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**Old Dominion**  
UTILITY SERVICES, INC.  
A Subsidiary of American States Utility Services, Inc.



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# 2013 WATER QUALITY REPORT



**Old Dominion**  
UTILITY SERVICES, INC.  
A Subsidiary of American States Utility Services, Inc.

*An Ongoing Commitment to the Communities We Serve*



## Protecting and Preserving Your Drinking Water

We are pleased to present the following 2013 Water Quality Report, which contains information about testing completed in your water system through December 2013.

Old Dominion Utility Services, Inc. (ODUS) takes seriously its job as the guardian of the drinking water quality and the service we provide to our customers. ODUS is regulated by the state and federal government, and we are proud to say the quality of your water continually meets all drinking water standards.

Daily, ODUS industry professionals take water samples to monitor quality at approved sites throughout the distribution system. If there is an instance of a sample exceeding a drinking water standard, we are required to notify you quickly and take action to restore normal service.

We pride ourselves on our strong customer service culture that comes from industry knowledge and relationships built in the water industry. Our representatives are available around the clock to answer questions and address any water concerns, day or night.

On behalf of all of us at Old Dominion Utility Services, Inc., thank you for providing us the opportunity to serve those who serve. If you have any questions about this report, please call our Customer Service Center at 757-888-0484.

Sincerely,



Robert Sprowls  
President and Chief Executive Officer  
Old Dominion Utility Services, Inc.



Susan Miller  
Utility Manager  
Old Dominion Utility Services, Inc.

## Source Water Assessment

Your water is tested before and after it is treated to ensure it meets federal and state standards. The Hampton Roads Planning Commission has completed a Source Water Assessment of the City of Norfolk water sources in 2001-02. The surface water sources were rated as relatively high in susceptibility to contamination (one reason it's important for water treatment) using the criteria developed by the state in its approved Source Water Assessment Program. The assessment report consists of maps showing the source water assessment area, an inventory of known land use activities of concern, a susceptibility explanation chart, and term definitions. The report is available by contacting Peter Pommerenk at (757) 385-4171 or ppommere@vbgov.com.



## If You Have Questions – Contact Us

### About drinking water quality:

Call the U.S. Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

### About local drinking water quality:

- (at Joint Expeditionary Base Little Creek-Fort Story East) call Susan Miller at (757) 888-0485.
- (Norfolk) call Alicia Connelly, Division of Water Production and Water Quality, City of Norfolk, at 441-5678 ([alicia.connelly@norfolk.gov](mailto:alicia.connelly@norfolk.gov)).
- (Virginia Beach) call Susan Sadowski, Virginia Beach Department of Public Utilities Laboratory, at 385-1400 ([ssadowsk@vbgov.com](mailto:ssadowsk@vbgov.com)).
- Or call the Virginia Department of Health Office of Drinking Water at (757) 683-2000 ([vdh.virginia.gov/ODW](http://vdh.virginia.gov/ODW))



### About this report:

Call Susan Miller at (757) 888-0485

If you have questions or concerns about decisions affecting your drinking water quality, please contact either:

- Virginia Beach Department of Public Utilities is part of the City of Virginia Beach municipal government. The Virginia Beach City Council meets on the second and fourth Tuesdays of each month except July and December, when the meetings occur on the first and second Tuesdays. Information and agendas for upcoming meetings may be requested from the Virginia Beach City Clerk's office at (757) 385-4303 or found at [VBgov.com](http://VBgov.com)
- The Norfolk City Clerk to see when water quality presentations are scheduled before the Norfolk City Council. For times and agenda, call 664-4253.
- Or, Thomas Leahy, Director, Virginia Beach Department of Public Utilities, at (757) 385-4171 ([PUEngineer@vbgov.com](mailto:PUEngineer@vbgov.com)).

**Spanish** – Este informe contiene informacion muy importante sobre su agua beber. Traduzcalo o hable con alguien que lo entienda bien.

This water quality report has been reviewed by the Virginia Department of Health.

## Measurements

Water is sampled and tested throughout the year.

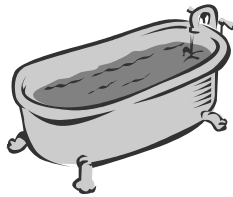
### Contaminants are measured in:

- Parts per million (ppm) or milligrams per liter (mg/L),
- Parts per billion (ppb) or micrograms per liter (µg/L),
- Parts per trillion (ppt) or nanograms per liter (ng/L),
- Nephelometric Turbidity Units (NTU) – A measurement of the clarity of water. Turbidity in excess of 5 NTU is noticeable to the average person.
- Picocuries per liter (pCi/L) – A measurement of radioactivity in water.

