

Annual Drinking Water Quality Report

Williams Rural Water District

For 2016

We're pleased to present to you this year's Annual Drinking Water Quality Report. This report is required by the federal Safe Drinking Water Act (SDWA) and we encourage you to share and discuss the contents with consumers who do not receive or may not understand the information contained herein. This report is designed to inform you about the safe clean water we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water.

We are pleased to report that our drinking water is safe and meets federal and state requirements.

If you own or manage an apartment complex or have renters, we encourage you to share this report with them. If you have any questions about this report or concerning your water utility, please contact Ben Clarys, our Manager, at (701) 774-8915. 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 board meetings that are held on the third Tuesday of every month at 7:30 AM at the Williams Rural Water District office. If you are aware of non-English speaking individuals who need help with the appropriate language translation, please call Ben Clarys at the number listed above.

This report has required definitions of terms, language requirements, tables of water quality data and other pertinent information you will hopefully find interesting and educational.

Williams Rural Water District's water source is the Western Area Water Supply which obtains its water from the Missouri River. The Water Treatment Plant is located on the north bank of the Missouri River near the Lewis & Clark Bridge on Highway 85. During high demands, Williams Rural Water may receive water through the R & T Water Supply system, which is not likely susceptible to potential contaminant sources. Recent amendments to the Safe Drinking Water Act require the North Dakota Department of Health to complete a source water assessment (SWA) for the Western Area Water Supply. The Health Department completed this assessment of our water source in 2003 and determined that our water system is moderately susceptible to potential contaminant sources. They also noted that "historically, the Williston Water Plant has effectively treated this source water to meet drinking water standards." Information about the SWA can be obtained by calling the Water Treatment Plant at (701) 577-7104.

Williams Rural Water District would appreciate it if large volume water customers post copies of the CCR 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.

Williams Rural Water District routinely monitors for contaminants in your drinking water according to Federal and State laws. This table shows the results of our monitoring for the period of January 1st to December 31st, 2016.

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 organic contaminants], though representative, is more than one year old.

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:

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 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 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 this 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:

Non-Detects (ND) - laboratory analysis indicates that the contaminant is not present.

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.

Parts per trillion (ppt) or Nanograms per liter (nanograms/l) - one part per trillion corresponds to one minute in 2,000,000 years, or a single penny in \$10,000,000,000.

Parts per quadrillion (ppq) or Picograms per liter (picograms/l) - one part per quadrillion corresponds to one minute in 2,000,000,000 years or one penny in \$10,000,000,000,000.

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

Millirems per year (mrem/yr) - measure of radiation absorbed by the body.

Million Fibers per Liter (MFL) - million fibers per liter is a measure of the presence of asbestos fibers that are longer than 10 micrometers.

Nephelometric Turbidity Unit (NTU) - nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

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 Goal (MRDLG) - The level of drinking water disinfectant below which there is no known or expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.

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.

Initial Distribution System Evaluation (IDSE) –

Umho/cm – Micromhos per centimeter (a measure of conductivity)

Obsvns – observations/field at 100 Power

WILLIAMS RURAL WATER DISTRICT - TEST RESULTS

<u>Contaminant</u>	<u>Violation Yes/No</u>	<u>Level Detected</u>	<u>Range</u>	<u>Date (year)</u>	<u>Unit Measurement</u>	<u>MCLG</u>	<u>MCL</u>	<u>Likely Source of Contamination</u>
Microbiological Contaminants								
1. Total Coliform Bacteria	No	0		2016		0	1 per month for systems <40,000 pop.	Naturally present in the environment
Inorganic Contaminants								
3. Copper	No	90th% 0.0237		2014	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
4. Lead	No	90th% No Detect		2014	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
Disinfectants								
5. Chloramines	No	2.1	1.98 to 2.255	2016	ppm	MRDLG=4	MRDL = 4.0	Water additive used to control Microbes
Disinfection Byproducts								
6. TTHM [Total trihalomethanes]-	No	20	9.57 to 20.91	2016	ppb	0	80	By-product of drinking water chlorination
7. Total Haloacetic Acids (HAA5) –	No	11	5.02 to 15.4	2016	ppb		60	By-product of drinking water disinfection

CITY OF WILLISTON – TEST RESULTS

<u>Contaminant</u>	<u>Violation Yes/No</u>	<u>Level Detected</u>	<u>Range</u>	<u>Date (year)</u>	<u>Unit Measurement</u>	<u>MCLG</u>	<u>MCL</u>	<u>Likely Source of Contamination</u>
Microbiological Contaminants								
1. Turbidity	No	0.69		2016		n/a	TT	Soil runoff
The lowest monthly % of samples meeting the Turbidity limits equals 100%								
Inorganic Contaminants								
2. Copper	No	90th% 0.0221		2014	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
3. Lead	No	90th% No Detect		2014	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
4. Barium	No	.0143		2016	ppm	2	2	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
5. Chromium	No	1.17		2016	ppb	100	100	Discharge from steel and pulp mills; Erosion of natural deposits
6. Fluoride	No	.81		2016	ppm	4	4	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
7. Nitrate – Nitrite	No	.19		2016	ppm	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
8. Selenium	No	1.44		2016	ppb	50	50	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines
Total Organic Carbon Removal								
9. Alkalinity – source	No	188	103 to 188	2016	MG/L			
10. Carbon, Total Organic (TOC)- Finished	No	2.4	1.90 to 2.40	2016	MG/L			
11. Carbon, Total Organic (TOC) - Source	No	4.2	3.20 to 4.20	2016	MG/L			
Unregulated Contaminants								
12. Alkalinity, Carbonate	No	3		2016	ppm			
13. Bicarbonate as HCO ₃	No	84		2016	ppm			
14. Calcium	No	44.6		2016	ppm			
15. Chloride	No	22.2		2016	ppm			
16. Conductivity @ 25 C UMHOS/CM	No	665		2016	umho/cm			
17. Hardness Total (as CaCO ₃)	No	159		2016	ppm			
18. Magnesium	No	11.6		2016	ppm			
19. Nickel	No	.00105		2016	ppm			
20. PH	No	8.63		2016	PH			
21. Potassium	No	4.2		2016	ppm			
22. Sodium	No	71.1		2016	ppm			

