

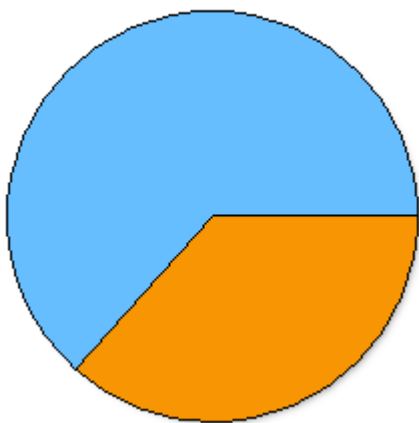
## WDWDD-SDSMT Report Card for Coliform Bacteria

Private Well Tests		Total col.	Fecal col.
Number of wells		262	262
Number of tests		272	272
Earliest test date	5/5/2013	5/5/2013	5/5/2013
Latest test date	11/03/2015	11/03/2015	11/03/2015
Lowest value detected	Absent	Absent	Absent
Highest value detected	Present	Present	Present
Number of wells with bacteria	97	17	17
Percent wells with bacteria	37%	6%	6%
Public Well Records		Total col.	Fecal col.
Number of wells		18	3
Number of recorded tests		32	5
Earliest test date	8/18/2001	6/1/2008	6/1/2008
Latest test date	6/1/2013	6/1/2013	6/1/2013
Lowest value detected	Absent	Present	Present
Highest value detected	Present	Present	Present
Number of wells with bacteria	17	3	3
Percent wells with bacteria	94%	100%	100%

Coliform bacteria are naturally present in the environment. Some types, including *E. Coli* and fecal coliform, only come from human and animal feces. We tested for both total coliform and fecal coliform bacteria in well water. Total coliform is not considered a health threat in itself, but it is tested because it may be an indicator of whether other potentially harmful bacteria may be present. The presence of fecal coliform is considered an indication of contamination of the water by fecal waste from humans or animals, and may carry with it threats from other sources, such as viruses, and cause gastrointestinal illness such as diarrhea, vomiting, or cramps. There is no maximum contaminant guideline for bacteria; tests simply record whether bacteria are absent or present.

We sampled 262 private wells between 2013 and 2015, and

**Total Coliform - Private Well Tests**

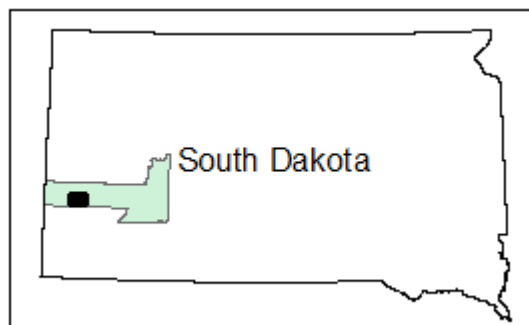
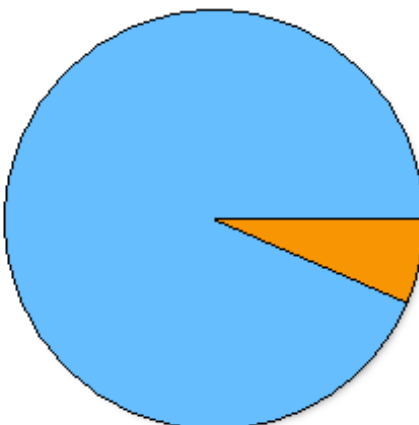


compiled published data from public wells to evaluate the presence of coliform bacteria in well water in western Pennington County, SD. In some cases the wells were tested multiple times. We found that 37% of private wells tested positive for total coliform, and 6% of private wells tested positive for fecal coliform. In public wells, nearly all of the tests were positive; it appears that public wells may only report positive tests, so that the actual detection rate in public wells is impossible to determine.

Bacteria problems can be treated so that the water is safe to drink. Public water supplies are regulated by law. Although the tests are performed prior to treatment, water from public wells should be safe.

Private wells are not regulated by law and homeowners are not required to meet drinking water standards set by the EPA. However, homeowners are encouraged to test their water to ensure that it is safe to drink and to protect their families.

**Fecal Coliform - Private Well Tests**



To protect the privacy of homeowners who participated in the study, we do not plot individual well test locations on maps shown to the public. Instead, we selected the private and public wells that tested positive for bacteria at least once and created a density map showing areas with a higher density of wells with bacteria. The total coliform higher-density areas are shown in the orange shades on the map; these represent regions where positive tests for total coliform are more frequent and periodic testing may be helpful to provide prompt warning of fecal coliform problems. The black contour lines enclose areas with more frequent occurrences of fecal coliform and represent areas of greater concern, where fecal contamination of groundwater may be occurring. **It is important to understand that subsurface conditions can change rapidly from place to place, and not all wells in the shaded areas will have bacteria problems.** The only way to know whether a particular well has coliform bacteria is to test it. Homeowners in the shaded areas are especially encouraged to test their well water to ensure that it is safe. Note that the fecal coliform areas of concern are associated with elevated densities of total coliform, as would be expected.

For interactive maps showing bacteria and other groundwater constituents, click [here](#).

