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ADDITIONAL INFORMATION - INITIAL METALLURGICAL TEST WORK AT JAGUAR NICKEL SULPHIDE PROJECT

25% increase in nickel recoveries achieved compared with historical metallurgical results

- > Nickel recoveries of over 80% achieved from initial metallurgical float tests for the Jaguar South Deposit.
- The Jaguar South composite has been tested using a traditional nickel flowsheet (as used by nickel sulphide mines in Western Australia), achieving a concentrate grading 16% nickel at a nickel recovery of 82%.
- > Initial results boost metal production by >25% compared to previously announced historical test work¹.
- Samples from the Onça Preta Deposit are being composited for testing and are expected to achieve even higher recoveries due to the coarser crystal nature and favourable non-sulphide gangue composition.
- > Metallurgical and flowsheet development is ongoing.

Centaurus Metals (ASX Code: **CTM**) is pleased to announce highly encouraging results from initial metallurgical test work on drill core from the Jaguar Nickel Sulphide Project in northern Brazil, with a nickel recovery of 81.6% and a 16.0% nickel concentrate grade. These results were achieved from a 1.63% nickel composite sourced from the Jaguar South Deposit.

The Company commenced metallurgical test work on the Jaguar Project on the basis of a focused, high-grade project rather than a bulk tonnage, low-grade operation as historically studied by Vale. The test work has so far included mineralogical understanding, comminution and flotation test work.

Centaurus' Managing Director, Mr Darren Gordon, said the outcomes of the preliminary metallurgical test work for the Jaguar South mineralised zone reflected the benefits of targeting a smaller, high-grade project using industry-standard flotation techniques that are widely used in the WA nickel sulphide industry.

"The recoveries that we are seeing in our first float tests are around 25% better than those previously delivered in historical test work, and this will have a significant positive impact on future project economics. These initial results – coupled with the continued success of our high-grade in-fill drilling program – are the key drivers to developing a robust high-grade nickel operation.

"With shallow, high-grade mineralisation, strong metal recoveries, close proximity to low cost power, an engaged labour force from an experienced mining jurisdiction and ample good quality water, we believe we have all the ingredients for a quality nickel sulphide development and we look forward to progressing the work required to bring this to fruition."

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¹ Refer to ASX announcement dated 6 August 2019 for details of historical metallurgical results.



Flotation

Flotation testing of core has initially focused on the Jaguar South mineralised zone (JAG001). A composite of this zone has been developed containing a head grade of 1.63% Ni and this composite has been tested using a traditional nickel flowsheet (as used by nickel sulphide mines in Western Australia) as well as traditional reagents and process conditions for successful nickel flotation. The source of the composite is shown in Table 1 below.

								Metallurgical Sample Intervals		
Hole ID	Target	Easting	Northing	mRL	Azi	Dip	EOH Depth	From (m)	To (m)	Interval (m)
JAG-DD-19-002	Jaguar South	477952	9282579	289	180	-55	192.25	70.00	84.80	14.80
								112.00	119.00	7.00
								131.00	173.20	42.20

Table 1 – JAG001 Composite



Figure 1: Jaguar Rougher Nickel Concentrate

Metallurgical test work is being undertaken at ALS Metallurgy (based in Balcatta, Perth) with initial results indicating that the best recoveries are achieved at 80% passing (P_{80}) primary grinds in the 53-75 μ m range (Figure 2).

At 53 μ m the recovery is 81.6% producing an excellent quality concentrate (16.0% Ni) with low arsenic (less than 100ppm) and high Fe: MgO (~5.5:1), which are all favourable and highly desirable in the nickel concentrate market.



Figure 2: Effect of Grind Size on Grade Recovery Relationship



The results outlined above are from simple rougher flotation testing only. The composite sample is fed into bench scale flotation machines which represent the first stage of flotation (roughing) and results in the production of a rougher concentrate. Further flowsheet development is ongoing (Figure 3) and is expected to further improve the recoveries of nickel metal in the final product.

Figure 3: Future Cleaner Flotation Flowsheet



Mineralogy

Initial mineralogical investigation of the both the Jaguar South and Onça Preta composite samples have aligned well with the Company's initial understanding of the Project. McArthur Ore Deposit Assessments (MODA) in Burnie Tasmania has started the mineralogical characterisation of the mineralisation so that domaining of the different ore zones can be completed to rapidly increase the confidence level, quality and understanding of the degree of variability within the Project.

The mineralogy work will be a continually evolving study over the duration of the planned drilling works.