23. Sodium Adsorption ratio	No	2.45		2016	cbsvns			
24. TDS	No	413		2016	ppm			
25. Zinc	No	.00183		2016	ppm			
Disinfectants								
26. Chloramines	No	2.2	1.87 to 2.36	2016	ppm	MRDL G=4	MRDL = 4.0	Water additive used to control Microbes
Disinfection Byproducts								
27. TTHM [Total trihalomethanes]-	No	20	10.44 to 21.7	2016	ppb	0	80	By-product of drinking water chlorination
28. Total Haloacetic Acids (HAA5) –	No	9	3.56 to 15.8	2016	ppb		60	By-product of drinking water disinfection

Additional Monitoring

The City of Williston conducted source water monitoring for Cryptosporidium, Giardia, Ecoli, and turbidity as part of the Long Term 2 Enhanced Surface Water Treatment Rule. The purpose of the LT2ESWTR is to protect public health from illnesses due to Cryptosporidium and other microbial pathogens. Cryptosporidium is a microbial pathogen found in surface water though out the U.S. Although filtration removes Cryptosporidium, the most commonly-used filtration methods cannot guarantee 100% safe removal. In accordance with this rule Cryptosporidium, Giardia, E-coli, and turbidity samples were taken monthly between November of 2014 and October 2016 from the raw water line and analyzed by certified laboratories. Results were used to determine “bin” classification, which determines whether further treatment for Cryptosporidium is needed. Our monitoring placed us in Bin 1 (< 0.075 oocysts/L), which requires no additional treatment.

Source Water Monitoring			
Microbial Contaminant	Total	Average	Range
Cryptosporidium, oocysts/L	.6	0.025	0-.2
Giardia, cysts	59	2.46	0-19
Ecoli, per 100ml	916.4	38.18	0->200.5
Turbidity, ntu	n/a	140	7.2 – 696.4

R & T WATER SYSTEM - TEST RESULTS

<u>Contaminant</u>	<u>Violation Yes/No</u>	<u>Level Detected</u>	<u>Range</u>	<u>Date (year)</u>	<u>Unit Measurement</u>	<u>MCLG</u>	<u>MCL</u>	<u>Likely Source of Contamination</u>
Microbiological Contaminants								
Inorganic Contaminants								
2. Copper	No	90th% 0.047		2015	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
3. Lead	No	90th% .55		2015	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
4. Arsenic	No	1.31		2016	ppb	0	10	
5. Barium	No	.00374		2016	ppm	2	2	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
6. Fluoride	No	.71		2016	ppm	4	4	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
7. Nitrate – Nitrite	No	.09		2016	ppm	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Unregulated Contaminants								
12. Alkalinity, Carbonate	No	4		2016	ppm			
13. Alkalinity, Total	No	79.6		2016	ppm			
13. Bicarbonate as HCO ₃	No	90		2016	ppm			
14. Calcium	No	28.8		2016	ppm			
15. Chloride	No	10.4		2016	ppm			
16. Conductivity @ 25 C UMHOS/CM	No	1020		2016	umho/cm			
17. Hardness Total (as CaCO ₃)	No	118		2016	ppm			
Iron	No	.238						
18. Magnesium	No	11.2		2016	ppm			
20. PH	No	8.62		2016	PH			
21. Potassium	No	8.4		2016	ppm			
22. Sodium	No	149		2016	ppm			
23. Sodium Adsorption ratio	No	5.96		2016	cbsvns			
24. TDS	No	628		2016	ppm			
25. Zinc	No	.00164		2016	ppm			
Disinfectants								
10. Chloramines	No	3.1	1.94 to 3.5	2016	ppm	MRDLG=4	MRDL = 4.0	Water additive used to control Microbes
Disinfection Byproducts								
11. TTHM [Total trihalomethanes]-	No	15		2016	ppb	0	80	By-product of drinking water chlorination
12. Total Haloacetic Acids (HAA5) –	No	9		2016	ppb		60	By-product of drinking water disinfection

Williams Rural Water had no Total Coliform monitoring violations in 2016.

* Total Coliform. Coliforms are bacteria which are naturally present in the environment and are used as an indicator that other; potentially-harmful, bacteria may be present.

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.

Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

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.

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. Williams Rural Water District 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>.

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.

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 & 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).

Please call our office if you have questions.

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