Presented By

City of New Brighton

ANNUAL WATER QUALITY REPORT

Water Testing Performed in 2016

PWS ID#: 1620009

New Brighton's Water Supply

This is the City's annual water quality report for the period January 1 thru December 31, 2016. We can be proud of the Council's and staff's proactive response to the legacy water challenges the City has faced caused by its proximity to the Twin Cities Army Ammunition Plant (TCAAP). Staff worked diligently with consultants to design a treatment plant for the initially-detected TCAAP contaminants, and now is in the midst of constructing a new facility to deal with the latest TCAAP contaminant, 1,4-dioxane (dioxane).

In February 2015, the City was notified by the Minnesota Department of Health that dioxane has been found in small amounts in New Brighton's water supply wells. Dioxane is a solvent stabilizer used at TCAAP that may cause long-term human health effects. In response, City staff ceased using the affected wells (and Water Treatment Plant 1), and switched to using our deeper, uncontaminated Mt. Simon/Hinckley wells as the City's sole source of drinking water.

In January 2016, the City's consultants completed a technology screening report that recommended two Advance Oxidation Processes (AOPs) for pilot testing as dioxane removal systems. Following a six-month pilot test, a treatability study report was submitted to and approved by the City Council that recommended acquiring the preferred AOP treatment technology for removing dioxane at Water Treatment Plant 1.

To ensure an adequate supply of potable water during the time needed to acquire and install the AOP treatment system, City staff transitioned from the Mt. Simon/Hinckley wells to Minneapolis water, using a newly constructed interconnection pipeline. The city of Minneapolis provides drinking water to its residents from the Mississippi River, a surface drinking water source. New Brighton will remain on Minneapolis water until the Water Treatment Plant 1 expansion is complete and the AOP treatment system has been installed, tested, and is operational.

In May 2017, the City Council authorized staff to enter into contracts for the purchase of the AOP treatment system and for the Water Treatment Plant 1 expansion project. That work will be complete in the fall of 2018, at which time staff will cease supplying Minneapolis water and will resume full use of Water Treatment Plant 1, including the AOP dioxane removal equipment.

Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water that 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 these contaminants does not necessarily indicate the water poses a health risk.

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 naturally occurring minerals, in some cases, radioactive material, and substances resulting from the presence of animals or from human activity. Substances 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, or wildlife;

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may 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 may also come from gas stations, urban stormwater runoff, and septic systems;

Radioactive Contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons, such as those with cancer undergoing chemotherapy, those who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) 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 (800) 426-4791 or http://water.epa.gov/drink/hotline.

Fact or Fiction

A person can live about a month without food, but only about a week without water. *(Fact: Dehydration symptoms generally become noticeable after only 2% of one's normal water volume has been lost.)*

A person should consume a half-gallon of water daily to live healthily. *(Fact: A person should drink at least 64 ounces, or 8 cups, of water each day.)*

Methods for the treatment and filtration of drinking water were developed only recently. *(Fiction: Ancient Egyptians treated water by siphoning water out of the top of huge jars after allowing the muddy water from the Nile River to settle. And, Hippocrates, known as the father of medicine, directed people in Greece to boil and strain water before drinking it.)*

There is the same amount of water on Earth now as there was when the Earth was formed. *(Fact: The water that comes from your faucet could contain molecules that dinosaurs drank!)*

A typical shower with a non-low-flow showerhead uses more water than a bath. *(Fiction: A typical shower uses less water than a bath.)*

About half the water treated by public water systems is used for drinking and cooking. *(Fiction: Actually, the amount used for cooking and drinking is less than 1% of the total water produced!)*

One gallon of gasoline poured into a lake can contaminate approximately 750,000 gallons of water. *(Fact)*

Source Water Assessment

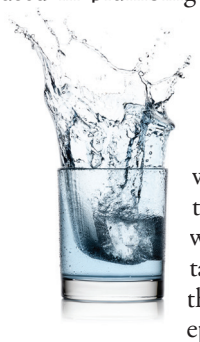
The City of New Brighton provides drinking water to its residents from the following ground water and surface water sources:

- Purchased treated water from the City of Minneapolis which obtains its water from a surface water source, the Mississippi River
- Six wells ranging from 295 - 522 feet deep, that draw water from the Prairie Du Chien Group and Prairie Du Chien-Jordan aquifers.

The Minnesota Department of Health has made a determination as to how vulnerable our systems source(s) 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.

Lead in Home Plumbing

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 is responsible for providing high-quality drinking water but cannot control the variety of materials used in plumbing components. When water has been sitting for several hours, one can minimize the potential for lead exposure by flushing the tap for 30 seconds to 2 minutes before using water for drinking or cooking. If there is concern about lead in drinking water, one may choose to have one's 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 www.epa.gov/lead.



QUESTIONS?

For more information about this report, or any questions relating to your drinking water, please call Jesse Hartman, Water Department Supervisor, at (651) 638-2114.

What type of container is best for storing water?

