3 November 2022

ASX Announcement

DFS forecasts strong returns for Maniry Project

Study finds Maniry will be financially robust, producing graphite which meets the criteria needed for processing into lithium battery components

Key Points

- **Maniry Definitive Feasibility Study (DFS) confirms the Project will generate compelling financial returns and be technically robust**
- **The findings are based on a flowsheet designed by Independent Technical Experts**
- **The DFS confirms Madagascar is an optimal location for graphite processing and has potential to be the largest producer of graphite outside China**
- **Tests confirm Maniry graphite will meet the requirements for many value-added products, including lithium batteries and other decarbonisation-related products**
- **Detailed Environmental & Social Impact Study (ESIA) program is ongoing with the aim of further enhancing Maniry's viability**

BlackEarth Minerals (ASX: BEM) is pleased to announce the results of the Definitive Feasibility Study (DFS) on its Maniry Graphite Project in Southern Madagascar.

The Study is based on work conducted by highly experienced and independent graphite design and construction engineers, CPC Engineering (CPC), which completed the flow sheet design, advised on a range of mining and infrastructure requirements and assessed the capital requirements for Stage 1 and Stage 2 of the project.

The work undertaken by CPC and other highly experienced advisers, has resulted in the following: -

1. A detailed engineering design of the project including mining, processing and other operations
2. An optimised schedule that provides for selective mining of high-grade product in order to maximise near-term economic outcomes
3. Detailed cost estimates for all components of the operation
4. A detailed operational and development plan for the short term construction of all related infrastructure

DFS Key Financial Outcomes and Assumptions

Financial Metric	Unit	2022 DFS Result
Project Life	(Yrs)	21
CAPEX Stage 1 (1) **(incl contingency)**	(US$ M, real)	79.2
CAPEX Stage 2 (incl contingency)	(US$ M, real)	24.6
Average Sales Price (LOM) (2)	(US$/t)	1,448
Average OPEX (LOM) - C1 (FOB)	(US$/t)	658
Stage 1 Production of Concentrate	(t / pa)	39,000 average
Stage 2 Production of Concentrate (from yr4)	(t / pa)	56,400 average
IRR - before tax	(%, real)	32.65%
NPV - before tax	(US$ M, real)	263
NPV - after tax	(US$ M, real)	204.8
Payback Period	(Yrs)	3.8

(1) Forecast Capex has been classified as a Class 3 estimate with accuracy of ±15% as defined by AACE International

(2) Average LOM Pricing based on forecast data prescribed by Benchmark Minerals Intelligence, Wood McKenzie and UBS

The Maniry Project

Maniry NPV

US$263m
pre tax
US$205m
post tax

Consolidated Project(s) NPV

US$313m
pre tax
US$243m
post tax
Combined Maniry & Metachem (1) pre -tax and post - tax valuations

Maniry Payback Period

3.8 Yrs
Maniry payback (after-tax) from first ore

Maniry Internal Rate of Return (IRR)

33%
pre tax
29%
post tax

Maniry Life of Mine

21 Years
with expansion options

Maniry Life of Mine Revenue

US$1,638m
Gross Revenue
US$ 857m
EBITDA

(1) Based on BEM 50% ownership interest – see ASX Release 21/7/2022

Updates from Previous Scoping Studies

Stage 1 CAPEX has increased from the Scoping Study of November 2021. This is due primarily to:

- Larger process plant equipment incorporated into the initial flowsheet. This is a direct result of a significant increase in grade / product produced in Stage 1 which requires a larger flotation circuit, dryer, screening and bagging equipment. The primary crusher has also been upsized to meet Stage 2 requirements.
- A material increase in equipment and freight costs experienced over the past 12-24 months

The incorporation of larger equipment into Stage 1 has resulted in a fall in Stage 2 CAPEX despite current inflationary conditions. This inclusion will also allow for a quicker and less disruptive construction and commissioning period for Stage 2 expansion.

The additional strategic investment in Stage 1 CAPEX has, overall, enhanced the project's viability and will provide for significant and continual ongoing development and expansion. Overall CAPEX improvements have resulted in an increase to Stage 1 concentrate production output of 30% on average and over 12.5% per annum from Stage 2.

Additionally, substantial resource expansion during 2022 has contributed greatly to the Project's increased life of mine, project returns and long-term project revenue. The Company intends to undertake additional exploration programs within the high-grade Razafy North West area to increase the resource even further with the intention of adding significantly to project economics.

Financial Metric	Unit	2021 Updated Scoping Study	2022 DFS
Project Life	(Yrs)	13.6	21
Average Sales Price (LOM)	(US$/t)	1,258	1,448
Total LOM Net Revenue	(US$ M, real)	899	1,638.7
Total LOM EBITDA	(US$ M, real)	561.2	857.2
Total LOM Net Cash Flows After Tax	(US$ M, real)	388.2	574.6
CAPEX Stage 1	(US$ M, real)	38.3	79.2
CAPEX Stage 2	(US$ M, real)	26.3	24.6
Payback Period	(Yrs)	1.2	3.8

Leading Consultants, Benchmark Mineral Intelligence, estimate that Graphite Production will need to double by 2025 to meet surging demand from EV automakers.

Graphite Pricing - The Dynamic Change in Demand for Graphite

BlackEarth has adopted a weighted basket price of US$1,448 a tonne (FOB) for the life of its operation.

This pricing is based on short term market projections and, conservatively, does not provide for any price increases that may occur as and when the global supply of natural graphite falls, as predicted, well below projected demands.

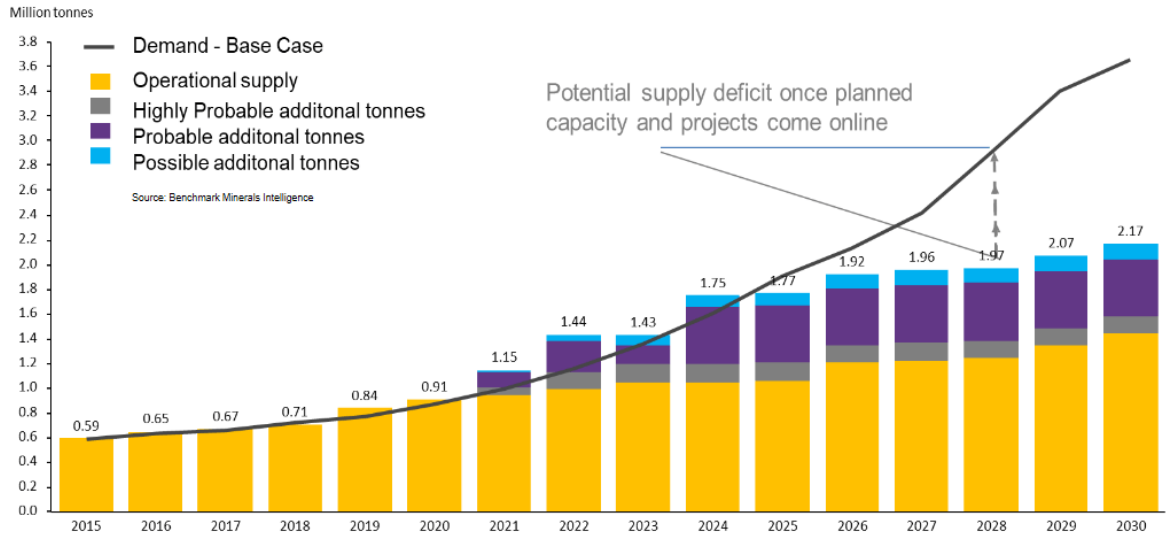
Lithium-ion batteries now account for almost 50% of graphite demand and we believe this will increase as the world continues to embrace the use of Electric Vehicles and clean energy solutions.

At present, almost all battery anode material is made in China from small flake graphite. But as supply reduces in China and local production is insufficient to meet demand, a greater emphasis is being placed on the development of giga-factories in Europe with the European Union and a range of Industry Groups providing substantial fiscal and other support to manufacturing hubs being developed throughout Europe.

Madagascar has a strong history of graphite mining over the last century with consistent development occurring throughout the Country. During the last year, a substantial development adjacent to our Maniry site has progressed and further projects have increased production in the north and north- east of the country. It is projected that Madagascar producers could export well in excess of 300,000 tonnes of concentrate in 2023, which would make it the largest exporter of concentrate outside China.

Madagascar also enjoys the strategic advantages of very competitive labour rates and mining laws, and is well positioned geographically with logistics and freight costs materially more appealing than other parts of the world.

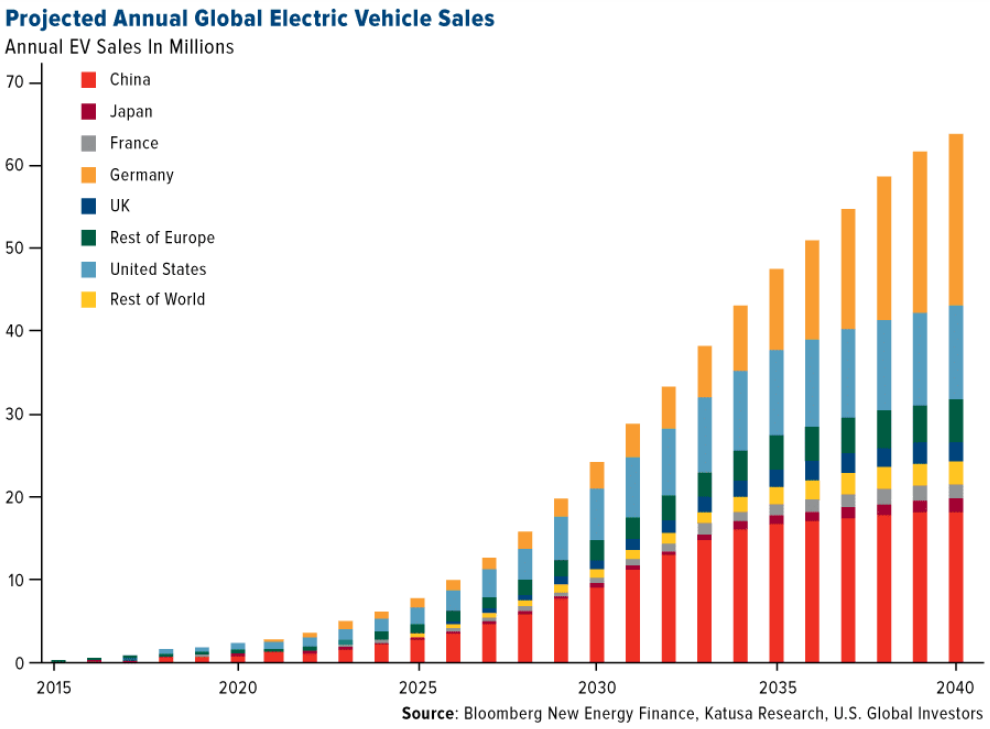
BlackEarth believes Madagascar is uniquely positioned to lead global supply of ethically produced graphite to meet world demand.



Source – Roskills

Graphite Demand from Electric Vehicle Manufacturers Forecast to Surge

"Benchmark Mineral Intelligence estimates that the major auto makers have committed over US$300 billion to developing EVs and that there are over **200 LiB mega-factories in the pipeline**. These factories represent over 3,000 GWh of LiB production capacity which in turn equates to over 1,000,000 tonnes of new annual graphite demand by 2025. In short, graphite production has to more than double quickly to meet this demand. As a result, the outlook for graphite prices is very bright and the need for secure western sources of supply is critical".



BlackEarth Managing Director Tom Revy said: *"The DFS confirms that Maniry is on track to be a world-class graphite project which will generate strong financial returns underpinned by an exceptional resource and robust processing route.*

"The study supports our view that Maniry will be perfectly placed to capitalise on the enormous opportunity to supply graphite for use in lithium batteries.

"The graphite supply shortfall is widely forecast to grow rapidly from next year onwards, increasing prices and profit margins for producers in the process.

"Demand for non-Chinese graphite is expected to be even stronger as battery manufacturers and EV makers look to diversify their sources of supply.

"Maniry's location in Madagascar is also an important strategic advantage. The Government there is highly supportive and the country's production and export of graphite is projected to expand rapidly over the next few years.

"This DFS provides more firm evidence that we have all the ingredients required to take full advantage of what is rapidly shaping up to be a boom time for graphite producers".

This release has been authorised by the Company's Disclosure Committee

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BLACKEARTH
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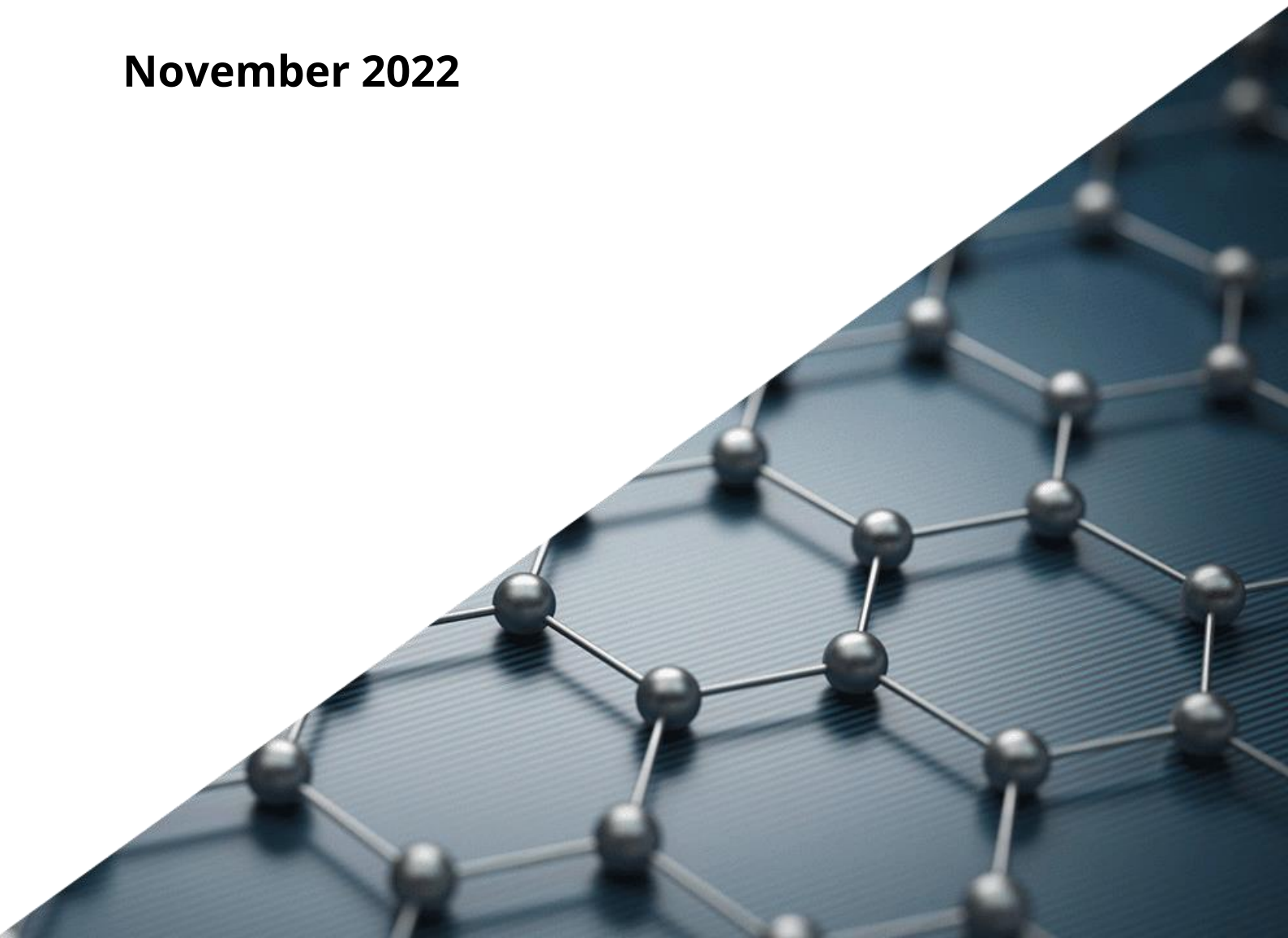
CPC
PROJECT DESIGN

BlackEarth Minerals NL

Maniry Graphite Project

Definitive Feasibility Study

November 2022



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External Study Consultants

Project Management	Inmett Projects
Mineral Resource Estimate (Razafy / Razafy NorthWest)	Snowden Optiro
Mine Planning and Pit Optimisation	Mining Focus Consultants Pty Ltd
Geotechnical Investigation & Analyses	WSP Golder
Metallurgy & Processing	CPC Project Design
Hydro(geo)logy & Tailings Storage Facility	WSP Golder
General Project Infrastructure	WSP Golder & CPC Project Design
Legal Tenure	Lexel, Juridique & Fiscal
Financial Modelling	Modus Capital

Contents

Table of Tables

Table of Figures

1. Executive Summary

1.1 Introduction

BlackEarth Minerals NL ("BlackEarth" or "Company") is an Australian-based graphite development company, listed on the Australian Securities Exchange (ASX:BEM) with key graphite projects located in southern Madagascar, including the Maniry Graphite and Ianapera Graphite Projects.

This Definitive Feasibility Study ("DFS") relates to the development of the 100%-owned Maniry Graphite Project ("Maniry" or "the Project"). The Company has adopted the guidelines of the Equator Principles in the design, and ultimately the construction and operation of its Maniry Project.

The Project is in southwest Madagascar approximately 180 km south-east of Toliara, the capital of the Toliara Region and 225 km north-west from Port d'Ehoala (Fort Dauphin) - Tolanaro. The Project area is contained within approximately 20 square kilometres (km^2) of granted exploration and mining tenements.

BlackEarth completed a Scoping Study on the Project in January 2019 and, following completion of the DFS, is now moving towards securing project financing and progressing into construction and operations with commissioning targeted in 2024.

The DFS proposes the Maniry Project comprises the staged development of open pit mines, processing plant and associated infrastructure including water supply, power generation, accommodation village and tailings storage facility. The plant will be initially designed to process 0.5 Mtpa and will be expanded during its third year of production to process a total of 1.0 Mtpa of ore at the commencement of year 4.

Pit optimisation and mining schedules have been completed with mining expected to be undertaken by conventional open cut mining techniques, on a contract basis to deliver 0.5 Mtpa of ore increasing to 1.0 Mtpa of ore in year 4. The estimated life of mine (LOM) diluted mine ore grade is 6.44% total graphitic carbon ("TGC") at a waste to ore ratio of 2.1:1.

The process utilised for graphite recovery will be based on well-proven processes; crushing, grinding and flotation. A product grade of 95% TGC (average) at 90% recovery will be filtered, dried, screened and bagged ready for transport to market. Tailings will be stored in a tailings dam on the mining lease. The bagged product will be transported to the Port at Toliara located on the west coast of Madagascar.

The financial analysis indicates a net present value ("NPV") @8% post tax, ungeared of US$205M for the base case production profile and price assumptions, which provides for an internal rate of return ("IRR") of 29% (post tax, ungeared).

The financial performance of the project is summarised in Table 1

Table 1: Maniry Project Financial Performance Summary

Financial Performance Summary	Unit	LOM
Life of Mine	Years	21
Total LOM Gross Revenue	US$M, real	1,638
Graphite Basket Price (LOM)	US$/t	1,448
Total Project Development Capital Costs – Stage 1	US$M	79.2
Total Project Development Capital Costs – Stage 2	US$M	24.6
FOB Cost per Tonne – Concentrate (LOM)	US$/t	657
LOM Average Annual EBITDA (after year 1)	US$M, real	39
Project NPV @8.0% - Pre Tax, Ungeared	US$M, real	263
Project NPV @8.0% - Post Tax, Ungeared	US$M, real	205
Project IRR – Pre Tax, Ungeared	%, Nominal	33
Project IRR - Post Tax, Ungeared	%, Nominal	29
Payback (Post Tax) from first ore	Years	3.8

The financial analysis indicates the project is financially viable and results in strong financial returns, with a short payback period of 3.8 years from first ore processed. The strong financial returns under the base case assumptions provide a positive risk versus reward assessment.

Figure 1: Benchmark Minerals Intelligence predicts another 97 new graphite mines need to be developed over the next 13 years in order to meet market demand

1.2 Madagascar

1.2.1 Overview

Madagascar is an island country in the Indian Ocean, approximately 400 kilometres off the coast of East Africa, across the Mozambique Channel. It is one of the largest island countries in the world and has a population of approximately 29 million people.

Madagascar has a long history of mining graphite, chromite, gold and precious stones. In the last 15 years, 2 major mining projects have been developed. Ambatovy is a major mining and refining nickel and cobalt project in Madagascar. At a cost of US$8 billion, it is the largest-ever foreign investment in Madagascar. In 2008, Rio Tinto developed the QIT Madagascar Minerals JV (QMM) mineral sands project in the Anosy region of south-eastern Madagascar for US$930M. The project produces ilmenite which is a major source of titanium. QMM is a joint venture between Rio Tinto (80%) and the government of Madagascar (20%).

Madagascar provides explorers and mine developers a number of advantages over other jurisdictions especially in regards graphite:

- The country has a long history in graphite mining. Madagascar has been successfully mining and exporting graphite for over 100 years. Known for its high-quality natural graphite, Madagascar is currently one of the major global producers of graphite; currently third after China and Mozambique.
- One of the largest graphite reserves in the world (top 5)
- Madagascar allows for up to 100% foreign ownership in mining projects.
- Company tax rate is 20% and a royalty of 2% is applied to graphite sales
- An available work force with experience in graphite geology, mining and metallurgy
- Work is currently under way on the development and expansion of graphite projects which could result in Madagascar becoming the largest producer of graphite, outside of China, in 2023

1.2.2 Political Overview

Following decolonization, Madagascar gained full independence from France in 1960.

Under the leadership of President Philibert Tsiranana, Madagascar's First Republic (1960–1972) was established as a democratic system modeled on that of France.

Today, the politics of Madagascar is based on a framework of a semi-presidential representative democratic republic, whereby the President of Madagascar is the head of state and the Prime Minister of Madagascar (appointed by the President), is head of the government, overseeing a multi-party system. Executive power is exercised by the Government. Legislative power is vested in both the Government and the Senate and the National Assembly. The Judiciary is independent of the executive and the legislature.

Presidential elections were held in Madagascar on 7 November 2018. As no candidate received a majority of the vote, a second round involving the top two candidates, Andry Rajoelina and Marc Ravalomanana, was held on 19 December 2018. On 27 December 2018 Rajoelina was announced as the winner with 56% of the vote. The president is elected for a 5-year term, renewable twice.

Following the 2018 Presidential elections, the Southern African Development Community ("SADC") and the European Union's monitoring mission to the Indian Ocean island-nation said no major anomalies took place during vote.

The November 2018 election outcome marked the first democratic handover of political power in the country's history. Andry Rajoelina won 55.6% of the votes and became the President of the Republic of Madagascar, leading the country alongside his Prime Minister, Christian Ntsay, and 24 ministers. The legislative elections held on May 27, 2019 delivered a massive victory to President Andry Rajoelina's political party, which won 84 of the National Assembly's 151 seats.

Next Presidential elections are due late 2023, while the Legislative elections will be held in 2024. Following the conclusions of the 9th political dialogue between Madagascar and the European Union held on 19 November, 2021, Brussels has agreed to send several electoral experts to monitor the preparations for Madagascar's next Presidential election in 2023

1.3 Project Background

1.3.1 Project Location

The Project is located in the southern part of Madagascar, some 180 km southeast of the country's regional capital (and major port) of Toliara. The main regional town supporting the Project area, is Ampanihy, located some 23km to the south of the Project area.

Figure 2: Project Location

The Maniry area falls within the arid, semi-desert southern zone of Madagascar. The climate is considered moderate to hot, with elevated temperatures year-round peaking in the hot season at an average of over 30°C. The climate is dominated by southeast trade winds originating in the Indian

Ocean anticyclone, a centre of high atmospheric pressure that seasonally changes its position over the ocean. Annual rainfall in the area is typically low, ranging from 30 cm to 50 cm.

The Project area is covered by sparse vegetation. Grass cover is widespread and trees widely spaced overall, with increased populations focused on drainage lines and streambeds.

The area includes a number of small, isolated villages and family compounds supported by the larger township of Ampanihy. Travel is generally limited to communal transport ('Taxi Brus' or 'bush taxi'), zebu (cattle) carts, bicycles and walking.

Farming practices are largely subsistence-based, with some artisanal mining activity for semi-precious gemstones.

1.3.2 Site Access

The Maniry Graphite Project is located in southwest Madagascar approximately 180 km south-east of Toliara, the capital of the Toliara Region and 225 km north-west from Port d'Ehoala (Figure2), Tolanaro.

Access to Ampanihy from Toliara is initially via a 70-km paved road to the village of Andranovory. From Andranovory, secondary all-season roads (RN10) continue south through the major towns of Betioky and Ejeda for a distance of 200 km to access the large regional township of Ampanihy. This route is used by heavy transport and general traffic, and access, at the height of the rainy season, may be restricted.

Alternatively, access from Tolanaro to the Maniry Project can also be via the arterial sealed road Route R13 to Ambovomby and then via unsealed road through to Ampanihy (RN10), a total of approximately 300 km.

The full length of the RN10, has recently been agreed to be upgraded to a fully sealed major road – a jointly funded project involving the World Bank and the Government of Madagascar. The estimated US$400M will finance the rehabilitation and paving of the 400km stretch of road. Work is planned to commence in Q1, 2023.

Southern Madagascar is accessed by daily commercial flights (Air Madagascar, approximately 1 hour flight) between Antananarivo and Toliara. Ampanihy is also supported by a local airstrip and fuel supply and is a centre for limited government administration services and supplies.

1.3.3 Climate and Climate Impact Management

The Maniry Project area falls within the arid, semi-desert southern zone of Madagascar. The climate is considered moderate to hot, with elevated temperatures year-round peaking in the hot season at an average of over 30°C, sometimes exceeding 40°C (refer Figure 3). The climate is dominated by southeast trade winds originating in the Indian Ocean anticyclone, a centre of high atmospheric pressure that seasonally changes its position over the ocean.

The Project area is subject to two distinct seasons: a hot, rainy season from December to March, and a cooler dry season from April to November. Annual rainfall in the area is typically low, ranging from 30 centimetres ("cm") to 50 cm. The wet season is typified by short-term, large-volume rainfall.

Dengue and malaria are endemic to the region; however, the use of physical precautions and medications can manage this effectively.

BlackEarth recognises the need to identify and integrate climate change and energy issues into the planning, development and ultimately operation of its Maniry Graphite Project. As part of the Maniry

Project DFS, the Company has identified a number of potential physical and / or transitional risks that may affect the Project as a result of changing climatic conditions including the impact of cyclones, some of which have extended further south in the country than traditionally experienced.

The decrease in rainfall in the area in recent years, has and will continue to have an impact on the surrounding villages. The Company has undertaken significant groundwater testing (including water bore pump testing) and climate review as part of the DFS and has determined that the Project can commence operations without impacting local water supply sources. Further work will be undertaken (pre and post commencement of operations) to minimize any potential long-term impacts in the immediate area, including any associated with future Project expansions.

As part of the completed DFS, fire protection measures are planned to be put in place as part of the development and operational phases which are also planned to be used to protect the general area in case of bush fires that may occur as a result of longer, hotter and drier conditions in the area.

Project specific and local "general purpose" infrastructure as part of the DFS will reflect current and predicted weather conditions, to ensure all year-round access can be maintained.

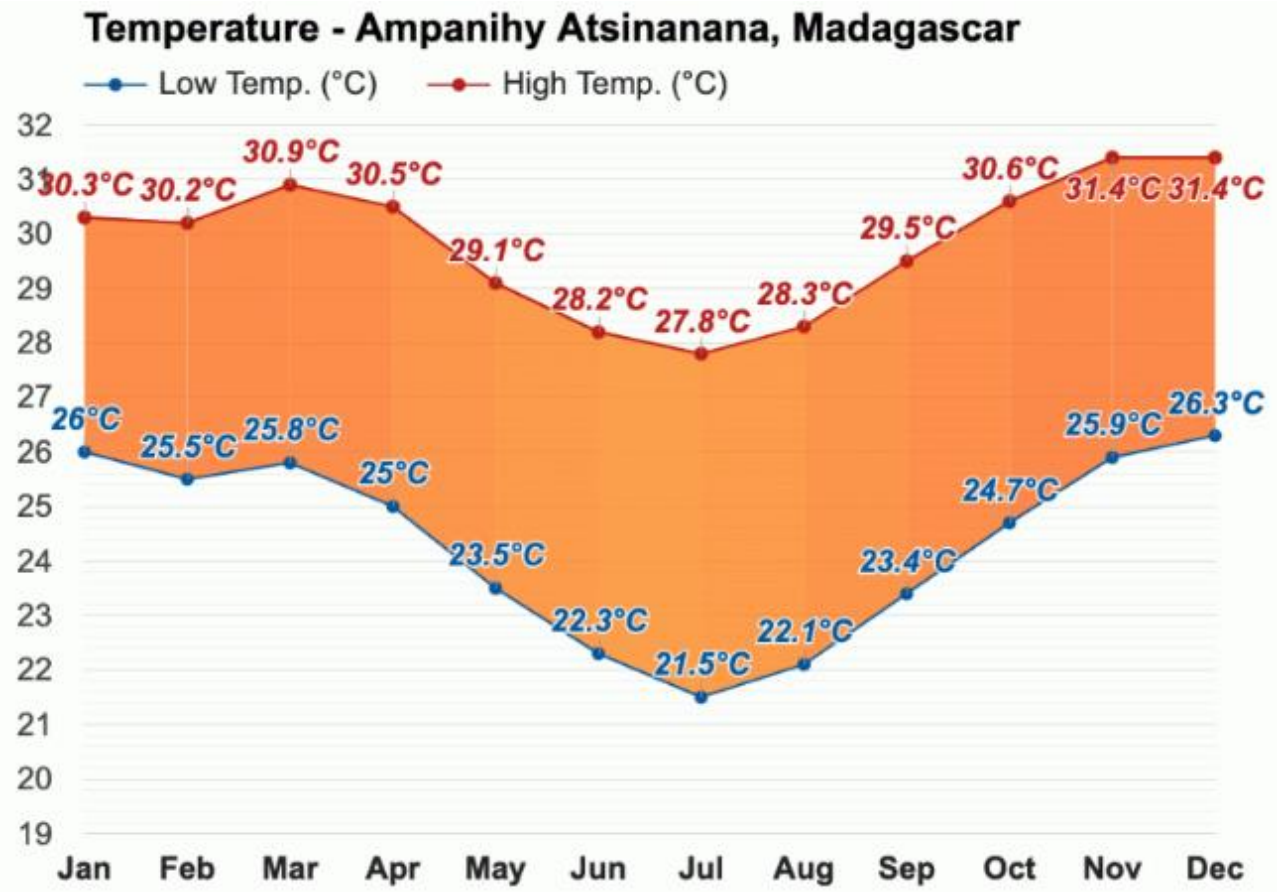


Figure 3: Temperature - Ampanihy Atsinanana, Madagascar

(Source: https://www.weather-atlas.com/en/madagascar/ampanihy-atsinanana-climate)

1.3.4 Site Topography and Drainage

The topography of the site is generally characterised by gentle gradients sloping towards the west with natural ground level at approximately 300 meters above mean sea level (masl). According to WSP Golder, the site is not characterised by any permanent drainage channels nor surface water bodies. Rock outcrops and large surface boulders are evident across the site.

