

2007 Water Quality Report

City of New Brighton • July 2008

Your Drinking Water Meets Federal and State Standards

The City of New Brighton's goal is to provide you with high quality, reliable drinking water that surpasses every federal and state requirement. The United States Environmental Protection Agency and the Minnesota Department of Health have identified many chemicals and other substances that may pose a risk to humans. When a contaminant is thought to pose a risk, these agencies set upper limits for safe human consumption.

We are proud to report that no contaminants were detected at levels that violated state and federal drinking water standards.

This special newsletter contains the City's annual water quality report, which includes complete information on the monitoring done on New Brighton's drinking water during 2007. Please review the report, and if you have questions, contact Scott Boller, Water Supervisor, 651-638-2119, scott.boller@new-brightonmn.gov. You can also view water topics on the City of New Brighton website under City Services, Drinking Water at www.newbrightonmn.gov.



Water Quality Report for 2007

The federal government's Safe Drinking Water Act of 1996 mandates that all public water supply systems send water quality reports to each of their customers annually. The purpose of this report is to advance consumer's understanding of drinking water and to heighten awareness of the need to protect precious water sources. This report summarizes results of monitoring done on New Brighton drinking water from January 1 to December 31, 2007. This newsletter also contains information about radium detected in the City's municipal water in 2004, along with other water topics.

Source of Water

The City of New Brighton provides safe drinking water to its residents and businesses by pumping water from the following groundwater sources: the Prairie Du Chien, Jordan, and Mount Simon-Hinckley aquifers. The Prairie Du Chien and Jordan aquifers are vast underground veins of water that supply the majority of New Brighton's water, 98% in 2007. The City currently has 11 wells ranging from 294 to 915 feet deep.

New Brighton's water provided to customers meets all of the Environmental

continued on page 4

History of New Brighton Water System

The New Brighton water system has undergone major changes since the discovery of volatile organic compounds (VOCs) in the City water wells in July of 1981. Trichloroethylene (TCE), a common degreasing solvent and suspected carcinogen, was found in the wells at levels ranging from a few parts per billion to over two hundred parts per billion. The well water also contained lesser quantities of trichloroethane, dichloroethane, and dichloroethylene. The City immediately responded by changing the order of usage of the wells to use the lowest contaminated wells first. In addition, an odd/even lawn sprinkling procedure was put into effect to control water demand.

The State Board of Health notified the City that the chemical contamination posed a long-term chronic health problem and directed the City to replace the contaminated supply. Replacement options investigated by the City included purchasing

water from a neighboring city, installation of new clean wells, and treatment of the existing supply. The City's initial decision was to construct new wells in the deeper Mount Simon/Hinckley aquifer.

By 1987, the source of the contamination had been identified as the Twin Cities Army Ammunition Plant (TCAAP) located in Arden Hills about 2.5 miles northeast of the City water wells. The Army reimbursed the City for the cost of the Mount Simon/Hinckley wells and iron removal plants and paid for the design, construction, operation and maintenance of a new treatment plant to treat water from the old contaminated wells #3, #4, #5, and #6. The litigation settlement agreement between the City and the Army required the City to utilize the treated water for 80 percent of total annual water usage for aquifer cleanup purposes.

continued on page 5

Compliance with National Primary Drinking Water Regulations

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 natural 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 natural 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 natural 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 contami-

nants. 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, 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 are available from the Safe Drinking Water Hotline at 1-800-426-4791. Cryptosporidium can be present in surface water. New Brighton's water sources, however, are deep wells.

Substances Detected in Trace Amounts in New Brighton Water					
Contaminant (units)	MCLG	MCL	Level Found		Typical Source of Contaminant
			Range (2007)	Average/Result*	
Barium (ppm) (04/16/2003)	2	2	N/A	0.1	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
Fluoride (ppm)	4	4	1-1.1	1.08	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	10	nd-.05	.05	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
TTHM (Total trihalomethanes) (ppb)	0	80	N/A	0.9	By-product of drinking water disinfection.
Xylenes (ppm)	10	10	N/A	.001	Discharge from petroleum factories.

