CASSINI
RESOURCES LIMITED

ASX Release (CZI)
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Metallurgical Program Delivers Positive Results

HIGHLIGHTS

- **Further Scoping Study metallurgical program confirms positive processing results for Nebo-Babel**
- **Production of separate, saleable nickel and copper concentrates**
- **Nickel concentrate grades of 10-12% achievable at 60-70% recovery**
- **Copper concentrate grades of 21-25% achievable at 78-80% recovery**
- **Marketable concentrates with low impurities and likely by-product credits**
- **Opportunities identified for further improvements**
- **Further Scoping Study on track for delivery in Q4 2017.**

Cassini Resources Limited (ASX:CZI) ("Cassini" or the "Company") is pleased to announce the completion of a detailed metallurgical testwork program as part of Further Scoping Study ("FSS") activities at the West Musgrave Project ("WMP" or the "Project"), located in Western Australia. This program of work represents the first stage of the Earn-in/JV Agreement with OZ Minerals Limited (ASX:OZL) ("OZ Minerals").

The testwork program has confirmed the successful production of separate, saleable nickel and copper concentrates from all mineralised domains, including the weathered ore-domains. The metal concentrates are expected to be highly marketable with low impurities and a high Fe:MgO ratio.

Managing Director Comment

Cassini's Managing Director, Mr Richard Bevan, said "At the commencement of the FSS, there were two key technical outcomes we targeted to ensure the viability of the project. They were the identification of a near-by groundwater source, and confirmation that the metallurgy results we had previously achieved could be reproduced at lower nickel and copper grades and throughout the weathered zones. To have achieved positive outcomes in both of these is a fantastic result by the team and a significant step forward for the Project.

This metallurgical program confirms that there are no fatal flaws in the mineralogy and that the processing flowsheet will be comparable to other nickel and copper sulphide projects globally. We have now done a significant amount of metallurgical work for a scoping level study and are confident that we will continue to improve these outcomes as we progress through the next study phases."

Metallurgical Testwork Program

Testwork in Cassini's 2015 scoping study was focused on the relatively high head grade ore domains, which would be processed through a 1.5Mtpa treatment plant. The scope of the FSS testwork program was designed to cover whole ore composites and variability samples which are representative of the ore domains and average head grades aligned with the increased project size development options.

This current program has increased the level of understanding and confidence in the metallurgical performances across a complete range of mineralisation types within the Nebo-Babel deposits. It focused on lower head grade samples across the primary and weathered ore domains, some of which were not previously tested. No oxide material is being considered for treatment. A significant component of the testwork included optimisation of the process flow sheet, and testing of alternative reagent regimes, all of which were aimed at further improving nickel and copper recoveries and concentrate grades.

Testwork was conducted at Bureau Veritas Laboratories in Perth under the supervision of GR Engineering Services and is the most thorough metallurgical program undertaken to date. It comprised 200 flotation tests and covered 17 variability composites (different mineralised domains covering a range of nickel and copper grades). Two locked cycle tests on master composites, each representing typical run of mine material, of the early and later years of a likely mine schedule, have also been tested. Locked cycle tests are used to simulate continuous flotation circuit conditions, such as those in an actual process plant, during which various streams are recycled until the test achieves stability.

The program has successfully produced separate, saleable nickel and copper concentrates from all mineralised domains including the weathered ore-domains (transition zone and pyrite-violarite zones, but not oxide). The Company expects to receive by-product credits for cobalt, platinum, palladium and gold. Importantly both concentrates have no penalty elements such as arsenic and have high Fe:MgO (≥10), both of which are desired by smelters.

These results will be used to update the mining and processing studies in order to determine the optimum size of the operation.

Results of the final cycle for the two master composites are shown below:

	Nickel Concentrate		Copper Concentrate	
Mineralisation Type	**Recovery (%)**	**Grade (%)**	**Recovery (%)**	**Grade (%)**
Master Composite A	**45**	**10**	**78**	**21**
Master Composite B	**70**	**10**	**78**	**25**

Master Composite A comprises 10% Nebo primary massive and breccia mineralisation, 30% Nebo weathered massive and breccia mineralisation and 60% Babel weathered disseminated mineralisation. This composite approximates one of the potential processing streams during the first 2 years of operation.

Note: *Master Composite A includes 90% of the shallow weathered mineralisation which would be mined first. With only 10% primary ore, it is likely to represent a near worst-case processing scenario. An objective of future study phases is to find the optimum blend of the weathered and primary ore before the operation returns to steady-state production on 100% primary ore in later years.*

Master Composite B comprises 50% Nebo primary massive and breccia mineralisation, 48% Babel primary disseminated mineralisation and 2% Babel disseminated transition zone. This master composite approximates potential processing streams in the latter years of operation.

