See also 83-4 for geochemical results.

(148) Item 2

0570 0002

BIG CREEK DISTRICT

The Big Creek mining district is located on the west side of the central Toiyabe Range in Lander County, about 10 miles south-southwest of Austin in T17 and 18, R43E. The area is accessible on good dirt roads south from U.S. Highway 50.

Early mining in the district dates from the 1860's when silver bearing veins were discovered. Large amounts of antimony and copper in the ore made the extraction of the silver difficult and many of the early mines, and consequently the early towns, were soon abandoned. Interest was rekindled briefly in 1890 when the large antimony deposits at the Pine Mine (Antimony King) in Dry Canyon were discovered. The district was again active in 1916-1918 when demand for antimony was high due to World War I. Sporadic production from 1935-1969 reflects the fluctuating market price of antimony, but in general, production was small and erratic. The total production of the district is less than $500,000 (Stager, 1977).

The Big Creek mining district is situated along the west side of a well defined horst which makes up the central part of the Toiyabe Range. The most prevalent structures in the range are the high angle, dip-slip faults, thrust faults, and folds. The most recent of these are the high angle normal faults that cut across and parallel the range, the most prominent being the north trending Eastside (Kingston Canyon-Big Creek) Fault, that runs down the middle of the range and is downthrown on the western side. The early Paleozoic sedimentary rocks are composed of at least three and locally more, thrust plates. The first plate, Lower Cambrian quartzites, shales, and limestones, and the second plate, Cambrian/Ordovician limestones and phyllites, are lithologically similar (Stager, 1977). The third plate consists of Ordovician cherts and argillites of the Valmy Formation. The first and second plates are separated by the Eastside Fault. The second and third plates are separated by the Roberts

J. Tingley + P. Smith (1982) Mineral Inventory of Eureka-Shoshone Resource Area: NBMG OFR ~~82-10~~. 83-3

Mountain Thrust. Both structures show evidence of two generations of folding (Washburn, 1966, 1970). The cherts and argillites of the third plate are in small isoclinal folds with fold axis parallel to the formation strike. There is a strong northwest trend in bedding planes and fold axis (Mean, 1962); elongation of outcrop belts and orientation of the margins of intrusive rocks (Stager, 1977). Small bedding faults are common in the formations (Hansen, 1961). In Dry Canyon, the autochthonous and allochthonous sequences are in both thrust and normal fault contact. The contacts trend north, follow the topographic contours and are offset by an inferred strike-slip fault in the vicinity of the Antimony King Mine (Hanson, 1961). In the northern part of the district, Mesozoic granitic rocks outcrop, possibly related to the Austin pluton. Locally, rhyolite dikes cut the sedimentary rocks. Patches of Tertiary pyroclastics overlie the Paleozoic sediments (Stager, 1977).

The ore minerals, principally stibnite with pyrite, argentiferous tetrahedrite, and galena, occur in and intergrown with white crystalline quartz which fills fissures and fractures in the sedimentary rocks. Some of the deposits have a network of small interlacing quartz veinlets cutting the beds in all directions and ranging from inches to 2 feet (Hill, 1915).

There are two principal workings in the district: The Bray-Beulah-Hard Luck-Pradier workings in the Big Creek Canyon and the Dry Canyon-Antimony King workings in Dry Canyon. The patented Bray-Beulah Mine (Genessee) is located on the west side of Big Creek, 4.8 miles from the canyon mouth in the Ordovician Valmy Formation. The Hard-Luck Pradier is located about 1,000 feet to the north. The Bray-Beulah was originally located as a silver mine in 1864. Its antimony was not recognized until 1891 when it was relocated by J. Bray. Over 1,000 tons of 60% antimony was produced from 1891-1898 from at least two adits, now caved, with over 900 feet of underground workings. Water flows freely from the portal of one of the adits at the rate of several gallons per minute. No activity was noted at

this time. The Valmy Formation at this location is black, thinly bedded, and platy, consisting of intensely folded shales and phyllites. The siliceous beds show a prominent NW-SE strike. Abundant fissure veins of vuggy quartz cut the host rock and carry crystalline stibnite with minor amounts of galena, pyrite, tetrahedrite, and covellite. Along the contact between the quartz vein and the host rock, the stibnite has been altered to white and yellow oxides which coat silica boxworks. The sulfides occur in pods and blebs and fill the vugs and fractures of the vein quartz. Some of the veins exhibit post-mineralization faulting.

The Dry Canyon Mine (Antimony #4, Pine, Stakes, Mammoth) is located at the head of Dry Canyon, 1.8 miles from the canyon mouth and down slope from the Antimony King. The mine had produced 165 tons of antimony and in World War I, 300 tons of 55% antimony ore was shipped. The mine has several hundred feet of underground workings with outlying pits and cuts in thinly bedded, shaley limestone (Silurian Roberts Mountain Formation?). Stibnite, the principal sulfide, occurs with minor amounts of pyrite and tetrahedrite in quartz veins that cut the limestone host rock. The workings are along a contact between the upper and lower plates of the Roberts Thrust Fault. There has been no recent activity at this site. On the top of the ridge north of the Dry Canyon Mine is the Antimony King Mine, a 250 foot shaft with crosscuts, open cuts, and pits in a silicified fault breccia along the thrust plane. Vein quartz carries intergrown stibnite that has been oxidized on the surface. The older workings have been recently open pitted and extensively drilled. At the time of this examination (1981), FMC Corporation was conducting exploration for gold in the area of Dry Canyon.

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