



**Troy B. Hall**  
Water Utility Director

**Daniel L. Portlock**  
Water Utility Engineer

**Brian A. Ward**  
WTP Superintendent

# 2021 WATER QUALITY REPORT

The City of Fargo Water Treatment Plant is issuing this report to inform customers about the quality of water produced and distributed in 2021.

If you are a large-volume user, please distribute a copy of this Water Quality Report to consumers who do not receive a bill.

If you have questions about Fargo drinking water, or if you are aware of non-English speaking individuals who need help with the appropriate language translation, please contact the **Water Treatment Plant at 701-241-1469**.

If you would like opportunities for public participation in decisions that affect water quality, please attend City Commission meetings, which are held every other Monday at 5 p.m. Please visit the City of Fargo website for exact meeting dates.

<https://www.fargond.gov/city-government/departments/city-commission>



## AESTHETIC WATER QUALITY AVERAGES FOR 2021

**Total Hardness** > 132 (ppm) or 7.72 grains/gallon

**Total Dissolved Solids** > 250 (ppm)

**Iron** > Less than 0.01 (ppm)

**Manganese** > Less than 0.01 (ppm)

**pH** > 9.15

### WHAT YOU NEED TO KNOW ABOUT DRINKING WATER REGULATIONS

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.

In order to ensure 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. 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 (800-426-4791) or visiting their website.

<https://www.epa.gov/ground-water-and-drinking-water/safe-drinking-water-information>

Before the City of Fargo delivers water to your home it is thoroughly tested. All regulatory testing is performed in certified laboratories. In addition, the Fargo Water Treatment Plant is staffed with Certified Operators and Environmental Laboratory Technicians who are monitoring and testing your water to ensure that drinking water standards enforced by the North Dakota Department of Environmental Quality (NDDEQ) are maintained.

The Fargo water treatment plant complies with the EPA Safe Drinking Water Act by routinely testing for contaminants. The contaminants detected and values are listed in the Monitoring Results Tables. Certain contaminants require testing less than once per year. The concentrations of these contaminants are not expected to vary significantly from year to year. This data, while still representative of the water quality, is more than a year old and is also listed in the Monitoring Tables. In 2021, there were no contaminants that exceeded the Maximum Contaminant Level (MCL), which is the highest level of a substance allowed in drinking water as set forth by the EPA.



### 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.

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 (800-426-4791).

### Lead and Copper

The MCL for lead and copper is known as the Action Level (AL). This is the concentration which, if exceeded, triggers treatment or other requirements a water system must follow. Ninety percent of all samples tested must be below this concentration. During 2021, no sample site in the City of Fargo water distribution system tested above the AL for lead and copper.

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. The City of Fargo Water Treatment Plant 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 (800-426-4791) or at:

<https://www.epa.gov/ground-water-and-drinking-water/basic-information-about-lead-drinking-water>



## KEY TO THE TABLES

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

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

**(MRDLG) Maximum Residual Disinfection 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 of a disinfectant is necessary for control of microbial contaminants.

**Highest Compliance Level:** The highest level of 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.

## ABBREVIATIONS:

**ppb** - parts per billion

**ppm** - parts per million

**pCi/L** - picocuries per liter (a measure of radioactivity)

**umho/cm** - micromhos per centimeter (unit of measurement for conductivity)

**AL** – Action Level

**N/A** – Not Applicable

**ND** - Not Detected

**NTU** – Nephelometric Turbidity Units

**TT** – Treatment Technique

**TOC** – Total Organic Carbon

**WTP** – Water Treatment Plant

**LSWTP** – Lime Softening Water Treatment Plant

**MWTP** – Membrane Water Treatment Plant

**MGD** – Million Gallons Per day

**TURBIDITY** is a measure of water clarity monitored at the City of Fargo Water Treatment Plant. Certain treatment techniques (TT) are required to reduce the level in the drinking water. Regulations require turbidity to be < 0.15 NTU at the effluent of the Fargo Membrane Water Treatment Plant (MWTP) and < 0.30 NTU at the effluent of the Fargo Lime Softening Water Treatment Plant (LSWTP) 95% of the time and < 1.0 NTU 100% of the time. Turbidity has no health effects, but can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms such as bacteria, viruses, and parasites that can cause nausea, cramps, diarrhea and associated headaches.

**MICROBIAL CONTAMINANTS**

Turbidity	Treatment Technique (TT)	< 1.0 (NTU) (100%)	MWTP < 0.15 (NTU) (95%) LSWTP < 0.3 (NTU) (95%)	Level Detected (NTU)	Range (NTU)
<b>(MWTP) Effluent</b>	Ultra Filtration; Reverse Osmosis; Disinfection	100% of samples	100 % of samples	0.138 6/14/2021	0.01 to 0.138
<b>(LSWTP) Effluent</b>	Filtration; Disinfection	100% of samples	100 % of samples	0.285 12/16/2021	0.01 to 0.285

