

Naval Support Activity (NSA) Mid-South Annual Water Quality Report for Year 2019

Why are we doing this report?

In order to ensure that tap water is safe to drink, the United States Environmental Protection Agency (EPA) and Tennessee Department of Environment and Conservation (TDEC), Division of Water Resources, regulate the amount of certain contaminants in water provided by public water systems. Congress, in its 1996 amendments to the Safe Drinking Water Act, mandated that the EPA promulgate regulations requiring community water systems to annually publish and provide, to their customers, Consumer Confidence Reports (CCRs). These reports must describe the quality of the water supplied to customers and provide educational information on health effects of various contaminants.

The sampling results are summarized in Table 1, Table 2 and Table 3 below. Sampling results in Table 1 only include contaminants that were above detectable levels. We welcome this opportunity to inform you of the high quality of water that is delivered to our customers at NSA Mid-South.

What is the source of our water?

Our public water system serving NSA Mid-South is a groundwater system consisting of five wells and a 4.2 million-gallon-per-day capacity. Of the five wells, two are in the Memphis Sands aquifer and are approximately 500 feet deep. Three are in the Fort Pillow aquifer and are approximately 1,400 feet deep. The water treatment plant is designed to remove naturally occurring iron and provide chlorination and fluoridation.

The Tennessee Department of Environment and Conservation (TDEC) has prepared a Source Water Assessment Program (SWAP) Report for the untreated water sources serving water to this water system. The SWAP Report assesses the susceptibility of untreated water sources to potential contamination. To ensure safe drinking water, all public water systems treat and routinely test their water. Groundwater is potentially susceptible to contamination from industrial and agricultural sources in the area; however, frequent monitoring has shown that NSA Mid-South's water remains free of these contaminants. In addition, to reduce the potential for groundwater contamination NSA Mid-South maintains a Wellhead Protection Plan.

An explanation of Tennessee's Source Water Assessment Program, the Source Water Assessment summaries, susceptibility scorings and the overall TDEC report to EPA can be viewed online at:

<https://www.tn.gov/environment/article/wr-wq-source-water-assessment> or a hard copy can be viewed in Bldg. 455, Public Works Environmental Division any time during regular operating hours with your questions and concerns. Our Wellhead Protection Plan is also available for your review.

Does my drinking water meet EPA standards and other rules that govern our operations?

Yes, our drinking water meets or exceeds all of EPA's health standards. During our last water plant inspection from TDEC in November 2018, we received a numerical rating of 99 out of 100 points, placing us among the state's "approved" public water systems. The State and EPA require us to test our water on a regular basis to ensure its safety and to report the results of this monitoring. The tables below show contaminants for which we have sampled recently. None of the results exceeded regulatory limits. The data presented are the most recent testing results, completed in accordance with regulations.

Why are there contaminants in our water?

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 EPA's Safe Drinking Water Hotline at (800) 426-4791.

The sources of drinking water (both tap water and bottled water) include aquifers, 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 operations, 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, urban stormwater 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, 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.

In order to ensure that tap water is safe to drink, EPA and Tennessee 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 any 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/Centers for Disease Control and Prevention 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 (800) 426-4791.

Lead in Drinking Water

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. NSA Mid-South is responsible for providing high quality drinking water, but can only control to the best of our ability the wide variety of materials used in plumbing components over the years. 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 contact our Public Works Environmental Department. 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>.

How can I get involved?

Please feel free to call your PWD Environmental Division Manager, Jim Heide, at 901-874-5367 any time during regular operating hours with your questions and concerns. These operating hours are from 7 a.m. until 3:30 p.m. Monday - Friday.

Other contacts for more information:

EPA Safe Drinking Water Hotline, (800) 426-4791

Tennessee Division of Water Resources, (615) 532-0191

TDEC, Memphis Environmental Field Office, 901-371-3015

Memphis and Shelby County Health Department, (901) 544-7741

Table 1.

Contaminants	MCLG ¹	MCL ²	Level found	Date	Violation	Typical Source
^a Total Coliform Bacteria (RTCR)	0	TT Trigger ⁷	None	Monthly	No	Naturally present in the environment.
² Fluoride	4 PPM ³	4 PPM ³	Average: .70 PPM Range: .48-1.09 PPM	Monthly	No	Water additive, which promotes strong teeth; erosion of natural deposits; discharge from fertilizers & aluminum factories.
^b Lead	0 PPB ⁴	AL ⁵ =15 PPB ⁴	1.84 PPB, 90 th percentile	6/10/17	No	Corrosion of household plumbing systems; erosion of natural deposits.
^c Copper	1.3PPM ³	AL ⁵ =1.3 PPM ³	0.168 PPM, 90 th percentile	6/9/17	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives.
^d Sodium	No MCLG	NO MCL	10.1 PPM	4/10/17	No	Erosion of natural deposits; used in water treatment.
^e Total trihalomethanes (TTHM)	No MCLG	80 PPB	6.04 PPB	8/13/19	No	By-products of drinking water chlorination.
^e Haloacetic Acids (HAA5)	No MCLG	60 PPB	1.06 PPB	8/13/19	No	By-products of drinking water chlorination

*Contaminants that are below detection limit are not included in table.

