

City of Gibraltar

Water and Sewer Department

2020 Consumers Annual Report on Water Quality

June 2021 - WQR No. 23

ATTENTION: THIS IS A REPORT ON WATER QUALITY AND SAFETY AND CONTAINS IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER. HAVE SOMEONE TRANSLATE IT FOR YOU, OR SPEAK WITH SOMEONE WHO UNDERSTANDS IT.

The City of Gibraltar is proud of the water it supplies and is honored to provide this report to you.

The Great Lakes Water Authority and the City of Gibraltar Water and Sewer Department want 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.

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

We will update this report annually and will keep you informed of any problems that may occur throughout the year, as they happen. Copies are available at Gibraltar City Hall (29450 Munro Ave.) and at the Gil Talbert Community Center (29340 S. Gibraltar Rd.). This report will not be sent to you.

About Our System

The Great Lakes Water Authority provides drinking water to approximately 4.2 million people in 126 southeastern Michigan communities, including the City of Gibraltar. 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. The City of Gibraltar receives water from the Southwest Treatment Plant.

Detroit River Intakes

Your source water comes from the Detroit River, situated within the Lake St. Clair, Clinton River, Detroit River, Rouge River, Ecorse River, watersheds in the U.S. and parts of the Thames River, Little River, Turkey Creek and Sydenham watersheds in Canada. The Michigan Department of Environment, Great Lakes and Energy (EGLE) 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 on a seven-tiered scale from "very low" to "very high" based primarily on geologic sensitivity, water chemistry, and contamination sources. The susceptibility of our Detroit River source water intakes were determined to be highly susceptible to potential contamination. However, all four Detroit water treatment plants that use source water from Detroit River have historically provided satisfactory treatment of this source water to meet drinking water standards.

GLWA initiated source-water protection activities that include chemical containment, spill response, and a mercury reduction program. GLWA participates in a National Pollutant Discharge Elimination System permit discharge program and has an emergency response management plan. In 2016, the Michigan Department of Environmental Quality approved the GLWA Surface Water Intake Protection Program plan. The programs include seven elements that include the following: 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's 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. Highly qualified, trained staff test hundreds of samples each week in GLWA's certified laboratories. Detroit water not only meets safety and health standards, but also ranks among the top 10 in the country for quality and value.

Additional 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 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 number 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.

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 1-(800-426-4791).

National Primary Drinking Water Regulation Compliance

Monitoring and Reporting to the Department of Environment, Great Lakes, and Energy (EGLE) Requirements: The State of Michigan and the U.S. EPA require us to test our water on a regular basis to ensure its safety. We met all the monitoring and reporting requirements for 2020.

Other Monitoring

In addition to testing, we are required to perform; our water system voluntarily tests for hundreds of additional substances and microscopic organisms to make certain our water is safe and of the highest quality. If you are interested in a more detailed report, contact the City of Gibraltar Water and Sewer Department at (734) 676-3952.

Educational Information about Lead & Copper

If present, elevated levels of lead can cause serious health problems, especially for pregnant women, infants and young children. Infants and children who drink water containing lead could experience delays in their physical or mental development. Children could show slight defects in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Gibraltar is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. Our water supply has approximately 30 lead service lines out of a total number of 1,600 service lines. 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 1-(800-426-4791) or at <http://www.epa.gov/safewater/lead>.

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.

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 Gibraltar performs required lead and copper sampling and testing in our community. 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.

-Run your water for 30 seconds to 2 minutes, or until it feels cold. 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 materials that are either lead free or will not leach unsafe levels of lead into your water.

Cost Comparison

In Gibraltar, the tap water costs **\$8.04 per 1000 gallons**. Bottled water ranges anywhere from **\$1 to \$4 per gallon**.

* Sewage disposal fees are in addition to water usage.

Opportunities for Public Participation

The City of Gibraltar and the Great Lakes Water Authority are committed to safeguarding our water supply and delivering the highest quality drinking water to protect public health.

We invite public participation in decisions that affect drinking water quality. The City of Gibraltar's Council Meetings are held the 2nd and 4th Monday of each month at 6:30 p.m. in the Council Chambers at the City of Gibraltar Municipal Complex, 29450 Munro, Gibraltar, MI. For more information about your water, or the contents of this report, contact Chelsea Johnson at 734-676-3900 ext. 218. For more information about safe drinking water, visit the U.S. EPA at <http://www.epa.gov/safewater>.

