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## No. 11,900

**EL 2760 / EL 3445**

**KANGAROO DAM**

### **SECOND PARTIAL SURRENDER REPORT FOR THE PERIOD 19/10/2000 TO 3/9/2009**

Submitted by  
IMX Resources Ltd  
2009

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**Government of South Australia**  
**Primary Industries and Resources SA**



# **EL 3445 Kangaroo Dam Partial Relinquishment Report**

Volume 1 of 1

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## **SUMMARY**

Exploration licence EL3445 'Kangaroo Dam' (formally EL2760) covers an area of 509 km<sup>2</sup> and is situated 45 km south of Coober Pedy in the northern Gawler Craton (Figure 1). EL3445 is situated on the Mount Barry and Anna Creek Pastoral Leases and lies within the Coober Pedy (SH53-06) and Billa Kalina (SH53-07) 1:250,000 map sheets. It lies within the Woomera Prohibited Area.

This partial relinquishment report describes activities conducted on the 27 km<sup>2</sup> portion of the tenement that is to be relinquished.

Between 2001 and 2004, the licence was part of the Mt Woods Joint Venture between Goldstream (now IMX Resources Ltd) and Anglo. On 11<sup>th</sup> February 2004, Anglo withdrew from the joint venture and the licence was returned to Goldstream for management.

EL3445 is a subsequent replacement licence, granted on 5<sup>th</sup> April 2007, for EL2760, which continues to be part of the Mt Woods Project.

No field work was conducted during the report period due to exploration commitments elsewhere within the Mt Woods Project.

A review of the geophysical targets and the uranium potential of the licence is ongoing.

## **KEY WORDS**

Coober Pedy, Coober Pedy 1:250,000 map sheet, Billa Kalina 1:250,000 map sheet, Proterozoic, Mount Woods Inlier, Iron Oxide-Copper-Gold, IOCG, Base Metals, Magnetism, Gravity, Geophysical Anomalies

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EL 3445\_Partial Relinquishment Report\_2009.pdf

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## **1.0 INTRODUCTION**

Kangaroo Dam EL3445 is located approximately 45 km south of Coober Pedy in the northern Gawler Craton (Figure 1). EL3445 lies within the Coober Pedy (SH53-06) and Billa Kalina (SH53-07) 1:250,000 map sheets. The EL lies entirely within the Woomera Prohibited Area.

The sealed Stuart Highway from Coober Pedy passes north to south across the EL, which is situated on the Mount Penrhyn Pastoral Lease and which is criss-crossed by numerous dirt tracks, many of which service opal mining activities at localities called Allan Rise and Fitzgerald Dam.

The terrain is dominantly flat to rolling plains with areas of bluebush and saltbush and intermittent drainage towards the west and southwest. The Stuart Highway follows approximately the height of land of the Stuart Range, east of which are low breakaways.

Between 2001 and 2003, the licence was part of the Mt Woods Joint Venture as EL2760 between Goldstream and Anglo American Exploration (Australia) Pty Ltd (Anglo). On February 11<sup>th</sup> 2004, Anglo withdrew from the joint venture and the licence was returned to Goldstream for management.

## **2.0 TENURE**

Exploration Licence 3445 (formally EL2760) was originally granted to IMX Resources Ltd (then Goldstream Mining NL) on 7<sup>th</sup> November 2005, and has subsequently been replaced and renewed. The current licence expires on 6<sup>th</sup> January 2010.

The lease is part of the Mt Woods Project Amalgamated Expenditure Agreement with PIRSA dated 23 June 2008, an extension to which is being sought.

The EL initially covered an area of approximately 567 km<sup>2</sup> but has been reduced by 58 km<sup>2</sup> to 509 km<sup>2</sup> (171 blocks).

| <b>Licence</b> | <b>Granted</b>  | <b>Expiry</b>   | <b>Year</b> | <b>Area</b>         | <b>Status</b> |
|----------------|-----------------|-----------------|-------------|---------------------|---------------|
| EL3445         | 7 November 2005 | 6 November 2009 | 3           | 509 km <sup>2</sup> | Current       |
| EL2760         | 19 October 2000 | 18 October 2005 | 6           | 509 km <sup>2</sup> | Expired       |

*Table 1: Licence Details*

This partial reduction reduces the EL by a further 27 km<sup>2</sup> (9 blocks) to 486 km<sup>2</sup> (162 blocks) (see Figure 2).

