

# Whyalla Presentation 30<sup>th</sup> May 2006

## **Analyst Visit to OneSteel Whyalla Steelworks**

**30 May 2006**

### **Itinerary**

8.00 am	-	9.30 am	<b>Business Overview and Magnet Presentations</b>
9.30 am	-	12.30 pm	<b>Travel and Mine Tour</b>
12.30 pm	-	1.00 pm	<b>Lunch</b>
1.00 pm	-	1.30 pm	<b>Blast Furnace</b>
1.45 pm	-	2.15 pm	<b>Steelmaking</b>
2.30 pm			<b>Depart Whyalla Steelworks for Airport</b>

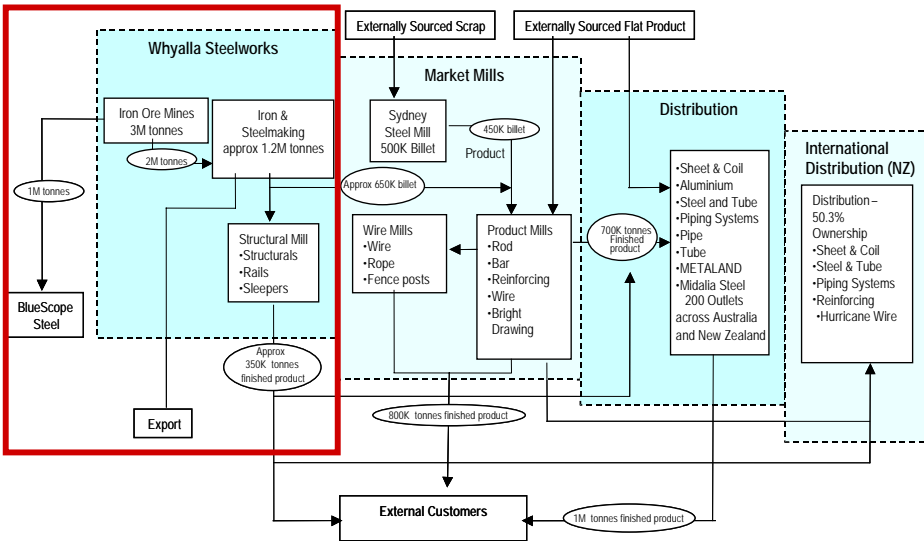
## **Safety is a Core Value**

### ***Your Safety is Important to us!***

- 1 Your safety whilst you are our guests is our highest priority.**
- 2 Wearing Personal Protective Equipment (PPE) - including safety helmets, safety glasses, reflective safety vests, dust coats and adequate footwear is MANDATORY.**
- 3 Sign-in procedures apply at the Steelworks to ensure that visitors to Plant Departments can be accounted for at all times. You will be asked to sign Location Tags for the Plant areas you will be visiting.**
- 4 When visiting Plant Departments, always stay within the designated walkways.**
- 5 To ensure your visit remains on schedule and is conducted safely, please always remain with the group, your guide and our departmental hosts.**

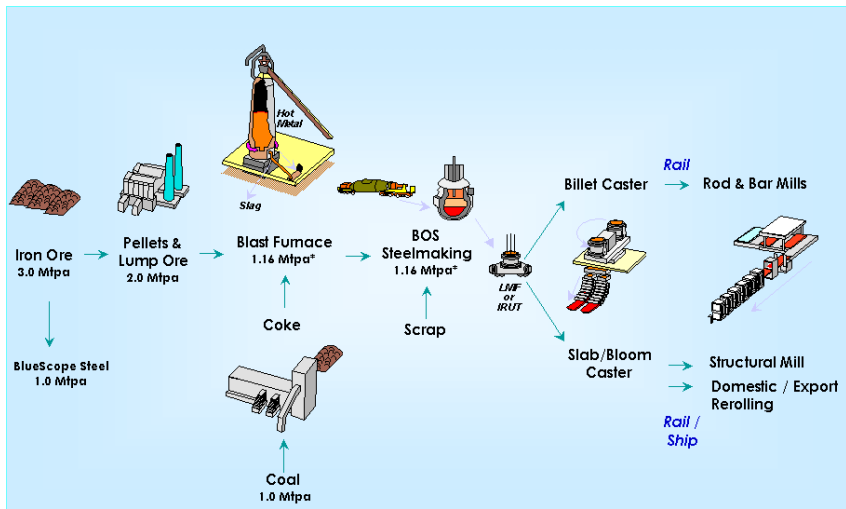
**OneSteel Whyalla Steelworks welcomes you and hopes that your visit is informative and enjoyable.**

