Mineralization, Alteration and Structure of the Taseko Lakes Region, Southwestern B.C.: **Preliminary Analysis**



Geoscience

Introduction

- The Taseko Lakes region lies ~200 km north of Vancouver.
- The purpose of this two-year study is to identify and classify: - significant fault structures.
- porphyry- and epithermal-style mineralization occurrences.
- deformational phases and relative ages of faults.
- age of mineralization.
- relationship between faulting and mineralization in the region.





The Taseko Lakes region lies on the boundary between the southeast and the southwest Coast Belt, at the eastern limit of the Coast Plutonic Complex.

 Major faults include the Yalakom, Chita Creek and Tchaikazan and Twin Creek Faults, all dominantly dextral. The Twin Creeks and Tchaikazan Faults are the main regional faults (shown left).

 Other mineral deposits in the region include the Bralorne (past producer) and Prosperity (advanced prospect) deposits (shown above).

Structural Geology





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This project includes structurallyfocused regional scale mapping in the Tchaikazan Valley and Twin Creeks areas and detailed deposit studies of the Northwest Copper and The Hub porphyry/epithermal prospects.





The region has undergone at least three phases of brittle deformation:

D1. Early to mid Cretaceous sinistral deformation resulting in the development of NW/SE trending sinistral faults (shown top left). An illite cooling age of 89 Ma was attained from a sinistral fault fabric (Israel et al., 2006).

D2. Mid Cretaceous compressional deformation resulting in the development of north verging thrust faults (shown top right). Compressional deformation may have been accommodated by the reactivation of pre-existing sinistral faults. Regionally, N-NE verging thrust faults are 87-84 Ma in age. (Umhoefer et al.,1994).

D3. Late Cretaceous to Eocene dextral transpressional deformation resulting in the development of major dextral-slip faults including the Tchaikazan Fault (the largest scale fault in the area, shown bottom).





Lithologic Units





andesitic flow



Future Work

Field work during the summer of 2007 will include: - continued mapping of mineralization, alteration and lithologies at the Hub, Northwest Copper and Twin Creeks Areas. - detailed study and sampling of significant fault zones throughout the region. - sampling along and across specific fault zones to characterize alteration and mineralization present. Upcoming lab work will include: -Ar-Ar and U-Pb dating of selected lithologies and fault materials. -Petrographic analysis of lithologies, mineralization and alteration features. -Stable isotopic analysis of alteration minerals.

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Mineral Deposit Research Unit UBC

The Hub H.Warren from the University of British Columbia first identified the Hub showing in the 1940s.

> Located ~4 km southeast of the Northwest Copper showing, it contains exposures that parallel the Tchaikazan River.

 Felsic dykes crosscut the volcanic lithologies. A late feldspar porphyry dyke that cuts all lithologies, contains the most significant mineralization, with up to 7% pyrite.

 Sulfides are mapped with increasing concentration to the north, where molybdenite and chalcopyrite are present in association with cm-scale quartz veins.



