



www.nhwaterwell.com

Information: New Hampshire Water Well Association

Information in this document is provided in good faith to inform the public about groundwater and water wells. Well owners should ensure that their well contractor has obtained permits (if required) and has referred to local codes, rules, regulations and laws for site selection, construction, maintenance and operation of water wells and water system equipment.

WATER PRESSURE PROBLEMS

Have you ever been in the shower when suddenly the pressure drops and the shower turns to a drip because someone turned on the kitchen tap or started the washing machine? This can happen if your well water system doesn't have enough pressure. Has this been gradually getting worse or has it always been like that? Do you notice a difference in other people's homes or when you stay in a hotel?

Water flows out of taps because of pressure in the system. The overall rate of flow is related to pump capacity. If your pump will only supply 5 gallons per minute then there should be no surprise at a pressure drop if you create a 10-gallon per minute demand. A pressure tank in a water system is designed to store a few gallons so that the pump does not have to switch on for small demands such as a glass of water, but a tank can't provide sustained flow greater than the pump capacity. The main purpose of the tank is to control the on and off of the pump. It is the pump which provides the water pressure to your home.

If you use your well water for an extended period, such as using a lawn sprinkler all day, you may notice a gradual drop in pressure. This may be caused by the lowering of the water level in your well much further down than occurs with regular household use. With a lower water level in the well, the pump has to "push" the water up from a greater depth and then the flow (pressure) at the tap can be reduced. Most wells recover their water levels overnight, or when the water demands are reduced.

So what can you do?

Write down the dates and times that you notice a pressure change. When you call a well contractor, this information may help diagnose whether the solution is a plumbing or a well pump issue. The contractor will check that there is a correct pressure setting on the tank. If you are in an area of hard water you may have a build-up of scale that is causing pressure drop because of increased friction in the pipes (relatively easy to check, hard to fix, but easy to prevent).

There are three basic solutions to improve water pressure:

- Install a constant pressure valve between the pump and the pressure tank. This will automatically adjust flow from the well pump to meet a pre-set pressure. You still won't be able to get water out at a flow rate greater than the pump will deliver.
- Add additional pressure tank capacity to meet peak demands for water that are in excess of pump capacity. This could involve a new tank or an additional tank. This can help overcome short-term demands but may not solve the problem of running lawn sprinklers, washing machines and showers simultaneously.
- Replace the existing well pump with a variable speed pump to maintain constant pressure. Traditional submersible well pump motors run at a constant speed (typically 3,400 rpm) variable speed motors can run up to 8,000 rpm. The speed of the motor is regulated by the home's demand for water. An electrical/mechanical device measures the demand for pressure and adjusts the pump flow rate to match. Variable speed pump motors may have slow (maybe just a couple of seconds!) start-up that has added benefits of reducing torque on the pump and piping in the well in addition to eliminating power surges. Variable speed pumps use less electricity and require smaller pressure tanks.

Constant water pressure is not only a convenience for homeowners at the tap or shower. Water softeners, iron removal devices and other conditioning equipment work more efficiently under conditions of constant pressure and appliances such as washing machines and dishwashers may not function properly at low water pressures.

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