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# WILCHERRY HILL IRON ORE PROJECT

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**IRONCLAD**  
MINING LIMITED

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This presentation has originated from IronClad Mining Limited.

The information that relates to exploration targets, exploration results and drilling data is based on information compiled by Chris Mroczek , who is a member of the Australian Institute of Mining and Metallurgy and who has more than five years experience in the field of activity being reported on.

Mr Mroczek has sufficient experience which is relevant to the style of mineralisation and type of deposits 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, Minerals Resources and Ore Reserves.

Mr Mroczek consents to the inclusion in the presentation of the matters based on his information in the form and content in which it appears.

# PROJECT

## Project Location

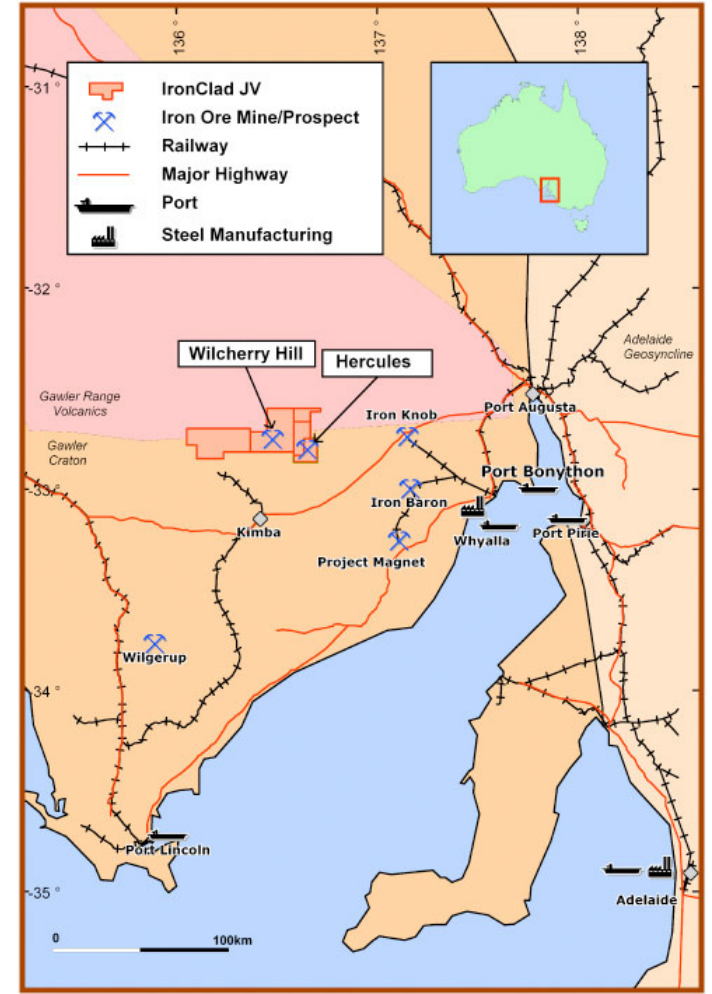


# PROJECT Overview

- Stage 1 is the low cost start-up of an iron ore project which IronClad will grow, in three stages, into a large scale, long life project

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<b>Location</b>	<ul style="list-style-type: none"> <li>• Wilcherry Hill, South Australia</li> </ul>
<b>JORC Resource</b>	<ul style="list-style-type: none"> <li>• Indicated JORC Resource: 48.2Mt at 25.5% Fe</li> <li>• Inferred JORC Resource: 21.2Mt at 31% Fe</li> <li>• Reserve of 11.1Mt at 40.2%Fe</li> </ul>
<b>Exploration Target</b>	<ul style="list-style-type: none"> <li>• 1,500-2,000Mt iron Ore target (predominately Hercules)</li> </ul>
<b>Products</b>	<ul style="list-style-type: none"> <li>• DSO/DMS magnetite (+60% Fe) (Stage 1A/1B)</li> <li>• Magnetite concentrate (+62% Fe) (Stage 2/3)</li> </ul>
<b>Production</b>	<ul style="list-style-type: none"> <li>• Stage 1: 1Mtpa to be upgraded to 2Mtpa in year 2</li> <li>• Stage 2: 4-5Mtpa (year 3)</li> <li>• Stage 3: 10-12Mtpa (year 4/5)</li> </ul>
<b>First Production</b>	<ul style="list-style-type: none"> <li>• Q3, CY2012</li> <li>• Q4, CY 2012 - First Ore on Ship (FOOS)</li> </ul>
<b>Mine Life</b>	<ul style="list-style-type: none"> <li>• Stage 1: 3-5 years</li> <li>• Stages 2 &amp; 3: Will extend the mine life considerably</li> </ul>
<b>Road and Port Logistics</b>	<ul style="list-style-type: none"> <li>• 156km from mine (by road) to Lucky Bay Port (triple road trains proposed)</li> <li>• Floating harbour development planned for Stage 2</li> <li>• Low capital cost port development solution</li> <li>• Transshipping of ore from barge to ship</li> </ul>