# OneSteel Operations



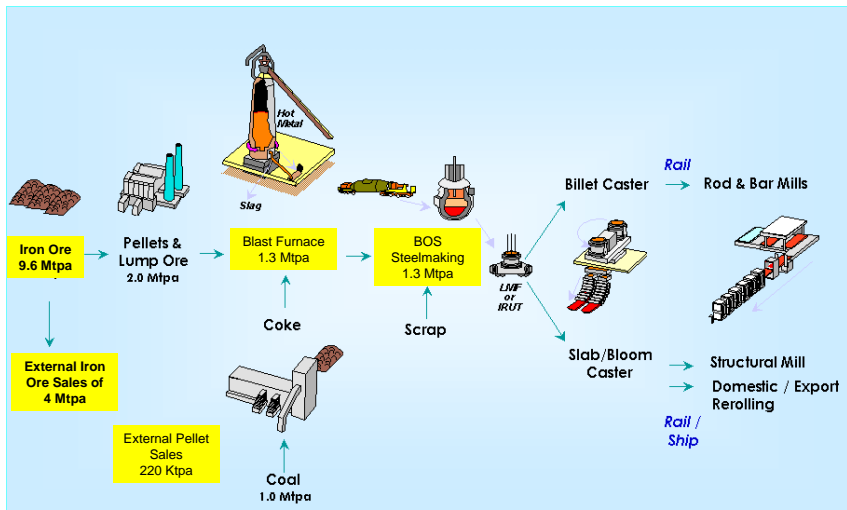
- **Whyalla Steelworks**
  - Produces approximately 1.16 million tonnes per annum, 650,000 of billet for Newcastle rolling mills, in excess of 400,000 of bloom for structural beam and rail and the remainder in slab for export.
- **Key Strategic Objectives**
  - Successfully manage Magnet implementation and transition
  - Supply Billet to Newcastle at lowest possible cost and at the rate and grade section required
  - Supply rail and structural beam to meet customer requirements
  - Maximise slab export and scrap arbitrage opportunities
- **Key Strengths**
  - Low cost iron ore
  - Flexible production capabilities – integrated into OneSteel
    - Product choices – billets, slab, structural products
    - Continuous investment
    - Continuous maintenance
  - Predominant domestic producer of medium structurals, rails, and special billet grades
  - Established contractor partnerships
  - Capable, can do workforce and management
  - Broad community support

# Whyalla Current Production Process – Pre Magnet

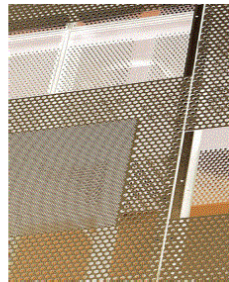
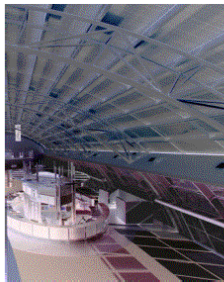
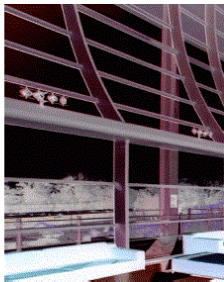
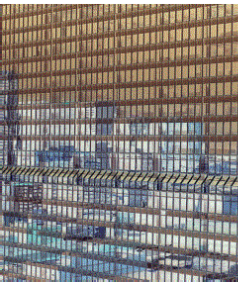


\* Four-year normalised average. On completion of Project Magnet average expected to be 1.3 million tonnes per annum

# Whyalla Current Production Process – Post Magnet



Major Changes Highlighted in Yellow



# Integrated Steelworks Facilities



- **Mine two million tonnes per annum for use at Whyalla Pellet Plant, one million tonnes for sale to BlueScope and in excess of 500,000 tonnes for export.**
  - For the hematite used at the Pellet plant objective is to develop ore to specification, at the right rate and at the lowest cost
  - Ore currently delivered to the pellet plant by rail
- **Key Strategic Objectives**
  - Ensure transition from hematite to magnetite ore for delivery to Pellet plant is achieved effectively
  - Expansion of mining operations to plan

- **Mines – Total ore mined will be 9.6 million tonnes per annum**
  - 4.6 million magnetite ore to be ground and concentrated to slurry to Pellet plant.
  - 4 million tonnes per annum for export
- **Key Operating Objectives**
  - Establish reputation as a quality supplier of hematite ore to domestic and international customers at lowest cost whilst reviewing opportunities to maximise ore reserves
- **Key Strategic Objectives**
  - Deliver Hematite ore for export at quality and rate required

- **Whyalla Pellet plant produces in excess of 1.5 million tonnes of pellets for use in Blast furnace.**
- **Operational Objectives**
  - Ensure pellet is in specification and at rate required to meet Blast furnace production requirements.
  - Maximise throughput to facilitate export opportunities
  - Implementing initiatives focussed at maximising up-time and minimising cost
- **Key Strategic Objectives**
  - Transition successfully from Hematite to Magnetite feed.
  - Priority to deliver low-cost efficient supply to the Blast furnace
  - Additional production of export pellets to export market

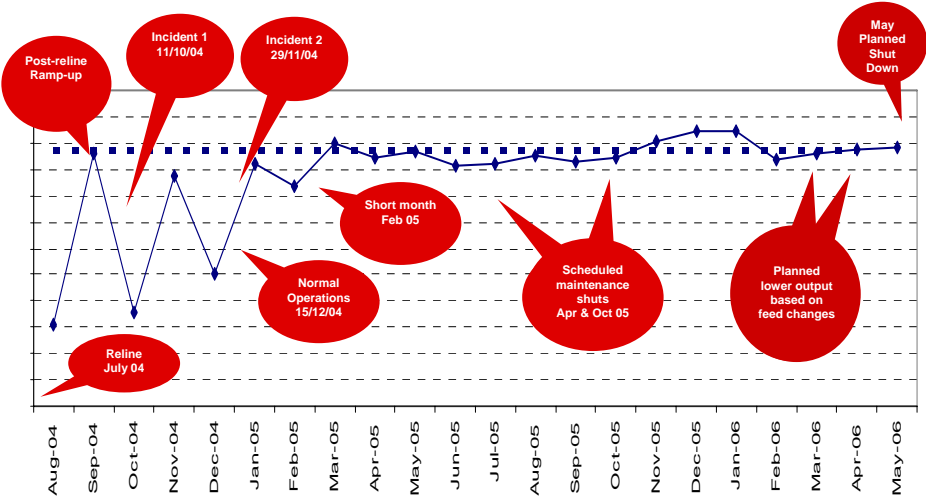
## Whyalla Coke Ovens



- **Whyalla coke ovens produce in excess of 550,000 tonnes of blast furnace quality coke from 108 battery ovens.**
- **Operational and Strategic Objectives**
  - **Maximise productivity and yield to maintain self sufficiency in blast furnace coke feed in line with increased iron production associated with Project Magnet**
  - **Continue to identify markets for bi-product sales**

