MADISON WATER UTILITY
2013 Water Quality Report

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In this report we provide information about the quality of your drinking water. 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. Detected contaminants are summarized on page 3. **Please see page 4 for an important notice about your water.** Also, check out our website, **madisonwater.org**, where you can find more information about water utility programs and projects.

Mission Statement

We are entrusted by the people of Madison to supply high quality water for consumption and fire protection, at a reasonable cost, while conserving and protecting our ground water resources for present and future generations.

WHICH WELL SERVES MY ADDRESS?

The Madison water system consists of 22 wells and over 840 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/myWells.**

Quality & Reliability since 1882

WHAT IS THE SOURCE OF MADISON TAP WATER?

Madison drinking water comes from a deep sandstone aquifer, an underground rock formation where water is stored in small spaces between and within rock. Groundwater in the Madison area originates as rain or snow that falls in Dane County, soaks into the ground, and is filtered through layers of soil and rock before replenishing the aquifer. Natural filtration produces high-quality water for us to enjoy.

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.

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 level. In 2013, the system-wide average of 5,020 tests was 0.70 mg/L.

DO I NEED TO TAKE SPECIAL PRECAUTIONS?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised 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.

Do Your Part To Protect Groundwater

- Properly dispose of household hazardous chemicals through Clean Sweep, **danecountycleansweep.com**
- Use non-toxic or biodegradable cleaning products
- Promote healthy lawns and gardens without the use of harmful chemicals, **clean-water.uwex.edu/pubs**
- Limit use of winter salt on sidewalks and driveways

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. On average, over 200 distribution samples are collected each month from representative locations. Samples are tested for coliform bacteria, indicators of potential contamination. In 2013, the Water Utility collected 2,821 distribution samples. None of these required samples showed the presence of coliform bacteria. These results reflect 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.

On the Web

» **Inside MWU** – News about your water and the people who keep it running.

» **Rebuilding & Renewing** – Learn about our plan to replace Madison's aging water mains.

» **Toilet Rebate Program** – Find out how to get $100 just for buying a water-efficient toilet!

» **Project News** – In 2014, MWU will oversee a variety of construction and engineering projects totaling more than $26 million. Learn how you can be involved.

» **Sustainability** – See what we're doing to protect Madison's water for future generations, and find out how you can help.

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 ppb is analogous to one second in 32 years
- Picocurie per liter (pCi/L) is a measure of radioactivity
- nd = non-detect

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** 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
Regulated Substances							
Antimony (ppb)	6	6	non-detect	nd - 0.2	No	Well 11	Discharge from petroleum refineries; fire retardants; electronics; ceramics; solder
Arsenic (ppb)	zero	10	0.2	nd - 0.7	No	Twelve wells	Erosion of natural deposits; Glass and electronics production
Barium (ppb)	2000	2000	20	7.8 - 66	No	All wells	Erosion of natural deposits; Discharge from metal refineries
Chromium, Total (ppb)	100	100	0.7	nd - 2.2	No	Thirteen wells	Erosion of natural deposits; Discharge from steel and pulp mills
1,2-Dichloroethylene, cis (ppb)	70	70	non-detect	nd - 0.37	No	Well 8 & Well 11	Discharge from industrial chemical factories; Biodegradation of PCE and TCE
Fluoride (ppm)	4	4	0.8	0.3 - 0.9	No	All wells	Erosion of natural deposits; Added to promote strong teeth
Nickel (ppb)	n/a	100	1.1	0.6 - 3.0	No	All wells	Occurs naturally in soil and water; Used in electroplating, stainless steel & alloy products
Nitrate (ppm)	10	10	0.8	nd - 4.3	No	Fifteen wells	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Selenium (ppb)	50	50	0.5	nd - 1.5	No	Thirteen wells	Erosion of natural deposits; Petroleum and metal refineries
Tetrachloroethylene [PCE] (ppb)	zero	5	non-detect	nd - 3.1	No	6, 9, 11, 14, 15, 18, 27	Discharge from factories, dry cleaners, and auto shops
Thallium (ppb)	0.5	2	non-detect	nd - 0.3	No	11, 17, 19, 23, 26, 27	Ore processing sites; Electronics, glass, and drug factories
1,1,1-Trichloroethane (ppb)	200	200	non-detect	nd - 0.20	No	Well 18	Discharge from metal degreasing sites and other factories
Trichloroethylene [TCE] (ppb)	zero	5	non-detect	nd - 0.39	No	11, 14, 15, 18	Discharge from metal degreasing sites and other factories
Xylene, Total (ppb)	10000	10000	non-detect	nd - 1.3	No	Tower 225	Discharge from chemical factories and petroleum factories
Radionuclides (2012 data)							
Gross Alpha (pCi/L)	zero	15	4.5	1.4 - 11	No	Data from two wells: 15 and 19	Erosion of natural deposits
Radium, 226+228 (pCi/L)	zero	5	2.6	0.1 - 4.8	No		Erosion of natural deposits
Total Uranium (ppb)	zero	30	1.3	1.0 - 1.6	No		Erosion of natural deposits
Disinfection By-Products (Distribution)							
Haloacetic Acids [HAA5] (ppb)	60	60	0.6	nd - 3.6	No	n/a	By-product of drinking water chlorination
Total Trihalomethanes [TTHM] (ppb)	zero	80	3.4	0.4 - 11	No	n/a	By-product of drinking water chlorination
Unregulated Substances							
Bromodichloromethane (ppb)	n/a	n/a	non-detect	nd - 1.5	No	7, 9, 17, 19, 23, 24, 26, 29	By-product of drinking water chlorination
Bromoform (ppb)	n/a	n/a	non-detect	nd - 0.9	No	6, 9, 15, 17, 18, 23, 24	By-product of drinking water chlorination
Chloroform (ppb)	n/a	n/a	non-detect	nd - 2.1	No	7, 9, 17, 19, 24, 29	By-product of drinking water chlorination
Chromium, Hexavalent (ppb)	n/a	n/a	0.5	nd - 1.9	No	Nineteen wells	Erosion of natural deposits; Chrome plating, leather tanning, wood preservation
Dibromochloromethane (ppb)	n/a	n/a	0.3	nd - 1.3	No	Fifteen wells	By-product of drinking water chlorination
1,1-Dichloroethane (ppb)	n/a	n/a	non-detect	nd - 0.07	No	Well 9	Discharge from industrial chemical factories
1,4-Dioxane (ppb)	n/a	n/a	non-detect	nd - 0.6	No	9, 11, 14, 15	Discharge from chemical factories; Cosmetics and detergents
Strontium (ppb)	n/a	n/a	78	48 - 105	No	All wells	Erosion of natural deposits
Trichlorofluoromethane (ppb)	n/a	n/a	non-detect	nd - 0.8	No	Well 11	Discharge from industrial chemical factories; Degreaser, propellant, refrigerant
Other Substances	**Aesthetic Goal**						
Chloride (ppm)	250		24	2.2 - 106	No	All wells	Erosion of natural deposits; Road salt application
Iron (ppm)	0.3		0.06	nd - 0.39	No	All except 9, 12, 14, 18, 20	Erosion of natural deposits
Manganese (ppb)	50		3.8	nd - 42	No	All except 16	Erosion of natural deposits
Sodium (ppm)	n/a		10	2.0 - 37	No	All wells	Erosion of natural deposits; Road salt application
Sulfate (ppm)	250		18	6.8 - 51	No	All wells	Erosion of natural deposits