# PROJECT

## Overview – con't

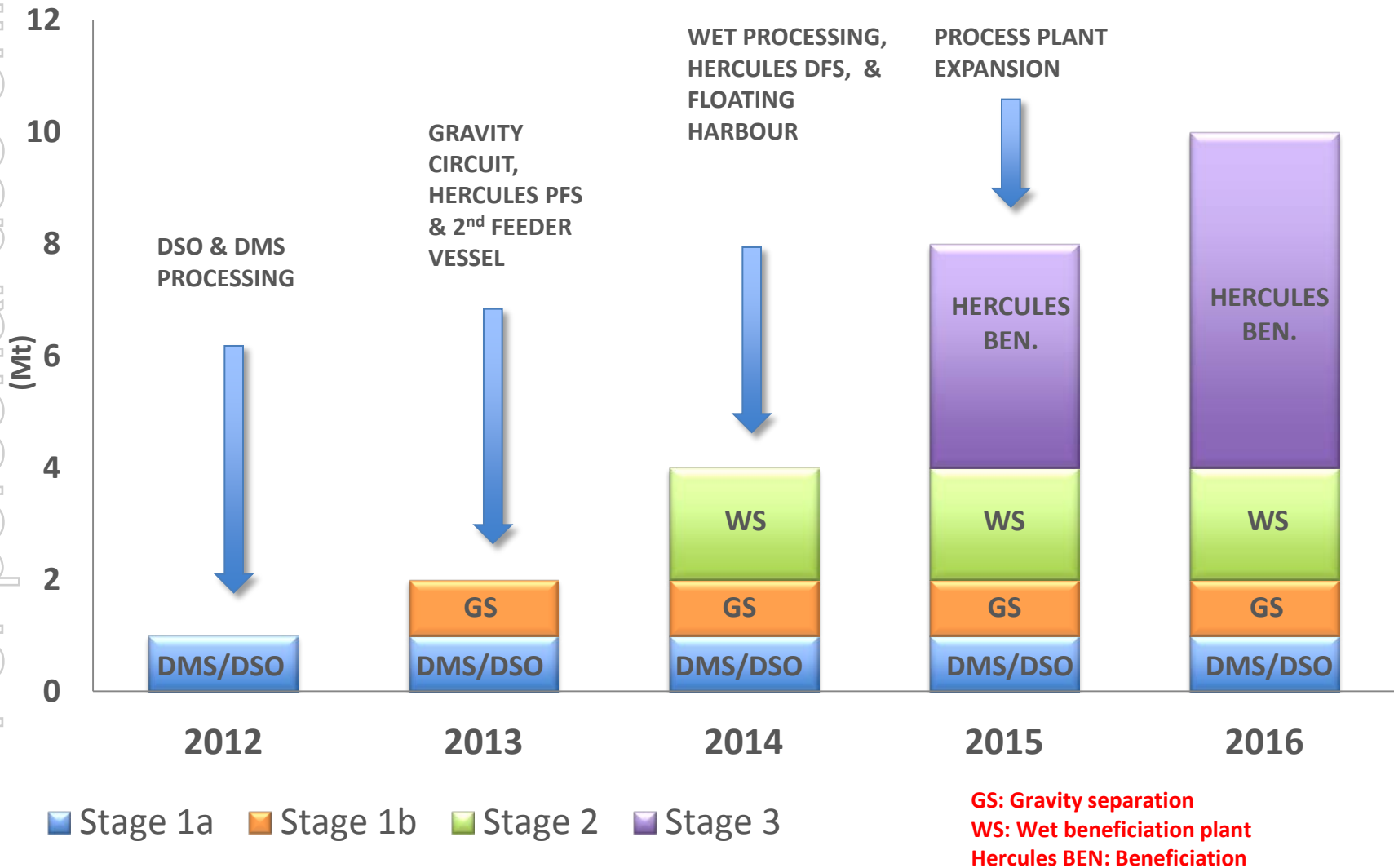
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Stage	Product	Process
<b>Stage 1A</b>	DSO/DMS magnetite (+60% Fe)	<ul style="list-style-type: none"> <li>• Stage 1A involves the production and sale of DSO/DMS magnetite (at +60 %Fe)</li> <li>• Stage 1A is expected to result in approximately 5.3Mt of high quality saleable product</li> <li>• Mining to commence Q2, CY2012 – first DSO/DMS production Q3, CY2012</li> <li>• Simple and low energy processing (no grinding)               <ul style="list-style-type: none"> <li>✓ crushing</li> <li>✓ screening</li> <li>✓ Dry Magnetic Separation (DMS) plant</li> </ul> </li> </ul>
<b>Stage 1B</b>	Magnetite concentrate	<ul style="list-style-type: none"> <li>• Stage 1B involves the construction of a gravity circuit plant</li> <li>• The processing for Stage 1B includes               <ul style="list-style-type: none"> <li>✓ gravity circuit</li> <li>✓ crushed</li> <li>✓ screened</li> </ul> </li> </ul>
<b>Stage 2</b>	Magnetite concentrate	<ul style="list-style-type: none"> <li>• The ore will be recovered through a simple wet beneficiation process (scrubbers, jigs and spirals)</li> <li>• A feasibility study for Stage 2 (4-5Mtpa) will commence shortly</li> </ul>
<b>Stage 3</b>	Hematite and magnetite (Hercules)	<ul style="list-style-type: none"> <li>• Stage 3 (10-12Mtpa) will see production commence from the massive Hercules Project, about 15km east of the Wilcherry Hill mining area</li> </ul>

# PROJECT

## Production Stages 1-3

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# PROJECT

## Key Development Milestones

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Key Milestones Achieved to Commence Production in 2012	Date
✓ Development Application for port approved by the South Australian Government	April 2012
✓ Four year off take agreement signed with Hong Kong based New Page Investment	February 2012
✓ Completed construction of 80 person mining village	December 2011
✓ Program for Environmental Protection and Rehabilitation (PEPR) approved - “right” to commence mining	December 2011
✓ Mining lease granted	October 2011
✓ Secured port access with 50ha of land set aside for IronClad port operations at Lucky Bay in South Australia	August 2011
✓ Stage 1A Feasibility Study completed	December 2010
✓ Native Title Agreement signed	September 2010

# CORPORATE Overview

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Capital Structure	ASX: IFE
Ordinary shares	107.9
Share price <sup>1</sup>	\$0.75
Market cap	\$80.8M
Unlisted options	950,000
Fully diluted market cap	\$81,500,000
Cash	~\$12M
Enterprise value	~\$69.5M

