93-L

811852

REPORT

CARIBOU CLAIMS 1 - 20

HOWSON CREEK AREA

OMINECA M.D.

BRITISH COLUMBIA

Submitted To:

Joy Mining Ltd., N.P.L.,
390 West Hastings St.,
Vancouver, B.C.

Vancouver, B.C.
March 11, 1968.

C.J. Coveney, P. Eng.,
Consulting Geologist.

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INTRODUCTION

The Caribou claims, numbering 1 - 20 inclusive and owned by Joy Mining Ltd., N.P.L., are situated in the Howson Creek area in the Omineca M.D. about 23 miles southwest of the town of Smithers, B.C. (Figure 1). Geographically, the claims are located at approximately 127° 20' west Longitude and 54° 28' north Latitude and are joined on the west by ground held by Norcan Mines Ltd. (Figure 2).

The easiest access to the property is by helicopter from Smithers or by plane using pontoons from Lake Kathlyn, just north of Smithers, to Mooseskin Johnny Lake which borders the west part of the claims. Travel time is about 45 minutes. A recently constructed dirt road passes near Mooseskin Johnny Lake and is suitable for 4 x 4 vehicles.

The area is mountainous but not rugged with gentle slopes rising from Mooseskin Johnny Lake in the Howson Creek valley. Timberline is about 5000 foot elevation. The Caribou claims are at an elevation of 4500 and are mainly drift covered.

HISTORY

The first work of any significance in the area was in early 1900 when the Telkwa Mining, Milling and Development Co. and Telkwa Mines Ltd. explored the Anna Eva, War Eagle, Duchess and Evening showings. These prospects are now part of the Norcan Mines holdings.

From 1910 to 1929 only sporadic work was done. In 1929, Cominco started an underground exploration program on the Duchess zone but it was terminated before completion in 1930 due to the economic recession. Except for a limited amount of work in 1952 by Kennecott on a zinc property, the area lay dormant until 1965 when increased metal prices focussed attention on the area and major companies moved into the basin. In 1966 and 1967, Norcan Mines Ltd.

carried out an extensive exploration program with encouraging results. Recently, Norcan Mines Ltd. optioned their claims to Bethlehem Copper Corp. who are committed to an expenditure of $100,000 on the property for 1968.

GEOLOGY

The rocks underlying Howson Basin are predominantly volcanics composed of tuffs, agglomerate, flow breccia etc. which form part of the Hazelton Group of Upper Jurassic age. The rocks vary in color from greenish gray to purplish red with red predominating towards the top of the series and green towards the base. The volcanics are the most important rocks economically as they contain most of the known mineralization. The group trend in a northeasterly direction with varied dips to the southeast.

To the west of Howson Basin is a large intrusive granitic plug from which radiates a number of dikes that in general trend north-south and cut the volcanics at steep angles. A similar but smaller plug occurs in Hunter Basin about 12 miles to the east. The deposits occur in the volcanics and consist either of veins or vein-like replacements in fault or shear zones or of mineralized shear zones with many of the shear zones lying along the dike contacts. Sulphide mineralization includes chalcopyrite, chalcocite, tetrahedrite, pyrite, hematite and pyrrhotite.

In the general region there are two known areas of mineralization associated with granitic intrusives - one is in Howson Basin area - the other in Hunter Basin about 12 miles to the east.

Prospects in the Howson Basin include the Santa Maria, Duchess, Evening, War Eagle and Strathcona, the majority of which are associated with shear structures that have been traced over considerable lengths. Work by Norcan Mines Ltd. in the past 2 years, for

example, shows the Santa Maria zone to have a strike length of over 2,200 feet, the Duchess a length in excess of 3,500 feet with width up to 12 feet, and the Evening zone has been traced for over 1,500 feet with width up to 25 feet. In 1967, Norcan's exploration was concentrated mainly on the Santa Maria and they are reported to have outlined about 830,000 tons grading 1.0 oz. Ag. and 1.50% Cu. to a depth of 250 feet.

The Hunter Basin showings are generally small, occurring either as irregular fissures or replacement along shear zones and include the King, Jackpot, Rainbow, Colorado, Idaho and the Hunter. The vein on the King and Jackpot claims is 1,800 feet long, varying in width from a few inches up to 4 feet with handsorted material averaging 5% Cu. and 105 oz. Ag.

The Caribou claims held by Joy Mining are geologically favourably located being about midway between the Howson and Hunter intrusives and underlain by the same volcanic rocks that contain the mineralization in both areas. It is reasonable, then, to expect the Caribou claims to contain similar vein-type structures.