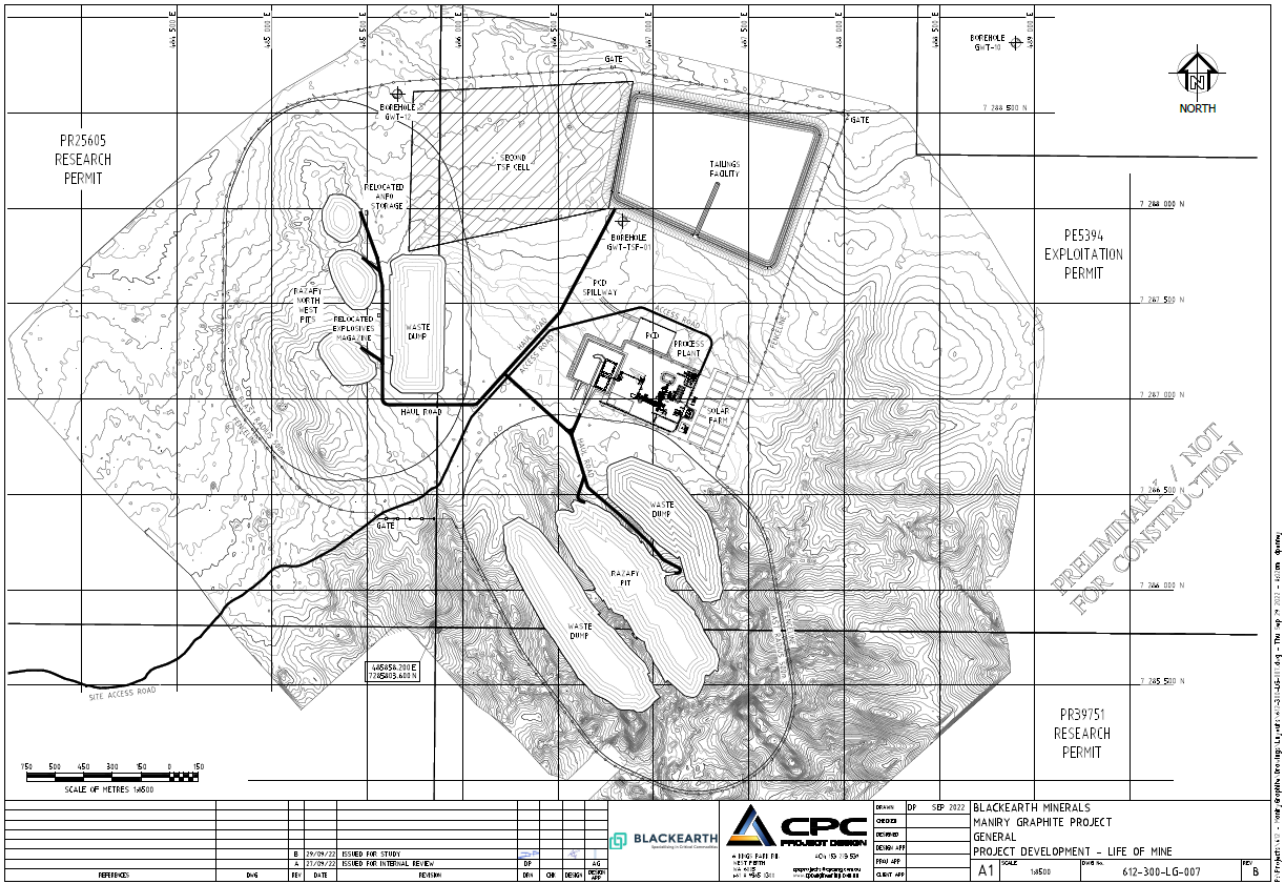


Figure 4: Topography of the Maniry Area

A surface water management plan was developed for the Maniry Graphite project site. The system is comprised of diversion channels, PCDs, sumps and a combination of hydraulic structures to control flooding and ensure compliance with statutory standards. The analysis was event-based and focused on flood peaks, hydrologic and hydraulic calculations to effectively drain the site for the 1 in 50 year 24-hour storm duration and the 1 in 100 year 24-hour storm duration for sensitive areas.

The key environmental features that will be impacted by the establishment of the Razafy Pit are the watercourses that occur within the pit area as well as the blast radius of the pit. The main drainage features currently drains directly through the pit footprint in a north to south direction.

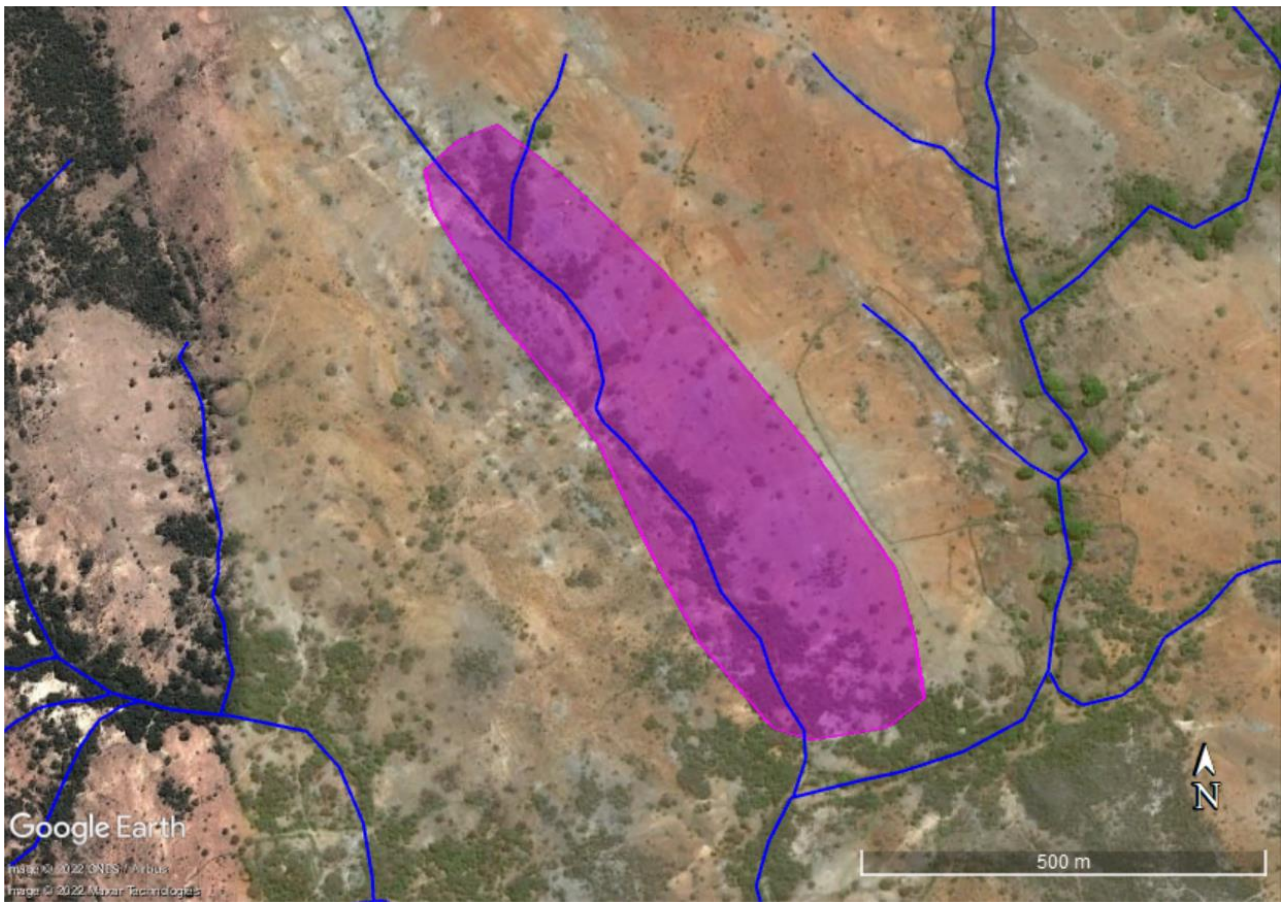


Figure 5: Location and extent of the watercourse associated with the Razafy Pit

The location of the pit and waste rock dumps has necessitated the need for storm water collection ponds to alleviate any potential flooding of the Project area. These ponds will require earthworks to construct sufficient earthen embankments as part of the Project development phase. Further investigation will ensure sufficient competent material for forming the embankments is available on-site. It is noted that these watercourses are all seasonal in nature and that will only have water for short periods of time following rainfall events.

1.4 Ownership and Leases

As part of the Mainry DFS, an independent legal review of the ownership and tenement position was undertaken by Lexel, Juridique & Fiscal (“Lexel”), the leading and largest business law firm in Madagascar. This review was completed in July 2022.

In 2018, the Company acquired the entire share capital of Madagascar Graphite Limited (“Mauritius”), a company that holds the entire share capital of the company BlackEarth Minerals Madagascar SARL (formerly known as Mada Aust SARL), a company under Malagasy law registered under the number RCS 2004 B 00494. This Madagascan company holds (100%) the exploration and exploitation Tenements (“Tenements”), for the purposes of carrying out the feasibility study for the graphite mining project in southern Madagascar known as the "Maniry Project" for which the Company is responsible.

Lexel sighted current copies of the Maniry Exploration (Research) Tenements PR3432, PR25605, PR25606, PR39750 and PR39751. The grant of an Exploration Tenement under the Mining Code lies with the Ministry of Mines (article 28 e. of the Application Decree of the Mining Code).

The holder of an Exploration Tenement has the exclusive right of prospecting for and exploring the mineral resources indicated in its Tenement (article 33 of the Mining Code). Article 33 of the Mining Code states that the duration of an exploration Tenement is 5 years with the possibility of renewal for 2 consecutive terms of 3 years each.

Lexel also reviewed a copy of the exploitation Tenements, PE5394.The grant of an Exploitation Tenement under the Mining Code lies with the Ministry of Mines (article 28 e. of the Application Decree of the Mining Code).

The Exploitation Tenement confers to its holder, the exclusive right to conduct prospecting, exploration, extraction and commercial exploitation of mineral resources designated therein for the authorised term (article 37 of the Mining Code). Article 37 of the Mining Code provides that the duration of an exploitation Tenement is 40 years with the possibility of renewal for one or several consecutive terms of 20 years each. Once a mining Tenement has been granted, the land rights and the mining rights attached to the tenement cannot be claimed or challenged by a third party.

BlackEarth holds the exclusive right for a defined group of industrial minerals within the permits listed above; this includes graphite.

Lexel key findings were:

- The Tenements are validly granted and are in good standing; and
- The declarations of receipt issued by the Ministry of Finance and the payment orders issued by the BCMM indicate that the mining administration fees, with respect to the Tenements under review, have been duly paid every year since year 2017 to year 2022, except for the 2022 mining administration fees corresponding to Exploitation Tenement PE5394 which are due to be paid by December 2022.

BlackEarth has applied for conversion of portions of the Exploration Tenements 25605 and 39751, from exploration licenses (PR) to Exploitation licenses (PE). The Company plans to have these converted prior to commencement of construction of the Project.

Table 2: Licenses Granted to BlackEarth Minerals SARL

Licence Type	Licence Number	Area (km^2)	BlackEarth Ownership (%)
Exploitation	PE5394	18.75	100%
Exploration	PR3432	18.75	100%
Exploration	PR25605	31.25	100%
Exploration	PR25606	6.25	100%
Exploration	PR39750	6.25	100%
Exploration	PR39751	62.50	100%
Total		**143.75**	

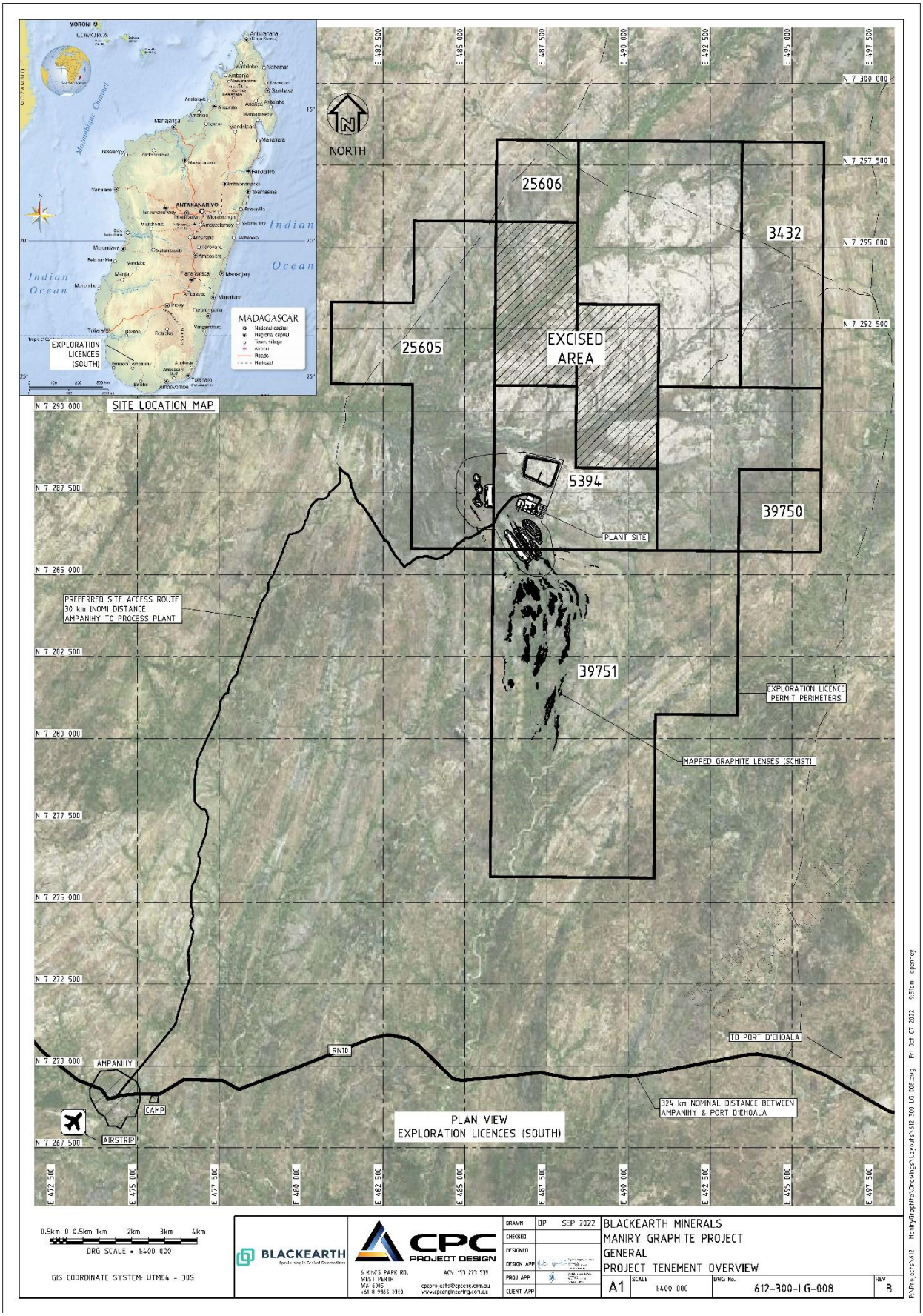


Figure 6: Current Maniry Graphite Tenement Position

1.5 Geology and Mineral Resources

1.5.1 Regional Geology

The Maniry graphite deposits are situated in southern Madagascar within metasediments of the Graphite Sequence, just southwest of the Saririaky anorthosite massif (Ashwal et al., 1998). The figure below shows the regional geology map for distribution of the anorthosite massifs and surrounding metamorphic sequences.

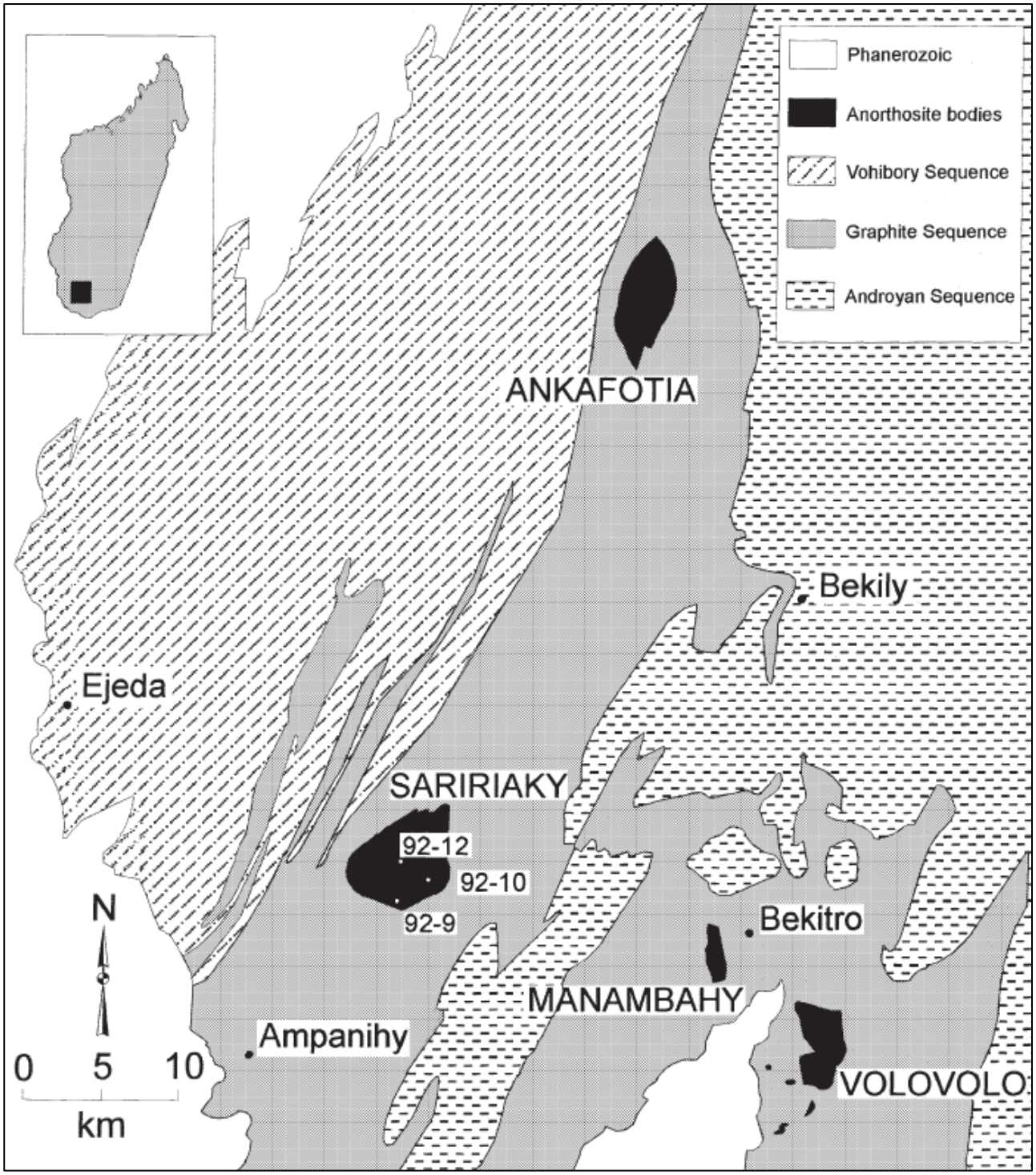


Figure 7: Regional geology map highlighting the Graphite Sequence and anorthosite bodies

The Maniry graphite deposits (Razafy and Razafy NorthWest) are hosted by the Graphite Sequence comprises graphite schist, marble, quartzite, amphibolites and leucogneiss. The leucogneisses are also described as leptynites and commonly contain garnets.

The Vohibory Sequence to the west of the Graphite Sequence consists of granitoid gneisses, extensive marbles, amphibolites, pyroxenites, quartzites and occasional serpentinite pods and lenses.

The Androyan Sequence to the east consists of granitoid gneisses, migmatites, charnockites, quartzites and subordinate marbles.

The Vohibory Sequence is estimated to have reached metamorphic temperatures of 750-800^{o}C near the amphibolite-granulite facies transition, while the adjacent Graphite Sequence reached granulite facies conditions of around 710-890^{o}C.

The anorthosite bodies are estimated to have crystallised at about 660 ± 60 Ma and are mainly coarse-grained anorthosites and leuconorites, with minor norites and ferrogabbros near the margins.

Two extensive N-S trending ductile shear zones have been mapped up to 250 km long and tens of km wide. The Ampanihy shear zone is near the boundary of the Vohibory and Graphite Sequences, while the Vorokafotra shear zone is about 60 km to the east with both the Graphite and Androyan Sequences.

1.5.2 Local Geology

Disseminated graphite flakes occur in two main layers between about 20 and 40 m apparent thickness hosted within granulitic gneisses. The mineralised zones strike NNW and dip at ~45-75° to the ENE and have been traced by mapping, trenching and drilling along approximately 1,300 m strike length.

The graphitic and waste rocks are weathered to varying depths across the deposit and may be described as oxidised, transitional or fresh. The oxidised domain is characterised by the oxidation of sulphide minerals, e.g. pyrite, and by the formation of secondary sulphate minerals such as jarosite and hydrous clay minerals such as goethite, smectite and kaolinite.

The central part of the western graphite zone was intruded by granitic material which has displaced or stoped away the graphite mineralisation. Marble layers are noted in the hanging wall of the east graphite zone; some of these were originally logged as granite with xenoliths but were later verified to be calcium carbonate with ‘xenoliths’ rich in clinopyroxene. Marble may be useful for neutralising any acid forming (sulphide-bearing) rocks or waste generated during future mining activities. A garnetiferous marker layer has been noted along the base of the eastern graphite zone. The graphite schists and gneisses are generally underlain by a monotonous sequence of grey granulite and gneiss lithologies.

Pale green alteration is noted on some drillholes and may indicate the formation of epidote along fault zones.

The general geological continuity along strike is verified by the drilling pattern and the apparently continuous distribution of graphitic and host rock and by shallow trenches that verified presence of graphite mineralisation at surface, extending up-dip from drilled mineralisation.

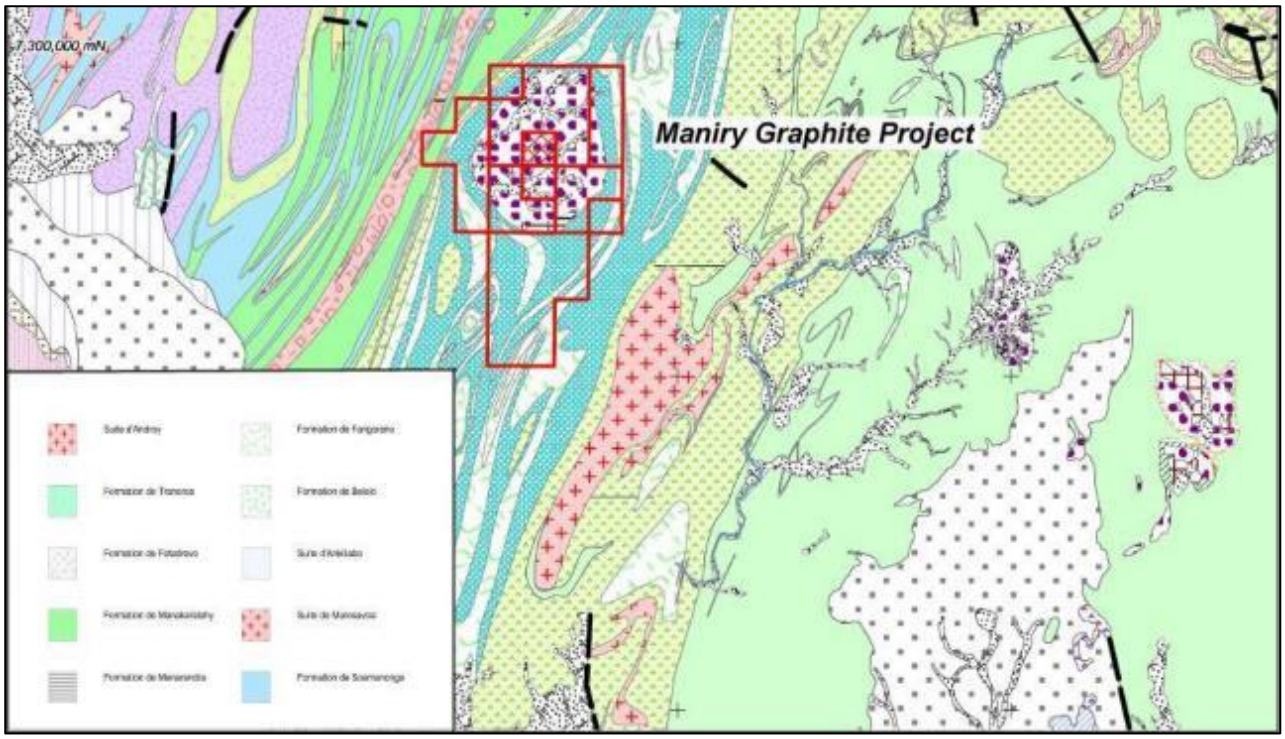


Figure 8: Maniry Project – Ampanihy 100,000 scale geology map

1.5.3 Mineral Resource – Razafy

The Razafy Mineral Resource estimate reported at a 3% total graphitic carbon (TGC) cut-off as of July 2022 is as follows (Refer ASX Release dated: 26 July 2022):

- Indicated Mineral Resource: 13.6Mt @ 6.5% TGC
- Inferred Mineral Resource: 12.1Mt @ 5.9% TGC

Total Indicated + Inferred Mineral Resource 25.7Mt @ 6.2% TGC.

The Razafy graphite deposit is situated within metasediments known as the Graphite Sequence, just southwest of the Saririaky anorthosite massif. The Graphite Sequence comprises graphite schist, marble, quartzite, amphibolites and leucogneiss and was metamorphosed at granulite facies conditions of around 700-900°C. It is currently thought that the high metamorphic grade (upper-amphibolite to granulite facies) of the Razafy deposit is potentially favourable for the development of coarse graphite flakes.

Disseminated graphite flakes occur in two main layers between about 20 and 40 m apparent thickness hosted within granulitic gneisses. The host rocks of the graphite mineralisation are generally quartzo-feldspathic. The mineralised zones strike NNW and dip at ~45-75° to the ENE and have been traced by mapping, trenching and drilling along approximately 1,300 m strike length.

Graphite-bearing and waste rocks are weathered to varying depths across the Razafy deposit and have been described as weathered (oxidised and transitional) or fresh. Pyrite was noted at depths greater than about 25m down-hole. Kaolinisation of alumino-silicate minerals is widespread and is noted from both the weathered and fresh domains.

The central part of the western graphite zone was intruded by granitic material which has displaced or stoped out the graphite mineralisation.

The Razafy deposit has been sampled using diamond core drilling over several drilling campaigns, with drilling initially completed on a nominal 100 m by 30 m grid. Infill drilling has been completed

to a grid of roughly 50 m by 30 m roughly covering the central half of the Razafy Main deposit. A total of 131 diamond holes for 8,471.9 m has been drilled and assayed by means of a standard induction furnace infrared absorption method for graphite content. A total of 4,339.45 m of diamond core from 128 holes lie within the interpreted mineralisation zones

The Mineral Resource is estimated within constraining wireframe solids using a combination of logged geological boundaries and assay data using a nominal 3% TGC lower grade cut-off. The Mineral Resource is quoted from all classified blocks above 3% TGC within these wireframe solids.

Grade estimation was completed using ordinary kriging, with an inverse distance weighting to the power of two validation check estimate concurrently completed.

The Mineral Resource is classified as Inferred and Indicated, accounting for the level of geological understanding of the deposit, quality of samples, density data, drillhole spacing and sampling, analytical and metallurgical processes. Material classified as Inferred was considered sufficiently informed by geological and sampling data to imply geological, grade and quality continuity between data points. Material classified as Indicated was considered sufficiently informed by geological and sampling data to assume geological, grade and quality continuity between data points.

1.5.4 Mineral Resource – Razafy NorthWest

The Razafy NorthWest (NW) Mineral Resource estimate reported at 3% TGC cut-off as of August 2022 is as follows (Refer ASX Release dated: 9 August 2022):

- Indicated Mineral Resource: 3.1Mt @ 8.6% TGC
- Inferred Mineral Resource: 2.2Mt @ 8.5% TGC

Total Indicated + Inferred Mineral Resource 5.3Mt @ 8.5% TGC

Like the Razafy deposit, the Razafy NW graphite deposit is situated within metasediments known as the Graphite Sequence, just southwest of the Saririaky anorthosite massif. The Graphite Sequence comprises the same materials as Razafy and was metamorphosed also at upper amphibolite to granulite facies conditions of around 700-900°C. It is currently thought that the high metamorphic grade (upper-amphibolite to granulite facies) of the Razafy deposit is potentially favourable for the development of coarse graphite flakes.

Disseminated graphite flakes occur in four individual domains (zones) each consisting of several graphitic layers between about 5 and 40 m apparent thickness hosted within granulitic gneisses. The graphitic layers are separated by waste rock that may contain background values of up to about 3% TGC. The graphite mineralisation is generally within quartzo-feldspathic rocks and from preliminary thin section studies contain garnets and trace amounts of sillimanite. The individual mineralised zones extend about 250-350 m along strike to the NNW and dip at approximately ~60-75° to the ENE and have been traced by trenching and drilling along a total of approximately 1,100 m strike length

Graphite-bearing and waste rocks are weathered to varying depths and like the Razafy deposits have been described as weathered (oxidised and transitional) or fresh.

The Razafy NW deposit has been sampled using diamond core drilling over two drilling campaigns, with drilling initially completed on a nominal 100 m by 30 m grid. Infill and extensional drilling have been completed to a grid of roughly 50 m by 30 m over all, but the southernmost pod. A total of 50 diamond holes for 2,643.3 m have been drilled with 2,469.6 m assayed by means of a standard

induction furnace infrared absorption method for graphite content. A total of 1,269.4 m of diamond core from 49 holes lie within the interpreted mineralisation zones.

The Mineral Resource is estimated within constraining wireframe solids interpreted using a combination of logged geological boundaries and assay data using a nominal 3% TGC lower grade cut-off. A weathering surface delineating the interpreted top of fresh rock ("TOFR") was interpreted based on drill hole geological logging, core photography and chemical analysis of sulphur values. The Mineral Resource is quoted from all classified blocks above 3% TGC within the interpreted wireframe solids.

Grade estimation was completed using ordinary kriging, with an inverse distance weighting to the power of two validation check estimate concurrently completed.

The Mineral Resource was classified as Inferred and Indicated, accounting for the level of geological understanding of the deposit, quality of samples, density data, drillhole spacing and sampling, analytical and metallurgical processes. Material classified as Inferred was considered sufficiently informed by geological and sampling data to imply geological, grade and quality continuity between data points. Material classified as Indicated was considered sufficiently informed by geological and sampling data to assume geological, grade and quality continuity between data points.

1.5.5 Mineral Resource – Haja

The Haja Mineral Resource estimate reported at a 5% TGC cut-off as of August 2022 is as follows (Refer ASX Release dated: 27 December 2018):

- Inferred Mineral Resource: 9.0Mt @ 5.8% TGC

No material from the Haja deposit has been included as part of the Maniry Graphite Project DFS. Further work may be undertaken on the Haja deposit in the future as part of expanding the Project's Mineral Resources inventory.

