

26 July 2022

## ASX Announcement

### Massive Mineral Resource Upgrade achieved at Razafy

- **The Mineral Resource upgrade represents a 63% increase in the Company's previously reported overall Mineral Resource tonnes**
- Recent diamond drill program has delivered an upgraded JORC (2012) reportable Indicated and Inferred **Mineral Resource for Razafy of 25.7Mt @ 6.2% TGC** at the Maniry Project – **Total Resources now stand at 37.6Mt @ 6.4% TGC**
- The additional Resource provides a material increase to the Company's inventory of Graphite Mineral Resources which **will add significantly to the Project's mine life**
- **The Mineral Resource remains open along strike and down dip** with the potential to add to the Company's **overall inventory of defined Graphite Mineral Resources, now standing at 2.4Mt of contained graphite**
- The Company has **commenced updating its high-grade Razafy Northwest Mineral Resource** following the receipt of final assay data

BlackEarth Minerals NL (ASX: BEM) (the **Company** or **BlackEarth**) is pleased to announce it has materially increased its total graphite inventory, at its 100% owned Maniry Graphite Project in Southern Madagascar with the completion of infill and extension drilling at its Razafy Resource.

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

Area	Classification	Tonnes	Total Graphitic Carbon (%TGC)	Contained Graphite (tonnes)
Razafy *	Indicated	13,600,000	6.5%	885,000
	Inferred	12,100,000	5.9%	715,000
	<b>TOTAL</b>	<b>25,700,000</b>	<b>6.2%</b>	<b>1,610,000</b>

**Table A – Razafy Mineral Resource Estimates for Maniry Project**

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

This Mineral Resource estimate is the culmination of the Company's recent diamond drilling exploration program to identify further Resources at Razafy. The successful program was completed earlier this year and will form an integral component to the Company's current DFS activities, which should result in a significant increase to the mine life of the Maniry Graphite Project.

**Managing Director, Tom Revy commented:**

*"The success at Maniry of discovering and continual upgrading the Mineral Resources at Maniry is testament to the exceptional potential that exists at the Project.*

*This updated and expanded Mineral Resource will be incorporated into the current Maniry DFS and has the potential to significantly increase the proposed mine life for Maniry.*

*Work continues on the Razafy Northwest area with an updated Mineral Resource expected ahead of the completion of the Maniry DFS. All assays from recent drilling in the area have now been received."*

**The new and updated Company Mineral Resource Inventory is reported as follows -**

Area	Classification	Tonnes (Mt)	Total Graphitic Carbon (%TGC)	Contained Graphite (tonnes)
Razafy*	Indicated	13,600,000	6.5%	885,000
	Inferred	12,100,000	5.9%	715,000
Razafy NW**	Indicated	1,900,000	9.6%	182,000
	Inferred	1,000,000	10.1%	101,000
Haja***	Indicated	-	-	-
	Inferred	9,000,000	5.8%	522,000
TOTAL	Indicated	15,500,000	6.9%	1,067,000
	Inferred	22,100,000	6.1%	1,338,000

**Table B - Maniry Project Minerals Resources**

\*3% TGC cut-off grade

\*\*6% TGC cut-off grade

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

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

## Resource Summary

The Razafy Mineral Resource estimate reported above a 3% total graphitic carbon (TGC) cut-off as of the 18<sup>th</sup> July 2022 is as follows:

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

For a total Indicated + Inferred Mineral Resource of 25.7Mt @ 6.2% TGC. The resource estimate is presented in Table 1 for a range of %TGC cut-offs.

