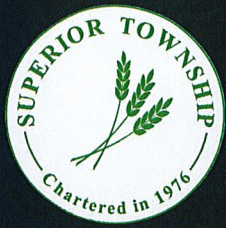




2022 SUPERIOR TOWNSHIP DRINKING WATER QUALITY REPORT



Dear Customer,

It is with great anticipation and honor for Superior Township Utility Department to present our 2022 Drinking Water Quality Report to our customers. Our commitment is to deliver safe, reliable, and exceptional drinking water while meeting all standards and regulations required by the Federal EPA and State of Michigan Safe Drinking Water Acts. This Consumer Confidence Report is required to be distributed annually to our customers and it explains where your drinking water comes from. This report provides water test results that we perform throughout the year and compare to Federal EPA and State of Michigan standards for water quality testing. We are happy to inform you that Superior Township met all water quality regulations in 2022.

As a department of Superior Charter Township, decisions and direction regarding the drinking water system are provided by the Township's Board of Trustees. The Board of Trustees meet on the third Monday of each month at 7:00pm at the Township Hall located at 3040 North Prospect Road (the corner of Prospect & Cherry Hill). The meeting schedule and agendas are available at **Board of Trustees – Superior Township, Washtenaw County** (<https://superiortownship.org/government/board-of-trustees>)

Our staff, and those of the Great Lakes Water Authority (GLWA) where your water comes from, take great pride in their hard work and diligence to provide the safe, reliable and exceptional drinking water expected by our customers. Thank you for taking the time to review our report and taking an interest in our water system. If you have any questions, need additional information about Superior Township's water system or would like to receive a hard copy of this water quality report, please contact us at utilitydept@superior-twp.org or 734-480-5500.

Sincerely,

Mary Burton
Utility Administrator

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2022 Drinking Water Quality Report



Information About GLWA

Superior Township obtains your drinking water from the Great Lakes Water Authority (GLWA) water system. Your source water comes from the Detroit River, situated within the Lake St. Clair, Clinton River, Detroit River, Rouge River, and Ecorse River watersheds in the U.S. and parts of the Thames River, Little River, Turkey Creek, and Sydenham watersheds in Canada.

Drinking water quality is important to our community and the region. Superior Township and 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. Superior Township 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 Superior Township 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. If you wish to learn more about the plants that treat our water or obtain information regarding GLWA Board meetings, please visit www.glwater.org.

Source Water Assessment

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 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 using geologic sensitivity, water chemistry, and potential contaminant sources. The report described GLWA's Detroit River intakes as highly susceptible to potential contamination. GLWA's Southwest and Springwells water treatment plants that 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 the National Pollutant Discharge Elimination System permit program and has an emergency response management plan. GLWA has an updated Surface Water Intake Protection Plan for the Belle Isle Intake and the Fighting Island Intake. The plan has seven elements that include: roles and duties of government units and water supply agencies, delineation of source water protection areas, identification of potential sources of contamination, management approaches for protection, contingency plans, siting of new water sources, and public participation and education activities. If you would like to know more information about the Source Water Assessment report please, contact GLWA at 313.926.8127.



Minimizing Lead Exposure

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. Superior Township 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 two minutes before using water for drinking or cooking. If you have a lead service line, galvanized previously connected to lead, or unknown but likely to be lead, it is recommended that you run your water for at least five 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 1.800.426.4791 or at www.epa.gov/ground-water-and-drinking-water/basic-information-about-lead-drinking-water.



Lead and Copper Facts

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. Superior Township 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.

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.

As of 2019, the Safe Drinking Water Act requires water utilities to inventory the service lines in its service area. Superior Township contains 2,491 service lines. There are no lead service lines and there are no service lines of unknown material in Superior Township.



Additional Actions Homeowners Can Take to Reduce Lead Exposure from Tap Water

- Let water run until it feels cold prior to drinking.
- Only use cold water for drinking, cooking, and making baby formula, as it is less likely to contain lead than hot tap water.
- Remove aerators in faucets and clean them every six months, at a minimum.
- Replace faucets, fittings, and valves sold before 2014, as they may contain up to 8 percent lead, even if marked lead-free.



Health and Safety 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 EPA's Safe Drinking Water Hotline at 800.426.4791.

