What Should I Be Doing to Maintain My Well And Storage Tank?

Most of the time, your well and storage tank probably provide your home with a reliable water supply, to the point that you may go for months without really thinking about them. In fact, unless your well goes dry, the water level in the well casing drops below the pump intake, the appearance, odor or taste of your well water changes, or your water starts to stain plumbing fixtures or contain noticeable amounts of sand, your well may operate for a couple of years or more without any apparent need for servicing.

However, this paper addresses some simple things you might consider doing if you are interested in trying to proactively ensure that your well and tank consistently provide the water you need, rather than simply relying on fate or the assumption that they will continue to operate without servicing.

Remember your well water comes from precipitation that passes through soil and rocks and along this pathway to your well, minerals may accumulate as well as other potential contaminants. Many of the constituents that are present in your well water are imperceptible without testing.

Maximizing your Well's Performance

Here are four suggestions regarding your well and tank that, if followed, will help protect the health of those who use your water, and may reduce the cost of operating your water system:

1. **Engage a competent laboratory to help you sample and analyze your well water every year or two.** Your well service professional can recommend such a laboratory, or you can easily find one on the internet. The laboratory can help you identify which constituents (*e.g.*, arsenic, lead, iron, manganese, Escherichia bacteria [*E. coli*], pesticides, etc.) it should test for and/or that might raise health concerns if

detected. The laboratory will provide the sampling containers, and advise you how and where to collect whatever water samples you submit for laboratory analysis[1].

If your well turns out to be contaminated with *E. coli*, you will need to decontaminate it by adding a disinfectant to your well and/or water tank. If the well water contains elevated levels of iron or manganese, or one or more pesticides, you may need to install filters in your water system to remove such constituents before water from your tank reaches your house. In extreme but rare circumstances, drilling a new well might be required. Obviously, you should consult your well service professional for advice on how to best and most economically address these types of water quality issues.

2. **Periodically, your water tank should be drained, cleaned, and perhaps disinfected.** You should ask your well service professional how often this should be done, and obtain his/her recommendation on whom you should hire to do this tank maintenance.

3. **The more times a day your well pump has to turn on, the more wear and tear on the pump, the shorter the pump's useful life expectancy, and the more electricity the pump will use.**

   You may not be able to do much to address these issues if your well either pumps directly into your house on demand, or into a small (*e.g.*, 200 gallon) pressure tank. With that type of system, your well pump will likely need to switch on 5-10 times a day or more to make sure your home system is adequately pressurized and able to produce the amount of water you need where and when you need it.

   However, assume that your household typically uses 1,500 gallons per day and that you have a 3,000-gallon storage tank. You should determine if there is a timer that controls when your well pump turns on. You or your well service professional can either adjust the existing

[1] EPA and Centers for Disease Control and Prevention advises the following water testing schedule for private well water: Yearly – analyze for bacteria, lead, arsenic, nitrates, total dissolved solids, volatile organic compounds and pH. Every 2 to 3 years – analyze for tannins, hardness, chloride, sulfate, iron and copper.

timer (if there is one) or install a new one that is set to turn the pump on at midnight. The pump can then operate for a few hours to replace the approximately 1,500 gallons of water your household used the previous day.

Controlling the operation of your well pump in this manner can have at least two benefits. First, you will be extending the likely serviceable life of your well pump by having it turn on only once a day. Start-up is the phase of a pump's operation when it has to work the hardest, when it likely suffers the most wear-and-tear, and when it draws the most electricity. The less often your $3,000 - $4,000 pump needs to start up, the longer it will operate before needing to be replaced. Second, if you can get by with re-filling your storage tank only once a day (in the middle of the night), you will be using electricity when rates are the lowest, thereby reducing your pump operating costs. Again, it is wise to ask your well service professional for advice on how to most economically operate your water system.

The benefits of regulating your well's operation and limiting the number of times your well pump turns on during a given week can be even greater if you have a larger storage tank (*e.g.*, 16,000 gallons). With a 16,000 gallon tank, and assuming, again, that the people using your well typically draw 1,500 gallons of water per day (10,500 gallons/week), for much of the year you may be able to refill your tank by operating the well pump only one night a week. To the extent you can do so, that is likely to further prolong the life of your well pump and reduce your electricity costs. Of course, there may be times of the year, particularly when the fire danger is high, that you will want to be sure your storage tank is topped up each day.

4. **Consider installing a couple of water meters that can help you determine whether your water system is leaking.**

   If your water system has a good pump and a sound tank, your pump may still be working harder and longer than it needs to if you have leaks in the water lines connecting the well to your house. Without meters, it is difficult to compare how much water your well is producing with how

much water is actually delivered to where you use it. For example, if there is leak in the water line between the well and the water storage tank, the leaked water will simply be going to waste, the electricity used to pump that water will be wasted as well, and the pump will have to work longer to make up for the water lost due to the leak.

An ideal water system might have a meter at the well head (measuring how many gallons the well is pumping to the storage tank or directly to the house) and a meter at the point where the water system line enters the house and any related irrigation system (measuring how much water is actually delivered to where it is needed). Assuming there are no leaks in the system, over time, the gallons reported by both meters should be pretty much the same. If the amounts are materially different, a search for leaks may be appropriate. Obviously, the more points in your system at which you have a meter installed, the quicker you can narrow your search for a leak.

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