



## **QUARTERLY REPORT JUNE 2013**

**22 July 2013**

### **HIGHLIGHTS**

#### **Financial Status**

- At 30 June 2013, GCR held approximately \$1.3 million in cash and \$485,000 in negotiable securities.

#### **Molong Project – Copper Hill**

- Drilling programs to test anomalies outside the Copper Hill deposit are being planned to add to the existing resource and to search for higher grade deposits within the Molong - Copper Hill Exploration Licence 6391.

#### **South Australia Drilling**

- An initial three-hole core drilling program, testing three gravity-magnetic anomalies, has been completed with encouraging indications. Magnetite-biotite and hematite-sericite alteration assemblages were intersected. Anomalous copper values, extensive brecciation and silicification were observed in core from the SR11 gravity anomaly.

### **MOLONG PROJECT – COPPER HILL**

GCR conducted a series of assessment studies into the economics of the Copper Hill copper-gold deposit. These investigated a range of possible production rates, based on various capital costs and operating costs, to derive likely revenue streams.

Using copper and gold prices at, or close to, April 2013 spot prices, the studies demonstrated that mining and mill throughput rates of between 5 and 8 million tonnes per year provided the best returns. On this basis, GCR modelled a scenario with a mill throughput rate of 8 million tonnes of ore per year over a 7 year mine life, yielding a concentrate grading 25% copper and 22 g/t gold. At this scale, the model demonstrates

positive cash flow, but at rates of return unlikely to attract finance from conventional Western sources.

Project economic models improve if additional mineral resource tonnes can be mined and processed, adding to the mine life. Similarly, increased grade would significantly benefit project cash flows. Drilling at Copper Hill in the past 5 years, focusing on the main deposit, has increased the Measured-Indicated-Inferred JORC-resource to 153 million tonnes at grades of 0.32% copper and 0.28 g/t gold using a 0.2% copper cut-off grade. This program materially increased the known tonnage, but copper and gold grades remained relatively unchanged. The Company has not identified a higher grade core of sufficient size to sustain a smaller-scale start-up operation.

Other targets within GCR's Molong Exploration Licence, being outside the quantified mineral resource, were considered of lower priority at the time. Accordingly, drilling of these areas was placed on hold. The relatively high-cost programs of deep drilling below Buckley's Hill, Copper Hill and Wattle Hill were included in this deferral.



**“Coppervale”, with Buckley’s Hill and Copper Hill in the background.  
GCR’s core shed and office facility at Copper Hill near Molong, NSW.**

