EL 29046

PARTIAL RELINQUISHMENT REPORT
3 July 2012 to 2 July 2014

BY

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20th August 2014

Target Commodities: Cu

MAP REFERENCE

NT 1:250 000 Hale River, SG53-3
NT 1:250 000 Illogwa Creek, SF 53-15
NT 1:100 000 Todd, 5949; Limba 5950

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Abstract

EL29046 locates about 130km east of township of Alice Springs and is being explored by GRIGM Resources Pty Ltd since granted by NT Department of Mines and Energy on 3 July 2012. In order to meet the requirements of the Mineral Titles Act, 47 blocks of EL29046 were surrendered in July 2014.

EL29046 license area locates in the northeast part of Amadeus Basin in the southern part of Northern Territory. The basin overlies basement of the Musgrave Province to the south and the Warumpi and Aileron provinces (Arunta Region) to the north. It is overlain by the Permian-Triassic Pedirka and Mesozoic Eromanga basins in the southeast, and by the younger Palaeozoic Canning Basin to the west. Sedimentation began in the Neoproterozoic in the Amadeus Basin and continued until the Late Devonian/Early Carboniferous.

The licensed area has been considered to be prospective for copper as the existing records show that the copper mineralization in the area is of stratiform type. It was reported that secondary copper minerals occurred in green dolomitic siltstone and could be traced about 8 miles along strike.

Work completed in the relinquished area includes:

1. A detailed literature review;
2. Ground check of mineral occurrences;
3. Ground check of aero magnetic anomalies;
4. Ground check soil and stream sediment geochemical anomalies.

Ground check failed to locate the old mineral diggings around Waldo Pedlar Bore, possibly due to refill.

Aero magnetic anomalies in the north part of the relinquished area outline regional structures, which marks boundary between Aileron Province and Amadeus Basin.

The NW-SE extending weak Cu stream sediment geochemistry anomaly and weak Cu soil geochemistry anomaly appears in consistence with outcrop of silicified sandstone and green dolomitic siltstone and/or shale.
Introduction

Exploration Licence EL29046 was granted to GRIGM Resources Pty Ltd by NT Department of Mines and Energy on 3 July 2012 for a period of six years. In order to meet the requirements of the Mineral Titles Act, 47 blocks were surrendered in July 2014 and this report summarises work carried out in the relinquished area during the period July 3, 2012 to July 2, 2014.

Tenure details

EL29046, total of 94 units (Table 1), is located about 130km east of township of Alice Springs, accessing by Ross Highway, Ringwood Road and local 4WD tracks (Figure 1).

Table 1  EL29046 units

<table>
<thead>
<tr>
<th>SF53</th>
<th>3421</th>
<th>C,D,E,H,J,K,P,U</th>
</tr>
</thead>
<tbody>
<tr>
<td>SF53</td>
<td>3422</td>
<td>all</td>
</tr>
<tr>
<td>SF53</td>
<td>3423</td>
<td>A,B,F,G,L,M,Q,R,V,W</td>
</tr>
<tr>
<td>SG53</td>
<td>37</td>
<td>U,W,X,Y,Z</td>
</tr>
<tr>
<td>SG53</td>
<td>109</td>
<td>B, C, D, E</td>
</tr>
<tr>
<td>SG53</td>
<td>110</td>
<td>A, B, C, D, E</td>
</tr>
<tr>
<td>SG53</td>
<td>111</td>
<td>A</td>
</tr>
</tbody>
</table>

Figure 1  EL29046 location diagram
To meet Mineral Titles Act, 47 blocks (listed in table 2, and shown in Figure 1) were surrendered in July 2014.

### Table 2  Relinquished blocks

<table>
<thead>
<tr>
<th>Block Number</th>
<th>Blocks Allowed to Surrender</th>
</tr>
</thead>
<tbody>
<tr>
<td>SF53 3421</td>
<td>C, D, E, H, J, K, P, U</td>
</tr>
<tr>
<td>SF53 3423</td>
<td>A, B, F, G, L, M, Q, R, V, W</td>
</tr>
<tr>
<td>SG53 38</td>
<td>A, B, C, D</td>
</tr>
</tbody>
</table>

### Geological Setting

EL29046 license area locates in the northeast part of Amadeus Basin (Figure 2). Amadeus Basin extends approximately 800 km east-west and a maximum of about 300 km north-south. The basin overlies basement of the Musgrave Province to the south and the Warumpi and Aileron provinces (Arunta Region) to the north. It is overlain by the Permian-Triassic Pedirka and Mesozoic Eromanga basins in the southeast, and by the younger Palaeozoic Canning Basin to the west. Early-middle Palaeozoic parts of the succession were probably continuous with sedimentary successions of the subsurface Warburton Basin to the southeast, which extends into South Australia and southwestern Queensland (C J Edgoose 2013). Sedimentation began in the Neoproterozoic in the Amadeus Basin and continued until the Late Devonian/Early Carboniferous.

