Rouge River Collaborative Illicit Discharge Elimination Plan
2020-2021 Progress Report



Alliance of Rouge Communities
OURS TO PROTECT
Working together, restoring the river

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A. Purpose

This report summarizes the activities undertaken to implement the Rouge River Collaborative Illicit Discharge Elimination Program (IDEP) plan (Plan) which was approved by the Michigan Department of Environment, Great Lakes and Energy (EGLE) in September 2017 and revised in January 2020. The Plan is part of the municipal separate storm sewer system (MS4) permits for several communities in the Rouge River watershed. The report includes activities implemented by or on behalf of members of the Alliance of Rouge Communities (ARC) from January 1, 2020 through December 31, 2021. The permittees participating in the Plan during the reporting period are listed below.

Participating Permittees	
Beverly Hills, Village of	Northville, City of
Bingham Farms, Village of	Northville Township
Birmingham, City of	Novi, City of
Bloomfield Hills, City of	Oak Park, City of
Bloomfield Township	Plymouth, City of
Canton Township	Plymouth Township
Dearborn Heights, City of	Redford Township
Farmington, City of	Southfield, City of
Farmington Hills, City of	Troy, City of
Franklin, Village of	Walled Lake, City of
Garden City, City of	Wayne, City of
Inkster, City of	Westland, City of
Lathrup Village, City of	West Bloomfield Township
Livonia, City of	
Melvindale, City of	Henry Ford College
Oakland County*	Wayne County Airport Authority
	Wayne County*

**Participating in the Plan but will provide a separate report of county activities per their approved progress report schedule.*

B. Action Strategy Status

The status of each action strategy includes a description of each activity, progress made during the reporting period and status of each metric.

IDEP #1: Mapping of Storm Sewer Systems

Description: The permittees have their storm sewer maps available which include the location of outfalls, enclosed and open storm drains, roads and waters of the state. In addition, the ARC has developed a GIS database of the storm sewer system maps. For Wayne and Oakland counties, this requirement will be dealt with under their individual stormwater management plans.

Goal:

- 100% of outfalls mapped in GIS
- 100% of storm sewers mapped in GIS

Status:

Metric	Status
Portion of watershed (area) where known outfalls are mapped in GIS	100% (based on permittee land area)
Portion of watershed with storm sewers in GIS	98% (based on permittee land area)

Description of Progress:

Most permittees provided the ARC with their outfall and storm sewer GIS data. Only Melvindale still needs to provide their storm sewer system in GIS format.

IDEP #2: Outfall Prioritization and Dry Weather Screening

Description: The ARC screened all priority outfalls in 2018 in each city or village. The ARC has determined outfalls with suspicious discharges and conducted follow-up investigations for those outfalls. Cities/Townships/Villages will perform dry weather screening of new outfalls within 6 months of construction, taking ownership or discovery. For Wayne and Oakland counties, this requirement will be dealt with under their individual stormwater management plans.

Goal: Screen 100% of priority outfalls

Status:

Metric	Status
Number priority outfalls identified	471
Percent of priority outfalls screened	100%
Number of new outfalls identified	12
Percent of new outfalls screened	0%
Number of suspicious discharges identified (based on screening results)	29 (Category A and B outfalls)

Bloomfield townships identified 11 additional outfalls and Plymouth identified 1 additional outfall that fall under the MS4 permit. They were identified in the fall of 2021 and screening is planned for the spring of 2022.

IDEP #3: Advanced Investigations

Description: The goal of this activity is to 1) locate source(s) of suspected illicit discharge(s) in the initial priority areas and upstream of the priority outfalls, and 2) oversee the correction of any identified illicit discharges.

Goals:

- Follow the advanced investigation protocol for initial priority areas and priority outfalls.
- 100% of illicit connections/discharges resolved or a plan in place for elimination.

Status:

Metric	Status
Total number of illicit discharge investigations (outfalls)	31
From previous priority areas	5
From priority outfall screening	21
From other efforts	5
Number of investigations closed	20 (65%)
Number of investigations remaining (in progress)	11 (35%)
Number of illicit discharges identified	10
Number corrected	7
Number unresolved	3

Description of Progress:
Below is a list of the 31 outfalls that required investigations during the reporting cycle. A summary by community is provided in Table 1.

- Beverly Hills: BV66, BV51
- Bloomfield Twp: CH Stevens No. 4 Drain
- Farmington Hills: FH01
- Inkster: Perrin Drain, OF47A
- Livonia: U2008221, 6038, 13002, U2008231, M2008117, U2008238, 2680, L1619, L3582, Levan Rd South 42”,
- Northville: NV03, NV22, NV23, NV57
- Novi: NO23
- Plymouth: PY8, PY27, PY5, Holbrook St, Harvey St, Park St.
- Southfield: Fracassi Drain, 8 Mile Drain
- Wayne: WN21A
- Westland: SWOF-00278

Table 1 - Outfalls that Required Investigations

Permittee	Investigations Originating from				Total No. of Outfalls	Lead Agency
	Previous Priority Areas	Outfall Screening		Other Efforts		
		Cat A	Cat B			
Beverly Hills		2			2	ARC
Bloomfield Twp.	1				1	OCWRC
Farmington Hills		1			1	ARC
Inkster				2	2	WCESD
Livonia		2	6	2	10	WCESD
Northville		2	2		4	ARC
Novi		1			1	ARC
Plymouth	2	1	2	1	6	WCESD
Southfield	2				2	OCWRC
Wayne		1			1	WCESD
Westland		1			1	WCESD
Total	**5**	**11**	**10**	**5**	**31**	

In partnership with the local communities, the ARC, Wayne County Environmental Services Department (WCESD) and Oakland County Water Resource Commissioner's Office (OCWRC) investigated drains that displayed suspicious discharges. Investigations were conducted on 30 of the 31 outfalls, and investigations were closed out on 20 of the outfalls. The status of these investigations is provided in Table 2 and detailed investigation reports can be found in Appendix B.

Table 2 - Status of Investigations by Outfall

Permittee	Outfall ID	Status	Result
Beverly Hills	BV66	Completed	Illicit sewage connection identified and corrected
	BV51	Ongoing	Sewage source suspected
Bloomfield Twp.	CH Stevens No. 4 Drain	Completed	1 failed septic system on Dover St. (corrected)
Farmington Hills	FH01	Completed	No sources found
Inkster	Perrin Drain	Ongoing	Sewage sources suspected
	OF47A	Ongoing	Sewage sources suspected
Livonia	U2008221	Ongoing	Sewage sources suspected
	6038	Ongoing	Sewage sources suspected
	13002	Completed	No sources found
	U2008231	Completed	No sources found
	M2008117	Completed	No sources found
	U2008238	Completed	No sources found
	2680	Completed	No sources found
	L1619	Ongoing	Sewage sources suspected
	L3582	Ongoing	Sewage sources suspected
	Levan Rd South 42"	Completed	No sources found

Permittee	Outfall ID	Status	Result
Northville	NV03	Completed	Illicit sewage connection identified and corrected
	NV22	Completed	No sources found
	NV23	Completed	No sources found
	NV57	Completed	No sources found
Novi	NO23	Completed	Animal source identified (addressed)
Plymouth	PY8	Ongoing	Sewage sources suspected
	PY27	Completed	No sources found
	PY5	Ongoing	Sources suspected
	Holbrook Street	Ongoing	Sources suspected
	Harvey St (with Beech/Palmer St.)	Completed	3 illicit sewage connections (corrected)
	Mill/Park St.	Pending correction	3 illicit sewage connections
	Jener St.	Pending correction	1 illicit sewage connection
	Amelia St.	Pending correction	1 illicit sewage connection
Southfield	Fracassi Drain	Completed	No sources found
	8 Mile Drain	Ongoing	Sources suspected
Wayne	WN21A	Completed	No sources found
Westland	SWOF-00278	Completed	No sources found

A total of 11 illicit discharges containing sewage from residential homes were identified. All but 5 of the illicit connections in Plymouth have been corrected as shown in Table 3. These corrections result in the elimination of 372,300 gallons of untreated wastewater and 4,120 lbs of pollutants on an annual basis (Tables 4 and 5).

Table 3 – Number and Type of Illicit Discharges (IDs) Discovered and Resolved

	A	B	C	A+B-C
County	**No. of Known IDs at beginning of Reporting Period**	**No. IDs Discovered During Reporting Period**	**No. of IDs Resolved During Reporting Period**	**No. of Unresolved IDs at the end of Reporting Period**
Sanitary Sewage from Illicit Connections from Residences				
Beverly Hills	0	1	1	0
Northville	0	1	1	0
Plymouth	0	8	3	5
Sanitary Sewage from Failed Residential Septic Systems				
Bloomfield Twp	1	0	1	0
Total	**1**	**10**	**6**	**5**

Table 4 - Volume of Sewage Eliminated from Surface Waters

Community Name	Household Size	Number of households with failed septics or illicit connections	Annual Wastewater Volume (gallons/year)
Data sources	[a]	[b]	
Beverly Hills	2.48	1	**67,890**
Plymouth	2.07	3	**169,999**
Bloomfield Twp	2.55	1	**69,806**
Northville	2.36	1	**64,605**
Total			**372,300**

Table 5 - Amount of Pollutants Eliminated from Surface Waters

Parameter	Average Concentration (mg/L)[i]	[i]Data Source	Pollutant Load (lbs/year)				
			Beverly Hills	Plymouth	Bloomfield Twp	Northville	Totals
Total Solids	690	[d]	391	979	402	372	**2144**
Total Suspended Solids	243	[d]	138	345	142	131	**756**
BOD	221	[d]	125	314	129	119	**687**
Ammonia	8.5	[d]	4.8	12.1	4.9	4.6	**26.4**
Total Phosphorus	9	[d]	5.0	12.75	5.2	4.8	**27.75**
Surfactant	13.5	[d]	7.6	19.1	7.8	7.2	**41.7**
Potassium	6	[e]	3.4	8.5	3.5	3.2	**18.6**
Total Organic Carbon	47	[f]	27	67	27	25	**146**
Fats, Oil & Grease	88	[d]	50	125	51	47	**273**
Total Pollutant Load (lb/year)			752	1,882	772	714	**4,120**

Data Sources:

[a] SEMCOG (Household size estimates for Southeast Michigan).

[b] County Database (from WCDPH-EHD for Wayne County).

[c] *Environmental Health Ready Reference*. Michigan Environmental Health Association. March 2004.

[d] *Onsite Wastewater Treatment Systems Manual.* U.S. EPA EPA/625/R-00/008. February 2002. Table 3-7 .

[e] Pitt, Robert, et al. *Investigations of Inappropriate Pollutant Entries into Storm Sewer Systems, A Users Guide*. U.S EPA. EPA/600/R-92/238. January 1993.

[f] *Onsite Wastewater Treatment Systems Manual.* U.S. EPA EPA/625/R-00/008. February 2002. Table 3-18 .

In addition to the efforts described above, Bloomfield Township, the City of Farmington, Farmington Hills, Livonia, and Novi conducted investigations in their jurisdictions to identified illicit discharges. These efforts are detailed in Appendix B.

IDEP #4: Staff Training

Description: The permittees will have at least one person who is competent at the IDEP Investigator Level. Permittees will have 50% of their field staff trained at the Alert Observer Level by March 31, 2022. In addition, permittees will remind staff of *E. coli* problems in Priority Areas and encourage reporting, annually.

Goals:

- 1 person per permittee trained at Investigator Level
- 50% of field staff trained at the Alert Observer Level.

Status:

Metric	Status
Portion of permittees with 1 or more staff trained at the Investigator level (of the 29 participating permittees)	79%
Number of field staff employed by the permittees (FTEs)	458
Portion of field staff trained at the Alert Observer level (or higher)	56%

Description of Progress:
The ARC offered or partnered in one IDEP Investigator and two Alert Observer training sessions during the permit period. They were held on November 12, 2020 and October 27, 2021. Due to the pandemic, IDEP Investigator training was not offered in 2020, but was available as a virtual course in 2021. See Appendix C for recent staff training records.

There are 458 field staff employed by the permittees as shown in Appendix C. Of these, 258 staff (56%) are trained at the awareness level or greater: 125 at the investigator level and 258 at the alert observer level. Most permittees have more than 1 person trained at the investigator level and more than 50% trained at the alert observer level, while others fall short of these targets. The permittees that need more staff training (Table 6) will be targeted by the ARC in 2022.

Note: Oakland County and Wayne County personnel are not included in these totals, as they will be reporting on their staff training separately.

Table 6 - Permittees needing IDEP Training

Community	Number of Staff Needing Investigator Level Training	Number of Staff Needing Alert Observer Level Training*
Beverly Hills		3
Bingham Farms	1	
Bloomfield Hills	1	
Dearborn Heights		10
Garden City	1	
Melvindale	1	4
Livonia		6
Oak Park	1	
Southfield		5
Westland	1	12

*To achieve the 50% training goal.

IDEP #5: Pollution Complaint Response

Description: Permittees will have a method for recording and tracking pollution complaints from staff and the public. Permittees will follow-up on the complaints. The ARC will maintain a list of community contacts who are responsible for complaint response.

Goal: 100% of complaints addressed

Status:

Metric	Status
Number of complaints received and referred or investigated	100
Number of issues resolved	95
Portion of issues resolved	95%

Description of Progress:
The permittees received 100 pollution complaints. Of those 100 complaints, 95 issues were investigated and resolved. Corrections are pending or repairs are ongoing for 5 of the complaints. One of the unresolved issues is the illicit connection at Lathrup Village DPS which is discussed in on the next page. The other 4 unresolved issues are as follows:

- Bloomfield Twp: Illicit connection for wastewater at 1904 Pine Ridge Court
- Farmington: Illicit connection for wash water at 31930 Grand River
- OCWRC in West Bloomfield: Failed septic system at 2038 S. Hammond Lake
- OCWRC in Farmington Hills: Illegal dumping of concrete washout suspected. Source is suspected, but not verified by the City. The investigation remains open.

Documentation of the complaints is provided in Appendix D.

IDEP #6: Inspection of ARC Member-Owned Facilities

Description: Dye-test permittee owned or operated facilities (within the watershed) to ensure they are properly draining to the sanitary sewer.

Goals:

- 100% of ARC Member existing facilities dye tested.
- 100% of issues addressed.

Status:

Metric	Status
Number of facilities owned by permittees	222
Number of facilities owned by permittees with major renovations during reporting period	6
Portion of facilities dye tested, including renovations	99%
Number of issues found	2
Portion of issues addressed	0%

Description of Progress:

There are 222 municipal owned facilities in the watershed. Of these, 219 were dye tested to ensure that they were properly connected to the sanitary sewer (Appendix E). The remaining facilities are in Novi and are scheduled to have dye testing done in the spring of 2022. Six of the 222 municipal owned facilities had major renovations completed during the reporting period. Three of those renovated facilities have had dye testing done since the renovations were complete. The dye testing revealed illicit connections at 2 facilities (Appendix E2 and E3).

- An illicit connection was identified in part of the DPS building in Lathrup Village in December of 2020. The part of the building that has an illicit connections was part of an addition several years ago. Signs have been posted to prevent water use in that area of the building. DPS staff plan to trace the sanitary line to properly reroute the connections. The issue will be corrected no later than June 17, 2022.
- An illicit connection was identified in Bloomfield Hills at the City Hall/Police/Fire building in September of 2021. The part of the building that has cross-connections was part of an addition several years ago. The City will be investigating further to televise the sanitary line to trace were the connection can be routed. The issue is scheduled to be corrected in 2022.

IDEP #7: IDEP Work Group

Description: Permittees will meet twice a year to discuss IDEP-related topics including the annual advanced investigations work plan, progress of advanced investigations, lessons learned, any road blocks encountered with implementing the plan, and recommendations for improving the plan.

Goals:

- Hold at least 2 work group meetings per year.
- 80% member participation.
- 2 meeting summaries per year.

Status:

Metric	Status
Number of meetings per year	1 in 2020 and 2 in 2021
Number of meeting summaries per year	1 in 2020 and 2 in 2021
Portion of members in attendance at meetings	90% over both years

Description of Progress:
Three Technical Committee meetings were held during the reporting period. In 2020, 26 of 30 permittees were represented, while in 2021, 28 of 30 permittees were represented at the first meeting and 90 participants were signed on for the second meeting (Appendix F). The meeting in 2020 took place in person in early March, prior to the pandemic. Subsequent meetings have been conducted virtually.

C. Other Efforts

Each permittee included in this report has its own IDEP ordinance or policy and procedures in place. Copies of these ordinances and policies have been submitted to EGLE.

Appendix A

Dry Weather Outfall Screening Supporting Documentation

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Canton Administration Building

Section #: 21 Photograph #: _____ Date: 1-10-22 Crew Initials: CH

Weather: Air temp.: 20° Rain: Yes ____ No X Sunny X Cloudy ____

OUTFALL #: 3-7 storm sewer

1. Creek Name: Mott Drain
2. Size: 26"
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: 2" (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____

Color: None X Yellow ____ Brown ____ Gree

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____

Deposits/stains: None X Sediment ____ Oily ____

Vegetation conditions: Normal X Inhibited gr

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalli

Other damage: _____ Extent _____

2021 INSPECTIONS Were Done EARLY 2022

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Links at Pheasant Run Condos

Section #: 28 Photograph #: _____ Date: 1-10-22 Crew Initials: _____

Weather: Air temp.: 20 Rain: Yes ____ No X Sunny X Cloudy ____

OUTFALL #: 3-6

1. Creek Name: Mott Drain
2. Size: 16"
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: 3" (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

Location: Rodin Park

Section #: 14 Photograph #: _____ Date: 1-10-22 Crew Initials: CH

Weather: Air temp.: 20° Rain: Yes ____ No X Sunny X Cloudy ____

OUTFALL #: 1-5A

1. Creek Name: Fellows Creek
2. Size: 24
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: 1" (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Flodin Park

Section #: 14 Photograph #: _____ Date: 1-10-22 Crew Initials: CH

Weather: Air temp.: 20° Rain: Yes ____ No X Sunny X Cloudy ____

OUTFALL #: 1-5B

1. Creek Name: Fellows Creek
2. Size: 24
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: — (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Sheldon Road Wetland

Section #: 3 Photograph #: _____ Date: 1-13-22 Crew Initials: CH

Weather: Air temp.: 30 Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 1-1

1. Creek Name: Willow Creek
2. Size: 24"
3. Material: Metal
4. Flow/Depth on Flow in Pipe: 1" (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

Location: Canton Public Library

Section #: 21 Photograph #: _____ Date: 1-13-22 Crew Initials: CH

Weather: Air temp.: 32° Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 3-5A

1. Creek Name: Mill Drain
2. Size: 12"
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: 3" (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Canton Public Library

Section #: 21 Photograph #: _____ Date: 1-13-22 Crew Initials: CJ

Weather: Air temp.: 32° Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 3-5 B

1. Creek Name: Mott Drain
2. Size: 12"
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: 2" (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Canton Public Library

Section #: 21 Photograph #: _____ Date: 1-13-22 Crew Initials: CH

Weather: Air temp.: 32° Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 3-5C

1. Creek Name: Mott Drain
2. Size: 12"
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: 2" (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Heritage Park

Section #: 21 Photograph #: _____ Date: 1-13-22 Crew Initials: CH

Weather: Air temp.: 32° Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 3-4A

1. Creek Name: Mott Drain
2. Size: 10"
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: _____ (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Heritage Park

Section #: 21 Photograph #: _____ Date: 1-13-22 Crew Initials: CH

Weather: Air temp.: 32° Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 3-4B

1. Creek Name: Mott Drain
2. Size: 10"
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: _____ (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None____Sewage____Sufide____Oil____Gas____Rancid-sour____Other____

Color: None____Yellow____Brown____Green____Red____Gray____Other____

Turbidity: None____Cloudy____Opaque____

Floatables: None____Petroleum____Sheen____Sewage____Other____(collect samples)

Deposits/stains: None____Sediment____Oily____Describe:____(collect samples)

Vegetation conditions: Normal____Inhibited growth____Excessive growth____

Extent: _____

Damage to outfall structures:

None____Concrete cracking____Concrete Spalling____Peeling paint____Metal corrosion____

Other damage:_____Extent_____

ANALYSES

Known industrial or commercial uses in drainage area? Yes____No____Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES____NO____

_____

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Heritage Park

Section #: 21 Photograph #: _____ Date: 1-13-22 Crew Initials: CH

Weather: Air temp.: 32° Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 3-4C

1. Creek Name: Mott Drain
2. Size: 10"
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: _____ (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Grounds Maintenance Building

Section #: 21 Photograph #: _____ Date: 1-11-22 Crew Initials: CH

Weather: Air temp.: 8° Rain: Yes ____ No X Sunny X Cloudy ____

OUTFALL #: _____

1. Creek Name: Mott Drain
2. Size: 36"
3. Material: Metal
4. Flow/Depth on Flow in Pipe: 4" (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Griffin Park

Section #: 15 Photograph #: _____ Date: 1-11-22 Crew Initials: CH

Weather: Air temp.: 8° Rain: Yes ____ No X Sunny X Cloudy ____

OUTFALL #: 1-6A

1. Creek Name: Green Drain
2. Size: 12"
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: — (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Griffin Park

Section #: 15 Photograph #: _____ Date: 1-11-22 Crew Initials: CH

Weather: Air temp.: 8° Rain: Yes ____ No X Sunny X Cloudy ____

OUTFALL #: 1-6B

1. Creek Name: Green Drain
2. Size: 12"
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: 6" (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None ____ Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None ____ Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None ____ Cloudy ____ Opaque ____

Floatables: None ____ Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None ____ Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal ____ Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Griffin Park

Section #: 15 Photograph #: _____ Date: 1-11-22 Crew Initials: CH

Weather: Air temp.: 8° Rain: Yes ____ No X Sunny X Cloudy ____

OUTFALL #: 1-6C

1. Creek Name: Green Drain
2. Size: 12"
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: 1" (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None ____ Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None ____ Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None ____ Cloudy ____ Opaque ____

Floatables: None ____ Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None ____ Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal ____ Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Independence Park

Section #: 19 Photograph #: _____ Date: 1-11-22 Crew Initials: CH

Weather: Air temp.: 10° Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 3-2

1. Creek Name: Lower Rouge River
2. Size: 24"
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: 1" (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Canton Softball Center

Section #: 33 Photograph #: _____ Date: 1-14-22 Crew Initials: CH

Weather: Air temp.: 30° Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 3-8A

1. Creek Name: Rich Drain
2. Size: 12"
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: — (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Canton Softball Center

Section #: 33 Photograph #: _____ Date: 1-14-22 Crew Initials: CH

Weather: Air temp.: 30° Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 3-8B

1. Creek Name: Rich Draw
2. Size: 12"
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: — (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

Location: Old Human Resources Building

Section #: 34 Photograph #: _____ Date: 1-14-22 Crew Initials: CH

Weather: Air temp.: 28 Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 4-4

1. Creek Name: Rich Drain
2. Size: _____
3. Material: ~~Concrete~~ Under Road Storm Sewer
4. Flow/Depth on Flow in Pipe: _____ (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None ____ Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None ____ Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None ____ Cloudy ____ Opaque ____

Floatables: None ____ Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None ____ Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal ____ Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None ____ Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Old Township Hall

Section #: 34 Photograph #: _____ Date: 1-14-22 Crew Initials: CH

Weather: Air temp.: 28° Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 4-3

1. Creek Name: Rich Drain
2. Size: 36"
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: _____ (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Canton HR Resources Building

Section #: 18 Photograph #: _____ Date: 1-14-22 Crew Initials: CH

Weather: Air temp.: 25° Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 2-1

1. Creek Name: Lower Rouge River
2. Size: 24
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: 1" (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Canton DPW

Section #: 34 Photograph #: _____ Date: 1-14-22 Crew Initials: CH

Weather: Air temp.: 28° Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 4-5

1. Creek Name: Fisher & Leng Drain & McKinstry Drain
2. Size: 24
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: _____ (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None____Sewage____Sufide____Oil____Gas____Rancid-sour____Other____

Color: None____Yellow____Brown____Green____Red____Gray____Other____

Turbidity: None____Cloudy____Opaque____

Floatables: None____Petroleum____Sheen____Sewage____Other____(collect samples)

Deposits/stains: None____Sediment____Oily____Describe:____(collect samples)

Vegetation conditions: Normal____Inhibited growth____Excessive growth____

Extent: _____

Damage to outfall structures:

None____Concrete cracking____Concrete Spalling____Peeling paint____Metal corrosion____

Other damage:_____Extent_____

ANALYSES

Known industrial or commercial uses in drainage area? Yes____No____Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES____NO____

_____

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Pheasant Run Golf Course

Section #: 29 Photograph #: _____ Date: 1-5-22 Crew Initials: CH

Weather: Air temp.: 18 Rain: Yes ____ No X Sunny X Cloudy ____

OUTFALL #: 3-10

1. Creek Name: Lower Rouge River
2. Size: 6
3. Material: Plastic
4. Flow/Depth on Flow in Pipe: — (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Pheasant Run Golf Course

Section #: 29 Photograph #: _____ Date: 1-5-22 Crew Initials: CH

Weather: Air temp.: 18 Rain: Yes ____ No X Sunny X Cloudy ____

OUTFALL #: 3-11

1. Creek Name: Lower Rouge River
2. Size: 24"
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: 2" (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Pheasant Run Golf Course

Section #: 20 Photograph #: _____ Date: 1-5-22 Crew Initials: CF

Weather: Air temp.: 18 Rain: Yes ____ No X Sunny X Cloudy ____

OUTFALL #: 3-13

1. Creek Name: Lower Rouge
2. Size: _____
3. Material: _____
4. Flow/Depth on Flow in Pipe: _____ (inches)

Can't Find.

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None ____ Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None ____ Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None ____ Cloudy ____ Opaque ____

Floatables: None ____ Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None ____ Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal ____ Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None ____ Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO ____

_____

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Pheasant Run Golf Course

Section #: 20 Photograph #: _____ Date: _____ Crew Initials: _____

Weather: Air temp.: 18 Rain: Yes ____ No X Sunny X Cloudy ____

OUTFALL #: 3-14

1. Creek Name: Lower Rouge River
2. Size: _____
3. Material: _____
4. Flow/Depth on Flow in Pipe: _____ (inches)

Can't find

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None ____ Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None ____ Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None ____ Cloudy ____ Opaque ____

Floatables: None ____ Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None ____ Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal ____ Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None ____ Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO ____

_____

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Pheasant Run Golf Course

Section #: 20 Photograph #: _____ Date: 1-5-22 Crew Initials: CH

Weather: Air temp.: 18 Rain: Yes ____ No X Sunny X Cloudy ____

OUTFALL #: 3-15

1. Creek Name: _____
2. Size: _____
3. Material: _____
4. Flow/Depth on Flow in Pipe: _____ (inches)

Can't Find

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None ____ Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None ____ Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None ____ Cloudy ____ Opaque ____

Floatables: None ____ Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None ____ Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal ____ Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None ____ Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO ____

_____

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Pheasant Run Golf Course

Section #: 20 Photograph #: _____ Date: 1-5-22 Crew Initials: CH

Weather: Air temp.: 18 Rain: Yes ____ No X Sunny X Cloudy ____

OUTFALL #: ~~Lower Rouge~~ 3-16

1. Creek Name: Lower Rouge River
2. Size: @ 36"
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: 4" (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Pheasant Run Golf Course

Section #: 20 Photograph #: _____ Date: 1-5-22 Crew Initials: CH

Weather: Air temp.: 20 Rain: Yes ____ No X Sunny X Cloudy ____

OUTFALL #: 3-17

1. Creek Name: Lower Rouge River
2. Size: 24
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: 4" (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: ____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: ____ Extent ____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: ____

Stream conditions: ____

Additional Observations: ____

Need to follow up: YES ____ NO X

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Pheasant Run Golf Course

Section #: 20 Photograph #: _____ Date: 1-5-22 Crew Initials: CH

Weather: Air temp.: 20 Rain: Yes ____ No X Sunny X Cloudy ____

OUTFALL #: 3-18

1. Creek Name: Lower Rouge
2. Size: _____
3. Material: _____
4. Flow/Depth on Flow in Pipe: _____ (inches)

Can't Find

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None____Sewage____Sufide____Oil____Gas____Rancid-sour____Other____

Color: None____Yellow____Brown____Green____Red____Gray____Other____

Turbidity: None____Cloudy____Opaque____

Floatables: None____Petroleum____Sheen____Sewage____Other____(collect samples)

Deposits/stains: None____Sediment____Oily____Describe:____(collect samples)

Vegetation conditions: Normal____Inhibited growth____Excessive growth____

Extent: _____

Damage to outfall structures:

None____Concrete cracking____Concrete Spalling____Peeling paint____Metal corrosion____

Other damage:_____Extent_____

ANALYSES

Known industrial or commercial uses in drainage area? Yes____No____Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES____NO____

_____

OUTFALL INVESTIGATION REPORT

Location: Pheasant Run Golf Course

Section #: 20-29 Photograph #: _____ Date: 1-5-22 Crew Initials: CH

Weather: Air temp.: 20 Rain: Yes ____ No X Sunny X Cloudy ____

OUTFALL #: 3-19

1. Creek Name: Lower Rouge
2. Size: 32"
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: 3" (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Pheasant Run Golf Course

Section #: 20-29 Photograph #: _____ Date: 1-6-22 Crew Initials: _____

Weather: Air temp.: 20° Rain: Yes ____ No X Sunny X Cloudy ____

OUTFALL #: 3-20

1. Creek Name: Lower Rouge River
2. Size: _____
3. Material: _____
4. Flow/Depth on Flow in Pipe: _____ (inches)

Can't Find.

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None ____ Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None ____ Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None ____ Cloudy ____ Opaque ____

Floatables: None ____ Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None ____ Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal ____ Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None ____ Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO ____

_____

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Pheasant Run Golf Course

Section #: 20-29 Photograph #:_____ Date: 1-6-22 Crew Initials:_____

Weather: Air temp.: 20 Rain: Yes____ No X Sunny X Cloudy____

OUTFALL #: 3-21

1. Creek Name: Lower Rouge River
2. Size: _____
3. Material: _____
4. Flow/Depth on Flow in Pipe: _____ (inches)

Can't Find

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None____Sewage____Sufide____Oil____Gas____Rancid-sour____Other____

Color: None____Yellow____Brown____Green____Red____Gray____Other____

Turbidity: None____Cloudy____Opaque____

Floatables: None____Petroleum____Sheen____Sewage____Other____(collect samples)

Deposits/stains: None____Sediment____Oily____Describe:____(collect samples)

Vegetation conditions: Normal____Inhibited growth____Excessive growth____

Extent: _____

Damage to outfall structures:

None____Concrete cracking____Concrete Spalling____Peeling paint____Metal corrosion____

Other damage:_____Extent_____

ANALYSES

Known industrial or commercial uses in drainage area? Yes____No____Describe: _____

_____

Stream conditions: _____

_____

Additional Observations: _____

_____

Need to follow up: YES____NO____

_____

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Barchester Park

Section #: II Photograph #: _____ Date: 1-6-22 Crew Initials: CH

Weather: Air temp.: 20° Rain: Yes ____ No X Sunny X Cloudy ____

OUTFALL #: 1-2

1. Creek Name: Willow Creek
2. Size: 48"
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: — (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

Location: Fire Station #2

Section #: 11 Photograph #: _____ Date: 1-6-22 Crew Initials: CH

Weather: Air temp.: 18 Rain: Yes ____ No X Sunny X Cloudy ____

OUTFALL #: 1-3

1. Creek Name: Tonquish Creek
2. Size: 3"-4"
3. Material: Plastic
4. Flow/Depth on Flow in Pipe: _____ (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Koppernick Pond

Section #: 12 Photograph #: _____ Date: 1-6-22 Crew Initials: CH

Weather: Air temp.: 20 Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 1-4

1. Creek Name: Tonquish Creek
2. Size: ~~24~~ 24"
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: 3" (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal ____ Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Freedom Park

Section #: 22 Photograph #: _____ Date: 1-18-22 Crew Initials: CH

Weather: Air temp.: 28° Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 4-2

1. Creek Name: MTT Drain
2. Size: Storm Sewer M.H.
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: _____ (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Fellows Creek . Golf Course

Section #: 25 Photograph #: _____ Date: 1-12-22 Crew Initials: CH

Weather: Air temp.: 20 Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 4-6

1. Creek Name: Fellows Creek
2. Size: _____
3. Material: _____
4. Flow/Depth on Flow in Pipe: _____ (inches)

Can't Find

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None____Sewage____Sufide____Oil____Gas____Rancid-sour____Other____

Color: None____Yellow____Brown____Green____Red____Gray____Other____

Turbidity: None____Cloudy____Opaque____

Floatables: None____Petroleum____Sheen____Sewage____Other____(collect samples)

Deposits/stains: None____Sediment____Oily____Describe:____(collect samples)

Vegetation conditions: Normal____Inhibited growth____Excessive growth____

Extent: _____

Damage to outfall structures:

None____Concrete cracking____Concrete Spalling____Peeling paint____Metal corrosion____

Other damage:_____Extent_____

ANALYSES

Known industrial or commercial uses in drainage area? Yes____No____Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES____NO____

_____

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Fellows Creek, Golf Course

Section #: 25 Photograph #: _____ Date: 1-12-22 Crew Initials: CH

Weather: Air temp.: 20 Rain: Yes____ No X Sunny____ Cloudy X

OUTFALL #: 4-7

1. Creek Name: Fellows Creek
2. Size: _____
3. Material: _____
4. Flow/Depth on Flow in Pipe: _____ (inches)

Can't Find

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None____ Sewage____ Sufide____ Oil____ Gas____ Rancid-sour____ Other____

Color: None____ Yellow____ Brown____ Green____ Red____ Gray____ Other____

Turbidity: None____ Cloudy____ Opaque____

Floatables: None____ Petroleum____ Sheen____ Sewage____ Other____ (collect samples)

Deposits/stains: None____ Sediment____ Oily____ Describe:____ (collect samples)

Vegetation conditions: Normal____ Inhibited growth____ Excessive growth____

Extent: _____

Damage to outfall structures:

None____ Concrete cracking____ Concrete Spalling____ Peeling paint____ Metal corrosion____

Other damage:_____ Extent_____

ANALYSES

Known industrial or commercial uses in drainage area? Yes____ No____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES____ NO____

_____

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Fellows Creek Golf Course

Section #: 25 Photograph #: _____ Date: 1-12-22 Crew Initials: CH

Weather: Air temp.: 20 Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 4-8 Can't Find

1. Creek Name: Fellows Creek
2. Size: _____
3. Material: _____
4. Flow/Depth on Flow in Pipe: _____ (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None____Sewage____Sufide____Oil____Gas____Rancid-sour____Other____

Color: None____Yellow____Brown____Green____Red____Gray____Other____

Turbidity: None____Cloudy____Opaque____

Floatables: None____Petroleum____Sheen____Sewage____Other____(collect samples)

Deposits/stains: None____Sediment____Oily____Describe:____(collect samples)

Vegetation conditions: Normal____Inhibited growth____Excessive growth____

Extent: _____

Damage to outfall structures:

None____Concrete cracking____Concrete Spalling____Peeling paint____Metal corrosion____

Other damage:_____Extent_____

ANALYSES

Known industrial or commercial uses in drainage area? Yes____ No____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES____ NO____

_____

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Fellows Creek Golf Course

Section #: 25 Photograph #: _____ Date: 1-12-22 Crew Initials: CH

Weather: Air temp.: 20 Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 4-9

1. Creek Name: Fellows Creek
2. Size: 8"
3. Material: Plastic
4. Flow/Depth on Flow in Pipe: _____ (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal ✓ Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Fellows Creek Golf Course

Section #: 25 Photograph #: _____ Date: 1-12-22 Crew Initials: CH

Weather: Air temp.: 20 Rain: Yes____ No X Sunny____ Cloudy X

OUTFALL #: 4-10

1. Creek Name: Fellow Creek
2. Size: _____
3. Material: _____
4. Flow/Depth on Flow in Pipe: _____ (inches)

Can't Find

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None____ Sewage____ Sufide____ Oil____ Gas____ Rancid-sour____ Other____

Color: None____ Yellow____ Brown____ Green____ Red____ Gray____ Other____

Turbidity: None____ Cloudy____ Opaque____

Floatables: None____ Petroleum____ Sheen____ Sewage____ Other____ (collect samples)

Deposits/stains: None____ Sediment____ Oily____ Describe:____ (collect samples)

Vegetation conditions: Normal____ Inhibited growth____ Excessive growth____

Extent: _____

Damage to outfall structures:

None____ Concrete cracking____ Concrete Spalling____ Peeling paint____ Metal corrosion____

Other damage:_____ Extent_____

ANALYSES

Known industrial or commercial uses in drainage area? Yes____ No____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES____ NO____

_____

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Fellows Creek Golf Course

Section #: 25 Photograph #: _____ Date: _____ Crew Initials: CH

Weather: Air temp.: 25 Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 4-11

1. Creek Name: Fellow Creek
2. Size: 24
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: 1" (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Fellow Creek Golf Course

Section #: 25 Photograph #: _____ Date: _____ Crew Initials: CH

Weather: Air temp.: 25 Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: ~~#~~ 4-12

1. Creek Name: Fellow Creek
2. Size: _____
3. Material: _____
4. Flow/Depth on Flow in Pipe: _____ (inches)

Can't Find

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None____Sewage____Sufide____Oil____Gas____Rancid-sour____Other____

Color: None____Yellow____Brown____Green____Red____Gray____Other____

Turbidity: None____Cloudy____Opaque____

Floatables: None____Petroleum____Sheen____Sewage____Other____(collect samples)

Deposits/stains: None____Sediment____Oily____Describe:____(collect samples)

Vegetation conditions: Normal____Inhibited growth____Excessive growth____

Extent: _____

Damage to outfall structures:

None____Concrete cracking____Concrete Spalling____Peeling paint____Metal corrosion____

Other damage:_____Extent_____

ANALYSES

Known industrial or commercial uses in drainage area? Yes____No____Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES____NO____

_____

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Fellows Creek Golf Course

Section #: 25 Photograph #: _____ Date: _____ Crew Initials: CH

Weather: Air temp.: 25 Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 4-13

1. Creek Name: Fellows Creek
2. Size: _____
3. Material: _____
4. Flow/Depth on Flow in Pipe: _____ (inches)

Can't Find

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None____Sewage____Sufide____Oil____Gas____Rancid-sour____Other____

Color: None____Yellow____Brown____Green____Red____Gray____Other____

Turbidity: None____Cloudy____Opaque____

Floatables: None____Petroleum____Sheen____Sewage____Other____(collect samples)

Deposits/stains: None____Sediment____Oily____Describe:____(collect samples)

Vegetation conditions: Normal____Inhibited growth____Excessive growth____

Extent: _____

Damage to outfall structures:

None____Concrete cracking____Concrete Spalling____Peeling paint____Metal corrosion____

Other damage:_____Extent_____

ANALYSES

Known industrial or commercial uses in drainage area? Yes____No____Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES____NO____

_____

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Fellow Creek Golf Course

Section #: 25 Photograph #: _____ Date: _____ Crew Initials: CH

Weather: Air temp.: 25 Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 4-14

1. Creek Name: Fellows Creek
2. Size: 4
3. Material: Plastic
4. Flow/Depth on Flow in Pipe: _____ (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Fellow Creek Golf Course

Section #: 25 Photograph #: _____ Date: _____ Crew Initials: CF

Weather: Air temp.: 25 Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 4-15

1. Creek Name: Fellows Creek
2. Size: _____
3. Material: _____
4. Flow/Depth on Flow in Pipe: _____ (inches)

Can't Find

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None____Sewage____Sufide____Oil____Gas____Rancid-sour____Other____

Color: None____Yellow____Brown____Green____Red____Gray____Other____

Turbidity: None____Cloudy____Opaque____

Floatables: None____Petroleum____Sheen____Sewage____Other____(collect samples)

Deposits/stains: None____Sediment____Oily____Describe:____(collect samples)

Vegetation conditions: Normal____Inhibited growth____Excessive growth____

Extent: _____

Damage to outfall structures:

None____Concrete cracking____Concrete Spalling____Peeling paint____Metal corrosion____

Other damage:_____Extent_____

ANALYSES

Known industrial or commercial uses in drainage area? Yes____No____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES____NO____

_____

OUTFALL INVESTIGATION REPORT

Location: Fellow Creek Golf Course

Section #: 25 Photograph #: _____ Date: 1-18-22 Crew Initials: CH

Weather: Air temp.: 28 Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 4-16

1. Creek Name: Fellow Creek
2. Size: 4"
3. Material: Plastic
4. Flow/Depth on Flow in Pipe: _____ (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Fellows Creek Golf Course

Section #: 25 Photograph #: _____ Date: 1-18-22 Crew Initials: CH

Weather: Air temp.: 28 Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 4-17

1. Creek Name: Fellow Creek
2. Size: 6"
3. Material: Plastic
4. Flow/Depth on Flow in Pipe: _____ (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

_____

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Fellows Creek Golf Course

Section #: 25 Photograph #: _____ Date: 1-18-22 Crew Initials: CH

Weather: Air temp.: 28 Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 4-18

1. Creek Name: Fellow Creek
2. Size: _____
3. Material: _____
4. Flow/Depth on Flow in Pipe: _____ (inches)

Can't Find

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None____Sewage____Sufide____Oil____Gas____Rancid-sour____Other____

Color: None____Yellow____Brown____Green____Red____Gray____Other____

Turbidity: None____Cloudy____Opaque____

Floatables: None____Petroleum____Sheen____Sewage____Other____(collect samples)

Deposits/stains: None____Sediment____Oily____Describe:____(collect samples)

Vegetation conditions: Normal____Inhibited growth____Excessive growth____

Extent: _____

Damage to outfall structures:

None____Concrete cracking____Concrete Spalling____Peeling paint____Metal corrosion____

Other damage:_____Extent_____

ANALYSES

Known industrial or commercial uses in drainage area? Yes____No____Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES____NO____

_____

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Fellow Creek Golf Course

Section #: 25 Photograph #: _____ Date: 1-18-22 Crew Initials: CH

Weather: Air temp.: 28 Rain: Yes____ No X Sunny____ Cloudy X

OUTFALL #: 4-19

1. Creek Name: Fellow Creek
2. Size: _____
3. Material: _____
4. Flow/Depth on Flow in Pipe: _____ (inches)

Can't Find.

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None____ Sewage____ Sufide____ Oil____ Gas____ Rancid-sour____ Other____

Color: None____ Yellow____ Brown____ Green____ Red____ Gray____ Other____

Turbidity: None____ Cloudy____ Opaque____

Floatables: None____ Petroleum____ Sheen____ Sewage____ Other____ (collect samples)

Deposits/stains: None____ Sediment____ Oily____ Describe:____ (collect samples)

Vegetation conditions: Normal____ Inhibited growth____ Excessive growth____

Extent: _____

Damage to outfall structures:

None____ Concrete cracking____ Concrete Spalling____ Peeling paint____ Metal corrosion____

Other damage:_____ Extent_____

ANALYSES

Known industrial or commercial uses in drainage area? Yes____ No____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES____ NO____

_____

Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	01-02
Date of Observation:	9 / 21 / 2020 — Time: 12:50 pm
Name(s) of Investigator(s):	Cory Borton
Has it rained over 0.10 in. in last 72 hours?	☐ Yes ☑ No

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☑ Suburban Residential
- ☐ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known): Detention Basin at south end of Shaker Heights Dr.

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☑ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 24 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☐ No ☑ Partially ☐ Fully With Sediment: ☑ No ☐ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☐ Yes ☑ No **(If No, Skip to Section 5)**

Flow Description (If present) ☐ Trickle ☐ Moderate ☐ Substantial

Description Details: _____

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☐			
pH / Temperature	☐	pH Level	Temperature (F)	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: _____

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: _____

Section 8: General Comments

Comments: _Holding water from downstream._____

Section 9: Reporting Information

Comments: _____		Date Observed:	__/___/ ___
_____		Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___





Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	03-01
Date of Observation:	9 / 21 / 2020 — Time: 1:15 pm
Name(s) of Investigator(s):	Cory Borton
Has it rained over 0.10 in. in last 72 hours?	☐ Yes ☑ No

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☐ Suburban Residential
- ☑ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known): In front of 43034 Woodward (Moose Preserve)

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☑ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 24 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☐ No ☑ Partially ☐ Fully With Sediment: ☑ No ☐ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☑ Yes ☐ No **(If No, Skip to Section 5)**

Flow Description (If present): ☑ Trickle ☐ Moderate ☐ Substantial

Description Details: _____

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☑ Yes ☐ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☑	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☑ Other: _leaves_____	☑ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☐ Yes ☐ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☑	4 MPN/100ml		
pH / Temperature	☑	pH Level 7.93	Temperature (F) 71.8	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: _____

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: _____

Section 8: General Comments

Comments: _____

Section 9: Reporting Information

Comments: _____		Date Observed:	__/___/ ___
_____		Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___





Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	04-01
Date of Observation:	9 / 17 / 2020 — Time: 2:00 pm
Name(s) of Investigator(s):	Cory Borton
Has it rained over 0.10 in. in last 72 hours?	☐ Yes ☑ No

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☐ Suburban Residential
- ☐ Commercial
- ☑ Institutional
- ☐ Open Space
- ☐ Woods

Other: Fire Statioin No. 4

Known Industries: _____

Notes (e.g. origin of outfall, if known): North side of fire station at 2389 Franklin Rd.

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☐ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 6 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☑ No ☐ Partially ☐ Fully With Sediment: ☑ No ☐ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☐ Yes ☑ No **(If No, Skip to Section 5)**

Flow Description (If present) ☐ Trickle ☐ Moderate ☐ Substantial

Description Details: _____

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☐			
pH / Temperature	☐	pH Level	Temperature (F)	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: _Only fire station downspouts and surface drainage discharge to it._____

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: _____

Section 8: General Comments

Comments: _____

Section 9: Reporting Information

Comments: _____		Date Observed:	__/___/ ___
_____		Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___





Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	04-02
Date of Observation:	9 / 21 / 2020
Time:	1:35 pm
Name(s) of Investigator(s):	Cory Borton
Has it rained over 0.10 in. in last 72 hours?	☐ Yes ☑ No

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☐ Suburban Residential
- ☑ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known): North of entrance to 43902 Woodward

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☑ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 30 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☑ No ☐ Partially ☐ Fully With Sediment: ☑ No ☐ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☐ Yes ☑ No **(If No, Skip to Section 5)**

Flow Description (If present) ☐ Trickle ☐ Moderate ☐ Substantial

Description Details: _____

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☐			
pH / Temperature	☐	pH Level	Temperature (F)	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: Stagnant water in invert. No flow.

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: _____

Section 8: General Comments

Comments: _____

Section 9: Reporting Information

Comments: _____		Date Observed:	__/___/ ___
_____		Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___





Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	06-01
Date of Observation:	9 / 17 / 2020 — Time: 2:25 pm
Name(s) of Investigator(s):	Cory Borton
Has it rained over 0.10 in. in last 72 hours?	☐ Yes ☑ No

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☑ Suburban Residential
- ☐ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known): Detention Basin outlet on Kemp Road

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☑ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 8 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☐ No ☑ Partially ☐ Fully With Sediment: ☑ No ☐ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☐ Yes ☑ No **(If No, Skip to Section 5)**

Flow Description (If present): ☐ Trickle ☐ Moderate ☐ Substantial

Description Details: _____

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☐			
pH / Temperature	☐	pH Level	Temperature (F)	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☑ Yes ☐ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☑	☑ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: Outfall holding water due to level of lake. Upstream structures into basin have no flow.

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: _____

Section 8: General Comments

Comments: _____

Section 9: Reporting Information

Comments: _____		Date Observed:	__/___/ ___
_____		Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___



Manhole upstream of detention basin



Outlet of storm sewer downstream of basin



Outfall submerged

Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	06-02
Date of Observation:	9 / 17 / 2020 — Time: 2:45 pm
Name(s) of Investigator(s):	Cory Borton
Has it rained over 0.10 in. in last 72 hours?	☐ Yes ☑ No

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☑ Suburban Residential
- ☐ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: Retention Pond

Known Industries: _____

Notes (e.g. origin of outfall, if known): Retention pond for Meadowlands of Bloomfield

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☑ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 36 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☐ No ☐ Partially ☑ Fully With Sediment: ☐ No ☐ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☐ Yes ☐ No **(If No, Skip to Section 5)**

Flow Description (If present) ☐ Trickle ☐ Moderate ☐ Substantial

Description Details: _____

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☐			
pH / Temperature	☐	pH Level	Temperature (F)	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: _____

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: _Outfall submerged. Upstream strucures holding water._____

Section 8: General Comments

Comments: _Retention Basin may need to be dredged._____

Section 9: Reporting Information

Comments:	_____	Date Observed:	__/___/ ___
_____		Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___



Submerged Outfall



Retention Pond

Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	08-01
Date of Observation:	9 / 21 / 2020 — Time: 3:07 pm
Name(s) of Investigator(s):	Cory Borton
Has it rained over 0.10 in. in last 72 hours?	☐ Yes ☑ No

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☑ Suburban Residential
- ☐ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known): South of house at 1471 Franklin Road

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☑ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 24 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☐ No ☐ Partially ☑ Fully With Sediment: ☑ No ☐ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☑ Yes ☐ No **(If No, Skip to Section 5)**

Flow Description (If present): ☐ Trickle ☑ Moderate ☐ Substantial

Description Details: _____

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☑ Yes ☐ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☑	58 MPN/100ml		
pH / Temperature	☑	pH Level: 8.08	Temperature (F): 69.3	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: Surface runoff sewer from Forest Lake Golf Club and Club Road.

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments:

Section 8: General Comments

Comments: Water sample taken for E. Coli, and temperature and pH taken.

Section 9: Reporting Information

Comments:		Date Observed:	__/___/ ___
		Time Observed:	
Investigated By:		Date Reported:	__/___/ ___





Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	11-01
Date of Observation:	9 / 22 / 2020
Time:	1:15 pm
Name(s) of Investigator(s):	Cory Borton
Has it rained over 0.10 in. in last 72 hours?	☐ Yes ☑ No

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☑ Suburban Residential
- ☐ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known): Detention Basin access off Bridlepath Court

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☑ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: _____ in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☐ No ☑ Partially ☐ Fully With Sediment: ☑ No ☐ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☑ Yes ☐ No **(If No, Skip to Section 5)**

Flow Description (If present): ☐ Trickle ☑ Moderate ☐ Substantial

Description Details: _____

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☐ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☑ Yes ☐ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☑	162 MPN/100ml		
pH / Temperature	☑	pH Level: 7.79	Temperature (F): 66.5	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: No smell, color, or floatables.

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: _____

Section 8: General Comments

Comments: _____

Section 9: Reporting Information

Comments: _____		Date Observed:	__/___/ ___
_____		Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___



Basin inlet on North side



Basin inlet on west side



Basin outlet on south side



Basin Overflow Structure on south side



Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	11-02
Date of Observation:	9 / 21 / 2020 — Time: 4:30 pm
Name(s) of Investigator(s):	Cory Borton
Has it rained over 0.10 in. in last 72 hours?	☐ Yes ☑ No

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☑ Suburban Residential
- ☐ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known): Crofton Court detention basin

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☑ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 15 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☑ No ☐ Partially ☐ Fully With Sediment: ☑ No ☐ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☐ Yes ☑ No **(If No, Skip to Section 5)**

Flow Description (If present) ☐ Trickle ☐ Moderate ☐ Substantial

Description Details: _____

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☐			
pH / Temperature	☐	pH Level	Temperature (F)	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: Located 15" inlet pipe into basin, but not 6" outlet pipe.

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: _____

Section 8: General Comments

Comments: _____

Section 9: Reporting Information

Comments: _____		Date Observed:	__/___/ ___
_____		Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___





Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	12-01		
Date of Observation:	9 / 22 / 2020	Time:	2:15 pm
Name(s) of Investigator(s):	Cory Borton		
Has it rained over 0.10 in. in last 72 hours?	☐ Yes	☑ No	

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☑ Suburban Residential
- ☐ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known): Detention basin for Hidden Pines sub

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☑ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 42 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☑ No ☐ Partially ☐ Fully With Sediment: ☑ No ☐ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☐ Yes ☑ No **(If No, Skip to Section 5)**

Flow Description (If present) ☐ Trickle ☐ Moderate ☐ Substantial

Description Details:

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☐			
pH / Temperature	☐	pH Level	Temperature (F)	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: Detention pond holding water. Not up to outlet.

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: _____

Section 8: General Comments

Comments: _____

Section 9: Reporting Information

Comments: _____		Date Observed:	__/___/ ___
_____		Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___





Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	12-02
Date of Observation:	9 / 22 / 2020
Time:	2:25 pm
Name(s) of Investigator(s):	Cory Borton
Has it rained over 0.10 in. in last 72 hours?	☐ Yes ☑ No

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☑ Suburban Residential
- ☐ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known): Retention area off Westview Rd and west of Westman Ct

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☑ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 18 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☑ No ☐ Partially ☐ Fully With Sediment: ☐ No ☑ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☐ Yes ☑ No **(If No, Skip to Section 5)**

Flow Description (If present) ☐ Trickle ☐ Moderate ☐ Substantial

Description Details: _____

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☐			
pH / Temperature	☐	pH Level	Temperature (F)	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: No flow from outlet. No water in retention pond.

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: _____

Section 8: General Comments

Comments: _____

Section 9: Reporting Information

Comments: _____		Date Observed:	__/___/ ___
_____		Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___





Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	13-02		
Date of Observation:	9 / 22 / 2020	Time:	2:45 pm
Name(s) of Investigator(s):	Cory Borton		
Has it rained over 0.10 in. in last 72 hours?	☐ Yes	☑ No	

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☑ Suburban Residential
- ☐ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known):

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☐ Closed Pipe	☐ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☐ Circular ☐ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: _____ in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☐ No ☐ Partially ☐ Fully With Sediment: ☐ No ☐ Partially ☐ Fully
☑ Open Drainage (Channel)	☐ Concrete ☑ Earthen ☐ Rip-Rap ☐ Other: _____	☑ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: 2 ft. Top Width: 4 ft. Bottom Width: 1 ft.	

Is Flow Present? ☑ Yes ☐ No **(If No, Skip to Section 5)**

Flow Description (If present): ☐ Trickle ☑ Moderate ☐ Substantial

Description Details: Flowing stream

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☑ Yes ☐ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☑	83 MPN/100ml		
pH / Temperature	☑	pH Level: 8.05	Temperature (F): 68.1	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: Flowing stream. Nothing Unusual.

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: _____

Section 8: General Comments

Comments: _____

Section 9: Reporting Information

Comments: _____		Date Observed:	__/___/ ___
_____		Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___





Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	16-04
Date of Observation:	9 / 23 / 2020 — Time: 3:05 pm
Name(s) of Investigator(s):	Cory Borton
Has it rained over 0.10 in. in last 72 hours?	☐ Yes ☑ No

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☐ Suburban Residential
- ☐ Commercial
- ☑ Institutional
- ☐ Open Space
- ☐ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known): CB in Township campus entrance south of Police.

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☐ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☑ Other: Clay	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 8 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☑ No ☐ Partially ☐ Fully With Sediment: ☑ No ☐ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☐ Yes ☑ No **(If No, Skip to Section 5)**

Flow Description (If present): ☐ Trickle ☐ Moderate ☐ Substantial

Description Details: _____

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☐			
pH / Temperature	☐	pH Level	Temperature (F)	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: _____

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: _____

Section 8: General Comments

Comments: _____

Section 9: Reporting Information

Comments: _____		Date Observed:	__/___/ ___
_____		Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___





Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	18-01
Date of Observation:	9 / 21 / 2020 — Time: 2:40 pm
Name(s) of Investigator(s):	Cory Borton
Has it rained over 0.10 in. in last 72 hours?	☐ Yes ☑ No

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☑ Suburban Residential
- ☐ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known): Storm sewer under tennis court.

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☑ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 12 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☑ No ☐ Partially ☐ Fully With Sediment: ☑ No ☐ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☐ Yes ☑ No **(If No, Skip to Section 5)**

Flow Description (If present) ☐ Trickle ☐ Moderate ☐ Substantial

Description Details: _____

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☐			
pH / Temperature	☐	pH Level	Temperature (F)	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: Only surface drainage. No buildings to tie in.

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments:

Section 8: General Comments

Comments: Trickle from private storm sewer. Not from Twp. Sewer.

Section 9: Reporting Information

Comments:		Date Observed:	__/___/ ___
		Time Observed:	
Investigated By:		Date Reported:	__/___/ ___





Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	18-02		
Date of Observation:	9 / 21 / 2020	Time:	2:15 pm
Name(s) of Investigator(s):	Cory Borton		
Has it rained over 0.10 in. in last 72 hours?	☐ Yes	☑ No	

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☑ Suburban Residential
- ☐ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known): Storm sewer along north side of condos

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☑ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 12 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☑ No ☐ Partially ☐ Fully With Sediment: ☑ No ☐ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☑ Yes ☐ No **(If No, Skip to Section 5)**

Flow Description (If present): ☑ Trickle ☐ Moderate ☐ Substantial

Description Details: _____

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☑ Yes ☐ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☑	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☑ Other: soap	☑ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☑ Yes ☐ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☑	>2420 MPN/100ml		
pH / Temperature	☑	pH Level: 8.18	Temperature (F): 70.7	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- ☐ Unlikely
- ☐ Potential (Presence of two or more indicators)
- ☑ Suspect (One or more indicators with a severity of 3)
- ☐ Obvious

Comments: _Smelled soap in manhole._____

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: East inlet in manhole has trickle. West inlet does not._____

Section 8: General Comments

Comments: _____

Section 9: Reporting Information

Comments:	E.coli sample came back with high results. Further investigation will be done to determine source.	Date Observed:	9/23/2020
		Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___





Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	19-01		
Date of Observation:	__9__ / __17___ / _2020___	Time:	__4:05 pm__
Name(s) of Investigator(s):	Cory Borton		
Has it rained over 0.10 in. in last 72 hours?	☐ Yes	☑ No	

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☑ Suburban Residential
- ☐ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known): Enclosed ditch on east side of 1671 Keller Lane

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☑ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: _30___ in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☑ No ☐ Partially ☐ Fully With Sediment: ☑ No ☐ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☐ Yes ☑ No **(If No, Skip to Section 5)**

Flow Description (If present) ☐ Trickle ☐ Moderate ☐ Substantial

Description Details: _____

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☐			
pH / Temperature	☐	pH Level	Temperature (F)	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: No flow and upstream ditch is dry.

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: _____

Section 8: General Comments

Comments: _____

Section 9: Reporting Information

Comments: _____		Date Observed:	__/___/ ___
_____		Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___



Upstream end of enclosed ditch/sewer



Downstream end of enclosed ditch/sewer

Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	20-01		
Date of Observation:	9 / 17 / 2020	Time:	4:25 pm
Name(s) of Investigator(s):	Cory Borton		
Has it rained over 0.10 in. in last 72 hours?	☐ Yes	☑ No	

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☑ Suburban Residential
- ☐ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known): Outfall on east side of safety path on Franklin Road

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☑ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 18 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☑ No ☐ Partially ☐ Fully With Sediment: ☐ No ☑ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☐ Yes ☑ No **(If No, Skip to Section 5)**

Flow Description (If present) ☐ Trickle ☐ Moderate ☐ Substantial

Description Details: _____

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☐			
pH / Temperature	☐	pH Level	Temperature (F)	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: Outlet for dry detention area.

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: Broken off animal grate

Section 8: General Comments

Comments:

Section 9: Reporting Information

Comments:		Date Observed:	__/___/ ___
		Time Observed:	
Investigated By:		Date Reported:	__/___/ ___



Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	20-02
Date of Observation:	9 / 17 / 2020
Time:	4:35 pm
Name(s) of Investigator(s):	Cory Borton
Has it rained over 0.10 in. in last 72 hours?	☐ Yes ☑ No

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☑ Suburban Residential
- ☐ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known):

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☑ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 12 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☑ No ☐ Partially ☐ Fully With Sediment: ☑ No ☐ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☐ Yes ☑ No **(If No, Skip to Section 5)**

Flow Description (If present) ☐ Trickle ☐ Moderate ☐ Substantial

Description Details: _____

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☐			
pH / Temperature	☐	pH Level	Temperature (F)	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: 165' of pipe enclosing ditch

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: _____

Section 8: General Comments

Comments: _____

Section 9: Reporting Information

Comments: _____		Date Observed:	__/___/ ___
_____		Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___





Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	21-01
Date of Observation:	9 / 17 / 2020 — Time: 9:30 am
Name(s) of Investigator(s):	Cory Borton
Has it rained over 0.10 in. in last 72 hours?	☐ Yes ☑ No

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☑ Suburban Residential
- ☐ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known): Outfall for Overlea Court storm sewer

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☐ RCP ☐ PVC ☐ CMP ☑ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 15 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☑ No ☐ Partially ☐ Fully With Sediment: ☐ No ☑ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☐ Yes ☑ No **(If No, Skip to Section 5)**

Flow Description (If present) ☐ Trickle ☐ Moderate ☐ Substantial

Description Details: _____

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☐			
pH / Temperature	☐	pH Level	Temperature (F)	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☐ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☑	☐ Excessive ☑ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: Storm sewer on Overlea Court.

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: _____

Section 8: General Comments

Comments: _____

Section 9: Reporting Information

Comments: _____		Date Observed:	__/___/ ___
_____		Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___





Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	25-01
Date of Observation:	9 / 22 / 2020 — Time: 3:30 pm
Name(s) of Investigator(s):	Cory Borton
Has it rained over 0.10 in. in last 72 hours?	☐ Yes ☑ No

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☐ Suburban Residential
- ☑ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known): Inspected manhole in parking lot.

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☑ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 12 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☑ No ☐ Partially ☐ Fully With Sediment: ☐ No ☑ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☐ Yes ☑ No **(If No, Skip to Section 5)**

Flow Description (If present): ☐ Trickle ☐ Moderate ☐ Substantial

Description Details: _____

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☐			
pH / Temperature	☐	pH Level	Temperature (F)	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: Parking lot storm sewer manhole. Could not locate catch basin in green space.__

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: _____

Section 8: General Comments

Comments: _____

Section 9: Reporting Information

Comments: _____		Date Observed:	__/___/ ___
_____		Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___





Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	25-02
Date of Observation:	9 / 22 / 2020 — Time: 3:18pm
Name(s) of Investigator(s):	Cory Borton
Has it rained over 0.10 in. in last 72 hours?	☐ Yes ☑ No

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☐ Suburban Residential
- ☑ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known): Inspected catch basin SE of dumpsters.

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☑ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 15 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☑ No ☐ Partially ☐ Fully With Sediment: ☑ No ☐ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☐ Yes ☑ No **(If No, Skip to Section 5)**

Flow Description (If present): ☐ Trickle ☐ Moderate ☐ Substantial

Description Details: _____

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☑ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☐			
pH / Temperature	☐	pH Level	Temperature (F)	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: Parking lot storm sewer.

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: _____

Section 8: General Comments

Comments: _____

Section 9: Reporting Information

Comments: _____		Date Observed:	__/___/ ___
_____		Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___





Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	29-01		
Date of Observation:	9 / 23 / 2020	Time:	3:18 pm
Name(s) of Investigator(s):	Cory Borton		
Has it rained over 0.10 in. in last 72 hours?	☐ Yes	☑ No	

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☑ Suburban Residential
- ☐ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known): Outfall on north side of driveway for 5575 Forman

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☐ RCP ☐ PVC ☑ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 24 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☑ No ☐ Partially ☐ Fully With Sediment: ☑ No ☐ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☐ Yes ☑ No **(If No, Skip to Section 5)**

Flow Description (If present) ☐ Trickle ☐ Moderate ☐ Substantial

Description Details: _____

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☐			
pH / Temperature	☐	pH Level	Temperature (F)	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: Drains Forman Road and overflow for wetland area.

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: _____

Section 8: General Comments

Comments: _____

Section 9: Reporting Information

Comments: _____		Date Observed:	__/___/ ___
_____		Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___





Appendix B

Advanced Investigations Documentation

Appendix B1. 2020 Wayne County IDEP Investigation Report

Appendix B2. 2021 Wayne County IDEP Investigation Report

Appendix B3. 2020 Oakland County IDEP Investigation Report

Appendix B4. 2021 Oakland County IDEP Investigation Report

Appendix B5. Bloomfield Township Investigation Records

Appendix B6. Canton Township Investigation Records

Appendix B1

2020 Wayne County IDEP Investigation Report

Wayne County Illicit Discharge Elimination Program
ARC IDEP Services 2020 Report

Executive Summary

Wayne County Department of Public Services Environmental Services Division (ESD) performed source identification advanced investigations in the Cities of Plymouth, Wayne, Westland, and Livonia (Table 1). The ARC 2020 workplan was amended in September of 2020 to include advanced investigations along the Lower Rouge in the City of Inkster. The addition of the Lower Rouge investigations was in response to elevated *E. coli* concentrations identified during routine monitoring performed by ESD and the City of Dearborn. Other tasks completed in 2020 included IDEP Training and activity reporting.

Table 1: Findings and recommended actions for illicit discharge investigations

Community	**Outfall/ target area**	**Findings**	**Recommendations**
Plymouth	PY8	Elevated *E. coli* and *Bacteriodes*	Continued investigations including dye testing and televising in 2021
Plymouth	PY5	Elevated *E. coli*	Continued investigations including sampling for *E. coli* and *Bacteroides*, as well as televising in 2021
Plymouth	PY27	Low *E. coli*, no evidence of illicit discharge	No further follow-up
Plymouth	Harvey Street	Two illicit connections identified via televising and during construction in 2020 have been corrected	Follow-up *E. coli* monitoring to confirm no additional illicit connections
Plymouth	Mill/Park Street	Four illicit connections identified (3 discharge to Wayne County Mill Street MS4, and one discharges to the City of Plymouth MS4 tributary). Compliance actions ongoing	Follow-up *E. coli* monitoring to confirm no additional illicit connections once corrections are made.
Livonia	Bakewell Drain/Levan Road	Investigations were limited in 2020 by the COVID-19 pandemic and changes in investigative priorities that occurred in the workplan.	Continued investigations including sampling for *Bacteroides* in 2021
Livonia	Outfall L-1619	Elevated *E. coli* was detected in one storm sewer near a food service facility.	Continued investigations including sampling for *Bacteroides* and televising in 2021
Livonia	6038	Investigations limited in 2020 by the COVID-19 pandemic and changes in investigative priorities that occurred in the workplan.	Continued investigations including sampling for *E. coli* and *Bacteroides* in 2021
Livonia	13002	Investigations limited in 2020 by the COVID-19 pandemic and	Continued investigations including sampling for *E. coli* and *Bacteroides*

		changes in investigative priorities that occurred in the workplan.	in 2021
Livonia	U2008231	Investigations limited in 2020 by the COVID-19 pandemic and changes in investigative priorities that occurred in the workplan.	Continued investigations including sampling for *E. coli* and *Bacteroides* in 2021
Livonia	M2008117	Investigations limited in 2020 by the COVID-19 pandemic and changes in investigative priorities that occurred in the workplan.	Continued investigations including sampling for *E. coli* and *Bacteroides* in 2021
Livonia	U2008238	Investigations limited in 2020 by the COVID-19 pandemic and changes in investigative priorities that occurred in the workplan.	Continued investigations including sampling for *E. coli* and *Bacteroides* in 2021
Livonia	2680	Investigations limited in 2020 by the COVID-19 pandemic and changes in investigative priorities that occurred in the workplan.	Continued investigations including sampling for *E. coli* and *Bacteroides* in 2021
Livonia	L3582	Investigations limited in 2020 by the COVID-19 pandemic and changes in investigative priorities that occurred in the workplan.	Continued investigations including sampling for *E. coli* and *Bacteroides* in 2021
Wayne	WN-21	*E. coli* concentrations during two sampling events were very low.	Completed. No further follow-up
Westland	SWOF-00278	Low *E. coli* concentrations. Elevated pH and chalky-white discharge observed.	Referred to the City of Westland for further follow-up
Dearborn and Inkster	Lower Rouge	Elevated *E. coli*	Additional investigations on the Lower Rouge upstream of John Daly Road will involve screening outfalls. Sampling for *E. coli*, *Bacteroides*, and surfactants, as well as televising planned for the Perrin Drain

Task 1: Field Investigations

ESD conducted IDEP investigations at various outfalls and upstream manholes. Water samples were tested for *E. coli* and observations were recorded regarding water clarity, color, odor, and debris. In addition to ESD's typical IDEP investigation methods, select samples were analyzed for the Human *Bacteroides* marker. The presence of the marker above 1,000 gene copies/100 mL is used as a threshold to indicate potential human source of bacteria present when correlated with elevated *E. coli*.

City of Plymouth

ESD coordinated with ARC staff and the City of Plymouth to continue investigations of outfalls PY8, PY5, PY27, and the Harvey Street and the Park Street municipal separate storm sewer systems (MS4). The PY8, PY5, and PY27 outfalls discharge to the North branch Tonquish Creek. The Harvey Street MS4 is a tributary to Byron Creek and the South Branch of Tonquish Creek. The Park Street MS4 captures the Mill Street drainage and discharges to the Rouge River Middle Branch.

Outfall PY8

ESD performed follow up monitoring of outfall PY8, investigating manholes and storm sewer laterals upstream of the outfall on July 14, September 15, and 23, 2020. Nine manholes and the outfall were sampled during dry weather. The City of Plymouth televised this storm sewer in December 2019 with no definitive findings. The investigation area and dry weather screening data is shown in *Figure 1* and the investigation data is located in Appendix A, Table A1.

Elevated *E. coli* was detected at the outfall and several manholes in the upstream storm sewer system on Penniman and Blunk Streets. The *Bacteriodes* marker was found in all the Bacteria Source Tracking (BST) samples collected in the storm sewer line during September 2020. Further investigations are needed to identify the *E. coli* source (s) in the outfall PY8 investigation area. Review of storm sewer televising footage, additional manhole sampling (*E. coli* and *Bacteriodes*), televising the sanitary sewer to locate residential leads, and dye testing of selected residences in the investigation area are planned for 2021.

Outfall PY5

ESD performed follow up monitoring of outfall PY5, investigating manholes and storm sewer laterals upstream of the outfall on September 21, 2020. Twelve manholes and the outfall were investigated during dry weather. The investigation area and dry weather screening data is shown in *Figure 2* and the investigation data is located in Appendix A, Table A2.

Elevated *E. coli* was detected at the outfall and several manholes in the upstream storm sewer system on Arthur, William, and Pacific Streets. Further investigations are needed to identify the *E. coli* source (s) in the Outfall PY5 investigation area. The storm sewer sampling locations are going to be verified, the drainage area confirmed, and additional manhole sampling (*E. coli* and *Bacteriodes*) to determine if there are illicit discharges present.

Outfall PY27

The City of Plymouth Outfall PY27 was investigated during August and September 2020. The outfall was investigated three times and during one of those events, no dry weather flow was present. During the two times the outfall was sampled, the *E. coli* concentrations were less than 100 CFU/100mL. When storm sewer manholes upstream of the outfall were investigated, the dry weather flow was limited, or the *E. coli* concentrations were less than 20 CFU/100mL. Based on the *E. coli* data and observations, it is recommended that no further investigative effort is needed at this time. The investigation area and dry weather screening data is shown in *Figure 3* and the investigation data is located in Appendix A, Table A3.

Figure 1: Outfall PY8 Investigation Area Map



Figure 2: Outfall PY5 Investigation Area Map



Harvey Street Investigation Area
During 2019, ESD resampled the Harvey Street outfall and reinvestigated the laterals on the Harvey street storm sewer. The Harvey Street outfall was resampled three times in 2019. Although the *E. coli* concentrations were reduced from 2018, they were still elevated. In addition, low levels of *Bacteroides* were found in the outlet.

A storm sewer lateral of the Harvey Street line located on Jener Street, was found to have elevated *E. coli* concentrations. Physical signs (tissues and baby wipes) of illicit discharge were observed in December 2019. The *Bacteroides level* in the Jener/Linden Street storm sewer was fairly high indicating a human source of *E. coli*. The *Bacteroides* level was much higher than the *E. coli* concentration, which may be an indication of past contamination.

During 2020, the City of Plymouth televised the Jener Street storm sewer, which is upstream of a manhole where elevated *E. coli* concentrations and the physical evidence of illicit discharge were detected. An illicit connection at a single family residence (663 Jener Street) was discovered during the televising effort.

The City of Plymouth also discovered an illicit connection at a residential property on Harvey Street during construction (566 N. Harvey Street). Both illicit connections have been corrected. Follow up *E. coli* monitoring at the Harvey Street outfall and storm sewer laterals will be performed to confirm that no further illicit connections are present in the storm sewer.

Park Street/Mill Street Investigation Area
There are a total of four residences with unresolved illicit connections identified in the Mill/Park Street investigation area, including a duplex located at 150/152 S. Mill Street identified during residential dye testing performed in 2018.Three residences with illicit connections were identified during utility televising performed in the area by Consumer's Energy during 2019. Two of these connections were identified along Mill Street and discharge into the Wayne County Mill Street MS4 (195 S. Mill and 485 S. Mill). The third originated from a residence on Amelia Street (175 Amelia Street), and this one discharges into the City of Plymouth MS4 tributary to the Mill Street storm sewer. The property owners of the three Mill Street residences were mailed compliance letters in January 2021 providing notice of the illicit connections, indicating that their elimination from the Mill Street MS4 is required by April 1, 2021.

Once the active illicit connections are eliminated from the Mill Street and Ameila Street storm sewers, the Mill Street storm sewer laterals and the Park Street storm sewer outfall will be resampled.

The field data from each of the City of Plymouth's investigation areas discussed above is included in Appendix A.

Figure 3: Outfall PY27 Investigation Area Map



City of Livonia

Outfall L-1619
ESD performed dry weather screening of the City of Livonia Outfall L-1619 on December 9 and 16, 2020. Outfall L-1619 and ten upstream manholes were surveyed. Animal tracks and droppings in and on the stream banks near the L-1619 outlet were observed, and the *E. coli* concentration at the outfall was 620 CFU/100mL Additional sampling for *E. coli* and *Bacteriodes* is planned for the outfall/storm sewer lines upstream of Outfall L-1619 in 2021.

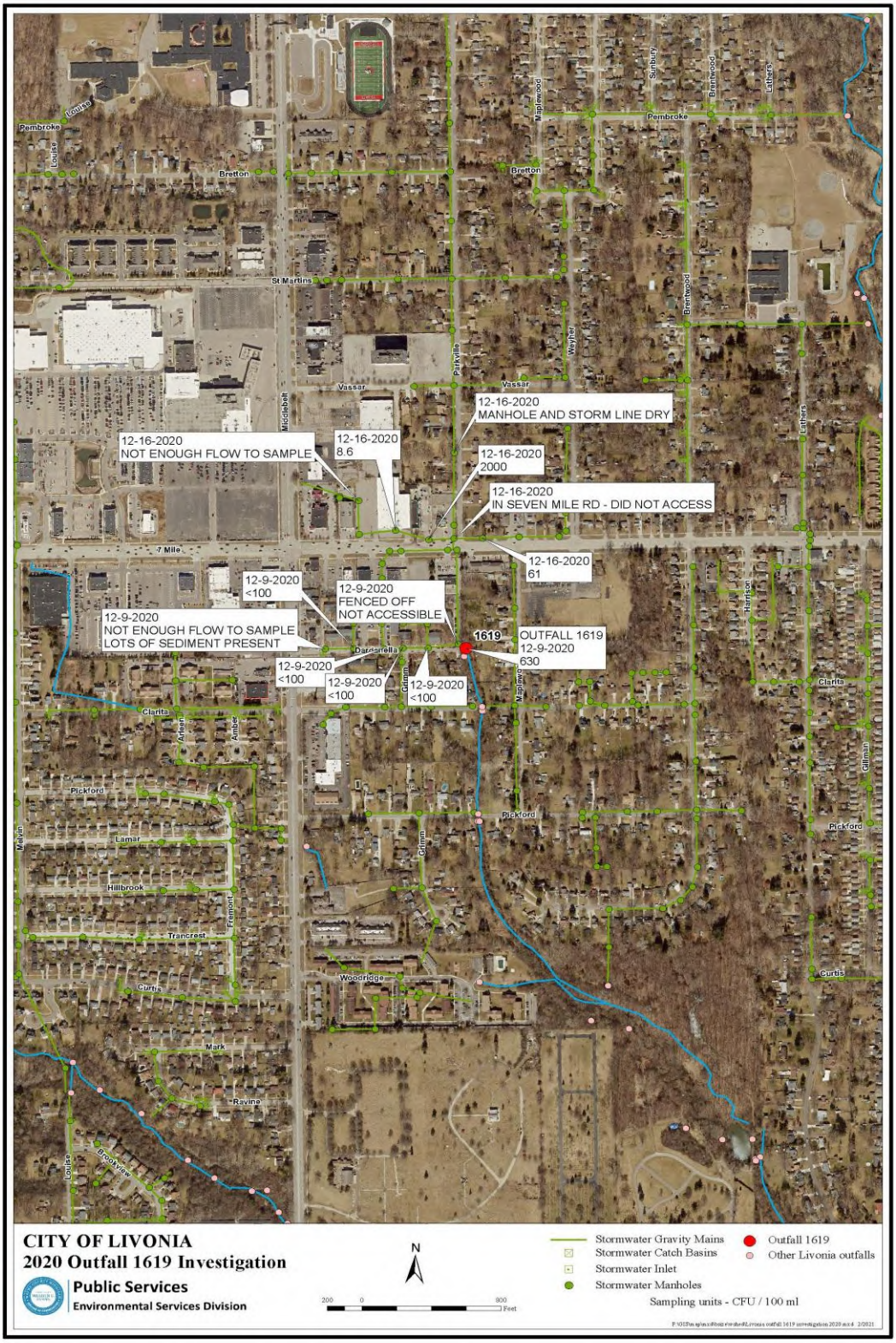
Figure 4 illustrates the data collected during the investigations of Outfall L-1619.

Outfall U2008221 (Bakewell Drain) and the 42-inch Outfall Levan Road South (Bakewell Drain)
ESD met with the City of Livonia to review the findings of the investigations performed on the Outfall U2008221 and the 42 inch Levan Road outfall in 2019 and developed a follow-up plan to delineate the storm sewers draining to these outfalls, where elevated *E. coli* and BST markers were detected. The City of Livonia televised a storm sewer line located on the west side of Levan Road and discovered it did not have an outlet to the Bakewell Drain. ESD and the City of Livonia were not able to perform further investigation on the Bakewell Drain outfalls due to the staffing shortages caused by the COVID-19 pandemic and the changes in investigative priorities that occurred in the workplan. Further televising, and additional sampling is planned for the outfalls/storm sewer lines upstream of Outfall U2008221and the 42-inch Outfall Levan Road South in 2021.

Outfalls 6038, 13002, U2008231, M2008117, U2008238, 2680, and L3582
ESD and the City of Livonia were not able to perform further investigation on these outfalls due to the staffing shortages caused by the COVID-19 pandemic and the changes in investigative priorities that occurred in the workplan. It is recommended that the further investigations of these outfalls continue in 2021.

The field data from each of the City of Livonia's investigation areas discussed above is included in Appendix B.

Figure 4: City of Livonia L-1619 Investigation Map



City of Wayne

One outfall in the City of Wayne, WA-21, was investigated in 2020. ESD investigated the outfall's drainage area on two separate occasions, July 28 and August 6, 2020. One sample was collected at the outfall and eleven samples were collected in manholes where dry weather flow was present. The *E. coli* concentrations during both sampling events were very low. No further investigation of the outfall is recommended at this time based on the data obtained during the 2020 investigation.

Figure 5 illustrates the data collected during the investigations of the outfall.

The field data from the City of Wayne's investigation areas discussed above is included in Appendix C.

City of Westland

ESD conducted a follow up investigation of the SWOF-00278 outfall, located in the City of Westland, had a suspicious discharge discovered during the ARC's outfall survey. The outfall had a clear dry weather flow and a chalky-white discharge was evident on the streambank. ESD investigated this outfall in 2019 and 2020. *E. coli* concentrations in the sample collected in 2019 were below 150 CFU/100mL; and the water discharging from the outfall had elevated pH in addition to the chalky-white discharge. In December 2020, the outfall also had elevated pH (10), the discharge was clear and a chalky-white substance was present on the vegetation and outfall outlet leading to the Wilson Drain. Since this outfall is privately owned, it was referred to the City of Westland for further follow up and assistance with determining if the discharge source is groundwater or other origin.

The investigation area is shown in *Figure* 6 SWOF-00278. A photograph of the outfall is shown in *Figure 7*. The field data for the investigation is included in Appendix D.

Lower Rouge Investigations

The ARC approved continued monitoring of sampling sites on the Lower Rouge water trail. The six sites are the routine monitoring sites sampled by Wayne County on a weekly basis from April-September. The continuing of the Lower Rouge and outfall investigations was in response to elevated *E. coli* concentrations identified during monitoring performed by ESD and the City of Dearborn. The six routine monitoring sites and four additional instream sites were sampled on four occasions in October and November 2020. In addition to the instream monitoring, ESD sampled outfalls adjacent to road crossings if dry weather discharge was present, with a total of three outfalls sampled. ARC staff performed an investigation on the Perrin Drain and identified a section of the drain in the City of Inkster with elevated *E. coli*.

ARC and ESD staff met to review monitoring results, gather historical data and information, met with community representatives, and developed an investigative approach to focus on the river segments located in between sampling locations with elevated *E. coli*. Performing a stream walk and outfall survey of the section of the Lower Rouge upstream of John Daly Road is one of the activities, in addition to continued investigations on the Perrin Drain that are recommended for 2021.

The investigation area is shown in *Figure* 8 Lower Rouge Investigation Area. The field data for the investigation is included in Appendix E.

Figure 5 City of WA-21 Investigation Area Map



Figure 6 SWOF-00278 Investigation Map

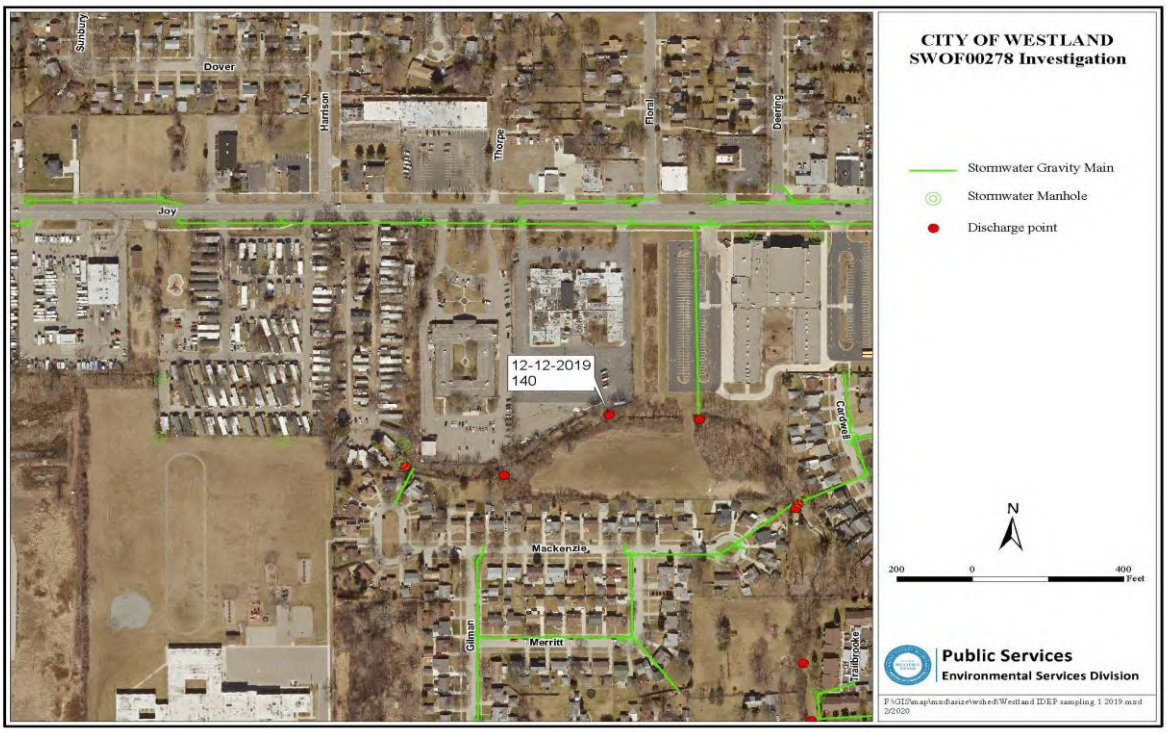
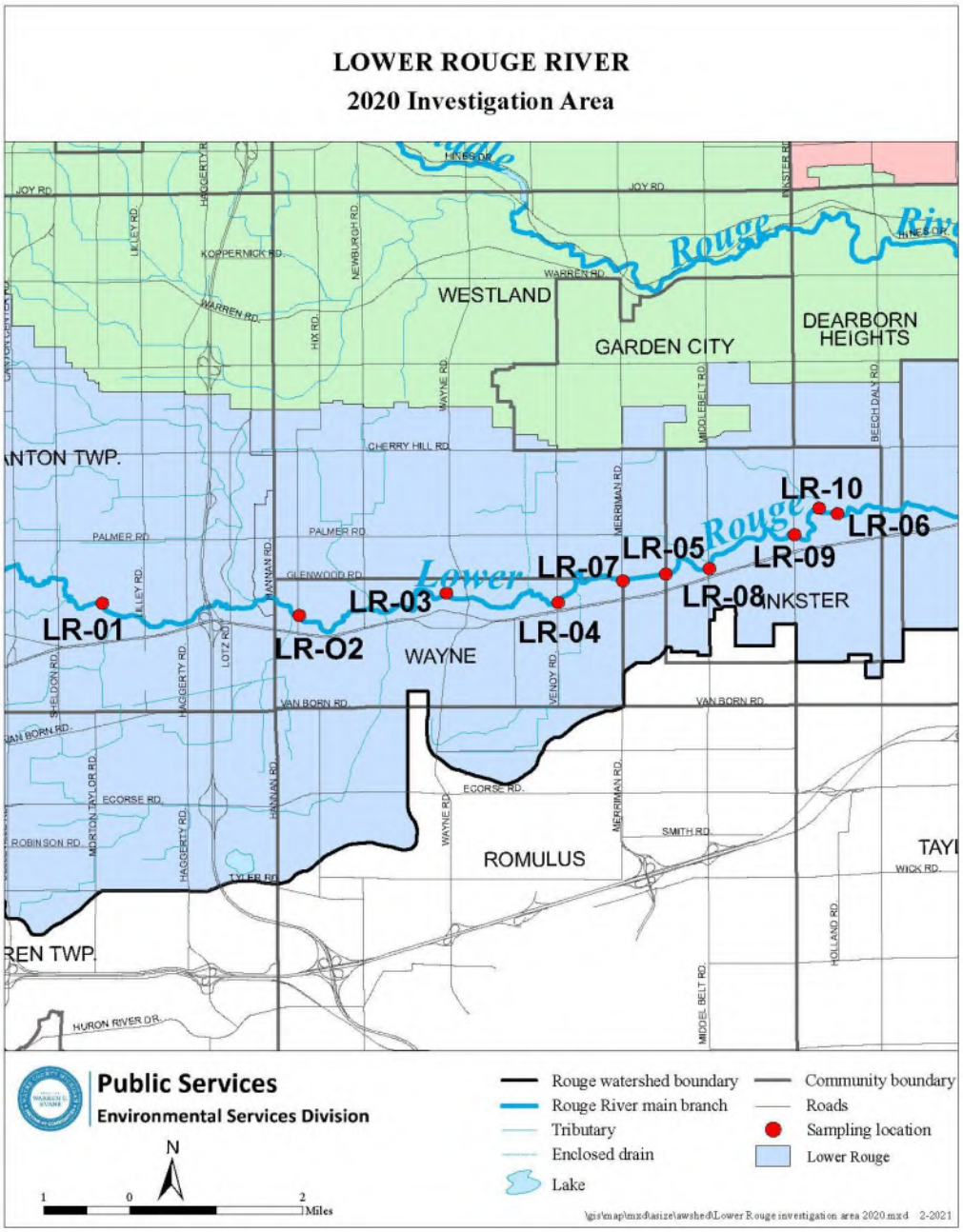


Figure 7 SWOF-00278 Outfall Photograph



Figure 8 Lower Rouge Investigation Area Map



Task 2 IDEP Training

One IDEP Alert Observer training workshop was presented in 2020 in partnership with the Southeast Michigan Council of Governments (SEMCOG) Partners for Clean Water. Due to the COVID-19 pandemic, the in-person Advanced Investigator training workshop was not offered, and a virtual Alert Observer training was developed and offered instead.

The Alert Observer training workshop is a one-hour session that included a question and answer session and panel discussion. The Alliance of Rouge Communities (ARC) partnered with the Southeast Michigan Partners for Clean Water to present the IDEP Alert Observer training, which introduces illicit dicharges, why it is important to identify and report them, and also where to report them to. The online training workshop was held on November 10, 2020 with a total of 180 persons from 48 public entities attending the session. One-hundred-twelve of the 180 attendees (62 percent) were representatives of (or consultants representing) ARC member communities.

Appendix F contains the attendance lists for the Alert Observer workshop. Attendees representing ARC communities are highlighted.

Task 3 Reporting

Written progress summaries of IDEP activities were provided. The 2019 IDEP Activities Summary was completed and the 2020 activities summary drafted.

Appendix A
2020 ARC IDEP Field Investigations
City of Plymouth

Table A1: Outfall PY8 Investigation Area
Table A2: Outfall PY5 Investigation Area
Table A3: Outfall PY27 Investigation Area

Number	Date	Time (military)	Investigation Location	Site Location	*E. coli (colony-forming units (CFU)/100mL)*)	Bacteriodes human specific markerArithmetic Average Gene Copies/100mL	Ammonia (PPM)	Surfactant (PPM)	Conductivity (mS/cm)	Temperature (degrees celcius)	Observations	Sanitary Flow Evidence	Odor
1	7/14/2020	12:10	PY8 Outfall	PY8 Outfall	35000	NA	1.5	0.25	1.255	16.9	Outfall w/ dry weather flow; some white material like sewage fungus on bottom of outfall pipe, flow is clear; lot of dark organic debris on bank below outfall outlet	Yes	None
2	9/15/2020	10:10	PY8 Outfall	PY8 Outfall	>48392	NA	NA	NA	NA	NA	Outfall with dry weather flow, water slightly turbid	No	None
3	9/23/2020	10:10	PY8 Outfall	PY8 Outfall	>241960	$1.54x10^{7}$	NA	NA	NA	NA	Slightly turbid water at outfall; steady flow present	No	None
4	7/14/2020	13:00	PY8 Outfall	990 Penniman	3900	NA	0.75	>3.0	1.201	17.1	Flow from north inlet. Clear flow, laundry like odor, suspicious inlet on southwest side of manhole. Dried debris present on that inlet	No	None
5	9/15/2020	10:55	PY8 Outfall	990 Penniman	1300	NA	NA	NA	NA	NA	Flow in manhole from north. No flow from inlets, but suspicious debris on inlet from the west. Strong odor in manhole like decaying material	No	Yes
6	9/23/2020	9:15	PY8 Outfall	990 Penniman	1300	$6.61x10^{5}$	NA	NA	NA	NA	Water clear in storm from upstea. No flow from inlets or sign of recent activity. No odor	No	
7	7/14/2020	13:30	PY8 Outfall	Blunk/Church	>48392	NA	0.5	<0.25	1.17	17.5	Clear flow from upstream, with some intermittent sud-like foam	No	None
8	9/15/2020	10:40	PY8 Outfall	Blunk/Church	2500	NA	NA	NA	NA	NA	Clear flow in storm. No flow from inlets	No	None
9	9/23/2020	10:50	PY8 Outfall	Blunk/Church	3800	$4.48x10^{5}$	NA	NA	NA	NA	Clear water in storm. No flow from inlets	No	
10	7/14/2020	13:50	PY8 Outfall	Blunk/William	>48392	NA	NA	NA	1.153	21.4	Water clear, flow from upstream and none from inlets	No	None
11	9/15/2020	11:45	PY8 Outfall	Blunk/William	8700	NA	NA	NA	NA	NA	No flow from inlets. Slow clear flow from upstream.	No	None
12	9/23/2020	11:15	PY8 Outfall	Blunk/William	2300	$1.31x10^{6}$	NA	NA	NA	NA	Clear flow in storm. No flow from inlets	No	
13	7/14/2020	14:05	PY8 Outfall	334 Blunk	220	NA	NA	NA	1.147	20.3	Trickle flow in manhole, calcium deposits on east inlet. No flow from inlet	No	None
14	9/15/2020	12:05	PY8 Outfall	334 Blunk	1100	NA	NA	NA	NA	NA	Trickle flow from east inlet and from north. Both clear. Sampled downstream of inlet. Calcium deposit on east inlet	No	None
15	9/23/2020	11:35	PY8 Outfall	334 Blunk	4000	$6.61x10^{5}$	NA	NA	NA	NA	Water clear in sump, steady trickle from upstream. No flow from east inlet. Some sediment on bottom of pipe	No	None
16	9/23/2020	12:10	PY8 Outfall	242 Blunk	8700	NA	NA	NA	NA	NA	Water clear. Slow flow from east inlet. West inlet bulkheaded	No	None

Number	Date	Time (military)	Investigation Location	Site Location	*E. coli (colony-forming units (CFU)/100mL)*)	Bacteriodes human specific markerArithmetic Average Gene Copies/100mL	Ammonia (PPM)	Surfactant (PPM)	Conductivity (mS/cm)	Temperature (degrees celcius)	Observations	Sanitary Flow Evidence	Odor
17	7/14//2020	14:10	PY8 Outfall	Blunk/Blanche	430	NA	NA	NA	NA	NA	Slow steady flow in manhole, Inlets dry. Water not deep enough for conductivity/temperature reading	No	None
18	9/15/2020	12:45	PY8 Outfall	Blunk/Blanche	3300	$6.25x10^4$	NA	NA	NA	NA	Clear flow in storm. Some trickle flow from inlet- white PVC. East inlet damp from previous flow.	No	None
19	9/23/2020	12:25	PY8 Outfall	Blunk/Blanche	1400	NA	NA	NA	NA	NA	Slow flow in storm. Very little water. No flow from inlets. Some leaves in flow	No	None
20	7/14/2020	14:30	PY8 Outfall	Blunk/Farmer	NA	NA	NA	NA	NA	NA	Manhole dry. Clear water dripping from two catch basin inlets. Not enough flow to sample inlets	No	None
21	9/15/2020	12:55	PY8 Outfall	Blunk/Farmer	NA	NA	NA	NA	NA	NA	Manhole is buried under gravel due to road construction. Catch basins on each curb are being set. There is standing water in catch basins on the northeast, northwest, and southwest	No	None
22	7/14/2020	14:35	PY8 Outfall	Junction/Blunk	NA	NA	NA	NA	NA	NA	Manhole and inlets dry	No	None
23	9/15/2020	13:05	PY8 Outfall	Junction/Blunk	NA	NA	NA	NA	NA	NA	Manhole and inlets dry. Manhole is cracked. Condition reported to the City staff	No	None
24	9/23/2020	12:15	PY8 Outfall	Junction/Blunk	NA	NA	NA	NA	NA	NA	No dry weather flow in manhole	No	None

Number	Date	Time (military)	Investigation Location	Site Location	*E. coli (colony-forming units (CFU)/100mL)*)	Ammonia (PPM)	Surfactant (PPM)	Conductivity (mS/cm)	Temperature (degrees Celsius)	Observations	Sanitary Flow Evidence	Odor
1	9/21/2020	10:35	PY5 Outfall	PY5 Outfall	1100	NA	NA	NA	NA	Slow flow, pipe has low gradient. Water clear	None	None
2	9/21/2020	10:55	PY5 Outfall	1214 Penniman	N/A	NA	NA	NA	NA	No dry weather flow in manhole. Manhole shallow	None	None
3	9/21/2020	11:15	PY5 Outfall	Arthur/Penniman	18000	NA	NA	NA	NA	Dry weather flow. Manhole is deep. No inlets. Is not appear to be at the same elevation as Penniman manhole	None	None
4	9/21/2020	11:30	PY5 Outfall	Arthur 197	<20	NA	NA	NA	NA	Water clear, slow flow in storm. Shallow manhole	None	None
5	9/21/2020	11:50	PY5 Outfall	Arthur/William East	40	NA	NA	NA	NA	Clear water in storm. Some leaf litter and grass clippings present. No flow from inlets	None	None
6	9/21/2020	12:10	PY5 Outfall	Arthur/William West	1700	NA	NA	NA	NA	Clear flow in storm. Some bulk headed pipes. Sample in sump	None	None
7	9/21/2020	12:20	PY5 Outfall	1251 William	2700	NA	NA	NA	NA	Clear flow in storm sump	None	None
8	9/21/2020	12:45	PY5 Outfall	William/Pacific	14000	NA	NA	NA	NA	Slow flow in storm. Water clear, some leaves and grass clippings. Inlets dry	None	None
9	9/21/2020	12:55	PY5 Outfall	295 Pacific	1800	NA	NA	NA	NA	Water clear in sump and from upstream inlet. Some leaves in storm. Catch basin Inlet dry	None	None
10	9/21/2020	13:05	PY5 Outfall	333 Pacific	170	NA	NA	NA	NA	Flow from upstream, trickle flow from storm inlets. Water clear. Leaves and lawn clippings	None	None
11	9/21/2020	13:15	PY5 Outfall	Blanche/Pacific	<20	NA	NA	NA	NA	Clear water in sump, and from upstream. No flow from catch basin inlets.	None	None
12	9/21/2020	13:30	PY5 Outfall	650 Pacific	NA	NA	NA	NA	NA	Manhole dry	None	None
13	9/21/2020	13:35	PY5 Outfall	775 Pacific	NA	NA	NA	NA	NA	Manhole dry. Leaf and lawn clippings present	None	None

Number	Date	Time (military)	Investigation Location	Site Location	*E. coli (colony-forming units (CFU)/100mL)*)	Ammonia (PPM)	Surfactant (PPM)	Conductivity (mS/cm)	Temperature (degrees celcius)	Observations	Sanitary Flow Evidence	Odor
1	8/13/2020	13:20	PY27 Outfall	PY27 Outfall	NA	NA	NA	NA	NA	No dry weather flow in outfall, upstream catch basin. Some standing water in outfall pipe	None	None
2	8/20/2020	14:07	PY27 Outfall	PY27 Outfall	20	NA	NA	NA	NA	Trickle flow from outfall. Roots growing out of pipe	None	None
3	9/21/2020	14:00	PY27 Outfall	PY27 Outfall	<100	NA	NA	NA	NA	Clear flow from outfall	None	None
4	8/20/2020	14:05	PY27 Outfall	Willowbrook storm #1	NA	NA	NA	NA	NA	Trickle flow in storm. No enough flow to sample	None	None
5	9/21/2020	14:10	PY27 Outfall	Willowbrook storm #1	<20	NA	NA	NA	NA	Clear flow, no inlets	None	None
6	8/20/2020	14:25	PY27 Outfall	Willowbrook storm #2	NA	NA	NA	NA	NA	Some trickle flow from PVC pipe draining into manhole. Clear water. Not enough flow to sample. Car parked on manhole	None	None
7	9/21/2020	14:20	PY27 Outfall	Willowbrook storm #2	<20	NA	NA	NA	NA	Clear flow from large east pipe. Dripping from PVC pipe from the parking area catch basin	None	None
8	9/21/2020	14:35	PY27 Outfall	Plymouth Service Center	<20	NA	NA	NA	NA	Clear dry weather flow from south and east inlets	None	None

Appendix B
2020 ARC IDEP Field Investigations
City of Livonia

Table B: Outfall L-1619

Number	Date	Time (military)	Investigation Location	Site Location	*E. coli (colony-forming units (CFU)/100mL)*)	Ammonia (PPM)	Surfactant (PPM)	Conductivity (mS/cm)	Temperature (degrees Celsius)	Observations	Sanitary Flow Evidence	Odor
1	12/9/2020	14:20	Outfall 1619	Outfall 1619	620	NA	NA	NA	NA	Cloudy water at drain enclosure outlet. Lots of animal tracks, droppings in the drain and on banks (deer raccoon and other large mammal tracks present)	No	No
2	12/9/2020	14:55	29050 Dardanella	Outfall 1619	<100	NA	NA	NA	NA	Iron bacteria in storm. Solid lid, water clear. Catch basins at the dead end of Dardanella have standing water. Sampled from sump	No	No
3	12/9/2020	15:15	Dardanella/Grimm	Outfall 1619	<100	NA	NA	NA	NA	No flow from south inlet. Clear slow flow from west. Water clear	No	No
4	12/9/2020	15:30	29130 Dardanella	Outfall 1619	<100	NA	NA	NA	NA	Water clear, trickle flow from inlets west and north	No	No
5	12/9/2020	15:40	29200 Dardanella	Outfall 1619	<100	NA	NA	NA	NA	Water clear in storm; flow from west	No	No
5	12/9/2020	15:45	29200 1-8 Dardanella	Outfall 1619	NA	NA	NA	NA	NA	Some clear flow. Iron bacteria present. Flow from west inlet (Dunkin' Donuts). Terminal manhole- no sample collected. Not enough flow. Sediment present, brick and debris	No	No
6	12/16/2020	13:00	29155 Seven Mile	Outfall 1619	8.6	NA	NA	NA	NA	Clear water in storm. Trickle flow from south inlet	No	No
7	12/16/2020	14:35	Chicken Shack	Outfall 1619	2000	NA	NA	NA	NA	Water clear in storm. Flow from west toward enclosed drain	No	No
8	12/16/2020	14:45	Toys R Us Lot	Outfall 1619	NA	NA	NA	NA	NA	Trickle flow; not enough to sample. On large line	No	No
9	12/16/2020	15:10	Seven Mile WC MS4 East	Outfall 1619	61	NA	NA	NA	NA	Water clear, flow from east inlet; beehive structure	No	No
10	12/16/2020	15:20	19127 Parkville	Outfall 1619	NA	NA	NA	NA	NA	Manhole dry	No	No

Appendix C
2020 ARC IDEP Field Investigations
City of Wayne

Table C: Outfall WA-21

Number	Date	Time (military)	Investigation Location	Site Location	*E. coli (colony-forming units (CFU)/100mL)*)	Ammonia (PPM)	Surfactant (PPM)	Conductivity (mS/cm)	Temperature (degrees Celsius)	Observations	Sanitary Flow Evidence	Odor
1	8/6/2020	9:15	WA-21A Outfall	WA21A	420	NA	NA	NA	NA	Outfall pipe cracked and broken with the headwall and part of the pipe in the river. Clear dry weather flow present. There is some river infiltration through pipe joints.	No	No
2	7/28/2020	13:52	36765 Thinbark	WA21A	NA	NA	NA	NA	NA	Manhole located in driveway on south side of Thinbark St. No inlets in storm except for northeast from manhole #1	No	No
3	8/6/2020	9:30	36765 Thinbark	WA21A	220	NA	NA	NA	NA	First accessible manhole upstream of outfall. Clear water in sump and clear water in inlet which is from the manhole at Thinbark/Thinbark Ct. Sampled below inlet	No	No
4	7/28/2020	13:40	Thinbark/Thinbark Court	WA21A	6.2	NA	NA	NA	NA	Dry weather flow in manhole from the north. Water clear.	No	No
5	8/6/2020	9:40	Thinbark/Thinbark Court	WA21A	60	NA	NA	NA	NA	Clear flow from north inlet. No flow from catch basins. Clear water in sump.	No	No
6	7/28/2020	14:10	Thinbark/Center Court	WA21A	8.6	NA	NA	NA	NA	Trickle flow from north inlet at bottom of manhole and some trickle flow from west. Not enough flow from the west to sample. Sample collected from manhole sump. Water clear	No	No
7	8/6/2020	10:20	Thinbark/Center Court	WA21A	220	NA	NA	NA	NA	Clear water in sump. Trickle flow from north inlet and also 24 inch west inlet. Not enough flow to sample the 24 inch inlet. Sample collected in center of sump.	No	No

Number	Date	Time (military)	Investigation Location	Site Location	*E. coli (colony-forming units (CFU)/100mL)*)	Ammonia (PPM)	Surfactant (PPM)	Conductivity (mS/cm)	Temperature (degrees Celsius)	Observations	Sanitary Flow Evidence	Odor
8	7/28/2020	14:13	Greenbush/Center	WA21A	NA	NA	NA	NA	NA	All inlets dry. Water stagnant in sump, not flowing out through outlet. Manhole is full of grass clippings. Water clear.	No	No
9	8/6/2020	10:30	Greenbush/Center	WA21A	20	NA	NA	NA	NA	Grass clippings in sump. Clear water in sump up to outlet; trickle flow out. No flow from catch basin inlets. Sample collected at outlet	No	No
10	7/28/2020	14:25	Thinbark/Upland Ct	WA21A	6.3	NA	NA	NA	NA	Manhole is located just south of Upland Court. All catch basin inlets dry. Clear dry weather flow from north inlet.	No	No
11	8/6/2020	10:45	Thinbark/Upland Ct	WA21A	220	NA	NA	NA	NA	No flow from catch basin inlets. Trickle flow from north inlet	No	No
12	7/28/2020	14:35	Thinbark/Glenwood	WA21A	13	NA	NA	NA	NA	Clear water in manhole. Trickle flow from east inlet from Glenwood. Water in sump sampled. No flow from a PVC or two catch basin inlets.	No	No
13	8/6/2020	10:55	Thinbark/Glenwood	WA21A	150	NA	NA	NA	NA	Clear water in sump. Clear flow from east inlet. Sample collected in sump near east inlet discharge.	No	No

Number	Date	Time (military)	Investigation Location	Site Location	*E. coli (colony-forming units (CFU)/100mL)*)	Ammonia (PPM)	Surfactant (PPM)	Conductivity (mS/cm)	Temperature (degrees Celsius)	Observations	Sanitary Flow Evidence	Odor
14	8/6/2020	11:05	36429 Glenwood	WA21A	<1	NA	NA	NA	NA	Turbid appearing water in sump. Trickle flow from east inlet. Trickle through outlet to west. No flow from catch basins. Sample collected at outlet. Water appears clear in sample bottle.	No	No
15	8/6/2020	11:15	36417 Glenwood	WA21A	NA	NA	NA	NA	NA	Slightly turbid water in sump. No flow from inlet to the north. No flow out of manhole. Some grass clippings present. Terminal manhole for the line. Manhole is brick. Did not sample due to absence of dry weather flow.	No	No

Appendix D
2020 ARC IDEP Field Investigations
City of Westland

Table D: Outfall SWOF-00278

Number	Date	Time (military)	Investigation Location	Site Location	*E. coli (colony-forming units (CFU)/100mL)*)	*Bacteriodes* human specific marker Arithmetic Average gene copies/100mL	*Bacteriodes* bovine specific marker Arithmetic Average gene copies/100mL	Conductivity (mS/cm)	Observations	Sanitary Flow Evidence	Odor
1	1/16/2020	14:30	SWOF-00278 Outfall	SWOF-00278 Outfall	NA	NA	NA	NA	outfall discharging clear water. Some heavy calcium deposits at outfall outlet and on bank of stream.	None	None
2	12/7/2020	10:00	SWOF-00278 Outfall	SWOF-00278 Outfall	NA	NA	NA	NA	outfall discharging clear water. Some heavy calcium deposits at outfall outlet and on bank of stream. pH of outfall discharge is 10	None	None

Appendix E
2020 ARC IDEP Field Investigations
Lower Rouge

Table E: Lower Rouge water quality and outfall data

Site ID	Site Location	Date	Time	*E.coli* (CFU/100 mL)	Watershed	Community	Water Clarity	Water Color	Odor	Visible Debris/Pollution	Weather Conditions	Comments	Rain on Sampling Day	Rain day before sampling	Rain two days before sampling
LR-01	Lower Rouge/Morton Taylor Rd	9/28/2020	12:30	480	Lower	Canton Township	Clear	Medium brown	Musty/faint	Natural	Cloudy 61 degrees	trickle flow from outfall left bank	No	No	No
LR-01	Lower Rouge/Morton Taylor Rd	10/21/2020	13:10	627	Lower	Canton Township	Clear	Light brown	None/natural	Natural	Cloudy 55 degrees	Outfall discharge left bank clear	No	Yes- 0.05"	Yes-0.24"
LR-01	Lower Rouge/Morton Taylor Rd	10/29/2020	9:45	200	Lower	Canton Township	Clear	Light brown	None/natural	Natural	Cloudy 42 degrees	trickle flow from outfall left bank. Cladophora and leaf litter present	No	No	No
LR-01	Lower Rouge/Morton Taylor Rd	11/5/2020	12:45	36.4	Lower	Canton Township	Clear	Light brown	None/Natural	Natural	Cloudy 63 degrees	Trickle flow from outfall on left bank	No	No	No
LR-01	Lower Rouge/Morton Taylor Rd	11/11/2020	14:05	630	Lower	Canton Township	Clear	Clear	None/Natural	Natural	Clear 50 degrees		No	Yes-0.21"	No
LR-02	Lower Rouge/Hix Rd	9/28/2020	12:05	710	Lower	Wayne	Slightly Turbid	Medium brown	Musty/faint	Natural	Cloudy 61 degrees	20 turkeys crossing the road near site	No	No	No
LR-02	Lower Rouge/Hix Rd	10/21/2020	12:55	836	Lower	Wayne	Slightly Turbid	Medium brown	None/natural	Natural	Cloudy 55 degrees		No	Yes- 0.05"	Yes-0.24"
LR-02	Lower Rouge/Hix Rd	10/29/2020	10:10	100	Lower	Wayne	Clear	Light brown	None/natural	Natural	Cloudy 42 degrees	Leaf litter present at site	No	No	No
LR-02	Lower Rouge/Hix Rd	11/5/2020	13:15	15.8	Lower	Wayne	Clear	Light brown	None/Natural	Natural	Cloudy 63 degrees		No	No	No
LR-02	Lower Rouge/Hix Rd	11/11/2020	13:55	520	Lower	Wayne	Slightly Turbid	Light brown	None/Natural	Natural	Clear 50 degrees		No	Yes-0.21"	No
LR-03	Lower Rouge/Elizabeth St	9/28/2020	11:45	760	Lower	Wayne	Slightly Turbid	Light brown	None/Natural	Natural	Cloudy 61 degrees		No	No	No
LR-03	Lower Rouge/Elizabeth St	10/21/2020	12:40	712	Lower	Wayne	Slightly Turbid	Medium brown	None/natural	Natural	Cloudy 55 degrees		No	Yes- 0.05"	Yes-0.24"
LR-03	Lower Rouge/Elizabeth St	10/29/2020	10:20	310	Lower	Wayne	Slightly Turbid	Medium brown	Musty/faint	Natural	Cloudy 42 degrees	Leaf litter present at site	No	No	No
LR-03	Lower Rouge/Elizabeth St	11/5/2020	12:20	13.2	Lower	Wayne	Clear	Medium brown	None/Natural	Natural	Cloudy 63 degrees	Lots of floating leaves at site	No	No	No
LR-03	Lower Rouge/Elizabeth St	11/11/2020	13:45	2490	Lower	Wayne	Slightly Turbid	Medium brown	None/Natural	Natural	Clear 50 degrees		No	Yes-0.21"	No

Site ID	Site Location	Date	Time	*E.coli* (CFU/100 mL)	Watershed	Community	Water Clarity	Water Color	Odor	Visible Debris/Pollution	Weather Conditions	Comments	Rain on Sampling Day	Rain day before sampling	Rain two days before sampling
LR-04	Lower Rouge/Venoy Rd	9/28/2020	11:25	950	Lower	Wayne	Slightly Turbid	Medium brown	None/Natural	Natural	Cloudy 61 degrees	Left bank outfall discharging clear water	No	No	No
LR-04	Lower Rouge/Venoy Rd	10/21/2020	12:25	1012	Lower	Wayne	Moderately Turbid	Medium brown	None/natural	Natural	Cloudy 55 degrees		No	Yes- 0.05"	Yes-0.24"
LR-04	Lower Rouge/Venoy Rd	10/29/2020	10:35	200	Lower	Wayne	Slightly Turbid	Medium brown	Musty/faint	Natural	Cloudy 42 degrees	Leaf litter present at site	No	No	No
LR-04	Lower Rouge/Venoy Rd	11/5/2020	11:55	18.5	Lower	Wayne	Clear	Medium brown	None/Natural	Natural	Cloudy 63 degrees	No flow from outfalls at crossing	No	No	No
LR-04	Lower Rouge/Venoy Rd	11/11/2020	13:30	860	Lower	Wayne	Slightly Turbid	Medium brown	None/Natural	Musty/faint	Clear 50 degrees		No	Yes-0.21"	No
LR-04 NW outfall	Lower Rouge/Venoy Rd outfall northwest bank	10/29/2020	10:45	<100	Lower	Wayne	Clear			Natural	Cloudy 42 degrees	Flow from outfall clear	No	No	No
LR-04 SE outfall	Lower Rouge/Venoy Rd outfall southeast bank	10/29/2020	10:55	100	Lower	Wayne	Clear			Natural	Cloudy 42 degrees	Flow from outfall clear	No	No	No
LR-07	Lower Rouge/Merriman Rd	9/28/2020	11:00	880	Lower	Wayne	Slightly Turbid	Light brown	None/Natural	Natural	Cloudy 61 degrees	Carts, flow from an outfall on SE bank (sampled). Other outfalls dry. Some work on both sides of the crossing	No	No	No
LR-07	Lower Rouge/Merriman Rd	10/21/2020	NA	NA	Lower	Wayne	NA	NA	NA	NA	Cloudy 55 degrees	Site not accessible due to ongoing construction	No	Yes- 0.05"	Yes-0.24"
LR-07	Lower Rouge/Merriman Rd	10/29/2020	11:15	100	Lower	Wayne	Slightly Turbid	Medium brown	None/natural	Natural	Cloudy 42 degrees		No	No	No
LR-07	Lower Rouge/Merriman Rd	11/5/2020	11:45	25.6	Lower	Wayne	Clear	Medium brown	None/Natural	Natural	Cloudy 63 degrees	No dry weather flow from outfalls at crossing	No	No	No
LR-07	Lower Rouge/Merriman Rd	11/11/2020	13:15	1730	Lower	Wayne	Moderately Turbid	Medium brown	None/Natural	Natural	Clear 50 degrees	Some dewatering on south side of bridge due to construction work near Michigan Avenue intersection	No	Yes-0.21"	No
Merriman SE Outfall	Lower Rouge/Merriman Road Oufall SE side	9/28/2020	11:10	750	Lower	Westland	Clear				Cloudy 61 degrees	Outffall discharge clear; some sudsing present	No	No	No

Site ID	Site Location	Date	Time	*E.coli* (CFU/100 mL)	Watershed	Community	Water Clarity	Water Color	Odor	Visible Debris/Pollution	Weather Conditions	Comments	Rain on Sampling Day	Rain day before sampling	Rain two days before sampling
LR-05	Lower Rouge/Henry Ruff Rd	9/28/2020	10:45	650	Lower	Westland	Slightly Turbid	Light brown	Musty/faint	Natural/fixed trash	Cloudy 61 degrees	Large logjam at bridge with duckweed and fixed trash present; no DO taken at center and left bank stream due to jam. Two outfalls upstream and one downstream	No	No	No
LR-05	Lower Rouge/Henry Ruff Rd	10/21/2020	12:10	1374	Lower	Westland	Moderately Turbid	Medium brown	None/natural	Natural	Cloudy 55 degrees		No	Yes- 0.05"	Yes-0.24"
LR-05	Lower Rouge/Henry Ruff Rd	10/29/2020	11:30	100	Lower	Westland	Slightly Turbid	Medium brown	None/natural	Natural	Cloudy 42 degrees	No flow from outfalls at crossing	No	No	No
LR-05	Lower Rouge/Henry Ruff Rd	11/5/2020	11:35	11	Lower	Westland	Clear	Dark brown	None/Natural	Natural	Cloudy 63 degrees	no flow from outfalls at crossing. Large logjam and duckweed present	No	No	No
LR-05	Lower Rouge/Henry Ruff Rd	11/11/2020	13:05	2590	Lower	Westland	Slightly Turbid	Medium brown	None/Natural	Musty/faint	Clear 50 degrees		No	Yes-0.21"	No
LR-08	Lower Rouge/Middlebelt Rd	9/28/2020	10:35	770	Lower	Inkster	Slightly Turbid	Light brown	None/Natural	Natural	Cloudy 61 degrees	Large logjam upstream of bridge; outfall SE bank dry	No	No	No
LR-08	Lower Rouge/Middlebelt Rd	10/21/2020	12:05	660	Lower	Inkster	Moderately Turbid	Dark brown	None/natural	Natural	Cloudy 55 degrees	Logjam, leaves	No	Yes- 0.05"	Yes-0.24"
LR-08	Lower Rouge/Middlebelt Rd	10/29/2020	13:40	>100	Lower	Inkster	Slightly Turbid	Medium brown	None/natural	Natural	Cloudy 42 degrees	Large logjam upstream of bridge	No	No	No
LR-08	Lower Rouge/Middlebelt Rd	11/5/2020	11:25	13.1	Lower	Inkster	Clear	Dark brown	None/Natural	Natural	Cloudy 63 degrees	Large logjam at site; no flow from outfalls at crossing	No	No	No
LR-08	Lower Rouge/Middlebelt Rd	11/11/2020	12:30	2920	Lower	Inkster	Moderately Turbid	Dark brown	None/Natural	Natural	Clear 50 degrees	Large logjam with foaming at bridge	No	Yes-0.21"	No
LR-09	Lower Rouge/Inkster Rd	9/28/2020	10:15	400	Lower	Inkster	Slightly Turbid	Light brown	None/Natural	Natural	Cloudy 61 degrees	Logjam at bridge upstream side; dry outfall NW side of crossing	No	No	No
LR-09	Lower Rouge/Inkster Rd	10/21/2020	11:50	708	Lower	Inkster	Moderately Turbid	Dark brown	None/natural	Natural	Cloud 55 degrees	Logjam at bridge	No	Yes- 0.05"	Yes-0.24"
LR-09	Lower Rouge/Inkster Rd	10/29/2020	12:05	100	Lower	Inkster	Slightly Turbid	Medium brown	None/natural	Natural	Cloudy 42 degrees	Logjam at bridge	No	No	No
LR-09	Lower Rouge/Inkster Rd	11/5/2020	11:10	18.9	Lower	Inkster	Clear	Dark brown	None/Natural	Natural	Cloudy 63 degrees	Large logjam at site; floating leaves; no flow at outfalls at crossing	No	No	No

Site ID	Site Location	Date	Time	*E.coli* (CFU/100 mL)	Watershed	Community	Water Clarity	Water Color	Odor	Visible Debris/Pollution	Weather Conditions	Comments	Rain on Sampling Day	Rain day before sampling	Rain two days before sampling
LR-09	Lower Rouge/Inkster Rd	11/11/2020	12:10	1080	Lower	Inkster	Moderately Turbid	Dark brown	None/Natural	Natural	Clear 50 degrees	Some trickle flow from outfalls at crossing; lots of leaves and foaming at large logjam	No	Yes-0.21"	No
LR-10	Perrin Drain outlet	10/21/2020	11:40	3076	Lower	Inkster	Clear	Dark brown	None/natural	Natural	Cloudy 55 degrees	some trash and leaves present	No	Yes- 0.05"	Yes-0.24"
LR-10	Perrin Drain outlet	11/5/2020	11:00	27.9	Lower	Inkster	Clear	Light brown	None/Natural	Some fixed trash	Cloudy 63 degrees	Slow flow from outlet; some leaves	No	No	No
LR-10	Perrin Drain outlet	11/11/2020	12:00	11120	Lower	Inkster	Slightly Turbid	Dark brown	None/Natural	Floating trash. leaves	Clear 50 degrees	Some foam, leaves, flow from outfall; floating trash			
LR-06	Lower Rouge/John Daly Rd	9/28/2020	9:50	560	Lower	Inkster	Slightly Turbid	Dark brown	None/Natural	Natural/Fixed Trash	Cloudy 61 degrees	Bike on left bank, leaf debris flowing, no flow at outfalls at crossing	No	No	No
LR-06	Lower Rouge/John Daly Rd	10/21/2020	11:30	1017	Lower	Inkster	Moderately Turbid	Medium brown	None/natural	Natural	Cloudy 55 degrees	Leaves in water	No	Yes- 0.05"	Yes-0.24"
LR-06	Lower Rouge/John Daly Rd	10/29/2020	12:30	630	Lower	Inkster	Slightly Turbid	Medium brown	None/natural	Natural	Cloudy 42 degrees		No	No	No
LR-06	Lower Rouge/John Daly Rd	11/5/2020	10:50	11	Lower	Inkster	Clear	Dark brown	None/Natural	Natural	Cloudy 63 degrees	Lots of floating leaves at site	No	No	No
LR-06	Lower Rouge/John Daly Rd	11/11/2020	11:50	1340	Lower	Inkster	Highly Turbid	Dark brown	None/Natural	Natural	Clear 50 degrees		No	Yes-0.21"	No
	E. coli values above 1000 CFU/100mL														

Appendix F
2020 Partners for Clean Water Regional IDEP Training Workshop
Alert Observer Training
Attendees List
November 10, 2020

SEMCOG UNIVERSITY ALERT OBSERVER TRAINING ATTENDANCE LIST
NOVEMBER 10, 2020

ARC Member Community

Number	First Name	Last Name	Community/Organization
1	Cory	Borton	Bloomfield Township
2	Don	Coddington	Chesterfield Township
3	Mike	Oloughlin	City of Allen Park
4	Roger	Bouck	City of Ann Arbor
5	Jason	Derwoed	City of Ann Arbor
6	John	Kimberly	City of Ann Arbor
7	Kevin	Schneider	City of Ann Arbor
8	Mark	Sirls	City of Ann Arbor
9	Ben	Stapish	City of Ann Arbor
10	Peter	Stephens	City of Ann Arbor
11	Ken	Marten	City of Bingham Farms
12	Bryan	Grill	City of Birmingham
13	Michael	Jurek	City of Birmingham
14	Brendan	McGaughey	City of Birmingham
15	John	Selmi	City of Dearborn Heights
16	Kenneth	Kucel	City of Detroit
17	Jacob	Donner	City of Dexter
18	Joshua	Leach	City of Farmington
19	Mirandi	Alexander	City of Farmington Hills
20	Joe	Bledsoe	City of Farmington Hills
21	Jim	Cubera	City of Farmington Hills
22	ShonQuase	Dawkins	City of Farmington Hills
23	Mike	Hoffmeyer	City of Farmington Hills
24	Natasha	Sonck	City of Farmington Hills
25	Dan	Striks	City of Farmington Hills
26	Alex	Teraglia	City of Farmington Hills
27	Joe	Thornburg	City of Farmington Hills
28	Gregory	Young	City of Farmington Hills
29	Neil	Johnston	City of Grosse Pointe
30	Steve	Vitale	City of Grosse Pointe
31	Nicholas	Rudd	City of Grosse Pointe Shores

SEMCOG UNIVERSITY ALERT OBSERVER TRAINING ATTENDANCE LIST
NOVEMBER 10, 2020

ARC Member Community

Number	First Name	Last Name	Community/Organization
32	Michael	Way	City of Grosse Pointe Shores
33	Steve	Dubay	City of Hazel Park
34	George	Hutton	City of Livonia
35	Doug	Moore	City of Livonia
36	John	Klimaszewski	City of New Baltimore
37	Giordano	Bartoletri	City of Novi
38	Victor	Boron	City of Novi
39	Thomas	Constantine	City of Novi
40	Casey	Fox	City of Novi
41	Charles	Fritz	City of Novi
42	Jacy	Headley	City of Novi
43	James	Matties	City of Novi
44	James	Paulk	City of Novi
45	Frederick	Pettey	City of Novi
46	Dean	Reid	City of Novi
47	Kate	Richardson	City of Novi
48	Keith	Salowich	City of Novi
49	Drew	Snyder	City of Novi
50	Christopher	Stanley	City of Novi
51	Aaron	Staup	City of Novi
52	John	Talbot	City of Novi
53	Mike	Tate	City of Novi
54	Gerald	Tremblay	City of Novi
55	Jeffrey	Vancurler	City of Novi
56	Matt	Wiktorowski	City of Novi
57	Roger	Gardner	City of Orchard Lake
58	mike	lee	City of Orchard Lake
59	Greta	Bolhius	City of Plymouth
60	Mike	Brindley	City of Plymouth
61	Dave	Cirilli	City of Plymouth
62	Jennifer	Coykendall	City of Plymouth
63	Steve	Faiman	City of Plymouth
64	Nancy	Griwicki	City of Plymouth

SEMCOG UNIVERSITY ALERT OBSERVER TRAINING ATTENDANCE LIST
NOVEMBER 10, 2020

ARC Member Community

Number	First Name	Last Name	Community/Organization
65	Brandon	Haarala	City of Plymouth
66	Lisa	Hominga	City of Plymouth
67	Nick	Johns	City of Plymouth
68	Trent	Kalis	City of Plymouth
69	Ray	Kraft	City of Plymouth
70	Aaron	Micek	City of Plymouth
71	Colin	Murphy	City of Plymouth
72	Chris	Porman	City of Plymouth
73	Brian	Ronayne	City of Plymouth
74	John	Segura	City of Plymouth
75	Jacob	Chafins	City of Port Huron
76	Sherman	Potter	City of Portage
77	Tim	Pollizzi	City of Rochester Hills
78	Austin	Laskaska	City of Romulus
79	John	McKinney	City of Romulus
80	Nicholas	Pace	City of Romulus
81	Richard	Taylor	City of Romulus
82	Brandy	Siedlaczek	City of Southfield
83	Larry	Sirls	City of Southfield
84	Mike	Allen	City of St. Clair Shores
85	David	Conklin	City of St. Clair Shores
86	Ron	Demski	City of St. Clair Shores
87	Zach	Erne	City of St. Clair Shores
88	Erik	Skurda	City of Sterling Heights
89	Matthew	Bonza	City of Taylor
90	Jason	Mach	City of Taylor
91	Randy	Smith	City of Taylor
92	Scott	Carruthers	City of Troy
93	George	Hawes	City of Troy
94	Chad	Fisher	City of Wayne
95	Mary	Bednar	Clinton Township
96	Gordon	Bush	Clinton Township
97	Jason	Mills	Clinton Township

SEMCOG UNIVERSITY ALERT OBSERVER TRAINING ATTENDANCE LIST
NOVEMBER 10, 2020

ARC Member Community

Number	First Name	Last Name	Community/Organization
98	Robert	Turner	Clinton Township
99	Nick	Kammer	East China Township
100	Donald	Liniarski	East China Township
101	Kenneth	Schindler	East China Township
102	Blayn	Szyska	East China Township
103	Janelle	Hohm	EGLE
104	Jen	Klang	EGLE
105	Felicia	Venable	Farmington Public Schools
106	Jay	Stogiera	Henry Ford Community College
107	Rebekkah	Ausbury	Kalamazoo County Road Commission
108	Rod	Soos	Livingston County
109	Bryan	Varacalle	Livingston County
110	John	Griffor	Macomb County
111	Carol	Koehn	Macomb County
112	Jeff	Bednar	Macomb County
113	Jenay	Chartier	Macomb County
114	Karen	Czernel	Macomb County
115	Sam	DiCaro	Macomb County
116	Jessica	Hicks	Macomb County
117	Carol	Koehn	Macomb County
118	Anthony	Lemire	Macomb County
119	Greg	Martinez	Macomb County
120	Lara	Sucharski	Macomb County
121	Terry	Baumgarten	No affiliation provided
122	Jennifer	Carpenter	No affiliation provided
123	Matt	Collins	No affiliation provided
124	Troy	Farnum	No affiliation provided
125	Edward	LaGarde	No affiliation provided
126	Mark	Baldwin	Oakland County
127	Ron	Fadoir	Oakland County
128	Michael	Mausolf	Oakland County
129	Megan	Schildberg	Oakland County
130	Stephen	Whaley	Oakland County

SEMCOG UNIVERSITY ALERT OBSERVER TRAINING ATTENDANCE LIST
NOVEMBER 10, 2020

ARC Member Community

Number	First Name	Last Name	Community/Organization
131	Michael	Chiasson	Oakland County
132	Jacy	Garrison	Oakland County
133	Joel	Kohn	Oakland County
134	Jeff	Monette	Oakland County
135	Jim	Schafer	Oakland County
136	Sean	Zera	Oakland County
137	Levi	Brindley	Oakland County Parks and Recreation
138	Laura	Hassold Prevot	Oakland County Road Commission
139	Cora	Hanson	Oakland University
140	Cora	Hanson	Oakland University-Environmental Health & Safety
141	Conner	Reiter	Orion Township
142	Joe	Pace	Riverview Schools
143	Trevor	Layton	SEMCOG-Partner
144	Glenda	Marks	SEMCOG-Partner
145	Stephanie	Taylor	SEMCOG-Partner
146	John	Taylor	Village of Beverly Hills
147	Franklin	Wenzel	Village of South Rockwood
148	Kelly	McRobb-Ackland	Wade Trim-No community affiliation provided
149	April	Avigne	Washtenaw County
150	Kevin	Butler	Washtenaw County
151	Michael	Fry	Washtenaw County
152	William	Fults	Washtenaw County
153	Dakota	Spain	Washtenaw County
154	Bryan	Bloomensaat	Washtenaw County
155	Robert	Dancer	Washtenaw County
156	Marc	Decker	Washtenaw County
157	Bob	Griffin	Washtenaw County
158	Heather	Rice	Washtenaw County
159	Julie	Sigda	Washtenaw County
160	Kathy	Squiers	Washtenaw County
161	David	Streeter	Washtenaw County
162	Edward	Wojtan	Washtenaw County
163	Scott	Burby	Washtenaw County Road Commission

SEMCOG UNIVERSITY ALERT OBSERVER TRAINING ATTENDANCE LIST
NOVEMBER 10, 2020

ARC Member Community

Number	First Name	Last Name	Community/Organization
164	Mark	Fenelon	Washtenaw County Road Commission
165	Jaclyn	Henderson	Washtenaw County Road Commission
166	Becky	Houle	Washtenaw County Road Commission
167	Larry	Plesiewicz	Washtenaw County Road Commission
168	Jared	Powers	Washtenaw County Road Commission
169	Lauren	Purdy	Washtenaw County Road Commission
170	Kristin	Goetze	Waterford Township
171	Robert	Merinsky	Waterford Township
172	David	Cartwright	Wayne County
173	Frederick	Greene	Wayne County
174	John	Gundry	Wayne County
175	Richard	Hodges	Wayne County
176	Elizabeth	Iszler	Wayne County
177	Sami	Khaldi	Wayne County
178	LeDonn	Majors	Wayne County
179	Noel	Mullett	Wayne County
180	Joseph	Tomocik	Wayne County

Appendix B2

2021 Wayne County IDEP Investigation Report

Wayne County Illicit Discharge Elimination Program
ARC IDEP Services 2021 Report

Executive Summary

Wayne County Department of Public Services Environmental Services Division (ESD) performed source identification advanced investigations in the Cities of Plymouth, Inkster, and Livonia (Table 1). The ARC 2021 workplan was amended in September of 2020 to include advanced investigations along the Lower Rouge in the City of Inkster. The addition of the Lower Rouge investigations was in response to elevated *E. coli* concentrations identified during routine water quality monitoring performed by ESD and the City of Dearborn. Other tasks completed in 2021 included IDEP Training and activity reporting.

Table 1: Findings and recommended actions for illicit discharge investigations

Community	**Outfall/ target area**	**Findings**	**Recommendations**
Plymouth	PY8	Elevated *E. coli, Bacteriodes and HF183 marker*	Continued investigations in 2022 including dye testing and televising storm sewer segments isolated by sampling
Plymouth	PY5	Elevated *E. coli* and HF183 marker	Continued investigations in 2022 including sampling for *E. coli* and HF183 marker, dye testing and televising storm sewer segments isolated by sampling
Plymouth	Holbrook Street	Low *E. coli*, no evidence of illicit discharge other than sewage odor	Investigation plans for 2022 TBD pending recommendations from the City of Plymouth
Plymouth	PY27	Low *E. coli;* no evidence of illicit discharge	No further follow-up necessary. No further investigation is needed in 2022
Plymouth	Harvey Street	Two illicit connections identified via televising and during construction in 2020 were corrected	Follow-up *E. coli* monitoring performed in 2021 confirmed no additional illicit connections suspected. No further investigation is needed in 2022
Plymouth	Mill/Park Street	Four illicit connections identified (3 discharge to Wayne County Mill Street MS4, and one discharges to the City of Plymouth MS4 tributary). Compliance actions ongoing	Follow-up *E. coli* monitoring to confirm no additional illicit connections once corrections are made.
Livonia	Bakewell Drain/Levan Road 42" storm sewer	Low *E. coli* and HF183 marker; no evidence of illicit discharge	Continued investigations including sampling for *E. coli* and HF183 marker is needed in 2022

Livonia	Outfall L-1619	Elevated *E. coli* and HF183 marker was detected in a storm sewer near a food service facility. Sewage source (s) suspected	Continued investigations including additional sampling for *E. coli,* HF183 marker, dye testing and televising in 2022
Livonia	6038	2021 investigation inconclusive	Continued investigations including sampling for *E. coli* and HF183 marker in 2022
Livonia	13002	Low *E. coli*; no evidence of illicit discharge	No further investigation is needed in 2022
Livonia	U2008231	Low *E. coli,* outfall dry; no evidence of illicit discharge	No further investigation is needed in 2022
Livonia	M2008117	Low *E. coli*; no evidence of illicit discharge	No further investigation is needed in 2022
Livonia	U2008238	Low *E. coli*; no evidence of illicit discharge	No further investigation is needed in 2022
Livonia	2680	Low *E. coli*/HF183*;* no evidence of illicit discharge	No further investigation is needed in 2022
Livonia	L3582	2021 investigation inconclusive	Continued investigations including sampling for *E. coli* and HF183 marker in 2022
Livonia	U2008221	Sewage sources suspected. No investigation on this line in 2021	ARC staff taking over investigation of this outfall in 2022
Dearborn and Inkster	Lower Rouge	Elevated *E. coli*	Additional investigations on the Lower Rouge upstream of John Daly Road will involve screening outfalls, sampling for *E. coli, HF183 marker* and surfactants, as well as televising planned for the Perrin Drain, and sanitary sewer crossings

Task 1: Field Investigations

ESD conducted IDEP investigations at various outfalls and upstream storm sewer manholes. Water samples were tested for *E. coli* and observations were recorded regarding water clarity, color, odor, and debris. In addition to ESD's typical IDEP investigation methods, select samples were analyzed for the Human Source (HF183) marker. The presence of the marker above 1,000 gene copies/100 mL is used as a threshold to indicate potential human source of bacteria present when correlated with elevated *E. coli* levels.

