

2024 Oakland County Water Resources Commissioner's Office Water Quality Sampling Results

Background

Oakland County Water Resources Commissioner's Office (WRC) is required to comply with the Michigan Department of Environment, Great Lakes and Energy's (EGLE) NPDES Municipal Separate Storm Sewer System (MS4) Phase II permit by implementing an Illicit Discharge Elimination Program (IDEP). WRC developed an alternative procedure for ongoing monitoring of all open and enclosed County drains for illicit discharges. This procedure covers all County drains in both MS4 and non-MS4 areas. All County drains and structures are currently inspected on a 5-year rotating cycle under WRC's Construction Drain Maintenance (CDM) Program. The Environmental team follows this same cycle for sampling the outfalls of each County drain to confirm current *E. coli* levels within the system.

A process for prioritizing the drains for illicit discharge investigation was previously developed and approved. The criteria used for evaluating and prioritizing County drains is as follows:

Priority 1 – Evidence of pollutants and/or *E. coli* values $\geq 10,000$ cfu/100 ml

Immediate follow-up to verify illicit discharge. Initiate upstream IDEP investigation to identify pollutant source(s) and coordinate additional activities as needed.

Priority 2 – No evidence of pollutants and *E. coli* values ≥ 1001 and $< 10,000$ cfu/100 ml

Schedule additional dry weather sampling with human marker screening within one (1) year for further evaluation. Schedule upstream dry weather sampling or initiate IDEP investigation to identify pollutant sources(s) as needed.

Priority 3 – No evidence of pollutants and *E. coli* values $\leq 1,000$ cfu/100 ml

Continue dry weather sampling of outfalls and discharge points per 5-year drain maintenance inspection cycle. Review results and re-prioritize as needed.

WRC contracts with Oakland University to perform Microbial Source Tracking (MST) sampling. With MST, human-associated pollution markers are detected by looking for *Bacteroides* HF183. Consecutive results over 10,000 cfu/100 ml will trigger a lab test for HF183 to be conducted. HF183 markers are measured in GC (Gene Copies) / 100 ml with priority designation given to results of 1,000 GC/100ml in enclosed systems and 500 GC/100ml in open water courses or drains with regular flow. HF183 marker results at 95 GC / 100 ml are considered non detect.

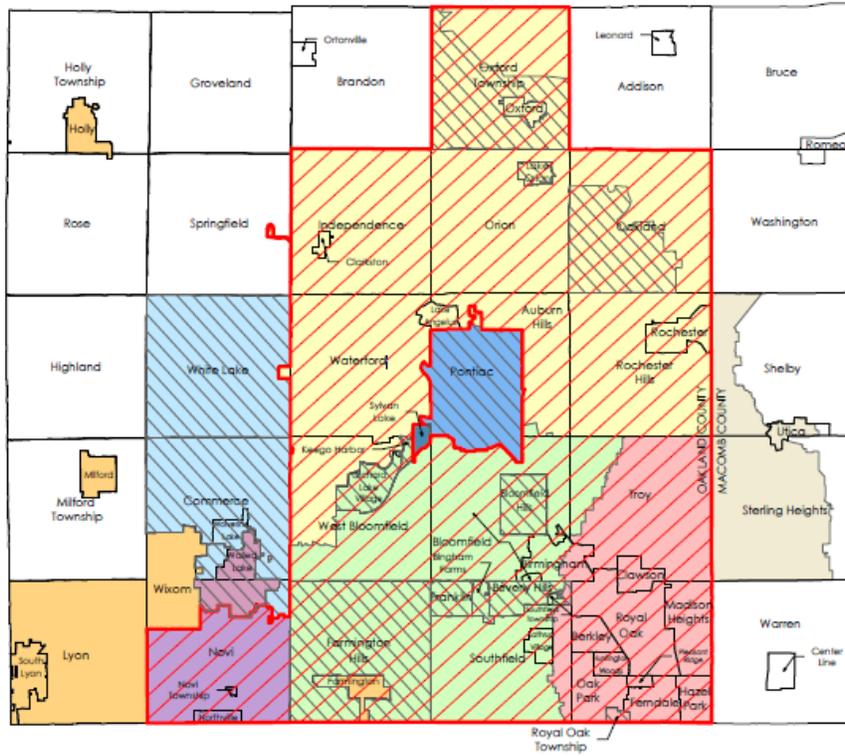
Water quality samples for *E. coli* analysis were completed by either the Walled Lake-Novu Waste Water Treatment Plant or Paragon Laboratories Inc. Samples for HF183 analysis were completed by Oakland University.

