



## Source Water Protection Starts at Home

Over three 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.

Unlike public drinking water systems, homeowners with private water do not have assistance with managing 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 ensure everything is working correctly and 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 a volunteer from the Master Well Owner Network today!

## About the Master Well Owner Network

Working through Penn State Extension, this program educates private water system owners throughout Pennsylvania. Trained volunteers help form a network to connect with community members. To find out more, visit [extension.psu.edu/water/mwon](https://extension.psu.edu/water/mwon).

## Resources

Penn State Extension Master Well Owner Network  
[extension.psu.edu/water/mwon](https://extension.psu.edu/water/mwon)

Penn State Extension Water Resources  
[extension.psu.edu/water](https://extension.psu.edu/water)

National Ground Water Association (NGWA)  
[www.ngwa.org](https://www.ngwa.org)  
[www.wellowner.org](https://www.wellowner.org)

Pennsylvania Department of Environmental Protection (DEP)  
[www.dep.state.pa.us](https://www.dep.state.pa.us)

Pennsylvania Ground Water Association (PGWA)  
[www.pgwa.org](https://www.pgwa.org)

U.S. Environmental Protection Agency (EPA)  
Safe Drinking Water Hotline  
[www.epa.gov/safewater](https://www.epa.gov/safewater)  
1-800-426-4791

This material is based upon work supported by the Cooperative State Research, Education, and Extension Service, U.S. Department of Agriculture, National Integrated Water Quality Program, Under Agreement No. 2003-04892..

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## [extension.psu.edu/mwon](https://extension.psu.edu/mwon)

Penn State College of Agricultural Sciences research and extension programs are funded in part by Pennsylvania counties, the Commonwealth of Pennsylvania, and the U.S. Department of Agriculture.

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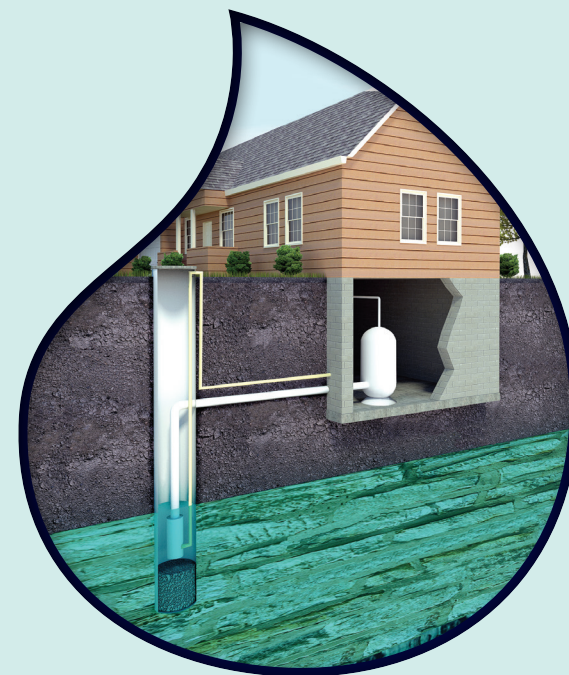
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Code EE0665 3C04/22mpc

# Private Water Systems

A Guide for Private Water System Owners throughout Pennsylvania

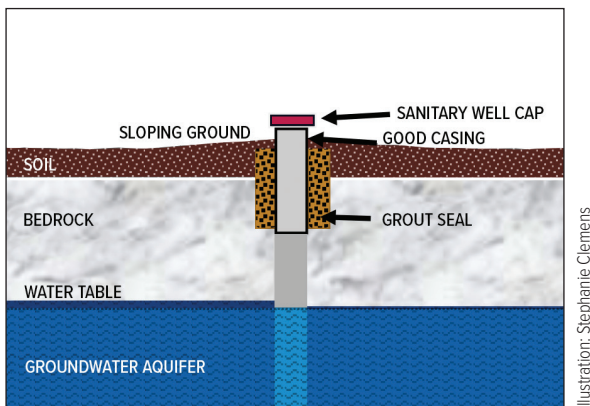


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## Wells

Wells are holes drilled (or hand dug) into the ground to access water stored in an aquifer. A pump and pipe then pull the water to the surface for use. There are over one million private wells in Pennsylvania.

