



MEMORANDUM

Mailing address: Parliament Buildings, Victoria, British Columbia V8V 1X4 Telephone: (604) 356-2818 Fax: (604) 356-8153

LOG NO: MAY 08 1992
ACTION: Janice - very to Property Files
FILE NO: GSC - 1992 (Sub-File)

888156 Sullivan

May 1, 1992

To: Branch Geologists Geological Survey Branch

From: Bill McMillan Mapping & Resource Evaluation

Re: GSC Cooperation and Planned 1992 Activities Synopsis of Meetings held with GSC Scientists April 9/10, 1992

1. Topic - Mineral Potential

- Charlie Jefferson completed the South Moresby Marine Park report. He was involved in our Mineral Potential Workshop April 22 and 23.

2. Topic - Mineral Deposits

2a. Sullivan Project: We met John Lydon and Wayne Goodfellow; John is project coordinator.

Activities: An Aldridge lithogeochemical file is being readied for Open File release. Depositional processes of SEDEX ores are being studied.

Comments: They would welcome more involvement by Trygve Hoy. Ray Price has a new post-doc (Allistair Wellborne) in the area Trygve is collaborating. John Lydon is concentrating on the bedded-ore to country rock (fringe zone)

transition. He noted that ore "layers" are more properly ore "lenses." He thinks the zones represent brine pools in topographic depressions, not black smoker fallout. The central zone he regards as a debris flow. Questions being considered include, how much sulphide represents fallout, how much nucleation in the brine pool, how much is from mechanical transport?

Wayne Goodfellow, who is also spending half his time on Middle Valley data, is interested in the 1) processes of element dispersion from hydrothermal centers, including distal hydrothermal sediments. They are attempting to document changes and develop exploration criteria. Were the ore fluids buoyant, rapidly mixed, widely dispersed? How were they dispersed, what chemical changes occurred? 2) What were conditions like in the basin during mineralization? Was the water oxidizing or reducing? Where did the sulphur come from? Were there several periods of hydrothermal activity? Was there more than one mineralizing event?

Some results and plan are: the water was likely reducing or stagnant; the core breccia pipe is S-poor, so sulphur is probably externally derived; Elizabeth McClelland is expanding dating of the Moyie sills to see if there are multiple episodes of dike formation/extension. Are sills cutting the Middle Aldridge different than those cutting the Low Aldridge? Trygve's work shows considerable petrochemical evolution, and generally there is a kind of chronology with older dikes lower in the section because they propagate upwards. Tests of water character are S isotopes, S to C ratios - reduced basins have higher ratios; checking for oxidized rims on sulphides; they plan to evaluate dispersion "down current" and to try to date hydrothermal minerals, especially cassiterite (U/Pb).

SULLIVAN