



2021 WATER QUALITY REPORT

CITY OF MASON

This report covers the drinking water quality for the City of Mason (City) for the 2021 calendar year. This information is a snapshot of the quality of the water we provided to you in 2021. Included are details about where your water comes from, what it contains, and how it compares to United States Environmental Protection Agency (EPA) and state standards.

Your water comes from seven groundwater wells, each well averaging from 215 to 400 feet in depth. The Michigan Department of Environment Great Lakes and Energy (EGLE) performed an assessment of our source water in 2007 to determine the susceptibility or the relative potential of contamination. The susceptibility rating is on a seven-tiered scale from "very-low" to "very-high" based on geologic sensitivity, well construction, and water chemistry and contamination sources. The susceptibility of our source water is moderately high as of that evaluation. There are no significant sources of contamination in our water supply. We are making efforts to protect our drinking water sources. In 2022, the City will continue its well head protection plan through public education.

- **Contaminants and their presence in 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 **EPA's Safe Drinking Water Hotline (800-426-4791)**.
- **Vulnerability of sub-populations:** 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 systems 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/Centers for Disease Control and Prevention (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)**.
- **Sources of drinking water:** The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. Our water comes from 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 agricultural and residential uses.

Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban Stormwater runoff, and septic systems.

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

Water Quality Data

The provided table lists all the drinking water contaminants that we detected during the 2021 calendar year. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done January 1 – December 31, 2021. EGLE 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 provided here is representative of the water quality, but some are more than one year old.

Terms and abbreviations used in report:

- **EGLE:** Michigan Department of Environment Great Lakes and Energy
- **Maximum Contaminant Level (MCL):** 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.
- **Maximum Contaminant Level Goal (MCLG):** the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
- **Maximum Residual Disinfectant Level (MRDL):** means the highest level of a 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):** means the level of a 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.
- **MDHHS:** Michigan Department of Health and Human Services
- **N/A:** not applicable
- **ppb:** parts per billion or micrograms per liter
- **ppm:** parts per million or milligrams per liter
- **ppt:** parts per trillion or nanogram per liter
- **pCi/l:** picocuries per liter (a measure of radioactivity).
- **AI:** Action Level which is the concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

Lead Service Line Transparency

Number of lead service lines	Number of service lines of unknown material	Total number of service lines
582	1410	2904

On December 23, 2019, the City did an evaluation of potential lead service lines within the jurisdiction. Lead is defined to also include galvanized lines that were once connected to lead. The information above is based on data we have on timing of housing construction and available records. The City has not visually confirmed all lead service lines at this point.

Results

Regulated Contaminant	MCL	MCLG	Level Detected	Range	Year Sampled	Violation Yes / No	Typical Source of Contaminant
Fluoride (ppm)	4.0	4.0	.69	.66 -.70 mg/l	2021	No	Erosion of natural deposits discharge from fertilizer & aluminum factories
TTHM - Total Trihalomethanes (ppb)	60	N/A	27	N/A	2021	No	By-product of drinking water disinfection
HAA5 Haloacetic Acids (ppb)	80	N/A	6	N/A	2021	No	By-product of drinking water disinfection
Radioactive Contaminant	MCL	MCLG	Level Detected	Range	Year Sampled	Violation Yes/No	Typical Source of Contaminant
Alpha Emitters (pCi/L)	15	0	2.5	2.5	2018	No	Erosion of natural deposits (Not required to test this year)
Combined Radium (pCi/L)	5.0	0	1.96	N/A	2021	No	Erosion of natural deposits
Chlorine (ppm)	MRDL	MRDLG	1.13	1.12 – 1.16	2021	No	Water additive used to control microbes
	4	4					
Contaminant Subject to AL	Action Level	MCLG	90% of Samples ≤ This Level		Year Sampled	Samples Above AL	Typical Source of Contaminant
Lead (ppb) *	15	0	1.5		2021	1	Corrosion of household plumbing systems; erosion of natural deposits
Copper (ppm)**	1.3	1.3	1.06		2021	0	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Special Monitoring and Unregulated Contaminant ***			Level Detected		Year Sampled	Comments	
Sodium (ppm)			11.8		2021	Typical source is erosion of natural deposits	
Hardness (ppm)			351		2021	Typical source is erosion of natural deposits	
Chloride (ppm)			15.6		2021	Typical source is erosion of natural deposits	
Sulfate (ppm)			44.7		2021	Typical source is erosion of natural deposits	
Emerging Contaminant ****	LHA		Level Detected	Range	Year Sampled	Violation Yes / No	Typical Source of Contaminant
PER-Polyfluoroalkyl Substances (ppt) *****	70		0	0	2021	No	Industrial and consumer product runoff

The City is responsible for providing safe, high quality drinking water to its residents but cannot control the variety of materials used in plumbing components inside homes. Elevated lead and copper levels are sometimes found in some residences due to corrosion of household plumbing pipes and fixtures made of, or containing, lead and copper.

