

3 September 2015

ASX Release

ASX Code: CXX

## PANDA HILL NIOBIUM – A STEP CLOSER TO CONSTRUCTION

### Highlights

- **Environmental and Social Impact Assessment (“ESIA”) Certificate issued**
- **Mining licence renewal application approved**
- **Integrated Pilot Plant test work at SGS Canada underway**

Cradle Resources Limited (“Cradle”) is pleased to announce that the ESIA Certificate has been issued for mining operations and that the Mining Licences for its Panda Hill Niobium Project (“Project”) have been renewed for a further 10 years to November 2026 (see Table 1).

The ESIA documentation was submitted to the Tanzanian National Environment Management Council (“NEMC”) in May 2015 after 18 months of baseline environmental studies within the project area which included extensive community engagement and various impact studies of the Project on the surrounding areas and communities. An NEMC visit to the project site took place in July 2015, following the initial ESIA submission to the department. The Environmental and Social Impact Assessment Certificate for the Project was issued on 18 August 2015. There were no restrictions or special instructions imposed on the ESIA certification.

The three licences (ML 237/2006, 238/2006 and 239/2006) (Figure 1), have also been renewed for a further 10 year term as per the Tanzanian Mining Act and regulations. These Mining Licences cover all of the known niobium mineralisation in the area, as well sufficient ground for the establishment of the mine infrastructure required for the estimated 30 year life of mine (see announcement 14 July 2015).

**Table 1: Panda Hill Niobium Project Licence Summary – August 2015**

Licence	Area (km <sup>2</sup> )	Renewal from	Renewal to	Owner
ML237/2006	4.94	16 Nov 2016	16 Nov 2026	RECB Ltd*
ML238/2006	7.67	16 Nov 2016	16 Nov 2026	RECB Ltd*
ML239/2006	9.45	16 Nov 2016	16 Nov 2026	RECB Ltd*

\*Cradle Resources and its joint venture partner hold 50% of RECB and have the exclusive right to acquire the remaining 50% by June 2017

**Cradle’s Managing Director, Grant Davey, commented:** “The granting of the ESIA Certificate and the Mining Licence renewals until November 2026 are significant milestones and ensure that the Panda Hill Niobium Project is a step closer to producing niobium from its world class niobium Mineral Resource. The approval demonstrates the importance that the Tanzanian government places on continued development of the Tanzanian mining industry. We continue to de-risk the Project and lay the foundation for the rapid growth of the Project as we head towards completing the Feasibility Study.”

