

DETECTED DRINKING WATER CONTAMINANTS <i>All levels detected by analyses performed in 2022, unless otherwise noted.</i>								
DETECTED SUBSTANCE (units of measurement)	MCLG	MCL	BHW Results	HGW Results	CW/ MFWTF Results	HU Results	Violation (yes/no)	Possible Source of Contaminant
Turbidity (NTU)	0	5 TT	2.210 -	0.644 -	- 0.408	0.33	NO	Soil runoff
Fluoride (ppm)	4	4	0.62 <i>Range</i> 0.00-0.81	0.66 <i>Range</i> 0.02-0.88	0.67 <i>Range</i> 0.11-0.92	<i>Range</i> ND-0.76	NO	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer
Nitrates (ppm)	10	10	4.1-4.2	1.8-2.0	2.4-2.7	<i>Range</i> ND-2.0	NO	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Barium (ppm)	2	2	0.017	ND	0.010	0.02-0.03	NO	Drilling and refinery discharge; erosion of natural deposits
Tetrachloroethylene (ppb)	0	5	ND	ND	ND	ND-0.51	NO	PVC pipe leaching; factory & dry cleaner discharge
HAA5 (ppb) Total Haloacetic Acids	0	60	LRAA 34.0 Range 17.6 - 57.3				NO	By-product of drinking water chlorination
TTHM (ppb) Total Trihalomethanes	0	80	LRAA 37.0 Range 24.9 - 54.2				NO	By-product of drinking water chlorination
Chlorine (ppm)	MRDLG = 4	MRDL =4	Range 1.1 - 2.8				NO	Water additive used to control microbes
Total Coliform Bacteria	0	≤5% positive	0%				NO	Naturally present; indicator that other types of bacteria may be present
Lead (ppb) tested 2020	0	AL = 15	3.3 # of sites exceeding AL = 0				NO	Corrosion of household plumbing systems; erosion of natural deposits
Copper (ppm) tested 2020	0	AL = 1.3	0.260 # of sites exceeding AL = 0				NO	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
SECONDARY CONTAMINANTS								
Aluminum (ppb)	NS	200	0.013	ND	ND	ND-0.03	NO	Erosion of natural deposits; treatment with water additives
Chloride (ppm)	NS	250	6.9	ND	6.0	6.8-12.0	NO	Erosion of natural deposits
Sulfate (ppm)	NS	250	ND	ND	5.4	ND-29.3	NO	Erosion of natural deposits
Total Dissolved Solids (ppm)	NS	500	100	94	123	102-171	NO	Erosion of natural deposits; runoff
pH	NS	NS	6.9	6.9	6.9	7.0-7.2	NO	Erosion of natural deposits; algae blooms
Total Alkalinity (ppm)	NS	NS	82.2	65.6	100	n/a	NO	Erosion of natural deposits
Carbon Dioxide (ppm)	NS	NS	19.0	16.7	32.6	n/a	NO	Erosion of natural deposits
Sodium (ppm)	NS	NS	17.1	22.7	3.7	2.5-15.6	NO	Erosion of natural deposits
Calcium (ppm)	NS	NS	16.1	6.0	28.1	n/a	NO	Erosion of natural deposits
Magnesium (ppm)	NS	NS	3.5	1.3	7.9	n/a	NO	Erosion of natural deposits
Manganese (ppm)	NS	0.05		ND	ND	ND-0.01	NO	Erosion of natural deposits; leaching from pipes
Hardness as CaCO <sub>3</sub> (ppm)	NS	NS	54.8	20.4	103	63.6-141	NO	Erosion of natural deposits
UNREGULATED CONTAMINANTS								
Chloroform (ppb)	NS	NS	ND	ND		ND-20.0	NO	Naturally occurring in the environment or from runoff
Bromodichloromethane (ppb)	NS	NS	ND	ND		ND-4.90	NO	Naturally occurring in the environment or from runoff
Chloromethane (ppb)	NS	NS	ND	ND		ND-14.0	NO	Naturally occurring in the environment or from runoff
BASED ON A STUDY CONDUCTED BY ADEM WITH THE APPROVAL OF THE EPA, A STATEWIDE WAIVER FOR THE MONITORING OF ASBESTOS AND DIOXIN WAS ISSUED. THUS, MONITORING FOR THESE CONTAMINANTS WAS NOT REQUIRED.								

