FERNDALE

2023

Consumers' Annual Report on Water Quality

DELIVERY OF SAFE WATER IS
OUR PRIMARY MISSION

Drinking water quality is important to our community and the region. The City of Ferndale and the Great Lakes Water Authority (GLWA) are committed to meeting state and federal water quality standards including the Lead and Copper Rule. With the Great Lakes as our water source and proven treatment technologies, the GLWA consistently delivers safe drinking water to our community. Ferndale operates the system of water mains that carry this water to your home's service line. This year's Water Quality Report highlights the performance of GLWA and Ferndale water professionals in delivering some of the nation's best drinking water. Together, we remain committed to protecting public health and maintaining open communication with the public about our drinking water.

Our Essential Commodity...Water

The City of Ferndale Water Department wants you to know that your tap water meets or surpasses all federal and state standards for quality and safety. We are pleased to show you how we have surpassed water quality standards as mandated by the Environmental Protection Agency (EPA) and the State of Michigan Department of Environment, Great Lakes and Energy (EGLE).

The 2023 Annual Consumers' Report of Water Quality was compiled by your Department of Public Works and distributed to the community. This report is an unfunded mandate, requirement by the U.S. Environmental Protection Agency and the State of Michigan Department of Environment, Great Lakes & Energy. All water distributors are required to distribute an annual Water Quality Report.

The City of Ferndale and the Great Lakes Water Authority (GLWA) are proud of the fine drinking water they supply and are pleased to provide this informational report to you. The 2023 Consumers' Annual Report on Water Quality shows the sources of our water, lists the results of water quality tests, and contains important information about water and health. We will notify you immediately if there is ever any reason for concern about our water.

Ferndale and the Great Lakes Water Authority are committed to safeguarding our water supply and delivering the highest quality drinking water to protect public health. Please contact us with any questions or concerns about your water.

How Do We Get It

Your source water comes from the Detroit River, situated within the Lake St. Clair, Clinton River, Detroit River, Rouge River, Ecorse River watersheds in the U.S. and parts of the Thames River, Little River, Turkey Creek, and Sydenham watersheds in Canada. The State of Michigan Department of Environment, Great Lakes and Energy in partnership with the U.S. Geological Survey, the Detroit Water and Sewerage Department, and the Michigan Public Health Institute performed a source water assessment in 2004 to determine the susceptibility of GLWA's Detroit River source water for potential contamination. The susceptibility rating is based on a seven-tiered scale and ranges from very low to very high determined primarily using geologic sensitivity, water chemistry, and potential contaminant sources. The report described GLWA's Detroit River intakes as highly susceptible to potential contamination. GLWA's Northeast plant that draws water from the Detroit River has historically provided satisfactory treatment and meet drinking water standards.

GLWA has initiated source-water protection activities that include chemical containment, spill response, and a mercury reduction program. GLWA participates in the National Pollutant Discharge Elimination System permit discharge program and has an emergency response management plan. GLWA has a Surface Water Intake Protection plan for the Belle Isle Intake. The plan has seven elements that include: roles and duties of government units and water supply agencies, delineation of a source water protection areas, identification of potential sources of contamination, management approaches for protection, contingency plans, siting of new water sources, public participation, and public education activities. If you would like to know more information about the Source Water Assessment report, please, contact GLWA at (313) 926-8127.

How It Works

The Great Lakes Water Authority (GLWA) water treatment and transmission facilities operate twenty-four hours a day, seven days a week.

The treatment process begins with disinfecting the source water with chlorine to kill harmful microorganisms that can cause illness. Next, a chemical called Alum is mixed with the water to remove the fine particles that make the water cloudy or turbid. Alum causes the particles to clump together and settle.

The water then flows through fine sand filters called beds. These filters remove even more particles and certain microorganisms that are resistant to chlorine.

Finally, a small amount of phosphoric acid, flouride and chlorine are added to the treated water before it leaves the treatment plant. The phosphoric acid helps control the lead that may dissolve in water from household plumbing systems. Fluoride is added to protect teeth from cavities and decay. The chlorine keeps the water disinfected as it travels through the distribution system to your home.

In addition to this carefully controlled and monitored treatment process, the water is tested for a variety of substances before treatment, during various stages of treatment, and throughout the distribution system.

The GLWA, the third largest water and sewer utility in the country, provides water that not only meets safety and health standards, but also ranks among the top ten in the country for quality and value.

In order to ensure that tap water is safe to drink, the EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for human health.

