

**MOUNT GUNSON COPPER PROJECT  
PRELIMINARY FEASIBILITY STUDY RESULTS  
- MG 14 DEPOSIT**

**HIGHLIGHTS**

- **Preliminary Feasibility Study (PFS) completed, with positive results, encouraging the Company to proceed with upgrading the Study to bankable status (BFS).**
- **Metallurgical test work completed during the Study has resulted in a high grade copper concentrate from MG 14 containing 33% copper and 1.1% cobalt, with low sulphur and uranium contents, an attractive smelter feedstock.**
- **Over its 2 year mine life, the 1.1 million tonne 25 metre deep MG 14 deposit pays back the capital investment, with residual cash left over while leaving a processing plant available to treat ore from the ten times larger Windabout deposit 5 kilometres to the north.**
- **A review of the PFS document by engineering group Sedgman Metals has concluded that the PFS could be brought to bankable status in 15 months if the regulatory approvals process was initiated at the same time as the rest of the BFS.**
- **Sedgman's review of a 1995 PFS on Windabout indicated that the MG 14 processing plant could be upgraded to treat Windabout ore for a relatively moderate cost at nearly twice the annual throughput.**
- **The primary focus of the bankable feasibility study (BFS) will be to improve the predicted financial returns of a sequential MG 14 – Windabout mine development by enhancing the concentrate grade and recovery of copper into concentrate of both deposits.**

**1. INTRODUCTION**

Mount Gunson is an old copper mining centre in South Australia, located in the centre of the Olympic copper-gold province, about 500 km north of Adelaide and 40 km south east of Woomera (Figure 1). Gunson Resources Limited (Gunson) has title to 4 adjoining exploration licences around Mount Gunson covering a total area of 1,320 square kilometres.

In addition to its high potential for large and deep iron oxide associated copper-gold deposits in the basement, there are a number of relatively small, shallow copper deposits in the cover sequence at Mount Gunson, with a combined JORC Indicated Resource of some 20 million tonnes averaging 1% copper and 0.05% cobalt. These resources are listed on page 25 of Gunson's 2008 Annual Report.

Exploration for large iron oxide copper-gold deposits in basement rocks has been the focus of a farm-in agreement with Noranda Pacific Pty Limited (Noranda) since mid 2006. Noranda is now part of the Xstrata Copper business unit and on 5<sup>th</sup> June 2009, a Deed of Variation was

signed with Noranda to excise the MG 14 and Windabout copper deposits in the cover sequence from the farm-in agreement.

Collectively, the MG 14 and Windabout deposits account for just over 205,000 tonnes of contained copper and a feasibility study into the potential development of the MG 14 copper deposit was initiated in May 2008. As stated in the Company's 2008 Annual Report, MG 14 has a two year mine life at the proposed production rate of 550,000 tonnes of ore per annum. To improve the financial return from the proposed mining operation, subsequent production from the nearby and geologically similar Windabout deposit was considered but because no metallurgical work was carried out on the Windabout deposit in the present study, the financial returns reported below are solely from the MG 14 deposit. The Windabout resource is ten times larger than MG 14.

## **2. MG 14 DEPOSIT GEOLOGY AND RESOURCE**

The MG 14 deposit, named in 1973 after the discovery drill hole about 1 kilometre north of the old Cattlegrid copper mine (Figure 2), is a totally concealed, flat lying body of copper sulphide mineralisation at about 25 metres average depth. It is elongated east-west and is about 800 metres long by 200 metres wide, averaging some 2.5 metres thick.

A JORC compliant resource was estimated by Mr K.F Bampton of Ore Reserve Evaluation Services in 1997. This Indicated Resource is 1.1 million tonnes @ 1.7% copper, 17g/t silver and 390ppm cobalt at a 0.5% copper cut-off. Excluding by product credits, the contained copper metal in the deposit is 18,700 tonnes.

Bampton's resource estimate was based on 107 vertical drill holes, approximately half of which are diamond core holes and the remainder reverse circulation. QEMSCAN mineralogical analysis by AMDEL in 2008 revealed that the main copper sulphides, in decreasing order of abundance, are chalcocite, bornite, chalcopyrite and covellite. The copper-cobalt sulphide carollite is also present in lesser quantities.

A five hole wide diameter diamond drilling program completed in July 2008 confirmed observations from previous drilling in the 1970s and 1980s that the mineralised zone ranges from 1.5 to 3.5m thick, with the upper section typically having the best mineralisation. This upper zone includes a breccia at the top, made up of angular fragments of pale carbonate-rich sandstone, randomly distributed in a dark grey carbonate-rich mudstone host.

