CLIMAX MOLYBDENUM (B.C.) LIMITED

P. O. Box 696
Smithers, British Columbia
Telephone: (604) 847-9949

535 Thurlow Street
Vancouver 5, British Columbia
Telephone: (604) 683-0474

802546

92 B

Dr. M. S. Hedley
Senior Geologist
Department of Mines and Petroleum Resources
Victoria, B. C.

July 26, 1966

3042

Dear Dr. Hedley,

As requested by Rod Kirkham, I am enclosing an abstract of "250 words or less to be submitted by August 1st" of my paper to be presented at the October meeting of the Canadian Institute of Mining and Metallurgy in Victoria. At last count my abstract is 250 words long, and therefore conforms with your requirements.

I hope that Rod's work in the Stikine area is going well. He has certainly done a fine job here on Hudson Bay Mountain and we will welcome him back when his Stikine project is completed in the next year or two.

They are making good progess in the tunnel - about 30 feet per day in hard tuffs and lapilli tuffs which require no timbering or roof support. The face of the tunnel is now at 2850 feet and should encounter the top of the granodiorite sheet at approximately 4000 feet from the portal.

We will be happy to give you, or members of your staff, a tour of the tunnel if you should happen to be passing through Smithers.

Sincerely yours,

Dave Jenson

Copy: S. R. Wallace
Chief Geologist, Western Operations

Technical paper to be presented at the meeting of the C. I. M. in Victoria, on October 29, 1966

GEOLOGY OF THE HUDSON BAY MOUNTAIN MOLYBDENITE DEPOSIT, SMITHERS, B. C.

by

Dave Jonson Climax Molybdenum (B.C.) Ltd.

ABSTRACT

A thrust fault trending northeast and dipping gently southeast separates upper and lower sequences of Hazelton Group volcanics. A thick wedge-shaped intrusive sheet parallels, and may locally occupy, the thrust plane. The sheet is magmatically differentiated, grading from strongly granophyric leucogranite at the top to moderately granophyric chloritic granodiorite with thin layers of diorite near the bottom. A porphyritic phase is a late differentiate from aplitic leucogranite.

Basaltic dikes, presently highly altered, intruded Hazelton rocks and the intrusive sheet. These rocks are unconformably overlain by Bowser Group sediments.

Bowser rocks have been domed by intrusions of quartz monzonite porphyry. A porphyry stock occurs at depth southeast of the Hudson Bay Mountain glacier; a zone of intense silicification, dikes of quartz porphyry, aplite, pegmatite, and porphyry dikes and breccia which are intra-mineral relative to molybdenite mineralization occur near the upper contact. An intra-mineral dike swarm crossing upper cirque walls is probably derived from a second stock which is believed to lie beneath the glacier.

The intrusive sheet represents an especially favorable host rock for post-Bowser molybdenite mineralization. Molybdenite occurs within two generations of quartz veinlets:

Variety	Mineralogy	Generalized Attitude	Probable Origin of Fracturing
Early (Type I)	All minerals fine-grained: quartz, molybdenite, sericite, calcite; minor scheelite-powellite, pyrite, magnetite.	Several sets of steeply-inclined veinlets.	Stockwork veining related to stock intrusion.
Late (Type II)	All minerals coarse-grained, often in drusy cavities: quartz, rosette molybdenite, calcite, sericite (muscovite), pyrite-pyrrhotite; minor K feldspar, chalcopyrite, scheelite-powellite.	Northwesterly strike, gentle westerly dip.	Tensional fractures related to thrusting.