Lead and Copper Testing

This is a specialized testing program to identify the potential for a homeowner's internal plumbing to impact their drinking water. **New Brighton's drinking water does not contain lead or copper;** however, these substances might be detected in household drinking water as a result of an installed plumbing system. Common sources of lead and copper are lead solder and copper pipe fittings. Lead in solder was banned after 1985. The City tests for lead and copper under Department of Health guidelines every three years by collecting water samples from selected households in the City.

The chart below shows the results of tests performed during 2007. **No contaminants were detected at levels that violated federal drinking water standards.**

Contaminant (units)	MCLG	AL	90% Level	# sites over AL	Typical Source of Contaminant
Copper (ppm)	N/A	1.3	.43	0 out of 30	Corrosion of household plumbing systems; Erosion of natural deposits.
Lead (ppb)	N/A	15	3	0 out of 30	Corrosion of household plumbing systems; Erosion of natural deposits.

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 New Brighton 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 are available from the Safe Drinking Water Hotline at 1-800-426-4791 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. In the table that follows are the unregulated contaminants that were detected:

Contaminant (units)	Level Found		Typical Source of Contaminant
	Range (2007)	Average/Result	
Sodium (ppm) (08/28/2006)	N/A	15	Erosion of natural deposits.
Sulfate (ppm) (08/28/2006)	N/A	2.82	Erosion of natural deposits.

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.

pCi/l PicoCuries per liter (a measure of radioactivity).

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

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

nd No Detection.

N/A Not Applicable (does not apply).

Water Report...from page 1

Protection Agency's health and aesthetic standards for safe drinking water. The City's wells and treatment plants meet all construction standards and do not present a pathway for contamination to enter the water supply. The City's operating procedures include daily monitoring of treatment plants and frequent water testing. Our state of the art Granular Activated Carbon absorption process removes more impurities than most other treatment plants in the country. If you wish to obtain the entire water source assessment regarding your drinking water, please call (651) 201-4700 or 1-800-818-9318 (and press 5) during regular business hours. Also, you can view it online at www.health.state.mn.us/divs/eh/water/swp/swa.

Water Quality Monitoring

The City tests the water on a daily basis. Outside testing laboratories and the State of Minnesota conduct additional testing on monthly and quarterly schedules. Daily readings of flow and chemical usage verify that proper ratios of fluoride and chlorine are used. More than 1500 individual tests are performed annually to ensure that water quality remains at the highest level.

Monitoring Results

No contaminants were detected at levels that violated federal drinking water standards. However, some contaminants were detected in trace amounts that were always below the maximum allowed in drinking water. The table on page 2 shows the contaminants that were

detected in trace amounts in 2007. (Some contaminants are sampled less frequently than once a year; as a result not all contaminants were sampled in 2007. 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).

Contact Scott Boller, Water Supervisor, 651-638-2119, scott.boller@newbrightonmn.gov if you have questions about the City of New Brighton drinking water or would like information about opportunities for public participation in decisions that may affect the quality of the water.

Radium and Radon in Drinking Water

Radium occurs naturally in our environment. It is a natural component of underground rock and soil, and it can work its way into groundwater.

In 2004, the Minnesota Department of Health (MDH) notified the City that four of our 11 wells exceeded the reporting

level of 5.4 pCi/l for combined radium. City staff put a plan together with MDH and the City Council to rehabilitate the existing iron filters to remove the radium. At the present time, three filters have been modified and have passed radium testing, and the fourth filter will be complete

and tested by July 2008. New Brighton has been very pro-active in working with MDH to resolve this problem, with very good results. More information on radium is available on the MDH website: <http://www.health.state.mn.us/divs/eh/water/com/fs/radium.html>

Contaminant (units)	MCLG	MCL	Level Found		Typical Source of Contaminant
			Range (2007)	Average/Result*	
Combined Radium (pCi/l)	0	5.4	nd-1.4	.7	Erosion of natural deposits.
Radon (pCi/l)	-	-	45-62	53.5	Erosion of natural deposits.

