



**IRONCLAD**  
MINING LIMITED

ASX Release

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## **Pre Feasibility Demonstrates Profitable Low Capital Start Up At Wilcherry Hill.**

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### **Highlights:**

- **Low Capital Cost Requirement**
  - \$35 million funded and amortised by contractors
  - \$10 million funded by IronClad
- **Mining and Transport FoB Costs ~ \$51/t**
  - Mining + Processing ~ \$8/t
  - Transport ~ \$29/t
  - Port charges ~ \$11/t
  - Administration + Royalties ~ \$3/t
- **Anticipated Average Margins ~ \$28/t**
  - Fines ~ \$23/t
  - Lump ~ \$34/t
- **Bankable Feasibility Study Started**

The Directors of IronClad Mining Limited (ASX:IFE) are pleased to announce a summary of the results of the Pre-Feasibility Study into the production and sales of the proposed 2 two million tonnes per annum of Direct Shipping Ore (DSO) from the Wilcherry Hill project in South Australia. The results indicate that it is a robust project and likely to provide significant financial returns for the foreseeable future. A full Bankable Feasibility Study (BFS) has been commenced and is targeted for completion in late March 2010.

The Pre-Feasibility Study investigated: project scope, cost, schedule and risks based on the pre-defined assessment criteria of:

- Shortest development time to first sales
- Minimum capital requirement
- Easiest and earliest regulatory approvals

## **MINING and TRANSPORT**

### Stage 1

The stage 1 DSO mining method will be from shallow (< 50m) open-cut pits using excavators, haul trucks and front end loaders. Initially only ore that is >60% Fe or ore which readily upgrades to >60% Fe will be crushed and screened. There will be a low ore: waste stripping ratio as mining will commence at outcrops of high grade ore. Lower grade mineralisation will be stockpiled and processed during subsequent stages of development.

A process plant will involve the use of +2Mt/a mobile crushing and screening plant and, if required, a dry magnetic separation unit. The product of the plant will be separate lump (minus 30 mm to 6 mm) and fines (minus 6 mm) streams which then will be stockpiled either for sale as DSO or for potential retreatment in a beneficiation plant (Stage 2). The portable crushing and screening equipment will be able to be relocated to a run-of-mine (ROM ) pad for each pit, thus reducing truck cycle times. (see Figure 1 below).

The nominal plant design is based upon limited testwork data. Further information will be required on the overall composition of the Wilcherry ore bodies, before the plant design is finalised.



Fig 1 : Proposed Mobile Crushing and Screening Plant (the above is not the property of the Company).

The ore will then be trucked approximately 100 km by road using triple road trains with 35 tonnes per trailer to a rail siding at Lincoln Gap and then by rail to Port Adelaide where it will be loaded on to Panamax or small Cape-size vessels for export.

Sales will be on a free on board (FOB) basis.

The study estimates the cost of mining to be approximately \$8 per tonne for DSO material including crushing and screening.

Transport and port charges will total a further \$40/tonne. Government royalties and administration costs are estimated at a further \$3/tonne giving an average FOB cost of \$51/wet tonne.

Based on 2009 benchmark contract prices for Hamersley fines and an exchange rate of AUD 0.91c per USD\$1.00, IronClad will realise an average gross margin of approximately \$28 / tonne FOB.

A production of 2Mt/a is expected to provide an initial mine life of at least, 5 years for DSO, operated by a contract mining firm with a limited on site IronClad management team.

For stage 1 (DSO), the main infrastructure required on site will be a 2 megalitre / day bore field, water storage, fuel storage, site offices and vehicle and plant maintenance sheds. No accommodation camp will be built as the workforce will reside in Kimba or nearby towns. There is an existing airport near the site.

For the first stage DSO operation a ten year mining lease will be obtained. Contracts for mining, transport and port services will be entered into for 5 years for 2 Mt/a.

## Stage 2

Investigation has been undertaken into Stage 2 which will be beneficiation by simple processes. The strategy for Stage 2 will be to upgrade high grade material in fresh or oxidised ore (probably >45% Fe) and possibly tails from Stage 1 to produce a saleable product using the lowest possible operating and capital cost technique. Testwork on 50-60% Fe head grade samples has shown that it readily upgrades to >60 Fe using a combination of low and high intensity magnetic separation. Given the significantly greater volume of mineralisation at a 45% Fe cut off, an expanded production rate may be possible. A Bankable Study for Stage 2 will be undertaken once production commences. Further studies to find the optimum processing technique and transport solution are planned to occur as Stage 1 begins production.

