

THE CITY OF



TWENTY-TWENTY-ONE

WATER QUALITY REPORT

The City of Kalamazoo provides its customers with information about the quality of our drinking water each year in a Water Quality Report (sometimes referred to as a Consumer Confidence Report). Much of the information provided in this report, along with the additional monitoring and testing conducted throughout the year, is beyond what is required by the Safe Drinking Water Act and is provided as an extra service to our customers.

The 2021 water quality data in this report demonstrates that the water we provide to our customers exceeds the standards established by federal and state regulations.



The Kalamazoo Water Supply System



DID YOU KNOW that the Kalamazoo Water Supply System is the Largest Groundwater System in Michigan?

Your Drinking Water Source

The City of Kalamazoo Public Water Supply System is the largest groundwater-based drinking water system and the fifth largest water utility in Michigan. It is also ranked among the lowest for water rates out of the 50 largest systems within the state.

Our system utilizes limited treatment through chlorine, fluoride, and phosphate additives. Two stations are equipped with water purification and iron removal capabilities.

2021 Kalamazoo Water Facts

STORAGE: 10 water storage facilities with 17.8 million gallons of treated water storage capacity

SOURCES:

- 13 active wellfields
- 13 point of entry treatment facilities
- 94 wells
- 19 million gallons per day produced on average
- 38 million gallons per day maximum in 2020
- 46 million gallons per day of treatment capacity

DISTRIBUTION:

- 196,292 customers served
- Service in 11 jurisdictions
- 838 miles of water main
- Approximately 7000 hydrants
- 11 pressure service districts

THIS REPORT

Summarizes our efforts and commitment to provide safe, reliable, and affordable drinking water. Our facilities operate 24 hours a day, 7 days a week and are monitored continuously both on and off site by qualified, trained and licensed personnel.

Upcoming Improvements for 2022

The City of Kalamazoo has planned a systematic Multi-Year Capital Improvement Program to continue our mission of providing high quality drinking water in compliance with all regulatory requirements. This program will include upgrades to existing pipes, new water main construction, new water storage facilities, additional lead service replacements, and new iron and PFAS removal capabilities.



Protecting Our Water

Nearly half of the U.S. population depends on groundwater for its drinking water supply.

Kalamazoo's Groundwater

In Kalamazoo County, groundwater is our source of drinking water for private and municipal wells. Groundwater exists underground in pore spaces between sand and gravel particles. Groundwater is relatively abundant, easy to extract, and generally lacks harmful bacteria. However, it can also be vulnerable to contamination from spills, leaks, or dumping of harmful substances to the ground.

Wellhead Protection



The City of Kalamazoo has a Michigan Department of Environment, Great Lakes, and Energy (EGLE) approved Wellhead Protection Program. The City has been awarded many Exemplary Source Water Protection Awards. Since 1998, it has also been designated as a Groundwater Guardian Community.

Kalamazoo's Wellhead Protection website ProtectYourWater.net has specific educational information about its Water System, related ordinances, fun activities, links to other websites, and resources for groundwater and other water resource issues.

Our Wellhead Protection Management Plan allows actual and potential sources of contamination in a wellhead protection area (WHPA) to be managed in order to prevent them from reaching the aquifer. Management approaches may involve a variety of activities including facility inspections, land-use regulations, operational policies, best management practices, public information and education. For more information contact the Public Services Water Programs Manager at 311 or (269) 337-8000.

Stormwater Management



Rivers, lakes, and streams don't follow city limits, so protecting them can't just be the responsibility of one group or community. That's why the City of Kalamazoo works with other Kalamazoo County communities as part of the Kalamazoo Stormwater Working Group (KSWG). The KSWG communities have interconnected "Municipal Separate Storm Sewer Systems" (or MS4s). This means that stormwater and wastewater are collected through separate sewer systems. Stormwater is collected through drainage systems and released to our waterways. Wastewater is collected for treatment prior to being released to waterways.

Rain falls and snow melts across hard and impervious surfaces that do not allow water to soak into the ground. Stormwater runoff carries salts, grass clippings, sediment, fertilizer, oils, pet waste, and other material left on driveways and sidewalks. Join us and be a good steward of our natural water resources by preventing harmful discharges. **Learn more at ProtectYourWater.net/KSWG or contact the Public Services Water Programs Manager at 311 or (269) 337-8000.**

The City's Performance Standards for groundwater and stormwater can be found at <https://protectyourwater.net/groundwater-regulations/>

Protecting Our Water *continued*

CROSS-CONNECTIONS

A backflow in the water system can be created in areas that experience a sudden loss of pressure.

