

# Consolidated Rocks

## Sedimentary

Rock Name	Composition	Physical Characteristics
Conglomerate	Cemented gravel, sand, and sometimes contains silt.	Color varies. Very uneven composition. Hardness varies widely with the degree of cementation.
Sandstone	Cemented sand. Contains varying amounts of silt, mica, or other materials.	Buff, yellow, brown, and gray in color. Drills fairly well except where it is highly cemented. Deposited in layers of varying thickness. Water bearing characteristics very widely.
Siltstone	Cemented material of silt. size.	Layered, generally gray in color. Forms gritty mud when drilled.
Shale	Compacted and cemented clay.	Thinly layered. Often blue, gray, green, or yellow in color. Drills easily and often the cuttings exhibit thin soft flakes. Poor aquifer.
Limestone	Compacted and cemented limy mud.	Thin to thickly bedded. Generally light to dark gray in color. Rock will fizz when weak hydrochloric (Muriatic) acid is put on it. Very good aquifer when solution channels have formed.

## Igneous

Rock Name	Physical Characteristics
Granite	Generally light to dark gray or pinkish in color. Mineral crystals are well developed and are generally even in size. Very hard to drill. Ground water present will only occur in joints and fractures in the rock.
Rhyolite	Gray, white, red, or purplish in color. Often highly fractured. Contains grains of quartz, mica, and sometimes pumice fragments. Often is associated with obsidian flows. Fairly hard and slow drilling with much abrasive effect on drill bits.
Basalt	Usually dark gray to black in color. Generally well jointed, and often includes small green crystals of olivine. Gas bubbles are present near the top and bottom of individual flows and contacts are generally marked by cinder beds, thin deposits of sediments, and reddish discoloration. Where the pore space exceeds the rock material the rock is called scoria.

## Metamorphic

Rock Name	Physical Characteristics
Gneiss	Granitic appearing rocks. Generally they are darker in color and have a banded appearance. Very hard to drill. Water occurs only in joints and generally in low quantity.
Quartzite	A light colored, extremely hard sandstone consisting almost entirely of quartz grains. This is probably the hardest rock to drill.
Marble	The metamorphic companion of limestone. Generally light gray in color with darker contorted bands.
Slate	Very hard metamorphic shale. Usually only identified by drilling speed and comparison of hardness