

GEOPHYSICAL GEOCHEMICAL

& GEOLOGICAL INVESTIGATION

OF

THE BARB CLAIM GROUP
KAMLOOPS MINING DIVISION

<u>B. C</u>.

92P/10E

51°00'N - 120°00', N.W.

22 Miles West of Clearwater, B.C.

for

QUEBEC CARTIER MINING COMPANY

by

Albert F. Reeve, P. Eng.

Geological Engineer

June 10, 1967 -- August 4, 1967

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INTRODUCTION

This report is based on geochemical, geological and geophysical surveys carried out under the writer's supervision in June and July 1967. It is submitted to the British Columbia Department of Mines to satisfy assessment work requirements on the 20 Barb claims for a period of one year from August 5, 1967.

This work was done as a result of geochemical prospecting in 1966.

PROPERTY

Claim Name	Record No.	Tag No.	Record Date		
Barb #1	59260	663881	August 5, 1967		
to	to	to			
#20 inc.	59279 inc.	663900 inc.			

Owner:

Albert F. Reeve

400 - 837 W. Hastings St.

Vancouver 1, B. C.

FMC #58116 - issued May 8, 1967 at Vancouver

LOCATION AND GEOGRAPHY

(See Figure 1)

The property lies on the headwaters of Windy Creek at 4400° to 5300° A.S.L., I mile south of windy Mountain and 22 miles east of Clearwater, B. C. The valley of Windy Creek is rolling and boggy with moderately steep valley walls. The entire area is covered by thick coniferous growth and outcrop is very sparse.

ACCESS

The property was reached by driving

70 miles from Little Fort via Bridge Lake to Windy Mountain. A trail was cut from the road to the claims.

Four wheel drive was necessary for the last 10 miles of the journey.

WORK DONE

- 1. 12 miles of grid lines were cut and chained.
- 540 soil samples were taken on selected parts of the claim group. All samples were analysed for copper and molybdenum.
- 3. Four magnetometer traverses each 6000' in length were run across the property in a NE-SW direction.

 Observations were taken at 25' intervals.
- 4. Geological mapping was done over the entire property and in adjacent areas along the Windy Mountain fault.

PERSONNEL

The work was carried out by the following

persons:

A.F. Reeve, P. Eng. - Geological Engineer 400 - 837 West Hastings Street, Vancouver 1, B. C.

J.M. Dawson, M.Sc. - Geologist 400 - 837 West Hastings Street, Vancouver 1, B. C.

M. Schuler - Field Technician 4470 West 12th Avenue, Vancouver 8, B. C.

F. O'Grady - Field Technician 3485 Point Grey Road, Vancouver, B. C.

D. Fraser - Field Technician 12165 Mt. View Crescent, Haney, B. C.

GEOLOGY

Regional

The general geology of the region is described on Map #3-1966, Bonaparte River, by Dr. R.B. Campbell of the G.S.C. The area surrounding the Barb Claim Group is underlain by triassic volcanic and sedimentary rocks (Units 15 and 12). These units are cut by a number of strike and sub-strike faults and are intruded by a number of small intermediate plutons. Unit 12 may be equivalent to the Nicola volcanics which occur in the Merritt and Kamloops areas. This geological setting favours the occurrence of copper and molybdenum mineralization.

Local (See Figure 2.)

Sedimentary and volcanic rocks in the near vicinity of the Barb Group have a well defined NW trend. The Windy Mountain fault cuts these rocks along strike and passes through the centre of the property.

Four rock units were defined by local geological mapping.

Unit 1 lies east of the Windy Mountain fault and is relatively unaltered. It is composed of grey-whacke, argillite and siltstone with minor

amounts of breccia, arkose, conglomerate and a few thin andesite flows. The sediments are mainly dark grey blue in color and are slightly calcareous.

- Unit 2 lies on the west side of the fault. It consists of rusty weathering calc-argillite which is pyritic, fractured and recemented by silica and carbonate. Also included in this unit are minor bands of chert, limestone and non-calcareous greywhacke.
- Unit 3 is a band of grey green andesite flows about 300 thick, and is enclosed by the rocks of Unit 2.
- Unit 4 is a small pluton of porphyritic syenite which is light grey to blue in color. It is exposed in four outcrops on the NW corner of the property.

No economic mineralization was found on the Barb Group.

MAGNETIC SURVEY

Method

The purpose of this work was to supplement geological information in drift covered areas. Four 6000 foot traverses were run 750° apart across the apparent geological trend. Magnetic observations were taken at 25 foot intervals with a Sharpes MF-1 model flux gate magnetometer. Maximum readout sensitivity of this instrument is 10 gammas. Each traverse was corrected internally for diurnal variation by looping back to a base station. No correction was made for daily variation or regional gradient.

