2010 Annual Drinking Water Quality Report

Marquette Water Filtration Plant

The City of Marquette is pleased to present to you this year's Annual Water Quality Report. This report is designed to inform you about the quality of the water and services we deliver to you every day. Our water source is Lake Superior. This surface water source has provided Marquette residents with excellent drinking water for over 130 years. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water and are pleased to inform you that our drinking water is safe and meets all state and federal drinking water standards.

The Marquette Water Utility routinely monitors for contaminants in your drinking water according to Federal and State laws. For the most part, the tables in this report show the results of our monitoring for the period of January 1 to December 31, 2010. However, the Michigan Department of Natural Resources and Environment and the US-EPA allow us to monitor for some contaminants less than once per year because the concentrations do not change frequently. Some of our data, though representative, is more than one year old. As water travels over the land or underground, it can pick up substances or contaminants such as microbes, inorganic and organic chemicals, and radioactive substances. All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some constituents. It is important to remember that the presence of these constituents does not necessarily pose a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791

In the table, you will find many terms and abbreviations with which you might not be familiar. To help you better understand these terms we've provided the following definitions:

Parts per million (ppm) or Milligrams per liter (mg/l) - one part per million corresponds to one gallon per million gallons, or one minute in two years or a single penny in $10,000.

Parts per billion (ppb) or Micrograms per liter (ug/l) - one part per billion corresponds to one gallon per billion gallons, or one minute in 2,000 years, or a single penny in $10,000,000.

Turbidity Unit (NTU) - turbidity unit is a measure of the clarity of water. Turbidity more than 5.0 NTU is just noticeable to the average person.

Action Level (AL) - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Treatment Technique (TT) - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water. The TT level for turbidity in water from a filtration plant is 0.5 turbidity units.

Maximum Contaminant Level Goal - The "Goal" (MCLG) is 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 - The "Maximum Allowed" (MCL) is 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.

MCLs are set at very stringent levels. To put into perspective the possible health effects described for many regulated contaminants, you can think of it this way. A person would have to drink two liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having any possible health effect.

The table below lists all of the drinking water contaminants we detected.

TEST RESULTS – Regulated Contaminants						
Contaminant	**Violation Y/N**	**Maximum Level Detected**	**Unit of Measure-ment**	**MCLG**	**MCL**	**Likely Source of Contamination**
Microbiological Contaminants						
Turbidity	**N**	**0.08**	**NTU**	**N/A**	**TT – 0.30**	**Soil runoff**
Inorganic Contaminants						
Fluoride	**N**	**1.19**	**ppm**	**4.0**	**4.0**	**Water additive which promotes strong teeth**
Volatile Organic Contaminants						
TTHM [Total Trihalomethanes]	**N**	**20.0***	**ppb**	**0**	**80**	**By-product of drinking water chlorination**
HAA5s (Halo Acetic Acids)	**N**	**10.0****	**ppb**	**0**	**60**	**By-product of drinking water chlorination**

*** TTHM range was 12.0 to 20.0 ppb. 16.0 ppb was the maximum running average**
****HAA5s range was 6.0 to 10.0 ppb. 9.0 ppb was the maximum running average**

Lake Superior water is very soft (Hardness: 42 ppm or 2.6 grains per gallon) and naturally corrosive, as can be the water from the city's filtration plant. Left uncorrected, it can cause increased lead levels in households with copper plumbing and lead/tin solder joints. (Lake Superior water has a natural pH of 7.20) We have corrected the problem by increasing the pH of the water to around 8.4, therefore making it less corrosive. In 2008, the city collected 33 samples for lead and copper analyses. The lead concentrations in those samples ranged from non-detectable levels to 61 ppb, with two of the samples exceeding the 15 ppb action level, and our 90th percentile level was 9.4 ppb. Because the levels were so low, the city does not need to sample again until September 2011.

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 City of Marquette 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.

Aside from the monitoring listed in the table on the reverse side of this page, the city water department routinely monitors the water quality in the distribution system. Last year over 300 samples were collected from the distribution system and analyzed for coliform bacteria. None of the samples collected contained coliform bacteria.

Chlorine and fluoride concentrations are also measured when the bacteriological samples are collected. The maximum concentration of chlorine leaving the filtration plant was 1.59 ppm (1.01 average), and distribution system monitoring ranged from 0.19 to 0.89 ppm. While there is no maximum level set for chlorine, it has always been the source of most of our water quality complaints as some people are more sensitive to its odor. Our practice has always been to add just enough chlorine to the water to maintain a minimal level throughout the distribution system. The fluoride concentration in your drinking water is typically 1.00 ppm. Your drinking water contains chloride at non-detectable levels this year, and a sodium concentration of 7.0 ppm. There are no established health limits for chloride or sodium. Nitrate concentrations detected were 0.4 ppm and Nitrite was below detectable levels.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune-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 microbiological contaminants are available from the EPA's Safe Drinking Water Hotline 1-800-426-4791.

Contaminant	Susceptible Vulnerable Sub-Population	Level of Concern
Fecal Coliform/ E. Coli	Infants, young children, and people with Severely compromised immune systems	Confirmed presence (any Confirmed detect)
Lead	Infants and children	15.0 ppb
Copper	People with Wilson's Disease	1300 ppb
Fluoride	Children	4.0 ppm
Nitrate	Infants below the age of 6 months	10.0 ppm
Nitrite	Infants below the age of 6 months	1.0 ppm

If you have any questions about this report or concerning your water utility, please contact Curt Goodman, Superintendent of Water & Wastewater at 906-225-4055. This 2010 Annual Water Quality Report is also posted on the City of Marquette web site, www.mqtcty.org. If you want to learn more about the water utility, you may attend any of our regularly scheduled Public Works Advisory Board meetings. They are held on the second Monday of each month at 3:00 p.m. at the Municipal Service Center.

MARQUETTE SOURCE WATER ASSESSMENT

In order to help protect Public Water Supplies, Congress amended the Safe Drinking Water Act in 1996 and provided resources for state agencies to conduct Source Water Assessments (SWA). The SWAs analyze the "sensitivity" of the surface water source to natural conditions, conduct contaminant source inventories and determine the "susceptibility" of the source to potential contamination. Sensitivity is determined from the natural setting of the source water, and indicates natural protection afforded the source water. Susceptibility identifies factors within the community's source water area that may pose a risk to the water supply. The Source Water Assessments were completed for every surface water supply source in Michigan. It is a requirement of the Michigan Department of Natural Resources and Environment (MDNRE) that we share the findings of the Source Water Assessment with the public. The Marquette Source Water Assessment was completed in 2003.

If you have any questions concerning the Source Water Assessment, do not hesitate to contact us at the Water Filtration Plant. You can view the assessment at our website, **www.mqtcty.org.**