

Riding a new wave of opportunity in Brazilian iron ore

Unlocking the potential of large-scale nickel-cobalt and copper-gold projects



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- The information in this announcement that relates to Exploration Results and Mineral Resources is based on information compiled by Roger Fitzhardinge, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy and Volodymyr Myadzel, a Competent Person who is a Member of Australian Institute of Geoscientists. Roger Fitzhardinge is a permanent employee of Centaurus Metals Limited and Volodymyr Myadzel is the Senior Resource Geologist of BNA Consultoria e Sistemas Limited, independent resource consultants engaged by Centaurus Metals. Roger Fitzhardinge and Volodymyr Myadzel have sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Roger Fitzhardinge and Volodymyr Myadzel consent to the inclusion in the announcement of the matters based on their information in the form and context in which it appears.
- All information included in this presentation regarding the Canavial Mineral Resource was prepared and released to the market on 31 May 2013 under the JORC Code 2004.
- Refer to the ASX announcements dated 20 December 2013 and 13 January 2014 for details of the material assumptions underpinning the production target and forecast financial information from the 2013 Feasibility Study included in this presentation for the Jambreiro Iron Ore Project. The Company confirms that all the material assumptions underpinning the production target and forecast financial information derived from the production target continue to apply and have not materially changed.
- The Jambreiro JORC Ore reserve was prepared and first disclosed under the JORC Code 2004. It is presently being updated to JORC 2012 Standard.
- All information contained in this presentation on the Salobo Mine of Vale has been taken from the "Vale Production in 4Q18" Report, its 20-F Annual Report for 2018 and other public domain reports including their 2018 Vale Day presentation
- All information contained in this presentation on the Jacaré Mineral Resource has been taken from Anglo American Presentation "Ore Reserves and Mineral Resources Report 2018.
- All information contained in this presentation on the Itapitanga Exploration Target was release to the market on 1 August 2018.
- This presentation comments on and discusses some of Centaurus Metals Limited's exploration in terms of target size and type. The information relating to the Itapitanga Exploration Target should not be misunderstood or misconstrued as an estimate of Mineral Resources or Ore Reserves. The potential quantity and quality of material discussed as an Exploration Target is conceptual in nature since there has been insufficient work completed to define them as Mineral Resources or Ore Reserves. It is uncertain if further exploration work will result in the determination of a Mineral Resource or Ore Reserve.

# **Delivering Value from a Diversified Asset Base in Brazil**



- Development-ready iron ore project at Jambreiro ideally positioned to take advantage of changing market dynamics, with new PFS work underway
- High-potential nickel-cobalt and copper-gold projects in Tier-1 Carajás Mineral Province of northern Brazil
- Large-scale Itapitanga nickel-cobalt discovery moving rapidly to development under innovative JV with battery metals specialist Simulus Group – CTM: free-carried
- Extensive, well-defined copper-gold targets at Salobo West in Carajás Mineral Province – permitting welladvanced
- Outstanding leverage to exploration success with value underpinned by large asset base

Shares on Issue	2,708m
Listed Options (EP \$0.01, Exp 31/8/19)	623m
Listed Options (EP \$0.012, Exp 31/5/21)	434m
Unlisted Options (EP \$0.008 to \$0.015)	262m
Directors and Management Holding	5%
Market Capitalisation (at \$0.008)	A\$21.6m
Cash as at 31 March 2019	A\$3.0m

Canital Structure - Post AGM Resolution

Centaurus offers highly leveraged exposure to a rich asset base in Brazil including exciting new greenfields nickel-cobalt and copper-gold projects and a retained high-quality development iron ore asset.

