

Langley Air Force Base Annual Water Quality Report For Calendar Year 2022

ABOUT THIS REPORT

Langley Air Force Base's goal is to provide you with a safe and dependable supply of drinking water. This is our annual Consumer Confidence Report on the drinking water delivered to Langley AFB. This report is required by the Safe Drinking Water Act (SDWA) and provides information such as to where your water comes from and information on *potential* contaminants. It is reviewed and approved by the Virginia Department of Health (VDH), Office of Drinking Water in Norfolk. The quality of your drinking water must meet state and federal requirements administered by the VDH. The information contained in this report validates all requirements were met and the water is safe for consumption.

This report is written, prepared and distributed by 633d Operational Medical Readiness Squadron, Bioenvironmental Engineering (BE) as required by the Safe Drinking Water Act. If you have questions about this report, please contact Bioenvironmental Engineering Office by phone at (757) 764-7760/DSN: 574-7760 and or by email at usaf.jble.633-mdg.list.633-omrs-sgxb-personnel@health.mil.

NEWPORT NEWS WATERWORKS (NNWW)

Newport News Waterworks serves as a regional water provider for five jurisdictions: Hampton, Newport News, Poquoson, York County and part of James City County. NNWW is committed to providing a reliable supply of high-quality drinking water to our customers. Drinking water is treated and tested using state-of-the-art equipment and advanced procedures, and it meets or exceeds state and federal standards. Bottom line: The quality of your drinking water is excellent.

WATER SOURCE

The sole public water system for supplying drinking water to Langley AFB is NNWW. Surface water provides the source for drinking water. It begins with the Chickahominy River. Water is pumped from the river above Walker's Dam and is transferred through pipes to one of five reservoirs owned and operated by NNWW.

These reservoirs store and supply water to the treatment plants. Brackish (slightly salty) groundwater, which is mostly used for firefighting purposes, is pumped from deep wells in the Lee Hall area. The two source waters are treated separately then blended at Lee Hall water treatment plant (WTP) before distribution to the service area. Langley AFB receives very little groundwater as most of the water comes from Harwood's Mill WTP. Ground water from Langley is not part of this process and is never mixed with the drinking water.

HOW THE WATER IS TREATED

Water is treated at NNWW treatment plants where it passes through screens to remove large debris. Then aluminum sulfate (alum) and polymer are added. These chemicals cause tiny particles in the water to cling together (coagulation), making the particles easier to remove. After the water is clarified, ozone (disinfection) is added to kill microorganisms such as bacteria and viruses. The water is then sent through filters to remove any remaining particles (filtration). Lime is added to adjust the pH, fluoride is added to prevent tooth decay, and zinc orthophosphate is added to control corrosion inside the pipe system. Finally, chloramines are added (secondary disinfection) to maintain disinfection as it travels through the pipe system to your home or office.

The brackish groundwater is pumped to NNWW's desalination plant located in Lee Hall. Using a process called reverse osmosis, water is forced by high pressure through membranes that can remove the salt and other contaminants to produce very high-quality water. The water is blended with treated surface water and sent out to its customers. In

order to ensure that the tap water is safe to drink, the Environmental Protection Agency (EPA) prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug

Administration (FDA) prescribe regulations establishing limits for contaminants in bottled water and must provide the same level of protection for the consumers as available tap 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 (1-800-426-4791).

NNWW updated its Source Water Assessment in 2022. Information on the NNWW source water assessment is available by calling NNWW Customer Service at (757) 926-1000.

HOW WE TEST YOUR WATER: NNWW

To ensure that tap water is safe to drink, EPA regulations limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish the limits for contaminants in bottled water, which must provide the same protection for public health. The water quality information listed here is based upon tests conducted in 2022 by NNWW. Samples of treated water were taken at regular intervals from specific locations (the treatment plants, residences, and businesses) across the Waterworks service area.

Tables with the results of testing for Regulated and Unregulated substances conducted by NNWW can be found on pages 3, 4, and 5. The tables contain the name of each substance, the highest level allowed by regulation (MCL), the ideal goals for public health (MCLG), the amount detected, the usual sources of such contamination, and whether Waterworks meets state and federal standards. For help understanding the tables, please see the key terms on the next page and the footnotes at the bottom of the tables. An expanded version of the tables in this report (listing additional test results) can be found on the Waterworks website at www.nnva.gov/waterqualityreport.

