2020 Annual Drinking Water Quality Report
(For period January through December 2019)

HARVEST-MONROVIA
WATER & SEWER AUTHORITY

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We are pleased to present to you this year's Annual Water Quality Report. This report is delivered to you each year to provide information about the quality of water the Authority provides to our customers. Last year, as in years past, your tap water met all U.S. Environmental Protection Agency (EPA) and Alabama Department of Environmental Management (ADEM) drinking water health standards. We diligently safeguard your water supplies, and once again we are proud to report that our system has not violated any water quality standard.

If you have any questions about this report or concerning your water utility, please contact Mike Oliver at 256-837-1132**.** 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 second Tuesday of each month at 1:30 p.m. at the water office.

Water Sources	8 groundwater wells producing from the Tuscumbia-Fort Payne Aquifer
Water Treatment	10 MGD Burwell Treatment Plant: flocculation, filtration, chlorination, fluoridation, coagulation, corrosion control 4.1 MGD Mt Zion Treatment Plant: microfiltration, chlorination, fluoridation, corrosion control
Storage Capacity	7 water storage facilities with a capacity of 11.5 million gallons
Population Served	Approximately 51,912
Interconnections	Madison County Water Department, Huntsville Utilities, Madison Water Works Board, and Limestone County Water Authority
Water Board Members	Roy McCrary, Chairman
	Frank Turner, Vice Chairman
	Tracy Brewer, Secretary

Water Quality Protection

Harvest-Monrovia Water and Sewer Authority developed a Source Water Assessment plan that will assist in protecting our water sources. The assessment was performed, public notification was completed, and the plan was approved by ADEM. As part of the assessment process, information on potential contaminant sources was defined, and the major sources were ascertained to be existing wells, agricultural run-off and septic tanks. The Assessment is available for review at the water office during regular business hours.

Harvest-Monrovia Water and Sewer Authority routinely completes a water storage facility inspection plan and utilizes a Bacteriological Monitoring Plan. The required chlorine residual is maintained throughout our distribution system to protect your drinking water from possible outside contaminants.

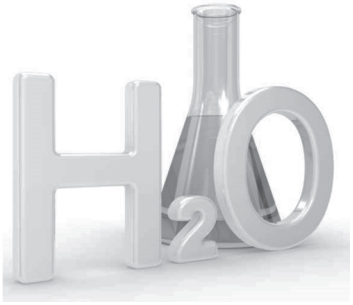
Please help us make these efforts worthwhile by protecting our source water. Carefully follow instructions on pesticides and herbicides you use for your lawn and garden, and properly dispose of household chemicals, paints, and waste oil. We ask that all our customers help us protect our valuable water sources, which are the heart of our community, our way of life, and our children's futures.

Excellence Awards

At Harvest-Monrovia Water and Sewer Authority, it is our goal to provide clean, safe drinking water to our customers throughout the year, and our staff strives each day to accomplish this goal. Our water system has won many excellence awards in our population-served division:

- 2019 AWPCA Award of Excellence for Ground Water 25,001-50,000 Population
- 2010 & 2011, 2016-2018 AWPCA Best Operated Distribution System
- 2007-2019 EPA and ADEM Optimization Award for Optimized Water Treatment

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. 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.

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.

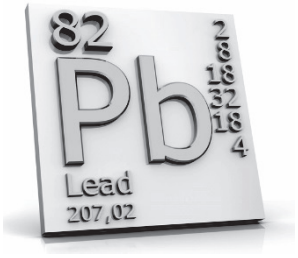
Some people may be more vulnerable to contaminants in drinking water than the general population. People who are immuno-compromised such as cancer patients undergoing chemotherapy, organ transplant recipients, HIV/AIDS positive or other immune system disorders, some elderly, and infants can be particularly 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 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. 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).

Water sources that are surface water or groundwater under the influence of surface water 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, the document "Guidance for People with Severely Weakened Immune Systems" was developed by the Center for Disease Control and 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. Testing for the following microbiological contaminants was performed on raw water, before any treatment.

Microbiological Contaminants	Levels Detected	Unit Msmt	MCLG	MCL	Likely Source
Cryptosporidium	ND	Oocysts/L	0	TT	Wildlife and/or human waste
Giardia	ND	Cysts/L	0	TT	Wildlife and/or human waste
E. Coli	ND	#/100mL	0	TT	Wildlife and/or human waste
Turbidity	0.02-15.7	NTU	n/a	n/a	Soil runoff

Information about Lead



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. Your water system 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.

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 will probably 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. 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.

Monitoring Schedule

We routinely monitor your drinking water for contaminants according to Federal and State laws. 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. This report contains results from the most recent monitoring which was performed in accordance with the regulatory schedule. 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.

