

Property File

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REPORT OF
PRELIMINARY EXAMINATION

OF THE
J. & L. MINE.

REVELSTOKE. B. C.

TO

MR. F. R. WEEKES. MANAGER.

PORCUPINE GOLDFIELDS DEVELOPMENT & FINANCE CO. LTD.

BY CHAS. C. STARR.

AUGUST 30th, 1925.

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INTRODUCTION.

The writer spent three days on the property with an assistant in company with Mr. McBean, the owner. The examination was of a preliminary nature, but a more thorough examination would not be apt to change the conclusions in any way.

LOCATION AND ACCESSIBILITY.

The property is located on the south slope of Goat mountain, about half a mile from Carnes Creek, and south of the east branch of the creek, in the Revelstoke Mining Division. It is best reached from Revelstoke by an automobile road, sixteen miles in length, and ten miles by trail, along the Columbia River to Carnes Creek, whence the trail follows Carnes Creek for nine miles. The grades are generally good and the trail is in fair condition, except for about a half mile.

The B. C. Government is now improving the Auto road, and plan to extend it at least to the mouth of Carnes Creek within a year or two.

The country now traversed by the trail is one over which a road could be built comparatively cheap, as there is no rock work except for short distances.

For a number of years a steamer was run up the Columbia River, from Revelstoke beyond the mouth of Carnes Creek, and if thought advisable a new service could be inaugurated to serve the mine and the surrounding country.

TIMBER

The property and the surrounding district are heavily timbered with a heavy stand of fir, balsam and cedar.

WATER

There is no water even for domestic purposes, except near the Creeks.

There appears to be ample water for power purposes in either the main Carnes Creek or in the East Fork, but a considerable length of ditch would be required to obtain a good pressure. It is reported that the best power site is a mile or two below the

junction of the two Creeks. So far as known, no measurements have been made of the flow of either creek, but it seems probable that it is sufficient to furnish several hundred horse power at all seasons.

TOPOGRAPHY

The property extends across the point of the mountain between Carnes Creek and its East fork. Between the intersection of the creek and the foot of the mountain there are a number of acres of practically level land; From there the mountain rises steeply along both Creeks, and has an average slope of about 40 degrees, with numerous small cliffs.

The following elevations were taken by aneroid during variable weather, and are therefore probably inaccurate; The junction of Carnes Creek and Columbia River 1600 feet; The J. & L camp 2600 Feet; The J. & L. tunnel 2900 feet; the highest point of the main Apex 3900 Ft

CLIMATE

Winters are reported to be long, though not extremely cold, and there is said to be a snow fall of four to eight feet. There are no snowslides in the immediate vicinity of the mine or camp, but two small ones across the trail, between the Columbia River and the mine.

CLAIMS

There are eight claims in the group, of which five, the J. & L. Annie M. "98", York, Dunbar, lie to the south of the East fork. To the north of the Fork there are three more claims, said to be on the same vein, which were not visited. All the claims are of approximate full size (1500 feet square) and are held by the performance of annual assessment work, and have not been surveyed. Before any development campaign is undertaken on the property more adjoining claims should be located. They are owned by Mr. E. McBean, Box 412, Revelstoke, B. C..

TERMS

The price asked for the property is \$ 65,000.00; Five thousand dollars to be paid in one year, five thousand dollars in two years, Ten thousand dollars in three years, and the balance

in four years. As an alternative , the price is \$35,000.00, payments to be five thousand dollars spot cash, five thousand in six months, five thousand in one year, five thousand in eighteen months, and the balance in two years.

This company has no definite option on the property on account of Mr. McBean's disinclination to tie it up for a sufficient length of time for ore treatment test to be made. He has, however, agreed to notify us before making any deal with other parties.

HISTORY

The claims were located at various times since 1896, and assessment work appears to have been performed regularly. Mr. McBean purchased part of the claims and located others himself.

EQUIPMENT

There is practically no equipment, a very few hand tools, and a poor cabin being all.

DEVELOPMENT

There are 25 or 30 small open cuts and trenches on the vein, extending across the J. & L, Annie M, "98" and York Claims. Near the northwest end of the "98" claim an 80 foot crosscut tunnel has been driven, from which there is an 80 foot drift (30 feet now caved), and 120 foot inclined winze. Near the Northwest end of the Annie M claim there is an incline shaft 130 feet deep on the vein. Near the centre of the J. & L claim a tunnel 218 feet long has been driven from which there are 30 feet of crosscuts; 150 feet of this tunnel is on the vein.

GEOLOGY

On account of the steep slopes of the mountain and a heavy covering of soil and brush, the surface geology was not studied very carefully.

