

# Montepuez Graphite Project Update

Tailings storage facility, camp construction and major earthworks for processing plant set for completion next month

## HIGHLIGHTS

- Due diligence being undertaken as part of the project funding is progressing well. The due diligence work has included:
  - Updated Resources, Reserves and capital and operating cost estimates
  - Project site visit and inspection of transport and logistics infrastructure
  - Process flow sheet design, construction, commissioning and ramp up plan
  - Independent forecasts of graphite demand, supply and price forecasts
  - Completion of financial assumptions including taxes, duties and royalties
  - Compliance with UN Equator Principles for community and environment
- The independent commodity forecast predicts strong graphite prices from 2020 to 2030
- Construction and commissioning of the permanent 100-person accommodation camp almost complete
- Tailing Storage Facility earth works for the processing plant are almost complete; Contractor due to demobilise in November 2018
- Battery anode test work using Montepuez graphite is delivering outstanding purification results
- Exploration drilling at the new Warthog prospect is delivering strong results including 51m at 9.8% TGC from 18m and 18m at 11.1% TGC from 6m

## Montepuez Project Resource Update<sup>1</sup>

- Group Mineral Resource Total now sits at 152.5mt @ 8.5% for 13.03mt of contained Graphite (Montepuez and Balama Central Projects).
- Montepuez Project Mineral Resources of 119.6mt @ 8.1% TGC

*Note 1: See announcement dated 18<sup>th</sup> October 2018 for full details and Competent Persons sign-off*

Battery Minerals Limited (ASX: BAT) is pleased to advise that it is making strong progress in its strategy to develop the Montepuez Graphite Project in Mozambique, with due diligence for the funding package almost complete.

As part of its strategy to finalise project funding, the Company has also continued construction of key items at Montepuez.

Battery Minerals Managing Director David Flanagan said the development strategy was proceeding to plan.

“The project funding due diligence process is progressing well, and this along with the rapid progress being made in construction of the project means we are very well placed to capitalise on the strong increases in graphite prices expected from 2020 onward,” Mr Flanagan said.

### **Finance and Due Diligence**

The Company’s financial advisors, Origin Capital, have appointed a range of experts to complete detailed due diligence across various elements of the Montepuez Graphite Project. With the pending delivery of the updated mining plan, which will be supported by the updated Resource estimate, this due diligence process is almost complete.

The review has included process flowsheet design, quantity and quality of geological and technical data supporting resources and reserves, metallurgical parameters, all key agreements, financial assumptions, community engagement, environmental impact, access to water and power as well as independent forecasts for global graphite supply, demand and prices.

Battery Minerals remains well-funded to complete its current work plan with \$12.25M in cash at the end of September 2018. While also pursuing full project financing, the Company is also forecasting uncommitted retained cash reserves of ~\$5M at the end of December 2018.

### **Site Construction Update**

The Company is pleased to advise that there are now ~150 people working on site, 70 of whom have been employed directly from local villages. To date, there has been zero lost time injuries on site.

Construction and commissioning of the permanent 100-person accommodation camp is now nearing completion. Contractors are due for demobilisation in November 2018. The buildings have been completed, the electrical fit-out, plumbing, sewerage system and water treatment facility are all due for commissioning before the end of November 2018.



Figure 1. Montepuez Graphite Project: Aerial view of camp. The camp is due to receive the first residents in November and will accommodate up to 100 people



Figure 2. Montepuez Graphite Project: View of permanent camp showing night commissioning of electrical fit out.



Figure 3. Montepuez Graphite Project: View of workshop, power generators and fuel storage at the permanent camp.

The tailing storage facility (TSF) is nearing completion. The TSF wall keyway, the curtain drains and decant area are complete. Approximately 1,500-2,000 cubic metres per day of material is going into the wall construction through to completion at the end of October 2018. Other site earthworks, road construction and the installation of culverts are progressing well and are also due for completion. Road works crews will demobilise in November 2018.





Figure 4. Montepuez Graphite Project TSF civils work, managing moisture content to ensure appropriate compaction and wall strength are progressing well.



Figure 5. Montepuez Graphite Project TSF wall progressing well with excavator forming final wall angles



Figure 6. Earlier aerial view of part of tailings dam wall showing large extent of the project

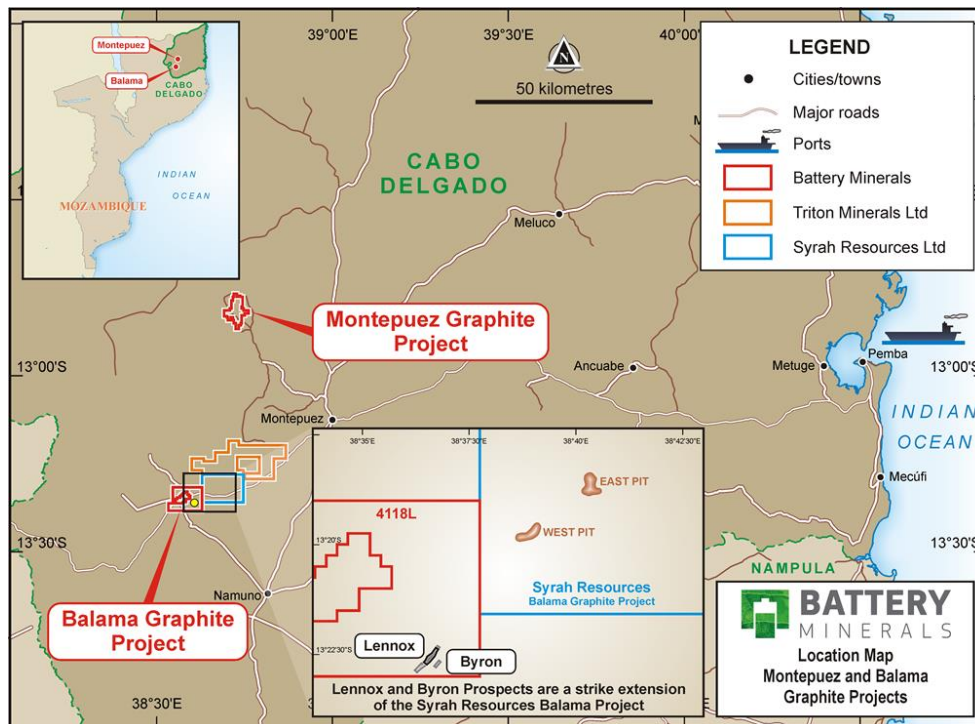


Figure 7: Montepuez Graphite Project location plan also showing location of the Battery Minerals Balama Graphite Project.

