# 2021 Annual Drinking Water Quality Report

(For period January through December 2020)

## 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.

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
Board Members	Frank Turner, Chairman Tracy Brewer, Vice Chairman Brant Neely, Secretary

### Questions?

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.

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

### Water Quality Protection

Harvest-Monrovia Water and Sewer Authority developed a Source Water Assessment Plan (SWAP) that assists in protecting our water sources. All components of the SWAP were 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 SWAP 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 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**

Our goal at Harvest-Monrovia Water and Sewer Authority is 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. Our recent awards are:

- 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

### 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 <u>www.epa.gov/safewater/lead</u>.

#### **General Information**

All drinking water, including bottled water, may reasonably be 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 the 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, stormwater run-off, or 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 levels 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. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS 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.

#### **Microbiological Contaminants**

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 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 CDC and EPA is available online on the

EPA's website at <u>https:nepis.epa.gov/Ee/ZyPURL.cgi?Dockey=200024LD.txt</u> or from the Safe Drinking Water Hotline at 1-800-426-4791.

Testing for the microbiological contaminants listed in the adjacent table was performed on raw water, before any treatment. *Cryptosporidium has not been detected in our finished drinking water.* 

Microbiological Contaminants	Levels Detected	Unit Msmt	Likely Source
Cryptosporidium	ND	Oocysts/L	Wildlife and/or human waste
Giardia	ND	Cysts/L	Wildlife and/or human waste
E. Coli	ND	#/100mL	Wildlife and/or human waste
Turbidity	0.02-9.9	NTU	Soil runoff

#### **Monitoring Schedule and Results**

We routinely monitor your drinking water for contaminants according to Federal and State laws. The Alabama Department of Environmental Management allows us to monitor for some contaminants less than once per year because the levels 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 are pleased to report that our drinking water meets or exceeds federal and state requirements. 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.

Constituents Monitored	Monitored			
Inorganic Contaminants	2019			
Lead/Copper	2019			
Microbiological Contaminants	current			
Nitrates	2020			
Radioactive Contaminants	2014			
Synthetic Organic Contaminant	2019			
Volatile Organic Contaminants	2020			
Disinfection By-products	2020			
Cryptosporidium (on raw water)	2017			
UCMR4 Contaminants	2019			
PFAS Contaminants	2020			

DETECTED DRINKING WATER CONTAMINANTS									
Primary Contaminants	Violation Y/N	Levels Detected	Unit Msmt	MCLG	MCL	Likely Source			
Chlorine, finished water	NO	1.3-2.1	ppm	MRDLG=4	MRDL=4	Water additive used to control microbes			
Total organic carbon	NO	ND-1.0	ppm	RAA<2.0	TT	Naturally present in the environment			
Turbidity, filtered water	NO	0.01-0.09	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	Drilling waste and refinery discharge; erosion			
Carbofuran	NO	ND-0.53	ppb	40	40	Leaching of soil fumigant used on rice and alfalfa			
Chromium	NO	ND-0.80	ppb	100	100	Steel and pulp mill discharge; erosion of natural deposits			
Copper	NO	0.836 <sup>1</sup>	ppm	1.3	AL=1.3	Household plumbing corrosion; erosion; preservative leaching			
Fluoride	NO	0.1-1.3	ppm	4	4	Erosion; water additive; fertilizer & aluminum factory discharge			
Lead	NO	ND <sup>2</sup>	ppm	0	AL=0.015	Corrosion of household plumbing systems, erosion			
Mercury (inorganic)	NO	0.10-0.15	ppb	2	2	Erosion; discharge from industry; runoff			
Nitrate (as Nitrogen)	NO	3.13-3.25	ppm	10	10	Fertilizer runoff; septic tank leaching, sewage; erosion			
Simazine	NO	ND-0.06	ppb	4	4	Herbicide runoff			
TTHM [Total trihalomethanes]	NO	RAA 4.1 (0.44-10.3)	ppb	0	80	By-product of drinking water chlorination			
HAA5 [Total haloacetic acids]	NO	RAA 2.00 (ND-5.15)	ppb	0	60	By-product of drinking water chlorination			
Unregulated Contaminants									
Chloroform	NO	2.47	ppb	70		Naturally occurring or from discharge or runoff			
Bromodichloromethane	NO	0.43	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			
Naphthalene	NO	1.20	ppb	100	n/a	Factory discharge; landfill runoff; insecticide and pesticide runoff			
Secondary Contaminants		-							
Alkalinity, Total (as CA, Co <sub>3</sub> )	NO	88-138	ppm	n/a	n/a	Caused by carbonates, bicarbonates and hydroxides			
Aluminum	NO	0.03-0.05	ppm	n/a	0.2	Erosion of natural deposits or from water treatment			
Calcium	NO	5.92-38.7	ppm	n/a	n/a	Naturally occurring; dissolved minerals			
Carbon Dioxide	NO	30-110	ppm	n/a	n/a	Naturally occurring or used to adjust pH			
Chloride	NO	6.05-7.46	ppm	n/a	250	Naturally occurring 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-0.06	ppm	n/a	0.30	Naturally occurring; erosion; leaching from pipes			
Magnesium	NO	1.76-6.60	ppm	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			
рН	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 presence of natural 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; discharge from industry; runoff from landfills			
<sup>1</sup> Figure shown is 90 <sup>th</sup> perceptile and $\# d$	f comple citor	avagading the		lof 1 2 nnm = 0					

