ANNUAL FINAL REPORT

EL 27379

Murphy Project, NT

2011

David Esser

February 2012
EXECUTIVE SUMMARY

EL 27379 is part of a group of twelve (12) tenements comprising the Murphy Project in the northeastern part of the Northern Territory. Bondi Mining Limited was conducting exploration for unconformity and sedimentary hosted uranium mineralisation, analogous to the unconformity deposits of the East Alligator River Region (e.g. Jabiluka) of the Northern Territory, and the Westmoreland deposit in northwestern Queensland respectively.

An environmental audit of drilling rehabilitation on the Murphy Project was completed during the 2011 field season, however no holes were drilled on EL 27379.

Bondi decided to surrender EL 27379 in total as it focuses on targets with better potential for hosting economic mineralisation on it’s other tenements.
1 INTRODUCTION

Bondi Mining Limited, through its wholly owned Australian subsidiary Murphy Uranium Pty Ltd, is the holder of EL 27379. The license is located west of the Westmoreland Uranium Field and forms part of Bondi’s Murphy Project targeting uranium deposits about the Murphy Inlier in the Northern Territory. The Murphy Project currently comprises ELs 24694, 24841, 25708, 25709, 25710, 26138, 26139, 26140, 27379, 27728, 27729 and 27730. Refer to Figure 1 for the location map.

This annual report covers all the exploration work carried out within EL 27379 up to 12th of January 2012. The only exploration on the Murphy project during the 2011 field season was an environmental audit of drilling rehabilitation and there were no holes were drilled on EL 27379.

Figure 1: Location Map showing Murphy Project
EL 27379 is located approximately 130km west of the NT - QLD border and 170km south east of the McArthur River mine in eastern NT, see Figure 2. The licence covers four 1:250,000 map sheets; Wallhallow, Brunette Downs, Calvert Hills and Mount Drummond. Access is via the Barkly Highway from Mt. Isa, to the Barkly Roadhouse, then via the Tablelands Highway to the Calvert Hills Road. Access around the project area is via graded station roads and tracks. An alternative access can be gained via Cape Crawford to the north via the Tablelands highway, or from the east by the Calvert Hills Rd which crosses the border near Wollogorang.

Figure 2: Tenement Location Map
Murphy Uranium Pty Ltd who are a 100% owned subsidiary of Bondi Mining Limited (Bondi) applied for the EL 27379 on the 1st June 2009, the tenement was granted on the 13th January 2010. In December 2008 a Letter of Agreement was signed between Bondi and Japan Oil, Gas and Metals National Corporation (JOGMEC) wherein JOGMEC can earn a 51% undivided interest in the project by funding AUD $3 million in exploration over four years. Bondi is the operator of the exploration program. Tenement details are shown below in Table 1.

Table 1: Tenement details

<table>
<thead>
<tr>
<th>Exploration Licence No.</th>
<th>No. Sub-Blocks</th>
<th>Area (km²)</th>
<th>Grant Date</th>
<th>Expiry Date</th>
<th>Current Annual Expenditure Commitment</th>
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<tr>
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<td>168</td>
<td>550</td>
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3 REGIONAL GEOLOGY

The Murphy Project area is located on the western end of the Murphy Inlier. The inlier is referred to as the Murphy Tectonic Ridge and represents a belt of lower Proterozoic basement that separates the middle Proterozoic McArthur Basin to the north and the middle Proterozoic Lawn Hill Platform - South Nicholson Basin to the south. Refer to Figure 3. The oldest rocks in the region are the lower Proterozoic Murphy Metamorphics, which form the basal unit of the Murphy Inlier, and consist of isoclinally folded greenschist facies metasediments; typically quartz-feldspar-mica schists and gneiss with minor graphitic units. The Murphy Metamorphics form the core of the Murphy Tectonic Ridge and only outcrop in the NT portion of the inlier. The Cliffdale volcanics unconformably overlie the Murphy Metamorphics and are made up of a series of felsic volcanic and volcanioclastic rocks. The Cliffdale volcanics are only found at the eastern end of the inlier. Both the metamorphics and volcanics are intruded by granites and adamellites of the Nicholson Granite Complex which constitutes the majority of the rocks found in the inlier.

