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**GUNSON RESOURCES LIMITED** 

ABN 32 090 603 642

# FACSIMILE MESSAGE

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Subject:	COBURN MINERAL SAND PROJECT – PRE-FEASIBILITY STUDY

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Attached are two releases on results of the above study:

- 1 ASX release
- 2 Media release.

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D N HARLEY MANAGING DIRECTOR



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**ASX RELEASE** 

## COBURN MINERAL SAND PROJECT PRE-FEASIBILITY STUDY

# **HIGHLIGHTS**

- Ability to sustain a high volume, low cost, long life mining operation capable of producing premium grade mineral sand products.
- Over the 20 year life of the Project, total revenue is estimated at \$1.5 billion, with an operating cash surplus excluding capital of \$440 million.
- Under the base case stand alone scenario, the project would have an NPV (8%) of \$44 million after tax and internal rate of return of 21%.
- Development in conjunction with a regional mineral sands producer could double the after tax returns, with an NPV (8%) of \$81 million and an internal rate of return of 44%.
- Approximately half the revenue would be generated from zircon, for which there is a very positive market outlook.

### INTRODUCTION

The Company's wholly owned Coburn Mineral Sand Project in Western Australia is located immediately south of Shark Bay and 250 kilometres north of the regional centre of Geraldton (Figure 1). Geraldton has a deep water port and a major heavy mineral processing facility built to treat concentrates from the world class Eneabba deposits some 100 kilometres to the south. Western Australia produces approximately 30% of the world's zircon and 15% of the world's ilmenite.

The Project hosts the Amy Zone deposit discovered by Gunson Resources in 2000. In July 2002, the Company announced that the Amy Zone contained an inferred resource of 516 million tonnes at 1.4% heavy minerals. This resource totals 7 million tonnes of contained heavy minerals and encouraged the commencement of a preliminary feasibility study in August 2002.

The Amy Zone deposit consists of an upper dunal horizon grading between 0.6% and 2.0% heavy minerals and a lower marine horizon containing a high grade core in excess of 2.0% heavy minerals. A substantial proportion of the



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overburden and interburden contains heavy mineral concentrations of between 0.2% and 0.6%, which would be processed in any dredging operation. By industry standards, slime levels are very low, averaging less than 3%, a favourable situation for a low cost dredging operation.

The exploration potential of the Coburn Project is excellent and a major exploration program to expand the resource is justified.

### PREFERRED MINING METHODS

The Amy Zone deposit is ideally suited to large scale dredging and gravity separation of both the ore and overburden.

Two dredging options were considered:

### Option 1 – Conventional dredge and concentrator

Mining plant comprises two conventional suction cutter dredge and floating spiral concentrator plants. Both units operate in a side by side staggered configuration within the same dredge pond. In this arrangement each unit mines the overburden and both upper and lower ore horizons.

### Option 2 – Tray Plant

This option comprises two conventional suction cutter dredges. The first is predominantly an "overburden" dredge, mining the upper ore horizon and overburden material. The tray overburden dredge would feed a single stage tray plant that would increase the heavy mineral grade by a factor of 4:1 while providing recovery factors in the order of 80%. The concentrate stream from the tray plant would report by gravity to the bottom of the dredging pond. Mining of the lower orebody and reclamation of the tray plant concentrate would be undertaken by a second conventional dredge, the ore being processed via a floating concentrator, as per option 1.

The tailings from both plants would be hydraulically transported to tailings stackers located at the rear of the dredging pond, allowing continuous rehabilitation. Heavy mineral concentrates from the primary concentrator(s) would be hydraulically transported and de-watered in stockpiles adjacent to the pond. The concentrate would typically be 95% heavy minerals and be dewatered to 5% moisture before being reclaimed by front end loader and transported by road train to a mineral separation plant located in Geraldton.

### MINERAL PRODUCTS

Results of metallurgical test work on seven bulk samples recovered from representative parts of the Amy Zone deposit have shown that good quality mineral products can be recovered with conventional methods. These mineral products are similar to those from other large deposits along the west coast of Western Australia, which have good market acceptance. Comments on the



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individual products recovered during the test work are as follows, the figures in brackets being % of the total heavy mineral assemblage.

- **ilmenite** (51.4%) has low uranium and thorium levels averaging 180 ppm combined with titanium dioxide (Ti0<sub>2</sub>) content over 60%. Suitable for synthetic rutile feedstock as well as direct chlorination to pigment.
- leucoxene (11.5%) a + 90% Ti0<sub>2</sub> product, which should be acceptable in the welding electrode market.
- **rutile** (4.2%) contains 94 95.5% TiO<sub>2</sub> readily acceptable in the pigment market.
- **zircon** (21.6%) a premium grade product subsequent to a mineral conditioning step to remove weak to moderate iron oxide coating. This step involved a 10 minute hot acid leach similar to the process used in South Africa and Western Australia. The capital cost of a hot acid leach circuit was included in the stand alone case mineral separation plant.

The median grain size of the valuable heavy mineral product is in the 120 to 125 micron range.

# CAPITAL COST ESTIMATES

Given the location of the project and the established regional infrastructure, two capital investment strategies have been considered:

## Case 1 - Stand Alone

All plant and equipment is purchased new. Total estimated capital cost of the conventional dredge and concentrator option is \$162 million, and the tray plant option is estimated at \$147 million.

# Case 2 – Incremental

The Project would be developed by or in conjunction with an existing regional mineral sands producer, thereby reducing the initial capital requirements of the project. Under this scenario, the estimated capital cost of the conventional dredge and concentrator option is \$109 million and \$84 million for the tray plant option. It was assumed that the Project would pay the pro rata operating and maintenance costs of the shared infrastructure.

