

ANNUAL WATER QUALITY REPORT

WATER TESTING PERFORMED IN 2018



Presented By
City of Manistee

Our Mission Continues

We are once again pleased to present our annual water quality report covering all testing performed between January 1 and December 31, 2018. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best-quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all our water users.

Please remember that we are always available should you ever have any questions or concerns about your water.

Water Treatment Process

The City of Manistee treats your water using phosphate and chlorine, to remove or reduce harmful contaminants that may come from the source water, and fluoride, to promote tooth health. Our Wellhead Protection Program was started in 1996. The basic premise of the plan is to keep our water supply safe from contamination. A copy of the source water protection plan is available at Department of Public Works, 280 Washington Street; it provides more information such as potential sources of contamination. The City has an updated copy of our Well Head Protection Plan, completed in 2015, in our DPW office.

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as those with cancer undergoing chemotherapy, those who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or <http://water.epa.gov/drink/hotline>.



Protecting Your Water



Bacteria are a natural and important part of our world. There are around 40 trillion bacteria living in each of us; without them, we would not be able to live healthy lives. Coliform bacteria are common in the environment and are generally not harmful themselves. The presence of this bacterial form in drinking water is a concern, however, because it indicates that the water may be contaminated with other organisms that can cause disease.

In 2016, the U.S. EPA passed a new regulation called the Revised Total Coliform Rule, which requires additional steps that water systems must take in order to ensure the integrity of the drinking water distribution system by monitoring for the presence of bacteria like total coliform and *E. coli*. The rule requires more stringent standards than the previous regulation, and it requires water systems that may be vulnerable to contamination to have in place procedures that will minimize the incidence of contamination. Water systems that exceed a specified frequency of total coliform occurrences are required to conduct an assessment of their system and correct any problems quickly. The U.S. EPA anticipates greater public health protection under the new regulation due to its more preventive approach to identifying and fixing problems that may affect public health.

Though we have been fortunate to have the highest-quality drinking water, our goal is to eliminate all potential pathways of contamination into our distribution system, and this new rule helps us to accomplish that goal.

Lead in Home Plumbing

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. We are responsible for providing high quality drinking water but we 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 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at (800) 426-4791, or on the U.S. EPA's website at <http://water.epa.gov/drink/info/lead/index.cfm>.



Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water that must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals, in some cases, radioactive material, and substances resulting from the presence of animals or from human activity. Substances 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, or wildlife; Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may 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 may also come from gas stations, urban stormwater runoff, and septic systems; Radioactive Contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Where Does My Water Come From?

The City of Manistee customers are fortunate because we enjoy an abundant water supply. Our water source is groundwater from two natural aquifers. Four large water wells pump the water to two 500,000 gallon water towers. In 2018, we pumped 295,635,000 gallons of water.

Community Participation

You can attend regular scheduled City Council meetings on the first and third Tuesdays of each month, at 7:00 p.m. in the City Hall Council Chambers, Third Floor, at 70 Maple Street.

Source Water Assessment

A Source Water Assessment Plan (SWAP) is now available at our office. This plan is an assessment of the delineated area around our listed sources through which contaminants, if present, could migrate and reach our source water. It also includes an inventory of potential sources of contamination within the delineated area, and a determination of the water supply's susceptibility to contamination by the identified potential sources.

According to the Source Water Assessment Plan, our water system had a susceptibility rating of high. It is important to understand that this susceptibility rating does not imply poor water quality, only the system's potential to become contaminated within the assessment area. If you would like to review the Source Water Assessment Plan, please feel free to contact our office during regular office hours.

We remain vigilant in delivering the best-quality drinking water

QUESTIONS?

For more information about this report, or your drinking water, please contact Jeff Mikula, Public Works Director, at (231) 723-7132 or by writing to this address: 70 Maple Street, Manistee, MI 49660. We want our valued customers to be informed about their water utility. For more information about safe drinking water, visit the U.S. Environmental Protection Agency at www.epa.gov/safewater/ or DEQ at www.michigan.gov/water. We will update this report annually and will keep you informed of any problems that may occur throughout the year, as they happen. Copies are available at the Department of Public Works, City Hall, and various other public locations.

Lead Service Lines

The City of Manistee has 3,439 service connections. Of those, 259 are made of copper, 9 are HDPE, and 106 are galvanized. The materials in the other 3,065 are unknown at this time. We will be working diligently in the next few years to identify the remaining materials.



BY THE NUMBERS

The number of Olympic-sized swimming pools it would take to fill up all of Earth's water.

800
TRILLION

1
CENT

The average cost for about 5 gallons of water supplied to a home in the U.S.

The amount of Earth's water that is salty or otherwise undrinkable, or locked away and unavailable in ice caps and glaciers.

99%

50
GALLONS

The average daily number of gallons of total home water use for each person in the U.S.

The amount of Earth's surface that's covered by water.

71%

330
MILLION

The amount of water on Earth in cubic miles.

The amount of Earth's water that is available for all of humanity's needs.