- **Produces 1.16 million tonnes of iron per annum.**
- **Operational Objectives**
  - Meeting current business requirements whilst running trials of key input and feed variables
- **Strategic Objectives**
  - Manage blast furnace operations to safe operating window
    - Necessary for transition to magnetite feed
    - Provides platform to maximise production post feed change
  - Manage the transition from hematite to magnetite based pellets.
  - Extract productivity improvements from new relined furnace and value in use from utilising magnetite feed
- **Benchmarking operations against international blast furnace operators**

# Whyalla – Back to Normal Operations

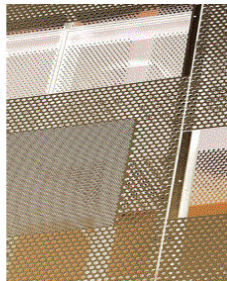
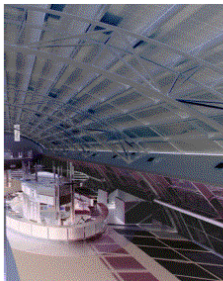
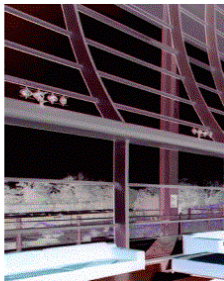
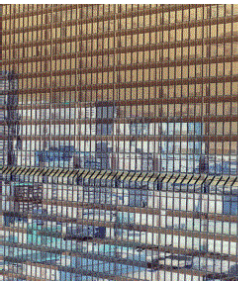


- **Produces in excess of 1.16 million tonnes of steel**
- **Operational objectives**
  - **Utilise available hot metal and convert for billet, bloom and slab feed**
  - **Managing steelmaking cost**
  - **Utilise existing technical partners to benchmark operational practices to identify opportunities to enhance productivity and or reduce costs to make**
- **Strategic Objectives**
  - **Ensure steelmaking can utilise increasing blast furnace output**
  - **Optimise production mix to maximise returns based on scrap and slab price movement as opportunities arise**

- **Sales in excess of 400,000 tonnes of structural and rail product**
- **Operational objectives**
  - **Minimise cost to serve through a combination of operational excellence and selected automation projects**
  - **Maximise productivity and throughput of bottleneck assets to meet targeted customer demand**
- **Strategic Objectives**
  - **Minimise cost structure through selected automation projects based on benchmark activities**
  - **Improve value proposition and efficiency of supply chain**



- **Community Support**
  - Focus on youth and disadvantaged groups
  - Council contribution increasing annually
- **Indigenous Support**
  - Support new Company 'Walga Mining'
    - Whyallina
    - HWE
    - OneSteel
- **Conservation**
  - Land gift to Whyalla conservation park – 1,000 ha
  - Proposed Iron Magnet reserve – 4,000 to 20,000 ha



# Project Magnet Update

## Project Magnet – Strategic Rationale



- Approval May 2005
- Improves OneSteel's competitive position, extends the life of Whyalla and lowers cost of steelmaking
  - extend life of Whyalla from current restraint of 2020 to at least 2027
  - potential to cut cost of steelmaking at Whyalla by up to 5% by converting to magnetite
- Additional source of earnings and profit
  - export up to 3 million tonnes extra hematite ore pa for 10 years (in total 4mtpa)
  - export ~220,000 tonnes pellets pa over the project life
  - produce up to ~100,000 tonnes extra steel pa over the project life
- Environmental benefits
  - switch from dry to wet processing
- \$355 million capital expenditure

An attractive, value-creating long-term project, that builds on OneSteel's competitive advantage of owning low-cost, high-quality iron ore. Project Magnet is consistent with OneSteel's strategy of optimising its portfolio of assets

- Project Magnet extends the current competitive position of OneSteel by lengthening the life of its strategic iron ore resource from 2020 to beyond 2027
- Value in use properties of using magnetite as against hematite ore for steelmaking:
  - Lower energy costs for pellet production
  - Less slag associated with iron making
  - Less impurities therefore less fluxes consumed

In excess of \$1.5 billion additional revenue

- 3m tonnes hematite ore sales pa for approx 10 yrs  
(in addition to the historical sales of 1m tonnes pa)
- Approx 100,000 tonnes steel sales pa for ~ 20 years
- Approx 220,000 tonnes pellet sales pa for ~ 20 years

- Magnetite concentrate will be filtered to 9% moisture and pelletised effectively switched from a dry process to a wet pelletising process
- All crushing, grinding and screening which is currently undertaken at Whyalla will be done at the mine
- Magnetite will be conveyed to Pellet Plant via a closed loop slurry pipe as against by rail as is current practice
- Hematite exports will be via enclosed conveyors and a storage shed

**Provides improved environment for Whyalla Community and long term certainty for OneSteel.**

- **Key Value Drivers**
  - Value in use
  - Additional steel production
  - Benefits from iron unit sales
- Value in use and additional steel production when added are approximately equal to the benefits from ore and pellet sales

## Project Magnet – Timing of Cash Flows



- **Capital Expenditure – spent and committed**

- 04/05 \$30 million
- 05/06 \$210 to 225 million
- 06/07 \$100 to 115 million
- Total \$355 million

- **Revenues**

- Iron Unit Sales – Ore and Pellet
  - 05/06 400 to 500k tonnes
  - 06/07 1,400 to 1,500k tonnes
  - 07/08 Approx. 3.2m tonnes
- Slab Sales
  - 07/08 Sales commence

