Memphis Water Quality Report 2025

Shelby County is privileged to possess some of the highest-quality drinking water in the United States. Memphis stands among the select few cities boasting a water supply sourced entirely from groundwater.

The Memphis Sand Aquifer is the primary water source for Shelby County. Wells pump water from depths of 350 to 1,100 feet. On an average day, MLGW pumps 120 million gallons of water from the aquifer that is delivered to 10 pumping stations around the city. The water is then aerated, filtered, treated and distributed across Shelby County for consumption.

Protecting our water source is vital and we all must work together to protect this resource now and in the future. Here are several ways you can contribute to safeguarding our water source:

- **Conserve Water:** Practice water conservation at home by fixing leaks, using water-efficient appliances, taking shorter showers and turning off the tap when not in use. Every drop saved reduces the strain on water sources.
- **Dispose of Chemicals Properly:** Avoid pouring household chemicals, paints, oils and other hazardous substances down drains or into the soil. Dispose of them responsibly at designated collection centers.

- **Reduce Plastic Use:** Minimize single-use plastics, such as bottles and bags, to prevent them from ending up in waterways and contaminating water sources. Opt for reusable alternatives whenever possible.

- **Volunteer for Clean-up Efforts:** Participate in community clean-up events focused on rivers, lakes and other water bodies. Removing litter and debris helps maintain water quality and protects aquatic habitats.

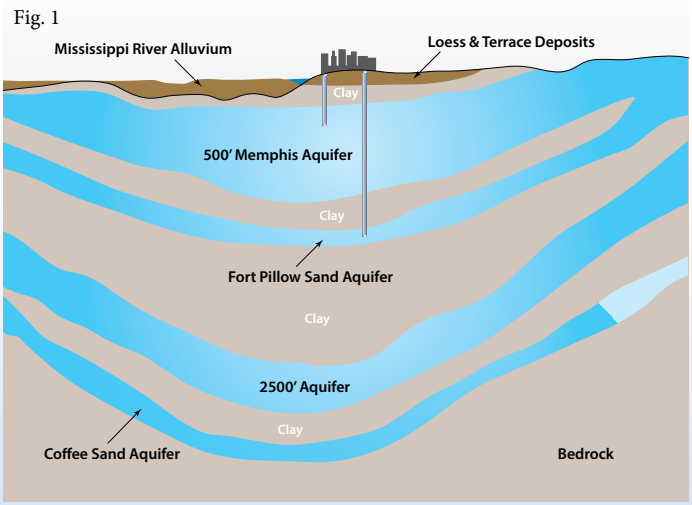
By taking these actions, you can play a significant role in protecting water sources and ensuring their availability for future generations. Every effort counts in preserving this precious resource.

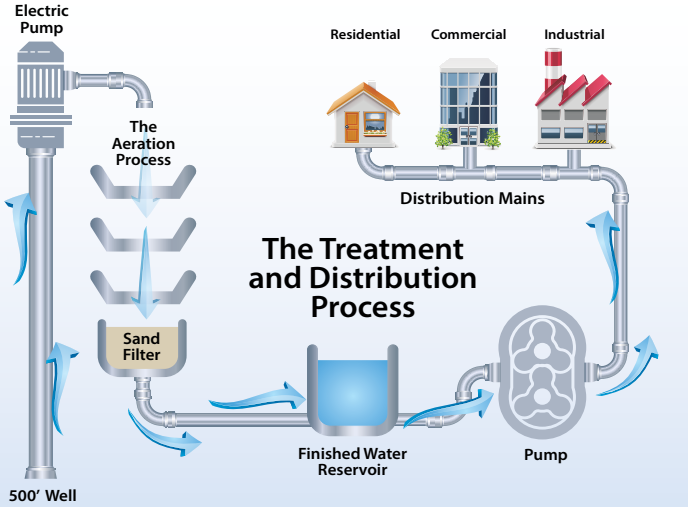
For more tips on water management visit: mlgw.com/community/stormwatercarecommunity.

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 pose a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at 800-426-4791.

Sources: EPA and Tennessee Department of Environment and Conservation

Fig. 1





The layers of our aquifer (Fig. 1) act as a natural filter, removing many impurities from the water. Some experts believe the water we drink today began as raindrops over 2,000 years ago.

