

What is Getting into Your Drinking Water?

The C.H.A. is following an ongoing study that is being conducted in southwestern Wisconsin to test private wells for evidence of contamination. The Southwest Wisconsin Groundwater and Geology study began in 2018 with two objectives: (1) Evaluate private well contamination using indicator bacteria (total coliform and *E. coli*) and nitrate based on randomized synoptic sampling events, and (2) identify the source of contamination in a subset of total coliform- and nitrate-positive wells once per season using microbial tests that distinguish between human, bovine and swine fecal sources.

Two phases of the study have been completed, and **the results are concerning**. During a first sampling, **42% of the wells showed either bacteria contamination or elevated nitrate levels** above the 10 mg/L health standard. A second sampling showed 27% of the wells were contaminated. Higher percentages of wells showed **contamination with bacteria** as opposed to nitrate, which was surprising, as nitrate (nitrogen) moves more easily through soil and is not captured by adsorption and filtering as bacteria are when septic tank effluent moves by unsaturated flow through soil.

In the second study phase, 34 contaminated wells were evaluated for bacteria associated with fecal contamination from either animals or humans. **Human fecal material was found in 41% of the wells.**

The next phase of the research is to carry out geologic studies and analyze well construction practices in the three-county region. The goal is to determine correlations between water quality, geology and well construction. The hope is to understand where the water in the wells is being drawn and whether the wells are properly cased and finished to avoid contamination from the surface. Contamination may be coming from sources other than septic systems.

What can you do to protect your water?

1. Ensure your septic system and all of the surrounding septic systems are inspected every 3 years
 - a. A level 4 inspection is the best but even a level 3 will help
2. Ensure you follow the C.H.A. Septic Tips <https://www.cohpoa.org/septic-health/septic-tips/>
 - a. to minimize and spread out water use as overloaded systems are one of the suspected causes of this contamination
 - b. To keep the bacteria in your system healthy and plentiful to digest as much as possible

The C.H.A. Volunteers will be following this research and will keep your association up to date as more results come in



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