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MAPLE BAY PROPERTY 3
Maple Bay Groups
Outsider Group

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H.S. 1942

Sources of Information: Granby Consolidated Mining, Smelting & Power Co. Ltd.
Geological Survey, Canada, Memoir 175.

Quartz veins, sparingly mineralized with chalcopyrite, pyrite and pyrrhotite, and containing some altered wall rock, occur in amphibolite which contains bands of sedimentary rocks adjacent to Maple Bay, on the eastern side of Portland Canal. Maple Bay on the western side of the peninsula which runs southerly between Portland Canal and Observatory Inlet, is almost due west of Anyox, on the eastern side of the peninsula. The distance between the two points is about eight miles in a straight line. A telegraph line passes through the two points and between them follows a route about 12 miles long, crossing the ridge which forms the backbone of the peninsula at an elevation of about 2000 feet.

Several groups of claims covering ground extending easterly from the shore line have collectively been referred to as the "Maple Bay Groups". Another important group of claims, lying north of Maple Bay, is the Outsider Group. At a recent date a good deal of the ground was open, most of the claims having been allowed to lapse, but it is reported that some of the most important claims had been kept in good standing.

Outsider Group

The principal vein on this group is 2 to 12 feet wide, has been traced for 3000 feet on the surface and has been explored in a length of 2000 feet by four adits; from the lowest of these, the

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900 level, a winze has been sunk, from which some drifting has been done on the 800 level.

Some ore was shipped from the Outsider in 1905-06, in 1922 the Granby Consolidated Mining, Smelting & Power Company acquired the property and did substantial work on it, shipping in all some 96,000 tons of ore as siliceous flux to the smelter at Anyox. This ore contained some 3,400,000 pounds of copper, 65 ounces of gold, and 460 ounces of silver; equivalent to a little more than 36 pounds of copper, 0.0006 oz. gold and 0.05 oz. silver per ton. The operation was shut down in 1926, the Granby Company having decided to use siliceous flux from another source directly tributary to Anyox. In 1923 based on some diamond drill holes and the development work of that time, it was predicted that the Outsider vein above the 900 level would yield 500,000 tons of ore averaging 2.5% copper or better. The production to 1926 has been given; at the time of the shutdown total reserves were estimated at 79,100 tons, averaging 1.6% copper with a further 10,000 tons probable. This estimate included ore below the 900 level, but was not considered to exhaust the possibilities of the vein. It seems probable that the vein proved more lenticular and the pay sections proved narrower than had been anticipated in 1923. With a total production of 26,412 tons in the last two years of operation, total costs including some development averaged about \$5.05 per ton. In the last year practically no development was done.

Maple Bay Groups

Several veins are known on the various claims which constituted

these groups. The properties were optioned by the Granby Company in 1913; a 700 foot adit was driven on the Star vein and in 1916, some 4000 tons of copper-bearing siliceous flux was shipped to Anyox. Other veins were prospected on the surface and with several diamond drill holes. The Eagle vein up to 35 feet wide traced on the surface for 3000 feet, between 3200 and 3500 feet elevation, and cut by several diamond drill holes, was estimated to contain 250,000 tons of probable ore averaging 2.5% copper; further possibilities in the vein were estimated at 2,000,000 tons, averaging 1.75% copper.

In 1941, a report on the Maple Bay groups was prepared based on the records of diamond drilling and on a recent examination and sampling of the surface exposures. It was considered that the Eagle and Anaconda veins could be counted upon to yield moderate tonnages of ore and that some of the other veins had possibilities. Because of elevation and absence of timber, causing danger from snowslides, the Eagle vein could not be worked from the surface in the winter. The Anaconda vein outcrops at lower elevation in timber, and therefore could be reached and worked throughout the year. Sampling of the southern outcrops of the Anaconda vein averaged 2.0% copper over an average width of 7.8 feet. These outcrops are oxidized and leached; it was considered probable that fresh material would average 2.5% copper, and that selective mining and sorting would raise the grade to about 3% copper.

Considering only parts of the veins from which it was expected that selective mining and sorting would yield material running

about 3% copper, "possible ore" was estimated as follows:

Eagle Vein 108,400 tons, gold, trace; silver, trace; copper, 3.21%;
width 8 to 13 feet.
Anaconda Vein 32,400 tons, gold, trace; silver, trace; copper, 2.04%;
average width 7.8 feet.

It was recognized that the lensy nature of the better mineralized parts of the veins and consequent need of selective mining and sorting would probably reduce the mineable tonnage from the sections considered; but it was considered probable that, within range of the workings needed to mine the blocks considered, there would be other lenses sufficient to offset these defects.

Proposal to Ship Raw Ore As Flux

In an hypothetical program, it was proposed to develop the Anaconda vein and if it responded satisfactorily, to develop the Eagle vein. Mining the Eagle vein would be done only during the summer. The expenditure required to prepare the Anaconda Vein for production, and to provide all facilities needed was estimated at \$60,000. Probable costs assuming mining 100 tons of shipping ore per day from the Anaconda vein, and shipment of the ore as flux to Tacoma, the smelter charging \$1.00 per ton for treatment and allowing full value for contained copper, were estimated as follows,--

Estimate of Costs

Mining

All operating charges, including breaking ore, current development, delivering to and loading at wharf	\$2.27 per ton
General expenses, administration, taxes, etc.	.60
Royalty	.15
	<hr/>
	3.02
Freight and unloading	2.65
Smelting	1.00
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Total	\$6.67.

