

2021 Annual Drinking Water Quality Report
City of Jackson
PWS ID#: 0250008 & 0250012
June 2022

We're pleased to present to you this year's Annual Quality Water Report. This report is designed to inform you about the quality water and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water.

If you have any questions about this report or concerning your water utility, please contact Mary D. Carter at 601.960.2090. 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 every other Tuesday of the month at 10:00 AM or 6:00 PM within the City Hall.

Our water source is from wells drawing from the Sparta System, J. H. Fewell WTP is surface water intake for Pearl River, O.B. Curtis WTP is surface water intake from the Ross Barnett Reservoir. The source water assessment has been completed for our public water system to determine the overall susceptibility of its drinking water supply to identified potential sources of contamination. A report containing detailed information on how the susceptibility determinations were made has been furnished to our public water system and is available for viewing upon request. The wells for the City have received lower to moderate susceptibility rankings to contamination.

We routinely monitor for contaminants in your drinking water according to Federal and State laws. This table below lists all of the drinking water contaminants that we detected during the period of January 1 to December 31, 2021. In cases where monitoring wasn't required in 2021, the table reflects the most recent results. As water travels over the surface of land or underground, it dissolves naturally occurring minerals and, in some cases, radioactive materials and can pick up substances or contaminants from the presence of animals or from human activity; microbial contaminants, such as viruses and bacteria, that 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 runoff, 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, urban storm-water runoff, 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 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 that limit the amount of certain contaminants in water provided by public water systems. All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some contaminants. It's important to remember that the presence of these contaminants does not necessarily indicate that the water poses a health risk.

In this table you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

Action Level - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Treatment Technique (TT) - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water. A treatment technique violation occurs when a water system fails to treat its water in the way prescribed by MSDH and the EPA.

Maximum Contaminant Level (MCL) - 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 (MCLG) - 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. There is convincing evidence that addition of a disinfectant is necessary for control microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG) – The level of a drinking water disinfectant below which there is no known or expected risk of health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

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 billion (ppb) or Micrograms per liter - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

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

Turbidity is a measure of the cloudiness of water and is an indication of the effectiveness of our filtration system.

PWS ID # 250008 SURFACE WATER RESULTS

Contaminant	Violation Y/N	Date Collected	Level Detected	Range of Detects or # of Samples Exceeding MCL/ACL	Unit Measure -ment	MCLG	MCL	Likely Source of Contamination
Microbiological Contaminants								
Total Coliform Bacteria	N N	August September	Positive Positive	1 of 120 1 of 120	NA NA	0 0	presence of coliform bacteria in 5% of monthly samples	Naturally present in the environment E Coli comes from human and animal fecal waste
Turbidity - NTU	Y	2021	1.27	0.04 – 1.3	NA	0	TT	Soil runoff
Turbidity – (Monthly %)	Y	2021	75.1 % (MIN)	75.1 – 100%	NA	NA	TT	Soil runoff
Radioactive Contaminants								
Gross Alpha	N	2019*	2.4	.79 – 2.4	pCi/L	0	15	Erosion of natural deposits
Radium 228	N	2020*	1.4	No Range	pCi/L	0	5	Erosion of natural deposits
Inorganic Contaminants								
Arsenic	N	2021	.7	.5 - .7	ppb	n/a	10	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium	N	2021	.0251	.0169 - .0251	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Copper	N	1-6/2021 7-12/2021	.1 .1	0 0	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Fluoride	N	2021	.957	.193 – .957	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Lead	N	1-6/2021 7-12/2021	6 11	0 0	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
Nitrate (as Nitrogen)	N	2021	.245	.183 - .245	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrite (as Nitrogen)	N	2021	.0343	No Range	ppm	1	1	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Sodium	N	2021	18.9	5.1 – 18.9	ppm	20	0	Erosion of natural deposit; Leaching
Disinfection By-Products								
HAA5	Y	2021	65	14.6 – 73.2	ppb	0	60	By-Product of drinking water disinfection.
TTHM [Total trihalomethanes]	N	2021	67	13.4 – 86.6	ppb	0	80	By-product of drinking water chlorination.
Chlorine	N	2021	2	.1– 3.8	mg/l	0	MRDL = 4	Water additive used to control microbes
Total Organic Carbon (TOC)	N	2021 Sampled Weekly/ Monthly	1.2 Avg	1.0 – 1.4	NA	NA	TT	Naturally present in the environment

* Most recent sample. No sample required for 2021.

Microbiological Contaminants:

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system.

