

Introduction

The initial problem posed by Aberfoyle is as follows:

- o Given that barite mineralisation at Mt Charter has similarities to UMS deposits elsewhere in the district, that it occurs above the stratigraphic level of the Hellyer and Que River deposits and that no significant mineralisation has been encountered by drilling to date, is it possible and demonstrable that it is representative of either a remobilisation event from some more deeply buried UMS style deposit or is related to a stacked massive sulphide sequence?

Consideration of this problem has required review of existing isotope data, geochemistry and geology of the district and allowed redefinition of the problem in terms of wider ranging exploration-related research in the district. In this report, a number of avenues of exploration related research are discussed including aspects of structural interpretation, litho-geochemistry and isotope geology. A specific programme of strontium isotope and trace element geochemistry has also been implemented in regard to the use of these techniques in future deep exploration drilling in the Mt Read Volcanic Belt.

The above prompted a very useful seminar and discussion at Hellyer on November 7th. Following an underground visit to Hellyer, I provided a talk on the structure of volcanic belts based on case histories at Buchans, Aberfoyle's exploration at Bimurra (N.E. Queensland) and some recent evaluation of the structural architecture of the Taupo Volcanic Zone (New Zealand) which I am currently undertaking. The latter, previously ascribed a simple graben structure, now appears to be a divergent fault array comprising a number of basins between two major transcurrent faults (Abstract attached). Discussion after the talk provided an overview of the excellent isopach mapping which is on-going at Hellyer itself and the interesting "unfolding" of the complex Que River structure currently being undertaken by Ed Dronseika. Both studies suggest that the essential localisation and ponding of sea floor UMS bodies may have occurred in transtensional strike slip basins rather than in simple extensional basins. I am grateful to the staff at Hellyer and Que River who interacted in this way.

As the review progressed the assistance of Andrew MacNeil and Dave Wallace has been invaluable in resurrecting a number of older reports on the district. This has highlighted one possible information problem, common to a number of exploration activities, as to whether Aberfoyle has a comprehensive data base of in-house reports, papers, maps and documents for this or other