Constituents Monitored	Monitored
Inorganic Contaminants	2019
Lead/Copper	2019
Microbiological Contaminants	current
Nitrates	2019
Radioactive Contaminants	2019
Synthetic Organic Contaminants (including herbicides and pesticides)	2019
Volatile Organic Contaminants	2019
Disinfection By-products	2019
Cryptosporidium (on raw water)	2017
Unregulated Contaminant Monitoring Rule (UCMR4) Contaminants	2019

TABLE OF DETECTED DRINKING WATER CONTAMINANTS

Primary Contaminants	Violation Y/N	Levels Detected	Unit Msmt	MCLG	MCL	Likely Source
Chlorine, finished water	NO	1.2-2.0	ppm	MRDLG=4	MRDL=4	Water additive used to control microbes
Total organic carbon	NO	RAA 1.0 ND-1.0	ppm	RAA<2.0	TT	Naturally present in the environment
Turbidity, filtered water	NO	0.01-0.13	NTU	n/a	0.3	Soil runoff: Indicator of the effectiveness of filtration
Alpha emitters	NO	2.04	PCi/l	0	15	Erosion of natural deposits
Barium	NO	0.02	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Carbofuran	NO	ND-0.53	ppb	40	40	Leaching of soil fumigant used on rice and alfalfa
Copper	NO	0.836 [1] 0 > AL	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead	NO	ND [2] 1 > AL	ppm	0	AL=0.015	Corrosion of household plumbing systems, erosion of natural deposits
Mercury (inorganic)	NO	0.10-0.15	ppb	2	2	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills or cropland
Nitrate (as Nitrogen)	NO	3.13-3.25	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Simazine	NO	ND-0.06	ppb	4	4	Herbicide runoff
TTHM [Total trihalomethanes]	NO	ND-11.6	ppb	0	80	By-product of drinking water chlorination
HAA5 [Total haloacetic acids]	NO	ND-6.43	ppb	0	60	By-product of drinking water chlorination
Unregulated Contaminants						
Chloroform	NO	14.7	ppb	70	n/a	Naturally occurring or from discharge or runoff
Bromodichloromethane	NO	4.60	ppb	0	n/a	Naturally occurring or from discharge or runoff
Chlorodibromomethane	NO	0.48	ppb	60	n/a	Naturally occurring or from discharge or runoff
Bromoform	NO	0.10	ppb	0	n/a	Naturally occurring or from discharge or runoff
Secondary Contaminants						
Alkalinity, Total (as CA, Co_3)	NO	86-140	ppm	n/a	n/a	Caused by carbonates, bicarbonates and hydroxides. Phosphates and silicates contribute.
Aluminum	NO	0.03-0.05	ppm	n/a	0.2	Erosion of natural deposits or from water treatment
Carbon Dioxide	NO	30-112	ppm	n/a	n/a	Naturally present in drinking water; sometimes added as water treatment to adjust pH
Chloride	NO	6.05-7.46	ppm	n/a	250	Naturally present in the environment or from runoff
Hardness	NO	21.2-117	ppm	n/a	n/a	Naturally occurring in the environment or from treatment
Iron	NO	ND-0.07	ppm	n/a	0.30	Naturally present in the environment; erosion of natural deposits; leaching from pipes
Magnesium	NO	1.76-6.60	ppm	n/a	n/a	Naturally occurring; dissolved minerals
Manganese	NO	ND-0.04	ppm	n/a	0.05	Erosion of natural deposits; leaching from pipes
Nickel	NO	ND-0.003	ppm	n/a	n/a	Erosion of natural deposits; leaching from pipes
pH	NO	6.8-7.1	S.U.	n/a	n/a	Naturally occurring in the environment or from treatment
Sodium	NO	3.85-5.46	ppm	n/a	n/a	Naturally occurring in the environment
Specific Conductance	NO	74.1-238	µs/cm	n/a	n/a	Indicates the presence of naturally-occurring ions that conduct electricity.
Sulfate	NO	0.28-2.11	ppm	n/a	250	Naturally present in the environment or from runoff
Total Dissolved Solids	NO	8.00-33.0	ppm	n/a	500	Naturally present in the environment or from runoff
Zinc	NO	ND-0.06	ppm	n/a	5	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills

[1] Figure shown is 90th percentile and # of sample sites exceeding Action Level (1.3 ppm) = 0
[2] Figure shown is 90th percentile and # of sample sites exceeding Action Level (0.015 ppm) = 1

UCMR4

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. Our assigned schedule was certain weeks during 2018 and 2019. The table below shows the contaminants we were required to monitor and the results of our monitoring.

