PARTIAL RELINQUISHMENT REPORT ON EXPLORATION ACTIVITIES OVER EL26367

# PARTIAL RELINQUISHMENT REPORT ON MT IDA U-Ta-B PROJECT

# ARUNTA BLOCK, NORTHERN TERRITORY

Mt Ida Projects

**Exploration Licence: 26367** 

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# UNITED URANIUM LTD ANNUAL REPORT ON EXPLORATION ACTIVITIES OVER EL26367

PROJECT NAME: Mt Ida **TENEMENTS: Exploration Licences 26367** Pine Creek Mineral Field MINERAL FIELD: LOCATION: ALCOOTA SF5310 1:250 000 1:100 000 Utopia 5853 COMMODITIES: Uranium, Tantalum and Bismuth 3.0 TENEMENTS......3 4.0 TOPOGRAPHY, VEGETATION AND CLIMATE ......4 5.0 REGIONAL GEOLOGY & MINERALISATION ......5 6.0 REGIONAL MINERALISATION......5 8.0 PREVIOUS EXPLORATION......7 9.0 EXPLORATION 2008 TO 2009 – BLUEKEBBLE PTY LTD.......8 12.0 REFERENCES......8 LIST OF FIGURES Figure 1: Mt Ida Project Partial Relinquishment Location Map – Red Hatch Areas Retained .....4

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#### 1.0 EXPLORATION LICENCES OVER MT IDA PROJECT

The Mt Ida Project consists of one granted Exploration Licence (EL26367) covering 66.66 square kilometres approximately 270 kilometers north east of Alice Springs in the Northern Territory (Figure 1). The tenement area is situated along the Sandover Highway in the poly-metallic Arunta Mineral Field.

This report describes the results of literature research and target generation based on reinterpretation of magnetic data and exploration target generation carried out during the first and year within the Licence.

In 1977 Otter Exploration NL was granted four licences including the historical EL1453 which covered the central part of the current EL26367 area. During 1977/78 Otter undertook an airborne radiometric survey which detected a number of anomalies. In the ground follow up of anomaly C38 Otter geologists sampled micro gneiss with traces of uraniferous leucoxene adjacent to pegmatite which analysed up to 215 ppm U. A grab sample of calc-silicate with scheelite from close to pegmatite analysed 2.65% tungsten.

A total of 50% of the tenement was to be relinquished based upon more favorable radiometric targets in the eastern portion of the Exploration Licence area.

#### 2.0 LOCATION AND ACCESS

Exploration Licence Application 26367 is situated approximately 270 kilometers north east of Alice Springs on the ALCOOTA 1:250,000 geology sheet along the Sandover Highway. Access to the station is provided by graded road suitable for most traffic in the dry season while bush tracks on the alluvial plains give reasonable access within the Exploration Licence. Bouldery and rugged terrain typical of large outcrops of granite limit access to four wheel drive or foot traffic for most of the area. Little natural surface water is available for much of the year, and stock is watered from several large dams and bores.

#### 3.0 TENEMENT

The project area is covered by one Exploration Licence 26367 which cover a total area of 66.66 square kilometers; applied on the 10th August 2007 by Bluekebble Pty Ltd. The whole Exploration Licence area falls within the Perpetual Pastoral Lease 01116 and 01126. The two applications were lodged with the Northern Territory Titles Department on the 10th August 2007. The tenement details summarised in Table 1 and their locations are shown in Figure 1.

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Tenement Number	Current Area Blocks (sq km)		Current Grant Date Date		Expiry Date	Exploration Expenditure
EL26367	11	31.95 km²	13/03/2008	17/04/2012	13/03/2008	\$8,500.00

**Table 1: Summary Table of EL26367** 

SF532121C	SF532121D	SF532121E	SF532122A	SF532122B	SF532122C
SF532121H	SF532121J	SF532121K	SF532122F	SF532122G	SF532122H
SF532121N	SF532121O	SF532121P	SF532122L	SF532122M	SF532122N
SF532121S	SF532121T	SF532121U	SF532122Q	SF532122R	SF532122S

Figure 1: Mt Ida Project Partial Relinquishment Location Map – Red Hatch Areas Retained

## 4.0 TOPOGRAPHY, VEGETATION AND CLIMATE

Relief is generally low to moderate in areas of Delmore metamorphic and Quarternary deposits but steeply dipping outcrops of Ledan schist provide higher relief in the north and western portions of the lease.

Drainage outside the lease area is predominantly to the Bundey River in the east. However, a superimposed drainage pattern is evident with a flow to the north, and this can be explained by uplift in the region of the MacDonnell Ranges with subsidence to the north of the Alcoota 1:250,000 sheet when the present day outcrops were buried by younger sediments.

