



Carpentaria Exploration Ltd

Perth June 26 – 27 2012

Developing the Hawsons Iron Project

2nd Annual Iron Ore Project Development and Logistics

We find it. We prove it. *We make it possible.*



Carpentaria



We Find It



We Prove It



We Make It Possible

Aim :

Discover, Develop and Mine mineral resources to grow shareholder value and fund further discoveries in Eastern Australia

Abilities :

Strong geoscientific and engineering team

Track Record :

- Established Resource at Hawsons
 - ✓ Positive PFS released
- Tin / Tungsten near Broken Hill
 - ✓ Tungsten Resource
- Gold – Lachlan Fold Belt
- Nickel – North of Broken Hill

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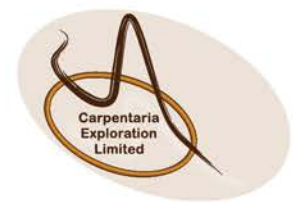
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Structure of the Talk

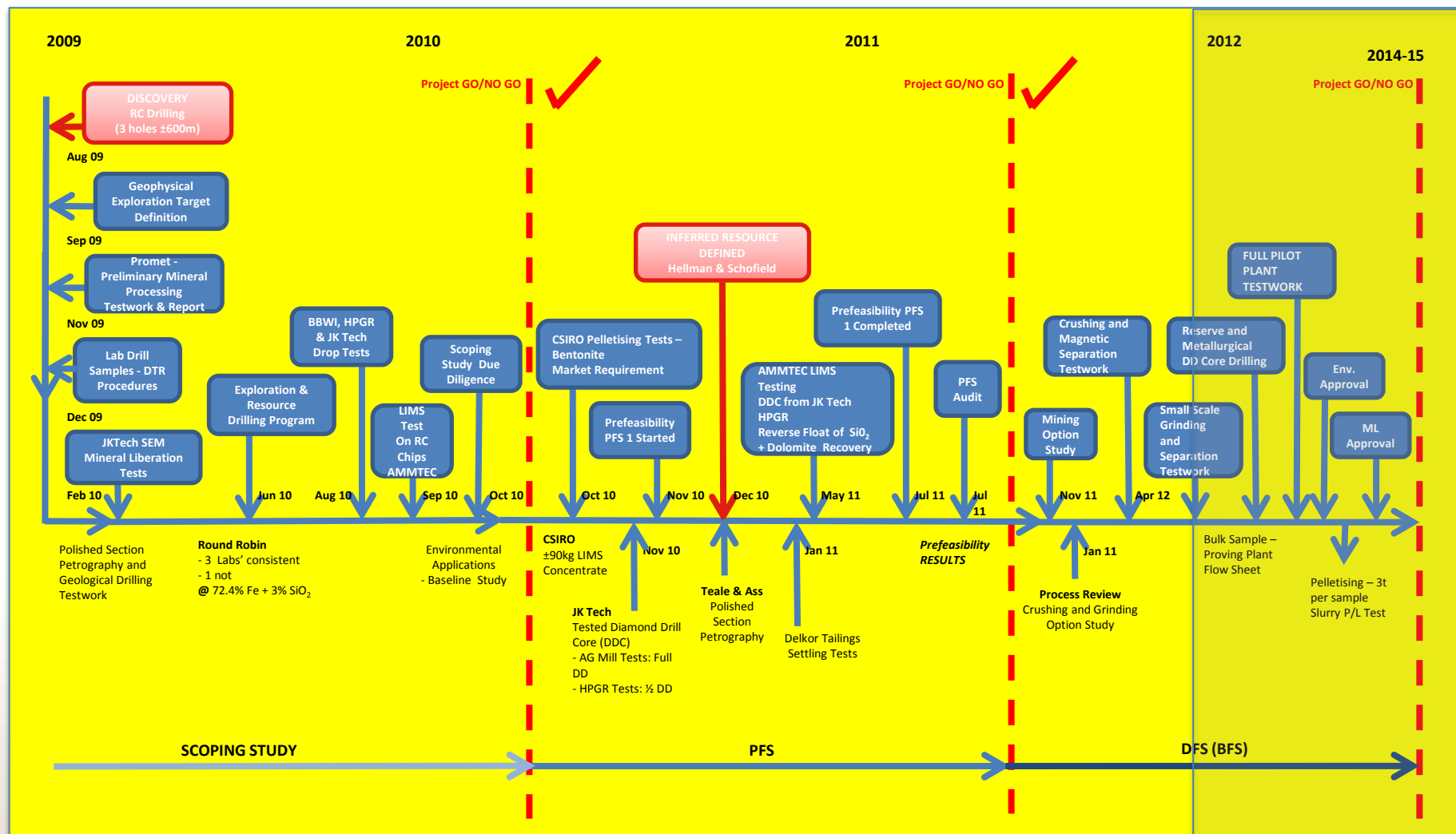


- Progress to date
 - Time Line
 - Location
 - Geology and resources
 - PFS
 - Mining
 - Processing Flow Sheet
- Export and Logistic Solutions
 - Water
 - Power
 - Rail
 - Port
- Summary



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Project and Test Work Flow Diagram

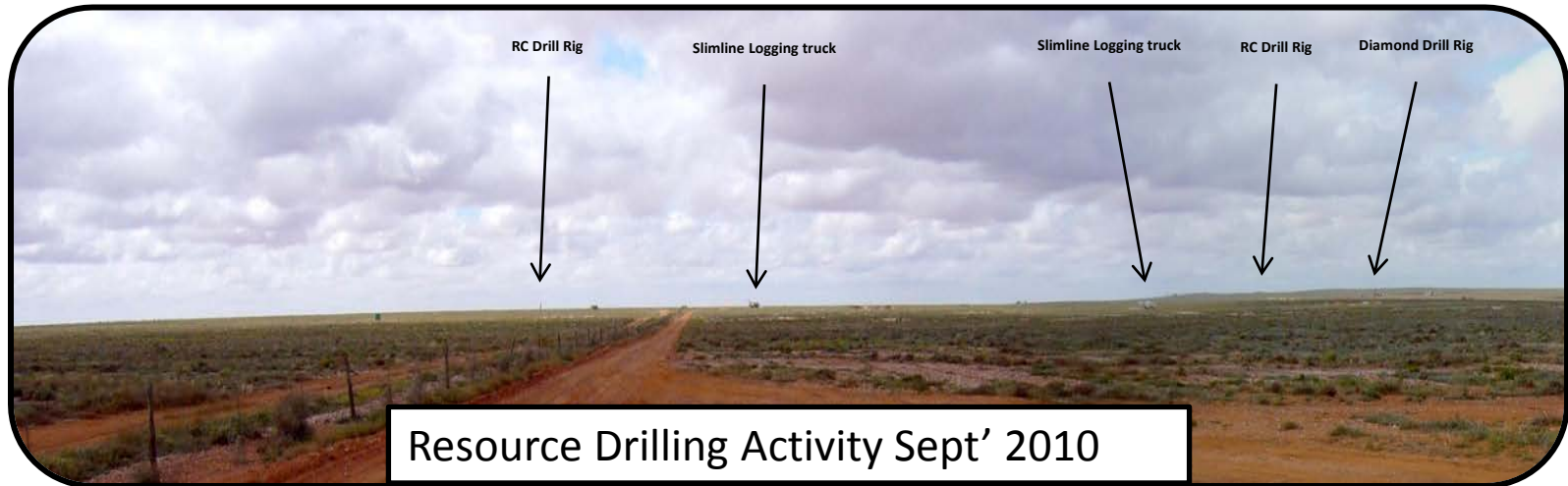


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Pre-feasibility Study



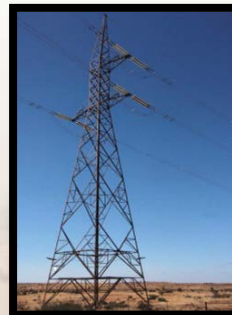
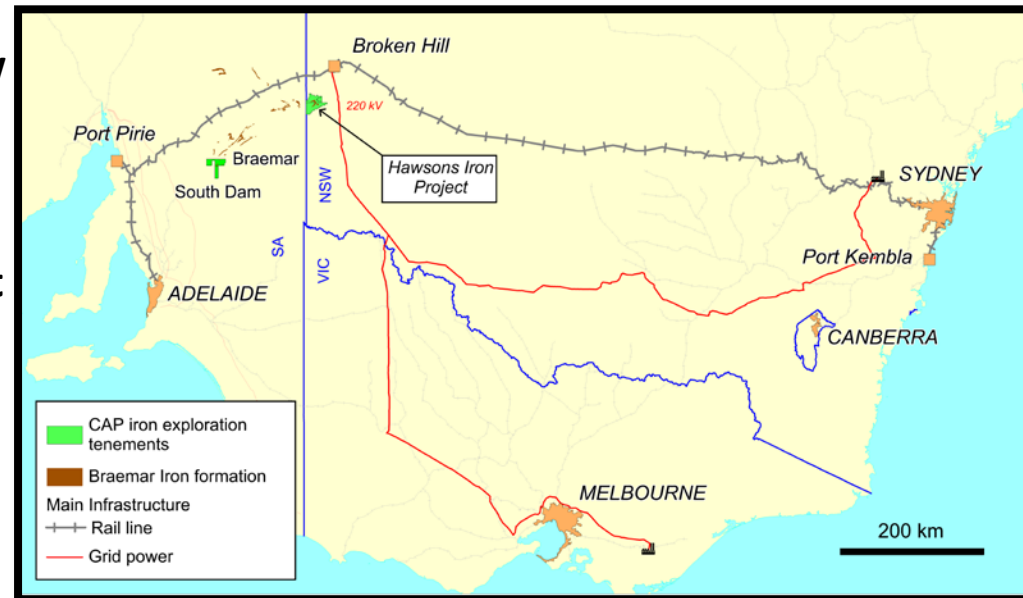
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Largest Magnetite Project in NSW



