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REPORT ON
PINNACLE MINES LIMITED
KAMLOOPS AREA

By: L. G. Phelan,
June, 1967

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BRITISH COLUMBIA

- by -

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REPORT ON
PINNACLE MINES LIMITED, N.P.L.
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BRITISH COLUMBIA

Pinnacle Mines Limited, N.P.L., has acquired a group of claims in the Iron Mask batholith area near Kamloops, B.C. During the fall and winter of 1966-67 exploration work was carried out on the property, under the writer's supervision. The following is a resume of available information.

PROPERTY

The property consists of 44 contiguous mining claims totalling about 2,000 acres and situated some eight miles south of Kamloops, B.C. The Kamloops-Merritt highway passes along the east side of the claim group.

Claims and numbers are as follows:

A #1 to A #12	inclusive	Record Number	47777 to 47788	inclusive
A #13 to A #16	"		48071 to 48074	"
C #1 to C #3	"		47789 to 47791	"
C #4 to C #18	"		47955 to 47969	"
Cle#1 to Cle#10	"		47792 to 47801	"

HISTORY

Copper was first found in the area in the 1890's and intermittent exploration has been carried on ever since, resulting in the discovery of a great many copper occurrences, and one former producer of importance - the Iron Mask Mine. Lode-type deposits were the initial exploration target. In recent years with the development of large low grade "porphyry copper" type deposits elsewhere in British Columbia, there has been a resurgence of exploration activity on the Iron Mask batholith. The principal companies in the area are Cominco, Rolling Hills, Galaxy Copper Makao Development,

Kimberly Copper and Kamloops Copper, which companies, with Pinnacle Copper Mines, hold virtually all of the easterly part of the Iron Mask batholith, referred to further below.

The Pinnacle claims, like the rest of the area, have been explored from time to time, though there is little record of the early work. There is an old, and now filled-in, shaft - the "Grey Mask" shaft - in the north-east part of the property, reported to be 28 feet deep, with 40 feet of drifting. In the north-central part of the group are two adits - the "Joker" adits - now completely filled. In the westerly part of the group is a small shaft of unknown, but obviously small size. Elsewhere there are several trenches and pits.

In the mid-1950's Commercial Minerals Limited did some 5,500 feet of diamond drilling, and some stripping and bulldozing, principally in the vicinity of the Joker adits. Partial results were made available to the writer and are discussed below.

About that time or shortly later New Jersey Zinc Co. and Rio Tinto are reported to have done some geophysical work over parts of the area. Results are not available.

In 1965 an induced polarization survey was carried out over parts of about five claims, including the Joker adit and the north shaft.

In the fall of 1966 Pinnacle acquired the claims. A magnetometer survey was carried out over the central 24 claims. Some ten line miles of induced polarization survey were performed in the same area. Six diamond drill holes totalling 1,200 feet were drilled. Results are discussed below.

GENERAL GEOLOGY

The Iron Mask batholith is a large, elongate body of monzonite, diorite, gabbro and pyroxenite of (Mesozoic) age, which intrudes Palaeozoic?

U. Jurassic
of Cretaceous

U. Triassic

(Nicola Group) volcanics and sediments and is capped in part by Miocene (Kamloops Group) volcanics and sediments.

The Pinnacle property is situated at the extreme southeasterly end of the batholith. The claims are underlain in large part by the intrusive. The contact with Nicola volcanics is within the property, near and roughly paralleling the east boundary. The contact with the overlying Kamloops volcanics extends in a northwesterly direction more or less along the west boundary of the property.

*Explore
beneath
overlying
TK.*

A linear picrite and serpentine body extends in a north-south direction for about 5,000 feet, within the batholith near its easterly contact with the Nicola volcanics.

ECONOMIC GEOLOGY

Copper deposits of the area occur as veins, stockworks and disseminations in fractured and brecciated areas of the batholith, more commonly near its contacts with structurally weaker rocks. Chalcopyrite (copper-iron sulfide) is the principal copper-bearing mineral; native copper is not uncommon, and bornite (copper sulfide) and chalcocite (copper oxide) are known to occur. Pyrite (iron sulfide) magnetite and specularite (iron oxides) are common associates. Intense rock alteration - pink feldsparthization and white bleaching and albitization - are widespread and often a guide to ore.

The principal known copper occurrence on the Pinnacle claims is at the Joker adits. The metal occurs as native copper, chalcocite (copper oxide), chalcopyrite, and bornite (copper sulfides) in flat-lying shears and slip planes. Native copper and chalcocite were the principal economic minerals noted by the writer. Sulfides are rare and rock alteration is very slight. Little is known concerning the Grey Mask shaft some 2,400 feet to

the northeast, other than that chalcopryrite associated with magnetite and hematite (iron oxides) can be seen in a nearby dump. The mineralization is believed similar in character and manner of occurrence to that at the adit.

Partial records of the work done by Commercial Minerals have been made available to the writer. In the immediate vicinity of the Joker adits, in an area about 400' x 300'; some 25 short vertical holes were drilled.

