

## NEWS COLUMN

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### **Bacterial Contamination Common in Private Domestic Wells**

Many water samples from private domestic wells tested annually by the South Dakota Department of Health Laboratory are found to be contaminated with potentially health-threatening bacteria.

Laboratory analysis is the only way to determine if your private well is contaminated with potentially harmful bacteria. Following specific procedures for collecting water samples will assure the sample doesn't become contaminated.

The South Dakota Health Laboratory provides all County Extension Offices with special bottles and instructions for collecting and submitting to their lab for analysis. The cost for bacteria analysis is \$12.

Lab tests determine if fecal coliform bacteria are present. These are bacteria commonly found in the intestines of humans and animals. The presence of these bacteria indicates possible contamination with human and warm-blooded animal fecal matter or human sewage that often contain harmful bacteria.

While the most common health impacts associated with bacteria contamination are diarrhea and other intestinal infections, serious diseases including cholera, hepatitis and typhoid can occur. Several outbreaks of E. Coli 0157:H7 bacteria outbreaks reported in the United States during recent years were caused by bacteria contaminated drinking water.

It is recommended that private wells used as a source of drinking water be tested:

- At least once annually.
- When individuals consuming the water exhibit symptoms of diarrhea or other intestinal infections.
- If a well-contamination event such as flooding has occurred.

People served by the public water systems such as municipalities and rural water systems don't need to test their water since federal and state regulations require the system to provide water free of harmful bacteria.

Coliform-contaminated wells typically are associated with one or more of three well characteristics.

First, many wells are old and lack construction features to prevent contaminants from entering the well. The S.D. Department of Environment and Natural Resources has well construction regulations that require new wells to have features that minimize well contamination risks. Examples include a watertight well cap and concrete or clay seal around the well casing.

Second, wells often are located too close to potential sources of contaminants such as septic tanks, feedlots or areas subject to flooding and other sources of contaminants. Current well construction regulations now require minimal separation distances from many contaminate sources to minimize risk.

Finally, many wells are located in shallow aquifers that are more vulnerable to contamination than deeper aquifers.

Several options are available for solving bacteria well contamination problems. If flooding or some other one-time contamination occurred, shock chlorination will eliminate the bacteria. If on-going contamination is a problem, use of continuous chlorination, ultraviolet, or ozonization water treatment equipment can remove the bacteria.

In many instances where on-going bacteria contamination persists, one should consider developing another source of water whether by constructing a new well or hooking up to a rural or municipal water system if one is available.

Determining which option is best for solving a bacteria contamination problem depends on site-specific conditions, cost and personal preferences.

For additional information about water testing, drinking water quality or solving bacterial contamination problems, contact your local Extension Office or S.D. Health Laboratory at 773-3368.