

82F/3W

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82F/3W-2 REEVES MacDONALD MINES LIMITED

This company, controlled by Pend Oreille Mines & Metals Company, owns a large group of claims near the international boundary, south of Nelson, British Columbia. The principal workings are a little less than 5 miles by motor road from Nelway, the Canadian customs port at the boundary. Principally in 1926-1929, lead-zinc mineralization was explored by surface working, diamond drilling and adits. Galena, sphalerite and pyrite occur disseminated in the limestone. In the zone which has yielded the best results to date, widths averaging 30 feet and more have been considered as potential ore.

According to published company information, mineralization with an average width of 30 feet was indicated for a length of 540 feet on the Reeves adit level, at 2675 feet elevation, and averaged Silver about  $\frac{1}{2}$  oz. per ton, lead 1.6%, zinc 6.2%. Nearly 800 feet lower, workings toward the inner end of the River adit (elevation 1885 feet approximately) incompletely outline similar mineralization up to 50 feet in width, with a maximum length of about 350 feet. It is lower in lead, but contains approximately the same average zinc content as the mineralization explored on the Reeves level. Diamond drilling indicates similar mineralization between the two levels; and above the Reeves level surface cuts indicate mineralization which thus occurs through a

vertical range of at least 1000 feet. A simple body continuous throughout the vertical range would contain more than 1,000,000 tons of potential ore. It is probable that mineralization of the grade indicated does not continue as a body of simple outline between the two levels. On the other hand, it is likely that in further ore in the Reeves zone and in two or three other zones, enough ore exists to make up any defect from 1,000,000 tons.

The zinc mineral is a pale yellow sphalerite containing little iron, and therefore favoring concentrates high in zinc. In addition to galena and sphalerite, the sulphides include pyrite. For the purpose of the present study, we assume 1,000,000 tons averaging Silver 0.3 oz. per ton, lead 1.0%, zinc 6.0%, and mill products, assays, and distribution of metals as follows:

<u>Product</u>	<u>Assay</u>			<u>Distribution</u>		
	<u>Silver</u> <u>oz/ton</u>	<u>Lead</u> <u>%</u>	<u>Zinc</u> <u>%</u>	<u>Percent of Total</u>		
				<u>Silver</u>	<u>Lead</u>	<u>Zinc</u>
Lead Concentrate	14.0	60.0%	6.0%	60%	78%	1%
Zinc Concentrate	1.0	1.0%	58.0%	28%	8%	80%
Tailings	0.006%	0.05%	1.4%	12%	14%	19%

In view of the nature of the ore, recovery and grade of zinc in zinc concentrate should be as good as indicated. The grade and recovery of lead shown may be somewhat optimistic in view of the small quantity of lead in the feed. Our assumed recoveries of lead in lead concentrate and zinc in zinc concentrate combined amount to about 110 pounds of metal per ton milled.

The width of ore and strong but not tough rock in which it occurs should make for cheap mining and milling. At 1000 tons per day, an average of 2¢ per pound of metal (\$2.20 per ton of ore) should cover operating costs to the point of producing concentrates at the property. This cost includes administration and taxes. It would probably require about \$1,250,000 to bring the property into production at 1000 tons per day. On 1,000,000 tons, the capital charges then would be \$1.25 plus interest per ton or 1.14¢ per pound of metal recovered, bringing to a total of say 3.15¢ per pound of metal. From other studies (Lucky Jim and Base Metals Mining Corporation), it appears probable that from concentrates of the grades assumed, the net returns would be about 3.0¢ per pound of lead in lead concentrates, and about 2.6¢ per pound of zinc in zinc concentrates, after allowing for trucking concentrates some miles to the railway. These returns are less than the estimated cost of production, but if the effect of the United States duty were removed, and if the present United States prices continued for 3 years from beginning of production, the operation would show a satisfactory profit,

particularly as the plant should have some salvage value after treating 1,000,000 tons.

Vancouver, B.C.,  
June 11, 1942.

H. Sargent,  
Mining Engineer.