



City of Lapeer

2016 Consumers Confidence Water Quality Annual Report

Attention: This is an Important Report on Water Quality and Safety

This information is an overview of the quality of water that the City of Lapeer provided to you in 2016 and a notification for the 2017 water monitoring program for well #4. This report will show you the source of our water; list water test results; and it also contains important information about water and health.

About Our System

The City of Lapeer water system consists of approximately 369,600 linear feet of water main (70 miles), 1,306 gate valves, 776 fire hydrants and four (4) back-up wells. Water main size throughout the City varies from 4" to 20". The wells provide a back-up water supply in the event the Great Lakes Water Authority System (GLWA) fails. Our wells are capable of producing 4 million gallons a day, and on average the City uses 1.2 million gallons per day.

The Water Division has a wide range of duties that are necessary for providing continuous service and safe drinking water. Our goal along with GLWA is to ensure safe drinking water and provide the highest quality of service to our customers. The City of Lapeer Water Department consists of a determined group of individuals who are vigilant in improving methods and procedures to meet new challenges in maintaining a safe drinking water system.

The water we receive is surface water from Lake Huron. Great Lakes Water Authority (GLWA) water plant is located five miles north of Port Huron. Water for treatment at the Lake Huron plant arrives via a deep tunnel with an intake located 5 miles out in Lake Huron – at a depth of 45'.

January 1, 2016 was the official date in which the City of Detroit no longer controlled the regional potable water supply. The process of restructuring and converting assets from Detroit Water to the newly formed Great Lakes Water Authority (GLWA) took several years. Great Lakes Water Authority is an independent entity in that the authority's operations are administered through a director who works with a board in providing this region with safe drinking water. The board is made up of representatives from community's that purchases water from GLWA. These representatives hold their seat for a four year term. As a result of this process the City of Detroit is now a customer of the GLWA vs. being the owner and operator. In that this report represents water information pertaining to 2004 in which Detroit water is identified as the water provider for the City of Lapeer. For additional information on Great Lakes Water Authority please visit their web page at www.glwater.org.

In the event that concern over water quality develops, the city will notify you immediately through cable, radio, television, and newspapers.

GLWA - How Do We Know the Water is Safe to Drink?

GLWA treatment facilities operate 24 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 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 microorganisms 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 the 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.

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

GLWA not only meets safety and health standards, but also ranks among the top 10 in the country for water quality and value.

Source water protection Lake Huron intake; for communities receiving water from the Lake Huron Plant:

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 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.

GLWA voluntarily developed and received approval in 2016 for a source water protection program (SWIPP) 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 source water protection areas, 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 the SWIPP please, contact GLWA **(313)-926-8102** or visit their web site at **www.glwater.org**

Include information about **UCMR3 monitoring** if it was conducted and you detected any chemicals. The latest information must be report annually for 5 years.

If you have questions regarding this source water or a complete copy of this report, please contact the City of Lapeer (810) 664-4711.

Additional Information

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.

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.*

Drinking water, including bottle 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 at **(800) 426-4791**.

People with special Health concerns:

"Some people may be more vulnerable to contaminants in drinking water than is 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 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 at other homes in the community as a result of materials used in your homes plumbing. If you are concerned about elevated levels of lead 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 at **(800) 426-4791** or at <http://www.epa.gov/safewater/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 Lapeer is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your homes 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 at (800) 426-4791 or at <http://www.epa.gov/safewater/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 Lapeer performs required lead and copper sampling and testing in our community following the Department of Environmental Quality sampling procedure and sample periods. 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.

Additional Lead and Copper information can be found at www.ci.lapeer.mi.us and www.glwater.com

