City of Belleville

6 Main Street ◇ Belleville, MI 48111-2788

David Robinson, City Manager

734-697-9323 ◇ Fax 734-697-6837 ◇ www.belleville.mi.us

2022

City of Belleville Water Department

Consumer Confidence Report

The Belleville Water Department wants you to know that your tap water is safe to drink and that it meets or surpasses all Federal and State standards for quality and safety.

Overview

The City of Belleville is proud of the fine drinking water it provides. This annual water quality report shows the source of our water, lists the results of our tests and contains much important information about water and health. Belleville Water Department will notify you immediately if there is any reason for concern about your water. We are happy to show you how we have surpassed water-quality standards. You will receive reports like this each and every year by July 1 regarding your water.

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

Water Source

The City of Belleville water is supplied by the Great Lakes Water Authority from its Southwest Water Treatment Plant. The Great Lakes Water Authority provides drinking water to approximately 4.2 million people in 126 Michigan Communities. The City of Belleville purchased over 111,425,000 gallons of water in 2019.

The system uses water drawn from the Detroit River through a 12-foot diameter intake that is approximately 120-feet deep. The line slopes to a depth of 132-feet in approximately one mile where it connects at a vertical shore shaft, which causes raw water to rise and enter a land tunnel. The 12-foot diameter shore or land tunnel travels another 3 miles to the Southwest plant's low lift pumps. The many miles of deep raw water tunnels are periodically inspected either by divers or with cameras for structural integrity and zebra mussel infestation.

Your source water comes from the Detroit River, situated within the Lake St. Clair, Clinton River, Detroit River, Rouge River, Ecorse River, in the U.S. and parts of the Thames River, Little River, Turkey Creek and Sydenham watersheds in Canada. 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 GLWA's Detroit River source water for potential contamination. The susceptibility rating is based on a seven-tiered scale and ranges from "very low" to "very high" determined primarily on geologic sensitivity, water chemistry, and potential contaminant sources. The report described GLWA's Detroit River

intakes as highly susceptible to potential contamination. However, all four GLWA water treatment plants that service the City of Detroit and draw water from the Detroit River have historically provided satisfactory treatment and 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 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 of sources of contamination, management approaches for protection, contingency plans, siting of new 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 Our Water Is Safe?
We obtain water from the Great Lakes Water Authority whose treatment facilities operate 24 hours a day, 7 days a week. The treatment process begins with the disinfecting the source water with chlorine to kill harmful microorganisms that can cause illness. Next, 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 the water from household plumbing systems. The chlorine keeps the water disinfected as it travels through water mains to reach your home.

The water is tested for a variety of substances before treatment, during various stages of treatment and throughout the distribution system on a regular basis. The City of Belleville has several testing locations that are tested regularly by the Great Lakes Water Authority. If any contaminates are detected at an unacceptable level, the City as well as the residents will be notified. All of the City of Belleville samples have tested negative for total coliform bacteria.

Unregulated Contaminants
Unregulated contaminants are those for which the EPA has not established drinking water standards. Monitoring helps the EPA to determine where certain contaminants occur and whether it needs to regulate those contaminants. Beginning in July 2008 the Detroit Water and Sewerage Department (DWSD) began monitoring quarterly for unregulated contaminants under the Unregulated Contaminant Monitoring Rule 2 (UCMR2). All UCMR2 contaminants monitored on the list 1 and list 2 in 2008 were undetected. The Great Lakes Water Authority provides the City of Belleville with water. Also, GLWA does not test the water for radon.

What Is Cryptosporidium?
Cryptosporidium is a disease causing parasite that lives in the intestinal tract of many animals including dogs and cats. Cryptosporidium can be introduced into bodies of water by way of surface runoff containing animal wastes and sewage discharges.

GLWA voluntarily monitors for Cryptosporidium and Giardia in our untreated source water monthly. The untreated water samples collected from the Southwest Plant indicated the presence of one Giardia cyst in March. In addition, monitoring indicated the presence of one Giardia cyst and one Cryptosporidium oocyst in the untreated water from the Southwest Plant in July. Additional testing was performed on the treated water at the Southwest Plant and Cryptosporidium was absent. All other samples collected in the year 2018 were absent for the presence of Cryptosporidium and Giardia. Systems using surface water like GLWA must provide treatment so that 99.9 percent of Giardia lamblia is removed or inactivated.

