



Province of
British Columbia

GEOLOGICAL SURVEY BRANCH

Ministry of
Energy, Mines and
Petroleum Resources

MEMORANDUM

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To: Project Geologists, Managers

Date: Dec. 21, 1994

884700

From: Dani Alldrick, Kim Bellefontaine, Dave Lefebure

Re: Highlights from MDRU VMS Update - Dec. 9, 1994 at UBC

Food for thought: The three GSB participants decided to write down the 6-8 "high points" of information that had the most significance and impact for them out of all the data presented at this day-long meeting. Here are the 21 highlights. Note that each geologist selected different "most important" points.

- MDRU is subdividing VMS deposits into two groups: mafic volcanic/sediment hosted and felsic volcanic hosted. First group includes Windy Craggy, Anyox and Granduc and is preferred to "Cyprus-Type" and "Besshi-Type" because there are always sediments in the sequence. Second group includes some deposits that are not "Kuroko-Type" such as Kutcho Creek.
- Granduc 223 Ma (U-Pb), Anyox are Triassic-age VMS deposits.
- Trondjemite body located in the centre of the Anyox pendant has yielded a 364 Ma zircon date (!) This pendant MUST be mapped - it holds 160 Ma of uncorrelated stratigraphy -- and hosts a major VMS camp -- What else does it host???
- Granby Point Quartz veins (and similar veins throughout the Anyox camp) are Tertiary, high temperature veins (>300°C)
- Kutcho Creek is constrained to 249 Ma by U-Pb dates - so lies on the Permo-Triassic boundary. Not Triassic as previously thought.
- The "primitiveness" of the Kutcho Creek deposit is intriguing. Pb isotopes suggest formation in an oceanic environment. However, large amounts of felsic volcanics are anomalous for this type of tectonic setting. So, O1B?
- The geochemistry of the Kutcho formation volcanics show they are tholeiitic, sodic, and have very low concentrations of incompatible elements. Geochemistry supports an oceanic environment but rock types are typical of island arcs. This raises interesting questions about the relationships between rocks of the King Salmon allochthon and Cache Creek terrane.
- Almost all volcanic rocks and associated intrusives at Kutcho Creek are tholeiitic with low values of incompatible elements (Nb, Y, Zn) which are not consistent with a calc-alkaline Kuroko-deposit setting.
- Tulsequah is hosted by proximal felsic volcanics while Big Bull is at roughly the same stratigraphic horizon in distal bedded felsic volcanics with manganese exhalative

Granduc.

Anyox

Kutcho
Ck.

(à la Tulsequah
chert / Myra
falls!)

Analogies 71
e/saw where...

Tulsequah
Chert