- Just over \$200 million committed or spent to date



# Project Magnet - Summary Financials

## Project Estimated Financials

As Per May 2005

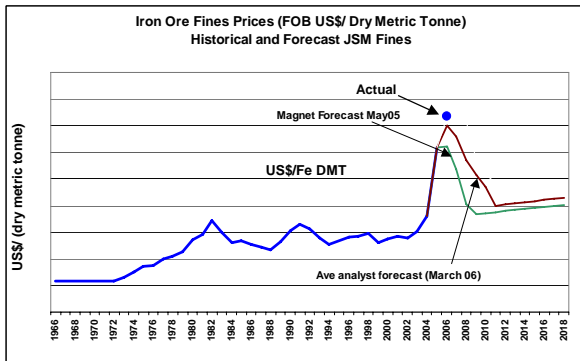
NPV > A\$100M

IRR > 14.0%

PV/I > 1.4

Payback approx. 5 years

EBITDA Avg > \$70 million



OneSteel has used conservative forward pricing assumptions for iron ore prices for the business case

Since that time iron ore price forward assumptions have increased as per the top line of the graph

- The strong market for Iron Ore is expected to continue in 06/07, driven by China and will remain strong for the foreseeable future.
- OneSteel's Marketing Agents for the selling and marketing of Iron Ore is BHP Billiton, which is working very well.
- All of OneSteel's current exports into China and surrounding regions are on a spot basis and this vs contract will continue in the main in 06/07.
- OneSteel will be moving to establish long term contract positions with selective Chinese steel mills over the course of 06/07 financial year for the majority of our export ore sales beyond 2007.
- OneSteel in conjunction with BHPB have a clear plan and program to position our long terms contracts.

- **\$355 million OneSteel capital expenditure**

- **Major works:**

### **Converting Whyalla to Magnetite**

- **New Iron Magnet Mine**
- **Crushing and grinding processes**
- **Concentrating process**
- **Tailing dam at mine site**
- **Pumping and slurry pipeline**
- **Pellet plant re-configuration**
- **Desulphurisation plant**


### **Incremental Iron Ore Sales**

- **Rail upgrade**
- **Wagons**
- **Handling facilities at port**
- **Storage**
- **Trans-shipping**

### Two process streams are under construction

- **Hematite stream – Construction is progressing to achieve commissioning and begin ramp-up in line with external sales of 2.5 MTPA in 2006/07 and 4 Mtpa in 2007/08**
  - **Site works are underway on the crushing plant upgrade at the Mine Site**
  - **The rail line upgrade to the Mine, delivery of 56 new fines wagons and upgrade of 75 existing RSK wagons are now complete.**
  - **Installation of all process equipment substantially complete**
  - **5 of 11 scheduled shutdowns to upgrade the shiploader complete**
  - **The floating offshore terminal vessel “Spencer Gulf” has been launched and is now at fit-out in Yang Ziang, China**
  - **The 2 transfer barges “Middleback” and “Barngala” progressing according to construction schedule.**

## Project Magnet – Construction



- **Magnetite Stream – Construction is progressing to achieve commissioning of new capital works for full production in the 07/08 financial year.**
  - 133KV power line is on schedule for first quarter 06/07 financial year commissioning. All power lines now strung, and transformers and switch gear in position.
  - Concentrator plant foundations are 60% complete. All major equipment orders are on schedule. Screens, thickeners and magnetic separation equipment is onsite
  - Tailings dam design complete, with construction to start in the first quarter of 06/07 financial year
  - Slurry and return water pipelines installation completed in January 06
  - Filter & Flux plant foundations are complete, and structural steel installation is in progress. All major equipment orders have been placed with deliveries on schedule.
  - Modification works to the existing Pellet Plant are in design phase, with installation due in 3<sup>rd</sup> quarter annual pellet Plant shutdown
  - Desulphurisation site works have commenced at the Steelplant. All major process equipment has been ordered and detailed design is in progress. Commissioning is scheduled for 3<sup>rd</sup> quarter 06/07 financial year.

## Project Magnet – Pipeline installation



## Project Magnet – 133 kV Power Line







## Project Magnet – Export Shed



## Project Magnet – Filter & Flux Plant





**Barge Under Construction**



After Launch



FOTB- Fitting out

- **Transition Priorities**
- **Logistics and Inventory**
- **Labour**
- **New Technology**

## Project Magnet – Effective Ramp Up



- **'Readiness to Operate'** is the set of activities associated with preparing the Whyalla Steelworks to take-over and operate the new process equipment in line with business case.
  - The Transition plan describing the commissioning and cut-over sequence, work-in-progress stockpiles and ramp-up is complete. Various risk scenarios have been analysed and mitigation measures developed and being implemented.
  - **Management Operating Systems:**
    - Production methods, quality assurance and control systems and associated facilities are in progress
    - Magnetite ore testwork, to ensure optimal production setpoints during the ramp-up phase, is continuing to schedule
    - Mine operating information systems - upgrade to be complete during 2006
  - **Maintenance systems:** Asset management strategies are under development in conjunction with equipment vendors - consumables and spare parts procurement commenced
  - **Human Resources:** Organisational design, recruitment and training planning are progressing to ensure mobilization in time for commissioning.

