



Saginaw Region Drinking Water Quality Report

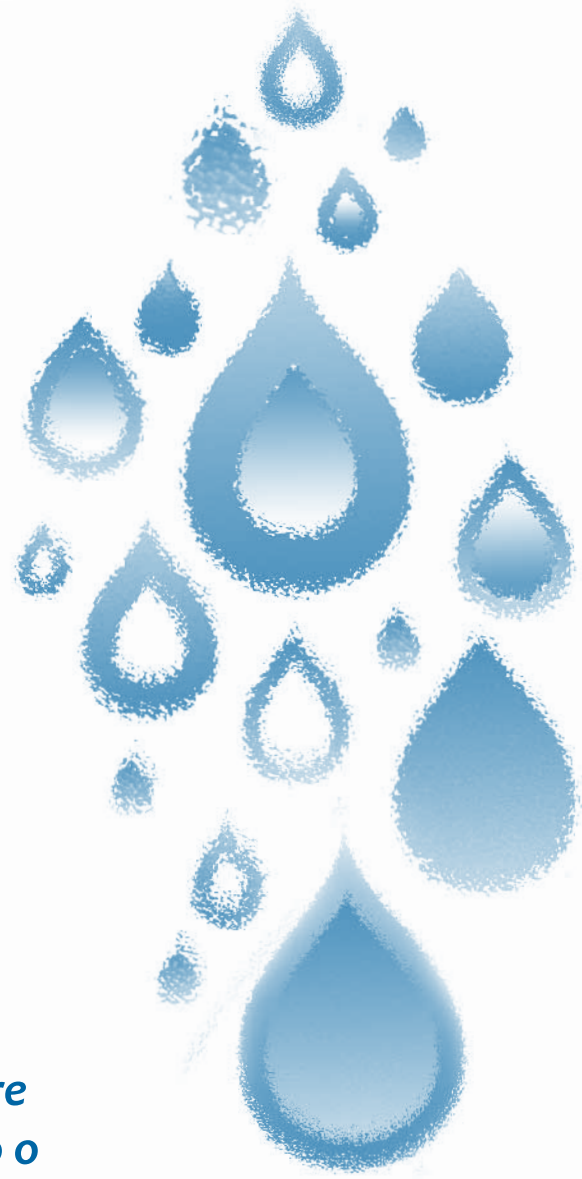
*for Albee Township ~ Village of Birch Run ~ Birch Run Township
Blumfield Reese Water Authority ~ Bridgeport Charter Township
Buena Vista Charter Township ~ Carrollton Township
Frankenlust Township ~ James Township
Kochville Township ~ Saginaw Charter Township
City of Saginaw ~ Village of St. Charles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

2017

Your water supplier is providing this report to help you learn more about the quality of your drinking water. Please take the time to read this report thoroughly. It contains important information and test results for those who receive their water from the Saginaw Water Treatment Plant.

This report has been carefully prepared by the professionals who work at the plant and in your local water distribution system. Their collaborative efforts continue to save time and money for rate payers, and have allowed them to achieve or surpass all drinking water rules in 2017.

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



Saginaw Water Plant Featured in *Treatment Plant Operator Magazine*



After completing a vulnerability assessment in compliance with the 2002 Bioterrorism Act, a multi-phased fencing project was undertaken to enclose and protect the 21-acre plant property.

Citizens were concerned that a fence would obstruct and destroy the plant's beauty, but the thoughtful design is secure, functional and appears to be original to the iconic building's architecture.

