## Enjoy Minneapolis tap water

The City has an ample supply of water from the Mississippi River, but it is important to find ways to conserve water whenever possible. The less water you use, the lower your utility bill will be. It will also help ensure that there will be plenty of water for all uses. You can find links to conservation resources at: http://www.ci.minneapolis.mn.us/water/conservation-resources.asp

## Ways to save on water use

### In the bathroom:

• Older toilets can send 3½ to 5 gallons of water down the drain every flush. Newer 1.6 gallons-per-flush toilets can cut this amount by more than 50 percent.
• Repair leaky faucets and toilets quickly. A slow drip from a tap can waste 15 to 20 gallons of water per day, and a leaky toilet can waste hundreds of gallons a day.
• Ordinary shower heads use seven to 10 gallons of water a minute. Replacing them with low-flow shower heads can reduce that number to 2½ gallons per minute.
• If you're taking a bath, remember that every inch of depth equals about five gallons. The less you fill, the more water you save.

### In the kitchen:

• A typical kitchen faucet can go through up to 7 gallons of water in just one minute. Instead of running the tap to get cold water, put a pitcher of water in your fridge.
• When washing dishes by hand, never run water continuously. Instead, fill a basin or use a stopper in the sink for rinse water.
• If you have a dishwasher, make sure it's full before running. Dishwashers use 7 to 14 gallons per running, no matter how full they are.

### In the laundry room:

• A washing machine uses 27 to 51 gallons per cycle. A big factor in water use is load size. Make sure the load size you set matches the amount of clothing you need to clean.
• When purchasing a new washing machine, pay attention to the "water factor" – the number of gallons of water needed for each cubic foot of laundry. The lower the number, the more water saved.

### Outside the house:

• Before you turn on your sprinkler, figure out whether your lawn or garden needs water. Buy a rain gauge and use it to determine how much rain your yard has received. A good rain can eliminate the need to water for up to two weeks.
• If you do need to water, avoid doing it during the day. Evaporation is lower during the early morning hours, which means more of the water gets to the roots.
• Adjust sprinklers so they don't water streets or sidewalks.
• If you're washing your car, use a bucket instead of a continuously running hose.

## Water Main Projects

As summer gets underway, inevitably so do construction projects. Like the City's other infrastructure, the City's water main pipes, hydrants, and valves need work in order to reliably provide water service, maintain pressure and to maintain water quality. Water main projects fall into three types of work: cleaning and lining, structural lining, and replacement.

### How does the City decide where to do what type of project?

The following factors are taken into consideration:
⇒ Opportunity to perform work in conjunction with street reconstruction projects for both cost savings and for a more holistic approach. The decision to clean and line or to structurally line/replace is based upon whether the pipe is structurally sound (leak history).
⇒ Cleaning and lining is performed based upon citywide water quality information (kept in a database). Areas where there are more acute problems (as identified by data) are prioritized.
⇒ Locations that have had a number of leaks are prioritized for replacement or installation of a structural liner.

### Cleaning and Lining

Most of the City's water main pipes are made of unlined cast iron pipe. All pipes installed after the early 1970's, are made of ductile iron that comes from the factory with a cement lining on the inside. Over the years, unlined cast iron pipes can build up rust deposits on the inside of the pipe. Sometimes these mineral deposits are suspended in the water creating rusty colored water. Although the water is safe to drink, it doesn't look very good. Additionally, mineral deposits constrict the volume of flow that can go through the pipe. The old cast iron water mains are generally very structurally sound; due to the fact the City has granular soil surrounding them.

The cleaning and lining project involves cleaning the inside of the water main with metal scrapers and then installing a cement mortar lining. The discolored water complaints go away after the pipe is lined and there is usually much better flow for our customers' use and for fire protection.

### Structural Lining or Water Main Replacement

While cement mortar lining can only be used for pipes that are structurally sound, there are locations that have a leak history where a structural liner or water main replacement is needed. For a system of its size, Minneapolis has very few water main breaks. In 2010, we had 29 breaks in the 1,000 miles of pipe.

The process for installing a structural liner involves cleaning the inside of the pipe, pulling a sock liner injected with epoxy resin that is safe for drinking water, and then going back and robotically drilling out the service taps after the resin has cured. This creates a new pipe within the old pipe that is fully free standing and able to bear the pressure of the soil and traffic that is over it. A structural liner is a less expensive alternative to open trench replacement. Since there is less digging, this method can save time and money especially in areas where there are a lot of utilities. Additionally, the carbon footprint for installation of a structural liner is considerably less than the carbon footprint for water main replacement. This year, we will install about two thirds of a mile of structural lining.

Locations for water main replacement projects are determined by leak history or changing use. For example, along the LRT Central Corridor project there is existing water main that would have been under the track area. As part of the LRT construction project, their contractor is relocating and replacing roughly two miles of water main.

