

City of Sylvan Lake

2018 Water Quality Report



We are pleased to present you with our 2018 Annual Water Quality Report. Drinking water quality is important to our community and the region. The City of Sylvan 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. The City of Sylvan Lake 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 the City of Sylvan Lake 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.

This report is designed to inform you about the quality of water and services *we deliver to you every day*. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources.

The sources of drinking water (both tap and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over 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. It is reasonably expected that all drinking water, including bottled water, will contain at least small amounts of some contaminants. It's important to remember that the presence of contaminants does not necessarily pose 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 1-800-426-4791.

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 Environmental Quality in partnership with the Detroit Water and Sewerage Department and several other governmental agencies performed a source water assessment 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.

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 to know more information about the Source Water Assessment report please, contact your water department (248) 682-1440.

Is my water safe?

Last year, as in years past, your tap water met all U.S. Environmental Protection Agency (EPA) and state drinking water health standards. The City of Sylvan Lake and the GLWA routinely monitor your drinking water for contaminants according to Federal and State laws. 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 public health.

Contaminants that may be present in source water include:

Microbiological Contaminants such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.

Pesticides and Herbicides may come from a variety of sources such as agriculture, urban storm water runoff and residential uses.

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.

Organic Chemical Contaminants including synthetic and volatile organics, which are byproducts of industrial processes and petroleum production. They can also come from gas stations, urban storm water runoff and septic systems.

Radioactive contaminants can be naturally occurring or be the result of oil and gas production and mining activities.

Key to the Detected Contaminants Table

In the following table, you will find many terms and abbreviations you might not be familiar with.

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. 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.
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

The following tables show the results of testing done on our water coming from the Lake Huron water treatment plant and from our own water system. The tables indicate the test date, the level of contaminants detected and a description of possible ways they may enter a water system.

Lake Huron Water Treatment Plant 2018 Regulated Detected Contaminants Tables

2018 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	6-12-2018	ppm	4	4	0.76	n/a	no	Erosion of natural deposits; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate	6-12-2018	ppm	10	10	0.33	n/a	no	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Barium	5-16-2017	ppm	2	2	0.01	n/a	no	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits

2018 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	2018	ppb	n/a	80	38.4	38.4	No	By-product of drinking water chlorination	
Haloacetic Acids HAA5	2018	ppb	n/a	60	10	10	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 2018	ppm	4	4	0.83	0.79-0.87	no	Water additive used to control microbes	

2018 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
0.17 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.					

2017 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	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.								

Regulated Contaminant	Treatment Technique 2018	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 2018	Source of Contamination
Sodium (ppm)	n/a	n/a	5.21	Erosion of natural deposits

What does this mean?

As you can see by the tables, our system had no violations. We're proud that your drinking water exceeds all Federal and State requirements. As expected, we found through our monitoring and testing that some contaminants have been detected. The EPA has determined that your water IS SAFE at these levels.

MCL's are set at very stringent levels. To understand the possible health effects for many regulated contaminants, a person would have to drink two liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having any health effect.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised people, such as people with cancer undergoing chemotherapy, people 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 microbiological contaminants are available from the Safe Drinking Water Hotline at 800-426-4791.

In 1996 the City of Sylvan Lake was required to begin routinely monitoring the levels of lead and copper in our drinking water. This testing must follow very specific guidelines regarding locations to be tested and the testing procedure. To date, we have not had any levels exceed the maximum allowable. If present, elevated levels of lead can cause serious health problems, especially for pregnant women, infants, and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Sylvan Lake is responsible for providing high quality drinking water. However, it is possible that lead levels at your home may be higher than at other homes in the City because of materials in your home's plumbing. 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) 426-4791, or at <http://www.epa.gov/safewater/lead>.

In 2007, Stage 2 DBPR (Disinfectant Bi-Product Rule) monitoring went into effect. We are required to routinely testing for Total Trihalomethanes (TTHM) and Haloacetic Acids (HAA5). These tests follow very specific guidelines regarding when and where the tests are to be conducted. They also have very strict requirements on how the samples are taken. Since testing began, we have not exceeded the maximum goal. TTHM, also known as total trihalomethanes, are tested by collecting one sample, for chloroform, bromodichloromethane, dibromochloromethane, and bromoform. HAA5, also known as haloacetic acids, are tested by collecting one sample, for monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, and dibromoacetic acid.

What about "rusty" water? Rust is oxidized iron which is not harmful. How many of us take iron tablets? It can originate from a water main or your own plumbing. Tap water can turn reddish brown due to iron particles that break free from sediment inside corroded iron or steel pipes. It can also occur naturally in some drinking water sources, especially wells. Though rusty water may look or taste unpleasant, it does not pose a health concern. A possible exception is people with hemochromatosis which is a very rare disorder. On its own, rusty water is not a sign of harmful bacteria or lead.

In providing drinking water we not only want it to be safe for consumption, we want to provide it at the lowest cost possible. We know that water and sewer rates have increased dramatically over the past several years *and will continue to do so*. Providing safe drinking water as well as adequate fire protection, requires repair, maintenance, and upgrades to an aging utility system. Those costs in addition to the cost of purchasing safe, tested, and treated drinking water are what determine the cost that is passed on to you as a consumer. We regularly evaluate all the variables in the cost of the water (and sewer) systems to determine the proper fees.

The City of Sylvan Lake 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. We ask that all our customers help us protect our water sources, which are the heart of our community, our way of life and our children's future.

Sincerely,



John Martin,
City Manager, State of Michigan Waterworks System Operator