



# MADISON WATER UTILITY

## Annual Water Quality Report

A SUMMARY OF WATER TESTING CONDUCTED IN 2023

**PARA ESPAÑOL  
HAGA CLIC AQUÍ**

This annual report complies with federal and state drinking water regulations, which require us to provide water quality information to our customers each year. Unless otherwise noted, results are based on testing conducted in 2023. We are pleased to report that we continue to supply high quality water that meets or exceeds all federal and state standards for health and safety. **Test results are summarized on page 3.** Visit our website, [madisonwater.org](http://madisonwater.org), to learn about our programs and projects.

## Quality & Reliability Since 1882

### YOUR WATER SOURCE

Madison's drinking water comes from a deep sandstone aquifer that sits hundreds of feet below the city. The water originates as rain or snow that slowly soaks into the ground and is filtered through layers of soil and rock. This natural filtration process produces excellent water for us to enjoy.

### WHICH WELL SERVES MY ADDRESS?

The Madison water system consists of 20 active wells and over 900 miles of interconnected pipes. Most locations receive water from one to three wells. Our website has an application that can tell you which wells supply water to your home or business. There are links to detailed reports with the latest water quality test results. For more information, call the Water Utility or go to [madisonwater.org](http://madisonwater.org).

### WHAT KEEPS OUR WATER SAFE?

The high-quality aquifer supplying our drinking water requires little treatment. Madison Water Utility disinfects the water with chlorine to reduce the risk of microbial contamination. A small amount of chlorine kills bacteria and viruses that can be present in groundwater. Chlorine also travels with the water and is ready to kill microbes that it might encounter in the system. Our goal is to maintain a chlorine residual above 0.1 milligrams per liter (mg/L) at all points in the distribution system. Typical concentrations range from 0.2 to 0.4 mg/L.

#### Did You Know?

One 12-ounce cup of salt is enough to treat a 20-foot driveway or 10 sidewalk squares when it snows. Reducing winter salt use helps protect Madison's drinking water. Learn more at [wisaltwise.com](http://wisaltwise.com)

### HOW ELSE IS THE WATER TREATED?

Fluoride is added to Madison drinking water to improve dental health and reduce tooth decay. The US Centers for Disease Control and Prevention (CDC) and Wisconsin Department of Health Services recommend maintaining an average fluoride level of 0.7 mg/L. Water from each well is tested daily to achieve this target. In 2023, the system-wide average of 6,696 tests was 0.67 mg/L.

Three wells have filters that remove more than 95% of the iron and manganese before it enters the piping system. These filters reduce the occurrence of rust-colored water at the customer tap.

### DO I NEED TO TAKE SPECIAL PRECAUTIONS?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as those 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* and other microbial contaminants are available from the Environmental Protection Agency's Safe Drinking Water Hotline at **800-426-4791**.

*Cryptosporidium* and *Giardia*, two organisms commonly linked to water-borne illness, are found primarily in surface waters such as lakes and rivers. Because Madison's drinking water comes from a deep groundwater aquifer, these organisms do not pose a significant health risk in Madison tap water.

# MadCAP

Madison Customer Assistance Program

MadCAP assists eligible households by providing up to a \$30 monthly credit, or discount, on their Municipal Services Bill. The MadCAP program credit spreads across all Municipal Services, not just water. The credit is automatically applied monthly to customer bills and does not need to be repaid. Call **608-266-4651** or visit [madisonwater.org](http://madisonwater.org) for more information.

## POTENTIAL CONTAMINANTS IN DRINKING WATER AND THEIR LIKELY SOURCES

Sources of drinking water, both tap water and bottled water, include rivers, lakes, springs, and wells. As water travels over the surface of the land and through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Types of potential contaminants and their likely sources include:

- **Microbial contaminants**, such as viruses and bacteria, may come from leaky sewer pipes, septic systems, agricultural livestock operations, and wildlife.
- **Inorganic contaminants**, including metals, minerals, nutrients, and salts, can occur naturally or they may result from urban stormwater runoff, industrial wastewater discharges, mining, or farming activities.
- **Organic contaminants**, including synthetic and volatile organic compounds, are by-products of industrial processes that can come from chemical spills, gas stations, urban stormwater runoff, and septic systems.
- **Pesticides and herbicides** may come from a variety of sources such as agriculture, urban stormwater runoff, and residential use.
- **Radioactive substances** may occur naturally in rock formations and groundwater.

In order to ensure that tap water is safe, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Routine monitoring helps to ensure that drinking water concentrations of any substance remain at safe levels.

