NBMG OFR 83-11
See also 83-12
for geochemical
results.

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Item 5

ROCK HILL DISTRICT

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The Rock Hill mining district is located about 10 miles northwest of Coaldale, Nevada, on the eastern flank of the rolling Candelaria Hills between U. S. Highway 95 and the Esmeralda-Mineral County line. Due south of the district is the Columbus salt marsh. Access to the district is along fair to poor dirt roads west from U.S. Highway 95 and east from the Candelaria mining district.

The Rock Hill district is characterized by intermittent exploration with little or no reported production from the mining ventures. Little is known of the early history of the district, but it is probably intimately related to the history of the Candelaria/Columbus mining district, which was founded and prospected by the Mexicans in the 1860's. Early mining was hampered by the lack of nearby water, however, camps soon sprang up in the area. By 1872, Columbus, the settlement on the southern edge of the district, was the most flourishing town in Esmeralda County, mainly due to salt and borax production from the salt marsh. Activity in the Candelaria/Columbus area was reported from 1870-1893, and again in 1905-1926 (Shamberger, 1978).

Early production from the Rock Hill district is largely unknown, however it was probably small, and would have been included in the production figures for the Candelaria district. A few tons of iron ore was produced from the Boak Mine in 1952, but the low grade of the deposit caused the mine to be shut down (Reeves, 1958). A total of approximately 200 units of tungsten concentrates were produced from the Rock Hill Mines area in 1958 and 1972-1979, mostly from placer with some lode operation (Schilling, 1964). The Rock Hill Mine area has been the subject of extensive drilling and surface exploration over the past 20 years. Bear Creek Mining Company, Inspiration Copper Mining Company, and Moly Corporation, a subsidiary of Union Oil Co., have all conducted drilling ventures at the time. Tingley (1972) conducted an on-site inspection of the placer operation and

scheelite recovery plant which at the time was held by the DHW Corporation and in production. The remains of the recovery plant are still standing. At the time of the field examination (1982) there was no observed activity in the district.

The Rock Hill district is underlain by the Ordovician Palmetto Formation which is unconformably overlain by the Permian Diablo Formation and the Middle Triassic Excelsior Formation and in places with angular discordance by the Lower Triassic Candelaria Formation. Elsewhere, the Candelaria Formation and Excelsior Formation overlies the Diablo Formation along a marked erosional unconformity. Overlying all rock types are erosional remnants of Miocene welded ash flows. Intruding the sedimentary rocks are Jurassic to Tertiary granitic masses and andesite-diorite dikes and masses.

The Palmetto Formation consists of slate, siltstone, quartzite, and limestone, the Diablo Formation of massive dolomite and conglomerate composed of Ordivician chert fragments; the Candelaria Formation of silicious clastics, which intergrade laterally, and tuffaceous sandstone; and the Excelsior Formation of greenstone breccia, thin lava flows, and tuffaceous sandstone (Ferguson, et al, 1953).

The Jurassic-Tertiary intrusives, outcropping in the eastern and southern parts of the district, range from quartz monzonite to granodiorite in composition. Along the intrusive contact, the sedimentary units are metamorphosed to shales, hornfels and tactites, and are locally silicified. The sediments and intrusives are intruded by quartz veins and veinlets, and later coated with chalcedonic and drusy quartz.

Pre-Permian tectonic activity resulted in the Monte Cristo Thrust Fault where folded slates and cherts of the Palmetto Formation were thrust over the greenstone breccias of the Excelsior Formation in the northern part of the district. Drag folds in the Palmetto indicate eastward movement of the upper plate. Further northeast, later tectonic activity thrust massive Permian conglomerates of the

Diablo Formation over the Palmetto Formation. Later normal, minor thrust, and strike-slip faulting in the region further complicated the structure of the district (Ferguson, 1953). Throughout the district, a strong, distinct northeast trending fault zone was observed. Many of the workings explore the thrust fault zone which ranges up to 2 feet in thickness in places. It is sericitized and heavily stained with iron and manganese oxides and the fault gouge is filled with quartz veins and coated with chalcedonic silica. The quartz veins are generally massive, range from milky white to smokey grey, and carry fine pyrite and chalcopyrite grains.

Mineralization in the district is generally erratic, low grade, and is most prominent along the thrust fault, the northeast trending fault zone, or disseminated in the country rock adjacent to the quartz veins. An iron ore deposit occurs northeast of the townsite of Columbus in an east-west trending belt as hematite and magnetite in shear zones and as small replacement bodies in the Diablo Formation. Turquoise, along with variscite, has generally been found in the southwest part of the district as veins up to 2 inches thick along intensely kaolinized shale and as nodules within silicified limestone breccia along northeast trending bedding plane shears. The turquoise ranges from plae blue to blue green in color and exhibits varying degrees of hardness. Turquoise was reported by Morrissey (1968) at the Carl Riek Mine, now the Hilltip Claims, however, no turquoise was observed during the inspection. Copper mineralization at the site consisted of minor copper oxides staining fracture surfaces in the Candelaria Formation. The mine workings follow shallow dipping quartz veins which carried oxidized pyrite and chalcopyrite crystals. The formation was intruded by a fine-grained granitic mass.

The Rock Hill mines area is currently staked by Tungsil, Inc., from Carson City. The workings explore highly contorted and shattered beds of the Palmetto

Formation which are metamorphosed to tactite. The beds are cut by crushed, sulfide-bearing, vertical quartz veins and white to greyish-black calcite veins which are coated with copper oxides. The mine and surrounding area has been extensively drilled. Northeast of the workings is a small ridge of Jurassic granodiorite which has been repeatedly brecciated and recemented with massive quartz veins. The quartz veins are crushed and heavily coated with psilomelane. The intrusive is cut with a prominent northeast trending fault which is traceable southwest through the Rock Hill Mine area. Scheelite, along with minor hubnerite, is reported to occur as disseminated crystals in the tactite, and as a thin coating along fractures adjacent to the quartz veins. Scheelite rich gravels are found down slope of the mine (Tingley, 1972).

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