

COMPANY: TECK EXPLORATIONS LIMITEDINTER-OFFICE LETTER DATE: June 11, 1979

TO: J. L. May

FROM: A. I. Betmanis

COPIES TO:

WRB

WHEN FEASIBLE, CONFINE LETTER
TO ONE SUBJECTRE: Summary of Molybdenite Potential, Porphyry Creek,
Aiken Lake, Area, B. C. (Job #1247)General

The molybdenite mineralized biotite quartz monzonite stock has been outlined by Riocanex using geology, geophysics and geochemistry as having dimensions of approximately 3,000 feet by 650 feet. Sulphide mineralization consists of (i) molybdenite as a fine dissemination, fracture filling, and on walls of fine quartz veinlets, all restricted to the stock; (ii) persistent pyrite as dissemination and in quartz veinlets throughout the stock, and pyritization up to 1,000 feet from the stock; and (iii) sparse chalcopyrite. Two inclined AX holes were drilled from the same set-up in the northern part of the stock. Core recovery was poor and sludge recovery was worse with eventual loss of circulation and loss of sludge. The holes were drilled in an area which was less anomalous geochemically. It is possible that with better located and larger diameter drilling, economic molybdenite grades could be recovered.

Geology

The biotite quartz monzonite stock intrudes Upper Triassic Takla volcanics, hornblendites and appinites. The stock is elongated NW-SE and has approximate dimensions of 3,000 by 650 feet. Due to irregularities in the contact and presence of dyking, a northwest plunge is indicated. Alteration in the stock is potash silicate with frequent quartz and orthoclase veins and stringers. Intense alteration extends for 350 feet from the stock. Oxidation of sulphides extends to 125 feet from surface.

Geochemistry

Geochemical soil samples were analysed in a field laboratory using colorimetric methods by Riocanex.

The silt train from the stock extends for at least one mile down Porphyry Creek with values from 40 to 150 ppm Mo. The area underlain by the stock and the surrounding area for approximately 3,600 by 1,200 feet gives soil values greater than 25 ppm Mo. Within

....2

Memo to J. L. May,
Page 2,
June 11, 1979

Re: Porphyry Creek

this area are two areas of plus 100 ppm Mo; the first an irregular area concentrated around Karen and Davie Creeks, tributaries of Porphyry Creek, and the second, an area 1,000 by 800 feet on Porphyry Ridge. The drilling did not test the stronger geochemically anomalous areas.

Analyses for copper gave irregular, small anomalies suggestive of less consistent copper mineralization.

Magnetics

Several widely spaced magnetometer lines were run across the stock for a reconnaissance magnetic survey. The survey indicated that the stock was a magnetic low with surrounding magnetic highs in the intruded rocks outside the stock.

Mineralization

Fairly consistent pyrite mineralization of about 1% occurs throughout the stock and for 750 to 1,000 feet beyond the stock. The pyrite is as a fine dissemination in the monzonite and in narrow quartz stringers.

Molybdenite mineralization occurs as a fine dissemination, in narrow veinlets, and on the walls of quartz stringers. The mineralized veins and stringers comprise 1 to 2% of the rock.

Chalcopyrite is sparse, and occurs erratically with the pyrite.

Drilling

Two AX diamond drill holes were drilled from the same location in opposite directions: hole P-1 was inclined at 75° and drilled to 270 feet and hole P-2 was inclined at 45° and drilled to 342 feet. Sludges were collected and assayed in the upper parts of the holes. Problems were encountered with core and sludge recovery. Drill water and sludge were frequently lost ahead of the bit, and the core recovered in the oxidized zone was described as "gravel".

Memo to J. L. May,
Page 3,
June 11, 1979

Re: Porphyry Creek

Results of the drilling are listed below:

Hole P-1 Core recovery to 270 feet 67%
Sludge recovery to 50 feet 16%
Core assay average to 270 Feet 0.029% Mo
Sludge assay average to 130 feet 0.050% Mo

0.048 m.o.s₂

Hole P-2 Core recovery to 342 feet 75%
Sludge recovery to 130 feet 21%
Core assay average to 352 feet 0.015% Mo
Sludge assay average to 130 feet 0.016% Mo.

0.025 m.o.s₂

Conclusions and Recommendations

If 1-2% of the stock is comprised of molybdenum mineralized stringers, than most of the ferromolybdate in the oxidized zone and an appreciable amount of the molbdenite must have been lost from the drilling. Larger diameter drilling probably would increase the recovered grades appreciably.

If the surface soil geochemistry is indicative of directly underlying molybdenum mineralization, which is possible but not probable, then other parts of the stock may be better mineralized than where drilled. An examination of the stock, using the Riocanex accumulated data, may indicate more favourable areas to be drill tested.

It is recommended that the previously proposed exploration program as a Joint Venture with Riocanex be undertaken by Teck alone in 1979. If results are sufficiently encouraging then Teck's interest in the property would not be divided. If the results are marginal or sub-marginal, then consideration should be given to bringing in a partner to further evaluate the area for better drill targets.


A. I. Betmanis

AIB:mjb