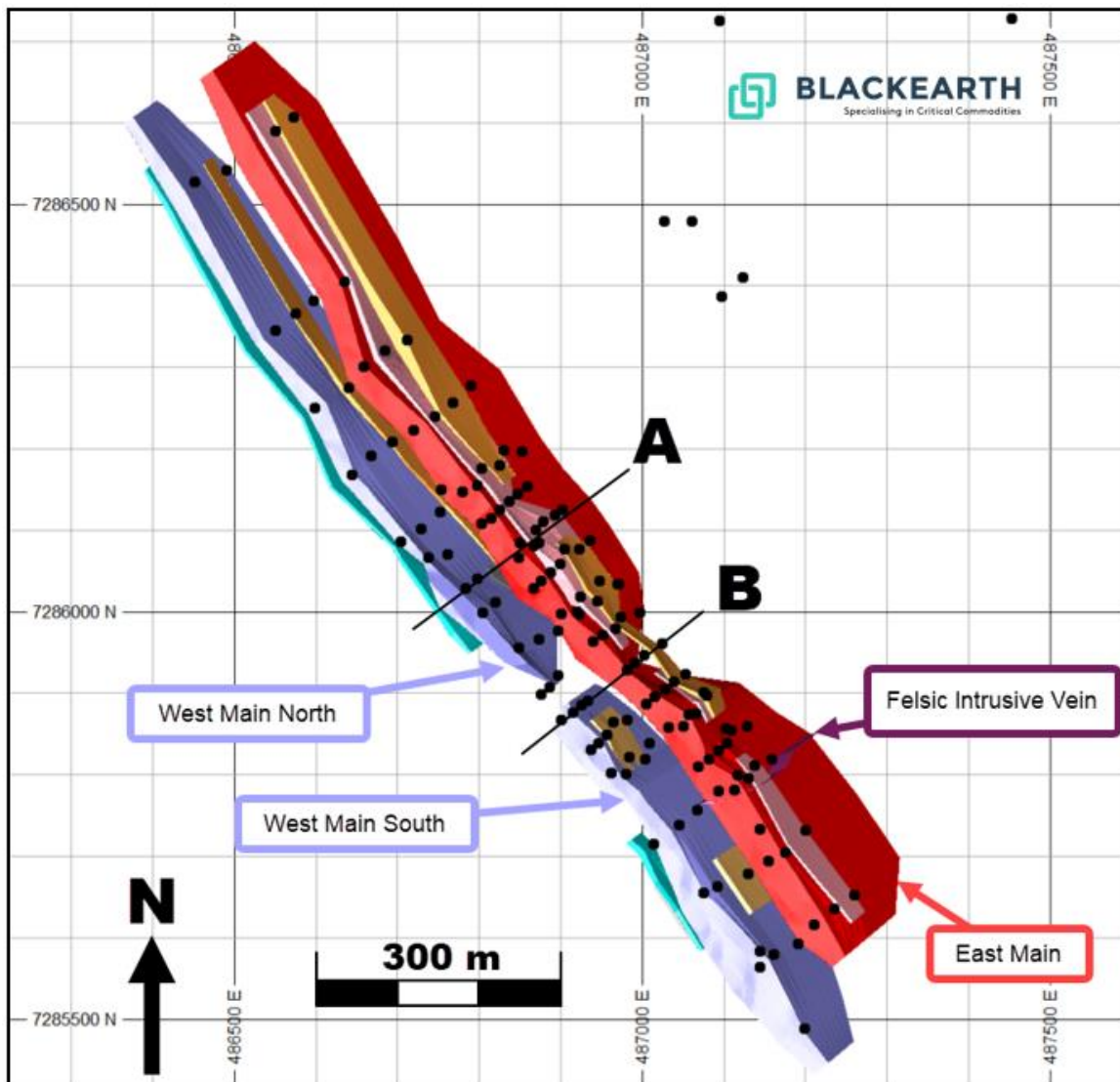
Razafy Main All Zones Indicated + Inferred Grade Tonnage Table				
TGC % Cut	Volume	Tonnes	TGC %	Density (t/m3)
6	6,200,000	14,090,000	7.1	2.3
5.5	8,450,000	19,190,000	6.7	2.3
5	9,830,000	22,300,000	6.5	2.3
4.5	10,430,000	23,670,000	6.4	2.3
4	10,880,000	24,670,000	6.3	2.3
3.5	11,210,000	25,430,000	6.3	2.3
3	11,350,000	25,750,000	6.2	2.3
2	11,360,000	25,750,000	6.2	2.3
1	11,360,000	25,750,000	6.2	2.3
0	11,360,000	25,750,000	6.2	2.3

**Table C – Razafy Mineral Resource Grade Tonnage Table for Maniry Project**

The following summary is based on the requirements of ASX Listing Rule 5.8.1 and presents a fair and balanced representation of the information contained within the full MRE report