*If this is difficult to imagine, think about these comparisons:*

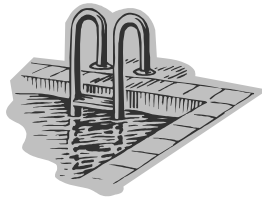
#### Parts per million:

3 drops in 42 gallons  
(large bathtub)



#### Parts per billion:

1 drop in 14,000 gallons  
(average swimming pool)



#### Parts per trillion:

1 drop in 14,000,000 gallons  
(average lake)



## About Old Dominion Utility Services, Inc.

Old Dominion Utility Services, a subsidiary of American State Utility Services (NYSE: AWR), is the company managing the water and wastewater systems at JEBLCFS East formerly Fort Story.

ODUS's experience and resources should give you peace of mind. You can count on reliable water services, quality drinking water, and unsurpassed response to your questions.

Since 1929, AWR and its family of companies have provided water to communities throughout the United States. For over 75 years, we've been installing and maintaining complex structures consisting of thousands of miles of pipelines, numerous wells and pumping stations, reservoirs, and wastewater systems.

You can find our companies in California, Texas, Maryland, North Carolina, South Carolina, and Virginia. AWR provides water to 1 out of every 30 people in California, electricity to a resort mountain community in California and management of water and wastewater systems at other military installations in the United States.

Our trained personnel have thousands of years of combined experience and are certified to work the various aspects of water and wastewater systems. Our water testing procedures allow us to meet or exceed the water quality regulations set in place by the U.S. Environmental Protection Agency and the Virginia Department of Health to deliver quality, wholesome water to you --- our customers.

Managing the daily operations for ODUS at JEBLCFS East is Susan Miller, Utility Manager. Susan is a seasoned professional with over 25+ years of experience in the water industry. She has worked in all phases of water treatment and distribution.

All the men and women at ODUS are committed to meeting the needs of JEBLCFS East. The water system at JEBLCFS East undergoes a comprehensive infrastructure analysis to determine what areas need repair, replacement or new facilities.

We're here to give you peace of mind --- water when you need it and unsurpassed service. For questions on your water service, please contact Susan Miller at (757) 888-0485.

## Definitions

### Action Level (AL)

The concentration of a contaminant which, 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 public health goals and maximum contaminant level goals as is economically and technologically feasible.

### Maximum Contaminant Level Goal (MCLG)

The level of contaminant in drinking water below which there is no known or expected risk to health. Maximum contaminant level goals are set by EPA.

### Maximum Residual Disinfectant Level (MRDL)

The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.

### Maximum Residual Disinfectant Level Goal (MRDLG)

The level of a disinfectant added for water treatment below which there is no known or expected health risk. MRDLs are set by EPA.

### Primary Drinking Water Standard (PDWS)

MCLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

### Secondary Maximum Contaminant Level (SMCL)

Secondary Maximum Contaminant Levels are non-enforceable guidelines regulating contaminants that may cause cosmetic or aesthetic effects. These contaminants are not considered a risk to human health at the SMCL. Secondary MCLs are set to manage the odor, taste and appearance of drinking water.

### Secondary Maximum Contaminant Level Goal (SMCLG)

Secondary Maximum Contaminant Level Goals have not been established.

### Treatment Technique (TT)

A required process intended to reduce the level of a substance in drinking water.

## Distribution System Water Quality - Monitored by Old Dominion Utility Services

Disinfection Byproducts and Disinfectant Residuals (units)	PRIMARY MCL (MRDL)	MCLG	Range of Detection	Highest 4-Quarterly Average	Meets EPA Standard?	Likely Source
Chloramines [as Cl <sub>2</sub> ] (mg/L)	4	4	0.25 - 3.6	1.95	Yes	Water additive to control microbes
HAA5 [Total of five Haloacetic Acids] Stage 1 monitoring (ug/L)	60	n/a	ND - 43	35	Yes	Byproduct of drinking water chlorination
TTHMs [Total of four Trihalomethanes] Stage 1 monitoring (ug/L)	80	n/a	27 - 56.9	47	Yes	Byproduct of drinking water chlorination
Inorganic Constituents (units) Tested in 2012	ACTION LEVEL	MCLG	Range of Detection	90th % Level	Meets EPA Standard?	Likely Source
Copper (mg/L)	1.3	1.3	0.022 - 0.190	0.076	Yes	Corrosion of household plumbing systems
Lead (ug/L)	15	0	ND - 2	2	Yes	Corrosion of household plumbing system

n/a = not applicable  
 ND = not detected, below minimum report level  
 \* This number is the highest monthly average for the calendar year.  
 \*\* For physician-prescribed "no salt diets," a limit of 20 mg/L is suggested

We are pleased to report to you that there were no detections of total coliforms or fecal coliforms in the monthly samples collected during calendar year 2013.

