

# **Lenox Township Department of Public Works 2021 Consumers Annual Report On Water Quality**

Attention: THIS IS AN IMPORTANT REPORT ON WATER QUALITY AND SAFETY  
This report contains important information about your drinking water. Have someone translate it for you or speak with someone who understands it.

**Lenox Township's Department of Public Works (DPW) 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.**

The Lenox Township DPW is proud of the fine drinking water it supplies and is honored to provide this report to you. The 2021 Consumers Annual Report on Water Quality shows the sources of our water, lists the results of our tests, and contains important information about water and health. The Lenox Township DPW will notify you immediately if there is ever any reason for concern about our water. We are pleased to show you how we have surpassed water quality standards as mandated by the Environmental Protection Agency (EPA) and the State of Michigan Department of Environmental Quality (MDEQ).

## **About Our System**

Lenox Township DPW provides drinking water to approximately 3,000 people in the 36 square mile area. The system uses water drawn from two master meters. The water traversing through the master meter is supplied and purchased from the Great Lakes Water Authority, otherwise known as GLWA for information purposes throughout this report, the water supplied to Lenox Township from GLWA is from the Lake Huron treatment plant.

## **The Great Lakes Water Authority**

January 1, 2016 marked the launch of a regional water authority in southeast Michigan. The City of Detroit, the counties of Macomb, Oakland, Wayne, and the State of Michigan have officially united to form the Great Lakes Water Authority (GLWA). The new authority is yet one more piece of the grand bargain to not only position an emerging Detroit for long term success but to give the suburban water and sewer customers a powerful voice in the management and direction of one of the largest water and wastewater utilities in the nation. GLWA begins management control of the regional water and wastewater services, while Detroit, like suburban communities throughout the region, will retain control of water and sewer services within the City limits. The GLWA has signed a 40-year lease with Detroit for \$50 million a year. Detroit will use these funds to overhaul its aging infrastructure. The lease also provides for a \$4.5 million Water Residential Assistance program to help low income customers of GLWA customer communities pay their water bills. GLWA is comprised of six board members: two from the City of Detroit, and one each from Wayne, Oakland, and Macomb Counties, plus one representing the State of Michigan.

For more information, please visit The Great Lakes Water Authority website: [www.glwater.org](http://www.glwater.org)

## **Great Lakes Water Authority**

The Great Lakes Water Authority (GLWA) provides drinking water to approximately 4.0 million people in 126 southeastern Michigan Communities. The system uses water drawn from two intakes in the Detroit River, one to the north near the mouth of Lake St. Clair and one to the south near Lake Erie. The water is directed to four (4) large water treatment plants for processing. A fifth water treatment plant located in St. Clair County uses surface water from Lake Huron. 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 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 contaminant sources. The Lake Huron water treatment plant has historically provided satisfactory treatment of this source water to meet drinking water standards.

In 2021, the Michigan Department of Environment, Great Lakes and Energy approved GLWA’s updated Surface Water Intake Protection Plan for the Lake Huron Water Intake. The plan has seven elements: roles and duties of government units and water supply agencies, delineation of a source water protection areas, identification of potential sources of contamination, management approaches for protection, contingency plans, siting of new water sources, public participation, and public education activities if you would like to know more information about the Source Water Assessment Report. Please, contact GLWA at (313) 926-8102.

## **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.

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

## Important Health 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 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 (E.coli), which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely-compromised immune systems.
- ✓ 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. Infants and children who drink water containing lead 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. 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.
- ✓ Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses. Infants below the age of 6 months who drink water containing nitrate or nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
- ✓ 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. Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Fluoride in drinking water at half the MCL or more may cause mottling of children's teeth, usually in children less than 9 years old. Mottling, also known as dental fluorosis, may include brown staining or pitting of the teeth, or both, and occurs only in developing teeth before they erupt from the gums.
- ✓ Radioactive contaminants which can be naturally occurring or be the result of oil and gas production and mining activities, 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 the data is representative of the water quality, but some are more than one year old.

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.

