

Annual Drinking Water Quality Report

Kingbrook Rural Water System, Inc.

January 1, 2022 – December 31, 2022



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 possible contaminants. The South Dakota Department of Agriculture and Natural Resources (DANR) reviews all our testing data to ensure that 1) we are providing safe drinking water to our customers, and 2) we are complying with EPA regulations. Our constant goal is to provide you with a safe and dependable supply of drinking water.

Once again, Kingbrook Rural Water System has supplied another year of safe drinking water to the public it serves and has been awarded the Secretary's Award for Drinking Water Excellence by the South Dakota Department of Agriculture and Natural Resources. This report is a snapshot of the quality of the water that we provided last year. Included are details about where your water comes from, what it contains, and how it compares to Environmental Protection Agency (EPA) and state standards. We are committed to providing you with information because informed customers are our best allies.

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

Heath Thompson, General Manager
Kingbrook Rural Water System, Inc.
P.O. Box 299, Arlington, SD 57212 Phone: (800) 605-5279 or (605) 983-5074

We Welcome Your Input

Kingbrook Rural Water System employees work 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.

If you want to learn more, please attend any of our regularly scheduled Board meetings held at 7:00 P.M. on the third Monday of every month at our office in Arlington. (Please call the office for any scheduling changes.)

Please call our office if you have questions at (800) 605-5279 or (605) 983-5074 if you wish to attend a meeting.

Where does our water come from?

Our water system is separated into three geographic areas, each of which has its own treatment plant and water source from groundwater drawn from wells. Phase I, located north of Bruce, and Phase III, located near Chester, both draw from the Big Sioux Aquifer; and Phase II, located north of DeSmet, draws from the East Fork of the Vermillion Aquifer.

Wellhead protection areas have been defined for each of our wellfields. DANR has performed an assessment of our source water and they have determined that the relative susceptibility rating for Kingbrook Phase I is low and for Kingbrook Phase II and Kingbrook Phase III is medium. For more information about your water, please call our office at 605-983-5074.

We are pleased to report that your drinking water is safe and meets or exceeds all Federal and State requirements.

Why do we test our drinking water?

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. The water we pump from our wells is from underground aquifers, supplied by water that originally comes from the surface, and very slowly seeps down into the aquifer. 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.

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 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.

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.

Information provided by the EPA

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.

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 (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 (800-426-4791).

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. Kingbrook Rural Water System is responsible for providing high quality drinking water but cannot control the variety of materials used in plumbing components. 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 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>.

What treatment does our water receive?

After we pump the water from our wells, we filter the water to remove iron and manganese. Although the iron and manganese in our water does not pose a health concern, these two naturally occurring substances can cause the water to appear brown or rust-colored and can stain clothes and plumbing fixtures. We, therefore, treat our water to remove these substances.

Once the iron and manganese are removed, chlorine is added to eliminate bacteria and fluoride is added to protect against tooth decay. The finished water is pumped into an initial storage tank called a clearwell, from there into the distribution system, and ultimately to your home.

Definitions for Contaminant Tables

The following definitions are provided to assist you in understanding our water quality test results presented in the table at the end of the report.

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

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

Running Annual Average (RAA): Compliance is calculated using the running annual average of samples from designated monitoring locations.

N/A – Not Applicable

ND – Not Detected

MCL's are set at very stringent levels. To understand the possible health effects described for many regulated constituents, 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.

Detected Contaminants and Water Quality Data

The table at the end of the report lists the drinking water contaminants we detected during the 2022 calendar year. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done January 1 – December 31, 2022. The state requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one year old. In these cases, where the last sample was taken prior to 2022, the sample date has been provided.

Summary of 2022 Water Quality Tests Results

Last year, we were required to test for various drinking water contaminants. Only a very small number of these, as shown in the table, registered a detectable quantity. Additionally, in each case, the detected quantity fell far short of the maximum limit. If a specific contaminant is not shown on the table, it is because the analytical results indicate the sample tested below the detection level.

Alpha Emitters are substances that naturally occur in rocks and soil. The levels detected are well below those allowed by the EPA.

Arsenic occurs as a result of natural deposits or from runoff from orchards. The levels detected are well below those allowed by the EPA.

Summary of 2022 Water Quality Tests Results Continued

Barium occurs as a result of erosion of natural deposits and was detected in the Big Sioux and Vermillion Aquifers at an insignificant quantity.

Chromium occurs as a result of erosion of natural deposits and was detected at levels dramatically lower than the highest level allowed by EPA.

Fluoride is naturally present at low levels in our water. In addition, we add fluoride to the water to promote healthy teeth.

Nitrate levels in our water in 2022 were found at amounts consistent with our area land use and significantly below the highest level allowed by EPA.

Lead and Copper levels are normally a function of home plumbing fixtures. Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes throughout the system as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may want to have your water tested. Additional information is available from the Safe Drinking Water Hotline (1-800-426-4791).

Selenium is a naturally occurring substance found in the soil and rocks of this region. Detected quantities were significantly below maximum allowable levels.

Total Trihalomethanes (TTHM) and Haloacetic Acids are chemicals produced by the chlorination of drinking water. Detected levels found were well below the highest level currently allowed by EPA.