As a City of Kalamazoo drinking water supply customer, you can help ensure that the water you are drinking within your home and business remains safe. Prevent cross-connections with the City of Kalamazoo's water supply by ensuring that all backflow prevention devices are installed, inspected and properly maintained by licensed and certified plumbers as required by state and local plumbing codes.

What is a “cross-connection”?

Cross-connections are arrangements of piping or appurtenances through which a backflow of undesirable material could enter the potable (drinking) water system.

What is a “backflow”?

Backflow is water flowing in the opposite direction of its normal flow. Backflow can allow contaminants to enter the drinking water system through cross-connections.

The undesirable material may come from sources connected to your own home or facility's internal or external plumbing. A backflow in the water system can be created in areas that experience a sudden loss of pressure. Pressure changes can occur as a result of water main breaks, fire department usage, or during times of hydrant flushing.

If any of these conditions occur in your area, you should flush your lines before using the water to minimize iron particles and other undesirable impurities that may be present. Flush your taps by starting in your restroom facility or utility sink and working out towards your food service area.



Help prevent cross-connections:

- Do not submerge hoses in buckets, pools, tubs, sinks or process tanks.
- Do not use spray attachments without a backflow prevention device. The chemicals used on your lawn are toxic and can be fatal if ingested.
- Do buy and install backflow prevention devices (hose bib vacuum breakers) for all threaded faucets around your home or business. They are inexpensive and available at hardware stores and home-improvement centers.
- Never install sprinkler systems, fire suppression systems, or boilers with chemical additives without proper backflow prevention devices.
- Ensure that your softener drain line has an air gap between the drain line and the receiving drain.
- Residential and Commercial establishments connected to the municipal water system must properly abandon all water wells onsite and provide abandonment information to the City of Kalamazoo and the Kalamazoo Environmental Community Health Department.



Learn more about PFAS at www.protectyourwater.net/pfas/

Hazardous Materials

A toxic product dumped on the ground or down a storm drain can contaminate our drinking water and surface waters and is strictly prohibited by law.

Help prevent pollutants from entering groundwater or surface water features by taking unused hazardous household chemicals to the Kalamazoo County Household Hazardous Waste Collection Center, located at 1301 Lamont Avenue, off Lake Street next to the Kalamazoo County Fairgrounds. Contact the center at (269) 373-5211 or view their website at www.kalcounty.com/hhw for more information. Unused prescription drug disposal locations and hours are listed at www.kalcounty.com/hhw/med-disposal.htm.

PFAS Tests for Kalamazoo Municipal Drinking Water Continue to Show Results Within Safe Drinking Water Guidelines

PFAS levels at water pumping stations serving the Kalamazoo municipal drinking water have been consistently within the safe drinking water guidelines, set by the Environmental Protection Agency, and Michigan Department of Environment, Great Lakes and Energy. The City of Kalamazoo will continue to conduct routine PFAS testing at each pumping station in addition to any state or federal mandated monitoring to maintain oversight of the water supply system and ensure public health.

What's new in 2022?

You may have noticed a few changes. The City is currently constructing the 6th Street South Water Tower in Texas Township. Water tower construction began in 2020 and is scheduled to be complete later this year. The 6th Street South Water Tower will be the tallest in the City's distribution system (at 150 feet tall), will provide storage for 1.5 million gallons of municipal drinking water, and will assist in stabilizing system pressures south of I-94 and throughout much of Texas Township.



2021 WATER QUALITY DATA

Regulated Contaminant	MCL	MCLG	Level Detected	Results Range	Violation Yes/No	
Nitrate (ppm)	10	10	1.2	ND - 1.2	No	
Barium (ppm) (2019)	2	2	0.13	0.09-0.13	No	
Selenium (ppm) (2019)	0.05	0.05	0.002	ND - 0.002		
Arsenic (ppb)	10	NA	5.6	NA	No	

Regulated Contaminant	MCL	MCLG	Highest Annual Average	Results Range	Violation Yes/No	
Fluoride (ppm)	4	4	0.79	0.35 - 0.83	No	
Trichloroethene (ppb) (2020)	5	0	0.70	ND - 0.76	No	
Cis-1,2- Dichloroethylene (ppb)	70	70	0.84	ND - 1.4	No	
1,2- Dichloroethane (ppb)	5	0	0.36	ND - 0.63	No	

