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NATIONAL, HUMBOLDT CO. McDermitt Sheet

Source: Geology and Mineral Deposits of the National Mining District, Nev.
Waldemar Lindgren, U.S.G.S. Bull. 601, 1915

REGIONAL SETTING

Structural: At junction of a major N-S anticline and an E-W anticline; latter may be W extension of the pre-Tertiary E-W anticline in northern-most Nevada along which lie Jarvis, and possibly, if the E-W ore zone associated with this anticline is broad enough, Cornucopia, Tuscarora, Getchell etc.

Production Belts: At intersection of ore belt just mentioned and N-S Austin-Goldfield high production belt. But National lies N of highest-production strand in the E-W production belt.

Lithology: National lies near the W edge of a major volcanic field, extending eastward almost to Utah. Much of this area is capped by post-mineral volcanic cover; but large areas of pre-mineral rocks may be exposed where erosion has cut down to them.

LOCAL GEOLOGY

Section:

Basalt: caps range
Rhyolite: Maximum thickness 1200'+
Basalt: 2000 ft. Thin flows = Columbia River lavas
Latite, trachyte: 400'+. Wedges out
Water-laid tuff: 900
Basalt

Contemporaneous with the rhyolite flows are many rhyolite dikes, often carrying mineralization; trend north like the veins.

Structure: regular NE dip of all flows, 8-15, suggests doming. (W.L.)

ORE DEPOSITS

Narrow fissure veins, trend N, dip steeply E or W. They cut latite, rhyolite, basalt, basalt tuff, trachyte; younger than any rock in the district. Only National vein has been extensively developed.

Hydrothermal Alteration: Near veins, pyrite, calcite, a little sericite and adularia.

Veins consist of sheared rock a few ft. wide; footwall well marked. Seams of quartz along foot, hanging, or intermediate walls. Quartz shows symmetrical, crustified banding; vuggy. Massive quartz is fine grained. Calcite is rare. Granular adularia in one vein.

Stibnite in almost every vein, but veins with high stibnite are usually poor in gold & silver. Pyrite, chalcopyrite, arsenopyrite, blende, galena as small grains; often among the first to be deposited. Cinnabar in one vein.

Shipping ore, silver, found only near surface; ruby silver, horn silver. From veins and at least one mineralized dike. Only real development is the gold shoot of the National mine - gold as electrum, 50% silver. Pyrite, stibnite, marcasite (most abundant). Much of the ore ran \$20-30 per lb. Early quartz was barren. Electrum with productive quartz in footwall seam.

National Mine

Ore topped 40' below surface, but this is probably the real top, because no placer gold has been found. Shoot developed down the dip for 800', maximum strike length 250'. Total production of shoot \$3,500,000 (\$5,900,000 @ \$35 gold).

Latite is the main country rock. (Ore body was well down in stratigraphic section).

Vein dips 50-60 W with well developed walls.; along a fault, but some of the faulting is post-mineral, 5-6' wide in ore. Productive quartz is translucent, fine-grained, dull white.

CONCLUSIONS

The National vein can be traced on the surface for 2000'; it is along a fault and is apparently by far the strongest structure in the district. The ore body lay well down in the stratigraphic section. The Santa Rosa range rises to the east. Elevation of outcrop is about 6600'; there are roughly 20 square miles of volcanics at elevations over 7000' east and south of the mine.

On Buckskin Peak, 3.5 mi. E of S from the National mine, the rhyolite series is exposed. Elevation, top of peak, 8743'. A prospect, elevation 8000', shows a N-S vein with fine-grained quartz replacing rhyolite; needles of stibnite and fine-grained pyrite replace the fine-grained quartz. Said to carry silver. (Bell & Ward prospect).

Neversweat: ½ mile to N and 600' E of above. 80' shaft on a narrow vein striking northward, dipping steeply W. Some drifting. Vein shows 5-10" of quartz, some pseudomorphic after calcite; adularia & with the quartz; pyrite. Ore said to contain ruby silver, horn silver and native silver; no stibnite. Two assays: (1) Au 40c, Ag 21 oz. (2) Au \$1.40, Ag 105 oz. Many assays, \$30 to \$100, said to have been obtained.

Rhyolite is often an unfavorable rock for fracturing; at Buckskin Peak contact with the underlying basalt is at 7500' or somewhat lower; elevation of prospects about 8000'. The basalts of the district do not seem to be of the shaly type, unfavorable for fracturing; some are diabasic in texture; others, though fine-grained, are holocrystalline. Basalt might fracture well.

National is well situated, as shown above, from the standpoint of regional ore controls. The ridge between National and Buckskin Peak, the Buckskin Peak area, and the high country east of the National mine merits investigation, with special emphasis on searching for persistent fractures, preferably minor faults.