Underneath the breccia are alternate layers of carbonate-rich sandstone and mudstone between 0.5 to 10 cm thick. Visible high tenor copper sulphides chalcocite and bornite are most abundant in the sandstone fragments in the breccia but are also present in places in the underlying, undisturbed sandstone layers. Copper sulphides are much harder to see in the dark grey mudstone but records from previous drilling indicate that they are present, with the lower tenor copper sulphide mineral chalcopyrite becoming more abundant than the high tenor sulphides with depth.

## **3. ORE RESERVES**

Considering the high density of drilling, it is considered that pit optimisation and calculation of an ore reserve from the JORC compliant indicated resource will be a relatively simple exercise based on the mining and mineral processing method. No ore reserve estimate was made for the present study.

## **4. MINING METHOD**

Mining of the MG 14 deposit is to be by open pit, the majority of the overburden and ore being free digging, suitable for the use of a hydraulic excavator. It is proposed to mine the ore using strip mining methods, so that once the first strip has been established, further overburden can be dumped back into the pit.

Mining contractor Watpac has provided the Company with indicative costs based on mining 1.1 million tonnes of ore with a 9 to 1 open pit waste to ore strip ratio, over a two year period. Three haul trucks have been budgeted and mining would be around the clock on a 3 panel roster system.

## 5. METALLURGICAL TEST WORK

A 12 month metallurgical test work program to guide the design and costing of the mine site concentrator was carried out by the Ian Wark Research Institute at the University of South Australia. Samples of the MG 14 ore were obtained from ore intervals in the 5 hole, wide diameter diamond drilling program completed in July 2008.

The test work comprised 3 separate phases, as follows:

**Phase 1.** Flotation tests on composite samples of ore from the mineralised zone in each of the 5 drill holes.

**Phase 2.** Flotation tests on a bulk sample of ore from 4 of the 5 drill holes, the fifth hole, MGD 54, omitted because it appeared metallurgically different from the others.

**Phase 3.** A Locked Cycle flotation test on a bulk sample of ore from the same intervals as the Phase 2 sample. The procedure was continued for 5 cycles.

The Locked Cycle test yielded a copper-cobalt concentrate assaying 33% copper and 1.1% cobalt with relatively low sulphur at 16.4% and 4ppm uranium. The recovery of copper into the concentrate was 67%, comparing favourably with the 74% recovery into a 19.3% copper concentrate in the Phase 2 batch tests.

This high copper concentrate, with its low sulphur and uranium content, appears to be an attractive smelter feedstock, with acceptable impurity levels.

## 6. MINERAL PROCESSING PLANT

Based on the metallurgical test work summarised above, the principal of Mines Trust, Mr Steven Sickerdick, has designed and costed a small 550,000 tpa flotation plant to produce a high grade copper concentrate for export via available ports within 250 km of MG 14. Mines Trust is an unlisted company that until earlier this year, operated the Kanmantoo heap leach copper plant, approximately 50 kilometres east of Adelaide. Gunson reached agreement in 2008 with Mines Trust to complete a feasibility study on MG 14, then to jointly participate in a mine development, subject to financing.

The Mines Trust flow sheet for the processing plant comprises a semi continuous crusher, a grinding mill, flotation circuit with 3 Jameson Cells, then concentrate thickening and drying facilities. Approximately 19,000 tonnes of concentrate per year would be produced, containing 6,250 tonnes of copper and 215 tonnes of cobalt.

## 7. MARKETING

The high copper grade (33%) combined with low sulphur and uranium contents of 16.4% and 4 ppm respectively appear to make the MG 14 concentrate an attractive smelter feedstock. At present, there is a severe shortage of good quality copper concentrate and preliminary advice is that the MG 14 concentrate will be keenly sought after.

Consequently, direct approaches to smelters willing to pay for the cobalt credit in the concentrates will be made over the next few months, with a view to seeking direct investment in the proposed mine development.

## 8. PFS REVIEW BY SEDGMAN METALS

In September 2009, the Gunson – Mines Trust PFS was reviewed by Sedgman Metals, the engineering group appointed as the Company's preferred contractor for the Coburn Zircon Project in June 2009.

Sedgman Metals have concluded that the MG 14 project could generate about \$21.5 million of surplus cash per annum over its two year life, based on the Ian Wark Research Institute locked cycle flotation test work summarised above and the following price assumptions.

