



NITRATE & DRINKING WATER

WHAT IS NITRATE? WHERE DOES IT COME FROM?

Nitrate (NO_3) is a form of nitrogen found naturally in both soil and groundwater. Since plants use nitrate as an essential nutrient, many farms utilize fertilizers containing large amounts of nitrates.

Run-off from these farms and fields can infiltrate groundwater, leading to increased nitrate concentrations above the EPA's drinking water standard. This contamination can especially affect households that rely on private water wells for drinking water.

WHY IS NITRATE CONTAMINATION A CONCERN?

Nitrate is an acute contaminant, meaning that one exposure can affect a person's health. Some adults who ingest high levels of nitrate experience a decreased ability for blood to carry oxygen to tissues, drops in blood pressure, increased heart rate, headaches, abdominal cramps and vomiting.

While most people recover quickly, this can be very dangerous for infants and some adults. Infants exposed to high amounts of nitrate may develop "blue baby syndrome." This illness is rare, but it can be fatal. Infants may be especially vulnerable if they are fed with formula mixed with well water that has a high nitrate concentration.

Research on the other health effects of nitrate in humans has been inconclusive.

WHAT LEVELS ARE ACCEPTABLE FOR NITRATE FOUND IN WATER WELLS?

The Environmental Protection Agency's (EPA) maximum limit for nitrate in drinking water is 10 milligrams per liter (mg/L), or 10 parts per million (ppm).

SHOULD I GET MY PRIVATE WATER WELL TESTED FOR NITRATE?

If you use your private well for drinking water purposes you should have your well tested.

The Health Department can test private water wells for nitrates and the presence of coliform bacteria for \$50.00

**CALL THE HEALTH
DEPARTMENT TO SCHEDULE
YOUR WELL WATER TEST
(620) 221-1430**

WHAT SHOULD I DO IF MY DRINKING WATER IS CONTAMINATED WITH NITRATE?

If a nitrate test shows levels higher than 10 ppm, you should find a safe alternative drinking water supply. The quickest thing to do is to begin using bottled water for drinking.

After this, you should install a device or filter that will remove nitrate from your water. Other possible long term solutions include drilling a deeper well into a different aquifer or connecting to a public water system.

IS IT SAFE TO SHOWER OR BATHE IN MY WATER IF IT IS OVER 10 PARTS PER MILLION?

Nitrate is only a concern for ingestion (eating and drinking). It is not absorbed through your skin. People who install filter systems for nitrate often install them just for their kitchen sink faucet, and they use that faucet for their cooking and drinking water.



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WILL BOILING MY WATER HELP?

No. Boiling water will NOT reduce nitrate levels. In fact, it will make the level of nitrate worse because as the water boils off the concentration of nitrate in the water will increase.

I USE A CARBON FILTER. WILL THIS HELP?

Activated carbon filters, such as those in a "Brita" water pitcher, DO NOT remove nitrates.

WHAT ABOUT HOME FILTER SYSTEMS?

Point of use (POU) filter systems treat water at a single tap. Point of entry (POE) filter systems treat water used throughout the house. Two types of systems that will remove nitrates from your water are:

- Reverse osmosis unit
- Distillation unit

In addition, some vendors may make claims about their effectiveness that are not based on science. EPA does not test or certify treatment units, but two organizations that do are

- NSF International (<http://www.nsf.org>) and
- Underwriters Laboratory (<http://www.ul.com>)