BATTERY MINERALS

ASX Announcement 12 December 2018

Feasibility Study shows Balama graphite project will generate outstanding financial returns for capex of just US$70m

As Battery Mineral's second project, Balama Central will generate EBITDA of +US$35m a year and a pre-tax IRR of 55%[1]

Highlights

- **Feasibility Study finds Balama Central graphite project in Mozambique will generate EBITDA of +US$35m a year[1], robust pre-tax IRR of 55% and have a payback period of just 2-3 years**
- **Maiden Ore Reserve Estimate at Balama Central is 19.7Mt at 11.1% Total Graphitic Carbon (TGC) for 2.2Mt of contained graphite**
- **Total Mineral Resources at Balama Central are 32.9Mt at 10.2% TGC[2]**
- **Key Balama Central operating parameters:**

Mine life of 27 years at production rate of 58ktpa at 96% TGC
Average C1 Operating Cost for the first 8 years of US$363/t
BMI basket price for Balama Central concentrate of US$1,106/t [1]
Project CAPEX of US$69.4M

1. Based on the latest Benchmark Mineral Intelligence (BMI) CIF China forecast graphite prices for 2022
2. See "Mineral Resource Doubles at Balama Central Project in Mozambique" 29 March 2018 ASX announcement)

Battery Minerals Limited (ASX: BAT) is pleased to announce that a Feasibility Study has found that its second proposed graphite project in Mozambique, Balama, will cost just US$69.4 million to develop and generate outstanding financial returns.

Balama's strong outlook is highlighted by the Study's finding that it will generate average free operating cashflow of US$35 million a year and have a pre-tax internal rate of return of 55 per cent.

The project's payback period is estimated at two to three years.

The Study underpins a maiden Ore Reserve at Balama of 19.7Mt at 11.1% TGC for 2.2Mt of contained graphite reported at a cut-off grade of 6% TGC.

Battery Minerals Managing Director David Flanagan said Balama was a top-class project with some of the best product sizing classification, operating costs, concentrate purity and economic returns in the graphite sector.

"The Balama Central Graphite Project immediately adjoins the world's largest graphite export operation, which is currently being delivered into all the world's major lithium ion battery manufacturing markets," Mr Flanagan said.

"As a result, this area is one of the world's most important suppliers of minerals which are essential to the assembly of lithium ion batteries."

Battery Minerals expects to develop Balama Central after its first Mozambican graphite project, Montepuez, is commissioned.

The Company is currently in the process of completing full project financing for Montepuez.

"Given that leading industry forecasters expect graphite prices to increase as a result of substantial supply shortages over the next few years, we see significant opportunity to grow the forecast cashflows from our two projects," Mr Flanagan said.

"Lithium ion batteries currently cannot be manufactured without graphite. We are completely focused on being among the world's most competitive suppliers of this essential product while we also deliver very good returns for shareholders and help deliver a revolution in electric vehicles and renewable energy. Battery Minerals continues to work and engage with all local communities to minimise impacts and maximise benefits from our operations within Mozambique."

Table 1

Battery Minerals Group Probable Ore Reserves			
Project	**Mt**	**Grade % TGC**	**Contained Graphite Mt**
Balama[1]	**19.66**	**11.06**	**2.17**
Montepuez[2]	**42.19**	**9.27**	**3.91**
Total	**61.9**	**10.1**	**6.08**

1. *Balama - The Ore Reserve estimate was compiled under the supervision of Mr Jon Hudson who is an employee of Snowden Mining Industry Consultants and a Fellow of the South African Institute of Mining And Metallurgy. Mr Hudson has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity that he has undertaken to qualify as a Competent Person as defined in the JORC Code. The Ore Reserve was estimated above a cut-off of 3.4% TGC for weathered and 4.3% TGC for fresh. All Ore Reserve tonnes have been rounded to the nearest 10,000 tonnes and grade to the nearest 0.01. The Ore Reserve estimate includes small amounts of Inferred material in the form of mining edge dilution.*
2. *Montepuez - The company released an announcement to the ASX on 4th December 2018 "Increase in Montepuez Reserve". The information in this announcement and the 4th December 2018 announcement that relates to the Ore Reserves at Montepuez is based on information reviewed or work undertaken by Mr Jon Hudson, FSAIMM, and an employee of Snowden Mining Industry Consultants. Mr Hudson has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the preparation of mining studies to qualify as a Competent Person as defined by the JORC Code 2012. Mr Hudson consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears.*

Balama Central Graphite Project - Key feasibility study findings

Table 2

	Feasibility Study findings* on Balama Central Graphite Project**
Annual production at run of mine (ROM) ore at an average rate of 480,000tpa at over 12.2% TGC	58,000t of +96% TGC graphite concentrate
Life of Mine (LoM) sales revenue (net)	US$2,962 million
LoM cash generation	US$1,912 million *
Average EBITDA at BMI pricing**	+US$35M per annum
Project pre-tax IRR	55%
Project payback period	2.3 years
Capex (pre-production)	US$69.4 million
C1 LoM operating cash cost	US$425/t of product (FOB Pemba)

First 8 years C1 operating cash cost	US$363/t of product (FOB Pemba)
Mine life at production rate of 58,000tpa **	27 years
Waste to ore strip ratio	2.0

*- Excludes National Ownership (anticipated to be ~5%) and 32% tax rate and royalties
**- Based on Ore Reserves (see ASX released dated December 2018)
***- Feasibility Study findings (+15%/-5%)
****- Based on the latest BMI CIF China forecast graphite prices for 2022

Location

The Balama Central Graphite Project is located in the province of Cabo Delgado in northern Mozambique, approximately 260km west of the port of Pemba.

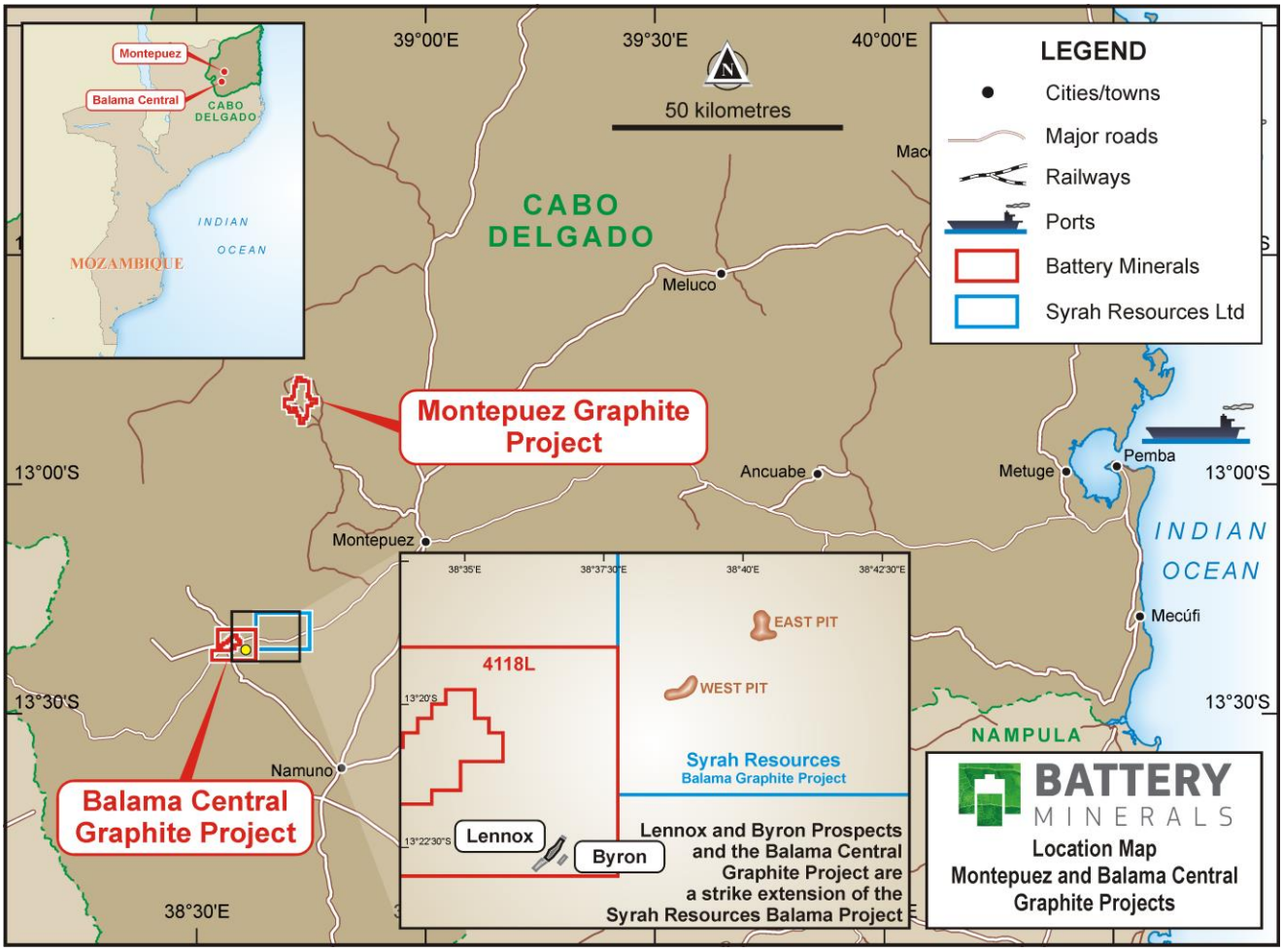


Figure 1 - Location map showing the Balama Central Graphite Project in the Province of Cabo Delgado in northern Mozambique.

Balama Central Graphite Project: Lennox and Byron deposits Ore Reserve Estimate

The Probable Ore Reserve for the Lennox and Byron deposits was estimated to be 19.7Mt at 11.1% TGC for 2.2Mt of graphite. The Ore Reserve comprises of the following mineral inventories;

- **Weathered ore:** 5.4Mt @ 10.7% TGC for 0.6Mt
- **Fresh ore**: 14.2Mt @ 11.2% TGC for 1.6Mt

The Ore Reserve estimate is summarised in Table 3 below.

