2022 Annual Water Quality Report

Testing performed January through December 2021

Jasper Waterworks and Sewer Board

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Office Hours: 7:30 AM - 4:30 PM, Monday – Friday

The Jasper Waterworks and Sewer Board is pleased to present this year's Annual Water Quality Report, which is designed to inform you about the quality of your water. Our goal is to deliver water that meets regulatory requirements and your expectations for safety, quality, and reliability. If you have questions about the report, please contact our water office or visit our website *www.jwwsb.org*. You may also attend the monthly board meetings held on the third Tuesday of each month at 12:00 P.M. at the board office located at 1620 Alabama Avenue. 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 Source	Surface water from the Mulberry Fork of the Warrior River	
Treatment Plants	One 18-MGD (million gallons/day)	
Laye-Williams Water Treatment Plant	Raw water is aerated at the Laye-Williams Water Treatment Plant to prevent taste and odor problems. Chlorine Dioxide is fed in the raw water as a pre-oxidant to reduce disinfection by-product formation and to address potential taste and odor issues. Lime is added for pH adjustment and sodium permanganate for aid in organic removal. Alum is added as a coagulant aid. The water flows through two flocculation basins and three settling basins prior to entering the rapid sand filters. Chlorine is added after filtration for disinfection and zinc orthophosphate for corrosion control.	
Number of Customers	Approximately 10,000	
Storage Capacity	9 tanks, total capacity of 8.9 million gallons	
Public Fire Hydrants	Approximately 848	
Waterworks Board	Michael Williams, General Manager	Bob Forbus, District 3
	Alan McAdams, District 1 Chairman	Haig Wright, District 4,
	Phillip Lee, District 2 Vice Chairman	Fred Webb, District 5

Source Water Assessment

In compliance with the Alabama Department of Environmental Management (ADEM), Jasper Waterworks and Sewer Board has completed an extensive Source Water Assessment as required by the Alabama Department of Environmental Management. This Assessment provides 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. It has been determined by the results of the assessment that our source water susceptibility ranking has a LOW potential to contamination. Anyone wishing to view this report should contact the water office at 205-221-2141.

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.

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 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.

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.

This water system also tests our source water for pathogens, such as *Cryptosporidium* and *Giardia*. These pathogens can enter the water from animal or human waste. For people who may be immuno-compromised, a guidance document developed jointly by the Environmental Protection Agency and the Center for Disease Control is available online at www.epa.gov/safewater/crypto.html or from the Safe Drinking Water Hotline at 800-426-4791. All test results were well within state and federal standards. *Cryptosporidium and Giardia have not been detected in our finished drinking water.*

Information about Lead

Elevated levels of lead can cause serious health problems, especially for pregnant women, infants, and young children. NEVER make baby formula with warm or hot tap water. Lead is rarely found in source water. If lead is present in tap water, it is primarily from corrosion of materials that were used in older plumbing, solder that connects pipes, or from pipes connecting a house to the main water pipe in the street. Lead is no longer used in manufacturing these products, but plumbing components containing lead may still remain in some older homes and buildings. When water sits for several hours in pipes containing these older materials, lead can leach into the water.

Your water system is responsible for providing high quality drinking water but cannot control the variety of materials that were used in household plumbing. The EPA and the CDC make the following recommendations:

- Before using any tap water for drinking or cooking, flush your water system by running the kitchen tap (or any other tap you take drinking or cooking water from) on COLD for 1–2 minutes. Flushing can minimize the potential for lead exposure, especially if the water has been sitting undisturbed for several hours, as in overnight.
- In all situations, especially for making baby formula, drink or cook only with water that comes out of the cold tap. Warm or hot tap water is more likely to cause lead to leach from plumbing materials.
- Periodically remove the aerator on the tip of the faucet and wash out any debris such as metal particles.

You can't see, smell or taste lead in your water, and boiling will NOT reduce the amount of lead in your water. Testing at the tap is the only way to measure the lead levels in your home or workplace. If you choose to have your tap water tested, be sure to use a properly certified laboratory. Testing usually costs between $20 and $100. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water hotline at 800-426-4791 and from CDC at http://www.cdc.gov/nceh/lead/tips/water.htm.

Monitoring Schedule and Results

Our water source is routinely monitored for contaminants according to a schedule determined by Federal and State regulations using 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	Date Monitored
Inorganic Contaminants	2021
Lead/Copper	2021
Microbiological Contaminants	current
Nitrates	2021
Radioactive Contaminants	2021
Synthetic Organic Contaminants (including pesticides and herbicides)	2021 partial
Volatile Organic Contaminants	2021
Disinfection By-products	2021
Cryptosporidium	2017
Unregulated Contaminants Monitoring Rule 4 (UCMR4) Contaminants	2020

This Annual Water Quality Report summarizes the results of our extensive monitoring and testing for a wide array of contaminants and chemicals. As you can see by the tables below, our system had no violations. We have learned through our monitoring and testing that some constituents have been detected. We are proud to say we meet or exceed all drinking water requirements