PWS ID # 250012 GROUND WATER RESULTS

Contaminant	Violation Y/N	Date Collected	Level Detected	Range of Detects or # of Samples Exceeding MCL/ACL	Unit Measure-ment	MCLG	MCL	Likely Source of Contamination
Radioactive Contaminants								
Radium 226 Radium 228	N	2020*	.85 1.2	.83 - .85 1 - 1.2	pCi/L	0	5	Erosion of natural deposits
Inorganic Contaminants								
Barium	N	2021	.0036	.0015 - .0036	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chromium	N	2021	.6	.5 - .6	ppb	100	100	Discharge from steel and pulp mills; erosion of natural deposits
Copper	N	1-6/21	.1	0	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Fluoride	N	2021	.901	.59 - .901	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Lead	N	1-6/21	3	0	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
Volatile Organic Contaminants								
Carbon tetrachloride	N	2021	.695	.567 - .695	ppb	0	5	Discharge from chemical plants and other industrial activities
Disinfection By-Products								
HAA5	N	2021	74	17.6 - 74.3	ppb	0	60	By-Product of drinking water disinfection.
THM [Total trihalomethanes]	N	2021	77	13.1 - 82.7	ppb	0	80	By-product of drinking water chlorination.
Chlorine	N	2021	1.4	.1 - 3.4	ppm	0	MRDL = 4	Water additive used to control microbes

* Most recent sample. No sample required for 2021.

Monitoring and Reporting of Compliance Data Violations

In 2021, the #250008 system received violations shown in the table below.

MS0250008 Violations for 2021

Violation	Explanation	Duration	Corrective Actions	Health Effects Language
Surface Water Treatment Rule (SWTR)				
TT Violation for Exceedances of Single Turbidity Limits	A water sample taken 2.23.2021 showed turbidity levels greater than 1.0 NTU. This is above the standard of 0.30NTU. Because of these high levels of turbidity, there is an increased chance that the water may contain disease-causing organisms.	February 23, 2021	We have taken steps to ensure the required level of treatment is maintained: The cause of the treatment lapse was identified, and repairs were made and improvements at the O. B. Curtis Water Treatment Plant to address the issue and decrease the possibility of a repeat occurrence.	Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-cause organisms. These organisms include bacteria, viruses and parasites which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.
TT Violation for Exceedances of Monthly Turbidity Limits	Water samples for February 2021 showed that >25% and March 2021 showed that 8.1% turbidity measurements were over 0.30 turbidity units per month. The standard is that no more than five percent (5%) of samples may exceed 0.30 turbidity units per month. Normal turbidity levels at our plant are below 0.30 turbidity units. Additionally, multiple water samples taken between 2/18-23/2021 showed levels of 1.0 turbidity units. This was above the standard of 0.30 units. Because of these high levels of turbidity, there was an increased chance that the water may contain disease-causing organisms. During these elevated turbidity events, the system was under a Precautionary Boil Water Notice.	February 2021 March 2021	We have inspected and cleaned filters, as well as added chemicals to reduce turbidity. We sampled both untreated and treated water for the presence of coliform bacteria.	Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-cause organisms. These organisms include bacteria, viruses and parasites which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches

Lead and Copper Rule (LCR)				
<p>TT Violation for Water Quality Parameters Not Meeting Minimum Values</p>	<p>We routinely sample water at consumers' taps for lead and copper. In 2015, tests showed lead levels in the distribution system water above the action level. Additionally, a routine inspection conducted in November 2016 by Mississippi State Department of health (MSDH) found inadequate application of treatment chemicals due to failing corrosion control system at the O. B. Curtis Water Treatment Plant. As required Environmental Protection Agency, we were required to take action to correct this deficiency. After testing and analyses of our treatment plants and distribution system, we began installation of optimized corrosion control treatment in October 2017. This treatment helps prevent lead and copper in pipes and plumbing components from dissolving into drinking water. During the monitoring periods of 2018, 2019, 2020, and 2021, we failed to consistently meet treatment technique requirements for our system which is a violation of the Lead and Copper Rule and a requirement of the City's Optimized Corrosion Control Plan. Corrosion control installation has been completed at O. B. Curtis Water Treatment Plant but is incomplete at J. H. Fewell Water Treatment Plant due to a reassessment of the Optimized Corrosion Control Treatment plan. The water system will remain in violation for not installing the corrosion control treatment until installation is complete and approved by the Mississippi State Department of Health.</p>	<p>January 2021 February 2021 March 2021 July 2021 September 2021 November 2021</p>	<p>We have evaluated and made corrective actions to our existing corrosion control system to stabilize the pH in the distribution system. This evaluation and corrective actions are an ongoing process.</p> <p>We have increased monitoring of water quality parameters in the distribution system and at the treatment plants.</p> <p>The engineering consultant has completed the corrosion control studies for the water treatment plants and distribution system and the results are being evaluated.</p> <p>Optimized corrosion control treatment will be installed and operational in 2021.</p>	<p>Infants and children who drink water containing lead in excess of the action level over many years could experience delays in their physical or mental development. The high level of lead in the blood is the actual reason for the delays. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.</p>
<p>TT Violation for Failure to Install Corrosion Control</p>	<p>We routinely sample water at consumers' taps for lead and copper. In 2015, tests showed lead levels in the distribution system water above the action level. Additionally, a routine inspection conducted in November 2016 by Mississippi State Department of health (MSDH) found inadequate application of treatment chemicals due to failing corrosion control system at the O. B. Curtis Water Treatment Plant. As required Environmental Protection Agency, we were required to take action to correct this deficiency. After testing and analyses of our treatment plants and distribution system, we began installation of optimized corrosion control treatment in October 2017. This treatment helps prevent lead and copper in pipes and plumbing components from dissolving into drinking water. During the monitoring periods of 2018, 2019, 2020, and 2021, we failed to consistently meet treatment technique requirements for our system which is a violation of the Lead and Copper Rule and a requirement of the City's Optimized Corrosion Control Plan. Corrosion control installation has been completed at O. B. Curtis Water Treatment Plant but is incomplete at J. H. Fewell Water Treatment Plant due to a reassessment of the Optimized Corrosion Control Treatment plan. The water system will remain in violation for not installing the corrosion control treatment until installation is complete and approved by the Mississippi State Department of Health.</p>	<p>2018, 2019, 2020, 2021 -- the water system will remain under violation for not installing the Corrosion Control Treatment until the corrosion control installation is complete at J. H. Fewell Water Treatment Plant</p>	<p>We have evaluated and made corrective actions to our existing corrosion control system to stabilize the pH in the distribution system. This evaluation and corrective actions are an ongoing process.</p> <p>We have increased monitoring of water quality parameters in the distribution system and at the treatment plants.</p> <p>The engineering consultant has completed the corrosion control studies for the water treatment plants and distribution system and the results are being evaluated.</p> <p>An amendment to the corrosion control study was completed and submitted to MSDH for review. MSDH has reviewed, commented, and accepted the contents of the amendment.</p> <p>Optimized corrosion control treatment will be installed and operational in 2022.</p>	<p>Infants and children who drink water containing lead in excess of the action level over many years could experience delays in their physical or mental development. The high level of lead in the blood is the actual reason for the delays. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.</p>
Disinfection Byproducts Rule (DBPR)				
<p>MCL Violation for HAA5 MCL Exceeded</p>	<p>Similarly, we routinely monitor for the presence of drinking water contaminants. Testing results from 4th Quarter 2020 and 1st Quarter 2021 show that our system exceeded the standard, or maximum contaminant level (MCL), for Total Haloacetic Acids (HAA5). The standard for HAA5 is 60 ug/L. It is determined by averaging all the samples collected at each sampling location for the past 12 months. The level of HAA5 averaged at one of our system's locations for the 4th Quarter 2020 was 66 ug/L and for 1st Quarter 2021 was 65 ug/L.</p>	<p>4th Quarter 2020 1st Quarter 2021</p>	<p>We are working to minimize the formation of TTHM or HAA5 while ensuring we maintain an adequate level of disinfectant. We have taken additional steps to change disinfectant type/levels, remove natural organic matter, and increased flushing of water lines to determine if our efforts have been effective.</p>	<p>Total Haloacetic Acids or HAA5 are five Haloacetic acid compounds which form when disinfectants react with natural organic matter in the water. People who drink water containing Haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.</p>

Lead and Copper

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. Our 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. 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 <http://www.epa.gov/safewater/lead>. The Mississippi Public Health Laboratory offers lead testing. Please contact 601.576.7582 if you wish to have your water tested.

Significant Deficiencies for System # 250008

During a sanitary surveys conducted on 11/18/16, 2/03/2020 and 11/08/2021, the Mississippi State Department of Health cited the following significant deficiency(s):

Function and Condition of Treatment Facilities (3)

Condition of Source Facilities (2)

Capacity of Treatment Facilities

Capacity of Pumps

Condition of Water Storage Tanks

Monitoring Plans and Systems (3)

Inadequate application of treatment chemicals and techniques

Inadequate follow up on previous deficiencies

Water System Staffing

Significant Deficiency Not otherwise specified (4)

Corrective Actions: Our system is under an Administrative Compliance Order on Consent, Docket No. SDWA-04-2020-2301 (AOC) through the EPA. All deficiencies are currently scheduled to be addressed by May 2024 contingent upon current approval by the EPA.

Fluoridation

To comply with the "Regulation Governing Fluoridation of Community Water Supplies", our system # 250008 is required to report certain results pertaining to fluoridation of our water system. The number of months in the previous calendar year in which average fluoride sample results were within the optimal range of 0.6-1.2 ppm was 11. The percentage of fluoride samples collected in the previous calendar year that was within the optimal range of 0.6-1.2 ppm was 81%.

To comply with the "Regulation Governing Fluoridation of Community Water Supplies", our system # 250012 is required to report certain results pertaining to fluoridation of our water system. The number of months in the previous calendar year in which average fluoride sample results were within the optimal range of 0.6-1.2 ppm was 12. The percentage of fluoride samples collected in the previous calendar year that was within the optimal range of 0.6-1.2 ppm was 96%.

Other Information

All sources of drinking water are subject to potential contamination by substances that are naturally occurring or man made. These substances can be microbes, inorganic or organic chemicals and radioactive substances. 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 the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1.800.426.4791.

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. These people 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 1.800.426.4791.

The City of Jackson works around the clock to provide top quality water to every tap. We ask that all our customers help us protect our water sources, which are the heart of our community, our way of life and our children's future.