There are no ~~Government~~ Publications covering the geology of the district, except a few notes by Mr. O'Grady, a Government Engineer, who states that the formation consists of schist and lime and shows great uniformity; That the vein conforms to the stratification of the rocks, and is situated on a schist-lime contact, the hanging wall being schist and the foot wall lime. He classes the vein as a "Bedded Fissure".

The country rock consists of schisted argillites, impure limestone, generally thin bedded, and some massive quartzite. No igneous rocks are known in the vicinity of the mine, except near the northwest end of the York claim, where a very small outcrop shows a porphyritic rock.

The average strike of the sedimentary rocks is N 40 degrees W, but it is slightly more east and west at the south end and more North and south at the North end. The dip varies from 35 degrees to 50 degrees, averaging about 40 degrees northeast and into the mountain.

There is no evidence of serious faulting, but there are undoubtedly a number of small breaks, one of which is in evidence between the first and second cuts from the northwest end of the York claim. On the southeast end of the property the hanging wall is schist and the footwall also schist, but more silicious, but at the third cut from the southwest end of the York claim, and thence northward the hanging wall is schist and the footwall limestone, extending several hundred feet to the northwest of the J. & L tunnel. From this point the footwall is again schist, as well as the hanging.

It is evident from this change in the wall rocks that the vein does not follow the stratification of the rocks perfectly, but it appears in general to do so.

VEIN

The Southeastern part of the vein strikes N 44 degrees west, and dips 37 degrees N. E. while the Northeastern part strikes N 30 degrees W, and dips 45 degrees N. E.

The vein has been opened by cuts at close intervals for 4,000 feet; To the extreme Southeast on the Dunbar claim the vein narrows and breaks into stringers, and disappears at a distance of several hundred feet. On the Northwest end of the J. & L claim the vein is not well exposed, but two or three small cuts near the Creek show sulphides still present, together with a considerable amount of quartz, and with locally a quartzite hanging wall. There is a possibility that the vein has split some distance above the Creek, as there is another stringer about 150 feet to the Northward, each appears to converge toward the tunnel.

The vein varies in width from one foot to ten feet. The average width of all samples is about $3\frac{1}{2}$ feet, but this is less than the true width of the veins many of the samples did not include the lower grade portions. The vein filling consists of veinlets and lenses of nearly solid sulphides with some quartz, seams of sulphide in partially decomposed schists, bluish nearly barren quartz, and an iron stained ^{residuum} residuum of shist and limestone from the oxidation of sulphides and leaching of the rocks by acid. The sulphides consist of a fine grain mixture of arsenopyrite, pyrite, Galena, and sphalerite, with which there is a small amount of fine grain quartz.

The sulphide streaks usually occur on the hanging wall, occasionally on the foot wall or on both foot and hanging, and rarely in the centre of the vein, and rarely as small stringers through the vein. The centre of the vein is apt to be lean oxidized material, and the material on the foot wall is generally thoroughly oxidized and frequently earthy. As a rule there is a small gouge on the hanging wall and frequently also on the foot wall. The walls are generally strong, but at a few places are broken and slabby, the vein is not entirely unoxidized at any point that can now be seen, but near the face of the tunnel the oxidization is very slight.

Over the northerly two-thirds of the York claim the vein appears to have good width and values in general, although somewhat variable, and this condition holds for a distance of five or six hundred feet onto the "98" claim. Thence the vein is rather lean and narrow nearly to the "98" shaft. At the "98" shaft the vein is ten feet in width, and throughout these workings the width is greater than at any other point exposed. In the first two cuts North of the "98" - Annie M line, the vein is narrow and appears to be low grade, it is then generally of fair width and fair apparent values up to the Annie M shaft. In this shaft the ^{core} core is about two feet wide while the vein proper is about $3\frac{1}{2}$ feet wide. From this shaft to the tunnel the vein appears a fair grade, though not very wide.

At the J. & L tunnel the vein is comparatively narrow and consists of sulphide, except for a few inches ~~near the~~ next the foot wall.

The tunnel in part has been driven along the foot wall of the vein, and the first 80 feet of the tunnel is completely in the foot wall. Except for an oxidized out 100 feet from the tunnel the vein is not exposed until near the creek, a distance of five or six hundred feet, where it appears to be narrow, although possibly a fair grade.

SAMPLING

(Gold at \$20.67 per ton)

Thirty-five samples were taken on the property (see map) The greater part of the open cuts were sampled and the underground workings were sampled at intervals of twenty feet.

Adjacent to the York - "98" end line, five sample cuts representing the length of vein of 500 feet, average Gold \$6.89, Silver 2.4 oz. Lead 2.5%, Zinc 2.7%, over an average width of 3.6 feet. In general these samples include the best of the oxidized material, and all of the sulphides, but not always the full width of the vein. Sample No. 3073 is from sulphides, but both foot and hanging, which are separated by four feet of low grade vein matter, which was not included in the sample.

