

Conclusions

As more research has emerged from the first question in 1945 about nitrates in well water as a possible cause of “blue baby syndrome” to this day, the scientific evidence shows consistently and incontrovertibly that:

- The harmful effects of nitrate on human health are found at lower and lower levels of concentration.
- The trend of lower threshold levels has been consistent for more than 25 years, finding significant health consequences at and below nitrate concentrations of 5 mg/L.
- At levels below 5mg/L the list of cancer and non-cancer health conditions triggered by lower levels of nitrates expands continuously, to include, among other conditions, non-Hodgkin’s lymphoma, thyroid, bladder, colorectal and ovarian cancers, brain tumors in children, and multiple birth defects.
- Many experts and organizations domestically and internationally have called for the maximum contaminant level for nitrate to be set between 1 mg/L and 5 mg/L.
- Nitrate concentrations of 5 mg/L are well below current EPA and Truro Board of Health standards.
- Nitrate in private wells – serving 85% of Truro’s households - is not regulated. In Truro, only the Board of Health has the authority to do so.
- Nitrates combine with and catalyze action of OWCs (organic wastewater compounds) to induce adverse health effects at lower levels of concentration and over longer periods of time.
- Mitigation of excessive nitrate concentrations or nitrate loading is uncertain, expensive, and prolonged once it enters groundwater.
- With prior planning and sound regulation, the worst effects of water contamination can be avoided, as can the adverse effects associated with excess nitrates on human health, property values, the local economy and the surrounding natural environment.

Recommendations

It is clear that nitrate levels once thought to be safe in the 1960’s – set at 10mg/L - are considered to be too high and are no longer viewed as safe by the great majority of scientific evaluations, and today’s level of safety should reflect the evolution in science and science-based policy and regulation.

These extensive scientific evaluations propound that safe levels fall within the range of 1 to 5 mg/L.

Accordingly, as a pressing local matter this research warrants consideration and possible revision by the Truro Board of Health to reset local standards in conformity with current scientific evaluations for nitrate concentrations and nitrate loading at a level at or under 5 mg/L.