

Annual Drinking Water Quality Report — Aurora-Brule Rural Water System —

January 1, 2018 – December 31, 2018

Introduction

The purpose of this report is to inform you of the quality of the drinking water that we provide. We are required by the U.S. Environmental Protection Agency (EPA) to test our water frequently for the presence and concentrations of over 80 different substances. The South Dakota Department of Environment and Natural Resources (DENR) reviews all of our testing data to ensure that 1) we are providing safe drinking water to our customers, and 2) we are complying with EPA regulations.

We want you to fully understand the information contained in this report. If you have any questions, please contact:

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Information provided by the EPA

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 at 800-426-4791.

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 at 800-426-4791.

Where does our water come from?

The source of our drinking water is surface water from Fort Randall Reservoir, on the Missouri River. Aurora-Brule RWS purchases some water from the Randall Community Water District, which has the same source. The Missouri River drains most of Montana and North Dakota, and most of western South Dakota.

Why do we test our drinking water?

The water we pump from Fort Randall Reservoir is surface water that comes from the Missouri River and other streams upstream of our intake. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals, and can pick up substances resulting from the presence of animals or from human activity. Too much of any substance, either naturally occurring or resulting from human activities can be considered a contaminant.

Contaminants that can occur in source water include:

1. **Microbial Contaminants**, such as viruses and bacteria, which

can come from human sewage or livestock waste disposal facilities, and wildlife,

2. **Inorganic Contaminants**, such as salts and metals, which are generally naturally-occurring in this area;
3. **Pesticides and Herbicides**, from both residential and agricultural use,
4. **Organic Chemical Contaminants**, including synthetic and volatile organic chemicals, which can come from leaking gas storage tanks, urban storm water runoff, agricultural runoff, and septic systems, and
5. **Radioactive Contaminants**, which are naturally occurring in some of the rocks in South Dakota.

In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

What treatment does our water receive?

Aurora-Brule Rural Water and Randall Community Water District utilize the same method of treatment. The first stage of the treatment process is a screen at the intake station. This screen keeps out relatively large debris such as driftwood, fish, etc. The water is pumped from the intake station to the treatment plant. At the treatment plant, a coagulant is added to the water. The coagulant makes small, microscopic particles and impurities stick together to form larger particles. This makes the smaller particles easier to remove. After the water is treated with the coagulant, it is filtered to remove the particles and other impurities normally found in lake water. We add potassium permanganate to remove tastes and odors caused by decaying organic material, such as dead leaves. We also add chlorine and Ammonia which forms chloramines to kill any bacteria that may be in the water.

Summary of 2018 Water Quality Tests Results

We are pleased to report that our water in 2018 was in compliance with all EPA and state water quality standards.

Although we routinely test our water for over 80 different substances, only those 10 substances shown in the table were detected. With the exception of lead and fluoride, all of these 10 substances are naturally occurring.

Alpha emitters, antimony, arsenic, barium, chromium, and selenium are all substances that are naturally occurring in the rocks and soil within the Missouri River watershed. These six substances were well below the highest level allowed by EPA.

Sulfate is also a substance that is naturally occurring in the rocks and soil within the region. Sulfates have not been demonstrated to pose any health risks and are therefore not regulated by the EPA. We monitor for sulfates to provide information to the EPA and the DENR

regarding the occurrence of sulfates in drinking water. EPA may use this information and information from other drinking water providers throughout the United States, to determine if sulfates should be regulated in the future.

Turbidity is a measure of the cloudiness of the water. We monitor it daily because it is a good indicator of the effectiveness of our filtration system. Turbidity levels vary due to changes in surface water runoff. The turbidity levels measured in 2017 were well within the acceptable range of levels allowed by the EPA. Fluoride is naturally present at low levels in our water.

We monitor for lead and copper in some of our customer's homes to determine if it is leaching from plumbing fixtures. Due to the chemical stability of the water we produce, the measured lead and copper levels are low and are well below the highest level allowed by EPA.