Copper Price	\$US2.70 per pound
Cobalt Price	\$US14.50 per pound
Exchange Rate	US 86 cents to \$A1.

From the costs estimated in the Sedgman review, the project will generate surplus cash marginally above the capital cost of the MG 14 mine. This cash surplus could be used for a drilling program on the much larger but lower grade Windabout copper deposit approximately 5 km north of MG 14.

However, Sedgman commented that a better copper recovery than 67% may be achieved, along with a higher concentrate grade, based on the dominance of high tenor copper sulphides in the ore. Sensitivity analysis showed that moderate increases in recovery, coupled with a higher concentrate grade, have a large positive impact on the financial return of MG 14. However, the most significant improvement to the return of a small scale mine development at Mount Gunson would be if mining of the Windabout deposit followed immediately after the exhaustion of MG 14. For these reasons, Sedgman proposed the following work program to bring the feasibility study to bankable status:

- diamond drilling of the Windabout and MG 14 deposits to obtain additional samples for further metallurgical test work and to better define the Windabout mineralisation
- metallurgical test work to improve and confirm the previous work on MG 14 ore, including comminution testing and flotation optimisation.
- BFS test work including thickening, filtration, rheology, flotation variability and other tests.
- comminution, flotation and geotechnical work on the Windabout deposit additional to the work done for a preliminary feasibility study in the mid 1990s.

## 9. WINDABOUT DEPOSIT

As stated above, the biggest improvement in the financial return of a small-scale mine development at Mount Gunson would result if mining of the Windabout deposit followed immediately after the exhaustion of MG 14.

The Windabout deposit is a totally concealed, flat lying body of copper sulphide mineralisation at about 65 metres average depth. Like the MG 14 deposit, it is hosted in carbonate-rich sedimentary rocks at the top of the Tapley Hill Formation shale, but Windabout is larger, with areal dimensions of 1.5 km by 0.8 km. Economic copper mineralisation averages approximately 2.7 m in thickness, ranging from 1.5 to 8 m. The mineralised zone dips gently northwards from 50 metres depth in the south east to 80 metres deep at its northern extremity.

Like MG 14, there is evidence of vertical zonation in the copper sulphides, from high tenor bornite-chalcocite and the cobalt sulphide carrollite in the upper carbonate-rich beds, to lower tenor chalcopyrite in the darker mudstone facies beneath. The Windabout sulphides are coarser grained than those at MG 14 and a review of previous metallurgical work by the Ian

Wark Research Institute concluded that recovery of copper into concentrate should be higher than MG 14.

A JORC compliant resource was estimated by F J Hughes, a consultant of Stuart Metals NL, in 1997. This Indicated Resource is 18.7 million tonnes averaging 1% copper, 0.05% cobalt and 10 g/t silver. It was based on 168 reverse circulation and 28 diamond drill holes, the majority of which were drilled by Stuart Metals NL between 1994 and 1995. Further drilling is likely to better define higher grade zones within this resource.

Sedgman Metals' review of the available metallurgical information on Windabout revealed that, with some modifications, primarily related to expanding the throughput due to the lower ore grade, the MG 14 treatment plant could be used to treat ore from Windabout.

## 10. CONCLUSIONS

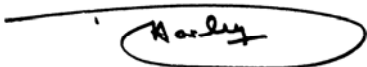
Results of the PFS on MG 14 have indicated that sufficient cash is generated at the current copper price to pay back the capital invested and to fund additional drilling at MG 14 and Windabout. At the higher prices forecast from 2010 onwards by some respected analysts, the financial returns could be very attractive.

Metallurgical test work by the Ian Wark Research Institute at the University of South Australia has resulted in a premium high copper, low sulphur and uranium concentrate that should attract strong interest in the market. These results are a significant improvement on those obtained in previous metallurgical test work.

Consequently, the Company has decided to proceed with the following work program in the next 15 months to upgrade the present study to bankable status:

- Initiate an infill drilling program at Windabout Prospect to collect additional samples for further metallurgical and geotechnical test work and to define zones of shallow, higher grade mineralisation for early mining.
- A small infill drilling program at MG 14 to collect additional metallurgical samples.
- Metallurgical test work, primarily on samples from Windabout but some work on MG 14 additional to that already completed this year by the Ian Wark Research Institute.
- Optimisation of the process design to realise possible improvements in the metal recovery and concentrate grade.
- Complete regulatory approvals for the proposed mine development.
- Develop bankable capital and operating cost estimates.
- Initiate contact with potential copper concentrate customers and financiers with a view to completing offtake and financing arrangements by late 2010.

