



## 2017 Water Quality Report



*we pledge, we deliver*



*In our 20th annual  
Drinking Water Quality Report,  
we are pleased to announce that water  
provided by Rochester Public Utilities (RPU)  
meets all State and Federal drinking water standards.  
RPU is dedicated to one clear goal – Quality First.  
With a focus on customer service and efficiency  
in operations, we continue to strive for excellence  
through effective water quality programs that will  
ensure a safe and reliable drinking water supply  
for years to come. This report contains the results  
of monitoring done on your drinking water for the  
period from January 1 to December 31, 2017.  
The purpose of this report is to advance consumers’  
understanding of drinking water and  
heighten awareness of the need to  
protect our precious water resources.*

## **Making Safe Drinking Water**

Water is pumped from 31 deep groundwater wells located throughout the city. Most wells are 24 inches in diameter and extend 400-1,000 feet in depth. Water in the Rochester municipal system is drawn from water-bearing rock layers called aquifers. An aquifer is any type of geologic material, such as sand or sandstone, that can supply water to wells or springs. Most of Rochester’s water is drawn from the Jordan Aquifer, a deep sedimentary unit that underlies much of southeastern Minnesota. Water is also drawn from several multi-formation wells including: Prairie du Chien-Jordan, Prairie du Chien-Wonewoc, Jordan-Wonewoc, and Prairie du Chien-Mt. Simon aquifers.

Contact Todd Osweiler, Environmental & Regulatory Affairs Coordinator, at 507-280-1589 or [tosweiler@rpu.org](mailto:tosweiler@rpu.org) if you have questions about Rochester’s drinking water. You can also ask for information about how you can take part in decisions that may affect water quality.

The U.S. Environmental Protection Agency sets safe drinking water standards. These standards limit the amounts of specific contaminants allowed in drinking water. This ensures that tap water is safe to drink for most people. The U.S. Food and Drug Administration regulates the amount of certain contaminants in bottled water. Bottled water must provide the same public health protection as public tap water.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency’s Safe Drinking Water Hotline at 1-800-426 4791.



# Compliance with National Primary Drinking Water Regulations

Minnesota's primary drinking water sources are ground-water and surface water. Groundwater is the water found in aquifers beneath the surface of the land. Groundwater supplies 75 percent of Minnesota's drinking water. Surface water is the water in lakes, rivers, and streams above the surface of the land. Surface water supplies 25 percent of Minnesota's drinking water.

Contaminants can get in drinking water sources from the natural environment and from people's daily activities. There are five main types of contaminants in drinking water sources:

- **Microbial contaminants** such as viruses, bacteria, and parasites. Sources include sewage treatment plants, septic systems, agricultural livestock operations, pets, and wildlife.
- **Inorganic contaminants** include salts and metals from natural sources (e.g. rock and soil), oil and gas production, mining and farming operations, urban storm-water runoff, and wastewater discharges.
- **Pesticides and herbicides** are chemicals used to reduce or kill unwanted plants and pests. Sources include agriculture, urban stormwater runoff, and commercial and residential properties.

- **Organic chemical contaminants** include synthetic and volatile organic compounds. Sources include industrial processes and petroleum production, gas stations, urban stormwater runoff, and septic systems.
- **Radioactive contaminants** such as radium, thorium, and uranium isotopes come from natural sources (e.g. radon gas from soils and rock), mining operations, and oil and gas production.

The Minnesota Department of Health provides information about your drinking water source(s) in a source water assessment, including:

- How Rochester is protecting drinking water source(s);
- Nearby threats to your drinking water sources;
- How easily water and pollution can move from the surface of the land into drinking water sources, based on natural geology and the way wells are constructed.

Find your source water assessment at Source Water Assessments ([www.health.state.mn.us/divs/eh/water/swp/swa/](http://www.health.state.mn.us/divs/eh/water/swp/swa/)) or call 651-201-4700 or 1-800-818-9318 between 8:00 a.m. and 4:30 p.m., Monday through Friday.



## Results of Monitoring

This report contains our monitoring results from January 1 to December 31, 2017.

RPU works with the Minnesota Department of Health to test drinking water for more than 100 contaminants. It is not unusual to detect contaminants in small amounts. No water supply is ever completely free of contaminants. Drinking water standards protect Minnesotans from substances that may be harmful to their health.

Learn more by visiting the Minnesota Department of Health's webpage Basics of Monitoring and Testing of Drinking Water in Minnesota ([www.health.state.mn.us/divs/eh/water/factsheet/com/sampling.html](http://www.health.state.mn.us/divs/eh/water/factsheet/com/sampling.html)).

