

Iowa's Private Wells Contaminated by Nitrate and Bacteria

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Des Moines Water Works has struggled for years to provide safe drinking water to its customers, battling nitrate contamination from upstream farms. But contamination from agricultural practices may be even worse for the estimated 230,000 to 290,000 Iowans whose drinking water comes from private wells, an investigation by Environmental Working Group and Iowa Environmental Council finds.

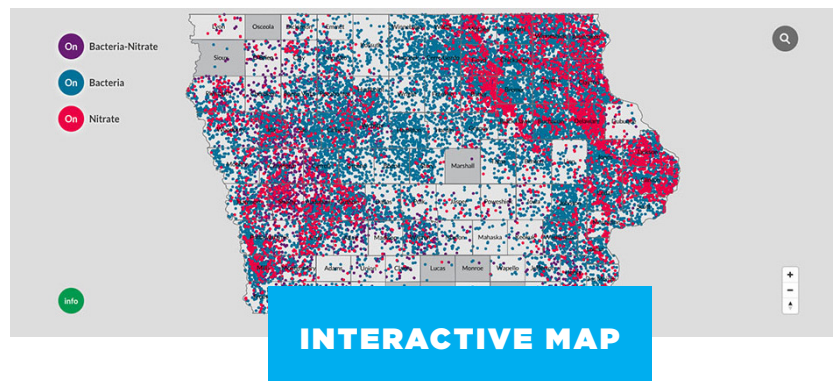
Between 2002 and 2017, unsafe levels of nitrate, coliform bacteria and fecal coliform bacteria were found in thousands of wells across Iowa. Farms are among the main source of the contamination, especially in rural areas of the state.

Almost three-fourths of private wells polluted by these contaminants were in rural counties. Nitrate from fertilizer and animal manure and bacteria from manure applied to farm fields seep through soil or run off poorly protected fields to contaminate drinking water.

Contamination of Iowa's private wells poses serious health hazards, including elevated cancer risk and birth defects. Yet no state or federal agency requires testing or regulation of private wells. The state requires testing only once, for newly dug or repaired wells.

Public water systems have strict rules about how much nitrate and bacteria are in drinking water. But private well owners are left to deal with harmful pollutants on their own.

Which private wells have the most contamination?



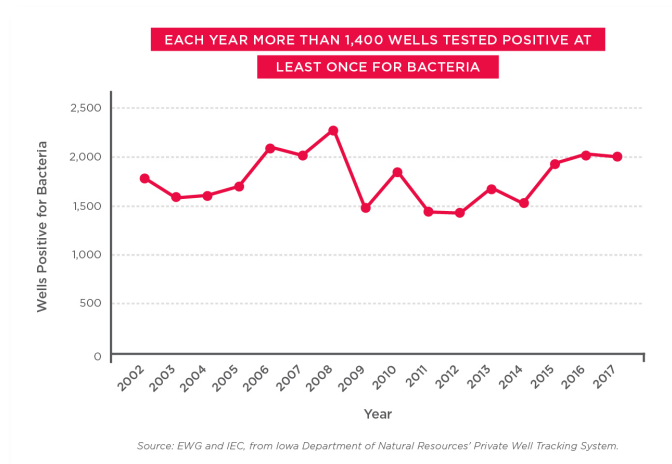
The U.S. Environmental Protection Agency has determined there is no safe level of coliform or fecal coliform bacteria in drinking water.

Most coliform bacteria are not harmful themselves, but some strains of *E. coli* can cause diarrhea, vomiting and even death. The presence of coliforms in drinking water indicates other scary pathogens may lurk there, too.

The investigation found that between 2002 and 2017:

- Almost 55,000 Iowa wells were tested for coliform or fecal coliform bacteria.
- Bacteria were found at least once in more than 22,000 of those wells.
- More than 4,300 wells tested positive for bacteria every time they were tested.

