



2009 Report

# Water Quality

*January 1-December 31, 2009*

Este informe contiene información muy importante sobre el agua que usted bebe. Tradúzcaolo ó hable con alguien que lo entienda bien.



*Live Green. Think Blue.*

## Why this Report?

The Safe Drinking Water Act requires public water supply systems to send annual water quality reports to all customers, paid for by customers through water rates. For more information about our water operations, call 554.6666 or visit [www.mudomaha.com](http://www.mudomaha.com).

## Public Meetings

The M.U.D. Board of Directors meets at 9 a.m. the first Wednesday of every month at 1723 Harney St., Omaha. Visit our website or call 504.7147 for an agenda. Requests for special accommodations, alternative formats or sign language interpreters require a minimum of 72 hours advance notice. Call 504.7147 or TDD phone 504.7024.

M.U.D. serves 199,102 customers an average of more than 83 million gallons of water per day. As a customer of the Metropolitan Utilities District, you receive a high quality product that meets or surpasses every federal and state standard for safe drinking water.

Since we do not have the capability or resources to determine health risks of chemical compounds found in the water, we must rely on the EPA and Nebraska Health and Human Services to tell us what substances are a health risk—and if they are a health risk, what levels are safe for human consumption.

To ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (EPA) prescribes regulations to 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, 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 risks may be obtained by calling the EPA's Safe Drinking Water Hotline, 800.426.4791.

## Source Water Assessment

The Nebraska Department of Environmental Quality (NDEQ) has completed the source water assessment which includes a wellhead protection area map, potential contaminant source inventory, vulnerability rating and source water protection information. To view the source water assessment or for more information, contact Customer Service, 402.554.6666; e-mail: [customer\\_service@mudomaha.com](mailto:customer_service@mudomaha.com).

## Sources of Drinking Water

Sources of drinking water (tap and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and groundwater 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.

Sources of M.U.D. tap water include the Missouri and Platte Rivers and the Dakota sandstone aquifer. These sources are categorized as surface water (Missouri River), groundwater under-the-direct-influence of surface water (Platte River), and groundwater. Water is pumped from intakes and wells maintained by the District.

On January 7, 2009, the District received an extension from the State of Nebraska for improvements at the Platte South Water Plant to meet groundwater under the direct influence of surface water regulations. The improvements, estimated at \$6 million, will be completed by the fall of 2010.



**Protect the source — More than one million tons of hazardous waste enter the waters of our continent every year.**

## Treatment Process

We use chloramines in the water treatment process to kill bacteria that causes diseases like typhoid and cholera. Approximately 20 percent of water supply systems in the U.S., including Council Bluffs and Lincoln, use chloramine as a disinfection agent.

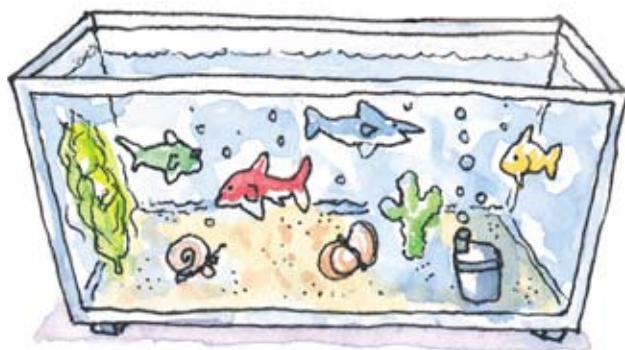
Chloramine, a mixture of chlorine and ammonia, does not dissipate through boiling or exposure to the air in open containers as rapidly as chlorine.

Chloraminated water is safe for warm-blooded animals to drink, including humans, kidney dialysis patients, pregnant women, infants, dogs, cats and birds, because their digestive systems neutralize chloramine before it reaches their bloodstreams.

Chloramine is toxic to cold-blooded animals, such as fish, reptiles, turtles and amphibians because it enters directly into their bloodstreams. Fish tank, aquarium and pond owners need to use filtration equipment or water treatment products to neutralize chloramines. These products are available at pet supply stores.

If you use a home kidney dialysis system, the water will need to be treated. Check with your equipment supplier and/or physician.

M.U.D. also adds fluoride to its treated water as directed by Omaha voter approval in May, 1968. Questions about drinking water? Call the EPA Safe Drinking Water Hotline or go to their website: <http://www.epa.gov/safewater>.





## Crypto tests

We tested source and treated water for *Cryptosporidium* (Crypto) every month during 2009. We did not find Crypto in any of the raw (river) or finished (treated) water samples. Analysis was conducted by M.U.D. and Underwriters Laboratories.

