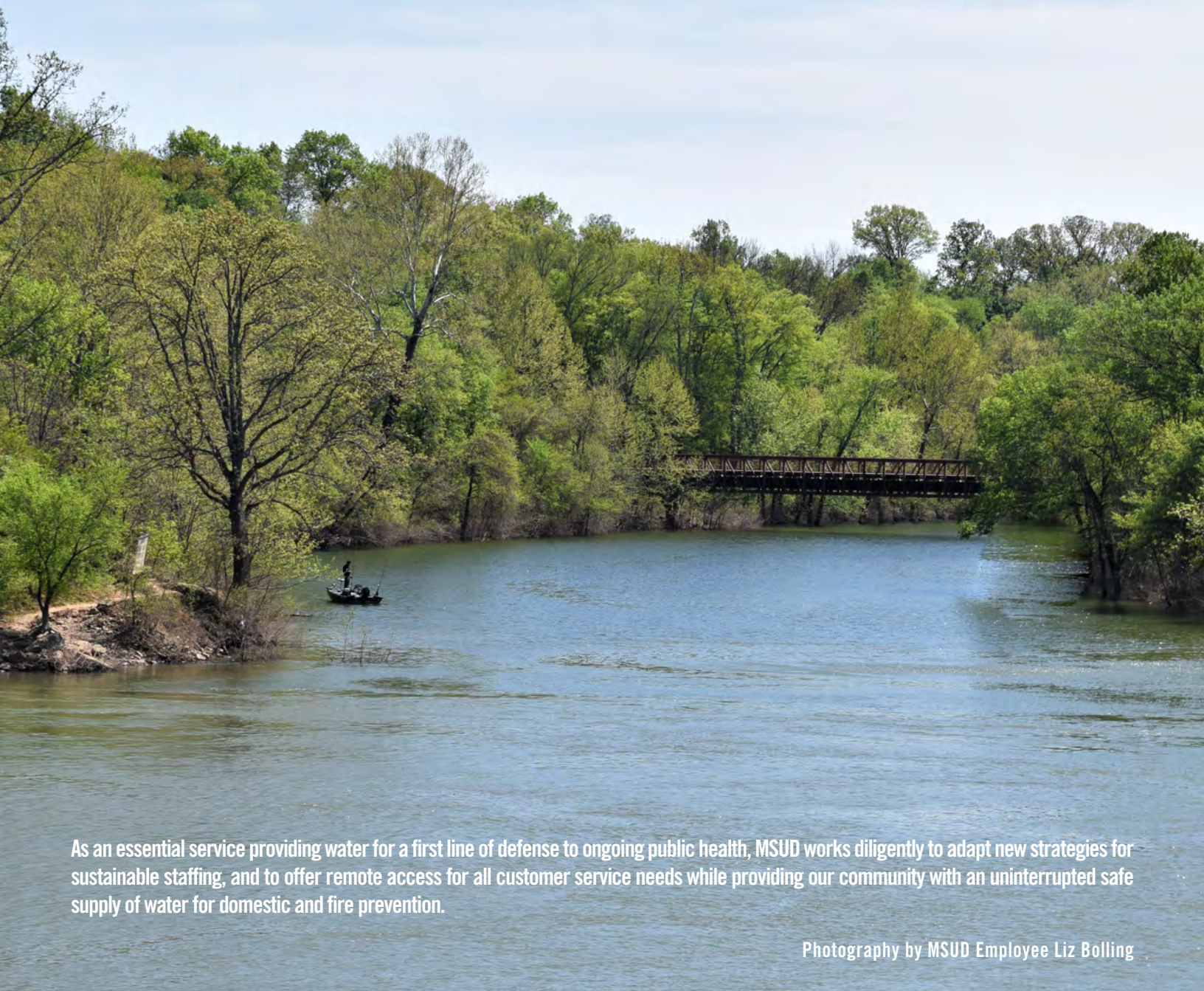


MADISON SUBURBAN UTILITY DISTRICT

2022 ANNUAL DRINKING WATER QUALITY REPORT

TEST RESULTS FROM 2021

SINCE 1939, THE MADISON SUBURBAN UTILITY DISTRICT (MSUD) has remained committed to safeguarding the public water system as an essential part of our mission to protect public health.



As an essential service providing water for a first line of defense to ongoing public health, MSUD works diligently to adapt new strategies for sustainable staffing, and to offer remote access for all customer service needs while providing our community with an uninterrupted safe supply of water for domestic and fire prevention.

Photography by MSUD Employee Liz Bolling

THINK BEFORE YOU FLUSH!

Flushing unused or expired medicines can be harmful to your drinking water. Disposing of medicines in the trash can also eventually lead to leaching in the ground water. Properly disposing of unused or expired medication helps protect you and the environment. Keep medications out of Tennessee's waterways by disposing your unused medicine in one of our permanent pharmaceutical take back bins. There are over 340 take back bins located across the state in all 95 counties. To find a convenient location please visit:

<http://tdeconline.tn.gov/rxtakeback>. Dispose locally at the address below:

Nashville/Davidson Police Department • Madison Precinct

400 Myatt Dr, Madison, TN

Monday - Friday: 8:00 am - 4:30 pm • 615-862-7750

HOW DO I CONTACT MADISON SUBURBAN UTILITY DISTRICT?