## FINANCIAL ASSESSMENT

Economic evaluation of the various mining options and capital strategies summarised below show that the project provides attractive financial returns for



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both the stand alone and incremental cases. A debt to equity ratio of 60:40 was used in the financial model, and the figures quoted are after tax and royalties.

Because of the lower capital cost, the incremental case shows the best results. In this case, the conventional option has a 44% internal rate of return and NPV of \$81 million whereas the tray plant option has a 41% internal rate of return and NPV of \$77 million. The stand alone case has a 21% internal rate of return and NPV of \$44 million for the conventional option, and a 16% internal rate of return and NPV of \$31 million for the tray plant option.

Initial capital investment for the tray plant option is significantly less than that required for the conventional mining option, although this saving is offset by the two year increase in mine life of the tray plant option compared to the conventional plant option. There are also significant operational advantages with the conventional plant option, mainly involving greater flexibility in mining and savings in spare parts inventory.

EVALUATION SUMMARY - STAND ALONE			
Parameter	1. Conventional Plant	2. Tray Plant	
Mine Life	20 years	22 years	
Capital Cost	\$162 M	\$147 M	
Total Revenue	\$1,539 M	\$1,542 M	
Total Operating Costs *	\$1,097 M	\$1,099 M	
Operating Cash Surplus *	\$442 M	\$443 M	
Cost/tonne HMC	\$176	\$176	
Ilmenite recovered	3.12 Mt	3.13 Mt	
Leucoxene recovered	0.25 Mt	0.25 Mt	
Rutile recovered	0.27 Mt	0.27 Mt	
Zircon recovered	1.20 Mt	1.21 Mt	
IRR after tax	21%	16%	
NPV (8%) after tax	\$44 M	\$31M	

EVALUATION SUMMARY - INCREMENTAL °				
Parameter	1. Conventional Plant	2. Tray Plant		
Capital Cost	\$109 M	\$84 M		
IRR after tax	44%	41%		
NPV 8% after tax	\$81 M	\$77 M		

excluding capital and before tax and debt repayment

Revenue, operating cost and recovered product figures are the same as stand alone case



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### CONCLUSIONS

The results of the pre-feasibility study have indicated that Amy Zone could sustain a long life and financially attractive mining operation, particularly if existing regional mineral processing infrastructure is utilised.

Discussions with potential partners to fund a bankable feasibility study will commence early next month.

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D N HARLEY MANAGING DIRECTOR

31st January 2003

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#### Attachments:

Figure 1: Coburn Project – Regional Setting

#### ATTRIBUTION

The information contained in this report is based on, and accurately reflects, information compiled by Mr D N Harley, a corporate member of the Australasian institute of Mining and Metallurgy, who has over five years experience in the field of activity being reported on.

The metallurgical test work for this study was coordinated by Mr P A Butler of Gravcon Consultancy. The mining study and financial evaluation was carried out by Mr D Merkley of Pertola Pty Ltd. Both Mr Butler and Mr Merkley have sufficient experience in preparing pre-feasibility and feasibility studies relevant to the style of mineralisation, and type of deposits under consideration and to the activity which they are undertaking, to qualify as Competent Persons as defined in the 1999 release of the "Australasian Code for Reporting of Mineral Resources and Ore Reserves". Both persons consent to the inclusion of the information in the report in the form and context in which it appears.



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MEDIA RELEASE

ASX CODES: GUN 31\*\* JANUARY 2003

# COBURN PRE-FEASIBILITY STUDY SHOWS MINERAL SANDS PROJECT IS FINANCIALLY ATTRACTIVE

Gunson Resources will immediately pursue its options to fund a bankable feasibility study following the positive financial outcome of the pre-feasibility to mine the Coburn mineral sand project immediately south of Shark Bay in Western Australia.

The Coburn project is 250 kilometres north of the major Western Australian heavy mineral processing centre and deepwater port of Geraldton.

Gunson managing director David Harley said the pre-feasibility confirmed the Coburn project could be a financially attractive, large scale, low-cost, dredging operation similar to that operating on North Stradbroke Island near Brisbane.

"It focussed on the Amy Zone deposit discovered by Gunson in 2000, which contains a resource of 516 million tonnes at 1.4% heavy minerals for a total of 7 million tonnes of contained heavy minerals," he said.

"With estimated revenue of \$1.5 billion and an operating cash surplus (excluding capital) of \$440 million over a 20 year mine life, the project is an attractive mining proposition for Gunson and will also appeal to a major mineral sands producer."

"The study indicates that, if developed in conjunction with a regional producer, Coburn would have a much better financial return than a stand alone scenario, with an after tax internal rate of return of 44% and an NPV of \$81 million."

Mr Harley said marketing the Amy Zone's mineral output should not be a problem, given the similarity to other large deposits currently being mined along the Western Australian coast and the fact that the product is readily accepted by the market".

"Western Australia produces approximately 30% of the world's zircon and 15% of the world's ilmenite, and mineral sands from this region are in high demand in international markets. Gunson is already receiving calls from overseas buyers interested in securing product in future."

"The market outlook for zircon is very positive, which bodes well for the project from a marketing and financial viewpoint as approximately half the revenue to be generated from Coburn would come from zircon sales".

"Also of interest is the competition among major players to find new deposits and to negotiate with juniors that have built or are building quality projects. A current example is the interest being shown in junior explorer Magnetic Minerals by a large Western Australian producer. This is a developing trend in the mineral sands industry," he said.

FOR FURTHER INFORMATION: DAVID HARLEY, MANAGING DIRECTOR, GUNSON RESOURCES MAX NIND, WARD HOLT CORPORATE COMMUNICATION

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