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Bay View

COPY OF REPORT TO
MESSRS. CHAFFEY-FRASER, LTD.
VANCOUVER, B.C.
from
W. G. NORRIE,
MINING ENGINEER.

October 2nd, 1925.

Messrs. Chaffey-Fraser Limited,
Vancouver, B. C.

Gentlemen:

BAYVIEW GROUP OF MINERAL CLAIMS.

At your request I recently examined the above group of claims, situated near Stewart, B. C.

A short time previous to my visit to the property, the Bayview Mining Company had secured two reports, one from Mr. B. W. W. McDougall and another from Mr. John F. Coats, mining engineers, and these reports were handed to me for my personal use in connection with this examination.

As I understand that you have also been furnished with copies of these reports it will be unnecessary for me to enter into any detailed description of the general features such as situation, topography, geology etc., at this time, as you will find all of this described in the other two reports and particularly well in Mr. McDougall's report.

I went over all the mineral showings and examined all the points sampled by Mr. McDougall and judging from my experience of the class of ore occurring on these claims, I would say that in the main the sampling was performed efficiently and very carefully and the assays shown are as nearly correct as it is possible to get them from surface exposures. On this account I found it unnecessary to take any samples myself particularly as Mr. Coats's sampling checked Mr. McDougall's sampling very closely. I have therefore used Mr. McDougall's assay results in my calculations of ore values.

It is now possible to ship mixed lead - zinc ores such as yours to the Trail smelter and have them concentrated before smelting at a moderate charge, so that you can, in this way, obtain the full value of the ore, less of course the inevitable milling and smelting losses. The importance of this new development cannot be too strongly emphasised. It renders the development of a property such as yours possible at a minimum of cost as it makes it possible for you to realise on your ores at a much earlier time than if you had to await the erection of your own concentrator.

The geology of the property is correctly described by both Messrs. Coats & McDougall, there are some minor points of a technical nature in connection with the mineral occurrences, on which

I might not be in entire agreement, but as these do not affect the general conclusion I will not bother you with them here.

My own opinion of the property is that it has considerable possibilities and the area of Greenstones underlying the claims is sufficiently large to permit of the occurrence of very fair sized bodies of commercial ore. I most certainly think it is worth the expenditure of some money for exploration purposes and strongly recommend that you carry this out in the following manner.

(1) On the Lucille No. 1 claim extend the tunnel at elevation 2650 feet, which I have called No. 2 tunnel, until it hits the vein, this should be encountered in a distance of approximately 80 feet. At the same time as this work is in progress crosscut from the face of the upper tunnel (No. 1) to the left a distance of from 15 to 20 feet until the vein is encountered.

I suggest this work because my compass surveys show that the No. 2 tunnel was not extended far enough to hit the showing of ore above it and the No. 1 tunnel crosscut was deflected along a footwall stringer and not along the vein at all. (See sketches attached).

(2) When these two crosscuts have hit the veins, I recommend that you drift on them as far as possible, say 100 feet in both cases.

I suggest that this work be performed by hand and assuming that it is carried to completion in this manner you will have about 300 feet of hand work to perform. If you work both tunnels at the same time you should make progress at the rate of about 40 feet a month, so that this portion of the programme should be completed in about four months from the time of starting.

(3) While this work is in progress I suggest that the high grade surface showings, particularly those on the upper portion of the Bayview group be further prospected and as much ore be mined and sacked as possible. During the period of exploration it is entirely practicable to take out sufficient of this class of ore to partially offset the cost of exploration.

(4) If the above work meets with no success, that is if it shows conclusively that the surface ore exposures do not continue downward, you will have to seriously consider what further steps should be taken in connection with future operations.

If on the other hand, and this is the more probable, the preliminary exploration is successful in that it proves the downward extension of the ore, plans should be made for the deeper and more permanent development of the property, so that it can be worked the year round.

The present tunnels are so situated that they are inaccessible for men in the winter time, consequently it is essential to select some point for a permanent tunnel free from snow slide interference. There are several such points and the final selection may well be left until the preliminary work has been done.

The first consideration, before permanent work is undertaken, will be the provision of suitable transportation between the permanent tunnel site and the Stewart road. An aerial tramway as suggested by Mr. McDougall is about the only installation that need be considered and the construction of this should be undertaken as soon as the exploration work and the amount of ore sacked warrants.

A compressor plant, camp and mining equipment will then become necessary and all of the material necessary for this can be hauled over the tram.