**LEAD AND COPPER**

Substance (monitored at tap) (units) test date	AL	MCLG	90th Percentile	Sites Exceeding AL	Major Source of Contaminant
<b>Copper (ppm) 8/10/2021</b>	1.3	1.3	0.0513	0 of 50 sites	Corrosion of household plumbing systems Erosion of natural deposits
<b>Lead (ppb) 8/10/2021</b>	15	0	2.43	0 of 50 sites	Corrosion of household plumbing systems Erosion of natural deposits

Substance (monitored at tap) (units) test date	MCL	MCLG	Highest Compliance Level	Major Source of Contaminant
--	-----	------	--------------------------	-----------------------------

**INORGANIC CONTAMINANTS**

<b>Barium (ppm) 4/17/2018</b>	2	2	0.0376	Discharge of drilling wastes; Discharge from metal refineries; Erosion of Natural Deposits
<b>Fluoride (ppm) 4/17/2018</b>	4	4	0.625	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories

**RADIOACTIVE CONTAMINANTS**

<b>Gross Alpha, Including RA, Excluding RN &amp; U (pCi/l) 7/17/2018</b>	15	15	2.44	Erosion of natural deposits
<b>Radium, Combined (226, 228) (pCi/l) 7/17/2018</b>	5	N/A	0.166	Erosion of natural deposits

## DISINFECTANTS

Substance (monitored at tap) (units) test date	MRDL	MRDLG	Highest Compliance Level	Range	Major Source of Contaminant
Chloramine (ppm) 10/31/2021	4	4	3.1	2.78 to 3.25	Water additive used to control microbes

Substance (monitored at tap) (units) test date	MCL	MCLG	Highest Compliance Level	Range	Major Source of Contaminant
--	-----	------	--------------------------------	-------	-----------------------------

## UNREGULATED CONTAMINANTS

Alkalinity, Carbonate (ppm) 12/21/2021	N/A	N/A	20	ND - 20	Naturally present when water passes through rock and soil which contains carbonate, bicarbonate, and hydroxide compounds
Bicarbonate as HCO <sub>3</sub> (ppm) 12/21/2021	N/A	N/A	305	44 - 305	Naturally present when water passes through rock and soil which contains carbonate, bicarbonate, and hydroxide compounds
Bromide (ppm) 12/7/2021	N/A	N/A	300	22 - 300	Discharge from oil and gas production and coal-fired steam electric power plants Erosion of natural deposits
Calcium (ppm) 12/21/2021	N/A	N/A	134	ND - 134	Naturally present when water passes through rock and soil. It may dissolve from rocks such as limestone, marble, calcite, dolomite, gypsum, fluorite and apatite
Conductivity @ 25 C (umho/cm) 12/21/2021	N/A	N/A	1280	324-1280	Conductive ions from dissolved salts and inorganic materials such as alkalis, chlorides, sulfides and carbonate compounds naturally present in water
Orthophosphate (ppm) 12/21/2021	N/A	N/A	0.481	0.004 – 0.481	Water additive used to inhibit corrosion
pH 12/22/2021	N/A	N/A	9.37	5.68 – 9.37	Measure of how acidic or basic water is
Total Dissolved Solids (ppm) 12/21/2021	N/A	N/A	794	201 - 794	Organic and inorganic materials either naturally occurring or man- made that are dissolved in water

Substance (monitored at tap) (units) test date	MCL	MCLG	Highest Compliance Level	Range	Major Source of Contaminant
--	-----	------	--------------------------------	-------	-----------------------------

**TOTAL ORGANIC CARBON REMOVAL**

Alkalinity - Source (ppm) 2/28/2021	N/A	N/A	396	187 to 396	Naturally present when water passes through rock and soil which contains carbonate, bicarbonate, and hydroxide compounds
Total Organic Carbon (TOC) - Finished (ppm) 4/30/2021	N/A	N/A	5.22	0.62 to 5.22	Naturally present in the environment
Total Organic Carbon (TOC) - Source (ppm) 3/31/2021	N/A	N/A	13.5	6.57 to 13.5	Naturally present in the environment

**DISINFECTION BYPRODUCTS**

Bromate - Finished (ppb) 8/31/2021	10	0	2	ND to 8.6	By-product of drinking water disinfection
Haloacetic Acids (HAA5) (ppb) 3/31/2021	60	N/A	15	ND to 21.84	By-product of drinking water disinfection
Total Trihalomethanes (TTHMs) (ppb) 12/31/2021	80	N/A	14	ND to 23.94	By-product of drinking water disinfection

**CRYPTOSPORIDIUM**

Cryptosporidium is a microbial parasite which is found in surface waters throughout the United States. Symptoms of Cryptosporidium infection may include nausea, diarrhea, and abdominal cramps. Most healthy individuals that become infected are able to overcome these symptoms within a few weeks. However, immuno-compromised individuals have more difficulty and are at greater risk of developing severe or potentially life threatening illness.

Cryptosporidium must be ingested to cause disease and it may be ingested through means other than drinking water. Immuno-compromised individuals are encouraged to consult their doctor regarding the appropriate precautions to take to avoid infection.