Note: *Based on the results of Master Composite B, Cassini could reasonably target a final nickel concentrate grade of* ***10-12%*** *with recoveries in the range of* ***60-70%.***

This program has significantly de-risked the metallurgical component of the project by testing weathered mineralised domains, which usually result in lower nickel recoveries, but these are important in the early stages of the project. Copper recovery appears to be only marginally lower in the weathered

zones compared to primary zones. Lower nickel recoveries in the weathered domains are primarily due to the effect on altered sulphide minerals, pyrite and violarite being the most dominant ones at Nebo-Babel. Mining operations usually address this by blending the weathered domains with the better performing primary domains.

Furthermore, a parallel program of independent umpire testwork has been completed by ALS Laboratories in Perth. This program successfully reproduced the initial results.

Opportunities for further improvement and optimisation

Further work on the optimisation of concentrate grades and recoveries is planned to be tested by completing additional locked cycle tests on multiple master composites, representing run of mine material across different ore domains and nickel and copper grades at various stages through the mine plan. Evaluation of different ore blending options, particularly with the weathered zones, will also be a priority.

The Company has also completed a trial magnetic separation test on Nebo massive sulphide mineralisation as an alternative processing method aimed at improving nickel concentrate grade in the final step in the process flow sheet. This test gave encouraging results and produced a 11.7% nickel concentrate with >80% recovery. This is a successful proof of concept that now needs to be applied to the disseminated styles of mineralisation, which if proven successful could potentially lead to lower capital and operating costs.

The completion of the metallurgical testwork is a significant milestone of the FSS, the results of which now feed into the Metallurgical model, mine optimisation and financial modelling. FSS activities are progressing on schedule towards delivery in Q4 2017.

ACTIVITY	STATUS
Metallurgical Test Work	Complete
Transport Logistics Study	Complete
Energy Study	Complete
Water Study	Complete
Resource Extension Drilling	Complete
Process Plant Design	In Progress
Geology & Resource Modelling	In Progress
Mine Optimisation and Design	In Progress
Study Compilation & Delivery	Delivery Q4

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About the Company

Cassini Resources Limited (ASX: CZI) is a base and precious metals developer and explorer based in Perth. In April 2014, the Company acquired its flagship West Musgrave Project (WMP), located in Western Australia. The WMP is a world-class asset which currently has over 850,000 tonnes of contained nickel and 1.8 million tonnes of contained copper in Resource. The WMP is a new mining camp with three existing nickel and copper sulphide deposits and a number of other significant regional exploration targets already identified. The WMP is the largest undeveloped nickel copper project in Australia.

In August 2016, Cassini entered into a three-stage $36M Earn-in/Joint Venture (JV) agreement with prominent Australian mining company OZ Minerals Ltd (ASX: OZL). The JV provides a clear pathway to a decision to mine and potential cash flow for the Company.

Cassini is also progressing its Mt Squires Gold Project in WA and an early stage zinc exploration project in the West Arunta region of WA.

Current Highlights:

- Cassini's West Musgrave project contains one of Australia's largest undeveloped nickel/copper deposits
- Cassini is free carried to a "decision to mine" via a 3 stage A$36m Earn-in/Joint Venture agreement with OZ Minerals
- Previous Scoping Study presented highly attractive economics, supporting a long life, open pit development
- Significant exploration upside across portfolio with Succoth Copper deposit and multiple other mineralised targets identified at additional deposits
- High impact A$8m regional exploration program to be executed in Stages 2 and 3 of the joint venture
- Track record of prudent investment and capital management with a CY2016 exploration / administration ratio of 1.5x (compares favourably to peer group average of 0.9x)[1]

Competent Persons Statement

The information in this report that relates to Exploration Results is based on information compiled or reviewed by Mr Greg Miles, who is an employee of the company. Mr Miles is a Member of the Australian Institute of Geoscientists and has sufficient experience of relevance to the styles of mineralisation and the types of deposits under consideration, and to the activities undertaken, to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Miles consents to the inclusion in this report of the matters based on information in the form and context in which it appears.

The Company is not aware of any new information or data, other than that disclosed in this report, that materially affects the information included in this report and that all material assumptions and parameters underpinning Exploration Results, Mineral Resource Estimates and Production Targets as reported in the market announcements dated 13, April 2015 and 7 December 2015, continue to apply and have not materially changed.