Results

The magnetic survey results are shown on Figure 3. Corrected readings are plotted on profiles at 1" = 100! and keyed to a plan of 1" = 1000!.

"quiet" or "flat". A series of anomalous magnetic disturbances with maximum relief of 700 gammas align themselves with the trend of the local geological structure. This magnetic feature or "anomaly" is apparently reflecting a source associated with the Windy Mountain fault zone.

GEOCHEMISTRY

Sampling and Analytical Procedures

(a) Sampling

The following data was recorded in the field at each soil sample point:

Sample No.

Soil type

Location

Horizon and depth

Slope

Colour

Physiography

Texture

Particular care was taken to exclude organic matter from samples. Soil samples were taken from the 'B' forizon wherever possible.

(b) Analytical Procedures

Total heavy metals determinations were made in the field by scooping a constant volume of the finest material and leaching with cold, dilute ammonium citrate. The heavy metals removed were then determined by reaction with 0.001% w/v dithizone in benzene to form a colored product.

For copper and molybdenum the samples were dried and sieved in a laboratory to -80 mesh.

Copper was determined directly by atomic absorption methods after leaching the sample with a

mixture of $1\frac{1}{2}$ ml. concentrated nitric acid and $\frac{1}{2}$ mil. concentrated hydrochloric acid in a hot water bath for $2\frac{1}{2}$ hours and adjusting the final volume to 10 ml.

Molybdenum was determined colorimetrically by a stannous chloride - thiocyanate method
using a pyrosulphate fusion. The molybdenum - thiocyanate
complex was extracted into isoprople ether.

All metal values are expressed in parts per million.

Results

The results of soil sampling are shown on figures 4 and 5.

(a) Copper

The background copper content of the soil is 50 or less parts per million with a threshold range of 50 - 100 ppm. Eight percent of the samples contained more than 100 ppm. Cu., the highest being 375. These may be considered anomalous. However, they are randomly distributed on the sampling grid and probably do not represent a confined source of economic significance.

(b) Molybdenite

The apparent Mo background is less than 5 ppm. A threshold range of about 5 to 13 is almost vacant.

Sixteen values ranging from 14 to 70 ppm are sharply anomalous. Thirteen of these occur in a well defined area 3000' in length on the NE slope of a NW trending ridge. It is suspected that the source may be an argillite bed having higher than average Mo, traces.

SUMMARY AND CONCLUSIONS

A programme of geochemical, geological and magnetic surveys was carried out on the Barb Claim Group following geochemical and geological reconnaissance. The Barb Group is located on the Windy Mountain fault in a belt of Mesozoic volcanic and sedimentary rocks intruded by later stocks of intermediate to felsic plutonic rock.

- 1. No significant economic mineralization was seen directly on the claims.
- 2. The results of copper analysis on soil samples do not suggest any exploration targets.
- Molybdenum analysis indicates an anomalous area that will require further investigation.
- 4. Magnetic survey work has suggested the buried location of the Windy Mountain fault where it crosses the property.
- 5. The presence of a syenite stock cutting fractured, pyritic, silicified and carbonatized sedimentary rocks west of the fault indicates a favourable geological setting for the occurrence of copper and molybdenite mineralization.

RECOMMENDATIONS

It is suggested that further preliminary work be carried out as follows:

- Trace and prospect the contact of syenite pluton west of the property.
- Investigate the magnetic anomaly by running EM traverses on the original survey lines.
- 3. Check anomalous Mo values in soil samples by doing rock chip sampling and limited hand trenching.

A. F. REEVE

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Respectfully submitted

Albert F. Reeve, P. Eng. Geological Engineer

September 15, 1967.

APPENDIX A

STATEMENT OF EXPENDITURES

APPENDIX A

RE EXPLORATION OF BARB CLAIM GROUP - 1967

Salaries and Fees				
Supervision and Rep Engineer - 3 da		tion	\$210.00	
Field Geologist -14 da	ays @ \$30	#	420.00	
3 Technicians	ays @ \$20	**	840.00	
Stenographic servic - 4 h	ce rs. @ \$4	23	16.00	
Drafting service - 30 hr	rs. 🤉 \$4	201	120.00	\$1,606.00
Bquipment				
Truck rental ½ mo	. 😂 \$350	#3	\$175.00	
Magnetometer ½ mo.	. @ \$200	ia.	100.00	
Sampling tools and geochemical field		***	50.00	325.00
Supplies and Miscellaneous				
540 Geochemical as	nalyses @ \$2		\$1,080.00	
Food, supplies 60 man days @ \$4	4		240.00	1.320.00
Total Expenditure \$3,251.00				\$3,251.00

Apply \$2,000.00 to cover 20 claims for one year.

