

## Epanko Graphite Technical Update

- **Extremely high melting point established at 1,305°C proves Epanko graphite suitable for the refractory market, presenting opportunities for potential new customers**
- **Mineralogy testwork confirms large flake graphite occurs across a wide grade range (5% to 15% TGC) which simplifies the optimisation of the deposit**
- **Flotation testwork confirms Epanko flake size distribution consistent throughout the deposit**

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Kibaran Resources Limited (ASX:KNL) is pleased to provide the following technical update from the ongoing Epanko Feasibility Study.

Recent testwork focussed on analysing three key physical characteristics, with the findings to be used as fundamental inputs into the Epanko Feasibility Study that recently commenced.

The physical characteristics assessed were:

- Melting point of Epanko graphite
- Relationship between flake size and grade.
- Flake size distribution within the transition and fresh rock zones as determined by flotation testwork

The testwork has resulted in positive key findings and provides additional technical evidence that the Epanko deposit hosts significant, premium quality, large flake distributions with no limitations on its industrial uses.

The recent Letter of Intent (LOI) signed with ThyssenKrupp (refer ASX announcement 30 October 2014) for an initial 20,000tpa graphite offtake agreement is testament to this view and further supported by the binding offtake agreement for 10,000tpa of graphite Kibaran secured late last calendar year.

### **Melting Point of Graphite**

Testwork carried out by an independent European laboratory has determined the melting temperature of Epanko graphite to be at 1,305°C. During sample preparation, it was noted the material had a very high resistivity against oxidation. Most commonly, all carbon is burned off within 8 hours at a temperature of 900°C. The oxidation resistivity and melting point for the Epanko graphite is considered extremely high, which makes it also suitable for refractory applications, opening the product to an even more diverse customer base.

Melting points for graphite used in refractory applications from China are between 1,150–1,250°C and from Canada 1,100–1,200 °C.

### **Flake Size versus Grade**

Mineralogy and petrographic studies were conducted on a range of Epanko graphite grades between 3% and 15% in 2% increments. All samples contained significant quantities of large flake graphite with flake sizes frequently in excess of 500 micron long. This supports that locally, within the Epanko deposit, there is no relationship between flake size and grade. This characteristic simplifies the optimisation of the deposit in terms of work being undertaken as part of the feasibility study.

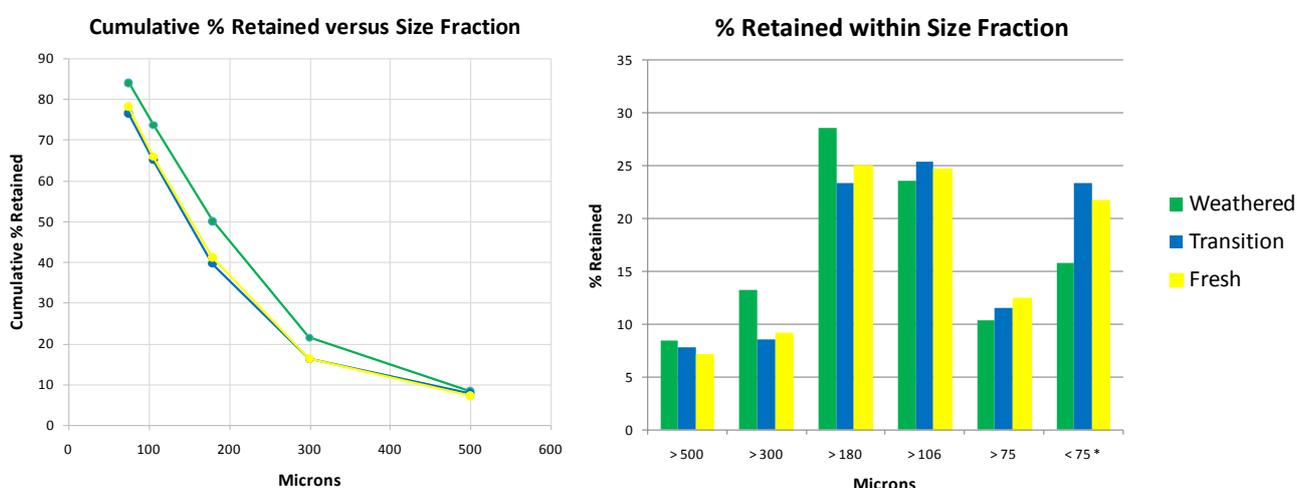
This observation is consistent with the high metamorphic gradient within Tanzania being a key factor to its graphite crystallinity and large flake size distribution. The study also highlighted the importance of the rock mineralogy, as this impacts the depth of weathering and ultimately the liberation of graphite from any host rock impurities. The recent study has found that graphite at Epanko is largely associated with the minerals sillimanite, mica, feldspar and scapolite (a calc silicate mineral).

