

2016 Annual Drinking Water Quality Report Bowman, North Dakota

We're very pleased to provide you with this year's Annual Drinking Water Quality Report. We want to keep you informed about the excellent water and services we have delivered to you over the past year. Our goal is to provide you with a safe and dependable supply of drinking water. Our water source is from the Foxhill and Hell Creek Aquifer. We have five (5) wells with depths from 1050' to 1150'.

Community water systems are required to fully inform citizens about the source and quality of their drinking water; however, events since September 11, 2001 also required that disclosure of public information does not threaten the security of water systems.

The City of Bowman is participating in North Dakota's Wellhead Protection Program. Copies of the Wellhead Protection Program plan and other relevant information regarding this program can be obtained from the City Auditor during normal office hours.

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 not likely susceptible to potential contaminants.

"I'm pleased to report that our drinking water is safe and meets federal and state requirements", said Bill Mason, water superintendent.

This report shows our water quality and what it means. If you have any questions about this report or concerning your water utility, please contact Bill Mason at 701-523-5771. We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled meetings. They are held on the 1st & 3rd Tuesdays of every month at the Bowman City Hall at 4:00 PM. If you are aware of non-English speaking individuals who need help with the appropriate language translation, please call City Hall at 701-523-3309.

The City of Bowman would appreciate it if large volume water customers would please post copies of this Annual Drinking Water Quality Report in conspicuous locations or distribute them to tenants, residents, patients, students, and/or employees, so individuals who consume the water, but do not receive a water bill can learn about our water system. We will make a "Good Faith" effort for this report to be available to all residents.

The City of Bowman routinely monitors for contaminants in your drinking water according to Federal and State laws. The following table shows the results of our monitoring for the period of January 1st to December 31st, 2015. As authorized and approved by EPA, the state has reduced monitoring requirements for certain contaminants to less often than once per year because the

concentrations of these contaminants are not expected to vary significantly from year to year. Some of our data, though representative, is more than one year old.

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 Environmental Protection Agency's Safe Drinking Water Hotline (1-800-426-4791)

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 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, industrial or domestic wastewater discharges, oil production, mining or farming.

Pesticides and herbicides, which 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 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.

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. EPA/ Center for Disease Control and Prevention (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

In the following table you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

Abbreviations:

Parts per billion (ppb) or Micrograms per liter ($\mu\text{g/l}$)- parts per billion or micrograms per liter;

Parts per million (ppm) or Milligrams per liter (mg/l) - parts per million or milligrams per liter

Parts per trillion (ppt) – parts per trillion or nanograms per liter

Not Applicable (NA)

Non Detected (ND)

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

Action Level (AL)- the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Treatment Technique (TT) - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

Maximum Contaminant Level - The “Maximum Allowed” (MCL) 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 - The “Goal” (MCLG) 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.

Maximum Residual Disinfectant Level (MRDL) – 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.

Maximum Residual Disinfectant Level Goal (MRDLG) – 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.

IDSE – Initial Distribution Systems Evaluations.

Obsvns – Observations/field at 100 Power.

