



2013 **Drinking** **Water** **Report**

Also available on-line
at www.mpsutility.com/waterreport.

A high-speed photograph of water being poured from above into a pool of water. The water is clear and bright blue, creating a dynamic splash with many bubbles and ripples. The background is a light, clean white.

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For Non-English Speaking Customers:

English:

This report contains very important information. Translate or ask someone who understands it.

Spanish:

Información importante. Si no la entiende, haga que alguien se la traduzca ahora.

Hmong:

Nov yog ntaub ntauv tseem ceeb. Yog koy tsi to taub, nrhiav neeg pab txhais rau koh kom sai sai.

Dear MPS Water Customer:

Moorhead Public Service (MPS) is pleased to present its 2013 Drinking Water Report. This report was prepared in accordance with the Consumer Confidence Rule (CCR) required by the United States Environmental Protection Agency. Water quality test results indicate that MPS was in compliance with all State and Federal drinking water standards in 2013.

In 2013, MPS' Water Division continued to improve water quality, equipment efficiency, and infrastructure security. The Red River Intake and Pump Station Improvements Project was completed to increase the reliability of raw water pumps that convey Red River (River) water to the Water Treatment Plant and to provide flood protection of critical equipment to a River stage of 45 feet. Design for a new finished water high service pumping station began in 2013 to replace MPS' existing pumps that have been in service since the 1950s and are nearing the end of their useful life. These pumps deliver finished, treated, potable water from the Water Treatment Plant into the distribution system throughout Moorhead.

Asset management and, specifically, the replacement of cast iron (CI) watermain is a very important issue for MPS; therefore, in 2013, MPS staff developed the Watermain Asset Management Plan (WAMP) to guide watermain replacement efforts. The WAMP is available at www.mpsutility.com. During the next three years, MPS will strategically focus on replacing watermain in the downtown area to align with several planned City of Moorhead roadway restoration projects.

Protecting groundwater resources has always been a priority for MPS and, in 2013, MPS' state mandated, ten-year update to its Wellhead Protection Plan (WHPP) was accepted by the Minnesota Department of Health. The WHPP outlines methods for landowners, businesses, and public water suppliers to protect the quality and quantity of water in the Buffalo and Moorhead Aquifers. As required by the WHPP, MPS plans projects to ensure that Moorhead's groundwater sources are reliable for years to come. One of the initial projects includes the condition assessment and rehabilitation of pumping infrastructure for the Buffalo Aquifer. The aquifers are important resources and critical water supply sources in the event of a major drought. The WHPP is available at <http://www.buffaloaquifer.com/index.php/wellhead-protection-plan.html>.

Beginning in 2013, the MPS Commission implemented a Residential Conservation Rate to encourage customers to conserve water and protect Moorhead's valuable water resources. Conservation rates are also required by Minnesota Statute §103G.291(4), Demand Reduction Measures. A cost-of-service study was performed to outline a multi-year plan for implementation of conservation rates into MPS' water rates. The Commission annually reviews the continued implementation of conservation rates. Water conservation information is available at www.mpsutility.com/index.php/water-conservation. MPS' 2014 water rates are shown below:

Volume Charge	November-April	May-October
Residential Rate	\$2.94	\$3.24
Residential Conservation Rate*	--	\$3.90

- Volume charge for all water per 100 cubic feet (c.f.) (1 c.f. = 7.48 gallons, 100 c.f. = 748 gallons).
- The above rates are for inside city limits. Rates outside city limits are 1.5x the rates shown.

The Residential Conservation Rate applies to monthly water usage for May-October that exceeds 150% of your average monthly usage for November-April. For example, John Doe used an average of 400 c.f. per month from November-April, so 150% of his November-April average usage equals 600 c.f. Therefore, for May-October, his volume charge will be \$3.24 per 100 c.f. for monthly usage up to 600 c.f. and \$3.90 per 100 c.f. for monthly usage over 600 c.f.

As stewards of our community's water resources, the MPS Commission and MPS staff are working to ensure we will be able to stand ready to meet our growing community's demand for safe, clean drinking water for many years to come.

Sincerely,



Bill Schwandt, PE MBA
General Manager



The Safety of Your Water

Moorhead Public Service (MPS) is issuing the results of monitoring done on its drinking water for the period from January 1 to December 31, 2013. The purpose of this report is to advance consumers' understanding of drinking water and heighten awareness of the need to protect precious water resources. MPS must distribute this report annually to its customers as required by the Environmental Protection Agency (EPA).