Radon in Drinking Water

Radon is a radioactive gas which is naturally occurring in some groundwater. It poses a lung cancer risk when gas is released from water into air (as occurs during showering, bathing, or washing dishes or clothes) and a stomach cancer risk when it is ingested. Because radon in indoor air poses a much greater health

risk than radon in drinking water, an Alternative Maximum Contaminant Level (AMCL) of 4,000 picoCuries per liter may apply in states that have adopted an Indoor Air Program, which compels citizens, homeowners, schools, and communities to reduce the radon threat from indoor air. For states without such a program, the Maximum Contaminant Level (MCL) of 300 pCi/l may apply. Minnesota

plans to adopt an Indoor Air Program once the Radon Rule is finalized.

*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.

Chlorine Testing

Chlorine is added to protect the system from biological growth or bacteria. Chlorine samples are taken from different areas of the City and tested to verify that the disinfection properties are carried throughout the entire system to the ends of the lines.

Contaminant (units)	MRDLG	MRDL	****	*****	Typical Source of Contaminant
Chlorine (ppm)	4	4	.2 - .5	.27	Water additive used to control microbes.

****Highest and Lowest Monthly Average. *****Highest Quarterly Average.

History...from page 1

The water treatment plant was put into service in May of 1990. The treatment process utilizes granular activated carbon in down-flow pressure contactors to remove the contaminants. The treatment plant proved to be a safe and reliable water supply for the City and an important groundwater cleanup facility for the Army. This practical relationship between water supply and groundwater cleanup resulted in a cooperative effort by the Army and the City for the final remediation plan for the contaminated Prairie Du Chein/Jordan aquifer. In 1992, well #13, a second smaller treatment plant, and a 20 inch diameter water system interconnection to the City of Fridley were completed. In 1994, iron and manganese pressure filtration was added to the first Treatment Plant. In 1995 and 1996, two additional new wells, #14 and #15, were installed to optimize contaminant removal and plume containment. The interconnection to the City of Fridley was built because the daily pumpage requirements for containment were in excess of the City of New Brighton's average day water demand. The iron and manganese filtration was added because the best wells for remediation contain levels of iron and manganese that could not be satisfactorily controlled by sequestration. The large water treatment plant is referred to as the Permanent Granular Activated Carbon Water Treatment Facility, or by the acronym PGACWTF.

New Brighton has SCADA

SCADA stands for Supervisory Control And Data Acquisition system. It is a computer-monitored alarm, response, control and data acquisition system used by operators to monitor and adjust their treatment processes and water distribution systems.

The SCADA system collects, stores, and analyzes information about all aspects of operation and maintenance, transmits alarm signals when necessary, and allows fingertip control of alarms, equipment and processes. SCADA provides the information operators need to solve minor problems before they become major incidents. As the nerve center of a water treatment and distribution system, SCADA allows

operators to enhance the efficiency of their water treatment and distribution system by keeping the operators fully informed and in control.

SCADA monitors levels, pressures and flows and also operates pumps, valves and alarms. It can monitor temperatures, speeds, motor currents, chlorine residuals, and other operating guidelines, and provides control as necessary. SCADA also logs events and monitors equipment operating time for maintenance purposes.

New Brighton's water treatment system has SCADA control in all of the wells and treatment plants, Public Works offices, and also can be controlled remotely.



Kris Fluegel, Treatment Plant Operator, monitors the City's water system utilizing the SCADA system at the Water Treatment Plant on 5th Street.