We Welcome Your Input

We have an annual meeting every year for our customers. We mail invitations stating the time and place of the annual meeting to all of our members. Additionally, our Board of Directors meets on the second Tuesday of every month at the main office located in Kimball, SD. If you would like to attend one of the board meetings, please notify Wade Blasius at the address and phone number listed at the beginning of this report.

DEFINITION OF TERMS

These definitions are provided to assist you in understanding our water quality test results and the following discussion of the results.

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 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 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.

2018 WATER QUALITY TEST RESULTS

Aurora-Brule RWS - Water Quality Tests Taken At The Treatment Plant

Substance REGULATED	Sample Date	Highest Level Detected	Range of Detection	Ideal Goals (MCLG)	Highest Level Allowed (MCL)	Likely source of substance
Antimony	03/22/12	0.3	N/A	6.0	6.0	Erosion of natural deposits
Arsenic	03/22/12	2	N/A	N/A	50	Erosion from natural deposits; Orchard runoff
Chromium	03/22/12	2.3	N/A	100	100	Erosion of natural deposits
Barium	03/22/12	0.042	N/A	2.0	2.0	Erosion of natural deposits
Mercury	03/17/12	0.1	N/A	2	2	Erosion of natural deposits
Fluoride	11/05/18	.50	.50	.50-1.0	4.00	Water additive to promote strong teeth
Selenium	03/22/12	1.5	N/A	50.0	50.0	Erosion of natural deposits, Mine discharges
Turbidity	Daily	99%	within limits	N/A	TT	Soil runoff
Total Coliform Bacteria	Continuous	0	NA	0	1	
Nitrate	03/20/18	0.2	N/A	10	10	Runoff from fertilizer use; Leaching from Septic tanks, Sewerage, Natural deposits
Alpha emitters	05/16/12	1.1	N/A(1)	0	15.0	Erosion of natural deposits
Haloacetic Acids	12/15/18	3.0	N/A	0	60	By-product of drinking water chlorination
Total Trihalomethanes	12/15/18	1.79	N/A	0	80	By-product of drinking water chlorination

Randall CWD – Water Quality Tests Taken At The Treatment Plant

Antimony	09/26/12	0.5	N/A	6.0	6.0	Erosion of natural deposits
Arsenic	09/26/12	2	N/A	N/A	50	Erosion of natural deposits; Orchard runoff
Chromium	09/26/12	0.9	4.0	100	100	Erosion of natural deposits
Barium	09/26/12	0.041	N/A	2.0	2.0	Erosion of natural deposits
Fluoride	11/07/18	.49	.48-.49	.50-1.0	4.0	Water additive to promote strong teeth
Selenium	09/26/12	1.7	1.4-1.7	50.0	50.0	Erosion of natural deposits, Mine discharges
Turbidity	Daily	99%	within limits	N/A	TT	Soil runoff
Total Coliform Bacteria	Continuous	0	N/A	0	1	
Nitrate	06/04/18	0.2	NA	10	10	Runoff from fertilizer use; Leaching from Septic tanks, Sewerage, Natural deposits
Alpha emitters	05/20/15	3.0	N/A	0	15.0	Erosion of natural deposits
Haloacetic Acids	11/07/18	35.75	N/A	0	60	By-product of drinking water chlorination
Total Trihalomethanes	11/07/18	52.38	N/A	0	80	By-product of drinking water chlorination

Water Quality Tests taken at the Customers Tap

Substance REGULATED	Date Sampled	Highest Level for Compliance	# of Samples above the AL	MCLG	MCL	Likely source of substance
Copper A-B	07/11/18	0.2	0	0	AL=1.3	Corrosion of household plumbing.
Lead A-B	07/11/18	3.0	0	0	AL=15.0	Corrosion of household plumbing
Copper Randall	08/21/18	0.1	0	0	AL=1.3	Corrosion of household plumbing
Lead Randall	08/14/18	2.0	0	0	AL=15.0	Corrosion of household plumbing