Annual Drinking Water Quality Report

City of Wixom Municipal Water

For January 1, 2014 to December 31, 2014

Dear Water Utility Customer:

We are pleased to provide you with the 2014 Annual Drinking Water Quality Report in accordance with the "Safe Drinking Water Act", which was re-authorized and signed into law by President Clinton in the fall of 1998. A key component of this Act is mandatory public disclosure about compliance with drinking water regulations. The City of Wixom views this as an opportunity to inform our water customers about the high quality drinking water being supplied to them. The sample results presented in the following report are technical in nature, and our goal is to help you understand how the data supports the safety of consuming drinking water provided by the City of Wixom and its Contract Operator, United Water. If you have any questions about the contents of this report, or have suggestions on making it more understandable, please contact Nathan Opalko (United Water, Water Operations Specialist) at 248-960-0870.

The Detroit Water and Sewerage Department (DWSD, Lake Huron) has been providing water to the Wixom System since October 2001. Your source water comes from the lower Lake Huron watershed. The watershed includes numerous short, seasonal streams that drain to Lake Huron. The Michigan Department of Environmental Quality in partnership with the U.S. Geological Survey, the Detroit Water and Sewerage Department and the Michigan Public Health Institute performed a source water assessment in 2004 to determine the susceptibility of potential contamination. The susceptibility rating is on a seven-tiered scale ranging from moderately low to very high, based primarily on geologic sensitivity, water chemistry, and contaminant sources. The Lake Huron source water intake is categorized as having a moderately low susceptibility to potential contaminant sources. The Lake Huron water treatment plant has historically provided satisfactory treatment of this source water to meet drinking water standards. If you would like to have more information about this report or a complete copy of this report, please contact United Water at 248-960-0870. Test results for the DWSD water supply are included in this report.

Even though we are connected to the DWSD system, the City of Wixom still has eight ground water wells that are kept as "stand-by wells". These wells were not used to supply water to the City of Wixom in 2014. However, the City is still required to sample them as if they were the primary source of water. These wells draw their water from the Huron River and Rouge River watershed and are approximately 100 feet in depth.

Over the last 25 years, state and federal environmental regulations have become progressively more stringent, resulting in significant improvements to water quality. As you will see in the following report, the City closely monitors both the source water and the drinking water supplied to you to ensure its quality and safety.

United Water (Contract Operator of the Wixom Water Utility) and DWSD routinely monitor your drinking water for impurities according to federal and state laws. The table included with this report shows the results of our monitoring for the period **January 1, 2014 to December 31, 2014.**

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 U.S. Environmental Protection Agency's (EPA) Safe Drinking Water Hotline at 800-426-4791.

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 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 storm water run-off, 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 storm water run-off, and residential uses.

- Organic chemical contaminants, including synthetic and volatile organics, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water run-off and septic systems.

- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

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

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 Wixom 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 people may be more vulnerable to contaminants in drinking water than is 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.

Also, the City of Wixom is required to collect numerous samples each year and have them analyzed for various chemical parameters to determine compliance with state drinking water standards. These samples are taken periodically throughout the year and are sent out to be analyzed. We are also required to take monthly samples, which are tested for any bacteria that might be in the water system. These samples are analyzed by a United Water state certified laboratory in Wixom. The City of Wixom and United Water are proud that the drinking water delivered to you meets or exceeds all federal and state requirements. As you will see from the tables below, our water system had no Maximum Contaminant Level (MCL) violations during 2014.

As a water utility customer, you should consider yourself an investor-owner of the Wixom Water Utility System. Consequently, all customer inquiries, requests, or suggestions are welcomed and encouraged. Ultimately, the Wixom City Council, which assembles on the second and fourth Tuesday of every month, is responsible for overseeing the Wixom Water Utility. If you have questions, comments or want additional information regarding the water utility, you may direct your inquiries to the following personnel:

Richard Bacon	Mark Clancey
Project Manager	Public Works Manager
United Water	City of Wixom
Telephone 248-960-0870	Telephone 248-624-4664
Fax 248-960-6586	Fax 248-624-0890

There are Internet web sites with additional water information. Oakland County has an Internet web site at *www.oakgov.com*. You can find the EPA at *www.epa.gov*. The American Water Works Association has a site at *www.awwa.org*. **In the following tables are terms and abbreviations that may not be familiar to you. To help you understand these terms better, we are providing the following definitions:**

KEY TO THE DETECTED CONTAMINANTS TABLE

Symbol	Abbreviation	Definition/Explanation
>	Greater than	
AL	Action Level	The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements which a water system must follow.
HAA5	Haloacetic Acids	HAA5 is the total of bromoacetic, chloroacetic, dibromoacetic, dichloroacetic, and trichloroacetic acids. Compliance is based on the total.
LRAA	Locational Running Annual Average	
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.
MCLG	Maximum Contaminant Level Goal	The level of contaminant in drinking water below which there is no known or expected risk to health.
mg/L	Milligrams per liter	A milligram = 1/1000 gram 1 milligrams per liter is equal to 1 ppm
MRDL	Maximum Residual Disinfectant Level	The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
MRDLG	Maximum Residual Disinfectant Level Goal	The level of a drinking water disinfectant below which there is no known or expected risk to health. MRLDG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.
n/a	Not Applicable	
NTU	Nephelometric Turbidity Units	Measures the cloudiness of water.
pCi/L	Picocuries Per Liter	A measure of radioactivity. Picocurie (pCi) means the quantity of radioactive material producing 2.22 nuclear transformations per minute.
ppb	Parts Per Billion (one in one billion)	The ppb is equivalent to micrograms per liter. A microgram = 1/1000 milligram.
ppm	Parts Per Million (one in one million)	The ppm is equivalent to milligrams per liter. A milligram = 1/1000 gram.
RAA	Running Annual Average	
TT	Treatment Technique	A required process intended to reduce the level of a contaminant in drinking water.
TTHM	Total Trihalomethanes	Total Trihalomethanes is the sum of chloroform, bromodichloromethane, dibromoochloromethane and bromoform. Compliance is based on the total.