- **Resource** – very large with potential for 50 year plus mine life
- **Mining** – very low unit costs because low strip ratio, very wide mining widths, low abrasion index and single pit
- **Processing** - comparatively very low cost because of very soft mineralised rock
- **Infrastructure** – water, power, transport and port all available for start up
- **Approvals** – low hurdles compared with other projects

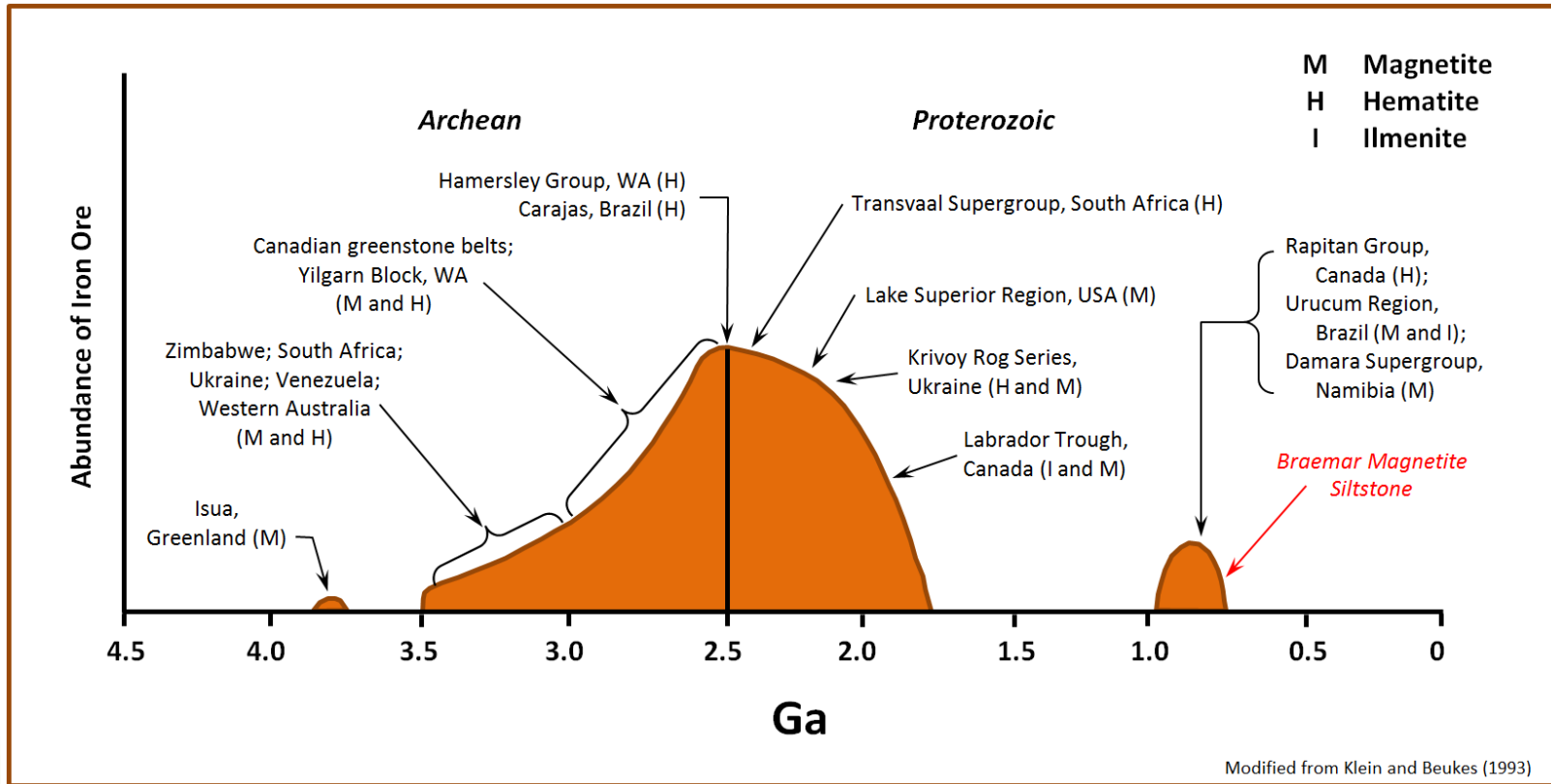
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GLOBAL IRON Geological Time



