

002350

REPORT OF EXAMINATION

of the

HOPE NO. 2 MINE

LEMON CREEK,

near Slocan City, B.C.

For the:

PIEDMONT MINES, LTD.,

REGINA, SASK.

BY:

Charles C. Starr,

Aug. 1, 1928

INTRODUCTION:

Two trips were made to the property, the last one on July 31st, and August 1st, and the former about a month previous. The immediate vicinity of the workings has been gone over quite thoroughly, but the more distant parts of the claims have not been visited. No sampling was done except in the New, or No. 3, tunnel.

LOCATION:

The lower camp is distant about 5 miles by road from Lemon Creek, which is a flag station on the C.P.R.; the upper camp is about 2 miles further, by trail. The distance from Nelson is approximately 50 miles by road. The property is situated in the Slocan City Mining Division.

TOPOGRAPHY:

The elevation of the mine is approximately 5,000 feet, and of the lower camp approximately 4,300 feet. The property lies well towards the top of a well timbered mountain with steep but generally comparatively smooth slopes.

TRANSPORTATION:

A branch of the Canadian Pacific Railway at Lemon Creek is connected with the lower terminal of the tramway by a good mountain road; ore may be transported from the mine over the aerial tramway, and thence by truck to the railroad at a reasonable cost.

EQUIPMENT:

The lower camp, situated at the lower terminal of the tramway, consists of an office, boarding-house, and other buildings of frame construction which are entirely adequate for their purpose. The upper camp consists of an office, boarding-house and bunk-houses sufficient for about 15 men. The aerial tramway is well constructed, has 10 ore buckets, and connects the mine with the road. The two-stage Ingersoll-Rand Compressor of 750 cu. ft. capacity is located near the lower camp and compressed air is piped to the mine. The compressor is driven by a 135 H.P. Crossley fuel-oil engine and forms an extremely economical unit. At the mine there are several rock drills, blacksmith shop, cars etc. The equipment is rather exceptionally good and, with the addition of very minor items from time to time as required, will be sufficient for a long time.

DEVELOPMENT:

(Refer also to the Accompanying map).

Development has been concentrated about the centre of the Hope No. 2 claim and consists of approximately the following footage:

Trenches through soil and into rock	370 feet
Twelve open cuts driven into the hillside	180 feet.
Three tunnels (mostly crosscuts)	290 feet
One raise	30 feet.

Development Con't

The No. 1 tunnel shows the ore bearing formation, in part, and some aplite rock; the No. 2 tunnel does not show any of the ore bearing formation since its place has been taken by an intrusion of aplite rock; No. 3 tunnel shows a fair width of the ore bearing formation and has cut a body of low-grade ore. The central part of the ore bearing area has been well outlined by the trenches and cuts which serve as a valuable guide to underground work. There has, however, not been enough development work to permit sufficient sampling and the value of the ore as a whole can only be guessed at.

GEOLOGY:

The rocks on the property consist of limestones, and argillites which presumably belong to the Slocan Series. They have been intruded by a large mass of granite, and have also been penetrated along the margins by many small irregular dikes of aplite, which is related in origin to the granite, but of later formation. The contact between the limestones and the granite mass is approximately parallel to the slope of the mountain side and in places the limestone has been completely eroded leaving the granite at the surface. This condition is complete a short distance to the east of the workings, and over irregular parts of the area to the south of and below the workings. To the west and south-west erosion has not penetrated so deeply.

The limestone and argillite beds strike north-west and south-east and dip about 40° southwest, with some local variations

ORE DEPOSITS:

The ore consists of sulphides of lead and zinc containing a little silver and iron. It occurs, so far as yet known, in

Ore Deposits:

a single bed of limestone which has been much altered by the heat from the granite intrusion. This limestone may be distinguished by the presence of a considerable amount of garnet which gives a reddish tinge to the rock. This ore-bearing bed is from 15 to 25 feet in thickness in the present exposures. In places the ore covers the full width of the bed, in other places only a part, and in still others no ore appears. Around some of the mine workings, erosion of the rocks on the upper side of the ore has left the side of the ore-body partially exposed on the surface, and in a favorable condition to be mined at a low cost.

