

LEONARD CREEK DISTRICT

LOCATION

The Leonard Creek district is located in the southern half of the Pine Forest Range, northern Humboldt County, and includes the area around Dyke Hot Spring. The Dyke Hot Springs area is sometimes referred to as the Dyke, Florence, or Boyd Basin district but these usages appear to be local and unofficial. It may, however, be improper to include the Dyke area within the Leonard Creek district but we have done so for convenience sake. A good dirt road traverses the eastern and southern margins of the Pine Forest Range passing by both the Woodward Ranch and Leonard Creek Ranch. Access to the the two ranches is via dirt roads leading west from State Highway 140, about 60 miles north of Winnemucca. Topography in the district is steep, exceeding 7,000 feet in places and most mines and prospects are generally inaccessible.

HISTORY

Efforts to promote the Nevada King Mine in 1906 appear to be the first recorded mining activity in the district. The mine is located in sec. 30, T44N,R30E near the headwaters of Pass Creek Canyon. Lawrence (1963) reported the first production from the mine was in 1927 and it operated intermittently thereafter until 1942. Total production is reported to be 22 tons of antimony metal.

According to Vanderburg (1938), placer gold was discovered on Leonard Creek in 1914. Snow Creek and Tepee Creek, tributaries of Leonard Creek, along with New York Canyon were all worked by placer miners before the activity ceased in the mid 1930's. There are, however, large areas of the drainages that were not worked. Like most small placer operations, the mining was done by individual miners so production figures are incomplete and have little meaning.

Mining activity in the area of Dyke Hot Springs dates from about 1915 when prospecting began along quartz vein systems. Locally, rich pockets of gold and silver ore were encountered but no production figures exist. The largest workings are associated with the Hapsgood Silver Mine in sec. 1, T42N,R30E, the Yellow Dog and Dyke Springs Mine in sec. 36, T43N,R30E, and the Bobby Mine in Dyke Canyon. A number of smaller, unnamed mines and prospects explore quartz veins along the east side of the Range from Cherry Creek north to Pass Creek Canyon.

The Nevada Bureau of Mines has a report on file for a property described as the "Oklahoma Gold Mining Company", dated 1914, that relates to a mine in the Dyke District with extensive workings and good assays. The report does not, however, provide a precise location for the mine, and none of the properties examined match its description.

In 1955 a tungsten discovery was made at the present site of the Saddle Mine in sec. 17, T43N,R30E. During the same year 250 tons of tungsten ore were mined from the deposit and shipped to the Getchell mill for processing.

During the late 1970's uranium was discovered in shear zones within metasediments near the head of Snow Creek in sec. 35, T43N,R28E. In the

early 1980's these deposits were explored by drilling and were determined to be uneconomical at the time. A prospect above the springs in the same section 35 exposes a pegmatitic quartz vein containing large rosettes of molybdenite and minor copper sulfides.

GEOLOGIC SETTING

The oldest rocks exposed in the Leonard Creek district are metavolcanics of the Happy Creek Formation of Permian age which are exposed along the east and west flanks of the Range. A single exposure of Jurassic-Triassic limestone crops out along the south eastern part of the Range while phyllites, slates, and quartzites of the same age survive as pendants or flank the Range to the east. The northern portion of the district is dominated by granodiorites and monzonites that form the ridges and highlands of the central portion of the Range. The southern portion of the district is composed of undifferentiated volcanic and sedimentary rocks of Tertiary age.

ORE DEPOSITS

Antimony mineralization at the Nevada King Mine occurs entirely along shear zones in metasediments. According to Lawrence (1963) the ore exists as lenses, pods, veinlets, and as single crystals of stibnite, much of which is covered by yellow antimony oxides.

The quartz vein systems in the Dyke Hot Springs area are commonly narrow, highly oxidized, almost always iron stained, usually brecciated and sometimes gossan like. They normally trend north and dip at steep angles. Free gold is present but rarely visible and silver is apparently present in tetrahedrite or, as in the case of the Hapsgood Mine, it may be present within the lead minerals.

The tungsten mineralization at the Saddle Mine occurs along and near the contact between quartz monzonite or granodiorite and limestone. According to Stager (in prep) the mineralization consists of scheelite, minor molybdenum, pyrite, and some secondary copper in a gangue of epidote, quartz, calcite, garnet, and feldspars. Grade of the ore ranges from 0.3 percent to 1.75 percent WO_3 . Three ore zones are exposed from the crest of the range westward for about 800 feet. Very little development work or mining has taken place to date.

Uranium mineralization at Snow Creek occurs most commonly in pockets or masses of chalcedony that form along fractures or in shear zones in metasediments. In one place, uranium is concentrated on limonitized fractures in an alaskite dike. The uranium appears to have been introduced along with silica by hot water ascending along the fractures.

GEOCHEMICAL RELATIONSHIPS

Of the seven quartz veins sampled in the Dyke Hot Springs all but one had detectable gold. The six samples reporting gold had values ranging

from 3.8 to 140 ppm gold. Silver values ranged from 5 to 5,000 ppm with anomalous lead, copper, zinc, and arsenic.

SELECTED REFERENCES

Lawrence, E. L. (1963) Antimony Deposits of Nevada: NBMG Bull. 61.

Stager, H. K. (in prep) Tungsten Deposits of Nevada: NBMG Bull.

Vanderburg, W. O. (1938) Reconnaissance of Mining Districts in Humboldt County, Nevada: USBM IC 6995.

Willden, R. (1964) Geology and Mineral Deposits of Humboldt County, Nevada: NBMG Bull. 59.