

2018 Annual Water Quality Report
(Testing performed January through December 2017)

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CHILTON WATER AUTHORITY
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19246 US HWY 31
Clanton, AL 35045

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.

Water Sources	9 groundwater wells producing from the Coker Aquifer, Jemison Chert, Ordovician Knox Group, and Newala Limestone*
Water Treatment	<u>South Treatment Plant:</u> Aeration, coagulation, flocculation, sedimentation, gravity sand filtration, disinfection. Use polymer, lime, chlorine. <u>Kewish Plant:</u> Aeration. No filtration needed. Use lime, chlorine. <u>Gulf States Plant:</u> Aeration. No filtration needed. Use chlorine.
Storage Capacity	11 storage tanks with a total capacity of 4.65 million gallons
Inter-connections	Sell water continuously to Maplesville and Montevallo water systems Also connected to Autauga County, Billingsley, Clanton, Jemison, Marbury, North Dallas, Thorsby and Wilton water systems
Service Connections	Approximately 10,200
Water Board Members	Elmore Hicks, Chairman
	Tim Watley, Vice Chairman
	Harry Benson
	Jeffery Williams
	Patsy Leach
Water System Manager/Operator	Jason Smith

* The Jemison Chert well and plant serves customers located North of Highway 22, west from Clanton, and North of Cargile Creek, east of Clanton. The Coker aquifer and wells Roebuck, Osborne, Miller, Sellers, Chambers and Adams serve customers south of Highway 22 and west of Clanton and south of Cargile Creek. The Ordovician and Newala Limestone plant serves customers located west of US 31 and north of Highway 22.

Source Water Assessment

In compliance with the Alabama Department of Environmental Management (ADEM), Chilton Water Authority developed a Source Water Assessment plan that will assist in protecting our water sources. This plan provides additional information such as potential sources of contamination. It includes a susceptibility analysis, which classifies potential contaminants as high, moderate, or non-susceptible to contaminating the water source. The plan was completed and approved by ADEM, and a copy of the report is available in our office for review during normal 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.

Questions?

If you have any questions about this report or concerning your water utility, please contact Jason Smith at 205-646-3300. 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 third Thursday of the month at 4 p.m. at the water board office at 19246 US HWY 31 Clanton, AL.

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).

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 immuno-compromised 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).

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

Lead is rarely found in source water but is primarily from corrosion of materials and components associated with 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. 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.

Effective ways to reduce lead in household drinking water:

- 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.
- Use *only* water from the cold-water tap for drinking, cooking, and especially for making baby formula. Hot water is likely to contain higher levels of lead.

The two actions recommended above are very important to the health of your family. They are likely to be effective in reducing lead levels because most of the lead in household water usually comes from the plumbing in your house, not from the local water supply.

Monitoring Schedule and Results

Our water system monitors for contaminants according to a schedule assigned to us by the Alabama Department of Environmental Management (ADEM), using EPA approved methods and a State certified laboratory. This report contains results from the most recent monitoring which was performed in accordance with the State and Federal regulatory schedule. Note: ADEM allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently.

Constituent Monitored	Date Monitored
Inorganic Contaminants	2016
Lead/Copper	2017
Microbiological Contaminants	current
Nitrates	2017
Radioactive Contaminants	2010
Synthetic Organic Contaminants (including pesticides and herbicides)	2016
Volatile Organic Contaminants	2017
Disinfection By-products (DBPs)	2017
Unregulated Contaminant Rule 3 (UCMR3) Contaminants	2015

As you can see by the table below, our system had no violations. We have learned through our monitoring and testing that some constituents have been detected. We are pleased to report that our drinking water meets or exceeds federal and state requirements.

TABLE OF DETECTED DRINKING WATER CONTAMINANTS						
Contaminants	Violation Y/N	Level Detected	Unit Msmt	MCLG	MCL	Likely Source of Contamination
Chlorine Residual	NO	Kewish 1.54-235	ppm	MRDLG=4	MRDL=4	Water additive used to control microbes
		Gulf States 1.04-2.19				
		South 1.84-2.35				
Turbidity *	NO	Kewish 1.0	NTU	n/a	TT	Soil runoff
		Gulf States 2.0				
		South 0.7				
Alpha emitters	NO	1.6 ± 0.6	PCi/l	0	15	Erosion of natural deposits
Barium	NO	ND-0.12	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Copper **	NO	0.085	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from preservatives
Nitrate (as Nitrogen)	NO	ND-0.60	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
TTHM [Total trihalomethanes]	NO	RAA 6.71 ND-34.0	ppb	0	80	By-product of drinking water chlorination
HAA5 [Total haloacetic acids]	NO	RAA 1.49 ND-7.85	ppb	0	60	By-product of drinking water chlorination
Secondary Contaminants						
Chloride	NO	3.44-8.95	ppm	n/a	250	Naturally occurring in the environment or from runoff
Hardness	NO	41.8-135	ppm	n/a	n/a	Naturally occurring in the environment or from treatment
pH	NO	7.37-7.99	S.U.	n/a	n/a	Naturally occurring in the environment or as a result of treatment with water additives
Sodium	NO	2.01-4.37	ppm	n/a	n/a	Naturally occurring in the environment
Sulfate	NO	4.42-11.6	ppm	n/a	250	Naturally occurring in the environment or as a result of industrial discharge or agricultural runoff
Total Dissolved Solids	NO	76.0-164	ppm	n/a	500	Naturally occurring in the environment or as a result of industrial discharge or agricultural runoff

