Saginaw Region Drinking Water Quality Report

2020

Albee Township Village of Birch Run Birch Run Township Blumfield Reese Water Authority Bridgeport Charter Township Buena Vista Charter Township Carrollton Township Frankenlust Township City of Frankenmuth Frankenmuth Township James Township Kochville Township Saginaw Charter Township City of Saginaw Village of St. Charles Spaulding Township Swan Creek Township Taymouth Township Thomas Township Tittabawassee Township

City of Zilwaukee

The year 2020 was marked by the COVID-19 pandemic, which brought a new focus on the importance of essential workers. Professionals in the local water distribution system and at the Saginaw Water Treatment Plant continued in their frontline roles behind the scenes, delivering a reliable, continuous supply of water on tap. From homes to hospitals, safe drinking water is critical to sustaining life. The drinking water you received was produced in accordance with all federal and state water quality and safety standards. Further, Saginaw Water Treatment Plant staff perform such high quality maintenance that some equipment has been in service since 1929! Please take a moment to read through this report, learn more about your drinking water, and reach out to us if you have questions.

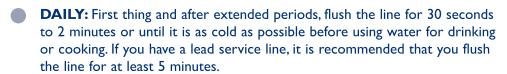
El informe contiene informacion importate sobre la calidad del agua en su comunidad. Traduzcalo o hable con alguien que lo entienda bien.

Lead and Copper Rule (LCR) Update

The communities covered by this report have historically remained well under the maximum level allowed for lead or copper in drinking water systems. Because of this favorable track record, lead and copper testing was only required every three years until the 2018 changes to Michigan's LCR. Now, Saginaw and its wholesale customers are required to conduct lead and copper testing every year, and at nearly twice as many sites.

When you look at the lead and copper test results for your community inside this report, it is important to note that these levels may not reflect conditions within your home or at any specific faucet. Lead and copper levels vary depending on the type of plumbing and fixtures inside your home as well as the type of materials used in service lines.

The LCR update also changed corrosion control practices. Corrosion control involves careful monitoring and the use of additives to deliver non-corrosive drinking water to your tap. These corrosion control additives coat the inside of all water lines and help prevent the chemical reaction between water and plumbing that causes metal release. The Saginaw Water Treatment Plant optimizes corrosion control of the finished water. Starting in 2019, each individual community was required to begin additional water quality testing relating to corrosion control. Even with the Saginaw Water Treatment Plant's reliable corrosion control program, customers are advised to do the following:





New gearing on the Lime Transfer Elevator, which is part of the corrosion control process

- MONTHLY: Run the cold water on all faucets at the same time for at least 5 minutes to fully flush your pipes. Rinse out any debris from your faucet aerators (screens) and replace when clogged.
- ONGOING: Review the information about replacing pre-2014 plumbing fixtures and using/properly maintaining a filter certified for lead removal at: www.michigan.gov/documents/deq/deq-odwma-water-cdwu-reoccupy-your-home_524539_7.pdf

If you remain concerned about lead in your water, visit www.saginaw-mi.com/lead or contact your community (see last page of this report).

Reduce the potential for lead in drinking water by flushing faucets daily, flushing the entire home and cleaning aerators monthly, evaluating/updating plumbing, and adding/maintaining filters certified for lead removal.

2020 Water System Improvements

Ask your local water utility about projects completed in the regional distribution system.



