



Department of Utilities
 P.O. Box 1080
 Norfolk, Virginia 23510-1080

The City of Norfolk Department of Utilities is committed to providing residents and businesses throughout the City with top quality water service. Utilities' employees are on call 24 hours a day, 365 days a year to ensure that you always have access to safe Norfolk drinking water. The Water Quality Report is distributed annually to inform our customers that we are meeting all water quality guidelines set forth by the Environmental Protection Agency.

Once again in 2015, Norfolk tap water met all federal requirements.



**City of Norfolk Department of Utilities
 Contact Information:**

Business/Customer Address
 401 Monticello Ave.
 Norfolk, VA 23510

Mailing Address:
 P.O. Box 1080
 Norfolk, VA 23501

Customer Service: 757-664-6700
 Water & Sewer Emergencies: 757-823-1000
 Water Quality Lab: 757-441-5678

www.norfolk.gov/utilities

Please share this information with people who drink this water, especially those who may not have received this notice directly. You can do this by posting this notice in a public place or by distributing copies by hand or by mail.

**2016
 WATER QUALITY REPORT**

Based on 2015 Testing Data



**I'm more than
 just another tall
 drink of water.**

If only our tap water could talk to us. It might remind us that tap water is more than just a healthy, refreshing drink. It also fights fires, supports our economy and provides us with the high quality of life we enjoy.

Our water bills pay to keep our community tap water safe, reliable and there for us — 24/7 without fail. For more information about what your tap water delivers, visit www.norfolk.gov/utilities.

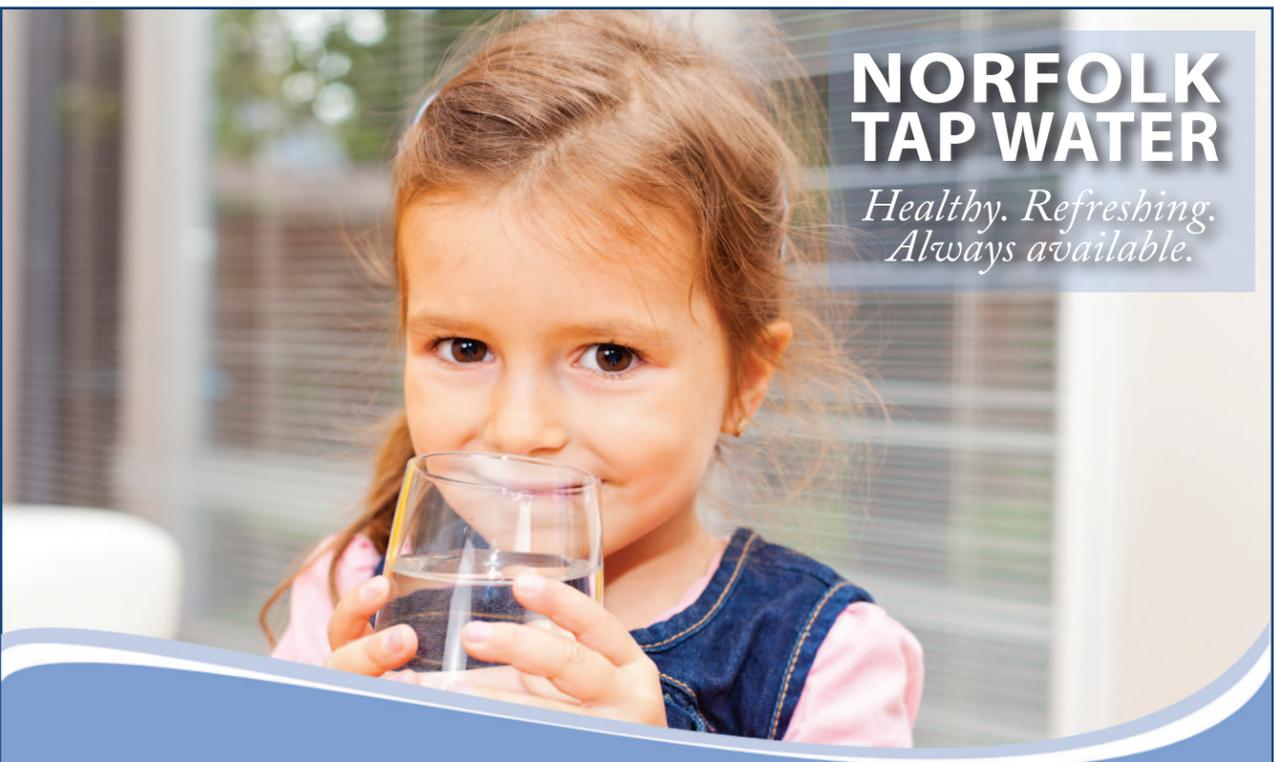
Only Tap Water Delivers™



Presented in cooperation with
 American Water Works Association

**NORFOLK
 TAP WATER**

*Healthy. Refreshing.
 Always available.*



Drink up! With no sugar and no calories, Norfolk tap water is the healthy, refreshing beverage of choice for the entire family! Carry a refillable cup or bottle throughout the day so you can take a sip whenever you get thirsty.

