



# **MITHRIL**

---

## **RESOURCES LTD**

*60 King William Road, Goodwood, South Australia 5034*  
*Telephone: (61 8) 8378 8200 Fax: (61 8) 8271 0037*  
Web: [www.mithrilresources.com.au](http://www.mithrilresources.com.au) Email: [admin@mithrilresources.com.au](mailto:admin@mithrilresources.com.au)  
ABN: 30 099 883 922

---

## **CASEY PROJECT**

**EL 25711, 25887**

**50% REDUCTION REPORT FOR END OF YEAR 2**

**Jim McKinnon-Matthews**  
**Chief Geologist**

January 2010

MAP REFERENCE:  
**HALE RIVER 250K Sheet SG53/3**

**ILLOGWA CREEK 250K Sheet SF53/15**

## **SUMMARY**

This report summarises the work completed over the relinquished 50% on Exploration Licences 25711, 25887. Work completed on these areas consisted of a gravity survey on 2kmx2km spacing as infill to the 4km x 4km gravity survey completed by the NTGS in 2007.

**CONTENTS**

1.0 Introduction ..... 1  
2.0 Location ..... 1  
3.0 Tenure ..... 1  
4.0 Geology ..... 1  
5.0 Previous Exploration..... 2  
6.0 Mithril Activities over reduced areas..... 3

FIGURES at end of Document

APPENDIX - Gravity data.

## 1.0 Introduction

This report summarises the work carried out by Mithril Resources Limited on the 50% relinquished portions of Exploration Licences 25711 and 25887.

The area was selected following the identification of significant copper mineralisation in a mega-conglomerate unit at the Pipeline Prospect in what is thought to be the Loves Creek Member. This mineralisation is thought to be related to a stratiform or stratabound mineralising event.

## 2.0 Location

The ELs are located 170 km east-southeast of Alice Springs along the north-western margin of the Simpson Desert (Figure 1). Access from Alice Springs is via the Ross Hwy for 33km and then 158km along the Ringwood-Numery Road. Access from the main road is then either cross county or on station tracks and roads.

## 3.0 Tenure

ELs 25711 and 25887 were granted on 17 September 2007 to Minex (Aust) Ltd, a wholly owned subsidiary of Mithril Resources.

Following the 50% relinquishment due to statutory requirements the area under tenure was reduced from 442sqkm to 221sqkm, Table 1.

Tenement	Ten no.	Area (sqkm)	Grant Date	Expiry Date
Casey 2	25711	184	17 Sept 2007	16 Sept 2013
Casey 3	25887	37	17 Sept 2007	16 Sept 2013

**Table 1:** Current Details of ELs

## 4.0 Geology

The geology of Central Australia can be divided into two broad components: Paleo - to Mesoproterozoic igneous-metamorphic rocks (Arunta-Musgraves regions) and Neoproterozoic to Palaeozoic Centralian Superbasin sediments (Amadeus-Georgina-Ngalia Basins). The Centralian Superbasin once covered the entire southern Arunta but uplift and erosion of the basin produced domains where the sediments are now absent and Arunta basement is exposed.

The Casey project as a whole focuses on the area to the west and north of the Casey Inlier; a 17km wide, northwest-trending uplift block where the south easternmost outcrops of Arunta basement are exposed. Basement is exposed for about 50% of the inlier. Where covered, the preserved Amadeus sediments are relatively thin and only shallowly dipping. The entire uplift block is obvious in the regional aeromagnetic data as the basement rocks are more magnetic than the Amadeus sediments. The gross structure of the uplift block is complicated, although it is probably bounded by southwest-dipping thrust faults. The north-western and south-eastern margins of the uplift block are poorly constrained.

Amadeus Basin sediments thinly cover the bulk of the project area. Cliffs of Heavitree Quartzite preserve the unconformity above all the basement domains. The Amadeus sediments overlying the inlier and other basement in the area typically dip shallowly.

## **5.0 Previous Exploration**

Historical exploration within the area has been sporadic focussing on both of the Casey inlier and Amadeus basin sediments for various styles of mineralisation. The main historic work includes:

Sabminco (EL 5363; CR19890017) – Au exploration in the exposed Arunta basement of the Casey Inlier. Copper mineralisation at 3 localities reported, including Arthur Popes Prospect, but no evidence that any work was undertaken at these localities. Numerous stream sediment and soil samples taken, but mainly in Central and Western Basement Domains of the Casey Inlier. However, their best stream sediment result of 6400 ppt Au (bulk cyanide leach) was collected from EL 24646 (northern western entrance to Casey pound).

Pancontinental (EL 6550; CR19900180) - zircon-monzite mineral sand exploration in Hale River alluvial fan. Ground magnetic and shallow drillhole traverses across the Hale River. A number of these traverses are within EL 24646. Heavy mineral concentrates averaged 7-8 %, but were predominantly garnet with little zircon or monazite.

