



Norfolk Naval Shipyard & St. Julien's Creek Annex Portsmouth, Virginia 2013 Consumer Confidence Report

Norfolk Naval Shipyard and St. Julien's Creek Annex are committed to providing you drinking water that is safe and reliable. We believe 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 advise consumers of where their water comes from, water quality data, advance understanding of drinking water, and heighten awareness to conserve water resources.

Drinking Water Sources

Norfolk Naval Shipyard and St. Julien's Creek Annex purchase finished water from the City of Portsmouth. Portsmouth's water supply comes from a system of four surface lakes (Kilby, Meade, Cohoon, and Speight's Run) and five deep wells in the Middle Potomac Aquifer. From these lakes and wells, the water is pumped through pipes to a water treatment facility which has the capacity to treat 33 million gallons of water each day and serves over 120,000 customers in Portsmouth, Chesapeake and Suffolk. 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.

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 stormwater 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 stormwater runoff, and residential uses;
- **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, urban stormwater runoff, and septic systems;
- **radioactive contaminants**, which can be naturally occurring or be the result of oil and gas production and mining activities.

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For additional information:

Navy Environmental
(757) 341-0482

**City of Portsmouth,
Water Quality Division**
(757) 539-2201 x232

**Virginia Department of
Health**
(757) 683-2000
[http://www.vdh.state.va.us/
DrinkingWater/](http://www.vdh.state.va.us/DrinkingWater/)

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

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About Drinking Water (continued)

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 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 Should 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. Norfolk Naval Shipyard and St. Julien's Creek Annex are 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>.

Definitions and Abbreviations

- **Action Level (AL)** - The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that 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 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.
- **ND** - non-detection, laboratory indicates that the contaminant was not present.
- **NTU (nephelometric turbidity unit)** - A measure of the clarity of water.
- **pCi/L, picocuries per liter** - A measurement of radiation released by a set amount of a certain compound.
- **ppb, ppm** - part per billion, part per million. Measurements of the amount of contaminant per unit of water. A part per million is like one cent in \$10,000 and a part per billion like one cent in \$10,000,000.
- **Secondary Maximum Contaminant Level (SMCL)** - Threshold levels for aesthetic considerations.
- **Trihalomethanes (THM)** - Four separate compounds (chloroform, bromoform, dichlorobromomethane, and dibromochloromethane) that form as a result of disinfection.
- **Treatment Technique (TT)** - A required process intended to reduce the level of a contaminant in drinking water.

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2013 WATER QUALITY DATA

**Testing Data from the City of Portsmouth
(sampling conducted at Lake Kilby Water Treatment Plant)**

REGULATED SUBSTANCES						
Substance (Unit of Measure)	MCL [MRDL]	MCLG [MRDLG]	Amount Detected	Range Low-High	Violation	Typical Source
Barium (ppm)	2	2	0.027	NA	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Beta/Photon Emitters (pCi/L)	50	0	4.3 ¹	NA	No	Decay of natural and man-made deposits
Combined Radium (pCi/L)	5	0	0.3 ²	NA	No	Erosion of natural deposits
Fluoride (ppm)	4	4	0.87	0.61 - 1.52	No	Erosion of natural deposits; Water additive which promotes strong teeth
Nitrate (ppm)	10	10	0.12	NA	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Total Organic Carbon	TT	NA	1.7	1.4 – 2.7	No	Natural in environment
Turbidity (NTU)	TT	NA	0.1	0 - 0.1	No	Urban and soil runoff, waste discharge, sediments from erosion
Turbidity (Lowest monthly percent of samples meeting limit)	TT	NA	100	NA	No	Urban and soil runoff, waste discharge, sediments from erosion
OTHER REGULATED SUBSTANCES						
Substance (Unit of Measure)	SMCL	MCLG	Amount Detected	Range Low-High	Violation	Typical Source
Alkalinity (ppm)	NA	NA	63	60 – 125	No	Naturally Occurring
Ammonia	NA	NA	0.37	NA	No	NA
Calcium Hardness	NA	NA	17	15 – 31	No	Naturally present in sedimentary rocks
Conductivity	NA	NA	341	320 – 418	No	Naturally Occurring
Hardness (ppm)	NA	NA	24	16 – 34	No	Naturally Occurring
Ortho-Phosphate	NA	NA	0.07	NA	No	Occurs naturally in rocks and other minerals
Silica (Reactive)	NA	NA	3	NA	No	Naturally present in the environment
Total Sodium	NA	NA	60	56 – 92	No	Naturally Occurring. For physician- prescribed "no salt diets," a limit of 20 ppm is suggested.
SECONDARY SUBSTANCES						
Substance (Unit of Measure)	SMCL	MCLG	Amount Detected	Range Low-High	Violation	Typical Source
Chloride (ppm)	250	NA	18	NA	No	Runoff/leaching from natural deposits
Corrosivity (Units)	Non- corrosive	NA	-1.41	(-1.870) – (-0.082)	No	Natural or industrial-influenced balance of hydrogen, carbon and oxygen in the water; Affected by temperature and other factors
Sulfate (ppm)	250	NA	63	NA	No	Runoff/leaching from natural deposits; Industrial wastes
Total Dissolved Solids [TDS] (ppm)	500	NA	198	NA	No	Runoff/leaching from natural deposits
pH (Units)	6.5-8.5	NA	7.52	7.2- 8.0	No	Naturally Occurring

