Geological characteristics and ore genesis of the Buck Reef West gold deposit, Ravenswood, Queensland, Australia

Supervisors: Zhaoshan Chang and Nick Lisowiec

The Buck Reef West project is a satellite ore system located approximately 700m west of Sarsfield pit in Ravenswood, north Queensland. Historical (pre-1918) and modern (1987-2004) production totaled approximately 400,000oz Au, and the potential for a larger, bulk tonnage mine is currently being investigated by Carpentaria Gold. The bulk of the mineralisation is hosted within a sub-vertical chlorite-sulphide breccia within the Buck Reef Fault, and by shallow to moderate dipping, high grade carbonate-base metal veins. Late faults offset the mineralised structures to varying degrees.

The main aim of the project is to understand the genesis of the mineralisation and the relationship to the nearby Sarsfield/Nolans orebodies. The structural controls on mineralisation are also to be investigated. To achieve the aim this project would:

- Investigate the nature and characteristics of the mineralised structures and the relationship between the sub-vertical and shallow dipping lodes.
- Determine the paragenesis of and zonation in alteration and mineralisation.
- Determine the composition of the sulphides, and the occurrences of gold.
- Develop a geological model (potentially in 3D).

There are significant field and lab components in this project. The techniques applied will include:

- Surface mapping
- Drill core logging
- SWIR (Short wavelength Infra-Red) techniques, with a specTERRA instrument
- Optical petrography and ore microscopy
- SEM (Scanning electron microscope)
- Electron microprobe
- LA-ICP-MS trace element analysis of sulfides
- LA-ICP-MS U-Pb dating

The project will be sponsored by Carpentaria Gold with analytical funding and inkind support such as accommodation at the camp at Ravenswood and transport to/from Townsville. **The company would also be keen to take on the student as a vocational student in the months leading up to the start of the honours program.**

Carpentaria Gold Pty Ltd is a subsidiary of Resolute Mining Limited. Further details about the Ravenswood prospect can be located at www.rml.com.au

The preferred starting time is February 2014.