HOW WE TEST YOUR WATER ON LANGLEY AFB

BE collects treated water samples in accordance with EPA SDWA, VDH, Office of Drinking Water, and Air Force Instruction 48-144, *Drinking Water Surveillance Program*. Samples of treated water were collected at regular intervals from specific locations (i.e., water system entry points, pump stations) that have been established by VDH, Office of Drinking Water.

Tables with the results of testing for Regulated substances conducted by BE for Langley AFB can be found on page 6. The tables contain the name of each substance, the highest level allowed by regulation (MCL), the ideal goals for public health (MCLG), the amount detected, the usual sources of such contamination, and whether Langley AFB Water System met state and federal standards. For help understanding the tables, please see the key terms on the next page and the footnotes at the bottom of the table.

PLEASE NOTE:

As previously mentioned, all data that has been supplied throughout (e.g., sampling dates, results, and locations) has been reviewed and approved by the VDH, Office of Drinking Water for accuracy. Not all sample types are recurring or have an annual sampling requirement.

**Your drinking water is continually monitored for contaminants.
Langley AFB drinking water is SAFE.**

INFORMATION

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 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, 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. They 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.

IMPORTANT INFORMATION FOR PEOPLE WITH HEALTH CONCERNS

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons 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 drinking water contaminants.

These people should seek advice about drinking water from their health care providers. EPA and Center 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 Drinking Water Hotline (1-800-426-4791).

CHLORAMINES

A combination of chlorine and ammonia are now used as a secondary disinfectant. **Reminder** - kidney dialysis centers are advised of the dangers of the chloramine treatment. Also, tropical fish owners need to de-chlorinate the water before use in fish habitats or tanks.

LEAD

NNWW 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 two minutes before using water for drinking or cooking. If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water primarily comes from materials and components associated with service lines and home plumbing.

Waterworks recommends that you prepare baby formula with cold water. If you are concerned about elevated lead levels in your home's water, you may have your water tested. Additional information to include steps you can take to minimize exposure to lead is available from the EPA's Safe Drinking Water Hotline at (1-800-426-4791) or visit them on the web at <http://www.epa.gov/safewater/lead>.

KEY TERMS

ACTION LEVEL (AL) - The concentration of a contaminant that, if exceeded, triggers treatment or other requirements, which a water system must follow.

MAXIMUM CONTAMINANT LEVEL (MCL) - 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.

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.

MICROGRAM PER LITER (ug/L) - Concentrations of chemicals in water (units of the mass of chemical) per volume of water (liter = L)

MINIMUM REPORTING LEVEL (MRL) - Estimate of lowest concentration of a compound that laboratories would report as a detection.

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 control of microbial contaminants.

MAXIMUM RESIDUAL DISINFECTANT LEVEL GOAL (MRDLG) - The level of a drinking water disinfectant below which there is no known or expected risk to health. It does not reflect the benefits of adding chemical for the control of water borne microbial contaminants.

NEPHELOMETRIC TURBIDITY UNIT (NTU) - A measure of water clarity. Turbidity greater than five (5) NTUs is just noticeable to the average person.

NON-DETECTS (ND) - Does not equate to zero but refers to an amount below analytical reporting limits.

PARTS PER MILLION (PPM) - Parts per million relates to one drop in one million drops of water or about one cup of water in a swimming pool.

PARTS PER BILLION (PPB) - Parts per billion relates to one drop in one billion drops of water or about one drop of water in a swimming pool.

PICOCURIES PER LITER (PCI/L) - Picocuries per liter is a measure of the radioactivity in water.

TREATMENT TECHNIQUE (TT) - A required process intended to reduce the level of a contaminant in drinking water.

