



Water

2015 ANNUAL QUALITY REPORT

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Drinking water meets state safety standards

One of the most important services provided by the City of Savage is the delivery of drinking water to the community. It's a role the City takes very seriously. In addition to ensuring an adequate supply is always available, City staff carefully and regularly inspect the water to ensure it is of the highest quality.

Over the past several years, new treatment technologies have been implemented to guarantee everyone served by the City has safe drinking water.

Numerous tests were conducted in 2014 in accordance with Minnesota Department of Health and Environmental Protection Agency requirements. Once again, Savage's water meets all state and federal standards. Test results listed on the following pages show that contaminant levels are below the maximum limits allowed.

Why does the City produce this report each year?

This report is being provided to you in accordance with the Federal Safe Drinking Water Act. Amended by Congress in 1996, the Act includes a provision that requires all community water systems to deliver an annual water quality report to their customers. The goal of this provision, called the Consumer Confidence Report Rule, is to provide information about drinking water to customers. Specifically, the report aims to advance consumers' understanding of drinking water and heighten awareness of the need to protect water resources.

Information contained in this report covers monitoring that occurred on the system from Jan. 1 to Dec. 31, 2014.



Presented by the City of Savage
6000 McColl Drive
Savage, MN 55378
952-882-2660 | cityofsavage.com

Tested at the tap

Just as water picks up substances in the ground, it can also absorb lead or copper that exists in the plumbing of a home or business. These substances are regulated, and tests are conducted for their presence every three years.

Bottled water is regulated by the Food & Drug Administration, while tap water is regulated by the Environmental Protection Agency.



Federal regulations ensure water is safe to drink

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk.

To ensure tap water is safe to drink, the U.S. Environmental Protection Agency (EPA) prescribes regulations that 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.

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**.

Health considerations

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, and some elderly and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. Guidelines on appropriate means to lessen the risk from infections by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at **1-800-426-4791**.

Wells, quarry supply Savage with water

The City of Savage provides drinking water to more than 9,500 homes and over 500 businesses. The water is drawn from the ground using seven wells located throughout the community. The wells range from 152 to 1,029 feet deep and draw water from the Mt. Simon, Quaternary Buried Artesian, Prairie Du Chien Group and Franconia-Ironton-Galesville aquifers.

Water drawn from the wells is run through one of the City's two treatment plants for purification. It is then stored in a water tower or reservoir for future use.



Savage also distributes water that originates in and is treated by the City of Burnsville (See page 4). This arrangement allows the City of Savage to meet demands for water without adversely impacting the environment.

The Minnesota Department of Health has determined that these drinking water sources are not particularly susceptible to contamination. 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 **952-224-3400** if you have questions about the City's drinking water, or if you would like information about opportunities for public participation in decisions that may affect the quality of the water.



Contaminant (units)	MCLG	MCL	Level Found		Typical Source of Contaminant	Meets Standard
			Range 2014	Average/Result *		
Alpha Emitters (pCi/l) Test Date: 1/15/13	0	15.4	N/A	6.5	Erosion of natural deposits.	X
Barium Test Date: 1/15/13	2	2	.0216 - .39	.39	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.	X
Combined Radium (pCi/l) Test Date: 1/15/13	0	5.4	N/A	3.7	Erosion of natural deposits.	X
Fluoride (ppm) Test Dates: 1/7/14, 4/15/14, 7/14/14, 11/6/14	4	4	.96 - 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.	X
Haloacetic Acids (HAA5) (ppb) Test Dates: 2/4/14	0	60	5.3 - 6.7	6.7	By-product of drinking water disinfection.	X
Nitrate (as Nitrogen) (ppm) Test Date: 7/14/14	10.4	10.4	nd - .43	.43	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.	X
TTHM (Total trihalomethanes) (ppb) Test Dates: 2/4/14	0	80	18.5 - 25.2	25.2	By-product of drinking water disinfection.	X
Total Coliform Bacteria 30 per month	0	1	N/A	✓ 1	Naturally present in the environment.	X

* 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.

✓ Follow-up sampling showed no contamination present.

Contaminant (units)	MRDLG	MRDL	Highest/Lowest Monthly Avg.	Highest Quarterly Avg.	Typical Source of Contaminant	Meets Standard
Chlorine (ppm) Tested 30 times each month	4	4	.15 - 1.17	.57	Water additive used to control microbes.	X

Contaminant (units)	MCLG	AL	90% Level	# Sites Over AL	Typical Source of Contaminant	Meets Standard
Copper (ppm) Test Date: June 2013	1.3	1.3	.16	0 out of 30	Corrosion of household plumbing systems; erosion of natural deposits.	X
Lead (ppb) Test Date: June 2013	0	15	.6	0 out of 30	Corrosion of household plumbing systems; erosion of natural deposits.	X

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. City of Savage 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 orepa.gov/safewater/lead.

