ANNUAL REPORT
EXPLORATION LICENCE
EL23393
ARUNTA PROJECT
NORTHERN TERRITORY
FOR THE YEAR ENDED
16th February 2006

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Submitted by:
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SUMMARY

This report summarises work carried out on Exploration License 23393, Arunta Project, Northern Territory for the year ended 16th February 2006.

Through compilation efforts, Falconbridge (Australia) Pty Limited identified the north-central Arunta as being favourable to host Proterozoic, intrusive related, magmatic Ni-Cu-PGE sulphide mineralization, analogous to the giant Voiseys Bay nickel-copper deposit in Canada. The area has seen little historic work and has not been the focus of dedicated nickel sulphide exploration in recent years. In December 2003, Discovery Nickel Limited acquired 100% interest in EL23393 and other Falconbridge tenements following the successful listing of Discovery Nickel on the Australian Stock Exchange.

Most significant nickel-copper massive sulphide deposits are extremely good conductors. Discovery Nickel’s exploration approach relies heavily on airborne electromagnetic (AEM) surveying, followed up by ground EM to define targets. Falconbridge commissioned an AEM survey over the Arunta tenements in early 2003 and after analysis of the Falconbridge AEM results, Discovery Nickel Limited commissioned a ground EM (SMARTEM) survey focused on the highest priority target areas. The results did not highlight any strong anomalies/basement conductors that warranted drill testing on EL 23393.

Drilling at prospect B1 on EL 23392, north east of EL 23393 intersected a significant new sulphide system. Additional airborne EM (GEOTEM) was collected during October 2004 over areas on EL 23395 and EL 23391. In 2005 DNL exploration efforts were restricted due to problems securing contractors to collect additional ground EM and drilling. Reassessment of 2004 GEOTEM in light of success at B1 on EL 23392 highlighted additional targets for follow-up. In late 2005 DNL was able to finally collect additional EM along strike from the B1 prospect. But unfortunately failed to cover any of the new targets on EL 23393 before the onset of the wet season.
1 INTRODUCTION

This report summarises work carried out on Exploration License 23393, which is part of Discovery Nickel Limited’s Arunta Project for the year ended 16th February 2006.

The Arunta Project is located approximately 250km N-NW of Alice Springs in the Northern Territory. The North Arunta Province is dominated by a series of sulphidic Proterozoic sedimentary sequences on an Archean/Proterozoic boundary zone that have been intruded by late mafic sills. Quaternary and Tertiary cover of variable thickness, conceal large areas of bedrock in the area and although the region has seen some exploration for a variety of commodities (including gold, copper, iron ore, and diamonds) the evaluation of the nickel potential of the area has been very limited to date.

During regional compilations by Falconbridge the area was recognised to have potential when the Barrow Creek nickel sulphide occurrence 75-100km east of the project area was noted in regional assessment files. Also, rumours of success in the Andrew Young belt to the south prompted further assessment of the NTGS geophysical and geological datasets. These compilations flagged major regional structures coincident with interpreted mafic bodies in the project area that had potential for nickel sulphides and hence tenement applications were made (Fig. 2, 3, 4, 5 and 6).

Work completed in the area to date includes negotiating a land access agreement with the Traditional Owners, compilation of historic and regional datasets, ground EM survey, interpretation of ground EM results, magnetic data interpretation and drilling of two exploration holes.
Figure 1: DNL’s Arunta Project location map showing tenement holding.
Figure 2: Total Magnetic Intensity (TMI) - DNL’s Arunta Project.
Figure 3: 1VD of the reduced to the pole (RTP), Total Magnetic Intensity (TMI) - DNL’s Arunta Project.
Figure 4: Regional Gravity - DNL’s Arunta Project.
Figure 5: 1VD TMI (grayscale) over the 1VD gravity – DNL’s Arunta Project.
2 PROPERTY DESCRIPTION AND TENURE

EL 23393 forms part of Discovery Nickel’s Arunta Project, which includes other granted tenements 23392, 23393, 23271, 23074, 23391, 23629 and 24357. Details for tenement EL23393 are shown in Table 1.