2009 Cryptosporidium Language

Cryptosporidium is a microbial pathogen found in surface water throughout the U.S. Although filtration removes Cryptosporidium, the most commonly used filtration methods cannot guarantee 100 percent removal. Our monitoring indicates the presence of these organisms in our source water. Cryptosporidium was detected once, during a twelve-month period at our Detroit River intake plants. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of Cryptosporidium may cause cryptosporidiosis, an abdominal 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 their doctor regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water.

2020 Southwest Regulated Detected Contaminants Table

2020 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	3-10-2020	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	3-10-2020	ppm	10	10	0.61	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.

2020 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	2020	ppm	4	4	0.62	0.49-0.72	no	Water additive used to control microbes

2020 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	2020	ppb	n/a	80	80	34	no	By-product of drinking water chlorination
(HAA5) Haloacetic Acids	2020	ppb	n/a	60	60	14	no	By-product of drinking water chlorination

2020 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
0.13 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	0.65 ± 0.54	no	Erosion of natural deposits

Lead and Copper Monitoring at the Customer's Tap in 2020									
Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Action Level AL	90 th Percentile Value*	Number of Samples Over AL	Range of Individual Samples Results	Violation	Major Sources in Drinking Water
Lead	2020	ppb	0	15	3 ppb	0	0 – 5 ppb	no	Lead services lines, corrosion of household, plumbing including fittings and fixtures; erosion of natural deposits"
Copper	2020	ppm	1.3	1.3	0.5 ppm	1	0.0 – 2.6 ppm	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.

2020 Special Monitoring						
Contaminant	Test Date	Unit	MCLG	MCL	Highest Level Detected	Source of Contaminant
Sodium	3-10-2020	ppm	n/a	n/a	6.81	Erosion of natural deposits

These tables are based on tests conducted by GLWA in the year 2020 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. All of 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.

Example UCMR table IF NEEDED

Unregulated Contaminant	Test date	Unit	Average Level Detected	Range of Detection	Major Sources in Drinking Water

2020 Southwest Mineral Analysis

Parameter	Units	Max.	Min.	Avg.
Turbidity	NTU	0.50	0.04	0.17
Total Solids	ppm	167	46	142
Total Dissolved Solids	ppm	162	89	127
Aluminum	ppm	0.172	0.022	0.072
Iron	ppm	0.183	ND	0.114
Copper	ppm	ND	ND	ND
Magnesium	ppm	8.36	6.88	7.54
Calcium	ppm	34.8	24.6	28.4
Sodium	ppm	7.78	4.51	5.35
Potassium	ppm	1.31	0.93	1.04
Manganese	ppm	ND	ND	ND
Lead	ppm	ND	ND	ND
Zinc	ppm	ND	ND	ND
Silica	ppm	2.7	1.6	2.0
Sulfate	ppm	37.5	19.7	26.1

Parameter	Units	Max.	Min.	Avg.
Chloride	ppm	13.9	8.3	9.6
Phosphorus	ppm	1.24	0.1 2	0.48
Free Carbon Dioxide	ppm	16.7	6.0	8.6
Total Hardness	ppm	118	95	104
Total Alkalinity	ppm	78	66	73
Carbonate Alkalinity	ppm	ND	ND	ND
Bi-Carbonate Alkalinity	ppm	78	66	73
Non-Carbonate Hardness	ppm	40	25	31
Chemical Oxygen Demand	ppm	6.0	ND	2.7
Dissolved Oxygen	ppm	12.6	7.8	10.3
Nitrite Nitrogen	ppm	ND	ND	ND
Fluoride	ppm	0.76	0.5 6	0.68
pH		7.39	6.9 7	7.25
Specific Conductance @ 25 °C.	µohm s	274	213	231
Temperature	°C	24.1	1.8	12.6

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, di-bromoacetic, 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 our 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. MCLGs allow a margin of safety.
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 all analytical results for all samples during the previous four quarters.
SMCL	Secondary Maximum Contaminant Level	
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	Microohms	Measure of electrical conductance of water