1.5.6 Mineral Resources – Total

The total Mineral Resource estimate reported at the cut-offs stated above, as at August 2022 is as follows (Refer ASX Release dated: 9 August 2022):

- Indicated Mineral Resource: 16.7Mt @ 6.9% TGC
- Inferred Mineral Resource: 23.3Mt @ 6.1% TGC

Total Maniry Indicated + Inferred Mineral Resource 40.0Mt @ 6.5% TGC.

Table 3: Global Mineral Resource Inventory Estimate as at August 2022

Area	Classification	Tonnes (Mt)	Total Graphitic Carbon (%TGC)	Contained Graphite (tonnes)
Razafy	Indicated	13.6Mt	6.5%	890,000
	Inferred	12.1Mt	5.9%	720,000
Razafy NW	Indicated	3.1Mt	8.6%	266,000
	Inferred	2.2Mt	8.5%	186,000
Haja	Indicated	-	-	-
	Inferred	9.0Mt	5.8%	522,000
TOTAL	Indicated	16.7Mt	6.9%	1,156,000
	Inferred	23.3Mt	6.1%	1,428,000

1.6 Mining

The Project comprises two main deposits – Razafy and Razafy Northwest (NW), broadly 1.5km apart, spread out over approximately 2km^2. An initial 0.5Mtpa process plant will be located about 0.5km north of Razafy, to be expanded to 1.0Mtpa in Year 3, ready for milling 1.0Mtpa from Year 4 onwards – staged development.

It is envisaged that two waste dumps will be constructed at Razafy, a smaller one to the east and a larger one to the west of the pit. A single waste dumps will be constructed at Razafy NW.

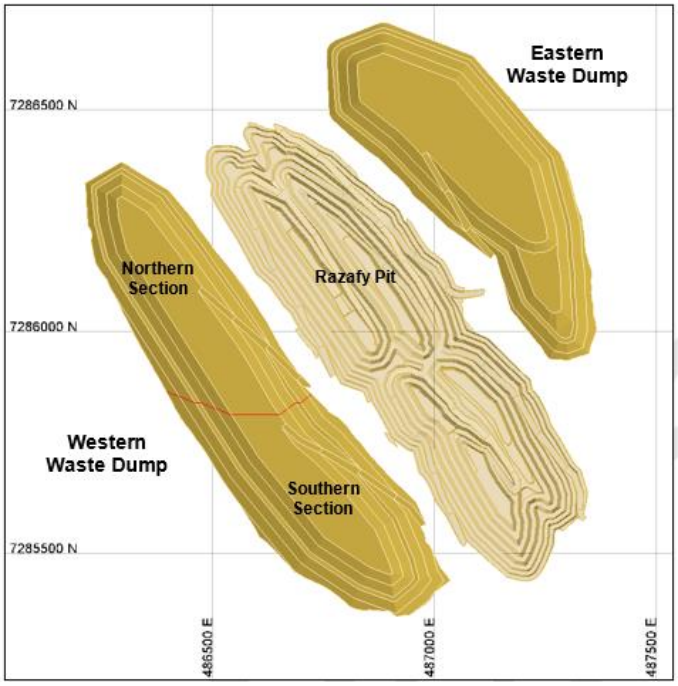


Figure 9: Overview – Razafy NW

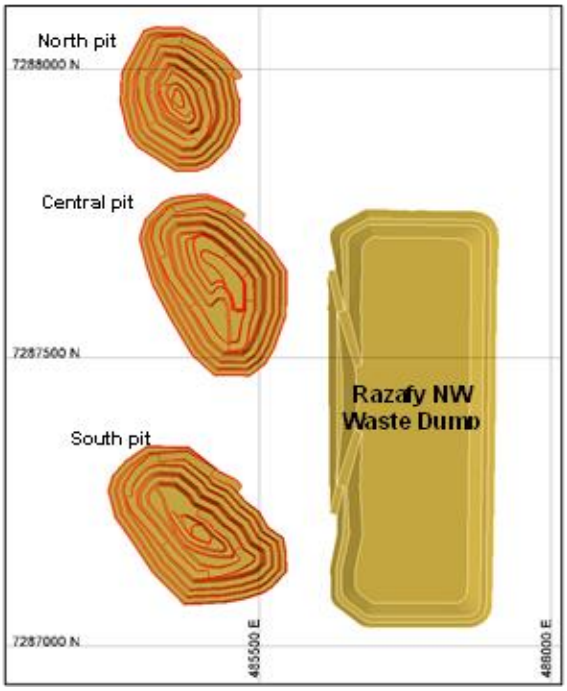


Figure 10: Overview – Razafy

Mining will be carried out using conventional open pit methods of drill and blast followed by load and haul.

The total material movement at the Project has been estimated at approximately 2Mtpa for the first three years of operation, increasing to a maximum of 4Mtpa in subsequent years.

It is believed that a mining fleet comprising 60t to 80t excavators and 30t to 40t capacity trucks would be suited for the scale of mining envisaged.

Ore and waste boundaries will be based on grade control and the resultant geological modelling and interpretation. Bench and face mapping, for grade control, should be a routine task in finalising the ore and waste boundaries to be marked out for excavation.

The mining operation would excavate and load the ore and waste in accordance with the marked ore and waste boundaries and ensure minimum dilution and maximum recovery of ore.

The ore is to be hauled to a single ROM pad located to the north of Razafy and east southeast of Razafy NW.

The bulk of the waste will be dumped in areas adjacent to the pits, with 26% required for constructing the TSF embankment and 3% for other mining related infrastructure such as the Run of Mine ("ROM") pad.

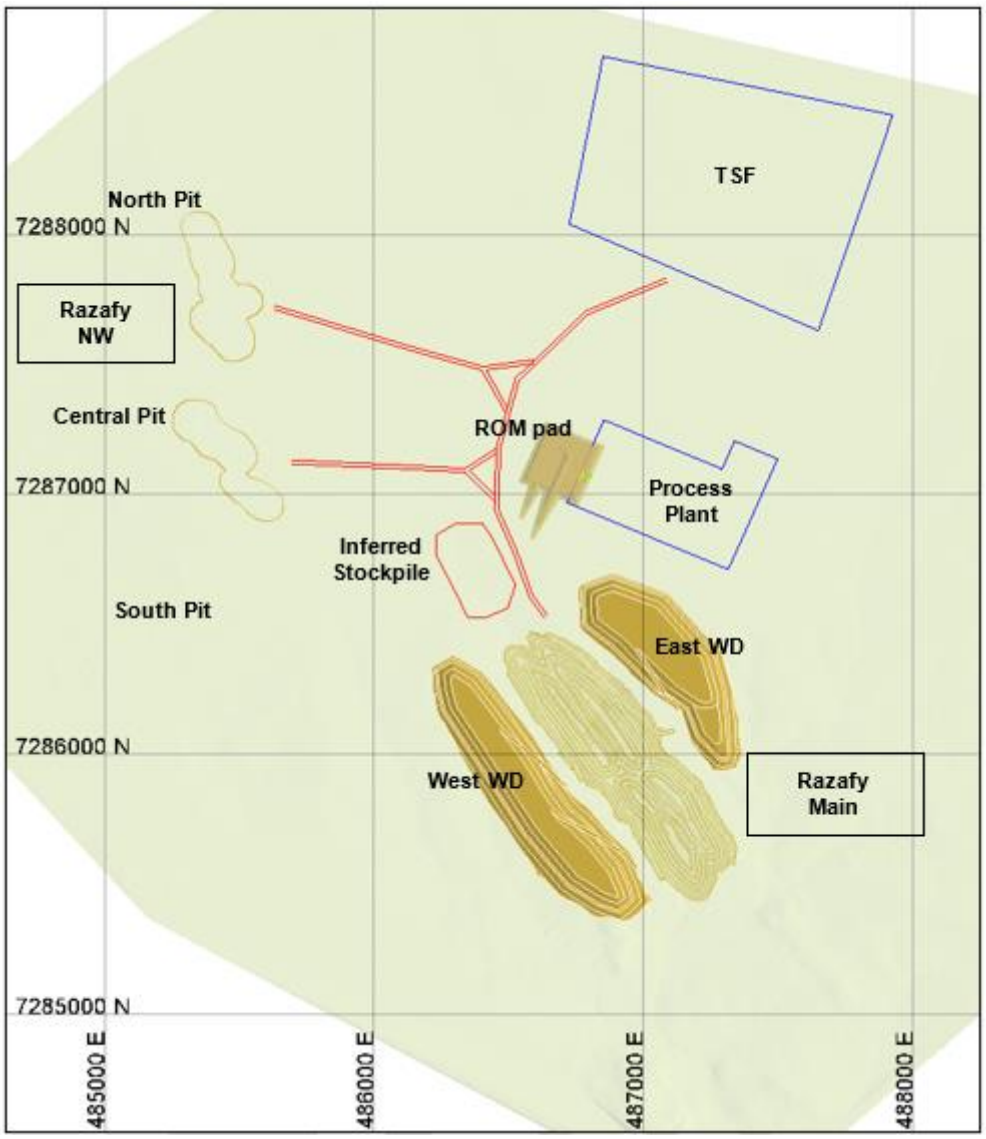


Figure 11: Overall Site Layout

Staged development of the pit is driven to maximise the grade of the initial plant feed, minimise waste pre-stripping and the requirement for maximising concentrate production.

Staged mining has generally a positive impact on the project net present value (NPV) by reducing the duration of the pre-production phase and reducing the strip ratio in the early years of production.

With reference to the hydrological assessments, it is envisaged that in-pit water management will primarily consist of runoff control and sumps.

Pit optimisations were undertaken for two mill throughput rates, namely 0.5 Mtpa and 1.0 Mtpa. The pit optimisations were carried out based on Indicated Mineral Resource only. Key optimisation input parameters were as follows:

- A 5% mining dilution
- Mining costs were based on contractor submissions
- Pit slopes were based on test work / advice from WSP Golder (South Africa)
- Processing recovery of 90%
- A conservative graphite concentrate price of US$1300 and a royalty of 2%

A contract mining approach excluding drill and blast and pit dewatering, has been adopted for the life of mine ("LOM"). Blast consumables will be sourced from a reliable and reputable supplier. Mine assay samples will be sent to the onsite contract laboratory for analyses and enable a quick turnaround for results. This follows the outcome of a vendor capability and capacity study conducted for a range of equipment suppliers and service providers during the DFS.

The 18.5 million tonnes (Mt) of Mineral Resource in the mining schedule consists of 16.2Mt of Ore Reserves (see Table below) and 2.3Mt of inferred Resource representing 88% and 12% of mill feed respectively (see Table above). The inclusion of the Inferred Resource and its inclusion in the final years of mine life, currently projected to exceed 20 years, is not a determining factor in the Project's viability.

Table 4: LOM Material Movement

Deposit	Total Material [Mt]	Waste [Mt]	Strip Ratio [w:o]	Mill Feed		Inferred (Included as Mill Feed)	
				Tonnes [Mt]	TGC [%]	Tonnes [Mt]	TGC [%]
Razafy Main	44.7	29.8	2.0	15.0	6.02	1.8 (12%)[1]	4.62
Razafy NW	11.7	8.2	2.3	3.5	8.21	0.5 (15%)	8.13
Total[2]	**56.5**	**38.0**	**2.1**	**18.5**	**6.44**	**2.3 (12%)**	**5.44**

Notes: 1. Percentage of total mill feed shown
2. Totals may not add due to rounding

The inclusion of Inferred material within current pit shells, for which there is a low level of geological confidence, will require further technical assessment for the final production target to be ultimately realised.

Table 5: JORC Compliant Ore Reserve

Category	Tonnes (Mt)	Grade {%TGC)	Contained Graphite (Mt)
Ore Reserves			
Proved	0	0	0
Probable	16.2	6.58	1.1
Total Ore Reserves	**16.2**	**6.58**	**1.1**

The open pit mining activities have been sequenced and scheduled by pit staging / cutback to optimise cashflow (refer below), provide a continuous ore feed to the processing plant, minimise stockpile inventory and provide a managed waste rock schedule for constructing key infrastructure.

Initial waste rock generated from mining is to be used for constructing key infrastructure such as upgrading the haul road to the processing plant, ROM pad construction, construction, reshaping drainage terrain, surface water embankments and construction of the tailings dam (TSF). Excluding mine waste utilised for the construction of the TSF, ROM pad and other miscellaneous infrastructure it is estimated that approximately 10 million cubic meters of waste will need to be placed in dedicated waste dumps located adjacent to the Razafy and Razafy NW pits.

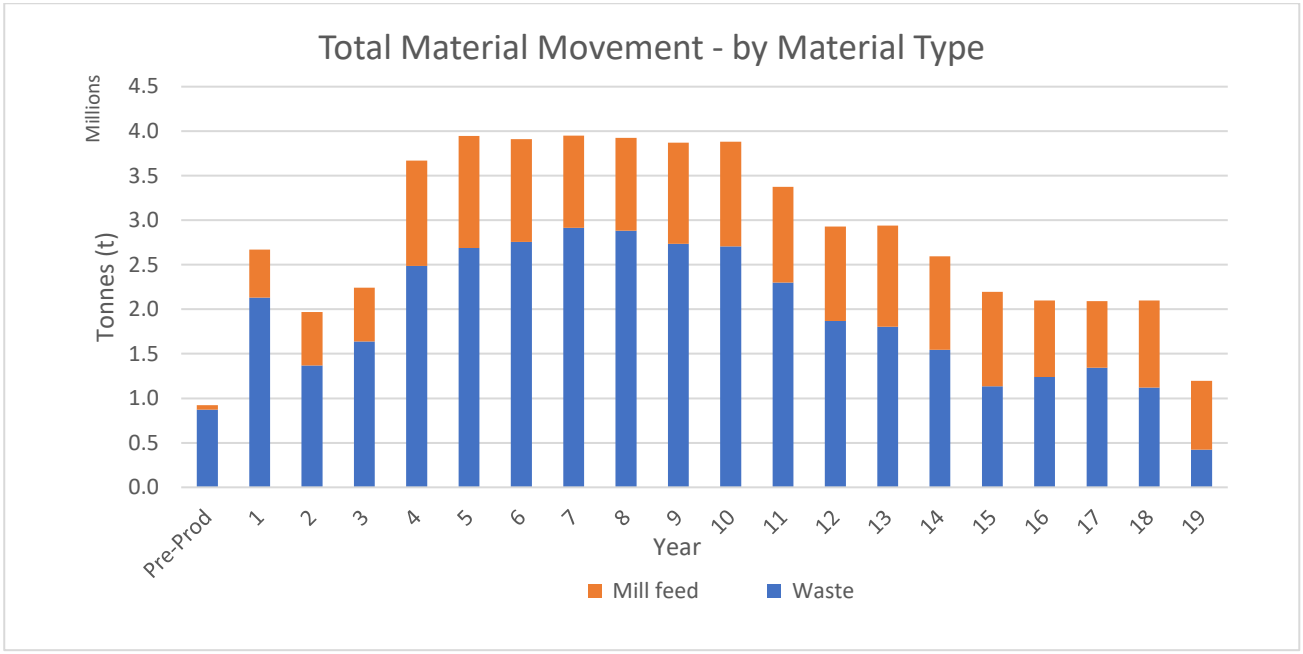


Figure 12: Total Material Movement by Material Type

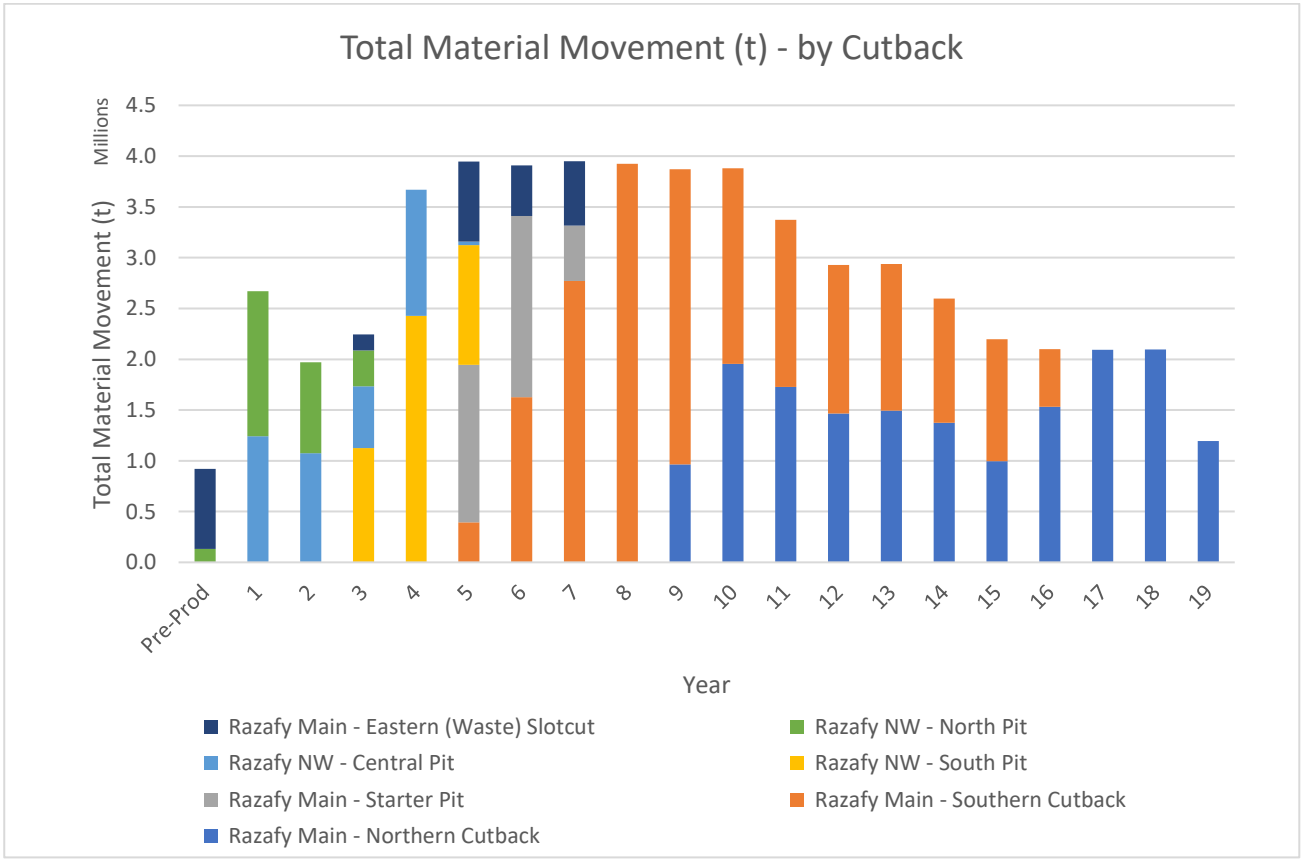


Figure 13: Total Material Movement by Cutback

Figures 12 and 13, show the material movement, ore and waste, and scheduled cut backs by year for the LOM.

Figure 14, outlines the LOM processing schedule detailing the proportion of inferred material processed in the latter years of the Project.

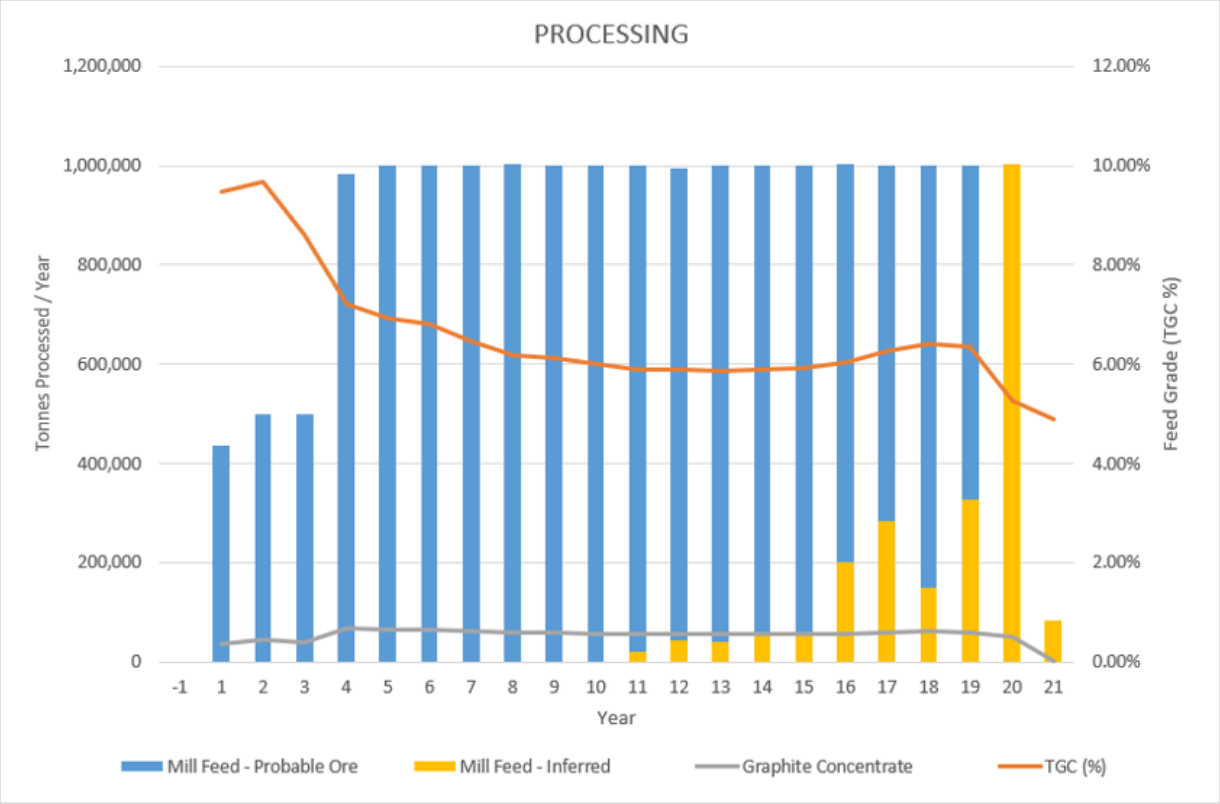


Figure 14: LOM Processing

Figure 15 outlines the tonnes mined each year over the LOM and the breakdown of the amount mined between Inferred and Probable – Ore (Reserve) and also waste.

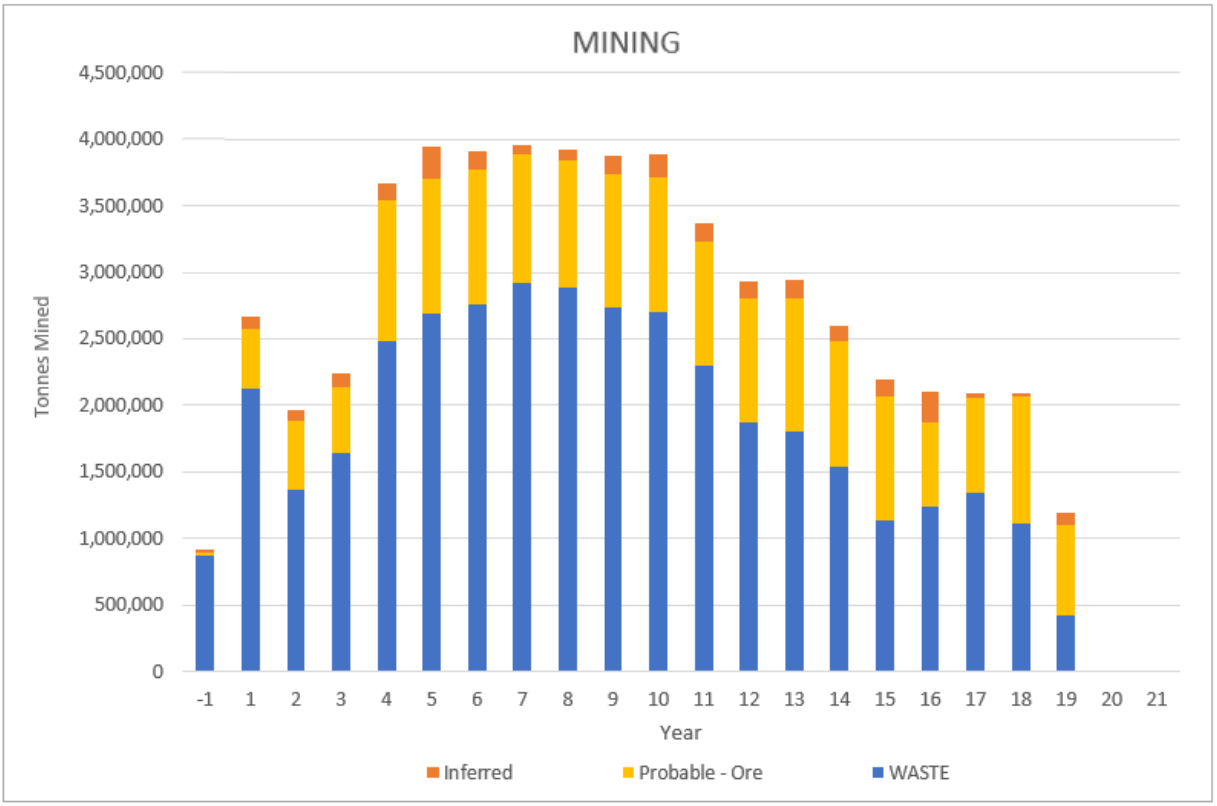


Figure 15: LOM Mining

1.7 Metallurgy

The focus of test work for the DFS was to determine the optimum flowsheet for processing ore from the Maniry Project. The objective of the various test work programs was to develop a flowsheet that achieved a minimum 95% TGC concentrate grade at high recovery (+90%) whilst preserving and maximizing the amount of coarse graphite into the concentrate stream.

An initial metallurgical program was managed and supervised by Battery Limits, with the test work performed at ALS Metallurgy Services during August 2018 to February 2019. This program included a number of small scale pilot test runs to identify a preliminary flowsheet and to generate a number of concentrate samples for downstream test work to evaluate its suitability to the downstream graphite industry markets. These markets included the Li-ion battery, refractory and expandable graphite markets. Samples were derived from core samples produced during the Company's various diamond drill programs in 2018. (Refer ASX releases: 16 Oct 2018, 12 Dec 2018).

Subsequent to this, independent process and engineering services company BGRIMM Technology Group ("BGRIMM") performed an optimisation test work program that developed a recommended process flowsheet during October 2019 to January 2020. It comprised a two- phased approach using the same feed material: a 250kg sample (Phase 1) followed by a 60-tonne pilot test program (Phase 2).

As part of the Phase 1 program, progressive batch flotation test work was used to determine the optimum parameters in terms of minimizing graphite size degradation and maximizing graphite recovery, ahead of the large-scale pilot program.

The phase 2 program by BGRIMM followed, whereby a commercial process flowsheet was finalised and the major process equipment selection was determined. The 60-tonne bulk sample was excavated in September 2019 from within the same pit area as the initial 250 kg sample for the phase 1 program.

Phase 2 was carried out during March through to May 2021 (Refer ASX release 9 Aug 2021).

The main outcomes and interpretation from the 60-tonne pilot operation were:

- The target graphite grade for all of the final concentrate size fractions at +95% FC were achieved.
- In combination with the increase in SMM/flotation cleaner stages to achieve +95% FC in the final concentrate size fractions as well as the finer M2F grind liberation size, the % +150 micron in concentrate was approximately 40%.
- The total collector addition was 0.312 kg/t (diesel and kerosene at 50/50% concentration) and frother at 0.15 kg/t (MIBC).
- The product flake size distribution which was based on achieving a nominal 91% overall TGC recovery – see the table below

Table 6: Product Size Distribution

Quantity	P35	P50	P80	P100	M100
ASTM E 11-87	+35 Mesh	-40 +50 Mesh	-50 +80 Mesh	-80 +100 Mesh	- 100 Mesh
Microns	>500	>300	>180	>150	<150
96 FC%	1.5%	11.0%	26.0%	13.0%	0.0%
95 FC%					48.5%
Total	**1.5%**	**11.0%**	**26.0%**	**13.0%**	**48.5%**

A total of 26 metallurgical samples from individual diamond drill holes were selected for ore characterisation on the Maniry graphite mineralised resource as part of a variability test program which was concluded in July 2022.

These samples were selected on the following basis:

- The samples were continuous down the hole intervals and contained no internal or at the mineralised contacts, waste dilution.
- The samples were spread along strike and down dip to provide spatial coverage across the geological resource.
- Core logging data and sulphur analyses were used to domain the samples as either oxide or fresh.
- Varying graphite grades (%TGC) were selected to identify if a grade versus recovery relationship was evident.

A mineralogical assessment via thin section petrographic analyses was also performed by Townend Mineralogy on the variability samples as part of the DFS to identify any mineralogical changes throughout the ore body.

Overall, variability test work showed that target concentrate grades can be achieved when feeding different parts of the Maniry deposit through the proposed flowsheet. The variability test work also indicated the potential to decrease the amount of overall grinding, and flotation stages; this will be further investigated as part of future metallurgical test work.

Comminution test work undertaken as part of the variability program, showed that the ore was relatively soft, with low abrasiveness, lending itself to a relatively low energy comminution circuit.

1.8 Process Plant

The Stage 1 process plant has been designed to process ROM graphite ore into a variety of saleable graphite concentrates. Stage 1 will process 0.5 Mtpa of ore for the first 3 years of operation. Brought into production in year 4, Stage 2 will increase the treatment rate to 1.0 Mtpa of ore.

The key criteria for equipment selection are suitability for duty, reliability, and ease of maintenance. The plant layout will provide ease of access to all equipment for operating and maintenance requirements whilst maintaining a compact footprint to minimise construction costs.

The extensive metallurgical test work results have been combined with standard industry practice and the experience of CPC to develop the process plant flowsheet and design criteria to design the process plant to a feasibility study level.

The figure below, shows the simplified overall flowsheet for the Stage 1 process plant.

The process can be summarised as follows:

- ROM ore at 6.3% to 10.3% TGC is crushed in a two-stage crushing and screening plant and then conveyed to the primary milling circuit where it is milled in a closed circuit to further liberate and prepare the ore for flotation
- Milled slurry progresses to the flotation circuit to produce a high grade 95% TGC concentrate
- Flotation concentrate is pumped to the dewatering area where it is filtered and thermally dried to reduce the concentrate moisture to <0.25% w/w

- Dry product is classified by size using a plansifter screen with each product size bagged separately
- Tailing from the flotation circuit is sent to a thickener to increase the solids density to 60% w/w prior to disposing in a residue storage facility. The recovered filtrate reports back to the process water circuit for reuse.

The Process Design Criteria ("PDC") was developed based on test work, discussions with equipment suppliers, direction from BlackEarth and CPC in-house experience.

Table 7: Key Process Design Criteria, Stage 1

Parameter	Units	Value
Throughput Rate	tpa	500,000
Operating hours, crushing	hr/y	3,066
Operating hours, milling/flotation/tailing	hr/y	7,884
Operating hours, filtration/drying/screening/bagging	hr/y	7,008
Concentrate Production	tpa	30,000 (nominal) 52,000 (design)
Feed Grade	TGC (%)	6.3 (nominal) 10.3 (design)
Concentrate Grade	TGC (%)	95
Flotation Recovery (@ 95% TGC)	%	90

The PDC has formed the basis for the mass balance, Process Flow Diagrams ("PFD"), equipment specifications and the process design.

Stage 2, expansion to 1Mtpa throughput, includes some shared equipment with Stage 1 including the primary and secondary crushers, cleaner flotation, dryer, screening, bagging plant and building infrastructure. The initial plant design has been completed to minimise downtime and general disruption during the expansion construction period.