APPENDIX B

STATUTORY DECLARATION

IN

SUPPORT OF EXPENDITURES

APPENDIX B

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Province of British Columbia

TO WIT:

IN THE MATTER OF the Statement of Expenditures for exploration of the Barb Mineral Claims in the Kamloops Mining Division.

I, ALBERT F. REEVE, Geological Engineer, of 400 - 837 West Hastings Street, in the City of Vancouver, in the Province of British Columbia. DO SOLEMNLY DECLARE:

- 1. THAT the geophysical, geological and geochemical investigation of the Barb Claim Group was carried out under my direction.
- 2. THAT the Statement of Expenditures set out in Appendix "A" of my report "Geological, Geophysical and Geochemical Investigation of the Barb Claim Group", dated June 10 to August 4, 1967, truly represents the amounts expended on geological mapping of the said claim group.

AND I Make this solemn Declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath, and by virtue of the Canada Evidence Act.

DECLARED before me at the City of Vancouver, in the Province of British Columbia, this 15th day of September, A.D. 1967.

7. T. Lay

A Commissioner for taking Affidavits for British Columbia.

APPENDIX C

WRITER'S CERTIFICATE

OF
OUALIFICATIONS

CERTIFICATE

I, ALBERT F. REEVE, of Vancouver, B. C., hereby certify that:

- 1. I am a geological engineer residing at #4, 2475 West 1st Avenue, with an office at 400, 837 West Hastings Street.
- I am a graduate of the Provincial Institute of Mining, Haileybury, Ontario, 1958; and received a Bachelor of Science degree from Michigan College of Mining and Technology, Houghton, Michigan, 1961.
- 3. I am a certified member of the Associations of Professional Engineers in the provinces of Ontario and British Columbia.
- 4. I am the author of this report.

5. I supervised geological, geophysical and geochemical investigations of the Barb Claim Group which are described herein.

A. F. REEVE

BRITISH

COLUMBIA

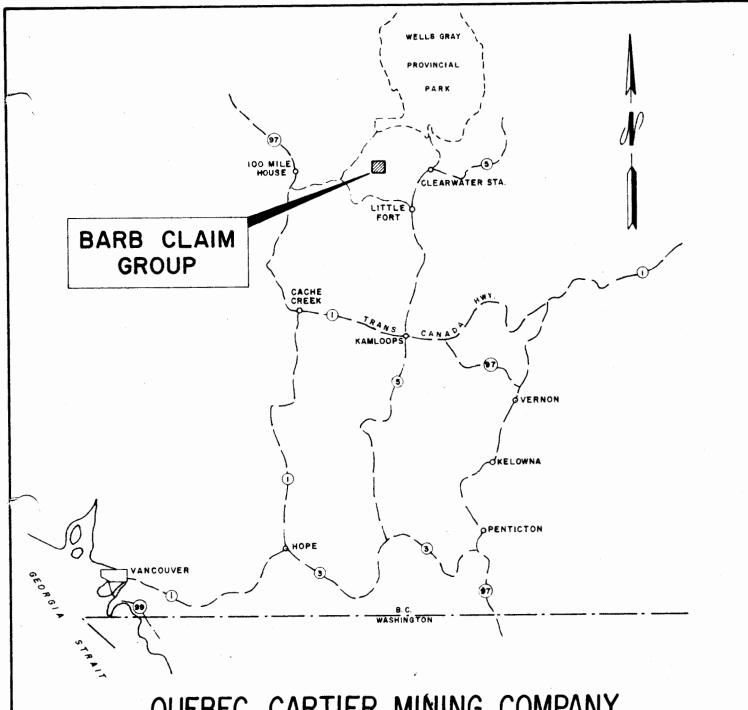
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Signed

Albert F. Reeve, P. Eng. Geological Engineer

September 15, 1967.

Vancouver, B.C.



QUEBEC CARTIER MINING COMPANY

LOCATION PLAN

BARB CLAIM GROUP

KAMLOOPS MINING DIVISION

BRITISH COLUMBIA

SCALE: I" = 40 MILES (approx.)

BY

CORDILLERAN EXPLORATION CORPORATION LTD.

400-837 W. HASTINGS ST.

VANCOUVER, CANADA

SEPTEMBER 15, 1967