Crypto, a protozoan parasite and one-celled animal, is too small to be seen without a microscope. It's common in surface waters (lakes and rivers), especially when these waters contain sewage or animal waste.

### Safe Drinking Water Hotline

**800.426.4791**

**[www.epa.gov/safewater](http://www.epa.gov/safewater)**

Crypto must be ingested to cause infection. Symptoms include diarrhea, nausea and abdominal cramps. Most healthy individuals can overcome the infection within a few weeks.

We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. Crypto may be spread through means other than drinking water.

## Health Notes

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised people—such as those with cancer undergoing chemotherapy, people who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some older adults and infants—can be particularly at risk from infections.

These people should seek advice about drinking water from their health care providers.

EPA and the Centers for Disease Control 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 ([www.epa.gov/safewater](http://www.epa.gov/safewater)).

## 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 run-off, 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 run-off and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and also can come from gas stations, urban storm water run-off and septic systems.
- Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

## M.U.D. is required to test for the following contaminants:

Acetochlor, Acetochlor ESA, Acetochlor OA, Alachlor, Alachlor ESA, Alachlor OA, Aldrin, Antimony, Arsenic, Asbestos, Atrazine, Barium, Benzene, Benzo(a)pyrene, Beryllium, Bromoform, Butachlor, Cadmium, Carbaryl, Carbofuran, Carbon Tetrachloride, Chlordane, Chloroform, Chromium, Coliform Bacteria, Copper, Cyanide.

Dalapon, Di(2-ethylhexyl)adipate, Dibromochloropropane, Dicamba, Dieldrin, Dimethoate, Dinoseb, Di(2-ethylhexyl)phthalate, Diquate, 2,4-D, Dioxin, Endothall, Endrin, Ethylene dibromide, Fluoride, Glyphosate, Heptachlor, Heptachlor epoxide, Hexachlorobenzene, Hexachlorocyclopentadiene.

o-Dichlorobenzene, Para-Dichlorobenzene, 1,2-Dichlorethane, 1,1-Dichloroethylene, Cis-1,2,-Dichloroethylene, Trans-1,2-Dichloroethylene, Dichloromethane, 1,2-Dichloropropane, Ethylbenzene, Monochlorobenzene, 1,2,4-Trichlorobenzene, 1,1,1-Trichloroethane, 1,1,2-Trichloroethane, Trichloroethylene.

Gross Alpha (minus Uranium & Radium 226), Radium 226 plus Radium 228, Bromodichloromethane, Chlorodibromomethane.

Chlorobenzene, m-Dichlorobenzene, 1,1-Dichloropropene, 1,1-Dichloroethane, 1,1,2,1-Tetrachlorethane, 1,2,-Dichloropropane, Chloromethane, Bromomethane, 1,2,3-Trichloropropane, 1,1,1,2-Tetrachloroethane, Chloroethane, 2,2-Dichloropropane, o-Chlorotoluene, p-Chlorotoluene, Bromobenzene, 1,3-Dichloropropene.

3-Hydroxycarbofuran, Lead, Lindane, Mercury, Methomyl, Methoxychlor, Metolachlor, Metolachlor ESA, Metolachlor OA, Metribuzine, Bromochloroacetic acid, Dibromoacetic acid, Dichloroacetic acid, Monobromoacetic acid, Monochloroacetic acid, Trichloroacetic acid.