MLGW brings water from the aquifer to your home by way of an extensive system of water pumping stations and more than 142 wells throughout Shelby County.

What we do

After the water is collected and processed, MLGW's Water Quality Assurance Laboratory ensures our water's quality and safety by conducting about 40,000 tests per year.

Though our naturally pure water needs little treatment, we put forth this additional care to add to the final quality, safety and taste that our customers are accustomed to enjoying.

Other drinking water sources

The sources of drinking water include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over 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 human activity.

In order to ensure that tap water is safe to drink, EPA and the Department prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Contaminants That May Be Present In Source Water:

- 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 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, 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.

Cryptosporidium

Cryptosporidium is a microscopic parasite that causes the diarrheal disease cryptosporidiosis. Both the parasite and the disease are commonly known as "Crypto."

While this parasite can be spread in several different ways, water (drinking water and recreational water) is the most common way to spread the parasite. According to the Centers for Disease Control and Prevention (CDC), Cryptosporidium is a leading cause of waterborne disease among people in the U.S.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as people with cancer undergoing chemotherapy, people 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 EPA's Safe Drinking Water Hotline at 800-426-4791.

Source water and wellhead protection

An explanation of Tennessee's Source Water Assessment Program, the Source Water Assessment summaries, susceptibility scorings and the overall Tennessee Department of Environment and Conservation (TDEC) report to the EPA can be viewed online at: tn.gov/environment/program-areas/wr-water-resources/water-quality/source-water-assessment.

MLGW's wellhead protection plan and source water assessment are available for public review by calling **Aaron Smith, Manager, Water Engineering and Operations, at 901-320-3923, 7 a.m. - 4 p.m., Monday-Friday.**

For more information on groundwater protection, visit epa.gov/nscep and request a copy of the EPA's Citizen's Guide to Ground Water Protection. You can also access a digital copy by searching for the publication title, "EPA's Citizen's Guide to Ground-Water Protection," at epa.gov.

Opportunities to discuss water quality issues

MLGW holds meetings of its Board of Commissioners, which are livestreamed and open to the public, on the first and third Wednesdays of each month at 8:30 a.m. The meetings are held at the **MLGW Administration Building, 220 S. Main Street, Memphis, 38103.** Watch the livestream here: mlgw.com/LiveStream.

Public meetings are also held periodically by the Shelby County Groundwater Control Board. For more information on the time and location of future meetings, call the Water Quality Section of the **Shelby County Health Department at 901-222-9000**.

Unregulated Contaminant Monitoring Rule

The EPA requires MLGW to participate in the Unregulated Contaminant Monitoring Rule (UCMR). This testing identifies chemical contaminants in drinking water that may require future regulation.

2025 Water Quality Table

MLGW

RESULTS OF INORGANIC ANALYSES

Component	Average Amount Detected	Maximum Contaminant Level (MCL)	Maximum Contaminant Level Goal (MCLG)	Range of Levels Detected	Major Sources in Drinking Water
FLUORIDE	0.59 parts per million	4.0 parts per million	4.0 parts per million	0.09 - 1.16 parts per million	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
NITRATE as Nitrogen (N)	0.10 parts per million	10.0 parts per million	10.0 parts per million	0.01 - 0.32 parts per million	Erosion of natural deposits; leaching from septic tanks; sewage; runoff from fertilizer use
SODIUM *	8.9 parts per million	Not applicable	Not applicable	6.0 - 14.7 parts per million	Naturally present in the environment

Results surpass state and federal drinking water regulations.

Fluoride Reduction

Fluoridation has been successfully practiced in the U.S. since the mid-1900s. MLGW began adding fluoride to the water supply according to mandates set by a City of Memphis Ordinance at a concentration of 1.0 ppm. In December 2010, the U.S. Department of Health and Human Services (HHS) proposed through the CDC that the fluoride level recommended for drinking water be set at 0.7 mg/L. The Rules of the Tennessee Department of Environment and Conservation made this same recommendation.

MLGW changed the fluoride content in finished water from 1.0 mg/L to 0.7 mg/L in 2013. Because of its contribution to the dramatic decline in tooth decay over the past 75 years, the CDC named community water fluoridation as one of the 10 greatest public health achievements of the 20th century.