City of Plymouth

ESD coordinated with ARC staff and the City of Plymouth to continue investigations of outfalls PY8, PY5, Holbrook Street, and the Harvey Street and the Park Street municipal separate storm sewer systems (MS4). The PY8 and PY5 outfalls discharge to the North Branch Tonquish Creek. The Harvey Street MS4 is a tributary to Byron Creek and the South Branch of Tonquish Creek. The Park Street MS4 captures the Mill Street drainage and discharges to the Rouge River Middle Branch, as does the outfall discharging the drainage from the Holbrook Street investigation area.

Outfall PY8

ESD performed follow up monitoring of outfall PY8, investigating manholes and storm sewer laterals upstream of the outfall on August 23, September 21, and November 10, 2021. Three manholes were investigated during dry weather. The investigation area and dry weather screening data is shown in *Figure 1* and the investigation data is in Appendix A, Table A1.

Elevated *E. coli* was detected at two manholes in the upstream storm sewer system on Blunk Street. Elevated levels of HF183 marker were detected in a sample taken on November 10, 2021. Further investigations are needed to identify the source (s) in the outfall PY8 investigation area. Review of storm sewer televising footage, additional manhole sampling (*E. coli* and *HF183*), televising the sanitary sewer to locate residential leads, and dye testing of selected residences in the investigation area are planned for 2022.

Outfall PY5

ESD performed follow up sampling in manholes and storm sewer laterals upstream of the outfall on August 23, and November 10, 2021. Two manholes and the outfall were investigated during dry weather. The investigation area and dry weather screening data is shown in *Figure 2* and the investigation data is in Appendix A, Table A2.

The outfall was not sampled due to stagnant water/no dry weather flow present in the pipe. Elevated *E. coli* was detected in one manhole in the upstream storm sewer system at the intersection of Arthur and William Streets. *E. coli* and HF 183 marker concentrations were low in a sample taken on Pacific Street November 10, 2021. Further investigations are needed to isolate the *E. coli/HF183* source (s) in the Outfall PY5 investigation area. Televising of the storm sewer, verification of sampling locations, additional manhole sampling (*E. coli* and *HF183*), and dye testing of selected residences are planned for 2022.

Holbrook Street

The City of Plymouth Holbrook Street storm sewer segment between Plymouth Road and its terminal manhole south of the railroad tracks (north of Liberty Street) was investigated on August 23 and September 2, 2021. The manholes along this segment were investigated twice and during one of those events, no dry weather flow was present, except for in the manhole at furthest downstream point in investigation area. During the two times this manhole was sampled, the *E. coli* concentrations were less than 100 CFU/100mL. A sewage odor was detected in the storm sewer at Holbrook and Spring Street intersection, and complaints received about this odor is what initiated the investigation in this specific section of the drainage area. The odor does not appear to be originating from an active illicit discharge source. Based on the *E. coli* data and observations, no further investigation is recommended at this time, unless the reviewing the CCTV footage of the sewers in the drainage area indicates otherwise. The investigation area is shown in Figure 3 and dry weather screening data is shown in *Figure 3* and the investigation data is in Appendix A, Table A3.

Harvey Street Investigation Area
Two residences with illicit connections were discovered during 2020. One was found when the City of Plymouth televised the Jener Street storm sewer, which is upstream of a manhole where elevated *E. coli* concentrations and physical evidence of illicit discharge were detected during storm sewer manhole sampling investigations. The illicit connection discovered during the televising effort was at a single-family residence (663 Jener Street). The City of Plymouth also discovered an illicit connection at a residential property (566 N. Harvey Street) on Harvey Street during road construction. Both illicit connections were corrected.

Follow up *E. coli* monitoring at the Harvey Street outfall and its storm sewer laterals was performed during 2021 to confirm that no further illicit connections are present in the storm sewer system that discharges to Byron Creek (Tonquish Creek South Branch). A total of six residences with illicit connections were identified in the Harvey Street storm sewer drainage area investigation. This investigation is completed. The investigation area is shown in Figure 4 and the dry weather screening data is in Appendix A, Table A4.

Park Street/Mill Street Investigation Area
There are a total of four residences with unresolved illicit connections identified in the Mill/Park Street investigation area, including a duplex located at 150/152 S. Mill Street identified during residential dye testing performed in 2018. Three residences with illicit connections were identified during utility televising performed in the area by Consumer's Energy during 2019. Two of these connections were identified along Mill Street and discharge into the Wayne County Mill Street MS4 (195 S. Mill and 485 S. Mill). The third originated from a residence on Amelia Street (175 Amelia Street), and this one discharges into the City of Plymouth MS4 tributary to the Mill Street storm sewer. The property owners of the three Mill Street residences were mailed Notice of Ordinance Violation letters ordering disconnection of the plumbing fixtures from the Mill Street MS4 and that the fixtures be properly connected to the City of Plymouth sanitary sewer. The correction of the illicit connections is required by May 1, 2022.

Once the active illicit connections are eliminated from the Mill Street and Ameila Street storm sewers, the Mill Street storm sewer laterals and the Park Street storm sewer outfall will be resampled.

City of Livonia
ESD continued investigations of outfall L-1619, the 42-inch Levan Road outfall, and initiated investigations on outfalls 6038, 13002, U2008231, M2008117, U2008238, 2680, and L3582. No additional investigation was performed on outfall U2008221 during 2021. Outfall M2008117 discharges to the Middle Rouge River, and the others discharge to the Upper Rouge or one of its tributaries.

42-inch Outfall Levan Road South (Bakewell Drain)
This outfall and several laterals were investigated in 2019 and elevated *E. coli* and BST markers were detected. Due to staffing shortages caused by the COVID-19 pandemic and investigative priority changes in the ARC IDEP workplan, no investigations occurred on this outfall in 2020. ESD performed a follow up investigation on this storm sewer line on November 10, 2021. The outfall, and storm sewer manholes on upstream laterals where elevated *E. coli* and/or BST markers were previously detected, were investigated and resampled. The *E. coli* samples were 10 CFU/100mL in the laterals and less than 1000 CFU/100mL at the outfall. Due to the low *E. coli* concentrations, it is one more sampling at the outfall and laterals occur in 2022 prior to closing out the investigations. The investigation area is shown in Figure 5 and the dry weather screening data is in Appendix B, Table B1.

Outfall L-1619

ESD began its investigation L-1619 in December 2020 and continued that investigation in 2021. The outfall, and storm sewer manholes on upstream laterals where elevated *E. coli* were previously detected were investigated and resampled on November 10, 2021. The HF183 marker was very high in a sample collected from a storm sewer on Seven Mile Road near a food service establishment. Further investigations are needed to isolate the *E. coli/HF183* source (s) in the investigation area. Additional manhole sampling (*E. coli* and *HF183*), delineating of the drainage area, televising of the storm sewer, and dye testing of selected facilities are planned for 2022. The investigation area is shown in Figure 6 and the dry weather screening data is in Appendix B, Table B2.

Outfall 6038

ESD investigated Outfall 6038 on July 28, 2021. One of the samples collected in the storm sewer upstream of the outfall was 1600 CFU/100mL and there was low flow, or stagnant water present in other manholes in the system, so the investigation was inconclusive. Additional investigation of this area is recommended for 2022. The investigation area is shown in Figure 7 and the dry weather screening data is in Appendix B, Table B3.

Outfall 13002

ESD investigated Outfall 13002 on August 3 and September 30, 2021. *E. coli* concentrations in the manhole samples was less than 200 CFU/100mL. No further investigation is recommended for this area. The investigation area is shown in Figure 8 and the dry weather screening data is in Appendix B, Table B4.

Outfall U2008231

ESD investigated Outfall U2008231 on August 2 and September 30, 2021. No dry weather discharge was present at the outfall, and *E. coli* concentrations in storm sewer manhole samples were less than 900 CFU/100mL. Recommend no further investigation for this area. The investigation area is shown in Figure 9 and the dry weather screening data is in Appendix B, Table B5.

Outfall M2008117

ESD investigated Outfall M2008117 on July 28 and September 30, 2021. Dry weather discharge was present at the outfall, and *E. coli* concentrations in the manhole samples were less than 1600 CFU/100mL. Recommend no further investigation for this area. The investigation area is shown in Figure 10 and the dry weather screening data is in Appendix B, Table B6.

Outfall U2008238

ESD investigated Outfall U2008238 on August 2 and September 30, 2021. *E. coli* concentrations in the manhole samples were less than 100 CFU/100mL. Recommend no further investigation for this area. The investigation area is shown in Figure 11 and the dry weather screening data is in Appendix B, Table B7.

Outfall 2680

ESD investigated Outfall 2680 on August 4, 5 and November 10, 2021. *E. coli* concentrations in the manhole samples were less than 100 CFU/100mL. HF183 marker levels were very low in two laterals the *E. coli* concentrations were below 5000 CFU/100mL during both investigations. Recommend no further investigation. The investigation area is shown in Figure 12 and the dry weather screening data is in Appendix B, Table B8.

Outfall L3582
ESD investigated Outfall 2680 on August 5, 2021. *E. coli* concentrations in the manhole samples were less than 500 CFU/100mL. Recommend one additional round of sampling to ensure no illicit discharges are present. The investigation area is shown in Figure 13 and the dry weather screening data is in Appendix B, Table B9.

Outfall U2008221 (Bakewell Drain)
ESD met with the City of Livonia to review the findings of the investigations performed on the Outfall U2008221 in 2019 and developed a follow-up plan to delineate the storm sewers draining to these outfalls, where elevated *E. coli* and BST markers were detected. The City of Livonia televised a storm sewer line located on the west side of Levan Road and discovered it did not have an outlet to the Bakewell Drain. ESD and the City of Livonia were not able to perform further investigation on the Bakewell Drain outfalls due to the staffing shortages caused by the COVID-19 pandemic and the changes in investigative priorities. Further investigation on this outfall is planned for 2022 and is detailed in the workplan for ARC staff.

Lower Rouge Investigation-Inkster
ESD supported ARC staff by providing staff to assist with performing an outfall survey on the Lower Rouge between Inkster and Beech Daly Roads on April 8, 2021. ESD also supported ARC staff in dry weather advanced investigations on the Perrin Drain collecting samples from storm sewer manholes in the investigation area on March 10 and May 12, 2021. ARC staff prepared reports detailing the investigations, results and follow up recommendations.

Task 2 IDEP Training
Two IDEP training workshops were presented in 2021 in partnership with the Southeast Michigan Council of Governments (SEMCOG) Partners for Clean Water and the ARC. ESD provides support to ARC and SEMCOG in these training efforts. Due to the ongoing COVID-19 pandemic, the workshops were held virtually. The Alert Observer training, that was redesigned for the virtual platform in 2020, was offered on October . The Advanced Investigator training workshop was modified to the virtual platform and that workshop also held on October.

The IDEP Alert Observer training workshop is a one-hour session that included a question and answer session at its conclusion. This training introduces illicit dicharges, why it is important to identify and report, and reporting procedures. The virtual training workshop was held on October 27, 2021 with a total of 239 persons from 48 public entities attending the session. One-hundrd thirty-seven of the 239 attendees (57percent) were representatives of (or consultants representing) ARC member communities.

The IDEP Advanced Investigator training workshop is a two-hour session that included a question and answer session at its conclusion. This training details the various techniques used to investigate, identify and eliminate illicit discharge sources. The Advanced Investigator training virtual training workshop was held on October 27, 2021 with a total of 173 persons from 48 public entities attending the session. One-hundred-fifteen of the 173 attendees (66 percent) were representatives of (or consultants representing) ARC member communities.

Appendix C contains the attendance lists for the Alert Observer and Advanced Investigator workshops. Attendees representing ARC communities are highlighted.

Task 3 Reporting

Written progress summaries of IDEP activities were provided. The 2020 IDEP Activities Summary was completed and the 2021 activities summary drafted.

Figures
2021 ARC IDEP Field Investigation Maps

Figure 1: Outfall PY8 Investigation Area

Figure 2: Outfall PY5 Investigation Area

Figure 3: Holbrook Street Investigation Area

Figure 4: Harvey Street Investigation Area

Figure 5: Outfall Levan Road South (Bakewell Drain) Investigation Area

Figure 6: City of Livonia L-1619 Investigation Area

Figure 7: Outfall 6038 Investigation Area

Figure 8: Outfall 13002 Investigation Area

Figure 9: Outfall U2008231 Investigation Area

Figure 10: Outfall M2008117 Investigation Area

Figure 11: Outfall U2008238 Investigation Area

Figure 12: Outfall 2680 Investigation Area

Figure 13: Outfall L3582 Investigation Area



CITY OF PLYMOUTH
2021 IDEP Investigation
Outfall PY8

Stormwater Gravity Mains
Stormwater Manholes
Sanitary Gravity Main & Lateral Lines
Sanitary Manhole

Sampling units - *E. coli* - CFU / 100 ml
HF 183 - GC / 100 ml

200 0 600 Feet

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CITY OF PLYMOUTH
2021 IDEP Investigation
Outfall PY5

Stormwater Gravity Mains
Sanitary Gravity Main & Lateral Lines
R Stormwater Manholes
R Sanitary Manhole
Sampling units - CFU / 100 ml

200 0 600 Feet

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CITY OF PLYMOUTH
2021 IDEP Investigation
Holbrook Street

1:3,000
1 inch = 250 feet

250 125 0 250 500 Feet

Stormwater Gravity Main
Stormwater Manhole
Sanitary Gravity Main & Lateral Lines
Sanitary Manhole

Sampling units - CFU / 100 ml

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CITY OF PLYMOUTH
2021 IDEP Investigation
Harvey Street

Stormwater Gravity Mains
Sanitary Gravity Main & Lateral Lines
Stormwater Manholes
Sanitary Manhole

200 0 600 Feet

Sampling units - CFU / 100 ml

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CITY OF LIVONIA
2021 IDEP Investigation
Levan Road 42" Outfall

Category B outfall
Stormwater Gravity Main
R Stormwater Manhole
Livonia boundary
Sanitary Gravity Main
R Sanitary Manhole

250 0 500 Feet

Sampling units - CFU / 100 ml

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CITY OF LIVONIA
2021 Outfall 1619 Investigation

Category B outfall
Stormwater Gravity Main
Stormwater Manhole
Livonia boundary
Sanitary Gravity Main
Sanitary Manhole

200 0 200 Feet

Sampling units - *E. coli* - CFU / 100 ml
HF 183 - GC / 100 ml

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CITY OF LIVONIA
2021 IDEP Investigation
Outfall 6038

- Category B outfall
- Stormwater Gravity Main
- R Stormwater Manhole
- Sanitary Gravity Main
- R Sanitary Manhole
- Livonia boundary

Sampling units - CFU / 100 ml

100 0 400 Feet

WAYNE COUNTY MICHIGAN
WARREN C. EVANS

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CITY OF LIVONIA
2021 IDEP Investigation
Outfall 13002

200 0 800 Feet

Category B outfall
Stormwater Gravity Main
Stormwater Manhole
Livonia boundary
Sanitary Gravity Main
Sanitary Manhole

Sampling units - CFU / 100 ml

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CITY OF LIVONIA
2021 IDEP Investigation
Outfall U2008231

Category B outfall
Stormwater Gravity Main
R Stormwater Manhole
S Stormwater Catch Basin
Livonia boundary
Sanitary Gravity Main
R Sanitary Manhole

100 0 400 Feet

Sampling units - CFU / 100 ml

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CITY OF LIVONIA
2021 IDEP Investigation
Outfall M2008117

Category B outfall
Stormwater Gravity Main
R Stormwater Manhole
Livonia boundary
Sanitary Gravity Main
R Sanitary Manhole

250 0 500 Feet

Sampling units - CFU / 100 ml

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CITY OF LIVONIA
2021 IDEP Investigation
Outfall U2008238

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250 0 500 Feet

Category B outfall
Stormwater Gravity Main
R Stormwater Manhole
Sanitary Gravity Main
R Sanitary Manhole
Livonia boundary

Sampling units - CFU / 100 ml

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CITY OF LIVONIA
2021 IDEP Investigation
Outfall 2680

200 0 800 Feet

Category B outfall
Stormwater Gravity Main
Stormwater Manhole
Livonia boundary
Sanitary Gravity Main
Sanitary Manhole

Sampling units - CFU / 100 ml

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CITY OF LIVONIA
2021 IDEP Investigation
Outfall L3582

Category B outfall
Stormwater Gravity Main
Stormwater Manhole
Livonia boundary
Sanitary Gravity Main
Sanitary Manhole

250 0 500 Feet

Sampling units - CFU / 100 ml

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Appendix A
2021 ARC IDEP Field Investigation Data
City of Plymouth

Table A1: Outfall PY8 Investigation Area
Table A2: Outfall PY5 Investigation Area
Table A3: Holbrook Street Investigation Area
Table A4: Harvey Street Investigation Area

Number	Date	Time (military)	Investigation Location	Site Location	*E. coli (colony-forming units (CFU)/100mL)*)	HF183 Gene copies (GC)/100mL	Ammonia (PPM)	Surfactant (PPM)	Conductivity (mS/cm)	Temperature (degrees Celsius)	Observations	Sanitary Flow Evidence	Odor
1	8/23/2021	14:25	Outfall PY8	Blunk St/Church St	<2419.6	NA	NA	NA	NA	NA	Water flow in storm from north inlet. Some sediment in sample	No	No
2	9/21/2021	13:20	Outfall PY8	Blunk St/Farmer St	1300	NA	NA	NA	NA	NA	Sampled north inlet. Clear trickle flow from west inlet-not enough to sample.	No	No
3	11/10/2021	9:40	Outfall PY8	Blunk St/Farmer St	464	45031.6	NA	NA	NA	NA	Clear flow in storm from north inlet. Trickle flow from west inlet, not enough to collect a sample	No	No
4	9/21/2021	12:45	Outfall PY8	Blunk St/Junction St	NA	NA	NA	NA	NA	NA	Manhole dry. Lid cracked. No storm sewer catch basins in between Junction and Farmer on Blunk St	No	No

Number	Date	Time (military)	Investigation Location	Site Location	*E. coli (colony-forming units (CFU)/100mL)*)	HF183 Gene copies (GC)/100mL	Ammonia (PPM)	Surfactant (PPM)	Conductivity (mS/cm)	Temperature (degrees Celsius)	Observations	Sanitary Flow Evidence	Odor
1	8/23/2021	13:45	Outfall PY5	Outfall PY5	NA	NA	NA	NA	NA	NA	Standing water in outfall pipe. No dry weather flow. Tonquish Creek water levels very low	No	No
2	8/23/2021	13:50	Outfall PY5	William St/Arthur St	5700	NA	NA	NA	NA	NA	Slow flow in storm; water clear, steady flow from William Street inlet	No	No
3	11/10/2021	10:05	Outfall PY5	295 Pacific St	275	94.7	NA	NA	NA	NA	Musty odor, flow from north inlet	No	Yes

Number	Date	Time (military)	Investigation Location	Site Location	*E. coli (colony-forming units (CFU)/100mL)*)	Ammonia (PPM)	Surfactant (PPM)	Conductivity (mS/cm)	Temperature (degrees Celsius)	Observations	Sanitary Flow Evidence	Odor
1	8/23/2021	11:55	Holbrook St Storm Sewer	Holbrook St/Plymouth Rd	39	NA	NA	NA	NA	Trickle flow from north inlet; water clear. Iron deposits present on inlet pipe. Sample collected at 13:30. Only manhole in storm sewer line with consistent dry weather flow	No	No
2	9/2/2021	11:00	Holbrook St Storm Sewer	Holbrook St/Plymouth Rd	11	NA	NA	NA	NA	Clear flow from north inlet on Holbrook St. Iron deposits present on inlet pipe	No	No
3	8/23/2021	12:00	Holbrook St Storm Sewer	472 Holbrook St	NA	NA	NA	NA	NA	Manhole dry, musty odor, inlets dry. Some standing water in catch basins (Holbrook east side). West side inlet dry	No	No
4	9/2/2021	11:25	Holbrook St Storm Sewer	472 Holbrook St	NA	NA	NA	NA	NA	Manhole and storm inlets dry	No	No
5	8/23/2021	12:10	Holbrook St Storm Sewer	Holbrook St/Caster St	NA	NA	NA	NA	NA	Strong decaying debris odor in manhole. Some water in sump-not enough to sample. Drip from catch basin inlet- not enough to sample. No flow from north inlet	No	Yes
6	9/2/2021	11:35	Holbrook St Storm Sewer	Holbrook St/Caster St	NA	NA	NA	NA	NA	Some standing water in manhole; not enough to sample. Inlets dry	No	No
7	8/23/2021	12:20	Holbrook St Storm Sewer	Holbrook St/Spring St	NA	NA	NA	NA	NA	Storm with "Dump No Waste" grate cover. Sewage odor present in sump. Manhole dry. Some leaf litter at bottom of sump. Slight sewage odor in west catch basin	No	Yes
8	9/2/2021	11:50	Holbrook St Storm Sewer	Holbrook St/Spring St	NA	NA	NA	NA	NA	Manhole dry. Sewage odor present. East and west catch basins on Holbrook St dry	No	Yes
9	8/23/2021	12:50	Holbrook St Storm Sewer	Holbrook St/Liberty St	NA	NA	NA	NA	NA	Manhole and storm inlets dry	No	No
10	9/2/2021	12:10	Holbrook St Storm Sewer	Holbrook St/Liberty St	NA	NA	NA	NA	NA	Manhole damp on the bottom. Drip on Liberty Street inlet. Not enough flow to sample. Slight musty odor present	No	Yes
11	9/2/2021	12:15	Holbrook St Storm Sewer	818 Holbrook St	NA	NA	NA	NA	NA	Manhole and storm inlets dry. Some standing water in catch basins	No	No

Number	Date	Time (military)	Investigation Location	Site Location	*E. coli (colony-forming units (CFU)/100mL)*)	Ammonia (PPM)	Surfactant (PPM)	Conductivity (mS/cm)	Temperature (degrees Celsius)	Observations	Sanitary Flow Evidence	Odor
12	8/23/2021	13:15	Holbrook St Storm Sewer	882 Holbrook St terminal manhole	NA	NA	NA	NA	NA	Terminal manhole south of railroad tracks. Sump and inlets dry	No	No
13	9/2/2021	12:20	Holbrook St Storm Sewer	882 Holbrook St terminal manhole	NA	NA	NA	NA	NA	Terminal manhole south of railroad tracks. Sump and inlets dry	No	No

Number	Date	Time (military)	Investigation Location	Site Location	*E. coli (colony-forming units (CFU)/100mL)*)	Ammonia (PPM)	Surfactant (PPM)	Conductivity (mS/cm)	Temperature (degrees Celsius)	Observations	Sanitary Flow Evidence	Odor
1	9/2/2021	13:10	Harvey St Outfall	Harvey St Outfall	20	NA	NA	NA	NA	Clear discharge from outfall	No	No
2	9/21/2021	12:20	Harvey St Outfall	Harvey St Outfall	350	NA	NA	NA	NA	Clear discharge from outfall	No	No
3	9/2/2021	12:55	Harvey St Outfall	Beech St/Harvey St	100	NA	NA	NA	NA	Water clear in storm. Trickle flow from west inlet. Sample collected at west inlet	No	No
4	9/21/2021	12:00	Harvey St Outfall	Beech St/Harvey St	<1	NA	NA	NA	NA	Trickle flow in sump; water clear	No	No
5	9/2/2021	12:40	Harvey St Outfall	Linden St/Jener St	62	NA	NA	NA	NA	Clear flow from north inlet (from Jener). Other inlets dry. Sample collected from sump	No	No
6	9/21/2021	11:50	Harvey St Outfall	Linden St/Jener St	40	NA	NA	NA	NA	Clear flow from McKinley Street inlet; sample collected by north inlet. Some intermittent discharge from sump drain	No	No
7	9/2/2021	13:00	Harvey St Outfall	Palmer St/Harvey St	NA	NA	NA	NA	NA	Did not sample- dry weather flow in storm from active lawn sprinklers on Palmer St	No	No
8	9/21/2021	12:10	Harvey St Outfall	Palmer St/Harvey St	190	NA	NA	NA	NA	Clear slow flow from west and north inlets. Steady flow from east inlet	No	No

Appendix B
2021 ARC IDEP Field Investigation Data
City of Livonia

Table B1: Outfall Levan Road South (Bakewell Drain)
Table B2: Outfall L-1619
Table B3: Outfall 6038
Table B4: Outfall 13002
Table B5: Outfall U2008231
Table B6: Outfall M2008117
Table B7: Outfall U2008238
Table B8: Outfall 2680
Table B8: Outfall L3582

Number	Date	Time (military)	Investigation Location	Site Location	*E. coli (colony-forming units (CFU)/100mL)*	HF183 Gene copies (GC)/100mL	Ammonia (PPM)	Surfactant (PPM)	Conductivity (mS/cm)	Temperature (degrees Celsius)	Observations	Sanitary Flow Evidence	Odor
1	11/10/2021	10:30	Levan Road Southeast storm outfall	Levan Road Southeast storm	609	NA	NA	NA	NA	NA	Dry weather flow at outfall, clear	None	None
2	11/10/2021	11:00	Allen Ct/Levan	Levan Road Southeast storm	<10	NA	NA	NA	NA	NA	Clear flow from south and west inlets. Sample collected in sump	None	None
3	11/10/2021	10:35	36263 Barkley manhole	Levan Road Southeast storm	10	NA	NA	NA	NA	NA	Clear slow flow in storm from north and west inlets. Sample collected in sump	None	None

Key:
NA-Not applicable
ND: Non-detect

Number	Date	Time (military)	Investigation Location	Site Location	*E. coli (colony-forming units (CFU)/100mL)*	HF183 Gene copies (GC)/100mL	Ammonia (PPM)	Surfactant (PPM)	Conductivity (mS/cm)	Temperature (degrees Celsius)	Observations	Sanitary Flow Evidence	Odor
1	11/10/2021	13:35	Outfall 1619	Outfall 1619	3076	94.7	NA	NA	NA	NA	Water clear; could not sample directly from outfall due to fencing	None	None
2	11/10/2021	13:15	Outfall 1619	Chicken Shack	1616	1541052.6	NA	NA	NA	NA	Water clear in storm, flow from west	None	None

Key:
NA-Not applicable
ND: Non-detect

Number	Date	Time (military)	Investigation Location	Site Location	*E. coli (colony-forming units (CFU)/100mL)*)	Ammonia (PPM)	Surfactant (PPM)	Conductivity (mS/cm)	Temperature (degrees Celsius)	Observations	Sanitary Flow Evidence	Odor
1	7/28/2021	15:30	Outfall 6038	Outfall 6038	NA	NA	NA	NA	NA	Outfall not sampled/accessed due to deep water and recessed under road. Flow from outlet on north side of Six Mile.	No	No
2	7/28/2021	15:00	Outfall 6038	15130 Golfview	NA	NA	NA	NA	NA	Standing water in storm; grass clippings. Did not sample due to stagnant water in sump	No	No
3	7/28/2021	15:10	Outfall 6038	15194 Golfview	1600	NA	NA	NA	NA	Clear water in sump, very slow flow toward outlet. Inlets dry. First manhole upstream of outfall/receiving water. Sampled from sump near outlet.	No	No
4	7/28/2021	15:20	Outfall 6038	Golfview/Parkhurst	440	NA	NA	NA	NA	Sample collected in sump. Steady flow from two inlets to west. Water is clear in sump and from inlets.	No	No

Number	Date	Time (military)	Investigation Location	Site Location	*E. coli (colony-forming units (CFU)/100mL)*)	Ammonia (PPM)	Surfactant (PPM)	Conductivity (mS/cm)	Temperature (degrees Celsius)	Observations	Sanitary Flow Evidence	Odor
1	8/3/2021	12:25	Outfall 13002	Newburgh/Jamison	120	NA	NA	NA	NA	Turbid, slow flow in storm. No linlets observed. Sample collected in sump	No	No
2	9/30/2021	12:25	Outfall 13002	Newburgh/Jamison	84	NA	NA	NA	NA	Water clear in sump. Some grass clippings present	No	No
3	8/3/2021	12:40	Outfall 13002	Lyndon/Newburgh Inlet #1 (South)	19	NA	NA	NA	NA	Water clear in sump. Clear water flowing from two inlets. Inlet #1 is from the southeast.	No	No
4	8/3/2021	12:50	Outfall 13002	Lyndon/Newburgh Inlet #2 (West)	65	NA	NA	NA	NA	Water clear in sump. Clear water flowing from two inlets. Inlet #2 is from the west.	No	No
5	9/30/2021	12:15	Outfall 13002	Lyndon/Newburgh	20	NA	NA	NA	NA	Clear flow from west and southwest inlets. Sample collected at outlet in sump	No	No
6	8/3/2021	13:10	Outfall 13002	Stonehouse/Lyndon Inlet #1 (Northwest)	130	NA	NA	NA	NA	Water flowing from two inlets. Cloudy water from inlet #1 Inlet #1 is from the northwest. Construction activity upstream	No	No
7	8/3/2021	13:15	Outfall 13002	Stonehouse/Lyndon Inlet #2 (Southwest)	32	NA	NA	NA	NA	Water flowing from two inlets. Cloudy water in sump from inlet #1. Inlet #2 is from the southwest and flow is clear.	No	No
8	8/3/2021	13:25	Outfall 13002	Blue Skies (South)/Lyndon	140	NA	NA	NA	NA	Cloudy water in storm; some clear trickle flow from catch basin inlets due to lawn sprinkler runoff	No	No
9	8/3/2021	13:40	Outfall 13002	Lyndon/Susanna Inlet #1	220	NA	NA	NA	NA	Flow from storm from large south inlet from new development. Flow is clear. Storm line not on Livonia storm paper map	No	No
10	8/3/2021	13:50	Outfall 13002	Lyndon/Susanna Inlet #2	160	NA	NA	NA	NA	Cloudy flow from catch basin inlet. Active construction dewatering occurring in front of 37598 Lyndon	No	No
11	8/3/2021	14:10	Outfall 13002	Lyndon/Nola	NA	NA	NA	NA	NA	Some standing water in sump. No flow. No sample collected	No	No
12	8/3/2021	14:15	Outfall 13002	Lyndon/Hix	NA	NA	NA	NA	NA	Some standing water in sump. No dry weather flow at outlet, some trickle flow at west inlet. Not enough water to collect sample. Terminal manhole	No	No

Number	Date	Time (military)	Investigation Location	Site Location	*E. coli (colony-forming units (CFU)/100mL)*)	Ammonia (PPM)	Surfactant (PPM)	Conductivity (mS/cm)	Temperature (degrees Celsius)	Observations	Sanitary Flow Evidence	Odor
13	8/3/2021	14:25	Outfall 13002	Lyndon/Houghton	5.1	NA	NA	NA	NA	Clear trickle flow from west inlet. Sample collected in sump.	No	No
14	8/3/2021	14:45	Outfall 13002	14580 Richfield	11	NA	NA	NA	NA	Trickle flow in storm from west and southwest inlets. Clear flow from lawn sprinklers on Huff Street. Sample collected in sump	No	No
15	8/3/2021	15:00	Outfall 13002	14570 Newburgh	NA	NA	NA	NA	NA	Steady flow in storm. Inlet offset and not visible. No sample collected	No	No

Number	Date	Time (military)	Investigation Location	Site Location	*E. coli (colony-forming units (CFU)/100mL)*)	Ammonia (PPM)	Surfactant (PPM)	Conductivity (mS/cm)	Temperature (degrees Celsius)	Observations	Sanitary Flow Evidence	Odor
1	8/2/2021	13:40	U2008231 Outfall	U2008231 Outfall	NA	NA	NA	NA	NA	Corrugated 12" pipe set in culvert to the east of the Blue Skies road crossing. Outfall is dry. Some sand/sediment on bottom of pipe.	No	No
2	9/30/2021	13:40	U2008231 Outfall	U2008231 Outfall	NA	NA	NA	NA	NA	Corrugated 12" pipe set in culvert to the east of the Blue Skies road crossing. Outfall is dry. Some sand/sediment on bottom of pipe.	No	No
3	8/2/2021	14:10	U2008231 Outfall	Stonehouse/Blue Skies Storm Manhole	NA	NA	NA	NA	NA	Storm manhole and inlets are dry	No	No
4	8/2/2021	14:05	U2008231 Outfall	15523 Stonehouse Catch Basin	NA	NA	NA	NA	NA	Not enough water in catch basin to sample	No	No
5	8/2/2021	14:00	U2008231 Outfall	15516 Stonehouse Catch Basin	870	0	0.25	NA	NA	Clear water in catch basin; trickle flow from 8 inch inlet.	No	Yes
6	8/2/2021	14:14	U2008231 Outfall	Blue Skies #3	84	NA	NA	NA	NA	Stagnant odor in catch basin, water clear. Greenish color on inlet pipe. Trickle flow from inlet	No	No
7	9/30/2021	12:55	U2008231 Outfall	Huff St	NA	NA	NA	NA	NA	Trickle flow in storm. Not enough water to sample	No	No

Number	Date	Time (military)	Investigation Location	Site Location	*E. coli (colony-forming units (CFU)/100mL)*)	Ammonia (PPM)	Surfactant (PPM)	Conductivity (mS/cm)	Temperature (degrees Celsius)	Observations	Sanitary Flow Evidence	Odor
1	7/28/2021	14:35	M2008117/LD-33 Outfall	M2008117/LD-33 Outfall	130	NA	NA	NA	NA	Outfall is partially submerged. Slow flow. Water slightly turbid.	No	No
2	9/30/2021	13:15	M2008117/LD-33 Outfall	M2008117/LD-33 Outfall	41	NA	NA	NA	NA	Slow flow out of outfall. Water clear, Middle Rouge slightly turbid	No	No
3	7/28/2021	11:25	M2008117/LD-33 Outfall	11019 Levan	340	NA	NA	NA	NA	Clear flow in storm from north. Two inches of water in storm. Clear flow from catch basin	No	No
4	9/30/2021	13:30	M2008117/LD-33 Outfall	11019 Levan	310	NA	NA	NA	NA	Clear trickle flow from north inlet	No	No
5	7/28/2021	11:50	M2008117/LD-33 Outfall	Elmira/Levan	110	NA	NA	NA	NA	Old manhole on east side of the street. Sample collected from east inlet. Water clear. A sample could not be collected in the sump due to interference from east inlet flow.	No	No
6	9/30/2021	15:30	M2008117/LD-33 Outfall	Elmira/Levan	1530	NA	NA	NA	NA	Old manhole on east side of the street. Sample collected from east inlet. Water clear. A sample could not be collected in the sump due to interference from east inlet flow.	No	No
7	7/28/2021	12:30	M2008117/LD-33 Outfall	Exxon Gas Station/Levan (Northwest corner Plymouth/Levan)	NA	NA	NA	NA	NA	Manhole is near Exxon near decorative berm. Muddy sludge in manhole does not appear to be directly part of the M2008117 (LD-33) line. No sample collected	No	No
8	7/28/2021	12:40	M2008117/LD-33 Outfall	11731 Levan	84	NA	NA	NA	NA	Clear, sluggish flow in storm. Dry catch basin inlet	No	No
9	7/28/2021	14:00	M2008117/LD-33 Outfall	12017 Levan	83	NA	NA	NA	NA	Very slow flow, clear flow in storm. Inlet from CB dry	No	No
10	7/28/2021	14:15	M2008117/LD-33 Outfall	Commerce/Levan	52	NA	NA	NA	NA	Clear flow in storm from north. Trickle flow from white PVC (dripping). 18" inlet dry	No	No

Number	Date	Time (military)	Investigation Location	Site Location	*E. coli (colony-forming units (CFU)/100mL)*)	Ammonia (PPM)	Surfactant (PPM)	Conductivity (mS/cm)	Temperature (degrees Celsius)	Observations	Sanitary Flow Evidence	Odor
11	7/28/2021	14:25	M2008117/LD-33 Outfall	Amrhein/Levan	NA	NA	NA	NA	NA	Terminal manhole. Manhole and inlets are dry	No	No

Number	Date	Time (military)	Investigation Location	Site Location	*E. coli (colony-forming units (CFU)/100mL)*)	Ammonia (PPM)	Surfactant (PPM)	Conductivity (mS/cm)	Temperature (degrees Celsius)	Observations	Sanitary Flow Evidence	Odor
1	8/2/2021	11:05	U2008238	Quakertown/Upper	53	NA	NA	NA	NA	Inlets partially submerged. Trickle flow at outlet, clear, some grass clippings in sump	No	No
2	9/30/2021	11:25	U2008238	Quakertown/Upper	97	NA	NA	NA	NA	Clear water in sump. Some leaves/grass present. Sample collected at outlet	No	No
3	8/2/2021	11:25	U2008238	Quakertown/Stacey	8.5	NA	NA	NA	NA	Grass clippings in sump and sample collected from sump	No	No
4	9/30/2021	11:40	U2008238	Quakertown/Stacey	75	NA	NA	NA	NA	Steady clear flow from north inlet. No flow from east. Clear water, grass clippings in sump. Sampled at outlet	No	No
5	8/2/2021	11:30	U2008238	Quakertown/Aldrich	14	NA	NA	NA	NA	Slow flow in storm and clear flow from inlets	No	No
6	9/30/2021	11:50	U2008238	Quakertown/Aldrich	10	NA	NA	NA	NA	Slow flow in storm and clear flow from northwest inlet. Sample collected at outlet	No	No
7	8/2/2021	11:45	U2008238	15969 Swarthmore	8.6	NA	NA	NA	NA	Water clear in sump, trickle flow at outlet	No	No
8	8/2/2021	12:05	U2008238	15625 Swarthmore	15	NA	NA	NA	NA	Water clear, trickle flow from inlets. Grass clippings in storm. Sample collected in sump	No	No
9	8/2/2021	12:20	U2008238	15731 Penn	81	NA	NA	NA	NA	Clear flow of water in storm. Trickle flow from both inlets	No	No
10	8/2/2021	12:30	U2008238	15569 Penn	42	NA	NA	NA	NA	Iron buildup in storm. Steady clear flow from west inlet. Catch basin inlet dry. Manhole sampled at inlet	No	No

Number	Date	Time (military)	Investigation Location	Site Location	*E. coli (colony-forming units (CFU)/100mL)*)	HF183 Gene copies (GC)/100mL	Ammonia (PPM)	Surfactant (PPM)	Conductivity (mS/cm)	Temperature (degrees Celsius)	Observations	Sanitary Flow Evidence	Odor
1	8/4/2021	12:05	Outfall 2680	Outfall 2680	2100	NA	NA	NA	NA	NA	Sample collected at outfall. Steady clear dry weather flow	No	No
2	11/10/2021	12:15	Outfall 2680	Outfall 2680	428	NA	NA	NA	NA	NA	Sample collected at outfall. Steady clear dry weather flow	No	No
3	8/4/2021	12:30	Outfall 2680	Pickford/Beverly Park Inlet #1 (North)	2100	NA	NA	NA	NA	NA	Water slightly cloudy in storm. Some sand in sump. Slightly cloudy flow from north inlet	No	No
4	8/4/2021	12:40	Outfall 2680	Pickford/Beverly Park Inlet #2 (East)	240	NA	NA	NA	NA	NA	Water slightly cloudy in storm. Some sand in sump. Clear flow from east inlet	No	No
5	8/4/2021	12:50	Outfall 2680	Pickford/Beverly Park West	NA	NA	NA	NA	NA	NA	Storm manhole? Sump full of clear water. May be collecting catch basins from street? No flow from sump. Did not sample. Standing water in street catch basins	No	No
6	8/4/2021	12:55	Outfall 2680	Beverly Park/Pickford North Inlet #1 (West)	280	NA	NA	NA	NA	NA	Clear steady flow from west inlet. Clear water in sump	No	No
7	8/4/2021	13:00	Outfall 2680	Beverly Park/Pickford North Inlet #2 (East)	NA	NA	NA	NA	NA	NA	Trickle flow from east inlet. Clear water in sump. Not enough flow to sample	No	No
8	11/10/2021	12:30	Outfall 2680	Beverly Park/Pickford	341	94.7	NA	NA	NA	NA	Sample collected in sump downstream of east inlet. Water clear	No	No
9	8/4/2021	13:10	Outfall 2680	Pickford/Purling-brook	220	NA	NA	NA	NA	NA	Manhole near school sidewalk entryway. Water is stagnant in sump, with a slow flow to west. Grass clippings present. Sample collected in sump at west outlet	No	No
10	8/4/2021	13:20	Outfall 2680	11618 Purlingbrook	NA	NA	NA	NA	NA	NA	Some water in sump; not enough to sample. No flow from inlets	No	No
11	8/4/2021	13:30	Outfall 2680	18684 Purlingbrook	NA	NA	NA	NA	NA	NA	Some evidence of concrete wash/debris in storm. Buildup of tree debris at bottom of east inlet. No flow in storm; some water on manhole bottom,; not enough to sample	No	No
12	8/4/2021	13:40	Outfall 2680	18816 Purlingbrook	1500	NA	NA	NA	NA	NA	Grass clipping/standing water in sump. Trickle flow from north inlet. West inlet from catch basin. Standing water in catch basin.	No	No

Number	Date	Time (military)	Investigation Location	Site Location	*E. coli (colony-forming units (CFU)/100mL)*)	HF183 Gene copies (GC)/100mL	Ammonia (PPM)	Surfactant (PPM)	Conductivity (mS/cm)	Temperature (degrees Celsius)	Observations	Sanitary Flow Evidence	Odor
13	8/4/2021	14:00	Outfall 2680	18882 Purlingbrook	NA	NA	NA	NA	NA	NA	Some debris (tree debris, grass clippings on shelf in sump. Trickle flow from north. Not enough to sample. Sand on bottom of manhole, rebar. East inlet dry. Some animal droppings (unknown type-raccoon?) on sump shelf	Yes	No
14	8/4/2021	14:05	Outfall 2680	Seven Mile/Purlingbrook	NA	NA	NA	NA	NA	NA	Manhole dry. Some brick debris in sump. Inlet from Seven Mile dry	No	No
15	8/4/2021	14:10	Outfall 2680	Hillcrest/Pickford	560	NA	NA	NA	NA	NA	Clear water in sump, grass clippings. Slow flow from north inlet	No	No
16	8/4/2021	14:20	Outfall 2680	Clarita/Hillcrest	NA	NA	NA	NA	NA	NA	Trickle flow from north. Standing water in sump. Not enough flow to sample. Inlets dry.	No	No
17	8/4/2021	14:30	Outfall 2680	Hillcrest/Seven Mile	NA	NA	NA	NA	NA	NA	Terminal manhole on the line. Manhole dry	No	No
18	8/4/2021	14:35	Outfall 2680	19030 Hillcrest	NA	NA	NA	NA	NA	NA	Inlet and manhole dry	No	No
19	8/4/2021	14:40	Outfall 2680	18901 Hillcrest	NA	NA	NA	NA	NA	NA	No inlets, some clear water on bottom of pipe. No dry weather flow. Not enough water to collect sample	No	No
20	8/4/2021	14:45	Outfall 2680	18689 Hillcrest	NA	NA	NA	NA	NA	NA	Slow flow from north inlet. Not enough water present to sample. Some rocks/sand on manhole bottom	No	No
21	8/4/2021	14:50	Outfall 2680	18571 Hillcrest	NA	NA	NA	NA	NA	NA	Some standing water in manhole bottom, not enough to sample. No flow.	No	No
22	8/4/2021	14:55	Outfall 2680	Flamingo/Pickford	2700	NA	NA	NA	NA	NA	Trickle flow from north inlet. Steady flow from west inlet. Some sediment on bottom of north inlet	No	No
23	11/10/2021	12:37	Outfall 2680	Flamingo/Pickford	256	NA	NA	NA	NA	NA	Clear flow in storm from west and north inlets. Sample collected in sump	No	No
24	8/4/2021	15:10	Outfall 2680	Milburn/Pickford Inlet #1 (West)	340	NA	NA	NA	NA	NA	Clear flow from west inlet. Active lawn irrigation on northeast corner of Milburn/Pickford	No	No
25	8/4/2021	15:15	Outfall 2680	Milburn/Pickford Inlet #2 (North)	30	NA	NA	NA	NA	NA	Clear flow from north inlet. Active lawn irrigation on northeast corner of Milburn/Pickford	No	No

Number	Date	Time (military)	Investigation Location	Site Location	*E. coli (colony-forming units (CFU)/100mL)*)	HF183 Gene copies (GC)/100mL	Ammonia (PPM)	Surfactant (PPM)	Conductivity (mS/cm)	Temperature (degrees Celsius)	Observations	Sanitary Flow Evidence	Odor
26	8/5/2021	11:30	Outfall 2680	Milburn/Pickford Inlet #3 (Southwest)	1130	NA	NA	NA	NA	NA	Clear flow from north inlet and west inlets, and southwest. Clear flow from catch basin inlet from catch basin south side of Pickford	No	No
27	8/5/2021	11:45	Outfall 2680	Sunset/Pickford Inlet #1 (West)	39	NA	NA	NA	NA	NA	Trickle clear flow from three inlets. Two catch basin inlets (northwest and northeast) dry	No	No
28	8/5/2021	11:55	Outfall 2680	Sunset/Pickford Inlet #2 (North)	3900	NA	NA	NA	NA	NA	Trickle clear flow from three inlets. Two catch basin inlets (northwest and northeast) dry	No	No
29	8/5/2021	12:00	Outfall 2680	Sunset/Pickford Inlet #2 (South)	27	NA	NA	NA	NA	NA	Trickle clear flow from three inlets. Two catch basin inlets (northwest and northeast) dry	No	No
30	11/10/2021	13:00	Outfall 2680	Pickford/Sunset	556	NA	NA	NA	NA	NA	Clear flow from west and north inlets. Sample collected from sump	No	No
31	8/5/2021	12:05	Outfall 2680	Bainbridge/Pickford	80	NA	NA	NA	NA	NA	Clear trickle flow in storm from west and south inlets. Trickle flow from catch basin inlet on south side of Pickford. Sample collected in sump upstream of flow from south	No	No
32	8/5/2021	12:15	Outfall 2680	Bainbridge/Pickford Court	NA	NA	NA	NA	NA	NA	Clear trickle flow from all inlets. Not enough flow in manhole to sample	No	No
33	8/5/2021	12:20	Outfall 2680	18536 Bainbridge	130	NA	NA	NA	NA	NA	Clear flow from north inlet	No	No
34	8/5/2021	12:30	Outfall 2680	18360 Bainbridge	21	NA	NA	NA	NA	NA	Water clear in sump. Trickle flow from west inlet. Not enough to sample. Trickle flow from south inlet clear. Sample collected from sump.	No	No

Number	Date	Time (military)	Investigation Location	Site Location	*E. coli (colony-forming units (CFU)/100mL)*)	Ammonia (PPM)	Surfactant (PPM)	Conductivity (mS/cm)	Temperature (degrees Celsius)	Observations	Sanitary Flow Evidence	Odor
1	8/5/2021	13:00	Outfall L3582	17251 Lathers	NA	NA	NA	NA	NA	Clear flow in storm from north. No flow from east inlet. No sample collected	No	No
2	8/5/2021	13:20	Outfall L3582	Lathers/Floral	NA	NA	NA	NA	NA	Road ditches in area are all dry. Manholes have manhole covers with Wayne County sewerage logo. No sample collected	No	No
3	8/5/2021	13:25	Outfall L3582	7424 Floral	39	NA	NA	NA	NA	Clear water in storm sewer, some debris. Sample collected in sump. Beehive north of manhole has clear standing water, and outlet from beehive is dry. Trickle flow from 12 inch inlet from west.	No	No
4	8/5/2021	13:30	Outfall L3582	Curtis/ South Floral Inlet #1 (West)	450	NA	NA	NA	NA	All road ditches on Floral between Curtis and Lathers are dry. Clear dry weather flow from west inlet, and east inlet. Both sampled. Two 12 inch concrete inlets, and a 4 inch white PVC inlet are dry	No	No
5	8/5/2021	13:35	Outfall L3582	Curtis/ South Floral Inlet #1 (East)	92	NA	NA	NA	NA	All road ditches on Floral between Curtis and Lathers are dry. Clear dry weather flow from west inlet, and east inlet. Both sampled. Two 12 inch concrete inlets, and a 4 inch white PVC inlet are dry	No	No
6	8/5/2021	15:10	Outfall L3582	Curtis/North Floral	75	NA	NA	NA	NA	Road ditches on Curtis and North Floral are dry. Clear flow from north inlet and east inlet(trickle). Concrete washout present at east inlet. Sample collected in manhole sump.	No	No
7	8/5/2021	15:30	Outfall L3582	Curtis/Lathers	250	NA	NA	NA	NA	Clear water in storm sewer. Mosquitoes present. Sample collected in manhole sump. Very slow flow from manhole. North inlet partially submerged. 4 inch PVC and catch basin inlet dry.	No	No

Appendix C
2021 Partners for Clean Water Regional IDEP Training Workshop
Alert Observer Training
Advanced Investigator Training
Attendees List
October 27, 2021

SEMCOG UNIVERSITY
ALERT OBSERVER TRAINING
ATTENDANCE LIST
OCTOBER 27, 2021

	Alliance of Rouge Community member	
Number	**Name**	**Community**
1	Emily Levine	Alliance of Rouge Communities
2	Ken Marten	Bingham Farms
3	Yevgeniy Malkin	Bingham Farms
4	Colleen Wayland	Bingham Farms
5	Scott Zielinski	Birmingham
6	Brad McNab	Birmingham
7	Anthony Evangelista	Canton Township
8	Brad Bird	Canton Township
9	Brent Sprague	Canton Township
10	Chris Hanner	Canton Township
11	Christian Manley	Canton Township
12	Clint Hallman	Canton Township
13	Curt Foster	Canton Township
14	Daniel Bayush	Canton Township
15	David Lanch Arnold	Canton Township
16	Greg Pyle	Canton Township
17	Jacob Saunders	Canton Township
18	James West	Canton Township
19	Jason Conner	Canton Township
20	Jay Heroon	Canton Township
21	Jeffery Albert Michael	Canton Township
22	John Selmi	Canton Township
23	Josh Smith	Canton Township
24	Josh Worth	Canton Township
25	Kevin Clark	Canton Township
26	Mike Britton	Canton Township
27	Rob Moyers	Canton Township
28	Roy Hamilton	Canton Township
29	Scott Kahanec	Canton Township
30	Jason Mills	Clinton Township
31	Mary Bednar	Clinton Township
32	Tom Klapp	Clinton Township
33	Eric Streu	Clinton Township
34	Jason D Mills	Clinton Township
35	Tim Braekevelt	Clinton Township
36	Mark Gaworecki	Dearborn
37	Robert Conrad	Dearborn Heights
38	Aaron Brunson	Detroit
39	Alizah Mooman	Detroit
40	Anna Timmis	Detroit
41	Barry Brown	Detroit
42	Bryant Barber	Detroit
43	Devyn McNaughton	Detroit
44	Hannah Slabaugh	Detroit

SEMCOG UNIVERSITY
ALERT OBSERVER TRAINING
ATTENDANCE LIST
OCTOBER 27, 2021

Number	Name	Community
45	Howard Sokoni	Detroit
46	Ian Tamm	Detroit
47	Lisa Wallick	Detroit
48	Mackenzy Shega-Fox	Detroit
49	Mohamed Boudali	Detroit
50	Mohammed Siddique	Detroit
51	Sarah Stoolmiller	Detroit
52	Syed Ali	Detroit
53	E. Anderson	Ecorse
54	Joshua Leach	Farmington
55	Tara Pieron	Farmington
56	Chris Guibord	Farmington
57	Chris Jacob	Farmington
58	Dave Popp	Farmington
59	Greg Young	Farmington
60	James Cubera	Farmington Hills
61	Kristina Crimmins	Farmington Hills
62	Mirandi Alexander	Farmington Hills
63	Natasha Sonck	Farmington Hills
64	Scott Campbell	Farmington Hills
65	Sean Devers	Farmington Hills
66	ShonQuase Dawkins	Farmington Hills
67	Tyler Sonoga	Farmington Hills
68	Unnamed attendee	Farmington Hills
69	Gerald Harrison	Gibraltar
70	Robert Tomasik	Gibraltar
71	William Cain	Gibraltar
72	Michael Landis	Gibraltar
73	Mike Grima	Grosse Ile Schools
74	Derek Thiel	Grosse Ile Township
75	Nicholas Rudd	Grosse Pointe Shores
76	Michael Way	Grosse Pointe Shores
77	Jerome Bivins	Inkster
78	Chad Burke	Kalamazoo City
79	Jessica Slagter-Enaohwo	Kalamazoo City
80	Anyah Preston	Kalamazoo County
81	Selena Rider	Kalamazoo County Road Commission
82	David Chung	Lathrup Village
83	Rami Sweidan	Lathrup Village
84	Mark Benson	Livingston County
85	Kim Hiller	Livingston County Road Commission
86	Trish Gabriel	Livonia
87	Danielle Devlin	Macomb County
88	Patrick Lewis	Monroe
89	Laura Hassold Prevot	New Baltimore

SEMCOG UNIVERSITY
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ATTENDANCE LIST
OCTOBER 27, 2021

Number	Name	Community
90	John Klimaszewski	New Baltimore
91	Joshua Hedge	New Baltimore
92	William Gouine	New Baltimore
93	Brad Lear	Northville Township
94	Brenden Villalobos	Northville Township
95	Brian Thomson	Northville Township
96	Corey Nicoloff	Northville Township
97	Mitchell Berendt	Northville Township
98	Tim Swailes	Northville Township
99	Kate Purpura	Novi
100	David Vicini	Oakland County
101	Jacy Garrison	Oakland County
102	Jim Schafer	Oakland County
103	Robert Malek	Oakland County
104	Stephanie Petriello	Oakland County
105	Laura Hassold Prevot	Oakland County Road Commission
106	Mike Lee	Orchard Lake
107	Cameron Bump	Plymouth Township
108	Daniel Hamann	Plymouth Township
109	David Nelson	Plymouth Township
110	Jim Thomas	Plymouth Township
111	Jimmy Scholten	Plymouth Township
112	Joe Overaitis	Plymouth Township
113	Randy Krueger	Plymouth Township
114	Spencer Kitchen	Plymouth Township
115	Steve Melow	Plymouth Township
116	Zachary Pumphrey	Plymouth Township
117	Jamie Harmon	Portage
118	Sherman Potter	Portage
119	Adam Bauman	Rochester Hills
120	Adam Kemmer	Rochester Hills
121	Andrew Burdett	Rochester Hills
122	Anthony Rocco	Rochester Hills
123	Brandon Grund	Rochester Hills
124	Brian Vermander	Rochester Hills
125	Carl Hager	Rochester Hills
126	Chris Shepard	Rochester Hills
127	Cody Devoe	Rochester Hills
128	George Rice	Rochester Hills
129	Henry Ceniceros	Rochester Hills
130	Ian Casey	Rochester Hills
131	Jared Bauman	Rochester Hills
132	Jason Berlingier	Rochester Hills
133	Jason Dickinson	Rochester Hills
134	Jason Rozell	Rochester Hills

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OCTOBER 27, 2021

Number	Name	Community
135	Jeff Fox	Rochester Hills
136	Jenny McGuckin	Rochester Hills
137	Jim Owens	Rochester Hills
138	Ken Deleeuw	Rochester Hills
139	Kyle Mayhew	Rochester Hills
140	Leon Luedeman	Rochester Hills
141	Mike Greenwood	Rochester Hills
142	Mike Phillips	Rochester Hills
143	Nick Costanzo	Rochester Hills
144	Niko Tzantzarov	Rochester Hills
145	Russ George	Rochester Hills
146	Rusty Kostsuca	Rochester Hills
147	Sean Hadley	Rochester Hills
148	Seth Bucholz	Rochester Hills
149	Shane Rudolphs	Rochester Hills
150	Shawn Vanbuskirk	Rochester Hills
151	Stacey Maresh	Rochester Hills
152	Steve Bott	Rochester Hills
153	Timothy Pollizzi	Rochester Hills
154	Todd Gehrke	Rochester Hills
155	Tony Edwards	Rochester Hills
156	Tracey Kelm	Rochester Hills
157	Tyler Goschnick	Rochester Hills
158	Vince Jesue	Rochester Hills
159	Wayne Rybak	Rochester Hills
160	Zach Weninger	Rochester Hills
161	Alec Staten	Romulus
162	Elizabeth Jenkins	Romulus
163	Kassim Mc Neil	Romulus
164	Paul Banks	Romulus
165	John Wright	Schoolcraft College
166	Brandy Siedlaczek	Southfield
167	Bryan Babcock	St. Clair Shores
168	Dave Conklin	St. Clair Shores
169	Jon Frazho	St. Clair Shores
170	Mike Allen	St. Clair Shores
171	Paul Kosiara	St. Clair Shores
172	Ron Demksi	St. Clair Shores
173	Sheldon Wood	St. Clair Shores
174	Trevor Smalley	St. Clair Shores
175	Zach Erne	St. Clair Shores
176	Jessica DiMilia	State of Michigan
177	Doug Varney	South Lyon
178	Brett Goecke	University of Michigan
179	Brian Welch	University of Michigan

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OCTOBER 27, 2021

Number	Name	Community
180	Brian Zybura	University of Michigan
181	Chris Onsted	University of Michigan
182	Dana Wilkinson	University of Michigan
183	Daniel Knight	University of Michigan
184	Dharmesh Joshi	University of Michigan
185	Hannah Smith	University of Michigan
186	Jared Evers	University of Michigan
187	Jason	University of Michigan
188	Jay Brummel	University of Michigan
189	Jeffrey Pipkin	University of Michigan
190	Jenny Scherer	University of Michigan
191	Jeremy Gonzales	University of Michigan
192	Joe Stark	University of Michigan
193	John Kosco	University of Michigan
194	Jonathan Hanak	University of Michigan
195	Josh Fryd	University of Michigan
196	Konnor Seyfried	University of Michigan
197	Kris Barnes	University of Michigan
198	Kyle DeKeyser	University of Michigan
199	Matt Kettmann	University of Michigan
200	Matthew Repka	University of Michigan
201	Michael Lollo	University of Michigan
202	Pamela Rutter	University of Michigan
203	Paul Clark	University of Michigan
204	Paul Doepfer	University of Michigan
205	Paul Dunlop	University of Michigan
206	Robert Woodruff	University of Michigan
207	Ryan Silva	University of Michigan
208	Stephen O'Rielly	University of Michigan
209	Steve Fisher	University of Michigan
210	Steven Stawkey	University of Michigan
211	Ty Patton	University of Michigan
212	Adam Kulinski	Unlisted Affiliation
213	Carrie Loya-Smalley	Unlisted Affiliation
214	Evan Falkner	Unlisted Affiliation
215	Karl Woodard	Unlisted Affiliation
216	Sermed Saif	Unlisted Affiliation
217	Zachary Harrison	Unlisted Affiliation
218	DPW	Utica
219	Eric Menzies	Walled Lake
220	Chelsea Pesta	Walled Lake
221	Autumn House	Washtenaw County
222	Scott Miller	Washtenaw County
223	Kristin Weisgerber	Washtenaw County
224	Gary Streight	Washtenaw County Road Commission

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Number	Name	Community
225	John Miller	Washtenaw County Road Commission
226	Mark McCulloch	Washtenaw County Road Commission
227	Michael Buiten	Wayne City
228	Jennifer DePaulis	Wayne County
229	Matthew Fiems	Wayne County
230	Sami Khaldi	Wayne County
231	Susan Thompson	Wayne County
232	Bryant Houfek	West Bloomfield Township
233	Gary Hernandez	West Bloomfield Township
234	Philip LaLone	West Bloomfield Township
235	Jon Allen	Wyandotte
236	Brian Martin	Wyandotte
237	Dave Rothermal	Wyandotte
238	Gregory Mayhew	Wyandotte
239	Joseph Mayhew	Wyandotte

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WORKSHOP
ATTENDANCE LIST
OCTOBER 27, 2021

ARC Member Community

Number	Name	Community/Organization
1	Emily Levine	Alliance of Rouge Communities
2	Scott Zielinski	Birmingham
3	Cory Borton	Bloomfield Township
4	Mark Hendricks	Bloomfield Township
5	Anthony Evangelista	Canton Township
6	Brad Bird	Canton Township
7	Brent Sprague	Canton Township
8	Chris Hanner	Canton Township
9	Christian Manley	Canton Township
10	Clint Hallman	Canton Township
11	Curt Foster	Canton Township
12	Daniel Bayush	Canton Township
13	David Lanch Arnold	Canton Township
14	Greg Pyle	Canton Township
15	Jacob Saunders	Canton Township
16	James West	Canton Township
17	Jason Conner	Canton Township
18	Jay Heroon	Canton Township
19	Jeffery Albert Michael	Canton Township
20	John Selmi	Canton Township
21	Josh Smith	Canton Township
22	Josh Worth	Canton Township
23	Kevin Clark	Canton Township
24	Mike Britton	Canton Township
25	Rob Moyers	Canton Township
26	Roy Hamilton	Canton Township
27	Scott Kahanec	Canton Township
28	Jason Mills	Clinton Township
29	Mary Bednar	Clinton Township
30	Mitchell Verellen	Clinton Township
31	Jason D Mills	Clinton Township
32	Steve Elliot	Clinton Township
33	Michael Scott	Clintondale School District
34	Al Loebach	Dearborn
35	Mark Gaworecki	Dearborn
36	Ryan Ferrell	Dearborn
37	Robert Conrad	Dearborn Heights
38	Aaron Brunson	Detroit
39	Alizah Mooman	Detroit
40	Anna Timmis	Detroit
41	Barry Brown	Detroit

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OCTOBER 27, 2021

ARC Member Community

Number	Name	Community/Organization
42	Bryant Barber	Detroit
43	Hannah Slabaugh	Detroit
44	Ian Tamm	Detroit
45	Mackenzy Shega-Fox	Detroit
46	Mohammad Siddique	Detroit
47	Sokoni Howard	Detroit
48	Syed Ali	Detroit
49	E. Anderson	Ecorse
50	Chris Guibord	Farmington
51	Chris Jacob	Farmington
52	Dave Popp	Farmington
53	Greg Young	Farmington
54	Josh Leach	Farmington
55	James Cubera	Farmington Hills
56	Kristina Crimmins	Farmington Hills
57	Mirandi Alexander	Farmington Hills
58	Natasha Sonck	Farmington Hills
59	Scott Campbell	Farmington Hills
60	Sean Devers	Farmington Hills
61	ShonQuase Dawkins	Farmington Hills
62	Tyler Sonoga	Farmington Hills
63	Gerald Harrison	Gibraltar
64	Landis Michael	Gibraltar
65	Michael Landis	Gibraltar
66	Robert Tomasik	Gibraltar
67	William Cain	Gibraltar
68	Mike Grima	Grosse Ile Schools
69	Derek Thiel	Grosse Ile Township
70	Michael Way	Grosse Pointe Shores
71	Nicholas Rudd	Grosse Pointe Shores
72	Daryl Davis Jr.	Inkster
73	Fidell Morris	Inkster
74	Jerome Bivens	Inkster
75	LaToria Joyce	Inkster
76	Chad Burke	Kalamazoo City
77	Jessica Slagter-Enaohwo	Kalamazoo City
78	Scott Managhan	Kalamazoo City
79	Tara Hendricks	Kalamazoo County Road Commission
80	David Chung	Lathrup Village
81	Rami Sweidan	Lathrup Village
82	Mark Benson	Livonia

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OCTOBER 27, 2021

ARC Member Community

Number	Name	Community/Organization
83	Trish Gabriel	Livonia
84	Danielle Devlin	Macomb County
85	Kraig Hohf	Marysville
86	Patrick Lewis	Monroe
87	John Klimaszewski	New Baltimore
88	Joshua Hedge	New Baltimore
89	William Gouine	New Baltimore
90	Anthony Manzo	Northville
91	Brad Lear	Northville Township
92	Brenden Villalobos	Northville Township
93	Brian Tack	Northville Township
94	Brian Thomson	Northville Township
95	Chris Putman	Northville Township
96	Corey Nicoloff	Northville Township
97	Mitchell Berendt	Northville Township
98	Steve Smeal	Northville Township
99	Tim Swailes	Northville Township
100	Brad Lear	Northville Township
101	Kate Purpura	Novi
102	Jennifer Wilson	Oak Park
103	Darlene Rowley	Oakland County
104	DJ Coffey	Oakland County
105	Jeremy Brown	Oakland County
106	Jim Schafer	Oakland County
107	Joshua Leach	Oakland County
108	Mark Adams	Oakland County
109	Matt Pardy	Oakland County
110	Mike Boyd	Oakland County
111	Randy Krueger	Oakland County
112	Rebecca Eggert	Oakland County
113	Sean Zera	Oakland County
114	Shayne Skolnik	Oakland County
115	Stephanie Petriello	Oakland County
116	Thomas Rymsza	Oakland County
117	Zachary Crane	Oakland County
118	Jacy Garrison	Oakland County
119	Joel Kohn	Oakland County
120	Ron Fadoir	Oakland County
121	Laura Hassold Prevot	Oakland County Road Commission
122	Mike Lee	Orchard Lake
123	Cameron Bump	Plymouth Township

SEMCOG UNIVERSITY
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OCTOBER 27, 2021

ARC Member Community

Number	Name	Community/Organization
124	Daniel Hamann	Plymouth Township
125	David Nelson	Plymouth Township
126	James Scholten	Plymouth Township
127	Jim Thomas	Plymouth Township
128	Joseph Overaitis	Plymouth Township
129	Randy Krueger	Plymouth Township
130	Spencer Kitchen	Plymouth Township
131	Steve Melow	Plymouth Township
132	Zachary Pumphrey	Plymouth Township
133	Jamie Harmon	Portage
134	Sherman Potter	Portage
135	Jason Dickinson	Rochester
136	Jeff Fox	Rochester Hills
137	Chris Shepard	Rochester Hills
138	Seth Bucholz	Rochester Hills
139	Shane Rudolph	Rochester Hills
140	Timothy Pollizzi	Rochester Hills
141	Alec Staten	Romulus
142	Elizabeth Jenkins	Romulus
143	Kassim Mc Neil	Romulus
144	Paul Banks	Romulus
145	Ryan Stamper	Romulus
146	Kelly Karll	SEMCOG
147	Doug Varney	South Lyon
148	Anthony Shourds	University of Michigan
149	Dana Wilkinson	University of Michigan
150	Jody Lynn Mathias	University of Michigan
151	John Kosco	University of Michigan
152	Kathleen McDonald	University of Michigan
153	Stephen O'Rielly	University of Michigan
154	Carrie Loya-Smalley	Unlisted Affiliation
155	Evan Falkner	Unlisted Affiliation
156	Zachary Harrison	Unlisted Affiliation
157	Adam Kulinski	Village of Milford
158	Chelsea Pesta	Walled Lake
159	Eric Menzies	Walled Lake
160	Gary Streight	Washtenaw County Road Commission
161	John Miller	Washtenaw County Road Commission
162	Mark McCulloch	Washtenaw County Road Commission
163	Michael Buiten	Wayne City
164	Derick Coley	Wayne County

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OCTOBER 27, 2021

ARC Member Community

Number	Name	Community/Organization
165	Jennifer DePaulis	Wayne County
166	Bryant Houfek	West Bloomfield Township
167	Gary Hernandez	West Bloomfield Township
168	Jennifer DePailis	West Bloomfield Township
169	Philip LaLone	West Bloomfield Township
170	Michael Belcher	Woodhaven-Brownstown School District
171	Jon Allen	Wyandotte
172	Gregory Mayhew	Wyandotte
173	Jesus Plasencia	Wyandotte

Appendix B3

2020 Oakland County IDEP Investigation Report

Annette DeMaria, P.E., PMP
Executive Director

Auburn Hills
Beverly Hills
Bingham Farms
Birmingham
Bloomfield Hills
Bloomfield Twp.
Canton Twp.
Commerce Twp.
Dearborn Heights
Farmington
Farmington Hills
Franklin
Garden City
Henry Ford College
Inkster
Lathrup Village
Livonia
Melvindale
Northville
Northville Twp.
Novi
Oak Park
Oakland County
Orchard Lake
Plymouth
Plymouth Twp.
Redford Twp.
Rochester Hills
Romulus
Schoolcraft College
Southfield
Troy
University of Michigan-Dearborn
Van Buren Twp.
Walled Lake
Washtenaw County
Wayne
Wayne County
Wayne County Airport Authority
West Bloomfield Twp.
Westland
Wixom

Cooperating Partners:
Cranbrook Institute of Science
Friends of the Rouge
Great Lakes Water Authority
Rouge River Advisory Council
SEMCOG
Southeastern Oakland County Water Authority

TO: **Karen Mondora, ARC Technical Committee Chair**

FROM: **Annette DeMaria, Executive Director**

DATE: **January 29, 2021**

SUBJECT: **2020 IDEP Investigation Summary**

In 2020, ARC staff investigated eight suspicious outfall discharges primarily in the Oakland County portion of the Rouge River Watershed. These outfalls were designated in the Category A and B priority levels for illicit discharge investigations. Of the eight outfalls, two illicit connections were discovered and corrected, three outfalls were determined to be likely impacted by animal feces, and three outfalls will require additional source investigations in 2021.

In 2020, ARC staff worked in five communities to conduct illicit discharge investigations in accordance with the Rouge River Collaborative Illicit Discharge Elimination Plan. These investigations were prompted by the outfall screening efforts conducted in 2018 and 2019, and were conducted in Beverly Hills, Farmington Hills, Northville, and Novi.

The results of the investigations are summarized in Table 1. More detail can be found in the investigation reports which were sent to the communities (Attachment A).

Table 1. Status and Results of Illicit Discharge Investigations

Permittee	Outfall ID	Status	Result
Beverly Hills	BV66	Completed	Residential illicit connection identified and corrected
Beverly Hills	BV51	Ongoing	Further investigation required
Farmington Hills	FH01	Completed	Animal sources suspected
Northville	NV03	Completed	Residential illicit connection identified and corrected
Northville	NV23	Completed	Animal source suspected
Northville	NV22	Ongoing	Further investigation required
Northville	NV57	Ongoing	Further investigation required
Novi	NO23	Completed	Animal sources identified

Both Beverly Hills and Northville have indicated that the illicit connections identified within their jurisdictions (BV66 and NV03) have been corrected. These corrections were both completed by the end of November, 2020.

In addition, ARC staff partnered with Wayne County to conduct investigations in Inkster because of elevated instream E. coli levels results found in the Lower Rouge in 2020. This involved gathering and graphing existing water quality data to determine the areas of impact, meetings with the City and County and initial IDEP investigations on the Perrin

Drain. These investigations revealed high E. coli that may be the result of an illicit connection.

In 2021, the ARC will continue source investigations on the outstanding issues in accordance with the Plan and as directed by the Technical Committee. This includes resampling outfalls BV66 and NV03 to confirm no other illicit discharges are present in the tributary drains.

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Attachment A
Community-specific Investigation Reports

Annette DeMaria, P.E., PMP
Executive Director

Auburn Hills
Beverly Hills
Bingham Farms
Birmingham
Bloomfield Hills
Bloomfield Twp.
Canton Twp.
Commerce Twp.
Dearborn Heights
Farmington
Farmington Hills
Franklin
Garden City
Henry Ford College
Inkster
Lathrup Village
Livonia
Melvindale
Northville
Northville Twp.
Novi
Oak Park
Oakland County
Orchard Lake
Plymouth
Plymouth Twp.
Redford Twp.
Rochester Hills
Romulus
Schoolcraft College
Southfield
Troy
University of Michigan-Dearborn
Van Buren Twp.
Walled Lake
Washtenaw County
Wayne
Wayne County
Wayne County Airport Authority
West Bloomfield Twp.
Westland
Wixom

Cooperating Partners:
Cranbrook Institute of Science
Friends of the Rouge
Great Lakes Water Authority
Rouge River Advisory Council
SEMCOG
Southeastern Oakland County Water Authority

Alliance of Rouge Communities
OURS TO PROTECT
Working together, restoring the river

TO: **Tom Meszler, Village of Beverly Hills Director of Public Services**

FROM: **Annette DeMaria, Executive Director**

DATE: **December 22, 2020**

SUBJECT: **IDEP Investigation Results: Outfall BV51 (Sleepy Hollow Lane)**

ARC staff continued illicit discharge investigation on storm sewer outfall BV51 in response to findings from the 2018 outfall screening and 2019 investigations. The September 2020 results indicate that sewage is likely impacting the drain. However, we were unable to narrow down where sewage is entering the drain. Therefore, further investigations are recommended in 2021.

Background

Outfall BV51 was investigated due to the high *E. coli* concentrations found during the outfall survey conducted in 2018. At that time, the *E. coli* concentration was 3,076 MPN/100 ml which can be indicative of an illicit discharge containing sanitary sewage. ARC staff reinspected the outfall in 2019 and found *E. coli* concentrations at 201 and >24,196 MPN/100 ml respectively.

The outfall drains a portion of Sleepy Hollow Lane, Fiddlers Cove Road, and Metamora Lane. The receiving water is an unnamed tributary of the Rouge River (Figure 1). The drain crosses the sanitary sewer at 31403 Sleepy Hollow Lane (Figure 2).

Results

ARC staff reinspected the outfall on August 19, September 15, and November 17, 2020. As was the case in 2019, the results varied greatly in 2020, with *E. coli* concentrations of 573, >24,196, and 1,081 MPN/100 ml respectively (See Table 1). The results from the September and November sampling events showed Human Bacteroides concentrations of 72,000 and <354 gene copies/100 ml respectively. There were no physical signs (ex: odor, staining, debris, organic growth) of a sewage discharge to the storm drain in the outfall or any of the manholes. Likewise, there were no obvious signs of animal fecal impacts to the drain.

Samples were analyzed by Paragon Laboratories for *E. coli* concentration. Additionally, samples were analyzed by Michigan State University's Department of Fisheries & Wildlife for a microbial source tracking (MST) marker to determine whether contamination was human in origin. The marker being used is *Bacteroides thetaiotaomicron* (*B. theta*) which identifies if the bacteria are from the human intestinal track.

Table 1. Sampling Results (*E. coli* in MPN/100 mL and Human *Bacteroides* in gene copies/100 ml)

	E. coli	***E. coli***	***E. coli***	***E. coli***	***E. coli***	**Human *Bacteroides***	***E. coli***	**Human *Bacteroides***
	7/9/18	**8/15/19**	**9/19/19**	**8/19/20**	**9/15/20**	**9/15/20**	**11/17/20**	**11/17/20**
BV51-0	3,076	201	>24,196	573	>24,196	72,000	1,081	<354

Conclusions and Recommendations

The high *E. coli* and *Bacteroides* results from September 2020 indicate that sewage is likely impacting the drain. However, the sewage source appears to be inconsistent, so we were not able to narrow it down within the drain. The recommended next steps are for the drain to be televised to determine the potential source of sewage. ARC staff will follow up with the Village to request this work be completed by the Village in 2021.

This work is being completed as outlined in the Rouge River Collaborative IDEP Plan in compliance with the Village's MS4 permit and as a result of your ARC membership. If you have any questions, I can be reached at 248-765-4085 or ademaria@ectinc.com.

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Figure 1. Storm Drain Location



Figure 2. Sanitary Sewer Location



Annette DeMaria, P.E., PMP
Executive Director

Auburn Hills
Beverly Hills
Bingham Farms
Birmingham
Bloomfield Hills
Bloomfield Twp.
Canton Twp.
Commerce Twp.
Dearborn Heights
Farmington
Farmington Hills
Franklin
Garden City
Henry Ford College
Inkster
Lathrup Village
Livonia
Melvindale
Northville
Northville Twp.
Novi
Oak Park
Oakland County
Orchard Lake
Plymouth
Plymouth Twp.
Redford Twp.
Rochester Hills
Romulus
Schoolcraft College
Southfield
Troy
University of Michigan-Dearborn
Van Buren Twp.
Walled Lake
Washtenaw County
Wayne
Wayne County
Wayne County Airport Authority
West Bloomfield Twp.
Westland
Wixom

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Friends of the Rouge
Great Lakes Water Authority
Rouge River Advisory Council
SEMCOG
Southeastern Oakland County Water Authority

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Working together, restoring the river

TO: **Tom Meszler, Village of Beverly Hills Director of Public Services**

FROM: **Annette DeMaria, Executive Director**

DATE: **August 20, 2020**

SUBJECT: **IDEP Investigation Results: Outfall BV66 (Village Pines Drive)**

ARC staff continued illicit discharge investigation on storm sewer outfall BV66 in response to findings from the 2018 outfall screening and 2019 investigations. We have determined that there is an illicit connection from the residence at 22045 Village Pines Drive that needs to be corrected.

Background

Outfall BV66 was investigated due to the high *E. coli* concentrations found during the outfall survey conducted in 2018. At that time, the *E. coli* concentration was 12,033 MPN/100 ml which can be indicative of an illicit discharge containing sanitary sewage.

ARC staff inspected the outfall and the tributary storm sewer several times in 2019 and 2020. *E. coli*, surfactants and Human *Bacteroides* were sampled along the storm line. The *E. coli* samples were analyzed by Paragon Laboratories, the *Bacteroides* sample was analyzed by Michigan State University's Department of Fisheries & Wildlife, and surfactants were analyzed using a Chemetrics field kit (K-9400).

The outfall and tributary storm sewer primarily receive runoff from Village Pines Drive, west of Lahser Road and south of 14 Mile Road. It also picks up drainage from E. Valley Woods Drive. The receiving water is an unnamed tributary of the Main Branch of the Rouge River. The storm sewer generally runs along the south side of Village Pines Drive, while the sanitary sewer generally runs along the north side (See Figures 1 and 2). The sanitary sewer crosses above the storm sewer at more than one location.

Results

As in 2019, there were no physical signs (ex: odor, staining, debris, organic growth) of a sewage discharge to the storm drain in any of the manholes/catch basins. However, high levels of *E. coli* continued and very high levels of Human *Bacteroides* were found in the outlet (See Table 1). This prompted a CCTV inspection of the sanitary sewer and storm drains to locate the source of the illicit discharge.

The CCTV inspection was conducted by Oakland County Water Resources Commissioners Office in August 2020. The extent of the inspection was as follows (See Figures 1 and 2):

- On the sanitary sewer from MH 23471 downstream to MH 23467
- On the storm drain from BV66-0 upstream to 106' east of BV66-5
- On the storm drain from BV66-4 upstream to BV66-4A

A suspicious connection to the storm was located at 73.5' west of BV66-5 from the south (See Figures 3A and 3B). The residence of 22045 Village Pines Dr. was subsequently dye tested and the CCTV camera recorded the results (See Figure 3C). While the CCTV operator monitored the storm drain, ARC staff monitored the sanitary sewer. The testing revealed that all bathrooms were draining to the storm drain. Dye testing was completed at the sinks of each bathroom (basement, master, hallway, and garage entrance). No dye showed up in the sanitary sewer.

In addition, we suspect that the footing drain for 22045 Village Pines Dr. is connected to the sanitary sewer and not the storm drain. This is based on the following:

- There was no calcium build-up in the (illicit) connection to the storm drain, while the footing drains for the other homes in the neighborhood showed substantial calcium build-up.
- There is a connection to the sanitary at 63.6' west of MH 23464, which is where the sanitary map shows the sanitary tap from 22045. The flow out of this tap was continuous and clear and there was minor calcium build-up present (Figures 4A – 4C).

After a desktop review of the CCTV footage, no other illicit connections are suspected to be tributary to outfall BV66-0, at this time. In addition, there were no obvious signs of exfiltration from the sanitary sewer which could have impacted the water quality in the storm drain, since the sanitary is at a higher elevation than the storm drain.

Conclusions and Recommendations

We have determined that there is an illicit connection to the storm drain from the residence at 22045 Village Pines Dr. The connection is a violation of Chapter 30 (Surface Water Drainage), Section 30.06 of the City's Code of Ordinances, and needs to be eliminated. In accordance with the City's Municipal Separate Storm Sewer System (MS4) permit, the City is required to request the property owner to eliminate the discharge, so it no longer impacts waters of the State. The property owner has 120 days to eliminate the discharge as outlined in Section 30.12 of Chapter 30.

Once the correction is made, we suggest that the Village jet and vacuum the storm sewer to remove residual sanitary waste. Then notify the ARC and we will resample the outfall to confirm no other issues are present.

Although not the subject of this investigation, we also suspect that the footing drain from the same home is improperly connected to the sanitary sewer, but this should be confirmed with a dye test. If confirmed, this connection may be a violation of the State's Plumbing Code and should be addressed accordingly.

This work is being completed as outlined in the Rouge River Collaborative IDEP Plan in compliance with the Village's MS4 permit and as a result of your ARC membership. If you have any questions, I can be reached at 248-765-4085 or ademaria@ectinc.com.

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Table 1. Sampling Results (*E. coli* in MPN/100 ml; Surfactants in mg/l; Bacteroides in gene copies/100 ml)

Structure	Location	*E. coli*		*E. coli*	Surfactants	*E. coli*	Human *Bacteroides*	*E. coli*	Human *Bacteroides*	*E. coli*	*E. coli*
		6/26/2018	8/6/2019	12/12/2019		12/19/2019		7/2/2020		8/5/2020	8/6/2020
BV66-0	Outlet to unnamed tributary	12,033	>24,196	292	0.75	9,804	527,000	2,755	1,120,000		
BV66-1	Manhole in the lawn south of the house							17,239			
BV66-2	Manhole on south side of street		>24,196					15,531			
BV66-3	Buried manhole in the lawn on south side of street			4,106	0.75	8,164	<354				
BV66-4	Manhole on south side of street		>24,196					4,611			
BV66-4A	Beehive catch basin on north side of street under pine trees			10	0.25	<10	<354	10	<10		
BV66-4-18"	18" inlet to BV66-4 (coming from BV66-4A)									1,830*	
BV66-4-24"	24" inlet to BV66-5 (coming from BV66-5)									36,540	
BV66-5	Manhole in the island		10	20				185			
BV66-5 SE	SE inlet to BV66-5								<10		
BV66-5 CB-EE	Road inlet on east side of cul-de-sac										20
BV66-5 CB-N	Road inlet on north side of Village Pines Dr.										359
BV66-5 E	East inlet to BV66-5										63

*rust colored sample contaminated by material stirred up by the CCTV camera

Figure 1. Storm Sewer Location

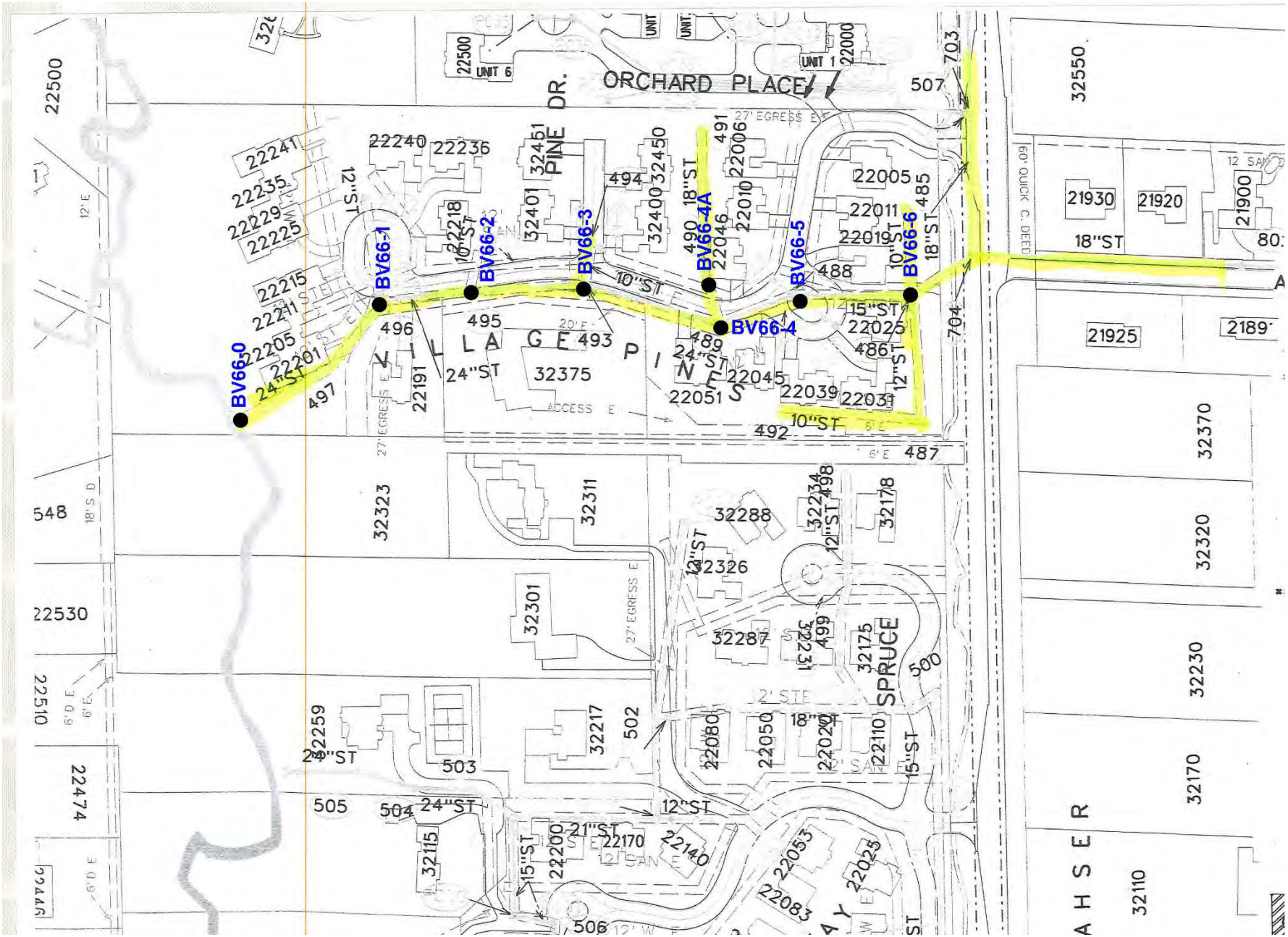


Figure 2. Sanitary Sewer Location

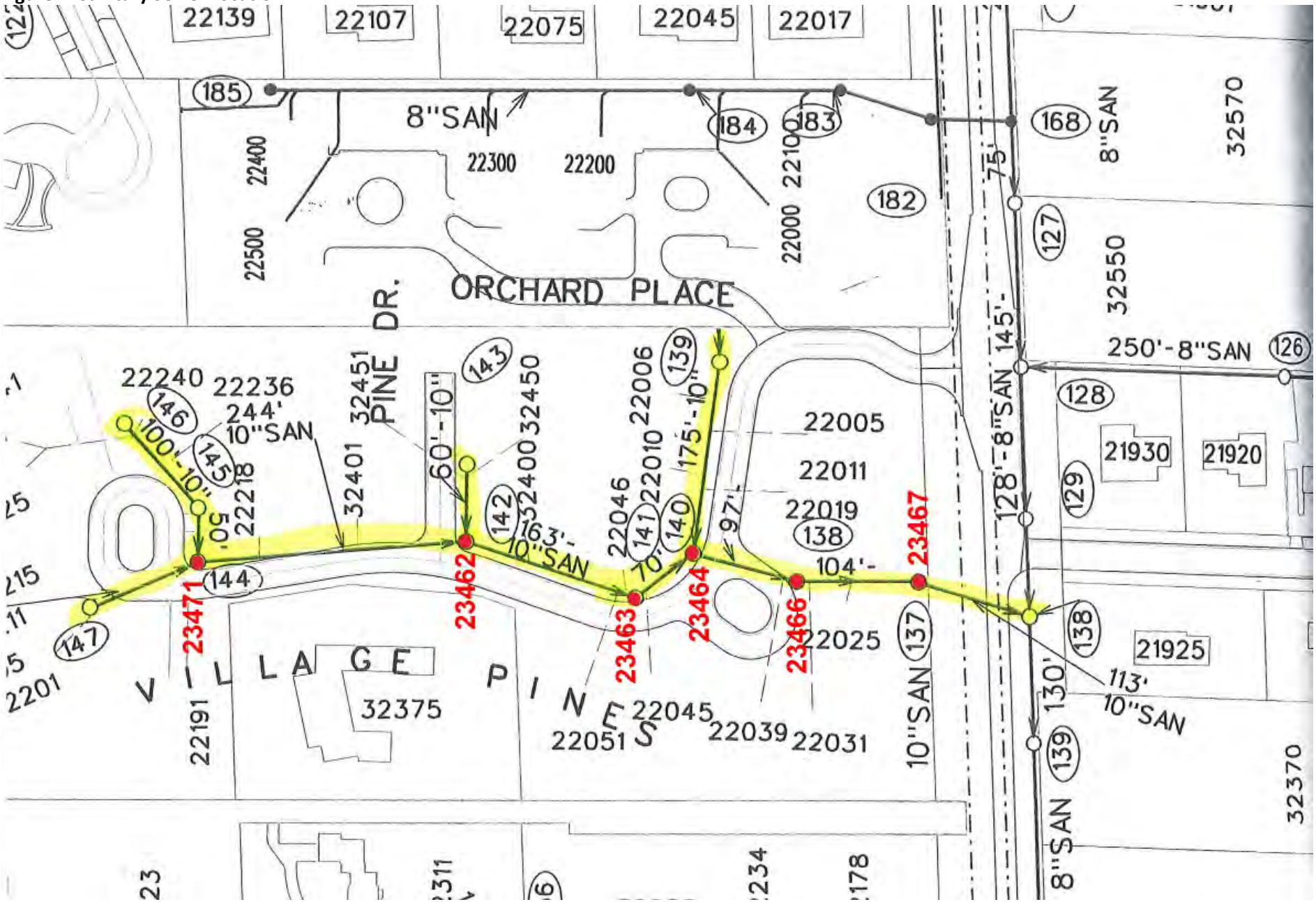


Figure 3A. Illicit connection to storm drain at 11:00 at 73.5’ west of BV66-5 (or 33.5’ east of BV66-4) – note sanitary debris in the drain

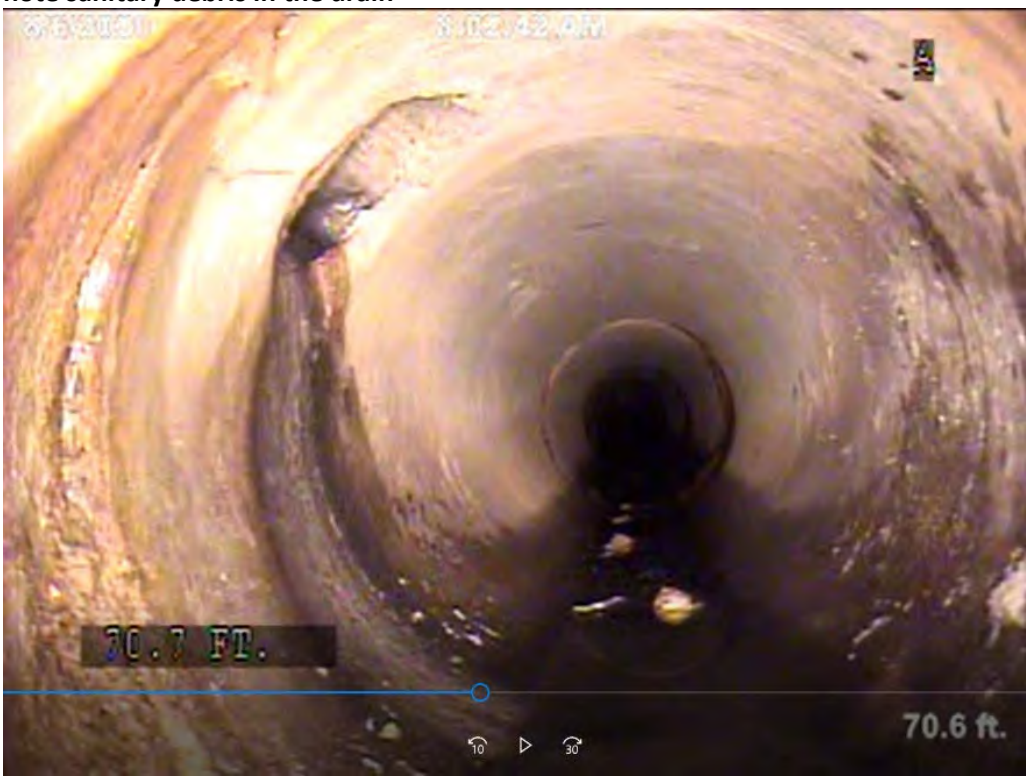


Figure 3B. Close up of illicit connection – note gray staining at the outlet



Figure 3C: Dye testing results from basement bathroom



Figure 4A: Possible footing drain tap at 9:00 at 63.6' west of MH 23464 (or 6.5' east of MH 23463) – note minor calcium build-up under the tap



Figure 4B: Close up of possible footing drain connection



Figure 4C: Close up of possible footing drain connection – note calcium build-up in tap



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Executive Director

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TO: **Karen Mondora, City of Farmington Hills Director of Public Services**

FROM: **Annette DeMaria, Executive Director**

DATE: **November 30, 2020**

SUBJECT: **IDEP Investigation Results: Outfall FH01 (Tulane Avenue)**

ARC staff have conducted an illicit discharge investigation on storm sewer outfall FH01[1] in response to findings from the ARC's 2018 outfall screening and follow-up sampling conducted in 2019. We suspect that animal feces are likely responsible for the high *E. coli* readings. No further action is necessary at this time.

Background

Outfall FH01 was originally investigated due to very high *E. coli* concentration (>24,196 MPN/100 mL) found during an outfall screening conducted April 27, 2018. There was no observed color, odor, turbidity, or other unusual characteristics noted during the initial screening.

ARC staff reinspected the outfall on December 13 and 19, 2019 and found similar conditions as seen in the original inspection. Water samples were taken from the outfall, along with water samples from four upstream manholes in an effort to narrow down possible sources of *E. coli* contamination.

The outfall drains a portion of Tulane Avenue north of Nine Mile Road and receives runoff from the residential properties along portions of Astor Street, Colgate Street, and Albion Avenue. The receiving water is an unnamed tributary of the Main Branch of the Rouge River (See Figure 1).

Results

ARC staff reinspected the outfall on July 2, and August 18, 2020 and found similar *E. coli* conditions as seen in the original inspection. Water samples were taken from the outfall and from one upstream manhole in an effort to narrow down possible sources of *E. coli* contamination. Additional samples were not collected from more locations due to a lack of flow in upstream manholes.

Samples were analyzed by Paragon Laboratories for *E. coli* concentration. Additionally, samples were analyzed by Michigan State University's Department of Fisheries & Wildlife for a microbial source tracking (MST) marker to determine whether contamination was human in origin. Human Bacteroides is a microbial source tracking method used for identifying if bacteria are from the human intestinal track.

[1] Also identified as fhc.01.

The outfall and upstream manhole had high *E. coli* levels, but the Human Bacteroides analysis did not show a sewage signature for three of the four water samples and the sewage signature on the fourth sample was only moderately high (See Table 1). There were no physical signs (ex: odor, staining, debris, organic growth) of a sewage discharge to the storm drain in the outfall or any of the manholes. Likewise, there were no obvious signs of animal fecal impacts to the drain.

Table 1. Sampling Results

Structure	Location	*E. coli* result (MPN/100 ml)	*E. coli* result (MPN/100 ml)	*E. coli* result (MPN/100 ml)	Human *Bacteroides* (gene copies/ 100 ml)	*E. coli* result (MPN/100 ml)	Human *Bacteroides* (gene copies/ 100 ml)	*E. coli* result (MPN/100 ml)	Human *Bacteroides* (gene copies/ 100 ml)
		4/27/2018	**12/13/2019**	**12/19/2019**	**12/19/2019**	**7/2/2020**	**7/2/2020**	**8/18/2020**	**8/18/2020**
FH01-0	Outfall to unnamed tributary	> 24,192	1,246	9,208	< 354	>24,196	3,630	8,664	<354
FH01-1W	West inlet to first upstream manhole at Tulane & Astor		1,314			>24,196	< 354		
FH01-2N	Trough of manhole north of FH01-1W at Tulane & Astor		<10						
FH01-2W	North inlet to second upstream manhole at Albion & Astor		<10						
FH01-3W	Trough of third upstream manhole at Colgate & Astor		197						

Conclusions and Recommendations

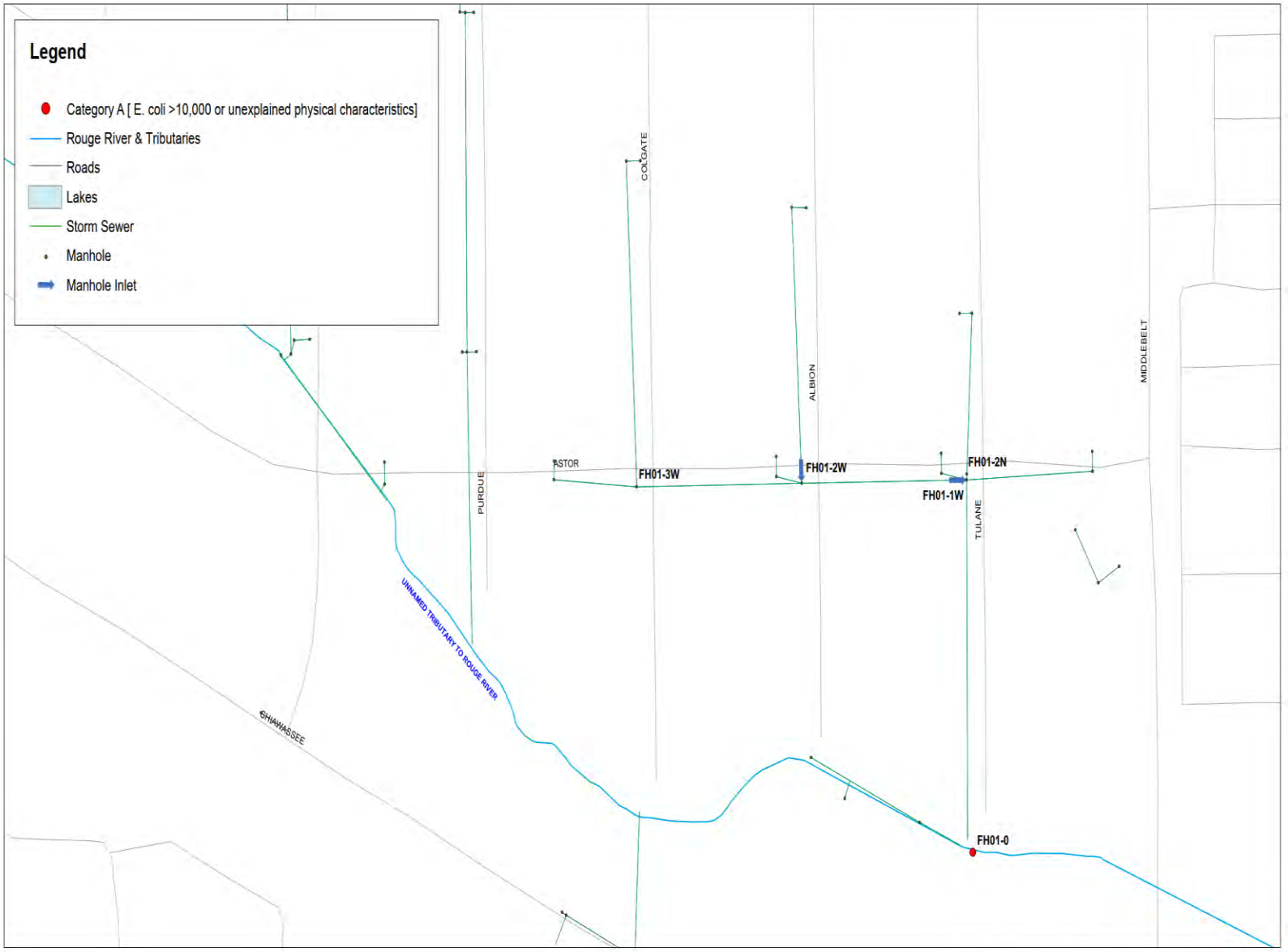
Based on the data collected to date, we suspect that the source of the high *E. coli* is from animal feces, rather than from sewage. This determination is made because the high *E. coli* levels coincide with low Human Bacteroides levels which indicates that the *E. coli* is not from a human source. Given that there were no obvious signs of animal sources to the drain, no further action is recommended at this time.

This work is being completed as outlined in the Rouge River Collaborative IDEP Plan in compliance with the City's MS4 permit and as a result of your ARC membership. If you have any questions, I can be reached at 313-963-6600 or ademaria@ectinc.com.

cc: John Beisel, City of Farmington Hills

Attachment: Figure 1. Storm Sewer and Sampling Location

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0 62.5 125 250 375 500 Feet

Figure 1. Storm Sewer Location

ECT Environmental Consulting & Technology, Inc.

2/13/2019

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Executive Director

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TO: **Loyd Cureton, Director, Northville Department of Public Works**

FROM: **Annette DeMaria, Executive Director**

DATE: **September 1, 2020**

SUBJECT: **IDEP Investigation Results: Outfall NV03 (Glenhill Drive)**

In 2020, ARC staff continued illicit discharge investigation on storm sewer outfall NV03 in response to findings from the 2018 outfall screening and 2019 investigations. We have determined that there is an illicit connection from the residence at 1009 Glenhill Drive that needs to be corrected.

Background

Storm sewers connected to outfall NV03 were investigated due to the high *E. coli* concentrations found during the outfall survey conducted in 2018. Because the outfall was partially submerged, water samples from two upstream manholes were taken for *E. coli* analysis. One of these manholes (NV03-2S) had an *E. coli* concentration of >24,196 MPN/100 mL.

Manhole NV03-2S is located in Shannon Court and receives runoff from residential properties along portions of Glenhill Drive, Whitegate Drive, Andover Drive, Portsmere Court, and Abbey Court (See Figure 1). The receiving water is an unnamed tributary of the Middle Branch of the Rouge River.

ARC staff revisited the area several times in 2019 and 2020 to take water samples from various manholes across the drainage area in order to narrow down possible sources of *E. coli* contamination. *E. coli* and Human *Bacteroides* were sampled along the storm line. The *E. coli* samples were analyzed by Paragon Laboratories, and the *Bacteroides* sample was analyzed by Michigan State University's Department of Fisheries & Wildlife.

Results

High levels of *E. coli* and very high levels of Human *Bacteroides* were found in manhole NV03-6W, however other manholes did not have high levels of *E. coli* (See Table 1). In addition, a sewage odor and sanitary debris were observed in the catch basins along Glenhill Drive that are connected to NV03-6W.

This prompted a CCTV inspection of the storm drain connected to NV03-6W to locate the source of the illicit discharge. The CCTV inspection was conducted by the City of Northville in August 2020. The extent of the inspection included the storm drain on the west side of Glenhill Drive, extending west approximately 180' from NV03-6W-1, and south 300' to the next manhole. The south pipe was not shown on the City's maps but extends past 1003 Glenhill west of the sanitary sewer (See Figure 1).

The residences of 1003, 1009, 1015, and 1021 Glenhill Drive were subsequently dye tested. City staff monitored the storm drain and the sanitary sewer while ARC staff dye tested all bathrooms in each house. The testing revealed that all bathrooms at 1009 Glenhill Drive were draining to the storm drain. Dye testing was completed at the sinks of each bathroom (first floor, upstairs, and master). No dye showed up in the sanitary sewer. The connection to the storm was located 150' south of NV03-6W-1 (See Figures 2A and 2B).

The dye testing of the other houses indicated that they were properly connected to the sanitary sewer.

Conclusions and Recommendations

We have determined that there is an illicit connection to the storm drain from the residence at 1009 Glenhill Dr. The connection is a violation of Chapter 86 (Utilities), Division 2 (Illicit Discharge Elimination Program) of the City's Code of Ordinances, and needs to be eliminated. In accordance with the City's Municipal Separate Storm Sewer System (MS4) permit, the City is required to request the property owner to eliminate the discharge, so it no longer impacts Waters of the State. The property owner Is required to achieve compliance within the time period set forth within the notice given by the City, as outlined in Section 86-119.

Once the correction is made, we suggest that the City jet and vacuum the storm sewer to remove residual sanitary waste. Then notify the ARC and we will resample the storm drain to confirm no other issues are present.

This work is being completed as outlined in the Rouge River Collaborative IDEP Plan in compliance with the City's MS4 permit and as a result of your ARC membership. If you have any questions, I can be reached at 248-765-4085 or ademaria@ectinc.com.

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Table 1. Sampling Results (*E. coli* in MPN/100 ml; Surfactants in mg/l; Bacteroides in gene copies/100 ml)

Structure	Location	*E. coli*	*E. coli* (MPN/100 ml)	Human *Bacteroides* marker (gene copies/100 ml)	*E. coli* result	Human *Bacteroides* marker (gene copies/100 ml)	*E. coli* (MPN/100ml)	Human *Bacteroides* marker (gene copies/100 ml)
		6/8/2018	12/13/2019		12/19/2019		7/2/2020	7/2/2020
NV03-2S	Manhole in Shannon Ct.	>24,192						
NV03-2S-W	South inlet to manhole on Shannon Ct		<10	<354	<10		31	ND
NV03-2S-S	West inlet to manhole on Shannon Ct		573	928	2,489	1,510		
NV03-6W	West inlet to manhole on Glenhill Dr		1,658		3,076	543	17,329	347,000
NV03-6S	South inlet to manhole on Glenhill Dr		<10				20	
NV03-11	Trough of the manhole at Glenhill Dr and Whitegate		30				63	

Figure 1. Storm Sewer Location Map

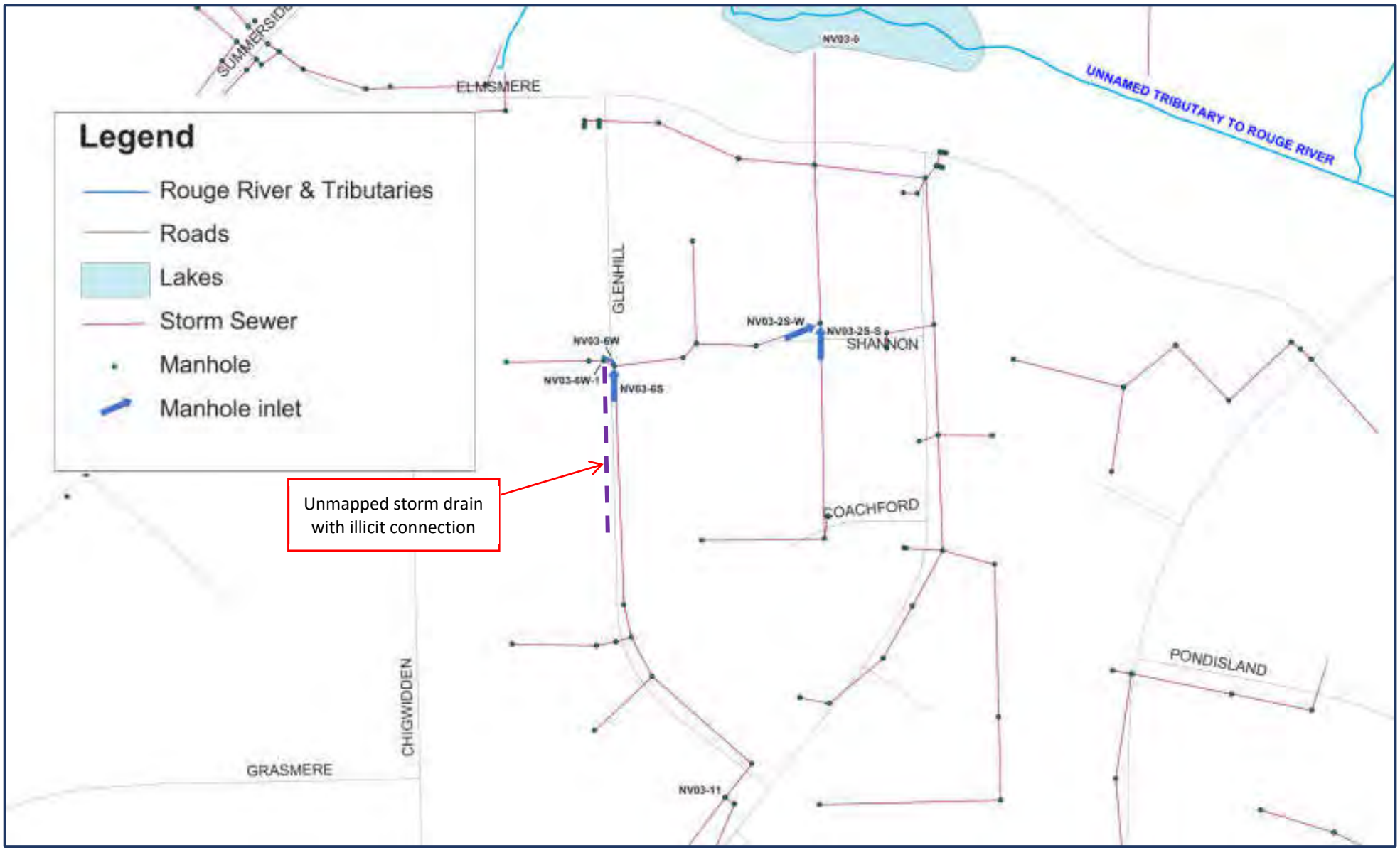


Figure 2A. Illicit connection to storm drain at 150’ south of manhole NV03-6W-1 located on the west side of Glenhill Drive. Green dye exiting the sewer lead to the storm drain from testing of the first floor bathroom of 1009 Glenhill Dr.



Figure 2B. Red dye exiting the sewer lead to the storm drain from testing of the upstairs bathroom of 1009 Glenhill Dr.



Annette DeMaria, P.E., PMP
Executive Director

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TO: **Loyd Cureton, City of Northville**

FROM: **Annette DeMaria, Executive Director**

DATE: **January 4, 2021**

SUBJECT: **IDEP Investigation Results: Outfall NV22**

ARC staff have conducted an illicit discharge investigation on storm sewer outfall NV22 in response to findings from the ARC's 2018 outfall screening and follow-up sampling conducted in 2019. We have determined that additional investigations are needed in order to determine if an illicit discharge is impacting the storm drain.

Background

Outfall NV22 was investigated due to high *E. coli* concentration (2,755 MPN/100 mL) found during an outfall screening conducted June 7, 2018. There was no observed color, odor, turbidity, or other unusual characteristics noted during the initial screening.

ARC staff reinspected the outfall on August 15, 2019 and found higher *E. coli* concentrations (>24,196 MPN/100 mL) and similar conditions as seen in the original inspection, with low flow noted.

The outfall drains a portion of Allen Drive, Novi Street, and other adjoining streets north of Eight Mile Road. Based on the available GIS information, it is unclear which storm drains at the intersection of Hill and Novi Streets discharge to NV22. The receiving water is the Walled Lake Branch of the Middle Rouge River (See Figure 1).

Results

ARC staff reinspected the outfall on July 1, and August 18, 2020 and found lower *E. coli* levels compared to the original inspection. Water samples were taken from the outfall and from two pipes in an upstream manhole in an effort to narrow down possible sources of *E. coli* contamination. These samples were also tested for Human Bacteroides, which were found at low levels as well.

Samples were analyzed by Paragon Laboratories for *E. coli* concentration. Additionally, samples were analyzed by Michigan State University's Department of Fisheries & Wildlife for a microbial source tracking (MST) marker to determine whether contamination was human in origin. Human Bacteroides is a microbial source tracking method that uses the B. theta biomarker to determine if bacteria are from the human intestinal track.

Table 1. Sampling Results

Structure	*E. coli* (MPN/ *100mL)*	*E. coli* (MPN/ *100mL)*	*E. coli* (MPN/ *100mL)*	Human *Bacteroides* (gene copies/100 ml)	*E. coli* (MPN/ *100mL)*	Human *Bacteroides* (gene copies/100 ml)
	6/7/2018	**8/15/2019**	**7/1/2020**	**7/1/2020**	**8/18/2020**	**8/18/2020**
NV22-0	2,755	>24,196	108	582	<10	<354
NV22-2W-N			404	747		
NV22-2W-W			201			

Conclusions and Recommendations

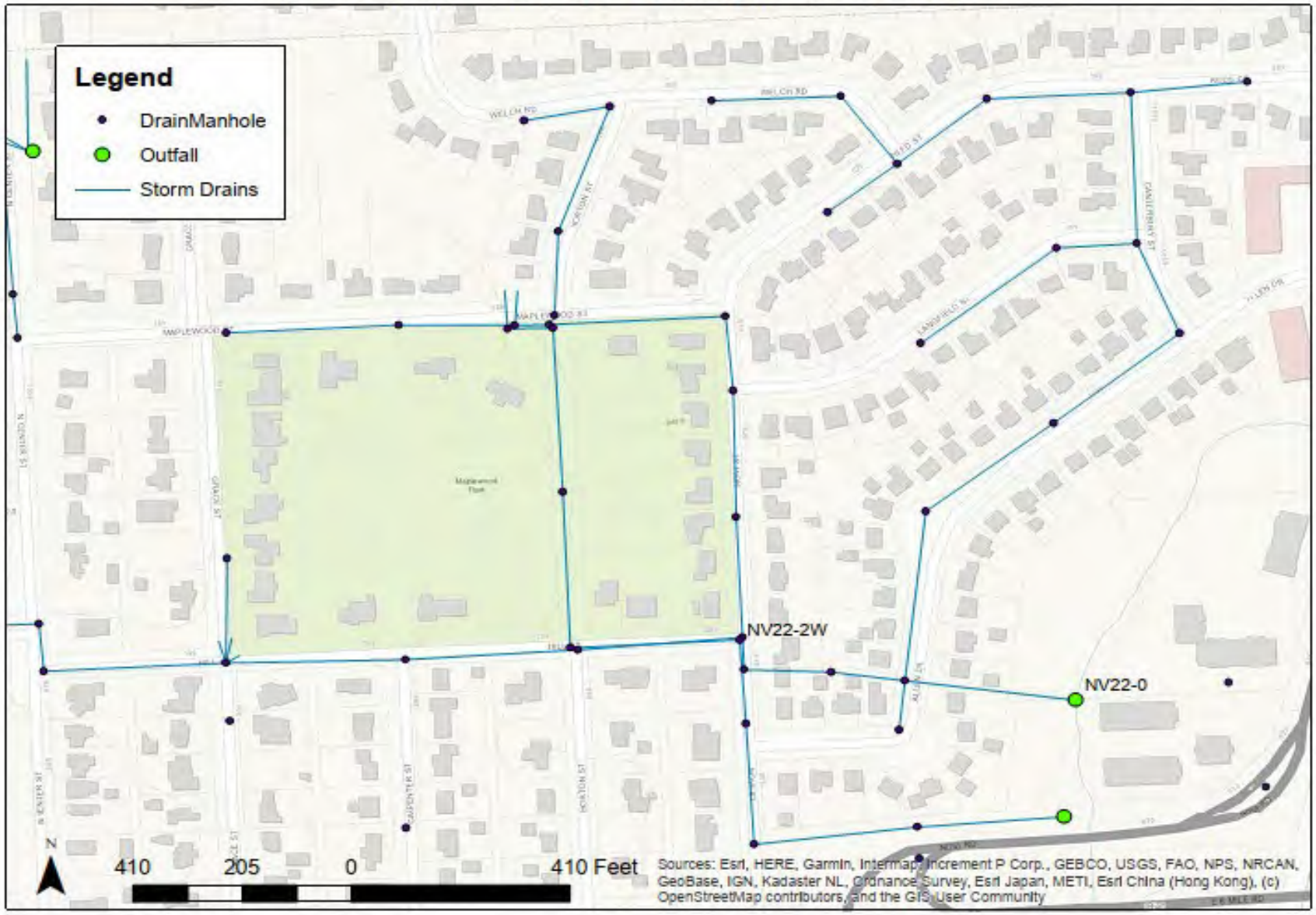
Given that both the E. coli and Bacteroides were low in the samples, the results of the testing are inconclusive in identifying the source of the E. coli. Therefore, additional investigations are needed. ARC staff will continue these investigations in 2021 following a meeting with DPW staff to better understand the extent of the drainage network.

This work is being completed as outlined in the Rouge River Collaborative IDEP Plan in compliance with the City's MS4 permit and as a result of your ARC membership. If you have any questions, I can be reached at 313-963-6600 or ademaria@ectinc.com.

Attachment: Figure 1. Storm Sewer and Sampling Location

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Figure 1: Storm Sewer and Sampling Locations for NV22



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TO: **Loyd Cureton, City of Northville**

FROM: **Annette DeMaria, Executive Director**

DATE: **December 16, 2020**

SUBJECT: **IDEP Investigation Results: Outfall NV57 (First Street)**

ARC staff have conducted an illicit discharge investigation on storm sewer outfall NV57 in response to findings from the ARC's 2018 outfall screening and follow-up sampling conducted in 2019. The August 2020 results indicate that sewage may be impacting the drain. However, we were unable to narrow down where sewage is entering the drain. Therefore, further investigations are recommended in 2021.

Background

Manhole NV57-1 was investigated due to high *E. coli* concentration (3,876 MPN/100 ml) found during an outfall screening conducted June 8, 2018. There was no observed color, odor, turbidity, or other unusual characteristics noted during the initial screening. ARC staff reinspected manhole NV57-1 on August 15, 2019 and found an *E. coli* concentration of 6,131 MPN/100 ml.

The outfall drains First Street and a portion of West Cady Street, north of Seven Mile Road. The receiving water is Johnson Drain, which feeds into the Walled Lake Branch of the Middle Rouge River (See Figure 1).

Results

ARC staff reinspected manholes and collected samples from three upstream manholes to narrow down possible sources of *E. coli* contamination. Although these efforts yielded inconsistent results, the August data did show a strong sewage signal at manhole NV57-1 as demonstrated by the very high Bacteroides results. Another high Bacteroides concentration was found at manhole NV-573E. All other Bacteroides results were below detection limits (See Table 1).

In terms of *E. coli*, manhole NV57-1 had moderately high levels in July, August, September, and November but it was not detectable at other manholes. There were no physical signs (ex: odor, staining, debris, organic growth) of a sewage discharge to the storm drain in any of the manholes. Likewise, there were no obvious signs of animal fecal impacts to the drain.

Samples were analyzed by Paragon Laboratories for *E. coli* concentration. Additionally, samples were analyzed by Michigan State University's Department of Fisheries & Wildlife for a microbial source tracking (MST) marker to determine whether contamination was human in origin. The marker being used is *Bacteroides thetaiotaomicron* (*B. theta*) which identifies if the bacteria are from the human intestinal track.

Table 1. Sampling Results (*E. coli* in MPN/100 mL and Human *Bacteroides* in gene copies/100 ml)

Structure		NV57-1	NV57-2	NV57-3E	NV57-3N
Location		Manhole at corner where Fairbrook St meets 7 Mile Rd	Manhole located in front of 320 and 310 1st St	Manhole at intersection of W Cady St and 1st St	Manhole at intersection of W Cady St and 1st St
E. coli	**6/8/18**	3,876			
E. coli	**8/15/19**	6,131			
E. coli	**7/2/20**	1,012			<10
Human *Bacteroides*	**7/2/20**	<354			<354
E. coli	**8/18/20**	1,137			
Human *Bacteroides*		433,000			
E. coli	**9/15/20**	6,867	<10	<10	<10
Human *Bacteroides*		<354	<354	47,200	<354
E. coli	**11/19/20**	1,789	41	41	41
Human *Bacteroides*		<354	<354	<354	<354

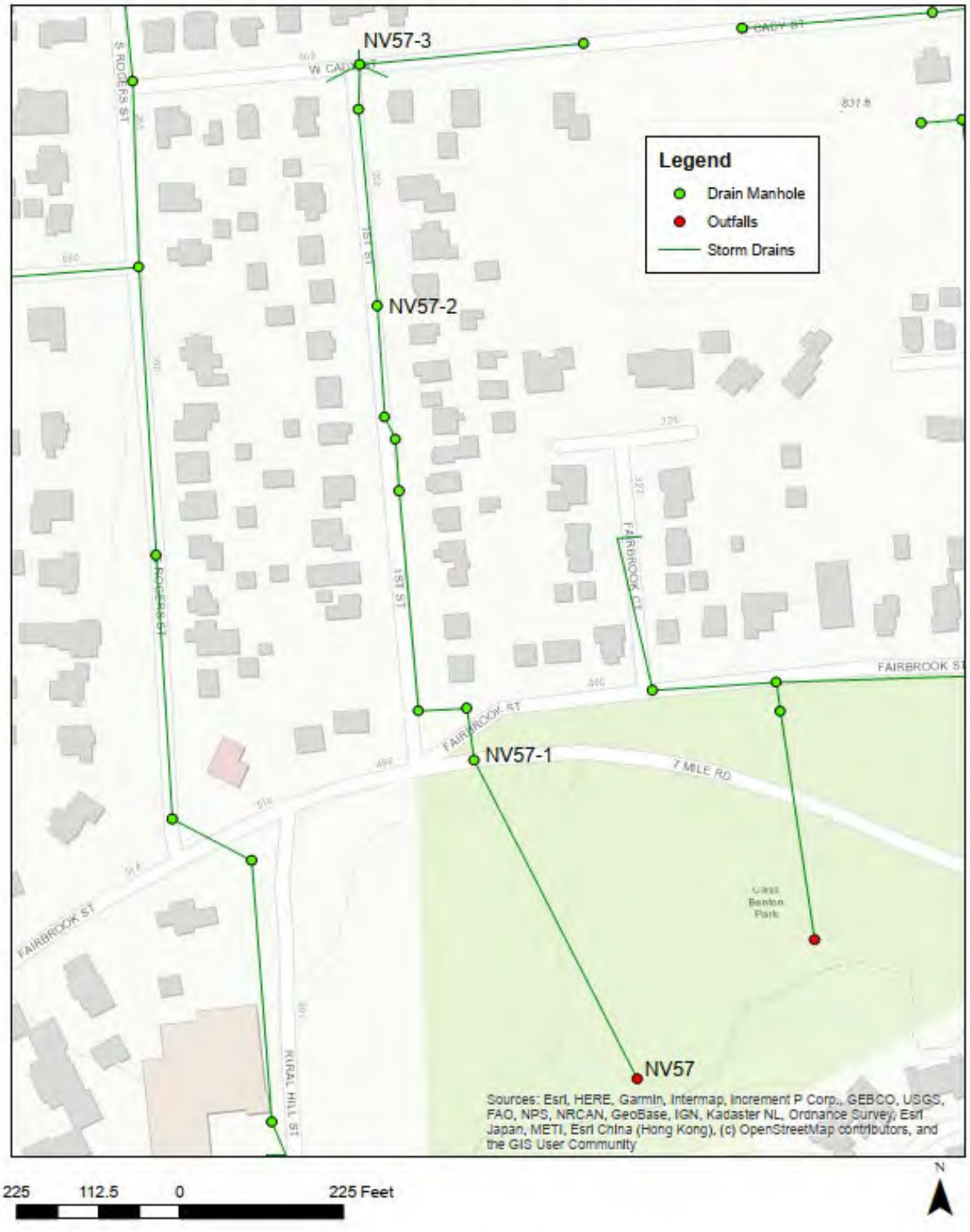
Conclusions and Recommendations

The high *Bacteroides* results from August and September 2020 indicate that sewage may be impacting the drain. However, the sewage source appears to be inconsistent, and we were not able to narrow it down within the drain. The recommended next steps are for the drain to be televised to determine the potential source of sewage. ARC staff will follow up with the City to request this work be completed in 2021.

This work is being completed as outlined in the Rouge River Collaborative IDEP Plan in compliance with the City's MS4 permit and as a result of your ARC membership. If you have any questions, I can be reached at 313-963-6600 or ademaria@ectinc.com.

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Figure 1: Storm Sewer and Sampling Locations for NV57



Annette DeMaria, P.E., PMP
Executive Director

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Lathrup Village
Livonia
Melvindale
Northville
Northville Twp.
Novi
Oak Park
Oakland County
Orchard Lake
Plymouth
Plymouth Twp.
Redford Twp.
Rochester Hills
Romulus
Schoolcraft College
Southfield
Troy
University of Michigan-Dearborn
Van Buren Twp.
Walled Lake
Washtenaw County
Wayne
Wayne County
Wayne County Airport Authority
West Bloomfield Twp.
Westland
Wixom

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SEMCOG
Southeastern Oakland County Water Authority

TO: **Kate Richardson, City of Novi Plan Review Engineer**

FROM: **Annette DeMaria, Executive Director**

DATE: **September 4, 2020**

SUBJECT: **IDEP Investigation Results: Outfall NO23 (Park Ridge Court)**

Following cleaning of the storm drain on Park Ridge Court, the *E. coli* counts in the storm drain were no longer elevated. This indicates that the source of the high *E. coli* was the wildlife feces that had accumulated in manhole NO23-2.

Background

Outfall NO23 was investigated in 2019 by Alliance of Rouge Communities (ARC) staff due to the high *E. coli* concentrations found during the outfall survey conducted in 2018. The 2019 investigations revealed wildlife feces accumulated in manhole NO23-2 and low concentrations of human *Bacteroides* (table 1).

The outfall drains a portion of Park Ridge Court which is a residential area north of 10 Mile Road and west of Meadowbrook Road (Figure 1). The receiving water is Walled Lake Branch which drains to the Middle Branch of the Rouge River.



Wildlife scat in Manhole NO23-2 in 2019

2020 Effort

On March 4, 2020, the City cleaned the storm drain along Park Ridge Court. ARC staff re-inspected the system the following day. Feces were no longer present in manhole NV23-2 and the *E. coli* concentration at the downstream manhole was much lower (Table 1).

Conclusions and Recommendations

Based on the information collected to date, the wildlife feces appear to be responsible for the elevated *E. coli* found in 2018 and 2019. We recommend that the City re-inspect and clean this manhole periodically if feces accumulate again. A suggested inspection frequency is monthly, but this should be modified based on the inspection findings. This will reduce water quality impacts to the river.

Table 1. Sampling Results for Park Ridge Court Storm Sewer

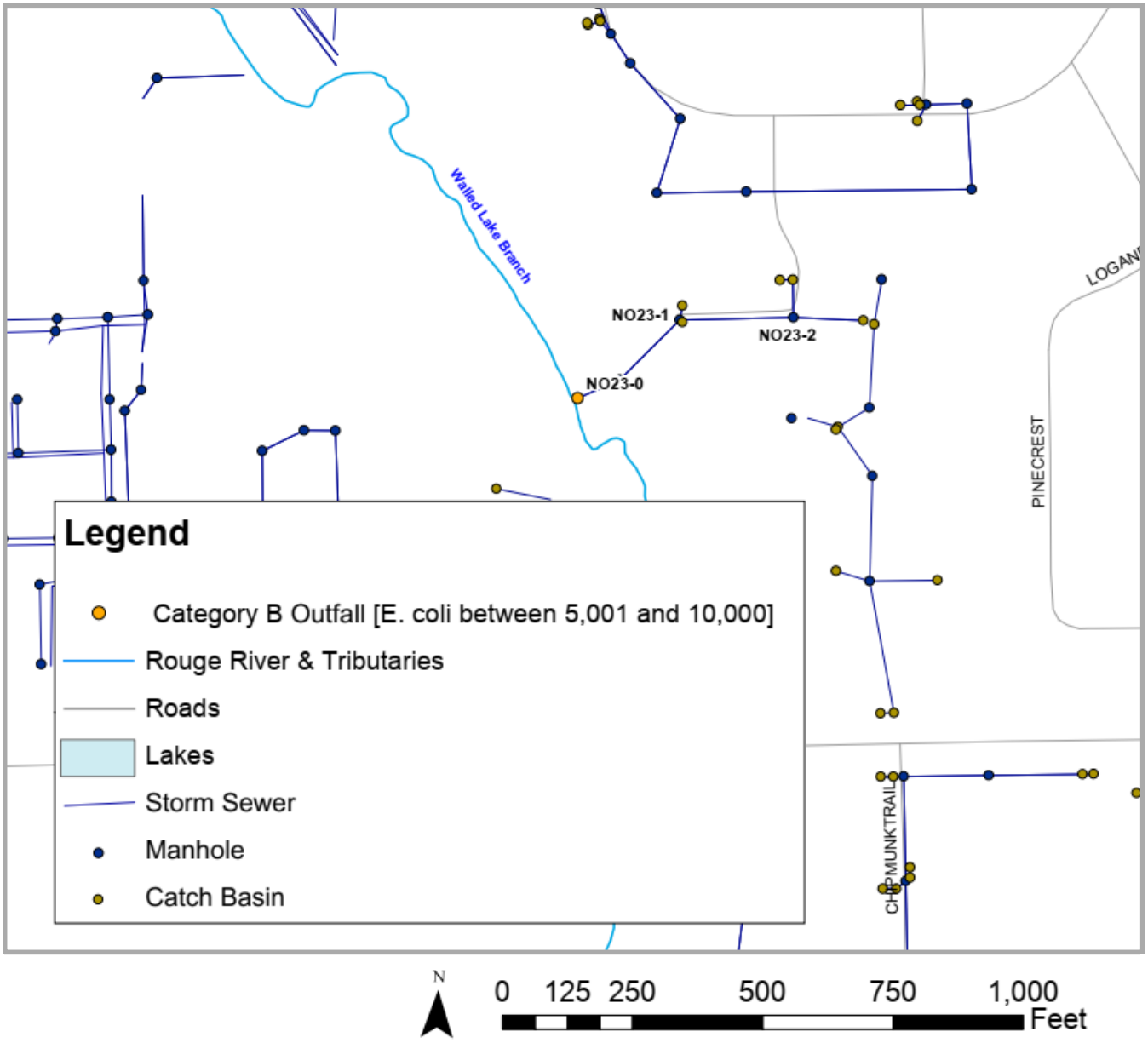
Structure	Location	*E. coli* (MPN/100 ml)		Surfactants (mg/l)	Human *Bacteroides* (gene copies/100 ml)	*E. coli* (MPN/100 ml)
		2018	12/13/19			3/5/20
NO23-0	Outlet to Walled Lake Branch	Submerged, not sampled				
NO23-1	Manhole 1 at west end of island	7,701	10,462	1.0	1,890	1,616
NO23-2	Manhole 2 east of manhole 1		Too little flow to sample			

This work was completed as outlined in the Rouge River Collaborative IDEP Plan in compliance with the City's MS4 permit and as a result of your ARC membership. If you have any questions, I can be reached at 313-963-6600 or ademaria@ectinc.com.

Attachment: Figure 1. Storm Sewer and Sampling Locations

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Figure 1. Storm Sewer Location



Appendix B4

2021 Oakland County IDEP Investigation Cat A and B Results Summary

Annette DeMaria, P.E., PMP
Executive Director

Auburn Hills
Beverly Hills
Bingham Farms
Birmingham
Bloomfield Hills
Bloomfield Twp.
Canton Twp.
Commerce Twp.
Dearborn Heights
Farmington
Farmington Hills
Franklin
Garden City
Henry Ford College
Inkster
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TO: **Karen Mondora, ARC Technical Committee Chair**

FROM: **Emily Levine, Technical Committee Coordinator**

DATE: **February 15, 2022**

SUBJECT: **2021 IDEP Investigation Summary**

In 2021, ARC staff investigated three suspicious outfall discharges in the Oakland County portion of the Rouge River Watershed. These outfalls were designated in the Category A and B priority levels for illicit discharge investigations. Of the three outfalls, two outfalls were determined to be likely impacted by animal feces, and one outfall will require additional source investigations in 2022. In addition, ARC staff completed follow-up sampling at two outfall locations to confirm that corrections made to illicit connections in 2020 had resolved the issues.

In 2021, ARC staff worked in two communities to conduct illicit discharge investigations in accordance with the Rouge River Collaborative Illicit Discharge Elimination Plan. These investigations were prompted by the outfall screening efforts conducted in 2018 and 2019 and were conducted in Beverly Hills and Northville.

The results of the investigations are summarized in Table 1. More detail can be found in the investigation reports which were sent to the communities (Attachment A).

Table 1. Status and Results of Illicit Discharge Investigations

Permittee	Outfall ID	Status	Result
Beverly Hills	BV66	Completed	Resampling confirmed effective correction to illicit connection
Beverly Hills	BV51	Ongoing	Further investigation required
Northville	NV03	Completed	Resampling confirmed effective correction to illicit connection
Northville	NV22	Completed	Animal source suspected
Northville	NV57	Completed	Animal source suspected

In addition, ARC staff partnered with Wayne County to conduct investigations in Inkster because of elevated instream E. coli results found in the Lower Rouge in 2020. This involved sampling in the Perrin Drain and walking the Lower Rouge between Inkster Road and Beech Daly to investigate outfalls. These investigations revealed high *E. coli* that may be the result of an illicit connection.

In 2022, ARC staff will continue source investigations on the outstanding issues in accordance with the Plan and as directed by the Technical Committee. This will also include assisting Wayne County with investigations in Livonia.

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Attachment A
Community-specific Investigation Reports

Annette DeMaria, P.E., PMP
Executive Director

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Bingham Farms
Birmingham
Bloomfield Hills
Bloomfield Twp.
Canton Twp.
Commerce Twp.
Dearborn Heights
Farmington
Farmington Hills
Franklin
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TO: **Mike Domine, City of Northville**

FROM: **Emily Levine, ARC Staff**

DATE: **August 5, 2021**

SUBJECT: **IDEP Investigation Results: Outfall NV57**

ARC staff conducted an illicit discharge investigation on storm drain outfall NV57 in response to findings from the ARC's 2018 outfall screening and follow-up sampling conducted in 2019, and 2020. We suspect that *E. coli* from non-sewage sources were likely contained in the sediment built up in the storm drain near West Cady Street and First Street because removal of that sediment appears to have corrected the issue. If construction continues in the area, ARC Staff recommends monitoring the storm drain for additional sediment build up and cleaning it out when observed.

Background

Manhole NV57-1 was investigated due to high *E. coli* concentration (3,876 MPN/100 ml) found during an outfall screening conducted June 8, 2018. ARC staff reinspected manhole NV57-1 on August 15, 2019 and found an *E. coli* concentration of 6,131 MPN/100 ml. ARC staff reinspected manholes and collected samples from three upstream manholes to narrow down possible sources of *E. coli* contamination in 2020 (Table 1). Although these efforts yielded inconsistent results, the August data did show a strong sewage signal at manhole NV57-1 as demonstrated by the very high Bacteroides results. There were no physical signs (ex: odor, staining, debris, organic growth) of a sewage discharge to the storm drain during any of these sampling events. Likewise, there were no obvious signs of animal fecal impacts to the drain.

The outfall drains First Street and a portion of West Cady Street, north of Seven Mile Road. The receiving water is Johnson Drain, which feeds into the Walled Lake Branch of the Middle Rouge River (See Figure 1).

