



BLACKEARTH

Specialising in Critical Commodities

Definitive Feasibility Study Progress Update

ASX:BEM

January 2022



Disclaimer

BlackEarth Minerals NL (“BlackEarth or “the Company”) now presents details regarding its Definitive Feasibility Study Progress Update

The Definitive Feasibility Study Progress Update (“the Definitive Feasibility Study Update ” or “the DFS”) referred to in this announcement is based on a Scoping Study (“the Original Study”) released in February 2019 and an Updated Scoping Study released in December 2021. This document remains at the level of an Updated Scoping Study based on preliminary technical and economic study of the viability of developing the Maniry Graphite Project (“Maniry”) by constructing an open cut mine and processing facility to produce graphite concentrate for export. DFS Update outcomes, production target and forecast financial information referred to in this release are based on low accuracy level technical and economic assessments that are insufficient to support estimation of Ore Reserves.

As announced in December 2021, the Scoping Study Update has been completed to a level of accuracy of +/- 35% in line with a scoping level study accuracy. While each of the modifying factors was considered and applied, there is no certainty of eventual conversion to Ore Reserves or that the production target itself will be realised. Further exploration and evaluation work and appropriate studies are required before Maniry will be in a position to estimate any Ore Reserves or to provide any assurance of an economic development case. Given the uncertainties involved, investors should not make any investment decisions based solely on the results of the Definitive Feasibility Study Update .

The Company has reasonable grounds for disclosing a Production Target, given that 80% of production of the mill feed is scheduled from the Indicated Resource category. Approximately 80% of the Life-of-Mine (LOM) Production Target is in the Indicated Mineral Resource category, and 20% is in the Inferred Mineral Resource category. There is a lower level of geological confidence associated with Inferred Mineral Resources. The Company has only applied 20% of its Inferred mineral resource to DFS Update assessment and we believe this to be a fair and conservative approach.

The Definitive Feasibility Study Update is based on the material assumptions outlined below. These include assumptions about the availability of funding. While the Company considers all the material assumptions in this Study to be based on reasonable grounds, there is no certainty that they will prove to be correct or that the range of outcomes indicated will be achieved.

The Mineral Resources underpinning the production target in the Definitive Feasibility Study Update have been prepared by a competent person in accordance with the requirements of the JORC Code (2012). The Competent Person's Statement is found on page 3 of this study booklet within this ASX release. For full details of the Mineral Resources estimate, please refer to Company's ASX release dated 17 November 2021. BlackEarth confirms that it is not aware of any new information or data that materially affects the information included in that release. All material assumptions and technical parameters underpinning the estimates in that ASX release continue to apply and have not materially changed.

Disclaimer

FORWARD LOOKING STATEMENTS

Certain statements contained in this presentation, including information as to the future financial or operating performance of BlackEarth Minerals NL (“the Company”) and its projects, are forward-looking statements. Such forward-looking statements are necessarily based on a number of estimates and assumptions that, while considered reasonable by the Company, are inherently subject to significant technical, business, economic, competitive, political and social uncertainties and contingencies, involve known and unknown risks and uncertainties that could cause actual events or results to differ materially from estimated or anticipated events or results reflected in such forward-looking statements, and may include, among other things, statements regarding targets, estimates and assumptions in respect of commodity prices, operating costs and results, capital expenditures, ore reserves and mineral resources and anticipated grades and recovery rates and are, or may be, based on assumptions and estimates related to future technical, economic, market, political, social and other conditions. The Company disclaims any intent or obligation to update publicly any forward-looking statements, whether as a result of new information, future events or results or otherwise. The words ‘believe’, ‘expect’, ‘anticipate’, ‘indicate’, ‘contemplate’, ‘target’, ‘plan’, ‘intends’, ‘continue’, ‘budget’, ‘estimate’, ‘may’, ‘will’, ‘schedule’ and other, similar expressions identify forward-looking statements. All forward-looking statements made in this presentation are qualified by the foregoing cautionary statements. Investors are cautioned that forward-looking statements are not guarantees of future performance and, accordingly, investors are cautioned not to put undue reliance on forward-looking statements due to the inherent uncertainty therein. Many known and unknown factors could cause actual events or results to differ materially from estimated or anticipated events or results reflected in such forward-looking statements. Such factors include, but are not limited to: competition; mineral prices; ability to meet additional funding requirements; exploration, development and operating risks; uninsurable risks; uncertainties inherent in ore reserve and resource estimates; dependence on third-party smelting facilities; factors associated with foreign operations and related regulatory risks; environmental regulation and liability; currency risks; effects of inflation on results of operations; factors relating to title to properties; native title and Aboriginal heritage issues; dependence on key personnel, and share-price volatility. They also include unanticipated and unusual events, many of which it is beyond the Company’s ability to control or predict. Photographs in this presentation may not depict assets of the Company.

