

600339

REPORT ON ST. PAUL MINE
PORCUPINE MOUNTAIN, VERNON, B.C.

August 1st, 1919

Location

The St. Paul Mine, better known as the Minerva Group, and as the Rembler Paul Property, is located on the east slope and on top of Porcupine Mountain, about 46 miles east of Vernon, B.C. It is Vernon Division of Yale District of British Columbia.

A wagon road, 4 miles in length, which was built four or five years ago, connects the property with the Vernon to Monashee road. This piece of road is not now in good repair so that at present it is not possible to drive to within $2\frac{1}{2}$ miles of the stamp mill, on the Pioneer claim.

A first class rawhide trail about 30 inches wide and over 2 miles in length, has been built up the mountain from the stamp mill at 3600 feet elevation to the upper workings at 5700 feet elevation and is in good repair.

Claims and Ownership

The property consists of seven claims, of which four claims, The Toughnut, Zilpah, Minerva, and Black Bess are Crown Granted, and the three locations Pioneer, Millsite, and Millview, are in good standing.

The claims Toughnut, Zilpah, and Black Bess are owned $22/32$ nds by the estate of Rembler Paul, $5/32$ nds by Angus Woods, and $5/32$ nds by E.H. McDaniel.

The Minerva claim is owned 22/32nds by the estate of Rembler Paul and 10/32nds by E.H. McDaniel.

The locations are in the following names:- "Pioneer", the late Rembler Paul; "Millsite", Angus Woods; and "Millview" by E.H. McDaniel.

Assessment work is due August 14th, on the Pioneer claim but as Angus Woods and E.H. McDaniel were both overseas, assessment on Millsite and Millview is clear for a year from now.

Geology

The common rock of the district here appears to be a shale which contains a good deal of graphite, making it black and oily in appearance and on the upper part of the mountain there is porphyry showing on top of the shale. The extent of these rocks would be hard to determine at present as a heavy overburden of soil covers both the top plateau and the east slope of the mountain. The shale dips to the north-east under the porphyry at about 40 degrees. The shale has a good deal of quartz bedded into it and on the upper level has a distinct quartz vein at its contact which is regular in thickness, varying where opened up from 10 inches to 2 feet. At the 4750 foot elevation, and at 4815 foot elevation, tunnels tap a vein of quartz lying in the shale and conformable with it. In these tunnels the thickness of the vein varies along the vein and probably also in depth.

Ore Deposit

On the top plateau of the mountain, as shown by accompanying sketch, there is a regular contact quartz vein which outcrops in a north-west direction and dips to the north east at about 40 degrees.

The vein filling here is quartz with pyrite and galena, carrying gold about 60% free and 40% refractory. It lies between a graphite shale foot-wall and a porphyry hanging. About 1000 feet down the mountain side at 4815 elevation a quartz vein was picked up and a short tunnel 35 feet long driven on it. The vein here is 18 inches thick and is a quartz vein with arsenopyrite and pyrite lying conformably in graphitic shale. It has about the same dip and strike as the vein on top of the mountain. At 4750 feet elevation a tunnel was started to tap this vein of same dip and strike. This was not supposed to be the same vein as the 4815 so the tunnel was continued and is now 300 feet long without encountering any other vein.

It is the opinion of those who worked the property that the 5700 feet vein and the 4815 feet vein are the same, but that the 4750 foot vein is a different one. This does not appear to the writer to be correct, but rather that the vein crossed in the 4750 foot tunnel is the vein tapped at 4815, but is not the vein opened up on the top of the mountain.

It is hard to say on which side of this vein the upper vein should lie, as it is about in that direction and as there is nearly 1000 feet difference in elevation it would require a survey to determine but evidently they have not hit the upper vein in the lower workings as yet. The upper vein carried galena, whereas the lower ones carry arsenopyrite.