**If you have any questions about the Water Quality Report,
 please contact the Water Quality Lab at 757-441-5678.**

The City of Norfolk obtains its raw (untreated) water from eight reservoirs, two rivers and four deep wells. The map at right shows the location of each of your water sources. From these sources, raw water is pumped to one of the Department of Utilities' two water treatment plants, where it is filtered and disinfected. Once tested to meet water quality standards, Norfolk drinking water is pumped on demand to your tap.



Definitions

- **AL (action level)**, the amount required to trigger treatment or other action
- **LIKELY SOURCE**, where it could come from
- **MCL (maximum contaminant level)**, the highest level allowed by regulation
- **MCLG (maximum contaminant level goal)**, the ideal goal
- **MRDL (maximum residual disinfectant level)**, the highest level of a disinfectant allowed in drinking water
- **MRDLG (maximum residual disinfectant level goal)**, the level of a drinking water disinfectant below which there is no known or expected risk to health
- **MICROBIOLOGICAL CONTAMINANTS** are used as an indicator that other, potentially harmful bacteria may be present
- **Norfolk's Average Level**, the average level of a detected compound or water quality parameter
- **Norfolk's Highest Level**, Norfolk's single highest level of a detected compound or water quality parameter
- **REGULATED SUBSTANCES** are regulated by the EPA and they cannot be above the MCL
- **SMCL (Secondary Maximum Contaminant Levels)**, which are recommendations
- **TT (treatment technique)**, a required process intended to reduce the level of a substance in drinking water
- **TURBIDITY** is a measure of the cloudiness of water, which is not necessarily harmful, but can interfere with the disinfection of drinking water
- **UNREGULATED MONITORED SUBSTANCES** are not regulated by the EPA, but they must be monitored so information about their presence in drinking water can be used to develop limits

Table Key

- ppm – One part per million (equivalent to 1 minute in 2 years).
 ppb – One part per billion (equivalent to 1 minute in 2,000 years).
 pCi/L – Picocuries per liter (measure of radioactivity).
 NTU – Nephelometric Turbidity Unit (measure of very small particulate matter in drinking water).
 > – Greater than.
 ND – Not detected in the 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. It can also pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source (raw) 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.
- **Radioactive contaminants**, which can be naturally-occurring or be the result of oil and gas production and mining activities.

In 2001 the Hampton Roads Planning District Commission conducted a study on all the raw water sources in the area, including Norfolk's, to determine the susceptibility of reservoirs, rivers, and wells to contamination. Norfolk's susceptibility has been rated high. Norfolk's water treatment process ensures you receive high quality treated tap water that meets all Federal Safe Drinking Water Act requirements. For a copy of this study contact Norfolk's Water Quality Lab at 757-441-5678.

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 limitations 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 (trace) amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. **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, 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/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from:**

**Environmental Protection Agency's
Safe Drinking Water Hotline
800-426-4791**

For questions regarding this report contact Norfolk's Water Quality Lab at 757-441-5678. For more information about decisions affecting your drinking water quality, you may attend Norfolk City Council meetings. For times and agendas, call the City Clerk's office at 757-664-4253.

Regulated Substances

Substance	Likely Source	Norfolk's Measured Range	Norfolk's Highest Level	Norfolk's Average Level	National MCL	National MCLG	Unit	Meets EPA Standards
Barium	Erosion of natural deposits	0.03 – 0.04	0.04	0.03	2	2	ppm	✓
Chloramine	Drinking water disinfectant	3.3 – 3.4	3.4	3.4	4 ²	4 ³	ppm	✓
Dalapon	Field herbicide runoff	ND – 1	1	ND	200	200	ppb	✓
Fluoride	Added to prevent tooth decay	0.1 – 0.9	0.7 ¹	0.6	4	4	ppm	✓
Gross Beta	Erosion of natural deposits	2 – 3	3	3	50 ⁴	0	pCi/L	✓
Nitrate as Nitrogen	Erosion of natural deposits, runoff	0.02 – 0.23	0.23	0.11	10	10	ppm	✓
Total Organic Carbon	Occurs naturally in environment	1.8 – 3.1	2.8 ¹	2.4	TT	n/a	ppm	✓

¹Highest monthly average for calendar year ²MRDL ³MRDLG ⁴EPA considers 50 pCi/L to be the level of concern for Beta particles.