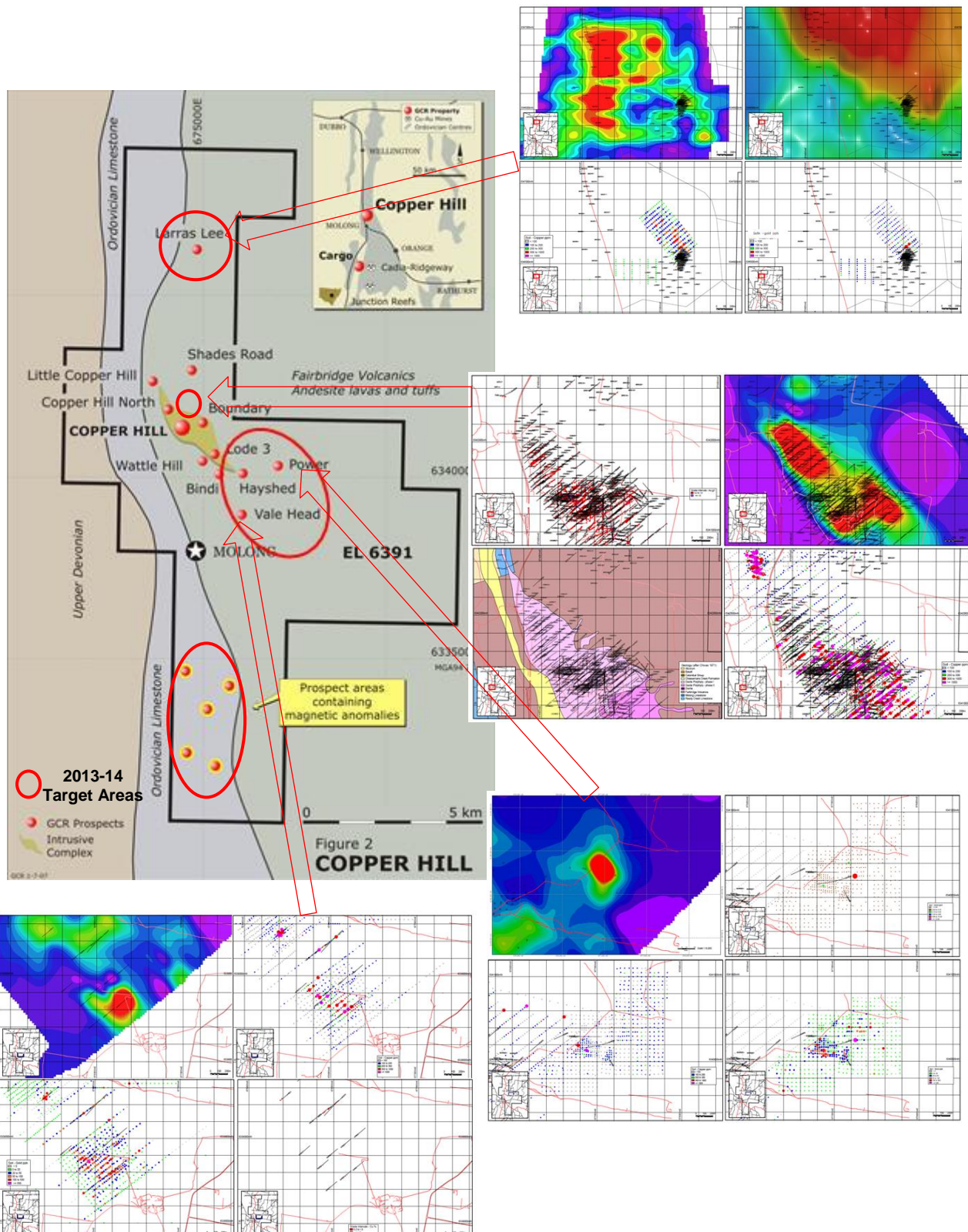
The Company plans to recommence exploration with a view to increase the resource tonnage and, potentially, its grade. A 5,000 metre drilling program has been designed to test four mineralised prospects adjacent to the Copper Hill resource.

These include the northeast shoulder of the Copper Hill induced polarisation anomaly (including the higher grade gold zone of 5 metres at 4.43 g/t gold intersected in GCHR446), the Power induced polarisation anomaly to the east of Copper Hill and, along strike to the southeast, the Hayshed and Vale Head copper-gold prospects.

The Larras Lee prospect to the north and magnetic anomalies in the south of the exploration licence will also be reviewed.

Any suitable mineral resources delineated at these target areas would have the potential to form satellite sources of mill feed should project economics permit. The areas are shown in Figure 1 below.

Alternative metallurgical processing options are also being considered and 200 kg of selected Copper Hill core was sent to Beijing in mid-June for testing.



**Figure 1. Copper Hill EL 6391, showing target areas beyond the main deposit. Side maps, showing IP anomalies, drill intersections and soil geochemistry may be enlarged using the '+' key in Adobe Acrobat®**