When the above equipment is installed, permanent development can be proceeded with expeditiously and the general idea of this development will be to place enough ore in sight to justify the erection of your own concentrator on the claims. During the course of this development, at any rate during the summer months, I would suggest that you extract as much of the high grade ore as possible for shipment to the smelter. This will enable you to help defray the costs of development and at the same time obtain a thorough idea as to the values of the ore and the method of treatment, so that when you finally build your own mill you will have complete information concerning all the necessary features.

COSTS. The cost of preliminary exploration can be estimated fairly closely, but the total cost of the development and equipment of the property, up to the point where it will become a profitable producer can only be very approximately stated at this time, however, to give you an idea of what your future requirements may be I suggest the following steps in your financing.

(A) For preliminary exploration together with provision for property payments, provide the sum of \$30,000.00.

This amount of money may be regarded as the preliminary gamble in connection with the property and I believe the present surface conditions fully warrant this.

(B) Expenditures under heading "A" will determine to what extent you should proceed with further development. Assuming that you decide to go ahead with an extensive programme the following is suggested.

| | | | |
|---|-------|-------|--------------|
| Tramway cost and installation | - - - | - | \$15,000.00 |
| Camp construction & Compressor installation | | - | 30,000.00 |
| Development approximately 5000 feet @ \$12.00 | | - | 60,000.00 |
| Construction of 50 ton per day concentrator | | - | 50,000.00 |
| | | | <hr/> |
| | | Total | - 155,000.00 |
| | | | <hr/> |

ASSAYS.

As previously noted I made a careful examination of the points sampled by Mr. McDougall and found the assays of samples taken at these points, to be in the main, a correct representation of the ore occurrences.

Based on this I have made estimates of the average assay of the more important ore exposures, eliminating as far as possible all high grade ore, which I will treat separately as shipping ore.

As the width of exposures are variable and as it is necessary, in order to mine the ores economically to break a width of about four feet, I have based all calculations on an average width of four feet, and wherever this width did not include all ore, I have assumed that the difference between the actual width of ore sampled and the width necessary for stoping, would be made up of waste rock, carrying no value. On this basis the average of the milling ore is:

Width 4 feet.

| | | | | |
|--------|------|-----|-----|-----|
| Gold | .023 | ozs | per | ton |
| Silver | 15.4 | " | " | " |
| Lead | 4.09 | % | | |
| Zinc | 2.9 | % | | |

This grade of ore if concentrated on the property will probably have a nett value, at present metal prices, allowing for milling losses and smelter deductions and freight, of \$15.00 per ton.

With a 50 ton concentrator installed and in operation, the cost per ton of ore landed at Stewart should not exceed \$8.00, so that there is an indicated profit of \$7.00 per ton on this class of ore.

It is impossible to obtain an accurate valuation of the ores pending further development and I merely outline the above to give you a general idea of what might be expected in the future.

With the same idea in mind I may say that if it requires \$200,000.00 to bring the property to the profitable production stage, it will require say 50,000 tons of ore of the grade mentioned to return this capital expenditure together with a fair rate of interest. At the present time there appears to be a reasonable possibility of developing this tonnage.

SHIPPING ORE.

In the course of my examination I made a careful estimate of the quantity of ore which could be extracted and shipped without concentration on the ground. Starting with the upper showings on the Bayview Claim, it should be possible to obtain from the surface about 150 tons of ore similar to the shipment made by the Bayview Company, which assayed:

| | | | | | |
|--------|---|-------|-----|-----|-----|
| Gold | - | .07 | ozs | per | ton |
| Silver | - | 171.9 | " | " | " |
| Lead | - | 16.5 | % | | |
| Zinc | - | 21.2 | % | | |

On the Lucille showings the upper one should produce 100 tons of shipping ore and the lower showing about 200 tons. A grab sample was taken from about 90 sacks of ore from the upper showing and this assayed Gold .05 ozs, Silver 56.1 ozs, Lead 15.3 % and Zinc 10.6 %.

On the lower Lucille showing, based on Mr. McDougall's sampling the grade will probably be Gold .03, Silver 50 ozs per ton, Lead 30 %, and Zinc 12 %.

The average of these ores based on the quantities noted is Gold .05 ozs per ton, Silver 92 ozs per ton, Lead 22.1 % and Zinc 14.7 %.