Regulated Contaminant	MRDL	MRDLG	Highest Running Annual Average	Results Range	Violation Yes/No	
Chlorine (ppm)	4	4	0.98	ND - 3.32	No	
Haloacetic Acids (HAA5) (ppb)	60	NA	19.3	12.7 - 29	No	
Total Trihalomethanes (ppb)	80	NA	38.5	12 - 50	No	

Special Monitoring and Unregulated Contaminant*	Highest Level Detected	Results Range	Average Result 2020	
Sodium (ppm)*	72	7.0 - 72	34	

Contaminant subject to AL	Action Level	90th Percentile	Sample Date	Number of Samples above AL	Range of Results	
Lead (ppb)**	15	8 13	Jan 1-June 30, 2021 July 1-Dec 31, 2021	4 7	0-97 0-47	
Copper (ppm)	1.3	0.9 0.7	Jan 1-June 30, 2021 July 1-Dec 31, 2021	5 3	0-2.8 0-2.0	

UCMR TESTING 2018 & 2019	Analyte	Units	Lowest	Highest	Average	Violation Yes/No
	Germanium µg/L	µg/L	ND	0.370	0.122	N
	Manganese µg/L	µg/L	ND	261	256	N
	o-Toluidine µg/L	µg/L	ND	0.562	0.036	N
	Total Haloacetic Acids (5) µg/L	µg/L	10.60	18.82	15.01	N
	Total Haloacetic Acids (6) µg/L	µg/L	12.98	21.60	17.62	N
	Total Haloacetic Acids (9) µg/L	µg/L	16.70	26.80	22.23	N

* 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.

UCMR TESTING 2018 & 2019



Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Discharge of drilling wastes; discharge from metal refineries and coal-burning factories; discharge from electrical aerospace and defense industries
Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes

Typical Source of Contamination

Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Dishcharge from metal degreasing sites and other factories
Discharge from industrial chemical factories

Typical Source of Contamination

Water additive used to control microbes
By-product of drinking water disinfection

Typical Source of Contamination

Erosion of natural deposits

Typical Source of Contamination

Lead service lines, corrosion of household plumbing including fittings and fixtures; Erosion of natural deposits
Corrosion of household plumbing systems; erosion of natural deposits

The City of Kalamazoo was in compliance for all treatment techniques in 2021

2021 PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) MONITORING						
Regulated Contaminant	MCL, TT, or MRDI	MCLG or MRDLG	Highest Running Annual Average	Results Range	Violation Yes/No	Typical Source of Contaminant
Perfluorobutane sulfonic acid (PFBS) (ppt)	420	N/A	10.5	ND-8	NO	Discharge and waste from industrial facilities; stain-resistant treatments
Perfluorohexane sulfonic acid (PFHxS) (ppt)	51	N/A	4.2	ND-5	NO	Firefighting foam; discharge and waste from industrial facilities
Perfluorohexanoic acid (PFHxA) (ppt)	400,00	N/A	3.5	ND-4	NO	Firefighting foam; discharge and waste from industrial facilities
Perfluorooctane sulfonic acid (PFOS) (ppt)	16	N/A	5	ND-6	NO	Firefighting foam; discharge from electroplating facilities; discharge and waste from industrial facilities
Perfluorooctanoic acid (PFOA) (ppt)	8	N/A	3.2	ND-5	NO	Discharge and waste from industrial facilities; stain-resistant treatments



Water Quality Data Table

DEFINITIONS

More than 30,000 tests were performed on our drinking water in 2021, and the City of Kalamazoo met or exceeded all state and federal drinking water standards.

The City of Kalamazoo monitors for contaminants in your drinking water according to federal and state laws. The table is based on analyses conducted in 2021 and those tests conducted less frequently than once per year. The Water Quality Data Table lists only the contaminants that were detected. If the test was not performed in 2021, then the most recent analysis is listed. The City of Kalamazoo's state certified laboratory analyzes for the absence of microorganisms and levels of limited treatment chemicals (hexametaphosphate, orthophosphate, fluoride, and residual chlorine) in the City's water supply at several locations three to five days per week. All limited treatment chemicals are on automated feed control systems that are monitored 24/7 by City of Kalamazoo staff.

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

Contaminant – A biological, chemical, physical, or radiological substance or matter in water.

