

# 2022 Annual Water Quality Report (Testing Performed January - December 2021)

## MARION WATER DEPARTMENT

104 Hubbard Drive  
P. O. Box 125  
Marion, AL 36756  
Phone 334-683-8642  
Fax 334-683-8643

We are pleased to present to you this year's Annual Water Quality Report. This report is designed to inform you about the quality water and services we deliver to you every day. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water.

<b>Water Sources</b>	Three groundwater wells producing from the Gordo aquifer
<b>Additional Connections</b>	Connection with Perry County Water Board to sell as needed
<b>Water Treatment</b>	Disinfection, aeration, flocculation, filtration, corrosion control, and fluoridation
<b>Storage Capacity</b>	Three tanks with a total capacity of 675,000 gallons
<b>Number of Customers</b>	Approximately 1375
<b>City Council</b>	Mayor Dexter Hinton Councilman Jeremy Arrington Councilman Leon Kennie Councilman Joe Pearson Councilman Willie Jackson Councilman Jefferson Nail

### Source Water Assessment

In compliance with the Alabama Department of Environmental Management (ADEM), Marion Water Department has completed a Source Water Assessment plan that provides additional information such as potential sources of contamination. The plan includes a susceptibility analysis, which classifies potential contaminants as high, moderate, or non-susceptible to contaminating the water source. A copy of the report is available in our office for review during regular business hours, or you may purchase a copy upon request for a nominal reproduction fee.

Please help us make this effort worthwhile by protecting our source water. Carefully follow instructions on pesticides and herbicides you use for your lawn and garden, and properly dispose of household chemicals, paints and waste oil.

### Information about Lead

Lead in drinking water is rarely found in source water but is primarily from materials and components associated with service lines and home plumbing. Your water system is responsible for providing high quality drinking water but cannot control the variety of materials used in plumbing components.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Use *only* water from the cold-water tap for drinking, cooking, and *especially for making baby formula*. Hot water is more likely to cause leaching of lead from plumbing materials. 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. These recommended actions are very important to the health of your family.

Lead levels in your drinking water are likely to be higher if:

- Your home or water system has lead pipes, or
- Your home has faucets or fittings made of brass which contains some lead, or
- Your home has copper pipes with lead solder and you have naturally soft water, and
- Water often sits in the pipes for several hours.

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 [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).

## General Information

All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. MCL's, defined in a List of Definitions in this report, 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.

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.

Contaminants that may be present in source water include:

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

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water.

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 microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

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.

## Questions?

If you have any questions about this report or concerning your water utility, please contact Mr. Brian Moore, Water and Sewer Superintendent, at 334-683-8642. We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled meetings. They are held on the first and third Mondays of each month at 5:30 p.m. in the council chambers at City Hall.

More information about contaminants to drinking water and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at (1-800-426-4791).

## Monitoring Schedule

Marion Water Department routinely monitors for contaminants in your drinking water according to Federal and State laws, using EPA approved methods and a State certified laboratory. The Alabama Department of Environmental Management (ADEM) allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. We have learned through our monitoring and testing that some constituents have been detected. We are pleased to report that our drinking water meets federal and state requirements.

Constituents Monitored	Date Monitored
Inorganic Contaminants	2019
Lead/Copper	2019
Microbiological Contaminants	current
Nitrates	2021
Radioactive Contaminants	2021
Synthetic Organic Contaminants (including herbicides and pesticides)	2021
Volatile Organic Contaminants	2021
Stage 2 Disinfection By-products	2021
DSE Disinfection By-products	2019
Per- and polyfluoroalkyl substances (PFAS)	2021

