PARTIAL RELINQUISHMENT REPORT EL24463

Walbiri

NGALIA REGIONAL PROJECT

6 February, 2006 to 8 January, 2016

EL24463_2016_P.pdf

1:250K Map Sheet: Mount Doreen SF52-12
1:100K Map Sheets: Doreen 5153, Yuendumu 5253

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TABLE OF CONTENTS

SUMMARY 4

INTRODUCTION 5
    Geology and Physiography 6

WORK COMPLETED 6 FEBRUARY 2006 – 8 JANUARY 2016 8
    Geophysical Survey 8
    Drilling Programs 8
    Field Reconnaissance 8
    Heritage Clearances 13
    Project Review 13
    Digital Data 14

CONCLUSIONS 14

REFERENCES 14

FIGURES

Figure 1: Location of Bigrlyi/Ngalia Regional Projects. 5
Figure 2: Tenements of the Bigrlyi/Ngalia Regional Project. 6
Figure 3: Surrendered areas in relation to topographic features. 7
Figure 4: Colour-shaded TMI-RTP magnetic imagery with tilt derivative filter. 9
Figure 5: Outcropping geological units from Mt Doreen 250K map-sheet. 10
Figure 6: Uranium channel radiometric map with overlaid structure. 11
Figure 7: Ternary RGB radiometric map with overlaid structure. 12
Figure 8: Surrendered areas in relation to Aboriginal Heritage Areas. 13
SUMMARY

Exploration Licence EL24463 (Walbiri) is part of the 100% owned Energy Metals Ltd (EME) Ngalia Regional Project situated approximately 360km northwest of Alice Springs and 50km southeast of the Bigryi Uranium Project (Kerr & Liu, 2015).

EL24463 was granted on 6 February 2006. A partial reduction (reducing the EL by 6 blocks or 7% of the original area) was approved on 8 January 2016. This report covers exploration activities that occurred on the surrendered area during Energy Metals period of tenure.

The tenement covers areas of granitic and metamorphic basement of the Aileron Province in the north. Mt Eclipse Sandstone, often under sand cover in the south, occupies most of the tenement.

Exploration work on the relinquished blocks over Energy Metals' period of tenure included several heritage surveys, an aerial geophysical radiometric and magnetic survey with interpretation (2007), field reconnaissance and a project review (2015). Following an assessment in 2015, part of the tenement located outside the Ngalia Basin was considered to be non-prospective for uranium and was relinquished.
INTRODUCTION

The Ngalia Regional project comprises ten 100% owned exploration licences located in the Ngalia Basin, between 180 and 350 km northwest of Alice Springs in the Northern Territory (Figures 1 & 2). Seven of these tenements are contiguous and surround the Bigrlyi uranium deposit (ELR 46-55) as well as a number of other uranium deposits and occurrences including the Malawiri prospect (EME 52%, ELR41) and part of the Walbiri deposit (EME 42%, ELR45).

EL24463 (initially 81 graticular blocks located southeast of the Bigrlyi resource area) was granted on 6 February 2006 for a term of six years and was subsequently renewed for two periods of two years. An application for surrender of 6 blocks was approved by the DME on 8 January 2016. This report covers the partial relinquishment.

![Project Location Plan](image)

Figure 1. Location of the Bigrlyi/Ngalia Regional Projects (NT).
**Figure 2.** Tenements of the Biglyi/Ngalia Regional Projects (NT) as at 31 Dec 2015.

**Geology and Physiography**

The tenement area borders the northern margin of the Ngalia Basin with prominent outcrop of the Djangamarra Formation, Walbiri Dolomite, Yuendumu Sandstone flanking the northern boundary and Mt Eclipse Sandstone towards the south and host to the Walbiri Uranium Deposit (Figure 3).

Broad scale folding within the licence area has disturbed the strata forming a series of synclines and anticlines with east-west axes. The most northerly of these, the Mount Eclipse Syncline, is asymmetrical and faulted against the Basement rocks in the far north of the licence area (Pope, 1984). Prominent geomorphological features within the tenement include the Walbiri Range, dominantly east-west trending hills and flatter northerly limb of the Mount Eclipse Syncline comprised of Mt Eclipse Sandstone. In the south much of the area comprises Mt Eclipse Sandstone covered by sand plain and is drained by a number of creeks that have formed alluvial outflow plains. Within EL24463, there are no significant areas of granitic basement outcrop to the north other than lateritic cap rock of the Arunta Block. The Mt Eclipse Sandstone is the primary target for uranium mineralisation in the Ngalia Basin.