NEWPORT NEWS WATERWORKS

(Samples collected by Newport News Public Utilities to ensure water quality)

WATER QUALITY TESTING RESULTS REGULATED HEALTH RISK CONTAMINANTS

<u>Contaminant</u>	<u>MCLG</u>	<u>MCL</u>	<u>Units</u>	<u>Highest Level Found</u>	<u>Range</u>	<u>Meets State & Federal Standards</u>	<u>Sample Date</u>	<u>Likely Source</u>
INORGANICS								
Copper	0	AL = 1.3	ppm	0.101 ¹	0.007-0.311	Yes	2022	Corrosion of household plumbing
Lead	0	AL = 0.015	ppm	<1.0 ¹	<1-9.86	Yes	2022	Corrosion of household plumbing
Fluoride	4	4	ppm	0.75	0.59-0.75	Yes	2022	Added to promote strong teeth
Barium	2	2	ppm	0.021	0.019-0.021	Yes	2022	Erosion of natural deposits
Nitrate	10	10	ppm	0.060	0.047-0.060	Yes	2022	Erosion of natural deposits
Nitrite	1	1	ppm	0.002	<0.001-0.002	Yes	2022	Erosion of natural deposits
DISINFECTION BY-PRODUCTS AND PRECURSORS								
Total Organic Carbon (TOC) Removal	None	TT	N/A	1.16 ²	0.97-1.57	Yes	2022	Naturally present in the environment.
Total Trihalomethane TTHM	0	80	ppb	14 ³	4-23	Yes	2022	By-product of drinking water chlorination
HAA(5)	0	60	ppb	16 ³	2-39	Yes	2022	By-product of drinking water chlorination
MICROBIOLOGICAL & RADIOLOGICAL								
Total Coliform	0	N/A		Max concentration 0.09%	N/A	Yes	2022	Naturally present in the environment
Turbidity	None	TT	NTU	0.144 ⁴	0.014-0.144	Yes	2022	Soil runoff
Radium- 226 & 228	0	5	pCi/L	0.6	0.2-0.6	Yes	2016	Erosion of natural deposits
Beta/Photon Emitters	0	4	pCi/L	1.8	1.2-1.8	Yes	2016	Decay of natural & man-made deposits
<p>Footnotes:</p> <p>The concentrations of all contaminants, except for TOC, in the table are the highest levels found in your drinking water.</p> <p>(1) None of the individual lead-and-copper sample results exceeded the established Action Levels. At least 90% of the sample results were at or below the Highest Level Found. Since the 90th percentiles of the lead-and-copper concentrations have been consistently below the established Action Levels, your waterworks remains in the Triennial Reduced Monitoring for the contaminants.</p> <p>(2) Compliance is based on a running four-quarter average. The range is the individual monthly ratio from both water treatment plants. TOC has no adverse health effects, but can be a critical component in the formation of disinfection by-products. The data in the "Highest Result" column includes samples from 2021. The range is for samples taken in 2022.</p> <p>(3) The highest level of TTHM or HAA5 is the highest of the four locational running annual averages over the period of 01/01/2022-12/31/2022 The range of TTHM or HAA5 is the lowest and the highest concentrations in the individual samples collected from four sample sites in 2022.</p> <p>(4) Turbidity is a measure of water cloudiness. It is a good indicator of the effectiveness of our filtration system. 100% of samples were within the turbidity limit.</p> <p>Please note: Not all sample types are recurring or have an annual frequency.</p>								<p>MCLs are set at very stringent levels. To experience the possible health effects described for many regulated contaminants, a person would have to drink two liters of water at the MCL level every day for a lifetime to have a one-in-a-million chance of having a possible health effect.</p>

NEWPORT NEWS WATERWORKS

(Samples collected by Newport News Public Utilities to ensure water quality)

2021 WATER QUALITY TESTING RESULTS NON-REGULATED MICROBIALS MONITORED AT THE SOURCE								
<i>Contaminant</i>	<i>MCLG</i>	<i>MCL</i>	<i>Units</i>	<i>Highest Level Found</i>	<i>Range</i>	<i>Meets State & Federal Standards</i>	<i>Sample Date</i>	<i>Likely Source</i>
Cryptosporidium*	n/a	TT	Oocysts /L	0.05	0.00-0.05	Yes	2021	Human or animal fecal waste
<p>*In the raw water—not in the treated water.</p> <p>Cryptosporidium is a parasitic microbe found in surface waters throughout the U.S. Our monitoring indicates the presence of these organisms at very low levels in our source water but not in our treated water. Current test methods approved by the EPA do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of cryptosporidium may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people, infants and small children, and the elderly are at greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium are available from the Safe Drinking Water Hotline at 800-426-4791.</p> <p>Please note: Not all sample types are recurring or have an annual frequency.</p>								



