Exploration Rationale

EL 24746 is considered to be prospective for magmatic Cu-Ni mineralisation related to the mafic-ultramafic intrusions at Mount Hay and Mount Chapple. Basic field mapping and rockchip sampling are required to test the validity of this model. Ground EM may also be used to identify sub-surface conductors related to massive sulphide mineralisation. Drilling of identified conductors should be undertaken where warranted.

Work completed

Unfortunately no field work was completed on EL 24746 during the final year of tenure. For most of the year, Northern Mining was busy with other projects in the Northern Territory and Western Australia. The recent downturn of the mining industry and the difficulty raising significant funds led Northern Mining to scale back its exploration expenditure in the last few months and to surrender EL 24746.
Introduction

EL 24746 “Milton Park” is located approximately 80 km WNW of Alice Springs and 60 km west of the Stuart Highway. Access is excellent as the Tanami Road cuts the tenement. In addition, there are many station tracks and fence lines crossing the tenement. The area is prospective for uranium, copper and nickel.

In August 2008, EL 24746 was transferred to NuPower Resources Limited in a joint venture agreement with Northern Mining Limited. NuPower Resources completed numerous exploration programmes in the following 2 years, before deciding to withdraw from the joint venture on 25 November 2010. Since NuPower’s withdrawal there has been very limited field work within EL 24746.

Tenure

EL 24746 was granted to Imperial Granite & Minerals Pty Ltd (100%) on 13 April 2006, and was immediately transferred to Northern Mining Limited as part of an existing agreement. The original tenement comprised 498 sub-blocks overlying NT Portions 703, 4443 and 4423, which are part of the Aileron, Amburla and Hamilton Downs perpetual pastoral leases, respectively. The Rubunja Community had been excised from the lease.

NuPower entered into a Joint Venture agreement with Northern Mining Limited in August 2008 to explore the tenement for uranium, thorium and coal. On 25 November 2010, NuPower withdrew from the joint venture and tenement reverted to Northern Mining.

A partial waiver reducing the tenement to 300 blocks was approved in 2009 and a total waiver was approved in 2010. At the end of the 5th year of tenure (2011) 154 sub-blocks were dropped leaving 146 sub-blocks. At the end of the 6th year of tenure half of the tenement was dropped leaving 73 sub-blocks. These remaining sub-blocks are within the Amburla perpetual pastoral lease.

<table>
<thead>
<tr>
<th>Tenement</th>
<th>Ten no.</th>
<th>Blocks Granted</th>
<th>Blocks Relinqu.</th>
<th>Blocks Retain</th>
<th>Grant Date</th>
<th>Expiry Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milton Park</td>
<td>24746</td>
<td>498</td>
<td>425</td>
<td>73</td>
<td>13 Apr 2006</td>
<td>12 Apr 2014</td>
</tr>
</tbody>
</table>

Table 1: Tenement details

Geology/Prospectivity

EL 24746 contains two distinct geological domains and is prospective for two main styles of mineralisation:

- Burt Basin – shallow Cenozoic basin overlying Arunta basement prospective for shallow secondary uranium (New Well),
Arunta region – basement to the above basins and known to contain many styles of mineralisation. Of greatest interest within EL 24746 is the potential for magmatic copper-nickel sulphide accumulations related to mafic-ultramafic intrusions, such as Mount Hay.

4.1 Shallow Secondary Uranium Deposits
Many of the exposed parts of the Arunta region contain elevated levels of uranium and thorium, and while it has long been realised that these units may host primary uranium deposits, it was also recognised that they may provide a source of uranium for secondary mineralisation. Such secondary uranium mineralisation may form where weathered and eroded material from the exposed Arunta basement accumulates as thick sequences of unconsolidated material in the lowlands between the exposed ranges. Such a scenario happened throughout much of the Cenozoic to form numerous Tertiary basins in Central Australia. Where such sequences have filled with uraniferous sediment it is possible that interaction with groundwater may form uranium accumulations at certain chemical interfaces. For example, the New Well U deposit in the Burt Basin near Tilmouth Well is interpreted to have formed by such processes. EL 24746 covers part of the Burt Basin and is prospective for such analogues.