- The Razafy Graphite Deposit is part of the Maniry Graphite Project, which is in southern Madagascar approximately 180 km southeast of Toliara, the regional capital of the Toliara Region. The Razafy Mineral Resource straddles two permits at the Maniry Project, known as Permits PE5394 and PR39751.
- The Razafy graphite deposits are situated within metasediments known as the Graphite Sequence, just southwest of the Saririaky anorthosite massif. The Graphite Sequence comprises graphite schist, marble, quartzite, amphibolites and leucogneiss and was metamorphosed at granulite facies conditions of around 700-900°C. The CP is of the opinion that the high metamorphic grade (upper-amphibolite to granulite facies) of the Razafy deposit is potentially favourable for the development of coarse graphite flakes.
- Disseminated graphite flakes occur in two main layers between about 20 and 40 m apparent thickness hosted within granulitic gneisses. The host rocks of the graphite mineralisation are generally quartzo-feldspathic. The mineralised zones strike NNW and dip at ~45-75° to the ENE and have been traced by mapping, trenching and drilling along approximately 1,300 m strike length.

- Graphite-bearing and waste rocks are weathered to varying depths across the Razafy deposit and have been described as weathered (oxidised and transitional) or fresh. The weathered domain is characterised by the oxidation of sulphide minerals e.g., pyrite, and by the formation of secondary sulphate minerals such as jarosite and hydrous clay minerals such as goethite, smectite and kaolinite. Pyrite was noted at depths greater than about 25m down-hole. Kaolinisation of aluminosilicate minerals is widespread and is noted from both the weathered and fresh domains.
- The central part of the western graphite zone was intruded by granitic material which has displaced or stoped out the graphite mineralisation.
- The CP notes that kaolinisation of aluminosilicate minerals as seen at Razafy, causes graphite to be split into thin flakes when in contact with kaolin. Bimodal graphite populations are therefore noted i.e., large clean flakes vs small flakes, or split flakes.
- Weathered (oxidised) material has been noted in drill cores from along the contact zones of graphite schist and adjacent country rocks. It appears that oxidation extends down-dip along fractured footwall contacts, and generally to a lesser degree on hanging wall contacts of the graphite zones.