## SOUTH AUSTRALIA – GAWLER CRATON IOCG

*Oolgelima Hill, Giddinna, Warriner Creek, Codna Hill, Koolymilka, Stuart Range*

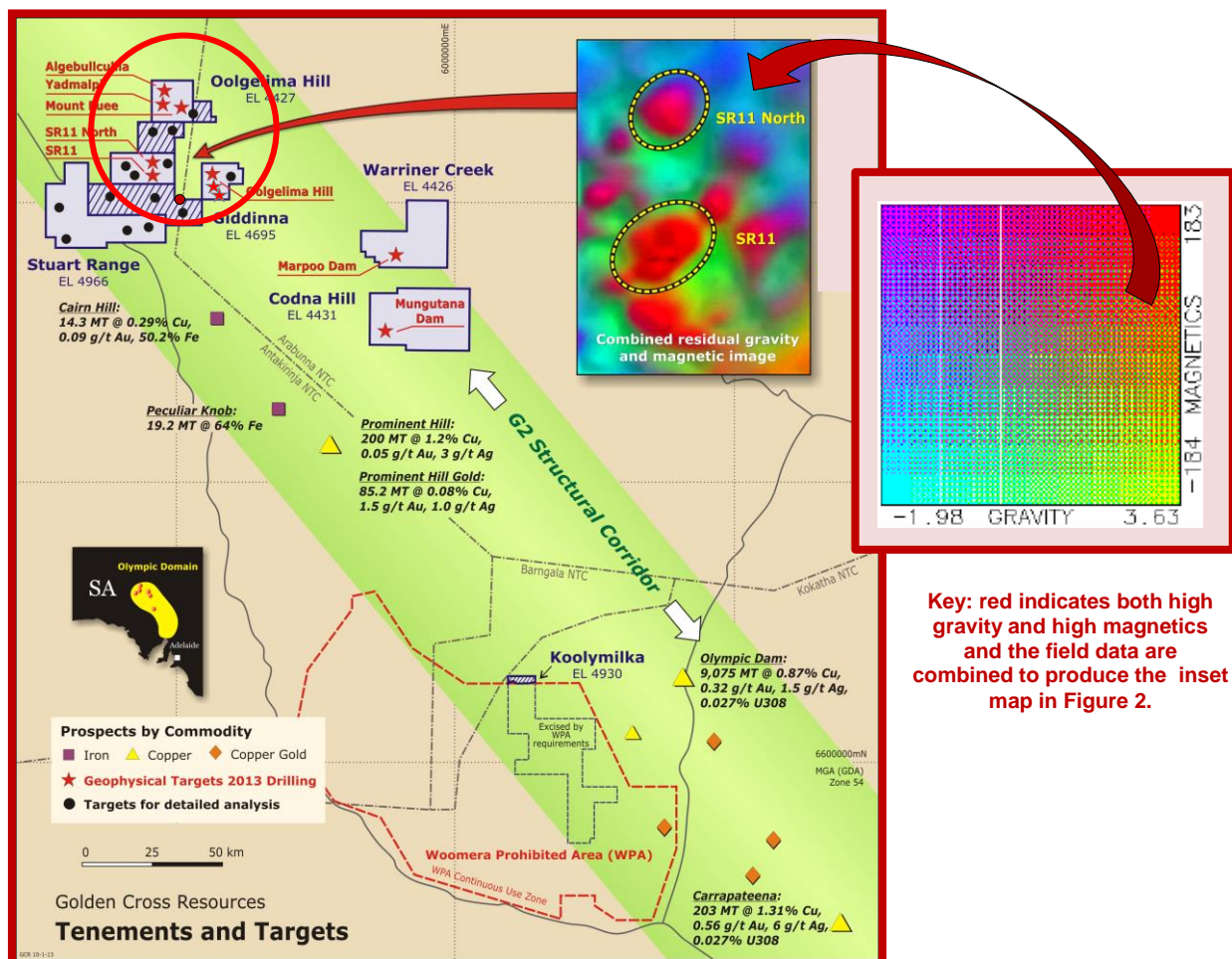
A multi-purpose rig commenced drilling in the Oolgelima EL4427, north east of Coober Pedy on 25 May 2013.

A core drilling program was planned to test three of the six initial targets within the Oolgelima EL (granted in three parts – see Figure 1.) The targets are Algebullcullia, Mount Euee and SR11. Readers are referred to GCR's ASX announcement of 21 January 2013 for more details.

Three holes were completed for a total of 1,412 metres, one at each of the targets set out above.

Whilst no economic mineralisation was intersected, GCR's geologists remain confident that the company is in highly prospective, untested domains. They have been encouraged by the intensity of hematite alteration, zones of sericite alteration, skarn development and brecciation.

