

# DAM NECK ANNEX

## VIRGINIA BEACH, VIRGINIA

### 2013 CONSUMER CONFIDENCE REPORT



Dam Neck Annex is committed to providing you drinking water that is safe and reliable. Dam Neck believes that providing you with accurate information about your water is the best way to assure you that your water is safe.

This Consumer Confidence Report is a snapshot of the quality of your drinking water in 2013. The purpose of this annual report is to explain where your water comes from and contains tables listing all contaminants detected in your water in 2013.



#### **SOURCE WATER**

Dam Neck 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 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 Dam Neck, the Naval Facilities Engineering Command, Mid-Atlantic, Utilities Department operates and maintains your potable water system and is dedicated to ensuring quality drinking water through monthly monitoring for coliform bacteria and quarterly monitoring for disinfection by-products. On average, over 400 water quality samples are collected and analyzed monthly by Norfolk, Virginia Beach and Dam Neck providing continual monitoring for the highest water quality possible.

#### **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.

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 (EPA'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.



**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 water treated with chloramines. 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 water treated with chloramines.

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 Dam Neck 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 15 to 30 seconds 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>.

**NEED MORE INFORMATION?**

NAVFAC MIDLANT Environmental: 341-0482

City of Norfolk Division of Water Quality: 441-5678  
[www.norfolk.gov/utilities/quality](http://www.norfolk.gov/utilities/quality)

City of Virginia Beach: [www.vbgov.com](http://www.vbgov.com)

Virginia Department of Health: 683-2000  
[www.vdh.state.va.us/drinkingwater](http://www.vdh.state.va.us/drinkingwater)

EPA Safe Drinking Water Hotline: 1-800-426-4791  
<http://www.epa.gov/safewater>

**DEFINITIONS & ABBREVIATIONS**

Contaminants in your drinking water are routinely monitored according to Federal and State regulations. The tables below show the results of monitoring for 2013. In this report you may find terms and abbreviations that are not familiar to you. 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.
- **Coliform** - A group of bacteria commonly found in the environment. They are an indicator of potential contamination of water. Adequate and appropriate disinfection effectively destroys coliform bacteria.
- **Contaminant** - Any natural or man-made physical, chemical, biological, or radiological substance or matter in water, which is at a level that may have an adverse effect on public health, and which is known or anticipated to occur in public water systems.
- **Disinfection** - A process that effectively destroys coliform bacteria.
- **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.
- **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.
- **Nitrates** - A dissolved form of nitrogen found in fertilizers and sewage by-products which may leach into groundwater and other water sources. Nitrates may also occur naturally in some waters.
- **ND** - Non-Detection. Laboratory analysis indicates that the contaminant is not present.
- **NTU (nephelometric turbidity unit)** - 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.
- **Pathogens, disease-causing pathogens, waterborne pathogens** - A pathogen is a bacterium, virus, or parasite that causes or is capable of causing disease. Pathogens may contaminate water and cause waterborne disease.
- **pCi/L, picocuries per liter** - A measure of the radioactivity in water.
- **pH** - A measure of the acidity or alkalinity of water.

**DEFINITIONS & ABBREVIATIONS (continued)**

- **part per billion (ppb), part per million (ppm)** - Measurements of the amount of contaminant per unit of water. One part per million corresponds to one minute in two years or a single penny in \$10,000 and a part per billion is like a penny in \$10,000,000.
- **Trihalomethanes (THM)** - Four separate compounds that form as a result of disinfection.

- **Treatment Technique (TT)** - A required process intended to reduce the level of a contaminant in drinking water.
- **Turbidity** - A measure of the cloudiness of water caused by suspended particles.



**WATER QUALITY DATA**

The tables below list only those contaminants that were present in your drinking water at levels detectable by laboratory equipment. The data presented in these tables is from testing done in 2013, unless otherwise noted. The Maximum Contaminant Levels (MCLs) and the Maximum Contaminant Level Goals (MCLGs) listed in the tables are set by EPA. The Regulated Substances Table and the Unregulated Substances Table are provided for your information and as required by the Consumer Confidence Rule.

Inorganic Contaminants	Unit	EPA Limits		Dam Neck Drinking Water			Meets EPA Standards	Possible Source of Contamination
		MCLG	MCL	Highest Level	Average Level	Range		
Barium	ppm	2	2	0.04	0.03	0.03 – 0.04	Yes	Erosion of natural deposits
Fluoride	ppm	4	4	0.9 <sup>1</sup>	0.5	0.1 – 0.9	Yes	Added for prevention of tooth decay
Haloacetic Acids (HAA5)	ppb	N/A	60	35	20 <sup>2</sup>	0 - 35	Yes	Drinking water disinfection by-product
Nitrate as Nitrogen	ppm	10	10	0.32	0.19	0.9 – 0.32	Yes	Erosion of natural deposits, runoff
Total Chlorine Residual	ppm	4 MRDLG	4 <sup>4</sup> MRDL	4.8	2.3 <sup>4</sup>	0.2 – 4.8	Yes	Drinking water disinfectant
Total Organic Carbon	ppm	n/a	TT	2.5 <sup>1</sup>	2.2	2.0 – 2.5	Yes	Occurs naturally in the environment
Trihalomethanes (THMs)	ppb	N/A	80	46 <sup>2</sup>	53	0 – 46	Yes	Drinking water disinfection by-product

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

<sup>2</sup> This number is the highest quarterly running annual average of compliance samples for the calendar year.