Consumer Reports has consistently advised that glass or BPA-free plastics such as polyethylene are the safest choices. To be on the safe side, do not use any container with markings on the recycle symbol showing "7 PC" (code for BPA). You could also consider using stainless steel or aluminum with BPA-free liners.

How much emergency water should I keep?

Typically, 1 gallon per person per day is recommended. For a family of four, that would be 12 gallons for 3 days. Humans can survive without food for 1 month, but can survive only 1 week without water.

How long can I store drinking water?

The disinfectant in drinking water will eventually dissipate, even in a closed container. If that container housed bacteria before it was filled with tap water, the bacteria may continue to grow once the disinfectant has dissipated. Some experts believe that water could be stored up to six months before needing to be replaced. Refrigeration will help slow the bacterial growth.

How long does it take a water supplier to produce one glass of drinking water?

It could take up to 45 minutes to produce a single glass of drinking water.

How many community water systems are there in the U.S.?

About 53,000 public water systems across the United States process 34 billion gallons of water per day for home and commercial use. Eighty-five percent of the population is served by these systems.

Which household activity wastes the most water?

Most people would say the majority of water use comes from showering or washing dishes; however, toilet flushing is by far the largest single use of water in a home (accounting for 40% of total water use). Toilets use about 4 to 6 gallons per flush, so consider an ultra-low-flow (ULF) toilet, which requires only 1.5 gallons.

Test Results

The City's water is monitored for many different kinds of contaminants on a very strict sampling schedule. The information below represents only those substances that were detected; the City's goal is to keep all detects below their respective maximum allowed levels. The State recommends monitoring for certain substances less often than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

The City participated in the 3rd stage of the U.S. EPA's Unregulated Contaminant Monitoring Rule (UCMR3) program by performing additional tests on the City's drinking water. UCMR3 benefits the environment and public health by providing the EPA with data on the occurrence of contaminants suspected to be in drinking water, in order to determine if the EPA needs to introduce new regulatory standards to improve drinking water quality. Contact the City for more information on this program. Monitoring may have been done for additional contaminants that do not have MCLs established for them and are not required to be monitored under the Safe Drinking Water Act. Results may be available by calling 651-201-4700 or 1-800-818-9318 during normal business hours.

REGULATED SUBSTANCES

				City of New Brighton		Minneapolis			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Alpha Emitters (pCi/L)	2016	15	0	8.8	NA	NA	NA	No	Erosion of natural deposits
Barium (ppm)	2012	2	2	0.04	NA	NA	NA	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chloramines (ppm)	2016	[4]	[4]	NA	NA	3.33[1]	2.6–3.6[2]	No	Water additive used to control microbes
Chlorine (ppm)	2016	[4]	[4]	1.21	0.1–5.6	NA	NA	No	Water additive used to control microbes
Combined Radium (pCi/L)	2016	5	0	5.1	NA	NA	NA	No	Erosion of natural deposits
Cryptosporidium in the river (oocysts/L)	2016	NA	NA	ND	ND	NA	ND-3	No	Human and animal fecal waste. Results are from raw water.
Fluoride (ppm)	2016	4	4	0.62	0.58–0.69	0.75	0.66–0.72	No	Erosion of natural deposits; Water additive that promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAAs] (ppb)	2016	60	NA	28.2	18.5–59.7	26.85	2.7–55.4	No	By-product of drinking water disinfection
Nitrate (ppm)	2016	10	10	NA	NA	0.52	NA	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
TTHMs [Total Trihalomethanes] (ppb)	2016	80	NA	22.75	10.1–46.3	25.18	8.7–33.3	No	By-product of drinking water disinfection
Total Organic Carbon[3] (% removal)	2016	TT	NA	NA	NA	NA	55.2–64.2	No	Naturally present in the environment
Turbidity[4] (NTU)	2016	TT	NA	NA	NA	0.18	NA	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2016	TT = 95% of samples meet the limit	NA	NA	NA	100%	NA	No	Soil runoff

Tap water samples were collected for lead and copper analyses from sample sites throughout the community.

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH%TILE)	SITES ABOVE AL/ TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2016	1.3	1.3	0.07	0/39	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2016	15	0	2.3	0/39	No	Corrosion of household plumbing systems; Erosion of natural deposits

[1] Value represents the highest quarterly average.
[2] Values represent the lowest and highest monthly averages.
[3] We are required to remove between 25 - 30 percent of Total Organic Carbon. The City has been in compliance in every quarter during 2016.
[4] Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system.

Definitions

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

LRAA (Locational Running Annual Average): The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters. Amount Detected values for TTHMs and HAAs are reported as LRAAs.

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.

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.

MRDL (Maximum Residual Disinfectant Level): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MRDLG (Maximum Residual Disinfectant Level Goal): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

NA: Not applicable

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

pCi/L (picocuries per liter): A measure of radioactivity.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

TT (Treatment Technique): A required process intended to reduce the level of a contaminant in drinking water.