**Significant Sand and Gravel Aquifers**

*Yield (flow) of well or spring in gallons per minute (GPM)*
*Depth to water level in feet below land surface (observed in well, spring, test, or natural sand-salt storage area)*

**WHAT IS AN AQUIFER?**

A water-bearing geologic formation capable of yielding a usable amount of ground water at a rate of 10 gallons per minute (gpm) or more. To sustain a yield of 10 gpm or more, a material must be permeable enough to allow substantial water to move through it. Usually, these materials are unconsolidated sand and gravel deposits, surficial deposits other than sand and gravel, or bedrock with large pore spaces. Permeability is an important characteristic since it determines whether ground water can move through the material to the well. A well is filled with water at the water table in the overlying materials. The gravel-packed well in the diagram has a high yield of 300 gpm. The driven well near the stream is not contaminated, but is at risk since the plume contaminated the gravel-packed well as it passed by. Notice in the diagram below that ground water is not static; it flows. This flow can be affected by human activities, which may be controlled or mitigated. For example, removing the sand and gravel deposit from beneath a landfill could result in ground water contamination. Normal, day-to-day activities, such as disposing of waste or clearing land for development, can also affect ground water. The diagram shows a landowner who initially installed a shallow well to provide water for livestock. The ground water near the well is high in salts, and water is drawn up by the well screen. If ground water contamination occurs, it is often difficult and expensive to correct. The only sure way to prevent contamination is to avoid it in the first place. Ground water contamination is a problem that affects all of us. Some of the common sources of contamination include: industrial supernatant, transmission and seepage from septic systems, and escape from private and public septic tanks. In addition, the mixing of ground water and storm water can result in contamination.