Some of the information contained in this presentation has been derived from previously released information to the ASX refer: 30/1/2019 -“Positive Definitive Feasibility Study Update Results”; 30/1/2019-“BEM Progressing to full feasibility”; 17/1/2021- “Significant increase in Graphite inventory at Maniry”; ‘Update to Scoping Study report of December 2021”.

COMPETENT PERSONS STATEMENT

The information in this document that relates to Exploration Results, Exploration Targets and Mineral Resources is based on information compiled by Ms. Annick Manfrino, Principal of Sigma Blue and is a Competent Person who is a member of the Australasian Institute of Mining and Metallurgy and a consultant to the Company. Ms. Manfrino has sufficient experience that is relevant to the style of mineralization and type of deposit under consideration and to the activity being undertaken 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. Ms Manfrino consents to the use of the information included in this document in the form and context in which it appears.

Vision: To Become a Material, Vertically Integrated Global Graphite Business

Maniry Graphite Project

- Proven location
- Quality Resource & large Exploration Target
- Product tested and samples qualified by tier 1 users
- Plan to complete the DFS by Q2 2022
- Plant commissioning planned in CY 2023

Stage 1 Downstream

- Expandable graphite (2000-2500tpa) facility
- Significant uplift in revenue / profit
- JV with proven producer - Metachem
- Binding offtake with Tier 1 European buyer in place
- Plan to commission plant by Q3 2022

Graphite Market Conditions

- End-users becoming increasingly concerned about security of supply
- Decline in coarse graphite flake supply has seen prices rise
- Increasing EV demand combined with growing ESG thematic provide strong tailwinds



Corporate Overview

CAPITAL STRUCTURE

BEM

ASX Code

\$5.77M

Cash at 30 Sep 21

\$26.1M

Market Cap (at \$0.12 per share)

217m

Shares on Issue

8.0M

Performance Rights

\$20.3m

Enterprise Value
Or \$USD15M

BOARD OF DIRECTORS & MANAGEMENT

George Bauk
Non-Executive
Chairman

- Over 30 years' experience in the resources industry including 14 years' experience as a listed resources company director
- Has held global operational and corporate roles with WMC Resources and Western Metals, and most recently was MD of Northern Minerals

Tom Revy
Managing
Director

- Qualified metallurgist with extensive experience in project development and EPCM services
- More than 30 years' experience within the resources industry
- Held senior operational and corporate positions at GRD Minproc, WorleyParsons, Ferrum Crescent and Empire Resources

David Round
Finance Director

- Extensive M&A, Business Development and Corporate Advisory experience
- Was recently CFO and Head of Sales of an Australian listed Graphite production company with mine in Madagascar

Heather Zampatti
Non-Executive
Director

- Head of Wealth Management at Bell Potter Securities and has over 35 years in Stockbroking, Finance, Investment policy, strategy and funds management
- Extensive board experience including on the Federal Government Remuneration Tribunal and Takeovers Panel, the Australian Institute of Management (WA), and ASIC Financial Services Consultative Committee.