2016 Key to Detected Contaminants Tables		
Symbol	Abbreviation for	Definition/Explanation
MCLG	Maximum Contaminant Level Goal	The level of contaminant in drinking water below which there is no known or expected risk to health.
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.
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.
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.
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.
NTU	Nephelometric Turbidity Units	Measures the cloudiness of water.
LRAA	Locational Running Annual Average	
mg/l	Milligrams per liter	1/1 million= 0.000001 and the same as ppm
Ug/l	Microgram per liter	1/1 billion = 0.000000001 and the same as ppb
ND	Not Detected	
RAA	Running Annual Average	
TT	Treatment Technique	A required process intended to reduce the level of a contaminant in drinking water.
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.
TTHM	Total Trihalomethanes	Total Trihalomethanes is the sum of chloroform, bromodichloromethane, dibromochloromethane, and bromoform. Compliance is based on the total.
pCi/l	Picocuries per liter	A measure of radioactivity
n/a	Not applicable	
umhos	Micromhos	Measure of electrical conductance of water
°C	Celsius	A scale of temperature in which water freezes at 0° and boils at 100° under standard conditions.
>	Greater than	

The table on this page is a key to the terms used in the tables shown on the next page.

**Great Lakes Water Authority Distribution System,
Lake Huron Water Treatment Plant and City of Lapeer
2016 Regulated Detected Contaminants Tables**

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
GLWA - Inorganic Chemicals – Monitoring at the Plant Finished Water Tap								
Fluoride	5/10/16	ppm	4	4	0.50	n/a	no	Erosion of natural deposits; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate	5/10/16	ppm	10	10	.46	n/a	no	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.

City of Lapeer - 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)	2016	ppb	n/a	80	55	15-55	No	By-product of drinking water chlorination
Haloacetic Acids Five (HAA5)	2016	ppb	n/a	60	26	2.4-26	No	By-product of drinking water disinfection

GLWA - Disinfectant Residuals Monitoring in Distribution System by Treatment Plant								
Regulated Contaminant	Test Date	Unit	Health Goal MRDGL	Allowed Level MRDL	Highest RAA	Quarterly Range of Detection	Violation yes/no	Major Sources in Drinking Water
Total Chlorine Residual	Jan-Dec 2016	ppm	4	4	0.79	0.61 – 0.85	no	Water additive used to control microbes
Regulated Contaminant	Treatment Technique							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

City of Lapeer - 2014 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	2014	ppb	0	15	4.0 ppb	0	No	Corrosion of household plumbing system; Erosion of natural deposits.
Copper	2014	ppm	1.3	1.3	0.035 ppm	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.								

GLWA-Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Allowed Level MCL	Level Detected	Violation yes/no	Major Sources in Drinking Water
Combined Radium 226 and 228	5/13/2014	pCi/L	0	5	0.86 + or - 0.55	no	Erosion of natural deposits

GLWA - Contaminant	MCLG	MCL	Level Detected	Source of Contamination
Sodium (ppm)	n/a	n/a	4.00	Erosion of natural deposits

2016 Turbidity – Monitored every 4 hours at Plant Finished Water Tap-GLWA			
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
.28 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.			

City of Lapeer - 2016 Microbiological Contaminants – Monthly Monitoring in Distribution System					
Regulated Contaminant	MCLG	MCL	Highest Number Detected	Violation yes/no	Major Sources in Drinking Water
Total Coliform Bacteria	0	Presence of Coliform bacteria > 5% of monthly samples	0	No	Naturally present in the environment.
<i>E.coli</i> Bacteria	0	A routine sample and a repeat sample are total coliform positive, and one is also fecal or <i>E. coli</i> positive.	0	No	Human waste and animal fecal waste.

Regulated Contaminant	Treatment Technique	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

- The State allows us to monitor for certain contaminants less than once per year because of 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.

Monitoring and Reporting Requirements:

The State and EPA requires us to test our water on a regular basis to ensure its safety. The EPA recommends reporting results from any voluntary monitoring that is above a proposed MCL or above a level of concern. The detected unregulated contaminants in the tables shown do not meet these criteria.

We have met all of the monitoring and reporting requirements for 2016.

Important Notice: In 2017 the City of Lapeer did not meet the monitoring requirement, from January 1, 2017 to March 31, 2017 for Arsenic monitoring at one of our wells. The City has four wells for use as a back-up water supply. The City took the sample and mailed the sample to DEQ; however, the sample was lost in the mail.

Our mailing procedure has changed so this does not happen again. The City will use UPS to deliver samples to the DEQ Lab in Lansing. In using UPS we set-up delivery notification to our email to inform us that the sample has arrived at the lab. UPS is also an overnight delivery service. In revising our mailing procedure allows for additional time to re-sample if the sample is lost or damaged preventing future monitoring violations.