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Geology and Resources



Five magnetic anomalies as target

- Very limited outcrop
- 20,000m drilling
- 70 holes

Results

- Consistent magnetite siltstone in all anomalies

Exploration Target¹

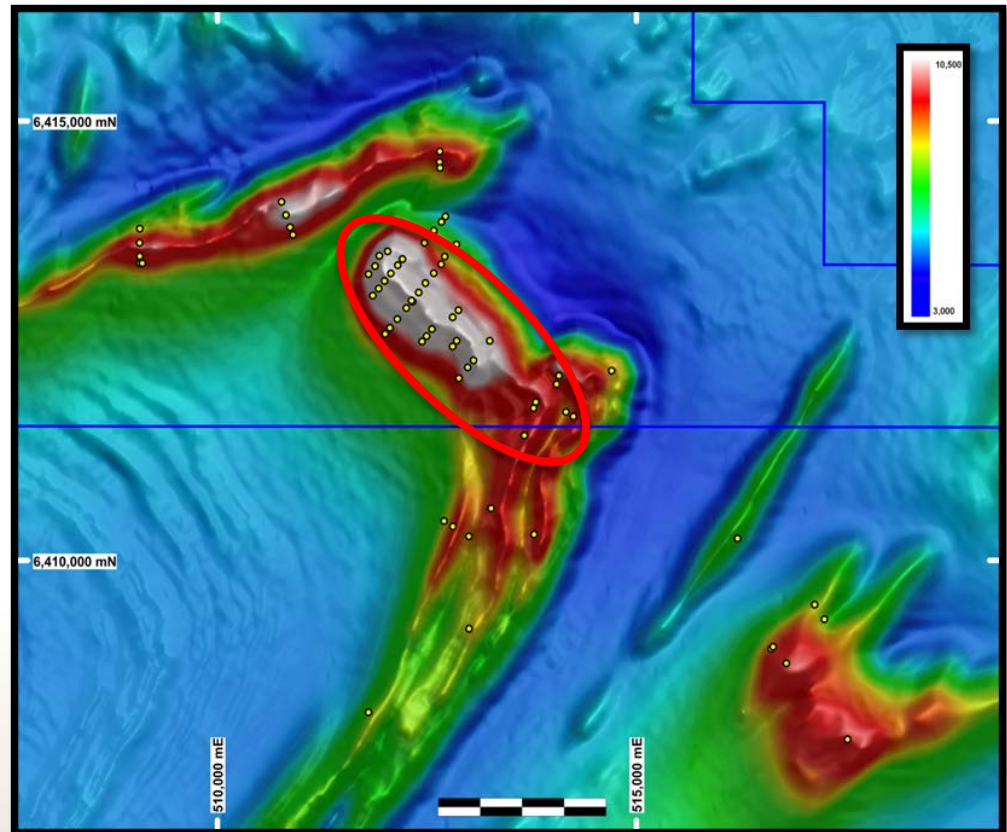
6 to 11 billion tonnes

900-1,900 million tonnes of concentrate

Mass Recovery (DTR) 14-17%

Concentrate Grade of 69-71% Fe

And a Maiden Resource



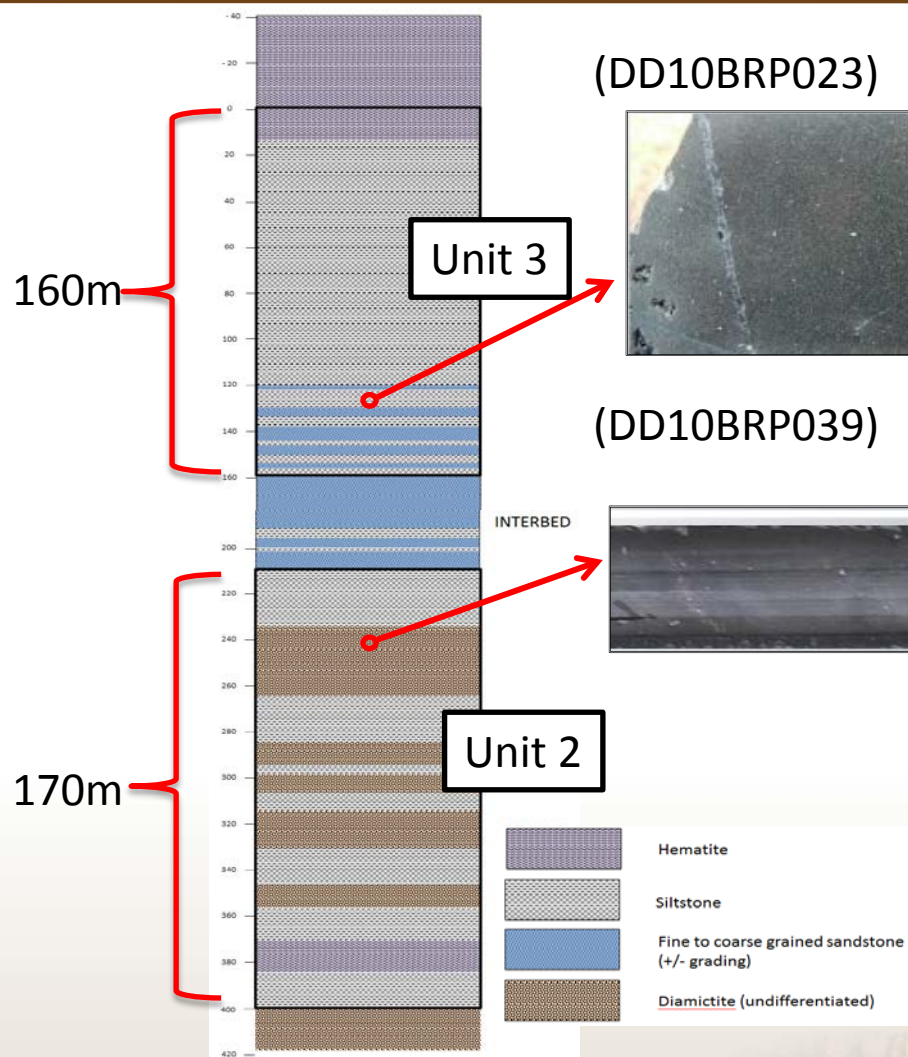
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¹ The potential quantity and grade of the exploration targets is conceptual in nature and there has been insufficient exploration to define a Mineral Resource. It is uncertain if further exploration will result in the determination of a Mineral Resource. (DTR is Davis Tube Recovery)

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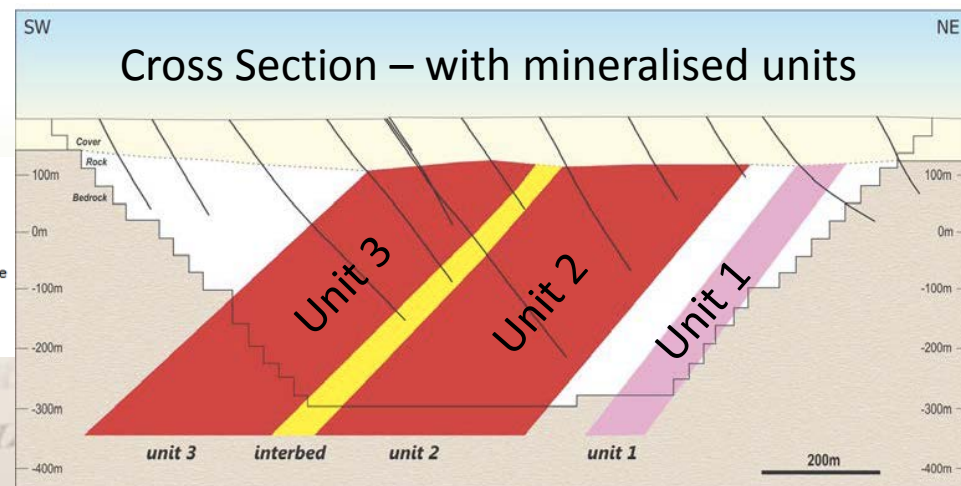
Geologically Consistent



True Thickness 400-500m

Composition

- Magnetite
- Quartz
- Carbonate
- Chlorite/biotite
- Hematite



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Maiden Resource

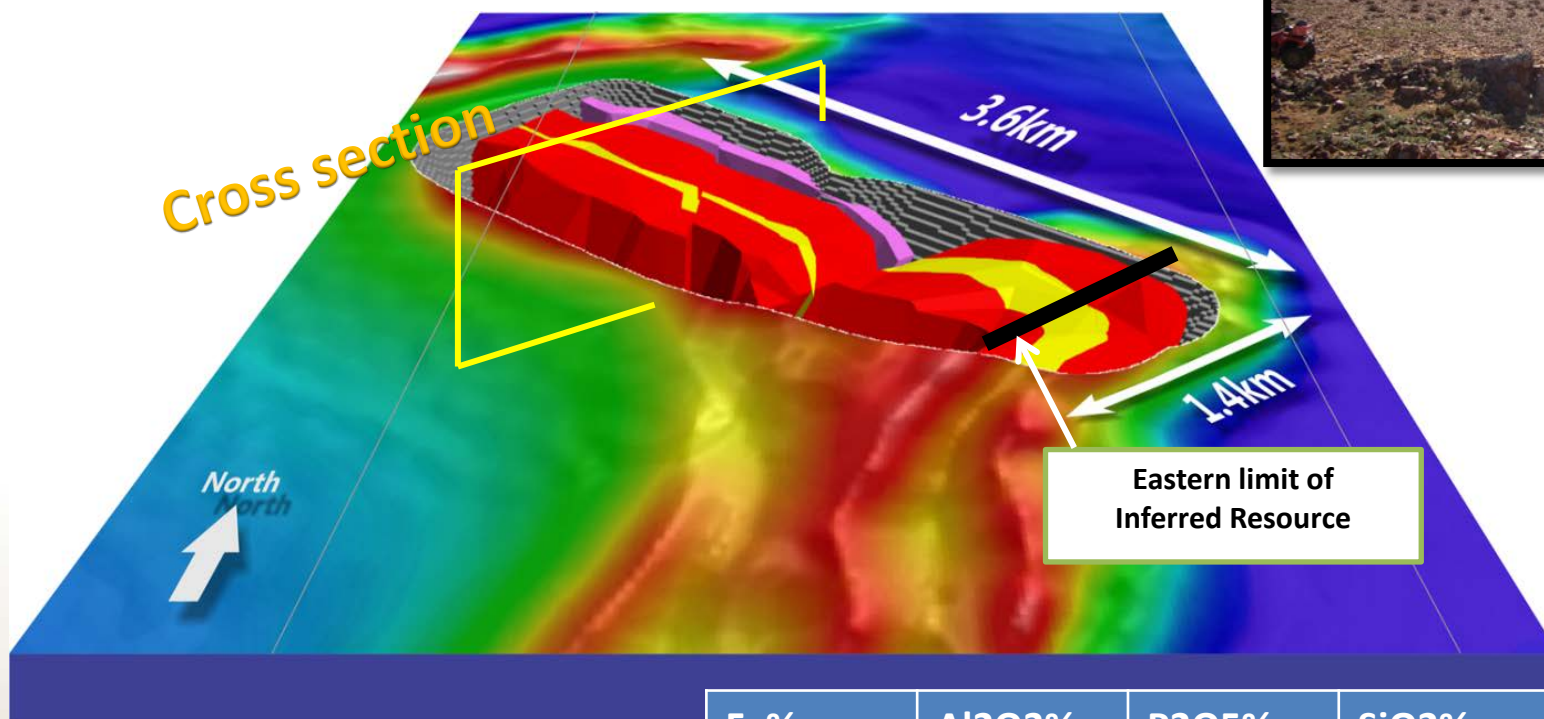


JORC Inferred Resource (12% DTR cut off)

1.4 billion tonnes at 15.5% mass rec.