<sup>1</sup> Figure shown is 90<sup>th</sup> percentile and # of sample sites exceeding the Action Level of 1.3 ppm = 0.
<sup>2</sup> Figure shown is 90<sup>th</sup> percentile and # of sample sites exceeding the Action Level of 0.015 ppm = 1.

Fourth Unregulated Contaminant Monitoring Rule (UCMR4) Contaminants								
Contaminants Unit Level Msmt Detected Contam		Contaminants	Unit Level Msmt Detected		Contaminants	Unit Msmt	Level Detected	
Germanium	ppb	ND	Oxyfluorfen	ppb	ND	2-methoxyethanol	ppb	ND
Manganese	ppb	ND-8.75	Profenofos	ppb	ND	2-propen-1-ol	ppb	ND
Alpha-hexachlorocyclohexane	ppb	ND	Tebuconazole	ppb	ND	Butylated hydroxyanisole	ppb	ND
Chlorpyrifos	ppb	ND	Total permethrin (cis- & trans-)	ppb	ND	O-toluidine	ppb	ND
Dimethipin	ppb	ND	Tribufos	ppb	ND	Quinoline	ppb	ND-0.05
Ethoprop	ppb	ND	1-butanol	ppb	ND			
		•	Cyanotoxins				•	
Anatoxin-A	ppb	ND	Microcystin-LR	ppb	ND	Nodularin	ppb	ND
Cylindrospermopsin	ppb	ND	Microcystin-LY	ppb	ND	Total Microcystins	ppb	ND
Microcystin-LA	ppb	ND	Microcystin-RR	ppb	ND			
Microcystin-LF	ppb	ND	Microcystin-YR	ppb	ND			
Distribution Samples								
HAA5	ppb	ND-2.19	HAA9	ppb	ND-2.19	Total organic carbon (TOC)	ppb	ND-1020
HAA6Br	ppb	ND-2.16				Bromide	ppb	ND-25.7

Per- and polyfluoroalkyl substances (PFAS) are a group of man-made chemicals for which the EPA has not established primary drinking water regulations. The lifetime health advisory level for PFOA and PFOS is a combined 70 parts per trillion (ppt), or 0.07 parts per billion (ppb). Below is a list of PFAS contaminants for which our water sources were monitored in 2020 as required.

PFAS Contaminants								
Contaminant		Level Detected		Contaminant	Unit Msmt	Level Detected		
11CI-PF3OUdS (11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid)	ppb	ND		Perfluoroheptanoic acid	ppb	ND		
9CI-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	ND0044		
NEtFOSAA (N-ethylperfluorooctanesulfonamidoacetic acid)	ppb	ND		Perfluorooctanoic acid	ppb	ND		
NMeFOSAA (N-methylperfluorooctanesulfonamidoacetic acid0	ppb	ND		Perfluorotetradecanoic acid	ppb	ND		
Perfluorobutanesulfonic acid	ppb	ND- .0043		Perfluorotridecanoic acid	ppb	ND		
Perfluorodecanoic acid	ppb	ND		Perfluoroundecanoic acid	ppb	ND		
Perfluorohexanoic acid	ppb	ND		Total PFAS	ppb	ND-0087		
Perfluorododecanoic acid	ppb	ND						

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

## Monitoring Violation 2020

Due to a laboratory error not involving water system staff Harvest-Monrovia Water System incurred a Total Trihalomethanes (TTHM) monitoring non-compliance for the October-December 2020 monitoring period. Our water quality was not affected. When the analysis was completed, the results were all well within regulatory standards.

#### 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 part per (picograms/I)-one 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 (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. 

