3570 0003

Lincoln Co. general

Item 18

PENNSYLVANIA DISTRICT

LOCATION

The Pennsylvania district is located near the head of Pennsylvania Canyon on the southwest flank of the Clover Mountains and east of Meadow Valley Wash. The district is centered around one major deposit, the Pennsylvania Mine just east of the center of T6S, R67E. Access to the area is by the steep Ella Mountain road which leads from Elgin in Meadow Valley Wash.

HISTORY

According to Thompson and West, 1881, the Pennsylvania district was discovered by "a mormon named Klingensmith" and the first work was done in the fall of 1871. The principal mine was named the Klingensmith, and it was developed by a 75-foot incline and a 200-foot shaft. The vein was two and one half to three feet wide and produced low-grade ore valued at twenty to twenty five dollars per ton. Old mill ruins, dumps, and foundations can today be seen which date to this early period of mining, but no production records exist from this activity. It is probable that production from that early period was credited to the nearby Caliente Delamar or Viola districts. Smith (1969) mentions a 1943-vintage DMEA contract which was carried out at the Pennsylvania mine, but, again, no records of this exist. Production figures of about $45,000 are given in NBMG Bull. 73, but they are not well documented.

The claims immediately surrounding the old Pennsylvania mine are owned by Tom Johnson and family of Eureka, Nevada. Several exploration programs have been conducted on the property and the surrounding area in the past twenty or so years, and a small-scale gold leaching project is now underway. The first of the recent exploration efforts in the Pennsylvania district was by Bear Creek Mining Co. in the late 1960's. Bear Creek was interested in the copper potential of the skarn prospects to the southeast of the Pennsylvania gold occurrences. Following Bear Creek, other major companies, including Homestake Mining Co. and Cordex Exploration investigated the area for gold. From the drill pattern seen within the Pennsylvania property, it appears that the present small operation plans to mine gold from the area of the open pit near Johnson's cabin.

GEOLOGIC SETTING

The Pennsylvania district lies along the southwestern boundary of the main portion of the large Caliente caldron complex. The mines and prospects of the district are aligned along a regional NNW structure which either parallels or forms the southwestern boundary of the caldron. To the northeast of the structure, a thick sequence of ash flow tuffs and rhyolitic flows fill the caldron. To the southwest, a structurally complex band of pre-Tertiary rocks outcrop somewhat as a window surrounded by andesitic and rhyolitic volcanics. The pre-Tertiary sedimentary rocks are intruded by small plugs of what has been described as diorite porphyry. The older limestones have been marbleized near the diorite contacts, and small skarn deposits have formed in areas along the

margins of the diorite. The structural complexity of the Pre-Tertiary rocks and the limited extent of their outcrop within a much larger area of tuffs related to the Caliente caldron complex suggests the possibility that these older rocks could be structural blocks broken from the walls of the caldron.

ORE DEPOSITS

Mining activity in the Pennsylvania district has been limited to an area about one mile long which extends N10°-30°W along a fault contact-caldron margin at the head of Pennsylvania canyon. The mineralized zone exposed in cuts and pits at the Pennsylvania mine consists of a sheeted quartz vein system which cuts altered andesitic volcanics. The veins treand NNW and generally dip to the east. In some areas along the structure, quartz-cemented breccia occurs with vugs lined with quartz crystals. Pyrite and chalcopyrite are visible in ore speciments, and rock fragments are commonly coated with iron, manganese, and copper oxide minerals. Free gold is occasionally visible. The andesitic wall rocks are propylitically altered and silicified. There has been limited prospecting of the small, weak skarn zones exposed within the blocks of Cambrian limestones which are found southeast of the Pennsylvania mine. These prospects contain magnetite, copper minerals, and sparse scheelite.

GEOCHEMICAL RELATIONSHIPS

Samples of ores from the mines of the Pennsylvania district were found to be uniformly high in manganese, copper and silver, and locally contained very high gold values. The samples were low in barium, contained low to moderate amounts of lead and zinc and, at least at the detection limits of our analytical methods, contained no antimony or arsenic. Tin and bismuth were not detected and only one sample, a skarn, contained molybdenum.

SELECTED REFERENCES

Ekren, E. B., Orkild, P. P., Sargent, K. A., and Dixon, G. L., 1977, Geologic Map of Tertiary Rocks, Lincoln County, Nevada: USGS map I-1041.

Smith, L. E., 1969, The Tom Johnson Property, Pennsylvania District, Lincoln County, Nevada: NBMG File 167, item 1.

Thompson, T. H., and West, A. A., 1881, History of Nevada: Oakland, Calif., Howell-North [1958].

Tschanz, C. M., and Pampeyan, E. H., 1970, Geology and Mineral Deposits of Lincoln County, Nevada: NBMG Bull. 73.