FINAL REPORT OVER THE LITCHFIELD SOUTH URANIUM PROJECT

8 July 2010 to 31 July 2013

PINE CREEK MINERAL FIELD,
NORTHERN TERRITORY

Litchfield South Project
Exploration Licence: 27851

BY
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DISTRIBUTION
1. Northern Territory Department of Minerals & Energy
2. Eclipse Metals Limited
<table>
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<th>LITCHFIELD SOUTH</th>
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<td>TENEMENTS:</td>
<td>Exploration Licences 27851</td>
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<tr>
<td>MINERAL FIELD:</td>
<td>Pine Creek Orogen</td>
</tr>
<tr>
<td>LOCATION:</td>
<td>PINE CREEK SD5208 1:250 000</td>
</tr>
<tr>
<td></td>
<td>Reynolds River 5071 1:100 000</td>
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<tr>
<td>COMMODITIES:</td>
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1.0 LITCHFIELD SOUTH PROJECT

1.1 Copyright Statement:

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2.0 INTRODUCTION

The Litchfield North tenement (EL27851) covers 307.4 km² of ground within the Palaeoproterozoic rocks of the Pine Creek Orogen. The project is potentially prospective for uranium, gold and base metals. The tenement is situated on the western portion of the Pine Creek Geosyncline.

During April 2013 consulting geologists Kastellco Geological Consultancy (“KGC”) conducted a review of existing historical exploration and geophysical data within the Northern Territory Geological Survey Database. This was conducted for over the Project area to identify any potential for uranium, gold and base metal.

Work during this term included literature searches and database compilation. Open file company reports were obtained from the Northern Territory Geological Survey and a review of past exploration data and geological concepts undertaken.

The targeting was undertaken at a high level to identify areas of interest that stand out in the regional re-interpreted geophysical data. Historical prospects were reviewed to determine the effectiveness of the previous exploration and evaluate remaining potential within the Exploration Licence area.

Several radiometric targets were identified based on the review; it was recommended the exploration licence area was to be relinquished upon very little to no mineral prospectivity as these anomalies were located within granitic lithologies.

3.0 LOCATION AND ACCESS

The Litchfield North project is located approximately 150 km south of Darwin and 50km west of Adelaide River. Access to the project is via long the Stuart Highway then along the Skewes Road which passes through the tenement from the NNW to SSE. The project consists of many tracks cross the EL running from north to south. The project comprises one Exploration Licence (EL 27851) which covers a total area of 307.4 km².

Access to the Exploration Licence is gained via the Darwin to Daly River Mission track. This track connects with the Adelaide River – Daly River Mission road, such that the area may be approached either from the south or from the north via Wangi and Keri Stations. Access becomes difficult during the wet season, particularly from the north, where the flood plain of the Reynolds River often becomes impassible from December to May.

Rainfall is seasonal, associated mostly with the summer monsoon. Temperatures range from the summer average of 35 degrees celsius to a winter average minimum of 12 degrees Celsius.

The tenement is a gently sloping low lying parcel of land with a relative relief of approximately 85m giving a northerly fall towards the Reynolds River to the east of the current tenure area.
4.0 TENEMENTS

The project is comprised of one granted exploration licence (EL) with the tenement details summarised in Table 1 and their locations are shown in Figures 1 and 2. Surrendered 31/07/2013.

Table 1: Litchfield South Project - Tenement Summary

<table>
<thead>
<tr>
<th>Project</th>
<th>Tenement Number</th>
<th>Status</th>
<th>Current Area</th>
<th>Current Holder</th>
<th>Granted Date</th>
<th>Expenditure Covenant ($)</th>
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</thead>
<tbody>
<tr>
<td>Litchfield South</td>
<td>EL27851</td>
<td>Granted</td>
<td>92</td>
<td>307.4 km²</td>
<td>08/07/2010</td>
<td>$45,000</td>
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Figure 1: Litchfield South Project – Topographic Map

5.0 REGIONAL GEOLOGY MINERALISATION

The Exploration Licence area is within the Litchfield Province which is the western most structural block of the Pine Creek Geosyncline – the exposed basement for the northwest part of the Northern Territory.
The Litchfield Province extends from the Giants Reef Fault, which is a north east trending dextral wrench fault having a horizontal displacement of 6 km west to the edge of the Bonaparte Gulf Basin.

