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REPORT ON HUMBOLT GROUP OF CLAIMS

January 2, 1941
Caldwell, Idaho

GEOGRAPHY: This property is located in the $S\frac{1}{2}$ of Sec. 35, T. 11 S., R. 19 E. in the Ochoce Mining district, about $\frac{1}{2}$ of a mile north of Bear Creek, Jefferson County, State of Oregon. The property can be reached by U. S. Highway 28 from Vale to Mitchell, Oregon, about 10 miles west of Mitchell a road takes off to the right up a narrow gulch over a rolling plateau for 7 miles to a ranch house, after crossing Bear Creek, which is the most westerly contributor to John Day River, another road takes off to the right for about $\frac{1}{2}$ mile which ends on the property.

The elevation at the portal of the lower tunnel is 3500 ft. which makes the climatological condition about the same as John Day. The property consists of 6 unpatented claims, some of which were located several years ago, and others recently.

DEVELOPMENT: The lower tunnel was started some years ago in the S.W. corner of the Humbolt No. 1 claim, on small seams of cinnabar out-cropping in a long, nosing-out hill, which strikes northwesterly, the tunnel follows the rake of the hill for 140 ft. with numerous raises and crosscuts. Unfortunately the main raise to the upper tunnel has caved in and filled the lower tunnel at the intersection some few months ago. So no examination could be made of the crosscuts and face of the tunnel. A 6 x 10 Single Stage Compressor driven by a Chevrolet motor in good condition, but a new reservoir tank is needed to complete the plant for 100-150 cu. ft. capacity; a well-equipped Blacksmith shop is in the same building.

One Rotary Retort, almost new 24" x 10' long in good condition, about 2-ton capacity, is located about half-way between the upper and the lower tunnels, and ore has been fed to the retort from a glory hole near the mouth of the upper tunnel, wood was used for fuel during its operation. A Bunk House 14' x 24' frame structure in good condition with stoves and utensils is located 350 ft. north-easterly from the retort.

The upper tunnel as shown on the accompanying map is 100 ft. above the lower tunnel driven in a same general direction for a distance of 60 ft. Mostly in Phylite and Porphyritic Andesite, the glory hole is near the portal of this tunnel where considerable amount of quicksilver was taken out of in the last year or so. Numerous open cuts and pits have been opened up on the property which shows that the panning method of prospecting has been used.

GEOLOGY: The Magmatic outlet is quite in evidence of being driven from the highly elevated mountain range to the north, about $3\frac{1}{2}$ miles. The first flow consists of Andesite, about a mile north of the property a prominent sill of Andesite is exposed out of the over-lying Rhyolite. Following the Andesite floor which probably released the Hydrothermal pressure and which changed the composition to more Basic substance, a natural flow occurred in somewhat periodical performance probably due to the mud dams that slowed up the extraction and caused false resistance to the more pasty mass that followed the mud out-let. This also had the tendency of fracturing the structural rock during the silicification and may often be construed that a re-alteration has taken place.

No evidences were found of any thermal spring on the property, due probably to the fact that one major fault striking northwesterly from a point about 1,600 ft. East of the Bunk House, where uphemeral stream has developed. Another major fault is found on the west side of the property commencing in the S.W. corner of Sec. 35 with a northwesterly strike and to my opinion may be an extension of the Horse Havin fault, which is the main ore-maker in the Horse Havin Mine.

Both of these faults commenced developing at the end of the Rhyolite flow period, and the water was then only under a low hydrostatic pressure and went to its least resistance probably through the underlying pervious rocks or the Andesite tuff which may well be considered receptacle rock for mineral gathering, but none of the underground workings have not raised the expectation of suitable formation, about 3/4 mile north of the building, a great deal of round Opalite nodules (Geodes) are found, left by the erosion, which have been developed in the mud seams of the Rhyolite and which may indicate that the thermal waters went through there, under low pressure and most of them showed Mercury Sulfides in one form or another opened up.

The Horse Havin Mine located in Sec. 12, T. 10 S., R. 18 E. (El. 3250) or 8 miles N.W. of Humbolt which in 1934 came to be the third largest producer of quicksilver for that year in Oregon. There are lays in Opalite and Andesite tuff, the nearest mines in operation to the Southeast is Westerling's property on Johnson Creek, Sec. 15, T. 14, R. 20 E. Both of these mines are working on the theory that they are getting their best ore in the Clarno formation (Eocene). Several other small producers on Johnson Creek are getting their values in the Rhyalite.

RECOMMENDATION: The property is credited with a total production up to date, six flasks of quicksilver, which has mostly been taken out of the glory hole from surface prospecting. Flowered quick is found in various small seams or clay dams formed by the water erosion on the surface which indicates that a great deal of the Mercury Sulfides have been exposed to the sun and weather conditions that altered the mineral to its native state. It is therefore advisable to do more surface prospecting and development such as trenches and crosscuts rather than underground developments at the present time. I believe the surface mining with this small retort on the ground will help to pay for the underground exploration in a short time.

Particular attention should be payed to both of the major faults in prospecting along the trend of the fault both sides. So to not overlook any cross-fractures or minor faults that may now be hid under erotional remains. If the ore is found on the surface it could be hauled on light trucks or any other conveyance to the retort without excessive cost. The general estimation of fuel capacity in that vicinity is 10 gal. of fuel oil to a ton of ore, this includes drying. The previous mentioned operation on the Humbolt property has been probably mostly dried by ariel condition and sunlight, which is much acceptable to the clay condition associated with the ore.

It is hard to estimate the actual cost of ore production under such a development, as there is a certain amount of waste work that has to be done but to feed this small furnace will only require the highest grade of ore which would pay good money while the operator is prospecting for larger deposits. This is commonly done in larger quicksilver producers and I believe the Humbolt property has a fair chance of finding a high-grade ore in several paces if carefully handled and should become a good average producer along the Ochoco mineral belt of Oregon.

Respectfully submitted,
(Signed): GEO. M. JOHNSON, Geologist.