### Technology / Operational Alliances

OneSteel has put in place a number of technical and operational alliances for:

- **Testwork**

**A range of test work with Australian and International companies and research institutes to validate assumptions, finalise equipment design specifications and determine operating ranges.**

- **Reference Plant Visits**

**A range of visits to Australian and International companies to capture experience and learnings from plants running similar processes and materials.**

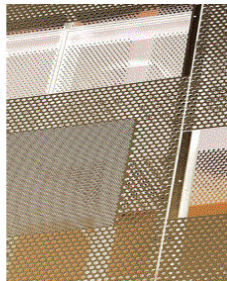
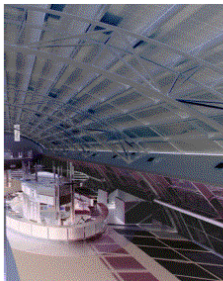
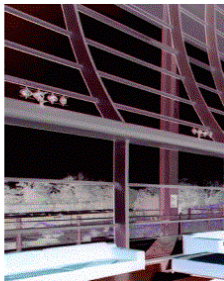
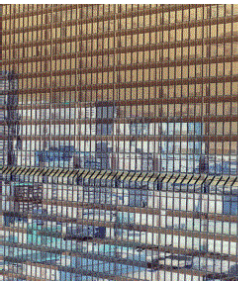
- **Technical Exchange and Support**

**A range of technical alliances and contractual agreements to support transition planning, cutover and post implementation ramp up.**

- **Project Timeline**
  - ~60% of time elapsed
- **Capital Spent or Committed**
  - ~60% of authorised capital (\$355 million) current expectation on budget or within 5%
- **Forecast Project Completion Cost**
  - ~ Authorised amount (\$355M) + 0% to 5%
- **Benefits**
  - 2.5 million tonnes external ore sales in 2006/07 on track
  - 4 million tonnes external ore sales in 2007/08 on track
  - 220,000 pellet sales in 2007/08 on track
  - 100,000 slab sales in 2007/08 on track



- **Valuable, attractive long-term project for OneSteel and its stakeholders, underpins Whyalla and its key competitive advantage of owning iron ore mines**
  - **Extends life of Whyalla beyond 2027**
  - **Improves competitive position by cutting cost of steelmaking by up to 5%**
  - **Generates new stream of earnings and profit**
  - **Incremental revenue in excess of \$1.5 billion revenue**
  - **\$355 million investment including environmental spend**
  - **Environmental & community benefits – 10 year operating licence**
- **Fits OneSteel strategy of optimising its assets**
- **Expands on OneSteel's vertical integration and horizontal flexibility – flat & long products/domestic & export markets**

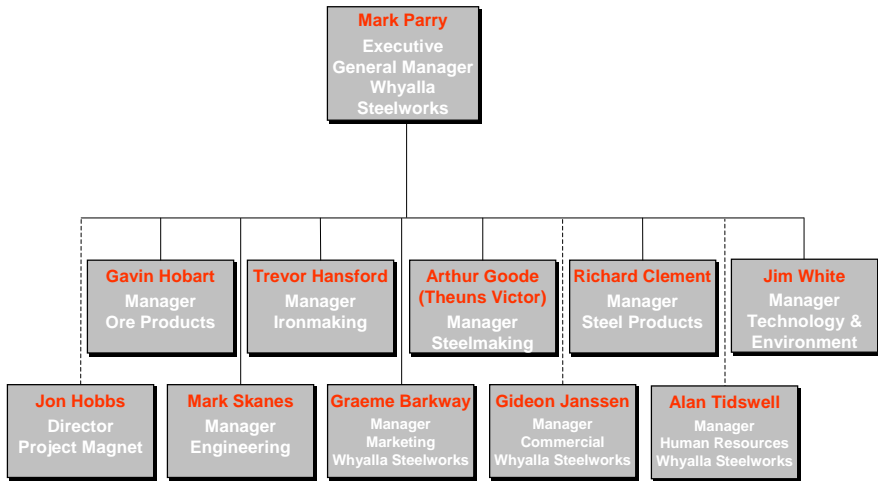


# Whyalla Steelworks Attachments

## Whyalla Steelworks Location

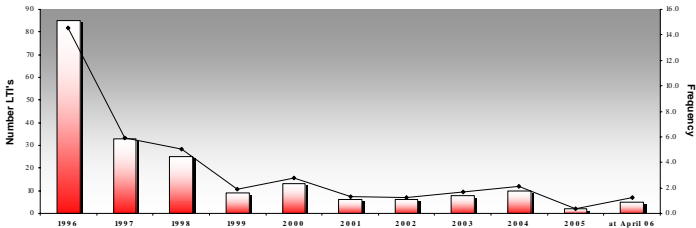


# Management Team

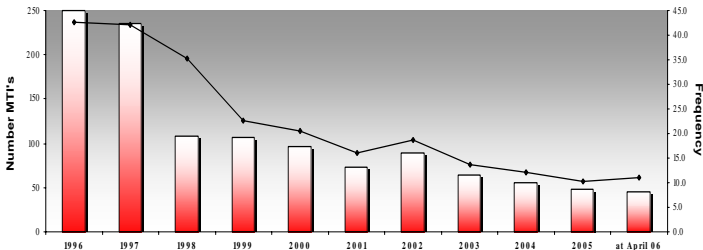


# Whyalla Steelworks Combined History

LTIFR



MTIFR



- Whyalla OneSteel Employees
  - **1,400**
- Significant Contractor Base ~ 40% of hours
  - **Mining - HWE**
  - **Railways - ARG**
  - **Materials Handling - Brambles / Metserv**
  - **Oxygen - BOC**
  - **IT Support - CSC**
  - **Laboratories - Amdel**
  - **Engineering - Hatch**
  - **Sea Transport - CSL/ISM**

**Contractor focus on reducing service delivery cost**

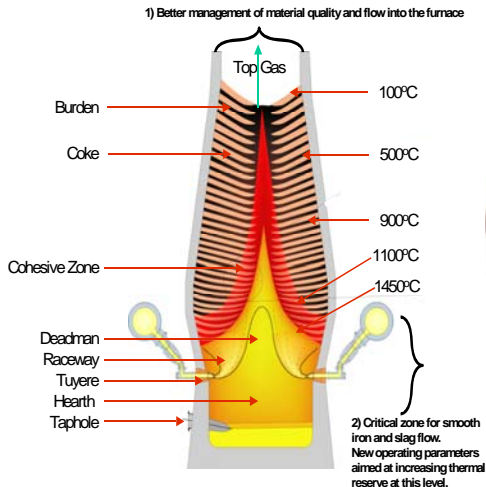
# Integrated Steelworks Facilities – Pellet Plant & Coke Ovens

