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## QUARTERLY REPORT TO 30 JUNE 2001

### HIGHLIGHTS

- **AusRutile Project, Orissa, India**

The engineering and costing study for the AusRutile project has reached 95% completion and will be finalised during the third quarter. Provided all Government approvals are in place project development will commence in the fourth quarter of 2001.

- **Austpac & Murray Basin Titanium Reach Agreement on Pilot Plant Work**

Murray Basin Titanium (MBT) and Austpac Resources have agreed a program of testwork aimed at improving the commercial acceptability of ilmenite from MBT's leases in the Murray Basin. The work, to be carried out at Austpac's Pilot Plant at Kooragang Island, will be focussed on using Austpac's ERMS technology to produce a high TiO<sub>2</sub>, low chrome ilmenite, suitable for high quality pigment production.

Successful application of ERMS technology would see a roaster built to treat the ilmenite from the currently producing Wemen mine and other MBT deposits, in accordance with an ERMS licence agreement.

- **Coarse-grained Strand Line Exploration Program within E.L. 4521 (WIM 150) - Murray Basin**

Exploration drilling is proposed for a potentially rich zone of coarse-grained heavy mineral strand line deposits in the western half of E.L. 4521 in the Murray Basin. A number of groups have expressed strong interest in the area.

- **ERMS** testwork on WIM 150 bulk sample material at the Newcastle pilot plant successfully produced an acceptable agglomerated synthetic rutile product.

## **AUSRUTILE PROJECT, ORISSA, INDIA**

During the quarter a final series of continuous plant trials was completed for each process step involved in the application of the ERMS and EARS technology to the AusRutile project. The Kooragang Island pilot plant was run for continuous periods of 36 hours at a through-put equivalent to one tenth of the proposed 10,000 tpa plant. This extensive test program established operating equilibriums and confirmed process reliability. We are confident that the ERMS and EARS processes can be readily scaled up to 10,000 tpa of synthetic rutile

Engineering studies and cost analyses by Ausenco Pty Ltd for the construction of the 10,000 tpa ERMS and EARS synthetic rutile plant at Chatrapur in the eastern Indian state of Orissa are 95% complete. All General Arrangement Drawings, Process and Instrumentation Diagrams, and Equipment Lists have been completed, and requests for quotations for supply of materials and services for the S.R. plant at Orissa have been issued. The major suppliers have already responded with indicative prices within the range of the original scoping study.

Jacobs H & G of India completed the collection of data for the environmental impact assessment during the quarter, and their report is now anticipated in August. No adverse environmental conditions were identified during the site assessment. A significant feature of the AusRutile plant is that there will be no effluent or tailings discharge. In excess of 99% of the hydrochloric acid is regenerated for reuse in leaching. Waste heat is recovered from the roasting stage and used to generate steam for the leach. The leached iron and other plant waste streams are converted to inert iron oxide pellets and stockpiled for future use. Samples and indicative synthetic rutile specifications for the AusRutile project were presented to potential customers. The high grade pilot plant product (>97% TiO<sub>2</sub>) received a very positive response from the major pigment producers.

Approvals for the AusRutile project, at both State and Central Government level are being progressed and it is anticipated that these will be granted in the coming quarter. Provided these are in place, and subject to Joint Venture partner approval, the project will commence as planned during the fourth quarter of 2001.

## **MURRAY BASIN**

### **APPLICATION OF ERMS TECHNOLOGY TO WEMEN ILMENITE**

Wemen is the only heavy mineral sand mine currently in production in the Murray Basin. While zircon and rutile concentrates are being sold, the chrome content of ilmenite significantly reduces its value and it is currently being stockpiled. High chrome content is a problematic characteristic of all Murray Basin ilmenites.

Murray Basin Titanium, a Joint venture between RZM-Cable Sands and Sons of Gwalia, will fund a program of testwork aimed at improving the commercial acceptability of ilmenite from MBT's leases in the Murray Basin. A bulk sample of Wemen ilmenite has been shipped to Austpac's Pilot Plant at Kooragang Island. The work will focus on using Austpac's ERMS technology to produce a high TiO<sub>2</sub>, low chrome ilmenite, suitable for high quality pigment production.

Successful application of ERMS technology would see a roaster built to treat the ilmenite from the Wemen mine, and from other MBT deposits, in accordance with an ERMS licence agreement.

### **EXPLORATION LICENCE 4521, MURRAY BASIN (WIM 150)**

E.L. 4521, 933 square kilometres in area, covers the WIM 150 deposit and two other large fine-grained heavy mineral deposits, Nathan and McKenzie. A higher grade area within WIM 150, the "WIM 150 core", comprises a Measured Resource of 452 million tonnes containing 2.41% TiO<sub>2</sub> (5.9% heavy minerals). To date the focus has been on applying the ERMS and EARS processes to produce commercially acceptable upgraded products.

Several coarse-grained strand line deposits are adjacent to or trend toward the southwestern portion of E.L. 4521. Coarse-grained heavy minerals were intersected in previous drilling programs in the western part of the licence and there is therefore excellent potential for the discovery of this type of deposit in this area.

### **WIM 150 Beneficiation Program**

Work continued at Newcastle on mineralised sand from the Drung South bulk sample site. A variety of concentration methods were used to prepare an ilmenite concentrate for batch testwork. A series of batch roasts were undertaken and the roasted products leached to produce synthetic rutile. The fine grained synthetic rutiles were then successfully treated to produce a commercially acceptable agglomerated product. While further testwork is required on the fine-grained material to optimise the process, this initial work on WIM 150 ilmenite is highly encouraging.

### **Exploration for Strand Line Deposits**

Austpac noted coarse-grained heavy mineral concentrations in the western part of E.L. 4521 in holes drilled by Rio Tinto in the early 1980's. The holes, generally 2 km apart, were too widely spaced to find the linear strand line deposits that have subsequently been discovered elsewhere in the southern part of the Murray Basin. The Echo deposit found by Basin Minerals Limited is located adjacent to the western boundary of E.L. 4521. Echo East lies to the south of E.L. 4521 and trends in a northerly direction toward it. Strand line deposits in the Murray Basin, which were formed along ancient shorelines, typically occur in clusters, and there is excellent potential for their discovery within the licence. An exploration program for strand line deposits in the western part of E.L. 4521 has been prepared and a number of groups have indicated strong interest in the area. It is expected that this program will commence during the coming quarter.

NOTE: This report is based on and accurately reflects information compiled by M.J. Turbott who is a member of the Australasian Institute of Mining and Metallurgy and a member of the Australian Institute of Geoscientists and is a competent person as defined in the Australian Code for Reporting of Identified Mineral Resources and Ore Reserves