PIEDMONT

The Piedmont in Pennsylvania is divided into three parts: (1) Upland, (2) Lowland, and (3) Gettysburg-Newark Lowland. Most of the Upland section's rocks are crystalline rocks like schist and gneiss (pronounced: "nice"), in which water is typically found only in fractures and faults (cracks). Because there are fewer and smaller water-bearing fractures the deeper you go, the only useful supplies of water are found within a few hundred feet of the surface.

The Piedmont Lowland section is generally made up of easily weathered rocks such as shale, limestone and dolomite (a cousin of limestone). Although wells in shale are often poor producers, wells in limestone or dolomite (together they can be called carbonate rocks) can be very productive.

The limestone and dolomite are found largely in the valleys. They have very productive aquifers in them. The carbonate rocks are so soluble (easily dissolved) that in many places in this region, the limestone layer has partly or completely dissolved away, leaving caves and sinkholes.

One problem here is that people for years have used sinkholes to dump garbage in (out of sight, out of mind), but also, unfortunately, into the groundwater system like a direct pipeline.

Rainfall in limestone areas can also carry pollutants -- like animal manure, fertilizers and pesticides - into sinkholes. The water flowing through a sinkhole (or any kind of cave) may finally come out at a spring or well, possibly one used as someone's water supply. Rocks such as these can often carry pollution over large distances.

Pennsylvania's Aquifer Types