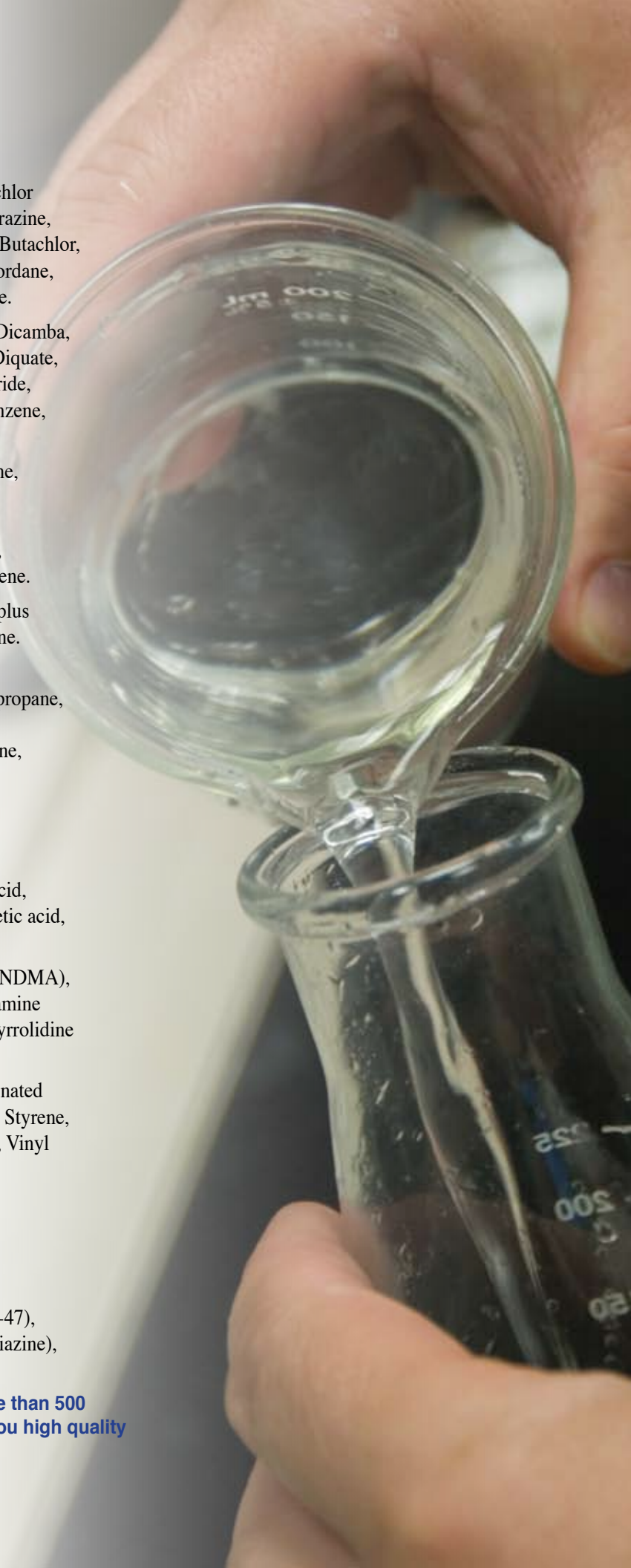
N-Nitrosodiethylamine (NDEA), N-Nitrosodimethylamine (NDMA), N-Nitrosodi-N-butylamine (NDBA), N-Nitrosodi-N-propylamine (NDPA), N-Nitrosomethylethylamine (NMEA), N-Nitrosopyrrolidine (NPYR), Nickel, Nitrate, Nitrite.

Oxamyl (Vydate), Pentachlorophenol, Picloram, Polychlorinated biphenyls, Propachlor, Selenium, Silvex, Simazine, Sodium, Styrene, Sulfate, Tetrachloroethylene, Thallium, Toluene, Toxaphene, Vinyl Chloride, Xylenes (total).

2,2',4,4',5,5'-Hexabromobiphenyl (HBB),  
2,2',4,4',5,5'-Hexabromodiphenyl ether (BDE-153),  
2,2',4,4',5-Pentabromodiphenyl ether (BDE-99),  
2,2',4,4',6-Pentabromodiphenyl ether (BDE-100).

Terbufos-sulfone, 2,2',4,4'-Tetrabromodiphenyl ether (BDE-47),  
1,3-Dinitrobenzene, RDX (Hexahydro-1,3,5-trinitro-1,3,5-triazine),  
TNT (2,4,6-Trinitrotoluene).

**M.U.D. conducts more than 500 tests a day to bring you high quality drinking water.**



## Test Results (collected in 2009, unless noted)

The State of Nebraska Health and Human Services requires monitoring of certain contaminants less than once per year because the concentrations of these contaminants do not change frequently. Therefore, some of this data may be more than a year old.

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

**MCL (Maximum Contaminant Level):** The highest level of a contaminant allowed in drinking water. MCLs are set as close to the MCLGs 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. MCLGs allow for a margin of safety.

**n/a:** Not applicable

**NTU:** Nephelometric turbidity unit and is a measure of the cloudiness of water.

**ppm (parts per million):** 1 part per million (or milligram per liter) and corresponds to 1 minute in 2 years or 1 penny in \$10 thousand.

**ppb (parts per billion):** 1 part per billion (or microgram per liter) and corresponds to 1 minute in 2,000 years or 1 penny in \$10 million.

**ppt (parts per trillion):** 1 part per trillion (or picogram per liter) and corresponds to 1 minute in 2 million years or 1 penny in \$10 billion.