## Monitoring Results

TABLE OF DETECTED DRINKING WATER CONTAMINANTS						
Contaminants	Violation Y/N	Level Detected	Unit Msmt	MCLG	MCL	Likely Source of Contamination
Total Coliform Bacteria	NO	3 *	Present or Absent	0	presence in 5% of monthly samples	Naturally present in the environment; used as an indicator that other bacteria may be present
Alpha emitters	NO	3.50	PCi/l	0	15	Erosion of natural deposits
Combined radium (Radium 228)	NO	1.26	PCi/l	0	5	Erosion of natural deposits
Barium	NO	0.05	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Copper	NO	0.062 **	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
TTHM [Total trihalomethanes]	NO	ND-1.00	ppb	0	80	By-product of drinking water chlorination
<b>Unregulated Contaminants</b>						
Chloroform	NO	ND-0.68	ppb	70	none	Naturally occurring; industrial discharge; agricultural runoff
Bromodichloromethane	NO	ND-0.50	ppb	0	none	Naturally occurring; industrial discharge; agricultural runoff
<b>Secondary Contaminants</b>						
Aluminum	NO	0.12	ppm	none	0.2	Erosion of natural deposits or from water additives
Chloride	NO	5.76	ppm	none	250	Naturally occurring; agricultural runoff
Hardness	NO	97.5	ppm	none	none	Naturally occurring; treatment with water additives
Iron	NO	0.06	ppm	n/a	0.30	Naturally occurring; erosion; leaching from pipes
pH	NO	8.06	S.U.	none	none	Naturally occurring; treatment with water additives
Sodium	NO	1.61	ppm	none	none	Naturally occurring in the environment
Sulfate	NO	9.87	ppm	none	250	Naturally occurring; erosion of natural deposits
Total Dissolved Solids	NO	96	ppm	none	500	Naturally occurring; industrial discharge; agricultural runoff
<b>DSE Disinfection Byproducts</b>						
TTHM [Total trihalomethanes]	NO	ND-8.00	ppb			By-product of drinking water chlorination
HAA5 [Total haloacetic acids]	NO	1.30-3.70	ppb			By-product of drinking water chlorination

\* Three positive samples occurred on 3/21/21. All follow up samples were negative.

\*\* Figure shown is the 90<sup>th</sup> percentile, and number of sites over the Action Level (AL) = 0.

### Level I Assessment

Three positive coliform samples occurred on March 21, 2021. These were not violations but triggered a Level I Assessment. We conducted the Assessment and submitted it to ADEM as required. Based on the findings of the Assessment, no new treatment or operational changes are required at this time. We will continue to monitor for coliform bacteria as required and will carefully perform the collection procedures to avoid contaminating the samples.

The method of collecting water samples is very sensitive. Several factors could cause a positive sample, especially at an outdoor open-air faucet: failure to sterilize the sample site adequately, mishandling of bottle, bottle cap, and/or sample, or an outdated sample bottle. A dirty faucet, rainwater, or even airborne particles can contaminate an otherwise clean water sample with coliform bacteria. Coliform bacteria are naturally present in the environment but not naturally present in groundwater; however, coliform bacteria can be an indication that other, potentially harmful, bacteria may be present. A positive coliform bacteria sample is not an immediate health concern, but further investigation is required.

### PFAS Contaminants

Per- and polyfluoroalkyl substances (PFAS) are a group of man-made chemicals that were used in the manufacture of nonstick cookware, stain-resistant carpet and textiles, firefighting foams, food wrappers, and other industrial and consumer applications. The EPA has not established primary drinking water regulations for PFAS substances. The lifetime health advisory level for PFOA and PFOS is a combined 70 parts per trillion, or 0.00007 mg/L. Below is a list of PFAS contaminants for which our system monitored our raw water source in 2021 and the results of that monitoring. *PFAS was not detected in our drinking water.*

Contaminant	Unit Msmt	Level Detected	Contaminant	Unit Msmt	Level Detected
11Cl-PF3OUdS (11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid)	ppb	ND	Perfluoroheptanoic acid	ppb	ND
9Cl-PF3ONS (9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid)	ppb	ND	Perfluorohexanesulfonic acid	ppb	ND
ADONA (4,8-dioxa-3H-perfluorononanoic acid)	ppb	ND	Perfluorononanoic acid	ppb	ND
HFPO-DA (Hexafluoropropylene oxide dimer acidA)	ppb	ND	Perfluorooctanesulfonic acid	ppb	ND
NEtFOSAA (N-ethylperfluorooctanesulfonamidoacetic acid)	ppb	ND	Perfluorooctanoic acid	ppb	ND
NMeFOSAA (N-methylperfluorooctanesulfonamidoacetic acid)	ppb	ND	Perfluorotetradecanoic acid	ppb	ND
Perfluorobutanesulfonic acid	ppb	ND	Perfluorotridecanoic acid	ppb	ND
Perfluorodecanoic acid	ppb	ND	Perfluoroundecanoic acid	ppb	ND
Perfluorohexanoic acid	ppb	ND	Total PFAS	ppb	ND
Perfluorododecanoic acid	ppb	ND			

For more information on PFAS contaminants, please consult <https://www.epa.gov/pfas/pfas-fact-sheets-and-infographics>

**List of Definitions**

**Action Level-** the concentration of a contaminant that, if exceeded, triggers treatment or other requirements which a water system must follow.