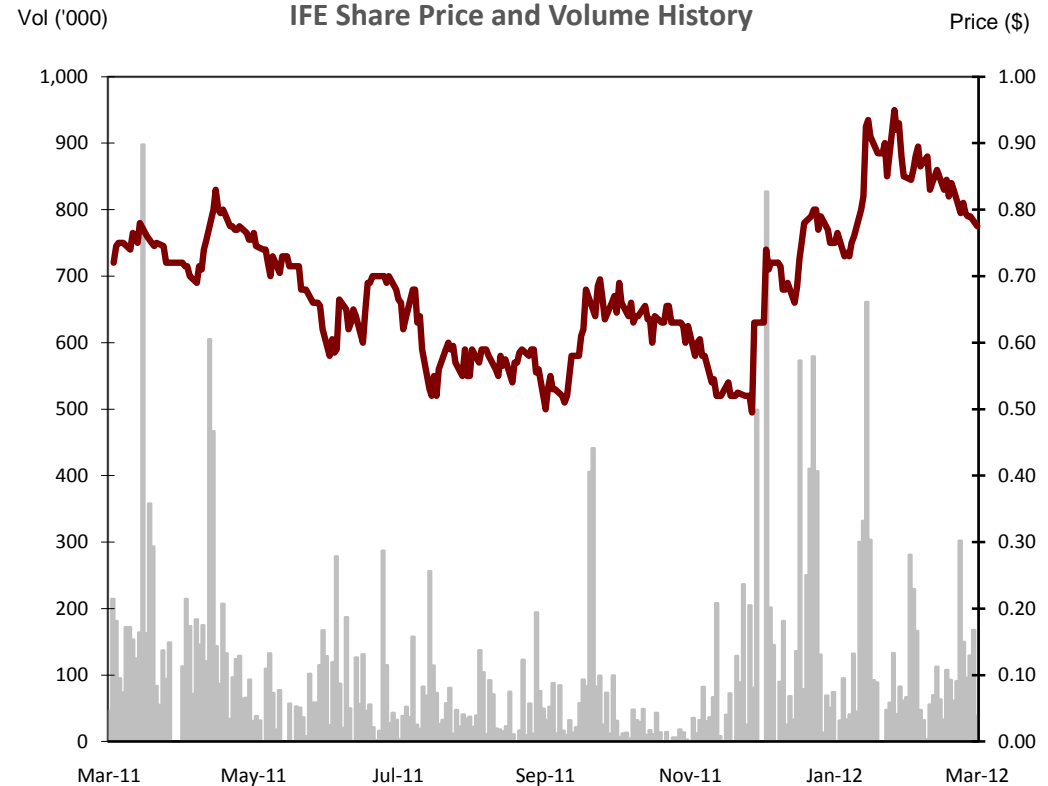
1. As at close 4 April 2012



80%

20%

**Wilcherry Hill/Hercules  
Projects**



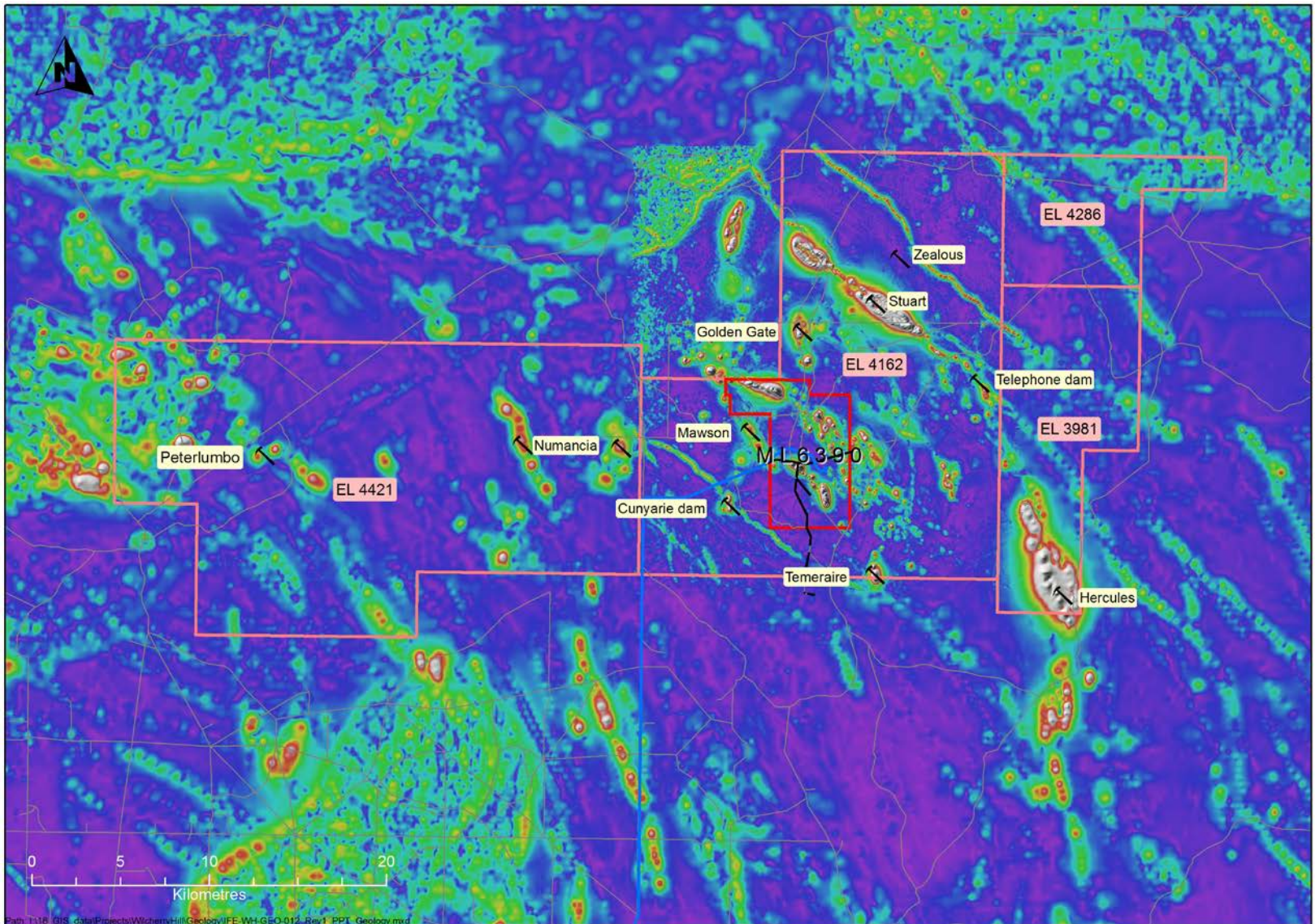
Major Shareholders	
Trafford Resources Ltd	27.5%
New Page Investments Ltd	6.96%



# PROJECT

## Exploration Lease

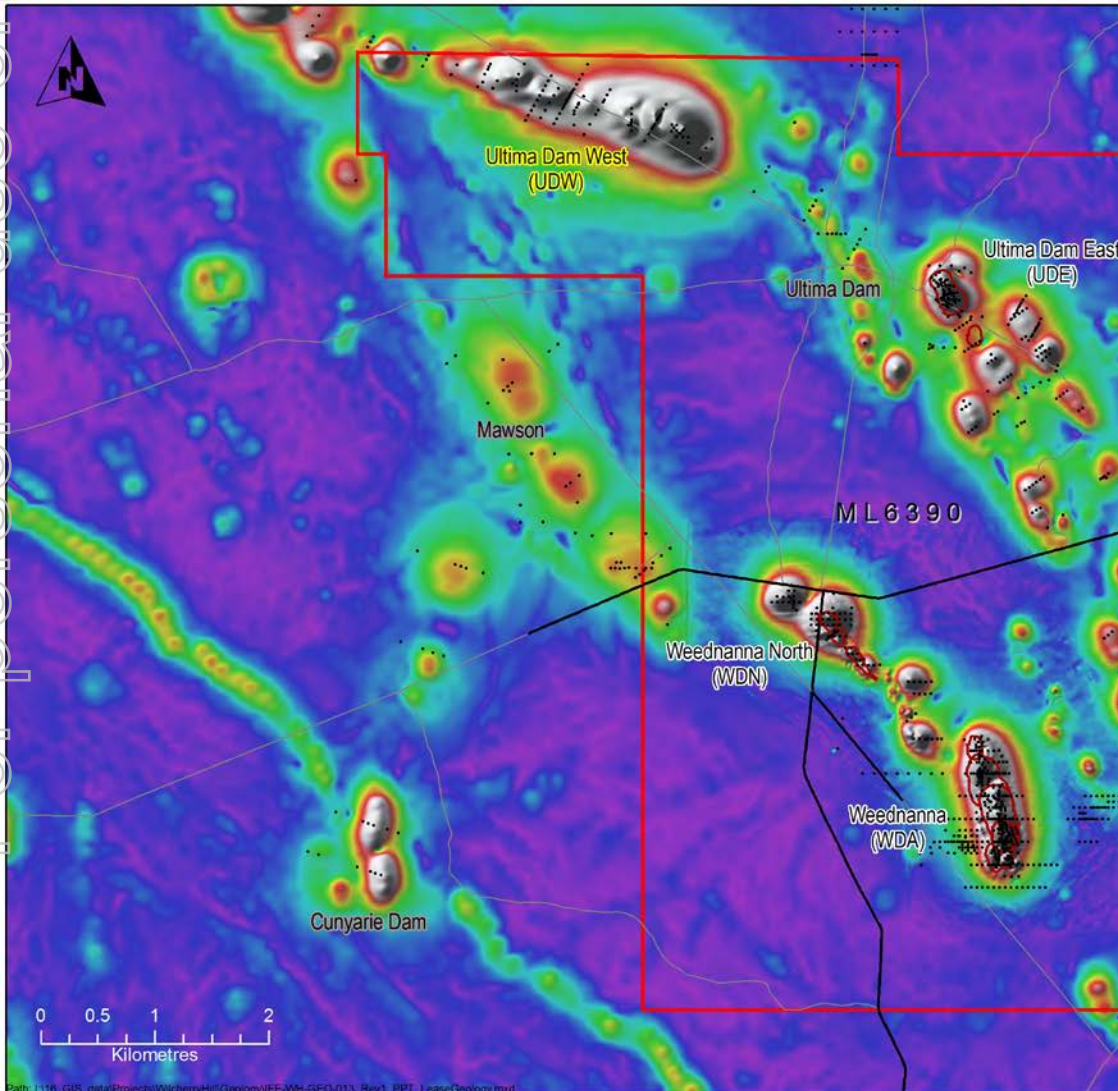
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# PROJECT Mining Lease

