

Nullagine Iron Ore Project Rising Stars Conference September 2009

Mike Young Managing Director



#### BC IRON LIMITED

- > A junior iron ore developer *near production*
- Direct Shipping, high-quality Sinter Blend Ore
- Channel iron deposit Yandi-style pisolite
- 50:50 Joint venture between BC Iron Nullagine Pty Ltd (BCIN) and Chichester Metals Pty Ltd (FMG)
- Infrastructure solution Rail Haulage and Port Access with TPI/FMG
- Marketing On going discussions with Chinese mills for Nullagine Pisolite





#### History of BC Iron – staying focussed

- BC Iron lists on ASX in December 2006
- Resource drilling identifies DSO at Outcamp May 2007
- MoU for rail and port access with Fortescue Metals Group July 2007
- Drilling to Ore Reserves 2007 through 2009
- Feasibility Study Complete June 2009
- Capital raising \$22M July 2009
- Joint Venture with FMG rail haulage and port agreement August 2009
- Production 1<sup>st</sup> half 2010 *Listing to mining in 3 <sup>1</sup>/<sub>2</sub> years*





#### BC IRON - CAPITAL & MANAGEMENT

<b>Capital Structure</b>		Number
Shares		80.3M
Options		5.7M
Fully Diluted Total		86.0M
Market Cap @ \$1.20		<b>\$96 M</b>
Cash on hand		\$22 M
Major Shareholders	Number	% Total
Consolidated Minerals	18.2M	23%
Regent Pacific Group	1 <b>0.2</b> M	13%
Alkane Resources	<b>5.0</b> M	6%
TOTAL	<b>33.4</b> M	42%

Board
<b>Tony Kiernan</b> – Chairman
Mike Young – Managing Director
Garth Higgo – Non-exec Director
Terry Ransted – Non-exec Director
Steven Chadwick – Non-exec Director
Management
Morgan Ball – Chief Financial Officer
Simon Storm – Company Secretary
Blair Duncan – Chief Operations Officer
Greg Hudson – Chief Geologist
Paul Vermeulen – Technical Marketing

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# BC IRON

#### NULLAGINE IRON ORE PROJECT

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#### **Bonnie Creek CID**

- Reserves of 36 Mt @ 57% Fe
- Resources of 51 Mt DSO @ 57.0% Fe
- > High CaFe, low  $Al_2O_3$  & ultra-low P
- Mesa-style mineralisation

**Nullagine River & Shaw River CID** 

> DSO & upgrade CID (~15 Mt)





#### JOINT VENTURE & INFRASTRUCTURE

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#### **Nullagine Joint Venture**

- BC Iron & Chichester Metals 50:50 unincorporated JV
- Up to \$10m contribution each remainder project finance
- BCI manages JV mining, sales, marketing
- > TPI manages rail haulage and port services
- Price participation on sales over US\$60/t up to 3 Mtpa

#### Infrastructure

- Heavy road haul to railhead (BCI)
- Rail haulage and port services (TPI)





#### NULLAGINE IRON ORE PROJECT

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#### June 2009 – Reserves and Resources Statement

Pit	Mt	Fe	CaFe	$SiO_2$	$Al_2O_3$	Р	S	LOI <sub>1000</sub>
Outcamp	19.2	56.8	64.8	3.21	1.92	0.01	0.01	12.2
Warrigal	10.3	57.0	64.5	3.67	2.13	0.02	0.01	11.7
Coongan	6.0	57.0	65.1	2.52	1.82	0.01	0.01	12.4
TOTAL	35.6	56.9	64.7	3.23	1.96	0.02	0.01	12.1

#### **DSO Resource Estimate**

Class	Mt	Fe	CaFe	$SiO_2$	$Al_2O_3$	Р	S	LOI <sub>1000</sub>
Measured	1.7	57.0	64.8	3.49	2.15	0.018	0.016	12.0
Indicated	38.6	57.0	64.7	3.15	2.09	0.016	0.011	12.0
Inferred	10.4	57.0	64.8	3.27	2.00	0.013	0.010	12.1
TOTAL	<b>50.</b> 7	57.0	64.8	3.19	<b>2.0</b> 7	0.015	0.011	12.0

• The Ore Reserve is a subset of the Resource Estimate

• *CaFe* = *Fe* / (100 – *LOI*) \* 100

• Total for Joint Venture – (FMG earning 50%)





#### PILBARA IRON ORE FINES

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Element	Nullagine DSO Reserve	Yandi/Robe DSO	Pilbara Fines DSO		
Fe	57	57 - 58.5	58 - 64		
Calcined Fe*	65	64	63-65		
$\mathrm{SiO}_2$	3.2	3 - 6	3 - 4		
$Al_2O_3$	1.9	1.4 – 2.7	1.3 - 2.1		
Р	<0.02	~0.04	0.05 – 0.09		
LOI	12	9-11	3-8		
Size -0.15mm	14	5-20	10-30		

#### **Direct Shipping Ore (DSO)**

- > Typically bedded hematite or pisolitic channel iron deposits
- > No beneficiation required simple mining, crushing and screening, and transport
- > At or close to accepted specifications



#### SEABORNE FINES COMPARISON





#### SEABORNE FINES COMPARISON



## BC IRON

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#### SEABORNE FINES COMPARISON



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#### NULLAGINE PROJECT – Outcamp Prospect

