

Customer Service Center  
City Hall  
1101 S. Saginaw St.  
Flint, MI 48501

Postage



The Consumers Annual Water Quality Report provides important information about your drinking water. This report includes information about the source of the water, health information, charts that summarize regulatory required testing results, and a table giving explanations of important terms to understand when viewing the test results. The City of Flint Department of Utilities is dedicated to providing quality drinking water to the residents of the community. The Flint Water Plant operates and maintains a certified drinking water laboratory to assure compliance with all state and federal regulations, and is committed to prompt and thorough notification to the consumers if there is any reason for concern about the quality of the drinking water. Information about your drinking water is available on the City of Flint web page at [www.cityofflint.com](http://www.cityofflint.com) or by calling the City of Flint Water Plant at (810) 787-6537. The Safe Drinking Water Hotline at (800) 426-4791 is a resource for health related questions and water quality issues. General drinking water information can also be found on the U.S. Environmental Protection Agency (EPA) web site at [www.epa.gov/safewater/](http://www.epa.gov/safewater/).

## *Water Source*

Your 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 Environment, Great Lakes, and Energy, (EGLE) f.k.a. Michigan Department of Environmental Quality (MDEQ), in partnership with the Detroit Water and Sewerage Department and several other governmental agencies, performed a Source Water Assessment (SWA) in 2004 to determine the susceptibility or relative potential of contamination. The susceptibility rating is on a seven-tiered scale ranging from “very low” to “very high” based primarily on geologic sensitivity, water chemistry, and contamination 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.

Great Lakes Water Authority (GLWA) voluntarily developed and received approval in 2015 for a surface water intake protection program (SWIPP) for the Lake Huron Water Treatment Plant. The program includes the following seven elements: 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 SWA or the SWIPP, please contact your water department at (810) 787-6537.

## *General Information*

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 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 at (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 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.

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.

## General Information (cont.)

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-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 individuals 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).

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.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Infants and young children are typically more vulnerable to lead in drinking water than the general population. Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or 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.

### **\*Important Information About 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 Flint 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 your 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 (800-426-4791) or at <http://www.epa.gov/safewater/lead>.

The City of Flint, at the time of publishing, has 29,250 active service lines. Of these 29,250 service lines, 21,373 have been replaced or are known to be copper. There are 7,877 service lines that are of unknown composition.

Officials recommend that all residents use water filters provided by the state in areas where construction activities are taking place to remove or replace service lines.

## Moving Forward

The City of Flint and the Great Lakes Water Authority are committed to safeguarding our water supply and delivering the highest quality drinking water to protect public health. The following pages of this report include the results of 2018 regulatory testing. If you have any questions about this report or other water related concerns please contact the City of Flint Water Treatment Plant at (810)787-6537.

## Contact Information

Water Treatment Plant:	(810) 787-6537
Water Service Center:	(810) 787-7202
Water Pollution Control:	(810) 766-7210
Customer Service:	(810) 766-7015

## City of Flint & Great Lakes Water Authority - Lake Huron Water Treatment Plant

### Water Quality Data

The table below lists all the drinking water contaminants that we detected during the 2018 calendar year. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done January 1 – December 31, 2018. 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.

#### Terms and abbreviations used below:

- Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
- Maximum Contaminant Level (MCL): 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.
- Maximum Residual Disinfectant Level (MRDL): 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.
- Maximum Residual Disinfectant Level Goal (MRDLG): 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.
- Minimum Reporting Level (MRL): The minimum concentration that can be reported by a laboratory as a quantitated value for a method analyte in a sample following analysis.
- Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.
- N/A: Not applicable ND: not detectable at testing limit ppb: parts per billion or micrograms per liter ppm: parts per million or milligrams per liter pCi/l: picocuries per liter (a measure of radioactivity).
- Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

Regulated Contaminant	MCL, TT, or MRDL	MCLG or MRDLG	Level Detected	Range	Date Sampled	Violation Yes / No	Typical Source of Contaminant
<b>Inorganic Contaminants – GLWA Lake Huron Water Treatment Plant</b>							
Barium (ppm)	2	2	0.01	n/a	5-16-17	No	Discharge of drilling wastes; Discharge of metal refineries; Erosion of natural deposits
Nitrate (ppm)	10	10	0.33	n/a	6-12-18	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Fluoride (ppm)	4	4	0.76	n/a	6-12-18	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Sodium <sup>1</sup> (ppm)	n/a	n/a	5.21	n/a	2018	No	Erosion of natural deposits.
Turbidity <sup>2</sup> (NTU)	TT	n/a	0.17	n/a	2018	No	Soil Erosion
Highest single turbidity reading cannot exceed 1 NTU				Lowest monthly % of turbidity samples meeting the turbidity limit of 0.3 NTU (Minimum of 95%) 100%			
Turbidity is a measure of the cloudiness of water. We monitor it because it is a good indicator of water quality. High turbidity can hinder the effectiveness of disinfectants.							