The tables on the following pages show the contaminants we found last year or the most recent time we sampled for that contaminant. They also show the levels of those contaminants and the Environmental Protection Agency's limits. Substances that we tested for but did not find are not included in the tables.

RPU may have done additional monitoring for contaminants that are not included in the Safe Drinking Water Act.

To request a copy of these results, call the Minnesota Department of Health at 651-201-4700 or 1-800-818-9318 between 8:00 a.m. and 4:30 p.m., Monday through Friday.

No contaminants were detected at levels that violated State or Federal drinking water standards. However, some contaminants were detected in trace amounts that were below legal limits. The table that follows shows the contaminants that were detected in trace amounts last year. Some contaminants are sampled less frequently than once a year; as a result, not all contaminants were sampled for in 2017. 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. In 2017 we also collected and tested over 1,200 water samples for coliform bacteria, which showed no bacteria present in the water.



## Regulated Substances

Parameter	Units	MCLG	MCL	Range (2017)	Avg./Results*	Violation	Typical Source
Gross Alpha	pCi/l	0	15.4	3.5-10.0	9.4	No	Erosion of natural deposits.
Barium	ppm	2	2	0.03-0.11	0.11	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Chlorine **	ppm	4	4	0.54 – 0.84 **	0.77 ***	No	Water additive used to control microbes.
Combined Radium	pCi/l	0	5.4	1.2-4.4	4.4	No	Erosion of natural deposits.
Fluoride	ppm	4	4	0.67-0.70	0.68	No	Erosion of natural deposits; Water additive to promote strong teeth
Haloacetic Acids (HAA5)	ppb	0	60	1-5.1	4.3	No	By-product of drinking water disinfection.
Nitrate (as Nitrogen)	ppm	10	10.4	0.00-0.77	0.77	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
THM (Total trihalo-methanes)	ppb	0	80	3-13.9	13	No	By-product of drinking water disinfection.
Tetrachloro-ethylene	ppb	0	5	0.00-1.50	0.73	No	Leaching from PVC pipes; discharge from factories and dry cleaners.
Trichloroethyl-ene (TCE)	ppb	0	5	0.00–0.57	0.2	No	Discharge from metal degreasing sites and other factories.
Total Coliform Bacteria	Presence / Absence	0	>5 %	N/A	1%	No	Naturally present in the environment.

\* 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.

\*\* Highest and Lowest Monthly Average.

\*\*\* Highest Quarterly Average.

## Lead and Copper- Tested at Customer Taps

Substance	MCLG	AL	90% Level	# of sites over AL	Violation	Typical Source
Lead (ppb) (July 2016)	0	15	3.6	1 out of 50	No	Corrosion of household plumbing systems; Erosion of natural deposits.
Copper (ppm) (July 2016)	1.3	1.3	0.95	0 out of 50	No	Corrosion of household plumbing systems; Erosion of natural deposits.

RPU samples and tests for Lead and Copper every 3 years to comply with the EPA's Lead & Copper Rule. The next round of sampling and testing is July 2019.

## Unregulated Substances in the Source Water

Parameter	Units	SMCL/MCLG	Avg./Results	Effects – Source
Alkalinity	ppm	N/A	260	Carbonate rocks (limestone)
Aluminum	ppm	0.05 to 0.2	0.005	Colored water
Calcium	ppm	N/A	72	Mineral deposits from rock.
Chloride	ppm	250	4.67	Salty taste
Copper	ppm	1.3	0.3	Corrosion of household plumbing systems; Erosion of natural deposits.
Hardness, Total	ppm	N/A	283	Mineral deposits
Hardness, Total	gpg	N/A	17	Mineral deposits
Iron	ppm	0.3	0.28	Rusty color, staining, metallic taste
Lead	ppb	1.5	0	Corrosion of household plumbing systems; Erosion of natural deposits.
Manganese	ppm	0.05	0.04	Black-to-brown color, staining, metallic taste
Magnesium	ppm	N/A	24.5	Mineral deposits from rock.
pH	pH	6.5 to 8.5	7.5	Corrosion, metallic taste if below 6.5; deposits, slippery feel, soda taste if above 8.5
Sodium	ppm	20	10	Salty taste – Erosion of natural deposits. (range 1.25 to 10)
Sulfate	ppm	250	45.9	Laxative effect – Erosion of natural deposits. (range 10.6 to 45.9)
Total Dissolved Solids	ppm	500	330	Hardness, deposits, colored water, staining, salty taste
Turbidity	Ntu	N/A	<1	Refers to how clear the water is.

### Key

MCL . . . . . (Maximum Contaminant Level) Highest level of a contaminant 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) 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.

N/A . . . . . Not Applicable.

