



“Tip sheets helped us learn about our well water.”

Get Tip Sheets at www.rivelltesting.org:

- 14 Tip Sheets about harmful substances
- 10 Tip Sheets about treatment choices
- 3 Tip Sheets about other topics of concern

Well water is groundwater, meaning that it comes from the water stored in the earth and rocks below ground. Even though groundwater is *under* the surface, substances *on* the surface, such as gas from a lawnmower or animal waste, can seep down and pollute it. Some natural substances stored in rocks and soil can also affect the smell, taste, color, and safety of well water.

Beryllium in Drinking Water Wells

Beryllium: A rare metal that occurs in certain locations in Rhode Island bedrock and can cause health problems

Locations with bedrock beryllium include portions of the towns of East Greenwich, West Greenwich, Coventry, Exeter, Johnston, western Cranston, and Scituate. Groundwater moving through the bedrock in these areas can dissolve beryllium. Remember, groundwater is the source of well water. If you have a private well in one of these areas, test your water for beryllium every 3 to 5 years.

What health problems can too much beryllium cause?

Breathing beryllium over a short time period can cause swelling and pain in the lungs. Breathing beryllium for many years can damage bones and lungs, and increase the chance of cancer. If well water with beryllium in it is used in a humidifier or vaporizer, it can get into the lungs.

Drinking water that contains beryllium is less of a health threat because it is not well absorbed in the intestines (gut). However, it can lead to damage in the intestines. The health effects are of most concern for infants and small children.

How does beryllium get into well water?

- **Bedrock:** In the towns listed above, beryllium can seep into well water from the natural bedrock, especially if you have a bedrock well.
- **Industry:** Certain industries such as metal refineries, coal-burning factories and others may release beryllium in fumes or dust. This is considered toxic air pollution by federal science agencies. They set limits on how much is allowed to be released.



How will I know if I have too much beryllium in my well water?

You won't know unless you have your water tested. Beryllium has no smell or taste. And, your water will look the same as usual.

Be sure to test if you live in an area with beryllium in bedrock:

- East Greenwich
- West Greenwich
- Coventry
- Exeter
- Western Cranston
- Johnston
- Scituate

Also be sure to test if you live near:

- A metal refinery or coal-burning factory
- An electrical, aerospace or defense industry

Beryllium may be discharged from these industries.

Use a State-certified lab to test your water.

Find a list here: www.health.ri.gov/find/labs/privatewelltesting.

Compare the numbers and letters on your lab test results with the standards (limits) set by the United States Environmental Protection Agency (EPA).

The EPA standard for beryllium is a Maximum Contaminant Level (MCL). MCL is a water quality standard for substances that can harm health.

EPA limit (MCL) for beryllium:

- 4 µg/L (micrograms per liter)
- 4 ppb (parts per billion)

What can I do about beryllium in my well water?

Three possible solutions if your well water tests high for beryllium:

1. Use another source of water for drinking and cooking, like bottled water.
2. Connect to a public water supply if available.
3. Use a home treatment method. Methods that remove beryllium include:
 - ▶ Distillation—Tip Sheet 20
 - ▶ Ion exchange—Tip Sheet 21
 - ▶ Reverse osmosis—Tip Sheet 24

Important: Before you install a treatment system, call us for expert advice. *Before* you buy a system, ask how it will be installed and whether this costs extra. Get at least 3 price quotes. Learn the questions to ask. See Tip Sheet 16. *After* you buy a system, be sure to:

1. Keep all the paperwork and directions.
2. Learn what you must do to maintain the system and do it.

Learn more

Get Tip Sheets about choosing and buying water treatment systems at www.riwelltesting.org.