## Montepuez Mining Agreement progress

Battery Minerals has continued to progress government engagement in relation to the Mining Agreement. The Mining Agreement is not a condition precedent to production, exports and cashflows. The execution of a Mining Agreement is a right enshrined in the mining law that enables investing companies to obtain absolute clarity around the application of the legal framework to the project. The Mining Agreement also formalises the project's fiscal stability rights into a contractually binding document and provides an agreed dispute resolution process. The Company does not expect a material adverse variation in project economics in the Mining Agreement

## Graphite Product Marketing

Battery Minerals' financial advisors, Origin Capital, has appointed Benchmark Mineral Intelligence (BMI), a global leader in battery commodities, to provide a graphite pricing forecast to be used by a prospective lending syndicate. On close assessment of future demand and supply from existing and expected market participants, BMI has forecast significant increases in graphite prices in the medium term.

The BMI forecast indicates that the Montepuez graphite basket price has potential to appreciate from current FOB China pricing of ~USD \$950/t to more than ~USD \$1,500/t over the first 10 years of operations. This is a highly encouraging, fully-independent outlook.

Battery Minerals has appointed experienced commodities trading executive Nick Stephens as its Head of Marketing, effective from 8 October 2018. Mr Stephens will manage the Company's commodity marketing, logistics and shipping business along with George Gao, Battery Minerals' Shanghai-based General Manager, China.

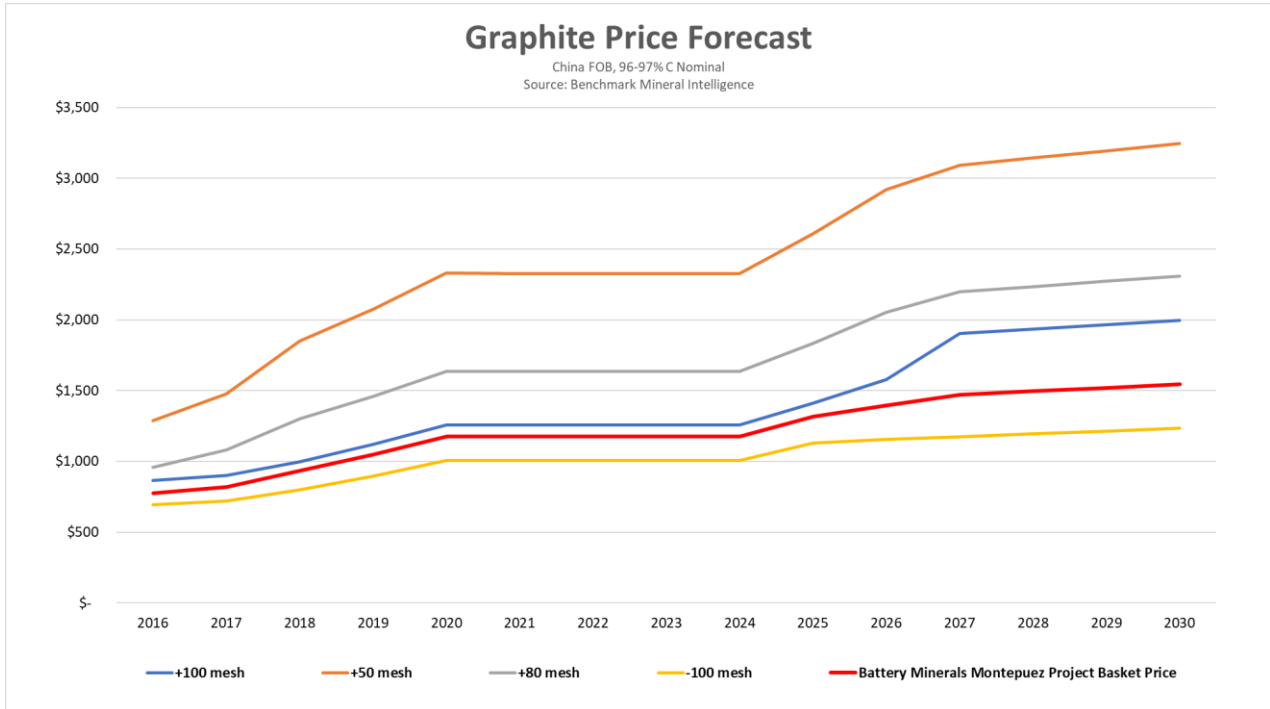


Figure 8. Montepuez Graphite Project BMI outlook for graphite pricing expected for our sizing specification

### Community investment

Battery Minerals continues to actively engage with members of the nearby communities in order to deliver a positive impact and mutually-supportive relationship. The Company also continues to recruit local people where possible. As described above, 70 local people have been employed by the Company.

The Company continues to work closely with nominated local representatives on selected community initiatives. As part of the Montepuez project’s community support and development efforts, Battery Minerals is building a public school in the community of Nkawene, 7km from the Montepuez project site. Site civil works, footings, concrete and brickwork for the school have been completed. In addition to the school construction, Battery Minerals has installed five water bores and pumping stations, renovated the local health clinic and supported a local inter village football completion.

In addition to providing communications support for the Company, local telecommunications contractors have upgraded digital mobile phone and data networks for the benefit of local communities.





Figure 9. Construction status of new school at Nkawene village



Figure 10. The newly renovated Mirate village clinic. Battery Minerals has reinstated electricity, painted the clinic inside and provided new fixtures and linen.



Figure 11. Communications tower installed by provider for benefit of Battery Minerals and surrounding communities



Figure 12. Short distance patient transport repaired and serviced

## Graphite Downstream Processing Testwork

The Company announced offtake and other agreements with Urbix Resources LLC (Urbix) on 19<sup>th</sup> December 2017 *“Battery Minerals Signs Offtake Agreement”*. Urbix is a privately-owned company based in Arizona, USA which specializes in all aspects of the graphite value chain and is a premier provider of refined graphite powders, pristine graphene, “graphenesque” products, expanded graphite, and specialty graphite products. A key part of the agreement is to establish a relationship which maximises the opportunity of any downstream value-added characteristics of the Montepuez graphite.