ND . . . . . Not Detected.

NT . . . . . Not Tested.

ppm . . . . . Parts per million.

ppb . . . . . Parts per billion.

gpg . . . . . Grains per gallon.

PCi/L . . . . . Pico curies per liter (a measure of radioactivity).

Range . . . . . Lowest to the highest a contaminant was detected in 2017.

AL . . . . . Action Level is the concentration of a contaminant which triggers treatment or another requirement which a water system must follow.

90% Level . . . . . 90% of samples must be below the AL.

SMCL . . . . . Secondary Maximum Contaminant Level.

Ntu . . . . . Nephelometric units.

## Fluoride

Fluoride is nature's cavity fighter, with small amounts present naturally in many drinking water sources. There is an overwhelming weight of credible, peer-reviewed, scientific evidence that fluoridation reduces tooth decay and cavities in children and adults, even when there is availability of fluoride from other sources, such as fluoride toothpaste and mouth rinses. Since studies show that optimal fluoride levels in drinking water benefit public health, RPU adjust the level of fluoride in the water to a concentration between 0.5 and 0.9 ppm to protect your teeth. Fluoride levels below 2.0 ppm are not expected to increase the risk of a cosmetic condition known as enamel fluorosis.

## Lead in Drinking Water

You may be in contact with lead through paint, water, dust, soil, food, hobbies, or your job. Coming in contact with lead can cause serious health problems for everyone. There is no safe level of lead. Babies, children under six years, and pregnant women are at the highest risk.

Lead is rarely in a drinking water source, but it can get in your drinking water as it passes through lead service lines and your household plumbing system. Rochester provides high quality drinking water, but it cannot control the plumbing materials used in private buildings.

**Read below to learn how you can protect yourself from lead in drinking water.**

1. **Let the water run** for 30-60 seconds before using it for drinking or cooking if the water has not been turned on in over six hours. If you have a lead service line, you may need to let the water run longer. A service line is the underground pipe that brings water from the main water pipe under the street to your home.
  - You can find out if you have a lead service line by contacting your public water system, or you can check by following the steps at: Are your pipes made of lead? Here's a quick way to find out ([www.mprnews.org/story/2016/06/24/npr-find-lead-pipes-in-your-home](http://www.mprnews.org/story/2016/06/24/npr-find-lead-pipes-in-your-home)).

- The only way to know if lead has been reduced by letting it run is to check with a test. If letting the water run does not reduce lead, consider other options to reduce your exposure.
2. **Use cold water** for drinking, making food, and making baby formula. Hot water releases more lead from pipes than cold water.
  3. **Test your water.** In most cases, letting the water run and using cold water for drinking and cooking should keep lead levels low in your drinking water. If you are still concerned about lead, arrange with a laboratory to test your tap water. Testing your water is important if young children or pregnant women drink your tap water.
    - Contact a Minnesota Department of Health accredited laboratory to get a sample container and instructions on how to submit a sample:  
***Environmental Laboratory Accreditation Program*** (<https://apps.health.state.mn.us/eldo/public/accreditedlabs/labsearch.seam>)  
The Minnesota Department of Health can help you understand your test results.
  4. **Treat your water** if a test shows your water has high levels of lead after you let the water run.
    - Read about water treatment units:  
***Point-of-Use Water Treatment Units for Lead Reduction*** ([www.health.state.mn.us/divs/eh/water/factsheet/com/poulead.html](http://www.health.state.mn.us/divs/eh/water/factsheet/com/poulead.html))

### Learn more:

- **Visit *Lead in Drinking Water*** ([www.health.state.mn.us/divs/eh/water/contaminants/lead.html#Protect](http://www.health.state.mn.us/divs/eh/water/contaminants/lead.html#Protect))
- **Visit *Basic Information about Lead in Drinking Water*** ([www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead))
- **Call the EPA Safe Drinking Water Hotline at 1-800-426-4791** to learn about how to reduce your contact with lead from sources other than your drinking water, visit **Lead Poisoning Prevention: Common Sources** ([www.health.state.mn.us/divs/eh/lead/sources.html](http://www.health.state.mn.us/divs/eh/lead/sources.html)).

# Water Conservation

RPU continues to offer rebates on qualifying efficient equipment purchases to promote and encourage water conservation. For full details and available rebates, visit [www.rpu.org](http://www.rpu.org). Through RPU's Conserve & Save® rebate program, a water savings of over 4.2 million gallons was attained in 2017!

## CONSERVE & \$AVE

How can you learn to save water, energy, and money?

Watch for TIPS FROM TONY!  
Visit our website at [www.rpu.org](http://www.rpu.org) for more.



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