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## **No. 12,727**

**EL 5404**

**DAVENPORT**

### **FIRST PARTIAL SURRENDER REPORT FOR THE PERIOD 1/5/2014 TO 2/6/2015**

Submitted by  
Red Metal Ltd  
2015

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**Government of South Australia**  
Department of State Development

**EL 5404 Davenport**  
**PARTIAL SURRENDER REPORT**  
for Period Ended  
**2 June 2015**

G. McKay  
21 May, 2015

## **TENEMENT REPORT INDEX**

TENEMENT:	EL 5404
LICENSEE:	Red Metal Limited
OPERATOR:	Red Metal Limited
AUTHOR:	G. McKay
REPORTING PERIOD:	May 1, 2014 to June 2, 2015
LATITUDE:	-28°10' to -28°35'
LONGITUDE:	136°02' to 136°29'
1:250,000 SHEET:	Warrina SH53-03
1:100,000 SHEET:	Umbum 6141 / Anna Creek 6140
MINERAL PROVINCE:	Peake and Denison Province
COMMODITIES:	Cu Au
KEYWORDS:	Literature review, geophysical interpretation

## **Table of Contents**

<b>SUMMARY.....</b>	<b>1</b>
<b>1.0 INTRODUCTION.....</b>	<b>2</b>
<b>2.0 LOCATION AND TENEMENT STATUS.....</b>	<b>2</b>
<b>3.0 REGIONAL GEOLOGY .....</b>	<b>3</b>
<b>4.0 HISTORICAL EXPLORATION.....</b>	<b>3</b>
<b>5.0 CURRENT EXPLORATION PROGRAM .....</b>	<b>4</b>
<b>6.0 CONCLUSIONS.....</b>	<b>4</b>

## **LIST OF FIGURES**

FIGURE 1: EL 5404 LOCATION – WEST OF LAKE EYRE .....	2
FIGURE 2: DAVENPORT EL 5404 – REGIONAL MAGNETIC IMAGE.....	4

## **Report Digital File List**

EL5404\_2015\_01 Partial Surrender Report.pdf

## **SUMMARY**

EL 5404 is located in the Peake and Denison Province, 50-80 km west of Lake Eyre. The district contains coincident gravity and aeromagnetic anomalies in basement rocks and is considered to have the potential to host IOCG copper-gold deposits.

Red Metal's targets on the Davenport project are Proterozoic copper-gold ironstone-hosted deposits on the north-east margin of the Peake and Denison Inliers. The highly magnetic terrain of the Peake and Denison area is of similar size and intensity to the Olympic Dam magnetic terrain on the Sturt Shelf.

On the basis of regional geophysical interpretations, the area surrendered was considered to have lower exploration potential.

## 1.0 INTRODUCTION

The exploration target is Proterozoic copper-gold ironstone-hosted deposits on the north-east margin of the Peake and Denison Inliers. The highly magnetic terrain of the Peake and Denison area is of similar size and intensity to the Olympic Dam magnetic terrain on the Sturt Shelf.

## 2.0 LOCATION and TENEMENT STATUS

EL 5404 is located about 50-80 km west of Lake Eyre, between the townships of Oodnadatta and William Creek. Access is via station tracks north from William Creek and east from the Peake homestead via the Oodnadatta Track. The tenement area is the subject of a Native Title claim by the Arabunna People (Claim SC98/002).

Exploration License 5404 was granted to Red Metal Limited on May 1, 2014 over 977 sq km. It was reduced to 115 sq km on 1 May 2015.

