



## NAVAL AIR STATION (NAS), OCEANA VIRGINIA BEACH, VIRGINIA 2015 CONSUMER CONFIDENCE REPORT

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### For additional information:

City of Norfolk Division of Water Quality  
441-5678  
<http://www.norfolk.gov/utilities/quality/default.asp>

Virginia Department of Health  
683-2000  
<http://www.vdh.state.va.us/DrinkingWater/>

USEPA Safe Drinking Water Hotline  
(800) 426-4791  
<http://www.epa.gov/safewater/>

Naval Facilities Engineering Command (NAVFAC) Mid-Atlantic Environmental  
341-0482



The source of NAS Oceana's drinking water is from Lake Gaston and Lake Wright and Western Branch Reservoirs.

Naval Air Station (NAS) Oceana is committed to providing you drinking water that is safe and reliable. NAS Oceana 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 2015.

Each year, the Consumer Confidence Report (CCR) is required to be distributed by July 1<sup>st</sup> of the current year. This CCR is a snapshot of the quality of your drinking water in 2015. 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.

### NAS OCEANA SOURCE WATER

NAS Oceana purchases drinking water from the City of Norfolk. Water from Lake Gaston is blended with Norfolk's water and is treated at the Moores Bridges Water Treatment Plant in Norfolk. Norfolk's primary water supply comes from Lake Wright and Western Branch Reservoirs. From the reservoirs, water is pumped through pipes to the treatment plant. 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 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. Once the water reaches NAS Oceana, 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 be the result of 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 by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

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 NAS Oceana drinking water for a variety of contaminants.



## 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 2015. In the tables and elsewhere in this report you may have found many terms and abbreviations that you might not be familiar with. 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.
- **Maximum Contaminant Level (MCL)** - 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 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. 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.
- **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 our 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.
- **Secondary Maximum Contaminant Level (SMCL)** - Non-enforceable standard that is established for aesthetic considerations
- **Treatment Technique (TT)** - A required process intended to reduce the level of a contaminant in drinking water.
- **NA** - Not applicable

### *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 systems disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control (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 (800-426-4791).

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. NAS Oceana 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 or until it becomes cold or reaches a steady temperature before using water for drinking or cooking. If you have questions about your water, please contact NAVFAC Mid-Lant Environmental at 757-341-0482. 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

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 2015. 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 Unregulated Substances Table are provided for your information and as required by the Consumer Confidence Rule.

### 2015 WATER QUALITY TABLE

| Regulated Substances   | Unit                  | MCLG           | MCL                                       | Highest Level              | Average Level  | Range       | Meets EPA Standards | Possible Source of Contamination                                     |
|--|-----------------------|----------------|---|----------------------------|--|-------------|---------------------|--|
| Barium   | ppm                   | 2              | 2   | 0.04                       | 0.03   | 0.03 – 0.04 | Yes                 | Erosion of natural deposits  |
| Fluoride   | ppm                   | 4              | 4   | 0.7 <sup>1</sup>           | 0.6  | 0.1 – 1.0   | Yes                 | Added for the prevention of tooth decay                              |
| Gross Beta   | pCi/L                 | 0              | 50  | 2                          | 2  | 2           | Yes                 | Erosion of natural deposits  |
| Nitrate as Nitrogen  | ppm                   | 10             | 10  | 0.23                       | .011   | 0.03 – 0.23 | Yes                 | Erosion of natural deposits, runoff                                  |
| Total Organic Carbon   | ppm                   | NA             | TT  | 2.7 <sup>1</sup>           | 2.4  | 2.0-3.0     | Yes                 | Occurs naturally in environment                                      |
| Microbiological Contaminants   | Unit                  | MCLG           | MCL                                       | Highest Level              | Average Level  | Range       | Meets EPA Standards | Possible Source of Contamination                                     |
| Total Coliform   | # of positive samples | 0              | More than 1 per month                     | 0*                         | NA   | NA          | Yes                 | Naturally present in the environment                                 |
| * This number represents the highest number of positive coliform samples in a month.   |                       |                |   |                            |  |             |                     |  |
| Residual Disinfectants and Disinfection By Products  | Unit                  | MCLG           | MCL                                       | Highest Level <sup>2</sup> | Range (Individual Results)                             |             | Meets EPA Standards | Possible Source of Contamination                                     |
| Haloacetic Acids (HAA5)  | ppb                   | NA             | 60  | 33.5                       | 8-48   |             | Yes                 | Drinking water disinfectant by-product                               |
| Trihalomethanes (TTHM)   | ppb                   | NA             | 80  | 44.9                       | 19.4-62.6  |             | Yes                 | Drinking water disinfectant by-product                               |
| Total Chlorine Residual  | ppm                   | 4 <sup>3</sup> | 4 <sup>4</sup>                            | 1.42                       | 0 – 2.20   |             | Yes                 | Drinking water disinfectant  |
| Substance  | Unit                  | MCLG           | MCL                                       | Highest Level              | Lowest monthly percentage of samples meeting the limit |             | Likely Source       |  |
| Turbidity**  | NTU                   | NA             | <1.0 maximum, and ≤0.3 < 95 % of the time | 0.20                       | 100 %  |             | Yes                 | Soil Run-off   |
| **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 Monitoring   | Unit                  | MCLG           | AL  | Highest Level              | Average Level  | Range       | Meets EPA Standards | Possible Source of Contamination                                     |
| Copper (2015 data)   | ppm                   | 1.3            | 1.3                                       | 0.117                      | 90 <sup>th</sup> percentile =0.090                     | 0.018-0.117 | Yes                 | Corrosion of pipes; Erosion of natural deposits                      |
| Lead (2015 data)   | ppb                   | 0              | 15  | <0.001                     | 90 <sup>th</sup> Percentile <0.001                     | <0.001      | Yes                 | Corrosion of household plumbing systems; Erosion of natural deposits |

