

**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

<b>Community</b>	<b>Outfall/ target area</b>	<b>Findings</b>	<b>Recommendations</b>
Plymouth	PY8	Elevated <i>E. coli</i> and <i>Bacteriodes</i>	Continued investigations including dye testing and televising in 2021
Plymouth	PY5	Elevated <i>E. coli</i>	Continued investigations including sampling for <i>E. coli</i> and <i>Bacteriodes</i> , as well as televising in 2021
Plymouth	PY27	Low <i>E. coli</i> , 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 <i>E. coli</i> 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 <i>E. coli</i> 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 <i>Bacteriodes</i> in 2021
Livonia	Outfall L-1619	Elevated <i>E. coli</i> was detected in one storm sewer near a food service facility.	Continued investigations including sampling for <i>Bacteriodes</i> 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 <i>E. coli</i> and <i>Bacteriodes</i> in 2021
Livonia	13002	Investigations limited in 2020 by the COVID-19 pandemic and	Continued investigations including sampling for <i>E. coli</i> and <i>Bacteriodes</i>

		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 <i>E. coli</i> and <i>Bacteroides</i> 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 <i>E. coli</i> and <i>Bacteroides</i> 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 <i>E. coli</i> and <i>Bacteroides</i> 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 <i>E. coli</i> and <i>Bacteroides</i> 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 <i>E. coli</i> and <i>Bacteroides</i> in 2021
Wayne	WN-21	<i>E. coli</i> concentrations during two sampling events were very low.	Completed. No further follow-up
Westland	SWOF-00278	Low <i>E. coli</i> concentrations. Elevated pH and chalky-white discharge observed.	Referred to the City of Westland for further follow-up
Dearborn and Inkster	Lower Rouge	Elevated <i>E. coli</i>	Additional investigations on the Lower Rouge upstream of John Daly Road will involve screening outfalls. Sampling for <i>E. coli</i> , <i>Bacteroides</i> , 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 U2008221 and 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.





### ***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*.

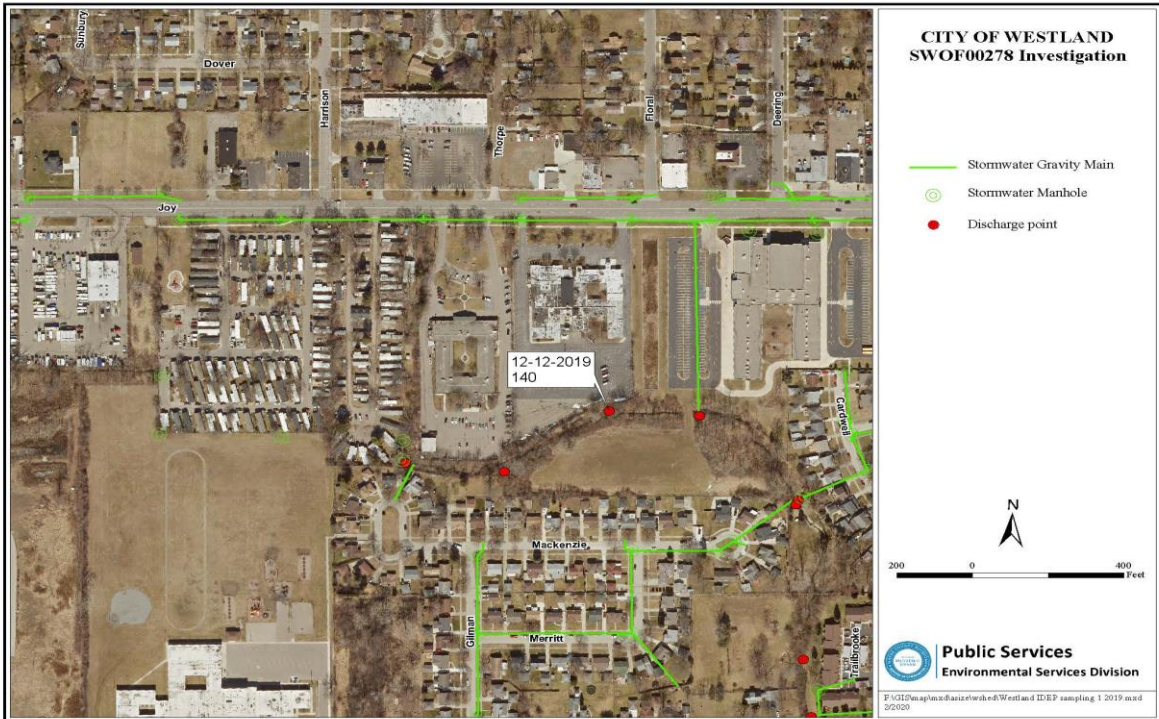
ARC and ESD staff met to review monitoring results, gather historical data and information, met with community representatives, and developed an investigative approach to focus on the river segments located in between sampling locations with elevated *E. coli*. Performing a stream walk and outfall survey 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