**Figure 1 : Razafy Mineral Resource highlighting the drill hole locations across both (West & East) Lenses**

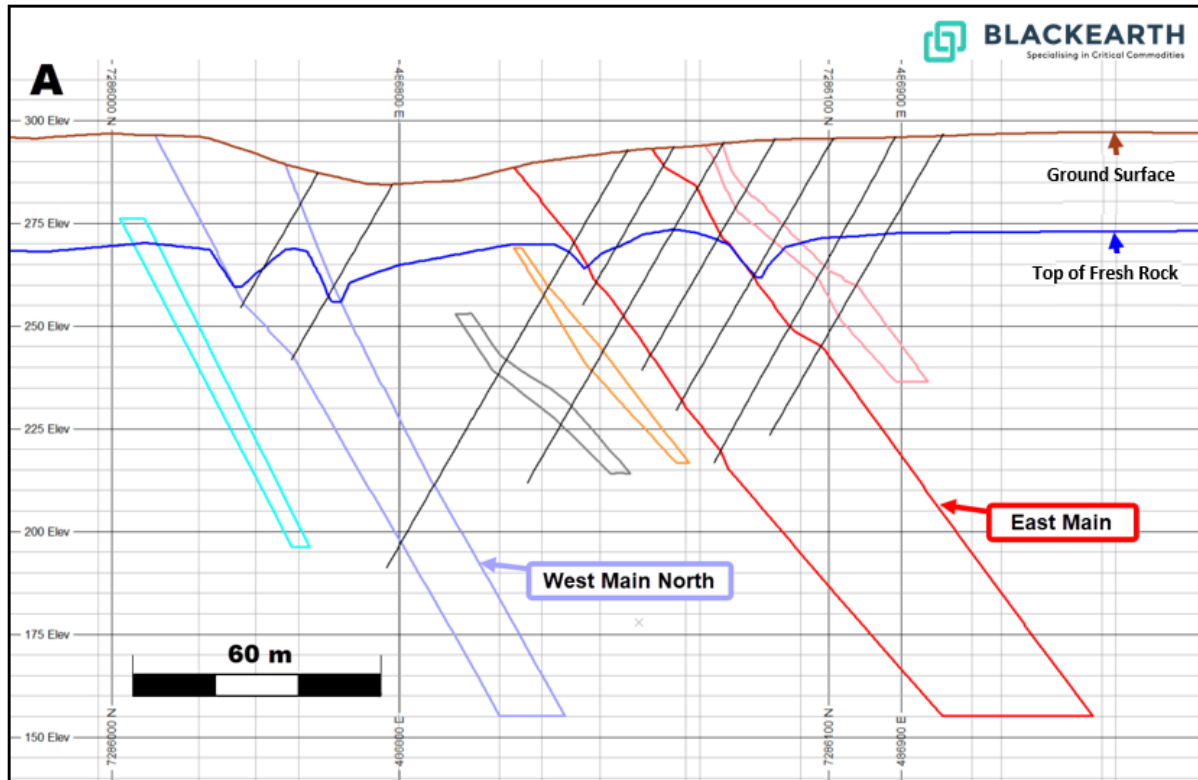


Figure 2 : Cross Section "A" depicting location of 2 main lenses (refer Figure 1)

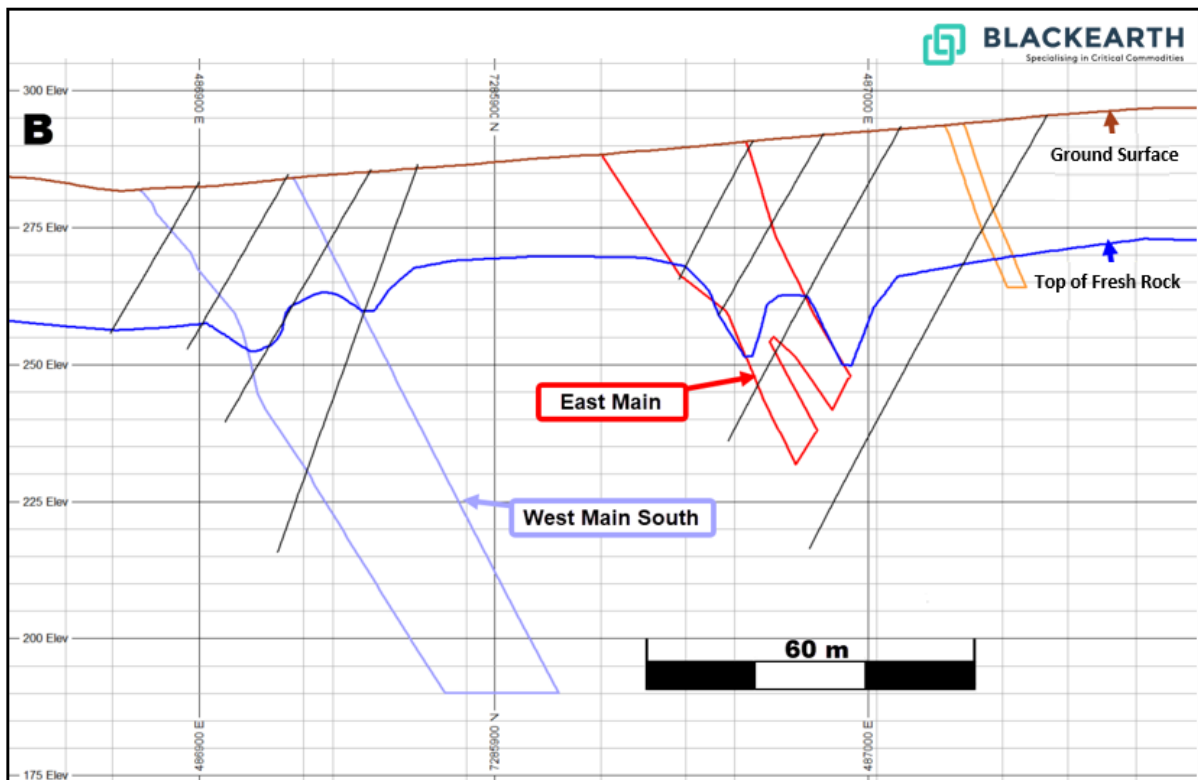


Figure 3 : Cross Section "B" depicting location of 2 main lenses (refer Figure 1)