The Litchfield Province was defined as the western part of the Pine Creek Geosyncline, with large parts of the Litchfield Province interpreted as ‘granitoid, garnetiferous, gneissic, with metasediments varying in metamorphic grade from greenschist to upper amphibolite / granulite grade (Berkman 1980). The lack of outcrop in much of the area has limited exploration on the western portions. Recent work by the NTGS has reviewed the Litchfield Province, with geochronology tentatively correlating the Litchfield Province with the Halls Creek Orogen to the southwest, but notes that the field evidence indicates a complex tectonic relationship (Carson et al., 2006; Glass, 2007).

This major gold and uranium province is associated with minor base mineral occurrences. The areas are geologically idyllic to host unconformity and vein-style uranium deposits similar to mineralisation found at South Alligator River Valley in the 1950s. The Rum Jungle uranium field lies on the western side of the Pine Creek Inlier where Palaeoproterozoic low-grade greenschist facies metasediments are unconformably draped around two Archaean granitic basement complexes the Rum Jungle Complex to the north and the Waterhouse Complex to the south.

Uranium and base metal mineralisation is hosted by graphitic or chloritic pyritic phyllite of the Whites Formation at its contact with the underlying dolomite-magnesite of the Coomalie Dolomite. The Palaeoproterozoic sequence is locally unconformably overlain by hematite quartzite breccia (a palaeo-regolith) and by late Palaeoproterozoic sandstone and conglomerate. The larger deposits (White’s, Dyson’s and Rum Jungle Creek South) as well as many of the smaller prospects show a spatial association with this unconformity.

The two basement complexes together with the Proterozoic rocks are displaced dextrally by 4 to 5 km along the regional Giant’s Reef Fault, creating a wedge-shaped embayment of sedimentary rocks, juxtaposed against the Rum Jungle Complex in the south-eastern block. A broad mineral zoning trend has been noted. The Rum Jungle Area is well known for the polymetallic nature of its mineralisation and it is usual for uranium to occur in association with other base and precious metals.

Four of the uranium and base metal deposits are in the Embayment, namely: Dyson's (uranium) in the north-east, followed to the south-west by White's (uranium, copper, lead, cobalt, nickel), Intermediate (copper, uranium; immediately south-west of White's) and Brown's (lead, zinc, copper, cobalt, nickel; 1 km south-west of Intermediate) The Mount Burton (uranium, copper) and Mount Fitch (uranium, copper) deposits are peripheral to the Rum Jungle Complex 5 km west and 7 km north-west of White's. Rum Jungle Creek South (uranium) is 5 km south-west of White's.

Ore samples from White’s deposit indicated that uraninite and pyrite mineralisation preceded a period of shearing, which was followed by the introduction of copper, cobalt and lead sulphides.

6.0 LOCAL GEOLOGY & MINERALISATION

The geology of the Exploration Licence is heavily masked by unconsolidated alluvial sand washed into the area of the Reynolds River. Elsewhere on the EL, the cover is soil, often lateritic to a depth of 8 m in places. There are very few outcrops within the tenement with small outcrop of weathered sandy siltstone present.

The licence area encompasses three distinct interpreted units but is poorly outcropping. They include Early Proterozoic stratigraphic units: the Welltree Metamorphics, Wangi Basics and the Two Sister Granite, as well as an undifferentiated Cambrian unit.
The Welltree Metamorphics consists predominantly of quartz-feldspar-biotite gneiss, quartzitic gneiss and minor quartz-feldspar-muscovite gneiss. Garnet and sillimanite are common. It is considered (in part) an equivalent of the Burrell Creek Formation, and in this locality it has been intruded by the Wangi Basics and Two Granite.

The Wangi Basics form small isolated outcrops in the licence area, marked by a distinctive deep red silty soil. Although the outcrop is poor on the licence, the main rock type appears to be a dolerite.

The Two Sister Granite forms subcrop in the eastern portion of the licence. Surface expression of the granite consists of predominantly grey silty quartz rich sand and some cream to grey feldspar and quartz rubble rises associated with pegmatite veins.

The Cambrian unit also outcrops poorly on this licence. It consists of red soil covering weathered dolomitic siltstone.

![Figure 2: Litchfield South Project – Regional Geology Map](image)

**7.0 PREVIOUS EXPLORATION**

From 1975 to 1976, exploration for phosphate was conducted within the central and eastern portions of the current tenure area. Exploration activities such as ground reconnaissance, low level combined aeromagnetic/spectrometer survey was flown with one magnetic/radiometric delineated. The anomalies were located and were sourced over black laterite outcrop in a sandsy soil area. Ground
radiometrics are very erratic with the highs generally corresponding to the laterite outcrops. The highest uranium value was only 3 ppm uranium. Also with the exploration drilling was completed, 4 holes, totaling 233.3 metres to test the Cambrian for phosphate. The holes intersected monotonous red and green, very calcareous shales. The holes were sampled every three metres and the samples analysed for Cu, Pb, Zn and phosphate. All values are low, the highest phosphate result being 0.2 P₂O₅.