Lead and Copper

The lead service line replacement program ended in 2012. This initiative successfully reduced lead exposure from Madison tap water. Water quality tests conducted in 2011 (see table) show that lead and copper corrosion have been minimized. Routine monitoring will occur in 2014.

	Ideal Goal (MCLG)	Action Level (AL)	90th Percentile	Range	Samples Above AL
Lead (ppb)	zero	15	3.0	nd - 21	2 of 201
Copper (ppb)	1300	1300	172	6 - 493	0 of 201

Important Notice About Your Drinking Water

MONITORING REQUIREMENT NOT MET

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. Between 07/15/2013 and 07/25/2013, we did not monitor for disinfection byproduct contaminants (the byproducts that occur when water is chlorinated). Samples were collected during this time period; however, a contracted laboratory made an error that resulted in the samples not being analyzed for some of the required disinfection byproducts. We therefore cannot be sure of the quality of your drinking water during that ten-day span. Re-samples were collected and analyzed in August. Samples were also collected, as required, in January, April, and October. The results were well below the federal regulatory limits (MCL) during each monitoring period.

The utility has been working with the laboratory to help ensure that a similar error does not occur in the future. There are no special precautions you need to take.

Winner, Best-Tasting Water in Wisconsin

In August of 2013, Madison competed in the Wisconsin Water Association (WWA) Water Taste-Test at the State Fair. After being judged against more than a dozen other Wisconsin municipalities, our water was voted best-tasting in the state. The first-place win qualifies Madison Water Utility to compete in the North American competition in Boston.

The Sustainable Choice

Did you know that 17 million barrels of crude oil are used every year to produce plastic water bottles? For the cost of one store-bought bottle of water, you can fill a reusable bottle 5,000 times with Madison tap water, which is tested thousands of times a year for quality and safety. We're committed to providing safe, clean water to every home, business, school and hospital in Madison and preserving our city's precious water supply for generations to come.

Information You Can Use

Madison Water Utility
119 E. Olin Avenue
Madison, WI 53713
608-266-4651

Water Utility General Manager: Tom Heikkinen
Water Utility Board President: Madeline Gotkowitz

Water Quality Dept. or questions about 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

GET THE LATEST MADISON WATER NEWS ONLINE

- Visit our website: **madisonwater.org**
- Find us on Facebook: **facebook.com/madisonwater**
- Follow us on Twitter: **twitter.com/MadWaterUtility**
- Get updates on drinking water quality or water main flushing: sign-up at **my.cityofmadison.com**

LANGUAGE SERVICES

- 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.
- You have the right to free language services. Please call 608-266-4651 for more information.

GET INVOLVED

- Visit our **Project News** website to learn about Madison Water Utility public works projects and provide input.
- Water Utility Board: Monthly meetings held at 119 E. Olin Avenue, starting at 4:30 p.m.

  2014 dates:*

April 30	August 26
May 27	September 23
June 24	October 28
July 22	November 25

*Meeting dates are subject to change; check the calendar at **madison.legistar.com/Calendar.aspx**

drink local

This annual report complies with state and federal drinking water regulations, which require us to provide water quality information to our customers every year. Unless otherwise noted, data reported in this report are based on monitoring results from calendar year 2013.