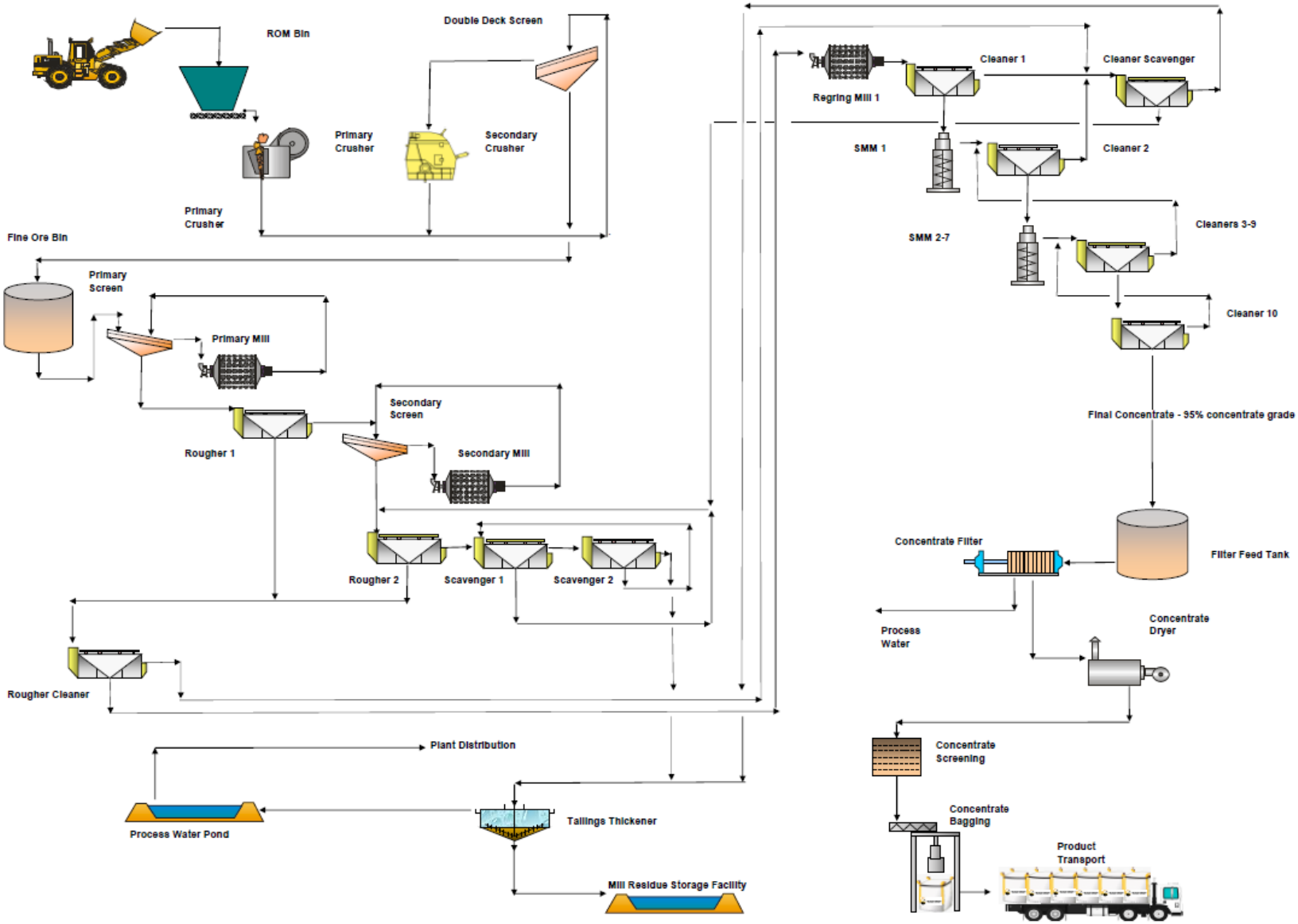


Figure 16: Simplified Process Diagram

1.9 Infrastructure

1.9.1 Site Layout

The plant and infrastructure located on site will consist of:

- Processing facilities for processing ore (Stage 1 and Stage 2) including product warehouses, reagents storage and truck loading area.
- Onsite power generation utilising a Build Own Operate ("BOO") solar/diesel hybrid facility.
- Stockpiles for mined ore and ROM for Stages 1 and 2
- Water ponds.
- Mine waste dumps.
- Mining workshop.
- Explosives magazine.
- Site buildings (administration offices, medical clinic, canteen, metallurgical and assay laboratory, workshops, etc.)
- Security/gatehouse.
- Tailings storage facility ("TSF").
- Camp facilities complete with kitchen and mess to be located in Ampanihy.

The Stage 1 and Stage 2 (future) process plants have been located in close proximity to both the Razafy and Razafy NW deposits. The majority of infrastructure is also located within this area as it is close to the site gatehouse, mining and warehousing facilities.

The site layout for the project can be found in Figure 17

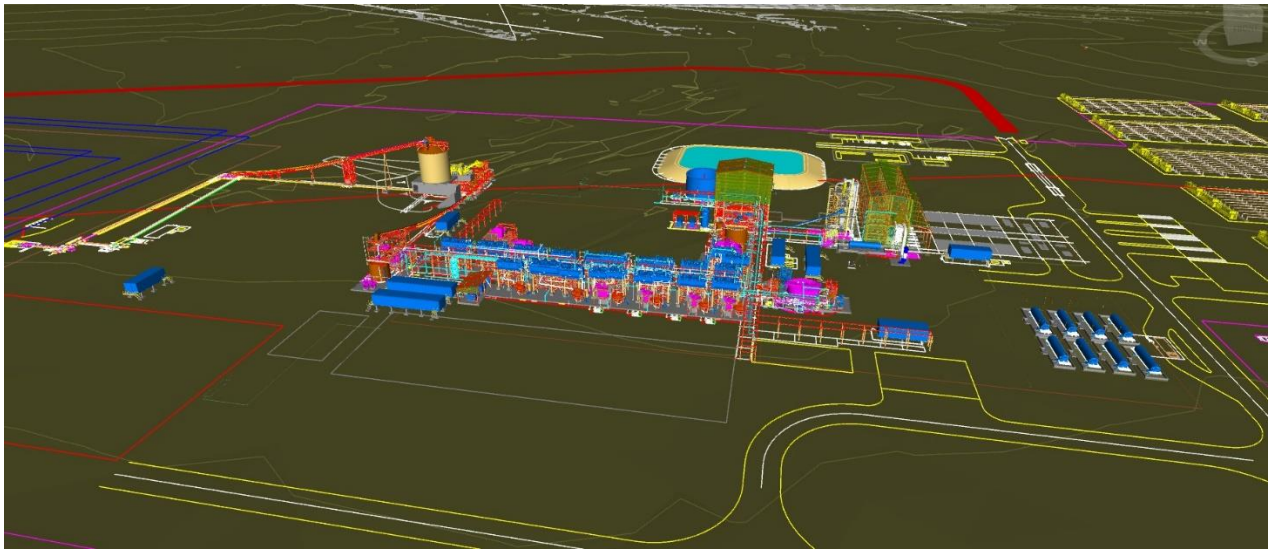


Figure 17: Proposed Process Plant

1.9.2 Roads

As part of the DFS, the 2 key routes from site to port were reviewed; Maniry to the Port of d'Ehoala and the Port of Toliara. While the majority of the route (RN10) will be upgraded in the future using

World Bank funding, the DFS has assumed the current road conditions. Any upgrade to the route would have a significant material (positive) impact on operating costs of the Project.

Route surveys undertaken by Antrak / Bollore reviewed:

- Maximum transport envelopes/weight limitations on proposed routes.
- Physical conditions of infrastructure (bridges, roads).
- The potential for any bottlenecks – ports, borders.
- Potential climate impacts on road conditions / transport needs
- Any potential risks and provided practical mitigation strategies.

Based on the results of the survey and port charges, the route to the Port of Toliara was deemed to be the preferred route.

The road from Ampanihy to Maniry will require some upgrade prior to construction and consequently an allowance has been included into the Project development capital costs. The road benefits from low traffic and limited population density.

Other roads within the DFS include:

- Plant site and mine services area access roads
- Access roads to Project infrastructure – TSF, explosives, administrative buildings etc.

Figure 18: Road from Ampanihy to Maniry

1.9.3 Mine Services Area

A mine services area will be established by the mining contractor with facilities that include a mine maintenance workshop and mine production office consisting of containers with dome shelter roof between each container.

1.9.4 Explosives Magazine

Explosives transport and storage are heavily regulated by Malagasy authorities and the contracted explosives supplier will use an approved system (Code of Practice) of delivering raw materials and chemicals which conform to the legal and safety standards on the mine. The raw materials required to obtain the required quality of explosive will be stored separately and blended when required.

The ammonium nitrate storage facility will be located to the north of the mine and process plant site, a minimum of 500 m away from all proposed and existing infrastructure, villages, product transport route, access road and the mining operations (pit).

Access to the ammonium nitrate prill storage facility is via an access road off the plant access road that runs in an east-west direction past the mine site. Access to the explosives magazines will be controlled by the explosives supplier who will also be managed in conjunction with the local police services (Gendarmerie Nationale) in the area.

1.9.5 Accommodation Village

An accommodation camp for senior management staff and senior personnel will be constructed within the local area. The camp will have an initial capacity of 60 to 80 personnel and is located in Ampanihy, the district capital, and approx. 25 km from the Maniry mine site. The camp is located on the outskirts of Ampanihy, approx. 1 km from the town centre and 2 km from the local airport.

The camp will be located on 2 leased land parcels.

The site was selected to better integrate the mine workforce with the local community and to provide tangible benefits to the local economy, without adversely impacting on the town's facilities. The camp will be self-contained with its own power, water and waste treatment.

The camp compound will also facilitate the mining load and haul contractor, power provider and laboratory contractor camp facilities within same plot. It is also anticipated that the transport contractor will also have short stay accommodation for drivers and vehicle secure parking.

1.9.6 Site Buildings

Site buildings will be constructed from a variety of methods to suit the application.

To promote local content while having robust buildings suitable for the LOM, buildings constructed utilising blockwork construction will include:

- Security/gatehouse
- administration office
- canteen
- gatehouse
- clinic
- ablutions
- substation buildings.

Structural steel framed clad buildings will include:

- plant warehouse

- product storage warehouse
- compressor shed.

Containers with dome shelter roofs between them are used for:

- light vehicle, drill and blast and maintenance workshops
- reagent storage.

The plant and crusher control rooms swill be prefabricated modular buildings constructed on a steel frame suitable for installation on a steel structure.

Both the clinic and assay laboratory will be contractor operated and fitted out.

1.9.7 Fuel Storage and Distribution

A self bunded fuel farm will be installed with a capacity of approximately 450kL of diesel fuel, which will provide approximately two weeks storage of fuel for the operation. The bulk storage facility will be designed to be expanded progressively to 900kL for Stage 2. Fuel will be delivered as a backload by the concentrate transport provider.

Diesel fuel is stored on site for the following purposes:

- mine fleet
- light vehicles
- dryer
- reagents (collector)
- ancillary infrastructure

The fuel storage facility will include separate off-loading and fuel bowser stations which are designed to minimise the interaction between light mobile vehicles and heavy mining equipment.

During construction, diesel fuel will be free issued on site to each contractor for construction related purposes only.

1.9.8 Water Supply and Distribution

Raw water is supplied via a raw water borefield and will utilize a planned pipeline system.

The raw water bore pumps supply water to the raw water tank which has significant storage capacity to supply the Project's general needs plus additional capacity for fire water.

WSP Golder was tasked with determining an optimum scenario which allowed for sufficient water supply for both stages of development (i.e. including the expansion) on a sustainable basis, without impacting the local villages' water supply.

The most favourable scenario capable of sustaining long term pumping needs involves an unlined tailings storage facility with scavenger boreholes. This is because this scenario utilizes the inflows from the pit which go up to 10L/s, return water volumes from the TSF which go up to 5L/s and volumes of water from the scavenger boreholes which average only 2L/s, therefore reducing the water demands from the local aquifer. It was also noted by WSP Golder that the abstraction rates for all the water supply boreholes in all the scenarios modelled, were deemed sustainable and capable of sustaining long term pumping.

For the Project's potable water needs (both on site and at the camp), water treatment facilities will be installed to ensure suitable health specifications are met for all Project personnel's potable water needs.

1.10 Tailings Storage Facility ("TSF")

1.10.1 Overview

The design undertaken by WSP Golder, considers tailings management and storage for 9.5 Mt of insoluble tailings solids, for tailings production over an 11-year period. BlackEarth has identified a greenfield area 2 km northeast of the proposed pit as the desired location for tailings deposition. During the 10th year, a second TSF is planned to be built utilising one common wall with the initial TSF, to enable a further 10 years of operation (the Reserve).

The TSF is designed as a fully contained facility with the embankment comprising waste rock encapsulated in oxide waste rock with upstream face lined with an HPDE membrane and a wide inner toe drain. The embankment will be constructed in a number of phases.

The TSF design concept is summarised as follows:

- Tailings generated by the process plant will be thickened to nominal 55% solids and pumped to the TSF for discharge using sub-aerial deposition via multiple spigots
- The tailings embankment will be constructed with primarily oxide waste rock from the pit. Any fresh waste rock utilised will be encapsulated within the oxide waste rock. A geomembrane liner will be placed on the upstream slope of the embankment. Topsoil will be removed from the proposed TSF footprint area and stockpiled. The material that remains will be ripped and compacted before deposition of the tailings
- Surface water around the TSF will be managed with an interception trench and diversions for separation of clean and dirty water. Seepage through the tailings will be captured at the upstream toe drains and will flow into the interception trench from where it will be pumped from sumps onto the TSF surface. Seepage that reaches groundwater (i.e., beneath the embankment and interception trench) will be pumped from the scavenger boreholes and used in the processing plant
- A floating barge or pump with floating turret system will be used to pump process water from the TSF pool to a process water dam at the plant area. The water will be used in the processing plant, in addition to groundwater. The use of return water from the TSF in the plant will result in accumulation of salts from ore processing and evaporation on the tailings facility. Thus, concentrations of constituents in process water will increase over time

1.10.2 Technical Design

BlackEarth directed from the outset, that the TSF be designed by WSP Golder to meet Equator Principles.

As part of the design process, a geotechnical investigation was conducted and comprised the drilling of ten boreholes between 11 November 2021 and 27 January 2022. The drilling operation was supervised by BlackEarth (under the direction of WSP Golder). Geotechnical laboratory tests were conducted on both the samples retrieved in the geotechnical investigation as well as tailings

samples provided by BlackEarth. These tests included: classification testing (sieve analysis and Atterberg limits), slurry consolidometer testing and triaxial tests.

Geochemistry characterisation was undertaken on tailings samples derived from the earlier 60 tonne pilot test program. The tested tailings material showed excess acid buffering capacity, with the material being classified as non-acid forming ("NAF"). The tailings material was slightly saline with paste EC value of 200 μS/cm. Electrical conductivity and sulphur exceeded the Malagasy effluent standards in tailings supernatant, but none of the measured constituents exceeded the standards in deionised water leachate. The pH of the supernatant is slightly alkaline because the slurry is limed in the plant, adjusting the pH to between 7 to 7.5 On the basis of the geochemical work completed and the poor baseline groundwater quality, the conclusion was to use an effective and sustainable alternative - scavenger boreholes. The following measures have been implemented to capture seepage water emanating from the TSF:

- Robust inner toe drains along the upstream toe of the embankment
- A subsurface seepage cut-off/ interception trench downstream of the embankment toe
- Seepage interception boreholes, i.e. scavenger boreholes, located downstream of the embankment

A dynamic daily time step model was also developed for the TSF by WSP Golder. The model was applied over the life of mine using the Ampanihy rainfall record for the TSF. The water balance showed that a return between 21% to 30% of the slurry water volume can be expected for use at the plant. Based on the rain data recorded at Ampanihy, the return pump capacity of 2 pumps with a capacity of 300 m3/d each is adequate to manage the pool volume.

As part of the TSF design, WSP Golder reviewed the freeboard requirements for the TSF. Based on the International Council on Mining and Metals ("ICMM") requirements the available freeboard is 2.5 m. Based on the ANCOLD standard the available freeboard is 2.3 m. The probability as a result, of overtopping under the assumed conditions is therefore considered unlikely with the established allowable freeboards.

On WSP Golder's recommendation, the closure concept (included into Project costs), consists of an outward draining final landform and the application of a cover system. The final TSF (at end of operations) would require infilling of tailings or other suitable material to create a free draining surface. Surface reshaping would be required to achieve the desired final profile. A cover system and growth media would be applied to the TSF surface and embankments.

1.11 Product Logistics

1.11.1 Logistics Operation

A comprehensive road survey was previously undertaken by Bollore Logistics for the majority of the route from the Port of Toliara to Maniry Site. The Port of Toliara is the preferred port for the export of the Maniry graphite concentrate because:

- It has the capacity to handle the volume (both for Stages 1 and 2) of concentrate planned to be produced from the Project
- The total route from site to port is shorter than the route to the alternative port located at Tolanaro.
- The cost of transporting concentrate is lower than alternate ports

Until an upgrade is completed on the proposed transport route to Toliara, the concentrate will be transported in 1 tonne bags within 20 tonne containers. Trucks will be limited to 1 container as a result of current route restrictions. On completion of the proposed route upgrade, it is anticipated that trucks will be capable of transporting 2 x 20 tonne containers; this should result in considerable transport cost savings. The DFS has assumed that for the LOM, no upgrade has been completed. The plan is for trucks to transport fuel and other consumables to site with the backload to port being graphite concentrate, in order to save logistics costs.

1.11.2 Port Selection

The Port of Toliara is the second major port in Madagascar. It is currently the preferred port for importing and exporting equipment, products and consumables as it considered a safer and more financially viable port option. It is operated by Agence Portuaire Maritime et Fluviale ("APMF"). The primary import traffic is consumable commodities. The Port facilities are in good condition however a shallow draft of 7.5 meters limits the access to smaller feeder vessels or lower capacity geared vessels. This is expected to pose no problems for the project. At the time of the study, ground capacity at the terminal could not be confirmed, nevertheless bridge and causeway capacity is known to be limited to 40 tonnes payload. Excessive weight will require prior authorization from the APMF.

Weather conditions are generally mild, with few windy days. The tide range varies from 0.60 m to 3.65 m according to the Toliara tide table issued by the French hydrographical Agency. The minimum tide difference is 40 cm (2.20 m versus 1.80 m).

The Port has container storage capacity of approximately 700 twenty-foot equivalent units. Additional container stage areas are available outside of the Port. The Company, as part of the DFS, plans on leasing warehousing facilities near the port.

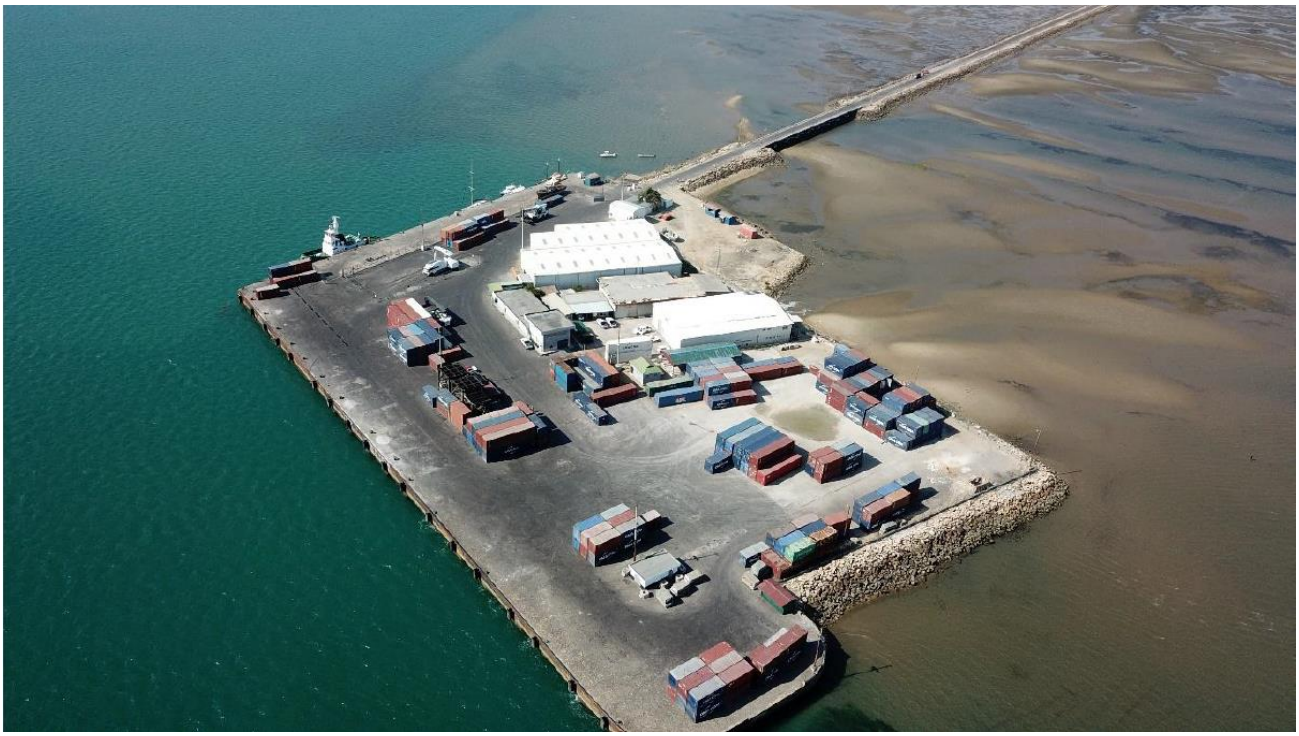


Figure 19: Port of Toliara

1.12 Environment and Social Impact

The project lies in the commune of Maniry within the Ampanihy District in the Atsimo-Andrefana Region. The project plans to export graphite concentrate to the Port of Toliara in the Atsimo-Andrefana Region, its economic impact will remain in the one region and thus influence a single region of the deep south of Madagascar.

The nearest regional population centre is Ampanihy, located approximately 25 km south east from the Project's nearest township of Maniry, some 8 km from site. The population of the broader Maniry district is around 2,000.

A "Census Data Base" was completed in June 2020. A total of 1,916 people were identified and villagers' data recorded by gender, age, occupation, village, literacy level and education level. This information will be used as the baseline for current residents in the area as well as a means of identifying future employment and training needs.

Within the project area, 5 villages are located with a total estimated population of around 500 people. There are also a number of tombs in the area which will need to be part of a future Resettlement Action Plan ("RAP"). A current Environmental and Social Impact Plan ("ESIA") will include the identification of key points raised from discussions with impacted villages which will form the basis of the RAP.

The grassy savannah formation in the area, develops on relatively flat ground with sandy soil. It forms a fairly large expanse dominated by two species of herbaceous plants Ahipoly and Ahidambo. Shrub plants are present but with a very low density, among which, Hazonta, Fandriandambo are frequently observed. It is a grazing area for cattle and sheep. Based on records, this savannah does not suffer from annual bushfires unlike the savannahs of western Madagascar.

Figure 20: Local Maniry villagers crossing the Project area

1.12.1 Demographics

The gender ratio in this commune is almost balanced; 47% male, 53% female. This trend is due to local family structure which is still dominated by nuclear families even in terms of cohabitation.

The household in the localities of the Commune is composed on average of 7 people formed by the father, the mother and their children.

The population in this region consists of a young population, the majority of whom are under 25 years of age, representing 78%. It also indicates a high birth rate because children aged 5 and under,

account for 21% of the population. Moreover, the working population between the ages of 21 and 50 is 30%.

Apart from a few primary schoolteachers, of whom there are 6 in the immediate area, the heads of households declare themselves to be farmers. It should be noted that in this region, few people claim to be agricultural employees because they prefer to work in the surrounding mining quarries and as small-scale or salaried workers.

The level of education of the population in the Commune is relatively low. As a result, the literacy rate in this region is very low. Barely 25% of the working population in this region have reached the end of primary education and can read and write.

1.12.2 Environmental Approval Permits

The legal and regulatory framework for environmental and mining approvals is comprehensive and clear in Madagascar. Delays are possible due to slow processing by the various authorities. Mitigating delays and other challenges in the environmental approval process include developing collaborative strategic partnership approach with the Office National pour l'Environnmente ("ONE"), local communities and other stakeholders and a diligent implementation of all process requirements.

BlackEarth has commenced the ESIA process under Malagasy law. This commenced with the submission of an initial screening document to ONE in April 2022, and receipt from ONE confirming an ESIA is required for the Project. ONE is the sole and unique authority for the screening of new projects, determination of the type of ESIA to be conducted, evaluation of ESIA's, setting norms, thresholds and limits (e.g. on effluent discharges), award or refusal of an environmental permit and subsequent monitoring of the adopted environmental management plan. This is very important, since it protects the Company from interference by sector ministries in relation to the ESIA process and permit and allows the investor to deal only with ONE on the ESIA process.

This formal process to gain environmental and social approval for the project will, however, include a continuation of the engagement with local stakeholders and all levels of Government

The proposed mine site itself is not close to any protected areas, including national parks / reserves. The soils are tropical ferruginous, with islands of red and yellow / red ferralitic soil associations. The vegetation is primarily grassy savannah with shrubs, affected by frequent bushfires leading to the degradation of vegetation cover and leaching of the soil. The local population is generally made up of Antandroy, very attached to traditions and customs. The regional economy is mainly pastoral (traditional cattle farming and extensive cattle raising).

Work to date suggests that biodiversity and natural habitats are unlikely to be major issues in the environmental approval process, reinforcing the expectation that water and social impacts are likely to be the focus of the ESIA.

1.12.3 Community Interaction

BlackEarth has proactively and regularly, engaged with local villages, the broader Maniry community as well as the residents in the Ampanihy region.

The Company has already participated in social actions in the Project area since 2017. The social actions carried out to date include:

- A joint approach to health in the area by working with Australian Doctors for Africa – the Company has provided not only funds, but also assistance in the construction of medical facilities in the area as administrative and logistics support in the country;
- Furnishing of classrooms in the township of Maniry;
- The donation of building materials for the rehabilitation of the EPP in the Fokontany of Rembohitseambany;
- The provision of protective equipment against Covid-19 of the Ampanihy Hospital in May 2020;
- The donation of several tonnes of rice on a number of occasions to villages within the Project area to assist with the long running impact of droughts;
- Training of locals in exploration related activities including drilling, trenching and other associated activities;
- The construction of a new 3 room school due to be completed by late October 2022.

Based on detailed discussions to date, the local population does not question the location of the project in their community. However, a part from serenity and security and, above all, better integration of the project, the expectation is that BlackEarth must cooperate and collaborate closely with the local population, administrative and traditional authorities as well as with the broader working population.

To this end, the establishment of a system of assistance and mutual assistance is proposed. These proposed series of socio-economic measures are planned to be carried out in order to improve the long-term stakeholder and community standards.

1.13 Project Implementation

1.13.1 General

The key criteria applied to the overall Project implementation plan are:

- deliver the project with zero lost time and medical treatment injuries;
- achieve zero major environmental incidents;
- conform to statutory requirements regarding licenses and approvals;
- maintain positive community relations;
- have low impact on surrounding communities;
- deliver a low cost, fast track, high quality process plant and associated infrastructure;
- implement and deliver an operational process plant which achieves the availability, reliability and operational performance given in the process design criteria;
- construct a facility designed for safety and fitness-for-purpose;
- become an employer of choice; and
- increase shareholder value

1.13.2 Staged Construction Approach

The project will be executed in 2 stages to accommodate a staged development around the two currently identified deposits, Razafy Northwest and the main Razafy deposit.

Stage 1 will be the first process plant module capable of a nominal throughput of 0.5 Mtpa to produce a nominal 35,000 to 45,000 tpa of graphite concentrate. Stage 1 will include infrastructure to support Stage 1 and Stage 2 and will be the initial production plant.

Stage 2 will double the plant throughput, increasing graphite concentrate production to an average of 50,000 to 60,000 tpa. The Stage 2 process plant will be commissioned approximately 3-4 years after Stage 1.

1.13.3 Project Execution Model

BlackEarth will establish a Project Delivery Team ("PDT") or Owner's Team which will consist of experienced management and technical personnel necessary to administer all aspects of the project. An engineering consultant with proven systems and procedures in the execution of mining resource projects in Africa will be appointed to form a combined project delivery team with the Company to deliver the project through execution to handover of facilities to operations.

The PDT will self-manage all contracts awarded for the project.

A Maniry Operations team will be mobilised at the appropriate time during the project, to develop and implement a business readiness plan and ensure a smooth transition from construction to operations. The business readiness plan will include implementation of systems, recruitment and training of all operations personnel for the project. The operations team will also support the project delivery team.

The contracting strategy for project delivery is based on proven methodologies of executing mining resource projects in Africa.

A number of contract structures will be implemented as part of the Project execution model, including lump sum, schedule of rates, build own operate and build own operate transfer. The appropriate structure implemented will reflect pricing, risk and expertise required.

1.13.4 Pre-Site Construction Activities

Prior to site activities commencing, the Company must complete the ESIA and obtain the necessary permits and licenses. Tenders will also be issued for long lead items, which include the power station, concentrate filter, electric switch rooms, the crushing and screening plant and the dry product screens; all these items are expected to have lead times in excess of 40 weeks.

In parallel to this, a 2-month Front-End Engineering and Design ("FEED") phase will also be implemented prior to the BlackEarth Board approving the Final Investment Decision ("FID"). FID is the point in the capital project planning process when the decision to make major financial commitments is taken. At the FID point, major equipment orders will be placed and contracts will be signed for various Project services.

Post-FID, the construction phase will only commence once all licences and permits are granted and resettlement of the areas covering the mine, process plant, and immediate surroundings has been completed.

1.13.5 Site Construction Activities

Construction site activities at Maniry are planned to take 14 months

During this phase, the schedule will be expanded to the next level of detail (level 3) with inputs from contractors and suppliers.

While detailed engineering and procurement is planned to commence prior to the commencement of site activities, these activities will continue into this phase of Project implementation.

The overall construction schedule consists of a logic-networked critical path schedule based on project requirements and acknowledges current manufacturing periods for major equipment which may change due to global demand.

1.13.6 Commissioning

Commissioning will occur progressively during construction and carried out in several phases, following the traditional approach adopted for a project of this nature and size. These phases will be:

- plant and equipment installation (construction) verification;
- dry commissioning;
- wet commissioning; and
- ore commissioning

Ore commissioning and ramp up is expected to take up to 3 months post completion of site construction.

1.14 Human Resources

Human Resource Management (“HRM”) is regarded as critical to the success of the Maniry Project. A strategic approach reflecting the effective and efficient management of people will be adopted in a way that they will assist both the Company and the Project, gain a competitive advantage during all phases of the Project; pre-construction, construction / commissioning and during operations.

The Company will develop practical policies and systems, which will cover key areas of HRM including: recruitment, training and development, performance appraisal and reward management. It will also be heavily involved in any organisational change, industrial relations and monitoring any changes to relevant employment laws.

BlackEarth is committed to the recruitment and training of local Malagasy citizens for the Maniry Project. Contractors and service providers will be encouraged by BlackEarth to provide employment to the regional workforce.

Many employment opportunities for semi-skilled and unskilled workers will become available throughput the construction phase. These opportunities will continue through to the mine’s operational life.

