

ASX Announcement

3 May 2023

Globe extracts 10-tonne sample from Kanyika Niobium Project for Phase 1 Plant Feasibility Study

Highlights

- Globe successfully collects and crushes 10-tonne sample from its Kanyika Niobium Project for Phase 1 Plant Feasibility Study.
- Sample to be used to finalise design of the pilot plant and for the full test work program, delivering the feasibility study inputs and offtake samples.

Globe Metals & Mining Limited (ASX: GBE) (“Globe” or “Company”) is pleased to announce it has completed its 10-tonne sampling program at the Kanyika Niobium Project.

One month after the Malawi Government approved the Mining Development Agreement (“MDA”) for the Kanyika Niobium Project, the Company is pleased to announce the completion of its 10-tonne sampling program from an outcropping at surface at the Project.

The 10-tonne sampling result is a significant next step after concluding the MDA¹ and satisfies the first of the short-term value drivers proposed for Q2, 2023.²

The 10-tonne sample will accelerate important metallurgical testing and will enable the Company to:

- commence desktop test work (20kg composite sample) to finalise design of the pilot plant to be used for the full test work program;
- determine the operating parameters for the implementation of chlorine gas-vapour technology for the extraction and refining of Kanyika concentrate materials;
- confirm the process to recover metals at a rate of 95% and to produce oxides with a grade of >99.5%;
- confirm the potential suite of finished products viz. Nb₂O₅, Ta₂O₅, ZrO, FeO; and
- produce the engineering parameters for the design, construction and operation of the pilot plant used for the Phase 1 plant in support of the Scoping and Feasibility Study work.

¹ ASX Announcement 29 March 2023, Malawi Government approves MDA for Kanyika Niobium Project.

² ASX Announcement 28 April 2023, Quarterly Report for quarter ended 31 March 2023.

The 10-tonne sample will also expedite discussions with potential offtake partners (battery producers and Nb and Ta metal refiners), and the Company will produce +/- 30 x 1kg commercial-grade samples to provide to interested parties.

Globe Chief Executive Officer, Grant Hudson, commented that “completion of the 10-tonne sampling program is an important and critical milestone for the Company as Globe is transiting from an exploration to a mining company. We look forward to working with our technical partners in the design, construction, and operation of a bespoke pilot plant in support of the Scoping Study and Feasibility Study updates, and in particular we are excited about the production of commercial-grade samples that we can distribute to potential offtake partners for their technical assessment.”

The Company was assisted in this exercise by S.R. Nicholas and Crushing for Africa, and the final -40mm sample will be packed into 1-tonne bulk bags and despatched to Johannesburg using C.Steinweg Bridge, a well-known regional logistics company based in Lilongwe. In Johannesburg the sample will be further milled to effectively <1mm by EDS (Energy and Densification Systems). Thereafter, Geolabs Global will prepare a concentrate sample using milling, desliming, magnetic separation, flotation, dewatering and drying. The dried sample will then go to TCM Research who will conduct an extensive program of metallurgical test work that will generate full-scale design parameters for the refinery while producing marketing samples for customer evaluation.



Figure 1. Sample collection at Kanyika mine site: 28 April 2023



Figure 2. *Crushing Kanyika ore for shipment: 29 April 2023*

Authorisation for Release

This ASX Announcement has been authorised for release by the Company's Chief Executive Officer, Grant Hudson.