At approximately 300 feet to the east of the workings the ore has been entirely removed by erosion, and considerable parts downward along the dip have also been removed; to the west of the workings, the ore bearing limestone is still in place overlain by argillites, and the outcrop covered by soil.

Ore bodies in this type of formation and under the existing conditions are not true veins, but often form large bodies of ore although frequently erratic in shape and value.

As
VALUE OF ORE: mentioned in the introduction, there is not enough development to allow systematic sampling and determination of the gross value and tonnage of the ore, although it is visible at numerous points, which may be sampled:

The net smelter returns on a carload of ore recently shipped to the Consolidated Mining & Smelting Co. which assayed 6.6 Oz. silver; 8.2% lead, 23.1% zinc, cannot be figured accurately until the results of the concentration and separation of the ore now being made by the C.M.&S. Co. have been received, but may be estimated to be about \$10. per ton.

VALUE OF ORE:

This shipment gives an indication of the approximate net value to be expected from the average ore now available for shipping.

This ore, if milled on the ground, would yield a value of \$3 to \$5 per ton greater than obtainable by shipping direct. There would be smaller hauling charges, concentration costs, and better extraction of the metal values.

Carefully taken samples of the ore recently cut in the New, or No. 3 Tunnel assayed as follows: 6 feet on the west side, 1.8 oz. silver, 2.6% lead, 5.4% zinc. 6.4 feet on the east side, 1.9 oz. silver, 2.0% lead, 4.7% zinc. The best part of the second sample was re-cut and the third sample represents about one half of the total width. It assayed 2.4 Oz. silver, 4.5% lead, 5.0% zinc; probably the iron content is high. This last sample is intended to indicate the value of ore that may be obtained by sorting out the better half for shipment. The widths given above are across the width of the ore, and not horizontally along the side of the tunnel,--the latter would be somewhat greater. These assays are rather too low to indicate workable ore, but should not be considered too discouraging since better ore may be encountered within a short distance.

ORE TREATMENT:

Before smelting, lead and zinc sulphides mixed together require separation by milling. What may properly be considered "shipping ore" has only one of these metals present in quantity, and should also be a fairly high-grade. For the convenience of patrons who have no mill, the Consolidated Mining & Smelting Co. concentrate mixed ores, and smelt the lead concentrates and zinc concentrates separately. In a custom mill charges are higher and loss of metals greater than is usual

ORE TREATMENT:

in a privately operated mill. This difference in cost and losses is often considerable.

RECOMMENDATION:

Further development of the property is thoroughly justified by the present showing, to prove the value and quantity of ore. The work done to date may be considered as preliminary development; it has been well laid out and is of great value in planning future work as well as in the ore it has exposed.

A policy of extensive and continuous development is recommended, which should be under careful and frequent supervision in order that full advantage may be taken of changing conditions. It is advisable to work in as many places as possible at one time, as in this way the lowest unit costs may be obtained.

For the present it would be well to drift westward on the newly opened orebody in No. 3 tunnel, and also to continue the tunnel ahead to the northward to explore untouched ground.

A new tunnel should also be driven at a point to be selected, but approximately 100 feet lower than the No. 3 tunnel.

Cripping should be built at proper places to prevent ore which is broken in the various workings from rolling too far down the hillside and being wasted.

SUMMARY & CONCLUSION:

The orebodies and geological conditions exposed by the work thus far, justify the expenditure of further sums required to prove up the property.

Development should be pushed ahead rapidly, and carefully supervised.

SUMMARY & CONCLUSION:

The aim should be to develop sufficient ore to justify the construction of a mill, as it is not economical to ship ore of this character.

Respectfully submitted,

Chas. C. Stan