

MDRU**MINERAL DEPOSIT RESEARCH UNIT****Department of Geological Sciences - The University of British Columbia****Tel: 822-6136 Fax: 822-6088****Interdepartmental Memorandum**

Date: 14 June 1991

To: J. O'Rourke, President, Princeton Mining Corp.
cc: K. Blower, Mine Manager, Similco Mines Ltd.
 B. Epp, Similco Mines Ltd.
 C. Godwin, UBC
 K. Dawson, GSC

From: J.F.H. Thompson, Director, MDRU, UBC

Re: MDRU Research Plans for the Copper Mountain Area

A meeting was held at the Copper Mountain Mine on June 13, 1991. Bill Epp, Colin Godwin, Ken Dawson and John Thompson attended. The purpose of the meeting was to determine the research that MDRU should carry out in the Copper Mountain area as part of the MDRU Copper-Gold Porphyry project. The overall aim of the research is to resolve fundamental questions regarding these deposits and hence assist the sponsoring companies. The work at Copper Mountain must also be relevant and beneficial to the mine and future exploration.

The research staff available to work at Copper Mountain include a Research Associate, two post-doctoral fellows (PDF), and a graduate student at the MSc level. Three possible candidates with different abilities and strengths have been identified for the graduate student position. The best available candidate will be selected over the next two to three weeks. Various topics were identified during the meeting as summarized below. Some of these are suitable for a graduate student while others are better suited to senior researchers. MDRU expects to work on most of the topics during the three year life of the project.

COPPER MOUNTAIN:**1. Virginia Zone:**

Project: Geology, alteration and geochemistry.
Goals: To understand the styles of and controls on mineralization and to determine the potential for deep mineralization.
Methods: Detailed logging of drill holes on a complete cross section through the ore zone; limited logging of other holes; mapping of available surface exposure; follow-up petrography and analytical studies.
Researcher: Suitable for MSc or PDF research.

2. Copper Mountain District:

Project: The geology and mineralization of the Copper Mountain area.
Goals: To determine the distribution of different styles of mineralization throughout the Copper Mountain area in relation to the petrogenesis of the related intrusions and the structural development of the region; to define the regional zoning pattern in the district and the potential for new ore zones.

Methods: Regional mapping (built on past work by survey and company personnel); geochemistry of mineralization (company data and analytical work) petrology, geochemistry and geochronometry of intrusive rocks.

Researcher: Particularly suitable for one of the potential MSc candidates who has a strong regional mapping background; the petrology and geochronometry will be carried out by PDFs if this student is not selected.

3. Copper Mountain Mine:

Project: The geology, geochemistry and structure of the Copper Mountain Mine.

Goals: To determine the structural control on mineralization in Copper Mountain Mine area and the timing of different styles of mineralization; to refine deposit-scale zoning, exploration guidelines for the mine area and the potential for deep mineralization.

Methods: Detailed pit mapping; logging and sampling of selected holes through important areas; petrography and geochemistry.

Researcher: Suitable for MSc project. Part of the project could be undertaken by a PDF.

INGERBELLE:

1. Ingerbelle Mine:

Project: Alteration and mineralization at Ingerbelle.

Goals: To determine the character of alteration and its relationship to mineralization in the Ingerbelle deposit; to evaluate the importance of this style of deposit and the potential for similar deposits.

Methods: Logging and sampling of drill holes; petrology and geochemistry.

Researcher: This work has been initiated by Ken Dawson, Geological Survey of Canada, who rehabilitated some of the Ingerbelle core and carried out preliminary sampling. Further work will be collaborative and will involve a PDF from MDRU.

PAST RESEARCH WORK

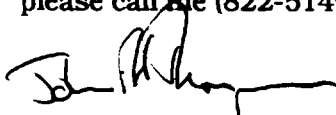
A number of company, survey and academic researchers have worked in the Copper Mountain area over the last thirty years. MDRU intends to compile and utilize this work as far as possible. The work of three people has been identified as important for the project and the mine:

1. **Holly Huyck:**
Holly Huyck, University of Cincinnati, has been carrying out research on Copper Mountain mineralization since 1986. Her work has involved sampling, petrography, gold-silver geochemistry and limited fluid inclusion studies. Holly has requested funds from Similco and MDRU to continue this work. Similco has no available funds and MDRU does not wish to finance research outside UBC where control and liaison with the sponsoring companies will be limited. There are, however, few reports or maps describing Holly's work in the area. MDRU is prepared to provide limited support to Holly to allow her to complete her existing work and sampling into a publication and a report for Similco and MDRU. This will document her work and ideas for the mine and will allow MDRU to proceed without any potential academic conflict. This offer will be discussed with Holly.

2. **Tats Takeda:**
Tats Takeda carried out detailed ore and alteration petrography on Ingerbelle and possibly Copper Mountain for Newmont. Apparently, this study was submitted to a Japanese university for a PhD. MDRU believes that this work will be useful to the mine for exploration and beneficiation purposes and will provide a valuable database for future research. MDRU is prepared to finance the acquisition of this work by offering to assist Takeda in publishing his thesis in English. Contact will be made with Takeda through Terry Macauley.

3. **Vic Preto:**
Vic Preto mapped throughout the Copper Mountain area on behalf of the B.C. Department of Mines in the late sixties. His maps and ideas represent an important contribution. MDRU will ask Vic to lead a field trip through the area to outline some of the important relationships which he identified.

We hope to resolve the personnel for the project over the next few weeks, and hence, refine the particular research topics and research plan. If you have any comments or suggestions, please call me (822-5149) or Colin Godwin (822-2804).



John Thompson
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