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Item 3

BUFFALO MOUNTAIN MINING AREA

LOCATION

Buffalo Mountain is located at the north end of the Tobin Range, north of Smelser Pass. It extends northeast to Lone Tree Hill near Interstate Highway 80, 10 km northwest of Valmy. Mines and prospects occur on both the east and west sides of the mountain. The area is joined on the south by the Iron Hat mining district, in which are included the properties just north of Smelser Pass.

HISTORY

Little is known concerning the history of the mines and prospects on Buffalo Mountain. The mines on Lone Tree Hill probably were worked in the early 1900's. Manganese occurrences were known in southeastern Humboldt and northeastern Pershing County in the early 1900's, but most of the production, and probably the exploration of minor properties, was done during or between the two world wars. Recent rotary drilling (1984) at copper prospects on the southeastern flank of Buffalo Mountain and in the vicinity of Smelser Pass (Iron Hat district) may have been in search of precious metals. Rotary drilling in S33,T34N,R42E and S1,T33N,R41E, at the northeast end of Buffalo Mountain is also reported to be for precious metals.

GEOLOGIC SETTING

Buffalo Mountain is underlain by Pennsylvanian and Permian rocks of the Havallah sequence which are intruded by a large mass of coarsely crystalline granodiorite (Cretaceous) that makes up most of the southwestern half of the range (Willden, 1964, p. 92).

ORE DEPOSITS

Several minor manganese deposits are reported from Buffalo Mountain, especially along the northwestern side and at the northern end of the range. Six individual properties are reported (Southern Pacific Co., 1964, p. 96; Southern Pacific Co., 1959), none of them are believed to have been productive (Willden, 1964, p. 93). Manganese deposits in marine rocks of the Havellah sequence are syngenetic deposits. Many of them are stratabound, although epigenetic deposits and occurrences are also known, and are believed to represent the plumbing system of the submarine hot springs that deposited the manganese (Snyder, 1978, p. 743). Manganese prospects are reported in S5, 6, 8 and 9, T33N,R41E, in S33,T34,R41E, and in S19 and 30,T34N,R42E (Southern Pacific Co., 1964, p. 96).

Numerous prospect pits, bulldozer cuts, and shallow underground workings are located in an area of about 2 km^2 at the northeast end of Buffalo Mountain. The prospects consist of gossan, oxide-copper minerals, and spotty vein quartz along high-angle or thrust faults cutting chert of the Havallah sequence. Dikes and small intrusive masses of Cretaceous

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quartz monzonite intrude the Havallah nearby. Sparse pyrite and chalcopyrite are present at one locality, and galena at another. Silver and gold mineralization is reported from prospects in SE/4 SE/4 S36,T34N,R41E, and suspected elsewhere.

Mines and prospects on Lone Tree Hill northeast of the northeast end of Buffalo Mountain explore high-angle fault zones in Ordovician Valmy Quartzite. Iron oxides and sparse oxide copper minerals occur with chalcedonic quartz along 1 m wide crush zones. The workings are probably for precious metals.

A small copper prospect (vein quartz and oxide copper minerals) is present in quartz monzonite on the southeastern side of Buffalo Mountain. Nearby copper prospects to the south are included in the Iron Hat mining district.

SELECTED REFERENCES

Snyder, W. S. (1978) Manganese deposited by submarine hot springs in chert-greenstone complexes, western United States: Geology, v. 6, p. 741-744.

Southern Pacific Co. (1959) Areal economic geology, T33-34, R41-42E.

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Willden, Ronald (1964) Geology and mineral deposits of Humboldt County, Nevada: Nevada Bureau of Mines and Geology Bulletin 59.