

October 19, 2011

**A LITTLE BIT COUNTRY
WARREN FROELICH
NDSU EXTENSION SERVICE
WILLIAMS COUNTY**

Water Quality Tests Available

Although I have not been overwhelmed with callers asking for information about water quality tests, there is a growing trend of requests regarding testing services and interpretation of test results. I suspect much of this is being driven by the desire to document the quality and safety of ground water sources.

When someone inquires about testing water I usually ask if an analysis is desired for bacterial or mineral content. The reason for this question is because a bacterial analysis requires a sterile container. These are usually available from the laboratory which will also provide some sampling and timing instructions.

For a mineral or chemical analysis, most laboratories suggest using a clean plastic or glass container commonly available at home. One quart containers previously used for bleach, soap or other substances will contaminate the water sample. It is advised to rinse the container three times with the water to be tested.

For a bacterial test the laboratory commonly will report the analysis as either positive or negative (absent), indicating the presence or absence of coliform bacteria. A satisfactory (negative) rating would mean the water is safe for human consumption from a bacteriological standpoint.

Coliform bacteria are present in the intestinal tract of warm-blooded animals, including humans. While not a cause of disease by itself, its presence indicates probable contamination of the water supply and possible presence of disease organisms. This can

lead to more serious problems for people with weakened immune systems such as the very young, elderly or immune-compromised individuals.

A positive bacterial test (greater than 1 per 100 milliliters of water) suggests further testing is necessary to include fecal coliform or E. coli bacteria testing. If such bacteria are present, the test confirms sewage or animal waste is contaminating the water and shock chlorination should be performed.

A mineral analysis is likely to include tests for total dissolved solids (TDS), pH, hardness, nitrates, iron and manganese, calcium and magnesium, chloride, sodium and sulfates.

The Environmental Protection Agency (EPA) has established a safe water guideline which is used by public water systems in North Dakota. Although the EPA cannot force private well owners to comply with the guidelines they can serve as a reference in determining the consumptive safety of ground water.

The Extension Agricultural Engineering Department of North Dakota State University has developed a publication which includes EPA's water quality guidelines and more details about the interpretation of test results. The publication also includes a list of laboratories which are certified by the North Dakota Department of Health or EPA. This publication is available free of charge by calling the NDSU Extension Office of Williams County: 701-577-4595.