NEWPORT NEWS WATERWORKS

(Samples collected by Newport News Public Utilities to ensure water quality)

2021 WATER QUALITY TESTING RESULTS UNREGULATED CONTAMINANTS

UNREGULATED CONTAMINANT MONITORING REGULATION-3 (UCMR3) PERFLUORINATED COMPOUNDS (PFOS & PFOA)

<u>Contaminant</u>	<u>Health Advisory Level</u>	<u>MRL</u>	<u>Units</u>	<u>Highest Level Found</u>	<u>Range</u>	<u>Sample Date</u>	<u>Likely Source</u>
Perfluorooctane Sulfonate - PFOS	0.02	<1.9	ppt	4.1	2.6 -4.1	2021	PFOS and PFOA are fluorinated organic chemicals that are part of a larger group of chemicals referred to as perfluoroalkyl substances (PFASs). They have been used to make carpets, clothing, fabrics for furniture, paper packaging for food and other materials that are resistant to water, grease or stains. They are also used for firefighting at airfields and in a number of industrial processes.
Perfluorooctanoic Acid - PFOA	0.004	<1.9	ppt	3.6	<1.9 -3.6	2021	

Footnotes:

In May 2016, the EPA established Drinking Water Health Advisories for PFOS and PFOA and a combined health advisory level of 70 parts per trillion (0.07 (µg/L)).

The 2021 sampling results for PFOS and PFOA were below the laboratory’s MRL; the combined result 61 parts per trillion (<0.061 µg/L) was below the Health Advisory level. What is a Health Advisory (HA)? Health advisories provide information on contaminants that can cause human health effects and are known or anticipated to occur in drinking water. EPA’s health advisories are non-enforceable and non-regulatory and provide technical information to states agencies and other public health officials on health effects, analytical methodologies, and treatment technologies associated with drinking water contamination.

EPA issued interim Health Advisories for PFOS and PFOA in 2002. However, these newer levels are below quantifiable limits (i.e., below detection levels). EPA announced a proposed LHA 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.

The Newport News Waterworks (NNWW) is the supplier of drinking water to Langley AFB. NNWW tests and ensures that drinking water that they supply to Langley AFB meets state and federal standards. In 2022, results for PFOS were 4.1 ppt and PFOA 3.6 ppt in the drinking water that NNWW supplies to Langley AFB. These levels are above the thresholds suggested by the 15 June 2022 interim EPA advisories but are well within current OSD policy of 70 ppt based on the May 2016 EPA HAs study.

Please note: Not all sample types are recurring or have an annual frequency.

NEWPORT NEWS WATERWORKS

(Samples collected by Newport News Public Utilities to ensure water quality)

2018-2019 WATER QUALITY TESTING RESULTS UNREGULATED CONTAMINANTS

UNREGULATED CONTAMINANT MONITORING REGULATION-4 (UCMR4)

This monitoring provides a basis for future regulatory actions to protect public health.

<u>Contaminant</u>	<u>MRL</u>	<u>Units</u>	<u>Average</u>	<u>Range of Test Results</u>	<u>Sample Date</u>	<u>Likely Source</u>
UCMR4 – TRACE METALS						
Manganese	0.4	µg/L	9.6	2.91-24.1	2018-2019	Naturally occurring element; commercially available in combination with other elements and minerals; used in steel production, fertilizer, batteries and fireworks; drinking water and wastewater treatment chemical; essential nutrient.
UCMR4 – HALOACETIC ACIDS						
Dichloroacetic Acid (DCAA)	0.2	µg/L	11.6	1.6-27.1	2018-2019	By-product of drinking water chlorination
Trichloroacetic Acid (TCAA)	0.5	µg/L	3.0	0.7-11.7		By-product of drinking water chlorination
Dibromoacetic Acid (DBAA)	0.3	µg/L	<0.3	<0.3-0.4		By-product of drinking water chlorination
Bromochloroacetic Acid (BCAA)	0.3	µg/L	2.2	0.4-3.3		By-product of drinking water chlorination
Bromodichloroacetic Acid (BDCAA)	0.5	µg/L	0.8	<0.5-2.3		By-product of drinking water chlorination
Chlorodibromoacetic Acid (CDBAA)	0.3	µg/L	<0.3	<0.3-0.7		By-product of drinking water chlorination

Please note: Not all sample types are recurring or have an annual frequency.