Event	Year
Ore Products	
Pellet Plant	- PP starts as export facility 1968
	- Flux pellets for Whyalla 1981
	- Waste Gas Cleaning Plant 1998
	- Kiln and cooler upgrade 2002-2005
	- Roller Feeder replacement 2002
	- Grate Upgrade 2006
Rail	- Major track upgrade, (inc 40 to 60km/h) comp (2006)
	- New fleet (56) higher capacity wagons comp (2006)
	- Upgrade 75 RSK wagons comp (2006)
Ore Beneficiation Plant commissioned	2005
Coke Ovens	
Battery 1 (72 ovens)	1968
Battery 2 (36 ovens)	1980
Reed Beds	1996
Refractory Asset Life extension	ongoing
Through wall repairs (2 ovens)	2006
Weak Ammonia Liquor Still	2008

**Continuous Maintenance and Capital Investment**

# Integrated Steelworks Facilities – Blast Furnace History and Operations

No. 2 Furnace Blown in	1965
Reline 1	1972
Reline 2	1981
Casthouse Floor Revamp	1993
Record Production	1999
Dust Catcher	2001
Water Treatment Plant	2002
Near Record Campaign	
Life of 23 years	2004
Reline	2004





<b>Event</b>	<b>Year</b>
2 vessels @ 130t	1965
Hot Metal Desulphuriser	1991
IRUT/Sublance/Electric/Controls	1992
Ladle Met Furnace/Alloy System	1999
New Vessel Shells	1999/2000
BOC Oxygen Plant Commissioned	2001
Planned replacement of Desulphurisation Plant (including new baghouse as part of Environmental Improvement Plan)	2007

**Continuous Maintenance and Capital Investment**

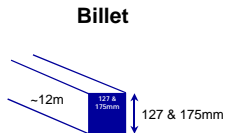
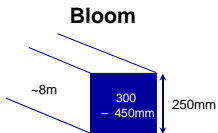
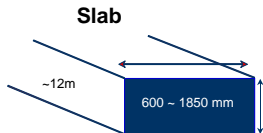
# Integrated Steelworks Facilities – Caster

Event	Year
Combination slab/bloom/billet caster	1992
Five-strand billet caster	1999

## Route to Market – Semi-Finished Products

Product	Distribution Channel	End Use
Billets	Inter-divisional to Market Mills	Used to produce rod and bar
Slabs	Direct to re-roller	Used to produce various flat products

## Semi-Finished Products



# Integrated Steelworks Facilities – Rolling

Event	Year
Commenced rolling ingots	1964
Rail finishing end	1982
Revamp for slabs/blooms (new rolling stands, etc)	1992
Cooling beds/Capacity Upgrade	1996

## Finished Products and Route to Market

### Columns\*



100 mm to 310 mm

### Channels\*



125 mm to 200 mm

### Rail – direct to end user



41 Kg/m – 68 Kg/m  
Plain Carbon - Head Hardened

### Beams\*



150 mm to 610 mm

### Angles\*



125 mm to 200 mm



150 x 90 & 150 x 100

### Sleeper Section – direct to end user



Mainline – 6.5 mm to 10 mm  
Heavy Haul – 9 mm to 14 mm

\* Structural products are distributed by domestic steel distribution companies, including OneSteel Distribution. They are used in structural frames for buildings, factories, bridges and other infrastructure

## Technology / Operational Alliances



- Ore Products
  - BHPB (Export)
  - Poetscka (OBP)
  - Promet (Concentrator)
  - Danieli Corus / Papacek (Pellet Plant)
  
- Ironmaking
  - Kobe
  - BlueScope Steel Limited
  
- Steelmaking
  - Kobe
  - Saarmetal
  - Nupro
  
- Steel Products
  - Nippon Steel Corporation

## Energy & Services Data

	Total	Bought In (over fence)	Magnitude Comparator
Electricity	40 – 45 megawatts (360,000 MWh pa)	15 – 20 megawatts (150,000 MWh pa)	Total is 3.0% of state load 20,000 room air conditioners
Fresh Water	3,600 mega litres pa	All	Whyalla township (population 25,000) consumes about same amount of water
Natural Gas - General - Co Gen Plant	3.5 – 4.0 petajoules pa 0.9 petajoules pa	All All (COGEN plant produces 100,000 MWh pa)	About 6% of state load. Excluding power stations, OneSteel is the second largest customer in state
By-products Gas	Approx 12 petajoules pa (50% Blast Furnace gas; 50% Coke Ovens gas)	All As Coal	These by-product gases displace \$40m pa of what otherwise would be purchased natural gas and/or electricity
Saltwater	180,000 mega litres pa	Pumped from Spencer Gulf	Sydney Harbour is approx 500,000 mega litres (40% of Sydney Harbour pa)
Oxygen Nitrogen Argon	160,000 tonnes pa 15,000 tonnes pa 2,000 tonnes pa	All (From on site BOC owned plant)	Largest customer of such gases in SA. Equivalent to 50,000 standard oxygen cylinders per day

