2010 Annual Drinking Water Quality Report

Village of Mukwonago

The Village of Mukwonago is pleased to present to you this Annual Drinking Water Quality Report. This report is designed to inform you about the quality of the drinking water as well as other water related services the Village delivers to you every day. This report communicates to the public the source of the Village's water and also summarizes the detected compounds from the sampling results for the year ending 2010. 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.

Source of Water

The Village currently obtains its drinking water from four drilled groundwater wells. Two of these wells are finished in the deep sandstone aquifer and the two most recent wells have been finished in the sand and gravel aquifer. Well No. 3 was drilled in 1965 and pumps to an elevated tank located at the same site. Well No. 4 was drilled in 1980 and pumps into a 300,000 gallon underground reservoir. Well No. 5 and Well No. 6 discharge to a dedicated water main. One end of this main terminates at Well No. 3 and the other end at Well No. 4. In addition, the Village distribution system also includes two elevated water storage tanks each 500,000 gallons in capacity.

Customer Questions?

If you have any questions about this report or concerning your water utility, please contact Ivan Zaremba from the Water Department at (262) 363-6439. We want our customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled meetings. The Village Board meets at 7:30 P.M. at the Village Hall located at 440 River Crest Court on the first and third Tuesday of each month. The Public Works Committee meets on the Monday before the second Tuesday of each month at 6:30 P.M. also at the Village Hall. Also, check out the Village website at www.villageofmukwonago.com.

Water Sample Test Results

The Village has followed the sampling requirements set forth by the Department of Natural Resources. This report summarizes the most recent water sample test results for the period of January 1, 2006 to December 31, 2010.

Below is a summary of the number of contaminants that were required to be tested for in the last five years. This CCR contains up to five years worth of water quality results. If a water system tests annually, or more frequently, the results from the most recent year are shown on the CCR. If testing is done less frequently, the results shown on the CCR are from the past five years.

Contaminant Group	# of Contaminants
Inorganic Contaminants	16
Disinfection By Products	2
Radioactive Contaminants	4
Unregulated Contaminants	4
Microbiological Contaminants	3
Volatile Organic Contaminants	20
Synthetic Organic Contaminants including Pesticides and Herbicides	23

It should be noted that all sources of drinking water are subject to potential contamination by compounds that are naturally occurring or are man made. Those compounds can be microbes, organic or inorganic chemicals, or radioactive materials. All 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 the water poses a health risk.

The table which follows summarizes the list of all **detected** compounds. These detects are then compared to a predetermined level of safety known as the Maximum Contaminant Level (MCL). The comparisons show if, for any given compound, there is a system violation.

Table of Detected Compounds

Contaminant Units	MCL	MCLG	Level Found	Range	Sample Date (if prior to 2010)	Violation	Typical Source of Contaminant
Coliform (TCR)	>5% samples	0	1	--		No	Naturally present in the environment.
Barium (ppm)	2	2	.085 (average)	.083-.085	2008	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
Copper (ppm)	AL=1.3	1.3	.162	.009-.451	2008	No	Corrosion of household plumbing system; erosion of natural deposits; leaching from wood preservatives.
Fluoride (ppm)	4	4	.9	.9-.9	2008	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Lead (ppb)	AL=15	0	5	1-7	2008	No	Corrosion of household plumbing systems; erosion of natural deposits.
Nickel (ppb)	100		2.0	1.0-2.0	2008	No	Nickel occurs naturally in soils, ground water and surface water and is often used in electroplating, stainless steel and alloy.
Nitrate (N03-N) (ppm)	10	10	.34 (average)	.33-.35		No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Sodium (ppm)	N/A	N/A	37.4	36.1-37.4	2008	No	N/A
Gross Alpha Excl. R&U (pCi/l)	15	0	14.2	13.4-14.2	2009	No	Erosion of natural deposits.
Gross Beta Particle Activity (pCi/l)	N/A	N/A	6.7 (average)	4.7-6.7	2009	No	Decay of natural and man-made deposits. MCL units are in millirem/year. Calculation for compliance with MCL is not possible unless level found is greater tan 50 pCi/l.
Radium (226 + 228) (pCi/l)	5	0	2.8 (average)	2.5-3.2	2009	No	Erosion of natural deposits.
HAA5(ppb)	60	60	0.4 (average)	nd-1.0		No	By-product of drinking water chlorination.
TTHM(ppb)	80	0	2.5 (average)	1.0-4.1		No	By-product of drinking water chlorination.
Bromodichloromethane (ppb)	N/A	N/A	.74	.18-.74		No	N/A
Bromoform (ppb)	N/A	N/A	1.7	.4-1.7		No	N/A
Chloroform (ppb)	N/A	N/A	.15	Nd-15		No	N/A
Dibromochloromethane (pb)	N/A	N/A	1.5	.37-1.5		No	N/A

Definitions:

Parts per million (ppm) or Milligrams per liter (mg/l) - one part per million corresponds to 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 minute in 2,000 years, or a single penny in $10,000,000.

Picocuries per liter (pCi/L) - picocuries per liter is a measure of the radioactivity in water.

Maximum Contaminant Level (MCL) - The "Maximum Allowed" 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.

Maximum Contaminant Level Goal (MCLG) - The "Goal" 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.

No Detect (ND) - No trace of compound found.

Not Applicable (N/A) - Does not apply.

Results

Since 2005, the Village has completely transitioned from providing customers with water pumped only from the deep sandstone aquifer, to providing a finished water that is blended with that pumped from the shallow sand and gravel aquifer.

The Village is proud to report that currently the water quality meets or exceeds all Federal and State requirements. The Village is now able to provide a finished water to its customers with no MCL violations for radionuclides. The Table above indicates all compounds detected in the water, and the EPA has determined that your drinking water is safe at these levels.

Violations

None.

Educational Information

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 from human activity.

Contaminants that may be present in source water include:

1. Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
2. Inorganic contaminants, such as salts and metals, which can be naturally – occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining of farming.
3. Pesticides and herbicides, which may come from a variety of sources such as agricultural, urban storm water runoff and residential uses.
4. 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 storm water runoff and septic systems.
5. Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

Groundwater Protection and System Improvements

The water quality has improved by blending waters from different aquifers. The well pumping stations at No. 5 and No. 6 are designed to blend the waters from the sandstone and the shallow sand and gravel aquifers. Water sample results have shown that the blending has reduced the historically high radionuclide levels before the water is pumped to the customers.

For each of these new sand and gravel wells, a Well Head Protection Plan (WHPP) has been prepared to identify any potential contaminants and protect the area surrounding each well. The enforcement aspect of the WHPP was accomplished through passing an Ordinance which identified the permitted and prohibited uses for the defined Well Head Protection area surrounding each of these wells. The Water Utility wants to remind residents that hydrant flushing occurs twice a year and that there does exist a sprinkling ordinance that can be put in effect from May 1 to September 15, limiting sprinkling to even/odd days.

Additional Information Available

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. The Environmental Protection Agency and the Center for Disease Control (EPA/CDC) guidelines on appropriate means to lessen the risk of infection from potential contaminants and potential health effects can be obtained by calling **the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791**.

Please feel free to call our office if you have questions concerning this report or any other water supply issues. The Village of Mukwonago works hard to provide top quality drinking water to all its customers. We ask that all our customers help us protect our water sources by conserving water and participating in the Village efforts to increase awareness of groundwater protection.