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**NORTHERN MINING LIMITED**  
**Annual Report on EL24746**  
**Milton Park**  
**For the Period of 13/4/2007 to 12/4/2008**

**By**

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## 1 INTRODUCTION

EL 24746 'Milton Park' is centred about 100 km northwest of Alice Springs. The tenement stretches about 100 km from north to south, with the Tanami Road crossing the southern portion about 90 km from Alice Springs (Figure 1). The Darwin to Amadeus Basin gas pipeline crosses the northern portion of the tenement. This report covers all work completed on EL 24746 during the second year of tenure.

EL 24746 is part of Northern Mining's Central Australian project. The tenement stretches across four discrete geological entities and is considered prospective for various commodities within various geological settings, including ultramafic-mafic-hosted Ni-Cu-Co-PGE, apatite-vein-hosted REE-P-U, sandstone-hosted U-V and surficial calcrete-hosted U. In the second year of tenure, work on EL 24746 has continued in the form of further data compilation from open file reports, in addition EM and Gravity surveys are either currently under way or scheduled for a start in May 2008. Much planned field work has been delayed due to lack of staff for the project.

## 2 TENURE

EL 24746 was granted to Imperial Granite and Minerals Pty Ltd (100 %) on 13 April 2006. Formal transfer of the tenement to Northern Mining Limited was completed during the first year of tenure. Northern Mining Limited floated on the Australian Stock Exchange in September 2006.

The tenement comprises 298 blocks within NT Portions 4443, 4286, 4423 and 703, which are part of the Amburla, Hamilton Downs and Aileron perpetual pastoral leases.

Tenement	Ten no.	Blocks Granted	Blocks Relinq.	Blocks Retain	Grant Date	Expiry Date
Milton Park	24747	298	nil	298	13 Apr 2007	12 Apr 2008

