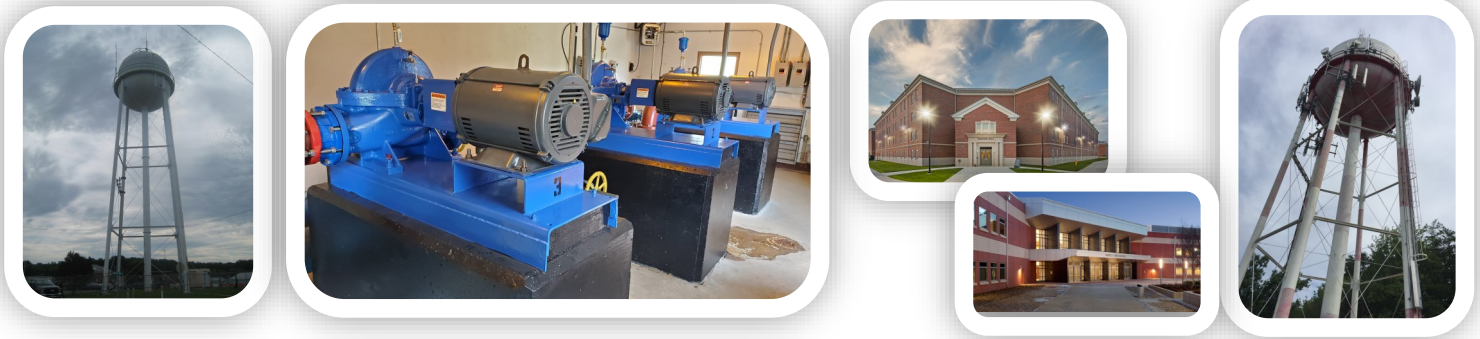
2022 Annual Drinking Water Consumer Confidence Report

Marine Corps Base Quantico

Camp Barrett Water System [TBS/DOJ/WTBN/RKB]

(PWSID 6153060)



Message from the Public Works Officer

Dear Camp Barret Water System Water Consumer,
The Public Works Branch (PWB) of the Marine Corps Base Quantico G-F, Installation and Environment Division, is pleased to present the Base's Camp Barret Water System Annual Water Quality Report. This report is designed to inform you of our and Stafford County's water quality monitoring results summary for the period **January 1 through December 31, 2022.**

Camp Barrett water system (PWSID No. 6153060) receives water from Stafford County processed at two water treatment plants in Stafford County, Va. (PWSID No. 6179100) and delivers water through its distribution system. This Camp Barret water system service area includes The Basic School (TBS), the Department of Justice (DOJ) complex, the Weapons Training Battalion (WTBN), and Russel Knox Building (RKB) Complex.
Our goal is to provide you with a safe and dependable supply of drinking water and we are committed to ensuring the quality of your water. In order to meet this goal, our "Water System Working Group (WSWG)" Team with personnel from the Water Treatment Plant, Utility Section, Facility Maintenance Section, Engineering Section, and Natural Resource & Environmental Affairs Branch meet monthly and continue process improvements to proactively address water quality concerns and issues throughout the year. The followings are some of our recent efforts and changes implemented to improve our water quality:

1) PWB Utilities Section Team have implemented and conducted annual comprehensive maintenance flushing program throughout the Camp Barret distribution system and spot flushing program on issue areas to ensure water quality throughout the Camp Barret Water System.
2) We also enhanced our sampling program that tracks compliance water quality monitoring, directly resulting in successfully completion of all samples on time and in compliance during 2022.

Our team is proud to announce that we have not had a single drinking water quality violation (i.e., fully in compliance with all water quality parameters). Our utilities team including our boots-on-ground Utility Shop Maintenance personnel & our 24/7 water system operators and assistant staff will continue to strive to provide safe drinking water of the highest quality to our families and the Quantico community.

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CDR Benjamin Hofman P.E.
Public Works Officer, Marine Corps Base Quantico

We Want To Hear From You

In order to meet increasingly stringent water quality requirements, we are constantly planning and funding projects to address many water-related issues including source water protection, system operation and maintenance improvement, and timely upgrade and replacement of water system infrastructure (pipes, pump stations and tanks) and treatment plant facility. We value your inputs on our water quality and water system related issues. You can call us at 703-432-2466 (PWB Water Commodities Manager) for any water related questions and inputs. To stay informed on important water related public notifications, please visit us on line at https://www.quantico.marines.mil/

MCB Quantico Camp Barret Water System (TBS/DOJ/WTB/RKB)

2022 Consumer Confidence Report

Regarding This Report

Both MCB Quantico and Stafford County Utilities routinely monitor for contaminants in your drinking water according to Federal and State laws. This report contains summarized information on all regulated contaminants found in your drinking water based on water quality tests performed for a variety of contaminants. An explanation of the results is included in a data table at the end of this report.