- The metallurgical process flowsheet included crushing and stage grinding, followed by attritioning and flotation stages. On average, the samples returned just over 50% of flakes greater than 150 micron diameter. The average concentrate purity (arithmetic, not weighted by length) was approx. 96% TGC. The West lens appears to have coarser recovered flakes than the Eastern lens.
- Recoveries (as a percentage of feed grade TGC) averaged 87%. The highest recoveries of up to about 96% appear to be from the West lens and the southern part of the East lens, whilst the lower recoveries of approximately 30% were from hole MNDD022 in the northern part of the East lens. Additional metallurgical testwork on the low recovery samples is underway.
- The CP is of the opinion that metallurgical testing to date indicates that graphite concentrates of marketable size and purity may be extracted from the Razafy deposit and that this supports the classification of the Mineral Resource as an industrial mineral according to Clause 49 of the JORC Code. Snowden Optiro notes that kaolinised graphite mineralisation, with associated split graphite flakes, may need additional cleaning and attritioning stages than non-kaolinised material.
- The Razafy deposits have been sampled using diamond core drilling over several drilling campaigns, with drilling initially completed on a nominal 100 m by 30 m grid. Infill drilling has been completed to a grid of roughly 50 m by 30 m roughly covering the central half of the Razafy Main deposits. A total of 131 diamond holes for 8,471.9 m have been drilled and assayed by means of a standard induction furnace infrared absorption method for graphite content. A total of 4,339.45 m of diamond core from 128 holes lie within the interpreted mineralisation zones.
- In situ bulk density has been measured by means of calliper, wax coated immersion and uncoated immersion methods. QC checks were by means of immersion and calliper measurements on half core samples. Weathered graphite mineralisation and fresh graphite mineralisation were assigned densities of 2.15 t/m<sup>3</sup> and 2.3 t/m<sup>3</sup> respectively.
- The Mineral Resources were estimated within constraining wireframe solids using a combination of logged geological boundaries and assay data using a nominal 3% TGC lower grade cut-off. The Mineral Resource is quoted from all classified blocks above 3% TGC within these wireframe solids.
- The CP is of the opinion that reporting of the Mineral Resources should be above the 3% TGC interpretation cut-off grade within the interpreted mineralisation lenses. In the CPs opinion this material represents the visually recognisable graphite mineralised units that have the potential for eventual economic extraction and that have therefore been classified as Mineral Resources. The use of a higher reporting cut-off grade for the Mineral Resources would also artificially restrict the ongoing mining engineering studies to determine optimal mining strategies for the deposit.
- Approximately 30% of the interpreted mineralisation is considered to be extrapolated.
- Grade estimation was completed using ordinary kriging, with an inverse distance weighting to the power of two validation check estimate concurrently completed.
- The Mineral Resource was classified as Inferred and Indicated, accounting for the level of geological understanding of the deposit, quality of samples, density data, drillhole spacing and sampling, analytical and metallurgical processes. Material classified as Inferred was considered sufficiently informed by geological and sampling data to imply geological, grade and quality continuity between data points. Material classified as Indicated was considered sufficiently informed by geological and sampling data to assume geological, grade and quality continuity between data points.



**This announcement was authorised by the Board of BlackEarth Minerals.**

## CONTACTS

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## Competent Persons Statement

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

## Forward Looking Statements

Some of the statements appearing in this announcement may be in the nature of forward-looking statements. You should be aware that such statements are only predictions and are subject to inherent risks and uncertainties. Those risks and uncertainties include factors and risks specific to the industries in which BlackEarth operates and proposes to operate as well as general economic conditions, prevailing exchange rates and interest rates and conditions in the financial markets, among other things. Actual events or results may differ materially from the events or results expressed or implied in any forward-looking statement.

No forward-looking statement is a guarantee or representation as to future performance or any other future matters, which will be influenced by a number of factors and subject to various uncertainties and contingencies, many of which will be outside the Company's control.

The Company does not undertake any obligation to update publicly or release any revisions to these forward-looking statements to reflect events or circumstances after today's date or to reflect the occurrence of unanticipated events. No representation or warranty, express or implied, is made as to the fairness, accuracy, completeness or correctness of the information, opinions or conclusions contained in this announcement. To the maximum extent permitted by law, none of the Company's Directors, employees, advisors or agents, nor any other person, accepts any liability for any loss arising from the use of the information contained in this announcement. You are cautioned not to place undue reliance on any forward-looking statement. The forward-looking statements in this announcement reflect views held only as at the date of this announcement.

