Virginia Household Water Quality Program
Carroll County 2011-2017

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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 who has water quality concerns. Participants will get 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 four samples of tap water. The four samples are collected at different times of day to determine if the water quality is constant throughout the day. Samples are collected at the kitchen sink. Instructions about how to collect the samples are included in the sample kit. Participants may use filtered water if they desire, but they must filter it through the faucet at the kitchen sink.

3. Analysis
Samples are analyzed at Tech’s campus for analysis. Samples are analyzed for total coliform bacteria, lead, copper, iron, three 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 participant.

4. Results
Results are returned to participants and explained at a local interpretation meeting. The meeting is held at the local Extension office.

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

Common contaminants

Contaminants 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 water supply. Wells should be constructed with proper casing, a rubber or grout seal, and a sealed well cap. Contamination supply. Wells should be constructed with proper casing, a rubber or grout seal, and a sealed well cap. Contamination sources, such as fertilizer 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 in Carroll County: Common Contaminants

The most common contaminants found in household water in Carroll County were low pH, total coliform bacteria, copper, lead, manganese and sodium.

Low pH (<6.5) can occur naturally in parts of Virginia geology, per below. If it was found in 12% of samples. Although not a common in acid, low pH can be a clue of how corrosive the water is. Once the water enters the house it can result in metal pipes and fixtures becoming brittle. From plumbing components that contain these metals, such as brass fittings or copper pipes. Total coliform bacteria presence in an indication that surface water may be entering the well and other health risks from harmful bacteria exist. Total coliform was found in 38% of the Carroll County samples. E. coli was found in 12% of the samples and is a sign that human or animal waste is entering the water supply.

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