Urbix’s advanced technology includes a unique environmentally/cost conscious purification method as well as intellectual property developments in a wide range of applications such as proprietary lithium-ion battery cells, graphene products, cements, and other composites and

energy storage materials. Urbix's state-of-the-art laboratory is located in Mesa, Arizona with commercial milling operations outside Hermosillo, Sonora in Mexico.

Battery Minerals is committed to evaluating downstream opportunities but has elected to do so with a technology partner with financial capacity to participate in the project. The Company is pleased to advise that subsequent to completing the first campaign of testwork, Urbix has demonstrated that its unique technology, combined with the specific characteristics of the Montepuez graphite, has consistently delivered battery-grade specification requirements.

Key testwork results include:

- Low temperature purification of 80°C
- Absence of highly toxic HF acids and similar
- No impact on graphite particle morphology in purification
- High graphite retention >95% in purification
- Industry leading graphite recovery in spheroidization exceeding 80%
- Industry leading low capex for 24ktpa plant at less than US\$10M

Exceptionally high purity achieved across all particle size specifications described below.

Sample Fraction	Initial purity, %TGC	Final Purity, %TGC
-43 micron	95.2	99.95
-150 +43 micron	97.1	99.97
+300 micron	94.3	99.95
-300 +180 micron	93.6	99.98

The Company maintains that high purity concentrates are not rare but they typically utilise high-cost thermal purification at temperatures exceeding 1200 degrees Celsius or use highly toxic chemicals. They also rarely contribute to spheroidization recoveries exceeding 50%.

The programme is anticipated to be completed by the end of 2018 with scoping study results to be reported early in 2019.

### Montepuez Resource Development

Battery Minerals' grade control drilling programme at the Buffalo deposit at Montepuez has increased the resource base and confidence levels at the Buffalo Deposit (See announcement dated 18 October 2018 for full details and Competent Persons sign-off).

Due to the Company's targeted, systematic and well documented drilling and metallurgical test work programme, more than 60 per cent of the 42.6Mt Buffalo Resource is in the Measured and Indicated Resource category. The Company is also pleased to announce an increase in the total resource grade from 7.93% TGC to 9.5% TGC at a 2.5% TGC cut off.

With 2018 seeing updates to Elephant, Buffalo and Balama Central resources, the Company's Group Mineral Resource Total has increased to **152.2mt @ 8.5% TGC for 13.03mt of contained Graphite**. This is a significant resource base and underpins Battery Minerals' graphite production development strategy.



These updated Mineral Resource estimates form the basis of the Montepuez Graphite project implementation mine plan and the Balama Central Feasibility study mine plan, currently being prepared by Snowdens. These results are expected to be published in early November 2018.

**Buffalo Graphite Deposit  
October 2018 vs January 2017 Mineral Resource Estimate (2.5% TGC Cut-off)**

Type	Total Mineral Resource					
	Tonnes Mt		TGC %		Cont. Graphite kt	
	Oct 18	Jan 17	Oct 18	Jan 17	Oct 18	Jan 17
Weathered	3.7	5.2	8.7	8.1	330	400
Primary	38.9	33.5	9.6	7.9	3,720	2,600
<b>Total</b>	<b>42.6</b>	<b>38.7</b>	<b>9.5</b>	<b>7.9</b>	<b>4,050</b>	<b>3,000</b>

*Note: See announcement dated 18 October 2018 for full details and Competent Persons sign-off*

Below is a Mineral Resource table for the Montepuez Project which includes comparison to the previously stated Mineral Resource estimate. Of note, is the overall tonnage increase from 105.9 to 119.6Mt, an increase of grade from 7.7% to 8.1% TGC at the same 2.5% cut-off, and a ~20% increase in contained graphite from 8Mt to 9.66Mt.

**Montepuez Graphite Project  
Montepuez 2018 Mineral Resource Estimate (2.5% TGC Cut-off)**

Type	Total Mineral Resource					
	Tonnes Mt		TGC %		Cont. Graphite kt	
	Oct 18	Historical	Oct 18	Historical	Oct 18	Historical
Weathered	10.3	13.0	7.7	7.9	790	998
Primary	109.2	92.9	8.1	7.7	8,870	7,066
<b>Total</b>	<b>119.6</b>	<b>105.9</b>	<b>8.1</b>	<b>7.7</b>	<b>9,660</b>	<b>8,064</b>

*Note: See announcement dated 18 October 2018 for full details and Competent Persons sign-off*

**Update on the Montepuez Mine Plan Study**

Snowden Mining Industry Consultants Pty Ltd has been engaged to update the Mine Plan for the Montepuez Graphite Project. Snowdens is currently working on the updated reserve estimate for Buffalo as detailed in this announcement, along with Elephant as previously announced. The update to the Mine Plan Study is planned to support the results discussed in the Value Engineering Study Announcement “Restructure of Montepuez Graphite Project will revolutionise its economics” dated 18<sup>th</sup> October 2017.

**Warthog – Regional Exploration Drilling Update**

In addition to the Montepuez Resource increase, strong drilling results have been returned at a new prospect, Warthog. The Prospect is 1.5km south of Elephant and within the existing Mining Licence boundary. On the back of a previously stated significant drill hole intercept of 12 metres at 14.27% TGC from 1 metre down hole in EL258A at Warthog, follow up drilling has confirmed further mineralisation in 14 of the 16 RC drill holes with drill hole EL287A

returning 51m @ 9.8% TGC from 21 metres. A total of 952 metres was completed as part of a reconnaissance programme to follow up the drill hole intercept from EL258A where 12 metres at 14.27% TGC was intersected from a depth of 1 metre to the end of the hole (refer to announcement “*Outstanding drilling results further strengthen economic outlook for Montepuez graphite Project*” dated 4<sup>th</sup> April 2018).

Observed thicknesses of our GS2 mineralisation (usually between 5 to 15% TGC) have been intersected over a strike length of 500 metres. Of note is the highly encouraging very large flake size observed in the samples returned:



**Figure 13:** Example of the graphite mineralization observed in follow up drilling around significant intercept form EL258A. Approximate width of flake is 10mm.