Fun Facts about Water

- Water is the most common substance found on earth.
- Water is the only substance on earth naturally found in the three true element forms: solid, liquid, and gas.
- 80% of the earth's surface is water.
- 97% of the earth's water is the oceans and seas. 2% of the earth's water is frozen in glaciers. 1% is fresh water for us to use.
- 66% of your body is water. 25% of our bones are water. Human blood is 83% water.
- A person can survive without food for more than 30 days, but less than a week without water.
- A gallon of water weighs 8.34 pounds.
- The first water pipes made in the U.S. were fire-charred, bored-out logs.
- The average American uses about 100 gallons of water a day.
- A shower, bathroom faucet, toilet and kitchen sink use approx. 2-5 gallons a minute.
- A dishwasher uses approx. 25 gallons of water in a load.
- A washing machine uses approx. 30 gallons of water in a load.

Learn more about water in New Brighton

Q: How much water does New Brighton use?

A: In 2007, residents and businesses in New Brighton used one billion gallons of water. This works out to an average of 2.75 million gallons of water per day. A typical New Brighton household consumes an average of 22,000 gallons of water each quarter of the year. Water use is lower than the average during the winter months and higher in the summer, primarily due to lawn watering. New Brighton has the capacity to pump over 9 million gallons per day, if needed.

Q: Why does the water look cloudy when it first comes from the faucet?

A: Cloudiness is temporary and is caused by air bubbles. Let the water stand exposed to the air for a short time, the bubbles will rise to the top and disappear.

Q: How much iron is in New Brighton water?

A: New Brighton water is relatively low in iron content. It is less than .01ppm, considered "no detection."

Q: Is there fluoride in my water?

A: Yes, there is fluoride in the water. Groundwater naturally contains a small amount of fluoride and the Water Department adds more fluoride to bring the total amount of fluoride in the water to the Department of Health standards of 1.0ppm to 1.5 ppm. New Brighton's water averages 1.2 ppm.

Q: Should I install a water softener in my home?

A: New Brighton has very hard water (17-20 grains per gallon) that may cause scale buildup on your fixtures, or spots on your dishes. The white scale of deposits is calcium and magnesium that build up over time. If you are bothered by this, a water softener should help. Soft water rinses off better, and you generally use less soap for your dishes and laundry.

Q: Should I install a water filter in my home?

A: This is a personal choice. A water filter is not required for the municipal water in New Brighton to meet drinking water standards. Most filters will remove the large chlorine ions, which are in the water to kill the harmful bacteria and fluoride ions, which strengthen teeth. If the water taste is not to your liking, then you may want to consider a home treatment unit.

You do not need to treat your drinking water at home to make it safe. A home water treatment unit can improve water's taste, or provide an extra margin of safety for people more vulnerable to the effects of waterborne illness.

Consumers who choose to purchase a home water treatment unit should carefully read its product information to understand what they are buying, whether it is to better taste or a certain method of treatment. Be certain to follow the manufacturer's instructions for operation and maintenance, especially changing the filter on a regular basis.

Q: Where can I get my water tested?

A: The City tests the water quality and results are published annually in this report. If you desire further testing, you will need to call a private testing laboratory. Private laboratories are located in the Yellow Pages under "water analysis" or "laboratories-analytical." In order to test water, you need to know what you want to test for. The City and Minnesota Department of Health conduct all the water testing required by the Safe Drinking Water Act to maintain safe drinking water in our City.

continued page 7

Water...from page 6

Q: Can New Brighton supply water during a power outage?

A: Yes. Water stored in water towers flows by gravity and does not require power. For the extended power outages New Brighton has its own power generators that can run the wells to pump 2 million gallons per day, enough for a limited temporary supply. New Brighton also has water interconnections with neighboring cities which could be opened to receive water during an emergency.

Q: Why do we store water in water towers?

A. 1. A large amount of water may be needed to fight a large fire.

2. When you turn on your faucet water flows out because the water in the pipes is under pressure and is pushed out. The water in the water tower sits on top of the water below it and the weight of the water above provides your house with water pressure. The higher the water is above you, the more pressure you have. Household water pressure ranges from 40 psi - 80 psi depending on the house elevation compared to the water tower.