**Table 1:** Tenement details

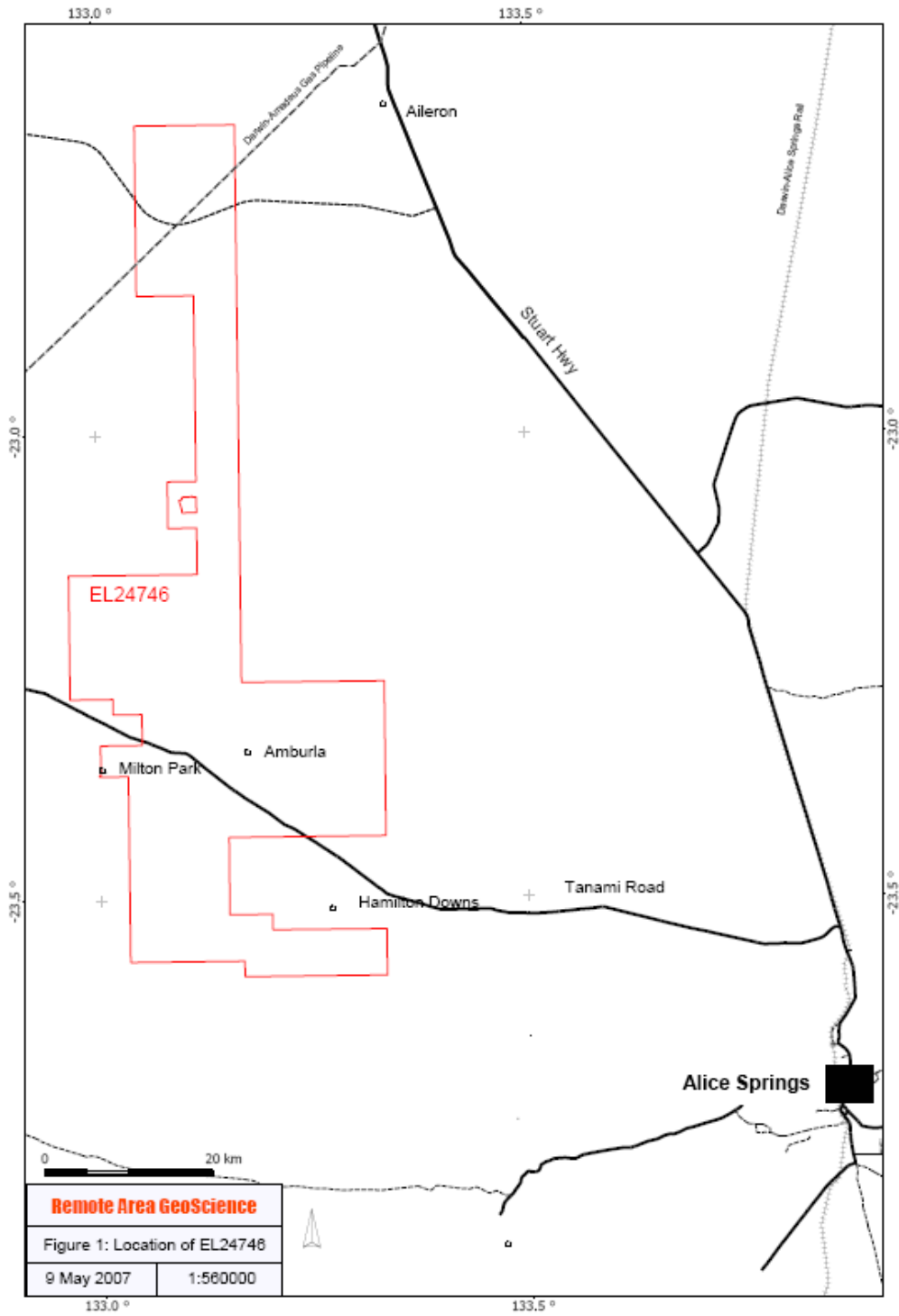


Figure 1 EL24746 location map

### 3 PREVIOUS EXPLORATION

The current tenement has a significant exploration history dating back to 1971 when anomalous values of nickel were obtained in the Mount Chappel pyroxene granulite. At the time these were not considered significant, although as the pyroxene granulite probably represents a basic igneous rock, a slightly higher base metal content could be expected. No further work was to be carried out on the basic rocks. The area is still considered prospective for uranium.

Examination of Precambrian Arunta basement in 1972 gave no indication of the existence of economic concentrations of copper, nickel, or other base metals. However, the Precambrian upland was recognised as a suitable source rock for the development of uranium deposits in younger sediments to the north. The area of Burt Plain was also examined in 1972 for its uranium potential. Seismic traverses were conducted to indicate depth to basement. These indicated the possible presence of Mesozoic sediments with a propagation velocity of 3600 m/sec beneath the Tertiary at 1500 m/sec. Precambrian rock was assumed to be 6000 m/sec. Radiometric traverses were conducted and water bores gamma logged. Apart from weak uranium anomalies associated with travertine, no indications were found.

In 1973, following a regional appraisal of areas prospective for peneconcordant sedimentary uranium deposits, an exploration licence covering 243 square miles (622 square km) located north-west of Alice Springs, Northern Territory, was applied for by Horizon Explorations Limited. Subsequent exploration was carried out by Horizon staff in terms of a Joint Venture Agreement with JOC Mineral Resources of Australia Pty Ltd but at the sole cost of JOC. Preliminary sampling of groundwater from bores in and around the Exploration Licence indicated that uranium in concentrations adequate to form deposits of the type sought is present. This was believed to have been derived from a bulk source in rocks of the Arunta Complex to the south-east. The Tertiary lithologies within the Exploration Licence were believed to present a suitable geological environment for economic uranium precipitation. Accordingly a programme of scout drilling was implemented. A total of 2,154 ft. (657m) was drilled in ten holes. All drill-cuttings were geologically logged, and selected samples analysed for Mo, Cu, V, U. Water, if encountered in drilling, was also sampled and analysed for Cu, V, U and Carbonate/Bicarbonate. Gamma-ray spectrograph logs of each hole were obtained and in addition, spectrograph readings were taken from the drill-cuttings. The subsurface lithology consists of gravelly soils with sparse, narrow bands of sand and clay. The soils themselves may be either sandy or clayey. In places, a pure clay stratum overlies the basement. The surface has a ubiquitous cover of recent soil over calcrete. Gamma-radiation in the drill holes was low, the maximum spectrograph count being 240 c.p.s. This, together with the unsuitable lithologies, indicates that the area has no potential for peneconcordant sedimentary uranium deposits. Accordingly, it was recommended that no further work be undertaken.

There was a gap in exploration through to 1994. Reconnaissance work by CRA Exploration had located the Napperby Creek Uranium Prospect. Follow up work included semi detailed geological mapping, magnetics and radiometrics, rock chip sampling and petrology. Helicopter supported reconnaissance located a new uranium occurrence in metasomatised quartz-tourmaline rocks of the Wickstead Creek Beds near Mount Freeling. In addition secondary uranium mineralization was located the Napperby Gneiss adjacent to a major

WNW shear some 5km from the Napperby Creek Prospect. Preliminary results from the airborne survey have highlighted numerous other radiometric anomalies warranting follow up. The 1995 field season was more productive with 30 occurrences of secondary uranium identified within EL8411, 22 of which occur within the Napperby Gneiss. Also outlined near Nolan's Bore was an area of apatite veining with elevated rare earth values.

In 1997 detailed airborne magnetics outlined intense magnetic features at the sixteen mile east tenement. Eighteen line km of detailed magnetics were compiled. A single diamond hole (191.6m) tested the feature. This hole intersected magnetite rich gneiss and zone of megacrystic K feldspar. The features were subsequently attributed to the high magnetite content of the rock.