Maniry Development History

2018

- Company IPO
- Commence drilling – defined Indicated and Inferred Resource
- Defined large Exploration Target
- Preliminary & small scale pilot met test work completed
- Commencement of Advanced Definitive Feasibility Study Update for Maniry

2019

- Completed Advanced Definitive Feasibility Study Update for Maniry
- Coarse product proven suitable for expandable graphite
- Fine product returns positive results – spheronised & purified graphite – SPG (pre-cursor to Li-Ion Batteries)

2020

- Maniry graphite proves suitable for Li-Ion Batteries
- Stage 1 Pilot Plant test work completed (ALS)
- Maniry graphite sample qualifies with Tier 1 Anode producer
- MOU offtake signed with RHI Magnesita for refractory material
- Commencement of Prelim Environ & Social (DFS) works at Maniry

2021 - YTD

- Stage 2 large scale Pilot Plant test work completed - BGRIMM
- MOU with URBIX (US) for collaboration to produce SPG
- Collaboration Agreement with German based LuxCarbon
- Downstream strategy plan for coarse flake materials in place (Metachem JV in India)
- Successful exploration at Razafy NW (Resource defined)
- External DFS consultants commenced – CPC, Golder, Snowden
- In fill drilling commenced to define Measured Resources
- Final ESIA commenced - GCS

Environmental, Social and Governance

Project Update



ENVIRONMENTAL

- Environmental & Social Impact Assessment (ESIA) commenced - to be conducted in accordance with IFC Principles / World Bank Standards
- Hydrology activities underway to mitigate any impact on local water sources / supply
- Hybrid power, incorporating solar currently being investigated as part of the DFS

SOCIAL

- 5 tonnes of food delivered to villages in the Maniry area to assist with famine conditions
- New furniture provided to a recently constructed school near the Project area
- Sponsorship of a Malagasy geologist to undertake PhD studies at Curtin University (Perth, WA)
- A critical water pump used by villagers was refurbished

GOVERNANCE

- Dedicated resources and programs in place to mitigate / minimize environmental and social impacts
- Maniry contractors screened for ESG credentials
- Succession plans in place for key functions
- DFS implementation adhering to all current Company policies
- Independent compliance audit recently undertaken on Resources

Maniry Definitive Feasibility Study (“DFS”) Update - Highlights

- The DFS is being prepared as a financing document to a standard that will meet project debt financiers’ requirements
- Key appointments made over recent months – experienced, world class advisors
- Scheduled completion target of June 2022
- The DFS is designed to provide certainty around the development of the proposed Maniry Graphite Project
- The DFS will include the results of recent and proposed drill programs designed to materially increase the Company's Graphite Concentrate Inventories ⁽¹⁾

(1) Cautionary Statement: the Exploration Targets reported herein are not JORC compliant Mineral Resources The potential quantity and grade of the Exploration Targets are conceptual in nature, there has been insufficient exploration to determine a Mineral Resource and there is no certainty that further exploration work will result in the determination of a Mineral Resource. See ASX announcement date 14 August 2018 and 17 November 2021

