

Glossary of Terms

andesite - a gray, fine-grained volcanic rock. Andesite consists mainly of sodium-rich plagioclase and one or more mafic minerals such as biotite, hornblende, or pyroxene. It often contains small, visible crystals (phenocrysts) of plagioclase. It is the fine-grained equivalent of diorite. Andesites are the principal rocks forming the volcanoes of the "ring of fire," the arcuate chains of volcanoes which rim the Pacific Ocean basin.

anhydrite - a colorless, white, gray, blue, pink or lilac mineral of anhydrous calcium sulfate, CaSO_4 . Under natural conditions, anhydrite hydrates slowly, but readily, to gypsum.

aplite - a fine-grained, light-colored granitic rock consisting primarily of orthoclase and quartz.

bornite - a brownish-bronze, lustrous copper ore with the composition Cu_5FeS_4 that tarnishes to purple when exposed to air.

breccia - a rock composed of sharp fragments embedded in a fine-grained matrix.

chalcocite - a dark-gray, lustrous mineral, Cu_2S , that is an ore of copper; cuprous sulfide

chalcopyrite - a yellow mineral, essentially CuFeS_2 , that is an important ore of copper.

clast - a rock fragment or grain resulting from the breakdown of larger rocks.

diamond drilling, diamond drill – refers to the drill bit which is impregnated with industrial diamonds in a matrix material for cutting through rock. The center of the bit is hollow to allow the rock (called the core) to pass through the bit into the core tube where it can be carried up to the surface. This allows the geologist to observe what rock types occur at great depths beneath the surface and analyze those rocks for economic minerals such as gold, silver, copper, zinc, etc.

diorite - A gray, coarse-grained igneous rock. Diorite consists mainly of sodium-rich plagioclase and one or more mafic minerals such as biotite, hornblende, or pyroxene. It is the coarse-grained equivalent of andesite.

disseminated - occurring in small portions scattered through some other substance.

fault - a fracture in the continuity of a rock formation caused by a shifting or dislodging of the earth's crust, in which adjacent surfaces are displaced relative to one another and parallel to the plane of fracture.

geophysics - those branches of earth sciences in which the principles and practices of physics are used to study the Earth. Geophysics is considered by some to be a branch of geology, by others to be of equal rank. It is distinguished from the other earth sciences largely by its use of instruments to make direct or indirect measurements of the parts of the Earth being studied, in contrast to the more direct observations which are typical of geology.

hydrothermal - relating to or produced by hot water, especially water heated underground by the Earth's internal heat.

igneous - produced under conditions involving intense heat; "igneous rock is rock formed by solidification from a molten state; especially from molten magma"

IP (Induced Polarization) – a geophysical process whereby a strong current is introduced into the ground by an electrode to test the ability of the rocks to carry an electrical current, measured and recorded at stations hundreds of meters from the source. The ability of the rock to carry a current

is enhanced by the presence of ore-related minerals, such as pyrite, and ore-forming minerals, such as chalcopyrite, thus zones of these types of minerals will create a stronger response, ie. an anomaly.

jasperoid – a rare dense siliceous rock similar in appearance to chert, it forms conspicuous and resistant masses, knobs, and hills along shear zones or faults.

molybdenite - a mineral form of molybdenum sulfide, MoS_2 , that is the principal ore of molybdenum.

monzonite - an igneous rock composed chiefly of the minerals plagioclase and orthoclase, with small amounts of other minerals.

porphyry - igneous rock composed of large, conspicuous crystals (phenocrysts) and a groundmass in which the phenocrysts are embedded.

porphyry deposit - a deposit in which minerals of copper, molybdenum, gold, or less commonly tungsten and tin, are disseminated or occur in a stockwork of small veinlets within a large mass of hydrothermally altered igneous rock. The host rock is commonly an intrusive porphyry, but other rocks intruded by a porphyry can also be hosts for ore minerals.

pyrite - a brass-colored mineral, FeS_2 , occurring widely and used in producing sulfur dioxide for sulfuric acid. Also called *fool's gold*, *iron pyrites*.

sericite - a fine grained mica, either muscovite, illite, or paragonite. Sericite is a common alteration mineral of orthoclase or plagioclase feldspars in areas that have been subjected to hydrothermal alteration typically associated with copper, tin, or other hydrothermal ore deposits.

silica - The chemical compound **silicon dioxide**, also known as **silica**, is an oxide of silicon with a chemical formula of SiO_2 and has been known for its hardness since antiquity. Silica is most commonly found in nature as sand or quartz, as well as in the cell walls of diatoms. Silica is the most abundant mineral in the Earth's crust.

stockwork - a mineral deposit in the form of a network of veinlets diffused in the country rock.

tourmaline - a complex crystalline silicate (mineral) containing aluminum, boron, and other elements: $(\text{Na,Ca})(\text{Mg,Fe,Al,Li})_3\text{Al}_6(\text{BO}_3)_3\text{Si}_6\text{O}_{18}(\text{OH})_4$

vein - a long, narrow deposit of mineral or rock that fills the void formed by a fracture or fault in another rock. The mineralogy of the host rock surrounding the vein is often altered where it is in contact with the vein because of chemical reactions between the two rock types.