Results

ARC staff coordinated with the City of Northville to televise the storm drain line along First Street on April 21, 2021. Except for a section near West Cady Street and a section in the middle of the block which were blocked by sediment, the storm drain line along First Street from 7 Mile Road to West Cady Street was televised. A tap that appeared to be from a downspout on a house and a connection that appeared to be from a sump pump were identified. No other connections were identified.

The storm drain along West Cady Street to the east of First Street had too much sediment for televising. Manhole NV57-1 was sampled that day and high *E. coli* concentrations were found. Additional samples collected on April 29, 2021 found high *E. coli* concentrations and low Bacteroides results, except for NV57-2, which had high Bacteroides results. The City of Northville cleaned out the storm drain near West Cady Street in June of 2021. ARC staff resampled NV57-1 and sampled NV57-4 after the drain was cleaned out and found low *E. coli* levels.

Until April of 2021, samples were analyzed by Michigan State University's Department of Fisheries & Wildlife for the *B. theta* marker to determine whether contamination was human in origin. Starting in April of 2021, samples were analyzed by Oakland University's laboratory for the HF183 biomarker to determine whether contamination was human in origin. Both *B. theta* and HF183 are microbial source tracking methods used for identifying if bacteria are from the human intestinal track.

Table 1. Sampling Results

Structure		**NV57-1**	**NV57-2**	**NV57-3E**	**NV57-3N**	**NV57-3**	**NV57-1A**	**NV57-4**
Location		Manhole at corner where Fairbrook St meets 7 Mile Rd	Manhole located in front of 320 and 310 1st St	East inlet to NV57-3	North inlet to NV57-3	Manhole at W Cady St and 1st St	Manhole at the south end of 1st St	Manhole in driveway of 487 W Cady St
E. coli	**6/8/18**	3,876						
E. coli	**8/15/19**	6,131						
E. coli	**7/1/20**	1,012			<10			
Human Biomarker		<354			<354			
E. coli	**8/18/20**	1,137						
Human Biomarker		433,000						
E. coli	**9/15/20**	6,867	<10	<10	<10			
Human Biomarker		<354	<354	47,200	<354			
E. coli	**11/17/20**	1,789	41	41	41			
Human Biomarker		<354	<354	<354	<354			
E. coli	**4/21/21**	14,210						
E. coli	**4/29/21**	6,131	>24,196			143	10,112	
Human Biomarker		113	36,695				<95	
E. coli	**7/28/21**	410						<1

Conclusions and Recommendations

Since *E. coli* can thrive in dark and wet conditions, the excessive amount of sediment in the storm drain along West Cady Street was likely harboring *E. coli* and contributing to the high *E. coli* in the stormwater. Given the inconsistent sample results, buildup of sediment in the storm drain, lack of suspicious connections to the storm drain and lack of sanitary debris, we suspect that the most likely source of the *E. coli* in the sediment was animals and not sewage. Given that there were no obvious signs of animal sources to the drain, ARC Staff recommends monitoring the storm drain for

excessive sediment build up and cleaning it out when build up appears to prevent water quality issues in the stormwater.

This work is being completed as outlined in the Rouge River Collaborative IDEP Plan in compliance with the City's MS4 permit and as a result of your ARC membership. If you have any questions, I can be reached at 313-963-6600 or elevine@ectinc.com.

Attachment: Figure 1. Storm Drain and Sampling Location

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Figure 1. Storm Drain and Sampling Locations



Annette DeMaria, P.E., PMP
Executive Director

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TO: **Mike Domine, City of Northville**

FROM: **Emily Levine, ARC Staff**

DATE: **August 5, 2021**

SUBJECT: **IDEP Investigation Results: Outfall NV22**

ARC staff conducted an illicit discharge investigation on storm drain outfall NV22 in response to findings from the ARC's 2018 outfall screening and follow-up sampling conducted in 2019 and 2020. Although our investigations did not reveal the source of *E. coli* entering the drain, we do not believe that the source is sewage. Therefore, no further actions are recommended at this time.

Background

Outfall NV22 was investigated due to high *E. coli* concentration (2,755 MPN/100 mL) found during an outfall screening conducted June 7, 2018. There was no observed color, odor, turbidity, or other unusual characteristics noted during the initial screening.

ARC staff reinspected the outfall on August 15, 2019 and found higher *E. coli* concentrations (>24,196 MPN/100 mL) and similar conditions as seen in the original inspection, with low flow noted (Table 1). The outfall was reinspected on July 1 and August 18, 2020 and lower *E. coli* levels were found compared to the original inspection. Water samples were taken from the outfall and from two pipes in an upstream manhole in an effort to narrow down possible sources of *E. coli* contamination. These samples were also tested for Human *Bacteroides*, which were only found at low levels.

The outfall drains a portion of Allen Drive, Novi Street, and other adjoining streets north of Eight Mile Road. The receiving water is the Walled Lake Branch of the Middle Rouge River (See Figure 1).

Results

ARC staff inspected upstream manholes on April 29, 2021 and found elevated concentrations of *E. coli* and the HF183 human biomarker at manhole NV22-1. Low *E. coli* concentrations were found at manhole NV22-2N, and elevated *E. coli* with low HF183 concentrations (typically indicative of animal sources) were found at manhole NV-22-2.

On May 11, 2021, ARC staff coordinated with the City of Northville to televise all inlet connections to manhole NV22-1. This included televising north from NV22-1 to NV22-1N, east to outfall NV22-0, south to where Allen Drive bends and the storm drain stops, and west to NV22-2. No suspicious connections were identified. Follow-up sampling on June 1, 2021 found low *E. coli* levels. No odors or visual indicators of sewage have been observed during these investigations.

Until April of 2021, human biomarker samples were analyzed by Michigan State University's Department of Fisheries & Wildlife for the *B. theta* marker to determine whether contamination was human in origin. Starting in April of 2021, samples were analyzed by Oakland University's laboratory for the HF183 biomarker to determine whether contamination was human in origin. Both *B. theta* and HF183 are microbial source tracking methods used for identifying if bacteria are from the human intestinal track.

Table 1. Sampling Results

Structure		**NV22-0**	**NV22-1**	**NV22-2**	**NV22-2N**	**NV22-2W-N**	**NV22-2W-W**
Location		Outfall	Manhole in the grass in front of 883 Allen Dr	Manhole in Novi St, south of Hill St	Manhole in the street near 985 Allen Dr	North inlet to NV22-2W	West inlet to NV22-2W
E. coli	**6/7/18**	2,755					
E. coli	**8/15/19**	>24,196					
E. coli	**7/1/20**	108				404	201
Human Biomarker		582				747	
E. coli	**8/18/20**	<10					
Human Biomarker		<354					
E. coli	**4/29/21**		>24,196	10,112	256		
Human Biomarker			24,800	109			
E. coli	**6/1/21**		52			41	

Conclusions and Recommendations

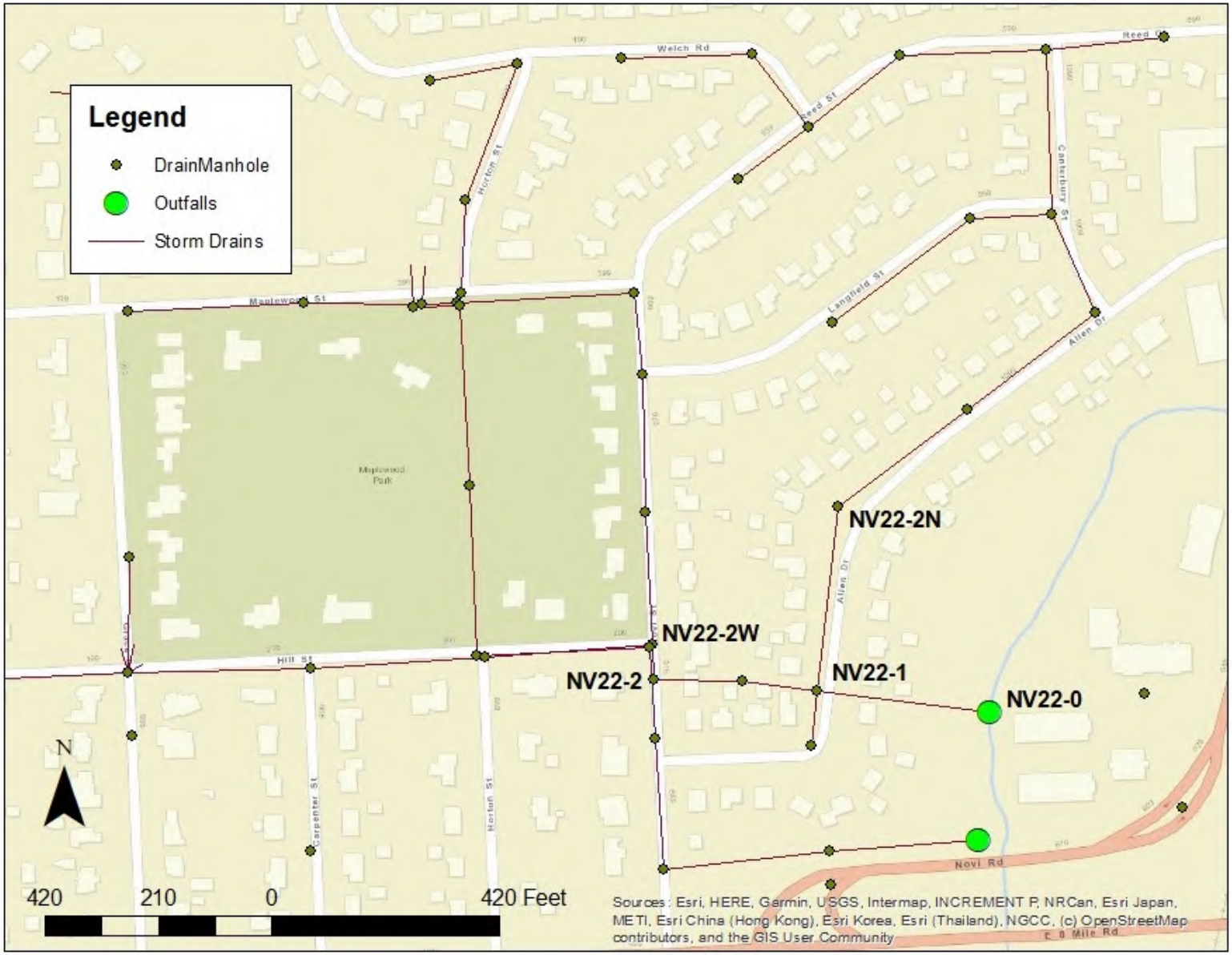
Based on the data collected and investigations conducted to date, we suspect that the source of the high *E. coli* was from animal feces, rather than from sewage. This determination is made because the high *E. coli* levels generally coincided with low Human Bacteroides levels which indicates that the *E. coli* is not from a human source. In addition, no identifiable illicit connections have been found after a thorough investigation of this storm drain system and no signs of sanitary debris were found in the storm drain. Given that there were no obvious signs of animal sources to the drain or identifiable illicit connections, no further action is recommended at this time.

This work is being completed as outlined in the Rouge River Collaborative IDEP Plan in compliance with the City's MS4 permit and as a result of your ARC membership. If you have any questions, I can be reached at 313-963-6600 or elevine@ect.com.

Attachment: Figure 1. Storm Drain and Sampling Locations

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Figure 1. Storm Drain and Sampling Locations



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Dearborn Heights
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TO: **Kevin Lawrence, Village of Beverly Hills Director of Public Services**

FROM: **Emily Levine, ARC Staff**

DATE: **August 5, 2021**

SUBJECT: **IDEP Investigation Results: Outfall BV51 (Sleepy Hollow Lane)**

ARC staff continued illicit discharge investigation on storm drain outfall BV51 in response to findings from the 2018 outfall screening and 2019 and 2020 investigations. Our investigations did not reveal the source of *E. coli* entering the drain; therefore, we will continue investigations in 2022.

Background

Outfall BV51 was investigated due to the high *E. coli* concentrations found during the outfall survey conducted in 2018. At that time, the *E. coli* concentration was 3,076 MPN/100 ml which can be indicative of an illicit discharge containing sanitary sewage. ARC staff reinspected the outfall in 2019 and found *E. coli* concentrations at 201 and >24,196 MPN/100 ml respectively.

ARC staff reinspected the outfall on August 19, September 15, and November 17, 2020. As was the case in 2019, the results varied greatly in 2020, with *E. coli* concentrations of 573, >24,196, and 1,081 MPN/100 ml respectively (See Table 1). The results from the September and November sampling events showed Human *Bacteroides* concentrations of 72,000 and <354 gene copies/100 ml respectively. There were no physical signs (ex: odor, staining, debris, organic growth) of a sewage discharge to the storm drain in the outfall or any of the manholes. Likewise, there were no obvious signs of animal fecal impacts to the drain.

The outfall drains a portion of Sleepy Hollow Lane, Fiddlers Cove Road, and Metamora Lane. The receiving water is an unnamed tributary of the Rouge River (Figure 1).

Results

Based on sampling results from previous inspections, ARC staff coordinated with the Oakland County Water Resource Commissioner (OCWRC) to televise the drain west of Outfall BV51 on May 19, 2021. Only the west line was televised because flow had not been observed coming from the north and south during dry weather. A tap was identified in the storm drain that was believed to be a possible illicit connection, although no staining or evidence of sewage was observed (Figure 2). Based on the pipe's location and direction, it appeared to be coming from the house at 31349 Sleepy Hollow Lane. On July 23, 2021, ARC staff coordinated with the Village of Beverly Hills to dye test 31349 Sleepy Hollow Lane. The dye testing revealed that all three bathrooms in the house were correctly connected to the sanitary drain and no dye was observed entering the storm drain.

Table 1. Sampling Results (*E. coli* in MPN/100 mL and Human *Bacteroides* in gene copies/100 ml)

	E. coli	***E. coli***	***E. coli***	***E. coli***	***E. coli***	**Human *Bacteroides***	***E. coli***	**Human *Bacteroides***
	7/9/18	**8/15/19**	**9/19/19**	**8/19/20**	**9/15/20**	**9/15/20**	**11/17/20**	**11/17/20**
BV51-0	3,076	201	>24,196	573	>24,196	72,000	1,081	<354

Conclusions and Recommendations

Work to date indicates that there is not an illicit connection downstream of BV51-1. However, the data suggests that upstream illicit connections may exist. Therefore, ARC staff recommends resampling the outlet up to two more times in 2022 for both *E. coli* and *Bacteroides* (only if the E. coli is elevated). If another set of high *E. coli* and *Bacteroides* results are found, we suggest televising the drain upstream of BV51-1 to determine if any suspicious connections are found. If so, dye testing should be performed to determine the nature of the connection. If another set of high *E. coli* and *Bacteroides* results are not found, we recommend closing out the investigation.

This work is being completed as outlined in the Rouge River Collaborative IDEP Plan in compliance with the Village's MS4 permit and as a result of your ARC membership. If you have any questions, I can be reached at 313-963-6600 or elevine@ectinc.com.

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Figure 1. Storm Drain and Sampling Locations

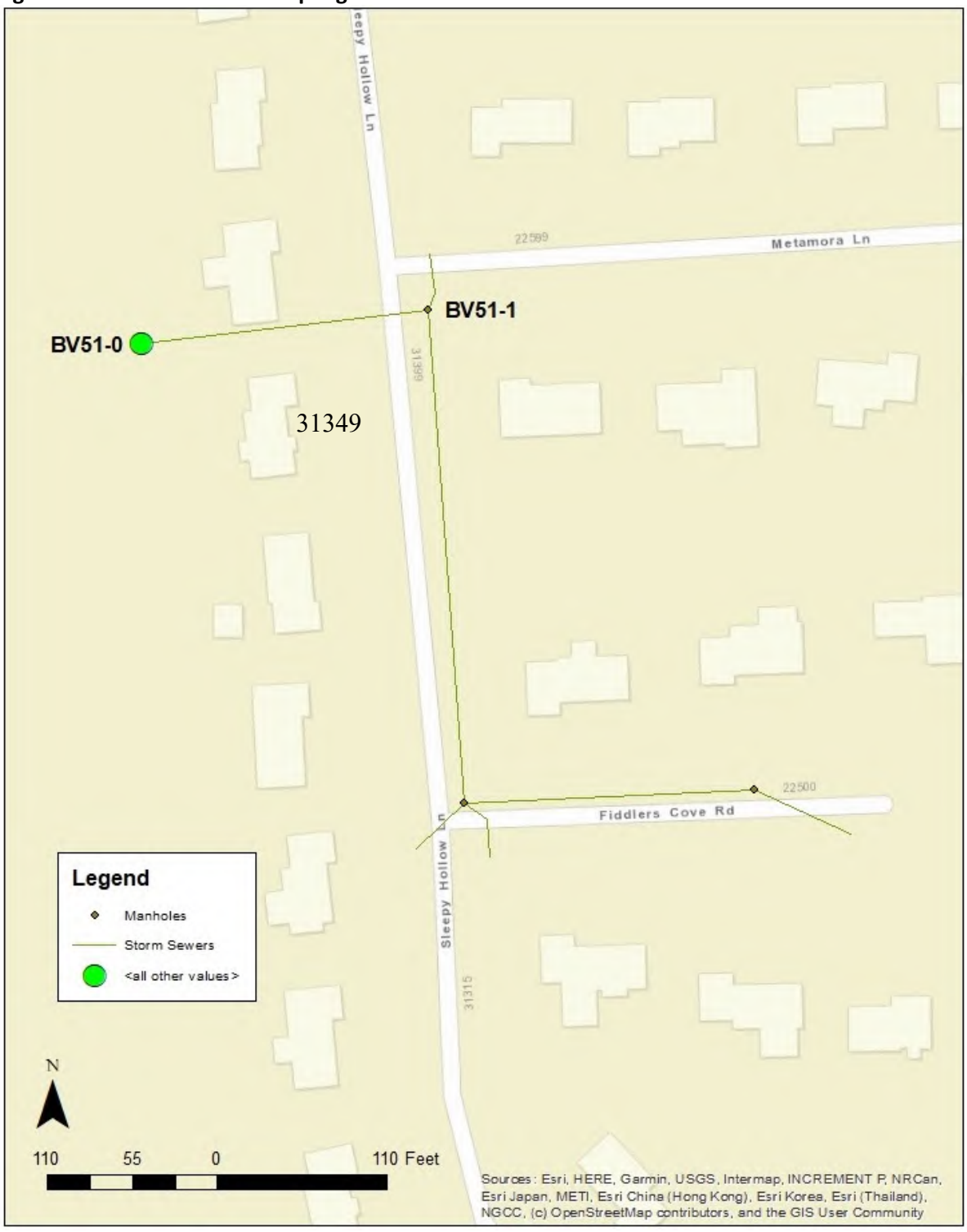


Figure 2. Tap to Storm Drain at 14.2 ft east of BV51-0



Appendix B5

Bloomfield Township Investigation Records

Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	01-02		
Date of Observation:	9 / 21 / 2020	Time:	12:50 pm
Name(s) of Investigator(s):	Cory Borton		
Has it rained over 0.10 in. in last 72 hours?	☐ Yes	☑ No	

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☑ Suburban Residential
- ☐ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known): Detention Basin at south end of Shaker Heights Dr.

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☑ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 24 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☐ No ☑ Partially ☐ Fully With Sediment: ☑ No ☐ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☐ Yes ☑ No **(If No, Skip to Section 5)**

Flow Description (If present) ☐ Trickle ☐ Moderate ☐ Substantial

Description Details: _____

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☐			
pH / Temperature	☐	pH Level	Temperature (F)	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: _____

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: _____

Section 8: General Comments

Comments: Holding water from downstream.

Section 9: Reporting Information

Comments: _____		Date Observed:	__/___/ ___
_____		Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___





Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	03-01		
Date of Observation:	9 / 21 / 2020	Time:	1:15 pm
Name(s) of Investigator(s):	Cory Borton		
Has it rained over 0.10 in. in last 72 hours?	☐ Yes	☑ No	

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☐ Suburban Residential
- ☑ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known): In front of 43034 Woodward (Moose Preserve)

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☑ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 24 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☐ No ☑ Partially ☐ Fully With Sediment: ☑ No ☐ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☑ Yes ☐ No **(If No, Skip to Section 5)**

Flow Description (If present) ☑ Trickle ☐ Moderate ☐ Substantial

Description Details: _____

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☑ Yes ☐ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☑	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☑ Other: leaves	☑ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☐ Yes ☐ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☑	4 MPN/100ml		
pH / Temperature	☑	pH Level: 7.93	Temperature (F): 71.8	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: _____

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: _____

Section 8: General Comments

Comments: _____

Section 9: Reporting Information

Comments: _____		Date Observed:	__/___/ ___
_____		Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___





Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	04-01
Date of Observation:	9 / 17 / 2020 — Time: 2:00 pm
Name(s) of Investigator(s):	Cory Borton
Has it rained over 0.10 in. in last 72 hours?	☐ Yes ☑ No

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☐ Suburban Residential
- ☐ Commercial
- ☑ Institutional
- ☐ Open Space
- ☐ Woods

Other: Fire Statioin No. 4

Known Industries: _____

Notes (e.g. origin of outfall, if known): North side of fire station at 2389 Franklin Rd.

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☐ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 6 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☑ No ☐ Partially ☐ Fully With Sediment: ☑ No ☐ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☐ Yes ☑ No **(If No, Skip to Section 5)**

Flow Description (If present) ☐ Trickle ☐ Moderate ☐ Substantial

Description Details: _____

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☐			
pH / Temperature	☐	pH Level	Temperature (F)	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: Only fire station downspouts and surface drainage discharge to it.

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: _____

Section 8: General Comments

Comments: _____

Section 9: Reporting Information

Comments: _____		Date Observed:	__/___/ ___
_____		Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___





Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	04-02		
Date of Observation:	9 / 21 / 2020	Time:	1:35 pm
Name(s) of Investigator(s):	Cory Borton		
Has it rained over 0.10 in. in last 72 hours?	☐ Yes	☑ No	

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☐ Suburban Residential
- ☑ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known): North of entrance to 43902 Woodward

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☑ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 30 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☑ No ☐ Partially ☐ Fully With Sediment: ☑ No ☐ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☐ Yes ☑ No **(If No, Skip to Section 5)**

Flow Description (If present) ☐ Trickle ☐ Moderate ☐ Substantial

Description Details: _____

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☐			
pH / Temperature	☐	pH Level	Temperature (F)	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: Stagnant water in invert. No flow.

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: _____

Section 8: General Comments

Comments: _____

Section 9: Reporting Information

Comments: _____		Date Observed:	__/___/ ___
_____		Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___





Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	06-01
Date of Observation:	9 / 17 / 2020 — Time: 2:25 pm
Name(s) of Investigator(s):	Cory Borton
Has it rained over 0.10 in. in last 72 hours?	☐ Yes ☑ No

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☑ Suburban Residential
- ☐ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known): Detention Basin outlet on Kemp Road

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☑ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 8 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☐ No ☑ Partially ☐ Fully With Sediment: ☑ No ☐ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☐ Yes ☑ No **(If No, Skip to Section 5)**

Flow Description (If present) ☐ Trickle ☐ Moderate ☐ Substantial

Description Details: _____

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☐			
pH / Temperature	☐	pH Level	Temperature (F)	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☑ Yes ☐ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☑	☑ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

☑	Unlikely
☐	Potential (Presence of two or more indicators)
☐	Suspect (One or more indicators with a severity of 3)
☐	Obvious
Comments:	Outfall holding water due to level of lake. Upstream structures into basin have no flow.

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: _____

Section 8: General Comments

Comments: _____

Section 9: Reporting Information

Comments:	_____	Date Observed:	__/___/ ___
	_____	Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___



Manhole upstream of detention basin



Outlet of storm sewer downstream of basin



Outfall submerged

Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	06-02
Date of Observation:	9 / 17 / 2020 — Time: 2:45 pm
Name(s) of Investigator(s):	Cory Borton
Has it rained over 0.10 in. in last 72 hours?	☐ Yes ☑ No

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☑ Suburban Residential
- ☐ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: Retention Pond

Known Industries: _____

Notes (e.g. origin of outfall, if known): Retention pond for Meadowlands of Bloomfield

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☑ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 36 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☐ No ☐ Partially ☑ Fully With Sediment: ☐ No ☐ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☐ Yes ☐ No **(If No, Skip to Section 5)**

Flow Description (If present) ☐ Trickle ☐ Moderate ☐ Substantial

Description Details: _____

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☐			
pH / Temperature	☐	pH Level	Temperature (F)	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: _____

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: Outfall submerged. Upstream strucures holding water.

Section 8: General Comments

Comments: Retention Basin may need to be dredged.

Section 9: Reporting Information

Comments:	_____	Date Observed:	__/___/ ___
	_____	Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___



Submerged Outfall



Retention Pond

Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	08-01		
Date of Observation:	9 / 21 / 2020	Time:	3:07 pm
Name(s) of Investigator(s):	Cory Borton		
Has it rained over 0.10 in. in last 72 hours?	☐ Yes	☑ No	

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☑ Suburban Residential
- ☐ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known): South of house at 1471 Franklin Road

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☑ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 24 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☐ No ☐ Partially ☑ Fully With Sediment: ☑ No ☐ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☑ Yes ☐ No **(If No, Skip to Section 5)**

Flow Description (If present): ☐ Trickle ☑ Moderate ☐ Substantial

Description Details: _____

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☑ Yes ☐ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☑	58 MPN/100ml		
pH / Temperature	☑	pH Level: 8.08	Temperature (F): 69.3	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

☑	Unlikely
☐	Potential (Presence of two or more indicators)
☐	Suspect (One or more indicators with a severity of 3)
☐	Obvious
Comments:	Surface runoff sewer from Forest Lake Golf Club and Club Road.

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments:	

Section 8: General Comments

Comments:	Water sample taken for E. Coli, and temperature and pH taken.

Section 9: Reporting Information

Comments:		Date Observed:	__/___/ ___
		Time Observed:	
Investigated By:		Date Reported:	__/___/ ___





Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	11-01		
Date of Observation:	9 / 22 / 2020	Time:	1:15 pm
Name(s) of Investigator(s):	Cory Borton		
Has it rained over 0.10 in. in last 72 hours?	☐ Yes	☑ No	

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☑ Suburban Residential
- ☐ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known): Detention Basin access off Bridlepath Court

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☑ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: _____ in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☐ No ☑ Partially ☐ Fully With Sediment: ☑ No ☐ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☑ Yes ☐ No **(If No, Skip to Section 5)**

Flow Description (If present): ☐ Trickle ☑ Moderate ☐ Substantial

Description Details: _____

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☐ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☑ Yes ☐ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☑	162 MPN/100ml		
pH / Temperature	☑	pH Level: 7.79	Temperature (F): 66.5	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: No smell, color, or floatables.

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: _____

Section 8: General Comments

Comments: _____

Section 9: Reporting Information

Comments:	_____	Date Observed:	__/___/ ___
_____		Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___



Basin inlet on North side



Basin inlet on west side



Basin outlet on south side



Basin Overflow Structure on south side



Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	11-02		
Date of Observation:	9 / 21 / 2020	Time:	4:30 pm
Name(s) of Investigator(s):	Cory Borton		
Has it rained over 0.10 in. in last 72 hours?	☐ Yes	☑ No	
Land Use in Drainage Area (Check all that apply):	☐ Industrial ☐ Ultra-Urban Residential ☑ Suburban Residential ☐ Commercial	☐ Institutional ☐ Open Space ☐ Woods Other: _____ Known Industries: _____	
Notes (e.g. origin of outfall, if known):	Crofton Court detention basin		

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☑ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 15 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☑ No ☐ Partially ☐ Fully With Sediment: ☑ No ☐ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	
Is Flow Present?	☐ Yes	☑ No	**(If No, Skip to Section 5)**	
Flow Description (If present)	☐ Trickle	☐ Moderate	☐ Substantial	
	Description Details: _____			

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☐			
pH / Temperature	☐	pH Level	Temperature (F)	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: Located 15" inlet pipe into basin, but not 6" outlet pipe.

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: _____

Section 8: General Comments

Comments: _____

Section 9: Reporting Information

Comments: _____		Date Observed:	__/___/ ___
_____		Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___





Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	12-01		
Date of Observation:	9 / 22 / 2020	Time:	2:15 pm
Name(s) of Investigator(s):	Cory Borton		
Has it rained over 0.10 in. in last 72 hours?	☐ Yes	☑ No	

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☑ Suburban Residential
- ☐ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known): Detention basin for Hidden Pines sub

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☑ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 42 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☑ No ☐ Partially ☐ Fully With Sediment: ☑ No ☐ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☐ Yes ☑ No **(If No, Skip to Section 5)**

Flow Description (If present) ☐ Trickle ☐ Moderate ☐ Substantial

Description Details:

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☐			
pH / Temperature	☐	pH Level	Temperature (F)	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: Detention pond holding water. Not up to outlet.

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: _____

Section 8: General Comments

Comments: _____

Section 9: Reporting Information

Comments: _____		Date Observed:	__/___/ ___
_____		Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___





Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	12-02
Date of Observation:	9 / 22 / 2020
Time:	2:25 pm
Name(s) of Investigator(s):	Cory Borton
Has it rained over 0.10 in. in last 72 hours?	☐ Yes ☑ No

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☑ Suburban Residential
- ☐ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known): Retention area off Westview Rd and west of Westman Ct

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☑ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 18 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☑ No ☐ Partially ☐ Fully With Sediment: ☐ No ☑ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☐ Yes ☑ No **(If No, Skip to Section 5)**

Flow Description (If present) ☐ Trickle ☐ Moderate ☐ Substantial

Description Details: _____

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☐			
pH / Temperature	☐	pH Level	Temperature (F)	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: No flow from outlet. No water in retention pond.

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: _____

Section 8: General Comments

Comments: _____

Section 9: Reporting Information

Comments: _____		Date Observed:	__/___/ ___
_____		Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___





Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	13-02		
Date of Observation:	9 / 22 / 2020	Time:	2:45 pm
Name(s) of Investigator(s):	Cory Borton		
Has it rained over 0.10 in. in last 72 hours?	☐ Yes	☑ No	

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☑ Suburban Residential
- ☐ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known):

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☐ Closed Pipe	☐ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☐ Circular ☐ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: _____ in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☐ No ☐ Partially ☐ Fully With Sediment: ☐ No ☐ Partially ☐ Fully
☑ Open Drainage (Channel)	☐ Concrete ☑ Earthen ☐ Rip-Rap ☐ Other: _____	☑ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: 2 ft. Top Width: 4 ft. Bottom Width: 1 ft.	

Is Flow Present? ☑ Yes ☐ No **(If No, Skip to Section 5)**

Flow Description (If present): ☐ Trickle ☑ Moderate ☐ Substantial

Description Details: Flowing stream

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☑ Yes ☐ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☑	83 MPN/100ml		
pH / Temperature	☑	pH Level: 8.05	Temperature (F): 68.1	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: Flowing stream. Nothing Unusual.

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: _____

Section 8: General Comments

Comments: _____

Section 9: Reporting Information

Comments: _____		Date Observed:	__/___/ ___
_____		Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___





Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	16-04
Date of Observation:	9 / 23 / 2020 — Time: 3:05 pm
Name(s) of Investigator(s):	Cory Borton
Has it rained over 0.10 in. in last 72 hours?	☐ Yes ☑ No

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☐ Suburban Residential
- ☐ Commercial
- ☑ Institutional
- ☐ Open Space
- ☐ Woods
- Other: _____
- Known Industries: _____

Notes (e.g. origin of outfall, if known): CB in Township campus entrance south of Police.

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☐ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☑ Other: Clay	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 8 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☑ No ☐ Partially ☐ Fully With Sediment: ☑ No ☐ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☐ Yes ☑ No **(If No, Skip to Section 5)**

Flow Description (If present) ☐ Trickle ☐ Moderate ☐ Substantial

Description Details: _____

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☐			
pH / Temperature	☐	pH Level	Temperature (F)	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: _____

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: _____

Section 8: General Comments

Comments: _____

Section 9: Reporting Information

Comments: _____		Date Observed:	__/___/ ___
_____		Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___





Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	18-01		
Date of Observation:	9 / 21 / 2020	Time:	2:40 pm
Name(s) of Investigator(s):	Cory Borton		
Has it rained over 0.10 in. in last 72 hours?	☐ Yes	☑ No	

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☑ Suburban Residential
- ☐ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known): Storm sewer under tennis court.

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☑ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 12 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☑ No ☐ Partially ☐ Fully With Sediment: ☑ No ☐ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☐ Yes ☑ No **(If No, Skip to Section 5)**

Flow Description (If present) ☐ Trickle ☐ Moderate ☐ Substantial

Description Details: _____

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☐			
pH / Temperature	☐	pH Level	Temperature (F)	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: Only surface drainage. No buildings to tie in.

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: _____

Section 8: General Comments

Comments: Trickle from private storm sewer. Not from Twp. Sewer.

Section 9: Reporting Information

Comments:	_____	Date Observed:	__/___/ ___
_____		Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___





Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	18-02		
Date of Observation:	9 / 21 / 2020	Time:	2:15 pm
Name(s) of Investigator(s):	Cory Borton		
Has it rained over 0.10 in. in last 72 hours?	☐ Yes	☑ No	

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☑ Suburban Residential
- ☐ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known): Storm sewer along north side of condos

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☑ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 12 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☑ No ☐ Partially ☐ Fully With Sediment: ☑ No ☐ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☑ Yes ☐ No **(If No, Skip to Section 5)**

Flow Description (If present) ☑ Trickle ☐ Moderate ☐ Substantial

Description Details: _____

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☑ Yes ☐ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☑	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☑ Other: soap	☑ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☑ Yes ☐ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☑	>2420 MPN/100ml		
pH / Temperature	☑	pH Level: 8.18	Temperature (F): 70.7	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

☐	Unlikely
☐	Potential (Presence of two or more indicators)
☑	Suspect (One or more indicators with a severity of 3)
☐	Obvious
Comments:	_Smelled soap in manhole._____

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments:	East inlet in manhole has trickle. West inlet does not._____

Section 8: General Comments

Comments:	_____

Section 9: Reporting Information

Comments:	E.coli sample came back with high results. Further investigation will be done to determine source.	Date Observed:	9/23/2020
		Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___





Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	19-01		
Date of Observation:	9 / 17 / 2020	Time:	4:05 pm
Name(s) of Investigator(s):	Cory Borton		
Has it rained over 0.10 in. in last 72 hours?	☐ Yes	☑ No	

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☑ Suburban Residential
- ☐ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known): Enclosed ditch on east side of 1671 Keller Lane

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☑ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 30 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☑ No ☐ Partially ☐ Fully With Sediment: ☑ No ☐ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☐ Yes ☑ No **(If No, Skip to Section 5)**

Flow Description (If present) ☐ Trickle ☐ Moderate ☐ Substantial

Description Details: _____

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☐			
pH / Temperature	☐	pH Level	Temperature (F)	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: No flow and upstream ditch is dry.

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: _____

Section 8: General Comments

Comments: _____

Section 9: Reporting Information

Comments: _____		Date Observed:	__/___/ ___
_____		Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___



Upstream end of enclosed ditch/sewer



Downstream end of enclosed ditch/sewer

Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	20-01		
Date of Observation:	9 / 17 / 2020	Time:	4:25 pm
Name(s) of Investigator(s):	Cory Borton		
Has it rained over 0.10 in. in last 72 hours?	☐ Yes	☑ No	

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☑ Suburban Residential
- ☐ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known): Outfall on east side of safety path on Franklin Road

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☑ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 18 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☑ No ☐ Partially ☐ Fully With Sediment: ☐ No ☑ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☐ Yes ☑ No **(If No, Skip to Section 5)**

Flow Description (If present) ☐ Trickle ☐ Moderate ☐ Substantial

Description Details: _____

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☐			
pH / Temperature	☐	pH Level	Temperature (F)	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: Outlet for dry detention area.

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: Broken off animal grate

Section 8: General Comments

Comments: _____

Section 9: Reporting Information

Comments: _____		Date Observed:	__/___/ ___
_____		Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___



Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	20-02		
Date of Observation:	9 / 17 / 2020	Time:	4:35 pm
Name(s) of Investigator(s):	Cory Borton		
Has it rained over 0.10 in. in last 72 hours?	☐ Yes	☑ No	

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☑ Suburban Residential
- ☐ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known):

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☑ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 12 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☑ No ☐ Partially ☐ Fully With Sediment: ☑ No ☐ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☐ Yes ☑ No **(If No, Skip to Section 5)**

Flow Description (If present) ☐ Trickle ☐ Moderate ☐ Substantial

Description Details: _____

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☐			
pH / Temperature	☐	pH Level	Temperature (F)	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: 165' of pipe enclosing ditch

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: _____

Section 8: General Comments

Comments: _____

Section 9: Reporting Information

Comments: _____		Date Observed:	__/___/ ___
_____		Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___





Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	21-01
Date of Observation:	9 / 17 / 2020 — Time: 9:30 am
Name(s) of Investigator(s):	Cory Borton
Has it rained over 0.10 in. in last 72 hours?	☐ Yes ☑ No

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☑ Suburban Residential
- ☐ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known): Outfall for Overlea Court storm sewer

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☐ RCP ☐ PVC ☐ CMP ☑ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 15 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☑ No ☐ Partially ☐ Fully With Sediment: ☐ No ☑ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☐ Yes ☑ No **(If No, Skip to Section 5)**

Flow Description (If present) ☐ Trickle ☐ Moderate ☐ Substantial

Description Details: _____

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☐			
pH / Temperature	☐	pH Level	Temperature (F)	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☐ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☑	☐ Excessive ☑ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: Storm sewer on Overlea Court.

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: _____

Section 8: General Comments

Comments: _____

Section 9: Reporting Information

Comments: _____		Date Observed:	__/___/ ___
_____		Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___





Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	25-01		
Date of Observation:	9 / 22 / 2020	Time:	3:30 pm
Name(s) of Investigator(s):	Cory Borton		
Has it rained over 0.10 in. in last 72 hours?	☐ Yes	☑ No	

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☐ Suburban Residential
- ☑ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known): Inspected manhole in parking lot.

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☑ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 12 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☑ No ☐ Partially ☐ Fully With Sediment: ☐ No ☑ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☐ Yes ☑ No **(If No, Skip to Section 5)**

Flow Description (If present) ☐ Trickle ☐ Moderate ☐ Substantial

Description Details: _____

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☐			
pH / Temperature	☐	pH Level	Temperature (F)	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: Parking lot storm sewer manhole. Could not locate catch basin in green space.

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: _____

Section 8: General Comments

Comments: _____

Section 9: Reporting Information

Comments: _____		Date Observed:	__/___/ ___
_____		Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___





Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	25-02		
Date of Observation:	9 / 22 / 2020	Time:	3:18pm
Name(s) of Investigator(s):	Cory Borton		
Has it rained over 0.10 in. in last 72 hours?	☐ Yes	☑ No	

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☐ Suburban Residential
- ☑ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods
- Other: _____
- Known Industries: _____

Notes (e.g. origin of outfall, if known): Inspected catch basin SE of dumpsters.

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☑ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 15 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☑ No ☐ Partially ☐ Fully With Sediment: ☑ No ☐ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☐ Yes ☑ No **(If No, Skip to Section 5)**

Flow Description (If present) ☐ Trickle ☐ Moderate ☐ Substantial

Description Details: _____

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☑ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☐			
pH / Temperature	☐	pH Level	Temperature (F)	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: Parking lot storm sewer.

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: _____

Section 8: General Comments

Comments: _____

Section 9: Reporting Information

Comments: _____		Date Observed:	__/___/ ___
_____		Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___





Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	29-01
Date of Observation:	9 / 23 / 2020 — Time: 3:18 pm
Name(s) of Investigator(s):	Cory Borton
Has it rained over 0.10 in. in last 72 hours?	☐ Yes ☑ No

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☑ Suburban Residential
- ☐ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known): Outfall on north side of driveway for 5575 Forman

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☐ RCP ☐ PVC ☑ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 24 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☑ No ☐ Partially ☐ Fully With Sediment: ☑ No ☐ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☐ Yes ☑ No **(If No, Skip to Section 5)**

Flow Description (If present) ☐ Trickle ☐ Moderate ☐ Substantial

Description Details: _____

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☐			
pH / Temperature	☐	pH Level	Temperature (F)	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: Drains Forman Road and overflow for wetland area.

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: _____

Section 8: General Comments

Comments: _____

Section 9: Reporting Information

Comments: _____		Date Observed:	__/___/ ___
_____		Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___





Appendix B6

Canton Township Investigation Records

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Canton Administration Building

Section #: 21 Photograph #: _____ Date: 1-10-22 Crew Initials: CH

Weather: Air temp.: 20° Rain: Yes ____ No X Sunny X Cloudy ____

OUTFALL #: 3-7 Storm Sewer

1. Creek Name: Mott Drain
2. Size: 26"
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: 2" (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil_

Color: None X Yellow ____ Brown ____ Gre

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____

Deposits/stains: None X Sediment ____ Oily_

Vegetation conditions: Normal X Inhibited gr

Extent: _____

2021 INSPECTIONS Were Done EARLY 2022

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalli

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Links at Pheasant Run Condos

Section #: 28 Photograph #: _____ Date: 1-10-22 Crew Initials: _____

Weather: Air temp.: 20 Rain: Yes ____ No X Sunny X Cloudy ____

OUTFALL #: 3-6

1. Creek Name: Mott Drain
2. Size: 18"
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: 3" (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Hodin Park

Section #: 14 Photograph #: _____ Date: 1-10-22 Crew Initials: CH

Weather: Air temp.: 20° Rain: Yes ____ No X Sunny X Cloudy ____

OUTFALL #: 1-5A

1. Creek Name: Fellows Creek
2. Size: 24
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: 1" (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Flodin Park

Section #: 14 Photograph #: _____ Date: 1-10-22 Crew Initials: CH

Weather: Air temp.: 20° Rain: Yes ____ No X Sunny X Cloudy ____

OUTFALL #: I-5B

1. Creek Name: Fellows Creek
2. Size: 24
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: — (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Sheldon Road Wetland

Section #: 3 Photograph #: _____ Date: 1-13-22 Crew Initials: CH

Weather: Air temp.: 30 Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 1-1

1. Creek Name: Willow Creek
2. Size: 24"
3. Material: Metal
4. Flow/Depth on Flow in Pipe: 1" (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

Location: Canton Public Library

Section #: 21 Photograph #: _____ Date: 1-13-22 Crew Initials: CH

Weather: Air temp.: 32° Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 3-5A

1. Creek Name: Mill Drain
2. Size: 12"
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: 3" (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Canton Public Library

Section #: 21 Photograph #: _____ Date: 1-13-22 Crew Initials: CH

Weather: Air temp.: 32° Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 3-5B

1. Creek Name: Mott Drain
2. Size: 12"
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: 2" (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Canton Public Library

Section #: 21 Photograph #: _____ Date: 1-13-22 Crew Initials: CH

Weather: Air temp.: 32° Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 3-5C

1. Creek Name: Mott Drain
2. Size: 12"
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: 2" (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Heritage Park

Section #: 21 Photograph #: _____ Date: 1-13-22 Crew Initials: CH

Weather: Air temp.: 32° Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 3-4A

1. Creek Name: Mott Drain
2. Size: 10"
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: _____ (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Heritage Park

Section #: 21 Photograph #: _____ Date: 1-13-22 Crew Initials: CH

Weather: Air temp.: 32° Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 3-4B

1. Creek Name: Mott Drain
2. Size: 10"
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: _____ (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None____Sewage____Sufide____Oil____Gas____Rancid-sour____Other____

Color: None____Yellow____Brown____Green____Red____Gray____Other____

Turbidity: None____Cloudy____Opaque____

Floatables: None____Petroleum____Sheen____Sewage____Other____(collect samples)

Deposits/stains: None____Sediment____Oily____Describe:____(collect samples)

Vegetation conditions: Normal____Inhibited growth____Excessive growth____

Extent: _____

Damage to outfall structures:

None____Concrete cracking____Concrete Spalling____Peeling paint____Metal corrosion____

Other damage:_____Extent_____

ANALYSES

Known industrial or commercial uses in drainage area? Yes____No____Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES____NO____

_____

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Heritage Park

Section #: 21 Photograph #: _____ Date: 1-13-22 Crew Initials: CH

Weather: Air temp.: 32° Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 3-4C

1. Creek Name: Mott Drain
2. Size: 10"
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: _____ (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Grounds Maintenance Building

Section #: 21 Photograph #: _____ Date: 1-11-22 Crew Initials: CH

Weather: Air temp.: 8° Rain: Yes ____ No X Sunny X Cloudy ____

OUTFALL #: _____

1. Creek Name: Mott Drain
2. Size: 36"
3. Material: Metal
4. Flow/Depth on Flow in Pipe: 4" (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Griffin Park

Section #: 15 Photograph #: _____ Date: 1-11-22 Crew Initials: CH

Weather: Air temp.: 8° Rain: Yes ____ No X Sunny X Cloudy ____

OUTFALL #: 1-6A

1. Creek Name: Green Drain
2. Size: 12"
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: — (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Griffin Park

Section #: 15 Photograph #: _____ Date: 1-11-22 Crew Initials: CH

Weather: Air temp.: 8° Rain: Yes ____ No X Sunny X Cloudy ____

OUTFALL #: 1-6B

1. Creek Name: Green Drain
2. Size: 12"
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: 6" (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None ____ Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None ____ Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None ____ Cloudy ____ Opaque ____

Floatables: None ____ Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None ____ Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal ____ Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Griffin Park

Section #: 15 Photograph #: _____ Date: 1-11-22 Crew Initials: CH

Weather: Air temp.: 8° Rain: Yes ____ No X Sunny X Cloudy ____

OUTFALL #: 1-6C

1. Creek Name: Green Drain
2. Size: 12"
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: 1" (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None ____ Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None ____ Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None ____ Cloudy ____ Opaque ____

Floatables: None ____ Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None ____ Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal ____ Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Independence Park

Section #: 19 Photograph #: _____ Date: 1-11-22 Crew Initials: CH

Weather: Air temp.: 10° Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 3-2

1. Creek Name: Lower Rouge River
2. Size: 24"
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: 1" (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Canton Softball Center

Section #: 33 Photograph #: _____ Date: 1-14-22 Crew Initials: CH

Weather: Air temp.: 30° Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 3-8A

1. Creek Name: Rich Draw
2. Size: 12"
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: — (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Canton Softball Center

Section #: 33 Photograph #: _____ Date: 1-14-22 Crew Initials: CH

Weather: Air temp.: 30° Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 3-8B

1. Creek Name: Rich Drain
2. Size: 12"
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: — (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Old Human Resources Building

Section #: 34 Photograph #: _____ Date: 1-14-22 Crew Initials: CH

Weather: Air temp.: 28 Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 4-4

1. Creek Name: Rich Drain
2. Size: _____
3. Material: ~~Concrete~~ Under Road Storm Sewer
4. Flow/Depth on Flow in Pipe: _____ (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None ____ Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None ____ Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None ____ Cloudy ____ Opaque ____

Floatables: None ____ Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None ____ Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal ____ Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None ____ Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Old Township Hall

Section #: 34 Photograph #: _____ Date: 1-14-22 Crew Initials: CH

Weather: Air temp.: 28° Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 4-3

1. Creek Name: Rich Drain
2. Size: 36"
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: _____ (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

Location: Canton HR Resources Building

Section #: 18 Photograph #: _____ Date: 1-14-22 Crew Initials: CH

Weather: Air temp.: 25° Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 2-1

1. Creek Name: Lower Rouge River
2. Size: 24
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: ~~1~~" (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

Location: Canton DPW

Section #: 34 Photograph #: _____ Date: 1-14-22 Crew Initials: CH

Weather: Air temp.: 28° Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 4-5

1. Creek Name: Fisher & Leng Drain & McKinstry Drain
2. Size: 24
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: _____ (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None____Sewage____Sufide____Oil____Gas____Rancid-sour____Other____

Color: None____Yellow____Brown____Green____Red____Gray____Other____

Turbidity: None____Cloudy____Opaque____

Floatables: None____Petroleum____Sheen____Sewage____Other____(collect samples)

Deposits/stains: None____Sediment____Oily____Describe:____(collect samples)

Vegetation conditions: Normal____Inhibited growth____Excessive growth____

Extent: _____

Damage to outfall structures:

None____Concrete cracking____Concrete Spalling____Peeling paint____Metal corrosion____

Other damage:_____Extent_____

ANALYSES

Known industrial or commercial uses in drainage area? Yes____No____Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES____NO____

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Pheasant Run Golf Course

Section #: 29 Photograph #: _____ Date: 1-5-22 Crew Initials: CH

Weather: Air temp.: 18 Rain: Yes ____ No X Sunny X Cloudy ____

OUTFALL #: 3-10

1. Creek Name: Lower Rouge River
2. Size: 6
3. Material: Plastic
4. Flow/Depth on Flow in Pipe: — (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Pheasant Run Golf Course

Section #: 29 Photograph #: _____ Date: 1-5-22 Crew Initials: CH

Weather: Air temp.: 18 Rain: Yes ____ No X Sunny X Cloudy ____

OUTFALL #: 3-11

1. Creek Name: Lower Rouge River
2. Size: 24"
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: 2" (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Pheasant Run Golf Course

Section #: 20 Photograph #: _____ Date: 1-5-22 Crew Initials: CF

Weather: Air temp.: 18 Rain: Yes ____ No X Sunny X Cloudy ____

OUTFALL #: 3-13

1. Creek Name: Lower Rouge
2. Size: _____
3. Material: _____
4. Flow/Depth on Flow in Pipe: _____ (inches)

Can't Find.

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None ____ Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None ____ Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None ____ Cloudy ____ Opaque ____

Floatables: None ____ Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None ____ Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal ____ Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None ____ Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO ____

_____

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Pheasant Run Golf Course

Section #: 20 Photograph #:_____ Date:_____ Crew Initials:_____

Weather: Air temp.: 18 Rain: Yes____ No X Sunny X Cloudy____

OUTFALL #: 3-14

1. Creek Name: Lower Rouge River
2. Size: _____
3. Material: _____
4. Flow/Depth on Flow in Pipe: _____ (inches)

Can't find

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None____Sewage____Sufide____Oil____Gas____Rancid-sour____Other____

Color: None____Yellow____Brown____Green____Red____Gray____Other____

Turbidity: None____Cloudy____Opaque____

Floatables: None____Petroleum____Sheen____Sewage____Other____(collect samples)

Deposits/stains: None____Sediment____Oily____Describe:_____(collect samples)

Vegetation conditions: Normal____Inhibited growth____Excessive growth____

Extent: _____

Damage to outfall structures:

None____Concrete cracking____Concrete Spalling____Peeling paint____Metal corrosion____

Other damage:_____Extent_____

ANALYSES

Known industrial or commercial uses in drainage area? Yes____ No____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES____ NO____

_____

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Pheasant Run Golf Course

Section #: 20 Photograph #: _____ Date: 1-5-22 Crew Initials: CH

Weather: Air temp.: 18 Rain: Yes ____ No X Sunny X Cloudy ____

OUTFALL #: 3-15

1. Creek Name: _____
2. Size: _____
3. Material: _____
4. Flow/Depth on Flow in Pipe: _____ (inches)

Can't Find

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None ____ Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None ____ Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None ____ Cloudy ____ Opaque ____

Floatables: None ____ Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None ____ Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal ____ Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None ____ Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO ____

_____

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Pheasant Run Golf Course

Section #: 20 Photograph #: _____ Date: 1-5-22 Crew Initials: CH

Weather: Air temp.: 18 Rain: Yes ____ No X Sunny X Cloudy ____

OUTFALL #: ~~Lower Rouge~~ 3-16

1. Creek Name: Lower Rouge River
2. Size: @ 36"
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: 4" (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Pheasant Run Golf Course

Section #: 20 Photograph #: _____ Date: 1-5-22 Crew Initials: CH

Weather: Air temp.: 20 Rain: Yes ____ No X Sunny X Cloudy ____

OUTFALL #: 3-17

1. Creek Name: Lower Range River
2. Size: 24
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: 4" (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Pheasant Run Golf Course

Section #: 20 Photograph #: _____ Date: 1-5-22 Crew Initials: CH

Weather: Air temp.: 20 Rain: Yes ____ No X Sunny X Cloudy ____

OUTFALL #: 3-18

1. Creek Name: Lower Rouge
2. Size: _____
3. Material: _____
4. Flow/Depth on Flow in Pipe: _____ (inches)

Can't Find

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None____Sewage____Sufide____Oil____Gas____Rancid-sour____Other____

Color: None____Yellow____Brown____Green____Red____Gray____Other____

Turbidity: None____Cloudy____Opaque____

Floatables: None____Petroleum____Sheen____Sewage____Other____(collect samples)

Deposits/stains: None____Sediment____Oily____Describe:____(collect samples)

Vegetation conditions: Normal____Inhibited growth____Excessive growth____

Extent: _____

Damage to outfall structures:

None____Concrete cracking____Concrete Spalling____Peeling paint____Metal corrosion____

Other damage:_____Extent_____

ANALYSES

Known industrial or commercial uses in drainage area? Yes____No____Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES____NO____

_____

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Pheasant Run Golf Course

Section #: 20-29 Photograph #: _____ Date: 1-5-22 Crew Initials: CH

Weather: Air temp.: 20 Rain: Yes ____ No X Sunny X Cloudy ____

OUTFALL #: 3-19

1. Creek Name: Lower Rouge
2. Size: 32"
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: 3" (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Pheasant Run Golf Course

Section #: 20-29 Photograph #: _____ Date: 1-6-22 Crew Initials: _____

Weather: Air temp.: 20° Rain: Yes ____ No X Sunny X Cloudy ____

OUTFALL #: 3-20

1. Creek Name: Lower Rouge River
2. Size: _____
3. Material: _____
4. Flow/Depth on Flow in Pipe: _____ (inches)

Can't Find.

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None ____ Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None ____ Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None ____ Cloudy ____ Opaque ____

Floatables: None ____ Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None ____ Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal ____ Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None ____ Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO ____

_____

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Pheasant Run Golf Course

Section #: 20-29 Photograph #:_____ Date: 1-6-22 Crew Initials:_____

Weather: Air temp.: 20 Rain: Yes____ No X Sunny X Cloudy____

OUTFALL #: 3-21

1. Creek Name: Lower Rouge River
2. Size: _____
3. Material: _____
4. Flow/Depth on Flow in Pipe: _____ (inches)

Can't Find

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None____Sewage____Sufide____Oil____Gas____Rancid-sour____Other____

Color: None____Yellow____Brown____Green____Red____Gray____Other____

Turbidity: None____Cloudy____Opaque____

Floatables: None____Petroleum____Sheen____Sewage____Other____(collect samples)

Deposits/stains: None____Sediment____Oily____Describe:____(collect samples)

Vegetation conditions: Normal____Inhibited growth____Excessive growth____

Extent: _____

Damage to outfall structures:

None____Concrete cracking____Concrete Spalling____Peeling paint____Metal corrosion____

Other damage:_____Extent_____

ANALYSES

Known industrial or commercial uses in drainage area? Yes____No____Describe: _____

_____

Stream conditions: _____

_____

Additional Observations: _____

_____

Need to follow up: YES____NO____

_____

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Barchester Park

Section #: 11 Photograph #: _____ Date: 1-6-22 Crew Initials: CH

Weather: Air temp.: 20° Rain: Yes ____ No X Sunny X Cloudy ____

OUTFALL #: 1-2

1. Creek Name: Willow Creek
2. Size: 48"
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: — (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

Location: Fire Station #2

Section #: 11 Photograph #: _____ Date: 1-6-22 Crew Initials: CH

Weather: Air temp.: 18 Rain: Yes ____ No X Sunny X Cloudy ____

OUTFALL #: 1-3

1. Creek Name: Tonquish Creek
2. Size: 3"-4"
3. Material: Plastic
4. Flow/Depth on Flow in Pipe: _____ (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Koppernick Pond

Section #: 12 Photograph #: _____ Date: 1-6-22 Crew Initials: CH

Weather: Air temp.: 20 Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 1-4

1. Creek Name: Tonquish Creek
2. Size: ~~12"~~ 24"
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: 3" (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal ____ Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Freedom Park

Section #: 22 Photograph #: _____ Date: 1-18-22 Crew Initials: CH

Weather: Air temp.: 28° Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 4-2

1. Creek Name: MTT Drain
2. Size: Storm Sewer M.H.
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: _____ (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Fellows Creek . Golf Course

Section #: 25 Photograph #: _____ Date: 1-12-22 Crew Initials: CH

Weather: Air temp.: 20 Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 4-6

1. Creek Name: Fellows Creek
2. Size: _____
3. Material: _____
4. Flow/Depth on Flow in Pipe: _____ (inches)

Can't Find

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None____Sewage____Sufide____Oil____Gas____Rancid-sour____Other____

Color: None____Yellow____Brown____Green____Red____Gray____Other____

Turbidity: None____Cloudy____Opaque____

Floatables: None____Petroleum____Sheen____Sewage____Other____(collect samples)

Deposits/stains: None____Sediment____Oily____Describe:____(collect samples)

Vegetation conditions: Normal____Inhibited growth____Excessive growth____

Extent: _____

Damage to outfall structures:

None____Concrete cracking____Concrete Spalling____Peeling paint____Metal corrosion____

Other damage:_____Extent_____

ANALYSES

Known industrial or commercial uses in drainage area? Yes____No____Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES____NO____

_____

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Fellows Creek, Golf Course

Section #: 25 Photograph #: _____ Date: 1-12-22 Crew Initials: CH

Weather: Air temp.: 20 Rain: Yes____ No X Sunny____ Cloudy X

OUTFALL #: 4-7

1. Creek Name: Fellows Creek
2. Size: _____
3. Material: _____
4. Flow/Depth on Flow in Pipe: _____ (inches)

Can't Find

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None____ Sewage____ Sufide____ Oil____ Gas____ Rancid-sour____ Other____

Color: None____ Yellow____ Brown____ Green____ Red____ Gray____ Other____

Turbidity: None____ Cloudy____ Opaque____

Floatables: None____ Petroleum____ Sheen____ Sewage____ Other____ (collect samples)

Deposits/stains: None____ Sediment____ Oily____ Describe:____ (collect samples)

Vegetation conditions: Normal____ Inhibited growth____ Excessive growth____

Extent: _____

Damage to outfall structures:

None____ Concrete cracking____ Concrete Spalling____ Peeling paint____ Metal corrosion____

Other damage:_____ Extent_____

ANALYSES

Known industrial or commercial uses in drainage area? Yes____ No____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES____ NO____

_____

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Fellows Creek Golf Course

Section #: 25 Photograph #: _____ Date: 1-12-22 Crew Initials: CH

Weather: Air temp.: 20 Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 4-8 Can't Find

1. Creek Name: Fellows Creek
2. Size: _____
3. Material: _____
4. Flow/Depth on Flow in Pipe: _____ (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None____Sewage____Sufide____Oil____Gas____Rancid-sour____Other____

Color: None____Yellow____Brown____Green____Red____Gray____Other____

Turbidity: None____Cloudy____Opaque____

Floatables: None____Petroleum____Sheen____Sewage____Other____(collect samples)

Deposits/stains: None____Sediment____Oily____Describe:____(collect samples)

Vegetation conditions: Normal____Inhibited growth____Excessive growth____

Extent: _____

Damage to outfall structures:

None____Concrete cracking____Concrete Spalling____Peeling paint____Metal corrosion____

Other damage:_____Extent_____

ANALYSES

Known industrial or commercial uses in drainage area? Yes____No____Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES____NO____

_____

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Fellows Creek Golf Course

Section #: 25 Photograph #: _____ Date: 1-12-22 Crew Initials: CH

Weather: Air temp.: 20 Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 4-9

1. Creek Name: Fellows Creek
2. Size: 8"
3. Material: Plastic
4. Flow/Depth on Flow in Pipe: _____ (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Fellows Creek Golf Course

Section #: 25 Photograph #: _____ Date: 1-12-22 Crew Initials: CH

Weather: Air temp.: 20 Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 4-10

1. Creek Name: Fellow Creek
2. Size: _____
3. Material: _____
4. Flow/Depth on Flow in Pipe: _____ (inches)

Can't Find

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None____Sewage____Sufide____Oil____Gas____Rancid-sour____Other____

Color: None____Yellow____Brown____Green____Red____Gray____Other____

Turbidity: None____Cloudy____Opaque____

Floatables: None____Petroleum____Sheen____Sewage____Other____(collect samples)

Deposits/stains: None____Sediment____Oily____Describe:____(collect samples)

Vegetation conditions: Normal____Inhibited growth____Excessive growth____

Extent: _____

Damage to outfall structures:

None____Concrete cracking____Concrete Spalling____Peeling paint____Metal corrosion____

Other damage:_____Extent_____

ANALYSES

Known industrial or commercial uses in drainage area? Yes____No____Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES____NO____

_____

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Fellows Creek Golf Course

Section #: 25 Photograph #: _____ Date: _____ Crew Initials: CH

Weather: Air temp.: 25 Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 4-11

1. Creek Name: Fellow Creek
2. Size: 24
3. Material: Concrete
4. Flow/Depth on Flow in Pipe: 1" (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Fellow Creek Golf Course

Section #: 25 Photograph #:_____ Date:_____ Crew Initials: CH

Weather: Air temp.: 25 Rain: Yes____ No X Sunny____ Cloudy X

OUTFALL #: ~~1~~ 4-12

1. Creek Name: Fellow Creek
2. Size: _____
3. Material: _____
4. Flow/Depth on Flow in Pipe: _____ (inches)

Can't Find

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None____Sewage____Sufide____Oil____Gas____Rancid-sour____Other____

Color: None____Yellow____Brown____Green____Red____Gray____Other____

Turbidity: None____Cloudy____Opaque____

Floatables: None____Petroleum____Sheen____Sewage____Other____(collect samples)

Deposits/stains: None____Sediment____Oily____Describe:____(collect samples)

Vegetation conditions: Normal____Inhibited growth____Excessive growth____

Extent: _____

Damage to outfall structures:

None____Concrete cracking____Concrete Spalling____Peeling paint____Metal corrosion____

Other damage:_____Extent_____

ANALYSES

Known industrial or commercial uses in drainage area? Yes____No____Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES____NO____

_____

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Fellows Creek Golf Course

Section #: 25 Photograph #: _____ Date: _____ Crew Initials: CH

Weather: Air temp.: 25 Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 4-13

1. Creek Name: Fellows Creek
2. Size: _____
3. Material: _____
4. Flow/Depth on Flow in Pipe: _____ (inches)

Can't Find

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None____Sewage____Sufide____Oil____Gas____Rancid-sour____Other____

Color: None____Yellow____Brown____Green____Red____Gray____Other____

Turbidity: None____Cloudy____Opaque____

Floatables: None____Petroleum____Sheen____Sewage____Other____(collect samples)

Deposits/stains: None____Sediment____Oily____Describe:____(collect samples)

Vegetation conditions: Normal____Inhibited growth____Excessive growth____

Extent: _____

Damage to outfall structures:

None____Concrete cracking____Concrete Spalling____Peeling paint____Metal corrosion____

Other damage:_____Extent_____

ANALYSES

Known industrial or commercial uses in drainage area? Yes____No____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES____NO____

_____

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Fellow Creek Golf Course

Section #: 25 Photograph #: _____ Date: _____ Crew Initials: CH

Weather: Air temp.: 25 Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 4-14

1. Creek Name: Fellows Creek
2. Size: 4
3. Material: Plastic
4. Flow/Depth on Flow in Pipe: _____ (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Fellow Creek Golf Course

Section #: 25 Photograph #: _____ Date: _____ Crew Initials: CF

Weather: Air temp.: 25 Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 4-15

1. Creek Name: Fellows Creek
2. Size: _____
3. Material: _____
4. Flow/Depth on Flow in Pipe: _____ (inches)

Can't Find

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None____Sewage____Sufide____Oil____Gas____Rancid-sour____Other____

Color: None____Yellow____Brown____Green____Red____Gray____Other____

Turbidity: None____Cloudy____Opaque____

Floatables: None____Petroleum____Sheen____Sewage____Other____(collect samples)

Deposits/stains: None____Sediment____Oily____Describe:____(collect samples)

Vegetation conditions: Normal____Inhibited growth____Excessive growth____

Extent: _____

Damage to outfall structures:

None____Concrete cracking____Concrete Spalling____Peeling paint____Metal corrosion____

Other damage:_____Extent_____

ANALYSES

Known industrial or commercial uses in drainage area? Yes____No____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES____NO____

_____

OUTFALL INVESTIGATION REPORT

CANTON Community

Location: Fellow Creek Golf Course

Section #: 25 Photograph #: _____ Date: 1-18-22 Crew Initials: CH

Weather: Air temp.: 28 Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 4-16

1. Creek Name: Fellow Creek
2. Size: 4"
3. Material: Plastic
4. Flow/Depth on Flow in Pipe: _____ (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage ____ Sufide ____ Oil ____ Gas ____ Rancid-sour ____ Other ____

Color: None X Yellow ____ Brown ____ Green ____ Red ____ Gray ____ Other ____

Turbidity: None X Cloudy ____ Opaque ____

Floatables: None X Petroleum ____ Sheen ____ Sewage ____ Other ____ (collect samples)

Deposits/stains: None X Sediment ____ Oily ____ Describe: ____ (collect samples)

Vegetation conditions: Normal X Inhibited growth ____ Excessive growth ____

Extent: _____

Damage to outfall structures:

None X Concrete cracking ____ Concrete Spalling ____ Peeling paint ____ Metal corrosion ____

Other damage: _____ Extent _____

ANALYSES

Known industrial or commercial uses in drainage area? Yes ____ No ____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES ____ NO X

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Fellows Creek Golf Course

Section #: 25 Photograph #: _____ Date: 1-18-22 Crew Initials: CH

Weather: Air temp.: 28 Rain: Yes____ No X Sunny____ Cloudy X

OUTFALL #: 4-17

1. Creek Name: Fellow Creek
2. Size: 6"
3. Material: Plastic
4. Flow/Depth on Flow in Pipe: _____ (inches)

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None X Sewage____ Sufide____ Oil____ Gas____ Rancid-sour____ Other____

Color: None X Yellow____ Brown____ Green____ Red____ Gray____ Other____

Turbidity: None X Cloudy____ Opaque____

Floatables: None X Petroleum____ Sheen____ Sewage____ Other____ (collect samples)

Deposits/stains: None X Sediment____ Oily____ Describe:_____ (collect samples)

Vegetation conditions: Normal X Inhibited growth____ Excessive growth____

Extent: _____

Damage to outfall structures:

None X Concrete cracking____ Concrete Spalling____ Peeling paint____ Metal corrosion____

Other damage:_____ Extent_____

ANALYSES

Known industrial or commercial uses in drainage area? Yes____ No____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES____ NO X

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Fellows Creek Golf Course

Section #: 25 Photograph #: _____ Date: 1-18-22 Crew Initials: CH

Weather: Air temp.: 28 Rain: Yes ____ No X Sunny ____ Cloudy X

OUTFALL #: 4-18

1. Creek Name: Fellow Creek
2. Size: _____
3. Material: _____
4. Flow/Depth on Flow in Pipe: _____ (inches)

Can't Find

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None____Sewage____Sufide____Oil____Gas____Rancid-sour____Other____

Color: None____Yellow____Brown____Green____Red____Gray____Other____

Turbidity: None____Cloudy____Opaque____

Floatables: None____Petroleum____Sheen____Sewage____Other____(collect samples)

Deposits/stains: None____Sediment____Oily____Describe:____(collect samples)

Vegetation conditions: Normal____Inhibited growth____Excessive growth____

Extent: _____

Damage to outfall structures:

None____Concrete cracking____Concrete Spalling____Peeling paint____Metal corrosion____

Other damage:_____Extent_____

ANALYSES

Known industrial or commercial uses in drainage area? Yes____No____Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES____NO____

_____

CANTON Community

OUTFALL INVESTIGATION REPORT

Location: Fellow Creek Golf Course

Section #: 25 Photograph #: _____ Date: 1-18-22 Crew Initials: CH

Weather: Air temp.: 28 Rain: Yes____ No X Sunny____ Cloudy X

OUTFALL #: 4-19

1. Creek Name: Fellow Creek
2. Size: _____
3. Material: _____
4. Flow/Depth on Flow in Pipe: _____ (inches)

Can't Find.

PHYSICAL DISCHARGE OBSERVATIONS

Odor: None____ Sewage____ Sufide____ Oil____ Gas____ Rancid-sour____ Other____

Color: None____ Yellow____ Brown____ Green____ Red____ Gray____ Other____

Turbidity: None____ Cloudy____ Opaque____

Floatables: None____ Petroleum____ Sheen____ Sewage____ Other____ (collect samples)

Deposits/stains: None____ Sediment____ Oily____ Describe:____ (collect samples)

Vegetation conditions: Normal____ Inhibited growth____ Excessive growth____

Extent: _____

Damage to outfall structures:

None____ Concrete cracking____ Concrete Spalling____ Peeling paint____ Metal corrosion____

Other damage:_____ Extent_____

ANALYSES

Known industrial or commercial uses in drainage area? Yes____ No____ Describe: _____

Stream conditions: _____

Additional Observations: _____

Need to follow up: YES____ NO____

_____

Appendix C

IDEP Training Records

Appendix C1. Number of Field Staff by Permittee

Appendix C2. Sign-in Sheets for ARC-Sponsor Training

Appendix C3. Individual Community Training Records

Appendix C1

Number of Field Staff by Permittee

Community	Number of field staff	Number of staff trained at the investigator level	Number of staff trained at observer level
Beverly Hills	10	5	2
Bingham Farms	1	0	1
Birmingham	13	1	10
Bloomfield Hills	5	0	5
Bloomfield Township	27	8	25
Canton Township	22	22	22
Dearborn Heights	30	1	5
Farmington	10	4	5
Farmington Hills	21	8	21
Garden City	23	0	23
Inkster	7	7	7
Lathrup Village	1	1	1
Livonia	65	4	26
Melvindale	8	0	1
Northville	6	2	6
Northville Township	11	11	11
Novi	26	1	17
Oak Park	2	0	2
Plymouth	13	11	11
Plymouth Township	11	10	5
Redford Township	16	8	2
Southfield	40	1	15
Troy	18	4	10
Village of Franklin	0	0	0
Walled Lake	3.5	2	2
Wayne	1	1	1
West Bloomfield Township	28	7	14
Westland	40	6	8
Total	**458.5**	**125**	**258**

Appendix C2

Sign-in Sheets for ARC-Sponsor Training

Attendee Report: **SEMCOG University: Alert Observer Training**

Report Generated: 11/12/2020 04:06 PM EST

Webinar ID	Actual Start Date/Time	Duration	# Registered
988-245-499	11/10/2020 09:32 AM EST	1 hour 30 minutes	195

Atendees

Interest Rating	Last Name	First Name	Email Address
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88	Bartlett	James	jbartlett@plymouthtwp.org
88	Bartoletri	Giordano	Jbartoletti@cityofnovi.org
56	Baumgarten	Terry	baumgartentery@yahoo.com
85	Bednar	Mary	tontownship-mi.gov
88	Bledsoe	Joe	awaker@fhgov.com
34	Boron	Victor	vboron@cityofnovi.org
76	Borton	Cory	cborton@bloomfieldtwp.org
85	Boyd	Mike	boydm@oakgov.com
80	Brindley	Mike	mbrindley@plymouthmi.gov
98	Brindley	Levi	brindleyl@oakgov.com
60	Burby	Scott	burbys@wcroads.org
88	Butler	Kevin	butlerk@washtenaw.org
84	Carpenter	Jennifer	jd.carp@yahoo.com
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73	Cubera	Jim	jcubera@fhgov.com
81	Czernel	Karen	@macombgov.org
87	Dancer	Robert	dancerr@washtenaw.org
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86	Decker	Marc	deckerma@washtenaw.org
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89	Donner	Jacob	jdonner@dextermi.gov
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City of Birmingha	Jones	Stan	
City of Birmingha	Bartley	David	
City of Birmingha	Kowaleski	Pat	
City of Birmingha	DeRoeck	Devin	
City of Birmingha	Leme Sr.	Dominic	
City of Birmingha	DeMaggio	Larry	
City of Birmingha	Aldrich	Derek	
City of Birmingha	Brionchette	Dave	
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Dearborn Heights	Bunker	Floyd	
Dearborn Heights	DeFazio	Joe	
Dearborn Heights	Huynh	Vien	
Dearborn Heights	Leslo	John	
Dearborn Heights	Dombrowski	Jesse	
Dearborn Heights	Winnie	Matt	
Dearborn Heights	Harris	Lerry	
Dearborn Heights	Russ	Mark	
Dearborn Heights	Jackson	David	
Dearborn Heights	Spehar	Paul	
Dearborn Heights	Whitmore	Curtis	
Dearborn Heights	Selmi	John	
Dearborn Heights	Polsinelli	Frank	

Dearborn Heights	Dishon	Christopher	
Dearborn Heights	Piestrah	Eugene	
Dearborn Heights	Watt	Daniel	
Dearborn Heights	Kupchick	Ken	
Dearborn Heights	Craft	Ben	
Dearborn Heights	Bonowski	David	
Dearborn Heights	Balckburn	Michael	
Dearborn Heights	Sabatini	Joeseph	
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	Kulesza	Timothy	

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Prevention & Good Housekeeping	784-259-027
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11/10/2020	134
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jmatties@cityofnovi.org
jvancurler@cityofnovi.org
cfritz@cityofnovi.org
dreid@cityofnovi.org
jheadley@cityofnovi.org
jpaulk@cityofnovi.org
gtremblay@cityofnovi.org

mtate@cityofnovi.org
cstanley@cityofnovi.org
fpettey@cityofnovi.org
Dsnyder@cityofnovi.org
dmoore@ci.livonia.mi.us
vboron@cityofnovi.org
lvoelker@emich.edu
klangj@michigan.gov
cborton@bloomfieldtwp.org
ECampbell@Geosyntec.com
kraussb@washingtontwpmi.org
HOHMJ@MICHIGAN.GOV
jpeters@riverviewschools.com
kackland@wadetrim.com
jpace@riverviewschools.com
bflorek@charlesraines.com
astaup@cityofnovi.org
mrhatigan@cityofnovi.org
mwiktorowski@cityofnovi.org
sdubay@hazelpark.org
krichardson@cityofnovi.org
nrudd@gpshoresmi.gov
chanson@oakland.edu
lsirls@cityofsouthfield.com
eskurda@sterling-heights.net
mway@gpshoresmi.gov
makic@washtenaw.org
smithj@villageofclarkston.org
aallen@hrcengr.com
creiter@oriontownship.org
villageofromeo@yahoo.com
lhassoldprevot@rcoc.org
bvaracalle@livgov.com
RSoos@livgov.com
jeff.bednar@macombgov.org
oxfordvillagedpw@gmail.com
dcs@cityoforchardlake.com
lara.sucharski@macombgov.org
chiassonm@oakgov.com
squiersk@washtenaw.org
millerki@oakgov.com
kleina@scsmi.net
babcockb@scsmi.net
pollizzit@rochesterhills.org
garrisonj@oakgov.com
riceh@washtenaw.org
m.bednar@clintontownship-mi.gov

holleye@washtenaw.org
chafinsj@porthuron.org
Avignea@washtenaw.org
grantham@semcog.org
kgoetze@waterfordmi.gov
NBDPS@CITYOFNEWBALTIMORE.OR
G
Wintonri@detroitmi.gov
taylor@semcog.org

Appendix C3

Individual Community Training Records

CANTON
Community

Alert Observer Training

Wednesday, October 27, 2021

PW Training Room

10:30a-11:30a

Name- please print	Signature
Kevin Clark	
Scott Kahanec	
MIKE BRITTON	
Josh Wardt	
Jay Herdon	
[illegible]	
Daniel Bayush	
JAMES WEST	
SEAN Conner	
Rob Moyers	
Christian Manley	
Brent Sprague	
Chris Hanner	
Anthony Evangelista	
CURT FOSTER	
Jeffrey Albert Michael (JAM)	
CLINT Hallman	
JACOB SAUNDERS	
David Lance Arnold	
BRAD BIRD	
Ray Hamilton	
Greg Pyle	

CANTON
Community

IDEP Investigator Training

Wednesday, October 27, 2021

PW Training Room

1:00p-3:00p

Name- please print	Signature
Brad Byrd	
Kevin Clark	
James West	
Jeff McInnes	
Josh Worth	
Jay Herdon	
Dave Arnold	
Josh Smith	
Scott Kahanec	
Christian Manley	
Rob Myers	
Brayton Sprague	
Chad Hallman	
Daniel Benyush	
Curt Foster	
Jason Conner	
Chris Hanner	
Jacob Saunders	
John Selvi	
Casey Pyle	
Roy Hamilton	

CANTON
Community

Pollution Prevention & Good Housekeeping Training

Thursday, October 28, 2021

PW Training Room

10:30a-11:30a

Name- please print	Signature
Kevin Clark	Ke Clark
Roy Hamilton	
GREG Pyle	
	Brent Sprague
Josh Wertz	
JACOB SAUNDERS	
ROB MOYERS	
Hhony Evangelista	
JAMES WEST	
CURT FOSTER	
Christian Manley	
Chris Hanner	
Daniel Bayush	
Josh Smith	
Scott Kihanec	
Jeff Michael	
Jason Conner	
Dave Arnold	
Mike Britton	
Clint Hallman	

Alex Kozlowski

From: Alex Kozlowski
Sent: Friday, October 22, 2021 12:25 PM
To: 'Laura Gruzwalski'
Subject: RE: SEMCOG IDEP/P2 Virtual Training Opportunities

Hi Laura,

Our Engineering Inspector, Bryant Houfek, is going to attend the Alert Observer and IDEP Investigator training on the 27th.

Have a great weekend!

Alex

From: Laura Gruzwalski <lgruzwalski@dlz.com>
Sent: Friday, October 22, 2021 10:04 AM
To: Corey Almas <coreyalmas@madison-heights.org>; Sean Ballantine <seanballantine@madison-heights.org>; Chris Woodward <cwoodward@madison-heights.org>; Justin Kowalski <JustinKowalski@Madison-Heights.org>; Blaine Wing <bwing@rochestermi.org>; Jason Dickinson <JDickinson@rochestermi.org>; Cory Bendick <CBendick@rochestermi.org>; Joe Raona <raonaj@lamphereschools.org>; Patti Wisniewski <wisniewskip@lamphereschools.org>; Ed Haapala <EHaapala@wbtownship.org>; Gary Simpson <GSimpson@wbtownship.org>; Mike Karll <mkarll@villageofmilford.org>; Angie Hiney <ahiney@villageofmilford.org>; cwuerth@villageofmilford.org; David McKee <dmckee@indtwp.com>; David Ziegler <dziegler@indtwp.com>; Jeff Cooper <JCooper@indtwp.com>; Tom Graham <TGraham@indtwp.com>; Kevin Daniels <kdaniels@indetwp.com>; Derek Smith <dosmith@indtwp.com>; Pat Lewis <patrick.lewis@monroemi.gov>; Christopher Schaffer <christopher.schaffer@monroemi.gov>; Bob Dion <rdion@baycitymi.org>; KHausbeck <KHausbeck@baycitymi.org>; rphillips@baycitymi.org; Tim Botzau <tbotzau@baycitymi.org>; rlewandowski <rlewandowski@porthurontownship.org>; Dan Duman <dduman@porthurontownship.org>; Adam Wallace <awallace@porthurontownship.org>
Cc: Alex Kozlowski <AKozlowski@wbtownship.org>
Subject: FW: SEMCOG IDEP/P2 Virtual Training Opportunities
Importance: High

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Good morning all –
I just wanted to send a friendly reminder regarding SEMCOG good housekeeping, pollution prevention, and IDEP training opportunities NEXT WEEK. If you and/or your staff are registered, please let me know, so we can track it for progress reporting to EGLE.

Thanks so much and have a great weekend!!
Laura Gruzwalski | Project Manager
(248) 836-4053 (office) | (248) 207-1797 (cell)
lgruzwalski@dlz.com | www.dlz.com

From: Laura Gruzwalski
Sent: Thursday, September 30, 2021 1:24 PM

To: Corey Almas <coreyalmas@madison-heights.org>; Sean Ballantine <seanballantine@madison-heights.org>; Chris Woodward <cwoodward@madison-heights.org>; Justin Kowalski <JustinKowalski@Madison-Heights.org>; Blaine Wing <bwing@rochestermi.org>; Jason Dickinson <JDickinson@rochestermi.org>; Cory Bendick <CBendick@rochestermi.org>; Joe Raona <raonaj@lamphereschools.org>; Patti Wisniewski <wisniewskip@lamphereschools.org>; Ed Haapala <ehaapala@wbtownship.org>; Gary Simpson <GSimpson@wbtownship.org>; Mike Karll <mkarll@villageofmilford.org>; Angie Hiney <ahiney@villageofmilford.org>; cwuerth@villageofmilford.org; David McKee <dmckee@indtwp.com>; David Ziegler <dziegler@indtwp.com>; Jeff Cooper <JCooper@indtwp.com>; Tom Graham <TGraham@indtwp.com>; Kevin Daniels <kdaniels@indetwp.com>; Derek Smith <dosmith@indtwp.com>; Pat Lewis <patrick.lewis@monroemi.gov>; Christopher Schaffer <christopher.schaffer@monroemi.gov>; Bob Dion <rdion@baycitymi.org>; KHausbeck <KHausbeck@baycitymi.org>; rphillips@baycitymi.org; Tim Botzau <tbotzau@baycitymi.org>; rlewandowski <rlewandowski@porthurontownship.org>; Dan Duman <dduman@porthurontownship.org>; Adam Wallace <awallace@porthurontownship.org>
Cc: Alex Kozlowski <akozlowski@wbtownship.org>
Subject: SEMCOG IDEP/P2 Virtual Training Opportunities
Importance: High

Good afternoon all –
I just wanted to pass along some virtual stormwater/pollution prevention/IDEP training opportunities coming up in October. You should be able to click on the blue text below to register for one, two, or three trainings. If you do participate, please let me know, so I can add it to your progress report.

Feel free to reach out if you have any
questions.

Register today for the Virtual Municipal Stormwater Trainings



It is a great time of year to be thinking about how to be an alert observer of illicit discharges. SEMCOG, in partnership with the Partners for Clean Water, will hold a virtual Illicit Discharge Elimination Program and Pollution Prevention training. The virtual trainings will be held October 27 and 28. During these trainings, attendees will learn about signs of illicit discharges, tools for reporting these problems, and how to engage in public outreach on this subject. Attendees will also learn about procedures for municipal facilities,for proper stormwater management and permit compliance. Registration for the three training session can be found below. We hope to see you there!

- Alert Observer Training: October 27, 10:30 – 11:30 AM
- IDEP Investigator Training: October 27, 1:00 – 3:00 PM
- Pollution Prevention & Good Housekeeping Training: October 28, 10:30 – 11:30 AM

SEMCOG Calendar of Events

Laura Gruzwalski | Project Manager
(248) 836-4053 (office) | (248) 207-1797 (cell)
lgruzwalski@dlz.com | www.dlz.com

DLZ
ARCHITECTURE - ENGINEERING - PLANNING
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Investigator

IDEP TRAINING WORKSHOP

ARC Members.

NO.	NAME	Affiliation	PHONE	EMAIL	Address
01	Allen, Ashley	Hubbell, Roth & Clark, Inc	248-454-6300	aallen@hrcengr.com	555 Hulet Dr Bloomfield Hills MI 48303
02	Allen, Danielle	Charter Township of Shelby	(586) 731-5990	ALLEND@SHELBYTWP.COM	6333 23 MILE RD Shelby Twp MI 48316
03	Apley, Carol	City of Eastpointe	586 615-3830	capley@eastpointecity.org	17750 Ten Mile Eastpointe MI 48021
04	Barne, Bob	City of Livonia	(734) 466-2705	bdotson@livonia.mi.us	12973 Farmington Rd Livonia MI 48150
05	Bartel, Kevin	Redford Township	313-387-2641	abardonski@redfordtwp.com	12200 Beech Daly Redford MI 48239
06	Bednar Jeff	Macomb County Public Works Office	(586) 746 9118	j.bednar@macombgov.org	21777 Dunham Rd Clinton Twp MI 48036
07	Campbell, Scott	City of Farmington Hills	248-302-4658	s_campbell@fhgov.com	31555 West Eleven Mile Farmington Hills MI 48336
08	Comey, Gerald	City of Romulus	734-955-8754	gtowler@romulusgov.com	12600 Wayne Road Romulus MI 48174
09	Carpenter, Jennifer	KER Engineering/Commerce	(248) 330 6004	jcarpenter@commercetwp.com	380 coyote run Holly MI 48442
10	Collins, Rebecca	Hubbell, Roth & Clark, Inc.	248-454-6300	rcollins@hrcengr.com	555 Hulet Dr Bloomfield Hills MI 48303
11	Cross, Ron	City of Roseville	586 344 9529	rcross@roseville.mi.gov	29411 Calahan Roseville MI 48066
12	DeCaussin, Joe	Macomb County Health Department	586) 469 5236	jd_decaussin_dr@macombgov.org	4525 Elizabeth Road, Mount Clemens MI 48043
13	Diesing, Eric	Clinton River Watershed Council	248 601 0606	ediesing@crwc.org	1115 W. Avon Rd Rochester Hills MI 48309
14	Dionne, Gerald	Grosse Ile Township	734 676 4422	jdionne@grosseile.com	9601 Groh Grosse Ile MI 48138
15	Enheuser, Matt	Clinton River Watershed Council	248 601 0606	menheuser@crwc.org	1115 W. Avon Rd Rochester Hills MI 48309
16	Gioia, Ryan	Oakland University	(248) 370-4383	rmgioia@oakland.edu	411 pioneer dr Rochester MI 48309
17	Glinski, Paul	Huron Charter Township DPW	734 753 9376	pl anton@huronlownship-mi.gov	22950 Huron River Drive New Boston MI 48164
18	Harden, Yvette	VA Ann Arbor Healthcare System	(734) 845-3803	Yvette.Harden@va.gov	2215 Fuller Road (001G) Ann Arbor MI 48105
19	Hendricks, Mark	Bloomfield Township	248-594-2806	mhendricks@bloomfieldtwp.org	4200 Telegraph P.O. Box 489 Bloomfield Township MI 48303-0489
20	Hinojosa, Jeff	Huron Charter Township DPW	734 753-9673	JHINOJOSA@HURONTOWNSHIP-MI.GOV	22950 Huron River Drive New Boston MI 48164
21	Hoffman, Edwin	City of Livonia	(734) 466-2627	ehoffman@livonia.mi.us	12973 Farmington Rd Livonia MI 48150
22	Jabbway, Drew	City of Eastpointe	586 615-3830	cpley@eastpointecity.org	17750 Ten Mile Eastpointe MI 48021
23	Jacobs, Bob	Ira Township	(586) 725-7231	rjacobs@iratownship.org	7085 Meldrum Fair Haven MI 48023
24	Jarvi, Eric	Ira Township	(586) 725-7231	ejarvi@iratownship.org	7085 Meldrum Fair Haven MI 48023
25	Knillen, Robert	Redford Township	313-387-2641	abardonski@redfordtwp.com	12200 Beech Daly Redford MI 48239
26	Koester, David	Port Huron Schools Facilities	810 300-1711	dkoester@phschools.us	4035 Dove Rd Port Huron MI 48060
27	Lane Abby	Clinton River Watershed Council	248-601-0606	alane@crwc.org	1115 W. Avon Rd. Rochester Hills MI 48309
28	LaPeer, Allen	Village of Romeo	586 752 9321	romeowwtp@gmail.com	121 W. St. Clair Romeo MI 48065
29	Lolfredi, Nick	City of Eastpointe	586 615-3830	cpley@eastpointecity.org	17750 Ten Mile Eastpointe MI 48021
30	Low, John	City of Rochester	586-536-7384	Bubbyu@gmail.com	400 Sixth Street, Rochester MI 48307
31	Maas, Tom	City of Roseville	586 914-4576	waterpeg@roseville.mi.gov	29411 Calahan Roseville MI 48066
32	Marx, George	Grosse Ile Township	734 676-4422	GeorgeM@grosseile.com	9601 Groh Grosse Ile MI 48138
33	Matthews, Barb	Macomb County Public Works Office	586 466-4016	barbara.matthews@macombgov.org	21777 Dunham Rd Clinton Twp MI 48036
34	Mayhew, Greg	City of Taylor	734-374-1473	gmayhew@ci.taylor.mi.us	25605 Northline Road Taylor MI 48180
35	Miller, Dave	Charter Township of Shelby DPW	(586) 731 5990	millerd@shelbytwp.org	6333 23 MILE RD Shelby Twp MI 48316
36	Morton, Shaun	Redford Township	313 387-2641	abardonski@redfordtwp.com	12200 Beech Daly Redford MI 48239
37	Nastasy, Frank	Charter Township of Shelby DPW	(586) 731-5970	fnastasy@shelbytwp.org	6333 23 MILE RD Shelby Twp MI 48316
38	Oswald, Sean	City of Farmington Hills DPW	248 871-2850	soswald@fhgov.com	27245 Halsted Farmington Hills MI 48331
39	Paolucci, Darin	City of Eastpointe	586 615 3830	cpley@eastpointecity.org	17750 Ten Mile Eastpointe MI 48021
40	Parrish, Pete	City of Farmington Hills DPW	248 871-2850	pparrish@fhgov.com	27245 Halsted Farmington Hills MI 48331
41	Perry, Austin	City of Rochester	586-604-2602	aperry10@yahoo.com	400 Sixth Street Rochester MI 48307
42	Plank, Craig	City of Romulus	734-955 8754	cplank@romulusgov.com	12600 Wayne Road Romulus MI 48174
43	Puronen, Dave	Macomb Intermediate School District	586-228 3347	dpuronen@misd.net	44001 Garfield Clinton Twp MI 48038
44	Richert, Jeremy	Village of Lake Orion	248 520-7597	Richert@lakeorion.org	21 E. Church St. Lake Orion MI 48362
45	Rochon, Karen	Algonac Community Schools	810-794-9366	krochon@acps.k12.us	5200 Taft Rd Algonac MI 48001
46	Sall, Semed	Tri-County Engineering / City of Orchard Lake	810 394 7887	sall@tri-countyeng.com	48701 Hayes Road Shelby Township MI 48315
47	Schulte, Brian	City of Roseville	586 909 0396	bschulte@roseville.mi.gov	29411 Calahan Roseville MI 48066
48	Shaddock, Rob	Charter Township of Shelby DPW	(586) 731-5990	rshaddock@shelbytwp.org	6333 23 MILE RD Shelby Twp MI 48316
49	Siegel, Kim	Road Commission for Oakland County	248-982-3739	ksiegel@rcoc.org	31001 Lasher Road, Beverly Hills, MI 48025
50	Smith, Chris	City of Livonia	(734) 466-2705	bdotson@livonia.mi.us	12973 Farmington Rd Livonia MI 48150
51	Smith, Devin	Redford Township	313 387-2641	abardonski@redfordtwp.com	12200 Beech Daly Redford MI 48239
52	Smith, Shun	Huron Valley Schools	810 964 2597	shunts@hvsd.com	2390 S. Milford Rd. Highland MI 48357
53	Suchaski, Lora	Macomb County Public Works	586-307-8271	lora.suchaski@macombgov.org	21777 Dunham Rd Clinton Twp MI 48036
54	Theobald, Brian	City of Eastpointe	586 615 3830	cpley@eastpointecity.org	17750 Ten Mile Eastpointe MI 48021
55	Unsworth, Justin	City of Livonia	(734) 466-2705	bdotson@livonia.mi.us	12973 Farmington Rd Livonia MI 48150
56	Verellen, Mitch	Charter Township of Clinton		mverellen@clintontownship.mi.gov	Clinton Twp
57	Watts, Kyle	Redford Township	313-387-2641	abardonski@redfordtwp.com	12200 Beech Daly Redford MI 48239
58	Webb, Jerry	Wayne County - Land Resource Management	734-326-3936	webbj@waynecounty.com	3600 Commerce Ct., Bldg E. Wayne, MI 48184
59	Wenzel, Arthur	Village of South Rockwood		wwtp@villageofsouthrockwood.com	P.O. Box 85 South Rockwood MI 48179
60	Wenzel, Franklin	Village of South Rockwood		wwtp@villageofsouthrockwood.com	P.O. Box 85 South Rockwood MI 48179
61	Whillen, Tim	City of Walled Lake	248 624 4847	dpw@cityofwalledlake.com	1499 E West Maple Rd City of Walled Lake MI 48390
62	Wieler, Jeff	City of Livonia	(734) 466-2705	bdotson@livonia.mi.us	12973 Farmington Rd Livonia MI 48150
63	Wizniuk, Claudette	Macomb County Public Works Office	586 307-8269	claudette.wizniuk@macombgov.org	21777 Dunham Rd Clinton Twp MI 48036
64	Wolgast, Shaun	City of Eastpointe	586 615 3830	cpley@eastpointecity.org	17750 Ten Mile Eastpointe MI 48021
65	Woolston, John	Farmington Public Schools	248-533-7312	john.wool ton@farmington.k12.mi.us	29350 W 10 Mile Road Farmington Hills MI 48336

CITY OF FARMINGTON HILLS
PUBLIC SERVICES
TRAINING REPORT

		Code	DESCRIPTION	START_DAT	END_DATE
PS.DPW					
COSTEW	JORDAN	idep	Illicit Discharge Elimination Program	09/24/13	09/24/13
DROELLE	DONALD	idep	Illicit Discharge Elimination Program		05/11/10
		idep	Illicit Discharge Elimination Program		03/01/04
EUDY	JOSEPH	idep	Illicit Discharge Elimination Program		04/15/15
		idep	Illicit Discharge Elimination Program		
HARVEY	VINCENT	idep	Illicit Discharge Elimination Program		03/01/04
MCCARTHY	KEVIN	idep	Illicit Discharge Elimination Program		05/11/10
MCDANNEL	CHAD	idep	Illicit Discharge Elimination Program		03/01/07
		idep	Illicit Discharge Elimination Program		04/01/06
PALLOZZI	MICHAEL	idep	Illicit Discharge Elimination Program		03/01/07
PARRISH	PETER	idep	Illicit Discharge Elimination Program		10/18/17
PATTERSON	CHRISTOPHER	idep	Illicit Discharge Elimination Program		04/23/08
		idep	Illicit Discharge Elimination Program		
PICKWORTH	BRYAN	idep	Illicit Discharge Elimination Program		04/23/08
		idep	Illicit Discharge Elimination Program		
RANKIN	JENESSA	idep	Illicit Discharge Elimination Program		03/14/16
RICHEY	DAVID	idep	Illicit Discharge Elimination Program		05/11/10
		idep	Illicit Discharge Elimination Program		03/01/04
SAKSEWSKI	ROBERT	idep	Illicit Discharge Elimination Program		05/11/10
		idep	Illicit Discharge Elimination Program		03/01/04
SWOPE	ANDREW	idep	Illicit Discharge Elimination Program	09/24/13	09/24/13
TAYLOR	JONATHAN	idep	Illicit Discharge Elimination Program		04/23/08
VANVLIET	JOSEPH	idep	Illicit Discharge Elimination Program		04/23/08

CITY OF FARMINGTON HILLS
PUBLIC SERVICES
TRAINING REPORT

		Code	DESCRIPTION	START_DAT	END_DATE
PS.ADM					
GUSHARD	TAMMY	idep	Illicit Discharge Elimination Program		10/13/16
		idep	Illicit Discharge Elimination Program		03/13/06
SONOGA	TYLER	idep	Illicit Discharge Elimination Program	10/27/21	10/27/21
		idep	Illicit Discharge Elimination Program		

CITY OF FARMINGTON HILLS
PUBLIC SERVICES
TRAINING REPORT

		Code	DESCRIPTION	START_DAT	END_DATE
PS.ENG					
ALEXANDER	MIRANDI	idep	Illicit Discharge Elimination Program	10/27/21	10/27/21
AMOLSCH	ETHAN	idep	Illicit Discharge Elimination Program		03/28/06
CAMPBELL	SCOTT	idep	Illicit Discharge Elimination Program		04/12/18
CUBERA	JAMES	idep	Illicit Discharge Elimination Program		03/28/06
DAWKINS	SHONQUASE	idep	Illicit Discharge Elimination Program	10/27/21	10/27/21
DEVERS	SEAN	idep	Illicit Discharge Elimination Program		10/23/19
		idep	Illicit Discharge Elimination Program		10/13/16
GEELHOOD	KRISTINA	idep	Illicit Discharge Elimination Program	10/27/21	10/27/21
SONCK	NATASHA	idep	Illicit Discharge Elimination Program	10/27/21	10/27/21
TARTAGLIA	ALEXANDER	idep	Illicit Discharge Elimination Program	10/27/20	10/27/20
THORNBURG	JOSEPH	idep	Illicit Discharge Elimination Program	10/27/20	10/27/20
WAKER	TIMOTHY	idep	Illicit Discharge Elimination Program		03/13/06

From: Emily Levine
To: Lisa McGill
Subject: RE: IDEP Training Question
Date: Monday, January 31, 2022 12:18:07 PM
Attachments: image001.png
image003.png
image005.png
image007.png
image009.png
image011.png
image012.png
image013.png
image014.png
image015.png

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Hi Lisa,
The attendance records should have been attached to the questionnaire, so I am sorry that that seems to not have worked out. According to the records that I have, in 2020 only one person is on the attendance list with a “farmgov” email address. That was Joshua Leach.
Let me know if you have any other questions.

Emily Levine
Senior Associate Scientist II | Water Resources
C: 248.763.1407

https://www.ectinc.com/" style='position:absolute;margin-left:3pt;margin-top:0;width:91.4pt;height:36pt;z-index:251659264;visibility:visible;mso-wrap-style:square;mso-width-percent:0;mso-height-percent:0;mso-wrap-distance-left:0;mso-wrap-distance-top:14.4pt;mso-wrap-distance-right:0;mso-wrap-distance-bottom:0;mso-position-horizontal:absolute;mso-position-horizontal-relative:text;mso-position-vertical:absolute;mso-position-vertical-relative:page;mso-width-percent:0;mso-height-percent:0;mso-width-relative:margin;mso-height-relative:page' o:allowoverlap="f" o:button="t">

Follow us:

From: Annette DeMaria <ademaria@allianceofrougecommunities.com>
Sent: Monday, January 31, 2022 8:21 AM
To: Emily Levine <elevine@ectinc.com>; Annette DeMaria <ademaria@ectinc.com>
Subject: Fwd: IDEP Training Question

See below.

Chris

-------- Forwarded Message --------
Subject:IDEP Training Question
Date: Fri, 28 Jan 2022 17:24:49 +0000
From: Lisa McGill <lmcgill@farmgov.com>
To:ademaria@allianceofrougecommunities.com
<ademaria@allianceofrougecommunities.com>

Hi Annette!

Hope you are well!

We are working on the IDEP portion of the collaborative plan, and are having a difficult time finding anything showing anyone attended the 2020 IDEP training. There is an e-mail where Chuck said three of the field staff would be able to attend, but nothing proving they actually did. Is there a roster showing who registered as I assume it was virtual?

Any information will be appreciated.

Thank you!

Lisa McGill
Administrative Assistant
Department of Public Works
City of Farmington

Joshua Leach

From: Joshua Leach
Sent: Thursday, October 28, 2021 11:30 AM
To: Grantham, Katherine; Osborne, Rebecca
Subject: RE: IDEP Training

Katie,

The following Personnel have viewed the SEMCOG IDEP Training...

10/27 Alert Observer Training

Josh Leach
Tara Pieron
Chris Jacob
Greg Young
Dave Popp
Chris Guibord

10/27 IDEP Investigator Training

Josh Leach
Chris Jacob
Greg Young
Dave Popp
Chris Guibord

10/28

Josh Leach
Chris Jacob
Greg Young
Dave Popp
Chris Guibord
Jim Englen
Marcus Schweisthal
John Wilson
Mike Pesavento

Thank you,

Joshua Leach
Assistant Superintendent of Public Works
City of Farmington
33720 West 9 Mile Road
Farmington, MI 48335
248-473-7250

Date _____10-27-21_____

Topic _Alert Observer Training_____

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R

register@semcog.org | Mike Domine

Registration Confirmation for SEMU Webinar: Pollution Prevention and Good Housekeeping

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Thanks for registering for SEMU Webinar: Pollution Prevention and Good Housekeeping!

The details of your registration are listed below.

Registrant:	Mike Domine (mdomine@ci.northville.mi.us)
Confirmation Number:	41597
Date/Time:	10/28/2021 10:30 AM - 11:30 AM
Location:	Zoom
URL:	https://semcog-org.zoom.us/j/86890466628

Meeting Registration

1001 Woodward Avenue, Suite 1400
Detroit, MI 48226
Main: 313-961-4266
Visit: www.semcog.org



FIELD STAFF					
FIRST NAME	LAST NAME	DEPT	Status	Last In-House Awareness Training	Investigator Training
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Gerald	Keller	Building Maintenance	Full	6/25/2019	-
Patrick	Quinn	Building Maintenance	Full	6/25/2019	
Dean	Begley	Grounds Maintenance	Full	7/24/2018	2014
Hillary	Drotoz	Grounds Maintenance	Full	6/25/2019	2014
Chris	Baroli	Road	Full	6/25/2019	-
Bruce	Carnahan	Road	Full	6/25/2019	-
Sean	Caverly	Road	Full	6/25/2019	-
James	Davis	Road	Full	6/25/2019	2013
Trevor	Fox	Road	Full	7/24/2018	-
Jon	Grigsby	Road	Full	6/25/2019	-
Jeff	Krauskopf	Road	Full	6/25/2019	-
Marco	Nervo	Road	Full	6/25/2019	2014
Duane	Poole	Road	Full	8/1/2018	-
Adam	Roose	Road	Full	6/25/2019	-
Jason	Simpson	Road	Full	6/25/2019	2014
Glenn	Wood II	Road	Full	6/25/2019	2013
Shane	Beslock	Water	Full	6/25/2019	-
Josh	Eubanks	Water	Full	6/25/2019	2014
Rick	Jenkinson	Water	Full	6/25/2019	-
David	Keller	Water	Full	6/25/2019	-
Craig	Lewis	Water	Full	6/25/2019	-
Patrick	McNamara	Water	Full	6/25/2019	2014
Paul	Palace	Water	Full	6/25/2019	-
Steve	Sierota	Water	Full	6/25/2019	-
Conner	McGray	Grounds Maintenance	Part	-	-
Emma	Simpson	Grounds Maintenance	Part		-

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Charles	Markus	EESD	Full	7/24/2018	2014
Olivia	Olsztyn-Budry	EESD	Full	-	2014
George	Kilpatrick	Building	Full	-	2015
Lance	Scram	Motor Pool	Full	7/24/2018	2015

SEMCOG IDEP ALERT OBSERVOR TRAINING
10/27/2021

Meeting ID	Topic	Dept.	Start Time	End Time
87200137056	SEMU Webinar: Alert Observer Training		10/27/2021 10:16	10/27/2021 11:22

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SEMCOG IDEP ALERT OBSERVOR TRAINING
10/27/2021

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SEMCOG IDEP INVESTIGATOR TRAINING
10/27/2021

Meeting ID	Topic	Dept.	Start Time	End Time
84416846507	SEMU Webinar: IDEP Investigator Training		10/27/2021 12:45	10/27/2021 14:48

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SEMCOG Southeast Michigan Council of Governments

Developing Regional Solutions

Continuing Professional Development Activity Certificate of Completion

In recognition of successful completion of the following Professional Development Activity:

IDEP Alert Observer Training

November 10, 2020

Provided by: **Southeast Michigan Council of Governments**

Was completed by: Giordano Bartoletti

Who is awarded credit for completing **1** **hours of professional development activity.**

I certify that the above Participant has completed the course and is entitled to PDHs as indicated

Kelly C. Karel

Notes:

1. This certificate must be accompanied by a description or outline of the activity supplied by the Provider.
2. This form is to be used to claim Professional Development Hours (PDHs) for atttendance at an educational program, panel, or tutorial session.
3. It is the responsibility of the attendee to select PDH activities that are relevant to the attendee's professional licenture, in accordance with their licensing agency's rules.
4. It is the responsibility of the attendee to retain this record for their use in proving their attendance at the above noted activity. The provider does not plan to keep records of who attended what activity.

SEMCOG Southeast Michigan Council of Governments

Developing Regional Solutions

Continuing Professional Development Activity Certificate of Completion

In recognition of successful completion of the following Professional Development Activity:

Pollution Prevention and Good Housekeeping Training

November 10, 2020

Provided by: **Southeast Michigan Council of Governments**

Was completed by: Giordano Bartoletti

Who is awarded credit for completing **1** **hours of professional development activity.**

I certify that the above Participant has completed the course and is entitled to PDHs as indicated

Kelly C. Karel

Notes:

1. This certificate must be accompanied by a description or outline of the activity supplied by the Provider.
2. This form is to be used to claim Professional Development Hours (PDHs) for atttendance at an educational program, panel, or tutorial session.
3. It is the responsibility of the attendee to select PDH activities that are relevant to the attendee's professional licenture, in accordance with their licensing agency's rules.
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SEMCOG Southeast Michigan Council of Governments

Developing Regional Solutions

Continuing Professional Development Activity Certificate of Completion

In recognition of successful completion of the following Professional Development Activity:

IDEP Alert Observer Training

November 10, 2020

Provided by: **Southeast Michigan Council of Governments**

Was completed by: **Tom Constantine**

Who is awarded credit for completing **1** **hours of professional development activity.**

I certify that the above Participant has completed the course and is entitled to PDHs as indicated

Kelly C. Karel

Notes:

1. This certificate must be accompanied by a description or outline of the activity supplied by the Provider.
2. This form is to be used to claim Professional Development Hours (PDHs) for atttendance at an educational program, panel, or tutorial session.
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SEMCOG / Southeast Michigan Council of Governments

Developing Regional Solutions

Continuing Professional Development Activity Certificate of Completion

In recognition of successful completion of the following Professional Development Activity:

Pollution Prevention and Good Housekeeping Training

November 10, 2020

Provided by: **Southeast Michigan Council of Governments**

Was completed by: **Tom Constantine**

Who is awarded credit for completing **1** **hours of professional development activity.**

I certify that the above Participant has completed the course and is entitled to PDHs as indicated

Kelly C. Karel

Notes:

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SEMCOG Southeast Michigan Council of Governments

Developing Regional Solutions

Continuing Professional Development Activity Certificate of Completion

In recognition of successful completion of the following Professional Development Activity:

IDEP Alert Observer Training

November 10, 2020

Provided by: **Southeast Michigan Council of Governments**

Was completed by: Casey Fox

Who is awarded credit for completing 1 **hours of professional development activity.**

I certify that the above Participant has completed the course and is entitled to PDHs as indicated

Kelly C. Karel

Notes:

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SEMCOG Southeast Michigan Council of Governments

Developing Regional Solutions

Continuing Professional Development Activity Certificate of Completion

In recognition of successful completion of the following Professional Development Activity:

Pollution Prevention and Good Housekeeping Training

November 10, 2020

Provided by: **Southeast Michigan Council of Governments**

Was completed by: Casey fox

Who is awarded credit for completing **1** **hours of professional development activity.**

I certify that the above Participant has completed the course and is entitled to PDHs as indicated

Kelly C. Karel

Notes:

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SEMCOG Southeast Michigan Council of Governments

Developing Regional Solutions

Continuing Professional Development Activity Certificate of Completion

In recognition of successful completion of the following Professional Development Activity:

IDEP Alert Observer Training

November 10, 2020

Provided by: **Southeast Michigan Council of Governments**

Was completed by: Charles A. Fritz

Who is awarded credit for completing **1** **hours of professional development activity.**

I certify that the above Participant has completed the course and is entitled to PDHs as indicated

Kelly C. Karel

Notes:

1. This certificate must be accompanied by a description or outline of the activity supplied by the Provider.
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SEMCOG Southeast Michigan Council of Governments

Developing Regional Solutions

Continuing Professional Development Activity Certificate of Completion

In recognition of successful completion of the following Professional Development Activity:

Pollution Prevention and Good Housekeeping Training

November 10, 2020

Provided by: **Southeast Michigan Council of Governments**

Was completed by: Charles A. Fritz

Who is awarded credit for completing **1** **hours of professional development activity.**

I certify that the above Participant has completed the course and is entitled to PDHs as indicated

Kelly C. Karel

Notes:

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SEMCOG Southeast Michigan Council of Governments

Developing Regional Solutions

Continuing Professional Development Activity Certificate of Completion

In recognition of successful completion of the following Professional Development Activity:

IDEP Alert Observer Training

November 10, 2020

Provided by: **Southeast Michigan Council of Governments**

Was completed by: Jacy Headley

Who is awarded credit for completing **1** **hours of professional development activity.**

I certify that the above Participant has completed the course and is entitled to PDHs as indicated

Kelly C. Karel

Notes:

1. This certificate must be accompanied by a description or outline of the activity supplied by the Provider.
2. This form is to be used to claim Professional Development Hours (PDHs) for atttendance at an educational program, panel, or tutorial session.
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SEMCOG Southeast Michigan Council of Governments

Developing Regional Solutions

Continuing Professional Development Activity Certificate of Completion

In recognition of successful completion of the following Professional Development Activity:

Pollution Prevention and Good Housekeeping Training

November 10, 2020

Provided by: **Southeast Michigan Council of Governments**

Was completed by: Jacy Headley

Who is awarded credit for completing **1** **hours of professional development activity.**

I certify that the above Participant has completed
the course and is entitled to PDHs as indicated

Kelly C. Karll

Notes:

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SEMCOG Southeast Michigan Council of Governments

Developing Regional Solutions

Continuing Professional Development Activity Certificate of Completion

In recognition of successful completion of the following Professional Development Activity:

IDEP Alert Observer Training

November 10, 2020

Provided by: **Southeast Michigan Council of Governments**

Was completed by: James Matties

Who is awarded credit for completing **1** **hours of professional development activity.**

I certify that the above Participant has completed
the course and is entitled to PDHs as indicated

Kelly C. Karel

Notes:

1. This certificate must be accompanied by a description or outline of the activity supplied by the Provider.
2. This form is to be used to claim Professional Development Hours (PDHs) for atttendance at an educational program, panel, or tutorial session.
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SEMCOG Southeast Michigan Council of Governments

Developing Regional Solutions

Continuing Professional Development Activity Certificate of Completion

In recognition of successful completion of the following Professional Development Activity:

Pollution Prevention and Good Housekeeping Training

November 10, 2020

Provided by: **Southeast Michigan Council of Governments**

Was completed by: James Matties

Who is awarded credit for completing **1** **hours of professional development activity.**

I certify that the above Participant has completed the course and is entitled to PDHs as indicated

Kelly C. Karll

Notes:

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SEMCOG Southeast Michigan Council of Governments

Developing Regional Solutions

Continuing Professional Development Activity Certificate of Completion

In recognition of successful completion of the following Professional Development Activity:

IDEP Alert Observer Training

November 10, 2020

Provided by: **Southeast Michigan Council of Governments**

Was completed by: Jim Paulk

Who is awarded credit for completing **1** **hours of professional development activity.**

I certify that the above Participant has completed
the course and is entitled to PDHs as indicated

Kelly C. Karel

Notes:

1. This certificate must be accompanied by a description or outline of the activity supplied by the Provider.
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SEMCOG / Southeast Michigan Council of Governments

Developing Regional Solutions

Continuing Professional Development Activity Certificate of Completion

In recognition of successful completion of the following Professional Development Activity:

Pollution Prevention and Good Housekeeping Training

November 10, 2020

Provided by: **Southeast Michigan Council of Governments**

Was completed by: Jim Paulk

Who is awarded credit for completing **1** **hours of professional development activity.**

I certify that the above Participant has completed
the course and is entitled to PDHs as indicated

Kelly C. Karel

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SEMCOG Southeast Michigan Council of Governments

Developing Regional Solutions

Continuing Professional Development Activity Certificate of Completion

In recognition of successful completion of the following Professional Development Activity:

IDEP Alert Observer Training

November 10, 2020

Provided by: Southeast Michigan Council of Governments

Was completed by: Fred pettey

Who is awarded credit for completing 1 **hours of professional development activity.**

I certify that the above Participant has completed the course and is entitled to PDHs as indicated

Kelly C. Karel

Notes:

1. This certificate must be accompanied by a description or outline of the activity supplied by the Provider.
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SEMCOG Southeast Michigan Council of Governments

Developing Regional Solutions

Continuing Professional Development Activity Certificate of Completion

In recognition of successful completion of the following Professional Development Activity:

Pollution Prevention and Good Housekeeping Training

November 10, 2020

Provided by: Southeast Michigan Council of Governments

Was completed by: Fred pettey

Who is awarded credit for completing 1 **hours of professional development activity.**

I certify that the above Participant has completed the course and is entitled to PDHs as indicated

Kelly C. Karel

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SEMCOG Southeast Michigan Council of Governments

Developing Regional Solutions

Continuing Professional Development Activity Certificate of Completion

In recognition of successful completion of the following Professional Development Activity:

IDEP Alert Observer Training

November 10, 2020

Provided by: **Southeast Michigan Council of Governments**

Was completed by: **Dean Reid**

Who is awarded credit for completing **1** **hours of professional development activity.**

I certify that the above Participant has completed the course and is entitled to PDHs as indicated

Kelly C. Karel

Notes:

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SEMCOG Southeast Michigan Council of Governments

Developing Regional Solutions

Continuing Professional Development Activity Certificate of Completion

In recognition of successful completion of the following Professional Development Activity:

Pollution Prevention and Good Housekeeping Training

November 10, 2020

Provided by: **Southeast Michigan Council of Governments**

Was completed by: **Dean Reid**

Who is awarded credit for completing **1** **hours of professional development activity.**

I certify that the above Participant has completed the course and is entitled to PDHs as indicated

Kelly C. Karel

Notes:

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SEMCOG Southeast Michigan Council of Governments

Developing Regional Solutions

Continuing Professional Development Activity Certificate of Completion

In recognition of successful completion of the following Professional Development Activity:

IDEP Alert Observer Training

November 10, 2020

Provided by: **Southeast Michigan Council of Governments**

Was completed by: Drew Snyder

Who is awarded credit for completing **1** **hours of professional development activity.**

I certify that the above Participant has completed
the course and is entitled to PDHs as indicated

Kelly C. Karel

Notes:

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Continuing Professional Development Activity Certificate of Completion

In recognition of successful completion of the following Professional Development Activity:

Pollution Prevention and Good Housekeeping Training

November 10, 2020

Provided by: **Southeast Michigan Council of Governments**

Was completed by: Drew Snyder

Who is awarded credit for completing **1** **hours of professional development activity.**

I certify that the above Participant has completed
the course and is entitled to PDHs as indicated

Kelly C. Karll

Notes:

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SEMCOG Southeast Michigan Council of Governments

Developing Regional Solutions

Continuing Professional Development Activity Certificate of Completion

In recognition of successful completion of the following Professional Development Activity:

IDEP Alert Observer Training

November 10, 2020

Provided by: **Southeast Michigan Council of Governments**

Was completed by: Chris Stanley

Who is awarded credit for completing **1** **hours of professional development activity.**

I certify that the above Participant has completed
the course and is entitled to PDHs as indicated

Kelly C. Karel

Notes:

1. This certificate must be accompanied by a description or outline of the activity supplied by the Provider.
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Developing Regional Solutions

Continuing Professional Development Activity Certificate of Completion

In recognition of successful completion of the following Professional Development Activity:

Pollution Prevention and Good Housekeeping Training

November 10, 2020

Provided by: **Southeast Michigan Council of Governments**

Was completed by: Chris Stanley

Who is awarded credit for completing **1** **hours of professional development activity.**

I certify that the above Participant has completed the course and is entitled to PDHs as indicated

Kelly C. Karel

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SEMCOG Southeast Michigan Council of Governments

Developing Regional Solutions

Continuing Professional Development Activity Certificate of Completion

In recognition of successful completion of the following Professional Development Activity:

IDEP Alert Observer Training

November 10, 2020

Provided by: **Southeast Michigan Council of Governments**

Was completed by: Mike Tate

Who is awarded credit for completing **1** **hours of professional development activity.**

I certify that the above Participant has completed the course and is entitled to PDHs as indicated

Kelly C. Karll

Notes:

1. This certificate must be accompanied by a description or outline of the activity supplied by the Provider.
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SEMCOG Southeast Michigan Council of Governments

Developing Regional Solutions

Continuing Professional Development Activity Certificate of Completion

In recognition of successful completion of the following Professional Development Activity:

Pollution Prevention and Good Housekeeping Training

November 10, 2020

Provided by: **Southeast Michigan Council of Governments**

Was completed by: Mike Tate

Who is awarded credit for completing **1** **hours of professional development activity.**

I certify that the above Participant has completed the course and is entitled to PDHs as indicated

Kelly C. Karll

Notes:

1. This certificate must be accompanied by a description or outline of the activity supplied by the Provider.
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SEMCOG Southeast Michigan Council of Governments

Developing Regional Solutions

Continuing Professional Development Activity Certificate of Completion

In recognition of successful completion of the following Professional Development Activity:

IDEP Alert Observer Training

November 10, 2020

Provided by: **Southeast Michigan Council of Governments**

Was completed by: **Gerald Tremblay**

Who is awarded credit for completing **1** **hours of professional development activity.**

I certify that the above Participant has completed
the course and is entitled to PDHs as indicated

Kelly C. Karel

Notes:

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Developing Regional Solutions

Continuing Professional Development Activity Certificate of Completion

In recognition of successful completion of the following Professional Development Activity:

Pollution Prevention and Good Housekeeping Training

November 10, 2020

Provided by: **Southeast Michigan Council of Governments**

Was completed by: **Gerald Tremblay**

Who is awarded credit for completing **1** **hours of professional development activity.**

I certify that the above Participant has completed
the course and is entitled to PDHs as indicated

Kelly C. Karel

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SEMCOG Southeast Michigan Council of Governments

Developing Regional Solutions

Continuing Professional Development Activity Certificate of Completion

In recognition of successful completion of the following Professional Development Activity:

IDEP Alert Observer Training

November 10, 2020

Provided by: Southeast Michigan Council of Governments

Was completed by: Jeff Van Curler

Who is awarded credit for completing 1 **hours of professional development activity.**

I certify that the above Participant has completed the course and is entitled to PDHs as indicated

Kelly C. Karel

Notes:

1. This certificate must be accompanied by a description or outline of the activity supplied by the Provider.
2. This form is to be used to claim Professional Development Hours (PDHs) for atttendance at an educational program, panel, or tutorial session.
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Developing Regional Solutions

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In recognition of successful completion of the following Professional Development Activity:

Pollution Prevention and Good Housekeeping Training

November 10, 2020

Provided by: Southeast Michigan Council of Governments

Was completed by: Jeff Van Curler

Who is awarded credit for completing 1 **hours of professional development activity.**

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Date 10/26/21

Topic Pollution Prevention and Good Housekeeping

Name	Phone	Email
David Chung	248-720-9806	dps1@lathrupvillage.org

Date 10/27/21

Topic SEMU Webinar: Alert Observe Training

Name	Phone	Email
David Chung	248-720-9806	dps1@athrupvillage.org

Date 10/27/21

Topic Illicit Discharge Elimination Program Investigator Training

Name	Phone	Email
David Chung	248-720-9806	dps1@lathrupvillage.org

City of Birmingham
A Walkable Community

Department of Public Services

IDEP/ Stormwater Illict Discharge Alert/Observer

10/27/2021

PRINT NAME	SIGNATURE	DIVISION (CIRCLE)
MICHAEL HUOT		PARKS (SSW) ARENA GOLF
Adam Bouse		PARKS (SSW) ARENA GOLF
Brenden Meredith		PARKS (SSW) ARENA GOLF
Timothy Davis		PARKS (SSW) ARENA GOLF
Bryan Gulke		PARKS (SSW) ARENA GOLF
Dan Hohn		(PARKS) SSW ARENA GOLF
Colin Quackenbush		(PARKS) SSW ARENA GOLF
Brent Jackson		(PARKS) SSW ARENA GOLF
		PARKS SSW ARENA GOLF
		PARKS SSW ARENA GOLF

Date _____10/27/21_- 10/28/21_____

Topic ____Alert Observer,_ IDEP Investigator, _Pollution Pervention & Good Housekeeping_____

Name	Phone	Email
Scott Zielinski (all)	248-530-1838	szielinski@bhamgov.org
Chris Morton (alert Obs only)	248-530-1835	cmorton@bhamgov.org

Appendix D

Pollution Complaint Documentation

Appendix D1. Bloomfield Township Pollution Complaint Documentation

Appendix D2. Canton Township Pollution Complaint Documentation

Appendix D3. Farmington Pollution Complaint Documentation

Appendix D4. Novi Pollution Complaint Documentation

Appendix D5. Oakland County Pollution Complaint Documentation

Appendix D6. Plymouth Township Pollution Complaint Documentation

Appendix D7. Wayne County Pollution Complaint Documentation

Appendix D8. City of Wayne Pollution Complaint Documentation

Appendix D1

Bloomfield Township Pollution Complaint Documentation

BLOOMFIELD TOWNSHIP - IDEP CONCERN LOG & SUMMARY, January 2020 thru December 2021

Sidwell Number	Address	Date	Description of Concern	Date referred to OCHD	Sewer Available	EESD Investigation Notes/Comments	Type
19-18-279-002	3821 Lakeland Lane	6/17/2020	Homeowner called in about a blue/green coloring to the lake.	NA	NA	O. Olsztyn-Budry went out and documented conditions. Fire Department responded also. Documentation was completed and included in project file. PEAS hotline notified. Neighb property owner indicated that Inland Waters had treated the lake a day or two before. OCWRC was notified. **Status: No further action required.**	Lake Treatment
1912477011	3371 Westchester Road	7/12/2020	Old underground fuel tank on property spilled across property and neighboring properties during property redevelopment.		Yes	An unknown fuel oil tank on property overflowed during rain storm (rain water entered tank) and flowed across several properties. Property under redevelopment. Fire Department called to property and EGLE notified. Builder hired PM Environmental to determne extent of spill, remove the contaiminated soil, and restore the propeties. EGLE verified submittal of final report. **Status: No further action required.**	Spill
19-24-302-005	5050 Brookdale Road	9/21/2020	Resident observed paint in nearby creek	NA	Yes	EGLE forwarded PEAS complaint of paint in a nearby creek. House under construction and the wash tub was incorrectly outleting to the sump pump and outlets to neighboring creek. Ordinance Department visited property and winessed disconnection from sump and connection to sanitary. **Status: No further action required.**	Illicit Connection
19-18-303-071	1904 Pine Ridge Coiurt	12/22/2020	2020 IDEP sampling revealed elevated E. coli in storm sewer	NA	Yes	Dye Tested condo units and discovered that 1904 Pine Ridge Court was incorrectly tied into the storm sewer and not the sanitary sewer. Issued Township letter requiring the correction. **Status: Repair ongoing.**	Illicit Connection
-	Beverly Hills	12/22/2020	Notification from OCWRC that green dye was seen in a stream southeast of the Township.	NA	NA	Worked with Joel Kohn of OCWRC and Annette DeMaria of ARC to locate source of green dye in stream. Came from dye testing of house on Long Bow Court in Beverly Hills. **Status: No further action required**	Dye in Stream
-	Upper Long Lake Estates	1/4/2021	OCWRC contacted by resident regarding use of road salt within development.	NA	Yes	Ron Cousineau of the Upper Long Lake-Lake Board called OCWRC regarding the use of road salt within Upper Long Lake Estates. He wanted to be sure too much is not being used. Bloomfield Township uses brine to reduce the amount of salt used, and only uses the amount necessary. **Status: No further action required.**	Road Salt
19-09-400-041	228 Orange Lake Road	4/27/2021	Property owner at the neighboring property at 3035 Croft way reported sludge oozing out of ground.	4/28/2021	Yes	Contacted OCHD and met them onsite. Talked to renters of property and added dye to kitchen sink. Dye appeared the next day where the sludge was coming from the ground. OCHD issued violation letter and property owner connected to sanitary sewer. **Status: No further action required.**	Failing septic

Sidwell Number	Address	Date	Description of Concern	Date referred to OCHD	Sewer Available	EESD Investigation Notes/Comments	Type
19-09-301-051	3325 Franklin Road	4/27/2021	Visiter to EL Johnson Nature Center reported oil sheen in stream.	NA	Yes	Resident contacted both Bloomfield Township and OCWRC regarding what appeared to be stagnant water and sheen in stream that flows through the EL Johnson Nature Preserve. Township staff visited site and walked along stream. The water level in the stream was much lower than usual and any shees observed seemed to be from iron bacteria from ground water seeps. **Status: No further action required.**	Natural sheen on water
19-11-276-013	2901 Woodcreek Way	6/30/2021	Resident contacted OCHD regarding Dan Devine Drain behind house is clogged and neighbor blows leaves into drain and pumps water from it. Also saw foam in stream.	6/30/2021	Yes	Complaint to OCHD was forwarded to the Bloomfield Township Ordinance Department and Ron Fadoir at OCWRC since the Dan Devine Drain is an Oakland County Drain. Ordinance Officer and OCHD visited site did not observe any foam in water or signs of illicit discharges or yard waste dumping. Some tree branches within drain. Ordinance Department sent letter to property owner to clean out debris. **Status: No further action required**	Yard waste in County Drain.
19-11-226-010	893 Foxhall Road	9/20/2021	Resident contacted OCWRC over the weekend regarding a dead deer within the stream behind their house.	NA	Yes	Ron Fadoir of OCWRC forwarded a a complaint to the Township regarding the dead deer in the yard. Township informed Ron that they can call the Bloomfield Township Animal Welfard Department for removal of the deer. This was forwarded to the resident. **Status: No further action required.**	Dead Deer

Updated 9/21/2021

Number of Complaints	Illicit Discharges	Illicit Discharges Corrected
10	4	3

BLOOMFIELD TOWNSHIP

Storm Water Discharge Response & Investigation Report

Date of Incidence: June 17, 2020 Time: 12:20

Reported By: Homeowner Telephone:

Location of Complaint: 3821 Lakeland Lane Sidwell: 19-18-279-002

Homeowner Information: Vijay and Sara Goburdhun

Description of Complaint: Blue/Green Discoloration of water along shoreline

EES Department Investigation Notes	Date
O. Olsztyn-Budry visited site. Upon arrival, Fire Department was on site. Captain Allen Van Heck spoke with homeowner and left a voice mail with Ned Greenberg, the Lake Board Representative and Lake Association President, to determine if there was any treatment on the lake recently. Captain Van Heck to follow up with O. Olsztyn-Budry once he responds. Captain Van Heck also spoke with Pete Filpansick with Lake Pro. Pete was not aware of any chemical treatment to the lake in recent days. He indicated that some algae treatment use copper which would result in the blue/green discoloration. O. Olsztyn-Budry called and registered the complaint with the EGLE Pollution Emergency Alert System (PEAS). The homeowner was also advised to report the concern as well. While on site, the homeowner from 3800 Lakeland Lane came out and informed O. Olsztyn-Budry & Captain Van Heck that there was a company on the lake on Friday June 12, 2020 performing some sort of treatment. She thought the company name was Inland Waters. O. Olsztyn-Budry called and left a message with Jacy Garrison, the Oakland County Water Resource Commissioner's office Lake Board Representative. Photos documented and included in the project file here: S:\Engineering\NPDES Stormwater Permit\IDEP\Illicit Discharge Investigations\3821 Lakeland Lane\Photos 6-17-20	6/17/20

Actions Taken	Date
Photo documentation – O. Olsztyn-Budry S:\Engineering\NPDES Stormwater Permit\IDEP\Illicit Discharge Investigations\3821 Lakeland Lane\Photos 6-17-20	6-17-20

Agencies Contacted	Name	Phone/Email	Date
OCWRC	Jacy Garrison	248-858-5264	6/17/20
EGLE	PEAS	800-292-4706	6/17/20

Administrative Use Only		Date
Report Prepared By:	Olivia Olsztyn-Budry	6/17/20

BLOOMFIELD TOWNSHIP

Storm Water Discharge Response & Investigation Report

Date of Incidence: July 12, 2020 Time: _____

Reported By: Ryan Husch, Bloomfield Township Fire Dept. Telephone: 433-7745

Location of Complaint: 3371 Westchester Road Sidwell: 19-12-477-011

Homeowner Information: Property Owner: Sibin Zacharias; Builder: Randy Najjar, Sapphire Luxury Homes

Description of Complaint: Fuel Oil Spill across this property and neighboring properties.

EES Department Investigation Notes	Date
An unknown fuel oil tank on property was ruptured during construction of new house and overflowed during rain storm. The oil flowed across the property and 2 neighboring properties. The Fire Department was called onsite on Sunday, July 12, 2020 and contained the spill. The Fire Department contacted DEQ and the PEAS Hotline.	7/12/20
The Summary Cleanup report was issued by PM Environmental on 9/29/20. Emailed with both Lishba Varughese and Joshua Scheels of DEQ. They received the report and consider this incident closed.	11/30/20

Actions Taken	Date
Office staff contacted Lishba Varughese at DEQ Water Division and Joshua Scheels of DEQ Incident Management. Builder for site, Sapphire Luxury Homes, has a contractor onsite pumping out remaining fuel oil from tank. Contractor is scheduled to remove contaminated soil.	7/13/20
Received complaint from property owner of 1036 Long Lake Road regarding smell of oil in the ditch line of Eastover Drive on the other side of Long Lake Road from the spill location. The spill plume must have traveled to a culvert that discharged it to the other side of Long Lake Road. Informed Kelley Junco of RCOC of this.	7/20/20
Met builder and representatives of PM Environmental onsite. PM Environmental will be managing cleanup effort of area impacted by spill. Through testing they will determine extent of contaminated soil. Contaminated soil will be removed and areas restored.	7/21/20

Agencies Contacted	Name	Phone/Email	Date
OCHD			
MDEQ	Lishba Verughese	varughesel@Michigan.gov	7/13/20
OCDC			
RCOC	Kelley Junco	kjunco@rcoc.org	7/20/20
OTHER			

Administrative Use Only		Date
Report Prepared By:	Cory Borton	11/30/20

BLOOMFIELD TOWNSHIP

Storm Water Discharge Response & Investigation Report

Date of Incidence: September 20, 2020 Time: _____

Reported By: 5090 Brookdale owner Telephone: _____

Location of Complaint: 5050 Brookdale Road Sidwell: 19-24-302-005

Homeowner Information: General Contractor of site is Thomas Sebold & Associates

Description of Complaint: Paint wash water entering nearby creek from 5050 Brookdale Road

EES Department Investigation Notes	Date
Resident of 5090 Brookdale Road contacted the PEAS hotline on Sunday, 9/20/20 regarding a painting contractor wash water entering nearby creek. Complaint was forwarded to Township on 9/21/20 by Lishba Varughese of DEQ.	9/21/20

Actions Taken	Date
Jodi Welch of Ordinance Department visited site. The house is currently under construction and the wash tub was incorrectly tied into the basement sump. The sump pump discharged the discharge water into the yard and creek area. Township staff witnessed the disconnection of the wash tub from the sump and reconnection to correct waste line.	9/21/20

Agencies Contacted	Name	Phone/Email	Date
OCHD			
MDEQ	Lishba Varughese	VARUGHESEL@michigan.gov	9/21/20
OCDC			
RCOC			
OTHER			

Administrative Use Only		Date
Report Prepared By:	Cory Borton	9/21/20

BLOOMFIELD TOWNSHIP

Storm Water Discharge Response & Investigation Report

Date of Incidence: December 22, 2020 Time: 10:30 AM

Reported By: Bloomfield Township Telephone:

Location of Complaint: 1904 Pine Ridge Court Sidwell: 19-18-303-071

Homeowner Information: Yellow H. Gandhi

Description of Complaint: E.Coli detected in storm sewer outfall

EES Department Investigation Notes	Date
Storm sewer outfall IDEP inspection during the summer/fall of 2020 revealed an elevated E.Coli count in one of the outfalls. Subsequent sampling and sewer televising limited the search to one run of sewer that 4 condo units discharge into.	12/22/20

Actions Taken	Date
Dye tested the condominium at 1904 Pine Ridge Court. Tested toilets on both the main and lower levels. Dye showed up in the downstream storm sewer manhole.	12/21/20
Issued a letter to the property owner, HOA President, and Condo management company indicating that the unit is illicitly connected to the storm sewer.	12/22/20
Met plumbing contractor and the plumbing inspector, Steve Fink, onsite to discuss cross connection and how it can be corrected.	1/25/21
Conducted several emails and phone calls with the plumbing contractor over past few months. Contractor was going to complete work in the spring, but then backed out of project. Sent certified letter today to the property owner, HOA President, and Condo management company indicating that the work must be completed within 30 days.	5/3/21
Management Company has been calling numerous contractors and they are either not interested in the work or their schedule is already booked. Ordinance Department took over project and will stay on top of Management Company to find contractor and get the work done.	7/26/21
Management Company has indicated that they have hired a contractor, the HOA approved the estimate, and the work will be scheduled.	1/26/22
Contractor, Milford Contracting, has indicated that they will begin on project as soon as the frost laws are lifted likely in early April	3/17/22

Agencies Contacted	Name	Phone/Email	Date
OCWRC	Ron Fadoir	fadoirr@oakgov.com	12/22/20

Administrative Use Only		Date
Report Prepared By:	Cory Borton	5/3/21

BLOOMFIELD TOWNSHIP

Storm Water Discharge Response & Investigation Report

Date of Incidence: December 22, 2000 Time: _____

Reported By: _____ Telephone: _____

Location of Complaint: Beverly Hills Sidwell: _____

Homeowner Information: _____

Description of Complaint: Green Dye in stream in area of Lahser Road and 13 Mile

EES Department Investigation Notes	Date
Received emails and phone calls from OCWRC regarding green dye in stream south of Bloomfield Township. OCWRC wanted to know if Township knew anything about it. We did not.	12/22/20

Actions Taken	Date
Cory Borton met Joel Kohn of OCWRC in the field to determine location of dye release. It was discovered that it was coming from a house on Long Bow Court in Beverly Hills. Apparently, a plumber was looking for sump pump outlet and used too much dye.	12/22/20

Agencies Contacted	Name	Phone/Email	Date
OCHD			
MDEQ			
OCWRC	Joel Kohn and Ron Fadoir		
RCOC			
OTHER			

Administrative Use Only		Date
Report Prepared By:	Cory Borton	12/22/20

BLOOMFIELD TOWNSHIP

Storm Water Discharge Response & Investigation Report

Date of Incidence: January 4, 2021 Time: 10:00 am

Reported By: Ron Cousineau Telephone: _____

Location of Complaint: Upper Long Lake Estates Sidwell: _____

Homeowner Information: _____

Description of Complaint: Ron Cousineau of the Upper Long Lake – Lake Board called OCWRC regarding the use of road salt.