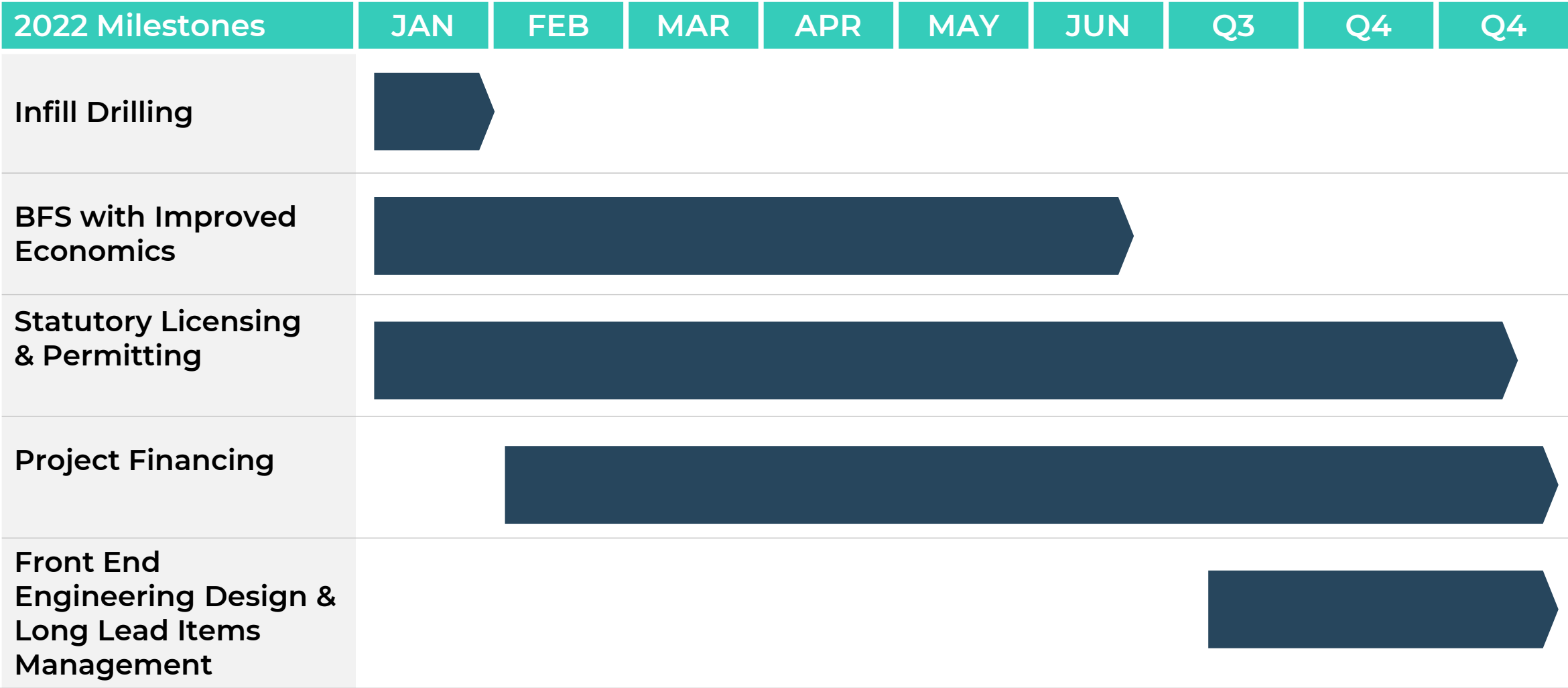
Maniry Definitive Feasibility (“DFS”) Update - Key Appointments

- The Company is delighted to confirm the appointment of experienced Key Advisors to the DFS including : -
 - **CPC Engineers:** DFS engineering Capex and Opex, including assisting on metallurgy, Study Report
 - **Golder:** geotechnical, water supply, surface water management, TSF and waste geochemistry
 - **Snowden:** resource development and modelling
 - **GSC:** ESIA in partnership with Malagasy specialist
 - **Mining Focus:** mining study and production schedule
 - **Orezone:** Infill drilling at Razafy



