



Water & Wastewater Board of the City of Madison 2015 Drinking Water Quality Report

We are pleased to present our annual Drinking Water Quality Report. We designed this report to inform you about the quality of the drinking water delivered to you every day. Our goal is to provide you with a safe dependable supply of drinking water.

If you have questions about the report, please contact Jason Leggett at 256-772-0253 ext. 119 between the hours of 8:00 a.m. to 4:00 p.m. Monday through Friday. If you want more information you may visit our web site at www.madisonutilities.org. Our Board meetings are on the first and third Monday (unless otherwise posted) of each month at 5:30 p.m. in the conference room of Madison Utilities located at 101 Ray Sanderson Drive.

Health information about your water

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 and radioactive material, and it can pick up substances resulting from the presence of animals or from human activity.

To ensure that tap water is safe to drink, the Environmental Protection Agency (EPA) prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) establishes limits for contaminants in bottled water.

Consumers should be aware that all drinking water, including bottled water, might 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 (800-426-4791).

Some people may be more vulnerable to contaminants in drinking water than the general population. People who are immunocompromised such as cancer patients undergoing chemotherapy, organ transplant recipients, HIV/AIDS positive or other immune system disorders, some elderly, and infants can be particularly at risk from infections. People at risk 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 microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

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. Madison Utilities 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 or at <http://www.epa.gov/safewater/lead>.

The Water & Wastewater Board routinely monitors for contaminants in your drinking water in accordance with Federal and State regulations. The tables included in this report detail the results of our monitoring for the period of January 1 - December 31, 2015 or the data as of the latest testing done in accordance with applicable regulations. All data presented is in the highest levels detected unless otherwise noted. Based on a study conducted by the Alabama Department of Environmental Management (ADEM) with the approval of the EPA, a statewide waiver for the monitoring of asbestos and dioxin was issued. Thus, monitoring for any of these contaminants was not required.

Este informe contiene información importante sobre la calidad de su agua potable. Por favor lea este informe o comuníquese con alguien que pueda traducir la información.