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.

Monitoring for unregulated contaminants as required by U.S. Environmental Protection Agency rules (40 CFR 141.40) was conducted in 2014. Results of the unregulated contaminant monitoring are available upon request from Cindy Swanson, Minnesota Department of Health, at 651/201-4656.

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 that 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).

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

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

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

N/A - Not Applicable (does not apply).

nd - No detection.

The tables on page 3 relate only to water drawn from wells in Savage. Homes and businesses in Savage also receive water via a pipeline that delivers groundwater collected from a quarry and treated by the **City of Burnsville**. This water accounts for 78.9 % of all water distributed in Savage.

The tables on this page relate to tests conducted on that water and all other water distributed by the City of Burnsville in 2014. In addition to the water from the quarry, the City of Burnsville gets its water from 17 wells that draw from the Jordan, Mt.Simon, Prairie Du Chien-Jordan, and Franconia-Mt. Simon aquifers.



Regulated substances

Burnsville

Contaminant (units)	MCLG	MCL	Level Found		Typical Source of Contaminant	Meets Standard
			Range 2014	*Average/Result		
Alpha Emitters (pCi/l)	0	15.4	N/A	7.4	Erosion of natural deposits.	X
Barium	2	2	N/A	.16	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.	X
Combined Radium (pCi/l)	0	5.4	N/A	3.7	Erosion of natural deposits.	X
Fluoride (ppm)	4	4	1 - 1.1	1.03	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.	X
Haloacetic Acids (HAA5) (ppb)	0	60	3.8 - 10.6	10.25	By-product of drinking water disinfection.	X
Nitrate (as Nitrogen) (ppm)	10.4	10.4	N/A	.6	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.	X
TTHM (Total Trihalomethanes) (ppb)	0	80	9.8 - 47	35.13	By-product of drinking water disinfection.	X

* 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.

Contaminant (units)	MCLG	MCL	**	***	Typical Source of Contaminant	Meets Standard
Turbidity (NTU)	N/A	TT	100	.226	Soil runoff.	X

** Lowest Monthly Percentage of Samples Meeting the Turbidity Limits *** Highest Single Measurement

Turbidity is a measure of the clarity of water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

Contaminant (units)	MRDLG	MRDL	Highest/Lowest Monthly Avg.	Highest Quarterly Avg.	Typical Source of Contaminant	Meets Standard
Chlorine (ppm)	4	4	.6 - .9	.72	Water additive used to control microbes.	X

Contaminant (units)	Unit	% Removal Required	% Removal Achieved	# of Quarters out of Compliance	Typical Source of Contaminant	Meets Standard
Total Organic Carbon	% Removed	* N/A	0 - 56.6 %	0	Naturally present in the environment.	X

* System uses direct filtration for surface water treatment. Direct filtration systems are not required to achieve total organic carbon percent removal levels.

Contaminant (units)	MCLG	AL	90% Level	# Sites Over AL	Typical Source of Contaminant	Meets Standard
Copper (ppm) Test Date: 7/25/12	1.3	1.3	.33	0 out of 30	Corrosion of household plumbing systems; erosion of natural deposits.	X
Lead (ppb) Test Date: 7/25/12	0	15	1.2	0 out of 30	Corrosion of household plumbing systems; erosion of natural deposits.	X

Substances absorbed by water

Prior to being tapped for distribution, the City's drinking water moves through the ground, dissolving natural minerals and, in some cases, radioactive material that are in its path. In addition, the water may absorb substances resulting from the presence of animals or human activity. As a result, the following substances may be present in the water prior to treatment:



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.

Water conservation essential for maintaining supply

Despite our seeming abundance of water, conservation is still essential in Minnesota. In parts of the Metropolitan Area, groundwater levels are dropping much faster than the water can be replenished. In addition, some agricultural regions in Minnesota are especially vulnerable to drought, which can affect crop yields and municipal supplies. It's important we use our water wisely. Below are some tips to help you and your family conserve.

- Fix running toilets – they can waste around 200 gallons a day or more.
- Turn the faucet off while brushing your teeth.
- Shower instead of bathe. Taking a bath uses (on average) more water than showering.
- Only run full loads of laundry, and set the washing machine to the correct water level.
- Only run a dishwasher when it's full.
- Use water-efficient appliances (look for the WaterSense label).

The U.S. Environmental Protection Agency's website has more great tips about how you can conserve, and save money in the process. Visit www.epa.gov/WaterSense/pubs/fixleak.html.