From 1984 to 1985, diamond exploration was the primarily commodity with base metals was a part of the programs. Stream sediment sampling programme was undertaken with negative results. Two magnetic anomalies were selected for follow-up as possible kimberlite intrusive. An aeromagnetic survey was flown over the anomalies and ground magnetic follow-up selected one drill target. This was drilled but no kimberlite was found and subsequently the licence area was relinquished in 1985.

Stockdale Prospecting carried out exploration for diamonds on several contiguous EL's (including EL's 6652 which covered much of EL25195). A programme of reconnaissance stream sediment sampling was also carried out, with low to moderate Pb (17-33ppm) and Ba (543-678ppm) associated with the Litchfield Granite at Elliot Creek. Ten rock chip samples from float or outcrop were taken as follow-up. No visible mineralisation was observed. Previous work by BHP noted that the overlying Tindall Limestone contained elevated Pb and Zn values, so this area was downgraded.

8.0 ECLIPSE METALS LTD EXPLORATION

During April 2013 consulting geologists Kastellco Geological Consultancy ("KGC") conducted a review of existing historical exploration data within the Northern Territory Geological Survey Database. This was conducted for all the Project areas to identify any high potential gold, base metal and uranium exploration targets and resulted in the identification of several targets that warrant further work.

Work during this term included literature searches and data base compilation. Open file company reports were obtained from the Northern Territory Geological Survey and a review of past exploration data and geological concepts undertaken.

The targeting was undertaken at a high level to identify areas of interest that stand out in the regional re-interpreted geophysical data. Historical prospects were reviewed to determine the effectiveness of the previous exploration and evaluate remaining potential within the Exploration Licence area.

Through detail interpretation of airborne magnetic from the Northern Territory Geological Survey, the following radiometric anomalies were identified as shown in Table 2 and shows the uranium anomalies. There were no magnetic anomalies identified; only extensive interpreted dolerite dykes running in a SW-NE direction within the Two Sister Granite. There are also very weak magnetic features in the northern and central portion of the tenure – these are classified as features no warranted for any exploration follow-up.

<table>
<thead>
<tr>
<th>Tenure Number</th>
<th>Radiometric Anomalies</th>
<th>Strike Length of Anomaly</th>
<th>Width of Anomaly</th>
<th>Actual Geology Lithology</th>
<th>Interpreted Lithology</th>
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<tbody>
<tr>
<td>EL27853</td>
<td>1</td>
<td>1.60 km Max</td>
<td>0.46 km Max</td>
<td>Quaternary Sediments</td>
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<td>EL27853</td>
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<td>0.50 km Max</td>
<td>Quaternary Sediments</td>
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Table 2: Radiometric Targets warranted for follow up exploration work over EL27851
<table>
<thead>
<tr>
<th>Tenure Number</th>
<th>Radiometric Anomalies</th>
<th>Strike Length of Anomaly</th>
<th>Width of Anomaly</th>
<th>Actual Geology Lithology</th>
<th>Interpreted Lithology</th>
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<td>0.40 km Max</td>
<td>Quaternary Sediments</td>
<td>Two Sisters Granite</td>
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<td>EL27853</td>
<td>4</td>
<td>0.85 km Max</td>
<td>0.55 km Max</td>
<td>Quaternary Sediments</td>
<td>Two Sisters Granite</td>
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<tr>
<td>EL27853</td>
<td>5</td>
<td>0.59 km Max</td>
<td>0.46 km Max</td>
<td>Quaternary Sediments</td>
<td>Two Sisters Granite</td>
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Figure 3: Litchfield South Project Areas showing Radiometric Target Anomalies
9.0 CONCLUSIONS AND RECOMMENDATIONS

EL 27853 represents a green-fields exploration play for principally uranium-gold-base metal deposits of varying genetic styles. Several radiometric targets were identified based on the review; it was recommended the exploration licence area was to be relinquished upon very little to no mineral prospectivity as these anomalies were located within granitic lithologies.

10.0 REFERENCES


Carson, C., Scrimgeour, I., Goldberg, A., Stern, R., and Worden, K., 2006. Western Pine Creek Orogen (Litchfield Province) recent advances and regional correlations. In Northern Territory


Glass, L., 2007. Geochemistry of mafic rocks in the Litchfield Province, western Pine Creek Orogen: Evidence for a Paleoproterozoic arc-related setting and links to the Halls Creek Orogen.
