



JOINT EXPEDITIONARY BASE (JEB) LITTLE CREEK VIRGINIA BEACH, VIRGINIA 2020 CONSUMER CONFIDENCE REPORT

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For additional information:

City of Norfolk Division of
Water Quality
757-441-5678
<https://www.norfolk.gov/633/Tap-Water>

Virginia Department of
Health
757-683-2000
<http://www.vdh.virginia.gov/drinking-water/>

US EPA Safe Drinking
Water
safewater@epa.gov
<http://www.epa.gov/safewater>

Naval Facilities
Engineering Command
(NAVFAC) Mid-Atlantic
Environmental Office
757-462-4806



The source of JEB Little Creek's drinking water is from Lake Gaston, Lake Wright and Western Branch Reservoirs.

Joint Expeditionary Base (JEB) Little Creek is committed to providing you drinking water that is safe and reliable. JEB Little Creek believes that providing you with accurate information about your water is the best way to assure that your water is safe. There were no drinking water violations to report for 2020.

The Consumer Confidence Report (CCR) is required to be distributed annually by July 1st to provide results from the previous year. This CCR is a snapshot of the quality of your drinking water in 2020. The purpose of this annual report is to advise consumers of where their water comes from, provide water quality data, advance greater understanding of drinking water, and heighten awareness to conserve water resources.

JEB LITTLE CREEK SOURCE WATER

JEB Little Creek purchases drinking water treated by the City of Norfolk and conveyed through the consecutive water system of the City of Virginia Beach. The City of Norfolk obtains its raw (untreated) water from eight reservoirs, two rivers and four deep wells. From these sources, raw water is pumped to one of two water treatment plants. At both plants, water treatment chemicals are added to the water, causing small solid particles to clump together and sink to the bottom of a settling basin. The water is then filtered to remove bacteria, algae, and other impurities. Finally, the water is disinfected with chloramines to kill any remaining bacteria.

The City of Virginia Beach is served by the Moores Bridges Water Treatment Plant. The Moores Bridges Water Treatment Plant provides state of the art treatment technology and surpasses all state and federal water quality standards and regulations. Moores Bridges not only treats the water, but also tests it for more than 250 substances. Water from the treatment plant reaches JEB Little Creek by passing through the City of Norfolk and City of Virginia Beach distribution systems (piping). Once the water reaches JEB Little Creek, the Naval Facilities Engineering Command, Mid-Atlantic operates and maintains your potable water system and is dedicated to ensuring quality drinking water through monthly monitoring for coliform bacteria, quarterly monitoring for disinfection by-products, and monitoring for lead and copper every three years.

ABOUT DRINKING WATER

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. Substances (referred to as contaminants) in source water may come from septic systems, discharges from domestic or industrial wastewater treatment facilities, agricultural and farming activities, urban storm water runoff, residential uses, and many other types of activities. Water from surface sources is treated to make it drinkable while groundwater may or may not have any treatment.

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 by-products of industrial processes and petroleum production, and can come from gas stations, urban storm water runoff, and septic systems.

Radioactive contaminants, which can be naturally occurring or result from oil and gas production and mining activities.

In addition to these contaminants, all lakes and streams contain algae, which are microscopic plants that can cause taste and odor problems in drinking water.

ABOUT DRINKING WATER (continued)

All 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 the water poses a health risk. More information about contaminants and potential health effects can be obtained on the Environmental Protection Agency (EPA) National Primary Drinking Water Regulations website: <https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations>

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) establishes limits for contaminants in bottled water, which must provide the same protection for public health.

Last year, the Moores Bridges Water Treatment Plant conducted tests for more than 250 potential contaminants. All of those tests met EPA regulatory standards. The Navy tested the JEB Little Creek drinking water for a variety of contaminants. All of those tests also met EPA regulatory standards.



Who needs 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, 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 (CDC) guidelines on appropriate ways to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available: <https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations>

Kidney dialysis patients should consult with their health care providers or dialysis centers in order to take special precautions when using chloraminated water. Fish owners should be sure chloramines are removed from the water before it is used in aquariums or ponds. Most pet stores sell water conditioners for chloraminated water.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. JEB Little Creek 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 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 at:

<http://www.epa.gov/safewater/lead>

DEFINITIONS AND ABBREVIATIONS

Contaminants in your drinking water are routinely monitored according to Federal and State regulations. The table on the following pages shows the results of monitoring for 2020. In the tables and elsewhere in this report, you may find some unfamiliar terms and abbreviations. The following definitions are provided to help you better understand these terms:

