SHL Private Well Reporting and Bottle Changes

Nancy H. Hall
Environmental Microbiology Manager

March 26, 2018

Iowa’s Environmental & Public Health Laboratory
Nitrate Reporting Change

- Coralville changing nitrate reporting format effective April 16
  - The nitrate + nitrite test will be reported “as N” (referred to as nitrogen) instead of “as NO₃” (referred to as nitrate)
  - The values will be ~4.4X lower than what you are used to seeing
  - For interpretation, the corresponding maximum contaminant level (MCL) will be “10 mg/L” instead of “45 mg/L.”
Nitrate Conversion Math
(for comparison purposes)

Nitrate+nitrite as NO₃ X 0.2259 = Nitrate+nitrite as N
Nitrate+nitrite as N X 4.4268 = Nitrate+nitrite as NO₃

EPA Maximum Contaminant Level (MCL)
45 mg/L nitrate+nitrite or nitrate as NO₃
10 mg/L nitrate+nitrite or nitrate as N

Molar mass of nitrate anion (62.0 g/mole)
Atomic weight of nitrogen (14.0) = 4.4268
Nitrate Drinking Water Interpretation for Private Wells

- Nitrate+nitrite (or nitrate) result $\leq 10 \text{ mg/L}$: does not exceed infant health advisory
- Nitrate+nitrite (or nitrate) result $>10 \text{ mg/L}$: EXCEEDS infant health advisory; should not be used to prepare formula or used for drinking by infants less than six months of age
- **What about adults?** More studies are showing adverse health outcomes with long term consumption of levels above $\frac{1}{2} \text{ MCL}$ (e.g. certain cancers, birth defects and reproductive and thyroid problems)
IPHA’s Iowa’s Water Quality: A Public Health Perspective

• https://www.iowapha.org/Water-Quality-and-Public-Health

Resources:
– Nitrate in Your Drinking Water: What You Need to Know (UI IWQ&PHC March 2017)
– Nitrate in Drinking Water: A Public Health Concern for All Iowans (IEC Sept 2016)
– Contaminants in Drinking Water and Health Effects (CHEEC Nov 2016)
According to Russ, the radio button is programmed to default “as Nitrogen” so counties will not have to change this button.
Coliform Bottle Change

• Total coliform bottle changing to a larger bottle; 4 oz to 5 oz
  – need a 1” head space for mixing
  – hard to achieve with current bottle

• More user friendly label

• Transition to this new bottle will occur throughout this summer
NEW Bottle

Fill to 120mL line

Current Bottle

Fill to shoulder
New Label

(please fill in; must be unique identifier for each sample)

Most important that this label matches the form so we can match the bottle to the form.
SHL Web Access  
(obtain results online)

- Highly encourage web access for results and stop mailing paper copies (saves a lot of trees and postage costs for SHL)
- Forms online
  - http://www.shl.uiowa.edu/results/