Table 3

Balama Central Graphite Project

November 2018 Ore Reserve Estimate

Pit	Ore type	Class	Ore (Mt)	TGC (%)
Lennox	Weathered	Probable	3.36	11.09
	Fresh	Probable	8.19	11.70
	Total	Probable	11.55	11.52
Byron	Weathered	Probable	2.08	10.18
	Fresh	Probable	6.02	10.49
	Total	Probable	8.11	10.41
Total	Weathered	Probable	5.44	10.74
	Fresh	Probable	14.21	11.19
	Total	**Probable**	**19.66**	**11.06**

Notes:

- *The Ore Reserve estimate was compiled under the supervision of Mr Jon Hudson who is an employee of Snowden Mining Industry Consultants and a Fellow of the South African Institute of Mining And Metallurgy. Mr Hudson has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity that he has undertaken to qualify as a Competent Person as defined in the JORC Code.*
- *The Ore Reserve was estimated above a cut-off of 6% TGC.*
- *All Ore Reserve tonnes have been rounded to the nearest 10,000 tonnes and grade to the nearest 0.01.*
- *The Ore Reserve estimate includes small amounts of Inferred material in the form of mining edge dilution.*

Balama Central Graphite Project CAPEX

The total estimated pre-production establishment capital cost for the project is US$69.4M, including contingency, as summarised in below table:

Table 4

BALAMA CENTRAL CAPEX	USD
Process Plant	20,893,575
Non-Process Infrastructure	7,709,246
Mining	8,171,160
EPCM	3,200,000
Owner's Costs	9,221,324
Resettlement Action Plan (RAP)	4,132,600
Non-Mining Mobile Fleet	1,939,648
TSF and Bulk Water Storage	6,838,080
Freight	1,786,170
Contingency	5,534,083
TOTAL	**69,425,887**

Balama Central Graphite Project OPEX

The Weathered Ore and Fresh Ore operating cost summaries (average blended ore) for the Balama Central Graphite Project is detailed below FOB Pemba:

Table 5

Weathered Ore OPEX CATEGORY	COST US$/y	COST US$/t feed	COST US$/t product	Distribution
Labour	3,260,031	6.79	56.09	15.9%
Power	3,782,923	7.88	65.08	18.5%
Reagents & Consumables	3,720,950	7.75	64.02	18.2%
Maintenance Materials	615,404	1.28	10.59	3.0%
G&A	1,941,712	4.05	33.41	9.5%
Product Logistics	3,914,138	8.15	67.34	19.1%
Mining and Earthworks	3,215,479	6.56	55.32	15.7%
TOTAL C1 Cost	**20,450,636**	**42.06**	**351.84**	**100.0%**

Fresh Ore OPEX CATEGORY	COST US$/y	COST US$/t feed	COST US$/t product	Distribution
Labour	3,260,031	6.79	56.09	13.9%
Power	3,782,923	7.88	65.08	16.1%
Reagents & Consumables	3,720,950	7.75	64.02	15.8%
Maintenance Materials	615,404	1.28	10.59	2.6%
G&A	1,941,712	4.05	33.41	8.3%
Product Logistics	3,914,138	8.15	67.34	16.6%
Mining and Earthworks	5,369,661	11.19	107.96	26.7%
TOTAL C1 Cost	**22,604,817**	**47.09**	**404.48**	**100.0%**

Notes: 1) Above tables excludes Government Royalties.
2) Above tables based on average blended ore of 58,000 tpa TGC production rate and ~1.7Mtpa mined and process run of mine (ROM) ore at an average rate of ~480,000tpa at 12.5% TGC

Balama Central Flake Size Classification

The updated Ore Reserve and associated mine plan has changed the Balama Central Flake Size Classification materially with the inclusion of a significant quantity of fresh material, which contains a significantly higher proportion of +150 micron flake. The BMI CIF China forecast basket price for Balama Central product for 2022 is US$1,106/t. The life of mine flake graphite concentrate sizing is summarised below:

Summary table of Product Size Distribution's for the Weathered and Fresh samples as derived from the BGRIMM Testwork

Table 6

Product Description	Size Fraction	Weathered	Fresh
Jumbo	+300 µm	9.5%	26.0%
Coarse	+180 µm	5.3%	7.4%
Medium	+150 µm	22.5%	22.0%
Fines	-150 µm	62.7%	44.6%

Mining Methods and Parameters

Mining at Balama Central will be completed with standard truck and excavator methods. Drill and blast of the fresh material will be required.

Pit designs for Lennox and Byron were based on Whittle pit optimisations for each deposit considering project specific unit costs, prices, recoveries and geotechnical inputs. The pit optimisations were constrained within the limits of the Indicated Resources for each deposit. The current design for the Lennox pit extends to a depth of approximately 90m, whilst the current design for Byron pit extends to a depth of approximately 135m deep. Each pit will have a single waste dump, located to the east of each excavation. Pit ramps will be oriented to ensure that both ore and waste haulage distances are minimized. Long-term ore stockpiles will be located between each pit and the ROM pad. The project layout is shown in figure 2.

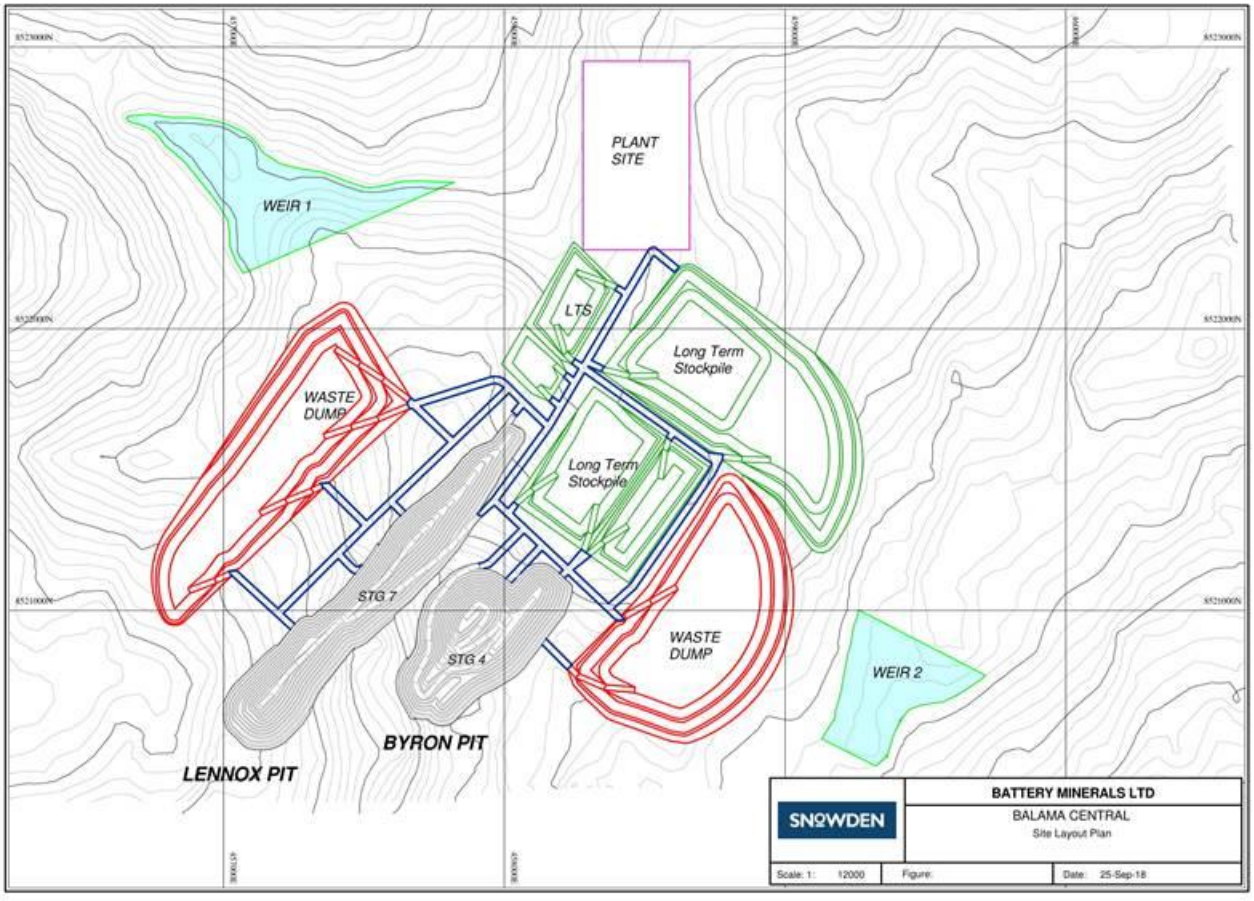


Figure 2 - Balama Central Mine & Processing Site Layout.

A mining schedule was completed based on the processing plant target production of ~58 ktpa of TGC concentrate at 96% TGC and practical mining constraints. A 75% ramp-up was applied in the first year. To enhance early cashflow, the target feed grade to the plant will average 12.5% TGC. This is maintained for 29 years before reducing.

The cut-off grade was determined through the application of project unit operating costs and recoveries. The recoveries were determined by deposit scale geometallurgical assessment of samples representative of the variable lithology types, oxidation and TGC% grade ranges. The marginal cut off estimated to be 3.4% TGC for the weathered material, and 2.9% TGC for the fresh material. An elevated cut-off grade of 6% TGC was selected as it produced sufficient mine life.

Material between the marginal cut-off and 6% TGC will be placed on a mineralised waste dump, separate from the main waste dumps.

The Mineral Resource to Ore Reserve conversion is 74% based on Probable Ore Reserves over Indicated Mineral Resources at a 6% TGC cut-off grade.

Metallurgical Methods and Parameters

Flowsheet development and locked cycle metallurgical testwork conducted at the Beijing General Institute of Mining and Metallurgy – Technology Group (BGRIMM) formed the basis of the Balama Central Graphite project implementation flowsheet.

Table 7

Sample ID / Lithology	Sample Feed Grade % TGC	Average Product Grade % TGC	Recovery %	% +150 µm
1 / GS4 O	3.05	98.07	94.9	27
2 / GS1 P	22.2	96.1	94.5	42.5
3 / GS3 P	10.29	98.1	92.4	70.8
4 / GS4 P	2.81	97.7	72.5	35
5 / GS3 O	17.1	96.5	95.5	38.8
6 / GS3 P HG	18.04	97.8	96.3	52.8
7 / GS3 O HG	21.4	96.6	97.5	35.8

Summary table of Flotation results for the different sample lithologies as derived from the BGRIMM Testwork

Notes:

1. GS3 and GS1 material are the key target lithologies as feed to the plant
2. GS4 O and GS4 P are low grade mineralised waste material designates
3. = weathered
4. P = primary or fresh

For the economic assessment of the ore, the Company has used a recovery of 93%.

The Product Size Distribution (PSD) for the Weathered and Fresh material determined by test work on the Balama Central 96% concentrate sample at BGRIMM is summarized in table below.

Summary table of Product Size Distribution's for the Weathered and Fresh samples as derived from the BGRIMM Testwork

Table 8

Product Description	Size Fraction	Weathered	Fresh
Jumbo	+300 µm	9.5%	26.0%
Coarse	+180 µm	5.3%	7.4%
Medium	+150 µm	22.5%	22.0%
Fines	-150 µm	62.7%	44.6%

Market Flake Size Pricing

Based on the latest BMI CIF China graphite prices for 8 years starting 2022, the forecast basket price of Balama Central 96% TGC graphite concentrate in 2022 is $1,106/t for the weathered material and $1,275/t for fresh material.

Table 9

Size fraction	Price ($/t product)	Weathered distribution	Fresh distribution
+300 µm	974	9.5%	26.0%
+180 µm	1,074	5.3%	7.4%
+150 µm	1,280	22.5%	22.0%
-150 µm	1,959	62.7%	44.6%
Basket price (USD $/t TGC in product)		**USD$1106**	**USD$1,275**

The basis of the product pricing was determined by an independent forecast of graphite flake market prepared for the Company by BMI, an independent publishing business focused on critical mineral supply chains particularly minerals applied to new technologies. This has resulted in a LoM average CIF China basket price of USD1,508/t. Shipping costs of USD 100/t product are anticipated and included as costs in the economic assessments.

