

Where Can I Get More Information?

Water quality—Contact the U.S. Environmental Protection Agency’s Safe Drinking Water Hotline at (800) 426-4791 (www.epa.gov/safewater).

Local drinking water quality—Contact Susan Sadowski of the Virginia Beach Department of Public Utilities laboratory at (757) 385-1400 (ssadowsk@vbgov.com), or the Virginia Department of Health Office of Drinking Water at (757) 683-2000 (www.vdh.state.va.us/drinking-water).

Water treatment/source water assessment—Contact Jim Van de Riet at (757) 385-4171 (jvan-deri@vbgov.com).

Water conservation—Contact Holly Miller at (757) 385-4171 (hbmiller@vbgov.com).

This report—Contact Holly Miller at (757) 385-4171 (hbmiller@vbgov.com).

Your water account—Contact the Virginia Beach Department of Public Utilities at (757) 385-4631 (water@vbgov.com).

Backflow and cross-connection prevention—Contact Edwin Garcia-Cardona at (757) 385-4171 (egarcia@vbgov.com).

TTY—711

Web site—VBgov.com/dpu

Tagalog
Ang pahayag na ito ay naglalaman nang importanteng inpormasyon na nauukol sa tubig na iniinom ninyo. Kong nangangailangan kayo nang tagapaliwanag tungkol sa iba pang nilalaman nang pahayag na ito ay pakitawagan lamang ninyo ang Departamento nang Public Utilities sa (757) 385-4171.

Spanish
Este reporte contiene información muy importante acerca del agua potable que usted consume. Si usted tiene una pregunta acerca de este reporte, por favor contacte a nuestro Departamento de Servicios Públicos al (757) 385-4171.

Public Participation Opportunities



The Virginia Beach Department of Public Utilities is part of the City of Virginia Beach municipal government. The City Council meets on the first, second, and fourth Tuesdays of each month. Meetings are held on the second floor of City Hall at the

Municipal Center and are open to the public. Agendas for upcoming meetings may be requested from the City Clerk’s office at (757) 385-4303 or found at VBgov.com.

The City of Virginia Beach Department of Public Utilities may be contacted at:

City of Virginia Beach
Department of Public Utilities
Municipal Center—Building 2
2405 Courthouse Drive
Virginia Beach, VA 23456-9031
(757) 385-4171
water@vbgov.com
VBgov.com/dpu



2007 Annual
Water Quality Report
for 2006 Data



Only Tap Water Delivers

Virginia Beach Public Utilities delivers quality drinking water to your tap.



In Virginia Beach, clean water is available whenever you turn on the faucet, so it’s easy to forget about the incredible value of a safe, reliable water supply and the water system that delivers it. But tap water does what no other water can.

Only tap water delivers public health protection. A safe water supply is critical to protecting the public health – the first obligation of all water suppliers. Without our modern water systems, diseases such as cholera and dysentery would be part of everyday life.

Virginia Beach drinking water meets or exceeds water quality requirements that are among the world’s most stringent. Our water, which is treated by the City of Norfolk, was ranked 4th Most Pure out of 100 U.S. water systems by *Men’s Health Magazine*. Our drinking water is tested every day and undergoes far more frequent testing than bottled water. We are committed to delivering clean, safe drinking water all day, every day, all year long.

This annual water quality report provides information about your drinking water and summarizes the results of water tests performed in 2006.

Where Does My Water Come From?

Virginia Beach water comes from surface water treated at Norfolk’s water treatment plant.

The mission of the Virginia Beach Department of Public Utilities is to provide a safe and sufficient water supply that will enhance and sustain our vibrant community. The Lake Gaston Water Supply Project helps fulfill that mission by providing water to Virginia Beach citizens through a 76-mile-long pipeline leading from Lake Gaston in Brunswick County, Virginia, to Lake Prince, a reservoir located in Suffolk but owned and operated by Norfolk. Lake Gaston provides an average

of 35 million gallons per day (MGD) of water to Virginia Beach citizens, and it will eventually furnish up to 45 MGD, supplying enough water to sustain our growing city for many years.

Water from Lake Gaston is blended with Norfolk’s water and is treated at the Moores Bridges Water Treatment Plant in Norfolk. Lake Gaston and most of Norfolk’s water sources are surface water. Norfolk’s primary water supply comes from Lake Prince and Western Branch Reservoir in Suffolk, and Lake Burnt Mills in Isle of Wight. During extended dry periods, these lakes may be supplemented with water from four deep wells located around the lakes, or with water from the Blackwater and Nottoway rivers. Lakes within 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. At the water treatment plant, the

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water undergoes a coagulation process which causes small particles to clump together and sink to the bottom of a settling basin. Next, the water is filtered to further 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 ensures water quality through continual monitoring and testing.