## **Lead**

Lenox Township has tested homes with plumbing systems that may contribute lead to the household water supply. The latest round of testing shows that **none** of the homes tested have lead levels above the action level, all of the approximately 200 service lines connected utilize copper plumbing. **There are no homes in Lenox Township with lead service lines.** There are homes constructed prior to the mid 1980's that may have interior lead solder joint plumbing. 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. Lenox Township DPW 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 the water for drinking or cooking. If you have a lead service line it is recommended that you run your water for 5 minutes to flush water from both your home plumbing and the lead service line. If you are concerned about lead in your water, you may wish to have it 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>.

You can take the following precautions to minimize your exposure to lead that may have leached into your drinking water from your pipes.

- Run your water for 30 seconds to 2 minutes. This practice should be followed anytime your water has not been used for more than 6 hours.
- Always use cold water for drinking, cooking, or making baby formula.
- Use faucets and plumbing material that are either lead free or will not leach unsafe levels of lead into your water.

## Key to the Detected Contaminants Table

Symbol	Abbreviation	Definition/Explanation
AL	Action Level	The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements which a water system must follow.
°C	Celsius	A scale of temperature in which water freezes at 0° and boils at 100° under standard conditions.
>	Greater than	
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.
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.
SMCL	Secondary Maximum Contaminant Level	An MCL which involves a biological, chemical or physical characteristic of water that may adversely affect the taste, odor, color or appearance (aesthetics), which may thereby affect public confidence or acceptance of the drinking water.
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

## Contaminants Table

### 2021 Lake Huron Regulated Detected Contaminants Table

2021 Inorganic Chemicals - Annual Monitoring at Plant Finished Tap								
Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Allowed Level MCL	Highest Level Detected	Range of Detection	Violation	Major Sources in Drinking Water
Fluoride	04/13/2021	ppm	4	4	0.62	n/a	no	Erosion of natural deposit; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate	04/13/2021	ppm	10	10	0.31	n/a	no	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Barium	05-16-2017	ppm	2	2	0.01	n/a	no	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.

Lead and Copper Monitoring at the Customer's Tap in 2021								
Regulated Contaminant	Unit	Year Sampled	Health Goal MCLG	Action Level AL	90 <sup>th</sup> Percentile Value*	Range of Individual Samples Results	Number of Samples Over AL	Major Sources in Drinking Water
Lead	ppb	2021	0	15	0 ppb	0 ppb - 12ppb	0	Lead services lines, corrosion of household, plumbing including fittings and fixtures; erosion of natural deposits.
Copper	ppm	2021	1.3	1.3	0.1 ppm	0.0ppm - 0.4ppm	0	Corrosion of household plumbing system; Erosion of natural deposits; leaching from wood preservatives.

\* The 90<sup>th</sup> percentile value means 90 percent of the homes tested have lead and copper levels below the given 90<sup>th</sup> percentile value. If the 90<sup>th</sup> percentile value is above the AL additional requirements must be met.

2021 Disinfection Residual - Monitoring in the Distribution System								
Regulated Contaminant	Test Date	Unit	Health Goal MRDLG	Allowed Level MRDL	Highest Level RAA	Range of Quarterly Results	Violation	Major Sources in Drinking Water
Total Chlorine Residual	2021	ppm	4	4	0.8	0.72-0.87	no	Water additive used to control microbes

2021 Disinfection By-Products - Stage 2 Disinfection By-Products Monitoring in the Distribution System								
Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Allowed Level MCL	Highest Level LRAA	Range of Quarterly Results	Violation	Major Sources in Drinking Water
(TTHM) Total Trihalomethanes	2021	ppb	n/a	80	57.25	40-71	no	By-product of drinking water chlorination
(HAA5) Haloacetic Acids	2021	ppb	n/a	60	18.45	4.8-32	no	By-product of drinking water chlorination

**2021 Turbidity - Monitored Every 4 Hours at the 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	Major Sources in Drinking Water
0.09 NTU	100%	no	Soil Runoff

Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.

