



# ANNUAL WATER QUALITY REPORT

## WATER TESTING PERFORMED IN 2012

*"When the well's dry, we know the worth of water."  
Benjamin Franklin*



**CITY OF FOND DU LAC  
WATER UTILITY**  
PWS ID #: 42004699

### WATER SYSTEM INFORMATION

This report is designed to inform you about the water quality and services delivered to you every day. 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.

Our valued customers need to be informed about their water utility. If you have any questions about this report, or concerning your water utility, please contact Kathryn Scharf, Manager of Operations for the Fond du Lac Water Utility, at (920) 322-3682.

### SOURCE OF WATER

The Fond du Lac Water Utility is supplied by groundwater pumped from 15 wells within and near the City of Fond du Lac. These 15 wells range in depth from 745 feet to 1,140 feet. In 2012, the Fond du Lac Water Utility distributed 1.94 billion gallons of water to 15,961 Fond du Lac water customers. The distribution system consists of six supply and distribution booster pump stations, five ground storage reservoirs, three elevated storage tanks, 220 miles of water main, and 1,827 fire hydrants.



### 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:

- ◆ 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, urban stormwater runoff and residential uses.
- ◆ 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.
- ◆ 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 that limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water, which shall provide the same protection for public health.

### HEALTH INFORMATION

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. More information about contaminants and potential health effects can be obtained by calling the U.S. Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791) or visit the website at <http://www.epa.gov>.

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 healthcare providers. U.S. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the U.S. Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791) or visit the website at <http://www.epa.gov>.

### WATER QUALITY

The City of Fond du Lac Water Utility routinely monitors for constituents in your drinking water according to Federal and State regulations. The table on the reverse page displays the number of contaminants that were required to be tested in the last five years. The results from the most recent year, between January 1<sup>st</sup> and December 31<sup>st</sup>, 2012 are shown. The Fond du Lac Water Utility performed testing of 17 inorganic contaminants, 2 microbiological contaminants, 2 disinfection by-product contaminants, 4 radioactive contaminants, 20 volatile organic contaminants, 27 synthetic organic contaminants including pesticides and herbicides, and 34 unregulated contaminants. City wide unidirectional hydrant flushing helps to maintain good water quality.



### THE TREATMENT PROCESS:

**Chlorine as a disinfectant:** The City of Fond du Lac began chlorinating water in 1930. This disinfection kills or inactivates harmful microorganisms which can cause illness such as typhoid, cholera, hepatitis and giardiasis. Chlorine is also added for its "residual" properties which means the chlorine remaining in the water supply, or added after disinfection is first accomplished, is available to fight against potential contamination in water distribution and storage systems that might enter through leaks and pipe breakages. Fond du Lac uses a liquid form of sodium hypochlorite.

**Hydrofluosilicic acid to reduce tooth decay:** This chemical is added to augment the natural fluoride found in our water supply and bring the residual up to the Department of Natural Resource's recommended level of 0.7 mg per liter. The Fond du Lac Water Utility closely monitors the level of fluoride in our system to assure proper concentrations. The Center for Disease Control has declared fluoridation one of the ten greatest public health advances of the 20th century. The City of Fond du Lac began fluoridation in July of 1950.

**Sodium Phosphate as an iron sequestering agent and corrosion inhibitor:** Iron removal is a common municipal water treatment in central Wisconsin when groundwater is the drinking water source. This element does not cause adverse health effects, but in fact, is essential to the human diet. However, water containing excessive amounts of iron can stain clothes, discolor plumbing fixtures and sometimes add a "rusty" taste and look to the water. When sodium phosphate is added the soluble iron is sequestered and not allowed to precipitate out and cause discoloration. This chemical has been added since 1972.

**Radium Removal:** Radium naturally occurs in some of Wisconsin's groundwater, particularly the deep sandstone aquifer that is the major source of our supply. We are currently making a conversion to the radium removal treatment plants that were put in service in 2009. The change will be more economical and will not only remove radium, but also has the benefit of removing iron, some manganese and arsenic. The new process is expected to be fully operational by late summer 2013. When complete, the above listed sodium phosphate will no longer be necessary.