Read the full article at: www.tpomag.com/editorial/2017/10/unique_plant_fencing_is_a_thing_of_beauty

2017 Water Treatment Division Projects

- Several improvements were made throughout the plant and distribution system to maintain a state of good repair and extend equipment service life. This included, among other projects, rebuilding high service pump #4, adjusting the filter media, repairing the filter wash water valve, and a new river dam pump.
- Maintenance included cleaning the Gratiot storage tank and rebuilding and constructing new retaining walls at the plant.
- Windows were reinstalled after completing masonry renovations on the historic washwater tower, and new counters were installed in the laboratory.
- A feed line was installed to the “Solar Bee” water recirculator in Lake Linton to help reduce the growth of algae.
- An additional uninterruptible power supply (UPS) was added to the Supervisory Control and Data Acquisition (SCADA) system, and filter control consoles were added to the UPS.
- Work on the electrical supply system included an inspection of the switchgear, breakers, transformers and relays.
- As required by the Michigan Department of Environmental Quality, an asset management plan was developed for the water supply and submitted by the January 1, 2018 deadline.

2017 Maintenance and Service Division Projects

- Mainline valves, hydrants and cast iron crossties were replaced at nine intersections on Williamson from Gallagher to Treanor.
- An 8-inch cast iron water main was replaced with PVC pipe and new fire hydrants installed on Veteran’s Memorial Highway from Wadsworth to McGill.
- A variety of work was completed as part of the Madison Water Main Project, from N. Michigan to N. Fayette: replaced a 6-inch cast iron water main (dated 1899) with PVC; replaced a 6-inch fire line to Covenant Hospital; installed a new fire hydrant and mainline valves.

Additional projects were completed in the regional distribution system. Contact your local water utility to learn more.



Davis Road Water System Improvements

A project to improve the water system along the Davis Road corridor between Pierce and Trautner Roads is nearly complete. Work to improve the reliability of both the raw and finished water transmission mains and the operational flexibility of the raw water supply includes 10,800 feet of new 48-inch *raw* water main and more than 12,000 feet of *finished* water main ranging from 16 to 36 inches in diameter. A new variable speed pump was added at the Kochville Pumping Station to meet seasonal flow demands more efficiently.

A temporary bypass was installed on the existing 48-inch *raw* water line to create a connection for the new main and also to assure that there would be a continuous flow of source water to the treatment plant. To minimize the impact of any disruptions in service while making connections to the existing *finished* water mains, work was scheduled during periods of low demand and contractors worked continuously until service was restored.

The Davis Road Water System Improvements project included provisions to allow future work to be completed without taking the new lines out of service. The new parallel water mains have an expected service life of nearly 100 years and provide *raw* water to the Water Treatment Plant and *finished* water to Carrollton, Frankenlust, Kochville, Saginaw, Thomas, and Tittabawassee Townships, as well as the City of Zilwaukee.

New Lead and Copper Rule Proposed in Michigan: In 2017, the state began work on revising its Lead and Copper Rule to reduce exposure to lead in drinking water. A public meeting was held on March 1, 2018, and a public comment period was provided through March 21. If adopted as currently written, the new rule would be the most stringent in the country. To view the timeline and obtain details, visit www.michigan.gov/deq and search for “proposed lead and copper rule.” To follow changes to the federal Lead and Copper Rule, visit www.epa.gov/dwstandardsregulations/lead-and-copper-rule-long-term-revisions

In the News

Per- and Polyfluoroalkyl Substances (PFAS): PFAS is a group of man-made chemicals used in a variety of industries since the 1940s. In late 2016, EPA established a health advisory levels of 70 parts per trillion for two specific PFAS contaminants (PFOS and PFOA). EPA’s health advisories are non-enforceable and non-regulatory and provide technical information on health effects, analytical methodologies, and treatment technologies associated with drinking water contamination. Only recently has it been possible to test for these contaminants in drinking water and scientific research is needed to better understand how PFOS and PFOA affect human health. Not all contaminants in source water are bad or harmful to health. For those that present a risk, EPA provides guidance that assumes a margin of protection from a lifetime of exposure. Saginaw’s water supply intake was tested for PFAS chemicals in 2017 and all results were below the limit of detection. These results can be viewed at www.saginaw-mi.com/departments/wastewaterandwatertreatmentservices/watertreatment/waterquality.php or for more information visit www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos

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 at 800.882.9539.


