STAR DISTRICT

LOCATION

The Star district is located in the north end of the Humboldt Range in Pershing County in T31 and 32N,R34E. It is accessible from Nevada Highway 400 by dirt roads.

HISTORY

The Star district was organized in 1861 following the discovery of silver ore in quartz veins in Star Canyon in 1860. The main mines were the Queen of Sheba and the De Soto mines. High-grade ores containing as much as $2500 per ton in precious metals led to the rapid growth of Star City in the early 1860's. The refractory nature of the sulfide ore led to the precipitous decline in mining in the area by 1868. Mining resumed on a limited scale in the 1870's and continued intermittently into the present. The Queen of Sheba Mine is credited with $5,000,000 in production, principally silver.

The Bloody Canyon antimony property was discovered in 1868 and has been worked intermittently from 1871 to the present. It is credited with producing over 1218 tons of antimony metal making it one of the larger producers of antimony ore in Nevada.

Some placer gold has been produced from Star Canyon and the Tehama Mine in Tehama Canyon, reportedly was worked as a gold mine, although the ore contains values predominantly in copper and silver.

GEOLOGIC SETTING

The oldest rocks exposed in the Star district are mafic flows, breccias, tuff and clastic rocks of the Limerick Greenstone of early Triassic age. It is overlain by rhyolite tuffs and flows of the Rochester Rhyolite. Both formations are part of the Koipato Group. The volcanic rocks are overlain unconformably by clastic and carbonate rocks of the Prida Formation which is in turn overlain by limestones of the Triassic, Natchez Pass Formation. These units are cut by several NNE trending faults which bound several large fault blocks.

ORE DEPOSITS

The main ore deposits in the Star district are located in the upper part of the Rochester Rhyolite and in the basal, clastic member of the Prida Formation. The bonanza silver deposits of the Queen of Sheba and De Soto mines occur in stockworks zones in the basal Prida Formation, which connect with high-angle quartz veins in the underlying Rochester Rhyolite. This relationship is so prevalent in the Humboldt Range that Silberling and Wallace (1969) have suggested that the silver in the veins and stockworks was remobilized from the rhyolites. This seems highly unlikely, however, since a clear zonal pattern is present surrounding several hydrothermal centers in the Humboldt Range. Quartz-scheelite-beryl-

tourmaline veins occur in the center of the zonal pattern. These grade outwards into scheelite-silver-base-metal veins, then into silver-base-metal veins and finally into an outer halo of antimony-mercury mineralization. The mineralization appears to be genetically related to the emplacement of S-type gravites of late Cretaceous age.

The workings in the Queen of Sheba and De Soto mines follow the contact between the Prida Formation and the Rochester Rhyolite and consist of quartz sulfide stockworks and veins in both units. Most of the economic mineralization occurred in the basal clastic unit of the Prida Formation. Sulfides present in the vein material include pyrite, galena, sphlerite, chalcopyrite, tetrahedrite and bornite. Johnson (1977) reports stibnite and jamesonite, but neither mineral was seen during my examination of the mines. A number of rotary holes, less than five years old have been drilled in the vicinity of the Queen of Sheba and De Soto mines.

The American Basin Mine is located in S27,T31N,R34E, south of the Queen of Sheba Mine. It also is located along the contact between the Prida Formation and the Rochester Rhyolite. The mineralogy of the quartz veins and stockworks is essentially the same as at the Queen of Sheba Mine. There has been recent drilling in the area between the American Basin Mine and the De Soto Mine along the contact between the Prida Formation and the Rochester Rhyolite.

The Tehama Mine in Tehama Canyon has been idle for many years. The road to the mine is washed out and there is no sign of recent activity. The mineralized zone occurs along the faulted contact between basal clastics of the Prida Formation and the Rochester Rhyolite. The fault zone trends NNE and dips 60°-70°NW. A zone of silicification and stockwork veining occurs in the fault zone. Sulfide minerals present in the ore zone include pyrite, chalcopyrite, tetrahedrite, and sphalerite. The mineralization occurs predominantly in the rhyolite.

The Bloody Canyon Mine is located in the upper part of Bloody Canyon. The main workings are located on a one meter wide quartz vein in Rochester Rhyolite. The vein contains coarse-grained massive of bladed stibnite. There is no evidence of recent activity in the area and the road was impassible in the summer of 1984.

GEOCHEMISTRY

Samples from the Queen of Sheba, De Soto, and American Basin mines were highly anomalous in silver (up to 3000 ppm Ag), copper, lead, antimony, and zinc. They were anomalous in arsenic and gold. A sample from the Queen of Sheba contained anomalous cadmium.

A sample of carbonaceous, pyritic limestone of the Prida Formation from the Pflum Mine contained anomalous molybdenum, vanadium, strongly anomalous zinc, lead, copper, barium, boron, silver, arsenic, and gold.

A sample from the Tehama Mine is highly anomalous in silver, arsenic, barium, copper, and antimony and contains anomalous zinc, lead, and gold.

Samples from the Bloody Canyon Mine, as expected, contain abundant antimony, but also are anomalous in arsenic, zinc, silver, copper, and lead.

SELECTED REFERENCES

Johnson, M. G. (1977) Geology and mineral deposits of Pershing County, Nevada: Nevada Bureau of Mines and Geology Bulletin 89, p. 115.

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