Further ground magnetics was completed. Seven RAB holes (725m) were subsequently sited. Only 3 holes reached basement. This basement consisted of gabbro and garnetiferous gneiss.

Airborne EM (GEOTEM) totalling 3,900km was flown. Several conductive features were identified. Two features, one near Cobs Dam and another near little Amburla Dam were followed up by ground EM (sirotem). Three RC holes (305m) tested the feature. The holes intersected garnetiferous gneiss and granulite. The anomalies were sourced in the tertiary cover. Structural features reported include: Mount Hay Massif, Ceilidh Massif and Mount Chappel Massif.

In 2003 a combined final report for EL 22615 "Mount Hay" and EL 22616 "Mount Chapple", was completed. This combined final report summarised work carried out by BHP Billiton Minerals Pty Ltd (BHPB) and Mithril Resources Ltd (Mithril) on exploration licences 22615 and 22616, Mount Chapple Project, Northern Territory. In 2002, BHPB and Mithril formed an alliance to undertake Ni exploration in Australia. A joint venture was entered into over the Mount Chapple Project when Mithril successfully listed on the Australian Stock Exchange in November 2002. Mithril subsequently reviewed the project and withdrew from the Joint Venture. BHPB also reviewed the project and decided to surrender both tenements in December 2003. Exploration work was aimed at discovering polymetallic Ni-Cu magmatic sulphide mineralisation of Voiseys Bay, Noril'sk affinities, associated with Proterozoic stratigraphy under thin Cainozoic cover.

Work completed consisted of a review of the previous exploration data. Access negotiations with the Central Land Council were in progress at the time of surrender, and no groundwork was completed.

In 2004 a Partial Relinquishment Report EL 22922, was completed. The Burt Plain Project (EL 22922) "Burt" was held by Tanami Gold to explore in the Strangways Metamorphic Complex. A partial relinquishment of 185 blocks of a total 500 blocks was made on 22 December 2003. Only a regional assessment was undertaken of the EL and no work was undertaken in the relinquished portion.

## 4 LAND SURFACE USE AND OWNERSHIP

The land surface underlying the tenement is locally known as the Amburla, Hamilton Downs and Aileron perpetual pastoral leases

## 5 REGIONAL GEOLOGICAL SETTING

Extending north-south for 100 km, EL 24746 covers at least 5 major geological entities which may be prospective for Nolans Bore REE-P-U apatite vein deposits (north of Ngalia Basin), Bigrlyi U-V deposits (within Ngalia Basin), surficial U deposits (south of Ngalia Basin), intrusive-related base metal deposits (reversely magnetised mafic-ultramafic bodies) and basal segregation Ni-Cu-Co-PGE mineralisation (Mt Chapple, Mt Hay; Figure 2). Of these, the most likely to occur within EL 24746 are surficial U and basal segregation Ni-Cu-Co-PGE mineralisation, although the other styles cannot be completely discounted.

## 6 LOCAL GEOLOGY

### *Nolans Bore REE-P-U*

About 10 km northeast of EL 24746 is the Nolans Bore REE-P-U deposit, which comprises a combined indicated-inferred resource of 18.6 Mt at 3.1 % REO, 14 % P<sub>2</sub>O<sub>5</sub> and 0.47 lb/t U<sub>3</sub>O<sub>8</sub> (Arafura Resources ASX announcement Nov 2005). Mineralisation is hosted in massive fluoroapatite veins and related stockworks in granitic gneiss country rock. Nearby U mineralisation was found in 1995, but the REE-P-U veins were only discovered in 1999. The greater area has a very high U response in the airborne radiometrics, mainly associated with large granitic bodies, such as the Napperby Gneiss. The northern part of EL 24746 covers a very small part of this geological zone. Although there is very little outcrop mapped within the tenement area, a number of large quartz veins are shown on the BMR 1:250,000-scale geological map. Since the discovery has been so recent, the area has experienced no previous exploration for this style of mineralisation.

### *Sandstone-hosted roll-front deposits*

In the Ngalia Basin significant U-V accumulations have been found within sandstone units to the west of EL 24746. The most significant of these deposits is Bigrlyi (200 km WNW of EL 24746) where a combined indicated-inferred resource of 6500 t U<sub>3</sub>O<sub>8</sub> and 7410 t of V<sub>2</sub>O<sub>5</sub> (0.05 % U cut off; Energy Metals ASX announcement March 2007) has been delineated. The mineralisation at Bigrlyi is exposed and the line of prospects is apparent from airborne radiometrics. The prospects are hosted in the Carboniferous Mount Eclipse Sandstone, at lithological contacts with significant carbonaceous material (plant matter), though mineralisation is related to post-depositional fluids along faults. The host rocks are believed to be important for precipitating the U-V mineralisation. There is only a 2 to 5 km sliver of the Ngalia Basin on EL 24746, including outcrops of the basal Vaughan Springs Quartzite. Small U anomalies are apparent from the regional radiometrics that do not correlate with the mapped outcrops.

