

2019 Annual Water Quality Report
(Testing Performed January through December 2018)



ALABASTER WATER BOARD

213 1st Street North
Alabaster, AL 35007
www.alabasterwater.com
Phone 205-663-6155
Fax 205-663-4786

*Proudly Serving the Alabaster
Community for Over 60 Years*

The Alabaster Water Board (Alabaster Water) is pleased to present this Annual Water Quality Report to inform you about the quality of the water delivered to you. Alabaster Water works diligently to provide a high quality, cost effective drinking water supply.

Water Sources	Three groundwater wells producing from the Longview Newalla Aquifer	
	Purchased surface water from Shelby County South Water Treatment Plant – Coosa River	
	Purchased surface water from Talladega – Shelby Water Treatment Plant – Coosa River	
	Purchased surface water from Bessemer Water Service – Warrior River via Bessemer GUSC	
Additional Connections	Emergency connections with Montevallo, Calera, and Helena	
Water Treatment	Membrane filtration, chlorination and fluoridation	
Storage Capacity	Eleven tanks with a total storage capacity of 10.7 million gallons	
Number of Customers	Approximately 13,222 active metered service connections	
Water Board Manager	Laura A. Koon, P.E.	
Water Board Members	Bobby Harris, Chairman	Gary Wright, Director
	Mike Allen, Vice Chairman	Rick Ellis, Director
	Sophie Martin, Director	

Source Water Assessment

Alabaster Water has completed all of the components of the required Source Water Assessment Plan (SWAP) in accordance with the Alabama Department of Environmental Management (ADEM) regulations. This plan assists with protecting our water sources. The plan provides information such as the delineation of wellhead protection areas and potential sources of contamination within these areas. It also includes a susceptibility analysis which classifies potential contaminants as high, moderate or non-susceptible (low) to contaminating the water source. The SWAP is updated as needed.

Alabaster Water has also developed a Wellhead Protection Plan (WHPP) that provides additional measures for protecting our water sources. The Wellhead Protection Plan is a voluntary program developed in accordance with the ADEM Wellhead Protection Program Guidance Document. The WHPP and SWAP reports are available in our office for review or a copy may be purchased upon request for a nominal reproduction fee. Please help us protect 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.

Monitoring Schedule

Alabaster Water’s water sources are routinely monitored for contaminants, according to a schedule determined by Federal and State regulations, using Environmental Protection Agency (EPA)-approved methods and State certified laboratories. Every water system has individually assigned monitoring requirements. The ADEM allows monitoring of some contaminants less than once per year because the concentrations of these contaminants do not change frequently. The following table shows the most recent year of monitoring for these contaminant groups.

Constituent Monitored	Alabaster Water	Shelby Co. WTP	Talladega-Shelby WTP	Bessemer (GUSC)
Inorganic Contaminants	2017	2018	2017	2018
Lead/Copper	2017	2017	2018	2018
Microbiological Contaminants	Monthly	Monthly	Monthly	Monthly
Nitrates	2018	2018	2018	2018
Radioactive Contaminants	2018	2018	2017	2012
Synthetic Organic Contaminants (including pesticides & herbicides)	2018	2018	2016	2016
Volatile Organic Contaminants	2018	2017	2016	2016
Disinfection By-products	2018	2018	2018	2018
Cryptosporidium	2018	2018	2018	2017
Distribution System Evaluation (DSE) Disinfection By-products	2018	2018	NA	NA
Unregulated Contaminants Monitoring Rule 3 (UCMR3)	2014	2014	NA	NA
Unregulated Contaminants Monitoring Rule 4 (UCMR4)	2018	2018	NA	NA

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. Maximum Contaminant Levels (MCLs), 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. 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. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled 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 and 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.

Some individuals may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as those with cancer undergoing chemotherapy, those who have undergone organ transplants, individuals with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. Individuals at risk should seek advice from their health care providers about drinking water.

Surface water sources are tested for pathogens such as *Cryptosporidium* at certain intervals determined by the EPA and the ADEM. These pathogens can enter the water from animal or human waste. All test results were well within Federal and State standards. For people who may be immuno-compromised, a guidance document developed by the Center for Disease Control is available online at <http://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=200024LD.txt> or from the Safe Drinking Water Hotline at 1-800-426-4791. This language does not indicate the presence of *Cryptosporidium* in our drinking water.

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.

Information about Lead

Elevated levels of lead can cause serious health problems, especially for pregnant women, infants, and young children. However, *lead is rarely found in source water*. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Alabaster Water 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.

