



CITY OF WARREN

2017 ANNUAL WATER QUALITY REPORT



JAMES R. FOUTS, MAYOR

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Attention: Important Information on Water Quality and Safety

Drinking water quality is important to our community and the region. The City of Warren 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. City of Warren 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 City of Warren 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.

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 the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

The sources of drinking water (both tap water 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.

Contaminants that may be present in source water include:

- *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 water 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 water runoff, and residential uses.*
- *Organic chemical contaminants, including synthetic and volatile organics, which are by-products of industrial processes, petroleum production, and can also come from gas stations, and urban storm water runoff and septic systems.*
- *Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.*

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

"Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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)."

Your source water comes from the Detroit River, situated within Lake St. Clair, Clinton River, Detroit River, Rouge River, Ecorse River, in the US and parts of the Thames River, Little River, Turkey Creek and Sydenham watersheds in Canada. The Michigan Department of Environmental Quality in partnership with the US 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 potential contamination. The susceptibility rating is on a seven-tiered scale from "very low" to "very high" based primarily on geologic sensitivity, water chemistry, and contaminant sources. The susceptibility of our Detroit River source water intakes were determined to be highly susceptible to potential contamination. However, all four Detroit water treatment plants that use source water from Detroit River have historically provided satisfactory treatment of this source water to meet drinking water standards.

GLWA initiated source-water protection activities that include chemical containment, spill response, and a mercury reduction program. GLWA participates in a National Pollutant Discharge Elimination System permit discharge program and has an emergency response management plan. In 2015, received a grant from the Michigan Department of Environmental Quality to develop a source water protection program for the Detroit River intakes. The programs includes seven elements that include the following: roles and duties of government units and water supply agencies, delineation of a source water protection area, identification of potential of source water protection area, management approaches for protection, contingency plans, siting of new sources and public participation and education. If you would like to know more information about the Source Water Assessment or SWIPP, contact the City of Warren Water Division at (586) 759-9200.

Information about lead:

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. Orthophosphates 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 Warren performs required lead and copper

Lead Information Continued:

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 Warren 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 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 (800) 426-4719 or at <http://www.epa.gov/safewater/lead> or <http://www.epa.gov/drink/info/lead>

2017 Lead and Copper Monitoring at Customers' Tap								
Regulated Contaminant	Test Date	Units	Health Goal MCLG	Action Level AL	90 th Percentile Value*	Number of Samples Over AL	Violation Yes/No	Major Sources in Drinking Water
Lead	2017	ppb	0	15	0	0	No	Corrosion of household plumbing system; Erosion of natural deposits.
Copper	2017	ppm	1.3	1.3	0.1	0	No	Corrosion of household plumbing system; Erosion of natural deposits; Leaching from wood preservatives.

*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 percentile value is above the AL additional requirements must be met.

Detected Contaminant Tables:

The following tables list all the drinking water contaminants that were detected during the 2017 calendar year. The presence of these contaminants in the water does not necessarily indicate the water poses a health risk. Unless otherwise noted, the data presented in these tables are from testing conducted in 2017.

Key to Detected Contaminants Tables		
Symbol	Abbreviation for	Definition/Explanation
>	Greater than	
°C	Celsius	A scale of temperature in which water freezes at °0 and boils at °100 under standard conditions.
AL	Action Level	The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements, which a water system must follow.
HAA5	Haloacetic acids	HAA5 is the total of bromoacetic, chloroacetic, dibromoacetic, dichloroacetic, and trichloroacetic acids. Compliance is based on the total.
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. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
MCLG	Maximum Contaminant Level Goal	The level of contaminant in drinking water below which there is no known or expected risk to health.
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. MRDLGs 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.
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 the total.
µmhos	Micromhos	Measure of electrical conductance of water