Each year more than 1,400 wells tested positive at least once for bacteria

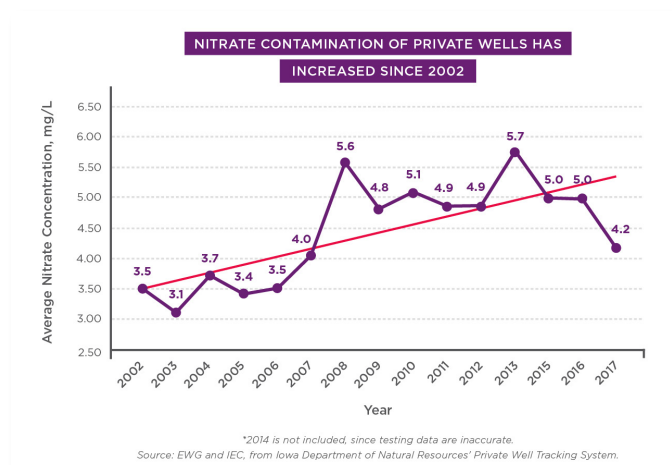


The EPA's legal limit for nitrate in drinking water is 10 milligrams per liter, or mg/L. But many recent studies have found that drinking water with just 5 mg/L is potentially dangerous and associated with increased rates of colon, rectal, bladder and ovarian cancer, as well as birth defects.

Between 2002 and 2017 (excluding 2014, since testing data for that year are inaccurate):

- Almost 55,000 tested wells averaged 4.4 mg/L of nitrate.
- More than 12,300 wells had nitrate averages at or above 5 mg/L.
- More than 6,600 wells had nitrate averages at or above 10 mg/L.

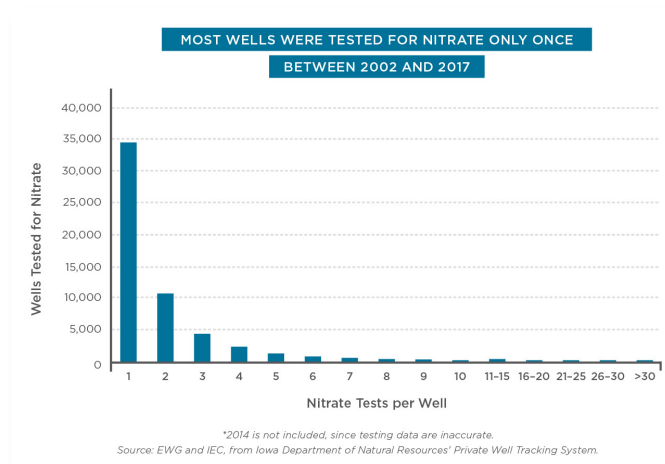
Nitrate contamination of private wells has increased since 2002



The Iowa Department of Natural Resources recommends – but does not require – that well owners test wells at least once every year.

Between 2002 and 2017:

- Almost two-thirds of all the wells tested for nitrate or bacteria were tested only once in 16 years.
- Only 10 wells out of almost 55,000 were tested every year for nitrate, and just 12 wells were tested every year for bacteria.
- Eight counties tested 10 wells or fewer for nitrate or bacteria.



Most wells were tested for nitrate only once between 2002 and 2017

Treating well water contaminated with nitrate or bacteria, or digging a new or deeper well to fix the contamination issue, can cost a homeowner thousands of dollars. And some well owners literally can't dig their way out of the problem, because there is no guarantee that going deeper is a long-term solution.

Cindy Lane, water program director of the Iowa Environmental Council, recommends:

- Farmers must do much more – and fast – to keep animal manure and fertilizer out of private wells. Requiring agriculture operations to implement best management conservation practices and reduce nitrogen application in the hardest-hit areas would be much more effective than current voluntary approaches.
- The state of Iowa should require all counties to test private wells for these contaminants, increase funding for tests and allow funding to go toward treating or replacing contaminated wells.
- State law should be amended to provide private well owners whose lives are upended and health put at risk by well contamination with legal recourse via nuisance lawsuits.

If you are an Iowa resident who uses a private well and you want to find out if there's nitrate or bacteria in your drinking water, contact your county sanitarian from [this list](#) and ask for a free well test through the Grants to Counties Program.

For more information about our findings [click here](#).