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

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

| TEST RESULTS for BOWMAN | | | | | | | | |
|--|-------------|------------|-----------------------------------|-------------------------|---------------|--------------------|------------------------------------|---|
| | <u>MCLG</u> | <u>MCL</u> | <u>Level Detected</u> | <u>Unit Measurement</u> | <u>Range</u> | <u>Date (year)</u> | <u>Violation Yes/No Other Info</u> | <u>Likely Source of Contamination</u> |
| Lead/Copper | | | | | | | | |
| Copper | 1.3 | AL=1.3 | 0.217 90 th % Value | ppm | NA | 2016 | 0 Sites exceeded AL | Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives |
| Lead | 0 | AL=1.5 | 1.9 90 th % Value | ppb | NA | 2016 | 0 Sites exceeded AL | Corrosion of household plumbing systems, erosion of natural deposits |
| Inorganic Contaminants | | | | | | | | |
| Barium | 2 | 2 | 0.148 | ppm | .0813 to .148 | 2016 | No | Discharge of drilling wastes, Discharge from metal refineries, Erosion of natural deposits |
| Chromium | 100 | 100 | 2.6 | ppb | ND to 2.6 | 2016 | No | Discharge from steel and pulp mills; Erosion from natural deposits. |
| Fluoride | 4 | 4 | 2.02 | ppm | 1.83 to 2.03 | 2016 | No | Erosion of natural deposits, Water additive which promotes strong teeth, Discharge from fertilizer and aluminum factories |
| Unregulated Contaminants | | | | | | | | |
| Alkalinity, Carbonate | | | 23 | ppm | n/a | 2016 | No | N/A |
| Alkalinity, Total | | | 619 | ppm | n/a | 2016 | No | N/A |
| Bicarbonate As HCO ₃ | | | 708 | ppm | n/a | 2016 | No | N/A |
| Chloride | | | 36.4 | ppm | n/a | 2016 | No | N/A |
| Conductivity @ 25 C UMHOS/CM | | | 1660 | umho/cm | n/a | 2016 | No | N/A |
| Hardness Total (AS CaCO ₃) | | | 9 | ppm | n/a | 2016 | No | N/A |
| Iron | | | 0.079 | ppm | n/a | 2016 | No | N/A |
| Nickel | | | 0.0127 | ppm | ND-0.0127 | 2016 | No | N/A |
| PH | | | 8.7 | ph | n/a | 2016 | No | N/A |
| Potassium | | | 1.1 | ppm | n/a | 2016 | No | N/A |
| Sodium | | | 379 | ppm | n/a | 2016 | No | N/A |
| Sodium Adsorption Ratio | | | 54.6 | obdvn | n/a | 2016 | No | N/A |
| TDS | | | 1000 | ppm | n/a | 2016 | No | N/A |
| Zinc | | | 0.0418 | ppm | n/a | 2016 | No | N/A |

Stage 1 Disinfection Byproducts

| | <u>MCLG</u> | <u>MCL</u> | <u>Level Detected</u> | <u>Unit Measured</u> | <u>Range</u> | <u>Date (year)</u> | <u>Violation Yes/No Other Info</u> | <u>Likely Source of Contamination</u> |
|-------------------------------|-------------|------------|-----------------------|----------------------|----------------|--------------------|------------------------------------|--|
| Total Haloacetic Acids (HAA5) | NA | 60 | 12 | ppb | 7.53 to 12.17 | 2016 | No | By-product of drinking water disinfection. |
| Total Trihalometha | NA | 80 | 50 | ppb | 28.49 to 50.45 | 2016 | No | By-product of drinking water chlorination. |
| Disinfectants | | | | | | | | |
| Chlorine | MRDL =4.0 | MRDL =4.0 | .08 | ppm | 0.16 to 1.85 | 2016 | No | Water additive used to control microbes. |

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 line and home plumbing. City of Bowman is responsible for providing high quality drinking water, but cannot control the variety of materials used plumbing components. **Use water from the cold tap for drinking and cooking. 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 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>.

EPA requires monitoring of over 80 drinking water contaminants. Those contaminants listed in the table above are the only contaminants detected in your drinking water. Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist the EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.

What does this mean?

MCL's are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effects

(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.

At Arsenic Levels >5 ug/L, but < 10 ug/L:

While your drinking water meets EPA's

standard for arsenic, it does contain low levels of arsenic. EPA's standard balance the current understanding of arsenic possible health effects against the costs of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

Nitrate: Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. Infants below the age of six months who drink water containing Nitrate in excess of 10 ppm water can become seriously ill, and if left untreated, may die. Symptoms include shortness of breath and "blue baby syndrome". Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice from your health care provider.

Copper: Copper is an essential nutrient, but some people who drink water contain-ing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's disease should consult their personal doctor.

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 materials and components associated with service lines and home plumbing. City of Bowman 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. 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 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>.

Uranium: Some people who drink water containing uranium in excess of the MCL over (PCVi/L) many years may have increased risk of getting cancer and kidney toxicity.

TTHMs: Some people who drink water containing trihalomethanes in excess of MCL over many years experience problems with their kidneys, liver or central nervous systems, and may have increased risk of getting cancer.

Thank you for allowing us to provide your family with clean, quality water this year. In order to maintain a safe and dependable water supply we sometimes need to make improvements that will benefit all of our customers. These improvements sometimes require rate structure adjustments.

Please call our office (523-3309) if you have questions.

The CITY OF BOWMAN works around the clock to provide top quality water to every tap. We ask that all customers help us protect our water sources, which are the heart of our community, our way of life and our children's future.

THIS REPORT IS AVAILABLE AT CITY HALL AND AT WWW.BOWNANND.COM