

# Activity Report for the Quarter Ended 31 December 2008



## OVERVIEW

### MT THIRSTY COBALT-NICKEL PROJECT – WA (Barra 50%)

- ❖ New study findings - Project has potential to deliver 3,700 tonnes of cobalt, 10,300 tonnes of nickel and 27,000 tonnes of manganese per annum during first 3 years of production to rank in the top 5 cobalt producers globally.
- ❖ Atmospheric leach extractions of 99% cobalt, 78% nickel and 98% manganese achieved during recent metallurgical test-work.
- ❖ Desktop study reveals NPV of A\$450 million with an IRR of 27% calculated using US\$10,000 per tonne nickel price and an exchange rate of 0.70 USD/AUD.
- ❖ Potential net cashflows for the life of mine after capital payback pegged at A\$1.65 billion at US\$4.54lb nickel, US\$16lb cobalt and US\$1,200 per tonne manganese carbonate.
- ❖ Production profile targeting 2 million tonnes per annum plant feed rate.
- ❖ Proposed plant flow design is proven with no new technology.

### BURBANKS UNDERGROUND GOLD MINE – WA (Barra 100%)

- ❖ The profitability in the extraction of a further 10,000 to 15,000 ounces of gold near existing underground infrastructure continues to be assessed.

### PHILLIPS FIND GOLD PROJECT – WA (Barra 100%)

- ❖ At Newminster, the compilation of structural data and sectional interpretations from previous drilling is continuing in preparation for a scoping study to determine if the deposit is potentially profitable at current mining costs and gold price.
- ❖ Review of data from Carbine Option tenement package to follow up on nine priority gold targets identified by auger soil sampling, is continuing.

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#### FOR FURTHER INFORMATION

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Dean Goodwin (Managing Director)  
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## EXPLORATION

### 1. Mt THIRSTY PROJECT (50% Barra; 50% Fission)

The 45km<sup>2</sup> Mt Thirsty Cobalt-Nickel Project is located 20km north-northwest of Norseman. It is a 50/50 joint venture between Barra Resources Limited ("Barra") and ASX listed Fission Energy Limited ("Fission") (collectively referred to as the "Joint Venture").

#### Highlights

- Project has potential to deliver 3,700 tonnes of cobalt, 10,300 tonnes of nickel and 27,000 tonnes of manganese per annum during first 3 years of production.
- Atmospheric leach extractions of 99% cobalt, 78% nickel and 98% manganese achieved during recent metallurgical testwork.
- Desktop study reveals NPV of A\$450 million with an IRR of 27% calculated using US\$10,000 per tonne nickel price and an exchange rate of 0.70 USD/AUD.
- Potential net cashflows for the life of mine after capital payback pegged at A\$1.65 billion at US\$16lb cobalt, US\$4.54 per pound nickel and US\$1,200 per tonne manganese carbonate.
- Production profile targeting 2 million tonnes per annum plant feed rate.
- Proposed plant flow design is proven with no new technology.

The Mt Thirsty cobalt-nickel-manganese project has the potential to emerge as the world's fourth largest cobalt supplier according to the results an ongoing metallurgical and engineering pre-feasibility study.

On conservative estimates for the first three years of production, the study found the project would immediately rank comfortably in the world's top 5 cobalt producers (see Figure 1).

The findings are from an independent study by Stimulus, a metallurgical and engineering consultancy firm, as part of ongoing pre-feasibility work on the project.

The metallurgical and engineering study found that, as a minimum, Mt Thirsty has the potential to support production of 3,700 tonnes of cobalt per year in its first three years at a throughput of 2 million tonnes per annum (tpa), ranking it around the top four or five such producers globally.

High cobalt throughput can be easily achieved early in the production schedule due to the majority of high grade ore sitting close to the surface, within 8 to 19m.

The Joint Venture partners say this front-loads production, increases Net Present Value (NPV) and significantly shortens capital payback.