**pCi/l (picoCuries per liter):** Measurement of radioactivity.

< means less than; > means more than.

**Your drinking water continues  
to surpass every federal and state requirement.**

## Coliform Bacteria

Maximum Contaminant Level Goal	Total Coliform Maximum Contaminant Level	Highest Number of Positive Total Coliform Samples in any Month
0	5% of monthly samples are positive	0 (0% of monthly samples)

Fecal Coliform or E. Coli Maximum Contaminant Level	Total Number of Positive E. Coli or Fecal Coliform Samples in 2008	Violation?	Likely Source of Contamination
Fecal Coliform or E. Coli MCL: A routine sample and a repeat sample are total coliform positive, and one also is fecal coliform or E. coli positive.	0	No	Naturally present in the environment.

## Lead (6.25.2007)

MCLG	Action Level (AL)	90th Percentile	Number of Sites Over AL	Likely Source of Contamination
0	15 ppb	6.5 ppb	0	Erosion of natural deposits; leaching from wood preservatives; corrosion of household plumbing systems.

Infants and young children typically are 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 in your community 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. Flushing the tap for 30 seconds to 2 minutes before using your tap water will clear the line of any lead that may have leached into the water while the line was idle.

**Only Tap Water Delivers<sup>SM</sup>**  
public health • fire protection  
support for economy • quality of life

Additional information is available from the Safe Drinking Water Hotline, 800.426.4791 ([www.epa.gov/safewater](http://www.epa.gov/safewater)) or Nebraska Health & Human Services Division of Public Health, Office of Drinking Water, 402.471.2541.

Copper (6.25.2007)

MCLG	Action Level (AL)	90th Percentile	Number of Sites Over AL	Likely Source of Contamination
1.3	1.3 ppm	0.0295 ppm	0	Erosion of natural deposits; leaching from wood preservatives; corrosion of household plumbing systems.

## Regulated Contaminants

	Highest Level Detected	Lowest monthly percentage	Unit of Measurement	MCLG	MCL	Violation?	Likely Source of Contamination
Turbidity	0.36	99.7%	NTU	n/a	1	No	Soil run-off.

**Disinfectants & Disinfectant By-Products** \*MCL is based on a system-wide running annual average of several samples.

	Highest Level Detected	Range of Levels Detected	Unit of Measurement	MCLG	MCL	Violation?	Likely Source of Contamination
Total Haloacetic Acids (HAA5)	27.8	6.5-61.3	ppb	n/a	60*	No	By-product of drinking water chlorination.
Total Trihalomethanes (TTHMs)	55.1	20.8-101.3	ppb	n/a	80*	No	By-product of drinking water chlorination.

Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys or central nervous system, and may have an increased risk of getting cancer.

## Inorganic Contaminants

Arsenic	5	<2-5.44	ppb	0	10	No	Erosion of natural deposits; run-off from orchards, electronics production wastes.
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While your drinking water meets EPA's standard for arsenic, it does contain low levels of arsenic. EPA's standard balances the current understanding of arsenic's possible health effects against the cost of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic, which is a mineral known at high concentrations to cause cancer in humans and is linked to other health effects such as skin damage and circulatory problems.

Barium	0.09	0.05-0.09	ppm	2	2	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
Chromium	7.11	1.81-7.11	ppb	100	100	No	Discharge from steel and pulp mills; erosion of natural deposits.



	Highest Level Detected	Range of Levels Detected	Unit of Measurement	MCLG	MCL	Violation?	Likely Source of Contamination
Fluoride	1.04	0.37-1.04	ppm	4	4	No	Erosion of natural deposits; water additive to promote strong teeth; fertilizer discharge.
Nitrate-Nitrite	1.8	0.27-1.8	ppm	10	10	No	Run-off from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Selenium	7.88	<5.0-7.88	ppb	50	50	No	Discharge from petroleum and metal refineries; erosion of natural deposits.
Sodium (state requirement)	73	22-73	ppm	n/a	500	No	Element of the alkali metal group found in nature, soil and rocks.

#### Radioactive Contaminants

Gross Alpha excluding Radon and Uranium	7.3	3.3-7.3	pCi/l	0	15	No	Erosion of natural deposits.
Radium (Ra 226 + Ra 228)	0.9	0-0.9	pCi/l	0	5	No	Erosion of natural deposits.