Regulated Contaminant	MCL, TT, or MRDL	MCLG or MRDLG	Level Detected	Range	Date Sampled	Violation Yes / No	Typical Source of Contaminant	
<b>Disinfectants &amp; Disinfection By-Products – Flint Distribution System</b>								
TTHM - Total Trihalomethanes (ppb)	80	n/a	43.7	14.3 - 49.8	2018	No	Byproduct of drinking water disinfection	
HAA5 Haloacetic Acids (ppb)	60	n/a	17.75	8 - 21	2018	No	Byproduct of drinking water disinfection	
Chlorine <sup>3</sup> (ppm)	4	4	1.4	1.28 - 1.67	2018	No	Water additive used to control microbes	
<b>Disinfectants &amp; Disinfection By-Products – GLWA Lake Huron Water Treatment Plant</b>								
Total Organic Carbon	TT	The Total Organic Carbon (TOC) 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	
<b>Radioactive Contaminants – GLWA Lake Huron Water Treatment Plant</b>								
Combined radium 226, 228 (pCi/L)	5	0	0.86 + or – 0.55	n/a	5-13-14	No	Erosion of natural deposits	
<b>Lead and Copper Monitoring – Customer Taps</b>								
<i>Inorganic Contaminant Subject to AL</i>	Action Level	MCLG	Your Water <sup>4</sup>	Range of Results	Year Sampled	# of Samples Above AL	Does System Exceed AL? Yes / No	Typical Source of Contaminant
Sampled from the City of Flint distribution system January 1, 2018 to June 30, 2018								
Lead (ppb)	15	0	6	0-725	2018	10	No	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	1.3	1.3	0.090	0 – 8.35	2018	2	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Sampled from the City of Flint distribution system July 1, 2018 to December 31, 2018								
Lead (ppb)	15	0	4	0 – 20	2018	2	No	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	1.3	1.3	0.050	0 – 0.17	2018	0	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

<sup>1</sup> Sodium is not a regulated contaminant.

<sup>2</sup> Turbidity is monitored every 4 hours at the Lake Huron Water Treatment Plant.

<sup>3</sup> The chlorine “Level Detected” was calculated using a running annual average.

<sup>4</sup> 90% of the samples were at or below the level reported for our water.

### **Additional Monitoring**

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.

Unregulated Contaminant Name	Average Level Detected	MRL	Year Sampled <sup>1</sup>	Comments
Chromium (ppb)	0.4	0.2	2014	Results of monitoring are available upon request.
Molybdenum (ppb)	2.3	1.0	2014	Results of monitoring are available upon request.
Hexavalent Chromium (ppb)	0.4	0.03	2014	Results of monitoring are available upon request.
Strontium (ppb)	130	0.3	2014	Results of monitoring are available upon request.

<sup>1</sup> Sampled under the third unregulated contaminant monitoring rule

## **Per- and polyfluoroalkyl substances (PFAS) and perfluorooctanoic acid (PFOA)**

The City of Flint is pleased to inform its water system customers that the water was tested for per- and polyfluoroalkyl substances (PFAS). Samples were collected from the Great Lakes Water Authority (GLWA) Lake Huron Water Treatment Plant January 16, 2018. The results for PFAS showed Not Detectable (ND).

### **What are Per- and polyfluoroalkyl substances (PFAS) and why are they harmful?**

Per- and polyfluoroalkyl substances (PFAS), sometimes called PFCs, are a group of chemicals that are resistant to heat, water, and oil. PFAS have been classified by the U.S. Environmental Protection Agency (EPA) as an emerging contaminant on the national landscape. For decades, they have been used in many industrial applications and consumer products such as carpeting, waterproof clothing, upholstery, food paper wrappings, fire-fighting foams, and metal plating. They are still used today. PFAS have been found at low levels both in the environment and in blood samples of the general U.S. population.

