

Drinking Water Quality Report 2016

Your Drinking Water

Garrison Rural Water (GRW) is pleased to present our annual Drinking Water Quality Report. This is an opportunity for you to learn more about the quality of your drinking water and how it compares to the guidelines set forth by the U.S. Environmental Protection Agency. To assure safe drinking water, Garrison water treatment plant operators routinely monitor your drinking water in accordance with federal and state laws. Providing safe reliable drinking water to our members is our highest priority.

About Garrison Rural Water

GRW purchases treated water for distribution from the City of Garrison. The source of Garrison water is surface water from Lake Sakakawea. The intake is located on the southwest side of Fort Stevenson State Park. The elevation and location were selected to provide a dependable supply of water, even during dry periods, and to draw water from the main body of Lake Sakakawea rather than a bay. The intake was modified in 2004 so that water can be either siphoned or pumped depending on lake level. From the intake, water is pumped to the Garrison water treatment plant.

Garrison's water plant has a design capacity of 700 gallons per minute. Water treatment consists of addition of lime for softening, organic polymers and inorganic coagulants for coagulation and flocculation, carbon dioxide for pH stabilization, fluorosilicic acid for fluoridation, phosphate for protection against corrosion, chlorine for primary disinfection and ammonium sulfate to form chloramines as a secondary disinfection for the distribution system. Water is filtered and stored in storage vaults and then transferred to the city water towers.

Our public water system, in cooperation with the North Dakota Department of Health (NDDH), 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, NDDH has determined that our source water is not susceptible to potential contaminants. If you have questions or wish to review the Source Water Assessment Program report, a copy is on file at McLean Electric.

All Drinking Water May Contain Contaminants

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 EPA's Safe Drinking Water Hotline (800-425-4791).

Violations

Garrison Rural Water had no violations in 2016.

The City of Garrison had no violations of the Stage 1 Disinfectants/Disinfection Byproducts Rule in 2016.

What causes drinking water 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 animal or human activity. Contaminants that may be present in source water include:

Microbial contaminants - This includes viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Inorganic contaminants - Included are 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.

Pesticides and herbicides - Pesticide and herbicide contaminants may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

Organic Chemical Contaminants - Synthetic and volatile organic chemical which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.

Radioactive contaminants - These may be naturally-occurring or a result of oil and gas production and mining activities.

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. Service lines in the GRW system are PVC. The City of Garrison 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>.

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

Special Notice: Some people are more vulnerable to contaminants:

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 Center for Disease Control (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 (800-426-4791).

Detected Regulated Contaminants

GRW and the City of Garrison routinely monitor for constituents in your drinking water according to Federal and State laws. The attached table shows the results of the highest value in the five year period 2012 through 2016. Some unregulated constituents reported may be older than 5 years and is being provided for your information. Some parameters, reported in the table, are unregulated contaminants for which there are no established contaminant levels. These unregulated contaminants are being reported to provide additional information regarding your drinking water.

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.

Since the source of GRW is surface water, the City of Garrison measures the cloudiness of the water in a measurement called turbidity. Turbidity is a good indicator of the effectiveness of the city water filtration system.

Summary

“Garrison Rural Water will be adding storage to the system in 2017.” says Hjalmer Carlson, President of Garrison Rural Water. “Currently GRW has limited storage in the system. Addition of a storage tank on both the east and west legs of the system will improve pressure and supply to the system. We look forward to the fall of 2017 when these improvements are scheduled to be complete.”

Contacts

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It is a requirement of the Safe Drinking Water Act that GRW make an effort to reach all consumers of our water. If you have renters or other people who consume water but do not receive a water bill we encourage you to share this report with them. If you have questions regarding this report, please call Marty Dahl, Manager GRW. If you still have questions you are welcome to attend the GRW Board of Directors meetings the last Tuesday of every month at 5:00 p.m. at McLean Electric Cooperative. Please call prior to the meeting to get on the agenda. If you are aware of non-English speaking individuals who need may need help interpreting this report, please call Mr. Dahl at the number listed above.

Definitions

The following terms are used in this report to describe various levels of contaminants in your drinking water. The definitions of these terms are listed below for your use.

Maximum Contaminant Level Goal (MCLG) - 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 Contaminant Level (MCL) - 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.

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, if exceeded, triggers treatment or other requirements which a water system must follow.

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.

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.

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

Range of Detections: The lowest to the highest result value recorded during the required monitoring timeframe for systems with multiple entry points.