EL 23393 of 181 sub-blocks and area 577.2sq km, was originally granted to Falconbridge on 7 March 2003 for a period of six years. However, 100% ownership was transferred to Discovery Nickel Limited following the successful listing of Discovery Nickel Limited on the Australian Stock Exchange in December 2003 and pursuant to a Heads of Agreement dated 15 October 2003.

Table 1 - Tenement Details.

<table>
<thead>
<tr>
<th>EL</th>
<th>Sub-blocks</th>
<th>Grant Date</th>
<th>Expiry Date</th>
<th>Expenditure Commitment Yr 1</th>
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<tr>
<td>23393</td>
<td>181</td>
<td>17.02.03</td>
<td>16.02.09</td>
<td>$23240</td>
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The tenement is located approximately 235km N-NW of Alice Springs in the Northern Territory and covers portions of the Mt Peake (SF53-05), 1:250,000 map sheet (Figure 1). It lies within the Stirling and/or Anningie Perpetual Pastoral Leases and is subject to Native Title. Access to the area is facilitated by the Central Land Council (CLC) through an Exploration Deed.

3 ACCESSIBILITY AND INFRASTRUCTURE

The project area can be accessed via the all weather Alice Springs - Darwin highway. Additional roads extend up to 100km west of the highway through the project area and are accessible by the use of four wheel drive vehicles. A new railway line to Darwin and a major gas pipeline both parallel the Stuart Highway (Figure 1).
The region is considered remote, however the area is quite arable with numerous bores supporting livestock on the stations. 50km to the south is the Ti-Tree table grape region producing over $15 million dollars worth of grapes annually.

4 GEOLOGICAL SETTING

The project area lies within the north-central portion of the Paleoproterozoic Arunta Province. The stratigraphy of the Arunta province comprises relics of 2500 Ma Archaean basement overlain by >1800 Ma Palaeoproterozoic, turbiditic sequences of greywacke, quartz, sandstone, siltstone and shale along with mafic rocks and their high-grade metamorphic equivalents. The Arunta also has minor calc-silicates and meta-felsic volcanic units. During the Barramundi Orogeny, the sedimentary units were intruded by mafic rocks which have been deformed and in places metamorphosed to amphibolite facies. During the closing stages of the Barramundi Orogeny (~1830 Ma) granite plutons intruded rocks of the Arunta Province.

In the tenement areas, rocks of the Palaeoproterozoic Lower Hatches Group, Reynolds Range Group, undifferentiated granite/granite gneiss and gabbro-dolerite occur (Fig. 6). Neoproterozoic to Palaeozoic rocks of the Georgina Basin cover the Palaeoprotozoic rocks in the south to southeast. Cainozoic sediments also cover parts of the tenements.

Locally, Quaternary and Tertiary cover sequences of variable depth (range from a few metres to in excess of 100m) conceal the basement rocks. As outlined below the area has been subject to a number of drilling campaigns (predominately shallow RAB holes) and of specific interest to this project; mafic/ ultramafic units were encountered within and adjacent to these tenements.
Approximately 100 km to the east of the project area lies the “Barrow Creek” or “Prospect D” occurrence discovered by Kewanee Exploration in the early 1970's.
during a diamond drillhole program (total of 11 holes). The best intersection is 0.9m averaging 4.65% Ni and 1.36% Cu. An inferred resource of 3,163,800 tonnes bearing 0.56% Cu and 0.19% Ni with a cut-off grade of 0.2% Cu was calculated in 1974 (not to JORC specifications).

The zone is described as a small massive nickelliferous sulphide intersection situated on the south-western limit of a thin mafic/ultramafic sill or dyke (1.4km by 20m) which intruded Proterozoic basin sediments (greywackes and pelites). The sill/dyke is a pyroxenite-rich unit that bears sulphide nickel up to 0.6% and significant copper levels of up to 2% in the matrix. The ‘massive sulphide’ intersection was observed in the NT core library in Alice Springs by a former Falconbridge Geologist (Neil Provins) and was described as highly oxidized, indicating that the nickel grades might be enhanced due to supergene weathering effects.