Aqua Pump Station PLC Upgrade

Replaced programmable logic controllers to meet current standards for computerized equipment control



Bacteriological Lab Autoclave Replacement

Replaced a failed autoclave unit needed to ensure laboratory equipment is sterile



Transmission Main Vault and Meter Rebuild

Renewal and improvement of aging Court Street structure and Venturi discharge metering equipment



Davis Road Raw Water Line Replacement Ph. 2

Removed remaining original raw water pipeline, while reinforcing the line to Kochville Pump Station



High Service Pump Check Valve Rehabilitation

Quality maintenance by plant staff allows original 1929 equipment to remain in service



Clarifier Painting and Maintenance

Regular painting ensures a long life for steel in regular contact with water

Drinking Water Details

Drinking water, including bottled water, may be reasonably expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily pose a health risk. For more information about contaminants and potential health effects, call the EPA's Safe Drinking Water Hotline, 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 – in some cases radioactive materials – 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 occur naturally 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 organic chemicals, which are byproducts 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 the result of oil and gas production and mining activities

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's regulations establish limits for contaminants in bottled water, which must provide similar public health protection.

Some people may be more vulnerable to certain contaminants in drinking water than the general population. Immuno-compromised persons such as those undergoing chemotherapy, those who have undergone organ transplants, those with HIV/AIDS or other immune system disorders, and some elderly and infants can be particularly at risk from infections. These people should seek advice about their drinking water from their health care providers.

Federal guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbiological contaminants are available at www.epa.gov/sdwa/drinking-water-contaminant-human-health-effects-information or EPA's Safe Drinking Water Hotline, 800.426.4791.

Contaminants tested for in 2020 with results **BELOW THE LIMIT** of detection

Nitrate; Nitrite; Iron; Bromoacetic Acid; Bromoform; Chloroacetic Acid; Dibromoacetic Acid; Dalapon; Benzene; Bromobenzene; Bromochloromethane; n-Butylbenzene; sec-Butylbenzene; tert-Butylbenzene; Carbon tetrachloride; Chlorobenzene; Chloroethane; Chloromethane; o-Chlorotoluene; p-Chlorotoluene; Dibromomethane; I,2-Dichlorobenzene; I,3-Dichlorobenzene; I,4-Dichlorobenzene; Dichlorodifluoromethane; I,1-Dichloroethane; I,2-Dichloroethylene; cis-I,2 Dichloroethylene; cis-I,2 Dichloroethylene; cis-I,2 Dichloropropane; I,3-Dichloropropane; I,3-Dichloropropane; I,1-Dichloropropene; cis-I,3 Dichloropropene; trans-I,3 Dichloropropene; Dichloromethane; Ethylbenzene; Fluorotrichloromethane; Hexachlorobutadiene; Isopropylbenzene; p-Isopropyltoluene; Methyl ethyl ketone; Methyl isobutyl ketone; Methyl-tert-butyl ether; Naphthalene; n-Propylbenzene; Styrene; I,1,1,2-Tetrachloroethane; I,1,2,2-Tetrachloroethane; Tetrachloroethylene; Tetrahydrofuran; Toluene; I,2,3-Trichlorobenzene; I,2,4-Trichlorobenzene; I,1,1-Trichloroethane; I,1,2-Trichloroethane; Trichloroethylene; I,2,3-Trichloropropane; I,2,4-Trimethylbenzene; I,3,5-Trimethylbenzene; Vinyl Chloride; m-Xylene; o-Xylene; p-Xylene; Total Xylenes; Hexafluoropropylene Oxide Dimer Acid; Perfluorobutane Sulfonic Acid; Perfluorohexanoic Acid; Perfluorooctanoic Acid (PFOA); Perfluorooctane Sulfonic Acid-Total (PFOS-Total); and ten different microcystin (MS) congeners (cyanotoxins): MS-RR; MS-YR; MS-HTYR; MS-LR; MS-LR Asp3; MS-WR; MS-LA; MS-LY; MS-LW; MS-LF

Regulatory News



Cryptosporidium and Giardia: These two microbial pathogens, which come from human and animal waste, have NEVER been detected in our treated drinking water.

Lead and Copper Rule: There are a variety of changes to how the City of Saginaw and its wholesale customers will test for and meet the requirements of Michigan's revised Lead and Copper Rule. Please see the full discussion on this topic on the introductory page or visit www.michigan.gov/egle/0,9429,7-135-3313_3675_76638—,00.html. Also note that, starting in 2025, the Action Level for lead will drop from 15 ppb to 12 ppb.