The construction phase will commence once resettlement of the areas covering the process plant, accommodation village and immediate surroundings has been completed. During construction BlackEarth will engage over 200 contractors. Contractors for site works will be selected based on their safety record, their industrial relations record, previous experience with similar projects, cost, schedule, availability, and capability to perform the work.

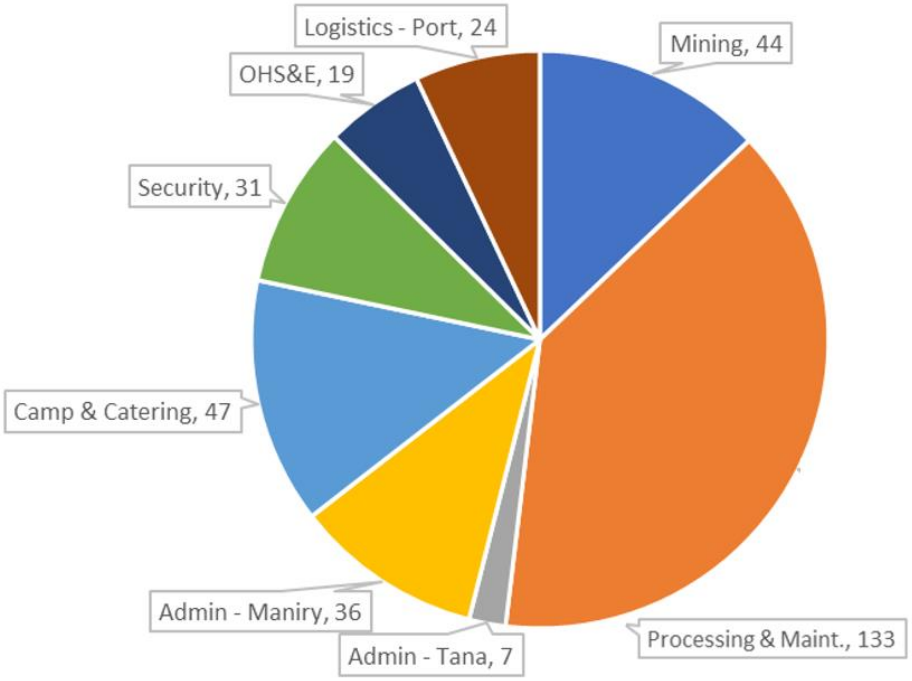


Figure 21: BlackEarth Minerals Personnel Distribution Year 2

During operations (Stages 1 & 2) it is estimated that 350-380 people will be directly employed by the Company with a further 50-100 contractors. Initially 98% of personnel employed by BlackEarth will be Malagasy.

1.15 Corporate Social Responsibility ("CSR")

The aim of BlackEarth's CSR approach is to align the Company's social and environmental activities now, and in the future, with its business goals and values.

BlackEarth understands that human rights are relevant to the economic, social and environmental aspects of corporate activity. The Company commits to respecting the rights of all its stakeholders in the development and operation of its Maniry Graphite Project.

The Company has developed a culture of inclusion with local villagers, Government authorities, contractors and employees in Madagascar to understand their ambitions, interests and concerns throughout the exploration and study phases it has undertaken to date. Stakeholder engagement will continue to be a priority to the Company as it ultimately moves into the implementation phase and beyond.

1.16 Operating Cost Estimate

The Operating Cost Estimate ("Opex") has been compiled based on the operation of a new graphite process plant at Maniry, in Madagascar and includes supporting infrastructure and indirect costs.

The Opex covers the operation of the Maniry mine and process plant and all associated infrastructure, including transport of finished graphite flake concentrate to the Port of Toliara on a free on board ("FOB") basis. The estimate has a base date of Q3 2022 and is reported in US Dollars (US$).

The Opex is based on inputs from the following organisations:

- Mining Focus (Australian based): development of mine and processing schedules and mine operating costs based on contract Load & Haul, Owner Drill & Blast and mine management and supervision. Pricing is based on quotes received from Malagasy and South African contractors.
- CPC Engineering (Australian based): process plant and infrastructure engineering, including process design criteria and reagent and power consumptions. Pricing is based on quotes from both Malagasy and International sources.
- BlackEarth: development of operating manning schedules, G&A cost inputs and estimate and transport costs. Pricing is largely based on both details and quotes derived from Malagasy sources.

Operating costs includes commissioning cost after first ore is presented to the process plant. For the Maniry Project this includes commissioning of the initial 0.5 Mtpa in year 1 and commissioning the expansion to 1.0 Mtpa in year 4.

The Opex summary for the Life of Mine (LOM) is reported in the table below.

Table 8: Summary of LOM Operating Cost

Operating Cost - LOM				
	Av. Total	Total Cost	Mill Feed	Product
	(US$M/a)	(%)	(US$/t)	(US$/t conc.)
Mining	11.30	30.2%	$12.20	$198.57
Processing	19.06	50.9%	$20.59	$334.91
G&A	2.33	6.2%	$2.52	$40.96
Logistics	4.72	12.6%	$5.10	$82.94
Total	**37.41**	**100%**	**$40.41**	**$657.38**

Mining costs have been based on the developed mining schedule tonnage movements and total mining cost. This cost includes all labour and fuel costs based on contract mining. Mining of the open pits ceases in Year 19, with subsequent years processing stockpiled Inferred material.

The process plant Opex is derived from the design criteria developed by both BlackEarth and CPC Engineers and reflected in reagent and consumable consumptions, power consumption developed from electrical load list, personnel schedules to operate and maintain the process plant and associated infrastructure and assay cost.

Diesel cost is derived from quotes by Malagasy petroleum distributors based on PLATTS gasoil FOB price of US$644.13/$m^3$ and accounts for all import and domestic costs and overheads, taxes and duties to port storage at Toliara. Transport from the port storage at Toliara is coordinated by BlackEarth as a back-load for concentrate deliveries from Mine to Port, using transport costs provided by Unitrans.

The Project aims to minimise expatriate personnel and maximise local labour. Local labour is defined as:

- Local within the Maniry / Ampanihy region, typically unskilled to semi-skilled labour,
- Regional within southern Madagascar, semi-skilled to skilled and some trades, and
- Madagascar from within Madagascar, trades, supervisors, technical and management positions.

Expatriate labour has only been considered for senior management / technical positions and over time, BlackEarth is planning to phase out the majority of the expat positions for Malagasy personnel. At the commencement of operations, 98% of the permanent BEM workforce (est 385) is expected to be Malagasy.

Maintenance costs have been estimated based on factors from installed equipment costs for both the 0.5 Mtpa and expansion to 1.0 Mtpa.

The Maniry process plant has a metallurgical and assay laboratory. The site assay laboratory is a contract facility, based on a proposal received from SGS to equip and operate the laboratory. The sample numbers are estimated from expected sampling and production levels.

The power supply for the Project is based on a hybrid solar / battery / diesel generator plant provided by a power provider ("PP") on a build own operate basis with a minimum 15 year term contract with provision for buy out. Diesel is provided to the PP by BlackEarth. For the Study, CrossBoundary Energy ("CBE") provided a proposal for a fully-financed renewable energy hybrid plant. This proposal offered a 15 year term based on BlackEarth supply of diesel at no cost to CBE.

The anticipated power mix for the power station is: for the initial 0.5Mtpa production rate 32,223MWh/a power consumption for the project 11,402MWh/a will be provided by solar and 20,826MWh/a by generators, the solar proportion is 35%. Further work will be undertaken to maximise solar / renewable contribution.

Mobile equipment required for the process plant is proposed to be leased with light vehicles replaced ever 5 years, cranes 20 years and remaining equipment every 7 years.

The General and Administration ("G&A") costs have two cost centres; the Maniry mine site and the capital city Antananarivo. The G&A provides for administration for BlackEarth in Madagascar, including;

- security,
- accounting, purchasing and warehouse management,
- HR, including travel and fly in/fly out
- OHS&E, including safety management, medical facilities, environmental monitoring and management, on-site training and provision of emergency services
- camp management and operation, including on-site catering,
- tenement management,
- insurances, and
- community support.

Logistics includes all costs to transport the graphite concentrate from the Maniry mine site to the Port of Toliara, including storage at the port and charges to load the ship, FOB.

The logistics team and port storage facility also manage the import of all goods required to operate the mine site, including maintenance spares and parts, diesel fuel and reagents and consumables.

The cost of transport of product to the port storage facility in Toliara has been provided by Unitrans. This cost is based on new vehicles operating on the existing road infrastructure, and utilising backload capacity to transport diesel and other containerized goods, including maintenance spares

and consumables, reagents and consumable as required. The cost would reduce per trip if road conditions improve with the planned upgrade of RN10 from Ampanihy to the intersection with RN7.

1.16.1 Sustaining Capital

BlackEarth have undertaken a detailed assessment of the likely Sustaining Capital requirements for the Project and a summary of this is included below:

Table 9: Estimated LOM Sustaining Capital Requirements

Description	LOM US$
Owner's Cost	$327,068
Mining - L&H mobilisation & demobilisation	$1,310,070
Mining - Sustaining	$1,200,000
Mining - Closure	$455,138
Non-mining - TSF - lifts & development	$18,409,532
Non-mining - TSF closure	$1,000,000
Non-mining - Closure	$1,925,804
Non-mining - Process Plant & Infrastructure	$8,160,000
	$32,787,612

Included within the overall operating costs and financial model, an allowance for Sustaining Capital commences from Year 1 of operations and exceeds US$1.25m pa with substantial allowances for the mobilisation, demobilisation as well as an allowance for closure cost requirements.

The assessment has been independently reviewed and is based on the likely cost and maintenance requirements of the Project inclusive of all associated infrastructure.

1.17 Capital Cost Estimate

The capital cost estimate ("capex") has been compiled by CPC and is based on the design, supply, fabrication, construction and commissioning of a new graphite process plant in Madagascar and includes supporting infrastructure, indirect costs and mining pre-strip.

The estimate has a base date of Q3 2022 and is reported in US Dollars (US$). No allowances are made for escalation, pre-implementation studies, financing, taxation, mining rights, rehabilitation and closure.

The capex has been classified as a Class 3 estimate with an accuracy of ±15% as defined by AACE International. The estimate relies predominantly on supplier and/or contractor quotations and/or tenders. Preliminary material-take-offs ("MTOs") for earthworks, structural steel, platework, concrete, piping, valves, instrumentation and cables were developed to determine quantities for estimating of the process plant and infrastructure. The capex was reviewed by mining project management consultants, Neuplan Pty Ltd.

1.17.1 Stage 1 (500ktpa throughput)

The capital cost required to develop the Project is estimated at US$79.15M for Stage 1.

Where appropriate, capital costs were deferred and included in the sustaining costs of the project. This applies to construction of Stage 2 process plant and future TSF wall lifts.

The capex for Stage 1 (0.5 Mtpa process plant) is reported in the Table below. The summary provides costs per major area including mining, process plant, infrastructure, construction direct costs, indirect costs, owner's costs and contingency.

Table 10: Stage 1 Capex costs

WBS Level 1	WBS Level 1 Name	Stage 1, US$M
1	Mining	3.46
3	Process Plant	34.17
4	Infrastructure & Services	9.22
6	Construction Costs (P&G's)	13.74
7	Indirects	7.00
8	Owners Costs	5.70
9	Contingency	5.86
	Subtotal	**79.15**

The capex has been compiled by CPC with quotations for equipment and services provided by vendors. Additional inputs into the capex were provided as follows:

- Mining capital costs including mining preproduction costs provided by Mining Focus
- MTO's for tailings storage facility provided by WSP Golder
- MTO for surface water catchment drains and pond provided by WSP Golder
- Capital cost allowance for the upgrade of the unsealed road from Ampanihy to the Project site provided by BlackEarth
- Owner's costs provided by BlackEarth

The mechanical equipment list used for calculating the capex, was developed from the process flowsheets, and process and instrumentation diagrams. The mechanical equipment list provides equipment numbers, equipment specification, type, model, size and power.

Request for Quotation ("RFQ") enquiries were issued to multiple local and international reputable suppliers for most of the mechanical equipment. Each RFQ enquiry package contained a scope of supply, general terms and conditions, equipment datasheet/s, pricing schedule and site standard specifications.

The value quoted for the Study (for Stage 1) represents 92.7% of the total equipment supply value. The remainder consists of low-cost equipment that was priced from recent projects and applicable escalation applied or estimated.

1.17.2 Stage 2 (1Mtpa throughput)

The capital cost required to expand the Project is estimated at US$24.63M for Stage 2.

Commencement of the higher throughput (1 Mtpa) for Stage 2, is planned for year 4.

The capital for the process plant expansions of Stage 2 was developed in a similar manner as the initial Stage 1 capital.

The capital covers the design and construction of the process plant and all associated infrastructure, equipment and ancillaries. The capital has a base date of Q3 2022 and is reported in US$. No allowances were made for the costs of escalation in the expansion.

The estimated capital costs for the Stage 2 processing facilities are shown in the Table below. The summary provides costs per major area including mining, infrastructure, process plant and site support (temporary services) direct costs, indirect costs, owner's costs and contingency.

Table 11: Stage 2 Capex costs

WBS Level 1	WBS Level 1 Name	US $M
1	Mining	0
3	Process Plant	13.28
4	Infrastructure & Services	0.54
6	Construction Costs	3.94
7	Indirects	3.55
8	Owners Costs	1.50
9	Contingency	1.82
	Subtotal	**24.63**

1.18 Marketing

Changes to the worlds view of fossil fuels has now seen Graphite identified as a *'critical mineral of the future'* and its demand is now driven by the massive growth in the use of lithium-ion batteries and significant steel production where graphite playing an important role in steel production. Graphite is a valuable and essential component of lithium-ion batteries and is also used extensively in the production of other batteries and other forms of green energy which are expected to play in an important part of the new World's Green Economic Future.

Graphite is facing a period of unprecedented growth in demand as highlighted by:

- The World Bank expecting graphite demand to increase by 500% between 2018 and 2050
- The global graphite market expected to reach US$21.6 billion by 2027
- Electric vehicle uptake will drive >700% graphite demand growth by 2025

The projected massive increase in the use of graphite has seen new and planned development of many new mines largely in Madagascar and other parts of Africa. End user demand to traditional sources of graphite supply have created opportunities for new mines to development and supply world class products in to new and growth markets. Outside of the USA, the European Union plans to invest billions in the development of giga-factories to support the expected growth in electric vehicles and other cleaner sources of power and energy.

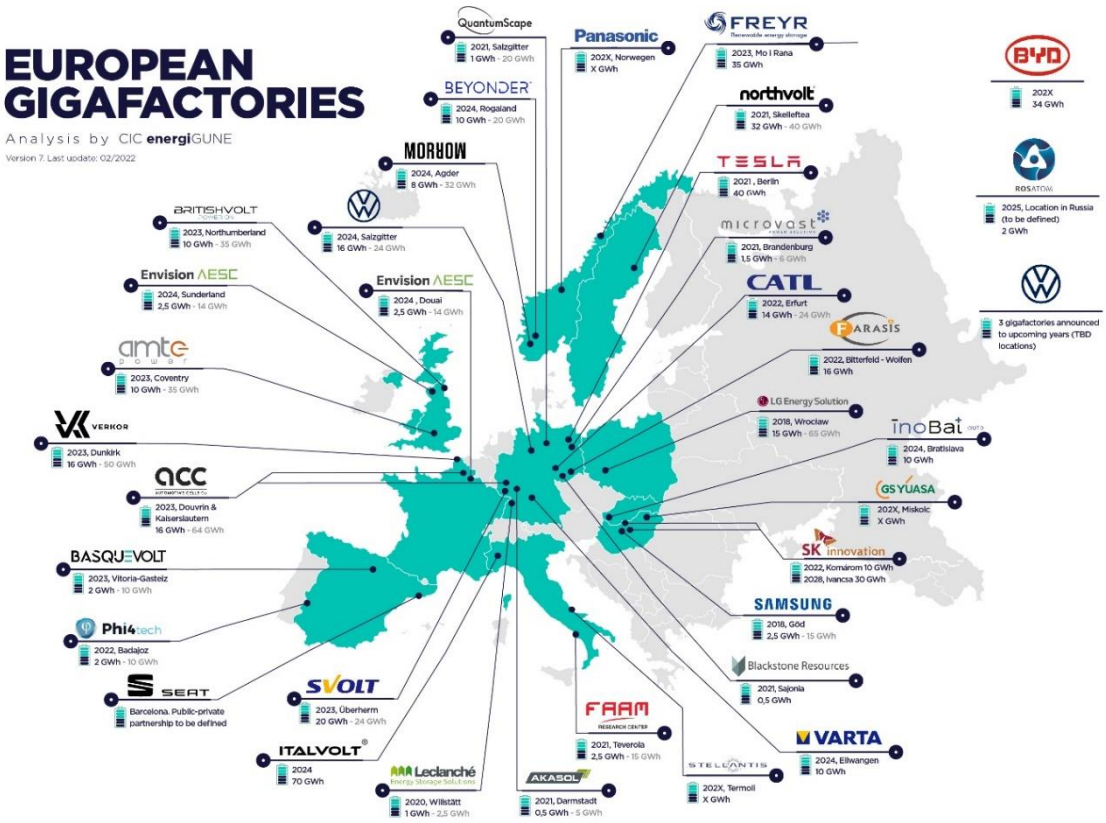


Figure 22: Battery Giga-factories projected for development in Europe

Madagascar has a strong history of graphite mining over the last 100 years with consistent development occurring throughout the Country. During the last year, a substantial development adjacent to our Maniry site has progressed and further projects have increased production in the north and north east of the country. It is projected that Madagascar producers could export well in excess of 300,000 tonnes of concentrate in 2023 which would make it the largest exporter of concentrate outside of China. The total production from Madagascar estimated for 2022 is in excess of 130,000 tonnes.

Madagascar also enjoys the strategic advantages of very competitive labour rates and mining laws, and is well positioned geographically with logistics and freight costs materially more appealing than other parts of the world.

Over the past two years, BlackEarth has undertaken a series of product testing that has consistently demonstrated that graphite concentrate from our Maniry deposit is highly suitable for the following applications: -

- To produce Battery Anode Material (“BAM”) for use in the production anodes for use in the manufacture of Lithium-ion batteries (“LiB”)
- In traditional graphite applications including foundry and manufacturing processes
- To produce Expandable Graphite as a downstream product which sells for approximately US$3,300 per tonne and is used in a number of building and construction applications and, importantly

BlackEarth will continue its short-term focus of meeting qualification standards from a variety of battery manufacturers and is well positioned to supply around 20,000 – 25,000 tonnes of material to this market in the short term.

Extensive product testing and Pilot Plant testing has focused on two specific outcomes in order to maximise the return on concentrate produced –

1. Maintaining a significant portion of product as medium, large and jumbo flake and
2. Producing a high average fixed carbon ("FC") grade whilst maintain a consistent distribution level. Note, at the point of sale, the product grade is referred to as FC not TGC.

This has successfully been achieved with Pilot Plant operations achieving 38.5% of production at greater than or equal to large flake, 13% defined as medium flake and 48.5% fine flake material.

This has also been achieved with average FC grades of between 95 – 96%. Such grades are above industry standards and will attract price premiums to quoted 94 – 95% FC products of around 10%.

Table 12: Product Distribution

Quantity	P35	P50	P80	P100	M100
ASTM E 11-87	+35 Mesh	-40 +50 Mesh	-50 +80 Mesh	-80 +100 Mesh	- 100 Mesh
Microns	>500	>300	>180	>150	<150
96 FC%	1.5%	11.0%	26.0%	13.0%	0.0%
95 FC%	0.0%	0.0%	0.0%	0.0%	48.5%
Total	**1.5%**	**11.0%**	**26.0%**	**13.0%**	**48.5%**

The price projections used in the DFS have been determined by assessing industry data, reviewing other projections and relying on the advice of leading graphite traders, experienced in assessing price trends and analysis.

Our projections are robust and are based on our and industry projections to apply from 2024 and do not provide for any material price increases that potentially can occur due to the shortages of supply to meet projected massive increases in demand. In assessing current and future pricing, we have relied on the UBS Pricing Assessment Outlook Report (March 2021), current and future pricing data from Benchmark Mineral Intelligence, feedback from the largest Graphite trading group in Europe and our own market research.

Based on the summary of our projected process and product distribution (above), we have assessed and applied an average selling basket price of US$1,448 / tonne.

Table 13: Project Graphite Pricing

US$ Price FOB	P35	P50	P80	P100	M100
96 FC%	2,700	2,650	1,665	1,350	1,050
95 FC%	2,250	2,200	1,495	1,150	1,050

1.19 Project Risk Assessment

1.19.1 Overview

The Feasibility Study has been carried out to the highest professional standards using the best available data. Nevertheless, it is recognised that there are uncertainties in implementing and operating any project. There is a risk that forecasts will not be achieved in some areas and there are opportunities for improving the performance of the Project in others. These risks and opportunities are categorised here as political, commercial, technical, implementation and operational.

A risk analysis has been carried out by identifying risk issues, determining their potential impact and likelihood of occurrence and setting strategies for dealing with each risk issue which may detract from the performance of the Project. Consideration has also been given to opportunities which may enhance the performance of the Project.

The Study represents a snap shot of the Project as at Q3 2022.

The risk strategy adopted has been to minimise wherever possible risks that have the potential to adversely impact the financial viability of the Project or the ability to enhance the Project's ability to obtain project financing.

Accordingly, BlackEarth will adopt, prior to financial drawdown, risk mitigation practices in such areas as HSEC (Health, Safety, Environment & Community), significant process inputs, product marketing, logistics, processing, operations, implementation and geopolitical risks. Prior to the commencement of the implementation phase, these plans will be initiated, while operational standards and management systems which will govern operations and mitigate risks through the life of the project will be developed.

A key overarching risk, across the development phase through to operations, is that of human resources management. Planned and targeted early recruitment and training aligned with the Project schedule has commenced and funding has been included within the capital costs, both prior to, and throughout the operational years for the identification and training of suitable Malagasy personnel. Critical to the success of the Project will be the timely recruitment of suitable and well credentialed expatriate personnel, who have successful track-records of working in similar environments.

1.19.2 Key Risks

1.19.2.1 Commercial

The financial analysis carried out for the Feasibility Study assumes that all production will be sold at the forecast graphite prices in US dollars while operating costs are converted from the country of origin currency to US dollars at the forecast exchange rate.

Approximately 50% of operating costs and 100% of the revenue will be in US dollars. BlackEarth intends to finance the Project through a US dollar denominated loan. The US dollar borrowings will provide BlackEarth with a natural hedge against the majority of foreign exchange risks associated with the Project.

The risk of actual graphite price falls, exchange rate fluctuations, etc. has been considered in the sensitivity studies carried out as part of the financial analysis.

It is expected that some graphite price volatility will continue into the future with an overall trend of increasing price. The price risk to the Project is mitigated by the Project's low operating cost structure.

In parallel to this natural hedge, it is anticipated that BlackEarth will pursue a conservative foreign exchange hedging program to minimise exchange rate risks.

1.19.2.2 Operational

The most significant operational inputs, accounting for 79% of the operating cost to the project and their proportion of average operating costs, are:

- Power Generation 32% of total operating cost;
- Mining Load & Haul 17% of total operating cost;
- Mining Drill & Blast 11% of total operating cost;
- Reagents & Consumables 11% of total operating cost; and
- Transport 8% of total operating cost.

Diesel is the largest single cost as it significantly impacts both Capex and Opex across the key areas of power generation, mining, processing (flotation and drying) and logistics. The price of diesel used in the DFS reflects the period Q3, 2022. All diesel is currently imported into Madagascar. Strategies are currently being reviewed to decrease overall diesel consumption.

Prior to the commencement of operations, people and safety plans will be detailed and implemented in order to minimise the risks normally incurred with start-up and ongoing operations.

1.19.2.3 Technical

Technical risk factors and areas reviewed included:

- the mineral resource tonnage and in-situ grade;
- mining production rate and head grade;
- process plant construction;
- ore processing throughput; and
- metallurgical recovery and product quality.

The risk in each of these areas is that actual performance will be less than that forecast in this Study such that the production of the forecast tonnages of graphite concentrate will not be achieved. Conversely there are opportunities to achieve greater than forecast production, if design parameters prove to be conservative. To minimise technical risks a well-resourced owner's management team will be established with high levels of expertise gained from direct exposure to the graphite projects and development of new projects in Africa and Madagascar in particular. The team will focus on risk management of resource estimation, mine design, process design, process plant engineering and construction having experienced the pitfalls from recent lessons learned in the similarly designed and operating technology.

1.19.2.4 Project Implementation

The major categories of risks in implementing the Project are that:

- Project facilities will not meet process or engineering design criteria;
- Costs will overrun; and
- there will be a delay in commencing operations.

Conversely there will be opportunities for exceeding the design criteria, saving costs and completing ahead of schedule.

These risks will form the basis of a detailed risk register and will be actively managed throughout the implementation phase as the Project progresses. The next phase of implementation, will involve recruit of critical personnel who will develop risk controls and implement appropriate standards and management systems to address these areas.

Aspects of the implementation plan which will impact on each of these risks and opportunities are:

- Project management;
- Structure of the major implementation contract;
- Engineering;
- Procurement;
- Construction;
- Commissioning;
- Human and physical resources;
- Government, community and industrial relations; and
- Latent conditions.

1.19.2.5 Country Risk

Further development of the Maniry Project is governed by Madagascan legislation, and is subject to the risks associated with operating in a foreign country including economic, social or political instability /change, changes in law affecting foreign investment, labour and community relations, timing on relevant permits and licenses, and changes to law and mining policies.

The effects of these and other potential factors, cannot be accurately predicted and developments may ultimately influence the future implementation and or operation of the Project.

The Company continues to be directly and indirectly involved in discussions at all levels of Government and community as they relate to the Project. This enables BlackEarth to best understand its current position in relation to these factors on an ongoing basis.

1.20 Financial

The financial analysis indicates an NPV @8% (post tax and ungeared) of US$205M for the base case production profile and price assumptions, which provide for an internal rate of return (“IRR”) of 29% (post tax and ungeared). The LOM currently runs for 21 years.

The financial performance of the project is summarised in Table 14.

Table 14: Financial Performance Summary

Financial Performance Summary	Unit	LOM
Life of Mine	Years	21
Total LOM Gross Revenue	US$M, real	1,638
Graphite Basket Price (LOM)	US$/t	1,448
Total Project Development Capital Costs – Stage 1	US$M	79.2
Total Project Development Capital Costs – Stage 2	US$M	24.6
FOB Cost per Tonne – Concentrate (LOM)	US$/t	657
LOM Average Annual EBITDA (after year 1)	US$M, real	39
Project NPV @8.0% - Pre Tax, Ungeared	US$M, real	263
Project NPV @8.0% - Post Tax, Ungeared	US$M, real	205
Project IRR – Pre Tax, Ungeared	%, Nominal	33
Project IRR - Post Tax, Ungeared	%, Nominal	29
Payback (Post Tax) from first ore	Years	3.8

The financial analysis indicates the project is financially viable and results in strong financial returns. With a short payback period of 3.8 years from first ore processed, the project has relatively low exposure to the key risk factor of long-term commodity prices, mitigating exposure to the financial risk associated with the project's capital funding requirements. The strong financial returns under the base case assumptions provide a positive risk versus reward assessment.

1.20.1 Key Financial Assumptions

The key financial assumptions are:

- All amounts have been modelled in US$.
- The financial model is built using real inputs in 2022 dollars.
- Discount Rate applied is 8%
- The financial model is built by monthly for the Life of Mine.
- Pre- and post-production capital and capitalised operating costs are depreciated for tax purposes on a straight-line basis. The costs of mining pre-production are part of capitalised pre-production operating costs and ore is not carried separately as mining inventory. The resultant tax treatment is conservative.
- Pre- and post-production capital and capitalised operating costs are depreciated for accounting purposes over the LOM. There is no residual value.
- The Model includes end of LOM rehabilitation costs and mine closure costs and assumes no project residual values. Operating costs allow for progressive rehabilitation of land throughout the project life and for land to be returned to traditional uses as quickly as possible post mining.

- Financial analysis is provided at the level of ungeared project cashflows. Analysis is based on 100% project equity.
- Basket pricing of $US1,448/t for concentrate product has been applied. Pricing is FOB from the Port of Toliara.
- Taxation inputs for the financial model are based on current fiscal conditions in Madagascar:
    - Corporate income tax of 20% is applied to earnings before tax, with the assumption that government royalties are tax deductible for corporate tax purposes.
    - Royalties of 2% are applied to gross FOB revenue.

1.20.2 Production Profile

Project revenue is derived from the sale of graphite product alone. Average graphite pricing of US$1,448/t product has been applied. Pricing is based on FOB Port of Toliara.

The base case average sales pricing is based on marketing research which is discussed in section 1.18.

1.20.3 Offtake Agreements and Project Financing

1.20.3.1 Offtake and Sales Agreements

BlackEarth plans to secure binding offtake agreements (sales contracts) on financially appropriate terms covering most of the Project's annual production and revenue.

BlackEarth is currently developing its Expandable Graphite Joint Venture in India and it is planned that around 4,000 tpa will be provided from its Maniry operation to the JV.

In addition to this, the Company has supply Memorandum of Understandings (MOU's) with RHI Magnesita, Europe and Urbix Resources Inc, USA and will continue discussions with these groups, and a number of others, in order to develop a substantial list of binding offtake agreements in the short term.

Members of the BlackEarth Executive team already have extensive, practical experience in the marketing and sales of graphite concentrate worldwide and the Company has an extensive database of potential buyers of its world class graphite products.

Additionally, as at the date of this report, the Company is undertaking a Scoping Study on the merits of developing a Battery Anode Material (BAM) development plant in Germany. The Scoping Study is being prepared by Wave International Ltd (Australia) in conjunction with leading Graphite testing and processing consulting group, Dorfner Anzaplan, Germany. The Company expects the results of the Scoping Study to be available in November 2022 and the proposed BAM plant would, potentially, require 30,000 tonnes pa of graphite concentrate from the Maniry Project in Madagascar.

BlackEarth is in discussions with several parties about, potentially, the joint development of the proposed BAM plant.

1.20.3.2 Project Financing

The Company is directly in early stage discussions with a number of potential funding partners in Australia and overseas. The potential funding partners are significant global financial institutions and other globally recognised groups which may also support the Company by entering into offtake agreements as part of a Company wide funding plan.

The Company has also recently engaged Corporate Advisors, and a legal team, to assist with funding plans to assist with the development of Maniry. The Company's Corporate Advisors are confident in the Company's ability to fund the Project's Stage1 CAPEX requirements and have also commenced discussions with a number of funding parties who may seek to provide a debt and equity facility in order to achieve short term funding needs.

The Company's Executive team is pleased with the level of early stage interest expressed by the potential funding partners and will look to develop a clear path to development completion over the short term.

On the basis of the robust market outlook for graphite products and the preliminary work already undertaken in relation to financing, the Company considers that there is a reasonable basis that the development of the Maniry Graphite Project can be successfully funded

1.20.3.3 Development Delivery

BlackEarth's key corporate objectives are to grow the Company's value by initiating the key strategic goals and plans that it has in development. These include:

- Establishment of key offtake and supply agreements which will support the Company's project financing plans
- Project development during 2H 2023 with ramp-up and production timing to be confirmed during 2024
- First sales and export of Graphite concentrate to occur in the second half of 2024.

The Company's plans are well advanced and supported by the fact that it has undertaken extensive product testing and market planning over the last two years.

