

This **Annual Water Quality Report** has been developed to keep you informed about the ACSA's water quality. The Service Authority is committed to supplying safe water that meets or exceeds state and federal regulations and achieves the highest standards of customer satisfaction. Please take a few minutes to read this report.

About Your Water....

We are proud to report that the water provided by ACSA to our Verona customers met all federal and state standards for drinking water for 2016.

Staunton water is generally distributed east of Rt. 612 and to the Rt. 11 corridor north to the Valley College Park Development and the Industrial Park in Weyers Cave.

This report includes details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies.



Where Does Your Water Come From?

Sources of the Verona District drinking water include the Berry Farm Spring or water purchased from the City of Staunton which uses groundwater from a spring and surface water from two reservoirs; Elkhorn and Staunton.

Source Water Assessments

A source water assessment has been completed by the Virginia Department of Health. More specific information may be obtained by contacting the Augusta County Service Authority at (540) 245-5670.

Water Saving Tip

Keep a bottle or pitcher of drinking water in the refrigerator instead of running the tap to cool it each time you want a drink.



How Is Staunton Water Treated?

Staunton Water: Water enters the Staunton Treatment Plant from the reservoirs or Gardner Springs.
Treatment includes: (1) **Screening** - removes leaves, sticks, and other large debris; (2) **Prechlorination** - kills most disease-causing organisms; (3) **Flash Mix** - chemicals are added and mixed with raw water containing fine particles that will not readily settle or filter out; (4) **Flocculation** - gathers together

fine, light particles to form larger particles to aid the settling and filtering processes; (5) **Sedimentation** - settles out large suspended particles; (6) **Filtration** - filters out remaining suspended particles; (7) **Postchlorination** - kills any remaining disease-causing organisms; and (8) **Fluoridation** - added to water for cavity prevention.

How Is Berry Farm Water Treated?

Water from the Berry Farm Spring is filtered through membrane filtration, then chlorine is added to kill any disease-causing organisms and fluoride is added for cavity prevention. A water softening system is used to reduce the hardness to approximately 8 grains per gallon (138 ppm).

The treated water is distributed via an extensive underground piping system and is delivered to your home.

Who's Most Vulnerable?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 the Safe Drinking Water Hotline (800-426-4791).

* Environmental Protection Agency
* Centers for Disease Control



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ACSA is committed to providing you with information about your water supply, because customers who are well informed are our best allies in supporting improvements necessary to maintain the highest drinking water standards.

- ☛ ACSA (540) 245-5681 or www.acsawater.com with links to American Water Works Association (AWWA) and Water Environment Federation (WEF)
- ☛ More information is available at waterdata.usgs.gov and www.epa.gov/ground-water-and-drinking-water/
- ☛ Safe Drinking Water Hotline (800) 426-4791
- ☛ Virginia State Health Department (Lexington) (540) 463-7136 www.vdh.virginia.gov/drinking-water/
- ☛ Monthly Board Meetings are held the Monday preceding the second Wednesday of every month at the Augusta County Government Center in Verona. Meetings start at 1:30 p.m.

We constantly monitor for various contaminants in the water supply to meet all regulatory requirements. This table lists only the regulated contaminants which had some level of detection in 2016. Many other contaminants have been analyzed but were not present or were below the detection limits of the lab equipment.