Cryptosporidium is a microbial pathogen found in the 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 the 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 weeks. However, immune-compromised people, infants and small children and the elderly are at the greater risk of developing life threatening illness. We encourage immune-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.

Contaminants That May Be Found In 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 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.

Vulnerability Of Some Population To Contaminants

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).

Key to the Detected Contaminants Table

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. 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.
TT	Treatment Technique	A required process intended to reduce the level of a contaminant in drinking water.
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.
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

2022 Southwest Regulated Detected Contaminants Table

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
2022 Inorganic Chemicals – Monitoring at Plant Finished Water Tap								
Fluoride	7-12-32022	ppm	4	4	0.71	n/a	no	Erosion of natural deposits; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate	7-12-2022	ppm	10	10	0.82	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

2022 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 quarterly Results	Violation yes/no	Major Sources in Drinking Water
Total Trihalomethanes (TTHM)	2022	ppb	n/a	80	66 ppb	30-60 ppb	no	By-product of drinking water chlorination.
Haloacetic Acids (HAA5)	2022	ppb	n/a	60	14 ppb	13-14 ppb	no	By-product of drinking water disinfection.

2022 Disinfection Residuals – Monitoring in Distribution System by Treatment Plant								
Regulated Contaminant	Test Date	Unit	Health Goal MRDGL	Allowed Level MRDL	Highest RAA	Range of Detection	Violation yes/no	Major Sources in Drinking Water
Total Chlorine Residual	2022	ppm	4	4	0.61	0.51-0.70	no	Water additive used to control microbes.

2022 Turbidity – Monitored every 4 hours at 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 yes/no	Major Sources in Drinking Water
0.14 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.

2022 Lead and Copper Monitoring at Customers' Tap									
Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Action Level AL	90th Percentile Value*	Number of Samples Over AL	Range of individual results	Violations yes/no	Major Sources in Drinking Water
Lead	2022	ppb	0	15	0 ppb	0	0-6 ppb	no	Lead service lines, Corrosion of household plumbing including fittings and fixtures; Erosion of natural deposits.
Copper	2022	ppm	1.3	.1	0 ppm	0	0-.4 ppb	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	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 requirement for TOC removal.	Erosion of natural deposits

Radionuclides-Monitored at the Plant Finished Tap in 2014

Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Allowed Level MCL	Level Detected	Violation	Major Sources in Drinking Water
Combined Radium 226 and 228	5/13/2014	pCi/L	0	5	0.65 + or - 0.54	no	Erosion of natural deposits

Contaminant	Test Date	Unit	MCLG	MCL	Highest Level Detected 2019	Source of Contamination
Sodium (ppm)	7-12-2022	ppm	**N/A**	**N/A**	**6.2**	Erosion of natural deposits

Unregulated Contaminant Monitoring Rule - Unregulated contaminants are those for which the Environmental Protection Agency (EPA) has not established drinking water standards. The purpose of unregulated monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. Before EPA regulates a contaminant, it considers adverse health effects, the occurrence of the contaminant in drinking water, and whether the regulation will reduce health risk. The Great Lakes Water Authority monitored for **20** unregulated contaminants quarterly in 2019. The following table list the unregulated substance detected during the calendar year 2019.

Unregulated Contaminant	Test Date	Unit	Highest Level Detected	SMCL	Range of Detection	Noticeable Effects above the SMCL	Major Sources in Drinking Water
Manganese	2019	**ppb**	**0.48**	50	**0.0-0.48**	black to brown color; black staining; bitter metallic taste	Erosion of natural deposits and corrosion of iron pipes

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.

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 your tap water. Additional information is available from the Safe Drinking Water Hotline at (800-426-4791).

Lead And Copper Testing

The City of Bellville consists of 1606 service connections of which none are known to be lead and 360 are of un known material. 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 Belleville Water Department 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 lead service line 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 at 1-800-426-4791or 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 Belleville 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.

Water Quality Data

Your drinking water is continuously monitored above and beyond Federal and State Laws. Monitoring frequencies vary by parameter, so some of the test dates for the results are a few years old because it is the most recent information. In addition, monitoring must be performed by the individual community. The community-specific information is presented in a separate table. The following table shows all the contaminants that were detected in your water.

