

2019 Annual Water Quality Report



ATTENTION:

THIS IS AN IMPORTANT REPORT ON WATER QUALITY AND SAFETY

The City of Walled Lake wants you to know your tap water is safe to drink and that it meets or surpasses all federal and state standards for quality and safety.

We are proud and honored to provide this information to you.

Este informe contiene informacion sobre la calidad del agua en su comunidad.
Traduzcalo o hable con alguien que lo entiendo bien.

If you would like more information or a complete copy of this report, please contact the City of Walled Lake at (248) 624-4847.

The City Administration is pleased to present this year's Annual Water Quality Report (Consumer Confidence Report) as required by the Safe Drinking Water Act (SDWA). Drinking water quality is important to our community and the region. The City of Walled Lake 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. Walled Lake employs Oakland County Water Resources Commissioner (WRC) to act as the City's water system supply agent. WRC 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, WRC, and Walled Lake 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.

Where Does Our Water Come From?

The City of Walled Lake provides drinking water to approximately 7,000 residents. In addition to our own community, we provide drinking water to a limited area of the Village of Wolverine Lake and Commerce Township. The City purchases drinking water wholesale from the Great Lakes Water Authority (GLWA). Our system uses surface water drawn from Lake Huron that has been processed at a water treatment plant located in St. Clair County. More specifically, Walled Lake's source water comes from the lower Lake Huron watershed. The watershed includes numerous short, seasonal streams that drain to Lake Huron.

The Michigan Department of Environmental Quality 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 potential contamination. The susceptibility rating is a seven-tiered

scale ranging from "very low" to "very high" based primarily on geologic sensitivity, water chemistry, and contaminant sources. The Lake Huron source water intake is categorized as having a moderately low susceptibility to potential contaminant sources.



The Lake Huron water treatment plant has historically provided satisfactory treatment of this source water to meet drinking water standards. If you would like more information or a complete copy of this report, please call (248) 624-4847.

How Do We Know The Water Is Safe To Drink?

WRC, on behalf of the City of Walled Lake, examines the aesthetic quality of our water and routinely processes bacteriological samples, conducts chlorine residual tests, and monitors the water for lead and copper, as well as for disinfection and chlorination by-products. In addition to regular business hours, WRC is on-call 24 hours a day, 7 days a week, year round for system emergencies.

GLWA treatment facilities operate 24 hours a day, 7 days a week. The treatment process begins with disinfecting the source water with chlorine to kill harmful micro-organisms 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 to the bottom. Fluoride is also added to protect our teeth from cavities and decay.

The water then flows through fine sand filters called "beds". These filters remove even more particles and certain micro-organisms that are resistant to chlorine. Finally, a small amount of phosphoric acid and chlorine are added to the treated water just before it leaves the treatment plant. The phosphoric acid helps control lead that may dissolve in water from household plumbing systems. The chlorine keeps the water disinfected as it travels through water mains to reach your home.

In addition to a 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. Hundreds of samples are tested each week in certified laboratories by highly qualified, trained staff. GLWA water not only meets safety and health stand-

ards, but also ranks among the Top 10 in the country for quality and value.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants (see table on Page 2). 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 Agency's Safe Drinking Water Hotline at (800) 426-4791.

In order to ensure that tap water is safe to drink, 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 public health.

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

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 at (800) 426-4791.

In addition to required testing, our water system voluntarily tests for hundreds of additional substances and microscopic organisms to make certain our water is safe and of the highest quality.

In 2015, GLWA received a grant from the Michigan Department of Environmental Quality to develop a source water protection program for the Lake Huron water treatment plant intake. The program 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 more information about the Source Water Assessment or the SWIPP please contact the City of Walled Lake at (248) 624-4847.



“A safe and reliable source of drinking water is essential for life.”



What Can the City of Walled Lake Do To Keep Our Water Safe?

A safe and reliable source of drinking water is essential for life. Because our water supply is limited, you can help protect this valuable resource by disposing all household and hazardous waste in a proper and safe manner. Information on the proper disposal of household or hazardous waste (including the schedule of disposal day events) is available on the City of Walled Lake’s website at www.walledlake.com; at City Hall, DPW Building, and Library; and on RRRASO-

C’s website at www.rrrasoc.org.

Other activities that can help protect our water include:

- Not dumping garbage, chemicals, oil, yard waste, etc. into storm drains
- Not over-fertilizing
- Cleaning up after pets
- Properly storing household and vehicle cleaners, chemicals, and oil

•Preventing cross connections and back siphonage into the water system

To learn more about how you can help, please visit www.walledlake.com or call (248) 624-4847. Information is also available at City Hall.

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 and petroleum production, and can also come from gas stations, 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.

Key to Detected Contaminants Tables

Symbol	Abbreviation	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.
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.
Level 2	Level 2 Assessment	A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.
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 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. MRLDG’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.
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.
µohms	Microhms	Measure of electrical conductance of water

Important Health Information

Since 1992, with the cooperation of many residents, the City of Walled Lake has been testing homes with plumbing systems that may contribute lead to the household water supply. Our latest round of testing shows **none** of the homes tested have lead levels above the action level. 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 Walled Lake is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. Safe drinking water is a shared responsibility. The 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. WRC, on behalf of the City of Walled Lake, 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. 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 or at <http://www.epa.gov/safewater/lead>.