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#### **5.0 REGIONAL GEOLOGY & MINERALISATION**

The greater part of the tenement is formed by the supracrustal package in the eastern Arunta region, the Ongeva package. This comprises the lower part of the Strangways Metamorphic Complex (Lower and Middle SMC only, but excludes the Cadney Metamorphics) and Bonya Schist, Deep Bore Metamorphics, Cacklebery Metamorphics, Kanandra Granulite and Mount Bleechmore Granulite further to the east. Geochronological data from the Strangways Metamorphic Complex, Bonya Schist and Deep Bore Metamorphics indicate ages between 1810 and 1800 Ma for this package. Lithologically, the Ongeva package consists of metapelitic and metapsammitic rocks with subordinate calcsilicate, marble, and felsic and mafic orthogneiss (Huston et al, 2006).

The Cadney package (Upper SMC), which includes marbles and calc-silicates of the Cadney Metamorphics, has been interpreted to have an age of 1780-1760 Ma. However, the age of this unit is poorly known, with its age constrained between ~1800 and ~1730 Ma by the underlying Strangways Metamorphic Complex and the overprinting ~1730 Ma Strangways metamorphic event. It is possible that the Cadney package may have been deposited shortly after the Ongeva package, with a depositional age of ~1800 Ma.

The  $\sim$ 1770-1730 Ma Ledan package includes pelitic and psammitic metasediments that uncomformably overlie the Strangways Metamorphic Complex (Scrimgeour, 2003; Maidment et al., 2005). This package is interpreted to contain the Oonagalabi assemblage, which hosts the Oonagalabi deposit. Recent geochronological studies identified a single zircon population age of 1765  $\pm$  4 Ma (Hussey et al., 2005), which was interpreted as a significant volcaniclastic component, implying that this age closely approximates the depositional age of the Oonagalagi assemblage.

The Harts Range Group comprises a complex assemblage of granite gneiss, marble, calc-silicate, amphibolite, psammites and pelites that have been metamorphosed to upper amphibolites - to granulite facies. Detrital zircon data from these rocks indicate that they are the high-grade metamorphic equivalents of sedimentary rocks in the adjacent Amadeus and Georgina basins (Maidment, 2005). Comparison of detrital zircon data from the high-grade metamorphic and unmetamorphosed successions indicates that the Harts Range Group was deposited between ~850 Ma and ~500 Ma.

#### **6.0 REGIONAL MINERALISATION**

Mineral deposits in the Arunta region vary in commodity, style and age. Although base-metal and gold deposits in the Arunta are relatively widespread and geologically interesting, these deposits have been generally deemed as being economically insignificant although several abandoned mines are shown on mapping to exist to the north of the tenement area.

The economically most important deposits are industrial minerals: vermiculite associated with the weathered rocks in the Mud Tank carbonatite complex, and garnet-amphibole-rich sands concentrated by aeolian and alluvial processes to the north of the Harts Ranges.

The oldest deposits in the eastern Arunta are base-metal and gold deposits hosted by the Strangways Metamorphic Complex, Bonya Schist and Cadney Metamorphics.

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Historically, these deposits have been classed as 'Oonagalabi-type' and were Volcanic-Hosted Massive Sulphide (VHMS) in origin. However, more recent work (Hussey et al, 2005; Huston et al, 2006) has identified systematic differences and has divided the know deposits into three subtypes:

- (1) the Utnalanama-type, which we interpret as VHMS deposits,
- (2) the Johnnies-type, which we interpret as IOCG deposits, and
- (3) the re-defined Oonagalabi-type, which we interpret as either carbonate-replacement or VHMS deposits.

Table 2 – Characteristics of Palaeoproterozoic Zn-Cu-Pb-Ag-Au deposits in the eastern Arunta

Туре	Metal assemblage	Other elements	Host	Alteration assemblages	Interpreted age (Ma)
tualanama Zr Cu Co	Mineralised marble:	Mineralised marble: Bi-Cd	Marble and calc- silicate after carbonate rocks.	Quartz-cordierite± orthopyroxene rock > massive amphibole± spinel±clinopyroxene rock.	1810-1800
	Zn-Pb- Cu(Ag-Au)	Calc-cilicata			(age of host); calc-silicate
	Calc-silicate: Pb-Zn	Sn, HFSE, REE		Both are concentrated in the footwall to mineralised marble lens.	may be younger
ie's	Lode rock: Lode Cu- Pb(Zn- Mn-C Ag-Au) HFS		Lode rock: magnetite diopside-amphibole± quartz rock (after marble).	Quartz-biotite-garnet gneiss in structural footwall to lode rock.	1795-1770 (Pb isotope model age)
Johnnie's	Footwall Garnetiferous zone: Au(Cu)	Footwall garnetiferous zone: Bi±Mo	Footwall garnetiferous zone: Quartz- biotitegarnet±magneit e gneiss.		
Oonag alabi	Zn-Cu-Pb (Ag- Au)	Bi	Marble → calc- silicate → massive anthophyllite schist.	Quartz-garnet rock symmetrically developed about host marble lens.	1765 (?) (age of host)

