

WATER QUALITY REPORT

FOR BLOOMINGTON, MN • 2010 TEST RESULTS



JUNE 2011

INSIDE

WQR2. Where does your tap water come from?

WQR3. FAQs.

WQR4. 2010 Water quality results.

ENSURING YOUR SAFETY

At the City of Bloomington, our goal is to provide you with high-quality, safe, reliable drinking water that meets every federal and state water quality requirement. This report contains information about the sources, treatment process and history of our water system. Page WQR4 provides the results of water quality monitoring on Bloomington's water sources from January 1 to December 31, 2010, by the Minnesota Department of Health, the city of Minneapolis and our own laboratories. We also answer common questions people have about our water. This report is meant to advance your understanding of drinking water and heighten awareness of the need to protect precious water resources.

CITY ACTS QUICKLY DRINKING WATER CONTAMINANT ELIMINATED

Bloomington closely monitors the public water supply at the Sam Hobbs Water Treatment Plant, the 82nd Street Reservoirs and 30 distribution sites throughout the city. Sites are sampled by Utility staff approximately once a week. William Lloyd/Tri-City Analytical Laboratory staff then analyze each sample for regulated and unregulated contaminants. On average, the laboratory performs more than 430 analyses on the public water supply per day, or more than 158,000 per year. This sampling rate meets and, in many instances, exceeds the requirements of the Minnesota Department of Health (MDH).

On Thursday, February 4, 2010, during the regular weekly analysis, laboratory staff noted that one chemical compound, methylene chloride, was above the maximum contaminant limit throughout the distribution system.

Traced to the water treatment plant, staff immediately shut off the feed from the water plant into the Bloomington water distribution system and switched to the Minneapolis water supply that is used to augment Bloomington's water. City staff proceeded at once to contact

and consult with the MDH's Drinking Water Protection Division.

The methylene chloride originated in a stripping product used by a contractor working at the plant on January 31. The contractor's work was immediately suspended and after February 5, the majority of Bloomington's distribution system did not have detectable levels of the chemical.

Certified test results showed the highest short-term exposure of methylene chloride to the public in the distribution system was 23 parts per billion (ppb); nowhere near the short-term health advisory limit of 10,000 ppb for a one-day exposure or 2,000 ppb per day for a 10-day exposure. As this level did not exceed the short-term exposure level, the MDH did not require a health advisory or "Do Not Drink Order."

The public's annual average exposure (average of four quarterly tests) for this event was 5.75 ppb, just slightly above the EPA maximum contaminant limit of 5.4 ppb. This regulatory violation required that the City notify the public. The formal Notice of Violation was posted in the *Sun Current* the week of February 22.



Maximum contaminant limits are based on lifetime exposure to a chemical and take into account treatment cost, benefits, and the ability of a public water system to detect and remove the contaminants using suitable treatment technologies. As applied to this event, a 150-pound person, drinking at least two liters of 5.4 ppb contaminated water per day for 70 years, has a one in one million chance of developing cancer.

After the plant was thoroughly cleaned and tested, the MDH confirmed levels of methylene chloride at the plant were well below accepted limits. On Thursday, February 18, just two weeks after detecting the incident, the plant was back in service.

For more information, call Public Works Director Karl Keel at 952-563-4581 or Utilities Superintendent Robert Cockriel at 952-563-8774.

GET INVOLVED

Public Works welcomes input on water quality issues. For information, contact Water Quality Supervisor Jon Eaton at 952-563-4501.

If you have questions about your water or need assistance, please give us a call or visit our website.

When you see **WEBSITE KEYWORDS** in this report, visit our website at www.ci.bloomington.mn.us for more information.

Water Plant (24 hours a day)
952-563-4905
TTY (8 a.m. to 4:30 p.m., M-F)
952-563-8740

Este informe contiene información muy importante. Si necesita una traducción del mismo, sírvase llamar al 952-563-4944 V/TTY.

Bản báo cáo này có các thông tin rất quan trọng. Nếu quý vị cần bản dịch tiếng Việt, xin gọi số 952-563-4944 V/TTY.