- **Action Level (AL)** - The concentration of a contaminant that, if exceeded, triggers treatment or other requirements which a water system must follow. For lead and copper monitoring, compliance is based on the 90th percentile value.
- **Level 1 Assessment** - A Level 1 assessment is a study of the waterworks to identify potential problems and determine, if possible, why total coliform bacteria have been found in our waterworks.
- **Level 2 Assessment** - A level 2 assessment is a very detailed study of the waterworks to identify potential problems and determine, if possible, why an *E. Coli* PMCL violation has occurred and why total coliform bacteria have been found in our waterworks on multiple occasions.
- **Maximum Contaminant Level (MCL, PMCL and SMCL)** - The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to MCLGs as feasible using the best available treatment technology. Maximum contaminant levels may be either "primary" (PMCL), meaning based on health considerations, or "secondary" (SMCL), meaning based on aesthetic considerations. Secondary limits are not enforceable and are established as guidelines to assist public water systems in managing their drinking water for aesthetic considerations.
- **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.
- **Maximum Residual Disinfectant Level (MRDL)** - The highest level of a disinfectant allowed in drinking water based on running annual average. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants. For chlorine and chloramines, a waterworks is in compliance with the MRDL when the running annual average of monthly averages of samples taken in the distribution system, computed quarterly, is less than or equal to the MRDL.
- **Maximum Residual Disinfectant Level Goal (MRDLG)** - 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 contamination.
- **NA** - Not applicable
- **Nephelometric Turbidity Unit (NTU)** - A measure of the clarity, or cloudiness, of water. Turbidity in excess of 5 NTU is just noticeable to the average person. Turbidity is monitored because it is a good indicator of the effectiveness of the filtration system.
- **Non-detection (ND)** - Laboratory analysis indicates that the contaminant is not present.
- **Picocuries per liter (pCi/L)** - A measure of the radioactivity in water.
- **Parts per million (ppm) or Milligrams per liter (mg/L)** - A measurement of the amount of contaminant per unit of water. A part per million is like one cent in \$10,000 or one minute in two years.
- **Parts per billion (ppb) or Micrograms per liter (ug/L)** - A measurement of the amount of contaminant per unit of water. A part per billion is like one cent in \$10,000,000 or one minute in 2,000 years.
- **Treatment Technique (TT)** - A required process intended to reduce the level of a contaminant in drinking water.

WATER QUALITY DATA

The tables below list only those contaminants that were present in your drinking water at levels detectable by laboratory equipment. Unless otherwise noted, the data presented in these tables is from testing done in 2020. We are required to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change. The presence of contaminants in the water does not necessarily indicate that the water poses a health risk. The EPA sets the Maximum Contaminant Levels (MCLs) and the Maximum Contaminant Level Goals (MCLGs) as listed in the tables. The Regulated Substances Table and the Secondary and Unregulated Substances Table are provided for your information and as required by the Consumer Confidence Rule.

2020 WATER QUALITY TABLES**Regulated Substances**

| Substance | Unit | MCLG | MCL | Highest Level | Average Level | Range | Meets EPA Standards | Possible Source of Contamination |
|------------------------------|-----------------------|------|-----------------|-------------------------------|---------------|---------------------|----------------------------------|-------------------------------------|
| Atrazine | ppb | 3 | 3 | 0.07 | ND | ND – 0.07 | Yes | Agricultural runoff |
| Barium | ppm | 2 | 2 | 0.05 | 0.04 | 0.03 – 0.05 | Yes | Erosion of natural deposits |
| Fluoride | ppm | 4 | 4 | 0.7 ¹ | 0.6 | 0.1 – 0.9 | Yes | Added to prevent tooth decay |
| Gross Beta | pCi/L | 0 | 50 ² | 3 | 3 | 3 | Yes | Erosion of natural deposits |
| Nitrate as Nitrogen | ppm | 10 | 10 | 0.26 | 0.16 | 0.05 – 0.26 | Yes | Erosion of natural deposits, runoff |
| Substance | Unit | MCLG | MCL | Percent Removal | | Range | Meets EPA Standards | Possible Source of Contamination |
| Total Organic Carbon | ppm | NA | TT | 53% removal (45% is required) | | 45-66% removal | Yes | Soil runoff |
| Microbiological Contaminants | Unit | MCLG | MCL | Highest Level | Average Level | Meets EPA Standards | Possible Source of Contamination | |
| <i>E. Coli</i> | # of positive samples | 0 | * | 0 | NA | Yes | Human and animal fecal waste | |

*Effective April 1, 2016 The Revised Total Coliform Rule established the following Primary Maximum Contamination Level (PMCL): In compliance unless (i) the waterworks has an E. coli-positive repeat sample following a total coliform-positive routine sample; (ii) the waterworks has a total coliform-positive repeat sample following an E. coli-positive routine sample; (iii) the waterworks owner fails to take all required repeat samples following an E. coli-positive routine sample; or (iv) the waterworks owner fails to test for E. coli when any repeat sample tests positive for total coliform.

| Residual Disinfectants and Disinfection By-Products | Unit | MCLG | MCL | Highest Level ³ | Range (Individual Results) | Meets EPA Standards | Possible Source of Contamination |
|---|------|----------------|----------------|----------------------------|----------------------------|---------------------|--|
| Haloacetic Acids (HAA5) | ppb | NA | 60 | 40.5 | 0-53 | Yes | Drinking water disinfectant by-product |
| Trihalomethanes (TTHM) | ppb | NA | 80 | 44.6 | 22.6-65.2 | Yes | Drinking water disinfectant by-product |
| Total Chlorine Residual | ppm | 4 ⁴ | 4 ⁵ | 1.7 | 0.0-3.5 | Yes | Drinking water disinfectant |

¹ Highest quarterly average for calendar year. ² EPA considers 50 pCi/L to be the level of concern for Beta particles. ³ This number is the highest running annual average of quarterly compliance samples for the 2020 calendar year; for Total Chlorine Residual, the highest running annual average was determined by calculating quarterly values which were based on monthly compliance samples. ⁴ MRDLG. ⁵ MRDL.