These chemicals are persistent, which means they do not break down in the environment. They also bioaccumulate, meaning the amount builds up over time in the blood and organs. Studies in people who were exposed to PFAS found links between the chemicals and increased cholesterol, changes in the body's hormones and immune system, decreased fertility, and increased risk of certain cancers.

### **Are there health advisory levels?**

The EPA has not established enforceable drinking water standards, called maximum contaminant levels, for these chemicals. However, EPA has set a lifetime health advisory (LHA) level in drinking water for two PFAS: perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS). The PFOA and PFOS LHA is the level, or amount, *below which no harm is expected from these chemicals*. The LHA level is 70 parts per trillion (ppt) for PFOA and 70 ppt for PFOS. If both PFOA and PFOS are present, the LHA is 70 ppt for the combined concentration.

The estimated levels of PFOA and PFOS combined in the samples collected from the Lake Huron Treatment Plant Intake showed Not Detectable (ND). Not Detectable would be considered well below the LHA of 70 ppt. There are many other PFAS compounds that currently do not have LHA levels. For information on PFOA, PFOS and other PFAS, including possible health outcomes, you may visit these websites: <https://www.epa.gov/pfas>; [www.atsdr.cdc.gov/pfas](http://www.atsdr.cdc.gov/pfas); or <http://www.michigan.gov/pfasresponse>.

### **Why was the GLWA source water tested for PFAS?**

The DEQ coordinated sampling in our raw water supply to help characterize Lake Huron raw water quality.

### **Who can I call if I have questions about PFAS in my drinking water?**

If any resident has additional questions regarding this issue, the State of Michigan Environmental Assistance Center can be contacted at 800-662-9278. Representatives may be reached to assist with your questions Monday – Friday, 8:00 AM to 4:30 PM. You may also contact the City of Flint Water Plant at (810) 787-6537.

### **Is it safe to eat fish in these areas?**

Wild fish samples are being collected from local lakes and rivers. These samples will be analyzed to determine the levels of PFAS in fish and make recommendations on how much is safe to eat. Some information is already available in the State of Michigan Eat Safe Fish guides, which are available at [www.michigan.gov/eatsafefish](http://www.michigan.gov/eatsafefish).

### **May I bathe or swim in water containing PFAS?**

Yes, PFAS does not easily absorb into the skin. It is safe to bathe, as well as do your laundry and household cleaning. It is also safe to swim in and use recreationally.

## **How can PFAS affect people's health?**

Some scientific studies suggest that certain PFAS may affect different systems in the body. The National Center for Environmental Health (NCEH)/Agency for Toxic Substances and Disease Registry (ATSDR) is working with various partners to better understand how exposure to PFAS might affect people's health.

If you are concerned about exposure to PFAS in your drinking water, please contact the MDHHS Toxicology Hotline at 800-648-6942 or the CDC/ATSDR: <https://www.cdc.gov/cdc-info/> or 800-232-4636. Currently, scientists are still learning about the health effects of exposures to PFAS, including exposure to mixtures.

## **What other ways could I be exposed to PFOA, PFOS and other PFAS compounds?**

PFAS are used in many consumer products. They are used in food packaging, such as fast food wrappers and microwave popcorn bags; waterproof and stain resistant fabrics, such as outdoor clothing, upholstery, and carpeting; nonstick coatings on cookware; and cleaning supplies, including some soaps and shampoos. People can be exposed to these chemicals in house dust, indoor and outdoor air, food, and drinking water. Usually the amounts of PFAS a person may be exposed to is quite small.

## **What is being done about this issue?**

State and local agencies are actively working to obtain more information about this situation as quickly as possible. Additional testing of the drinking water will be conducted to demonstrate that the PFAS levels are consistent, and reliably below the existing LHA. Additional monitoring in and around Lake Huron Watershed and other affected areas will also be performed by DEQ, which will help us answer more questions and determine next steps.

## **How can I stay updated on the situation?**

The state has created a website where you can find information about PFAS contamination and efforts to address it in Michigan. The site will be updated as more information becomes available. The website address is <http://michigan.gov/pfasresponse>

## **[Notice of Reporting Violation](#)**

The City of Flint did not meet the deadline to submit its Annual Cross Connection Report to the State of Michigan as required by March 31, 2018. The report was submitted to the State of Michigan on May 11, 2018.