Planning the next phase of drilling will follow a review of all assays, petrographic studies and infill gravity surveys (subject to native title clearance).

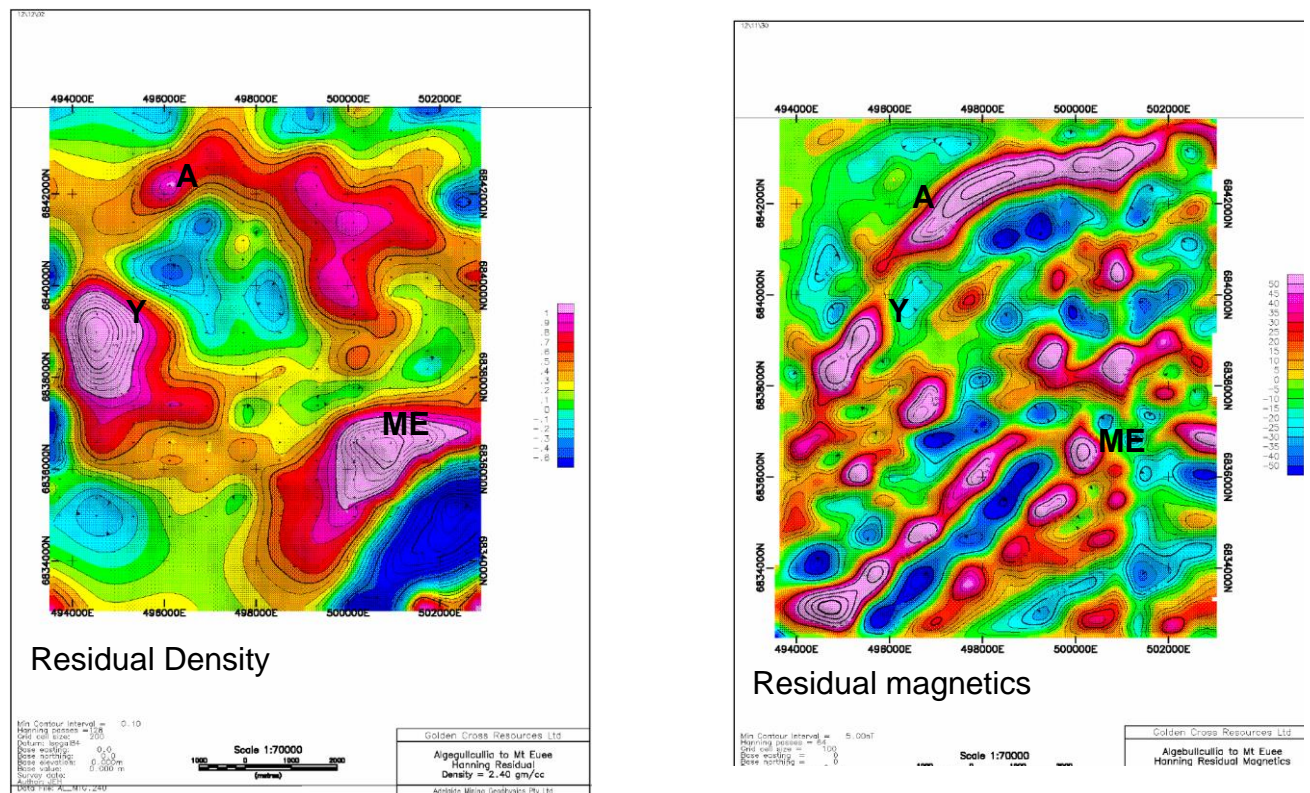


**Figure 2. Golden Cross tenements and targets Warriner Creek, Oolgelima Hill, Codna Hill, Giddinna and Stuart Range Projects (ELs 4426, 4427, 4431, 4695 and 4966). Much of the Koolymilka application (EL 4930) east of Olympic Dam, was excluded from the WPA.**

GCR holds six granted tenements covering over 3000 km<sup>2</sup> within the Gawler Craton and is targeting iron-oxide-copper-gold (IOCG) deposits similar to Prominent Hill and Carrapateena. Those deposits were discovered by drilling coincident magnetic and gravity anomalies comparable to those defined by GCR. GCR has continued field work and desk-top studies over the last few months with new and infill gravity surveys, defining high quality new anomalies and providing data for better drill targeting.