Pharmaceuticals in Water: As EPA continues to study the impact of pharmaceuticals in water supplies, please be sure to properly dispose of all medications. To find a collection center near you, call your local police department or the Drug Enforcement Agency (800.882.9539). You can also visit www.saginawpublichealth.org/programs-services/environmental-health/solid-and-hazardous-waste/ for a list of pharmaceutical drop boxes.

Per- and Polyfluoroalkyl Substances (PFAS): In August 2020, Michigan adopted the most stringent PFAS drinking water standards in the nation, far beyond the federal lifetime health advisory (LHA) level of 70 ppt. Visit www.michigan. gov/pfasresponse/0,9038,7-365-95571_99970—,00.html to view the newly established regulatory levels for seven different PFAS. Even prior to the state's regulations, Saginaw began testing for PFAS, including PFOS and PFOA. All results have been non-detect or below the limit of detection, including in 2020, except for a single sample in 2019 which was subjected to an alternate testing method intended for raw water applications. The amount in that single flagged detection was 3 parts per trillion (0.003 ng/L) for PFOS + PFOA, well below the new standards. See a summary of results at www.saginaw-mi.com/departments/water_wastewater_treatment_services/water_treatment/water_quality.php.

PFAS were NOT detected in Saginaw's drinking water in 2020

Source Water Assessment

Your drinking water comes from Lake Huron, one of the largest and highest quality sources of fresh water in the world. The raw water intake is near

Whitestone Point, a location selected in the 1940s after an engineering study showed that water at this location was typical of deep Lake Huron currents, and relatively free from influences from Saginaw Bay and nearby on-shore sources of contamination. The raw water is purchased from the Saginaw-Midland Municipal Water Supply Corporation (jointly owned by the Cities of Saginaw and Midland), and travels 65 miles through reinforced concrete and ductile iron pipe to the Saginaw Water Treatment Plant for processing.

In June 2004, the State of Michigan completed its assessment of our Lake Huron raw water supply and issued a Source Water Assessment report. This assessment determined our raw water supply's susceptibility to contamination.

The State used a seven-tiered susceptibility rating scale from "very low" to "very high" based primarily on geologic sensitivity, water chemistry, and contaminant sources.

The susceptibility of our raw water was rated "moderately low." Although the threat of contamination still exists, this rating is the best a surface water source can achieve. The forethought used in selecting the location of the intake helped our raw water supply achieve its "moderately low" susceptibility rating. If you would like to review a copy of the Source Water Assessment report, or have questions about it, please contact the Saginaw Water Treatment Plant at 989.759.1640.

2020 Water Quality Test Results



Below are the water quality test results from the Saginaw Water Treatment System during 2020, unless otherwise noted. Our water was produced in accordance with all state and federal regulations. The State allows us to monitor for certain contaminants less than once per year because their concentrations are not expected to change year-to-year.

MRDL MRDLG violation þarameter test date unit avg range likely sources Regulated Inorganic Parameters (sampled in the distribution system) 0.87-1.04 0.95 Water additive used to control microbials ppm *parameter* test date unit range MCL MCLG violation likely sources avg Regulated Inorganic Parameters (sampled at the plant's finished water tap) Fluoride¹ 2020 0.65 Water additive to promote strong teeth ppm na no Barium 2 2014 ppm 0.28 na no Erosion of natural deposits Regulated Microbiological Parameters (sampled in the filtered water confluence) Turbidity² NTU 0.06 0.05-0.24 Soil runoff, suspended matter in lake water none no 1. Saginaw monitors and supplements the fluoride level in drinking water to maintain a level close to 0.8 ppm to promote dental health. This fits with EPA's secondary fluoride standard of 2 ppm to prevent dental disease in children. The level reported above is from annual regulatory sampling. City staff also conduct daily fluoride sampling. Results in 2020 were: average=0.69 ppm; range=0.14-0.77 ppm. 2. To determine that our treatment process is working effectively, turbidity in systems that provide filtration, like Saginaw, must never exceed 1 NTU, and must not exceed 0.3 NTU in more than 95% of daily samples in any month to remain in compliance. I 00% of our samples achieved these requirements in 2020. MCL/MCLG *parameter* test date unit violation avg range likely sources Unregulated Parameters (not regulated at the State or Federal Level) Sodium³ ppm unregulated Naturally occurring 3. For those concerned about sodium in their diet, 5.3 ppm equates to 1.25 milligrams of sodium per 8-ounce glass of water.