Detected Contaminants Tables

These tables are based on tests conducted by GLWA in the year 2019. We conduct many tests throughout the year; however, only tests that show the presence of a contaminant are shown.

Lake Huron Water Treatment Plant– 2019 Regulated Detected Contaminants Tables

2019 Inorganic Chemicals – Monitoring at the Plant Finished Water Tap								
Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Allowed Level MCL	Highest Level Detected	Range of Detection	Violation yes/no	Major Sources in Drinking Water
Fluoride	6-11-2019	ppm	4	4	0.61	n/a	no	Erosion of natural deposits; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate	6-11-2019	ppm	10	10	0.46	n/a	no	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Barium	5-16-2017	ppm	2	2	0.1	n/a	no	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.

2019 Disinfection By-Products – Monitoring in Distribution System, Stage 2 Disinfection By-Products								
Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Allowed Level MCL	Highest LRAA	Range of Detection	Violation yes/no	Major Sources in Drinking Water
Total Trihalomethanes TTHM	2019	ppb	n/a	80	78	78	no	By-product of drinking water chlorination
Haloacetic Acids HAA5	2019	ppb	n/a	60	14	14	no	By-product of drinking water disinfection

Regulated Contaminant	Test Date	Unit	Health Goal MRDLG	Allowed Level MRDL	Highest RAA	Quarterly Range of Detection	Violation yes/no	Major Sources in Drinking Water
Total Chlorine Residual	Jan-Dec 2019	ppm	4	4	0.84	0.65-0.92	no	Water additive used to control microbes

2019 Turbidity – Monitored every 4 hours at Plant Finished Water			
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
0.14 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.

2019 Lead and Copper Monitoring at Customers' Tap								
Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Action Level AL	90 th Percentile Value*	Number of Samples over AL	Violation yes/no	Major Sources in Drinking Water
Lead	2019	ppb	0	15	0	0	no	Corrosion of household plumbing system; Erosion of natural deposits.
Copper	2019	ppm	1.3	1.3	0	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.

Regulated Contaminant	Treatment Technique 2019	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 quarter and because the level was low, there is no TOC removal requirement	Erosion of natural deposits

Radionuclides 2014							
Regulated contaminant	Test date	Unit	Health Goal MCLG	Allowed Level	Level detected	Violation Yes/no	Major Sources in Drinking water
Combined Radium 226 and 228	5-13-14	pCi/L	0	5	0.86 + or - 0.55	no	Erosion of natural deposits

Contaminant	MCLG	MCL	Level Detected 2019	Source of Contamination
Sodium (ppm)	n/a	n/a	4.74	Erosion of natural deposits



Water Quality Report

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Report Also Available
on the Web!

www.walledlake.com

The City of Walled Lake
contracts with WRC who
are available

24 hours a day, 7 days a week

In Case of a
Water Emergency:

(248) 858-0931

City of Walled Lake Leaders

MAYOR'S OFFICE

Honorable Linda S. Ackley, Mayor, MPA
Honorable Casey Ambrose, Mayor Pro-Tem

CITY MANAGER'S OFFICE

L. Dennis Whitt, MBA, MPA, MSM, MALS
Chelsea Pesta, MPA, CMC, MiPMC II

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WALLED LAKE, MI

PERMIT NO. 3

ATTENTION:

THIS IS AN IMPORTANT REPORT ON WATER QUALITY AND SAFETY

The State and EPA require us to test our water on a regular basis to ensure its safety. The City of Walled Lake wants you to know that your tap water is safe to drink and that it meets or surpasses all federal and state standards for water quality and safety for the year 2019.

The City of Walled Lake will update this report annually and will keep you informed of any problems that may occur throughout the year as they happen. Hard copies are available at Walled Lake City Hall, Department of Public Works, and the Walled Lake City Library.

Reduce High Water Bills

Small leaks can cause high water bills. Eliminating these common sources of water leaks will save YOU money:

- Repair dripping faucets
- Replace worn out or repair leaking hot water tanks
- Repair leaking or running toilets
- Check for and repair furnace humidifier leaks
- Check for and repair leaking water lines and shut-off valves

Public Participation

The City of Walled Lake Council meets every month. Public hearings and meetings are also available to attend. To confirm dates and times, or for information on other activities happening in the department, please contact Walled Lake City Hall or visit www.walledlake.com. We welcome comments and opinions about this report, and will be happy to answer any questions you may have. For more information about safe drinking water, visit the U.S. Environmental Protection Agency website at <http://www.epa.gov/safewater/>

Help Us Lower Our Water Rate!

As mentioned before, the City of Walled Lake purchases water from GLWA. The factors that determine the rates charged by GLWA are:

- **Distance** from the water treatment plant
- **Elevation** (higher costs to pump to higher elevations)
- **Annual Water Usage**
- **Maximum Day Demand** (water usage in a 24 hour period during summer)
- **Peak Hour Demand** (water usage over a one hour period during summer)

To learn more on how you can help reduce our costs, and ultimately yours, please call the City at 248-624-4847 or visit www.walledlake.com.