### MICROBIOLOGICAL TESTING

**Bacteria** – To ensure drinking water safety, routine bacteriological tests are conducted. Over 200 distribution samples are collected each month from representative locations. Samples are tested for coliform bacteria, indicators of potential contamination. In 2023, the Water Utility collected 2,876 distribution samples. None tested positive for coliform bacteria. The absence of coliform positive samples reflects good source water quality and adequate disinfection maintained in the distribution system.

### THE EPA ON DRINKING WATER CONTAMINANTS

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 (EPA) Safe Drinking Water Hotline, **800-426-4791**, or visiting: [www.epa.gov/ground-water-and-drinking-water](http://www.epa.gov/ground-water-and-drinking-water).

## Lead and Copper

The landmark Lead Service Replacement program helped our community remove or replace nearly 8,000 lead pipes between 1995 and 2011. Water quality tests conducted in 2023 (see table) continue to show that lead and copper corrosion has been minimized.

	Ideal Goal (MCLG)	Action Level (AL)	90th Percentile	Range	Samples Above AL
Lead (ppb)	zero	15	1.8	<0.5 – 5.8	0 of 50
Copper (ppb)	1300	1300	150	77 - 210	0 of 50

Elevated levels of lead can cause serious health problems, especially for pregnant people and young children. Lead in drinking water primarily comes from lead service pipes and household plumbing components. While Madison Water Utility has removed all known lead services, we cannot control the materials found in household plumbing components. Some faucets, fixtures, and pipes in your house could still contain lead. The longer water sits in the plumbing system, the more lead it may contain. You can minimize the potential for lead exposure by running water from a faucet for 2 to 3 minutes before using it for drinking or cooking. For more information on lead safety, go to [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).

Are you concerned about lead? Test your water. Contact a certified lab to get lead testing information: **Public Health Madison & Dane County, 608-266-4821; State Laboratory of Hygiene, 608-224-6202.**

## How to Read the Water Quality Data Table

The EPA and Wisconsin Department of Natural Resources (WDNR) establish the safe drinking water regulations that limit the amount of contaminants allowed in drinking water. The table shows the concentrations of detected substances in comparison to the regulatory limits. Substances not detected are not included in the table.

### Maximum Contaminant Level (MCL)

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 technology.

### Maximum Contaminant Level Goal (MCLG)

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.

### Action Level (AL)

The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a public water system shall follow.

### Units in the Table

- One milligram per liter (mg/L) equals one part per million (ppm)
- One microgram per liter (µg/L) equals one part per billion (ppb)
- One milligram per liter equals 1,000 micrograms per liter
- One part per billion is equal to 1,000 parts per trillion (ppt)
- One ppb is analogous to one second in 32 years
- Picocurie per liter (pCi/L) is a measure of radioactivity
- nd = not detected

**IMPORTANT NOTE ABOUT THE TABLE:** The table reports the maximum and minimum concentrations for each substance found in at least one well. Several substances are found only in a few wells. Contaminant levels reported in the table may not be representative of the water quality at your home. Visit [madisonwater.org](http://madisonwater.org) or call **608-266-4654** to get more information about water quality for the well that serves your home or business.