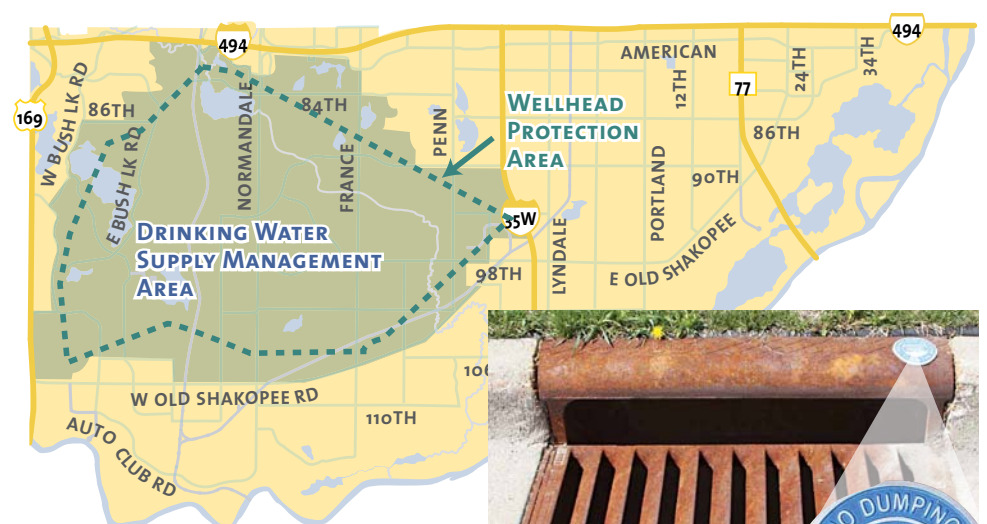
Warbixintaan waxaa ku jira macluumaad aad muhiim u ah. Haddii aad u baahan tahay in lagu turjumo, fadlan la xiriiir 952-563-4944 V/TTY.

PROTECTING OUR PUBLIC WATER SUPPLY EVERYONE BENEFITS FROM WELLHEAD PROTECTION

In its ongoing effort to protect the wellhead, Utilities labels all storm water catch basins within a 5,000 foot radius of the city's six groundwater wells with storm drain markers. These markers, with the words "No dumping, only rain in the drain," are displayed on both public and private storm sewer infrastructure inlets within the earmarked area, see map right, to remind people to help protect our community's valuable drinking water resource.

Wellhead protection prevents contaminants from entering the area that contributes water to the public water supply. The areas are determined by geologic and hydrologic criteria such as the physical characteristics of the aquifer and the effects that pumping has on the rate and direction of groundwater movement. A management plan identifies potential sources of groundwater contamination, monitors for the presence of specific contaminants, and manages existing and future land and water uses that pose a threat to groundwater quality.

The *Minnesota Groundwater Protection Act of 1989* granted the



Commissioner of Health authority to develop wellhead protection measures for wells serving public water supplies; this rule does not apply to private wells. This action was in response to the 1986 amendment of the federal *Safe Drinking Water Act* in which states are required to implement wellhead protection programs for public water supply wells.

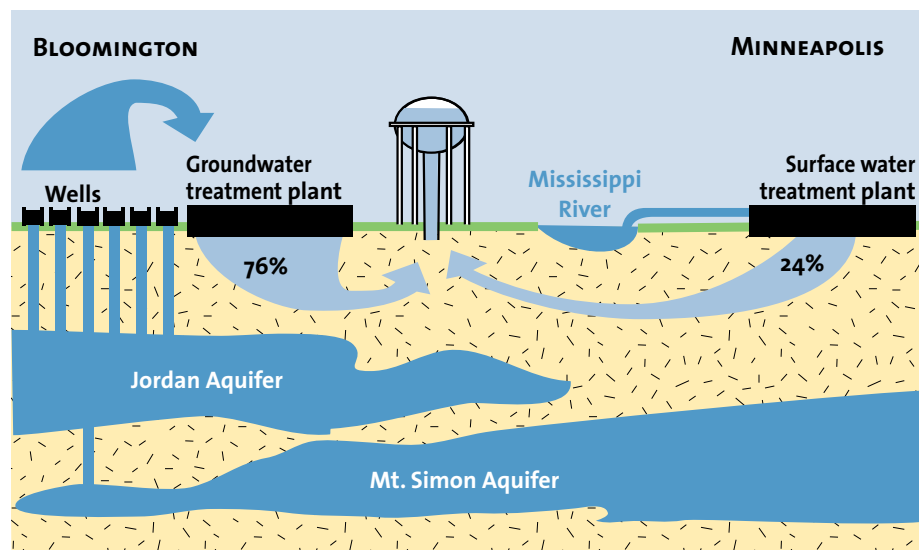
While a wellhead protection plan gives owners of public water supply wells a useful "tool" for providing a safe drinking water supply to their customers, the long-term goals are