EES Department Investigation Notes	Date
Ron Fadoir of OCWRC called regarding the concern of the use of road salt in the Upper Long Lake Estates development. The streets in this area drain to Upper Long Lake and the development swim area.	1/4/21

Actions Taken	Date
No actions required. The Bloomfield Township Road Department receives training on the use of road salt and the trucks are calibrated annually. The use of brine reduces the amount of road salt necessary. Only the necessary amount of road salt is used on the roads and the Road Department is aware of limiting use in areas along lakes	1/4/21

Agencies Contacted	Name	Phone/Email	Date
OCHD	Ron Fadoir	fadoirr@oakgov.com	1/4/21
MDEQ			

Administrative Use Only		Date
Report Prepared By:	Cory Borton	1/4/21

BLOOMFIELD TOWNSHIP

Storm Water Discharge Response & Investigation Report

Date of Incidence: April 28, 2021 Time: 9:15 AM

Reported By: Mary Porrazzo Telephone:

Location of Complaint: 3035 Croft Way / 228 Orange Lake Rd Sidwell: 19-09-400-041

Homeowner Information: Mary Porrazzo

Description of Complaint: E.Coli sludge coming from hillside. Possible failing septic system.

EES Department Investigation Notes	Date
Complaint from property owner at 3035 Croft Way of smelly sludge oozing from the hillside behind home. Suspected failing septic system for 228 Orange Lake Road at the top of the hill.	4/28/21

Actions Taken	Date
Property owner of 3035 Croft Way issued complaint to the Township DPW of smelly sludge in her rear yard coming out of hillside. DPW investigated and thinks it is a failing septic system from 228 Orange Lake Road up the hill.	4/27/21
Notified OCHD of the possible failing septic system at 228 Orange lake Road. Met Teresa Brooks onsite to investigate. Teresa and I knocked on the door of 228 Orange Lake Road and asked if we could add dye to their septic system. They allowed us to pour dye in the kitchen sink and run the water.	4/28/21
Teresa Brooks of OCHD is not able to visit site today to look for dye. I stopped by and observed dye coming out of the side of the hill where the sludge is located at 3035 Croft Way. I emailed pictures of it to Teresa.	4/29/21
OCHD issued a violation letter dated 4/30/21. The Townshjp issued a letter dated 5/4/21.	5/4/121
The plumbing inspector, Steve Fink, indicated today that the final connection of 228 Orange Lake Road to the public sanitary sewer was completed on 6/1/21. The septic tank for the property was abandoned and crushed onsite.	6/3/21

Agencies Contacted	Name	Phone/Email	Date
OCHD	Teresa Brooks	brookste@oakgov.com	4/28/21
MDEQ			

Administrative Use Only		Date
Report Prepared By:	Cory Borton	6/3/21

BLOOMFIELD TOWNSHIP

Storm Water Discharge Response & Investigation Report

Date of Incidence: April 27, 2021 Time: 1:00 pm

Reported By: Katie Sontag Telephone: 248-541-7245

Location of Complaint: 3325 Franklin Road E.L. Johnson Nature Center Sidwell: 19-09-301-051

Homeowner Information:

Description of Complaint: Stagnant water and sheen observed within stream that flows through E.L. Johnson Nature Center.

EES Department Investigation Notes	Date
The resident left a voicemail with DPW and called OCWRC. The complaint was forwarded to EESD by DPW and Joel Kohn of OCWRC.	

Actions Taken	Date
Cory Borton and Angela Hysinger visited the site and walked the stream. The water level in the stream was much lower than usual. Much of the pools along the stream were stagnant and it appeared that an iron bacteria sheet was observed in some locations from ground water seepage. No indications of any dumping or illicit discharges. Joel Kohn of OCWRC indicated that he has received numerous calls over the county lately regarding the same thing do to the lack of rain recently. No further action needed.	4/27/21

Agencies Contacted	Name	Phone/Email	Date
OCWRC	Joel Kohn	kohnj@oakgov.com	4/27/21
OCHD			
EGLE			

Administrative Use Only		Date
Report Prepared By:	Cory Borton	4/27/21

BLOOMFIELD TOWNSHIP

Storm Water Discharge Response & Investigation Report

Date of Incidence: June 30, 2021 Time: _____

Reported By: Property Owner Telephone: _____

Location of Complaint: 2903 Woodcreek Way Sidwell: _____

Homeowner Information: _____

Description of Complaint: Property Owner at 2903 Woodcreek Way contacted OCHD regarding Dan Devine Drain behind house is clogged and neighbor blows leaves into drain and pumps water from it. Also saw foam in stream. Name and phone number of property owner not provided.

EES Department Investigation Notes	Date
Teresa Brooks of OCHD forwarded complaint to Bloomfield Township. Teresa Brooks of OCHD visited the site on 6/30/21 and did not did not observe and foam on water or evidence of an illicit discharge or dumping. The complaint was forwarded to the Township Ordinance Department and the OCWRC. The Dan Devine Drain is an Oakland County Drain.	6/30/21

Actions Taken	Date
Ordinance Officer Bob Thibeault visited the site and did not observe any foam in water or signs of illicit discharges or yard waste dumping. Some tree branches within drain. Ordinance Department sent letter to property owner to clean out debris. No further action is required.	7/1/21

Agencies Contacted	Name	Phone/Email	Date
OCHD	Teresa Brooks	brookste@oakgov.com	
OCWRC	Ron Fadoir	fadoirr@oakgov.com	
EGLE			

Administrative Use Only		Date
Report Prepared By:	Cory Borton	7/7/21

BLOOMFIELD TOWNSHIP

Storm Water Discharge Response & Investigation Report

Date of Incidence: September 20, 2021 Time: _____

Reported By: Maboob Khan Telephone: 248-760-8874

Location of Complaint: 893 Foxhall Road Sidwell: 19-11-226-010

Homeowner Information: _____

Description of Complaint: Dead deer in stream in rear yard.

EES Department Investigation Notes	Date
Ron Fadoir of OCWRC forwarded complaint to Bloomfield Township	9/20/21

Actions Taken	Date
Bloomfield Township staff informed Ron that the resident can contact the Bloomfield Township Animal Welfare Department for removal of the carcass. This was passed to the resident. **Status: No further action required.**	9/20/21

Agencies Contacted	Name	Phone/Email	Date
OCHD	Ron Fadoir	fadoirr@oakgov.com	9/20/20
MDEQ			

Administrative Use Only		Date
Report Prepared By:	Cory Borton	9/21/21

Appendix D2

Canton Township Pollution Complaint Documentation

'cit Discharge Report Complaint Form

CANTON Community

Date: 7-9-21 Time: 11:00 AM Employee Initials: G. PYLE

Caller Information

Name: MICHELLE TREMAINE
Address: 44744 MICH. AVE.
Telephone: 313-690-4264

Location of Suspicious Discharge:
PARKING LOT STORM CATCH BASIN/POND

Description: (Circle all that apply)

Odor:	None	Sewage	Sulfide	(Oil)	Gas	Rancid-Sour	Other:
Color:	None	Yellow	Brown	Green	Red	Gray	Other: RAINBOW COLOR/POND
Turbidity:	(None)	Cloudy	Opaque				

Any other Information:

Investigation of Suspicious Discharge

Date: 7-9-21
Crew Initials: G. PYLE

Location: 44744 MICH. AVE

Temp.: 75° Rain: Yes ___ No: X Sunny Cloudy

General Description: (Circle all that apply)

Odor:	None	Sewage	Sulfide	(Oil)	Gas	Rancid-Sour	Other:
Color:	None	Yellow	Brown	Green	Red	Gray	Other: RAINBOW COLOR/POND
Turbidity:	(None)	Cloudy	Opaque				
Floatables:	None	(Petroleum)	(Sheen)	Sewage	Other:		(collect sample)
Deposits/Stains:	None	Sediment	(Oily)	Describe:			(collect sample)

➤Known industrial or commercial uses in drainage area? *Yes* *No*

➤Stream Conditions:

➤Additional observations:

Analysis:

➤Does this appear to be an illicit discharge? (*Yes*) *No* PARKING LOT

If so, can you identify the source? (*Yes*) *No* If yes, identify the Source: STORM CATCH BASIN

➤Is this within Canton Jurisdiction? (*Yes*) *No*

➤This discharge will be reported to: WC DOE WC Health Dept. (MDEQ)
(Circle appropriate jurisdiction)

* EMAIL AND PICTURES SENT TO SUE THOMPSON 7-9-21 YP

Appendix D3

Farmington Pollution Complaint Documentation

WATER & SEWER WORK ORDERS

MAINTENANCE, SEWER LINES

Customer Information

SHLAFER, ROMANDR
31930 GRAND RIVER
FARMINGTON,MI 48336
(248) 474-0224

Work Order #: 01950
Date Filed: 01/29/2020
Scheduled Date:
Scheduled By: LMCGILL

Work Description:

WASHER DRAINS INTO STORM LINE; OWNER WILL BE GETTING IT DISCONNECTED.

Work Results:

Labor

Performed By	NAME	Hours	Description

Inventory

Inventory Code	Description	Quantity	Units

Equipment

Equipment Code	Description

Results / Comments:

Completed By: _____ Date: / /

The City of FARMINGTON Founded 1824

DPW WORK ORDERS

DRAINAGE / CATCH BASIN

Customer Information

SAINI, VIJAY
34821 ARUNDEL
FARMINGTON,MI 48335
(614) 537-0602

Work Order #: 02106
Date Filed: 05/29/2020
Scheduled Date:
Scheduled By: JLEACH

Work Description:

REMOVE STICKS AND DEBRIS FROM STORM DRAINS.

Work Results:

VACTORED BASIN IN ROAD AND BEEHIVE IN YARD; FLUSHED OUT STORM LINE CONNECTING THE TWO; BOTH WERE FULL TO INVERTS OF SMALL STICKS AND BRANCHES; TOOK PICTURES AND E-MAILED TO JOSH; AMOUNT OF STICKS PLUGGED VACTOR TUBE SEVERALTIMES.

MARCUS & JACK 5/29/2020

Labor

Performed By	NAME		Hours	Description
00351	JACK	WEST	2.50	
00681	MARCUS	SCHWEISTHAL	2.50	

Inventory

Inventory Code	Description	Quantity	Units

Equipment

Equipment Code	Description
13	Van 2005 G.M.C. Savana 10,184#
20	VACTOR TRUCK 2020 FREIGHTLINER FL114SD
20.1	VACTOR JET RODDER 2020 FEDERAL SIGNAL 2100I
20.2	VACUUM PUMP - FEDERAL SIGNAL 2100I

Results / Comments:

Completed By: _____ Date: / /

DPW WORK ORDERS

DRAINAGE / CATCH BASIN

Customer Information

ENGELSMAN II, THOMAS R
36612 SAXONY
FARMINGTON,MI 48335

Work Order #: 02119
Date Filed: 06/05/2020
Scheduled Date:
Scheduled By: LMCGILL

Work Description:

PLEASE REPAIR EDGE DRAIN; CONTRACTOR FOR RESIDENT SAYS IT IS FULL OF ROOTS

Work Results:

36652 SAXONY HAS STREET BASIN AND STORM DRAIN; FOUND BLACK CORRUGATED PIPE IN STREET BASIN; WHEELED FROM BASIN TO CLEANOUT 157'; RAN LINE WITH VACTOR MULTIPLE TIMES; OPENED CLEANOUT TO VERIFY LOCATION; RAN 4' PAST TAP/CLEANOUT; BELIEVE TO BE BULKHEADED ~4' PAST CLEANOUT; PULLED BACK ROOTS AND SANDY WATER; WILL HAVE TO RETURN TO SUCK OUT THE SAND; RAN OUT OF TIME

JACK, MARCUS, & SEAN 6/5/2020

CLEANED OUT CATCH BASIN OF SAND AND DEBRIS

JACK, MARCUS, & SEAN 6/8/2020

Labor

Performed By	NAME		Hours	Description
00351	JACK	WEST	5.00	
00681	MARCUS	SCHWEISTHAL	5.00	
00323	SEAN	MILLER	2.00	

Inventory

Inventory Code	Description	Quantity	Units

Equipment

Equipment Code	Description
13	Van 2005 G.M.C. Savana 10,184#
20	VACTOR TRUCK 2020 FREIGHTLINER FL114SD
20.1	VACTOR JET RODDER 2020 FEDERAL SIGNAL 2100I
20.2	VACUUM PUMP - FEDERAL SIGNAL 2100I
15	VAN 2015 CHEVROLET EXPRESS

Results / Comments:

Completed By: _____ Date: / /

DPW WORK ORDERS

DRAINAGE / CATCH BASIN

Customer Information

JIANG, HUAHUI
36652 SAXONY
FARMINGTON,MI 48335
(248) 854-9067

Work Order #: 02122
Date Filed: 06/08/2020
Scheduled Date:
Scheduled By: LMCGILL

Work Description:
CALLER STATED DRAIN FOR SUMP PUMP DISCHARGE IS CLOGGED; SIMILAR TO 36612 SAXONY (W/O #2119); PLEASE CHECK/REPAIR EDGE DRAIN; MAY BE CLOGGED WITH ROOTS

Work Results:
JET 6" CORRUGATED AT BRITTANY HILL AND SAXONY; MADE ONLY TO FIRST HOUSE'S CONNECTION

MARCUS & JACK 6/8/2020

JETTED/TV'D STORM MAIN TO FIND POSSIBLE TAP; UNABLE TO FIND; HYDROEXCAVATED; FOUND BLACK CORRUGATED AND TAP; RAN LINE ~165'

MARCUS & JACK 6/9/2020

JETTED LINE BOTH WAYS; IT IS CLEAR; FIXED "T"; DID HAVE ROOT INTRUSIONS

MARCUS & JACK 6/10/2020

RESTORED

JACK & SEAN 6/11/2020

Labor

Performed By	NAME		Hours	Description
00681	MARCUS	SCHWEISTHAL	13.50	
00351	JACK	WEST	14.50	
00323	SEAN	MILLER	1.00	

Inventory

Inventory Code	Description	Quantity	Units

Equipment

Equipment Code	Description
13	Van 2005 G.M.C. Savana 10,184#
20.1	VACTOR JET RODDER 2020 FEDERAL SIGNAL 2100I

Results / Comments:

Completed By: _____ Date: / /

20.2	VACUUM PUMP - FEDERAL SIGNAL 2100I
20	VACTOR TRUCK 2020 FREIGHTLINER FL114SD
26	TRACTOR CAT 2019 420F2IT
26.2	FRONT END LOADER 2019 CAT
M235	Stone
M230	Sand
M241	Bags Mortar

Results / Comments:

Completed By: _____ Date: / /

DPW WORK ORDERS

DRAINAGE / CATCH BASIN

Customer Information

THOMPSON, JAMES
33111 KIRBY
FARMINGTON,MI 48336
(248) 573-9094

Work Order #: 02566
Date Filed: 05/03/2021
Scheduled Date:
Scheduled By: LMCGILL

Work Description:
RESIDENT CALLED TO REPORT CATCH BASIN NOT DRAINING; HE CLEARED OFF THE DEBRIS, AND IT IS JUST HOLDING WATER

Work Results:
RAN THE MAIN LINE; NEED TO CLEAN ROOTS OUT OF CATCH BASIN

MIKE & MARCUS 5/3/2021

VACTORED CATCH BASIN 2; ROOTS EVERYWHERE; RAN LINES TO 1 AND 3; DEBRIS AND ROOTS?; VACTORED 3; FULL OF ROOTS IN CATCH BASIN

MIKE & MARCUS 5/4/2021

Labor

Performed By	NAME		Hours	Description
00681	MARCUS	SCHWEISTHAL	3.50	
00408	MICHAEL	PESAVENTO	1.00	

Inventory

Inventory Code	Description	Quantity	Units

Equipment

Equipment Code	Description
20	VACTOR TRUCK 2020 FREIGHTLINER FL114SD
20.1	VACTOR JET RODDER 2020 FEDERAL SIGNAL 2100I
20.2	VACUUM PUMP - FEDERAL SIGNAL 2100I
15	VAN 2015 CHEVROLET EXPRESS
13	Van 2005 G.M.C. Savana 10,184#

Results / Comments:

Completed By: _____ Date: / /

DPW WORK ORDERS

DRAINAGE / CATCH BASIN

Customer Information

IHM, MARK
36522 VICARY LN
FARMINGTON,MI 48335

Work Order #: 02666
Date Filed: 07/19/2021
Scheduled Date:
Scheduled By: CEUDY

Work Description:
RESIDENT STATES SUMP PUMP DISCHARGING OUT OF OVERFLOW
CHRISTIE IHM 248/444-8245

Work Results:
WE NEED TO CLEAN THE LINE OUT BY CURB
--MIKE 7/20/21

VACTORED DOWN ON CURB DRAIN. INSTALLED 6" WYE, 45, AND SCREW-ON CAP FOR A NEW CLEANOUT TO RUN WEST TO EAST. MATERIALS ON 9/9/21 TIMESHEET. RAN LINE WITH BULLDOG.
--MARCUS 9/9/21

Labor

Performed By	NAME		Hours	Description
00408	MICHAEL	PESAVENTO	2.00	
00351	JACK	WEST	6.00	
00319	CHRISTOPHER	GUIBORD	6.00	
00681	MARCUS	SCHWEISTHAL	4.50	

Inventory

Inventory Code	Description	Quantity	Units

Equipment

Equipment Code	Description
15	VAN 2015 CHEVROLET EXPRESS
13	Van 2005 G.M.C. Savana 10,184#
26	TRACTOR CAT 2019 420F2IT
26.2	FRONT END LOADER 2019 CAT
26.1	BACKHOE ATTACHMENT 2019 CAT
20	VACTOR TRUCK 2020 FREIGHTLINER FL114SD
20.1	VACTOR JET RODDER 2020 FEDERAL SIGNAL 2100I
20.2	VACUUM PUMP - FEDERAL SIGNAL 2100I

Results / Comments:

Completed By: _____ Date: / /

DPW WORK ORDERS

DRAINAGE / CATCH BASIN

Customer Information

GIBBENS, LYNNE
36640 BRITTANY HILL
FARMINGTON,MI 48335
() -

Work Order #: 02739
Date Filed: 09/10/2021
Scheduled Date:
Scheduled By: JLEACH

Work Description:
CALLER STATES THAT THEIR SUMP PUMP IS DRAINING OUT OF THE OVER FLOW, CHECK EDGE DRAIN FOR ROOTS. ROB GIBBENS 248/425-2786

Work Results:
EXPOSED SUMP LINE AT STREET, JETTED LINE 60' TO THE EAST UNDER THE ROAD. VACTORED DOWN ON EAST SIDE OF ROAD AND JETTED LINE GOING TO THE EAST, FOUND SOME ROOTS, NOTHING FURTHER TO DO AT THIS TIME. BACKFILLED 9/16/21

Labor

Performed By	NAME		Hours	Description
00351	JACK	WEST	6.00	
00408	MICHAEL	PESAVENTO	2.00	
00319	CHRISTOPHER	GUIBORD	10.00	
00681	MARCUS	SCHWEISTHAL	11.50	

Inventory

Inventory Code	Description	Quantity	Units

Equipment

Equipment Code	Description
15	VAN 2015 CHEVROLET EXPRESS
13	Van 2005 G.M.C. Savana 10,184#
20	VACTOR TRUCK 2020 FREIGHTLINER FL114SD
20.1	VACTOR JET RODDER 2020 FEDERAL SIGNAL 2100I
20.2	VACUUM PUMP - FEDERAL SIGNAL 2100I

Results / Comments:

Completed By: _____ Date: / /

WATER & SEWER WORK ORDERS

MAINTENANCE, SEWER LINES

Customer Information

WHEATON, ERNEST
22618 BROOKDALE
FARMINGTON,MI 48336
(781) 894-4027

Work Order #: 02745
Date Filed: 09/14/2021
Scheduled Date:
Scheduled By: JLEACH

Work Description:

THERE IS A TAP IN THE STORM SEWER ON THE NORTH SIDE OF THIS HOME, DYE TEST PRIVATE SEWER.

Work Results:

ERNEST WHEATON PASSED AWAY; NIECE ROSEMARY IS IN TOWN CLEANING OUT HOUSE. WE PUT CAMERA IN STORM SEWER AT TAP IN QUESTION, POURED 1 GALLON OF MILK DOWN LAUNDRY TUB SINK IN BASEMENT; MILK MADE ITS WAY TO THE TAP IN THE STORM. TURNED WATER OFF AT CURB STOP. INFORMED ROSEMARY. SHE IS THE EXECUTOR OF THE ESTATE. CONTACT INFO FOR CORRESPONDENCE: ROSEMARY MILLER, 58 COLLEGE FARM ROAD, WALTHAM MA 02451, PH: 617-763-3457

Labor

Performed By	NAME		Hours	Description
00681	MARCUS	SCHWEISTHA	2.00	
00351	JACK	WEST	2.00	

Inventory

Inventory Code	Description	Quantity	Units

Equipment

Equipment Code	Description
13	Van 2005 G.M.C. Savana 10,184#
72	Enclosed Van Trailer 1987 Tote Wagon TW 101 3,000#
72.1	TV Sewer Inspection Unit 1986 Cues TV Qube P

Results / Comments:

Completed By: _____ Date: / /

The City of FARMINGTON Founded 1824

WATER & SEWER WORK ORDERS

MAINTENANCE, SEWER LINES

Customer Information

EIB, MARY
23130 ORCHARD LAKE
FARMINGTON,MI 48336
(248) 474-0741

Work Order #: 02784
Date Filed: 10/08/2021
Scheduled Date:
Scheduled By: CEUDY

Work Description:
APPOINTMENT 8:00 AM MONDAY OCTOBETR 11, 2021
FLOOR DRAIN NEAR FURNACE IS BACKING UP. PLUMBER ADVISED RESIDENT SEWERS FLOW TO ORCHARD LAKE ROAD.
IF FLOOR DRAIN NEAR FURNACE WILL TAKE WATER DYE TEST IT. IF NOT DYE TEST BASEMENT LAUNDRY TUB.

Work Results:
MAIN FLOOR OF HOME HAS HUNG PLUMBING EXITING TO BYPASSED SEPTIC TANK. BASEMENT FIXTURES DRAIN TO CLEANOUT IN BASEMENT. DYE TESTED AT BASEMENT LAUNDRY TUB. DYE CAME TO SANITARY SEWER IN REAR YARD. ADVISED RESIDENT TO CONTACT A DRAIN CLEANING CONTRACTOR TO CLEAN FLOOR DRAIN LINE NEAR TH FURNACE AND THE SEWER MAIN LINE ENTERING HOME.
--CHUCK 10/11/21

Labor

Performed By	NAME	Hours	Description
00408	MICHAEL PESAVENTO	0.75	

Inventory

Inventory Code	Description	Quantity	Units

Equipment

Equipment Code	Description
15	VAN 2015 CHEVROLET EXPRESS

Results / Comments:

Completed By: _____ Date: / /

Appendix D4

Novi Pollution Complaint Documentation

ARC Member Permit Responsibilities - Collective IDEP, TMDL and PEP Plans

Item	Date	Description
Repair/correct illicit connections/discharges revealed during the site inspection. If the discharge is significant, take immediate steps to stop the illicit discharge	2/26/2021	Illicit discharge at 43100 Nine Mile Road was discovered and corrected on 2/25/2021. The Water and Sewer Department discovered a sanitary sewer lead for a bathroom added to the north end of the building was connected to storm sewer. Residents in the area had complained about a smell, which trigered this discovery. A private contractor hired by the property owner capped the santiary sewer lead and will be connecting the lead to nearby sanitary sewer in the future. No plans will be submitted to the City for review since this is a private lead, but Kate Richardson will follow-up when the work is completed.
	4/28/2021	Possible illicit discharge at storm drain outlet from Beachwalk Apartments to Walled Lake. Resident Harvey Markkowitz (248-705-4822) contacted Novi Police about a frothy, milky layer with sediment on the surface of the water discharging into Walled Lake. Deputy Smith took a sample of it and noted that it was yellowish in color and looked like pollen. Rebecca Runkel will investigate (field visit confirmed that it appears to be naturally-occuring pollen - RR).
	11/18/21	Anonmyous call to Water & Sewer Dept stating a restaurant employee at 41563 10 Mile Rd was witnessed pouring grease into storm drain behind building. Site visit confirmed grease smell and substance in and around catch basin. Debbie Martinez, Code Enforcement Officer, spoke with restaurant employee and property manager. She will send a Notice of Violation to the property owner. The Water & Sewer dept will also be sending a letter to the restuarant regarding proper grease disposal. (Update, 12/7/21 - Violation letters sent, Field Ops checked public storm sewer on Meadowbrook and there was no visible grease accumulation in public sewer, property manager is instructed to clean out/vac private sewer where grease was dumped and report back to Field Ops).

Appendix D5

Oakland County Pollution Complaint Documentation

FY 2020 IDEP-Related Complaints
Rouge River Watershed

Source	Date	Complainant	Organization	Complaint Address / Location	City	Complaint	Investigating Agency	Enforcing Agency	Result	Status	Type / Source	Pollutant	Watershed	Estimated Amount	Notes
OC Safety	11/1/2019	Melissa Accord	Salvation Army	730 N. Pontiac Trail, Salvation Army Store	Walled Lake	Vehicle Spill, gasoline running into parking lot storm CB	WRC / Walled Lake	Walled Lake FD	Store Manager contacted Walled Lake FD, Truck was gone. Small amount of fuel on Parking lot cleaned up by FD. Walled Lake DPW followed up, no fuel in Parking lot CB or connected detention pond.	Closed	Fuel / Vehicle spill	Fuel	Rouge	1 gallon	Fuel cleaned up no impact to local storm
Phone Call	1/3/2020	Tom McNalley	Resident	Contour Contracting, 40960 Woodward Ave	Pontiac	Contractor dumping paint and construction debris in down storm drain	WRC / Bloomfield Twp.	NA	Site Investigated. No issues found.	Closed	Illegal Dumping / Commercial Facility	NA	Rouge	NA	
Email	2/6/2020	Maureen Diverno	Resident	2038 S. Hammond Lake	W. Bloomfield	Failed Septic System at residence on Hammond Lake	FOTR, W. Bloomfield, OCHD	OCHD	Violation Notices. Pump and Order Issued by OCHD, Homeowner has applied for Permit to replace Failed Septic System .	Permit Pending	Sewage- Residential Failed Septic System	Sewage	Rouge	65,700 gal. / yr.	
Letter	2/20/2020	John Biesell	Farmington Hills	La Marsa Restaraunt, 23273 Middlebelt Rd.	Farmington Hills	Restaurant illegal Dumping grease into property CBs going to local storm	Farmington Hills, OCHD	OCHD, FHC	Violation Notice Issued. Owner had property CBs and local storm cleaned out. OCHD followed up with restaurant inspection, grease trap cleaning and grease dumpster requirements	Closed	Restaurant Grease- Illegal Dumping ping	Grease	Rouge	200 gallons	Ongoing Issue with IDEP DWS / Investigations going back to 2010. Facility was dye tested, no illicit discharges were found.
CDM Inspection	3/21/2020	CDM	WRC / Northville FD	810 8 Mile Rd, Local Storm from Gas Station at 8 Mile & Taft	Northville	CDM reported oil sheen from a local drain an inlet to Randolph St Drain coming from the Gas Station at 810 Eight Mile Rd. Booming install at local drain outlet	WRC, EGLE, Station Owner	EGLE	Sheen is from Non Aqueous phase liquids from LUST diesel remediation at the Gas Station in Ground water migrating into the ga station the storm drain. PM Environmental & Oscar Larson, cleaned out and disposed of Fuel / water mix in storm system and disposed of Booms. Local drain was remediated per EGLE requirements. No product impacted the Randolph St Drain	Closed	Diesel Fuel- Gas Station LUST remediation site	Diesel Fuel / Ground water mix	Rouge	200 gallons	product was Light Non Aqueous Paste like diesel fuel components mixed w/ ground water. PM Environmental and Oscar Larson Managed Site cleanup and remediation of the storm sewer and groundwater contamination as part of an ongoing LUST remediation with EGLE.
OC Safety	4/2/2020	Joan Rayford	Resident	28899 Millbrook Rd	Farmington Hills	Neighbor discharging Pool Water into Pebble Creek	WRC / Farmington Hills	NA	Informed caller res pool water is not regulated. Referred to Farming Hills DPW for follow up	Closed	pool water / Residential swimming pool	NA	Rouge	NA	
OC Safety	5/12/2020	Anonymous		528 Randolph St	Northville	Residential home construction site, No silt fence, Excavator parked next to Randolph St Drain	Wayne County DPS / Northville	Northville	Reported to Wayne County, City Northville did SESC Site inspection. No issues were found	Closed	Soil Erosion / Residential Construction Site	NA	Rouge	NA	
OC Safety	7/11/2020		Bloomfield Twp FD	N. Ramp from Square Lk. To Opdyke Rd.	Bloomfield Twp	Gasoline Tanker Truck fire and fuel spill off N. Square Lk. Exit Ramp to Opdyke Rd.	WBT FD, MDOT, RCOC	MDOT	Spill contained by FD to grass detention area off exit ramp. MDOT /RCOC responded . Site cleaned up by contractor	Closed	Accident / Spill	Gasoline	Rouge	500 gallons	Spill was contained in detention area, no impact storm drains or Rouge
OC Safety	8/10/2020	Anonymous	OC Safety Dispatch	22330 Rougemont Dr.	Southfield	Illegal Dumping	WRC	NA	No issues found	Closed	NA	NA	Rouge		
OC Safety	8/18/2020	Judith McGrath	Resident	4469 W. Maple Rd	Bloomfield Hills	Neighbor has pipe from pond draining on to her property	WBC	NA	Referred to Bloomfield Hills not and IDEP issue	Closed					

FY 2021 IDEP-Related Complaints
Rouge River Watershed

Source	Date	Organization	Complainant	Address	City	State	Zip	Phone	Email	Complaint Address / Location	CVT	Complaint / Description	Referral / Inv Agencies	Enforcing Agency	Results	Status	Illict Discharge	Source	Type	Quantity	Drain / Waterbody	Watershed	Notes / Comments
Referral- FOTR	11/17/2020	Resident	David Levitt	25741 River Drive	Franklin	MI	48025	(248) 330.5888	dmlevitt@mindspring.com	25733 River Dr, drainage ditch to Rouge River	Franklin Village	Neighbor installed drainage ditch discharging road runoff to Rouge River	Franklin Village, WRC, EGLE	Franklin Village, WRC, EGLE	Referred to WRC for SESC Permit, Franklin Village Construction Permit and EGLE for Discharge Permit	Closed	Sediment	Residential Construction Site	SESC	Not Estimated	Franklin Branch of Rouge River	Rouge	WRC SESC issued stop work odor which was corrected. Ongoing dispute with neighbor, Franklin Village and EGLE over road drainage pipe instillation and permitting. See SESC file for more details
Lathrup Village -HRC	2/5/2021	HRC	Stephanie Petriello	555 Hulet Dr.	Bloomfield Hills,	MI	48303-0824	(248) 454-6318	spetriello@hrcengr.com	Lathrup Village DPS, 24000 Southfield, 48036	Lathrup Village	Dye Testing verified Illicit Connections in the DPS garage facility	Lathrup Village	Lathrup Village	Bathroom, shower and garage utility sink and floor drain connected to local storm MH. Verified by HRC	Corrective Action Pending by Lathrup Village	Sewage	DPW Garage	Illicit Connection	Not Estimated	Local Storm	Rouge	Received Dye Test Results Letter from HRC Corrective actions by Lathrup Village Pending
Referral -Farmington Hills	3/17/2021	Farmington Engineering	Karen Mondora	31555 W.11 Mile Rd	Farmington Hills	MI	48336	(248) 444-0311	kmondora@fhgov.com	Green Pond Sub Div. Valley Forge and Tulipwood	Farmington Hills	Dead Fish on Pond	FH, WRC, ARC	Reported to DNR	Determined to be Winter Fish Kill caused by freezing temps / low DO	Closed	NA	NA	NA	NA	Green Pond	Rouge	Dead fish attributed to frozen pond and low DO. Water Quality readings do not show an ongoing issue. Pond is sediment basin. Pond has only storm drain inlets and no outlets. Cleanout of pond is recommended.
OC Safety Dispatch	3/29/2021	Resident	Jim Williams	19800 Riverside Dr	Beverly Hills	MI		248-930-0435	mojohaiku@earthlink.net	Rouge River at 19800 Riverside Dr.	Beverly Hills	Possible sewage on River behind house	WRC, ODHD, Beverly Hills DPW	NA	No issue found, algae, plant material, debris from spring rain washout.	Closed	NA	NA	NA	NA	Rouge River	Rouge	No issues were seen. E.coli counts were minimal. Reported to results to Beverly Hills and homeowner
OC Safety Dispatch	4/2/2021	NA	Anonymous	NA	NA	NA	NA	NA	NA	14 Mile Rd at M 5, Construction site	Commerce Twp	Construction site pumping discharge with orange color to Seely Creek	Commerce Twp	Commerce Twp	Referred to Commerce Twp. No issues found at site.	Closed	NA	NA	NA	NA	Seely Drain	Rouge	Per Jay James, Commerce TWP, dewatering pond pump was in place but not operating at time of inspection. No issues with the creek were seen
Referral -Email to Rfadoir	4/19/2021	Wayne County DPS	Sue Thompson	3500 Commerce Ct	Wayne	MI		(313) 999-6266	sthompson@waynecounty.com	Sump Drain, 8 Mile W. of Napier	Novi	Heavy turbid flow to Sump Drain W. of Napier Rd	WRC Permitting / SESC	WRC	SESC Enforcement action at upstream Sub Division Construction site	Closed	Sediment	Residential Construction Site	SESC	Not Estimated	Sump Drain	Rouge	Referred to Joe Gardner with SESC
OC Safety Dispatch	4/27/2021		KATIE SONTAG					248-541-7245		EL L Johnson Nature Center 3325 Franklin Rd.	Bloomfield Twp	Oily Sheen on River at EL Johnson Nature Center	WRC / Bloomfield Twp	NA	No Issues Found	NA	NA	NA	NA	NA	NA	Rouge	No Information
OC Safety Dispatch	4/28/2021		HARVEY MARKOWITZ		Novi	MI		248 705 4822		1153 East Lake Dr	Novi	Yellow colored Discharge coming from Apt Complex Storm Drain at 1153 East Lake Dr	WRC /City of Novi, DPS	NA	Discharge is Pollen from Property Storm Runoff	Closed	NA	NA	NA	NA	NA	Rouge	Reported by Deputy, Smith Novi PD
OC Safety Dispatch	5/19/2021	Resident	Dale		Novi	MI		248-255-9076		1585 Paramount St	Novi	Caller thinks illegal Building at 1858 Paramount St is on wetlands	WRC SESC, Novi, EGLE	Novi / EGLE	Not WRC issue referred to City of Novi and EGLE	Closed	NA	NA	NA	NA	Na	Rouge	No Information
OC Safety Dispatch	6/12/2021	Square Lake HOA, President	Kirt Brannock	1642 Hamilton Dr.	Bloomfield Twp	MI		(360) 306-3300		1750 Hamilton Dr.	Bloomfield Twp	Homeowner at 1750 Hamilton on Square Lake is having issues with construction contactor and silt fencing	WRC SESC, Bloomfield DPS	WRC SESC	Contractor notified, Corrected SESC Controls	Closed	Sediment	Construction Site	SESC	Not Estimated	Square Lake	Rouge	Contact is Joe Gardner, WRC SESC 248-858-5389
OC Safety Dispatch	7/9/2021	Resident	Althea Brown	22387 Nearbrook Ct.	Farmington Hills	MI		(248) 974-1888		22387 Nearbrook Ct	Farmington Hills	Cement Contractor dumping concrete washout to local storm drain	Farmington Hills, DPS	Farmington Hills	Pending Investigation	Open							No Information
OC Safety Dispatch	9/18/2021	Resident	Mahboob Kahn	893 Foxhall Rd	Bloomfield Twp	MI		(248) 760-8874		893 Foxhall Rd	Bloomfield Twp	Dead deer in stream behind house	MDNR / OCHD	MDNR	Deer removed by Animal Welfare	Closed	NA	NA	NA	NA		Rouge	
OC Safety Dispatch	9/20/2021	Resident	Ryan Chevillet	21123 Halstead Rd	Farmington Hills	MI		734-926-6042		21123 Halstead Rd	Farmington Hills	Contactor spraying roundup near his property	FH, EGLE	EGLE	Contractor is treating Invasives as part od Minnow Pond Restoration Project. FH is handling	Closed	NA	NA	NA	NA	Minnow Pond Drain	Rouge	Contact Tyler Songas with Farmington Hills Engineering 248-871-2533
OC Safety Dispatch	12/21/2021	EGLE	Tracy Keskemeti							32801 Long Bow Ct	Beverly Hills	Green Dye in Rouge	EGLE/WRC/Beverly Hills Bldg Dept	Beverly Hills Bldg Dept	Plumber turned River green dye testing Residential Home for sale. Illicit connection corrected by property owner / Beverly Hills	Closed	Tracing Dye	Residential Property	Illicit Connection	0.5 gal	Rouge River	Rouge	House was for sale. Presumed vacant. Illicit connection was corrected by realtor.

Appendix D6

Plymouth Township Pollution Complaint Documentation

Charter Township of Plymouth

Pollution Complaint Tracking Form

Illicit Discharge Elimination Program

Complaint made by: Reported by GFL - Green for Life - Matt, Supervisor

Phone #: 586-447-8910

Date: 11/19/20 Time: 8:00 am

Location of Problem: Mystic Forest Offending Party (if known) GFL

Nature of Problem (i.e. paper waste, odor, color, etc.):

Trash truck had an oil leak/spill

Is this an Emergency? ☒ No
☐ Yes (then call 911)
Nature of Emergency: _____

Initial Contact made to:
- ☐ 911
- ☐ City Dept. _____
- ☐ Wayne County (888) 223-2363
- ☐ Oakland County (248) 858-0931
- ☐ PEAS Hotline (State) 1-800-292-4706
- ☒ Other Twp Office

Additional Comments:

GFL reported they had an oil leak/spill from one of the trash collection trucks on Wednesday 11/18/20 - no leak/spill entered a storm drain - GFL responded immediately.

Investigation Summary
- ☐ Initial Investigation
- ☐ Follow-up Investigation

Date of Investigation: _____
Investigating Agency: _____
Location of Discharge: _____

Crew Members: _____

Investigation Location: _____

Observations (odor, color, volume, etc.): _____

Actions Taken (dye testing, notification letter, etc.):

GFL addressed the spill immediately - placed down absorbent material - street sweeper will return to clean up on 11/20/20

Were photos taken: ☐ Yes ☒ No

Agency Referred to: _____
Agency Contact: _____
Method of Communication:
☐ E-mail* ☐ Letter/memo* ☐ Phone
*Attached copies
Content of Communication: _____

Date Corrected or Resolved: 11/20/20 - Completed

Charter Township of Plymouth

Pollution Complaint Tracking Form **Illicit Discharge Elimination Program**

Complaint made by: Environmental Consulting & Technology - Survey Crew Phone #: 734-769-3004 x23308

Date: 02/26/2021 Time: _____

Location of Problem: Plymouth Hills Mobile Home park Offending Party (if known) _____

Nature of Problem (i.e. paper waste, odor, color, etc.): _____

Reported black sheen in vicinity of trailer park. Surveying subcontractor observed a black water discharge coming from a tributary.

Is this an Emergency? ☒ No
☐ Yes (then call 911)
Nature of Emergency: _____

Initial Contact made to:
- ☐ 911
- ☐ City Dept. _____
- ☒ Wayne County (888) 223-2363
- ☐ Oakland County (248) 858-0931
- ☐ PEAS Hotline (State) 1-800-292-4706
- ☐ Other _____

Additional Comments:
Wayne County forwarded concern - DPW staff
investigated the area from the detention pond up to
Johnson's Creek.

Investigation Summary
- ☒ Initial Investigation
- ☒ Follow-up Investigation

Date of Investigation: 02/26/21 and 03/02/21
Investigating Agency: DPW
Location of Discharge: _____

Crew Members:
Jimmy Scholten

Investigation Location:
Johnson Creek tributaries and outfalls - qtr section 19sw
from pond at west side of Plymouth Hills north towards 5 Mile.

Observations (odor, color, volume, etc.):
No black oily sheen was discovered

Actions Taken (dye testing, notification letter, etc.):
Follow-up in one year recommended

Were photos taken: ☒ Yes ☐ No

Agency Referred to: _____
Agency Contact: _____
Method of Communication:
☐ E-mail* ☐ Letter/memo* ☐ Phone
*Attached copies
Content of Communication: _____

Date Corrected or Resolved: 03/02/2021

WORK ORDER NOTIFICATION

Plymouth Township – Public Works

Illicit Discharge Complaint Investigation

Work Order #14524

Priority: Red (High)

ADDRESS: Johnson Creek 48170 Q sect. 19SW

LOCATION: Johnson creek tributaries and outfalls-quarter section 19sw from pond at west side of Plymouth Hills Mobile Home Park north towards Five Mile

MAP PAGE:

SECTION:

INITIATED DATE: 3/2/2021 7:30:00 AM

INITIATED BY: Hamann, Dan

SUBMIT TO: Hamann, Dan

COMMENTS:

By Hamann, Dan : 1/25/2022 1:27:31 PM
Please look for reported black sheen in vicinity of trailer park. Please take photos. Please make a deposition of what you find and place in comments

By Hamann, Dan : 1/25/2022 1:32:34 PM
This work order replaces lost or damaged original w.o.

By Scholten, Jimmy : 1/26/2022 9:23:10 AM
Followed from the detention pond up to Johnson's creek. In that path I didn't identify any black oily sheen. However I did notice in the trailer park property where there is storage and maintenance activities possibly happening.

By Scholten, Jimmy : 1/26/2022 9:23:11 AM
Recommend visiting the site again in one year.

By Hamann, Dan : 1/26/2022 12:22:47 PM

"NOTE: THIS WORK ORDER WAS PREPARED EX POST FACTO DUE TO SOFTWARE ISSUE. COMPLAINT WAS RECEIVED ON 2-26-2021;INITIAL INSPECTION INSPECTION OCCURRED ON 2-26-2021; AND FOLLOW UP ON 3-2-2021: ATTACHED PHOTOS WERE TAKEN ON 3-2-2021
--

INSTRUCTIONS: Please look for reported black sheen in vicinity of trailer park. Please take photos. Please make a deposition of what you find and place in comments

SERVICE REQUEST / CALLER DETAILS

RequestID	Date/Time	Priority	Description	Problem Address

WORK ORDER TASKS

Sequence	Name	Proj Start	Entity ID	Duration

ADDITIONAL DETAILS

Sequence	Name

COSTS

Total Work Order Labor Costs	**$179.40**
Total Work Order Material Costs	$0.00
Total Work Order Equipment Costs	$9.39
Total Work Order Cost	**$188.79**

Work Order

WO Number: 14524

WO Type: Illicit Discharge Complaint Investigation

Asset Type: PLYMOUTH_OPENWATERWA Change

Category: Emergency Maintenance

Initiated By: Hamann, Dan — Date Created: 03/2/2021 7:30 AM

Status: Complete — Priority: Red (High)

Supervisor: Hamann, Dan

Submit To: Hamann, Dan — Date Submitted: 01/26/2022 9:24 AM

Projected Start: 03/2/2021 7:30 AM — Projected Finish: 03/2/2021 4:00 PM

Completed By: Scholten, Jimmy

Closed By: — Date Closed:

Appointment Time: — Finish Date: 01/26/2022 9:22 AM

Comments: Add Comment — Sort ▲

Hamann, Dan 01/25/2022 1:27 PM
Please look for reported black sheen in vicinity of trailer park. Please ta...

Hamann, Dan 01/25/2022 1:32 PM
This work order replaces lost or damaged original w.o.

Scholten, Jimmy 01/26/2022 9:23 AM
Followed from the detention pond up to Johnson's creek. In that path I ...

Scholten, Jimmy 01/26/2022 9:23 AM
Recommend visiting the site again in one year.

Hamann, Dan 01/26/2022 12:22 PM
*NOTE: THIS WORK ORDER WAS PREPARED EX POST FACTO DUE TO...

Instructions: Please look for reported black sheen in vicinity of trailer park. Please take photos. Please make a deposition of what you find and place in comments

Resolution:

Assets

Total Entities: 1

Asset	Asset Id	Asset Uid	Location	Warranty Date
PLYMOUTH_OPENWATERWAY	0	0		

- Pink rows indicate inventory still under warranty

Update Work Order XY when adding/removing assets? ☑

Details

Project: — Account:

Project Tree

Location Information

WO Address: Johnson Creek 48170 Q sect. 19SW

Location Details: Johnson creek tributaries and outfalls-quarter section 19sw from pond at west side of Plymouth Hills Mobile Home Park north towards Five Mile

Facility Id: — Level Id:

X Location: — Y Location:

Attachments

Add attachment... — Remove all attachments


IMG_20220126_092230027.jpg — 3.31 MB
Attached by Scholten, Jimmy — 01/26/2022 9:23 AM


IMG_20220126_092230558.jpg — 3.39 MB
Attached by Scholten, Jimmy — 01/26/2022 9:23 AM


IMG_20220126_092231081.jpg — 2.98 MB
Attached by Scholten, Jimmy — 01/26/2022 9:23 AM


IMG_20220126_092231536.jpg — 2.42 MB
Attached by Scholten, Jimmy — 01/26/2022 9:23 AM


IMG_20220126_092232016.jpg — 2.70 MB
Attached by Scholten, Jimmy — 01/26/2022 9:23 AM


IMG_20220126_092232544.jpg — 3.53 MB
Attached by Scholten, Jimmy — 01/26/2022 9:23 AM


IMG_20220126_092233017.jpg — 2.70 MB
Attached by Scholten, Jimmy — 01/26/2022 9:23 AM


IMG_20220126_092233513.jpg — 3.09 MB
Attached by Scholten, Jimmy — 01/26/2022 9:23 AM


IMG_20220126_092234049.jpg — 3.80 MB
Attached by Scholten, Jimmy — 01/26/2022 9:23 AM



IMG_20220126_092238465.jpg
Attached by Scholten, Jimmy
2.89 MB
01/26/2022 9:24 AM



IMG_20220126_092238988.jpg
Attached by Scholten, Jimmy
2.38 MB
01/26/2022 9:24 AM



IMG_20220126_092239527.jpg
Attached by Scholten, Jimmy
2.98 MB
01/26/2022 9:24 AM

Reservations

Equipment ID	Employee	Start Date	End Date	Comments

No records to display.

Checked Out Equipment

Equipment ID	Employee	Check Out Date	Due Date	Comments

No records to display.

Work Cycle

Repeat: Never

Interval: 2 Months

From: Projected Start Date

Date Printed:

Next Print Date: 3/1/2021

Related Work Activities

Service Requests

Link Request:

Inspections

Link Inspection:

Work Orders

Link Work Order:

	Id	Description	Link Type	Priority	Status	Sul
☐	14526	Illicit Discharge Complaint Investigation	Child	1	OPEN	Ha

Charter Township of Plymouth

Pollution Complaint Tracking Form

Illicit Discharge Elimination Program

Complaint made by: Stacey Allen - forwarded from PEAS

Phone #: 517-256-9557

Date: 04/08/21 from PEAS Time: _____

Location of Problem: 13270 Graefield Cir - Subdivision pond

Offending Party (if known) Fresh Image - 248-919-0872

Nature of Problem (i.e. paper waste, odor, color, etc.): _____

Painting company is suspected of rinsing painting tools into the storm sewers which flows into the neighborhood pond.

Is this an Emergency? ☒ No
☐ Yes (then call 911)
Nature of Emergency: _____

Initial Contact made to:
- ☐ 911
- ☐ City Dept. _____
- ☐ Wayne County (888) 223-2363
- ☐ Oakland County (248) 858-0931
- ☒ PEAS Hotline (State) 1-800-292-4706
- ☐ Other _____

Additional Comments:
Plymouth Township DPW was requested to investigate the above illicit discharge complaint.

Commercial painters had washed equipment in the home's backyard and run off water entered a nearby beehive that flows to pond behind complainant's home.

Investigation Summary
- ☒ Initial Investigation
- ☒ Follow-up Investigation

Date of Investigation: 04/08/21
Investigating Agency: Plymouth Twp - DPW
Location of Discharge:
13270 Graefield Circle

Crew Members:
Jimm Scholten

Investigation Location:
Above address and neighborhood pond

Observations (odor, color, volume, etc.):
DPW staff did not notice any white discharge - the milky appearing water seems to be dispersed.

Actions Taken (dye testing, notification letter, etc.):
Fresh Image was spoken to by Twp employees - it was believed they were not aware of the beehive in the rear yard and the incident was not intentional.

Were photos taken: ☒ Yes ☐ No

Agency Referred to: _____
Agency Contact: _____
Method of Communication:
☐ E-mail* ☐ Letter/memo* ☐ Phone
*Attached copies

Content of Communication:

Date Corrected or Resolved: 04/08/21

Michigan EGLE PEAS Incident Report

		Date & Time of Call:	04/07/2021	19:58	**Dispatch:**	JL-PEAS
PEAS Incident Number:	26090	Incident Occurred:	04/07/2021	19:58	**Shift:**	After Hrs.
Related Incident Number(s):		Incident Observed:			**District:**	Warren (SEMI(e

Description of Incident (incl. cleanup efforts, assistance requested, etc.): Paint disposed of in subdivision pond - Plymouth

Callers states that there appears to be a white, milky substance in a cement culvert where water drains into pond. Caller believes it is caused by painting being performed on the exterior of a house across the street (13225 Graefield Circle); the storm sewers drain into the pond and caller believes the painters dumped paint rinse water into the storm sewer, causing it to flow into the pond area. The pond is in the center of the subdivision and is adjacent to the north of the caller's property. Caller has pictures of the incident. Caller is requesting a follow up call from EGLE staff.

PEAS Caller *Name* :	Stacey Allen		PLP* - *Personal Contact Name:*		
PEAS Caller *Employer Name* :			PLP - *Employer Name:*		
PEAS Caller *Street Address* :	13270 Graefield Circle		PLP - *Street Address:*	13225 Graefield Circle	
PEAS Caller *City or Twp., State:*	Plymouth	MI	PLP - *City or Twp.* *State*	Plymouth	
PEAS Caller *Phone #:*	517-256-9557		PLP - *Phone #:*		
PEAS Caller *Email Address:*	staceyallen1@gmail.com		PLP - *Email Address:*		
PEAS Caller Type:	Private Party		**PLP - Type**:	Private Party	
Incident Street Address:	adjacent (north) to 13270 Graefield Circle		Material Released:	paint	
Incident Cross Streets:	North Territorial and Ridge Rd.		Amount Released to Air:		
Incident City or Twp.:	Plymouth City		Amount Released to Ground:		
Incident County:	Wayne		**Amount Released to Water:**	X	unknown
Incident Lat./Long.:	N	W	Cleanup Contractor:		
Water Body Impacted:	pond		Release/Incident Controlled?:		

Referrals

Special Referral:	Normal Referral	Lead Div. 1:		Lead Div. 2:		Lead Staff Person(s) Assigned:	

Referral Contact / District	Division / Affiliation	E-Mail Date / Time Sent	E-Mail Date / Time Received	Phone Call or Page Date / Time	Filed By	Assigned To	Referral Notes
SEMI DO	District D.L.						

Dispatch	Date / Time Start	Date / Time End	Hours
JL	04/07/2021 19:57		0.00

Sensitive Information in Addition to Above any Private Caller Personal information Above (in italics)

Additional Notes

Time Stamp: 19:58

* PLP - Potentially Liable/Responsible Party

*** Information in this form, except private callers' personal information (italics), is available from PEAS through FOIA*

Inbox | Recent | Requests | Work Orders | Inspections | Event Layers | GIS Search | Calendar | Storeroom

Work Order | Email | Print | Save | Close | Delete

Work Order

WO Number: 7217

WO Type: Illicit Discharge Complaint Investigation

Asset Type: PLYMOUTH_OPENWATERWA Change

Category: Emergency Maintenance

Initiated By: Hamann, Dan — Date Created: 04/8/2021 8:32 AM

Status: Complete — Priority: Red (High)

Supervisor: Hamann, Dan

Submit To: Hamann, Dan — Date Submitted: 04/8/2021 11:41 AM

Projected Start: 04/8/2021 8:32 AM — Projected Finish: 04/8/2021 8:32 AM

Completed By: Scholten, Jimmy

Closed By: — Date Closed:

Appointment Time: — Finish Date: 04/8/2021 11:40 AM

Comments: Add Comment — Sort ▲

Hamann, Dan 04/8/2021 8:34 AM
Please investigate IDEP complaint See PEAS report attached.

Scholten, Jimmy 04/8/2021 11:41 AM
Received pictures from homeowner across the street. The company t...

Scholten, Jimmy 04/8/2021 11:41 AM
When arrived on scene this morning I didn't notice any white discharg...

Instructions: Please investigate IDEP complaint See PEAS report attached. Please obtain info from PEAS caller and obtain any photographs if possible.

Resolution:

Assets

Total Entities: 1

Asset	Asset Id	Asset Uid	Location	Warranty Date
PLYMOUTH_OPENWATERWAY	0	0		

Pink rows indicate inventory still under warranty

Location Information

WO Address: 13270 Graefield Cir, Plymouth, Michigan, 48170

Location Details: 13270 Graefield Circle 48170

Facility Id: — Level Id:

X Location: -9,299,610.783 — Y Location: 5,217,112.009

Category

Attachments

Add attachment... | Remove all attachments


IMG_20210408_113046986.jpg — 3.46 MB
Attached by Scholten, Jimmy — 04/8/2021 11:31 AM


IMG_20210408_113047276.jpg — 2.50 MB
Attached by Scholten, Jimmy — 04/8/2021 11:31 AM


IMG_20210408_113047615.jpg — 3.92 MB
Attached by Scholten, Jimmy — 04/8/2021 11:31 AM


IMG_20210408_113047917.jpg — 3.62 MB
Attached by Scholten, Jimmy — 04/8/2021 11:31 AM


IMG_20210408_113048189.jpg — 3.04 MB
Attached by Scholten, Jimmy — 04/8/2021 11:31 AM


IMG_20210408_113048590.jpg — 3.85 MB
Attached by Scholten, Jimmy — 04/8/2021 11:31 AM







Visel, Sarah

From: Hamann, Dan
Sent: Tuesday, June 29, 2021 8:31 AM
To: Visel, Sarah
Subject: FW: Paint dumping complaint
Attachments: 4-7-21_ homeowner 1.png; 4-7-21_homeowner 2.png; 4-7-21_homeowner 3.png; 4-7-21_homeowner 4.png; 4-7-21_homeowner 5.png; 4-8-21 IDEP work order.png; 4-8-21 outlet from pond on s. side N. Territorial 2.jpg; 4-8-21_DPW 1.png; 4-8-21_DPW 2.png; 4-8-21_DPW 3.png; 4-8-21_DPW 4.png; 4-8-21_DPW 5.png; 4-8-21_DPW 6.png; 4-8-21_GIS_water bodies_water courses.png; 4-8-21_outfall from pond on n. side of N.Territorial.png; 4-8-21_outlet from pond s. side of N. Territorial.png; 4-8-21_outlet from pond s.side of N. Territorial.png; entry point to torm water sys @ rear of 13225 Graefield.png; PEAS - 26090 - Paint disposed of in subdivision pond - Plymouth - Wayne.pdf

From: Hamann, Dan
Sent: Friday, April 9, 2021 9:19 AM
To: Hendges, Martin (EGLE) <HENDGESM@michigan.gov>; Martin, Carol <cmartin@plymouthtwp.org>
Cc: Fellrath, Patrick <pfellrath@plymouthtwp.org>
Subject: RE: Paint dumping complaint

Dear Mr. Hendges,

Please find attached photos from the complainant and a few my staff took yesterday. There is a home across from complainant that is being painted by commercial painters and they washed equipment in that home's backyard. Run off water entered a nearby beehive that flows to pond behind complainant's home. That pond subsequentially flows north to eventually another pond on north side of N. Territorial Rd. and possibly, eventually to Johnson Creek. In the photos my staff took that reflect what complainant took on 4-7-21, the milky (white latex paint) appearing water seems to be nearly entirely dispersed. I include a screen shot of our work order in which our employees deposition contains painting company name and number. Please advise if there will be further follow up. In order to send this I had to resize all of the attachments.

Thank You,

Dan Hamann
DPW Foreman
Charter Township of Plymouth
46555 Port St. Plymouth, Mi. 48170
734-564-2853

From: Hendges, Martin (EGLE) <HENDGESM@michigan.gov>
Sent: Thursday, April 8, 2021 8:14 AM
To: Martin, Carol <cmartin@plymouthtwp.org>

Charter Township of Plymouth

Pollution Complaint Tracking Form — **Illicit Discharge Elimination Program**

Complaint made by: _____ Phone #: _____

Date: 08/18/21 Time: 14:12

Location of Problem: 15119 Robinwood Offending Party (if known) _____

Nature of Problem (i.e. paper waste, odor, color, etc.): _____

Gasoline or other flammable liquid spilled in Roadway

Is this an Emergency? ☒ No
☐ Yes (then call 911)
Nature of Emergency: _____

Initial Contact made to:
- ☐ 911
- ☒ City Dept. _____
- ☐ Wayne County (888) 223-2363
- ☐ Oakland County (248) 858-0931
- ☐ PEAS Hotline (State) 1-800-292-4706
- ☒ Other Fire Department

Additional Comments:
Resident contacted TWP fire dept to wash down fluids from a delivery truck in front of listed address.

Investigation Summary
- ☒ Initial Investigation
- ☐ Follow-up Investigation

Date of Investigation: 08/18/21
Investigating Agency: Twp Fire
Location of Discharge: 15119 Robinwood

Crew Members:

Investigation Location:

Observations (odor, color, volume, etc.):
a small amount of fluid in the street

Actions Taken (dye testing, notification letter, etc.):
PTFD personnel placed absorbent on the spill.

Were photos taken: ☐ Yes ☐ No

Agency Referred to: _____
Agency Contact: _____
Method of Communication:
☐ E-mail* ☐ Letter/memo* ☐ Phone
*Attached copies

Content of Communication:

Date Corrected or Resolved: 08/18/21

Incident Supplement No: 210001988-001 (000)	Report Type:	Report By Personnel:	001
	Incident Report	Loudon, Andrew (283)	

PLYMOUTH TOWNSHIP FIRE DEPARTMENT

9911 N. Haggerty Road
Plymouth, MI 48170
Phone: 734-354-3230

Incident Details

Alarm Date & Time	Arrival Date & Time	Controlled Date & Time	Last Unit Cleared Date & Time
08/18/2021 14:12:11	08/18/2021 14:16:00		08/18/2021 14:40:46

Response Time	Priority Response?
00:03:49	No

Incident Type	Fire Dept. Station	Shift
411 - Gasoline or other flammable liquid spill	ST1	B-SHIFT B

Aid Given or Received: N - None

Action Taken 1	Action Taken 2	Action Taken 3
45 - Remove hazard		

Apparatus - Suppression Count	Apparatus - EMS Count	Apparatus - Other Count
1		

Personnel - Suppression Count	Personnel - EMS Count	Personnel - Other Count
		2

EMS Provided?	Civilian Casualty? (Count)	Personnel Casualty? (Count)
No	No	No

Property Use	Mixed Use
962 - Residential street, road or residential driveway	-

Property Loss	Property Value	Contents Loss	Contents Value
$0.00	$0.00	$0.00	$0.00

Location

Location Type	Address	City, State Zip Code
Address	15119 ROBINWOOD	PLYMOUTH TWP, MI 48170

District	Section No	Census Tract	CAD Mapindex	Directions	Latitude	Longitude
Station #2				15119 ROBINWOOD	42.3940174	-83.4555506

Situation

Initial Dispatch Code	Final Dispatch Code	Incident Delay
411 - Gasoline or other flammable liquid spill	411 - Gasoline or other flammable liquid spill	

Incident Reported By	Response Type	Critical Incident?	Team Mobilized?
		No	No

Narrative:

Narrative Type	Narrative Description	Written By	Approved By
INCIDENT	E1	64LOUDONA	

Incident ID: 1641588 (1426191) Created by: 64FOXD Created Date: 8/18/2021 9:25:58 PM

Incident Supplement No: 210001988-001 (000)	Report Type:	Report By Personnel:	001
	Incident Report	Loudon, Andrew (283)	

E1 responded to a washdown of fluids from a delivery truck in front of the listed address. The call was placed by the homeowner to Twp. hall. The fire chief ordered an engine to go to the location to assist. E1 arrived on scene to find a small amount of fluid in the street. E1 made contact with the home owner and advised that PTFD personnel would lay down absorbent. PTFD personnel placed absorbent to the spill to absorb the fluids. E1 clear.

Charter Township of Plymouth

Pollution Complaint Tracking Form

Illicit Discharge Elimination Program

Complaint made by: Earl Baker - made to FOTR

Phone #: 734-765-5840

Date: 08/19/21 Time: _____

Location of Problem: Ann Arbor Rd. @ Tonquish Creek Offending Party (if known) _____

Nature of Problem (i.e. paper waste, odor, color, etc.): _____

Discharge of raw sewage into the creek

Is this an Emergency? ☒ No
☐ Yes (then call 911)
Nature of Emergency: _____

Initial Contact made to:
- ☐ 911
- ☐ City Dept. _____
- ☐ Wayne County (888) 223-2363
- ☐ Oakland County (248) 858-0931
- ☐ PEAS Hotline (State) 1-800-292-4706
- ☒ Other FOTR forwarded to Ply Twp

Additional Comments:
Specified area was checked for evidence of sewage discharge

Investigation Summary
- ☒ Initial Investigation
- ☒ Follow-up Investigation

Date of Investigation: 08/19/21 and 09/15/21
Investigating Agency: DPW
Location of Discharge:
Ann Arbor Rd @ Tonquish Creek

Crew Members:
Dan Hamann

Investigation Location:
Ann Arbor Rd @ Tonquish Creek

Observations (odor, color, volume, etc.):
Checked 5 outfalls near specified area, found no evidence of sewage discharge

Actions Taken (dye testing, notification letter, etc.):

Were photos taken: ☐ Yes ☐ No

Agency Referred to: _____
Agency Contact: _____
Method of Communication:
☐ E-mail* ☐ Letter/memo* ☐ Phone
*Attached copies
Content of Communication:

Date Corrected or Resolved: 09/15/21

Email Print Save Close Delete

Work Order

11814

Illicit Discharge Complaint Investigation

PLYMOUTH_OPENWATERWA Change

Emergency Maintenance

Hamann, Dan — Date Created: 09/15/2021 9:26 AM

Closed — Priority: Medium Low

Hamann, Dan

Hamann, Dan — Date Submitted: 08/19/2021 11:00 AM

08/19/2021 11:00 AM — Projected Finish: 08/19/2021 12:00 PM

Hamann, Dan

Hamann, Dan — Date Closed: 9/15/2021 9:35:41 AM

Finish Date: 08/19/2021 12:00 PM

Add Comment Sort ▲

Hamann, Dan 09/15/2021 9:26 AM
Please check outfalls for evidence of sewage discharge

Hamann, Dan 09/15/2021 9:28 AM
checked 5 outfalls near specified area, found no evidence of sewage ...

Please check outfalls for evidence of sewage discharge

Assets

1

Asset Id	Asset Uid	Location	Warranty Date
_OPENWATERWAY	0	0	

ate inventory still under warranty

KY when adding/removing assets?

Details

Account:

Contractor:

Location Information

WO Address: Ann Arbor Rd @ Tonquish Creek 48170

Location Details: AA Rd @ Tonquish Creek

Facility Id: Level Id:

X Location: Y Location:

Attachments

Add attachment... Remove all attachments

Drag and drop files here to attach them.

Reservations

Equipment ID	Employee	Start Date	End Date	Comments

No records to display.

Checked Out Equipment

Equipment ID	Employee	Check Out Date	Due Date	Comments

No records to display.

Work Cycle

Repeat: Never

Interval: 2 Months

From: Projected Start Date

Date Printed: 1/24/2022 Next Print Date: 9/13/2021

Related Work Activities

Service Requests

Link Request:

Id	Date Initiated	Description	Link Type	Priority	Category	Submit To	Disp

No records to display.

Open SRs Remove

Inspections

Link Inspection:

Id	Type	Description	Link Type	Entity Id	Entity Type	Date	Inspected By

Custom Fields

Category:

Appendix D7

Wayne County Pollution Complaint Documentation

Rouge River Watershed Complaints January 1, 2020-December 31, 2021

Have you received and investigated any pollution complaints? YES

Summary and details on complaints received in 2020/2021 below:

2020

	Number of complaints	***Number of Confirmed Illicit Discharges***
Year	2020	2020
Water Quality Complaints - DOE-Water Quality Division	23	8
Number of calls into Wayne County Hotline	NA	NA
Types of Complaint Investigations		
Illicit Discharge – oil/fuel	2	2
Illicit Discharge – sewage/grey water	2	1
Illicit Discharge – paint	1	
Illicit Discharge – other Dumping	2	1
Requesting Information/Technical Assistance	1	
Soil Erosion Sedimentation Control	4	1
Foaming/Turbidity	3	
Drainage/flooding	3	
Illicit Discharge-Algicide	1	1
Unauthorized discharge	1	
Dead fish	1	
Concrete Washout		
Discoloration-Surface water		
Unseated Sanitary Sewer manholes		
Suspicious discharge		
Emergency Spill Response		
List type(s) here:		
Subtotal, Emergency Spill Response		
Illicit Discharges Identified during Routine Field Operations Assignment: **ALL**	*Suspicious Illicit Discharge*	***Confirmed Illicit Discharges***
List type and source (LRMD, FMD. Parks etc) here		
ESD Soil Erosion/Sedimentation	2	2

Complaint investigation- Rouge River Watershed Summaries January 1, 2020-December 31, 2020

2020

Rouge River Watershed

1. January 4, 2020 Sediment Discharge
   A Friends of the Rouge (FOTR) staff person reported an active sediment discharge impacting the Middle Rouge River that was occurring on Saturday, January 4, 2020, at 10:49am. The outfall is located on the Middle Rouge in the City of Dearborn Heights near Parr Park. FOTR staff contacted the State of Michigan Pollution Emergency Alerting System to report the discharge and Michigan Environment, Great Lakes, and Energy (EGLE) staff responded and tracked the source to a broken water main/road work being performed on Ann Arbor Trail. There were no sediment controls in place and the agency (or contractor) performing the work was informed of this. EGLE staff was going to contact the Wayne County Environmental Services Division Director Patrick Cullen about the project. On Monday January 7, 2020, the information on this complaint was shared with the Soil Erosion program manager. No further action from is needed on this complaint.

   Illicit discharge confirmed: yes (EGLE)- third party

2. February 4, 2020 Johnson Creek Foaming Northville Township
   Friends of the Rouge (FOTR) received a call from a resident reporting large amounts of foam on the Johnson Creek near Six Mile and Beck Roads, and downstream. EGLE was contacted and their staff could not respond, but a report was filed. The foam was observed January 18, 2020, and it is still present. ESD investigated the foaming on February 5, 2020. Pockets of foam present downstream of the riffle at Beck and Six Mile Roads were verified. There was brownish organic material present in some of the foam pockets. Took a sample of the foam/water and used test kits to analyze for ammonia, surfactants, and tannin/lignin. No concentration of surfactant or ammonia were detected, but there was 2.5ppm of tannin/lignin. This result shows that there were tannin/lignans present in the sample. Tannin/lignin are organic and result from the breakdown of plant materials/wood. The turbulence at the riffle and where fast-moving water is present does help create the foam if the materials are present in the water. No further investigation of the complaint is needed at this time.

   Illicit discharge confirmed: no

3. February 25, 2020: A Canton Township resident is about the maintenance and flooding around the storm water pond and surrounding common area around the pond, located in her subdivision. She did not report any issues with flooding of the roads in the subdivision, which do appear to be under Wayne County jurisdiction according to the County's MS4 system maps

   Illicit discharge confirmed: no

4. March 2, 2020: ESD received a complaint from a Canton Township resident who reports having a lot of water in the yard and recently had to have the living room of the home lifted and repaired. The complaint may be attributable to poor drainage on the property. The property backs up to Lilley Road and Terrell court, which are both Wayne County roads. ESD investigated March 3, 2020, and it appears the yard over time has sunken/receded compared to neighboring properties. All the

adjacent yards appear to be at a slightly higher evaluation than that of the complainant. The flooding is contributing to issues regarding the home's foundation and/or structure as to the flooding in the family room on the west side as well as the basement on the east side of the home. It does appear that some of the water from the yard does flow into the county's MS4 storm sewer along Lilley Road that discharges into Fellows Creek to the south of Terrell Court. During the investigation, it was noted that the yard was supersaturated with water with several spots of pooling water present. The complainant informed ESD that the water had finally receded, but that the flooding is an ongoing issue, especially during the spring and summer. No issues were observed with the storm drains on the street. All the stormwater behind the property pools in the backyard and does not flow south along the cul- de- sac (Terrell Court). Based on the investigation findings it is recommended that the complainant would benefit from either having a storm drain installed in the backyard or have the backyard elevated with additional soil to increase the property elevation so that stormwater from neighboring properties do not flow into her yard. The complainant was provided with the Friends of the Rouge Rain Management brochure and suggested that FOTR be contacted for additional advice. No further investigation is needed at this time.

Illicit discharge confirmed: no

5. February 12, 2020 Reported Sewage Overflow - Romulus GM Plant
   ESD received a call from a Romulus resident regarding a sewage overflow occurring at the Romulus GM facility. The sewage overflow was reported to Romulus DPW. They sent a crew out to investigate. Mike and I went out and surveyed around the perimeter of the plant (that we could observe without accessing the facility). We did not observe an active overflow from that vantage point. ESD did not observe discharges to the McClaugherty Drain, which is located adjacent to the facility. ESD staff called the GM Romulus facility, and the environmental engineer, Michael Kennedy, confirmed that there was a sewage backup at the facility. It is contained and being remediated at this time. Some of the sewage overflow went to a stormwater pond onsite. None of the sewage migrated from the property. This pond does discharge into the McLaugherty Drain. The facility called EHD to report the sewage discharge. The discharge was also reported to EGLE. The engineer stated that when overflows have occurred in the past, EGLE gave permission to discharge water from the pond. Romulus DPW was also informed of this (and they learned about it during their investigations).

   Illicit discharge confirmed: yes (third party)

6. March 31, 2020 Gas spill, Randolph Street Drain, Northville
   Oakland County Water Resources Commission had a crew out on the Randolph Street Drain this morning at about 9:30 that reported gas coming into the open potion of the Randolph from the Mobile Gas station at 701 8 Mile Rd, on the North side of 8 mile. It's a substantial flow of product with lots of flow in the Randolph. It's probably already down in the Rouge. Don't know how long this has been occurring or how much product was released. We have a crew on site, and have contacted the station manager, Oakland County Safety Dispatch, Northville FD, and EGLE. This has been on ongoing issue at this gas station. Fuel is contained onsite. PLM and Oscar Larson are handling cleanup, source Investigation and reporting to EGLE. EGLE RRD will handle any additional remediation and corrective actions required.

   Illicit discharge confirmed: yes (third party)

7. April 18, 2021 Petroleum sheen Lower Rouge- Wayne
   Sheen on the Lower Rouge reported by a water trail volunteer at a location 1/4 mile east of John Hix, and approx. 600' north of Michigan Ave. west. The City of Wayne investigated, and the incident was also reported to EGLE. The sheen and oil odor appeared to be from runoff by recent rains. Wayne DPW staff placed a boom in the river as a precautionary measure. The boom was removed after consultation with EGLE staff and did not appear to have absorbed petroleum product. No investigated performed by ESD.

   Illicit discharge confirmed: yes- addressed by EGLE and Local community (third parties)

8. 5/14/2020 Stormwater Drainage- Canton Township
   Homeowner concerned over inadequate drainage in residential yard and what agency has the responsibility to address. ESD consulted with Wayne County Roads, and Wayne County does not have jurisdiction over personal property drainage, so the resident was referred to contact the subdivision HOA.

   Illicit discharge confirmed: no

9. May 12, 2020 Sedimentation – Northville
   An anonymous caller reported to Oakland County Safety Dispatch a construction site at 528 Randolph Street in the City of Northville. The complainant reports the silt fences are down and excavators are working in the stream along the Randolph Street Drain. It appeared that the site is South of Baseline (8 Mile Road) in Wayne County. The Randolph is an Inter-County Drain. This complaint was referred to Wayne County Soil Erosion for compliance

   Illicit discharge confirmed: no- referred to appropriate SCSC

10. 5/27/2020 Sedimentation Lower Rouge Inkster
    Sediment discharge observed at the John Daly Road crossing by ESD staff performing routine water quality monitoring. Referred to Wayne County soil erosion for referral to the appropriate local enforcement agency for compliance.

    Illicit discharge confirmed: yes

11. 5/28/2020 non-point source pollution and wildlife concerns Mott Drain Canton Township
    ESD received an e-mail from a Canton Township resident concerned about wildlife and the riparian corridor along the Wayne County Drain (Mott Drain) behind the person's home, which is in the Pheasant Run subdivision. The homeowner was provided a public education article to share with the Homeowners Association (HOA) for publishing in the newsletter to inform residents about being good watershed stewards

    Illicit discharge confirmed: no

12. 7/23/2020 Fellows Creek Algicide Canton Township
    A Canton Township resident reported that Fellows Creek had a purple-blue discoloration. This was confirmed and reported to EGLE staff in Lansing and SEMI district. Efforts to track the source of the discoloration, which appeared to be an algicide, such as Aquashade. No source was identified.

    Illicit discharge confirmed: yes

13. 6/4/2020 Illegal dumping City of Detroit Eliza Howell Park
    A City of Detroit resident reported illegal dumping in Eliza Howell Park in the woods behind her home. The dumping was done near the Rouge River. Two males in a late model Jeep dumped bedding boxes, Styrofoam, and other packing material and drove away. She has a video of the dumping and the suspects. She did not see a license number for the vehicle. She called the police and planning to clean the material up herself. Referred to the City of Detroit, and their staff responded to the complaint.

    Was an illicit discharge confirmed: no

14. 6/20/2020 Fish in storm drain Canton Township
    A Canton Township resident reported dead fish in a storm drain in Canton Township residential yard. The storm drain in the yard is not part of the County's drainage network and not the responsibility of Wayne County. Recommended the resident contact the residential homeowner's association (HOA) as to what drainage infrastructure was installed for drainage when the subdivision was built, and if maintenance could be performed to remove the dead fish.

Illicit discharge confirmed: no

15. 7/23/2020 City of Plymouth- concrete track out
    Vehicle track out onto residential streets originating from Messina Concrete, Plymouth was observed. The sediment from the facility track out was observed draining into a storm drain on Junction Street, which eventually drains to Tonquish Creek. Observations were referred to the City of Plymouth and EGLE Air Quality and Surface Water for follow up. Recommendations for BMPs for the facility were discussed with City representatives and EGLE staff

    Illicit discharge confirmed: yes

16. 6/29/2020 Johnson Creek Turbidity Northville
    A Northville resident reported cloudiness in Johnson Creek and that the Creek is more turbid than in the past. The creek was investigated, and no illicit discharges were detected at the time. Cloudiness to the creek may be attributed to low water and increasing development upstream may be generating more runoff and nonpoint source pollution to the Creek than in previous years.

    Illicit discharge confirmed: no

17. August 28, 2020 Johnson Creek Foaming Northville Township
    A Northville resident collected a water sample on Johnson Creek at the confluence of a natural watercourse, that drains a wetland upstream from his house. He also has photos of a brownish white foam present at the riffle on Johnson Creek and the natural watercourse. The metropolitan Detroit area was receiving heavy rainstorms and thundershowers and had received approximately 1.15 inches of rain at the time the caller reported the foaming at 10:07am. ESD investigated the complaint and collected samples at two locations- the natural watercourse/Johnson Creek (same location as the sample the resident collected), and at the outlet of the wetland. The water leaving the wetland does create a watercourse that has a downhill gradient until it meets Johnson Creek

    The samples were tested for tannin/lignin and anionic surfactants. Interference was noted in the surfactant samples as sulfate is likely present in the water. Based on the low levels of surfactant in

the sample, and presence of Tannin/Lignin, it is suspected that the foaming is due to natural phenomena.

Illicit discharge confirmed: no

18. July 21, 2020 Arbor Hills unauthorized discharge Northville Township
    ESD notified of an unauthorized discharge from Arbor Hills that occurred on July 7, 2020. The discharge impacted the drainage ditch that discharges to Johnson Creek in Northville Township. Given the length of time that has passed since the event occurred, it was determined that no follow up investigation was needed at this time.

    Illicit discharge confirmed: no

19. Sep 2, 2020 Soil Erosion Canton Township
    A Canton Township resident reports soil erosion occurring at a construction site. on Fellows Creek. water is blocked in the creek and a pump is set up to transfer water from one side of the crossing to the other side while the construction is ongoing at the crossing. The complaint was referred to Wayne County Soil Erosion, who did not find soil erosion compliance issues at the site. The site construction plan includes stabilizing and revegetating the streambanks once the work is completed.

    Illicit discharge confirmed: no

20. 9/15/2020 Paint Dumping Canton Township
    A Canton Township resident reported observing a neighbor dumping paint down a storm drain in the subdivision. This complaint was investigated, and some paint residue was observed on the storm drain grate, and none was observed in the catch basin. There was no response at the suspect residence.

    Illicit discharge confirmed: no

21. October 2, 2020 Sewage odor Livonia
    A complaint received from a Livonia resident regarding sewage odor in the Upper Rouge was forwarded to ESD and investigated. The Upper Rouge at the complaint location was clear, and no evidence of illicit discharge was noted. Some tires were observed in the river at the site. There is a sanitary sewer system siphon near the crossing and the sewage odor appears to be originating from there. The results of the complaint investigation were shared with the complainant and EGLE.

    Illicit discharge confirmed: no

22. October 9 2020 stormwater runoff/illegal dumping- Dearborn Heights
    FOTR staff referred a complaint about construction adjacent to the Rouge River from a Dearborn Heights citizen The complainant is concerned about the condition of the site and the impact of the stormwater runoff on the Rouge River. ESD investigated the site Wayne County Parks staff. Some illegal dumping was observed on the property. This condition was referred to Dearborn Heights compliance, Wayne County Soil Erosion and Wayne County Parks

    Illicit discharge confirmed: yes

23. 12/14/2020 Soil Erosion Northville Township

    Northville Township staff received a call from a resident regarding a homeowner that cleared land and is building a deck (with no permit) adjacent to the Johnson Creek. Northville Township notified the homeowner that a building permit was required. This complaint was referred to Wayne County Soil Erosion for further follow up if needed.

    Illicit discharge confirmed: no

2021

	Number of complaints	***Number of Confirmed Illicit Discharges***
Year	2021	2021
Water Quality Complaints - DOE-Water Quality Division	19	
Number of calls into Wayne County Hotline	NA	
Types of Complaint Investigations		
Illicit Discharge – oil/fuel	4	1
Illicit Discharge – sewage/grey water	4	1
Illicit Discharge – paint	1	
Illicit Discharge – other Dumping		
Requesting Information/Technical Assistance		
Soil Erosion Sedimentation Control	4	3
Foaming/Turbidity		
Drainage/flooding		
Illicit Discharge-Algicide		
Unauthorized discharge		
Dead fish		
Concrete Washout	1	
Discoloration-Surface water	3	
Unseated Sanitary Sewer manholes	1	
Suspicious discharge	1	
Emergency Spill Response		
List type(s) here:		
Subtotal, Emergency Spill Response		
Illicit Discharges Identified during Routine Field Operations Assignment: **ALL**	*Suspicious Illicit Discharge*	***Confirmed Illicit Discharges***
List type and source (LRMD, FMD. Parks etc) here		
ESD Soil Erosion/Sedimentation		

Complaint investigation- Rouge River Watershed Summaries January 1, 2021-December 31, 2021

1. January 21, 2021 Paint discharge Tonquish Creek Plymouth City
   A Plymouth City resident reported a whitish colored discharge originating from the large outfall between Coolidge and Harding Streets near Lions Park. The complainant observed a company called Paint in Manning working on a job at the corner of Coolidge and Joy Streets. The observations were reported to City staff. City staff followed up on the complaint, and the discharge was not active at the time of investigation, and they plan to do further investigation

   Illicit discharge confirmed: no

2. February 26, 2021 Blackish discharge-Johnson Creek Plymouth Township
   A contractor performing survey work on the Johnson Creek Intercounty Drain observed a black water discharge originating from a tributary. It appears to be discharging from a small tributary from the Plymouth Hills Estates. There is a stormwater pond and wetland areas upstream of that tributary according to Google Maps. It appears that the blackish material was organic material and does not appear to be an illicit discharge.

   Illicit discharge confirmed: no

3. April 19, 2021 Sedimentation- Sump Intercounty Drain Northville Township
   A FOTR volunteer reported a heavy turbid discharge into the Sump Intercounty Drain. The discoloration originated from the enclosed portion of the Sump Drain from Oakland County. The Oakland County Water Resources Commission was made aware of the condition. Oakland County Soil Erosion inspectors found an unpermitted single family construction site upstream of where the discharge was reported. The property owner was issued a compliance letter ordering them to get a permit and to protect the catch basin in the yard and to install silt fence.

   Illicit discharge confirmed: yes (third party)

4. April 27, 2021 concrete washout-Northville Township
   A Northville Township resident reported concrete washout occurring at a residence where construction was taking place. Northville Township staff investigated and inspected the catch basins on the street and the construction area. No evidence of concrete washout was evident on the catch basins, and it appeared the concrete contractor was following washout BMPs.

   Illicit discharge confirmed: no

5. May 6, 2021 Lower Rouge discoloration- Canton Township
   ESD staff observed a reddish discoloration on the Lower Rouge in Wayne while performing routine monitoring. FOTR staff also observed the discoloration further downstream. The discoloration was attributed to a substance in the YCUA effluent. YCUA staff was notified of the discoloration, and they were performing inspections inhouse, analyzing the effluent, and investigating the collection system for potential sources. A specific source of the discoloration was not identified but appears to be a tracing dye.

   Illicit discharge confirmed: no

6. May 7, 2021 Fellows Creek discoloration Canton Township
   A Canton Township resident contacted FOTR about a greenish discoloration observed on Fellows Creek. The resident contacted the EGLE PEAS hotline to report the incident and EGLE was investigating.

   Illicit discharge confirmed: no

7. June 10, 2021 Oiled birds- Rouge River Dearborn
   EGLE staff provided ESD an FYI as to oiled birds discovered in the Rouge River by the Ford Rouge plant. EGLE RRD and WRD are notified of the issue and were investigating the source of the oil that affected the birds.

   Illicit discharge confirmed: yes (third party)

8. July 2, 2021 Sewage discharge- Hines Park Dearborn Heights
   ESD received an email from FOTR staff regarding strong sewage odors/sewage discharge evidence at two locations along Hines Drive in Dearborn Heights in the Parr Recreation area (Hines West of Telegraph) and Wallaceville Recreation Area (near Beech Daly/Hines). Wayne County Drains and ESD staff investigated and found large areas in the floodplain that were impacted by an unidentified sewage source (gray/black water, sewage odor, and debris).

   The sewage source (s) may be from CSOs/SSOs that occurred during the historic rain events, and from water ponding in the low points of the floodplain after the waters receded. One of the manhole covers on the Rouge Valley Interceptor sewer was found dislodged, so that system may have overflowed/mixed with the flood water during the recent rain events.

   Wayne County Parks was notified as the standing water/sewage posed a potential public health risk to those who may walk in the impacted area or come in contact with the water. Parks staff cordoned off the areas to limit access and the Drains office was in the process of contacting a contractor to spread lime in contaminated areas.

   Illicit discharge confirmed: yes

9. July 6, 2021 Unseated manholes-Hines Drive Dearborn Heights
   FOTR staff reported to ESD that unseated manholes were also discovered in the area between Hines Drive/Beech Daly in an area that was underwater previously. Drains staff was deployed to reseat the manholes.

   Illicit discharge confirmed: no

10. July 6, 2021 Sewage Discharge- Rouge Park City of Detroit
    FOTR staff reported a pool of black sewage water in a field in Rouge Park where Lahser dead ends at the river just north of Joy by the Lahser Marsh. FOTR staff was advised to report these observations to the City of Detroit Parks and Recreation/Department of Public Works for investigation.

    Illicit discharge confirmed: no

11. July 9. 2021 Oil release Canton Township auto facility
    ESD received a voice mail and e-mail from Canton Township staff regarding an oil release that was occurring at Canton Auto Service. According to Canton Township, the complainant reported that the facility is discharging oil into storm drains and to a stormwater pond. Canton Township responded to the complaint and placed booms in the pond to collect the oil. In addition to contacting the Township, the complainant also called EGLE and the EPA. She claims the Auto Service company is discharging oil into the storm drain. She stated someone from the EPA (State of Michigan EGLE?) was onsite yesterday but did not have a name or number of the person who investigated.

    ESD staff called to talk to the complainant, and she said the dumping at the facility has been going on for a long time and she does observe oil in the pond after a rain. She observed inlets into the storm sewer where oil was entering the storm sewer system. She alleges the facility dumps other fluids such as antifreeze and the employees say if it because the owner orders them to do so. ESD confirmed that EGLE staff was at Canton Auto Service, and it was confirmed there was a discharge of oil that occurred into the pond, but it appears the petroleum product has not migrated from the pond at this time. According to EGLE, there are multiple issues going on at the facility, including a history of dumping, and the possibility of an illicit connection in the building. There are over 300 tires stored on the site as well. The complainant reported observing some dead ducks in the pond. The EGLE staff did not observe any but referred the matter to MDNR. According to EGLE, the owner is not being very responsive and cooperative. It does not appear that the Wayne County MS4 or Wayne County Drainage system are being affected by the oil discharge at this time.

    Illicit discharge confirmed: yes (third party)

12. July 23, 2021 Soil Erosion Northville Township
    Northville Township forwarded ESD a complaint regarding a recurring soil erosion issue. The complaint was referred to Wayne County ESD Soil Erosion.

    Illicit discharge confirmed: no

13. August 3, 2021 Soil Erosion-Livonia
    ESD staff, while performing IDEP investigations in the City of Livonia, observed some mild track out and a catch basin needing maintenance at a development site. Also, there is an excavation going on in the front of 37598 Lyndon (residence). The contractor performing the work is dewatering the excavation site and the water is very cloudy and entering the City's MS4 via a

street catch basin. The cloudiness is visible throughout the storm system. This complaint was forwarded to Livonia's SESC enforcement personnel, who investigated.

Illicit discharge confirmed: yes

14. August 14, 2021 Discoloration- YCUA Effluent Canton Township
    YCUA staff provided an update that this morning YCUA staff noticed discoloration in the influent and effluent from YCUA Plant. Upon investigation, the discoloration was traced back to the WTUA construction site where red colored water came into an excavation for pipe repair. It is unclear if it is related to some sort of dye testing by the repair crew or came in through the wastewater. YCUA staff was able to track the source of discoloration. It occurred at facility in Canton Township, which process pigments and dyes.

    Illicit discharge confirmed: no

15. August 19, 2021 Sewage Odor Byron Creek City of Plymouth
    FOTR staff reported that a City of Plymouth resident reported a strong sewage odor near a play area adjacent to Byron Creek. FOTR advised the complainant to contact PEAS. The complaint was investigated by ESD staff and City of Plymouth. Neither the City of Plymouth or ESD investigators detected a sewage odor in the catch basins in the street or near Byron Creek when the area was investigated.

    Illicit discharge confirmed: no

16. September 22, 2021 Sedimentation City of Westland
    FOTR staff reported that a development in the City of Westland, near Hines Drive, has a retention pond that was full of milky sediment. ESD provided the contact information for the City of Westland Code Compliance for follow up on the sedimentation occurring at the site.

    Illicit discharge confirmed: no

17. October 8, 2021 Petroleum discharge Lower Rouge City of Wayne
    A FOTR volunteer was on the Lower Rouge and stopped in the ESD office to report a fuel odor and rainbow sheen discharging from an outfall located on the north bank of the Lower Rouge. The approximate location is behind the Wayne Moose Lodge, 38050 Michigan Avenue in Wayne. He said the outfall was located just downstream of the DTE transmission tower/lines that crosses the Lower Rouge in that area. The incident was reported to PEAS and the City of Wayne. EGLE investigated on October 8, 2021 and not observe any fuel odor or sheen coming from the outfall. EGLE also checked upstream and downstream and didn't observe any sheen or odor, nor were obvious sources of pollutants. Observed along the bank of both sides of the river.

    Illicit discharge confirmed: no

18. November 1, 2021 WB M-14 /Beck Fuel Spill Plymouth Township
    ESD was provided an FYI from Wayne County Roads regarding a fuel spill that was reported occurring in the right lane, right shoulder of M-14 Westbound near Beck Road. The driver placed oil dry on the spilled material but stated it might not be enough containment. Recommended that the incident be reported to PEAS. EGLE was aware of the incident.

    Illicit discharge confirmed: no

19. Suspicious discharge Levan Road Livonia
    ESD investigated a report of a suspicious pipe and discharge that is occurring on Levan Road in the City of Livonia near a mountain bike trailhead. The pipe is black PVC, and it appears to be draining from a residence on Levan. The water discharging from the pipe is clear. The pipe drains into a ditch that drains into a gully leading towards Hines Drive, located on the west side of Levan. The discharge from this pipe is ending up on Wayne County Parks property. It does not appear to be an illicit discharge. The findings of the investigation were reported to Wayne County Parks.

    Illicit discharge confirmed: no

Appendix D8

City of Wayne Pollution Complaint Documentation

Pollution Complaints

Date Reported	Complaint	Date Investigated	Findings	Date Resolved	Resolution
10/8/2021	Fuel smell and rainbow sheen coming from an outfall located on the north bank of the Lower Rouge				
		10/11/2018	No fuel smell nor sheen observed		
		10/18/2021	No fuel smell nor sheen observed - video taken		
		10/18/2021	Original report changed to south bank		
				10/18/2021	EGLE staff visited site and found no fuel smell nor sheen - City will continue to monitor

Mike Buiten

From: Noel Mullett <Nmullett@waynecounty.com>
Sent: Friday, October 8, 2021 1:19 PM
To: mbuiten@ci.wayne.mi.us
Subject: FW: Bill Craig Complaint

Hi Mike –

Please see below. We have contacted PEAS (confirmation #27865). Operator indicated that someone from District Office in Warren will likely be investigating. I don't believe it to be a County MS4 given the location. Do you know if it is a City outfall or private? Seem like we've had previous issues in the area before although thought it would be south bank?

Hope you doing well!

Noel Mullett Jr.
Department Administrator
Environmental Services Division
Wayne County Department of Public Services
3600 Commerce Court, Building E
Wayne, Michigan 48184

email: nmullett@waynecounty.com
Phone: 734-326-4486
Cell: 313-405-5634
Fax: 734-326-4421
Wayne County Environmental Hotline: 1-888-223-2363

I maybe working remotely, if you need to contact me immediately please call or text me at the above cell phone number. Hope you are well. Please stay safe.

From: Patrick Cullen <PCULLEN@waynecounty.com>
Sent: Friday, October 8, 2021 12:43 PM
To: Noel Mullett <Nmullett@waynecounty.com>
Cc: Susan Thompson <Sthompso@waynecounty.com>
Subject: Bill Craig Complaint

Hi Noel – Bill Craig was on the Lower Rouge today and stopped in the office to report a fuel smell and rainbow sheen coming from an outfall located on the north bank of the Lower Rouge. The approximate location is behind the Wayne Moose Lodge, 38050 Michigan Avenue in Wayne. He said the outfall was located just downstream of the DTE transmission tower/lines that crosses the Lower Rouge in that area.

Could you please call this into PEAS?

Bill's phone # for more info is 248-479-5127. Thanks.

Patrick Cullen, Division Director

Deputy Drain Commissioner
Wayne County Department of Public Services
Environmental Services Division

3600 Commerce Court
Wayne, MI 48184
O: 734-326-4437
pcullen@waynecounty.com



Mike Buiten

From: Susan Thompson <Sthompso@waynecounty.com>
Sent: Monday, October 18, 2021 9:34 AM
To: mbuiten@cityofwayne.com
Subject: Update Lower Rouge complaint

Good Morning Mike:

Hope that you had a great weekend.
Wanted to share with you an update on the Lower Rouge petroleum sheen and fuel odor.
I contacted EGLE and they did investigate the complaint on the afternoon of October 8, 2021, at approximately 2:15 PM. The outfall was located based on photos and instructions from the complainant. At the time of the inspection, EGLE staff did not observe any fuel odor or sheen coming from the outfall. EGLE also checked upstream and downstream and didn't observe any sheen or odor, and no obvious sources of pollutants were observed along the bank of both sides of the river. I also contacted the complainant to get details as to what outfall the sheen was observed at and haven't heard back as of this morning.
Keep me posted on how your investigation goes, and I will likewise if I receive additional information that may be of assistance.
Take care,
Sue

Susan Thompson MS
Wayne County Department of Public Services
Environmental Services Division
3600 Commerce Court
Wayne, MI 48184
Phone: 734-326-5515
Cell: 313-999-6266
E-mail: sthompso@waynecounty.com

Appendix E

Municipal Facility Dye Testing Documentation

Appendix E1. Number of Municipal Facilities by Permittee

Appendix E2. Documentation of Dye Testing Results Bloomfield Hills

Appendix E3. Documentation of Dye Testing Results Lathrup Village

Appendix E4. Documentation of Dye Testing Results Novi

Appendix E5. Documentation of Dye Testing Results West Bloomfield Township

Appendix E1

Number of Municipal Facilities by Permittee

Community	Number of permittee-owned facilities located in the Rouge River Watershed
Beverly Hills	3
Bingham Farms	0
Birmingham	24
Bloomfield Hills	2
Bloomfield Township	10
Canton Township	8
Dearborn Heights	6
Farmington	5
Farmington Hills	12
Franklin	4
Garden City	0
Henry Ford College	20
Inkster	2
Lathrup Village	2
Livonia	18
Melvindale	5
Northville	6
Northville Township	0
Novi	11
Oak Park	0
Plymouth	4
Plymouth Township	7
Redford Township	8
Southfield	20
Troy	2
Walled Lake	0
Wayne	7
West Bloomfield	12
Westland	24

Appendix E2

Documentation of Dye Testing Results Bloomfield Hills

HUBBELL, ROTH & CLARK, INC
CONSULTING ENGINEERS SINCE 1915

MAILING: PO Box 824
Bloomfield Hills, MI 48303-0824
SHIPPING: 555 Hulet Drive
Bloomfield Hills, MI 48302-0360
PHONE: 248-454-6300
WEBSITE: hrcengr.com

Memorandum

To: Michigan Department of Environment, Great Lakes, and Energy

From: Hubbell, Roth & Clark, Inc.

Date: October 11, 2021

Subject: Bloomfield Hills Dye Testing Summary HRC Job No. 20180002

Bloomfield Hills is part of the Alliance of Rouge Communities (ARC) which assists with some of the City's Municipal Separate Storm System (MS4) permit tasks. Under the ARC's Collaborative Illicit Discharge Elimination Program (IDEP) there is a requirement to dye test all City owned facilities. This task is a requirement of the MS4 program to help identify and eliminate any illicit discharge into the storm sewer system that is not stormwater or groundwater. Dye testing of this facility has not been performed previously.

On September 28, 2021 Hubbell, Roth & Clark, Inc. (HRC) performed dye testing at the Bloomfield Hills City Hall/Police/Fire building. HRC tested 4 drains at City Hall in both the old and new sections of the building. It was discovered at each of the 4 drains tested, no dye was seen in the sanitary manhole. Upon investigation, dye was spotted in a storm manhole and storm catch basin just south of City Hall/Police and Fire Department. Direction of flow in the storm sewer was from the east to west, so the dye was flowing from the storm catch basin to the storm manhole. Dye was also spotted in the Amy Drain downstream of the culvert crossing at Woodward Avenue south of Long Lake Road.

Dye was also placed in two sanitary manholes just north and east of the main sanitary manhole in order to check connectivity. Dye was spotted in the main sanitary manhole both times in less than 10 minutes. To further address this issue, HRC is currently in discussion with the City regarding a corrective action plan and schedule for implementation. The following was discussed:

- The part of the building that has these cross-connections was part of an addition several years ago
- The City will be investigating further to televise the sanitary line to trace where the connection can properly be routed

45 East Long Lake Road



10/4/2021, 12:08:03 PM

Sanitary Manhole
- City of Bloomfield Hills
- Oakland County Road Commission
- MDOT
- Private

Sanitary Service Leads

Sanitary Pipe
- Bloomfield Hills Sanitary

Storm Pipes
- Bloomfield Hills
- Oakland County Road Commission
- MDOT
- Private

Storm Points
- City of Bloomfield Hills

Water Valve

Water Hydrant

Water Service Leads

Water Main

Tax Parcels

1:1,128

0 0.01 0.01 0.03 mi

0 0.01 0.03 0.06 km

Web AppBuilder for ArcGIS

Contour data created by Axis Geospatial, LLC in Easton, MD. LiDAR and derived DEM source data created by vendors under contract to the State of Michigan. |

Appendix E3

Documentation of Dye Testing Results Lathrup Village

HUBBELL, ROTH & CLARK, INC
CONSULTING ENGINEERS SINCE 1915

MAILING: PO Box 824
Bloomfield Hills, MI 48303-0824

SHIPPING: 555 Hulet Drive
Bloomfield Hills, MI 48302-0360

PHONE: 248-454-6300
WEBSITE: hrcengr.com

Memorandum

To: Dr. Sheryl Mitchell, City Administrator

From: Hubbell, Roth & Clark, Inc.

Date: February 5, 2021

Subject: Lathrup Village Dye Testing Summary HRC Job No. 20070249

Lathrup Village is part of the Alliance of Rouge Communities (ARC) which assists with some of the City's Municipal Separate Storm System (MS4) permit tasks. Under the ARC's Collaborative Illicit Discharge Elimination Program (IDEP) is a requirement to dye test all City owned facilities once every 5 years. This task is a requirement per the MS4 program to help identify and eliminate any illicit discharge into the storm sewer system that is not stormwater or groundwater.

Dye testing is a method used to trace sewer systems to locate any cross-connections between storm and sanitary sewer pipes. In compliance with all state regulations, a small amount of environmentally safe and EGLE-approved tracer dye is put into a sanitary drain and flushed with water. If the inlet is connected to the proper sanitary sewer, the dye will show up and be visible from an open manhole downstream. Water is flushed through the system until the dye disappears from the open manhole and the next test can then be performed. If the inlet is not connected to the proper sanitary sewer, an investigation is launched to identify where the drain outlets. The closest storm sewer is generally the best place to start looking for the tracer dye.

On December 17, 2020 Hubbell, Roth & Clark, Inc. (HRC) dye tested the City Hall and DPS building facilities. HRC tested 9 drains at City Hall and 5 drains at the DPS building. A summary table of the results and corresponding maps of the pertinent locations are attached.

HRC did not find any cross-connections or illicit discharges into the storm sewer at City Hall. However, HRC discovered two cross-connections in the DPS building. The shower drain and the garage utility sink are both connected to the storm sewer. Dye from these tests was observed in a storm drain manhole in the garage and from the trench drain just outside of the garage. To further address this issue, HRC has met with the City to discuss a corrective action plan and schedule for implementation. During this meeting, the following was discussed:

- The part of the building that has these cross-connections was part of an addition several years ago.
- Signs have been posted to prevent use of the shower and garage utility sink.
- DPS staff plan to trace the sanitary line from the kitchen sink and restroom so that the shower and utility sink can be properly rerouted.
- DPS staff will develop a corrective action plan no later than February 28, 2021.
- DPS will correct the cross-connection no later than June 17, 2022 (18 months from the dye testing, per the ARC collaborative IDEP plan).
- DPS staff will discuss the storm sewer system with the City engineer to help determine where the trench drain outlets.

Site Location: DPS Building
Investigators: Taylor Warstler, Stephanie Petriello, Kyle Anderson, Brent Tarpinian

Community: Lathrup Village
Date: 12/17/20
Job No.: 20070249

Test No.	Building	Location	Inlet	Time Administered	Dye Amount (oz)	Time Observed	Outlet Observed	Notes
1	DPS	Bathroom	Sink	9:12 AM	2	9:18 AM	9:18 AM	Bathroom and kitchen sink both ran for the duration of the test.
2	DPS	Kitchen	Sink	9:21 AM	2	9:26 AM	Southeast Sanitary MH	Bathroom and kitchen sink both ran for the duration of the test.
3	DPS	Shower Room	Shower Drain	9:30 AM 9:43 AM	2 2			Bathroom and kitchen sink both ran for the duration of the test. Shower ran for the duration of the test. Added additional dye after no sightings in the SE sanitary manhole (waited double the time it took to see the other tests). Still did not see any dye after the second test. Moved on to test the garage sink.
4	DPS	Garage	Sink	9:54 AM	2	10:01 AM	Storm MH in garage	Sink ran for the duration of the test. Drains to the storm manhole in the south end of the garage. This then goes to a trench drain just outside the south garage door. We could not trace it any further from here.
5	DPS	Shower Room - RETEST	Shower Drain	10:19 AM	1	10:23 AM	Storm MH in garage	Shower ran for the duration of the test. Dye was spotted in the same storm manhole as the garage sink test (south end of garage).


Lathrup Village
DPW Building
Twelve Mile Rd
DPS BUILDING
GARAGE STORM STRUCTURE
TRENCH DRAIN
SOUTHEAST SANITARY STRUCTURE
Harry Pogats Pkwy
Rossland Blvd
James Smyth St
Google Earth
©2020 Google
N
200 ft

Site Location: City Hall
Investigators: Taylor Warstler, Stephanie Petriello, Kyle Anderson, Brent Tarpinian

Community: Lathrup Village
Date: 12/17/20
Job No.: 20070249

Test No.	Building	Location	Inlet	Time Administered	Dye Amount (oz)	Time Observed	Outlet Observed	Notes
1	City Hall	Men's Restroom - 1st Floor	Left Sink	10:45 AM	2	10:56 AM	South Sanitary MH	Both sinks ran for the duration of the test.
2	City Hall	Women's Restroom - 1st Floor	Left Sink	11:08 AM	2	11:18 AM	South Sanitary MH	Both sinks ran for the duration of the test.
3	City Hall	Police Bathroom	Toilet	11:30 AM	1	11:40 AM	South Sanitary MH	Police sink and two women's restroom sinks ran for the duration of the test.
4	City Hall	Kitchen	Small Sink	11:45 AM	1	11:57 AM	South Sanitary MH	One kitchen sink (non-tested) and two women's restroom sinks ran for the duration of the test. Turned off the small kitchen sink (tested) half way through the test because the floor drain backed up.
5	City Hall	Men's Restroom - 2nd Floor	Janitor Closet Basin Sink	12:06 PM	2	12:14 PM	South Sanitary MH	Both restroom sinks and the basin sink ran for the duration of the test.

Site Location: City Hall
Investigators: Taylor Warstler, Stephanie Petriello, Kyle Anderson, Brent Tarpinian

Community: Lathrup Village
Date: 12/17/20
Job No.: 20070249

Test No.	Building	Location	Inlet	Time Administered	Dye Amount (oz)	Time Observed	Outlet Observed	Notes
6	City Hall	Women's Restroom - 2nd Floor	Right Sink	12:24 PM	2	12:33 PM	South Sanitary MH	Both women's restroom sinks and both men's restroom sinks ran for the duration of the test.
7	City Hall	Single Restroom w/ Shower - Basement	Sink	12:37 PM	2	12:46 PM	South Sanitary MH	Sink and shower ran for the duration of the test. Two sinks in the green restroom ran for the duration of the test.
8	City Hall	Green Restroom - Basement	Left Sink	12:50 PM	2	12:57 PM	South Sanitary MH	Both sinks ran for the duration of the test. Sink and shower in the single restroom ran for the duration of the test.
9	City Hall	Utility Closet	Floor Drain	1:00 PM	2	1:07 PM	South Sanitary MH	Two sinks in the green restroom ran for the duration of the test. Sink and shower in the single restroom ran for the duration of the test. Rinsed the drain with two 5-gallon buckets of water.


Lathrup Village
City Hall
Goldengate Dr W
Southfield Rd
CITY HALL
SOUTH SANITARY STRUCTURE
California Dr SW
California Dr SE
Google Earth
© 2020 Google

Appendix E4

Documentation of Dye Testing Results Novi

Dye Testing Log

Total		
17		= passed
3		= not yet completed or failed

Facility Location: DPW **Date: 09/25/2020** **Staff: Kate Richardson, Ben Croy, and Rebecca Runkel**

Dye Drop Location	Color	In-Time	Out-Time	Storm (Y or N)	Sanitary (Y or N)	Notes
Unisex bathroom	yellow green	9:10 AM	9:15 AM	N	Y	slow flow, very obviously yellow green

Facility Location: Gun Range **Date: 09/25/2020** **Staff: Kate Richardson and Ben Croy**

Dye Drop Location	Color	In-Time	Out-Time	Storm (Y or N)	Sanitary (Y or N)	Notes
Bathroom	yellow green	9:25 AM	9:27 AM	N	Y	fast flow, very obviously yellow green

Facility Location: Parks Building, next to DPW **Date: 09/25/2020** **Staff: Kate Richardson and Ben Croy**

Dye Drop Location	Color	In-Time	Out-Time	Storm (Y or N)	Sanitary (Y or N)	Notes
Bathroom	yellow green	9:35 AM	9:38 AM	N	Y	fast flow, very obviously yellow green

Facility Location: ITC Park **Date:** **Staff: Kate Purpura, Rebecca Runkel, Humna Anjum, Alex Mauney**

Dye Drop Location	Color	In-Time	Out-Time	Storm (Y or N)	Sanitary (Y or N)	Notes
SE bathroom, near playground	faint green	10:35 AM	10:37 AM	N	Y	Ultimately discharges to septic field, manhole is pretty blocked up but could see some flow.
Central bathroom, located in maintenance building	no color	10:56 AM	11:04 AM	N	Y	No flow to storm observed. Flow from sanitary lead was heavy, but no dye was visible.
NW bathroom, near soccer fields	very green	10:52am	10:57 AM	N	Y	Obvisously green
NE bathroom, near baseball fields	no color	11:19 AM	-	N	N	No flow seen in storm CB or sanitary lead. Further investigation needed. Reported to Scott.

Facility Location: Pavilion Shore **Date:** **Staff:**

Dye Drop Location	Color	In-Time	Out-Time	Storm (Y or N)	Sanitary (Y or N)	Notes

Facility Location: Power Park **Date:** **Staff: Water and Sewer Staff**

Dye Drop Location	Color	In-Time	Out-Time	Storm (Y or N)	Sanitary (Y or N)	Notes
Bathrooms						Bathroom lead was verified to connect to bolted down grinder pump by W&S staff recently.

Facility Location: Wildlife Woods **Date: 07/27/2021** **Staff: Kate Purpura, Rebecca Runkel, Humna Anjum, Alex Mauney**

Dye Drop Location	Color	In-Time	Out-Time	Storm (Y or N)	Sanitary (Y or N)	Notes
Women's bathroom	no color	11:47 AM + 11:54 AM	11:50 AM	N	Y	Manhole has tall interior drop for lead and deep 21" pipe flowing fast. Hard to see any color, but flow from lead was noticable after a few minutes.

Facility Location: Rotary Park **Date: August 6, 2021** **Staff: Rebecca Runkel, Victor Boron**

Dye Drop Location	Color	In-Time	Out-Time	Storm (Y or N)	Sanitary (Y or N)	Notes
Women's bathroom	yellow green	9:38	9:40	N	Y	Tall interior drop, color showed up within a couple of minutes.

Facility Location: Fuerst Park **Date:** **Staff:**

Dye Drop Location	Color	In-Time	Out-Time	Storm (Y or N)	Sanitary (Y or N)	Notes
						Unable to locate sanitary manhole

Facility Location: Ice Arena **Date: 10/01/2020** **Staff: Rebecca Runkel, Victor Boron, and Kate Richardson**

Dye Drop Location	Color	In-Time	Out-Time	Storm (Y or N)	Sanitary (Y or N)	Notes
Rear floor drain	yellow green	2:25 PM	2:27 PM	N	Y	

Bathroom	yellow green	2:39 PM	2:42 PM	N	Y	

Facility Location: Meadowbrook Commons **Date: August 6, 2021** **Staff: Rebecca Runkel, Victor Boron**

Dye Drop Location	Color	In-Time	Out-Time	Storm (Y or N)	Sanitary (Y or N)	Notes
Women's bathroom (main floor)	yellow green	9:21	9:27	N	Y	

Facility Location: Civic Center **Date: June 8, 2021** **Staff: Rebecca Runkel and Kate Richardson**

Dye Drop Location	Color	In-Time	Out-Time	Storm (Y or N)	Sanitary (Y or N)	Notes
Unisex Bathroom	Yellow Green	9:45AM	9:50 AM	N	Y	

Facility Location: Fire Station #1 **Date: March 3, 2021** **Staff: Aaron Staup, Kate Richardson, Humna Anjum, and Victor Boron**

Dye Drop Location	Color	In-Time	Out-Time	Storm (Y or N)	Sanitary (Y or N)	Notes
Women's Bathroom	Yellow Green	1:45 PM	1:46 PM	N	Y	Manhole was slightly clogged, but a flow was still very evident.

Facility Location: Fire Station #2 **Date: March 3, 2021** **Staff: Aaron Staup, Kate Richardson, Humna Anjum, and Victor Boron**

Dye Drop Location	Color	In-Time	Out-Time	Storm (Y or N)	Sanitary (Y or N)	Notes
Women's Bathroom		1:25 PM	N/A	N	N	3/3/21 - No flow or dye was visible in the manhole with a lead. Flush was heard, but there is no evidence that waste is currently discharging to this manhole. Upstream manhole could not be lifted because it was bolted down. Further investigation is needed.
						Update - W & S investigated and found the lead in the bolted down manhole.

Facility Location: Fire Station #3 **Date: March 3, 2021** **Staff: Aaron Staup, Kate Richardson, Humna Anjum, and Victor Boron**

Dye Drop Location	Color	In-Time	Out-Time	Storm (Y or N)	Sanitary (Y or N)	Notes
Bathroom	-	2:30 PM	-	N	N	Could not find a manhole on the santiary sewer lead. Closest manhole according to as-built plans is over the 21" interceptor, which has an extremly high flow rate. No dye was observed in nearby storm sewer or in the interceptor.

Facility Location: Fire Station #4 **Date: November 17, 2021** **Staff: Rebecca Runkel and Kate Purpura**

Dye Drop Location	Color	In-Time	Out-Time	Storm (Y or N)	Sanitary (Y or N)	Notes
Women's Bathroom	Yellow Green	10:09 AM	10:24 AM	N	Y	Manhole had some blockage before the flow from the dye test was evident.

Facility Location: Fire Station #5 **Date: March 3, 2021** **Staff: Aaron Staup, Kate Richardson, Humna Anjum, and Victor Boron**

Dye Drop Location	Color	In-Time	Out-Time	Storm (Y or N)	Sanitary (Y or N)	Notes
Unisex Bathroom	Yellow Green	3:00 PM	3:10 PM	N	Y	Dye took a while to see in the sanitary sewer main along Beck Road since there is a pump for the building lead. It required a lot of flushing/time running the sink to trigger the pump. Dye was obvious in the pump and santiary sewer manhole.

Facility Location: Police Station **Date: June 8, 2021** **Staff: Rebecca Runkel and Kate Richardson**

Dye Drop Location	Color	In-Time	Out-Time	Storm (Y or N)	Sanitary (Y or N)	Notes
Unisex Bathroom	Yellow Green	10:03 AM	10:07 AM	N	Y	Utility map incorrect. Deadend sanitary manhole is actually a storm sewer manhole.

Facility Location: Lakeshore Park **Date: November 3, 2021** **Staff: Kate Richardson and Humna Anjum**

Dye Drop Location	Color	In-Time	Out-Time	Storm (Y or N)	Sanitary (Y or N)	Notes
Women's Bathroom	Yellow Green	12:46 PM	1:06 PM	N	Y	

Facility Location: Library **Date: June 8 + 21, 2021** **Staff: Rebecca Runkel and Kate Richardson**

Dye Drop Location	Color	In-Time	Out-Time	Storm (Y or N)	Sanitary (Y or N)	Notes
Women's Bathroom	-	10:19 AM + 10:23 AM	-	N	Y	Need to test again with flashlight. Could not tell what color the sanitary flow was due to depth of manhole and limited flow.
Women's Bathroom	faintly green	1:35 PM	1:46 PM	N	Y	Took a while to see flow and even then the flow was minimal. Faintly green. Lead may have a blockage. Reported to Scott.

Appendix E5

Documentation of Dye Testing Results West Bloomfield Township

WEST BLOOMFIELD TOWNSHIP DYE TESTING FORM

Facility/Location/ID: Lily Pad Springs / 6200 Farmington Rd, West Bloomfield, MI 48322 / FA-5

Inspection Date and Time: October 21, 2021 / 11:40 AM

Inspectors: Alex Kozlowski (WBT), Laura Gruzwalski (DLZ), Tim Sobczak (WBT), John McKeown (WB Parks)

Weather Conditions: 63º F / Sunny

Type of Dye Used: Fluorescein

Area(s) in Facility where dye was flushed/washed	Illicit Connection Observed? (Circle One)	Additional Comments
Main Building Restrooms (4)	Yes / (No)	None

Appendix F

Technical Committee Meeting Attendance

ARC TC Meeting 3/6/2020

Annette DeMarie	ARC
Brad	Canton Twp
Doug Moore	Livonia
Tricia	Livonia
Karen Mondora	Farmington Hills
Emily Levine	ARC
Chelsea Pesta	City of Walled Lake
Adam Gerlach	City of Plymouth
Sermed Saif	City Of Orchard Lake / Tri-County Engineering
Scott Finlay	City of Troy
Cory Bortan	Bloomfield Twp.
Lisa McGill	Farmington
MIKE BOUTEN	CITY OF WAYNE
Laura Grusynski	DLZ Michigan
Alex Kozlowski	West Bloomfield Township
Kate Richardson	City of Novi
Joel Kohn	Oakland Co. Water Resources
Michael Flowers	Wayne County DPS
ANDRA MEALEY	WAYNE CO DPS
Ashley Allen	Hubbell, Roth + Clark
Barb Matthews	HRC - Rep. City of Birmingham
PATRICK FELLRATH	PLYMOUTH TWP.
Kristin Rutkowski	Village of Beverly Hills
GEORGE BEDNARSKI	REDFORD TWP
BOB BELAIR	NORTHVILLE TWP.
MIKE DOMINE	CITY of NORTHVILLE
John Deslippe	WESTLAND, FARMINGTON, OAK PARK

Noel Mullett — Wayne Co DPS

Mike Wieczorek — Henry Ford College

Dean Tuomari

Ron Fabois — WRC

Heather Rice — Washtenaw County Water Resources

TECHNICAL COMMITTEE MEETING NOTES

February 25, 2021, 1:30-3:00 PM
Virtual Meeting

33 Attendees listed below:

Lisa McGill (Farmington)
Alex Kozlowski (West Bloomfield Township)
Adam Gerlach (Plymouth)
Joel Kohn (Oakland County Water Resources Commissioner (OCWRC))
Jerome Bivins (Inkster)
Tim Pollizzi (Rochester Hills)
Doug Moore and Trisha (Livonia)
Rebecca Runkel (Novi)
Mike Buiten (Wayne)
Andra Mealey (Wayne County)
Matthew Best (Van Buren Township)
John Deslippe (OHM for Westland, Oak Park and Northville)
Scott Finlay (Troy)
Chris Wilson (Village of Beverly Hills)
Brandy Siedlaczek (Southfield)
Taylor Warstler (HRC for Lathrup Village)
Paul Horen (Redford Township)
Saif Sermed (for Orchard Lake)
Sue Thompson (Wayne County)
Kathy Hood (Romulus)
Angela Hysinger (Bloomfield Twp)
Ashley Allen (HRC for Bingham Farms)
Laura Gruzwalski (Johnson and Anderson)
Brad Ohman (Garden City)
Tyler Sonoga (Farmington Hills)
Sally Patrella (FOTR)
Katie Grantham (SEMCOG)
Patrick Fellrath (Plymouth Township)
Scott Finlay (Troy)
Bob Belair (Northville Township)
Chelsea Pesta (Walled Lake)
Marie McCormick (FOTR)
Jim Wineka (OCWRC)
Annette DeMaria (ARC)
Emily Levine (ARC)

2020 IDEP findings for Oakland County

Emily Levine (ARC staff) provided the status of the IDEP investigations conducted by ARC staff in OC. Highlights are below and details can be found in Attachment A.

Chris Wilson from Beverly Hills shared about an illicit connection that was found in December, in addition to the one on Village Pine Drive.

- A plumber working on a house that was uninhabited for 5 years used a lot of dye to find an illicit discharge and turned the Rouge green. The plumber was fined by EGLE for using the dye without a permit. The connection was corrected.
- The other connection on Village Pines Drive, which was identified by the ARC was fixed by a private contractor without issue.

Other status updates include the following:

- The City of Northville fixed an illicit connection after collaboration between Northville and the ARC. The illicit connection was made on a portion of storm sewer pipe that had not been mapped and was difficult to access. The City took care of routing the sanitary led to the sanitary sewer which was only a couple feet away.
- Further sampling at 3 locations indicated that animals were the likely sources of the elevated *E. coli* findings. Therefore, these sites have been closed out as possible IDEP sites.
- Ongoing investigations are necessary at 2 sites where illicit connections are likely, but have not yet been located.
- Lower Rouge investigations are ongoing. Elevated *E. coli* levels were detected on the Perrin Drain and in the river, necessitating further investigations.

2020 IDEP findings for Wayne County

Sue Thompson (WC) provided the status of the IDEP investigations conducted by ARC staff in OC. Highlights are below and details can be found in Attachment B.

- Plymouth sites –
  - Harvey Street and Mill/Park Street corrections have been made or are anticipated to be done soon. Resampling is planned.
  - PY8 and PY5 – additional investigations are planned
  - PY27 – No further action needed
- Livonia
  - Additional sampling is needed at the site near the Chicken Shack.
  - Outfall U200822 and Levan Road investigations were limited by Covid. Further investigations are planned.
- Wayne outfall, no further action needed.
- Westland – suspicious discharge with high pH referred to the city for follow-up.
- IDEP Alert Observer Training virtual class was well-attended by ARC members.

2020 Oakland County Water Resources IDEP findings

Joel Kohn (OCWRC) provided the status of the IDEP investigations conducted by ARC staff in OC. Highlights are below and details can be found in Attachment C.

- 8 Mile Drain investigation found some hot spots, as well as landscaping businesses lacking in BMPs. Follow-up with DNA sampling is planned for 2021.
- Corrected illicit connection in Bloomfield Township
- Claude H. Stevens Number 3 found concerning sample results, will need continued sampling follow-up in 2021.

Call for assistance with IDEP Investigations

ARC staff asked attendees if they need any assistance with IDEP investigations (outside the work already being investigated by the ARC). Adam from Plymouth brought up an issue around Holbrook Street in Plymouth. There have been multiple residents complaining about sewage smells in the area and Adam has narrowed it down to a catch basin. WC plans to support efforts to investigate this issue in 2021 and it has been included in their 2021 workplan.

2021 IDEP Investigation workplans for Oakland and Wayne Counties

The workplans for 2021 were included in the meeting handouts and were briefly discussed. They will focus on continuing unfinished investigations from 2020. The workplans were approved – Lisa McGill moved to approve; Doug Moore seconded. The meeting chat box was used to vote to approve, with unanimous consent from 24 'yes' votes.

Permit update

Annette DeMaria (ARC staff) reported that EGLE has set due dates of July 1st for the communities to have draft Post Construction Stormwater Management Ordinances and October 1st to have final ordinances in effect. Livonia has indicated that they will be pushing back on these dates.

The ARC has put together a spreadsheet showing the permit status and ordinance status among member communities. Members provided feedback during the call on the status of their permits. Mike Buiten (Wayne) asked that the spreadsheet be shared. ARC staff will share the spreadsheet along with ordinance language used by other permits who have an ordinance in effect.

Annette asked for feedback from the communities on what assistance was needed for this portion of the permit. No additional feedback was provided. The ARC plans to work with Wayne and Oakland Counties on understanding differences in their processes to determine how the ARC can assist the communities. Southfield volunteered to be a part of this effort.

Stormwater standards update from Counties

Jim Wineka (OCWRC) reported that regional collaboration has been going on amongst Counties to have consistent regional standards. Counties have come to a point of no substantial differences in the standards. However, counties are running behind in submitting final standards to EGLE, but progress is being made. OC anticipates County Board approval by the end of April.

Updates from cooperating partners

- SEMCOG is planning additional IDEP training this year.
- Reminder of March 2nd GLWA watershed meeting to discuss expanding E. coli monitoring for the Rouge and Clinton watersheds

Rouge River Collaborative Illicit Discharge Elimination Plan
2022-2023 Progress Report



Alliance of Rouge Communities
OURS TO PROTECT
Working together, restoring the river

Prepared by:

46036 Michigan Ave., Suite 126
Canton, Michigan 48188

March 25, 2024

A. Purpose

This report summarizes the activities undertaken to implement the Rouge River Collaborative Illicit Discharge Elimination Program (IDEP) plan (Plan) which was approved by the Michigan Department of Environment, Great Lakes and Energy (EGLE) in September 2017 and revised in January 2020. The Plan is part of the municipal separate storm sewer system (MS4) permits for several communities in the Rouge River watershed. The report includes activities implemented by or on behalf of members of the Alliance of Rouge Communities (ARC) from January 1, 2022 through December 31, 2023. The permittees participating in the Plan during the reporting period are listed below.

Participating Permittees	
Beverly Hills, Village of	Northville, City of
Bingham Farms, Village of	Northville Township
Birmingham, City of	Novi, City of
Bloomfield Hills, City of	Oak Park, City of
Bloomfield Township	Plymouth, City of
Canton Township	Plymouth Township
Dearborn Heights, City of	Redford Township
Farmington, City of	Southfield, City of
Farmington Hills, City of	Troy, City of
Franklin, Village of	Walled Lake, City of
Garden City, City of	Wayne, City of
Inkster, City of	Westland, City of
Lathrup Village, City of	West Bloomfield Township
Livonia, City of	
Melvindale, City of	Henry Ford College
Oakland County*	Wayne County Airport Authority
	Wayne County*

**Participating in the Plan but will provide a separate report of county activities per their approved progress report schedule.*

B. Action Strategy Status

The status of each action strategy includes a description of each activity, progress made during the reporting period and status of each metric.

IDEP #1: Mapping of Storm Sewer Systems

Description: The permittees have their storm sewer maps available which include the location of outfalls, enclosed and open storm drains, roads and waters of the state. In addition, the ARC has developed a GIS database of the storm sewer system maps. For Wayne and Oakland counties, this requirement will be dealt with under their individual stormwater management plans.

Goal:

- 100% of outfalls mapped in GIS
- 100% of storm sewers mapped in GIS

Status:

Metric	Status
Portion of watershed (area) where known outfalls are mapped in GIS	100% (based on permittee land area)
Portion of watershed with storm sewers in GIS	98% (based on permittee land area)

Description of Progress:

Most permittees provided the ARC with their outfall and storm sewer GIS data. Melvindale still needs to provide their storm sewer system in GIS format. Updates to these data sets are submitted to the ARC on an annual basis.

IDEP #2: Outfall Prioritization and Dry Weather Screening

Description: The ARC screened all priority outfalls in 2018 in each city or village. The ARC has determined outfalls with suspicious discharges and conducted follow-up investigations for those outfalls. Cities/Townships/Villages will perform dry weather screening of new outfalls within 6 months of construction, taking ownership or discovery. For Wayne and Oakland counties, this requirement will be dealt with under their individual stormwater management plans.

Goal: Screen 100% of priority outfalls

Status:

Metric	Status
Number priority outfalls identified	471
Percent of priority outfalls screened	100%
Number of new outfalls identified	6
Percent of new outfalls screened	17%
Number of suspicious discharges identified (based on screening results)	0

Bloomfield Township identified 5 additional outfalls and Westland identified 1 additional outfall that are part of the MS4 permit. One of the Bloomfield Township outfalls has been screened. The remaining outfalls will be screened in 2024. In addition, one new outfall was identified in Plymouth in 2021 and was listed in the previous progress report. It was screened in 2022. See Appendix A for new outfall screening reports.

IDEP #3: Advanced Investigations

Description: The goal of this activity is to 1) locate source(s) of suspected illicit discharge(s) in the initial priority areas and upstream of the priority outfalls, and 2) oversee the correction of any identified illicit discharges.

Goals:

- Follow the advanced investigation protocol for initial priority areas and priority outfalls.
- 100% of illicit connections/discharges resolved or a plan in place for elimination.

Status:

Metric	Status
Total number of illicit discharge investigations (outfalls)	17
From previous priority areas	1
From priority outfall screening	10
From other efforts	6
Number of investigations closed	6 (35%)
Number of investigations remaining (in progress)	11 (65%)
Number of illicit discharges identified	4
Number corrected	4
Number unresolved	0

Description of Progress:
Below is a list of the 17 outfalls that required investigations during the reporting cycle. A summary by community is provided in Table 1.

- Beverly Hills: BV51
- Inkster: Perrin Drain
- Livonia: U2008221, 411, 6038, L1619, 2680, 5626, L3582
- Novi: NO20
- Dearborn Heights: Red Run Drain Outlet, OUT20SW001, OUT05SW001
- Plymouth: PY8, PY5, Holbrook St, Park St.

Table 1 - Outfalls that Required Investigations

Permittee	Investigations Originating from				Total No. of Outfalls	Lead Agency
	Previous Priority Areas	Outfall Screening		Other Efforts		
		Cat A	Cat B			
Beverly Hills		1			1	ARC
Inkster				1	1	WCESD
Livonia		2	5		7	WCESD
Novi				1	1	ARC
Plymouth	1	1	1	1	4	WCESD
Dearborn Heights				3	3	WCESD
Total	**1**	**4**	**6**	**6**	**17**	

In partnership with the local communities, the ARC, Wayne County Environmental Services Department (WCESD) and Oakland County Water Resource Commissioner's Office (OCWRC) investigated drains that displayed suspicious discharges. Investigations were conducted on 17 outfalls, and investigations were closed out on 6 of the outfalls. The status of these investigations is provided in Table 2 and detailed investigation reports can be found in Appendix B.

Table 2 - Status of Investigations by Outfall

Permittee	Outfall ID	Status	Result
Beverly Hills	BV51	Ongoing	Sewage source suspected
Inkster	Perrin Drain	Completed	No sources found
Livonia	U2008221	Completed	Illicit connection found and corrected
	411	Ongoing	Sewage sources suspected
	6038	Completed	No sources found
	L1619	Ongoing	Sewage sources suspected
	2680	Ongoing	Sewage sources suspected
	5626	Completed	No sources found
	L3582	Completed	No sources found
Novi	NO20	Ongoing	Sewage source suspected
Dearborn Heights	Red Run Drain Outlet	Ongoing	Sewage source suspected
	OUT20SW001	Completed	Combined sewer overflow addressed
	OUT05SW001	Ongoing	Sewage sources suspected
Plymouth	PY8	Ongoing	Sewage sources suspected
	PY5	Ongoing	Sewage sources suspected
	Holbrook Street	Ongoing	Sewage sources suspected
	Park Street	Ongoing	Illicit connections found and corrected, need to confirm corrections resolved issue

A total of 3 illicit discharges containing sewage from residential homes and one illicit discharge containing sewage from a portion of a hospital were identified. All of these have been corrected as shown in Table 3. These corrections result in the elimination of 339,998 gallons of untreated wastewater and 3,764 lbs of pollutants on an annual basis (Tables 4 and 5).

Table 3 – Number and Type of Illicit Discharges (IDs) Discovered and Resolved

	A	B	C	A+B-C
County	**No. of Known IDs at beginning of Reporting Period**	**No. IDs Discovered During Reporting Period**	**No. of IDs Resolved During Reporting Period**	**No. of Unresolved IDs at the end of Reporting Period**
Sanitary Sewage from Illicit Connections from Residences				
Plymouth	0	3	3	0
Sanitary Sewage from Illicit Connections from Non-residences				
Livonia	0	1	1	0
Total	**0**	**4**	**4**	**0**

Table 4 - Volume of Sewage Eliminated from Surface Waters

Community Name	Household Size	Number of households with failed septics or illicit connections	Annual Wastewater Volume (gallons/year)
Data sources	[a]	[b]	
Plymouth	2.07	3	**169,999**
Livonia	N/A	1*	**169,999***
Total			**339,998**

*Illicit connection was from a portion of a hospital. It is unknown how much of the hospital was connected to this illicit connection. Therefore, this is an approximation based on an assumption that the portion of the hospital may have contributed three times as much wastewater as an average household.

Table 5 - Amount of Pollutants Eliminated from Surface Waters

Parameter	Average Concentration (mg/L)[i]	[i]Data Source	Pollutant Load (lbs/year)		
			Livonia	Plymouth	Totals
Total Solids	690	[d]	979	979	**1,958**
Total Suspended Solids	243	[d]	345	345	**690**
BOD	221	[d]	314	314	**628**
Ammonia	8.5	[d]	12.1	12.1	**24.2**
Total Phosphorus	9	[d]	12.75	12.75	**25.5**
Surfactant	13.5	[d]	19.1	19.1	**38.2**
Potassium	6	[e]	8.5	8.5	**17**
Total Organic Carbon	47	[f]	67	67	**134**
Fats, Oil & Grease	88	[d]	125	125	**250**
Total Pollutant Load (lb/year)			1,882	1,882	3,764

Data Sources:

[a] SEMCOG (Household size estimates for Southeast Michigan).

[b] County Database (from WCDPH-EHD for Wayne County).

[c] *Environmental Health Ready Reference*. Michigan Environmental Health Association. March 2004.

[d] *Onsite Wastewater Treatment Systems Manual.* U.S. EPA EPA/625/R-00/008. February 2002. Table 3-7 .

[e] Pitt, Robert, et al. *Investigations of Inappropriate Pollutant Entries into Storm Sewer Systems, A Users Guide*. U.S EPA. EPA/600/R-92/238. January 1993.

[f] *Onsite Wastewater Treatment Systems Manual.* U.S. EPA EPA/625/R-00/008. February 2002. Table 3-18 .

In addition to the efforts described above, Birmingham conducted an investigation in their jurisdiction to identify an illicit discharge. These efforts are detailed in Appendix B.

IDEP #4: Staff Training

Description: The permittees will have at least one person who is competent at the IDEP Investigator Level. Permittees will have 50% of their field staff trained at the Alert Observer Level. In addition, permittees will remind staff of *E. coli* problems in Priority Areas and encourage reporting, annually.

Goals:

- 1 person per permittee trained at Investigator Level
- 50% of field staff trained at the Alert Observer Level.

Status:

Metric	Status
Portion of permittees with 1 or more staff trained at the Investigator level (of the 29 participating permittees)	93%
Number of field staff employed by the permittees (FTEs)	601
Portion of field staff trained at the Alert Observer level (or higher)	63%

Description of Progress:
The ARC offered or partnered in four IDEP Investigator and four Alert Observer training sessions during the permit period. Two training sessions for Investigator and two training sessions for Alert Observer were held in the fall of 2022 and the fall of 2023. See Appendix C for recent staff training records.

There are 601 field staff employed by the permittees as shown in Appendix C. Of these, 382 staff (63%) are trained at the awareness level or greater. Most permittees have more than 1 person trained at the investigator level and more than 50% trained at the alert observer level, while others fall short of these targets. The permittees that need more staff training (Table 6) will be targeted by the ARC in 2024.

Note: Oakland County and Wayne County personnel are not included in these totals, as they will be reporting on their staff training separately.

Table 6 - Permittees needing IDEP Training

Community	Number of Staff Needing Investigator Level Training	Number of Staff Needing Alert Observer Level Training*
Bingham Farms	1	
Farmington		3
Wayne	1	
Troy		22
Southfield		5
Westland		16

*To achieve the 50% training goal.

IDEP #5: Pollution Complaint Response

Description: Permittees will have a method for recording and tracking pollution complaints from staff and the public. Permittees will follow-up on the complaints. The ARC will maintain a list of community contacts who are responsible for complaint response.

Goal: 100% of complaints addressed

Status:

Metric	Status
Number of complaints received and referred or investigated	32
Number of issues resolved	31
Portion of issues resolved	97%

Description of Progress:
The permittees received 32 pollution complaints (not including those received by Oakland and Wayne Counties, which report pollution complaints on their own). Of those 32 complaints, 31 issues were investigated and resolved. One unresolved issue is as follows:

- Birmingham: Illicit connection identified at 300 Warren Court. Building owner has been notified and instructed to correct the illicit connection.

Documentation of the complaints is provided in Appendix D.

IDEP #6: Inspection of ARC Member-Owned Facilities

Description: Dye-test permittee owned or operated facilities (within the watershed) to ensure they are properly draining to the sanitary sewer.

Goals:

- 100% of ARC Member existing facilities dye tested.
- 100% of issues addressed.

Status:

Metric	Status
Number of facilities owned by permittees	294
Number of facilities owned by permittees with major renovations during reporting period	11
Portion of facilities dye tested, including renovations **with existing records**	45%
Number of issues found	0

Description of Progress:

There are 294 municipal owned facilities in the watershed. The ARC had been informed that almost all of these facilities had been dye tested by Wayne County between 1987 and 2015. However, during this reporting period it was determined that records of these facilities being dye tested were no longer available. Therefore, the ARC has worked to identify which buildings have dye testing records and which will need to be dye tested. Some buildings have been dye tested in response to this issue, but more dye testing is necessary for many communities. See Appendix E for a list of the number of facilities with dye testing records available for each ARC community.

Eleven of the 294 municipal owned facilities had major renovations completed during the reporting period. Seven of those renovated facilities have had dye testing done since the renovations were complete. The dye testing revealed no illicit connections.

An illicit connection was identified in Bloomfield Hills at the City Hall/Police/Fire building prior to this reporting period, in September of 2021. The part of the building that has cross-connections was part of an addition several years ago. The issue was corrected in 2022. Documentation for this can be found in Appendix E.

IDEP #7: IDEP Work Group

Description: Permittees will meet twice a year to discuss IDEP-related topics including the annual advanced investigations work plan, progress of advanced investigations, lessons learned, any road blocks encountered with implementing the plan, and recommendations for improving the plan.

Goals:

- Hold at least 2 work group meetings per year.
- 80% member participation.
- 2 meeting summaries per year.