LANGLEY AFB DISTRIBUTION SYSTEM

(Samples collected by USAF Bioenvironmental Engineering and analyzed by state-certified lab, James R. Reed & Associates)

2021 - 2022 WATER QUALITY TESTING RESULTS REGULATED HEALTH RISK CONTAMINANTS								
<i>Contaminant</i>	<i>MCLG</i>	<i>MCL</i>	<i>Units</i>	<i>Highest Level Found</i>	<i>Range</i>	<i>Meets State & Federal Standards</i>	<i>Sample Date</i>	<i>Likely Source</i>
INORGANICS								
Lead	0	AL = 15	ppb	<1.0 ¹	<1-5	Yes	2021	Corrosion of household plumbing systems; erosion of natural deposits
Copper	0	AL = 1.3	ppm	0.439 ¹	0.021-1.05	Yes	2021	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservative
REGULATED DISINFECTANTS								
Chloramines (Total Chlorine)	MRDLG= 4	MRDL= 4	ppm	0.95 ²	0.2-3.2	Yes	2022	Water additive used to control microbes
DISINFECTION BY-PRODUCTS								
TTHM	0	80	ppb	15 ³	4.5-21.4	Yes	2022	By-product of drinking water chlorination
HAA5	N/A	60	ppb	16 ³	ND-20	Yes	2022	By-product of drinking water disinfection
MICROBIOLOGICAL								
<i>Contaminant</i>	<i>MCLG</i>	<i>MCL</i>	<i>Potential Bacteria Presence (Y/N)</i>		<i>Meets State & Federal Standards</i>	<i>Sample Date</i>	<i>Likely Source</i>	
Total Coliform Bacteria	0	N/A	No		Yes	2022	Naturally present in the environment	
<p>Footnotes:</p> <p>(1) None of the individual lead-and-copper sample results exceeded the established Action Levels. At least 90% of the sample results were at or below the Highest Level Found. Since the 90th percentiles of the lead-and-copper concentrations have been consistently below the established Action Levels, your waterworks remains in the Triennial Reduced Monitoring for the contaminants.</p> <p>(2) The highest level of chloramines is the highest of the four running annual averages of chloramines from 01/01/2022 through 12/31/2022. The range of chloramines is the lowest and the highest of the individual chloramines measured in 2022.</p> <p>(3) The highest level of TTHM or HAA5 is the highest of the four locational running annual averages over the period of 01/01/2022-12/31/2022. The range of TTHM or HAA5 is the lowest and the highest concentrations in the individual samples collected from four sample sites in 2022.</p> <p>Please note: Not all sample types are recurring or have an annual frequency.</p>							<p>MCLs are set at very stringent levels. To experience the possible health effects described for many regulated contaminants, a person would have to drink two liters of water at the MCL level every day for a lifetime to have a one-in-a- million chance of having a possible health effect.</p>	

LANGLEY AFB DISTRIBUTION SYSTEM

(Samples collected by USAF Bioenvironmental Engineering and analyzed by EPA-certified lab, EUROFINS USA)

2020 WATER QUALITY TESTING RESULTS UNREGULATED CONTAMINANTS

UNREGULATED CONTAMINANT MONITORING REGULATION-4 (UCMR4)

This monitoring provides a basis for future regulatory actions to protect public health.