## **3.0 REGIONAL GEOLOGY**

The Kangaroo Dam exploration licence covers the western portion of the Palaeoproterozoic Mount Woods Inlier, a large block of variable magnetic intensity lying to the east and southeast of the Coober Pedy Ridge and the Mabel Creek Inlier. These three terranes abut an interpreted Archaean age cratonic area to their south and west. The area contains major regional structures (including the Karari Fault Zone) and is traversed by several prominent northwest trending structures along which significant thicknesses of Permian sediments have been deposited.

Basement outcrop in the region is generally restricted to a quarry outcrop in the southwest of the tenement, and limited outcrop of Gawler Range Volcanics and Archaean Gneisses further south and southwest of the area.

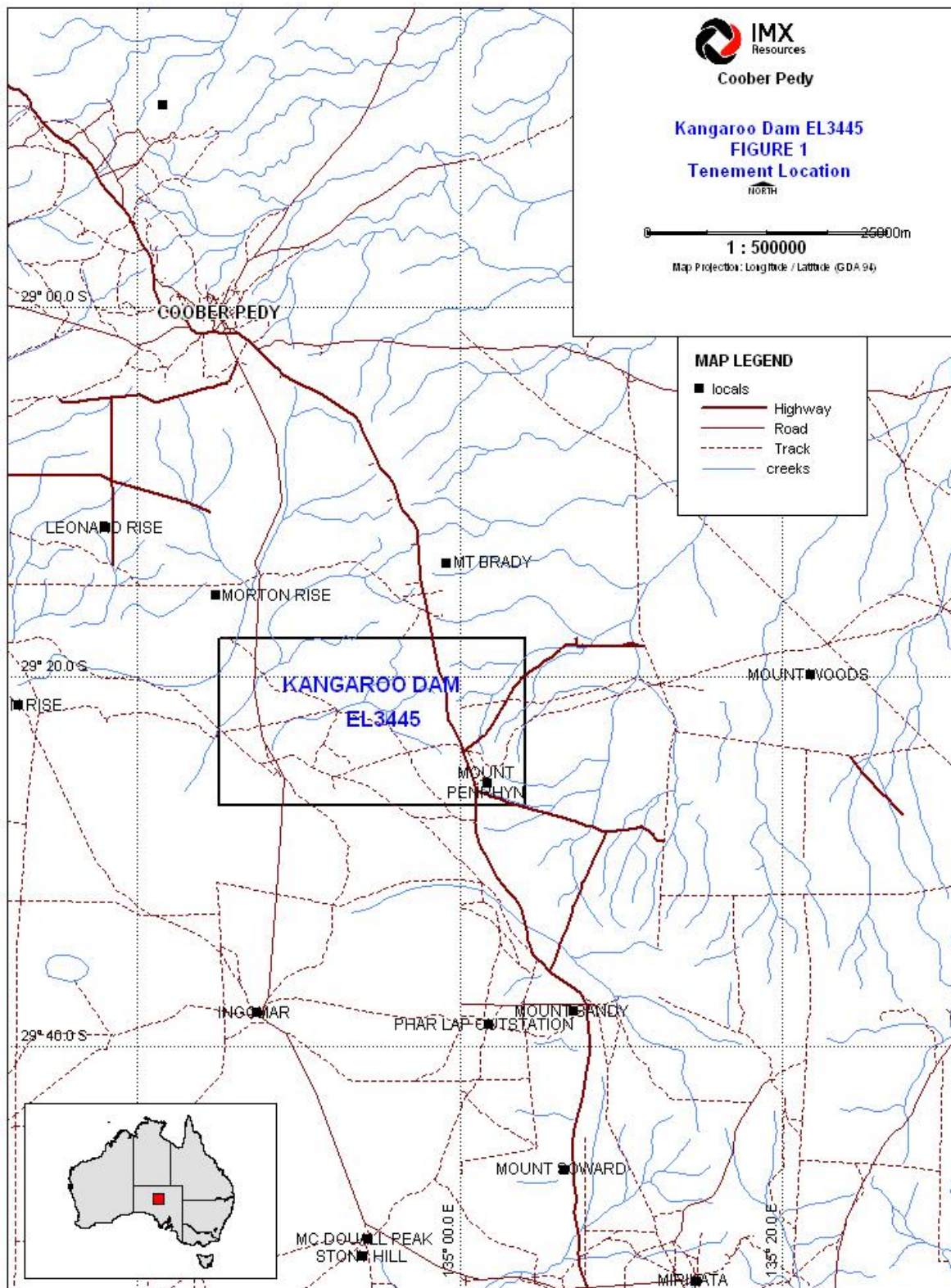


Figure 1: Kangaroo Dam location map

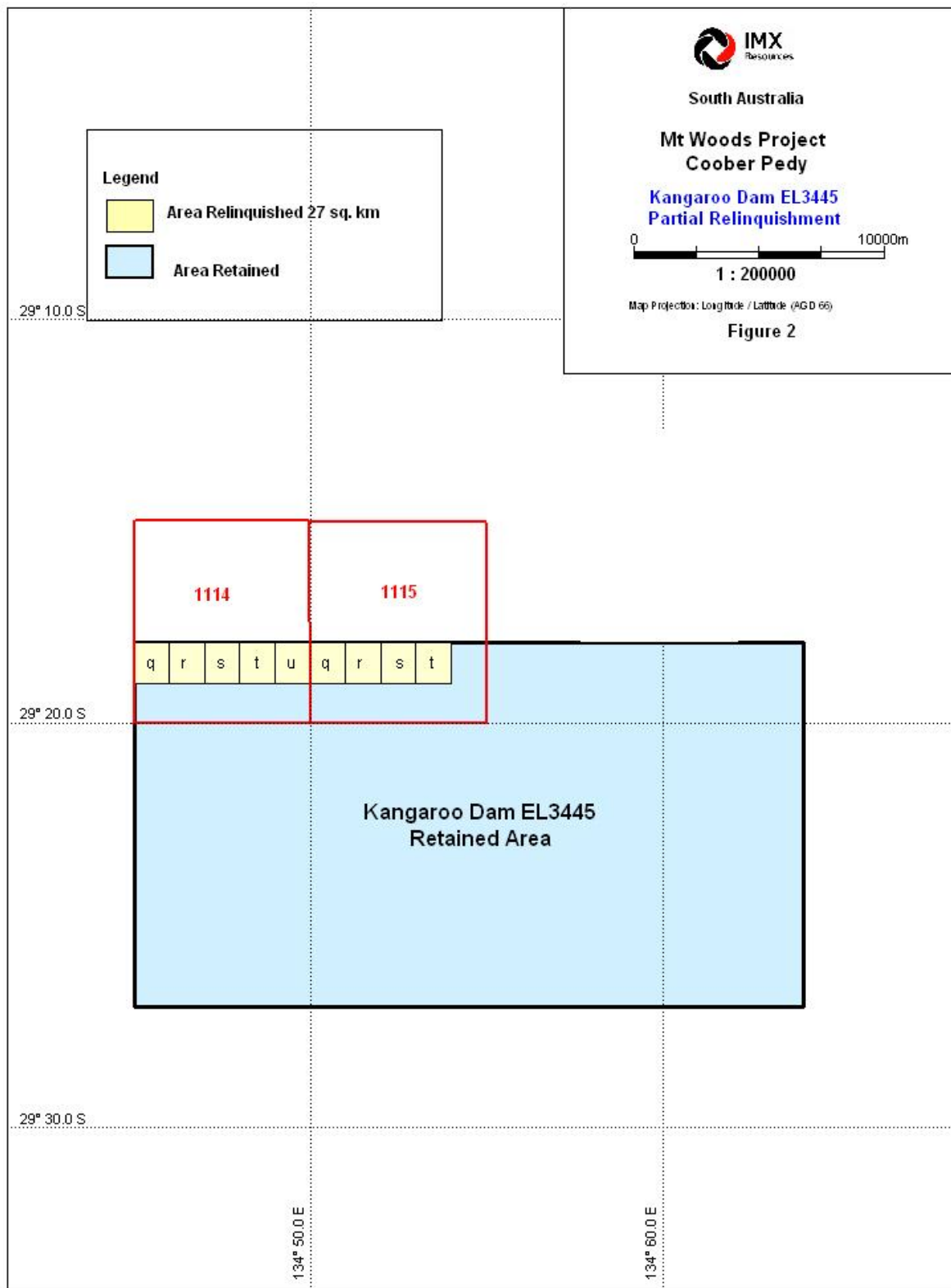


Figure 2: Kangaroo Dam EL – relinquished blocks

The Mount Woods Inlier comprises high grade Palaeoproterozoic metasedimentary rocks (amphibolite to granulite facies quartzo-feldspathic gneisses, meta-iron formations, quartz-feldspar-biotite schists, metaquartzites, calc-silicates and forsterite marbles) intruded by syn- to post tectonic granitoids, (eg, the Balta Granite, a polyphase Hiltaba Granite equivalent, comprising non-foliated brick-red granite, porphyritic granites and hybrid granites) and is covered by Mesozoic and Tertiary sedimentary cover. The metasediments are characterised by an intense magnetic