

CITY OF Fargo

WATER QUALITY REPORT 2013



The City of Fargo Water Treatment Plant is issuing this report to inform customers about the quality of water produced and distributed in 2013. If you are a large volume user, please distribute a copy of this Water Quality Report to consumers who do not receive a bill. We are again pleased to report that no contaminants were detected that exceeded EPA limits in drinking water.

If you have questions about Fargo drinking water, or if you are aware of non-English speaking individuals who need help with the appropriate language translation, please contact the Water Treatment Plant at 701-241-1469.

If you would like opportunities for public participation in decisions that affect water quality, please attend City Commission meetings which are held every other Monday at 5 p.m. You can check the city's web site for exact meeting dates at www.cityoffargo.com/commission

Some people may be more vulnerable to contaminants found 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

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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/Centers for Disease Control and Prevention (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).

What You Need to Know About Drinking Water Regulations

To ensure that tap water is safe to drink, the Environmental Protection Agency (EPA) prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health. 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 EPA's Safe Drinking Water Hotline (800-426-4791).

Before the City of Fargo can deliver water to your home, it must first be thoroughly tested in certified laboratories. Fargo water was tested for nearly 100 different contaminants and only those detected are listed in Table 1 (2013 results).

No contaminants were detected that exceeded EPA limits in drinking water. The North Dakota Department of Health requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, are more than one year old.

The highest level of a substance allowed in drinking water is the Maximum Contaminant Level (MCL), which is set by the EPA.

The MCL for lead and copper is known as the Action Level (AL). This is the concentration which, if exceeded, triggers treatment or other requirements a water system must follow. Ninety percent of all samples tested must be below this concentration. During 2011, no samples from the Fargo system tested above the action level for either copper or lead.

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 material and components associated with service lines and home plumbing. The City of Fargo is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. Use water from the cold tap for drinking and cooking. To minimize potential for lead exposure, use the cold water tap for cooking and drinking water, and allow water to run for 30 seconds to 2 minutes before using if the tap has not been opened for several hours. If you are concerned about lead in your drinking 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>

Unregulated Contaminants

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining their occurrence in drinking water and whether future regulation is warranted.

The City of Fargo was selected by EPA to sample for 21 unregulated contaminants during 2013. Samples were taken 4 times from both the water treatment plant and the water tap furthest from the plant. This is to obtain samples of water which have resided in the water supply system for the longest possible duration. Because the samples are drawn from locations ranging from water tower to tap, the results allow us to observe variances in water quality as it travels through our distribution system.

Of the 21 unregulated contaminants, only 5 were detected during this sampling (Table 2). The "Level Detected" is the sampling result found at the maximum residence time in the distribution system.

The concentration of a contaminant is a critical factor when determining whether it poses a risk to public health. For example, while Chromium and Strontium were detected in trace amounts in Fargo water, a 155 lb adult would need to drink 300 eight ounce glasses of water each day to suffer adverse health effects from these contaminants at the level detected in our water.

Should you have any questions, please contact our office.

The sources of drinking water (both tap 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:

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 industrial and petroleum process by-products and can also come from gas stations, urban stormwater runoff, and septic systems.

Radioactive contaminants, which can occur naturally or result from oil and gas production and mining activities.

Unregulated Contaminant Monitoring Rule Results-Table 2

| Substance (units) | Minimum Reporting Level | Level Detected | Range |
|----------------------|-------------------------|----------------|---------------|
| Chromium-total (ppb) | 0.2 | 0.714 | 0.537-1.022 |
| Molybdenum (ppb) | 1 | 2.727 | 2.503-2.907 |
| Strontium (ppb) | 0.3 | 183.292 | 142.47-213.73 |
| Vanadium (ppb) | 0.2 | 0.861 | 0.557-1.234 |
| Chromium-6 (ppb) | 0.03 | 0.765 | 0.47-1.109 |

KEY TO TERMS AND ABBREVIATIONS IN THE TABLE

MCLG: Maximum Contaminant Level Goal. 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.

MCL: Maximum Contaminant Level. The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to MCLGs as feasible using the best available treatment technology.

MRDLG: Maximum Residual Disinfectant Level Goal. The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

MRDL: Maximum Residual Disinfectant Level. The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Level Detected: The highest level of that contaminant used to determine compliance with a National Primary Drinking Water Regulation. This

can be the highest amount found in the water, or the average of all samples analyzed, depending on the regulation.

Range: The lowest to highest result value recorded during the required monitoring timeframe for systems with multiple entry points.

Turbidity is a measure of water clarity monitored at the Fargo Water Treatment Plant. Certain treatment techniques (TT) are required to reduce the level in the drinking water. Regulations require turbidity to be <0.3 NTU 95% of the time and <1.0 NTU 100% of the time. Turbidity has no health effects, but can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms such as bacteria, viruses, and parasites that can cause nausea, cramps, diarrhea and associated headaches.

AL: Action Level. **N/A:** Does not apply. **ND:** None detected. **NTU:** Nephelometric Turbidity Units. **pCi/L:** picocuries per liter (a measure of radioactivity.) **ppb:** parts per billion. **ppm:** parts per million. **TT:** Treatment Technique

