

wellcare® information for you about

Determining the Yield of a Well

The maximum safe yield of a well represents its dependable and continuous output during a long drought. Homeowners should know their well yield to ensure it can sustain them in demanding times.

The well yield may be found in the well log created when the well was drilled and its pump installed. Many communities also require a yield test when a property is bought or sold.

What is a well yield test?

Determining the yield of a well involves a test to see the balance between the maximum amount of water that can be pumped out of the well and the amount of water that recharges back into the well from the surrounding ground water source.

The test requires the continuous pumping of the well for an extended period of time. During the pumping period, measurements are made of 1) the rate at which water is being pumped out of the well and 2) the distance the water level is lowered in the well as a result of the pumping, known as the drawdown.

Balance, or equilibrium, is achieved when the water level within the well stops dropping for a given discharge rate. Once equilibrium is achieved, less pumping results in less drawdown. Well professionals rely on the yield pump test to set the well pump at the correct level.

It is common to maintain the water level in the well at least 25 feet above the top of the submersible pump. This depth of water over the pump provides a reasonable level of safety for dry conditions and provides for full cooling of the pump's electrical motor.

Don't be fooled by water pressure in the home. Pressure at the tap is not necessarily dependent on ample well yield. Proper sizing of the well pump, pressure tank and distribution lines by a well professional can increase pressure when yields are quite low.

Many communities set minimum levels. Baltimore County, MD requires a minimum well yield of one gallon per minute, which equals 1,440 gallons of water per day. That is more than four times the average consumption for a family of four (75 gallons per day per person, or 300 gallons per day).

Call your local health department or ask your well professional for minimum well yield requirements in your community.

How to conduct a well yield test

Determining the safe yield of a well is an involved process. In most cases, well owners should contact their well driller or other well professional, who will have the specialized equipment needed and can modify existing plumbing, if necessary.

For a new well, a yield test can be performed immediately after the drilling has been completed, but before the well is connected to the house. A yield estimate can be conducted by blowing compressed air into the well or a temporary pump can be used to measure yield.

For an existing well already in use, a professional can create an artificial water demand on the home's plumbing system so that the well pump runs continuously and water discharges from exterior faucets. Measurements can be taken during this constant pumping.

In either case, the yield test will generate lots of water that must be discharged to an appropriate location. Take care not to let the water flow towards or back into the well being pumped. Try to direct the water to a stream, pond or wetlands.

For new wells, piping can be used to direct water away from the well being tested. For testing of existing wells, lengths of garden hose can be connected to outside faucets to direct the water to an appropriate location.

For more information on measuring well yield and managing well levels

New Hampshire Department of Environmental Services fact sheet:

www.des.state.nh.us/factsheets/ws/ws-1-13.htm

Baltimore County fact sheets: *Yield Testing Methods and Well Yield Fact Sheet*,

www.baltimorecountyonline.info/Agencies/environment/ep_wellseptic.html

wellcare® Info Sheet: *Coping with Low Water Levels, Water Conservation and What to Do if the Well Runs Dry* – available in print by calling 202-625-4387 or online at:

www.watersystemscouncil.org/wellcare/infosheets.cfm

For more information on your drinking water

The following sites provide up-to-date information on efforts to protect public water supplies and steps you can take as a private well owner:

Home*A*Syst Program www.uwex.edu/homeasyst

Water Quality Association www.wqa.org

The Groundwater Foundation www.groundwater.org

American Water Works Association www.awwa.org

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.

Contact us at 202-625-4387 or visit www.watersystemscouncil.org



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