The Company is pleased to announce that based on a 4% TGC cut-off with a minimum 4 metre down hole length of mineralisation but no more than 3 metres of continuous <4% TGC material, the following results have been returned:

- **EL298A 16 metres at 6.4% TGC from 25 metres and 5 metres at 7.3% TGC from 48 metres,**
- **EL299A 9 metres at 8.8% TGC from 9 metres and 6 metres at 5.3% TGC from 29 metres,**
- **EL284A 11 metres at 10.1% TGC from surface, 12 metres at 6.7% TGC from 17 metres and 8 metres at 8.5% TGC from 55 metres,**
- **EL285A 7 metres at 7% TGC from 8 metres and 9 metres at 6.4% TGC from 37 metres,**
- **EL286A 4 metres at 7.3% TGC from 1metres, 5metres at 16.1% TGC from 13 metres, 22 metres at 9.3% TGC from 26 metres and 18 metres at 10.8% TGC from 55 metres,**
- **EL287A 8 metres at 12.5% TGC from surface and 51 metres at 9.8% TGC from 21 metres,**
- **EL288A 5 metres at 7.5% TGC from 34 metres and 11 metres at 7.8% TGC from 58 metres,**
- **EL289A 18 metres at 11.1% TGC from 6 metres,**
- **EL290A 23 metres at 6.3% TGC from surface, 4 metres at 5.9% TGC from 29 metres and 9 metres at 7% TGC from 38 metres,**
- **EL291A 5 metres at 12% TGC from 31 metres, 4 metres at 5.6% TGC from 45 metres and 12 metres at 6.6% TGC from 61metres,**
- **EL292A 8 metres at 6.5% TGC from 1 metre, 4 metres at 7.8% TGC from 17 metres, 19 metres at 6.3% TGC from 41 metres and 11 metres at 7.4% TGC from 73 metres,**
- **EL293A 26 metres at 5% TGC from 1 metre and 7 metres at 4.7% TGC from 33 metres,**
- **EL294A 5 metres at 9.5% TGC from 2 metres and 7 metres at 9.5% TGC from, 52 metres and**
- **EL295A 31 metres at 4.7% TGC from 14 metres and 27 metres at 4.8% TGC from 52 metres**

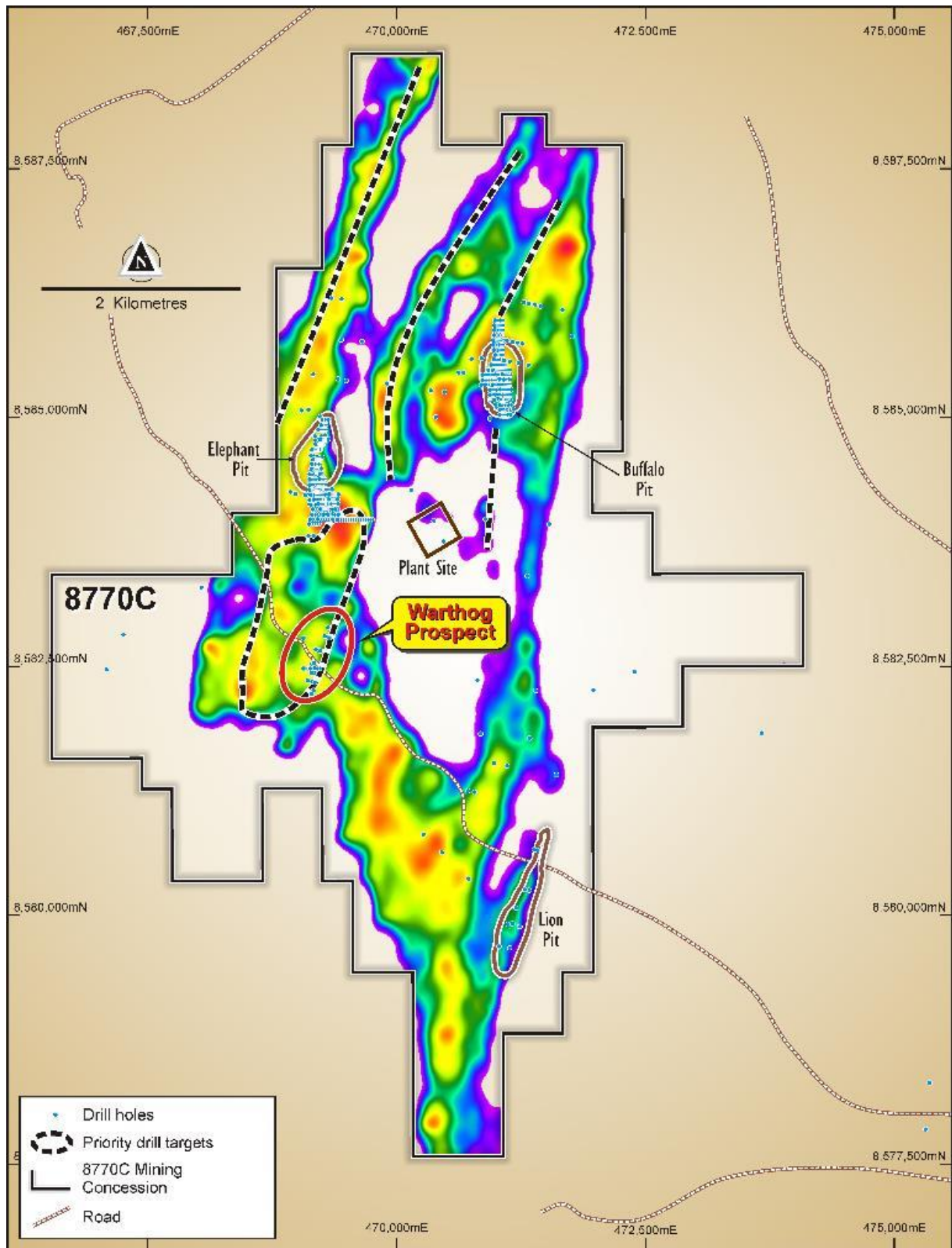


Figure 14: Location of the Warthog Prospect and previously illustrated Exploration Targets.