UCMR 4 Contaminants					
Contaminants	**Unit Msmt**	**Level Detected**	**Contaminants**	**Unit Msmt**	**Level Detected**
Germanium	ppb	ND	Total permethrin (cis- & trans-)	ppb	ND
Manganese	ppb	ND-8.75	Tribufos	ppb	ND
Alpha-hexachlorocyclohexane	ppb	ND	1-butanol	ppb	ND
Chlorpyrifos	ppb	ND	2-methoxyethanol	ppb	ND
Dimethipin	ppb	ND	2-propen-1-ol	ppb	ND
Ethoprop	ppb	ND	Butylated hydroxyanisole	ppb	ND
Oxyfluorfen	ppb	ND	O-toluidine	ppb	ND
Profenofos	ppb	ND	Quinoline	ppb	ND-0.05
Tebuconazole	ppb	ND			
Cyanotoxins			**Cyanotoxins**		
Anatoxin-A	ppb	ND	Microcystin-LY	ppb	ND
Cylindrospermopsin	ppb	ND	Microcystin-RR	ppb	ND
Microcystin-LA	ppb	ND	Microcystin-YR	ppb	ND
Microcystin-LF	ppb	ND	Nodularin	ppb	ND
Microcystin-LR	ppb	ND	Total Microcystins	ppb	ND
Distribution Samples			**Distribution Samples**		
HAA5	ppb	ND-2.19	Total organic carbon (TOC)	ppb	ND-1020
HAA6Br	ppb	ND-2.16	Bromide	ppb	ND-25.7
HAA9	ppb	ND-2.19*			

***** The level 2.19 ppb occurred on Dichoroacetic acid, which is part of each of the 3 HAA "groups" tested. All other HAA levels detected were below 2.19 ppb.

DEFINITIONS: We have provided the definitions below to help you better understand terms and abbreviations used in this report.

Action Level- the concentration of a contaminant that, if exceeded, triggers treatment or other requirements for a water system.
ADEM- Alabama Department of Environmental Management.
AWPCA- Alabama Water and Pollution Control Association.
Coliform Absent (ca)- Laboratory analysis indicates that the contaminant is not present.
Disinfection byproducts (DBPs)- are formed when disinfectants used in water treatment plants react with bromide and/or natural organic matter present in the source water. Disinfection byproducts for which regulations have been established include trihalomethanes (TTHM), haloacetic acids (HAA5), bromate, and chlorite.
Distribution System Evaluation (DSE)-a four quarter study conducted by water systems to identify distribution system locations with high concentrations of trihalomethanes (THMs) and haloacetic acids (HAAs).
EPA- Environmental Protection Agency.
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
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.
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.
Non-Detects (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 $10,000,000,000,000.
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.
RAA–Running annual average
Running Annual Average (RAA)-yearly average of results at each specific sampling site.
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.
Variances & Exemptions (V&E)-State or EPA permission not to meet an MCL or a treatment technique under certain conditions.

The following table is a list of Primary Drinking Water Contaminants, Unregulated Contaminants, and Secondary Contaminants for which our water system routinely monitors according to our regulatory schedule. 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 & Byproducts**		
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
cis-1,2-Dichloroethylene	70	ppb	Total organic carbon	TT	ppm

LIST OF SECONDARY CONTAMINANTS			
Alkalinity, Total (as CA, Co_3)	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	

LIST OF UNREGULATED CONTAMINANTS			
Aldicarb	Chloroethane	Hexachlorobutadiene	Propachlor
Aldicarb Sulfone	Chloroform	3-Hydroxycarbofuran	N-Propylbenzene
Aldicarb Sulfoxide	Chloromethane	Isoprpylbenzene	Propachlor
Aldrin	O-Chlorotoluene	p-Isopropyltoluene	1,1,1,2-Tetrachloroethane
Bromoacetic Acid	P-Chlorotoluene	M-Dichlorobenzene	1,1,2,2-Tetrachloroethane
Bromobenzene	Dibromochloromethane	Methomyl	Tetrachloroethene
Bromochloromethane	Dibromomethane	Methomyl	Trichloroacetic Acid
Bromodichloromethane	1,1-Dichloroethane	Methylene chloride	1,2,3-Trichlorobenzene
Bromoform	1,3-Dichloropropane	Methyl tert-butyl ether	Trichloroethene
Bromomethane	2,2-Dichloropropane	Metolachlor	Trichlorofluoromethane
Butachlor	1,1-Dichloropropene	Metribuzin	1,2,3-Trichloropropane
N-Butylbenzene	1,3-Dichloropropene	MTBE	1,2,4-Trimethylbenzene
Sec-Butylbenzene	Dicamba	Naphthalene	1,3,5-Trimethylbenzene
Tert - Butylbenzene	Dichlorodifluoromethane	1-Naphthol	
Carbaryl	Dieldrin	Paraquat	