220 million tonnes of concentrate

69.9% Fe, 2.50% SiO₂, no other impurities



Fe%	Al ₂ O ₃ %	P ₂ O ₅ %	SiO ₂ %	S%
69.9	0.22	0.002	2.50	0.003

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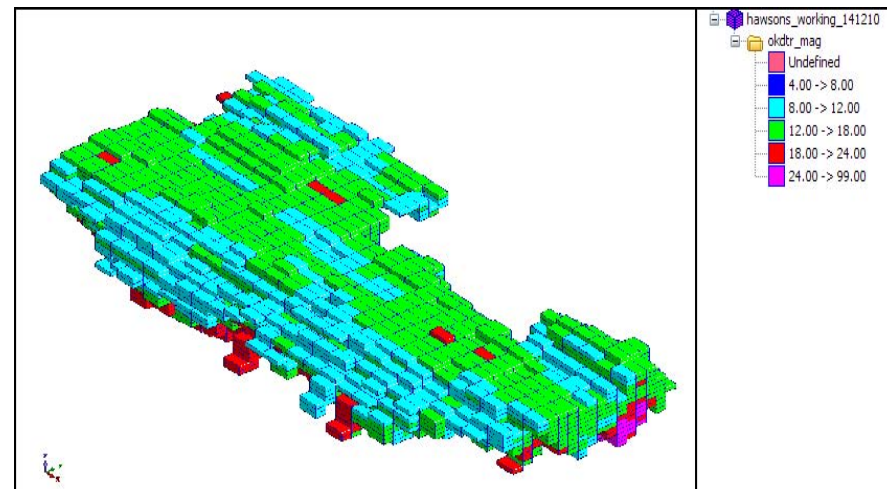
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PFS November 2011



Improvements to PFS base case :

- In pit crushing and conveying (IPCC) shows significant improvement
- Standard magnetite processing techniques



	Capex	NPV	IRR	Annual ave. Gross Profit	Payback
Nov 2011 PFS Update (incl in pit crushing option)	\$2.9Bn	\$3.2 Bn	23%	\$735 m	6.3yrs
July 2011 PFS Base Case	\$2.8Bn	\$2.8 Bn	21%	\$688 m	6.7yrs
Assumptions	Discount rate	AUD:USD	Life of Mine 69% Concentrate price*	Life of Mine equivalent 62% fines price*	
	9%	1.00:0.85	US\$88	US\$79	

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Lower Mining Costs – In Pit Crushing and Conveying

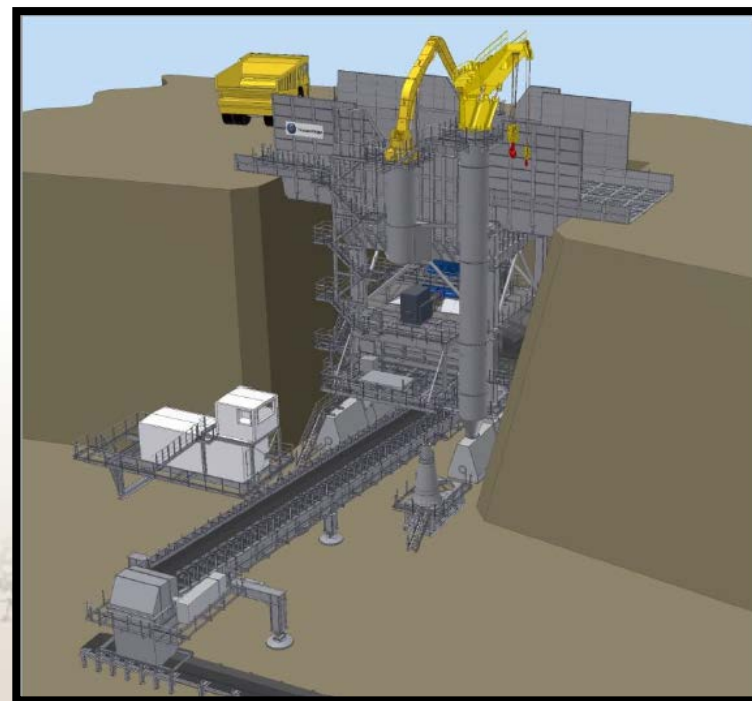
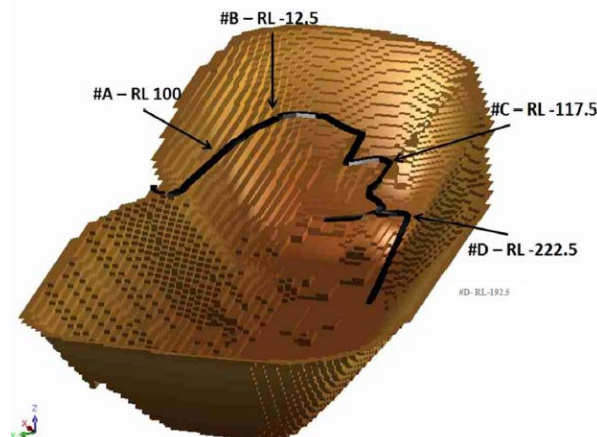


Existing and Proposed IPCC operations e.g. :

- Bingham Canyon
 - – ~165Mtpa linked to the Copperton Concentrator by an 8km conveyor system
- Escondida – Over 320Mtpa

Benefits :

- Lower fuel usage (fuel and transport ~50% of mining costs)
- Truck utilisation increase by up to 15%
 - less long up hill hauls
- Uses Electrical power – lower cost
- Better operational safety
- Deeper mine – maximise resource

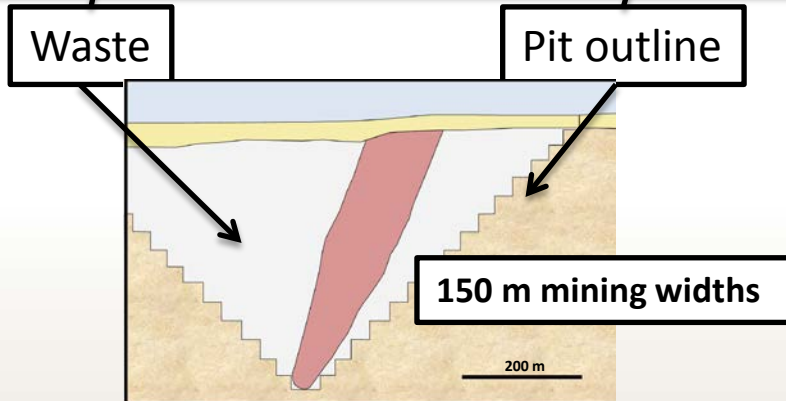
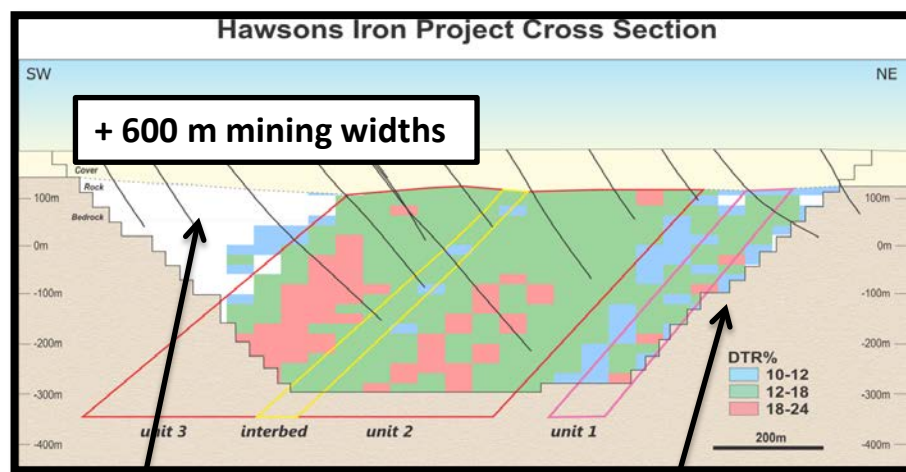


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Value of low Waste : Ore



Example at same scale

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Waste to ore 0.3 : 1, 15.5% DTR

Mine 130t material to produce 100t of ore

100t ore gives 15.5t of concentrate

8.4 t material moved
produces 1 tonne concentrate

Waste to ore 2.3: 1, 36% DTR

Mine 330t material to produce 100t of ore

100t ore gives 36t of concentrate

9.2 t material moved
produces 1 tonne concentrate

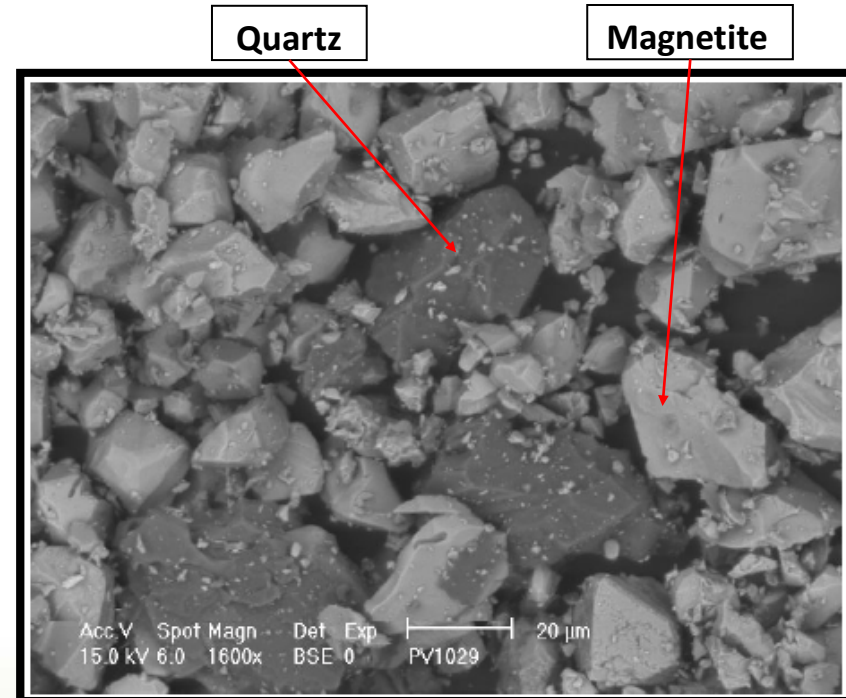
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Optimization Studies – Processing



