



CONSUMER CONFIDENCE REPORT (CCR)

Drinking Water Quality

1 January 2022 – 31 December 2022

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The 20th Operational Medical Readiness Squadron, Bioenvironmental Engineering (BE) Flight, informs consumers annually about the quality of their drinking water. This report is designed to provide details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. The CCR is a snapshot of last year's (2022) water quality. Shaw Air Force Base (AFB) receives its water from two (2) different aquifers which are the Upper and Lower Black Creek Aquifers. There are currently five (5) drinking water wells permitted by the South Carolina Department of Health and Environmental Control (SCDHEC), which operate on Shaw AFB (System No. SC4310501). In November 2022, SCDHEC conducted a source water sanitary survey for Shaw AFB.

IS MY WATER SAFE?

We are pleased to report that Shaw AFB drinking water is safe and meets all Federal and State requirements. Shaw AFB is committed to providing its consumers information because informed consumers are our best allies.

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. Environmental Protection Agency (EPA)/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Water Drinking Hotline **(800-426-4791)**.

WHY ARE THERE CONTAMINANTS IN MY DRINKING 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 Environmental Protection Agency's (EPA) Safe Drinking Water Hotline **(800-426-4791)**. 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: 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, urban storm water runoff, and septic systems; and 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. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

HOW CAN I GET INVOLVED?

Did you know that the average U.S. household uses approximately 400 gallons of water per day or 100 gallons per person per day? Luckily, there are many low-cost and no-cost ways to conserve water. Small changes can make a big difference - try one today and soon it will become second nature.

- Shut off water while brushing your teeth, washing your hair, and shaving. Doing so can save up to 500 gallons a month.
- Use a water-efficient showerhead. They're inexpensive, easy to install, and can save you up to 750 gallons a month.
- Run your clothes washer and dishwasher only when they are full. You can save up to 1,000 gallons a month.
- Water plants only when necessary.





- Fix leaky toilets and faucets. Faucet washers are inexpensive and take only a few minutes to replace. To check your toilet for a leak, place a few drops of food coloring in the tank and wait. If it seeps into the toilet bowl without flushing, you have a leak. Fixing it or replacing it with a new, more efficient model can save up to 1,000 gallons a month.
- Adjust sprinklers so only your lawn is watered. Apply water only as fast as the soil can absorb it and during the cooler parts of the day to reduce evaporation.
- Teach your kids about water conservation to ensure a future generation that uses water wisely. Make it a family effort to reduce next month's water bill!
- Visit www.epa.gov/watersense for more information.

SOURCE WATER PROTECTION TIPS

Protection of drinking water is everyone's responsibility. You can help protect your community's drinking water source in several ways:

- Eliminate excess use of lawn and garden fertilizers and pesticides - they contain hazardous chemicals that can reach your drinking water source.
- Pick up after your pets.
- If you have your own septic system, properly maintain your system to reduce leaching to water sources or consider connecting to a public water system.
- Dispose of chemicals properly; take used motor oil to a recycling center.
- Volunteer in your community. Find a watershed or wellhead protection organization in your community and volunteer to help. If there are no active groups, consider starting one. Use EPA's Adopt Your Watershed to locate groups in your community, or visit the Watershed Information Network's How to Start a Watershed Team.
- Organize a storm drain stenciling project with your local government or water supplier. Stencil a message next to the street drain reminding people "Dump No Waste - Drains to River" or "Protect Your Water." Produce and distribute a flyer for households to remind residents that storm drains dump directly into your local water body.



Airman First Class Pattirose Samuels from the Bioenvironmental Engineering Flight analyzing water quality.

ADDITIONAL INFORMATION FOR LEAD

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. Shaw AFB 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>.