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#### NULLAGINE PROJECT – Outcamp Prospect

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Shallow "pits" mainly above surrounding plains - mining ore from day 1

>Above water table - lower environmental impact

>Low OpEx - low strip ratio, use of surface miners



#### OUTCAMP MINE – Trial mining and bulk sample

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#### Trial mine and bulk sample

- Testing performance of two types of surface miners
- Assess geology, reconciliation and metallurgy
- Assessing mill throughput and product sizing

#### Contractors

- > UEA Vermeer surface miner
- WA Surface Mining Wirtgen SM
- Rapids Crushing crushing, screening and earthmoving
- Vulcan Tech and SGS metallurgy
- Golder Assoc mine geology and sampling





#### SURFACE MINERS

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VERMEER TL1255 commences at Outcamp Well - NIOJV

#### **Engineering benefits**

- Selective mining higher recovery
- Lower dilution and lower ore loss
- > Drill & blast not required
- > Primary crushing not required

#### **Environmental benefits**

- > Improved and safer mesa edge control
- Drainage management siltation minimised
- > Reduced vibration and ecosystem disturbance



Wirtgen 2500SM commences at Outcamp Well - NIOJV



### NULLAGINE PROJECT – Mining

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#### TRIAL MINING

April 2008







#### THE BLAST FURNACE

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#### Sintering

- All iron ore mines produce a *lump* and *fines* but only lump can be used in the blast furnace
- Synthetic lump is made by from *fines* by high temperature agglomeration - *sintering*
- Sintering creates "Made to order lump"
- > Optimal physical properties of the sinter:
  - > Strength, Fe content, impurities, reducibility
- Optimal sintering efficiency
  - Productivity, yield, assimilation (how particles melt together)



SINTER FEED

www.hcimm.com.au



#### Why is NIOP ore so good?

#### **Chemical advantages**

- Ultra-low Phosphorous (<0.02%)</p>
- High Calcined Fe (>64%)

#### **Physical advantages**



Ignition hood on sinter strand

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- Low ultra-fines improves sintering speed
- Large fines product sizing (9-10 mm) lower crushing costs

Sintering advantages (Results from Shandong University, PRC)

- Sintering efficiency up 10% (Yield increased from 66% up to 77%)
- Productivity up 40% (Increased from 1.05 to 1.48 t/m²/hr)
- Sinter strength improved (Tumble Index up from 64% to 68%)
- Considered a '*First Class*' sinter blend feedstock



#### CHINA MARKETING

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#### Marketing trip to China – July 2009

- Visited 4 Steel mills and 2 stockists
- Use and understand pisolite fines
- Will pay reference price (HI Fines Japanese settlement FY09 – USD0.97 dmtu)

#### **Marketing Strategy**

- Customised sinter blend High Value in Use
- Develop Long Term Contracts with mills that require our specific product – relationship sales
- Link offtake to project finance



#### **Blast furnaces**



#### CONCEPTUAL TIMETABLE

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Feasibility Study Complete  $\succ$ 

- Test Pit Bulk Sample  $\succ$
- **Construction Commences**  $\succ$
- Mining Approvals  $\geq$
- Production Start-up 1.5 Mtpa  $\succ$
- Production Ramp-up 3.0 Mtpa  $\triangleright$

June 2009 Underway 2<sup>nd</sup> Half 2009 1<sup>st</sup> Half 2010 1<sup>st</sup> Half 2010 2<sup>nd</sup> Half 2010





*Timetable conceptual only and dependant on mining approvals* 



#### **IRON ORE INVESTORS' CHECKLIST**

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#### "Filling in the blanks...."

Iron Ore Investors' Checklist							
COMPANY	BC Iron						
High quality DSO	Yes						
Simple mining method	Yes						
Low Ore:Waste ratio	Yes						
Low CapEx/OpEx	Yes						
Simple infrastructure	Yes						
Access to railway	Yes						
Access to port	Yes						
Customers	Yes						



#### SUPPORTING STATEMENT

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This release may include forward-looking statements. These forward-looking statements are based on management's expectations and beliefs concerning future events. Forward-looking statements are necessarily subject to risks, uncertainties and other factors, some of which are outside the control of BC Iron Limited, that could cause actual results to differ materially from such statements. BC Iron Limited makes no undertaking to subsequently update or revise the forward-looking statements made in this release to reflect events or circumstances after the date of this release.

The information that relates to the drilling data and geological interpretations is based on information compiled by Michael Young who is a Member of The Australian Institute of Geoscientists and a Director of the Company. The information that relates to the Mineral Resource Estimate has been compiled by Mr Richard Gaze who is a member of. Both Mr Young and Mr Gaze have sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity that they are undertaking to qualify as a Competent Persons as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Gaze and Mr Young consent to the inclusion in their names in the matters based on their information in the form and context in which it appears.

The information that relates to the Ore Reserves is based on information compiled by Mr Blair Duncan who is a Member of the Australasian Institute of Mining and Metallurgy and an employee of BC Iron Limited and by Mr Pieter Doelman who is a Member of the Australasian Institute of Mining and Metallurgy and an employee of Coffey Mining Pty Ltd. Both Mr Duncan and Mr Doelman have sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity that they are undertaking to qualify as a Competent Persons as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Duncan and Mr Doelman consent to the inclusion in their names in the matters based on their information in the form and context in which it appears

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