## “Licence to Operate” – Environment

- Major Environmental Projects since 1993

Project	\$ million
Blast Furnace Casthouse Floor	18
BOS Secondary Fume Emissions	9
Coke Ovens Battery Doors	5
Reed Beds	4
Site Upgrade and Regreening	1
Pellet Plant Waste Gas Cleaning Project	36
Pellet Plant Fugitive Dust	7
Blast Furnace Water Treatment	7
Project Magnet Environmental Spend	60
<b>TOTAL</b>	<b>147</b>

ISO14001 Accreditation achieved – Environment Management Systems

# Competitive Position

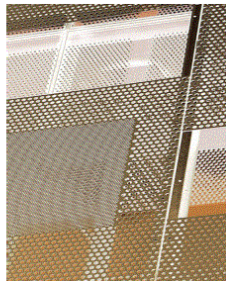
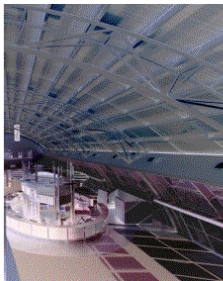
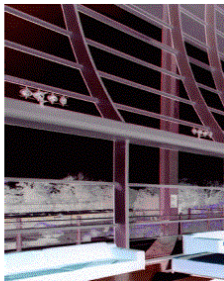
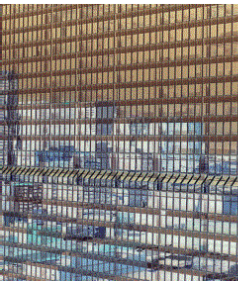


- Main Competitors include:

Structurals – Imports Thailand, Korea, South Africa
Structurals – Domestic Steel Competitors Structural tube, Roll-formed sections
Structurals – Intermaterial Products Concrete (in-situ, pre-stressed, tilt-up), Structural timber
Rails – Imports Various international mills
Rail Products – Inter-material Products Concrete, Timber

## Key Advantages

- Sole domestic manufacturer of a large range of structural and rail products
- Short supply lead times and reliable delivery performance
- Superior sales and technical service

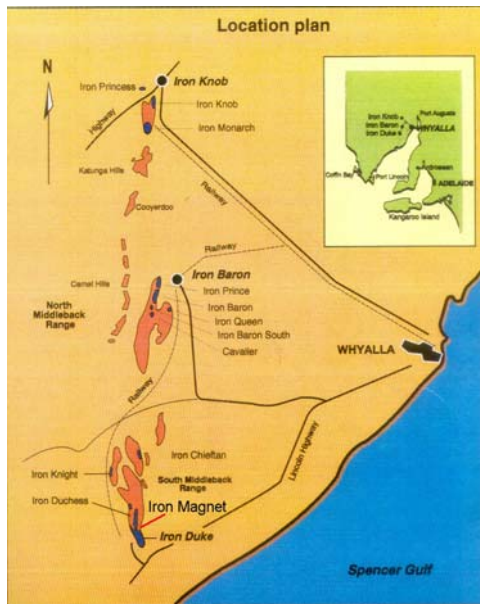


# Project Magnet Attachments



- Whyalla Steelwork's key competitive advantage is its access to low cost iron ore
  - Iron Ore Mines (All mines ~ 80 km by rail from Whyalla Steelworks)
    - Iron Duke
    - Iron Duchess
    - Iron Knight
    - Iron Magnet (~ 60km by slurry pipeline from Whyalla Steelworks)
  - Metallurgical Flux Mines
    - Near Iron Knob, Quartz
    - Ardrossan Dolomite
  - Imported Raw Materials
    - Coal, NSW, NQLD & NZ
    - Limestone, Japan
    - Ferrous Alloys – Various

# Mine Location

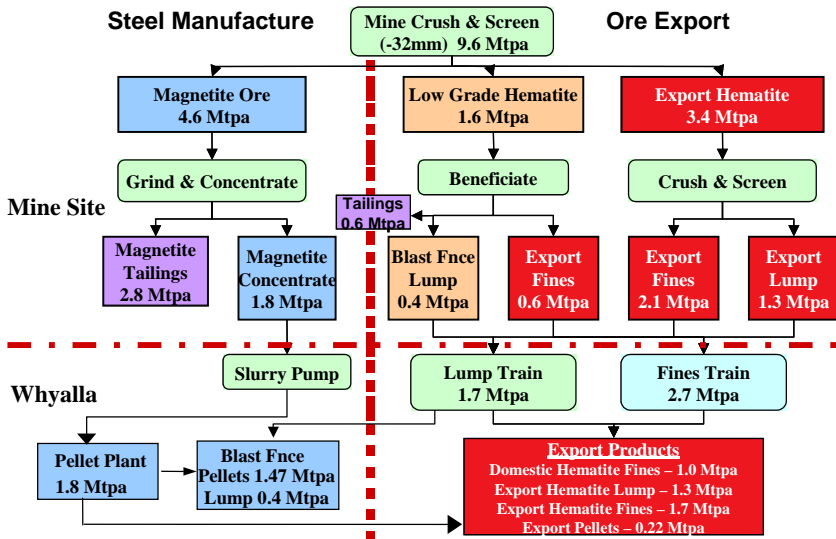


## Mines – Operations History



- 1899**    **BHP Started Mining at Iron Knob**  
(Iron Ore Flux for Port Pirie Smelter)
- 1901**    **Tramway from Iron Knob to Hummock Hill Completed**
- 1914**    **Newcastle Steelworks started**
- 1930**    **Iron Baron Mine Developed**
- 1970**    **Mine Production Peaked @ 7.6mt p.a.**
- 1989**    **Iron Duke Mine Opened - Iron Baron Mine Closed**
- 1998**    **Iron Duchess Mine Opened - Iron Knob Mine Closed**
- 1999**    **Iron Knight Mine Opened**
- 2004**    **Commissioning of Ore Beneficiation Plant**
- 2006**    **Iron Magnet Mine**