Status:

Metric	Status
Number of meetings per year	2 in 2022 and 2 in 2023
Number of meeting summaries per year	2 in 2022 and 2 in 2023
Portion of members in attendance at meetings	84% over both years

Description of Progress:
Four Technical Committee meetings were held during the reporting period. In 2022, 23 of 29 permittees were represented at the first meeting and 24 of 29 permittees were represented at the second meeting. In 2023, 22 of 29 permittees were represented at the first meeting and 28 of 29 participants were represented at the second meeting (Appendix F).

C. Other Efforts

Each permittee included in this report has its own IDEP ordinance or policy and procedures in place. Copies of these ordinances and policies have been submitted to EGLE.

Appendix A

Dry Weather Outfall Screening Supporting Documentation

Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	32-02		
Date of Observation:	10 / 5 / 2022	Time:	1:50 pm
Name(s) of Investigator(s):	Cory Borton		
Has it rained over 0.10 in. in last 72 hours?	☐ Yes	☑ No	

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☑ Suburban Residential
- ☐ Commercial
- ☐ Institutional
- ☐ Open Space
- ☑ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known): Storm sewer into County Drain.

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☑ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 12 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☐ No ☑ Partially ☐ Fully With Sediment: ☑ No ☐ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☑ Yes ☐ No **(If No, Skip to Section 5)**

Flow Description (If present): ☑ Trickle ☐ Moderate ☐ Substantial

Description Details: Dripping not enough to sample.

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☐ Yes ☑ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☐			
pH / Temperature	☐	pH Level	Temperature (F)	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☑ Yes ☐ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☑	☐ Oily ☑ Flow Line ☐ Paint ☑ Other: Dripping stain from outlet	
Vegetative Condition	☑	☑ Excessive ☐ Inhibited	Surrounded by Phragmites.
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: No signs of illicit discharges.

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: _____

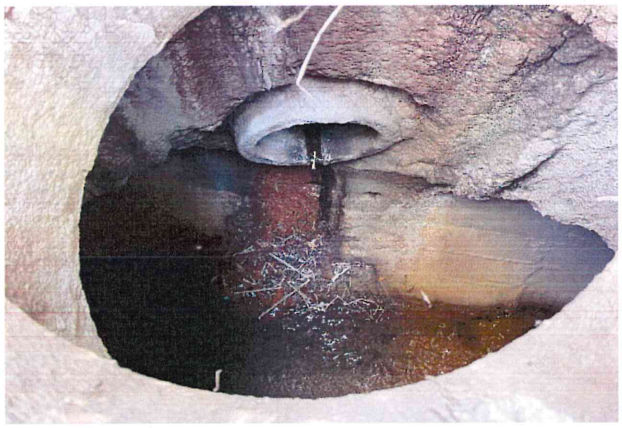
Section 8: General Comments

Comments: Drains residential area. Dripping not enough to sample.

Section 9: Reporting Information

Comments: _____	Date Observed: __/___/ ___
_____	Time Observed: _____
Investigated By: _____	Date Reported: __/___/ ___





Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	19-02
Date of Observation: 9 / 8 / 2022	Time: 2:50 pm
Name(s) of Investigator(s):	Cory Borton
Has it rained over 0.10 in. in last 72 hours?	☐ Yes ☑ No

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☑ Suburban Residential
- ☐ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known): Outlet for low area in woods

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☐ RCP ☐ PVC ☑ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 36 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☑ No ☐ Partially ☐ Fully With Sediment: ☑ No ☐ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	
Is Flow Present?	☐ Yes	☑ No	**(If No, Skip to Section 5)**	
Flow Description (If present)	☐ Trickle	☐ Moderate	☐ Substantial	
Description Details:	_____			

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☐ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☐ Yes ☐ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☐			
pH / Temperature	☐	pH Level	Temperature (F)	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☑ Yes ☐ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☑	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	Outlet structure at upstream end has some structure damage.
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegetative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: _____

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: _____

Section 8: General Comments

Comments: Low area was dry. No flow in upstream structure. No flow in downstream structure.

Section 9: Reporting Information

Comments:	_____	Date Observed:	__/___/ ___
_____		Time Observed:	_____
Investigated By:	_____	Date Reported:	__/___/ ___





Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	25-04
Date of Observation:	10 / 5 / 2022 — Time: 12:25 pm
Name(s) of Investigator(s):	Cory Borton
Has it rained over 0.10 in. in last 72 hours?	☐ Yes ☑ No

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☑ Suburban Residential
- ☐ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known): Storm sewer for residential area

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☐ RCP ☐ PVC ☑ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 12 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☑ No ☐ Partially ☐ Fully With Sediment: ☑ No ☐ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☐ Yes ☑ No **(If No, Skip to Section 5)**

Flow Description (If present) ☐ Trickle ☐ Moderate ☐ Substantial

Description Details: _____

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☐ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☐ Yes ☐ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☐			
pH / Temperature	☐	pH Level	Temperature (F)	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☑ Yes ☐ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegetative Condition	☑	☑ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: No flow from storm sewer.

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: _____

Section 8: General Comments

Comments: _____

Section 9: Reporting Information

Comments: _____	Date Observed: __/___/ ___
_____	Time Observed: _____
Investigated By: _____	Date Reported: __/___/ ___







Dry - Weather Screening Field Observation Form

Section 1: Background Data

Outfall ID / Location:	12-03
Date of Observation: 10 / 5 / 2022	Time: 12:00 pm
Name(s) of Investigator(s):	Cory Borton
Has it rained over 0.10 in. in last 72 hours?	☐ Yes ☑ No

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☑ Suburban Residential
- ☐ Commercial
- ☐ Institutional
- ☐ Open Space
- ☐ Woods

Other: _____

Known Industries: _____

Notes (e.g. origin of outfall, if known): Residential storm sewer

Section 2: Discharge Structure Description

LOCATION	MATERIAL	SHAPE	DIMENSION	SUBMERGED
☑ Closed Pipe	☑ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Steel ☐ Other:_____	☑ Circular ☑ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: ____ Other: _____	Circular Pipe Dimensions: Dia: 12 in. Elliptical Pipe Dimensions: Width: _____ in. Height: _____ in.	In Water: ☐ No ☐ Partially ☑ Fully With Sediment: ☑ No ☐ Partially ☐ Fully
☐ Open Drainage (Channel)	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other:_____	Depth: _____ ft. Top Width: ____ft. Bottom Width: _____ft.	

Is Flow Present? ☐ Yes ☑ No **(If No, Skip to Section 5)**

Flow Description (If present) ☐ Trickle ☐ Moderate ☐ Substantial

Description Details: Residential and road storm sewer.

Section 3: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? ☐ Yes ☐ No **(If No, Skip to Section 4)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Petroleum/Gas ☐ Other: _____	☐ 1 - Faint ☐ 2 - Easily Detected ☐ 3 - Noticeable from a Distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____	☐ 1 - Faint Colors ☐ 2 - Somewhat Visible ☐ 3 - Clearly Visible

Water Clarity	☐		☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables (Does not include trash)	☐	☐ Sewage (toilet paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other: _____	☐ 1- Few or slight; origin not obvious ☐ 2 - Some; indication of origin (possible suds or oil sheen) ☐ 3 - some; origin clear (obvious oil sheen, suds, or floating sanitary material)

Section 4: Non-Physical Indicators for Flowing Outfalls Only

Are any non - physical indicators present in the flow? ☐ Yes ☐ No **(If No, Skip to Section 5)**

INDICATOR	CHECK IF PRESENT	METER READING		RELATIVE SEVERITY INDEX
Ammonia	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Conductivity	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Fluoride	☐			☐ 1 - Low ☐ 2 - Medium ☐ 3 - High
Salinity	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
Surfactants	☐			☐ 1- Low ☐ 2 - Medium ☐ 3 - High
E. Coli	☐			
pH / Temperature	☐	pH Level	Temperature (F)	☐ 7 to 0 Increasingly Acidic ☐ 7 to 14 Increasingly Alkaline

Section 5: Physical Indicators for Both Flowing and Non-Flowing Discharge Structures

Are any physical indicators that are not related to flow present? ☐ Yes ☑ No **(If No, Skip to Section 6)**

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Discharge Structure Damage	☐	☐ Spalling, Cracking, or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits / Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: _____	
Vegitative Condition	☐	☐ Excessive ☐ Inhibited	
Biology	☐	☐ Bacterial Sheen ☐ Algae ☐ Slimes ☐ Other: _____	

Section 6: Overall Discharge Characterization

- [x] Unlikely
- [ ] Potential (Presence of two or more indicators)
- [ ] Suspect (One or more indicators with a severity of 3)
- [ ] Obvious

Comments: _____

Section 7: Non-Illicit Discharge Concern (e.g. illegal dumping, spills, trash or needed repairs)

Comments: _____

Section 8: General Comments

Comments: Inlet submerged. Outlet is dry. Upstream manhole has no flow.

Section 9: Reporting Information

Comments: _____	Date Observed: __/___/ ___
_____	Time Observed: _____
Investigated By: _____	Date Reported: __/___/ ___





Annette DeMaria, P.E., PMP
Executive Director

Auburn Hills
Beverly Hills
Bingham Farms
Birmingham
Bloomfield Hills
Bloomfield Twp.
Canton Twp.
Commerce Twp.
Dearborn Heights
Farmington
Farmington Hills
Franklin
Garden City
Henry Ford College
Inkster
Lathrup Village
Livonia
Melvindale
Northville
Northville Twp.
Novi
Oak Park
Oakland County
Orchard Lake
Plymouth
Plymouth Twp.
Redford Twp.
Rochester Hills
Romulus
Schoolcraft College
Southfield
Troy
University of Michigan-Dearborn
Van Buren Twp.
Walled Lake
Washtenaw County
Wayne
Wayne County
Wayne County Airport Authority
West Bloomfield Twp.
Westland
Wixom

Cooperating Partners:
Cranbrook Institute of Science
Friends of the Rouge
Great Lakes Water Authority
Rouge River Advisory Council
SEMCOG
Southeastern Oakland County Water Authority

Alliance of Rouge Communities
OURS TO PROTECT
Working together, restoring the river

TO: **Adam Gerlach**

FROM: **Emily Levine, ARC Staff**

DATE: **May 5, 2022**

SUBJECT: **Outfall screening report PY28**

ARC staff conducted a dry-weather outfall screening at outfall PY28 on April 28, 2022. This outfall is located behind the apartment complex located at the intersection of Liberty and York streets and was identified within the past year as belonging to the City of Plymouth. Discharge from the outfall flows down a hill towards Hines Drive and the Middle Rouge River.

E. coli levels were found to be low and no signs of suspicious discharge were observed.

Table 1. Sampling Results

Outfall Number	Outfall Description	Physical signs of Suspicious Discharge (y/n)	Screening Location	*E. coli* (MPN/100mL)
PY28	24” concrete, sediment built up filling about 1/3 of the pipe. 1” of flow	No	Outfall near the top of the hill	<10

This work is being completed as outlined in the Rouge River Collaborative IDEP Plan in compliance with the City’s MS4 permit and as a result of your ARC membership. If you have any questions, I can be reached at 313-963-6600 or elevine@ectinc.com.

X:\Alliance of Rouge Communities\2022 Alliance of Rouge Communities\Tech Committee\IDEP investigations\PY28 outfall screening report.docx

Figure 1. PY28 Outfall Location

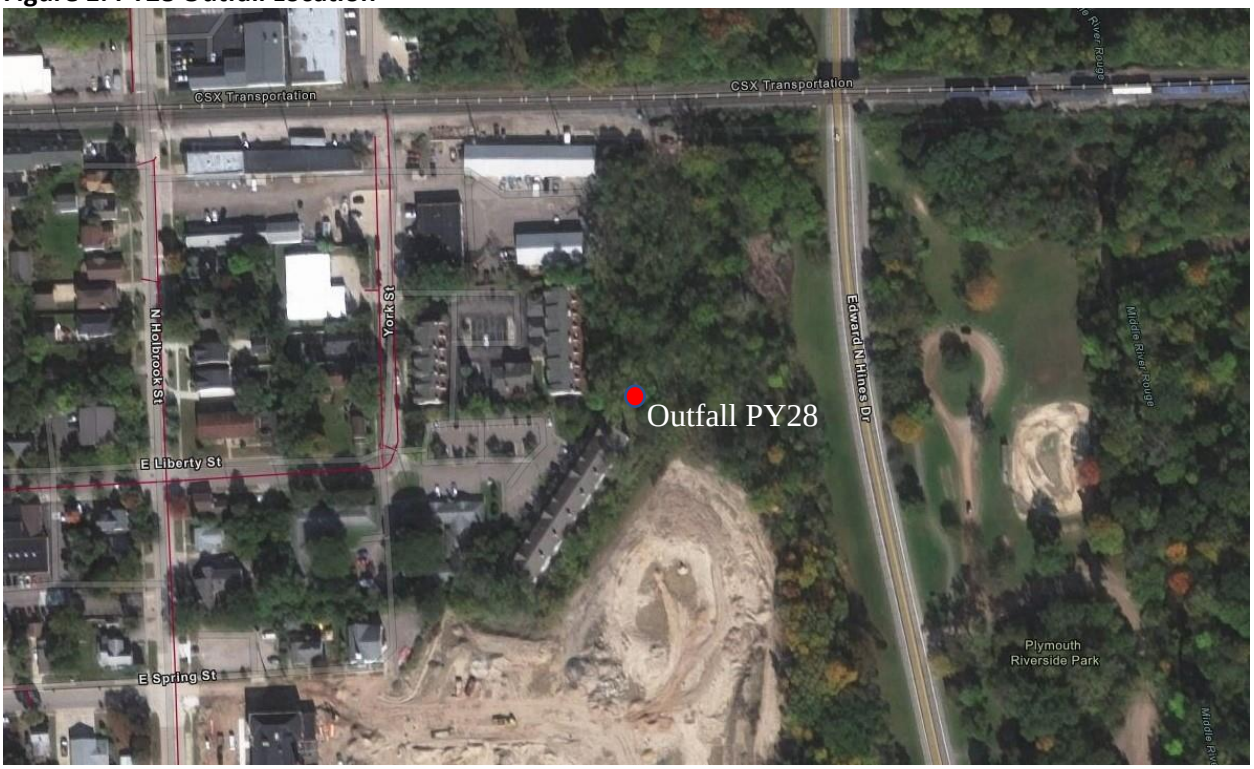


Figure 2: Picture of outfall PY28



Appendix B

Advanced Investigations Documentation

Appendix B1. 2022 Wayne County IDEP Investigation Report

Appendix B2. 2023 Wayne County IDEP Investigation Report

Appendix B3. 2022 ARC IDEP Investigation Report

Appendix B4. 2023 ARC IDEP Investigation Report

Appendix B5. Birmingham Investigation Records

Appendix B1

2022 Wayne County IDEP Investigation Report

Wayne County Illicit Discharge Elimination Program
ARC IDEP Services 2022 Report

Executive Summary

Wayne County Department of Public Services Environmental Services Division (ESD) performed source identification advanced investigations in the Cities of Plymouth, Inkster, and Livonia (Table 1). Other tasks completed in 2022 included IDEP Training and activity reporting.

Table 1: Findings and recommended actions for illicit discharge investigations

Community	Outfall/ target area	Findings	Recommendations
Plymouth	PY8	Elevated *E. coli, Bacteriodes and HF183 marker*	Continued investigations in 2023 including dye testing residential properties located in storm sewer segments identified by televising/manhole sampling and manhole sampling for *E. coli* and HR183 marker as needed
Plymouth	PY5	Elevated *E. coli* and HF183 marker	Continued investigations in 2023 including dye testing residential properties located in storm sewer segments identified by televising/manhole sampling and manhole sampling for *E. coli* and HR183 marker as needed
Plymouth	Holbrook Street	Elevated *E. coli*, low HF183 marker in wet weather, no evidence of illicit discharge other than sewage odor	No further investigation recommended in 2023. Based on televising and field investigations, the only possible source is a leaking sanitary sewer. Plans to replace the sanitary sewer in 2024 are in the process of being developed.
Plymouth	Mill/Park Street	The illicit connection at 150/152 S. Mill Street was confirmed corrected. Communications and compliance actions with the City and the property owners of the 3 remaining illicit connections continued.	Re-issue the notice of violation to the new property owner at 195 S. Mill and continue communications and compliance actions to correct remaining violations. Once corrections are made perform follow-up *E. coli* monitoring.
Livonia	U2008221	Sewage sources suspected and identified in 2022	ARC staff to continue investigation of this outfall in 2023
Livonia	L-1619	Elevated *E. coli* and HF183 marker. *E. coli* and HF183 sampling in 2022 and storm sewer televising	ARC staff to continue investigation of this outfall in 2023

Task 1: Field Investigations

ESD conducted IDEP investigations at various outfalls and upstream storm sewer manholes. Water samples were tested for *E. coli* and observations were recorded regarding water clarity, color, odor, and debris. In addition to ESD's typical IDEP investigation methods, select samples were analyzed for the Human Source (HF183) marker. The presence of the marker above 1,000 gene copies/100 mL is used as a threshold to indicate potential human source of bacteria present when correlated with elevated *E. coli* levels.

City of Plymouth

ESD coordinated with ARC staff and the City of Plymouth to continue investigations of outfalls PY8, PY5, Holbrook Street, and the Park Street municipal separate storm sewer systems (MS4). The PY8 and PY5 outfalls discharge to the North Branch Tonquish Creek. The Park Street MS4 captures the Mill Street drainage and discharges to the Rouge River Middle Branch, as does the outfall discharging the drainage from the Holbrook Street investigation area.

Outfall PY8

ESD did not perform any manhole and storm sewer lateral investigations upstream of the outfall in 2022. Elevated HF183 marker was identified in a segment of storm sewer during manhole sampling in 2021 as reported in the 2021 Wayne County ARC IDEP Workplan Summary. This segment is the furthest upstream segment of the Blunk Street storm sewer (between Junction and Farmer Streets). The sanitary sewer was televised in sections that were accessible and that footage was used to account for sanitary sewer taps. Dye testing the residences with no evidence of sanitary sewer taps identified by the televising is planned to for 2023.

Outfall PY5

ESD performed sampling in manholes and storm sewer laterals upstream of the outfall on May 13, November 3, and November 9, 2022, building upon the 2021 investigative effort.

Elevated *E. coli* and HR183 markers were detected in two manholes in the upstream storm sewer system at the intersection of Arthur and William Streets and one manhole on Pacific Street between William and Blanche Streets. The storm sewer lines of Outfalls PY5 and PY4 cross over each other downstream of William Street intersection, so the storm sewer on the east side of Arthur Street upstream of William Street was also investigated to ensure that there is no elevated *E. coli* or HSF183 detected above the William Street intersection.

The City of Plymouth dye tested four out of seven residences in the investigation area on William Street during 2022. The residences dye tested were determined to be connected to the sanitary sewer. The City also televised the storm sewer on Pacific Street and there are suspicious taps noted on this line.

The storm sewer televising and the manhole investigations detailed above determined that there are suspicious taps that need further verification on William Street between Arthur and Pacific Streets and Pacific Street upstream of the William/Pacific Street intersection. Dye testing of selected residences and manhole sampling (*E. coli* and HF183), as needed, is planned for this investigation area in 2023.

The investigation area and dry weather screening data is shown in *Figure 1* and the investigation data is included in Appendix A, Table A1.

Holbrook Street

The City of Plymouth Holbrook Street storm sewer segment between Spring Street and its terminal manhole south of the railroad tracks (north of Liberty Street) was investigated on June 29, 2022 after a wet weather event. There was no flow present in this section of storm sewer during dry weather in previous investigations. Elevated *E. coli* concentrations were present in the samples collected from the Holbrook/ Spring Street storm manhole and its north inlet, but the HF183 concentrations were very low in both samples.

The storm sewer segment was investigated again on November 3, 2022. A sewage odor was detected at the storm sewer at the Holbrook/Spring Street intersection, and a water sample collected from an upstream catch basin that had also had an odor and contained discolored water. The concentrations of *E. coli* and HF183 were low in the sample collected at this location.

The City of Plymouth televised the storm and sanitary sewers on Holbrook Street in the investigation area. No illicit or suspicious taps were identified, and the sanitary sewer televising determined that the line has leaky joints. Based on the televising and field investigation results, the only possible human source is the leaky sanitary sewer and infiltration into the storm sewer. The source of elevated *E. coli* in the wet weather sample is likely an animal source. Plans to replace the sanitary sewer in 2024 are in the process of being finalized.

No further investigation in this area is recommended in 2023.

The investigation area is shown in Figure 2 and the screening data is shown in *Figure 2* and the data is included in Appendix A, Table A2.

Park Street/Mill Street Investigation Area

During previous years of investigation, there were four residences with illicit connections identified in the Mill/Park Street investigation area. In 2022, the duplex located at 150/152 S. Mill Street was confirmed corrected by the City. Three residences with illicit connections remain. Two of these discharge into the Wayne County Mill Street MS4 (195 S. Mill and 485 S. Mill). The third, a residence on Amelia Street (175 Amelia), discharges into the City of Plymouth MS4. Amelia Street is tributary to the Mill Street storm sewer. Efforts are ongoing to resolve the remaining illicit connections. This will include reissuing the notice of violation to the new property owner at 195 S. Mill as well as continuing to work with the City and the property owners to ensure the proper sanitary sewer connections are made and the illicit connections eliminated.

Once the illicit connections are corrected, the Mill Street storm sewer laterals and the Park Street storm sewer outfall will be resampled.

City of Livonia

ESD provided ARC staff support in the investigations of outfall L-1619 and outfall U2008221 during 2022 and details of these investigations are included in the 2022 IDEP Investigation Summary prepared by ARC staff.

Task 2 IDEP Training

Four IDEP training workshops were presented in 2022 in partnership with the Southeast Michigan Council of Governments (SEMCOG) Partners for Clean Water and the ARC. ESD provides support to ARC and SEMCOG in these training efforts. Due to the ongoing COVID-19 pandemic, the workshops were

held virtually. The Alert Observer training, that was redesigned for the virtual platform in 2020, was offered as a virtual and in-person option in October 2022. The Advanced Investigator training workshop returned to in-person only in October 2022. Due to the demand, a second day of training was held in November for both workshops.

Alert Observer

The IDEP Alert Observer training workshop is a one-hour session that includes a question and answer session at its conclusion. This training introduces illicit dicharges, why it is important to identify and report, and reporting procedures. The virtual and in-person training workshop was held virtually and in-person at the HAWK Center Farmington Hills on October 18, and November 10, 2022 with a total of 218 persons from 72 organizations attending the sessions. One-hundred of the 218 attendees (46 percent) were representatives of (or consultants representing) ARC member communities.

Advanced Investigator

The IDEP Advanced Investigator training workshop is a two-hour session that included a question and answer session at its conclusion. This training details the various techniques used to investigate, identify and eliminate illicit discharge sources. The Advanced Investigator training in-person training workshop was held on October 18, and November 10, 2022 at the HAWK Farmington Hills with a total of 83 persons from 43 organizations attending the sessions. Twenty-eight of the 83 attendees (34 percent) were representatives of (or consultants representing) ARC member communities.

Appendix B contains the attendance lists for the Alert Observer and Advanced Investigator workshops. Attendees representing ARC communities are highlighted.

Task 3 Reporting

Written progress summaries of IDEP activities were provided. The 2021 IDEP Activities Summary was completed and the 2022 activities summary drafted.

Figures
2022 ARC IDEP Field Investigations

Figure 1: Outfall PY5 Investigation Area Map

Figure 2: Holbrook Street Investigation Area Map



CITY OF PLYMOUTH
2022 IDEP Investigation
Outfall PY5 / Arthur Street

N

100 0 500 Feet

Stormwater Gravity Mains
Sanitary Gravity Main & Lateral Lines
Stormwater Manholes
Sanitary Manhole

Sampling units - CFU / 100 ml

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11/3/2022
DRY
(TERMINAL MH)

11/3/2022
DRY

11/3/2022
63 *E. coli*
95 HF183

11/3/2022
DRY

6/29/2022
5172 *E. coli*
212.6 HF183

6/29/2022
>24,196 *E. coli*
217.9 HF183

11/3/2022
DRY

Division
York
Liberty
Mill
Davis
Spring
Starkweather
Edward Hines
Caster
Farmer
Blanche
Plymouth
Main
Rose
Amelia
Holbrook
Woods
Union
Park
Parkview

CITY OF PLYMOUTH
2022 IDEP Investigation
Holbrook Street

N

1:3,000
1 inch = 250 feet

250 125 0 250 500 Feet

Stormwater Gravity Main
Stormwater Manhole
Stormwater Catch Basin
Sanitary Gravity Main & Lateral Lines
Sanitary Manhole

Sampling units - CFU / 100 ml

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Appendix A
2022 ARC IDEP Field Investigation Data
City of Plymouth

Table A1: Outfall PY5/Arthur Street Investigation Area
Table A2: Holbrook Street Investigation Area

Number	Date	Time (military)	Investigation Location	Site Location	*E. coli (colony-forming units (CFU)/100mL)*) or MPN/100mL	HF183 Gene copies (GC)/100mL	Ammonia (PPM)	Surfactant (PPM)	Conductivity (mS/cm)	Temperature (degrees Celsius)	Observations	Sanitary Flow Evidence	Odor
1	6/29/2022	NA	Holbrook St Storm Sewer	Spring/Holbrook St	5172	212.6	NA	NA	NA	NA	Sample collected after a rain event by ARC staff. Flow from north inlet. Sample collected in manhole sump	No	No
2	6/29/2022	NA	Holbrook St Storm Sewer	Spring/Holbrook St - North inlet	>24,196	217.9	NA	NA	NA	NA	Sample collected after a rain event by ARC staff. Flow from north inlet. Sample collected from the north inlet flow	No	No
3	11/3/2022	9:30	Holbrook St Storm Sewer	Spring/Holbrook St Storm Sewer	NA	NA	NA	NA	NA	NA	Manhole dry, musty odor, inlets dry. Some standing water in catch basin (Holbrook east side). West side catch basin dry with leaves	No	Yes
4	11/3/2022	9:30	Holbrook St Storm Sewer	Spring/Holbrook St East Catch Basin (north of Spring St Storm)	63	95	NA	NA	NA	NA	East catch basin has leaves, debris, full of stagnant water. Sewage odor. Plymouth DMS cleaned catch basin sump and sample collected in remaining water	No	Yes
5	11/3/2022	10:00	Holbrook St Storm Sewer	Holbrook St/Liberty St	NA	NA	NA	NA	NA	NA	Manhole and inlets dry	No	No
6	11/3/2022	10:15	Holbrook St Storm Sewer	882 Holbrook St/Railroad Tracks-terminal manhole	NA	NA	NA	NA	NA	NA	Manhole and inlets dry	No	No

Number	Date	Time (military)	Investigation Location	Site Location	*E. coli (colony-forming units (CFU)/100mL)*)	HF183 Gene copies (GC)/100mL	Ammonia (PPM)	Surfactant (PPM)	Conductivity (mS/cm)	Temperature (degrees Celsius)	Observations	Sanitary Flow Evidence	Odor
1	5/13/2022	9:20	Outfall PY5	William/Pacific	31	NA	NA	NA	NA	NA	Clear water in sump, inlets dry except for north inlet.	No	No
2	5/13/2022	10:00	Outfall PY5	295 Pacific	52	NA	NA	NA	NA	NA	Clear water in sump; slow flow from outlet/inlet. Trickle flow from CB outlet on east side of the street/some foam. Catch basin contains standing water/organic debris	No	No
3	5/13/2022	9:40	Outfall PY5	1251 William	1187	131578.9	NA	NA	NA	NA	Some musty odor, water has some discoloration. Sediment in sump	No	Yes
4	5/13/2022	10:25	Outfall PY5	Arthur/William North Inlet	1046	94315.8	NA	NA	NA	NA	Cloudy flow from William Street inlet; clear flow from north inlet of Arthur. Sample collected from north inlet flow	No	No
5	11/3/2022	12:50	Outfall PY5	Blanche/Pacific	10	95	NA	NA	NA	NA	Steady slow flow in inlet, some calcium deposits. Water clear, musty odor	No	No
6	11/9/2022	12:10	Outfall PY5	Blanche/Pacific	10	NA	NA	NA	NA	NA	Water in sump clear, clear flow from north inlet, trickle flow from west inlet. Some leaf decomposition odor present	No	No
7	11/9/2022	12:20	Outfall PY5	333 Pacific	12997	1979	NA	NA	NA	NA	Clear water in sump. Slow flow from east inlet (green pipe)	No	No
8	11/3/2022	11:15	Outfall PY5	197 Arthur	199	NA	NA	NA	NA	NA	Clear flow in storm	No	No
9	11/9/2022	10:45	Outfall PY5	197 Arthur	NA	NA	NA	NA	NA	NA	Standing water in storm; not enough to sample. Water clear, some leaves	No	No
10	11/3/2022	11:20	Outfall PY5	William/Arthur East	185	95	NA	NA	NA	NA	Trickle flow in manhole; clear water	No	No
11	11/9/2022	10:50	Outfall PY5	Arthur/William East	481	95	NA	NA	NA	NA	Clear, low flow with some leaves; some decaying leaf odor; all inlets dry	No	No
12	11/3/2022	11:50	Outfall PY5	324 Arthur	86	NA	NA	NA	NA	NA	Clear dry weather flow; this manhole receives flow from two structures to the north	No	No
13	11/9/2022	11:05	Outfall PY5	324 Arthur	2755	95	NA	NA	NA	NA	Clear dry weather flow; this manhole receives flow from two structures to the north. Heard sump running in manhole	No	No
14	11/3/2022	12:15	Outfall PY5	396 Arthur(Blanche/ Arthur)	75	95	NA	NA	NA	NA	Clear water in storm. Some calcium deposits	No	No
15	11/9/2022	11:25	Outfall PY5	396 Arthur(Blanche/ Arthur)	1314	95	NA	NA	NA	NA	Clear flow from north manhole. No flow from inlets. Flow less than 1/4." Leaf decomposition odor present.	No	No
16	11/3/2022	12:25	Outfall PY5	492 Arthur (Arthur/Farmer)	10	95	NA	NA	NA	NA	Clear water in storm	No	No
17	11/9/2022	11:40	Outfall PY5	492 Arthur (Arthur/Farmer)	10	NA	NA	NA	NA	NA	Clear water in storm; leaves, grass clippings; trickle flow from west inlet	No	No
18	11/3/2022	12:35	Outfall PY5	700 Arthur	52	NA	NA	NA	NA	NA	Water clear in sump; some trickle flow from west catch basin	No	No
19	11/9/2022	11:50	Outfall PY5	700 Arthur	52	NA	NA	NA	NA	NA	Water clear in sump; some trickle flow from west catch basin	No	No
20	11/9/2022	12:00	Outfall PY5	Arthur/Junction	NA	NA	NA	NA	NA	NA	All inlets dry, some sediment in sump; north inlet and outlet partially blocked by sediment	No	No

Appendix B
2022 Partners for Clean Water Regional IDEP Training Workshop
Alert Observer Training
Investigator Training
Attendee Lists

October 18, 2022 Alert Observer Attendee List
October 18, 2022 Advanced Investigator Training Attendee List
November 10, 2022 Alert Observer Attendee List
November 10, 2022 Advanced Investigator Training Attendee List

Appendix B2

2023 Wayne County IDEP Investigation Report

Wayne County Illicit Discharge Elimination Program
ARC IDEP Services 2023 Report

Executive Summary

Wayne County Department of Public Services Environmental Services Division (ESD) performed source identification advanced investigations in the Cities of Plymouth, Dearborn Heights, and Livonia (Table 1). Other tasks completed in 2023 included IDEP Training and activity reporting.

Table 1: Findings and recommended actions for illicit discharge investigations

Community	**Outfall/ target area**	**Findings**	**Recommendations**
Plymouth	PY8	Elevated *E. coli* and HF183 marker	Continued investigations in 2024 including dye testing residential properties located in storm sewer segments identified by televising/manhole sampling. Manhole sampling for *E. coli* and HF183 marker will be performed as needed
Plymouth	PY5	Elevated *E. coli* and HF183 marker	Continued investigations in 2024 including dye testing residential properties located in storm sewer segments identified by televising/manhole sampling. Manhole sampling for *E. coli* and HF183 marker will be performed as needed
Plymouth	Mill/Park Street	The illicit connection at 150/152 S. Mill Street was confirmed corrected. Communications and compliance actions with the City and the property owners of the 3 remaining illicit connections continued.	Re-issue the notice of violation letter to the new property owner at 195 S. Mill Street and continue communications and compliance actions to correct remaining violations. Once corrections are made, perform follow-up *E. coli* monitoring
Livonia	2680	Elevated *E. coli* and HF183 marker at outfall and laterals	Recommend continued investigation in 2024 including additional sampling for *E. coli* and HF183 marker, televising and dye testing as needed
Livonia	L3582	Low *E. coli* and HF 183 marker at outfall and upstream manhole	No further investigation is needed in 2024

Livonia	411	Elevated *E. coli* at outfall and instream, low HF183 marker in three outfall samples	Manhole sampling for *E. coli* and HF183 marker will be performed upstream of outfall
Livonia	5626	Low *E. coli* at outfall or no dry weather flow during investigations	No further investigation is needed in 2024
Dearborn Heights	Red Run Drain Outlet	Elevated *E. coli* and HF183 at drain outlet	Known sanitary sewer integrity issues in the drainage area; recommend no further investigation at this time

Task 1: Field Investigations

ESD conducted IDEP investigations at various outfalls and upstream storm sewer manholes. Water samples were tested for *E. coli* and observations were recorded regarding water clarity, color, odor, and debris. In addition to ESD's typical IDEP investigation methods, select samples were analyzed for the Human Source (HF183) marker. The presence of the marker above 1,000 gene copies (GC)/100 mL is used as a threshold to indicate potential human source of bacteria present when correlated with elevated *E. coli* levels.

City of Plymouth

ESD coordinated with ARC staff and the City of Plymouth to continue investigations of outfalls PY8, PY5, Holbrook Street, and the Park Street municipal separate storm sewer systems (MS4). The PY8 and PY5 outfalls discharge to the North Branch Tonquish Creek. The Park Street MS4 captures the Mill Street drainage and discharges to the Rouge River Middle Branch.

Outfall PY8

ESD did not perform any manhole and storm sewer lateral investigations upstream of the outfall in 2023. Elevated HF183 marker was identified in a segment of storm sewer during manhole sampling during investigative work of previous years. This segment is the furthest upstream segment of the Blunk Street storm sewer (between Junction and Farmer Streets). The sanitary sewer was televised in sections that were accessible and that footage was used to account for sanitary sewer taps. Dye testing the residences with no evidence of sanitary sewer taps identified by the televising occurred in 2023. The dye testing did not identify illicit connections. One residence on Blunk Steet remains to be dye tested.

Outfall PY5

ESD did not perform any manhole and storm sewer lateral investigations upstream of the outfall in 2023. Elevated HF183 marker was identified in segments of storm sewer during manhole sampling during investigative work of previous years. The City of Plymouth dye tested four out of seven residences in the investigation area on William Street during 2022, and dye tested two residences in 2023. The residences dye tested did not have illicit connections. The one remaining residence on William Street is not allowing access to perform a dye test. Three residences on Pacific Street have not responded to notification letters.

Completing dye testing of remaining residences, and additional manhole sampling (*E. coli* and HF183), as needed, is planned for this investigation area in 2024.

Park Street/Mill Street Investigation Area

During previous years of investigation, there were four residences with illicit connections identified in the Mill/Park Street investigation area. In 2022, the duplex located at 150/152 S. Mill Street was confirmed corrected by the City of Plymouth. Three residences with illicit connections remain. Two of these discharge into the Wayne County Mill Street MS4 (195 S. Mill and 485 S. Mill). The third, a residence on Amelia Street (175 Amelia), discharges into the City of Plymouth MS4. Amelia Street is tributary to the Mill Street storm sewer. Efforts are ongoing to resolve the remaining illicit connections. This effort includes reissuing the notice of violation to the new property owner at 195 S. Mill as well as continuing to work with the City and the property owners to ensure the proper sanitary sewer connections are made and the illicit connections eliminated.

Once the illicit connections are corrected, the Mill Street storm sewer laterals and the Park Street storm sewer outfall will be resampled.

City of Livonia

Outfall 2680

ESD investigated Outfall 2680 and upstream laterals on June 21, July 18, and August 10, 2023. The outfall was sampled and two storm sewer laterals. Elevated levels of *E. coli* and HF183 were detected at the outfall. HF183 marker levels above 1000 GC/100mL were detected in samples taken in storm sewer laterals upstream. This storm sewer system was investigated in 2021 and is detailed in the 2021 Wayne County ARC IDEP Investigation Report. There were several manholes with *E. coli* levels above 2000 CFU/100mL. Further investigation of the storm sewer drainage area is recommended for 2024. The investigation area is shown in Figure 1 and the dry weather screening data is in Appendix A, Table A1.

Outfall L3582

ESD investigated and sampled the first manhole upstream of Outfall L3582 on June 21, 2023. Due to the low level of *E. coli* and HF183 in the samples collected in 2022, and 2023, no further investigation in this area is recommended. A full dog waste bag was present in the outfall, likely washed into the storm sewer during a rain event. The investigation area is shown in Figure 2 and the dry weather screening data is in Appendix A, Table A2.

Outfall 411

ESD investigated and sampled Outfall 411 on June 21, July 18, and August 10, 2023. There are high levels of *E. coli* present in the samples collected, but the HF183 marker was below 100 gene copies/100mL in the samples. There are traces of animal activity (tracks and droppings) at the outfall outlet. This storm sewer system was investigated in 2019 and that investigation is detailed in the 2019 Wayne County ARC IDEP Investigation Report. The *E. coli* concentrations in the storm sewer system were low during the 2019 investigation. ARC performed weekly water quality monitoring at an instream site in the vicinity of the outfall in 2023 for the Watershed Hub. The data from the instream site had results with elevated *E. coli* and this stream segment flagged for investigation. Due to the elevated *E. coli* levels in the instream results, the Outfall 411 samples, and inconclusive human source marker results, further manhole sampling upstream of the outfall is recommended for 2024. The investigation area is shown in Figure 3 and the dry weather screening data is in Appendix A, Table A3.

Outfall 5626

ESD investigated Outfall L3582 on June 21, and July 18, 2023. Due to the lack of dry weather flow and the low level of *E. coli* in the sample collected, no further investigation in this area is recommended. The investigation area is shown in Figure 4 and the dry weather screening data is in Appendix A, Table A4.

L-1619

ESD provided ARC staff support in the investigations of L-1619 during 2023. Details of these investigations are included in the 2023 IDEP Investigation Summary prepared by ARC staff.

City of Dearborn Heights

Red Run Drain Outlet

The Red Run Drain outlet point was added to the investigation priority list in March 2023. ESD investigated the Red Run Drain outlet, which is where the Red Run Drain, an enclosed Wayne County Drain, opens and travels to its confluence with the Middle Rouge River in Dearborn Heights. The water is discolored and turbid in the open channel. Elevated *E. coli* and HF183 marker levels were detected in the samples collected. There are known sanitary sewer system integrity issues in the Red Run drainage area. There is remediation plan to address these. It is recommended that no further ARC IDEP investigations be performed at this time. The investigation area is shown in Figure 5 and the dry weather screening data is in Appendix B, Table B1.

Task 2 IDEP Training

Four IDEP training workshops were presented in 2023 in partnership with the Southeast Michigan Council of Governments (SEMCOG) Partners for Clean Water and the ARC. ESD provides support to ARC and SEMCOG in these training efforts. The Alert Observer training, that was redesigned for a virtual platform in 2020, was offered as a virtual and in-person option in 2023. The IDEP Investigator training workshop was in-person only.

Alert Observer

The IDEP Alert Observer training workshop is a one-hour session that includes a question and answer session at its conclusion. This training introduces illicit dicharges, why it is important to identify and report, and reporting procedures. The virtual and in-person training workshop was held virtually and in-person in Macomb County at the Robert A. Verkuilen Building on October 10, and at the Washtenaw County Learning Resources Center in Washtenaw County October 11. A total of 100 persons attended the sessions. Fourty-four of the 100 attendees (44 percent) were representatives of (or consultants representing) ARC member communities.

Advanced Investigator

The IDEP Advanced Investigator training workshop is a two-hour session that included a question and answer session at its conclusion. This training details the various techniques used to investigate, identify and eliminate illicit discharge sources. The Advanced Investigator training in-person training workshop was held in Macomb County at the Robert A. Verkuilen Building October 10, and in Washtenaw County Learning Resources Center in Washtenaw County October 11. A total of 60 persons attended the sessions. Twenty-eight of the 60 attendees (47 percent) were representatives of (or consultants representing) ARC member communities.

Appendix C contains the attendance lists for the Alert Observer and Advanced Investigator workshops. Attendees representing ARC communities are highlighted.

Task 3 Reporting

Written progress summaries of IDEP activities were provided. The 2022 IDEP Activities Summary was completed and the 2023 activities summary drafted.

Figures
2023 ARC IDEP Field Investigations

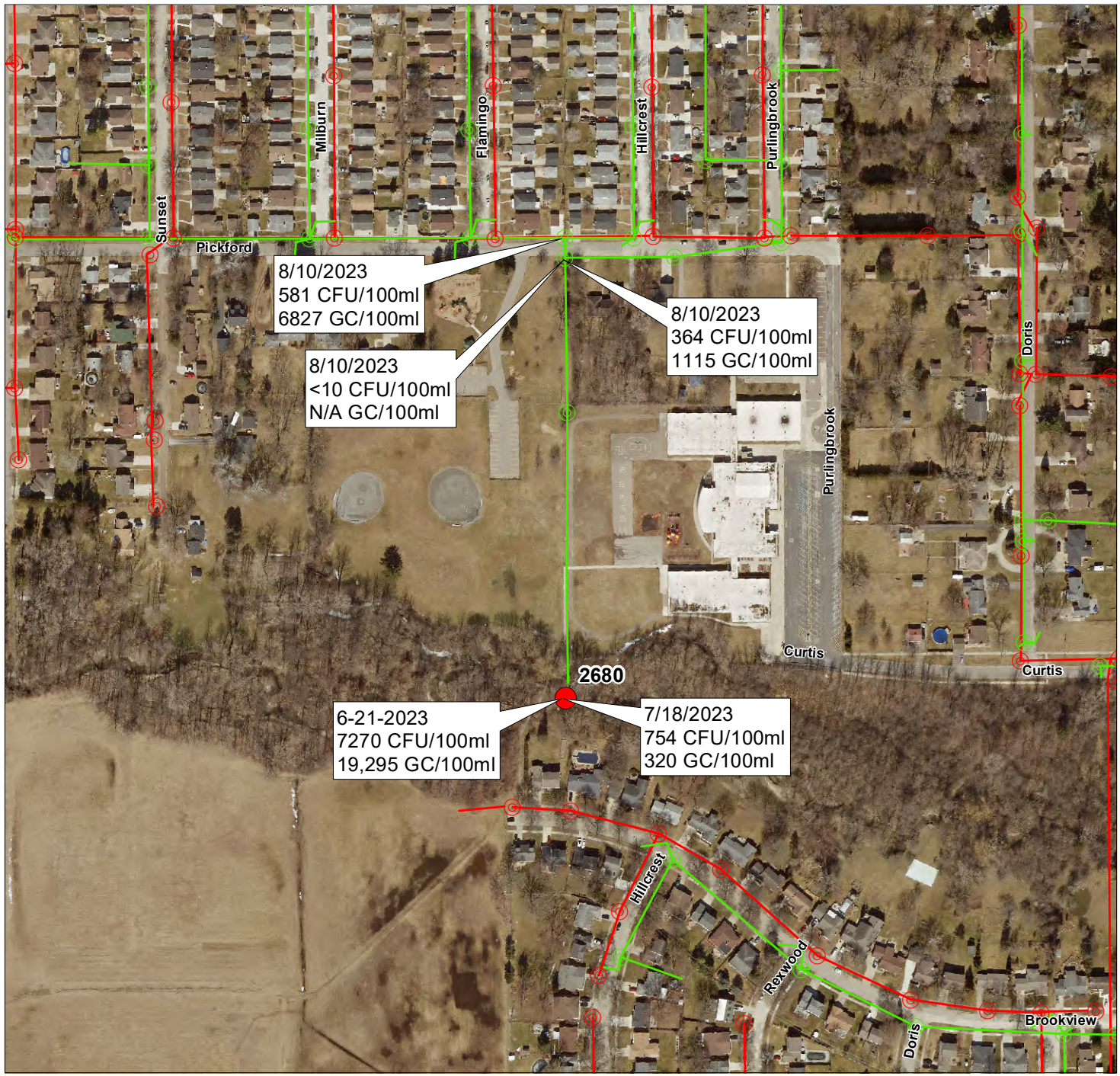
Figure 1: Outfall 2680 Investigation Area Map

Figure 2: Outfall L3582 Investigation Area Map

Figure 3 Outfall 411 Investigation Area Map

Figure 4 Outfall 5626 Investigation Area Map

Figure 5 Red Run Drain Investigation Area Map



CITY OF LIVONIA
2023 ARC IDEP Investigation
Outfall 2680

- Outfall
- Stormwater Gravity Main
- Stormwater Manhole
- Sanitary Gravity Main & Lateral Lines
- Sanitary Manhole

E. coli results-
Colony-forming units (CF) per 100 ml

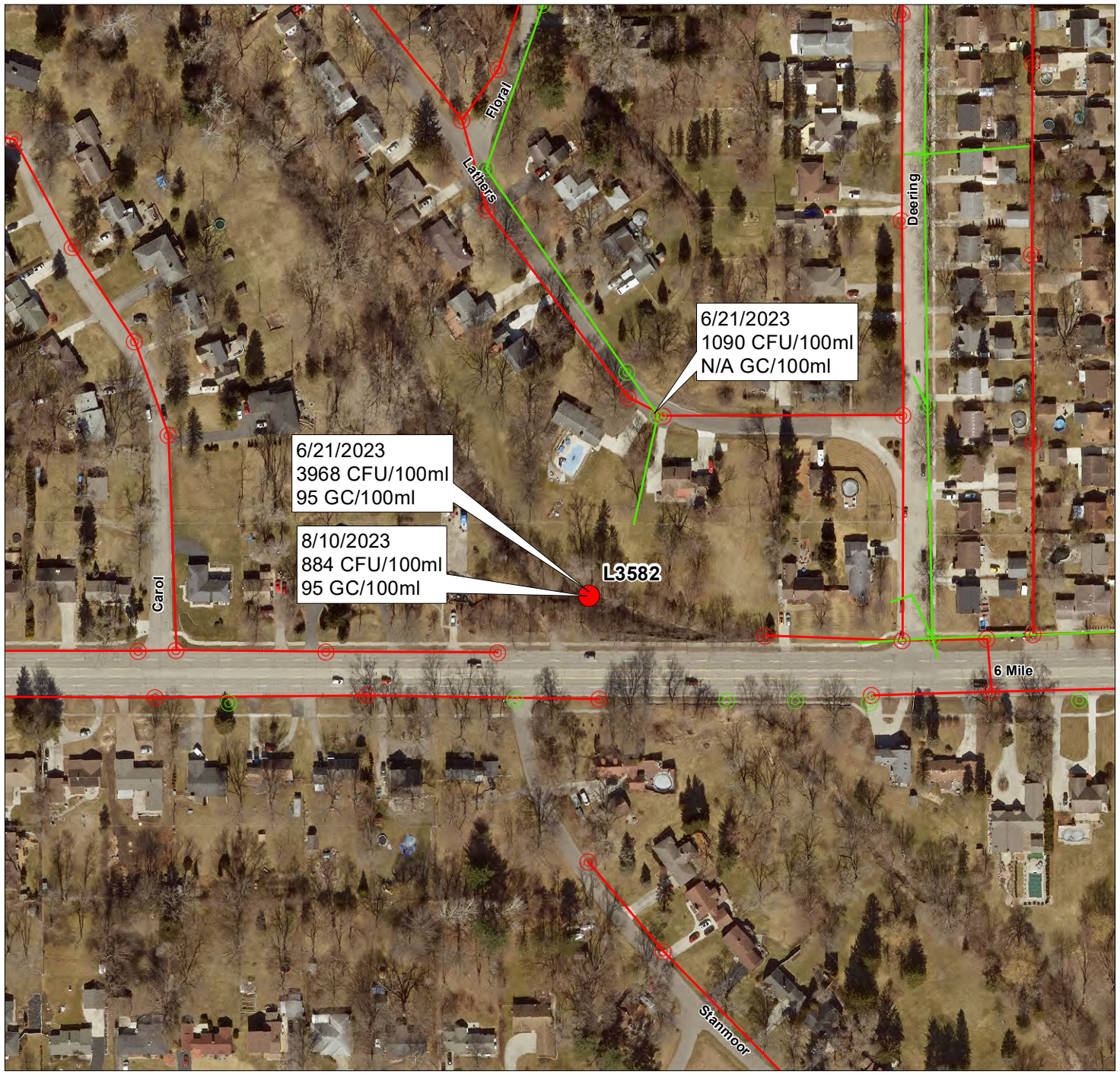
HF183 results -
Gene copies (GC) per 100 ml

N

100 0 500 Feet

Dept. of Public Services
Environmental Services Division

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3/2024



CITY OF LIVONIA
2023 ARC IDEP Investigation
Outfall L3582

- Outfall
- Stormwater Gravity Main
- Stormwater Manhole
- Sanitary Gravity Main & Lateral Lines
- Sanitary Manhole

E. coli results-
Colony-forming units (CF) per 100 ml

HF183 results -
Gene copies (GC) per 100 ml

N

100 0 300 Feet

Dept. of Public Services
Environmental Services Division

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3/2024



CITY OF LIVONIA
2023 ARC IDEP Investigation
Outfall 411

Outfall

Stormwater Gravity Main

Stormwater Manhole

Sanitary Gravity Main & Lateral Lines

Sanitary Manhole

E. coli results-
Colony-forming units (CF) per 100 ml

HF183 results -
Gene copies (GC) per 100 ml

N

250 0 750 Feet

Dept. of Public Services
Environmental Services Division

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3/2024



CITY OF LIVONIA
2023 ARC IDEP Investigation
Outfall 5626

Outfall

Stormwater Gravity Main

Stormwater Manhole

Sanitary Gravity Main & Lateral Lines

Sanitary Manhole

E. coli results-
Colony-forming units (CF) per 100 ml

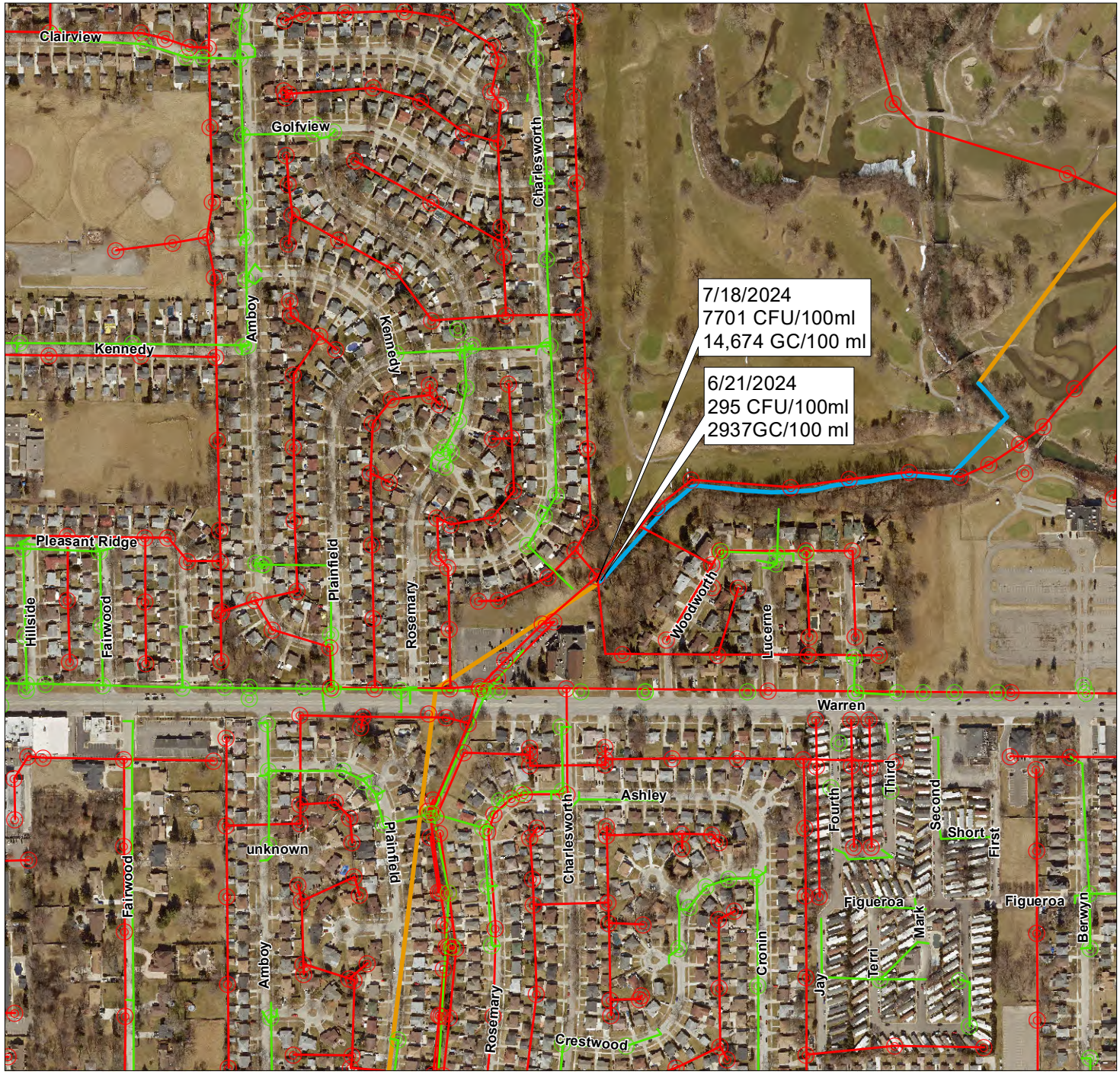
HF183 results -
Gene copies (GC) per 100 ml

N

250 0 500 Feet

Dept. of Public Services
Environmental Services Division

F:\GIS\map\mxd\asize\wshed\Livonia 2023 ARC IDEP outfall 5626.mxd
3/2024



CITY OF DEARBORN HEIGHTS
2023 ARC IDEP Investigation
Red Run Drain

Stormwater Gravity Main

Stormwater Manhole

Sanitary Gravity Main & Lateral Lines

Sanitary Manhole

Wayne County drain - open

Wayne County dtrain - closed

E. coli results-
Colony-forming units (CF) per 100 ml

HF183 results -
Gene copies (GC) per 100 ml

N

250 0 750 Feet

Dept. of Public Services
Environmental Services Division

F:\GIS\map\mxd\asize\wshed\Dearborn Hts 2023 ARC IDEP Red Run Drain.mxd
3/2024

Appendix A
2023 ARC IDEP Field Investigation Data
City of Livonia

Table A1: Outfall 2680 Investigation Area
Table A2: Outfall L3582 Investigation Area
Table A3: Outfall 411 Investigation Area
Table A4: Outfall 5626 Investigation Area

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Number	Date	Investigation Location	Site Location	*E. coli (colony-forming units (CFU)/100mL)*)	HF183 Gene copies (GC)/100mL	Ammonia (PPM)	Surfactant (PPM)	Conductivity (mS/cm)	Temperature (degrees Celsius)	Observations	Sanitary Flow Evidence	Odor
1	6/21/2023	Outfall 2680	Outfall 2680	7270	19295	NA	NA	NA	NA	Water clear at outfall	No	No
2	7/18/2023	Outfall 2680	Outfall 2680	754	320	NA	NA	NA	NA	Water clear at outfall, musty odor, some racoon tracks at outlet apron	No	No
3	8/10/2023	Pickford West	Outfall 2680	581	6827	NA	NA	NA	NA	Clear flow from west inlet. Other two inlets dry. Musty odor	No	No
4	8/10/2023	Pickford East	Outfall 2680	364	1115	NA	NA	NA	NA	Trickle flow from east inlet. Flow is clear. Large volume of flow from north inlet	No	No
5	8/10/2023	Pickford 1	Outfall 2680	<10	NA	NA	NA	NA	NA	Heard water running in manhole. Sump full of clear water. No flow visible. Musty odor	No	No

Number	Date	Investigation Location	Site Location	*E. coli (colony-forming units (CFU)/100mL)*)	HF183 Gene copies (GC)/100mL	Ammonia (PPM)	Surfactant (PPM)	Conductivity (mS/cm)	Temperature (degrees Celsius)	Observations	Sanitary Flow Evidence	Odor
1	6/21/2023	Outfall L3582	Outfall L3582	3968	95	NA	NA	NA	NA	Water clear at outfall	No	No
2	6/21/2023	Outfall L3582	17251 Lathers	1090	NA	NA	NA	NA	NA	Water clear at outfall, sedimentation present	No	No
2	7/18/2023	Outfall L3582	Outfall L3582	884	95	NA	NA	NA	NA	Water clear, sedimentation present. A full dog waste bag at outlet of outfall. Dog waste odor present	No	Yes

Number	Date	Investigation Location	Site Location	*E. coli (colony-forming units (CFU)/100mL)*)	HF183 Gene copies (GC)/100mL	Ammonia (PPM)	Surfactant (PPM)	Conductivity (mS/cm)	Temperature (degrees Celsius)	Observations	Sanitary Flow Evidence	Odor
1	6/21/2023	Outfall 411	Outfall 411	1396	638	NA	NA	NA	NA	Clear flow at outfall, some animal tracks	No	No
2	7/18/2023	Outfall 411	Outfall 411	14136	251	NA	NA	NA	NA	Clear flow at outfall	No	No
3	8/10/2023	Outfall 411	Outfall 411	<24196	923	NA	NA	NA	NA	Trickle clear flow at outfall, lot of animal tracks	No	No

Number	Date	Investigation Location	Site Location	*E. coli (colony-forming units (CFU)/100mL)*)	HF183 Gene copies (GC)/100mL	Ammonia (PPM)	Surfactant (PPM)	Conductivity (mS/cm)	Temperature (degrees Celsius)	Observations	Sanitary Flow Evidence	Odor
1	6/21/2023	Outfall 5626	Outfall 5626	NA	NA	NA	NA	NA	NA	Outfall dry	No	No
2	7/18/2023	Outfall 5626	Outfall 5626	132	NA	NA	NA	NA	NA	Clear flow at outfall-algal growth present	No	No

Appendix B
2023 ARC IDEP Field Investigation Data
City of Dearborn Heights

Table B1: Red Run Drain Outlet Investigation Area

Number	Date	Investigation Location	Site Location	*E. coli (colony-forming units (CFU)/100mL)*)	HF183 Gene copies (GC)/100mL	Ammonia (PPM)	Surfactant (PPM)	Conductivity (mS/cm)	Temperature (degrees Celsius)	Observations	Sanitary Flow Evidence	Odor
1	6/21/2023	Red Run Drain Outlet	Red Run Drain Outlet	295	2937	NA	NA	NA	NA	Water clear at outlet. Gray discoloration downstream at pedestrian bridge. No flow from outfalls on right bank	No	No
2	7/18/2023	Red Run Drain Outlet	Red Run Drain Outlet	7701	14674	NA	NA	NA	NA	Water clear at outlet. Gray discoloration downstream at pedestrian bridge. No flow from outfalls on right bank	No	No

Appendix C
2023 Partners for Clean Water Regional IDEP Training Workshop
Alert Observer Training
Investigator Training
Attendee Lists

October 10, 2023 Alert Observer Attendee List Macomb County
October 10, 2023 IDEP Investigator Training Attendee List Macomb County
October 11, 2023 Alert Observer Attendee List Washtenaw County
October 11, 2023 IDEP Investigator Training Attendee List Washtenaw County

SEMCOG UNIVERSITY
ALERT OBSERVER TRAINING
ATTENDANCE LIST
OCTOBER 10, 2023
MACOMB COUNTY
INPERSON AND ONLINE

Number	Name	Community
1	Elizabeth Guzanek	Charter Township of Orion
2	William Basigkow	Charter Township of Orion
3	Eric Miller	Charter Township Of Van Buren
4	Gary Hernandez	Charter Township Of West Bloomfield
5	Benjamin Stapish	City of Ann Arbor
6	Cory Holt	City of Ann Arbor
7	Eica Drake	City of Ann Arbor
8	Mark Sirls	City of Ann Arbor
9	Andrew Bahleda	City of Farmington Hills
10	Joshua Harris	City of Farmington Hills
11	Ray Williams	City of Farmington Hills
12	David Tate	City of Hazel Park
13	Doug Moore	City of Livonia
14	Mike Domine	City of Northville
15	Adam Yako	City of Novi
16	Humna Anjum	City of Novi
17	Rebecca Runkel	City of Novi
18	Michael Lee	City of Orchard Lake Village
19	Cheryl Hitchcock	City of Southfield
20	Javion Boyd	City of Southfield
21	Ricardo Harris	City of Southfield
22	Robert Ward	City of Southfield
23	Ethan Goodwell	City of St. Clair Shores
24	Gabriel Guzman	City of St. Clair Shores
25	Ryan Cantin	City of St. Clair Shores
26	Michael Way	The Village of Grosse Pointe Shores
27	WIlliam Diamond	City of Utica
28	Jesus Plasencia	City of Wyandotte
29	Bonnie Wessler, AICP	City of Ypsilanti
30	Megan McReynolds	DLZ
31	Billy Ainsworth	Fort Gratiot Twp. DPW
32	Gene Kowalski	Grosse Ile Township
33	Eric Jarvi	Ira Township
34	Jacob Alessandri	Ira Township
35	Joe Nadolski	Ira Township
36	Boyd Getz	Macomb County
37	Justin Selden	Macomb County
38	Barry Mosher	Macomb Township DPW
39	Ryan Kosi	Macomb Township DPW Macomb, MI
40	Brad Lear	Northville Township
41	Mitchell Berendt	Northville Township
42	Ian Anderson	Oakland County Parks and Recreation
43	Jamie Weasel	Oakland County Parks And Recreation
44	Kyle Adams	Oakland County Parks And Recreation
45	Laurie Cooper	Oakland County Parks And Recreation
46	Mickey Garner	Oakland County Parks And Recreation

SEMCOG UNIVERSITY
ALERT OBSERVER TRAINING
ATTENDANCE LIST
OCTOBER 10, 2023
MACOMB COUNTY
INPERSON AND ONLINE

Number	Name	Community
47	Noah Alessi	Oakland County Parks And Recreation
48	Sean Young	Oakland County Parks And Recreation
49	Tony Urbanik	Oakland County Parks And Recreation
50	Christy Kelly	Road Commission For Oakland County
51	Nate Jessee	Road Commission For Oakland County
52	Katherine Grantham	SEMCOG
53	Wes Sanchez	Village of Lake Orion
54	Michael Karll	Village of Milford
55	Anthony Herron	West Bloomfield Twp Water
56	Steve Baehren	West Bloomfield Twp Water
57	Keith Pung	WMU
58	Bill Lieberman	
59	Brett Mittelstedt	
60	Mary Einheuser	
61	Natalie Hoff	
ARC Member Community/Partner		

SEMCOG UNIVERSITY
ALERT OBSERVER TRAINING
ATTENDANCE LIST
OCTOBER 11, 2023
WASHTENAW COUNTY
INPERSON AND ONLINE

Number	Name	Community
1	Carrie Loya-Smalley	Alfred Benesch & Company
2	Garrett Brice	Charter Township Of Van Buren
3	Jason Vondrak	Charter Township Of Van Buren
4	Marcus Zysk	Charter Township of Van Buren
5	Ronald Akers	Charter Township of Van Buren
6	Joel Mead	City of Ann Arbor
7	Steve Pierce	City of Ann Arbor
8	Travis Conley	City of Ann Arbor
9	Cortney Quist	City of Dexter
10	Eric Hartman	City of Dexter
11	Grace Whitney	City Of Dexter
12	Jacob Donner	City of Dexter
13	Robert Hehr	City of Dexter
14	Jerome Bivens	City of Inkster
15	La-Tonia Triplett	City of Inkster
16	Doug Moore	City of Livonia
17	Kevin Sargent	City of Trenton
18	Chris Kowal	City of Wayne
19	Daniel Brist	City of Wayne
20	Jacob Shirley	City of Wayne
21	Darren Massey	City of Ypsilanti
22	David Blakley	City of Ypsilanti
23	Gary Burchwell	City of Ypsilanti
24	Kenneth Dancy	City of Ypsilanti
25	Robert Gillespie	City of Ypsilanti
26	Robert Nash	City of Ypsilanti
27	Kelly McCabe	Huron River Watershed Council
28	Cameron Bump	Plymouth Township
29	Luke Sims	Plymouth Township
30	Nathaniel Martin	Plymouth Township
31	Steven Champagne	Plymouth Township
32	Dana Wilkinson	University of Michigan
33	Joshua Michael	Veterans Affairs
34	Samuel Friedman	Veterans Affairs
35	Carrie Benesch	
36	ldoppke	
37	Maya Roots	
38	Rob Dahmen	
39	Steve Baldante	
	ARC Member Community/Partner	

SEMCOG UNIVERSITY
IDEP INVESTIGATOR TRAINING
ATTENDANCE LIST
OCTOBER 10, 2023
INPERSON ONLY
MACOMB COUNTY

Number	Name	Community
1	Brandon Patton	Charter Township Of Van Buren
2	Eric Miller	Charter Township Of Van Buren
3	Benjamin Stapish	City of Ann Arbor
4	Cory Holt	City of Ann Arbor
5	Erica Drake	City of Ann Arbor
6	Mark Sirls	City of Ann Arbor
7	Ray Williams	City of Farmington Hills
8	David Tate	City of Hazel Park
9	Jacob McTurnan	City of Hazel Park
10	Michael Lee	City of Orchard Lake Village
11	Roger Gardner	City of Orchard Lake Village
12	Cheryl Hitchcock	City of Southfield
13	Javion Boyd	City of Southfield
14	Ricardo Harris	City of Southfield
15	Robert Ward	City of Southfield
16	Ethan Goodwell	City of St. Clair Shores
17	Gabriel Guzman	City of St. Clair Shores
18	Ryan Cantin	City of St. Clair Shores
19	Michael Way	The Village of Grosse Pointe Shores
20	WIlliam Diamond	City of Utica
21	Megan McReynolds	DLZ
22	Jeff Parent	Fort Gratiot Twp. DPW
23	Eric Jarvi	Ira Township
24	Jacob Alessandri	Ira Township
25	Boyd Getz	Macomb County
26	Justin Selden	Macomb County
27	Eric Diesing	Oakland County Parks and Recreation
28	Ian Anderson	Oakland County Parks and Recreation
29	Jamie Weasel	Oakland County Parks And Recreation
30	Laurie Cooper	Oakland County Parks And Recreation
31	Mickey Garner	Oakland County Parks And Recreation
32	Noah Alessi	Oakland County Parks And Recreation
33	Stephen Whaley	Oakland County Parks And Recreation
34	Christy Kelly	Road Commission For Oakland County
35	Nate Jessee	Road Commission For Oakland County
36	Bill Lieberman	
37	Brett Mittelstedt	
ARC Member Community/Partner		

SEMCOG UNIVERSITY
IDEP INVESTIGATOR TRAINING
ATTENDANCE LIST
OCTOBER 11, 2023
INPERSON ONLY
WASHTENAW COUNTY

Number	Name	Community
1	Carrie Loya-Smalley	Alfred Benesch & Company
2	Garrett Brice	Charter Township Of Van Buren
3	Jason Vondrak	Charter Township Of Van Buren
4	Ronald Akers	Charter Township Of Van Buren
5	Joel Mead	City of Ann Arbor
6	Steve Pierce	City of Ann Arbor
7	Cortney Quist	City of Dexter
8	Eric Hartman	City of Dexter
9	Grace Whitney	City Of Dexter
10	Jacob Donner	City of Dexter
11	Robert Hehr	City of Dexter
12	Adam Yako	City of Novi
13	Humna Anjum	City of Novi
14	Kevin Sargent	City of Trenton
15	Chris Kowal	City of Wayne
16	Daniel Brist	City of Wayne
17	Jacob Shirley	City of Wayne
18	David Blakley	City of Ypsilanti
19	Cameron Bump	Plymouth Township
20	Steven Champagne	Plymouth Township
21	Dana Wilkinson, MS	University Of Michigan
22	Samuel Friedman	Veterans Affairs
23	Gary Burchwell	
ARC Member Community/Partner		

Appendix B3

2022 ARC IDEP Investigation Report

Annette DeMaria, P.E., PMP
Executive Director

Auburn Hills
Beverly Hills
Bingham Farms
Birmingham
Bloomfield Hills
Bloomfield Twp.
Canton Twp.
Commerce Twp.
Dearborn Heights
Farmington
Farmington Hills
Franklin
Garden City
Henry Ford College
Inkster
Lathrup Village
Livonia
Melvindale
Northville
Northville Twp.
Novi
Oak Park
Oakland County
Orchard Lake
Plymouth
Plymouth Twp.
Redford Twp.
Rochester Hills
Romulus
Schoolcraft College
Southfield
Troy
University of Michigan-Dearborn
Van Buren Twp.
Walled Lake
Washtenaw County
Wayne
Wayne County
Wayne County Airport Authority
West Bloomfield Twp.
Westland
Wixom

Cooperating Partners:
Cranbrook Institute of Science
Friends of the Rouge
Great Lakes Water Authority
Rouge River Advisory Council
SEMCOG
Southeastern Oakland County Water Authority

TO: **Karen Mondora, ARC Technical Committee Chair**

FROM: **Emily Levine, Technical Committee Coordinator**

DATE: **February 15, 2023**

SUBJECT: **2022 IDEP Investigation Summary**

In 2022, ARC staff continued to work on an ongoing illicit discharge investigation in Oakland County and assisted Wayne County with investigations in Livonia and Inkster. These investigations were in accordance with the Rouge River Collaborative Illicit Discharge Elimination Plan. These investigations were prompted by the outfall screening efforts conducted in 2018 and 2019, as well as additional sampling conducted by Wayne County in 2020.

The results of the investigations are summarized in Table 1. More detail can be found in the investigation reports which were sent to the communities (Attachment A).

Table 1. Status and Results of Illicit Discharge Investigations

Permittee	Outfall ID	Status	Result
Beverly Hills	BV51	Ongoing	Further investigation required
Livonia	U2008221	Ongoing	An illicit connection was identified and corrected. Follow-up investigation revealed that an additional pollutant source may be present, resulting in further investigation required
Livonia	L1619	Ongoing	Further investigation required
Inkster	Perrin Drain	Ongoing	Tap identified, further investigation required

In addition, ARC staff conducted sampling in accordance with the ARC's Collaborative Total Maximum Daily Load (TMDL) Implementation Plan requirements. This included completing DO monitoring in Johnson Creek for two months, screening 83 outfalls for *E. coli*, and sampling 28 instream sites for suspended sediment. More information about this can be found in the 2022 Rouge River Water Quality Assessment Report.

In 2023, ARC staff will continue source investigations on the outstanding issues in accordance with the Plan and as directed by the Technical Committee. This will also include additional investigations that are in response to results from the 2022 TMDL sampling efforts.

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Attachment A
Community-specific Investigation Reports

Annette DeMaria, P.E., PMP
Executive Director

Auburn Hills
Beverly Hills
Bingham Farms
Birmingham
Bloomfield Hills
Bloomfield Twp.
Canton Twp.
Commerce Twp.
Dearborn Heights
Farmington
Farmington Hills
Franklin
Garden City
Henry Ford College
Inkster
Lathrup Village
Livonia
Melvindale
Northville
Northville Twp.
Novi
Oak Park
Oakland County
Orchard Lake
Plymouth
Plymouth Twp.
Redford Twp.
Rochester Hills
Romulus
Schoolcraft College
Southfield
Troy
University of Michigan-Dearborn
Van Buren Twp.
Walled Lake
Washtenaw County
Wayne
Wayne County
Wayne County Airport Authority
West Bloomfield Twp.
Westland
Wixom

Cooperating Partners:
Cranbrook Institute of Science
Friends of the Rouge
Great Lakes Water Authority
Rouge River Advisory Council
SEMCOG
Southeastern Oakland County Water Authority

TO: **Neil Johnson, Village of Beverly Hills Director of Public Services**

FROM: **Emily Levine, ARC Staff**

DATE: **November 7, 2022**

SUBJECT: **IDEP Investigation Results: Outfall BV51 (Sleepy Hollow Lane)**

ARC staff continued illicit discharge investigation on storm drain outfall BV51 in response to findings from the 2018 outfall screening and 2019 and 2020 investigations. Our investigations did not reveal the source of *E. coli* entering the drain and no illicit connection has been identified.

Background

Outfall BV51 was investigated due to the high *E. coli* concentrations found during the outfall survey conducted in 2018. At that time, the *E. coli* concentration was 3,076 MPN/100 ml which can be indicative of an illicit discharge containing sanitary sewage. ARC staff reinspected the outfall in 2019 and found *E. coli* concentrations at 201 and >24,196 MPN/100 ml respectively.

ARC staff reinspected the outfall on August 19, September 15, and November 17, 2020. As was the case in 2019, the results varied greatly in 2020, with *E. coli* concentrations of 573, >24,196, and 1,081 MPN/100 ml respectively (See Table 1). The results from the September and November sampling events showed Human *Bacteroides* concentrations of 72,000 and <354 gene copies/100 ml respectively. There were no physical signs (ex: odor, staining, debris, organic growth) of a sewage discharge to the storm drain in the outfall or any of the manholes. Likewise, there were no obvious signs of animal fecal impacts to the drain.

The outfall drains a portion of Sleepy Hollow Lane, Fiddlers Cove Road, and Metamora Lane. The receiving water is an unnamed tributary of the Rouge River (Figure 1).

Results

Based on sampling results from previous inspections, ARC staff coordinated with the Oakland County Water Resource Commissioner (OCWRC) to televise the drain west of Outfall BV51 on May 19, 2021. Only the west line was televised because flow had not been observed coming from the north and south during dry weather. A tap was identified in the storm drain that was believed to be a possible illicit connection, although no staining or evidence of sewage was observed (Figure 2). Based on the pipe's location and direction, it appeared to be coming from the house at 31349 Sleepy Hollow Lane. On July 23, 2021, ARC staff coordinated with the Village of Beverly Hills to dye test 31349 Sleepy Hollow Lane. The dye testing revealed that all three bathrooms in the house were correctly connected to the sanitary drain and no dye was observed entering the storm drain.

ARC staff coordinated with the Village of Beverly Hills and OCWRC to televise the remainder of the storm drain on July 26, 2022. The drains from BV51-1 to BV51-2, and the drain from BV51-3 to BV51-2 were televised. BV51-2 is buried. No possible illicit connection was identified.

Table 1. Sampling Results (*E. coli* in MPN/100 mL and Human *Bacteroides* in gene copies/100 ml)

	E. coli	***E. coli***	***E. coli***	***E. coli***	***E. coli***	**Human *Bacteroides***	***E. coli***	**Human *Bacteroides***
	7/9/18	**8/15/19**	**9/19/19**	**8/19/20**	**9/15/20**	**9/15/20**	**11/17/20**	**11/17/20**
BV51-0	3,076	201	>24,196	573	>24,196	72,000	1,081	<354

Conclusions and Recommendations

Work to date indicates that no illicit connection has been identified upstream of BV51. The manhole at BV51-2 is buried. We recommend digging up BV51-2 to be able to further investigate it and sample the manhole.

This work is being completed as outlined in the Rouge River Collaborative IDEP Plan in compliance with the Village's MS4 permit and as a result of your ARC membership. If you have any questions, I can be reached at 313-963-6600 or elevine@ectinc.com.

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Figure 1. Storm Drain and Sampling Locations

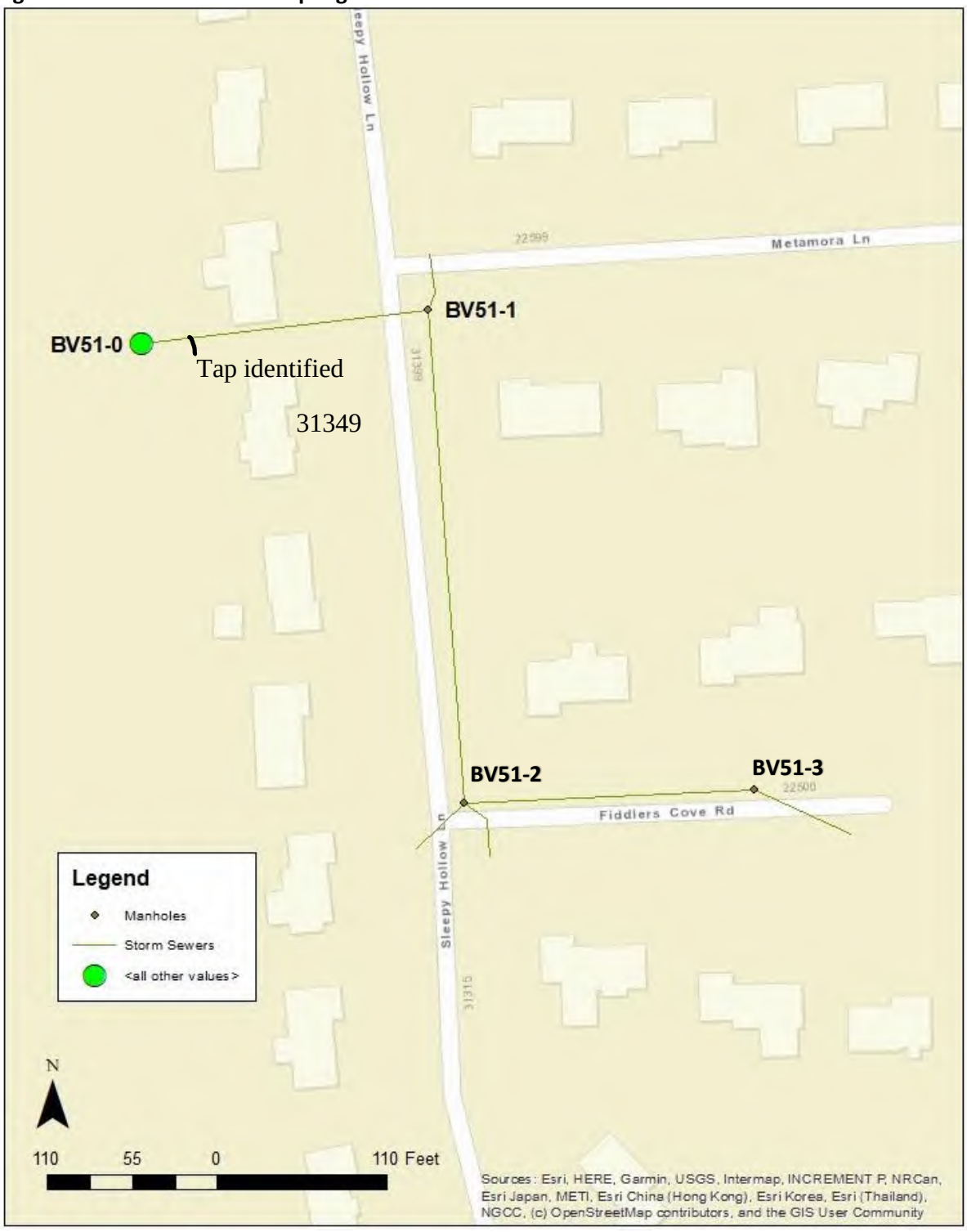


Figure 2. Tap to Storm Drain at 14.2 ft east of BV51-0



Annette DeMaria, P.E., PMP
Executive Director

Auburn Hills
Beverly Hills
Bingham Farms
Birmingham
Bloomfield Hills
Bloomfield Twp.
Canton Twp.
Commerce Twp.
Dearborn Heights
Farmington
Farmington Hills
Franklin
Garden City
Henry Ford College
Inkster
Lathrup Village
Livonia
Melvindale
Northville
Northville Twp.
Novi
Oak Park
Oakland County
Orchard Lake
Plymouth
Plymouth Twp.
Redford Twp.
Rochester Hills
Romulus
Schoolcraft College
Southfield
Troy
University of Michigan-Dearborn
Van Buren Twp.
Walled Lake
Washtenaw County
Wayne
Wayne County
Wayne County Airport Authority
West Bloomfield Twp.
Westland
Wixom

Cooperating Partners:
Cranbrook Institute of Science
Friends of the Rouge
Great Lakes Water Authority
Rouge River Advisory Council
SEMCOG
Southeastern Oakland County Water Authority

Alliance of Rouge Communities
OURS TO PROTECT
Working together, restoring the river

TO: **Doug Moore, City of Livonia**

FROM: **Emily Levine, ARC Staff**

DATE: **January 6, 2023**

SUBJECT: **IDEP Investigation Results: Outfall L1619**

ARC staff continued the illicit discharge investigation on storm drain outfall L1619 in response to findings from the 2018 outfall screening and subsequent investigations conducted by Wayne County. Our investigations have not identified an illicit connection and further investigation is recommended.

Background

Outfall L1619 was investigated due to the high *E. coli* concentrations found during the outfall survey conducted in 2018. At that time, the *E. coli* concentration was 15,531 MPN/100 ml which is indicative of an illicit discharge containing sanitary sewage. Wayne County conducted follow-up investigations, which narrowed down the source to being upstream of a manhole located in the grass along the north side of Seven Mile Road, near a Chicken Shack restaurant (Figure 1). *E. coli* and Human *Bacteroides* levels at this manhole have been found to be elevated (Table 1).

The drainage area of the manhole in front of the Chicken Shack was unclear, as the storm drain map provided by the City of Livonia appears to be incomplete. Therefore, televising was recommended to determine the extent of the storm drain and search for any illicit connections.

Results

ECT worked with a televising crew on December 21, 2022 to televise the line starting at the manhole by the Chicken Shack along Seven Mile Road and ending at Middlebelt Road (Figure 2). Eight manholes were encountered along this section of pipe. No taps were found between manholes and the line ended at a 12” pipe that was bulkheaded. Inlets in the manholes appear to connect to catch basins along Seven Mile Road and to the parking areas of the businesses to the north of the storm drain. The CCTV report is included as Attachment A.

Table 1. Sampling Results (*E. coli* in MPN/100 mL and Human *Bacteroides* in gene copies/100 ml)

	E. coli	*E. coli*	*E. coli*	*E. coli*	Human *Bacteroides*
	7/16/18	**12/9/20**	**12/16/20**	**11/10/21**	**11/10/21**
L1619	15,531	630		3,076	95
29050 Dardanella		<100			
Seven Mile WC MS4 East			61		
Chicken Shack			2,000	1,616	1,541,053

Conclusions and Recommendations

The source of the elevated *E. coli* at this outfall remains unclear. Additional inspections of catch basins and their connections along Seven Mile Road, upstream of the Chicken Shack are recommended.

This work is being completed as outlined in the Rouge River Collaborative IDEP Plan in compliance with the City's MS4 permit and as a result of your ARC membership. If you have any questions, you can reach me at 248-763-1407 or elevine@ectinc.com.

X:\Alliance of Rouge Communities\2022 Alliance of Rouge Communities\Tech Committee\IDEP investigations\Livonia\1619\L1619 2022 IDEP Summary.docx

Figure 1. Storm Drain and Sampling Location



Figure 2. Televised Line Map



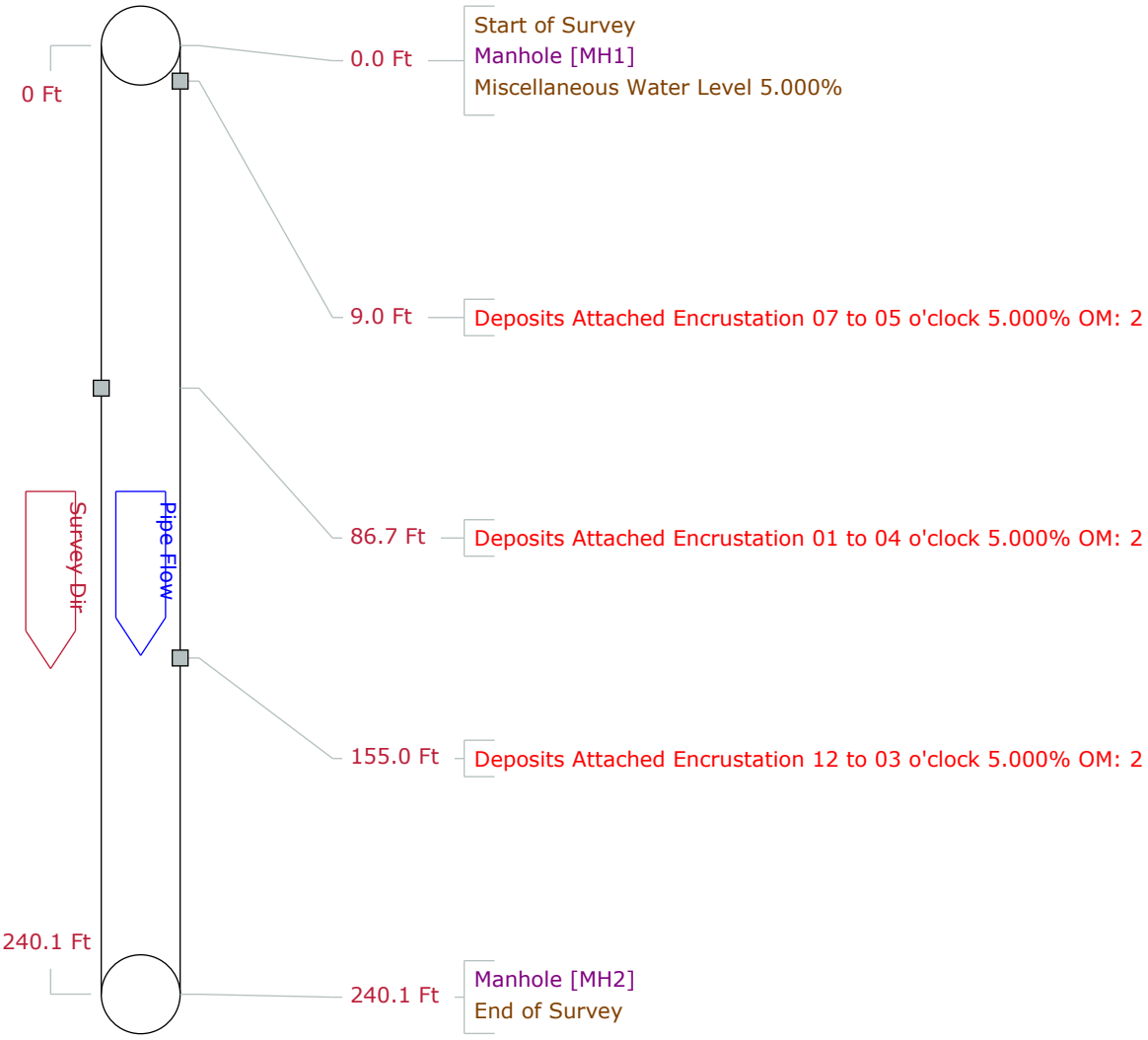
Attachment A. CCTV Inspection Reports

Pipe Graphic Report of PLR MH1A for ECT

Setup	1	Surveyed By	PIPETEK-RD	Certificate #	P0038923-082022
Owner	LIVONIA	Reviewed By		Reviewer #	
Work Order		Customer	ETC	P/O #	
Media Label	MH1A	Project	ETC_STORM_TV_RD_12-21-2022		
Date	2022/12/21	Time	8:49	Weather	
Pre-Cleaning	N	Date Cleaned			
Flow control	Not Controlled	Survey Purpose	Routine Assessment	Direction	Downstream
Street	7 MILE	City	LIVONIA	Drainage area	
Location Code		Pipe Use	Stormwater Pipe		
Location details	CHICKEN SHACK	Height	18	Width	ins
Shape	Circular	Material	Reinforced Concrete Pipe	Lining	
Coating		Pipe Joint length	Ft	Total length	Ft
Length Surveyed	240.10 Ft	Year Constructed		Year Renewed	
Additional info					

Structural	O & M				
Miscellaneous	Constructional				

Up	MH1	Rim to invert	Grade to invert	Rim to grade	Ft
Down	MH2	Rim to invert	Grade to invert	Rim to grade	Ft

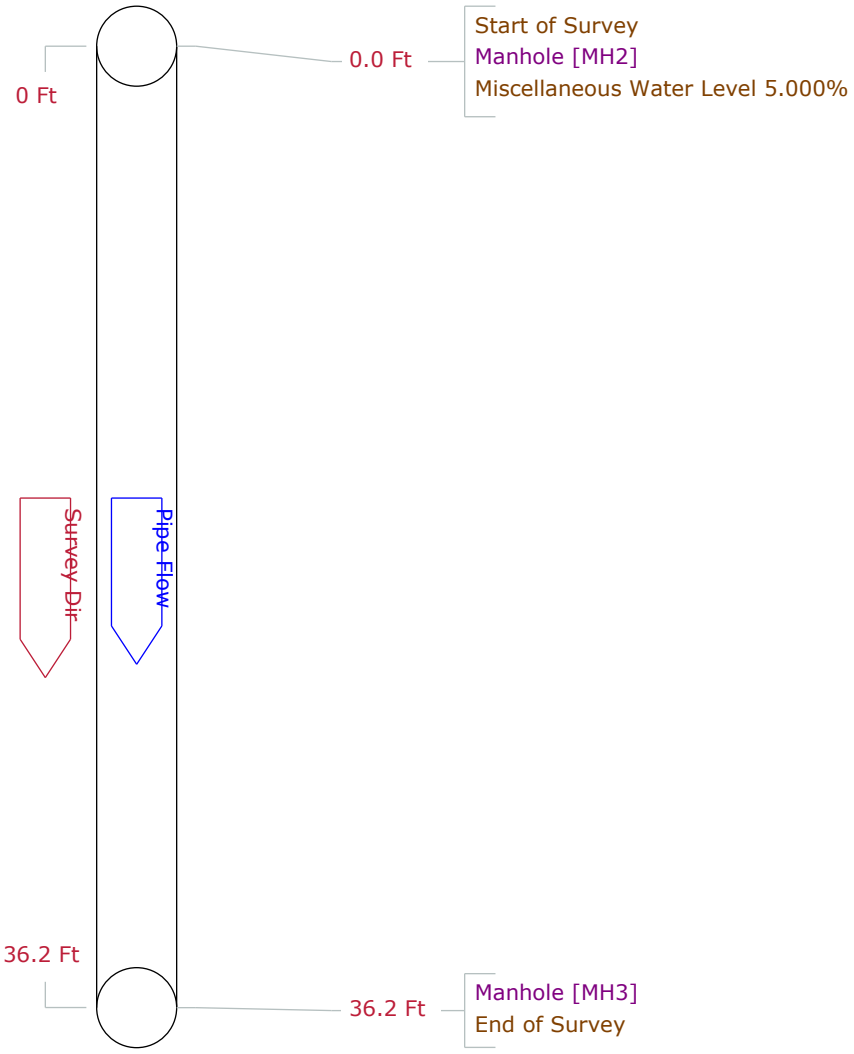


Pipe Graphic Report of PLR MH2A for ECT

Setup	2	Surveyed By	PIPETEK-RD	Certificate #	P0038923-082022
Owner	LIVONIA	Reviewed By		Reviewer #	
Work Order		Customer	ETC	P/O #	
Media Label	MH2A	Project	ETC_STORM_TV_RD_12-21-2022		
Date	2022/12/21	Time	9:11	Weather	
Pre-Cleaning	N	Date Cleaned			
Flow control	Not Controlled	Survey Purpose	Routine Assessment	Direction	Downstream
Street	7 MILE	City	LIVONIA	Drainage area	
Location Code		Pipe Use	Stormwater Pipe		
Location details		Height	18	Width	ins
Shape	Circular	Material	Reinforced Concrete Pipe	Lining	
Coating		Pipe Joint length	Ft	Total length	Ft
Length Surveyed	36.20 Ft	Year Constructed		Year Renewed	
Additional info					

Structural	O & M				
Miscellaneous	Constructional				

Up	MH2	Rim to invert	Grade to invert	Rim to grade	Ft
Down	MH3	Rim to invert	Grade to invert	Rim to grade	Ft

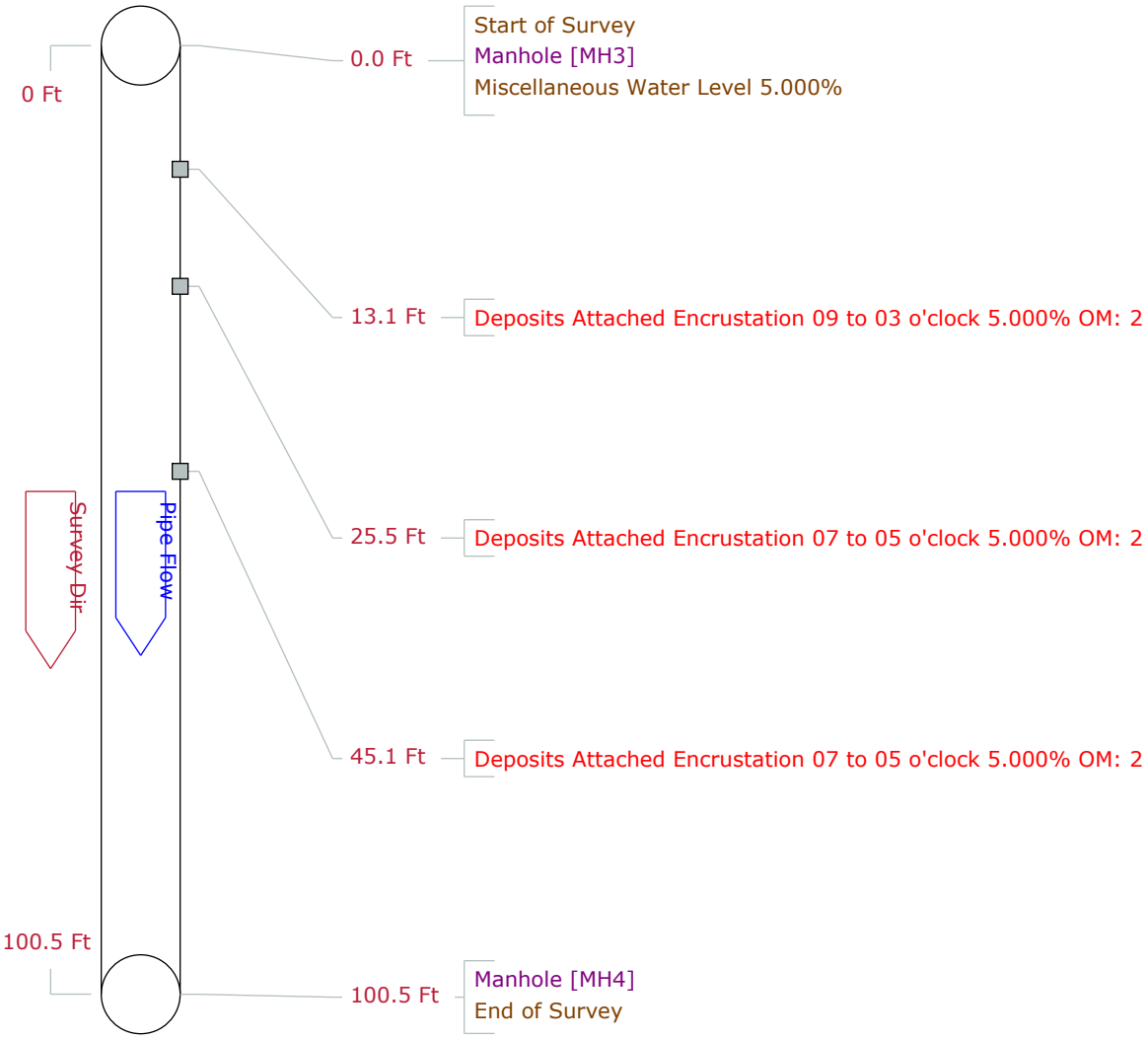


Pipe Graphic Report of PLR MH3A for ECT

Setup	3	Surveyed By	PIPETEK-RD	Certificate #	P0038923-082022
Owner	LIVONIA	Reviewed By		Reviewer #	
Work Order		Customer	ETC	P/O #	
Media Label	MH3A	Project	ETC_STORM_TV_RD_12-21-2022		
Date	2022/12/21	Time	9:41	Weather	
Pre-Cleaning	N	Date Cleaned			
Flow control	Not Controlled	Survey Purpose	Routine Assessment	Direction	Downstream
Street	7 MILE	City	LIVONIA	Drainage area	
Location Code		Pipe Use	Stormwater Pipe		
Location details		Height	18	Width	ins
Shape	Circular	Material	Reinforced Concrete Pipe	Lining	
Coating		Pipe Joint length	Ft	Total length	Ft
Length Surveyed	100.50 Ft	Year Constructed		Year Renewed	
Additional info					

Structural	O & M				
Miscellaneous	Constructional				

Up	MH3	Rim to invert	Grade to invert	Rim to grade	Ft
Down	MH4	Rim to invert	Grade to invert	Rim to grade	Ft

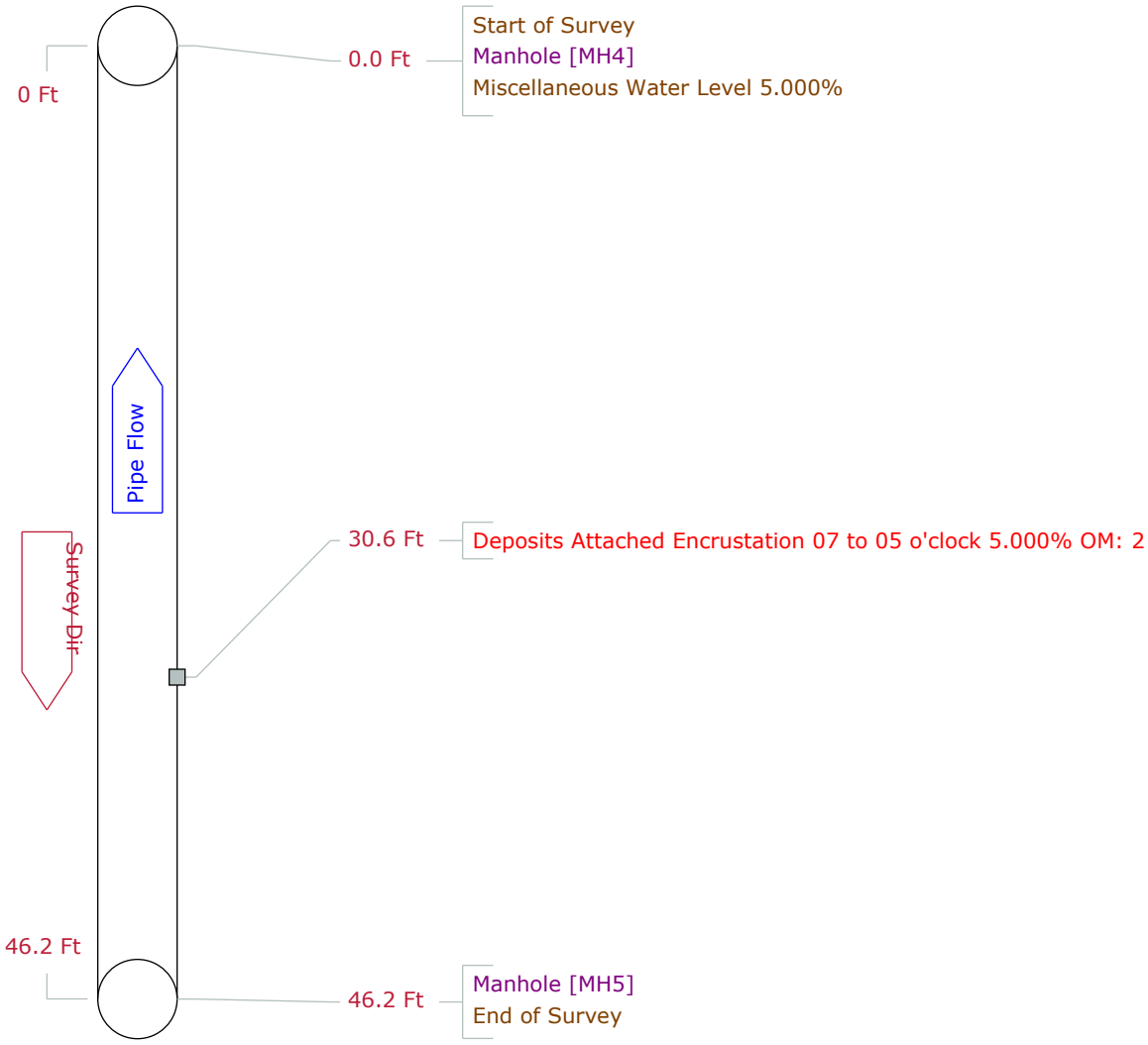


Pipe Graphic Report of PLR MH4A for ECT

Setup	4	Surveyed By	PIPETEK-RD	Certificate #	P0038923-082022
Owner	LIVONIA	Reviewed By		Reviewer #	
Work Order		Customer	ETC	P/O #	
Media Label	MH4A	Project	ETC_STORM_TV_RD_12-21-2022		
Date	2022/12/21	Time	9:52	Weather	
Pre-Cleaning	N	Date Cleaned			
Flow control	Not Controlled	Survey Purpose	Routine Assessment	Direction	Upstream
Street	7 MILE	City	LIVONIA	Drainage area	
Location Code		Pipe Use	Stormwater Pipe		
Location details		Height	18	Width	ins
Shape	Circular	Material	Reinforced Concrete Pipe	Lining	
Coating		Pipe Joint length	Ft	Total length	Ft
Length Surveyed	46.20 Ft	Year Constructed		Year Renewed	
Additional info					

Structural	O & M				
Miscellaneous	Constructional				

Up	MH5	Rim to invert		Grade to invert	Rim to grade Ft
Down	MH4	Rim to invert		Grade to invert	Rim to grade Ft

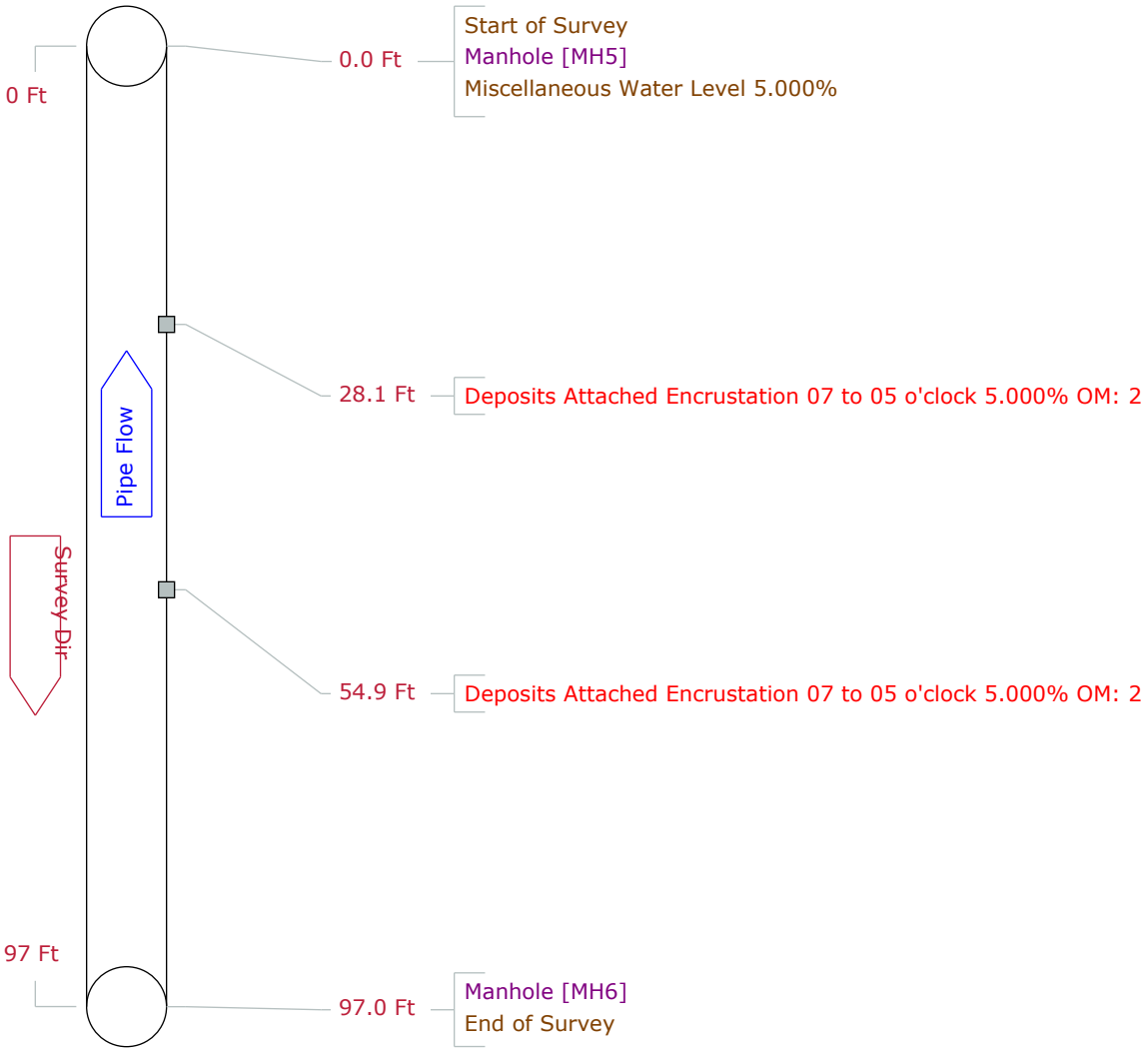


Pipe Graphic Report of PLR MH5A for ECT

Setup	5	Surveyed By	PIPETEK-RD	Certificate #	P0038923-082022
Owner	LIVONIA	Reviewed By		Reviewer #	
Work Order		Customer	ETC	P/O #	
Media Label	MH5A	Project	ETC_STORM_TV_RD_12-21-2022		
Date	2022/12/21	Time	10:13	Weather	
Pre-Cleaning	N	Date Cleaned			
Flow control	Not Controlled	Survey Purpose	Routine Assessment	Direction	Upstream
Street	7 MILE	City	LIVONIA	Drainage area	
Location Code		Pipe Use	Stormwater Pipe		
Location details		Height	18	Width	ins
Shape	Circular	Material	Reinforced Concrete Pipe	Lining	
Coating		Pipe Joint length	Ft	Total length	Ft
Length Surveyed	97.00 Ft	Year Constructed		Year Renewed	
Additional info					

Structural	O & M				
Miscellaneous	Constructional				

Up	MH6	Rim to invert	Grade to invert	Rim to grade	Ft
Down	MH5	Rim to invert	Grade to invert	Rim to grade	Ft



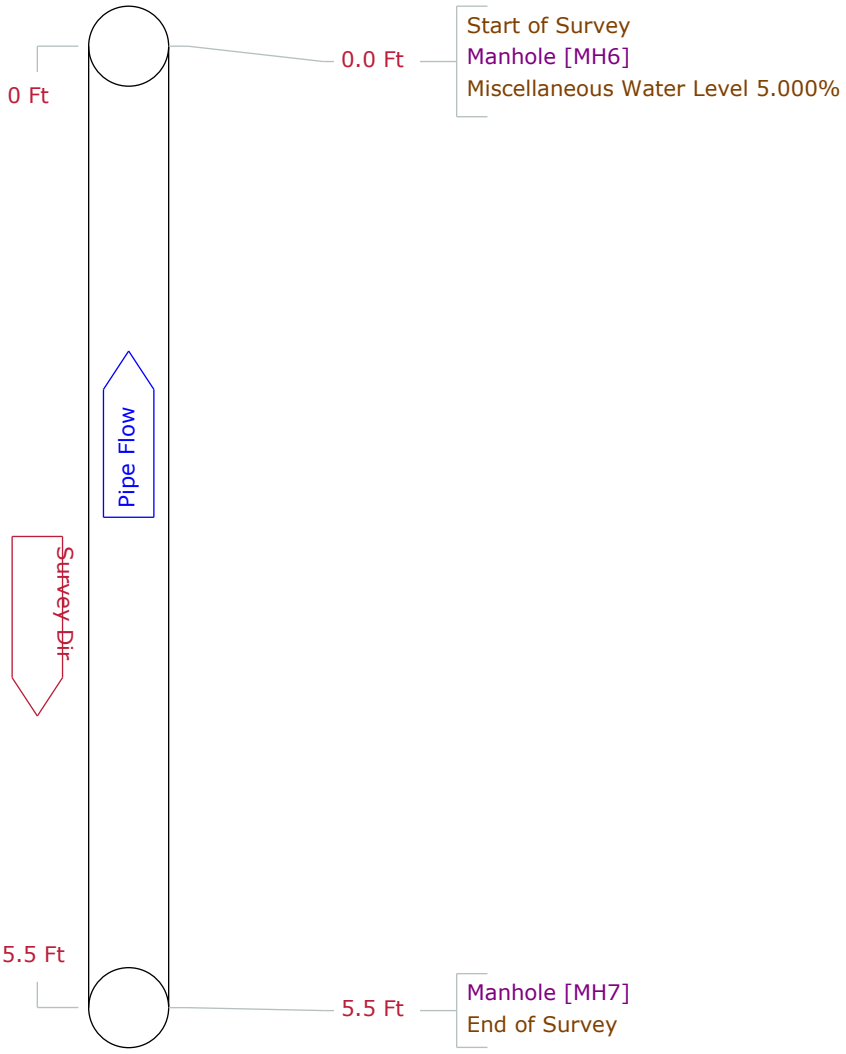
Pipe Graphic Report of PLR MH6A for ECT

Setup	6	Surveyed By	PIPETEK-RD	Certificate #	P0038923-082022
Owner	LIVONIA	Reviewed By		Reviewer #	
Work Order		Customer	ETC	P/O #	
Media Label	MH6A	Project	ETC_STORM_TV_RD_12-21-2022		
Date	2022/12/21	Time	10:36	Weather	
Pre-Cleaning	N	Date Cleaned			
Flow control	Not Controlled	Survey Purpose	Routine Assessment	Direction	Upstream

Street	7 MILE	City	LIVONIA	Drainage area	
Location Code		Pipe Use	Stormwater Pipe		
Location details		Height	18	Width	ins
Shape	Circular	Material	Reinforced Concrete Pipe	Lining	
Coating		Pipe Joint length	Ft	Total length	Ft
Length Surveyed	05.50 Ft	Year Constructed		Year Renewed	
Additional info					

Structural	O & M				
Miscellaneous	Constructional				

Up	MH7	Rim to invert		Grade to invert	Rim to grade Ft
Down	MH6	Rim to invert		Grade to invert	Rim to grade Ft

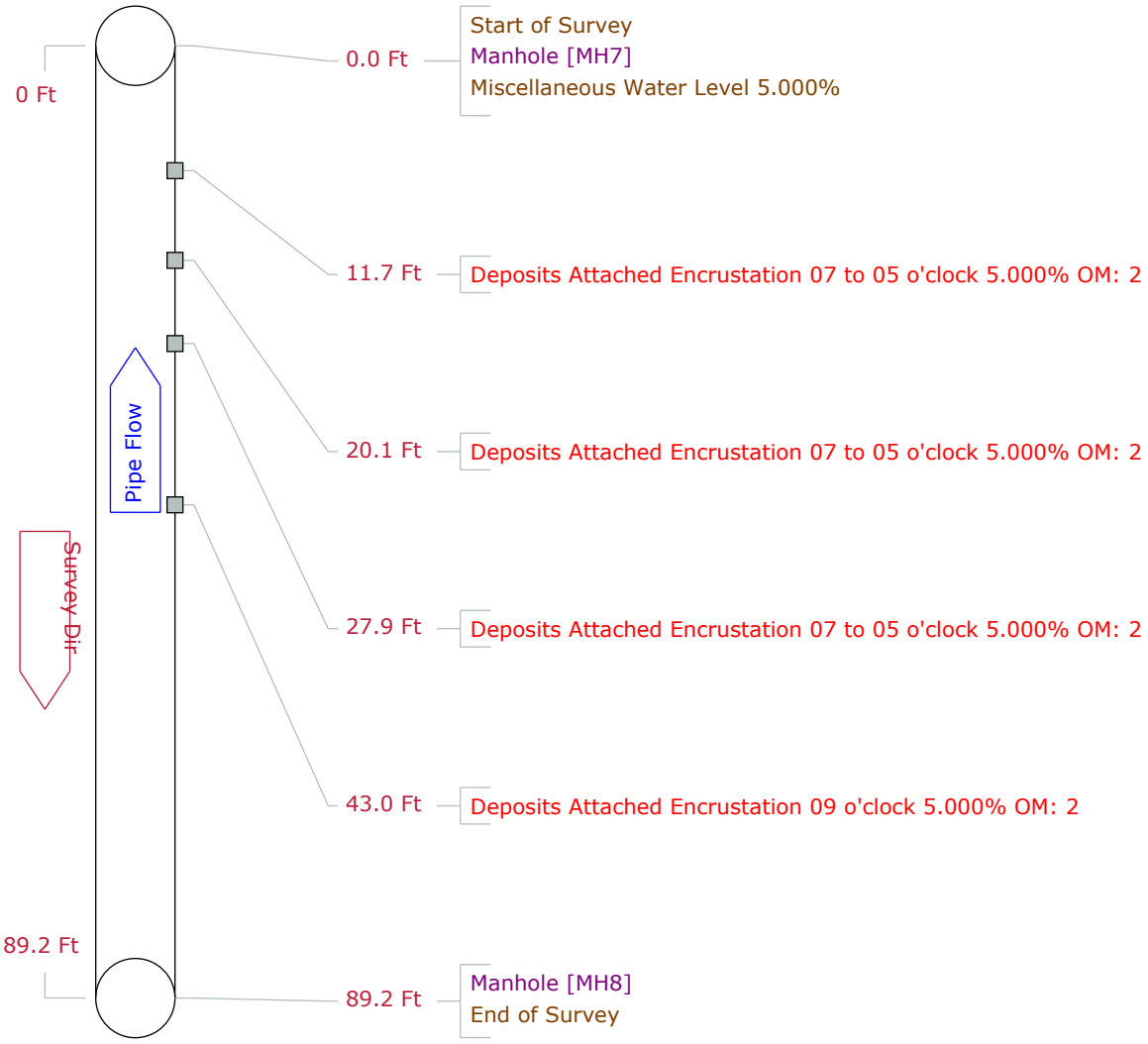


Pipe Graphic Report of PLR MH7A for ECT

Setup	7	Surveyed By	PIPETEK-RD	Certificate #	P0038923-082022
Owner	LIVONIA	Reviewed By		Reviewer #	
Work Order		Customer	ETC	P/O #	
Media Label	MH7A	Project	ETC_STORM_TV_RD_12-21-2022		
Date	2022/12/21	Time	11:03	Weather	
Pre-Cleaning	N	Date Cleaned			
Flow control	Not Controlled	Survey Purpose	Routine Assessment	Direction	Upstream
Street	7 MILE	City	LIVONIA	Drainage area	
Location Code		Pipe Use	Stormwater Pipe		
Location details		Height	18	Width	ins
Shape	Circular	Material	Reinforced Concrete Pipe	Lining	
Coating		Pipe Joint length	Ft	Total length	Ft
Length Surveyed	89.20 Ft	Year Constructed		Year Renewed	
Additional info					

Structural	O & M				
Miscellaneous	Constructional				

Up	MH8	Rim to invert		Grade to invert	Rim to grade Ft
Down	MH7	Rim to invert		Grade to invert	Rim to grade Ft

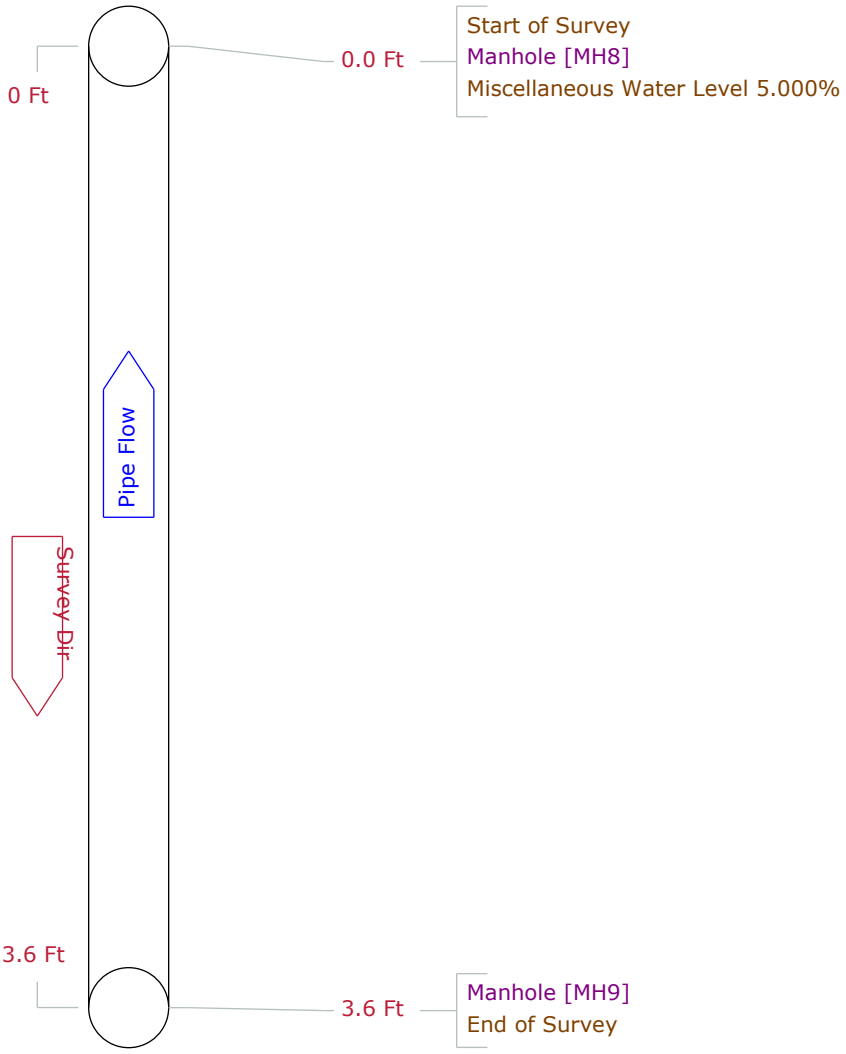


Pipe Graphic Report of PLR MH8A for ECT

Setup	8	Surveyed By	PIPETEK-RD	Certificate #	P0038923-082022
Owner	LIVONIA	Reviewed By		Reviewer #	
Work Order		Customer	ETC	P/O #	
Media Label	MH8A	Project	ETC_STORM_TV_RD_12-21-2022		
Date	2022/12/21	Time	11:34	Weather	
Pre-Cleaning	N	Date Cleaned			
Flow control	Not Controlled	Survey Purpose	Routine Assessment	Direction	Upstream
Street	7 MILE	City	LIVONIA	Drainage area	
Location Code		Pipe Use	Stormwater Pipe		
Location details		Height	12	Width	ins
Shape	Circular	Material	Reinforced Concrete Pipe	Lining	
Coating		Pipe Joint length	Ft	Total length	Ft
Length Surveyed	03.60 Ft	Year Constructed		Year Renewed	
Additional info					

Structural	O & M				
Miscellaneous	Constructional				

Up	MH9	Rim to invert	Grade to invert	Rim to grade	Ft
Down	MH8	Rim to invert	Grade to invert	Rim to grade	Ft



Annette DeMaria, P.E., PMP
Executive Director

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Bingham Farms
Birmingham
Bloomfield Hills
Bloomfield Twp.
Canton Twp.
Commerce Twp.
Dearborn Heights
Farmington
Farmington Hills
Franklin
Garden City
Henry Ford College
Inkster
Lathrup Village
Livonia
Melvindale
Northville
Northville Twp.
Novi
Oak Park
Oakland County
Orchard Lake
Plymouth
Plymouth Twp.
Redford Twp.
Rochester Hills
Romulus
Schoolcraft College
Southfield
Troy
University of Michigan-Dearborn
Van Buren Twp.
Walled Lake
Washtenaw County
Wayne
Wayne County
Wayne County Airport Authority
West Bloomfield Twp.
Westland
Wixom

Cooperating Partners:
Cranbrook Institute of Science
Friends of the Rouge
Great Lakes Water Authority
Rouge River Advisory Council
SEMCOG
Southeastern Oakland County Water Authority

TO: **Doug Moore, City of Livonia**

FROM: **Emily Levine, ARC Staff**

DATE: **January 6, 2023**

SUBJECT: **IDEP Investigation Results: Outfall U2008221**

ARC staff continued the illicit discharge investigation on storm drain outfall U2008221 in response to findings from the 2018 outfall screening and subsequent investigations. Our 2022 investigations identified an illicit connection coming from Saint Mary's Hospital. This connection was corrected by the hospital. Follow-up sampling to confirm that the connection was corrected revealed that a suspicious discharge still exists. Investigations to identify the source of this second discharge remain underway.

Background

Outfall U2008221 was investigated due to the high *E. coli* concentrations found during the outfall survey conducted in 2018. At that time, the *E. coli* concentration was >24,196 MPN/100 ml which is indicative of an illicit discharge containing sanitary sewage. ARC staff reinspected the outfall in 2019 and found *E. coli* concentrations at non-detect and >6,000 MPN/100 ml respectively, with Human *Bacteroides* concentrations of 1,010,000 gene copies/100 ml coinciding with the elevated *E. coli* levels.

It was initially uncertain where the outfall was draining from, as it is located in a culvert underneath Levan Road (Figure 1). Nonetheless, in 2019 and 2021 Wayne County conducted sampling within the manholes along the east side of Levan Road. However, these investigations did not reveal the source of the suspicious discharge.

Results

In May of 2022, the outfall was resampled by ARC staff and *E. coli* concentrations were >24,196 MPN/100 ml, with Human *Bacteroides* concentrations of 631,578,947 gene copies/100 ml (Table 1). At that time, it was determined that the outfall connects to private storm drains in the parking lot of Saint Mary's Hospital, located on the west side of Levan Road.

Inspections of manholes and review of utility drawings for the Hospital parking lot revealed a suspicious tap to the storm drain (Figure 2). Representatives from the Hospital cooperated with the City of Livonia and dye tested the area of the hospital closest to the tap. It was found that a section of the old emergency room had an illicit connection to the storm drain, which was subsequently corrected.

ECT resampled the outfall on November 3, 2022 to confirm that the corrected illicit connection had effectively reduced the *E. coli* levels coming from the outfall and found *E. coli* levels of 10 MPN/100 ml. However, during this sampling, bubbles that looked like soap were observed coming from the outfall (Figure 3). A test for surfactants was conducted in the field and surfactants level of 2.0 ppm was found. This indicates that although the *E. coli* source has been effectively eliminated, an additional pollutant source appears to be present that has been contributing surfactants to the river. Follow-up investigations were conducted later in November 2022. Surfactants levels of 2.0 ppm were consistently found in manholes in the hospital parking lot upstream of the outfall leading to the southern section of the parking lot. Due to a car being parked over a manhole, the investigation was not completed, and additional investigation is needed to narrow down the source of the surfactants.

Table 1. Sampling Results (*E. coli* in MPN/100 mL and Human *Bacteroides* in gene copies/100 ml)

	E. coli	***E. coli***	***E. coli***	***Human Bacteroides***	***E. coli***	**Human *Bacteroides***	***E. coli***	**Surfactants**
	7/16/18	**12/12/19**	**12/19/19**	**12/19/19**	**5/13/22**	**5/13/22**	**11/3/22**	**11/3/22**
U2008221	>24,196	ND	>6,000	1,010,000	>24,196	631,578,947	10	2.0 ppm

Conclusions and Recommendations

Work to date indicates that correcting an illicit connection has effectively eliminated the *E. coli* source for this outfall. However, an additional pollutant source remains that is contributing surfactants to the stormwater. Further investigation is necessary to determine where the surfactants are coming from and eliminate this pollutant source.

This work is being completed as outlined in the Rouge River Collaborative IDEP Plan in compliance with the City's MS4 permit and as a result of your ARC membership. If you have any questions, you can reach me at 248-763-1407 or elevine@ectinc.com.

X:\Alliance of Rouge Communities\2022 Alliance of Rouge Communities\Tech Committee\IDEP investigations\Livonia\U2008221\U2008221 2022 IDEP Summary.docx

Figure 1. Storm Drain and Sampling Location



Figure 2. Tap to Storm Drain in parking lot of Saint Mary's Hospital



Figure 3. Bubbly water coming from the outfall



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Executive Director

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Birmingham
Bloomfield Hills
Bloomfield Twp.
Canton Twp.
Commerce Twp.
Dearborn Heights
Farmington
Farmington Hills
Franklin
Garden City
Henry Ford College
Inkster
Lathrup Village
Livonia
Melvindale
Northville
Northville Twp.
Novi
Oak Park
Oakland County
Orchard Lake
Plymouth
Plymouth Twp.
Redford Twp.
Rochester Hills
Romulus
Schoolcraft College
Southfield
Troy
University of Michigan-Dearborn
Van Buren Twp.
Walled Lake
Washtenaw County
Wayne
Wayne County
Wayne County Airport Authority
West Bloomfield Twp.
Westland
Wixom

Cooperating Partners:
Cranbrook Institute of Science
Friends of the Rouge
Great Lakes Water Authority
Rouge River Advisory Council
SEMCOG
Southeastern Oakland County Water Authority

Alliance of Rouge Communities
OURS TO PROTECT
Working together, restoring the river

TO: **Patrick Cullen, Wayne County Deputy Drain Commissioner**

FROM: **Emily Levine, ARC Staff**

DATE: **February 7, 2023**

SUBJECT: **IDEP Investigation Results: Perrin Drain**

Cc: **Jerome Bivens, City of Inkster**
Sue Thompson, Wayne County Department of Public Works Environmental Services Division

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ARC staff has partnered with Wayne County to conduct an illicit discharge investigation on the Perrin Drain in response to findings of high *E. coli* in samples collected from the Lower Rouge River by Wayne County.

Background

The Perrin Drain flows into the Lower Rouge River upstream of John Daly Road. Once an open creek, the drain is now contained in an underground pipe from southeast of Inkster Road and Avondale Street, continuing upstream through the neighborhood to the northwest of that intersection, towards Cherry Hill Road and Middlebelt Road (Figure 1). Samples collected from near the outlet in September and October of 2020 had elevated *E. coli* levels. Additional samples collected from various upstream manholes on October 29, 2020 showed some elevated *E. coli* levels. Additional sampling was conducted in March 2021 which resulted in a recommendation to televise portions of the storm drain system.

Results

Based on the sample results from 2020 and 2021, ARC staff had the drains along Helen Street and Tromley Street televised in December of 2022. Although excessive sediment was found in the storm drain on Tromley Street, no evidence was found of illicit connections. On Helen Street, a tap was identified coming from the east side of Helen Street, south of the intersection with Cherry Hill Road (Figure 1).

Conclusions and Recommendations

It is unclear whether the tap that was identified is an illicit connection or draining stormwater. Therefore, additional sampling immediately downstream of the tap is recommended to test for *E. coli* and human *Bacteroides*. If elevated levels are found, then dye testing the nearby apartment building may be the recommended next step.

This work is being completed as outlined in the Rouge River Collaborative IDEP Plan in compliance with the County's and City's MS4 permits and as a result of your ARC membership. If you have any questions, I can be reached at 248-763-1407 or elevine@ectinc.com.