4.2 Magmatic Nickel-Copper Sulphide Deposits
The southern part of EL 24746 is dominated by the 1770 Ma Mount Chapple and 1803 Ma Mount Hay mafic-ultramafic bodies. Recent studies by Geoscience Australia have greatly improved the mapping, geochemistry, geochronology and mineral potential modelling of these bodies and highlighted their prospectivity for Voisey Bay-style basal segregation Ni-Cu-Co-PGE deposits (also Sally Malay, Radio Hill analogues). Furthermore, the work has shown that Mount Chapple and Mount Hay are layered intrusions with early saturation, crustal contamination and magma mingling, thus highlighting their prospectivity for Merensky Reef-style stratabound PGE-chromitite or PGE-Cu-Ni deposits (Munni Munni analogue). There has been some exploration around these bodies, including ground EM surveys and shallow drilling, but this predated the acquisition of regional aeromagnetics. Importantly, the aeromagnetic data highlight the buried extent of these bodies into EL24746, which is crucial when exploring for basal contact mineralisation. Therefore, the basal contact remains untested. Moreover, the discovery of Voisey Bay also postdates exploration in the south of EL 24746 and thus significantly increases the known size of basal segregation deposits.

Previous Exploration

The area covered by and surrounding EL 24746 has had a broad range of mineral exploration over the last 40 years. A review of the open file data was presented in the 2011 Annual Report.

Northern Mining / NuPower Resources Work

Year 1 & 2
In the first two years of tenure, work on EL 24746 was limited to desk-top reviews and reconnaissance field trips. These field trips included discussions with local Aboriginal groups and pastoralists. Access around the area was also assessed. No sampling was undertaken. The Aboriginal Areas Protection Authority sacred site register was assessed for the area and few sacred sites were recorded or registered within EL 24746.
Year 3 & 4

In the third year of tenure the joint venture agreement with NuPower Resources was implemented and significant work was undertaken focussed exclusively on potential uranium accumulations with the Tertiary Burt Basin. Exploration included:

- 1068.9 line kilometres of airborne EM surveys (as part of a larger survey in the Aileron Province),
- analysis of 15 water samples from thirteen water bores,
- fifteen vegetation samples from various plant species as part of a regional biogeochemical orientation sampling program, and
- contribution to the NTGS helicopter-borne regional gravity survey to infill the 2 km-spaced survey.

Year 5

In the fifth year of tenure, NuPower Resources decided to terminate the joint venture on 25 November 2010. NuPower completed no work during this year other than a major review of all their tenure and joint ventures.

Years 6 – 7

In the sixth and seventh years of tenure, work was limited to office-based studies and there was no field work. A covenant of $120,000 was proposed for the seventh year. Only $4,564 was spent.

Year 8

No field work was completed on EL 24746. For most of the year, Northern Mining was busy with other projects in the Northern Territory and Western Australia.

Expenditure

Expenditure claimed on the Department of Mines and Energy mineral exploration and mining expenditure reporting to 12 April 2013, totalled $4,564. There was no exploration expenditure for the period 12 April 2013 to 03 July 2013.

Conclusion

The recent downturn of the mining industry and the difficulty raising significant funds led Northern Mining to scale back its exploration expenditure in the last few months and to surrender EL 24746.

This document and its content are subject to the copyright of NORTHERN MINING LIMITED. The document has been written for submission to the Northern Territory Department of Mines and Energy in accordance with the Mineral Titles Act (NT). Northern Mining authorises the department to copy and distribute the report and associated data.
Figure 1: Location of EL24746

1:560000
Figure 2: Geology and main target areas on EL 24746

Ngalia Basin

reversely magnetised body

Mount Hay

palaeodrainage

palaeodrainage

1:430000

132.8 ° 133.0 ° 133.2 ° 133.4 °
Figure 3 - Location of Bore Water Samples
Figure 4 - Location of Vegetation Samples
Figure 6- Central Arunta Gravity Survey (CAGS) Stations
Figure 7 - Gravity Image