Detected Drinking Water Contaminants						
Contaminants	**Violation Y/N**	**Level Detected**	**Unit Msmt**	**MCLG**	**MCL**	**Likely Source of Contamination**
Chlorine	NO	1.3-1.9	ppm	MRDLG =4	MRDL =4	Water additive used to control microbes
Chlorite, at WTP	NO	075.-1.00	ppm	0.8	1	Byproduct of drinking water chlorination
Chlorite, in distribution	NO	0.52-0.95	ppm	0.8	1	Byproduct of drinking water chlorination
Total coliform bacteria	NO	2 positive samples *	Present/ Absent	0	5% of monthly samples	Naturally present in the environment
Turbidity	NO	Highest 0.153	NTU	n/a	TT	Soil runoff
Total Organic Carbon	NO	ND-2.30	ppm	n/a	TT	Soil runoff
Barium	NO	0.02	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Copper	NO	0.097 ** 0>AL	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching of preservatives
Nitrate (as Nitrogen)	NO	0.58	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
TTHM -Total trihalomethanes	NO	Highest LRAA 34.5 (Range 16.0-54.0)	ppb	0	80	By-product of drinking water chlorination
HAA5 -Total haloacetic acids	NO	Highest LRAA 28.8 (Range 11.0-51.0)	ppb	0	60	By-product of drinking water chlorination
Unregulated Contaminants						
Chloroform	NO	17.0	ppb	n/a	n/a	Naturally occurring; industrial discharge; agricultural runoff
Bromodichloromethane	NO	2.90	ppb	0	n/a	Naturally occurring; industrial discharge; agricultural runoff
Secondary Contaminants						
Aluminum	NO	0.02	ppm	n/a	0.2	Erosion; treatment with water additives
Chloride	NO	12.9	ppm	n/a	250	Naturally occurring; industrial discharge; agricultural runoff
Color	NO	5.0	units	n/a	15	Naturally occurring; treatment with water additives
Hardness	NO	54.7	ppm	n/a	n/a	Naturally occurring; treatment with water additives
Iron	NO	0.06	ppm	n/a	0.30	Naturally occurring; erosion; leaching from pipes
pH	NO	7.1	S.U.	n/a	n/a	Naturally occurring; treatment with water additives
Sodium	NO	7.2	ppm	n/a	n/a	Naturally occurring in the environment
Sulfate	NO	21.0	ppm	n/a	250	Naturally occurring; industrial discharge; agricultural runoff
Total Dissolved Solids	NO	66.0	ppm	n/a	500	Naturally occurring; industrial discharge; agricultural runoff
Zinc	NO	0.49	ppm	n/a	5	Erosion; refinery or factory discharge; landfill runoff

***** One positive sample occurred in August and one in December. All follow-up samples were negative for coliform bacteria.
****** Figure shown is 90th percentile and # of sites above Action Level (AL) = 0

UCMR4 Contaminants

The Fourth Unregulated Contaminant Monitoring Rule (UCMR4) required some systems to monitor for 30 unregulated contaminants during January 2018 through December 2020 on an assigned schedule. The table below shows the results of our assigned monitoring during 2019 and 2020.

Unregulated Contaminant Rule 4 (UCMR4) Contaminants					
Contaminants	**Unit Msmt**	**Level Detected**	**Contaminant**	**Unit Msmt**	**Level Detected**
Germanium	ppb	ND	1-butanol	ppb	ND
Manganese	ppb	0.77-1.60	2-methoxyethanol	ppb	ND
Alpha-hexachlorocyclohexane	ppb	ND	2-propen-1-ol	ppb	ND
Chlorpyrifos	ppb	ND	Butylated hydroxyanisole	ppb	ND
Dimethipin	ppb	ND	O-toluidine	ppb	ND
Ethoprop	ppb	ND	Quinoline	ppb	ND
Oxyfluorfen	ppb	ND	Total organic carbon (TOC)	ppb	2530
Profenofos	ppb	ND	Bromide	ppb	ND
Tebuconazole	ppb	ND	HAA9	ppb	ND-26.9
Total permethrin (cis- & trans-)	ppb	ND	HAA6Br	ppb	ND-2.4
Tribufos	ppb	ND	HAA5	ppb	ND-24.5

DEFINITIONS

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.

Coliform Absent- (ca) indicates that coliform bacteria is not present.

Disinfection byproducts- (DBPs) are formed when disinfectants react with bromide and/or natural organic matter present in the source water. Disinfection byproducts for which we test are trihalomethanes (TTHM), haloacetic acids (HAA5), bromate, and chlorite.

Distribution System Evaluation- (DSE) a four quarter study to identify locations with high concentrations of disinfection byproducts.

EPA- Environmental Protection Agency.

Maximum Contaminant Level- (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

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

Running Annual Average- (RAA) running 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.

Treatment Technique- (TT) 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. 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**
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
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)	Alkalinity, Total (as CA, Co_3)	Alkalinity, Total (as CA, Co_3)	Alkalinity, Total (as CA, Co_3)
Aluminum	Aluminum	Aluminum	Aluminum
Calcium, as Ca	Calcium, as Ca	Calcium, as Ca	Calcium, as Ca
Chloride	Chloride	Chloride	Chloride
Color	Color	Color	Color

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	