![Regional Geological Setting of Amadeus Basin (NTGS)](image)

The Amadeus Basin has had a complex tectonic evolution that has been influenced both by halotectonics and by large-scale intracratonic tectonics. Two major tectonic events have been recorded, Petermann Orogeny (580-530 Ma) and Alice Springs Orogeny (450-300 Ma). The Petermann Orogeny was a crustal-scale, bivergent intracratonic event localized in the Musgrave Province, which also affected overlying
Neoproterozoic stratigraphic successions of the Amadeus and Officer basins (Scrimgeour and Close 1999, Close et al 2004, Edgoose et al 2004). The Alice Springs Orogeny was a long-lived, multiphased, bivergent intracratonic event that resulted in large-scale uplift and exhumation of the Arunta Region and substantial deformation in the northern Amadeus Basin. Some of its earlier phases are recognized as discrete events largely related to unconformities within the basin succession. Its later phases resulted in basin inversion and the cessation of Palaeozoic deposition within the basin (Edgoose 2013).

As shown in Figure 3 and Figure 4, the license area mainly outcrop Proterozoic Bitter Springs Formation, Areyonga Formation, Aralka Formation low-grade metamorphic rocks, including sandstone, siltstone, shale, tillitic conglomerate, limestone and dolomite.

Structure in the license area is dominated by a multi-phase syncline with fold-axis extending near east-west. Both the north and south limbs of the syncline are outcropping as prominent ridges.

![Figure 3 Generalised outcrop geology of northeastern Amadeus Basin (Edgoose C J 2013)](image-url)
Mineral resources

The Amadeus Basin has had comparatively little exploration for mineral commodities. Historical and more recent mineral production in the basin is confined to gold production from the Arltunga and Winnecke goldfields, and minor surficial copper workings from a few locations. Mineral and industrial commodities present in the sedimentary rocks of the basin include uranium, base metals (Cu, Zn, Pb), manganese, iron ore, phosphate, barite, gypsum and dimension stone (C J Edgoose, 2013).

In EL29046 license area, traces of copper minerals were discovered in 1954 by M Collins. It was examined by Jones (1954). In 1965/1966, NTGS put down two diamond holes to examine copper occurrences below the weathered zone. Although core recovery rate is very low, the assay results did show copper concentration reaches 1200ppm at about 376-378 feet.

The licensed area has been considered to be prospective for copper as the existing records show that the copper mineralization in the area is of stratiform type. It was reported that secondary copper minerals occurred in green dolomitic siltstone and could be traced about 8 miles along strike.
Work completed

Work completed in the relinquished area of EL29046 includes:

1. A detailed review;
2. Ground check of mineral occurrences;
3. Ground check the aero magnetic anomalies;
4. Ground check Soil and stream sediment geochemical anomalies.

Results

Ground check copper mineral occurrences

There is one Cu mineral occurrence within the relinquished area, Waldo Pedlar Bore Copper. As shown in Figure 5, field inspection has been carried out along two lines EE’ and FF’, which cross the north limb of a multi-geosyncline with fold-axis extending near east-west.

Field inspection has failed to locate the recorded mineral occurrence. The old diggings were possibly refilled. No visible primary and secondary Cu minerals were identified.

Ground check magnetic anomalies

As shown in Figure 6, the prominent aero-magnetic anomalies in the north part of the relinquished area outline regional structures, which marks boundary between Aileron Province and Amadeus Basin. Two ground inspection lines EE’ and FF’, which follow the same lines used to inspect surface mineralization, were also used to check the magnetic anomaly. No obvious magnetic geological body is identified, largely due to thick Quaternary cover.
Figure 5 Geological setting of EL29046 showing location of cross-sections EE' and FF'

Figure 6 Magnetic anomalies
Ground check soil and stream sediment geochemistry anomalies

Literature review revealed that previous exploration companies conducted soil and stream sediment geochemical survey in the area. Figure 7 shows results of Cu soil geochemistry and Cu stream sediment geochemistry, all data has been extracted from NTGS Webpage STRIKE (Geoscience Web Mapping). In the field, both the Cu stream sediment geochemical anomalies and the Cu soil geochemical anomalies distribute alongside of the northwest striking hill ridges in the relinquished area. Outcrop along this ridge is silicified sandstone and arkose, which overlain green dolomitic siltstone and/or shale. The dolomitic siltstone/shale is the host strata for copper mineralization at Ringwood.

Figure 5 Cu soil and stream sediment geochemistry 
(Data extracted from NTGS Webpage STRIKE)

Conclusion and recommendation

1. Ground check failed to locate the old mineral diggings around Waldo Pedlar Bore, possibly due to refill.
2. Aero magnetic anomalies in the north part of the relinquished area outline regional structures, which marks boundary between Aileron Province and Amadeus Basin.
3. The NW-SE extending weak Cu stream sediment geochemistry anomaly and weak Cu soil geochemistry anomaly appears inconsistence with outcrop of silicified sandstone and green dolomitic siltstone and/or shale.

Due to lack of accommodation in the vicinity of the license area, field works turned out to be very expensive and time consuming.

As no mineralisation has been identified in the northern area of EL 29046, these blocks have been relinquished.
References