# Water Quality Table

Substance Detected (units)	Ideal Goal (MCLG)	Highest Level Allowed (MCL)	Median Level Found	Range of Results	Violation (Yes/No)	Wells with Detections	Typical Source of Substance
<b>Regulated Substances</b>							
Atrazine (ppb)	3	3	nd	nd - 0.03	NO	11,13,14,16,25,29	Runoff from herbicide used on row crops
Barium (ppb)	2,000	2,000	21	6.7 - 73	NO	All wells	Erosion of natural deposits; Discharge from metal refineries
Chromium, Total (ppb)	100	100	nd	nd - 1.7	NO	Wells 6, 13 & 14	Erosion of natural deposits; Discharge from steel and pulp mills
1,1-Dichloroethylene (ppb)	7	7	nd	nd - 0.3	NO	Well 18	Discharge from industrial chemical factories
1,2-Dichloroethylene, cis (ppb)	70	70	nd	nd - 0.4	NO	Wells 7 & 11	Discharge from industrial chemical factories; Biodegradation of PCE and TCE
Fluoride (ppm)	4	4	0.8	0.6 - 0.8	NO	All Wells	Erosion of natural deposits; Added to promote strong teeth
Nickel (ppb)	n/a	100	1.3	nd - 2.9	NO	Fourteen wells	Erosion of natural deposits; Electroplating, stainless steel and alloy products
Nitrate (ppm)	10	10	1.0	nd - 4.0	NO	Thirteen wells	Fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
PFOA (ppt)	20*	70	nd	nd - 1.9	NO	6,7,9,11,13,14,16,26,27	Firefighting foam; Landfills, food packaging, clothing, fabrics, upholstery
PFOS (ppt)	20*	70	nd	nd - 1.6	NO	6,9,11,16,26	Firefighting foam; Landfills, food packaging, clothing, fabrics, upholstery
Selenium (ppb)	50	50	nd	nd - 1.6	NO	Wells 6 and 14	Erosion of natural deposits; Petroleum and metal refineries
Tetrachloroethylene [PCE] (ppb)	zero	5	nd	nd - 5.9	NO	6,7,9,11,18	Discharge from factories, dry cleaners, and auto shops
Trichloroethylene [TCE] (ppb)	zero	5	nd	nd - 0.7	NO	Wells 7, 11 & 18	Discharge from metal degreasing sites, other factories
Xylene, Total (ppb)	10,000	10,000	nd	nd - 0.3	NO	Well 9	Discharge from petroleum and chemical factories
<b>Radionuclides</b>							
Gross Alpha (pCi/L) - 2020 data	zero	15	2.4	0.7 - 11	NO	All Wells	Erosion of natural deposits
Radium, 226+228 (pCi/L)	zero	5	2.3	nd - 5.5	NO	7,19,24,27,28,30	Erosion of natural deposits
<b>Disinfection By-Products (Distribution)</b>							
Haloacetic Acids (ppb)	60	60	1.0	0.4 - 2.9	NO	n/a	By-product of drinking water chlorination
Total Trihalomethanes (ppb)	zero	80	1.4	0.7 - 11	NO	n/a	By-product of drinking water chlorination
<b>Unregulated Substances</b>							
Chromium, Hexavalent (ppb)	n/a	n/a	1.6	0.9 - 2.0	NO	Wells sampled: 6, 13, 14, & 16	Erosion of natural deposits; Chrome plating, leather tanning, wood preservation
1,1-Dichloroethane	n/a	n/a	nd	nd - 0.1	NO	Well 9	Discharge from industrial chemical factories
1,4-Dioxane (ppb)	n/a	n/a	0.3	0.3 - 0.4	NO	Sampled Well 11 only	Discharge from chemical factories; Cosmetics and detergents
Metolachlor (ppb)	n/a	n/a	nd	nd - 0.01	NO	Well 14	Runoff from herbicide used on row crops
Trichlorofluoromethane (ppb)	n/a	n/a	nd	nd - 0.8	NO	6,9,11,14,18	Discharge from industrial chemical factories; Degreaser, propellant, refrigerant
<b>Other Substances</b>							
<b>Aesthetic Goal</b>							
Chloride (ppm)	250		20	1.2 - 190	NO	All Wells	Erosion of natural deposits; Road salt application
Iron (ppm)	0.3		nd	nd - 0.21	NO	17,19,24,27,28	Erosion of natural deposits
Manganese (ppb)	50		4.7	nd - 42	NO	Thirteen wells	Erosion of natural deposits
Silver (ppm)	0.1		nd	nd - 0.00	NO	Well 25	Discharge from industrial chemical factories
Sodium (ppm)	n/a		8.8	2.2 - 71	NO	All Wells	Erosion of natural deposits; Road salt application
Sulfate (ppm)	250		17	5.7 - 36	NO	All Wells	Erosion of natural deposits
Zinc (ppb)	5,000		nd	nd - 15	NO	9,12,14,16,17,19,28	Erosion of natural deposits

\*Based on guidance provided by WI Dept of Health Services

Please call **608-266-4654** if you have any questions about the Water Quality Table, or email: [water@madisonwater.org](mailto:water@madisonwater.org)



## PFAS Testing

Madison wells are tested twice annually for up to 30 PFAS (per- and polyfluoroalkyl substances). The table summarizes the 2023 results. At least one PFAS was found in ten wells. All active Madison wells meet health-based groundwater standards recommended by the WI Dept. of Health Services (DHS) for 18 types of PFAS, and they meet every PFAS standard set by any other US state.

PFAS	HAL*	Range of Results	Wells with Detections
PFOA (ppt)	20	nd-1.9	6, 7, 9, 11, 13, 14, 16, 26, 27
PFBA (ppt)	10,000	nd-46	6, 9, 11, 13, 14, 16, 26, 27
PFPeA (ppt)	n/a	nd-2.2	6, 9, 11, 13, 14, 16, 26, 27
PFHxA (ppt)	150,000	nd-2.2	6, 9, 11, 13, 14, 16, 27
PFHpA (ppt)	n/a	nd-0.5	6, 13, 16
PFOS (ppt)	20	nd-1.6	6, 9, 11, 16, 26
PFBS (ppt)	450,000	nd-1.8	6, 9, 11, 13, 14, 16, 26, 27
PFPeS (ppt)	n/a	nd-0.7	Well 6
PFHxS (ppt)	40	nd-6.6	6, 7, 9, 11, 13, 14, 16, 18, 26, 27

\*Health Advisory Level (HAL): concentration of a contaminant that poses a health risk based on guidance provided by WI Dept of Health Services

PFAS are a large group of human-made chemicals widely used in industry and water-proof, non-stick, and stain-resistant consumer products. These chemicals are not currently regulated by the US EPA under the Safe Drinking Water Act. However, in 2022, Wisconsin DNR adopted drinking water standards for PFOA & PFOS – set at 70 parts per trillion.