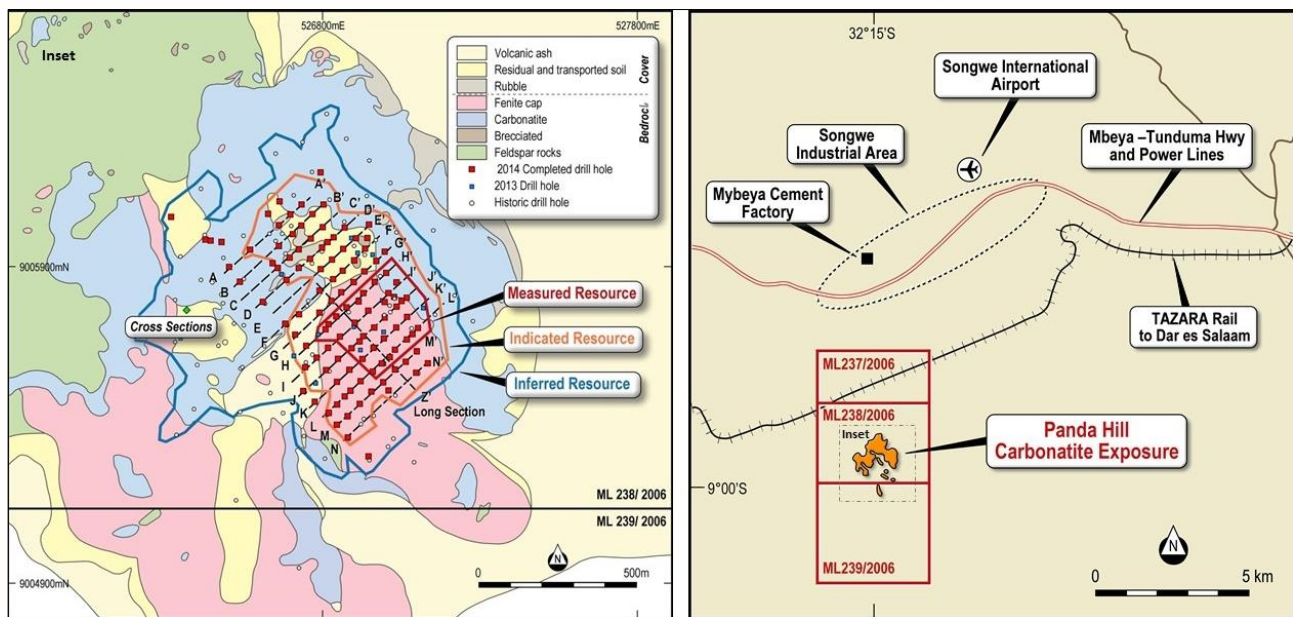


Figure 1: Showing the Panda Hill licences and location of the current Mineral Resources.

## Project Update

All the key project feasibility activities are in progress. The major field works, including the geotechnical investigations and hydrogeological drilling, have been completed. The field work associated with the environmental monitoring will continue so that we can establish further environmental baseline data in the project area.

The laboratory test work on the geotechnical samples collected from the field in June/July is well advanced and the results are being used to design the open pit, the processing plant site and the Tailings Storage Facility (TSF). The geological model has been completed and the mining consultants have completed the initial pit optimisation work and are now focused on the pit designs and the production scheduling.

The integrated pilot plant was commissioned and the milling and desliming circuit optimised during the first week of August. A series of ~10hr runs on the fresh carbonatite material were carried out in the second week of August. These test runs were used to understand and optimise the different sections of the flotation circuit as far as control strategies (e.g. pH profiles and control points), reagent additions, recycle rates and water recirculation are concerned, as well as understanding how these impact final concentrate grades and recoveries. In the third and fourth week of August work was done offline to determine how best to manage any build-up of reagents and/or dissolved solids in liquor from the recycled water and furthermore to optimise fine calcite rejection. Additional laboratory test work is currently ongoing to define these limits. The next pilot plant run will be in early September 2015 which is expected to confirm these optimised control strategies. The time taken to collect the bulk samples of the various ore types from site and transport them to SGS Lakefield in Canada is taking longer than initially planned and due to this our piloting plant program is running approximately a month behind schedule.

The process design is ongoing with progress being made on the generation of the process flow diagrams (PFDs), mass balances and equipment sizing for the processing plant. Equipment selection has started and the price enquiry documents are being compiled. The processing plant and infrastructure layouts are the next major activity from which the bulk earthworks, civil and structural bill of quantities (BOQs) can be developed and the cost information obtained. Work has also started with the execution planning and operational readiness requirements such that these can be accurately reflected in the construction schedules and start-up costs.

Offtake discussions with traders and end users are progressing well. The discussions are focused on optimising pricing and volume and both end-users and traders in the USA, Europe and Asia are being targeted. Project financing is ongoing and is being managed in South Africa through our project partners, Tremont, who are in discussions with commercial banks to secure the appropriate debt finance.

The project progress for the key activities against planned are shown in Figure 2 below.