beneficial to all residents of Minnesota. These goals reduce the need for costly treatment facilities, new wells and removal of contaminants from groundwater.

If you would like more information about wellhead protection, contact Glen Gerads at 952-563-8775 or the Minnesota Department of Health Source Water Protection Unit at 651-201-4700.

WHERE DOES YOUR TAP WATER COME FROM?



In 1999, the National Resources Defense Council (NRDC) published the results of a four-year study in which researchers tested more than 1,000 samples of 103 brands of bottled water. These researchers found that, "An estimated 25 percent or more of bottled water is really just tap water in a bottle – sometimes further treated, sometimes not."

Also, while municipal water systems must test for harmful microbiological content in water several times a day, bottled water companies are required to test for these microbes only once a week. Alarmingly, the 1999 NRDC study found that 18 of the 103 bottled water brands tested contained, in at least one sample, "more bacteria than allowed under microbiological-purity guidelines."

WATER FACTS © ALLABOUTWATER.ORG.

Remodeled in 2002, the Sam H. Hobbs Water Treatment Plant can produce up to 14 million gallons of treated, drinkable water per day.

BLOOMINGTON WELLS 76 PERCENT IN 2010

The City's water plant draws raw (untreated) groundwater from six deep wells. The wells extend downward between 376 and 963 feet into the Jordan, Prairie du Chien-Jordan, Franconia-Mount Simon and Jordan-St. Lawrence Aquifers, porous underground rock formations that hold vast amounts of water. The Midwest has a very rich water supply.

The City drew 3.1 billion gallons of water, 76 percent of Bloomington's needs, from these deep groundwater wells in 2010.

MISSISSIPPI RIVER 24 PERCENT IN 2010

To meet demand in excess of our production capabilities during peak periods, Bloomington purchases treated water from the city of Minneapolis. Treated water from our plant is blended with similarly treated water from Minneapolis and sent throughout Bloomington's distribution system. All of our consumers receive a blend of water from these two sources.

Minneapolis' surface water treatment plant takes its raw water from the Mississippi River. In 2010, the City purchased 0.9 billion gallons of water from Minneapolis, which supplied the remaining 24 percent of our water needs.

WEBSITE KEYWORDS:
WATER TREATMENT PLANT.

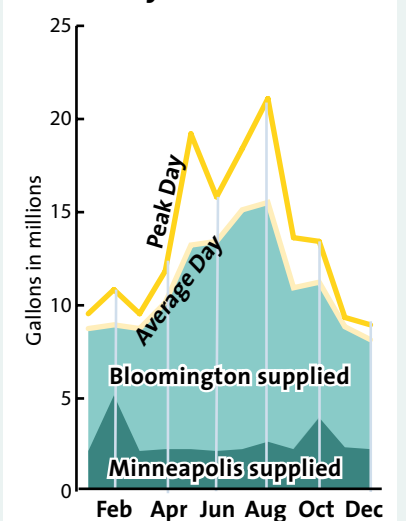
HOW MUCH IS USED?

In 2010, residents and businesses in Bloomington used 4.0 billion gallons of water, 600 million less than 2009. The average was 11.0 million gallons of water per day last year.

The chart below shows the peak day and average day of water use for each month during 2010, as well as the average amount of water treated at the City's plant and purchased from Minneapolis. To get a more accurate picture of the actual amounts of water consumed, peak day data was adjusted to account for fluctuations in our reservoir levels.

