SIXTH ANNUAL REPORT

EXPLORATION LICENCE 24932

Frazer North

For the reporting period 17th July 2011 – 16th July 2012

Project Name: FRAZER NORTH

Map Sheets: Rum Jungle SF53 1:100,000
Noonamah (5171) 1:100,000

Commodities: Uranium, Gold, Base Metals

For: TUC Resources Limited

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SUMMARY

Exploration on EL24932 was limited during the year due to the sale of the Frazer Project by Equator Resources Limited to TUC Resources Limited. Equator Resources had been committed to exploring this project with significant expenditure from airborne geophysics, diamond, RAB and RC in 2010. However due to a change in company strategy Equator decided to sell the Frazer Project (including this tenement), to TUC Resources. TUC are actively and successfully exploring similar targets in the Rum Jungle-Pine Creek region.

The project review and sale process took much of 2011 (year 6 for this tenement) resulting in no on ground exploration being undertaken on the tenement. The sale was completed in February 2012 and was registered on 4/4/2012.

An exploration review of the project was completed in 2011 prior to the sale process which demonstrated that EL29432 covers an important section of the offset north extension of the highly prospective Rum Jungle Woodcutters anticline where prospective stratigraphy intersects a north south fault.

In the coming year exploration is proposed to review the entire project with respect to rare earth element, uranium, gold and base-metal potential with a view to drill testing priority targets in subsequent years.
1. INTRODUCTION

In 2011 TUC went into negotiations with Equator Resources Limited to purchase the Acacia Pty Ltd Frazers Project (which includes EL24932, EL25027, EL26434, EL26777, EL27282, EL27349, EL27746 and EL27747) and the transfer was finalised and registered on 4th April not long before the third anniversary of EL24932.

TUC is now reporting on the activities completed by Equator Resources Limited during year 6 of this licence.
2. LOCATION

Exploration Licence 24932 is situated approximately 45kms south of Darwin. The Licence area spans the Acacia Hills Rural area and it is on freehold land. Access is via bitumen road and pastoral property tracks. The Rum Jungle 1:100 000 scale map sheets covers the geology of the region.

Figure 1. EL24932 Location plan
3. TENURE

Exploration Licence 24932 was granted to Imperial Granite & Minerals Pty Ltd on 17 July 2006 for a period of six (6) years expiring on 16 July 2012 over an area of twelve (12) graticular blocks. EL 24932 currently covers an area of six (6) graticular blocks.

An application for a two year renewal is currently being assessed by the department.

EL 24932 was transferred to Acacia Minerals Pty Ltd on 14 November 2007 and then the sale to TUC was completed in February 2012 and was registered on 4/4/2012.
4. GEOLOGY

4.1 Regional Geology

The Frazer Project lies in the northern apex of an embayment into the Pine Creek Group (PCG). This is the south-southeast trending fold belt composed of Lower Proterozoic sediments and volcanic which remain as a pendant on the intrusive Cullen Batholith. A broad south-southeast trending shear zone, known as the Pine Creek Shear (PCS), extends through Pine Creek in the south to the northeast. The PCS is a major locus for the passage of gold bearing fluids and hosts the majority of gold occurrences within the PCG.

The project area is located in the northern part of the PCG and contains early Proterozoic meta-sedimentary rocks resting on a gneiss and granitic Archaean basement. The geosynclinals sequence is dominated by mudstone, siltstone, greywackes, sandstone, tuffs and limestones. The PCG was folded and metamorphosed to amphibolites facies from ±1.87 – 1.90Ga. Transitional igneous rocks, including pre-tectonic dolerite sills and syn- to post-tectonic granitoid plutons, dolerite lopoliths and dykes all intrude the geosynclinals sequence. Detailed geology of the PCG is discussed by Nicholson, Ormsby, and Farrar (1994) who simplified the stratigraphy into the Batchelor, Frances Creek, and Finnis River Groups.

The Batchelor Group consists of shallow water coarse clastics and crystalline carbonates that are conformably overlain by the Frances Creek Group. The Frances Creek Group is subdivided into the Whites Formation, Acacia Gap Quartzite, Mundogie Sandstone, Koolpin Formation, Gerowie Tuff and Mount Bonnie Formation. The Finnis River Group overlies the Frances Creek Group and consists of a thick flysch sequence of greywacke and mudstone.