## Health Information

**Chloramine Disinfection** – In fall 2000, Norfolk and Virginia Beach, along with other cities in South Hampton Roads, changed from a chlorine disinfection process to chloramines. Chloramine disinfection is created when chlorine is combined with a small amount of ammonia. The purpose of this change was to lower disinfection byproducts in response to new and more stringent state and federal regulations.

Chloraminated water is safe for drinking, cooking, bathing, and all other everyday uses. There are, however, two groups of people who should take special precautions in using chloraminated water: kidney dialysis patients and fish owners. Like chlorine, chloramines must be removed from water used in kidney dialysis machines and aquariums.

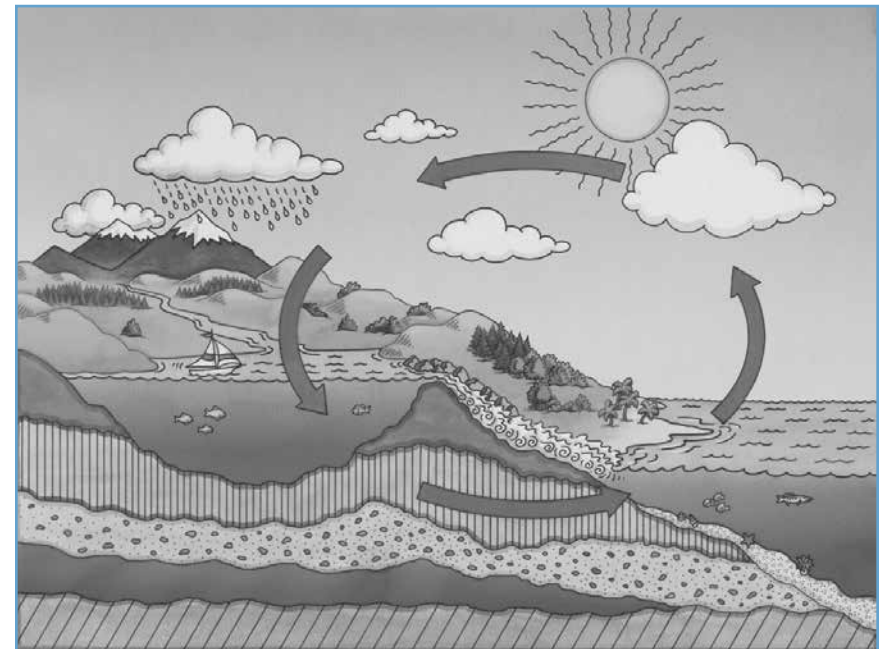
**Lead** –If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Old Dominion Utility Services, Inc. is responsible for 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 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 Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

**Sodium** –There is presently no established standard for sodium in drinking water. Water containing more than 20 mg/L should not be used as drinking water for those persons whose physician has placed them on severely restricted sodium diets. The maximum detected level was 14 mg/L, the average was 12 mg/L and the range was 9 – 14 mg/L.

Source Water Quality - Detected Contaminants Monitored by the City of Norfolk							
Primary Standards - Health Based (units)	PRIMARY MCL	MCLG	Range of Detection	Average Level	Highest Level	Meets EPA Standard?	Likely Source
<b>Turbidity</b>							
Highest single measurement of the Treated Surface Water (NTU)	TT = 1.0	n/a			0.31	Yes	Soil runoff
Lowest Percent of all Monthly Readings less than or equal to 0.3 NTU (%)	TT = 95	n/a	0.30 maximum	100.00%		Yes	Soil runoff
<b>Regulated Substances</b>							
Barium (ug/L)	2000	2000	30 - 40	30	40	Yes	Erosion of natural deposits
Fluoride (mg/L)	4	4	0.1 - 0.9	0.5	0.9*	Yes	Added to promote strong teeth
Nitrate (as Nitrogen) (mg/L)	10	10	0.09 - 0.52	0.19	0.32	Yes	Erosion of natural deposits, runoff
Total Organic Carbon (mg/L)	TT	n/a	2.0 - 2.5	2.2	2.5*	Yes	Occurs naturally in the environment
<b>Secondary Substances Monitoring (units)</b>							
	SMCL	SMCLG	Range of Detection	Average Level	Highest Level		Likely Source
Aluminum (mg/L)	0.2	n/a	0.01 - 0.04	0.02	0.04		Erosion of natural deposits; also comes from the addition of treatment chemicals at the water treatment plant
Chloride (mg/L)	250	n/a	14 - 23	18	23		Occurs naturally in the environment
Iron (mg/L)	0.3	n/a	ND - 0.08	0.03	0.08		Occurs naturally in the environment
Manganese (mg/L)	0.05	n/a	ND - 0.02	0.01	0.02		Occurs naturally in the environment
pH [acidity] (pH units)	6.5 - 8.5	n/a	7.5- 7.9	7.6	7.9*		Adjusted during water treatment process
Sulfate (mg/L)	250	n/a	31 - 36	34	36		Occurs naturally in the environment; also comes from the addition of treatment chemicals at the water treatment plant
Total Dissolved Solids (mg/L)	500	n/a	100 - 118	109	118		Occurs naturally in the environment
Zinc (mg/L)	5	n/a	0.04 - 0.18	0.12	0.18		Occurs naturally in the environment; also comes from the addition of treatment chemicals at the water treatment plant
<b>Unregulated Substances Monitoring (units)</b>							
	Suggested Limit	MCL	Range of Detection	Average Level			
Alkalinity (mg/L)	n/a	n/a	15 - 32	24			
Ammonia (mg/L)	n/a	n/a	ND - 0.3	0.1			
Hardness as CaCO3 (mg/L)	n/a	n/a	49 - 65	56			
Nickel (mg/L)	n/a	n/a	ND - 0.003	0.002			
Silica (mg/L)	n/a	n/a	2 - 6	5			
Sodium (mg/L)	n/a **	n/a	9 - 14	12			

