

Arsenic Fact Sheet

What is arsenic?

Arsenic is a naturally occurring element widely distributed in the earth's crust. It is found in combination with either inorganic or organic substances to form many different compounds. According to the CDC:

"Inorganic arsenic compounds are found in soils, sediments, and groundwater. These compounds occur either naturally or as a result of mining, ore smelting, and industrial use of arsenic. Organic arsenic compounds are found mainly in fish and shellfish. In the past, inorganic forms of arsenic were used in pesticides and paint pigments. They were also used as wood preservatives and as a treatment for a variety of ailments. Today, usage of arsenic-containing pesticides and wood preservatives is restricted."

Where is arsenic found in Iowa?

Arsenic is prevalent in the north central region of Iowa but it can be found anywhere in the state due to natural geologic formations. For private well owners or others testing for arsenic, the depth of the well and the well design can affect the presence of arsenic in the well water.

Can arsenic make you sick?

Studies have shown that chronic or repeated ingestion of water with arsenic over a person's lifetime is associated with increased risk of cancer (of the skin, bladder, lung, kidney, nasal passages, liver or prostate) and non-cancerous effects (diabetes, cardiovascular, immunological and neurological disorders).

Should I test my well for arsenic?

If you have never tested your well for arsenic before, you are strongly encouraged to test at least once. Because arsenic originates in the geologic formations of Iowa, it is not expected to change drastically with the seasons. It is recommended that all new wells be tested at least initially, and existing wells be tested at least once or whenever something changes that could affect the well such as your well is rehabilitated, or new irrigation or construction is in proximity to the well. Retesting for arsenic should be repeated every five years.

Is there a drinking water standard for arsenic?

Yes, there is for public water supplies. In 2006 the Environmental Protection Agency lowered the arsenic standard for drinking water to .010 parts per million (10 parts per billion) to protect consumers served by public water systems from the effects of long-term, chronic exposure to arsenic. While private wells are not regulated for arsenic or required to treat water containing arsenic, the EPA standard is still used for guidance.

(Sources of info: water.epa.gov/lawsregs/rulesregs/sdwa/arsenic/index.cfm)

Can I boil my water to remove arsenic?

No. Arsenic cannot be removed from water by boiling. Arsenic removal from water requires special adsorption media. If arsenic removal is required, it is important to determine the type of arsenic present in the water using the arsenic speciation test. The State Hygienic Laboratory performs this test.



STATE HYGIENIC LABORATORY
AT THE UNIVERSITY OF IOWA

Iowa's Environmental and Public Health Laboratory

SHL.UIOWA.EDU



Is it safe to take a shower or brush my teeth if arsenic is found in my water?

Bathing with water that contains arsenic is not a significant health risk because arsenic is not readily absorbed through the skin. Some ingestion of arsenic may occur when brushing your teeth. Although the amount ingested is minimal, using a clean source of water for brushing your teeth is advisable.

What's the difference between total arsenic and arsenic speciation?

Total arsenic refers to a test that determines concentration of all forms of arsenic in the sample. Arsenic speciation separates the different forms of arsenic and reports the individual concentration of each form of arsenic in the sample. Because natural arsenic exists most commonly in the inorganic form, the sum of the concentrations of arsenic species should closely equal the total arsenic result within experimental error.

What treatment options are available to remove arsenic?

Arsenic can be removed by treatments such as distillation, reverse osmosis, activated alumina and anionic resin. If you have total arsenic present in your well water, you may also want to test for arsenic speciation. The speciation of arsenic determines how easily it can be removed, and what will be the most effective treatment option. SHL can provide this testing service and also has a booklet describing general information on home treatment devices and contaminants. If a home treatment device is installed, you will want to have your drinking water retested for arsenic to ensure it's working properly.

(Booklet: shl.uiowa.edu/env/privatewell/homewater.pdf)

Where can I get my well tested for arsenic?

You can have your well tested for total arsenic or arsenic speciation by contacting SHL at 800-421-4692. There also may be funds available to cover the costs for total arsenic testing by contacting your local health department.

Coralville Lab

2490 Crosspark Road

Coralville, IA 52241

Phone: 319-335-4500 • Toll-Free: 800-421-4692

8:00 AM – 5:00 PM, Monday through Friday

9:00 AM – 12:00 PM, Saturday (Coralville only)

Ankeny Lab

2220 S. Ankeny Blvd

Ankeny, IA 50023

Lakeside Lab

1838 Highway 86

Milford, IA 51351

