

2016 Traverse City Water Quality Report

This report covers the drinking water quality for Traverse City Water System for the calendar year 2016 as well as an update on recent Water Treatment Plant capital improvements. This information is a snapshot of the quality of the water that we provided to you in 2016. 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.

Water Quality Data

The table below lists all the drinking water contaminants that were detected during the 2016 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, 2016 to December 31, 2016. 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.

Regulated Contaminant	MCL	MCLG	Level Detected	Range	Year Sampled	Violation Yes / No	Typical Source of Contaminant
Fluoride (ppm)	4	4	0.70	N/A	2016	No	Erosion of natural deposits. Water additive that promotes strong teeth.
TTHM - Total Trihalomethanes (ppb)	80	N/A	24.6	16.7 – 35.1	2016	No	Byproduct of drinking water disinfection
HAA5 Haloacetic Acids (ppb)	60	N/A	7.5	6.0 – 9.0	2016	No	Byproduct of drinking water disinfection
Nitrate (ppm)	10	10	0.3	N/A	2016	No	Runoff from fertilizer use; leaching from septic tanks, sewage
Chlorine (ppm)	MRDL	MRDLG	0.5	0.3 – 0.7	2016 Weekly	No	Water additive used to control microbes
	4	4					
Special Monitoring and Unregulated Contaminant *			Level Detected	Range	Year Sampled	Typical Source of Contaminant	
Sodium (ppm)			11.2	N/A	2016	Erosion of natural deposits	
Sulfate (ppm)			27	N/A	2016	Erosion of natural deposits	
Chromium-6 (ppb)			0.27	0.21 – 0.27	2014	Erosion of natural deposits	
Chromium (ppb)			0.51	0.46 – 0.51	2014	Erosion of natural deposits	
Vanadium (ppb)			0.57	0.49 – 0.57	2014	Erosion of natural deposits	
Molybdenum (ppb)			1.0	<1.0 – 1.0	2014	Erosion of natural deposits	
Strontium (ppb)			124	117 – 124	2014	Erosion of natural deposits	
Chlorate (ppm)			0.113	0.111–0.113	2014	Byproduct of drinking water disinfection	
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 2014	0	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	1.3	1.3	0.152		Summer 2014	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 previous table:

- **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.

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>.

Terms and abbreviations used below:

- **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.

Samples collected at the Water Plant

Regulated Substance	MCL/ MCLG	Limit	Range Detected	Sample Date	Violation Yes / No	Typical Source of Contaminant
Turbidity (NTU)	TT	≤ 0.1***	0.04 - 0.07	Daily	No	Soil Runoff
Turbidity lowest monthly percentage of samples meeting limit	TT	N/A	100%	Daily	No	Soil Runoff

*** 95% of samples less than or equal to this level

Monitoring and Reporting Requirements: The State and EPA require us to test our water on a regular basis to ensure health safety. We met all the monitoring and reporting requirements for 2016.

We will update this 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 Arthur J. Krueger / Water Plant Supt. at 231-922-4920 or email at akrueger@traversecitymi.gov. For more information about safe drinking water, visit the U.S. Environmental Protection Agency at www.epa.gov/safewater/.

Water Treatment Plant Capital Improvements: In 2016, the City completed approximately \$1.2 million in capital improvements at the Water Treatment Plant to further protect public health, safety and welfare and also enhance water treatment reliability. These projects included completing the Water Plant Monitoring and Controls Improvement Project, replacing two (2) Flocculation Tank mixing units with new motors and variable frequency drives, and replacing the second pump in the wash water lagoon discharge system.

The Water Plant Monitoring and Controls Improvement Project replaced original (1965) equipment including rate of flow control valves on the three (3) of the five (5) filters, the pressure relief valve (PRV) on the filter back wash pump, high service PRV and related piping as well as replacing the incoming raw water master meter and two (2) finished water master meters. The new water meters provide more accurate baseline flow data leaving the plant. This project also modernized the water plant control and monitoring system by installing a state of the art Supervisory Control and Data Acquisition (SCADA) system and overall greatly increased the reliability of operations and communications between the water plant, two booster pump stations and the two City water storage reservoirs.

The design phase began for a new 2 million gallon water storage reservoir adjacent to the existing Barlow reservoir by an engineering consultant. This project will provide storage redundancy 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 2017 or early 2018.

Another completed maintenance project included the underwater inspection and cleaning of the raw water intake crib structure.