6 EXPLORATION RATIONALE

Falconbridge targeted the Arunta area for Proterozoic, intrusive hosted, magmatic Ni-Cu-PGE sulphide mineralization. During 1997-98, the Arunta Project area was recognised to bear some potential when the Barrow Creek nickel sulphide occurrence was noted in a regional assessment of the area. A review of the available NTGS geological and geophysical datasets identified major regional structures coincident with interpreted mafic bodies (rarely exposed) visible on areomagnetics (Fig. 2). Based on these criteria in conjunction with the favourable re-assessment of the area by the NTGS, it was concluded that the Arunta was favourable for magmatic Ni-Cu-PGE deposits. The location of the Barrow Creek sulphide occurrence on the inferred structural trend to the east and the interpreted thickening of mafic bodies from Barrow Creek in the direction of the Arunta project were other criteria used in area selection.

Also, preliminary reviews of historic exploration work revealed that mafic/ultramafic units were drilled by WMC in the mid 1990’s adjacent these tenements. Anomalous nickel and copper results were noted in several holes with the best intervals being 5m @ 0.63% Ni, 3m @ 0.42% Ni & 0.52% Cu. In addition, regional soil geochemistry programs have identified several high Ni soil anomalies.
7 PREVIOUS EXPLORATION

The region has been partially explored for a variety of commodities including nickel, gold, copper, iron ore, bauxite and diamonds, with some areas experiencing limited or no work. There is no record of a focused Ni exploration program in the tenement areas. The following is a brief summary of historic work reviewed to date.

- In the early 1970’s CRA conducted Uranium exploration in the area. Work including geological mapping, photo interpretation, air and ground magnetics followed by rotary drilling and borehole logging. CRA resumed exploration in 1979 and over a four year period completed airborne magnetics/radiometrics, drainage geochemistry, soil and rock chip geochemistry and limited diamond drilling.

- Between 1991 and 1997 WMC completed work focussed on gold exploration that included data compilation, surface geochemical sampling, XRD analyses, geological/regolith mapping, gravity surveys, airborne magnetics/radiometrics, IP/TEM surveys and ground magnetics. Anomalies were then followed up with an Auger/RC drill program (Lulofs, 1998).

- In 1997 WMC optioned the ground to Aberfoyle who completed further rock chip sampling, soil sampling and vacuum drilling on the properties (Ashby and Schusterbauer, 1998). Aberfoyle withdrew from the JV and WMC surrendered their properties in 1998.

- Between December 2001 and October 2003, Falconbridge (Australia) negotiated an access agreement, compiled historic and regional datasets and flew priority areas with airborne electromagnetic/magnetic (GEOTEM) surveys.
8 EXPLORATION COMPLETED DURING THE PERIOD

In 2005 DNL’s exploration efforts were restricted due to problems securing contractors to collect additional ground EM and drilling. Reassessment of 2005 GEOTEM in light of success at B1 on EL 23392 highlighted additional targets on EL 23393 for follow-up. In late 2005, DNL was able to finally collect additional EM along strike from the B1 prospect. But unfortunately failed to cover the new targets on EL 23393 before the onset of the wet season.

9 WORK PROGRAM 2006

In 2005 DNL used the B1 GEOTEM signature to define new targets in the GEOTEM data over EL 23393. In 2006 DNL plans to cover new bedrock conductors with ground EM. If ground EM confirms the conductive features as bedrock conductors then RC or diamond drill testing of new targets will be undertaken.

The allocated budget for further work on EL 23393, including ground EM follow up of targets identified from the airborne EM data and RC drilling is $23241. Included in this budget are the following items:

- 3 days of ground EM surveying
- Interpretation and processing of the ground EM data
- Clearance of the proposed drill sites by the Traditional Owners
- 100m of RC drilling
- Contract geologist/geophysicist
- Field Support (vehicle hire, field technician, travel)
- Rehabilitation
- Tenement Fees
10 EXPENDITURE

Annual expenditure for EL 23393 is summarised in Table 2.

Table 2 - Expenditure Details.

<table>
<thead>
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<th>EXPENDITURE:</th>
<th>AMOUNT:</th>
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<td>Administration (15%)</td>
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<tr>
<td>TOTAL</td>
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11 REFERENCES


Lulofs, D. 1998, Surrender Report for Exploration Licences 7557, 7558, 7559, 8869 and 8874 Ti Tree Project NT 12/12/91-24/02/98, Western Mining Corporation, Open File CR990028