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ASX Release

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FINAL TESTS CONFIRM WORLD-CLASS QUALITY OF PANDA HILL NIOBIUM PRODUCT

Strong metallurgical results and first niobium production pave way for project funding

Highlights

- Laboratory-scale metallurgy tests show the Panda Hill concentrate will enable the production of high-quality ferro-niobium (FeNb) buttons
- First Panda Hill ferro-niobium has been produced, recording a niobium content of 69% - in line with steel industry specifications, with further production tests underway
- Niobium is one of the “new age” metals being sought to produce high-end steel products for construction, pipelines and car manufacturers
- The results confirm a readily marketable product and will facilitate off-take agreement discussions
- Release of a Definitive Feasibility Study is imminent; Construction is scheduled to start later this year for first production in 2018

Cradle Resources (ASX: CXX) is pleased to advise that it has achieved another major milestone in its strategy to develop the world-class Panda Hill niobium project in Tanzania, with key metallurgical tests returning outstanding results.

These most recent tests demonstrate that Panda Hill concentrate can be used to produce a high-quality ferro-niobium product, which is in turn sold directly to steel mills to produce high strength, low alloy steel products.

A picture of the Panda Hill FeNb buttons produced at the ANSTO facility in Sydney is shown below.



Figure 1: FeNb Buttons

These first FeNb production tests established that the buttons made from Panda Hill concentrate contained low levels of impurities, further underpinning the quality of product.

Niobium is used to harden and strengthen steel and also to make it more corrosion-resistant. The relatively limited sources of global supply – three producers account for 99 per cent of world supply - and the metal’s key role in producing high-quality steel means that the niobium market has different dynamics to conventional steel and steel-feed industries.

The strong test results are an outstanding outcome for Cradle and its 50 per cent-owned Panda Hill project because they confirm a final product well within the required specifications and they will therefore support the ongoing off-take negotiations.

The latest test results will be combined with the findings of the imminent Panda Hill Definitive Feasibility Study as part of Cradle’s strategy to finalise project finance.

The Project also enjoys access to existing infrastructure and an extensive Resource capable of underpinning a 30-year-plus mine life.

Construction is scheduled to start later this year with first production expected in 2018.

Test Results

The laboratory testwork was undertaken by ANSTO Minerals and consisted of bench-scale production of ferro-niobium (FeNb). The testwork used concentrate samples from the recently completed flotation pilot plant carried out at SGS Canada.

ANSTO independently undertook the concentrate cleaning steps (i.e. two-stage leach) on the samples received, with the residues then used as feed to the converter process. The assays of the FeNb button produced are shown in the table below. For comparison, the general specifications as well as typical product values for commercially produced FeNb are also included.

The Panda Hill results indicate all impurity elements are well below the required specifications and in line with the typical values.

This is the final step in validating the process selected for Panda Hill and confirms the proposed flowsheet for the project.

Element	General Specifications (%)	Typical Product (%)	Panda Hill Results (%)
Niobium	63.0	66.0	69.0
Iron	Balance	Balance	27.0
Aluminium	<2.00	1.00	1.0
Tantalum	<0.50	0.25	0.23
Silicon	<3.00	2.00	0.50
Phosphorous	<0.20	0.10	0.04
Titanium	<2.00	2.00	0.20
Sulphur	<0.10	0.04	0.03
Carbon	<0.20	0.12	0.05
Manganese	<0.75	0.55	0.11

By order of the Board

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