Only use water from the cold-water tap for drinking, cooking, and especially for making baby formula. Lead in household water usually comes from the plumbing in your house, not from the local water supply, and hot water is more likely to cause lead to leach from plumbing materials. 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 online at <https://www.epa.gov/your-drinking-water/basic-information-about-lead-drinking-water> or by calling the EPA's Safe Drinking Water Hotline at 1-800-426-4791.

Alabaster Water Board completed lead and copper testing at 30 sites in 2017. All lead test results were below the detection limit. All copper test results were below the MCL.

Questions?

If you have any questions about this report or concerning Alabaster Water, please contact Laura A. Koon, P.E., Manager, at 205-663-6155. If you would like to learn more, please attend one of our regularly scheduled monthly water board meetings. Board meetings are held on the first Tuesday of each month at 7:00 p.m. at the City of Alabaster Administration Building located at 1953 Municipal Way, Alabaster, Alabama. The Alabaster Water Board members are Bobby Harris, Chairman, Mike Allen, Vice Chairman, Sophie Martin, Director, Gary Wright, Director and Rick Ellis, Director. More information about contaminants in drinking water and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at 1-800-426-4791.

Monitoring Results – Primary, Secondary, and Unregulated Contaminants

This report contains results from the most recent monitoring of primary, secondary, and unregulated contaminants. The monitoring was performed in accordance with the sampling requirements established by EPA and ADEM. We have learned through our monitoring and testing that some constituents have been detected. Alabaster Water is pleased to report that our drinking water meets or exceeds federal and state drinking water requirements.

DETECTED DRINKING WATER CONTAMINANTS									
Regulated Primary Contaminants	Violation Y/N	Detected Alabaster Water	Detected Talladega Shelby WTP	Detected Shelby Co. WTP	Detected Bessemer (GUSC) WTP	Unit Msmt	MCLG	MCL	Likely Source of Contamination
Chlorine	NO	1.43-2.11	2.43	2.68	1.80	ppm	MRDLG=4	MRDL=4	Water additive used to control microbes
Turbidity	NO	0.41 100%<0.5	0.26	0.33	0.29	NTU	none	TT	Soil runoff
Total Organic Carbon	NO	Not required	2.40	1.20	0.87-2.26	ppm	none	TT	Soil runoff
Alpha emitters	NO	3.9	ND	ND	ND	PCi/l	0	15	Erosion of natural deposits
Copper	NO	0.172 * 0 > AL	NR	NR	0.098 * 0 > AL	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Fluoride	NO	ND	0.83	0.83-1.17	0.17-1.04	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from factories
Nitrate (as Nitrogen)	NO	0.85-1.15	0.40	0.27-0.40	ND-0.59	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of deposits
Regulated Disinfection By-products									
TTM [Total trihalomethanes]	NO	LRAA range 38.4-52.1	LRAA Range 16.0-17.4	LRAA range 49.2-52.3	LRAA range 12.2-98.0	ppb	0	80	By-product of drinking water chlorination
HAA5 [Total haloacetic acids]	NO	LRAA range 16.2-22.4	LRAA range 9.30-9.40	LRAA range 20.9-34.6	LRAA range 6.05-64.8	ppb	0	60	By-product of drinking water chlorination
Unregulated Contaminants									
Chloroform	NO	ND-0.71	4.50	0.56	6.0-101	ppb	none	none	Naturally occurring in the environment or as a result of industrial discharge or agricultural runoff
Bromodichloromethane	NO	ND	1.97	1.07	5.08-19.1	ppb	none	none	Naturally occurring in the environment or as a result of industrial discharge or agricultural runoff
Chlorodibromomethane	NO	ND	ND	1.15	2.23-3.90	ppb	none	none	Naturally occurring in the environment or as a result of industrial discharge or agricultural runoff
Secondary Contaminants									
Chloride	NO	5.03-8.27	10.0	9.67	11.2	ppm	none	250	Naturally occurring in the environment or from runoff
Hardness	NO	180-229	67.6	76.3	97.4	ppm	none	none	Naturally occurring in the environment or as a result of treatment with water additives
pH	NO	7.36-7.62	6.82-7.98	6.83-7.46	7.57	S.U.	none	6.5-8.5	Naturally occurring in the environment or as a result of treatment with water additives
Sodium	NO	1.76-3.12	5.31	5.37	17.2	ppm	none	none	Naturally occurring in the environment
Sulfate	NO	13.2-38.2	35.3	25.4	65.8	ppm	none	250	Naturally occurring in the environment; erosion of natural deposits
Total Dissolved Solids	NO	204-272	92.0	144	160	ppm	none	500	Naturally occurring in the environment or as a result of industrial discharge or agricultural runoff

*Figure shown is 90th percentile of distribution sites sampled and number of sites above Action Level (AL) of 1.3 ppm =0

Unregulated Contaminant Monitoring Rule 4 (UCMR 4)

Under the directive of the 1996 Safe Drinking Water Act (SDWA), every five years the EPA issues a new list of unregulated contaminants to be monitored by some public water systems (PWSs). The monitoring results may provide a basis for future regulatory actions to protect public health. The Fourth Unregulated Contaminant Monitoring Rule (UCMR4) required PWSs serving more than 10,000 people to monitor for 30 unregulated contaminants over a three year span, with each PWS assigned a monitoring period. Assigned monitoring periods for Alabaster Water were July, August, September, and October 2018 for cyanotoxins and October 2018, January 2019, April 2019, and July 2019 for the additional contaminants. The following table shows the UCMR4 contaminants tested in 2018 and the results.

