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SKARN

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for Cleaver Lake Mines

PROPERTY FILE

SKARN GROUP

REPORT

W.G. Hansworth, June 1976

92F386 SKARN

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PROPERTY FILE

REPORT ON THE

SKARN AND ASSOCIATED CLAIMS,
NANAIMO MINING DIVISION, B. C.

OF

ECHO MINING CO. LTD.

FOR

CLEAVER LAKE MINES LTD. (N.P.L.)

W. G. Hainsworth, P. Eng.
June 1st, 1976

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W. G. HAINSWORTH

CONSULTING GEOLOGIST

PROPERTY FILE

INTRODUCTION

At the request of Sheila Ostensoe, President of Cleaver Lake Mines Ltd., the writer has been commissioned to examine and report on claims held by Echo Mining Co. Ltd. in the Coombs area of British Columbia.

The writer has been on these claims on four separate occasions, May 10th, 19th, 22nd, and 27th of 1976. I have also been instrumental in directing the operations on the property.

At the present time staking of the immediate adjoining ground is underway. Some claim units have been recently recorded.

LOCATION AND ACCESS

The SKARN claim group of Echo Mining Co. Ltd. is located eleven miles southwest of Parksville on Vancouver Island, British Columbia. The claims lie directly north of the upper headwaters of French Creek.

The property can be most easily reached by turning off Highway 4 (Pt. Alberni-Parksville Road) at a point seven miles west of Parksville onto Winchester Road. At Grafton Avenue a west turn is made. This road eventually gives way to a gravel road recommended only for a four-wheel drive vehicle. This old forestry road following along the northwest side of French Creek ends at the claims.

Co-ordinates of the claims are longitude $124^{\circ}31'$ West and latitude $49^{\circ}16'$ North. They lie within N.T.S. 92-F-7.

The claims, which lie at elevations ranging from 1900 feet to 2200 feet A.M.S.L., are contained within the former E. & N. Land Grant.

PROPERTY

The SKARN group referred to in this Report consists of the SKARN claims, the BEN group and the ZEN group. The latter claim groups have been recently staked to the east and west of the SKARN claims.

The claims are located in the Nanaimo Mining Division of British Columbia and consist of:

SKARN GROUP:

<u>Claim Name</u>	<u>Record No.</u>	<u>Anniversary Date</u>
Skarn 1	32877 H	July 30, 1976
Skarn 2	32878 H	July 30, 1976
Skarn 3	33260 P	Nov. 9, 1976
Skarn 4	(No data -- Recorded June 1, 1976)	

BEN GROUP:

Ben 12 Units (No data -- Recorded June 1, 1976)

ZEN GROUP:

Zen 12 Units (No data -- Recorded June 1, 1976)

The Skarn 1 to 3 were staked under the old system whereas Skarn 4 and the Ben and Zen claims were staked under the new staking regulations.

HISTORY AND PREVIOUS WORK

The Coombs area has had a prospecting history that dates back to the turn of the century. French Creek, although checked thoroughly for placer gold, yielded a disappointing amount.

During the depression years of the 1930s, several shallow adits were put in alongside an upper tributary of French Creek. One of the adits picked up a magnetite-copper vein and was drifted upon for a distance of twenty-five feet in a north-northeast direction. It is reported that a recent face sampling of this structure yielded a 2% copper assay across 5 feet. The adit directly across on the other side of the tributary failed to pick up the extension.

The area was logged in 1968 at which time road building exposed a magnetite-pyrite section of good width but low grade. Further exploration in 1969 led to the discovery of the main showing, named the Gem. The original finders did some preliminary trenching before interesting Western Mines in the property. Western took an option in 1971 and released it nine months later.

*Extension
of the Keenan
prob.*

While they had the option, Western did a magnetometer and soil sampling survey over the original ten SKARN claims.

In addition to the main showing another area of interest, coinciding both magnetometer and soil anomalies, was located some eight hundred feet on strike to the east.

Eight drill holes averaging 200 feet each were scattered through the claims. There is no data available concerning this drill programme.

Roughly \$30,000.00 was expended before the option was released.

The original vendors have held on to the key portions of the ground.

