

WELL AND WATER SYSTEMS

PRIVATE WELLS

Unlike municipal water supplies that are monitored by State & Federal Agencies, private wells must be monitored by the homeowner. Private wells pump groundwater from the ground into a storage tank for domestic use. Groundwater can become contaminated in many ways and should be regularly tested by the homeowner.



WHERE DOES THE WATER COME FROM

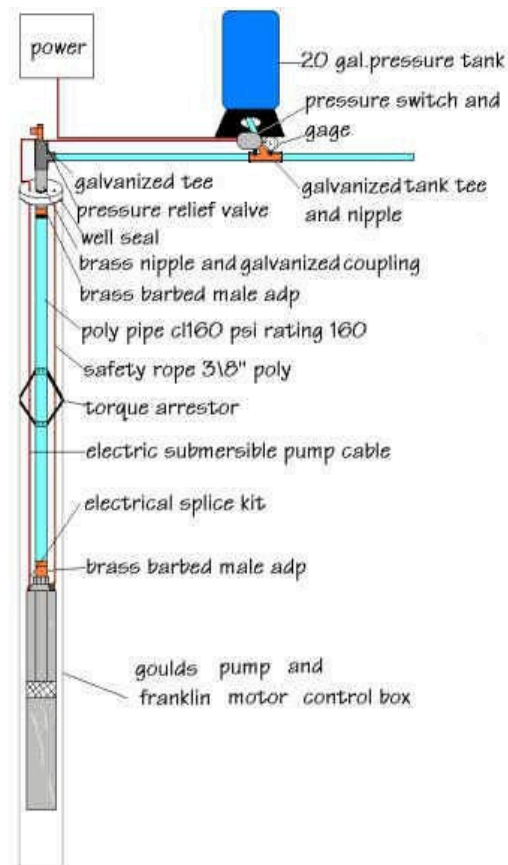
Rain and snow that seeps into the earth is called ground water. Ninety-seven percent of the world's fresh water supply is ground water that lies below the earth's surface. The top portion of the ground water, called the water table, can be anywhere from one to one thousand feet from the surface.

HOW DO WELL SYSTEMS WORK

The functional components of a well system are the well pump, the storage tank and the pressure switches. The well pump pumps the ground water up and into the storage tank. As the storage tank fills, it compresses the air in the tank. The pressure switches are set to signal the well pump when to pump water into the tank and when to stop. As the tank fills it compresses the air creating pressure. This is where the water pressure originates. As you use water the water level lowers in the tank lowering the pressure. The pressure switch has a high and low setting. The normal settings are 20psi (pounds per square inch) for the low and 40 psi for the high. The pump fills the tank until the pressure reaches 40 psi and would then shut off. As water is used the pressure drops, when the pressure reaches 20psi, the switch activates the pump, filling the tank and raising the pressure back to 40psi.

COMMON WELL WATER CONTAMINANTS

Physical contaminants include silt, sediment, clays, and suspended matter. When the suspended solids and matter in the water are grouped together, it is called turbidity. Turbidity breeds bacteria and viruses, and can also create harmful byproducts from chlorination. Chemical contaminants include all dissolved minerals including calcium, magnesium, iron, nitrates, lead, arsenic, selenium, mercury, decaying organics, hydrogen sulfide, and others.



EXTENDED WATER PROFILE

If the water is supplied by a private well system, laboratory analysis of the water can be performed to ensure portability. The following are tested for in the extended water profile: coliform bacteria and E Coli, Chlorine, color, odor, iron, manganese, sodium, chloride, hardness, nitrate-nitrate nitrogen, pH, sulfate, and turbidity.