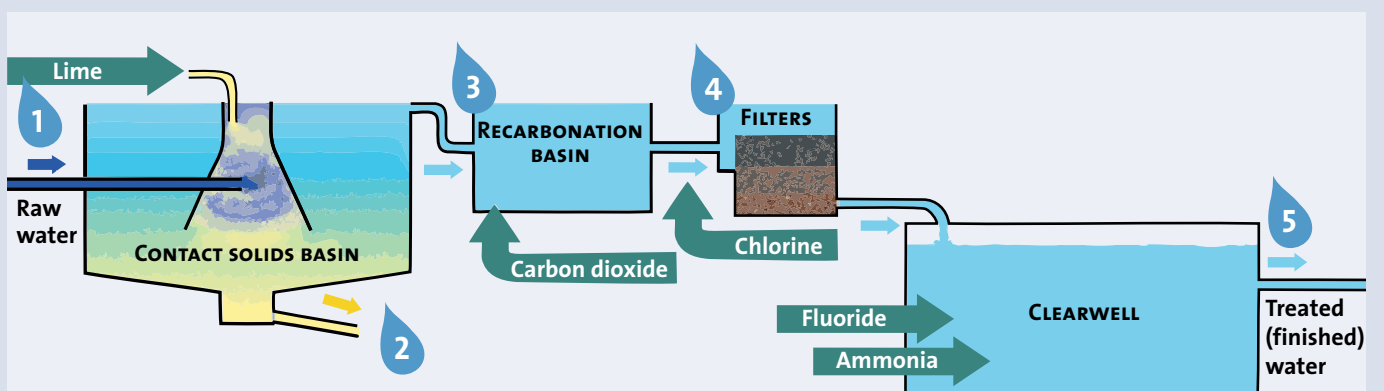
WEBSITE KEYWORDS: WATER USAGE.

2010 Daily water use



OUR WATER TREATMENT PROCESS

- The softening process begins when lime, in the form of slakened quicklime, is mixed with raw water in one of the City's two contact solids basins. Each basin holds about half a million gallons of water.
- The lime-and-water mixture causes the pH in the basins to rise, and calcium and magnesium (the main components of hardness) to form insoluble particles called flocs. As these floc particles grow in size, they settle to the bottom of the contact solids basins. The solids are removed, dewatered and used as a USDA-approved source of lime by Minnesota farmers to stabilize the pH in farm fields.
- The water enters a recarbonation basin where it is adjusted to the proper pH by adding carbon dioxide. A precise amount of chlorine is added to discourage bacterial growth as the water travels through the City's distribution system.
- The water is filtered to remove any remaining particles. Then it enters an underground reservoir called a clearwell where small quantities of fluoride and ammonia are added. Because fluoride promotes strong teeth and bones, fluoridation is mandated by State law at a dosage of 0.9 - 1.5 ppm. Ammonia works with the chlorine as a disinfectant. Now softened and disinfected, the water is ready for use by residents and businesses.



IS THE WATER SOFT?

Bloomington is one of the few water utilities in Minnesota that supplies softened water, saving consumers time and money. Untreated groundwater enters the water plant with a hardness of about 19 grains (320 parts per million). Our treatment process reduces the water's hardness to about 5.2 grains (90 parts per million).

- The finished water from the City's treatment plant is pumped into the distribution system, where it is mixed with treated water purchased from the city of Minneapolis.

WEBSITE KEYWORDS: TREATMENT PROCESS.

St. Cloud Technical College

A CAREER IN THE WATER INDUSTRY IS WAITING FOR YOU!

St. Cloud Technical College's Water Environment Technologies (WETT) program provides you with the skills you need to land a great job in this rapidly growing industry.

There are many benefits to this program:

- Hands-on learning.
- 12-month program.
- Metro and St. Cloud locations.
- 95 percent placement rates.

For more information on this career program, call St. Cloud Technical and Community College at 1-320-308-5952 or e-mail instructor Bill Spain at bspain@sctcc.edu.

FREQUENTLY ASKED QUESTIONS ABOUT BLOOMINGTON'S WATER



SHOULD I GET A WATER FILTRATION SYSTEM FOR MY HOME?