Unique Metallurgical Characteristics :

- Low bond work index of 6 - 8 kWh/t (*BIF's ~ 15 – 30 kWh/t*)
- Low abrasion index ~ 0.09 (*BIF's ~0.3 – 0.7*)
- Rock Strength (UCS) 50 – 90 Mpa (*BIF's ~ 355 Mpa*)
- Grain size 30 – 50 μm
- Ideal for pellet production
- Ideal for slurry pipe operation
- Lab' trials indicate :
 - suitable for impact crushing
 - impact crushing generates more fines than conventional crushing



Rock breaks into grain size

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Low Cost Front End Crushing



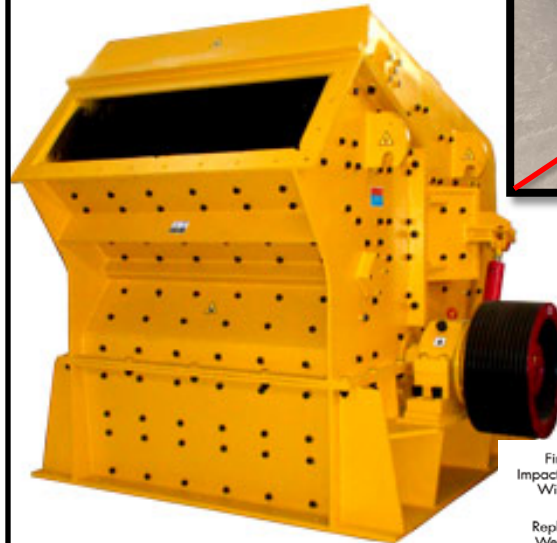
PRIMARY CRUSHING - IMPACT CRUSHERS

Preliminary testwork - Positive

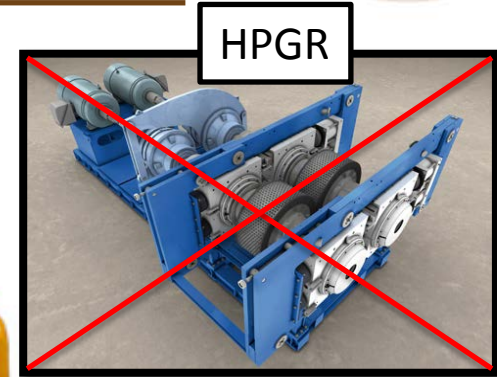
- Utilizing soft ore characteristic (Low bond work and abrasion indices)

Value compared to HPGR :

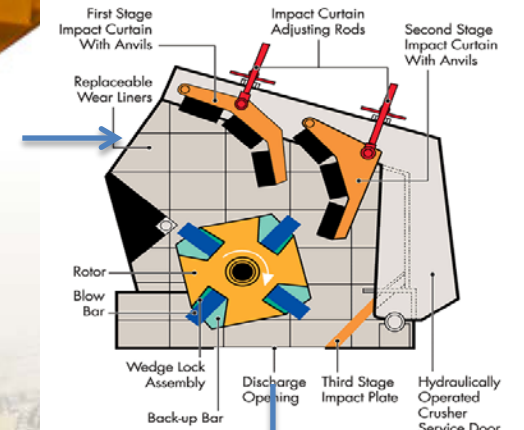
- Lower capital cost
- Low energy consumption
- Large feed reduction ratio (12 : 1)
 - Norm is 3 or 4 : 1
 - Fewer crushing stages
- Off the shelf units



Feed
<800mm



HPGR



Discharge
<65mm

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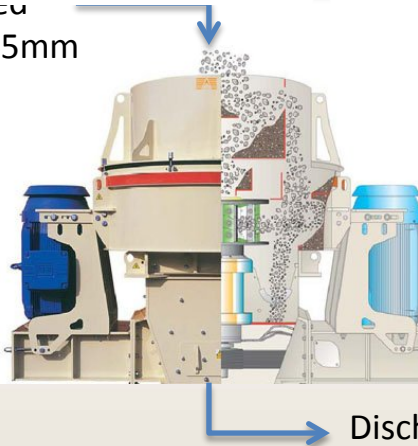
Low Cost Front End Crushing



Barmac Crusher



Feed
~ 65mm



Discharge
~70% <1mm

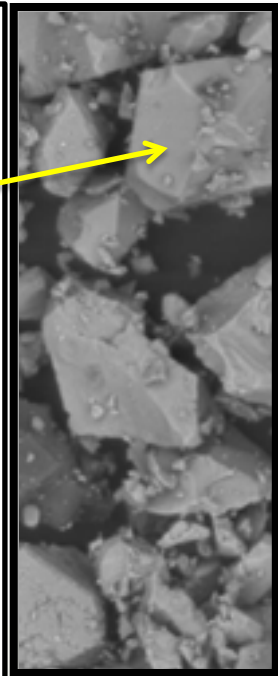
SECONDARY CRUSHING - IMPACT CRUSHERS

Laboratory scaled crushing tests indicate:

- Liberates crystalline magnetite
- Secondary Crushing
 - Feed ~ 65mm
 - Discharge ~70% less than 1mm
 - Total Fines Production ~35% less than 53 μ m

Value :

- Off the shelf low cost units
- Low energy consumption
- Produces 35% final products
- Eliminates tertiary crushing



~40 μ m

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Optimization Studies - Processing



Preliminary Costings for a 5mtpa Crushing Module

Equipment	5Mtpa (equivalent)		Installed Power kW	Estimated Costs M AUD	Option Study 5Mtpa (Anticipated)		Installed Power kW	Estimated Costs M AUD
Primary Crushers	Gyratory	1	1,200	4.5	Impact Crusher	2	2,400	2.0
Secondary Crushers	Cone	2	1,900	7.0	Barmac	5	3,000	2.5
Tertiary Crushers	HPGR	4	16,000	31.2	-	-	-	-
Total			19,100	42.7			5,400	4.5

Total Installed Power consumption estimated to be reduced from 173 MW to ~ 143 MW

Estimated Power Reduction of 15 – 20% *

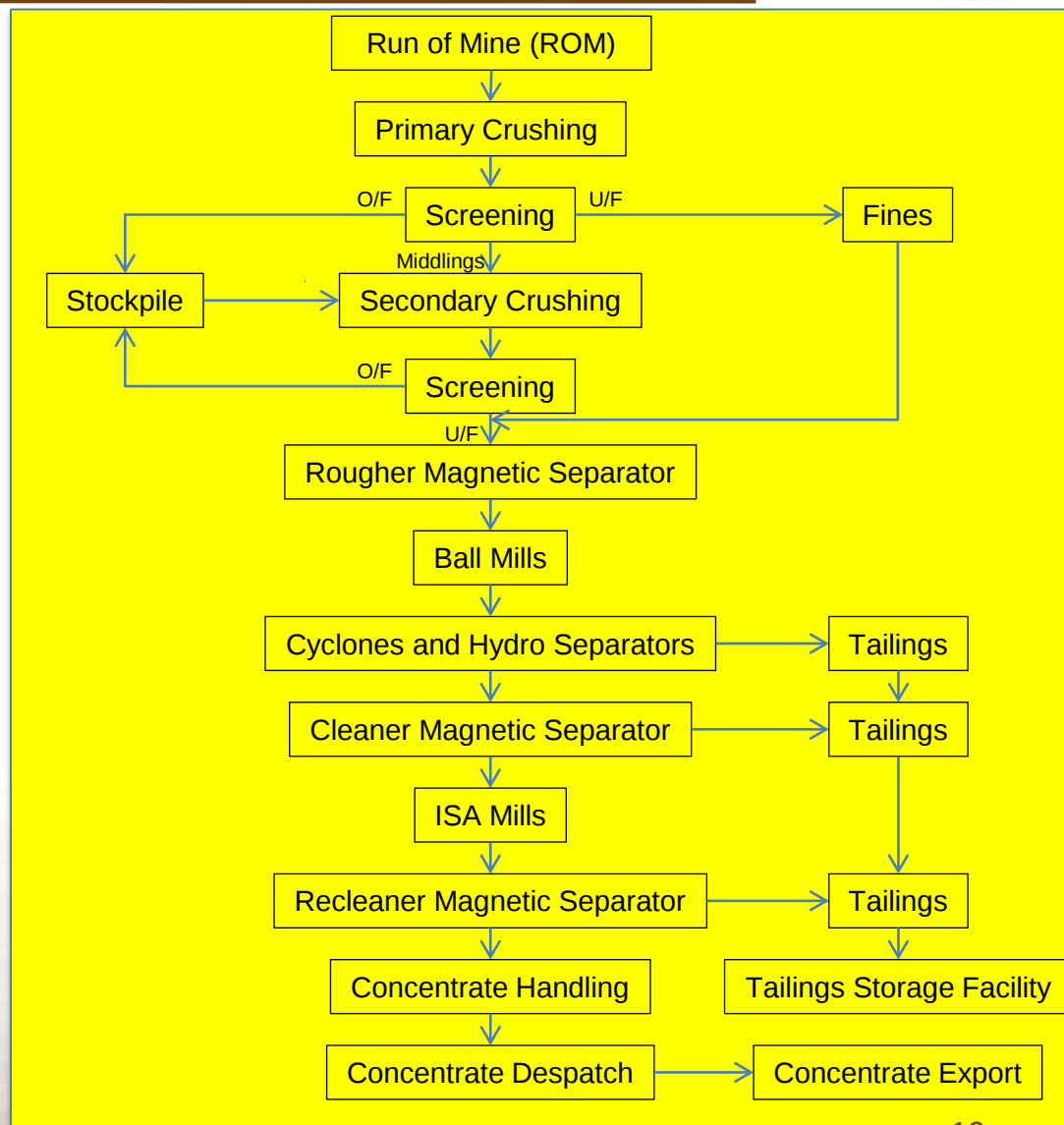
* Reduction not put into PFS, power for entire on site operation at 20Mtpa con. production

