

# wellcare® information for Sanitarians **Inspecting a Well**

More than 42 million Americans are served by a private well water system. Usually a state or local sanitarian is the source of information for these homeowners.

Most health departments also are responsible for:

- Issuing permits approving the location of a new well.
- Inspecting the well after construction to verify proper grouting (the seal) and sufficient water capacity (the yield).
- Maintaining records of well logs provided by well drillers.
- Taking or verifying drinking water test results and/or issuing certificates attesting to water quality.
- Providing annual water testing and well maintenance recommendations to local residents.
- Conducting real estate certifications for wells, as required by mortgage lenders prior to closing the sale of a house.

This wellcare® information sheet offers sanitarians basic guidance to give homeowners about managing their well system and drinking water. Further information on water testing, water treatment and septic systems can be found in other WSC wellcare® publications.

## **Research the Well's History**

Try to get as much information as possible on the construction, maintenance and condition of the well. Ask the seller or contact the company that drilled the well for the well log or well history (also known as a water well record or drilling report). Most states require well contractors to file a well log on each new well drilled. County or town health departments also may have records on when the well was drilled and how it was constructed.

The well log will include a reference number for the well, the well owner at the time of construction, location of the well and various construction details. These may include the drilling method used, the depth of the well, the amount and type of casing, the size and type of screen, and the type of pump. Ask for any records of maintenance and inspection of the well system after construction.

Also request a copy of any water quality tests taken in the years after the well was drilled. Most states encourage homeowners to test their well water once a year, usually in the spring. If the homeowner doesn't have records, check with the well driller or the local health department for water test results.

## **Review the Well's Condition**

The well log should help determine the location, age and condition of the well. There are other aspects of the well to consider. The list below includes the most positive conditions for a well.

### **Well location:**

- ***Proximity to pollution sources*** – The well is uphill from pollution sources, such as the septic tank and septic field. Surface water doesn't reach or is diverted from the well.

- **Distance from pollution sources** – The well is at least 100 feet away from potential pollution sources and meets or exceeds all state minimum requirements for distance. The local health department has standards for this.
- **Soil type** – The soil is fine-textured, such as clay loams or silty clay. This is the best soil type to filter impurities before ground water reaches the well.
- **Subsurface conditions** – The water table or fractured bedrock is deeper than 20 feet, which permits plenty of filtering.

#### Well construction and maintenance:

- **Age** – The well is less than 20 years old.
- **Well type** – It is a drilled well.
- **Casing height** – The lining of the well (the casing) is 12 or more inches above the land surface. In flood prone areas, the casing is one to two feet above the highest recorded flood level. This ensures that no substances can wash into the well.
- **Condition of casing and well cap** – No holes or cracks are visible, the cap is tightly attached and a screened vent faces the ground.
- **Casing depth** – The casing extends 50 or more feet below the land surface.
- **Backflow protection** – Measures are taken to prevent backflow (reverse flow in water pipes) and, where necessary, anti-backflow devices are installed.
- **Well components** – Pump, pressure tank and water treatment system, if any, are in good condition and have been regularly maintained.
- **Well inspection** – The well was inspected within the last 10 years and records are available.

#### Well capacity and yield:

- The well log or drilling report contains information on the well's capacity and yield in gallons per minute.
- There is a minimum well yield of one gallon per minute, which amounts to 1,440 gallons of water per day. The average family of four consumes 300 gallons per day.
- The ideal yield is five gallons or more per minute to accommodate family and all other water uses typical of a suburban or rural family home.

#### Water treatment systems:

- Water treatment devices are appropriate and have been regularly maintained. These include point-of-entry equipment, which treats the water as it enters the house, or point-of-use equipment, which treats the water at an individual tap, such as the kitchen sink.

If the well falls short of these ideal conditions, contact your local well professional about further well inspection, water testing and/or the need for well repair or replacement. All homeowners should schedule regular inspection, maintenance and testing to keep their well systems operating at peak efficiency.

#### Conduct a Water Test Every Year

At a minimum, every well should be tested every year for bacteria, the most common water quality problem. Federal home loan programs require tests for bacteria, lead and nitrate/nitrites, as well as contaminants of local concern, such as arsenic or radon, before mortgage insurance is approved.

State and local health departments maintain a list of state-certified laboratories, qualified to test for specific contaminants for the homeowner. Choose a lab that can return test results within two weeks in a form that is clear and understandable.

While the cost varies by state and lab, water testing can range from as little as \$5 for an individual test parameter, such as pH, to \$250 or more for a combination of many different parameters. Again, state and local health departments can provide guidance on what tests to request.

The laboratory will provide specific sampling instructions and clean bottles or small plastic bags in which to collect the water sample. Homeowners must carefully follow these instructions, because a carelessly collected sample can give inaccurate results.

Compare test results with U.S. Environmental Protection Agency (EPA) maximum containment levels for the contaminant, which are guidelines used for public water supplies. EPA does not regulate private wells. Go to [www.epa.gov/safewater/hfacts.html](http://www.epa.gov/safewater/hfacts.html) for individual standards. There also may be state or local standards for contaminants, such as sodium, that EPA does not regulate.

Any positive test for bacteria requires disinfection of the well system. Chlorine, ultra-violet light or ozone treatments will kill *E. coli* or other harmful germs. Other contaminants usually can be reduced to acceptable federal standards through either point-of-entry or point-of-use equipment.

### For more information on Well Inspection

*Home\* A\* Syst: An Environmental Risk-Assessment Guide for the Home* (Natural Resource, Agriculture and Engineering Service (NRAES) and the Regents of the University of Wisconsin System, 1997) can be found in the reference section of many public libraries or ordered from NRAES at [www.nraes.org](http://www.nraes.org) or 607-255-7604.

### For more information about wells and other wellcare® publications

wellcare® is a program of the **Water Systems Council (WSC)**. WSC is a national nonprofit organization dedicated to promoting the wider use of wells as modern and affordable safe drinking water systems and to protecting ground water resources nationwide. This publication is one in a series of wellcare® information sheets. They can be downloaded FREE from the WSC website at [www.watersystemscouncil.org](http://www.watersystemscouncil.org). Well owners and others with questions about wells or ground water can also contact the wellcare® hotline at 1-888-395-1033 or visit [www.wellcarehotline.org](http://www.wellcarehotline.org).



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