

The Rover Mineral Field Deposit Atlas

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The Rover field, situated to the south and west of Tennant Creek, has long been recognised as showing potential for base metal and precious metals mineralisation. Exploration going as far back as the 1960s has identified mineralisation of the Tennant Creek Cu-Au-Bi style, and more recently, a sediment-hosted Pb-Zn-Ag system at the western end of the area. Exploration in the area has been hampered by pervasive cover of up to 100 m or more, and by the need to base geological understanding of the region on the interpretation of geophysical data and isolated drillholes.

Several prospects have been identified and subjected to more intense drilling in the area, including Rover 1, Explorer 142, and Explorer 108/Curiosity. The Rover area also lies on the margin of the Tennant Creek–Mount Isa focus area of the Australian Government’s *Exploring for the Future Program*, and has benefited from insights from some of the regional analyses already carried out as part of that program, including the coverage of the AusAEM airborne electromagnetic survey.

It is well recognised that exploration under thick cover carries significantly more risk than exploration in well-exposed areas. As such, successful exploration requires a combination of conceptual target identification based on rigorous mineral process models, and direct target detection based on the best possible understanding of known and likely deposits, including recognition of halo signatures in common geoscientific datasets.

The aim of this study is to draw together new and existing regional datasets, including geophysics and

exploration drilling and other detailed data associated with known mineral occurrences, into a geoscience compilation. The aim of this compilation is to assist future exploration in the region by providing explorers rigorous and comprehensive data, as well as insights into the key geological characteristics related to mineralisation.

The main objectives of the project are:

1. to produce an updated solid geology basement interpretation based on government and open file geophysical data, plus newly compiled open file drilling data, in order to guide further target identification and exploration in the region
2. to produce 3D compilations of the main prospects in the area by pulling together drilling, geophysics, and any other relevant data, to afford explorers the best possible understanding of the characteristics of known mineralisation in the region
3. to produce a regional 3D compilation of geoscientific datasets relevant to exploration over the entire area in order to guide further target identification and exploration in the region.

Collectively, these products will form a basis for future exploration and targeting in the region, highlight areas of prospectivity, and cut short the process of basic compilation and analysis that often forms a barrier to initiation of greenfields exploration programs.

Work commenced in late December on the Rover Mineral Field Deposit Atlas. An initial compilation of drill collars has now been extended to a full drillhole dataset. Work is also progressing on solid geology interpretations, prospect 3D compilations, interpretation and inversion of geophysical data, and incorporation of all other regional precompetitive and exploration datasets.

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