



This report covers the drinking water quality for Traverse City Water System for the calendar year 2017. Included are details about where your water comes from, what it contains, and how it compares to Environmental Protection Agency (EPA) and state standards.

Your water is surface water and comes from the East arm of Grand Traverse Bay. The State performed an assessment of our source water in 2004. A determination of sensitivity and susceptibility to contamination was made by reviewing our source water geology, intake location, water chemistry, and potential contaminant sources within the source water area. The State has determined that our source water has a moderate geologic sensitivity with a moderate susceptibility to contamination. A copy of this report, [Source Water Assessment Report for the City of Traverse City Water Supply April 2004](#) may be reviewed on the City of Traverse City website www.traversecitymi.gov or by contacting the Traverse City Utility Accounting Office at the Governmental Center located at 400 Boardman Avenue, Traverse City, MI 49684.

Contaminants and their presence in water: 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 a health risk. More information about contaminants and potential health effects can be obtained by calling the **EPA's Safe Drinking Water Hotline (800-426-4791)**.

Vulnerability of sub-populations: Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised 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 by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

Sources of drinking water: The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. Our water comes from Lake Michigan. 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 and residential uses.
- * **Radioactive contaminants**, which can be naturally occurring or be the result of oil and gas production and mining activities.
- * **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.

In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water which provide the same protection for public health.

Information about lead: 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. The Traverse City Water Plant is responsible for providing high quality drinking water, but 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 1-800-426-4791 or <http://www.epa.gov/safewater/lead>.

Water Quality Data

The table below lists all the drinking water contaminants that were detected during the 2017 calendar year. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing performed January 1, 2017 to December 31, 2017. The State allows monitoring for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. All of the data is representative of the water quality, but some are more than one year old.

Samples collected at the Water Plant

Regulated Contaminant	MCL	MCLG	Level Detected	Range	Year Sampled	Violation Yes / No	Typical Source of Contaminant
Fluoride (ppm)	4	4	1.00	N/A	2017	No	Erosion of natural deposits. Water additive that promotes strong teeth.
Nitrate (ppm)	10	10	0.19	N/A	2017	No	Runoff from fertilizer use; leaching from septic tanks, sewage
Special Monitoring and Unregulated Contaminant *			Level Detected	Range	Year Sampled	Typical Source of Contaminant	
Sodium (ppm)			8	N/A	2017	Erosion of natural deposits	
Sulfate (ppm)			28	N/A	2017	Erosion of natural deposits	
Aluminum **			.08	ND – 0.30	2017	Drinking water treatment chemicals	
Chloride			14	N/A	2017	Erosion of natural deposits	
Chromium-6 (ppb)			0.20	N/A	2015	Erosion of natural deposits	
Chromium (ppb)			0.44	N/A	2015	Erosion of natural deposits	
Vanadium (ppb)			0.59	0.53 – 0.64	2015	Erosion of natural deposits	
Strontium (ppb)			117	116 – 117	2015	Erosion of natural deposits	
Chlorate (ppm)			0.066	0.065–0.066	2015	Byproduct of drinking water disinfection	

* 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.

** Aluminum Sulfate used as coagulant prior to 10/02/2017. Currently using Ferric Sulfate (most recent Aluminum levels ND).

Samples collected at the Water Plant

Regulated Substance	MCL/MCLG	Turbidity lowest monthly % of samples meeting limit of 0.3 NTU (minimum 95%)	Range Detected	Sample Frequency	Violation Yes / No	Typical Source of Contaminant
Turbidity (NTU)	TT	100%	0.05 - 0.12	Daily	No	Soil Runoff

Regulated Substance	MCL/MCLG	Sample Frequency	Violation Yes/No	Typical Source of Contaminant
4-hour CFE Turbidity	TT	Daily – four hour intervals	Yes***	Soil Runoff

***We missed collecting one required CFE turbidity sample in November 2017. Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches. Follow-up samples indicated that all turbidity levels met the requirements of the Safe Drinking Water Act. See attached public notice on page 5 for further explanation.

Samples collected in the Distribution System

Regulated Contaminant	MCL	MCLG	Level Detected	Range	Year Sampled	Violation Yes / No	Typical Source of Contaminant
TTHM - Total Trihalomethanes (ppb)	80	N/A	23.8	14.3 – 39.5	2017	No	Byproduct of drinking water disinfection
HAA5 - Haloacetic Acids (ppb)	60	N/A	9.0	8.0 – 10.0	2017	No	Byproduct of drinking water disinfection
Chlorine (ppm)	MRDL	MRDLG	0.6	0.12 – 0.97	2017 Weekly	No	Water additive used to control microbes
	4	4					

Samples collected at Customer Tap

Contaminant Subject to AL	Action Level	MCLG	90% of Samples ≤ This Level **	Year Sampled	Number of Samples Above AL	Typical Source of Contaminant
Lead (ppb)	15	0.0	0.0	Summer 2017	0	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	1.3	1.3	0.1	Summer 2017	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

* 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.

** Comprehensive results of the Regional Traverse City calculated from combined results of the City of Traverse City, Peninsula, Elmwood and Garfield Townships since the City of Traverse City Water Treatment Plant supplies water to all sampled sites.