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Location map showing mining targets within the ML



Mine Reserve within Mining Lease - currently

- Weednanna
- Weednanna North
- Ultima Dam East

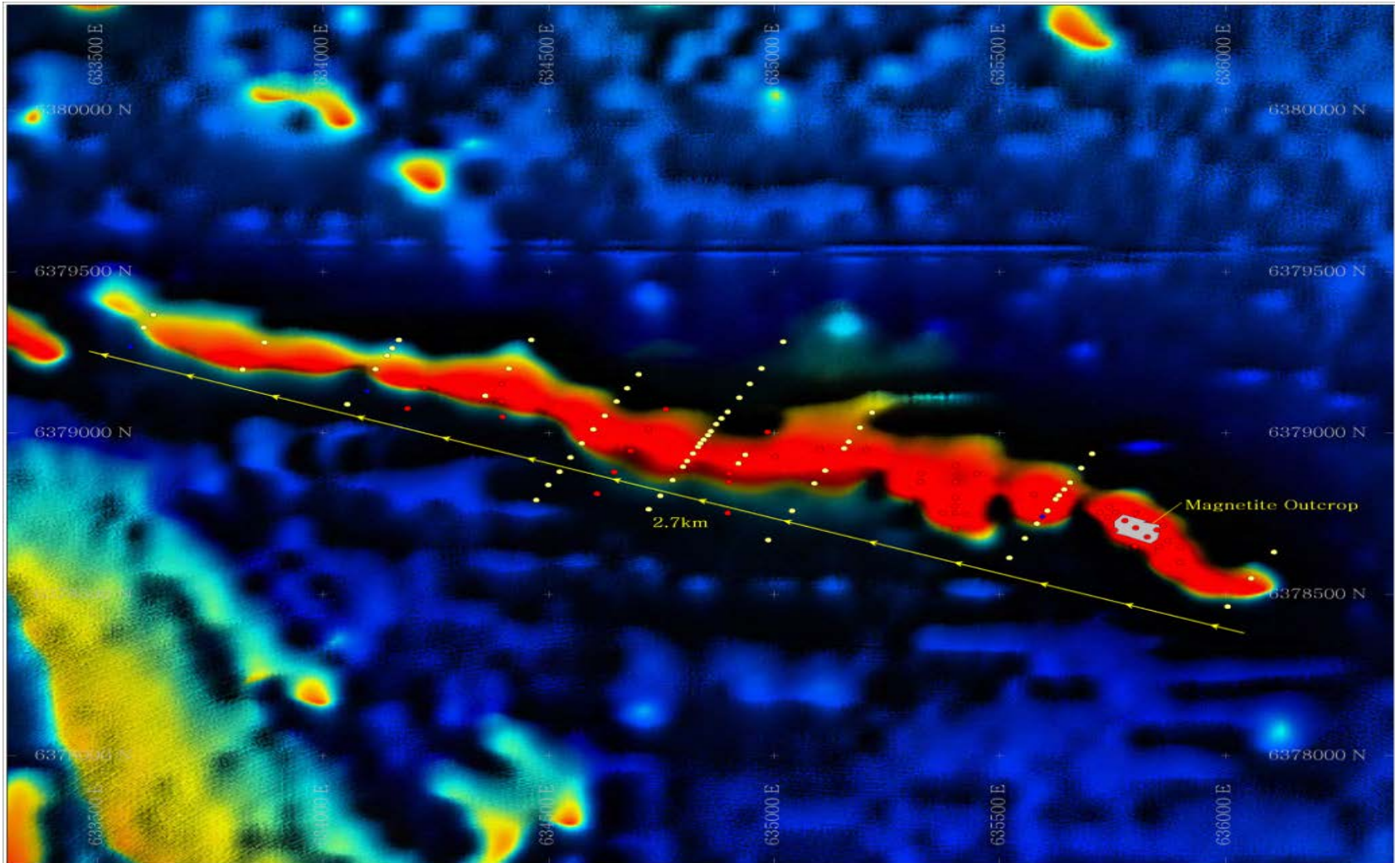
Future Resource /Reserve extension

- Ultima Dam West

# PROJECT

## Wilcherry Hill Iron Ore Project

- Ultima Dam West – resource definition and exploration drilling



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# PROJECT

## Wilcherry Hill Iron Ore Project – con't

- Ultima Dam West – resource definition and exploration drilling
  - Ultima Dam West contains the largest exploration potential of the Mining Lease with a magnetic anomaly strike length of approximately 2.5km
  - the current resource of 7.86Mt grading 26.54% Fe is only delineated by the eastern most drilling
  - resource only represents 500m of the 2.5km anomaly
  - first target for resource definition/extension drilling