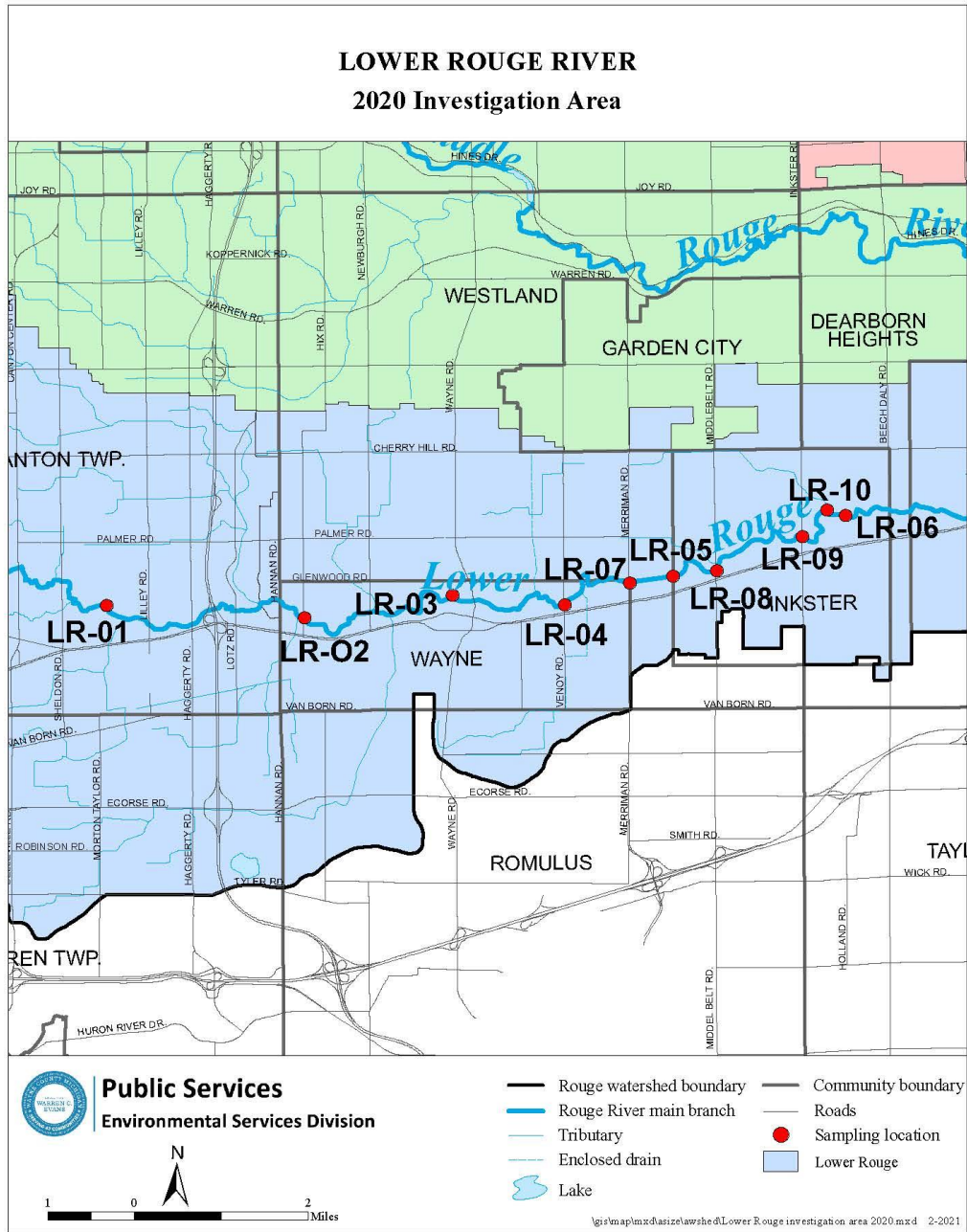
**Figure 6 SWOF-00278 Investigation Map**



**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 discharges, 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



APPENDIX A  
CITY OF PLYMOUTH  
OUTFALL PY8 INVESTIGATION  
2020 ARC IDEP

Number	Date	Time (military)	Investigation Location	Site Location	<i>E. coli</i> (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 <sup>7</sup>	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 <sup>5</sup>	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 <sup>5</sup>	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 <sup>6</sup>	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 <sup>5</sup>	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

APPENDIX A  
 CITY OF PLYMOUTH  
 OUTFALL PY8 INVESTIGATION  
 2020 ARC IDEP

Number	Date	Time (military)	Investigation Location	Site Location	<i>E. coli</i> (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 <sup>4</sup>	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