Terms and abbreviations used in tables:

- **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.
- **Maximum Contaminant Level (MCL):** 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.
- **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 for control of microbial contaminants.
- **Maximum Residual Disinfectant Level Goal (MRDLG):** The level of a drinking water disinfectant 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.
- **N/A:** Not Applicable
- **ppb:** parts per billion or micrograms per liter
- **ppm:** parts per million or milligrams per liter
- **Action Level (AL):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
- **Combined Filter Effluent (CFE):** Treated water after filtration.
- **Nephelometric Turbidity Units (NTU):** The measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.
- **Treatment Technique (TT):** A required process intended to reduce the level of a contaminant in drinking water.

Water Treatment Plant Capital Improvements: In 2017, the City completed approximately \$800,000 in capital improvements to the Water Treatment Plant and Distribution System. These improvements help to protect public health, safety and welfare and serves to enhance water reliability. 2017 projects included:

- **Coagulant bulk storage tank change:** Original chemical bulk tanks from 1965 were replaced to increase safety and reliability. Chemical coagulant was also changed from aluminum sulfate to ferric sulfate to optimize the treatment process. Total project cost: \$150,000.
 - **High service repairs/upgrades:** Provides for the replacement of motor windings that for variable frequency drive (VFD) installation on the pumps. VFD's allow significant energy savings and versatile operation to meet a wider range of flows to meet varying water demands. \$40,000 invested in 2017.
 - **Replacement of air compressors:** The old compressors were rebuilt numerous times and needed to be replaced. Air compressors are critical to the operation of the filter valves and other equipment at the water treatment plant. Total project cost: \$10,000.
 - **Construction of new storage reservoir:** The construction phase began for a new 2 million gallon water storage reservoir adjacent to the existing and reliability allowing much needed maintenance and repair of the existing Barlow reservoir. The new 2 million gallon reservoir is scheduled to be completed in late 2018. Total project cost will be \$2.7 million, \$96,000 invested in 2017.
 - **Rehabilitation and replacement of distribution mains:** This provides for continued systemic annual water main rehabilitation and replacement of aging infrastructure. \$300,000 invested in 2017 on West Front Street water mains.
 - **Service line replacements:** Replacement of 36 lead goosenecks and galvanized service lines. Corrosion in galvanized service lines can release trapped lead and can contribute to elevated lead levels in drinking water. \$148,000 invested in 2017.
- Lagoon Maintenance:** This project provides for the removal of sludge from the filter backwash process. Sludge is removed from lagoons and hauled to the landfill. Project cost for 2017: \$56,000.

We will update the Water Quality Report annually and will keep you informed of any problems occurring throughout the year, as required. Copies are available at the Traverse City Water Plant at 2010 Eastern Avenue, the Governmental Center at 400 Boardman Avenue, and the Department of Public Services Building at 625 Woodmere Avenue in Traverse City.

We invite public participation in decisions that affect drinking water quality. City Commission meetings are conducted on the first and third Mondays of each month in the Commission Chambers of the Governmental Center at 400 Boardman Avenue, public comment is welcome.

For more information about your water, or the contents of this report, contact Jacqueline Johnson, Water Plant Supt. at 231-922-4920 or email at jjohnson@traverscitymi.gov. For more information about safe drinking water, visit the US Environmental Protection Agency at www.epa.gov/safewater/.

PUBLIC NOTICE

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

Monitoring Requirements Not Met for the City of Traverse City

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether our drinking water meets health standards. We routinely monitor your water for turbidity (cloudiness). This tells us whether we are effectively filtering the water supply. On November 3, 2017, one required four-hour combined filter effluent (CFE) turbidity sample was missed. This monitoring location is required by law every four hours, and public notice is required due to the missed sample. While turbidity levels cannot be confirmed at the CFE during this time period, turbidity readings for individual filters indicate turbidity levels remained well below regulatory limits.

*Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease causing organisms. These organisms include bacteria, viruses, and parasites which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches. These symptoms are not caused only by organisms in drinking water. If you experience any of these symptoms and they persist, you may want to seek medical advice.

What should I do? There is nothing you need to do at this time. This is not an emergency. You do not need to boil water or use an alternative source of water at this time. Even though this is not an emergency, as our customers, you have a right to know what happened and what we did to correct the situation.

The table below lists the contaminant we did not properly test for, how often we are supposed to sample for this contaminant, how many samples we are supposed to take, how many samples we took, when samples should have been taken, and the date we collected follow-up samples.

Contaminant	Required sampling frequency	Number of samples taken	When all samples should have been taken	Date additional samples were (or will be) taken
Turbidity	Once every 4 hours	0	11/03/2017	Monitoring resumed on 11/03/2017

What happened? What is being done? We missed collecting a required sample that must be collected at least once every four hours. We collected a CFE sample at 10:00 AM and missed the 2:00 PM sample, which was not collected until 4:50 PM. Because of this, we did not meet the requirements for turbidity monitoring during this sampling period. We are making every effort to assure this does not happen. We had a continuous read turbidity monitor installed on our CFE at the water plant on December 29, 2017.

For more information, please contact Jacqueline Johnson, Water Plant Superintendent at 231-922-4920 or email at jjohnson@traversecitymi.gov.

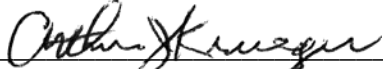
Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by the City of Traverse City.

CERTIFICATION:

WSSN: 06640

I certify that this water supply has fully complied with the public notification regulations in the Michigan Safe Drinking Water Act, 1976 PA 399, as amended, and the administrative rules.

Signature:  Title: Director of Municipal Utilities Date Distributed: 03/29/2018