A total of 371 samples were taken and analyzed for *E. coli* from these initiatives as follows:

- 4.31% (16 samples) were Priority 1
- 20.49% (76 samples) were Priority 2
- 75.20% (279 samples) were Priority 3

Outfall Sampling Program Results

A new outfall sampling program was initiated in 2023. Drain outfalls will be sampled in accordance with CDM's five-year inspection cycle. This program will ensure that any possible new pollutant sources are identified and investigated in a timely manner. Drains are sorted by sanitary disposal districts and non-sewered areas.



Legend

- Clinton-Oakland Sewage Disposal System
- Commerce-White Lake WWTP Sewage Disposal System
- Evergreen-Farmington Sanitary Drain
- Huron-Rouge Sewage Disposal System
- Oakland-Macomb Sewage Disposal System
- Pontiac Sewage Disposal System
- Southeastern Sewage Disposal System
- White Lake-Novi WWTP Sewage Disposal System
- Sylvan Lake SDB
- Municipally Operated Sewage Disposal Systems
- Non-Sewered Areas
- Municipal Lateral Sewer Systems Operated by WRC
- Great Lakes Water Authority (GLWA) Sewer Service Area

Clinton-Oakland Sanitary Disposal System

Drain Name	<u><i>E. coli</i> GEO MEAN</u> cfu/100 ml	Drain Name	<u><i>E. coli</i> GEO MEAN</u> cfu/100 ml
Axford Drain	108	Jensen Drain	4,692
Cornerstone Condos Drain 1	771	John E. Olson Drain	538
Cornerstone Condos Drain 2	2,433	Kelly Drain	247
Cornerstone Condos Drain 3	Dry	Levinson Drain	229
Crake Drain	241	Linden Drain	657
David L Moffett Drain	789	M15 Drain	58
Dennis Murphy Drain	719	Oaks Drain	80
Drayton Plain Drain	245	Osgood Drain	2,385
Fred Houghten Drain	286	Paint Creek (Rochester Park)	779
Goodison Place Drain 1	1,026	Pond Valee Drain 1	9
Goodison Place Drain 2	153	Pond Valee Drain 2	18
Goodison Place Drain 3	1,278	Pond Valee Drain 3	237
Guyer Drain	3,800	Pond Valee Drain 4	592
Hamilton Drain	1,405	Ramiro Drain	167
Ireland Drain	493	Robert J Evans Drain	179

<u>Drain Name</u>	<u>HF 183 Marker</u> <u>GC/100 ml</u>	<u>Drain Name</u>	<u>HF 183 Marker</u> <u>GC/100 ml</u>
Goodison Place Drain 1	54,652	Osgood Drain	95
Guyer Drain	240	Paint Creek –Rochester Park	95
Jensen Drain	277	Wrey Drain	325

Next Steps:

Goodison Place Drain CCTV was inconclusive, dye testing will take place in 2025 along the identified elevated segments of drain to locate the illicit connection.

All other drains will be resampled in 5 years.

George W. Kuhn Sanitary Disposal System

<u>Drain Name</u>	<u>E. coli GEO</u> <u>MEAN</u> <u>cfu/100 ml</u>	<u>Drain Name</u>	<u>E. coli GEO</u> <u>MEAN</u> <u>cfu/100 ml</u>
Dunleavy Drain (Tawas)	554	Kaczmar Drain	652
Dunleavy Drain (Wolverine)	1,919	King Drain	88
Fredericks Drain 1 (Page Drain)	697	McConnell Drain	262
Fredericks Drain 2	122	McCulloch Drain	1,866
Fredericks Drain 3	251	Moxley Drain 1	593
Halfpenny Drain	1,392	Moxley Drain 2	588
Hazel Park (Elza)	137	Nelson Drain	278
Hazel Park Local (Maple Ln)	31	Vogt Drain 1	538
Hazel Park Local (Tucker)	684	Vogt Drain 2	355

<u>Drain Name</u>	<u><i>E. coli</i> GEO MEAN cfu/100 ml</u>	<u>Drain Name</u>	<u><i>E. coli</i> GEO MEAN cfu/100 ml</u>
Henry Graham Drain (ROT005027)	12,915	Walker Drain	119
Hugh Dohnay Drain	719	Wilson Drain	147
Jackson Drain East	161	Wrey Drain	1,328
Jackson Drain West	165		