Treated Water Quality Roundup						
Substance	Highest Level Allowed (EPA's MCL*)	Highest Level Detected	Ideal Goals (EPA's MCLGs*)	Meets EPA Standards	Date Most Recent Testing Completed	Possible Sources
Regulated at the Treatment Plant						
Beta Emitters	50 pCi/L	ND - 2.8 pCi/L	0 pCi/L	✓	2016	Decay of natural and manmade deposits
Alpha Emitters	15 pCi/L	ND - 2.4 pCi/L	0 pCi/L	✓	2016	Erosion of natural deposits
Combined Radium	5 pCi/L	0.2 - 0.93 pCi/L	0 pCi/L	✓	2016	deposits
Total Organic Carbon (TOC)	TT	Range: 0.27 - 0.90 ppm	N/A	✓	2016, Monthly	Naturally present in the environment
Nitrate plus Nitrite as Nitrogen	10 ppm	Range: 0.42 - 1.26 ppm	10 ppm	✓	January and March 2016	Runoff from fertilizer use; leaching from sewage; erosion of natural deposits
Barium	2 ppm	Range: 0.009-0.0166 ppm	2 ppm	✓	January and March 2016	Erosion of natural deposits
Chlorine	MRDL= 4 ppm	Avg.: 1.4 ppm Range: 1.1 - 1.7 ppm	MRDLG = 4 ppm	✓	2016, Daily	Water additive used to control microbes
Fluoride	4 ppm	Avg.: 0.7 ppm Range 0.2 - 0.9 ppm	4 ppm	✓	2016, Daily	Water additive
Turbidity**	TT = 0.3 NTU	Max.: 0.294 NTU/100%	N/A	✓	2016, Daily	Soil runoff
Regulated at the Customers' Tap						
Lead (90th Percentile)	15 ppb Action Level (AL)	2.6 ppb None of the 20 samples collected exceeded the AL	0 ppb	✓	July 2016	Customer plumbing and service connection
Copper (90th Percentile)	1.3 ppm Action Level	0.16 ppm None of the 20 samples collected exceeded the AL	1.3 ppm	✓	July 2016	
Regulated in the Distribution System						
Total Trihalomethanes	80 ppb Avg.	Avg.: 26.4 ppb Range: 10.3 - 48.7 ppb	0 ppb	✓	2016, Quarterly	By-product of drinking water chlorination
Haloacetic Acid (HAA)	60 ppb Avg.	Avg.: 9.8 ppb Range: 1 - 16 ppb	0 ppb	✓	2016, Quarterly	
<p>*Definitions:</p> <p>(AL) Action Level - The concentration of a contaminant which, if exceeded, triggers a treatment or other requirements which a water system must follow.</p> <p>(MCL) Maximum Contaminant Level - Highest level of a contaminant that is allowed by EPA in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.</p> <p>(MCLG) Maximum Contaminant Level Goal - 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.</p> <p>(MRDL) Maximum Residual Disinfectant Level - 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.</p> <p>(MRDLG) Maximum Residual Disinfectant Level Goal - The level of a drinking water disinfectant below which there is no known or expected health risk. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination.</p> <p>ND - None detected</p> <p>(NTU) Nephelometric Turbidity Unit - A measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.</p> <p>pCi/L - PicoCuries per liter is a measure of the radioactivity in water.</p> <p>ppb - one part per billion, example is a single penny in \$10,000,000.</p> <p>ppm - one part per million, example is a single penny in \$1,000.</p> <p>(TT) Treatment Technique - A required process intended to reduce the level of contaminant in drinking water.</p>						

** Percent (%) represents the lowest monthly percentage samples which met the turbidity limits. Compliance for turbidity is based on the level being less than or equal to 0.3 NTUs in 95% of the measurements taken each month. Turbidity has no known health effects; however, it can interfere with disinfection and provide a medium for bacterial growth.

Additional Water Quality Parameters

Parameter	Detected Level	Suggested Limit
Alkalinity*	66-309 ppm	No Standard
Color	<5 Color Units (CU)	15 CU
Hardness*	81-113 ppm**	No Standard
Sodium*	3.19-82 ppm	No Standard
Manganese	<0.01 ppm	0.05 ppm
Iron	<0.01 ppm	0.3 ppm

*Accounts for differences between sources.
 **Water from Staunton: 4.7 grains per gallon
 **Water from Verona: 6.6 grains per gallon
 These water sources are considered moderately hard.

Substances Expected To Be In 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 land's surface or through the ground, it dissolves naturally occurring minerals and radioactive material, and can be polluted by animals or human activity.

Contaminants that may be present in source water include:

- ☞ **Microbiological 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 runoff, industrial or domestic waste water 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 also come from gas stations, urban storm water runoff and septic systems.
- ☞ **Radioactive materials**, which can be naturally occurring or be the result of oil and gas production and mining activities.

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 the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the U.S. Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791) or the Virginia State Health Department (540-463-7136).



Did You Know?

Water Supply: Due to the lack of moisture this winter, we are keeping a close eye on possible drought conditions for the Shenandoah Valley. The ACSA's water sources are stable at this time and employees continue to monitor water levels. You, as a customer, can help by conserving water whenever possible.

Lead Contaminants

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 Augusta County Service Authority 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 to minimize exposure is available from the Safe Drinking Water Hotline (800-426-4791) or at <http://www.epa.gov/safewater/lead>.