The Stimulus study determined a project development strategy that builds an atmospheric acid leach plant at Mt Thirsty at a present day cost of approximately US\$400 million to produce cobalt and nickel metal together with manganese carbonate concentrate for shipping to third party refineries. The plant is versatile and is easily expanded.

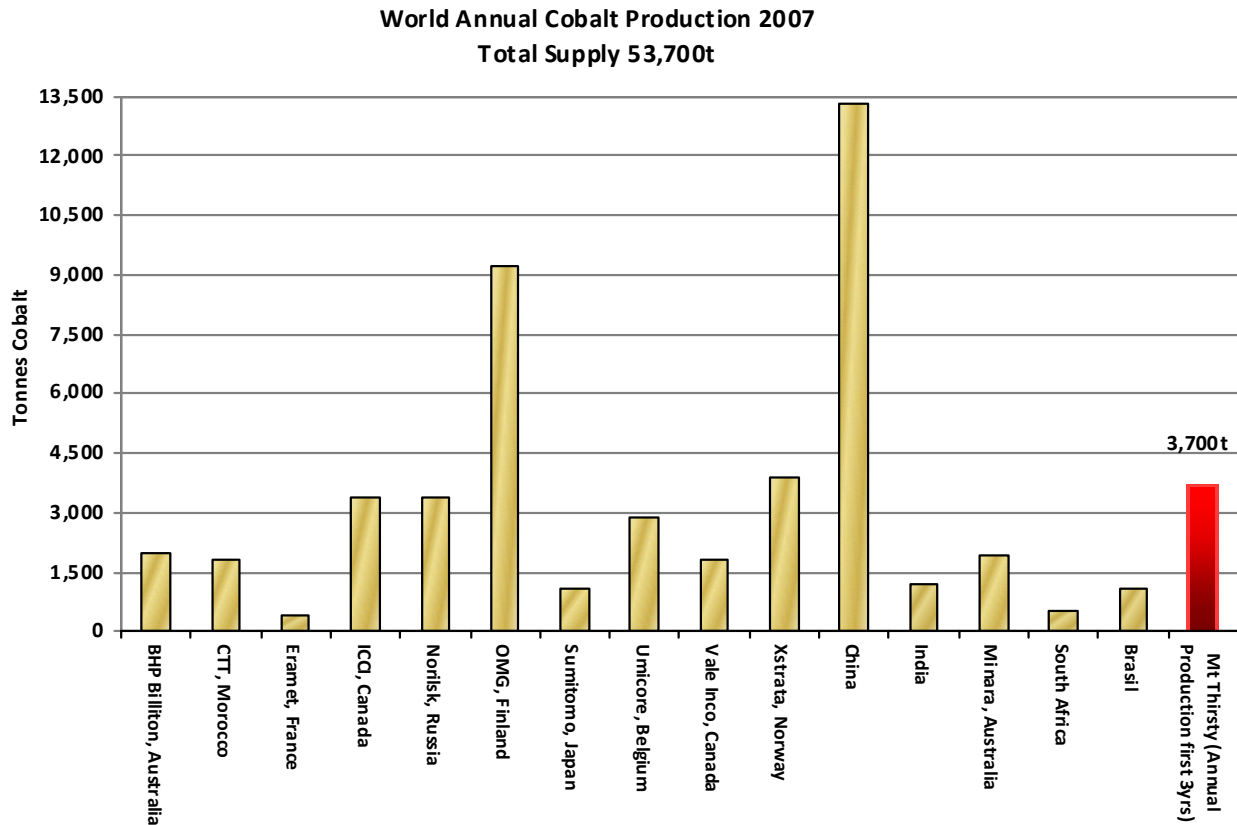
Metallurgical testwork completed to date has returned impressive recoveries at low acid consumptions of between 150-330kg per tonne. Atmospheric leaching at moderate temperatures has returned 99% cobalt, 77.5% nickel and 98% manganese extractions at 329 kg per tonne of acid. Nickel extraction can be increased above 95% with higher acid addition. Overall recoveries were discounted to a more conservative level for financial modelling. Cobalt and manganese extractions used for modelling were 96% and 95% respectively. Nickel extraction was modelled at 90% using 450 kg/t based on extrapolated testwork data.