Balama Central process plant

The Balama Central process plant will process run of mine (ROM) ore at an average rate of 480,000tpa at over 12.5% TGC to produce 58,000 tpa of dry graphite concentrate with a grade of +96% total graphitic carbon (TGC). The flowsheet has been developed based on the results of extensive test work performed on various samples. Battery Minerals expects that the Balama Central process plant will comprise of the following:

- ROM pad, designated stockpile areas and ability to blend ore on pad.
- Primary jaw crusher and crushed ore stockpile (COS).
- Primary closed-circuit rod mill.
- Rougher flotation.
- Concentrate regrinding and concentrate cleaning.
- Concentrate filtration.
- Concentrate drying, screening, and bagging.
- Tails thickening and disposal.
- Water and Air services.
- Reagents.

The processed tailings will be deposited in a Tailings Storage Facility (TSF).

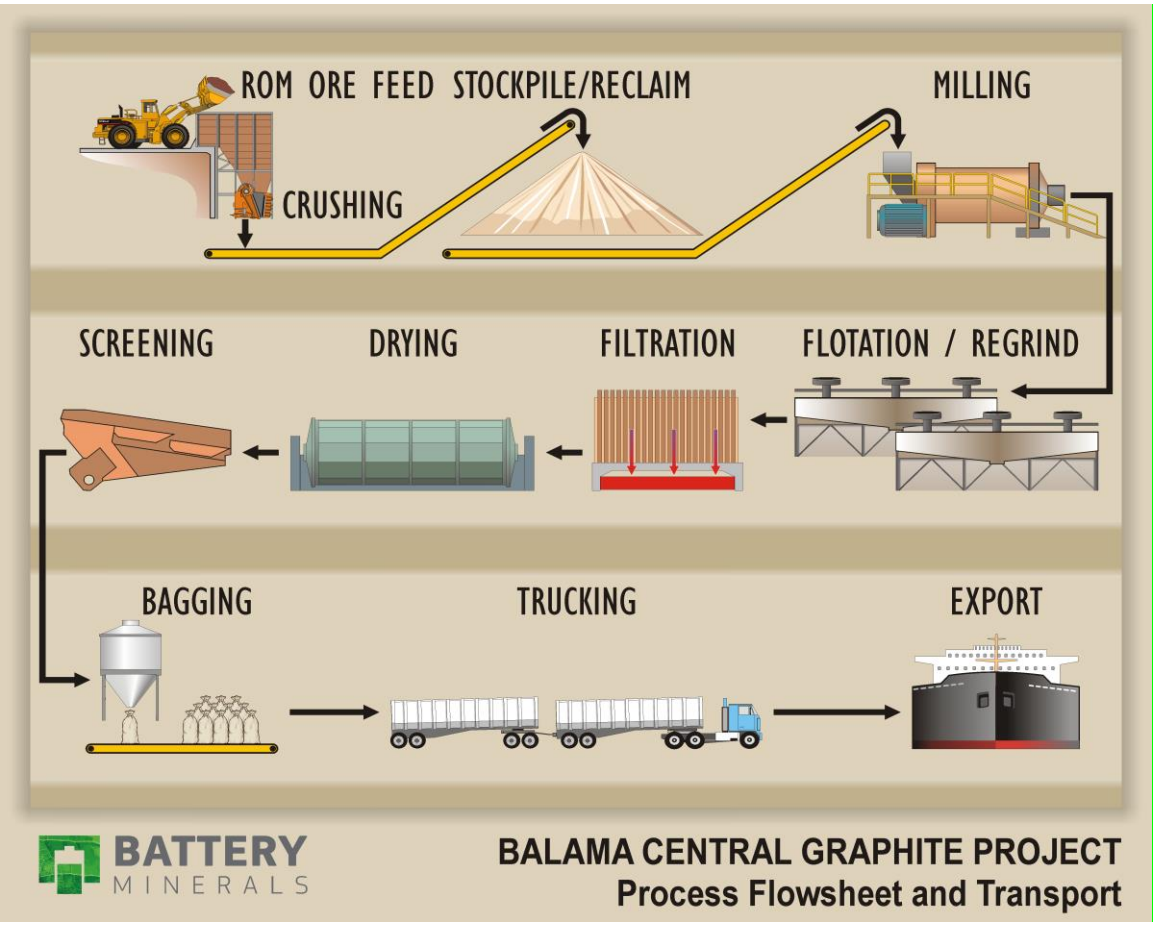


Figure 3 - Diagrammatic flow explaining the potential process flowsheet including the expected transport method.

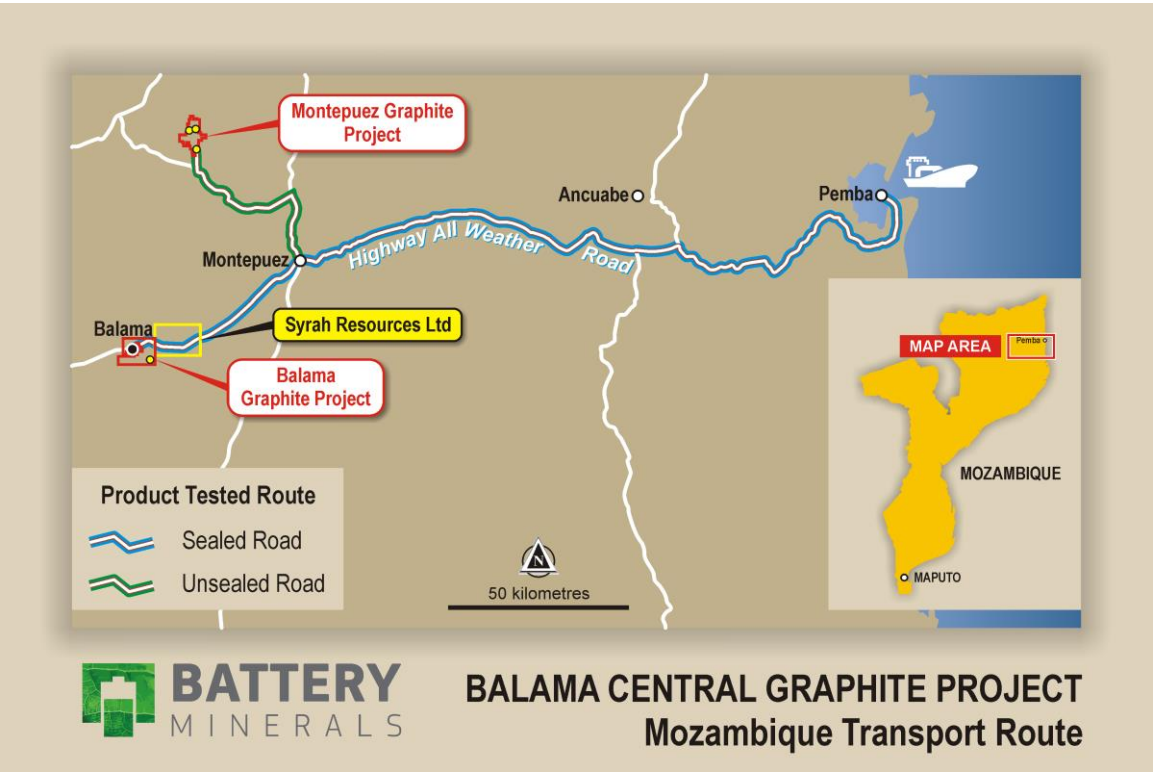


Figure 4 - Infrastructure map illustrating proximity to the nearest deep water ports

Feasibility Study (FS) consultants and contractors

The FS commenced in June 2018 and the Battery Minerals technical team has worked efficiently and effectively to deliver the FS within 7 months with multiple studies managed and progressed simultaneously. The study scope included further resource estimation and classification of the Byron and Lennox deposits, Ore Reserve estimation, life of mine planning, design and scheduling, transport route investigation and design, process plant infrastructure design and testwork, mine cost estimation and financial modelling, environmental and social impact assessment, hydro geological, tailings storage facility and water storage dam design, geochemical characterisation of acid mine drainage potential for both pits, waste dumps & low grade stockpiles, graphite flake size assessment and liberation, mineralogical characterisation, geometallurgical studies of surface trench and drill core samples. See Appendix 1 for a list of FS consultants and contractors.

Key Non-Process Infrastructure and other FS work

The Balama Central operations includes an open mine pit, waste and mineralised waste mine dumps, mine services area, process plant, non-process plant infrastructure, tailings storage facility, camp and water storage facilities. The overall site layout has been developed by taking into consideration any nearby villages, rivers, topography and existing infrastructure such as roads. All plant and non-process infrastructure (NPI) will be located within the mining license boundary.

The NPI will comprise of on-site roads, fuel storage, power generation and supply, raw water supply, non-process plant buildings and offices, camp and utilities.

Financial Evaluation - Summary of key inputs to the Feasibility Study Financial Model

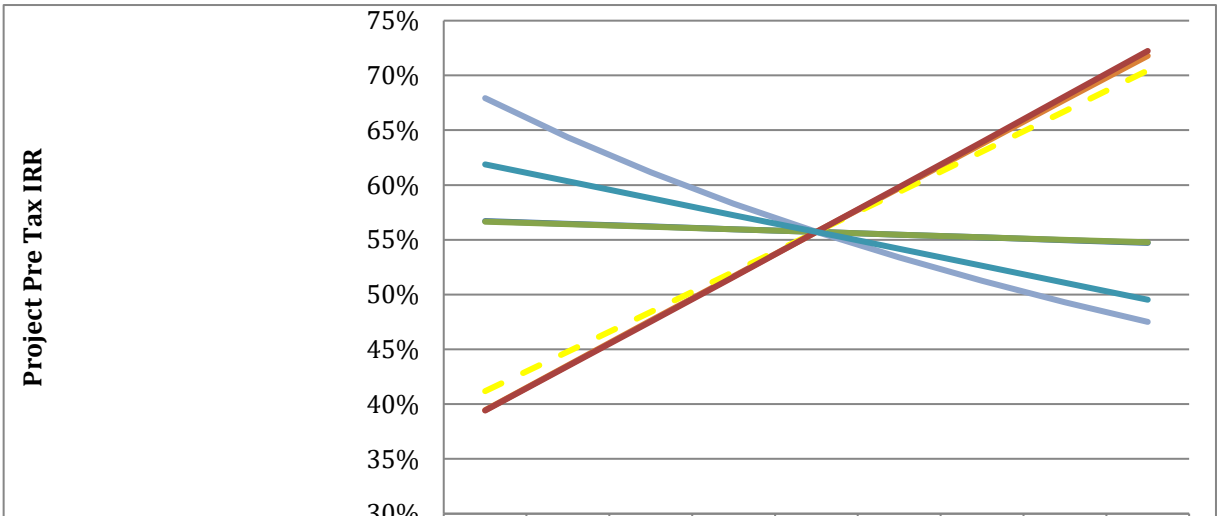
Table 10

Balama Central Mine - Summary of Key Project Statistics/Assumptions for Life of Mine (LoM)		
Total tonnes ore mined & processed	tonnes (x1,000)	19,656
Total tonnes moved	tonnes (x1000)	59,129
Average LoM strip ratio		2.01
Average head grade (TGC)	%	12.5%
Average annual production rate (@96% purity)	tpa (x1,000)	58,000
Average graphite recovery (@96% purity)	%	93%
LOM Product size distribution		
+300 micron	%	21.6%
-300+180 micron	%	6.9%
-180+150 micron	%	22.1%
-150 micron	%	49.4%
Weighted Average LoM Basket price (CIF China)	US$/tonne	$1,508
Average LoM C1 cash operating cost	US$/tonne	$425

Notes:
1) All costs and revenues quoted pre-tax (32% tax rate) and exclude National Ownership (anticipated to be ~5%)
2) C1 Costs exclude 3% royalty
3) Costs are based on Q4, 2018 estimates and are unescalated
4) Feasibility Study findings (+15%/-5%)

As can be seen in Figure 5 the project is most sensitive to the price of the product. A 20% reduction in product price reduces the IRR by 16%, plant feed and grade naturally both impact the IRR equally while the IRR is not highly sensitive to diesel costs which impact power costs. A reduction in capex would increase the IRR by 9%.

