

## 2022 Lake Huron Regulated Detected Contaminants Table

2022 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	7-12-2022	ppm	4	4	0.71	n/a	no	Erosion of natural deposit; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate	7-12-2022	ppm	10	10	0.51	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 2022								
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	2022	0	15	1 ppb	0 ppb – 6ppb	0	Lead services lines, corrosion of household plumbing including fittings and fixtures; Erosion of natural deposits.
Copper	ppm	2022	1.3	1.3	0.1 ppm	0.0 ppm – 0.2 ppm	0	Corrosion of household plumbing systems; Erosion of natural deposits

\* 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.

2022 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	2022	ppm	4	4	0.79	0.64-0.85	no	Water additive used to control microbes

2022 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	2022	ppb	n/a	80	26.4 ppb	N/A	no	By-product of drinking water chlorination
(HAA5) Haloacetic Acids	2022	ppb	n/a	60	21 ppb	N/A	no	By-product of drinking water chlorination

2022 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
0.35 NTU	98.4%		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.

Regulated Contaminant	Treatment Technique	Typical Source of Contaminant
<b>Total Organic Carbon ppm</b>	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
<b>Combined Radium Radium 226 and 228</b>	5/13/14	pCi/L	0	5	<b>0.86 ± 0.55</b>	<b>no</b>	Erosion of natural deposits

2022 Special Monitoring						
Contaminant	Test Date	Unit	MCLG	MCL	Highest Level Detected	Source of Contaminant
<b>Sodium</b>	7-12-2022	ppm	n/a	n/a	<b>5.4</b>	Erosion of natural deposits

*These tables are based on tests conducted by GLWA in the year 2022 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.*

## 2022 Lake Huron Tap Water Mineral Analysis

Parameter	Units	Max.	Min.	Avg.	Parameter	Units	Max.	Min.	Avg.
Turbidity	NTU	0.44	0.04	0.09	Phosphorus	ppm	0.48	0.39	0.36
Total Solids	ppm	156	98	100	Free Carbon Dioxide	ppm	7.3	4.5	4.8
Total Dissolved Solids	ppm	142	108	100	Total Hardness	ppm	104	80	77
Aluminum	ppm	0.072	0.011	0.027	Total Alkalinity	ppm	90	74	66
Iron	ppm	0.4	0.2	0.2	Carbonate Alkalinity	ppm	ND	ND	ND
Copper	ppm	0.008	ND	0.001	Bi-Carbonate Alkalinity	ppm	90	74	66
Magnesium	ppm	8.4	7.2	6.2	Non-Carbonate Hardness	ppm	30	ND	11
Calcium	ppm	27.2	24.3	20.8	Chemical Oxygen Demand	ppm	6.6	ND	3.5
Sodium	ppm	5.3	4.5	4.0	Dissolved Oxygen	ppm	14.0	9.2	9.7
Potassium	ppm	1.1	0.9	0.8	Nitrite Nitrogen	ppm	ND	ND	ND
Manganese	ppm	0.001	ND	ND	Nitrate Nitrogen	ppm	0.51	0.30	0.31
Lead	ppm	ND	ND	ND	Fluoride	ppm	0.79	0.62	0.57
Zinc	ppm	0.070	ND	0.008	pH		7.60	7.36	6.21
Silica	ppm	2.5	1.6	1.8	Specific Conductance @ 25 °C	µmhos	228	159	170
Sulfate	ppm	24.0	18.2	17.7	Temperature	°C	22.2	5.6	10.8
Chloride	ppm	10.6	8.3	8.0					

## 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 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

# 2022 Water Quality Report for City of Imlay City

This report covers the drinking water quality for the City of Imlay City for the calendar year 2022. This information is a snapshot of the quality of water we provided to you in 2022. Included are details about where your water comes from, what it contains, and how it compares to Environmental Protection Agency (EPA) and state standards.

The City of Imlay City purchases its water from the Great Lakes Water Authority (GLWA). GLWA operates a water treatment plant north of Port Huron from which we receive our water via a 72" transmission line. Drinking water quality is important to our community and the region. The City of Imlay City and the 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 Imlay City 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 Imlay City's 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.

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 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."

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 children who drink water containing lead could experience delays in their physical and 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.

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 home's plumbing. If you are concerned about elevated lead levels 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 (800-426-4791).

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 Imlay City 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 water for drinking or cooking. If you have a service line that is lead, galvanized previously connected to lead, or unknown but likely lead, it is recommended that you run your water for at least 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 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 1-800-426-4791 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 your home and business. The City of Imlay City performs required lead and copper sampling and testing in our community. Water customers also have a responsibility to maintain the plumbing in their homes and businesses, and can take steps to limit their exposure to lead.

The City of Imlay City completed a Preliminary Distribution System Materials Inventory in 2019. As a Complete Distribution System Materials Inventory is compiled, researching records, and physical verification provides more accurate data. The water distribution system consists of 1,112 service lines. Of those service lines, 668 contain neither lead, nor galvanized previously connected to lead. 144 service lines likely do not contain lead, and 300 service lines in the system are of unknown materials.

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 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.

GLWA has initiated source-water protection activities that include chemical containment, spill response, and a mercury reduction program. GLWA participates in the National Pollutant Discharge Elimination System permit discharge program and has an emergency response management plan. GLWA has a 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) 926-8127.

The City of Imlay City received a Treatment Technique Violation for failure to maintain corrosion control treatment within required ranges. These optimal corrosion control parameters were not maintained as required from August 13 through August 26, 2022 due to use of the City's emergency stand-by wells. The City's stand-by wells were utilized due to a GLWA transmission main break. The issue was resolved when the GLWA main was repaired, and the City began receiving GLWA water, which includes corrosion control treatment. Infants and children who drink water containing lead could experience delays in their physical and 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.

The City of Imlay City 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 State and EPA require us to test our water on a regular basis to ensure its safety. Every customer will not be mailed a copy of this report. If you would like to know more information about your drinking water or a copy of this report, please, visit our website [www.imlaycity.org](http://www.imlaycity.org) or contact your water department (810) 724-2135, Ed Priehs, [epriehs@imlaycity.org](mailto:epriehs@imlaycity.org)