Because Bloomington's water surpasses all federal and state standards, home filtration systems are not necessary. However, if you choose to purchase a filtration system for aesthetic or medical reasons, keep the following in mind:

- Find out if the filter you are considering is capable of removing substances that concern you.
- Look for filters that have been certified by NSF International (an independent testing group) and Underwriters Laboratory (UL).
- Follow the manufacturer's maintenance instructions carefully. When not properly maintained and serviced, filtration systems can harbor disease-causing bacteria that are not otherwise in the City's water supply.



DO I NEED A HOME WATER SOFTENING SYSTEM?

Our lime-softening process removes most of the hardness in Bloomington's water, reducing it from 19 grains per gallon (raw water) to about 5.2 grains per gallon (finished water). The water is also treated to be noncorrosive. This helps prevent unsafe levels of lead and copper from leaching into the water from home plumbing. Home softening systems can further reduce water hardness, usually by adding a small amount of sodium.

OTHER QUESTIONS?

Feel free to contact us at any time with your questions about drinking water. Call the Water Treatment Plant at 952-563-4905.

WEBSITE KEYWORDS: WATER FAQs.

WHY IS THE WATER FROM MY FAUCET CLOUDY?

Occasionally we receive calls reporting water that appears cloudy or milky. Usually indicating the presence of either oxygen or calcium, cloudy water is perfectly safe to drink.

Oxygen in water: Sometimes water fresh from the tap appears cloudy. Within a minute or two, the cloudiness rises toward the top of a glass and before long the whole glass is crystal clear. This is caused by excess oxygen escaping from the water.

Changes in water temperature and pressure can cause the oxygen dissolved in it to reach a "supersaturated" state where more oxygen is in the water than it can hold. When the water passes through a faucet, the disturbance is enough to release the excess oxygen out of the water, forming microscopic bubbles. The bubbles are so tiny that it takes them a long time to rise through the water. No harm will come from using oxygenated water and you need not take any corrective action if you experience it.

Calcium in water: The chemistry of water is surprisingly complex and many factors influence how it behaves. We treat Bloomington's water so that it is slightly prone to deposit a trace of calcium sediment as it travels through our distribution system. This helps keep our water from becoming corrosive and reduces the likelihood that it might attack water mains or leach lead or copper from our customers' plumbing and fixtures. *See below.* Usually, this calcium sediment remains at the bottom of the water mains, unnoticed by our water users.



However, the calcium can be stirred up when a large volume of water is drawn through a water main in a short time. Events that can increase water velocity include firefighting, water main breaks, hydrant maintenance and filling water or street-cleaning trucks' tanks at a hydrant. If you happen to turn on your cold water right after such an event, you may draw some of the stirred-up water into your pipes.

When calcium causes cloudiness, it is usually noticed in cold water. Let a glassful of the cloudy water sit for about 30 minutes and the calcium, appearing as a white or grayish substance, may settle to the bottom of the glass. Though it may be visually unappealing, such water is perfectly safe to drink or use for cooking.

To clean calcium sediment from your system, we recommend that you wait an hour or two to allow the water in the main to settle. Then, open a large faucet, such as a bathtub faucet, and let the cold water run for about 20 minutes. This will draw clean water through your system and should remove any remaining calcium from your pipes.

Please call us if you have any concerns or if your water remains cloudy after taking these steps.

WHAT CAN I DO TO MINIMIZE EXPOSURE TO LEAD?

The presence of lead ranks among the most common health concerns people have about drinking water. Recent studies suggest that levels of lead once thought to be safe can pose dangers, especially to unborn babies and children. Fortunately, over years of regular and rigorous monitoring, the City of Bloomington's water has never been found to be a significant source of lead.

In fact, lead pipes, solder, brass faucets and other plumbing in your home pose the greatest threat of adding dangerous levels of lead to your water. A few simple practices can minimize your

exposure to lead from your home. First, always use cold water for your cooking and drinking. If your plumbing contains lead, hot water will draw more lead out of it. Second, allow your cold water to run for 30 seconds to two minutes. This flushes out any water that may have been in your pipes long enough to pick up higher concentrations of lead.