Your drinking water met all the State and EPA monitoring and reporting requirements for 2021. Not listed are the hundreds of other contaminants tested for, but not found in your water.

National Primary Drinking Water Regulations Compliance

This report was prepared by Mr. Steven Svireff, Water System Operator for the City of Belleville using data supplied by the Great Lakes Water Authority and the Michigan Department of Environment, Great lakes and Energy (EGLE). Should you have any questions or concerns, please feel free to call Mr. Rick Rutherford at the City of Belleville at 734-697-9323.

This report has been prepared and provided to the residents of the City of Belleville in compliance with the Safe Drinking Water Act (1976 PA 399, as amended) 1998 PA 56. This act was passed to ensure compliance with the Federal Clean Water Act and rules promulgated by the U.S. EPA dealing with this law. Most of the specific language within this report is required and as such cannot be altered.

Public Participation

Each and every month the Great Lakes Water Authority Board meet at the Water Board Building at 735 Randolph Street, Detroit, Michigan 48226. These meetings as well as public hearings are open to the public. To confirm dates and times of the GLWA meetings residents are encouraged to visit the GLWA website at www.glwater.org.

City Comments

You can save hundreds even thousands of gallons of water each day by making adjustments to your daily routines. Simply install a low flow faucet aerator to save 1 to 3 gallons of water per minute of use. A low flow shower head can save you 10 gallons of water per minute which is an average of about 20,000 gallons a year. Watch for any drips in faucets. A running toilet can waste up to 74,000 gallons of water in just 3 months.

When using a sprinkler system, **Do Not Over Water!** Make sure your sprinkler heads are only watering your lawn and not your driveway or sidewalk. Sweep sidewalks and driveways rather than hosing them down to save about 50 gallons of water every 5 minutes. Lawns only need about on inch of water per week.

If you see any suspicious activity around the water system or fire hydrants, contact the City of Belleville Department of Public Works during regular business hours or the Belleville Police Department 24 hours a day, 7 days a week.

The City of Belleville 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 hope you find this report useful. Copies of this report are available at the Belleville City Hall located at 6 Main Street, Belleville, MI 48111. Please contact us if you should have any questions or concerns about your water. Also, look for future reports prior to July 1 of each year. Water quality data for community systems throughout the United States is available at http://waterdata.usgs.gov.

This report contains important information about your drinking water. Have someone translate if for you, or speak with someone who understands it.

2022 Southwest Tap Water Mineral Analysis

Parameter	Units	Max.	Min.	Avg.
Turbidity	NTU	0.23	0.02	0.09
Total Solids	ppm	183	110	145
Total Dissolved Solids	ppm	166	114	139
Aluminum	ppm	0.092	0.020	0.045
Iron	ppm	0.5	0.2	0.3
Copper	ppm	0.001	ND	0.000
Magnesium	ppm	8.3	7.4	7.8
Calcium	ppm	30.2	25.2	26.8
Sodium	ppm	8.1	5.0	5.9
Potassium	ppm	1.3	0.9	1.1
Manganese	ppm	0.001	ND	0.000
Lead	ppm	0.001	ND	0.000
Zinc	ppm	0.003	ND	0.001
Silica	ppm	2.5	1.4	2.0
Sulfate	ppm	33.9	20.2	27.4
Chloride	ppm	18.7	9.4	11.7

Parameter	Units	Max.	Min.	Avg.
Phosphorus	ppm	0.57	0.33	0.45
Free Carbon Dioxide	ppm	10.1	1.0	7.6
Total Hardness	ppm	102	66	94
Total Alkalinity	ppm	90	70	80
Carbonate Alkalinity	ppm	ND	ND	ND
Bi-Carbonate Alkalinity	ppm	90	69	79
Non-Carbonate Hardness	ppm	26	ND	16
Chemical Oxygen Demand	ppm	8.1	ND	3.6
Dissolved Oxygen	ppm	16.0	7.5	10.9
Nitrite Nitrogen	ppm	ND	ND	ND
Nitrate Nitrogen	ppm	0.82	0.21	0.43
Fluoride	ppm	0.72	0.53	0.64
pH		8.16	7.20	7.37
Specific Conductance @ 25 °C	µmhos	260	179	216
Temperature	°C	22.9	0.9	11.8