

2023 Annual Water Quality Report
Testing performed January through December 2022



Jasper Waterworks and Sewer Board

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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 908	
Waterworks Board	Michael Williams, General Manager	Bob Forbus, District 3 Vice Chairman
	Alan McAdams, District 1	Haig Wright, District 4,
	Phillip Lee, District 2 Chairman	Robert Epps, 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	2022
Lead/Copper	2021
Microbiological Contaminants	current
Nitrates	2022
Radioactive Contaminants	2021
Synthetic Organic Contaminants (including pesticides and herbicides)	2022
Volatile Organic Contaminants	2022
Disinfection By-products	2022
Cryptosporidium	2017
Unregulated Contaminants Monitoring Rule 4 (UCMR4) Contaminants	2022

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 MCL 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	1.2-1.9	ppm	MRDLG=4	MRDL=4	Water additive used to control microbes
Chlorite, at WTP	NO	0.75-1.00	ppm	0.8	1	Byproduct of drinking water chlorination
Chlorite, in distribution	NO	0.57-0.81	ppm	0.8	1	Byproduct of drinking water chlorination
Turbidity	NO	Highest 0.099	NTU	n/a	TT	Soil runoff
Total coliform bacteria	NO	2 *	Present/ Absent	0	5% of monthly samples	Naturally present in the environment
Total Organic Carbon	NO	0.86-1.40	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	Max LRAA 30.8 (Range 14.0-46.0)	ppb	0	80	By-product of drinking water chlorination
HAA5 -Total haloacetic acids	NO	Max LRAA 24.8 (Range 15.0-33.0)	ppb	0	60	By-product of drinking water chlorination
Unregulated Contaminants						
Chloroform	NO	7.90	ppb	n/a	n/a	Naturally occurring; industrial discharge; agricultural runoff
Bromodichloromethane	NO	3.40	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

* Two positive samples: one in October 2022 and one in December 2022. All follow-up samples were negative for coliform bacteria.

** Figure shown is 90th percentile and # of sites above Action Level (AL) = 0

UCMR4: 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

PFAS: Per- and polyfluoroalkyl substances (PFAS) are a group of man-made chemicals that were used in the manufacture of nonstick cookware, stain-resistant carpet and textiles, food wrappers, and other industrial and consumer applications. The U.S. Environmental Protection Agency (EPA) has not established primary drinking water MCLs for PFAS substances. Below is a list of PFAS contaminants for which our system monitored in 2022 and the results of that monitoring. *PFAS was not detected in our drinking water.* For more information on PFAS contaminants, please consult www.epa.gov/pfas.

Contaminant	Unit Msmt	Level Detected	Contaminant	Unit Msmt	Level Detected
11Cl-PF3OUdS (11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid)	ppb	ND	Perfluoroheptanoic acid	ppb	ND
9Cl-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	ND
NEtFOSAA (N-ethylperfluorooctanesulfonamidoacetic acid)	ppb	ND	Perfluorooctanoic acid	ppb	ND
NMeFOSAA (N-methylperfluorooctanesulfonamidoacetic acid)0	ppb	ND	Perfluorotetradecanoic acid	ppb	ND
Perfluorobutanesulfonic acid	ppb	ND	Perfluorotridecanoic acid	ppb	ND
Perfluorodecanoic acid	ppb	ND	Perfluoroundecanoic acid	ppb	ND
Perfluorohexanoic acid	ppb	ND	Total PFAS	ppb	ND
Perfluorododecanoic acid	ppb	ND			

Monitoring Non-compliance 2022: Jasper Waterworks and Sewer Board incurred a PFAS monitoring non-compliance by failing to collect samples during the January-March 2022 monitoring period.

Reporting Non-compliance 2022: Jasper Waterworks and Sewer Board incurred a reporting non-compliance during 2022 for a failure to report the April-June 2022 PFAS monitoring results by July 10, 2022. The ADEM Admin. Code states, "the supplier of water shall report to the Department the results of any test, measurement or analysis within the first 10 days following the month in which the result is received or the first 10 days following the end of the required monitoring period as stipulated by the Department, whichever is shortest."

We conducted PFAS monitoring during June and August, and PFAS was not detected in our drinking water. If you have any questions about this non-compliance or your water quality, please contact our office at 205-221-2141.