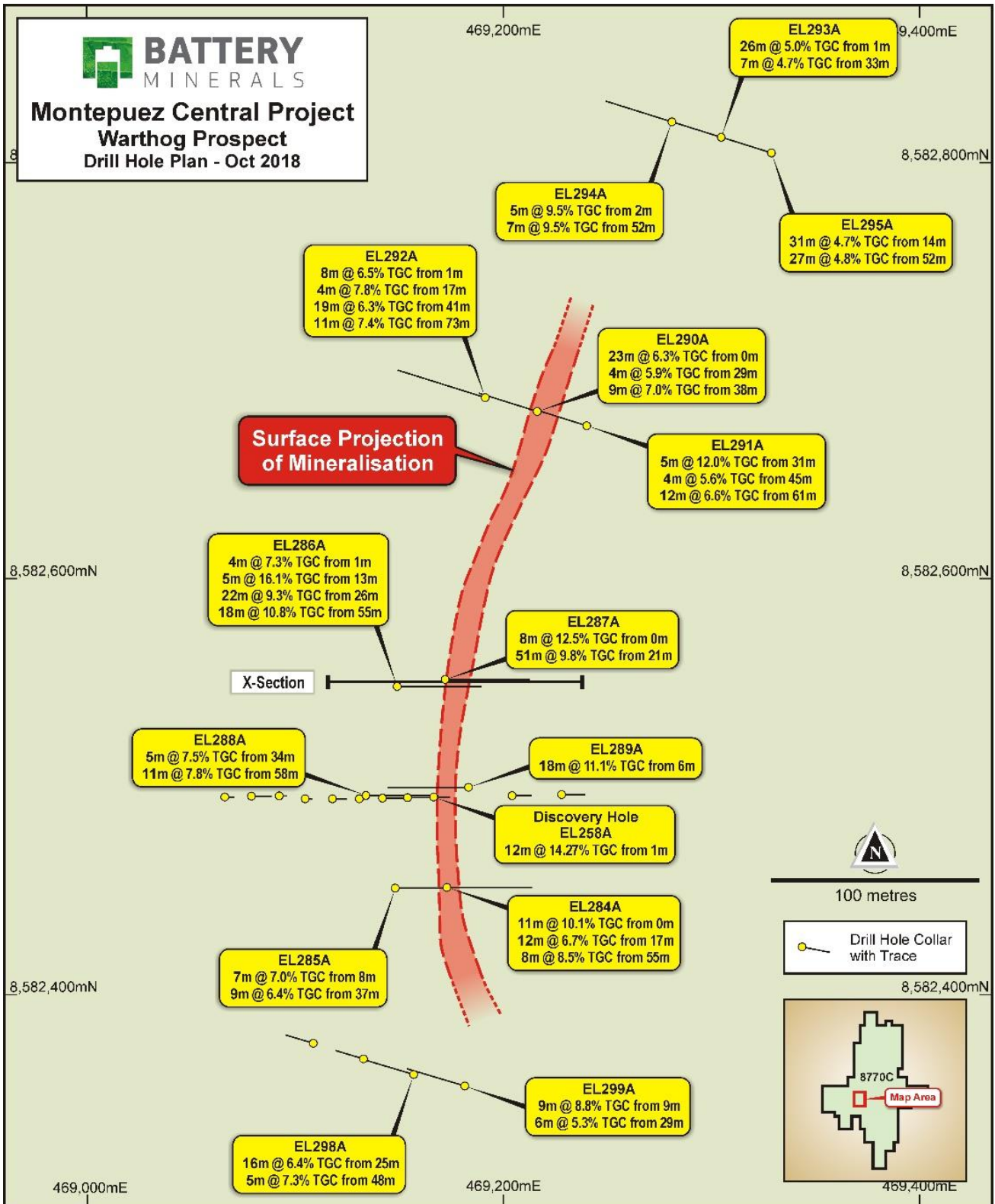


Figure 15: Warthog Collar Plot.

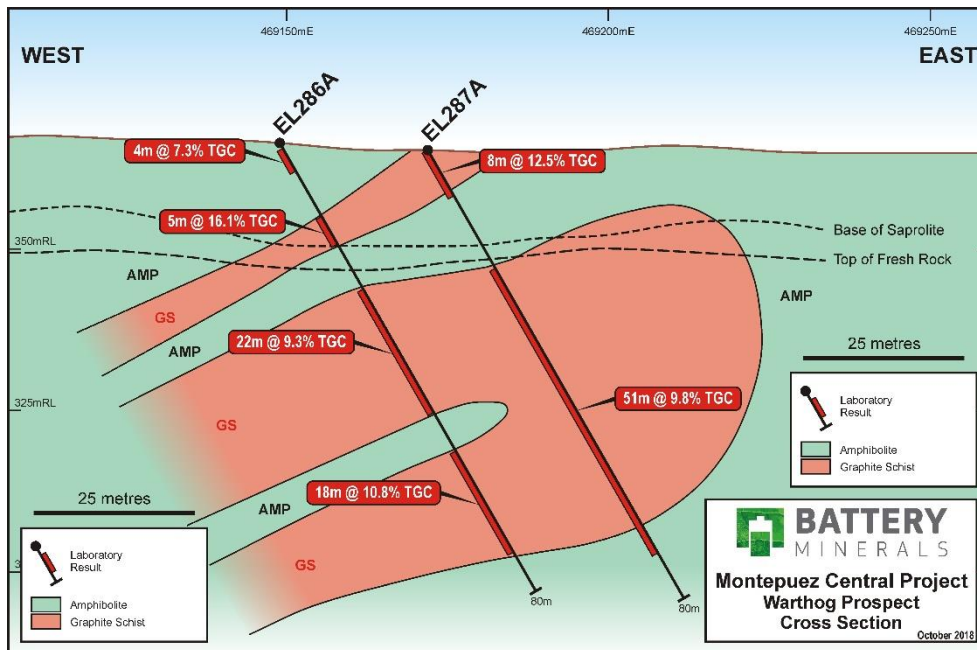


Figure 16: Warthog Cross Section.

## Background Information

Battery Minerals Limited (“Battery Minerals”) is an ASX listed Australian company with two world-class graphite deposits in Mozambique, those being Montepuez and Balama Central. Battery Minerals has produced high quality graphite flake concentrate at multiple laboratories. Battery Minerals intends to commence graphite flake concentrate production from its Montepuez graphite project with first shipment in the March 2019 Quarter at export rates of 45,000 to 50,000tpa at an average flake concentrate grade of 96.7% 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. The Mozambican Government has granted Battery Minerals a Mining Licence for its Montepuez graphite project and accepted the Company’s EIA for the Montepuez graphite project.