More Resources

EPA Safe Drinking Water Hotline: 800.426.4791

Website: www.epa.gov/ground-water-and-drinking-water

Michigan Department of EGLE Website: www.michigan.gov/egle

The sources of drinking water (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 can dissolve naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or 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 stormwater 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 stormwater 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 stormwater runoff, and septic systems.
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

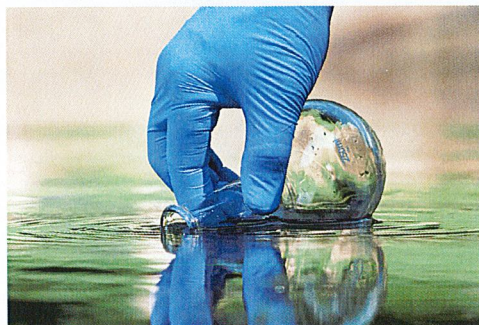
In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in the water provided by public water systems. The Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Based on testing results during 2017 - 2022 (Test Results Table), all of these contaminants were below the level of concern for safe drinking water standards set by EPA.



Information for 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. These people should seek advice about drinking water from their health care providers. EPA/Center for Disease Control 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).



Superior Township Water Quality Test Results for 2022

GLWA and Superior Township collect water samples above and beyond Federal and State requirements. Drinking water may contain small amounts of some parameters. This does not indicate a health risk. The tables below summarize the detectable results, public health goals, the highest concentration allowed, and likely sources. This table does not show the hundreds of other contaminants tested for, but not found in your drinking water. The test results confirm that **ALL DETECTED CONTAMINANTS WERE BELOW REGULATED LEVELS. THERE WERE NO VIOLATIONS OF STATE DRINKING WATER STANDARDS.**

Definitions

Action Level (AL) - The concentration of a contaminant which, if exceeded, triggers treatment or other required actions a water system must follow.

Haloacetic Acids (HAA5) - The total of bromoacetic, chloroacetic, dibromoacetic, dichloroacetic, and trichloroacetic acids. Compliance is based on the total.

Maximum Contaminant Level (MCL) - The highest level of a contaminant allowed in drinking water. MCLs are set as close to the MCLGs as feasible, using the best available treatment technology.

Maximum Contaminant Level Goal (MCLG) - The level of a contaminant in drinking water below which there is no known or expected health risk. MCLGs provide a margin of safety.

Maximum Residual Disinfectant Level (MRDL) - 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.

Maximum Residual Disinfectant Level Goal (MRDLG) - Level of 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.

na - Not applicable.

Nephelometric Turbidity Unit (NTU) - Measures the cloudiness of water.

Parts per billion (ppb) (one in one billion) - Equivalent to micrograms per liter. A microgram = 1/1000 milligram.

Parts per million (ppm) (one in one million) - Equivalent to milligrams per liter. A milligram = 1/1000 gram.

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

Total Trihalomethanes (TTHMs) - The sum of chloroform, bromodichloromethane, dibromochloromethane and bromoform. Compliance is based on the total.

Regulated Inorganic Parameters (annual monitoring at plant finished water taps)

Contaminant	Test Date	Unit	Level Detected	MCLG	MCL	Likely Sources
Fluoride	2022	ppm	0.71	4	4	Water additive to promote strong teeth, erosion of natural deposits, discharge from fertilizer and aluminum factories
Nitrate	2022	ppm	0.82	10	10	Fertilizer runoff, leaching from septic tanks, sewage, erosion of natural deposits
Barium	2017	ppm	0.01	2	2	Discharge from drilling wastes, discharge from metal refineries, erosion of natural deposits

Regulated Disinfectant Residuals and Disinfection By-Products (sampled in the distribution system)

Contaminant	Test Date	Unit	Result	Low	High	MCLG	MCL	Likely Sources
TTHMs	2022	ppb	45	n/a	n/a	n/a	80	By-products of drinking water disinfection
Haloacetic Acids	2022	ppb	10	n/a	n/a	n/a	60	

Samples were collected to test for the disinfection by-products TTHMs and Haloacetic Acids in Superior Township at the frequencies and times prescribed by Federal regulations. All samples collected throughout Superior Township distribution system during 2022 met the MCL for disinfection by-products.