3. Excess storage means the well can pump water more efficiently. The wells can pump water all night into storage as we sleep for the large demand when everyone wakes up and gets ready to start their day. Water is also saved over weekdays for weekends when the majority of people use water to clean and do laundry. New Brighton's four storage tanks can hold 2.75 million gallons of water.

Q. Who should I contact if I have further questions about my water or New Brighton's water system?

A. Contact Scott Boller, Water Supervisor, 651-638-2119, scott.boller@newbrightonmn.gov

Hydrant Flushing

The entire water distribution system is cleaned when fire hydrants are flushed in the fall. The City of New Brighton typically flushes the hydrants within the first two weeks of October. Flushing removes sediment, such as iron and manganese, that collects in the water system. It also moves freshly chlorinated water through all the lines, and verifies the operational reliability of the fire hydrants. If you get rusty or reddish-brown water in your home during the flushing, run a cold laundry faucet for about five minutes to purge your home plumbing. If you happen to get some rusty water in your hot water heater, it may take a day or so to completely clear up. The water is safe for human consumption; however, it could stain clothing if washing clothes. If discoloration of water occurs, it is suggested that you refrain from doing laundry until the water is clear, in about 24 hours.



The City flushes fire hydrants in the fall to remove iron and manganese from the water system. Flushing may temporarily cause reddish-brown water for residents. The water is safe for human consumption; however, it can stain clothing if washing clothes. If discoloration of water occurs, it is suggested that you refrain from doing laundry until the water is clear in approximately 24 hours.



City Maintenance Workers Duane Bosema and Tom Bauer are shown repairing a water hydrant that was hit by a car. Duane and Tom are part of a 10 member crew that keeps the City's water & sewer systems operating efficiently.



The Public Works Department responds to water main breaks quickly with equipment and manpower to lessen the effects on residents, neighborhoods and infrastructure. Here they worked on a break on Silver Lake Road.

Safe and Pleasing Water is Goal

The City of New Brighton's goal is to provide both safe and aesthetically pleasing water. Odor and taste changes often originate from the water's source. High mineral levels are common in Minnesota groundwater, and minerals affect the taste of water. Iron and manganese produce a metallic taste. Manganese can also pass on a bitter flavor and can be the cause of an oily-looking film seen on brewed coffee. Calcium and magnesium, which are responsible for water being "hard," actually can make water taste better. Generally, water is harder where calcium and magnesium rich limestone rocks are present. New Brighton pumps some of its water from aquifers in dolomite/limestone rock formation.

Odor and taste problems can originate in your own home. Water heaters are often a source of offensive odors in water, especially if you are away from home for long periods. Flushing or draining the water heater regularly can alleviate this problem.

If your drinking water does not taste or smell the way you would like (i.e., like



chlorine), fill a pitcher with tap water and let it stand in your refrigerator for a few hours prior to drinking the water. This will allow odors to dissipate and better tasting water should result. Change the water in the pitcher every couple of days.

New Brighton monitors and maintains all utility systems to ensure that safe and pleasing water is delivered to all residents in the community.

Lawn Sprinkling Policy

Summer water demand is high compared to the winter months. Lawn watering is the primary cause of increased water demand during the summer. The City of New Brighton has an on-going lawn sprinkling policy to ensure there will be adequate water available at all times plus reserves in storage for fire protection purposes.

New Brighton's lawn sprinkling policy states that even numbered addresses may sprinkle on even numbered calendar dates. Odd numbered addresses may sprinkle on odd numbered calendar dates. Newly seeded or sodded lawns may be sprinkled every day for a period not to exceed three weeks. The City asks that you avoid lawn sprinkling during the peak demand hours of 4:00 pm to 10:00 pm on hot, dry summer days. Violation of these policies is punishable by a fine of \$40.



the city that works for you

803 Old HWY 8 NW
New Brighton, MN 55112

PRSR STD
U.S. Postage
PAID
St. Paul, MN
Permit No.
3655

* * * * * ECRWSS * *

Postal Customer
New Brighton, MN 55112