UCMR 4 Contaminants							
	Unit Msmt	Level Detected (Alabaster)	Level Detected (Shelby Co)		Unit Msmt	Level Detected (Alabaster)	Level Detected (Shelby Co)
Contaminants (Entry Point)							
Germanium	ppb	ND	ND	Total permethrin (cis- & trans-)	ppb	ND	ND
Manganese	ppb	ND-5.56	ND	Tribufos	ppb	ND	ND
Alpha-hexachlorocyclohexane	ppb	ND	ND	1-butanol	ppb	ND	ND
Chlorpyrifos	ppb	ND	ND	2-methoxyethanol	ppb	ND	ND
Dimethipin	ppb	ND	ND	2-propen-1-ol	ppb	ND	ND
Ethoprop	ppb	ND	ND	Butylated hydroxyanisole	ppb	ND	ND
Oxyfluorfen	ppb	ND	ND	O-toluidine	ppb	ND	ND
Profenofos	ppb	ND	ND	Quinoline	ppb	ND	ND
Tebuconazole	ppb	ND	ND				
Cyanotoxins (Entry Point)							
Anatoxin-A	ppb	ND	ND	Microcystin-LY	ppb	ND	ND
Cylindrospermopsin	ppb	ND	ND	Microcystin-RR	ppb	ND	ND
Microcystin-LA	ppb	ND	ND	Microcystin-YR	ppb	ND	ND
Microcystin-LF	ppb	ND	ND	Nodularin	ppb	ND	ND
Microcystin-LR	ppb	ND	ND	Total Microcystins	ppb	ND	ND
Distribution Samples							
HAA5	ppb	117.0	67.2	Total organic carbon (TOC)	ppb	ND	3930
HAA6Br	ppb	34.0	11.0	Bromide	ppb	53.2	32.2
HAA9	ppb	145.7	77.6				

Distribution System Evaluation (DSE)

The ADEM requires public water systems to conduct a Distribution System Evaluation (DSE) every nine years. The DSE is a one-year study to determine locations of high disinfection by-product (total trihalomethanes and total haloacetic acids) concentrations throughout the water system distribution. Monitoring data from the DSE is compared with results from regulated disinfection by-products (TTHM and HAA5) monitoring to determine potential new monitoring sites. Alabaster Water's one year monitoring period was October 2017 through September 2018. The table below shows the results of DSE monitoring conducted by Alabaster Water during 2018.

Distribution System Evaluation (DSE) Contaminants			
Contaminants	Level Detected	Unit Msmt.	Likely Source of Contamination
TTHM [Total trihalomethanes]	25.8-95.8	ppb	By-product of drinking water chlorination
HAA5 [Total haloacetic acids]	9.16-53.1	ppb	By-product of drinking water chlorination

Definitions

Action Level (AL) - the concentration of a contaminant that, if exceeded, triggers treatment or other requirements.

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

Disinfection by-products (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 one-year study conducted by water systems to monitor disinfection by-products.

Locational Running Annual Average (LRAA) - yearly average of all the DPB results at each specific sampling site in the distribution system. The range of lowest to highest distribution site LRAA is reported in the Table of Detected Contaminants.

Maximum Contaminant Level (MCL) - The MCL is 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

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

Nephelometric Turbidity Unit (NTU) - a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

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

Not Applicable (NA) - the requirement for performing referenced monitoring was not required.

Not Reported (NR) - laboratory analysis, usually Secondary Contaminants, not reported by water system. EPA recommends secondary standards to water systems but does not require systems to comply.

Parts per billion (ppb) or **Micrograms per liter ($\mu\text{g/l}$)** - 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)** - corresponds to one minute in two years or a single penny in \$10,000.

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

Parts per trillion (ppt) or **Nanograms per liter (ng/l)** - 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.

RAA - Running annual average - level reported is the highest RAA for the year

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. Water with less than 6.5 could be acidic, soft, and corrosive. A pH greater than 8.5 could indicate that the water is hard.

