Chaffee County

Sedalia Mine

The Sedalia Mine is not a district but a single mine. The geology at the Sedalia deposit is very much like that at the Turret District to the North and the Cleora District to the East. Because the distance between the Sedalia and these districts is significant and the Sedalia is by itself such an iconic Colorado mine, we have chosen to treat it by itself.

The deposit was discovered in 1882 (according to Lindgren, 1907) or 1881 (according to Van Alstine, 1974), and worked intermittently until 1923. The Sedalia was the largest copper mine in Colorado, producing zinc and a bit of gold and silver in addition to the copper. By 1907, 60000 to 75000 tons of ore had been shipped, with grades of 5% copper and 10% zinc (Lindgren, Ibid).

Lindgren (Ibid) first described the deposit as a series of schists intruded by gabbro and pegmatite, the rocks metamorphosed to sillimanite grade. Boardman (1971) described the rocks similarly but added that the rocks constituted a skarn, formed by recrystallization and metasomatism of amphibolites and micaceous schists and gneisses. He described a number of rock types, dominated by a quartz-biotite rock with varying amounts of sillimanite, garnet, andalusite and cordierite. Less volumes of rocks included the assemblages actinolite-talc-chlorite; gedrite-garnet-cordierite; anthophyllite-cordierite-quartz-biotite; tremolite-thulite; hornblende-epidote-plagioclase-garnet.

Sheridan and Raymond (1978, 1984), with the benefit of evolving understanding of mineral deposits in various environments, reassessed the Sedalia Mine and similar deposits of Precambrian age. Carefully mapping the diverse geologic units in the area of the Sedalia Mine, they interpreted the geology as a sequence of submarine volcanic, volcaniclastic and sedimentary beds, intruded by magmas ranging from basalt to granitic pegmatite. The deposit itself was interpreted as an exhalative volcanogenic body, a type well known in Precambrian terrains in Canada and Australia. Strongly folded and metamorphosed to the amphibolite facies, the strataform deposit has developed a complex mineralogy (refer to list below).

Heyl (1963) described a thick bed of actinolite schist containing lead and zinc minerals. The primary target ore contains mainly limonite, malachite, cuprite, chalcocite with lesser sphalerite, cerussite, and galena. Other zones contain up to 10% magnetite and 20% sphalerite. The zinc spinel gahnite is common. Gahnite is recognized as an indicator mineral for metamorphosed exhalative deposits elsewhere in the world. Voynick (1994) recommends the Sedalia Mine (now inaccessible) as a source for specimen minerals, particularly the large, euhedral almandine garnets weighing up to fifteen pounds.

Sheridan and Raymond (1984) estimate a million tons of remaining ore (mainly lead-zinc) with possibly more at depth.

Mineral listed at the Sedalia Mine (mindat.org) include:

Actinolite
Almandine
Amphibole Supergroup
Andalusite
Anglesite
Anorthite var: Bytownite
var: Labradorite
Anthophyllite
Antlerite
'Apatite'
'Asbestos'
Aurichalcite
Azurite
Baryte
Beryl
'Biotite'
Brochantite
Calcite
Cerussite
Chalcanthite
Chalcocite
Chalcopyrite
'Chlorite Group'
Chrysocolla
'Chrysoprase' ?
Clinohumite
'Clinoptilolite'
Clinozoisite
Cordierite
Corundum ?
Covellite
Cummingtonite
Cuprite
Diopside
Epidote
Fluorapatite
Gahnite
Galena
Gedrite
Glaucophane ?
Gold
Goslarite
Gypsum
Hematite
Hemimorphite
Hercynite
'Hornblende'
Hydrozincite
Ilmenite
Kyanite
'Limonite'
Linarite
Magnetite
Malachite
Marcasite
Melanterite
Microcline
Muscovite var: Sericite
Opal
Phlogopite
'Psilomelane'
Pyrite
Pyrophyllite
Pyrrhotite
Quartz
Rosasite
Rutile
'Scapolite'
Scheelite
Serpierite
Sillimanite
Silver
Smithsonite
Sphalerite
Spinel
Staurolite
'Stilbite'
Talc
Tenorite
Titanite
'Tourmaline'
Tremolite
Vesuvianite
Wavellite
Willemite
Wulfenite
Zircon
Zoisite

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