Maximum Contaminant Levels (MCL's) are set at very stringent levels by the USEPA. In developing the standards USEPA assumes that the average adult drinks 2 liters of water each day throughout a 70-year life span. USEPA generally sets MCL's at levels that will result in no adverse health effects for some contaminants or a one-in-ten-thousand to one-in-a-million chance of having the described health effect for other contaminants.

Source Water

Camp Barrett water system receives water from Stafford County processed at two water treatment plants in Stafford County. Smith Lake and Lake Mooney reservoirs are the sources of public water in Stafford County. Most of Camp Barret water is processed and delivered from Smith Lake Water Treatment Plant that utilizes Smith Lake as its source water.

In 2002, the Virginia Department of Health (VDH) conducted an assessment of Stafford County's water reservoir at Smith Lake to determine how susceptible it is to contamination (an assessment of Lake Mooney and the Rappahannock River was completed in early 2019). It was determined that the source water was highly susceptible to contaminants because there are industrial, commercial, agricultural and residential land uses in its watersheds.

We ask for your help to properly dispose of trash, waste oil, antifreeze, and other hazardous materials and minimize application of fertilizer and pesticides so that they do not enter streams, storm drains, and other water bodies. You can report illegal dumping around or in Smith Lake to the Stafford County Sheriff's Office at 540-658-4400.

Potential Sources of Water Contaminants

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 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 byproducts 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.

In order to ensure that tap water is safe to drink, USEPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water. Drinking water, including bottled water, may reasonably be expected to contain at least a small amount of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about drinking water contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking water Hotline at 1-800-426-4791 or visiting their website at https://www.epa.gov/ground-water-and-drinking-water.

Should Some People Take Special Precautions?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune system compromised persons such as persons 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 partially at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the USEPA Safe Drinking Water Hotline at 1-800-426-4791.

***We strongly recommend that our customers not use water from the hot water tap for consumption*.** Any contaminants found in the water may accumulate in the hot water tank. This would be true anywhere, regardless of the water source. This does not mean that there is anything wrong with our drinking water. All water tests are conducted on water from the cold-water tap. Our concern is that the water quality is unknown when water from the hot-water tap is consumed. We believe you are better served by heating cold-water for this purpose.

Microbial Analysis

Coliforms are bacteria that are present naturally in the environment and are used as an indicator that other, potentially harmful bacteria, may be present. When Coliform bacteria are found, special follow-up tests are done to determine if harmful bacteria are present in the water supply. If the limit is exceeded, the water supplier must notify the public by bulletin boards, emails, social media, newspaper, radio, or television. A total of 1 positive total coliform sample was detected throughout 2022 but it was negative for E.coli and its repeat samples were negative for total coliform. We are proud to announce that we did not have any samples test present for E. Coli (i.e., no E. coli MCL violation) during the 2022 calendar year.

Disinfection Byproducts

MCB Quantico Camp Barret Water System collects disinfection byproducts samples (including Total Trihalomethanes and Haloacetic Acids samples) every quarter from 2 different locations selected from the Initial Distribution System Evaluation (IDSE).

During 2022, Camp Barret water system was in compliance with TTHM and HAA5 MCLs: none of annual running averages from required disinfection byproducts samples exceeded Total Trihalomethanes (TTHM) MCL (80 ppb) and Halo acetic Acids (HAA5) MCL (60 ppb).

Lead and Copper

During 2022, we completed all required testing for lead and copper and 90 percentiles of the lead and copper test results were less than their action levels (15 ppb for lead and 1.3 ppm for copper). We are proud to announce that none of 20 required sampling sites exceeded lead action level of 15 ppb and copper action level of 1.3 ppm.

Based on our triennial lead and copper sampling schedule, we are scheduled to conduct next lead and copper testing in 2025. More information about drinking water contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline at 1-800-426-4791 or visiting their website at http://water.epa.gov/drink/index.cfm. 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. Marine Corps Base Quantico 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, until it becomes cold or reaches a steady temperature before using the 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 USEPA's Safe Drinking water Hotline at 1-800-426-4791 or visit https://www.epa.gov/ground-water-and-drinking-water/basic-information-about-lead-drinking-water.