Ways you can help protect our water supply:

• Never put anything down a storm drain, wisely dispose of household and lawn/garden chemicals. Never pour hazardous wastes on the ground, in a storm drain or in an indoor drain. Consider using non-toxic alternatives to toxic household and lawn chemicals.

• Recycle used motor oil. Many auto stores and gas stations will accept used motor oil. Two gallons of used motor oil can be reprocessed into fuel and provide enough electricity to run the average household for about 24 hours.

• Wash your car at a car wash and prevent the soaps, polishes, waxes and other chemicals from entering the storm drain system.

• Think before you flush! Flushing unused or expired medicines can be harmful to our drinking water. Properly disposing of unused or expired medication helps protect you and the environment. The Memphis Police Department has installed several Prescription Drug Take-Back Locations throughout the city at specific Memphis Police precincts, Shelby County Sheriff precincts and specific Walgreens and CVS locations. The bins are in the lobby area of a precinct near you that are fully staffed 24/7, 365 days a year. The prescription drug take-back program is for citizen use only.

Search online for Tennessee's Permanent Household Prescription Drug Take-Back locations or visit tdeconline.tn.gov/rxtakeback.

• Recycle batteries, paints, solvents and chemicals by contacting local recycling companies or by taking them to the **Shelby County Household Hazardous Waste Collection Facility**, 6305 Haley Road, Memphis, 38134.

For additional information, contact the Water Quality Section of the **Shelby County Health Department at 901-222-9000.**

RESULTS OF LEAD AND COPPER SAMPLING AT RESIDENTIAL WATER TAPS

Component	Amount Detected	Maximum Contaminant Level (MCL)	Maximum Contaminant Level Goal (MCLG)	Sites Exceeding Action Level (AL)	Major Sources in Drinking Water
LEAD	4.73 parts per billion (90% of homes tested had lead levels less than 4.73ppb)	Action Level (AL)= 90% of the homes tested must have lead levels less than 15 parts per billion	Zero parts per billion	0 site of 50 exceeded AL	Corrosion of household plumbing systems; erosion of natural deposits
COPPER	0.34 parts per million (90% of homes tested had copper levels less than 0.34ppm)	Action Level (AL)= 90% of the homes tested must have copper levels less than 1.3 parts per million	1.3 parts per million	0 sites of 50 exceeded AL	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

Lead and Copper

Plumbing materials could contribute to lead and copper levels at the tap. There is no detectable lead in Memphis' source water. Regarding copper, very low levels of this metal occur naturally. Standing water in pipes for six hours or more along with lead or lead component plumbing may yield low levels of lead at the tap. It's rare that the lead levels exceed the action level. Depending on the specific circumstances, copper levels at the tap may be high.

The results reported here on lead and copper are from tests performed in 2024 at a targeted group of homes served by MLGW in areas of Memphis and Shelby County.

Fifty-five homes, most of which had some lead plumbing constituents, were tested. Out of that number, no sites exceeded the lead action level, and none exceeded the copper action level. The samples were collected after six to eight hours of no water usage. The 90th percentile result for lead was 4.73 ppb and the 90th percentile result for copper was 0.34 ppm.

Lead can cause serious health effects in people of all ages, especially pregnant people, infants (both formula-fed and breastfed), and young children. Lead in drinking water is primarily from materials and parts used in service lines and in home plumbing. MLGW is responsible for providing high quality drinking water and removing lead pipes but cannot control the variety of materials used in the plumbing in your home. Because lead levels may vary over time, lead exposure is possible even when you tap sampling results do not detect lead at one point in time. You can help protect yourself and your family by identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. Using a filter, certified by an American National Standards Institute accredited certifier to reduce lead, is effective in reducing lead exposures. Follow the instructions provided with the filter to ensure the filter is used properly. Use only cold water for drinking, cooking, and making baby formula. Boiling water does not remove lead from water. Before using tap water for drinking, cooking or making baby formula, flush your pipes for several minutes. You can do this by running your tap, taking a shower, doing laundry or a load of dishes. If you have a lead service line or galvanized requiring replacement service line, you may need to flush your pipes for a longer period. If you are concerned about lead in your water and wish to have your water tested, contact MLGW at waterlab@mlgw.org or call 901-320-3962. Information on lead in drinking water, testing methods and steps you can take to minimize exposure is available at: epa.gov/safewater/lead.