Maximum Residual Disinfectant Level (MRDL) The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary to control microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG) The 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.

Parts per million (ppm), billion (ppb), and trillion (ppt) One ppm can be equated to four teaspoons of salt in a standard 24-foot backyard pool. One ppb is like one teaspoon of salt In an Olympic-sized pool.

Maximum Contaminant Level (MCL) The highest level of a contaminant allowed in drinking water. MCLs are set as close to MCLGs as feasible, using the best available treatment technology. MCLs are set at very stringent levels by the state. and federal government.

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.

Nephelometric Turbidity Unit (NTU) - A measure of clarity based on how much light is scattered by suspended matter in the water. The lower the NTU, the less cloudy the water.

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

Total Trihalomethanes (TTHM) and Haloacetic Acids (HAA5) - Byproducts of drinking water disinfection.

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

nd/na - Not detected/not applicable or not available.

Terminology

Reliable Drinking Water for the Saginaw Region

Total Coliform Bacteria (Community-specific)

One sample tested positive for total coliform bacteria in the greater distribution system in 2020. Immediate retesting at the same site, as well as sites upstream and downstream, were negative so there was no contamination or violation and no need to boil water.

Regulated Parameters (sampled in each individual community's distribution system)

	Albee Twp	Birch Run Twp	Village of Birch Run ^a	Blumfield/Reese	Bridgeport Twp	Buena Vista Twp ^b	Carrollton Twp	Frankenlust Twp	City of Frankenmuth	Frankenmuth Twp	James Twp	Kochville Twp	City of Saginaw	Saginaw Twp	Village of St Charles	Spaulding Twp	Swan Creek Twpʻ	Taymouth Twp	Thomas Twp	Tittabawassee Twp	City of Zilwaukee
TTHM (ppb)	56	61	49	55	62	45	47	60	54	56	57	57	53	52	54	49	57	62	57	56	49
Low	37	49	31	37	26	26	32	35	39	34	36	40	22	31	33	21	37	34	28	37	31
High	80	69	78	73	93	60	62	88	80	81	81	76	70	66	73	77	87	96	87	85	69
Violations?		There were no TTHM or HAA5 MCL violations ^a																			
HAA5 (ppb)	27	32	28	37	30	24	26	31	29	32	29	33	23	26	25	30	26	32	31	37	27
Low	17	22	15	27	14	15	17	22	20	16	19	22	10	12	19	20	19	22	17	23	18
High	39	39	38	53	43	29	30	42	39	36	38	40	25	29	29	38	34	44	37	50	36
Copper (ppm)	0.2	0.3	0.2	0.2	0.3	0.2	0.2	0.3	0.3	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.4	02	0.3	0.3
Range (low/high)	0/0.3	0/0.3	0.1/0.2	0.1/0.2	0/0.3	0/0.3	0/0.3	0/0.3	0.1/0.3	0.1/0.4	0.1/0.3	0/0.3	0/0.3	0/0.3	0/0.2	0/0.2	0.1/0.2	0.1/0.4	0/0.3	0/0.3	0.1/0.3
Sites above AL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Violations?		There were no Lead or Copper AL violations ^{b,c}																			
Lead (ppb)	0	2	- 1	2	2	2	2	4	2	- 1	2	-1	15	2	12	2		2	2	2	2
Range (low/high)	0/0	0/2	0/2	0/3	0/5	0/23	0/3	0/5	0/3	0/2	0/3	0/18	0/45	0/7	0/13	0/2	0/1	0/3	0/2	0/3	0/2
Sites above AL	0	0	0	0	0	I	0	0	0	0	0	Ι	4	0	0	0	0	0	0	0	0
Lead Serv. Lines	0	0	0	0	0	0	0	0	0	0	0	0	11342	0	0	0	0	0	0	0	0
Unknown Material	0	0	0	0	0	2107	2421	0	0	0	0	845	16003 ^d	0	866	0	0	730	0	0	54
Total No. Lines	156	881	459	1446	4262	2673	2423	1097	2364	490	836	845	34356	15421	867	774	1008	730	4588	2746	769