Overall the project economic are robust and show good returns even with a reduction in key economic inputs of up to 20%.



	-20%	-15%	-10%	-5%	0%	5%	10%	15%	20%
Mining and Earthworks	57%	56%	56%	56%	56%	55%	55%	55%	55%
Capital Costs	68%	64%	61%	58%	56%	53%	51%	49%	48%
Power	57%	56%	56%	56%	56%	55%	55%	55%	55%
Plant Feedrate	39%	44%	48%	52%	56%	60%	64%	68%	72%
Grade	41%	45%	48%	52%	56%	59%	63%	67%	70%
Basket Price	39%	43%	48%	52%	56%	60%	64%	68%	72%
Opex	62%	60%	59%	57%	56%	54%	53%	51%	50%

Figure 5 - Sensitivity Analysis

Market Studies and Product Sales

This section summarises how the graphite product and product pricing was derived by the Company during the FS as they are a critical component of the project revenue stream.

Natural graphite markets are relatively opaque as product exchanges occur between producer and buyer. Compared with iron ore and other bulks, relatively limited information is available in the open-market regarding graphite product types and price ranges. In general, the coarser the natural flake size in concentrate, the more valuable the product. Concentrates exceeding 96% also command a premium price. Graphite is classed as an industrial mineral where sales contracts are tightly held.

Natural graphite product use is changing with high growth expected from the battery market particularly servicing electrical cars.

The Company has undertaken a variety of marketing and price investigations, including independent assessment to support the current and forecast price ranges for the intended production profile at Balama Central and Montepuez, and these have been incorporated into the FS product price basket.

These price profiles have been drawn from information provided by BMI, an independent evaluator of graphite and other product pricing indices. BMI is considered industry experts and recognised commentator on the graphite and energy minerals sector.

Battery Minerals has also received confirmation of interest and validation of product quality from a major Japanese graphite consumer for the Balama Central product.

China is the dominant player in the graphite market and has been for decades. In respect to the demand, supply and pricing parameters, the independent research firms mentioned have strong networks in both China and internationally. This has been the rationale for the use of independent research and commissioned reports.

Project Delivery Schedule

See Appendix 1 for details on the Project Delivery Schedule for the Balama Central Mine

Background Information on Battery Minerals

Battery Minerals Limited ("Battery Minerals") is an ASX listed Australian company with two world-class graphite deposits in Mozambique, being Montepuez and Balama Central. Battery Minerals has produced high quality graphite flake concentrate at multiple laboratories. Subject to completing project financing, Battery Minerals intends to commence graphite flake concentrate production from its Montepuez Graphite Project at rates of ~50,000tpa at an average flake concentrate grade of 96% TGC.

In December 2017 and January 2018, Battery Minerals signed four binding offtake agreements for up to 41,000tpa of graphite concentrate, representing over 80% of Montepuez's forecast annual production. In H1 FY2018, the Mozambican Government has granted Battery Minerals a Mining Licence and it has also accepted the Company's Environmental Impact Assessment (EIA) for the Montepuez Graphite Project.

As Battery Minerals executes subsequent expansions, subject to the completion of all necessary studies, permits, construction, financing arrangements, infrastructure access, it expects production to grow to over 100,000 tonnes per annum graphite flake concentrate from its Montepuez Graphite Project.

Battery Minerals has also now announced a feasibility study on its Balama Central project, which comprises a Stage 1 production rate of 58,000tpa (B1).

Combined with Montepuez and subject to continued positive economic, social and technical investigations, Balama Central provides scope for self-funded growth from a ~50,000tpa production-rate to at least 150,000tpa.

Investor Enquiries:	Media Enquiries:
David Flanagan Managing Director, Battery Minerals Limited Tel: +61 8 6148 1000 Email: info@batteryminerals.com **Tony Walsh** Company Secretary, Battery Minerals Limited Tel: +61 408 289 476	**Paul Armstrong** Read Corporate Tel: +61 8 9388 1474 Email: paul@readcorporate.com.au

Contact Details (Australian Office):

Ground Floor
10 Ord Street
West Perth, WA 6005
Australia

Competent Person's Statement - Mineral Resources
Battery Minerals Limited announced updated Mineral Resources for the Balama Central Project on 29 March 2018. This included the following competent person statement "The Statement of Estimates of Mineral Resources has been compiled by Mr. Shaun Searle who is an associate of RPM Global and a Member of the AIG. Mr. Searle has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity that he has undertaken to qualify as a Competent Person as defined in the JORC Code (2012). Mr Searle consents to the inclusion in the report of the matters based on his information in the form and context in which it appears." At the date of this announcement, Mr Searle has not withdrawn his consent.

Competent Person's Statement – Ore Reserves
The information in this announcement that relates to the Ore Reserves at Balama Central is based on information reviewed or work undertaken by Mr Jon Hudson, FSAIMM, and an employee of Snowden Mining Industry Consultants. Mr Hudson has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the preparation of mining studies to qualify as a Competent Person as defined by the JORC Code 2012. Mr Hudson consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears.

Important Notice
This ASX Announcement does not constitute an offer to acquire or sell or a solicitation of an offer to sell or purchase any securities in any jurisdiction. In particular, this ASX Announcement does not constitute an offer, solicitation or sale to any U.S. person or in the United States or any state or jurisdiction in which such an offer, tender offer, solicitation or sale would be unlawful. The securities referred to herein have not been and will not be registered under the United States Securities Act of 1933, as amended (the "Securities Act"), and neither such securities nor any interest or participation therein may not be offered, or sold, pledged or otherwise transferred, directly or indirectly, in the United States or to any U.S. person absent registration or an available exemption from, or a transaction not subject to, registration under the United States Securities Act of 1933.

Forward Looking Statements
Statements and material contained in this document, particularly those regarding possible or assumed future performance, resources or potential growth of Battery Minerals Limited, industry growth or other trend projections are, or may be, forward looking statements. Such statements relate to future events and expectations and, as such, involve known and unknown risks and uncertainties. Such forecasts and information are not a guarantee of future performance and involve unknown risk and uncertainties, as well as other factors, many of which are beyond the control of Battery Minerals Limited. Information in this presentation has already been reported to the ASX.
All references to future production and production & shipping targets and port access made in relation to Battery Minerals are subject to the completion of all necessary feasibility studies, permit applications, construction, financing arrangements, port access and execution of infrastructure-related agreements. Where such a reference is made, it should be read subject to this paragraph and in conjunction with further information about the Mineral Resources and Ore Reserves, as well as the relevant competent persons' statements.

Appendix 1

Balama Central Mine

Feasibility Study Project Implementation - Project Delivery Schedule

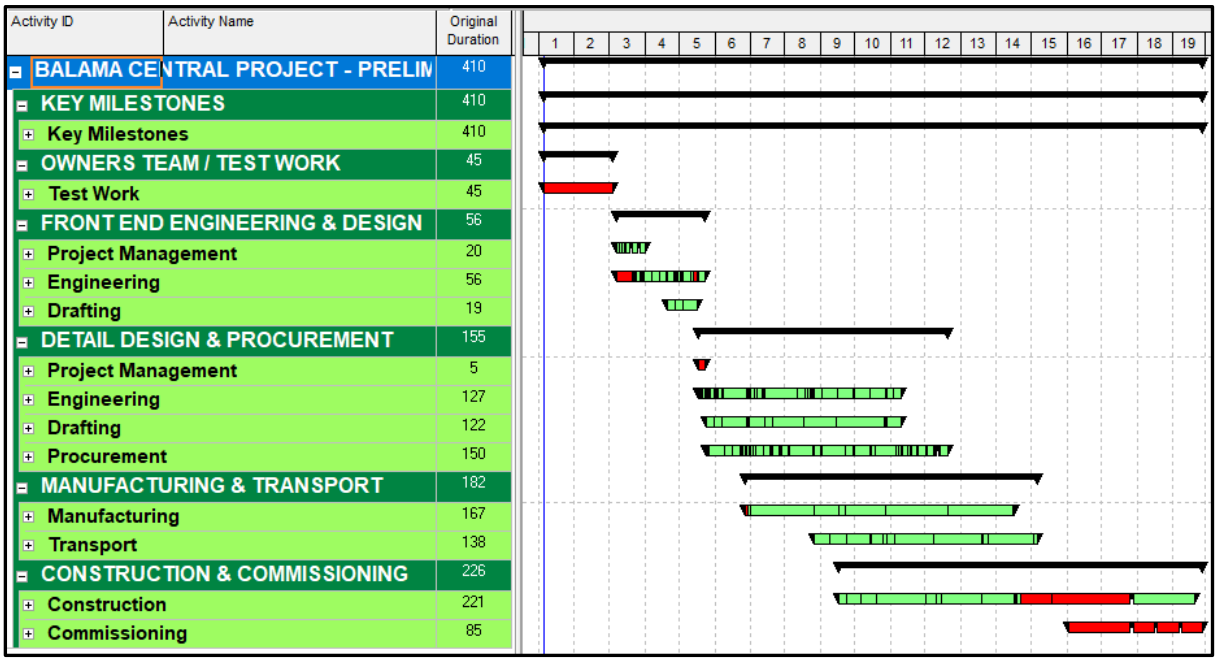


Figure 6 – Project Delivery Schedule

1. Execution Strategy

The project execution strategy adopted for the Feasibility Study was to perform the project implementation under an Engineering, Procurement, Construction and Management (EPCM) contracting model with key consultants engaged to prepare detailed design and specifications of the mine, the process plant and all non-process infrastructure respectively. The EPCM consultant would provide procurement, construction management, and commissioning services to assist the Company to deliver the project. Battery Minerals would also arrange and manage some contracts directly. The Company will review and consider alternative contracting models during the project approvals phase.

2. Operational Organisation Model

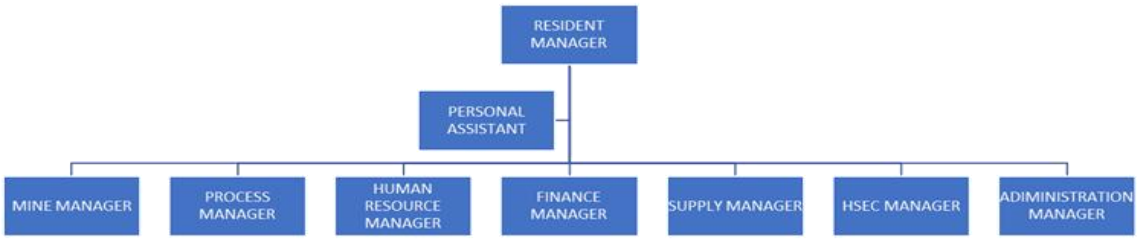


Figure 7 - Operational Organisation Model

3. Procurement and Contracting Strategy

Equipment packages will either be procured direct by The Company and free issued to contractors for installation under and EPCM model. Buildings on the plant site and at the accommodation village will be supplied and installed by a builder with bulk commodities (earthworks, concrete, steel, plate-work, piping, electrical, etc) supplied and installed by various construction contractors. Construction contracts will be let to suitably experienced African contractors for the process plant and infrastructure packages respectively.