MCLG (Maximum Contaminant Level Goal) – The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.

MCL (Maximum Contaminant Level) – The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to MCLG's as feasible using the best available treatment technology.

MRDL (Maximum Residual Disinfectant Level) – 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.

MRDLG (Maximum Residual Disinfectant Level Goal) – The level of a drinking water disinfection below which there is no known or expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.

ND – Non-detected

pCi/L (Picocuries per Liter) – A measure of radioactivity.

PPB – Part per billion; the equivalent of one microgram per Liter.

PPM – Part per million; the equivalent of one milligram per Liter.

Trihalomethanes – Compounds formed during the chlorination (disinfection) of drinking water.

NA – Not Applicable

Monitoring for Unregulated Contaminants – The U.S. Environmental Protection Agency (EPA) federal regulations affecting monitoring of unregulated contaminants at public water systems are known as the Unregulated Contaminants Monitoring Rule (UCMR). The purpose of monitoring for unregulated contaminants in drinking water is to provide data to support the EPA administrator's decisions concerning whether or not to regulate these contaminants in the future for the protection of public health.

MEETING EPA STANDARDS

While your drinking water meets the U.S. EPA standard for arsenic, it does contain low levels of arsenic. The U.S. EPA standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. The U.S. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.



ADDITIONAL HEALTH INFORMATION – Sources of drinking water for both tap water and bottled water can include rivers, lakes, streams, pond 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 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 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 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.

All 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 health risks. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at 800-426-4791.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 are available from the EPA's Safe Drinking Water Hotline at 800-426-4791.

Water Quality Reports from previous years

are available on the City of Kalamazoo's website at www.kalamazoo.org/waterqualityreport.

THE CITY OF KALAMAZOO'S

Lead and Copper PROGRAM



Congratulations to our Lead Service Replacement Team for their hard work in 2021.

The City of Kalamazoo is committed to providing safe and reliable drinking water to Kalamazoo and its surrounding communities and has been consistently in compliance with the 1991 Safe Drinking Water Act Lead and Copper Rule and all revisions of the rule.

Kalamazoo Drinking Water

The City of Kalamazoo does not have lead in its water mains or wells. However, lead can enter drinking water when it is in contact with pipes, solder, home/building interior plumbing, fittings and fixtures that contain lead.

Safe Water Treatment

The City has utilized a corrosion control program since 1956 that works to reduce water corrosiveness to pipes, fittings and fixtures containing lead and copper. To ensure an optimized strategy, the City of Kalamazoo performs routine monitoring of corrosion control parameters within the water distribution system and testing for lead and copper in customers' homes. Our Public Services Department periodically evaluates the most effective corrosion control methods available and additional ways to further enhance this program.

Lead Service Replacement

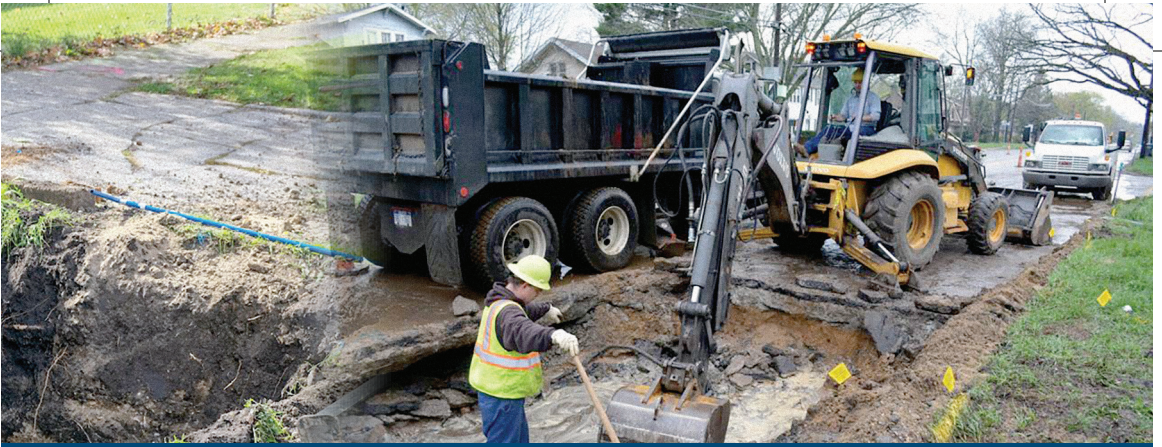
A proactive annual capital improvement program has been in place for over twenty years to address lead service replacements. In 2021 Kalamazoo replaced 940 non-copper services with funding from the Foundation for Excellence, Michigan's Drinking Water Revolving Fund Program, and the City of Kalamazoo's Capital Improvements Projects program. Lead service replacements are continuing in 2022 and beyond.