Assuming payment for 100% of the copper content of 3% ore, these costs work out to 10.95¢ per pound of copper; capital charges would increase the cost to about 14¢ per pound.

Under special circumstances, the smelter at Tacoma might be sufficiently desirous for siliceous flux to smelt Maple Bay ore for \$1.00 per ton and allow full value for copper; but those circumstances do not prevail today so far as the writer knows; further shipping facilities on the coast are reduced at present and are taxed by war demands. Under present conditions it seems probable that smelting charges would be at least \$1.75 and that payable copper would not be more than 50 pounds per ton, accordingly the net cost per pound of copper would be about 13 cents per pound.

Proposal to Mill Maple Bay Ore at Anyox

As an alternative to shipping raw ore, it could be milled at Maple Bay. It might be possible to keep a mill of 100 to 250 tons daily capacity running for some years. The difficulty of mining from the Eagle Vein in the winter might make it difficult to keep the mill running steadily, while capital charges for the mill and other facilities, assuming operations lasted several years, would probably result in an overall cost of more than 18 cents per pound of payable copper. The history of the Outsider operation suggests that the element of risk in estimating ore in Maple Bay veins is a large one. Therefore it is undesirable to risk capital, particularly as any really large tonnage is improbable.

If ore remaining in the Hidden Creek mine were salvaged and

were milled at Anyox, see "Hidden Creek and Bonanza", it might be possible to take ore from Maple Bay to be milled at Anyox. Little in the way of extra equipment would be required at Anyox, and it is probable that excess mill capacity there would be ample to handle the Maple Bay ore. Provided that Maple Bay ore could be milled at Anyox while the mill was handling Hidden Creek ore, the less regular or intermittent operation, called for by the Eagle vein, would be less of a handicap than if milling were done in a smaller mill at Maple Bay. Shipment of ore from Maple Bay to Anyox would be by barge. Use of equipment would be covered in the contract cost of freight and there would be no capital tied up or risked. The freight on ore to Anyox with handling and with milling in the large mill there, would probably be a little less than mill operating costs and capital charges if milled at Maple Bay. In the latter case, capital would be risked, time would be required to build the mill, and equipment might be difficult to obtain now.

One difficulty must be mentioned. The Maple Bay ore contains negligible gold, and if it were mixed with Hidden Creek ore in the mill, the gold content of the resulting concentrate might be reduced below the minimum per ton for which the smelter will pay. This would have to be guarded against either by contract with the smelter or by keeping the two ores separate in the mill. The latter procedure would involve some extra cost in milling which is allowed in the following estimates.

As far as mining ore and loading it at Maple Bay, the

estimates follow those for "shipping raw ore". For the present study, the writer assumes production at a rate of about 200 tons per day. Both the Eagle and the Anaconda veins would have to be developed and there would be extra expense for facilities. Capital expenditures placed at \$110,000, with an allowance of \$8000 for interest, are written off at \$1.18 per ton on 100,000 tons averaging 2.75 percent copper, which it is assumed would be produced in little more than 1½ years. As two veins are considered here, and as the total tonnage and average grade are reduced, the element of risk is reduced somewhat. The full amount of capital need not be spent should early work prove disappointing.

It cost the Granby company about 85 cents per ton to ship ore from the Outsider to Anyox in 1926. Under the present proposal, the tonnage to be shipped would be greater, which should favor somewhat lower costs; however, as demand for shipping is rather keen, 95 cents per ton has been used in the estimates. Ore would be loaded on scows at Maple Bay and towed around the end of the peninsula to Anyox, a distance of about 80 miles.

It is assumed that the ore, averaging 2.75% copper, could be concentrated at ratio 10:1 with 90% recovery, making a concentrate assaying 24.75% copper, and therefore containing (495-15) 480 pounds of payable copper per ton of concentrate, equivalent to 48 pounds per ton of ore.

Charges against Concentrates

Smelting	
Treatment	\$6.00 U.S. per ton
Deduction 2½¢ per pound of copper	<u>12.00</u>
	\$18.00 U.S.
Exchange Premium	<u>1.80</u>
Total in Canadian funds	\$19.80 Cdn.
Freight, Anyox to Tacoma	<u>3.60</u>
Total smelting and freight	\$23.40 per ton of concentrate
" " " "	4.88¢ per pound of payable copper.

Charges per Ton of Ore

Mining and Current Development, etc.	\$1.96
Tramway and Loading	.25
Genl. Expense (Taxes, office, assaying)	.60
Freight, Maple Bay to Anyox	.95
Unloading	.15
Royalty	.15
Milling	<u>\$1.00</u>
Total operating charges	\$5.06
Amortization and interest	<u>1.18</u>
Total per ton of ore	6.24
Total per pound of payable copper	.13¢

Summary of Costs

Mining and milling, including Amortization	13¢ per pound of payable copper
Freight and Smelting of concentrates	<u>4.9</u>
Total	17.9¢