

# PENNSTATE



**Land And Community**  
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on rural/urban issues

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## UNDERSTANDING YOUR WATER SYSTEM

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In Pennsylvania, about 40 inches of water falls yearly as rain or snow. Ten inches becomes surface runoff. Ten inches percolates into the groundwater. The rest evaporates or plants use it—eventually it returns to the air as water vapor. Groundwater supplies wells, but most of it slowly returns to the surface as stream or spring flow.

What area of your property is critical to your well water supply? Imagine building a fence around this area. Rain falling inside the fence becomes your drinking water.

Where would you put the fence? Draw a 200-foot circle with your well in the center. If your well is on a slope, adjust the fence. Cut the circle in half, forming an uphill part and a downhill part. Move the uphill part to the top of the hill and connect the two open sides with more fencing.

Now study the area inside the fence. Are there threats to your drinking water? Look for burn barrels, handling sites for gasoline and oil, animal wastes, fertilizers, pesticides, etc. Think about changing procedures or locations to minimize problems.

The only way to insure that a private water supply meets safe drinking water standards is to test it. Consider testing for contaminants that could originate inside the "fence." Include a coliform bacteria test annually. Test for nitrate, pH, and total dissolved solids every three years.

The water test is satisfactory when coliform bacteria are absent. Coliform bacteria live in the intestines of people and warm-blooded animals. They also occur in the topsoil. While coliform bacteria do not cause disease, their presence indicates disease organisms could be present.

More than 10 milligrams per liter of nitrate nitrogen can cause "blue baby syndrome" (methemoglobinemia) in infants less than 6 months old. This is only a problem when the baby's formula is prepared with high nitrate water. Stomach bacteria change nitrate to nitrite, which mimics

oxygen. The blood carries nitrite in place of oxygen, causing the baby to turn blue from lack of oxygen. Once the baby's stomach begins producing acid at about six months, the bacteria cannot survive and there is no further danger.

A pH of 7.0 is neutral (neither acid nor alkaline). Water having a pH lower than 6.5 may dissolve some of the metals (iron, copper, lead, cadmium, and zinc) used in the plumbing, adding metals and taste to your water. Acid water does not affect plastic plumbing. Water with a pH above 8.5 is alkaline and is likely to have a bitter taste. This is rarely a problem in Pennsylvania.

High total dissolved solids may add a noticeable taste to water. High total dissolved solids are the result of the water being in contact with rocks in the aquifer for a long time. The deeper the well, the greater chance that total dissolved solids will be elevated. These solids affect the taste of water, but are not a health problem. They are tested because this an inexpensive way of monitoring for changing conditions in the aquifer.

For more information, contact me at (717) 240-6500 or at trm3@psu.edu.

## Visible From Rt. 30, Sign Marks Farmland Preservation



At the Forry sign installment, from left, Jeff Swinehart, director of land preservation, Lancaster Farmland Trust; Dot Forry; Heidi J. Schellenger, executive director, Lancaster Farmland Trust; Dwight Forry; Dan Forry; Matt Knepp, Lancaster Ag Preserve Board preservation specialist; Rich Doenges, executive director, Lancaster Ag Preserve Board; and sign maker, Jim Preis, Dundore Signs, Lebanon. Photo by Andy Andrews, editor

LANCASTER (Lancaster Co.) — On Wednesday, representatives from Lancaster County's two farmland preservation organizations met to install a sign marking the preservation of 346 contiguous acres of farmland.

The four West Hempfield properties, owned by Daniel and Dorothy Forry, are located west of Lancaster city, north of Rt. 30 just after the Prospect Road exit, and are important preserved farms because of their extensive road frontage, proximity to other development, excellent soils, and large critical mass.

A great deal of the acreage is visible from Rt. 30, and this tract of land is one of the few remaining along Route 30 that has not been converted to industrial, commercial, or residential use.

The Forrys, who initially owned only the 85-acre and 98-acre properties, became inter-

ested in purchasing the 59- and 104-acre properties adjacent to those farms nine years ago when their youngest son Dwight, who majored in large animal science at Delaware Valley College, informed his parents of his interest in farming. Dwight is the fifth generation to farm the Forry land. The couple used the funds they received from the preservation of their 85- and 98-acre farms to help purchase the adjacent properties.

The preservation of the acreage in the summer of 2001 (the 104-acre property, where the sign will be placed, was preserved in 2002) was the fourth of five joint preservation projects between Lancaster Farmland Trust and the Agricultural Preserve Board. The impetus for the majority of these partnerships has been that the farms are under urgent development pressure and must be preserved more quickly

than the Ag Preserve Board can accommodate (because of their waiting list), but at a higher cost than the Trust can provide.

The sign marking this joint preservation project is based on the Trust's original 4 square foot signs designed by Russ Cox of Smiling Otis Designs, and was modified and constructed by Jim Preis of Dundore Signs, Lebanon.

## Reman Bale Stacker

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