MLGW offers a free lead testing kit that allows MLGW water customers in Memphis and Shelby County to have their tap water tested. To request a free lead kit, you can email us at waterlab@mlgw.org or call 901-320-3962. MLGW completed/submitted the LCRR inventory to TDEC in September 2024. Customers can access the public lead inventory map and lead information at mlgw.com/waterservicelines.

For more information about your drinking water, contact MLGW's Water Quality Lab at 901-320-3962, between the hours of 7 a.m. and 4 p.m., Monday-Friday. To view this report online, visit: mlgw.com/about/waterqualityreport or you can request a hard copy by calling 901-320-3962. You can email your comments to us at: waterlab@mlgw.org.

En español

Información para personas de habla hispana: Este reporte contiene información muy importante sobre su agua potable. Hágalo traducir o pida que se lo lea alguien que lo entienda bien. O mejor aún, lea la versión en español en nuestro sitio de red, mlgw.com/about/waterqualityreport.

RESULTS OF MICROBIOLOGICAL TESTING

Component	Maximum Monthly Detected	Maximum Contaminant Level (MCL)	Maximum Contaminant Level Goal (MCLG)	Annual Amount Detected	Major Sources in Drinking Water
Total Coliform Bacteria**	Highest positive monthly sample detected was 0.41% in January, February and August of 2025	Presence of coliform bacteria in 5% of monthly samples	Zero bacteria detected	Number of positive samples for the year: 3 out of 2,903 or 0.10%	Naturally present in the environment

Results surpass state and federal drinking water regulations.

Component	Highest Quarterly Running Annual Average	Level Found	Range of Amount Detected	Maximum Contaminant
Chlorine	0.86	0.89	0.21 - 1.85	MRDL-4.0 parts per million

Results surpass state and federal drinking water regulations.

The Coliform Group

Water Quality Assurance Laboratory staff analyzed 2,903 bacteriological tests in 2025 using samples of water treated and distributed throughout Memphis and Shelby County. We primarily test for the indicator organisms that are part of the coliform group prevalent in the environment. Whenever these organisms are found in the environment, it may be a possible indication that other types of harmful organisms are present as well. However, it is possible to obtain a misleading result as these organisms may be coming from the faucet itself, not necessarily from the water, from some other source while sampling or from accidental contamination of the sample during its analysis. Any sample indicating a positive result for coliform is methodically rechecked. All rechecks during the 2025 year proved to be negative.

RESULTS OF DISINFECTION BY-PRODUCTS

Component	Average Amount Detected	Maximum Contaminant Level (MCL)	Maximum Contaminant Level Goal (MCLG)	Range of Amount Detected	Major Sources in Drinking Water
TOTAL TRIHALOMETHANES (THMs)	***9.36 parts per billion	80 parts per billion	Not applicable	2.06 - 26.69 parts per billion	By-products of drinking water disinfection
HALOACETIC ACID (HAA5)	***1.29 parts per billion	60 parts per billion	Not applicable	0.01 - 4.13 parts per billion	By-products of drinking water disinfection
CHLORINE	1.20 parts per million	MRDL - 4.0 parts per million	MRDLG – 4.0 parts per million	0.11 - 1.99 parts per million	Water additive used to control microbes

Results surpass state and federal drinking water regulations.

Chlorine Residual

Federal and state drinking water regulations require detectable disinfectant (chlorine) residuals throughout our water distribution system. MLGW's water contains approximately one part per million of chlorine in order to ensure the proper residuals. This is done to prevent the possibility of waterborne disease. Both the maximum residual disinfectant level and maximum residual disinfectant level goal are set at four parts per million.

Disinfection By-Products

Disinfection is an absolutely essential component of drinking water treatment. Disinfection prevents the occurrence and spread of many serious and potentially deadly waterborne diseases. When chlorine is used for disinfection, it can react with naturally-occurring organic matter in the water. Minute amounts of disinfection by-products can be formed because of these reactions.

As a result, regulations limit the amount of disinfection by-products in your water. Two categories of disinfection by-products are specifically limited by these regulations: Total Trihalomethanes and Haloacetic Acids. These by-products must be reported to the state of Tennessee annually. Averages are calculated quarterly on samples taken at various locations through our distribution system. As the table above shows, our water meets the disinfection by-products standards.