Two major phases of deformation that pre-date granitoid intrusions have been recognized in the PCG. The earliest widely recognized D\textsubscript{1} structures are bedding-concordant fabrics and breccias zones. The second D\textsubscript{2} phase of deformation produced the north to north-west trending folds that still dominate the region. The folds vary from open and upright to overturned and isoclinals with the development of a penetrative slaty cleavage.

The PCS consists of a number of sub-parallel faults, over a 5 km-wide corridor, with apparent sinistral movement of up to 2km. The PCS postdates the D\textsubscript{2} deformation event and the granite intrusions. Where not observed in outcrop, the PCS is defined by linear magnetic anomalies caused by magnetic bearing dolerite dykes. This structural corridor runs through the central portion of the Frazer/Acacia tenements.

The bulk of the gold resources of the PCG are found in the quartz-sulphide stockworks and sheeted vein systems in association with disseminated sulphide deposits with dimensions suitable for open pit bulk mining. Many of these deposits occur along the sheared hinge lines of anticlinal
folds, particularly in interbedded greywackes and siltstones of the mount Bonnie and Burrel Creek Formations towards the top of the Early Proterozoic succession.

Most ore grade mineralization occurs within 50m of the controlling fold axis, and orebodies extend for approximately 1,000m along the axis of the fold. Mineralization consists of quartz-sulphide veining with pervasive alteration of the host rocks. Common sulphides are pyrite-arsenopyrite and pyrrhotite, with lesser sphalerite, galena and chalcopyrite. Most rock alteration consists of the assemblage silica-potash-feldspar-chlorite-biotite. Vein types include saddles, spurs and stockwork in the hinge zone, ladder and sheeted veins restricted to the west fold limb, and late-stage vughy quartz veins and breccias that are relatively rich in sphalerite and galena.
4.2 Frazer Project Geology

The project area is situated in the northern part of the Rum Jungle Region of the PCG overlain by Lower Proterozoic metasediments of the Mt. Partridge Group.

Most of the project area is covered by tertiary and Quaternary sediments with the outcropping Proterozoic Acacia Gap Quartzite Member and Whites Formation striking in a north-south direction in the western portion of EL24932. The Acacia Gap Quartzite Member is mainly quartzite, commonly pyritic, with interbedded shales and phyllites. The Whites Formation consists of calcareous and carbonaceous pyritic argillites, dololutite and calcareous para-amphibolite.
Figure 2  Local geology of the Acacia project area (EL27746 green hatched area).
5. WORK DONE DURING THE YEAR

Exploration on EL4932 was limited during the year due to the sale of the Frazer Project by Equator Resources Limited to TUC Resources Limited. Equator Resources had been committed to exploring this project with significant expenditure from airborne geophysics, diamond, RAB and RC in 2010. However due to a change in company strategy Equator decided to sell the Frazer Project (including this tenement), to TUC Resources. TUC are actively and successfully exploring similar targets in the Rum Jungle-Pine Creek region.

The project review and sale process took much of 2011 (year 6 for this tenement) resulting in no on ground exploration being undertaken on the tenement. The sale was completed in February 2012 and the tenement transfer was registered on 4/4/2012.

The project holds a key position in the company’s development strategy and has potential for uranium and rare earth element discovery. It has been demonstrated by previous explorers that the northern domain of the Frazers project is the offset equivalent of the Woodcutters Anticline in the main Rum Jungle area.

EL24932 and EL25027 (both of these have had renewals for 2 years submitted) cover essential parts of the main target for this project including the extension to the Woodcutters anticline and the highly prospective Frazers uranium and base-metal prospect (Figure 1 and Figure 2).

An exploration review of the project was completed in 2011 assessment of the project prior to the sale process demonstrated that EL29432 covers an important section of the offset north extension of the highly prospective Rum Jungle Woodcutters anticline (Figure 2). Recommendation was made to test coincident litho-structural and geochemical targets with RC drilling – depths ranging from 100-300m. With targets as the base of the Coomalie-Whites contact close to the Frazers contact on EL24932 and Acacia South (along the north south fault trend), and. the plunging Coomalie-Whites contact close to the anticline hinge.
CONCLUSION

The tenement was owned by Equator Resources during the year and exploration was restricted due to the sale process. In the coming year exploration is proposed to review the entire project with respect to rare earth element, uranium, gold and base-metal potential with a view to drill testing priority targets in subsequent years.