

GAC CORDILLERAN SECTION

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Exploration Breakfast Series

“Early stage active Projects”

7:15 – 8:30 am, Tuesday February 1, 2011

BCIT Downtown Campus

Rooms 282-284, 555 Seymour Street, Vancouver, BC

Cost: \$15 – Pay at Door

Coffee/tea, Muffins

RSVP: for catering please pre-register no later than January 25th by email to:

morning_talks@gac-cs.ca

New Insights Into Stratigraphy and Volcanogenic Massive Sulphide (VMS) Potential: Paleozoic Wrangellia, Southern Vancouver Island*

**Discussion Leader: Tyler W. Ruks, PhD Candidate,
MDRU - UBC**

The Middle Paleozoic Sicker Group (SG) on Vancouver Island is believed to record the evolution of an oceanic island arc that represents the basement of Wrangellia. The SG is exposed in several structural uplifts on Vancouver Island and the Canadian Gulf Islands, including the Buttle Lake, Bedingfield, Nanoose and Cowichan Lake uplifts and potentially portions of the Westcoast Crystalline Complex. SG strata in the Buttle Lake uplift host the producing Myra Falls volcanogenic massive sulphide (VMS) deposit, the largest producing VMS deposit in western Canada. Other VMS occur throughout the SG in the Cowichan Lake and Bedingfield uplifts, and in possibly correlative rocks of the Westcoast Crystalline Complex. A paucity of isotopic and fossil age control, and lack of a detailed understanding of the stratigraphy of the SG, has impeded the development of a robust model to explain the origins of Wrangellia and hampered exploration for stratigraphically controlled VMS mineralization. Our research combines geological mapping with geochronological, biostratigraphic, isotopic, and lithogeochemical studies to better understand the tectonic history and metallogeny of the SG. New geological mapping of key parts of the SG is aimed at better constraining stratigraphic relationships within the SG, and in particular the geological setting of VMS deposits. We are employing U-Pb and Ar-Ar dating of intrusive and extrusive rocks as well as microfossil (radiolarian and conodont) biostratigraphy of sedimentary units to develop a coherent chronostratigraphic framework for each of the SG uplifts. Whole rock lithogeochemistry together with Nd and Hf isotopic studies is being used to constrain the petrogenesis of SG magmatism and test for possible linkages to continental (possibly Laurentian) crust. Lead isotopic compositions of sulphide occurrences are being used to discriminate between syngenetic or epigenetic occurrences, in order to evaluate the potential for additional large VMS deposits in the SG. Results of the study will enhance our knowledge of Wrangellian tectonic evolution and metallogeny, and lead to a better understanding of a critical part of the history of crustal growth in the North American continent.

This talk will focus on the results of the study pertaining to mineral tenures owned by project sponsors Bitterroot Resources Ltd., Paget Minerals Corporation, Treasury Metals Inc., and Westridge Resources Inc.

*co-authors: James K. Mortensen (UBC) and Fabrice Cordey (Université Claude Bernard Lyon)

A summary of the work and results, ***intended to stimulate discussion of future efforts on the project***, will be presented.