Lead and Copper

Safe drinking water is a shared responsibility. The water that GLWA delivers to our community does not contain lead. Lead can leach into drinking water through home plumbing fixtures, and in some cases, customer service lines. Corrosion control reduces the risk of lead and copper from leaching into your water. *Ortho*-phosphates are added during the treatment process as a corrosion control method to create a protective coating in service pipes throughout the system, including in your home or business. The City of Ferndale performs required lead and copper sampling and testing in our community. Water consumers also have a responsibility to maintain the plumbing in their homes and businesses, and can take steps to limit their exposure to lead.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Ferndale is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you have a lead service line it is recommended that you run your water for five (5) minutes to flush water from both your home plumbing and the lead service line. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline 1-800-426-4791 or at **http://www.epa.gov/safewater/lead**.

Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.

Water Service Connections by Service Line Material		
Number of Lead Service Lines	**Number of Service Lines of Unknown Material**	**Total Number of Service Lines**
388	6,159	10,138
In 2022, the City of Ferndale replaced a total of 611 lead service lines and 145 copper lines. The City of Ferndale has replaced 501 lead service lines since 2023.		

KEY TO DETECTED CONTAMINANTS TABLE

SYMBOL	ABBREVIATION	DEFINITION/EXPLANATION
AL	Action Level	The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements which a water system must follow.
°C	Celcius	A scale of temperature in which water freezes at 0° and boils at 100° under standard conditions.
>	Greater Than	
HAA5	Haloacetic Acids	HAA5 is the total of bromoacetic, chloroacetic, dibromoacetic, dichloroacetic and trichloroacetic acids. Compliance is based on the total.
Level 1	Level 1 Assessment	A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in the water system.
LRAA	Locational Running Annual Average	The average of analytical results for samples at a particular monitoring location during the previous four quarters.
MCL	Maximum Contaminant Level	The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.
MCLG	Maximum Contaminant Level Goal	The level of contaminate in drinking water below which there is no known or expected risk to health. MCLG's allow a margin of safety.
MRDL	Maximum Residual Disinfectant Level	The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
MRDLG	Maximum Residual Disinfectant Level Goal	The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.
n/a	Not Applicable	
ND	Not Detected	
NTU	Nephelometric Turbidity Units	Measures the cloudiness of water.
pCi/L	Picocuries Per Liter	A measure of radioactivity.
ppb	Parts Per Billion (one in one billion)	The ppb is equivalent to micrograms per liter. A microgram = 1/1000 milligram.
ppm	Parts Per Million (one in one million)	The ppm is equivalent to milligrams per liter. A milligram = 1/1000 gram
RAA	Running Annual Average	The average of analytical results for all samples during the previous four quarters.
SMCL	Secondary Maximum Contaminant Level	
TT	Treatment Technique	A required process intended to reduce the level of a contaminant in drinking water.
TTHM	Total Trihalomethanes	Total Trihalomethanes is the sum of chloroform, bromodichloromethane, dibromochloromethane and bromoform. Compliance is based on total.
µmhos	Micromhos	Measure of electrical conductance of water

2023 Northeast Tap Water Mineral Analysis

Parameter	Units	Max.	Min.	Avg.
Turbidity	NTU	3.00	0.03	0.30
Total Solids	ppm	157	113	133
Total Dissolved Solids	ppm	159	101	129
Aluminum	ppm	0.071	0.018	0.038
Iron	ppm	0.4	0.2	0.3
Copper	ppm	0.003	0.001	0.002
Magnesium	ppm	8.3	6.7	7.7
Calcium	ppm	28.6	24.9	26.6
Sodium	ppm	7.3	4.6	5.4
Potassium	ppm	1.3	0.9	1.0
Manganese	ppm	ND	ND	ND
Lead	ppm	ND	ND	ND
Zinc	ppm	0.003	ND	ND
Silica	ppm	2.8	1.6	2.1
Sulfate	ppm	34.9	22.3	25.8
Chloride	ppm	14.0	7.5	10.4

Parameter	Units	Max.	Min.	Avg.
Phosphorus	ppm	0.66	0.36	0.47
Free Carbon Dioxide	ppm	16.4	6.7	10.0
Total Hardness	ppm	138	98	113
Total Alkalinity	ppm	94	68	81
Carbonate Alkalinity	ppm	ND	ND	ND
Bi-Carbonate Alkalinity	ppm	94	68	80
Non-Carbonate Hardness	ppm	48	8	32
Chemical Oxygen Demand	ppm	9.2	ND	4.6
Dissolved Oxygen	ppm	13.5	7.3	10.2
Nitrite Nitrogen	ppm	ND	ND	0.0
Nitrate Nitrogen	ppm	0.64	0.30	0.38
Fluoride	ppm	0.86	0.50	0.63
pH		7.35	7.03	7.21
Specific Conductance @ 25 °C.	µmhos	262	177	213
Temperature	°C	23.2	6.7	15.0