¹ The MCL for Beta particles is 4 mrem/year. The USEPA considers 50 pCi/L to be the level of concern for beta particles.

² The amount detected was for Radium 226. Less than 0.9 pCi/L was for Radium 228.

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2013 WATER QUALITY DATA

**Testing Data from NSA Norfolk Naval Shipyard (NSA NNSY)
(samples collected from outlets located on the installation)**

REGULATED SUBSTANCES						
Substance (Unit of Measure)	MCL [MRDL]	MCLG [MRDLG]	Amount Detected	Range Low- High	Violation	Typical Source
Total Coliform (Presence/Absence)	1	0	4 ⁴	0 -4	Yes	Naturally present in the environment
Total coliform bacteria were detected in samples collected in January (one), July (four), August (three), September (six), and October (three). Extensive flushing was commenced to draw fresh water to the area and re-sampling results have since been negative for Total Coliform. See Violations and Exceedances for explanation.						
Copper (ppm) ³	AL=1.3	1.3	(90th percentile) 0.253	0.008- 0.368	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb) ³	AL=15 (2 sites exceeded)	0	(90th percentile) 2	ND- 4	No	Corrosion of household plumbing systems; Erosion of natural deposits
Total Chlorine Residual (ppm)	4	4	2.45 ¹	0 - 4.2	No	Drinking water disinfectant.
Haloacetic Acids [HAA5] (ppb)	60	NA	33 ²	0-30	No	By-product of drinking water disinfection
TTHMs [Total Trihalomethanes] (ppb)	80	NA	45 ²	19.5- 47.0	No	By-product of drinking water chlorination

**Testing Data from St. Julien's Creek Annex (SJCA)
(samples collected from faucets located on the installation)**

REGULATED SUBSTANCES						
Substance (Unit of Measure)	MCL [MRDL]	MCLG [MRDLG]	Amount Detected	Range Low- High	Violation	Typical Source
Total Coliform	2	0	2 ⁴	0-2	Yes	Naturally present in the environment
Total coliform bacteria were detected in samples collected in July (one), August (one), September (three), and October (two). Extensive flushing was commenced to draw fresh water to the area and re-sampling results have since been negative for Total Coliform. See Violations and Exceedances for explanation.						
Copper (ppm) ³	AL=1.3	1.3	(90th percentile) 0.190	0.006 - 0.296	No	Corrosion of household plumbing systems; Erosion of natural deposits;
Lead (ppb) ³	AL=15	0	(90th percentile) 2	ND - 2	No	Corrosion of household plumbing systems; Erosion of natural deposits
Total Chlorine Residual (ppm)	4	4	1.23 ¹	0.1-2.9	No	Drinking water disinfectant.
Haloacetic Acids [HAA5] (ppb)	60	NA	17.3 ²	5-21	No	By-product of drinking water disinfection
TTHMs [Total Trihalomethanes] (ppb)	80	NA	46 ²	20.2 - 47.8	No	By-product of drinking water chlorination

1 Average chlorine residual value.

2 Highest running annual average of quarterly compliance samples for the calendar year.

3Data for Lead and Copper represent the most recent results from compliance samples collected in calendar year 2012.

4This number represents the highest number of positive coliform samples collected in any one month. See Violations and Exceedances for explanation.

VIOLATIONS AND EXCEEDANCES

Routine monitoring tested positive for Total Coliform bacteria in January 2013 at NSA NNSY, and from July to October 2013 at NSN NNSY and SJCA. Total Coliform exceedances from July to October at NSA NNSY, and in August and October 2013 at SJCA resulted in violations of a drinking water standard. Coliform bacteria are generally not harmful themselves. Coliforms 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 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 conclusively identify the source of the problem, chlorine residual decay as result of excessive warm weather, and other environmental factors, likely contributed to conditions allowing for coliform growth within the piping system. Extensive flushing was performed to draw fresh water to the area and re-sampling results have since been negative for total coliform. Please contact NAVFAC Mid-Atlantic Environmental staff at 757-341-0482 if you have any questions regarding this report.