Intersections of interest are as follows:

Hole	From - To	Thickness	Sludge Assay	Core Assay	Total Depth
1	0' - 32'	32'		0.25% Cu. 9.4 oz. Ag.	
2	17' - 40'	23'	0.66% Cu.	0.8% Cu. 1.3 oz. Ag.	
3	19' - 39'	20'	1.31%	0.76%	80'
4	25' - 45'	20'	0.95%	1.22%	79'
	70' - 79'	9'	1.05%	0.57%	
5	25' - 40'	15'	0.95%	0.76%	82'
6	Not Completed				39'
7	50' - 70'	20'	1.18%	0.99%	98'
8	43' - 63'	20'	0.45%	0.40%	90'
9	53' - 73'	20'		0.25%	90'
10	52' - 71'	19'	0.79%	0.44%	110'
	101' - 110'	9'	1.35%	2.30%	
11	73' - 83'	10'		0.55%	120'
12					150'
13	87' - 97'	10'		0.89%	102'
14	65' - 155'	90'		0.55%	152'
15	80' - 96'	16'	0.64%	0.69%	164'
16					186'
17	80' - 95'	15'		0.32%	214'
18	73' - 82'	15'		1.50%	191'
19	160' - 170'	10'		0.26%	186'
20	95' - 105'	10'		0.22%	170'
33	15' - 40'	25'	0.20%		101'
34	70' - 135'	65'	0.33%		171'
35	30' - 35'	5'	0.39%		159'
	115' - 125'	10'	0.27%		
36	75' - 80'	5'	0.20%		170'
	95' - 105'	10'	0.33%		
38	Not Known				168'

Pinnacle drilled three holes into the same area as a check on previous work. A resume of assays of consequence is:

Hole	From - To	Thickness	Sludge Assay	Core Assay	Total Depth
P1	70' - 80'	10'	0.60%		100'
	or 60' - 100'	40'	0.36%		
P2	90' - 100'	10'	0.25%		120'
P4	70' - 80'	10'	1.09%		150'
	or 70' - 100'	30'	0.71%		
	or 60' - 130'	70'	0.43%		

Pinnacle also drilled one hole to probe a geophysical anomaly to the east of the adit, in the picrite. No mineralization of economic interest was encountered. Two holes drilled some 600 feet north of the adit to test magnetic and I.P. highs were both lost in badly sheared ground.

In the Grey Mask shaft area Commercial Minerals drilled eight vertical holes 150' to 250' deep. Significant assays were:

21	70' - 85'	15'		0.47% Cu.
	or 45' - 95'	50'		0.22%
23	25' - 50'	25'	0.54%	0.43%
	or 20' - 142'	122'	0.22%	
25	55' - 70'	15'	0.39%	
	or 55' - 180'	125'	0.18%	
27	No Significant Mineralization			
28	No Significant Mineralization			
30	20' - 30'	10'	0.35%	
	85' - 95'	10'	0.22%	
31	80' - 85'	5'	0.28%	
	or 65' - 105'	40'	0.14%	
32	20' - 25'	5'	2.05%	
	or 20' - 45'	25'	0.61%	
	or 20' - 125'	105'	0.27%	

Four holes were drilled by Commercial Minerals Ltd. between the shaft and adit and four other holes were drilled south of the adit area. Exact locations are not known. Assay records show the following.

<u>Hole</u>	<u>From - To</u>	<u>Thickness</u>	<u>Sludge Assay</u>	<u>Core Assay</u>
24	15' - 25'	10'		0.35% Cu.
26	40' - 65'	25'	0.33% Cu.	
29	135' -140'	5'		0.31%
	175' -180'	5'		0.45%
	or			
40	65' -200'	135'		0.15%
	"Thin Mineralized Zones"			

About 2,500 feet west of the adits a small shaft was found, sunk on a steeply west-dipping shear about 18 inches wide. Minor copper sulfides and carbonates were noted. In the extreme southerly part of the claim group, and on ground immediately to the west of the property, disseminated copper sulfides and carbonates can be seen in fractured diorites.

CONCLUSIONS

Work by previous operators, and the present Pinnacle program indicate that copper mineralization is very widespread on the property. Many of the drill intersections quoted above are of interest, though overall grade is well below that economically mineable. It is considered that there are reasonable possibilities of finding mineable copper concentrations within the property. It is, however a difficult and expensive property to explore insofar as overburden is heavier than usual, and the known mineralization is non-magnetic and too sparse to respond well to the various electrical geophysical techniques.

RECOMMENDATIONS

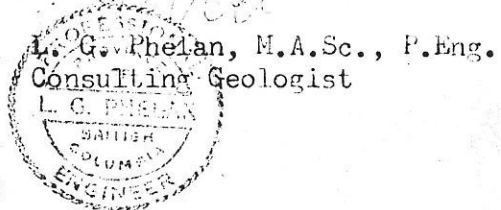
It is recommended that:

1. the existing picket-line grid be extended to cover the balance of the property,
2. the property be mapped geologically, and that the magnetometer survey, which is very useful in providing geological information in overburdened areas, be extended to cover the balance of the claims.
3. A geochemical survey for copper be carried out over the entire property,
4. results of 1 to 3 above, and the previous work, be studied and evaluated prior to contemplating further drilling or undertaking other geophysical work.

Cost of the above is estimated at \$15,000.

Respectfully submitted,

Toronto, Ontario
June 12, 1967



CERTIFICATE OF QUALIFICATION

I, Leo Gerard Phelan, do hereby certify that:

1. I am a practising consulting geologist with offices at 80 Richmond Street West, Toronto 1, Ontario.
2. I am a graduate of the University of Toronto and have been granted the degrees of Bachelor of Applied Science in 1947 and Master of Applied Science in geology in 1949.
3. I am a member of the Associations of Professional Engineers of Ontario, Manitoba and British Columbia, a member of the Canadian Institute of Mining and Metallurgy and a fellow of the Geological Association of Canada.
4. I have no interest direct or indirect in the properties or securities of Pinnacle Mines Limited, N.P.L. nor do I expect to receive any such interest whatsoever.
5. Information in this report is based on personal supervision of the Pinnacle Mines exploration program, on British Columbia Minister of Mines annual reports, and on records supplied by Commercial Minerals Limited.

Toronto, Ontario
June 12, 1967



L. G. Phelan



Exp. Date: Dec. 31, 1968