

BISMARCK WATER TREATMENT FACILITY

2014 ANNUAL REPORT ON THE QUALITY OF TAP WATER

We are happy to report that again in 2014 the City of Bismarck's drinking water continued to meet all EPA and State Standards of quality and safety. This report is part of maintaining our compliance with the Environmental Protection Agency's guidelines to provide information on tap water produced by the Bismarck Water Treatment Facility. This report provides you with specific test results to show the quality of Bismarck's water and compares those results to EPA standards for drinking water. It will also give you some general information about health and sources of contamination. We hope you find this information to be useful.

2014 Tap Water Profile

<i>Average Total Hardness</i>	132 mg/l or 7.7 grains/gallon
<i>Average Total Alkalinity</i>	71 mg/l
<i>Average pH</i>	9.01
<i>Average Fluoride</i>	0.69 mg/l
<i>Average Daily Water Production</i>	9.38 million gallons
<i>Highest Daily Water Production</i>	23.77 million gallons

Bismarck's Water Source

The Bismarck Water Treatment Facility takes its water from a horizontal collector well adjacent to the Missouri River south of the Memorial Bridge. This collector well draws water from a depth of 80 feet in an aquifer that is directly recharged from the Missouri River. The direct river intake upstream of the Memorial Bridge serves as a backup to the collector well intake. Our public water system, in cooperation with the ND Department of Health, has completed the delineation and contaminant/land use inventory elements of the ND Source Water Protection Program. Based on the information from these elements, the ND Department of Health has determined that our source water is moderately susceptible to potential contaminants. A copy of this report is available by contacting the Water Department at 355-1700.

Sources of Contamination

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:

(A) **Microbial contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

(B) **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.

(C) **Pesticides and herbicides**, which may come from a variety of sources such as agriculture, storm water runoff, and residential uses.

(D) **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 storm water runoff and septic systems.

(E) **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.

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 (1-800-426-4791).

EPA requires us to monitor for more than 80 potential contaminants. The regulated contaminants that have been detected in Bismarck's drinking water are shown on the attached table. The table also shows the maximum level that was detected and compares this to the EPA drinking water standards. These results show that Bismarck's water meets all EPA water quality requirements.

Health Information

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/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 (1-800-426-4791).

Concerning Lead in Our Water

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. Bismarck Water Treatment Facilities 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 (1-800-426-4791) or at <http://www.epa.gov/safewater/lead>.

To Learn More

We encourage public interest and participation in our community's decisions affecting drinking water. Regular City Commission meetings are held on the second and fourth Tuesday of each month in the Tom Baker Meeting Room at the City/County Building at 221 North 5th Street. The public is welcome to attend. These meetings are also televised on Dakota Media Access, Channel 2. You can learn more about the Bismarck Water Treatment Facility at www.bismarcknd.gov. Water quality data for community water systems throughout the United States is available at www.waterdata.com.

We would appreciate the cooperation of large volume water customers in posting copies of this report in conspicuous locations or distributing them to tenants, residents, patients, students, or employees, so individuals who consume the water, but do not receive a bill can learn more about our water system. Extra copies of this report are available at the Water Plant, the Public Works Department (601 S 26th Street) or the Bismarck Public Library (515 N 5th Street).

If you have questions about this report, need the report translated for non-English speaking consumers, or would like more information please call:

- Brian Young, Water Plant Superintendent — 355-1662
- Keith Demke, Director of Utility Operations — 355-1704
- For questions about your water bill call — 355-1700 Opt. 1

