



WELLS 101

"How Can I Live With One Gallon Per Minute?"

This is undoubtedly the most often asked question from buyers venturing into unknown well territory. Hopefully this summary will answer your questions and concerns.

- ◆ Wells have come along way from "ye 'ol crank and bucket." Most wells produce enough water to allow people to go about daily life without giving any thought about their well. There are certain areas of Baltimore, Harford and Carroll Counties where sufficient yield is difficult to find.
- ◆ In the early 80's Baltimore County passed a law requiring wells to produce at least a one gallon-per-minute yield in order to transfer the sale of the property. This legislation became a powerful tool for buyers to make certain they would have enough water for their needs.

"Does One Gallon Per Minute Mean That I Turn on My Faucet and It Trickles Out At That Rate?"

- ◆ Certainly not! Residential well systems basically consist of a pump in or exterior to the well and a pressure tank.
- ◆ Think of the pressure tank as ready source of initial supply. Once the pressure on the tank drops to the minimum, the well pump turns on to fill the demand. At this time you are beginning to utilize the reservoir in the well.
- ◆ Most wells in the area are six inches in diameter, holding approximately one and a half gallons per every one-foot of depth. When the well is idle whatever the water level returns to is called the static. The area of the well between the static water level and the pump or inlet is the reservoir.
- ◆ Therefore if the well is 300' deep and the static is 30' the well should have approximately 250' of water depending on where the pump inlet is (20' in this case). If the actual depth of the water is 250' then the actual amount of water equals 375 gallons.
This sounds like a lot of water, but hold on it gets better.
- ◆ If the well were to run constantly and it took two hours to drain the well; and the yield being one gallon per minute, you can add 120 gallons to make a grand total of 495 gallons.

"Will 500 Gallons Be Enough for My Family?"

- ◆ The average family uses *200-300 gallons per day and certainly not all at one time.
- ◆ For example, in the morning, three people shower (*60 gallons) and two loads of laundry are ran (another *50 gallons) all of this takes about two hours. Every time the well is drawn on, the reservoir is used and the yield begins filling the well. One gallon per minute is 120 gallons and the well is able to meet the demand with no problem.
- ◆ A one-gallon per minute well over a 24-hour day equals 1,440 gallons. If you add a reservoir into that your well is a powerhouse compared to your average daily use.
- ◆ Well yields do fluctuate, and it is wise to have a yield test ran regardless of what the county requires.
- ◆ Many things effect well yield such as watering two acres of grass on a daily basis or filling your pool from the bottom to the top. Limit your watering to those more expensive shrubs and only top off the pool with a few hundred gallons. When you wash your car make sure you use a nozzle that turns on and off and don't let the slip and slide run when your not using it.
** These figures can vary with individual use.*

A yield test ran properly, would accurately depict your well performance. The test can either run for 3 or 6 hours depending on the amount of yield. Some wells are very deep and take a longer time to draw down and therefore require a longer test. Another great thing about having a yield test is that you will find out whether or not the yield will be consistent for an extended amount of time.

The county requirements for a well yield test cover all the bases. Well yield tests should only be performed by a licensed well driller or pump installer. These professionals work with wells every day and can understand what is happening inside the depths of your well.

I'm Out Of Water!!!

If when running the well for an extended period of time and you run out of water:

- ◆ First you should turn the power off to the pump at the breaker or your system may have a switch near the tank.
- ◆ Check to see if you have a low pressure cut off switch. This is usually a small gray box near the pressure tank with wires attached. If the box has a small lever ***on the back right side***, turn the breaker on and lift the lever slightly until you hear water. Hold the lever at that point until 20-30 psi is restored to the tank.
- ◆ Once pressure is restored you can release the lever and it should operate properly.
- ◆ A low pressure cut off switch is designed to turn off the pump in the event that the well can no longer produce enough water. If this happens you should wait an hour before restoring the pump, to give the well time to recover some of its reservoir.
- ◆ If you consistently have problems with your water supply, it does not necessarily indicate your well is dry, you should call a professional to determine the problem.
- ◆ Another way to diagnose your problem is to check your arreators at the sinks and see if you have water pressure at your tub and hose faucets.
- ◆ If your breaker is tripping you could have a pump problem. Since your well can become contaminated we do not recommend replacing the pump yourself.

Bacteria

Aside from having enough water, clean water is just as important. If the well fails a bacteria test, chlorinating is the next step.

- ◆ Many things can cause the well to be contaminated.
- ◆ A common cause is an improper well cap. The proper cap is generally described as a two piece cap, having a lower ring fitting around the casing with a top bolted in place. These caps contain a gasket for tight fit and a threaded hole for a wire conduit. Most often a two piece cap has a screened vent allowing air to enter but not insects.
- ◆ Forty or so years ago well heads were placed below ground. Today, some wells still remain buried or in sunken block pits. New construction wells are built with the casing at least 8" above ground and those older wells can often be extended above ground.
- ◆ Just because the well is below ground or has an improper cap does not mean that it is contaminated. It only means that the probability of future contamination is higher.
- ◆ Wells that are buried or in a pit are more susceptible to surface water contamination, where as wells that are above ground are more susceptible to insect contamination.
- ◆ Once updated and chlorinated most wells provide clean and clear water.
- ◆ Chlorinations are not a fun prospect. Once the procedure is performed the well must sit for 24 hours to let the chlorine take effect.
- ◆ Then, the long and tedious process of removing the chlorine begins. This process could take a day or 2 weeks, depending upon the well characteristics.
- ◆ Only after the chlorine is removed can another bacteria test be done. Unfortunately a few bacteria cases don't clean up on the first chlorination.
- ◆ Having a bacteria test performed on your well once a year would not be a bad idea.

*If you have any questions please do not hesitate to call Caswell-McGill Inc.
(410)-557-WELL. It will be our pleasure to serve you.
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