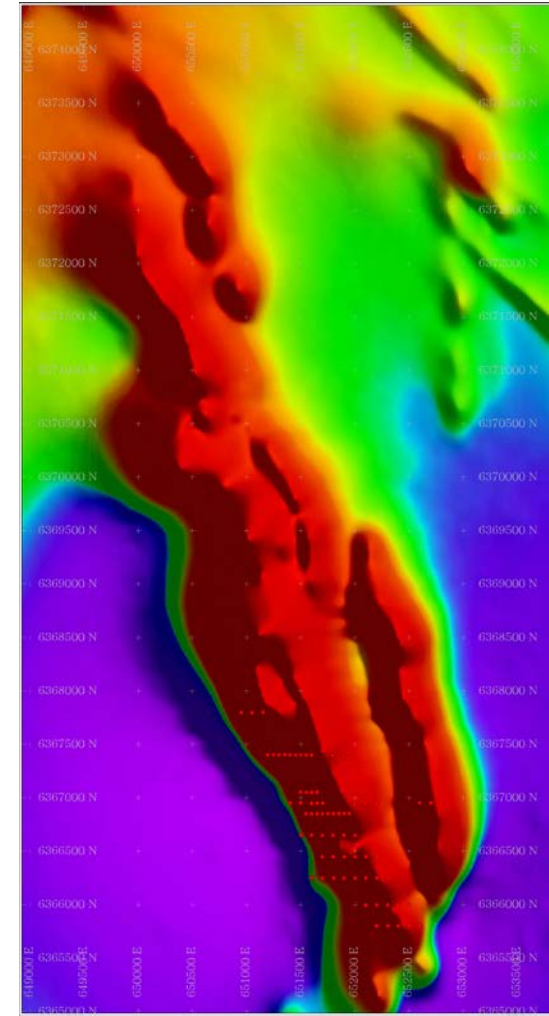
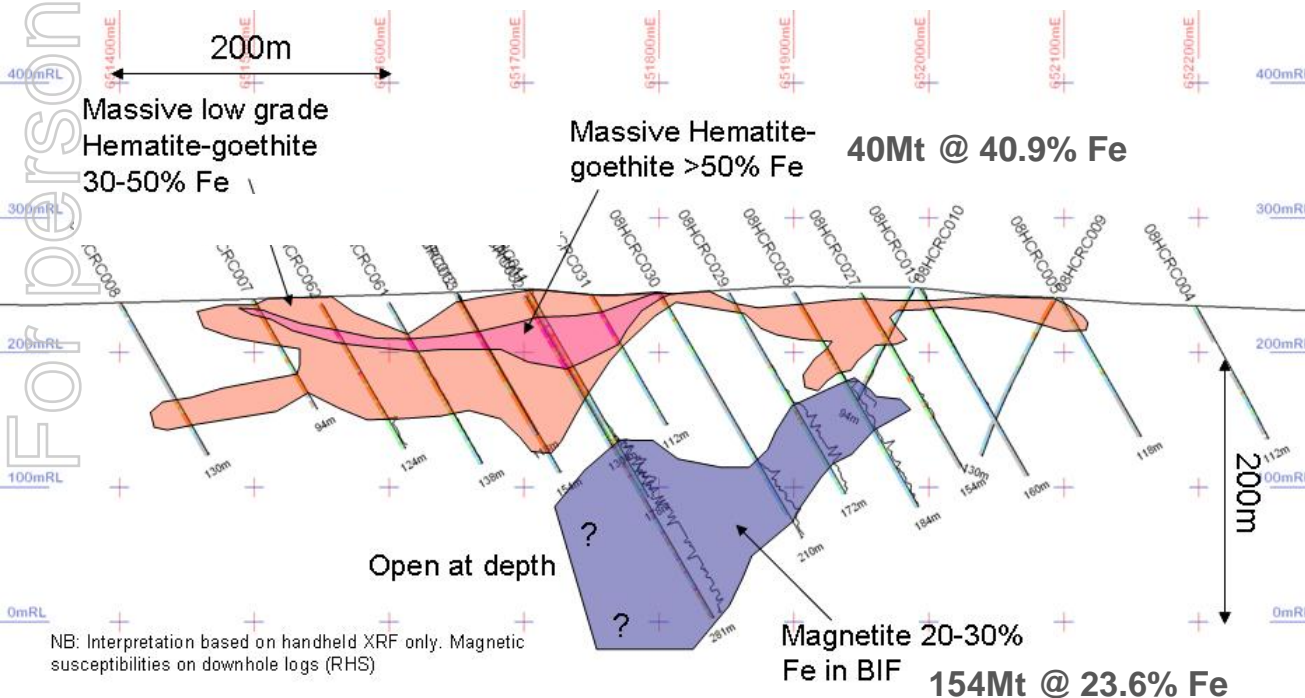
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## Hercules – Conventional BIF Target

- The geology consists of similar rocks to those seen in the Middleback Range iron deposits
- Near surface zones of flat hematite-goethite are interpreted to result from supergene enrichment of a primary magnetite rich banded iron formation and represent possible direct shipping ore zones

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# PROJECT

## Wilcherry Hill Stage 1 Mining and Processing

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Stage 1 has an initial mining scenario of 11.1Mt of DSO/DMS feed to produce 5.3Mt of high grade product with an average grade of 60.1% Fe, at a mining strip ratio of 3.8:1

Stage 1 is expected to be in operation for a minimum of 5 years

Production of 1Mtpa to be upgraded to 2Mtpa in year 2

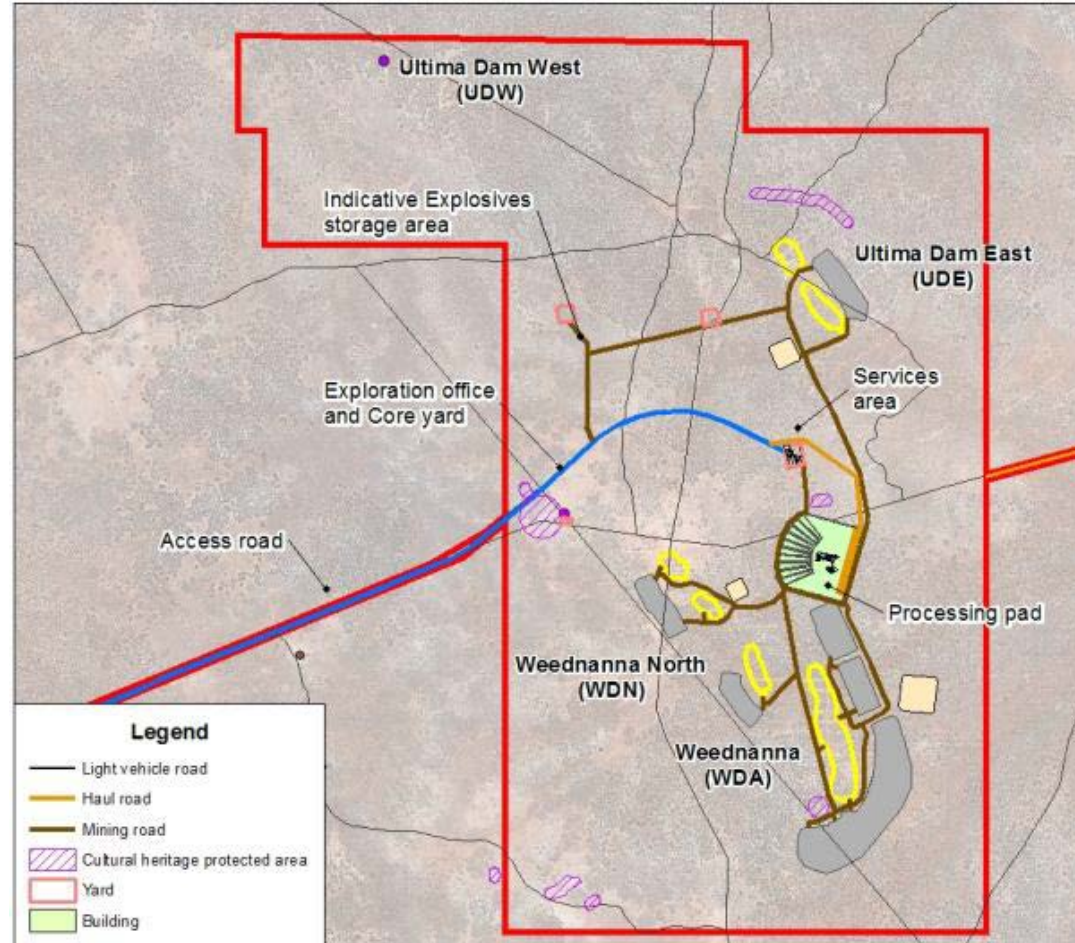
Selective mining of high grade ore will be achieved by truck and shovel mining methodology

Initial mining will access 3 pits, each with DSO/DMS ore from near surface

Mined high grade ore will be transported to a centralised processing plant. Lower in situ grade ore (<50% Fe) will be treated separately via the beneficiation process

The initial Stage 1 DMS processing plant will produce a minimum +60% Fe high quality fines product via a low intensity magnetic separation process