The northern margin of the Murphy Inlier is unconformably overlain by the Westmoreland Conglomerate, which is the oldest unit in the middle Proterozoic Tawallah Group, and marks the base of the southern portion of the McArthur Basin. The Westmoreland Conglomerate is made up of four sub-units;

(i) A basal volcanic derived (sourced from the underlying Cliffdale volcanics) conglomerate-breccia that grades up into a pebbly quartz sandstone;

(ii) An upward fining, coarse to medium grained ferruginous sandstone;

(iii) A coarse polymictic conglomerate and minor pebbly sandstone, which can be reverse faulted directly on the Cliffdale Volcanics; and

(iv) A porous, crossbedded, coarse grained quartz sandstone, with minor conglomerate bands and laminated tuffaceous siltstone in the lower part.

The Seigal Volcanics lie conformably on top of the Westmoreland Conglomerate and consist of massive and amygdaloidal tholeiitic basaltic lavas with minor interbedded siltstones and sandstones. A thin shale bed is commonly found at the base of the Seigal Volcanics and marks the hiatus between deposition of the Westmoreland Conglomerate and the start of volcanism. The middle to upper Tawallah Group consists of interbedded sediments and volcanics. Sediments and volcanics of the McArthur Group lie unconformably over the Tawallah Group.

The southern margin of the Murphy Inlier is unconformably overlain by several belts of Lawn Hill Platform in addition to sediments of the south Nicholson Basin, which unconformably covers the Lawn Hill Platform successions. A thin unit of coarse sandstone and conglomerate, the Wire Creek Sandstone, marks the base of the Lawn Hill Platform in places and is conformably overlain by the Peters Creek Volcanics; a massive sequence of alternating basalt, rhyolite and rhyodacites with minor sediments. Both units can be found lying unconformably on the Murphy Inlier and are considered equivalents to the Tawallah Group in the McArthur basin. The Peters Creek Volcanics are unconformably covered by the Fickling Group, a sequence of conglomerates, sandstones, siltstones and dolomites. The Fickling Group belongs to the Lawn Hill Platform and in the area of the Murphy Inlier is
unconformably covered by shallow marine sediments of the South Nicholson Basin referred to as the South Nicholson Group. This group is also found lying unconformably over the western end of the Murphy Inlier or over the Benmara Beds, which can lie unconformably between the South Nicholson Group and the Murphy Metamorphics. The Benmara Beds are also a middle Proterozoic Tawallah Group equivalent and consist of a mixed rhyolite, trachyte, sandstone and conglomerate package.

Figure 3: Simplified Regional Geology

Phanerozoic cover consists of mostly early to middle Cambrian sediments and basalts, and Cainozoic sediments. Outcropping of Proterozoic rocks in the project area suggests that within EL 27379 the Phanerozoic cover is not thick, although the airborne magnetics suggest that the Cambrian Georgina Basin limestone and Antrim Plateau Basalt become thicker to the west.

Structurally, the region is cut by a dominantly NW trending series of faults and joints paralleling the Calvert fault. Possible NNW trending extensions of the Emu Fault also pass through the west side of the region under the Phanerozoic cover. A second set of NE trending faults can also be seen paralleling the structural trend of the Murphy Tectonic Ridge. Both sets of faults commonly consist of high angle normal and reverse faults whose intersection appears to form structural blocks displaying horizontal movement and/or tilting. Lateral movement is also common in the NW trending structures. Numerous mafic, commonly doleritic, dykes parallel the faulting and are thought to be cogenetic with the mid Proterozoic volcanics of the Tawallah Group.

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Small stratabound disseminated lead – zinc ± copper occurrences, associated with carbonaceous units are found within both the McArthur and Lawn Hill Platform – South Nicholson Basins. Copper mineralisation occurs as unconformity related and breccia pipe occurrences in the region. The latter deposit type forms sub-economic deposits in the Redbank area (Figure 3) which were mined on a small scale in the post war era. Minor tin occurrences have also been found around the Nicholson Granite Complex.

