State Department of Geology and Mineral Industries

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Glass Buttes Dist.
Lake County

Preliminary Notes on the Oregon Uranium Corporation Mercury Mine.

Owner: Glass Buttes Mercury Association, Ronan, Montana. E. W. Pringle, attorney.

Lessee: Oregon Uranium Corporation, 8310 N. E. Highway 99, Vancouver, Washington. Harry Harold, President.

Location: On the isolated hills known as Glass Buttes in Sec. 34, T. 23 S, R. 23 E. in the extreme northeast part of [redacted] Lake County, Oregon The mine lies 3.5 miles south of U. S. Highway 20, 83 miles east of Bend and 49 miles west of Burns. No timber, electric power or water is available on the property. Water is transported and power is furnished by deisel-electric generator. Rail transportation is available at both Bend and Burns.

Bibliography:

Reed, G. C., Exploration of Glass Buttes Mercury deposit, Lake county, Oregon: U. S. Bur. of Mines Rpt. Invest 3926.

Ross, C. P. (1941) Some Quicksilver Prospects in Adjacent Parts of Nevada, California and Oregon: U. S. Geol. Survey Bull. 931-B, Pp 33-37.

Waters, Aaron (1927, A Structural and Petrographic Study of the Glass Buttes, Lake County, Ore. : Jour. Geol., Vol. 35, No. 5, Pp 441-452.

History and Development: Cinnabar was first discovered in the Glass Buttes district in the early 1930's. In 1935, 48 lode claims were located and for many years were held by H. A. Miller of Bend. Prior to 1940, four tunnels approximately 380, 240, 40, and 120 feet long, two shafts, 44 and 20 feet deep and numerous test pits and trenches were dug at various places on the property, but no production was made. Much of the work was done by J. W. McDaniel of Bend.

During the mid 1940's, the claims were leased from Miller by S. W. Lazier of Portland, but apparently little was done. The property then lay idle until in July 1954, Harold Olsson and E. W. Pringle of Ronan, Montana relocated 21 claims covering most of the early workings. The Glass Buttes Mercury Association was subsequently organized to promote further development of the property.

In November 1954, the property was leased by Kennametal, Inc. This company reopened the 380 foot crosscut tunnel and drove several hundred feet of additional drifts and crosscuts and drove a 100 foot raise to the surface in exploring a number of fault and breccia zones containing low grade but in some cases rather extensive cinnabar mineralization. Also a great deal of surface trenching was done with an RD 8 with dozer and rooter. Because this work failed to indicate the presence of ore in sufficient quantity and grade to warrent further expenditure the lease was terminated.

In June 1956, Max Stalnaker, Box 345, Scio, Oregon, and Elmer Surrat, 2295 E. Rural, Salem, leased 11 of the claims and later relocated the 10 claims adjoining these on the south that the Association had recently dropped. During the next few months, about three flasks of quicksilver were recovered with two 12 inch tubes. In early 1957, the 11 claims owned by the Association were acquired under lease by the Oregon Uranium Corporation. Stalnaker and Surrat then leased the 10 claims which they held by location to Cascade Mining, Inc. in return for a working interest in the company. Thirteen additional claims were later located. Equipment and finance for the exploration of the 23 claims are being furnished by a group of loggers from Lyons, Oregon.

Recent developments on Cascade Mining Co. property consist of surface trenching and the construction of a large frame cabin. Also two small rotary furnaces of unique design have been built but thus far (Sept. 10, 1957) not enough ore is available to operate them. Prior to 1940 two tunnels, 240 and 40 feet long were driven to explore minor cinnabar showings.

The Oregon Uranium Corporation is composed largely of stockholders in the Electro-Products Manufacturing Co., 8310 N. E. Highway 99, Vancouver, Washington. Harry Harold, is president of Oregon Uranium Company. Other stockholders include Al Wick, Algot Sunderlin, Russel Ramberg, Clem Eslinger, and Harry Hill. The latter two were former partners in the Lucky Five Group who in the summer of 1956 installed a 28" by 30' Gould rotary furnace on the Amundson, Hamilton & Buchart prospect on Bear Creek south of Prineville. The operation was very short lived, due to the lack of ore. According to Eslinger, he and Hill then purchased the company assets including the furnace and turned them over to Oregon Uranium for cash and an interest in the Glass Buttes venture.

The Gould rotary was removed to Glass Buttes early in March 1957 and in May production of about one flask of quicksilver, from 20-25 tons of ore, per day was begun.

Notes on Geology: The Glass Buttes district is underlain by three groups of lava flows (Waters, 1927, Pp 441-452) the upper and lower of which are basaltic. The intermediate series of flows which is over 400 feet thick and composed of andesitic rocks, perlite, obsidian and vitrophyre makes up the greater part of the Buttes. According to Waters, the volcanic rocks of the Glass Buttes form a broad anticline broken by many normal faults of diverse trends and magnitude.

The quicksilver deposits were formed in rocks which, as stated by Ross (1941, Pp 34) originally consisted almost entirely of flow banded glass. The glassy rocks have been extensively silicified along broad zones of northwesterly trend and in many places are completely altered to a dense brittle rock, milk-white to grey in color and composed almost entirely of silica in the form of opal or chalcedony or a mixture of both. The rock is commonly called "opalite."

The silicification was evidently effected by hydrothermal silica-bearing solutions along northwest-trending fractures. It is believed that at least part of the silica was derived from the leaching and devitrification of the glassy rocks adjacent to the channels through which the hydrothermal solutions ascended.

Halloysite (identified by Ross 1941 Pp 34) an aluminous clay mineral is locally abundant probably as a product of the alteration of the glass.

After, or more probably, during the later stages of the silicifying action, fracturing recurred within the opalized masses, apparently following or paralleling the earlier fractures. The adjustment of the hard, brittle rock to this recurrent movement often resulted in intense brecciation and minor fracturing along narrow bands paralleling the main fractures. Thus were formed innumerable open spaces into which cinnabar was later deposited during what were probably the final stages of the hydrothermal activity.

Cinnabar occurs as fracture fillings, as coatings on breccia fragments and as irregular banded or splotchy aggregates in the relatively unbroken rock. In the latter, cinnabar in an extremely finely divided state is intimately mixed with the amorphous silica. Such mixtures are of highly variable concentration and occur both as fracture fillings and as varicolored bands.

Ore is being mined from an open pit adjacent to the footwall of a curving northwest trending fault. This fault which has been exposed for about 100 feet strikes N 58° W at the eastern end of its exposure and N 80° W at the western end. Its dip is approximately 70° at either end becoming somewhat shallower near its central point. Thus the curving fault forms a cap-like structure which because of its possible damming effect on rising mineralizing solutions may account for the ore localization, The ore occurs largely within a 6 foot zone adjacent to the fault, but scattered mineralization and high grade pods are found at least 15 feet into the footwall zone.

Several lenses of breccia are so extensively coated with cinnabar that at first glance one would believe the small milk-white fragments to be bound in a matrix of cinnabar. However, this matrix proves to be largely crushed opalite and clays mixed with only minor quantities of thinly distributed cinnabar.

The ore is pushed by bulldozer into the raise driven by Kennametal in 1955 and then trammed to the portal of the tunnel where it is hauled about ¼ mile to the mill by truck.

Report by: Howard C. Brooks, November 15, 1957.

Date of Examination: September 10, 1957.