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Low Processing Costs - Summary

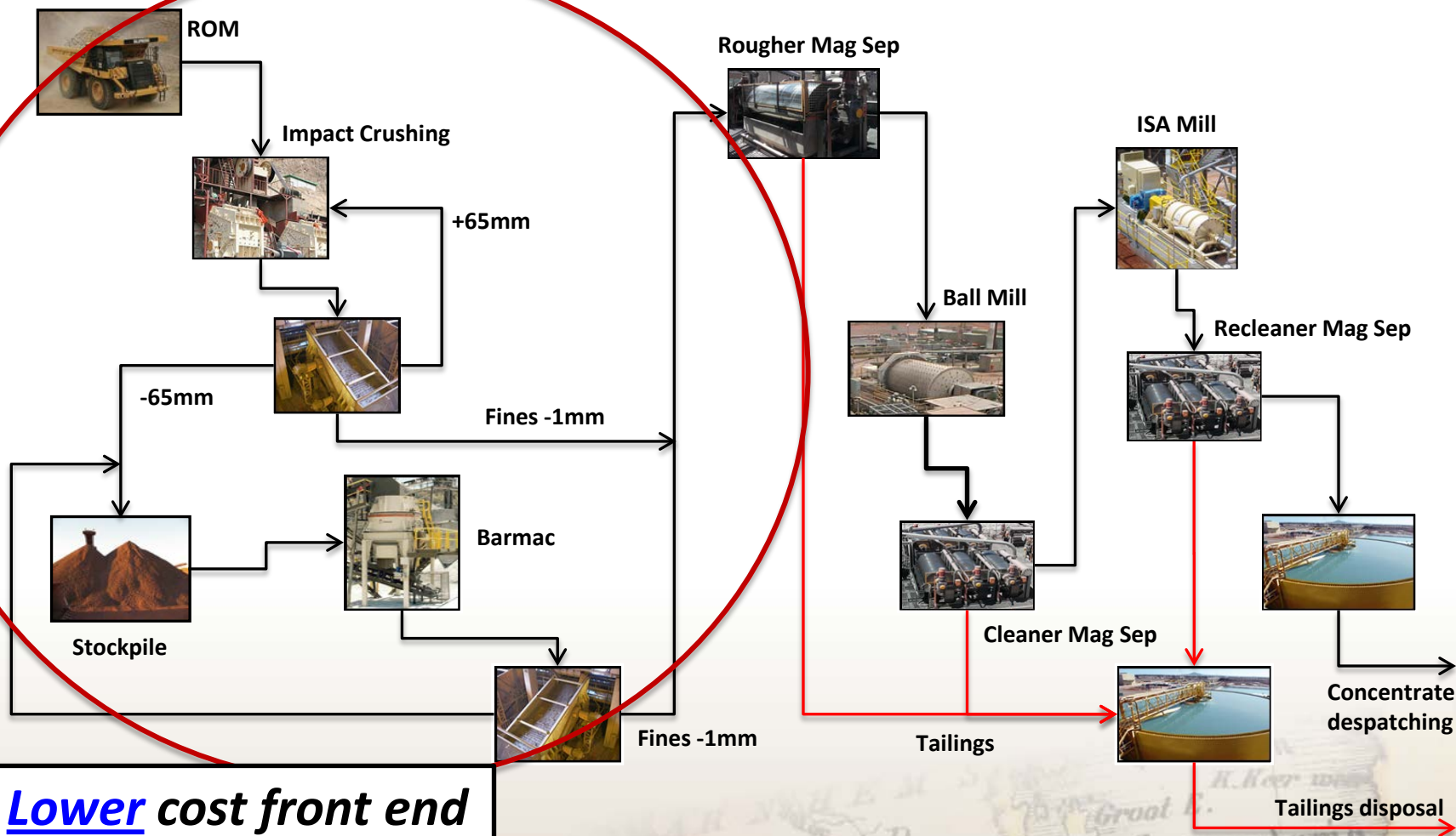


- **Processing Costs \$11/t concentrate – very low compared to others**
- **Produces premium pellet feed concentrate at 30-50 microns**
- **Very soft ore – est' 30% less energy per tonne concentrate than typical WA deposits**
- **Grid Power – up to 50% cheaper than self generated diesel power**



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Optimization Studies – Simplified Flow Diagram



Lower cost front end

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Value of Soft Ore – power per tonne concentrate



Hawsons

Grinding costs

Bond Work index : 6 kWh/t

At 15.5% DTR :

39 kWh to produce 1 tonne con'

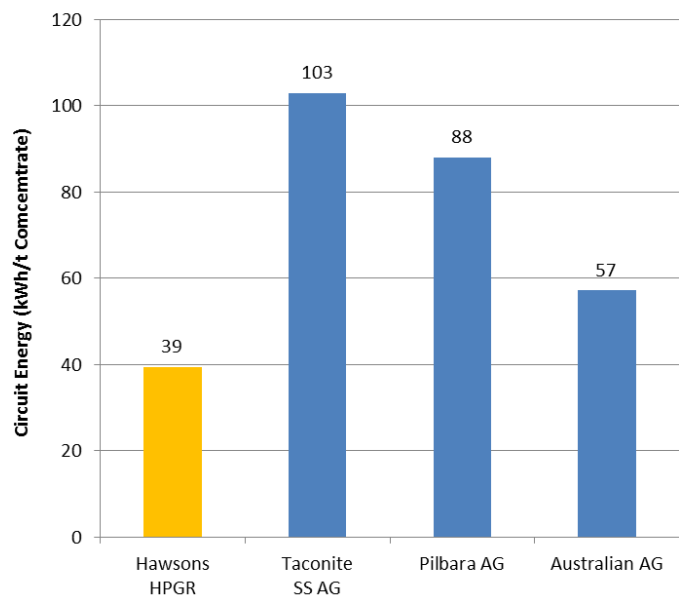
Example of a WA BIF

Grinding costs

Bond Work index : ~ 20 kWh/t

At 36% DTR :

57 kWh to produce 1 tonne con'



Note :

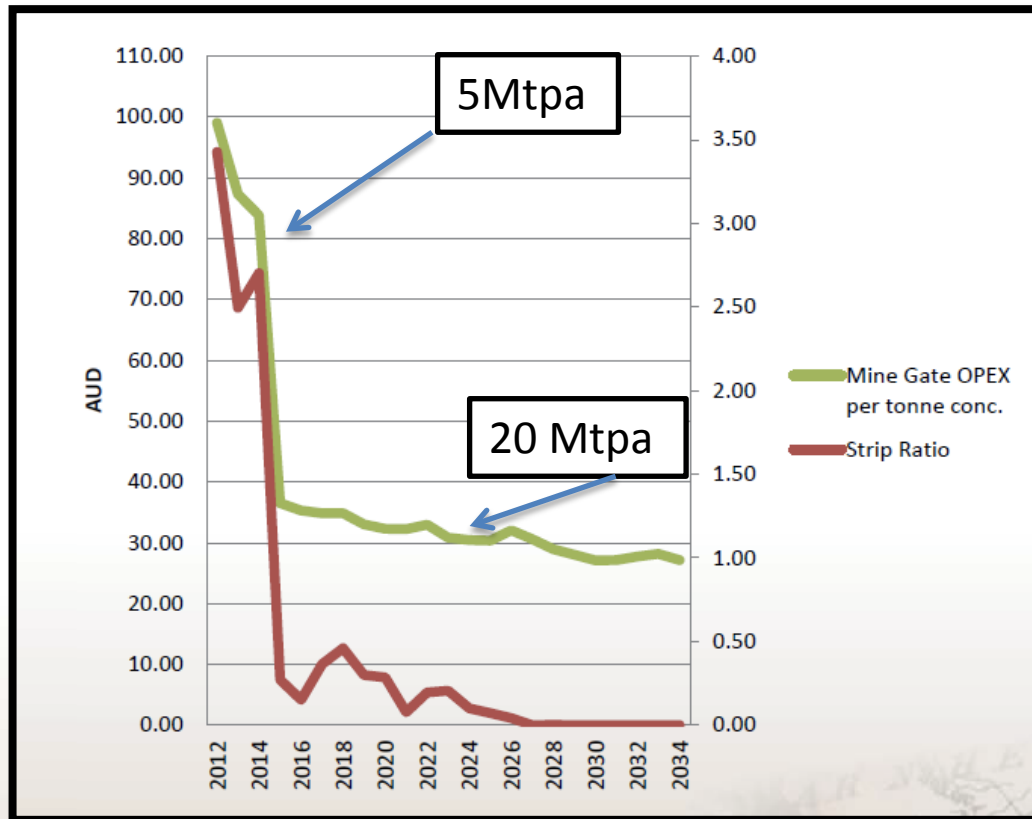
- Power calculations based on public information
- Hawsons costs assuming HPGR / Ball Mill circuit
- Anticipate lower power with impact crushers