Cash operating costs for the project are estimated at approximately A\$100 per tonne of ore. After cobalt credits, the cash operating cost is in the lower quartile at approximately US\$2.49 per pound of nickel.

Long-term free-on-board sulphur price of US\$50 per tonne, based on long-term price forecasting, was applied during the study.

Potential net cashflows after capital payback but excluding capital depreciation, project loan interest, royalties and income tax for the life of the project, is estimated at A\$1.65 billion.

**Figure 1: – World annual cobalt production 2007 compared with Mt Thirsty’s forecast annual production rate for the first 3-4 years. (Sourced from the Cobalt Development Institute).**



**Key findings of the study include:**

- Project operating costs would be in the lower quartile – around US\$2.49 per pound of nickel after cobalt credits.
- Total capital costs estimated at US\$400 million.
- Quick 4 to 5 year capital payback with high grade ore being sourced for the first 3 years of production.
- The project ore is totally oxidised, negating the need for drilling and blasting.
- The shallow ore body is amenable to low cost, simple, conventional open pit mining.
- Acid consumption in processing would be low for atmospheric leach, at around 450kg per tonne.

While further pre-feasibility modelling remains to be completed, it is expected that proceeds from Mt Thirsty’s nickel production would cover most if not all of the mine’s operating costs leaving the cobalt and manganese production credits delivering an undiluted revenue stream.

Mt Thirsty has a current JORC Inferred and Indicated resource of 29 million tonnes at 0.56% nickel, 0.14% cobalt and 0.88% manganese, at a 0.06% cobalt cut-off, over an apparent strike of 1.3km and 0.8km width. This translates to a mine life of 15 years at 2 million tpa throughput.

The total uncut JORC Inferred and Indicated resource stands at 44 million tonnes at 0.52% nickel, 0.10% cobalt and 0.65% manganese which equates to a potential 22 year mine life at a throughput of 2 million tpa. The deposit remains open along strike with the potential to further increase resources significantly through inexpensive aircore drilling.

**Further Potential**

There is sound potential to expand the resource further south along strike to the tenement boundary, a distance of some 600m, as mineralisation remains open beyond the 6,300N section.

**Future**

Barra is planning to initiate the Bankable Feasibility Study shortly, pending funding arrangements. This study is expected to be completed within 12 to 18 months.

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## 2. BURBANKS (100% Barra)

During the quarter, the Company focussed on the potential exploitation of current underground reserves close to existing developed infrastructure. The recent increase in the gold price through the A\$1200 per ounce mark, initiated the study.

Burbanks currently has an Indicated and Inferred resource of 391,300t @ 3.24g/t gold at a 1.0g/t cut-off for 40,800 ounces. At a 3.0g/t cut-off, the resource stands at 159,400t @ 4.95g/t gold for 25,400 ounces. The review has indicated that approximately 10,000-15,000 ounces of the total 25,400 ounces is close to existing mine workings and may well be profitable if small-scale mining is undertaken.

Further work on the potential mining and profitability of these resources will be carried out during the March quarter.

## 3. PHILLIPS FIND PROJECT (100% Barra)

In the previous quarter, a 1,125 sample auger soil sampling program was completed over the Carbine Option tenements located adjacent to the Phillips Find Project 50km north of Coolgardie. The Carbine tenements contain deeply weathered rocks with limited outcrop. The auger program was carried out in an effort to identify potential gold targets beneath the deep regolith.