### Flake Size Distribution within Rock Zones

The company is pleased to report that the flotation test work carried out within Transition Rock Zone (80m to 100m depth) and Fresh Rock Zone (+100m) has confirmed the flake size distribution shows similar favourable characteristics to the earlier reported Weathered Saprolitic Rock Zone (Surface to 80m). This significantly increases the deposits volume of large flake graphite within the current model and it is important to note the recent scoping study only focussed on near-surface weathered zones.

The following figures show the cumulative % retained charts, which emphasises the higher percent retained at each size fraction and also shows a slightly improved liberation on the weathered (saprolitic) zone. Significant size fractions are retained within Transition and Fresh rock zones and these factors will be incorporated into the feasibility study.

**Figure 1 - Flake Size Distribution within rock zones**



**Table 1 – Flotation results for Weathered Saprolitic Zone (Surface to 80m)**

Size (Micron)	Mesh	Cumulative % Retained	% Retained
> 500	>30	8.4	8.4
> 300	>48	21.6	13.2
> 180	>180	50.2	28.6
> 106	>150	73.8	23.6
> 75	>200	84.2	10.4

The results are based on testwork carried out on diamond hole MHDD002 (refer announcement dated 7 July 2014) located within the Western mineralised zone at Epanko. Further testwork is still ongoing, with core samples from seven recently completed diamond drill holes now in transit to metallurgical laboratories located in Europe, Africa and Australia.

Kibaran Executive Director Andrew Spinks commented: “The testwork results demonstrate the importance of the three key aspects that determine graphite’s saleability, including mineralogy and how that determines the liberation of the graphite from gangue minerals. The confirmation of favourable flake distributions from the deeper transition and fresh rock zones supports a longer mine life than previously envisaged and the ability to increase production as future demand increases”.

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**About Kibaran Resources Limited:**

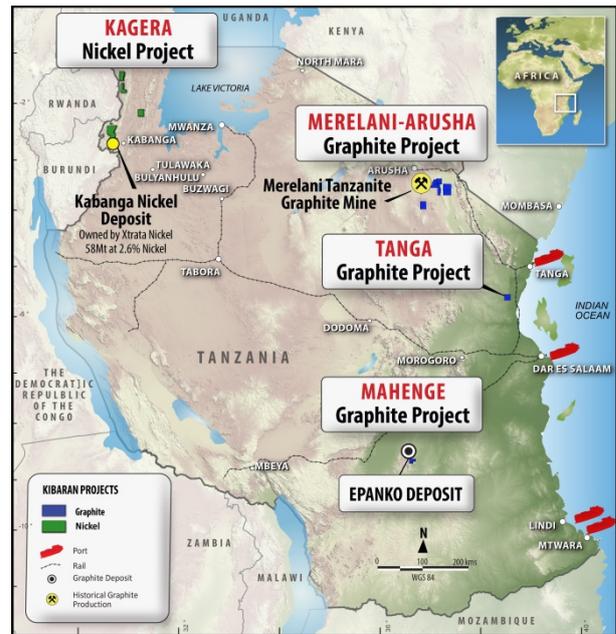
*Kibaran Resources Limited (ASX: KNL or “Kibaran”) is an exploration company with highly prospective graphite and nickel projects located in Tanzania.*

*The Company’s primary focus is on its 100%-owned Epanko deposit, located within the Mahenge Graphite Project. Epanko currently has a total Indicated and Inferred Mineral Resource Estimate of 22.7Mt, grading 9.8% TGC, for 2.2Mt of contained graphite, defined in accordance with the JORC Code. This initial estimate only covers 20% of the project area. Metallurgy has found Epanko graphite to be large flake and expandable in nature.*

*Kibaran also has rights to the Merelani-Arusha Graphite Project, located in the north-east of Tanzania. Merelani-Arusha is also considered to be highly prospective for commercial graphite.*

*Graphite is regarded as a critical material for future global industrial growth, destined for industrial and technology applications including nuclear reactors, lithium-ion battery manufacturing and a source of graphene.*

*In addition, the Kagera Nickel Project remains underexplored and is located along strike of the Kabanga nickel deposit, owned by Xstrata, which is considered to be the largest undeveloped, high grade nickel sulphide deposit in the world.*



The information in this report that relates to Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Mr Andrew Spinks, who is a Member of The Australasian Institute of Mining and Metallurgy included in a list promulgated by the ASX from time to time. Andrew Spinks is a director of Kibaran Resources Limited and 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”. Andrew Spinks consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this report that relates to Exploration Results and Mineral Resources is based on information compiled by Mr David Williams, who is a Member of The Australasian Institute of Mining and Metallurgy included in a list promulgated by the ASX from time to time. David Williams is employed by CSA Global Pty Ltd and 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”. David Williams consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.