

# Drilling a New Well

**A guide for private well owners on proper well location and construction.**

## Selecting Your Well Location

**If you are building a new home or drilling a new well, determining the proper location for the well is an important decision that can protect the health of you and your family.** It is important that you understand the topography of your property, the direction of your groundwater flow, and that you have identified all potential pollution risks in the surrounding area.

- Wells should be at least 25 feet from a silo
- Wells should be located at least 50 feet from sewers and septic tanks
- Wells should be at least 100 feet from pastures, on-lot sewage system absorption fields, cesspools and barnyards
- Avoid locating a well where groundwater comes to within 10 feet of the soil surface

## Selecting a Well Driller

To ensure that your well will be located and constructed properly, it is critical that you exercise caution when hiring a well driller. Use the following criteria to help you find a driller that is right for you.

- Find out if the contractor is certified by the National Ground Water Association.
- Check to see that the contractor has adequate equipment.
- Use a contractor that submits well logs and will supply you with a written contract.

## What You Need in a Contract

- Assurance of compliance with regulations
- Liability insurance information for driller
- Casing specifications (4" minimum to bedrock)

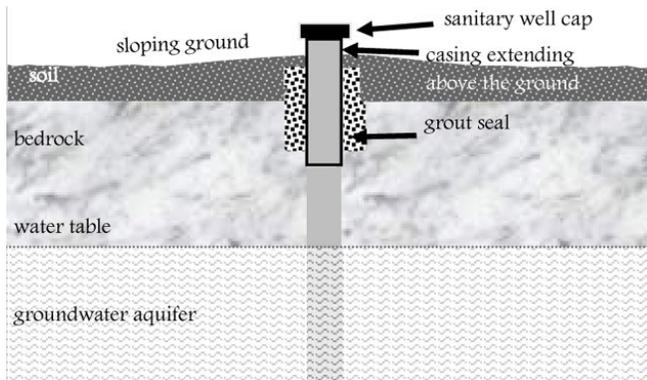
- Sanitary well cap and grout seal included
- Well development to maximum yield
- Disinfection after drilling and pump installation
- Itemized cost estimate
- Estimate of well yield
- Delivery of well log and pump test results

## Well Construction

Poor water quality is often a direct result of an improperly constructed well. For the health of your family, it is important to take the necessary steps to ensure that your well is constructed properly from the start so that you do not encounter any water quality problems in the future.

## Components of Properly Constructed Well

- **Well casings should be at least 8 inches above the ground** or high enough that surface water will never enter the well (even in times of flood).
- **The ground should slope away from the well** to prevent surface water from ponding.
- **A pitless adapter should be used** where the water pipe passes through the well casing below the frost depth.
- **A sanitary well cap should be used at the top of the casing** to prevent insects, small mammals, or other surface contaminants from entering the well.
- To prevent surface water contamination, **the space between the well casing and the drill hole should be filled with a clay grout or cement.**



Before the well construction is complete, make sure to receive a water yield and disinfect the system using shock chlorination. Get a copy of the completion report from the well driller and keep it as the start of your home well record.

## Helpful Websites

- [Wellowner.org](http://Wellowner.org) - to find a well driller in your local area that is certified by the Pennsylvania Ground Water Association
- [Penn State Extension Water Quality](http://Penn State Extension Water Quality) - to download publications regarding private water systems

## Before Buying a New Home

Typically, when buying an existing house, the last thing one thinks about is where the water supply comes from. However, for the safety of your family, it is very important to learn about the resources surrounding that home. When buying a home in a rural area, there may be more challenges when trying to determine potential threats to the water supply. Water quantity and quality are both issues to research before purchasing a home in the country. **If you buy a home in a rural community that relies on well water, find out how old the well is, what type of well it is, where it is located, if it is properly sealed, and determine all potential contaminants to that well.** For added protection, it is also important to make sure the means of disposing of wastewater is safe.

Regardless of where you are looking to purchase a home, knowledge of past landuse practices and locating the water supply and septic system is critical for making a good decision for the health of your family.

## Other Sources of Information

- [Master Well Owner Network](http://Master Well Owner Network)
- [Penn State Extension Water Quality](http://Penn State Extension Water Quality)
- [United States Environmental Protection Agency](http://United States Environmental Protection Agency)
- [Pennsylvania Department of Environmental Protection](http://Pennsylvania Department of Environmental Protection)
- [National Ground Water Association \(NGWA\)](http://National Ground Water Association (NGWA))
- [Pennsylvania Ground Water Association \(PGWA\)](http://Pennsylvania Ground Water Association (PGWA))

## Source Water Protection Starts at Home

Over 3 million people in Pennsylvania get their water from a private water system (well, spring, or cistern). Families on private water supplies, need to be aware of changing water quality issues and the best methods to protect their water supply. Preventing contaminated water supplies is much easier and cheaper than dealing with a water quality problem after the fact.

Unlike public drinking water systems, homeowners with private wells do not have assistance with the management of their water supply (including routine maintenance, water testing, and solving water quality and quantity problems). All private water system owners need to take the time to make sure everything is working correctly and ensure that their water is always healthy to drink.

For more information on proper management of private water systems, contact a Penn State Extension educator or become part of the Master Well Owner Network today!

## What is the Master Well Owner Network?

It is a program designed to train 240 volunteers throughout Pennsylvania about private water system management. If you are the owner of a private water system and/or you are interested in educating others in your community, become part of the network. Call us at 814-865-2250 or email [mwon@psu.edu](mailto:mwon@psu.edu).

## extension.psu.edu

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