A recent airborne reconnaissance survey near the eastern boundary of the Caribou claims indicated 4 low-medium order conductor axis as well as several others that are of a higher order. The trend of the conductor axis is north-south which is similar to mineralized trends on the Norcan property. Airborne work by Norcan indicated 21 anomalies including anomalies over the Santa Maria, Duchess and Evening zones. Ground follow-up using both EM and I.P. confirmed the anomalies on the above zones.

RECOMMENDATIONS

For the initial phase in an exploration programme, I would like to see an airborne survey over the claims. This, however, would only be feasible if the necessary airborne equipment were in the area,

otherwise the cost would be prohibitive. Fortunately, we do know that ground geophysics has been successfully employed in the area and I would recommend an EM or I.P. survey with preference given the I.P. survey. Concurrent with the geophysical survey would be geological mapping followed by trenching and drilling on selected targets. For confirmation, anomalous areas should be checked with soil samples.

ESTIMATED EXPENDITURES

PHASE I

GEOPHYSICAL PROGRAMME		
I.P. Ground Survey		
25 line miles @ $500/line mile	$ 12,500	
Line Cutting		
25 line miles @ $100/line mile	2,500	
Mobilization	300	$ 15,300
SOIL SAMPLING		1,500
GEOLOGICAL PROGRAMME		
Geologist - 4 months @ $800/month	$ 3,200	
Assistant - 4 " @ $600/month	2,400	
Labourers(2)- 4 " @ $500/month	4,000	
Cook - 4 " @ $550/month	2,200	11,800
EQUIPMENT RENTAL		
4 x 4 Vehicle - 4 months @ $500/month	$ 2,000	
Radio - 4 " @ $50/month	200	
Light Plant (Honda)	250	
Bulldozer - 200 hrs. @ $35/hr.	7,000	9,450

HELICOPTER			
20 hrs. @ $130/hr.			$ 2,600
CAMP EQUIPMENT			2,000
COOKERY			
5 men @ $5/day for 4 months			3,000
MISCELLANEOUS			
Travelling - 5 men x $90		$ 450	
Expenses - 5 men x $25		125	
Assaying		200	
Freight		500	1,275
CONSULTANTS			
Expenses, travelling		$ 2,500	2,500
	TOTAL		$ 49,425
	Contingencies 10%		4,900
			$ 54,325

Say - $55,000

PHASE II

DRILLING			
3,000 feet @ $900/ft.			$ 27,000
ASSAYING			300
	TOTAL		$ 30,300
	Contingencies 10%		3,000
			$ 33,300

Say - $34,000

TOTAL EXPENDITURES

PHASE I	$ 55,000
PHASE II	34,000
	$ 89,000

Considering the encouraging results that Norcan Mines are getting and the fact that the Caribou claims are well located geologically, I recommend that Phase I of the above programme be undertaken this season and if the results are encouraging to be followed by Phase II.

Respectfully submitted,

C.J. COVENEY, P. ENG.

CERTIFICATION

1. I, CECIL J. COVENEY, certify that I am a consulting Geologist and that I reside at 4024 Delbrook Avenue, North Vancouver, British Columbia.

2. I am a member of the Association of Professional Engineers for the Province of British Columbia and a graduate of the University of New Brunswick and the University of Toronto and have practised my profession for more than 20 years.

3. I have no direct or indirect interest in the securities or properties of Joy Mining Ltd. N.P.L. nor do I expect to receive any interest.

Signed this 11th day of March, A.D. 1968.

CECIL J. COVENEY, P. ENG.