**Synthetic Organic Contaminants (including pesticides and herbicides)** *\*\*MCL is based on a running average for one year. \*\*\*Tested January 2007; not detected on subsequent confirmation tests in 2007.*

Atrazine	0.18	<0.08-0.84	ppb	3	3**	No	Run-off from herbicide used on row crops.
Dibromochloropropane (DBCP)***	10	<10-10	ppt	200	200	No	Run-off/leaching from soil fumigant used on soybeans, cotton, pineapple and orchards.
Simazine	0.10	<0.10-0.125	ppb	4	4**	No	Herbicide run-off.

**Volatile Organic Contaminants** *\*\*\*\*Tested May 2007; not detected on subsequent confirmation tests in 2007. Source was not used in 2009.*

Ethylbenzene****	1.2	<0.5-1.2	ppb	700	700	No	Discharge from petroleum refineries.
Xylenes, meta****	0.004	<0.0005-0.004	ppm	10	10	No	Discharge from petroleum and chemical factories.
Xylenes, ortho****	0.0013	<0.0005-0.0013	ppm	10	10	No	Discharge from petroleum and chemical factories.

## Unregulated Water Quality Data

	Average Level Detected	Range of Levels Detected	Unit of Measurement
Bromochloroacetic acid	5.9	2.8-11.0	ppb
Bromodichloromethane	11.5	5.96-21.6	ppb
Bromoform	0.65	<0.5-1.64	ppb
Chloroform	27.7	8.62-74.4	ppb
Dibromoacetic acid	1.7	0.7-3.7	ppb
Dibromochloromethane	5.3	2.03-11.0	ppb
Dichoroacetic acid	16.1	3.3-41.0	ppb
Metolachlor	0.1	<0.1-0.2	ppb
Monobromoacetic acid	2.4	<1.0-5.8	ppb
Monochloroacetic acid	2.1	<2.0-4.6	ppb
N-Nitrosodimethylamine (NDMA)	0.002	<0.0020-0.0025	ppb
Nickel	2.1	1.67-2.41	ppb
Radium-226	0.1	0-0.3	pCi/l
Radium-228	0.2	0-0.9	pCi/l
Sulfate	116	64-210	ppm
Total Organic Carbon (TOC)	3.02	2.59-3.83	ppm
Trichloroacetic acid	4.7	1.2-14.0	ppb

## Mineral Analysis

	Average Level Detected	Range of Levels Detected	Unit of Measurement
pH	8.80	8.34-9.09	pH units
Alkalinity (total) as CaCO <sub>3</sub>	113	68-152	ppm
Aluminum	0.06	<0.02-0.31	ppm
Calcium	46	39-52	ppm
Chloride	26	17-52	ppm
Color (in cobalt platinum units)	2	1-4	ppm
Dissolved Solids	417	349-519	ppm
Hardness (total) as CaCO <sub>3</sub>	10	8-13	grains per gallon
Iron	0.03	<0.02-0.09	ppm
Magnesium	13	8-21	ppm
Manganese	0.02	<0.02-0.022	ppm
Phosphate	0.16	<0.05-0.38	ppm
Silica	28.2	6.5-81.2	ppm
Spec. Conductance @25 deg. C.	532	423-740	umhos
Temperature	14.4	2.5-25.9	degrees Celsius
Zinc	<0.02	<0.02	ppm

### What can you get for about \$1?

How about a 20-ounce bottle of water?  
Or, 748 gallons of M.U.D. water from your tap  
for 94 cents?

Plus, tap water is “green.”  
No plastic container to pollute the environment.

## Backflow prevention

According to the Safe Drinking Water Act, Nebraska Health and Human Services requires M.U.D. to make sure backflow preventers are installed and tested every year.

We keep records of these tests and issue notices when testing is due. [This requirement does not apply to lawn sprinkler systems unless they use booster pumps or chemical injection systems.](#) Also check your city's plumbing code for their regulations.

### What is potentially dangerous about an unprotected sill cock?

A sill cock permits easy attachment of a hose for outside watering. However, a garden hose with an unprotected sill cock can be hazardous when left submerged in swimming pools, watering shrubs, and when chemical sprayers are attached to hoses.

## Home water treatment devices

Home water treatment devices are not needed since M.U.D. water meets or surpasses all federal and state Safe Drinking Water standards. However, if you're considering the purchase of a home treatment system to enhance the aesthetics of the water:

- Look for the Underwriters Laboratory (UL) label,
- Find out what the device will remove, and
- Find out the total cost of maintenance. Some units can harbor disease-causing bacteria if not properly maintained and serviced.

M.U.D. maintains more than 26,460 water hydrants in the Omaha area for fire protection.