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

Unregulated Contaminant Monitoring Rule (UCMR) - EPA program to collect data for contaminants suspected to be present in drinking water, but that do not have health-based standards.

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

Below is a list of *Primary Drinking Water Contaminants* for which Alabaster Water routinely monitors. These contaminants are monitored in accordance with sampling requirements established by EPA and ADEM; however, not all were detected in your drinking water. The contaminants that had some level of detection are listed in the table of *Detected Drinking Water Contaminants* located on page 3.

STANDARD LIST OF PRIMARY DRINKING WATER CONTAMINANTS					
Contaminant	MCL	Unit of Msmt	Contaminant	MCL	Unit of Msmt
Bacteriological Contaminants			trans-1,2-Dichloroethylene	100	ppb
Total Coliform Bacteria	<5%	present or absent	Dichloromethane	5	ppb
Fecal Coliform and E. coli	0	present or absent	1,2-Dichloropropane	5	ppb
Turbidity	TT	NTU	Di (2-ethylhexyl)adipate	400	ppb
Cryptosporidium	TT	TT	Di (2-ethylhexyl)phthalate	6	ppb
Radiological Contaminants			Dinoseb	7	ppb
Beta/photon emitters	4	mrem/yr	Dioxin [2,3,7,8-TCDD]	30	pg/l
Alpha emitters	15	pCi/l	Diquat	20	ppb
Combined radium	5	pCi/l	Endothall	100	ppb
Uranium	30	pCi/l	Endrin	2	ppb
Inorganic Chemicals			Epichlorohydrin	TT	TT
Antimony	6	ppb	Ethylbenzene	700	ppb
Arsenic	10	ppb	Ethylene dibromide	50	ppt
Asbestos	7	MFL	Glyphosate	700	ppb
Barium	2	ppm	Heptachlor	400	ng/l
Beryllium	4	ppb	Heptachlor epoxide	200	ng/l
Cadmium	5	ppb	Hexachlorobenzene	1	ppb
Chromium	100	ppb	Hexachlorocyclopentadiene	50	ppb
Copper	AL=1.3	ppm	Lindane	200	ng/l
Cyanide	200	ppb	Methoxychlor	40	ppb
Fluoride	4	ppm	Oxamyl [Vydate]	200	ppb
Lead	AL=15	ppb	Polychlorinated biphenyls (PCBS)	0.5	ppb
Mercury	2	ppb	Pentachlorophenol	1	ppb
Nitrate	10	ppm	Picloram	500	ppb
Nitrite	1	ppm	Simazine	4	ppb
Selenium	.05	ppm	Styrene	100	ppb
Thallium	.002	ppm	Tetrachloroethylene	5	ppb
Organic Contaminants			Toluene	1	ppm
2,4-D	70	ppb	Toxaphene	3	ppb
Acrylamide	TT	TT	2,4,5-TP(Silvex)	50	ppb
Alachlor	2	ppb	1,2,4-Trichlorobenzene	.07	ppm
Atrazine	3	ppb	1,1,1-Trichloroethane	200	ppb
Benzene	5	ppb	1,1,2-Trichloroethane	5	ppb
Benzo(a)pyrene [PAHs]	200	ppt	Trichloroethylene	5	ppb
Carbofuran	40	ppb	Vinyl Chloride	2	ppb
Carbon tetrachloride	5	ppb	Xylenes	10	ppm
Chlordane	2	ppb	Disinfectants & Disinfection By-products		
Chlorobenzene	100	ppb	Chlorine	4	ppm
Dalapon	200	ppb	Chlorine Dioxide	800	ppb
Dibromochloropropane	200	ppt	Chloramines	4	ppm
o-Dichlorobenzene	600	ppb	Bromate	10	ppb
p-Dichlorobenzene	75	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
cis-1,2-Dichloroethylene	70	ppb			

Below is a list of *Unregulated Contaminants* for which Alabaster Water routinely monitors. These contaminants are monitored in accordance with sampling requirements established by EPA and ADEM; however, not all were detected in your drinking water. The contaminants that had some level of detection are listed in the table of *Detected Drinking Water Contaminants* located on page 3 and 4.

LIST OF UNREGULATED CONTAMINANTS			
1,1 – Dichloropropene	Aldicarb	Chloroform	Metolachlor
1,1,1,2-Tetrachloroethane	Aldicarb Sulfone	Chloromethane	Metribuzin
1,1,2,2-Tetrachloroethane	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	Isoprpylbenzene	Propachlor
1,3,5 - Trimethylbenzene	Butachlor	M-Dichlorobenzene	Sec - Butylbenzene
2,2 – Dichloropropane	Carbaryl	Methomyl	Tert - Butylbenzene
3-Hydroxycarbofuran	Chloroethane	MTBE	Trichlorfluoromethane