As Battery Minerals executes subsequent expansions, it expects production to grow to over 100,000 tonnes per annum graphite flake concentrate from its Montepuez graphite project by 2020.

In March 2018, Battery Minerals announced the delivery of a scoping study on its Balama Central project, which comprises a Stage 1 production rate of 55,000tpa (B1) and Stage 2 production rate of an additional ~55,000tpa (B2) for an aggregate of 110,000tpa from Balama Central. Balama Central is currently the subject of a feasibility study expected to be completed in November 2018. 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 in 2019 to more than 200,000tpa in 2022. (For full details on the Balama Central Graphite Project Scoping Study see ASX announcement dated 1st March 2018. Also see notes below below).

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**Investor Enquiries:****David Flanagan**

Managing Director, Battery Minerals Limited

Tel: +61 8 6148 1000

Email: [info@batteryminerals.com](mailto:info@batteryminerals.com)**Tony Walsh**

Company Secretary, Battery Minerals Limited

Tel: +61 408 289 476

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**Media Enquiries:****Paul Armstrong**

Read Corporate

Tel: +61 8 9388 1474

Email: [paul@readcorporate.com.au](mailto:paul@readcorporate.com.au)

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**Contact Details (Australian Office):**

Ground Floor

10 Ord Street

West Perth, WA 6005

Australia

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**Competent Person's Statement**

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.

Any references to Ore Reserve and Mineral Resource estimates should be read in conjunction with the competent person statements included in the ASX announcements referenced in this report as well as Battery Minerals' other periodic and continuous disclosure announcements lodged with the ASX, which are available on the Battery Minerals' website.

The information in this report that relates to Battery Minerals' Mineral Resources or Ore Reserves is a compilation of previously published data for which Competent Persons consents were obtained. Their consents remain in place for subsequent releases by Battery Minerals of the same information in the same form and context, until the consent is withdrawn or replaced by a subsequent report and accompanying consent.

The information in this Report that relates to Montepuez Mineral Resources is extracted from the ASX Announcement titled 'Group Resource Update' dated 18 October 2018, where the Statement of Estimates of Mineral Resources was compiled by Mr. Shaun Searle who is 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 consented to the inclusion in that report of the matters based on his information in the form and context in which it appears.

The information in this report that relates to Exploration Results is based on information compiled by Mr. Jason Livingstone, a Competent Person who is a member of both the Australian Institute of Mining and Metallurgy and the Australian Institute of Geoscientists. Mr. Jason Livingstone is a full-time employee of Battery Minerals Limited. Mr. Jason Livingstone has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr. Jason Livingstone consents to the inclusion of the matters based on his information in the form and context in which it appears.

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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: Table 1 of JORC Code

JORC Code, 2012 Edition Table 1 Appendix 1 to Announcement: Montepuez Graphite Project Update: Warthog Drill Results

### Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <li>Nature and quality of sampling (e.g. 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.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>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 (e.g. '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 (e.g. submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<p>The entire RC hole was sampled and assayed at 1m intervals.</p> <p>Internal logging procedures and processes ensure that sample representivity is maintained throughout the entire process.</p> <p>During logging, a visual estimation of graphite content is used to base the lithology, along with other indicator minerals. However, all samples were collected at a nominal 2 to 3kg size and submitted for analysis via the LECO analyser.</p>
Drilling techniques	<ul style="list-style-type: none"> <li>Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. 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).</li> </ul>	<p>The RC drilling was undertaken using a SHRAM RC rig with Metzke rig mounted cone splitter. A nominal 4.5 inch blade bit was used to achieve drilling penetration instead of a normal hammer bit. The entire RC hole was sampled and assayed at 1m intervals.</p>
Drill sample recovery	<ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>	<p>Sieved RC chip samples were collected and geologically logged and grade estimates (Visual Graphite Estimates).</p> <p>The driller was instructed and supervised to ensure that maximum sample recovery is to be obtained, issues were reported immediately and remedial action taken to find a solution in difficult drilling conditions.</p> <p>The RC samples were assessed for moisture and weight at the rig with data recorded in the database.</p> <p>No bias was observed between sample size and grade determined.</p>
Logging	<ul style="list-style-type: none"> <li>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.</li> </ul>	<p>Drill holes were logged by trained and experienced geologists and the level of detail would support a Mineral Resource estimation and subsequent classification.</p>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<p>Geological logging of all drill cuttings included; weathering, lithology, colour, mineralogy, mineralisation and visual graphite estimates.</p> <p>All data is initially captured on paper logging sheets and transferred to locked excel format tables for validation and is then loaded into the parent access database.</p> <p>All diamond drill core has been photographed and archived, firstly after mark-up and secondly after sampling.</p> <p>The logging and reporting of visual graphite percentages on preliminary logs is semi-quantitative and not absolute.</p>
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>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.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<p>All samples were drilled dry and split through the cone splitter with a duplicate sample collected at the drill rig.</p> <p>The sampling undertaken to date is appropriate for grade control purposes and geological interpretation.</p> <p>Samples were submitted to the ALS Minerals facility in Johannesburg, South Africa for sample preparation and analysis. Samples were weighed, assigned a unique bar code and logged into the ALS system. The entire sample was oven dried at 105° and crushed to -2mm. A 300g sub-sample of the crushed material was then pulverised to better than 85% passing -75µm using a LM5 pulveriser. The pulverised sample was split with multiple feed in a Jones riffle splitter until a 100-200g sub-sample was obtained.</p>
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>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.</li> <li>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</li> </ul>	<p>Loss on Ignition (LOI) has been determined between 105° and 1,050°C. Results are reported on a dry sample basis.</p> <p>Analysis includes Total Graphitic Carbon by LECO. The detection limits and precision for the Total Graphitic Carbon (TGC) analysis are considered adequate for resource estimation.</p> <p>All laboratory batch QC measures are checked for bias before final entry in the database, no bias has been identified in the results received.</p> <p>The CRM TGC values range between 4-24%. The blank samples comprise 1-2kg of dolomitic marble quarried from a location 50km east of the Elephant Central project.</p> <p>Six CRM's (GGC001, GGC003, GGC004, GGC005, GGC006 and GGC010) were used to monitor graphitic carbon.</p>
Verification of sampling and assaying	<ul style="list-style-type: none"> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> </ul>	<p>Significant intersections were visually field verified and inspected by Jason Livingstone during his visits in 2018.</p> <p>No twinned drill holes have been drilled on the project to date however no sampling bias is believed to exist due to quality triple tube core recovery. Q-Q analysis</p>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>Discuss any adjustment to assay data.</li> </ul>	of the RC versus DD drilling indicates that there is no discernible bias between the two drill methods.
Location of data points	<ul style="list-style-type: none"> <li>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.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<p>All spatial data across the Project was collected in WGS84 UTM Zone 37 South datum.</p> <p>Planned drill holes were surveyed using Garmin 62s GPS devices which typically have a <math>\pm 5</math>m error in the project area.</p> <p>Final collar locations were surveyed by GEOSURVEY utilising a differential GPS system with 0.02cm accuracy.</p> <p>Fresh satellite capture (30cm panchromatic standard 2A WorldView-3 stereo orthoimagery) was used to produce a 0.5m contour digital survey model. Drill hole collars were used as control points in producing the digital contours.</p>
Data spacing and distribution	<ul style="list-style-type: none"> <li>Data spacing for reporting of Exploration Results.</li> <li>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.</li> <li>Whether sample compositing has been applied.</li> </ul>	BAT's graphite prospects adopt drill line spacing on 400m and 200m spaced lines with 50m hole spacing on section. Additional grade control spaced drilling has been conducted within the weathered portions of the deposit at 50m by 12.5m spacings. This drill hole spacing is believed appropriate in which to assist in classifying Mineral Resources.
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>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.</li> </ul>	<p>Reconnaissance geological mapping and pitting was conducted prior to drilling the prospect in 2015. Mapping and pitting identified the regional stratigraphic southwest-northeast trend and moderate (-50°-70° towards northwest) dipping rocks. Drill orientation was designed accordingly to limit potential bias.</p> <p>The drilling is considered to have no significant sampling bias relative to geological structure orientation.</p>
Sample security	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<p>The samples are stored in the company's field base until laboratory dispatch. Samples are shipped by courier to ALS – Johannesburg, South Africa for sample preparation and analysis.</p> <p>Any visible signs of tampering are reported by the laboratory and none have been reported to date.</p>
Audits or reviews	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	Shaun Searle of RPM reviewed drilling and sampling procedures during the 2015 site visit and found that procedures and practices conform to industry standards