Long Term 2 Enhanced Surface Water Treatment Rule (LT2): Saginaw completed the final round of LT2 *Cryptosporidium* and *Giardia* source water monitoring in 2017. Results are presented inside this report. water.epa.gov/lawsregs/rulesregs/sdwa/lt2

The fourth Unregulated Contaminant Monitoring Rule (UCMR 4): Published in the Federal Register on December 20, 2016, UCMR 4 requires monitoring for 30 chemical contaminants between 2018 and 2020 using analytical methods developed by EPA and consensus organizations. This monitoring will provide a basis for future regulatory actions to protect public health.

Not all contaminants in source water are bad or harmful to health

Contaminants tested for in 2017 with results BELOW THE LIMIT of detection:

Cyanide; Nitrate; Nitrite; Iron; Per- and Polyfluoroalkyl Substances (PFAS, including PFOS and PFOA); Gross Alpha; Bromoacetic Acid; Chloroacetic Acid; Dalapon; Benzene; Bromobenzene; Bromochloromethane; Bromomethane; n-Butylbenzene; sec-Butylbenzene; tert-Butylbenzene; Carbon tetrachloride; Chlorobenzene; Chloroethane; Chloromethane; o-Chlorotoluene; p-Chlorotoluene; Dibromomethane; 1,2-Dichlorobenzene; 1,3-Dichlorobenzene; 1,4-Dichlorobenzene; Dichlorodifluoromethane; 1,1-Dichloroethane; 1,2-Dichloroethane; 1,1-Dichloroethylene; cis-1,2 Dichloroethylene; trans-1,2 Dichloroethylene; 1,2-Dichloropropane; 1,3-Dichloropropane; 2,2-Dichloropropane; 1,1-Dichloropropene; cis-1,3 Dichloropropene; trans-1,3 Dichloropropene; Dichloromethane; Ethylbenzene; Fluorotrichloromethane; Hexachlorobutadiene; Isopropylbenzene; p-Isopropyl Toluene; Methyl ethyl ketone; Methyl isobutyl ketone; Methyl-tert-butyl ether; Naphthalene; n-Propylbenzene; Styrene; 1,1,1,2-Tetrachloroethane; 1,1,2,2-Tetrachloroethane; Tetrachloroethylene; Tetrahydrofuran; Toluene; 1,2,3-Trichlorobenzene; 1,2,4-Trichlorobenzene; 1,1,1-Trichloroethane; 1,1,2-Trichloroethane; Trichloroethylene; 1,2,3-Trichloropropane; 1,2,4-Trimethylbenzene; 1,3,5-Trimethylbenzene; Vinyl Chloride; m-Xylene; o-Xylene; p-Xylene; Total Xylenes



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 and, in some cases, radioactive materials 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 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.

Health & Safety Information

Special Health Concerns Some people may be more vulnerable to 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 from EPA's Safe Drinking Water Hotline, 800.426.4791.

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 pipe to the Saginaw Water Treatment Plant for processing.

In June 2004, the Michigan Department of Environmental Quality 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.

2017 Water Quality Test Results

The table below shows the results of water quality tests in the Saginaw Water Treatment System during 2017, unless otherwise noted. 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. We remained in compliance with all of the monitoring and reporting requirements, and had no violations. Our water met or surpassed all state and federal water quality and safety standards.

parameter	test date	unit	avg	range	MRDL	MRDLG	violation	likely sources
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Regulated Inorganic Parameters (sampled in the distribution system)

Chlorine	2017	ppm	0.93	0.83-1.07	4	4	no	Water additive used to control microbials
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parameter	test date	unit	avg	range	MCL	MCLG	violation	likely sources
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Regulated Inorganic Parameters (sampled at the plant's finished water tap)

Fluoride ¹	2017	ppm	0.79	na	4	4	no	Water additive to promote strong teeth
Barium	2014	ppm	0.28	na	2	2	no	Erosion of natural deposits

