



**2012 DNR Consumer Confidence Report
Data
For 24601093 FREDONIA
WATERWORKS**

Letter from the Director

It is that time of year when we provide information about the quality of your drinking water, and I am pleased again to report that Fredonia's water has met or surpassed all Federal and State standards for health and safety. Please see the Water Quality Table on page 5 for the details. Last year we pumped 65,879,000 gallons from our wells. The average of the previous five years is 62,060,000 . As you may recall, we were in a drought last year combined with above average temperatures. The additional water use was due to much more irrigation of lawns than in prior years. Many of our neighboring communities declared drought emergencies and restricted water use. We were able to supply water to the residents and businesses of Fredonia without restrictions.

This year we are preparing a design to upgrade the water main to a 12" pipe under Fredonia Avenue. This will improve pressure on the west side of the village and reduce the potential for water main breaks once the water main is constructed. We are also in the process of upgrading our meter reading capabilities by installation of a system that continuously monitors water usage. This will allow us to notify residents on a timely basis if their water use exceeds historical use which is an indication of a leak in the house. Other activities planned for the water system include: inspection of the Maple Lawn reservoir, replacement of two hydrants (There are 10 hydrants in the Village that are obsolete and repair parts are difficult to obtain. These hydrants currently work fine but we want to begin the process of replacing them before they do not work.), testing of the well pumps to verify that they are still meeting the required performance, and testing of meters in the pump houses as required by the WDNR. We will also be performing system flushing and exercising of the valves to ensure that our system operates as designed.

Water from the Fredonia Water Utility costs less than a penny per gallon. The table below provides you an indication of the value of the water service that we provide.

| Item | Cost/gallon |
|---------------------------|-------------|
| Gasoline | \$3.75 |
| Milk | \$2.59 |
| Case of Beer | \$7.56 |
| Bottled Water | \$1.10 |
| Orange Juice | \$3.99 |
| Village of Fredonia Water | \$0.0015 |

Water System Information

If you would like to know more about the information contained in this report, please contact Roger Strohm at 262-692-9125. If you would like to discuss anything about the Village water supply with elected officials, the Village Board meets the first and third Thursday of each Month at the Fredonia Government Center at 7:00 PM.

Health Information

We are frequently asked if our water contains fluoride. The Village does not add fluoride to our drinking water; however, fluoride does occur naturally in our water supply at concentrations that range between 0.4 and 0.6 parts per million. This concentration is below the EPA and DNR's allowable amount. It is also below the World Health Organization and the U.S. Health and Human Services recommended amount. For more discussion on fluoride, please refer to the Center for Disease Control website http://www.cdc.gov/fluoridation/fact_sheets/cwf_qa.htm.

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 Environmental Protection Agency's safe drinking water hotline (800-426-4791).

Source(s) of Water

The Fredonia Waterworks obtains its water from two deep wells located within the village limits. Both of these wells obtain their water from more than 300 feet below the ground surface.

To obtain a summary of the source water assessment please contact Roger Strohm at 262-692-9125

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.

Microbiological testing Bacteria – To ensure drinking water safety, we conduct routine bacteriological tests. We sample the distribution twice per month the wells twice per quarter for bacteria. The samples are tested for coliform bacteria, indicators of potential contamination. The water utility did not have any samples test positive for coliform bacteria. The lack of coliform positive samples reflects good source water quality and adequate disinfection residuals maintained in the distribution system.

What keeps our water safe? The high quality aquifer supplying our drinking water requires little treatment. Fredonia Waterworks disinfects the water with chlorine to reduce the risk of microbial contamination. A small amount of chlorine kills the bacteria and viruses that can be present in groundwater. Chlorine produces a free residual that travels with the water and is ready to kill any microbe that it might encounter in the system. Excess chlorine can react with organic material in the water and produce cancer-causing compounds. Our groundwater source and low levels of chlorine residual reduce the potential for the development of these constituents.

Number of Contaminants Required to be Tested

This table displays the number of contaminants that were required to be tested in the last

five years. The CCR may contain 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 |
|--|-------------------|
| Disinfection Byproducts | 2 |
| Inorganic Contaminants | 16 |
| Microbiological Contaminants | 1 |
| Radioactive Contaminants | 3 |
| Synthetic Organic Contaminants including Pesticides and Herbicides | 25 |
| Unregulated Contaminants | 4 |
| Volatile Organic Contaminants | 20 |

How to Read the Water Quality Data Table

Maximum Contaminant Level (MCL)

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 technology.