MSUD Business Office:

615-868-3201, Monday – Friday, 7:30-4:00

or visit www.msud.net

AFTER HOURS EMERGENCIES: call 615-865-1636

Questions about this report or Water Quality? **615-865-1636**

Information for non-English Speaking Populations:

Este informe contiene información importante acerca de su agua potable. Haga que alguien lo traduzca para usted, o hable con alguien que lo entienda.

The District's Board of Commissioners meets each month at the Business Office, 108 W. Webster St, Madison, TN. These meetings are open to the public with the specific dates and times listed at www.msud.net.



GENERATORS ENSURE CONTINUED WATER SERVICE

In the event of a loss of electric power, MSUD has standby emergency generators at the treatment plant and booster pump stations within the Distribution system so that MSUD customers will continue to have water during a power outage.

WATER SYSTEM SECURITY

We understand that our customers may be concerned about the security of their drinking water. MSUD has established District-wide security, and continually reviews processes for enhancements as needed. We urge the public to report any suspicious activities at any facilities, including our treatment plant, tanks, fire hydrants, etc. to 615-868-3201.

NUMEROUS WAYS TO PAY YOUR BILL

Bank Draft: download form at www.msud.net

Online Secure Payment: go to www.msud.net

Automated Telephone System: **615-868-3201**

Mail Payment to Address: P.O. Box 306140, Nashville, TN 37230-6140

Payment Drop Box: for checks or money orders only at
108 W. Webster Street, Madison, TN 37115

CURRENT AND UPCOMING WATER SYSTEM IMPROVEMENTS

In 2021 MSUD performed infrastructure upgrades at the water treatment plant, water main upgrades on Two Mile Pike in Goodlettsville, and upgrades associated with the Madison Station Blvd Project. 2022 scheduled water main upgrades include main replacements in the following areas beginning with: McGavock Pike, Lakewood, Coreland, and Berkley Drives, Anderson Lane, Shepherd Hills Drive, and Cima Drive looping to Moss Trail.

These infrastructure upgrades align with MSUD's mission to properly maintain the water system, minimize water loss, and further improve water quality and fire flow in MSUD Public Fire Hydrants. Also, Satellite Imagery Leak Detection of the water district will be performed in 2022 to identify and minimize water loss, and for better use of facilities and treatment asset allocations. Traditional leak detection methods will continue to be used to further pinpoint water loss locations for corrective action.

SEASONAL TASTE AND ODOR IN DRINKING WATER

At times Madison Suburban Utility District (MSUD) Customers may experience seasonal taste and odor issues associated with the drinking water. This issue is one experienced by any water system in general. *The safety of the water is not at risk*; however, you may perceive that the water is unsafe to drink because it has an unpleasant smell or taste. Customers often describe the taste and smell as “musty”, “dusty”, or “earthy”. The primary causes are Geosmin and Methylisoborneol (MIB), which are non-harmful, naturally occurring compounds associated with algae growth in lakes and rivers. Classified as a Surface Water System, MSUD’s water source is the Cumberland River. Increased temperatures and low rainfall totals contribute to lower source water quality and increased algal blooms. To help eliminate taste and odor, powdered activated carbon (PAC) is added during the water treatment process. Regular analysis of water samples helps determine how much PAC to use and identifies necessary adjustments to the treatment process. The Madison Suburban Utility District’s goal is to eliminate taste and odor issues associated with your drinking water. We will continue to use new technologies and improve existing processes to meet this goal. For more information about Seasonal Taste and Odor Please Call: 615-865-1636

MSUD UTILIZES CURRENT WATER TREATMENT TECHNOLOGY

MSUD utilizes some of the most current technology and water chemistry processes to efficiently treat raw river water and transform it into crystal clear, safe drinking water. The MSUD Treatment Plant sends an average of 8 million gallons of water per day into the distribution system, and has a capacity of nearly double that. Water treatment involves two types of processes: (1) physical removal of particulates and contaminants and (2) chemical disinfection utilizing bleach. State of TN Certified Water Treatment Plant Operators are continuously monitoring the river water and adjusting treatment processes to ensure the finished water is just right. For more information on the Safe Drinking Water Act and current standards, visit [water.epa.gov-lawsregs/rulesregs/sdwa/](https://www.epa.gov/lawsregs/rulesregs/sdwa/).

CONTAMINANTS IN BOTTLE AND TAP

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. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency’s Safe Drinking Water Hotline (800-426-4791).

In order to ensure that tap water is safe to drink, the EPA and the TN Department of Environment and Conservation prescribe 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 which must provide the same protection for public health.

DO I NEED TO TAKE SPECIAL PRECAUTIONS?

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 microbial contaminants are available from the Safe Drinking Water Hotline at **1-800-426-4791**.