The Company's previous test results, as outlined in this document and previous ASX market releases, have been undertaken by Dorfner Anzaplan and BTR New Energy with both groups confirming that product from the Maniry Project is world class and suitable for a range of traditional graphite and down stream applications, including use in the manufacture of electric vehicle (EV) and alternative green energy supply industry. The Company has also made samples available for testing with a range of other new and proposed buyer and down stream processing groups with all results highly encouraging.

The independent verification that graphite from the Maniry project is of a superior, world class quality also de-risks our development for new and potential offtake partners.

Factors that can deliver a strategic advantage to Maniry include:-

- Maniry graphite has low deleterious impurities and favourable metallurgy, which enables the Project to produce 95-96% TGC concentrate purity, solely with conventional flotation processing.
- Buyers of Maniry graphite can, at their election, acquire the concentrate at a lower purity and be able to upgrade it easily and at a low cost.
- Testing for the battery and EV markets have indicated higher than required spheronisation yields than typically achieved.
- Positive ESG advantages – the Company has built into its plans the development of a substantial solar power generation system with the potential for massive upgrades to

provide a significant clean energy solution to the Project's power needs. This makes Maniry more environmentally-friendly than competing products.

- Maniry's Project flowsheet has been extensively tested by Industry leaders with pilot plant testing validating the quality of Maniry Graphite. The developed flowsheet has been uniquely developed to suit graphite from Madagascar and this initiative will assist to de-risk the projects development and provide significant supply security to proposed binding offtake parties.

1.21 Sensitivity Analysis

The sensitivity of the financial performance of the project to variations in a number of key parameters are outlined below.

1.21.1 Project Graphite Basket Price Variation

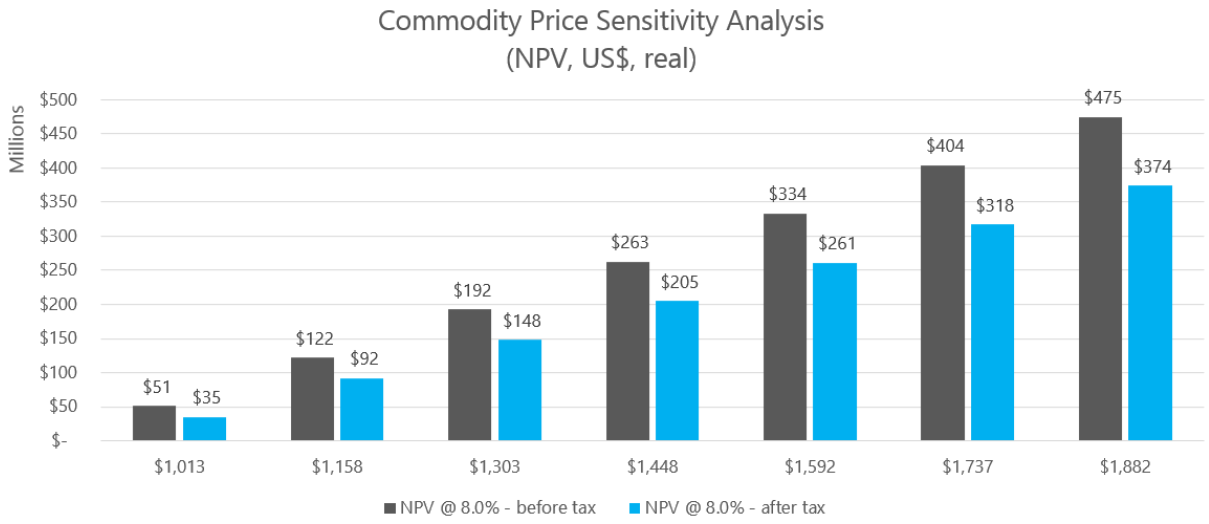


Figure 23: Commodity Price Sensitivity Analysis NPV

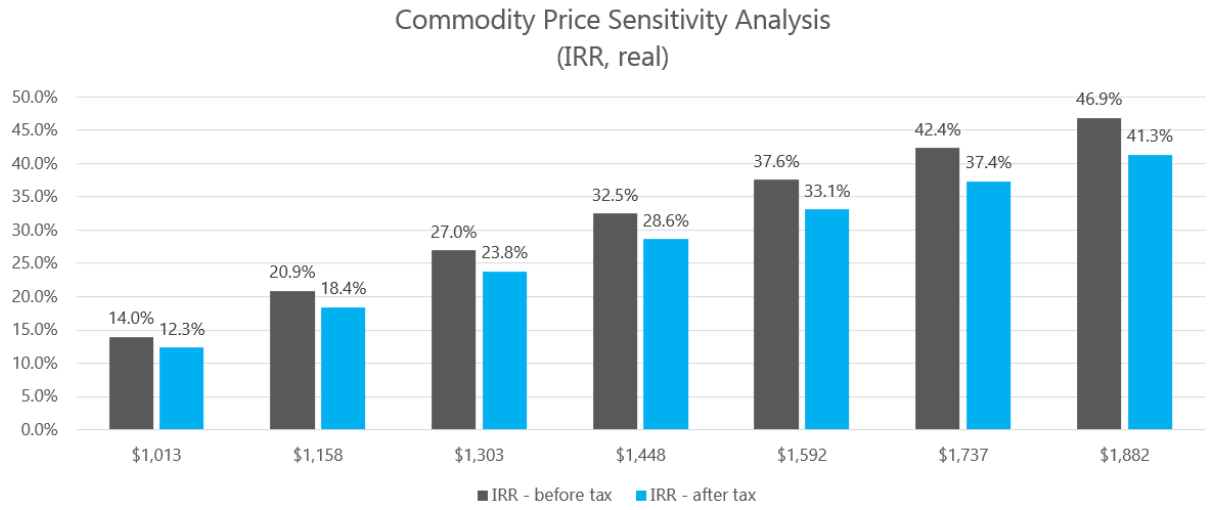


Figure 24: Commodity Price Sensitivity Analysis IRR

1.21.2 Project Sensitivities to Key Parameters

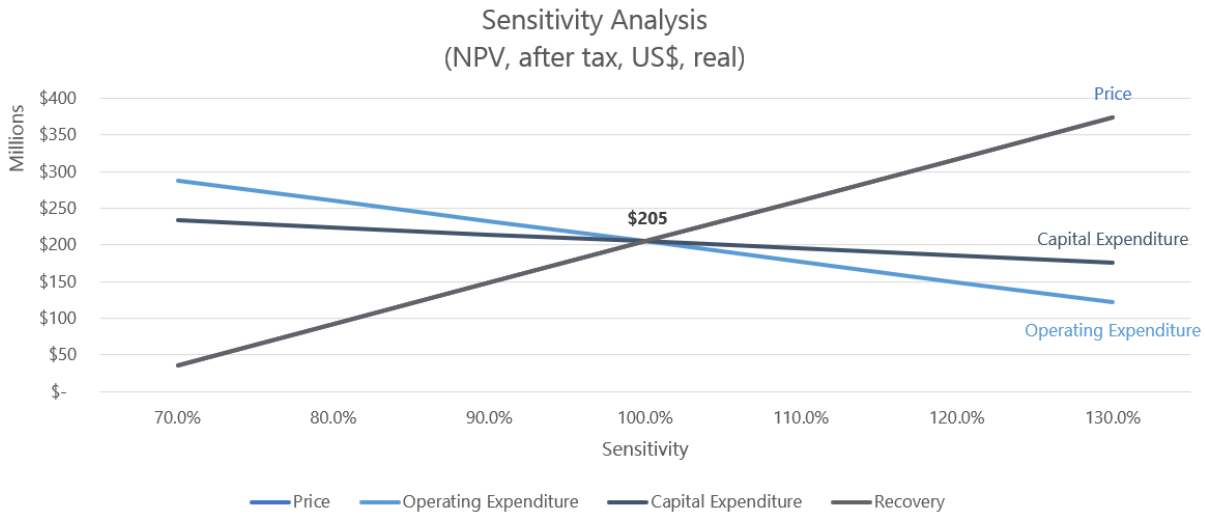


Figure 25: Sensitivity Analysis NPV after tax

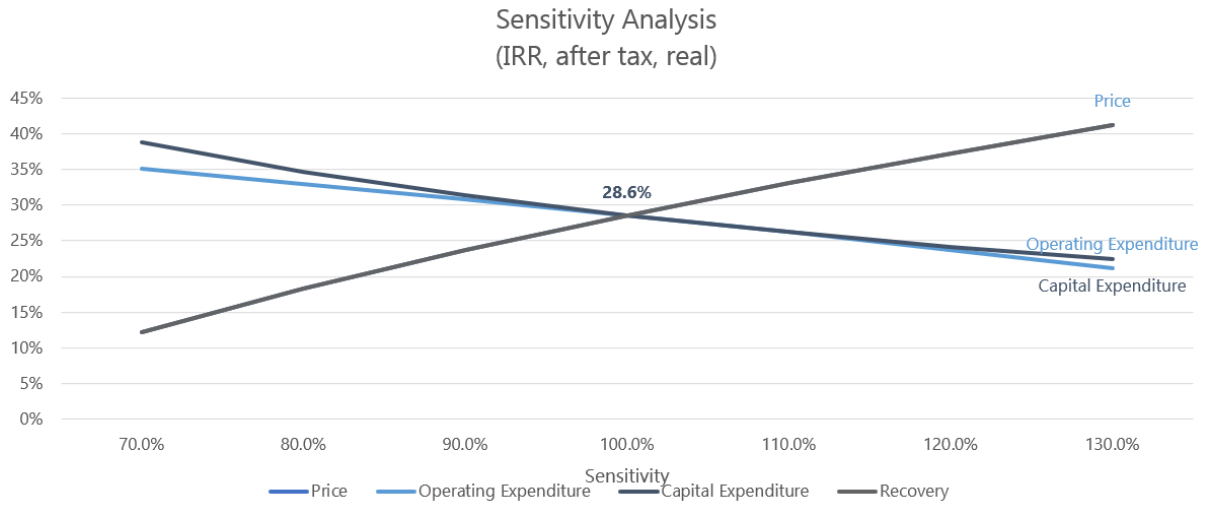


Figure 26: Sensitivity Analysis IRR

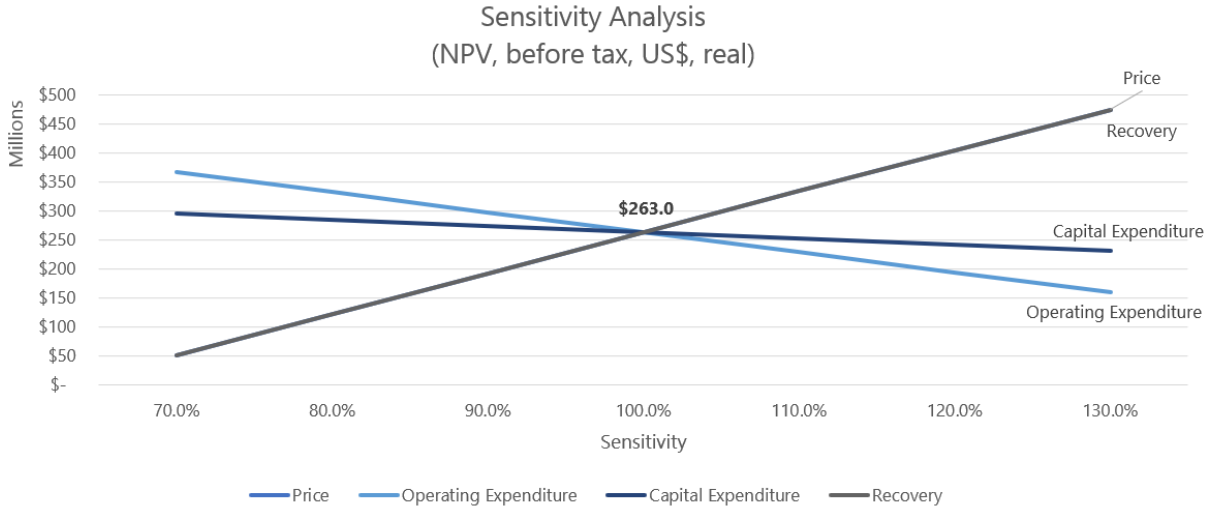


Figure 27: Sensitivity Analysis NPV before tax

2. Appendices

26 July 2022 – RAZAFY RESOURCE

The Razafy Indicated and Inferred Mineral Resource, now comprises 25.7Mt @ 6.2% Total Graphitic Carbon (TGC) above a 3% TGC cut-off grade, summarised below in Table A.

Table 15: Razafy Mineral Resource Estimates for Maniry Project

Area	Classification	Tonnes (Mt)	Total Graphitic Carbon (%TGC)	Contained (tonnes of graphite)
Razafy *	**Indicated**	**13.6Mt**	**6.5%**	**890,000**
	Inferred	**12.1Mt**	**5.9%**	**720,000**
	TOTAL	**25.7Mt**	**6.2%**	**1,610,000**

* Note: Mineral Resources are reported in accordance with the JORC Code. The Mineral Resource was estimated within constraining wireframe solids defined above a nominal 3% TGC cut-off. The Mineral Resource is reported in metric tonnes for all blocks above the lower cut-off grade of 3% TGC within these wireframe solids. Differences may occur due to rounding.

9 August 2022 – RAZAFY NW RESOURCE

The Razafy NW Indicated and Inferred Mineral Resource, comprising of 5.3Mt @ 8.5% Total Graphitic Carbon (TGC) at a 3% TGC cut-off grade is summarised below in Table A. The majority of the Mineral Resource has been classified with a high degree of confidence at an 'Indicated' classification, with the remainder classified as 'Inferred'.

Table 16: Razafy NW Mineral Resource Estimates for Maniry Project

Area	Classification	Tonnes	Total Graphitic Carbon (%TGC)	Contained Graphite (tonnes)
Razafy NW*	**Indicated**	**3,100,000**	**8.6%**	**266,000**
	Inferred	**2,200,000**	**8.5%**	**186,000**
	TOTAL	**5,300,000**	**8.5%**	**452,000**

* Note: Mineral Resources are reported in accordance with the JORC Code. The Mineral Resource was estimated within constraining wireframe solids defined above a nominal 3% TGC cut-off. The Mineral Resource is reported in metric tonnes for all blocks above the lower cut-off grade of 3% TGC within these wireframe solids. Differences may occur due to rounding.

The Project Mineral Resource Inventory is reported as follows -

Table 17: Maniry Project Minerals Resources

Area	Classification	Tonnes (Mt)	Total Graphitic Carbon (%TGC)	Contained Graphite (tonnes)
Razafy*	Indicated	13.6Mt	6.5%	890,000
	Inferred	12.1Mt	5.9%	720,000
Razafy NW*	Indicated	3.1Mt	8.6%	266,000
	Inferred	2.2Mt	8.5%	186,000
Haja**	Indicated	-	-	-
	Inferred	9.0Mt	5.8%	522,000
TOTAL	Indicated	16.7Mt	6.9%	1,156,000
	Inferred	23.3Mt	6.1%	1,428,000

**3% TGC cut-off grade* ***5% TGC cut-off grade*

Reported at the cut off grades above; figures in the table above have been rounded, reported to the appropriate significant figures with graphite tonnages rounded to the nearest thousand, in accordance with the 2012 JORC Code

Competent Persons Statement
Mineral Resource – Razafy and Razafy NorthWest

The information in this Report that relates to in situ Mineral Resources for Razafy and Razafy NW was prepared, and fairly reflects information compiled, by Mr Grant Louw and Dr Andrew Scogings, each of whom have sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as Competent Persons as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" (the JORC Code). Mr Louw is an employee of Snowden Optiro and is a Member of both the Australian Institute of Geoscientists and the Geological Society of South Africa. Dr Scogings is an employee of Snowden Optiro, a Member of the Australian Institute of Geoscientists and the Geological Society of South Africa and is a Registered Professional Geoscientist (RP Geo. Industrial Minerals). Mr Louw and Dr Scogings consent to the inclusion of information in the Mineral Resource report that is attributable to each of them, and to the inclusion of the information in the release in the form and context in which they appear.

Competent Persons Statement
Mineral Resource – Haja

The information contained in this report that relates to the Haja Mineral Resource is based on information compiled by Ms. Annick Manfrino, Principal of Sigma Blue and previously Manager Geology of BlackEarth Minerals. Ms. Manfrino is a member of The Australian Institute of Geoscientists and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activities 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 completed a site inspection and is the Competent Person for this Resource estimation. Ms. Manfrino consents to the use of the information included in this document in the form and context in which it appears.

October 2022 – MANIRY ORE RESERVES

The Ore Reserve is 16.2Mt at 6.58% TGC, details of which are set out in Table F.

Table 18: Summary Ore Reserves

Ore Reserve			
Area	**Classification**	**Tonnes (Mt)**	**TGC Grade (%)**
Razafy	**Probable**	**13.2**	**6.20**
Razafy NW	**Probable**	**3.0**	**8.22**
Total	**Probable**	**16.2**	**6.58**

Notes:

1. *All stated Ore Reserves are included within the quoted Mineral Resources and are quoted in dry tonnes.*

Competent Persons Statement
Ore Reserve – Razafy & Razafy NorthWest

The reported Ore Reserves have been prepared under the supervised and managed of Mr Michael Ryan. Mr Ryan is a Member of the Australasian Institute of Mining and Metallurgy and a consultant to BlackEarth Minerals NL as Project Manager for the Maniry Graphite Project. He has sufficient experience, relevant to the style of mineralisation and type of deposit under consideration and to the activity he is undertaking, to qualify as a Competent Person as defined in the 'Australasian Code for Reporting of Mineral Resources and Ore Reserves' of December 2012 ("JORC Code") as prepared by the Joint Ore Reserves Committee of the Australasian Institute of Mining and Metallurgy, the Australian Institute of Geoscientists and the Minerals Council of Australia. Mr Ryan gives BlackEarth Minerals NL consent to use this reserve estimate in reports. Mr Ryan holds a beneficial interest is shares in the company through a superannuation fund.

2.1 Razafy

2.1.1 JORC Code, 2012 Edition – Table 1

2.1.1.1 Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	• the drill hole database only consists of diamond drill holes • sampling consists of 2m composite samples of ¼ core with breaks at lithological discontinuities - typical 3-5kg • samples are cut using a diamond blade core saw • duplicate samples are collected every 20th sample for QAQC purposes • standards (CRMs) are inserted every 20th sample for QAQC purposes • blanks are inserted every 50th sample for QAQC purposes • sampling is considered comprehensive and representative • ¼ cores are sent for analysis, the remaining core material is retained and stored in BEM's secure core shed • metallurgical samples were obtained from diamond drilling using ¼ cores or a split of coarse reject crushed sample. **Trenching** • trenches are dug perpendicular to the strike of mineralised units with a backhoe or by hand using picks and shovel • geologists log and systematically sample the trenches using a rock hammer at 2m intervals • CRMs are inserted ~every 20th sample for QAQC purposes
Drilling techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• conventional wireline diamond drilling was used to obtain all drillcore and drilling was undertaken with a Boart Longyear LF70 trailer mounter drilling rig • nominal core diameter was 63.5mm (HQ) in 0.5-1.5m runs

Criteria	JORC Code explanation	Commentary
		• drill holes were inclined at -60°, direction 233°, and not all core is not orientated • a total of 61 diamond holes (RAZ13-20 to RAZ23-26) were completed during the 2021/2002 infill drilling program and 3369m were drilled
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• core recovery is routinely recorded every metre by geologists • no bias or relationship has been observed between recovery and grade • core recoveries of >85% on average were achieved for sampled core within the graphite mineralised zones
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	**Drilling** • all drill holes are logged by qualified and experienced geologists • logging includes descriptions of mineralisation, structural and lithological aspects of the core and is recorded using an industry standard code system • all logging included lithological features, estimates of graphite percentages and flake sizes, which is quantitative and is recorded on the logging sheets • cores are systematically photographed dry and wet • the data collected offers sufficient detail for the purpose of interpretation and further studies • density measurements are made using the Caliper Vernier method by qualified and experienced geologists for graphite ore and waste material, and further follow-up densities are completed at Intertek and Snowden in Australia. **Trenching** • all trenches are logged by qualified and experienced geologists • logging includes descriptions of mineralisation, structural and lithological aspects of the encountered rocks and is recorded using an industry standard code system

Criteria	JORC Code explanation	Commentary
		• the data collected offers sufficient detail for the purpose of interpretation and further studies
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	**Drilling** • ¼ cores are cut using a diamond core saw and collected for assay • 2 metre composite sampling is deemed to be comprehensive and representative for the style/type of mineralisation under investigation • sample preparation from ¼ core to pulp is undertaken at BEM's sample preparation facility in Antananarivo (former Intertek-Genalysis facility) • samples are oven dried, crushed to -2mm, split twice through a 50/50 riffle splitter to obtain a representative sub-sample, weighing approx. 100g and then pulverized that 85% pass -75µm pulp samples are sent to accredited laboratories in South Africa (SGS and Bureau Veritas) and Australia (Intertek) for Graphitic Carbon (TGC), Total Carbon (TC) and Sulphur (S) analysis **Trenching** • the base of the trench is chipped to obtain a representative sample over 2m intervals, the technique is deemed satisfactory for this exploratory phase of work • QAQC measures are deemed satisfactory for this type of sampling and exploratory phase of work • the sample size (3kg) is deemed satisfactory to the grain size of the material being sampled • sample preparation from 3Kg chip sample to pulp is undertaken at BEM's sample preparation facility in Antananarivo. Samples are pulverised to 75 microns, and approximately 100g sent to external laboratory for graphite and sulphur analysis
Quality of assay data and	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.*	**Drilling & Trenching** • analysis of TGC, TC and S content has been undertaken by Intertek in Australia (2018), SGS and Bureau Veritas in South Africa

Criteria	JORC Code explanation	Commentary
laboratory tests	• *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	(2021/2022). Umpire pulp samples for the 2021/2022 program were tested at Intertek, Australia. • a split of the sub-sample is analysed using a LECO Analyser to determine TC, S and TGC contents (these are considered both partial and total digestion analyses) • for TC and S, a stream of oxygen passes through a prepared sample (2g), it is heated in a furnace to approximately 1350°C and the sulphur dioxide and carbon dioxide released from the sample are measured with infrared detection • for TGC, a 0.2g sample is leached with dilute hydrochloric acid to remove inorganic carbon. After filtering, washing and drying, the remaining sample residue is roasted at 425°C to remove organic carbon. The roasted residue is analysed for Carbon - High temperature LECO furnace with infra-red detection • standards and duplicates (duplicates only for core, not for trench samples) are inserted every 20th sample, and blanks are inserted every 50th sample by the BlackEarth technical team in addition to the internal QAQC from the laboratory • Standards, blanks, duplicates and umpire samples for drill sample analyses reported in this announcement have performed satisfactorily. • OREAS standards OREAS722 / OREAS723 / OREAS724 and GEOSTATS standards GGC11 / GGC14 were included at a density of one in 20 samples • Blanks were included at a density of one in 50 samples • For some batches it was noted that the OREAS standards did not always perform well. Other QC measures for these batches including Geostats standards, blanks, field and pulp duplicate samples as well as laboratory internal QC measures generally performed acceptably. The OREAS standards are known to be a manufactured standard, rather than homogenised naturally occurring mineralisation and it is considered likely that some form of density separation of the filler material and graphite that form the standard has occurred during the extensive transport. As a

Criteria	JORC Code explanation	Commentary
		result while some samples from some batches have been reanalysed the primary issue appears to lie with the OREAS standard and not with the laboratory analysis. Umpire testing to date at two other laboratories has shown that the primary laboratory equipment appears to report slightly lower on average in comparison to other laboratories and as such data has been accepted for use in the MRE.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• significant intersections have been verified by alternative company personnel • no twin holes have been completed, but are planned for future drill programs • all data is recorded digitally using a standard logging system and files are stored in Excel files, with the objective being to import all data into an industry standard relational and auditable database before updating the Mineral Resource estimate based on the 2021 / 2022 infill drilling. • No data adjustment has been made.
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	**Drilling** • all collars were initially sited using handheld GPS. • collars were located using a DGPS (accurate to 1cm) projection and grid systems used: UTM (WGS84 Z38S). • downhole surveys by using a Reflex EZAQ instrument, were undertaken on some holes to verify deviation from starting azimuth and dip. **Trenching** • all XYZ surveying is collected using a handheld Garmin GPS accurate to ±4m • Projection and Grid system used: UTM (WGS84) Z38S
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral*	**Drilling** • drill hole spacing was originally approximately 100m along strike by 30m across strike (2018 and earlier)

Criteria	JORC Code explanation	Commentary
	Resource and Ore Reserve estimation procedure(s) and classifications applied. • *Whether sample compositing has been applied.*	• infill drilling during 2021/2022 was at approximately 50m along strike and 30m across strike • the drill hole spacing was sufficiently close to allow the graphitic mineralisation to be traced from section to section and down dip • samples were composited to 2m length • Some holes were sampled in entirety and others were sampled across graphite intersections and into adjacent waste rocks.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	**Drilling** • the drilling grid matches the strike of the orebody • the orientation of the drilling is not expected to introduce sampling bias as drill holes intersected the mineralisation at a sufficiently high angle to the dip of the graphite mineralisation. The 3D modelling process accounts for mineralisation envelopes when interpreted in three-dimensions. **Trenching** • the trenches are oriented perpendicular to the perceived orientation of the outcropping mineralisation, but since sampling is two-dimensional and not perpendicular to the dip of • mineralisation, reported intercepts will be wider than the true width of the mineralised unit
Sample security	• *The measures taken to ensure sample security.*	**Drilling** • full cores are kept in core trays systematically numbered and photographed, and cut and sampled and stored on site • pulps are prepared and stored at the BlackEarth's sample preparation facility in Antananarivo • pulps are couriered with DHL to laboratories in Australia and South Africa • the remaining core and leftover pulps are kept in a secure facility adjacent to the BlackEarth's office in Antananarivo **Trenching**

Criteria	JORC Code explanation	Commentary
		• samples are packaged and stored in secure storage from time of gathering to sample preparation
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• The procedures relating to diamond drilling more specifically logging, sampling (including density, sample collection, quality assurance/quality control, sample preparation and sample dispatch) and data management procedures have been reviewed by external auditors

2.1.1.2 Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• Work was undertaken upon permits PE5394 & PR39751 • The tenements are located within the inland of Madagascar in the southern region, approximately centred on the township of Ampanihy. • Tenements are held 100% by BlackEarth Minerals SARL Ultimately a wholly owned subsidiary of BlackEarth Minerals NL. • No overriding royalties are in place • There is no native title agreement required • Tenure does not coincide with any historical sites or national parkland • Semi-arid, thinly vegetated, relatively flat to low lying hills with sub-cropping rock. • Tenements are currently secure and in good standing.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Regional mapping by BRGM, Historical diamond drilling and trenching by Malagasy Minerals. Ltd. (2014-2016)
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The project overlies a prominent 20km wide zone consisting of a folded assemblage of graphite and quartz-feldspar schists (<60%

Criteria	JORC Code explanation	Commentary
		graphite), quartzite and marble units, with lesser intercalated amphibolite and leucogneiss. • This zone, termed the Ampanihy Belt is a core component of the Neoproterozoic Graphite System. The belt is interpreted as a ductile shear zone accreted from rocks of volcanic and sedimentary origins.

Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:*
	  ○ *easting and northing of the drill hole collar*
	  ○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar*
	  ○ *dip and azimuth of the hole*
	  ○ *down hole length and interception depth*
	  ○ *hole length.*
	• *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*
		• All relevant drill hole information has been previously reported to the ASX. No material changes have occurred to this information since it was originally reported.
		• All relevant data has been reported.

Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• Not relevant when reporting Mineral Resources. • No metal equivalent grades have been used.
Relationship between mineralisation widths and	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.*	• Not relevant when reporting Mineral Resources

Criteria	JORC Code explanation	Commentary
intercept lengths	• *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• Refer to figures within the main body of this report
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• Not relevant when reporting Mineral Resources
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• Refer to BlackEarth Prospectus and previous announcements.
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• Additional density measurements to be collected, and updated chemical analysis results for some sample batches will be incorporated to future MRE updates.

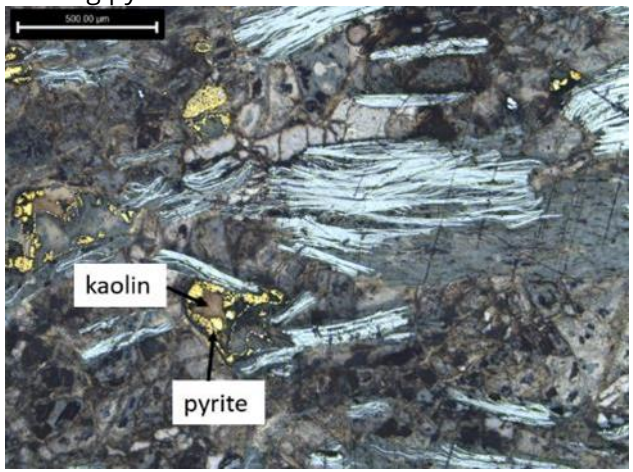
2.1.1.3 Section 3 Estimation and Reporting of Mineral Resources

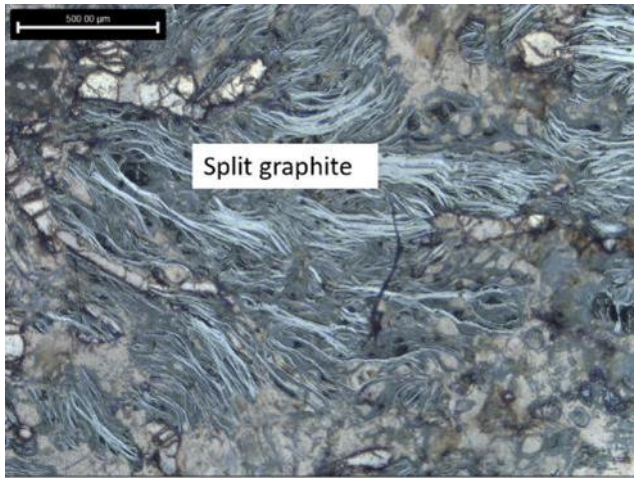
(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

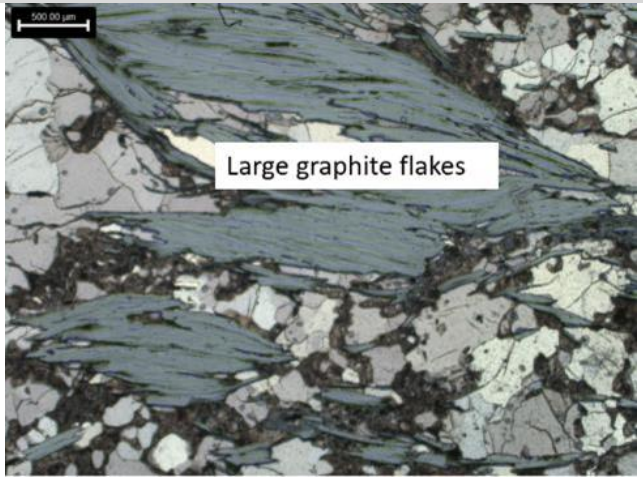
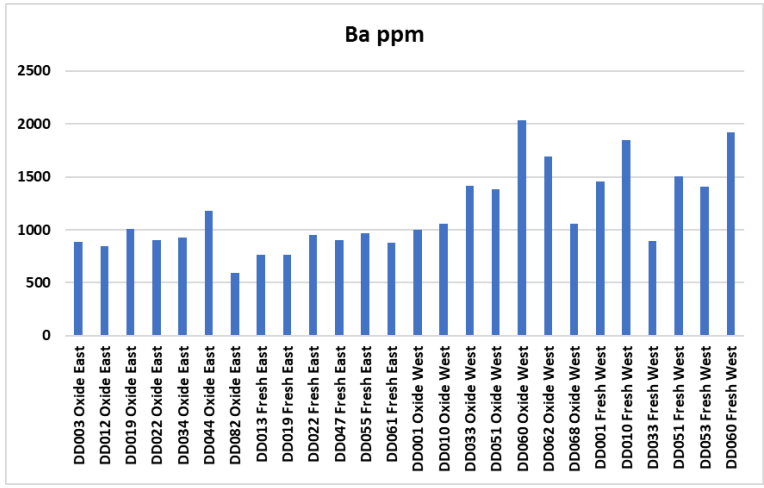
Criteria	JORC Code explanation	Commentary
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* • *Data validation procedures used.*	• Data used in the Mineral Resource estimate is sourced from a fully relational geological database export. Relevant tables from the data base are exported to MS Excel format and converted to csv format for import into Datamine Studio software.