TTHM MCL=80 ppb MCLG=none HAA5 MCL=60 ppb MCLG=none Lead AL=15 ppb MCLG=0 Copper AL=1.3 ppm MCLG=1.3 ppm

- a. The Village of Birch Run missed third quarter TTHM and HAA5 sampling in August and cannot be certain of the quality of the water from July to September 2020. Testing conducted in September showed results below the MCL, but did not count toward compliance. Compliance samples were collected in November during fourth quarter required monitoring for these disinfection byproducts. There was no emergency and no need to boil water.
- b. Buena Vista Charter Township was temporarily out of compliance in early 2020 for missing the deadline to submit lead/copper results to the State.
- c. Swan Creek Township was temporarily out of compliance for missing the State's LCR deadline due to omitting the signature page on their results.
- d. The City of Saginaw's unknown material quantity (2,794 in 2019) has been adjusted to include these additional categories: Unknown, Likely Contains Lead (7,920) and Unknown, Likely No Lead (5,289). City staff continue to verify these unknown material types to identify and prioritize replacing lead service lines. Staff has completed 10,500+ material verifications and 2,000+ lead service line replacements in just over two years.

Stage 2 Disinfection Byproducts (TTHM and HAA5) Results above are the highest locational running annual averages calculated quarterly for each community. The range shows the single highest and lowest detections during 2020 compliance monitoring. *Likely source:* TTHM and HAA5 are byproducts created when drinking water disinfectants react with organics in the water.

Lead and Copper The figures above are from the 2020 coordinated test and preliminary inventory of service line materials reported to the state in late 2019^d. Lead and copper compliance is based on the 90th percentile, where nine out of ten samples must be at or below the Action Level (AL). Of the 300+ reportable samples for lead compliance in the regional service area, only six exceeded the AL. No sites exceeded the AL for copper. Lead and copper are not naturally present in our water and the Saginaw Treatment Plant uses corrosion control techniques and monitoring to ensure that drinking water is non-corrosive to prevent the chemical reaction between water and plumbing that causes metal release. Likely sources: Lead and copper occur due to the corrosion of household plumbing including fittings and fixtures. Lead also occurs due to the presence of lead service lines, which the City is in the process of replacing. At present, the City's goal is to remove 750 lead service lines per year (www.saginaw-mi.com/lead).

Infants and children are considered a vulnerable subpopulation if elevated levels of lead are present in drinking water. Elevated levels of lead can cause serious health problems, especially for pregnant women, infants, and children. 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. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing and fixtures. Before using water for drinking or cooking, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes or until it is as cold as possible. 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, you may wish to have your water tested and your plumbing inspected since levels vary depending on a variety of factors. See the introductory page for more information or contact your local water utility for details. To minimize exposure, follow the steps at water.epa.gov/drink/info/lead or call the Safe Drinking Water Hotline at 800.426.4791.





To learn more or comment on the decisions affecting your drinking water, please consider attending meetings locally and with the City of Saginaw. Meeting times are shown below, along with the person to contact if you have questions about this report or local water projects.