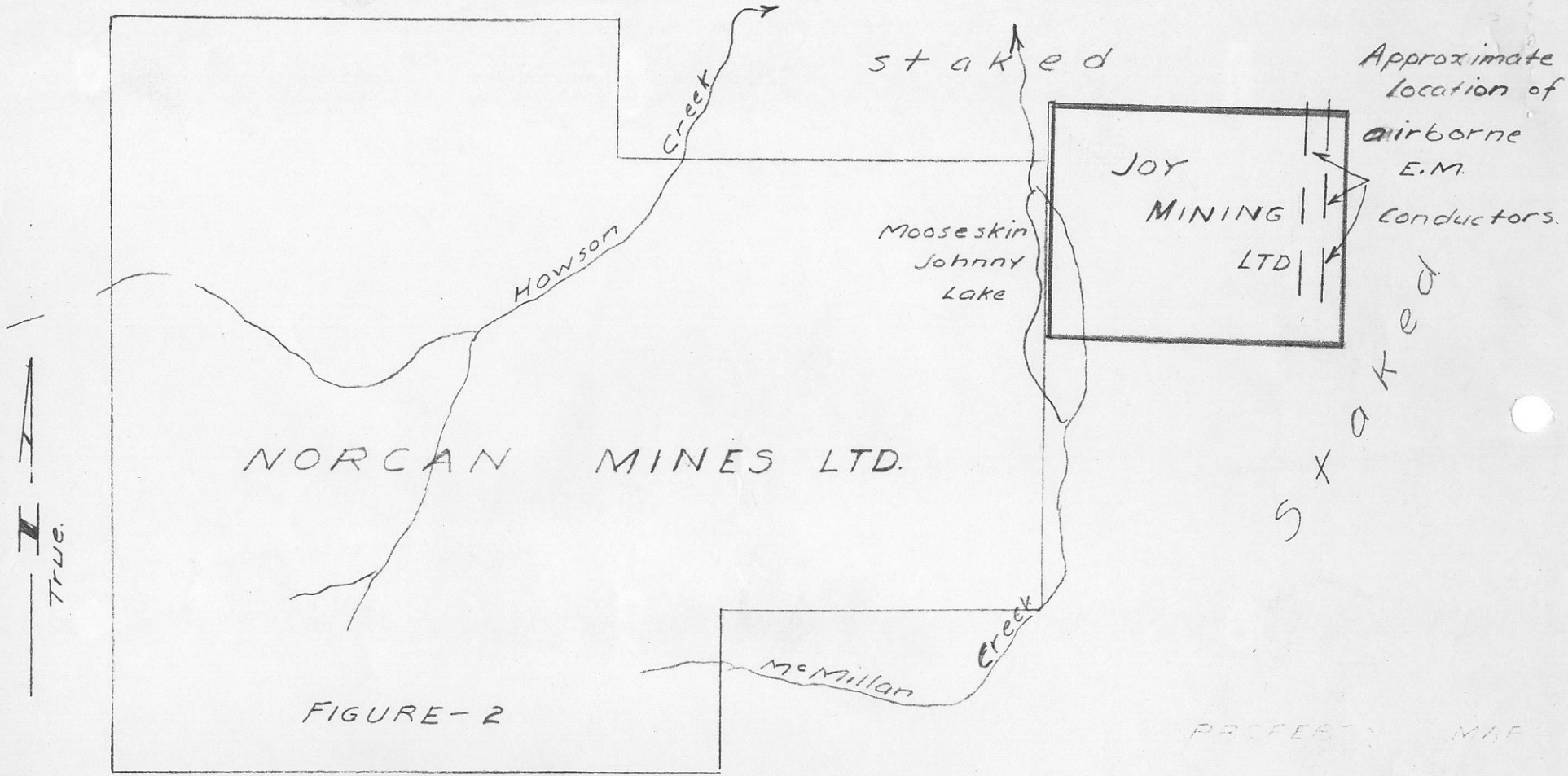
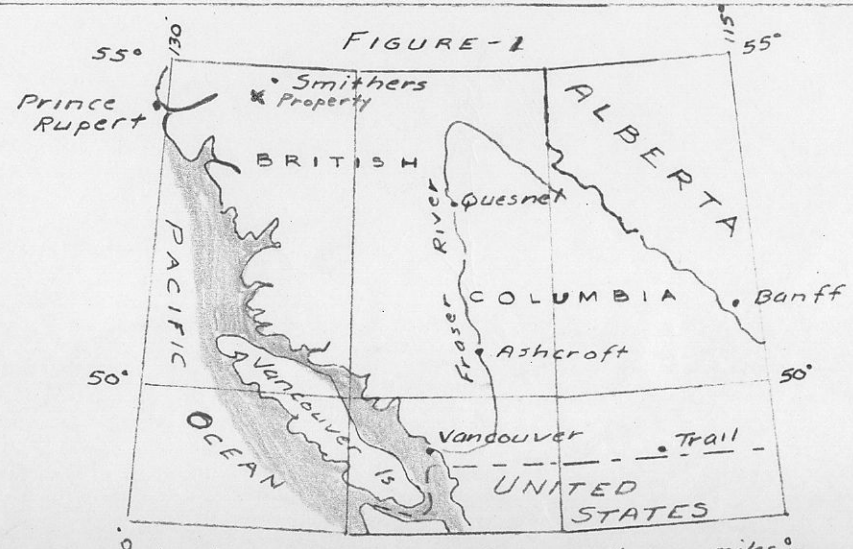


FIGURE-2



Index Map Scale 1" = 200 miles

FIGURE-1

JOY MINING LTD. (NPL)

PROPERTY MAP

HOWSON BASIN

OMINECA M.D.

Scale 1" = 4000ft March-1968

J. Lavery