Restrictions promote wise water use

Residents and business owners are reminded that outdoor watering restrictions are in effect throughout the year.

The restrictions are intended to conserve water by encouraging use at the most effective times of the day. Watering the lawn, washing the car, and other uses of water outdoors are not allowed between noon and 5 p.m. any day of the week.

Outdoor watering may occur before noon and after 5 p.m. according to an odd/even schedule determined by address number. Those with even-numbered addresses may water on even dates, while those with odd-numbered addresses may water on odd dates.

Landscaping, including newly seeded or sodded lawns, may be watered as needed (outside the hours of noon to 5 p.m.) for the first 30 days of installation. Those with private wells are exempt from the City's outdoor watering restrictions.

Savage's wellhead plan protects aquifers

The City of Savage has developed a Wellhead Protection Plan to protect the groundwater aquifers that supply Savage's municipal wells. An aquifer is an underground geologic formation (usually a sand deposit or bedrock layer) that is capable of storing and supplying water to a well.

Water supply wells can become polluted when substances that are harmful to human health infiltrate from the land surface down to the groundwater aquifers. Wells that pump from these aquifers can become unusable when the level of contamination rises above health standards.

The Wellhead Protection Plan identifies sources of contamination that could pollute local groundwater aquifers and enter the community's water supply wells. The ultimate goal of this plan is to help ensure that the City continues to provide residents with a safe and abundant supply of clean drinking water for generations to come.

Property owners can take the following steps to help wellhead protection planning efforts succeed:

- Identify possible sources of contamination on your property (wells, tanks, septic systems, hazardous wastes, etc.).
- Make sure any potential sources of contamination under your control meet all local, state, and federal regulations.
- Use potentially hazardous products only as directed and dispose of them properly when done. Visit Scott County's website, www.co.scott.mn.us, for information about waste collection locations and times.
- Practice proper turf management and avoid over-fertilization of your lawn.
- Seal any unused wells on your property, according to Minnesota Well Code.
- Report any spills you observe or discover. Spills as small as 5 gallons of fuel can contaminate millions of gallons of water.
- Conserve water whenever possible.

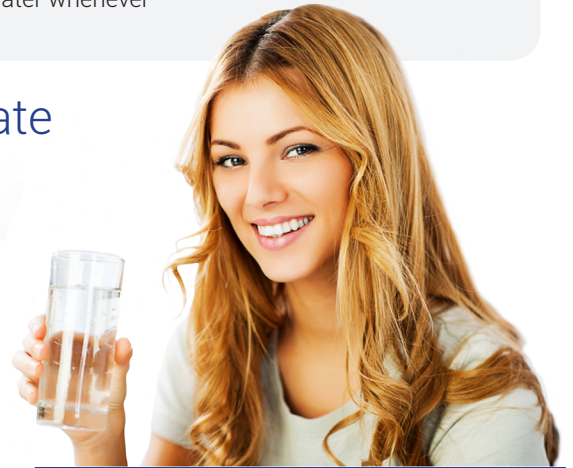
Backflow, cross connections can contaminate

Do your part to help prevent the problems caused by backflow and cross connections. Backflow occurs when the pressure of a polluted source exceeds that of the drinking water supply, which can pull contaminants back into the drinking water supply. It can result in contaminants, including hazardous chemicals and bacteria, mixing with drinking water. Cross connections – an actual or potential connection between a drinking water and non-drinking water supply – are sources of backflow problems.

Residential and commercial property owners should be concerned and diligent about backflow and cross connections. A garden hose can often be a cross connection. Someone spraying an herbicide with a cross connection could have some of the herbicide pulled back into the home plumbing, especially if there is a drop in the water pressure while the garden hose with the herbicide is attached.

The Minnesota Department of Health and American Water Works Association recommend the following precautions:

- Do not submerge hoses in buckets, pools, tubs, or sinks.
- Keep the end of the hose clear of possible contaminants.
- Do not use spray attachments without a backflow prevention device, and attach those devices to threaded faucets. Such devices are inexpensive and available at hardware stores.
- If a plumber is used to install backflow prevention devices, make sure the plumber is licensed to ensure that local codes and manufacturer's recommendations are met.
- Commercial property owners should develop a cross connection plan to minimize the risk of drawing contaminants into uncontaminated areas.
- Maintain air gaps between hose outlets and any liquids. Air gaps are vertical separations between an outlet and the flood-level rim of a vessel. The gap should be at least twice the diameter of the water supply outlet, or at least one inch – whichever is greater.



If you have a question about management of potential contamination sources, or you wish to view a copy of Savage's Wellhead Protection Plan, contact Public Works at **952-224-3400**.

DID YOU KNOW?

Running toilets can waste around 200 gallons a day or more!