<u>Contaminant</u>	<u>Units</u>	<u>MRL</u>	<u>Max</u>	<u>Range</u>	<u>Sources and Comments</u>
Geranium	µg/L	0.3	<0.3	<0.3	Trace Metals
Manganese	µg/L	0.4	24.1	2.9 – 24.1	Trace Metals
alpha-Hexachlorocyclohexane	µg/L	0.01	<0.01	<0.01	Pesticides and pesticide manufacturing byproduct
Chlorpyrifos	µg/L	0.03	<0.03	<0.03	Pesticides and pesticide manufacturing byproduct
Dimethipin	µg/L	0.20	<0.02	<0.02	Pesticides and pesticide manufacturing byproduct
Ethoprop	µg/L	0.03	<0.03	<0.03	Pesticides and pesticide manufacturing byproduct
Oxyfluorfen	µg/L	0.05	<0.05	<0.05	Pesticides and pesticide manufacturing byproduct
Profenofos	µg/L	0.3	<0.3	<0.3	Pesticides and pesticide manufacturing byproduct
Tebuconazole	µg/L	0.2	<0.2	<0.2	Pesticides and pesticide manufacturing byproduct
Permethrin, cis & Tran	µg/L	0.04	<0.04	<0.04	Pesticides and pesticide manufacturing byproduct
Tribufos	µg/L	0.07	<0.07	<0.07	Pesticides and pesticide manufacturing byproduct
Butylated Hydroxyanisole	µg/L	0.03	<0.03	<0.03	Semi-volatile organic compounds
o-Toluidine	µg/L	0.007	<0.007	<0.007	Semi-volatile organic compounds
Quinoline	µg/L	0.02	<0.02	<0.02	Semi-volatile organic compounds
1-Butanol	µg/L	2.0	<2.0	<2.0	Organic alcohols
2-Methoxyethanol	µg/L	0.4	<0.4	<0.4	Organic alcohols
2-Propen-1-ol	µg/L	0.5	<0.5	<0.5	Organic alcohols

Footnotes:

Unregulated contaminants are those that do not yet have a drinking water standard set by the U.S Environmental Protection Agency (EPA). The purpose of monitoring for these contaminants is to help the EPA decide whether the contaminants should have a standard. Langley AFB began sampling in May 2019; sampling was completed in August 2020.

Please note: Not all sample types are recurring or have an annual frequency.

LANGLEY AFB DISTRIBUTION SYSTEM

(Samples collected by USAF Bioenvironmental Engineering and analyzed by EUROFINs USA EPA-certified lab)

2020 WATER QUALITY TESTING RESULTS UNREGULATED CONTAMINANTS

UNREGULATED CONTAMINANT MONITORING REGULATION - 4 (UCMR4)

This monitoring provides a basis for future regulatory actions to protect public health.

<u>Contaminant</u>	<u>Units</u>	<u>MRL</u>	<u>Max</u>	<u>Range</u>	<u>Sources and Comments</u>
Bromochloroacetic Acid (BCAA)	µg/L	0.3	3.3	0.3 – 3.3	Haloacetic Acids
Bromodichloroacetic Acid (BDCAA)	µg/L	0.5	2.3	<0.5 – 2.3	Haloacetic Acids
Chlorodibromoacetic Acid (CDBAA)	µg/L	0.3	0.7	<0.3 – 0.7	Haloacetic Acids
Dibromoacetic Acid (DBAA)	µg/L	0.3	0.4	<0.3 – 0.4	Haloacetic Acids
Dichloroacetic Acid (DCAA)	µg/L	0.2	27.1	1.6 – 27.1	Haloacetic Acids
Monobromoacetic Acid (MBAA)	µg/L	0.3	0.37	<0.3 – 0.37	Haloacetic Acids
Monochloroacetic Acid (MCAA)	µg/L	2.0	2.9	<2.0 – 2.9	Haloacetic Acids
Tribromoacetic Acid (TBAA)	µg/L	2.0	<2.0	<2.0	Haloacetic Acids
Trichloroacetic Acid (TCAA)	µg/L	0.5	11.7	0.7 – 11.7	Haloacetic Acids

Footnotes:

Unregulated contaminants are those that do not yet have a drinking water standard set by the U.S Environmental Protection Agency (EPA). The purpose of monitoring for these contaminants is to help the EPA decide whether the contaminants should have a standard. Langley AFB began sampling in May 2019; sampling was completed in August 2020.

At Langley AFB, the installation receives water from the Newport News municipal source- a desalinization plant. Bioenvironmental Engineering Flight tests the received drinking water monthly, quarterly, semiannually, annually, and triennially IAW the EPA and VDH regulations and guidance to ensure the received drinking water meets standards. PFOS and PFOA in the received drinking water are also tested by Bioenvironmental Engineering Flight on Langley AFB by the request of the EPA. In 2018, under the EPA's Unregulated Contaminants Monitoring Rule #3 (UCMR-3), PFOS and PFOA levels were well within current OSD policy of 70 ppt based on previous EPA study. In 2020, the UCMR-4 was tested but PFOS and PFOA were excluded from requirement.

