Chromium & PRIVATE WELLS

What is chromium?

Chromium is a natural element found in rocks deep underground and soil. In the environment, chromium is found in several different forms, the most common forms are chromium (III) and chromium (VI).

Chromium (III) and (VI) are used for chrome plating, dyes and pigments, leather tanning, and wood preserving.

How does chromium get in my private well water?

Chromium can enter your private well water from erosion of rocks underground. Chromium can also enter groundwater from the manufacturing, use and disposal of chromium products. In North Carolina, chromium (VI) appears to be the most abundant form of chromium found in drinking water.

How can chromium affect my health?

Chromium (III) is an essential element, meaning your body requires it in small quantities. It helps the body use sugar, proteins, and fat. You can't see, smell, or taste chromium (III).

Chromium (VI) is not considered an essential element, meaning your body does not need it. You can't see, smell, or taste chromium (VI).

Drinking high levels of chromium (VI) over short periods can lead to:

- Irritation and ulcers in the stomach and small intestine

Drinking chromium (VI) over long periods may:

- Damage sperm and the male reproductive system
- Increase your risk of stomach and small intestine cancer, as animal studies suggest.

What level of chromium should I be concerned about?

The **NC Department of Environmental Quality** developed a groundwater standard of **0.01 milligrams of total chromium per liter of water (mg/L)**. Ground water standards are developed to protect public health. This standard was developed in 2013.

The **US Environmental Protection Agency** developed a public drinking water standard of **0.1 mg/L** for total chromium. Total chromium is a combined analysis of all forms of chromium in the sample. Public drinking water standards are based on public health protection and cost of treatment/testing at large utilities. This standard was developed in 1991 and in 2015, the U.S. Environmental Protection Agency began a reassessment of this value.

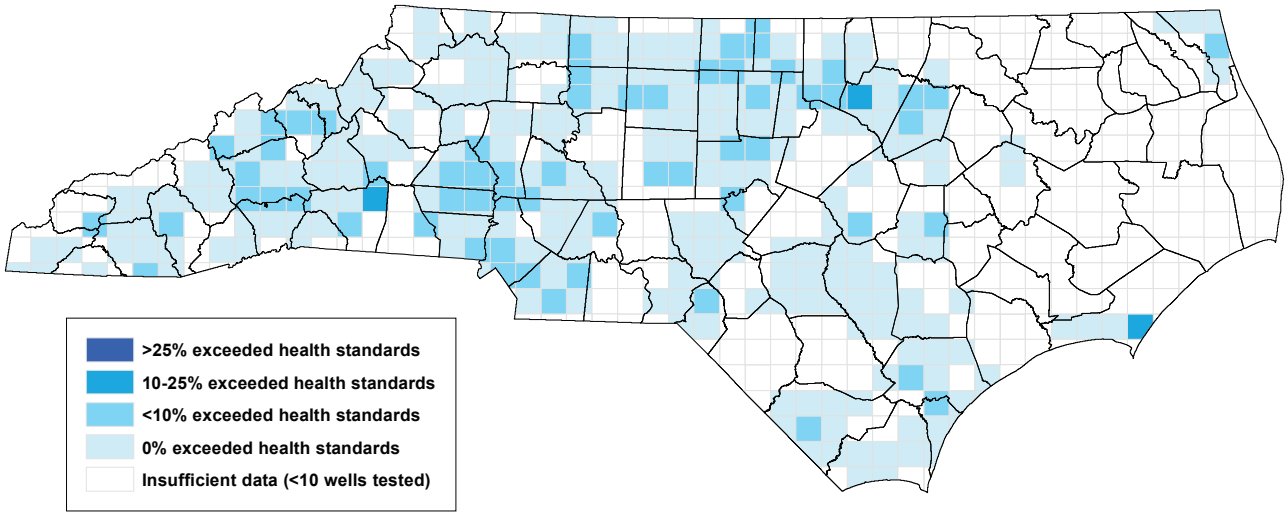
The **NC Department of Environmental Quality** also developed a health goal specific for chromium (VI) of **0.00007 mg/L** in 2015.

How do I test for chromium in my private well?

Use a certified lab to test your well water for total chromium 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.

You may also consider additional testing specifically for Chromium (VI).

Percent of Private Wells Tested
Exceeding State and/or Federal Standards for
Total Chromium, 2011-2013



Where is chromium found in NC?

Chromium is found at low levels (0.01 – 1.97 mg/L) throughout NC. **Less than 1%** of wells sampled for chromium in NC from 2011 to 2013 exceeded state and/or federal standards. Yet, there are several areas in NC with at least 10% of wells exceeding health standards. See map for areas with elevated total chromium.

What if my chromium levels are high?

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

- Activated carbon filtration
- Anion exchange
- Distillation
- Reverse osmosis

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

Where can I find more information about chromium and my well?

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

There you can find:

- Contacts for your county private well program
- Chromium 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/tfacts7.pdf

World Health Organization: www.who.int/water_sanitation_health/dwq/chemicals/chromium.pdf

National Sanitation Foundation: www.nsf.org/consumer-resources/what-is-nsf-certification/water-filters-treatment-certification/contaminant-reduction-claims-guide