## RESULTS OF LABORATORY TESTING - 2011 REPORTING YEAR

Contaminant	Violation	Level Detected	Range	Unit	MCLG	MCL	Typical Source of Contamination
<b>DISINFECTION BYPRODUCTS</b>							
Haloacetic Acid (HAA5)	No	6	1 - 6	ppb	60	60	By-product of drinking water chlorination
Total Trihalomethanes (TTHM)	No	44.4	0.7 - 44.4	ppb	0	80	By-product of drinking water chlorination
<b>INORGANIC CONTAMINANTS</b>							
Arsenic	No	4	3 - 5	ppb	n/a	10	Erosion of natural deposits; Runoff from orchards or from glass and electronics production wastes
Barium (sampled 4/13/11)	No	0.43	.057 - .430	ppm	2	2	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Cadmium (sampled 4/13/11)	No	0.3	0.2 - 0.3	ppb	5	5	Corrosion of galvanized pipes; Erosion of natural deposits; Discharge from metal refineries; Runoff from waste batteries and paints
Chromium (sampled 4/13/11)	No	1	nd - 1	ppb	100	100	Discharge from steel and pulp mills; Erosion of natural deposits
Copper (sampled 8/18/11)	No	0.64	*	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Fluoride (sampled 4/13/11)	No	0.5	0.4 - 0.5	ppm	4	4	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer & aluminum factories
Lead (sampled 8/18/11)	No	4.10	*	ppb	0	AL=15	Corrosion of household plumbing systems; Erosion of natural deposits
Nickel (sampled 4/13/11)	No	13.0000	9.0000-13.0000	ppb	-	100	Nickel occurs naturally in soils, ground water and surface waters and is often used in electroplating, stainless steel and alloy products.
Nitrate (NO3-N)	No	0.15	.03 - 0.15	ppm	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Selenium (sampled 4/13/11)	No	8	nd - 8	ppb	50	50	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines
Sodium (sampled 4/13/11)	No	53.00	31.00 - 53.00	ppm	n/a	n/a	n/a
* 0 of 30 results were above the action level							
<b>RADIOACTIVE CONTAMINANTS</b>							
Gross Alpha Excluding R&U	No	7.7	nd - 11.0	pCi/l	0	15	Erosion of natural deposits
Gross Alpha Including R&U	No	7.7	nd - 11.0	n/a	n/a	n/a	Erosion of natural deposits
Gross Beta Particle Activity (sample date 2/26/2009)	No	3.7	2.0 - 3.7	pCi/l	n/a	n/a	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 than 50 pCi/l.
Radium (226 + 228)	No	3.0	nd - 4.4	pCi/l	0	5	Erosion of natural deposits
<b>UNREGULATED CONTAMINANTS</b>							
Bromodichloromethane	No	1.10	nd - 1.10	ppb	n/a	n/a	n/a
Bromoform	No	36.00	0.39 - 36.00	ppb	n/a	n/a	n/a
Chloroform	No	0.14	nd - 0.14	ppb	n/a	n/a	n/a
Dibromochloromethane	No	7.20	0.33 - 7.20	ppb	n/a	n/a	n/a
Dibromomethane	No	0.43	nd - 0.43	ppb	n/a	n/a	n/a
Sulfate (sampled 4/13/11)	No	200.00	89.00-200.00	ppm	n/a	n/a	n/a
<b>VOLATILE ORGANIC CONTAMINANTS</b>							
Toluene	No	0.0000	nd - 0.0001	ppm	1	1	Discharge from petroleum factories

### DEFINITION OF TERMS

#### AL - Action Level:

The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

#### MCL - Maximum Contaminant Level

The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.

#### MCLG - Maximum Contaminant Level Goal

The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.

#### mrem/year - Millirems per Year

A measure of radiation absorbed by the body.

#### pCi/l - Picocuries per Liter

A measure of radioactivity.

#### ppm - Parts per million, or milligrams per liter (mg/l)

#### ppb - Parts per billion, or micrograms per liter (ug/l)

#### Explanation of Units:

Since one gallon of water weighs 8.34 pounds, one million gallons weighs 8,340,000 pounds. When 8.34 pounds of a pure substance is added to one million gallons of water the concentration is one part per million. Therefore: (ppm) = (mg/l) = 1 in 1,000,000 gallons.

When comparing 1 part per million to other units of measure we see just how small it is.

In Units	1 part per million
Length	1 inch in 16 miles
Time	1 minute in 2 years
Money	1 cent in \$10,000



As your water provider, we're constantly monitoring your water to make sure that it's safe and available 24/7. We make sure that there's an adequate supply of water to meet the needs of the community.

We carefully treat water to remove any potentially harmful contaminants. We disinfect water to make sure it's still safe when it reaches your faucet, and we maintain an elaborate underground network of mains and pipes to get it there.

We deliver more than water. We deliver public health, fire protection, support for the economy, and the overall quality of life we enjoy. Our job is to ensure that your water keeps flowing not only today, but well into the future. It's all part of our commitment to serve you and everyone in



### ELECTRONIC METER READING & LEAK DETECTION:

In 2012 the Water Utility implemented a fully electronic meter reading system. The technology provides daily data for all accounts, giving us the opportunity to find some leaks that may have otherwise gone unnoticed for months. The most common leak occurs in toilets. If the tank water level is set too close to the overflow tube (it should be 1-inch below) water can slowly seep out. An easy way to check for a toilet leak is to put food coloring in the tank, wait 5-10 minutes and if the dye shows up in the bowl you have a leak. Another suggestion to check if water is being used somewhere in your home is to look at your meter. If the little blue dial is moving, water is being used. Or, write the numbers down when you know water won't be used for a few hours. Check again later. If the value has increased then water did flow through the meter. If you're not sure where it went, start investigating!

