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Item 104

BATTLE MOUNTAIN DISTRICT

The Battle Mountain mining district, which includes the subdistricts of Copper Canyon, Bannock, Copper Basin, Cottonwood Creek, and Galena, is located in the southeast corner of the Battle Mountain Range, 10 miles southwest of the town of Battle Mountain in T31 and 32N, R43 and 44W. The district is principally in Lander County, but extends into southeast Humboldt County. The district originally was bound by the Reese River on the east, Summit Springs Valley on the west, Humboldt Valley on the north, and Buffalo Valley on the south. Access to the area is south from Interstate 80 on Nevada Highway 8A, then west along heavily used dirt roads. The district is located at the northwest end of the Battle Mountain-Eureka mineral belt.

The Battle Mountain district is perhaps the best described mining area within the Shoshone-Eureka project boundaries. Mining activity has been more or less continuous within the district since its discovery, and the prospects, veins and characteristics of the mineralization are well described in numerous publications. We have, therefore, confined our work at Battle Mountain to compiling data from literature and restricted our field reconnaissance to the collection of several samples, mainly for comparison purposes.

The Battle Mountain mining district, named for the 1857 battle between the Shoshone Indians and a government surveying expedition, was formally organized in 1866. The Shoshone Indians already had knowledge of copper ore and prospectors were making copper and silver discoveries in the early 1860's. Development followed organization and by 1868, the district was in full production with over 30 mines, 2 smelters and a mill in operation. Antimony was discovered in Cottonwood Creek in 1871 and minor production resulted from the deposits. The boom lasted until 1885 when the rich surface ore was finally exhausted, and except for minor leasing operations, the district was idle until 1900. The district experienced minor booms in 1900, 1909, and 1910 with the discovery of lode and

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placer gold, and during World War I due to the demand for copper (Vanderberg, 1938). After the war, production fell until 1935 when the Copper Canyon Mining Company began a development program. Over the next 50 years, the copper producing mines frequently have changed owners and experienced various stages of exploration and production. Placer gold, antimony and arsenic ores had been produced intermittently throughout the district's history. In 1967, Duval Corporation brought the Copper Canyon and Copper Basin open pit mines and mill into operation and became one of Nevada's three major producers of copper. These mines are still in operation today. Union Pacific Railroad (Rocky Mt. Energy) has drilled to a depth of at least 4000 feet on a deep molybdenum porphyry (Climax type) deposit at the Buckingham Mine (Schilling, 1972, oral communication). In 1981, Amax continued exploratory drilling but reported no plans to develop the prospect.

The total mineral production for the district from 1868 to 1969 is estimated to be about \$50 million, principally from copper, with lesser amounts coming from gold, silver, lead, zinc, antimony, arsenic, and turquoise (Stager, 1977).

The Battle Mountain range is a roughly circular, isolated group of hills that are underlain by Cambrian to Ordovician siliceous and volcanic rocks which are unconformably overlain by the Pennsylvanian-Permian Antler Sequence. Thrust over the Antler sequence from the west are the Pennsylvanian-Permian Pumpernickel and Havallah Formations along the Golconda Thrust. The sediments are intruded by an 87 m.y. old granitic pluton (Theodore, et al., 1973), and by numerous 38-41 m.y. old dikes and stocks (Silberman, McKee, 1971). Tertiary to Quaternary ash tuffs, basalts, glassy rhyolites, and augite andesite occur locally. The Paleozoic sediments are complexly folded and faulted with normal and thrust faults trending north and northeast.

According to Hill (1915), there are four principle modes of ore occurrence:

- 1) The silver-lead lodes - the ore bodies occur in sandstone and quartzite in narrow fissure veins that can be traced for thousands of feet along strike, and

barite occurs as gangue. Minor gossan along with pyrite was observed. The stibnite had been oxidized to stibiconite. There appears to have been no work on this prospect for at least 25 years.

The Lander Barite Mine (Elizonda Claims, Wildfire), owned by Jose Goyeneche, is located 2 miles east of the junction of Three Bar Ranch Road and the Jackass Creek Road and is currently being mined for barite. The barite is finely disseminated in a cherty unit of the Vinini Formation. The chert is slightly calcareous and contains minor shales and gossan. The barite was high graded at a specific gravity of 4.4 and is currently being mined at a specific gravity of 3.8. The main workings are along a northeast trending, 10-15 foot wide, highly altered shear zone.

The Carter Mine, a reported oil shale deposits in the Vinini Creek area, was not located.

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