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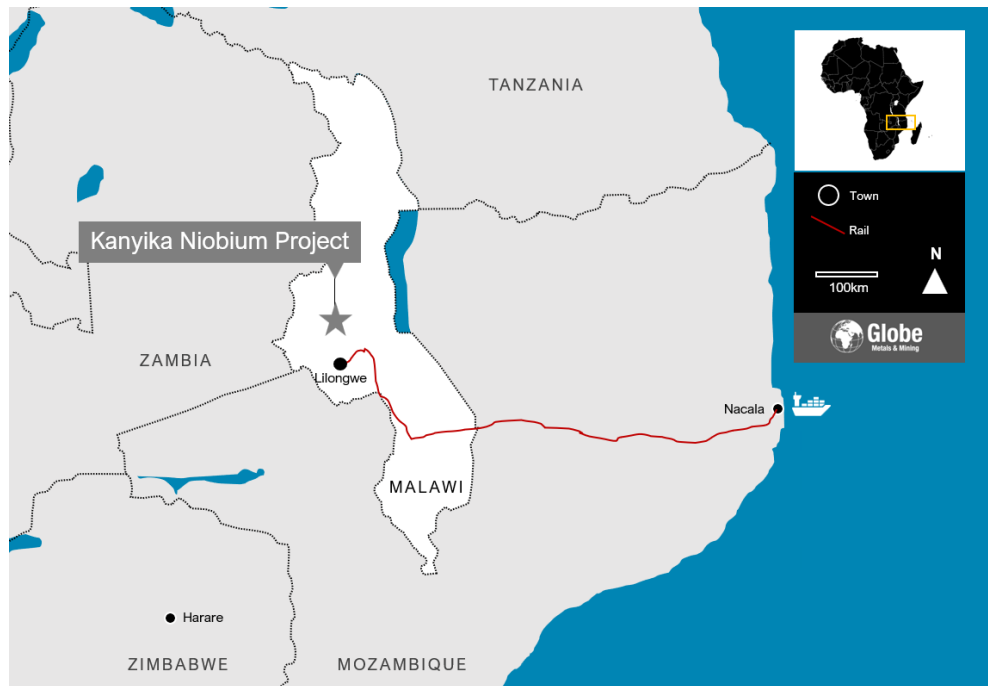
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About the Kanyika Niobium Project

The Kanyika Niobium Project is located in central Malawi, approximately 55km northeast of the regional centre of Kasangu and is secured by Large-Scale Mining Licence No. LML0216/21 which grants the Company security of tenure and the right to mine niobium, tantalum, and deleterious uranium.

Drilling programs totalling 33.8 kilometres of percussion and core drilling have defined the extent of mineralisation. Structured and progressive engineering studies have resulted in the current (JORC 2012) Mineral Resource Estimate (refer below) and given rise to significant improvements and simplifications in the process flowsheet, from that first imagined.

In addition, Globe has undertaken substantial metallurgical optimisation work and commissioned a pilot plant to demonstrate and further optimise metallurgical processes. Metallurgical optimisations studies have improved recoveries from 62% in 2012 to 75% today, through simple novel patented metallurgical processes.



The Kanyika operations will produce a pyrochlore mineral concentrate that contains both niobium and tantalum in commercially valuable volumes to be shipped to a refinery for advanced processing into high purity materials.

A Mineral Resource Estimate for the Kanyika Niobium Project under the 2012 JORC guidelines was reported to ASX on 11 July 2018 as follows:

Table 1: MRE for KNP using a 1,500 ppm Nb₂O₅ lower cut

Category	Million Tonnes	Nb ₂ O ₅ ppm	Ta ₂ O ₅ ppm
Measured	5.3	3,790	180
Indicated	47.0	2,860	135
Inferred	16.0	2,430	120
Total	68.3	2,830	135

Table 2: MRE for KNP using a 3,000 Nb₂O₅ lower cut

Category	Million Tonnes	Nb ₂ O ₅ ppm	Ta ₂ O ₅ ppm
Measured	3.4	4,790	220
Indicated	16.6	4,120	190
Inferred	2.8	4,110	190
Total	22.8	4,220	190

Mineral Resource Estimates

The information in this report that relates to Mineral Resources is extracted from the report titled “Kanyika Niobium Project – Updated JORC Resource Estimate” released to the Australian Securities Exchange (ASX) on 11 July 2018 and available to view at www.globemm.com and for which Competent Persons’ consents were obtained. Each Competent Person’s consent remains in place for subsequent releases by the Company of the same information in the same form and context, until the consent is withdrawn or replaced by a subsequent report and accompanying consent.

The Company confirms that is not aware of any new information or data that materially affects the information included in the original ASX announcement released on 11 July 2018 and, in the case of estimates of Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the original ASX announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Persons’ findings are presented have not been materially modified from the original ASX announcement.

Full details are contained in the ASX announcement released on 11 July 2018 titled “Kanyika Niobium Project – Updated JORC Resource Estimate” available to view at www.globemm.com.