

## Nitrate in Sutton Public Water

To: Health Care Providers, Hospitals, and Ambulatory Care Centers/  
Caledonia & Essex Counties

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### – Please Distribute Widely –

The Vermont Department of Environmental Conservation reports nitrate levels ranging from 8.3 to 9.2 milligrams per liter (mg/L) in the Sutton Public Water System. These levels are just below the Environmental Protection Agency nitrate standard or maximum contaminant level (MCL) of 10 milligrams per liter. Nitrate in drinking water above the nitrate standard is a serious health concern for infants less than 6 months old, older infants born prematurely, and pregnant women.

Infants younger than 6 months and older infants born prematurely who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, could die. The gastrointestinal system of infants is highly alkaline, and favors nitrate-reducing bacteria. These bacteria reduce nitrates to nitrites. Excess nitrites can alter the iron in fetal hemoglobin to the ferric state, leading to methemoglobin formation. Methemoglobin is less able to carry oxygen than hemoglobin. Fetal hemoglobin is more susceptible to forming methemoglobin than adult hemoglobin. Methemoglobinemia results when methemoglobin builds up in the blood. Methemoglobinemia can cause cyanosis of limbs and trunk, weakness, shortness of breath, and rapid heart rate. Symptoms of severe methemoglobinemia include lethargy, loss of consciousness, irregular heartbeat, shock, coma and death.

Children older than 6 months are less susceptible to methemoglobinemia from nitrates in the water. By 6 months of age, fetal hemoglobin has mostly been replaced by adult hemoglobin. Children's gastrointestinal systems also become more acidic as they age, which limits the growth of nitrate-reducing bacteria.

At or near the 30<sup>th</sup> week of pregnancy, an expectant mother and her fetus might be more sensitive to toxicity from nitrates.

### Recommendations

- **Water from the Sutton Public Water System should not be given to infants or used to prepare infant formula or juice.** Bottled water or other water low in nitrates should be used until further notice.
- The safest choice for pregnant women is to use bottled water or seek an alternate source low in nitrates.

- Boiling, freezing, and letting the water stand does not reduce the nitrate level. Excessive boiling can make the nitrates more concentrated because nitrates remain behind when the water evaporates.
- **Report suspected cases** to the Health Department's Environmental Health Division at 1-800-439-8550.
- Showering or bathing in water with elevated nitrates is not a health concern.
- Private well owners can also test their water for nitrate for \$12. A test kit can be ordered by calling the Public Health Laboratory at 1-800-660-9997.

**For More Information:** <http://healthvermont.gov/enviro/water/nitrates.aspx>

The town of Sutton is issuing a Public Notice regarding the nitrate levels in the water. The Public Notice outlines what steps are being taken to investigate the source of nitrates in the water.