GEOLOGY

The property lies within a northwesterly trending structure, the formations of which are part of the Vancouver group of sediments and volcanics.

The country rock underlying the SKARN claims is a black, massive basic volcanic. On the average there is little mineralization generally accompanying the basalts. Associated with this formation are breccias and feldspar porphyry structures of indeterminate dimensions. Both laterally and vertically the basalts give way to a fine grained, limestone formation which carries finely disseminated pyrite. These latter horizons appears to be short dimensions, adopting a Lens geometry.

Intrusive activity has been observed in the southwest corner of the four SKARN claims where several exposures of granodiorite outcrop along a creek. One of the exposures shows a medium grained hornblende granodiorite in fault contact with silicified and pyritized volcanics. The contact between the two formations runs east-west and dips into the north at 45°. The granodiorites carry no sulphides.

Alteration through the claims is generally weak with only mild grade alteration in the form of epidote being apparent at several localities.

It should be noted that rock exposures on the property are very few. Although the overburden is not heavy



(3 to 10 feet) the outcroppings occur generally along the creeks or on high hillsides.

SHOWINGS

Main Showing (Gem) This showing has been continuously exposed over a length of 269 feet. Work in 1969 consisted of bulldozing and trenching. In the intervening seven years the trenches have been partially filled in while run-off has obliterated much of the rock surface exposures.

The upper end of the workings is at 2125-foot elevation whereas the lower section is at 2025 feet. Apparent strike is North 60° ; East with a northern dip as yet undetermined.

The present exposures show a highly altered (skarn developed) oxidized limestone in contact with a relatively unaltered section of limestone. The contact exposed on the hanging-wall side shows a sharp demarcation of the alteration. At this contact, which dips steeply to the north at 70° , the magnetite-sulphide mineralization is cut off completely exposing a baked but unmineralized limestone bed.

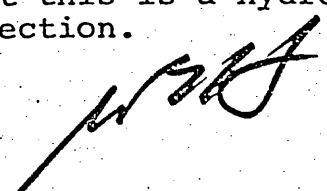
The showing is well sheared with what appears to be two dominating fracture patterns. One set strikes N 40° E whereas the other has a bearing of N 60° E. The writer suggests that the intersection of these crosscutting shears may well be the loci for mineral deposition. As the showing is progressed towards either end the alteration with its accompanying mineralization tends to thin out.

Mineralogically, the showing carries heavy amounts of magnetite, variable amounts of chalcopyrite and lesser amounts of bornite. Pyrite is also present in variable quantities. Gold and silver values appear to be associated with the copper content.

Heavy iron staining is evident throughout the showing in contrast to copper staining which is light. Oxidation is heavy in local situations.

The original character of the rock has been destroyed through the heavy deposition of the magnetite. The magnetite accumulation is at its greatest in the core of the zone.

It would appear that this is a hydrothermal replacement of a sheared limestone section.



The writer chipped a sample along a 164-foot length of the structure. The results:

Gold: 0.005 oz/ton
Silver: 1.44 oz/ton
Copper: 7.15%

Road Showing Some 425 feet east and slightly north, alongside the old logging road, is a further exposure somewhat similar to the main showing. An exposed width of well oxidized material carries a 5-foot central section of heavy magnetite decreasing to lighter amounts towards the margins. Pyrite is relatively strong whereas copper minerals are in very light amounts. The contacts of the zone are poorly exposed on one side and hidden on the other.

A sample across 25 feet of width by the writer yielded:

Gold: Trace
Silver: Trace
Copper: 0.08%

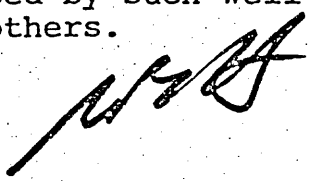
West Showing 365 feet west of the main showing, the property owners have blasted several small pits over a distance of 50 feet. Here they have exposed oxidation with variable amounts of magnetite and copper mineralization. The pits are shallow and small, not allowing for good sampling.

Host rock in this locality is a volcanic breccia with epidote alteration. Further to the west where several pits show no mineralization nor alteration the formation becomes a pyritic limestone.