This violation of monitoring and reporting Arsenic does not pose a threat to our customers or to your primary water supply quality. As a water customer there is nothing you need to do. This is not an emergency. You do not need to boil your water or use an alternative water source. In addition, our wells (Back-up) water supply was not used as a primary water supply in the months of January 1, 2017 to March 31, 2017.

Even though this is not an emergency and this did not impact your primary water source, as our customers, you have a right to know what happened and what we did to correct the situation.

The table below provides an overview of well #4 sampling requirement for arsenic, what was done to correct the monitoring violation, and future sample dates:

Contaminant	Required sampling frequency	Number of samples taken	When samples should have been taken	Corrective measure -new sample taken on the following date:
Arsenic	1 sample every 3 months	0	January 1,2017 to March 31, 2017	April 17, 2017
	May 6, 2017	1	April 1, 2017 to June 31, 2017	In compliance
	August 7,2017	Scheduled	July 1,2017 to September 31,2017	Pending
	November 6,2017	Scheduled	October 1,2017 to December 3, 2017	Pending

If you have any question or concerns regarding this monitoring violation, please contact Pam Reid, Director of Public Works, at 810-664-4711.

Water Conservation:

Everyone can play a role in water conservation. Water conservation not only protects the environment, but may help reduce your utility bill. Water conservation is being aware of how you are using water and adding measures to reduce your water usage. Listed below are a few tips:

- Toilets are the most common cause for high water bills. It is an unseen and often unheard leak that goes down the sewer. To check a toilet for leaks add food dye to the tank, wait 15 to 20 minutes without flushing. If the food coloring appears in the bowl, there is a leak. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak.
- Turn off your water when brushing your teeth. You lose between 4 to 6 gallons of water when you leave the water on while you brush.
- On the average 5% of your water consumption is used in the kitchen. There are several things you can do to reduce this water usage such as; scrape dishes without using water and don't rinse them before putting them in a dishwasher; clean vegetables in a pan of water rather than under running tap water, then use that water to give your plants a drink; run the dishwasher only when it is full; and use the garbage disposal sparingly.
- Fix dripping faucets. A faucet that drips 60 times per minute can waste up to 3 gallons per day or 1,225 gallons each year.
- Additional information can be found on our web site at www.ci.lapeer.mi.us

Cross Connections:

What is a cross connection? A cross connection is a connection where non-drinking water or contaminants can enter the drinking water system through backflow or a back siphon. A back siphon can occur when pressure is reduced causing suction that pulls contaminants into the drinking water system. A main break is an example of what can cause a back siphon. Back pressure can take place when pressure inside a building becomes greater than the public water system pressure. Back pressure can be created by a fire suppression pump or other pressure creating equipment used in manufacturing. Back flow devices are required at specific locations as a safety precaution to assist in preventing back flow that is created by a back siphon or back pressure.

A cross connection can pose a serious health issue and are prohibited within a drinking water system. Cross-connection inspections are performed throughout the year to ensure a cross connection does not exist within a business or a residential sprinkler system and backflow devices are tested annually.

Outside water taps and garden hoses are the most common sources of cross-connection contaminations at home. A garden hose can create a hazard when left submerged in a bucket of dirty water or if laying on the ground it may be contaminated by fertilizers, cesspools, or garden chemicals.

We are committed to providing you safe, reliable, and healthy water. We are pleased to provide you with this information to keep you fully informed about your water. We will be updating this report annually, and will also keep you informed of any problems that may occur throughout the year, as they happen. Copies are available at City Hall, the Department of Public Works and the County Health Department. This report will not be sent to you.

We welcome your comments and opinions about this report and will be happy to answer any questions you may have. Please direct your comments or questions to Pam Reid - City of Lapeer, Water Department at (810) 664-4711.

Agradecemos sus comentarios y opiniones acerca de este informe y estaremos encantados de responder a cualquier pregunta que usted pueda tener. Por favor, dirija sus comentarios o preguntas a Pam Reid - Ciudad de Lapeer, en el Departamento de Aguas (810) 664-4711.