It is intended that the diesel fired power station and the bulk diesel fuel facility will be procured, installed and operated by the Company.

Key services contracts will be let to support operations such as the mining, drill and blast, concentrate logistics, and catering services.

4. Operational Philosophy

The mine will operate 24 hours per day, 7 days per week on a roster basis with fly in-fly out for staff not resident in Cabo Delgado province. Shift workers will work an 8 hour shift with three shifts per day.

The Company will provide all personnel to operate and maintain the process plant and non-process infrastructure except for the mining contractor, the power station operator, and the accommodation village services provider, who will engage the personnel required to deliver these services.

The mining contractor will provide all mine contractor facilities and the mining fleet. Explosives supply may be undertaken by the mining contractor or by Battery Minerals.

The Company will procure an earthmoving fleet which it will operate and maintain during the project construction phase and for the duration of operations. This fleet will support the construction efforts of the main access road and will be used for lifts on the tailings storage facility and for maintaining the access road from Montepuez to the mine site.

Concentrate haulage, consolidation, and all terminal handling into containers and onto ship (FOB Pemba) will be performed by a logistics contractor.

Appendix 2 - Feasibility Study independent consultants and contractors

The following contractors were utilised as part of the Feasibility Study;

- Resource drilling – Mitchell Drilling Contractors Mozambique
- FS mineral resource estimation and classification – RPM Global
- Resource to reserve estimation and life of mine design and scheduling – Snowden
- Mine geotechnical study - Snowden
- Mine layout and design – Snowden
- Surface hydrology study – WRP Consultants
- Graphite product metallurgical assessment – LADP
- Non-process plant Infrastructure – LADP
- Process plant design - LADP
- Mine estimates – Snowden
- Plant capex and opex estimates - LADP
- Design and assessment of the TSF and WSF – Epoch

Appendix 3 - Feasibility Study - Key Non-Process Infrastructure

The Feasibility Study evaluation included the following Non-Process mine infrastructure.

1. **Power Station**

   The power station has four 1250 kVA diesel generators (three duty and one standby) and will supply power to the process plant, plant buildings and offices only. The average continuous power draw has been calculated to be 2,103 kW. The MSA and camp areas power will be supplied by two sets of two 300 kVA diesel generators (one duty and one standby) with an average continuous power draw of 138 kW and 266 kW respectively. Peak power will require the use of the stand by generator for those short periods of time. Power for the TSF and two water weirs pumps will be provided by 3 x 75KVa generators. The overall average continuous power draw for the entire site has been calculated to be 2,664 kW

2. **Accommodation Village**

   The accommodation camp will be able to cater for up to 100 residents. All accommodation units are single bedroom with ensuite. Management accommodation also include a small lounge area. A central kitchen, diner and recreational area will be provided for the camp residents. Other support facilities at the camp will include a laundry, offices and maintenance/ storage facilities.

3. **Site Development and roads**

   Site access roads will be constructed to provide access to the project areas (i.e. pit, MSA, process plant, TSF and camp). Road design and estimates have considered the anticipated vehicle types and loads that will be used. The mining fleet will mainly operate between the mine pit, MSA and the process plant ROM pad. Other roads are expected to facilitate light vehicle movements, including, mobile plant equipment, busses, light duty vehicles, maintenance vehicles etc. which will be required to support the operations.

4. **Water Supply and Distribution**

   Two rivers currently intersect the project site. The Lapa stream runs in a north to south direction and cuts through the Lennox and Byron ore bodies, while the Namiticu stream runs in a south west to north east direction through the southern corner of the license area. The design has allowed for a weir to be built on each of these streams to store water for operations and to allow a controlled diversion of the Lapa stream around the ore bodies and mining areas. The raw water from these weirs will be pumped to the raw water tank, located at the process plant (also used for fire water). A water treatment plant will provide potable water to the process plant and the MSA. A second water treatment plant will supply the camp. However, this water source will be from a dedicated borehole located in the vicinity of the camp.

5. Diesel Storage Facility

Allowance has been made for two dedicated fuel (diesel) storage facilities located at the MSA and process plant. The MSA fuel facility will have a storage capacity of approximately 150,000 L (3 x 50,000L tanks) and the plant fuel facility approximately 300,000 L (6 x 50,000L tanks). These facilities will be bunded to contain spills. It is anticipated that a pay as you use fuel contract will be placed, with the vendor supplying all fuel infrastructure required in the bunded area.

6. Mine Buildings and Facilities

Buildings and support facilities will be provided at the process plant and MSA area and include (but are not limited to):

- Administration building.
- Clinic.
- Ablution and change house facilities.
- Crib rooms.
- Workshops and stores.
- Laboratory.

Sewage collection and treatment facilities will be localised for the plant and MSA, while the camp will have a stand-alone system. All sewage and grey water will be collected from their sources and piped to a collection septic tank. The solid / liquid effluent from the septic tank will be pumped to an above ground bio-reactor, with ultra violet steriliser before the processed and “clean” effluent is drained to a soak away pit.

The entire mine site will be fenced by a high security perimeter fence to limit uncontrolled community and livestock access to the mining and operating areas. The main access to the mine site will be via a manned access control security gate. Site communication will be initially via VSat and fibre / wifi internet links, while microwave link to local vendor fibre systems will be investigated.

7. Communication and Information Technology

Communications and Information Technology required to support the mine are listed below:-

- Corporate Voice and Data
- Internet connectivity and firewall
- Process plant control systems communication networks
- Site wide communications fibre cabling backbone
- Village communications backbone and services
- Plant technical applications
- Server infrastructure
- Limited village entertainment services

Corporate Voice and Data provided through a microwave tower link provided by a domestic telecommunications service provider. The tower will be located 4kms from the village and will provide communications to the offices, plant control room, plant switch rooms and accommodation village.

8. Security

Security systems shall include physical security in the form of fencing, gates and signage as well as manual gates and closed circuit television (CCTV). The explosive compound and magazine shall be fenced and manned by security guards 24 hours a day, 7 days a week. Standard industry practice explosive stock control will apply on a daily basis. A manual security gate will be installed at the Process Plant and Accommodation Village entry points.

9. Tailings Storage Facility (TSF)

A combined containment and self-raising spigot tailings dam (TD) with a basin footprint area of 180Ha. It reaches height of 20m in year 30 and its terminal rate of rise is 0.23m/yr. The basic details of the stage 1 and stage 2 walls are:-

- The starter wall, as estimated for the capex is 9.5m high at the centre.
- A self-raising component (Stage 2) above the starter wall;
- A compacted earth elevated toe drain platform;
- A perimeter bund wall in areas that are higher than the starter wall;
- A 3.0m wide toe drain upstream of the starter wall, and;
- A seepage cut-off key below the footprint of the starter wall where the ground elevation is lower than 532m.a.m.s.l.
- An unlined solution trench to collect the seepage water from the toe drains;
- A concrete lined solution trench sump;
- A 25m wide unlined emergency by-pass spillways

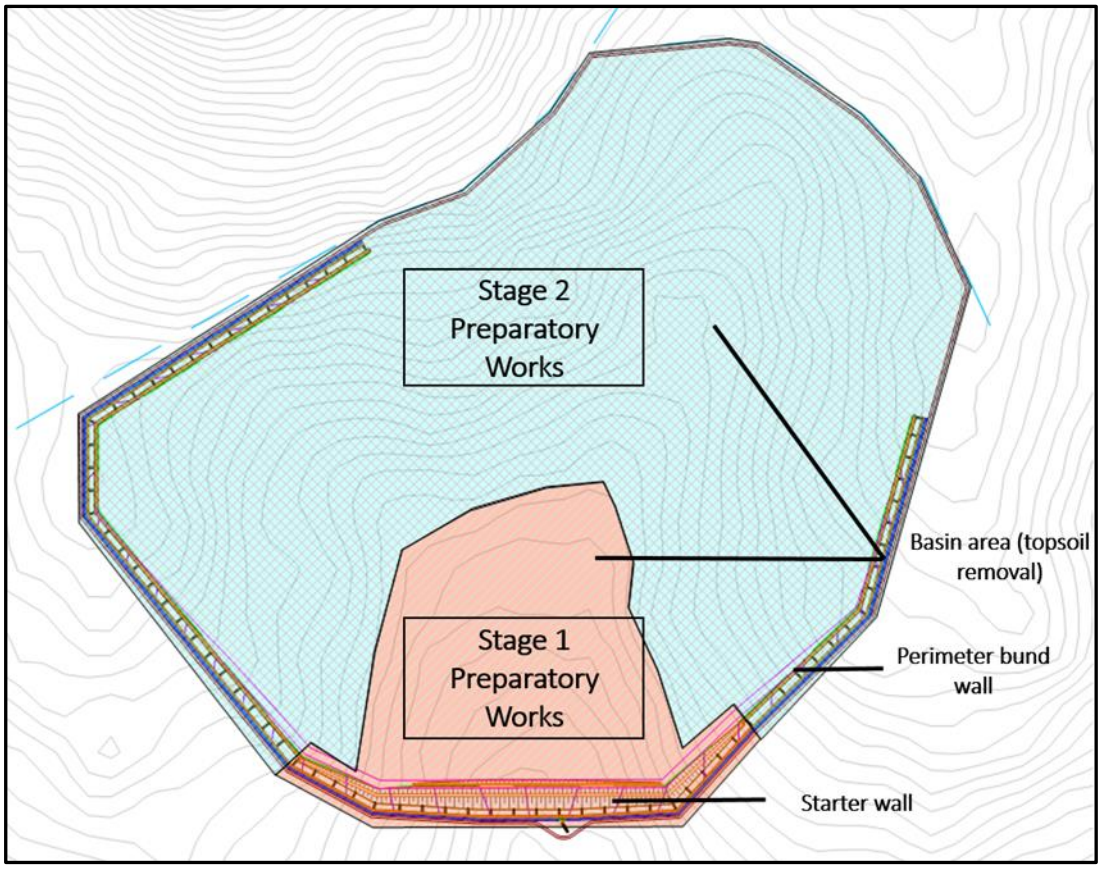


Figure 8 – Tailings Storage Facility

10. Water Storage Facility (WSF)

Key features of Weir 1 are:-

- An 8m high compacted earth embankment
- A seepage cut-off key below the footprint of the starter wall
- A 3m high curtain drain within the embankment;
- A 300mm thick Rip rap layer to the upstream face of the embankment;

Key features of Weir 2 are:

- A 6.4m high compacted earth embankment with the following dimensions:
- A seepage cut-off key below the footprint of the starter wall
- A 3m high curtain drain within the embankment;
- A 300mm thick Rip rap layer to the upstream face of the embankment, and;
- A 50m wide rip rap lined by-pass spillway with the following dimensions:

Appendix 4 – Feasibility Study Metallurgical Testwork Programs, Hydrology and Hydrogeology, Environmental Assessment and Approvals and Mine Development Licensing Schedule

METALLURGY

The detailed metallurgical report and associated documentation can be found in Appendix 5.0.

a. Testwork Program

Three programs of metallurgical testwork have been conducted on the Balama Central ore bodies.