More information about the contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791

#### DEFINITIONS

**BHW** - Bo Howard Well  
**HGW** - Hazel Green Well  
**CW** - Cress Well  
**MFWTF** - Mountain Fork Water Treatment Facility  
**HU** - Huntsville Utilities  
**ADEM** - Alabama Department of Environmental Management - Alabama's environmental regulatory agency  
**EPA** - The United States Environmental Protection Agency  
**Parts per million** (ppm) - the equivalent of a single penny in \$10,000  
**Parts per billion** (ppb) - the equivalent of a single penny in \$10,000,000  
**Parts per trillion** (ppt) - the equivalent of a single penny in \$10,000,000,000  
**Parts per quadrillion** (ppq) - the equivalent of a single penny in \$10,000,000,000,000  
**Nephelometric Turbidity Unit** (NTU) - measure of water clarity; turbidity in excess of 5 NTU is just noticeable to the average person  
**Picocuries per liter** (pCi/l) - measure of radioactivity in water  
**Millirems per year** (mrem/yr) - a measure of radiation absorbed by the body  
**Action Level** (AL) - the concentrations of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow  
**Treatment Technique** (TT) - a required process intended to reduce the level of a contaminant in drinking water  
**Non-Detect** (ND) - constituent not detected in water  
**Not Tested** (NT) - constituent not required to be tested at this site per ADEM  
**No Standard** (NS) - no standard set by regulations  
**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 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 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.  
**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.  
**Disinfection byproducts** (DBPs) - produced when disinfectants used in water treatment react with natural organic matter present in the source water  
**Distribution System Evaluation** (DSE) - a one year study conducted by water systems to monitor disinfection byproducts  
**Running Annual Average** (RAA) - the required method of calculating compliance on disinfection byproducts  
**UCMR** - Unregulated Contaminant Monitoring Rule

**SOURCE WATER ASSESSMENT:** The Alabama Department of Environmental Management (ADEM) requires water systems to conduct Source Water Assessment Programs (SWAP). The assessments must include these major elements: delineating (or mapping) the Source Water Assessment Area (SWAA) - the area of land that most directly contributes the raw water used for drinking water, conducting an inventory of potential sources of contamination within the SWAA, and determining the susceptibility of the water supply to those contamination sources. In 2021, the Madison County Water Department updated the source water assessment. Included in the report are a map and description of the Wellhead Protection Areas, or Source Water Assessment Areas; a list of common sources of contamination and the risks associated with them; the inventory of potential sources of contamination within each well's delineated area and their associated susceptibility ranking of high, medium or low as determined by water department personnel and ADEM; and a map of each well's Source Water Assessment Area classifying each potential contaminant source using its identification number and the following color code: red for highly susceptible, yellow for moderately susceptible, and green for non-susceptible. The report can be reviewed, by appointment, at the water department office.

**WATER SOURCES:** In 2022, the Madison County Water Department used water from seven different sources to provide drinking water to customers. The three primary sources are all groundwater sources. Bo Howard Well, Hazel Green Well and Cress Well all draw water from the Tusculumbia/Fort Payne Aquifer. Cress Well pumps water to the Mountain Fork Water Treatment Facility. Four sources are a part of Huntsville Utilities' water system. The Madison County Water Department purchased water from Huntsville's Lincoln/Dallas Water Treatment Plant, a groundwater source, and three Tennessee River surface water source treatment plants, the South Parkway Water Treatment Plant, Southwest Water Treatment Plant and Southeast Water Treatment Plant.

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 (1-800-426-4791).

## 2022 Annual Water Quality Report

**THE MADISON COUNTY COMMISSION** is pleased to present to you the 2022 Annual Drinking Water Report. We want to inform you about the excellent water and services delivered to you last year. All information provided in this pamphlet has been collected and reported in accordance with the water quality standards established by the US Environmental Protection Agency (EPA) and the Alabama Department of Environmental Management (ADEM). This annual report is a requirement of the Safe Drinking Water Act (SDWA), a federal law that sets health and safety standards for public drinking water in the United States. Under the direction of the SDWA, the EPA has established national drinking water standards which limit the amount of certain contaminants in water provided by public water systems. **We are proud to report to you that the Madison County Water Department has never had a contaminant level violation. Your drinking water meets or exceeds all Federal and State requirements.** This brochure is a summary of the quality of water provided to you in 2022. It is an excellent record reflecting the work of the Water Department's 59 employees to bring you water that is absolutely safe. Included are details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. The Madison County Commission is committed to providing you with information about your water supply and the many necessary improvements being made in the system to maintain the highest drinking water standard. If you have any questions or concerns, please contact Chuck Faulkner at the Madison County Water Department office.