***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 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.

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.

City residents concerned about lead levels in their drinking water can be added to the sampling pool for this next round of testing by calling 517.676.9155. There is no cost to participate in this sampling. 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://water.epa.gov/drink/info/lead/index.cfm>.

****Information about Copper:** As required by Federal and State laws and regulations, regular testing is conducted on various aspects of the water system. 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 about use of the City's water. Testing completed in 2014 determined that copper was not detected in the City's wells, which supply the City's water. The City's testing in homes for copper conducted in 2021 included 22 samples collected, none of the samples exceeded the EPA's MCLG for copper. In accordance with Federal and State laws and regulations, any sample that exceeds the EPA's MCLG for copper requires that the resident be notified of the results. The resident will also be given a fact sheet on how to flush their pipes before using the water for cooking and drinking if the water has been sitting in their pipes for an extended period of time.

EGLE has determined that the City is not in violation of the Michigan Safe Drinking Water Act. As a result, in 2021, EGLE reduced the City's copper sampling requirements from 80 samples per year to 20 sample per year.

City residents concerned about copper levels in their drinking water can be added to the sampling pool for this next round of testing by calling 517.676.9155. There is no cost to participate in this sampling. In 2021, the City began a corrosion study to investigate for adjustments in the current corrosion control program. The results of the study concluded that the current corrosion protection for copper the City is using provides the best protection.

The City recommends that residents, especially with copper plumbing, follow published guidance about flushing pipes before using tap water for drinking, cooking, rinsing food, brushing teeth, and preparing powdered baby formula. To flush your pipes, turn on any faucet and let it run cold for about two minutes. Taking a shower, doing a load of laundry, or running the dishwasher will also accomplish the goal of flushing your pipes.

The Michigan Department of Health and Human Services (MDHHS) recommends that homes with a formula-fed infant use cold, flushed water for drinking and making powdered infant formula. Formula-fed infants under twelve months old get their needed copper from the formula itself and if tap water containing copper is used to prepare the powdered formula, the infant can end up with too much copper in their body. This may cause stomach upset or other health issues. If your infant is experiencing persistent stomach upset symptoms, consult your healthcare provider. People with disorders of copper metabolism (for example: Wilson's Disease) should continue to avoid potential sources of copper, including drinking water from the City.

If you have questions about copper exposure and your health, call the Ingham County Health Department at 517.887.4312 or the MDHHS at 844.934.1315. If you choose to purchase a water filter, MDHHS recommends filters that are tested and certified to NSF/ANSI Standard 53 for copper reduction. Be sure to follow manufacturer's instructions for set-up and maintenance.

*****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.

******Per - and Polyfluoroalkyl Substances (PFAS)**, sometimes called PFCs are a group of chemicals that are resistant to heat, water, and oil. PFAS have been classified by the EPA as an emerging contaminant on the landscape. For decades, they have been used in many industrial applications and consumer products such as carpeting, waterproof clothing, upholstery food wrappings, fire-fighting foams, and metal plating. They are still in use today. PFAS have been found at low levels both in the environment and in blood samples from the general U.S. population.

These chemicals are persistent, which means they do not break down in the environment. They also bio-accumulate, meaning the amount builds up over time in the blood and organs. Although our understanding of these emerging contaminants is constantly evolving, elevated levels of PFAS have the potential to cause increased cholesterol, changes in the body's hormones and immune system, decreased fertility, and increased risk of certain cancers. Links to these health effects in humans are supported by epidemiologic studies and by laboratory studies in animal models

If any resident has additional questions regarding this issue, the Michigan Environmental Assistance Center can be contacted at 800-662-9278. Representatives may be reached to assist your questions Monday through Friday, 8:00 AM to 4:30 PM. The State has created a website where you can find information about PFAS contamination and efforts to address it in Michigan. The site will be updated as more information becomes available. The website address is: <http://michigan.gov/pfasresponse>.

2020 Consumer Confidence Report Correction Statement

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.

Conclusion

The EPA and EGLE require us to test our water on a regular basis to ensure its safety. The City met all the monitoring and reporting requirements for 2021.

The City will update this report annually and will keep residents informed of any problems that may occur throughout the year, as they happen. Copies are available at City Hall (201 West Ash Street) and on the City's website (www.mason.mi.us/WaterQualityReports).

For more information about safe drinking water, visit the EPA at www.epa.gov/safewater/.

Resources: More Questions? Please Contact our Customer Service Desk at 517.676.9155 between 8:30 AM - 4:30 PM or email info@mason.mi.us.