The value of this ore shipped to the Consolidated Mining & Smelting Co., Ltd., at Tadanac and concentrated there may be calculated as follows:

- (1) Allow 15% loss in milling for all metals.
- (2) Assume a ratio of concentration of 3 to 1 for Lead concentrate and 4 to 1 for Zinc concentrate.
- (3) Assume that all silver remains in the Lead concentrates (this point cannot be determined definitely pending a mill test).
- (4) Take metal prices at 68¢ per oz (New York silver) 7.7¢ per pound, (London Lead) and 8.50¢ per pound (St. Louis Zinc).
- (5) Consolidated Mining & Smelting settlement on Lead concentrates pay for 95% Gold @ \$20.00 per oz, 95% Silver at New York price and 90% Lead at London price less 1½ cents per pound. Treatment at \$10.00 per ton.
- (6) Consolidated Mining & Smelting Company settlement on Zinc ores pay for 80% of Zinc contents if 50% Zinc at 90% of St. Louis price charge \$25.00 on marketing per ton metal produced. Charge \$11.25 per ton for treatment.
- (7) Freight on ores from Stewart to Tadanac, B. C. \$11.50 per ton.

| | | | |
|------|---|----------------|-----------|
| Then | 1 Ton Lead concentrates contains 85% of | .05 ozs Au x 3 | -.13 ozs |
| | 1 " " " " 85% " | 92 " Ag x 3 | -234 " |
| | 1 " " " " 85% " | 442 lbs Pb x 3 | -1120 lbs |
| | 1 " " " " 85% " | 294 " Zn x 4 | -1000 lbs |
| | | | -56% Lead |
| | | | -80% Zinc |

LEAD CONCENTRATE VALUE.

| | | | |
|---------|---------------------------|---|---------------|
| 95 % of | .13 ozs Au @ \$20.00 | - | \$2.50 |
| 95 % " | 234 " Ag @ .68¢ | - | 151.30 |
| 90 % " | 1120 lbs Pb @ 7.7¢ - 1.25 | - | 65.00 |
| | 1.25 - 6.45¢ per lb | | |
| | 6.45 | | 218.80 |
| | Less treatment | | 10.00 |
| | Nett value concentrates | | <u>208.80</u> |

ZINC CONCENTRATE VALUE.

| | | |
|--|---|-----------------------------|
| 80 % of 1000 lbs @ 90 % of 8 $\frac{1}{2}$ ' | - | \$61.25 |
| Less marketing and treatment charge | - | 22.00 |
| | | <hr/> |
| Nett value Zinc concentrates | | 39.25 |
| 1 Ton Lead concentrate | = | 1/3 ton shipping ore |
| | = | $\frac{208.8}{3}$ = \$69.60 |
| 1 " Zinc " | = | 1/4 ton shipping ore |
| | = | $\frac{39.25}{4}$ = 9.81 |
| | | <hr/> |
| | | 76.41 |
| Less milling charge | - | 3.00 |
| | | <hr/> |
| | | 76.41 |
| Less freight Stewart to Tadanac | - | 11.50 |
| | | <hr/> |
| Nett value per ton shipping ore | - | \$ 64.91 |

The cost of packing this ore to Stewart from the mine will be prohibitive, so that while the ore may be mined and sacked during the exploration period, it should be assembled at some convenient point on the hill pending the completion of the aerial tram, when, as Mr. McDougall estimates, the ore can be transported to the Stewart dock at a cost of \$4.00 per ton.

With a force of 8 men breaking ore on the surface and incidentally prospecting the exposures, it should be possible to break and sack ore at the rate of about 2 tons per day and it will be possible to do this from the 1st of June till about the end of November or say a total of 6 months. In this period therefore about 350 tons of shipping ore should be assembled ready for shipment.

I previously estimated that it would require the sum of \$30,000 to meet property payments and preliminary exploration work including ore breaking but as an offset to this it is reasonable to expect the returns on 350 tons of ore at about \$65.00 per ton or \$24,250.00, assuming of course that the aerial tram is constructed.

SUMMARY.

| | | |
|--|----|-----------|
| Preliminary expenditures | \$ | 30,000.00 |
| Receipts from sales of ores during this period estimated at \$24,250.00 | | 24,250.00 |
| | | <hr/> |
| Nett preliminary cost | | 5,750.00 |
| Construction of tram | | 15,000.00 |

| | |
|---|-------------|
| Camp construction, compressor & equipment | \$30,000.00 |
| 5000 feet Development | 60,000.00 |
| 50 ton mill | 50,000.00 |

| | |
|-------------------------------------|---------------|
| Total estimated Capital Requirement | \$ 160,750.00 |
|-------------------------------------|---------------|

| | |
|--|---------|
| Nett value of average milling ore based on four feet stoping width | \$15.00 |
|--|---------|

| | |
|--|-------|
| Nett value of shipping ore at present prices | 64.91 |
|--|-------|

Estimated quantity of shipping ore on surface 450 tons.

I trust that the above information will be of service to you and I may say in conclusion that you need have no hesitation in supplying the funds for this proposition along the lines suggested as I think it is a very attractive speculation.

Yours very truly,

(Signed) W. G. NORRIE.

Mining Engineer.