The first was conducted by ALS laboratory in late 2015 and was a bench scale comminution and flotation testwork program. The second, also by ALS laboratories in mid 2016, involved the use of a mini pilot plant and included work index testing and bulk flotation. These first two testwork programs were summarized and used as inputs to the scoping study report (S087-REP-PR-001_0_Balama Central Scoping Study). The testwork flowsheet included rougher flotation, three concentrate regrind stages and four cleaner flotation stages. This flotation testwork indicated an average recovery of 88% and the grade was not lower than 96%.

The third testwork program was conducted by BGRIMM Technology Group, in China in early 2018, and involved locked cycle flotation testwork (closed circuit) with a flowsheet that included a rougher - scavenger, 5 cleaner stages and 3 concentrate regrind stages. Results can be found in the BGRIMM Mineral Processing Test Study Report - KY20180435000001, July 2018.

Comminution SMC testwork on GS3 O (weathered) and GS3 P (fresh) ore, was conducted by ALS Laboratory. Reference can be made to the SMC Test Report represented in Appendix 7.4 (JKTech Job no: 18001/P13, Testing Date: January 2018).

The BGRIMM testwork program as well as the comminution testwork provided the main inputs for the design of the milling and flotation circuits in this study. The comminution design was largely based on a SAG mill model developed by OMC using the SMC metallurgical testwork conducted by ALS Laboratories.

b. Flotation Results

Locked cycle flotation testwork was conducted on the different lithologies expected to be processed in the plant and two low grade waste designated lithologies. The lock cycle testwork flowsheet was geared to protect the flake size while maximising recovery in achieving a 96%TGC minimum grade product.

The ore grind size and open circuit floatation results from the ALS preliminary testwork were used as the basis for the BGRIMM inputs for the locked cycle testwork.

Diesel as the collector was tested in various dosages in the ranges 116-150 g/t, total diesel addition, and MIBC as the frother was tested in the dosage range of 88-108 g/t. The overall recovery and average % total fixed carbon (TGC) is presented in the table below

Table: Flotation Results

Table 11

Sample ID / Lithology	Sample Feed Grade % TGC	Average Product Grade % TGC	Recovery %	% +150 µm
1 / GS4 O	3.05	98.07	94.9	27
2 / GS1 P	22.2	96.1	94.5	42.5
3 / GS3 P	10.29	98.1	92.4	70.8
4 / GS4 P	2.81	97.7	72.5	35
5 / GS3 O	17.1	96.5	95.5	38.8
6 / GS3 P HG	18.04	97.8	96.3	52.8
7 / GS3 O HG	21.4	96.6	97.5	35.8

Note:

1. GS3 and GS1 material are the key target lithologies as feed to the plant
2. GS4 O and GS4 P are low grade mineralised waste material designates
3. O = weathered
4. P = primary or fresh

The locked cycle testwork results indicated that for all samples (excluding sample 4) that were tested, an average product grade of > 96% and a product recovery of > 92% could be achieved in a fixed process flow configuration. However, for the target process plant feed material lithologies (GS1 and GS3 material) the average concentrate grade was 97.0% TGC with an average recovery of 95.2%. The flotation circuit design in this study was based on the BGRIMM testwork.

The results from the process target lithologies tested indicate a consistent recovery range above 92% and a grade of over 96% TGC, regardless of feed grade. This indicates that the Balama Central graphite has a consistent upgradability across feed grade and lithology type. For the Balama Central FS Process Design Criteria and average product grade of 96% TGC and recovery of 93% was applied across the material processed.

From the testwork, the expected average product PSDs for the weathered and fresh material from flotation are shown in the table below.

Table : Average Product Size Fractions

Table 12

Product Description	Size Fraction	Weathered	Fresh
Jumbo	+300 µm	9.5%	26.0
Coarse	+180 µm	5.3%	7.4
Medium	+150 µm	22.5%	22.0
Fines	-150 µm	62.7%	44.62

.

1. Acid Mine Drainage Assessment

This preliminary geochemical assessment had the following outcomes:

- It is understood that the material provided for geochemical testing is representative of ore, sub-economic ore, and waste rock.
- Tailings were excluded from this assessment because a sample for geochemical testing was not available.
- The key interaction between the stockpiles and the groundwater system(s) at the site will be infiltration of rainwater into the stockpiles that results in seepage from the stockpile footprints into the underlying soil profile. During its passage through the stockpile geochemical reactions will add acidity and dissolved elements to the water (the resulting water will not inevitably have a low pH, that will depend on the extent of sulphur oxidation in the stockpile).
- Geochemical modelling indicated a range of potential values of aqueous parameters and components in seepage from stockpiles. The modelled ranges are presented in Table 6 of this report. In summary:
- Ore seepage pH is expected to be neutral in the short term, as determined from static geochemical test results. However, stockpiles of sub-economic ore/waste rock may eventually develop acid seepage. Whether acid seepage will develop, and the potential time frame, are unknown at this stage since kinetic test results were not conducted for this preliminary baseline assessment.
- The salinity of ore seepage is expected to be in the range 5 000 to 15 000 mg/L. This may increase if the seepage turns acidic.
- The salinity is mostly in the form of Na, Ca, and SO4 (sulphate) concentrations.
- The sulphate concentration of ore seepage is expected to be in the range 1 000 to 5 000 mg/L. Preliminary estimates suggest this may increase to 6 000 mg/L if the seepage turns acidic. However, this will need to be confirmed through kinetic geochemical testing.

Preliminary static geochemical testing results in this report indicate that the ore, especially the sub-economic ore/waste rock, is potentially acid generating (PAG). However, the presence of acid-neutralising calcite, its limited neutralisation potential, and the del S sulphur contribution to acid drainage risk remain uncertain. This is reflected in the NAG test result which suggests Composite S1 (ore) is non-PAG. It appears these factors may significantly change the acid drainage risk. Therefore, further geochemical testing is required.

- As a precaution until further test results are available, acid seepage from the ore and sub-economic ore/waste rock stockpiles should be expected.
- A trade-off study is required to balance the technical, financial, and engineering costs of measures to manage/mitigate this seepage against the potential benefits in terms of downstream impacts. As a precaution, management and control measures to reduce seepage from the ore and sub-economic ore/waste rock stockpiles is required.

2. Hydrology and Hydrogeology

The objective of the hydrological study was to complete a desktop hydrological analysis (rainfall runoff analysis) in order to derive a time series of flows to support the designated potential storage capacities for the two identified water storage weirs and TSF sites.

The study confirms that between 0.58 – 0.97 million m^3 per annum is expected to flow through the areas of the weirs and TSF. The two weirs and TSF have the capacity to contain up to 0.72 million m^3. The annual make-up water for the process plant is approximately 0.5 million m^3 per annum

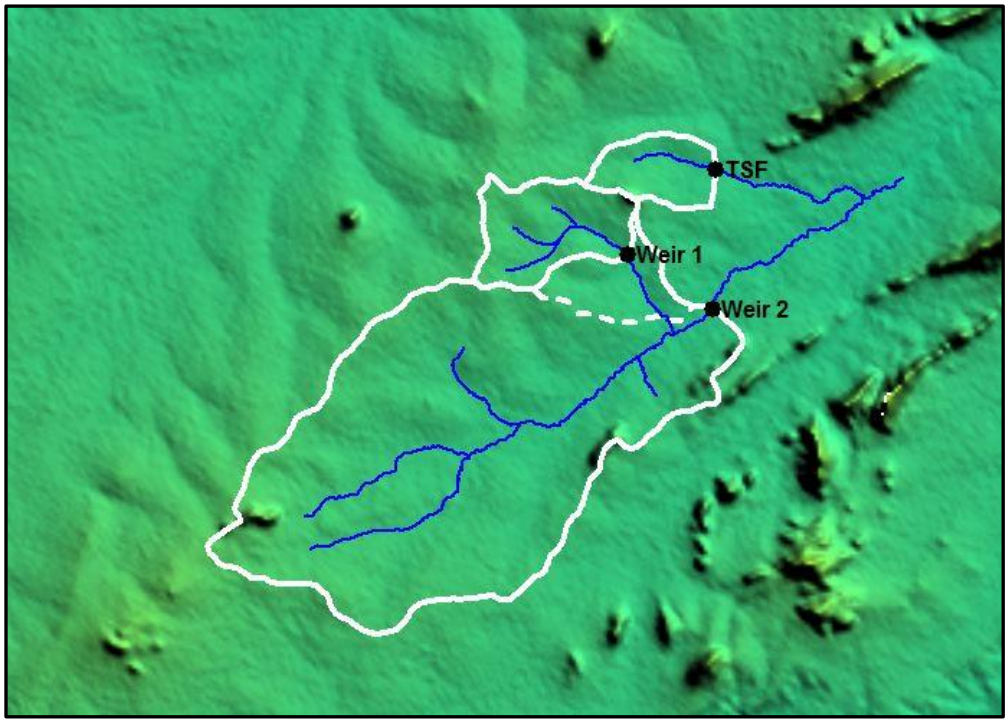


Figure 9 - Weirs 1 & 2 and TSF Catchments

a. Environmental Assessment and Approvals

The Company is well advanced with the Environmental Impact Assessment (EIA) which is a legislated requirement in Mozambique prior to Mine Concession approval. Preliminary Environmental and Social reports and risk assessments have been completed and no extreme risks have been identified to date and various mitigation measures are currently under study. Successful acceptance of the EIA is required to obtain an Environmental License, whereby construction and mining cannot commence without the Environmental license.

Specialist survey reports include; Vegetation Report, Faunal Report, Land and Natural Resource Use, Surface Water and Aquatic Assessment, Traffic Impact Assessment, Social Impact Assessment and Geohydrology and Geochemistry (including AMD studies).

There are homes on the Exploration license and therefore will require resettlement studies as part of the EIA. There are also small agricultural holdings in the license area.

b. Mine Development Licensing Schedule

Development of the mine is contingent on obtaining a Mining Concession Approval, Environmental License, Water License and Land Holding (locally referred DUAT).

The Company anticipates applying for all licence applications in 2019.