Poseidon Exploration (EL 6997, 6998, 7392; CR1992007, 19930015, 19930784) - Cu, Pb, Zn and Ag exploration, including very detailed work on the Amadeus Basin sediments overlying the northern part of the Casey Inlier and flanking the inlier. Includes work at the Limbla and Ringwood Copper prospects, which are east and west of the Casey Inlier, respectively. Extensive lag, soil, stream sediment and rockchip sampling. Fourteen key areas identified for continued work. Ground geophysics and drilling undertaken at these key areas. None of this work was within EL 24646, but it is still relevant to the greater area.

CRAE/Rio Tinto Exploration (EL 9332, 9335, 9337, 9340; CR19970431, 19970543) - Very extensive landholding, including about half of the Arunta basement in the Casey Inlier. Proximity to the continental-scale Woolangi Lineament (bounding faults of Casey Inlier?) noted for kimberlitic diamonds potential. Regional airborne magnetic and radiometric survey completed over entire area delineated 64 discrete dipolar magnetic bodies. Follow-up bulk gravel samples collected from 34 of these anomalies yielded no kimberlitic mineral indicators. Other focus was the Amadeus Basin sediments, particularly the contact between the Heavitree Quartzite and Gillen Member (Bitter Springs Formation) looking for stratabound, sediment-hosted copper (African Copper Belt, Kupferschiefer) and unconformity-related uranium mineralisation. Extensive stream sediment and rockchip sampling, followed by 150 percussion drillholes.

Since then, there has been no other exploration work. In 2004, the Northern Territory Geological Survey started mapping the Casey Inlier, only focussing on the

EL25711 and EL25887 first 50% reduction report.

Arunta basement. This work is ongoing and has included extensive rockchip sampling.

## **6.0 Mithril Activities over reduced areas**

Mithril Resources Activities in the first year included a review of historical exploration and participation in infilling the 4x4km gravity data to 1x1km and 2x2km over the extent of the exploration licences. The reason for infilling this gravity was to help determine potential mineralised structures and possibly accumulations of mineralisation (primarily copper) associated with the Bitter Springs formation as seen at the nearby Pipeline Copper Prospect. The areas relinquished were viewed as having little or no potential of hosting this stratigraphy, Figures 2 and 3.

No further work was completed on the relinquished areas of the tenements.

All gravity data can be found in appendix 1.