The region is best known for the uranium deposits at Westmoreland (Refer to Figure 3); notably the Redtree deposit (12,600t U₃O₈), the Junnagunna deposit (5,300t U₃O₈) and the Huarabagoo deposit (3,000t U₃O₈). Mineralisation in these deposits occurs as sandstone hosted uranium within the upper sandstone unit of the Westmoreland Conglomerate, directly below the contact with the Seigal Volcanics, and shows a strong association with fault hosted mafic dykes and sills. Minor mineralisation is also found within other units of the Westmoreland Conglomerate and in shear zones at the unconformity between the Cliffdale Volcanics and Westmoreland Conglomerate. Clusters of minor uranium occurrences area can be found to the west and east of the Westmoreland area, along the northern margin of the Westmoreland Conglomerate. To date only minor unconformity type uranium mineralisation has been found at the unconformity between the Murphy Metamorphics and the Westmoreland Conglomerate.
4 SUMMARY OF PREVIOUS WORK

A comprehensive review of previous mineral exploration was carried out and an outline is presented here. Important information gained from this review includes the following; During the process of these investigations, some stratigraphic data regarding the Phanerozoic rocks were reviewed in government and company reports. It wasn’t until the late 1960’s and early 1970’s that IMC and ICI carried out some exploration to evaluate the potential for Phosphate mineralisation in the Northern Territory part of the Georgina Basin. Their results led to the identification of a number of deposits of which are at or close to surface which at the time proved to be uneconomic due to grade and size constrains when compared to the Duchess Phosphate Hill deposit of NW Queensland. These discoveries are now attracting interest because of the exploded price of Phosphate and have been acquired by various companies in an effort to bring them to JORC reserve status.

Between 1984 to 1987 extensive diamond exploration was carried out by Ashton Mining Limited, microdiamonds were recovered in sampling in the area, however the exploration program failed to provide encouragement in locating the presence of a kimberlite pipe within the licence.

A list of the ATPs and ELs previously covering area about EL 27379 is provided in Table 2.

Table 2: Previous tenements over EL 27379

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<th>TENNUM</th>
<th>GRANTED</th>
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5 EXPLORATION COMPLETED BY BONDI

5.1 Summary of Work Completed to January 2011

- A comprehensive review and assessment of previous mineral and diamond exploration work.
- An airborne EM and magnetic survey. Refer to 5.2, below.
- A mineral assessment and target selection by Douglas Haynes Discovery Pty Ltd comprising:
  - Compilation of public domain geological, geochemical and geophysical data;
  - An interpretation of the geological and structural data for the region;
  - A geophysical and geochemical interpretation of available data, incorporating the airborne EM survey.
  - Selection of potential target areas.
- A geological interpretation of the airborne magnetics by John Coggon. Refer to

5.2 Airborne EM Survey

On 6th October 2010 Fugro Airborne Services completed an Airborne Electo-Magnetic survey (AEM) comprising a total of 2,355 line kilometres covering the Murphy West area (1,478 line km at 500m spacing), the UC19 area (624 line km at 300m spacing) and the UC 17 survey (253 line km). Refer to Figure 4 for location of the AEM survey. A small portion of the Murphy West area (60 sq km out of 600 sq km) covered the south eastern section of EL 27379 (Figure 4). The data from this survey is presented in Appendix 2 in the 2011 annual report.

An interpretation of the data from the AEM survey was completed in November (J. Coggon, 2010 – unpublished company report). The interpretation identified a thick, weakly conductive sequence which corresponds with the Cambrian limestone and Proterozoic Westmoreland sandstone in the Murphy West area. The Proterozoic, basement rocks appear to be resistive, however, the penetration of the AEM is limited to 300m due to the masking effect of a shallow near surface conductor, which is black soil or weathered limestone. Previously un-identified NW trending faults and folds were defined by the AEM survey and these areas have potential for hosting uranium mineralisation. The conductivity map and a quasi-section of the conductivity in the Murphy West area have been presented in various previous annual exploration activity reports.