### 7.0 MT IDA LOCAL GEOLOGY

The Delmore Metamorphics and Ledan schist of Middle Proterozoic age have been intruded by numerous veins of pegmatite and quartz. The origin of these is presumed to be the Upper Proterozoic Ida Granites which outcrop in the south and north part of the Exploration Licence

While the older calc-silicate gnesiss and epidote quartzites of the Delmore Metamorphic formation adopt a simple attitude striking northwest with indeterminate dip, the Ledan schists which unconformably overly them exhibit a moderate relief with a complex isoclinally folded structure and steep dip angles.

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These have been intruded, conformably in the most part by numerous sweat veins of pegmatite which consisting generally of massive quartz.

Several small mines have been worked at different times for mica and tantalite, but production has been insignificant. The mica workings are in the north-east end of the field in a area of moderate relief. The remaining workings are in flat country with extensive areas of soil cover and scattered outcrops..

The southern east part is also underlain by Tertiary Waite Formation which are mainly made up of Chelcedonic limestone, sandstone, mudstone; minor sandy conglomerate. In the north-western portion part is also underlain by Proterozoic Utopia Quartzite which are mainly made up of quartzite, granule conglomerate

Over 75% of the Exploration Licence is covered by Quaternary sediments which are mainly composed of alluvium, eluvium, colluvium, soil and scree.

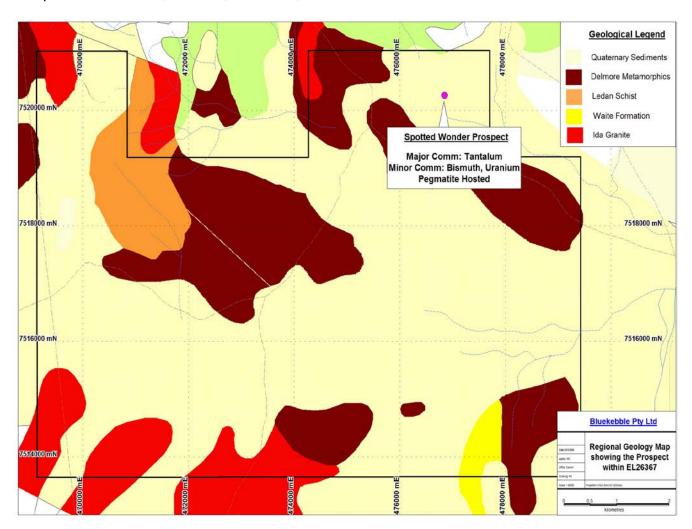


Figure 2: Mt Ida Project Regional Geology Map

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#### 8.0 PREVIOUS EXPLORATION

In 1977 Otter Exploration NL was granted four licences including the historical EL1453 which covered the central part of the current EL26367 area. During 1977/78 Otter undertook an airborne radiometric survey which detected a number of anomalies. In the ground follow up of anomaly C38 Otter geologists sampled micro gneiss with traces of uraniferous leucoxene adjacent to pegmatite which analysed up to 215 ppm U. A grab sample of calc-silicate with scheelite from close to pegmatite analysed 2.65% tungsten. Another pegmatite 3.5 km north of anomaly C38 traces of scheelite was observed with a maximum value of 0.1%.

In the north-eastern boundary of the current EL26367 a weathered coarse quartz feldspar pegmatite occurs within a biotite-hornfels schist which assayed 55 ppm U and 24 ppm Th, with manganese nodules found on the surface assaying 250 ppm U and 26 ppm Th.

#### 9.0 EXPLORATION 2008 TO 2009 – BLUEKEBBLE PTY LTD

During January 2007 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 uranium exploration targets and resulted in the identification of several targets that warrant further work.

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.

On a regional basis the Mt Ida tenement is located in the highly prospective Arunta Mineral Field. Through detail interpretation of airborne magnetic from the Northern Territory Geological Survey,

A total of 50% of the tenement was to be relinquished based upon more favorable radiometric targets in the eastern portion of the Exploration Licence area.

#### 10.0 REFERENCES

Cooney, R.G., 1973, Neptide Mineral Exploration Pty Ltd, Final Report on EL32, Northern Territory Geological Survey, Open File Report CR1973-0208.

Otter Exploration NL., 1978, Annual Report for Exploration Licence 1453, Northern Territory Geological Survey, Open File Report CR1978-0048.

Jays Exploration Pty Ltd., 1981, Final Report on Exploration Licence 2390 'Delmore Downs', Northern Territory Geological Survey, Open File Report CR1981-0196.