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Reconnaisance of the Area Between the Almeda Mine and Silver Peak

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The area under discussion constitutes a belt roughly 6 miles in width and 20 miles in length in Josephine and Douglas counties and extending from the Almeda mine along the Rogue River to Silver Peak, a few miles south of Riddle, Oregon. It is shown in the accompanying map. This reconnaisance was undertaken in search of commercial deposits of barite as well as to further investigate the mineral deposits within the area.

Mining and prospecting has been underway in this region for many years. One of the first geologic studies was published by J. S. Diller (1914). Later studies by P. S. Shenon (1933) and by W. R. Lowell (1942) have given additional details on the ore deposits. W. E. Caldwell and D. Sumner (1946) studied the copper content of the Silver Peak mine waters. A study of the Mt. Reuben area has been completed by E. A. Youngberg (1947). These should be consulted as a background for a better understanding of this region.

A review of the literature shows that the ore bodies are usually found in a steeply dipping greenstone series bounded on the east by the Galice formation and on the west by the Dothan formation, all of which are considered to be of Jurassic age. The regional trend in this area is N. 20 to 40 E. for both the formations and the schistosity. Most of the zones of mineralization, conform with this trend. The Silver Peak mine appears to be an exception for according to Shenon it occurs in a schistose part of the Dothan formation. The greenstone is a series of metaandesites and metabasalts with intercalated silicified tuffs and some chert. Several shear zones parallel the general

trend and the ore bodies and alteration of the wall rock, where they occur, is found in the more highly sheared zones.

The ore body that crops out at the Almeda mine is locally known as the Big Yank lode. It follows close to the contact between porphyritic dacite and slates of the Galice formation. Diller (1914) stated that:

> "the contact between the slates and the igneous rock, with which the Big Yank lode is associated, may be traced for over 20 miles in a direction about N. 30 E. from Briggs Creek valley to Cow Creek at Reuben spur. Although the general course is maintained with considerable regularity, there are many small variations, and the contact dips to the southeast in the same direction as the slates. The plane of the contact is generally a fault plane and is for the most part followed by the lode. The contact is apparently most irregular and the quartz porphyry (called porphyritic dacite by Shenon) most cut by shearing planes in the vicinity of the ore bodies."

Most of the ore bodies south of the Almeda toward Briggs Creek do seem to follow the Galice-greenstone contact as pointed out by Diller. However, there is little evidence of mineralization along the contact farther north. At the Waite barite prospect on Rock Creek, the mineralized zone is at least 1000 feet west of the contact, and at Silver Peak, mineralization according to Shenon (1933) is within an altered part of the Dothan formation.

The ore occurs in shear zones. Such zones are common and the location of the ore bodies may therefore depend more on the location of the contributing intrusives rather than the location of the zones. For instance, the California tunnel (Wheeler tunnel) on Reuben Creek encountered numerous shear zones in its 7364 feet (Youngberg 1947) few of which were mineralized.

Quartz diorite crops out at the Benton mine a few miles to the west of the projected trend of the Big Yank lode; porphyritic dacite was encountered in the Almeda mine. Other intrusives occur to the east and although none are known in the region between the Almeda and Silver Peak mines, it is probable that they occur at depth.

Almeda Mine

Mineralization at the Almeda mine has been discussed in some detail by Shenon (1933). He reported two types of ore, the "siliceous gold-silver ore" and "copper ore with barite." Shenon (1933;30) described the latter ore as follows:

> "The ore from the higher-grade shoots is composed principally of barite, quartz, and sulphides. The barite was introduced into the intensely silicified porphyritic dacite before the sulphides, and locally it has almost completely replaced the quartz. The sulphides, in turn, have replaced the barite as well as the quartz. Some specimens clearly show veinlets of sulphides cutting coarse grained barite. The sulphides include pyrite, chalcopyrite, galena, sphalerite, chalcocite, and covelite."

Lowell (1942;574) seems to differ as to the age of the barite. He stated:

> "In the Almeda and Silver Peak ore, barite replaces quartz and fills fractures in pyrite, chalcopyrite, and tetrahedrite...Barite was deposited late in the mineralizing stage and was followed by sericite which is developed as shreds in fractures in barite."

Lenses of pink and gray massive barite, in several instances 4-8 feet in width, were found on the surface of the Big Yank lode up the hill behind the Almeda mine. Some barite was interspersed in the silicified rock from which the sulphides had been leached. The lode was traced to a point between 600 and 700 feet above the river at which point it was lost, presumably cut off by a low angle reverse fault similar to or the same as the fault noted by Hotz and Bell (unpublished map U. S. Geological Survey) a short distance to the northwest. The massive lenses of barite appear to be pod-like and might pinch out rapidly, but at that the considerable tonnage is indicated. A sample assayed $BaSO_4$ 37.36%.

Almeda Mine-Grave Creek Valley

No mineralization was noted along the ridge between the Almeda mine and Grave Creek.

The contact of the greenstone and Galice formation showed little sign of mineralization along Grave Creek, although it is not well exposed. It is

possible, however, that further prospecting would show some signs of mineralization in this intermediate area.

Waite prospect

A prospect, under lease to E. R. Waite, Grants Pass, is located in the NW¼ sec. 29, T. 33, R. 7 W. along the west side of Rock Creek valley and about 2½ miles by trail from a point where the Grave Creekroad crosses Rock Creek. There is a preliminary report on this property in the files of the State Department of Geology and Mineral Industries. Several short prospect tunnels and open cuts reveal a mineralized zone which contains barite, one lens being more than 4 feet in width. The deposit, like others in the greenstone, strikes N. 40 E. It lies at least 1000 feet west of the Galice-greenstone contact. One sample of barite contained .05 oz. gold, 2.80 oz. silver and 91.34% $BaSO_4$. The sample (P-6194) from the lower tunnel by the trail contained .01 oz. gold, .10% copper, trace of lead, 2.05 zinc. A sample from a prospect pit a few hundred feet up the hill (P-6195) .10 oz. gold, 5.33 oz. silver, 1.30% lead, .40% copper, .55% zinc and 52.27% barium. More work is needed at this prospect to determine the amount of ore.