Results identified several encouraging gold-arsenic anomalies within the tenement package. Of particular interest is a northwest trending anomaly several hundred metres long associated with a felsic rock unit between two basalt units. Signs of significant shearing and fluid activity, indicated by abundant quartz veining show the potential for a significant resource.

An intensive program of mapping together with an aeromagnetic survey over the Carbine tenements is planned to validate these findings. It is anticipated that further field work will be carried out over the next 6 months.

At Newminster, the compilation of structural data and sectional interpretations from holes PFDD1 to 3 drilled earlier in 2008 is continuing. Best results from this drilling included 8.00m @ 4.04g/t gold from 28.03m including 3.25m @ 7.26 g/t gold and 5.15m @ 4.87g/t gold from 36.50m including 2.00m @ 10.46 g/t gold in PFDD1.

A scoping study on the Newminster deposit is planned to determine if the deposit is potentially profitable at current mining costs and gold price.

## 4. KAMBALDA WEST JV (Barra earning 70% of gold rights)

The Company has received a notice from Breakaway Resources Limited purporting to terminate the Farmin and Joint Venture Agreement between the parties relating to gold rights over the West Kambalda Project.

The Company is taking legal advice in relation to the notice and will keep the market informed of developments in relation to this issue.

## 5. RIVERINA NICKEL PROJECT (30% Barra, 70% Riverina Resources Pty Ltd - Managers)

### Nickel Exploration

#### Martins Zone Nickel Sulphide

No significant work was carried out during the quarter.

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## TENEMENTS

Tenements E29/648, E29/649, P29/1919, P29/1921 were acquired during the quarter. Tenements E29/329 and E29/331 were relinquished.

## Announcements

Date	Announcement
17/10/2008	Mt Thirsty Metallurgical Update
23/10/2008	Notice of Annual General Meeting/Proxy Form
23/10/2008	Annual Report to Shareholders
29/10/2008	Mt Thirsty Nickel Sulphide Gossans Discovered
31/10/2008	Quarterly Cashflow Report
31/10/2008	Quarterly Activities Report
27/11/2008	Results of Meeting
28/11/2008	AGM Presentation
01/12/2008	Secondary Trading Notice
01/12/2008	Appendix 3B
01/12/2008	Cancellation of Employee Options
08/12/2008	Change in Substantial Holding
09/12/2008	Change of Director's Interest Notice
09/12/2008	Expiry of Options

Note: All announcements are available on the Company's website.

## INVESTOR INFORMATION

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#### Office

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### Capital Structure

249,882,505 listed ordinary shares  
25,625,000 listed Options  
6,575,000 unlisted options (various)

### Company Directors

Gary Berrell - Non-Executive Chairman  
Dean Goodwin - Managing Director  
Grant Mooney - Non-Executive Director and Company Secretary

### ASX Codes

Shares: BAR  
Options: BARO



**DEAN GOODWIN**  
Managing Director

**Abbreviations** t=tonnes, mm=millimetre, m=metres, km=kilometres, ozs=ounces, %=percent, g/t=grams per tonne, Au = gold, Ni=nickel, Co=cobalt, Mn=manganese, @=at, ppm=parts per million, ppb=parts per billion, RC=Reverse Circulation, RAB=Rotary Air Blast, RL=Reduced Level

The information in this report which relates to the Mt Thirsty and Burbanks Mineral Resources is based on information compiled by Alan Miller, a full time employee of Golder Associates Pty Ltd and who is a member of the Australasian Institute of Mining and Metallurgy. Alan Miller 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 January 2005 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves prepared by the Joint Ore Resources Committee, the Australian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and the Mineral Council of Australia." Alan Miller consents to the inclusion in the report of the matters based on this information in the form and context in which it appears.

The information in this report that relates to Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Dean Goodwin who is a Member of the Australian Institute of Geoscientists. Dean Goodwin is a full-time employee of the Company. Dean Goodwin 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 January 2005 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Dean Goodwin consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.