

Annual Drinking Water Quality Report Tioga, North Dakota 2015

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. The City of Tioga's water source ground water from the Ray Aquifer, purchased from the R & T Water Supply Commerce Authority. The water is treated using the lime softening process. Chlorine is added for disinfection. Fluoride and phosphate for corrosion control are also added. R&T also receives and blends treated water from the Williston Water Treatment Plan. The City of Williston's test results are included in this report.

The R&T Water Association, 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 non susceptible to potential contaminants.

R&T Water Association is involved in the Wellhead protection program. Copies of the Wellhead Protection Program plan and other relevant information regarding this program is available from the R&T facility.

If you have any questions about this report or concerning your water utility, please contact Jeff Moberg, Water Superintendent at 701-641-3550. 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 held on the first and third Monday's of every month at 7:00 pm central time at City Hall. If you are aware of non-English speaking individuals who need help with the appropriate language translation, please call our office at the number listed above.

The City of Tioga would appreciate it if large volume water customers would please post copies of the *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.

The City of Tioga 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 [e.g., for inorganic contaminants], though representative, is more than one year old.

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

Pesticides and herbicides, which come from a variety of sources such as agriculture, urban storm water 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 storm water 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, the Environmental Protection Agency (EPA) prescribes regulations which limit the amount of certain contaminants in water provided by public water systems.

The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

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:

Not applicable (NA), No Detect (ND)

Parts per million (ppm) or Milligrams per liter (mg/l) - one part per million corresponds to one minute in two years or a single penny in \$10,000.

Parts per billion (ppb) or Micrograms per liter ($\mu\text{g/l}$) - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Picocuries per liter (pCi/l) - Pico curies 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.

2015 TEST RESULTS FOR THE CITY OF TIOGA, R&T WATER SUPPLY AND THE CITY OF WILLISTON

Contaminant	MCLG	MCL	Level Detected	Units	Range	Date (year)	Violation Yes/No Other Info	Likely Source of Contamination
Microbiological Contaminants (Williston)								
Turbidity*	NA	TT	0.26	NTU	N/A	2015	100% of samples met turbidity limits	Soil runoff
Lead/Copper (Tioga)								
Copper	1.3	AL=1.3	0.0316 90 th % Value	ppm	NA	2014	0 Sites Exceeded AL	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead**	0	AL=15	ND 90 th % Value	ppb	NA	2014	0 Sites Exceeded AL	Corrosion of household plumbing systems, erosion of natural deposits
Inorganic Contaminants								
Nitrate-Nitrite-Williston	10	10	0.1	ppm	NA	2015	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrate-Nitrite-R&T	10	10	0.09	ppm	NA	2015	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Stage 2 Disinfection By-Products - Tioga								
HAA5	NA	60	5	ppb	4.38 to 6.29	2015	No	By-product of drinking water chlorination
TTHM	NA	80	5	ppb	2.7 to 7.24	2015	No	By-product of drinking water chlorination
Disinfectants (Tioga)								
Chloramine	MRDLG =4	MRDL =4.0	2.1	ppm	0.59 to 3.08	2015	No	Water additive used to control microbes
TOTAL ORGANIC CARBON REMOVAL (WILLISTON)								
Alkalinity, Source- Williston	NA	NA	234	mg/l	128.0 to 234.0	2015	No	Natural erosion, certain plant activities, certain industrial wastewater discharges
Carbon, Total Organic (TOC) – Finished- Williston	NA	TT	5.4	MG/L	0 to 5.40	2015	No	Naturally present in the environment
Carbon, Total Organic (TOC)- Source- Williston	NA	TT	9.9	MG/L	3.0 to 9.90	2015	No	Naturally present in the environment

Unregulated Contaminants

<u>Contaminant</u>	<u>MCLG</u>	<u>Minimum Reporting Level</u>	<u>Average Value @ Entry Point to Dist. System</u>	<u>Units</u>	<u>Range of Detection @ Entry Point to Dist. System</u>	<u>Date</u>	<u>Violation, Yes/No other info</u>	<u>Likely Source of Contamination</u>
Total Chromium	N/A	0.20	0.42	ug/L	0.42	2015	No	N/A
Molybdenum	N/A	1.00	2.1	ug/L	2.1	2015	No	N/A
Strontium	N/A	0.3	320	ug/L	320	2015	No	N/A
Vanadium	N/A	0.2	1.1	ug/L	1.1	2015	No	N/A

Hexavalent Chromium by I.C.

Hexavalent Chromium	N/A	0.03	0.35	ug/l	0.35	2015	No	N/A
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Unregulated Contaminants

<u>Contaminant</u>	<u>MCLG</u>	<u>Minimum Reporting Level</u>	<u>Average Value @ MR Sampling Point</u>	<u>Units</u>	<u>Range of Detection @ MR Sampling Point</u>	<u>Date</u>	<u>Violation, Yes/No other info</u>	<u>Likely Source of Contamination</u>
Chromium	N/A	0.20	0.5	ug/L	0.5	2015	No	N/A
Molybdenum	N/A	1.00	2.1	ug/L	2.1	2015	No	N/A
Strontium	N/A	0.3	330	ug/L	330	2015	No	N/A
Vanadium	N/A	0.2	0.84	ug/L	0.84	2015	No	N/A

Hexavalent Chromium by I.C.

Hexavalent Chromium	N/A	0.03	0.45	ug/L	45	2015	No	N/A
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The city of Williston conducted source water monitoring for Cryptosporidium, Giardia & E-coli as part of the Long Term 2 Enhanced Surface Water Treatment Rule. The purpose of the LT2SWTR is to protect the public health from illnesses due to Cryptosporidium & other microbial pathogens. Cryptosporidium is a microbial pathogen found in surface water throughout the U.S. Although filtration removes Cryptosporidium, the most commonly-used filtration methods cannot guarantee 100% safe removal. Our source water monitoring indicates a very small presence of Cryptosporidium & Giardia @ out Missouri River intake. The city of Williston's finished drinking water has shown no evidence of these microbial contaminants & is safe to drink.

Source Water Monitoring

<u>Microbial Contaminant</u>	<u>MCLG</u>	<u>Total</u>	<u>Average</u>	<u>Units</u>	<u>Range of Detection @ MR Sampling Point</u>	<u>Date</u>	<u>Violation, Yes/No other info</u>	<u>Likely Source of Contamination</u>
Cryptosporidium	N/A	3	0.25	N/A	0.0 to 2.0	2015	No	N/A
Giardia	N/A	18	1.5	N/A	0 to 5.0	2015	No	N/A
Ecoli	N/A	437.8	36.5	N/A	2.0 to 135.4	2015	No	N/A

Surface Water Treatment Rule Monitoring Data:

Lowest Monthly Percentage of Samples Meeting Turbidity Limits= 100

Highest Single Measurement = 0.26

*Turbidity is a measure of the cloudiness of the water. The city of Williston monitors it because it is a good indicator of the effectiveness of their filtration system. Turbidity is measured every four hours during treatment plant operations. 100% of samples met turbidity limits.

EPA requires monitoring of over 80 drinking water contaminants. Those contaminants listed in the tables above are the only contaminants detected in your drinking 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. The City of Stanley 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>.

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.

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).

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 effect.

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/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).

Please call our office at 701-641-3550 if you have questions concerning your water system. The City of Tioga works diligently to provide top quality water to every tap. We ask that all our customers help us protect our water sources, which is the heart of our system, our way of life and our children's future.