*Surficial U deposits*

The New Well Uranium deposit (Deep Yellow Limited; historical inferred resource 6200 t U<sub>3</sub>O<sub>8</sub>) is 50 km west of EL 24746 and is hosted in green calcareous sand beneath surficial calcrete within the Day Creek palaeodrainage system. The Napperby Gneiss outcrops at the headwaters of Day Creek and is the probable source of uranium. Two other drainage systems capture material from the Napperby Gneiss (Napperby and Gidyea Creeks), but these are further west from EL 24746. However, possible sand-covered palaeodrainage systems capturing U-rich material from north of the Ngalia Basin and crossing the Ngalia Basin through Native Gap crosses EL 24746 from the northeast. Although these features are concealed by sand, previous experience suggests there will be an associated vegetation anomaly. These features have never been explored.

In the southern part of EL 24746, there are north-flowing active palaeodrainage systems. Since there is also a band of exposed high-U rocks at their headwaters, they too are considered prospective of surficial U. It is not known whether there has been much exploration along these systems, but they are quite extensive and invite some first-pass exploration.

*Reversely polarized magnetic body*

Within EL 24746, a 2 x 1 km sub circular magnetic low is obvious in the regional magnetics. Such bodies are known further to the southwest where, although poorly exposed, they are described as massive, coarse-grained ultramafic intrusions with phlogopite and magnetite. These bodies have never been explored, but may be prospective for Ni, Co, Cu and Pt.

*Layered intrusions*

The southern part of EL 24746 is dominated by the 1,770 Ma Mount Chapple and 1,803 Ma Mount Hay mafic-ultramafic bodies. Recent studies by Geoscience Australia have greatly improved the mapping, geochemistry, geochronology and mineral potential modeling 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 S 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, 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.



## 7 WORK DONE IN THE PERIOD 13/4/2007 TO 12/4/2008

### 7.1 Year 2 work and proposed year 3 activities;

- Continued data compilation from open file reports, is ongoing.
- AEM, 1014.3 sqkm at 1km line spacings orientated EW, NS, followed by interpretation by a geophysicist. This is estimated to begin in late June, however (Contract signed) the start has been delayed by the contractor.
- NTGS gravity survey infill, 481 sqkm. This is estimated to begin in May, and remains on schedule.
- Fifteen water bores have been sampled to date, assays for eight are available. Additionally a further eight water bores were to be sampled, during March-April however this is not completed due to lack of a geologist.
- Vegetation sampling subject to results of NuPower orientation study. Results are due in the third or fourth quarter of 2008. This represents the potential for several tens of line kilometers. This remains on schedule but orientation results have been delayed by laboratory congestion.
- Reconnaissance geological mapping, sampling of NTGS airborne U, Th, and radiometric anomalies. This has been delayed and is subject to the availability of a geologist.

<b>Northern Mining Expenditure 13.04.07 to 12.04.08</b>				
		<b>E24746</b>		
<b>MINERAL-EXPLORATION ACTIVITIES:</b>				
2.100.103	Geologist	-		
2.100.105	Geological sampling	1,500.00		
2.100.125	Geo data proc & interp	5,772.12		
2.100.135	Planning exploration programs	857.59		
2.100.140	Report preparation	2,006.90		
2.100.145	General Prospecting	53.20		
2.150.115	Fuel	95.25		
2.160.100	Exploration Travel	121.39		
2.165.100	Exploration Base Camp Maint	-		
2.165.105	Food and accommodation	209.82		
2.105.125	Geochem data proc	10,500		
2.115.115	Electromagnetics	15,000		
2.165.110	Vehicle costs	180.00		
		<b>36,296.27</b>		
<b>ANNUAL TENEMENT RENT AND RATES:</b>				
2.195.100	Annual Tenement Rates & Tax	-		
2.195.105	Rent	10,956.00		
		<b>10,956.00</b>		
<b>ANNUAL TENEMENT RENT AND RATES:</b>				
		-		

<b>ADMINISTRATION/OVERHEADS (@ 20%):</b>		<b>3,790.45</b>	
<b>TOTAL EXPENDITURE:</b>		<b>51,042.72</b>	

Table 21: Expenditure on EL 24746 for second year of tenure.

## 7.2 Proposed year 3 expenditure

Item	Expenditure
Surface sample assays (vegetation, lag, soil, rockchip)	
Water bore sampling	\$10,000
Geophysical surveys (magnetics, gravity, EM)	\$157,000
Field costs (includes vehicles)	
Wages, consultants	\$10,000
Administration	
<b>Total</b>	<b>\$177,000</b>

Table 3: Year 3 proposed expenditure

## 8 REFERENCES

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