

ANNUAL WATER QUALITY REPORT

WATER TESTING PERFORMED IN 2018



Presented By

CITY OF
CADILLAC
MICHIGAN

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.

Community Participation

We want to inform our customers about their water utility. Copies of our operation budget and capital improvement plan are available at the municipal complex and at Cadillac-mi.net. If you would like to tour a facility or learn more about our operations, please call our office to make arrangements.

City Council meetings are another good public forum for community participation; feel free to attend one of our regularly scheduled meetings on the first and third Mondays of each month at 7 p.m. at the Municipal Complex, 200 Lake Street, Cadillac, Michigan.

Important Health Information

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 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>.



Where Does My Water Come From?

Cadillac's water comes from seven wells owned by the city. Our wells draw groundwater from aquifers 300 and 400 feet below ground. The city's older well field and 1-million-gallon water tower were constructed in 1960, ending our reliance on surface water from Lake Cadillac. The most current well field, consisting of three wells, was completed and put online in August 2012.

Because well water contains varying amounts of inorganic contaminants (iron, manganese, calcium, etc.), a blended solution of ortho- and polyphosphates is added at each well to sequester these. In addition, phosphates ensure we maintain the highest water quality (inhibiting corrosion, scale, and biofilm and reducing lead and copper levels) in the distribution system. Chlorine is added to our system to disinfect the water supply.

Source Water Assessment

The 1996 amendments to the Safe Drinking Water Act require that source water assessments be completed for all public water supplies in the United States. The Michigan Department of Environmental Quality (MDEQ) developed a program to (1) identify areas that supply public drinking water, (2) assess the susceptibility of that supply to actual and potential contamination, and (3) inform the public of the assessment results. Cadillac's assessment was reevaluated in 2005 based on our approved Wellhead Protection Program. MDEQ's revised assessment lists the wells with a high to very high susceptibility based on geology, well construction, well water chemistry, source isolation, and potential sources of contamination. Copies of the complete source water assessment are available at Cadillac's Municipal Complex and local MDEQ office. To learn more about Cadillac's Wellhead Protection Program, please visit our website at www.cadillac-mi.net.



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, which 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.

We remain vigilant in delivering the best-quality drinking water

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.

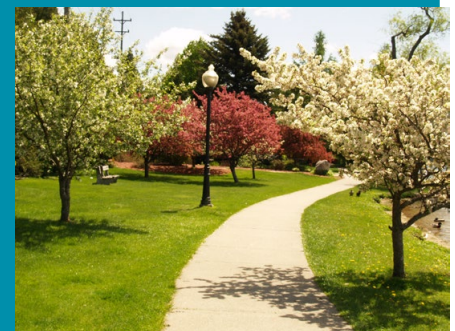
Per- and Polyfluoroalkyl Substances

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

No PFAS were detected in samples collected in 2018 from the City of Cadillac's water supply entry points. For information on PFOA, PFOS, and other PFAS, including possible health outcomes, please visit <https://www.epa.gov/pfas>, <https://www.atsdr.cdc.gov/pfas/>, or <http://www.michigan.gov/pfasresponse>.

QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please call the Director of the Cadillac Utilities Department at (231) 775-0181.



Tip Top Tap

The most common signs that your faucet or sink is affecting the quality of your drinking water are discolored water, sink or faucet stains, a buildup of particles, unusual odors or tastes, and a reduced flow of water. The solutions to these problems may be in your hands.

Kitchen Sink and Drain

Hand washing, soap scum buildup, and the handling of raw meats and vegetables can contaminate your sink. Clogged drains can lead to unclean sinks and backed-up water in which bacteria (i.e., pink and black slime growth) can grow and contaminate the sink area and faucet, causing a rotten egg odor. Disinfect and clean the sink and drain area regularly. Also, flush regularly with hot water.

Faucets, Screens, and Aerators

Chemicals and bacteria can splash and accumulate on the faucet screen and aerator, which are located on the tip of faucets and can collect particles like sediment and minerals, resulting in a decreased flow from the faucet. Clean and disinfect the aerators or screens on a regular basis.

