


File

CARIBOO MINELANDS LTD. 
Thunder Creek Property
Quesnel, B. C.

ALRAE ENGINEERING LTD.

October 17, 1968

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INTRODUCTION

At the request of the directors of Cariboo Minelands, the writer has examined mineralization on the company's claims and has organized and supervised geochemical soil sampling and a magnetometer survey on a selected area within the claim group. The writer has visited the claims on three separate occasions during the summer of 1968 and has examined mineralization occurring on the claims during these visits. Chip and grab samples have been taken of various zones of mineralization within an area approximately one mile by one half mile. Metals of chief interest on this property are silver, copper, lead and zinc.

LOCATION AND ACCESS

The company's claims are located approximately 20 miles north of Quesnel, B.C. and are immediately east of the Quesnel to Prince George highway and the Pacific Great Eastern Railway. The claims lie on the north side of the Ahbau River, between Thunder Creek and the P.G.E. railway.

Logging roads and recently constructed mine access roads provide ready access to the claims from the main highway at the highway crossing of Ahbau Creek. From the highway to the claims is a distance of approximately two miles.

HISTORY

Small occurrences of chalcopyrite have been known in this area for many years by one of the principals of the Company but there has been no significant exploration work done on the claims until the 1968 season. Other mining companies have held claims in this region in recent years past, however, there is no evidence of any organized evaluation work in the area.

Cariboo Minelands, during the 1968 summer season has completed geochemical soil sampling for copper and ground magnetometer surveys on a picket line grid system totalling approximately 10.8 line miles. Anomalies encountered in this survey are currently being tested by the Company. One of the smaller anomalies has recently been trenched by bulldozer and a significant zone of copper mineralization has been encountered.

There is no mining plant or equipment now on the claims.

CLAIMS

Claims and their record numbers are as follows:

| <u>CLAIM NAME</u> | <u>RECORD NUMBER</u> |
|-------------------|----------------------|
| Thunder 1 - 24 | 46164 - 46187 |
| Mike 3, 4, 5, 6 | 41208 - 41211 |
| Kim 1, 2 | 41206 & 41207 |

All 30 claims are within the Cariboo Mining Division. Original claims within this area have been abandoned by the Company and relocated by a more accurate location method during the past two months.

GEOLOGY

The claims are underlain by a volcanic series of rocks of Upper Triassic and Lower Jurassic age which include rhyolite, andesite, and volcanic breccia. This series of rocks has been intruded by Lower Jurassic granodiorite and by numerous dykes ranging from aplite to diorite in composition.

The main zone of intrusive lies on the northern fringe of the claim group and the quartz porphyry, diorite and pegmatite dykes which cut the volcanic series are probably related to the intrusive mass.

Mineralization encountered on the claims consists of pyrite, pyrrhotite, chalcopyrite, and minor galena and sphalerite. Pyrite and pyrrhotite are disseminated throughout many of the volcanic rocks over the area of the four claims. Chalcopyrite occurs in zones richer in pyrrhotite but is also present in greater concentrations in mineralized fault zones and in calcite veins exposed in the canyon of Thunder Creek. Rocks underlying the coincident magnetic and geochemical soil sampling survey anomalies immediately to the west of Thunder Creek and along the property baseline are chiefly pyroxene-bearing andesite which is light to medium grey in colour, fine grained and has phenocrysts of pyroxene (possibly enstatite) up to one quarter inch long. Disseminated pyrrhotite occurs as very fine pin-points and small blebs. Pyrite and pyrrhotite together would comprise from three to five per cent of the rock by volume. Traces of chalcopyrite are noted particularly in zones containing increased pyrrhotite.

Pyrite, pyrrhotite and minor chalcopyrite also occur in a highly fractured, dark grey rhyolite which occurs to the north and west of Thunder Creek and in the vicinity of a series of beaver ponds along the creek. Pyrrhotite, pyrite and chalcopyrite also occur in volcanic breccia immediately to the west of Hopeful Creek and approximately 3,000 feet west of the canyon of Thunder Creek. This breccia is composed of subangular fragments of siliceous tuff or rhyolite up to three inches long in a ground mass of pyroxene andesite. Phenocrysts, pyrrhotite, and pyrite occur both in the ground mass and in fragments and are noted to cross boundaries of fragments with the ground mass. Blebs of pyrrhotite occur within this breccia and, in zones containing increased pyrrhotite, perimeters or fringes of chalcopyrite occur around the blebs of pyrrhotite.

