



2011 Annual Drinking Water Quality Report

Water & Wastewater Board of the City of Madison

(dba Madison Utilities)

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. Our system had no violations of the Alabama Safe Drinking Water Act during 2011. We also expect to have no violations in 2012.

As you read the information listed below, if you have questions, please contact Andy Faulk at 256-772-0253 extension 112 between the hours of 7:00 a.m. to 4:00 p.m. Monday through Friday. If you want to learn more about your water utility operations, you may attend any of our regularly scheduled Board meetings or 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.

Water supply exceeded demand in 2011 and our system performed well. While we do not expect water shortages this summer, we do encourage wise use of our limited resources.

We were also able to complete the following water related projects last year including:

- Quinn Tank Renovation (Phase 1) – included foundation repairs and repainting of a 5 million gallon finished water storage tank
- Rock Quarry Water Intake – received ADEM approval to use the Rock Quarry Reservoir as a seasonal water source
- Water Main Replacement Program – continued efforts to replace aging water mains

We also wanted to mention three important 2012 projects.

- River Intake Project – we hope to receive our permits this year that will allow us to begin in earnest our design for a new water treatment plant that will address long-term water needs for the service area.
- Water Hardness – we are currently in the testing stages to make enhancements to our treatment process that will reduce the level of hardness in our water.
- Envelope billing – by early summer we will be replacing the post-card bill with an envelope bill that will provide more security of customer information, provide additional account information, and a return envelope for your use.

As we continue to build for the future, please know that we are honored to serve your water needs. We will continue to work hard to ensure we have a system that will meet the long-term needs of our customers, provide cost-effective rates, and professional customer service. We remain available to discuss any concerns or questions that you may have.

Sincerely,

Ricky K. Pounders
General Manager



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In these tables you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:
 Maximum Contaminant Level Goal or 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 or 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 or 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 or 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 – A required process intended to reduce the level of a contaminant in drinking water.

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

RAA – Running Annual Average

Table of Primary Drinking Water Contaminants

Contaminant	Bacteriological		Detected	Organic Chemicals		Detected
	MCL			Contaminant	MCL	
Total Coliform Bacteria	<5%		0.0	Di (2-ethylhexyl) phthalates	6 ppb	0.0
Turbidity	TT		0.04	Dinoseb	7 ppb	0.0
Fecal Coliform and E. coli	0.0		0.0	Diquat	20 ppb	0.0
Fecal Indicators (enterococci or coliphage)	TT		0.0	Dioxin (2,3,7,8-TCDD)	30 ppq	N/A
				HAA5	60 ppb	4.05
				Endothal	100 ppb	0.0
				Endrin	2 ppb	0.0
				Epichlorohydrin	TT	N/A
				Glyphosate	700 ppb	0.0
				1,2,4-Trichlorobenzene	70 ppb	0.0
				Heptachlor	400 ppt	0.0
				Heptachlor epoxide	200 ppt	0.0
				Hexachlorobenzene	1 ppb	0.0
				Hexachlorocyclopentadiene	50 ppb	0.0
				Lindane	200 ppt	0.0
				Methoxychlor	40 ppb	0.0
				Oxamyl (Vydate)	200 ppb	0.0
				PCBs	500 ppt	0.0
				Pentachlorophenol	1 ppb	0.0
				Picloram	500 ppb	0.0
				Simazine	4 ppb	0.0
				Toxaphene	3 ppb	0.0
				Benzene	5 ppb	0.0
				Carbon tetrachloride	5 ppb	0.0
				Chlorobenzene	100 ppb	0.0
				Dibromochloropropane	200 ppt	0.0
				o-Dichlorobenzene	600 ppb	0.0
				p-Dichlorobenzene	75 ppb	0.0
				1,2-Dichloroethane	5 ppb	0.0
				1,1-Dichloroethylene	7 ppb	0.0
				cis-1,2-Dichloroethylene	70 ppb	1.2
				trans-1,2-Dichloroethylene	100 ppb	0.0
				Dichloromethane	5 ppb	0.0
				1,2-Dichloropropane	5 ppb	0.0
				Ethylbenzene	700 ppb	0.0
				Ethylene dibromide	50 ppt	0.0
				Styrene	100 ppb	0.0
				Tetrachloroethylene	5 ppb	0.0
				1,1,1-Trichloroethane	200 ppb	0.0
				1,1,2-Trichloroethane	5 ppb	0.0
				Trichloroethylene	5 ppb	3.30
				TTHM	80 ppb	10.83
				Toluene	1 ppm	0.0
				Vinyl Chloride	2 ppb	0.0
				Xylenes	10 ppm	0.0
				TOC	TT	1.2
				Atrazine	3 ppb	0.0