Lead and Copper Monitoring

The City of Kalamazoo conducted two lead and copper monitoring programs in 2021 to comply with federal and state lead and copper regulations. These programs target homes that are likely to have the highest concentrations of lead in their drinking water and include those with lead service lines as well as homes with copper plumbing built before lead solder was outlawed in the late 1980s. Kalamazoo did not exceed the EPA Action level of 15 parts per billion (ppb) for lead or 1300 ppb for copper. Results of the testing can be found in the 2021 Water Quality Data table on pages 6-7.

There are currently 3,017 known lead services, 5,860 service lines of unknown material, and 41,669 total service lines.

The City of Kalamazoo is conducting a thorough inventory throughout the year and any updates to these numbers will be listed in future Water Quality Reports.



Our Commitment to Service

Kalamazoo has provided free lead and copper testing to customers for over 25 years. Lead filters are also provided at no charge to homes with a lead or un-defined service line. Call (269) 337-8550 if you have any questions about these services.

**Contact (269) 337-8550 to
arrange for free lead sampling**

For help finding out if you have lead service lines in your home, you can contact the City's Department of Public Services Field Services Division at 311 or (269) 337-8000.

Health Effects

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 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. The City of Kalamazoo is responsible for providing high quality drinking water, but cannot control the variety of materials used in household plumbing components. If you have a service line that is lead, galvanized

previously connected to lead, or unknown but likely to be lead, 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. Please contact the City of Kalamazoo Laboratory Supervisor at (269) 337-8550 for testing. 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 www.epa.gov/safewater/lead.

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.

If you have a service line that is lead, galvanized previously connected to lead, or unknown but likely to be lead, 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.

CONTACTS

Printed copies of this report are available upon request at (269) 337-8000

Customer Views Welcome

If you are interested in learning more, have questions on the contents of the report or would like to comment on water issues, please feel free to contact the Public Services Programs Manager at 311 or (269) 337-8000. Contact information is listed below for issues related to water.

If you would like to address issues in a public forum, the City of Kalamazoo Commission meetings are held on the 1st and 3rd Monday of each month at 7:00 p.m. in City Hall at 241 West South Street, Kalamazoo, Michigan 49007. We will update this report annually and keep you informed of any new developments or significant issues that occur throughout the subject-reporting year.

Utility Customer Service 311 or (269) 337-8000 opening or closing accounts, billing, payments, meter readings, leaks, or other related questions	Water Testing for Lead & Copper (269) 337-8550 arrange to have your home or businesses water tested for free	Public Services Programs Manager 311 or (269) 337-8000 questions regarding the Water Quality Report and laboratory data pertaining to water quality	Field Services Section 311 or (269) 337-8000 report a water main break, get assistance determining if your property has lead plumbing components, report clogged catch basins or inlets [call (269) 337-8148 after business hours]
24/7 Water/Sewer Emergency 311 or (269) 337-8000 report an emergency outside of normal business hours	Illicit Discharge Elimination Hotline 311 or (269) 337-8000 report illegal dumping of chemical or hazard materials	Water Operations 311 or (269) 337-8000 report any issues with water quality (call (269) 337-8148 after business hours)	EPA Safe Drinking Water Hotline (800) 426-4791 information and guidelines from the Environmental Protection Agency

Boil Water Advisories (BWAs) are most commonly issued when a significant temporary loss of pressure to a defined area occurs or had a reasonable potential to have occurred due to a water infrastructure break, repair, or replacement. BWAs may be issued before a planned/scheduled repair or infrastructure replacement, or issued under emergency conditions, such as a water main break or when other water infrastructure is severely damaged.



Boil Water Advisories & Orders

Although rare, BWAs can be issued under a variety of other situations, such as an act of vandalism, terrorism, or a known or unknown source of contamination in the water system. Please note that the BWA will always describe the specific area affected, contact numbers, and any appropriate directions, such as boiling your water. The vast majority of these BWAs are precautionary and issued without any evidence of contamination.

More information on Boil Water Advisories and customer communications is available at:
<https://www.kalamazoo.org/bwa>