Settling basins remove small particles from the water after it is pumped to the treatment plant from the reservoir. The water is then filtered and disinfected before being delivered to your tap.

Why Treat Water?

To ensure the water is clean, safe, and pleasant to drink.



Fertilizers and other chemicals wash into lakes, rivers, and streams when it rains. These contaminants are removed during water treatment.

The sources of drinking water (both tap water and bottled water) include lakes, ponds, reservoirs, rivers, springs, streams, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring organic and inorganic substances. Water also picks up contaminants from animals and human activity. Fertilizers, herbicides, pesticides, metals, and salts wash off streets and lawns and enter the water supply. Neighboring communities, farms, and industries all contribute to these impurities. Left untreated, this water could make you sick. At the very least, untreated water would have an unpleasant taste, odor, or appearance. Treating and testing the water ensures that it is clean, safe, and pleasant to drink.

Disinfection is an essential part of the water treatment process, preventing the occurrence and spread of many water-borne diseases. Norfolk’s Moores Bridges Water Treatment Plant treats our source water, testing it for over 230 substances. Further testing is performed daily throughout Virginia Beach’s water distribution system. On average, over 400 water quality samples are collected and analyzed monthly, providing continual monitoring for the highest water quality possible.

Possible contaminants in untreated water:

- Microbial contaminants, such as viruses and bacteria, which may come from wildlife, pets, agricultural livestock operations, septic tanks, and sewage treatment plants. Examples of such organisms are Cryptosporidium and



Impurities from livestock, wildlife, and pets are removed during water treatment.

Giardia. When ingested, these microscopic organisms can cause diarrhea, fever, and other gastrointestinal symptoms. The best defense against these organisms is an effective water treatment process.

- Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from 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, storm water runoff, and residential use.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production and can also come from gas stations, 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.

The water treatment process removes these impurities and ensures the water is safe to drink.

Is the Water Safe for Everyone?

Virginia Beach water meets all Environmental Protection Agency drinking water standards.



Clean water is available whenever you turn on the faucet.

To ensure tap water is safe to drink, the Environmental Protection Agency (EPA) has developed regulations limiting the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) has established similar regulations for bottled water.

All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

However, some people may be more vulnerable than the general population to drinking water con-

taminants. Immunocompromised persons such as people undergoing chemotherapy, organ transplant recipients, people with HIV/AIDS or other immune system disorders, some elderly people, and infants can be particularly at risk from infections. These people should seek advice from their health care providers about their drinking water.

The EPA/CDC (Centers for Disease Control and Prevention) guidelines on reducing the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791) or the EPA Web site at www.epa.gov/safewater.

Source Water Assessment

Your water is tested before and after it is treated to ensure it meets federal and state standards.



Virginia Beach source water comes from lakes, ponds, reservoirs, rivers, springs, streams, and wells.

A source water assessment of our system was conducted by the Hampton Roads Planning District Commission. This was done to determine the susceptibility to contamination of the surface water from which our

drinking water originates. In Hampton Roads, all surface water sources were determined to be of high susceptibility to contamination using the criteria developed by the state in its approved Source Water Assessment Program. Areas that rely on surface water commonly receive this rating. However, Norfolk’s Moores Bridges Water Treatment Plant tests and treats the water to meet federal standards.

The assessment report consists of maps showing the source water assessment area, an inventory of known land use activities of concern, and documentation of any known contamination within the last five years. The report is available by contacting Jim Van de Riet at (757) 385-4171 or jvanderi@vbgov.com.

On average, over 400 water quality samples are collected and analyzed monthly, providing continual monitoring for the highest water quality possible.