2017 Regulated Detected Contaminants Tables

Contaminant	Test Date	Units	Health Goal MCLG	Allowed Level MCL	Highest Level Detected	Range of Detection	Violation Yes / No	Major Sources in Drinking Water
2017 Inorganic Chemicals – Monitoring at Plant Finished Water Tap								
Fluoride	5/16/2017	ppm	4	4	0.66	n/a	No	Erosion of natural deposits; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate	5/16/2017	ppm	10	10	.44	n/a	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Barium	5/16/2017	ppm	2	2	.01	n/a	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits

2017 Disinfectant By-Products – Monitoring in Distribution System Stage 2 Disinfection By-Products

Regulated Contaminant	Test Date	Units	Health Goal MCLG	Allowed Level MCL	Highest LRAA	Range of Detection	Violation	Major Sources in Drinking Water
Total Trihalomethane (TTHM)	2017	ppb	n/a	80	55	26 to 55	No	By-product of drinking water chlorination.
Haloacetic Acids (HAA5)	2017	ppb	n/a	60	20	6.8 to 20	No	By-product of drinking water disinfection.

2017 Disinfectant Residual – Monitoring in Distribution System

Regulated Contaminant	Test Date	Units	Health Goal MCLG	Allowed Level MCL	Highest LRAA	Range of Detection	Violation	Major Sources in Drinking Water
Total Chlorine Residual	Jan -Dec 2017	ppm	MRDGL 4	MRDL 4	0.78	0.66 - 0.82	No	Water additive used to control microbes.

2017 Turbidity – Monitored every 4 hours at 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 Yes/No	Major Sources in Drinking Water
0.18 NTU	100%	No	Soil Runoff.

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

Regulated Contaminant	Treatment Technique 2017	Typical Source of Contaminant
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 month and because the level was low, there is no requirement for TOC removal.	Erosion of natural deposits.

2017 Special Monitoring

Contaminant	MCLG	MCL	Level Detected	Source of Contamination
Sodium (ppm)	n/a	n/a	4.85	Erosion of natural deposits.

Collection and Sampling information in the table provided by GLWA, Water Quality Division, ML Semegen.

Great Lakes Water Authority voluntarily monitors for the protozoans *Cryptosporidium* and *Giardia*. The December 2017 untreated water sample collected at the Belle Isle intake contained 1 *Giardia* cyst. All other samples collected in the year 2017 were absent for the presence of *Cryptosporidium* and *Giardia* in the untreated water. Systems using surface water Like GLWA must provide treatment so that 99.9 percent of *Giardia lamblia* is removed or inactivated.

Unregulated Contaminants are those for which EPA has not established drinking water standards. Monitoring helps the EPA to determine where certain contaminants occur and whether it needs to regulate those contaminants. Beginning in July of 2008 – April 2009, the Detroit Water and Sewerage Department (DWSD) began monitoring quarterly for unregulated contaminants under the Unregulated Contaminant Monitoring Rule 2 (UCMR2). All the UCMR2 contaminants monitored on List 1 and List 2 in 2008 - 2009 were undetected.

In the spring of 2013, the City of Warren began monitoring quarterly for unregulated contaminants under the Unregulated Contaminant Monitoring Rule 3 (UCMR 3). Below is a summary of the UCMR 3 from the four sampling events in 2013 and part of 2014.

2013 Unregulated Contaminant Monitoring Rule - UCMR 3

Unregulated Contaminant	Test Date	Units	MRL	Range of Detection	Average Results
Chromium	May, August, Nov, 2013 & Feb 2014	ppb	0.2	0.067 – 0.35	0.26
Hexavalent Chromium	May, August, Nov, 2013 & Feb 2014	ppb	0.03	0.080 - 0.15	0.11
Strontium	May, August, Nov, 2013 & Feb 2014	ppb	0.3	0.10 - 115	67.2
Vanadium	May, August, Nov, 2013 & Feb 2014	ppb	0.2	.067 - .45	0.24

More information about contaminants and potential health effects can be obtained by visiting the EPA's website at <http://www.epa.gov/dwucmr/third-unregulated-contaminant-monitoring-rule> or by calling the **Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791)**.