Criteria	JORC Code explanation	Commentary
		• Validation of the data import include checks for overlapping intervals, missing survey data, missing assay data, missing lithological data, and missing collars.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• No site visit has been undertaken by the Competent Person however independent consultants who were responsible for estimation and reporting of the previous MRE undertook a site visit in March / April of 2018 and found that "All drilling, sampling and sample preparation procedures were considered of industry standard, well supervised and carried out". • The project is being managed in-country for BlackEarth Minerals by an independent geological consultant Mr Jannie Leeuwner who has completed several site visits since Nov 2021 and ensured that all procedures are being carried out to a good industry standard. • Therefore, it was considered unnecessary for the CP to conduct a site visit at this stage as the CP is confident that the project works are being conducted in an appropriate professional manner.
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation.* • *The use of geology in guiding and controlling Mineral Resource estimation.* • *The factors affecting continuity both of grade and geology.*	• The geology and mineral distribution of the system appears to be reasonably consistent through the two (East and West) primary mineralisation lenses. Infill drilling data has shown the extents, orientation and mineralisation tenor of the mineralised geological units to be very similar to the previous interpretation. Some areas previously interpreted as mineralisation zones have been shown to be depleted by intrusives, but it is not anticipated that materially significant volumes would be affected by any potential additional intrusive units so far not encountered in drilling or recognised from surface geological mapping. • Drill hole intercept logging, assay results, trenching and surface geological mapping have formed the basis for the mineralisation domain interpretation. Assumptions have been made on the depth and strike extents of the mineralisation based on drilling and surface mapping information. • The extents of the modelled zones are constrained by the information obtained from the drill logging and surface mapping

Criteria	JORC Code explanation	Commentary
		data, with a nominal 3% TGC lower cut-off grade applied to the interpreted mineralisation lens extents which corresponds well to the geological logging of graphite mineralised units. Alternative interpretations are unlikely to have a significant influence on the global Mineral Resource estimate, with the deposit being open at depth. • Surface mapping and trenching, with logged geological units and chemical analysis data have formed the basis for interpretation of mineralisation zones. A weathered zone boundary surface has been interpreted separating fresh rock material from weathered material based on the geological logs and cross referenced against the core photography as well as S results from chemical analysis. • The central part of the western graphite zone was intruded by granitic material which has displaced or stoped away the graphite mineralisation, while sheets of anorthosite with xenoliths are noted in the hanging wall of the east graphite zone. A garnetiferous marker layer has been noted along the base of the eastern graphite zone. The graphite schists and gneisses are generally underlain by a monotonous sequence of grey granulite and gneiss lithologies. • Pale green (pistachio green) alteration is noted on some drillholes and may indicate the formation of epidote along fault zones. • Thin section examination of density samples and crushed metallurgy feed composites has shown that the graphite mineralisation is hosted mainly by quartzo-feldspathic schist and gneiss of upper amphibolite to granulite grade. Country rocks include felsic and mafic granulites, anorthosite, skarn, syenite and scapolite-bearing marble. • Goyazite (Sr-phosphate), woodehouseite (S-phosphate) and crandallite (Ca-phosphate) were described from some thin sections. • Weathering and possibly retrograde metamorphism has resulted in ubiquitous breakdown of feldspar to clay (probably kaolinite)

Criteria	JORC Code explanation	Commentary
		both within oxidized and fresh domains. Sillimanite is noted from the East lens and is also kaolinised. Hyalophane (Ba-K feldspar) is a common accessory mineral in both the East and West lenses. Phlogopite mica occurs in trace and accessory amounts mainly in the West lens. Carbonates (e.g., calcite) is noted commonly as veinlets and accessory grains in the weathered part of the graphite lenses, predominantly in the Eastern lens. • Secondary minerals such as goethite and jarosite are noted mainly in the weathered (oxidized) domain, while pyrite occurs within the fresh domain (see photomicrograph below of co-existing pyrite and kaolinite in MNDD045 at 78-80m).  • A preliminary review of the chemistry of the metallurgy feed samples indicates that the Western lens is characterized by higher contents of Ba (see graph below) K, Na and P than the Eastern lens, while the oxidised (weathered) graphite schist appears to have elevated Ca, Fe and Mg which probably reflects secondary carbonates and Fe and Mg minerals such as goethite and smectite respectively. • Continuity of geology and grade can be identified and traced between drill holes by visual, geochemical and mineralogical characteristics. Additional data is required to more accurately

Criteria	JORC Code explanation	Commentary
		model the effect of any potential geological influences on the down dip and strike extents of the defined mineralised geological units. Confidence in the grade and geological continuity is reflected in the Mineral Resource classification. • The CP is of the opinion that the high metamorphic grade (upper-amphibolite to granulite facies) of the Razafy deposit is potentially favourable for the development of coarse graphite flakes. The CP notes however that the ubiquitous kaolinisation of alumino-silicate minerals seen at Razafy has caused flake splitting and size reduction; which requires extra attrition and flotation steps to remove attached or entrained clay gangue. See examples of graphite flakes in thin section below. Scale bars = 0.5 mm. Split graphite in MNDD022 at 30-32 m; Large graphite flakes in MNDD024 at 91-93 m. 

Criteria	JORC Code explanation	Commentary
		•  • 
Dimensions	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	• The largest mineralisation unit is referred to as the East Main lens which has a strike length of approximately 1.3 km. The true width is on average about 30 m, ranging between roughly 20 to 45 m being generally narrower to the north and south and thickest through the centre. Depth extent is interpreted to a maximum of approximately 190 m down dip or roughly 155 m below surface,

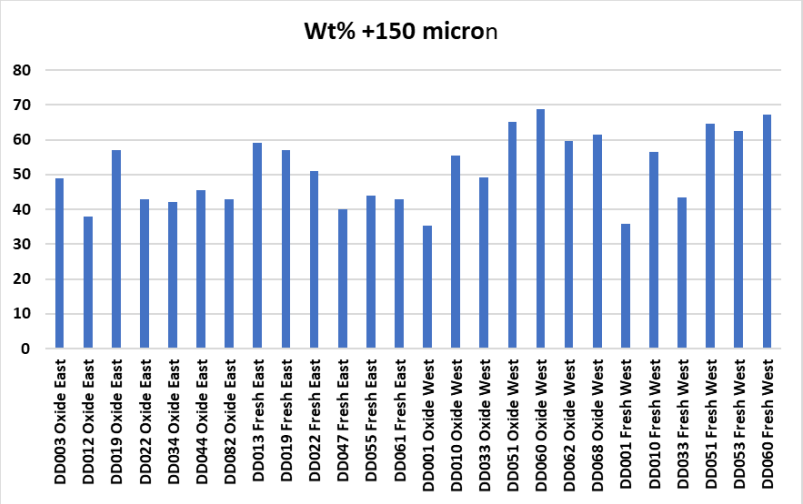
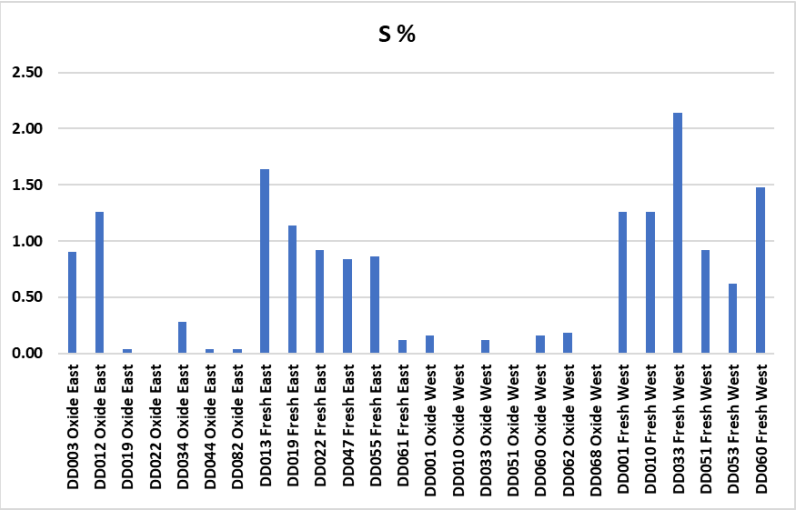
Criteria	JORC Code explanation	Commentary
		with the average down dip depth extent being approximately 155 m and average depth below surface being roughly 130 m. • To the west of the East Main lens (roughly 60 m across strike) is the second primary mineralisation lens called the West Main lens which is split into a north and south zone by an intrusive granite unit that affects about a 50 m strike length. The southern West Main lens has a strike length of roughly 550 m, down dip depth on average about 150 m ranging roughly between 115 and 175m, depth below surface on average roughly 130 m ranging between 100 and 150 m, with a true thickness on average about 33 m ranging between 25 and 45 m. The northern West Main lens has a strike length of roughly 850 m, down dip depth on average about 145 m ranging roughly between 115 and 160m, depth below surface on average roughly 120 m ranging between 100 and 130 m, with a true thickness on average about 15 m ranging between 10 and 25 m. • In addition, nine minor generally lower grade lenses, constituting less than 10% of the interpreted mineralisation volume have been interpreted in the footwall, hanging wall and between the primary lenses.
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.* • *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* • *The assumptions made regarding recovery of by-products.* • *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).*	• The mineralisation has been estimated using ordinary kriging (OK), using Datamine Studio RM software, based on estimation parameters obtained from geostatistical and spatial analysis and kriging neighbourhood analysis using Snowden Supervisor software. The OK grade estimation was carried out at the parent cell scale, with sub-blocks assigned parent block grades for the full extent of modelled mineralisation lenses, and an Inverse distance weighting to the power of two (IDS) check estimate was completed concurrently. TGC was estimated separately from S based on the requirement for the S estimate to be additionally be estimated based on the weathering state. Statistical analysis on 2 m composited drill hole data from within

Criteria	JORC Code explanation	Commentary
	• *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* • *Any assumptions behind modelling of selective mining units.* • *Any assumptions about correlation between variables.* • *Description of how the geological interpretation was used to control the resource estimates.* • *Discussion of basis for using or not using grade cutting or capping.* • *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	the interpreted mineralisation lenses individually to check grade population distributions using histograms, probability plots and summary statistics and the co-efficient of variation. The checks showed there were no significant outlier grades in the interpreted cut-off grade lenses for TGC while top cuts at 1.5% were required for S in the weathered zone for some lenses. The parameters obtained from the spatial (variogram) analysis modelling completed for TGC in the East Main lens was used for all grade estimates. The double spherical model had a nugget of 0.076, with a preferred strike direction of 140° for the major axis having been modelled with a range to the first structure (43%) of 45 m and to the second structure (49.4%) at 100 m. The semi major axis is modelled towards at -55° towards 050° with ranges of 25 m and 75 m. The minor axis is modelled at 35° towards 050° with ranges of 6 m and 9 m. Due to changes in the geometry of the mineralisation along strike the search ellipse orientation was varied along strike to suit the overall geometry of the lenses, with the variogram orientation also altered to match the search ellipse orientation. Based on the results of the KNA the search ellipse was 120 m (major) by 70 m (semi-major) by 10 m (minor) for the first search pass, which was then doubled for the second pass and increased 20 fold for the final (3rd) pass to ensure all blocks were estimated. A minimum of 12 and maximum of 24 samples was used for the first pass, reducing to minimum 10 and maximum 20 in the second pass and minimum 6 and maximum 16 for the 3rd pass. A maximum of 4 samples per drill hole was allowed per block estimate with no octant based searching used and block discretization was 3 by 3 by 3 (X, Y, Z). Model validation was carried out visually, graphically, and statistically to ensure that the block model grade reasonably represents the drillhole data. Cross sections, long sections and plan views were initially examined visually to ensure that the model grades honour the local composite drillhole grade trends.

Criteria	JORC Code explanation	Commentary
		These visual checks confirm the model reflects the trends of grades in the drillholes. Statistical comparison of the mean drillhole grades with the block model grade shows reasonably similar mean grades. The IDS check estimate shows similar grades to the OK model, adding confidence that the grade estimate has performed well. The model grades and drill grades were then plotted on histograms and probability plots to compare the grade population distributions. This showed reasonably similar distributions with the expected smoothing effect from the estimation taken into account. Swath or trend plots were generated to compare drillhole and block model grades with TGC compared at 40 m E, 40 m N and 10 m RL intervals. The trend plots demonstrate reasonable spatial correlation between the model estimate and drillhole grades after consideration of drill coverage, volume variance effects and expected smoothing. • No reconciliation data is available as no mining has taken place.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• Tonnages have been estimated on a dry, in situ basis, and samples were generally dry. No moisture values could be reviewed as these have not been captured.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• Visual analysis of the drill assay results demonstrated the lower cut-off interpretation of 3% TGC corresponds to natural break in the grade population distribution as well as corresponding well to the geological logging of graphite mineralised geological units. Metallurgical testing of composite intervals covering the full grade range of interpreted mineralisation appear to have delivered saleable products and as such all material within the interpreted mineralisation zones have been classified as Mineral Resources amenable to eventual economic exploitation.

Criteria	JORC Code explanation	Commentary
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	• It has been assumed that these deposits will be amenable to open cut mining methods and are economic to exploit to the depths currently modelled using the cut-off grade applied. • No assumptions regarding minimum mining widths and dilution have been made.
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	• BlackEarth reported initial metallurgical test results for a composite of MNDD series drill samples processed by ALS in Perth in 2018. Approximately 65% of the concentrate was coarser than 150 micron and > 96% TGC purity. • BlackEarth reported metallurgical testwork by the Chinese BGRIMM technology group in April 2021. A sixty (60) tonne bulk sample was taken in the east zone of the Razafy deposit (digging site centered on 487,040mE, 7,285,860mN). The excavation location was chosen between drillholes MNDD047 and MNDD048, with trench MNT012 confirming the location of the strata and graphite grades, in an area where the mineralisation is thick and the base of oxidation close to the topographical surface. Approximately 40% of the final concentrate had flakes greater than 150 µm at > 95% fixed carbon. The process flow incorporated 2 ball milling stages, 8 stages of stirred mill regrinding, and 10 concentrating stages. Most gangue minerals were reported to be kaolinite. • BlackEarth announced on 4th June 2019 that expandable graphite had been produced at a laboratory scale by specialist NGS Trading and Consulting in Germany. Based on the preliminary tests undertaken, expansion volumes of up to 400 cm^3/g were achieved. Key attributes towards producing an attractive expandable product including moisture, portion of volatile matter, loss on ignition (LOI), carbon content and ash content were all deemed positive. Low calcite contents were considered by NGS to

Criteria	JORC Code explanation	Commentary
		indicate that the BlackEarth flake graphite is suitable for the application in the refractory industry and other applications. • BlackEarth announced on 12th August 2019 that spherical graphite had been produced by Dorfner ANZAPLAN using concentrate from a pilot plant run by APS Perth. Dorfner ANZAPLAN concluded that the measured values after optimisation were in the range of typical comparable products. Spherical graphite production yields of 35-52% were achieved • Twenty six composites of half core from the 2018 MNDD series holes were submitted to ALS for crushing, grinding, attritioning and flotation tests in early 2021. Although this project is not finalized, on average, the samples returned just over 50% of flakes greater than 150 micron diameter (see graph below). The average purity (arithmetic, not weighted by length) was 96.2% TGC. The West lens appears to have coarser recovered flakes than the East lens. • Recoveries (as a percentage of feed grade TGC) averaged 87%. The highest recoveries appear to be from the West lens, whilst the lowest recovery of approximately 30% were from hole MNDD022 in the northern part of the East lens. • Metallurgical testwork samples achieved concentrate grades > 95% graphitic carbon. • Feed samples from the fresh domain are higher in S than the weathered (oxide) domain, reflecting the occurrence of pyrite in fresh rocks (see graph below). • The CP is of the opinion that metallurgical testing to date including the current 26 samples from MNDD holes, indicates that graphite concentrates of marketable size and purity may be extracted from the Razafy deposit and that this supports the classification of the Mineral Resource as an industrial mineral according to Clause 49 of the JORC Code.

Criteria	JORC Code explanation	Commentary
		 
Environmental factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of*	• No assumptions regarding waste and process residue disposal options have been made. It is assumed that such disposal will not present a significant hurdle to exploitation of the deposit and that any disposal and potential environmental impacts would be

Criteria	JORC Code explanation	Commentary
	potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	correctly managed as required under the regulatory permitting conditions.
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• Density has been measured by means of caliper, wax coated immersion, uncoated immersion and gas pycnometer methods. The gas pycnometer results have not been used as this method is not considered suitable for the deposit material. 40 historically collected density measurements apparently done by water displacement methods were available but since the exact interval measured are not known this data was used for comparison purposes only. A total of 54 measurements of full core by means of caliper completed by BlackEarth geologists fall within the mineralisation envelopes with half in fresh rock and half in weathered zone. QC checks by means of uncoated immersion for 21 samples were completed in the laboratory, while Snowden completed 18 caliper check measurements on half core samples. The QC checks validated that the caliper measurements were delivering reasonable results and therefore the caliper measurements have been used as the primary source for density values assigned to the model. Detailed assessment of the samples selected was required after analysis showed the weathered material has a mean value of 2.29, which is the same as that for the fresh rock. This showed that in the weathered zone a sample selection bias existed towards competent core pieces. As a result, the value applied to model required discounting to be considered reasonable. • The density measurements collected are considered appropriate for the material types. • Based on the sample selection bias noted it was decided that the mineralised weathered zone material should be assigned the mean value from all methods for the 6 samples of full core caliper

Criteria	JORC Code explanation	Commentary
		that had the additional QC measures in the form of uncoated immersion and half core measurements, being 2.15 t/m³. For the fresh mineralised material a mean caliper measured density of 2.3 t/ m³ is assigned. For waste rock the mean caliper density of 2.5 t m³ and 2.7 t/m³ for weathered and fresh material is assigned. All density assigned is a dry bulk density.
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.* • *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* • *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• Classification of the MRE was carried out accounting for the level of geological understanding of the deposit, quality of samples, density data and drillhole spacing. • The MRE has been classified as Inferred and Indicated in accordance with the JORC Code (2012 Edition) using a qualitative approach. All factors that have been considered have been adequately communicated in Section 1 and Section 3 of this Table. • Overall, the mineralisation trends are reasonably consistent over the drill sections. • The MRE appropriately reflects the view of the Competent Person.
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• No external audits have been undertaken.
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• The relative accuracy of the MRE is reflected in the reporting of the Mineral Resource as per the guidelines of the JORC Code (2012). • The Mineral Resource statement relates to global estimates of in situ tonnes and grade.

2.2 Razafy NorthWest

2.2.1 JORC Code, 2012 Edition – Table 1

2.2.1.1 Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	• the drill hole database only consists of diamond drill holes • sampling consists of 2m composite samples of ¼ core with breaks at lithological discontinuities - typically 3-5kg • samples are cut using a diamond blade core saw • duplicate samples are collected every 20th sample for QAQC purposes • standards (CRMs) are inserted every 20th sample for QAQC purposes • blanks are inserted every 50th sample for QAQC purposes • sampling is considered comprehensive and representative • ¼ cores are sent for analysis, the remaining core material is retained and stored in BEM's secure core shed **Trenching** • trenches are dug perpendicular to the strike of mineralised units with a backhoe or by hand using picks and shovel • geologists log and systematically sample the trenches using a rock hammer at 2m intervals • CRMs are inserted ~every 20th sample for QAQC purposes
Drilling techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• conventional wireline diamond drilling was used to obtain all drillcore and drilling was undertaken with a Boart Longyear LF70 trailer mounter drilling rig • nominal core diameter was 63.5mm (HQ) in 0.5-1.5m runs • drill holes were inclined at -60°, direction 233°, and not all core is not orientated

Criteria	JORC Code explanation	Commentary
		• a total of 28 diamond holes (MNDD108 to MNDD135) were completed during the 2002 infill drilling program and 1669m were drilled
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• core recovery is routinely recorded every metre by geologists • no bias or relationship has been observed between recovery and grade • core recoveries of >93% on average were achieved for sampled core within the graphite mineralised zones
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	**Drilling** • all drill holes are logged by qualified and experienced geologists • logging includes descriptions of mineralisation, structural and lithological aspects of the core and is recorded using an industry standard code system • all logging included lithological features, estimates of graphite percentages and flake sizes, which is quantitative and is recorded on the logging sheets • cores are systematically photographed dry and wet • the data collected offers sufficient detail for the purpose of interpretation and further studies • density measurements are made using the Caliper method by qualified and experienced geologists on full core for graphite mineralised and waste material, and further follow-up density measurements for QAQC purposes are completed at Intertek Laboratories by immersion methods and Snowden Optiro on half core by Caliper method in Australia. **Trenching** • all trenches are logged by qualified and experienced geologists • logging includes descriptions of mineralisation, structural and lithological aspects of the encountered rocks and is recorded using an industry standard code system

Criteria	JORC Code explanation	Commentary
		• the data collected offers sufficient detail for the purpose of interpretation and further studies
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	**Drilling** • ¼ cores are cut using a diamond core saw and collected for assay • 2 metre composite sampling is deemed to be comprehensive and representative for the style/type of mineralisation under investigation • sample preparation from ¼ core to pulp is undertaken at BlackEarth's sample preparation facility in Antananarivo (former Intertek-Genalysis facility) • samples are oven dried, crushed to -2mm, split twice through a 50/50 riffle splitter to obtain a representative sub-sample, weighing approx. 100g and then pulverized that 85% pass -75µm pulp samples are sent to accredited laboratories in Australia (Intertek) for Graphitic Carbon (TGC), Total Carbon (TC) and Sulphur (S) analysis **Trenching** • the base of the trench is chipped to obtain a representative sample over 2m intervals. Although the sampling technique is not ideal, the technique is deemed satisfactory for this exploratory phase of work • QAQC measures are deemed satisfactory for this type of sampling and exploratory phase of work • the sample size (3kg) is deemed satisfactory to the grain size of the material being sampled • sample preparation from 3Kg chip sample to pulp is undertaken at BlackEarth's sample preparation facility in Antananarivo. Samples are pulverised to 75 microns, and approximately 100g sent to external laboratory for graphite and sulphur analysis
Quality of assay data and	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.*	**Drilling & Trenching**

Criteria	JORC Code explanation	Commentary
laboratory tests	• *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	• analysis of TGC, TC and S content has been undertaken by Intertek in Australia. At the time of commencement of Resource estimation work no umpire pulp samples for the 2022 program had been completed. • for TC and S, analysis is performed in an Eltra Infrared Carbon – Sulphur Analyser. The pulped sample is weighed out and placed in a ceramic dish. An accelerant is added to act as a flux and improve fluidity and oxidation of the carbon and sulphur. Heating is accomplished in a high frequency induction furnace as this provides both speed and accuracy. Any sulphur or carbon is converted to SO_2 or CO_2 respectively. These gases absorb infra-red radiation at specific wavelengths which is proportional to the concentration of the C or S in the sample. Any water in the sample is removed by passing the gases produced through magnesium perchlorate as water interferes with the analysis • for TGC, a portion of the test sample is dissolved in dilute hydrochloric acid to liberate carbonate carbon. The solution is filtered using a filter paper and the collected residue is then dried at 425°C in a muffle oven to drive off organic carbon. The dried sample is then combusted in a Carbon/ Sulphur analyser to yield the TGC. The graphitic carbon content is determined by eliminating other carbon forms from the total carbon content. The addition of acid to the sample liberates carbon dioxide thus removing carbonate carbon. Soluble organic carbon will also be removed. Insoluble organic carbon is removed by heating the sample at 425°C in an oxidising environment. The “dried” carbon-bearing sample that is analysed in the resistance furnace is considered to contain only graphitic carbon. • standards and duplicates (duplicates only for core, not for trench samples) are inserted every 20th sample, and blanks are inserted every 50th sample by the BlackEarth technical team in addition to the internal QAQC from the laboratory

Criteria	JORC Code explanation	Commentary
		• standards, blanks, duplicates and umpire samples for drill sample analyses reported in this announcement have performed satisfactorily. • all GEOSTATS standards, blanks, and duplicates for drill sample analyses reported in this announcement have performed satisfactorily. Six OREAS standards failed QAQC checks and it appears the material settles in the containers and is thus not homogenised enough before its inserted into batches. Note that these OREAS standards are blended graphite with granodiorite • OREAS standards OREAS722 / OREAS723 / OREAS724 and GEOSTATS standards GGC11 / GGC14 were included at a density of one in 20 samples, blanks were included at a density of one in 50 samples
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• significant intersections have been verified by alternative company personnel • no twin holes have been completed, but are planned for future drill programs • all data is recorded digitally using a standard logging system and files are stored in Excel files, with the objective being to import all data into an industry standard relational and auditable database before updating the Mineral Resource estimate based on the 2022 infill drilling. • No data adjustment has been made.
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	**Drilling** • all collars were located using a DGPS (accurate to 1cm) projection and grid systems used: UTM (WGS84 Z38S). • downhole surveys by using a Reflex EZAQ instrument, were undertaken on some holes to verify deviation from starting azimuth and dip. **Trenching** • all XYZ surveying is collected using a handheld Garmin GPS accurate to ±4m

Criteria	JORC Code explanation	Commentary
		• Projection and Grid system used: UTM (WGS84) Z38S
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	**Drilling** • drill hole spacing was originally approximately 100m along strike by 30m across strike (2021) • infill drilling during 2022 was at approximately 50m along strike and 20 - 30m across strike • the drill hole spacing was sufficiently close to allow the graphitic mineralisation to be traced from section to section and down dip • samples were composited to 2m length within the logged mineralisation zones, with all 2022 holes sampled in their entirety.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	**Drilling** • the drilling grid matches the strike of the orebody • the orientation of the drilling is not expected to introduce sampling bias as drill holes intersected the mineralisation at a sufficiently high angle to the dip of the graphite mineralisation. The 3D modelling process accounts for mineralisation envelopes when interpreted in three-dimensions. **Trenching** • the trenches are oriented perpendicular to the perceived orientation of the outcropping mineralisation, but since sampling is two-dimensional and not perpendicular to the dip of mineralisation, reported intercepts will be wider than the true width of the mineralised unit
Sample security	• *The measures taken to ensure sample security.*	**Drilling** • full cores are kept in core trays systematically numbered and photographed, and cut and sampled and stored on site • pulps are prepared and stored at the BlackEarth's sample preparation facility in Antananarivo • pulps are couriered with DHL to Intertek laboratories in Australia

Criteria	JORC Code explanation	Commentary
		• the remaining core and leftover pulps are kept in a secure facility adjacent to the BlackEarth's office in Antananarivo **Trenching** • samples are packaged and stored in secure storage from time of gathering to sample preparation
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• The procedures relating to diamond drilling more specifically logging, sampling (including density, sample collection, quality assurance/quality control, sample preparation and sample dispatch) and data management procedures have been reviewed by external auditors

2.2.1.2 Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• Work was undertaken upon Research Permit PR25605 • The tenements are located within the inland of Madagascar in the southern region, approximately centred on the township of Ampanihy. • Tenements are held 100% by BlackEarth Minerals SARL, ultimately a wholly owned subsidiary of BlackEarth Minerals NL. • No overriding royalties are in place • There is no native title agreement required • Semi-arid, thinly vegetated, relatively flat to low lying hills with sub-cropping rock. • Tenements are currently secure and in good standing.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Regional mapping by BRGM.

Criteria	JORC Code explanation	Commentary
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The project overlies a prominent 20km wide zone consisting of a folded assemblage of graphite and quartz-feldspar schists (<60% graphite), quartzite and marble units, with lesser intercalated amphibolite and leucogneiss. This zone, termed the Ampanihy Belt is a core component of the Neoproterozoic Graphite System. The belt is interpreted as a ductile shear zone accreted from rocks of volcanic and sedimentary origins.

Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:*
	  ○ *easting and northing of the drill hole collar*
	  ○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar*
	  ○ *dip and azimuth of the hole*
	  ○ *down hole length and interception depth*
	  ○ *hole length.*
	• *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*
		• All relevant drill hole information has been previously reported to the ASX. No material changes have occurred to this information since it was originally reported.
		• All relevant data has been reported.

Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• Not relevant when reporting Mineral Resources. • No metal equivalent grades have been used.
Relationship between mineralisation widths and	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.*	• Not relevant when reporting Mineral Resources

Criteria	JORC Code explanation	Commentary
intercept lengths	• *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• Refer to figures within the main body of this report
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• Not relevant when reporting Mineral Resources
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• Refer to BlackEarth Prospectus and previous announcements.
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• Additional drilling may be undertaken to test strike and dip extensions. • additional metallurgical test work to confirm metallurgical performance

2.2.1.3 Section 3 Estimation and Reporting of Mineral Resources

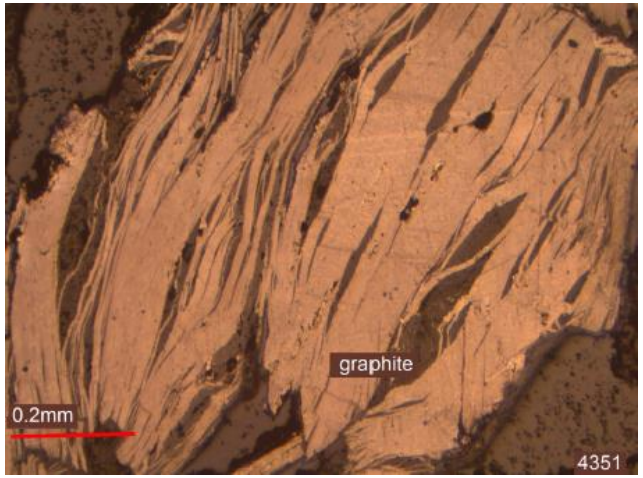
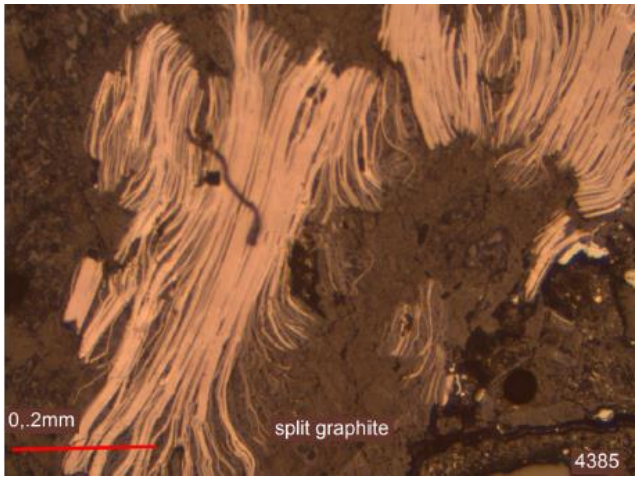
(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* • *Data validation procedures used.*	• Data used in the Mineral Resource estimate is sourced from a fully relational geological database export. Relevant tables from the data base are exported to MS Excel format and converted to csv format for import into Datamine Studio software.