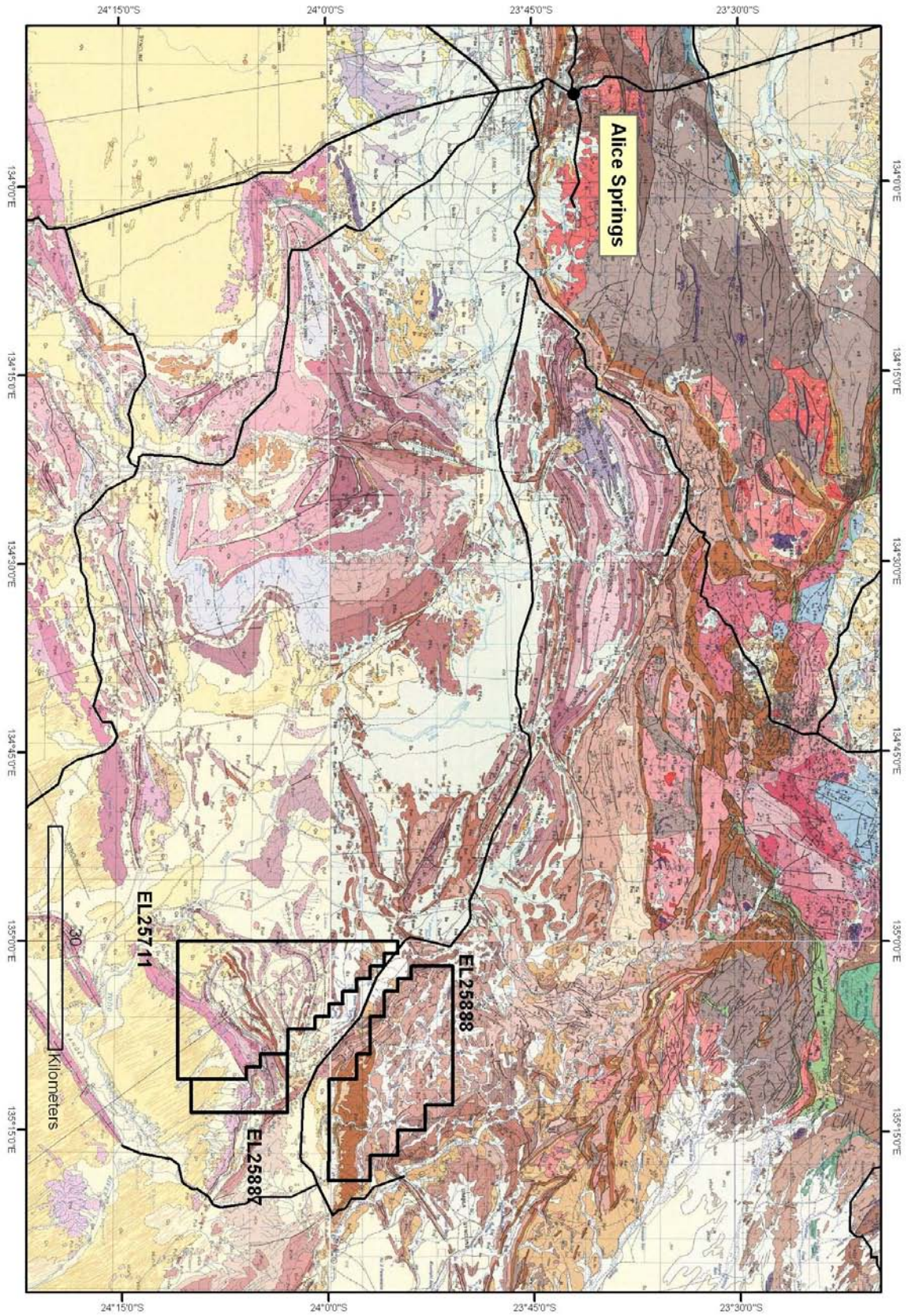


Figure 1: Location of Project Area on 250K published Geology

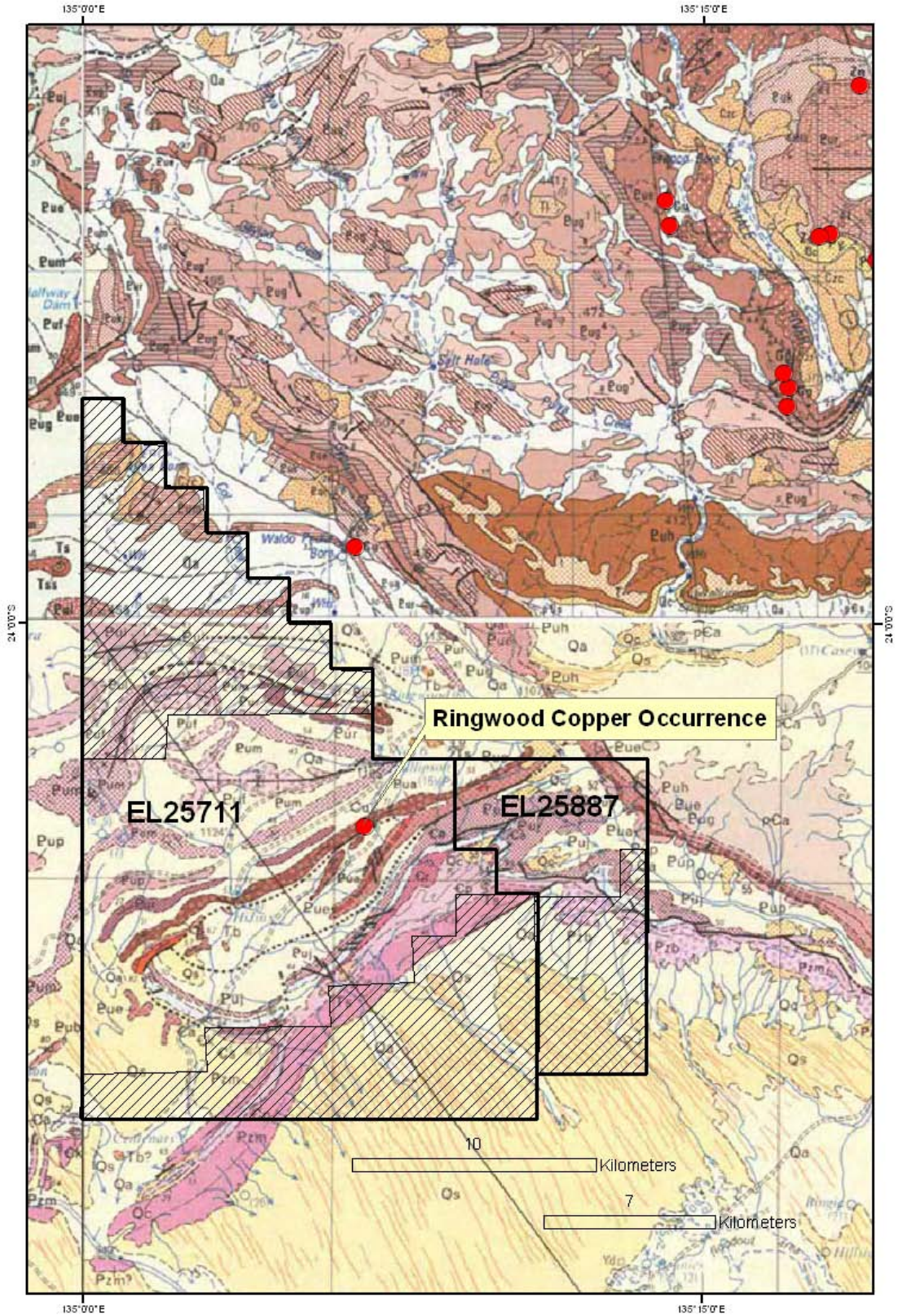


Figure 2: Mineral occurrences on