## Section 2 Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul style="list-style-type: none"> <li>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.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a license to operate in the area.</li> </ul>	<p>The Montepuez Project 8770C Mining License comprises an area covering 3,666.88ha and is held 100% by Battery Minerals Limited (Metals of Africa Limited prior to December 2016) via a locally owned subsidiary Suni Resources SA.</p> <p>The Montepuez Project contains the Elephant, Buffalo and Lion deposits however resource and reserve estimations were limited to Elephant and Buffalo during the DFS.</p> <p>All statutory approvals have been acquired to conduct development activities and the Company has established a good working relationship with the government departments of Mozambique and continues to build its relationship with the local community.</p> <p>The company is not aware of any impediments relating to the licenses or area.</p> <p>The Company has completed its field investigations as part of the Environmental Impact Assessment which has subsequently been approved by the regulatory body of Mozambique.</p> <p><i>The reference to Exploration Results in this announcement are activities that will contribute towards the estimation of a mineral resources and in turn a reserve determination and feasibility studies, let alone potential or actual mining activities. However, in accordance with Mozambican Law, whilst Battery Minerals via Suni Resources, hold the mining rights over the 8770C tenure for Graphite and Vanadium, "Exploration Results" by definition of the JORC 2012 Code are being discussed, however the work performed and reported is in support of the scheduled mining and processing operations planned for the 8770C Mining Licence.</i></p>
Exploration done by other parties	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<p>The Project area has been mapped at 1:250,000 scale as part of a nation-wide geological study prepared by a consortium funded by the Nordic Development Fund. The project area has also been flown with regionally spaced airborne geophysics (magnetics and radiometrics) as part of a post war government investment initiative.</p>

		<p>There is no record of past direct exploration activities on the license that BAT has knowledge of.</p> <p>A portion of the Montepuez Project was flown with VTEM by a neighbouring license holder and BAT flew its own survey in 2015.</p>
<p><i>Geology</i></p>	<ul style="list-style-type: none"> <li>• <i>Deposit type, geological setting and style of mineralisation.</i></li> </ul>	<p>The deposits were discovered after drill testing a series of coincident VTEM conductors and prospective stratigraphy with mapped graphitic outcrop occurrences.</p> <p>The 8770C license occurs on the Xixano Complex and traverse the tectonic contacts between the Nairoto, Xixano and Montepuez Complexes. The Xixano Complex includes a variety of metasediments and granulites that form the core of a regional north-northeast to south-southwest-trending synform. The paragneisses include mica gneiss and schist, quartzfeldspar gneiss, metasandstone, quartzite and marble.</p> <p>The metamorphic grade in the paragneiss is dominantly amphibolite facies, although granulite facies rocks occur locally in the region. The oldest dated rock in the Xixano Complex is a weakly deformed meta-rhyolite which is interlayered in the meta-supracrustal rocks and which gives a reliable extrusion age of 818 +/- 10 Ma.</p> <p>Graphite-bearing mica schist and gneiss are found in different tectonic complexes in the Cabo Delgado Province of Mozambique.</p> <p>Local geology comprises dolerite, meta-sediments, amphibolites, psammite with graphitic metasediments and graphitic schists.</p> <p>At Elephant deposit the metamorphic banding and foliation strike about 005° and the GSQF dips moderately steep west.</p> <p>At Buffalo the deformation strained zone of GSQF, psammite and amphibolite exhibit brittle and brittle-ductile structures that intersect each other, the deformation zone is where graphite mineralisation is located and part of a regional metamorphic and deformation event.</p> <p>The Montepuez deposits are disseminated with graphite dispersed within gneiss. The graphite forms as a result of high grade metamorphism of organic carbonaceous matter, the protolith in which the graphite has</p>