Maximum Contaminant Level Goal (MCLG)

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.

Secondary Maximum Contaminant Level (SMCL)

The level of a contaminant in drinking water above which it may cause cosmetic (skin or tooth discoloration) or aesthetic effects (taste, odor, or color) rather than health risks. EPA recommends secondary standards but does not require compliance from water systems.

Action Level (AL)

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

Units in the Table

One milligram per liter (mg/L) equals one part per million (ppm)
 One microgram per liter ($\mu\text{g/L}$) equals one part per billion (ppb)
 One milligram per liter equals 1,000 micrograms per liter
 One ppb is analogous to one second in 32 years
 Picocurie per liter (pCi/L) is a measure of radioactivity
 nd = non-detect

Disinfection Byproducts

| Contaminant (units) | MCL | MCLG | Level Found | Range | Sample Date | Violation | Typical Source of Contaminant |
|---------------------|-----|------|-------------|-----------|-------------|-----------|---|
| HAA5 (ppb) | 60 | 60 | 1 | 1- 1 | 08/09/2010 | No | |
| TTHM (ppb) | 80 | 0 | 12.2 | 5.0- 12.2 | 08/09/2010 | No | By-product of drinking water chlorination |

Inorganic Contaminants

| Contaminant (units) | MCL | MCLG | Level Found | Range | Sample Date | Violation | Typical Source of Contaminant |
|---------------------|--------|------|-------------|--|-------------|-----------|---|
| ARSENIC (ppb) | 10 | n/a | 4 | 3- 4 | 03/29/2011 | No | Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes |
| BARIUM (ppm) | 2 | 2 | .095 | .030- .095 | 03/29/2011 | No | Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits |
| CADMIUM (ppb) | 5 | 5 | .2 | nd- .2 | 03/29/2011 | No | Corrosion of galvanized pipes; Erosion of natural deposits; Discharge from metal refineries; runoff from waste batteries and paints |
| COPPER (ppm) | AL=1.3 | 1.3 | .1000 | 0 of 10 results were above the action level. | 07/13/2011 | No | Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives |
| FLUORIDE (ppm) | 4 | 4 | .6 | .4- .6 | 03/29/2011 | No | Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories |
| LEAD (ppb) | AL=15 | 0 | 2.50 | 0 of 10 results | 07/13/2011 | No | Corrosion of household plumbing |

| | | | | | | | |
|-----------------------|-----|-----|---------|------------------------------|------------|----|--|
| | | | | were above the action level. | | | systems; Erosion of natural deposits |
| NICKEL (ppb) | 100 | | 13.0000 | 4.7000-13.0000 | 03/29/2011 | No | Nickel occurs naturally in soils, ground water and surface waters and is often used in electroplating, stainless steel and alloy products. |
| NITRATE (NO3-N) (ppm) | 10 | 10 | .28 | nd- .28 | | No | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits |
| SELENIUM (ppb) | 50 | 50 | 2 | nd- 2 | 03/29/2011 | No | Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines |
| SODIUM (ppm) | n/a | n/a | 11.00 | 10.00-11.00 | 03/29/2011 | No | n/a |

Radioactive Contaminants

| Contaminant (units) | MCL | MCLG | Level Found | Range | Sample Date | Violation | Typical Source of Contaminant |
|-----------------------------|-----|------|-------------|---------|-------------|-----------|-------------------------------|
| RADIUM, (226 + 228) (pCi/l) | 5 | 0 | 2.0 | 1.5-2.0 | 03/17/2009 | No | Erosion of natural deposits |

Unregulated Contaminants

| Contaminant (units) | MCL | MCLG | Level Found | Range | Sample Date | Violation | Typical Source of Contaminant |
|----------------------------|-----|------|-------------|-----------|-------------|-----------|-------------------------------|
| BROMODICHLOROMETHANE (ppb) | n/a | n/a | 3.80 | 1.60-3.80 | 08/09/2010 | No | n/a |
| CHLOROFORM (ppb) | n/a | n/a | 6.70 | 2.70-6.70 | 08/09/2010 | No | n/a |
| DIBROMOCHLOROMETHANE (ppb) | n/a | n/a | 1.70 | .72-1.70 | 08/09/2010 | No | n/a |