Lake Huron Water Treatment Plant
2014 Regulated Detected Contaminants Tables

Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Allowed Level MCL	Highest Level Detected	Range of Detection	Violation yes/no	Major Sources in Drinking Water
Inorganic Chemicals – Monitoring at the Plant Finished Water Tap								
Fluoride	**5/13/14**	**ppm**	**4**	**4**	**0.59**	**n/a**	**no**	Erosion of natural deposits; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate	**5/13/14**	**ppm**	**10**	**10**	**0.31**	**n/a**	**no**	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.

Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Allowed Level MCL	Highest LRAA	Range of Detection	Violation yes/no	Major Sources in Drinking Water
Disinfection By-Products – Monitoring in Distribution System Stage 2 Disinfection By-Products								
Total Trihalomethanes (TTHM)	**2014**	**ppb**	**n/a**	**80**	**39**	**3.7-26**	**No**	By-product of drinking water chlorination
Haloacetic Acids (HAA5)	**2014**	**ppb**	**n/a**	**60**	**12**	**4.9-7.1**	**No**	By-product of drinking water disinfection

Regulated Contaminant	Test Date	Unit	Health Goal MRDGL	Allowed Level MRDL	Highest RAA	Range of Detection	Violation yes/no	Major Sources in Drinking Water
Disinfectant Residuals Monitoring in DWSD Distribution System								
Total Chlorine Residual	**Jan-Dec 2014**	**ppm**	**4**	**4**	**0.82**	**0.64-0.94**	**no**	Water additive used to control microbes

Regulated Contaminant	Treatment Technique	Typical Source of Contaminant
Total Organic Carbon (ppm)	The Total Organic Carbon (TOC) removal ratio is calculated as the ratio between the actual TOC removal and the TOC removal requirements. The TOC was measured each month and because the level was low, there is no requirement for TOC removal.	Erosion of natural deposits

2013 Turbidity – Monitored every 4 hours at Plant Finished Water Tap			
Highest Single Measurement cannot exceed 1 NTU	**Lowest Monthly % of Samples Meeting Turbidity Limit of 0.3 NTU (minimum 95%)**	**Violation yes/no**	**Major Sources in Drinking Water**
0.19 NTU	**100%**	no	**Soil Runoff**
Turbidity is a measure of the cloudiness of water. We monitor it because it is a good indicator of the effectiveness of our filtration system.			

2014 Microbiological Contaminants – Monthly Monitoring in Distribution System					
Regulated Contaminant	**MCLG**	**MCL**	**Highest Number Detected**	**Violation yes/no**	**Major Sources in Drinking Water**
Total Coliform Bacteria	**0**	**Presence of Coliform bacteria > 5% of monthly samples**	**0**	**No**	Naturally present in the environment.
***E.coli* Bacteria**	**0**	**A routine sample and a repeat sample are total coliform positive, and one is also fecal or *E. coli* positive.**	**0**	**No**	Human waste and animal fecal waste.

2014 Lead and Copper Monitoring at Customers' Tap								
Regulated Contaminant	**Test Date**	**Unit**	**Health Goal MCLG**	**Action Level AL**	**90th Percentile Value***	**Number of Samples Over AL**	**Violation yes/no**	**Major Sources in Drinking Water**
Lead	**2014**	**ppb**	**0**	**15**	**0 ppb**	**0**	**No**	Corrosion of household plumbing system; Erosion of natural deposits.
Copper	**2014**	**ppm**	**1.3**	**1.3**	**.125 ppm**	**0**	**No**	Corrosion of household plumbing system; Erosion of natural deposits; Leaching from wood preservatives.
*The 90th percentile value means 90 percent of the homes tested have lead and copper levels below the given 90th percentile value. If the 90th percentile value is above the AL additional requirements must be met.								

2014 Radionuclides							
Regulated Contaminant	**Test Date**	**Unit**	**Health Goal MCLG**	**Allowed Level MCL**	**Level Detected**	**Violation yes/no**	**Major Sources in Drinking Water**
Combined Radium Radium 226 & 228	**5/13/14**	**pCi/L**	**0**	**5**	**0.86 + or - 0.55**	**no**	Erosion of natural deposits

Contaminant	MCLG	MCL	Level Detected	Source of Contamination
Sodium (ppm)	**n/a**	**n/a**	**4.78**	Erosion of natural deposits

Collection, sampling result information and table provided by Detroit Water and Sewerage Department (DWSD) Water Quality Division, ML Semegen