Household Water Quality

Eastern Shore 2014 - 2017

The Virginia Household Water Quality Program provides affordable water testing and education through local Extension offices to the 1.7 million Virginians who rely on wells, springs or cisterns for their household water supply.

Visit us online!

Virginia Household Water Quality Program

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What's in your water?

Municipal water supplies are regulated under the Safe Drinking Water Act, which mandates routine testing and treatment. Maintenance and testing of private water supplies (wells, springs and cisterns) is the responsibility of the owner. Virginia Cooperative Extension offers water testing and education for private water supply users across the state

Drinking water clinics are held in county Extension offices each year. Here's how it works:

#1 Kickoff Meeting

Participation is voluntary and open to anyone with a well, spring or cistern. Participants pick up a sample kit and receive instructions about how to collect the samples from their household tap and where and when to drop off their samples.

#2 Sampling

Following directions carefully, participants collect their samples and complete a short questionnaire. Samples are dropped off locally, so shipping is unnecessary. We coordinate getting the samples to Virginia Tech's campus for analysis.

#3 Analysis

Samples are analyzed for total coliform and E. coli bacteria, nitrate, lead, copper, arsenic, fluoride, sodium, hardness, iron, manganese, total dissolved solids, pH, and sulfate. The cost for one sample kit in 2017 was $55. Confidential results are prepared and returned to the Extension office.

#4 Results

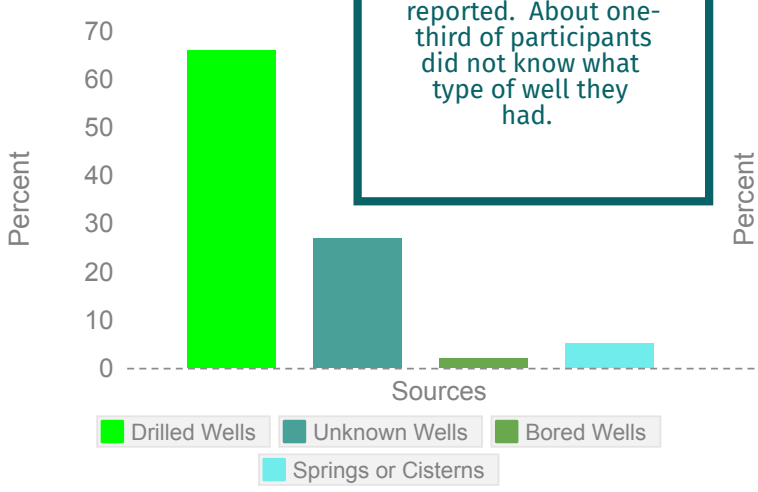
Results are returned to participants and explained at a local interpretation meeting. Information is provided about addressing water quality problems, routine care, and maintenance of private water supplies.

Water systems on the Eastern Shore (Accomack and Northampton Counties)

340 samples analyzed
Serving 872 people
Well depth: 35 to 350 feet
Well age: 1 to 69 years

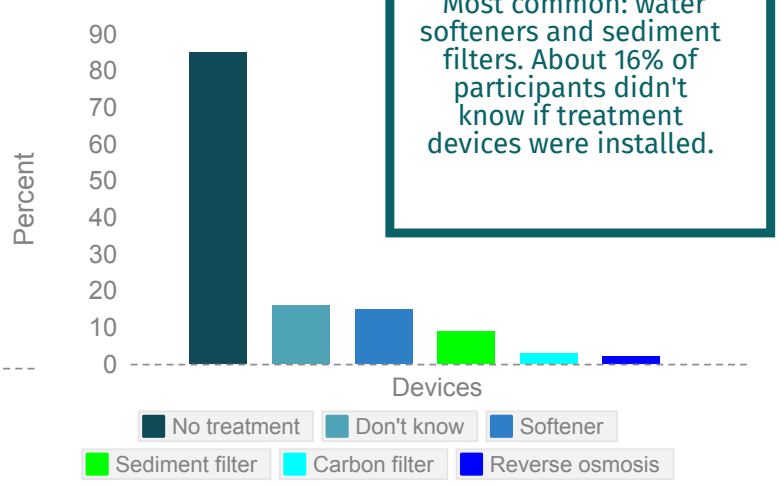
Systems

Drilled wells were most commonly reported. About one-third of participants did not know what type of well they had.



Treatment

25% of homes had treatment devices. Most common: water softeners and sediment filters. About 16% of participants didn't know if treatment devices were installed.



