

IRON: HOW WE TREAT/REMOVE IT FROM THE WELL WATER

Iron makes up five percent of the earth's crust and in dissolved form occurs in most ground water. It is dissolved from the rocks and minerals that form aquifers. Generally the longer the ground water is underground and flowing through cracks and pores, the higher the iron concentration is likely to be.

The process of disinfecting (chlorination) the Town's groundwater supply can result in an increased potential for iron and manganese precipitation (oxidization). This disinfection process can lead to customer complaints associated with discolored water, staining of clothes, and household plumbing fixtures. To prevent water quality problems and the chemical reaction between chlorine, iron and manganese, the Town has begun treating its water with an polyphosphate agent for iron and manganese sequestering as well as an inhibitor for corrosion control.

The Town has one treatment plant, located at well #5, to remove iron from the water. The remaining wells, wells 1, 2, 3, 4, and 6 have polyphosphate treatment. Polyphosphate treatment does not remove iron (or manganese) from the raw water. The polyphosphate reduces brown water by retaining these metals in solution and preventing oxidation. Iron is a beneficial and necessary nutrient in most adult diets and the US Environmental Protection Agency (EPA) does not consider elevated iron concentrations in drinking water to be a health problem.

HYDRANT FLUSHING

The Township flushes hydrants twice each year, purging discolored water from the system and checking the hydrants. The water tanks are also



cleaned twice a year. If you have discolored water you may run a cold water tap for 20 minutes to clear up the water. If the water is still discolored, call the Township and hydrants will be flushed in your area.

DRINKING WATER INFORMATION FROM EPA

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 and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or humans. 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 occur naturally or result from 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 byproducts 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.

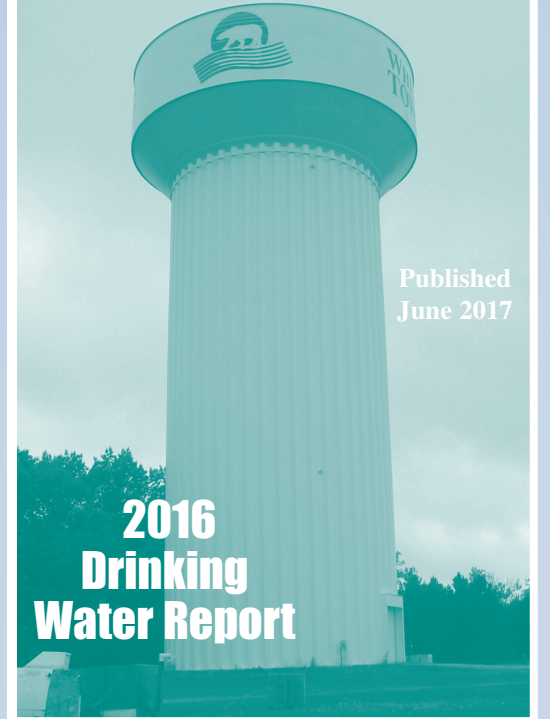
Some people may be more vulnerable to contaminants found in drinking water than the general population. Immuno-compromised persons, such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants can be obtained by calling the EPA's Safe Drinking Water Hotline at 800-426-4791.



**WHITE BEAR
TOWNSHIP**

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2016 Drinking Water Report

This annual report delivers laboratory testing results for White Bear Township tap water for the period January 1 to December 31, 2016. These results, obtained from testing during 2016, show how your water measures up to safe drinking water regulations. If after reviewing the data, you have questions or want more information about water quality, please contact White Bear Township staff at 651-747-2750 or www.whitebeartownship.org

Drinking Water Quality Table for 2016

TEST RESULTS SHOW TOWNSHIP WATER MEETS REGULATIONS

No contaminants were detected at levels that violated federal drinking water standards. However, some contaminants were detected in trace amounts that were below legal limits. The table that follows shows the contaminants that were detected in trace amounts last year. (Some contaminants are sampled less frequently than once a year; as a result, not all contaminants were sampled for in 2016. If any of these contaminants were detected the last time they were sampled for, they are included in the table along with the date that the detection occurred.)

KEY TO ABBREVIATIONS:

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.

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.

MRDL — Maximum Residual Disinfectant Level.

MRDLG — Maximum Residual Disinfectant Level Goal.

AL — Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirement which a water system must follow.

90th Percentile Level: This is the value obtained after disregarding 10 percent of the samples taken that had the highest levels. (For example, in a situation in which 10 samples were taken, the 90th percentile level is determined by disregarding the highest result, which represents 10 percent of the samples.) Note: In situations in which only 5 samples are taken, the average of the two with the highest levels is taken to determine the 90th percentile level.

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. White Bear Township 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 or at <http://www.epa.gov/safewater/lead>.

Some contaminants do not have Maximum Contaminant Levels established for them. These unregulated contaminants are assessed using state standards known as health risk limits to determine if they pose a threat to human health. If unacceptable levels on an unregulated contaminant are found, the response is the same as if an MCL has been exceeded; the water system must inform its customers and take other corrective actions. The table to the left shows the unregulated contaminants.

Contaminant (units)	MRDLG	MRDL	AL	MCLG	MCL	90% Level	# Sites Over ALL	Level Found		Typical Source of Contaminant
								Range (2016)	Average /Result*	
Alpha Emitters (pCi/l)	–	–	–	0	15.4	–	–	nd-3.5	3.5	Erosion of natural deposits.
Arsenic (ppb) (7/09/2014)	–	–	–	0	10	–	–	N/A	1.54	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes.
Barium (ppm) (7/09/2014)	–	–	–	2	2	–	–	N/A	0.08	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Combined radium (pCi/l)	–	–	–	0	5.4	–	–	2.4 - 4.6	4.6	Erosion of natural deposits.
Fluoride (ppm)	–	–	–	4	4	–	–	.72 - .87	0.8	State of Minnesota requires all municipal water systems to add fluoride to the drinking water to promote strong teeth; Erosion of natural deposits; Discharge from fertilizer and aluminum factories.
Haloacetic Acids (HAA5) (ppb)	–	–	–	0	60	–	–	8.8 - 12.1	12.1	By-product of drinking water disinfection.
TTHM (Total trihalomethanes) (ppb)	–	–	–	0	80	–	–	12.2 - 23.8	23.8	By-product of drinking water disinfection.
Total Coliform Bacteria				0 present	>1 present			N/A	2♥	Naturally present in the environment.

* This is the value used to determine compliance with federal standards. It sometimes is the highest value detected and sometimes is an average of all the detected values. If it is an average, it may contain sampling results from the previous year.

♥ Follow-up sampling showed no contamination present.

Chlorine (ppm)	4	4	–	–	–	–	–	.34 - 1.17****	.75 *****	Water additive used to control microbes.
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**** Highest and Lowest Monthly Average.

***** Highest Quarterly Average.

Copper (ppm)	–	–	1.3	1.3	–	.23	0 out of 30	–	–	Corrosion of household plumbing systems; Erosion of natural deposits.
Lead (ppb)	–	–	15	0	–	3.5	2 out of 30	–	–	Corrosion of household plumbing systems; Erosion of natural deposits.

Units of Measurement

pCi/l — PicoCuries per liter (a measure of radioactivity).

ppb — Parts per billion, which can also be expressed as micrograms per liter (ug/l).

ppm — Parts per million, which can also be expressed as milligrams per liter (mg/l).

nd — No Detection

N/A — Not Applicable (does not apply).

DRINKING WATER REGULATIONS

In order to ensure that tap water is safe to drink, the Environmental Protection Agency (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 that must provide the same protection for the public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of the 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).