Missouri West Water System
Quality on Tap Report
2022

We are pleased to present to you this year's *Quality on Tap Report*. 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.

Our water sources are from the City of Mandan and Southwest Water Authority which provide treated surface water drawn from the Missouri River. Both use the following treatment processes: clarification, softening, filtration, fluoridation, and disinfection.

The North Dakota Department of Health has prepared a Source Water Assessment for both Mandan and Southwest Water's surface water intake. The North Dakota Water Assessment Program has classified both water systems as moderately susceptible. It should be noted that historically they have both effectively treated its source water to meet drinking water standards and the risk for potential contamination is low. A copy of the assessment report can be reviewed at the each of the water treatment plants.

"I'm pleased to report that our drinking water is safe and meets federal and state requirements," said Karin Garvie, General Manager, Missouri West Water System. This report shows our water quality and what it means.

If you have any questions about this report or concerning your water utility, please contact Karin Garvie, General Manager, Missouri West Water System, at 701-663-8549. 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. They are held on the last Wednesday of the month at 10:00 a.m., location 2816 37th Street NW, Mandan, ND. If you are aware of non-English speaking individuals who need help with the appropriate language translation, please call Karin Garvie at the number listed above.

The Missouri West Water System would appreciate it if large volume water customers posted copies of this *Quality on Tap 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.

Missouri West Water System 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 31, 2022. 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 though representative, is more than one year old.

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).

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 runoff, industrial or domestic wastewater discharges, oil and gas 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 EPA prescribes regulations which limit the number of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

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 and Prevention (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 (1-800-426-4791).

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. Missouri West Water System 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 the following tables you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we have provided the following definitions:

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

(ppb) parts per billion or (µg/l) micrograms per liter - One part per billion corresponds to one minute in 2,000 years, or a single penny in $10,000,000.

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

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

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

(TT) Treatment Technique - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

(MCL) Maximum Contaminant Level - The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLG's as feasible using the best available treatment technology.

(MCLG) Maximum Contaminant Level Goal - The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.

(MRDLG) Maximum Residual Disinfectant Level Goal - The level of a 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.

(MRDL) Maximum Residual Disinfectant Level - The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition to a disinfectant is necessary for control of microbial contaminants.

TEST RESULTS FOR THE MISSOURI WEST WATER SYSTEM

Contaminant	MCLG	MCL	Level Detected	Units	Range	Year	Violation Yes/No	Likely Source of Contamination
Inorganic Contaminants								
Copper*	0	AL=1.3	0.0586 90th% Value	ppm	NA	2021	0 sites exceeded AL	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead*	0	AL=15	0.00 90th % Value	ppb	NA	2021	0 Sites exceeded AL	Corrosion of household plumbing systems, erosion of natural deposits
Disinfectants								
Chloramines	MRDLG =4	MRDL =4.0	2.1	ppm	1.6 to 2.9	2022	No	Water additive used to control microbes
Stage 2 Disinfection Byproducts								
(HAA5) Total Haloacetic Acids	NA	60	15	ppb	5.89 to 16.2	2022	No	By-product of drinking water disinfection
TTHM (Total Trihalomethanes)	NA	80	34	ppb	26.45 to 36.63	2022	No	By-product of drinking water disinfection

TEST RESULTS FOR THE CITY OF MANDAN								
Contaminant	**MCLG**	**MCL**	**Level Detected**	**Units**	**Range**	**Year**	**Violation Yes/No**	**Likely Source of Contamination**
Total Organic Carbon Removal								
Alkalinity – Source	NA	NA	168	MG/L	155.00 to 168.00	2022	No	Natural erosion, certain plant activities, certain industrial waste water discharges
Carbon, Total Organic (TOC) – Finished	NA	NA	2.7	MG/L	2.20 to 2.70	2022	No	Naturally present in the environment
Carbon, Total Organic (TOC)- Source	NA	NA	3.8	MG/L	3.10 to 3.80	2022	No	Naturally present in the environment
Disinfectants								
Chloramines	MRDLG= 4	MRDL= 4.0	2.3	ppm	2.16 to 2.38	2022	No	Water additive used to control microbes
Stage 2 Disinfection Byproducts								
(HAA5) Total Haloacetic Acids	NA	60	12	ppb	4.9 to 14.37	2022	No	By-product of drinking water disinfection
TTHM (Total Trihalomethanes)	NA	80	35	ppb	28.15 to 35.98	2022	No	By-product of drinking water disinfection
Radioactive Contaminants								
Gross Alpha, Including RA, Excluding RN& U	15	15	ND	pCi/l	NA	2018	No	Erosion of natural deposits
Uranium, Combined	NA	30	1.27	ppb	NA	2018	No	Erosion of natural deposits
Radium, Combined	NA	5	0.0696	pCi/l	NA	2018	No	Erosion of natural deposits