<sup>3</sup> The MCL for Beta particles is 4 mrem/year. EPA considers 50 pCi/L to be the level of concern for Beta particles.

<sup>4</sup> Annual average

TT = Treatment Technique. A required process intended to reduce the level of a substance in drinking water.

Substance	Unit	EPA Limits		Dam Neck Drinking Water		Meets EPA Standards	Possible Source of Contamination
		MCLG	MCL	Highest Level	Lowest monthly percentage of samples meeting the limit		
Turbidity	NTU	N/A	<1.0 maximum, and ≤0.3 95 % of the time	0.31	100 %	Yes	Soil runoff

<sup>1</sup>Water Utilities are required by *Waterworks Regulations* to continuously monitor the turbidity levels of the water leaving each of the filters in the treatment plant, and to record this information every 15 minutes.

Microbial Indicators	Unit	EPA Limits		Dam Neck Drinking Water			Meets EPA Standards	Possible Source of Contamination
		MCLG	MCL	Highest Level	Average Level	Range		
Total Coliform Bacteria	# positive	0	1	2**	NA	0-2	No	Naturally present in the environment

\*\* This number represents the highest number of positive coliform samples in a month. See Violations and Exceedances for explanation. Two total coliform organisms were detected in June 2013. Extensive flushing was commenced to draw fresh water to the area and re-sampling results have since been negative for Total Coliform.

Lead and Copper Monitoring	Unit	EPA Limits		Dam Neck Drinking Water			Meets EPA Standards	Possible Source of Contamination
		MCLG	AL	Highest Level	Average Level	Range		
Copper <sup>1</sup>	ppb	1300	1300 (0 sites exceeded AL)	359	90 <sup>th</sup> percentile = 207	20 – 359	Yes	Corrosion of household plumbing systems
Lead <sup>1</sup>	ppb	0	15 (0 sites exceeded AL)	2	90 <sup>th</sup> percentile = 2	ND – 2	Yes	Corrosion of household plumbing systems; erosion of natural deposits

<sup>1</sup> Data for Lead and Copper represent the most recent results from compliance samples collected in calendar year 2013.

## SECONDARY AND UNREGULATED CONTAMINANTS

Unregulated Monitored Substances	Unit	SMCL	Dam Neck Drinking Water			Possible Source of Contamination
			Highest Level	Average Level	Range	
Aluminum	ppm	0.20	0.04	0.02	0.01 – 0.04	Erosion of natural deposits; also from use of chemicals at water treatment plant
Chloride	ppm	250	23	18	14 – 23	Natural in environment
Iron	ppm	0.30	0.08	0.03	ND – 0.08	Natural in environment
Manganese	ppm	0.05	0.02	0.01	ND – 0.02	Natural in environment
pH	pH units	6.5 – 8.5	7.9 <sup>1</sup>	7.6	7.5 – 7.9	Adjusted during water treatment process
Nickel	ppm	n/a	0.003	0.002	ND – 0.003	Corrosion of plumbing materials
Sodium	ppm	n/a <sup>2</sup>	14	12	9 – 14	Natural in environment; also from use of chemicals at water treatment plant
Sulfate	ppm	250	36	34	31 – 36	Natural in environment; also from use of chemicals at water treatment plant
Total Dissolved Solids	ppm	500	118	109	100 - 118	Natural in environment
Zinc	ppm	5	0.18	0.12	0.04 – 0.18	Natural in environment; also from use of chemicals at water treatment plant

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

<sup>2</sup>For physician-prescribed "no salt diets," a limit of 20 ppm is suggested

## ADDITIONAL INFORMATION

Substance	Norfolk's Range	Norfolk's Average Level	Unit
Alkalinity	15 – 32	24	ppm
Ammonia	ND – 0.3	0.1	ppm
Hardness	49 – 65	56	ppm
Silica	2 – 6	5	ppm

## VIOLATIONS AND EXCEEDANCES

Routine monitoring in June of 2013 tested positive for Total Coliform, resulting in a violation of a drinking water standard. Coliform bacteria are generally not harmful themselves. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems. Consumers were notified, in accordance with EPA regulations. Whenever we detect coliform bacteria in any sample, we perform additional testing on that sample to see if other bacteria is of greater concern, such as fecal coliform or *E. coli*, are present. **Additional testing on these samples did not find any of these bacteria.** Although it is difficult to determine the specific cause of the positive samples, stir up of sediments in the distribution system after flushing of hydrants and high water temperatures likely contributed to conditions allowing for presence of Coliform bacteria. Extensive flushing was commenced to draw fresh water to the area and re-sampling results have since been negative for total coliform.