

JAN 26 1939

Josephine County  
Galice District

Name: Robertson Mine, also known as the Bunker Hill Mine.

Owners: John Robertson and Sons, Galice, Oregon.

Location: 12 miles west of Galice by road. Sec. 2, T. 35 S.,  
R. 9 W. 8 full size lode claims held by location.  
165 acres.

History: 2 claims were located in 1912. The remaining claims  
were located in 1915. The rest of the history is  
given in Bulletin 830 B, Page 45. The property has  
not been operated since the field work was done for  
this Bulletin.

The geology, equipment etc. are all as given in the  
Bulletin.

Informant: J. E. Morrison. 10/27/37.

# State Department of Geology and Mineral Industries

702 Woodlark Building  
Portland, Oregon

ROBERTSON MINE (Bunker Hill)

Josephine County  
Galice Area

May 21, 1945  
E. A. Youngberg

## New Development:

A new cross cut is being driven to intersect the downward extension of the veins developed in the upper levels at about 200 feet below these workings. The management estimates the adit will be approximately 1100 feet in length.

The adit was in 311 feet on May 21, 1945. Two sulphide veins were cut by the cross cut as shown on the attached map. The veins were parallel and dipped at about 85° to the east. The veins were composed of quartz and iron pyrites, no other sulphides were noted. Small nodules of unreplaced portions of the wall rocks were enclosed in the quartz. No. 1 vein across 12 inches assayed .02 oz. in gold, No. 2 vein across 10 inches assayed .01 oz. in gold.

RECEIVED  
JUN 14 1945

STATE DEPT OF GEOLOGY  
& MINERAL INDS.

Owner & Operator: Bill Robertson, Galice, Oregon.

Location: sec. 2, T. 35 S., R. 9 W., elevation 4500 feet.

Area: Eight full sized lode claims held by location; 165 acres.

History: "The Bunker Hill lode was located in 1914 by John Robertson and sons, of Galice, and its history for the next decade, like that of many other prospects, is one of hard work and expenses instead of dividends. In 1925, however, rich ore was struck, and in the next three years, by means of a small 5-stamp mill, a large amount of gold was produced. In 1928 the mine was purchased by the Robertson Mines Co., which, under the direction of K. Dean Butler, did a great deal of underground development and increased the capacity of the mill plant to 30 tons daily by adding five additional stamps and two concentrating tables. In September, 1930, about 30 men were employed in underground development, surface improvements, and the operation of the mill. A main haulage crosscut 520 feet long was completed, and over 1,200 feet of drifts and several raises were driven from it. A winze was sunk on the No. 1 vein to a depth of 91 feet, and most of the mining was being done below the main haulage level and above the 91 foot level. The ore is conveyed from the mine to the mill, a distance of 1,500 feet, by an aerial tram. The mine is well equipped, and good quarters are available for the accommodation of 30 men. The production reported since 1924 is, in round figures, \$138,000. This amount was the value of more than 6,900 ounces of gold and 546 ounces of silver obtained from 1,376 tons of ore. The gold content of the ore ranged from 19.50 ounces to the ton in 1925 to 1.97 ounces to the ton in 1929. It averaged 2.04 ounces to the ton in 1930. In 1929 and 1930 the output of the ore was greatly increased because of added milling facilities.

Geology: The workings of the Robertson mine partly explore a group of small quartz veins formed along fractures in greenstone near a tongue of quartz diorite. Four veins have been prospected underground and on the surface, but thus far nearly all of the production has come from the No. 1 vein. This vein, like the other principal veins, strikes northwest and dips at steep angles to the southwest. One fairly large quartz vein encountered in the No. 4 drift, however, strikes north and dips east at a steep angle. All the quartz veins are lens-shaped and have slickensided and, in most places, horizontally striated surfaces, and the surface are usually in contact with 1 inch to several inches of dark-grayish gouge.

"The quartz in the No. 1 vein is continuous horizontally for practically 140 feet, but in places it pinches to almost nothing. The average width is estimated at about 1 foot, although, where observed, the width ranged from less than 2 inches to almost 2 feet within short distances. The vein splits above the haulage level at about 100 feet below the surface and at the surface the two branches are about 35 feet apart. Practically the entire length of the vein, including both branches, contained commercial ore, and in September, 1930, except for several blocks and pillars, the vein was stoped for a vertical distance of 260 feet. The quartz in the vein everywhere contains some gold, but it is not at all evenly distributed, and according to G. T. Vandel, mine foreman, some gold occurs in the mineralized wall rocks next to the veins. In both oxide and sulphide zones free gold is in some places plainly visible scattered through the quartz, though in other places it can be detected only by panning. Mr. Vandel states that the ore in the No. 1 vein, outside of the rich spots, generally runs from \$25 to \$35 a ton, of which \$10 is recovered by plate amalgamation, and most of the remainder is saved in a sulphide concentrate on tables. The Nos. 2, 3, and 4 veins have all been explored on the main working level, but because the quartz in all of them has a low gold content they have not been stoped.