## **Brazil – A Mining-Friendly Destination**



- Latin America's largest economy
- Growing population (currently ~208 million)
- Low interest rates (by historical standards), low inflation and rising economic growth
- Pro-mining President encouraging foreign investment in mining and infrastructure projects
- Wide-ranging economic reforms underway labour laws, pension scheme, tax and government royalties
- Strong tenement control system, established Mining Code – Up to 8 years for Exploration Licences, which can be converted to Mining Leases
- No Government ownership in mining projects Government revenue generated from royalties



Minas Gerais and Pará are key mining States – strong mining culture, experienced workforce

# **Iron Ore – The Surprise Commodity Story of 2019**



- Iron ore price has risen ~50% since start of the year
- Indications are that supply out of Brazil will continue to be impacted for some time to come
- Changing market dynamics in the Brazilian domestic steel industry
- New and more flexible approach being adopted by iron ore customers
- Projects with existing permits and strategic location are best placed to capitalise on this environment



# **Iron Ore – New Opportunities Emerging at Jambreiro**



- Mining Leases granted
- Licensed for 3Mtpa of product
- Extensive project design and engineering in place
- Well located relative to Brazilian steel industry
- Original 1Mtpa Study in 2013 showed strong economics
- PFS Underway in light of strategic review and changed market dynamics



# Iron Ore – High Quality JORC Resource Inventory



Project	JORC Category	Million Tonnes	Fe (%)	SiO <sub>2</sub> (%)	Al <sub>2</sub> O <sub>3</sub> (%)	P (%)	LOI (%)
Jambreiro* <sup>(1)</sup>	Measured	44.3	29.2	50.5	3.9	0.04	1.6
	Indicated	37.7	27.5	51.1	3.7	0.04	1.7
	Measured + Indicated	82.1	28.4	50.8	3.8	0.04	1.3
	Inferred	45.1	27.3	52.7	3.3	0.05	1.3
	TOTAL	127.2	28.0	51.4	3.7	0.05	1.5
Canavial* <sup>(2)</sup>	Indicated	6.5	33.6	33.6	7.1	0.10	7.9
	Inferred	21.1	29.6	38.0	5.7	0.07	5.9
	TOTAL	27.6	30.5	37.0	6.0	0.07	6.4
Guanhães Region*	Measured	44.3	29.2	50.5	3.9	0.04	1.6
	Indicated	44.2	28.4	48.5	4.2	0.05	2.6
	Measured + Indicated	88.6	28.8	49.5	4.1	0.05	2.1
	Inferred	66.2	28.0	48.0	4.1	0.06	2.8
	TOTAL	154.7	28.5	48.9	4.1	0.05	2.4

• 20% Fe cut-off grade applied; Rounding may generate differences in last decimal place.

• (1) JORC 2012, (2) JORC 2004. Refer Centaurus' 2018 Annual Report released 28 March 2019

# Jambreiro – JORC Ore Reserve & Product Quality





PRODUCT QUALITY	Fe%	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	Р%	Mass Recovery %
FRIABLE ORE – PILOT PLANT	(30T)				
Head Grade	30.4	52.3	2.7	0.02	
Product Grade	66.0	4.1	0.8	0.01	39.4

- New Ore Reserve currently being prepared to upgrade to JORC 2012 standard based on new open pit optimisation and detailed mine plan
- Conservative assumptions used for 2013 Reserve
   no material change to Ore Reserve expected
- New open pit optimisation and mine plan aimed at reducing strip ratio and overall waste movement
- New Reserve and PFS Results due end June 2019

JORC Ore Reserve historically produced 18Mt of high grade (+65% Fe), low-impurity product

IN LINE WITH PREVIOUS WORK, NEW JORC 2012 ORE RESERVE WILL ONLY CONSIDER FRIABLE COMPONENT OF THE MEASURED AND INDICATED RESOURCE.

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## Jambreiro – New 2019 Process Flowsheet





Integrated Beneficiation Circuit to accommodate a long-life mining business in Brazil. New PFS incorporates proposed dry-stacking of tailings – no tailings dam now in project design.

## Jambreiro – Permitting





#### **Environmental Approvals (3.0Mtpa project)**

- Environmental Impact Assessment (EIA/RIMA) Approved
- o Key Environmental Approvals in place
  - o LP Issued
  - LI Issued with amendment for reduced footprint to be sought
  - LO On Completion of Construction
- Strong community support for Project

#### **Ministry of Mines & Energy**

Mining Leases – Granted

#### Land Access

 10-year land access and co-operation signed with land owner CENIBRA

One of the only licensed, yet undeveloped iron ore projects in Brazil.

