

The evaluation of a private system during a visual inspection is limited. An inspector can report on the condition of the motor and its components, if it is located in the house, but cannot report on submersible pumps since both the pump and motor are located in the well. In addition, the inspector does not, as part of his visual inspection, test the quality of water. Although obvious deficiencies will be reported, it is advised that the homeowner make arrangements with the local health department to have the well water tested.

The quality of well water depends on the type of well and the area. A well collects rainwater that filters down through the soil and seeps into the well. In some cases there may be an aquifer which the well is tapped into. Rainfall may contaminate a shallow well by its runoff. If a well is too deep it may be contaminated with sulfur or salt water. In either situation, the well water should be tested on a regular basis for bacteria, hardness, and other hazardous chemicals or debris.

Pumps are used to raise the water from a well and temporarily hold it in a storage tank before being used. All three of the following pumps may be used for either shallow or deep wells:

SUBMERSIBLE TYPE – As the name states, both the electrically-driven motor and the pump are submersed in the well. A submersible is more often associated with deep wells.

JET TYPE – Which may be either shallow or deep. A pump with one pipe serving the well is a shallow well pump and the foot valve is no deeper than 25 feet. Pumps with two pipes are deep well type pumps which can be from 25 feet to 170 feet.

PISTON TYPE – No longer in general use. Simply, they are a motorized version of the *hand pump*. In a shallow well, the motor-piston assembly is above ground. In deep wells, the motor is above ground and the piston assembly is located in the well.

The service piping from the well to the storage tank is most often plastic. Another component of this system is a storage tank for the water pumped. A portion of the tank is filled with air. Newer tanks have a diaphragm or bladder which serves the same purpose. In both cases the air is compressed (water cannot be compressed) and when there is a demand for water, the air forces the water out. The low and high pressure settings for a pump are **25 psi** (pounds per square inch) and **50 psi**. Typically, the water pressure for a private system is about **40 psi**.

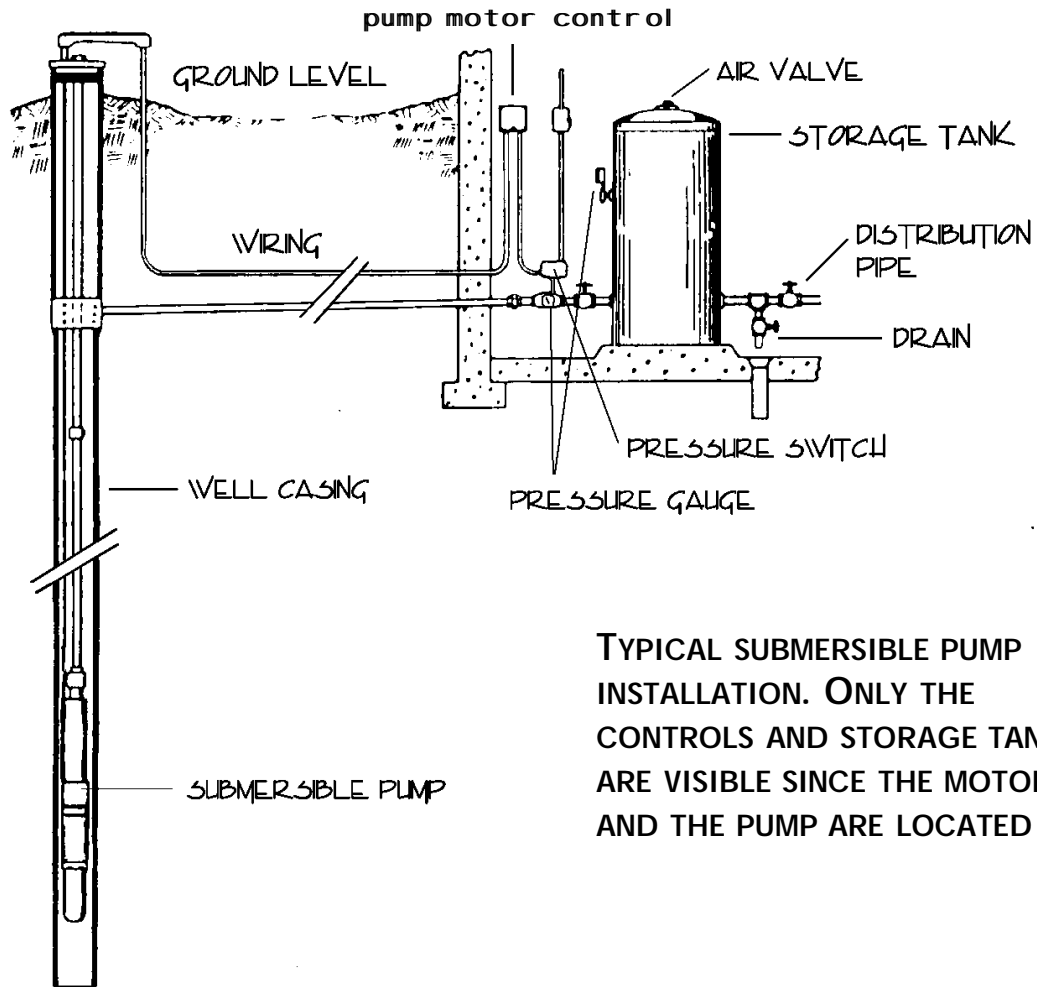
At times the air in the non-diaphragm tank will be absorbed by the water and becomes “**waterlogged**.” This means there is very little air, if any, in the tank. A lack of air results in “**short cycling**.” Evidence of this is when the pump starts and stops at very short intervals. Another symptom is when the pump suddenly comes on when a faucet is turned on. Short cycling with a bladder type tank indicates that the bladder is defective and is in need of replacement. If you hear the pump at very long intervals while no water is being used, it may mean a leak in the pipe or a leak in the foot valve.

HOW TO ENSURE AN ACCEPTABLE SUPPLY OF WELL WATER:

- **ASK IF THE WELL HAS RUN DRY DURING THE YEAR (DURING SEVERE DROUGHT THE WATER TABLE MAY DROP)**
- **IS THE STORAGE TANK SUITABLE FOR YOUR SIZE OF FAMILY (A MINIMUM 10 GALLONS)**
- **LOOK AT THE CONDITION OF THE MOTOR, STORAGE TANK, ELECTRICAL GROUND, FILTERING SCREENS, AND AIR CONTROLS FOR SIGNS OF CORROSION**
- **CONSIDER A MECHANICAL/CHEMICAL FILTERING SYSTEM TO REMOVE BACTERIA, PARTICLES, AND ODORS**
- **CONSIDER A WATER SOFTENER FOR WATER THAT CONTAINS A SIGNIFICANT AMOUNT OF MINERALS**

Water that has a foul taste or odor may be completely potable, whereas very clear water with a good taste may be contaminated with toxic chemicals. A visual inspection is not enough. Homeowners should have the quality of water tested annually. The homeowner should be provided with information such as its proximity to potential contaminants such as septic system leaching beds; its age; and if the well has ever run dry.

For further information contact your local health/conservation unit, well contractor or a licensed plumber.



TYPICAL SUBMERSIBLE PUMP INSTALLATION. ONLY THE CONTROLS AND STORAGE TANK ARE VISIBLE SINCE THE MOTOR AND THE PUMP ARE LOCATED IN

TYPICAL JET PUMP INSTALLATION. THE CONTROLS, STORAGE TANK AND MOTOR ARE VISIBLE.