Moorhead's **Water** Supply: Source of Water

MPS provides drinking water to its residents from groundwater and surface water sources. In 2013, approximately 79.2 percent of Moorhead's water was supplied by surface water drawn from the Red River of the North. The remaining water is pumped from a total of seven wells ranging in depth from 114 feet to 273 feet. These wells draw water from the Quaternary Buried Artesian, Indeterminate, and the Quaternary Buried Unconfined aquifers.

The water provided to customers may meet drinking water standards, but the Minnesota Department of Health (MDH) has also made a determination as to how vulnerable the source of water may be to future contamination incidents. If you wish to obtain the entire source water assessment regarding your drinking water, please call 651-201-4700 or 1-800-818-9318 (press 5) during normal business hours or view it on-line at www.health.state.mn.us/divs/eh/water/swp/swa.

Call MPS at 218-477-8000 if you have questions about Moorhead's drinking water or would like information about opportunities for public participation in decisions that may affect the quality of the water.



How Can I Be Sure My **Drinking Water** is Safe?

In order to ensure that tap water is safe to drink, the U. S. Environmental Protection Agency (EPA) prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration 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 EPA's Safe Drinking Water Hotline at 1-800-426-4791.



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 microbial contaminants are available from the Safe Drinking Water Hotline at 1-800-426-4791.

The MDH monitors and enforces the Federal standards for Moorhead's drinking water. On an ongoing basis, the MDH tests samples of Moorhead's water, checking for the presence of more than 130 different substances, including lead, copper, and chlorinated by-products. Each March, MPS' customers see a charge of \$6.36 on their bill for this testing.

One more assurance of water quality occurs at the local level. Each day, in addition to ongoing computerized monitoring, the staff at **Moorhead's Water Treatment Plant performs approximately 300 laboratory tests to ensure the continued quality and safety of our drinking water.** On a monthly basis, three water quality reports are submitted to the MDH.

Definitions:

Key to abbreviations:

MCLG—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.

MCL—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.

MRDL—Maximum Residual Disinfectant Level.

MRDLG—Maximum Residual Disinfectant Level Goal.

AL—Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirement which a water system must follow.

90th Percentile Level—This is the value obtained after disregarding 10 percent of the samples taken that had the highest levels. (For example, in a situation in which 10 samples were taken, the 90th percentile level is determined by disregarding the highest result, which represents 10 percent of the samples.) Note: In situations in which only 5 samples are taken, the average of the two with the highest levels is taken to determine the 90th percentile level.

ppm—Parts per million, which can also be expressed as milligrams per liter (mg/l).

ppb—Parts per billion, which can also be expressed as micrograms per liter (µg/l).

nd—No Detection.

N/A—Not Applicable (does not apply).

TT—Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.

A Closer Look at Contaminants:

The sources of drinking water (both tap water 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 stormwater 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 stormwater 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 stormwater runoff, and septic systems.

Radioactive Contaminants:

Which can be naturally-occurring or be the result of oil and gas production and mining activities.

Water Quality Roundup: Results of Monitoring

No contaminants were detected at levels that violated federal drinking water standards. However, some contaminants were detected in trace amounts that were below legal limits. The table that follows shows the contaminants that were detected in trace amounts last year. (Some contaminants are sampled less frequently than once a year; as a result, not all contaminants were sampled for in 2013. If any of these contaminants were detected the last time they were sampled for, they are included in the table along with the date that the detection occurred.)

Results of 2013 Water Quality Analyses:

Contaminants (units)	MCLG	MCL	Level Found		Typical Source of Contaminant
			Range (2013)	Average/Result*	
Bromate (ppb)	0	10	nd-11	3.53	By-product of drinking water disinfection.
Total Coliform Bacteria	0 present	>5% present	N/A	0%	Naturally present in the environment.
TTHM (Total trihalomethanes) (ppb)	0	80	0.4 - 1.6	1.33	By-product of drinking water disinfection.
Haloacetic Acids (HAA5) (ppb)	0	60	1.3 - 10.9	5.7	By-product of drinking water disinfection.
Fluoride (ppm)	4	4	0.99 - 1.2	1.15	State of Minnesota requires all municipal water systems to add fluoride to the drinking water to promote strong teeth; Erosion of natural deposits; Discharge from fertilizer and aluminum factories.
Nitrate (as Nitrogen) (ppm)	10.4	10.4	N/A	0.21	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.

*This is the value used to determine compliance with federal standards. It sometimes is the highest value detected and sometimes is an average of all the detected values. If it is an average, it may contain sampling results from the previous year.

Results of Total Organic Carbon Analyses:

The percentage of Total Organic Carbon (TOC) removal was measured each month. The system met all the TOC removal requirements set by the U. S. EPA.