2013 Monitoring Results-Table 1

| Substance (monitored at plant) (units) test date | MCL | MCLG | Level Detected | Range | Major Source of Contaminant |
|--|----------------------------------|-----------|---------------------------|----------------------|--|
| Alkalinity- source (ppm) 4/30/2013 | N/A | N/A | 297 | 174-297 | N/A |
| Barium (ppm) 6/14/2010 | 2 | 2 | 0.0135 | N/A | Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits. |
| Bromate (ppb) 8/31/2013 | 10 | 0 | 4 | ND-13 | By-product of drinking water disinfection. |
| Bromide (ppm) 12/9/2013 | Unregulated | N/A | 0.399 | ND-0.399 | Erosion of natural deposits. |
| Chloramine (ppm) 1/31/2013 | 4 (MRDL) | 4 (MRDLG) | 3 | 2.39-3.5 | Water additive used to control microbes. |
| Fluoride (ppm) 2013 monthly | 4 | 4 | 0.815 | 0.649-0.815 | Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories. |
| Gross Alpha Emitters (pCi/l) 2/8/2010 | 15 | 15 | 0.402 | N/A | Erosion of natural deposits. |
| Haloacetic Acids (ppb) 9/30/2013 | 60 | 0 | 15 | 2.51-33.54 | By-product of drinking water disinfection. |
| Nitrate-Nitrite (ppm) 4/8/2013 | 10 | 10 | 0.31 | N/A | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |
| Radium (pCi/l) 2/8/2010 | 5 | 0 | 0.546 | N/A | Erosion of natural deposits. |
| Selenium (ppb) 6/14/2010 | 50 | 50 | 1.43 | N/A | Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines. |
| Total Organic Carbon (ppm) 3/31/2013 | N/A | N/A | source=12.5 finished=8.25 | 6.26-12.5 3.84-8.25 | Naturally present in the environment. |
| Total Trihalomethanes (ppb) 3/31/2012 | 80 | 0 | 18 | 1.08-32.14 | By-product of drinking water disinfection. |
| Turbidity (NTU) daily | TT: 1.0 and <0.3 95% of the time | 0 | 0.3 | 100% of samples <0.3 | Soil runoff. |
| Uranium (ppb) 2/8/2010 | 30 | 0 | 0.6 | N/A | Erosion of natural deposits. |
| Substance (monitored at tap) (units) test date | AL | MCLG | 90% Level | Sites Over AL | Major Source of Contaminant |
| Copper (ppm) 8/19/2011 | 1.3 | 1.3 | 0.184 | 0 of 30 sites | Corrosion of household plumbing systems; Erosion of natural deposits. |
| Lead (ppb) 8/19/2011 | 15 | 0 | 5 | 0 of 30 sites | Corrosion of household plumbing systems; Erosion of natural deposits. |

Water Treatment: The Key to Great Water

Most large cities like Fargo use surface water as the community water source. Surface water sources are renewable and can provide more water volume than groundwater wells. Surface water quality, however, is variable - highly dependent on weather and other environmental conditions. For this reason, more rigorous water treatment processes are required when using surface water.

The City of Fargo maintains one of the most sophisticated water treatment facilities in the United States, with several security upgrades since the 9/11 attack.

The chemical and physical processes used at the plant convert source water with variable characteristics into consistently safe, soft, and good-tasting drinking water.

Water from the Red River is hard (high mineral content) and the water treatment process centers around softening the water (removing minerals). This process reduces hardness from an average of 17 grains per gallon to a target value of 7 grains per gallon. The residual hardness in the finished water prevents the water from becoming too corrosive.

After softening, the water is disinfected with ozone gas and then filtered to remove fine particles, additional hardness, and dissolved minerals like iron. All EPA standards for water clarity were met for 2013. Finally, chloramine is added before distribution to provide disinfection right up to the tap in Fargo homes.



Our Water Supply and Drought Management

The primary water source for the Fargo Water Treatment Plant is the Red River. A water intake is located in proximity to the Midtown Dam. The city also has alternate sources of water that can be used under extraordinary circumstances. These include an intake and pumping station on the Sheyenne River south of West Fargo. The City of Fargo also owns 52% of the stored water rights to Lake Ashtabula, as a result of funding construction of the Baldhill Dam at Valley City. During a drought, water from the lake can be released into the Sheyenne River to meet Fargo's water



needs. This lake (used in 1976, '84, and '88) could provide Fargo's needs for approximately two years.

The City of Fargo has a drought management plan that monitors water flow, river levels and the precipitation index. The city has adopted an ordinance that mandates citizen participation during drought to reduce the impact to all water users. For more information about the drought management plan visit:

www.cityoffargo.com/water

Observe Fargo's odd/even lawn watering schedule from Memorial Day to Labor Day to help reduce the peak demand.

Cryptosporidium

Cryptosporidium is a microbial parasite which is found in surface waters throughout the United States. Symptoms of Cryptosporidium infection may include nausea, diarrhea and abdominal cramps. Most healthy individuals are able to overcome these symptoms within a few weeks. However, immuno-compromised individuals have more difficulty and are at greater risk of developing severe or potentially life threatening illness.

Cryptosporidium must be ingested to cause disease and it may be ingested through means other than drinking water. Immuno-compromised individuals are encouraged to consult their doctor regarding the appropriate precautions to take to avoid infection.

Although filtration removes Cryptosporidium, the most common filtration methods cannot guarantee 100% removal. In January of 2007, the City of Fargo began monthly testing of our source water for the presence of Cryptosporidium. Two years of source water monitoring for public water systems is required under the Long-Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR), implemented by the EPA in 2003. The results of the 24 samples analyzed indicated an average of 0.066 oocysts per liter in the City of Fargo's *source water* (not the finished drinking water.) This concentration of Cryptosporidium falls into the lowest of 4 levels of required treatment, requiring no change in the current treatment processes used at the Fargo Water Treatment Plant (multi-stage clarification, filtration and two-stage disinfection).

Source Water Protection

Our public water system, in cooperation with the North Dakota Department of Health, has completed the delineation and contaminant/land use inventory elements of the North Dakota Source Water Protection Program. Based on the information from these elements, the North Dakota Department of Health has determined that our source water is moderately susceptible to potential contaminants.

You may learn more about the North Dakota Source Water Protection Program online at:

www.ndhealth.gov/wq/gw/sourcewater.htm