Development and Values

There was 130 tons of ore miled, all of which came from the workings on the 5700 foot elevation. The work here consists of 4 shafts and 3 pits, as shown on accompanying sketch. The shafts marked "A" and

"B" were sunk to the vein, but too much water came in and no ore was stopped. The ore was taken from the surface.

The 4815 foot elevation vein was driven on for 35 feet and 65 feet below that a tunnel was driven in 300 feet, but quartz values are low and no attempt was made to mill any of it.

Four samples of the vein on the 5700 foot level (locations on accompanying sketch) gave results as follows:-

No.1 vein 24" wide	gold	2.74 oz.	silver	1.76 oz.
" 2 " 16" "	"	trace	"	trace
" 3 " 10" "	"	0.14 oz.	"	trace
" 4 dump from pit	"	0.46 oz.	"	0.94 oz.

The best values are from the pit No.1 sample and from here about half the ore that was milled was taken.

A sample of the vein in the 4815 foot elevation tunnel assayed 0.04 oz. gold and 0.80 oz. silver and an average of the 6 foot vein in the 4750 elevation tunnel assayed 0.04 oz. gold and 0.12 oz. silver.

Equipment and Previous Work

The buildings at the property are good log cabin 20' x 30', a large stable and a stamp mill.

Stamp Mill Equipment

Farrell type rock breaker 8"x10"
Grizzly screen
Frazer and Chalmers single mortar, 2 stamp battery complete, triple discharge, automatic feed, about 800 lbs stamps, with extra shoes and cams.
2 copper plates, 3'6"x4'0"
3 Frue Vanners, 4'6"x15' (old type)
Pelton Wheel, 2" nozzle waterwat. 75' pipe and 300' flume.
Necessary bins.

Everything seems to be intact at the mill. The rubber belts, which although they look alright may not last long as they have paid there three years. The mill is a solid building made of hewn timber and covered with shakes and is weather tight.

This mill was set up in its present position in 1915 and was operated for six weeks during which time 130 tons of feed were milled with the following results:-

Tons feed ----- 130

Returns

Plates - 130 tons	\$2202.00	\$17.00
5700 lbs. concentrates net after freight and smelter charges.			
	<u>383.40</u>	<u>3.00</u>
	\$2585.40		\$20.00

A rough sampling of the tailing pond assayed -- gold \$5.20 and silver 54¢, so that allowing for freight and treatment and tailing losses, the feed of this mill was likely about \$27.00 ore, giving a recovery of 79% for the mill. This recovery if a little low, but could likely be somewhat increased by care and by a little finer screens. At present, the screens are coarse only about 40 to 50 mesh.

From a rough appraisal of this property, the buildings and equipment should be worth on the ground about (\$5000) five thousand dollars, while there appears to have expended, all told, on buildings equipment, roads and development work, about (\$15,000) fifteen thousand dollars.

CONCLUSION

The first thing necessary at this property is repairs to the mine road, four miles long; there are several wash outs, and also turn-outs should be made at suitable intervals. This road has been built entirely by the mine, so that it is reasonable to expect that if the district mining engineer has some assurance that the mine was to be gone ahead with, that the government would do the work, or at least, part of it.

There is a good grade gold quartz on the 5700 foot level, and it is the writer's opinion that this vein has not been found at a lower level. I believe that a competent surveyor should be retained to trace the strike and dip of this vein, which appears to be persistent down to the lower tunnel level, and then that surface trenching beyond to locate the vein.

If the vein is picked up at this level, a tunnel should be driven on it, or cheaper, it should be tapped from present tunnel.

If this vein can be picked up here, of as good grade as on top, it should make a good proposition, but even failing this an attempt should be made to bring it down from the upper level and mill it.

It would appear that the two owners in this property, with very little assistance, should be able to do this work. It is the writer's opinion that a sale of the property at a price of \$5000 would be a sacrifice to those who have staked their time and money in this venture, and only to be done failing other suitable and satisfactory arrangements.