**THE MADISON COUNTY COMMISSION** encourages public participation at the Commission Board Meetings. The regularly scheduled meetings occur every other Wednesday and are held at 10 AM in the Commission Chambers on the 7th floor of the Madison County Courthouse. Please call the county courthouse at 256-532-3492 for more information.



(L to R) **Phil Riddick**, District 5; **Steve Haraway**, District 2; **Violet Edwards**, District 6; **Mac McCutcheon**, Chairman; **Tom Brandon**, District 1; **Craig Hill**, District 3; **Phil Vandiver**, District 4



**Madison County Water Department**  
 246 Shields Road  
 Huntsville, Alabama 35811  
 (256) 746-2888  
 Office Hours: 7:00 a.m. - 3:30 p.m.



The Fourth Unregulated Contaminant Monitoring Rule (UCMR4) requires some systems to monitor for 30 unregulated contaminants during January 2018 through December 2020 on an assigned schedule. The table below shows the results for detected contaminants during 2019 and 2020.

DETECTED SUBSTANCE (units of measurement)	Level Detected	Violation (yes/no)	Possible Source of Contamination
<b>Manganese (ppb)</b>	ND - 0.75	NO	Naturally occurring or as a result of industrial discharge
<b>HAA9 (ppb)</b>	29.9 - 63.8	NO	By-product of drinking water chlorination
<b>HAA6Br (ppb)</b>	4.0 - 10.7	NO	By-product of drinking water chlorination
<b>HAA5 (ppb)</b>	25.9 - 57.5	NO	By-product of drinking water chlorination

Per- and polyfluoroalkyl substances (PFAS) are a group of man-made chemicals for which the EPA has not established primary drinking water standards. Madison County tested our wells for the following list of PFAS contaminants during 2022. For more information on PFAS contaminants, please refer to <https://www.epa.gov/pfas>. **ALL RESULTS WERE ND.**

PFAS Contaminants (ppb)	
Contaminant	Contaminant
11-Chloroicosafuoro-3-oxaundecane-1-sulfonic acid	Perfluoroheptanoic acid
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid	Perfluorohexanesulfonic acid
4,8-dioxa-3H-perfluorononanoic acid	Perfluorononanoic acid
Hexafluoropropylene oxide dimer acidA	Perfluorooctanesulfonic acid
N-ethylperfluorooctanesulfonamidoacetic acid	Perfluorooctanoic acid
N-methylperfluorooctanesulfonamidoacetic acid	Perfluorotetradecanoic acid
Perfluorobutanesulfonic acid	Perfluorotridecanoic acid
Perfluorodecanoic acid	Perfluoroundecanoic acid
Perfluorohexanoic acid	Total PFAS
Perfluorododecanoic acid	<b>ALL RESULTS WERE ND</b>

Madison County is required to monitor for the following unregulated contaminants. No MCLs have been established and testing is conducted based on a schedule set forth by the Environmental Protection Agency and the Alabama Department of Environmental Management. **ALL RESULTS WERE ND.**

UNREGULATED CONTAMINANTS			
1,1 - Dichloropropene	Aldicarb	Chloroform	Metolachlor
1,1,1,2 - Tetrachloroethane	Aldicarb Sulfone	Chloromethane	Metribuzin
1,1,1,2 - Tetrachloroethene	Aldicarb Sulfoxide	Dibromochloromethane	N-Butylbenzene
1,1 - Dichloroethane	Aldrin	Dibromomethane	Naphthalene
1,2,3 - Trichlorobenzene	Bromobenzene	Dicamba	N-Propylbenzene
1,2,3 - Trichloropropane	Bromochloromethane	Dichlorodifluoromethane	O-Chlorotoluene
1,2,4 - Trimethylbenzene	Bromodichloromethane	Dieldrin	P-Chlorotoluene
1,3 - Dichloropropane	Bromoform	Hexachlorobutadiene	P-Isopropyltoluene
1,3 - Dichloropropene	Bromomethane	Isopropylbenzene	Propachlor
1,3,5 - Trimethylbenzene	Butachlor	M-Dichlorobenzene	Sec - Butylbenzene
2,2 - Dichloropropane	Carbaryl	Methomyl	Tert - Butylbenzene
3 - Hydroxycarbofuran	Chloroethane	MTBE	Trichlorofluoromethane

The sources of drinking water (both tap 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. Therefore, all drinking water, including bottled water, may be reasonably expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk.