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 Virginia 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 Virginia, there is not a 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 is expected to issue a proposed regulation on PFAS drinking water standards for public comment in the next few months. DoD looks forward to the clarity that a nationwide regulatory standard for PFOS and PFOA in drinking water 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.

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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 Marine Corps Base Quantico Camp Barrett Water Distribution System tested its water for PFAS?

Yes, in March 2013 samples were collected from Smith Lake Water Treatment Plant Finished Water. 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 system. In accordance with DoD policy, the water system will be resampled every three years for your continued protection.

Further testing has been conducted in coordination with UCMR 5 sampling requirements. Apart of UCMR 5 includes extensive PFAS and PFOA testing. MCBQ has received preliminary results to date but has not received final sample results. Once a final report is received, proper notification will be made within 12 months.

Conclusion

Our Public Works Utilities Team works around the clock to provide top quality water to our families, co-workers and Quantico Community. In order to maintain a safe and dependable water supply we will continue to monitor and improve our supply lines and distribution system components that benefits all of our customers.

During our flushing events, water mains and fire hydrants are flushed comprehensively and vigorously. This may cause temporary water discoloration which can be resolved by running the tap until the water is clear. Please help us in our goal of ensuring a safe and sustainable water system by careful use of this resource, which is the heart of our community, our way of life and our children's future.

Learn About Your Drinking Water

To stay informed on important water related public notifications, please visit us on line at https://www.quantico.marines.mil/water-quality/.

More information about drinking water contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking water Hotline at 1-800-426-4791 or visiting their website at **https://www.epa.gov/ground-water-and-drinking-water**.

Please visit Virginia Department of Health (VDH) Office of Drinking Water (ODW) website for VDH drinking water compliance information.: https://www.vdh.virginia.gov/drinking-water/

For any questions about our drinking water, call at 703-432-2466 (MCBQ GF-Public Works Branch FMS Utilities and Energy Management Section).

Marine Corps Base Quantico - 2022 Camp Barret Water System Water Quality Report (PWSID 6153060)

Regulated Contaminants - Camp Barrett Water Distributon System (PWSID 6153060)

Microbiological Results	MCLG	MCL	No. of Samples Indicating Presence of Bacteria	Highest total number of positive samples per month	Monthly Samples	Violation	Major source in drinking water.
Total Coliform Bacteria	0	NA*	Total of 1 total coliform positive sample* during 2022: * None of its repeat samples showed presence of total coliform	1	10	No	Naturally present in the environment
E. Coli	0	A routine sample & a repeat sample are total coliform positive & one is also E. coli. Positive	0	0		No	Naturally present in the environment

* Two or more total coliform positive samples per month will trigger Level 1 assessments and corrective actions accordingly. ** Any E.coli MCL vilocation triggers Level 2 assessment and corrective actions accordingly.

Primary Regulated Contaminants

Metals (units)	MCLG	Action Level	90th Percentile	Number of sites tested	No. of Sites Exceeding action level.	Range Low to Highest	Violation	Source
Copper (ppm)	0	1.3 ppm	0.066 ppm	20	0	<0.002 to 0.150 ppm	No	Corrosion of household plumbing systems
Lead (ppb)	0	15 ppb	< 2.0 ppb	20	0	<2.0 to 2.0 ppb	No	Corrosion of household plumbing systems

MCB Quatnico Camp Barret Water System is on reduced monitoring for these parameters based upon historical results (as granted by the State). The Lead and Copper results are from Junet to August 2022; next test are to be conducted in 2025.

Disinfectant (units)	MCDLG	MRDL^	Average	Range Low to High	Violation	Source
Chloramines (ppm) Results from distribution system.	4.0 ppm	4.0 ppm	2.27 ppm	0.20 - 4.3 ppm	No	Added to drinking water as a disinfectant.

Disinfection By-Products (units)	MCLG	MCL	Quarterly Running Annual Average (Highest for the year)	Range Low to High	Violation	Source
Haloacetic Acids, HAA5 (ppb)	0	60 ppb	27 ppb	12 to 48 ppb	No	By-product of drinking water disinfection.
Trihalomethane, TTHM (ppb)	0	80 ppb	33 ppb	15 to 47 ppb	No	By-product of drinking water disinfection.