	)F PRIMARY L	DRINKING WATER CONT	AMINANTS			
MCL	Unit of Msmt	Contaminant	MCL	Unit of Msmt		
3		cis-1,2-Dichloroethylene	70	ppb		
<5%	present/absent	trans-1,2-Dichloroethylene	100	ppb		
0	present/absent	Dichloromethane	5	ppb		
				ppb		
TT	Calc.organisms/I			ppb		
				ppb		
				ppb		
				ppq		
				ppb		
30	pCi/i			ppb		
	1000			ppb		
				IT		
11000				ppb ppt		
				ppt		
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1			200000	ppb		
				ppb		
.002				ppb		
70	ppb			ppm		
				pph		
				ppb		
				ppm		
				ppb		
				ppb		
				ppb		
0.0000000				ppb		
			10	ppm		
			Byproducts	E E E		
200		Chlorine	4	ppm		
200		Chlorine Dioxide	800	ppb		
1000		Chloramines	4	ppm		
75		Bromate	10	ppb		
600		Chlorite	1	ppm		
5		HAA5 [Total haloacetic acids]	60	ppb		
7	ppb	TTHM [Total trihalomethanes]	80	ppb		
	LIST OF SECOND	ARY CONTAMINANTS				
Copper		Manganese	Specific Con	ductance		
1 000 X 1 Cast Cr 10000		Odor				
Foaming	agents (MBAS)	Nickel	Total Dissolved Solids			
	5		Zinc			
1						
				v Markoldo kusza		
			N-Propylbenzene			
			1,1,1,2-Tetrachloroethane			
			1,1,2,2-Tetrachloroethane			
	chloromethane	M-Dichlorobenzene	Tetrachloroethene			
Bromochloromethane 1,2-Dibromoeth		Methomyl Methology chloride	Trichloroacetic Acid			
	Bromodichloromethane Dibromomethane Bromoform 1,1-Dichloroethane		ene chloride 1,2,3-Trichloroben:			
Dibromo						
Dibromo 1.1-Dich	oroethane	Methyl tert-butyl ether	Trichloroethe			
Dibromo 1.1-Dich 1.3-Dich	oroethane oropropane	Methyl tert-butyl ether Metolachlor	Trichloroethe Trichlorofluor	romethane		
Dibromo 1 1-Dich 1 3-Dich 2 2-Dich	oroethane oropropane oropropane	Methyl tert-butyl ether Metolachlor Metribuzin	Trichloroethe Trichlorofluor 1,2,3-Trichlo	romethane ropropane		
Dibromo 1,1-Dichl 1,3-Dichl 2,2-Dichl 1,1-Dichl	oroethane oropropane oropropane oropropene	Methyl tert-butyl ether Metolachlor Metribuzin MTBE	Trichloroethe Trichlorofluor 1,2,3-Trichlo 1,2,4-Trimeth	romethane ropropane nylbenzene		
Dibromo 1,1-Dichl 1,3-Dichl 2,2-Dichl 1,1-Dichl	oroethane oropropane oropropane oropropene oropropene	Methyl tert-butyl ether Metolachlor Metribuzin	Trichloroethe Trichlorofluor 1,2,3-Trichlo	romethane ropropane nylbenzene		
	0 TT TT 4 15 5 30 6 10 7 2 4 5 100 AL=1.3 200 AL=1.3 200 AL=1.3 200 AL=1.3 200 1 0 0 20 70 TT 2 3 5 200 40 5 2 100 1 0 5 2 100 1 0 5 5 7 2 200 40 5 5 7 2 200 200 40 5 5 7 2 200 200 200 200 200 200 20	0     present/absent       TT     NTU       TT     Calc.organisms/I       4     mrem/yr       15     pCi/I       5     pCi/I       30     pCi/I	0     present/absent     Dickloromethane       TT     NTU     1,2-Dichloropropane       TT     Calc.organisms/I     Di (2-ethylhexyl)aclipate       Di (2-ethylhexyl)phthalate     Di (2-ethylhexyl)phthalate       15     pCi/I     Dioxeb       15     pCi/I     Dioxeb       30     pCi/I     Endothall	0     present/absent     Dichloromethane     5       TT     NTU     1,2-Dichloropropane     5       TT     Calc.organisms/l     Di (2-ethylhexyl)adipate     400       Di (2-ethylhexyl)phthalate     6     7       15     pCi/l     Dioxin [2,3,7,8-TCDD]     30       5     pCi/l     Endothall     100       6     ppb     Epichlorohydrin     TT       10     ppb     Epichlorohydrin     TT       10     ppb     Ethylene dibromide     50       2     ppm     Glyphosate     700       4     ppb     Heptachlor     400       5     ppb     Heptachlor     400       5     ppb     Heptachlor epoxide     200       100     ppb     Hexachlorocyclopentadiene     50       200     ppb     Undane     200       200     ppb     Polychorinated biphenyls     0.5       10     ppm     Pentachlorophenol     1       1     ppm     Simazine     4 </td		