Naval Support Activity (NSA) Mid-South Annual Water Quality Report for Year 2024

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 and Table 2 below. The data presented in the report are from the most recent testing in accordance with the regulations. 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 untreated water sources serving water to this water system. The SWAP Report assesses the susceptibility of untreated water sources to potential contamination. The URL address for Source Water Assessments is: https://www.tn.gov/environment/program-areas/wr-water-resources/water-quality/source-water-assessment.html. 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.

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 March 2024, we received a numerical rating of 596 out of 599 points. This gives us a 99% rating and places 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 only the contaminants for which we have sampled recently and are above detectable levels. None of the results exceeded regulatory limits.

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.

What concerns are there regarding lead in our drinking water?

NSA Mid-South routinely tests its drinking water for the presence of lead and other contaminants. During the most recent round of lead and copper sampling, out of 20 samples taken, 0 samples contained concentrations exceeding the action level of 15 ppb for lead. All results were below the laboratory's lead detection limit of 2 ppb. This detection limit is the lowest level of lead the lab can accurately measure using its machinery.

In addition to routine drinking water testing, NSA Mid-South completed a Lead Service Line Inventory (LSLI) in 2024 that detailed the presence of lead piping on the installation. This survey included all installation commands as well as housing. No lead or lead-adjacent piping was identified during the LSLI.

Where can I find a copy of the installation's Lead Service Line Inventory?

The results of the LSLI were submitted to TDEC in October of 2024 as required by the EPA. For a copy of the LSLI, please contact Geneva Catlett, NSA Mid-South Water Program Manager, at geneva.e.catlett.civ@us.navy.mil or at (901) 874-5910.

Are there additional ways to protect myself from lead in my drinking water?

The following is language provided by TDEC for publication in this year's CCR:

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. NSA Mid-South 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 your 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 Geneva Catlett, NSA Mid-South Water Program Manager, at geneva.e.catlett.civ@us.navy.mil or at 901-874-5910. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure are available at https://www.epa.gov/safewater/lead.

What are the health effects of drinking lead-contaminated water?

Exposure to lead in drinking water can cause serious health effects in all age groups. Infants and children can have decreases in IQ and attention span. Lead exposure can lead to new learning and behavior problems or exacerbate existing learning and behavior problems. The children of women who are exposed to lead before or during pregnancy can have increased risk of these adverse health effects. Adults can have increased risks of heart disease, high blood pressure, kidney, or nervous system problems.

How can I get involved?

Please feel free to call your PWD Installation Environmental Program Director, 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.

Table 1. Detected Regulated Contaminants

Contaminants	***MCLG[1]***	***MCL[2]***	***Level found***	***Date***	***Violation***	***Typical Source***
[a]Total Coliform Bacteria (RTCR)	N/A	TT Trigger[6]	*None*	*Monthly*	*No*	Naturally present in the environment.
[b]Barium	No MCLG	2 PPM[3]	.055 PPM	*2/8/23*	*No*	Discharge of drilling wastes; Discharge from metal refineries; Erosion from natural deposits
[c]Fluoride	4 PPM[3]	4 PPM[3]	Average: .70 PPM Range: .66-.73 PPM	*Monthly*	*No*	Water additive, which promotes strong teeth; erosion of natural deposits; discharge from fertilizers & aluminum factories.
[d]Lead	0 PPB[4]	AL[5]=15 PPB[4]	<2 PPB, 90th percentile Range: 2 – 2 PPB Samples were BDL[7]	8/1/23	*No*	Corrosion of household plumbing systems; erosion of natural deposits.
[d]Copper	1.3 PPM[3]	AL[5]=1.3 PPM[3]	.019 PPM, 90th percentile	8/1/23	*No*	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives.

[e]**Total Trihalomethanes**	No MCLG	80 PPB[4]	4.29 PPB	8/9/23	*No*	By-products of drinking water chlorination.
[f]**Radium 226 Radium 228 Combined**	0 pCi/l	5 pCi/l	.803 pCi/l	2/9/23	*No*	Erosion of natural deposits
[g]**Sodium**	No MCLG	No MCL	10.6 PPM	2/8/23	*No*	Erosion of natural deposits

*Other contaminants that are monitored and 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] **TT**- Treatment Technique, or a required process intended to reduce the level of a contaminant in drinking water.