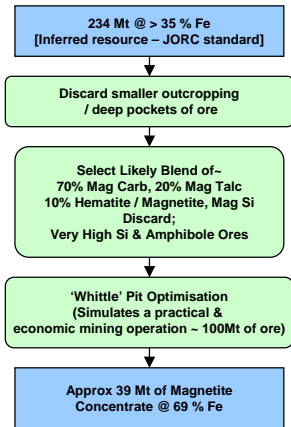
# Capacities and Material Flows



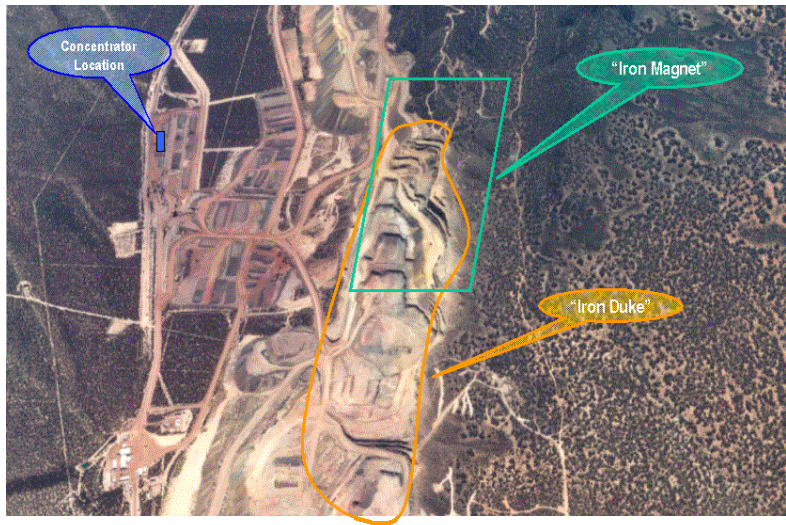
# Magnetite Mine Ore Calculation

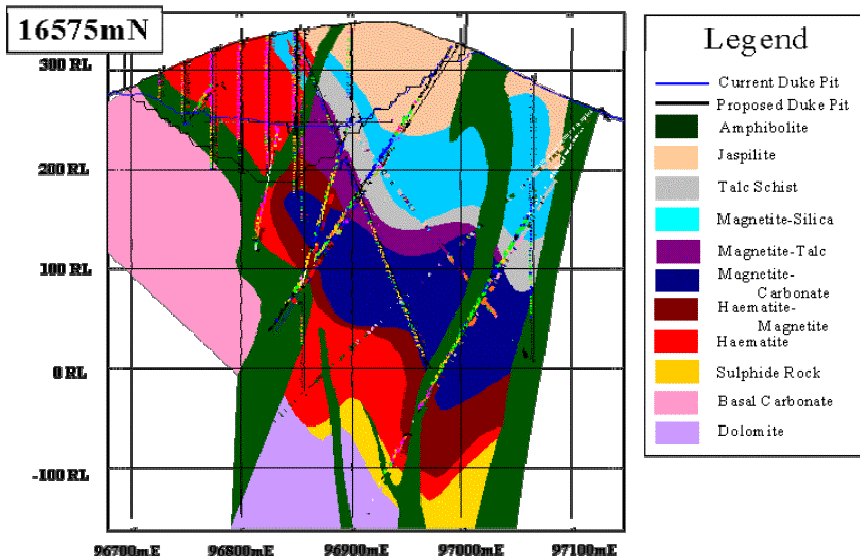
Magnetite ore calculation based on JORC standard

- **Total Magnetite Resource in South Middleback Ranges – based on JORC standard**
- **Select target area of most likely feasible magnetite deposit**
- **Select ore types that are ‘usable’ in beneficiation process, in percentages that are achievable**
- **Pit Optimisation Process**  
(What can economically be mined)
- **Beneficiation process with 40% mass recovery, producing concentrate at ~ 69% Fe**

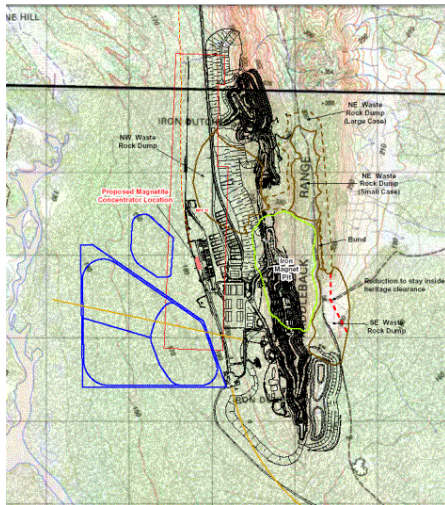


## Project Magnet – Resource Location



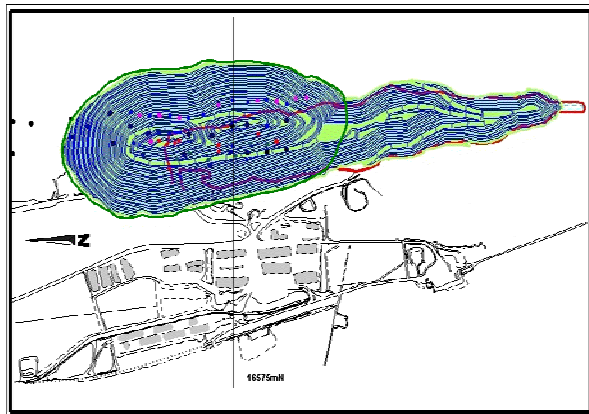


# Iron Magnet Mine Site





# Iron Magnet Mine Site



● ● ●  
Drill Holes

○ Iron Duke Pit Outline

○ Iron Magnet Pit Outline