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Operating Cost Summary



Operating Costs and Strip Ratio



Over Life of Mine :

- **Operating costs :**
Fall from \$36 to \$27
- **Waste to ore Strip Ratio :**
Reduce at start of mine
from ~ 0.4 :1 to 0 in
10 years

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Cost Summary – Start Up



Costs per tonne concentrate	AUD
Mining Costs	\$15
Processing Costs	\$11*
Other (incl' Royalties)	\$8
Total to Mine Gate	\$34 **

- FOB costs highly competitive (av. Closer to \$60)
- Average operating costs drop over life of mine after Pre Strip

** Does not include processing optimisation*

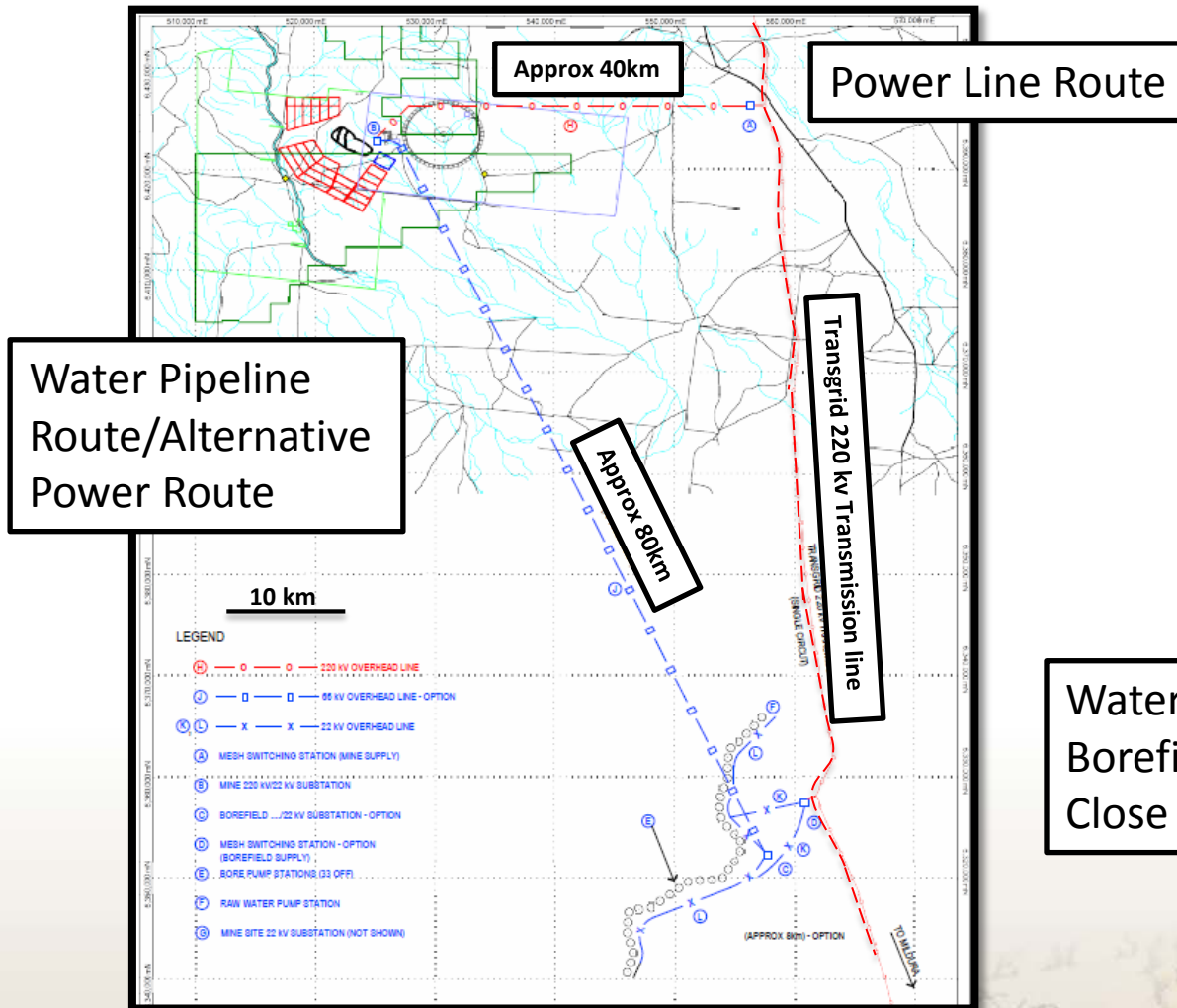
*** Long term total is estimated to be \$27*



FOB – Free on board

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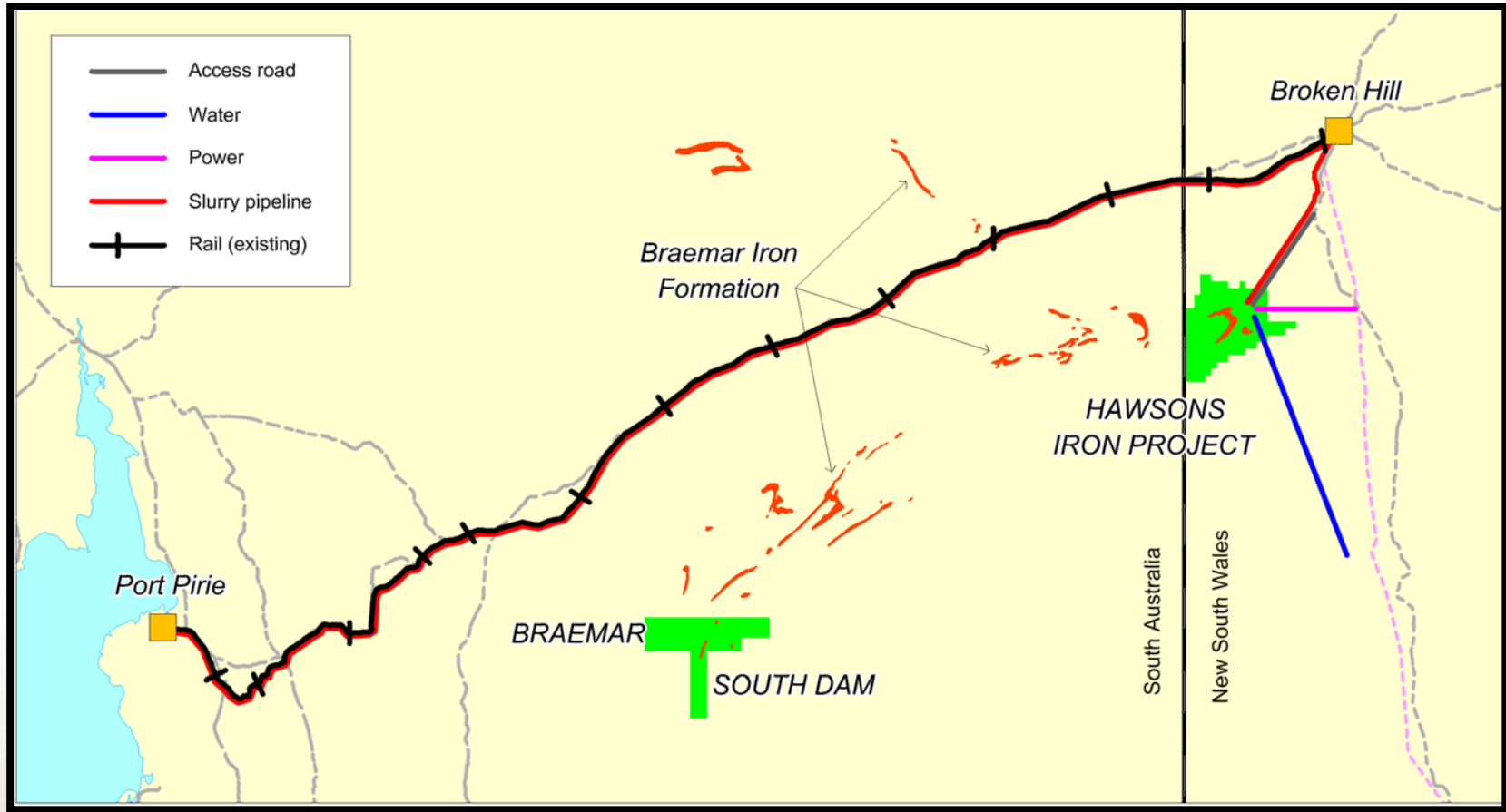
Power and Water - Concept