Key for Table Listed Below

MCLG - Maximum Contaminant Level Goal

ppm - Parts per million, or milligrams per liter (mg/l)

ppb - Parts per billion, or micrograms per liter (ug/l)

ppt - Parts per trillion or nanograms per liter (ng/l)

ppq - Parts per quadrillion or pictograms per liter (pg/l)

NTU - Nephelometric Turbidity Units

MCL - Maximum Contaminant Level

Umho/cm - micromhos per centimeter (a measure of conductivity)

Obsvns - observations/field at 100 Power

TT - Treatment Technique

AL - Action Level

pCi/L - Picocuries per liter (a measure of radioactivity in water)

MRDL - Maximum Residual Disinfectant Level

MRDLG - Maximum Residual Disinfectant Level Goal

ND - Non Detect

NA - Not Applicable

IDSE - Initial Distribution System Evaluation

Contaminants	Units	MCLG	MCL	Highest Level Found	Range of Detections	Year Date	Other Information	Typical Source of Contaminant
Disinfection Byproducts and Disinfectants								
Total Haloacetic Acids – (HAA5)	ppb	0	60	23	13.98 – 23.31	2016	No violations occurred	Byproduct of water disinfection
Total Trihalomethanes – (TTHM)	ppb	0	80	57	46.08 – 55.43	2016	No violations occurred	Byproduct of drinking water chlorination
Chloramine	ppm	MRDL 4	MRDL = 4.0	2.1	1.63 – 2.11	2016	No violations occurred	Water additive used to control microbes
Microbial Contaminants								
Total Coliforms	Absent/ Present	0	1 per month for systems that collect <40 samples/month	0	0	2016	Test and retest upstream both positive five additional tested all negative	Naturally present in the environment
Fecal Contaminants and E. Coli	Absent/ Present	0	A routine sample and a repeat sample are total coliform + and one is fecal coliform or E. Coli +	0	0	2016	0 positive	Human and animal fecal waste
Turbidity	NTU	NA	TT	0.1	.02 - .14	2016	100% lowest monthly % meeting limits	Soil runoff
Inorganic Contaminants								
Barium	ppm	2	2	0.00961999	NA	6/16	No violations occurred	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Copper	ppm	1.3	AL = 1.3	90 th % Value 0.0614	NA	6/16	0 sites exceeding Action Level	Corrosion of household plumbing systems, erosion of natural deposits
Lead	ppb	0	AL = 15	No Detect	NA	6/16	0 sites exceeding Action Level	Corrosion of household plumbing systems
Fluoride	ppm	4	4	0.56	NA	3/16	No violations occurred	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories

Inorganic Contaminants								
Nitrate as Nitrogen	ppm	10	10	.04	NA	5/16	No violations occurred	Runoff from fertilizer use; leaching from septic tanks sewage, erosion of natural deposits
Radiological Chemicals								
Gross Alpha, Inc. Radon & Uranium	pCi/L	15	15	0.251	NA	2009	No violations occurred	Erosion of natural deposits
Radium	pCi/L	0	5	.284	NA	2009	No violations occurred	Erosion of natural deposits
Total Organic Carbon Removal				Level Found	Range			
Alkalinity, Source	MG/L			169	162 – 169	7/16	No violations occurred	Naturally present in the environment
Carbon, Total Organic (TOC) Finished	MG/L			2.68	2.02 – 2.68	12/16	No violations occurred	Naturally present in the environment
Carbon, Total Organic (TOC) Source	MG/L			3.59	3.06 – 3.59	2/16	No violations occurred	Naturally present in the environment
Unregulated Contaminants								
Alkalinity, Carbonate	ppm			3	ND - 3	12/16	No violations occurred	Naturally present in the environment
Bicarbonate HCO ₃	ppm			206	92 – 206	12/16	No violations occurred	Naturally present in the environment
Calcium	ppm			28.6	n/a	3/16	No violations occurred	Naturally present in the environment
Chloride	ppm			14.7	n/a	3/16	No violations occurred	Naturally present in the environment
Magnesium	ppm			17.9	n/a	3/16	No violations occurred	Naturally present in the environment
Potassium	ppm			4.4	n/a	3/16	No violations occurred	Naturally present in the environment
Sodium	ppm			71.1	n/a	3/16	No violations occurred	Naturally present in the environment
Zinc	ppm			.00353	n/a	3/16	No violations occurred	Naturally present in the environment

Unregulated Contaminants								
Conductivity @25 C UMHOA/CM	Umho/ cm			621	n/a	3/16	No violations occurred	Naturally present in the environment
Total Hardness (as CaCO3)	ppm			145	n/a	3/16	No violations occurred	Naturally present in the environment
PH	PH			8.35	n/a	3/16	No violations occurred	Naturally present in the environment
Total Dissolved Solids	ppm			387	n/a	3/16	No violations occurred	Naturally present in the environment
Sodium Adsorption Ratio	obsvns			2.57	n/a	3/16	No violations occurred	Naturally present in the environment