The relinquished areas (Figure 3) consist dominantly of granitic and metamorphic basement of the Arunta Inlier (Figure 5).
Figure 3. Surrendered areas (6 blocks – area shown in red) in relation to topographic features, prospects, and the retained area (in green).
WORK COMPLETED From 6th February 2006 to 8th January 2016

Geophysical Survey

An airborne geophysical survey, providing radiometric, magnetic and topographic data, was conducted over Energy Metals’ Ngalia Regional tenements in September 2007 by GPX Airborne (Saul, 2008). A total of 14,932 line kilometres was flown. The data were processed by Southern Geoscience Consultants (SGC), who meshed the new data with previous company survey data. SGC were subsequently contracted to interpret the imagery in terms of structural and radiometric features. Figure 4 shows the SGC interpretation of processed magnetic imagery with prominent faults and fold axes identified, and Figure 5 shows that interpretation overlain on geological outcrop.

Radio metric imagery is shown in Figures 6 and 7. Features of note include the strong combined U+Th+K response of the Southwark Granite Suite terrain to the northwest; the generally weak response of the Mt Eclipse Sandstone; the association of drainage-related regolith features with potassium (likely illite-rich clays) and a minor thorium-related anomaly in the relinquished area associated with ferruginous regolith (see Figures 6 & 7). No uranium-specific anomalies are present on the relinquished ground.

Drilling Programs

Energy Metals did not conduct any drilling programs or other sampling programs on the relinquished ground during the period of tenure.

Field Reconnaissance

Field reconnaissance was carried out to an area of outcrop approximately 1.5km north of the Ngalia Basin’s northern margin (Figure 5). The outcrop is centred on co-ordinates 761680mE / 7536750mN and was investigated in the field during November 2015. The outcrop consists of a large lateritic cap; rich in goethite and limonite and considered a weathering phenomenon of the Arunta Block basement rocks. The area consists of low lying hills with colluvium flow as plates of laterite and peasilite gravel. The entire outcrop area was traversed with no uranium mineralisation observed. Radiation was measured using a RadEye PRD with background radiometric levels of 30-40 cps and slightly elevated levels of thorium are likely. The area investigated north of the Ngalia Basin on EL24463 shows diminutive potential for uranium mineralisation and was recommended for priority one relinquishment.
Figure 4. Colour-shaded TMI-RTP magnetic imagery with tilt derivative filter (TDR) applied. Structural interpretation provided by SGC including thrust faults (direction of overthrust indicated), major and minor faults (black lines), fold axes (yellow), fracture zones (S-pattern lines) and bedding or lineament trend directions (dot-dash lines). Tenement boundaries shown as in Figure 3. Note the thrust fault that transects the relinquished ground and bounds the northern margin of the Ngalia Basin.
Figure 5. Outcropping geological units from Mt Doreen 250K map-sheet shown in relation to SGC structural interpretation (see Figure 4). Red/dark pink = granite; brown/dark purple = metamorphic basement; light purple = Djangamara Formation; dark orange = Mt Doreen Formation; grey = Mt Eclipse Sandstone; light orange = Cenozoic deposits weathered from granite terrains. Tenement boundaries shown as in Figure 3. Note the thrust fault that transects the relinquished ground and bounds the northern margin of the Ngalia Basin. Outcrop field inspected is indicated and labelled in blue.
Figure 6. Uranium channel radiometric response map with overlaid structural interpretation. Note the strong response (pink colours) of the granite terrain to the west and north; and regolith features in red/orange colours.
**Figure 7.** Ternary RGB radiometric map with overlaid structural interpretation. R(red) = potassium; G(green) = thorium; B(blue) = uranium. Note the strong U+Th+K response of the granite terrain to the northwest; weak response of the Mt Eclipse Sandstone (dark); association of drainage-related regolith features with potassium (red-brown colours), minor thorium-related anomaly on the relinquished ground (green) associated with ferruginous regolith and a number of discrete uranium anomalies in blue associated with quartz vein systems (west of EL24463).
Figure 8. Surrendered areas (6 blocks – area shown in red) in relation to Aboriginal heritage areas (in blue) and the retained area (in green).

Heritage Clearances

CLC heritage notifications were lodged for drilling activities in the first year of EL24463 and at later times when additional work programs were planned. The clearance programs involved the Traditional Owners who identified a significant number of cultural sites, many of them located within the Walbiri Ranges; several large sensitive zones were outlined as shown in Figure 8. In some areas of these zones, ground disturbing activities are not permitted and accordingly these sites have adversely impacted exploration activities, including potential drilling programs.

Project Review

During 2015, the project was reviewed to identify areas of low uranium prospectivity with a view to surrender of non-prospective ground before the next anniversary date. The following ground was recommended for relinquishment:
• Blocks north of the fault zone that bounds the northern margin of the Ngalia Basin.

An application to surrender the ground shown in Figure 3 was made in December 2015 and approved by the DME on 8th January 2016.

Digital Data

All digital data covering EME’s exploration activities on the relinquished ground has previously been reported to the NT DME.

CONCLUSIONS

Due to assessed low prospectivity for uranium mineralisation, parts of the tenement were recommended for partial surrender with 75 blocks to be retained (see Figure 3); the partial surrender application was approved on 8th January 2016.

REFERENCES