NORTHEAST WATER TREATMENT PLANT
2023 REGULATED DETECTED CONTAMINANTS TABLES

2023 Inorganic Chemicals – Annual Monitoring at Plant Finished Tap

Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Allowed Level MCL	Highest Level Detected	Range of Detection	Violation	Major Sources in Drinking Water
Fluoride Northeast	4/11/2023	ppm	4	4	0.65	n/a	No	Erosion of natural deposits; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate Northeast	4/11/2023	ppm	10	10	0.64	n/a	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.

Lead and Copper Monitoring at the Customer's Tap in 2023 / Northeast

Regulated Contaminant	Unit	Year Sampled	Health Goal MCLG	Action Level AL	90th Percentile Value*	Range of Individual Samples Results	Number of Samples Over AL	Major Sources in Drinking Water
Lead	ppb	2023	0	15	11	1-16	1	Lead service lines, corrosion of household plumbing including fittings and fixtures; erosion of natural deposits.
Copper	ppm	2023	1.3	1.3	0.1	0-0.12	0	Corrosion of household plumbing systems, emersion of natural deposits.

*The 90th percentile value means 90 percent of the homes tested have lead and copper levels below the given 90th percentile value. If the 90th perentile value is above the AL additional requirements must be met.

2023 Disinfectant Residuals – Monitoring in the Distribution System

Regulated Contaminant	Test Date	Unit	Health Goal MRDLG	Allowed Level MDRL	Highest Level RAA	Range of Quarterly Results	Violation	Major Sources in Drinking Water
Chlorine Residual Northeast	2023	ppm	4	4	0.69	0.55-0.76	No	Water additive, used to control microbes.

2023 Disinfection By-Products / Northeast
Stage 2 Disinfection By-Products Monitoring in the Distribution System

Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Allowed Level MCL	Highest Level LRAA	Range of Quarterly Results	Violation	Major Sources in Drinking Water
(TTHM) Trihalomethanes	2023	ppb	n/a	80	.0419	.0132	No	By-product of drinking water cholorination
Haloacetic Acids (HAA5)	2023	ppb	n/a	60	.0160	.0100	No	By-product of drinking water disinfection

Site ID FERNDALE-4 — **Location: 521 E. Cambourne, Ferndale, MI 48220**

Test Date	3/8/2023	6/6/2023	9/12/2023	12/11/2023	Locational Running Annual Average (LRAA)	Stage 2 Compliance Site
TTHM	.0132	.0284	.0419	.0182	0.025	X
HAA5	.0106	.0160	.0130	.010	0.012	X
Test Date	**3/21/2022**	**6/8/2022**	**9/22/2022**	**12/6/2022**	**Locational Running Annual Average (LRAA)**	**Stage 2 Compliance Site**
TTHM	0.0190	0.0344	0.0389	0.021	0.028	X
HAA5	0.0120	0.0220	0.0130	0.015	0.016	X

Note: 1) All Concentrations are expressed in millograms per liter (mg/L)
2) Maximum Contaminant Levels (MCLs) for TTHM & HAA5 are 0.080 mg/L & 0.060 g/L,respectively
3) LRAAs below 0.040 mg/L for TTHM and below 0.030 mg/L for HAA5 may qualify for reduced monitoring

2023 TURBIDITY – Monitored every 4 hours at the Plant Finished Water Tap

Highest Single Measurement Cannot Exceed 1 NTU	Lowest Monthly % of Samples Meeting Turbidity Limit of 0.3 NTU (minimum 95%)	Violation	Major Sources In Drinking Water
Northeast 0.11 NTU	100%	No	Soil Runoff

Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

Regulated Contaminant	TREATMENT TECHNIQUES	Typical Source of Contaminants
Total Organic Carbon ppm	The Total Organic Carbon (TOC) removal ratio is calculated as the ratio between the actual TOC removal and the TOC removal requirements. The TOC was measured each quarter and because the level was low, there is no requirement for TOC removal.	Erosion of natural deposits

2023 SPECIAL MONITORING

Contaminant	Test Date	Unit	MCLG	MCL	Highest Level Detected	Source of Contamination
Sodium Northeast	4/11/23	ppm	n/a	n/a	7.3	Erosion of nautural deposits

These tables are based on tests conducted by GLWA in the year 2023 or the most recent testing done within the last five calendar years. GLWA conducts tests throughout the year only tests that show the presence of a substance or require special monitoring are presented in these tables. The State allows us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. The data is representative of the water quality, but some are more than one year old.