The Algebullcullia, Mt Euee and SR11 anomalies may have economic potential. The former has similarities to Carrapateena where the magnetic response is very weak, perhaps suggesting an IOCG system where almost all of the original magnetite has been altered to hematite while adding sulphides. At Mt Euee, the sharper gravity anomaly seems to require an excess mass of some 300Mt but more gravity data (now underway) will improve the drill targeting. The newly recognised Yadmalpi anomaly ('Y' in Figure 3) near MGA 495000E, 6839000N is being surveyed with closer spaced (200x200m) gravity data.

Other anomalies emerging as being equally prospective, with the right combination of gravity and magnetic responses, are, as noted above, at Yadmalpi, south of Algebullcullia and two new anomalies near Oolgelima Hill, currently being cleared for access by the Arabunna native title owners and shown as red stars in Figure 1.



**Figure 3.** Northern Oolgelima EL4427. Gravity and Magnetic responses. A = Algebullcullia, Y = Yadmalpi, ME = Mount Euee

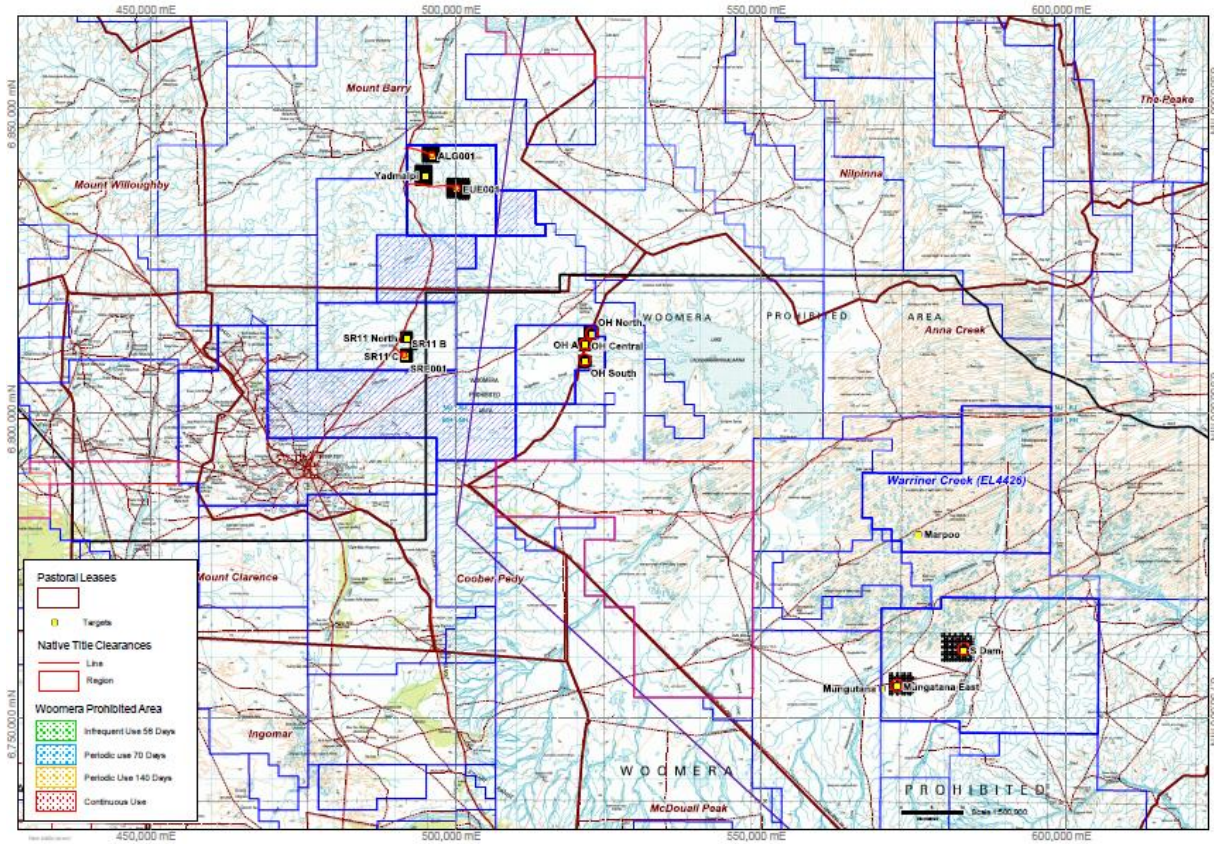