# City of Minneapolis Water Quality Report 2010

**Dear Resident,**

This report is issued to educate you about both the quality of drinking water that the City of Minneapolis produces and the active projects that are protecting and maintaining our trustworthy distribution system. We take pride in the water we provide to our residents. We are happy to report that **no contaminants were detected at levels that violated federal drinking water standards during 2010.**

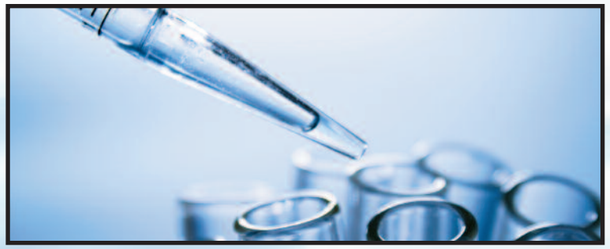
**Attention:** If you want help translating this information, call 3-1-1.

**Spanish**: Atención: Si desea recibir asistencia gratuita para traducir esta información, llame al 3-1-1.

**Somali**: Ogow: Haddii aad dooneyso in lagaa kaalmeeyo tarjamadda macluumaadkani oo lacag la' aan wac 3-1-1.

**Hmong**: Ceeb toom: Yog koj xav tau kev pab dawb txhais cov xov no, hu 3-1-1.

**TTY: 612-673-2626**



The City of Minneapolis is issuing the results of monitoring done on its drinking water for the period from January 1 to December 31, 2010. The purpose of this report is to advance consumers' understanding of drinking water and heighten awareness of the need to protect precious water resources.

The City of Minneapolis provides drinking water to its residents from a surface water source: surface water from the Mississippi River.

The water provided to customers may meet drinking water standards, but the Minnesota Department of health 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 (and press 5) during normal business hours. Also, you can view it online at www.health.state.mn.us/divs/eh/water/swp/swa.

Call 612-673-3000 if you have questions about the City of Minneapolis drinking water or would like information about opportunities for public participation in decisions that may affect the quality of the water.

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 2010. 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).

**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.

**TT – Treatment Technique:** A required process intended to reduce the level of a contaminant in drinking water, such as turbidity. Turbidity is a measure of clarity in the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

**NTU – Nephelometric Turbidity Unit**, used to measure clarity in drinking water.

**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.

**Average/Result:** 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.

**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).

**N/A – Not applicable** (does not apply).

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 Minneapolis 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.

Some contaminants do not have Maximum Contaminant Levels established for them. These unregulated contaminants are assessed using state standards known as health risk limits to determine if they pose a threat to human health. If unacceptable levels of an unregulated contaminant are found, the response is the same as if an MCL has been exceeded; the water system must inform its customers and take other corrective actions.

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 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.

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (EPA) prescribes regulations which 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 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 Environmental Protection Agency'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, people 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.

## 2010 Laboratory Testing Results for Minneapolis Water

| Contaminant (Units) *Year* | MCLG | MCL | Range | Average/ Result | Typical Source of Contaminant |
|---|---|---|---|---|---|
| **Fluoride** (ppm) | 4 | 4 | 0.93-1.1 | 1.06 | 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. |
| **Haloacetic Acids** (ppb) | 0 | 60 | 7.7-37.5 | 22.63 | By-product of drinking water disinfection. |
| **Nitrate as Nitrogen** (ppm) | 10.4 | 10.4 | N/A | 0.36 | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |
| **Total Trihalomethanes** (ppb) | 0 | 80 | 10.5-47.2 | 28.28 | By-product of drinking water disinfection. |
| **Turbidity** (NTU) | N/A | TT | Lowest Monthly % of Samples Meeting Turbidity Limits: 99.8% | Highest Single Measurement: 0.33 | Soil runoff. |
| **Chlorine** (ppm) | MRDLG: 4 | MRDL: 4 | High and Low Monthly Avg: 2.4-3.5 | Highest Quarterly Avg: 3.32 | Water additive used to control microbes. |
| **Total Organic Carbon** | N/A | % Removal Required: 25-30% | % Removal Achieved: 40.9-57.0% | No. Quarters out of Compliance: 0 | Naturally present in the environment. |
| **Copper** (ppm) *9/21/2009* | 1.3 | AL: 1.3 | 0 out of 51 samples over AL | 90% of samples < 0.07 | Corrosion of household plumbing systems; Erosion of natural deposits. |
| **Lead** (ppb) *9/21/2009* | 0 | AL: 15 | 1 out of 51 samples over AL | 90% of samples < 2 | Corrosion of household plumbing systems; Erosion of natural deposits. |
| **Sodium** (ppm) *7/3/2008* | N/A | No EPA Limit Set | N/A | 9.9 | Erosion of natural deposits. |
| **Sulfate** (ppm) *7/3/2008* | N/A | No EPA Limit Set | N/A | 25.5 | Erosion of natural deposits. |