published geology. Hatched areas are relinquished areas.



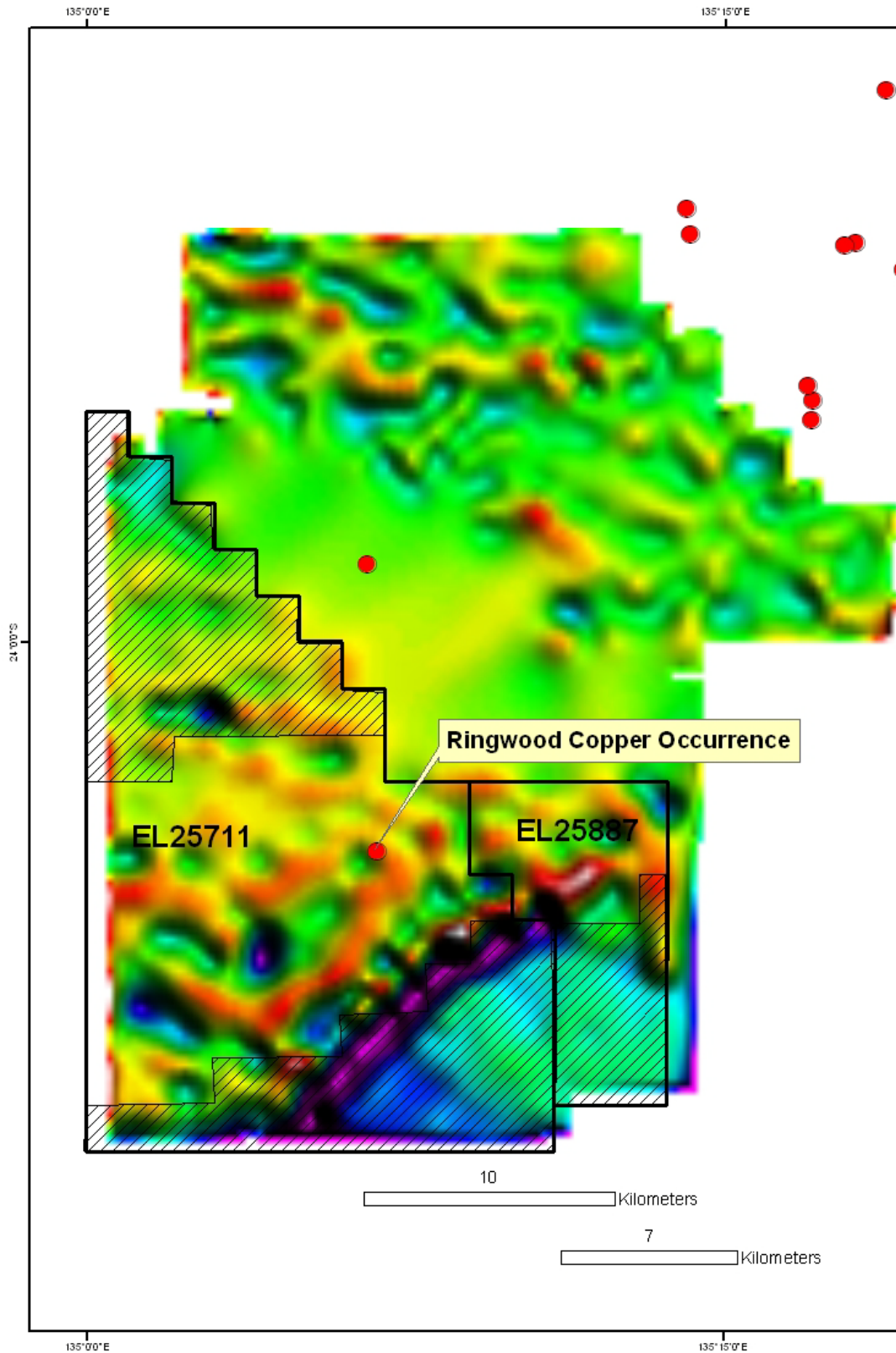


Figure 3: Gravity image (1vd) of the project area. Hatching shows relinquished areas.