<u>Drain Name</u>	<u>HF 183 Marker GC/100 ml</u>	<u>Drain Name</u>	<u>HF 183 Marker GC/100 ml</u>
Dunleavy Drain (Wolverine)	95	Moxley Drain 2	95
Hazel Park Local (Tucker)	4,311	Wrey Drain	325
Henry Graham Drain (ROT0050027)	507		

Next Steps:

Henry Graham Drain Dye test for possible illicit connection on Henry Graham Drain, if dye testing shows proper connections, coordinate with Madison Heights on good housekeeping solution.

Dunleavy Drain Continue investigating branches along Greig Ave with HF183 and CCTV if needed.

Hazel Park Local Continued coordination with the City of Hazel Park to help identify elevated structures that may lead to illicit connections.

All other drains will be resampled in 5 years.

Evergreen-Farmington Sanitary Disposal System

<u>Drain Name</u>	<u>E. coli GEO MEAN cfu/100 ml</u>	<u>Drain Name</u>	<u>E. coli GEO MEAN cfu/100 ml</u>
Apple Cove Drain	417	Owens Drain SOT137018	41
Arbors of West Bloomfield Drain 1	210	Owens Drain SOT137020	87
Arbors of West Bloomfield Drain 2	Dry	Owens Drain SOT137014	547
Arbors of West Bloomfield Drain 3	169	Owens Drain SOT137022	75
Arbors of West Bloomfield Drain 4	1,130	Palais Le Duc Drain	145
Arbors of West Bloomfield Drain 5	Dry	Park Ridge Drain	455
Blue Heron Drain	261	Peggy Drain	130
Brennan Drain	202	Peterson Drain	687
Case Drain	1,915	Robert Reid Drain	430
Chimney Hills Apartments Drain 1	491	Rouge River 9 and Inkster	931
Chimney Hills Apartments Drain 2	841	Rouge River Clarenceville Drain	610
Deconick Drain	639	Rouge River Tulane Drain	632
Donohue Drain 1	130	Rouge River Emily Drain	1,023
Donohue Drain 2	118	Rouge River Drake and Dewberry	468
Earlmoor Drain	109	Royal Pointe Drain 1	257
Edwards Drain	958	Royal Pointe Drain 2	430
Evans Drain	23,344	Silverbrook Villa Apartment Drain 1	186
Gronkowski Drain	290	Silverbrook Villa Apartment Drain 2	259

<u>Drain Name</u>	<u><i>E. coli</i> GEO MEAN cfu/100 ml</u>	<u>Drain Name</u>	<u><i>E. coli</i> GEO MEAN cfu/100 ml</u>
Hayes Drain	118	Silverbrook Villa Apartment Drain 3	459
Hazel Drain	424	Snyder Drain	1,709
Hidden Creek Drain	114	Southwyck Drain 1	178
Keego Harbor Drain	53	Southwyck Drain 2	525
Law Drain 1	159	Southwyck Drain 3	134
Law Drain 2	513	Southwyck Drain 4	36
Law Drain 3	728	Stewart Drain 1	465
Law Drain 4	720	Stewart Drain 2	890
Law Drain 5	697	Townline Drain	208
Luz Drain	293	Village Square Drain 1	107
Martha Washington Drain 1	36	Village Square Drain 2	100
Martha Washington Drain 2	249	Wagner Drain	397
McDonnell Drain	1,516	West Bloomfield Oaks Drain 1	Dry
Owens Drain SOT137024	49	West Bloomfield Oaks Drain 2	51

<u>Drain Name</u>	<u>HF 183 Marker GC/100 ml</u>	<u>Drain Name</u>	<u>HF 183 Marker GC/100 ml</u>
Case Drain	95		

Investigations Completed:

Owens Drain - The illicit discharge at 19244 E. Nine Mile Road in Southfield has been resolved.

Next Steps:

Evans Drain – Follow up required along the Evans Drain.

All other Drains will be resampled in 5 years

Other Systems / Non-sewered Areas

<u>Drain Name</u>	<u><i>E. coli</i> GEO MEAN cfu/100 ml</u>	<u>Drain Name</u>	<u><i>E. coli</i> GEO MEAN cfu/100 ml</u>
Patton Drain	86		

Next Steps: Patton Drain will be resampled in 5 years