Figure 1. Storm Drain and Sampling Locations

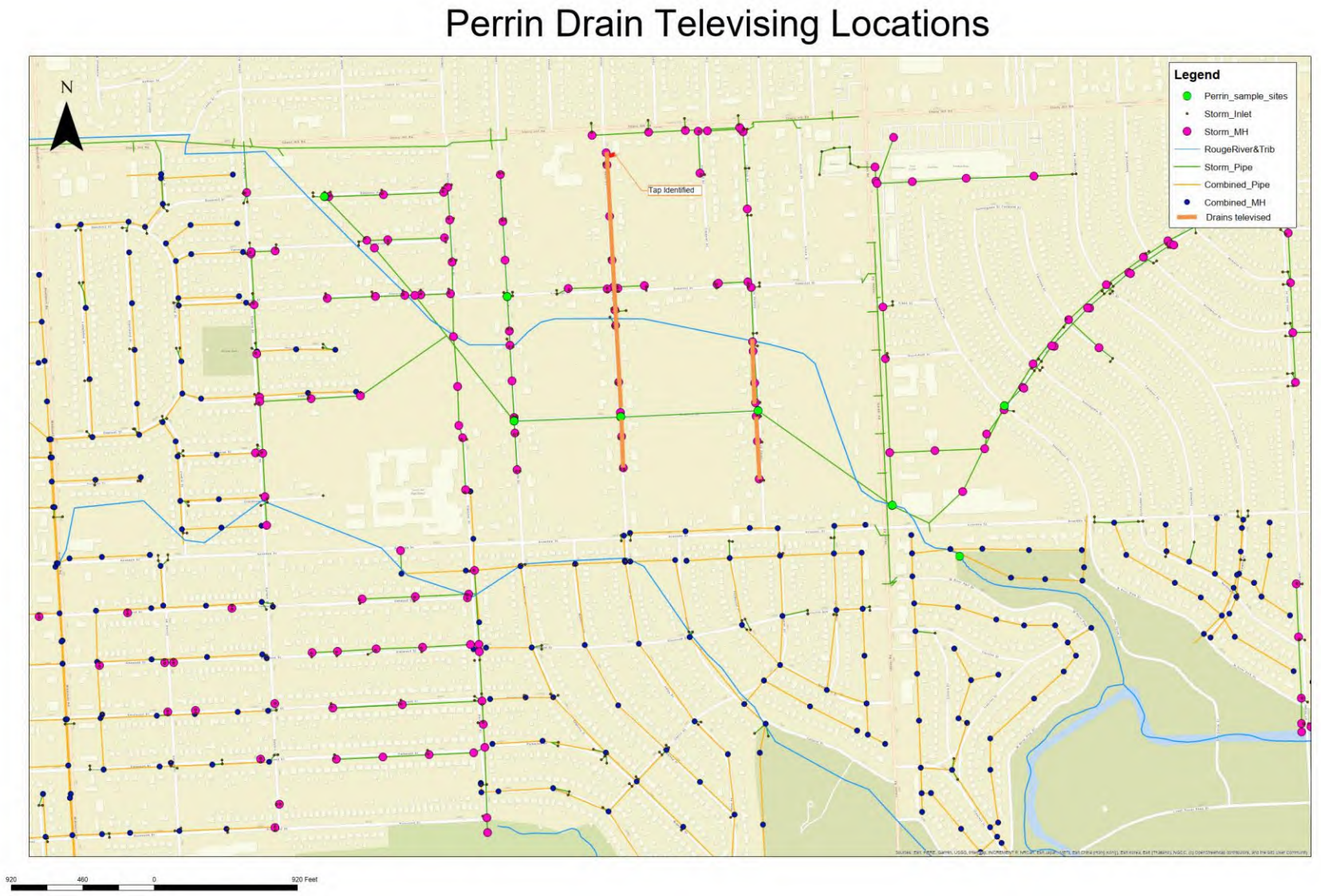


Figure 2. Tap in drain along Helen Street, south of Cherry Hill Road



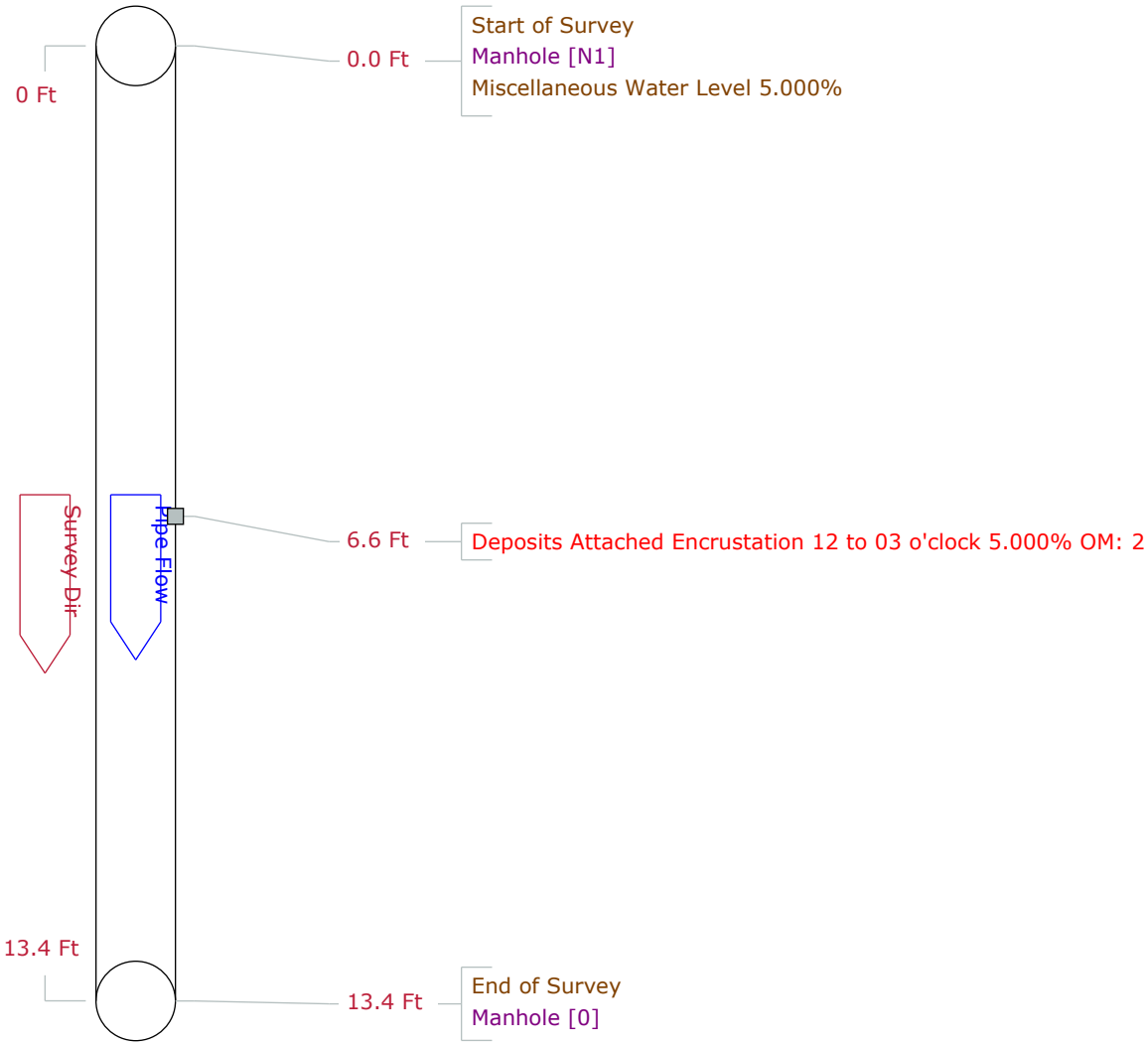
Attachment A: CCTV Inspection Reports

Pipe Graphic Report of PLR S2A for ECT

Setup	9	Surveyed By	PIPETEK-RD	Certificate #	P0038923-082022
Owner	INKSTER	Reviewed By		Reviewer #	
Work Order		Customer	ETC	P/O #	
Media Label	N1A	Project	ETC_STORM_TV_RD_12-21-2022		
Date	2022/12/21	Time	13:02	Weather	
Pre-Cleaning	N	Date Cleaned			
Flow control	Not Controlled	Survey Purpose	Routine Assessment	Direction	Downstream
Street	TROMLEY (SOUTH)	City	INKSTER	Drainage area	
Location Code		Pipe Use	Stormwater Pipe		
Location details	PERRIN	Height	12	Width	ins
Shape	Circular	Material	Reinforced Concrete Pipe	Lining	
Coating		Pipe Joint length	Ft	Total length	Ft
Length Surveyed	13.40 Ft	Year Constructed		Year Renewed	
Additional info					

Structural	O & M				
Miscellaneous	Constructional				

Up	S2	Rim to invert		Grade to invert	Rim to grade Ft
Down	S3	Rim to invert		Grade to invert	Rim to grade Ft

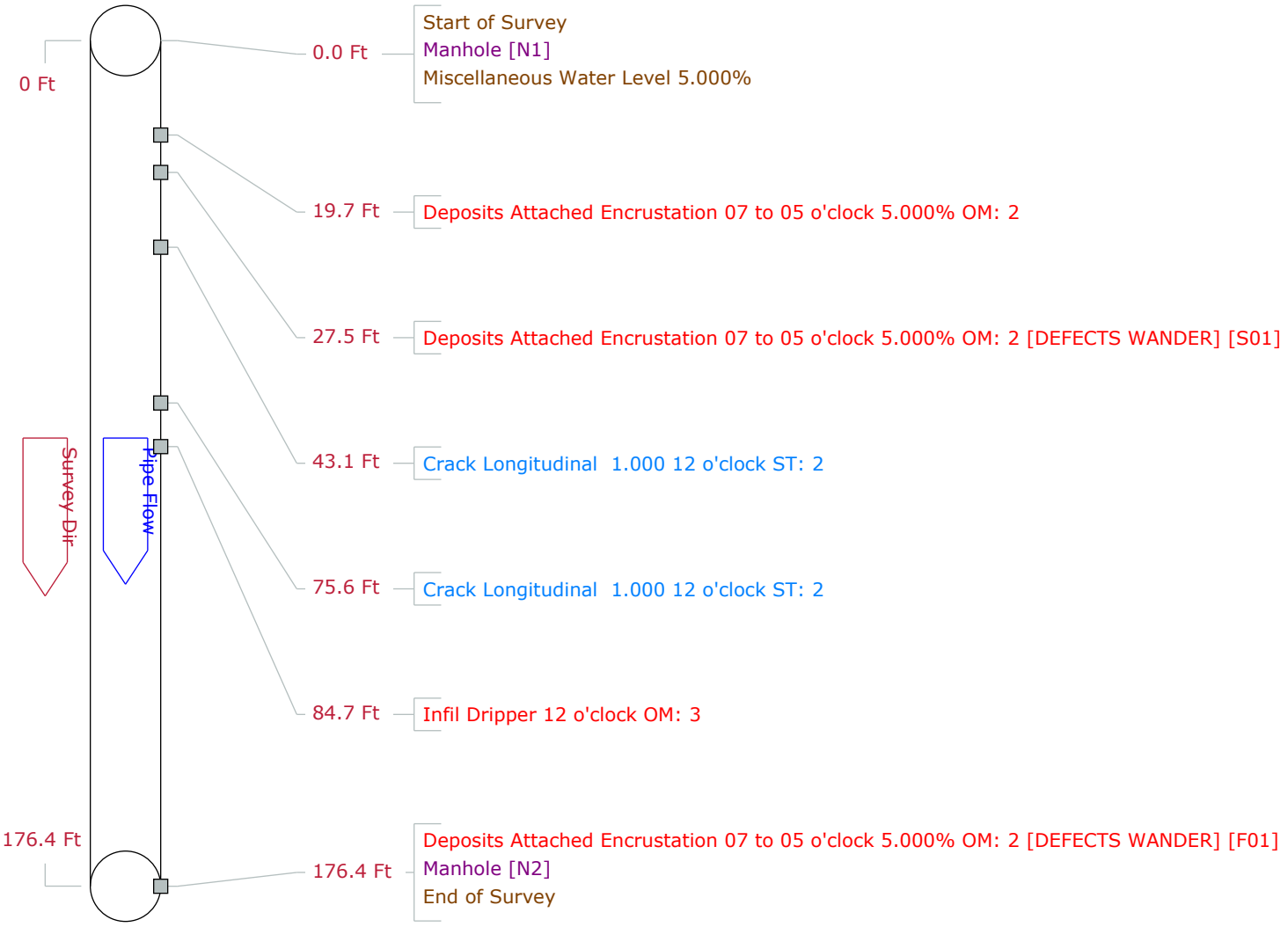


Pipe Graphic Report of PLR N1A-1 for ECT

Setup	10	Surveyed By	PIPETEK-RD	Certificate #	P0038923-082022
Owner	INKSTER	Reviewed By		Reviewer #	
Work Order		Customer	ETC	P/O #	
Media Label	N1A-1	Project	ETC_STORM_TV_RD_12-21-2022		
Date	2022/12/21	Time	13:11	Weather	
Pre-Cleaning	N	Date Cleaned			
Flow control	Not Controlled	Survey Purpose	Routine Assessment	Direction	Downstream
Street	TROMLEY (SOUTH)	City	INKSTER	Drainage area	
Location Code		Pipe Use	Stormwater Pipe		
Location details	PERRIN	Height	12	Width	ins
Shape	Circular	Material	Reinforced Concrete Pipe	Lining	
Coating		Pipe Joint length	Ft	Total length	Ft
Length Surveyed	176.40 Ft	Year Constructed		Year Renewed	
Additional info					

Structural	O & M				
Miscellaneous	Constructional				

Up	N1	Rim to invert	Grade to invert	Rim to grade	Ft
Down	N2	Rim to invert	Grade to invert	Rim to grade	Ft

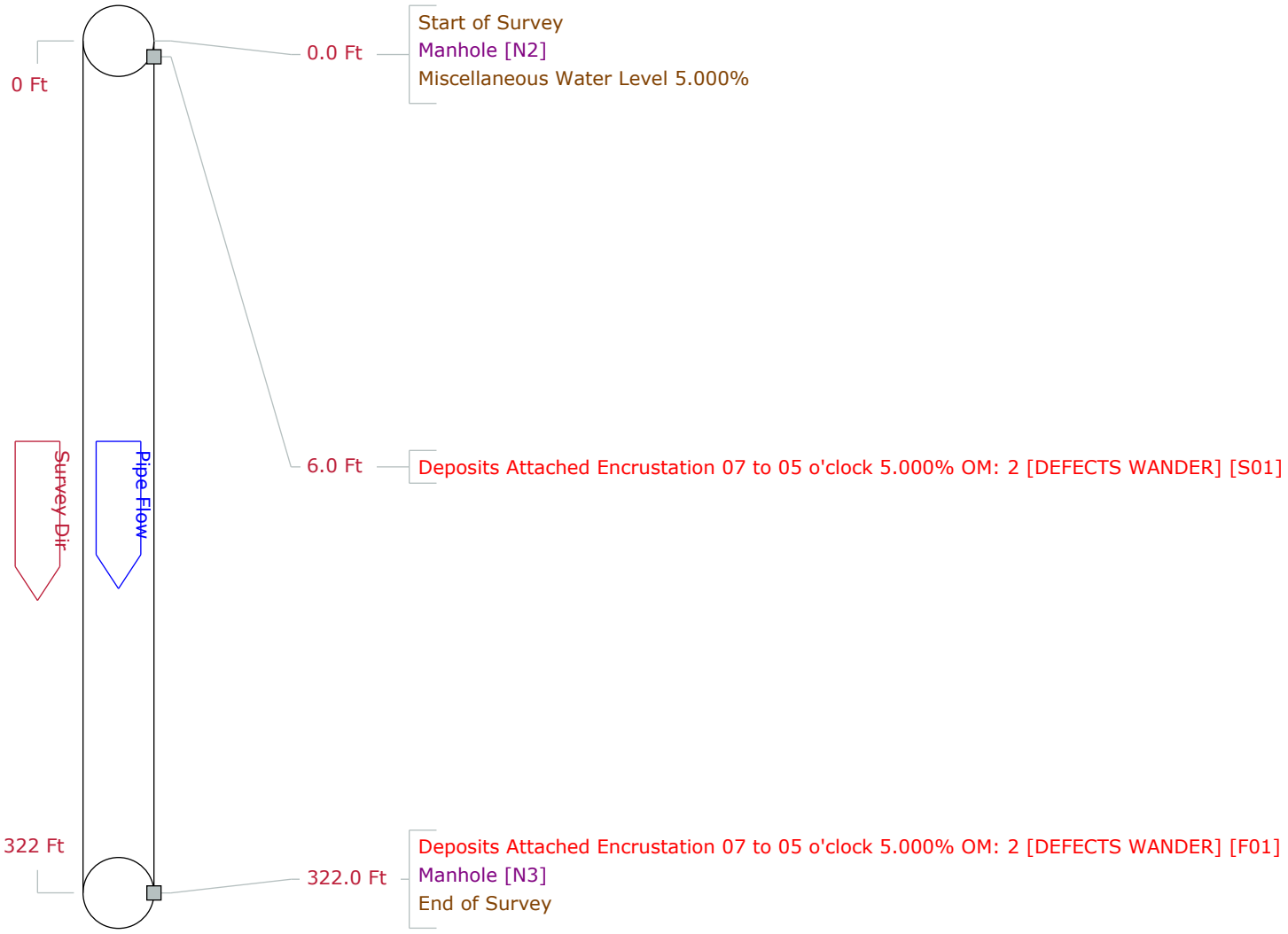


Pipe Graphic Report of PLR N2A for ECT

Setup	11	Surveyed By	PIPETEK-RD	Certificate #	P0038923-082022
Owner	INKSTER	Reviewed By		Reviewer #	
Work Order		Customer	ETC	P/O #	
Media Label	N2A	Project	ETC_STORM_TV_RD_12-21-2022		
Date	2022/12/21	Time	13:48	Weather	
Pre-Cleaning	N	Date Cleaned			
Flow control	Not Controlled	Survey Purpose	Routine Assessment	Direction	Downstream
Street	TROMLEY (SOUTH)	City	INKSTER	Drainage area	
Location Code		Pipe Use	Stormwater Pipe		
Location details	PERRIN	Height	12	Width	ins
Shape	Circular	Material	Reinforced Concrete Pipe	Lining	
Coating		Pipe Joint length	Ft	Total length	Ft
Length Surveyed	322.00 Ft	Year Constructed		Year Renewed	
Additional info					

Structural	O & M				
Miscellaneous	Constructional				

Up	N2	Rim to invert	Grade to invert	Rim to grade	Ft
Down	N3	Rim to invert	Grade to invert	Rim to grade	Ft

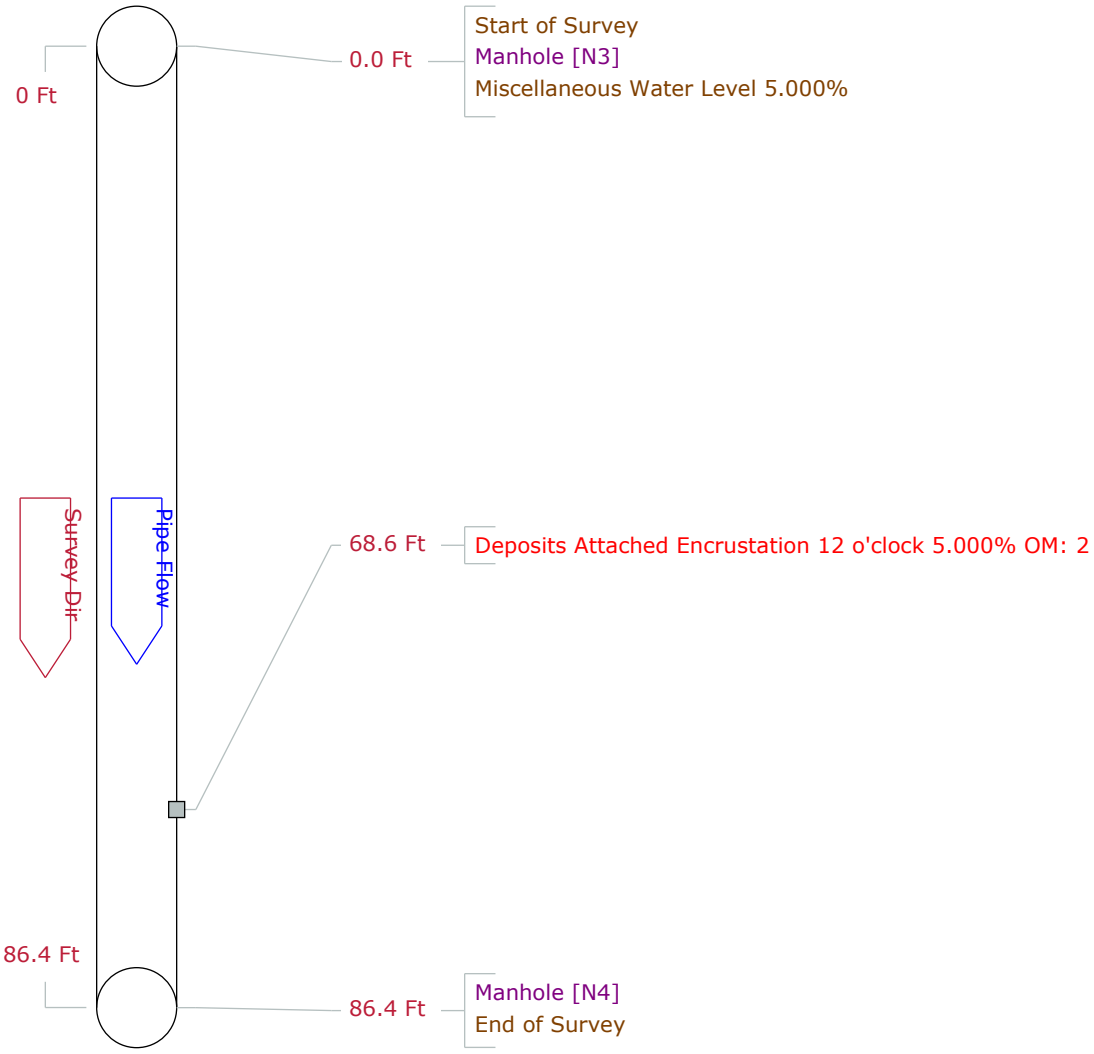


Pipe Graphic Report of PLR N3A for ECT

Setup	12	Surveyed By	PIPETEK-RD	Certificate #	P0038923-082022
Owner	INKSTER	Reviewed By		Reviewer #	
Work Order		Customer	ETC	P/O #	
Media Label	N3A	Project	ETC_STORM_TV_RD_12-21-2022		
Date	2022/12/21	Time	14:05	Weather	
Pre-Cleaning	N	Date Cleaned			
Flow control	Not Controlled	Survey Purpose	Routine Assessment	Direction	Downstream
Street	TROMLEY (SOUTH)	City	INKSTER	Drainage area	
Location Code		Pipe Use	Stormwater Pipe		
Location details	PERRIN	Height	12	Width	ins
Shape	Circular	Material	Reinforced Concrete Pipe	Lining	
Coating		Pipe Joint length	Ft	Total length	Ft
Length Surveyed	86.40 Ft	Year Constructed		Year Renewed	
Additional info					

Structural	O & M				
Miscellaneous	Constructional				

Up	N3	Rim to invert		Grade to invert	Rim to grade Ft
Down	N4	Rim to invert		Grade to invert	Rim to grade Ft

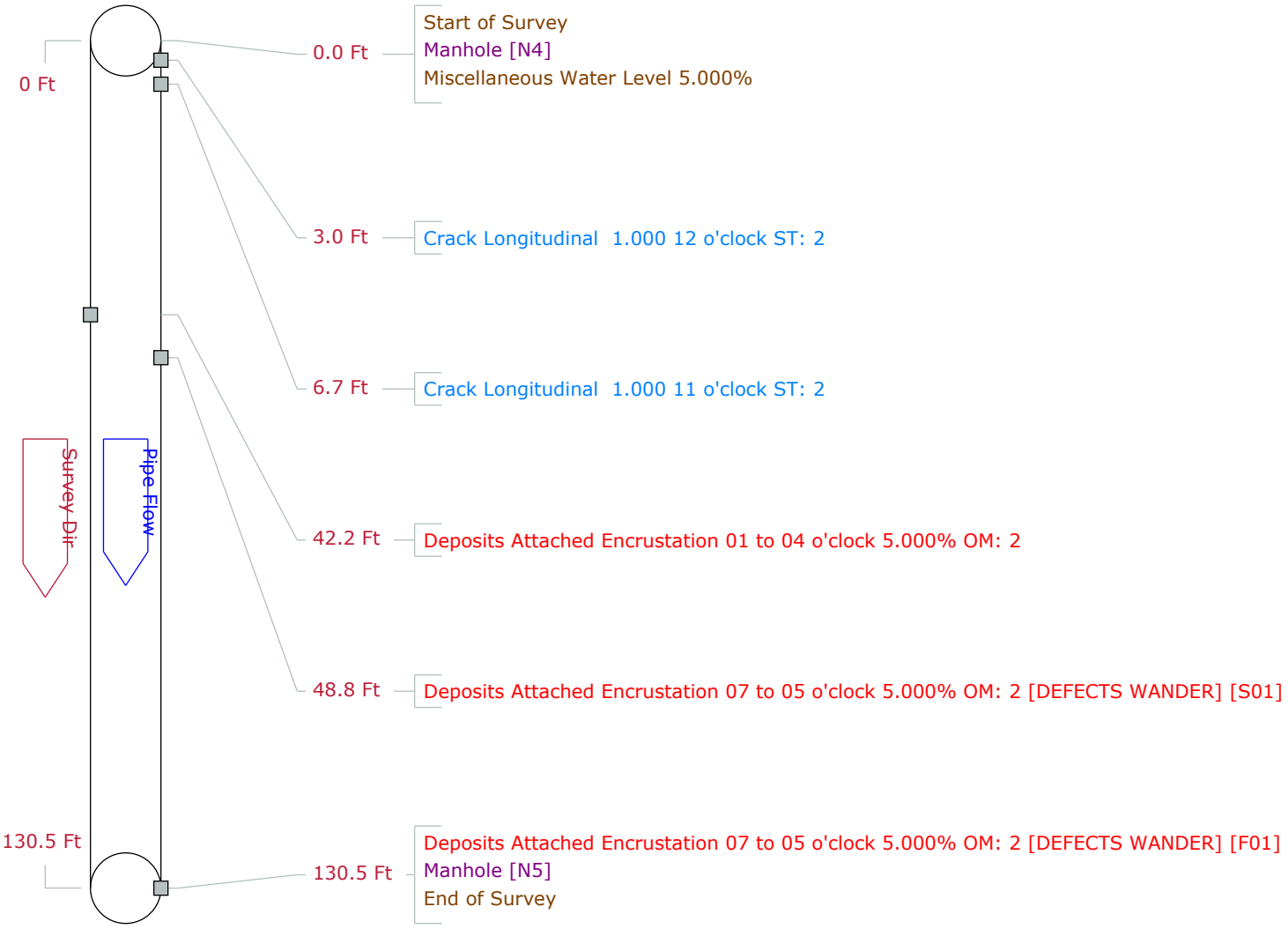


Pipe Graphic Report of PLR N4A for ECT

Setup	13	Surveyed By	PIPETEK-RD	Certificate #	P0038923-082022
Owner	INKSTER	Reviewed By		Reviewer #	
Work Order		Customer	ETC	P/O #	
Media Label	N4A	Project	ETC_STORM_TV_RD_12-21-2022		
Date	2022/12/21	Time	14:39	Weather	
Pre-Cleaning	N	Date Cleaned			
Flow control	Not Controlled	Survey Purpose	Routine Assessment	Direction	Downstream
Street	HELEN	City	INKSTER	Drainage area	
Location Code		Pipe Use	Stormwater Pipe		
Location details	PERRIN	Height	18	Width	ins
Shape	Circular	Material	Reinforced Concrete Pipe	Lining	
Coating		Pipe Joint length	Ft	Total length	Ft
Length Surveyed	130.50 Ft	Year Constructed		Year Renewed	
Additional info					

Structural	O & M				
Miscellaneous	Constructional				

Up	N4	Rim to invert	Grade to invert	Rim to grade	Ft
Down	N5	Rim to invert	Grade to invert	Rim to grade	Ft

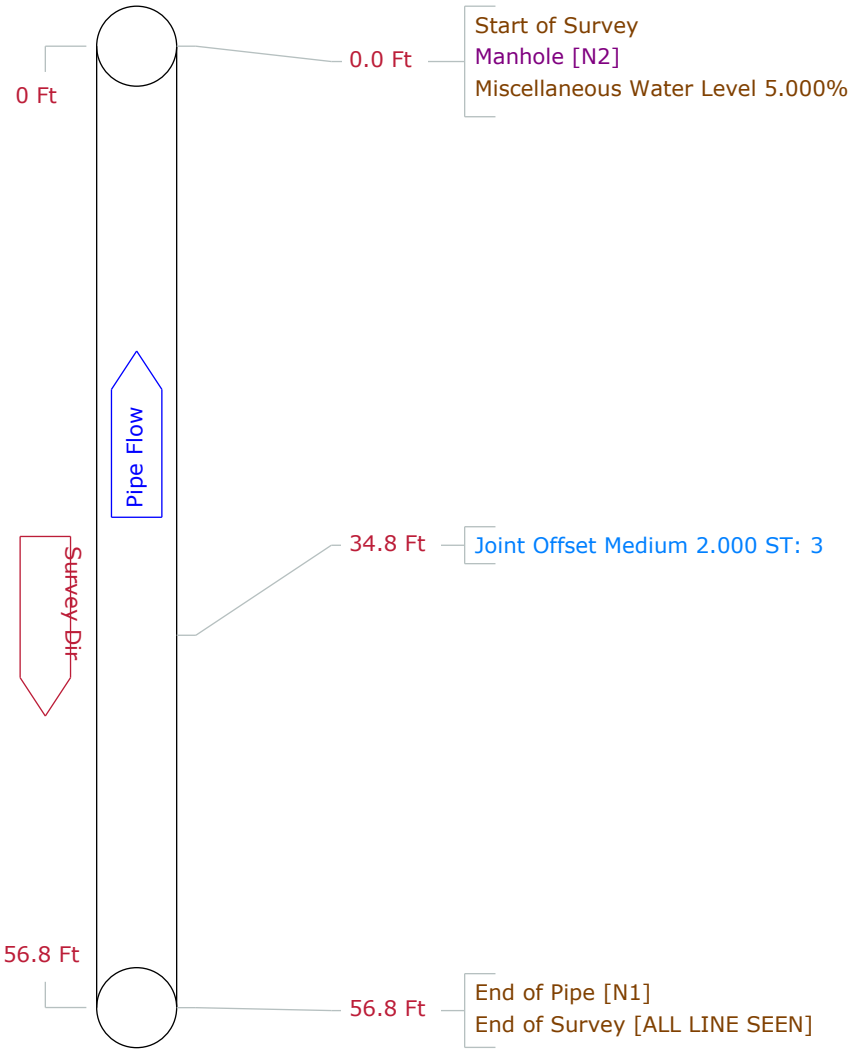


Pipe Graphic Report of PLR N1A-1 for ECT

Setup	14/28	Surveyed By	PIPETEK-RD	Certificate #	P0038923-082022
Owner	INKSTER	Reviewed By		Reviewer #	
Work Order		Customer	ETC	P/O #	
Media Label	N1A-1	Project	ECT_STORM_TV_RD_12-21-2022		
Date	2022/12/22	Time	12:46	Weather	
Pre-Cleaning	N	Date Cleaned			
Flow control	Not Controlled	Survey Purpose	Routine Assessment	Direction	Upstream
Street	TROMLEY (SOUTH)	City	INKSTER	Drainage area	
Location Code		Pipe Use	Stormwater Pipe		
Location details	PERRIN	Height	12	Width	ins
Shape	Circular	Material	Reinforced Concrete Pipe	Lining	
Coating		Pipe Joint length	Ft	Total length	Ft
Length Surveyed	56.80 Ft	Year Constructed		Year Renewed	
Additional info	Reverse set up on sheet:29				

Structural O & M
Miscellaneous Constructional

Up	N1	Rim to invert		Grade to invert	Rim to grade Ft
Down	N2	Rim to invert		Grade to invert	Rim to grade Ft

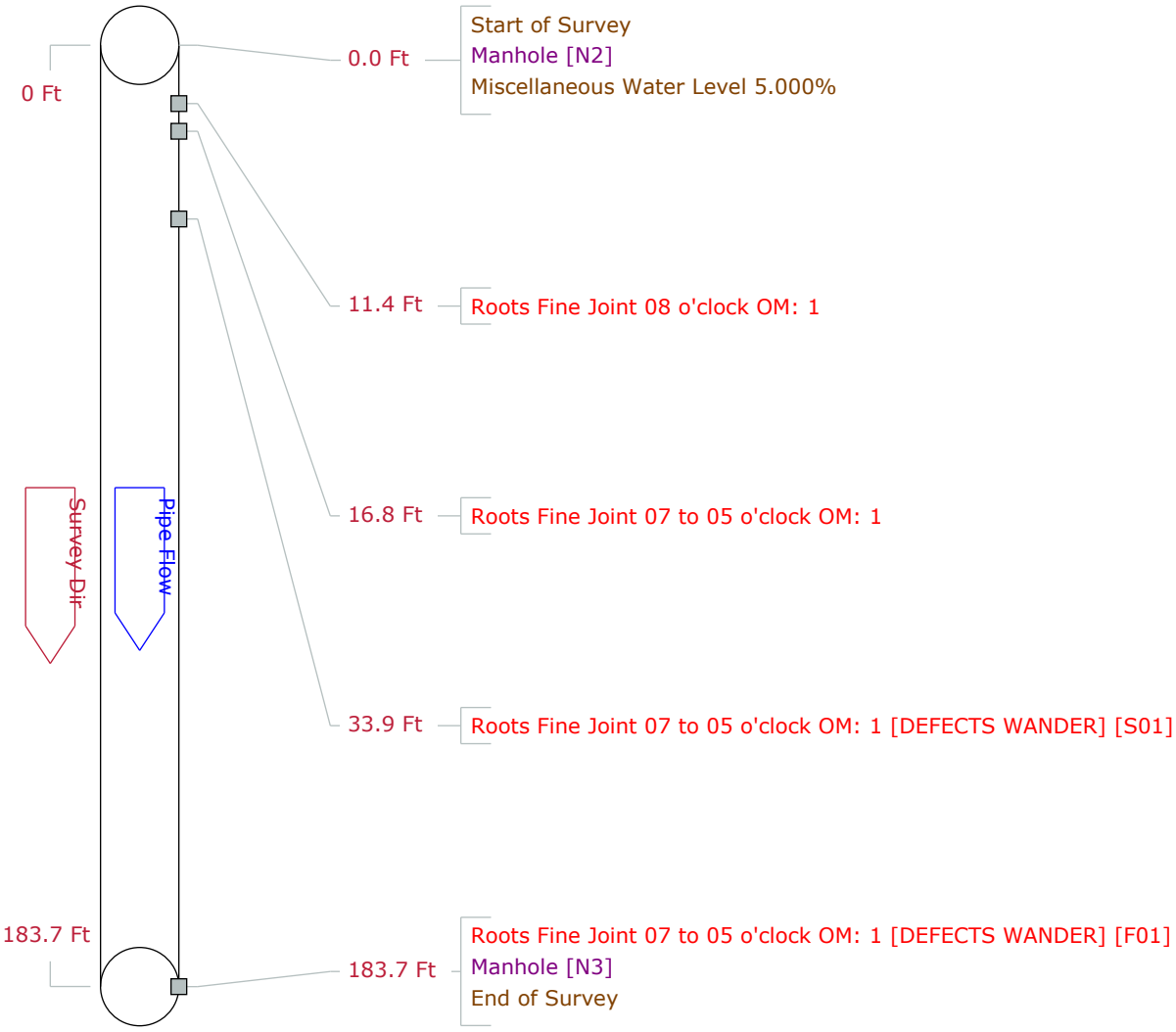


Pipe Graphic Report of PLR N2A for ECT

Setup	15	Surveyed By	PIPETEK-RD	Certificate #	P0038923-082022
Owner	INKSTER	Reviewed By		Reviewer #	
Work Order		Customer	ETC	P/O #	
Media Label	N2A	Project	ECT_STORM_TV_RD_12-21-2022		
Date	2022/12/22	Time	13:02	Weather	
Pre-Cleaning	N	Date Cleaned			
Flow control	Not Controlled	Survey Purpose	Routine Assessment	Direction	Downstream
Street	TROMLEY (SOUTH)	City	INKSTER	Drainage area	
Location Code		Pipe Use	Stormwater Pipe		
Location details	PERRIN	Height	12	Width	ins
Shape	Circular	Material	Reinforced Concrete Pipe	Lining	
Coating		Pipe Joint length	Ft	Total length	Ft
Length Surveyed	183.70 Ft	Year Constructed		Year Renewed	
Additional info					

Structural	O & M				
Miscellaneous	Constructional				

Up	N2	Rim to invert	Grade to invert	Rim to grade	Ft
Down	N3	Rim to invert	Grade to invert	Rim to grade	Ft

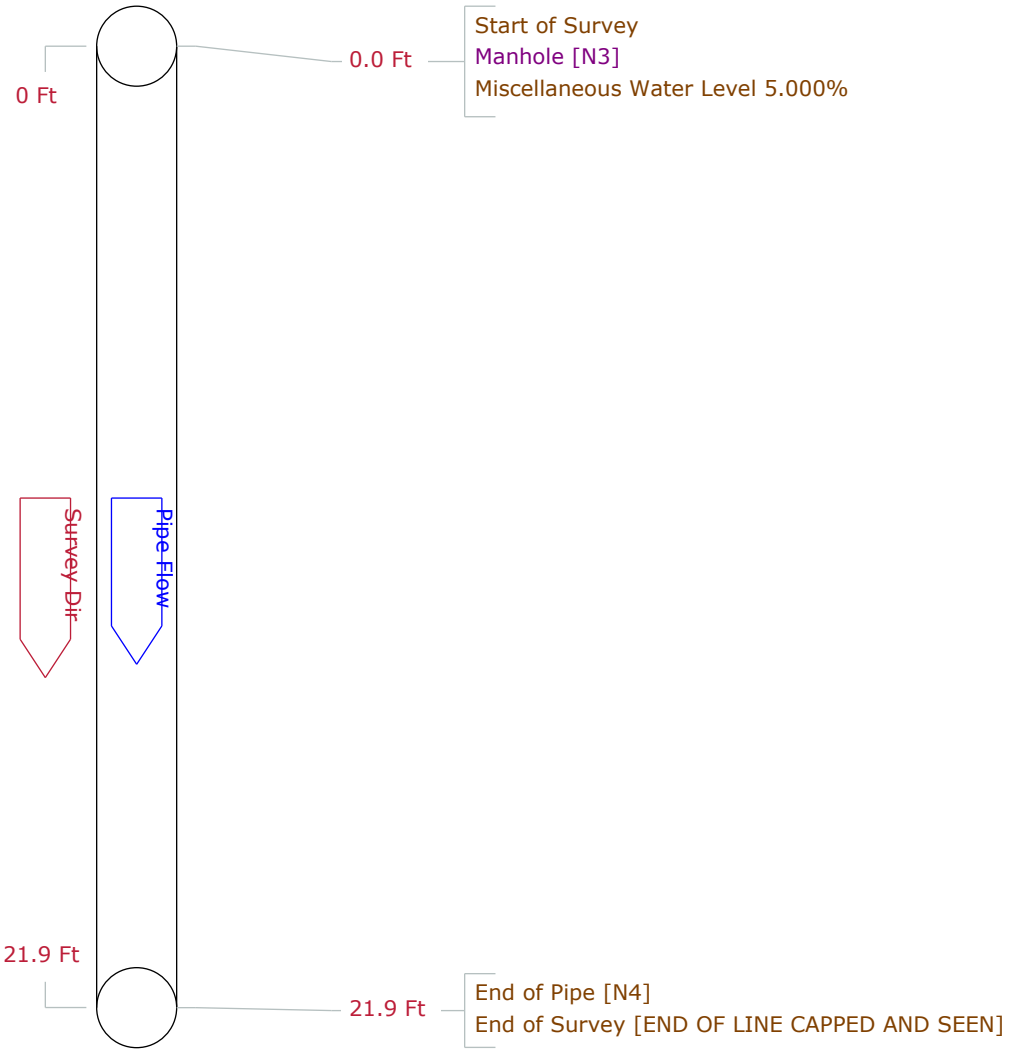


Pipe Graphic Report of PLR N3A for ECT

Setup	16	Surveyed By	PIPETEK-RD	Certificate #	P0038923-082022
Owner	INKSTER	Reviewed By		Reviewer #	
Work Order		Customer	ETC	P/O #	
Media Label	N3A	Project	ECT_STORM_TV_RD_12-21-2022		
Date	2022/12/22	Time	13:37	Weather	
Pre-Cleaning	N	Date Cleaned			
Flow control	Not Controlled	Survey Purpose	Routine Assessment	Direction	Downstream
Street	TROMLEY (SOUTH)	City	INKSTER	Drainage area	
Location Code		Pipe Use	Stormwater Pipe		
Location details	PERRIN	Height	12	Width	ins
Shape	Circular	Material	Reinforced Concrete Pipe	Lining	
Coating		Pipe Joint length	Ft	Total length	Ft
Length Surveyed	21.90 Ft	Year Constructed		Year Renewed	
Additional info					

Structural	O & M
Miscellaneous	Constructional

Up	N3	Rim to invert		Grade to invert	Rim to grade Ft
Down	N4	Rim to invert		Grade to invert	Rim to grade Ft

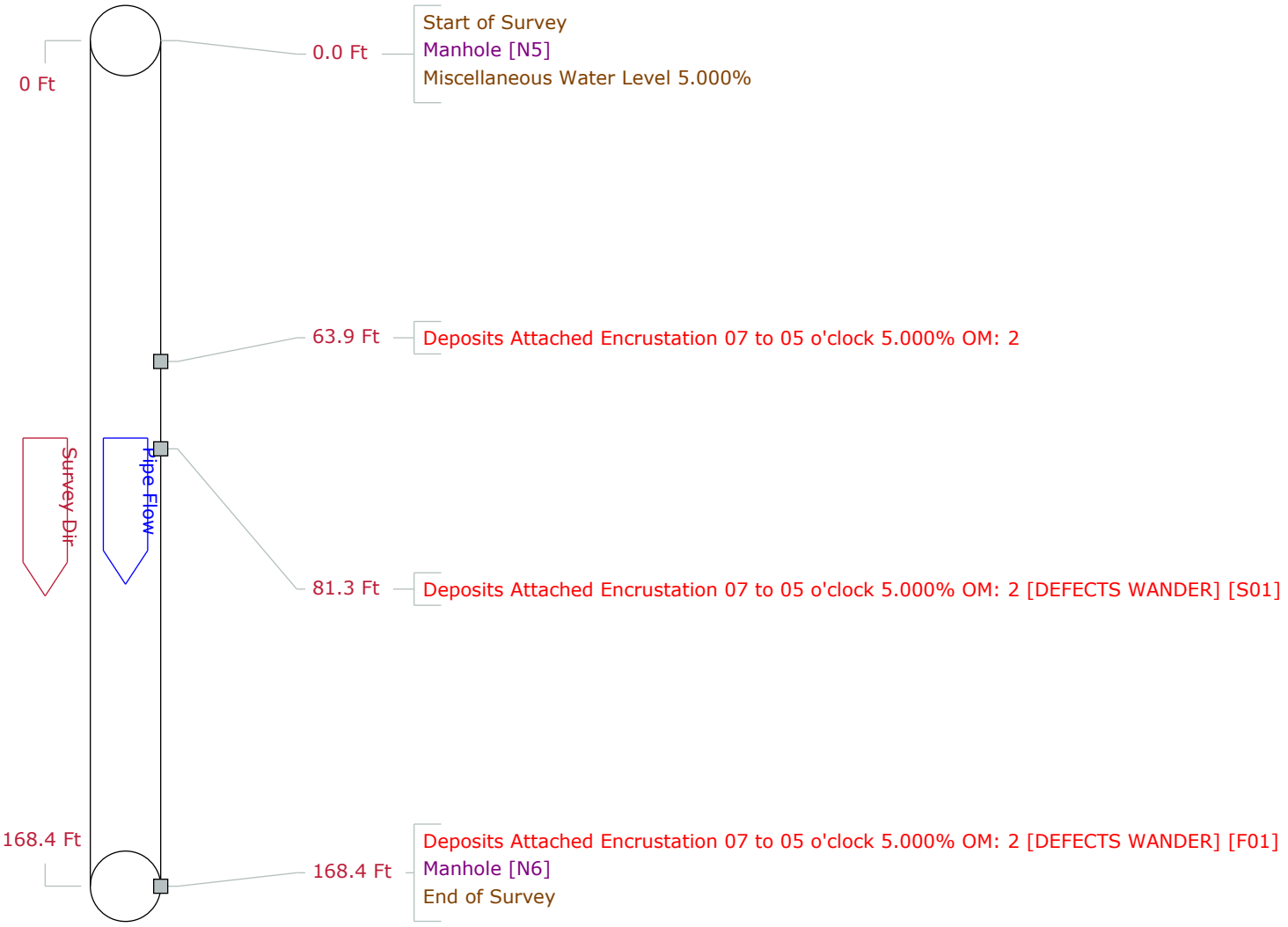


Pipe Graphic Report of PLR N5A for ECT

Setup	17	Surveyed By	PIPETEK-RD	Certificate #	P0038923-082022
Owner	INKSTER	Reviewed By		Reviewer #	
Work Order		Customer	ETC	P/O #	
Media Label	N5A	Project	ECT_STORM_TV_RD_12-21-2022		
Date	2022/12/22	Time	8:45	Weather	
Pre-Cleaning	N	Date Cleaned			
Flow control	Not Controlled	Survey Purpose	Routine Assessment	Direction	Downstream
Street	HELEN	City	INKSTER	Drainage area	
Location Code		Pipe Use	Stormwater Pipe		
Location details	PERRIN	Height	18	Width	ins
Shape	Circular	Material	Reinforced Concrete Pipe	Lining	
Coating		Pipe Joint length	Ft	Total length	Ft
Length Surveyed	168.40 Ft	Year Constructed		Year Renewed	
Additional info					

Structural	O & M				
Miscellaneous	Constructional				

Up	N5	Rim to invert		Grade to invert	Rim to grade Ft
Down	N6	Rim to invert		Grade to invert	Rim to grade Ft



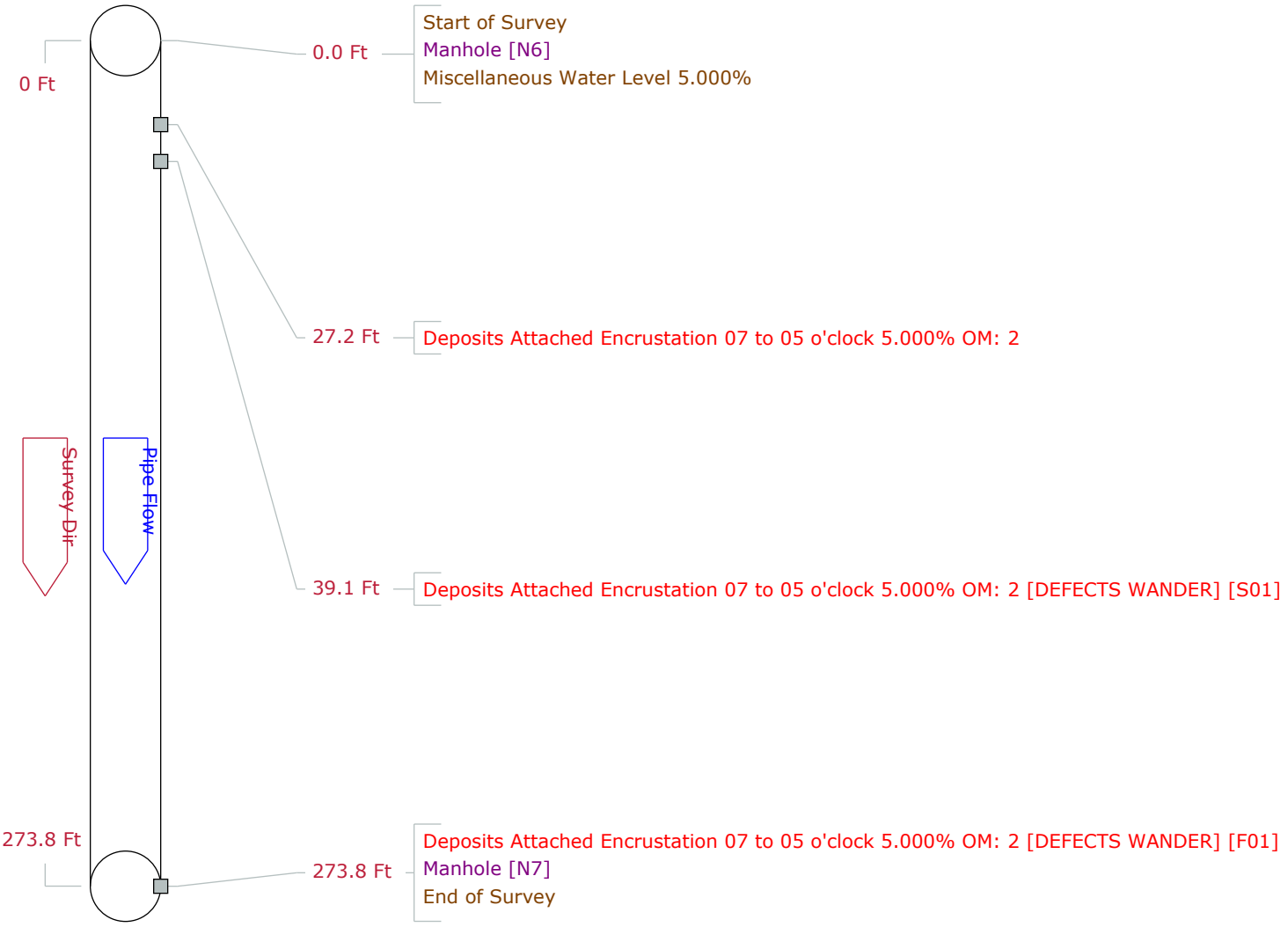
Pipe Graphic Report of PLR N6A for ECT

Setup	18	Surveyed By	PIPETEK-RD	Certificate #	P0038923-082022
Owner	INKSTER	Reviewed By		Reviewer #	
Work Order		Customer	ETC	P/O #	
Media Label	N6A	Project	ECT_STORM_TV_RD_12-21-2022		
Date	2022/12/22	Time	9:31	Weather	
Pre-Cleaning	N	Date Cleaned			
Flow control	Not Controlled	Survey Purpose	Routine Assessment	Direction	Downstream

Street	HELEN	City	INKSTER	Drainage area	
Location Code		Pipe Use	Stormwater Pipe		
Location details	PERRIN	Height	18	Width	ins
Shape	Circular	Material	Reinforced Concrete Pipe	Lining	
Coating		Pipe Joint length	Ft	Total length	Ft
Length Surveyed	273.80 Ft	Year Constructed		Year Renewed	
Additional info					

Structural	O & M				
Miscellaneous	Constructional				

Up	N6	Rim to invert	Grade to invert	Rim to grade	Ft
Down	N7	Rim to invert	Grade to invert	Rim to grade	Ft

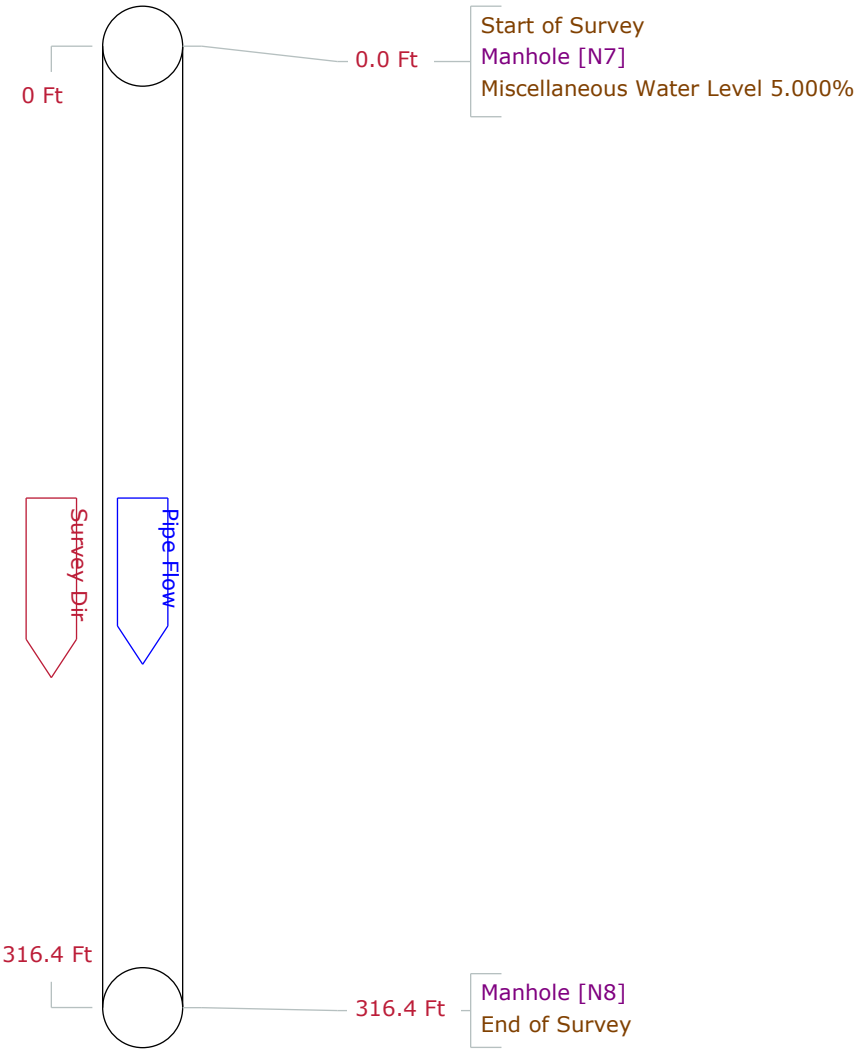


Pipe Graphic Report of PLR N7A for ECT

Setup	19	Surveyed By	PIPETEK-RD	Certificate #	P0038923-082022
Owner	INKSTER	Reviewed By		Reviewer #	
Work Order		Customer	ETC	P/O #	
Media Label	N7A	Project	ECT_STORM_TV_RD_12-21-2022		
Date	2022/12/22	Time	9:41	Weather	
Pre-Cleaning	N	Date Cleaned			
Flow control	Not Controlled	Survey Purpose	Routine Assessment	Direction	Downstream
Street	HELEN	City	INKSTER	Drainage area	
Location Code		Pipe Use	Stormwater Pipe		
Location details	PERRIN	Height	18	Width	ins
Shape	Circular	Material	Reinforced Concrete Pipe	Lining	
Coating		Pipe Joint length	Ft	Total length	Ft
Length Surveyed	316.40 Ft	Year Constructed		Year Renewed	
Additional info					

Structural	O & M				
Miscellaneous	Constructional				

Up	N7	Rim to invert	Grade to invert	Rim to grade	Ft
Down	N8	Rim to invert	Grade to invert	Rim to grade	Ft



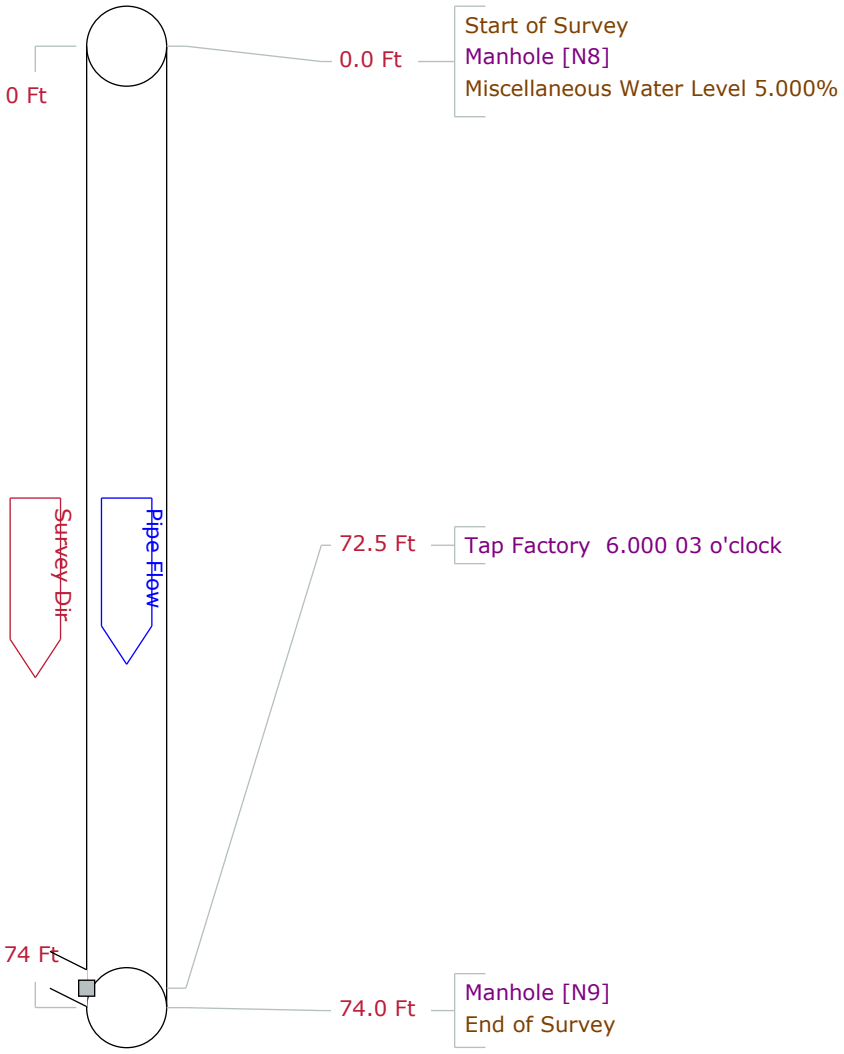
Pipe Graphic Report of PLR N8A for ECT

Setup	20	Surveyed By	PIPETEK-RD	Certificate #	P0038923-082022
Owner	INKSTER	Reviewed By		Reviewer #	
Work Order		Customer	ETC	P/O #	
Media Label	N8A	Project	ECT_STORM_TV_RD_12-21-2022		
Date	2022/12/22	Time	9:52	Weather	
Pre-Cleaning	N	Date Cleaned			
Flow control	Not Controlled	Survey Purpose	Routine Assessment	Direction	Downstream

Street	HELEN	City	INKSTER	Drainage area	
Location Code		Pipe Use	Stormwater Pipe		
Location details	PERRIN	Height	12	Width	ins
Shape	Circular	Material	Reinforced Concrete Pipe	Lining	
Coating		Pipe Joint length	Ft	Total length	Ft
Length Surveyed	74.00 Ft	Year Constructed		Year Renewed	
Additional info					

Structural	O & M				
Miscellaneous	Constructional				

Up	N8	Rim to invert	Grade to invert	Rim to grade	Ft
Down	N9	Rim to invert	Grade to invert	Rim to grade	Ft

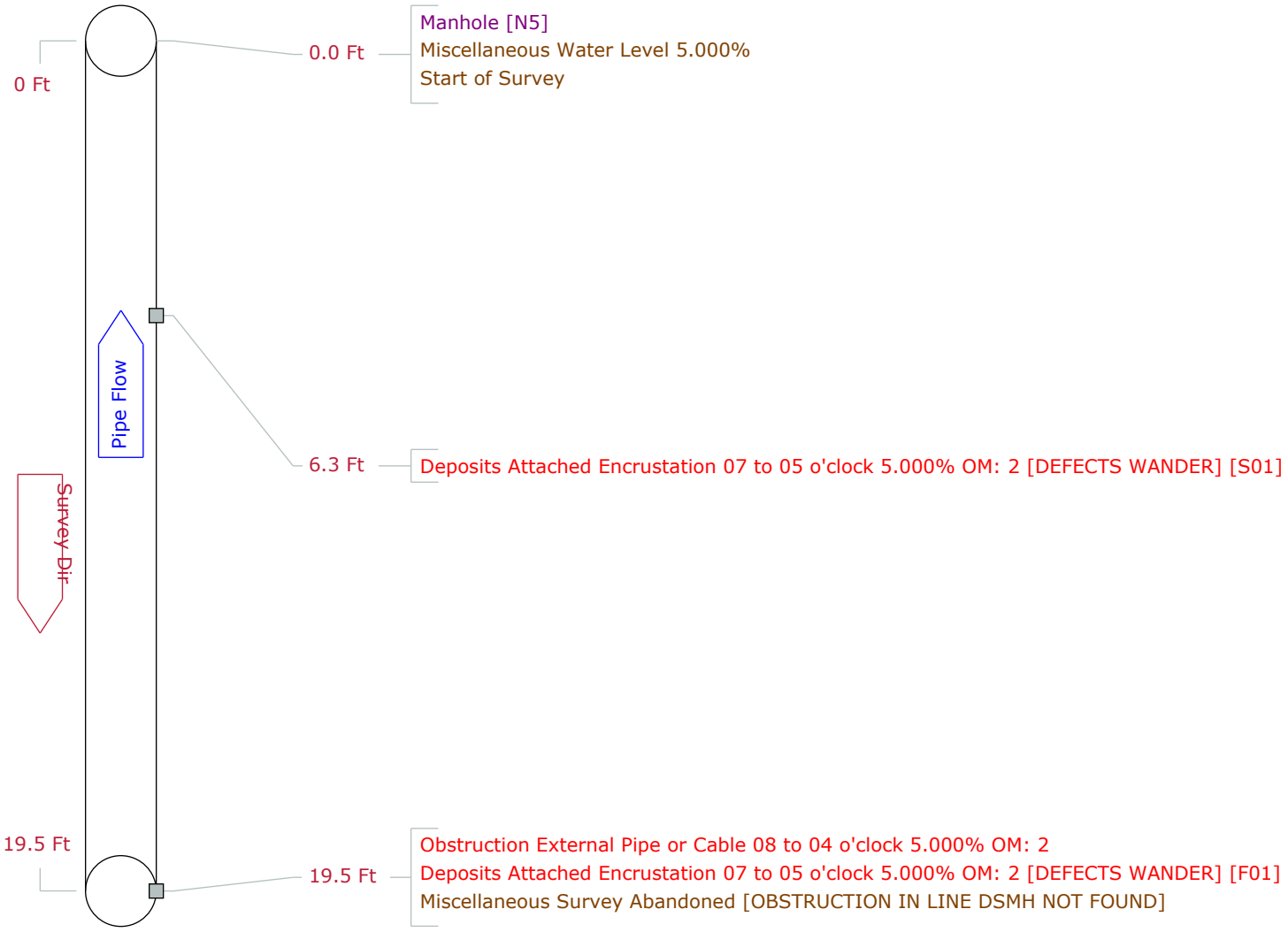


Pipe Graphic Report of PLR N5B for ECT

Setup	21	Surveyed By	PIPETEK-RD	Certificate #	P0038923-082022
Owner	INKSTER	Reviewed By		Reviewer #	
Work Order		Customer	ETC	P/O #	
Media Label	N5B	Project	ECT_STORM_TV_RD_12-21-2022		
Date	2022/12/22	Time	10:30	Weather	
Pre-Cleaning	N	Date Cleaned			
Flow control	Not Controlled	Survey Purpose	Routine Assessment	Direction	Upstream
Street	HELEN	City	INKSTER	Drainage area	
Location Code		Pipe Use	Stormwater Pipe		
Location details	PERRIN	Height	18	Width	ins
Shape	Circular	Material	Reinforced Concrete Pipe	Lining	
Coating		Pipe Joint length	Ft	Total length	Ft
Length Surveyed	19.50 Ft	Year Constructed		Year Renewed	
Additional info					

Structural	O & M				
Miscellaneous	Constructional				

Up	SOMERSET EAST	Rim to invert		Grade to invert	Rim to grade Ft
Down	N5	Rim to invert		Grade to invert	Rim to grade Ft

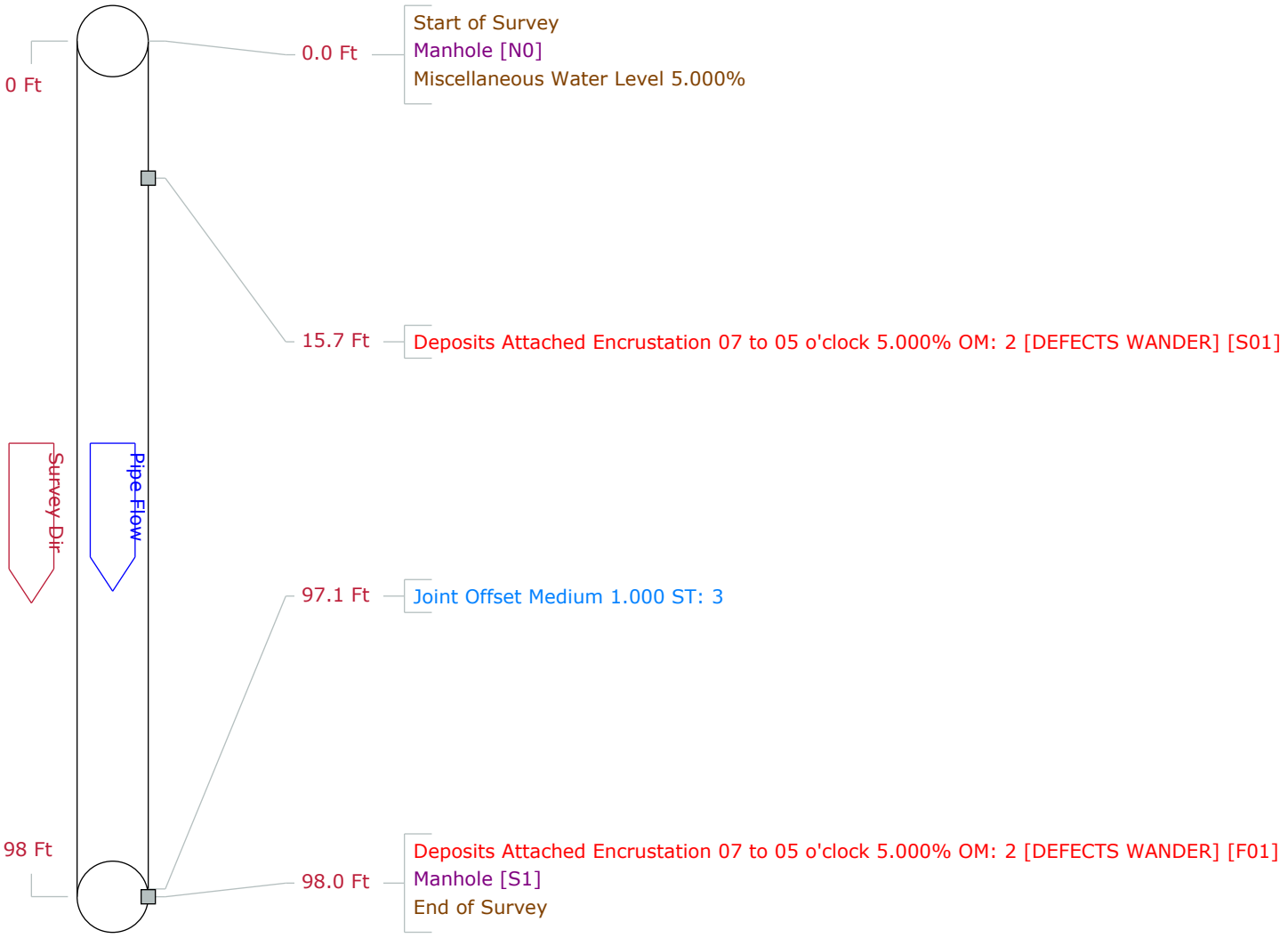


Pipe Graphic Report of PLR N0A for ECT

Setup	22	Surveyed By	PIPETEK-RD	Certificate #	P0038923-082022
Owner	INKSTER	Reviewed By		Reviewer #	
Work Order		Customer	ETC	P/O #	
Media Label	N0A	Project	ECT_STORM_TV_RD_12-21-2022		
Date	2022/12/22	Time	10:59	Weather	
Pre-Cleaning	N	Date Cleaned			
Flow control	Not Controlled	Survey Purpose	Routine Assessment	Direction	Downstream
Street	HELEN (SOUTH)	City	INKSTER	Drainage area	
Location Code		Pipe Use	Stormwater Pipe		
Location details	PERRIN	Height	12	Width	ins
Shape	Circular	Material	Reinforced Concrete Pipe	Lining	
Coating		Pipe Joint length	Ft	Total length	Ft
Length Surveyed	98.00 Ft	Year Constructed		Year Renewed	
Additional info					

Structural	O & M				
Miscellaneous	Constructional				

Up	N0	Rim to invert		Grade to invert	Rim to grade Ft
Down	S1	Rim to invert		Grade to invert	Rim to grade Ft

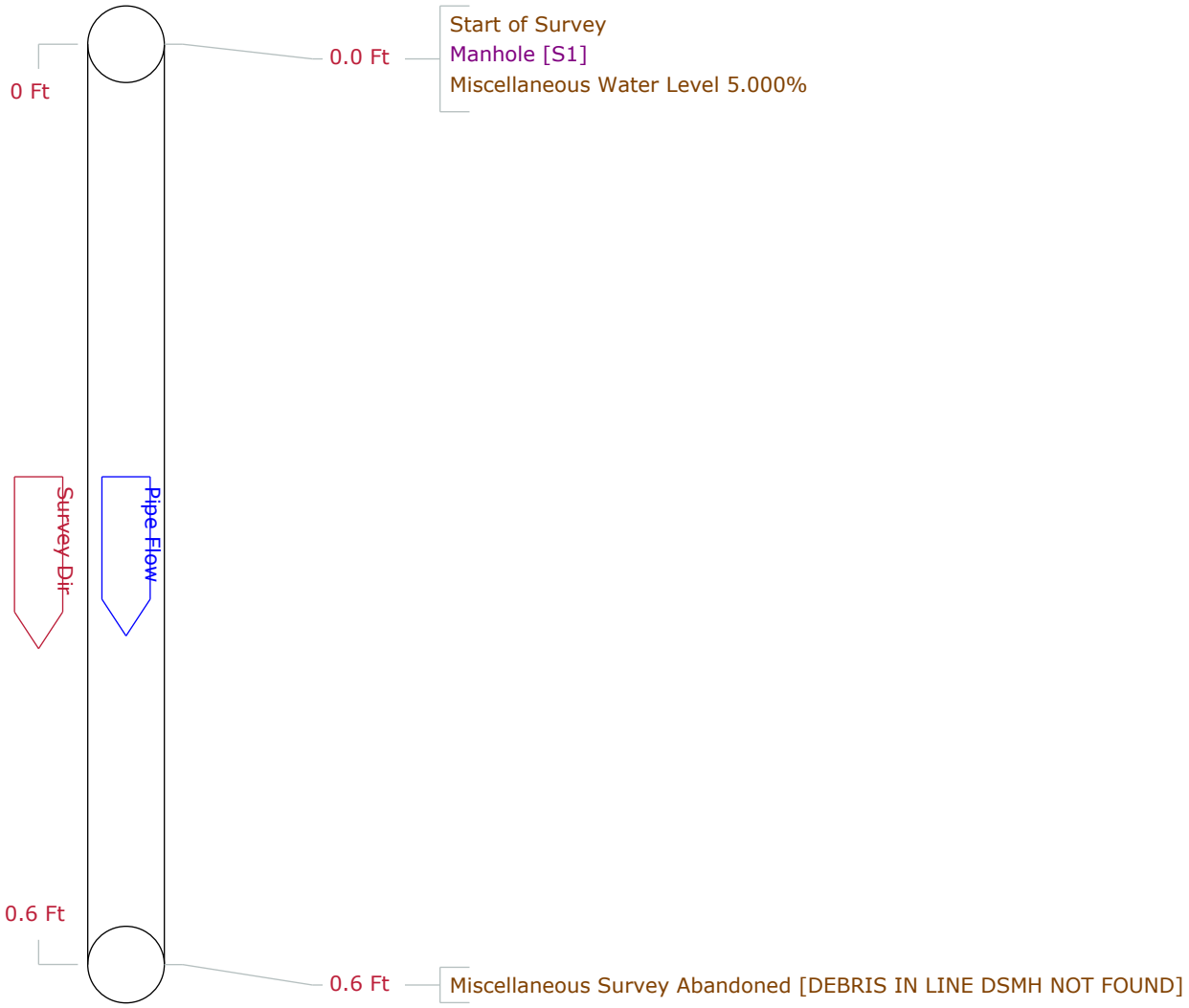


Pipe Graphic Report of PLR SOUTH 1 for ECT

Setup	23	Surveyed By	PIPETEK-RD	Certificate #	P0038923-082022
Owner	INKSTER	Reviewed By		Reviewer #	
Work Order		Customer	ETC	P/O #	
Media Label	SOUTH 1	Project	ECT_STORM_TV_RD_12-21-2022		
Date	2022/12/22	Time	11:41	Weather	
Pre-Cleaning	N	Date Cleaned			
Flow control	Not Controlled	Survey Purpose	Routine Assessment	Direction	Downstream
Street	TROMLEY (SOUTH)	City	INKSTER	Drainage area	
Location Code		Pipe Use	Stormwater Pipe		
Location details	PERRIN	Height	12	Width	ins
Shape	Circular	Material	Reinforced Concrete Pipe	Lining	
Coating		Pipe Joint length	Ft	Total length	Ft
Length Surveyed	00.60 Ft	Year Constructed		Year Renewed	
Additional info	DSMH Not Found				

Structural	O & M				
Miscellaneous	Constructional				

Up	S1	Rim to invert	Grade to invert	Rim to grade	Ft
Down	0	Rim to invert	Grade to invert	Rim to grade	Ft

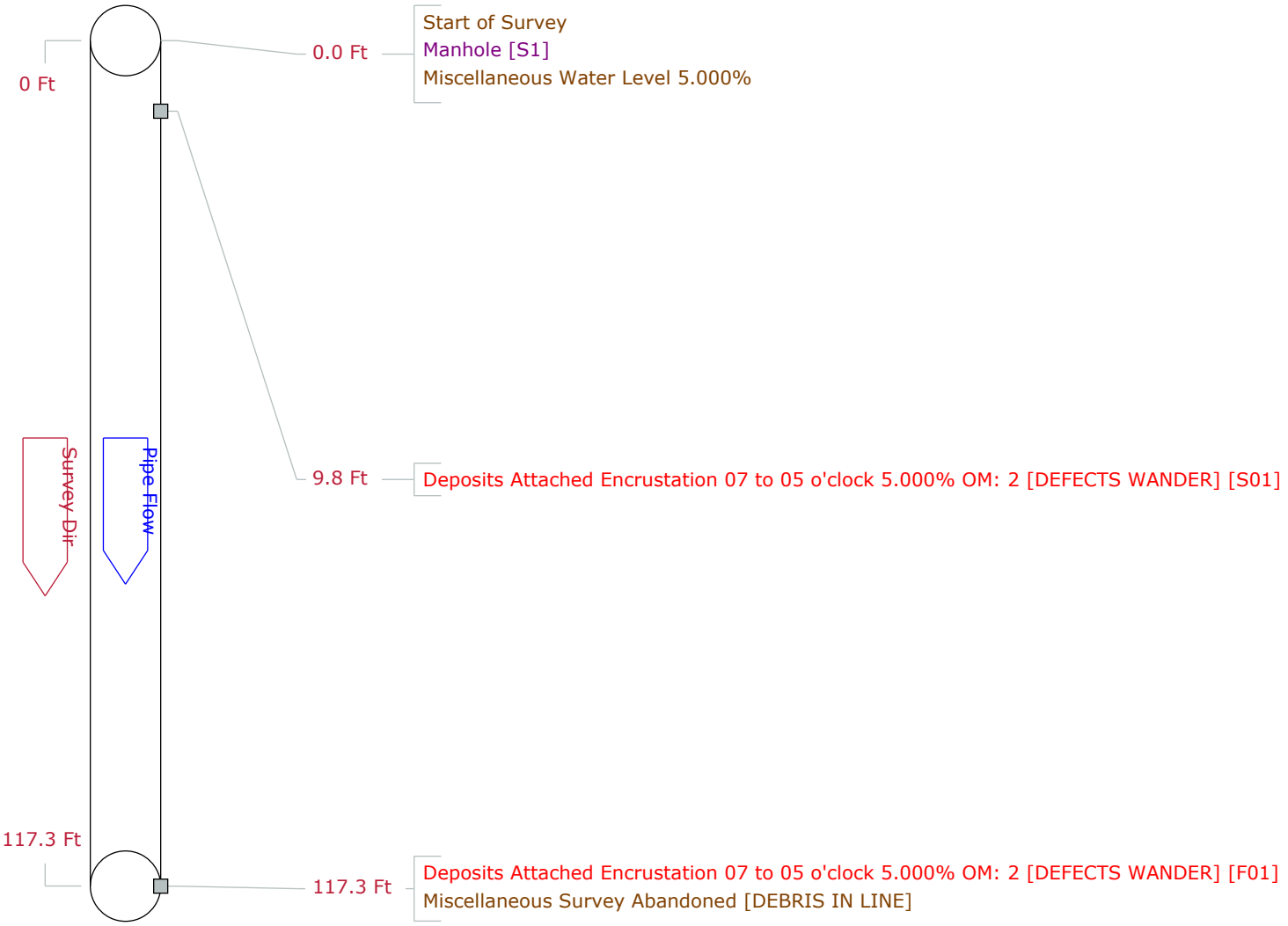


Pipe Graphic Report of PLR S1A for ECT

Setup	24/25	Surveyed By	PIPETEK-RD	Certificate #	P0038923-082022
Owner	INKSTER	Reviewed By		Reviewer #	
Work Order		Customer	ETC	P/O #	
Media Label	S1A	Project	ECT_STORM_TV_RD_12-21-2022		
Date	2022/12/22	Time	11:51	Weather	
Pre-Cleaning	N	Date Cleaned			
Flow control	Not Controlled	Survey Purpose	Routine Assessment	Direction	Downstream
Street	TROMLEY (SOUTH)	City	INKSTER	Drainage area	
Location Code		Pipe Use	Stormwater Pipe		
Location details	PERRIN	Height	12	Width	ins
Shape	Circular	Material	Reinforced Concrete Pipe	Lining	
Coating		Pipe Joint length	Ft	Total length	Ft
Length Surveyed	117.30 Ft	Year Constructed		Year Renewed	
Additional info					

Structural	O & M				
Miscellaneous	Constructional				

Up	S1	Rim to invert	Grade to invert	Rim to grade	Ft
Down	S2	Rim to invert	Grade to invert	Rim to grade	Ft

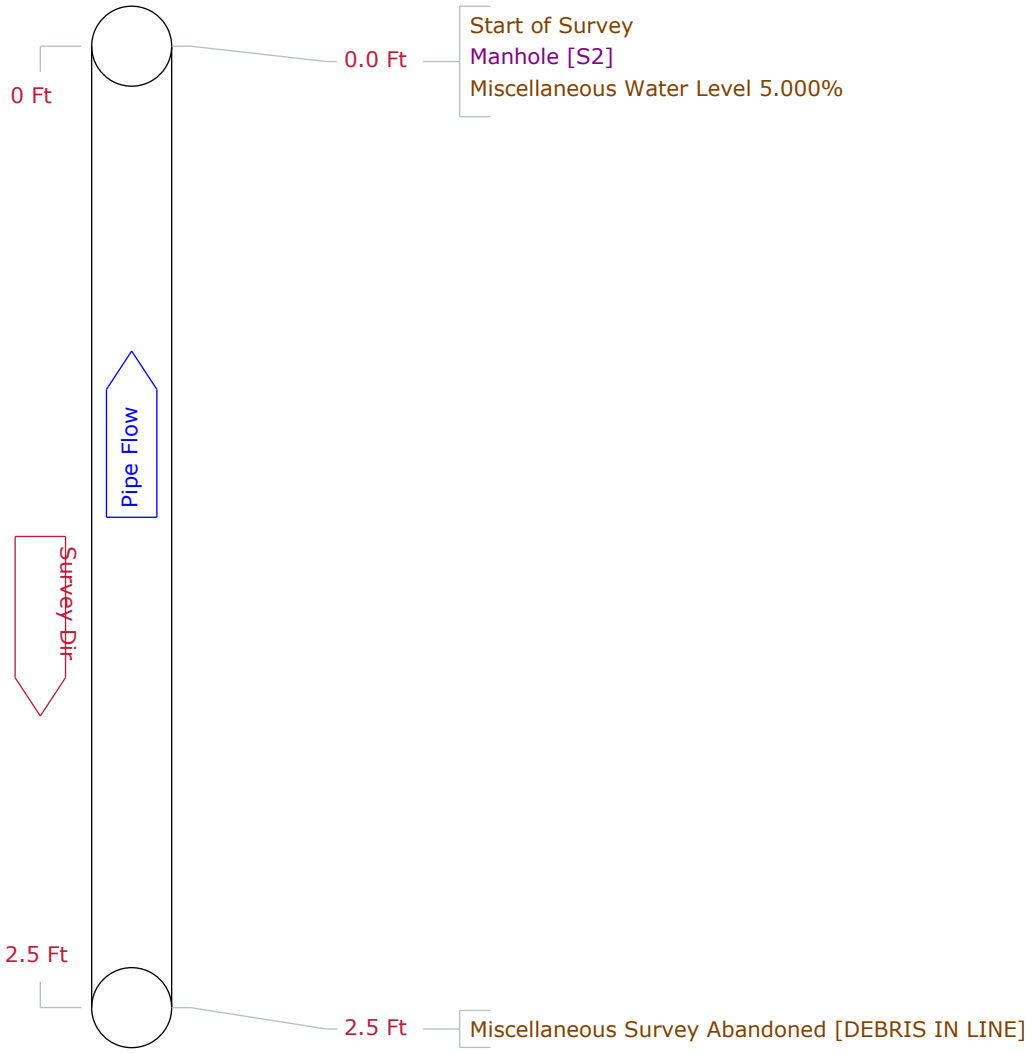


Pipe Graphic Report of PLR S1A for ECT

Setup	25/24	Surveyed By	PIPETEK-RD	Certificate #	P0038923-082022
Owner	INKSTER				
Reviewed By		Reviewer #		Work Order	
Customer	ETC			P/O #	
Media Label	S1A	Project	ECT_STORM_TV_RD_12-21-2022		
Date	2022/12/22	Time	12:03	Weather	
Pre-Cleaning	N	Date Cleaned			
Flow control	Not Controlled	Survey Purpose	Routine Assessment	Direction	Upstream
Street	TROMLEY (SOUTH)	City	INKSTER	Drainage area	
Location Code		Pipe Use	Stormwater Pipe		
Location details	PERRIN	Height	12	Width	ins
Shape	Circular	Material	Reinforced Concrete Pipe	Lining	
Coating		Pipe Joint length	Ft	Total length	Ft
Length Surveyed	02.50 Ft	Year Constructed		Year Renewed	
Additional info	Reverse set up on sheet:24				

Structural	O & M				
Miscellaneous	Constructional				

Up	S1	Rim to invert	Grade to invert	Rim to grade	Ft
Down	S2	Rim to invert	Grade to invert	Rim to grade	Ft

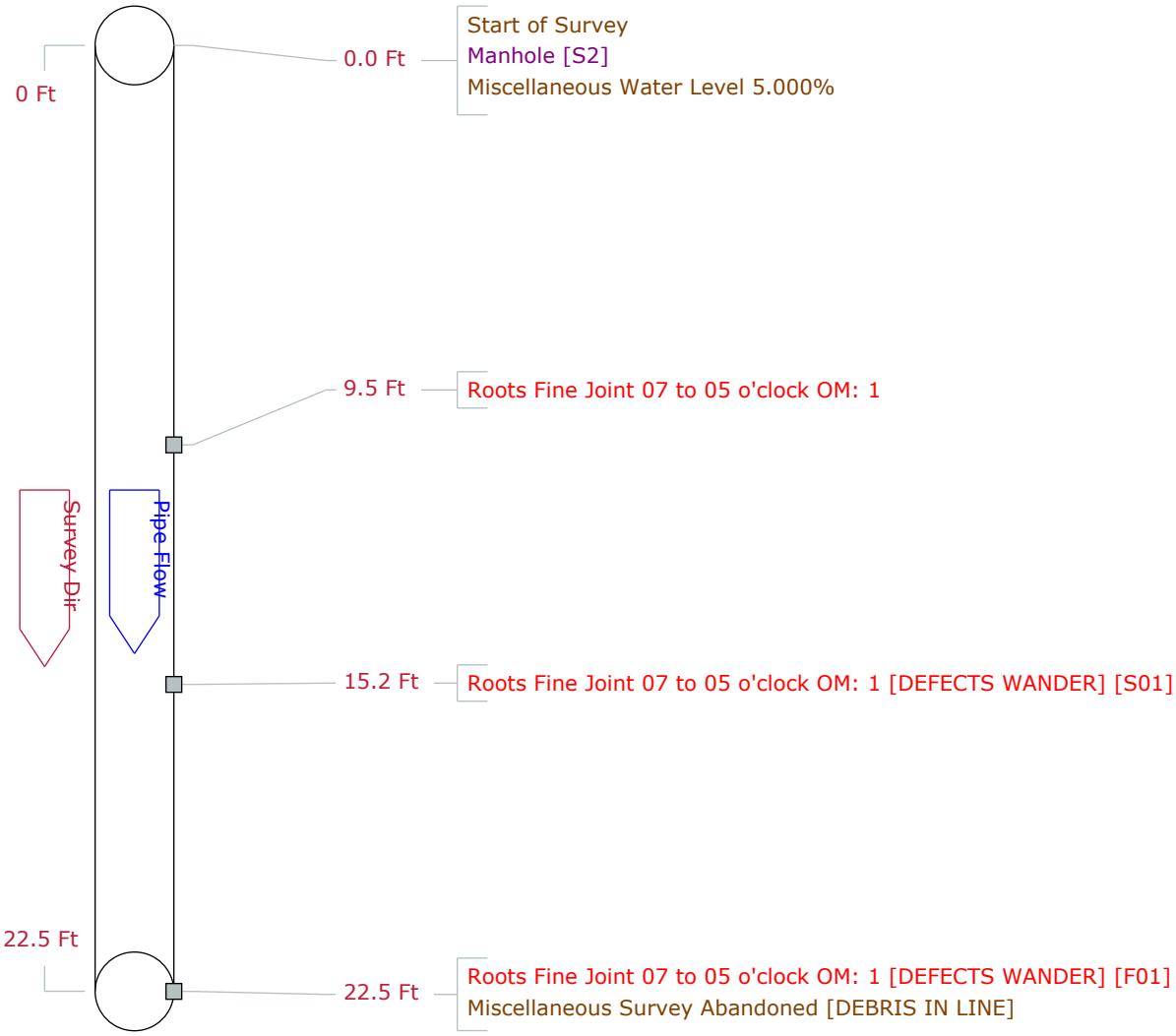


Pipe Graphic Report of PLR S2A for ECT

Setup	26	Surveyed By	PIPETEK-RD	Certificate #	P0038923-082022
Owner	INKSTER	Reviewed By		Reviewer #	
Work Order		Customer	ETC	P/O #	
Media Label	S2A	Project	ECT_STORM_TV_RD_12-21-2022		
Date	2022/12/22	Time	12:14	Weather	
Pre-Cleaning	N	Date Cleaned		Flow control	Not Controlled
Survey Purpose	Routine Assessment	Direction	Downstream	Street	TROMLEY (SOUTH)
City	INKSTER	Drainage area		Location Code	
Pipe Use	Stormwater Pipe	Location details	PERRIN	Height	12
Width	ins	Shape	Circular	Material	Reinforced Concrete Pipe
Lining		Coating		Pipe Joint length	Ft
Total length	Ft	Length Surveyed	22.50 Ft	Year Constructed	
Year Renewed		Additional info			

Structural	O & M				
Miscellaneous	Constructional				

Up	S2	Rim to invert		Grade to invert	Rim to grade Ft
Down	S3	Rim to invert		Grade to invert	Rim to grade Ft

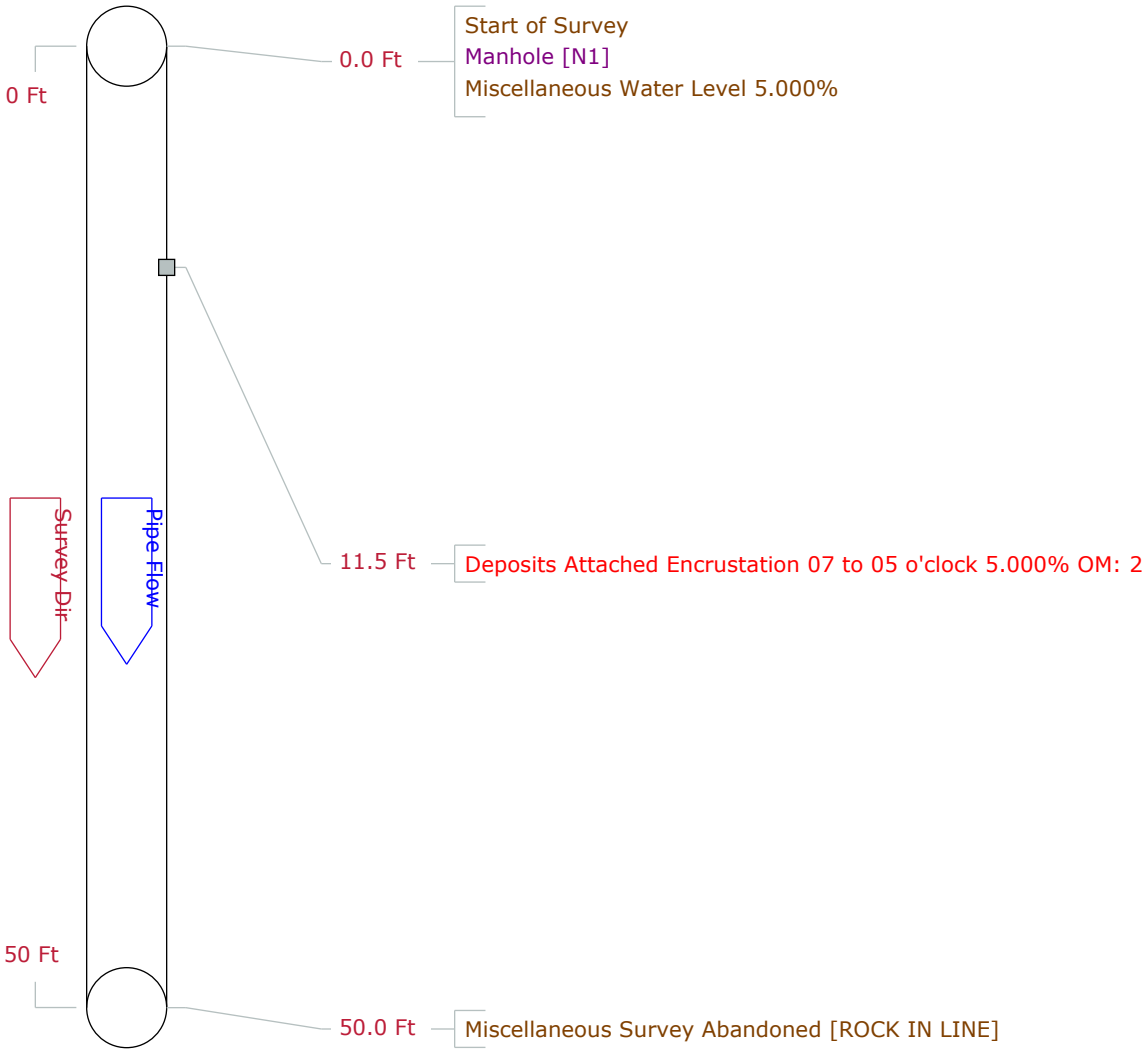


Pipe Graphic Report of PLR N1A-1 for ECT

Setup	28/14	Surveyed By	PIPETEK-RD	Certificate #	P0038923-082022
Owner	INKSTER	Reviewed By		Reviewer #	
Work Order		Customer	ETC	P/O #	
Media Label	N1A-1	Project	ECT_STORM_TV_RD_12-21-2022		
Date	2022/12/22	Time	12:38	Weather	
Pre-Cleaning	N	Date Cleaned			
Flow control	Not Controlled	Survey Purpose	Routine Assessment	Direction	Downstream
Street	TROMLEY (SOUTH)	City	INKSTER	Drainage area	
Location Code		Pipe Use	Stormwater Pipe		
Location details	PERRIN	Height	12	Width	ins
Shape	Circular	Material	Reinforced Concrete Pipe	Lining	
Coating		Pipe Joint length	Ft	Total length	Ft
Length Surveyed	50.00 Ft	Year Constructed		Year Renewed	
Additional info					

Structural	O & M				
Miscellaneous	Constructional				

Up	N1	Rim to invert	Grade to invert	Rim to grade	Ft
Down	N2	Rim to invert	Grade to invert	Rim to grade	Ft



Appendix B4

2023 ARC IDEP Investigation Report

John O'Meara, P.E
Executive Director

Auburn Hills
Beverly Hills
Bingham Farms
Birmingham
Bloomfield Hills
Bloomfield Twp.
Canton Twp.
Commerce Twp.
Dearborn Heights
Farmington
Farmington Hills
Franklin
Garden City
Henry Ford College
Inkster
Lathrup Village
Livonia
Melvindale
Northville
Northville Twp.
Novi
Oak Park
Oakland County
Orchard Lake
Plymouth
Plymouth Twp.
Redford Twp.
Rochester Hills
Romulus
Schoolcraft College
Southfield
Troy
University of Michigan-Dearborn
Van Buren Twp.
Walled Lake
Washtenaw County
Wayne
Wayne County
Wayne County Airport Authority
West Bloomfield Twp.
Westland
Wixom

Cooperating Partners:
Cranbrook Institute of Science
Friends of the Rouge
Great Lakes Water Authority
Rouge River Advisory Council
SEMCOG
Southeastern Oakland County Water Authority

Alliance of Rouge Communities
OURS TO PROTECT
Working together, restoring the river

TO: **Tyler Sonoga, ARC Technical Committee Chair**

FROM: **Emily Levine, Technical Committee Coordinator**

DATE: **March 5, 2024**

SUBJECT: **2023 IDEP Investigation Summary**

In 2023, ARC staff continued to work on illicit discharge investigations in Oakland County and assisted Wayne County with investigations in Livonia and Inkster. These investigations were in accordance with the Rouge River Collaborative Illicit Discharge Elimination Plan. These investigations were prompted by the outfall screening efforts conducted in 2018 and 2019, as well as sampling done in compliance with the collaborative TMDL plan in 2022.

The results of the investigations are summarized in Table 1. More detail can be found in the investigation reports which were sent to the communities (Attachment A).

Table 1. Status and Results of Illicit Discharge Investigations

Permittee	Outfall ID	Status	Result
Beverly Hills	BV51	Ongoing	Further investigation required
Livonia	U2008221	Closed	Issue identified is outside the parameters of the MS4
Livonia	L1619	Ongoing	Further investigation required
Inkster	Perrin Drain	Closed	Three samples taken downstream of the tap that was identified did not have elevated *E. coli* levels
Dearborn Heights	OUT20SW001	Closed	Combined sewer overflow addressed by Wayne County
Dearborn Heights	OUT05SW001	Ongoing	Further investigation required
Novi	ON20	Ongoing	Further investigation required

In 2024, ARC staff will continue source investigations on the outstanding issues in accordance with the Plan and as directed by the Technical Committee. Additional sampling will be determined pending EGLE approval of the updated Collaborative IDEP Plan.

\\anafile1\Projects\Alliance of Rouge Communities\2024 Alliance of Rouge Communities\Tech Committee\Facilitation\2023 ECT IDEP Summary.docx

Attachment A
Community-specific Investigation Reports

Annette DeMaria, P.E., PMP
Executive Director

Auburn Hills
Beverly Hills
Bingham Farms
Birmingham
Bloomfield Hills
Bloomfield Twp.
Canton Twp.
Commerce Twp.
Dearborn Heights
Farmington
Farmington Hills
Franklin
Garden City
Henry Ford College
Inkster
Lathrup Village
Livonia
Melvindale
Northville
Northville Twp.
Novi
Oak Park
Oakland County
Orchard Lake
Plymouth
Plymouth Twp.
Redford Twp.
Rochester Hills
Romulus
Schoolcraft College
Southfield
Troy
University of Michigan-Dearborn
Van Buren Twp.
Walled Lake
Washtenaw County
Wayne
Wayne County
Wayne County Airport Authority
West Bloomfield Twp.
Westland
Wixom

Cooperating Partners:
Cranbrook Institute of Science
Friends of the Rouge
Great Lakes Water Authority
Rouge River Advisory Council
SEMCOG
Southeastern Oakland County Water Authority

Alliance of Rouge Communities
OURS TO PROTECT
Working together, restoring the river

TO: **Neil Johnson, Village of Beverly Hills Director of Public Services**

FROM: **Emily Levine, ARC Staff**

DATE: **January 29, 2024**

SUBJECT: **IDEP Investigation Results: Outfall BV51 (Sleepy Hollow Lane)**

ARC staff continued illicit discharge investigation on storm drain outfall BV51 in response to findings from the 2018 outfall screening and subsequent investigations. Our investigations did not reveal the source of *E. coli* entering the drain and no illicit connection has been identified.

The outfall drains a portion of Sleepy Hollow Lane, Fiddlers Cove Road, and Metamora Lane. The receiving water is an unnamed tributary of the Rouge River (Figure 1).

Background

Outfall BV51 was investigated due to the high *E. coli* concentrations found during the outfall survey conducted in 2018. At that time, the *E. coli* concentration was 3,076 MPN/100 ml which can be indicative of an illicit discharge containing sanitary sewage. ARC staff reinspected the outfall in 2019 and 2020 and found elevated *E. coli* and human *Bacteroides* concentrations (See Table 1). There were no physical signs (ex: odor, staining, debris, organic growth) of a sewage discharge to the storm drain in the outfall or any of the manholes. Likewise, there were no obvious signs of animal fecal impacts to the drain.

Results

In 2021 and 2022, ARC staff coordinated with the Oakland County Water Resources Commissioner (OCWRC) to televise the drain. The drains from BV51-1 to the outfall, BV51-1 to BV51-2, and the drain from BV51-3 to BV51-2 were televised. BV51-2 is buried. A tap was identified in the storm drain between the outfall and BV51-1 that was believed to be a possible illicit connection, although no staining or evidence of sewage was observed (Figure 2).

In 2021, ARC staff coordinated with the Village of Beverly Hills to dye test 31349 Sleepy Hollow Lane. The dye testing revealed that all three bathrooms in the house were correctly connected to the sanitary drain and no dye was observed entering the storm drain. In 2023, ARC staff coordinated with the Village of Beverly Hills to dye test 31403 Sleepy Hollow Lane. No illicit connections were found. In addition, the manhole BV51-2 was dug up by the city staff and inspected by ARC staff, with no signs of illicit connections identified.

Table 1. Sampling Results (*E. coli* in MPN/100 mL and Human *Bacteroides* in gene copies/100 ml)

	E. coli	***E. coli***	***E. coli***	***E. coli***	***E. coli***	**Human *Bacteroides***	***E. coli***	**Human *Bacteroides***
	7/9/18	**8/15/19**	**9/19/19**	**8/19/20**	**9/15/20**	**9/15/20**	**11/17/20**	**11/17/20**
BV51-0	3,076	201	>24,196	573	>24,196	72,000	1,081	<354

Conclusions and Recommendations

Work to date indicates that no illicit connection has been identified upstream of BV51. Planned work includes blocking a tap in the north side of BV51-1 to cause water to backup in a connecting catch basin and sample there. If this does not help locate an illicit connection, then dye testing additional homes in the drainage area may be necessary.

This work is being completed as outlined in the Rouge River Collaborative IDEP Plan in compliance with the Village's MS4 permit and as a result of your ARC membership. If you have any questions, I can be reached at 313-963-6600 or elevine@ectinc.com.

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Figure 1. Storm Drain and Sampling Locations

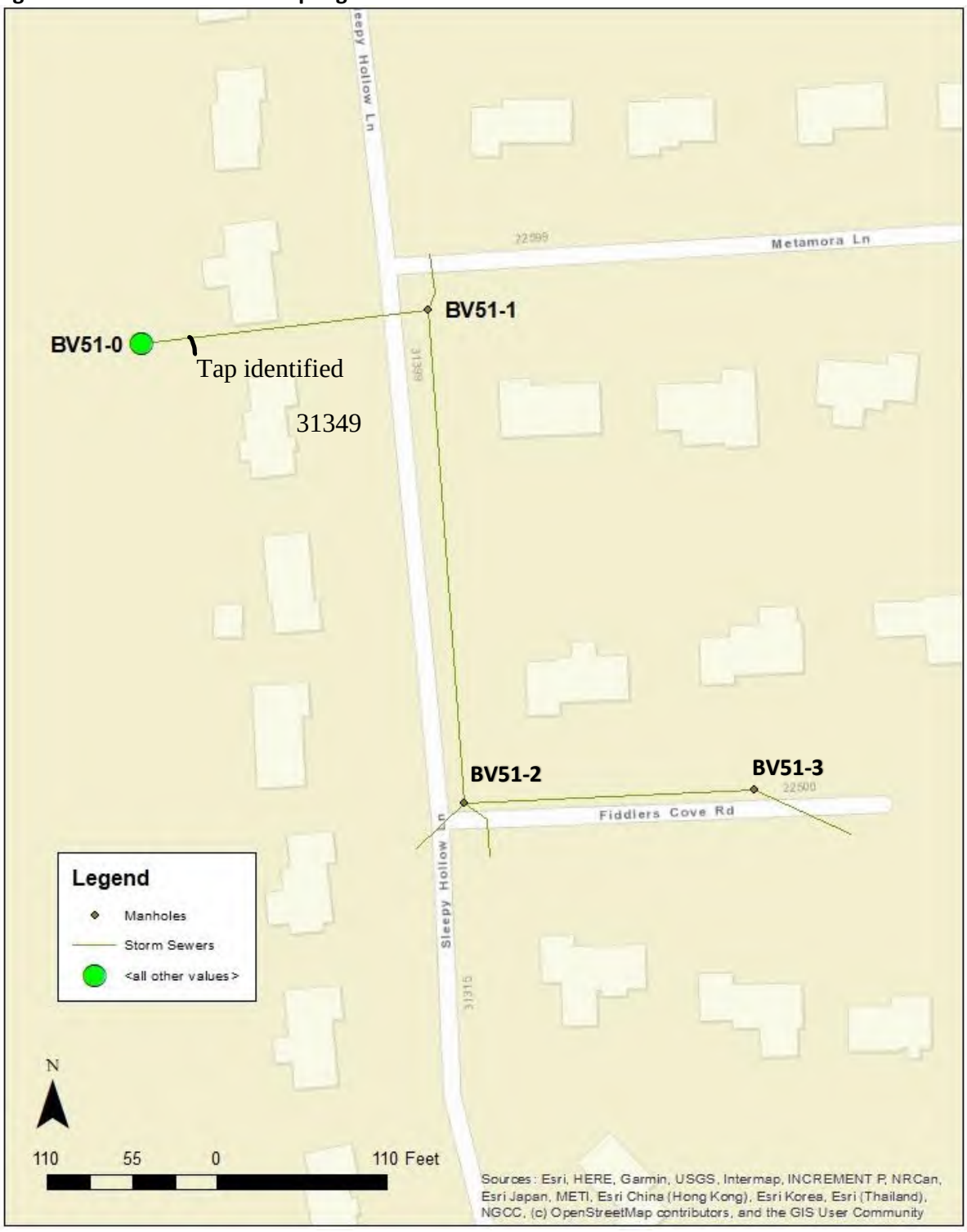


Figure 2. Tap to Storm Drain at 14.2 ft east of BV51-0



John O'Meara, PE
Executive Director

Auburn Hills
Beverly Hills
Bingham Farms
Birmingham
Bloomfield Hills
Bloomfield Twp.
Canton Twp.
Commerce Twp.
Dearborn Heights
Farmington
Farmington Hills
Franklin
Garden City
Henry Ford College
Inkster
Lathrup Village
Livonia
Melvindale
Northville
Northville Twp.
Novi
Oak Park
Oakland County
Orchard Lake
Plymouth
Plymouth Twp.
Redford Twp.
Rochester Hills
Romulus
Schoolcraft College
Southfield
Troy
University of Michigan-Dearborn
Van Buren Twp.
Walled Lake
Washtenaw County
Wayne
Wayne County
Wayne County Airport Authority
West Bloomfield Twp.
Westland
Wixom

Cooperating Partners:
Cranbrook Institute of Science
Friends of the Rouge
Great Lakes Water Authority
Rouge River Advisory Council
SEMCOG
Southeastern Oakland County Water Authority

TO: **Doug Moore, City of Livonia**

FROM: **Emily Levine, ARC Staff**

DATE: **January 6, 2024**

SUBJECT: **IDEP Investigation Results: Outfall L1619**

ARC staff continued the illicit discharge investigation on storm drain outfall L1619 in response to findings from the 2018 outfall screening and subsequent investigations conducted by Wayne County. Our investigations have not identified an illicit connection and further investigation is recommended.

Background

Outfall L1619 was investigated due to the high *E. coli* concentrations found during the outfall survey conducted in 2018. At that time, the *E. coli* concentration was 15,531 MPN/100 ml which is indicative of an illicit discharge containing sanitary sewage. Wayne County conducted follow-up investigations, which narrowed down the source to being upstream of a manhole located in the grass along the north side of Seven Mile Road, near a Chicken Shack restaurant (Figure 1). *E. coli* and Human *Bacteroides* levels at this manhole have been found to be elevated (Table 1).

The drainage area of the manhole in front of the Chicken Shack was unclear, as the storm drain map provided by the City of Livonia appears to be incomplete. Therefore, televising was done of the drain along 7 Mile Road in 2022. No signs of illicit connections were identified and additional investigation was determined to be necessary.

Results

ECT worked with Wayne County to conduct additional sampling and dye testing in 2023. Elevated *E. coli* and human DNA were found in the manhole located in the grassy area northwest of the Chicken Shack manhole (Table 1). Dye testing showed all buildings in the vicinity to be correctly connected, except for the car wash. Dye was not found in the drains after dye testing the car wash and the building plan for the car wash was reexamined but found to be uninformative.

Table 1. Sampling Results (*E. coli* in MPN/100 mL and Human *Bacteroides* in gene copies/100 ml)

	E. coli	*E. coli*	*E. coli*	*E. coli*	Human DNA	*E. coli*	*E. coli*	Human DNA
	7/16/18	12/9/20	12/16/20	11/10/21	11/10/21	7/18/23	8/10/23	8/10/23
L1619	15,531	630		3,076	95			
29050 Dardanella		<100						
Seven Mile WC MS4 East			61					
Chicken Shack			2,000	1,616	1,541,053	96	6,867	736
MH SE of car wash in grassy area						97	9,208	816
MH SW of car wash next to tree						160		
MH near 7 Mile SE of car wash						31	31	

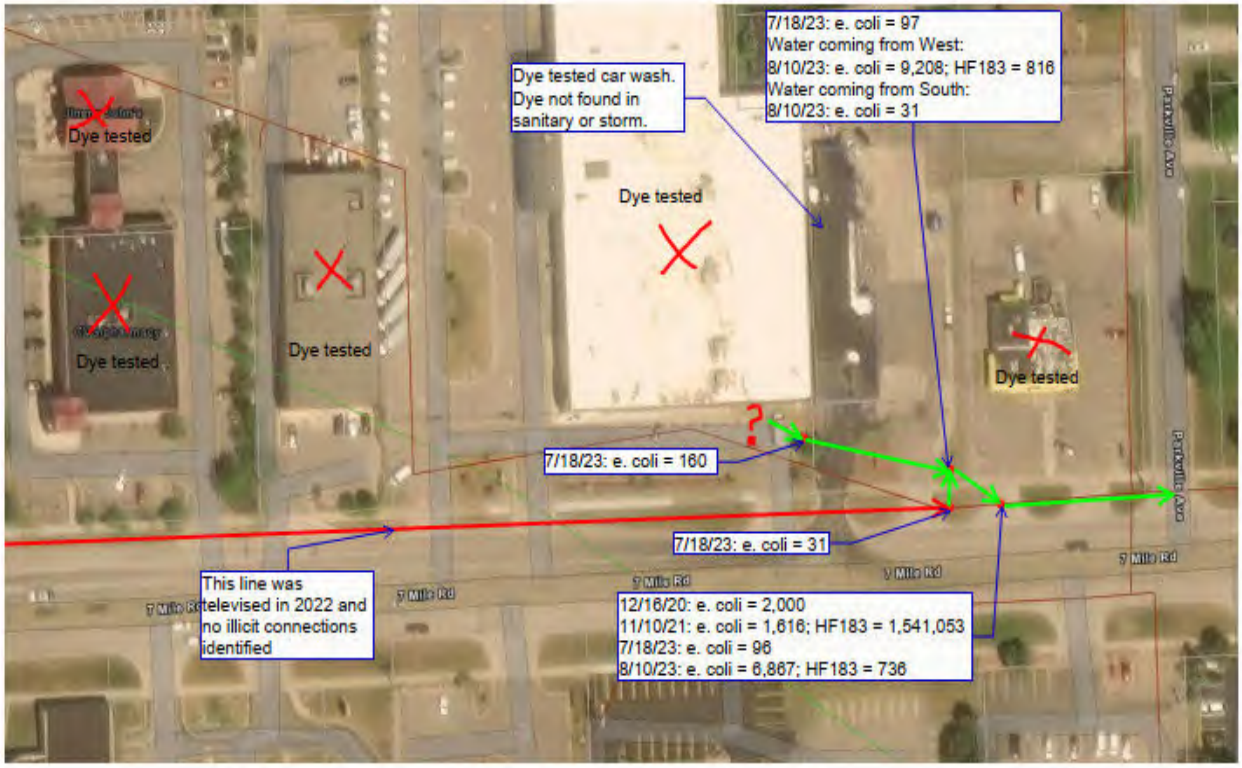
Conclusions and Recommendations

The source of the elevated *E. coli* at this outfall remains unclear. Redoing the dye testing of the car wash is the recommended next step.

This work is being completed as outlined in the Rouge River Collaborative IDEP Plan in compliance with the City's MS4 permit and as a result of your ARC membership. If you have any questions, you can reach me at 248-763-1407 or elevine@ectinc.com.

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Figure 1. Storm Drain and Sampling Location



Annette DeMaria, P.E., PMP
Executive Director

Auburn Hills
Beverly Hills
Bingham Farms
Birmingham
Bloomfield Hills
Bloomfield Twp.
Canton Twp.
Commerce Twp.
Dearborn Heights
Farmington
Farmington Hills
Franklin
Garden City
Henry Ford College
Inkster
Lathrup Village
Livonia
Melvindale
Northville
Northville Twp.
Novi
Oak Park
Oakland County
Orchard Lake
Plymouth
Plymouth Twp.
Redford Twp.
Rochester Hills
Romulus
Schoolcraft College
Southfield
Troy
University of Michigan-Dearborn
Van Buren Twp.
Walled Lake
Washtenaw County
Wayne
Wayne County
Wayne County Airport Authority
West Bloomfield Twp.
Westland
Wixom

Cooperating Partners:
Cranbrook Institute of Science
Friends of the Rouge
Great Lakes Water Authority
Rouge River Advisory Council
SEMCOG
Southeastern Oakland County Water Authority

TO: **Doug Moore, City of Livonia**

FROM: **Emily Levine, ARC Staff**

DATE: **January 6, 2024**

SUBJECT: **IDEP Investigation Results: Outfall U2008221**

ARC staff continued the illicit discharge investigation on storm drain outfall U2008221 in response to findings from the 2018 outfall screening and subsequent investigations. Our 2022 investigations identified an illicit connection coming from Saint Mary's Hospital. This connection was corrected by the hospital. Follow-up sampling to confirm that the connection was corrected revealed that a suspicious discharge still exists, since elevated surfactants were identified. Investigations to identify the source of this second discharge have shown that a stormwater retention basin beneath the parking lot on the south side of the hospital is releasing water with elevated surfactants into the storm drain (Figure 1). The city has informed the hospital that this issue needs to be addressed. Since this discharge is not impacting city-owned stormwater infrastructure, this issue is outside the scope of the MS4 permit and does not require any further action from the perspective of the MS4 permit.

This work was completed as outlined in the Rouge River Collaborative IDEP Plan in compliance with the City's MS4 permit and as a result of your ARC membership. If you have any questions, you can reach me at 248-763-1407 or elevine@ectinc.com.

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Figure 1. Surfactants discharge locations



Annette DeMaria, P.E., PMP
Executive Director

Auburn Hills
Beverly Hills
Bingham Farms
Birmingham
Bloomfield Hills
Bloomfield Twp.
Canton Twp.
Commerce Twp.
Dearborn Heights
Farmington
Farmington Hills
Franklin
Garden City
Henry Ford College
Inkster
Lathrup Village
Livonia
Melvindale
Northville
Northville Twp.
Novi
Oak Park
Oakland County
Orchard Lake
Plymouth
Plymouth Twp.
Redford Twp.
Rochester Hills
Romulus
Schoolcraft College
Southfield
Troy
University of Michigan-Dearborn
Van Buren Twp.
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Washtenaw County
Wayne
Wayne County
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Rouge River Advisory Council
SEMCOG
Southeastern Oakland County Water Authority

Alliance of Rouge Communities
OURS TO PROTECT
Working together, restoring the river

TO: **Patrick Cullen, Wayne County Deputy Drain Commissioner**

FROM: **Emily Levine, ARC Staff**

DATE: **February 7, 2024**

SUBJECT: **IDEP Investigation Results: Perrin Drain**

Cc: **Jerome Bivens, City of Inkster**
Sue Thompson, Wayne County Department of Public Works
Environmental Services Division

ARC staff has partnered with Wayne County to conduct an illicit discharge investigation on the Perrin Drain in response to findings of high *E. coli* in samples collected from the Lower Rouge River by Wayne County.

Background

The Perrin Drain flows into the Lower Rouge River upstream of John Daly Road. Once an open creek, the drain is now contained in an underground pipe from southeast of Inkster Road and Avondale Street, continuing upstream through the neighborhood to the northwest of that intersection, towards Cherry Hill Road and Middlebelt Road (Figure 1). Samples collected from near the outlet in September and October of 2020 had elevated *E. coli* levels. Additional samples collected from various upstream manholes on October 29, 2020 showed some elevated *E. coli* levels. Additional sampling was conducted in March 2021 which resulted in a recommendation to televise portions of the storm drain system.

ARC staff had the drains along Helen Street and Tromley Street televised in December of 2022. Although excessive sediment was found in the storm drain on Tromley Street, no evidence was found of illicit connections. On Helen Street, a tap was identified coming from the east side of Helen Street, south of the intersection with Cherry Hill Road (Figure 1).

Results

Samples were collected three times from the outfall directly downstream from the tap that was identified on Helen Street. Although the first sample result showed *e. coli* at 932 MPN/100mL, the human DNA levels for that sample were not elevated and subsequent samples found low *E. coli* levels (Table 1).

Table 1. Sample Results

Location	*E. coli*	Human *Bacteroides*	*E. coli*	*E. coli*
	5/22/23	**5/22/23**	**7/18/23**	**8/10/23**
147 Helen	932	95	272	145

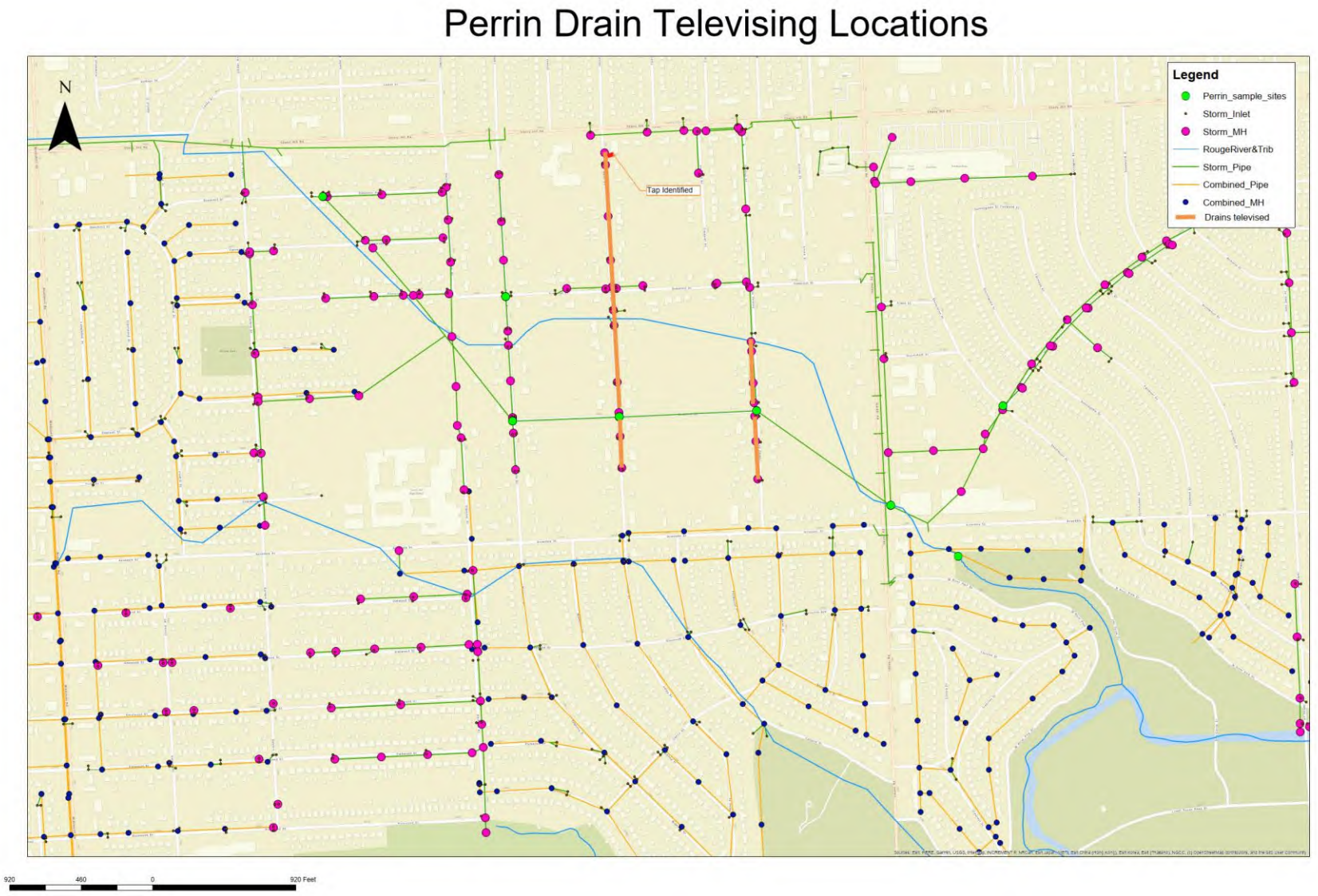
Conclusions and Recommendations

Findings from sample results indicate that the tap that was identified is not a source of illicit discharge. Therefore, this investigation can be closed.

This work was completed as outlined in the Rouge River Collaborative IDEP Plan in compliance with the County's and City's MS4 permits and as a result of your ARC membership. If you have any questions, I can be reached at 248-763-1407 or elevine@ectinc.com.

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Figure 1. Storm Drain and Sampling Locations



Annette DeMaria, P.E., PMP
Executive Director

Auburn Hills
Beverly Hills
Bingham Farms
Birmingham
Bloomfield Hills
Bloomfield Twp.
Canton Twp.
Commerce Twp.
Dearborn Heights
Farmington
Farmington Hills
Franklin
Garden City
Henry Ford College
Inkster
Lathrup Village
Livonia
Melvindale
Northville
Northville Twp.
Novi
Oak Park
Oakland County
Orchard Lake
Plymouth
Plymouth Twp.
Redford Twp.
Rochester Hills
Romulus
Schoolcraft College
Southfield
Troy
University of Michigan-Dearborn
Van Buren Twp.
Walled Lake
Washtenaw County
Wayne
Wayne County
Wayne County Airport Authority
West Bloomfield Twp.
Westland
Wixom

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Friends of the Rouge
Great Lakes Water Authority
Rouge River Advisory Council
SEMCOG
Southeastern Oakland County Water Authority

Alliance of Rouge Communities
OURS TO PROTECT
Working together, restoring the river

TO: **Rebecca Runkel**

FROM: **Emily Levine, ARC Staff**

DATE: **January 29, 2024**

SUBJECT: **IDEP Investigation Results: Outfall NO20**

ARC staff conducted an illicit discharge investigation on storm drain outfall NO20 in response to findings from the ARC's 2022 outfall screening conducted in accordance with the ARC's Collaborative TMDL Plan. Our investigations did not reveal the source of *E. coli* entering the drain and no illicit connection has been identified. ARC Staff recommends additional IDEP investigations at this location.

Background

Outfall NO20 was investigated due to high *E. coli* concentration (11,119 MPN/100 ml) found during an outfall screening conducted in 2022. There was no observed color, odor, turbidity, or other unusual characteristics noted during the initial screening.

The outfall drains Willowbrook Drive and its adjoining roads. The receiving water is a tributary of the Middle Branch of the Rouge (See Figure 1).

Results

ARC staff reinspected outfall NO20 on May 22, 2023 and found an *E. coli* concentration of 882 MPN/100 ml and human *Bacteroides* concentration of 9,284 MNP/100mL. ARC staff reinspected the outfall and collected samples from three upstream manholes to narrow down possible sources of *E. coli* contamination four more times in 2023 (Table 1). The first three sets of results had *E. coli* concentrations below 500 MNP/100mL, which indicated that testing for *Bacteroides* was not necessary and an illicit connection was unlikely. The fourth set of samples was collected incase the illicit connection was coming from the nearby school, since the first three sets of samples were collected during the summer when school was not in session. This fourth set of samples found elevated *E. coli* and *Bacteroides* at manhole NO20-4 Willow.

Table 1. Sampling Results

Structure		NO20	NO20-3	NO20-4 Oak	NO20-4 Willow
Location		Outfall on south side of the creek, west of Willowbrook Dr.	Manhole at the northeast corner of Willowbrook and Oak Tree Road	Manhole next to driveway of 40440 Oak Tree Road	Manhole in the sidewalk on east side of Willowbrook Dr, south of Oak Tree Road
9/1/2022	***E. coli***	11,199			
5/22/23	***E. coli***	882			
	Human *Bacteroides*	9,284			
7/20/23	***E. coli***	31	218	158	109
8/10/23	***E. coli***	98	41	20	
8/29/23	***E. coli***	10	31	10	30
9/11/23	***E. coli***	583	537	10	512
	Human *Bacteroides*	240	240		667

Conclusions and Recommendations

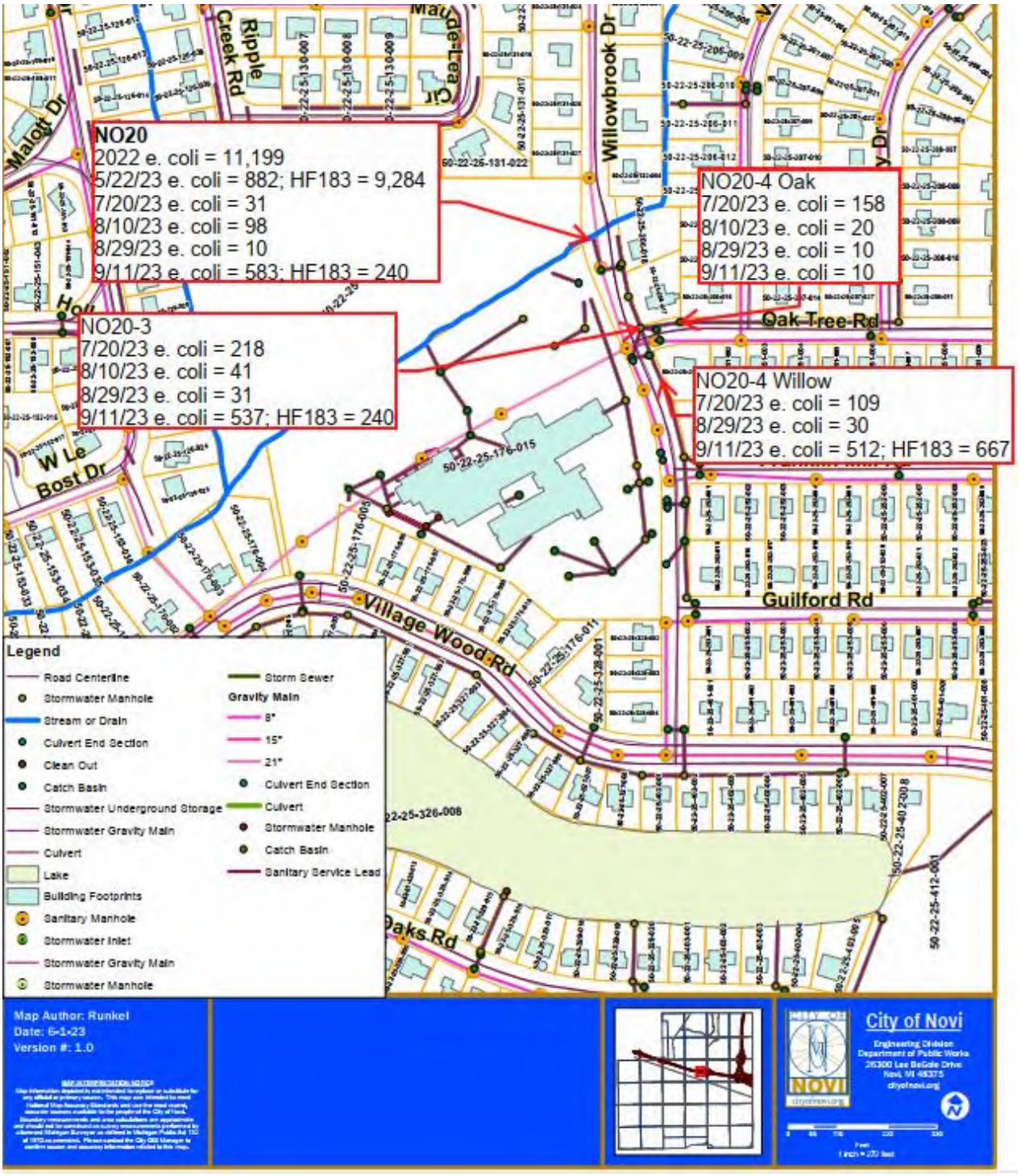
Due to the presence of elevated E. coli during the school year and not during the summer time, it is likely that there is an illicit tap coming from the school located on the west side of Willowbrook Drive. Dye testing the school and possible additional sampling is recommended as the next steps.

This work is being completed as outlined in the Rouge River Collaborative IDEP Plan in compliance with the City's MS4 permit and as a result of your ARC membership. If you have any questions, I can be reached at 313-963-6600 or elevine@ectinc.com.

Attachment: Figure 1. Storm Drain and Sampling Location

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Figure 1. Storm Drain and Sampling Locations



Appendix B5

Birmingham Investigation Records

BIRMINGHAM
A WALKABLE CITY

Illicit Discharge Response & Investigation Report

Date of Incidence: October 19, 2023 Time: 2:39 pm

Reported By: Sally Patrella, Friends of the Rouge Telephone: (734) 927-4904

Location of Complaint: 300 Warren Court Sidwell: 19-25-376-034

Property Owner Info. From City storm sewer from Parking Lot No. 5.

Description of Complaint: Discharge from City storm sewer outfall into Rouge River.

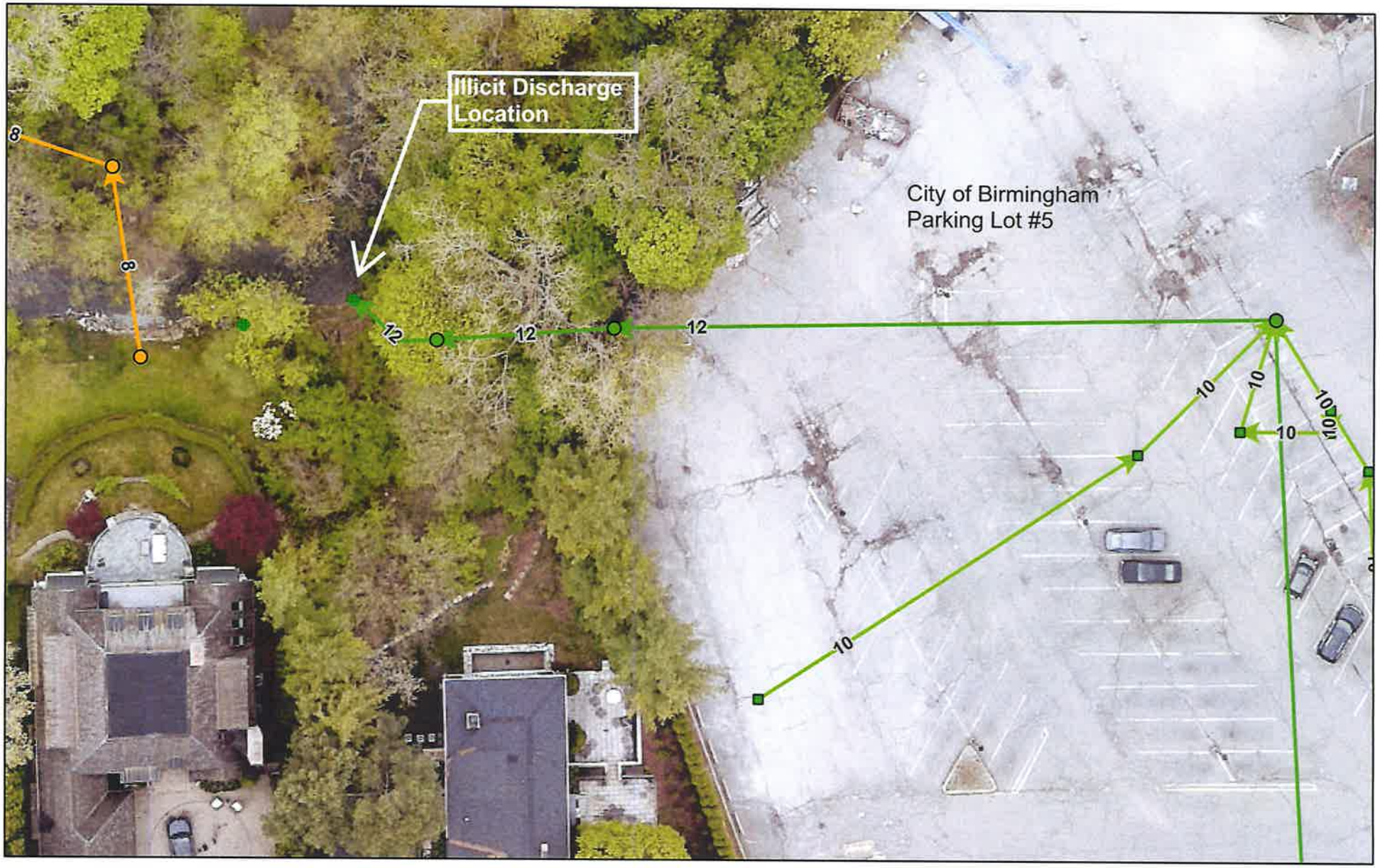
Investigation Notes	Date
During Friends of the Rouge stream monitoring a discharge from a City storm sewer was observed. Pictures were taken and Oakland County was called. Oakland County took a sample. Sally Patrella emailed Nick in Planning.	10/19/23
Investigations in the field, as-built plans, and sewer videos reveals that the church at 300 Willits is discharging waste water to the City storm sewer.	

Actions Taken	Date
Letter sent to First Baptist Church requesting a meeting and resolution to the issue.	12/6/23
CB, CM, and BH met with church staff and Creggar Plumbing to determine extent of waste water connection to storm sewer. Investigations revealed the entire church and day care appears to discharge out the north side of the building and into the storm sewer.	1/11/24
Sent email to Church staff on 1/23/24 regarding steps/options necessary to disconnect waste water line from storm sewer and tie into combined sewer. Received letter response back. Letter sent to City Manager and City Attorney for follow-up.	1/29/24

Agencies Contacted	Name	Phone/Email	Date
OCWRC	Ron Fadoir	(248) 431-6354 fadoirr@oakgov.com	10/19/23
EGLE	Kathleen Sexton	(586) 206-2699 SextonK3@michigan.gov	11/3/23

Report Prepared By: Cory Borton

Birmingham Sewer System



11/3/2023, 2:28:07 PM

- Outfall
- Birmingham-Owned Sewer Inlet
- Birmingham-Owned Manhole
- SanitaryManhole
- StormManhole
- Non-City Manhole
- SanitaryManhole
- StormManhole
- Birmingham-Owned Sewer Main
- Storm
- Sanitary
- Catch Basin Lead

1:564

0 0 0.01 0.01 mi

0 0.01 0.01 0.02 km

Oakland County, Michigan, SEMCOG, Esri Canada, Esri, HERE, Garmin, INCREMENT P, USGS, EPA, USDA

City of Birmingham

Oakland County, Michigan, SEMCOG, Esri Canada, Esri, HERE, Garmin, INCREMENT P, USGS, EPA, USDA |

BIRMINGHAM
A WALKABLE CITY

December 6, 2023

First Baptist Church
300 Willits Street
Birmingham, MI 48009

Re: City of Birmingham Illicit Discharge Elimination Program

To Whom It May Concern,

In October 2023, an illicit discharge was observed from the storm sewer outfall to the Rouge River north of your property. A sample of the discharge indicated a high level of E. coli bacteria. The City of Birmingham has traced the discharge back to a connection to the storm sewer that appears to be coming from your property.

A review of our files indicates that an illicit connection was discovered from your building in 1996 and 1998. This issue again appeared in 2008. After each instance steps were taken by the City of Birmingham and First Baptist Church to remedy the situation. Attached are copies of the correspondence since 1996 outlining what has occurred and how it was resolved.

Per Federal, State, and local laws and regulations, non-storm water discharges must be directed to the City's sanitary/combined sewers. Failure of this can result in penalties from the City of Birmingham and possibly the Michigan Department of Environment, Great Lakes and Energy (EGLE). The City requests that Church staff investigate this situation where the illicit connection may be occurring, and implement a plan to permanently remedy the illicit discharge. The City of Birmingham Engineering Department shall be contacted within 14 days of this letter to schedule a meeting to discuss and receive copies of the remediation plan.

We may be contacted at (248) 530-1840 or mcoatta@bhamgov.org and cborton@bhamgov.org to discuss and schedule an onsite meeting and inspection.