2014 WATER QUALITY TESTING RESULTS FOR REGULATED CONTAMINANTS

CONTAMINANT	DATE TESTED*	UNIT	MCL	MCLG	HIGHEST COMPLIANCE LEVEL	RANGE OF DETECTIONS	MAJOR SOURCES	VIOLATION?	
Inorganic Contaminants									
Barium	6/15/2010	ppm	2	2	0.0158	N/A	Natural deposit erosion, drilling wastes	No	
Fluoride#	1/5/2014	ppm	4	4	0.85	0.54-0.85	Natural deposit erosion, additive to promote strong teeth	No	
Nitrate + Nitrite	4/9/2014	ppm	10	10	0.32	N/A	Fertilizer runoff, leaching from septic tanks, sewage	No	
Microbiological Contaminants					MAX				
Turbidity**#	6/1/2014	NTU	TT	N/A	0.23	0.05-0.23	Soil runoff	No	
Total Coliform#	12/31/2014	% of samples	<5%	0	0%	0-0%	Naturally present in the environment	No	
Radioactive Contaminants					MAX				
Combined Radium 226, 228	11/13/2008	pCi/L	5		0.814	NA	Erosion of natural deposits	No	
Combined Uranium	11/13/2008	ppb	30		0.439	NA	Erosion of natural deposits	No	
Gross Alpha, excluding RN & U	11/13/2008	pCi/L	15	15	ND	N/A	Erosion of natural deposits	No	
Disinfectants			MRDL	MRDLG	MAX				
Chloramine	6/30/2014	ppm	4	4	1.7	1.34 to 1.81	Added as water disinfectant	No	
Total Organic Carbon (TOC) Removal									
Total Alkalinity (source)	12/31/2014	MG/L			309	141 to 309	Natural erosion, certain plant activity, certain industrial wastewater discharges	No	
Total Organic Carbon (source)	11/30/2014	MG/L			6.5	4.60 to 6.50	Naturally present in the environment	No	
Total Organic Carbon (treated)	11/30/2014	MG/L			3.5	2.70 to 3.50	Naturally present in the environment	No	
Disinfection Byproducts									
Total Trihalomethanes	12/31/2014	ppb	80	NA	29.0	21.48 to 33.57	By-product of drinking water chlorination	No	
Total Haloacetic Acids	6/30/2014	ppb	60	NA	15	5.17 to 17.25	By-product of drinking water chlorination	No	
Lead and Copper Sampling at Residential Taps					90TH PERCENTILE	EXCEEDENCE			
Lead	9/27/2013	ppb	AL=15		9.2	1	Corrosion of household plumbing systems	No	
Copper	9/27/2013	ppm	AL=1.3		0.0399	0	Corrosion of household plumbing systems	No	

*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 are not expected to vary significantly from year to year. Some of our data, though representative, are more than one year old.
Samples are taken daily

KEY TO TABLE

ppm = parts per million, or milligrams per liter (mg/L)
ppb = parts per billion, or micrograms per liter (ug/L)
ND = none detected
pci/L = Pico curies per liter : a measure of radioactivity
NTU = Nephelometric turbidity units
umho/cm = micromhos per centimeter (a measure of conductivity)
obsvns = observations/field at 100 power

Maximum Contaminant Level Goal (MCLG): 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.

Maximum Contaminant Level (MCL): 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.

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

Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. For lead and copper the Action Level is exceeded if the 90th percentile value exceeds the Action Level. Thirty two sites were sampled and one site exceeded the Action level for lead.

**** Turbidity** is a measure of the cloudiness of water. We monitor it because it is a good measure of the effectiveness of our filtration system. Turbidity has no health effects, however it can interfere with disinfection or provide a medium for microbial growth. Compliance is determined by the percentage of samples that meet the limit of 0.3 NTU.

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

2014 WATER QUALITY TESTING RESULTS FOR UNREGULATED CONTAMINANTS

The City of Bismarck was selected by EPA to sample for 21 unregulated contaminants during 2014. Samples were taken 1 time from both the Water Treatment Plant and from the Maximum Residence Time sampling point.

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 the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. Should you have any questions, please contact our office at 355-1700.

The following unregulated contaminants were the only contaminants detected during this sampling. Results are from the sample point with the Maximum Residence (MR) Time in our system.

Unregulated Contaminant	Minimum Reporting Level (ug/L)	Average Value at MR sampling point (ug/L)	Range of Detection at MR sampling point (ug/L)
Chromium	0.2	0.64	NA
Molybdenum	1	3.4	NA
Strontium	0.3	350	NA
Vanadium	0.2	1.7	NA
Hexavalent chromium/chromium-6	0.03	0.49	NA