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74ROYSTON DISTRICT

LOCATION

The Royston district is located in the central Royston Hills, astride the Nye County - Esmeralda County line about 25 miles northwest of Tonopah. The mines of the district are located in the northwest quarter of Township 5 North, Range 40 East and the southwest quarter of Township 6 North, Range 40 East. The county line bisects the district along a northwest-southeast line and the largest properties are in Esmeralda County. In Esmeralda County, the area is known as the Crow Springs district.

HISTORY

The first recorded activity in the Royston (Crow Springs) district was in 1902 when mining began on the Royal Blue Mine, located just west of the county line in Esmeralda County. From 1902 to 1915, the mine is credited with production of about \$5 million (Morrissey, 1968) in turquoise. Intermittant mining activity has taken place in the district to the present time, but there is no record of the dollar amount produced. Production in the district has been coincident with the rise of gem prices. A high-grade deposit of silver was discovered on the Foy-Betts Lease in 1921 and about \$20,000 worth of ore was produced from a shallow shaft on that property in six weeks' time (Paher, 1970). Apparently little came of the silver strike, and the boom quickly subsided.

The district and the surrounding areas were heavily prospected in the 1960's and 1970's for copper-molybdenum porphyry deposits and, at the present time, the central part of the district is being explored for precious metals by a Canadian firm.

GEOLOGIC SETTING

The Royston hills are underlain by metavolcanic rocks (greenstone) and metachert assigned to the Permian Pablo Formation (Kleinhampl and Ziony, 1984). At Royston, the Pablo Formation is locally bleached and exhibits a well-developed fracture cleavage. A minor outcrop of granitic rock is located in the main part of the district. Tertiary volcanic rocks, consisting of welded ash-flow tuffs and basalt overlie the older rocks.

ORE DEPOSITS

Turquoise occurs principally in veinlets and seams in intensely deformed and altered metavolcanic rocks of the Pablo Formation near the contact with intrusive quartz porphyry. Minor lenses and nodules of turquoise ranging from a fraction of an inch to more than an inch in thickness occur in the altered host rock and as cementing material in fault breccias; the rocks were locally silicified after the turquoise was emplaced (Morrissey, 1968). Turquoise from the district ranges from pale blue to dark sky blue.

At the Royston Coalition Mine, within the Nye County part of the district, workings follow a north-trending shear zone in bleached, altered quartzite of

the Pablo Formation. An iron- oxide stained, brecciated quartz vein containing galena, sphalerite, and pyrite follows the shear zone. Turquoise occurs in the oxidized portions of the vein system and has been mined in some of the workings on this property. One of the shafts at this mine, located on the north end of the common line of Sections 6 and 6, T5N, R40E, is the Foy-Betts Lease, source of the silver ore responsible for the short rush to the district in 1921.

GEOCHEMICAL RELATIONSHIPS

Samples of ores from the district were anomalous in gold and contained high silver associated with high arsenic, antimony and base metals. Boron values were high, one sample contained over 2000 ppm boron.

SELECTED REFERENCES

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