Appendix 5:
Balama Central Graphite Project
JORC Code, 2012 Edition Table 1 Section 4

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 November 2018 Ore Reserves compiled by Snowden Mining Industry Consultants Pty Ltd (Snowden) is based on an updated Mineral Resource for Balama Central in March 2018, compiled by Runge Pincock Minarco (RPM). The Mineral Resource estimate for Balama Central is 32.9 million tonnes at 10.2 % TGC for 3.36Mt of graphite reported at a 6 % TGC cut off. The Mineral Resource estimate was created using Ordinary Kriging for Total Graphitic Carbon TGC%, CaO %, LOI %, S% and V2O5%. Density domains were based on lithology and weathering, which was estimated on a domain by domain basis. The Balama Central comprises two prospects named Lennox and Byron which are composed of relatively simple geology with interpreted steeply dipping northwest host lithologies. The graphite forms as a result of high grade (amphibolite) metamorphism of organic carbonaceous matter. The Mineral Resource estimates for Balama Central were used for the mine planning work and conversion to Ore reserves. Mr Hudson has relied on the integrity and accuracy of the Mineral Resource for this Ore Reserve estimate. • The Mineral Resources are reported inclusive of 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.*	• A site visit of the Balama Central project was undertaken by Jon Hudson who is the Competent Person for the Ore Reserve estimate on the 13th and 14th June 2018. The site visit involved a review of the following; • Location and potential operating environment of the Byron and Lennox prospects within Balama Central • Core viewing of pre-selected drill holes – Lennox deposit ▪ LX037D ▪ LX033D – Byron deposit ▪ LX024D ▪ LX016D

Criteria	JORC Code explanation	Commentary
		• A GPS recorded walk through the mining license area encountered a number of community and farming activities taking place is a known key risk for the future project development. The location of the following proposed main infrastructure areas were recorded and viewed; – Open pit location – Processing Plant – Tailings Storage Facility – Long Term and ROM Ore Stockpiles – Waste Rock Dumps – Core Yard • The high water table, water courses and wet land areas were observed on the site visit which will adversely affect the mining operations but beneficial for water supply to the processing plant.
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.*	• Battery Minerals Limited (BAT) have prepared a Feasibility Study (FS) for the Balama Central Graphite Project in Mozambique. The FS commenced in June 2018 and was completed in December 2018. Lycopodium ADP (LADP) was contracted by BAT as the primary consultant to undertake and co-ordinate the Balama Central FS. • The Competent Person notes that all aspects of the study were completed to at least Pre-feasibility level, with key disciplines being completed to feasibility level, and is deemed to be sufficient for Ore Reserve conversion. • A detailed mine plan and schedule was created for the Lennox and Byron deposits.
Cut-off parameters	• *The basis of the cut-off grade(s) or quality parameters applied.*	• An economic mining envelope was determined by applying Whittle pit optimisation to the Indicated and Measured Mineral Resources using appropriate modifying factors. • Marginal cut off grades (by weathering) were calculated based on all pre-tax costs associated with the processing and selling of a composite graphitic product containing 96% TGC which includes: – Stockpile reclaiming – Processing – Road transport – Ship loading – Royalties – General & Administration – Product Pricing from BAT

Criteria	JORC Code explanation	Commentary
		– Sales prices for each product size fraction – Mining costs – The process recoveries as outlined in the "Metallurgical factors or assumptions" section. • The Ore Reserve was estimated using a marginal cut-off grade of 6% TGC for optimization purposes which is above the marginal cut-off grades calculated to be 3.4% TGC for the weathered material and 2.9% TGC for the fresh material. • For the production schedule, an elevated cut-off grade of 10% was applied to target an average grade of 12.5% for the first 30 years (approx.) of operations. Material with grades between the marginal 6% and 10% TGC cut-off are stockpiled for processing at the end of the mining operation.
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 parameters (eg 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.*	• The proposed mining method is conventional open pit bulk mining for the Balama Central Graphite project with drill and blast in fresh material • Owner mining is considered, with contracted drill and blast services provided. • Waste material will be trucked to the permanent waste rock dumps located adjacent to each of the pits. • The weathered material excavated during initial mining at the Lennox and Byron deposits is predicted to be amenable to free digging. It is likely that some harder layers of in-situ material will require moderate "paddock" blasting. • The majority of material mined is placed on a long-term stockpile in close proximity of the pits for blending purposes. Nominally the stockpiles will be split into four areas; two grade ranges for weathered and fresh. For strategic purposes a mineralised waste stockpile of approximate 5% TGC material is placed alongside the long term stockpile. The stockpiles are of a similar capacity to the waste dumps and require a substantial footprint. • The mining operations will be supported by the following typical on-site infrastructure requirements; – Access roads within the Mining lease area for access between the various facilities – Haul roads to the RoM and long term stockpiles and waste rock storage areas – Mine Services – Diesel Storage Facilities – Temporary and Permanent Workshop Facilities to maintain the mechanised mining equipment • Separate grade control drilling is planned. Grade control will be carried out using a combination of blade reverse circulation drilling, blast hole sampling and trench sampling. • The water table at Balama Central is potentially high and the pit will need to be dewatered in advance of mining. A hydrogeological investigation needs to be performed to qualify this aspect. • A preliminary geotechnical design of the pit slopes for the Lennox and Byron pits was

Criteria	JORC Code explanation	Commentary

conducted by Snowden in July 2018 using photo logging and kinematic analyses from the Balama database. Due to the graphitic foliation the south-east ("footwall") walls are capable of planar sliding along the foliation surfaces which resulted in a lower slope angle compared to the north-west slopes (hanging wall). The pit slope angles applied in the pit optimisation are shown in the table below. They include a 4 degree adjustment to allow for pit ramps on all walls.

- The following pit slope angles were used for Whittle pit optimisation. The slope angles included an additional 4 degrees to accommodate the pit roadways.

Rock type	F/wall	H/wall
Weathered	29 ^{O}	35 ^{O}
Fresh	35 ^{O}	43 ^{O}

- A full geotechnical study including orientated core logging, rock testing and the based on the results of a geohydrological study is required for further detailed design work. The study also needs to accurately determine the transition between free dig, ripping and drill and blast using rock quality data combined with excavator/ dozer capabilities.
- Given the bulk nature of the mineralisation, mining dilution was applied based on reblocking the Mineral Resource model from 2.5 mX by 50 mY by 2.5 mZ to an SMU size 5 mX by 5 mY by 5 mZ. This block size was determined after consideration of the size of the excavator bucket and expanded to mimic the mixing associated with blasting and loading. Mineral Resource classifications were assigned on the basis of majority representation within the SMU block. The Inferred and unclassified material were only included as dilution within the SMU.
- The analysis indicates approximately 9% dilution for Lennox and 3% dilution for Byron.
- Within the mining envelope, the mining ore loss was estimated to be approximately 3% for Lennox and 8% for Byron.
- Practical pit designs were created based on the envelopes produced in the optimisation. The life of mine strip ratio was estimated to be 2:1 (W:O) A minimum mining width of 15m was allowed for in the designs based on the proposed mining fleet of 85 t excavator and 40 t articulated dump trucks.
- A one month pre-strip was allowed for to prepare the mining operation for production. No other technical issues were identified to restrict accessing the Ore.
- It has been assumed that all the weathered material is amenable to free dig. A geotechnical study to confirm this is required.
- The mining rate is based on the production of approximately 50 ktpa of graphite product from the onsite processing plant.
- The production schedule uses excessive stockpiling of low and high grade weathered and fresh ore to maximize the high grade ore feed to the processing plant up front in the mine's life. The Lennox and Byron pits are mined out in 35 years with the current production schedule and the life of mine is 43 years.

Criteria	JORC Code explanation	Commentary
		• The mine designs were prepared by Snowden and reviewed by the Competent Person.
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 metallurgical process fits the mineralogy • The technology for processing is well tested for this application • Three programs of metallurgical testwork have been conducted on the Balama Central ore bodies; – The first was conducted by ALS laboratory in late 2015 and was a bench scale comminution and flotation testwork program. – The second, also by ALS laboratories in mid-2016, involved the use of a mini pilot plant and included work index testing and bulk flotation. – The third testwork program was conducted by BGRIMM Technology Group, in China in early 2018, and involved locked cycle flotation testwork (closed circuit) with a flowsheet that included a rougher - scavenger, 5 cleaner stages and 3 concentrate regrind stages. • The process design philosophy was to keep the operational steps simple and fit for purpose to optimise capital expenditure but maintain efficiency and practicability. • The design approach was to include, where appropriate, similar equipment and design outcomes to the Montepuez plant design to allow for spares, maintenance and skills synergies across the two operations. • The Metallurgical process and non-process infrastructure design was conducted by LADP • BAT propose to process the ore by crushing, grinding, flotation and screening to produce graphite concentrate of various flake sizes. • The process plant based on preliminary processing testwork has the same recovery for weathered and fresh ore material. The following recoveries were applied to produce a concentrate grade of 96% TGC. The processing testwork is considered to be appropriate for the declaration of Ore Reserves. Source / Weathered / Fresh Lennox/Byron / 93% / 93% • The product size distribution (PSD) of 96% TGC concentrate varies across the weathered and fresh lithologies. The flake size distribution applied to the Balama Central Feasibility Study were obtained from the target ore lithologies BGRIMM locked cycle testwork and applied as an average of results to the weathered and fresh fractions of the ore bodies. Flotation Results per lithology:

Criteria	JORC Code explanation	Commentary

Sample ID / Lithology	Sample Feed Grade % TGC	Average Product Grade % TGC	Recovery %	% +150 µm
1 / GS4 O*	3.05	98.1	94.9	27.0
4 / GS4 P*	2.81	97.7	72.5	35.0
2 / GS1 P	22.2	96.1	94.5	42.5
3 / GS3 P	10.29	98.1	92.4	70.8
5 / GS3 O	17.1	96.5	95.5	38.8
6 / GS3 P HG	18.04	97.8	96.3	52.8
7 / GS3 O HG	21.4	96.6	97.5	35.8

*waste lithology tested to understand performance should it be fed to the plant during the mining operation.

Average Product Size Fractions:

Product Description	Size Fraction	Weathered	Fresh
Jumbo	+300 µm	9.5%	26.0
Coarse	+180 µm	5.3%	7.4
Medium	+150 µm	22.5%	22.0
Fines	-150 µm	62.7%	44.6

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.*	• Environmental consultant Coastal and Environmental Services (CES) area assisted BAT with the environmental planning and baseline studies. • A draft Environmental and Social Impact Assessment (ESIA) has been completed to assess the environmental and social impacts of the proposed establishment of the project, and to provide key stakeholders, and affected persons or communities in the study area, an opportunity to comment on the findings of the ESIA. The ESIA process intends to ensure that environmental concerns are integrated into the proposed development, and suggests ways of preventing, minimising, mitigating and/or compensating for possible adverse environmental impacts which may arise due to the proposed development. The ESIA supports an Environmental License application, which combined with the Feasibility study further supports a mining license application. • In terms of the project impacts; these are currently being compiled by CES and are addressed in the Environmental and Social Impact Assessment (ESIA) and Environmental Management Program (EMPr). The stand-out risks include the community relocation process to relocate the farms that will be taken over by the project, water management and Acid Mine Drainage (AMD) potential with the Tailings Dam and the Long Term Ore Stockpile, flora and fauna impacts, population in-migration including changes to social systems and structured due to employment opportunities putting strain on local natural

Criteria	JORC Code explanation	Commentary
		resources and public health and safety. • Epoch Resources (Pty) Ltd (Epoch) conducted a PFS level design for the Tailings Storage Facility (TSF) and two on site water weirs used for water retention. The abundance of water on the site poses a problem for the siting of the tailings dam, waste rock and long term ore stockpiles.
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.*	• Pending relocation of the subsistence farmers, there is sufficient land within the proposed mining lease boundary for the proposed mine infrastructure. • The non-process infrastructure (NPI) will comprise of on-site roads, fuel storage, power generation and supply, raw water supply, non-process plant buildings and offices, camp and utilities. • The Mine Service Area (MSA), process plant and camp have been located to facilitate access, manage surface run-off and drainage of water and reduce environmental factors such as noise. Allowance has also been made for possible future expansion of the operations and potential common infrastructure sharing. • Site access roads will be constructed to provide access to the project areas (i.e. pit, MSA, process plant, TSF and camp). • Allowance has been made for two dedicated fuel (diesel) storage facilities located at the MSA and process plant. • The power station has four 1250 kVA diesel generators (three duty and one standby) and will supply power to the process plant, plant buildings and offices only. Peak power will require the use of the stand by generator for those short periods of time. Power for the TSF and two water weirs pumps will be provided by 3 x 75KVa generators. The overall average continuous power draw for the entire site has been calculated to be 2,664 kW. • Two rivers currently intersect the project site. The Lapa stream runs in a north to south direction and cuts through the Lennox and Byron ore bodies, while the Namiticu stream runs in a south west to north east direction through the southern corner of the license area. The design has allowed for a weir to be built on each of these streams to store water for operations and to allow a controlled diversion of the Lapa stream around the ore bodies and mining areas. The raw water from these weirs will be pumped to the raw water tank, located at the process plant (also used for fire water). A water treatment plant will provide potable water to the process plant and the MSA. A second water treatment plant will supply the camp. • Buildings and support facilities will be provided at the process plant and MSA area and include (but are not limited to): – Administration building. – Clinic. – Ablution and change house facilities. – Crib rooms. – Workshops and stores.