WATER QUALITY DATA TABLE

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of contaminants in water provided by public water systems. The table below lists all of the drinking water contaminants that we detected during the calendar year of this report. Although many more contaminants were tested, only those substances listed below were found in your water. All sources of drinking water contain some naturally occurring contaminants. At low levels, these substances are generally not harmful in our drinking water. Removing all contaminants would be extremely expensive, and in most cases, would not provide increased protection of public health. A few naturally occurring minerals may actually improve the taste of drinking water and have nutritional value at low levels. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. As such, some of our data, though representative, may be more than one year old. In this table you will find terms and abbreviations that might not be familiar to you. To help you better understand these terms, we have provided the definitions below the table.

Table 1. Data Water Quality Table

Contaminants	MCLG or MRDLG	MCL, TT, or MRDL	Detect In Your Water	Range		Sample Date	Violation	Typical Source
				Low	High			
Inorganic Contaminants								
Nitrate [measured as Nitrogen] (ppm)	10	10	1.000	0.440	1.100	2022	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Sodium (ppm)	N/A	N/A	4.9	0	4.9	2021	No	Erosion of natural deposit
Radioactive Contaminants								
Alpha emitters (pCi/L)	0	15	2.270	1.700	2.270	2022	No	Erosion of natural deposits
Radium (combined 226/228) (pCi/L)	0	5	1.186	0.335	1.186	2022	No	Erosion of natural deposits

Contaminants	MCLG or MRDLG	MCL, TT, or MRDL	Detect In Your Water	Range		Sample Date	Violation	Typical Source
				Low	High			
Volatile Organic Contaminants								
Chlorobenzene	100	100	0.510	0	0.510	2022	No	Discharge from chemical and agricultural chemical factories
Cis-1,2-Dichloroethylene	70	70	0.675	0	0.675	2022	No	Discharge from industrial chemical factories
Trichloroethylene (ppb)	0	5	4.000	1.750	7.590	2022	No	Discharge from metal degreasing sites and other factories

Contaminants	MCLG	AL	Your Water	Sample Date	# Samples Exceeding AL	Exceeds AL	Typical Source
Inorganic Contaminants (required every three years, next sampling will be conducted 2023)							
Copper - action level at consumer taps (ppm)	1.3	1.3	0.045	2020	0	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead - action level at consumer taps (ppb)	0	15	0.370	2020	0	No	Corrosion of household plumbing systems; Erosion of natural deposits

Violations or Exceedances

None.

Disinfection

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

Disinfectant (unit of measure)	MCLG or MRDLG	MCL, TT, or MRDL	Detect in Your Water	Range	Violation (Yes or No)	Sample Date	Typical Source
Chlorine (ppm)	4	4	1.000	1.000 - 1.000	No	2022	Water additive used to control microbes

ADDITIONAL MONITORING

Per- and polyfluoroalkyl substances (PFAS)

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 industrial and consumer products around the globe, including in the U.S., for decades. Due to their widespread use and environmental persistence, most people in the United States have been exposed to certain PFAS. PFAS have been used to make coatings and products that are used as oil and water repellents for carpets, clothing, paper packaging for food, and cookware. They are also contained in some foams (aqueous film-forming foam or AFFF) used for fighting petroleum fires.

Is there a federal or South Carolina regulation for PFAS in drinking water?

There is currently no federal drinking water standard for any PFAS compounds. In May 2016, the U.S. Environmental Protection Agency (EPA) established a lifetime drinking water health advisory (HA) level at 70 parts per trillion (ppt) for individual or combined concentrations of perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS). Both chemicals are types of PFAS.

In South Carolina, there is no PFAS drinking water regulation. The Department of Defense (DoD) issued a policy in 2020 to monitor drinking water for PFAS at all DoD owned and operated water systems at a minimum of every three years. The DoD policy states that if water sampling results confirm that drinking water contains PFOA and PFOS at individual or combined concentrations greater than the 2016 EPA HA level of 70 ppt, water systems would 1) take immediate action to reduce exposure to PFOS or PFOA, to include providing alternative drinking water; and 2) undertake additional sampling to assess the level, scope, and localized source of contamination.]