The primary focus of this bankable feasibility study will be to improve the financial returns of a sequential MG 14 – Windabout mine development by enhancing the concentrate grade and recovery of copper into concentrate of both deposits.



**D N HARLEY**  
**MANAGING DIRECTOR**

**Attachments:**

**Figure 1 South Australian Copper Belt**

**Figure 2 Mount Gunson Copper Prospects**

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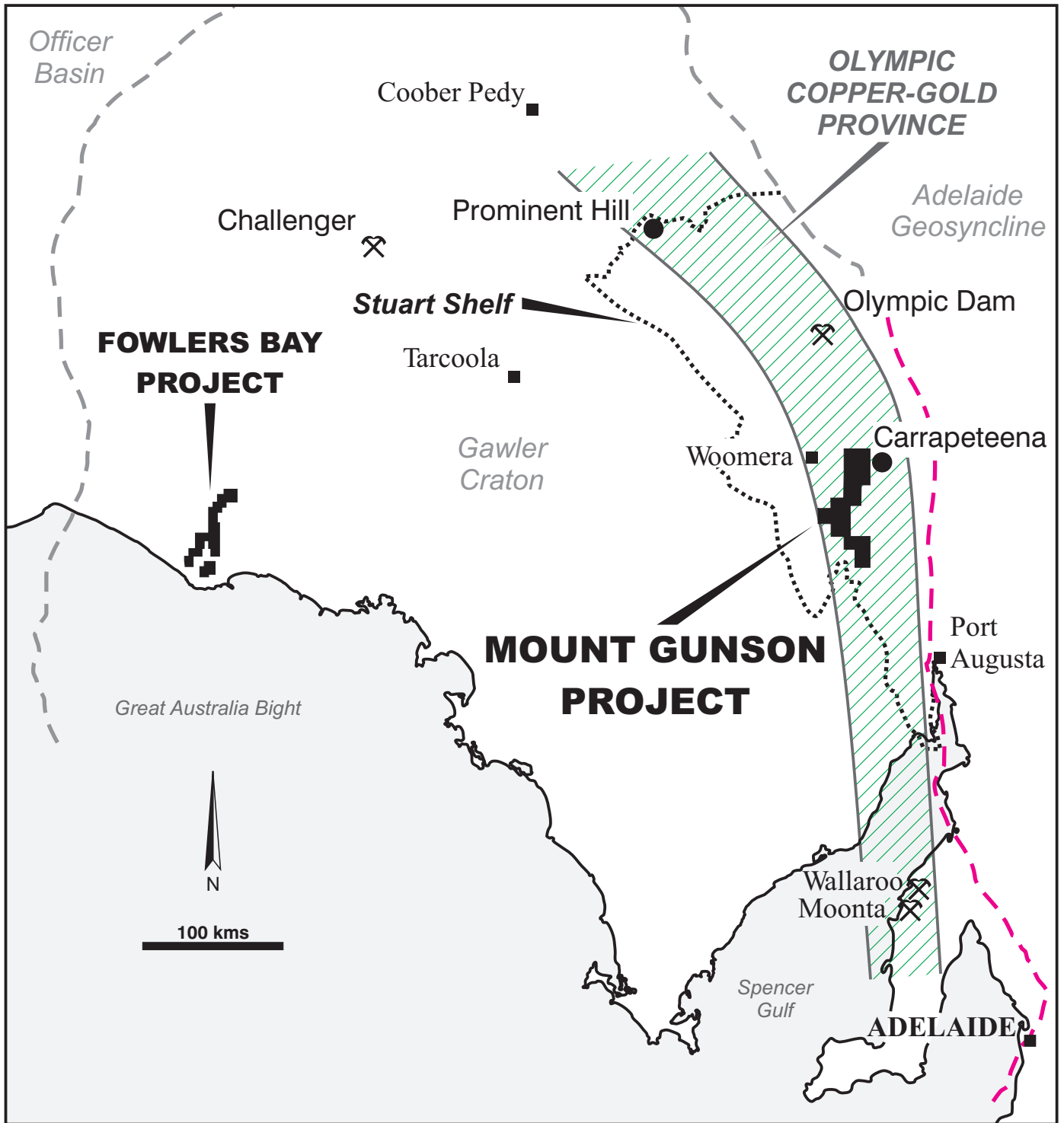
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**ATTRIBUTION**

The information in this report that relates to exploration results, mineral resources and ore reserves is based on information compiled by Mr D N Harley, who is a Fellow of the Australasian Institute of Mining and Metallurgy. Mr Harley has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which 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 Harley consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.