It is significant to note that chlorite is developed in shear zones which are most heavily mineralized with sulphides, including chalcopyrite. Such a shear zone has been exposed recently

for a width of from 18 to 20 feet and is coincident with magnetic and geochemical anomalies. A grab sample taken from a pit blasted in the shear zone was found, by assay, to contain trace of gold, 0.78 oz. per ton of silver and 0.27% copper. A zone approximately one foot wide at the hanging wall of this shear zone contains galena, sphalerite, pyrite, pyrrhotite and chalcopyrite. A grab sample of this material assayed 0.13 oz. per ton of gold, 1.98 oz. per ton of silver. Work is continuing to trace this occurrence along strike and to open the mineralized zone by rock trenching for representative sampling. The anomaly in which this mineralization occurs extends for approximately 900 feet to the southwest of the present exposure.

Preliminary geological mapping has indicated the presence of two strong fault zones on the property. One of these is along the course of Hopeful Creek and the other strikes northerly from the canyon of Thunder Creek. Two magnetic anomalies occur on either side of the latter fault, but there is rock exposed only in the vicinity of the magnetic anomaly immediately west of Thunder Creek. Overburden cover appears to be shallow on the magnetic anomaly 800 feet west of Thunder Creek.

CONCLUSIONS AND RECOMMENDATIONS

An area of the Cariboo Minelands claims, approximately 3,000 feet by 7,000 feet has been tested by ground magnetometer survey, geochemical soil survey for copper content in the soils, initial trenching, and rock test pitting. This work, together with examination of the regional geology, indicates copper mineralization to be present in the area and to be associated with pyrite and pyrrhotite. The remainder of the claim area is, as yet, essentially unexplored.

Further evaluation of the property should take two basic forms. These should include examination of presently known anomalies

and mineralized zones, and the exploration of the remainder of the claim area for further occurrences of possible economic mineralization. To accomplish these two objectives, the following work is recommended:

- (a) Extension of the grid line system over the remainder of the claims, lines spaced 400 feet apart.
- (b) Geological mapping, soil sampling, magnetometer survey and induced polarization survey of a reconnaissance nature along picket lines over the claim area.
- (c) Bulldozer trenching, rock trenching and detailed sampling of mineralization occurring in the vicinity of known anomalous areas and mineralized zones.
- (d) Investigation of new anomalies encountered on the remainder of the claim group by similar methods.
- (e) Shallow drilling to test the cause of anomalies in areas of deeper overburden.
- (f) Deeper diamond drilling of mineralized zones where warranted.

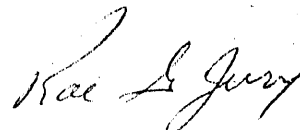
COST ESTIMATE

Approximate cost of the above recommended work would be as follows:

| | |
|--|----------------------|
| (a) Grid system preparation | \$ 3,500.00 |
| (b) Geological mapping | 2,000.00 |
| (c) Magnetometer survey (reconnaissance) | 2,500.00 |
| (d) Induced polarization survey | 15,000.00 |
| (e) Bulldozer trenching | 4,000.00 |
| (f) Shallow drilling - 3,000' @ \$10/ft. | 30,000.00 |
| (g) Deeper drilling if warranted | <u>50,000.00</u> |
| | \$ <u>107,000.00</u> |

Should this work encounter significant zones of economically interesting mineralization, much more work would be required to completely evaluate such a discovery.

Respectfully submitted:



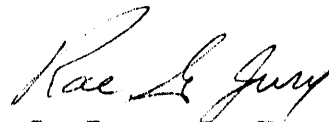
Rae G. Jury, P. Eng.

CERTIFICATE

I, Rae G. Jury, of the City of Vancouver, British Columbia, do hereby certify that:

1. I am a consulting geological engineer.
2. I am a graduate of Queen's University in Kingston (B. Sc. in Geological Sciences, 1957).
3. I am a registered Professional Engineer of the Provinces of British Columbia and Ontario and also a member of the Canadian Institute of Mining and Metallurgy.
4. I have practiced my profession since 1957 with Labrador Mining and Exploration Company, Quemont Mining Corporation, Canadian Johns-Manville Co. Ltd., and Alrae Engineering Ltd.
5. I have examined some of the original Bane claim posts on the property and these claims have now been abandoned and carefully relocated as the Thunder, Mike and Kim claims. There are no conflicting or nearby claim groups.
6. I have personally examined mineralized deposits and geology of Cariboo Minelands property during visits to the claims in July, August and October 1968. I have also supervised magnetometer and geochemical survey work on the claims during July and August, 1968.
7. I have not received, nor do I expect to receive, any interest, either directly or indirectly, in the properties or securities of Cariboo Minelands Ltd. (N.P.L.)

DATED AT VANCOUVER, this 17th day of October, A.D. 1968.



Rae G. Jury, P. Eng.