Sincerely,

Melissa A. Coatta, P.E.
City Engineer

Cory Borton
Asst. Director of Engineering

Appendix C

IDEP Training Records

Appendix C1. Number of Field Staff by Permittee

Appendix C2. Sign-in Sheets for ARC-Sponsor Training

Appendix C3. Individual Community Training Records

Appendix C1

Number of Field Staff by Permittee

Community	Number of field staff	Number of staff trained at the investigator level	Number of staff trained at observer level
Beverly Hills	7	1	7
Bingham Farms	0	0	0
Birmingham	33	2	29
Bloomfield Hills	5	5	5
Bloomfield Township	33	15	30
Canton Township	24	16	24
Dearborn Heights	29	7	19
Farmington	13	4	13
Farmington Hills	21	8	21
Garden City	23	1	18
Inkster	16	1	9
Lathrup Village	0	1	0
Livonia	67	4	63
Melvindale	10	2	8
Northville	6	2	6
Northville Township	11	1	11
Novi	29	2	15
Oak Park	2	1	1
Plymouth	10	1	5
Plymouth Township	9	6	8
Redford Township	14	2	8
Southfield	40	1	15
Troy	65	3	10
Village of Franklin	0	0	0
Walled Lake	3	2	2
Wayne	0	0	0
West Bloomfield Township	28	7	14
Westland	40	4	4
Total	**538**	**99**	**345**

Appendix C2

Sign-in Sheets for ARC-Sponsor Training

SEMCOG University: MS4 IDEP Training: Module 1 Alert Observer (In-Person)

10/18/2022

Name	Organization	Email	Attended
Aaron Berkholz	Washtenaw County Road Commission	berkholza@wcroads.org	x
Adam R. Carter	City of Flat Rock	eholtz@flatrockmi.org	x
Alex Tartaglia	City of Farmington Hills	atartaglia@fhgov.com	x
Ashley Bueche	St. Clair County	abueche@stclaircounty.org	x
Austin Perry	City of Rochester DPW	aperry@rochestermi.org	x
Brandon Jackson	Charter Township Of West Bloomfield	bjackson@wbparks.org	x
Caleb Ovillette	City of Wayne	DPW@cityofwayne.com	x
Chad Fisher	City of Wayne	DPW@cityofwayne.com	x
Chad Thompson	Oakland County Parks And Recreation	thompsonmc@oakgov.com	x
Chris Ahlgren	City of Rochester DPW	cahlgren@rochestermi.org	x
Chris Weigel	City of Riverview		x
Dan Raupp	West Bloomfield Parks And Recreation	draupp@wbparks.org	x
David Bernard	St. Clair County Community College	dobernard@sc4.edu	x
Dennis Burns	City of Riverview		x
Derrick Schueller	City of Farmington Hills	dschueller@fhgov.com	x
Devin Martin	City of Riverview		x
Dillon Rodgers	City of Hazel Park	Sdubay@hazelpark.org	x
Ethan Amolsch	City of Farmington Hills	eamolsch@fhgov.com	x
Fisher Stuk	West Bloomfield Parks And Recreation	fstuk@wbparks.org	x
Frank Firmstone	Grosse Ile Township	frankf@grosseile.com	x
Gary Crimaldi	Charter Township Of West Bloomfield	gcrimaldi@wbtownship.org	x
Gene Kowalski	Grosse Ile Township	genek@grosseile.com	x
Gerald R. DeFrank	City of Flat Rock	eholtz@flatrockmi.org	x
Janel MacNee	Grosse Ile Township	janelm@grosseileairport.com	x
Jason Dickinson	City of Rochester DPW	jdickinson@rochestermi.org	x
Joe Thornburg	City of Farmington Hills	jthornberg@fhgov.com	x
John Low	City of Rochester DPW	jlow@rochestermi.org	x
Kerri Martin	City Of Rochester	kmartin@rochestermi.org	x
Kristina Geelhood	Charter Township Of Bloomfield	kgeelhood@bloomfieldtwp.org	x
Liz Szczepaniak	City of Melvindale	water@melvindale.org	x
Martin Mordarski	Charter Township Of West Bloomfield	mmordarski@wbtownship.org	x
Matt Schaerer	West Bloomfield Parks And Recreation		x
Michael Booker	City of Hazel Park	Sdubay@hazelpark.org	x
Mike Rostkowych	City of Hazel Park	tyoung@hazelpark.org	x
Nate Kieser	City of Rochester DPW	nkieser@rochestermi.org	x
Paul Gavras	Charter Township Of West Bloomfield	pgavras@wbtownship.org	x
Richard DeCaussin	Macomb County	joe.decaussin@macombgov.org	x
Rick Castleman	City of Hazel Park	Sdubay@hazelpark.org	x
Scott Kleinfeld	Charter Township Of Clinton	s.kleinfeld@clintontownship-mi.gov	x
Sean Devers	City of Farmington Hills	sdevers@fhgov.com	x

Tim Waker	City of Farmington Hills	tdwaker@fhgov.com	x
Todd Dodge	Charter Township Of West Bloomfield	TDodge@wbtownship.org	x
Todd Moskovitz	Charter Township Of West Bloomfield	tmoskovitz@wbtownship.org	x
Tony Youtsos	St. Clair County	tyoutsos@stclaircounty.org	x
William Prucknic	Charter Township Of West Bloomfield	wprucknic@wbtownship.org	x

SEMCOG University: MS4 IDEP Training: Module 1 Alert Observer (Online)

10/18/2022

Attended	Name	Email
Yes, multi-viewer	Aaryn Lindow – Roads	City of Sterling Heights
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SEMCOG University: MS4 IDEP Training: Module 1 Alert Observer

11/10/2022

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- Alyssia Anderson, City of Inkster
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- Thomas Rowland, Charter Township Of Redford
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SEMCOG University: MS4 IDEP Training: Module 2 Investigator Training

10/18/2022

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SEMCOG University: MS4 IDEP Training: Module 2 Investigator Training

10/18/2022

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SEMCOG University: MS4 IDEP Training: Module 2 Investigator

11/10/2022

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Oct-23

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Oct-23

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Maleek Harris	City of Inkster	departmentofpublicservice@dps.com
Da'Laun Hooker	City of Inkster	departmentofpublicservice@dps.com
Mike Karll	Village of Milford	mkarll@villageofmilford.org
Adam Kulinski	Village of Milford	akulinski@villageofmilford.org

Matt Openshaw	Village of Milford	waterplant@villageofmilford.org
Tim Eiden	Village of Milford	mkarll@villageofmilford.org
Steve Degnan	Village of Milford	mkarll@villageofmilford.org
Randy Sword	Village of Milford	mkarll@villageofmilford.org
Lee Lewis	Village of Milford	mkarll@villageofmilford.org
Tim Musuta	Village of Milford	mkarll@villageofmilford.org
John Payne	Village of Milford	mkarll@villageofmilford.org

Registration Option Registrants for Module 1: IDEP Alert Observer - Washtenaw County

I plan to attend this meeting in-person

Name	Organization	Quantity	Email
David Blakley	City of Ypsilanti	1	Dblakley@cityofypsilanti.com
Garrett Brice	Charter Township Of Van Buren	1	Gbrice@vanburen-mi.org
Daniel Brist	City of Wayne	1	dpw@cityofwayne.com
Gary Burchwell	City of Ypsilantlanti	1	gburchwell@cityofypsilanti.com
Kenneth Dancy	City of Ypsilanti	1	gburchwell@cityofypsilanti.com
Jacob Donner	City of Dexter	1	jdonner@dextermi.gov
Samuel Friedman	Veteran Affairs	1	Samuel.Friedman1@va.gov
Robert Gillespie	City of Ypsilanti	1	gburchwell@cityofypsilanti.com
Eric Hartman	City of Dexter	1	ehartman@dextermi.gov
Robert Hehr	City of Dexter	1	rhehr@dextermi.gov
Chris Kowal	City of Wayne	1	dpw@cityofwayne.com
Carrie Loya-Smalley	Alfred Benesch & Company	1	csmalley@benesch.com
Darren Massey	City of Ypsilanti	1	gburchwell@cityofypsilanti.com
Kelly McCabe	Huron River Watershed Council	1	kmccabe@hrwc.org
Joel Mead	City of Ann Arbor	1	Jmead@a2gov.org
Robert Nash	City of Ypsilanti	1	gburchwell@cityofypsilanti.com
Steve Pierce	City of Ann Arbor	1	Spierce@a2gov.org
Cortney Quist	City of Dexter	1	cquist@dextermi.gov
Kevin Sargent	City of Trenton	1	ksargent@trenton-mi.com
Jacob Shirley	City of Wayne	1	dpw@cityofwayne.com
Jason Vondrak	Charter Township Of Van Buren	1	jvondrak@vanburen-mi.org
Grace Whitney	City Of Dexter	1	gwhitney@dextermi.gov
	22		

Registration Option Registrants for Module 2: IDEP Investigator - Washtenaw County

Meeting Registration

Name	Organization	Quantity	Email
Ronald Akers	Charter Township Of Van Buren	1	rakers@vanburen-mi.org
Humna Anjum	City of Novi	1	hanjum@cityofnovi.org
David Blakley	City of Ypsilanti	1	Dblakley@cityofypsilanti.com
Garrett Brice	Charter Township Of Van Buren	1	Gbrice@vanburen-mi.org
Daniel Brist	City of Wayne	1	dpw@cityofwayne.com
Cameron Bump	Plymouth Twp.	1	cbump@plymouthtwp.org
Gary Burchwell		1	gburchwell@cityofypsilanti.com
Steven Champagne	Plymouth Twp.	1	schampagne@plymouthtwp.org
Jacob Donner	City of Dexter	1	jdonner@dextermi.gov
Samuel Friedman	Veteran Affairs	1	Samuel.Friedman1@va.gov
Eric Hartman	City of Dexter	1	ehartman@dextermi.gov
Robert Hehr	City of Dexter	1	rhehr@dextermi.gov
Chris Kowal	City of Wayne	1	dpw@cityofwayne.com
Carrie Loya-Smalley	Alfred Benesch & Company	1	csmalley@benesch.com
Joel Mead	City of Ann Arbor	1	Jmead@a2gov.org
Steve Pierce	City of Ann Arbor	1	Spierce@a2gov.org
Cortney Quist	City of Dexter	1	cquist@dextermi.gov
Kevin Sargent	City of Trenton	1	ksargent@trenton-mi.com
Jacob Shirley	City of Wayne	1	dpw@cityofwayne.com
Jason Vondrak	Charter Township Of Van Buren	1	jvondrak@vanburen-mi.org
Grace Whitney	City Of Dexter	1	gwhitney@dextermi.gov
Dana Wilkinson, MS	University Of Michigan	1	danawilk@umich.edu
Adam Yako	City of Novi	1	ayako@cityofnovi.org
	23		

Appendix C3

Individual Community Training Records

Bloomfield Township IDEP and Pollution Prevention

DPW Multi-Purpose Room

6/28/2022 - 7:00am to 8:30am

Emma A Moody
Lance Schram
Bob Dragoo
Brandon Johnston
Robert Shamoon
Bill D
Brett Moshier
Tom McGrath
Pat Quinn
Marco Nerva
GLENN WOOD II
Adam Roose
J. Grigsby
Tori Hancock
Olivia Clark
James Davis
Jack Kettner
Hillary Drotos
Bruce Carnahan
Chris Ciarelli
Sean C

Jeffrey K.
Trevor Fox
Duane E Cook
Patrick McNamara
Paul Palmer
Josh Eubanks
David Keller
Cory Borton

IDEP & PPGH TRAINING

FIELD STAFF					
FIRST NAME	LAST NAME	DEPT	Status	Last In-House Training	Investigator Training
Robert	Dragoo	Building Maintenance	Full	6/28/2022	-
Gerald	Keller	Building Maintenance	Full	6/25/2019	-
Dean	Begley	Grounds Maintenance	Full	7/24/2018	2014
Hillary	Drotoz	Grounds Maintenance	Full	6/28/2022	2014
Chris	Baroli	Road	Full	6/28/2022	-
Bruce	Carnahan	Road	Full	6/28/2022	-
Sean	Caverly	Road	Full	6/28/2022	-
James	Davis	Road	Full	6/28/2022	2013
Trevor	Fox	Road	Full	6/28/2022	-
Jon	Grigsby	Road	Full	6/28/2022	-
Jeff	Krauskopf	Road	Full	6/28/2022	-
Marco	Nervo	Road	Full	6/28/2022	2014
Duane	Poole	Road	Full	6/28/2022	-
Jason	Simpson	Road	Full	6/25/2019	2014
Glenn	Wood II	Road	Full	6/28/2022	2013
Shane	Beslock	Water	Full	6/25/2019	-
Josh	Eubanks	Water	Full	6/28/2022	2014
Rick	Jenkinson	Water	Full	6/25/2019	2005
David	Keller	Water	Full	6/28/2022	2008
Craig	Lewis	Water	Full	6/25/2019	2005
Patrick	McNamara	Water	Full	6/28/2022	2014
Steve	Sierota	Water	Full	6/25/2019	2005
Bill	Diviney	Motor Pool	Full	6/28/2022	
Tom	McGray	Motor Pool	Full	6/28/2022	
Emmett	Moody	Motor Pool	Full	6/28/2022	
Brett	Moshier	Motor Pool	Full	6/28/2022	
Robert	Stacherski	Motor Pool	Full	6/28/2022	

TRAINED OFFICE STAFF					
FIRST NAME	LAST NAME	DEPT	Status	Last In-House Training	Investigator Training
Mark	Hendricks	EESD	Full	7/24/2018	2017
Angela	Hysinger	EESD	Full	7/24/2018	2018
Paul	Palace	EESD	Full	6/28/2022	2005

Last Updated 6/28/22

FARMINGTON HILLS DPW
SAFETY MEETING
6/29/23
(DATE)

Safety Topic(s): IDEP TRAINING 3
SEMCOG - YOUTUBE

Instructor/Speaker(s): TRAINING VIDEO - P2GH

Print Name	Signature
MIKE HOFFMEYER	
CHRIS PATTERSON	
Nikola Milosevich	
Chase Vincent	
Joe Iafrate	
Mike Downs	
Jacob Henig	
Dan Stricks	
Mike Morud	
Mike Pallozzi	
Joe Van Vliet	
RAY WILLIAMS	
Noah Downs	
Morgan Kozlarz	
ANDY SWOPE	
Joe Eudy	
PETER PARRISH	
SAM FREEMAN	
Ryan Delph	
Sort	
Angelo St Jean	
DON DROELLE	
JENESSA RANKIN	
Chad McDaniel	
DERRICK SCHUELLER	

IDEP Training Sign in Date: 6/28/23

Parks

Name (print)	Signature
Kelly Smith	
~~Paul Hervey~~ Paul Hervey	
Joe Guibord	
Gerald Coppock	
Jeff Nelson	
Tim Marttila	
Jack Nogas	
Ashley Bonner	
Jack Politowicz	
Alexander Woods	
Rowland Daniel	
Jack Qualman	
Lev Mechnikov	
Joe Oleksak	
April Heier	
Alison Shapic	
Elsie Hellner	online
Jeff Campbell	online JC

IDEP Training Sign in Date: 6/29/2023

Golf

Name (print)	Signature
LAWRENCE MICHALIAK	L Michaliak
Bob Kopczynski	Robert Kopczynski
David De Groot	David De Groot
LEE Sinelli	Lee Sinelli
TOM ZARB	Tom Zarb
DAVID WEBER	David Weber
MIKE MARTIN	Mike Martin
Doug Walczak	Doug Walczak
DALE COUNTEGAN	Dale Countegan
April Heiar	April Heiar
Jim Ø Priebe	Jim Priebe

BIRMINGHAM
A WALKABLE CITY

Department of Public Services
IDEP Alert Observer 1-10-24 9AM

PRINT NAME	SIGNATURE	DIVISION (CIRCLE)
Timothy Davis	Timothy Davis	PARKS (SSW) ARENA GOLF
Ron Dix	Ron Dix	PARKS SSW ARENA GOLF
Brad McNab	Brad McNab	(PARKS) SSW ARENA GOLF
Ali Al-Abbas	Ali Al-Abbas	PARKS SSW (ENG) ARENA GOLF
MICHAEL KOWALCZUK	MICHAEL KOWALCZUK	PARKS (SSW) ARENA GOLF
Adam Bouse	Adam Bouse	PARKS (SSW) ARENA GOLF
Bryan GRUKE	Bryan GRUKE	PARKS (SSW) ARENA GOLF
MICHAEL NUOT	Michael Nuot	PARKS (SSW) ARENA GOLF
Allister	Allister	PARKS SSW ARENA GOLF
J. Rushing	J. Rushing	PARKS (SSW) ARENA GOLF

BIRMINGHAM
A WALKABLE CITY

Department of Public Services
IDEP Alert Observer 1-10-24 9AM

PRINT NAME	SIGNATURE	DIVISION (CIRCLE)
Devin DeRoeck	Devin DeRoeck	(PARKS) SSW ARENA GOLF
Colin Quackenbush	Colin Quackenbush	(PARKS) SSW ARENA GOLF
Brandon Wynn		(PARKS) SSW ARENA GOLF
Ross Leibolt		(PARKS) SSW ARENA GOLF
Chris Morton		PARKS SSW ARENA GOLF
~~Chris~~		PARKS SSW ARENA GOLF
		PARKS SSW ARENA GOLF
		PARKS SSW ARENA GOLF
		PARKS SSW ARENA GOLF
		PARKS SSW ARENA GOLF

BIRMINGHAM
A WALKABLE CITY

Department of Public Services
IDEP Alert Observer 1-10-24 11AM

PRINT NAME	SIGNATURE	DIVISION (CIRCLE)
Grey Foley		PARKS SSW ARENA GOLF
Jeff Odett		PARKS SSW ARENA GOLF
Derek Aldrich		PARKS SSW ARENA GOLF
Josh Parks		PARKS SSW ARENA GOLF
Ryan James		PARKS SSW ARENA GOLF
Bryan Haley		PARKS SSW ARENA GOLF
Scott Bunders		PARKS SSW ARENA GOLF
Dominic Lamar Sr.		PARKS SSW ARENA GOLF
Justin Burris		PARKS SSW ARENA GOLF
Nathan Baranski		PARKS SSW ARENA GOLF

BIRMINGHAM
A WALKABLE CITY

Department of Public Services
IDEP Alert Observer 1-10-24 11AM

PRINT NAME	SIGNATURE	DIVISION (CIRCLE)
Ryan Ballard		PARKS (SSW) ARENA GOLF
Brenden Meredith		PARKS (SSW) ARENA GOLF
Todd Borz		(PARKS) SSW ARENA GOLF
Brent Jackson		(PARKS) SSW ARENA GOLF
Scott Zielinski		PARKS SSW ARENA GOLF
Melissa Coatt		PARKS SSW ARENA GOLF
Charles Thomas Markus	Charles Thomas Markus	PARKS (SSW) ARENA GOLF
		PARKS SSW ARENA GOLF
		PARKS SSW ARENA GOLF
		PARKS SSW ARENA GOLF

SEMCOG Southeast Michigan Council of Governments

Developing Regional Solutions

Continuing Professional Development Activity Certificate of Completion

In recognition of successful completion of the following Professional Development Activity:

IDEP Investigator Training

October 18, 2022

Provided by: Southeast Michigan Council of Governments

Was completed by: Steven Michalak

Who is awarded credit for completing 2 **hours of professional development activity.**

I certify that the above Participant has completed the course and is entitled to PDHs as indicated

Kelly C. Karll

Notes:

1. This certificate must be accompanied by a description or outline of the activity supplied by the Provider.
2. This form is to be used to claim Professional Development Hours (PDHs) for atttendance at an educational program, panel, or tutorial session.
3. It is the responsibility of the attendee to select PDH activities that are relevant to the attendee's professional licenture, in accordance with their licensing agency's rules.
4. It is the responsibility of the attendee to retain this record for their use in proving their attendance at the above noted activity. The provider does not plan to keep records of who attended what activity.

SEMCOG Southeast Michigan Council of Governments

Developing Regional Solutions

Continuing Professional Development Activity Certificate of Completion

In recognition of successful completion of the following Professional Development Activity:

IDEP Alert Observer Training

October 18, 2022

Provided by: Southeast Michigan Council of Governments

Was completed by: Steven Michalak

Who is awarded credit for completing 1 **hours of professional development activity.**

I certify that the above Participant has completed the course and is entitled to PDHs as indicated

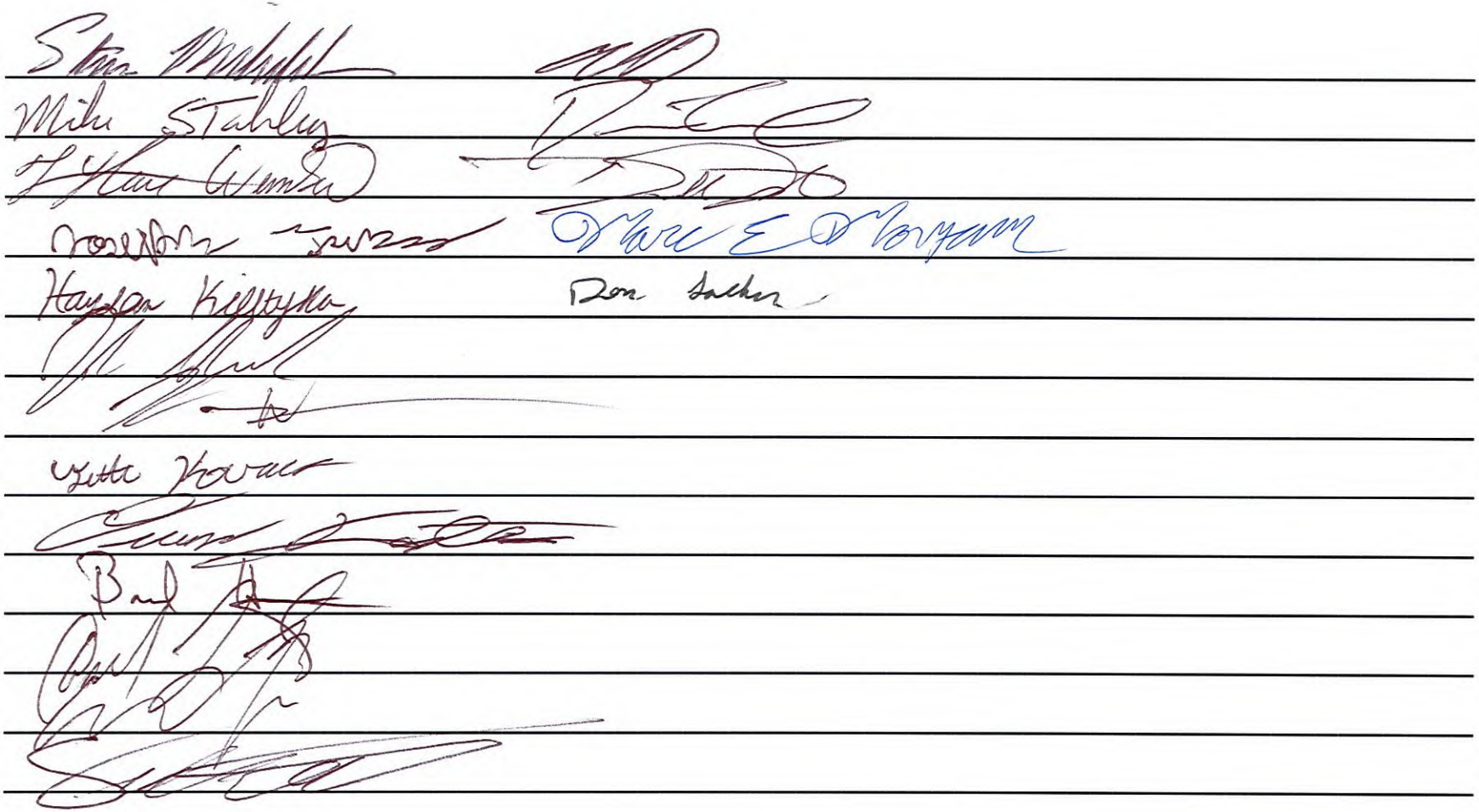
Kelly C. Karel

Notes:

1. This certificate must be accompanied by a description or outline of the activity supplied by the Provider.
2. This form is to be used to claim Professional Development Hours (PDHs) for atttendance at an educational program, panel, or tutorial session.
3. It is the responsibility of the attendee to select PDH activities that are relevant to the attendee's professional licenture, in accordance with their licensing agency's rules.
4. It is the responsibility of the attendee to retain this record for their use in proving their attendance at the above noted activity. The provider does not plan to keep records of who attended what activity.

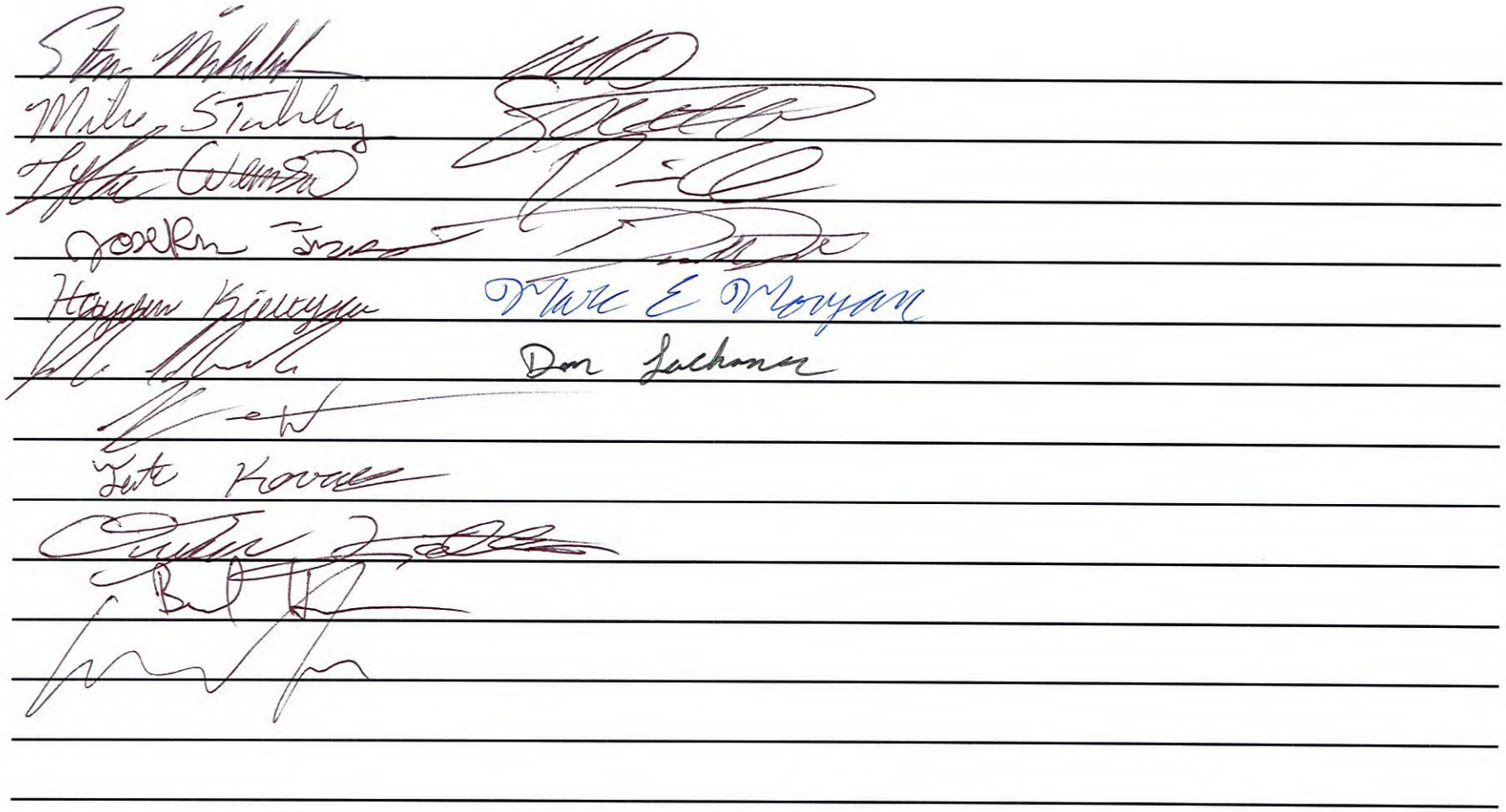
SEMCOG Webinar Training Sign in Sheet

Illicit Discharge Elimination Program (IDEP) – Alert Observer 11/20/2023



SEMCOG Webinar Training Sign in Sheet

Pollution Prevention & Good Housekeeping (PPGH) 11/20/2023



Date 10-18-2022

Topic MODULE I - ILLICIT DISCHARGE ELIMINATION PROGRAM

Name	Phone	Email
GEORGE BALLARD	248-524-3594	G.BALLARD@TROYMI.GOV
Brian Bialik	248-524-3594	BialikBE@troyMi.gov
Robert Bowens	248-524-3594	Robert.bowens@troyMi.gov

VILLAGE OF BEVERLY HILLS						
DEPARTMENT OF PUBLIC SERVICES						
STORMWATER TRAINING LIST						
FIRST NAME	**LAST NAME**	**EGLE STORMWATER VIDEO 1**		**EGLE STORMWATER VIDEO 2**		**DATE**
Matt	Kulesza	x		x		3/9/2023
Neil	Johnston	x		x		3/10/2023
John	Taylor	x		x		3/10/2023
James	Rush	x		x		3/13/2023
Gavin	Langdon	x		x		3/13/2023
Marty	Collins	x		x		3/14/2023
Jamie	Collins	x		x		3/14/2023

Tim Whitten training

Investigate

IDEP TRAINING WORKSHOP

ARC Members.

NO.	NAME	Affiliation	PHONE	EMAIL	Address
01	Allen, Ashley	Hubbell, Roth & Clark, Inc	248-454-6300	[redacted]	555 Hulet Dr Bloomfield Hls MI 48303
02	Allen, Danielle	Charter Township of Shelby	(586) 731-5990	[redacted]	6333 23 MILE RD Shelby Twp MI 48316
03	Apley, Carol	City of Eastpointe	586 615-3830	[redacted]	17750 Ten Mile Eastpointe MI 48021
04	Barne, Bob	City of Livonia	(734) 466-2705	[redacted]	12973 Farmington Rd Livonia MI 48150
05	Bartel, Kevin	Redford Township	313-387-2641	[redacted]	12200 Beech Daly Redford MI 48239
06	Bednar Jeff	Macomb County Public Works Office	(586) 746 9118	[redacted]	21777 Dunham Rd Clinton Twp MI 48036
07	Campbell, Scott	City of Farmington Hills	248-302-4636	[redacted]	31555 West Eleven Mile Farmington Hills MI 48336
08	Comey, Gerald	City of Romulus	734 955 8754	[redacted]	12600 Wayne Road Romulus MI 48174
09	Carpenter, Jennifer	KER Engineering/Commerce	(248) 330 6001	[redacted]	383 coyote run Holly MI 48442
10	Colfen, Rebecca	Hubbell, Roth & Clark, Inc.	248 454 6300	[redacted]	555 Hulet Dr Bloomfield Hls MI 48303
11	Cross, Ken	City of Roseville	586 344 9529	[redacted]	29411 Calahan Roseville MI 48066
12	DeCaussin, Joe	Macomb County Health Department	586) 469 5236	[redacted]	4525 Elizabeth Road, Mount Clemens MI 48043
13	Diesing, Eric	Clinton River Watershed Council	248 601 0606	[redacted]	1115 W. Avon Rd Rochester Hls MI 48309
14	Dionne, Gerald	Grosse Ile Township	734 676 4422	[redacted]	9601 Groh Grosse Ile MI 48138
15	Eisheuer, Matt	Clinton River Watershed Council	248 601 0606	[redacted]	1115 W. Avon Rd Rochester Hls MI 48309
16	Gioia, Ryan	Oakland University	(248) 370-4383	[redacted]	411 pioneer dr Rochester MI 48309
17	Gmitd, Paul	Huron Charter Township DPW	734 753 9376	[redacted]	22950 Huron River Drive New Boston MI 48164
18	Harden, Yvette	VA Ann Arbor Healthcare System	(734) 845-3603	[redacted]	2215 Fuller Road (00IG) Ann Arbor MI 48105
19	Hendricks, Mark	Bloomfield Township	248-594-2806	[redacted]	4200 Telegraph P O Box 489 Bloomfield Township MI 48303 0459
20	Hinojosa, Jeff	Huron Charter Township DPW	734 753-9673	[redacted]	22950 Huron River Drive New Boston MI 48164
21	Hoffman, Edwin	City of Livonia	(734) 466-2627	[redacted]	12973 Farmington Rd Livonia MI 48150
22	Jabiway, Drew	City of Eastpointe	586 615-3830	[redacted]	17750 Ten Mile Eastpointe MI 48021
23	Jacobs, Bob	Ira Township	(586) 725-7231	[redacted]	7085 Meldrum Fair Haven MI 48023
24	Jarvi, Eric	Ira Township	(586) 725-7231	[redacted]	7085 Meldrum Fair Haven MI 48023
25	Knillen, Robert	Redford Township	313-387-2641	[redacted]	12200 Beech Daly Redford MI 48239
26	Koesler, David	Port Huron Schools Facilities	810 389-1711	[redacted]	4035 Dove Rd Port Huron MI 48060
27	Lane Abby	Clinton River Watershed Council	248-601-0606	[redacted]	1115 W Avon Rd. Rochester Hls MI 48309
28	LaPeer, Allen	Village of Romeo	586 752 9321	[redacted]	121 W. St. Clair Romeo MI 48065
29	Lollred, Nick	City of Eastpointe	586 615 3830	[redacted]	17750 Ten Mile Eastpointe MI 48021
30	Low, John	City of Rochester	586-536-7384	[redacted]	400 Sixth Street, Rochester MI 48307
31	Maas, Tom	City of Roseville	586 914-4576	[redacted]	29411 Calahan Roseville MI 48066
32	Mark, George	Grosse Ile Township	734 676-4422	[redacted]	9601 Groh Grosse Ile MI 48138
33	Matthews, Barb	Macomb County Public Works Office	586 466-4016	[redacted]	21777 Dunham Rd Clinton Twp MI 48036
34	Mayhew, Greg	City of Taylor	734-374-1473	[redacted]	25605 Northline Road Taylor MI 48180
35	Miller, Dave	Charter Township of Shelby DPW	(586) 731 5970	[redacted]	6333 23 MILE RD Shelby Twp MI 48316
36	Morton, Shaun	Redford Township	313 387-2641	[redacted]	12200 Beech Daly Redford MI 48239
37	Nastasy, Frank	Charter Township of Shelby DPW	(586) 731-5970	[redacted]	6333 23 MILE RD Shelby Twp MI 48316
38	Oswald, Sean	City of Farmington Hills DPW	248 871-2850	[redacted]	27245 Halsted Farmington Hls MI 48331
39	Paolucci, Dorin	City of Eastpointe	586 615 3830	[redacted]	17750 Ten Mile Eastpointe MI 48021
40	Parrish, Pete	City of Farmington Hills DPW	248 871-2850	[redacted]	27245 Halsted Farmington Hls MI 48331
41	Perry, Austin	City of Rochester	586-604-2602	[redacted]	400 Sixth Street Rochester MI 48307
42	Plank, Craig	City of Romulus	734-955 8754	[redacted]	12600 Wayne Road Romulus MI 48174
43	Puronen, Dave	Macomb Intermediate School District	586-228 3347	[redacted]	44001 Garfield Clinton Twp MI 48038
44	Richert, Jeremy	Village of Lake Orion	248 520-7597	[redacted]	21 E. Church St. Lake Orion MI 48362
45	Rochon, Karen	Algonac Community Schools	810-794-9366	[redacted]	5200 Toll Rd Algonac MI 48001
46	Sail, Samed	Tri County Engineering / City of Orchard Lake	810 394 7687	[redacted]	48701 Hayes Road Shelby Township MI 48315
47	Schulte, Brian	City of Roseville	586 909 0396	[redacted]	29411 Calahan Roseville MI 48066
48	Shaddock, Rob	Charter Township of Shelby DPW	(586) 731-5990	[redacted]	6333 23 MILE RD Shelby Twp MI 48316
49	Siegel, Kim	Road Commission for Oakland County	248-982 3739	[redacted]	31001 Lahser Road, Beverly Hls. MI 48025
50	Smith, Chris	City of Livonia	(734) 466-2705	[redacted]	12973 Farmington Rd Livonia MI 48150
51	Smith, Devin	Redford Township	313 387 2641	[redacted]	12200 Beech Daly Redford MI 48239
52	Smith, Shun	Huron Valley Schools	810 984 2597	[redacted]	2390 S. Milford Rd. Highland MI 48357
53	Suchanek, Lisa	Macomb County Public Works	586 307 8271	[redacted]	21777 Dunham Rd Clinton Twp MI 48036
54	Theobald, Brian	City of Eastpointe	586 615 3830	[redacted]	17750 Ten Mile Eastpointe MI 48021
55	Unsworth, Justin	City of Livonia	(734) 466-2705	[redacted]	12973 Farmington Rd Livonia MI 48150
56	Veretten, Mitch	Charter Township of Clinton		[redacted]	Clinton Twp
57	Watts, Kyle	Redford Township	313-387-2641	[redacted]	12200 Beech Daly Redford MI 48239
58	Webb, Jerry	Wayne County Land Resource Management	734-326-3936	[redacted]	3600 Commerce Ct. Bldg E. Wayne, MI 48184
59	Wenzel, Arthur	Village of South Rockwood		[redacted]	P.O. Box 85 South Rockwood MI 48179
60	Wenzel, Franklin	Village of South Rockwood		[redacted]	P.O. Box 85 South Rockwood MI 48179
61	Whitten, Tim	City of Walled Lake	248 624 4847	[redacted]	1499 E West Maple Rd City of Walled Lake MI 48390
62	Wieler, Jeff	City of Livonia	(734) 466 2705	[redacted]	12973 Farmington Rd Livonia MI 48150
63	Wisniuk, Claudette	Macomb County Public Works Office	586 307-8269	[redacted]	21777 Dunham Rd Clinton Twp MI 48036
64	Wolgast, Shaun	City of Eastpointe	586 615 3830	[redacted]	17750 Ten Mile Eastpointe MI 48021
65	Woolston, John	Farmington Public Schools	248-533-7312	[redacted]	29350 W 10 Mile Road Farmington Hls MI 48336

Appendix D

Pollution Complaint Documentation

Appendix D1. Bloomfield Township Pollution Complaint Documentation

Appendix D2. Canton Township Pollution Complaint Documentation

Appendix D3. Plymouth Township Pollution Complaint Documentation

Appendix D4. West Bloomfield Township Pollution Complaint Documentation

Appendix D5. Birmingham Pollution Complaint Documentation

Appendix D6. Bloomfield Hills Pollution Complaint Documentation

Appendix D7. Farmington Hills Pollution Complaint Documentation

Appendix D8. Southfield Pollution Complaint Documentation

Appendix D9. Livonia Pollution Complaint Documentation

Appendix D10 City of Plymouth Pollution Complaint Documentation

Appendix D1

Bloomfield Township Pollution Complaint Documentation

BLOOMFIELD TOWNSHIP

Storm Water Discharge Response & Investigation Report

Date of Incidence: January 12, 2022 Time:

Reported By: Alvin Glinn Telephone: 248-854-4369

Location of Complaint: 54 Hillsdale Road Sidwell: 19-03-352-005

Homeowner Information: Alvin Glinn

Description of Complaint: Sewage flowing across property from Septic System

EES Department Investigation Notes	Date
Property owner called Township about sewage in his rear yard. DPW visited the site and observed that sewage was overflowing out of septic tank onto yard and flowing across rear yard.	1/12/22
Township Ordinance Department sent violation notice to property owner on 2/23/22.	2/23/22

Actions Taken	Date
Contact OCHD regarding failed septic system. OCHD records showed that this property had a pump in the septic tank that pumped sewage from the tank to the field, which is at a higher elevation. Appears that pump has failed.	1/12/22
OCHD sent violation notice on 2/22/22.	2/22/22
OCHD and Township verified correction completed by licensed on 4/18/22	4/18/22

Agencies Contacted	Name	Phone/Email	Date
OCHD	Teresa Brooks	brookste@oakgov.com	1/12/22
MDEQ			

Administrative Use Only		Date
Report Prepared By:	Cory Borton	4/25/22

BLOOMFIELD TOWNSHIP

Storm Water Discharge Response & Investigation Report

Date of Incidence: December 22, 2020 Time: 10:30 AM

Reported By: Bloomfield Township Telephone:

Location of Complaint: 1904 Pine Ridge Court Sidwell: 19-18-303-071

Homeowner Information: Yellow H. Gandhi

Description of Complaint: E.Coli detected in storm sewer outfall

EES Department Investigation Notes	Date
Storm sewer outfall IDEP inspection during the summer/fall of 2020 revealed an elevated E.Coli count in one of the outfalls. Subsequent sampling and sewer televising limited the search to one run of sewer that 4 condo units discharge into.	12/22/20

Actions Taken	Date
Dye tested the condominium at 1904 Pine Ridge Court. Tested toilets on both the main and lower levels. Dye showed up in the downstream storm sewer manhole.	12/21/20
Issued a letter to the property owner, HOA President, and Condo management company indicating that the unit is illicitly connected to the storm sewer.	12/22/20
Met plumbing contractor and the plumbing inspector, Steve Fink, onsite to discuss cross connection and how it can be corrected.	1/25/21
Conducted several emails and phone calls with the plumbing contractor over past few months. Contractor was going to complete work in the spring, but then backed out of project. Sent certified letter today to the property owner, HOA President, and Condo management company indicating that the work must be completed within 30 days.	5/3/21
Management Company has been calling numerous contractors and they are either not interested in the work or their schedule is already booked. Ordinance Department took over project and will stay on top of Management Company to find contractor and get the work done.	7/26/21
Management Company has indicated that they have hired a contractor, the HOA approved the estimate, and the work will be scheduled.	1/26/22
Contractor, Milford Contracting, has indicated that they will begin on project as soon as the frost laws are lifted likely in early April	3/17/22
Milford Excavating began work on 8/23/22. They excavated where the storm and sanitary leads were located and the expected depth and did not locate them. Township DPW televised the sewer today to determine the location and depth of connection to sewers to assist.	8/24/22
Milford Excavating has to use a larger excavator to complete work and will need to get access across golf course. Golf course indicated they will not allow access until the winter when ground is frozen. Apparently they all agreed on January 2023.	9/29/22
Ordinance Department sent out a violation notice on 10/18/22 to the property owner indicating that this issue must be resolved by the end of January 2023.	10/18/22

Final Repair completed on 2/15/23. Sewer lead switched over to sanitary sewer, and storm/sump lead switched over to storm sewer.	2/15/23

Agencies Contacted	Name	Phone/Email	Date
OCWRC	Ron Fadoir	fadoirr@oakgov.com	12/22/20

Administrative Use Only		Date
Report Prepared By:	Cory Borton	5/3/21

Appendix D2

Canton Township Pollution Complaint Documentation

Roy Hamilton

From: Sexton, Kathleen (EGLE) <SextonK3@michigan.gov>
Sent: Thursday, July 20, 2023 8:25 AM
To: John Selmi
Cc: Roy Hamilton
Subject: RE: Dumping Complaint - Heather Lane

CAUTION: This email originated from outside of Canton Township. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hello John,

Thank you for following up on this complaint.

A few additional questions/comments:

1. Were you able to determine the responsible party? Was a resident having work done?
2. Please send me confirmation once the catch basin has been cleaned (work order completion, photos, etc.) and I will add these to the file.

Thank you,
Kathleen

Kathleen

Kathleen Sexton
Environmental Quality Analyst
Municipal Storm Water Program
Warren District Office | 27700 Donald Court Warren, MI 48092
Water Resources Division
Michigan Department of Environment, Great Lakes, and Energy
(586) 206-2699 | SextonK3@michigan.gov

Pollution Emergencies: 800-292-4706
EGLE Environmental Assistance Center: 800-662-9278
EGLE Website: www.Michigan.gov/EGLE

From: John Selmi <john.selmi@cantonmi.gov>
Sent: Thursday, July 20, 2023 8:20 AM
To: Sexton, Kathleen (EGLE) <SextonK3@michigan.gov>
Cc: Roy Hamilton <roy.hamilton@cantonmi.gov>
Subject: RE: Dumping Complaint - Heather Lane

CAUTION: This is an External email. Please send suspicious emails to abuse@michigan.gov

Good Morning,
We visited the site yesterday afternoon and it appears that this was a concrete truck washout all material was dry.
We will go out this morning and vac out the catch basin .
Let us know if you should need anything further.

From: Sexton, Kathleen (EGLE) <SextonK3@michigan.gov>
Sent: Wednesday, July 19, 2023 2:53 PM
To: John Selmi <john.selmi@cantonmi.gov>
Cc: Gregory Pyle <gregory.pyle@cantonmi.gov>
Subject: Dumping Complaint - Heather Lane

CAUTION: This email originated from outside of Canton Township. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hello John,

As I mentioned during our phone call, EGLE received an anonymous dumping complaint for an incident within the Township. I have attached the complaint form and photo that the anonymous complainant provided. Very little information was included, but it looks like paint was dumped into a storm drain on Heather Ln west of Sheldon Rd, south of Joy Rd.

I understand this is Wayne County's MS4, but it is likely quicker for the Township to go out and initially assess the situation. Please let me know what you find out.

Thanks,
Kathleen

Kathleen

Kathleen Sexton
Environmental Quality Analyst
Municipal Storm Water Program
Warren District Office | 27700 Donald Court Warren, MI 48092
Water Resources Division
Michigan Department of Environment, Great Lakes, and Energy
(586) 206-2699 | SextonK3@michigan.gov

Pollution Emergencies: 800-292-4706
EGLE Environmental Assistance Center: 800-662-9278
EGLE Website: www.Michigan.gov/EGLE

Roy Hamilton

From: Sexton, Kathleen (EGLE) <SextonK3@michigan.gov>
Sent: Friday, July 21, 2023 7:56 AM
To: John Selmi
Cc: Roy Hamilton
Subject: RE: Dumping Complaint - Heather Lane

CAUTION: This email originated from outside of Canton Township. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Received, thank you. I will add these to the complaint file in our MiEnviro portal database and mark it as resolved.

Kathleen

Kathleen Sexton
Environmental Quality Analyst
Municipal Storm Water Program
Warren District Office | 27700 Donald Court Warren, MI 48092
Water Resources Division
Michigan Department of Environment, Great Lakes, and Energy
(586) 206-2699 | SextonK3@michigan.gov

Pollution Emergencies: 800-292-4706
EGLE Environmental Assistance Center: 800-662-9278
EGLE Website: www.Michigan.gov/EGLE

From: John Selmi <john.selmi@cantonmi.gov>
Sent: Friday, July 21, 2023 7:49 AM
To: Sexton, Kathleen (EGLE) <SextonK3@michigan.gov>
Cc: Roy Hamilton <roy.hamilton@cantonmi.gov>
Subject: RE: Dumping Complaint - Heather Lane

CAUTION: This is an External email. Please send suspicious emails to abuse@michigan.gov

Kathleen,
Attached are some photos of the catch basin .

From: Sexton, Kathleen (EGLE) <SextonK3@michigan.gov>
Sent: Thursday, July 20, 2023 8:25 AM
To: John Selmi <john.selmi@cantonmi.gov>

Cc: Roy Hamilton <roy.hamilton@cantonmi.gov>
Subject: RE: Dumping Complaint - Heather Lane

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Hello John,

Thank you for following up on this complaint.

A few additional questions/comments:

1. Were you able to determine the responsible party? We have not . Was a resident having work done? It appears there was some concrete work done in this area
2. Please send me confirmation once the catch basin has been cleaned (work order completion, photos, etc.) and I will add these to the file.

Thank you,
Kathleen

Kathleen

Kathleen Sexton
Environmental Quality Analyst
Municipal Storm Water Program
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Hello John,

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I understand this is Wayne County's MS4, but it is likely quicker for the Township to go out and initially assess the situation. Please let me know what you find out.

Thanks,
Kathleen

Kathleen

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EGLE Environmental Assistance Center: 800-662-9278
EGLE Website: www.Michigan.gov/EGLE

Roy Hamilton

From: Sexton, Kathleen (EGLE) <SextonK3@michigan.gov>
Sent: Tuesday, October 10, 2023 10:57 AM
To: Roy Hamilton
Subject: RE: Oil dumping

CAUTION: This email originated from outside of Canton Township. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Okay, thanks for the info. The name is not familiar. The WC environmental services division was planning on hiring more field staff, perhaps she is new.

Thanks,
Kathleen

Kathleen

Kathleen Sexton
Environmental Quality Analyst
Municipal Storm Water Program
Warren District Office | 27700 Donald Court Warren, MI 48092
Water Resources Division
Michigan Department of Environment, Great Lakes, and Energy
(586) 206-2699 | SextonK3@michigan.gov



Pollution Emergencies: 800-292-4706
EGLE Environmental Assistance Center: 800-662-9278
EGLE Website: www.Michigan.gov/EGLE

From: Roy Hamilton <roy.hamilton@cantonmi.gov>
Sent: Tuesday, October 10, 2023 10:05 AM
To: Sexton, Kathleen (EGLE) <SextonK3@michigan.gov>
Subject: RE: Oil dumping

CAUTION: This is an External email. Please send suspicious emails to abuse@michigan.gov

Hello Kathleen, I checked my voice mail and the person I talked to from Wayne County was Kathy Petaway.

Roy Hamilton
Sewer Supervisor
Canton Township

4847 S. Sheldon Rd.
Canton Michigan 48188
Office: 734/394-5286
roy.hamilton@cantonmi.gov

From: Sexton, Kathleen (EGLE) <SextonK3@michigan.gov>
Sent: Wednesday, October 4, 2023 3:59 PM
To: Roy Hamilton <roy.hamilton@cantonmi.gov>
Subject: Automatic reply: Oil dumping

CAUTION: This email originated from outside of Canton Township. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hello,

I am out of the office until Monday October 9, 2023 and will respond to your email when I return.

For general questions, please contact the Environmental Assistance Center at 1-800-662-9278.

If this is a pollution emergency please call the EGLE Pollution Emergency Alert System at 1-800-292-4706.

Thank you,
Kathleen

Roy Hamilton

From: Sexton, Kathleen (EGLE) <SextonK3@michigan.gov>
Sent: Friday, November 3, 2023 11:50 AM
To: Roy Hamilton
Cc: Sthompso@waynecounty.com
Subject: RE: Oil dumping

CAUTION: This email originated from outside of Canton Township. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hello Roy,

I had a conversation with Sue Thompson with Wayne County after her site visit. Following Wayne County's findings, we referred the issue to EGLE Materials Management Division (MMD) for evaluation.

Please let me know if you have any questions.

Thanks,
Kathleen

Kathleen

Kathleen Sexton
Environmental Quality Analyst
Municipal Storm Water Program
Warren District Office | 27700 Donald Court Warren, MI 48092
Water Resources Division
Michigan Department of Environment, Great Lakes, and Energy
(586) 206-2699 | SextonK3@michigan.gov



Pollution Emergencies: 800-292-4706
EGLE Environmental Assistance Center: 800-662-9278
EGLE Website: www.Michigan.gov/EGLE

From: Roy Hamilton <roy.hamilton@cantonmi.gov>
Sent: Friday, November 3, 2023 9:43 AM
To: Sexton, Kathleen (EGLE) <SextonK3@michigan.gov>
Cc: pdenski@ewsdisposal.com
Subject: RE: Oil dumping

CAUTION: This is an External email. Please send suspicious emails to abuse@michigan.gov

Good morning Kathleen, Any word on the property at 42100 Van Born? I spoke to the property owner and he was told by Sue Thompson at WC that this was an EGLE issue. The neighbor at 42020 Van Born continues to dump oil in the drain. Thank you.

Roy Hamilton
Sewer Supervisor
Canton Township
4847 S. Sheldon Rd.
Canton Michigan 48188
Office: 734/394-5286
roy.hamilton@cantonmi.gov

From: Sexton, Kathleen (EGLE) <SextonK3@michigan.gov>
Sent: Tuesday, October 10, 2023 10:57 AM
To: Roy Hamilton <roy.hamilton@cantonmi.gov>
Subject: RE: Oil dumping

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Okay, thanks for the info.

Thanks,
Kathleen

Kathleen
Kathleen Sexton
Environmental Quality Analyst
Municipal Storm Water Program
Warren District Office | 27700 Donald Court Warren, MI 48092
Water Resources Division
Michigan Department of Environment, Great Lakes, and Energy
(586) 206-2699 | SextonK3@michigan.gov

EGLE

Pollution Emergencies: 800-292-4706
EGLE Environmental Assistance Center: 800-662-9278
EGLE Website: www.Michigan.gov/EGLE

From: Roy Hamilton <roy.hamilton@cantonmi.gov>
Sent: Tuesday, October 10, 2023 10:05 AM
To: Sexton, Kathleen (EGLE) <SextonK3@michigan.gov>
Subject: RE: Oil dumping

CAUTION: This is an External email. Please send suspicious emails to abuse@michigan.gov

Hello Kathleen, I checked my voice mail and the person I talked to from Wayne County was Kathy Petaway.

Roy Hamilton
Sewer Supervisor
Canton Township
4847 S. Sheldon Rd.
Canton Michigan 48188
Office: 734/394-5286
roy.hamilton@cantonmi.gov

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Sent: Wednesday, October 4, 2023 3:59 PM
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Subject: Automatic reply: Oil dumping

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Hello,

I am out of the office until Monday October 9, 2023 and will respond to your email when I return.

For general questions, please contact the Environmental Assistance Center at 1-800-662-9278.

If this is a pollution emergency please call the EGLE Pollution Emergency Alert System at 1-800-292-4706.

Thank you,
Kathleen

Appendix D3

Plymouth Township Pollution Complaint Documentation

Charter Township of Plymouth

Pollution Complaint Tracking Form **Illicit Discharge Elimination Program**

Complaint made by: PEAS Hotline - Kathleen Sexton, EGLE - forward to Plymouth Township Phone #: 586-206-2699

Date: 04/17/23 Time: 4:39 p.m.

Location of Problem: 45657 Port Street - Bedding Superstore Offending Party (if known) ABS Freight - Premium Environmental Service (Spill consultant)

Nature of Problem (i.e. paper waste, odor, color, etc.):

Spill of 8 gallons of motor oil

Is this an Emergency? ☒ No
☐ Yes (then call 911)
Nature of Emergency: _____

Initial Contact made to:
- ☐ 911
- ☐ City Dept. _____
- ☐ Wayne County (888) 223-2363
- ☐ Oakland County (248) 858-0931
- ☒ PEAS Hotline (State) 1-800-292-4706
- ☐ Other _____

Additional Comments:

Investigation Summary
- ☒ Initial Investigation
- ☐ Follow-up Investigation

Date of Investigation: 04/18/23
Investigating Agency: DPW
Location of Discharge:

Crew Members:
Jimmy Scholten

Investigation Location:
45657 Port St. - Bedding Superstore

Observations (odor, color, volume, etc.):
4/18/23 - Company was in the process of cleaning up an oil spill from a semi truck - reported 8 gallons of motor oil spilled

Actions Taken (dye testing, notification letter, etc.):
DPW confirmed the spill had been contained and cleaned up no further action required. EGLE notified of findings.

Were photos taken: ☐ Yes ☒ No

Agency Referred to: _____
Agency Contact: _____
Method of Communication:
☐ E-mail* ☐ Letter/memo* ☐ Phone
*Attached copies

Content of Communication:

Date Corrected or Resolved: 04/18/2023

Fellrath, Patrick

From: Sexton, Kathleen (EGLE) <SextonK3@michigan.gov>
Sent: Tuesday, April 18, 2023 3:12 PM
To: Fellrath, Patrick
Subject: FW: PEAS - 26628 - Spill of 8 Gallons of Motor Oil to a Catch Basin - Wayne
Attachments: PEAS - 26628 - Spill of 8 Gallons of Motor Oil to a Catch Basin - Wayne.pdf

EXTERNAL EMAIL

Hello Patrick

We received a pollution complaint about a release of oil to the ground and nearby catch basin in front of the Bedding Superstore at 45657 Port Street that occurred yesterday at 1:07pm; it was called into PEAS at 4:39pm. The responsible party is ABS freight. I spoke with their spill response consultant, Premium Environmental Service (PES). PES reported the spill had been contained and cleaned up.

Would someone from the Township be able to visit the site and ensure cleanup measures are appropriate? Additionally, can the city tell me where the catch basin that received the oil discharges to?

Thanks,
Kathleen

Kathleen

Kathleen Sexton
Environmental Quality Analyst
Municipal Storm Water Program
Warren District Office | 27700 Donald Court Warren, MI 48092
Water Resources Division
Michigan Department of Environment, Great Lakes, and Energy
(586) 206-2699 | SextonK3@michigan.gov

EGLE

Pollution Emergencies: 800-292-4706
EGLE Environmental Assistance Center: 800-662-9278
EGLE Website: www.Michigan.gov/EGLE

Michigan EGLE PEAS Incident Report

Date & Time of Call:	2023-04-17	16:39	Dispatch:	RB-PEAS
PEAS Incident Number:	26628	Incident Occurred:			Shift:	After Hrs.
Related Incident Number(s):		Incident Observed:	2023-04-17	12:29	District:	Warren

Description of Incident (incl. cleanup efforts, assistance requested, etc.): Spill of 8 Gallons of Motor Oil to a Catch Basin

Caller reporting a spill of 8 gallons of motor oil from a tractor trailer oil pan that ruptured and discharged to asphalt and a catch basin at Budding Superstore at 45657 Port Street. First Call is on site to clean up the spill and will be collecting freestanding oil. It is unknown where catch basin goes.

PLEASE PRINT [illegible]

PEAS Caller *Name*:	Daryl Martin		PLP* - *Personal Contact Name:*	ABS Freight	
PEAS Caller *Employer Name*:	Premium Environmental Service		PLP - *Employer Name:*		
PEAS Caller *Street Address*:	PO Box 370		PLP - *Street Address:*	3901 Old Greenwood Road	
PEAS Caller *City or Twp., State:*	Newberg	IN	PLP - *City or Twp.* / *State*	Forksmith	AR
PEAS Caller *Phone #:*	812-629-5555		PLP - *Phone #:*		
PEAS Caller *Email Address:*	Not Given		PLP - *Email Address:*		
PEAS Caller Type:	Company		**PLP - Type:**	Company	
Incident Street Address:	45657 Port Street		Material Released:	Oil	
Incident Cross Streets:			Amount Released to Air:		
Incident City or Twp.:	Plymouth City		Amount Released to Ground:	X	
Incident County:	Wayne		**Amount Released to Water:**	X	
Incident Lat./Long.:	N	W	Cleanup Contractor:		
Water Body Impacted:	Unknown (catch basin)		Release/Incident Controlled?:		

Referrals

Special Referral:	Normal Referral	Lead Div. 1:	WRD-WQ	Lead Div. 2:	RRD	Lead Staff Person(s) Assigned:	

Referral Contact / District	Division / Affiliation	E-Mail Date / Time Sent	E-Mail Date / Time Received	Phone Call or Page Date / Time	Filed By	Assigned To	Referral Notes
Warren DO	District D.L.	2023-04-17 16:53					

Dispatch	Date / Time Start	Date / Time End	Hours
RB	2023-04-17 16:39	2023-04-17 16:53	0.24

Sensitive Information in Addition to Above any Private Caller Personal information Above (in italics)

Additional Notes

Time Stamp: 16:39

* PLP - Potentially Liable/Responsible Party

** *Information in this form, except private callers' personal information (italics), is available from PEAS through FOIA*

WORK ORDER NOTIFICATION

Plymouth Township – Public Works

Illicit Discharge Complaint Investigation
Work Order #27410
Status: Closed
Date Completed: 5/3/2023 1:17:04 PM

ADDRESS:	45657 Port St 48170
LOCATION:	45657 Port St 48170
MAP PAGE:	
SECTION:	
INITIATED DATE:	4/19/2023 8:00:00 AM
INITIATED BY:	Hamann, Dan
SUBMIT TO:	Hamann, Dan
COMMENTS:	By Hamann, Dan : 5/3/2023 11:28:45 AM Please investigate possible oil spill of 8 gallons of motor oil. By Scholten, Jimmy : 5/3/2023 1:17:17 PM Saw a company in the process of cleaning up an oil spill from a semi truck. By Hamann, Dan : 5/3/2023 2:20:29 PM J. Scholten's comments, both written here and conveyed to me verbally were passed on to Kathryn Sexton at MI-EGLE by telephone conversation on 4-19-2023
INSTRUCTIONS:	Please investigate possible oil spill of 8 gallons of motor oil.

SERVICE REQUEST / CALLER DETAILS

RequestID	Date/Time	Priority	Description	Problem Address

WORK ORDER TASKS

Sequence	Name	Proj Start	Entity ID	Duration

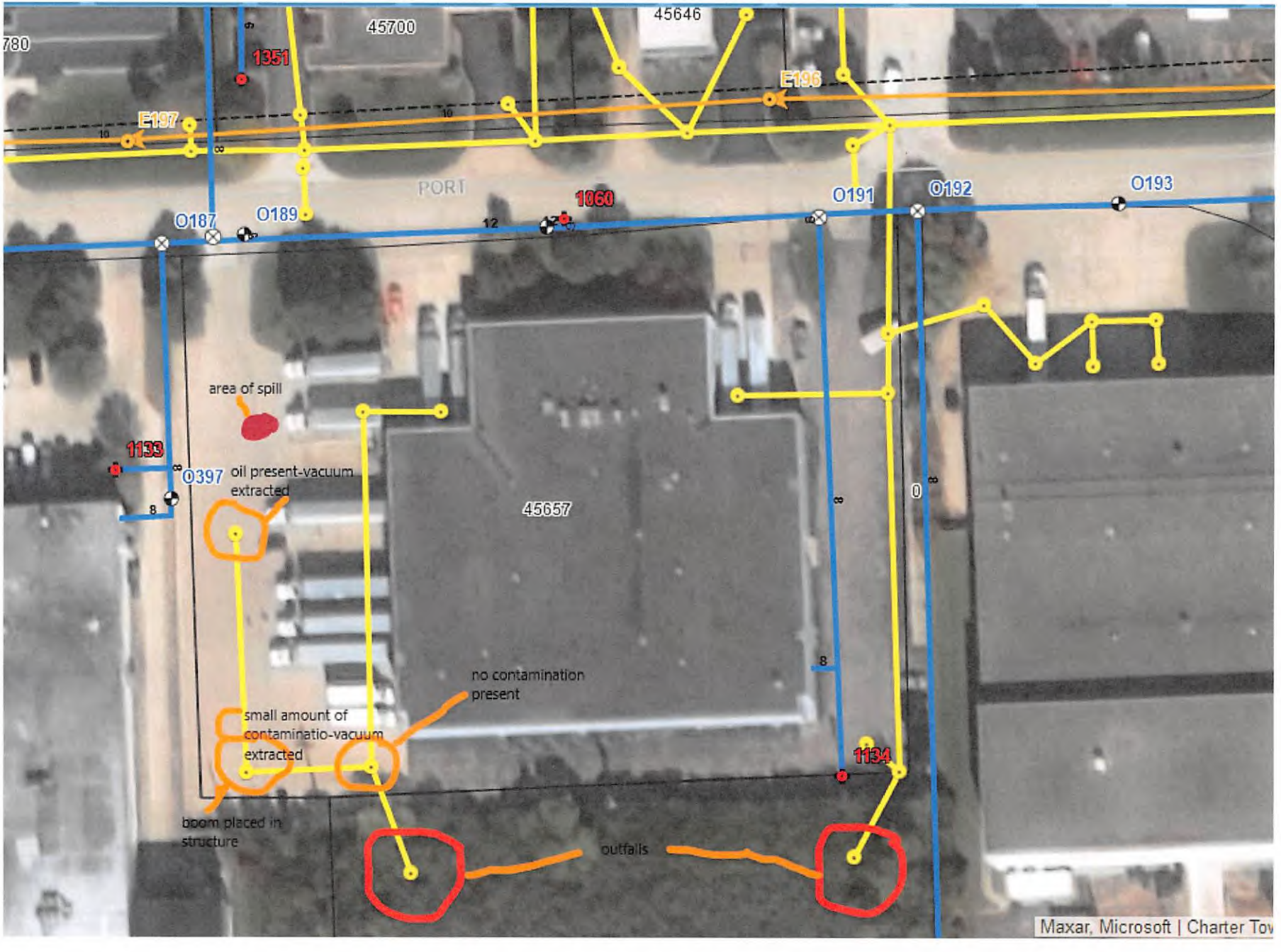
ADDITIONAL DETAILS

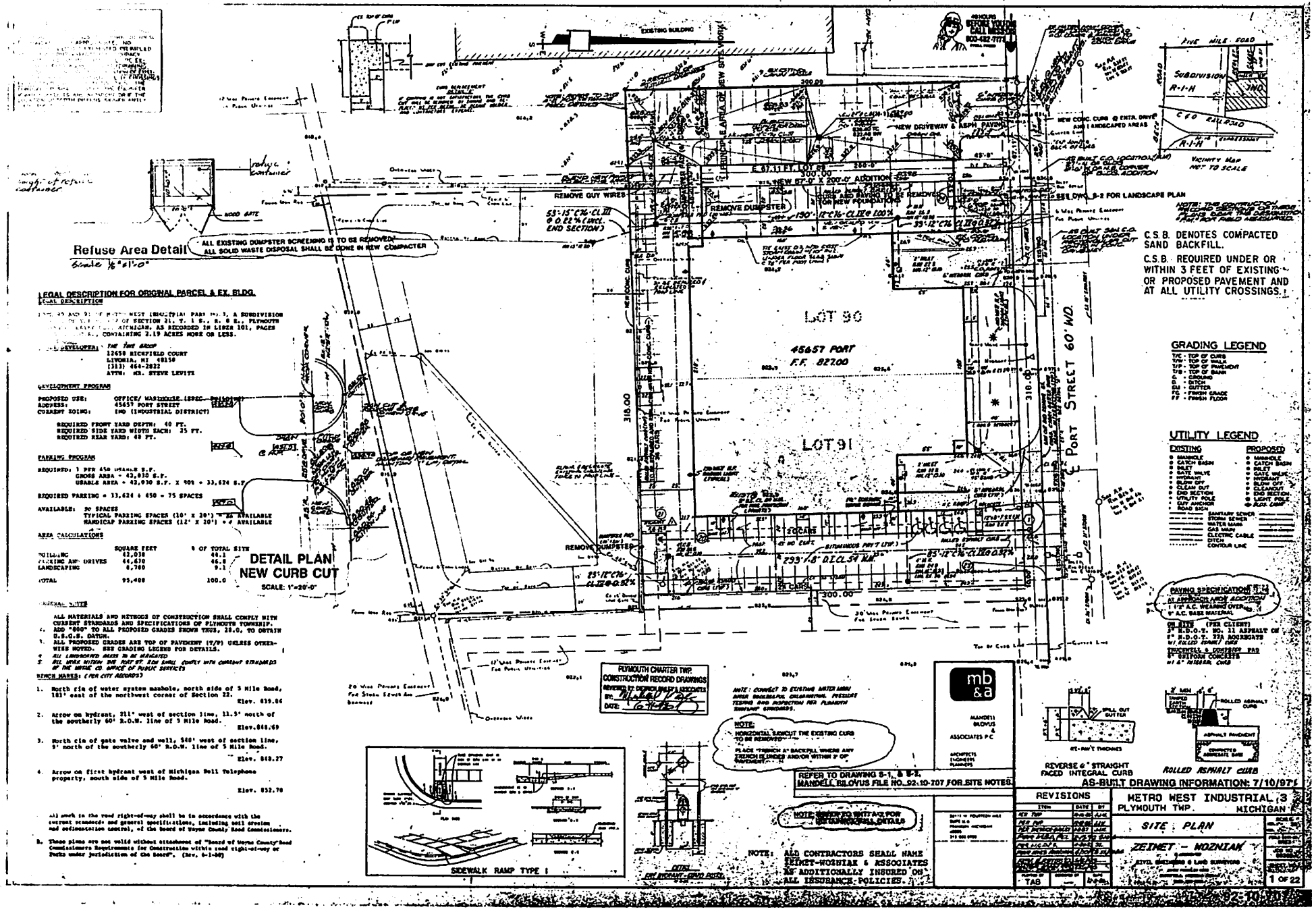
Sequence	Name

COSTS

Total Work Order Labor Costs	**$119.11**
Total Work Order Material Costs	$0.00
Total Work Order Equipment Costs	$9.39
Total Work Order Cost	**$128.50**

This message is intended only for the use of the individual or entity to which it is addressed, and may contain information that is privileged, confidential, and/or exempt from disclosure under applicable laws. If the reader of the message is not the intended recipient, or the employee or agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone and/or reply to this


780
45700
45646
1351
E196
E197
PORT
1060
O187
O189
O191
O192
O193
area of spill
1133
O397
oil present-vacuum extracted
45657
no contamination present
small amount of contaminatio-vacuum extracted
1134
boom placed in structure
outfalls
Maxar, Microsoft | Charter Tov


Refuse Area Detail
Scale 1/4"=1'-0"
ALL EXISTING DUMPSTER SCREENING IS TO BE REMOVED!
ALL SOLID WASTE DISPOSAL SHALL BE DONE IN NEW COMPACTER
LEGAL DESCRIPTION FOR ORIGINAL PARCEL & EX. BLDG.
LEGAL DESCRIPTION
DEVELOPER: THE ZINK GROUP
12650 RICHFIELD COURT
LIVONIA, MI 48150
(313) 464-2822
ATTN: MR. STEVE LEVITT
DEVELOPMENT PROGRAM
PROPOSED USE: OFFICE/ WAREHOUSE (SPEC. BUILDING)
ADDRESS: 45657 PORT STREET
CURRENT ZONING: IND (INDUSTRIAL DISTRICT)
REQUIRED FRONT YARD DEPTH: 40 FT.
REQUIRED SIDE YARD WIDTH EACH: 25 FT.
REQUIRED REAR YARD: 40 FT.
PARKING PROGRAM
REQUIRED: 1 PER 450 USABLE S.F.
GROSS AREA = 42,030 S.F.
USABLE AREA = 42,030 S.F. X 90% = 33,624 S.F.
REQUIRED PARKING = 33,624 ÷ 450 = 75 SPACES
AVAILABLE: 80 SPACES
TYPICAL PARKING SPACES (10' X 20') = 76 AVAILABLE
HANDICAP PARKING SPACES (12' X 20') = 4 AVAILABLE
AREA CALCULATIONS
SQUARE FEET
% OF TOTAL SITE
BUILDING 42,030 44.1
PARKING AND DRIVES 44,670 46.8
LANDSCAPING 8,700 9.1
TOTAL 95,400 100.0
DETAIL PLAN
NEW CURB CUT
SCALE: 1"=20'-0"
GENERAL NOTES
ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL COMPLY WITH CURRENT STANDARDS AND SPECIFICATIONS OF PLYMOUTH TOWNSHIP.
1. ADD "800" TO ALL PROPOSED GRADES SHOWN THUS, 28.0, TO OBTAIN U.S.G.S. DATUM.
2. ALL PROPOSED GRADES ARE TOP OF PAVEMENT (T/P) UNLESS OTHERWISE NOTED. SEE GRADING LEGEND FOR DETAILS.
3. ALL LANDSCAPED AREAS TO BE MULCHED
4. ALL WORK WITHIN THE RIGHT OF WAY SHALL COMPLY WITH CURRENT STANDARDS OF THE WAYNE CO. DEPT. OF PUBLIC SERVICES
BENCH MARKS: (PER CITY RECORDS)
1. North rim of water system manhole, north side of 5 Mile Road, 181' east of the northwest corner of Section 22. Elev. 839.06
2. Arrow on hydrant, 211' west of section line, 11.5' north of the southerly 60' R.O.W. line of 5 Mile Road. Elev. 848.69
3. North rim of gate valve and well, 540' west of section line, 9' north of the southerly 60' R.O.W. line of 5 Mile Road. Elev. 849.27
4. Arrow on first hydrant west of Michigan Bell Telephone property, south side of 5 Mile Road. Elev. 852.78
All work in the road right-of-way shall be in accordance with the current standards and general specifications, including soil erosion and sedimentation control, of the Board of Wayne County Road Commissioners.
B. These plans are not valid without attachment of "Board of Wayne County Road Commissioners Requirements for Construction within road right-of-way or Parks under jurisdiction of the Board". (Rev. 6-1-69)
SIDEWALK RAMP TYPE I
EXISTING BUILDING
NEW DRIVEWAY & ASPH. PAVING
NEW CONC. CURB @ ENTR. DRIVES AND LANDSCAPED AREAS
E. 67.11 FT. LOT 89
300.00
NEW 97'-0" X 200'-0" ADDITION
REMOVE GUY WIRES
REMOVE DUMPSTER
SEE DWG. S-2 FOR LANDSCAPE PLAN
LOT 90
45657 PORT
F.F. 827.00
LOT 91
318.00
310.00
PORT STREET 60' W/D.
50 CARS
293'-1.8" @ L.C.L.S4 N.M.
NEW CONC. CURB
REMOVE DUMPSTER
PLYMOUTH CHARTER TWP.
CONSTRUCTION RECORD DRAWINGS
REVIEWED BY: DERRICK BRADY & ASSOCIATES
BY:
DATE:
NOTE: CONNECT TO EXISTING WATER MAIN AFTER BACTERIOLOGICAL PRESSURE TESTING AND INSPECTION PER PLYMOUTH TOWNSHIP STANDARDS.
NOTE:
HORIZONTALLY SAWCUT THE EXISTING CURB TO BE REMOVED.
PLACE "TRENCH A" BACKFILL WHERE ANY TRENCH IS UNDER AND/OR WITHIN 3' OF PAVEMENT.
REFER TO DRAWING S-1, & S-2, MANDELL BLOVUS FILE NO. 92-10-707 FOR SITE NOTES.
NOTE: SEE DWG. S-2 FOR ADDITIONAL DETAILS
NOTE: ALL CONTRACTORS SHALL NAME ZEINET-WOZNIAK & ASSOCIATES AS ADDITIONALLY INSURED ON ALL INSURANCE POLICIES.
MANDELL BLOVUS & ASSOCIATES P.C.
ARCHITECTS ENGINEERS PLANNERS
FIVE MILE ROAD
SUBDIVISION
R-1-H
C & O RAILROAD
VICINITY MAP NOT TO SCALE
C.S.B. DENOTES COMPACTED SAND BACKFILL.
C.S.B. REQUIRED UNDER OR WITHIN 3 FEET OF EXISTING OR PROPOSED PAVEMENT AND AT ALL UTILITY CROSSINGS.
GRADING LEGEND
T/C - TOP OF CURB
T/W - TOP OF WALK
T/P - TOP OF PAVEMENT
T/B - TOP OF BASIN
C - CROWN
D - DITCH
GU - GUTTER
FG - FINISH GRADE
FF - FINISH FLOOR
UTILITY LEGEND
EXISTING
PROPOSED
MANHOLE
CATCH BASIN
INLET
GATE VALVE
HYDRANT
BLOW OFF
CLEAN OUT
END SECTION
UTILITY POLE
GUY ANCHOR
ROAD SIGN
SANITARY SEWER
STORM SEWER
WATER MAIN
GAS MAIN
ELECTRIC CABLE
DITCH
CONTOUR LINE
PAVING SPECIFICATIONS S.H.
AT APPROACH AREA ADDITION
1 1/2" A.C. WEARING COURSE
9" A.C. BASE MATERIAL
ON SITE (PER CLIENT)
3" M.D.O.T. NO. 11 ASPHALT OR
6" M.D.O.T. 22A AGGREGATE
W/ FILLED JOINT/ CRACK
TRENCHES & DRIVEWAY PAD
6" UNIFORM CONCRETE
AT 6" MINIMUM CURB
REVERSE 6" STRAIGHT FACED INTEGRAL CURB
ROLLED ASPHALT CURB
AS-BUILT DRAWING INFORMATION: 7/10/97
REVISIONS
ITEM
DATE
BY
TAB
METRO WEST INDUSTRIAL #3
PLYMOUTH TWP.
MICHIGAN
SITE PLAN
ZEINET - WOZNIAK
CIVIL ENGINEERS & LAND SURVEYORS
1 OF 22

Work Order | Email | Print | Save | Close | Delete

Work Order

WO Number: 27410
WO Type: Illicit Discharge Complaint Investigation
Asset Type: PLYMOUTH_OPENWATERWA Change
Category: Emergency Maintenance
Initiated By: Hamann, Dan
Date Created: 04/19/2023 8:00 AM
Status: Closed
Priority: Red (High)
Supervisor: Hamann, Dan
Submit To: Hamann, Dan
Date Submitted: 05/3/2023 1:17 PM
Projected Start: 04/19/2023 8:00 AM
Projected Finish: 04/19/2023 8:00 AM
Completed By: Scholten, Jimmy
Closed By: Hamann, Dan
Date Closed: 5/3/2023 2:20:34 PM
ointment Time:
Finish Date: 05/3/2023 1:17 PM

Comments: Add Comment | Sort ▲

Hamann, Dan 05/3/2023 11:28 AM
Please investigate possible oil spill of 8 gallons of motor oil.

Scholten, Jimmy 05/3/2023 1:17 PM
Saw a company in the process of cleaning up an oil spill from a semi t...

Hamann, Dan 05/3/2023 2:20 PM
J. Scholten's comments, both written here and conveyed to me verball...

Instructions: Please investigate possible oil spill of 8 gallons of motor oil.

Resolution:

Assets

Total Entities: 1

Asset	Asset Id	Asset Uid	Location	Warranty Date
PLYMOUTH_OPENWATERWAY	0	0		

- Pink rows indicate inventory still under warranty.

ate Work Order XY when adding/removing assets?

Details

Location Information

WO Address: 45657 Port St 48170
Location Details: 45657 Port St 48170
Facility Id:
Level Id:
X Location:
Y Location:

Category:

Attachments

Add attachment... | Remove all attachments

04182023_Email_re_Spill.pdf Attached by Fellrath, Patrick	180.27 KB 05/3/2023 12:13 PM	
04182023_Email_re_Spill_Attach.pdf Attached by Fellrath, Patrick	175.94 KB 05/3/2023 12:15 PM	
45657 Port St 48170 outfalls (003).bmp Attached by Hamann, Dan	1.92 MB 05/3/2023 1:06 PM	
FW PEAS - 26628 - Spill of 8 Gallons of Motor Oil to a Catch Basin - Wayne.msg Attached by Hamann, Dan	2.02 MB 05/3/2023 11:37 AM	
Sheet 1 - Site Plan (2).pdf Attached by Hamann, Dan	804.46 KB 05/3/2023 11:30 AM	
WO_27410_Attachment.pdf Attached by Fellrath, Patrick	46.83 KB 05/3/2023 3:55 PM	

Reservations

Equipment ID	Employee	Start Date	End Date	Comments
No records to display.				

From: Hamann, Dan
To: SextonK3@michigan.gov
Subject: FW: PEAS - 26628 - Spill of 8 Gallons of Motor Oil to a Catch Basin - Wayne
Date: Wednesday, April 19, 2023 8:46:00 AM
Attachments: ~WRD0001.jpg
image001.jpg
45657 Port St 48170 outfalls.bmp

Hi Kathleen,

I have attached a screen shot from our GIS map where I have marked the outfalls. They actually discharge waters collected from quite a few of the properties in north, east and west of address so should dilute if any oil makes it out of the outfall and, the waste area it discharges to is at least 1500 feet from a waterway. As you can also see in photo, there are for catch basins in the street in front of address as well as two in sloped areas of loading docks at front of building and several more in paved areas of that address. Any chance you can provide a more accurate description of the catch basin in question?

Dan Hamann
Charter Township of Michigan
Dept. of Public Works Foreman
Phone: 734-564-2853

From: Sexton, Kathleen (EGLE) <SextonK3@michigan.gov>
Sent: Tuesday, April 18, 2023 5:41 PM
To: Fellrath, Patrick <pfellrath@plymouthtwp.org>
Cc: Hamann, Dan <dhamann@plymouthtwp.org>
Subject: RE: PEAS - 26628 - Spill of 8 Gallons of Motor Oil to a Catch Basin - Wayne

EXTERNAL EMAIL

Patrick,

Thank you, much appreciated.

-Kathleen

Kathleen

Kathleen Sexton
Environmental Quality Analyst
Municipal Storm Water Program
Warren District Office | 27700 Donald Court Warren, MI 48092
Water Resources Division

Michigan Department of Environment, Great Lakes, and Energy
(586) 206-2699 | SextonK3@michigan.gov
EGLE Vertical logo_cropemail

Pollution Emergencies: 800-292-4706
EGLE Environmental Assistance Center: 800-662-9278
EGLE Website: www.Michigan.gov/EGLE

From: Fellrath, Patrick <pfellrath@plymouthtwp.org>
Sent: Tuesday, April 18, 2023 4:50 PM
To: Sexton, Kathleen (EGLE) <SextonK3@michigan.gov>
Cc: Hamann, Dan <dhamann@plymouthtwp.org>
Subject: RE: PEAS - 26628 - Spill of 8 Gallons of Motor Oil to a Catch Basin - Wayne

CAUTION: This is an External email. Please send suspicious emails to abuse@michigan.gov

Kathleen,

I received your e-mail below. We will follow-up.

Thank you,

PATRICK J. FELLRATH, P.E.
Director of Public Services
Charter Township of Plymouth

From: Sexton, Kathleen (EGLE) <SextonK3@michigan.gov>
Sent: Tuesday, April 18, 2023 3:12 PM
To: Fellrath, Patrick <pfellrath@plymouthtwp.org>
Subject: FW: PEAS - 26628 - Spill of 8 Gallons of Motor Oil to a Catch Basin - Wayne

EXTERNAL EMAIL

Hello Patrick

We received a pollution complaint about a release of oil to the ground and nearby catch basin in front of the Bedding Superstore at 45657 Port Street that occurred yesterday at 1:07pm; it was called into PEAS at 4:39pm. The responsible party is ABS freight. I spoke with their spill response consultant, Premium Environmental Service (PES). PES reported the spill had been contained and cleaned up.

Would someone from the Township be able to visit the site and ensure cleanup measures are appropriate? Additionally, can the city tell me where the catch basin that received the oil discharges to?

Thanks,
Kathleen

Kathleen

Kathleen Sexton
Environmental Quality Analyst
Municipal Storm Water Program
Warren District Office | 27700 Donald Court Warren, MI 48092
Water Resources Division
Michigan Department of Environment, Great Lakes, and Energy
(586) 206-2699 | SextonK3@michigan.gov

EGLE Vertical logo_cropemail

Pollution Emergencies: 800-292-4706
EGLE Environmental Assistance Center: 800-662-9278
EGLE Website: www.Michigan.gov/EGLE

Appendix D4

West Bloomfield Township Pollution Complaint Documentation

West Bloomfield Township

2022-2023 IDEP Summary

- *Illicit Discharges Identified*: 2
    - In May 2022, a GFL Environmental garbage truck experienced a transmission oil spill near 7260 Muerdale. The oil spilled onto to the road as well as on bushes and grass along the northeast property line. The bushes and grass were near a small pond on the property. The spill was promptly cleaned up and the affected vegetation removed/restored through the joint efforts of GFL Environmental, West Bloomfield Township's Fire Department, and Michigan Spill Response.

    - In Fall 2023, a resident called the Township to complain about her resident 'dumping' materials into the back woods adjacent to their properties. The Township Environmental Division, along with the Fire Department visited the site and did not identify any illicit discharging or suspicious activity.

- *Illicit Connections:* 1
    - In July 2022, it was identified that the Fire Station #4's interior trench drain was connected to the storm sewer system. The Township hired a contractor to make the repair and the connection was eliminated in October 2022. All facilities were dye tested and no other illicit connections were identified.

- The Township continues to administer its septic evaluation program to locate other illicit discharges.

- The Township lift stations are maintained on a regular basis to prevent future failures.

- In July 2023, 7 Parks and 3 Water and Sewer Dept staff attended in-person IDEP and GH Training, administered by DLZ.

- In October 2022, 6 Township staff and 6 Parks & Recreation staff attended SEMCOG's Alert Observer Training. Also in October 2022, 1 Parks & Recreation staff attended SEMCOG's Pollution Prevention & Good Housekeeping Training.

- In 2022, 2 Township staff became certified as Storm Water Management Operators for Industrial and SESC sites (plan review and design).

- Outfall investigations and sampling occurred in 2020. One outfall (Civic Center CC-1D) had higher levels of E. Coli and was re-sampled in 2021. The outfall is monitored annually.

- IDEP information is provided on our website.

<u>TMDL Summary</u>

<u>Program Effectiveness</u>

Overall, the IDEP program is effective, in training our staff and in conducting outfall investigations. The Township works hard to keep our staff trained on stormwater management issues.

The Township is participating in the ARC Collaborative IDEP and TMDL Plan. In addition, the Township has provided some existing and future BMPs for the permit period. See the table on the following page.

BMPs Table

Existing BMPs	**Frequency**	**Comments**	**Measurable Goals**
Single Use Plastics, Septic Systems, Lawn Care	Ongoing	Website, social media	# of articles published; # of website hits
Tributary Signage	Ongoing	Throughout the Township	# of inquiries received
HHW Education & Drop Off Events	Ongoing; Bi-Annual	Website, social media	# of articles published; # of drop off participants; amount of materials collected
Clean Boating & Auto Education	Ongoing	Website	# of articles published
Coal Tar Sealant Education/Ordinance	Ongoing	Website, Ordinance	# of website hits; biennial program updates
Pet Waste Bag Receptacles @ Township Parks	Ongoing		# of receptacles; # of bags utilized per year
Earth Day Event	Annually	Publicized on website, social media	# of volunteers
Staff IDEP Training	At least once per permit cycle		# of staff trained per permit period
IDEP/Stormwater Awareness Education	Ongoing	Website, social media	# of reports received annually
Outfall/Discharge Point Investigations/Sampling	At least once per permit cycle		# of outfalls sampled per permit period
Coordination with ARC Technical Committee	Ongoing		ARC IDEP/TMDL reporting
Sanitary Sewer Lift Station Improvements	2018-2024		# of SSOs/year
Future BMPs	**Frequency**	**Comments**	**Measurable Goals**
FOG Education	At least once per permit cycle	Website, social media	# of articles published
Waterfowl Management Education	At least once per permit cycle	Website, social media	# of articles published

Appendix D5

Birmingham Pollution Complaint Documentation

Report of Discharge (CSO\SSO\RTB)

version 1.14

(Submission #: HPM-6TF0-SQBRY, version 2)

Details

Submission ID HPM-6TF0-SQBRY

Status In Process

Form Input

Report Details

Is this the inital or final discharge report?
Final

Site/Facility Name:
City of Birmingham CM

Permit Number (if applicable):
NONE PROVIDED

Sewer System or Treatment Facility Owner

Organization Name
City of Birmingham

Phone Type	Number	Extension
Business	2485301839	

Email
mcoatta@bhamgov.org

Fax
NONE PROVIDED

Address
151 MARTIN ST
BIRMINGHAM, MI 48009
United States

Facility Address
2666 W 14 Mile Road
Birmingham, MI 48009

Sewer System or Treatment Facility Owner Location
42.5313,-83.2476

2666 W 14 Mile Road, Birmingham, MI

Discharge Details (1 of 1)

SSO Discharge from `NEW_FEATR_ID_TXT``OUTFL_ID_TXT`

Discharge Type:
SSO Discharge

SSO Discharge
The reported discharge is from a private or municipal separate sewer collection system (not a wastewater treatment plant) during wet or dry weather, or a dry weather discharge from a municipal combined sewer collection system.

Is the outfall or discharge area located at a private residential address?
YES

Please describe the discharge location. Private Residential Addresses entered here will not show to the public.
483 and 456 Warren Court

Outfall or Discharge Area Description
Sanitary sewer manhole 43 feet south of the Rouge River

Outfall or Discharge Area Location
42.54828085607318,-83.21893932297498

Has the discharge ended?
YES

Volume Discharged	Unit	Was the volume estimated?
100	Gallons	Yes

Quality of Discharge
Diluted Raw Sewage

Please describe the discharge, including the reason for Discharge
On 8/24/2022, the original complaint was a leak at an existing bulkhead combined sewer. There was a back up in a combined sewer and surcharged into a manhole. On 8/25/2022, the manhole was found to be leaking sewage out of the casting.

Was the land or surface water impacted by the discharge?
Land impacted only

Name/description of the land impacted:
Land between combined sewer manhole and Rouge River

Discharge Event Start

Date	Time
08/24/2022	04:00 pm

Discharge Event End

Date	Time
08/25/2022	01:00 pm

Name of the wastewater treatment facility that normally receives sewage.
GLWA WWTP

Was the reported discharge caused by a party other than the sewer system owner and out of the control or knowledge of the actions which resulted in the discharge?
NO

Is the sewer system owner in compliance with applicable discharge permits, laws, rules, and orders?
YES

Initial Notification

Organization	Date	Time
Local Health Department	08/25/2022	NONE PROVIDED
Daily Local Newspaper	08/25/2022	NONE PROVIDED

Was EGLE notified prior to this report being received?
EGLE was notified prior to this report being submitted

Prior EGLE notification that discharge has started

EGLE Notification Method	Person(s) notified	EGLE Notification Date	EGLE Notification Time	Comments
Phone	Environmental Emergencies hotline	08/24/2022	05:17 pm	NONE PROVIDED

Notification that discharge has concluded.

Organization	Date	Time
Local Health Department	08/25/2022	NONE PROVIDED
Daily Local Newspaper	08/25/2022	NONE PROVIDED

Precipitation Type(s) (Select none if there was no precipitation)
None

Actions taken to minimize the impact from the discharge(s):
Within 24 hours, a contractor was able to televise the sewer and remove the blockage.

Actions taken, or that will be taken, to prevent this discharge event from reoccurring:
The sewer has been televised to upstream manhole to review any other issues and none were discovered.

Additional Details

Report Submitter

Prefix
Mrs.

First Name **Last Name**
Melissa *Coatta*

Title
City Engineer

Organization Name
City of Birmingham

Phone Type **Number** **Extension**
Business 2485301839

Email
mcoatta@bhamgov.org

Fax
NONE PROVIDED

Address
151 Martin
151 Martin Street
Birmingham, Michigan 48009
United States

Do you have any additional comments or uploads you would like to provide?
YES

Additional Information
Attached is a utility map noting what occurred.

Upload addition information, as needed.
20220825_Utility_Map_Notes.pdf - 08/25/2022 04:25 PM
Comment
NONE PROVIDED

Attachments

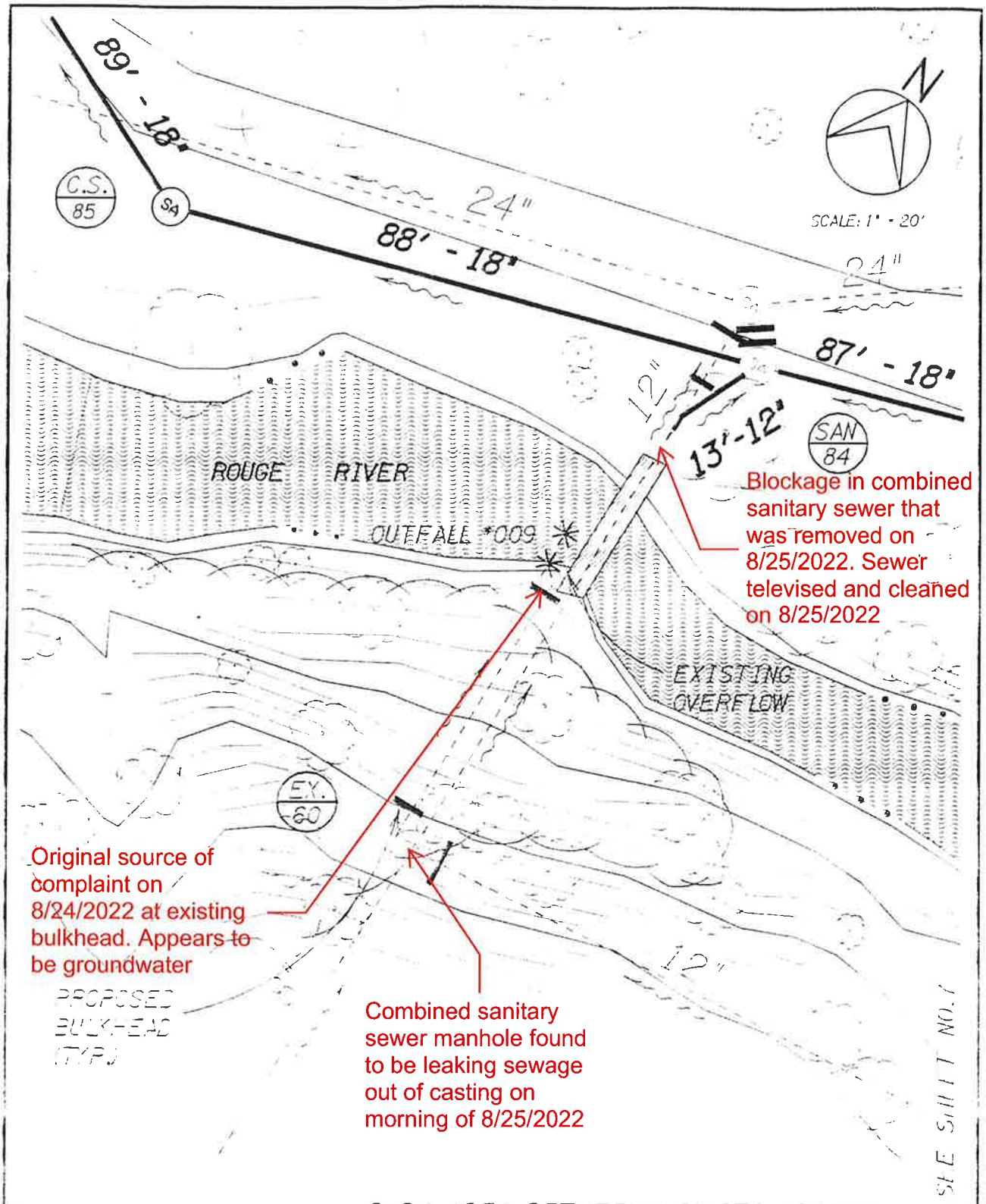
Date	Attachment Name	Context	User
8/25/2022 4:25 PM	20220825_Utility_Map_Notes.pdf	Attachment	Melissa Coatta

Status History

	User	Processing Status
9/2/2022 2:29:24 PM	Melissa Coatta	Draft
9/2/2022 2:40:04 PM	Melissa Coatta	Submitting
9/2/2022 2:40:16 PM	Melissa Coatta	Submitted
9/2/2022 2:40:22 PM	Melissa Coatta	In Process

Revisions

Revision	Revision Date	Revision By
Revision 1	8/25/2022 3:55 PM	Melissa Coatta
Revision 2	9/2/2022 2:29 PM	Melissa Coatta



PARK AREA BETWEEN WILLITS STREET AND WOODWARD AVENUE

BIRMINGHAM CSO
CONTRACT NO. 2
PLAN SHEET NO. 5
SW1/4 SEC. 25

97110	HUBBELL, ROTH & CLARK, INC.	5
SEPT. 1997	555 HULET DRIVE, BLOOMFIELD HILLS, MICH. P.O. BOX 824, 48303-0824	

BIRMINGHAM
A WALKABLE CITY

Illicit Discharge Response & Investigation Report

Date of Incidence: October 19, 2023 Time: 2:39 pm

Reported By: Sally Patrella, Friends of the Rouge Telephone: (734) 927-4904

Location of Complaint: 300 Warren Court Sidwell: 19-25-376-034

Property Owner Info. From City storm sewer from Parking Lot No. 5.

Description of Complaint: Discharge from City storm sewer outfall into Rouge River.

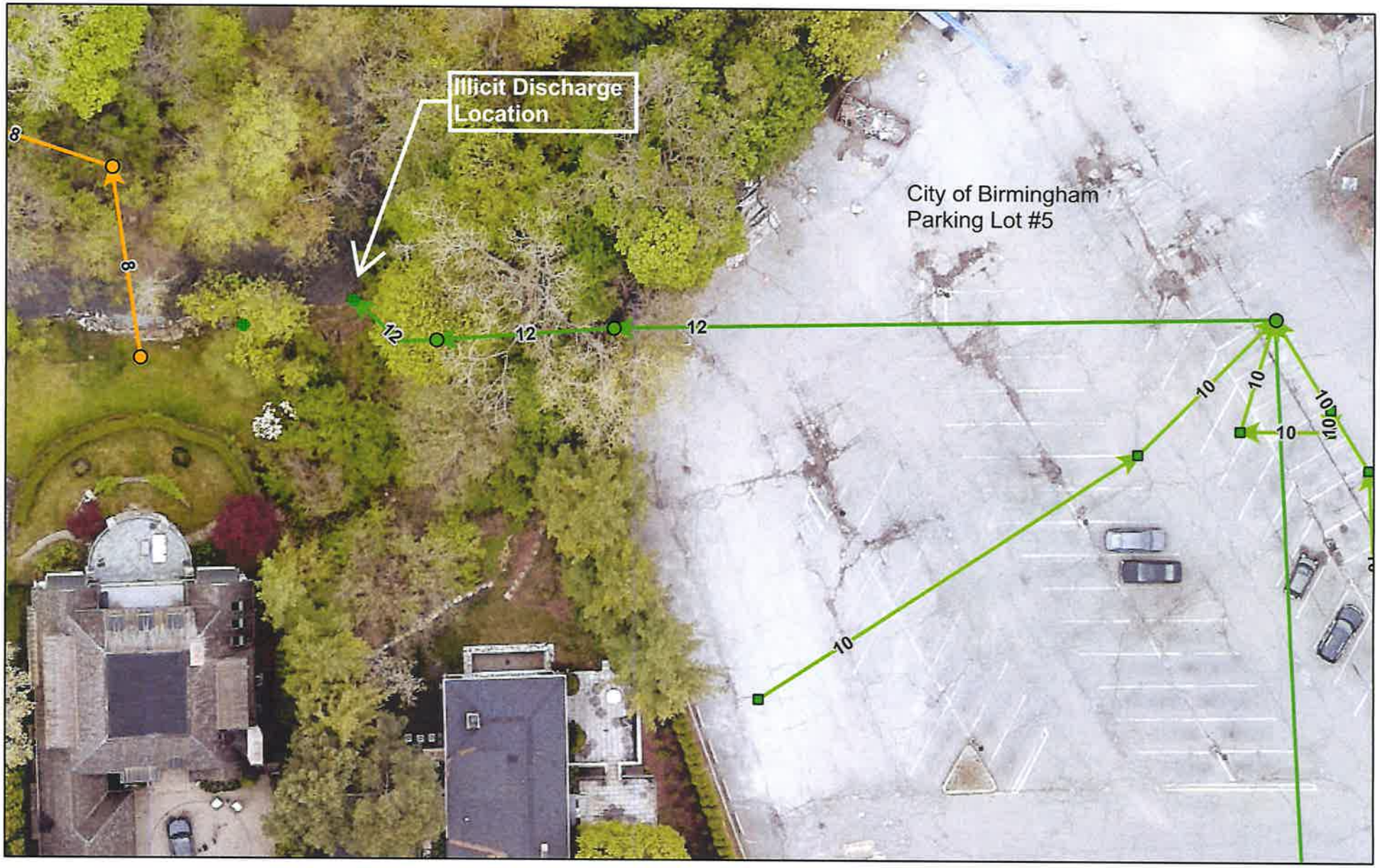
Investigation Notes	Date
During Friends of the Rouge stream monitoring a discharge from a City storm sewer was observed. Pictures were taken and Oakland County was called. Oakland County took a sample. Sally Patrella emailed Nick in Planning.	10/19/23
Investigations in the field, as-built plans, and sewer videos reveals that the church at 300 Willits is discharging waste water to the City storm sewer.	

Actions Taken	Date
Letter sent to First Baptist Church requesting a meeting and resolution to the issue.	12/6/23
CB, CM, and BH met with church staff and Creggar Plumbing to determine extent of waste water connection to storm sewer. Investigations revealed the entire church and day care appears to discharge out the north side of the building and into the storm sewer.	1/11/24
Sent email to Church staff on 1/23/24 regarding steps/options necessary to disconnect waste water line from storm sewer and tie into combined sewer. Received letter response back. Letter sent to City Manager and City Attorney for follow-up.	1/29/24

Agencies Contacted	Name	Phone/Email	Date
OCWRC	Ron Fadoir	(248) 431-6354 fadoirr@oakgov.com	10/19/23
EGLE	Kathleen Sexton	(586) 206-2699 SextonK3@michigan.gov	11/3/23

Report Prepared By: Cory Borton

Birmingham Sewer System



11/3/2023, 2:28:07 PM

- Outfall
- Birmingham-Owned Sewer Inlet
- Birmingham-Owned Manhole
- SanitaryManhole
- StormManhole
- Non-City Manhole
- SanitaryManhole
- StormManhole
- Birmingham-Owned Sewer Main
- Storm
- Sanitary
- Catch Basin Lead

1:564

0 0 0.01 0.01 mi

0 0.01 0.01 0.02 km

Oakland County, Michigan, SEMCOG, Esri Canada, Esri, HERE, Garmin, INCREMENT P, USGS, EPA, USDA

City of Birmingham

Oakland County, Michigan, SEMCOG, Esri Canada, Esri, HERE, Garmin, INCREMENT P, USGS, EPA, USDA |

BIRMINGHAM
A WALKABLE CITY

December 6, 2023

First Baptist Church
300 Willits Street
Birmingham, MI 48009

Re: City of Birmingham Illicit Discharge Elimination Program

To Whom It May Concern,

In October 2023, an illicit discharge was observed from the storm sewer outfall to the Rouge River north of your property. A sample of the discharge indicated a high level of E. coli bacteria. The City of Birmingham has traced the discharge back to a connection to the storm sewer that appears to be coming from your property.

A review of our files indicates that an illicit connection was discovered from your building in 1996 and 1998. This issue again appeared in 2008. After each instance steps were taken by the City of Birmingham and First Baptist Church to remedy the situation. Attached are copies of the correspondence since 1996 outlining what has occurred and how it was resolved.

Per Federal, State, and local laws and regulations, non-storm water discharges must be directed to the City's sanitary/combined sewers. Failure of this can result in penalties from the City of Birmingham and possibly the Michigan Department of Environment, Great Lakes and Energy (EGLE). The City requests that Church staff investigate this situation where the illicit connection may be occurring, and implement a plan to permanently remedy the illicit discharge. The City of Birmingham Engineering Department shall be contacted within 14 days of this letter to schedule a meeting to discuss and receive copies of the remediation plan.

We may be contacted at (248) 530-1840 or mcoatta@bhamgov.org and cborton@bhamgov.org to discuss and schedule an onsite meeting and inspection.

Sincerely,

Melissa A. Coatta, P.E.
City Engineer

Cory Borton
Asst. Director of Engineering

Appendix D6

Bloomfield Hills Pollution Complaint Documentation

Emily Levine

From: Burton, Jamie
Sent: Friday, February 10, 2023 12:35 PM
To: Allen, Ashley
Subject: Fwd: 148 Linda Ct. Cross Connection

James Burton, P.E.
Hubbell, Roth & Clark, Inc.

Begin forwarded message:

From: "Warren, Karen L" <warrenk@oakgov.com>
Date: February 10, 2023 at 12:26:12 PM EST
To: "Burton, Jamie" <JBurton@hrcengr.com>
Cc: dhendrickson@bloomfieldhillsmi.net, jspivy@bloomfieldhills.net, "Cook, Richard E" <cookr@oakgov.com>
Subject: RE: 148 Linda Ct. Cross Connection

Hi,
At your request WRC cleaned the storm manholes and the storm pipes from Linda Ct to Lone Pine/Cranbrook. Let me know if you need anything else. My direct line is 248-431-3828.
Karen W.

From: Burton, Jamie <JBurton@hrcengr.com>
Sent: Friday, February 10, 2023 11:18 AM
To: Warren, Karen L <warrenk@oakgov.com>
Cc: dhendrickson@bloomfieldhillsmi.net; jspivy@bloomfieldhills.net
Subject: RE: 148 Linda Ct. Cross Connection

CAUTION: This message is from a sender outside of the Oakland County organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

I do not believe so.

James F. Burton, P.E.
Vice President
Hubbell, Roth & Clark, Inc.

(o) 248.454.6363
(m) 248.535.3414

From: Warren, Karen L <warrenk@oakgov.com>
Sent: Friday, February 10, 2023 11:15 AM
To: Burton, Jamie <JBurton@hrcengr.com>
Cc: dhendrickson@bloomfieldhillsmi.net; jspivy@bloomfieldhills.net
Subject: RE: 148 Linda Ct. Cross Connection

Is that house still connected to the storm as of today?

From: Burton, Jamie <JBurton@hrcengr.com>
Sent: Friday, February 10, 2023 8:59 AM
To: Warren, Karen L <warrenk@oakgov.com>
Cc: dhendrickson@bloomfieldhillsmi.net; jspivy@bloomfieldhills.net
Subject: RE: 148 Linda Ct. Cross Connection

CAUTION: This message is from a sender outside of the Oakland County organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

The City manager and DPW supervisor are on this chain now so just let us know. Thanks

James F. Burton, P.E.
Vice President
Hubbell, Roth & Clark, Inc.

(o) 248.454.6363
(m) 248.535.3414

From: Warren, Karen L <warrenk@oakgov.com>
Sent: Friday, February 10, 2023 8:55 AM
To: Burton, Jamie <JBurton@hrcengr.com>
Cc: dhendrickson@bloomfieldhillsmi.net
Subject: RE: 148 Linda Ct. Cross Connection

Hi,
WRC will visit the site today and figure out a plan of action. Traffic control may be necessary on Lone Pine. For sure we will need to use City water from a hydrant.
Is there anyone besides you that you want me to keep posted?
Karen

From: Burton, Jamie <JBurton@hrcengr.com>
Sent: Friday, February 10, 2023 8:16 AM
To: Warren, Karen L <warrenk@oakgov.com>
Cc: dhendrickson@bloomfieldhillsmi.net
Subject: RE: 148 Linda Ct. Cross Connection

CAUTION: This message is from a sender outside of the Oakland County organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Yes.
We have to get this reported and cleaned up and you are best suited to do so.
Thanks

James F. Burton, P.E.

Vice President
Hubbell, Roth & Clark, Inc.

(o) 248.454.6363
(m) 248.535.3414

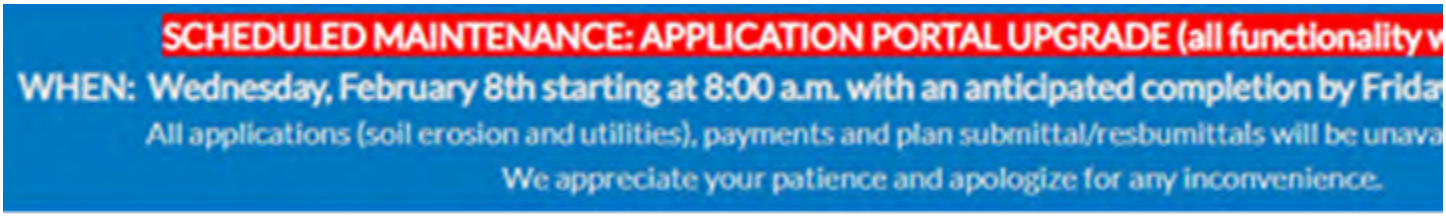
From: Warren, Karen L <warrenk@oakgov.com>
Sent: Friday, February 10, 2023 8:10 AM
To: Burton, Jamie <JBurton@hrcengr.com>
Subject: FW: 148 Linda Ct. Cross Connection

Hi Jamie,
Just double checking that the City is ok with WRC charging our time for this issue to the O&M fund. Let me know.
Karen

From: Davis, Mark <davisma@oakgov.com>
Sent: Friday, February 10, 2023 7:57 AM
To: Cook, Richard E <cookr@oakgov.com>; Allen, Ashley <AAllen@hrcengr.com>; Warren, Karen L <warrenk@oakgov.com>
Cc: Fadoir, Ronald J <fadoirr@oakgov.com>; Kohn, Joel W <kohnj@oakgov.com>; Seymour, Lynne <seymourl@oakgov.com>; Burton, Jamie <JBurton@hrcengr.com>; Sandahl, M. Drew <sandahlm@oakgov.com>
Subject: RE: 148 Linda Ct. Cross Connection

Bloomfield Hills SMU System O&M

Mark W. Davis
Senior Engineering Systems Coordinator
Oakland County Water Resources Commissioners Office
248-452-2172 (p)
248-858-1066 (f)
248-897-2748 (cell)



From: Cook, Richard E <cookr@oakgov.com>
Sent: Friday, February 10, 2023 7:43 AM
To: Davis, Mark <davisma@oakgov.com>; Allen, Ashley <AAllen@hrcengr.com>; Warren, Karen L <warrenk@oakgov.com>
Cc: Fadoir, Ronald J <fadoirr@oakgov.com>; Kohn, Joel W <kohnj@oakgov.com>; Seymour, Lynne <seymourl@oakgov.com>; Burton, Jamie <JBurton@hrcengr.com>; Sandahl, M. Drew <sandahlm@oakgov.com>
Subject: RE: 148 Linda Ct. Cross Connection

What are charging the cleaning to?

From: Davis, Mark <davisma@oakgov.com>
Sent: Friday, February 10, 2023 6:46 AM

To: Allen, Ashley <AAllen@hrcengr.com>; Warren, Karen L <warrenk@oakgov.com>; Cook, Richard E <cookr@oakgov.com>
Cc: Fadoir, Ronald J <fadoirr@oakgov.com>; Kohn, Joel W <kohnj@oakgov.com>; Seymour, Lynne <seymourl@oakgov.com>; Burton, Jamie <JBurton@hrcengr.com>; Sandahl, M. Drew <sandahlm@oakgov.com>
Subject: RE: 148 Linda Ct. Cross Connection

Ashley,
Do you have more information on the storm system configuration?
I recommend this entire system be inspected/cleaned of the raw sewage, all the way to its outlet.

Karen/Rich,
Do you need any additional information for this sites illicit connection to the City's storm system?
Contractor stated that the catch basin(s) sump are full of sewage.

Mark W. Davis
Senior Engineering Systems Coordinator
Oakland County Water Resources Commissioners Office
248-452-2172 (p)
248-858-1066 (f)
248-897-2748 (cell)

<image001.png>

From: Allen, Ashley <AAllen@hrcengr.com>
Sent: Thursday, February 09, 2023 4:13 PM
To: Davis, Mark <davisma@oakgov.com>
Cc: Fadoir, Ronald J <fadoirr@oakgov.com>; Kohn, Joel W <kohnj@oakgov.com>; Warren, Karen L <warrenk@oakgov.com>; Seymour, Lynne <seymourl@oakgov.com>; Burton, Jamie <JBurton@hrcengr.com>; Cook, Richard E <cookr@oakgov.com>; Sandahl, M. Drew <sandahlm@oakgov.com>
Subject: Re: 148 Linda Ct. Cross Connection

CAUTION: This message is from a sender outside of the Oakland County organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Mark,

I talked with Jamie and yes please go ahead and schedule a clean out of that catch basin.

Thanks!
Ashley

Sent from my iPhone

> On Feb 9, 2023, at 2:57 PM, Davis, Mark <davisma@oakgov.com> wrote:
>
> Ashley,
> The contractor stated that their service line is connected to the CB shown on the City's GIS map.

He said the CB sump is holding residential waste.

Should the WRC send out a vactor truck to clean the CB's?

Mark W. Davis
Senior Engineering Systems Coordinator
Oakland County Water Resources Commissioners Office
248-452-2172 (p)
248-858-1066 (f)
248-897-2748 (cell)

<image001.png>

From: Fadoir, Ronald J <fadoirr@oakgov.com>
Sent: Thursday, February 09, 2023 2:05 PM
To: Kohn, Joel W <kohnj@oakgov.com>; Davis, Mark <davisma@oakgov.com>
Cc: Jeff Wren <jwren@bloomfieldhillsmi.net>; Warren, Karen L <warrenk@oakgov.com>; Seymour, Lynne <seymourl@oakgov.com>; Burton, Jamie <JBurton@hrcengr.com>; WRC Service Connections <wrcserviceconnections@oakgov.com>; Egres, Debbie L <egresd@oakgov.com>; Carley, Joseph <carleyj@oakgov.com>
Subject: FW: 148 Linda Ct. Cross Connection

Here's storm and Sanitary for that area. Let me know if you need anything else.

Ronald J Fadoir
Environmental Planner
Oakland County Water Resources Commissioner
1 Public Works Dr.
Waterford, MI 48328

Email: fadoirr@oakgov.com
Office: (248) 858-5248
Fax: (248) 858-1066
Moblle: (248- 431-6354
24 Hr. Water Pollution Hotline: (248) 858-0931

From: Allen, Ashley <AAllen@hrcengr.com>
Sent: Thursday, February 9, 2023 1:26 PM
To: Fadoir, Ronald J <fadoirr@oakgov.com>
Cc: Kohn, Joel W <kohnj@oakgov.com>; njessee@rcoc.org
Subject: RE: 148 Linda Ct. Cross Connection

CAUTION: This message is from a sender outside of the Oakland County organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Ron,

Thank you for letting me know. Looks like the storm sewer runs down Lone Pine Road and outlets at the Cranbrook Road and Lone Pine Road intersection into the creek between Kingswood Lake and Endicott Lake.

Attached is a map that shows the main sanitary line location also.
Let me know if you need anything else.



Thanks!
Ashley

From: Fadoir, Ronald J <fadoirr@oakgov.com>
Sent: Thursday, February 9, 2023 12:27 PM
To: Allen, Ashley <AAllen@hrcengr.com>
Cc: Kohn, Joel W <kohnj@oakgov.com>; njessee@rcoc.org
Subject: FW: 148 Linda Ct. Cross Connection

Ashley,

Just wanted to make sure your aware of this illicit connection at 148 Linda Court for IDEP reporting and tracking purposes. We're looking for Storm Drain plans for that sub. Thought you might know if Bloomfield Hills has storm maps for that area. Let me know.

Ronald J Fadoir
Environmental Planner
Oakland County Water Resources Commissioner
1 Public Works Dr.
Waterford, MI 48328

Email: fadoirr@oakgov.com
Office: (248) 858-5248
Fax: (248) 858-1066
Moblle: (248- 431-6354
24 Hr. Water Pollution Hotline: (248) 858-0931

From: Kohn, Joel W <kohnj@oakgov.com>
Sent: Thursday, February 9, 2023 12:00 PM
To: Seymour, Lynne <seymourl@oakgov.com>; Fadoir, Ronald J <fadoirr@oakgov.com>
Subject: RE: 148 Linda Ct. Cross Connection

Ron,

There is no County Drains, but lets see if we can find the local storm system, whether its through Bloomfield Hills or our sub files (I'll start there). It might be a good idea to adjust our GLWA locations to a spot(s) where that neighborhood discharges.

Joel Kohn
Environmental Planner
Oakland County Water Resources Office
1 Public Works Drive, 95 West
Waterford, MI 48328-1907
e-mail: kohnj@oakgov.com
Cell Phone: (248) 535-7653
Fax: (248) 858-1066

From: Seymour, Lynne <seymourl@oakgov.com>
Sent: Thursday, February 9, 2023 11:52 AM
To: Kohn, Joel W <kohnj@oakgov.com>; Fadoir, Ronald J <fadoirr@oakgov.com>
Subject: FW: 148 Linda Ct. Cross Connection

Please see Mark's email regarding a cross connection.

Lynne

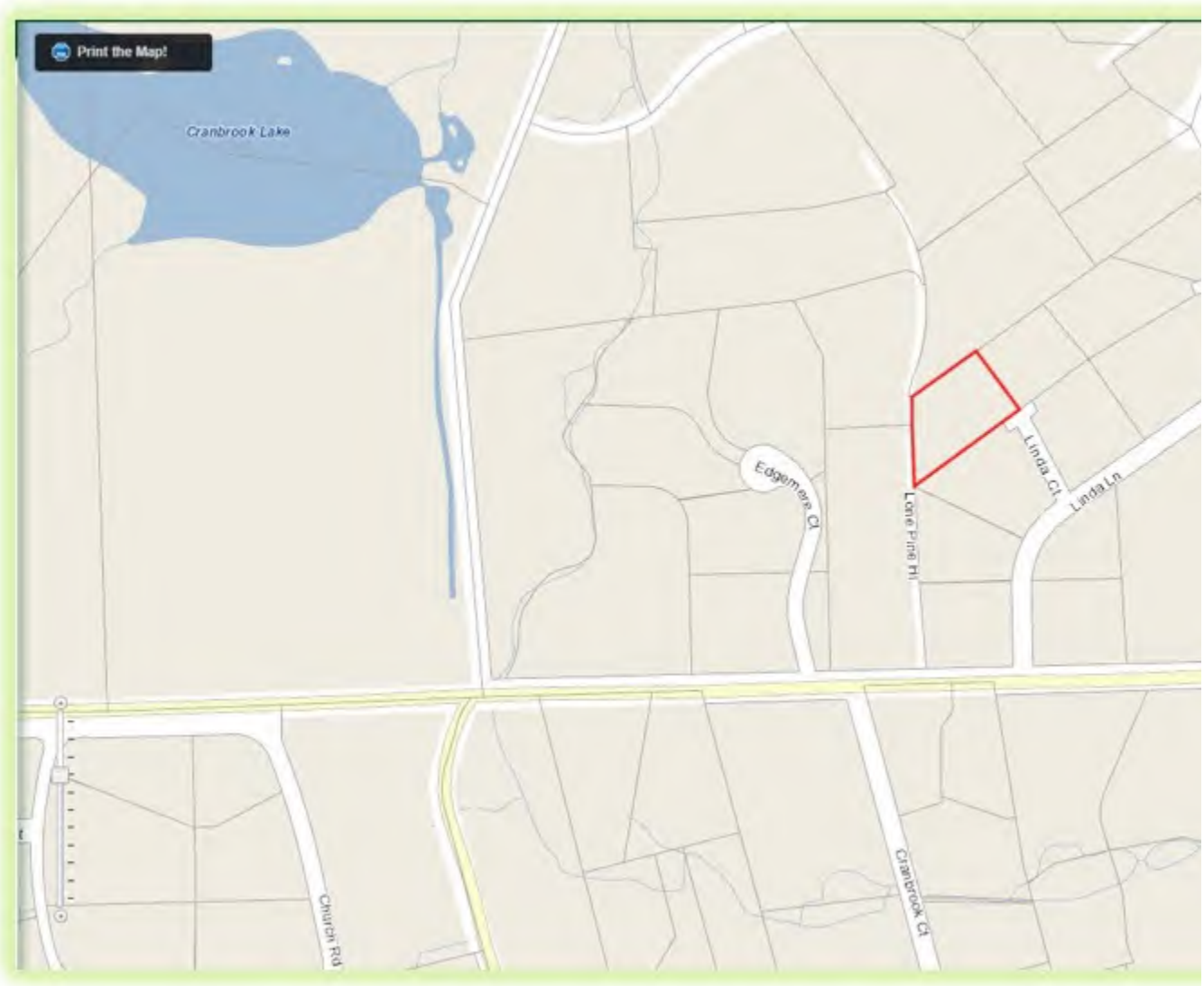
WRC
M: 248.421.5878

From: Davis, Mark <davisma@oakgov.com>
Sent: Thursday, February 9, 2023 11:49 AM
To: jeffmouch@gmail.com
Cc: Jeff Wren <jwren@bloomfieldhillsmi.net>; Warren, Karen L <warrenk@oakgov.com>; Seymour,

Lynne <seymourl@oakgov.com>; Burton, Jamie <JBurton@hrcengr.com>; WRC Service Connections <wrcserviceconnections@oakgov.com>; Egres, Debbie L <egresd@oakgov.com>; Carley, Joseph <carleyj@oakgov.com>
Subject: 148 Linda Ct. Cross Connection

Hi Jeff,
Thank you for contacting me. Attached is the information that you requested.

1. Please contact the City Building Department to obtain a permit to make the necessary repairs to disconnect the existing homes service line from the Storm Drain and make a new connection to the existing Service Lead.
    1. The downstream Storm Drainage system may need to be inspected and cleaned.
2. A Permit ($200) from the OCWRC Billing Service Unit (248-858-1110) will be required for the OCWRC CDM Inspection Unit to witness the connection to the Sanitary Service Lead.
    1. Once you obtain the OCWRC Sewer Inspection Permit, please see page 2 for additional conditions.



Mark W. Davis
Senior Engineering Systems Coordinator
Oakland County Water Resources Commissioners Office

248-452-2172 (p)
248-858-1066 (f)
248-897-2748 (cell)

<image001.png>

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**This email originated from outside the company. Please be sure to check the sending email address and report any suspicious emails using the Phish Tool.
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Appendix D7

Farmington Hills Pollution Complaint Documentation

Request Number: 458800 ***Associated WO Number:***
Complaint
Code: **FHC_ILLICIT_DISCHARG**
Description: **Illicit discharge of water**
Region Code:
Problem Address: **river north of Freedom between Drake and Halsted (section 29)**

Details:	**Resident said there is a white milky substance running in river**

Date / Time Reported: 1/14/2022 9:57:09 AM
Intitiated By: MOISAN, CONNIE

Caller Information

Call		Name			Home Address			Home Phone	Work Phone	Cell Phone
463465		CRAIG		UNKNOWN	Mission Creek			248-613-3621		

Call	Questions	Answers
463465	Where is the discharge happening?	Open ditch/stream
463465	What is wrong with the water?	Appearance

Resolution
Closed Out By: _____ *Date/Time Resolved:* _____
Held Over for Day Shift *Referred To Municipality* *Date / Time Reported:* _____
Reported to Municipality: _____ *Name of Contact:* _____

Comments: Caller: UNKNOWN, CRAIG:
Q: Where is the discharge happening?
A: Open ditch/stream
Q: What is wrong with the water?
A: Appearance
By Sonoga, Tyler: 1/24/2022 1:16:15 PM
Spoke to Craig who explained what he saw in the water. Went out to Freedom road north of M-5. River was cloudy. Checked up stream, no cloudiness was observed at Grand River stream crossings. Appeared to be possible flow from a watermain break the day before, called city of Farmington DPW to have them take a look around the Chatham Hills Apartments.

Tyler Sonoga

From: karen calhoun <karende03@gmail.com>
Sent: Tuesday, January 18, 2022 4:59 PM
To: Kohn, Joel W
Cc: Tyler Sonoga
Subject: Re: Caddell Drain
Attachments: image001.jpg

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

It's been clearing up nicely every day. Thanks so much for everything! The ducks were out yesterday and today.

On Tue, Jan 18, 2022, 2:10 PM Kohn, Joel W <kohnj@oakgov.com> wrote:

> Hi Karen and Tyler,
>
> Did a drive by and everything looked normal. We did do an E.coli grab sample back in June and results didn't produce anything high but we'll keep an eye out when we are in the area and will do a site visit once things start to unthaw.
>
> Joel Kohn
>
> ***Environmental Planner***
>
> ***Oakland County Water Resources Office***
>
> ***1 Public Works Drive, 95 West***
>
> ***Waterford, MI 48328-1907***
>
> **e-mail:** **kohnj@oakgov.com**
>
> **Office Phone:** (248) 858-5565
>
> **Cell Phone: (248) 535-7653**
>
> **Fax:** (248) 858-1066
>
> ---
>
> **From:** karen calhoun <karende03@gmail.com>
> **Sent:** Friday, January 14, 2022 3:15 PM
> **To:** Kohn, Joel W <kohnj@oakgov.com>
> **Cc:** Eastman, Emily <eastmane@oakgov.com>
> **Subject:** Re: Caddell Drain

Thanks so much Joel! I'll monitor it over the weekend too and will take photos when I walk in the morning. Wishing you a great holiday weekend.

Karen

On Fri, Jan 14, 2022 at 2:32 PM Kohn, Joel W <kohnj@oakgov.com> wrote:

> Hi Karen,
>
> I will run out on Tuesday and if the water is still murky do a quick grab sample for testing. It's plausible the extra flow from the watermain break is stirring up the drain, we've also had some known issues upstream of the subdivision that we are currently working with the city on.
>
> I'll update you on Tuesday evening of my findings. Have a great weekend and thanks for notifying us.
>
> Sincerely,
>
> Joel Kohn
>
> ***Environmental Planner***
>
> ***Oakland County Water Resources Office***
>
> ***1 Public Works Drive, 95 West***
>
> ***Waterford, MI 48328-1907***
>
> **e-mail: kohnj@oakgov.com**
>
> **Office Phone:** (248) 858-5565
>
> **Cell Phone: (248) 535-7653**
>
> **Fax:** (248) 858-1066
>
> ---
>
> **From:** Eastman, Emily <eastmane@oakgov.com>
> **Sent:** Friday, January 14, 2022 2:15 PM
> **To:** Kohn, Joel W <kohnj@oakgov.com>
> **Cc:** Thick, Edward M <thicke@oakgov.com>
> **Subject:** FW: Caddell Drain

Joel,

This is the property owner that I have been communicating with on the Caddell drain…..

From: karen calhoun <karende03@gmail.com>
Sent: Friday, January 14, 2022 2:12 PM
To: Eastman, Emily <eastmane@oakgov.com>
Cc: David Ryall <dryall@sbcglobal.net>; Jon Carter <carter248@yahoo.com>; Robert Layne <rlayne1950@gmail.com>; WRC <wrc@oakgov.com>
Subject: Caddell Drain

Hi Emily:

Just got off the phone with the guy who checked the drain and did a walk thru. He thinks something may have been stirred up and it doesn't appear to be a concern; also an engineer's looking further into this. He checked other drains in the area (i.e., Grand River apartment complex nearby) as well.

I asked if he could test the water. He doesn't have a testing kit and it seems to be out of his purview. So I asked who to contact and he suggested I call the office, but since we've been communicating I'm following up with you on who to call to request a basic test for anything alarming.

A neighbor also reported a water main break occurred at 14 mile and Drake (not far from the park/creek) and a boil alert is in place. Your questions this morning helped identify the water appeared to be more robust in murkiness the farther east on the trail towards Drake.

Please send a contact to request testing. I don't understand how the creek may impact household water, there's no issues as far I know, but my sump pump is running more than usual. I'm copying the Chatham Hill's association leadership, and the WRC inquiry email on our correspondence to keep them in the loop.

Thanks,

Karen

Karen Calhoun

(313) 632-9932

On Fri, Jan 14, 2022 at 10:10 AM Eastman, Emily <eastmane@oakgov.com> wrote:

> Good morning Karen,
>
> CDM has received your drain concern. Could you please call our office so I could get some additional information? 248-858-1105.
>
> Thank you,

Emily Eastman – Operations Clerk | Construction Drain Maintenance



One Public Works Drive Building 95 West | Waterford, MI 48328
Office number: 248-858-1105

Office hours: M-F 6:30am-3:00pm

Request Number: 459045 ***Associated WO Number:***
Complaint
Code: **FHC_ILLICIT_DISCHARG**
Description: **Illicit discharge of water**
Region Code: Thirteen Mile Rd
Problem Address: **30500 W W 13 MILE RD**

Details:	**At 12:10 p.m. 1/19/22 Tyler Sonoga received an e-mail from Joel Kohn from WRC about receiving report of diesel in the pebble creek at Glen Oaks. (see attached e-mail)**

Date / Time Reported: 1/20/2022 10:55:35 AM
Intitiated By: SMRTKA, BARB S.

Caller
Information

Call		Name			Home Address			Home Phone	Work Phone	Cell Phone
463714		GLEN OAKS		COUNTRY CLUB	30500 W W 13 MILE RD	FARMINGTON HILLS	48334			

Call	Questions	Answers
463714	Where is the discharge happening?	Open ditch/stream
463714	What is wrong with the water?	Appearance

Resolution
Closed Out By: _____ *Date/Time Resolved:* _____
Held Over for Day Shift *Referred To Municipality* *Date / Time Reported:* _____
Reported to Municipality: _____ *Name of Contact:* _____

Comments: Caller: COUNTRY CLUB, GLEN OAKS:
Q: Where is the discharge happening?
A: Open ditch/stream
Q: What is wrong with the water?
A: Appearance
By Sonoga, Tyler : 6/5/2023 10:32:17 AM
EGLE and County followed up with gas station to report leaks from tanks. Attaching all documentation recieved from EGLE Remediation and Redevelopment Division Rebeca Degrazia

BLDI Environmental Engineering | *Working for you*

September 12, 2018

Farmington Hills Department of Public Works
31555 W. Eleven Mile Road
Farmington Hills, MI 48336

RE: Notice to Impacted Parties of Corrective Action

To Whom It May Concern:

BLDI is the qualified environmental consultant that has been working with Knight Enterprises, Inc. and the Michigan Department of Environmental Quality (MDEQ) to obtain closure of releases of petroleum to the environment that have occurred at the Knight Enterprises K-313 Site, located at 29510 Orchard Lake Road, Farmington Hills, Oakland County, Michigan.

The confirmed release was reported on October 6, 2017. Based on the locations of several soil borings installed recently on the gas station site, it appears likely that these releases have contaminated soil where natural gas utilities are present within the adjoining Orchard Lake Road and West 13 Mile Road right of ways (ROWs).

This notice is being provided to inform you of the presence of this impact and to fulfill the requirements of Section 21309a of Part 213 of the Natural Resources and Environmental Protection Act (NREPA). Please feel free to contact me should you have any questions or concerns.

Sincerely,

Leslie A. DeBoer, EP
Project Manager

Cc: MDEQ, SE Michigan District Office

Attachment

150 Fountain NE • Grand Rapids, Michigan 49503 | 616.459.3737
P.O. Box 242 • Loveland, Ohio 45140 | 513.490.0664
www.bldi.com

DEQ

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

REMEDIATION AND REDEVELOPEMENT DIVISION

NOTICE TO IMPACTED PARTIES OF CORRECTIVE ACTION

INSTRUCTIONS:

An owner or operator that is liable under section 21323a is required by Sections 21309a(3) of Part 213, Leaking Underground Storage Tanks, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, to provide Notice of Corrective Action to each owner of property whose soil and/or groundwater is directly impacted above residential Risk-Based Screening Levels. Owners of property include, but are not limited to, deed holders, easement holders, tenants, utilities, and highway authorities.

Complete and send the Notice to Impacted Parties of Corrective Action Form to the owners of properties impacted by the contamination before submitting the Corrective Action Plan to the DEQ, Remediation and Redevelopment Division (RRD). Mark that notification was made on the appropriate Report cover sheets (Question #3), and provide a copy of the Notice of Corrective Action and proof of providing the Notice in the appropriate Report (Final Assessment Report and Closure Report).

PO BOX 34026
LANSING, MI 48909-7926
PHONE: 571-284-5087 FAX: 517-241-9581

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY – REMEDIATION AND REDEVELOPMENT DIVISION
PO BOX 30426, LANSING, MI 48909-7926, Phone 517-284-5087, Fax 517-241-9581

NOTICE TO IMPACTED PARTIES OF CORRECTIVE ACTION

This information is being sent to notify you that your property is impacted by petroleum products or other regulated substances that were released from an Underground Storage Tank (UST) and to notify you of the steps that are being taken to address the contamination. This information is required to be sent to you under Sections 21309a(3) of Part 213, Leaking Underground Storage Tanks, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended.

OWNER OR OPERATOR PROPOSING CORRECTIVE ACTION: Knight Enterprises, Inc.			
LOCATION OF RELEASE (SITE NAME): Knight Enterprises K-313			
STREET ADDRESS: 29510 Orchard Lake Road			
CITY: Farmington Hills	ZIP: 48334	COUNTY: Oakland	
CONTACT PERSON: John Denton	PHONE: (248) 478-3651		
MAILING ADDRESS: 40600 Grand River	CITY: Novi	STATE: MI	ZIP: 48375
PROPERTY DIRECTLY IMPACTED BY THE RELEASE:			
PROPERTY OWNERS NAME: Farmington Hills Department of Public Works			
PROPERTY ADDRESS: Water and sanitary sewer utility at 29510 Orchard Lake Road, Farmington Hills, MI adjacent Orchard Lake Road and 13 Mile Road ROWs			
CITY: Farmington Hills	ZIP: 48334	COUNTY: Oakland	
MAILING ADDRESS: 31555 W. Eleven Mile Road	CITY: Farmington Hills	STATE: MI	ZIP: 48336

☐ The groundwater at this property is contaminated with petroleum products or other regulated substances.

☒ The soil at this property is contaminated with petroleum products or other regulated substances.

Type of corrective action(s) or restriction(s) proposed for this release:

The confirmed release was reported on October 6, 2017. Soil contamination has been documented at concentrations exceeding Part 213 Risk Based Screening Levels (RBSLs) in soil borings located near to the water and sanitary sewer utility located within the adjacent Orchard Lake Road and 13 Mile Road ROWs. Initial response activities at the Site include installation of soil borings adjacent to the ROWs to evaluate the presence of contamination. Once the extent of contamination has been delineated, the final corrective actions will rely upon institutional controls to mitigate any remaining exposure pathways associated with the remaining soil contamination.

Corrective Action Goal/Objective for your property:

☐ **Unrestricted Residential** (Petroleum products or other regulated substances would remain at levels that allow for the use of the property for any residential purpose, with no restrictions.)

☐ **Unrestricted Non-Residential** (Petroleum products or other regulated substances would remain at levels that allow for the use of the property for any non-residential purpose, with no restrictions.)

☐ **Restricted Residential** (Petroleum products or other regulated substances would remain at levels that require some restricted use of the property. The property can be used for residential purposes with the appropriate restrictions applied to the deed with the property owner's approval.)

☒ **Restricted Non-Residential** (Petroleum products or other regulated substances would remain at levels that require some restricted use of the property. The property can be used for non-residential purposes with the appropriate restrictions applied to the deed with the property owner's approval.)

This notice does not constitute a warranty or representation of any kind by the State of Michigan that the corrective actions performed in accordance with this notice will result in the achievement of the remedial criteria established by Law, or that the property is suitable for any particular use.

Site release information and corrective action plans are made available to the public at the local Department of Environmental Quality (DEQ), Remediation and Redevelopment Division (RRD) District Office listed below:

SE Michigan District

To obtain a copy of this information, please go to www.michigan.gov/deq, Freedom of Information Act (FOIA) Link for further details, or contact the DEQ FOIA Office by phone at: 800-662-9278.

Tyler Sonoga

From: DeGrazia, Rebecca (EGLE) <DeGraziaR@michigan.gov>
Sent: Thursday, April 14, 2022 11:03 AM
To: mmaiorelle@usenergydistribution.com
Cc: Stasha Wilt; Stanley Barnes; Kohn, Joel W; Jason Baloga; Kevin McCarthy; Tyler Sonoga; Amira Lewis; Charbonneau, Michael (LARA); Richardson, TJ (LARA); Arnold, Jerry (LARA); Gantt, Roy (LARA); Sexton, Kathleen (EGLE); Wilson, Cheryl (EGLE); Noetzel, Katie (EGLE)
Subject: RE: FID# 00018512, 29510 Orchard Lake/Glenn Oaks Pebble Creek Spill
Attachments: diesel sump near pump #5 3-2-2022.JPG; 29510 Orchard Lake Farmington Hills Lab Report 03-24-2022.pdf; new concrete gasoline tanks 3-2-2022.JPG

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Dear Mr. Maiorelle,

While we understand US Energy Distribution has completed some work, other compliance issues with Part 211, Underground Storage Tank Regulations, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451) and subsequently Part 213 have been observed and documented in LARA's inspection report dated January 21, 2022, and an onsite visit conducted on March 2, 2022.

Two new releases have been confirmed by EGLE and LARA staff; one diesel: REL-0022-22 and one gasoline: REL-0059-22.

On March 2, 2022, as follow-up to the petroleum product discovered in Pebble Creek and the lack of response activities conducted by US Energy Distribution, EGLE met with LARA on-site. EGLE observed black soils and petroleum odors in the diesel sump located near pump #5 (see photo) where the flex pipe is improperly buried under debris. In addition, EGLE staff sent a soil sample to be analyzed for petroleum analytes (see attached results). The sample results indicated a diesel release has occurred. REL-0022-22 was confirmed based on visual and olfactory observations as well as the soil sample results.

During our site visit, EGLE and LARA staff also noted the two gasoline tanks had new concrete work around them (see photo). When the observation well between the two tanks was checked, a sheen and gasoline odors were observed. Based on the spill bucket test results provided by Ms. Stasha Wilt, it appears that one of the gasoline spill buckets had failed a tightness test on October 26, 2020, and therefore, the spill bucket was replaced in February 2022. When asked about the second gasoline tank, Ms. Wilt said the technician stated it did not look good and it should also be changed. By law, a failed spill bucket test should be reported as a suspected release; US Energy Distribution never reported a release for this. Based on visual and olfactory observations a second release (gasoline), REL-0059-22, has been confirmed.

Corrective actions for these confirmed releases are regulated under Part 213, Leaking Underground Storage Tanks, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA). As the Owner/Operator (O/O), who is liable under Part 213, US Energy Distribution has statutory obligations to undertake corrective actions and meet the reporting requirements of Part 213.

These obligations include, but are not limited to:

1. Hire a qualified underground storage tank consultant to perform the work that is necessary to meet the reporting and corrective action requirements of Part 213. A qualified underground storage tank consultant must meet all of the requirements of Section 21325 of Part 213.
2. After a release has been reported to EGLE, initial corrective actions must be performed immediately and expeditiously, pursuant to Section 21307 of Part 213.

3. Section 21308a of Part 213 requires that a liable O/O complete and submit an Initial Assessment Report (IAR) within 180 days after a release has been discovered.
4. Section 21311a of Part 213 requires that a liable O/O complete and submit a Final Assessment Report (FAR) and Corrective Action Plan within 365 days after a release has been discovered.
5. Upon completion of the corrective actions, Section 21312a of Part 213 requires that the liable O/O complete and submit a Closure Report (CR) to EGLE.

Note, the gasoline release should have been reported October 26, 2020. Based on this date, US Energy Distribution is out of compliance with Part 213 for the gasoline release. Since the releases were not timely reported by US Energy Distribution, EGLE has not been able to send formal compliance communications as Part 213 only applies to confirmed releases. Now that both releases have been confirmed, EGLE will be sending formal compliance communications.

Sincerely,

Rebecca DeGrazia, Project Manager
Michigan Department of Environment, Great Lakes, and Energy
Remediation and Redevelopment Division – Warren District Office
27700 Donald Court, Warren, Michigan 48092
586-255-2935 | DeGraziaR@michigan.gov
Follow Us | **Michigan.gov/EGLE**

From: mmaiorelle mmaiorelle@usenergydistribution.com
Sent: Tuesday, April 12, 2022 1:41 PM
To: 'Stanley Barnes' SBarnes@fhgov.com; Stasha Wilt swilt@usenergydistribution.com; Kohn, Joel W kohnj@oakgov.com; DeGrazia, Rebecca (EGLE) DeGraziaR@michigan.gov; Wilson, Cheryl (EGLE) WILSONC3@michigan.gov; Sexton, Kathleen (EGLE) SextonK3@michigan.gov; Jason Baloga JBaloga@fhgov.com; Gantt, Roy (LARA) GanttR@michigan.gov; Richardson, TJ (LARA) RichardsonT14@michigan.gov; Charbonneau, Michael (LARA) CHARBONNEAUM1@michigan.gov; Kevin McCarthy KMcCarthy@fhgov.com; Tyler Sonoga TSonoga@fhgov.com
Cc: Amira Lewis ALewis@fhgov.com
Subject: RE: REMINDER SOIL SAMPLING Glenn Oaks Pebble Creek Spill / 29510 Orchard Lake

Hello Roy,

To follow up on my invoice mail earlier. I would like to request an on site meeting. We have spent over $20,000, testing and replacing the GTM. With no record of any loss of inventory and quarterly monitor has identified no change in soil condition. Now soil samples?

Thanks,

Mike

Michael Maiorelle
Chief Operating Officer

U.S. Petroleum Partners, LLC
40600 Grand River Ave. Novi, MI 48375
mmaiorelle@usenergydistribution.com
Office: 248-478-3651
Cell: 843-818-9039

From: Stanley Barnes <SBarnes@fhgov.com>
Sent: Tuesday, April 12, 2022 1:17 PM
To: Stasha Wilt <swilt@usenergydistribution.com>; Kohn, Joel W <kohnj@oakgov.com>; DeGrazia, Rebecca (EGLE) <DeGraziaR@michigan.gov>; Wilson, Cheryl (EGLE) <WILSONC3@michigan.gov>; Sexton, Kathleen (EGLE) <SextonK3@michigan.gov>; Jason Baloga <JBaloga@fhgov.com>; Gantt, Roy (LARA) <GanttR@michigan.gov>; Richardson, TJ (LARA) <RichardsonT14@michigan.gov>; Charbonneau, Michael (LARA) <CHARBONNEAUM1@michigan.gov>; Kevin McCarthy <KMcCarthy@fhgov.com>; Tyler Sonoga <TSonoga@fhgov.com>
Cc: Amira Lewis <ALewis@fhgov.com>; mmaiorelle <mmaiorelle@usenergydistribution.com>; Stanley Barnes <SBarnes@fhgov.com>
Subject: RE: REMINDER SOIL SAMPLING Glenn Oaks Pebble Creek Spill / 29510 Orchard Lake

Just for clarification, I believe what is being asked is not the regular or scheduled monitoring that occurs quarterly, although that information would be valuable as well, but the monitoring related to this Spill incident. As was noted, there was product that was found in the nearby drains. Also, was monitoring accomplished outside of the tank with the ruptured inlet? That would have required monitoring of the soil and gravel, stone, etc. outside of that tank in question.

