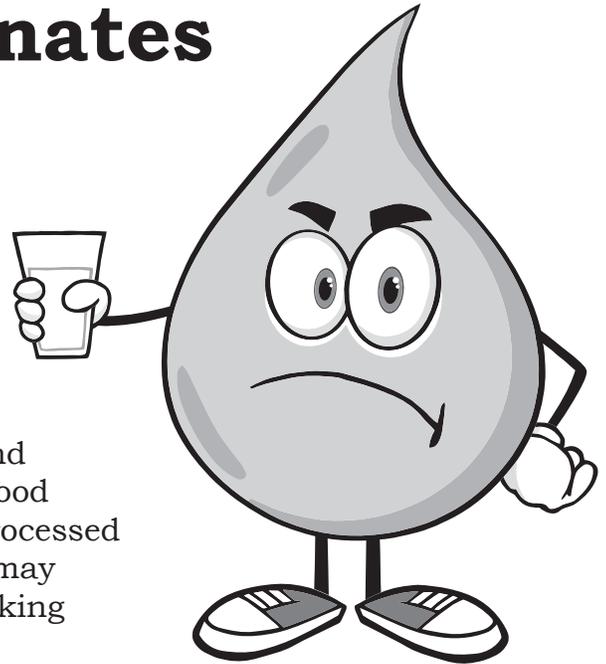


Water Well Contaminates

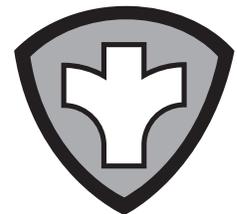
Nitrates

Nitrate is a common contaminant found in many wells in areas of Peoria County, and may cause health problems if present in water in amounts greater than the drinking water standard set by the United States Environmental Protection Agency (EPA).



- Nitrates are made from nitrogen and oxygen found in nature. It can be found in low amounts in food items such as spinach, lettuce, carrots, beets, processed meats, and in ground water. Because low levels may occur naturally, the standard for nitrates in drinking water is 10 milligrams per liter in Illinois.
- Sources of nitrates include water runoff or seepage from animal waste or fields, municipal and industrial waste water, dumps, animal feedlots, onsite wastewater treatment systems, urban drainage, and decaying plant debris.
- Higher concentrations in drinking water can be potentially dangerous to infants (especially under 6 months of age) including fetuses, with the possibility of “blue baby syndrome.” Nitrates become dangerous when they turn into nitrites. This is a process that can occur in the stomach as well as saliva. Infants are more susceptible because their stomach juices are less acidic, making the nitrate growth easier (adults are less susceptible because of their strong stomach acids). Nitrates in the blood combine with hemoglobin, reducing the capacity of the blood to carry oxygen to all parts of the body. This results in the “blue” condition of the skin.
- Boiling water **INCREASES** the concentration by boiling off the water and leaving the nitrates behind. Water high in nitrates should not be used to prepare infant formula or any other way that could result in consumption by a baby.
- Treatment options include: demineralization by reverse osmosis, or ion exchange. In reverse osmosis, a membrane filters out minerals and nitrates. It doesn't completely remove it, but it does reduce the numbers. Ion exchange introduces another substance that trades places with the nitrate.

Water with nitrate levels under 10mg per liter is considered safe to drink. However, the levels may change throughout the year, so annual testing of the well should be performed to assure the well is providing a safe supply of water. Whether the contamination is due to onsite wastewater treatment system failures near the well, fertilizer or feedlot runoff, testing for nitrates plays a large role in drinking water.



Public Health
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**Peoria City/County
Health Department**

Environmental Health
2116 N. Sheridan Rd.
Peoria, Illinois 61604
309/679-6161

environmentalhealth@peoriacounty.org

www.pcchd.org