What about the EPA's 2022 interim Health Advisories or proposed regulations?

EPA issued interim Health Advisories for PFOS and PFOA in 2022. However, these newer levels are below quantifiable limits (i.e., below detection levels). EPA announced a proposed regulation on PFAS drinking water standards for public comment on March 14, 2023. The Department supports EPA taking regulatory actions to address PFAS, including a drinking water standard for PFAS that will apply to all drinking water suppliers once final. DoD respects and values the public comment process on this proposed nationwide drinking water rule and looks forward to the clarity that a final regulatory drinking water standard for PFAS will provide.

In anticipation of this EPA drinking water regulation and to account for emerging science that shows potential health effects of PFOS and PFOA at levels lower than 70 ppt, DoD is evaluating its efforts to address PFAS in drinking water, and what actions we

can take to be prepared to incorporate this standard, such as reviewing our current data and collecting additional sampling where necessary. DoD remains committed to communicating and engaging with our communities throughout this process.

Has Shaw Air Force Base tested its water for PFAS?

Yes. Monthly PFAS/PFOS sampling was completed from January to December 2022 and were collected from Wells 3, 4, and 5. Well 6 was later added to the sampling schedule as it became fully operational in 2022.

PFAS Detected but PFOA/PFOS were below the 2016 EPA Health Advisory (HA)

We are informing you that PFOA and PFOS were detected but below the 2016 EPA HA. Other PFAS compounds covered by the sampling method were detected above the method reporting limit (MRL) but EPA does not have a HA for these compounds at this time. The results are provided in Table 2. 2022 PFOA/PFOS Sampling Results (below). PFOA and PFOS were below the 2016 EPA HA of 70 parts per trillion, we will continue to monitor the drinking water quarterly. In accordance with DoD policy, Shaw AFB will collect quarterly samples for PFAS for one year and then every two years thereafter as long as the results are below the 2016 EPA HA.

For more information on PFAS, visit the following:

1. EPA's Drinking Water Health Advisories for PFOA and PFOS
<https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos>
2. SC-DHEC PFAS website
<https://scdhec.gov/environment/polyfluoroalkyl-substances-pfas>

Table 2. 2022 PFOA/PFOS Sampling Results

Name	Average System Values (2022)	Range		Exceeds Health Advisory (70 ppt)
		Low	High	
perfluorooctanesulfonic acid (PFOS) (ppt)	6.848	1.9	24.0	No
perfluorooctanoic acid (PFOA) (ppt)	10.634	1.9	38.0	No
Combined concentration (ppt)		3.8	62.0	No

Unit Descriptions	
<u>Term</u>	<u>Definition</u>
ppm	ppm: parts per million, or milligrams per liter (mg/L)
ppb	ppb: parts per billion, or micrograms per liter (µg/L)
ppt	ppt: parts per trillion, or nanograms per liter
pCi/L	pCi/L: picocuries per liter (a measure of radioactivity)
% positive samples/month	% positive samples/month: Percent of samples taken monthly that were positive
NA	NA: not applicable
ND	ND: Not detected
NR	NR: Monitoring not required, but recommended.

Important Drinking Water Definitions	
<u>Term</u>	<u>Definition</u>
MCLG	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.
MCL	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.
TT	TT: Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.

Important Drinking Water Definitions	
AL	AL: Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
Variances and Exemptions	Variances and Exemptions: State or EPA permission not to meet an MCL or a treatment technique under certain conditions.
MRDLG	MRDLG: Maximum residual disinfection 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.
MRDL	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 control of microbial contaminants.
MNR	MNR: Monitored Not Regulated
MPL	MPL: State Assigned Maximum Permissible Level

Point of Contact(s):

If you would like any additional information in regards to sanitary surveys and/or routine water sampling, please contact the Bioenvironmental Engineering Flight. For more information from the Water System Operator, contact Civil Engineering at **(803) 895-5171**.



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