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td></td><td></td><td>

Laboratory.

The camp will be able to cater for up to 100 residents.
Sewage collection and treatment facilities will be localised for the plant and MSA, while the camp will have a stand-alone system.
The entire mine site will be fenced by a high security perimeter fence to limit uncontrolled community and livestock access to the mining and operating areas.
There is a 200km sealed road from the port town of Pemba to Montepuez town and approximately 20km of the 60km road from Montepuez to Balama Central is unsealed.
Equipment and materials unavailable within Mozambique will be imported via the port of Pemba or transported by road from South Africa. Logistical assessments have not identified any major hindrances or obstacles along the transport route from site to Pemba.

</td></tr>
<tr><td>Costs</td><td>

The derivation of, or assumptions made, regarding projected capital costs in the study.
The methodology used to estimate operating costs.
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.

</td><td>

Based on and subject to the methodologies, processes, information and exclusions, LADP has compiled a Class II (+15%/-5%) feasibility capital cost estimate (capex) as per the main summary below. This estimate is a combination of detailed, semi-detailed and factorised costs. Generally, more than one supplier, or contractor, was invited to provide budget quotations. However, where specifically requested by BAT (or due to specific project requirements) prices were obtained from a single source.
The base date for the estimate is October 2018.
The capital cost estimate has been developed and built-up on the assumption that the work will be executed and managed using a typical Engineering, Procurement and Construction Management (EPCM) strategy.

<table>
<tr><th>Area</th><th>Total US$ millions</th><th>%</th></tr>
<tr><td>Process Plant</td><td>$20.90</td><td>30.1%</td></tr>
<tr><td>Non-Process Infrastructure</td><td>$7. 71</td><td>11.1%</td></tr>
<tr><td>Mining</td><td>$8.17</td><td>11.8%</td></tr>
<tr><td>EPCM</td><td>$3.20</td><td>4.6%</td></tr>
<tr><td>Owner’s Costs</td><td>$9.22</td><td>13.3%</td></tr>
<tr><td>RAP</td><td>$4.13</td><td>6.0%</td></tr>
<tr><td>Non-Mining Mobile Fleet</td><td>$1.94</td><td>2.8%</td></tr>
<tr><td>TSF and Bulk Water Storage</td><td>$6.84</td><td>9.8%</td></tr>
<tr><td>Freight</td><td>$1.77</td><td>2.6%</td></tr>
<tr><td>Contingency</td><td>$4.13</td><td>5.9%</td></tr>
<tr><td>Owner’s Contingency</td><td>$1.41</td><td>2.0%</td></tr>
<tr><td>TOTAL</td><td>$69 43</td><td>100.0%</td></tr>
</table>
</td></tr>
</table>

Criteria	JORC Code explanation	Commentary
		The operating cost has been developed from information provided by BAT and LADP, which includes: • Labour and G&A operating cost estimate. • Budget quotations received from the market. • LADP's database of prices for plant consumables for similar process plants. • Reagent consumptions based on metallurgical test work results and designs. • Orway Mineral Consultants (OMC) model for crushing and grinding energy and consumables, using ore characteristics measured during the test work. • Opex estimate for the mining operations as supplied by Snowden, built from vendor quotations, benchmarked costs and contractor quotations (as a reference) • Based on, and subject to, the methodologies, processes, information and exclusions and as described in this section, LADP has compiled a Class II (+15%/-5%) feasibility operating cost estimate (opex) as per the main summary below. The opex is estimated for mine, plant, infrastructure and TSF. • Mining operating costs were estimated by Snowden based on its database of operating costs, fuel costs of US$0.82/L (supplied by BAT) and benchmarked against contractor quotations. • There is also a sustaining capital over life of mine to replace BAT owned light vehicles, computers and survey equipment. These costs are estimated in the sustaining capital estimate and in the life of mine cash flow. • A breakdown of the operating costs for the life of mine is shown below which includes rehandling of the ore from the long term stockpiles post completion of mining activities from the open pit.
Revenue factors	• *The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges,*	• The revenue price range per size fraction for Ore Reserve estimation was developed from an average of long-term CIF China forecasts from three reputable firms. These prices were reduced by US$100/t to calculate a FOB Pemba price range. The assumptions

Category	US$/t product (life of mine)
Labour	63.9
Power	73.7
Reagents and Consumables	72.5
Maintenance Materials	12.0
G&A	38.0
Product Logistics	67.3
Mining and Earthworks	104.4
TOTAL	**431.7**

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td></td><td>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>around the basket price are shown below.
<table><tr><th rowspan="2">Size fraction</th><th>Price FOB</th><th colspan="2">Balama Central</th></tr><tr><th>($/t product)</th><th>Weathered distribution</th><th>Fresh distribution</th></tr><tr><td>Fine, -150 µm (%)</td><td>700</td><td>62.7</td><td>44.6</td></tr><tr><td>Medium, 150 to 180 (%)</td><td>900</td><td>22.5</td><td>22.0</td></tr><tr><td>Large, 180 to 300 µm (%)</td><td>1,175</td><td>5.3</td><td>7.4</td></tr><tr><td>Jumbo, +300 µm (%)</td><td>1,680</td><td>9.5</td><td>26.0</td></tr><tr><td><b>Basket price ($/t product)</td><td></td><td>863</td><td>1034</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>• Analysis by Benchmark Minerals Intelligence (BMI) shows an expectation that the market demand for large flake and spherical graphite will continue to increase until at least 2020. This is primarily due to an increase in demand for spherical graphite, a derivative of flake graphite, used by lithium-ion battery anode producers.
• Other key producers of flake graphite within the region include Syrah Resources (Mozambique) Bass Metals (Madagascar) and Gecko (Namibia). BMI have identified approximately 20 graphite projects, excluding Balama Central that are currently in development worldwide.
• Customer acceptance of 96% TGC concentrate flake size has been received from an independent trading house in Japan, this includes consideration of impurities within the concentrate material.
• China’s natural graphite production now accounts for 70% of the total world production. The country flake production bases are Qingdao in Shandong Province, Luobei (200ktpa) and Jixi (200ktpa) in Heilongjiang Province, Xinghe in Inner Mongolia, and major amorphous production in Hunan Province.</td></tr>
<tr><td>Economic</td><td>• 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.</td><td>• A detailed cash flow model was created using the pricing described above. The cash flow included a detailed schedule of Capital and Operating cost expenditures. Revenue from product sales were modelled by shipment with 100% payable within 60 days of production and paid FOB from the port of Pemba. No allowance was made for penalties associated with out of specification production or exceeding limits on deleterious elements. The cash flow was modelled in real terms, hence no price or cost escalation was applied. A discount rate of 10% was applied to determine a Net Present Value (NPV) from the project cash flow.
• The cash flow analysis demonstrated a positive return for the project .
• Input costs were considered to be accurate to within +/- 20%. Costs were sourced either directly from vendor quotes specific to the project or consultant estimates for specific</td></tr>
</table>

Criteria	JORC Code explanation	Commentary
		scopes of work. • The financial model was reviewed by the Competent Person. The model was deemed to be closely aligned with the parameters used in mine planning. • Various sensitivity analyses were carried out on the cash flow model. Key parameters were varied by +/- 20%. These parameters included product price, capital cost, processing cost, mining cost, general and administration costs, and logistics cost. The results were evaluated on the basis of pre-tax NPV. All parameters tested returned a positive NPV over the range. The most sensitive factor was determined to be the product price which, based on the modeling, showed the project will be hypersensitive to changes in both positive and negative directions.
Social	• *The status of agreements with key stakeholders and matters leading to social licence to operate.*	• The ESIA process ensures that social concerns are integrated into the proposed development, and suggests ways of preventing, minimising, mitigating and/or compensating for possible adverse social impacts which may arise due to the proposed development. • Due to the high density of community activities on the resource and license area, the Resettlement Action Plan (RAP) described in the ESIA is a critical aspect to the project. For graves and other heritage features that can be relocated, appropriate compensation measures to facilitate the relocation of these features, where possible, will be detailed in the RAP. It is important that the socio-economic development needs of the communities are addressed in the RAP. The process, impact and cost of transitioning the affected communities from the target mining areas to a mutually acceptable new location is a key risk to project development . • BAT has not submitted its proposed Social Development Programs in its Mine License Application to the National Institute of Mining (INAMI) which is part of legislated requirements. The programs focuses on providing indirect benefits for the general community due to the high expectations of employment from the local community communicated during the initial public participation process. This is anticipated to be completed during the Mining Licence application. • BAT will continue to work with local consultants on the best management practices for the existing small farm holdings to ensure household incomes are not negatively impacted by the development of the mine. • Other Social Impacts which will need careful management include population growth of nearby townships, large number of job seekers, community high expectations and harvesting of natural resources on the license area. • Community engagement has been initiated and is ongoing at this time. Communities' consultation extends to those settlements proximal to the project area that will be affected by the mining operation and the associated transport routes.
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 lease is currently held by Suni Resources a wholly owned subsidiary of Battery Minerals. • The mining lease application is still to be lodged for the project. • The following government agreements and approvals are outstanding at this time and are material to the project execution

Criteria	JORC Code explanation	Commentary
	• *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 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.*	– Mining Concession – Water License – Environmental License – Land Holding (DUAT) License • No material impediments to reaching agreement or granting approvals have been identified by BAT.
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 Ore Reserve was classified in accordance with the guidelines in the JORC Code (2012). Standard and appropriate modifying factors and conversions were applied. The combined Lennox and Byron deposit Ore Reserve comprised approximately 99% Indicated Mineral Resource with the balance comprising dilution from Inferred and unclassified material. • The Ore Reserve estimation and classification methods used were considered by the Competent Person to be appropriate for the style and nature of the deposit.
Audits or reviews	• *The results of any audits or reviews of Ore Reserve estimates.*	• The Ore Reserve estimate was subject to internal reviews by Snowden. Review of the consultant reports were also conducted by Battery Minerals. All identified issues were addressed progressively through the study. • It is anticipated that independent technical review will be undertaken by a third party at the conclusion of the feasibility study.
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 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.*	• A detailed cash flow model was created using the pricing described above. The cash flow analysis demonstrated a positive return for the project. • Key risks for the project relate to; – Uncertainty around product pricing over the project life – Demonstration of recoveries and concentrate grade at scale and for all material – Tonnes and grade of ore with closer spaced drilling – Timeous relocation of the affected communities • Sensitivity analysis has shown that the project can still produce a positive return with some downside in any of these aspects.