



2011 Report

Water Quality

January 1-December 31, 2011

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



METROPOLITAN
UTILITIES DISTRICT

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 402.554.6666 or visit www.mudomaha.com.

Public meetings

The M.U.D. Board of Directors generally meets at 9 a.m. the first Wednesday of every month at 1723 Harney St., Omaha. Visit our website or call 402.504.7147 for an agenda. Requests for special accommodations, alternative formats or sign language interpreters require a minimum of 72 hours advance notice. Call 402.504.7147 or TDD phone 402.504.7024.

M.U.D. serves 201,580 customers an average of more than 88 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.

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, 2008, the District received an extension from the State of Nebraska for improvements at the Platte South Water Treatment Plant to meet groundwater under the direct influence of surface water regulations. The improvements, were completed in February 2011.

On November 7, 2011, the District received an extension from the State of Nebraska for improvements at the Florence Water Treatment Plant to meet the Stage II Disinfection By-Products Rule. The extension is effective until April 1, 2014.



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.

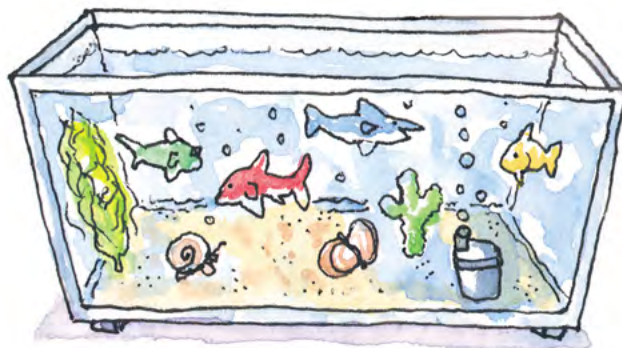
Chloramine, a mixture of chlorine and ammonia, does not dissipate through boiling or exposure to the air in open containers as rapidly as chlorine.

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. Fluoridation was approved by Omaha voters May 14, 1968, by a vote of 54,185 in favor to 39,827 opposed. 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 at our three water plants for *Cryptosporidium* (Crypto) every month in 2011. The Missouri River (raw water) had an average of 0.167 cysts per liter. We did not find crypto in any other raw or treated water sample.

Analysis was conducted by M.U.D. and Underwriters Laboratories.

Safe Drinking Water Hotline

800.426.4791

www.epa.gov/safewater

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.

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).

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, Radium 226, 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 2011, 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 is a measure of the clarity 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 meet or surpass every federal and state
requirement.**

| Coliform Bacteria | | | |
|-------------------|------------------------------------|--|--|
| MCLG | Total Coliform MCL | Highest Percentage of Positive Total Coliform Samples in any Month | Likely Source of Contamination |
| 0 | 5% of monthly samples are positive | 0.33 | Naturally present in the environment; used as an indicator that other potentially harmful bacteria may be present. |

| Fecal Coliform or E. Coli MCL | Total Number of Positive E. Coli or Fecal Coliform Samples in 2011 | Violation? | Likely Source of Contamination |
|--------------------------------|--|------------|--|
| Fecal Coliform or E. Coli MCL. | 0 | No | Naturally present in the environment; used as an indicator that other potentially harmful bacteria may be present. |

| Lead (Monitoring period: 2008-2010; Sampled July 7-16, 2010) | | | | | |
|--|-------------------|-----------------|-------------------------|--------------------------|---|
| MCLG | Action Level (AL) | 90th Percentile | Number of Sites Over AL | Range of Levels Detected | Likely Source of Contamination |
| 0 | 15 ppb | 8.3 ppb | 3 | 1.09-52.1 | 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.

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

Only Tap Water DeliversSM
 public health • fire protection
 support for economy • quality of life

Copper (Monitoring period: 2008-2010; Sampled July 7-16, 2010)

| MCLG | Action Level (AL) | 90th Percentile | Number of Sites Over AL | Range of Levels Detected | Likely Source of Contamination |
|---------|-------------------|-----------------|-------------------------|--------------------------|---|
| 1.3 ppm | 1.3 ppm | 0.0368 ppm | 0 | 0.00549-0.135 | 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 | 0.29 | 100% | 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 Average Detected | Range of Levels Detected | Unit of Measurement | MCLG | MCL | Violation? | Likely Source of Contamination |
|-------------------------------|--------------------------|--------------------------|---------------------|------|-----|------------|--|
| Total Haloacetic Acids (HAA5) | 22.3 | 10.0-38.8 | ppb | n/a | 60* | No | By-product of drinking water chlorination. |

Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.

| | | | | | | | |
|-------------------------------|------|-----------|-----|-----|-----|----|--|
| Total Trihalomethanes (TTHMs) | 50.0 | 24.9-76.3 | 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

| | Highest Level Detected | Range of Levels Detected | Unit of Measurement | MCLG | MCL | Violation? | Likely Source of Contamination |
|---------|------------------------|--------------------------|---------------------|------|-----|------------|--|
| Arsenic | 4.72 | <2-4.72 | ppb | 0 | 10 | No | Erosion of natural deposits; run-off from orchards, electronics production wastes. |