For more information, call the Safe Drinking Water Hotline at 1-800-426-4791 or visit www.epa.gov/safewater/lead. If you are concerned about your home's lead levels, our laboratory can test your water for a fee.

The average person in the United States uses anywhere from 80 to 100 gallons of water per day. Flushing the toilet accounts for the largest amount of this water.

WATER FACTS © ALLABOUTWATER.ORG.

IMPORTANT INFORMATION

FOR PEOPLE WITH COMPROMISED IMMUNE SYSTEMS

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised people, such as people 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 of infections.

These people should seek advice from their health care providers about drinking water. Environmental Protection Agency and Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline: 1-800-426-4791.

LEAD IN WATER

If present, infants and children who drink water containing lead in excess could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

Lead in drinking water is primarily from the components associated with service lines and home plumbing. The City is responsible for providing high quality drinking water, but cannot control the materials used in plumbing. When your water has been sitting for hours, minimize potential lead exposure by flushing the tap for 30 seconds to two minutes. If you are concerned about lead in your water, you may have your water tested.

Information on lead in drinking water, testing methods and steps to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.



WATER PURITY INFORMATION PROVIDED BY THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Drinking water sources in the United States, both tap water and bottled water, include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over or through the ground, it dissolves naturally occurring minerals and, sometimes, radioactive material. Water also picks up substances resulting from animal or human activity.

To ensure that tap water is safe to drink, the Environmental Protection Agency (EPA) regulates the amounts of certain contaminants in water provided by public systems. The Food and Drug Administration regulates contaminants in bottled water to provide the same public health protection.

Drinking water, including bottled water, may be expected to contain reasonably small amounts of some contaminants. Their presence does not necessarily indicate that the water poses a health risk. Information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at 1-800-426-4791.

CONTAMINANTS THAT MAY BE PRESENT IN SOURCE UNTREATED WATER

Microbial contaminants, such as viruses and bacteria, may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.

Inorganic contaminants, such as salts and metals, can occur naturally or result from urban storm runoff, industrial or domestic wastewater discharges, oil and gas production, mining and farming.

Pesticides and herbicides come from a variety of sources such as agriculture, urban stormwater runoff and residential uses.

Organic chemical contaminants, including synthetic and volatile organic chemicals, are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff and septic systems.

Radioactive contaminants can occur naturally or be the result of oil and gas production and mining activities.

2010 WATER QUALITY RESULTS

The Minnesota Department of Health and City staff regularly test samples of Bloomington's water for many contaminants. Some substances were detected in trace amounts in the drinking water. Only those substances that were detected appear on the table; many results are not listed because the substances were not found at any time in 2010 by tests designed to detect them. Some substances are tested less than once per year; in such cases, the most recent results and the test dates are reported.

Some contaminants do not have Maximum Contaminant Levels (MCL) established. These "unregulated contaminants" are assessed using federal standards known as health risk limits to determine if they pose a threat. 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 corrective actions.

The table's upper portion summarizes test results performed on Bloomington water. The lower portion

shows results for Minneapolis water because we blend Minneapolis treated surface water with our water plant's treated groundwater.

The Minnesota Department of Health has made a determination as to how vulnerable Bloomington's source water may be to future contamination incidents. If you wish to obtain the entire source water assessment, please call 651-201-4700 or 1-800-818-9318 (and press 5) during normal business hours, or view the assessment online at www.health.state.mn.us/divs/eh/water/swp/swa.