In the "98" incline seven cuts across the vein, average Gold \$7.14, silver 4.2 oz, lead 5.9%, zinc 1.6%, for a width of 5.6 ft. and covering a distance along the dip of 120 feet. at the top ~~of the~~ incline the width of the vein is 10 ft, and at the bottom six feet, while the average width is probably about 7 feet, rather than the 5.6 feet sample. At that point by far the greater portion of the vein is oxidized. The assays from the drift in the "98" workings are not included in the average, as they are extremely low grade.

The average of the two samples from the surface of the Annie M, average Gold \$7.72 silver 0.5 oz. lead 0.9% zinc not assayed, over average width of 2.9 feet. To the North and south of these cuts the vein appears to be of equal or slightly less value; It is partly sulphide ore, and partly oxidized.

In the Annie M shaft seven cuts across the vein covering a length of 130 feet on the dip, average Gold \$6.28 Silver 4.5 oz. Lead 4.4%. Zinc 3.2%. over a width of 3.2 feet. Slightly the greater part of the vein is oxidized; It is 12 to 18 inches wider than indicated by the samples, but this portion is undoubtedly low grade.

On the J. & L surface samples from two cuts, the upper one oxidized, and the lower on solid sulphide, average Gold \$14.88 silver 1.2 oz lead 1.5%. Zinc 2.8%, over a width of 2.6 feet.

In the J. & L. tunnel five cuts across the vein representing a length of 130 feet, average gold \$6.30. silver 6.6 oz. lead 7.9%. Zinc 13.6%, over a width of 2.2 feet. The samples are entirely of sulphide ore, except that a few inches of oxidized material along the footwall is included.

The average of all underground samples, except those in the "98" drift is Gold \$6.74, silver 4.7 oz. lead 5.8%. zinc 3.9%. and the width 3.6 feet.

The average of all surface samples, except No. 3075 is Gold, \$8.46, silver 1.8 oz, lead 2.0% Zinc 2.1%, and width 3.2 feet.

The average of all samples taken, with the above exceptions is Gold \$7.26, silver 3.8 oz, lead 4.6%, zinc 3.4% and the average width 3.5 feet. Figuring silver at 70¢ per oz. Lead at 8¢ per pound, and zinc at 7¢ per pound the value of the above ore is \$22.64 per ton. It is possible that in addition to arsenic contained in the ore may have commercial value. but the assays for arsenic have not yet been received.

There is no very definite ratio between the values of the various metals evident in the above samples; This may be due to the mixture of sulphide and oxidized ore. A large sample of sulphide sent to Ottawa by Mr. McBean assayed Gold \$11.20. Silver 2.5 Oz. copper 0.17% Arsenic 15.64% . lead 3.25%. zinc 4.72%. Various portions of this sample assayed separately indicate that the Gold varies with the arsenic, and the lead , silver and zinc vary together.

ORE DEVELOPED

There is no ore blocked out, there is, however, evidence of fair values through out the vein for 4,000 feet along its strike, and there are apparently shoots of specially good ore near the junction of the York and "98" claims, at the "98" shaft at the J. & L. tunnel, and possibly at the Annie M shaft. There is, therefore, very strong indications of a very large tonnage of ore of a good gross value.

ORE TREATMENT

The ore is very complex, and the treatment of the sulphide will undoubtedly be complicated by the presence of the oxidized products

Tests on the samples of ore sent to Ottawa by Mr. McBean are now being made by the Division of Ore Dressing and Metallurgy of the Canadian Department of Mines. A sample of the ore has also been sent to the Mineral Separation Company at San Francisco for flotation tests. Any further examination of the J. & L. Mine should be deferred until the results of the test are received.

SUMMARY

The vein lies essentially with the bedding planes of the enclosing limestone and schists. It has been developed by open cuts over a length of 4,000 feet on the strike, and at elevations ~~over 1,000~~ ^{nearly 2000} feet apart, indicating that it has an average width of about 4 feet. The average gross value is in the neighborhood of \$20.00 a ton, omitting the value of the Arsenic. If a narrower width should be mined the value of the ore would be considerably increased, while on the other hand, if the full width of the vein should be mined, the value would be somewhat reduced.

Physical conditions, except that of transportation are good, and development and mining costs should be fairly cheap. The principal difficulty would appear to be the development of a cheap and efficient process to treat the ore. The price is very reasonable, and the terms easy.

CONCLUSION

If the results of the ore tests are satisfactory, I strongly recommend that an option on the property be secured and that a thorough examination and sampling be made.

Respectfully submitted

Chas. C. Starr.

ADDENDUM

The following samples were assayed for Arsenic with the following results:-

No. 3071	10.04%
No. 3100	10.14.
No. 3102	20.68.

C. C. S

C.S/C.J.