You can find more information and sign up for our PFAS updates email list at [madisonwater.org](https://www.madisonwater.org)

## YOUR WATER SOURCE - GROUNDWATER

Madison's drinking water comes from a deep sandstone aquifer that sits hundreds of feet below the city. The water originates as rain or snow that slowly soaks into the ground and is filtered through layers of soil and rock.

### How Groundwater Occurs in Rocks

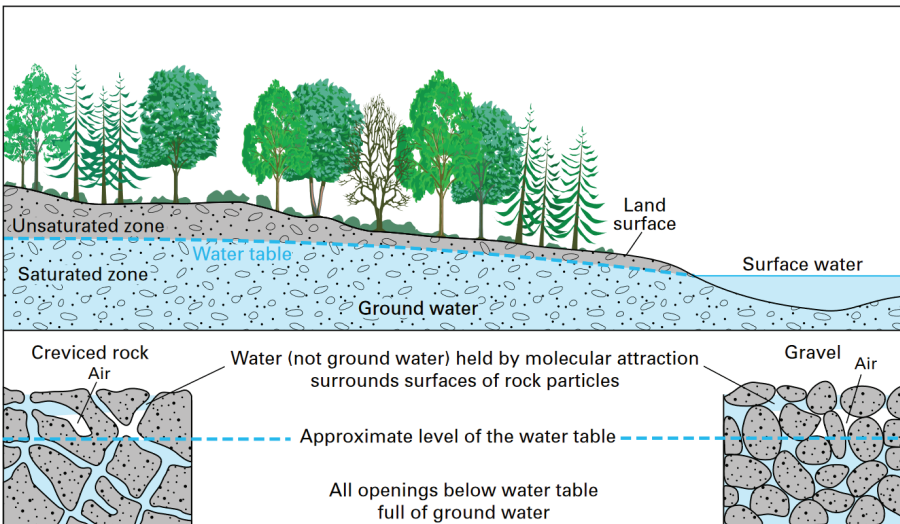


Image source: U.S. Geological Survey

## GENERAL INFORMATION

### Madison Water Utility

119 E. Olin Avenue  
Madison, WI 53713

- General Inquiries.....**608-266-4651**
- Water Quality Questions or to Request a Copy of this Report.....**608-266-4654**

### Certified Drinking Water Laboratories in Madison, WI:

- Public Health Madison & Dane County.....**608-266-4821**
- Wisconsin State Laboratory of Hygiene.....**608-224-6202**

## CONNECT WITH MADISON WATER UTILITY

- Website: [madisonwater.org](https://www.madisonwater.org)
- Facebook: [facebook.com/madisonwater](https://www.facebook.com/madisonwater)
- Twitter: [twitter.com/MadWaterUtility](https://twitter.com/MadWaterUtility)
- Instagram: [instagram.com/madison\\_water](https://www.instagram.com/madison_water)

Want to receive email updates on drinking water quality or water main flushing? Sign-up at [madisonwater.org](https://www.madisonwater.org)

## LANGUAGE SERVICES

- You have the right to free language services. Please call **608-266-4651** for more information.
- Usted tiene derecho a recibir servicio gratuito de intérprete. Por favor llame al teléfono **608-266-4651** para mayor información.
- Koj muaj tvoj cai tau kev pab txhais lus pub dawb. Thov hu rau **608-266-4651**.
- 您有權獲得免費的語言服務。請致電 **608-266-4651** 以了解更多信息。

## GET INVOLVED

Visit our [Projects](#) webpage to learn about Madison Water Utility public works projects and provide input.

Water Utility Board: Monthly meetings are held at 119 E. Olin Avenue, starting at 4:30 p.m.

### 2024 Board Meeting Dates:\*

May 28	August 27	November 27
June 25	September 25	
July 23	October 22	

\*Meeting dates are subject to change. Please find the official Board Meeting calendar at:

[cityofmadison.com/city-hall/committees/water-utility-board](https://www.cityofmadison.com/city-hall/committees/water-utility-board)