Although filtration removes Cryptosporidium, the most common filtration methods cannot guarantee 100% removal. In April 2015, the City of Fargo began monthly testing to monitor source water for Cryptosporidium. This testing lasted two years and was performed in compliance with the EPA Long-Term 2 Enhanced Surface Water Treatment Rule

(LT2ESWTR). The results of the 24 samples analyzed indicated an average of 0.095 oocysts per liter in the City of Fargo source water (not the finished drinking water). For Fargo, source water is defined as the Red River and/or Sheyenne River entering the Water Treatment Plants. This concentration of Cryptosporidium falls into the second lowest of 4 levels of treatment requirements, but requires additional treatment credits for our LSWTP. Currently, the City of Fargo is working toward completion of the project to install an Ultraviolet (UV) light disinfection system in the LSWTP to achieve the additional disinfection credit. This project was started in early 2021 and is on course to be completed by summer 2022. The MWTP completed in 2019, meets all Cryptosporidium treatment requirements.



## Our Water Supply and Drought Management

The primary water source for the City of Fargo Water Plant is the Red River. A water intake and pump station is located just east of our facility in proximity to the Midtown Dam. The City has alternate sources of water which include the Sheyenne River and water storage at Lake Ashtabula. The Sheyenne intake and pumping station is used approximately 30% of the time and is located between the communities of West Fargo and Horace. Each pumping facility can be used independently or combined to provide source water flow into each of our treatment facilities. We focus on utilizing these sources wisely to minimize operating and treatment costs while optimizing water quality for our customers.

The City of Fargo owns 52% of the stored water rights to Lake Ashtabula. This allocation was a result of the City of Fargo helping to fund the construction of the Baldhill Dam north of Valley City. During a drought, with Corps of Engineers approval, water from Lake Ashtabula can be released into the Sheyenne River to help meet Fargo's water needs. This lake (used in 1976, '84, and '88), along with water restrictions, and conservation, can help provide Fargo's emergency water needs for approximately two years.

The City of Fargo has a drought management plan that monitors water flow, river levels and the precipitation index. The City has adopted an ordinance that mandates citizen participation during drought to reduce the impact to all water users. For more information about the drought management plan visit:

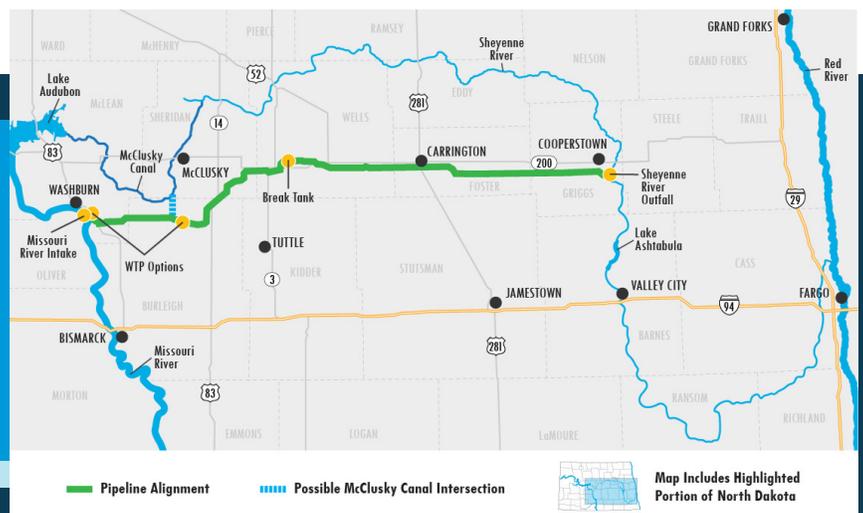
<https://fargond.gov/city-government/departments/water-treatment/drought-plan>

## Source Water Protection

The City of Fargo public water system, in cooperation with the North Dakota Department of Environmental Quality (NDDEQ), 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, the NDDEQ has determined our source water is moderately susceptible to potential contaminants.

You can learn more about the North Dakota Source Water Protection Program online at: [https://deq.nd.gov/WQ/1\\_Groundwater/1\\_SW.aspx](https://deq.nd.gov/WQ/1_Groundwater/1_SW.aspx)

## Membrane Water Treatment Plant Improves Tap Water Quality and Water System Resiliency



The MWTP has been fully operational since June, 2019, after nearly a decade of planning, design, and construction. The MWTP is now operated daily together with the 1997 LSWTP. The LSWTP met EPA drinking water requirements prior to the MWTP becoming fully operational in 2019. However, operating both water plants together provides customers with more consistent water hardness, lowers the chance of taste variation in Fargo tap water, and provides other benefits. The City of Fargo received \$30 million in grant funding from the North Dakota State Water Commission to help construct the MWTP. Under most conditions, the MWTP is also more cost efficient for achieving desired drinking water standards. These factors help keep Fargo water rates low regionally compared to other water systems using surface water as their source.

Moving forward, the Fargo Water Utility is focusing on capital projects to improve resiliency for source water supply. In serving a population of nearly 165,000, water supply resiliency is critical. While drought conditions in 2021 brought water supply availability to the forefront, capital projects for resiliency were already programmed into the 20-year Capital Improvement Plan (CIP) and Water Utility financial model. Water supply improvements include: Red River Valley Water Supply Project, raw water transmission to the MWTP and LSWTP, permit updates, and other projects.