Substance	Likely Source	Norfolk's Measured Range	Norfolk's Average Level	Norfolk's Highest Quarterly Local Annual Running Average	Quarterly Running Annual Average		Unit	Meets EPA Standards
		(Individual Results)			National MCL	National MCLG		
Haloacetic Acids (HAA5)	Byproduct of disinfection process	16 – 42	34	37	60	0	ppb	✓
Trihalomethanes (TTHM)	Byproduct of disinfection process	24 – 68	50	54	80	0	ppb	✓

Turbidity

Substance	Likely Source	Norfolk's Lowest Monthly % of Samples Meeting Limit	Norfolk's Highest Level (NTUs)	National MCL	National MCLG	Unit	Meets EPA Standards
Turbidity	Soil runoff	100%	0.26	<1.0 maximum, and ≤0.3 95% of the time	n/a	NTU	✓

Microbiological Contaminants

Substance	Likely Source	Norfolk Samples Indicating Bacteria Present	Norfolk's Highest Monthly % of Positive Samples	Norfolk's Months of Presence	National MCL	National MCLG	Meets EPA Standards
Total Coliform Bacteria	Natural in environment	4	1.3%	May, July, Oct	5% of samples per month positive for total coliform	0%	✓

Lead and Copper in Customers' Homes (data from 2014 triennial sampling)

Norfolk has extremely low lead levels in its drinking water system. Because of this, the EPA has placed Norfolk on a reduced monitoring schedule. In 2014, no lead was detected at the monitoring level.¹

Substance	Likely Source	Norfolk's Results ¹	Norfolk Homes Exceeding Action Level	National Action Level	Unit	MCLG	Meets EPA Standards
Lead	Household plumbing corrosion	< 2.5	0	15	ppb	0	✓
Copper	Household plumbing corrosion	0.12	0	1.3	ppm	1.3	✓

¹Lead and copper compliance is measured at the 90th percentile of all samples taken during the 2014 triennial sampling period.

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. The Norfolk Department of Utilities 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 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 (800-426-4791) or at <http://www.epa.gov/safewater/lead>.

Secondary and Unregulated Monitored Substances

Substance	Likely Source	Norfolk's Range	Norfolk's Highest Level	Norfolk's Average Level	National SMCL	Unit
Aluminum	Erosion of natural deposits; also from the use of chemicals at water treatment plant	ND – 0.06	0.06	0.03	0.20	ppm
Chloride	Natural in environment	13 – 21	21	17	250	ppm
Di-n-Butylphthalate	Agricultural use	ND – 1	1	ND	n/a	ppm
Iron	Natural in environment	ND – 0.08	0.08	0.05	0.3	ppm
Manganese	Natural in environment	ND – 0.03	0.03	ND	0.05	ppm
Metolachlor	Agricultural Use	ND – 0.2	0.2	0.1	n/a	ppm
pH	Adjusted during the water treatment process	7.3 – 7.9	7.7 ¹	7.6	6.5 - 8.5	pH units
Nickel	Corrosion of plumbing materials	ND – 0.003	0.003	ND	n/a	ppm
Sodium	Natural in environment; also from the use of chemicals at water treatment plant	10 – 27	27	15	n/a ²	ppm
Sulfate	Natural in environment; also from the use of chemicals at water treatment plant	22 – 34	34	29	250	ppm
Total Dissolved Solids	Natural in environment	89 – 106	106	99	500	ppm
Zinc	Natural in environment; also from the use of chemicals at water treatment plant	0.02 – 0.20	0.20	0.12	5	ppm

¹Highest monthly average for calendar year ²For physician-prescribed "no salt diets," a limit of 20 ppm is suggested

Additional Information

The substances listed below are not regulated by the EPA; however, the Water Quality Lab provides this information as a service to our customers.

Substance	Norfolk's Range	Norfolk's Average Level	Unit
Alkalinity	17 – 35	26	ppm
Ammonia	ND – 0.5	0.1	ppm
Hardness	26 – 61	43	ppm
Silica	3 – 8	6	ppm