response in regional aeromagnetic data, which reflects a combination of magnetite rich precursor sediments including BIFs, magnetite alteration, and interpreted probable mafic intrusive bodies. The Inlier is bounded by major shear zones, the most prominent of which is the Karari Fault Zone which bounds the east-west trending Coober Pedy Ridge.

To the north, the Coober Pedy Ridge is separated from the Mabel Creek Ridge by the Permian Tallaringa Trough, and the cover thickness increases markedly. To the west cover thickness also increases due to the presence of Permian and some Cambrian sediments, and increased thickness of Mesozoic cover. Limited previous exploration drilling has shown that the cover sequences generally comprising Cretaceous sediments of the Cadna-Owie Formation, Algebuckina Sandstone and the Bulldog Shale, which are in turn overlain by Tertiary, Quaternary and recent cover, are highly variable over the tenement area. Basement is interpreted to deepen to the south of the tenement into the Phillipson Trough.

Extensive pre- and post-tectonic alteration can be observed from drill holes in the region. Hematite  $\pm$  magnetite  $\pm$  sulphide breccias, iron introduction into meta-sediments and calcium-iron silicate alteration have been reported.

#### **4.0 PREVIOUS EXPLORATION**

Exploration for iron ore in the Coober Pedy region was undertaken by Delhi Petroleum during 1962-1965, with more extensive base and precious metal exploration, and minor uranium and diamond exploration being carried out by