Regulated Microbiological Parameters (sampled in the filtered water confluence)

Turbidity ²	2017	NTU	.056	0.04-0.23	TT	none	no	Soil runoff, suspended matter in lake water
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1. The Saginaw Water Treatment Plant 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. Staff members also conduct daily fluoride sampling. Results in 2017 were: average=0.77 ppm; range=0.66-0.86 ppm.
2. 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. 100% of our samples in 2017 achieved these requirements. This indicates that our treatment process is working effectively.

parameter	test date	unit	avg	range	MCL/MCLG	violation	likely sources
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Unregulated Parameters (not regulated at the State or Federal Level)

Sodium ³	2017	ppm	6	na	unregulated	no	Naturally occurring
Bromochloroacetic Acid	2017	ppb	2	nd - 3	unregulated	no	Byproduct of drinking water disinfection

3. This data is provided for those with dietary concerns. Sodium was detected at 6 ppm at the plant tap, which equates to 1.42 milligrams of sodium per 8 ounce glass of water.

2017 Long Term 2 Enhanced Surface Water Treatment Rule (LT2) Results

The Saginaw Water Plant conducted monthly source water monitoring for *Cryptosporidium*, *Giardia*, and *E. coli* through September 2017, per the LT2 Rule. *Cryptosporidium* and *Giardia* were not detected in our raw water in 2017 and have NEVER been detected in our treated drinking water. *E. coli* was also not detected during LT2 testing in 2017. *Cryptosporidium*, *Giardia*, and other microbial pathogens come from human and animal waste. They are sometimes found in untreated surface waters (lakes, rivers, streams). Saginaw's test results have been so favorable through the years that our water was placed into the lowest and best category when the LT2 rule began in 2006. This allowed us to avoid the need to add costly treatment measures, keeping our water rates as low as possible. The purpose of the LT2 rule is to reduce illness linked with disease-causing microorganisms in drinking water. It is important to note, however, *Cryptosporidium*, *Giardia*, and microbial pathogens can be spread through means other than drinking water.

Terminology

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) and parts per billion (ppb) - 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.

	Albee Twp	Birch Run Twp	Village of Birch Run	Blumfield/Reese	Bridgeport Twp	Buena Vista Twp	Carrollton Twp	Frankenlust Twp	James Twp	Kochville Twp	City of Saginaw	Saginaw Twp	Village of St Charles	Spaulding Twp	Swan Creek Twp	Taymouth Twp	Thomas Twp	Tittabawassee Twp	City of Zilwaukee
TTHM (ppb)	72	61	55	73	77	55	57	62	54	68	59	62	60	63	58	64	66	70	59
Low	72	33	26	30	35	24	24	27	23	40	20	29	34	19	27	33	18	34	25
High	72	95	73	75	110	83	77	77	66	95	88	89	83	70	92	93	80	88	83
Violation?																			
HAA5 (ppb)	25	31	27	38	28	30	27	29	27	34	25	29	24	32	29	30	33	38	28
Low	25	19	15	19	16	13	13	11	13	25	9	15	15	15	14	19	11	16	13
High	25	38	32	38	35	27	33	36	33	41	28	36	30	44	36	38	43	46	42
Violation?																			
Lead (ppb)	2	1	2	5	1	2	3	4	2	3	10	4	4	2	1	2	1	2	2
Sites above AL	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0
Violation?																			
Copper (ppm)	0.3	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.1	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.3
Sites above AL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Violation?																			

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
Likely sources: TTHM and HAA5 are byproducts of drinking water disinfection. Lead and copper occur due to the corrosion of household plumbing.

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

Total Coliform Bacteria In 2017, total coliform bacteria and *E. coli* were NOT detected in routine monitoring samples in the greater distribution system.