Check with your plumber if you find particles in the faucet screen as they could be pieces of plastic from the hot water heater dip tube. Faucet gaskets can break down and cause black, oily slime. If you find this slime, replace the faucet gasket with a higher-quality product. White scaling or hard deposits on faucets and showerheads may be caused by hard water, or water with high levels of calcium carbonate. Clean these fixtures with vinegar or use water softening to reduce the calcium carbonate levels for the hot water system.

Water Filtration/Treatment Devices

A smell of rotten eggs can be a sign of bacteria on the filters or in the treatment system. The system can also become clogged over time, so regular filter replacement is important. (Remember to replace your refrigerator filter!)



Tap vs. Bottled

Thanks in part to aggressive marketing, the bottled water industry has successfully convinced us all that water purchased in bottles is a healthier alternative to tap water. However, according to a four-year study conducted by the Natural Resources Defense Council (NRDC), bottled water is not necessarily cleaner or safer than most tap water. In fact, about 25 percent of bottled water is actually just bottled tap water (40 percent, according to government estimates).

The Food and Drug Administration (FDA) is responsible for regulating bottled water, but these rules allow for less rigorous testing and purity standards than those required by the U.S. EPA for community tap water. For instance, the high mineral content of some bottled waters makes them unsuitable for babies and young children. Further, the FDA completely exempts bottled water that's packaged and sold within the same state, which accounts for about 70 percent of all bottled water sold in the United States.

People spend 10,000 times more per gallon for bottled water than they typically do for tap water. If you get your recommended eight glasses a day from bottled water, you could spend up to \$1,400 annually. The same amount of tap water would cost about 49 cents. Even if you installed a filter device on your tap, your annual expenditure would be far less than what you'd pay for bottled water.

For a detailed discussion on the NRDC study results, check out its website at <https://goo.gl/Jxb6xG>.

Lead Service Lines

Our preliminary distribution system materials inventory (DSMI) indicates 3,996 total service lines in the Cadillac community water supply, with no known lead service lines. In compliance with the recently updated Michigan Lead and Copper Rule, we will continue to evaluate and update our DSMI prior to the January 2025 final inventory deadline.

Test Results

Our water is monitored for many kinds of substances on a very strict sampling schedule. The information in the data tables shows only those substances that were detected. Our goal is to keep all detects below their respective maximum allowed levels. The state allows us to monitor for certain substances less often 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	
Arsenic (ppb)	2016	10	0	2.40	ND–2.40	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes	
Barium (ppm)	2016	2	2	0.046	0.0065–0.046	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits	
Chlorine (ppm)	2018	[4]	[4]	1.02	ND–1.53	No	Water additive used to control microbes	
Chromium (ppb)	2016	100	100	1.2	ND–1.2	No	Discharge from steel and pulp mills; Erosion of natural deposits	
Fluoride (ppm)	2018	4	4	0.13	ND–0.13	No	Erosion of natural deposits; Discharge from fertilizer and aluminum factories	
Haloacetic Acids [HAAs] (ppb)	2018	60	NA	2.5	ND–2.5	No	By-product of drinking water disinfection	
Nitrate (ppm)	2018	10	10	0.9	ND–0.9	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits	
TTHMs [Total Trihalomethanes] (ppb)	2018	80	NA	20.5	ND–27	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)	2016	1.3	1.3	0.429	ND–0.695	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2016	15	0	ND	ND–7.42	0/30	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	
Chloride (ppm)	2018	250	NA	25	16–25	No	Runoff/leaching from natural deposits	
Iron (ppb)	2018	300	NA	300	ND–300	No	Leaching from natural deposits; Industrial wastes	
Unregulated Substances								
Substance (Unit of Measure)	Year Sampled	Amount Detected	Range Low-High	Typical Source				
Hardness (ppm)	2018	147	133–147	Erosion of natural deposits				
Nickel (ppb)	2016	1.1	ND–1.1	Industrial discharge; Erosion of natural deposits				
Sodium (ppm)	2018	7	6–7	Erosion of natural deposits				

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 which, if exceeded, triggers treatment or other requirements which a water system must follow.

LRAA (Locational Running Annual Average): The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters. Amount Detected values for TTHMs and HAAs are reported as the highest LRAAs.

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).

RAA (Running Annual Average): The average of sample analytical results for samples taken throughout the distribution system during the previous four calendar quarters. The Amount Detected value for chlorine is reported as the highest RAA.

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