* Figure shown is highest turbidity

** Figure shown is 90th percentile and # of sites above action level (1.3 ppm) = 0

Unregulated Contaminant Monitoring Rule 3 (UCMR3) Contaminants - 2015		
Contaminants	Level Detected (Range)	Unit of Msmt.
Chromium	ND	ppb
Cobalt	ND	ppb
Molybdenum	ND	ppb
Strontium	ND-300	ppb
Vanadium	ND-0.40	ppb
Chromium, Hexavalent	ND-0.17	ppb
Chlorate	ND-38.0	ppb
1,4-Dioxane	ND	ppb
Bromochloromethane	ND	ppb
Bromomethane	ND	ppb
1,3-Butadiene	ND	ppb
Chlorodifluoromethane	ND	ppb
Chloromethane	ND	ppb
1,1-Dichloroethane	ND	ppb
1,2,3-Trichloropropane	ND	ppb
Perfluorobutanesulfonic acid (PFBS)	ND	ppb
Perfluoroheptanoic acid (PFHpA)	ND	ppb
Perfluorohexanesulfonic acid (PFHxS)	ND	ppb
Perfluorononanoic acid (PFNA)	ND	ppb
Perfluorooctane sulfonate (PFOS)	ND	ppb
Perfluorooctanoic acid (PFOA)	ND	ppb

DEFINITIONS

Action Level- 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 byproducts (DBPs)- are formed when disinfectants react with bromide and/or natural organic matter (i.e., decaying vegetation) present in the source water. Different disinfectants produce different types and amounts of disinfection byproducts. Disinfection byproducts for which regulations have been established include trihalomethanes (THM), haloacetic acids (HAA5), bromate, and chlorite.

Initial Distribution System Evaluation (IDSE)-a one-time study conducted by water systems to identify distribution system locations with high concentrations of trihalomethanes (THMs) and haloacetic acids (HAAs).

Level 1 Assessment-a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

Level 2 Assessment-a very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

Maximum Contaminant Level-(mandatory language) The Maximum Allowed (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-(mandatory language) The Goal (MCLG) is 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

Micrograms per liter (ug/L) – Equivalent to parts per billion (ppb) since one liter of water is equal in weight to one billion micrograms.

Milligrams per liter (mg/L) – Equivalent to parts per million

Millirems per year (mrem/yr)-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.

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

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 (ug/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 \$10,000,000,000,000.

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 (RAA)-yearly average of all the DPB results at each specific sampling site in the distribution system. The RAA, along with a range, is reported in the Table of Detected Contaminants.

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.

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* and a list of *Unregulated Contaminants* for which our water system routinely monitors. These contaminants were *not* detected in your drinking water unless they are listed in the *Table of Detected Drinking Water Contaminants*.

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/absent	Dichloromethane	5	ppb
Fecal Coliform and E. coli	0	present/absent	1,2-Dichloropropane	5	ppb
Turbidity	TT	NTU	Di (2-ethylhexyl)adipate	400	ppb
Cryptosporidium	TT	Calc.organisms/l	Di (2-ethylhexyl)phthalate	6	ppb
Radiological Contaminants			Dinoseb	7	ppb
Beta/photon emitters	4	mrem/yr	Dioxin [2,3,7,8-TCDD]	30	ppq
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	ppt
Beryllium	4	ppb	Heptachlor epoxide	200	ppt
Cadmium	5	ppb	Hexachlorobenzene	1	ppb
Chromium	100	ppb	Hexachlorocyclopentadiene	50	ppb
Copper	AL=1.3	ppm	Lindane	200	ppt
Cyanide	200	ppb	Methoxychlor	40	ppb
Fluoride	4	ppm	Oxamyl [Vydate]	200	ppb
Lead	AL=15	ppb	Polychlorinated biphenyls	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
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	Disinfectants & Disinfection Byproducts		
Dalapon	200	ppb	Chlorine	4	ppm
Dibromochloropropane	200	ppt	Chlorine Dioxide	800	ppb
o-Dichlorobenzene	600	ppb	Chloramines	4	ppm
p-Dichlorobenzene	75	ppb	Bromate	10	ppb
1,2-Dichloroethane	5	ppb	Chlorite	1	ppm
1,1-Dichloroethylene	7	ppb	HAA5 [Total haloacetic acids]	60	ppb
cis-1,2-Dichloroethylene	70	ppb	TTHM [Total trihalomethanes]	80	ppb
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	Isopropylbenzene	Propachlor		
1,3,5 - Trimethylbenzene	Butachlor	M-Dichlorobenzene	Sec - Butylbenzene		
2,2 - Dichloropropane	Carbaryl	Methomyl	Tert - Butylbenzene		
3-Hydroxycarbofuran	Chloroethane	MTBE	Trichlorofluoromethane		
SECONDARY CONTAMINANTS					
Alkalinity, Total (as CA, Co ₃)	Copper	Magnesium	Silver		
Aluminum	Corrosivity	Manganese	Sodium		
Calcium, as Ca	Foaming agents (MBAS)	Odor	Sulfate		
Chloride	Hardness	Nickel	Total Dissolved Solids		
Color	Iron	pH	Zinc		