Figure 4. GCR tenements near Coober Pedy showing anomalies selected for more work

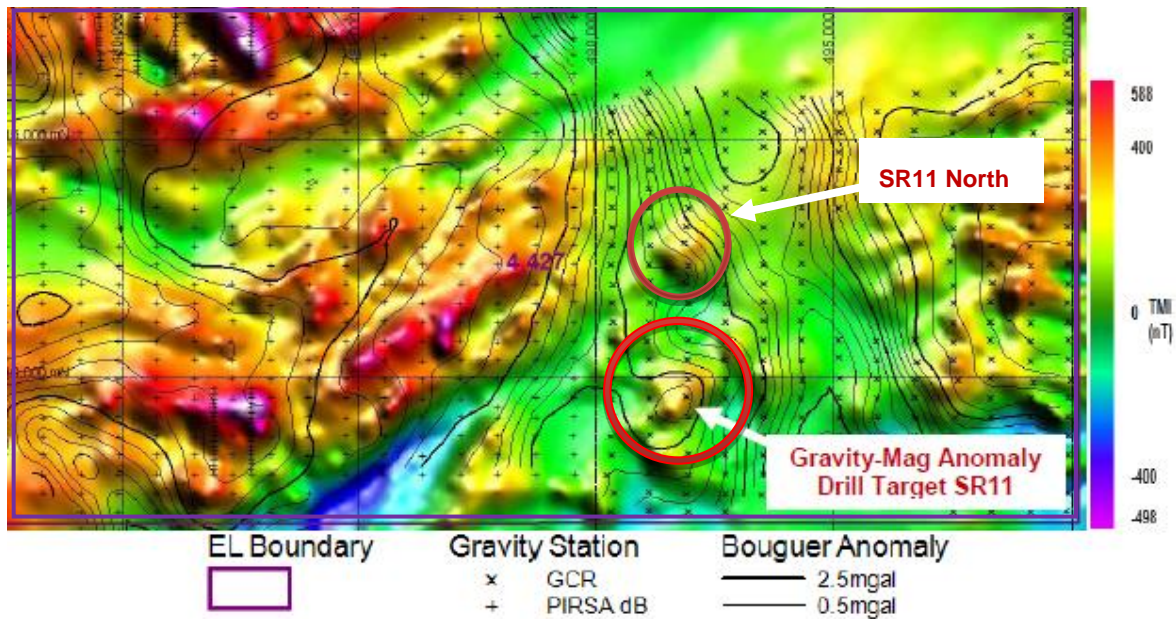


Figure 5. Gravity contours over regional magnetic (TMI) data with two coincident magnetic (colour) and gravity (contours) anomalies highlighted, southern Oolgelima Hill Project, EL 4427.

The first hole in GCR's IOCG drilling program, **ALG001** at the Algebullcullia gravity-magnetic anomaly, was completed at 498.4 metres. For geophysical target information please refer to previous ASX announcements. Basement rocks of the Mabel Creek Rise were intersected at 232 metres depth.

Hematite-altered meta-sediments and volcanics were intersected with some sericite alteration. Garnetiferous zones indicate high grade metamorphism and possible skarn development.

Minor magnetite, as disseminations, thin veins and in clots, varied throughout the hole with increased magnetic susceptibility restricted to an interval between 450 and 494 metres.