# Jambreiro – Extensive Engineering Completed





- Extensive basic engineering completed for 1Mtpa operation
- Modularised plant designed and costed with CDE Global in 2013 with re-pricing exercise now underway
- All tailings to be dry-stacked with tailings dam now removed from the project design
- Significantly reduced footprint as a result of dry stacking



New Site Layout for Modularised 1Mtpa operation.

## Jambreiro – 2013 Project Economics



Key Financial Outcomes – 2013 Feasibility Study	Total A\$	Total R\$
Production Rate	1Mtpa	1Mtpa
Mine Life	18 years	18 years
Total Revenue	A\$750 million	R\$1,505 million
EBITDA	A\$350 million	R\$699 million
Capital Costs	A\$53 million	R\$109 million
Annual Average Operating Cash Flow	A\$19.4 million	R\$37.4 million
LOM Average Sales Price	A\$41.3/dmt	R\$82.7/dmt
<b>Operating Cash Cost (per tonne Product - LoM)</b>	A\$22.0/dmt	R\$44.0/dmt
	ASX Release – FS Dec 2013	Current – June 19
Average FX - AUD to BRL	2.00	2.77
Average FX - AUD to USD	0.91	0.69
Average FX - USD to BRL	2.20	4.00
Ave Sales Price - Mine Gate R\$/wmt Product	82.7	See Below

Mine gate sales of 62% Fe ore are occurring in close proximity to the Jambreiro Project which, based on information available to the Company, indicates that a price of R\$130-R\$150 tonne is presently being achieved for that ore.

Potential partners have expressed an interest in the project. While there is no guarantee that a transaction of this nature will be finalised, the discussions to date provide the Company with confidence that Jambreiro can be funded at a Project level with equity, should ongoing Feasibility Study work deliver the results expected by the Company.

# Jambreiro – 2013 Capital and Operating Costs for 1Mtpa Operation



Limited

		Limited
Capital Cost Breakdown*	A\$ million At 2013 FX Rates	
Direct Costs		
Processing Plant & Equipment	32.1	
Site Infrastructure/Civils/Pre Strip	6.5	
Water Supply & Tailings Mgt	4.4	
Detailed Engineering/Project Management	5.4	
Contingency	4.6	
TOTAL CAPEX	53.0	
<b>Operating Cost Breakdown*</b>	A\$ per Tonne Product At 2013 FX Rates	
Mining	9.2	260
Processing & Beneficiation	8.6	
Administration	2.2	
SITE OPERATING CASH COST (C1)	20.0	A THE AND A THE A
Royalties – Government and Landowner	2.0	PFS to provide new Capex and
TOTAL OPERATING CASH COSTS (C1 + Royalties)	22.0	Opex numbers for Project

# Jambreiro – Project and Mine Life Upside



Potential to significantly extend the mine life based on 1Mtpa operation

#### **Compact Ore**

- Comprises 63.6Mt @ 26% Fe within overall resource of 127.2Mt @ 28.0% Fe
- New pit optimisation work incorporating this material to be defined deliver an In-Pit Resource as part of the PFS underway

#### **Other Resource Opportunities**

- Jambreiro could become a strategic processing hub for other miners in the region with significant itabirite resources
- CTM's Canavial Project Resources only 10km from Jambreiro

PRODUCT QUALITY	Fe%	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	Р%	Mass Recovery %	
COMPACT MINERALISATION – BENCH SCALE (Wet Magnetic Separation)						
Head Grade	25.0	55.9	2.2	0.07		
Beneficiated Product	66.2	3.7	0.9	0.01	35.2	



# **The Carajás Mineral Province – Land of the Giants**





The Carajás contains one of the world's largest known concentrations of large-tonnage mineral deposits

10 IOCG deposits with resources of +100Mt Cu-Au, including six >300Mt for **+4.0Bt of Cu-Au resources** 

- Includes Vale's giant Salobo Mine:
  - Reserves of 1.15Bt @ 0.61% Cu, 0.3g/t Au
    Produced ~193kt Cu and ~361koz Au in 2018
- Also hosts the largest high-grade iron ore deposits on the planet, plus multiple large nickel deposits
- CTM holds + 250km<sup>2</sup> tenement portfolio located within the world-class Carajás Mineral Province
- Includes CTM's Salobo West Cu-Au Project and Itapitanga Ni-Co Project
- Oz Minerals now in the Carajás with takeover of Avanco in 2018.
- Vale planning to roll out "Mini Mines" partnership model in base metals in the Carajás