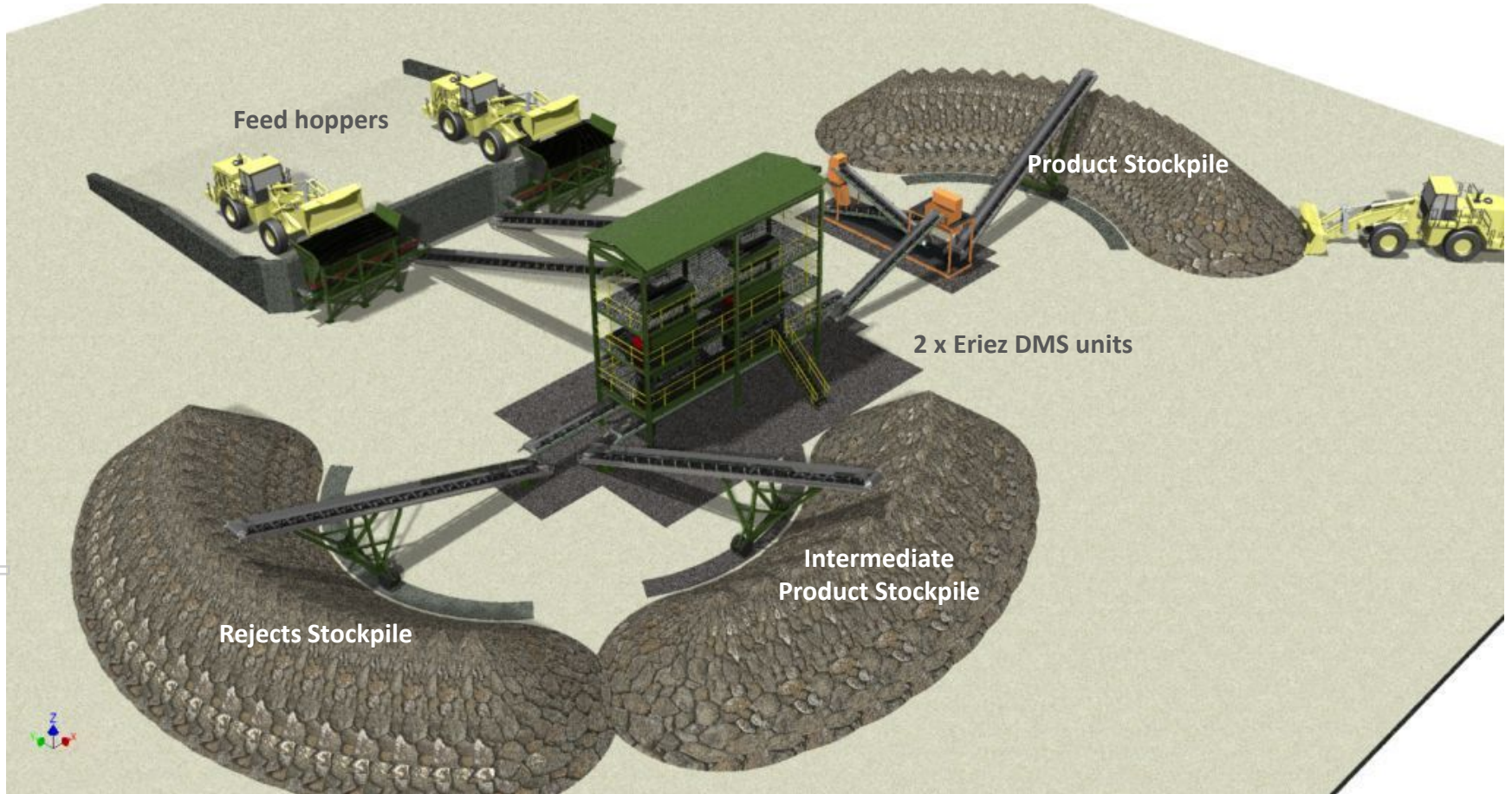
- Low levels of contaminants (P and S) are prevalent in the final product(s)



# PROJECT

## Dry Magnetic Separation Plant Layout

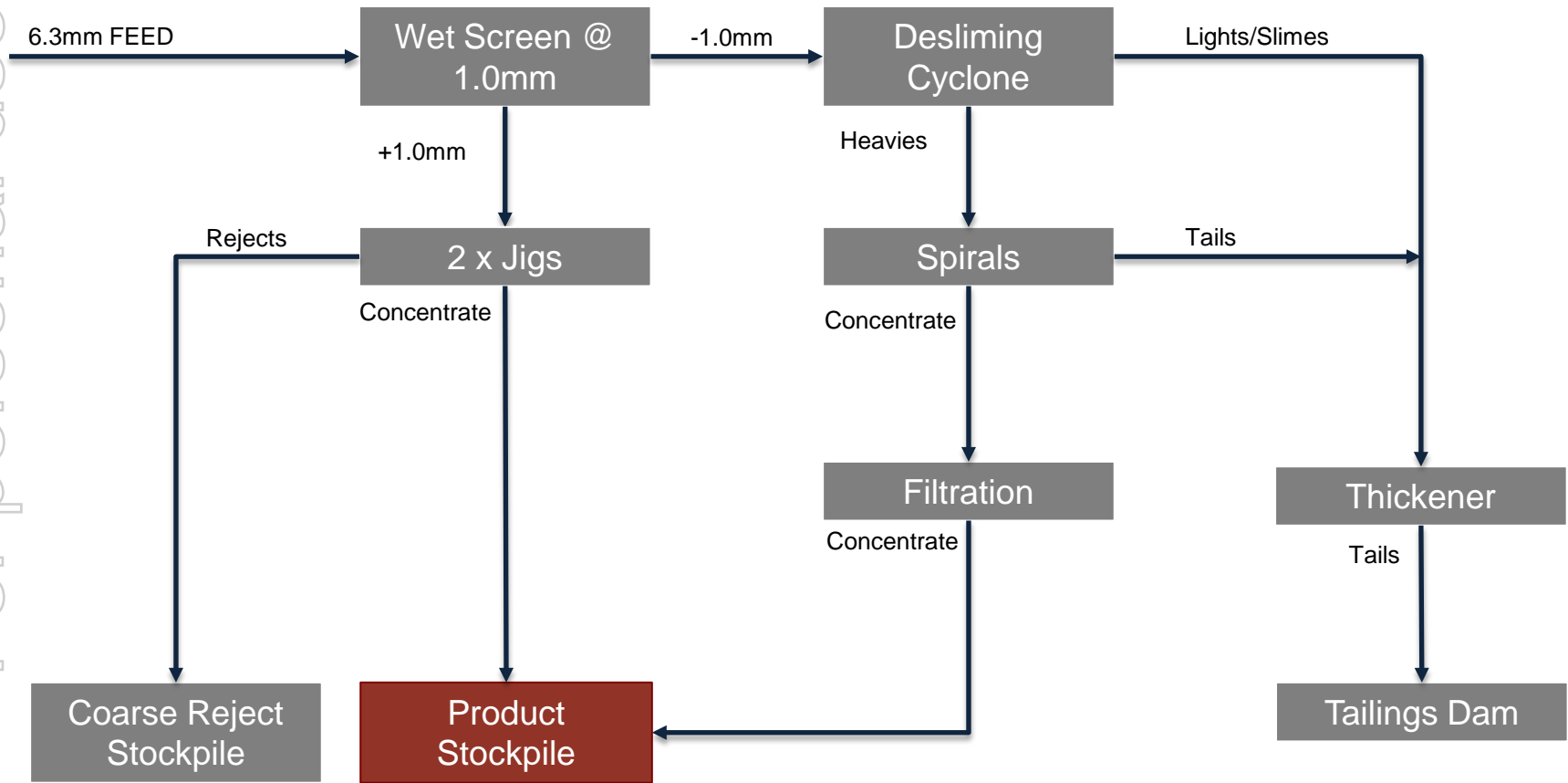
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## Proposed Gravity Process Flowsheet