Contaminant	Unit	% Removal Required	% Removal Achieved	# of Quarters out of Compliance	Typical Source of Contaminant
Total Organic Carbon	% Removed	25 - 30%	50 - 71.7%	0	Naturally present in the environment

Results of Turbidity Analyses:

Turbidity is a measure of the clarity of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system. In 2013, Moorhead's tap water had an average turbidity of 0.04 NTU.

Contaminants (units)	MCLG	MCL	**	***	Typical Source of Contaminant
Turbidity (NTU)	N/A	TT	100.0	0.1457	Soil runoff

**Lowest monthly percentage of samples meeting the turbidity limits

***Highest single measurement

Results of Lead and Copper Analyses:

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. Moorhead Public Service 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>.

Contaminants (units)	MCLG	AL	90% Level	# of sites over AL	Typical Source of Contaminant
Lead (ppb)	0	15.0	3.9	0 out of 30	Corrosion of household plumbing systems; Erosion of natural deposits.
Copper (ppm)	1.3	1.3	0.11	0 out of 30	Corrosion of household plumbing systems; Erosion of natural deposits.

Results of Chlorine Analyses:

Contaminants (units)	MRDLG	MRDL	****	*****	Typical Source of Contaminant
Chlorine (ppm)	4.0	4.0	2.4 - 2.9	2.72	Water additive used to control microbes

****Highest and lowest monthly average

*****Highest quarterly average

Additional Analyses:

Monitoring may have been done for additional contaminants that do not have MCLs established for them and are not required to be monitored under the Safe Drinking Water Act. Results may be available by calling 651-201-4700 or 1-800-818-9318 during normal business hours.

Moorhead's Water Treatment

From Source to Tap:

A State-of-the-Art **Water Treatment** Plant

Since 1986, Moorhead's water system has undergone more than \$20 million in improvements, including the completion of a state-of-the-art Water Treatment Plant in 1995. Among its features: a lime water-softening process, a highly-efficient filtration system, and the use of ozone for primary disinfection and odor/taste removal. The Water Treatment Plant has significantly reduced the amount of chlorinated by-products generated by treating water in Moorhead.

The bottom line is this: Moorhead's Water Treatment Plant produces water that meets all current water-quality standards set by the U.S. EPA and is well-prepared to comply with future standards.

A Clear Distinction: Our **Experienced Staff**

Around-the-clock, highly-trained, and experienced professionals operate Moorhead's Water Treatment Plant. Of the nine full-time licensed operators, four hold Class A licenses (the highest of four possible designations, from A through D). Together, these employees have over 85 years of experience in the field. This superior level of knowledge and expertise contributes to quality water for our customers.



Nine full-time licensed operators, with over 85 years experience, operate the Water Treatment Plant 24-hours-a-day.

Everyone is Responsible for Ensuring the Continued Safety of our Water:

Businesses, individuals, communities, utilities...we all need to work together to protect precious water resources. This includes taking steps today to prevent problems tomorrow.

Protecting Our Area's Water Resources:

The Safe Drinking Water Act required all states to prepare an assessment for each public water supply—listing potential sources of contamination. Moorhead Public Service has done a preliminary assessment of potential sources of contamination to the Red River of the North. Two of the primary potential sources of contamination are agricultural drainage and the storm sewer outfalls within the Fargo and Moorhead city limits. In particular, the storm sewer outfall at 16th Avenue South in Moorhead presents one of the major potential sources of contamination.

Be Water-Wise. . .Consider a Xeriscape™ for Your Yard:

Water use in a typical Moorhead home jumps more than 200 percent in the summer, mainly due to lawn watering. Xeriscape™, a water-efficient landscape, helps conserve water and energy. An example of Xeriscape™ can be found outside of Moorhead's Water Treatment Plant located at 307 Highway 75 North in Moorhead. Take a walk through to learn more about this landscaping option, or call us at 218-299-8070 to request a free copy of the Xeriscape™ plant list.

Customer Questions and Views Welcome:

Two often-asked questions relate to the pH and hardness of Moorhead's tap water. In 2013, the average pH was 9.28 and the average hardness was 98 mg/l (5.7 grains/gallon). The water in Moorhead is softened to the point that residents do not need water softeners. If you have questions about Moorhead's drinking water, please call MPS at 218-477-8070, or you may e-mail your questions or comments to mps@mpsutility.com. You may also contact MPS if you would like information about opportunities for public participation in making decisions that may affect the water quality.

For more information about drinking water:

Moorhead Public Service - www.mpsutility.com

Minnesota Department of Health - www.health.state.mn.us

U. S. Environmental Protection Agency - www.epa.gov/drink

Moorhead Public Service

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