# **Salobo West – Key Prospects**





#### Two tenements – SW1 and SW2 (120km<sup>2</sup> of tenure):

- Tenements hosts at least five quality Cu-Au Prospects – SW1-A, SW1-B, Serendipidade, Dom & Gov Prospects.
- Expansive high-quality exploration dataset:
  - Stream sediment and soils geochem database (more then 3,500 samples);
  - Airborne VTEM and Magnetic data, 200m spacing;
  - Ground Induced Polarization (16 lines)
  - Diamond drilling, 10 drill holes for a total of 1,787 m
- Environmental Licence secured from ICMBio for nonground disturbing exploration
- Vegetation inventory work now complete. ICMBio site inspection to be completed in advance of issue of drilling and clearing license. Current anticipated issue date – Q2 2019



# THE ROAD TO DISCOVERY

- Target generation work undertaken with industry leading independent consultants
- Clearing permit for drill camp facilities, access roads and initial 35-drill hole platforms lodged in Q4 2018
- Clearing and drilling licence grant expected in Q2 2019 after ICMBio site inspection completed
- Maiden RC/DD drilling program planned for Q3 2019
- Proactive approaches received from large third-party mining groups to potentially joint venture into the Project these proposals and our overall approach to exploration on the Project are currently under evaluation



# **Itapitanga Nickel-Cobalt Project – Alligator by the Tail?**





The Itapitanga Ni-Co Project is located at the southern extent of Anglo American's world-class Jacaré Nickel-Cobalt Project

# Resources: 307Mt at 1.3% Ni and 0.13% Co, including a high-grade cobalt resource of 185Mt at 1.2% Ni and 0.19% Co

- Project acquired in February 2018
- Forms part of the southern extension of the ultramafic-mafic intrusive complex (2.8Ga) that hosts Jacaré
- Vale also holds multiple large tonnage (+100Mt) Ni-Co resources along the 15km of ground between Itapitanga and Jacaré
- Innovative JV with battery metal specialist Simulus (November 2018)
- Scoping Study planned to be delivered Q2 2019

The Itapitanga JV aims to be the first mover in one of the world's largest undeveloped highgrade nickel-cobalt provinces

# **Fast-Track Development Pathway – Simulus JV**



The Simulus Group – Australia's premier hydrometallurgy and mineral processing service group and ideal JV partner for Centaurus to fast-track development of the Itapitanga Project

- Simulus has the right to earn up to 80%, in stages, by freecarrying Centaurus through the entire exploration and evaluation process to a Decision to Mine and arranging project finance
- Industry leaders in process development for battery metals
- Simulus to leverage off its in-house capabilities for process design on nickel-cobalt projects, with the ultimate aim of delivering a low capital intensity process design

Australia's largest operating High-Pressure Acid Leach (HPAL) testing facility and battery metal demonstration plant is owned and operated by Simulus at their laboratory in Western Australia



# **Moving Rapidly to Development**



## **ON THE DEVELOPMENT FAST-TRACK – FUNDED BY SIMULUS**



Completed on schedule
 Underway

## **Centaurus – Key Investment Takeaways**





- Outstanding package of iron ore, nickel-cobalt and coppergold development and exploration projects
- Development-ready Jambreiro Project ideally positioned to capitalize on the rapidly changing iron ore market dynamics – New PFS underway
- is World-class IOCG discovery opportunity at Salobo West neighbouring Vale's flagship copper mine in the Carajás
  - Innovative JV with leading battery metals process group to free-carry Centaurus to Decision to Mine at Itapitanga
  - Aggressive development time-line with aim to be first-mover in significant undeveloped nickel-cobalt province

Centaurus offers highly leveraged exposure to a rich asset base in Brazil across a number of commodities with the potential to deliver significant value in the short-term.



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