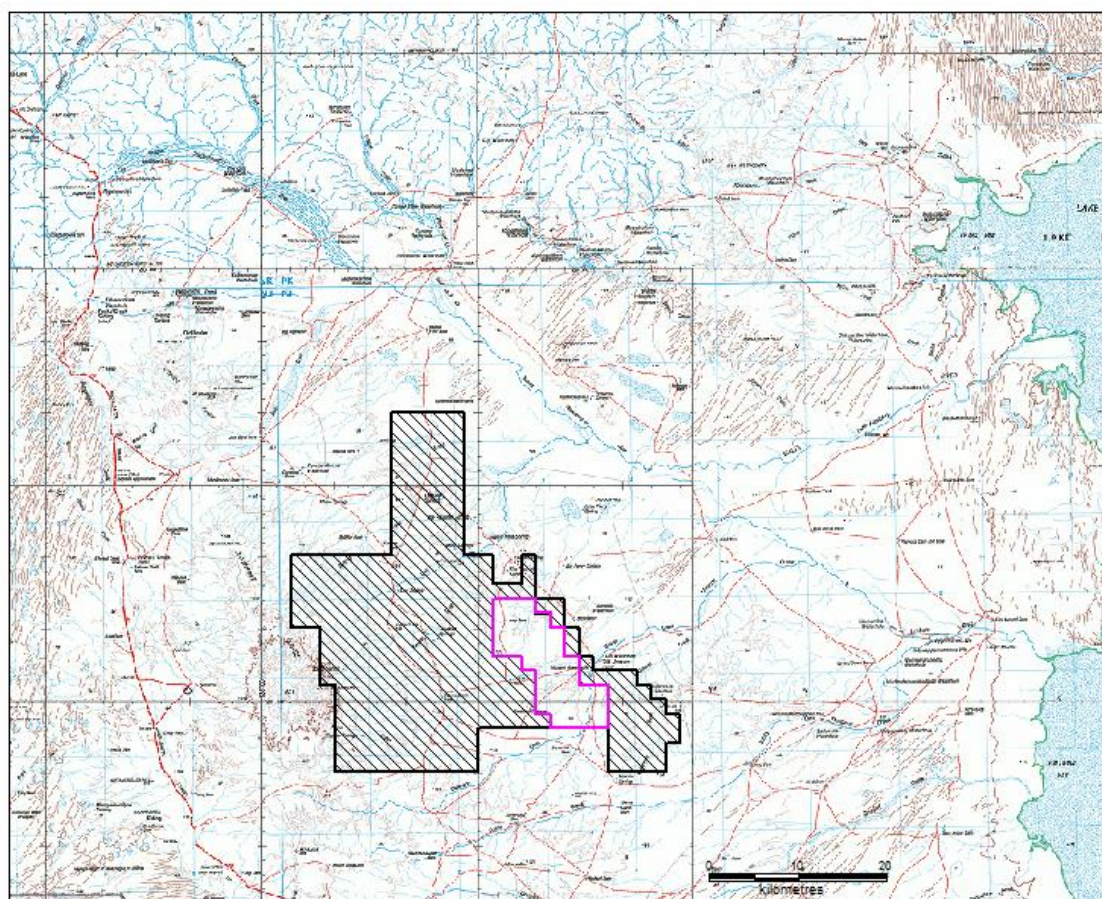


Figure 1: EL 5404 location – west of Lake Eyre  
Surrendered portion cross-hatched

### **3.0 REGIONAL GEOLOGY**

The project area is located on the rifted northeast margin of the Gawler Craton within the northwest extension of the Adelaide Orogenic Belt, midway between the Musgrave Block and Curnamona Craton.

The project area incorporates Proterozoic inliers – the Peake and Denison province. Palaeoproterozoic (1800-1780 Ma) basement lithologies are exposed within the inliers as large enclaves surrounded by Neoproterozoic “diapiric” breccias and further to the east as isolated exposures at Spring Hill, Mt Charles, Lagoon Hill and Milne Springs. These basement rocks are dominated by interlayered metabasalt and quartzite with subordinate porphyritic rhyolite, granite, phyllite, schist and calcsilicate.

A second volcano-sedimentary cycle is recognised at 1750-1740 Ma equated with the Wallaroo Group of the Northern Yorke Peninsula. These rocks comprise felsic metavolcanics, quartz-feldspar schist, gneiss, calcsilicate and quartzite.

Anorogenic felsic plutonism around 1530 Ma is evident within the inliers but is restricted to an occurrence of massive to coarse-grained granite and aplite dykes at Lagoon Hill. The age of these intrusives is important and provides evidence for potential fluid/metal sources with a spatial and temporal relationship to known IOCG mineralising events.

Mesozoic sediment cover of the Eromanga Basin largely conceals metamorphic basement to the east and west of the inliers. The Late Jurassic–Early Cretaceous marginal basin sequence exposed in the area comprises a fining up sequence including the basal Algebuckina Sandstone, Cadna-Owie Formation and Bulldog Shale.

Tertiary gibber lag, gypsiferous clays, alluvial gravels, silts/clays, aeolian dune sands, lacustrine and mound spring deposits overlie the Mesozoic sediments and dominate the surficial cover away from the inliers.