Contaminants that may be present in source water include the following:

- **Microbiological** – such as viruses and bacteria, may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife
- **Inorganic** – such as salts and metals, can be naturally occurring or result from urban storm runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming
- **Pesticides and Herbicides** – may come from a variety of sources such as agricultural and residential uses, and stormwater runoff
- **Organic** – including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, can also come from gas stations, urban stormwater runoff, and septic systems
- **Radioactive** – can be naturally occurring or be the result of oil and gas production and mining

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 County Water Department 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>.

MCL'S ARE SET AT VERY STRINGENT LEVELS. TO UNDERSTAND THE POSSIBLE HEALTH EFFECTS DESCRIBED FOR MANY REGULATED CONSTITUENTS, A PERSON WOULD HAVE TO DRINK 2 LITERS OF WATER EVERY DAY AT THE MCL LEVEL FOR A LIFETIME TO HAVE A ONE-IN-A-MILLION CHANCE OF HAVING THE DESCRIBED HEALTH EFFECT.

**MADISON COUNTY provides our customers with a table of contaminants for which the Environmental Protection Agency and the Alabama Department of Environmental Management require testing. These contaminants were not detected in your drinking water unless they are also listed in the Detected Drinking Water Contaminants table located in the report.**

CONTAMINANT (UNIT OF MSMT)	MCL
<b>BACTERIOLOGICAL</b>	
Total Coliform Bacteria (present or absent)	<5%
Fecal Coliform and E. coli (present or absent)	0
Turbidity (NTU) - groundwater	5
Turbidity (NTU) - surface water	TT
<b>RADIOLOGICAL</b>	
Beta/photom emitters (mrem/yr)	4
Alpha emitters (pci/l)	15
Combined radium (pci/l)	5
<b>INORGANIC</b>	
Antimony (ppb)	6
Arsenic (ppb)	10
Asbestos (MFL)	7
Barium (ppm)	2
Beryllium (ppb)	4
Cadmium (ppb)	5
Chromium (ppb)	100
Cyanide (ppb)	200
Fluoride (ppm)	4
Mercury (ppb)	2
Nitrate (ppm)	10
Nitrite (ppm)	1
Selenium (ppb)	50
Thallium (ppb)	2
<b>ORGANIC</b>	
2,4-D (ppb)	70
2,4,5-TP (Silvex) (ppb)	50
Acrylamide (ppm)	TT
Alachlor (ppb)	2
Atrazine (ppb)	3
Benzo(a)pyrene[PHAS] (ppt)	200
Carbofuran (ppb)	40
Chlordane (ppb)	2
Dalapon (ppb)	200
Di-(2-ethylhexyl)adipate (ppb)	400
Di(2-ethylhexyl)phtlates (ppb)	6
Dinoseb (ppb)	7
Diquat (ppb)	20
Dioxin[2,3,7,8-TCDD] (ppq)	30
Endothall (ppb)	100

Endrin (ppb)	2
Epichlorohydrin (ppb)	TT
Glyphosate (ppb)	700
Heptachlor (ppt)	400
Heptachlor epoxide (ppt)	200
Hexachlorobenzene (ppb)	1
Hexachlorocyclopentadiene (ppb)	50
Lindane (ppt)	200
Methoxychlor (ppb)	40
Oxamyl [Vydate] (ppb)	200
PCBs (ppt)	500
Pentachlorophenol (ppb)	1
Picloram (ppb)	500
Simazine (ppb)	4
Toxaphene (ppb)	3
Benzene (ppb)	5
Carbon tetrachloride (ppb)	5
Chlorobenzene (ppb)	100
Dibromochloropropane (ppt)	200
o-Dichlorobenzene (ppb)	600
p-Dichlorobenzene (ppb)	75
1,2-Dichloroethane (ppb)	5
1,1-Dichloroethylene (ppb)	7
cis-1,2-Dichloroethylene (ppb)	70
trans-1,2-Dichloroethylene (ppb)	100
Dichloromethane (ppb)	5
1,2-Dichloropropane (ppb)	5
Ethylbenzene (ppb)	700
Ethylene dibromide (ppt)	50
Styrene (ppb)	100
Tetrachloroethylene (ppb)	5
1,2,4-Trichlorobenzene (ppb)	70
1,1,1-Trichloroethane (ppb)	200
1,1,2-Trichloroethane (ppb)	5
Trichloroethylene (ppb)	5
Toluene (ppm)	1
Vinyl Chloride (ppb)	2
Xylenes (ppm)	10