MAGNETITE AND MONAZITE MINERAL CHEMISTRY FOR IRON **OXIDE-COPPER-GOLD EXPLORATION IN THE PEAKE AND DENISON AREA, SOUTH AUSTRALIA**

PHD PROJECT

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RESEARCH PROJECT

The Peake and Denison area in northern South Australia is emerging as a potential source of iron oxide-copper-gold mineralisation. Exploration activities undertaken by Minotaur Exploration have shown that the mineralisation has unique characteristics and is less like the Olympic Dam-style mineralisation typical of South Australia and more akin to iron oxide-copper-gold deposits within the Cloncurry area, Queensland. Understanding this new mineralisation style is critical to exploration as it informs ore genesis processes and thus 'points' to where it is most likely to be found.

This project will investigate the mineralogy and geochemistry of existing drill holes in the Peake and Denison area to develop criteria that can be used as an indication of proximity to Cu-enrichment. The project will have two focus areas: 1. developing geochemical criteria to distinguish hydrothermal magnetite that is potentially associated with mineralisation from other magnetite (e.g. igneous), and 2. further developing monazite geochemical criteria for iron oxide-copper-gold exploration. Criteria development will require collection of petrological data, whole rock geochemical data and mineral chemistry using a variety of analytical techniques. The criteria developed will then be tested using data on existing and planned drill holes in Minotaur Exploration tenements and within the MinEx CRC NDI areas as appropriate.