Figure 4: Photomicrographs of the Jaguar (left) and Onça (right) composites demonstrating the coarse nature of the sulphides



m Reflected Light Jaguar Comp2 3 Frame width 206μm Reflected Light Onça Comp1 3 Ga = Gangue; Pt = Pentlandite; Py = Pyrite; Mt = Magnetite

Work is ongoing on all metallurgical fronts with the flotation test work results from the Onça Preta composite expected in the coming weeks.

Comminution

Based on the flotation results achieved, a moderate 53µm primary grind has been selected as the best metallurgical response for the Jaguar South composite. The composite has been tested to determine comminution parameters, identifying that the mineralised zone is both moderately hard and has low-abrasive properties – indicating that a conventional, low risk, semi-autogenous/ball mill circuit (SABC) will be suitable for the targeted production profile. Table 2 below shows the results of comminution testwork.

Parameter	Units	Jaguar South Composite
Drop Weight Index (DWi)	kWh/m ³	8.99
Comminution Parameter "A"	-	55.1
Comminution Parameter "B"	-	0.63
SAG Mill Specific Energy (SCSE)	kWh/t	11.57
Bond Ball Mill Work Index (BWi)	kWh/t	16.3
Bond Abrasion Index (Ai)	-	0.0673
		(Moderately
		Abrasive)

Table 2 – JAG001 Comminution Results

Once more samples have been tested, a preliminary milling circuit design will be completed. This work is expected to be completed by the end of Q1 2020.

-ENDS-

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Competent Persons Statement

The information in this report that relates to Exploration Results is based on information compiled by Roger Fitzhardinge who is a Member of the Australasian Institute of Mining and Metallurgy. Roger Fitzhardinge is a permanent employee of Centaurus Metals Limited. Roger Fitzhardinge has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is 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 consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.



APPENDIX A – Compliance Statements for the Jaguar Project

The following Tables are provided for compliance with the JORC Code (2012 Edition) requirements for the reporting of Exploration Results at the Jaguar Project.

SECTION 1 - SAMPLING TECHNIQUES AND DATA

(Criteria in this section apply to all succeeding sections).

Criteria	Commentary
Sampling techniques	Historical soil sampling was completed by Vale. Samples were taken at 50m intervals along 200m
	spaced north-south grid lines.
	• Surface material was first removed, and sample holes were dug to roughly 20cm depth. A 5kg
	sample was taken from the subsoil. The sample was placed in a plastic sample bag with a sample
	tag before being sent to the lab.
	 Surface rock chip/soil samples were collected from in situ outcrops and rolled boulders and submitted for chemical analysis.
	• The historical drilling is all diamond drilling. Drill sections are spaced 100m apart and generally there
	is 50 to 100m spacing between drill holes on sections.
	 Core was cut and ¼ core sampled and sent to commercial laboratories for physical preparation and
	chemical assay.
	 At the laboratories, samples were dried (up to 105°C), crushed to 95% less than 4mm, homogenized, split and pulverized to 0.105mm. A pulverized aliquot was separated for analytical
	procedure.
	 Sample length along core varies between 0.3 to 4.0m, with an average of 1.48m; sampling was done
	according to lithological contacts and generally by 1m intervals within the alteration zones and 2m intervals along waste rock.
	 Current drilling is being completed on spacing of 100m x 50m or 50m x 50m. Sample length along core varies between 0.5 to 1.5m
	 Core is cut and ¼ core sampled and sent to accredited independent laboratory (ALS).
	• For metallurgical test work continuous downhole composites are selected to represent the
	metallurgical domain and ¼ core is samples and sent to ALS Metallurgy, Balcatta, Perth.
Drilling techniques	 Historical drilling was carried out between 2006 to 2010 by multiple drilling companies (Rede and Geosol), using wire-line hydraulic diamond rigs, drilling NQ and HQ core.
	• Vale drilled 173 drill holes for a total of 58,024m of drilling on the project. All drill holes were drilled
	at 55° - 60° towards either 180° or 360° .
	Current drilling is a combination of HQ and NQ core (Servdrill).
Drill sample recovery	 Diamond Drilling recovery rates are being calculated at each drilling run.
	For all diamond drilling, core recoveries were logged and recorded in the database for all historical
	and current diamond holes. To date overall recoveries are >98% and there are no core loss issues or
	significant sample recovery problems.
	 To ensure adequate sample recovery and representivity a Centaurus geologist or field technician is present during drilling and monitors the campling process.
	 present during drilling and monitors the sampling process. No relationship between sample recovery and grade has been demonstrated. No bias to material
	 No relationship between sample recovery and grade has been demonstrated. No bias to material size has been demonstrated.
Logging	 Historical outcrop and soil sample points were registered and logged in the Vale geological mapping
Logging	point database.
	 All drill holes have been logged geologically and geotechnically by Vale or Centaurus geologists.
	 Drill samples are logged for lithology, weathering, structure, mineralisation and alteration among
	other features. Logging is carried out to industry standard and is audited by Centaurus CP.
	 Logging for drilling is qualitative and quantitative in nature.
	 All historical and new diamond core has been photographed.
Sub-sampling techniques and	 Diamond Core (HQ/NQ) was cut using a core saw, ¼ core was sampled. Sample length along core
sample preparation	varies between 0.3 to 4.0m, with an average of 1.48m; sampling was done according to lithological
	contacts and generally by 1m intervals within the alteration zones and 2m intervals along the waste
	rock.
	• There is no non-core sample within the historical drill database.
	• QAQC: Standards (multiple standards are used on a rotating basis) are inserted every 20 samples.
	Blanks have been inserted every 20 samples. Field duplicates are completed every 30 samples.
	Additionally, there are laboratory standards and duplicates that have been inserted.
	• Centaurus has adopted the same sampling QAQC procedures which are in line with industry
	standards and Centaurus's current operating procedures.
	• Sample sizes are appropriate for the nature of the mineralisation.
	• All historical geological samples were received and prepared by SGS Geosol or ALS Laboratories as
	0.5-5.0kg samples. They were dried at 105°C until the sample was completely dry (6-12hrs), crushed



