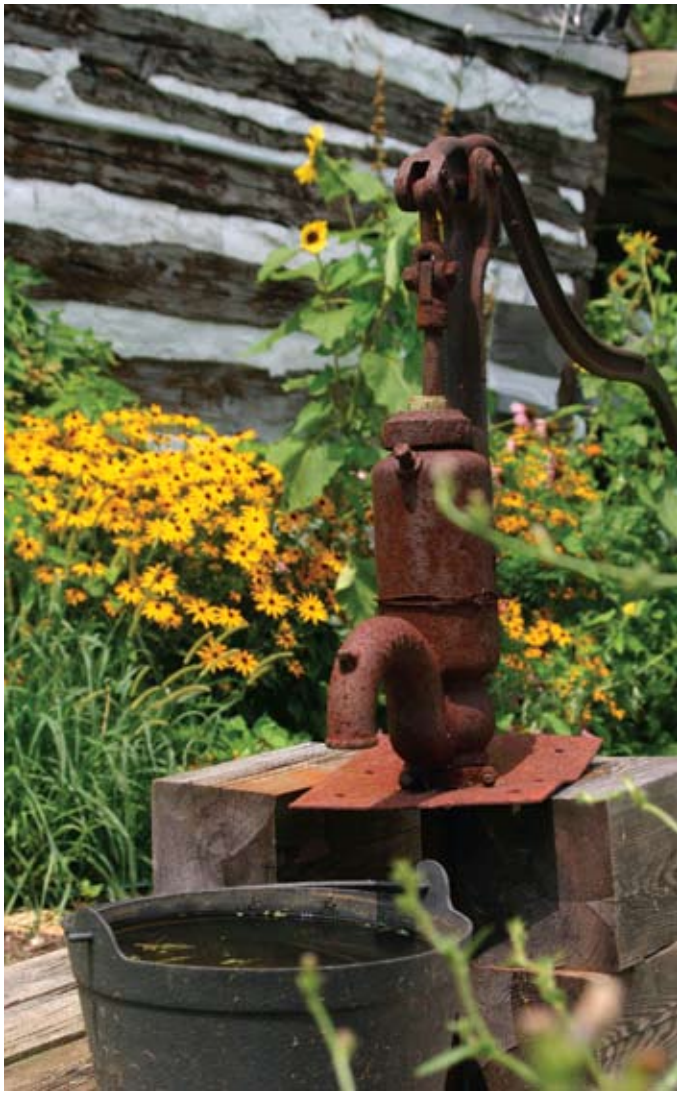
BE A RESPONSIBLE

well owner

by MSU Extension Water Quality Program



Being a private well owner carries a number of responsibilities. Unlike those using public water systems, private well owners cannot depend upon the government to monitor the quality of their drinking water. Private well owners should conduct their own water sampling and understand what can be done to help protect their water source.

Protecting the Wellhead

The "wellhead" is where the well meets the ground surface and is capped. Well owners should be familiar with the wellhead location and monitor the condition of the wellhead and its surroundings. Soil removes many contaminants as water moves into the ground. This filtering function is why ground water typically has good quality; however, as a well is drilled, it cuts through all the filtering layers and provides a quick path for contaminants to travel to ground water if the well is not properly constructed and maintained.

Easy steps to protect the wellhead:

- Ensure your well has a "sanitary well cap" with a rubber gasket and a screen over the vent to keep insects and rodents out of the well. If your well is not equipped with a sanitary well cap, contact a certified well driller and have one installed.
- Ensure the casing (the outer wall of the well) extends at least 18 inches above the ground. If it doesn't, check with a certified well driller or plumber about adding a short extension.
- Ensure the ground surface is sloped so water flows away from the top of the well and does not pond near the well.

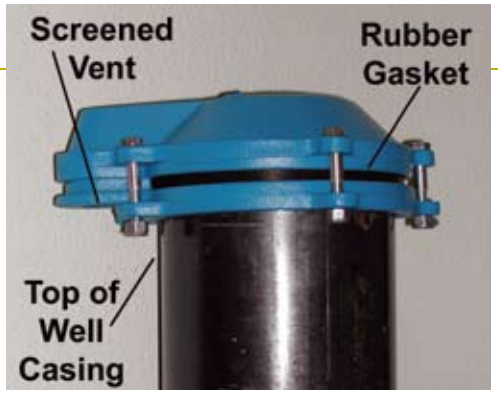
Back siphoning can carry contaminants into the water system when the faucet is turned off. Watch for a future article on back siphon prevention devices and how to protect your water system using an air gap at your stock tank.

Keeping a "Well File"

Keeping a "Well File" and a "Septic File" with all information related to a water system is very important for scheduling maintenance and isolating potential causes if water quality changes.

Well Files should include:

- Construction information including driller, total depth, depth to water and other available information such as gallons per minute the well can produce and geology the well is drilled through.
- Maintenance records should include what was done, when, and who did the work. Also include any information about required maintenance for water treatment systems and septic pumping.
- Water quality test results including laboratory reports, information provided for result interpretation and cost of testing.



Well Water Quality Testing

Regularly sampling well water is essential to monitor the quality of a water supply and detect any changes. Test for nitrates and bacteria every year. It is also a good idea to do a thorough test initially and consider repeating this more comprehensive test every five years. Check with a local health department or county extension agent for a list of certified drinking water testing laboratories. Most laboratories will mail out bottles and instructions for water sampling. Montana State University also offers the Well Educated program each spring to guide private well owners through the water testing process. More information is available at http://waterquality.montana.edu/.

Potential Contaminant Storage

A drawing of a property depicting a well and its surroundings is helpful. Include the septic tank and drainfield, home, garage, any animal pens, streams, ditches and the slope of the ground surface. Draw rings around a well at 50, 100 and 250 feet. These rings represent zones where specific potential contaminants should not be located or stored. Consider what is upslope from a well and what could run off with rains or snow melt.

- **Less than 50 feet** Any sewer line should be outside this zone.
- **Less than 100 feet** Leach fields, livestock yards, fuel tanks, pesticides and fertilizer storage should be outside this zone.
- **Less than 250 feet** Manure storage piles should be outside this zone.

These separation distances are minimums; inquire with the local health department about septic system regulations.

Septic System Maintenance

Septic systems are designed to treat and discharge household wastewater to minimize impact on surface and ground water. Neglecting a septic system can shorten the life of the septic leach field leading to expensive new construction and potential contamination of ground water and/or surface water. For more information on septic system function and maintenance, visit http://waterquality.montana.edu/.

Sealing Old Wells

Improperly sealed abandoned wells pose a large threat to water quality. Property with a long history of inhabitation is more likely to have abandoned wells. Looking in small structures and sheds or inquiring with neighbors are ways to search out possible abandoned wells. Abandoned wells should be sealed by a professional well driller to ensure they will not contaminate ground water.

Fifteen percent of all Americans and more people in rural Western states depend upon private wells, which are typically safe and reliable water sources. Private well owners play an important role in ensuring the continued integrity of the valuable ground water resources. ■

This article is reprinted from the Wyoming "Barnyards and Backyards" with the authors' (Adam Sigler and others) permission. Adam Sigler, Suzanna Carrithers, Teresa Mowen and Jim Bauder work for Montana State University Extension Water Quality (MSUEWQ) and can be contacted on the web at: http://waterquality.montana.edu/, by phone at: (406) 994-7381 and Sigler by email at: asigler@montana.edu