Thanks for the reply.

Stan Barnes, Inspector

Stan Barnes, Inspector
Farmington Hills Fire Department
Public Education Coordinator
Hazardous Materials Coordinator
248 871-2820 Work
248-231-7937 Cell
sbarnes@fhgov.com email

"Just Gets Better With Time"

From: mmaiorelle <mmaiorelle@usenergydistribution.com>
Sent: Tuesday, April 12, 2022 1:17 PM
To: Stasha Wilt <swilt@usenergydistribution.com>; Stanley Barnes <SBarnes@fhgov.com>; Kohn, Joel W <kohnj@oakgov.com>; DeGrazia, Rebecca (EGLE) <DeGraziaR@michigan.gov>; Wilson, Cheryl (EGLE)

<WILSONC3@michigan.gov>; Sexton, Kathleen (EGLE) <SextonK3@michigan.gov>; Jason Baloga <JBaloga@fhgov.com>; Gantt, Roy (LARA) <GanttR@michigan.gov>; Richardson, TJ (LARA) <RichardsonT14@michigan.gov>; Charbonneau, Michael (LARA) <CHARBONNEAUM1@michigan.gov>; Kevin McCarthy <KMcCarthy@fhgov.com>; Tyler Sonoga <TSonoga@fhgov.com>
Cc: Stanley Barnes <SBarnes@fhgov.com>; Amira Lewis <ALewis@fhgov.com>
Subject: RE: REMINDER SOIL SAMPLING Glenn Oaks Pebble Creek Spill / 29510 Orchard Lake

Hello,

Additionally, I have requested the last two quarterly monitoring well reports for this location from BLDI. The one from the last quarter of 2021 and the one from March of 2022. As communicated, we have completed all testing tank and line which all passed coupled with a review of our daily over/short reports identify no loss or variation in inventory of any tanks.

Thanks,

Mike

Michael Maiorelle
Chief Operating Officer

U.S. Petroleum Partners, LLC
40600 Grand River Ave. Novi, MI 48375
mmaiorelle@usenergydistribution.com
Office: 248-478-3651
Cell: 843-818-9039

From: Stasha Wilt <swilt@usenergydistribution.com>
Sent: Tuesday, April 12, 2022 1:05 PM
To: Stanley Barnes <SBarnes@fhgov.com>; Kohn, Joel W <kohnj@oakgov.com>; DeGrazia, Rebecca (EGLE) <DeGraziaR@michigan.gov>; Wilson, Cheryl (EGLE) <WILSONC3@michigan.gov>; Sexton, Kathleen (EGLE) <SextonK3@michigan.gov>; Jason Baloga <JBaloga@fhgov.com>; Gantt, Roy (LARA) <GanttR@michigan.gov>; Richardson, TJ (LARA) <RichardsonT14@michigan.gov>; Charbonneau, Michael (LARA) <CHARBONNEAUM1@michigan.gov>; Kevin McCarthy <KMcCarthy@fhgov.com>; Tyler Sonoga <TSonoga@fhgov.com>
Cc: Stanley Barnes <SBarnes@fhgov.com>; Amira Lewis <ALewis@fhgov.com>; mmaiorelle <mmaiorelle@usenergydistribution.com>
Subject: Re: REMINDER SOIL SAMPLING Glenn Oaks Pebble Creek Spill / 29510 Orchard Lake

Good Afternoon.
This US Energy Distribution site has been monitored quarterly since we aquired it from Knight Enterprises 4 years ago. There has been no change at all in the soil readings.

Sent from my Verizon, Samsung Galaxy smartphone
Get Outlook for Android

From: Stanley Barnes <SBarnes@fhgov.com>
Sent: Tuesday, April 12, 2022 9:26:07 AM
To: Kohn, Joel W <kohnj@oakgov.com>; DeGrazia, Rebecca (EGLE) <DeGraziaR@michigan.gov>; Wilson, Cheryl (EGLE) <WILSONC3@michigan.gov>; Sexton, Kathleen (EGLE) <SextonK3@michigan.gov>; Jason Baloga <JBaloga@fhgov.com>; Gantt, Roy (LARA) <GanttR@michigan.gov>; Richardson, TJ (LARA) <RichardsonT14@michigan.gov>; Charbonneau, Michael (LARA) <CHARBONNEAUM1@michigan.gov>; Kevin McCarthy <KMcCarthy@fhgov.com>; Tyler Sonoga <TSonoga@fhgov.com>; Stasha Wilt <swilt@usenergydistribution.com>

Cc: Stanley Barnes <SBarnes@fhgov.com>; Amira Lewis <ALewis@fhgov.com>
Subject: RE: REMINDER SOIL SAMPLING Glenn Oaks Pebble Creek Spill / 29510 Orchard Lake

Hello to all, hopefully you are all safe and well. I just wanted to follow up with a friendly reminder. How is the Soil Sampling progressing?

Thanks Stan

Stan Barnes, Inspector
Farmington Hills Fire Department
Public Education Coordinator
Hazardous Materials Coordinator
248 871-2820 Work
248-231-7937 Cell
sbarnes@fhgov.com email

"Just Gets Better With Time"

From: Kohn, Joel W <kohnj@oakgov.com>
Sent: Friday, February 25, 2022 1:32 PM
To: DeGrazia, Rebecca (EGLE) <DeGraziaR@michigan.gov>
Cc: Wilson, Cheryl (EGLE) <WILSONC3@michigan.gov>; Sexton, Kathleen (EGLE) <SextonK3@michigan.gov>; Jason Baloga <JBaloga@fhgov.com>; Gantt, Roy (LARA) <GanttR@michigan.gov>; Richardson, TJ (LARA) <RichardsonT14@michigan.gov>; Charbonneau, Michael (LARA) <CHARBONNEAUM1@michigan.gov>; Kevin McCarthy <KMcCarthy@fhgov.com>; Tyler Sonoga <TSonoga@fhgov.com>; Stanley Barnes <SBarnes@fhgov.com>
Subject: RE: Glenn Oaks Pebble Creek Spill / 29510 Orchard Lake

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Here are storm drain plans. The storm from the NE corner runs easterly on the north side of 13 Mile Road to just past Greening st. From there it turns 45 degrees northeasterly into the golf course and outlets to the Pebble Creek.

Joel Kohn

Environmental Planner
Oakland County Water Resources Office
1 Public Works Drive, 95 West
Waterford, MI 48328-1907
e-mail: kohnj@oakgov.com
Office Phone: (248) 858-5565
Cell Phone: (248) 535-7653
Fax: (248) 858-1066

From: DeGrazia, Rebecca (EGLE) <DeGraziaR@michigan.gov>
Sent: Friday, February 25, 2022 11:26 AM
To: Kohn, Joel W <kohnj@oakgov.com>
Cc: Wilson, Cheryl (EGLE) <WILSONC3@michigan.gov>; Sexton, Kathleen (EGLE) <SextonK3@michigan.gov>; Jason Baloga <JBaloga@fhgov.com>; Gantt, Roy (LARA) <GanttR@michigan.gov>; Richardson, TJ (LARA) <RichardsonT14@michigan.gov>; Charbonneau, Michael (LARA) <CHARBONNEAUM1@michigan.gov>; Kevin McCarthy <KMcCarthy@fhgov.com>; Tyler Sonoga <TSonoga@fhgov.com>; Stanley Barnes <SBarnes@fhgov.com>
Subject: RE: Glenn Oaks Pebble Creek Spill / 29510 Orchard Lake

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Good morning Joel,

The gas station's diesel and kerosene tanks are still Red Tagged. LARA cannot yet determine if the incident to Pebble Creek was due to a leak in the UST system or a spill to the ground near the gas station's on-site storm water catch basin. In either case, it is up to the owner/operator of the gas station to conduct soil sampling. Roy Gantt and I were supposed to meet on site today to further investigate, however due to the weather and temperatures we will have to postpone this investigation until next.

I would also like to look at the diesel underground storage tank and maintenance yard at the golf course.

Can anyone share a map of the storm sewers with flow direction and the locations where they discharge into the creek?

Many thanks,

Rebecca DeGrazia, Project Manager
Michigan Department of Environment, Great Lakes, and Energy
Remediation and Redevelopment Division – Warren District Office
27700 Donald Court, Warren, Michigan 48092
586-255-2935 | DeGraziaR@michigan.gov
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From: Kohn, Joel W <kohnj@oakgov.com>
Sent: Wednesday, February 23, 2022 3:45 PM
To: Stanley Barnes <SBarnes@fhgov.com>; DeGrazia, Rebecca (EGLE) <DeGraziaR@michigan.gov>
Cc: Wilson, Cheryl (EGLE) <WILSONC3@michigan.gov>; Sexton, Kathleen (EGLE) <SextonK3@michigan.gov>; Jason Baloga <JBaloga@fhgov.com>; Gantt, Roy (LARA) <GanttR@michigan.gov>; Richardson, TJ (LARA) <RichardsonT14@michigan.gov>; Charbonneau, Michael (LARA) <CHARBONNEAUM1@michigan.gov>; Kevin McCarthy <KMcCarthy@fhgov.com>; Tyler Sonoga <TSonoga@fhgov.com>
Subject: RE: Glenn Oaks Pebble Creek Spill / 29510 Orchard Lake

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H All,

Is there a plan to complete soil sampling on site? If not this is something we would like to see completed to fully complete the investigation and confirm the source.

Joel Kohn
Environmental Planner
Oakland County Water Resources Office
1 Public Works Drive, 95 West
Waterford, MI 48328-1907
e-mail: kohnj@oakgov.com
Office Phone: (248) 858-5565
Cell Phone: (248) 535-7653
Fax: (248) 858-1066

From: Stanley Barnes <SBarnes@fhgov.com>
Sent: Wednesday, February 23, 2022 9:40 AM
To: DeGrazia, Rebecca (EGLE) <DeGraziaR@michigan.gov>
Cc: Wilson, Cheryl (EGLE) <WILSONC3@michigan.gov>; Sexton, Kathleen (EGLE) <SextonK3@michigan.gov>; Kohn, Joel W <kohnj@oakgov.com>; Jason Baloga <JBaloga@fhgov.com>; ganttr@michigan.gov; Richardson, TJ (LARA) <RichardsonT14@michigan.gov>; Charbonneau, Michael (LARA) <CHARBONNEAUM1@michigan.gov>; Kevin McCarthy <KMcCarthy@fhgov.com>; Tyler Sonoga <TSonoga@fhgov.com>; stewardj@michigan.gov; ARNOLDJ@michigan.gov; Stanley Barnes <SBarnes@fhgov.com>; Amira Lewis <ALewis@fhgov.com>
Subject: RE: Glenn Oaks Pebble Creek Spill / 29510 Orchard Lake

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Hello to all… Just to keep you in the loop, I received the following documents from Stasha Wilt of US Distribution regarding the UST's on location at 29510 Orchard Lake Rd.

Also… FYI… There were no documents received regarding Soil Sampling for contamination around the Tanks or for the obvious contamination that was observed inside the Storm Drains down stream from the distribution pumps. Also, the last time that I went out, the TLM System was still down, however, she stated that sometime this week that should be corrected.

I am not sure who is overseeing the Clean Up, but I did want to share with you what was passed on to me. I will continue to keep you in the loop. If you find out something please let me know.

Thanks Stan

Stan Barnes, Inspector
Farmington Hills Fire Department
Public Education Coordinator
Hazardous Materials Coordinator
248 871-2820 Work

248-231-7937 Cell
sbarnes@fhgov.com email

Stasha, Thank you for the update… I will pass it on. Thanks Stan.

From: Stasha Wilt <swilt@usenergydistribution.com>
Sent: Wednesday, February 23, 2022 9:29 AM
To: Stanley Barnes <SBarnes@fhgov.com>
Subject: Re: 00018512 Suspected Release

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Good Morning Stanley.
I have not received the results yet. I was told it always takes 3 or more weeks to get those. We have the environmental company BLDI that does quarterly samples on all of our properties so we will reach out to them as well to see if they have done their quarterly.

Sent from my Verizon, Samsung Galaxy smartphone
Get Outlook for Android

From: Stanley Barnes <SBarnes@fhgov.com>
Sent: Wednesday, February 23, 2022 9:14:53 AM
To: Stasha Wilt <swilt@usenergydistribution.com>
Cc: Stanley Barnes <SBarnes@fhgov.com>
Subject: RE: 00018512 Suspected Release

Hello Stasha, how are you… I have received the documents regarding the testing of the Tanks…

I did not find included any information regarding Soil Samples.

Could you please send me that information?

Thank you.

Stan

Stan Barnes, Inspector
Farmington Hills Fire Department
Public Education Coordinator
Hazardous Materials Coordinator
248 871-2820 Work
248-231-7937 Cell
sbarnes@fhgov.com email

From: Stasha Wilt <swilt@usenergydistribution.com>
Sent: Monday, February 21, 2022 2:18 PM
To: Stanley Barnes <SBarnes@fhgov.com>
Subject: Fw: 00018512 Suspected Release

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From: Stasha Wilt <swilt@usenergydistribution.com>
Sent: Monday, February 21, 2022 6:56 PM
To: sbarnes@fhgov.com <sbarnes@fhgov.com>
Subject: Fw: 00018512 Suspected Release

From: Steward, Jessica (LARA) <stewardj@michigan.gov>
Sent: Wednesday, February 2, 2022 2:46 PM
To: Stasha Wilt <swilt@usenergydistribution.com>; Arnold, Jerry (LARA) <ARNOLDJ@michigan.gov>; Dennis, Rick (LARA) <DennisR1@michigan.gov>; Gantt, Roy (LARA) <GanttR@michigan.gov>; EGLE-RRD-Part213Notices <EGLE-RRD-Part213Notices@michigan.gov>
Subject: FW: 00018512 Suspected Release

All,

A Suspected Release has been reported for Facility 00018512, 1313, 29510 Orchard Lake Rd., Farmington, MI 48334. Thanks and have a good day.

Jessica Steward
Departmental Technician
LARA BFS Storage Tank Section
611 W. Ottawa St., 4th Floor
PO Box 30033
Lansing, MI 48933
Office hours: 8:30am-5:00 p.m.
(517)335-7210



From: Arnold, Jerry (LARA) <ARNOLDJ@michigan.gov>
Sent: Monday, January 31, 2022 3:45 PM
To: Steward, Jessica (LARA) <stewardj@michigan.gov>
Subject: RE: 00018512 Suspected Release

Thanks

Jerry Arnold
Engineer - Storage Tank Section
Bureau of Fire Services
611 W. Ottawa St., 4th Floor,
P.O. Box 30033
Lansing, MI 48909

arnoldj@michigan.gov
(517) 241-4709 (phone)
Office Hours: M-R 7am to 5:30pm





From: Steward, Jessica (LARA) <stewardj@michigan.gov>
Sent: Monday, January 31, 2022 3:34 PM
To: Arnold, Jerry (LARA) <ARNOLDJ@michigan.gov>; Gantt, Roy (LARA) <GanttR@michigan.gov>
Cc: Charbonneau, Michael (LARA) <CHARBONNEAUM1@michigan.gov>
Subject: RE: 00018512 Suspected Release

All,

I am waiting for the owners rep to send me the release report. She said she would send it tomorrow. Thanks!

Jessica Steward
Departmental Technician
LARA BFS Storage Tank Section
611 W. Ottawa St., 4th Floor
PO Box 30033
Lansing, MI 48933
Office hours: 8:30am-5:00 p.m.
(517)335-7210



From: Arnold, Jerry (LARA) <ARNOLDJ@michigan.gov>
Sent: Monday, January 31, 2022 3:04 PM
To: Gantt, Roy (LARA) <GanttR@michigan.gov>; Steward, Jessica (LARA) <stewardj@michigan.gov>
Cc: Charbonneau, Michael (LARA) <CHARBONNEAUM1@michigan.gov>
Subject: RE: 00018512 Suspected Release

Email was accidentally sent before I was finished.

Looks like the confirmed release submitted back in 2017 was for gasoline. I don't know what was submitted or if anything, but you did note diesel/kerosene staining as the possible source. All indicators are that a new release occurred, whether a 201 or 213 could be debated. It is my opinion that a confirmed 213 release should be submitted if owner or operator failures to provide requested documentation.

Jerry Arnold
Engineer - Storage Tank Section
Bureau of Fire Services
611 W. Ottawa St., 4th Floor,
P.O. Box 30033
Lansing, MI 48909

arnoldj@michigan.gov
(517) 241-4709 (phone)
Office Hours: M-R 7am to 5:30pm





From: Arnold, Jerry (LARA)
Sent: Monday, January 31, 2022 2:51 PM
To: Gantt, Roy (LARA) <GanttR@michigan.gov>; Steward, Jessica (LARA) <stewardj@michigan.gov>
Cc: Charbonneau, Michael (LARA) <CHARBONNEAUM1@michigan.gov>
Subject: RE: 00018512 Suspected Release

Hi Roy,

Based on the cited violations on the recent existing inspection, a confirmed release (213) should be submitted if PASSING tightness testing & passing operational functionality testing or certification of the existing release detection system can not be provided.

If everything PASSES, then site conditions; UDC failure; CP failure (metal in contact with the ground properly maintained); improperly maintained or functioning spill containment; and the possible of an overfills event, would all contribute to confirming a (213) release, over the scenario or likelihood that a recent 201 spill or existing "historical" contamination at the LUST facility.

Per MUSTR Rule 31 – section 280.52(a)(3) - Further investigation is not required if the test results for the UST system, tank, and delivery piping, do not indicate that a leak existing, and if environmental contamination is not the basis for suspecting a release.

Jerry Arnold
Engineer - Storage Tank Section
Bureau of Fire Services
611 W. Ottawa St., 4th Floor,
P.O. Box 30033
Lansing, MI 48909

arnoldj@michigan.gov
(517) 241-4709 (phone)
Office Hours: M-R 7am to 5:30pm





From: Gantt, Roy (LARA) <GanttR@michigan.gov>
Sent: Monday, January 31, 2022 12:52 PM
To: Arnold, Jerry (LARA) <ARNOLDJ@michigan.gov>; Steward, Jessica (LARA) <stewardj@michigan.gov>
Cc: Charbonneau, Michael (LARA) <CHARBONNEAUM1@michigan.gov>
Subject: 00018512 Suspected Release

Hello Jerry,

We were called by Farmington Hills Fire Department on 1/21/22, regarding odor and sheen on a nearby stream, east of this property. Checked everything and requesting testing by the owner. No results yet but the owner indicates that all passed. A suspected release was requested and the owner submitted. We did see staining from a diesel/kero dispenser island that went into a storm sewer on site. The catch basin was full of sediment. Diesel odor was present in the catch basin. Farmington Hills was going to clean the sediment out of the catch basin.

Question.

EGLE is asking if the release has been confirmed or ruled out. How is a release handled when no sign of compromise to the system is observed, but staining would suggest a spill caused product to be release into a catch basin. Also, we have not been informed if the catch basin is connected to the stream. I believe that the 2 week suspected release window is on the 4th of February. I just spoke with Stasha at US Energy and they said they sent the suspected release. I asked Stasha to send it to Jessica, and explained to Stasha at that the two weeks were up soon, so we need to get it resolved.

Thanks,

Roy G. Gantt
Hazardous Materials Storage Inspector
Department of Licensing and Regulatory Affairs
Bureau of Fire Services
Storage Tank Section
611 W. Ottawa St., 4th Floor
P.O. Box 30033
Lansing, MI 48909
Office Hours: Tuesday thru Friday – 7:00am to 5:30pm

Phone 313-348-3943
Email: ganttr@michigan.gov



From: Stasha Wilt <swilt@usenergydistribution.com>
Sent: Thursday, January 27, 2022 9:07 AM
To: Gantt, Roy (LARA) <GanttR@michigan.gov>
Subject: US Energy Distribution Site 1313

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Good Morning Roy,
I just wanted to provide an update to you regarding site 1313. I did file a suspected release like requested. The past 2 days I had every tank tested and the lines and leak detectors, and all have passed without an issue. Petroleum services is sending me the reports later on this afternoon. I will send those to you when I receive them all. I also have inventory control records as far back as you need showing no missing gallons or leakage. We do daily reconciliation in our office. Will you be able to de tag the tanks after you receive the reports?

Thank you,
Stasha Wilt
US Energy Distribution
Maintenance Department
A/B Operator
810-623-0961

Request Number: 466448 ***Associated WO Number:***
Complaint
Code: **FHC_ILLICIT_DISCHARG**
Description: **Illicit discharge of water**
Region Code: 12-A
Problem Address: **29015 Utley Rd**

Details:	**At the corner of Utley and Westbrook there is a white filmy substance coming out of the culvert.**

Date / Time Reported: 3/15/2022 9:33:14 AM
Intitiated By: CAVICCHIO, LISA

Caller
Information

Call		Name			Home Address			Home Phone	Work Phone	Cell Phone
471191		TIM		UNKNOWN	29015 Utley Rd	Farmington Hills	48334	248-719-8283		

Call	Questions	Answers
471191	Where is the discharge happening?	Pipe
471191	What is wrong with the water?	Appearance

Resolution
Closed Out By: _____ *Date/Time Resolved:* _____
Held Over for Day Shift *Referred To Municipality* *Date / Time Reported:* _____
Reported to Municipality: _____ *Name of Contact:* _____

Comments: Caller: UNKNOWN, TIM :
Q: Where is the discharge happening?
A: Pipe
Q: What is wrong with the water?
A: Appearance
By WILSON, VIANNEY: 3/15/2022 9:44:10 AM
Resident called back to report a piece of drywall is the source.

Request Number: 467668 ***Associated WO Number:***
Complaint
Code: **FHC_ILLICIT_DISCHARG**
Description: **Illicit discharge of water**
Region Code:
Problem Address: **23054 Cora**

Details:	**Resident states the neighbor next door creek has a log jam. He says there is brown scum on top of the water on his section of the creek, not sure about odor. I explained that the stream is state waters and the creek is on his private property.**

Date / Time Reported: 3/22/2022 11:07:08 AM
Intitiated By: SMRTKA, BARB S.

Caller
Information

Call		Name			Home Address			Home Phone	Work Phone	Cell Phone
472420		DAVE		HARMON	23054 Cora	Farmington Hills	48336	248 470-0745		

Call	Questions	Answers
472420	Where is the discharge happening?	Open ditch/stream
472420	What is wrong with the water?	Appearance

Resolution
Closed Out By: _____ *Date/Time Resolved:* _____
Held Over for Day Shift *Referred To Municipality* *Date / Time Reported:* _____
Reported to Municipality: _____ *Name of Contact:* _____

Comments: Caller: HARMON, DAVE :
Q: Where is the discharge happening?
A: Open ditch/stream
Q: What is wrong with the water?
A: Appearance
By Sonoga, Tyler : 6/5/2023 10:36:27 AM
I met with residents that day on their property and climbed down into the ditch to the area they suspected some pollution. It was a natural sheen from stagnant water in the creek behind the houses. Residents asked about cleaning log jams to allow water to flow, I explained it was private property and would be up to the residents who share the property line.

Request Number: 471253 ***Associated WO Number:***
Complaint
Code: **FHC_ILLICIT_DISCHARG**
Description: **Illicit discharge of water**
Region Code:
Problem Address: **24036 HAGGERTY RD**

Details:	**Possible oil discharge into detention pond. See Amanda's Environmental Violations Report attached. Request PD incident report (will attach once it is received)**

Date / Time Reported: 4/12/2022 12:35:21 PM
Intitiated By: SMRTKA, BARB S.

Caller
Information

Call		Name		Home Address			Home Phone	Work Phone	Cell Phone
476048		NICK'S AUTO REPAIR	ZONING OFFICER: AMANDA GRENANCO	24036 HAGGERTY RD	FARMINGTON HILLS	48335	284 871-2526		

Call	Questions	Answers
476048	Where is the discharge happening?	Retention basin
476048	What is wrong with the water?	Other

Resolution
Closed Out By: _____ *Date/Time Resolved:* _____
Held Over for Day Shift *Referred To Municipality* *Date / Time Reported:* _____
Reported to Municipality: _____ *Name of Contact:* _____

Comments: Caller: ZONING OFFICER: AMANDA GRENANCO, NICK'S AUTO REPAIR:
Q: Where is the discharge happening?
A: Retention basin
Q: What is wrong with the water?
A: Other
By Sonoga, Tyler: 4/12/2022 3:52:39 PM
Went out with Stanley in FD to investigate. No signs of oil dumping into retention pond. Spoke to an employee at the Limo company who said the original call to PD was to stop nearby businesses from using their parking lots. Employee said he didn't suspect any oil being dumped into the pond or catch basins. The detention pond was full of trash.

Request Number: 476599 ***Associated WO Number:***
Complaint
Code: **FHC_ILLICIT_DISCHARG**
Description: **Illicit discharge of water**
Region Code: 21-A
Problem Address: **25242 WITHERSPOON ST**

Details:	**Resident called earlier am complaining about contractor spilling into Heritage Park wetlands.....she says the whole area. She talked with the contractor and he was rude, said he was aware of the situation but was not stopping until an inspector shuts down the job. Tim Waker went out to the site around 9 a.m. this morning.**

Date / Time Reported: 5/11/2022 3:53:09 PM
Intitiated By: SMRTKA, BARB S.

Caller Information

Call	Name		Home Address			Home Phone	Work Phone	Cell Phone
481433	KAREN	PEPPER	25242 WITHERSPOON ST	FARMINGTON HILLS	48335	248 22p7-5246		

Call	Questions	Answers
481433	Where is the discharge happening?	Other
481433	What is wrong with the water?	Appearance

Resolution
Closed Out By: _____ *Date/Time Resolved:* _____
Held Over for Day Shift *Referred To Municipality* *Date / Time Reported:* _____
Reported to Municipality: _____ *Name of Contact:* _____

Comments: Caller: PEPPER, KAREN :
Q: Where is the discharge happening?
A: Other
Q: What is wrong with the water?
A: Appearance
By SMRTKA, BARB S.: 5/11/2022 3:57:06 PM
Resident said she reported this incident to EAGLE and the state. Mirandi Alexander is the project manager of the Normandy Hills Water Main project. Gary Mekjian was also notified of this complaints, along with Karen Mondora (but she is on vacation until Thursday, May 12).

By Sonoga, Tyler: 5/11/2022 4:09:57 PM
Drilling slurry mix leaked out from the contractor's water main drilling operations. Abu Islam

called from EGLE as well as Kathleen Sexton about the same complaint. Kathleen was transferred to Mirandi as the project engineer.

I spoke with Tim Waker who went out on the site. Ashley Allen from HRC was called out on site to inspect the soil erosion measures. The contractor did not have silt fence to contain the leak but has since installed it. Tim said the work had been stopped while we wait for a cleanup plan.

HUBBELL, ROTH & CLARK, INC
CONSULTING ENGINEERS SINCE 1915

535 Griswold Street
Buhl Building, Suite 1650
Detroit, MI 48226

313-965-3330

www.hrcengr.com

May 10, 2023

Michigan Department of Environment, Great Lakes, and Energy
Water Resources Division
27700 Donald Court
Warren, Michigan 48092-2793

Attn: Mr. Robert Primeau, Water Resources Analyst

Re: EGLE violation notice VN-013032
City of Farmington Hill, Normandy Hills Park HRC Job No. 20200533

Dear Mr. Primeau:

In response to the above referenced violation notice, the city has been working with EGLE and their contractor to resolve this matter. Restoration efforts were completed last fall. The parties agreed to review this matter again this spring before closing this violation file. On April 25, 2023, we met on site and determined that the restoration appeared to be successful. However, it was decided that the restoration area should be observed again later in the spring to see if further development of the wetland plant communities was occurring.

Please review the attached photographs of the restored wetland. The restoration is complete and additional species were beginning to grow. Evidence of bentonite clay was not observed, and the adjacent stream was clear and flowing naturally. The upland sloped areas were stable, and the silt fence will be removed, soon.

At this time, HRC on behalf of the City of Farmington Hills is requesting that the matter be officially closed and documentation to this effect sent to the City.

Very sincerely yours,

HUBBELL, ROTH & CLARK, INC.

Derek J. Stratelak, SPWS, LLA, RF, CA
Wetland Specialist

Attachment
pc: City of Farmington Hills; Mr. Joe Valentine Mr. Jim Cubera, Ms. Mirandi Alexanger
HRC; C Hart, A. Pike, J. Burton, File



Restored Wetland Viewed From the South



View of Stream



Close up of Stream



Glyceria striata - Fowl Mannagrass



Ranunculus sceleratus – Celery-leaved Buttercup



Carex stipata – Awlfruit sedge



Hackelia virginiana – Virginia stickseed



Leersia – Rice cutgrass



Solidago canadensis – Canada goldenrod



Stabilized Uplands

Request Number: 477805 ***Associated WO Number:***
Complaint
Code: **FHC_ILLICIT_DISCHARG**
Description: **Illicit discharge of water**
Region Code:
Problem Address: **Brittany Dr. (section 21)**

Details:	**At the end of Brittany Dr. where it dead ends into the woods, there is house doing some type of construction (she did not have an address). There is a pipe above ground that goes from this house into the woods along a trail and dumps into the river. This pipe is NEW. There is styrofoam stuffed into the end of the pipe. She is not sure what is happening here, but would like the City to check it out.**

Date / Time Reported: 5/20/2022 10:10:48 AM
Intitiated By: CAVICCHIO, LISA

Caller Information

Call		Name			Home Address			Home Phone	Work Phone	Cell Phone
482645		KATHLEEN		UNKNOWN	Brittany Dr. (section 21)			248-231-9448		

Call	Questions	Answers
482645	Where is the discharge happening?	Open ditch/stream

Resolution
Closed Out By: _____ *Date/Time Resolved:* _____
Held Over for Day Shift *Referred To Municipality* *Date / Time Reported:* _____
Reported to Municipality: _____ *Name of Contact:* _____

Comments: Caller: UNKNOWN, KATHLEEN :
Q: Where is the discharge happening?
A: Open ditch/stream
By Sonoga, Tyler: 7/25/2022 2:11:48 PM
Spoke to Kathleen on the phone and said I would go take a look and let her know if I saw anything out of the ordinary. When I went out I discovered she was talking about watermain being staged for the Normandy Hills WM project.
By Sonoga, Tyler : 6/5/2023 10:04:27 AM
This was watermain for a project, not an illicit discharge.

Request Number: 478432 ***Associated WO Number:***
Complaint
Code: **FHC_ILLICIT_DISCHARG**
Description: **Illicit discharge of water**
Region Code:
Problem Address: **24026 Haggerty Rd**

Details:	**4/25/2022 Email from Anne Marie to Tyler: We had a person stop in DPW this morning, he wanted to remain anonymous. He reported that Modern Stone Fitters located at 24026 Haggerty (10 Mile and Haggerty) has been illegally dumping suet from the granite into the City storm drain. He has personally witnessed it happening. I have attached a GIS screenshot of the location. WARNING – the gentleman said the owner is "armed and a dangerous person".**

Date / Time Reported: 5/25/2022 1:57:09 PM
Intitiated By: CAVICCHIO, LISA

Caller Information

Call		Name			Home Address			Home Phone	Work Phone	Cell Phone
483277				UNKNOWN	24026 Haggerty Rd	Farmington Hills	48335			

Call	Questions	Answers
483277	Where is the discharge happening?	Other
483277	What is wrong with the water?	Other

Resolution
Closed Out By: _____ *Date/Time Resolved:* _____
Held Over for Day Shift *Referred To Municipality* *Date / Time Reported:* _____
Reported to Municipality: _____ *Name of Contact:* _____

Comments: Caller: UNKNOWN, :
Q: Where is the discharge happening?
A: Other
Q: What is wrong with the water?
A: Other
By CAVICCHIO, LISA: 5/25/2022 2:06:12 PM
This person, who wants to remain anonymous, came back into the DPW today. He said this business is still dumping into the drain that is right outside the building.

By Sonoga, Tyler: 7/25/2022 2:10:11 PM

Walked around site and found no evidence of IDEP in either ponds to north and south or in catch basins.

Request Number: 489884 ***Associated WO Number:***
Complaint
Code: **FHC_ILLICIT_DISCHARG**
Description: **Illicit discharge of water**
Region Code: Orchard Lake Rd
Problem Address: **Old Best Buy on Orchard Lake s of 14 Mile**

Details:	**Resident says the old Best Buy building is discharging debris all over (sanding off foam core and it's blowing everywhere).**

Date / Time Reported: 9/29/2022 12:15:30 PM
Intitiated By: SMRTKA, BARB S.

Caller
Information

Call		Name			Home Address			Home Phone	Work Phone	Cell Phone
494841		JULIE		CLARE	27720 Rackham	Lathrup Village	48076	248 2`9-0064		

Call	Questions	Answers
494841	Where is the discharge happening?	Other
494841	What is wrong with the water?	Other

Resolution
Closed Out By: _____ *Date/Time Resolved:* _____
Held Over for Day Shift *Referred To Municipality* *Date / Time Reported:* _____
Reported to Municipality: _____ *Name of Contact:* _____

Comments: Caller: CLARE, JULIE:
Q: Where is the discharge happening?
A: Other
Q: What is wrong with the water?
A: Other
By SMRTKA, BARB S.: 9/29/2022 12:17:48 PM
She feels this debris should be contained, it's going to get into the storm system.

By Sonoga, Tyler: 10/17/2022 8:41:01 AM
Spoke to employees at the Best Buy. They were sending the face of the building. They did have some of the building debris around outside. I told them they needed to vacuum it all up by the end of the day and they agreed.

Request Number: 491967 ***Associated WO Number:***
Complaint
Code: **FHC_ILLICIT_DISCHARG**
Description: **Illicit discharge of water**
Region Code: *07-F*
Problem Address: **37814 Avon Ln**

Details:	**Bryan, Tyler is on vacation this week. The pond at the Essex Club Condos on Halsted north of 12 Mile, has a black substance that has spread over the top of the entire pond. The resident is concerned it is something toxic.**

Date / Time Reported: 10/31/2022 1:15:52 PM
Intitiated By: CAVICCHIO, LISA

Caller
Information

Call		Name			Home Address			Home Phone	Work Phone	Cell Phone
496965		ROSETTA		UNKNOWN	37814 Avon Ln	Farmington Hills	48331			770-374-4301

Call	Questions	Answers
496965	Where is the discharge happening?	Other
496965	What is wrong with the water?	Appearance

Resolution
Closed Out By: _____ *Date/Time Resolved:* _____
Held Over for Day Shift *Referred To Municipality* *Date / Time Reported:* _____
Reported to Municipality: _____ *Name of Contact:* _____

Comments: Caller: UNKNOWN, ROSETTA :
Q: Where is the discharge happening?
A: Other
Q: What is wrong with the water?
A: Appearance
By PICKWORTH, BRYAN J.: 10/31/2022 2:29:07 PM
BOB S and I (BP) went to investigate the "black substance" in or on the water . See Attached pic's.Looked like the SW inlet to the pond had a darker color liquid in the pond but did not appear to have a sheen or an odor nor was it floating on top of the water. After discussing with the concerned residents @ 37814 Avon I believe it was possibly organic breakdown of leaves etc. Possibly some of the drains and sumps were stagnate with leaves etc that got flushed out with this mornings rains.
Been relatively dry out as this is the first rain we've had since last week.

By PICKWORTH, BRYAN J.: 9/18/2023 10:11:29 AM
Looked at with Bob S. Our best guess was that leaves from the season may have contributed to this challenge. Spoke with resident and followed up with engineering as this was not an Illicit Discharge.
BP

Request Number: 498116 ***Associated WO Number:***
Complaint
Code: **FHC_ILLICIT_DISCHARG**
Description: **Illicit discharge of water**
Region Code: 07-A
Problem Address: **29319 Glenbrook Dr, Farmington Hills, MI, 48331**

Details:	**Bodrie Trenching is dumping a clear liquid down the drain in the street. The resident witnessed them emptying their entire tank.**

Date / Time Reported: 2/16/2023 11:05:03 AM
Intitiated By: CAVICCHIO, LISA

Caller
Information

Call	Name		Home Address			Home Phone	Work Phone	Cell Phone
503164	COURTNEY	UNKNOWN	29319 GLENBROOK DR, FARMINGTON HILLS, MI, 48331	FARMINGTON HILLS	48331	248-910-4545		

Call	Questions	Answers
503164	Where is the discharge happening?	Other
503164	What is wrong with the water?	Other

Resolution
Closed Out By: _____ *Date/Time Resolved:* _____
Held Over for Day Shift *Referred To Municipality* *Date / Time Reported:* _____
Reported to Municipality: _____ *Name of Contact:* _____

Comments:
By CAVICCHIO, LISA : 2/16/2023 11:05:03 AM
Caller: UNKNOWN, COURTNEY:
Q: Where is the discharge happening?
A: Other
Q: What is wrong with the water?
A: Other

By Sonoga, Tyler : 6/5/2023 10:00:38 AM
Tyler Sonoga went out and met contractor, was determined they were dumping clean water from their reservoir on their truck.

Request Number: 514845 ***Associated WO Number:***
Complaint
Code: **FHC_ILLICIT_DISCHARG**
Description: **Illicit discharge of water**
Region Code: 22-E
Problem Address: **31659 BELMONT ST**

Details:	**Resident says he hired a contractor (with a permit) to take down 5 trees on his property. They left oil in his driveway and on the street (200-250 droplets). Staman Acres**

Date / Time Reported: 7/13/2023 4:12:53 PM
Intitiated By: SMRTKA, BARB S.

Caller
Information

Call		Name			Home Address			Home Phone	Work Phone	Cell Phone
520027		JOHN		HOEFLEIN	31659 BELMONT ST	FARMINGTON HILLS	48336	248 474-7024		

Call	Questions	Answers

Resolution
Closed Out By: _____ *Date/Time Resolved:* _____
Held Over for Day Shift *Referred To Municipality* *Date / Time Reported:* _____
Reported to Municipality: _____ *Name of Contact:* _____

Comments:
By Sonoga, Tyler : 9/19/2023 9:02:27 AM
Contractor left oil marks on road in front of address. No oil seemed to be in ditches. DPW to give a call to the contractor but said since it is so spread out, it will be tough to clean.

Request Number: 517686 ***Associated WO Number:***
Complaint
Code: **FHC_ILLICIT_DISCHARG**
Description: **Illicit discharge of water**
Region Code: 30-A
Problem Address: **24175 Research Dr, Farmington Hills, MI, 48335**

Details:	**On August 11 the employee reporter a contractor was out repairing an AC outside the building. Contractor left valve opened and spill fluid into storm drain.**

Date / Time Reported: 8/17/2023 4:00:20 PM
Intitiated By: SMRTKA, BARB S.

Caller
Information

Call	Name		Home Address			Home Phone	Work Phone	Cell Phone
522892	CHRIS AN EMPLOYEE FROM TRW	UNKNOWN	24175 RESEARCH DR	FARMINGTON HILLS	48335	248 318-5448		

Call	Questions	Answers
522892	Where is the discharge happening?	Other
522892	What is wrong with the water?	Other

Resolution
Closed Out By: _____ *Date/Time Resolved:* _____
Held Over for Day Shift *Referred To Municipality* *Date / Time Reported:* _____
Reported to Municipality: _____ *Name of Contact:* _____

Comments:
By SMRTKA, BARB S.: 8/17/2023 4:00:20 PM
Caller: UNKNOWN, CHRIS AN EMPLOYEE FROM TRW:
Q: Where is the discharge happening?
A: Other
Q: What is wrong with the water?
A: Other

By Sonoga, Tyler : 9/19/2023 8:51:29 AM
Met with Employee Chris at TRW Automotive 24175 Research Drive. On thursday before call they had a contractor replace fluids in outside AC unit. Noticed one week after spill occurred that the fluid got into storm drains. It had rained twice since that date. I inspected site storm drains and outlet along with creek in the area, no sign of spill. Self reporting leak of 55 gallons of propylene glycol.

Request Number: 517688 ***Associated WO Number:***
Complaint
Code: **FHC_ILLICIT_DISCHARG**
Description: **Illicit discharge of water**
Region Code: Northwestern Highway
Problem Address: **30301 Northwestern Hwy, Farmington Hills, MI, 48334**

Details:	**Ashley Allen, our HRC SESC Inspector, alerted the City during her site inspection that the silt fence was down, sediment flowing into the stream. This is at the Judson Center.**

Date / Time Reported: 8/17/2023 4:06:40 PM
Intitiated By: SMRTKA, BARB S.

Caller
Information

Call		Name		Home Address			Home Phone	Work Phone	Cell Phone
522894		ASHLEY	ALLEN (HRC - SESC INSPECTIOR)	30301 NORTHWESTERN HWY	FARMINGTON HILLS	48334		248 454-6300	

Call	Questions	Answers
522894	Where is the discharge happening?	Other
522894	What is wrong with the water?	Other

Resolution
Closed Out By: _____ *Date/Time Resolved:* _____
Held Over for Day Shift *Referred To Municipality* *Date / Time Reported:* _____
Reported to Municipality: _____ *Name of Contact:* _____

Comments:
By SMRTKA, BARB S.: 8/17/2023 4:06:40 PM
Caller: ALLEN (HRC - SESC INSPECTIOR), ASHLEY:
Q: Where is the discharge happening?
A: Other
Q: What is wrong with the water?
A: Other

By Sonoga, Tyler : 1/22/2024 11:40:35 AM
Ashley put the contractor on a stop work order. Alex, city inspector went out and talked with the contractor to install additional SESC measures. Ashley then reinspected after the contractor installed additional measures.

By Sonoga, Tyler : 1/22/2024 11:42:26 AM
After Ashley's inspection, the site was removed from stop work order list.

CITY OF FARMINGTON HILLS
SOIL EROSION AND SEDIMENTATION CONTROL INSPECTION FORM
DIVISION OF ENGINEERING
(248) 871-2560
FAX: (248) 871-2401

Engineering Permit Number: PSESC230012 Requested Date of Inspection: 8/10/2023

Inspection Type: ☐ Pre-Permit ☒ Monitoring ☐ Violation Recheck ☐ Complaint

Subdivision/Project Name: Lot/Unit: Block:

Address: 30301 Northwestern Hwy Requested By:

SESC Required At: ☒ Front ☒ Rear ☒ Left Side ☒ Right Side

Special Notes:

Is sediment properly contained on project side?	☐ Yes ☒ No
Are controls adequate for this site?	☐ Yes ☒ No
Are controls installed per plan?	☐ Yes ☒ No
Are controls properly maintained?	☐ Yes ☒ No
Is earth change confined to areas specified on plan?	☒ Yes ☐ No

Inspector's Comments: Site is absolute mess. Measures are down and sediment is getting into stream. Silt fence on west, north and southwest sides need to be fixed immediately. Site is on Stop Work Order.

☐ Approved
☒ Not Approved -- The following corrections are needed:

- ☐ Soil erosion control measures not installed on site.
- ☐ Soil erosion control measures must be placed according to the approved grading plan.
- ☐ Soil erosion control needs to be repaired/replaced at ☒ Front ☒ Rear ☒ Left Side ☐ Right Side
- ☐ Bottom of silt fence must be trenched to prevent underflow by runoff.
- ☐ Straw bales must be double staked to prevent movement.
- ☐ Minimum of 10 feet wide by 30 feet long gravel access drive must be installed as shown on the approved grading plan.
- ☐ Gravel access drive is plugged with mud and needs top dressing.
- ☐ Soil is being deposited into the street. Daily scraping, clean up behind delivery vehicles and sweeping as needed are necessary.
- ☐ Work being done is not authorized by Grading and Soil Erosion and Sedimentation permit. Immediately submit an application for permit amendments.
- ☐ Other:

☐ A **STOP INSPECTION ORDER** is in effect. Corrections must be made by: _____

☒ A **STOP WORK ORDER** is in effect. Corrections must be made prior to continuing work.

☐ Charge reinspection fee. (Reinspection fees will be assessed at time of Certificate of Occupancy issuance).

☐ Lift **STOP INSPECTION ORDER / STOP WORK ORDER**

AA 8/10/2023

Inspector's Signature **Date**

City of Farmington Hills Engineering Department
Attn.: Mr. James Cubera, P.E.
Soil Erosion Sedimentation Control Inspections

Stop Inspection Notices in Effect:

Date Issued	Permit No.	Address	Subdivision	Lot Number	Builder	Issue

Stop Inspection Notices Lifted:

Date Issued	Permit No.	Address	Subdivision	Lot Number	Builder	Issue
8/15/2023	*PSESC220025*	*28910 Wintergreen*	*Halsted Estates*	*6*	*NAM Group*	*Sediment is getting off site since stone was not added to access path. Street needs to be cleaned - sediment piling up around catch basins.*
8/15/2023	*PSESC220024*	*28878 Wintergreen*	*Halsted Estates*	*7*	*NAM Group*	*Stone was not added to access path and sediment is getting off site and pooling around catch basins down street. Street needs to be cleaned properly around catch basins.*

Stop Work Orders Notices in Effect:

Date Issued	Permit No.	Address	Subdivision	Lot Number	Builder	Issue

Stop Work Orders Lifted:

Date Issued	Permit No.	Address	Subdivision	Lot Number	Builder	Issue
8/10/2023	*PSESC230012*	*30301 Northwesterm Hwy*	*Judson Center*		*Midwest Excavation*	*Site is a mess. Silt fences are down including near stream in back. Sediment has gotten into stream.*

RE: 37206 Timberview

Allen, Ashley <AAllen@hrcengr.com>
Wed 9/13/2023 2:23 PM
To:Tyler Sonoga <TSonoga@fhgov.com>

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Thanks, Tyler. They are finalizing the sprinklers on site and then placing sod this weekend or next week (so they tell me). So they should be complete soon.

Thanks!
Ashley

From: Tyler Sonoga <TSonoga@fhgov.com>
Sent: Wednesday, September 13, 2023 9:42 AM
To: Allen, Ashley <AAllen@hrcengr.com>
Subject: Re: 37206 Timberview

You can send them a soil erosion letter, if they are still in violation. I had DPW clean the road and clean all the catch basins.

Sent from my Verizon, Samsung Galaxy smartphone
Get Outlook for Android

From: Allen, Ashley <AAllen@hrcengr.com>
Sent: Wednesday, September 13, 2023 7:57:29 AM
To: Tyler Sonoga <TSonoga@fhgov.com>
Cc: Timothy Waker <TDWaker@fhgov.com>
Subject: RE: 37206 Timberview

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Hi Tyler,

Checking to see if you wanted me to alert the contractor with the soil erosion letter or were you going to send an MS4 letter?

Thanks!

Ashley

From: Allen, Ashley
Sent: Thursday, September 7, 2023 3:58 PM
To: Tyler Sonoga <TSonoga@fhgov.com>
Cc: Timothy Waker <TDWaker@fhgov.com>
Subject: RE: 37206 Timberview

Here is the permit with the contractor information. The Stop Work Order letter relates to soil erosion issues so do you want me to tell the contractor you will be reaching out and sending a letter?

From: Tyler Sonoga <TSonoga@fhgov.com>
Sent: Thursday, September 7, 2023 3:29 PM
To: Allen, Ashley <AAllen@hrcengr.com>
Cc: Timothy Waker <TDWaker@fhgov.com>
Subject: RE: 37206 Timberview

I'm going to go check it out and let DPW know. We might need to clean out these catch basins and find out who the contractor was.

From: Allen, Ashley <AAllen@hrcengr.com>
Sent: Thursday, September 7, 2023 2:47 PM
To: Tyler Sonoga <TSonoga@fhgov.com>
Cc: Timothy Waker <TDWaker@fhgov.com>
Subject: 37206 Timberview

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Hi Tyler,

I just called Tim about this MS4 issue. There is some white residue coming from 37206 Timberview and it has reached the catch basin down the street. I don't see any sediment/soil erosion issues, but I'll place them on Stop Work Order for this error.

City of Farmington Hills Engineering Department
Attn.: Mr. James Cubera, P.E.
Soil Erosion Sedimentation Control Inspections

Stop Inspection Notices in Effect:

Date Issued	Permit No.	Address	Subdivision	Lot Number	Builder	Issue

Stop Inspection Notices Lifted:

Date Issued	Permit No.	Address	Subdivision	Lot Number	Builder	Issue

Stop Work Orders Notices in Effect:

Date Issued	Permit No.	Address	Subdivision	Lot Number	Builder	Issue
9/7/2023	*PSESC230052*	*28945 Grand River*		*20*	*Al Rice*	*Working without a permit and has disturbed lot next to stream. Owner has not corrected issues or installed measures correctly. Back silt fence needs to be trenched in and left side of site needs silt fence installed to contain sediment from leaking into side ditch which ultimately drains to stream. Banks of stream and side ditch need to be stabilized.*
9/7/2023	*PSESC210044*	*37206 Timberview*	*Whispering Woods*	*8*	*Suto Sinishtaj*	*White residue leaking down street from site. Residue has reached catch basin.*

Stop Work Orders Lifted:

Date Issued	Permit No.	Address	Subdivision	Lot Number	Builder	Issue

Request Number: 524253 ***Associated WO Number:***
Complaint
Code: **FHC_ILLICIT_DISCHARG**
Description: **Illicit discharge of water**
Region Code:
Problem Address: **Windemere Apartments, Building 8**

Details:	**He worked for the company Chelsea Home Services. He says the company is illegally dumping 50-100 gallons of carpet cleaning solution in the storm drain behind Windemere Apartments, Building 8. He also claims the company is not properly ventilating the apartments after using strong chemicals and Kilz on the flooring. We told him that would have to be handled by the Oakland County Health Division.**

Date / Time Reported: 11/2/2023 10:07:33 AM
Intitiated By: SMRTKA, BARB S.

Caller Information

Call		Name			Home Address			Home Phone	Work Phone	Cell Phone
529526		MICHAEL (HOMELESS)		UNKNOWN						734 799-6112

Call	Questions	Answers

Resolution
Closed Out By: _____ *Date/Time Resolved:* _____
Held Over for Day Shift *Referred To Municipality* *Date / Time Reported:* _____
Reported to Municipality: _____ *Name of Contact:* _____

Comments:
By Sonoga, Tyler : 1/22/2024 11:19:55 AM
I went out and check catch basins and saw no evidence. Caller seemed to be having a hard time explaining what was happening and his story was strange.

Request Number: 526237 ***Associated WO Number:***
Complaint
Code: **FHC_ILLICIT_DISCHARG**
Description: **Illicit discharge of water**
Region Code: Orchard Lake Rd
Problem Address: **29977 ORCHARD LAKE RD**

Details:	**Ashley called Tyler to notify him of a possible IDEP situation. This is a laundry mat, she says there is soap suds in the catch basin behind the building.**

Date / Time Reported: 12/4/2023 2:59:21 PM
Intitiated By: SMRTKA, BARB S.

Caller
Information

Call		Name		Home Address			Home Phone	Work Phone	Cell Phone
531515		ASHLEY	ALLEN FROM HRC (SESC INSPECTOR)	29977 ORCHARD LAKE RD	FARMINGTON HILLS	48336			248-464-7834

Call	Questions	Answers

Resolution
Closed Out By: _____ *Date/Time Resolved:* _____
Held Over for Day Shift *Referred To Municipality* *Date / Time Reported:* _____
Reported to Municipality: _____ *Name of Contact:* _____

Comments:
By Sonoga, Tyler : 1/22/2024 11:09:48 AM
Went to site and did not see any evidence of dumping in the parking lot or in the catch basins. Will need to periodically check in.

Appendix D8

Southfield Pollution Complaint Documentation

Emily Levine

From: Kohn, Joel W <kohnj@oakgov.com>
Sent: Monday, October 9, 2023 5:02 PM
To: Seymour, Lynne
Cc: Coburn, Brian; Siedlaczek, Brandy; Schultz, Leigh; Beck, Justin
Subject: [EXTERNAL] Emily Drain Spill

Drain: Emily Drain

Date: October 6, 2023

Location: Throughout Emily Drain to Outlet to Rouge River

Substance: Organic Shampoo (Potassium Cocoate (moisturizer), CALSOFT AOS-40 (surfactant), Cocamidopropyl betaine (thickening agent) and Decyl Glucoside (plant-based surfactant)

PEAS # 28343

Source: Reforma Group, 20777 East Street, Southfield, MI 48033

AT 10:23 am Oakland Safety Dispatch received a call from Jeff Beck of the City of Southfield about a significant amount of white suds in the Rouge River and on the banks coming out of the 72" Emily Drain. Southfield pulled 4 upstream manholes, and each were filled with suds.

Oakland County Water Resources Environmental Unit came on site at 1:15 pm took pictures from multiple locations (see below):



Manhole Structures were inspected along Shiawassee Road, Wakedon Street and East Street in which foam was observed at all locations (see Figure 1). At approximately 1:30 Marine Pollution Control was called on site to begin cleaning up. A Frac Tank was ordered to store the foam until the foam could be properly identified. EGLE was also called at this time to report the incident. Marine Pollution Control came on site around 4:15 pm and coordination to begin cleaning up, which included placing the frac tank on the west side of Beech Road south of the Rouge River. Water samples and foam samples were captured at the outlet and upstream manhole for EGLE analysis (samples to be taken to Europhins Test America in Brighton).

Environmental unit continued the investigation to find the source of the foam. The manhole structure of the Emily Drain on Delaware Street contained no foam (see figure 1). Investigation moved east to East Street where the Emily Drain and local system was investigated, and foam was observed. We tracked foam to the local system and to the parking lot of 20777 East Street where multiple parking lot catch basins contained foams. The foam was tracked to the back of the lot behind the building where empty containers were piled up. (see Figure 2). Product was observed in the parking lot and on the catch basin. We were able to make contact with a business representative and have a conversation about the issue of what products were being used.

As of Today (October 9th) we are waiting on results of the foam test to confirm any PFOS/PFAS which will determine where to dispose of the water/foam. The property owner has hired a contractor to clean up the business and we are coordinating with them and the state. EGLE did mention today that foam was observed as far south as Dearborn.

Questions/Comments feel free to contact me

Figure 1.

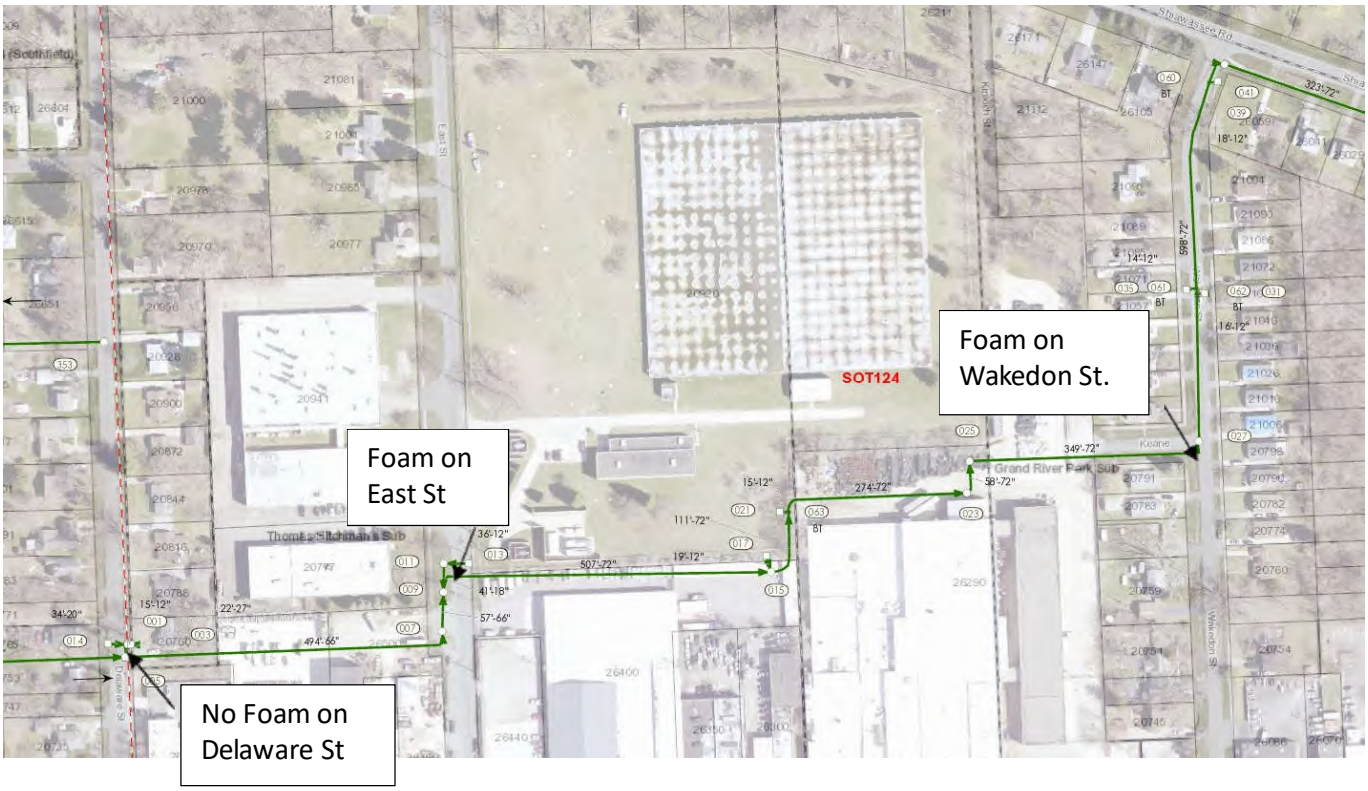
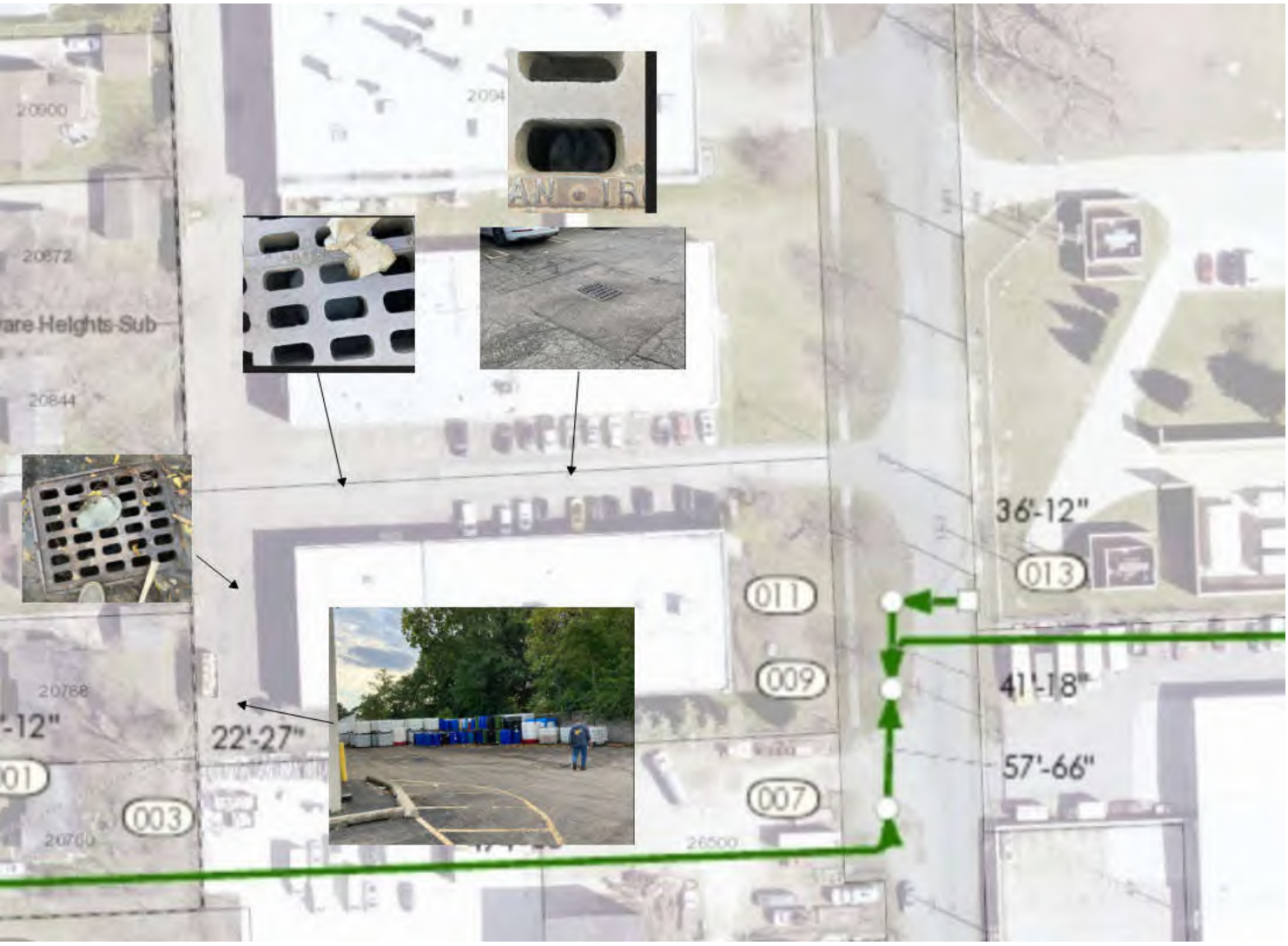


Figure 2.



Joel Kohn
Environmental Planner
Oakland County Water Resources Office
1 Public Works Drive, 95 West
Waterford, MI 48328-1907
e-mail: kohnj@oakgov.com
Cell Phone: (248) 535-7653
Fax: (248) 858-1066

Appendix D9

Livonia Pollution Complaint Documentation

Community Name

Pollution Complaint Tracking Form **Illicit Discharge Elimination Program**

Complaint made by: Resident through the City's Ordinance Department to Dan Buhagiar Phone #: (734) 466-2596

Date: 5/16/22 Time: 11:25 a.m.

Location of Problem: 36293 Five Mile Rd., Livonia, MI 48154 Offending Party (if known) Location could suggest a car wash

Nature of Problem (i.e. paper waste, odor, color, etc.): Looks to be an orange substance leaking into the creek behind the car wash.

Is this an Emergency? ☒ No
☐ Yes (then call 911)
Nature of Emergency:

Initial Contact made to:
- ☐ 911
- ☒ City Dept.: Ordinance
- ☒ Wayne County (888) 223-2363
- ☐ Oakland County (248) 858-0931
- ☒ PEAS Hotline (State) 1-800-292-4706
- ☐ Other:

Additional Comments:
Photos and email chain attached.

Investigation Summary
☒ Initial Investigation
☐ Follow-up Investigation

Date of Investigation: 5/17/22
Investigating Agency: City of Livonia
Location of Discharge: Behind 36293 Five Mile Rd.
Crew Members: Ed Hoffman, Bob Roscoe
Investigation Location: 36293 Five Mile Rd.
Observations (odor, color, volume, etc.): Orange substance behind car wash near creek, no odor,

Actions Taken (dye testing, notification letter, etc.): Inspected parking lot manholes for an illicit connection or discharge containing an orange substance. Also sent a sample to the lab to get tested.

Were photos taken: ☒ Yes ☐ No

Agency Referred to: N/A - dealt with in house
Agency Contact: _____
Method of Communication:
☐ E-mail* ☐ Letter/memo* ☐ Phone
*Attached copies
Content of Communication:
_____
_____
_____
_____

Date Corrected or Resolved: 8/30/22

From:	Sexton, Kathleen (EGLE)
To:	Gabriel, Trisha
Cc:	Buhagiar, Daniel; Hoffman, Edwin; Moore, Doug
Subject:	RE: 36293 Five Mile
Date:	Tuesday, August 30, 2022 3:23:47 PM
Attachments:	image002.png image003.png image004.png image005.png image006.png

Hello Trisha,

Thank you for the follow up. It sounds like the investigation is complete; I will file this in MiWaters and close out the pollution complaint in our system.

Take care,
Kathleen

Kathleen

Kathleen Sexton
Environmental Quality Analyst
Municipal Storm Water Program
Warren District Office | 27700 Donald Court Warren, MI 48092
Water Resources Division
Michigan Department of Environment, Great Lakes, and Energy
(586) 206-2699 | SextonK3@michigan.gov



Pollution Emergencies: 800-292-4706
EGLE Environmental Assistance Center: 800-662-9278
EGLE Website: www.Michigan.gov/EGLE

From: Gabriel, Trisha <tgabriel@livonia.gov>
Sent: Tuesday, August 30, 2022 3:20 PM
To: Sexton, Kathleen (EGLE) <SextonK3@michigan.gov>
Cc: Buhagiar, Daniel <dbuhagiar@livonia.gov>; Hoffman, Edwin <ehoffman@livonia.gov>; Moore, Doug <dmoore@livonia.gov>
Subject: RE: 36293 Five Mile

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Hi Kathleen,

We've decided it is indeed a natural phenomenon and there is nothing further to investigate.

I apologize for the delayed response.

Have a nice evening,

Trisha

Trisha Gabriel
Roads & Parks Supervisor
City of Livonia | Department of Public Works
(734) 466-2705
tgabriel@livonia.gov
www.livonia.gov

From: Sexton, Kathleen (EGLE) <SextonK3@michigan.gov>
Sent: Monday, August 15, 2022 1:25 PM
To: Gabriel, Trisha <tgabriel@livonia.gov>
Cc: Buhagiar, Daniel <dbuhagiar@livonia.gov>; Hoffman, Edwin <ehoffman@livonia.gov>; Moore, Doug <dmoore@livonia.gov>
Subject: RE: 36293 Five Mile

Hello Trisha,

Thanks for your patience on EGLE's response. Was the city able to make a conclusion as to what the discharge was based on the lab results?

Thank you,

Kathleen

Kathleen Sexton
Environmental Quality Analyst
Municipal Storm Water Program
Warren District Office | 27700 Donald Court Warren, MI 48092
Water Resources Division
Michigan Department of Environment, Great Lakes, and Energy
(586) 206-2699 | SextonK3@michigan.gov

Pollution Emergencies: 800-292-4706
EGLE Environmental Assistance Center: 800-662-9278
EGLE Website: www.Michigan.gov/EGLE

From: Gabriel, Trisha <tgabriel@livonia.gov>
Sent: Tuesday, July 26, 2022 9:37 AM

To: Sexton, Kathleen (EGLE) <SextonK3@michigan.gov>
Cc: Buhagiar, Daniel <dbuhagiar@livonia.gov>; Hoffman, Edwin <ehoffman@livonia.gov>; Moore, Doug <dmoore@livonia.gov>
Subject: RE: 36293 Five Mile

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Hi Kathleen,

Attached is the final report. I am not well versed with what the results should be with organic material. Please let me know if you need anything further.

I will also forward this information on to Wanye County.

Thanks,

Trisha

Trisha Gabriel
Roads & Parks Supervisor
City of Livonia | Department of Public Works
(734) 466-2705
tgabriel@livonia.gov
www.livonia.gov

From: Gabriel, Trisha <tgabriel@livonia.gov>
Sent: Tuesday, July 26, 2022 8:38 AM
To: Sexton, Kathleen (EGLE) <SextonK3@michigan.gov>
Cc: Buhagiar, Daniel <dbuhagiar@livonia.gov>; Hoffman, Edwin <ehoffman@livonia.gov>; Moore, Doug <dmoore@livonia.gov>
Subject: RE: 36293 Five Mile

Hi Kathleen,

We still have not received the results from the lab to our knowledge. I followed up with the lab to get the results as soon as possible.

I'm not sure how they haven't received an updated contact but they were trying to reach someone that retired in 2016. We've used them since then….

As soon as I receive them, I'll forward them on.

Trisha

Trisha Gabriel
Roads & Parks Supervisor
City of Livonia | Department of Public Works
(734) 466-2705
tgabriel@livonia.gov

From: Sexton, Kathleen (EGLE) <SextonK3@michigan.gov>
Sent: Monday, July 25, 2022 1:35 PM
To: Gabriel, Trisha <tgabriel@livonia.gov>
Cc: Buhagiar, Daniel <dbuhagiar@livonia.gov>; Hoffman, Edwin <ehoffman@livonia.gov>; Moore, Doug <dmoore@livonia.gov>
Subject: RE: 36293 Five Mile

Hello,

Could you please provide the sampling results of the outfall investigation.

Thank you,
Kathleen

Kathleen

Kathleen Sexton
Environmental Quality Analyst
Municipal Storm Water Program
Warren District Office | 27700 Donald Court Warren, MI 48092
Water Resources Division
Michigan Department of Environment, Great Lakes, and Energy
(586) 206-2699 | SextonK3@michigan.gov

Pollution Emergencies: 800-292-4706
EGLE Environmental Assistance Center: 800-662-9278
EGLE Website: www.Michigan.gov/EGLE

From: Gabriel, Trisha <tgabriel@livonia.gov>
Sent: Tuesday, June 7, 2022 7:22 AM
To: Sexton, Kathleen (EGLE) <SextonK3@michigan.gov>
Cc: Buhagiar, Daniel <dbuhagiar@livonia.gov>; Hoffman, Edwin <ehoffman@livonia.gov>; Moore, Doug <dmoore@livonia.gov>
Subject: RE: 36293 Five Mile

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Hi Kathleen,

Unfortunately, we have not received the results. I will let you know when we do.

Thanks,

Trisha

Trisha Gabriel
Roads & Parks Supervisor
City of Livonia | Department of Public Works
(734) 466-2705
tgabriel@livonia.gov
www.livonia.gov

From: Sexton, Kathleen (EGLE) <SextonK3@michigan.gov>
Sent: Monday, June 6, 2022 11:41 AM
To: Gabriel, Trisha <tgabriel@livonia.gov>
Cc: Buhagiar, Daniel <dbuhagiar@livonia.gov>; Hoffman, Edwin <ehoffman@livonia.gov>; Moore, Doug <dmoore@livonia.gov>
Subject: RE: 36293 Five Mile

Hello,

I'm following up to see if the city received the sampling results and whether they provided any insight on the discharge from the outfall.

Thanks,
Kathleen

Kathleen

Kathleen Sexton
Environmental Quality Analyst
Municipal Storm Water Program
Warren District Office | 27700 Donald Court Warren, MI 48092
Water Resources Division
Michigan Department of Environment, Great Lakes, and Energy
(586) 206-2699 | SextonK3@michigan.gov



Pollution Emergencies: 800-292-4706
EGLE Environmental Assistance Center: 800-662-9278

EGLE Website: www.Michigan.gov/EGLE

From: Sexton, Kathleen (EGLE)
Sent: Monday, May 23, 2022 2:35 PM
To: Gabriel, Trisha <tgabriel@livonia.gov>
Cc: Buhagiar, Daniel <dbuhagiar@livonia.gov>; Hoffman, Edwin <ehoffman@livonia.gov>; Moore, Doug <dmoore@livonia.gov>
Subject: RE: 36293 Five Mile

Hello Trisha,

Sounds good, thank you for the update. I will wait to hear from you and then close out the complaint file pending it is not an illicit discharge.

Best,

Kathleen

Kathleen Sexton
Environmental Quality Analyst
Municipal Storm Water Program
Warren District Office | 27700 Donald Court Warren, MI 48092
Water Resources Division
Michigan Department of Environment, Great Lakes, and Energy
(586) 206-2699 | SextonK3@michigan.gov



Pollution Emergencies: 800-292-4706
EGLE Environmental Assistance Center: 800-662-9278
EGLE Website: www.Michigan.gov/EGLE

From: Gabriel, Trisha <tgabriel@livonia.gov>
Sent: Monday, May 23, 2022 2:33 PM
To: Sexton, Kathleen (EGLE) <SextonK3@michigan.gov>
Cc: Buhagiar, Daniel <dbuhagiar@livonia.gov>; Hoffman, Edwin <ehoffman@livonia.gov>; Moore, Doug <dmoore@livonia.gov>
Subject: RE: 36293 Five Mile

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Hi Kathleen,

We performed an investigation which included taking a sample to the lab. We are waiting for the

results. We (the city and county) believe it's a natural phenomenon but will confirm once we get the results.

Thanks,

Trisha

Trisha Gabriel
Roads & Parks Supervisor
City of Livonia | Department of Public Works
(734) 466-2705
tgabriel@livonia.gov
www.livonia.gov

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From: Buhagiar, Daniel <dbuhagiar@livonia.gov>
Sent: Friday, May 20, 2022 3:45 PM
To: Gabriel, Trisha <tgabriel@livonia.gov>; Hoffman, Edwin <ehoffman@livonia.gov>
Subject: FW: 36293 Five Mile

FYI, from EGLE Rep. Kathleen Sexton.....

Daniel Buhagiar
Code Enforcement Officer
City of Livonia | Inspection Department
(734) 466-2596
dbuhagiar@livonia.gov

From: Sexton, Kathleen (EGLE) <SextonK3@michigan.gov>
Sent: Friday, May 20, 2022 3:38 PM
To: Buhagiar, Daniel <dbuhagiar@livonia.gov>
Subject: RE: 36293 Five Mile

Has the city done any investigation or follow up since we spoke earlier in the week?

Kathleen

Kathleen Sexton
Environmental Quality Analyst
Municipal Storm Water Program
Warren District Office | 27700 Donald Court Warren, MI 48092
Water Resources Division
Michigan Department of Environment, Great Lakes, and Energy
(586) 206-2699 | SextonK3@michigan.gov

Pollution Emergencies: 800-292-4706
EGLE Environmental Assistance Center: 800-662-9278
EGLE Website: www.Michigan.gov/EGLE

From: Buhagiar, Daniel <dbuhagiar@livonia.gov>
Sent: Friday, May 20, 2022 3:37 PM
To: Sexton, Kathleen (EGLE) <SextonK3@michigan.gov>
Subject: RE: 36293 Five Mile

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Ok, thanks for the update I will inform the complainant and hopefully it will put her mind at ease.....

Daniel Buhagiar
Code Enforcement Officer
City of Livonia | Inspection Department
(734) 466-2596
dbuhagiar@livonia.gov
www.livonia.gov

From: Sexton, Kathleen (EGLE) <SextonK3@michigan.gov>
Sent: Friday, May 20, 2022 1:52 PM
To: Buhagiar, Daniel <dbuhagiar@livonia.gov>
Subject: RE: 36293 Five Mile

Hello Daniel,

Do you have an update on the IDEP investigation for this outfall? Based on the photos, the rusty orange color may indicate the presence of iron bacteria, which is a natural phenomenon. If there is dry weather flow, this still needs to be investigated/explained.

Feel free to call if you have any questions or to discuss.

Thank you,

Kathleen

Kathleen Sexton
Environmental Quality Analyst
Municipal Storm Water Program
Warren District Office | 27700 Donald Court Warren, MI 48092
Water Resources Division
Michigan Department of Environment, Great Lakes, and Energy
(586) 206-2699 | SextonK3@michigan.gov

Pollution Emergencies: 800-292-4706
EGLE Environmental Assistance Center: 800-662-9278
EGLE Website: www.Michigan.gov/EGLE

From: Buhagiar, Daniel <dbuhagiar@livonia.gov>
Sent: Tuesday, May 17, 2022 8:55 AM
To: Sexton, Kathleen (EGLE) <SextonK3@michigan.gov>
Subject: RE: 36293 Five Mile

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I am attaching photos I took already and will follow up after meeting on site today or tomorrow.

Daniel Buhagiar
Code Enforcement Officer
City of Livonia | Inspection Department
(734) 466-2596
dbuhagiar@livonia.gov
www.livonia.gov

From: Sexton, Kathleen (EGLE) <SextonK3@michigan.gov>
Sent: Monday, May 16, 2022 2:17 PM
To: Buhagiar, Daniel <dbuhagiar@livonia.gov>
Subject: RE: 36293 Five Mile

Hello Dan,

I called and left another message. I will leave you some info here, but I would still like to have a conservation about doing a source investigation for the suspected illicit discharge from this outfall.

Livonia participates in the Rouge River collaborative Illicit Discharge Elimination Program (IDEP) administered by the Alliance of Rouge Communities (ARC). This program is part of the city's overall Stormwater Management Plan (SWMP) implemented to satisfy the Municipal Separate Storm Sewer System (MS4) permit requirements.

The collaborative IDEP plan outlines the process for source investigation (IDEP#3) and shares a flow chart (Figure 3) as a guide. I have attached the plan here for your reference.

Doug Moore is my MS4 contact from the city; it's a good idea to loop him in on this source investigation since this process is an MS4 permit requirement.

Please call me at your earliest convenience to discuss.

Thank you,
Kathleen

Kathleen

Kathleen Sexton
Environmental Quality Analyst
Municipal Storm Water Program
Warren District Office | 27700 Donald Court Warren, MI 48092
Water Resources Division
Michigan Department of Environment, Great Lakes, and Energy
(586) 206-2699 | SextonK3@michigan.gov



Pollution Emergencies: 800-292-4706
EGLE Environmental Assistance Center: 800-662-9278
EGLE Website: www.Michigan.gov/EGLE

From: Buhagiar, Daniel <dbuhagiar@livonia.gov>
Sent: Monday, May 16, 2022 11:25 AM
To: Sexton, Kathleen (EGLE) <SextonK3@michigan.gov>
Subject: 36293 Five Mile

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Kathleen (I hope that is what I heard), just a quick line so you can talk me through the process of having the complaint of what appears to be an orange substance leaking into the creek behind the car wash (address listed) checked out. Looking forward to hear from you, thanks.

Daniel Buhagiar
Code Enforcement Officer
City of Livonia | Inspection Department
(734) 466-2596
dbuhagiar@livonia.gov
www.livonia.gov

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RTI Laboratories
31628 Glendale St.
Livonia, MI 48150
TEL: (734) 422-8000
Website: www.rtilab.com

Friday, May 27, 2022

Paul St. Henry
Livonia, City of
12973 Farmington Road
Livonia, MI 48150
TEL: (734) 466-2607
FAX: (734) 466-2660

RE: 36251 Five Mile

Work Order #: 2205327

Dear Paul St. Henry:

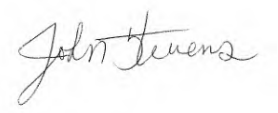
There were no problems with the analytical events associated with this report unless noted in the Case Narrative.

This report may only be reproduced in its entirety. Individual pages, reproduced without supporting documentation, do not contain related information and may be misinterpreted by other data reviewers.

Quality control data is within laboratory defined or method specified acceptance limits except if noted.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,



John Stevens

Project Manager

RTI Laboratories, Inc. - Case Narrative

WO#: 2205327

Date Reported: 5/27/2022
Original

Client: Livonia, City of

Project: 36251 Five Mile

Concentrations reported with a J flag in the Qual field are values below the reporting limit (RL) but greater than the established method detection limit (MDL). There is greater uncertainty associated with these results and data should be considered as estimated. These analytes are not routinely reviewed nor narrated below as to their potential for being laboratory artifacts.

Concentrations reported with an E flag in the Qual field are values that exceed the upper quantification range. There is greater uncertainty associated with these results and data should be considered as estimated.

All sample analyses included a Method Blank, LCS/LCSD, MS/MSD, Duplicates, post digestion spikes, serial dilutions, and all method specified quality control, as applicable. All QC parameters were within established control limits except where noted on the QC report and/or below. Initial and continuing calibration results were within method specifications, except as noted below.

Any comments or problems with the analytical events associated with this report are noted below.
Analytical Comments for SW6020B, Sample QCS-052522-1, Batch ID R130750 : QCS for Zn

RTI Laboratories, Inc. - Analytical Report

WO#: 2205327

Date Reported: 5/27/2022
Original

Client:	Livonia, City of	**Collection Date:**	5/17/2022 9:25:00 AM
Project:	36251 Five Mile		
Lab ID:	2205327-001	**Matrix:**	Water
Client Sample ID:	River Water		

Analysis	Result	RL	Qual	Units	DF	Date Analyzed
Oil & Grease	**Method: EPA1664A**					**Analyst: NS1**
Oil and Grease						
Oil & Grease, Total	4.6	5.0	J	mg/L	1	5/17/2022 10:30 AM
Oil & Grease	**Method: EPA1664SGT**					**Analyst: NS1**
Total Petroleum Hydrocarbons						
Petroleum Hydrocarbons, TR	ND	5.0	U	mg/L	1	5/20/2022 10:00 AM
Metals ICP/MS	**Method: EPA200.8**					**Analyst: HIV**
Copper	10	10		µg/L	10	5/25/2022 1:17 PM
Zinc	69	100	J	µg/L	10	5/25/2022 1:17 PM
E. Coli, Total Coliforms QT	**Method: SM9223B**					**Analyst: GMSR**
Escherichia Coli	5.2	1.0		CFU/100ml	1	5/17/2022 12:50 PM
Total Suspended Solids	**Method: SM2540D**					**Analyst: NS1**
Residue, Suspended	120	2.0		mg/L	1	5/19/2022 10:40 AM
BOD (Biochemical Oxygen Demand)	**Method: SM5210B**					**Analyst: HAK**
Biochemical Oxygen Demand	ND	1.7	U	mg/L	1	5/23/2022 10:13 AM
COD (Chemical Oxygen Demand)	**Method: EPA410.4**					**Analyst: GMSR**
Chemical Oxygen Demand	75	50		mg/L	1	5/20/2022 2:46 PM
Ammonia	**Method: SM4500-NH3-H**					**Analyst: NK**
Nitrogen, Ammonia	0.35	0.10		mg/L	1	5/23/2022 12:18 PM
Total Kjeldahl nitrogen	**Method: SM4500-Norg-D**					**Analyst: NK**
Nitrogen, Total Kjeldahl	1.2	0.20		mg/L	1	5/23/2022 3:08 PM
Phosphorus	**Method: SM4500-P-H**					**Analyst: NK**
Phosphorus, Total (As P)	0.12	0.12		mg/L	1	5/20/2022 12:25 PM

RTI Laboratories, Inc. - DATES REPORT

WO#: 2205327

Date Reported: 5/27/2022
Original

Client: Livonia, City of

Project: 36251 Five Mile

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
2205327-001A	River Water	5/17/2022 9:25 AM	Water				
				EPA_200.8-Metals ICP/MS		5/18/2022 9:44 AM	5/25/2022 1:17 PM
2205327-001B	River Water	5/17/2022 9:25 AM	Water				
				SM_2540D-Total Suspended Solids		5/19/2022 10:40 AM	5/19/2022 10:40 AM
2205327-001C	River Water	5/17/2022 9:25 AM	Water				
				SM_5210B-BOD (Biochemical Oxygen Demand)		5/18/2022 11:12 AM	5/23/2022 10:13 AM
2205327-001D	River Water	5/17/2022 9:25 AM	Water				
				SM_4500-NH3-H-Ammonia		5/23/2022 12:18 PM	5/23/2022 12:18 PM
				EPA_410.4-COD (Chemical Oxygen Demand)		5/20/2022 2:46 PM	5/20/2022 2:46 PM
				SM_4500-P-H-Phosphorus		5/19/2022 3:45 PM	5/20/2022 12:25 PM
				SM_4500-NORG-D-Total Kjeldahl nitrogen		5/19/2022 10:04 AM	5/23/2022 3:08 PM
2205327-001E	River Water	5/17/2022 9:25 AM	Water				
				SM 9223B_MPN-E. Coli, Total Coliforms QT		5/17/2022 12:50 PM	5/17/2022 12:50 PM
2205327-001F	River Water	5/17/2022 9:25 AM	Water				
				EPA_1664A-Oil and Grease		5/17/2022 10:30 AM	5/17/2022 10:30 AM
				EPA_1664A-SGT-Total Petroleum Hydrocarbons		5/20/2022 10:00 AM	5/20/2022 10:00 AM

RTI Laboratories, Inc. - QC SUMMARY REPORT

WO#: 2205327

Date Reported: 5/27/2022
Original

Client: Livonia, City of

Project: 36251 Five Mile **Test Code: EPA_1664A**

Sample ID:	**MBLK-051722**	Samp Type:	**MBLK**	Test Code:	**EPA_1664A**	Units:	**mg/L**	Prep Date:	**5/17/2022**	RunNo:	**130664**	
Client ID:	**PBW**	Batch ID:	**R130664**	TestNo:	**E1664**			Analysis Date:	**5/17/2022**	SeqNo:	**2507762**	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual	
Oil & Grease, Total	ND	5.0									U	

Sample ID:	**LCS-051722**	Samp Type:	**LCS**	Test Code:	**EPA_1664A**	Units:	**mg/L**	Prep Date:	**5/17/2022**	RunNo:	**130664**	
Client ID:	**LCSW**	Batch ID:	**R130664**	TestNo:	**E1664**			Analysis Date:	**5/17/2022**	SeqNo:	**2507763**	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual	
Oil & Grease, Total	32	5.0	40.00	0	80.8	78	114					

Sample ID:	**LCSD-051722**	Samp Type:	**LCSD**	Test Code:	**EPA_1664A**	Units:	**mg/L**	Prep Date:	**5/17/2022**	RunNo:	**130664**	
Client ID:	**LCSS02**	Batch ID:	**R130664**	TestNo:	**E1664**			Analysis Date:	**5/17/2022**	SeqNo:	**2507764**	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual	
Oil & Grease, Total	33	5.0	40.00	0	83.3	78	114	32.30	3.05	18		

RTI Laboratories, Inc. - QC SUMMARY REPORT

WO#: 2205327

Date Reported: 5/27/2022
Original

Client: Livonia, City of

Project: 36251 Five Mile **Test Code: EPA_1664A-SGT**

Sample ID:	MBLK-051722	Samp Type:	MBLK	Test Code:	EPA_1664A-SGT	Units:	mg/L	Prep Date:	5/20/2022	RunNo:	130694
Client ID:	PBW	Batch ID:	R130694	TestNo:	E1664			Analysis Date:	5/20/2022	SeqNo:	2508232

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	ND	5.0									U

Sample ID:	LCS-051722	Samp Type:	LCS	Test Code:	EPA_1664A-SGT	Units:	mg/L	Prep Date:	5/20/2022	RunNo:	130694
Client ID:	LCSW	Batch ID:	R130694	TestNo:	E1664			Analysis Date:	5/20/2022	SeqNo:	2508233

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	14	5.0	20.00	0	69.0	64	132				

Sample ID:	LCSD-051722	Samp Type:	LCSD	Test Code:	EPA_1664A-SGT	Units:	mg/L	Prep Date:	5/20/2022	RunNo:	130694
Client ID:	LCSS02	Batch ID:	R130694	TestNo:	E1664			Analysis Date:	5/20/2022	SeqNo:	2508234

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	13	5.0	20.00	0	67.0	64	132	13.80	2.94	28	

RTI Laboratories, Inc. - QC SUMMARY REPORT

WO#: 2205327

Date Reported: 5/27/2022
Original

Client: Livonia, City of

Project: 36251 Five Mile **Test Code: EPA_200.8**

Sample ID:	2205347-006AMS	Samp Type:	MS	Test Code:	EPA_200.8	Units:	µg/L	Prep Date:	5/18/2022	RunNo:	130750	
Client ID:	ZZZZZZ	Batch ID:	55709	TestNo:	E200.8			Analysis Date:	5/25/2022	SeqNo:	2509189	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Copper	200	10	200.0	12.23	92.1	80	120				
Zinc	5400	100	200.0	5647	-101	80	120				S

Sample ID:	2205347-006AMSD	Samp Type:	MSD	Test Code:	EPA_200.8	Units:	µg/L	Prep Date:	5/18/2022	RunNo:	130750	
Client ID:	ZZZZZZ	Batch ID:	55709	TestNo:	E200.8			Analysis Date:	5/25/2022	SeqNo:	2509190	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Copper	190	10	200.0	12.23	88.9	80	120	196.4	3.29	20	
Zinc	5500	100	200.0	5647	-97.1	80	120	5444	0.158	20	S

Sample ID:	LCS-55709	Samp Type:	LCS	Test Code:	EPA_200.8	Units:	µg/L	Prep Date:	5/18/2022	RunNo:	130750	
Client ID:	LCSW	Batch ID:	55709	TestNo:	E200.8			Analysis Date:	5/25/2022	SeqNo:	2509210	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Copper	180	10	200.0	0	91.7	85	115				
Zinc	180	100	200.0	0	91.6	85	115				

Sample ID:	MB-55709	Samp Type:	MBLK	Test Code:	EPA_200.8	Units:	µg/L	Prep Date:	5/18/2022	RunNo:	130750	
Client ID:	PBW	Batch ID:	55709	TestNo:	E200.8			Analysis Date:	5/25/2022	SeqNo:	2509211	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Copper	ND	10									U
Zinc	ND	100									U

RTI Laboratories, Inc. - QC SUMMARY REPORT

WO#: 2205327

Date Reported: 5/27/2022
Original

Client: Livonia, City of

Project: 36251 Five Mile **Test Code: EPA_410.4**

Sample ID:	MB 052022	Samp Type:	MBLK	Test Code:	EPA_410.4	Units:	mg/L	Prep Date:	5/20/2022	RunNo:	130689
Client ID:	PBW	Batch ID:	R130689	TestNo:	E410.4			Analysis Date:	5/20/2022	SeqNo:	2508151

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Chemical Oxygen Demand	ND	50									U

Sample ID:	LCS 052022	Samp Type:	LCS	Test Code:	EPA_410.4	Units:	mg/L	Prep Date:	5/20/2022	RunNo:	130689
Client ID:	LCSW	Batch ID:	R130689	TestNo:	E410.4			Analysis Date:	5/20/2022	SeqNo:	2508152

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Chemical Oxygen Demand	100	50	100.0	0	103	90	110				

Sample ID:	2205297-002AMS	Samp Type:	MS	Test Code:	EPA_410.4	Units:	mg/L	Prep Date:	5/20/2022	RunNo:	130689
Client ID:	ZZZZZZ	Batch ID:	R130689	TestNo:	E410.4			Analysis Date:	5/20/2022	SeqNo:	2508154

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Chemical Oxygen Demand	530	56	111.0	421.8	95.0	90	110				

Sample ID:	2205297-002AMSD	Samp Type:	MSD	Test Code:	EPA_410.4	Units:	mg/L	Prep Date:	5/20/2022	RunNo:	130689
Client ID:	ZZZZZZ	Batch ID:	R130689	TestNo:	E410.4			Analysis Date:	5/20/2022	SeqNo:	2508155

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Chemical Oxygen Demand	520	56	111.0	421.8	90.0	90	110	527.2	1.06	20	

Sample ID:	MB 052022A	Samp Type:	MBLK	Test Code:	EPA_410.4	Units:	mg/L	Prep Date:	5/20/2022	RunNo:	130689
Client ID:	PBW	Batch ID:	R130689	TestNo:	E410.4			Analysis Date:	5/20/2022	SeqNo:	2508159

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Chemical Oxygen Demand	ND	50									U

RTI Laboratories, Inc. - QC SUMMARY REPORT

WO#: 2205327

Date Reported: 5/27/2022
Original

Client: Livonia, City of

Project: 36251 Five Mile **Test Code: SM_2540D**

Sample ID:	MBLK-051922	Samp Type:	MBLK	Test Code:	SM_2540D	Units:	mg/L	Prep Date:	5/19/2022	RunNo:	130680
Client ID:	PBW	Batch ID:	R130680	TestNo:	A2540D			Analysis Date:	5/19/2022	SeqNo:	2508019

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Residue, Suspended	ND	2.0									U

Sample ID:	LCS-051922	Samp Type:	LCS	Test Code:	SM_2540D	Units:	mg/L	Prep Date:	5/19/2022	RunNo:	130680
Client ID:	LCSW	Batch ID:	R130680	TestNo:	A2540D			Analysis Date:	5/19/2022	SeqNo:	2508020

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Residue, Suspended	530	2.0	500.0	0	107	80	120				

Sample ID:	2205291-002B DUP	Samp Type:	DUP	Test Code:	SM_2540D	Units:	mg/L	Prep Date:	5/19/2022	RunNo:	130680
Client ID:	ZZZZZZ	Batch ID:	R130680	TestNo:	A2540D			Analysis Date:	5/19/2022	SeqNo:	2508022

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Residue, Suspended	63	2.0						64.00	1.57	5	

Sample ID:	2205370-007A DUP	Samp Type:	DUP	Test Code:	SM_2540D	Units:	mg/L	Prep Date:	5/19/2022	RunNo:	130680
Client ID:	ZZZZZZ	Batch ID:	R130680	TestNo:	A2540D			Analysis Date:	5/19/2022	SeqNo:	2508041

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Residue, Suspended	130	2.0						131.0	0	5	

RTI Laboratories, Inc. - QC SUMMARY REPORT

WO#: 2205327

Date Reported: 5/27/2022
Original

Client: Livonia, City of

Project: 36251 Five Mile **Test Code: SM_4500-NH3-H**

Sample ID:	MB-052322	Samp Type:	MBLK	Test Code:	SM_4500-NH3-H	Units:	mg/L	Prep Date:	5/23/2022	RunNo:	130699
Client ID:	PBW	Batch ID:	R130699	TestNo:	A4500-NH3-H			Analysis Date:	5/23/2022	SeqNo:	2508303

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.10									U

Sample ID:	LCS-052322	Samp Type:	LCS	Test Code:	SM_4500-NH3-H	Units:	mg/L	Prep Date:	5/23/2022	RunNo:	130699
Client ID:	LCSW	Batch ID:	R130699	TestNo:	A4500-NH3-H			Analysis Date:	5/23/2022	SeqNo:	2508304

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	5.2	0.10	5.000	0	104	80	120				

Sample ID:	2205395-001CMS	Samp Type:	MS	Test Code:	SM_4500-NH3-H	Units:	mg/L	Prep Date:	5/23/2022	RunNo:	130699
Client ID:	ZZZZZZ	Batch ID:	R130699	TestNo:	A4500-NH3-H			Analysis Date:	5/23/2022	SeqNo:	2508309

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	5.0	0.10	5.000	0	100	80	120				

Sample ID:	2205395-001CMSD	Samp Type:	MSD	Test Code:	SM_4500-NH3-H	Units:	mg/L	Prep Date:	5/23/2022	RunNo:	130699
Client ID:	ZZZZZZ	Batch ID:	R130699	TestNo:	A4500-NH3-H			Analysis Date:	5/23/2022	SeqNo:	2508310

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	5.0	0.10	5.000	0	99.0	80	120	5.000	1.01	20	

Sample ID:	2205446-004CMS	Samp Type:	MS	Test Code:	SM_4500-NH3-H	Units:	mg/L	Prep Date:	5/23/2022	RunNo:	130699
Client ID:	ZZZZZZ	Batch ID:	R130699	TestNo:	A4500-NH3-H			Analysis Date:	5/23/2022	SeqNo:	2508320

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	18	0.10	5.000	13.40	96.0	80	120				

Sample ID:	2205446-004CMSD	Samp Type:	MSD	Test Code:	SM_4500-NH3-H	Units:	mg/L	Prep Date:	5/23/2022	RunNo:	130699
Client ID:	ZZZZZZ	Batch ID:	R130699	TestNo:	A4500-NH3-H			Analysis Date:	5/23/2022	SeqNo:	2508321

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	18	0.10	5.000	13.40	96.0	80	120	18.20	0	20	

RTI Laboratories, Inc. - QC SUMMARY REPORT

WO#: 2205327

Date Reported: 5/27/2022
Original

Client: Livonia, City of

Project: 36251 Five Mile **Test Code: SM_4500-NORG-D**

Sample ID:	MB-55716	Samp Type:	MBLK	Test Code:	SM_4500-NORG-D	Units:	mg/L	Prep Date:	5/19/2022	RunNo:	130707
Client ID:	PBW	Batch ID:	55716	TestNo:	A4500-Norg-D			Analysis Date:	5/23/2022	SeqNo:	2508508

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Nitrogen, Total Kjeldahl	ND	0.20									U

Sample ID:	LCS-55716	Samp Type:	LCS	Test Code:	SM_4500-NORG-D	Units:	mg/L	Prep Date:	5/19/2022	RunNo:	130707
Client ID:	LCSW	Batch ID:	55716	TestNo:	A4500-Norg-D			Analysis Date:	5/23/2022	SeqNo:	2508509

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Nitrogen, Total Kjeldahl	5.2	0.20	5.000	0	105	80	120				

Sample ID:	2205327-001DMS	Samp Type:	MS	Test Code:	SM_4500-NORG-D	Units:	mg/L	Prep Date:	5/19/2022	RunNo:	130707
Client ID:	River WaterMS1	Batch ID:	55716	TestNo:	A4500-Norg-D			Analysis Date:	5/23/2022	SeqNo:	2508514

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Nitrogen, Total Kjeldahl	5.6	0.20	5.000	1.250	87.4	80	120				

Sample ID:	2205327-001DMSD	Samp Type:	MSD	Test Code:	SM_4500-NORG-D	Units:	mg/L	Prep Date:	5/19/2022	RunNo:	130707
Client ID:	River WaterSD1	Batch ID:	55716	TestNo:	A4500-Norg-D			Analysis Date:	5/23/2022	SeqNo:	2508515

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Nitrogen, Total Kjeldahl	5.6	0.20	5.000	1.250	87.2	80	120	5.620	0.178	20	

RTI Laboratories, Inc. - QC SUMMARY REPORT

WO#: 2205327

Date Reported: 5/27/2022
Original

Client: Livonia, City of

Project: 36251 Five Mile **Test Code: SM_4500-P-H**

Sample ID:	LCS-55719	Samp Type:	LCS	Test Code:	SM_4500-P-H	Units:	mg/L	Prep Date:	5/19/2022	RunNo:	130676
Client ID:	LCSW	Batch ID:	55719	TestNo:	A4500-P-H			Analysis Date:	5/20/2022	SeqNo:	2507943

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	1.0	0.12	1.000	0	104	80	120				

Sample ID:	MB-55719	Samp Type:	MBLK	Test Code:	SM_4500-P-H	Units:	mg/L	Prep Date:	5/19/2022	RunNo:	130676
Client ID:	PBW	Batch ID:	55719	TestNo:	A4500-P-H			Analysis Date:	5/20/2022	SeqNo:	2507945

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.039	0.12									J

Sample ID:	2205291-002CMS	Samp Type:	MS	Test Code:	SM_4500-P-H	Units:	mg/L	Prep Date:	5/19/2022	RunNo:	130676
Client ID:	ZZZZZZ	Batch ID:	55719	TestNo:	A4500-P-H			Analysis Date:	5/20/2022	SeqNo:	2507947

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	1.7	0.12	1.000	0.5880	107	80	120				

Sample ID:	2205291-002CMSD	Samp Type:	MSD	Test Code:	SM_4500-P-H	Units:	mg/L	Prep Date:	5/19/2022	RunNo:	130676
Client ID:	ZZZZZZ	Batch ID:	55719	TestNo:	A4500-P-H			Analysis Date:	5/20/2022	SeqNo:	2507948

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	1.7	0.12	1.000	0.5880	107	80	120	1.660	0	25	

Sample ID:	2205395-006CMS	Samp Type:	MS	Test Code:	SM_4500-P-H	Units:	mg/L	Prep Date:	5/19/2022	RunNo:	130676
Client ID:	ZZZZZZ	Batch ID:	55719	TestNo:	A4500-P-H			Analysis Date:	5/20/2022	SeqNo:	2507961

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.98	0.12	1.000	0.02960	94.9	80	120				

Sample ID:	2205395-006CMSD	Samp Type:	MSD	Test Code:	SM_4500-P-H	Units:	mg/L	Prep Date:	5/19/2022	RunNo:	130676
Client ID:	ZZZZZZ	Batch ID:	55719	TestNo:	A4500-P-H			Analysis Date:	5/20/2022	SeqNo:	2507962

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	1.2	0.12	1.000	0.02960	114	80	120	0.9790	17.8	25	

RTI Laboratories, Inc. - QC SUMMARY REPORT

WO#: 2205327

Date Reported: 5/27/2022
Original

Client: Livonia, City of

Project: 36251 Five Mile **Test Code: SM_5210B**

Sample ID:	MB-55713	Samp Type:	MBLK	Test Code:	SM_5210B	Units:	mg/L	Prep Date:	5/18/2022	RunNo:	130745
Client ID:	PBW	Batch ID:	55713	TestNo:	A5210B			Analysis Date:	5/23/2022	SeqNo:	2509101

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	ND	2.0									U

Sample ID:	LCS-55713	Samp Type:	LCS	Test Code:	SM_5210B	Units:	mg/L	Prep Date:	5/18/2022	RunNo:	130745
Client ID:	LCSW	Batch ID:	55713	TestNo:	A5210B			Analysis Date:	5/23/2022	SeqNo:	2509102

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	120	68	198.0	0	58.9	84.85	115.15				S

Sample ID:	2205326-001ADUP	Samp Type:	DUP	Test Code:	SM_5210B	Units:	mg/L	Prep Date:	5/18/2022	RunNo:	130745
Client ID:	ZZZZZZ	Batch ID:	55713	TestNo:	A5210B			Analysis Date:	5/23/2022	SeqNo:	2509104

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	71	24						72.62	2.51	25	

Sample ID:	IDMP-1 HAK	Samp Type:	LCS	Test Code:	SM_5210B	Units:	mg/L	Prep Date:	5/23/2022	RunNo:	130745
Client ID:	LCSW	Batch ID:	55713	TestNo:	A5210B			Analysis Date:	5/23/2022	SeqNo:	2509107

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	99	68	198.0	0	50.2	84.85	115.15				S

Sample ID:	IDMP-2 HAK	Samp Type:	LCS	Test Code:	SM_5210B	Units:	mg/L	Prep Date:	5/23/2022	RunNo:	130745
Client ID:	LCSW	Batch ID:	55713	TestNo:	A5210B			Analysis Date:	5/23/2022	SeqNo:	2509108

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	96	68	198.0	0	48.4	84.85	115.15				S

Sample ID:	IDMP-3 HAK	Samp Type:	LCS	Test Code:	SM_5210B	Units:	mg/L	Prep Date:	5/23/2022	RunNo:	130745
Client ID:	LCSW	Batch ID:	55713	TestNo:	A5210B			Analysis Date:	5/23/2022	SeqNo:	2509109

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	120	68	198.0	0	58.4	84.85	115.15				S

RTI Laboratories, Inc. - QC SUMMARY REPORT

WO#: 2205327

Date Reported: 5/27/2022
Original

Client: Livonia, City of

Project: 36251 Five Mile **Test Code: SM_5210B**

Sample ID:	**IDMP-4 HAK**	Samp Type:	**LCS**	Test Code:	**SM_5210B**	Units:	**mg/L**	Prep Date:	**5/23/2022**	RunNo:	**130745**
Client ID:	**LCSW**	Batch ID:	**55713**	TestNo:	**A5210B**			Analysis Date:	**5/23/2022**	SeqNo:	**2509110**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	140	68	198.0	0	70.5	84.85	115.15				S

RTI Laboratories, Inc. - Definitions and Acronyms

WO#: 2205327

Date Reported: 5/27/2022
Original

DEFINITIONS:

DF: Dilution factor; the dilution factor applied to the prepared sample.

DUP: Duplicate; aliquots of a sample taken from the same container under laboratory conditions and processed and analyzed independently, used to calculate Precision (%RPD).

LCS: Laboratory Control Sample; prepared by adding a known amount of target analytes to a specified amount of clean matrix and prepared with the batch of samples, used to calculate Accuracy (%REC).

LCSD: A duplicate LCS sample, used to calculate both Accuracy (%REC) and Precision (%RPD)

MBLK: Method Blank; a sample of similar matrix that does not contain target analytes or interference that may impact the analytical results and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedure, used to assess and verify that the analytical process is free of contamination.

MDL: Method Detection Limit; The lowest concentration of analyte that can be detected by the method in the applicable matrix.

Mg/Kg or mg/L: Units of part per million (PPM) – milligram per Kilogram (W/W) or milligram per Liter (W/V).

MS: Matrix Spike; prepared by adding a known amount of target analytes to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available, used to calculate Accuracy (%REC)

MSD: A duplicate MS sample, used to calculate both Accuracy (%REC) and Precision (%RPD)

% REC: Percent Recovery of a known spike (SPK); a measure of accuracy expressed as a percentage of a measured (recovered) concentration compared to the known concentration (SPK) added to the sample. This is compared to the Low Limit and High Limit.

% RPD: Relative Percent Difference; a measure of precision expressed as a percentage of the difference between two duplicates relative to the average concentration. This is compared to the RPD Limit.

PL: Permit limit:; Not included on all reports. Used primarily for wastewater discharge permits.

PQL: Practical Quantitation Limit; The lowest verified limit to which data is quantified without qualifications. Analyte concentrations below PQL are reported either as ND or as a number with a “J” qualifier.

Qual: Qualifier that applies to the analyte reported

RL: Reporting Limit: See PQL

SPK: Spike; used in the QC section for both SPK Value and SPK Ref Val

Ug/Kg or ug/L: Units of part per billion (PPB) – microgram per Kilogram (W/W) or microgram per Liter (W/V).

QUALIFIERS:

*/X: Reported value exceeds the maximum allowed concentration by regulation or permit

B: Analyte detected in the associated Method Blank at a concentration > RL.

E: Analyte concentration reported that exceeds the upper calibration standard. Greater uncertainty is associated with this result and data should be considered estimated.

H: Holding time for preparation or analysis has been exceeded

J: Analyte concentration is reported, and is less than the PQL and greater than or equal to the established MDL. Greater uncertainty is associated with this result and data reported is estimated. These analytes are not routinely reviewed nor narrated as to their potential for being laboratory artifacts.

M: Manual Integration used to determine area response

ND: Analyte concentration is less than the Reporting Limit.

P: Second column RPD exceeds 40%

R: % RPD exceeds control limits

S: % REC exceeds control limits

T: MBLK result is greater than 1/2 of the LOQ

U: The analyte concentration is less than the DL.

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

ENVIRONMENTAL LAB
RTI LABORATORIES, INC.
31628 Glendale Street
Livonia, MI 48150-1827
Phone (734) 422-8000
Fax (734) 422-5342
www.rtilab.com

RTI LABORATORIES, INC.

220327

Please Include Email Address of Report Recipient Whenever Possible !!!

SUBMITTING COMPANY: City of Livonia	REPORT TO: Paul St. Henry	BILL TO:
PROJECT NAME: 36251 Five Mile / PROJECT #:	COMPANY: **City of Livonia, 12973 Farmington Road**	City of Livonia, 12973 Farmington Road
SPECIAL INSTRUCTIONS / COMMENTS:	PHONE: (734) 466-2607	
	FAX: / EMAIL:	

SAMPLER'S PRINTED NAME: **SAMPLER'S SIGNATURE:**

ITEM #	SAMPLE I.D.	DATE SAMPLED	TIME SAMPLED	Wastewater	Grab	Composite	Water	SAMPLE DESCRIPTION	NBR OF CONTAINERS	BOD	TSS	Pt, NH3-N, TKN, COD	FOG/TPH-SGT	Total Metals: Cu,Zn	Ecoli, ~~Fecal~~	pH check OK? (Metals)	pH check OK? (Phosphorus)	COMMENTS
ANALYTICAL PARAMETERS																		
1	**River Water**	5-17-22	9:25am	X	X		X		6	X	X	X	X	X	X	Y	Y	
6																		
7																		
8																		
9																		
10																		

	Date	Time		Date:	Time:
Relinquished By:	5-17-22	9:40	Received By:	5-17-22	09:40
Relinquished By:	Date	Time	Received By:	Date:	Time:
Relinquished By:	Date	Time	Received By:	Date:	Time:

FOR LAB USE ONLY

Were samples preserved ☐ in field ☐ in lab ☐ N/A

Were samples filtered ☐ in field ☐ in lab ☐ N/A

Temp of samples or blank 7.8-10.1 °C On Wet Ice? YES

TAT: Standard ☐ **RUSH:** Next BD ☐ 2nd BD ☐ 3rd BD ☐

Note: RUSH requests will incur surcharges!

Comments/Notes: 7.7-10.8°C +0.1°C = 7.8-10.1°C

Cooler ID: IDEP **Temp Gun ID:** 101810934


Timestamp Camera
Timestamp
Camera
28/04/22 01:07:58
42.3965°N -83.3702°W




Timestamp Camera
Timestamp
Camera
28/04/22 01:07:44
42.3965°N -83.3702°W

Appendix D10

City of Plymouth Pollution Complaint Documentation

City of Plymouth Pollution Complaint Investigations 2022-2023

- 11/4/2022: Report of grease being dumped into catch basin on Fleet St. Upon investigation, no evidence of grease in or around any catch basin on Fleet St.
- 1/30/2023: Report of oil in Tonquish creek near Tonquish creek manor. Upon investigation, found hydraulic oil discharge from elevator at Tonquish creek manor is running to creek via elevator pit sump pump to courtyard catch basin. Contractor hired to contain and clean up oil.
- 2/15/2023: Report of oil in Tonquish creek near Tonquish creek manor, again. Upon investigation, found hydraulic oil discharge from elevator pit again. Contractor contained and cleaned up oil, sump pump replumbed, elevator mechanical system repair &/or replaced, all storm drains fully jetted and cleaned.
- 12/1/2023: Report of foam on road and leaf piles on Junction st. Upon investigation, found residual household soap (likely dish or laundry) from bottles placed to the curb for recycling, automated carts likely tipped over due to placement on large leaf piles. The small quantity of soap became foamy in light rain when car tires drove through.

Appendix E

Municipal Facility Dye Testing Documentation

Appendix E1. Number of Municipal Facilities with Dye Testing Records by Permittee

Appendix E2. Documentation of Dye Testing Results Illicit Discharge Correction Bloomfield Hills

Appendix E1

Number of Municipal Facilities with Dye Testing Records by Permittee

Dye test status spreadsheet

Community	total number of facilities	number of facilities dye tested	Number needing dye testing
Beverly Hills	3	3	0
Bingham Farms	0	0	0
Birmingham	17	0	17
Bloomfield Hills	3	1	2
Bloomfield Township	6	6	0
Canton Township	21	18	3
Dearborn Heights	12	0	12
Farmington	15	12	3
Farmington Hills	13	13	0
Franklin Village	2	0	2
Garden City	6	6	0
HFC	5	5	0
Inkster	5	0	5
Lathrup Village	8	0	8
Livonia	20	8	12
Melvindale	5	3	2
Northville	6	0	6
Northville Twp	5	5	0
Novi	13	0	13
Oak Park	0	0	0
Plymouth	7	3	4
Plymouth Township	10	5	5
Redford Township	8	1	7
Southfield	12	12	0
Troy	36	0	36
Walled Lake	6	0	6
Wayne	7	2	5
West Bloomfield Township	18	18	0
Westland	25	9	16

Total	**294**	**130**	**164**

Appendix E2

Documentation of Dye Testing Results Illicit Discharge Correction Bloomfield Hills

HUBBELL, ROTH & CLARK, INC
CONSULTING ENGINEERS SINCE 1915

MAILING: PO Box 824
Bloomfield Hills, MI 48303-0824

SHIPPING: 555 Hulet Drive
Bloomfield Hills, MI 48302-0360

PHONE: 248-454-6300
WEBSITE: hrcengr.com

Memorandum

From: Hubbell, Roth & Clark, Inc.

Date: May 16, 2022

Subject: Bloomfield Hills Dye Testing Summary HRC Job No. 20210934

Bloomfield Hills is part of the Alliance of Rouge Communities (ARC) which assists with some of the City's Municipal Separate Storm System (MS4) permit tasks. Under the ARC's Collaborative Illicit Discharge Elimination Program (IDEP) there is a requirement to dye test all City owned facilities. This task is a requirement of the MS4 program to help identify and eliminate any illicit discharge into the storm sewer system that is not stormwater or groundwater. Dye testing of this facility has not been performed previously.

On September 28, 2021 Hubbell, Roth & Clark, Inc. (HRC) performed dye testing at the Bloomfield Hills City Hall/Police/Fire Department building. HRC tested 4 drains at City Hall in both the old and new sections of the building. For each of the 4 drains tested, no dye was observed in the sanitary manhole. Upon further investigation, dye was observed in a storm manhole and a storm catch basin just south of City Hall/Police/Fire Department building. The direction of flow in the storm sewer was from the east to west, indicating dye was flowing from the storm catch basin to the storm manhole. Dye was also observed in the Amy Drain, downstream of the Woodward Avenue road culvert, south of Long Lake Road.

After the initial dye testing on 9/28/2021, HRC coordinated with the Oakland County Water Resources Commissioner (OCWRC) to have portions of sanitary and storm sewer systems televised, to determine the existence and location of storm and sewer leads. The OCWRC performed this televising work on November 1, 2021, and HRC was present for the duration of the work. The sanitary sewer located along the south side of E Long Lake Rd was televised first, and a lead was observed on the north side of the main, heading in the direction of the Police/Fire Department building. No flow was observed coming from out of the lead. The storm sewer on the north side of E Long Lake Rd was also televised, which confirmed the location of a blind tap coming from the direction of the City Hall/Police/Fire Department building

Corrective measures taken:

- Relayed dye testing results to EGLE and Oakland County in October 2021. Notification was not made to the Department in accordance with Part II Section C.6 Noncompliance Notification (page 27) of the permit since the City Manager was out of town and needed to be alerted first.
- Relayed the results of the televising work to the City of Bloomfield Hills, with a recommendation that exploratory excavation work be performed on the north side of E Long Lake Rd, to determine if the sanitary lead spans the full width of E Long Lake Rd, and is accessible on the north side.
- Sanitary lead spans the full width of E. Long Lake Rd, and is accessible on the north side. Contractor disconnected the City Hall/Police and Fire Department building sewer lead from the storm system and connected it to the sanitary system. Details as follows:

- Contractor excavated for the proposed sanitary manhole over the existing 8" sanitary main between the City Hall parcel and the adjacent property to the west (21 E Long Lake Rd)
- Work occurred between 4/26/22 – 4/29-22

Follow-up dye testing occurred on 5/5/22 at City Hall/Police/Fire Department building to confirm the correction. Dye was placed in the same areas from the first round of testing along with additional areas to confirm connection to the sanitary. All structures, including trench drains in the Fire Department Garage, flow to sanitary. Report of dye testing results is attached.

Site Location: City Hall, Police and Fire Department
Investigators: Ashley Allen, Brent Tarpinian, and Christine Purdy

Community: Bloomfield Hills
Date: 5/5/2022
Job No.: 20210934

Test No.	Building	Location	Inlet	Time Administered	Dye Amount (oz)	Time Observed	Outlet Observed	Notes
1	City Hall	Kitchen	Sink	8:42am	3	8:51am 8:53am 8:54am	MH #1 MH #2 MH #3	
2	City Hall	Women's Bathroom	Sink	9:19am	3	9:24am 9:27am 9:29am	MH #1 MH #2 MH #3	
3	Police Department	Women's Bathroom	Sink	9:43am	3	9:52am 9:55am 9:56am	MH #1 MH #2 MH #3	
4	Police Department	Kitchen	Sink	10:17am	3	10:20am 10:29am 10:29am	MH #1 MH #2 MH #3	
5	Fire Department	NE Trench Drain	Trench Drain	10:56am	3	11:06am 11:08am 11:09am	MH #1 MH #2 MH #3	Trench drain drains to manhole in garage, which drains to sanitary.


City Hall
Police/Fire Dept
Reconnected
San MH #1
San MH #2
Long Lake Road
Woodward Ave
E Long Lake Rd
San MH #3
Abbey Ln

Appendix F

Technical Committee Meeting Attendance

TECHNICAL COMMITTEE MEETING NOTES

February 18, 2022, 1:00-2:30 PM
Virtual Meeting

34 Attendees listed below:

Lisa McGill (Farmington)
Alex Kozlowski (West Bloomfield Township)
Adam Gerlach (Plymouth)
Joel Kohn (Oakland County Water Resources Commissioner (OCWRC))
Tim Pollizzi (Rochester Hills)
Doug Moore (Livonia)
Rebecca Runkel (Novi)
Mike Buiten (Wayne)
Scott Finlay (Troy)
Brandy Siedlaczek (Southfield)
Karen Mondora (Farmington Hills)
Cory Borton (Bloomfield Township)
Heather Rice (WCWRC)
Kara Grisamer (Oak Park)
Dan Power (Van Buren Township)
Noel Mullet (Wayne County)
Laura Hassold Prevot (Oakland County Road Commission)
Brad Byrd (Canton)
Kathy Hood (Romulus)
Dave Fogle (U of M Dearborn)
John Selmi (Canton)
Nicholas Bayley (OHM, Westland)
Saif Sermed (for Orchard Lake)
Sue Thompson (Wayne County)
Kathy Hood (Romulus)
Ashley Allen (HRC for Bingham Farms)
Laura Gruzwalski (Johnson and Anderson)
Tyler Sonoga (Farmington Hills)
Katie Grantham (SEMCOG)
Bob Belair (Northville Township)
Chelsea Pesta (Walled Lake)
Annette DeMaria (ARC)
Emily Levine (ARC)
Larry Luckett (Van Buren Township)

2021 IDEP findings for Oakland County

Emily Levine (ARC staff) provided the status of the IDEP investigations conducted by ARC staff in OC. Highlights are below and details can be found in Attachment A.

- Follow up sampling at 2 locations with connections corrected in 2020 were confirmed to be corrected and closed out.
- Further sampling at 2 locations indicated that animals were the likely sources of the elevated *E. coli* findings. Therefore, these sites have been closed out as possible IDEP sites.
- Ongoing investigations are necessary at 1 site where illicit connections are likely, but have not yet been located.
- Lower Rouge investigations are ongoing. Elevated *E. coli* levels were detected on the Perrin Drain and in the river, necessitating further investigations.

2021 IDEP findings for Wayne County

Sue Thompson (WC) provided the status of the IDEP investigations conducted by Wayne County. Highlights are below and details can be found in Attachment B.

- Plymouth sites –
  - Harvey Street – outfall resampled to confirm corrections
  - Park Street – connections identified, corrections needed
  - PY8 and PY5 – additional investigations are planned
  - Holbrook Street – investigation ongoing
- Livonia
  - 6 outfalls have investigations completed
  - 4 outfalls require additional investigation
  - Sediment discharge investigated
- Lower Rouge investigation conducted as a team effort with ECT
- IDEP Advanced Investigator and Alert Observer Training virtual classes were well-attended by ARC members.

2020 Oakland County Water Resources IDEP findings

Joel Kohn (OCWRC) provided the status of the IDEP investigations conducted by Oakland County. Highlights are below.

- Samples from Fracassi Drain had low human DNA markers, indicating no further investigation needed
- Owens Drain – a possible connection has been identified and dye testing is planned for March.

Call for assistance with IDEP Investigations

ARC staff asked attendees if they need any assistance with IDEP investigations (outside the work already being investigated by the ARC). No requests were made.

2022 IDEP Investigation workplans for Oakland and Wayne Counties

The workplans for 2022 were included in the meeting handouts and were briefly discussed. They will focus on continuing unfinished investigations from 2021. The workplans were approved with unanimous consent.

Progress Report Reminder

Annette DeMaria (ARC staff) reminded communities that progress reports would be due April 1 for many of them. There would be the regular progress report and the construction standards update progress report to submit via MiWaters. EGLE will be providing guidance on how to report construction standards. There is a metrics worksheet available that was provided in the past to help with preparing for progress report submittal. In addition, ARC staff will print and send to everyone a list of questions from MiWaters, which will help prepare for submitting progress reports.

Most communities have completed the survey that was sent out for the collaborative progress reports. However, some communities have not yet responded and we are waiting on those responses.

Communities are reminded that responses to the survey is necessary to be included in the collaborative plans and to be in compliance with permits.

Post Construction Standards

EGLE is backlogged and has not been providing feedback on post construction standards updates. Most communities have submitted them already. Stay tuned for EGLE feedback.

ARC Joint Technical/PIE Committee
Meeting Notes
October 3, 2022, 1:30 pm – 3:30 pm
Farmington Hills Community Center (HAWK) 29995 W 12 Mile Rd

In attendance:

Name	Representing
Annette Demaria	ARC
Scott Finlay	Troy
Karen Mondora	Farmington Hills
Jacy Garrison	Oakland County
Joel Kohn	Oakland County
Jason Rosell	West Bloomfield
Ashley Allen	HRC
Dean Keffer	City of Westland and City of Northville (OHM)
Alex Kozlowski	West Bloomfield
Laura Hassold Prevot	R.C.O.C.
Adam Gerlach	City of Plymouth
Chuck Eudy	City of Farmington
Thomas Rowland	Redford Township
Mike Butten	City of Wayne
Rebecca Runkel	City of Novi
Chelsea Pesta	City of Walled Lake
Sue Thompson	Wayne County
David Fogle	U of M Dearborn
Bob Belair	Northville Township
Cory Borton	Bloomfield Township
Laura Gruzwalski	DLZ
Trisha Gabriel	City of Livonia
Doug Moore	City of Livonia
Brandy Siedlaczek	Southfield
Heather Rice	Washtenaw County
Tyler Sonoga	Farmington Hills
Melissa Coatta	Birmingham
Chris O'Meara	ARC
Dean Tuomani	Citizen
Emily Levine	ARC

1. **Introductions** - Karen Mondora, Chair
   - Welcomed us to the Hawk rec center facility

2. **EGLE Audits Lessons Learned** – Emily Levine, Tech Comm Coordinator
   - EGLE audits have become more detail-oriented and Violation Notices with long lists of requested changes are being given out without hesitation.

- It is important to evaluate the list of facilities found at the top of Appendix H in the SWMP because EGLE is looking to ensure that this is accurate
- We will be creating a database of facilities and their dye test records
- We are going to stop including the Counties pollution complaints in our collaborative progress report.
- West Bloomfield Township shared some of the challenges they had encountered with EGLE's audit. This included a lack of understanding of when ordinances are necessary and the effort required to pass them, questioning the completeness of dye test reports, and expecting changes that are not required under the permit until April to be implemented immediately.

3. Collaborative Plan Updates (IDEP, TMDL, PPP, PIE)

- Tech Committee – Emily Levine
  - Proposed changes build from the previous collaborative IDEP plan.
  - We will be checking in annually for updates to GIS maps and facilities list for Dye testing
  - Outfall prioritization and screening is planned for the next collaborative plan. It will be similar to the previous one, but with less instream data collection to reduce costs.
  - A map of outfalls being screened will be shared with communities.
  - IDEP training and P2/GH training are scheduled for October 18 and 19, online and in person. Communities are encouraged to send employees with the goal of training 50% of all field staff at alert observer level and one employee that works at each high priority facility at investigator level.
- PIE Committee – Chris O'Meara, PIE Committee Coordinator
  - Proposed collaborative PEP Plan is similar to the current plan.
  - Reviewed change to BMP1 which creates a brochure focused on educating contractors.
  - Discussed change to BMP3 which distributes seasonal posters to schools, recreation centers and libraries.
  - Will incorporate boosting Facebook posts to increase our reach under BMP1 and BMP4.
  - Reviewed change to BMP6 for 2 less workshops per year.
  - Change to BMP7 and BMP8 remove FOTR from being listed as the contractor but continue to contract with them. This is in keeping with the standard of not listing specific contractors in the plans.
  - Discussed change to BMP9 adding a billboard campaign throughout the watershed.
  - The Collaborative PPP will include another public survey during the next permit period to gauge success of the Collaborative PEP activities.

4. 2023 Work Plan Recommendations

- Tech Committee – Emily Levine
  - IDEP meetings, facilitation, and investigations as previously agreed to for TC1

- IDEP meetings, facilitations, collaborative plan updates, and IDEP training as agreed to for TC2
- We might remove Wayne County from the budget, since it isn't really necessary to include their in-kind contributions. Chris will confirm with the auditor whether this matters.
- TC3 will include completing two reports based on the TMDL data, which will be presented to the ARC in 2023, as indicated in the collaborative TMDL plan.
- TC4 is proposed to assist communities with permit reapplication. Communities are asked to consider this option and provide feedback to Annette by October 14.

- PIE Committee – Chris O'Meara
  - PIE work plan discussed in keeping with the Collaborative PEP plan activities with the annual tasks the same as previous years including supporting the FOTR Winter Stonefly Search.
  - Activities under the Permit Cycle activities include updating the Collaborative PPP and PEP for the new permit application in 2023. Other items include 1 new ad graphic, article and 1 new static display. No workshops are planned for 2023 because this permit activity has been met. The ARC will support 1 FOTR green infrastructure workday and 1 rain barrel sale. ARC Staff will also create a map of the new watershed road signs and verify the new sign installations.
  - An ARC survey will be coming out to gauge communities interest in the next round of Forest Service grants for trees and green infrastructure. This one will not have a match required and will include an increase in the reimbursement amount per tree for communities.

5. **Post Construction SW Mgt tracking** – Joel Kohn
   - This is a site plan review tracking system being developed by SEMCOG in partnership with Oakland County.
   - They are looking for input on fields and if this is useful.
   - Tracking is going to be required for site plan review anyways, so the hope is that this will streamline things.
   - Oakland County is looking for feedback – volunteers for this: Mike B (Wayne), Todd (Livonia), Jason Rosell (WBT), Ashley Allen (HRC), Tyler (Farmington Hills)
   - Communities are wondering about the ability to filter out information prior to an audit.
   - This can be expanded by SEMCOG to be regional, not just for the watershed.

6. **Questions/Comments from Members** – Karen Mondora
   - Heather Rice provided feedback from Lansing that they may switch to annual reports instead of biennial because of poor audits and the permit cycle may be changed to be less than 5 years.

TECHNICAL COMMITTEE MEETING NOTES

February 28, 2023, 1:00-2:30 PM
Hawk Community Center, Farmington Hills

29 Attendees listed below:

Alex Kozlowski (West Bloomfield Township)
Adam Gerlach (Plymouth)
Joel Kohn (Oakland County Water Resources Commissioner (OCWRC))
Nate Jessee (Oakland County Road Commission)
Neil Johnston (Beverly Hills)
Paulina Appel (Livonia)
Rebecca Runkel (Novi)
Olga MacDonald (Novi)
Scott Finlay (Troy)
Emily Ause (Troy)
Thomas Rowland (Redford Township)
Bill Craig (RRAC)
Dean Taoman (RRAC)
Brandy Siedlaczek (Southfield)
Saif Sermed (for Orchard Lake)
Ashley Allen (HRC for Lathrup Village, Franklin, Bingham Farms)
Laura Gruzwalski (DLZ)
Tyler Sonoga (Farmington Hills)
Chelsea Pesta (Walled Lake)
Annette DeMaria (ARC)
Emily Levine (ARC)
Jeff Modica (Schoolcraft College)
Melissa Coatta (Birmingham)
Tim Sikma (Wixom)
Karen Mondora (Farmington Hills)
Cory Borton (Bloomfield Township)
Kara Grisamer (Oak Park)
Sue Thompson (Wayne County)

2022 IDEP findings for Oakland County

Emily Levine (ARC staff) provided the status of the IDEP and TMDL investigations conducted by ARC staff. Highlights are below and details can be found in Attachment A.

- Ongoing investigations are necessary at 2 sites where illicit connections are likely, but have not yet been located.
- An illicit connection was identified and corrected. Follow-up investigation revealed that an additional pollutant source may be present, resulting in further investigation required
- A tap was identified in Inkster contributing to the Perrin Drain and further investigation is required
- ARC staff conducted sampling in accordance with the ARC's Collaborative Total Maximum Daily Load (TMDL) Implementation Plan requirements. This included completing DO monitoring in Johnson Creek for two months, screening 83 outfalls for *E. coli*, and sampling 28 instream sites for suspended sediment.

2022 IDEP findings for Wayne County

Sue Thompson (WC) provided the status of the IDEP investigations conducted by Wayne County. Highlights are below and details can be found in Attachment B.

- Plymouth sites –
    - Park Street – Re-issue the notice of violation to the new property owner at 195 S. Mill and continue communications and compliance actions to correct remaining violations. Once corrections are made perform follow-up E. coli monitoring
    - PY8 and PY5 – Continued investigations in 2023 including dye testing residential properties located in storm sewer segments identified by televising/manhole sampling and manhole sampling for E. coli and HR183 marker as needed
    - Holbrook Street – No further investigation recommended in 2023. Based on televising and field investigations, the only possible source is a leaking sanitary sewer. Plans to replace the sanitary sewer in 2024 are in the process of being developed
- Livonia
    - 2 outfalls have investigations completed
- IDEP Advanced Investigator and Alert Observer Training virtual classes were well-attended by ARC members.

2022 Oakland County Water Resources IDEP findings

Joel Kohn (OCWRC) provided the status of the IDEP investigations conducted by Oakland County. Highlights are below.

- An Illicit Connection was discovered on the Owens Drain and has been corrected.
- Investigation ongoing into possible leaking bulkheads on the US16 Drain
- Follow up work is ongoing on the Austin Drain

Call for assistance with IDEP Investigations

ARC staff asked attendees if they need any assistance with IDEP investigations (outside the work already being investigated by the ARC). No requests were made.

2023 IDEP Investigation workplans for Oakland and Wayne Counties

The workplans for 2023 were included in the meeting handouts and were briefly discussed. They will focus on continuing unfinished investigations from 2022, including new investigations into sites identified by TMDL sampling. The workplans were approved with unanimous consent.

MS4 Permit Renewal

Emily Levine (ARC staff) reminded communities that MS4 permit reapplications would be due April 4. Briefly discussed additional KML requirements for outfalls and discharge points.

Post Construction Reporting Tool

It was requested that SEMCOG should share the Post Construction Reporting Tool Webinar from the previous week.

Discussion of site plan reviews for sites that discharge to other jurisdictions (MDOT, County, etc). Who should report these sites? Who should be responsible in these cases? This issue impacts a lot of areas and it gets complex. Additional conversations with counties are needed regarding this topic.

Joint Technical/PIE Committee Meeting Summary
October 16, 2023, 2:00 p.m.

Hawk Community Center, Farmington Hills

Attendance

Doug Moore, Livonia
Josh Leach, Farmington
Joel Kohn, Oakland County
Heather Rice, Washtenaw County
Jacy Garrison, Oakland County
Wade Burkholder, West Bloomfield Twp.
Larry Luckett, Van Buren Twp.
Tyler Sonoga, Farmington Hills
Rebecca Runkel, Novi
Tim Sikma, Wixom
Scott Finlay, Troy
Neil Johnston, Beverly Hills
Alex Kozlowski, West Bloomfield Twp.
Brent Densmore, Schoolcraft College
Paul Palace, Bloomfield Twp.
John O'Meara, ARC Executive Director
David Fogle, UofM Dearborn
Lauren Eaton, Friends of the Rouge
Sue Thompson, Wayne County
Trisha Gabriel, Livonia
Cory Borton, Birmingham
Brandy Siedlaczek, Southfield
John Selmi, Canton
Dean Tuomari, Citizen & RRAC
Emily Ause, Troy
Chelsea Pesta, Walled Lake
Ashley Allen, HRC for Lathrup Village & Franklin
Jerome Bivins, Inkster
Nate Jessee, Road Commission of Oakland County
Sermed Saif, Tri County for Orchard Lake
Angela Hysinger, Bloomfield Twp.
Mike Buiten, Wayne
Emily Levine, ARC Staff
Chris O'Meara, ARC Staff
Noel Mullett, ARC Staff

Introductions

Jacy Garrison, Chair of the PIE Committee welcomed those attending and asked everyone introduce themselves.

2023 Technical Committee Update

Facility Dye Testing: In response to EGLE audits, any community owned facilities for which there are no records of dye testing or as-built plans available will need to be dye tested. The ARC has been/will be reaching out to communities to complete a list of facilities and identify which ones require dye testing. The ARC will be creating a guidance document in the coming year to assist communities in dye testing facilities.

Training updates: IDEP trainings in partnership with SEMCOG were presented last week. Any communities that should have sent employees to the trainings, but missed them can complete the Observer training by showing the training recordings to employees and filling out a sign-in sheet. Please report to Emily if you do this. Investigator training cannot be completed in this way and you will need to wait for next year's in-person training session. P2GH training is being hosted by SEMCOG as a webinar on 10/17/23 and should be attended by DPW employees.

If there have been any updates to your GIS data, or changes to your storm drains or outfalls, please inform Emily. She will be reaching out to all communities to check for updates.
IDEP investigations are ongoing in 3 communities. We are still working to identify pollutant sources.

2023 Budget Amendments: Noel shared the 2023 budget and how it relates to the 5 year plan, which has increased expenses in the first, second and fifth years, based on which step of the collaborative IDEP and TMDL plans are being implemented each year. Also discussed the ERB grant money, which will offset some of the tech committee budget and be used to implement an MS4 training program for municipal employees.

2023 PIE Committee Update
Ours to Protect watershed signage campaign – new signs have been installed and mapped.

New 2023 public education items – New topics have been voted on for this year's educational materials.

Public education items available – There are plenty of items available. Communities are encouraged to request them via email or online and they will be delivered.

ARC seasonal posters & permit requirement – 3 communities still need to display seasonal posters and should get in touch with Chris O'Meara to get them.

The Oakland County Pollution Hotline brochure has been updated and Jacy has copies available for communities to take or are available upon request.

Draft ARC 5-Year Plan (2024-2028)
Technical Committee – budget overview was discussed. Some of the costs associated with the IDEP program will be covered by an ERB grant with the remainder covered by ARC dues. However, the cost may decrease if other sources of funding, such as WATUA become available. Either way, there should be funds left in the budget. The 5-year plan is designed to have more expenses up front and at the end, with each year's activities building on the previous year.

PIE Committee – The 5-year plan will be similar to the previous plan, with the addition of billboard campaigns in 2025 and 2028. Communities should continue to like and share Facebook posts. Rouge River National Wet Weather Demonstration Project historic reports will be organized and incorporated into the ARC website over the next 5 years. Educational materials will continue to be available with 3 displays. Posters are going to be displayed in libraries, schools, and other public areas beyond municipal offices. ARC funding will continue to support volunteer monitoring events with Friends of the Rouge (FOTR).

Draft ARC 2024 Budget Recommendations
The individual budget recommendations were reviewed and discussed. ARC Staff asked that members forward any comments on the recommendations. If no comments are received the budget recommendations will go to the Finance Committee, Executive Committee and Full ARC in November.

Questions/comments from members
No questions or comments. Members were reminded to review both the 2024 budget and the 5-year plan. The final Full ARC meeting is scheduled for November 20, 2023, at 1:00 p.m. and will be virtual.