Water :
Borefield – saline and deep
Close to power

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Transport Options From Site to Port



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Transport Options – Great Optionality



Recent Developments – March 21, 2012

- MOU signed with Flinders Ports to determine long term handling, storage and loading solution at Port Pirie, South Australia
- Common User Facility for potential to export 20 – 30Mtpa of iron concentrates

Start Up Preference

- Year 1 – 5MT
 - slurry to Broken Hill , rail to Port Pirie
- Ramp up to yr 4 - 20MT
 - slurry to Broken Hill , slurry / rail to Port Pirie
- 13Mtpa available using existing rail to Port Pirie
- Port Capacity available at Port Pirie pending upgrade



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Transport Options – Concept Plan



**Port Pirie
bottleneck solved
Two spare berths
Out of town stock
pile and conveyor**

Availability of long-term handling and storage facility - great advantage over many other proposed magnetite projects

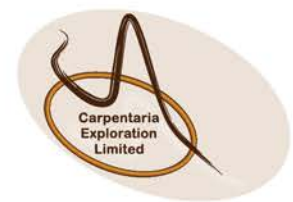
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Port Pirie common berth facility

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Cost Summary



Costs per tonne concentrate	AUD
Mining Costs	\$15
Processing Costs	\$11*
Other (incl' Royalties)	\$8
Transport to and onto Ship	\$13 ^a - 19 ^b
Total FOB Port Pirie	\$47-53

- **FOB costs highly competitive (av. Closer to \$60)**
- **Average operating costs drop over life of mine after Pre Strip**



FOB – Free on board

^a Long term pipeline estimate

^b Rail to Port Pirie estimate

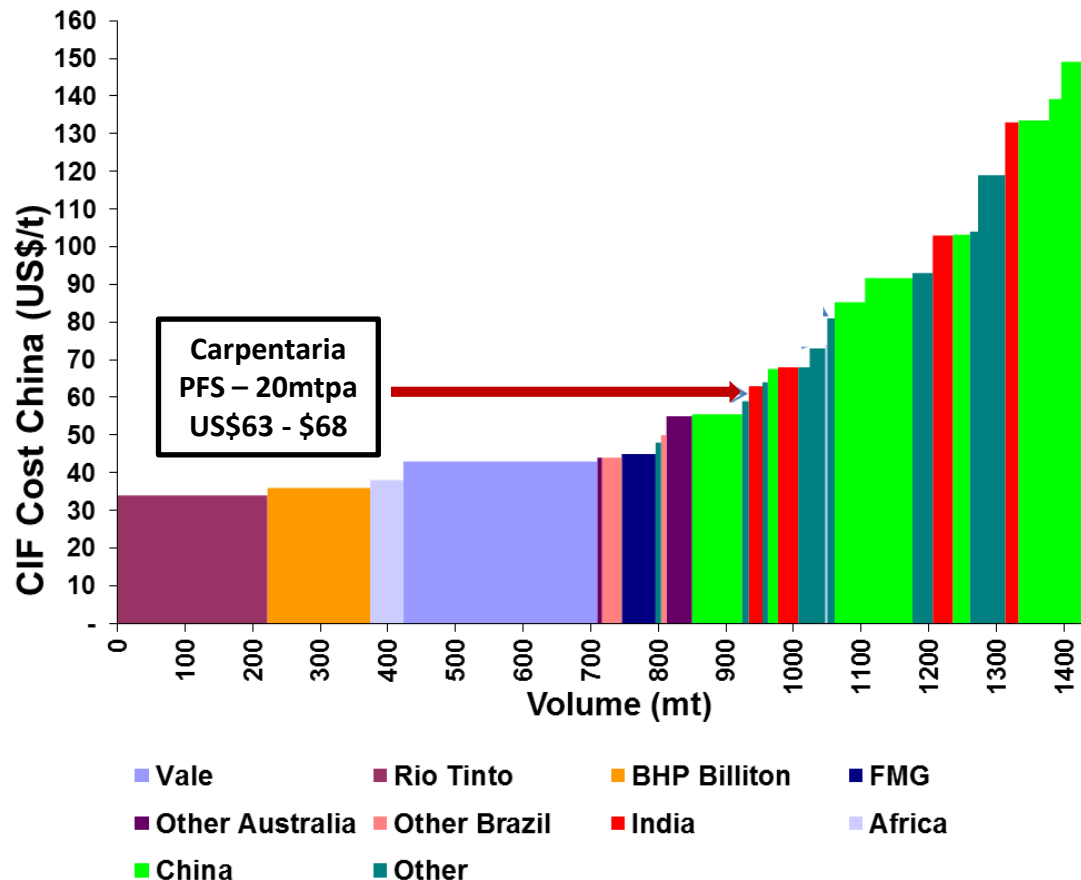
* Not including processing optimization

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CIF China Comparison June 2011



Supply curve to Chinese market for iron ore fines



Source:
Macquarie Bank
2011

Note :

The CIF costs are
at production grade
eg hematite producers
est. at 60% Fe

High grade concentrate
producers – magnetite
will attract 10 – 20%
premium.

This offsets processing
and transport costs
not reflected in graph

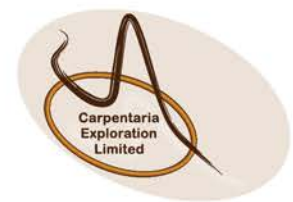
***Makes magnetite
attractive***

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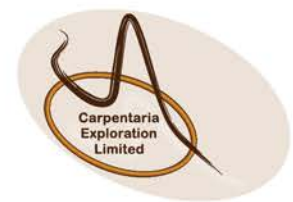
Work Program - Summary



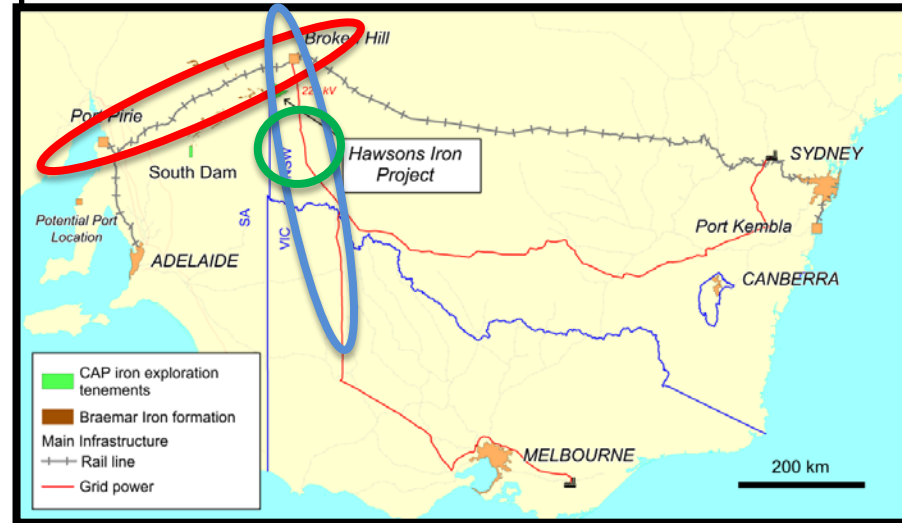
- **Port Pirie Expansion**
 - Flinders Port to complete
- **Metallurgical Testwork**
 - Bench scale and pilot scale
- **Project Sizing Study**
 - Determine optimum capacity and production rates
 - Include recent optimisation studies
- **Transport Studies**
 - Maximise option utility (Slurry/rail)
- **Drilling**
 - Improve resource category
 - Geotechnical testing
 - Metallurgical sampling
- **Statutory Approvals**



HAWSONS IRON PROJECT SUMMARY



- **Prefeasibility Study** – Start up at 5mtpa ramp to 20 mtpa concentrate production, 20 year mine life
 - NPV \$3.2 billion, IRR 23% (November 2011)
 - CAPEX of \$2.9b
 - Life of mine 69%Fe price US\$87/t
 - Est. cost in China US\$63 – 68 /t
 - PFS Audited Sept 2011 – all ok
- **Infrastructure** – Port, rail capacity, water, and power all available for start up
- **Mining and Processing** – low unit costs because low strip ratio, wide mining widths and soft ore
- **Marketing** – Saleable concentrate low silica, no impurities
- **Ownership** – CAP 60%, BMG (in Liquidation) 40%
CAP potential to increase



Native Title has been extinguished



The information in this presentation that relates to Exploration Results and Resources is based on information compiled by S.N.Sheard, who is a Fellow of the Australian Institute of Geoscientists and has had sufficient experience which is relevant to the style of mineralization and type of deposit 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, Mineral Resources and Ore Reserves'. S.N.Sheard is an employee of Carpentaria and consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

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