2022 WATER QUALITY RESULTS

Kingbrook Phase I – Bruce Water Treatment Plant

Substance	Sample Date	Highest Level Detected	Range of Detection	Ideal Goals (MCLG)	Highest Level Allowed (MCL)	Units	Likely source of substance
Inorganic Substances							
Fluoride	2/7/22	0.86	0.57-0.86	4	<4	ppm	Water additive to promote strong teeth
Nitrate (as Nitrogen)	3/21/22	2.4	NA	10	10	ppm	Fertilizer runoff; leaking septic tanks; erosion of natural deposits
Antimony	11/8/21	0.2	ND-0.2	6	6	ppb	Discharge from petroleum refineries; fire retardants, ceramics; electronics; solder
Arsenic	11/8/21	1.0	ND-1	0	10	ppb	Erosion of natural deposits, runoff from orchards
Barium	11/4/21	0.092	0.071-0.092	2	2	ppm	Erosion of natural deposits
Chromium	11/4/21	1.84	0.87-1.84	100	100	ppb	Erosion of natural deposits
Selenium	11/4/21	0.9	0.67-0.9	50	50	ppb	Erosion of natural deposits
Water Quality Tests taken throughout the Distribution System							
Haloacetic Acids	8/23/22	12.2	NA	0	60	ppb	By-products of drinking water chlorination
Total Trihalomethanes	8/23/22	26.5	NA	0	80	ppb	By-products of drinking water chlorination
Radioactive Substances							
Alpha emitters	6/15/21	4	ND-4	0	15	pCi/l	Erosion of natural deposits
Water Quality Tests taken at the Consumer's Tap Located within Kingbrook Phase I							
Substance	Sample Date	Level Detected (90 th Percentile)	# of Samples above the AL	MCLG	MCL	Units	Likely source of substance
Copper	8/2/21	0.2	1	0	AL = 1.3		Corrosion of household plumbing systems
Lead	7/28/21	2.4	0	0	AL = 15		Corrosion of household plumbing systems

Kingbrook Phase II – De Smet Water Treatment Plant

Substance	Sample Date	Highest Level Detected	Range of Detection	Ideal Goals (MCLG)	Highest Level Allowed (MCL)	Units	Likely source of substance
Inorganic Substances							
Fluoride	4/6/222	0.76	0.49-0.76	4	<4	ppm	Water additive to promote strong teeth
Nitrate (as Nitrogen)	6/9/21	<0.2	NA	10	10	ppm	Fertilizer runoff; leaking septic tanks; erosion of natural deposits
Arsenic	11/3/21	1.0	NA	0	10	ppb	Erosion of natural deposits, runoff from orchards
Barium	11/3/21	0.027	NA	2	2	ppm	Erosion of natural deposits
Chromium	11/3/21	2.53	NA	100	100	ppb	Erosion of natural deposits
Water Quality Tests taken throughout the Distribution System							
Haloacetic Acids	8/10/22	15.2	N/A	N/A	60	ppb	By-products of drinking water chlorination
Total Trihalomethanes	8/10/22	40.4	N/A	N/A	80	ppb	By-products of drinking water chlorination
Water Quality Tests taken at the Consumer's Tap Located within Kingbrook Phase II							
Substance	Sample Date	Level Detected (90 th Percentile)	# of Samples above the AL	MCLG	MCL	Units	Likely source of substance
Copper	8/4/21	0.3	0	0	AL = 1.3	ppm	Corrosion of household plumbing systems
Lead	8/1/21	3.9	0	0	AL = 15	ppb	Corrosion of household plumbing systems

Kingbrook Phase III – Chester Water Treatment Plant

Substance	Sample Date	Highest Level Detected	Range of Detection	Ideal Goals (MCLG)	Highest Level Allowed (MCL)	Units	Likely source of substance
Inorganic Substances							
Fluoride	8/18/22	0.76	0.48-0.76	4	<4	ppm	Water additive to promote strong teeth
Nitrate (as Nitrogen)	5/17/22	0.5	N/A	10	10	ppm	Fertilizer runoff; leaking septic tanks; erosion of natural deposits
Arsenic	5/17/22	2.0	NA	0	10	ppb	Erosion of natural deposits, runoff from orchards
Barium	5/17/22	0.032	NA	2	2	ppm	Erosion of natural deposits
Chromium	5/17/22	0.43	NA	100	100	ppb	Erosion of natural deposits
Selenium	5/17/22	0.5	NA	50	50	ppb	Erosion of natural deposits
Water Quality Tests taken throughout the Distribution System							
Haloacetic Acids	8/23/22	20.9	N/A	0	60	ppb	By-products of drinking water chlorination
Total Trihalomethanes	8/23/22	44.0	N/A	0	80	ppb	By-products of drinking water chlorination
Radioactive Substances							
Alpha emitters	7/5/22	3	ND-3	0	15	pCi/l	Erosion of natural deposits
Water Quality Tests taken at the Consumer's Tap Located within Kingbrook Phase III							
Substance	Date	(90 th Percentile)	# of Samples above the AL	MCLG	MCL	Units	Likely source of substance
Copper	7/23/22	0.5	0	0	AL = 1.3		Corrosion of household plumbing systems
Lead	7/13/22	2.6	0	0	AL = 15		Corrosion of household plumbing systems

Units and Abbreviations

pCi/L: picocuries per liter (a measure of radioactivity)
ppb: parts per billion, or micrograms per liter (ug/l)

ppm: parts per million, or milligrams per liter (mg/l)
pspm: positive samples per month