Langley AFB was directed by the EPA to conduct testing for PFOS and PFOA under the EPA's UCMR-5. UCMR-5 testing began in March 2023 and will continue until 2025. Reference Table 1, *2023 LANGLEY AFB PFOS/PFOA RESULTS* in the CY2023 Consumer Confidence Report (CCR) Language Regarding PFAS attachment.

Please note: Not all sample types are recurring or have an annual frequency.

ADDITIONAL INFORMATION OF INTEREST

VIOLATIONS

Langley Air Force Base waterworks **did not** receive any violations during the calendar year 2022.

FLUORIDE

Fluoride is added to water to prevent tooth decay. NNWW adheres to drinking water regulations set by the EPA and guidance provided by the Virginia Department of Health (VDH). VDH has adopted the recommendation of 0.7 mg/L, set by the U.S. Department of Health and Human Services, as the optimum level of fluoride concentration in drinking water. This is the target Waterworks strives to achieve. Information about fluoridation, oral health, and current issues is available at www.cdc.gov/fluoridation.

HARDNESS

No EPA standard is set. Water treated by NNWW is considered moderately hard (the range of 4 - 6 grains is equal to 60 - 120 mg/L as calcium carbonate or CaCO₃). In 2022 the average was 61 mg/L with a range of 58 - 112 mg/L.

NNWW CONSUMER CONFIDENCE REPORT

The expanded versions of both reports featuring additional test results, are available online at www.nnva.gov/waterqualityreport. A paper copy of this report is available at all local libraries in the Waterworks service area, in the NNWW walk-in services lobby at 700 Town Center Drive in Newport News, and in city halls and county offices in our service area. If you would like to receive a copy of this report in the mail, please call Waterworks at 757-926-1000.

NNWW LOCAL MEETINGS

Because Waterworks is a department of the City of Newport News, major decisions about your drinking water are made by Newport News City Council. They meet on the second and fourth Tuesdays of each month at 7:00pm, and you are welcome to attend and participate. These meetings are broadcast live on Newport News City Channel (in Newport News - Cox channel 48 and Verizon FIOS channel 19) and can be viewed live or on-demand by all customers in our service area on the web at www.nnva.gov/nntv.

Questions can be directed to:

633d Operational Medical Readiness Squadron

Bioenvironmental Engineering Office Commercial:

(757) 764-7760 DSN: 574-7760

Email: usaf.jble.633-mdg.list.633-omrs-sgxb-personnel@health.mil

CY2023 Consumer Confidence Report (CCR) Language Regarding 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 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 Langley AFB tested its water for PFAS?

Yes. In March 2023 samples were collected from the water distribution system entry point.

PFAS detected but all results were below the 2016 EPA HA

We are informing you that PFOA and PFOS were not detected. Other PFAS compounds covered by the sampling method were detected. The results are provided in Table 1, Langley AFB PFOS/PFOA Results. All PFAS, including PFOS and PFOA, results 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, Langley 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.

Table 1

2023 LANGLEY AFB PFOS/PFOA RESULTS			
UNREGULATED CONTAMINANT MONITORING REGULATION-5 (UCMR5)			
Perfluorinated Compounds (PFOS & PFOA)			
Contaminant	Health Advisory Level	Results	Sample Date
Perfluorooctanesulfonic Acid (PFOS)	0.07 µg/L ¹	Not Detected at the Reporting Limit	March 2023
Perfluorooctanoic Acid (PFOA)		Not Detected at the Reporting Limit	March 2023
Perfluorohexanesulfonic Acid (PFHxS)		0.00363 µg/L ²	March 2023
Footnotes:			
<p>(1) PFOS/PFOA results were compared to the EPA’s 2016 Health Advisory Level of 70 parts per trillion (0.07 µg/L).</p> <p>(2) The EPA is currently using the 2016 Health Advisory Levels for PFOA, PFOS, Gen X chemicals, and PFBS as reference concentrations for all UCMR5 sampling.</p>			