¹ **MCLG**- Maximum contaminant level goal or 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.

² **MCL**- Maximum contaminant level or highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLGs as feasible using the best available treatment technology.

³ **PPM**- Parts per million or milligrams per liter, explained in the terms of money as one penny in \$10,000

⁴ **PPB**- Parts per billion or micrograms per liter, explained in terms of money as one penny in \$10,000,000.

⁵ **AL** - Action Level, or the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

⁶ **pCi/l**- Picocuries per liter

⁷ **TT**- Treatment Technique, or a required process intended to reduce the level of a contaminant in drinking water.

^a Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other; potentially harmful, bacteria may be present. No positive coliforms were found in any of our monthly monitoring samples.

^b Fluoride is added to our water at levels recommended by the EPA and the US Department of Health and Human Services to help prevent tooth decay. Some people who drink water that contains fluoride well in excess of the MCL over many years could get bone disease. This could include pain and tenderness of the bones, and children's teeth could become discolored.

^c TDEC requires all public water systems to test various sites in their distribution system for lead and copper. Corrosion of household plumbing systems and erosion of natural deposits are the sources for these

contaminants. During the most recent round of lead and copper sampling, 0 out of 40 samples taken contained concentrations exceeding the action level.

^d Some people who drink water that contains high levels of sodium could develop high blood pressure.

^e Because of a chemical reaction between chlorine and naturally occurring organic matter in water, certain by-products such as trihalomethanes and haloacetic acids are formed during the process of disinfection. A certain percentage of people who drink water with levels of trihalomethanes and haloacetic acids well over the MCL for many years could have liver or kidney problems, deficiencies in the central nervous system, and higher cancer risk. Safe Drinking Water Regulation 0400-45-1-.36 requires us to submit a collection of one residence time-sample result for haloacetic acids and one residence time-sample result for total trihalomethanes during July 1 through September 30 once every year. Our next sample date is August 2019.

Table 2.

Contaminant	MRDLG ¹	MRDL ²	Level Found	Date	Violation	Typical Source
^f Chlorine	4.0 PPM	4.0 PPM	Average: 1.33 Range:.47-2.20	Daily	No	Water additive used to control microbes

¹ **MRDLG** - Maximum Residual Disinfectant Goal, or 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.

² **MRDL** - Maximum Residual Disinfectant Level, or the highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for the control of microbial contaminants.

^f Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could also experience stomach discomfort.

Table 3. Unregulated Contaminant Voluntary Monitoring

Contaminant	*EPA Health Advisory	Level Found	Date	Violation	Likely Source
^g Perfluorinated Compounds	.07 PPB	Not Detected <.002 PPB	8/23/18	No	Used in firefighting foams to extinguish petroleum fires

*In May of 2016, EPA established drinking water health advisory of .07 PPB. EPA has not issued a Maximum Contaminant Level for drinking water. Currently under review to determine if it may require regulation under the Safe Drinking Water Act

There have been some questions about the safety of our drinking water after Military Times released a report about contaminates in drinking water which listed Millington as a site with a contaminated well. We wanted to ensure you the water available to personnel and residents on the installation is safe to drink and use. The well referenced in the article is a different well than the ones that supply water to the installation. The drinking water used in all facilities and residences on the installation is supplied from an aquifer. This water is tested annually and exceeds state standards.

Additionally, the Installation's drinking water was specifically tested for PFAS and PFOS in 2016 and again in 2018 and no contaminants were detected.

Perfluorinated compounds (PFOS and PFAS) are part of a class of man-made chemicals used in many industrial and consumer products to make the products resist heat, stains, water, and grease. Limited human studies show perfluorinated compounds may be associated with developmental delays in fetuses & children; decreased fertility; increased cholesterol; changes to the immune system; increased uric acid levels; changes in liver enzymes; and prostate, kidney, and testicular cancer.

Think before you flush!

Flushing unused or expired medicines can be harmful to your drinking water. Properly disposing of unused or expired medication helps protect you and the environment. Keep medications out of Tennessee's waterways by disposing 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/>