Detected substance	Amount detected	Allowed (MCL)	Ideal (MCLG)	Typical source of substance	Type	Meets standards?
CITY OF BLOOMINGTON						
Arsenic (ppb) (09/05/2006)	1.7	10	0	Erosion of natural deposits	R	Yes
Chlorine (ppm)	Avg. = 2.1 (1.3 to 2.5)	4 MRDL	4 MRDLG	Water additive used to control microbes	R	Yes
Copper (ppm) (06/03/2008)	90% = 0.02 (0 of 30 sites over AL)	AL = 1.3	NA	Corrosion of household plumbing systems; erosion of natural deposits	R	Yes
Dichloromethane (ppm)	Avg. = 5.75 (nd to 23)	5*	0	Paint stripping chemical	R	No
Fluoride (ppm)	Avg. = 1.03 (0.94 to 1.2)	4	4	Added for strong teeth/bones; erosion of natural deposits	R	Yes
Haloacetic Acids (HAA) (ppb)	Avg. = 0.1 (nd to 0.4)	60	0	Chlorination by-product	R	Yes
Lead (ppb) (06/03/2008)	90% = 4 (0 of 30 sites over AL)	AL = 15	NA	Corrosion of household plumbing systems; erosion of natural deposits <i>See page WQR3.</i>	R	Yes
Sodium (ppm) (07/03/2008)	5.4	U	U	Erosion of natural deposits	U	Yes
Sulfate (ppm) (07/03/2008)	12.6	U	U	Erosion of natural deposits	U	Yes
Tetrachloroethylene (ppb)	Avg. = 0.07 (nd to 0.4)	5	0	Paint stripping chemical	R	Yes
Trihalomethanes (TTHM) (ppb)	Avg. = 0.6 (0.4 to 0.8)	80	0	By-product of drinking water disinfection	R	Yes

CITY OF MINNEAPOLIS						
Chlorine (ppm)	Avg. = 3.3 (2.4 to 3.5)	4 MRDL	4 MRDLG	Water additive used to control microbes	R	Yes
Copper (ppm) (09/21/2009)	90% = 0.07 (0 of 51 sites over AL)	AL = 1.3	NA	Corrosion of household plumbing systems; erosion of natural deposits	R	Yes
Fluoride (ppm)	Avg. = 1.06 (0.93 to 1.1)	4	4	Added for strong teeth/bones; erosion of natural deposits	R	Yes
Haloacetic Acids (HAA5) (ppb)	Avg. = 22.6 (7.7 to 37.5)	60	0	Chlorination by-product	R	Yes
Lead (ppb) (09/21/2009)	90% = 2 (1 of 51 sites over AL)	AL = 15	NA	Corrosion of household plumbing systems; erosion of natural deposits	R	Yes
Nitrate (as nitrogen) (ppm)	0.36	10.4	10.4	Runoff from fertilizer use; leaching from sewage; erosion of natural deposits	U	Yes
Sodium (ppm) (07/03/2008)	9.9	U	U	Erosion of natural deposits	U	Yes
Sulfate (ppm) (07/03/2008)	26	U	U	Erosion of natural deposits	U	Yes
Trihalomethanes (TTHM) (ppb)	Avg. 28.3 (10.5 to 47.2)	80	0	Chlorination by-product	R	Yes
Turbidity (NTU)	Max: 0.33 (limit met 99.8%)	TT	NA	Soil runoff	R	Yes

KEY	
MCL	Maximum Contaminant Level. The highest level allowed in drinking water. MCLs are set as close to MCLG as feasible using the best available treatment technology.
MCLG	Maximum Contaminant Level Goal. Below this level there is no known or expected health risk. MCLGs allow for a margin of safety.
U	Unregulated, but monitoring is required by the State of Minnesota. No limits have been set for this compound.
R	Regulated.
NA	Not Applicable.
AL	Action Level. An amount that, if exceeded, triggers a specific response that a water system must follow.
TT	Treatment Technique. A required process intended to reduce the level of a contaminant.
ppb	Parts Per Billion. Units of a substance, in pure form, found in every billion units of water.
ppm	Parts Per Million. Units of a substance, in pure form, found in every million units of water.
NTU	Nephelometric Turbidity Unit. A measure of water clarity.
MRDL	Maximum Residual Disinfectant Level.
MRDLG	Maximum Residual Disinfectant Level Goal.
90%	This is the value obtained after disregarding the 10 percent of the samples taken that had the highest levels.
cfu	Colony Forming Unit.
nd	No Detection.

* During the 2010 calendar year, Bloomington had a violation for dichloromethane. Some people who drink water containing in excess of the MCL over many years could have liver problems and may have an increased risk of getting cancer. Dichloromethane was not detected in the follow-up samples collected at the treatment plant. Bloomington's system was returned to compliance. See page WQR1.