1%

75%

The amount of the human brain that contains water.

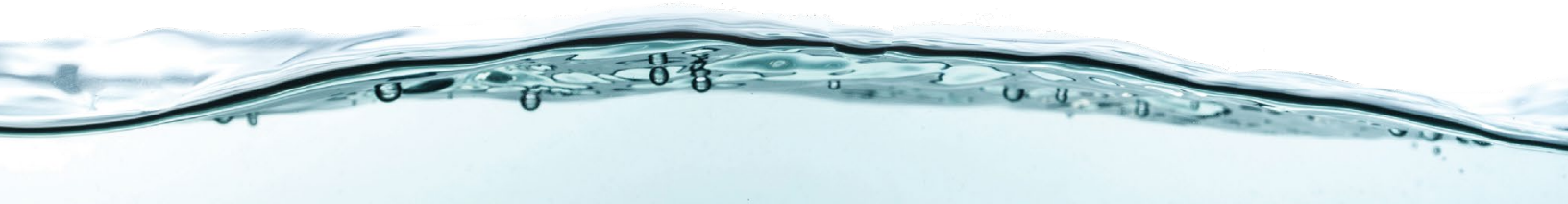
What's a Cross-Connection?

Cross-connections that contaminate drinking water distribution lines are a major concern. A cross-connection is formed at any point where a drinking water line connects to equipment (boilers), systems containing chemicals (air conditioning systems, fire sprinkler systems, irrigation systems), or water sources of questionable quality. Cross-connection contamination can occur when the pressure in the equipment or system is greater than the pressure inside the drinking water line (backpressure). Contamination can also occur when the pressure in the drinking water line drops due to fairly routine occurrences (main breaks, heavy water demand), causing contaminants to be sucked out from the equipment and into the drinking water line (backsiphonage).

Outside water taps and garden hoses tend to be the most common sources of cross-connection contamination at home. The garden hose creates a hazard when submerged in a swimming pool or when attached to a chemical sprayer for weed killing. Garden hoses that are left lying on the ground may be contaminated by fertilizers, cesspools, or garden chemicals. Improperly installed valves in your toilet could also be a source of cross-connection contamination.

Community water supplies are continuously jeopardized by cross-connections unless appropriate valves, known as backflow prevention devices, are installed and maintained. We have surveyed industrial, commercial, and institutional facilities in the service area to make sure that potential cross-connections are identified and eliminated or protected by a backflow preventer. We also inspect and test backflow preventers to make sure that they provide maximum protection.

For more information on backflow prevention, contact the Safe Drinking Water Hotline at (800) 426-4791.



Test Results

Our water is monitored for many different kinds of substances on a very strict sampling schedule. Also, the water we deliver must meet specific health standards. Here, we show those substances that were detected in our water. (A complete list of all our analytical results is available upon request.) Remember that detecting a substance does not mean the water is unsafe to drink; our goal is to keep all detects below their respective maximum allowed levels.

The state recommends monitoring for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Barium (ppm)	2017	2	2	0.03	0.02–0.03	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chlorine (ppm)	2018	[4]	[4]	0.4 ¹	0.05–1.26	No	Water additive used to control microbes
Fluoride (ppm)	2018	4	4	1.4	ND–1.4	No	Erosion of natural deposits; Water additive that promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAAs] (ppb)	2018	60	NA	ND	NA	No	By-product of drinking water disinfection
Nitrate (ppm)	2018	10	10	1.49	ND–1.49	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Selenium (ppb)	2017	50	50	2	ND–2	No	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines
TTHMs [Total Trihalomethanes] (ppb)	2018	80	NA	21	ND–21	No	By-product of drinking water disinfection

Tap water samples were collected for lead and copper analyses from sample sites throughout the community.

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH %ILE)	RANGE LOW-HIGH	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2017	1.3	1.3	0.48	ND–0.68	0/20	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2017	15	0	ND	ND–2	0/20	No	Corrosion of household plumbing systems; Erosion of natural deposits

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Manganese (ppb)	2014	50	NA	28.9	21.3–28.9	No	Leaching from natural deposits

UNREGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Sodium (ppm)	2016	17	10–17	Erosion of natural deposits

OTHER SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH
Perfluorooctanesulfonate Acid [PFOS] (ppt)	2018	ND	NA
Perfluorooctanoic Acid [PFOA] (ppt)	2018	ND	NA

Definitions

90th %ile: The levels reported for lead and copper represent the 90th percentile of the total number of sites tested. The 90th percentile is equal to or greater than 90% of our lead and copper detections.

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

MCL (Maximum Contaminant Level): 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.

MCLG (Maximum Contaminant Level Goal): 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.

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 disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

NA: Not applicable

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

ppt (parts per trillion): One part substance per trillion parts water (or nanograms per liter).

SMCL (Secondary Maximum Contaminant Level): These standards are developed to protect aesthetic qualities of drinking water and are not health based.

¹Value shown represents the running annual average.