Hydrogeological drilling at Maniry

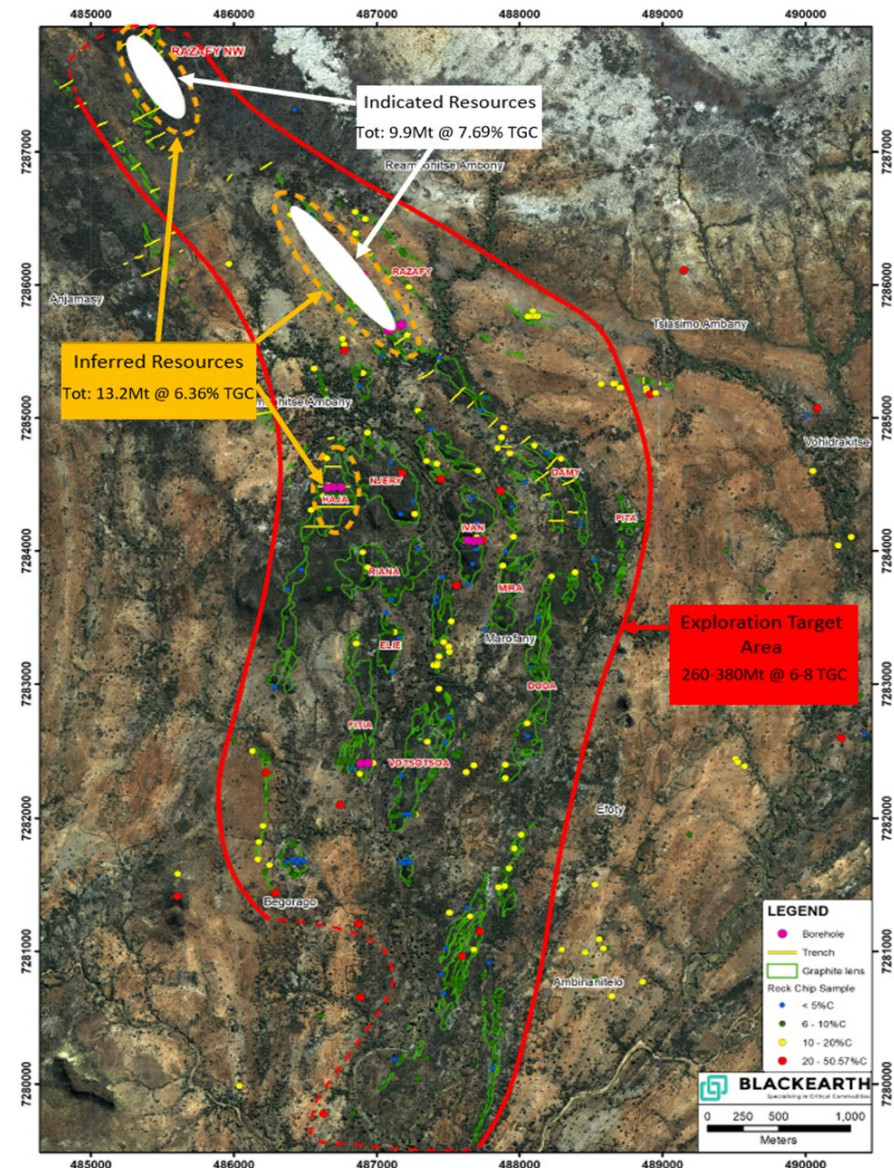
Project Development Schedule



DFS Potential Upside

- Identify further high grade Resources at depth and along strike at Razafy Northwest
- Commence systematic resource development exploration targeting and definition utilising geophysics and drilling, to be coupled with ongoing metallurgical testwork to target coarse graphite production
- Flowsheet development to maximise coarse graphite product
- Continue to investigate opportunities in shared logistics of imports and exports

Ongoing drilling has the potential to increase both NPV and IRR for the Project



Geology & Resource

- Base case to include Razafy & Razafy NW resources
- Current Razafy 3,500m infill program targeting conversion of Indicated to Measured Resources
- Infill drilling program to go deeper (>40m) than the original Resource limit to include material at depth

Tenements

- All plant & infrastructure to now be built on the granted 40 year Mining Lease – 5394
- Application underway for the conversion of remaining Exploration Leases to Mining Leases



