

# State Department of Geology and Mineral Industries

1069 State Office Building  
Portland 1, Oregon

## North Powder Molybdenum Prospect

Baker County  
~~Twin Mountain Area~~  
Rock Creek

The prospect is in Sec. 5, 6, 7 or 8, T. 8 S, R 37 E on the steep south facing slope of the North Powder River about 14 miles by road west of Haines.

It is accessible by traveling U. S. 30 from Haines northward 1.7 miles to the Muddy Creek road, thence west 4.1 miles to the Muddy Creek school, thence north 1.0 mile to the Bulger Flat road, thence westerly 7.0 miles across Bulger Flat and up the North Powder River to the mouth of Lost Lake Creek, thence northwesterly up Lost Lake Creek 0.4 mile to the mine road which, being steep and passable only to four wheel drive vehicles, leads northeasterly about one half mile to the present workings. The mill site is on the east side of Lost Lake Creek about 0.2 mile northwest of the mine road junction.

The road up the North Powder River, although of gentle grade, is ungravelled and rocky in places and is difficult to negotiate with a conventional passenger car. It is ordinarily closed by snow from November till June.

Owners: Robert Hulin, Baker, Oregon, and Wilford W. Serrine and Webster W. Decker of Salt Lake City, Utah. These three have initiated proceedings toward organizing the Twin Mountain Mining Company under the laws of Utah.

Development: The prospect is developed by an open cut about 50 feet long, 30 feet wide and 20 feet in maximum depth at the face, a tunnel about 60 feet long lying about 25 feet east of the opencut and trending N 35° E, and two shallow test pits. The tunnel and test pits were dug several years ago by Seth Irvin, George Irvin, Frank Landreth and associates. About 1/4 mile along the slope of the hill to the east are two tunnels and a water filled shaft which also were dug by previous operators.

Mill equipment consists of a 7½ x 4½ inch jaw crusher, a 2' x 2' ball mill with attached screen classifier, two small wilfley tables, a Cummins diesel engine

and Columbia generator unit and two small electric motors. A small flotation unit of possibly 5 ton per day capacity to be used for test purposes is to be installed in the immediate future. Mining equipment consists of a Gardner-Denver 125 rotary compressor and jackhammer.

An estimated 60 tons of material containing the sulphides and rarely oxides of molybdenum and copper has been hand sorted and stockpiled for milling. No samples of the material were taken for assay, but the tenor is estimated as being from one to four percent each of molybdenum and copper.

Geology: The deposit occurs in granodiorite in an area containing many small closely spaced and erratically distributed pegmatites. The pegmatites are composed largely of grey to buff colored feldspar and colorless to white quartz. The former generally predominates, although segregations of either are common. Where present, ferromagnesian minerals are relatively small and much less abundant than in the granodiorite. Contacts between the pegmatites and the granodiorite are commonly gradational and irregular and the pegmatites are in part interconnecting, giving the impression that the pegmatitic fluids were widely distributed through the granodiorite in the opencut area. The largest single pegmatite exposed is a nearly flat lens about 3 feet in maximum thickness and about 30 feet long lying immediately above the opencut.

The surface limits of the main area of pegmatization and associated molybdenum and copper mineralization appears, from the short reconnaissance made, to be not much larger than the area explored by the opencut. However, according to Hulin, minor occurrences of molybdenite have been found in several places in the surrounding area. One of the better showings is said to be a one to two inch veinlet exposed at the top of the water filled shaft about 1/4 mile east of the present workings.

Segregations which are finer grained than the granodiorite but possibly too coarse grained to fit the accepted definition of aplite occur at several places in the workings, particularly along the west edge of the opencut and in the tunnel.

These segregations appear in hand specimen to be of essentially the same composition as the granodiorite.

Two prominent sets of joints are exposed in the prospect workings. One set strikes N 35°W, the other N 80°E. Dips are generally in excess of 80° to the east and south respectively. Some alteration has occurred along at least two of the N 80°E set of fractures. These fractures, lying about four feet apart, are partially filled with clays, broken rock and other debris which are most likely of surface origin. If the clay and accumulation of debris is the result of faulting and subsequent hydrothermal processes, the evidence at hand does not indicate that the molybdenum and copper mineralization is genetically related, although, as presently exposed, the greater concentration of mineralization lies between these two fractures.

Molybdenite occurs in large, often well formed, crystals or crystal aggregates, many of which are one half inch or more in diameter. The crystals are conspicuously distributed through many of the small pegmatites and occasionally are found in the bordering finer grained granodiorite. Associated minerals are pyrite, chalcopyrite and small amounts of other copper sulphides and native copper. Ferromolybdate, copper oxides and "limonite" are common, though not plentiful, alteration products. The copper minerals tend to be associated more with the aplite and granodiorite adjacent to the pegmatites than does the molybdenite.

Sampling the prospect to obtain an accurate estimate of its tenor would be difficult because of the erratic distribution of exposed mineralized areas. Until development work indicates the presence either of considerably larger quantity of material similar to that presently available, or material of much higher grade, sampling will be of little value.

Report by: Howard C. Brooks, Setp. 14, 1959

Date of Exam; August 26, 1959.

N North Powder Molybdenum Prospect Molybdenum Copper  
 NAME PRINCIPAL ORE MINOR MINERALS

5, 18 S 37 E 5,6,7 or 8  
 T R S

PUBLISHED REFERENCES

..... Baker..... COUNTY  
 ..... Rock Creek (.Twin Mountain). AREA  
 ..... ELEVATION  
 ..... Up North Powder River..... ROAD OR HIGHWAY  
 ... 14 miles west of Haines..... DISTANCE TO SHIPPING POINT

MISCELLANEOUS RECORDS

PRESENT LEGAL OWNER (S) .. Robert Hulin.....  
 .. Wilford W. Serrine.....  
 .. Webster W. Decker.....  
 .....

Address ... 1917 Clifford St., Baker.....  
 ... Salt Lake City, Utah.....  
 ... Accounting Dept. Univ. of Utah Salt Lake.....  
 .....  
 .....

OPERATOR . As Above .....

Name of claims	Area	Pat.	Unpat.
5 unpatented lode claims and 1 5acre mill site			
Twin mountain 1,2,3, and 4			
Lost Lode # 1			

Name of claims	Area	Pat.	Unpat.

EQUIPMENT ON PROPERTY 7½ x 4½ jaw crusher, 2 x 2 foot ball mill and classifier, 5 tpd flotation plant  
deisel generator and Gardner-Denver 125 rotary compressor

REPORTS

Howard C. Brooks Sept., 14, 1959

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SHIPMENT AND ASSAY RECORDS

MAPS