- Wells should be properly located on your property. When they are not, they are more susceptible to contamination.
  - At least 25 feet from a silo
  - At least 50 feet from sewers and septic tanks
  - At least 100 feet from pastures, on-lot sewage system absorption fields, cesspools, and barnyards
  - Not where groundwater comes to within 10 feet of the soil surface
- 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 around the casing.
- A pitless adapter should be used to extend the casing above ground level. This 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 clay grout or cement.



## Springs

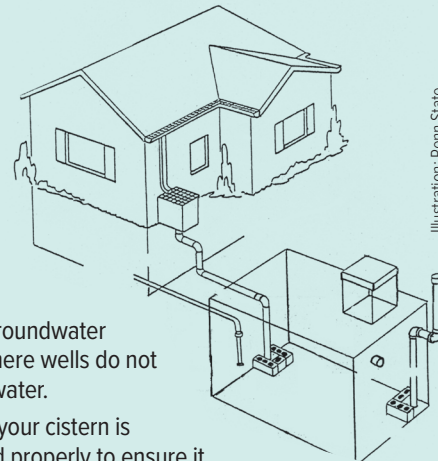
A spring forms when groundwater breaks the surface of the ground. Springs serve as private drinking water supplies for many people throughout Pennsylvania.

- Make sure your spring box is sealed to prevent insects, animals, and surface water from entering it.
- Fence livestock out of the spring catchment area.
- Disinfect springs after construction and then test for bacteria.
- Springs are very susceptible to bacterial contamination—get yours tested at least every year!

## Cisterns

Cisterns store rainwater collected from roofs for household or other uses. They are used extensively in areas that have severe groundwater pollution or where wells do not yield enough water.

- Make sure your cistern is constructed properly to ensure it is of adequate size to meet your water demands. A minimum storage capacity of 5,000 gallons is recommended.
- All cisterns require treatment.
  - Most cisterns rely on rainwater that can be extremely corrosive to plumbing systems.
  - Water entering the cistern should be disinfected before it is consumed.



## Water Testing

- Every year homeowners should do a thorough inspection of their private water supply. Have your system inspected by a professional at least every 10 years.
- Every year test your home drinking water for coliform bacteria.

- Every three years test for pH, total dissolved solids, and other contaminants based on locally occurring activities. All water tests should be done by a certified lab. See [www.dep.pa.gov](http://www.dep.pa.gov) (search for laboratory accreditation) for help finding a lab.
- After getting your water tested, compare your results to the drinking water standards established by the state (see [extension.psu.edu/drinking-water-interpretation-tool-dwit](http://extension.psu.edu/drinking-water-interpretation-tool-dwit)).
- If you have questions, contact the Penn State Extension office in your county.

## Problem Solving

If after testing your water you find a problem with the quality, there are several steps you can take to ensure you have a clean source of drinking water.

- Develop a new source of water (drill a new well, develop a new spring, etc.).
- Control the source of pollution (divert runoff). Conduct maintenance of your water system (install a sanitary well cap, slope ground, etc.).
- Install water treatment devices.

## Water Conservation

Many people think water is a limitless resource. This is a common misconception, and for that reason water is often misused and wasted in and around our homes. Water conservation is the best way to ensure an adequate supply of water for the future.

### Why Conserve Water?

- It will save you money (energy and water savings)!
- You will conserve your water supply for later use.
- It will reduce the load on your septic or sewer system, which means less maintenance.
- You will be a steward of the environment.

### Achieving Water Conservation

- Change your habits—save water every day, not just during times of drought.
- Install water-saving appliances and fixtures around your home; toilets are the largest user of water in the home.
- Collect rainwater in rain barrels to use for outdoor water needs.