### **4.0 HISTORICAL EXPLORATION**

A range of companies have carried out base metal exploration in the district.

During 1974 Chevron Exploration Corporation held much of the Peake & Denison project area under Exploration Licence 22 (Lagoon Hill). Activities were focused on uranium exploration and concluded with an 18-hole mud rotary drilling programme, which was abandoned with little success.

Over the period 1978 to 1980, Dampier Mining conducted ground magnetic and mapping traverses over key magnetic complexes within the area, concluding in two holes (WLE 1 & WLE 2) being drilled. No significant mineralisation was encountered.

BHP Minerals Pty Ltd held tenements in the area in 1978-80 and completed ground magnetic and gravity traverses over selected magnetic complexes. Their work resulted in the drilling of one hole (WLE1a) into a large gravity/magnetic anomaly which intersected an altered unmineralised calc-silicate rock at 295.4 metres.



CRA Exploration Pty Ltd held tenements around Spring Hill and Mt Charles in the early 1990's. Work activities included stream sediment and gravel sampling, airborne geophysical surveying and gravity surveying.

In the late 1990's, BHP Minerals Pty Ltd and Rio Tinto Exploration Pty Ltd joint ventured tenements in the Peake-Denison area. In November 2003 these companies formed a joint venture with Phelps Dodge Australasia Inc, with Red Metal Limited acting as operator on behalf of Phelps Dodge. The joint venture tenements were surrendered in 2010.

## 5.0 CURRENT EXPLORATION PROGRAM

The exploration target is Proterozoic copper-gold ironstone-hosted deposits on the NE margin of the Peake and Denison Inliers. The highly magnetic terrain of the Peake and Denison area is of similar size and intensity to the Olympic Dam magnetic terrain on the Stuart Shelf.

Regional geophysical interpretation of existing datasets was conducted.

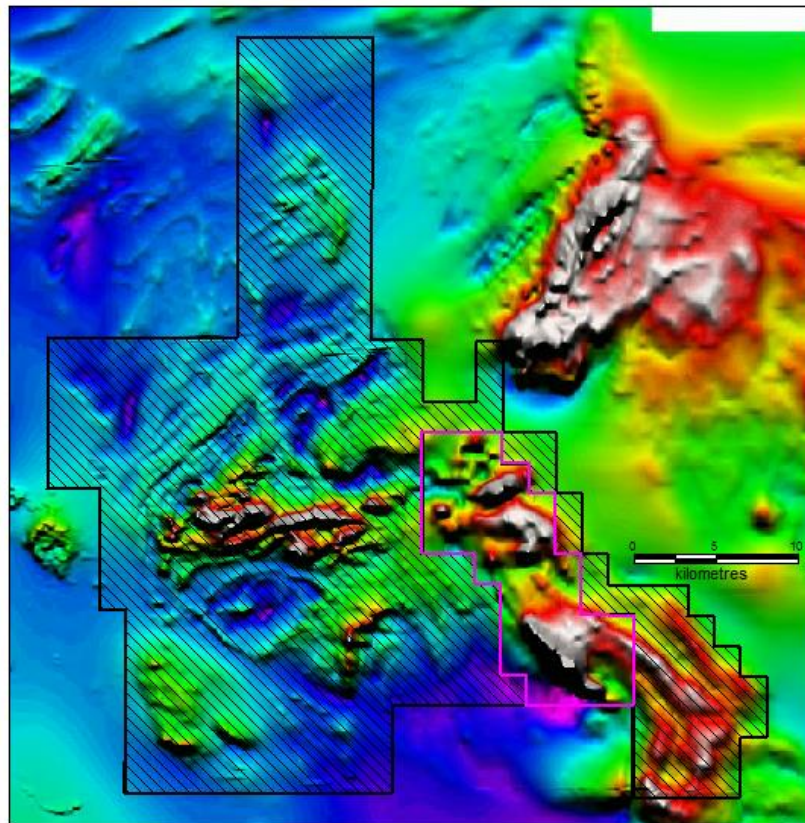


Figure 2: EL 5404 – regional magnetic image  
Surrendered portion cross-hatched

## 6.0 CONCLUSIONS

On the basis of regional geophysical interpretations, the area surrendered was considered to have lower exploration potential.