

# Black Rock Mining Replicates 99%+ TGC Concentrate at 93% Recovery through FEED Optimisation Program by China Based EPC Partner

## **HIGHLIGHTS**

- Metallurgical optimisation in China by EPC partner Yantai Jinyaun Mining Machinery has delivered 99%+ TGC concentrate at 93% recovery, with a favourable flake size distribution, at lab scale testing
- Application of Chinese IP has optimised circuit design and improved flake distribution while preserving • exceptional concentrate grades
- 20 tonne demonstration pilot plant to be run by Black Rock's EPC partner Yantai Jinyaun Mining Machinery
- Pilot plant is likely to lead to formation of EPC contract with performance warranties, US\$20m of vendor . support, and up to a further US\$20m of vendor sponsored external support
- Selected potential investors, existing and additional offtakers from China, Korea and Japan to visit pilot • plant over coming weeks
- Large sample to be tested in commercial sized spheronisation circuit to evaluate yields and further support • market price discovery

Tanzanian graphite developer Black Rock Mining Limited (BKT: ASX) ("Black Rock" or "the Company") is pleased to announce that its Chinese EPC partner, Yantai Jinyuan Mining Machinery Ltd, has successfully replicated work completed in Canada by SGS Lakeshore Laboratories by delivering 99%+ TGC concentrate at lab scale from oxide ores, as part of the FEED (Front End Engineering Design) process being undertaken in China. The results were achieved without secondary leaching or any chemical intervention. Metallurgical recovery to final concentrate at the +99% TGC set point, has stabilised at 93%. Preliminary data for the oxide ore sample is presented below.

ASTM Mesh Size	% Retained for Size	TGC (%C by LOI*)	Cumulative Retained	Cumulative TGC (%C by LOI*)
+32	1.02%	98.04%	1.02%	1.00%
+50	7.85%	99.12%	8.87%	7.78%
+80	35.84%	99.17%	44.71%	35.54%
+100	24.23%	99.12%	68.94%	24.02%
-100	31.06%	98.88%	100.00%	30.71%
* Total Graphitic Carbon (TGC) as	reported by Loss on Ignition (LOI) n	nethod		99.05%

Samples are being subjected to detailed multi element analysis to better understand deportment of gangue minerals prior to an optimisation program to be conducted over the next couple of weeks.

## **Pilot Plant**

On delivery of a final flowsheet and metallurgical plan, Yantai will conduct a 20 tonne pilot plant at associated facilities to validate the optimised design flow sheet under continuous operation. The recommended flow sheet will be reviewed and approved by CPC Engineering and Design who completed the Mahenge DFS, prior to final authority to operate the pilot plant.

Black Rock Mining Ltd ACN 094 551 336 ASX·BKT

**Issued Capital** 538.5m Shares 47m Options

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Directors **Richard Crookes** John de Vries Gabriel Chiappini



During operation of the pilot plant selected potential Investors, and new and existing Offtake partners have been given the opportunity to review plant performance and perform further independent Due Diligence on plant operation and concentrate attributes. Pilot plant operations are schedule to commence at the end of March.

#### Vendor Bid

On successful operation of the pilot plant, Yantai Jinyuan Mining Machinery and Black Rock will seek to enter into an EPC contract for delivery of plant, process and infrastructure equipment and installation for the Mahenge Graphite Project. The contract will be structured to deliver the following outcomes:

- Fixed price bid subject to normal rise and fall provisions
- Build Operate Transfer model with transfer contingent on process performance warranty
- US\$20m vendor bid, support by sponsorship of an additional US\$20m of external funding
- CPC Engineering and Design to be retained as Black Rock's Engineering Manager to manage project delivery and compliance

## **Bulk Spheronising Trial**

Approximately 700kg of sub #80 mesh material from the trial will be directed to a commercial scale spheronising trial. The objective of the trial will be to validate lab yields of 65% and establish productivity parameters at scale in a typical commercial sized cascade mill.

**Commenting on the significance of the metallurgical progress, Black Rock Mining CEO, John de Vries,** said "Being able to demonstrate the efficacy and performance of our Mahenge ore to deliver the world's highest grade concentrates, by our Chinese partners, is a significant step in validating our credentials in our most important offtake market.

The operation of a pilot plant in front of Investors and our Offtake partners is a novel step in project financing, however leaves absolutely no doubt as to expected asset and product performance, which we are confident of achieving. We believe this process will support price discovery based on transparent product parameters.

We are absolutely delighted with how the three way relationship between Black Rock, Yantai Jinyuan Mining Machinery and CPC Engineering and Design has matured. The levels of cooperation and strategic planning provides me with a lot of confidence in our ability to deliver in full, on time and to specification.

We continue to see interest in financing Mahenge. Solid progress on de-risking our project delivery and awarding of the Mining Licences will support continued progress to developing a funding solution for Mahenge."

## For more information:

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## About Black Rock Mining

Black Rock Mining Limited is an Australian based company listed on the Australian Securities Exchange (ASX:BKT). The Company has a 100% interest in the Mahenge Graphite Project (the "Project") located in Tanzania. The Project has a JORC compliant Mineral Resource Estimate of 212m tonnes at 7.8% TGC. It also has Reserves of 70m tonnes at 8.5% TGC. The Reserve supports a mine life of 250k tonnes of graphite per annum for 25 years. Since the release of the Resource Estimate, the Company confirms that it is not aware of any new information or data that materially affects the resources estimate.

In October 2018, the Company released a Definitive Feasibility Study for the Project demonstrating exceptional financial metrics including:

- Low Capex: Lowest peak capital expenditure of US\$115M for phase one;
- High Margin: AISC margin of 63.6%;
- Low Technical Risk: Substantial pilot plant run of 90 tonnes delivering eight tonnes of product; and
- Superior Economics: IRR of 42.8% with NPV<sub>10</sub> of US\$895m

Following release of the DFS, the Company confirms that it is not aware of any new data or information that materially affects the results of the DFS and that all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed. In January 2019 the Company announced it had substantially sold out of production with up to 205k tonnes of graphite subjected to binding offtakes in year three of production. In February 2019 it also announced receipt of its mining licence for the DFS project.

The Company is currently progressing financing discussions and detailed engineering with a view to commencing construction of the mine in 2019.

JORC Compliant Mineral Resource Estimate and Reserve						
Reserves	Tonnes (Mt)	Grade (% TGC)	Contained Graphite (Mt)			
- Proven	0	0.0	0.0			
- Probable	70	8.5	6.0			
Total Reserves	70	8.5	6.0			
Resources						
- Measured	25.5	8.6	2.2			
- Indicated	88.1	7.9	6.9			
Total M&I	113.6	16.5	9.1			
- Inferred	98.3	7.6	7.4			
Total M, I&I	211.9	7.8	16.6			



For further information on Black Rock Mining Ltd, please visit www.blackrockmining.com.au

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