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82G/N-8



DEPT. OF MINES  
 Mines of the Province of British Columbia  
 1538  
 Recd. JUN 30 1951

DEPARTMENT OF MINES  
NELSON

No 22

DEPT. OF MINES  
 REC'D JUN 30 1951  
 SUBJECT \_\_\_\_\_  
 FILE 2200  
 REFERRED TO \_\_\_\_\_

June 26th, 1951.

Dr. H. Sargent,  
Chief, Mineralogical Branch,  
Department of Mines,  
Victoria, B.C.

Dear Dr. Sargent:

I spent three days, June 18, 19 and 20 on the Estella property and beg to submit the following report and analysis. Time was insufficient to work out the geology and ore controls, and I would estimate that at least two more weeks would have to be spent to arrive at conclusions that might be reasonably complete under existing conditions.

I found no evidence of deliberate misrepresentation, but abundant evidence of poor engineering and muddled thinking. It is obvious that, no matter what the ore reserves are estimated to be at the present time, there is not sufficient ore in sight to warrant the large expenditures already made, and it is equally obvious that the proposed mill capacity of about 150 tons is too large. The chances for finding a substantial quantity of additional ore cannot at present be assessed, but it may be said that the outlook is not exceptionally promising. By additional ore is meant an amount equal to or greater than the present indicated tonnage. Mr. Hughes will be able to tell you verbally much about the general state of the operation.

I have examined the Company's assay plans, which cannot be checked visually in more than a very general way. The samples were taken by a number of individuals at various times. Since I can see no reason to question them as a whole, I have calculated ore reserves using the Company's assays and my interpretation of continuity. The ore may be

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termed reasonably assured but is not positively blocked out and some of it is not well enough exposed by drifting to permit thorough sampling. The matter of dilution cannot be estimated, beyond the fact that unless mining is being carefully carried out dilution may be large. The estimate of reasonably assured ore that can be mined is 47,000 tons containing 1 ounce or more of silver, 3.4% lead, and 16.5% zinc. Mr. Hemsworth's forthcoming calculation should check these figures within reason.

There is, of course, some doubt as to what to call ore, but I have eliminated a section 220 feet long averaging 13 inches wide containing 20% combined metals which was sampled in only 5 places, and have paid no attention to local bulges or spot assays in otherwise narrow or lean sections.

The ore so estimated exists in two blocks, one on each level, and extensions above and below each level are estimated on admittedly meagre evidence. Current raise development should, in the next month or two, give more positive evidence regarding vertical extensions. Drifting into new country on the Estella level should be resumed soon.

The ore occurs in a zone of shattering and silicification that dips on the average at about 55 degrees to the southwest. The zone is semi-bedded in sediments that are quartzitic and argillaceous, and passes into diorite in some parts. The relation of the diorite to the sediments is not clear in the mine area, but is believed by Cominco geologists to be sill-like on a regional scale. The ore minerals are contained in rock or in silica that represents partial or complete replacement of rock. The amount of vein quartz is relatively small. There is an impression which

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cannot be substantiated that the ore bodies are related in some way to the diorite, i.e. near to the diorite contact although not necessarily within that rock. If there is a connection between the two ore bodies a low rake to the southeast may be presumed, and it may be that the diorite-sedimentary contact may rake in that direction, although there is no positive evidence for this assumption.

A body of syenitic porphyry is exposed at the Estella adit portal and some of the same rock is encountered in the northwest face of the Estella adit.

The geology has been mapped by the company with general correctness but without any attempt at detail. The surface outcrops in the immediate vicinity of the mine have been mapped but the map adds nothing to the underground picture. More detailed surface mapping and at the same time a broader coverage would be necessary before the possibilities could be understood. More complete geological examination would at the present affect the ore picture little if at all, but would be desirable if development is to be extended.

The accompanying map shows the essentials of the mine. Raises E 1 and E 2 show subcommercial ore only but further investigation should be carried out from E 2 because it was started in the footwall of the ore and drilling from the Rover adit indicates ore between the two levels. Raise E 3, started in the footwall of the barren zone has just been turned back in search of the downward continuation of the Rover orebody. Raise E 4 is in ore for 50 feet and is continuing as a prospect raise. Raise R 1

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above the Rover adit shows ore to continue upwards for at least 50 feet, but was then turned to make a breakthrough to surface. Diamond drilling was in progress near the southeast face of the Estella adit in search of the faulted lode.

Details of the ore blocks are as follows. The Silver content was not determined in all samples, but should average between 1 and 2 ounces per ton.

Block A, Rover adit, is 310 feet long, 8 feet wide, contains 4.1% lead and 21% zinc. It is known to extend more than 50 feet above the level in one place and not to extend to a surface shaft 50 feet above the northwest end. It is presumed to extend to the equivalent of 50 feet above and below the level for a total of 25,000 tons in round figures.

Block B, Estella adit, is 145 feet long, 5.5 feet wide and contains 0.9% lead and 9.7% zinc. It is presumed to extend 50 feet below the level and for 100 feet above on the strength of a diamond drill intersection 40 feet below the upper adit. Total 12,000 tons. This section is spotty.

Block C is separated from B by 25 feet of low grade material which has not been sampled. It is 60 feet long, 4.7 feet wide and contains 2.2% lead and 16.9% zinc. It is presumed to extend for a vertical range equal to that of Block B for a total of 4,500 tons.

Block D lies between two faults and is exposed in a drill core and two faces. The raise above contains ore of similar grade to these for a distance of at least 50 feet. Length 85 feet, width 6.4 feet, containing an estimated 7.0% lead and 10.0% zinc for a vertical range of 100 feet,

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Total, 5,500 tons.

The weighted average of all four blocks is 47,000 tons containing 3.4% lead and 16.5% zinc as indicated by Company assays.

Re the cobalt content, there is nothing under visual examination to suggest the presence of cobalt. I learned at Trail that there is no tolerance on cobalt and that virtually all must be removed at considerable expense.

Yours very truly,

*M. S. Hubley*

Geologist.

MSH/HR