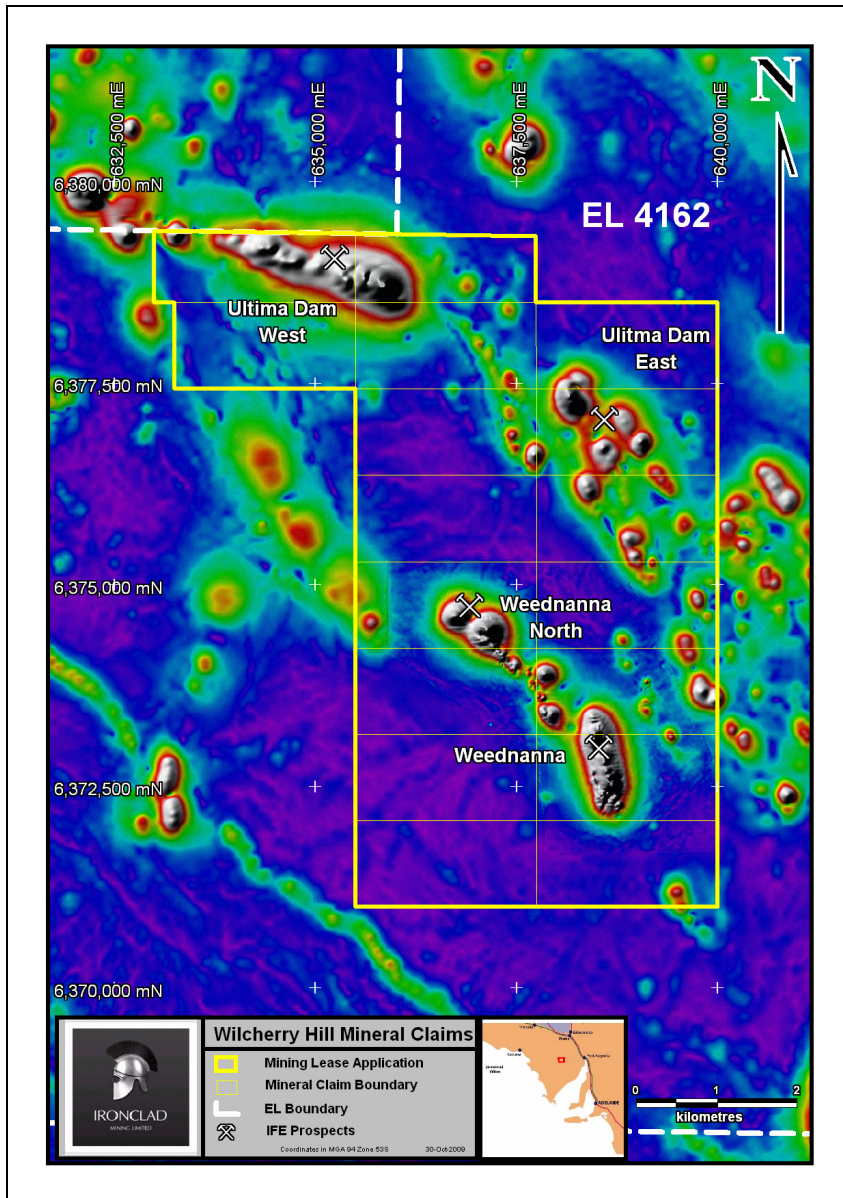


Fig 2 : Wilcherry Hill Mineral Claims

## Bankable Study

A bankable study for the Stage 1 DSO operation commenced on 4th January 2010 and the report is due on 31st March 2010.

## Marketing and Pricing

A range of products may be produced to meet client specifications in terms of grade and grind size. The PFS has identified three specifications which are being presented to potential clients for review and refinement.

## Price Outlook

The affect of the Global Financial Crisis impacted on the iron ore market in 2009 with rapid reduction in demand. The underlying base price reduced approximately 30-40%,

Industry research experts are advising that prices should continue to recover over the medium to long term. For example:

- RCR Research predicted in October 2009 that benchmark prices would rise to the vicinity of \$US1.00 - \$1.30 per dry metric ton unit for fines (\$62-80/t for 62% Fe).
- Macquarie Group Ltd analysts forecast a 30% increase for 2010 iron ore benchmark prices. "Undoubtedly, rampant Chinese growth is still the main story in the steel industry. We remain very bullish on Chinese demand growth through 2010 and beyond, which will create tightness in the steel market during the second half of next year."
- JP Morgan Chase & Co. in December also joined UBS AG and Goldman Sachs JB Were Pty in predicting a 20% increase for 2010 iron ore benchmark prices
- Wall Street Journal reported in December that "analysts believe iron ore prices will also increase in 2010 anywhere from 15-20%"
- The Bank of America and Merrill Lynch estimate a 50% rise in benchmark prices.
- The ANZ Bank estimates a 40% rise

The current price outlook is therefore very positive, and reflects the forecast worldwide demand for iron ore.

In its PFS forecasts IronClad has anticipated increases in benchmark prices by 25% in 2010 in order to determine its projected margins. However, a sales and marketing strategy will be adopted to take advantage of elevated spot prices, currently running at levels significantly higher than benchmark prices.

Establishing a common price for iron ore is problematic because of its different qualities and because of discounts applied if impurities such as phosphorous or alumina are in the ore. **The low impurities of the Wilcherry Hill ore should see realised prices above those of the industry averages.**

## Capital

The Project capital requirements are broken down into "those likely to be funded by contractors and amortised" (\$35 million) and "IronClad costs" (\$10 million).

### Contractor Capital Costs

These are estimated as follows:-

• Truck Fleet	\$ 7,500,000
• Port Works	\$ 9,000,000
• Locos and Rolling Stock	\$13,000,000
• Nonning Road Upgrade	\$ 5,500,000
<b>TOTAL</b>	<b>\$35,000,000</b>

### IronClad Costs.

IronClad capital costs include, but are not limited to, Site Roads, Site Clearing, Fencing and Signage, Site Offices, Computers, Bore Fields (\$1.4 million), Water Storage, Rail siding (Lincoln Gap), Legal, Landholder Compensation, Native Title payments, Geotechnical drilling and assaying, external consultants and salaries.

### **Approval Process.**

The approvals process is progressing according to schedule. Several of the long lead time items in this process were identified and commenced at the earliest opportunity. For instance, the first biodiversity study was completed in the spring of 2008 and that work is near completion. Community impact studies were carried out during 2007 and 2008.

The approvals process has been expedited by the engagement of the leading consultant in this field in South Australia and by the appointment of an internal approvals manager. Both are working closely with the various regulatory authorities in South Australia to achieve the earliest satisfactory completion.



Ian D. Finch  
Executive Chairman