Turbidity

| Substance | Unit | MCLG | MCL | Highest Level | Lowest monthly percentage of samples meeting the limit | Meets EPA Standards | Likely Source |
|-------------|------|------|--|---------------|--|---------------------|---------------|
| Turbidity** | NTU | NA | < 1.0 maximum; ≤ 0.3 < 95% of the time | 0.29 | 100% | Yes | Soil runoff |

** Turbidity is a measure of the cloudiness of water. Turbidity, by itself, is not harmful, but it can interfere with the disinfection of drinking water.

Lead and Copper

| 2019 Monitoring ⁸ | Unit | MCLG | AL | Samples Above AL | 90th Percentile | Range | Meets EPA Standards | Possible Source of Contamination |
|------------------------------|------|------|-----|------------------|-----------------|---------------|---------------------|--|
| Copper | ppm | 1.3 | 1.3 | 0 | 0.353 | 0.053 – 0.572 | Yes | Corrosion of pipes; Erosion of natural deposits |
| Lead | ppb | 0 | 15 | 1 | 3 | ND – 18 | Yes | Corrosion of household plumbing systems; Erosion of natural deposits |

⁸Little Creek is currently on a triennial reduced monitoring cycle for the Lead and Copper Rule with the last required sampling in 2019. Resampling is scheduled for 2022.

Secondary and Unregulated Monitored Substances

| Substance | Unit | SMCL | Highest Level | Average Level | Range | Likely Source |
|------------------------|----------|-----------------|------------------|---------------|-------------|--|
| Aluminum | ppm | 0.20 | 0.02 | 0.02 | 0.02 – 0.03 | Erosion of natural deposits; also from use of chemicals at water treatment plant |
| Chloride | ppm | 250 | 21 | 16 | 13 – 21 | Occurs naturally in environment |
| Foaming Agents | ppb | 500 | 13 | 9 | 6 – 13 | Occurs naturally in environment |
| Iron | ppm | 0.3 | 0.04 | ND | ND – 0.04 | Occurs naturally in environment |
| pH | pH Units | 6.5 – 8.5 | 7.7 ⁷ | 7.7 | 7.3 – 8.3 | Adjusted during water treatment process |
| Sodium | ppm | NA ⁸ | 15 | 12 | 10 – 15 | Occurs naturally in environment; also from use of chemicals at water treatment plant |
| Sulfate | ppm | 250 | 27 | 27 | 26 – 27 | Occurs naturally in environment; also from use of chemicals at water treatment plant |
| Total Dissolved Solids | ppm | 500 | 120 | 85 | 39 – 120 | Occurs naturally in environment |
| Zinc | ppm | 5 | 0.46 | 0.21 | 0.01 – 0.46 | Occurs naturally in environment; also from use of chemicals at water treatment plant |

⁷ Highest monthly average for calendar year.

⁸ For physician-prescribed “low sodium diets,” a limit of 20 ppm is suggested.

Additional Information

| Substance | Unit | Average Level | Range |
|------------|------|-----------------|----------|
| Alkalinity | ppm | 28 | 20 – 35 |
| Ammonia | ppm | 0.1 | ND – 0.9 |
| Hardness | ppm | 48 ⁹ | 39 – 61 |
| Silica | ppm | 5 | 3 – 6 |

The substances listed above are not regulated by the EPA; however, this information is provided as a service to our customers.

⁹ Norfolk’s water averages in the range between soft and slightly hard. This means there is enough hardness for soaps and detergents to work properly, yet not too much to interfere with most industrial appliances. To find grains per gallon, divide ppm value by 17.

Unregulated Contaminant Monitoring Rule 4 (UCMR4)^{***}

| 2018 Monitoring ¹⁰ | Unit | SMCL | Highest Level | Average Level | Range | Likely Source |
|-------------------------------|------|-------|---------------|---------------|------------|---------------------------------|
| Manganese | ppm | 0.050 | 0.004 | 0.001 | ND – 0.004 | Occurs naturally in environment |

^{***}This monitoring provides a basis for future regulatory actions to protect public health. The substance listed above is not regulated by the EPA; however, EPA requires this information be provided to our customers.

¹⁰The UCMR has a 5 year monitoring cycle with the last required sampling in 2018. The next cycle is scheduled for 2023 to 2025.

VIOLATIONS AND EXCEEDANCES

There are no drinking water violations to report for 2020.

QUESTIONS

Please contact NAVFAC Mid-Atlantic Environmental staff at 757-462-4806 if you have any questions regarding this report.

To access this report electronically, please visit the Commander, Navy Region Mid-Atlantic website at:
https://www.cnic.navy.mil/regions/cnrma/om/environmental_support/water_quality_information.html