Cow Creek valley near Reuben Station and Koler

The greenstone-Galice contact in the vicinity of Cow Creek is irregular. The belt of greenstone broadens to the north. Although, exposures were poor along both sides of the creek, the lack of established claims near the contact at Reuben Station points to a probable lack of mineralization in that region. A short distance to the north along the west side of Panther Butte and Grayback Mountain, a zone of mineralization has been found that if projected would reach a point a mile or so west of Reuben Station.

South Fork of Middle Creek to Grayback Mountain

A mineralized zone (see map of claims) trends northeastward across the South Fork of Middle Creek valley from Panther Butte to and beyond Silver Peak.

This belt of claims is near the west boundary of the greenstone mass and appears to follow a persistent shear zone. It does not form prominent outcrops and is difficult to find except for iron staining. A prospect tunnel driven by Al. Glick and C. L. Cox along a quartz stringer is situated above the creek near the mineralized zone. The tunnel, about 75 feet long, trends S. 70° E. although it turns a little more to the south near the end of the drift. This quartz stringer is bearing across the greenstone belt and not following the shear zones; it may be along a cross fracture formed during the stage of deformation that caused shearing. Further inspection of this region and an examination of the other claims in this zone is needed.

Silver Peak

The mines in the vicinity of Silver Peak are described by Shenon (1933). Two of these, belonging to the Silver Peak Copper Company and the Umpqua Consolidated Mining Company lie south of Silver Peak. The Golden Gate mine, lies about half a mile north. The district is reached by a forest road that leaves the county road near Russel Creek.

> According to Shenon (1933;18), "the ore minerals occur as massive tabular bodies and disseminated in highly foliated schist. The principal workings expose a zone of mineralized schist more than 100 feet wide. Across most of this zone sulphide minerals are rather sparsely distributed, but in at least two places bodies of nearly solid sulphide ore occur. Normally, the massive ore grades into schist with disseminated sulphides, but in some places, especially where the massive ore pinches, one or both walls are slickensided fault surfaces commonly lined with several inches of gouge.
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> "The massive sulphide ore is distinctly banded, probably in part because the ore minerals have replaced schistose rocks and in part because the minerals were introduced along parallel fractures in the rock. The sulphides include pyrite, sphalerite, chalcopyrite, bornite, galena, tennantite, chalcocite, and covellite named in their relative order of their abundance; the last four mentioned occur in relatively small amounts... The gangue minerals are principally quartz, barite, and sericite."

The order of mineralization as given by Lowell (1942;589) shows pyrite followed by quartz, then fracturing, sphalerite, more fracturing followed by tetrahedrite, tennantite, chalcopyrite, bornite and galena, more fracturing with

barite and sericite the last of the hypogene minerals.

Considerable barite is present as lenses in the ore bodies uncovered in the mines. Sone of this has disseminated sulphides which might be a hindrance for some uses of barite.

Several prospects are located in this mineralized belt to the southwest. A tunnel on the Silver Peak property, located at the head of a small tributary of the South Fork of Middle Creek trends N. 40 E. and paralleling the schistosity. Considerable exploration has been done as is shown by the size of the dump.

Although most of the ore bodies are in the greenstone, those at Silver Peak according to Shenon (1933:16) are in the schistose part of the Dothan formation. He describes the schist as follows:

> "Near the Silver Peak mines the Dothan formation is composed principally of dark-gray to almost black thin-bedded schist and highly altered fine-grained argillite. Many of the Dothan rocks are so completely altered that it is difficult to differentiate them in the field from the altered greenstone. Near the ore bodies the schist is bleached to light gray or almost white, and, because of the abundance of sericite, has a talcose appearance. In addition, the ore-bearing schist commonly contains considerable quartz, barite, and disseminated sulphides."

Conclusions:

Mineralized zones have been with few exceptions found within the greenstone mass. Diller indicated that the position of the Big Yank Lode between Briggs Creek and the Almeda mine closely paralleled the contact between the Galice formation and the greenstone, thus it is relatively easy to locate. However, it is difficult to prove that the ore bodies farther north are a direct continuation of this lode. Instead, they appear to be independent shear zones located in en echelon arrangement and situated progressively westward in the greenstone mass when traced northward to Silver Peak where they are in the Dothan formation. This generalization needs further checking. As was shown in the California (Wheeler) tunnel, several shear zones exist, few of which were mineralized. Thus it may be the location of the intrusive at depth, rather than the shear zone that

determines the location and extent of mineralization.

With the exception of the Big Yank lode above the Almeda mine, the outcrops of the mineralized zones are not particularly prominent. Mineralized zones farther north were difficult to locate and had little on the surface to indicate their presence. In such rugged terrain, considerable time will be needed in which to locate claims and prospects as well as other existing mineralized zones.

At present, the Almeda and Silver Peak mines appear to have the largest and perhaps the most accessible deposits of barite. The barite appears to be but one phase of regional mineralization. The barite deposits might well be studied in conjunction with a study of the ore bodies. More work is needed, particularly in the area just south of the Almeda mine, between Grayback Mountain and Silver Peak, and perhaps for a few miles north of Silver Peak. All existing claims in this area should be visited.

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