ADDITIONAL WATER QUALITY PARAMETERS OF INTEREST

This table shows levels of additional water quality parameters which are often of interest to our customers. Values shown are averages from our water treatment plants for 2025. There are no health-based limits for these substances in drinking water.

Parameter (unit of measure)	Average Level Detected	Average Range of Levels Detected	Typical Source of Contaminants
Alkalinity (ppm)	57	21 – 158	Erosion of natural deposits
Calcium (ppm)	11.4	3.6 - 34.5	Erosion of natural deposits
Chloride (ppm)	4.6	2.4 - 6.2	Erosion of natural deposits
Hardness (ppm)	48	14 - 150	Erosion of natural deposits
Hardness (grains/gallon)	2.8	0.8 - 8.8	Erosion of natural deposits
Iron (ppm)	0.01	0.01 - 0.16	Naturally occurring
pH (Standard)	7.3	6.2 - 7.9	-------
Phosphate (ppm)	0.75	0.1 - 2.0	Water additive for corrosion control
Sulfate (ppm)	4.8	2.0 - 8.1	Naturally present in the environment
Temperature (°F)	66	63 - 71	-------

RESULTS OF RADIOACTIVE CONTAMINANT TESTING

Component	Average Amount Detected	Maximum Contaminant Level (MCL)	Maximum Contaminant Level Goal (MCLG)	Range of Levels Detected	Major Sources in Drinking Water
COMBINED RADIUM (226/228) (pCi/L)	0.6	5.0	0	0.4 - 0.9	Decay of natural and man-made deposits
GROSS ALPHA (excluding radon and uranium) (pCi/L)	0.7	15	0	0.5 - 0.8	Erosion of natural deposits

Results surpass state and federal drinking water regulations.

As water travels over land or through the ground, it can dissolve naturally occurring radioactive minerals or radioactive contaminants from human activities such as oil and gas production, mining activities or nuclear facilities. Certain minerals or contaminants may emit a form of radiation known as gross alpha, radium 226 and radium 228 (combined radium). The values shown in the table are the most recent analysis conducted in 2021 at the water treatment plants.

RESULTS OF TURBIDITY TESTING

Component	Level Detected	Range of Amount Detected
Turbidity	1.36	0.06 - 1.36

We met the treatment technique for turbidity with 99.4% of monthly samples below the turbidity limit of 1.0 NTU.

Turbidity is a measure of the cloudiness of water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

TERMS USED IN THIS REPORT

To protect public health, state and federal agencies set maximum contaminant levels, maximum contaminant level goals or action levels for contaminants. Below are definitions of terms used in this report to help you understand the 2025 results.

Action Level (AL)	The concentration of a contaminant that, if exceeded, triggers a treatment or other requirement that a water system must follow.
Below Detection Limit (BDL)	The concentration of a compound is less than the smallest amount that can be measured by the test method used.
Locational Running Annual Average (LRAA)	The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters.
Maximum Contaminant Level (MCL)	The highest level of a contaminant allowed in drinking water. MCLs are set as close to MCL goals 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.
mg/L or ppm	Milligrams per liter or parts per million (one penny in $10,000)
µg/L or ppb	Micrograms per Liter or parts per billion (one penny in $10,000,000)
pCi/L	Picocuries per Liter
Maximum Residual Disinfectant Level Goal (MRDLG)	The level of 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.
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 the control of microbial contaminants.
NTU	Nephelometric Turbidity Units—Turbidity is a measure of the clarity of the water. Turbidity in excess of 5 NTUs is just noticeable to the average person.
Treatment Technique (TT)	A required process intended to reduce the level of a contaminant in drinking water.

WATER QUALITY TABLE FOOTNOTES

* There is no state or federal MCL for sodium. Monitoring is required to provide information to consumers and health officials who are concerned about sodium intake due to dietary precautions. If you are on a sodium-restricted diet, you should consult a physician about the level of sodium in the water.

** For the highest monthly level detected, there were only three positive samples out of 2,903 samples taken. MLGW immediately responded by resampling above, at and below where the positive sample had been collected, and all the results were negative.

*** Data expressed as LRAA – Locational Running Annual Average: The average of four consecutive quarterly results at each monitored sample location.