Criteria	Commentary
Quality of soons data and	 to 90% passing 4mm and reduced to 400g. The samples were pulverised to 95% passing 150µm and split further to 50g aliquots for chemical analysis. New samples are being sent to ALS Laboratories. The samples are dried, crushed and pulverised to 85% passing 75µm and split further to 250g aliquots for chemical analysis. During the preparation process grain size control was completed by the laboratories (1 per 20 samples). Metallurgical samples are crushed to 3.35mm and homogenised. Samples are then split to 1kg subsamples. Sub-samples are ground to specific sizes fractions (53-106µm) for flotation testwork.
Quality of assay data and laboratory tests	 Chemical analysis for drill core and soil samples was completed by multi element using Inductively Coupled Plasma ICPAES (multi-acid digestion); ore grade analysis was completed with Atomic Absorption (multi-acid digestion); sulphur analysis was completed with Leco, and Au and PGEs completed via Fire Assay. New samples are being analysed for 33 elements by multi element using ICP-AES (multi-acid digestion) at ALS Laboratories; ore grade analysis was completed with ICP-AES (multi-acid digestion); sulphur analysis was completed with Leco, and Au and PGEs completed via Fire Assay. ALS Laboratories insert their own standards at set frequencies and monitor the precision of the analysis. The results reported are well within the specified standard deviations of the mean grades for the main elements. Additionally, ALS perform repeat analyses of sample pulps at a rate of 1:20 (5% of all samples). These compare very closely with the original analysis for all elements. Vale inserted standard samples every 20 samples (representing 5%). Mean grades of the standard samples are well within the specified 2 standard deviations. All laboratory procedures are in line with industry standards. Analysis of field duplicates and lab pulp duplicates have returned an average correlation coefficient of over 0.98 confirming that the precision of the samples is within acceptable limits. Vale QAQC procedures and results are to industry standard and are of acceptable quality. All metallurgical chemical analysis is completed limits.
Verification of sampling and assaying	 All historical samples were collected by Vale field geologists. All assay results were verified by alternative Vale personnel. The Centaurus CP has verified the historical significant intersections. Centaurus Exploration Manager and Senior Geologist verify all new results and visually confirm significant intersections. No twin holes have been completed. All primary data is now stored in the Centaurus Exploration office in Brazil. All new data is collected on Excel Spreadsheet, validated and then sent to independent database administrator (MRG) for storage (DataShed).
Location of data points	 No adjustments have been made to the assay data. All historical collars were picked up using DGPS units. Centaurus has checked multiple collars in the field and has confirmed their location. All field sample and mapping points were collected using a Garmin handheld GPS. An aerial survey was completed by Esteio Topografia and has produced a detailed surface DTM at (1:1000 scale). The survey grid system used is SAD-69 22S. This is in line with Brazilian Mines Department requirements. New drill holes are sighted with handheld GPS and will be picked-up by an independent survey consultant periodically. Downhole survey is being completed using Reflex digital down-hole tool, with readings every metre.
Data spacing and distribution	 Soil samples were collected on 50m spacing on section with distance between sections of 200m and 400m depending on location. Sample spacing was deemed appropriate for geochemical studies. The historical drilling is all diamond drilling. Drill sections are spaced 100m apart and generally there is 50 to 100m spacing between drill holes on sections. Centaurus plans to close the drill spacing to 100m x 50m or 50m x 50m. No sample compositing was applied to the drilling Metallurgical sample to date has been taken from Jaguar South, see Table 1 for sample location. Future samples will be taken from Onça Preta and other prospects as drilling advances.
Orientation of data in relation to geological structure	 Historical drilling was oriented at 55°-60° to either 180° or 360°. This orientation is generally perpendicular to the main geological sequence along which broad scale mineralisation exists. Mineralisation is sub-vertical; the majority of the drilling is at low angle (55-60°) in order to achieve intersections at the most optimal angle.
Sample security	 All historical and current samples are placed in pre-numbered plastic sample bags and then a sample ticket was placed within the bag as a check. Bags are sealed and then transported by courier to the ALS laboratories in Parauapebas, PA.



