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Exploration Research in the Mt Read Volcanics, Tasmania Lithochemistry in the Exploration of the Que River-Hellyer district

II. Rb-Sr Isotope Data and Alteration Geochemistry

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Summary

The results of this pilot study suggest that rubidium/strontium isotope ratios preserved in altered footwall volcanics at Hellyer relate directly to the throughflow of primary ore transport fluid.

Since the Rb/Sr isotope ratio is directly related to the concentration ratio of these elements, rubidium and the Rb/Sr concentration ratio may be used directly as first order whole rock lithochemical parameters to map alteration and vector the centre of a VMS hydrothermal alteration system in the 200 to 2000m distance range. Use of the vector to increase the search radius of an exploration drillhole array requires application of an alteration index 'filter' to counter heterogenous alteration in rocks at this distance.

The above is based on a limited data set and some additional whole rock geochemistry from within the stringer zone, proximal to the Hellyer deposit. The study is to be extended to assess variability of Rb and Sr downhole in distal parts of the alteration zone at Hellyer and will also be trialed at Mount Charter within the altered dacite sequence for which geochemical data are currently limited; intersections are currently too few to permit use of the Rb vector in the 'ore sequence'. Further studies may be warranted in the hanging wall sequence above the Helyer deposit.