Virginia Beach Water Quality Data

for January 1 through December 31, 2006

REGULATED SUBSTANCES TABLE								Meets EPA Standards
Substance	Likely Source	Range	Average Level	Highest Level Detected	MCL	MCLG	Unit	
Barium	Erosion of natural deposits	26 - 34	31	34	2000	2000	ppb	✓
Fluoride	Added for the prevention of tooth decay	0.11 - 1.19	0.83	1.00 ¹	4	4	ppm	✓
Gross Alpha Activity	Erosion of natural deposits	0.5 - 4.9	2.7	4.9	15	NA	pCi/L	✓
Gross Beta Activity	Erosion of natural deposits	3.3 - 18.2	10.8	18.2	50 ²	NA	pCi/L	✓
Haloacetic Acids (HAA5)	Drinking water disinfection byproduct	14 - 34	24	24 ³	60	NA	ppb	✓
Nitrate as Nitrogen	Erosion of natural deposits, runoff	0 - 0.17	0.11	0.17	10	10	ppm	✓
Radium 226/228	Erosion of natural deposits	1.2 - 1.5	1.4	1.5	5	NA	pCi/L	✓
Total Organic Carbon	Occurs naturally in the environment	1.21 - 3.26	2.05	2.94 ⁴	TT	NA	ppm	✓
Total Trihalomethanes (TTHMS)	Drinking water disinfection byproduct	20 - 54	36	36 ³	80	NA	ppb	✓

MICROBIOLOGICAL TABLE									
Substance	Likely Source	Range	Average Level	Highest Level Detected	MCL	MCLG	Unit	Meets EPA Standards	
Total Coliform Bacteria	Naturally present in the environment	0 - 4.2	1.0	4.2	5.00	0	Percent of monthly samples testing positive	✓	
Substance	Likely Source	Lowest monthly percentage of samples meeting the limit	Highest Level Detected	MCL	MCLG	Unit	Meets EPA Standards		
Turbidity	Soil runoff	99.04%	0.48	< 95%	NA	NTU	✓		
Substance	Likely Source	Range	Average Level	Highest Level Detected	MRDL	MRDLG	Unit	Meets EPA Standards	
Chloramine	Drinking water disinfectant	0.4 - 4.8	3.2	3.5 ⁴	4 ⁴	4	ppm	✓	

LEAD/COPPER TABLE							
Substance	Likely Source	Range	Number of Sites Exceeding the AL	MCL	MCLG	Unit	Meets EPA Standards
Copper	Corrosion of household plumbing systems	90% of samples <0.18 ND - 0.44	0	AL = 1.3	1.3	ppm	✓
Lead	Corrosion of household plumbing systems, erosion of natural deposits	90% of samples <2.0 ND - 40	2	AL = 15	0	ppb	✓

UNREGULATED SUBSTANCES TABLE							
Substance	Likely Source	Range	Average Level	Highest Level Detected	MCLG	Unit	
Aluminum	Erosion of natural deposits; also comes from the addition of treatment chemicals at the water treatment plant	0.02 - 0.10	0.04	0.10	NA	ppm	
Manganese	Occurs naturally in the environment	ND - 0.1	ND	0.1	NA	ppm	
Sodium	Occurs naturally in the environment; also comes from the addition of treatment chemicals at the water treatment plant	11 - 26	17	26	NA ⁵	ppm	
Sulfate	Occurs naturally in the environment; also comes from the addition of treatment chemicals at the water treatment plant	21 - 40	31	40	NA	ppm	

Monitoring the unregulated substances in the above table helps the EPA to determine where certain contaminants occur and whether it needs to regulate those contaminants.

¹The highest monthly average for the calendar year

²EPA considers 50 pCi/L to be the level of concern for Beta particles

³Highest quarterly running average of compliance samples for the calendar year

⁴Annual Average

⁵For physician-prescribed “no salt diets,” a limit of 20 ppm is suggested

Definitions

Action Level or AL- The concentration of a contaminant that, if exceeded, triggers treatment or other requirements which a water system must follow.

Maximum Contaminant Level or MCL- The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs (see definition below) as feasible by using the best available treatment technology.

Maximum Contaminant Level Goal or 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 set by EPA.

Maximum Residual Disinfectant Level or MRDL- The highest level of disinfectant allowed in the drinking water. There is convincing evidence that addition of a disinfectant is necessary for the control of microbial contaminants.

Maximum Residual Disinfectant Level Goal or 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 contaminants.

NA- Not applicable.

ND- Not detected in the water.

Nephelometric Turbidity Unit or NTU- Units describing how cloudy a water sample appears. Turbidity is a good indicator of the effectiveness of our filtration system.

PG/L (picocuries per liter)- A measure of the radioactivity of water.

ppb (parts per billion)- Concentration in parts per billion, or micrograms per liter (µg/L); this is equivalent to a single penny in \$10,000,000.

ppm (parts per million)- Concentration in parts per million, or milligrams per liter (mg/L); this is equivalent to a single penny in \$10,000.

Treatment Technique or TT- A required process intended to reduce the level of a contaminant in drinking water.