Table of Primary Drinking Water Contaminants

Contaminant	Units	MCL	Max Detected	Contaminant	Units	MCL	Max Detected
Microbiological Contaminants				Organic Contaminants (cont.)			
Total Coliform Bacteria		<5%	0	DICAMBA	ppb	N/A	<0.1
Turbidity	NTU	TT	4.24	Dichloroacetic Acid	ppb	N/A	3.79
Fecal coliform and <i>E. coli</i>		0	0	1,2-Dichlorobenzene	ppb	N/A	<0.5
Fecal Indicators (<i>enterococci</i> or <i>coliphage</i>)		TT	0	1,3-Dichlorobenzene	ppb	N/A	<0.5
Inorganic Contaminants				1,4-Dichlorobenzene	ppb	N/A	<0.5
Alkalinity	ppm	N/A	150	1,2-Dichlorobenzene-d4	% Rec.	N/A	97.2
Calcium	ppm	N/A	60	Dichlorodifluoromethane	ppb	N/A	<0.5
Free Carbon Dioxide	ppm	0.8	<20	1,1-Dichloroethane	ppb	N/A	<0.5
Hardness, Total (ppb as CaCO3)	ppm	N/A	170	1,2-Dichloroethane	ppb	5	<0.5
Magnesium	ppm	N/A	6.8	cis-1,2-Dichloroethene	ppb	N/A	<0.5
Nitrate	ppm	10	3.5	1,1-Dichloroethene	ppb	N/A	<0.5
Nitrite	ppm	1	<0.1	trans-1,2-Dichloroethene	ppb	N/A	<0.5
Total Nitrate and Nitrite	ppm	10	3.2	1,2-Dichloropropane	ppb	5	<0.5
pH	su	6.5 - 8.5	7.7	1,3-Dichloropropane	ppb	N/A	<0.5
Residual Chlorine	ppm	MRDL = 4	2.3	2,2-Dichloropropane	ppb	N/A	<0.5
Sodium	ppm	N/A	11	1,1-Dichloropropene	ppb	N/A	<0.5
Sulfate	ppm	500	6.8	1,3-Dichloropropene	ppb	N/A	<0.5
Organic Contaminants				Dieldrin	ppb	N/A	<0.1
Alachlor	ppb	2	<0.1	Dinoseb	ppb	7	<0.1
Aldicarb	ppb	N/A	<0.5	Diquat	ppb	20	<0.4
Aldicarb sulfone	ppb	N/A	<0.7	Endothall	ppb	100	<9
Aldicarb sulfoxide	ppb	N/A	<0.5	Endrin	ppb	2	<0.1
Aldrin	ppb	N/A	<0.1	Ethylbenzene	ppb	700	<0.5
Atrazine	ppb	3	<0.1	Ethylene Dibromide	ppt	50	<10
Benzene	ppb	N/A	<0.5	Glyphosate	ppb	700	<6
Benzo(a)pyrene	ppt	200	<20	Total Haloacetic Acids (HAA5)	ppb	60	11.1
Bis(2-ethylhexyl)adipate	ppb	N/A	<0.6	Heptachlor	ppt	400	<40
Bis(2-Ethylhexyl)phthalate	ppb	N/A	<0.6	Heptachlor epoxide	ppt	200	<20
Bromoacetic Acid	ppb	N/A	<1	Hexachloro-1,3-butadiene	ppb	N/A	<0.5
Bromobenzene	ppb	N/A	<0.5	Hexachlorobenzene	ppb	1	<0.1
Bromochloromethane	ppb	N/A	<0.5	Hexachlorocyclopentadiene	ppb	50	<0.1
Bromodichloromethane	ppb	N/A	4.92	3-Hydroxycarbofuran	ppb	N/A	<0.5
4-Bromofluorobenzene	% Rec	N/A	92.3	Isopropylbenzene	ppb	N/A	<0.5
Bromoform	ppb	N/A	<1	Lindane	ppt	200	<20
Bromomethane	ppb	N/A	<0.5	Methomyl	ppb	N/A	<0.5
Butachlor	ppb	N/A	<0.1	Methoxychlor	ppb	40	<0.1
tert-Butylbenzene	ppb	N/A	<0.5	Methyl tert-butyl ether	ppb	N/A	<0.5
Carbaryl	ppb	N/A	<0.5	Methylene chloride	ppb	N/A	<0.5
Carbofuran	ppb	40	<0.9	Metolachlor	ppb	N/A	<0.1
Carbon tetrachloride	ppb	5	<0.5	Metribuzin	ppb	N/A	<0.1
Chlordane	ppb	2	<0.1	Naphthalene	ppb	N/A	<5
Chloroacetic Acid	ppb	N/A	3.54	n-Butylbenzene	ppb	N/A	<0.5
Chlorobenzene	ppb	100	<0.5	n-Propylbenzene	ppb	N/A	<0.5
Chlorodibromomethane	ppb	N/A	2.78	Oxamyl	ppb	200	<1
Chloroethane	ppb	N/A	<0.5	Polychlorinated biphenyls (PCB)			
Chloroform	ppb	N/A	9.5	PCB 1016	ppt	500	<80
Chloromethane	ppb	N/A	<0.5	PCB 1221	ppt	500	<190
2-Chlorotoluene	ppb	N/A	<0.5	PCB 1232	ppt	500	<230
4-Chlorotoluene	ppb	N/A	<0.5	PCB 1242	ppt	500	<260
2,4-D	ppb	70	<0.1	PCB 1248	ppt	500	<100
Dalapon	ppb	200	<1	PCB 1254	ppt	500	<100
1,2-Dibromo-3-Chloropropane	ppb	N/A	<0.02	PCB 1260	ppt	500	<200
Dibromoacetic Acid	ppb	N/A	<1	Pentachlorophenol	ppb	1	<0.04
Dibromomethane	ppb	N/A	<0.5	Picloram	ppb	500	<0.1

Table of Primary Drinking Water Contaminants (cont.)