COMMENTS

The SKA^{DM} group is dominated by one lengthy mineralized structure (Gem). The presumed continuation, or possibly a parallel structure, is illustrated by the existence of the road showing and the west showing. In total length, the exposures carry for just over 1000 feet.

The Vancouver Group (Karmutsen and Bonanza Formations) are well known for their magnetite-copper precious metals structures. The capriciousness of the structures is equally well known. However, this fact is balanced by such well known success' as Texada Mines, Zeballos and others.



It would appear, at this early date, that the structure is one of the shear type limestone replacement.

There should not be too much emphasis placed on the high-grade silver-copper assay taken by the writer along the strike. This is more indicative of the extensive presence of economic mineralization than grade.

In the writer's opinion, the length of the showing is very encouraging. The visible content of copper and the fact that a portion of it is contained in bornite is also comforting.

In addition, the showings are relatively new. Only one other company has investigated the property. Unfortunately, the drill logs of their operation are not available.

CONCLUSIONS AND RECOMMENDATIONS

The writer concluded that the SKARN claims and their surrounding BEN and ZEN claims present an interesting geological situation. A condition could exist whereby a small tonnage could become available for an eventual modest underground operation. To this end it is recommended that Cleaver Lake Mines Ltd. acquire the above claims and institute a staged programme on the property.

The writer recommends that the property be investigated in two stages. The first stage would include trenching and expanding of the known showings; a magnetometer survey over the acquired claims; a soil sampling survey over the same area and a geological survey covering the complete survey. Time involvement: 7 to 9 weeks.

This stage, if carried through to completion, would pinpoint targets for the second stage, that of diamond drilling.

The second stage would consist of a minimum programme of 2500 feet of AQ diamond drilling. Time involvement: 4 to 5 weeks.

An approximate cost of this programme would be:

Stage I -- Surface Explorations

Trenching	\$ 1,000
Magnetometer Survey	1,850
Geochemical Survey	2,050

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Stage I -- Surface Explorations (continued)

Geological Survey	\$ 1,500	
Assaying	3,000	
Boarding crew & Transportation	5,150	
Equipment Rental	500	
Supervision	2,500	
Miscellaneous	1,000	
		<hr/>
		\$18,550
Contingency 10%		<u>1,850</u>
		\$20,400

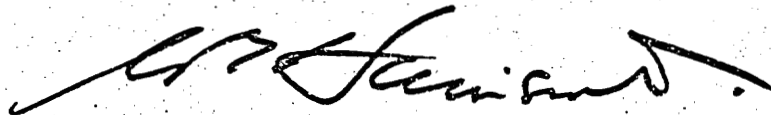
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Stage II -- Diamond Drilling

2500 feet AQ drilling @ \$20/ft.	\$50,000	
Mobilization & Demobilization	2,000	
Assaying	1,500	
Core handling	1,000	
Supervision	2,500	
Miscellaneous	1,000	
		<hr/>
		\$58,000
Contingency 10%		<u>5,800</u>
		\$63,800

Total for Two Stages = \$84,200

Stage III, if the above two stages were successful, would be a more involved drill programme. At this point in time details are meaningless.



W. G. Hainsworth, P. Eng.


W. G. HAINSWORTH

CONSULTING GEOLOGIST

CERTIFICATE

- 1. I, WILLIAM G. HAINSWORTH, HEREBY CERTIFY:
- 2. That I am a geologist residing at 3473 Capilano Road, North Vancouver, British Columbia.
- 3. That I a graduate of the University of Western Ontario, London, Ontario, with a B.Sc. degree and am a registered member of the Association of Professional Engineers of the Province of British Columbia.
- 4. That I have practiced my profession for twenty-six years.
- 5. That I have no financial interest, either direct or indirect, in the subject properties, in the securities of Echo Mining Co. Ltd. and Cleaver Lake Mines Ltd., nor in that of any of their affiliates and that I do not expect to obtain any such interest.
- 6. That the information contained in this report is based on my personal knowledge of the general area and to examination of the property in question on May 10th, 19th, 22nd, and 27th, 1976.

June 1st, 1976
Vancouver, British Columbia


W. G. Hainsworth,
P. Eng.
Geologist