Newmont Ltd (1970-1977), CRA Exploration (1981-1988), BHP Minerals (1991-1995) and WMC Resources (1995-2000, in joint venture with BHP Minerals). Some drilling of geophysical basement targets under cover was completed but no mineralisation of note was intersected.

As there is no basement outcrop within the tenement area, all previous exploration has been strongly controlled by geophysics. Some drilling (principally utilising Rotary Mud/Percussion) of geophysical basement targets under cover was completed but no mineralisation of note was intersected. Extensive regional RC drilling was also completed by PIRSA as part of the South Australian Steel and Energy Project on the Phillipson and Coober Pedy 1:100,000 map sheets (1995).

Between 2001 and 2003 Anglo joint ventured into the Goldstream ground and managed exploration on behalf of Goldstream. Initial exploration by Anglo involved a comprehensive review and compilation of previous work which identified the potential of the area for craton margin magmatic nickel deposits together with a number of aeromagnetic and gravity targets with potential for iron oxide-copper-gold (IOCG) style mineralisation.

In 2004, Ian Garsed of Garsed & Associates was contracted by Goldstream to conduct a detailed assessment of exploration conducted over the entire Mt Woods Project licences which included the Kangaroo Dam area. Five geophysical targets were identified in the Kangaroo Dam licence using gravity grids and interpreted geology. Details were reported by Manzi and Garsed (2005).