CITY OF WARREN WATER DIVISION



JAMES R. FOUTS, MAYOR

A Message from the City of Warren

Delinquent Water Bills

The City of Warren has stepped up collections of unpaid water or sewage bills. **Delinquent water bills not paid within thirty (30) days after they become due may result in water and sewer services being shut-off at the property for non-payment.** If your water and /or sewer service is discontinued for non-payment, you will be charged a \$70.00 service fee in addition to any other unpaid fees including penalties per city ordinance, section 41-182. –Late payment; penalty. **Please pay your water bills on time.**

Minimize Water Use During Summer Months Between the Hours of 5 am and 11 PM

As warmer weather approaches, watering demands increase, what you may not know is that the time of day you use this water has a direct impact on our City water rates. The City of Warren purchases wholesale water from the GLWA.

The cost of buying water is based on peak rate demand which occurs during the hours of 5 am to 11 pm. The more water we use during this time period from May 15 through October 15 has significant impact on what GLWA charges Warren for its water.

Minimize your outdoor water usage between (5 am to 11 pm) for your irrigation systems and outdoor usage. Lawn irrigation systems are the main contributor to our peak hour demand. If we can shift when we water our lawns into the non-peak hours (11 pm to 5 am), we will be able to reduce rate increases. **Reduce our peak rate water usage by shifting your irrigation and other outdoor water consumption to the hours of 11 pm to 5 am.**

Pay Your Water Bill.

The City of Warren offers three (3) options to pay your water bill

- Direct Payment
- Easy Pay
- Credit/Debit Card and E-check Payment (3rd party fees apply)

Charges may apply to some of the payment options. Find the right payment method that meets your needs. Prompt payment will keep water account free of late charges.

Any questions, call Customer service at 586-759-9200.

Public Participation

The City of Warren 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 to the Warren Water Division at (586) 759-9200.

Know your water meter and how it works!

Low Flow Indicator

Dial

Odometer

Cubic Feet

1 cubic foot = 7.48 gallons
 10 cubic feet = 74.8 gallons
 100 cubic feet = 748 gallons = 1 unit on water bill

Your water meter looks similar to this one on the left:

Dial: One full rotation of the dial equals 1 cubic foot of water or 7.48 gallons and advances the far right digit on the odometer.

Low flow or leak indicator: Any water passing through the meter is detected, including small leaks which will register on the odometer.

Odometer: The odometer records total water use in a similar way as the odometer of your car records mileage driven. The water meter odometer records water use in cubic feet and displays as follows: The digits from right to left represent 1 cubic foot, 10 cubic feet, 100 cubic feet and so on. Like a car odometer, the water meter odometer cannot be altered.

The City of Warren measures water consumption by units for billing purposes: 1 unit of water billed = 100 cubic feet or 748 gallons.

Example: 2 units on your water bill = 200 cubic feet or 1,496 gallons of water.

Drinking Water Quality in the Home

THE WATER THAT GLWA DELIVERS TO THE CITY OF WARREN DOES NOT CONTAIN LEAD. LEAD CAN LEACH INTO DRINKING WATER THROUGH HOME PLUMBING FIXTURES, AND IN SOME CASES, CUSTOMER SERVICE LINES.

What steps can I take to maintain drinking water quality in my home?

Residents can take steps to protect water quality in their home. Actions that help to preserve water quality include:

- Use cold water for drinking and preparing food.
- Flush your tap before using it for drinking or cooking any time the water in a faucet has gone unused for more than 6 hours. Flushing the tap means running the cold water for 30 seconds to 2 minutes until it gets noticeably colder.
- Clean faucet aerators and strainers monthly. Replace aerators in poor condition.
- Clean and disinfect sinks and faucets regularly.
- Replace your refrigerator and icemaker filters according to the manufacturer's recommendations.
- Replace any other water filters used according to the manufacturer's recommendations.

Flushing tap water is a simple and inexpensive measure you can take to protect your family's health. When water stands in lead pipes or pipes with lead solder for several hours or more, the lead may dissolve into your drinking water. This means the first water drawn from the tap in the morning, or later in the afternoon after returning from work or school, may contain higher levels of lead.