On completion of the interpretation of the GEOTEM data has no significant anomalies were identified.
5.3 Geophysical interpretations.

The detailed magnetic survey flown over the eastern-central Murphy leases in 2008 was merged with new detailed airborne magnetic data acquired over the surrounding tenements in 2009. A re-interpretation of the regional geology was then carried out by Dr Douglas Haynes and new interpretation was conducted by Dr John Coggon.

5.3.1 Haynes Interpretation.

A copy of the Dr Haynes new interpretation is shown in Figure 5 and the full report is within Appendix 3 in a report on EL 24841 by Esser & Hedger (2010). Dr Haynes identified more extensive Westmoreland Conglomerate cover within the tenement, the presents of narrow, mafic dykes with Murphy Metamorphic basement and reposition the location of the inferred Proterozoic unconformity. The re-interpretation defined 2 new unconformity uranium target areas (UC25 and UC26), in addition to locating 7 base-metal target areas, and also redefined the position and shape of older targets area (refer to Figure 5).
5.3.2 Coggon Interpretation

An interpretation of the magnetic character of the covered rocks was carried by Dr John Coggon of Mines Geophysical Services. A copy of Dr Coggon report is within Appendix 4 in Esser & Hedger (2010), and map showing his interpretation is shown in Figure 6. The aim of this interpretation was to examine the different magnetic terrains, and associate rocks units, and map possible dip and dip directions, along with major structural zones and any indications of movement. Three main magnetic groups were indentified; (1) a magnetically noisy cover unit, the Cambrian Antrim Volcanics which displays lava channels and thickens to the north and north west; (2) an underlying magnetic “basin” with sub-horizontal, mid-Proterozoic mafic volcanics and sediments with (probably) mafic intrusions that could be
possible feeders; and (3) magnetic to non-magnetic basement rocks of the Murphy Inlier. Faulting is predominantly north northwest to northwest, and interpreted as having either normal or reverse movements which has caused significant lateral movement in the shallow dipping units. Northeast trending faulting was indentified but is not as obvious.

Using an analogy based on the Westmoreland deposit, a series of uranium targets areas were identified using the location of the basal magnetic units and intersecting structures (refer to Figure 8). Dr Coggon noted some difficulty in locating the basal unconformity (above the Murphy Metamorphics) in certain areas because these basement rocks displayed varying degrees of magnetic response. An additional part of the magnetic interpretation involved the 3D inversion modeling of two main target areas; UC19 and Camp. The modeling used software from the University of British Columbia to invert the detailed airborne magnetic to create generalized smoothed 3D susceptibility distributions. The aim of the work was to examine the shape and depth to magnetic bodies or magnetite destruction zones for the purposes of targeting and drill testing. The results of this work are discussed in the follow sections.

Figure 6: John Coggon’s interpretation.
5.4 Summary of Work Completed in 2011

The only exploration on the Murphy project during the 2011 field season was an environmental audit of drilling rehabilitation there were no holes were drilled on EL 27379.

6 CONCLUSIONS

- In 2010 Fugro Airborne Services completed an Airborne Electo-Magnetic (AEM) survey comprising 2,355 line kilometres covering the Murphy West area (1,478 line km at 500m spacing), which partly covers EL 27379.
- An interpretation of the data from the AEM survey completed in November identified a thick, weakly conductive sequence which corresponds with the Cambrian limestone and Proterozoic Westmoreland sandstone in the Murphy West area.
- The Proterozoic, basement rocks appear to be resistive, however, the penetration of the AEM is limited to 300m due to the masking effect of a shallow near surface conductor, which is black soil or weathered limestone.
- No strong basement conductors were identified during the AEM survey
- Previously un-identified NW trending faults and folds were defined by the AEM survey and these areas have potential for hosting uranium mineralisation.
- No significant targets identified on EL 27379, tenement to be surrendered

7 REFERENCES


Esser, D., 2011. ‘Annual Report EL 27379 Murphy Project, NT’