APPENDIX A  
 OUTFALL PYS INVESTIGATION  
 CITY OF PLYMOUTH  
 2020 ARC IDEP

Number	Date	Time (military)	Investigation Location	Site Location	<i>E. coli</i> (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	PYS Outfall	PYS Outfall	1100	NA	NA	NA	NA	Slow flow, pipe has low gradient. Water clear	None	None
2	9/21/2020	10:55	PYS 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	PYS 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	PYS Outfall	Arthur 197	<20	NA	NA	NA	NA	Water clear, slow flow in storm. Shallow manhole	None	None
5	9/21/2020	11:50	PYS 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	PYS 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	PYS Outfall	1251 William	2700	NA	NA	NA	NA	Clear flow in storm sump	None	None
8	9/21/2020	12:45	PYS 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	PYS 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	PYS 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	PYS 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	PYS Outfall	650 Pacific	NA	NA	NA	NA	NA	Manhole dry	None	None
13	9/21/2020	13:35	PYS Outfall	775 Pacific	NA	NA	NA	NA	NA	Manhole dry. Leaf and lawn clippings present	None	None

APPENDIX A  
OUTFALL PY27 INVESTIGATION  
CITY OF PLYMOUTH  
ARC IDEP 2020

Number	Date	Time (military)	Investigation Location	Site Location	<i>E. coli</i> (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

APPENDIX B  
 OUTFALL L-1619 INVESTIGATION  
 CITY OF LIVONIA  
 ARC IDEP 2020

DECEMBER 2020

Number	Date	Time (military)	Investigation Location	Site Location	<i>E. coli</i> (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

APPENDIX C  
CITY OF WAYNE  
OUTFALL WA-21  
2020 ARC IDEP

JULY/AUGUST 2020

Number	Date	Time (military)	Investigation Location	Site Location	<i>E. coli</i> (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



APPENDIX C  
CITY OF WAYNE  
OUTFALL WA-21  
2020 ARC IDEP

JULY/AUGUST 2020

Number	Date	Time (military)	Investigation Location	Site Location	<i>E. coli</i> (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

APPENDIX C  
 CITY OF WAYNE  
 OUTFALL WA-21  
 2020 ARC IDEP

JULY/AUGUST 2020

Number	Date	Time (military)	Investigation Location	Site Location	<i>E. coli</i> (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

APPENDIX D  
 SWOF-00278  
 CITY OF WESTLAND  
 ARC IDEP 2020

DECEMBER 2020

Number	Date	Time (military)	Investigation Location	Site Location	<i>E. coli</i> (colony-forming units (CFU)/100mL)	<i>Bacteriodes</i> human specific marker Arithmetic Average gene copies/100mL	<i>Bacteriodes</i> 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

APPENDIX E  
 LOWER ROUGE  
 WATER QUALITY MONITORING  
 ARC IDEP 2020

Site ID	Site Location	Date	Time	<i>E.coli</i> (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

APPENDIX E  
LOWER ROUGE  
WATER QUALITY MONITORING  
ARC IDEP 2020

NOVEMBER 2020

Site ID	Site Location	Date	Time	<i>E.coli</i> (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 Outfall SE side	9/28/2020	11:10	750	Lower	Westland	Clear				Cloudy 61 degrees	Outfall discharge clear; some sudsing present	No	No	No

APPENDIX E  
 LOWER ROUGE  
 WATER QUALITY MONITORING  
 ARC IDEP 2020

NOVEMBER 2020

Site ID	Site Location	Date	Time	<i>E.coli</i> (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



APPENDIX E  
 LOWER ROUGE  
 WATER QUALITY MONITORING  
 ARC IDEP 2020

NOVEMBER 2020

Site ID	Site Location	Date	Time	<i>E.coli</i> (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
	<i>E. coli</i> values above 1000 CFU/100mL														

**Appendix F**  
**2020 Partners for Clean Water Regional IDEP Training Workshop**  
**Alert Observer Training**  
**Attendees List**  
**November 10, 2020**

APPENDIX F  
SEMCOG UNIVERSITY ALERT OBSERVER TRAINING ATTENDANCE LIST  
NOVEMBER 10, 2020

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

APPENDIX F  
SEMCOG UNIVERSITY ALERT OBSERVER TRAINING ATTENDANCE LIST  
NOVEMBER 10, 2020

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	Petty	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

APPENDIX F  
SEMCOG UNIVERSITY ALERT OBSERVER TRAINING ATTENDANCE LIST  
NOVEMBER 10, 2020

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

APPENDIX F  
SEMCOG UNIVERSITY ALERT OBSERVER TRAINING ATTENDANCE LIST  
NOVEMBER 10, 2020

NOVEMBER 10, 2020

<b>ARC Member Community</b>			
<b>Number</b>	<b>First Name</b>	<b>Last Name</b>	<b>Community/Organization</b>
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

APPENDIX F  
SEMCOG UNIVERSITY ALERT OBSERVER TRAINING ATTENDANCE LIST  
NOVEMBER 10, 2020

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	Bloomensaar	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

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NOVEMBER 10, 2020

NOVEMBER 10, 2020

<b>ARC Member Community</b>			
<b>Number</b>	<b>First Name</b>	<b>Last Name</b>	<b>Community/Organization</b>
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