**Coliform Absent (ca)-** Laboratory analysis indicates that the contaminant is not present.

**Cryptosporidium-** a microscopic parasite that can cause disease, mainly diarrhea, if swallowed.

**Disinfection byproducts (DBPs)-** are formed when disinfectants used in water treatment plants react with bromide and/or natural organic matter (i.e., decaying vegetation) present in the source water.

**Distribution System Evaluation (DSE)-**a 4-quarter study to identify distribution system locations with high concentrations of DBPs.

**Maximum Contaminant Level (MCL)** is the highest level of a contaminant that is allowed in drinking water.

**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

**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.

**Millirems per year (mrem/yr)-**measure of radiation absorbed by the body.

**Nephelometric Turbidity Unit (NTU)-**a measure of the clarity of water.

**Non-Detect (ND)-** laboratory analysis indicates that the constituent is not present above detection limits of lab equipment.

**Parts per billion (ppb)** or Micrograms per liter (µg/l)-one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

**Parts per million (ppm)** or Milligrams per liter (mg/l)-one part per million corresponds to one minute in two years or a single penny in \$10,000.

**Parts per quadrillion (ppq)** or Picograms per liter (picograms/l)-one part per quadrillion corresponds to one minute in 2,000,000,000 years, or a single penny in \$10,000,000,000.

**Parts per trillion (ppt)** or Nanograms per liter (nanograms/l)-one part per trillion corresponds to one minute in 2,000,000 years, or a single penny in \$10,000,000,000.

**Picocuries per liter (pCi/L)-**picocuries per liter is a measure of the radioactivity in water.

**Running Annual Average (LRAA)-**yearly average of all the DPB results at each specific sampling site in the distribution system.

**Standard Units (S.U.)-pH** of water measures the water's balances of acids and bases and is affected by temperature and carbon dioxide gas.

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

**Variances & Exemptions (V&E)-**State or EPA permission not to meet an MCL or a treatment technique under certain conditions.

Below is a table of contaminants for which the Environmental Protection Agency and the Alabama Department of Environmental Management require testing where applicable. These contaminants were not detected in your drinking water unless they are also listed in the Detected Drinking Water Contaminants table elsewhere in this report.

