

# Best Management Practices for Private Water Wells

A guide to proper maintenance of private water wells.



## Why protect your private well?

In Pennsylvania, there are no state regulations that require private well owners to maintain their well or test their drinking water. Improperly constructed or poorly maintained wells can create a pathway for pollutants into your home drinking water. The owner of a private water well may be the only line of defense against contamination of that water supply. Preventing contaminated water supplies protects the health of you and your family, and it is also less expensive and easier than fixing a water quality problem after it has already occurred. Learning about proper well maintenance is your best line of defense against a polluted water source.

## Test your water

To ensure that your drinking water is healthy, have your water tested every year. There are many tests that can be done on your water and having all of them done is usually not necessary. It is a good idea to have your water tested annually for coliform bacteria and every three years for pH and total dissolved solids. However, if you can determine what potential contaminants are threats to your water supply, you can more carefully select the type of tests and analysis that you will need done to ensure the safety of your water. Have your water tested by a certified laboratory. If you have questions about what to test your water for or if you want to locate a local certified testing lab, contact your county's Extension Educator. It is also important to test the water in a home with a private well before purchase.

## Potential Contaminants

### Regular tests for.. .

**Every Year:** Total Coliform Bacteria

**Every 3 years:** pH and Total Dissolved Solids

### Additional tests for specific problems

Symptom Test For

Symptom	Test for
Gastro-intestinal illness	coliform bacteria
Cloudy or colored water	detergents
Orange or black stains	iron, manganese
Soap has no lather, white residue	hardness
Water tastes salty	chloride, sodium, TDS*
Odor of gas or fuel	VOCs**
Pin hole leaks, bluish stains	pH, copper, lead

Nearby Landuse	Test For
Agricultural operations	nitrate, coliform bacteria, pesticides



**PennState Extension**

Coal mining	pH, iron, manganese
Gas drilling	sodium, chloride, barium
Dump, landfill, or factory	metals, VOCs**
Heavily salted roadways	sodium, chloride, TDS*

\*\* VOC = Volatile Organic Compound \* TDS = Total Dissolved Solids

## Interpreting your water tests

The results of your water test(s) will tell you the level at which each of the tested substances were found in your water supply. The presence of any specific substance does not necessarily indicate a danger to your health. Comparing your results to the state or federal drinking water standards will help you to determine how problematic your results really are to the safety of your family. For information on safe drinking water standards, contact your county's Penn State Extension office.

## Inspect your well

Every year, homeowners should do a thorough inspection of their home water well.

- Keep the area around your well clean and make sure it is always accessible.
- Limit activities such as use of fertilizers or pesticides near the well.
- Be aware of local activities that may impact your well water.
- Complete a visual inspection of your well casing to detect any cracks, holes, or corrosion.
- Replace a standard well cap with a sanitary well cap to keep out insects, small mammals, and other surface contamination.
- Check the wiring for the pump to make sure that it is secured in an electric conduit pipe.
- If you have not taken measures to prevent backflow, contact a plumbing supplier and take advantage of backflow prevention devices that are inexpensive.

Maintaining your well is essential to protecting your family's health on a day to day basis. However, even with proper annual maintenance, well materials and equipment will eventually need replacement. For preventative maintenance, get your well inspected at least every ten years by a qualified professional.

## Keep good records

Well record books are a great way to keep track of your well installation, maintenance, inspections, repairs, and water tests. Having this log of activity will assist the owner of the well in detecting problems early and noticing changes over time. If something does go wrong, contact a local expert and show them your well's records for a diagnosis. Well record books can also be helpful to any future owners of your home.

## Other sources of information

Master Well Owner Network

U.S. Environmental Protection Agency (EPA) [Safe Drinking Water Hotline](#) or 1-800-426-479

[Office of Groundwater and Drinking Water](#)

[PA Department of Environmental Protection \(DEP\)](#)

[National Ground Water Association \(NGWA\)](#)

[Pennsylvania Ground Water Association \(PGWA\)](#)

[National Ground Water Association \(NGWA\)](#)

## 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.

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 814-863-0194 or email [brs@psu.edu](mailto:brs@psu.edu).

## Authors

---

### **Bryan Swistock**

Senior Extension Associate; Water Resources Coordinator

[brs@psu.edu](mailto:brs@psu.edu)

814-863-0194

---

## **extension.psu.edu**

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.

Where trade names appear, no discrimination is intended, and no endorsement by Penn State Extension is implied.

**This publication is available in alternative media on request.**

Penn State is an equal opportunity, affirmative action employer, and is committed to providing employment opportunities to all qualified applicants without regard to race, color, religion, age, sex, sexual orientation, gender identity, national origin, disability, or protected veteran status.

© The Pennsylvania State University 2021

Code: ART-1515