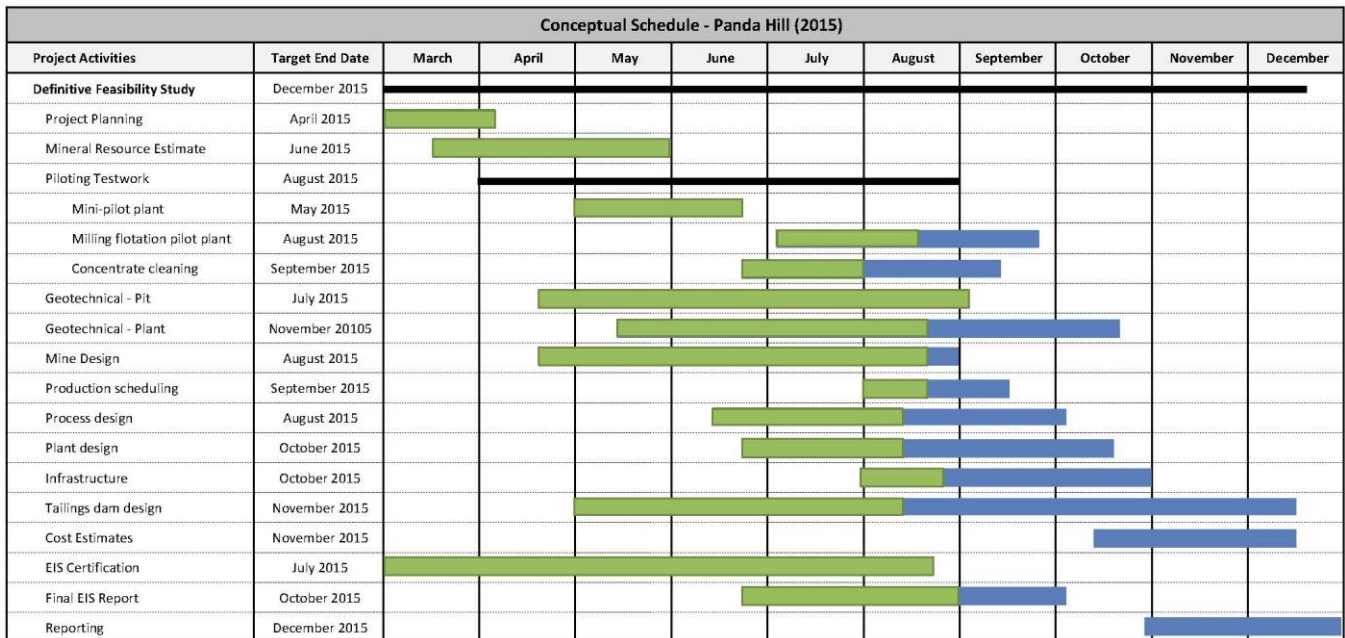


Figure 2: DFS Schedule Progress

\*Green – actual progress, blue forecast

## Project Background

The Panda Hill Niobium Project (Figure 3) is located in the Mbeya region in south western Tanzania approximately 650km west of the capital Dar es Salaam. The industrial city of Mbeya (pop. 280,000) is situated only 26km from the project area and will be a significant service and logistics centre for the Project. The Project is unique in that it is located close to highly developed surrounding infrastructure including the new Songwe international airport (8 km away), the TAZARA Rail line (2km away), the Dar es Salaam - Tunduma Highway (5km away) and major power infrastructure (26km away).

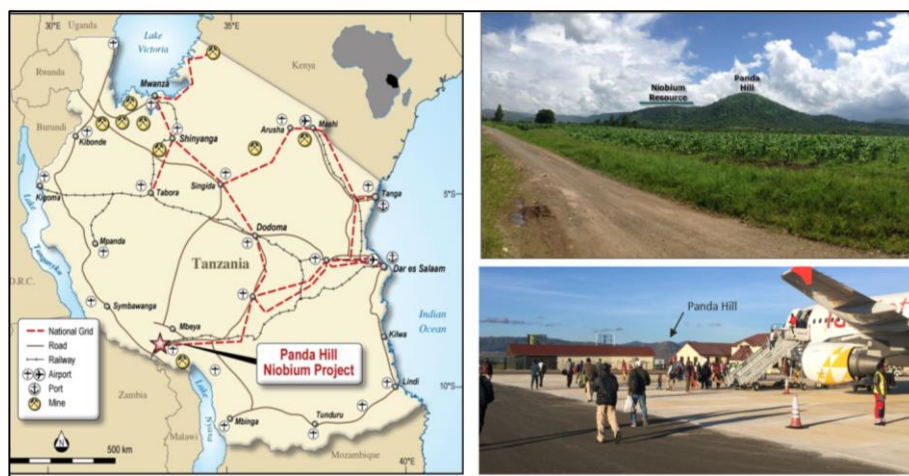


Figure 3: Showing location of Panda Hill and the nearby Songwe international airport.

The Panda Hill Niobium Project is located on three Mining Licences (ML237/2006, 238/2006 and 239/2006) granted to Panda Hill Mines Ltd on 16 November 2006 and covering a total area of approximately 22.1 km<sup>2</sup>. Title of these licences was transferred to RECB Limited ("RECB") on 18 December 2012. Panda Hill Mining Pty Ltd ("PHM"), a wholly owned subsidiary of Cradle, currently has a 50% shareholding in RECB with an additional exclusive right to acquire the remaining 50% of RECB by June 2017. PHM assigned its rights in respect of the Panda Hill Niobium Project (including the right to hold the RECB shareholding and the right to acquire the remaining 50% of RECB) in June 2014 to Panda Hill Tanzania Ltd, which is owned by Cradle (as to 62.5%) and Tremont (as to 37.5%).