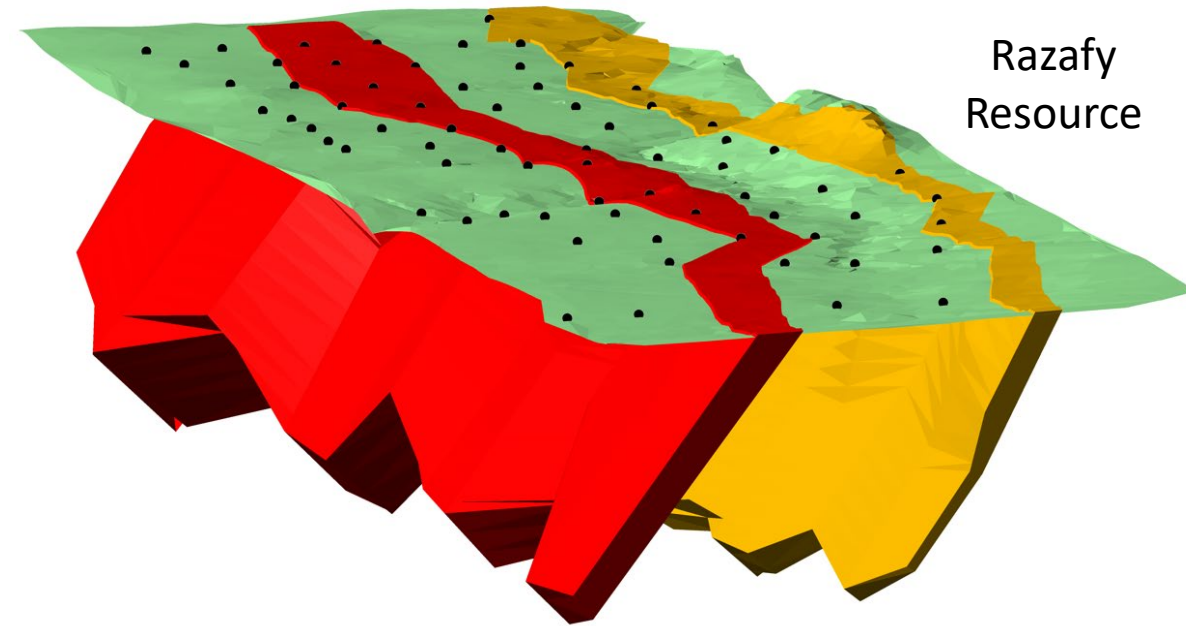
Core cutting from the current infill drill program at Razafy

Mining

- Reserves to be determined from Measured & Indicated resources
- Contract mining using small equipment
- No Project waste dumps required – waste to be used 100% on tailings dam development and subsequent lifts (environmental and cost benefits)
- Geotech drilling due to be completed in January 21