Criteria	JORC Code explanation	Commentary
		• Validation of the data import include checks for overlapping intervals, missing survey data, missing assay data, missing lithological data, and missing collars.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• No site visit has been undertaken by the Competent Person however independent consultants who were responsible for estimation and reporting of the previous MRE undertook a site visit in March / April of 2018 and found that "All drilling, sampling and sample preparation procedures were considered of industry standard, well supervised and carried out". • The project is being managed in-country for BlackEarth Minerals by an independent geological consultant Mr Jannie Leeuwner who has completed several site visits since Nov 2021 and ensured that all procedures are being carried out to a good industry standard. • Therefore, it was considered unnecessary for the CP to conduct a site visit at this stage as the CP is confident that the project works are being conducted in an appropriate professional manner.
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation.* • *The use of geology in guiding and controlling Mineral Resource estimation.* • *The factors affecting continuity both of grade and geology.*	• The geology and mineral distribution of the system appears to be reasonably consistent through the four interpreted mineralisation zones, with the northern most zone having an on average higher grade than the others. Infill drilling data has shown the extents, orientation and mineralisation tenor of the mineralised geological units to be broadly similar to the previous interpretation albeit generally steeper dipping than previously recognised. • Drill hole intercept logging, assay results, trenching and surface geological mapping have formed the basis for the mineralisation domain interpretation. Assumptions have been made on the depth and strike extents of the mineralisation based on drilling and surface mapping information. • The extents of the modelled zones are constrained by the information obtained from the drill logging and surface mapping data, with a nominal 3% TGC lower cut-off grade applied to the interpreted mineralisation lens extents which corresponds well to the geological logging of graphite mineralised units. Alternative

Criteria	JORC Code explanation	Commentary
		interpretations are unlikely to have a significant influence on the global Mineral Resource estimate, with the deposit being open at depth. • Surface mapping and trenching, with logged geological units and chemical analysis data have formed the basis for interpretation of mineralisation zones. A weathered zone boundary surface has been interpreted separating fresh rock material from weathered material based on the geological logs and cross referenced against the core photography as well as S results from chemical analysis. • Continuity of geology and grade can be identified and traced between drill holes by visual, geochemical and mineralogical characteristics. Additional data is required to more accurately model the effect of any potential geological influences on the down dip and strike extents of the defined mineralised geological units. Confidence in the grade and geological continuity is reflected in the Mineral Resource classification. • The Razafy NW graphite deposit is situated within metasediments known as the Graphite Sequence, just southwest of the Saririaky anorthosite massif. The Graphite Sequence comprises graphite schist, marble, quartzite, amphibolites and leucogneiss and was metamorphosed at upper amphibolite to granulite facies conditions of around 700-900°C. The CP is of the opinion that the high metamorphic grade of the Razafy NW deposit is potentially favourable for the development of coarse graphite flakes. • The graphite mineralisation is generally within quartzo-feldspathic and from preliminary thin section studies contain garnets and trace amounts of sillimanite. • Graphite-bearing and waste rocks are weathered to varying depths across the Razafy NW deposit and have been described as weathered (oxidised and transitional) or fresh. The weathered domain is characterised by the oxidation of sulphide minerals e.g., pyrite, and by the formation of secondary hydrous clay minerals such as goethite and kaolinite.

Criteria	JORC Code explanation	Commentary
		Weathered (oxidised) graphite schist 8.71-12.45 m in hole MNDD130  **Fresh graphite schist at 35.21-38.73 m in MNDD130**  • The CP notes that kaolinisation of alumino-silicate minerals as seen at Razafy NW typically causes graphite to be split into thin flakes when in contact with kaolin. Bimodal graphite populations are therefore noted i.e., large clean flakes vs small flakes, or split flakes. • The CP is of the opinion that the high metamorphic grade (upper-amphibolite to granulite facies) of the Razafy NW deposit is potentially favourable for the development of coarse graphite flakes. • The CP notes however that the ubiquitous kaolinisation of alumino-silicate minerals seen at Razafy has caused flake splitting

Criteria	JORC Code explanation	Commentary
		and size reduction. See examples of graphite flakes in thin section below. Scale bars = 0.2 mm. **Large graphite flakes in sample 4351 from NW-09-A at 10 m**  **Split graphite flake in sample 4385 from NW-40-A at 21 m** 

Criteria	JORC Code explanation	Commentary
Dimensions	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	• Disseminated graphite flakes occur in four individual outcropping domains (zones) each consisting of several graphitic layers between about 5 and 40 m apparent thickness hosted within granulitic gneisses. The graphitic layers are separated by waste rock that may contain background values of up to about 3% TGC. The graphite mineralisation is generally quartzo-feldspathic and from preliminary thin section studies contain trace amounts of sillimanite. The individual mineralised zones extend about 250-350 m along strike to the NNW and dip at ~60-75° to the ENE, and have been traced by trenching and drilling along a total of approximately 1,100 m strike length. The down dip depth varies nominally between 55 and 115 m averaging roughly 85 m, while the vertical depth below topographic surface varies between about 50 and 105 m averaging about 75 m.
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.* • *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* • *The assumptions made regarding recovery of by-products.* • *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).* • *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* • *Any assumptions behind modelling of selective mining units.* • *Any assumptions about correlation between variables.* • *Description of how the geological interpretation was used to control the resource estimates.* • *Discussion of basis for using or not using grade cutting or capping.*	• The mineralisation has been estimated using ordinary kriging (OK), using Datamine Studio RM software, based on estimation parameters obtained from geostatistical and spatial analysis and kriging neighbourhood analysis using Snowden Supervisor software. The OK grade estimation was carried out at the parent cell scale, with sub-blocks assigned parent block grades for the full extent of modelled mineralisation lenses, and an Inverse distance weighting to the power of two (IDS) check estimate was completed concurrently. TGC was estimated separately from S based on the requirement for the S estimate to be additionally be estimated based on the weathering state. Statistical analysis on 2 m composited drill hole data from within the interpreted mineralisation lenses individually to check grade population distributions using histograms, probability plots and summary statistics and the co-efficient of variation. The checks showed there were no significant outlier grades in the interpreted cut-off grade lenses for TGC, while top cuts were required for S for some lenses.

Criteria	JORC Code explanation	Commentary
	• *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	The parameters obtained from the spatial (variogram) analysis modelling completed for TGC in the East Main lens was used for all grade estimates. The double spherical model had a nugget of 0.15, with a preferred strike direction of 145° for the major axis having been modelled with a range to the first structure (69%) of 90 m and to the second structure (16%) at 130 m. The semi major axis is modelled towards at -65° towards 055° with ranges of 45 m and 70 m. The minor axis is modelled at 25° towards 055° with ranges of 30 m and 40 m. Due to changes in the geometry of the mineralisation along strike the search ellipse orientation was varied along strike to suit the overall geometry of the lenses, with the variogram orientation also altered to match the search ellipse orientation. Based on the results of the KNA the search ellipse was 80 m (major) by 40 m (semi-major) by 15 m (minor) for the first search pass, which was then doubled for the second pass and increased 20 fold for the final (3rd) pass to ensure all blocks were estimated. A minimum of 12 and maximum of 24 samples was used for the first pass, reducing to minimum 10 and maximum 20 in the second pass and minimum 6 and maximum 16 for the 3rd pass. A maximum of 4 samples per drill hole was allowed per block estimate with no octant based searching used and block discretization was 3 by 3 by 3 (X, Y, Z). Model validation was carried out visually, graphically, and statistically to ensure that the block model grade reasonably represents the drillhole data. Cross sections, long sections and plan views were initially examined visually to ensure that the model grades honour the local composite drillhole grade trends. These visual checks confirm the model reflects the trends of grades in the drillholes. Statistical comparison of the mean drillhole grades with the block model grade shows reasonably similar mean grades. The IDS check estimate shows similar grades to the OK model, adding confidence that the grade estimate has performed well. The

Criteria	JORC Code explanation	Commentary
		model grades and drill grades were then plotted on histograms and probability plots to compare the grade population distributions. This showed reasonably similar distributions with the expected smoothing effect from the estimation taken into account. Swath or trend plots were generated to compare drillhole and block model grades with TGC compared at 20 m E, 50 m N and 10 m RL intervals. The trend plots demonstrate reasonable spatial correlation between the model estimate and drillhole grades after consideration of drill coverage, volume variance effects and expected smoothing. • No reconciliation data is available as no mining has taken place.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• Tonnages have been estimated on a dry, in situ basis, and samples were generally dry. No moisture values could be reviewed as these have not been captured.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• Visual analysis of the drill assay results demonstrated the lower cut-off interpretation of 3% TGC corresponds to natural break in the grade population distribution as well as corresponding well to the geological logging of graphite mineralised geological units. Metallurgical testing of composite intervals covering the full grade range of interpreted mineralisation appear to have delivered saleable products and as such all material within the interpreted mineralisation zones above a lower cut-off grade of 3% TGC have been classified as Mineral Resources amenable to eventual economic exploitation.
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be*	• It has been assumed that these deposits will be amenable to open cut mining methods and are economic to exploit to the depths currently modelled using the cut-off grade applied. • No assumptions regarding minimum mining widths and dilution have been made.

Criteria	JORC Code explanation	Commentary
	reported with an explanation of the basis of the mining assumptions made.	
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	• Six down-hole drill core composites were submitted to ALS Perth for metallurgical tests to evaluate the quality and quantity of graphite extracted by flotation methods. The flotation samples were distributed evenly across the NW deposit. A broad range of feed grades was selected, from <3% TGC to 20% TGC and between <1% S to nearly 7%. • Five of the composite samples were from the fresh domain and one from the weathered (oxidised / transitional) domain. The metallurgical process flowsheet included stage crushing and grinding, followed by up to six attritioning and flotation stages. Four of the six samples returned approximately 50% of flakes greater than 150 micron diameter. • Coarse flake product (>150 µm) ranged in purity from 78.2% to 98.3% TGC, while the fines product (< 150 µm) ranged from 85.8% to 98.4% TGC. • The CP is of the opinion that the limited metallurgical testing to date indicates that graphite concentrates of marketable size and purity may be produced from the Razafy NW deposit. This supports the classification of the Mineral Resource as an industrial mineral according to Clause 49 of the JORC Code. Snowden Optiro notes however that kaolinised graphite mineralisation, with associated split graphite flakes, may need additional cleaning and attritioning stages than non-kaolinised material and that further metallurgical testing is required to improve confidence in variability across the deposit.
Environmental factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of*	• No assumptions regarding waste and process residue disposal options have been made. It is assumed that such disposal will not present a significant hurdle to exploitation of the deposit and that any disposal and potential environmental impacts would be

Criteria	JORC Code explanation	Commentary
	potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	correctly managed as required under the regulatory permitting conditions.
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• Density has been measured by means of caliper, laquer coated immersion, uncoated immersion and gas pycnometer methods. The gas pycnometer results have not been used as this method is not considered suitable for the deposit material. 5 historically collected density measurements apparently done by water displacement methods were available but since the exact interval measured are not known this data was used for comparison purposes only. A total of 324 measurements of full core by means of caliper completed by BlackEarth geologists fall within the mineralisation envelopes with half in fresh rock and half in weathered zone. QC checks by means of immersion for 26 samples were completed in the laboratory, while Snowden completed 26 caliper check measurements on half core samples. The QC checks validated that the caliper measurements were delivering reasonable results and therefore the caliper measurements have been used as the primary source for density values assigned to the model. • The density measurements collected are considered appropriate for the material types. • For weathered zone material the mean caliper measured density value of 2.21 t/m³ is assigned. For the fresh mineralised material a mean caliper measured density of 2.47 t/ m³ is assigned. For waste rock the mean caliper density of 2.49 t m³ and 2.66 t/m³ for weathered and fresh material is assigned. All density assigned is a dry bulk density.
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.*	• Classification of the MRE was carried out accounting for the level of geological understanding of the deposit, quality of samples, density data and drillhole spacing.

Criteria	JORC Code explanation	Commentary
	• *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* • *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• The MRE has been classified as Inferred and Indicated in accordance with the JORC Code (2012 Edition) using a qualitative approach. All factors that have been considered have been adequately communicated in Section 1 and Section 3 of this Table. • Overall, the mineralisation trends are reasonably consistent over the drill sections. • The MRE appropriately reflects the view of the Competent Person.
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• No external audits have been undertaken.
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• The relative accuracy of the MRE is reflected in the reporting of the Mineral Resource as per the guidelines of the JORC Code (2012). • The Mineral Resource statement relates to global estimates of in situ tonnes and grade.

2.3 Ore Reserves – Razafy and Razafy NorthWest

2.3.1 Section 4 Estimation and Reporting of Ore Reserves

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	• *Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.* • *Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.*	The Maniry Project includes the Razafy and Razafy NW deposits. Resource estimate for Razafy (July 2022) and Razafy NW (August 2022) were prepared by prepared by Snowden Optiro. The Mineral Resources are reported inclusive of the Ore Reserves.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	The Competent Person (Mr Michael Ryan) visited the proposed mining site of the project in May 2022. Mr Ryan as Project Manager for BlackEarth supervised and managed all aspects of the Feasibility Study (FS). The following observations are made: • The mining area is located near the town of Ampanihy in the Toliara region of Madagascar. The site is 180km south east of the regional capital Toliara and 700km south of the capital Antananarivo. The project site is relatively flat, very sparsely populated and semi-desert.
Study status	• *The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.* • *The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.*	The Feasibility Study for the Maniry Graphite Project is the basis for conversion of Mineral Resources to Ore Reserves. The study was compiled in September 2022 by CPC Engineering and BlackEarth. The Study was undertaken by a team of industry professionals as listed below: • Resource Estimate: Snowden Optiro • Mine Engineering: Mining Focus Consultants Pty ltd • Geotechnical investigation: WSP Golder • Metallurgy and Processing: CPC Engineering • Hydro(geo)logy: WSP Golder • General Project Infrastructure: CPC Engineering • Tailings Storage Facility: WSP Golder

Criteria	JORC Code explanation	Commentary
		• Legal Tenure: Lexel • Social and Environmental: BlackEarth • Market Research: BlackEarth • Financial Modelling: Modus Capital The Study was underpinned by a mine plan detailing mining locations, ore and waste quantities, mill feed quantities, and mill feed grades. Scheduling is reported in months for the life of mine (LOM). Mine planning activities included pit optimisation, interim staged and final pit designs, mine and waste disposal scheduling, concentrate production estimation, and mining cost estimation. Modifying factors considered during the mine planning process included slope design criteria, mining dilution and ore loss, process plant recoveries, processing costs, general and administration costs, concentrate price and royalties, land access and permitting.
Cut-Off Parameters	• *The basis of the cut-off grade(s) or quality parameters applied*	A cut-off of 3.0% TGC was applied based on the adopted Resource modelling work of 3.0% TGC cut-off.
Mining factors or assumptions	• *The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).* • *The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.* • *The assumptions made regarding geotechnical parameter (e.g. pit slopes, stope sizes, etc), grade control and pre-production drilling.* • *The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).* • *The mining dilution factors used. The mining recovery factors used. Any minimum mining widths used.* • *The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.* • *The infrastructure requirements of the selected mining methods.*	It is proposed to mine the resource utilising conventional open pit mining methods. Conversion of Mineral Resources to Ore Reserves has been by the application of appropriate mining factors and assumptions based on the feasibility study, including geotechnical investigations. A 5% mining dilution and a 95% mining recovery was estimated. Pit optimisations were completed the results of which were used to identify the final pit limits. The geotechnical parameters were developed by a specialist geotechnical consultant. The mine plan was primarily based on the Indicated Resources with some Inferred Resources captured within the pit included in the overall mine plan, resulting in about 12% of Inferred Resources being included. This Inferred Resource is not considered material to the value of the Project and is not included as part of the Ore Reserve. The mine plan incorporates a six month mining pre-strip, with steady

Criteria	JORC Code explanation	Commentary
		state production of 0.5Mtpa of mill feed for the first three years, increasing to 1.0Mtpa from Year 4. A minimum cutback mining width of 20m was adopted. The primary infrastructure required for the development of the Project are listed below: o General administration and services infrastructure. o General mining facilities. o Process plant o Waste dumps o Tailings storage facility The mine plan is based on Indicated and Inferred resource. Inferred material included within the pit has been stockpiled and only processed beyond Year 10, and for the following 5 years of the mine schedule at a rate no more than 6% of ore processed. The total inferred material within the pit is approximately 12.4% of the total mill feed. Pit inventory reported within the interim staged and final pit designs were used to generate a mining schedule which incorporates both Razafy and Razafy NW deposits. Factors such as slope design criteria, mining dilution and ore loss, processing recoveries, processing costs, general and administration costs, concentrate price and royalties were applied as part of the pit optimisation process. A conventional open pit mining method using proven technology was chosen as the basis for the Study due to the near surface and outcropping presentation of the graphite mineralisation, the relatively low stripping ratio and availability of land required to support the selected mining method. This method is suitable as it is well proved with standard off-the-shelf equipment (i.e. low risk) and, due to the low population density, the presence of mine infrastructure such as pits and waste dumps will have limited negative land use impact on the local population. Mine design criteria include minimum mining width, ramp width and gradient, pit exit location and slope design parameters.

Criteria	JORC Code explanation	Commentary
		The mining fleet consisting of 75t excavators matched with 40t 6x4 tipper trucks was selected to initially develop site access, site establishment works and subsequent development of mining areas including the requirement to excavate highly weathered materials. Geotechnical assessment was undertaken by WSP Golder resulting in pit slope design guidelines. These guidelines, which vary with weathering classification have been applied in the pit optimisation and pit design. Grade control at a 15m (across strike) x 30m (along strike) drill pattern was selected as the initial drillhole pattern. Drill holes will be drilled at 20m passes, overlapping at each bench and providing minimal disruption to the mining operation. Drill hole cuttings will be sampled manually at every 1m interval using a three-tier riffle splitter for grade control then combined to form 2m composites. Grade control samples will be analysed at an onsite lab facility. Assaying cost has been obtained from SGS to establish this facility. The grade control drill pattern will be optimised at operational phase when further data becomes available. The Mineral Resource Estimates used as a basis for the conversion to the Ore Reserve were the Razafy July 2022 resource model and the Razafy NW August 2022 resource model. Pit slope design criteria and processing recoveries were applied in the pit optimisation process together with mining, processing, “General & Administration” and concentrate transport cost estimates, concentrator performance, including recovery and concentrate grade predictions, and revenue projections. Dual lane ramps: 13m wide road surface, 10% gradient max. Single lane ramps: 10m wide road surface, 10% gradient max. Minimum mining width 20m, 10m in final bench and good-bye cuts. Pit staging sequence and cutbacks are based on pit designs from Optimisation work. No Inferred resource materials have been included in the Ore Reserve estimate.

Criteria	JORC Code explanation	Commentary
		The infrastructure for mining include fuel & oil storage facilities, fuel bay, workshops, wash bay, magazines, bulk emulsion storage facility, offices, lunch and ablution facilities, and a first aid room.
Metallurgical factors or assumptions	• *The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.* • *Whether the metallurgical process is well-tested technology or novel in nature.* • *The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.* • *Any assumptions or allowances made for deleterious elements.* • *The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.* • *For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?*	The process plant utilises crushing, grinding and flotation to produce a graphite concentrate of minimum 95% TGC at a recovery of 91%. The concentrate produced in flotation is filtered and dried prior to screening into the 5 sized products. This sized product is bagged into nominal 1t bulka bags and transported to the export port. The initial process plant is sized at 0.5Mtpa to produce up to 50,000tpa graphite concentrate. In Year 4 the plant is expanded to 1.0Mtpa and nominal 65,000tpa concentrate with the addition of grinding, flotation and product screening capacity The process plant design has been undertaken by CPC Engineers based on metallurgical testwork undertaken. This design has then been costed by CPC Engineering. The process plant flowsheet selected is common for the treatment of graphitic carbon ores and supported by metallurgical testwork. The process plant flowsheet and design criteria has been developed from metallurgical testwork undertaken at ALS in Perth and BGRIMM in China. The flowsheet selected is based on the Pilot program undertaken at BGRIMM processing 60 tonnes of oxide graphite material from the Razafy deposit. This BGRIMM pilot plant was the second pilot plant undertaken with the initial pilot program using 1.0 tonnes undertaken at ALS, Perth. The ALS Pilot plant samples consisted of drill core throughout the Razafy deposit. Variability flotation testwork has been undertaken at ALS using representative samples of oxide and fresh material for both the Razafy and Razafy NW deposits. Mine planning assumptions of a homogenous flake distribution has been made. Short term variances in performance are managed by planned metallurgical testwork on grade control samples with the ability to both selectively mine and blend in-pit and the use of finger feed strategy on the ROM. Metallurgical testwork has not identified any deleterious elements.

Criteria	JORC Code explanation	Commentary
		Pilot plant product samples have been submitted to potential customers for assessment.
Environmental	• *The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.*	An Environmental Impact Assessment commenced in April 2022 with the submission of a scoping report and receipt of the Notice that a EIA is required for the Project from Office National Environment (ONE) on 8 June 2022. This assessment is conducted under Malagasy Mining and Environmental laws. The Study is a key input into the assessment. Geochemical testwork and assessment has been undertaken by WSP Golder on mine waste and tailings. The assessment indicated slightly elevated, above existing measured levels, of groundwater for sulphate and TDS from waste facilities. In the long-term, 30 to 50 years post closure, the open pit is a sink for the surrounding groundwater and is unlikely to discharge to the environment.
Infrastructure	• *The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.*	The Project is located 9km from the existing Ampanihy to Maniry road and 25km from the town of Ampanihy. Ampanihy is on the main Route National 10 connecting to the ports of Toliara and Port D'Ehoala. The land is sparsely populated. Proximity of local landholders to the mine, process plan and infrastructure requires their relocation. Provision for compensation has been allowed in the capital estimate. Power supply for the project is provided via a hybrid solar-battery-generator power station located at the plant site, which is owned and operated by a 3rd party provider. Water supply is provided by bores and from pit dewatering. A camp for provided for non-local personnel and located in Ampanihy. The camp is initially sized at 60 person. The transport of graphite concentrate from the mine site to the port of Toliara, is via road. A storage and handling facility is to be established near the port to facilitate bi-monthly shipping on existing shipping schedules.
Costs	• *The derivation of, or assumptions made, regarding projected capital costs in the study. The methodology used to estimate operating costs.*	Mining costs are estimated using contract rates for load and haul applied to the mine schedule and include dayworks for any miscellaneous works. Drill and blast is owner operator and

Criteria	JORC Code explanation	Commentary
	• *Allowances made for the content of deleterious elements. The source of exchange rates used in the study. Derivation of transportation charges.* • *The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.* • *The allowances made for royalties payable, both Government and private.*	developed from first principals. Grade control is based on contractor rates and assay costs. Mine technical supervision and management is owner supplied and developed from first principals providing technical support for mine engineering, safety, geological control and survey for the open pit mine. Mine capital costs are estimated for initial equipment requirements, pre-strip, contractor mobilisation and establishment. Ongoing replacement, mobilisation and demobilisation costs during the life of the operation are provided for as sustaining capital. Mine operating costs include contractor rates, personnel, fuel, maintenance, ground engaging tools and explosives. Process plant capital costs are based on vendor pricing and estimation from first principals. Over 94% of mechanical equipment and building and 78% of electrical is based on vendor pricing. The process plant bulk commodities, including piping, structural steel and concrete is based on quantities from 3D modelling. Process plant operating costs are developed from first principals, using quoted reagent and consumable pricing, power supply costs from power provider, personnel costs to operate and maintain the facility. General & Administration (G&A) are developed from first principals and include the mine site, accommodation camp and operation of the office in the capital Antananarivo. Logistics costs from mine site to ship (FOB) Toliara are developed from first principals. Transport costs are based on quotes from reliable transport and logistics providers established in Madagascar. Metallurgical testwork has not identified and deleterious elements. All product is sampled and assayed prior to shipment from the mine site with off-specification material recycled to the process plant for further treatment. Government Royalties (Madagascar) of 2% have been considered. This is made up of mining royalties of 0.6% and mining duties of 1.4% based on first sale of the extracted resource.

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td>Revenue factors</td><td>• The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.
• The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.</td><td>Pricing basis if FOB Toliara, Madagascar.
Marketing and realisation costs have been excluded from the operating costs.
Product sales are by long term contracts.
Graphite basket pricing used for the Ore Reserve estimate is based on a basket of graphite flake of different sizes and compositions to form a weighted average price. The pricing forecast is developed from market prediction. The project produced a range of graphite products that attract pricing levels based on quality. The graphite 'basket price' of $1,448/t concentrate FOB is based on the following product pricing and distribution.

<table>
<tr><td></td><td>P35</td><td>P50</td><td>P80</td><td>P100</td><td>M100</td></tr>
<tr><td colspan="6">US$ Price FOB</td></tr>
<tr><td>96 FC%</td><td>2,700</td><td>2,650</td><td>1,665</td><td>1,350</td><td>1,050</td></tr>
<tr><td>95 FC%</td><td>2,250</td><td>2,200</td><td>1,495</td><td>1,150</td><td>1,050</td></tr>
<tr><td colspan="6">Size Distribution</td></tr>
<tr><td>96 FC%</td><td>1.5%</td><td>11.0%</td><td>26.0%</td><td>13.0%</td><td>0.0%</td></tr>
<tr><td>95 FC%</td><td>0.0%</td><td>0.0%</td><td>0.0%</td><td>0.0%</td><td>48.5%</td></tr>
<tr><td>Total</td><td>1.5%</td><td>11.0%</td><td>26.0%</td><td>13.0%</td><td>48.5%</td></tr>
</table>
</td></tr>
<tr><td>Market assessment</td><td>• The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.
• A customer and competitor analysis along with the identification of likely market windows for the product.
• Price and volume forecasts and the basis for these forecasts.
• For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.</td><td>Graphite flake is an internationally traded industrial mineral concentrate. Traditional users include refractory, expanded flake and lubrication. Growth is the Lithium Ion Battery sector, of which graphite is a key input, is widely forecast to increase volumes in the short to long term.
Graphite is sold by contract based on the performance of market samples provided to customers. Over the past two years, BlackEarth has undertaken a series of product testing that has demonstrated that graphite concentrate from the Maniry deposit pilot testwork is suitable for the following applications; refractory, expandable graphite and battery anode material.</td></tr>
</table>

Criteria	JORC Code explanation	Commentary
		Current graphite market volumes are estimated at 800kt, with most production from Chinese sources. The volume and quality of graphite concentrate production is based on metallurgical testwork and mine schedules for the Razafy NW and Razafy deposits.
Economic	• *The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation discount rate, etc.* • *NPV ranges and sensitivity to variations in the significant assumptions and inputs*	The project economic analysis has been performed by Modus Capital on behalf of BlackEarth. The assumptions used in the Ore Reserve analysis are: • 8% discount real • LOM Cash cost US$657 per tonne of concentrate • Payback Period 3.8 years from first production • NPV_8 US$263M Real before Tax • NPV_8 US$205M Real after tax • IRR 33% Real before tax • IRR 29% real after tax • Capital Stage 1 US$79.2M for 0.5Mtpa throughput • Capital Stage 2 US$24.6M for 1.0Mtpa throughput. • Sustaining Capital LOM US$32.8M The Project is relatively insensitive to capital and operating costs. However, it is sensitive to basket price and recovery. A 10% increase in either product price or graphite recovery results in an increase in NPV of 16%
Social	• *The status of agreements with key stakeholders and matters leading to social licence to operate.*	The EIS process commenced in April 2022. A key input into the EIS is the FS to identify impacts associated with the development and mitigation measures. The EIS is scheduled to be complete mid-2023.
Other	• *To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:* • *Any identified material naturally occurring risks.* • *The status of material legal agreements and marketing arrangements.* • *The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be*	A risk review was undertaken as part of the Feasibility study. Three areas of risk were identified: • Delays in the Project could impact capital cost, operating cost, schedule and product pricing • Technical issues (mining and/or processing) which could impact costs, recovery, product quality and quantity • Country risk issues including Government, community and industrial relations

Criteria	JORC Code explanation	Commentary
	received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.	Exploration Tenement 25605 expired on the June 17th 2011 and Tenement 39751 expired on the September 20th 2018. Tenement 5394 is a granted exploitation (mining) tenement with an expiry date of 19th Nov 2042. For the Tenement 25605, application for the renewals was submitted to the BCMM on the August 23rd 2011. For the Tenement 39751, the application for renewal was submitted to the BCMM on July 13th 2018. Following the *"gel du traitement des Permis miniers "* (suspension of the issuance of mining Tenements) decided by the Ministry of Mines from 2010 to date, the BCMM has not ruled on the applications for renewal of these Tenements. It is clear from the registration certificates of the aforementioned Tenements that the related renewal applications were indeed taken into account by the BCMM. The registration of the receipt of the said applications in the registration certificates of the aforementioned Tenements is therefore deemed to be tacit acceptance by the BCMM of the admissibility of the said applications, pursuant to Article 75 of the Decree implementing the Mining Code, which states that *"A registration certificate for a mining Tenements may be issued by the BCMM to any person who requests it. This document relates the current status of the Tenement as mentioned in the Mining Tenements Register [Section 1.4]".* BlackEarth has paid tenement renewal notices annually as due up to and including 2022 and the BCMIM has accepted payment and allowed exploration activities to be conducted on these tenements. A high proportion of the Razafy Ore Reserve is contained within an existing mining licence, 5394. The remaining Ore Reserves for Razafy and Razafy NW are within existing exploration licences, 39751 and 25605 respectively, for which application to convert to mining licences has been made, June 2022. There is no reason to believe the mining licences will be unreasonably withheld.

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		To allow development of the project approval of the EIS is required. The EIS is underway and there is no reason to believe the EIS will be unreasonably withheld. In the absence of granted EIS and mining licence over the whole reserve, the reserve is considered to be of a Probable level of confidence. There are no material legal agreements and marketing arrangements in place.
Classification	• *The basis for the classification of the Ore Reserves into varying confidence categories.* • *Whether the result appropriately reflects the Competent Person's view of the deposit.* • *The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).*	The Reserve is based on a current FS completed in October 2022. Economic assumptions are based on pricing as at 3rd quarter 2022 and reflect current economic circumstances. Probable Ore Reserves were declared based on the Indicated Mineral Resources contained within the pit designs that were developed for the Project. The financial analysis showed that the Project is economically viable and the risk analysis did not identify any insurmountable risks. There is no Measured Mineral Resource for the Project.
Audits or reviews	• *The results of any audits or reviews of Ore Reserve estimates.*	No external audits have been undertaken.
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material*	The relative accuracy and confidence of the Ore Reserve estimate is inherent in the Ore Reserve Classification. No mine or processing production data is available at this stage for reconciliation and/or comparative purposes. Factors that may affect the global tonnages, the associated grades and concentrate production include:- • Accuracy of the Mineral Resource estimate • Mining dilution • Mining recovery • Process plant performance, recovery and product grade and size distribution The project is at the Study stage of development. Continues advancement through further metallurgical testwork and optimisation and front end engineering design and optimisation will reduce risk for both capital and operating costs.

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	impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage. • *It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	