An update to the PFS<sup>1</sup> results were announced on 14 July 2015, indicating that a staged approach to the Project allowed reduced upfront capital without significantly impacting the overall economics. The indicative project capex was US\$123M initial capital with US\$32M working capital based upon mining scenario of 1.3Mtpa for the first few years ramping up to 2.6Mtpa in Year 5.

Subsequent to the PFS announcement, Cradle also announced a significant Mineral Resource upgrade for the Project in April 2015, with a total Mineral Resource of 178Mt @ 0.5% Nb<sub>2</sub>O<sub>5</sub> for 891Kt of contained Nb<sub>2</sub>O<sub>5</sub> (16Mt @ 0.63% Nb<sub>2</sub>O<sub>5</sub> Measured, 53Mt @ 0.5% Nb<sub>2</sub>O<sub>5</sub> Indicated and 108Mt at 0.48% Nb<sub>2</sub>O<sub>5</sub> Inferred above a 0.36% Nb<sub>2</sub>O<sub>5</sub> lower cut-off (see announcement of 30 April 2015). Additionally the Project has an Exploration Target<sup>2</sup> of 200Mt to 400Mt at between 0.4% and 0.6% Nb<sub>2</sub>O<sub>5</sub> for regions outside of the current Mineral Resource (see announcement 24 April 2015). The April 2015 updated Mineral Resource will be used for the final Feasibility Study.

<sup>1</sup>Cautionary Statement concerning Production Target Results including Inferred Resources

*Cradle advises that the PFS results and production targets reflected in this announcement are preliminary in nature as conclusions are drawn partly from Indicated Mineral Resources and partly from Inferred Mineral Resources. There is a low level of geological confidence associated with Inferred Mineral Resources and there is no certainty that further exploration work will result in the determination of Indicated or Measured Mineral Resources or that the production target itself will be realised.*

<sup>2</sup>Note on Exploration Target

*The Exploration Target is conceptual in nature as there has been insufficient exploration to define a Mineral Resource. It is uncertain if further exploration will result in the determination of a Mineral Resource under the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, the JORC Code" (JORC 2012). The Exploration Target is not being reported as part of any Mineral Resource or Ore Reserve. Work activities including mapping, chip sampling and drilling are expected to be undertaken in 2015 and 2016.*

In June 2014 Cradle reached an agreement with Tremont Investments Limited (backed by Denham Capital) ("Tremont") to fund the Project to DFS and beyond. Tremont will earn up to a 50% in the Project for a consideration of up to US\$20M. To date Tremont has acquired a 37.5% stake in the Project through funding of US\$15M.

*By order of the Board*



For further information, please visit [www.cradleresources.com.au](http://www.cradleresources.com.au) or contact:

Grant Davey      Managing Director      Tel: +61 8 9389 2000

#### **Competent Person's Statement**

*The information in this document that relates to the Exploration Target, Exploration Results and Resources is based on information compiled or reviewed by Mr Neil Inwood who is a Fellow of The Australasian Institute of Mining and Metallurgy and a Member of the Australian Institute of Geoscientists. Mr Inwood is a full time employee of Verona Capital Pty Ltd. Mr Inwood 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'. Mr Inwood consents to the inclusion in this document of the matters based on his information in the form and context in which it appears.*

*The Company notes that JORC Table 1 has not been included in this announcement as the Table 1 from the previous announcements is valid and the sampling and assaying techniques have not changed materially from previous announcements.*

*The information relating to the Mineral Resource is extracted from the report entitled 'Significant Resource Upgrade for Panda Hill Niobium Project' created on 20<sup>th</sup> January 2015 and is available to view on [www.cradleresources.com.au](http://www.cradleresources.com.au). The information relating to the Pre-Feasibility Study is extracted from the report entitled 'Positive Pre-Feasibility Study results For Panda Hill' created on 31<sup>st</sup> March 2015 and the update announcement on 14<sup>th</sup> July 2015 entitled 'Updated Panda Hill Site and Study Progress' and is available to view on [www.cradleresources.com.au](http://www.cradleresources.com.au). The information referring to the Exploration Target is extracted from the report 'Panda Hill Progress Update and Exploration Target' created on 23<sup>rd</sup> April 2015 and is available to view on [www.cradleresources.com.au](http://www.cradleresources.com.au). Other than as specified in this announcement and the mentioned announcements, the Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and, in the case of estimates of Mineral Resources, Exploration Target or Ore Reserves that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcements.*