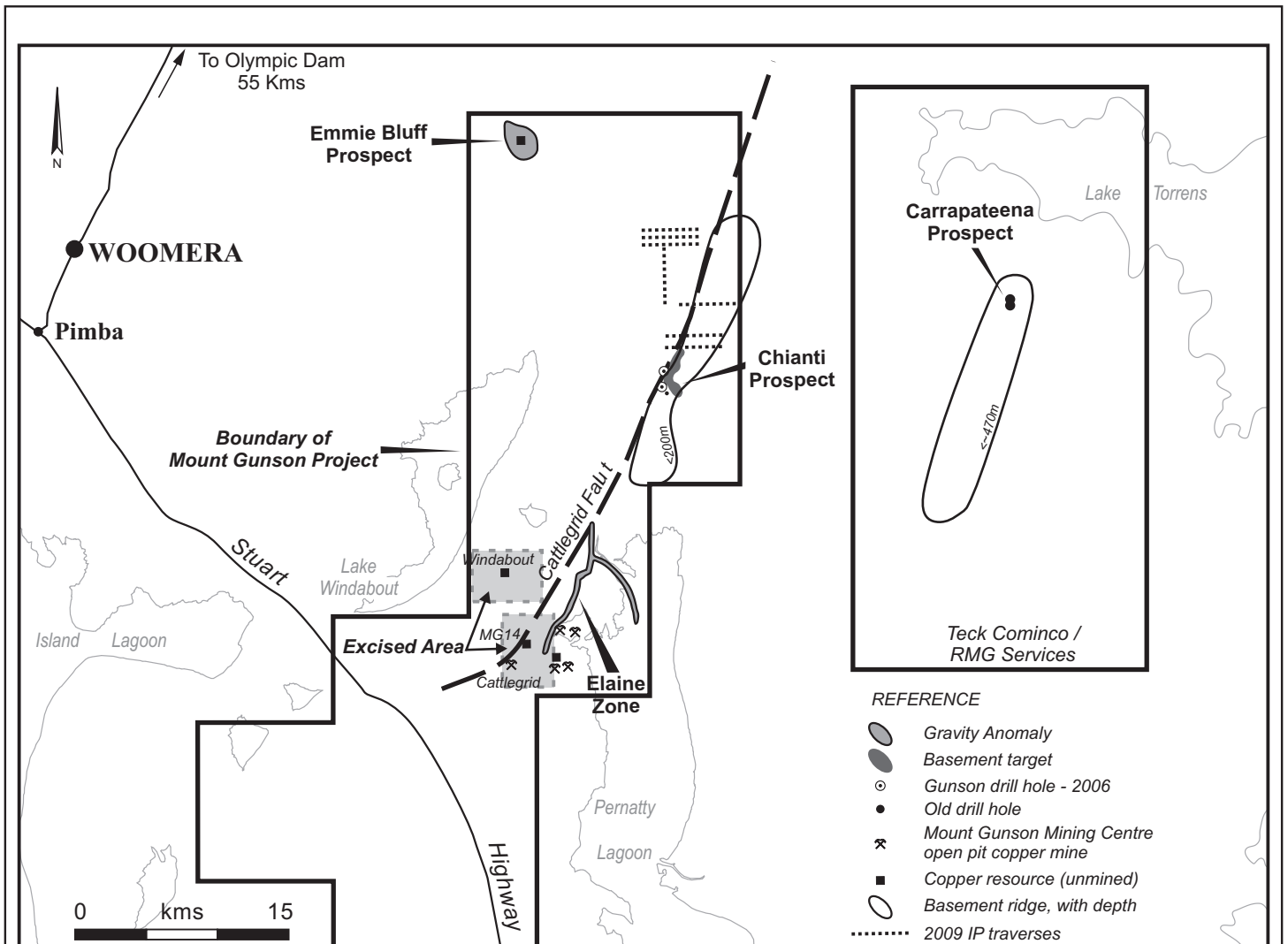
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**South Australian  
Copper Belt**

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Date : 9 Oct 2009

**Figure 1**



## Gunson Resources Ltd

# Mount Gunson Prospects and Target Areas

Date : 9 Oct 2009

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**Figure 2**