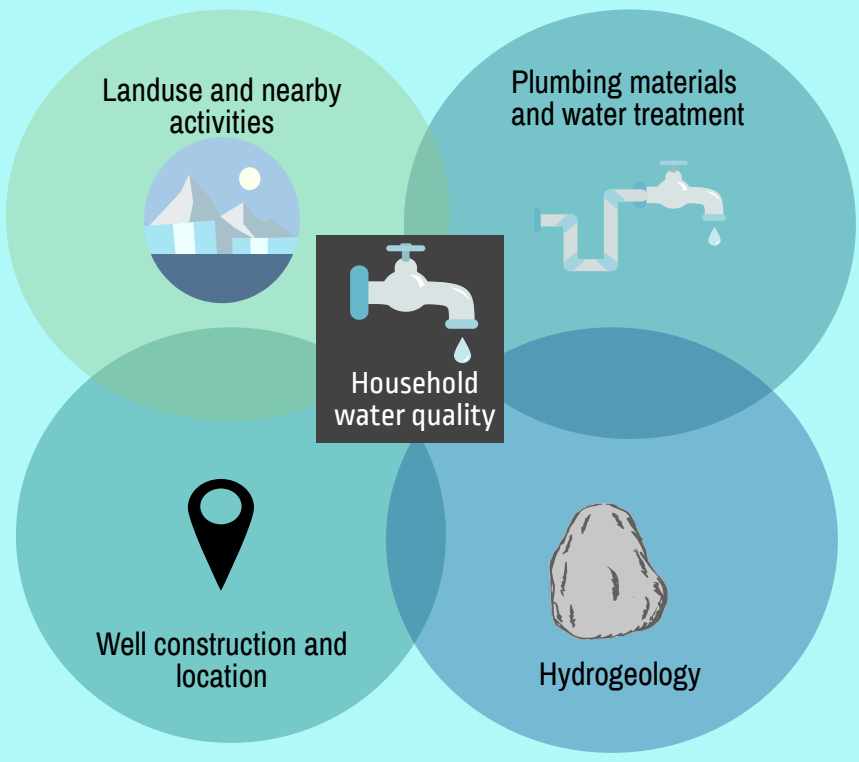
Where do contaminants come from?

Contaminants in water may be health-related (e.g., bacteria) or a nuisance (e.g., hardness causing scale) and can come from a variety of sources.

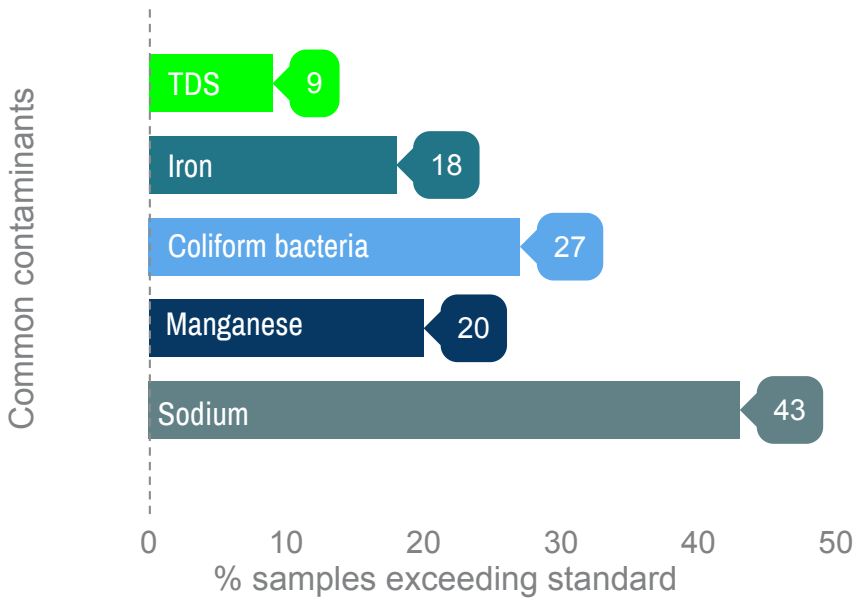
Some contaminants originate from geology, the sediment or rock where the water is stored. Others are a result of land usage or activities on the earth's surface, such as lawn fertilizer, animal waste, or chemical spills.

Proper construction of a well can protect household water quality by preventing surface water, which may carry many contaminants, from entering the groundwater supply. Wells should be constructed with proper casing, grout seal, and a sealed well cap. Contamination sources, such as livestock and septic systems should be at least 50 feet away from the well head.

Treatment devices and plumbing components can also influence water quality by adding contaminants or changing water chemistry.



Household water quality on the Eastern Shore: Common Contaminants



The most common contaminants found in household water on the Eastern Shore were sodium, manganese, total coliform bacteria, iron, and total dissolved solids (TDS). Other contaminants were found in less than 5% of samples.

Total coliform bacteria presence is an indication that surface water may be entering a well and other more harmful microorganisms may be present. E. coli were found in 4% of Eastern Shore samples.

Sodium is commonly found in sediments of the Eastern Shore. Softeners can also be a source of sodium. The EPA recommendation for sodium in drinking water is 20 mg/L. Manganese and iron tend to occur together naturally in geology, and are nuisance contaminants. Both can cause staining on fixtures, dishes and clothes, and a metallic taste.

Total dissolved solids, or TDS, is a measure of all dissolved impurities in water, and can be made up of sodium, nitrate, or other dissolved contaminants. It is a nuisance contaminant.

For more information, please visit our website: www.wellwater.bse.vt.edu

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