

# Frequently Asked Questions About Nitrate and Drinking Water



Region 10

October 2012

## What is nitrate?

Nitrate ( $\text{NO}_3$ ) is a form of nitrogen. It is a natural part of soil and groundwater. But in some areas of the Lower Yakima Valley, human activities such as fertilizer use and manure applications, have increased nitrate concentrations in drinking water to levels above EPA's drinking water standard.

## Why is nitrate contamination a concern?

Nitrate is an acute contaminant, meaning that one exposure can affect a person's health. Too much nitrate in your body makes it harder for red blood cells to carry oxygen.

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 other human health effects of nitrate in humans has been inconclusive. For more information on the health effects of nitrate, see the Washington Department of Health fact sheet at [http://bit.ly/Wa\\_DOH\\_Nitrate](http://bit.ly/Wa_DOH_Nitrate) or <http://www.doh.wa.gov/portals/1/documents/pubs/331-214.pdf>

## How can nitrate get into my drinking water?

When products containing nitrogen, such as fertilizer or manure, are applied to land, natural bacteria living in the soil can change nitrogen into nitrate. Human waste from septic systems can also be a source of nitrate. Rain or irrigation water can carry the nitrates down through the soil to the groundwater below.

## What should I do if my drinking water is contaminated with nitrate?

The maximum contaminant level, or EPA's drinking water standard, for nitrate is 10 milligrams per liter (mg/L), which is the same thing as 10 parts per million (ppm).

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. Another option is to install a device or filter that will remove nitrate from your water. More information on these devices is provided below.

Other possible long term solutions include drilling a deeper well into a different aquifer, connecting to a public water system, or creating a new public water system to serve your home and nearby neighbors. These options require working with others in the community to determine if they are practical or possible.

*Continued Next Page* ⇨

## What does “parts per million” mean?

“Parts per million” (ppm) is a measure of the concentration of a substance (such as nitrate) in water. As an example, let’s say a bucket of water has nitrate in it at a level of 14 parts per million (or mg/L).

If the bucket of water had a million drops of water in it, 14 of those drops would be nitrate and the rest of the drops would be water.

## How do I have my drinking water tested in the future?

We recommend testing private wells for coliform bacteria and nitrates once a year.

Many laboratories in Washington perform these tests. The 2012 costs range from \$20 – \$25 for coliform bacteria tests, and from \$30 – \$42 for nitrate tests. Lab staff can answer questions and tell you how to collect water samples. Within the Yakima Valley area, there are four locations where residents can take samples of their drinking water for water quality testing: *(Inclusion on this list does not imply or constitute endorsement or recommendation by EPA)*

- Benton Franklin Health District Lab | 7102 W Okanogan Place | Kennewick, WA 99336 | 509-460-4206
- Cascade Analytical, Inc. | 1008 W. Ahtanum | Yakima, WA 98903 | 509-452-7707
- Valley Environmental Laboratory | 201 E. “D” St. | Yakima, WA 98901 | 509-575-3999
- Ag Health Laboratories | 445 Barnard Blvd | Sunnyside, WA 98944 | 509-836-2020

## 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.

## Will boiling my water help?

No. Boiling water will NOT reduce nitrate levels. In fact, it will make the level of nitrate worse because some of the water will evaporate but the nitrate will not. This increases the concentration of nitrate in the water.

## 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

**IMPORTANT:** All POU and POE filter systems or treatment units need maintenance to operate effectively. If they are not maintained properly, contaminants may accumulate in the units and make your water worse.

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>)

## What are government agencies doing to fix the problem?

EPA is working with its governmental partners and other stakeholders to address the issue. If you would like to be included on an email list for occasional updates about drinking water in the Yakima Valley, meetings, and how you can be involved in finding a solution, please send your email address to [jennings.marie@epa.gov](mailto:jennings.marie@epa.gov) or call

☎ 1-800-424-4372 ext. 1893  
or 1-206-553-1893

*If you need materials in an alternative format, please contact Marie Jennings at 1-800-424-4372 ext. 1893*

📠 *TDD users please call the Federal Relay Service: 800-877-8339 and give the operator Marie Jennings’ phone number.*