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.

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. Different disinfectants produce different types or amounts of disinfection byproducts. Disinfection byproducts for which regulations have been established include trihalomethanes (TTHM), haloacetic acids (HAA5), bromate, and chlorite.

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

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. MRDLG's 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. 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 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 (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

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.

Following is a list of Primary Drinking Water Contaminants, Secondary Contaminants, and Unregulated Contaminants for which our water system routinely monitors on a schedule established by State and Federal regulators. 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			cis-1,2-Dichloroethylene	70	ppb
Total Coliform Bacteria	<5%	present/absent	trans-1,2-Dichloroethylene	100	ppb
Fecal Coliform and E. coli	0	present/absent	Dichloromethane	5	ppb
Turbidity	TT	NTU	1,2-Dichloropropane	5	ppb
Cryptosporidium	TT	Calc.organisms/l	Di (2-ethylhexyl)adipate	400	ppb
Radiological Contaminants			Di (2-ethylhexyl)phthalate	6	ppb
Beta/Photon emitters	4	mrem/yr	Dinoseb	7	ppb
Alpha emitters	15	pCi/l	Dioxin [2,3,7,8-TCDD]	30	ppq
Combined radium	5	pCi/l	Diquat	20	ppb
Uranium	30	pCi/l	Endothall	100	ppb
Inorganic Chemicals			Endrin	2	ppb
Antimony	6	ppb	Epichlorohydrin	TT	TT
Arsenic	10	ppb	Ethylbenzene	700	ppb
Asbestos	7	MFL	Ethylene dibromide	50	ppt
Barium	2	ppm	Glyphosate	700	ppb
Beryllium	4	ppb	Heptachlor	400	ppt
Cadmium	5	ppb	Heptachlor epoxide	200	ppt
Chromium	100	ppb	Hexachlorobenzene	1	ppb
Copper	AL=1.3	ppm	Hexachlorocyclopentadiene	50	ppb
Cyanide	200	ppb	Lindane	200	ppt
Fluoride	4	ppm	Methoxychlor	40	ppb
Lead	AL=15	ppb	Oxamyl [Vydate]	200	ppb
Mercury	2	ppb	Polychlorinated biphenyls	0.5	ppb
Nitrate	10	ppm	Pentachlorophenol	1	ppb
Nitrite	1	ppm	Picloram	500	ppb
Selenium	.05	ppm	Simazine	4	ppb
Thallium	.002	ppm	Styrene	100	ppb
Organic Contaminants			Tetrachloroethylene	5	ppb
2,4-D	70	ppb	Toluene	1	ppm
Acrylamide	TT	TT	Toxaphene	3	ppb
Alachlor	2	ppb	2,4,5-TP(Silvex)	50	ppb
Atrazine	3	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
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	Dieldrin	Propachlor		
Aldicarb Sulfone	Chloroform	Hexachlorobutadiene	N-Propylbenzene		
Aldicarb Sulfoxide	Chloromethane	3-Hydroxycarbofuran	Propachlor		
Aldrin	O-Chlorotoluene	Isopropylbenzene	1,1,1,2-Tetrachloroethane		
Bromoacetic Acid	P-Chlorotoluene	p-Isopropyltoluene	1,1,2,2-Tetrachloroethane		
Bromobenzene	Dibromochloromethane	M-Dichlorobenzene	Tetrachloroethene		
Bromochloromethane	1,2-Dibromoethane	Methomyl	Trichloroacetic Acid		
Bromodichloromethane	Dibromomethane	Methylene chloride	1,2,3-Trichlorobenzene		
Bromoform	1,1-Dichloroethane	Methyl tert-butyl ether	Trichloroethene		
Bromomethane	1,3-Dichloropropane	Metolachlor	Trichlorofluoromethane		
Butachlor	2,2-Dichloropropane	Metribuzin	1,2,3-Trichloropropane		
N-Butylbenzene	1,1-Dichloropropene	MTBE	1,2,4-Trimethylbenzene		
Sec-Butylbenzene	1,3-Dichloropropene	Naphthalene	1,3,5-Trimethylbenzene		
Tert - Butylbenzene	Dicamba	1-Naphthol			
Carbaryl	Dichlorodifluoromethane	Paraquat			