Contaminant	Radiological		Detected	Inorganic Chemicals		Detected
	MCL			MCL		
Beta/Photon emitters (mrem/yr)	4		N/A	Antimony	6 ppb	0.0
Alpha emitters (pCi/l)	15		3	Arsenic	10 ppb	0.0
Combined radium (pCi/l)	5		2.3	Asbestos (MFL)	7	N/A
Uranium	30 pCi/l		N/A	Barium	2 ppm	0.02
				Beryllium	4 ppb	0.0
				Bromate	10 ppb	N/A
				Cadmium	5 ppb	0.0
				Chloramines	4 ppm	N/A
				Chlorine	4 ppm	2.9
				Chlorine dioxide	800 ppb	0.0
				Chlorite	1 ppm	N/A
				Chromium	100 ppb	0.0
				Copper	AL= 1.3 ppm	0.25 90th Percentile
				Cyanide	200 ppb	0.0
				Fluoride	4 ppm	0.86
				Lead	AL= 15 ppb	4.3 90th Percentile
				Mercury	2 ppb	0.0
				Nitrate	10 ppm	2.33
				Nitrite	1 ppm	0.6
				Total Nitrate and Nitrite	10 ppm	2.9
				Selenium	50 ppb	0.0
				Thallium	2 ppb	0.0

Contaminant	Organic Chemicals		Detected	Organic Chemicals		Detected
	MCL			MCL		
2,4-D	70 ppb		0.0	2,4,5-TP (Silvex)	50 ppb	0.0
Acrylamide	TT		N/A	Alachlor	2 ppb	0.0
Benzo(a)pyrene (PAHs)	200 ppt		0.0	Carbofuran	40 ppb	0.0
Chlordane	2 ppb		0.0	Dalapon	200 ppb	0.0
Di (2-ethylhexyl) adipate	400 ppb		0.0			

Table of Detected Contaminants

Contaminants (units of measure)	Violation		MCLG	MCL	Highest Level Detected	Range	Major Sources
	Year	Y/N					
Barium (ppm)	2011	N	2	2	0.024	0.022 - 0.024	Discharge of drilling waste, Discharge from metal refineries, Erosion of natural deposits
Fluoride (ppm)	2011	N	4	4	1	0.00 - 1.00	Water additive which promotes strong teeth, Erosion of natural deposits, Discharge from fertilizer and aluminum
Alpha emitters (pCi/l)	2011	N	0.0	15	3	0.00 - 3.0	Erosion of natural deposits
Combined Radium (pCi/l)	2011	N	0.0	5	2.3	0.00 - 2.3	Erosion of natural deposits
Nitrate (ppm)	2011	N	10	10	3.1	1.5 - 3.1	Runoff from fertilizer use, Leaching from septic tanks, sewage, Erosion of natural deposits
TTHM (ppb)	2011	N	N/A	80	33.2	0.00 - 33.2	By-Product of drinking water chlorination
Haloacetic Acids (HAA5) (ppb)	2011	N	N/A	60	19.4	0.00 - 19.4	By-Product of drinking water disinfection
Turbidity (NTU) Surface Water	2011	N	N/A	5	0.04	N/A	Soil Runoff
Turbidity (NTU) Groundwater	2011	N	N/A	5	0.07	N/A	Soil Runoff
Lead (ppb)	2010	N	0.0	AL=15	4.3 90th Percentile	1 - 18	Corrosion of household plumbing systems, Erosion of natural deposits
	One sample site exceeded the action level. Retested at 2.5.						
Copper (ppm)	2010	N	1.3	AL=1.3	0.25 90th Percentile	0.025 - 0.31	Corrosion of household plumbing systems, Erosion of natural deposits, Leaching from wood preservatives
Chlorine (ppm)	2011	N	MRDLG=4	MRDL=4	2.5	1.6 - 2.5	Water additive used to control microbes
Trichloroethylene (ppb)	2011	N	0.0	5	1.14 Annual Average	0.00 - 3.3	Discharge from metal degreasing sites and other factories
Total Organic Carbon	2011	N	N/A	TT	1.2	0.00 - 1.20	Naturally present in the environment