Contaminants That Might Be There

- **Microbial** contaminants such as viruses and bacteria which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- **Inorganic** contaminants such as salts and metals, which can be naturally occurring or result from urban storm runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- **Pesticides and herbicides,** which may come from a variety of sources such as agriculture, urban storm runoff, and residential uses.
- **Organic chemical** contaminants, including synthetic and volatile organics products of industrial processes and petroleum which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.
- **Radioactive** contaminants, which can be naturally occuring or be the result of oil and gas production and mining activities.

The State allows us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. All of the data is representative of the water quality, but some are more than one year old.

Unregulated Contaminants

Unregulated Contaminants are those for which the EPA has not established drinking water standards. Monitoring helps the EPA determine where certain contaminants occur and whether it needs to regulate those contaminants.

Some other unregulated but monitored contaminants are: arsenic, coliform, e.coli, fluoride, nitrate, cryptosporidium giardia. and radon. Cryptosporidium is a microbial parasite found in surface water throughout the United States. Giardia is a tiny germ that lives in poop and can contaminate water, food or surfaces. Radon is a naturally occurring gas present in some groundwater. If found, assessment(s) are made to correct the problem. Your concerns about these contaminants and their potential health effects can be addressed by calling the EPA's Safe Drinking number, 1-800-426-4791.

Do Your Part

Water that enters our storm drains often flows directly to our local streams and rivers. You can help protect our waterways:

- Always recycle or dispose of household hazardous wastes properly.
- Don't pour motor oil, antifreeze or other toxic materials down storm drains.
- Don't flush paint thinners, insect sprays, herbicides and other harmful chemicals down the toilet or put them down the sink. (Check with the Public Works Department for the Household Hazardous Materials Drop-off Event.)
- Don't flush wipes, whether made from natural or synthetic materials, down the toilet because they do not instantly dissolve like toilet paper. In homes, wipes can cause interior pipes to clog and sewage to back-up into homes or the street.
- Do not discard rubber gloves, masks and any other litter onto streets or sidewalks because they can end up in our local waterways or at our waste water treatment plants where they can clog the infrastructure.

Your Drinking Water

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Administration's Safe Drinking Water Hotline at 800-426-4791.

The sources of drinking water (both tap and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Keeping You Healthy

Some people may be more vulnerable to contaminants in drinking water than is the general population. Immune-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline (800-426-4791).

Infants and children who drink water containing lead could experience delays in their physical and mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

Spanish-Speaking Individuals

"El informe contiene informacion importante sobre la calidad del agua en su comunidad. Traduzcalo o hable con alquien que lo entienda bien."

FERNDALE

521 East Cambourne
Ferndale, MI 48220

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If you would like more information about this report, please contact the Department of Public Works Water Department at 248-546-2519.

IMPORTANT NUMBERS

US Environmental Protection Agency | 800-426-4791

Department of Public Works | 248-546-2519
Water issues/concerns, such as service breaks, leaks, low pressure, illegal hydrant use, or water quality concerns (color, smell, taste, etc.)

Ferndale Police Department non-emergency | 248-541-3650
Water billing, water meter issues, or questions (high bills, leaks, etc.)

Water Billing Department | 248-546-2374
Mon-Thurs, 8:00 a.m.-5:30 p.m.

DEPARTMENT OF PUBLIC WORKS

248-546-2519

Mon-Thurs, 7:30 a.m.– 4:00 p.m.
Friday 7:30 a.m.–11:30 a.m.

PUBLIC PARTICIPATION IS ALWAYS WELCOME!

The **Great Lakes Water Authority (GLWA)** meets the fourth (4th) Wednesday of each month.

Call **844-455-4592** for information.

Ferndale City Council meets at 7:00 p.m. on the second and fourth Monday of each month. Meeting agendas are posted outside City Hall, located at 300 E. Nine Mile Road, and online at **www.ferndalemi.gov/council-meetings.**

We welcome your comments and feedback about this report and are happy to answer any questions you may have; please call us at 248-546-2519. This Water Quality Report describing the source and quality of your water is available on our city website, Facebook and Twitter.