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 is measured each quarter and because the level is low, there is no requirement for TOC removal.	Erosion of natural deposits

**Radionuclides - Monitored at the Plant Finished Tap in 2014**

Regulated Contaminant	Test Date	Unit	MCLG	MCL	Level Detected	Violation	Major Sources in Drinking Water
Combined Radium Radium 226 and 228	5/13/14	pCi/L	0	5	0.86 ± 0.55	no	Erosion of natural deposits

**2021 Special Monitoring**

Contaminant	Test Date	Unit	MCLG	MCL	Highest Level Detected	Source of Contaminant
Sodium	4/13/2021	ppm	n/a	n/a	4.23	Erosion of natural deposits

*These tables are based on tests conducted by GLWA in the year 2021 or the most recent testing done within the last five calendar years. GLWA conducts tests throughout the year only tests that show the presence of a substance or require special monitoring are presented in these tables. 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. The data is representative of the water quality, but some are more than one year old.*

## About Unregulated Contaminant Monitoring

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

Unregulated Contaminant	Average Level Detected	Range	Year Sampled	Comments
[Name of Unregulated Contaminant] (unit)				
[Name of Unregulated Contaminant] (unit)				

## 2021 Lake Huron Tap Water Mineral Analysis

Parameter	Units	Max.	Min.	Avg.	Parameter	Units	Max.	Min.	Avg.
Turbidity	NTU	0.11	0.04	<b>0.07</b>	Chloride	ppm	10.1	8.4	<b>9.6</b>
Total Solids	ppm	164	70	<b>124</b>	Phosphorus	ppm	0.48	0.36	<b>0.40</b>
Total Dissolved Solids	ppm	148	68	<b>113</b>	Free Carbon Dioxide	ppm	8.3	4.4	<b>5.8</b>
Aluminum	ppm	0.139	0.023	<b>0.060</b>	Total Hardness	ppm	107	85	<b>98</b>
Iron	ppm	0.3	0.1	<b>0.2</b>	Total Alkalinity	ppm	78	72	<b>75</b>
Copper	ppm	0.001	ND	<b>0.000</b>	Carbonate Alkalinity	ppm	0	0	<b>0</b>
Magnesium	ppm	8.3	6.0	<b>7.4</b>	Bi-Carbonate Alkalinity	ppm	78	72	<b>74</b>
Calcium	ppm	27.7	20.5	<b>25.0</b>	Non-Carbonate Hardness	ppm	29	13	<b>24</b>
Sodium	ppm	16.1	4.0	<b>5.8</b>	Chemical Oxygen Demand	ppm	5.0	ND	<b>1.9</b>
Potassium	ppm	1.1	0.8	<b>1.0</b>	Dissolved Oxygen	ppm	12.6	8.3	<b>10.5</b>
Manganese	ppm	ND	ND	<b>0.000</b>	Nitrite Nitrogen	ppm	ND	ND	<b>0.0</b>
Lead	ppm	ND	ND	<b>0.000</b>	Nitrate Nitrogen	ppm	0.37	0.29	<b>0.33</b>
Zinc	ppm	0.003	ND	<b>0.001</b>	Fluoride	ppm	0.80	0.59	<b>0.67</b>
Silica	ppm	2.5	1.8	<b>2.2</b>	pH		7.53	7.25	<b>7.42</b>
Sulfate	ppm	22.4	17.3	<b>19.3</b>	Specific Conductance @ 25 °C	µmhos	312	188	<b>222</b>
					Temperature	°C	68.2	4.2	<b>19.2</b>

### People with Special Health Concerns

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. Some people who drink trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer. 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).



## **Cryptosporidium**

Cryptosporidium is a microbial parasite found in surface water throughout the U.S. Although filtration removes cryptosporidium, the most commonly used filtration methods cannot guarantee 100% removal. Our monitoring indicates the presence of these organisms in our source/ finish water. Current test methods do not allow us to determine if the organisms are dead or alive. Ingestion of Cryptosporidium may cause cryptosporidiosis, an abnormal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people, infants and small children, and the elderly are at greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult with their doctor regarding appropriate precautions to take to avoid infection. Cryptosporidium must be taken in through the mouth to cause disease and it may be passed by other means than drinking water.

## **Opportunities for Public Participation**

The Lenox Township Board of Trustees meets the first Monday of each month. This meeting is for the general public to address the Board of Trustees with any problems or situations that the Board should be aware of. This meeting does not discuss the quality of water and any questions regarding water quality will be directed to the office of the DPW.

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 the Lenox Township DPW at (586) 749-0230.

## **Other Monitoring**

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

*"El informe contiene informacion importante Sobre la calidad del agua en su comunidad. Tradumalo o hable con alguien que lo entienda bien"*