Table of Detected Contaminants

Unregulated Contaminants	Date	Units	Range		Average	Unregulated Contaminants	Date	Units	Range		Average
Alkalinity	2011	ppm	97	165	141.7	Sodium	2011	ppm	6.1	15	8.35
Calcium	2011	ppm	37	55	48.1	Specific Conductance	2011	umhos/cm	300	360	332
Chloride	2011	ppm	7.5	12	10.4	Sulfate	2011	ppm	0.0	17	5.6
Dissolved Solids	2011	ppm	170	190	180	Carbon Dioxide	2011	ppm	8	60	25
Hardness	2011	ppm	140	160	152.5	Manganese	2011	ppb	0.0	50	50
Magnesium	2011	ppm	5.2	7.8	6.1	Color	2011	units	1	3	1.6
pH	2011	ppm	6	8.1	7.2	Iron	2011	ppb	0.0	40	10

Microbiological Contaminants	Violation Y/N	Highest Level Detected	Unit of Measure	MCLG	MCL	Likely source of Contamination
Total Coliform Bacteria (including fecal coliform and E. Coli) 2011	N	0.0	N/A	0.0	Presence of coliform bacteria in 5% of monthly samples or if a routine sample and a follow up repeat sample are total coliform positive and one is also fecal Coliform or E. coli positive.	Human and animal fecal waste

Key

AL = Action Level

TT = Treatment Technique

MCL = Maximum Contaminant Level

MCLG = Maximum Contaminant Level Goal

mg/l = milligrams per liter, or parts per million

mrem/year = millirems per year (a measure of radiation absorbed by the body)

pCi/l = picocuries per liter (a measure of radioactivity)

ppb = parts per billion or micrograms per liter

ppm = parts per million or milligrams per liter

ppq = parts per quadrillion or picograms per liter

ppt = parts per trillion or nanograms per liter

MFL = million fibers per liter

GWR = Ground Water Rule

N/A = Not Applicable

Frequently Asked Questions

• What are our sources of water?

We utilized twelve groundwater sources in the Madison County area for 2011. They are the Fiorentino, Drake, New Gillespie, Collier, McCrary, Williams, Hardiman, Nickelson, Rowe, Triana, Murphy Wells and the Rock Quarry; which are in the Tuscumbia/Fort Payne Aquifer.

• How is our water treated?

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

• Who regulates our drinking 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.

• Does all water include some contaminants?

Consumers should be aware that all 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 (800-426-4791). Madison Utilities 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, 2011 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 Department 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.

- **Are some people more susceptible than others to contaminants?**

Some people may be more vulnerable to contaminants in drinking water than the general population. People who are immuno-compromised such as cancer patients undergoing chemotherapy, organ transplant recipients, HIV/AIDS positive or those with 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).

- **Do you have a Source Water Assessment Plan?**

Yes. We have our Source Water Assessment Plan and Susceptibility Analysis. We also 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.

- **What information do you have about lead in the drinking water?**

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>.

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Committed to Excellence

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