### From Where Does my Water Come?

The drinking water being delivered to you is purchased from the City of Norfolk and rechlorinated by the City of Virginia Beach. Virginia Beach, including Joint Expeditionary Base Little Creek-Fort Story (JEBLCFS East formerly Fort Story), is provided water through a 76-mile pipeline leading from Lake Gaston on the North Carolina-Virginia border to Lake Prince, a reservoir in Suffolk that is owned and operated by Norfolk. Lake Gaston water is treated at the Moores Bridges Water Treatment Plant in Norfolk, where it is blended with City of Norfolk water. Norfolk's primary water supply comes from Lake Prince and Western Branch Reservoir in Suffolk and Lake Burnt Mills in Isle of Wright. During extended dry periods, these lakes may be supplemented with water from deep wells located around the lakes and pump-overs from the Blackwater and Nottoway Rivers, located west of the lakes. In-town lakes in Norfolk and Virginia Beach also supplement Norfolk's water supply. These include Lake Wright, Lake Whitehurst, Little Creek Reservoir, Lake Smith, Lake Lawson, and Stumpy Lake. From the reservoirs, water is pumped to the treatment plant.



**The Water Cycle:**

*A continuous process by which water circulates throughout the earth and atmosphere.*

### Risks to Tap and Bottled Water

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. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

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 mean water may be 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).

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 animal or human activity.

In order to ensure that tap water is safe to drink, USEPA and the Virginia Department of Health Services (VDH) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. VDH regulations also establish limits for contaminants in bottled water that must provide the same protection for public health.

#### Contaminants in Drinking Water Sources May 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 and 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, 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.

### Safekeeping of Water Supplies and Facilities

To reduce the risk of terrorism affecting local water supplies and distribution systems, Old Dominion Utility Services is following recommendations from the Federal Bureau of Investigation, the United States Environmental Protection Agency, and the American Water Works Association. While water systems have a low relative likelihood of experiencing terrorist acts, these agencies advise that water systems should guard against unplanned physical intrusion, review emergency response plans, and increase vigilance. Old Dominion Utility Services has taken all these steps and is continuing to look for additional safety improvements.

### For People with Sensitive Immune Systems...

Some people may be more vulnerable to constituents in the water than the general population. Immuno-compromised people, such as those with cancer undergoing chemotherapy, persons who have had organ transplants, people with HIV/AIDS or other immune system disorders, some elderly persons and infants can be particularly at risk of infections. These people, or those caring for them, should seek advice about drinking water from their healthcare providers.

The US EPA and the Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the US EPA's safe drinking water hotline at 1-800-426-4791 or the EPA web site at [epa.gov/safewater](http://epa.gov/safewater).

### Monitoring of Your Drinking Water

At JEBLCFS East, we monitor for the contaminant groups listed in Column 1 of the following table using EPA-approved methods. Column 2 of the table specifies the monitoring frequency for these contaminant groups.

Analyte/Contaminant Group	Monitoring Frequency
Coliform	Monthly
Copper	Every 3 years
Lead	Every 3 years

### Results of Detected Contaminants

JEBLCFS East, Norfolk, and Virginia Beach constantly monitor for various contaminants in the water supply to meet all regulatory requirements. The tables list only those contaminants that had some level of detection. Many other contaminants have been analyzed but were not present or were below the detection limits of the lab equipment.

The following tables list the drinking water contaminants that were detected during the 2013 calendar year. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in these tables is from testing done January 1 – December 31, 2013. The state requires JEBLCFS East to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one year old.