Assays were received post-quarter. Weakly elevated copper values are irregularly distributed from 285m down-hole to EOH at 498.4 metres, with a peak value of 419ppm. Further evaluation, including petrography, is underway.

Pyrite, with rare, trace chalcopyrite, occurs as disseminations. While weak hematite alteration is widespread in the Gawler Craton, more intense alteration, and the presence of sericite, provides encouragement. GCR's geologists are pleased with the outcome of this first hole in what is an untested region in the northern Gawler Craton.



**Hematite-dusted K-feldspar and brecciated meta-sediment at 450 metres in hole ALG001**

The rig then moved south to the Mount Euee anomaly, still within the Mabel Creek Rise. Basement was intersected at 210 metres and was completed at a total depth of 471.4 metres.

Hole **EUE001** is dominated by a foliated, medium grained biotite-chlorite-garnet schist, probably a meta-volcanic without much visual encouragement from 440m to end-of-

hole at 471.4m. Broad (~20m) zones dominated by pink quartz-K-feldspar-hematite rock as seen in ALG001 were reported.

Lithologies intersected in EUE001 were generally less altered and copper values were low, peaking at 110 ppm copper. Petrographic studies are underway.



**K-Spar - Hematite alteration at Mount Euee, hole EUE001. Two trays, 209-212m and 270-274m**

The rig then moved south to drill hole **SRE001** at the SR11 anomaly in the Coober Pedy Rise domain. Basement was intersected at the relatively shallow depth of 75 metres, indicating a basement topographic high requiring re-interpretation of the gravity anomaly. The hole is dominated by two main lithologies from 83m onwards, either:

a) yellow-green sericite/chlorite rock, fine grained with brick red hematite fragments and veinlets. There is a zone with coarse crystalline pyrite from 164-172m and some hematite rimmed magnetite with possible bornite as shown in the photograph below, or



b) strongly silicified, pink K-feldspar-hematite rock. This is frequently micro-brecciated, and with darker brown hematite flecks and includes two zones of quartz-matrix breccia.

Significant visible pyrite up to 3% by volume over a 10m intersection from 166 metres associated with hematite (with possible, trace chalcopyrite) is circled in yellow in the top tray in the photo below. This section is slightly coarser grained with chlorite-sericite alteration and occasional magnetite blebs and stringers.



SRE001 returned a 10 metre zone from 164 – 174 metres (photo above) with elevated copper values, with assays peaking at 1320 ppm. This correlates with observed disseminated pyrite with rare chalcopyrite in sericite-chlorite altered metavolcanics. A second zone of elevated copper values occurs from 365-369 metres, peaking at 1710 ppm copper.

Not all the core was cut and assayed. Further sampling is planned to close off and fully evaluate the significance of these anomalous copper zones.

Petrographic examination of samples, to clarify lithologies and alteration, is in progress.

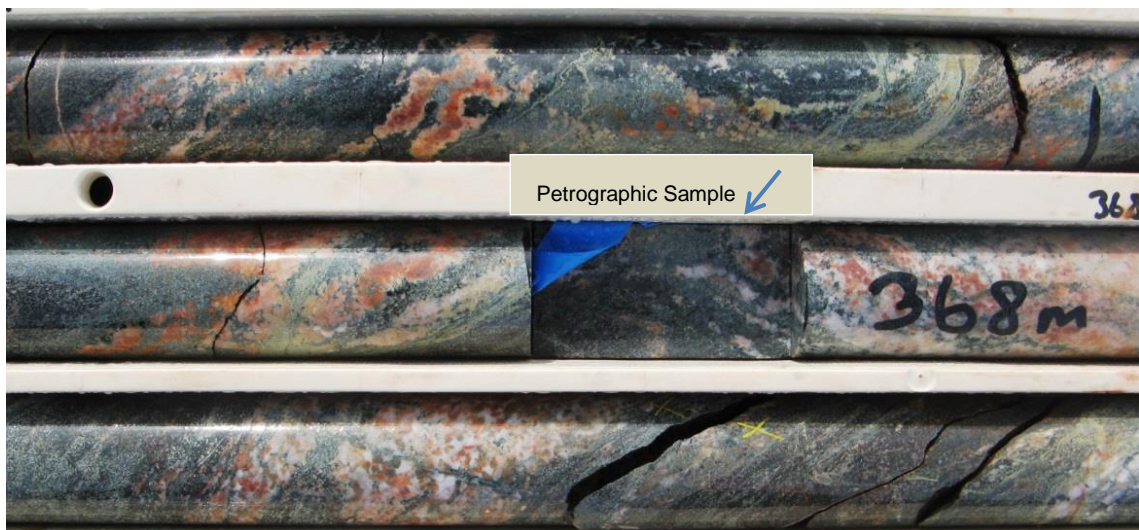
Zones of strong silicification correlated with geochemical depletion of most elements of interest.