Water Supplier	Meeting Schedule/Time/Location	Water Utility Contact					
Albee Township	Second Tuesday, 8:00 pm, 10645 East Road	Mark Jebb, 989.770.4844					
Birch Run Township	Second Tuesday, 7:00 pm, 8411 Main Street	Brad Thomas, 989.624.9773					
Village of Birch Run	Fourth Monday, 7:00 pm, 12060 Heath Street	Marty Hauck, 989.624.9856					
Blumfield/Reese	Third Monday, 7:00 pm, 12810 E. Washington, Reese	Tim Sheridan, 989.868.9940					
Bridgeport Township	First Tuesday, 6:00 pm, 6740 Dixie Highway	Ruthann Evans, 989.777.0974					
Buena Vista Township	Fourth Monday, 6:00 pm, 1160 S. Outer Drive	Charles Suchodolski 989.754.6536					
Carrollton Township	Second/Last Monday, 5:30 pm, 1645 Mapleridge Road	Don Sumption, 989.754.4611 x110					
Frankenlust Township	Varies, please call 989.684.3883, 3933 Patterson Road	Trevor Jacobs, 989.439.7237					
City of Frankenmuth	First Tuesday, 7:00 pm, 240 W. Genesee Street	Ken O'Brien, 989.652.8987					
Frankenmuth Township	Third Monday, 7:00 pm, 240 W. Genesee Street	Ken O'Brien, 989.652.8987					
James Township	Second Monday, 7:30 pm, 6060 Swan Creek Road	Mark Jebb, 989.781.1353					
Kochville Township	Third Monday, 7:00 pm, 3265 Kochville Road	Trish Foerster 989.792.7596 x120					
City of Saginaw	Mondays, twice monthly, call 989.759.1480 for details	Ted Bomba, 989.759.1640					
Saginaw Township	Second/Fourth Mondays, 5:30 pm, 4980 Shattuck Road	Daryl Gotham, 989.791.9870					
Village of St. Charles	Second Wednesday, 7:00 pm, 110 W. Spruce Street	Don Ackerman, 989.865.8287					
Spaulding Township	Third Tuesday, 6:00 pm, 5025 East Road	Ed Masters, 989.777.2733					
Swan Creek Township	Second Monday, 4:00 pm, 11415 Lakefield Road	Mark Jebb, 989.865.6251					
Taymouth Township	Second Wednesday, 6:00 pm, 4343 Birch Run Road	A.J. Nowak, 989.624.4159 x24					
Thomas Township	First Monday, 7:00 pm, 8215 Shields Drive	Rick Hopper, 989.781.0150					
Tittabawassee Township	Second Tuesday, 5:30 pm, 145 S. Second Street	Ken Dey, 989.695.6517					
City of Zilwaukee	Last Monday, 3:30 pm, 319 Tittabawassee Road	Eric Mahan, 989.755.0931					



About the Saginaw Water Treatment Plant

You receive your water from the Saginaw Water Treatment Plant, which is a not-for-profit department of the City of Saginaw, governed by Saginaw City Council. We encourage your interest in the decisions pertaining to your drinking water. Meetings are held on Mondays, twice monthly. For details or to register as a speaker, please contact the City Clerk's office at 989.759.1480.

Council Members: Annie Boensch George Copeland Jr. Michael Flores

Monique Lamar-Silvia Bill Ostash Autumn Scherzer Reggie Williams II

Tim Morales, City Manager Phillip Karwat, PE, Public Services Director

Paul Reinsch, Director of Water and Wastewater Treatment Services

Ted Bomba, Superintendent, City of Saginaw Water Treatment Plant

Water Quality Questions: 989.759.1640

EPA Safe Drinking Water Hotline: 800.426.4791

Electronic Water Quality Report: www.saginaw-mi.com/ccr

Contact Information