Contaminant	Test Date	Unit	Result	Low	High	MCLG	MCL	Likely Sources
Disinfectant Chlorine	2022	ppm	0.67	0.51	0.73	4	4	Water additive used to control microbes

Regulated Microbiological Parameters

Contaminant	Test Date	Unit	Highest Result	MCLG	MCL	Likely Sources
Total Coliform	2022	--	0	0	>1 positive sample/month	Naturally present in the environment
E. Coli	2022	--	0	0	>1 positive sample/month	Human or animal fecal waste
Turbidity	2022	NTU	0.25	0	1.0	Soil runoff

Turbidity is a measure of the cloudiness of water. Turbidity is monitored every 4 hours at the plant taps. We monitor it because it is a good indicator of the effectiveness of our filtration system. The rules state that turbidity must never exceed 1.0 NTU (see "highest result") and must not exceed 0.3 NTU in more than 95% of daily samples in any single month. The turbidity in daily samples was below 0.3 NTU 100% of the time. Therefore, we achieved both requirements and remained in compliance.

Copper and Lead Testing (sampled at individual taps)

Contaminant	Test Date	Unit	90th	Samples >AL	Range of Individual Results	MCLG	MCL	Likely Sources
Lead	2022	ppb	0	0	0 ppb - 4 ppb	0	AL=15	Lead services lines, corrosion of household plumbing including fittings and fixtures, erosion of natural deposits
Copper	2022	ppm	0.0	0	0.0 ppm - 0.1 ppm	1.3	AL=1.3	Corrosion of household plumbing systems, erosion of natural deposits; leaching from wood preservatives

Lead and Copper compliance is based on the 90th percentile, where nine out of ten samples must be below the Action Level (AL). If the 90th percentile value is above the AL, additional requirements must be met.



Total Organic Carbon (TOC) Removal

The TOC removal ratio is calculated as the ratio between the actual TOC removal and the TOC removal requirements. During 2022, TOC was measured each quarter and because the level was low, there is no TOC removal requirement.

UNREGULATED PARAMETERS (No established EPA drinking water standards)

Contaminant	Test Date	Unit	Level Found	EPA Health Guidance	Likely Sources
Sodium	2022	ppm	6.2	20	Erosion of natural deposits

6.2 ppm equates to about 1.47 milligrams of sodium per 8-ounce glass of water. EPA Health Guidance is for people restricted to taking in less than 500 mg of sodium per day according to "Drinking Water Advisory: Consumer Acceptability Advice and Health Effects Analysis on Sodium," US EPA, EPA 822-R-03-006, February 2003.

Additional Information: 2022 GLWA Tap Water Mineral Analysis

Parameter	Units	Max.	Min.	Avg.
Turbidity	NTU	0.23	0.02	0.07
Total Solids	ppm	183	110	143
Total Dissolved Solids	ppm	169	105	137
Aluminum	ppm	0.092	0.014	0.038
Iron	ppm	0.5	0.2	0.3
Copper	ppm	0.002	ND	0
Magnesium	ppm	8.5	7.3	7.8
Calcium	ppm	30.2	24.9	26.5
Sodium	ppm	8.1	4.9	5.6
Potassium	ppm	1.3	0.9	1.1
Manganese	ppm	0.001	ND	0
Lead	ppm	0.001	ND	0
Zinc	ppm	0.004	ND	0.001
Silica	ppm	2.7	1.4	2.1
Sulfate	ppm	33.9	20.2	27.5
Chloride	ppm	18.7	8.3	11.2

Parameter	Units	Max.	Min.	Avg.
Phosphorus	ppm	0.87	0.33	0.49
Free Carbon Dioxide	ppm	13.6	1.0	8.9
Total Hardness	ppm	112	66	93
Total Alkalinity	ppm	90	70	78
Carbonate Alkalinity	ppm	ND	ND	ND
Bi-Carbonate Alkalinity	ppm	90	69	77
Non-Carbonate Hardness	ppm	42	2	17
Chemical Oxygen Demand	ppm	12	ND	3.8
Dissolved Oxygen	ppm	16.5	3.4	11.1
Nitrite Nitrogen	ppm	ND	ND	ND
Nitrate Nitrogen	ppm	0.82	0.21	0.40
Fluoride	ppm	0.77	0.51	0.61
pH	s.u.	8.16	7.06	7.28
Specific Conductance @ 25 °C	µmhos	260	166	216
Temperature	°C	23.9	0.9	12.4