Reserves

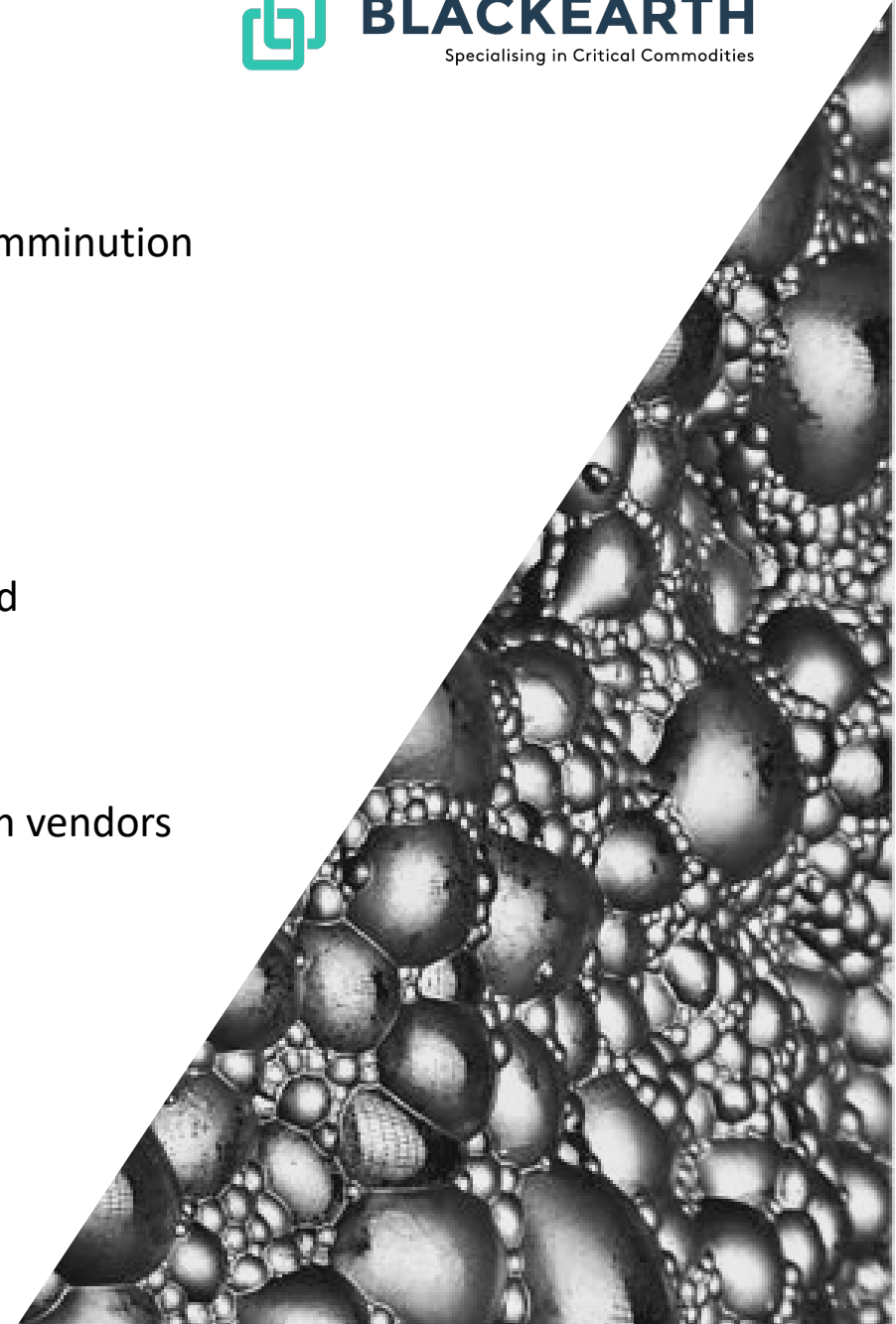
- Resources to be converted to Proven and Probable Reserves as part of the DFS
- Delineation of Proven Reserves to exceed the demands of potential project financiers



- 1) Green = surveyed topographic surface
- 2) Red = projected outcrop of modelled East main lens wireframe
- 3) Orange = projected outcrop of modelled West main lens wireframe
- 4) Black dots = collars pre-2021 used in the 2018 resource estimation

Processing

1. Optimisation test work currently being undertaken, including flotation and comminution variability tests
2. Basis of design is the large scale 60t pilot plant completed in mid-2021
3. Year 1 to 3 throughput, 500,000tpa to then be increased in Year 4 to 1.0Mtpa
4. Focus on maximising the production of coarse flake concentrate product
5. Process Design Criteria (PDC), process mass balance and flowsheets completed
6. P&ID's currently underway
7. Comminution circuit being priced
8. Requests for pricing on thickeners, filters, slurry pumps have been sought from vendors
9. Preliminary layouts completed awaiting final vendor data
10. Tailings test work and preliminary tailings dam design completed



DFS Details

Logistics

- Export via Port d'Ehoala on southeast coast – right of use in place with owners
- Use of this Port for all imports also e.g. fuel, reagents parts not available Madagascar

Personnel

- Only small expat workforce to make use of significant graphite capabilities in-country
- Malagasy technical & trade personnel to be used where available - local / Antananarivo
- Labour – local / regional

Environmental

- Commenced Environmental and Social Impact Assessment (ESIA) as part of final permitting



Recently installed Site Weather Station

Maniry Social and Community Activities



Regular meeting held with local villagers to provide them with regular updates on the progress of the Project



Further food donation made 01 December 2021 to the village of Tsiasimo; also made to the following villages: Reambohitse Ambany, Analazotse and Ambatohera



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