^ MRDL: Maximum Residual Disinfection Level (in mg/L or ppm)

Regulated Contaminants and Treatment Techniques as reported by Stafford County Water System [Smith Lake and Lake Mooney Water Plants]. (PWSID 6179100)

Regulated Contaminants

Parameter (units) - Regulated	MCLG	MCL	Average	Range	Violation	Source
Fluoride (ppm)	4 ppm	4 ppm	0.85 ppm	0.76 to 0.93 ppm	No	Added to the drinking water to promote dental health; erosion of natural deposits; discharge from fertilizer and aluminum factories.
Barium (ppm)	2 ppm	2 ppm	0.004 ppm	< QL to 0.008 ppm	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.

Treatment Technique (TT) Parameters

Total Organic Carbons (TOC) and Turbidity	MCL or TT	Average	Range	Violation	Source
Total Organic Carbons *	Treatment Technique: Running annual average of quarterly TOC removals ratio must be ≥ 1.0 **	The running annual average of quarterly TOC removal ratios ranged from 1.79 to 1.82		No	Naturally present in environment
Turbidity (NTU)***	Treatment Technice (TT) - at least 95% of all samples taken each month must be 0.3 NTU or less; 1 NTU maximum	Maximum Detected = 0.21 NTU - 100% of all samples taken were 0.3 NTU or less		No	Soil erosion from runoff

* Total Organic Carbon has no health effects. However, it provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes and haloacetic acids. Compliance with the treatment technique reduces the formation of these disinfection byproducts.
** Compliance with Treatment Technique (TT) is a removal ratio of 1.0 and higher (quarterly running annual average) . The ratio of removal is the actual TOC removal between the source water and treated water.

*** Samples taken from filtered water at the treatment plan

Secondary / Unregulated Contaminants

Parameter (units) - Sodium	MCLG	Secondary MCL	Average	Range	Violation	Source
Sodium (ppm)	N/A	N/A	28.1 ppm	25.3 to 30.8 ppm	N/A	Erosion of natural deposits
Sulfate (ppm)	N/A	250 ppm	28.0 ppm	27.3 to 28.6 ppm	N/A	Erosion of natural deposits; fertilizer runoff
Chloride (ppm)	N/A	250 ppm	16.4 ppm	15.6 to 17.1 ppm	N/A	Erosion of natural deposits
Orthophosphate (ppm)	N/A	N/A	0.58 ppm	0.41 to 0.75 ppm	N/A	Added as corrosion inhibitor
Nickel (ppm)	NA	NA	0.002 ppm	< QL to 0.003 ppm	No	Nickel occurs naturally in soils, ground water and surface waters and is often used in electroplating, stainless steel and alloy products.
Silica (ppm)	N/A	N/A	5.54 ppm	2.32 to 8.76 ppm	N/A	Erosion of nautral deposits

Key to acronyms and abbreviations.

Non-Detects (ND)	Laboratory analysis indicates that the constituent is below the detection level.
Parts per million (ppm) & Milligrams per liter (mg/L)	Parts per million and milligrams per liter are the same. One part per million corresponds to one minute in two years, or a penny in $10,000.
Parts per billion(ppb) & Micrograms per liter (µg/L)	Parts per billion and Micrograms per liter are the same. One part per billion corresponds to one minute in 1902 years, or a penny in $10,000,000.
Picocuries per liter (pCi/l)	Picocuries per liter is a measure of the radioactivity in the water.
Nephelometric Turbidity Unit (NTU)	Nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just visibly cloudy with the naked eye.
Action Level (AL)	Concentration of a contaminant which, if exceeded, triggers treatment or other requirements a water system must follow.
Treatment Techniques (TT)	A treatment technique is a required process intended to reduce level of contaminant in drinking water
Maximum Contaminant Level (MCL)	The highest level of a contaminate that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology
Maximum Contaminant Level Goal (MCLG)	The "Goal" (MCLG) is the level of a contaminant in drinking water below which there is no known or expected risk to MCLG's allow for a margin of safety.
Maximum Residual Disinfection Level (MRDL)	The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfection is necessary for control of microbial contaminants.
Maximum Residual Disinfection Level Goal (MRDLG)	The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLG does not reflect the benefits of the use of disinfectants.
No Regulatory Limit (NRL)	A substance or chemical constituent that is of interest but currently does not have a regulatory limit or concentration.