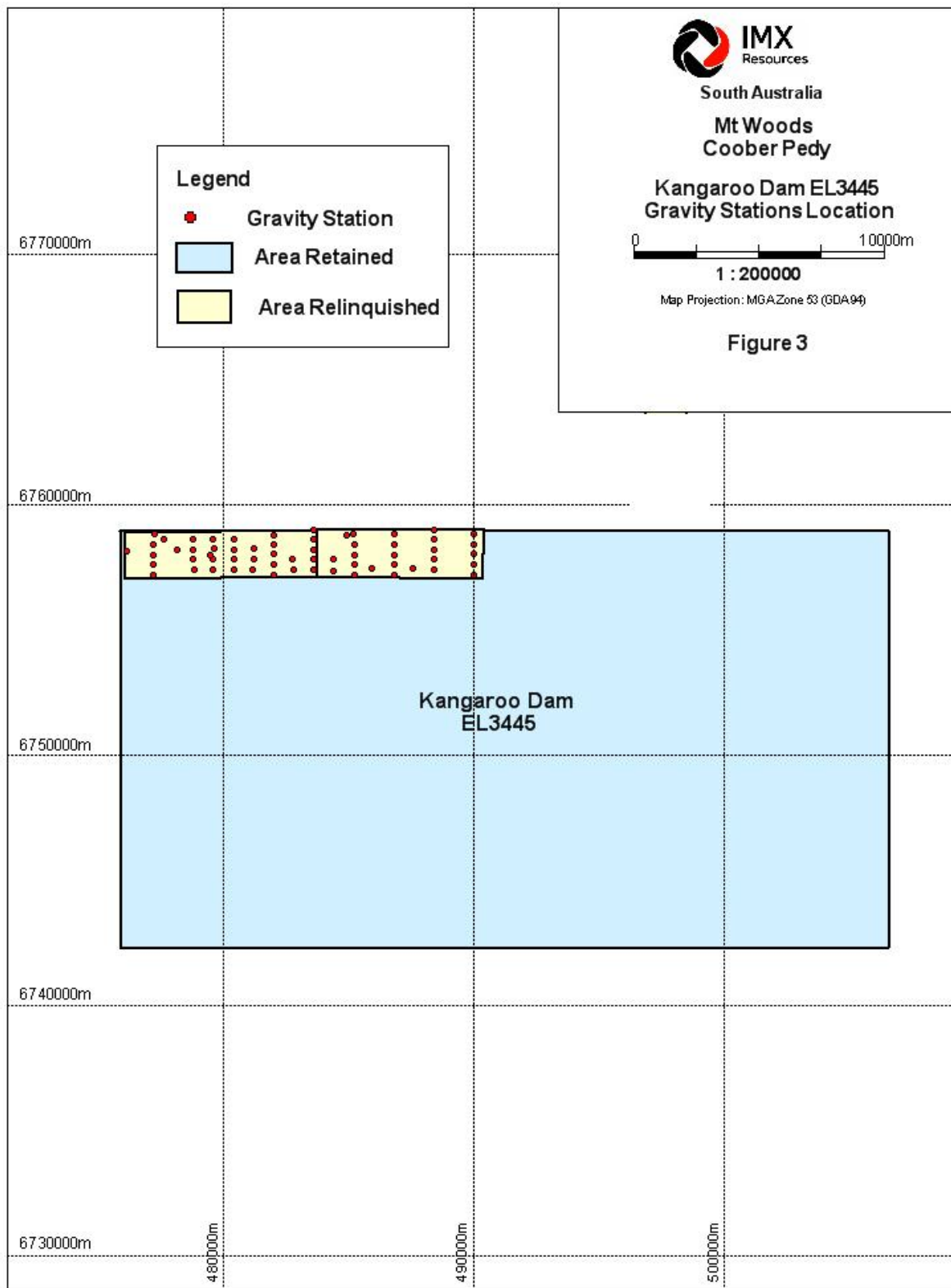


Figure 3: Location of gravity stations

## **5.0 EXPLORATION ACTIVITIES**

The area to be relinquished was covered by part of a 2003 gravity survey with stations spaced at 400 m intervals on N-S lines spaced 1600 m apart (Figure 3). Locally there are intermediate lines. In the area to be relinquished there are 61 stations. Appendix I shows the gravity survey data.

Assessment of geophysical targets is ongoing. Several targets have been drilled. None are in the area to be relinquished.

## **6.0 EXPENDITURE**

Expenditure for the relinquished portion of EL3445 for the reporting period is **\$6,000**

## **7.0 CONCLUSIONS AND RECOMMENDATIONS**

The tenement EL3445 has being reduced in size for the company to focus on the more prospective portion of the tenement and also as part of the Mount Woods Amalgamated Agreement with PIRSA. Modeling of gravity and magnetics data and reinterpretation of the existing data is ongoing in order to determine depths and geometry of the IOCG targets.