STANDARD LIST OF PRIMARY DRINKING WATER CONTAMINANTS					
Contaminant	MCL	Unit of Msmt	Contaminant	MCL	Unit of Msmt
<b>Bacteriological Contaminants</b>			cis-1,2-Dichloroethylene	70	ppb
Total Coliform Bacteria	<5%	present/absent	trans-1,2-Dichloroethylene	100	ppb
Fecal Coliform and E. coli	0	present/absent	Dichloromethane	5	ppb
Turbidity	TT	NTU	1,2-Dichloropropane	5	ppb
Cryptosporidium	TT	Calc.organisms/l	Di (2-ethylhexyl)adipate	400	ppb
<b>Radiological Contaminants</b>			Di (2-ethylhexyl)phthalate	6	ppb
Beta/photon emitters	4	mrem/yr	Dinoseb	7	ppb
Alpha emitters	15	pCi/l	Dioxin [2,3,7,8-TCDD]	30	ppq
Combined radium	5	pCi/l	Diquat	20	ppb
Uranium	30	pCi/l	Endothall	100	ppb
<b>Inorganic Chemicals</b>			Endrin	2	ppb
Antimony	6	ppb	Epichlorohydrin	TT	TT
Arsenic	10	ppb	Ethylbenzene	700	ppb
Asbestos	7	MFL	Ethylene dibromide	50	ppt
Barium	2	ppm	Glyphosate	700	ppb
Beryllium	4	ppb	Heptachlor	400	ppt
Cadmium	5	ppb	Heptachlor epoxide	200	ppt
Chromium	100	ppb	Hexachlorobenzene	1	ppb
Copper	AL=1.3	ppm	Hexachlorocyclopentadiene	50	ppb
Cyanide	200	ppb	Lindane	200	ppt
Fluoride	4	ppm	Methoxychlor	40	ppb
Lead	AL=15	ppb	Oxamyl [Vydate]	200	ppb
Mercury	2	ppb	Polychlorinated biphenyls	0.5	ppb
Nitrate	10	ppm	Pentachlorophenol	1	ppb
Nitrite	1	ppm	Picloram	500	ppb
Selenium	.05	ppm	Simazine	4	ppb
Thallium	.002	ppm	Styrene	100	ppb
<b>Organic Contaminants</b>			Tetrachloroethylene	5	ppb
2,4-D	70	ppb	Toluene	1	ppm
Acrylamide	TT	TT	Toxaphene	3	ppb
Alachlor	2	ppb	2,4,5-TP(Silvex)	50	ppb
Atrazine	3	ppb	1,2,4-Trichlorobenzene	.07	ppm
Benzene	5	ppb	1,1,1-Trichloroethane	200	ppb
Benzo(a)pyrene [PAHs]	200	ppt	1,1,2-Trichloroethane	5	ppb
Carbofuran	40	ppb	Trichloroethylene	5	ppb
Carbon tetrachloride	5	ppb	Vinyl Chloride	2	ppb
Chlordane	2	ppb	Xylenes	10	ppm
Chlorobenzene	100	ppb	<b>Disinfectants &amp; Disinfection Byproducts</b>		
Dalapon	200	ppb	Chlorine	4	ppm
Dibromochloropropane	200	ppt	Chlorine Dioxide	800	ppb
1,2-Dichlorobenzene	1000	ppb	Chloramines	4	ppm
1,4-Dichlorobenzene (para)	75	ppb	Bromate	10	ppb
o-Dichlorobenzene	600	ppb	Chlorite	1	ppm
1,2-Dichloroethane	5	ppb	HAA5 [Total haloacetic acids]	60	ppb
1,1-Dichloroethylene	7	ppb	TTHM [Total trihalomethanes]	80	ppb
<b>LIST OF SECONDARY CONTAMINANTS</b>					
Alkalinity, Total (as CA, Co <sub>3</sub> )	Copper	Manganese	Specific Conductance		
Aluminum	Corrosivity	Odor	Sulfate		
Calcium, as Ca	Foaming agents (MBAS)	Nickel	Total Dissolved Solids		
Carbon Dioxide	Hardness	pH	Zinc		
Chloride	Iron	Silver			
Color	Magnesium	Sodium			
<b>LIST OF UNREGULATED CONTAMINANTS</b>					
Aldicarb	Chloroethane	Dieldrin	Propachlor		
Aldicarb Sulfone	Chloroform	Hexachlorobutadiene	N-Propylbenzene		
Aldicarb Sulfoxide	Chloromethane	3-Hydroxycarbofuran	Propachlor		
Aldrin	O-Chlorotoluene	Isopropylbenzene	1,1,1,2-Tetrachloroethane		
Bromoacetic Acid	P-Chlorotoluene	p-Isopropyltoluene	1,1,2,2-Tetrachloroethane		
Bromobenzene	Dibromochloromethane	M-Dichlorobenzene	Tetrachloroethene		
Bromochloromethane	1,2-Dibromoethane	Methomyl	Trichloroacetic Acid		
Bromodichloromethane	Dibromomethane	Methylene chloride	1,2,3-Trichlorobenzene		
Bromoform	1,1-Dichloroethane	Methyl tert-butyl ether	Trichloroethene		
Bromomethane	1,3-Dichloropropane	Metolachlor	Trichlorofluoromethane		
Butachlor	2,2-Dichloropropane	Metribuzin	1,2,3-Trichloropropane		
N-Butylbenzene	1,1-Dichloropropene	MTBE	1,2,4-Trimethylbenzene		
Sec-Butylbenzene	1,3-Dichloropropene	Naphthalene	1,3,5-Trimethylbenzene		
Tert - Butylbenzene	Dicamba	1-Naphthol			
Carbaryl	Dichlorodifluoromethane	Paraquat			