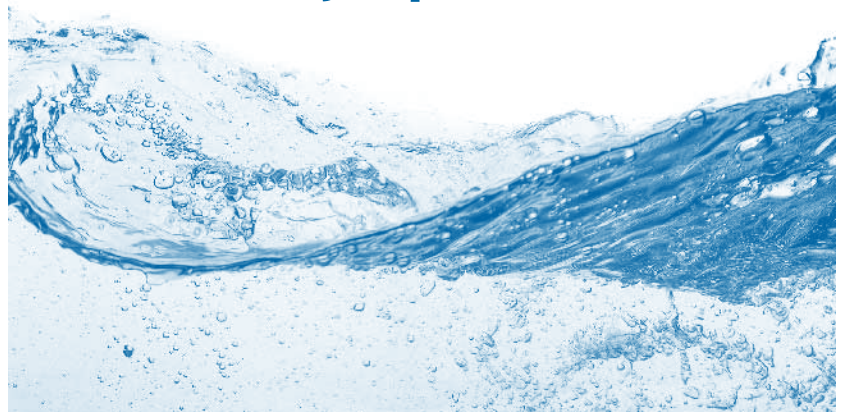
Stage 2 Disinfection Byproducts The results shown above for TTHM and HAA5 are the highest locational running annual averages calculated quarterly for each community. The range shows the single highest and lowest detections during 2017 compliance monitoring.

Lead and Copper Communities in the Saginaw Region have historically remained well under the maximum level allowed for lead or copper in drinking water systems. Lead and copper are not naturally present in our water and the Saginaw Treatment Plant monitors to ensure that drinking water is non-corrosive. Because of this favorable track record, all communities in the Saginaw system participate in coordinated testing every three years. The figures above are from the 2016 coordinated test. Lead and copper compliance is based on the 90th percentile, where nine out of ten samples must be below the Action Level (AL). Of the 156 reportable samples for lead compliance in the regional service area, only four exceeded the AL. No sites exceeded the AL for copper.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Infants and children who drink water containing lead in excess of the action level 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. Your water utility is responsible for providing high quality drinking water, but cannot control the variety of materials used in household 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 are concerned about lead, you may wish to have your water tested.

Information on steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at 800.426.4791 or www.epa.gov/safewater/lead as well as by searching for "Lead in Drinking Water" at www.michigan.gov/deq.

Community-Specific Results



CONTACTS ~ Please consider attending meetings locally and with the City of Saginaw if you would like to comment on the decisions affecting your drinking water. 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	Terry Engelhardt, 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, 6206 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
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	Mike Comstock 989.792.7596 x115
City of Saginaw	Mondays, twice monthly, call 989.759.1480 for details	Paul Reinsch, 989.759.1640
Saginaw Township	Second/Fourth Mondays, 7:00 pm, 4980 Shattuck Road	Sonny Grunwell, 989.791.9870
Village of St. Charles	Second Wednesday, 7:00 pm, 110 W. Spruce Street	Tito Gauna, 989.798.8836
Spaulding Township	Third Tuesday, 6:00 pm, 5025 East Road	Don Ackerman, 989.777.2733
Swan Creek Township	Second Monday, 4:00 pm, 11415 Lakefield Road	Mark Jebb, 989.865.6251
Taymouth Township	Second Wednesday, 7:00 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	Ed Mahaney, 989.695.6517
City of Zilwaukee	Last Monday, 3:30 pm, 319 Tittabawassee Road	Eric Mahan, 989.755.0931



Water Quality Questions: 989.759.1640

USEPA Safe Drinking Water Hotline: 800.426.4791

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

[Learn More 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.

Dennis Browning, Mayor
 Floyd Kloc, Mayor Pro Tem
 Michael Balls, Council Member
 Annie Boensch, Council Member
 Clint Bryant, Council Member
 John Humphreys, Council Member
 John Milne, Council Member
 Brenda Moore, Council Member
 Demond Tibbs, Council Member
 Tim Morales, City Manager
 Kimberly Mason, Director of Water and Wastewater Treatment Services
 Phillip Karwat, PE, Public Services Director
 Paul Reinsch, Superintendent of Water Treatment and Field Operations