## **8.0 REFERENCES**

**Brewer, A., 2003.** EL 2760 Kangaroo Dam, Mount Woods Joint Venture Annual Report for the Period 7<sup>th</sup> January 2002 to 6<sup>th</sup> January 2003. Anglo American Exploration (Australia) Pty Ltd. *Internal unpublished report for Goldstream Mining NL and PIRSA.*

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# **APPENDIX 1**

## **Gravity Station Data**

| X_GDA94 | Y_GDA94 | SURVEY_ID        | GDAZONE |
|---------|---------|------------------|---------|
| 477197  | 6757206 | Goldstream_Grav1 | 53      |
| 477197  | 6757612 | Goldstream_Grav1 | 53      |
| 477196  | 6757995 | Goldstream_Grav1 | 53      |
| 477203  | 6758396 | Goldstream_Grav1 | 53      |
| 477225  | 6758824 | Goldstream_Grav1 | 53      |
| 478800  | 6757402 | Goldstream_Grav1 | 53      |
| 478794  | 6757803 | Goldstream_Grav1 | 53      |
| 478795  | 6758205 | Goldstream_Grav1 | 53      |
| 478790  | 6758619 | Goldstream_Grav1 | 53      |
| 479559  | 6757398 | Goldstream_Grav1 | 53      |
| 479580  | 6757828 | Goldstream_Grav1 | 53      |
| 479589  | 6758593 | Goldstream_Grav1 | 53      |
| 479630  | 6758221 | Goldstream_Grav1 | 53      |
| 480401  | 6757399 | Goldstream_Grav1 | 53      |
| 480398  | 6757796 | Goldstream_Grav1 | 53      |
| 480403  | 6758207 | Goldstream_Grav1 | 53      |
| 480404  | 6758605 | Goldstream_Grav1 | 53      |
| 481177  | 6757408 | Goldstream_Grav1 | 53      |
| 481195  | 6757804 | Goldstream_Grav1 | 53      |
| 481223  | 6758258 | Goldstream_Grav1 | 53      |
| 481999  | 6757201 | Goldstream_Grav1 | 53      |
| 481992  | 6757599 | Goldstream_Grav1 | 53      |
| 481998  | 6758007 | Goldstream_Grav1 | 53      |
| 481995  | 6758409 | Goldstream_Grav1 | 53      |
| 481997  | 6758800 | Goldstream_Grav1 | 53      |
| 482782  | 6757408 | Goldstream_Grav1 | 53      |
| 482750  | 6757825 | Goldstream_Grav1 | 53      |
| 483598  | 6757402 | Goldstream_Grav1 | 53      |
| 483603  | 6757806 | Goldstream_Grav1 | 53      |
| 483592  | 6758205 | Goldstream_Grav1 | 53      |
| 483602  | 6758604 | Goldstream_Grav1 | 53      |
| 483601  | 6759002 | Goldstream_Grav1 | 53      |
| 484368  | 6757324 | Goldstream_Grav1 | 53      |
| 484369  | 6757806 | Goldstream_Grav1 | 53      |
| 485202  | 6757208 | Goldstream_Grav1 | 53      |
| 485201  | 6757606 | Goldstream_Grav1 | 53      |
| 485210  | 6758003 | Goldstream_Grav1 | 53      |
| 485202  | 6758406 | Goldstream_Grav1 | 53      |
| 485191  | 6758817 | Goldstream_Grav1 | 53      |
| 485938  | 6757450 | Goldstream_Grav1 | 53      |
| 486801  | 6757210 | Goldstream_Grav1 | 53      |
| 486800  | 6757591 | Goldstream_Grav1 | 53      |
| 486800  | 6758002 | Goldstream_Grav1 | 53      |
| 486797  | 6758410 | Goldstream_Grav1 | 53      |
| 486804  | 6758807 | Goldstream_Grav1 | 53      |
| 487575  | 6757445 | Goldstream_Grav1 | 53      |
| 488402  | 6757402 | Goldstream_Grav1 | 53      |
| 488402  | 6757803 | Goldstream_Grav1 | 53      |
| 488410  | 6758193 | Goldstream_Grav1 | 53      |
| 488402  | 6758608 | Goldstream_Grav1 | 53      |
| 488404  | 6759005 | Goldstream_Grav1 | 53      |
| 490002  | 6757196 | Goldstream_Grav1 | 53      |
| 489995  | 6757593 | Goldstream_Grav1 | 53      |
| 490003  | 6758010 | Goldstream_Grav1 | 53      |
| 490003  | 6758394 | Goldstream_Grav1 | 53      |
| 490005  | 6758812 | Goldstream_Grav1 | 53      |
| 479466  | 6757993 | North29_Plus     | 53      |
| 476103  | 6758155 | North29_Plus     | 53      |
| 478122  | 6758180 | North29_Plus     | 53      |
| 477627  | 6758604 | North29_Plus     | 53      |
| 484910  | 6758773 | North29_Plus     | 53      |