Contaminant	Units	MCL	Max Detected	Contaminant	Units	MCL	Max Detected
Organic Contaminants (cont.)				Organic Contaminants (cont.)			
p-Isopropyltoluene	ppb	N/A	<0.5	2,4,5-TP (Silvex)	ppb	50	<0.1
Propachlor	ppb	N/A	<0.1	Trichloroacetic Acid	ppb	N/A	4.08
sec-Butylbenzene	ppb	N/A	<0.5	1,2,3-Trichlorobenzene	ppb	N/A	<0.5
Simazine	ppb	4	<0.07	1,2,4-Trichlorobenzene	ppb	70	<0.5
Specific Conductance	umhos/cm	N/A	350	1,1,1-Trichloroethane	ppb	200	<0.5
Styrene	ppb	100	<0.5	1,1,2-Trichloroethane	ppb	5	<0.5
1,1,1,2-Tetrachloroethane	ppb	N/A	<0.5	Trichloroethene	ppb	N/A	<0.5
1,1,2,2-Tetrachloroethane	ppb	N/A	<0.5	Trichlorofluoromethane	ppb	N/A	<0.5
Tetrachloroethene	ppb	N/A	<0.5	1,2,3-Trichloropropane	ppb	N/A	<0.5
TOC (Total Organic Carbon)	ppb	TT	930	1,2,4-Trimethylbenzene	ppb	N/A	<0.5
Toluene	ppb	1000	<0.5	1,3,5-Trimethylbenzene	ppb	N/A	<0.5
Total Trihalomethanes (TTHM)	ppb	80	17	Vinyl chloride	ppb	2	<0.5
Toxaphene	ppb	3	<1	Xylenes, Total	ppb	10000	<1.5

Table of Detected Contaminants

Contaminant	Units	Year	Violation	MCLG	MCL	Max	Min	Major Sources			
Alpha emitters	pCi/l	2012	No	0	15	3.6	2.3	Erosion of natural deposits			
Barium	ppm	2012	No	2	2	0.02	0.02	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits			
Combined Radium	pCi/l	2012	No	0	5	1.61	1.25	Erosion of natural deposits			
Copper	ppm	2013	No	1.3	AL=1.3	0.42	0.02	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives			
Fluoride	ppm	2014	No	4	4	0.63	<0.1	Water additive which promotes strong teeth; Erosion of natural deposits; Discharge from fertilizer and aluminum factories			
Lead	ppb	2013	No	0	AL=15	0.02	0	Corrosion of household plumbing systems			
Nitrate	ppm	2015	No	1	1	3.5	2.3	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits			
Res. Chlorine (On Site)	ppm	2015	No	MRDLG=4	MRDL=4	2.3	1.6	Water additive used to control microbes			
TOC (Total Organic Carbon)	ppm	2015	No	N/A	TT	0.93	<0.5	Naturally present in the environment			
Total Haloacetic Acids (HAA5)	ppb	2015	No	N/A	60	11.1	<1.0	By-product of drinking water disinfection			
Total Trihalomethanes (TTHM)	ppb	2015	No	N/A	80	17	1.44	By-product of drinking water chlorination			
Trichloroethylene	ppb	2012	No	0	5	2.9	0	Discharge from metal degreasing sites and other factories			
Turbidity	NTU	2013	No	N/A	5	0.37	N/A	Soil runoff			
Contaminant	Units	Year	Max	Min	Avg	Contaminant	Units	Year	Max	Min	Avg
Alkalinity	ppm	2015	150	98	121.5	1,2-Dichlorobenzene-d4	% Rec.	2015	97.2	91.8	94.5
Bromodichloromethane	ppb	2015	4.92	<1	2.66	Dissolved Solids	ppm	2014	250	150	190
4-Bromofluorobenzene	% Rec	2015	92.3	87.9	90.1	Hardness, Total (CaCO3)	ppm	2015	170	99	134.75
Calcium	ppm	2015	60	31	46.75	Magnesium	ppm	2015	6.8	5.2	5.85
Chloride	ppm	2014	6.8	5.4	6.1	pH (On Site)	su	2015	7.7	7.18	7.39
Chloroacetic Acid	ppb	2015	3.54	<2	3.34	Sodium	ppm	2015	11	4.3	6.95
Chlorodibromomethane	ppb	2015	2.78	<1	1.76	Specific Conductance	umhos/cm	2015	350	240	292.5
Chloroform	ppb	2015	9.5	1.11	4.27	Sulfate	ppm	2015	6.8	<5.0	5.9
Dichloroacetic Acid	ppb	2015	<1	1	2.27	Trichloroacetic Acid	ppb	2015	4.08	<1	2.73

DEFINITIONS

ppm - Parts per million, **ppb** - Parts per billion, **ppt** - Parts per trillion, **pCi/l** - Picocuries per liter, **NTU** - Nephelometric turbidity unit

Action Level (AL) - The concentration of a contaminant that triggers treatment or other requirement a water system shall follow.

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.