Criteria	Commentary		
	• All remnant Vale diamond core has now been relocated to the Company's own core storage facility in Tucumã, PA.		
Audits or reviews	• The Company is not aware of any audit or review that has been conducted on the project to date.		

SECTION 2 REPORTING OF EXPLORATION RESULTS

(Criteria listed in the preceding section also apply to this section).

Criteria	Commentary
Mineral tenement and land tenure status	 The Jaguar project includes one exploration licence (856392/1996) for a total of circa 30km². A Mining Lease Application has been lodged that allows for ongoing exploration and project development ahead of project implementation. The tenement is part of a purchase agreement with Vale SA. Centaurus has committed to an upfront cash payment of US\$250,000, the transfer of the Salobo West tenements to Vale, two deferred consideration payments totalling US\$6.75M and a production royalty of 0.75%. Completion of the acquisition remains subject to approval by the Brazilian National Bank for Economic and Social Development (BNDES) for the assignment of BNDES' royalty interest in the Project. Mining projects in Brazil are subject to a CFEM royalty, a government royalty of 2% on base metal revenue. Landowner royalty is 50% of the CFEM royalty. The project is not located within any environmental protection zones and exploration and mining is permitted with appropriate environmental licences.
Exploration done by other parties	• Historically the Jaguar Project was explored for nickel sulphides by Vale from 2005 to 2010.
Geology	 Jaguar Nickel Sulphide is a hydrothermal nickel sulphide deposit located near Tucumã in the Carajás Mineral Province of Brazil. The deposit setting is interpreted as an extensional fault with the Itacaiúnas Supergroup down thrust southwards over the Xingu basement resulting in the development of a ductile mylonite zone along the Canãa Fault. Iron rich fluids were drawn up the mylonite zone causing alteration of the host felsic volcanic and granite units and generating hydrothermal ironstones. Late stage brittle-ductile conditions triggered renewed hydrothermal fluid ingress and resulted in local formation of high-grade nickel sulphide zones within the mylonite and as tabular bodies within the granite.
Drill hole Information	 Refer to Figures 1 to 4. Refer to previous ASX Announcements for significant intersections from Centaurus drilling. Refer to ASX Announcement 6 August 2019 for all significant intersections from historical drilling.
Data aggregation methods	 Continuous sample intervals are calculated via weighted average using a 0.5 % Ni cut-off grade with 3m minimum intercept width. There are no metal equivalents reported.
Relationship between mineralisation widths and intercept lengths Diagrams	 Mineralisation is sub-vertical; the majority of the drilling is at low angle (55-60°) in order to achieve intersections at the most optimal angle. The results in ASX Announcement 6 August 2019 reflect individual down hole sample intervals and no mineralised widths were assumed or stated. Refer to Figures 1-4
Balanced reporting	All exploration results received by the Company to date are included in this or previous releases to the ASX.
Other substantive exploration data	• The Company has received geophysical data from Vale that is being processed by an independent consultant Southern Geoscience. Refer to ASX Announcements for geophysical information.
Further work	 A Ground Magnetic survey is underway and the Company's own Electro-magnetic (EM) geophysical surveys are planned to start in early February. In-fill and extensional drilling within the known deposits to test the continuity of high-grade zones is ongoing. There are currently three drill rigs at the Project working double shifts. Resource samples are being sent in batches of 150-300 sample and will be reported once the batches are completed.