"The greenstone inclosing the ore is a very dense greenish-gray to almost black rock which the microscope shows to have a basaltic texture typical of the fine-grained greenstones of the region. Underground, except in close proximity to the quartz veins, it is not greatly different in composition from the normal fine-grained greenstone. Near the veins, however, the greenstone is altered to a light-green greasy-appearing rock consisting largely of fine-grained epidote, chlorite, quartz, and a white, nearly opaque material which under high magnification is seen to be composed largely of epidote and quartz. Where the alteration

is most intense--for example, along the walls in contact with the ore--and in rock fragments included in the vein quartz, chlorite is less abundant and the fine-grained alteration product makes up the bulk of the rock. Part of the quartz, calcite, and epidote, as well as the ore minerals, have been introduced. The principal ore minerals are native gold, petzite (a gold-silver telluride), and pyrite, and chemical tests show the presence of some bismuth in the sulphide concentrate. Microchemical tests on the petzite indicate a high percentage of gold and an almost total absence of silver, but the mineral is isotropic, a fact which indicates isometric crystal form; hence it is petzite rather than calaverite or sylvanite. There are at least two generations of quartz. Coarse-grained quartz was introduced before the ore minerals, whereas fractures filled with fine grained quartz, epidote, and calcite clearly cut the pyrite. The pyrite, gold, and petzite were introduced along shattered portions of the coarse-grained quartz and are therefore younger. The petzite is locally replaced by gold.

"Origin of the Ore: The evidence available suggests that the ore at the Robertson mine was formed at moderately shallow depths and under conditions of moderate temperature. The mineral assemblage does not offer conclusive evidence to support this inference, but the presence of gold telluride and the occurrence of open vugs are not characteristic of the deep-zone type of mineralization. On the other hand, neither do the veins exhibit an abundance of features characteristic of very shallow mineralization.

"The ore bodies appear to be related genetically to the intrusive quartz diorite. The quartz diorite is not far from the veins and is the most probable source of the ore-bearing solutions. Study of thin sections indicates that during mineralization considerable lime, ferric iron, alumina, and quartz were added to the rock next to the veins, and apparently soda, potash, and magnesia were removed. More or less granular quartz has been introduced into the greenstone inclusions and into the wall rocks immediately adjacent to the veins. The manner in which the quartz has penetrated along fractures of microscopic size shows clearly that the quartz must have been introduced in a very tenuous state and not as a viscous substance.

"The ore has been deposited along numerous small fractures and along a few larger and more persistent ones. However, the longest horizontally continuous vein thus far exposed is only 140 feet in length, although the same vein has been followed downward for 260 feet. The parallel alignment of the principal veins, the manner in which they terminate, and the distribution of the numerous fractures near the veins suggest that they have been formed by east-west shearing stresses. Such stresses are believed to have formed the openings along which the quartz was deposited and later to have produced the slickensiding and gouge along the walls of the veins.

"Economic Considerations: The lenslike form of the veins is believed to be largely an original feature and not entirely the result of later faulting. If the evidence is interpreted correctly, long-continuous ore shoots can not be expected at the Robertson Mine, but there is a good probability that undiscovered quartz veins exist parallel to the known veins. A favorable area for prospecting appears to be between No. 1 and No. 4 veins, southeast of the stoped area of the No. 1 vein. Prospecting would have to determine whether undiscovered veins would contain sufficient gold to be commercially valuable, because thus far only one out of four of the known veins has proved to be of commercial grade."

Development: One shaft 240 feet deep; one tunnel 150 feet from surface, 500 feet long. From three to six men are employed.

Equipment: One compressor; 10 stamp mill operated by a gas-engine.

Recent Activity: From the Grants Pass Courier, March 15, 1940: "On March 15, 1940, it was reported that V. E. Hughes and J. B. Fanchini were moving their cyaniding plant from the Kubli Mine, Gold Hill district, to the Robertson Mine, in order to cyanide tailings".

The most recent activity is reported by the Grants Pass Courier, April 1940 as follows:

"The dream of every miner, a sudden rich strike, came true at the old Bunker Hill quartz mine near Galice during the last fortnight when a ledge was uncovered that produced 640 ounces of gold, valued at about \$20,480, in four days of mining.

"The owners, William Robertson and Virgil E. Hull, and their crew came to Grants Pass Saturday to "cash in", bringing three hefty bars of the yellow metal, the result of five and one-half days of milling. The strike was made Monday, March 18.

"The Bunker Hill mine had lain idle for years until Robertson and Hull reopened it in October. It was worked for a few weeks and then dropped until January, when further digging led to the strike. The ledge has been modestly named "Ham'n Eggs".

"The Bunker Hill has had an up-and-down fortune, at various times yielding quantities of ore, and then its ledges petering out until operations were suspended."

Reference: Shenon, pp. 2-45, 1933 (quoted)

Informant: John Robertson and R. M. Alden, 3/2/40.

Report by: Ray C. Treasher