

# Silver & PRIVATE WELLS

## What is silver?

Silver is a natural element found in rocks deep underground and soil. Silver is found in the environment joined to other elements like sulfur, chloride and nitrate.

Silver is used to make jewelry, silverware, electronics and dental fillings. Silver is also used to make photographs, solder and as a disinfectant.

## How does silver get in my private well water?

Silver compounds can enter your private well water from erosion of rocks underground. Rain may wash silver from soil into groundwater. Silver can also enter groundwater from photographic processes.

## How can silver affect my health?

Silver is not an essential element, meaning your body does not need it. You can't see, smell, or taste silver.

Drinking high levels of silver over long periods of time may lead to argyria, a condition known for blue-gray discoloration of skin, hair and internal organs.

## What level of silver should I be concerned about?

The **NC Department of Environmental Quality** developed a groundwater standard of **0.02 milligrams of silver per liter of water (mg/L)**.

Ground water standards are developed to protect public health. This standard was developed in 2013 to prevent argyria.



In addition, the **US Environmental Protection Agency** developed an aesthetic standard of **0.1 mg/L**. This standard was developed to prevent argyria (purple-grey skin).

## How do I test for silver in my private well?

Use a certified lab to test your well water for silver every two years, as part of the inorganic panel screen. Contact the private well program at your county health department to assist you with getting your water tested. Pricing of testing varies from county to county.

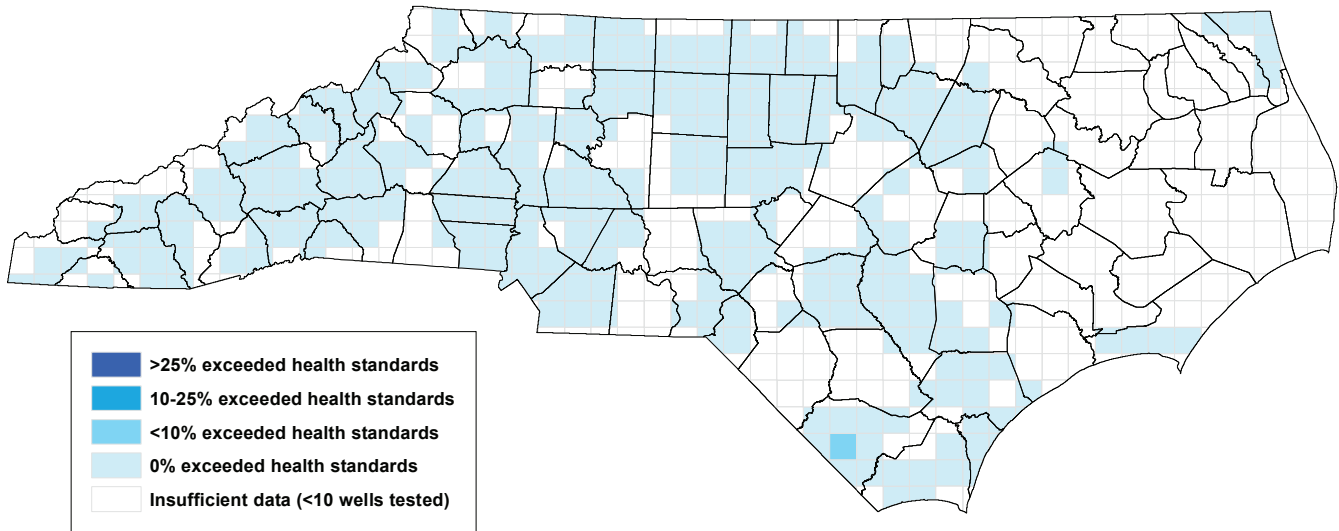
## What if my silver levels are high?

You can install a treatment system to reduce the levels of silver in your private well. Treatment systems that reduce the levels of silver in your well water include:

- Anion Exchange
- Distillation
- Reverse osmosis

You can also reduce your exposure by using bottled water or connecting to public water supply, if possible.

## Percent of Private Wells Tested Exceeding State and Federal Standards for Silver, 2011-2013



### Where is silver found in NC?

Silver was found at a single location in NC from 2011 to 2013, that well exceeded the state standard. Yet, there are several areas in NC with at least 10% of wells exceeding state standards. See map for areas with elevated silver.

### Where can I find more information about silver and my well?

Visit the NC Division of Public Health's Private Well and Health Program website: <http://epi.publichealth.nc.gov/oeep/programs/wellwater.html>.

There you can find:

- Contacts for your county private well program
- Silver in well water maps
- A guide for selecting a treatment system
- Other private well resources

You can also call the Private Well and Health Program at 919-707-5900.

### Where did this information come from?

**Agency for Toxic Substances & Disease Registry:** [www.atsdr.cdc.gov/toxfaqs/tfacts146.pdf](http://www.atsdr.cdc.gov/toxfaqs/tfacts146.pdf)

**World Health Organization:** [www.who.int/water\\_sanitation\\_health/dwq/chemicals/silver.pdf](http://www.who.int/water_sanitation_health/dwq/chemicals/silver.pdf)

**Water Quality Association:** [www.wqa.org/Portals/0/Technical/Technical%20Fact%20Sheets/2015\\_Silver.pdf](http://www.wqa.org/Portals/0/Technical/Technical%20Fact%20Sheets/2015_Silver.pdf)