TEST RESULTS FOR THE SOUTHWEST WATER AUTHORITY								
Contaminant	**MCLG**	**MCL**	**Level Detected**	**Units**	**Range**	**Year**	**Violation Yes/No**	**Likely Source of Contamination**
Copper*	0	AL=1.3	0.225 90^{th}% Value	ppm	NA	2022	0 sites exceeded AL	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead*	0	AL=15	1.09 90^{th}% Value	ppb	NA	2022	0 sites exceeded AL	Corrosion of household plumbing systems, erosion of natural deposits
Inorganic Contaminants								
Arsenic	0	10	1.01	Ppb	NA	2022	No	Erosion of natural deposits; run off from orchards; run off from glass and electronics production wastes
Nitrate – Nitrite	10	10	0.036	ppm	NA	2022	No	Infants below the age of six months who drink water containing nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.

Disinfectants								
Chloramines	MRDLG=4	MRDL=4.0	3.4	ppm	3.2 to 3.48	2022	No	Water additive used to control microbes

Contaminant	MCLG	MCL	Level Detected	Units	Range	Year	Violation Yes/No	Likely Source of Contamination
Radioactive Contaminants								
Gross Alpha, Including RA, Excluding RN& U	15	15	ND	pCi/l	NA	2018	No	Erosion of natural deposits
Radium, Combined (226, 228)	0	5	0.691	pCi/l	NA	2018	No	Erosion of natural deposits
Uranium, Combined	0	30	ND	ppb	NA	2018	No	Erosion of natural deposits
TOTAL ORGANIC CARBON (TOC) REMOVAL								
Alkalinity (ppm) Source Water	N/A	N/A	175	MG/L	159-175	2022	N/A	Natural erosion, plant activities, and certain industrial waste discharge
Total Organic Carbon (ppm) Source Water	N/A	TT	3.91	MG/L	3.13-3.91	2022	N/A	Naturally present in the environment
Total Organic Carbon (ppm) Finished Water	N/A	TT	1.92	MG/L	1.43-1.92	2022	N/A	Naturally present in the environment
Stage 2 Disinfection Byproducts								
(HAA5) Total Haloacetic Acids	NA	60	11	ppb	5.6 to 9.81	2022	No	By-product of drinking water disinfection
TTHM (Total Trihalomethanes)	NA	80	16	ppb	6.47 to 20.21	2022	No	By-product of drinking water disinfection
Unregulated Contaminants								
Alkalinity-Source	NA	NA	7	ppm	ND-7	2022	No	Natural erosion, certain plant activities, certain industrial waste water discharges
Bicarbonate AS HCO3	NA	NA	213	ppm	182-213	2022	No	NA

*The Missouri West Water System and Southwest Water Authority tests for copper and lead at twenty (20) locations throughout the distribution system. The Compliance Detection Level indicates the 90th percentile value, or the value that 90 percent of the test samples are below. No sample sites exceeded the action level.

Turbidity is an indirect measure of suspended material (such as clay and silt) in water. Turbidity is continuously measured during plant operation to monitor the performance/effectiveness of filtration. For the City of Mandan, the month of March 2022 had the highest single turbidity measurement of 0.107 N.T.U. and January 2022 lowest single turbidity measurement of 0.038 N.T.U. During 2022 Southwest Water Authority's highest single turbidity measurement was 0.2 N.T.U. The lowest monthly percentage of samples meeting turbidity limits equals 100%.

EPA requires monitoring of over 90 drinking water contaminants. Those contaminants listed in the tables on the previous pages are the only contaminants detected in your drinking water. The EPA requires testing for certain unregulated contaminants but has not established enforceable drinking water standards for them. They are monitored to determine whether future regulation is warranted.

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.

As you can see, our system had no violations. We are proud that your drinking water meets or exceeds all Federal and State requirements. We have learned through our monitoring and testing that some contaminants have been detected. The EPA has determined that your water IS SAFE at these levels.

Missouri West Water System 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.

Missouri West Water Systems
Karin Garvie, General Manager
Telephone: (701) 663-8549

Quality On Tap!
Our Commitment Our Profession

Morton County Water Resource District Board Members

Wade Bachmeier, Mandan
Michael Kemnitz, Mandan
Bruce Engelhardt, Mandan
Jim Schmidt, Mandan
Jamie Wetsch, Mandan

Safe Drinking Water Hot Line (800-426-4791)