[7] **BDL**- Below Detection Limit, meaning a contaminant's presence is less than what can be accurately detected by lab machinery. BDL contaminants are reported with the testing machine's lowest possible detection limit instead.

Iron occurs naturally in our raw water and occasionally accumulates in the distribution system. Iron shows up as "red" or" rusty" water at your tap. Although you do not want to drink water that is not clear, iron is not considered to be a hazard to your health. We test for iron daily and it is usually around .05 ppm. The aesthetic limit for iron is 0.3 ppm.

[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 found in any of our monthly monitoring samples.

[b] Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.

[c] 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.

[d] 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.

[e] Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

[f] Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.

[g] Some people who drink water that contains high levels of sodium could develop high blood pressure.

Table 2.

Contaminant	MRDLG[1]	MRDL[2]	Level Found	Date	Violation	Typical Source
[a]**Chlorine**	4.0 PPM	4.0 PPM	Average:1.24 PPM Range: .22-2.26 PPM	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.

[a] 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.

What are per- and polyfluoroalkyl substances and where do they come from?

Per- and polyfluoroalkyl substances (PFAS) are a group of thousands of man-made chemicals. PFAS have been used in a variety of industries and consumer products around the globe, including in the U.S., since the 1940s. PFAS are found in many consumer products, as well as in industrial products, like certain firefighting agents called aqueous film forming foam (AFFF). PFAS is also found in essential use applications such as in microelectronics, batteries, and medical equipment. PFAS chemicals are persistent in the environment, and some are persistent in the human body – meaning they do not break down and they can accumulate over time.

Is there a regulation for PFAS in drinking water?

On April 26, 2024, the United States Environmental Protection Agency (EPA) published a National Primary Drinking Water Regulation (NPDWR) final rule on drinking water standards for six PFAS under the Safe Drinking Water Act (SDWA). The rule establishes the following maximum contaminant levels (MCLs):

Compound	MCL
Perfluorooctane Sulfonic Acid (PFOS)	4.0 ppt
Perfluorooctanoic Acid (PFOA)	4.0 ppt
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA, commonly known as GenX)	10.0 ppt
Perfluorononanoic Acid (PFNA)	10.0 ppt
Perfluorohexane Sulfonic Acid (PFHxS)	10.0 ppt
HI MCL for PFHx, PFNA, perfluorobutane sulfonic acid (PFBS), and GenX = 1 (unitless)	

Under the NPDWR, regulated public water systems (PWS) are required to complete initial monitoring by April 26, 2027. Beginning April 26, 2027, regulated PWSs will conduct ongoing compliance monitoring in accordance with the frequency dictated by the rule and as determined by the initial compliance monitoring results. Regulated PWSs must demonstrate compliance with the Maximum Contaminant Levels (MCLs) by April 26, 2029.

In order to provide safe drinking water to all Department of Defense (DoD) personnel, OSD policy extends this requirement to all DoD systems which provide drinking water for human consumption, regardless of size of the drinking water system. In addition to the six regulated compounds, DoD-owned systems are required by DoD policy to monitor for all 25 compounds detected when using EPA Method 533.

Protecting the health of our personnel, their families, and the communities in which we serve is a priority for the Department. DoD is committed to complying with requirements of the NPDWR and the continued provision of safe drinking water to those that work and live on DoD installations.

Has NSA Mid-South tested its water for PFAS in 2024?

Yes. In June and December 2024 samples were collected from the potable water system.

We are pleased to report that drinking water testing results were below the Method Reporting Limit (MRL) for all 29 PFAS compounds covered by the

sampling method, including PFOA and PFOS. This means that PFAS were not detected in your water.

What is next?

NSA Mid-South initial monitoring for PFAS in accordance with EPA requirements is complete. Based on these results, the installation will begin triennial monitoring for PFAS in 2027.

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: https://www.tnpharm.org/patient-resources/disposing-of-unwanted-drugs/