		formed may have been globular carbon, composite flakes, homogenous flakes or crystalline graphite.
<i>Drill hole information</i>	<ul style="list-style-type: none"> <li>• 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: <ul style="list-style-type: none"> <li>• easting and northing of the drill hole collar</li> <li>• elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>• dip and azimuth of the hole</li> <li>• down hole length and interception depth</li> <li>• hole length</li> </ul> </li> <li>• 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.</li> </ul>	<p>All exploration results have previously been reported by MTA/ BAT between 2015 and 2018.</p> <p>All drill hole information has been included in Appendix 2 of this report. No drill hole information has been excluded.</p>
<i>Data aggregation methods</i>	<ul style="list-style-type: none"> <li>• In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>• 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.</li> <li>• The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<p>Drill hole intercepts are calculated using two sets of parameters:</p> <p>The first to highlight the higher grading intercepts are zones greater than 4 metres down hole that are greater than 10% TGC but overall, include no more than 3 metres of continuous less than 10% TGC material.</p> <p>The second to highlight the previously stated MRE cut off of 6% grading intercepts are zones greater than 4 metres down hole that are greater than 6% TGC but overall, include no more than 3 metres of continuous less than 6% TGC material. However, this is only used in the cross section to illustrate continuity.</p> <p>Metal equivalent values have not been used.</p>
<i>Relationship between mineralisation widths and intercept lengths</i>	<ul style="list-style-type: none"> <li>• These relationships are particularly important in the reporting of Exploration Results.</li> <li>• If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>• If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').</li> </ul>	<p>The geology at Elephant is less structurally complex than Buffalo and comprises a moderately steep westerly graphitic schist package bound by amphibolite and notable psammite in the southern portion of the orebody.</p>
<i>Diagrams</i>	<ul style="list-style-type: none"> <li>• 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.</li> </ul>	<p>Relevant diagrams have been included within the main body of text</p>



<p><i>Balanced Reporting</i></p>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> </ul>	<p>The report is believed to include all representative and relevant information and is believed to be comprehensive.</p>
<p><i>Other substantive exploration data</i></p>	<ul style="list-style-type: none"> <li>• 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.</li> </ul>	<p>Regional airborne geophysical (magnetics, radiometrics), DEM and regional geological mapping was used to assist mapping interpretation and drill hole targeting.</p> <p>Subsequent to mapping, VTEM data was acquired and contributed to the surface geology interpretation.</p> <p>Metallurgical sample was sourced from surface trenches as well as drill core sample selected from fresh and oxidised horizons dispersed over the Elephant and Buffalo orebodies. Metallurgical samples were selected by lithology and TGC%. The samples are considered representative of the orebody.</p>
<p><i>Further work</i></p>	<ul style="list-style-type: none"> <li>• The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large- scale step-out drilling).</li> <li>• Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<p>Further drilling to increase the size and/or confidence in the Mineral Resource will be conducted.</p> <p>Further metallurgical, geotechnical and hydrogeological drilling is planned.</p>

## Appendix 2: Warthog Drill Hole Collar Table

Hole ID	Project	Prospect	Lease ID	UTM Grid ID	UTM_East	UTM_North	Elevation	Hole Type	Max Depth
EL256A	MPC	Warthog	8770C	WGS84_37S	469,228.10	8,582,496.66	363.39	RC	21
EL257A	MPC	Warthog	8770C	WGS84_37S	469,204.36	8,582,496.22	362.69	RC	17
EL258A	MPC	Warthog	8770C	WGS84_37S	469,166.70	8,582,495.54	365.12	RC	14
EL259A	MPC	Warthog	8770C	WGS84_37S	469,154.08	8,582,495.27	365.55	RC	21
EL260A	MPC	Warthog	8770C	WGS84_37S	469,142.06	8,582,495.02	365.99	RC	23
EL261A	MPC	Warthog	8770C	WGS84_37S	469,130.89	8,582,494.67	366.28	RC	22
EL262A	MPC	Warthog	8770C	WGS84_37S	469,118.04	8,582,494.69	366.73	RC	12
EL263A	MPC	Warthog	8770C	WGS84_37S	469,104.94	8,582,494.64	367.15	RC	5
EL264A	MPC	Warthog	8770C	WGS84_37S	469,092.38	8,582,496.10	367.47	RC	6
EL265A	MPC	Warthog	8770C	WGS84_37S	469,079.12	8,582,495.98	367.79	RC	18
EL266A	MPC	Warthog	8770C	WGS84_37S	469,066.29	8,582,495.56	367.97	RC	7
EL284A	MPC	Warthog	8770C	WGS84_37S	469,172.99	8,582,452.10	363.64	RC	80
EL285A	MPC	Warthog	8770C	WGS84_37S	469,148.16	8,582,451.76	364.71	RC	60
EL286A	MPC	Warthog	8770C	WGS84_37S	469,149.08	8,582,548.63	366.48	RC	80
EL287A	MPC	Warthog	8770C	WGS84_37S	469,172.13	8,582,552.05	365.40	RC	80
EL288A	MPC	Warthog	8770C	WGS84_37S	469,134.13	8,582,496.23	366.32	RC	70
EL289A	MPC	Warthog	8770C	WGS84_37S	469,183.37	8,582,500.15	364.04	RC	80
EL290A	MPC	Warthog	8770C	WGS84_37S	469,216.37	8,582,680.90	365.87	RC	60
EL291A	MPC	Warthog	8770C	WGS84_37S	469,240.17	8,582,673.96	366.78	RC	80
EL292A	MPC	Warthog	8770C	WGS84_37S	469,191.41	8,582,687.50	364.73	RC	90
EL293A	MPC	Warthog	8770C	WGS84_37S	469,304.81	8,582,812.71	371.48	RC	70
EL294A	MPC	Warthog	8770C	WGS84_37S	469,281.19	8,582,820.06	371.11	RC	67
EL295A	MPC	Warthog	8770C	WGS84_37S	469,328.94	8,582,805.16	372.66	RC	90
EL296A	MPC	Warthog	8770C	WGS84_37S	469,108.83	8,582,377.17	363.06	RC	30
EL297A	MPC	Warthog	8770C	WGS84_37S	469,132.92	8,582,369.59	361.47	RC	30
EL298A	MPC	Warthog	8770C	WGS84_37S	469,157.05	8,582,362.10	361.11	RC	65
EL299A	MPC	Warthog	8770C	WGS84_37S	469,181.53	8,582,356.67	361.40	RC	60