WHAT IS THE SOURCE OF MY WATER?

Your water comes from the Cumberland River. As a surface water source, it has been rated as highly susceptible to potential contamination based on geologic factors and human activities in the vicinity. A source water assessment has been conducted and is available for review at the Madison Suburban Utility District offices or can be viewed online at <https://www.tn.gov/environment/program-areas/wr-water-resources/water-quality/source-water-assessment.html>.

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, in some cases, radioactive material, and 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 operation, and wildlife.
- Inorganic Contaminants - such as salts and metals, which can be naturally-occurring or result from urban stormwater 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, stormwater runoff, and residential uses.
- Organic Chemical Contaminants - including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
- Radioactive Contaminants - which can be naturally occurring or be the result of oil and gas production and mining activities.

ELECTRONIC REPORT

This report is available electronically at our website: <https://msud.net/wp-content/uploads/2022/03/madccr2022.pdf>

You may also email msud@msud.net or call the office to request a copy be mailed.



REQUIRED EPA MONITORING UNDER THE PRIMARY DRINKING WATER STANDARD

Every year we monitor the presence of over 100 compounds in your water, before, during and after treatment.

MONITORED AT THE TREATMENT PLANT

Contaminant	Violation	Date Collected	Level Detected	Unit of Measure	Range	MCL	MCLG	Likely Sources of Contaminants
Nitrate	No	1/6/2021	0.373	ppm		10	10	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits
Sodium	No	7/6/2021	8.89	ppm				Erosion of natural deposits; used in water treatment
Turbidity ¹	No	Daily	0.130	NTU	0.020-0.13	TT		Soil Runoff
Total Organic Carbon ²	No	Monthly	41% removal			TT > 25% removal	TT	Naturally present in the environment

(1) Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system. We met the treatment technique requirement for turbidity with 100% of daily samples below the limit of 0.15 NTU. (2) We met the treatment technique requirement for total organic carbon removal in 2021.

MONITORED AROUND THE DISTRICT

Contaminant	Violation	Date Collected	Level Detected	Unit of Measure	Range	MCL	MCLG	Likely Sources of Contaminants
Fluoride	No	quarterly	0.54	ppm	0.45-0.64	4.0	4.0	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Total Trihalomethanes ⁴ (TTHM)	No	quarterly	40 Highest LRAA	ppb	20-60	80 LRAA		By-product of drinking water chlorination
Total Haloacetic Acids ⁴ (HAAS)	No	quarterly	40 Highest LRAA	ppb	20-50	60 LRAA		By-product of drinking water chlorination
Total Coliform Bacteria (RTCR)	No	2021	0			TT - Trigger	0	Naturally present in the environment

(4) Highest Locational Running Annual Average (LRAA) calculated quarterly.

Contaminant	Violation	Date Collected	Average	Unit of Measure	Range	MRDL	MRDLG	Likely Sources of Contaminants
Chlorine	No	2021	1.63	ppm	0.40-3.0	4.0	4.0	Water additive used to control microbes

MONITORED AT THE CUSTOMER'S TAP

Contaminant	Violation	Date Collected	Level Detected	Unit of Measure	Range	MCL	MCLG	Likely Sources of Contaminants
Copper ⁵	No	2020	0.134	ppm	0.025-0.24	AL=1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead ⁵	No	2020	<0.2 (BDL)	ppb	<0.2	AL=1.5	0	Corrosion of household plumbing systems, erosion of natural deposits

(5) Level detected is 90th percentile. During the most recent testing, 0 out of 30 households sampled contained concentrations exceeding the action level (AL).

Lead Levels – 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 (customer's) service lines and home plumbing. MSUD is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When 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 your 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 (1-800-426-4791) or by visiting www.epa.gov/safewater/lead.

DATA TABLE DEFINITIONS

- (ppm) – Parts per million or (mg/L) Milligrams per liter: This is explained as a relation to time and money as one part per million corresponds to one minute in two years, or one penny in \$10,000.
- (ppb) – Parts per billion or (µg/L) Micrograms per liter: This is explained as a relation to time and money as on part per billion corresponds to one minute in 2,000 years, or one penny in \$10,000,000.
- (MCL) – Maximum Contaminant Level: 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. 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.
- (MCLG) – Maximum Contaminant Level Goal: 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
- (NTU) – Nephelometric Turbidity Unit: This is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.
- (TT) – Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.
- (RTCR) – Revised Total Coliform Rule: This rule went into effect on April 1, 2016 and replaces the MCL for total coliform with a Treatment Technique Trigger for a system assessment
- (MRDL) – Maximum Residual Disinfectant Level: The highest level of a disinfectant allowed in

drinking water. There is convincing evidence that addition of a disinfectant is necessary for the control of microbial contaminants.

- (MRDLG) – Maximum Residual Disinfectant Level Goal: 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.
- (BDL) – Below Detection Limit: Laboratory analysis indicates that the contaminant is not present at a level that can be detected.
- (AL) – Action Level: The concentration of a contaminant which, when exceeded, triggers treatment or other requirements which a water system must follow.