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 | 0.10 | 0.05-0.10 | ppm | 2 | 2 | No | Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits. |
|--------|------|-----------|-----|---|---|----|---|

| | Highest Level Detected | Range of Levels Detected | Unit of Measurement | MCLG | MCL | Violation? | Likely Source of Contamination |
|----------------------------|------------------------|--------------------------|---------------------|------|-----|------------|---|
| Chromium Total | 1.65 | 0.184-1.65 | ppb | 100 | 100 | No | Discharge from steel and pulp mills; erosion of natural deposits. |
| Chromium VI | 1.43 | 0.154-1.43 | | | | | |
| Fluoride | 0.951 | 0.355-0.951 | ppm | 4 | 4 | No | Erosion of natural deposits; water additive to promote strong teeth; fertilizer discharge. |
| Nitrate-Nitrite | 2.66 | 0.37-2.66 | 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) | 90 | 30.0-90.0 | ppm | n/a | 500 | No | Element of the alkali metal group found in nature, soil and rocks. |

Radioactive Contaminants ***MCL is based on Gross alpha excluding radon and uranium.*

| | | | | | | | |
|---|-----|----------|-------|---|------|----|------------------------------|
| Gross Alpha including Radon and Uranium | 6.0 | <1.8-6.0 | pCi/l | 0 | 15** | No | Erosion of natural deposits. |
| Radium (Ra 226 + Ra 228) | 2.5 | <0.8-2.5 | 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.*

| | | | | | | | |
|----------|------|-------------|-----|---|------|----|---|
| Atrazine | 0.22 | <0.08-0.545 | ppb | 3 | 3*** | No | Run-off from herbicide used on row crops. |
|----------|------|-------------|-----|---|------|----|---|

Unregulated Water Quality Data

| | Average Level Detected | Range of Levels Detected | Unit of Measurement |
|-------------------------------|---------------------------|-----------------------------|---------------------|
| Bromochloroacetic acid | 5.37 | 3.01-9.36 | ppb |
| Bromodichloromethane | 13.3 | 5.37-21.1 | ppb |
| Bromoform | 0.92 | <0.5-1.93 | ppb |
| Chloroform | 27.1 | 9.5-62.0 | ppb |
| Dibromoacetic acid | 2.03 | 0.69-3.15 | ppb |
| Dibromochloromethane | 6.98 | 1.19-10.7 | ppb |
| Dichoroacetic acid | 13.2 | 5.23-28.8 | ppb |
| Metolachlor | 0.11 | <0.1-0.236 | ppb |
| Monobromoacetic acid | 1.08 | <1.0-2.79 | ppb |
| Monochloroacetic acid | 2.08 | <2.0-3.83 | ppb |
| N-Nitrosodimethylamine (NDMA) | 0.0023 | <0.0020-0.0039 | ppb |
| Nickel | 0.00222 | 0.00193-0.00269 | ppm |
| Radium-226 | <0.1 | 0-0.1 | pCi/l |
| Radium-228 | 1.0 | 0-2.5 | pCi/l |
| Sulfate | 110 | 75-213 | ppm |
| Total Organic Carbon (TOC) | 3.54 | 2.80-5.20 | ppm |
| Trichloroacetic acid | 3.2 | 1.32-6.13 | ppb |

Mineral Analysis

| | Average Level Detected | Range of Levels Detected | Unit of Measurement |
|---|---------------------------|--------------------------|------------------------|
| pH | 8.94 | 8.73--9.25 | pH units |
| Alkalinity (total) as CaCO ₃ | 107 | 49-139 | ppm |
| Aluminum | 0.04 | <0.01-0.38 | ppm |
| Calcium | 46 | 31-58 | ppm |
| Chloride | 24 | 16-39 | ppm |
| Color (in cobalt platinum units) | 2 | 1-3 | ppm |
| Dissolved Solids | 436 | 382-528 | ppm |
| Hardness (total) as CaCO ₃ | 10 | 9-14 | grains per gallon |
| Iron | 0.04 | <0.02-0.13 | ppm |
| Magnesium | 13 | 8-24 | ppm |
| Manganese | <0.02 | <0.02-0.02 | ppm |
| Phosphate | 0.14 | <0.05-0.27 | ppm |
| Silica | 21.8 | 4.2-42.4 | ppm |
| Spec. Conductance @25 deg. C. | 566 | 464-730 | umhos |
| Temperature | 15.8 | 1.3-26.9 | degrees Celsius |
| Zinc | <0.01 | <0.01 | ppm |

What can you get for \$1?

How about a 20-ounce bottle of water?
 Or, 328 gallons of M.U.D. water from your tap?
 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 27,471 fire hydrants in the Omaha area for fire protection.