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 treatment technology.

Maximum Residual Disinfectant Level Goal (MRDLG) - 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.

Maximum Residual Disinfectant Level (MRDL) - 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.

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

CURRENT HAPPENINGS

Madison Utilities is in the process of significantly expanding and improving its infrastructure to insure the supply of water to the residents and businesses of the City of Madison. These improvements include the following major projects for the water system:

- ◆ Installation of the Terris Tatum Tennessee River Intake Facility to begin drawing water from the river.
- ◆ Upgrades to the Quarry Water Treatment Plant to be able to treat the river water.

HOW MUCH DOES YOUR WATER COST?

Affordability is important to us! Did you know a gallon of name brand bottled water would cost \$10.81 on average?

A gallon through Madison Utilities costs just \$0.0027.



WATER SOURCE INFORMATION

Madison Utilities utilized ten groundwater sources in 2015. They are the Collier, Drake, Fiorentino, McCrary, Murphy, New Gillespie, Nickelson, Rowe, Triana, and Williams wells, which are in the Tuscumbia/Fort Payne Aquifer.

The water from the Collier, Drake, Murphy, Rowe, and Triana wells is treated at the Quarry Water Treatment Plant using aeration, coagulation, filtration, disinfection and the addition of fluoride. The water from the Fiorentino, McCrary, New Gillespie, Nickelson, and Williams wells is treated at the Keene Water Treatment Plant using coagulation, filtration, pH adjustment, disinfection, and fluoridation.

We have completed our Source Water Assessment Plan and Susceptibility Analysis, and have an established Wellhead Protection Plan. These documents are very extensive and cannot be included within this report but these documents are available for public review at our office located at 101 Ray Sanderson Drive.

YOUR WATER UTILITY BY THE NUMBERS

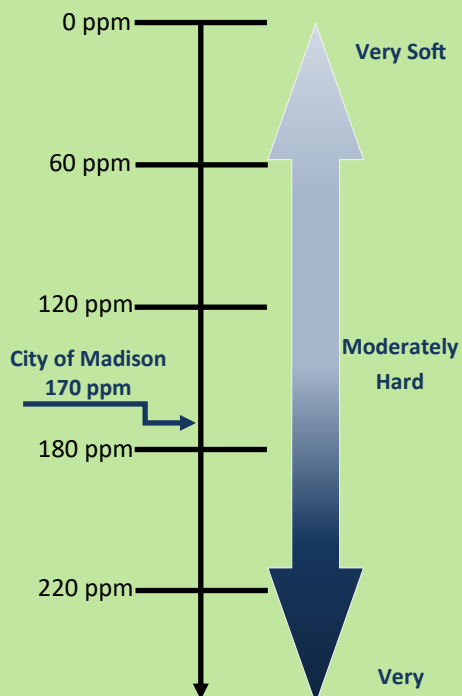
Your water utility is comprised of wells, lines, valves, and other equipment, that are maintained to protect water quality and ensure water is available every time you turn on your faucet. From the wells that pump water out of underground aquifers to the valves that isolate sections of the water system and help limit service interruptions during line maintenance and repairs, your water utility is a sophisticated mix of hardware and dedicated employees who keep your water clean, reliable, and affordable.

 Employees: 50	 Production Wells: 10
 Water Reservoirs: 4	 Waterlines: 270 mi
 Water Valves: 8000	 Fire Hydrants: 2845

Waterlines, Valves, and Hydrants estimated

HOW HARD IS YOUR WATER?

If substantial amounts of Calcium or Magnesium, both nontoxic minerals, are present in drinking water, the water is said to be hard. Hard water does not dissolve soap readily making lather for washing and cleaning difficult. Water containing little Calcium or Magnesium is called soft water. The water in Madison is moderately hard due to limestone rock formations in this area.



WHY FIXING LEAKS AROUND YOUR HOME IS IMPORTANT

Even the smallest leak can have a large impact on both your water usage and your wallet! Here are some leak facts that may surprise you:

- ◆ A leaking toilet can use 90,000 gallons of water in 30 days.
- ◆ A typical toilet leak loses 30,000 gallons of water per year.
- ◆ A dripping faucet or hose bib can lose up to 180 gallons a month, or 2,160 gallons per year.
- ◆ About 1 in every 318 homes or buildings has a leak.

Source: American Leak Detection and Water Online



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