<sup>1</sup>Highest monthly average for calendar year.

<sup>2</sup>This number is the highest running annual average of quarterly compliance samples for the 2015 calendar year; for Total Chlorine Residual, the highest running annual average was determined by calculating quarterly values which were based on monthly compliance samples.

<sup>3</sup>MRDLG.

<sup>4</sup>MRDL.

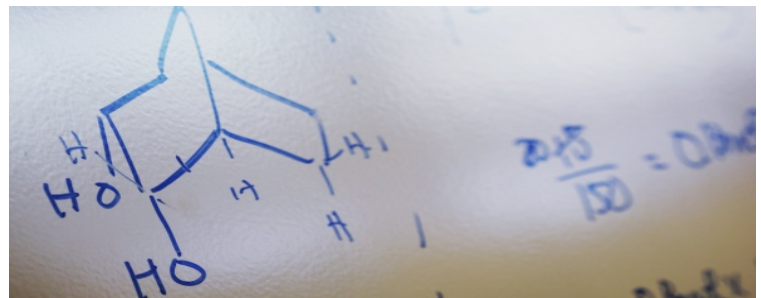
| Secondary and Unregulated Monitored Substances | Unit     | SMCL            | Highest Level    | Average Level | Range      | Likely Source  |
|--|----------|-----------------|------------------|---------------|------------|--|
| Aluminum                                       | ppm      | 0.20            | 0.02             | 0.02          | ND – 0.02  | Erosion of natural deposits; also from use of chemicals at water treatment plant |
| Chloride                                       | ppm      | 250             | 20               | 17            | 14 - 20    | Natural in environment   |
| Iron   | ppm      | 0.30            | 0.08             | 0.06          | ND – 0.08  | Natural in environment   |
| Manganese                                      | ppm      | 0.05            | 0.03             | ND            | ND – 0.03  | Natural in environment   |
| Metolachlor                                    | ppm      | NA              | 0.2              | 0.1           | ND-0.2     | Agricultural Use   |
| pH   | pH Units | 6.5 – 8.5       | 7.7 <sup>6</sup> | 7.6           | 7.0-8.1    | Adjusted during water treatment process  |
| Nickel   | ppm      | NA              | 0.003            | ND            | ND – 0.003 | Corrosion of plumbing materials  |
| Sodium   | ppm      | NA <sup>7</sup> | 14               | 12            | 10 – 14    | Natural in environment; also from use of chemicals at water treatment plant      |
| Sulfate  | ppm      | 250             | 34               | 29            | 22-34      | Natural in environment; also from use of chemicals at water treatment plant      |
| Total Dissolved Solids                         | ppm      | 500             | 106              | 100           | 95-106     | Natural in environment   |
| Zinc   | ppm      | 5               | 0.20             | 0.12          | 0.08-0.20  | Natural in environment; also from use of chemicals at water treatment plant      |

<sup>5</sup>Highest monthly average for calendar year.

<sup>6</sup>For physician-prescribed “no salt diets,” a limit of 20 ppm is suggested.

| Additional Information* | Unit | Average Level | Range  |
|-------------------------|------|---------------|--------|
| Alkalinity              | ppm  | 26            | 17-33  |
| Ammonia                 | ppm  | 0.10          | ND-0.2 |
| Hardness                | ppm  | 51            | 42-61  |
| Silica                  | ppm  | 6             | 3-8    |

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



## VIOLATIONS AND EXCEEDANCES

There are no drinking water violations to report for 2015.

## QUESTIONS

Please contact NAVFAC Mid-Atlantic Environmental staff at 757-341-0482 if you have any questions regarding this report.

To access this report electronically, please visit the Commander, Navy Region Mid-Atlantic website at: [http://www.cnrc.navy.mil/regions/cnrma/om/environmental\\_support/water\\_quality\\_information.html](http://www.cnrc.navy.mil/regions/cnrma/om/environmental_support/water_quality_information.html)