- Commences Stage 1B



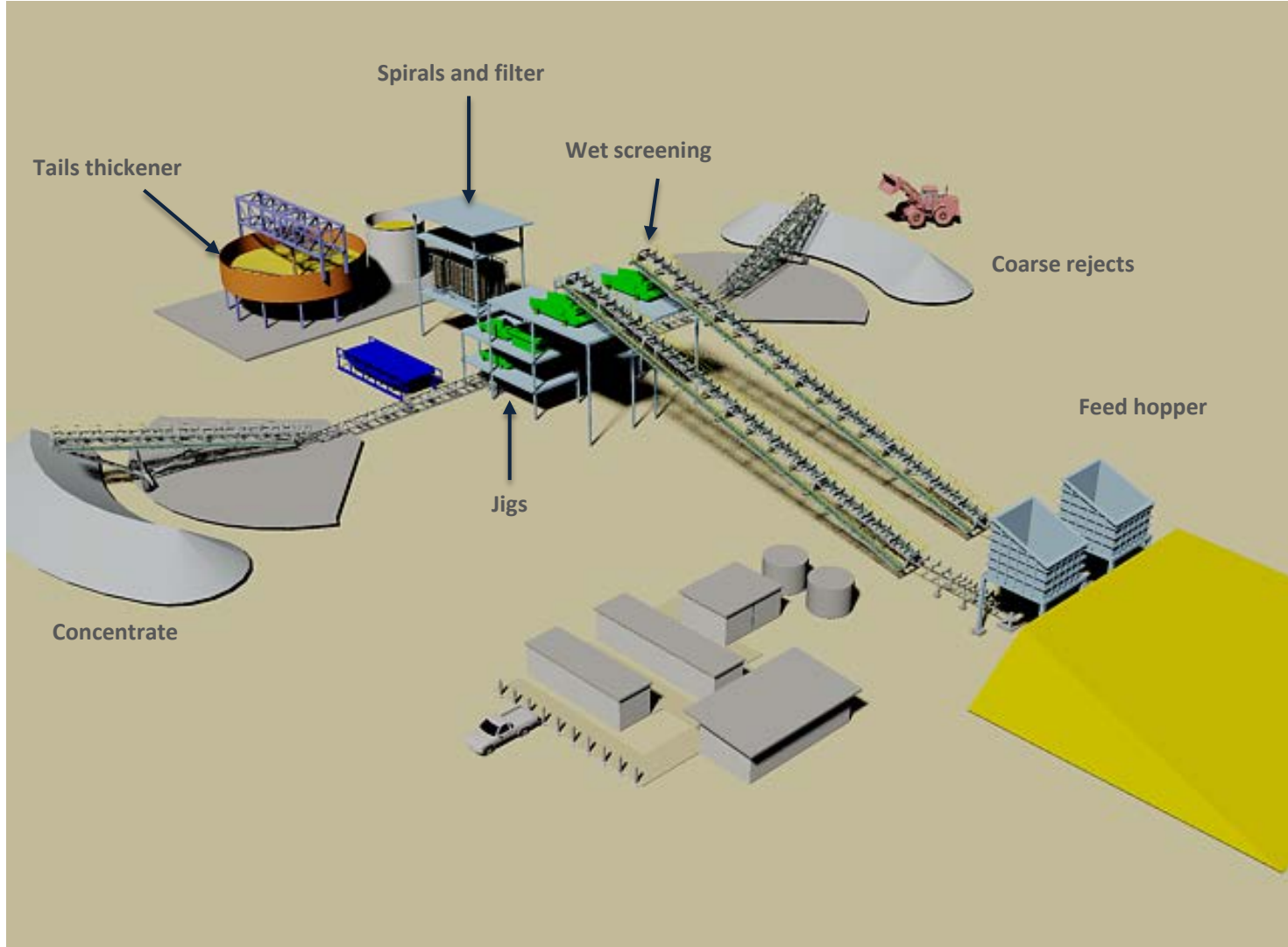
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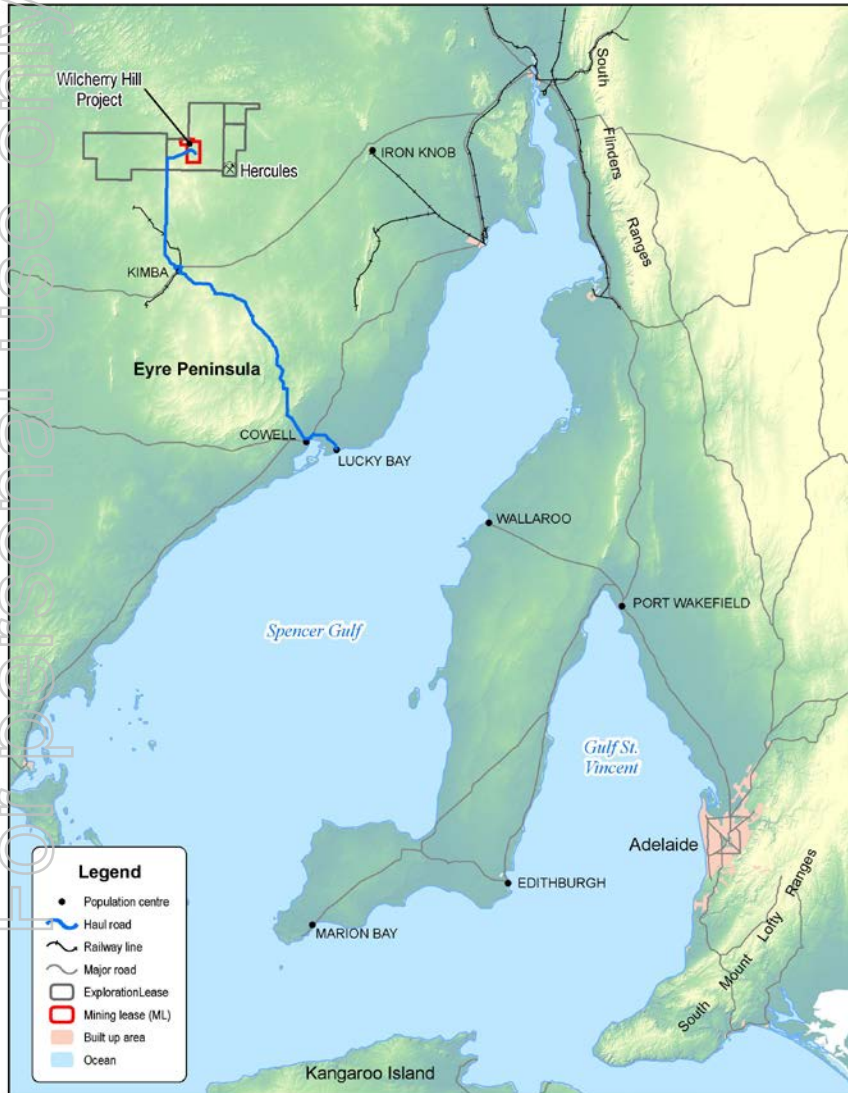
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## Proposed Gravity Process Flow