The following core tray photos from further down-hole display colourful, brecciated textures; the widespread breccia matrix is quartz-dominated and there is some hematitic staining and veinlets throughout this core. There are no obvious visible sulphide minerals and none of the sought-after minerals - specular, steely hematite, barite or fluorite. The silicified rock is non-magnetic.





Further down the hole, around 368 metres, the sericite-chlorite (green) rock in particular has textural characteristics of a skarn assemblage - see photo below: A sample has been sent for petrography.



The last few metres of SRE001 returned strongly altered, foliated, sericite-chlorite-K-feldspar-hematite "granite" gneiss. See photo below.



While no substantial copper-gold mineralisation was intersected in any of the three holes, a number of encouraging features were observed in what are essentially virgin domains in the northern Gawler Craton: the Mabel Creek Rise and the Coober Pedy Rise.

The presence of magnetite-biotite and hematite-sericite alteration demonstrates the impact, on these domains, of the Hiltaba-Gawler Range Volcanics magmatic event which also dominates the Mounts Woods Inlier and Olympic Domain to the south. Airborne magnetic interpretations (previously reported, and apparent in Figures 3 & 5) show the presence of favourable northwest and northeast trending structures within GCR's tenements.

At SR11 the gravity anomaly is now known to reflect a palaeo-topographic high and there is insufficient massive, steely hematite in the drill core at this location to increase the density sufficiently to create the observed gravity anomaly. However the hematite, sericite, silica and chlorite alteration may provide evidence, with the support of the zones of strong brecciation, for proximity to a venting site and potential mineralisation. Lanthanum (an indicator element, along with Cerium [not yet assayed]) values are low and erratic and uranium responses were also low. Work on the core is continuing with more assays and petrographic reports to come.

More holes at SR11 are under consideration to provide geochemical and alteration vectors towards mineralisation. These will be sited after interpretation of the infill gravity surveying has been completed.

**Compliance Statement:**

*The information in this report that relates to Exploration Results is based on information compiled by Kim Stanton-Cook, who is a member of the Australian Institute of Geoscientists, is a full-time employee of GCR, and has sufficient experience relevant to the styles of mineralisation and types of deposit under consideration and to the activity he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Stanton-Cook consents to the inclusion in the report of the matters based on this information in the form and context in which it appears.*

## Corporate Directory

### Board of Directors

Steve Gemell Chairman  
 Kim Stanton-Cook Managing Director  
 Li Xiaoming Non-Executive Director  
 Jingmin Qian Non-Executive Director  
 Suzanne Qiu Non-Executive Director  
 Li Yan Alternate Director for Mr Li

### Company Secretary

Simon Lennon

### Exploration Manager

Bret Ferris

### Issued Share Capital

Golden Cross Resources Ltd has 1,361 million ordinary shares on issue which are listed on the ASX.

### Share Registry

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**Please direct shareholding enquiries to the Share Registry.**

### About Golden Cross Resources Ltd

*Golden Cross Resources (ASX:GCR) is a mineral explorer with a copper-gold focus. GCR has many high quality projects across Australia as well as prospective joint ventures funded and managed by GCR's partners. At 22 July 2013, GCR holds \$1 million in cash and \$610,000 in negotiable securities.*



**GCR's Australian Project Locations**