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# TRANSPORT LOGISTICS



- 156km to Port - Lucky Bay in the Spencer Gulf of South Australia
- Ore trucked predominately on bitumen road to port
- Full access to 50ha site at Lucky Bay Port secured, with harbour frontage and full access to Port
- Multi user port and potential floating harbour will provide an important export point and significant cost savings for the Wilcherry Hill Project
- DSO transported by road in customised containers to harbour side facility

# TRANSPORT LOGISTICS

## Lucky Bay Port Layout

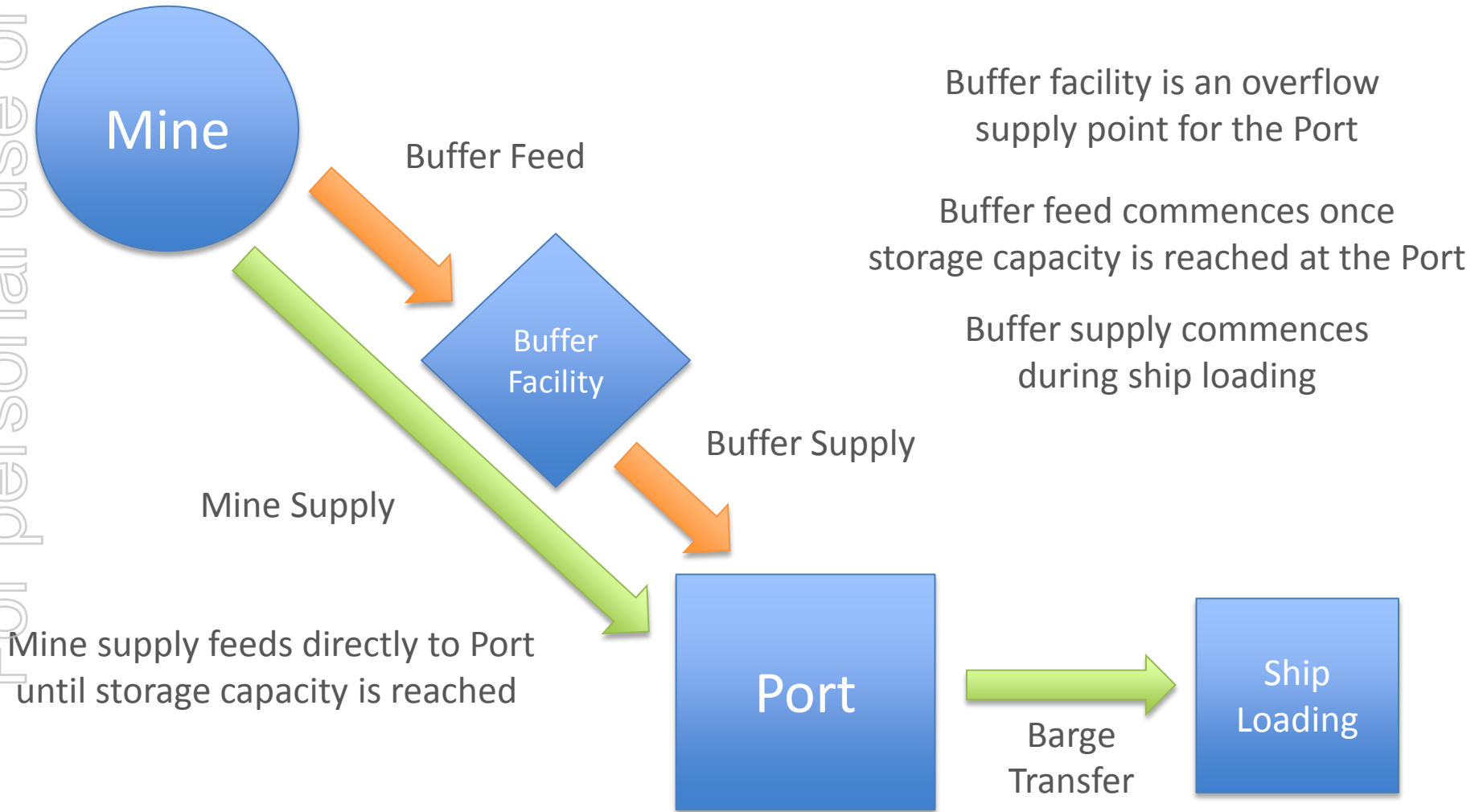
- Development application approval granted in April 2012 by South Australian Government
- IronClad received confirmation of 50ha allocation at the new Lucky Bay Port development in August 2011



# TRANSPORT AND LOGISTICS

## Export Facility Process Flow

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# TRANSPORT AND LOGISTICS

## Lucky Bay Port Stage 1

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- Containers will be loaded onto a motorised barge and powered to Panamax vessels off shore
  - Panamax vessels will be anchored 10 nautical miles offshore
  - A tug has been purchased. Mobilisation to Lucky Bay in Q3, CY2012
  - Motorised barge is being constructed in China
  - Loading of the first ship is forecast to be in late 2012 via a powered feeder vessel capable of delivering up to 4,500 per day/vessel
  - 2 feeder vessels will be used for Stage 2 production
- Panamax vessels loaded for export**



**Containers loaded onto transshipment barges**



**Tug used to transport barges to Panamax vessels**



# TRANSPORT AND LOGISTICS

## Lucky Bay Port Stage 2

- Stage 2 transhipment of ore is planned to commence when the floating harbour or an equivalent loading system is commissioned
- Floating harbour is proposed to anchor approximately 10 nautical miles offshore
- Floating harbour is intended to be capable of docking full cape size vessels
- 2-3 feeder vessels will transport ore to floating harbour - depending on export rate
- Feeder vessels each carry 4,500-6,000 tonnes per day
- Forecast floating harbour construction period of 18 months - from award of contract
- Commissioning of floating harbour aimed to meet upgraded mine throughput from the end of year 2

**Lucky Bay Stage 2 port layout**



**Feeder barge carries ore to floating harbour**



# MARKETING

## Product Specifications

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### Final Shipping Ore Specifications

- IronClad will produce a +60% Fe DSO product with very low impurities levels resulting in high “value in use” performance within the steel manufacturing process

Fines	IFE
Fe %	>60%
SiO <sub>2</sub> %	<2.9%
Al <sub>2</sub> O <sub>3</sub> %	<2.3%
CaO %	<0.05%
MgO%	<0.85%
Na <sub>2</sub> O	<0.12%
K <sub>2</sub> O%	0.11%
P%	<0.02%
S%	<0.04%
MnO%	0.12 - 0.15

### Marketing

- First 2 years of production fully contracted for sale
- 50% of production in years 3 and 4 contracted for sale to New Page Investments Ltd
- Shipment of DSO/DMS – final product is expected to commence in Q4, CY2012
- IronClad has a contract with OMS Trading Pty Ltd in Singapore to sell up to 50% of the ore produced in the first 2 years

Stockpiles in Southern China



# PROJECT Milestones

- Major catalysts for IronClad over the next 6-12 months include completion of construction, commencement of production and first ore on ship

	CY 2012			CY 2013			
	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Port development approval (granted)	■						
Port construction commencement	■						
Stage 1A: Mining commencement	■						
Stage 1A: Processing facility (DMS) constructed/commissioned		■					
Stage 1A: Transport of first ore to Lucky Bay			■				
Stage 1A: First ore on ship			■				
Stage 1B: (2Mtpa) Beneficiation plant construction commencement				■			
Stage 1B: Ore processing commencement					■		
Full production at 2Mtpa							■



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