This announcement is not an offer, invitation or recommendation to subscribe for, or purchase securities by the Company. Nor does this announcement constitute investment or financial product advice (nor tax, accounting or legal advice) and is not intended to be used for the basis of making an investment decision. Investors should obtain their own advice before making any investment decision.

## JORC Code, 2012 Edition – Table 1 report template

### Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <li>Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</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.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul style="list-style-type: none"> <li>the drill hole database only consists of diamond drill holes</li> <li>sampling consists of 2m composite samples of ¼ core with breaks at lithological discontinuities - typical 3-5kg</li> <li>samples are cut using a diamond blade core saw</li> <li>duplicate samples are collected every 20th sample for QAQC purposes</li> <li>standards (CRMs) are inserted every 20th sample for QAQC purposes</li> <li>blanks are inserted every 50th sample for QAQC purposes</li> <li>sampling is considered comprehensive and representative</li> <li>¼ cores are sent for analysis, the remaining core material is retained and stored in BEM's secure core shed</li> <li>metallurgical samples were obtained from diamond drilling using ¼ cores or a split of coarse reject crushed sample.</li> </ul> <p><b>Trenching</b></p> <ul style="list-style-type: none"> <li>trenches are dug perpendicular to the strike of mineralised units with a backhoe or by hand using picks and shovel</li> <li>geologists log and systematically sample the trenches using a rock hammer at 2m intervals</li> <li>CRMs are inserted ~every 20th sample for QAQC purposes</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <li>Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).</li> </ul>	<ul style="list-style-type: none"> <li>conventional wireline diamond drilling was used to obtain all drillcore and drilling was undertaken with a Boart Longyear LF70 trailer mounter drilling rig</li> <li>nominal core diameter was 63.5mm (HQ) in 0.5-1.5m runs</li> <li>drill holes were inclined at -60°, direction 233°, and not all core is not orientated</li> <li>a total of 61 diamond holes (RAZ13-20 to RAZ23-26) were completed during the 2021/2002 infill drilling program and 3369m were drilled</li> </ul>
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> </ul>	<ul style="list-style-type: none"> <li>core recovery is routinely recorded every metre by geologists</li> <li>no bias or relationship has been observed between recovery and grade</li> </ul>



Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <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>	<ul style="list-style-type: none"> <li>core recoveries of &gt;85% on average were achieved for sampled core within the graphite mineralised zones</li> </ul>
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> <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><b>Drilling</b></p> <ul style="list-style-type: none"> <li>all drill holes are logged by qualified and experienced geologists</li> <li>logging includes descriptions of mineralisation, structural and lithological aspects of the core and is recorded using an industry standard code system</li> <li>all logging included lithological features, estimates of graphite percentages and flake sizes, which is quantitative and is recorded on the logging sheets</li> <li>cores are systematically photographed dry and wet</li> <li>the data collected offers sufficient detail for the purpose of interpretation and further studies</li> <li>density measurements are made using the Caliper Vernier method by qualified and experienced geologists for graphite ore and waste material, and further follow-up densities are completed at INTERTEK and SNOWDEN in Australia.</li> </ul> <p><b>Trenching</b></p> <ul style="list-style-type: none"> <li>all trenches are logged by qualified and experienced geologists</li> <li>logging includes descriptions of mineralisation, structural and lithological aspects of the encountered rocks and is recorded using an industry standard code system</li> <li>the data collected offers sufficient detail for the purpose of interpretation and further studies</li> </ul>
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> </ul>	<p><b>Drilling</b></p> <ul style="list-style-type: none"> <li>¼ cores are cut using a diamond core saw and collected for assay</li> <li>2 metre composite sampling is deemed to be comprehensive and representative for the style/type of mineralisation under investigation</li> <li>sample preparation from ¼ core to pulp is undertaken at BEM's sample preparation facility in Antananarivo (former Intertek-Genalysis facility)</li> <li>samples are oven dried, crushed to -2mm, split twice through a 50/50 riffle splitter to obtain a representative sub-sample, weighing approx. 100g and then pulverized that 85% pass -75µm pulp samples are sent to accredited laboratories in South Africa (SGS and BERAU)</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<p>VERITAS) and Australia (INTERTEK) for Graphitic Carbon (GC), Total Carbon (TC) and Sulphur (S) analysis</p> <p><b>Trenching</b></p> <ul style="list-style-type: none"> <li>the base of the trench is chipped to obtain a representative sample over 2m intervals. Although the sampling technique is not ideal, the technique is deemed satisfactory for this exploratory phase of work</li> <li>QAQC measures are deemed satisfactory for this type of sampling and exploratory phase of work</li> <li>the sample size (3kg) is deemed satisfactory to the grain size of the material being sampled</li> <li>sample preparation from 3Kg chip sample to pulp is undertaken at BEM's sample preparation facility in Antananarivo. Samples are pulverised to 75 microns, and approximately 100g sent to external laboratory for graphite and sulphur analysis</li> </ul>
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 (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</li> </ul>	<p><b>Drilling &amp; Trenching</b></p> <ul style="list-style-type: none"> <li>analysis of GC, TC and S content has been undertaken by INTERTEK in Australia (2018), SGS and BEREAU VERITAS in South Africa (2021/2022). Umpire pulp samples for the 2021/2022 program were tested at INTERTEK, Australia.</li> <li>a split of the sub-sample is analysed using a LECO Analyser to determine TC, S and GC contents (these are considered both partial and total digestion analyses)</li> <li>for TC and S, a stream of oxygen passes through a prepared sample (2g), it is heated in a furnace to approximately 1350°C and the sulphur dioxide and carbon dioxide released from the sample are measured with infrared detection</li> <li>for GC, a 0.2g sample is leached with dilute hydrochloric acid to remove inorganic carbon. After filtering, washing and drying, the remaining sample residue is roasted at 425°C to remove organic carbon. The roasted residue is analysed for Carbon - High temperature LECO furnace with infra-red detection</li> <li>standards and duplicates (duplicates only for core, not for trench samples) are inserted every 20th sample, and blanks are inserted every 50th sample by the BEM technical team in addition to the internal QAQC from the laboratory</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>Standards, blanks, duplicates and umpire samples for drill sample analyses reported in this announcement have performed satisfactorily.</li> <li>OREAS standards OREAS722 / OREAS723 / OREAS724 and GEOSTATS standards GGC11 / GGC14 were included at a density of one in 20 samples</li> <li>Blanks were included at a density of one in 50 samples</li> <li>For some batches it was noted that the OREAS standards did not always perform well. Other QC measures for these batches including Geostats standards, blanks, field and pulp duplicate samples as well as laboratory internal QC measures generally performed acceptably. The OREAS standards are known to be a manufactured standard, rather than homogenised naturally occurring mineralisation and it is considered likely that some form of density separation of the filler material and graphite that form the standard has occurred during the extensive transport. As a result while some samples from some batches have been reanalysed the primary issue appears to lie with the OREAS standard and not with the laboratory analysis. Umpire testing to date at two other laboratories has shown that the primary laboratory equipment appears to report slightly lower on average in comparison to other laboratories and as such data has been accepted for use in the MRE.</li> </ul>
Verification of sampling and assaying	<ul style="list-style-type: none"> <li><i>The verification of significant intersections by either independent or alternative company personnel.</i></li> <li><i>The use of twinned holes.</i></li> <li><i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></li> <li><i>Discuss any adjustment to assay data.</i></li> </ul>	<ul style="list-style-type: none"> <li>significant intersections have been verified by alternative company personnel</li> <li>no twin holes have been completed, but are planned for future drill programs</li> <li>all data is recorded digitally using a standard logging system and files are stored in Excel files, with the objective being to import all data into an industry standard relational and auditable database before updating the Mineral Resource estimate based on the 2021 / 2022 infill drilling.</li> <li>No data adjustment has been made.</li> </ul>
Location of data points	<ul style="list-style-type: none"> <li><i>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.</i></li> <li><i>Specification of the grid system used.</i></li> <li><i>Quality and adequacy of topographic control.</i></li> </ul>	<b>Drilling</b> <ul style="list-style-type: none"> <li>all collars were initially sited using handheld GPS.</li> <li>collars were located using a DGPS (accurate to 1cm) projection and grid systems used: UTM (WGS84 Z38S).</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>downhole surveys by using a Reflex EZAQ instrument, were undertaken on some holes to verify deviation from starting azimuth and dip.</li> </ul> <p><b>Trenching</b></p> <ul style="list-style-type: none"> <li>all XYZ surveying is collected using a handheld Garmin GPS accurate to <math>\pm 4\text{m}</math></li> <li>Projection and Grid system used: UTM (WGS84) Z38S</li> </ul>
Data spacing and distribution	<ul style="list-style-type: none"> <li><i>Data spacing for reporting of Exploration Results.</i></li> <li><i>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.</i></li> <li><i>Whether sample compositing has been applied.</i></li> </ul>	<p><b>Drilling</b></p> <ul style="list-style-type: none"> <li>drill hole spacing was originally approximately 100m along strike by 30m across strike (2018 and earlier)</li> <li>infill drilling during 2021 / 2022 was at approximately 50m along strike and 30m across strike</li> <li>the drill hole spacing was sufficiently close to allow the graphitic mineralisation to be traced from section to section and down dip</li> <li>samples were composited to 2m length</li> <li>Some holes were sampled in entirety and others were sampled across graphite intersections and into adjacent waste rocks.</li> </ul>
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> <li><i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i></li> <li><i>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.</i></li> </ul>	<p><b>Drilling</b></p> <ul style="list-style-type: none"> <li>the drilling grid matches the strike of the orebody</li> <li>the orientation of the drilling is not expected to introduce sampling bias as drill holes intersected the mineralisation at a sufficiently high angle to the dip of the graphite mineralisation. The 3D modelling process accounts for mineralisation envelopes when interpreted in three-dimensions.</li> </ul> <p><b>Trenching</b></p> <ul style="list-style-type: none"> <li>the trenches are oriented perpendicular to the perceived orientation of the outcropping mineralisation, but since sampling is two-dimensional and not perpendicular to the dip of</li> <li>mineralisation, reported intercepts will be wider than the true width of the mineralised unit</li> </ul>
Sample security	<ul style="list-style-type: none"> <li><i>The measures taken to ensure sample security.</i></li> </ul>	<p><b>Drilling</b></p> <ul style="list-style-type: none"> <li>full cores are kept in core trays systematically numbered and photographed, and cut and sampled and stored on site</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>pulps are prepared and stored at the BEM's sample preparation facility in Antananarivo</li> <li>pulps are couriered with DHL to laboratories in Australia and South Africa</li> <li>the remaining core and leftover pulps are kept in a secure facility adjacent to the BEM's office in Antananarivo</li> </ul> <p><b>Trenching</b></p> <ul style="list-style-type: none"> <li>samples are packaged and stored in secure storage from time of gathering to sample preparation</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul style="list-style-type: none"> <li>The procedures relating to diamond drilling more specifically logging, sampling (including density, sample collection, quality assurance/quality control, sample preparation and sample dispatch) and data management procedures have been reviewed by external auditors</li> </ul>

## Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<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 licence to operate in the area.</li> </ul>	<ul style="list-style-type: none"> <li>Work was undertaken upon permits PE5394 &amp; PR39751</li> <li>The tenements are located within the inland of Madagascar in the southern region, approximately centred on the township of Ampanihy.</li> <li>Tenements are held 100% by BlackEarth Minerals SARL Ultimately a wholly owned subsidiary of Black Earth Minerals NL.</li> <li>No overriding royalties are in place</li> <li>There is no native title agreement required</li> <li>Tenure does not coincide with any historical sites or national parkland</li> <li>Semi-arid, thinly vegetated, relatively flat to low lying hills with sub-cropping rock.</li> <li>Tenements are currently secure and in good standing.</li> </ul>
Exploration done by other parties	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>Regional mapping by BRGM, Historical diamond drilling and trenching by Malagasy Minerals. Ltd. (2014-2016)</li> </ul>
Geology	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul style="list-style-type: none"> <li>The project overlies a prominent 20km wide zone consisting of a folded assemblage of graphite and quartz-feldspar schists (&lt;60%</li> </ul>

Criteria	JORC Code explanation	Commentary
		<p>graphite), quartzite and marble units, with lesser intercalated amphibolite and leucogneiss.</p> <ul style="list-style-type: none"> <li>This zone, termed the Ampanihy Belt is a core component of the Neoproterozoic Graphite System. The belt is interpreted as a ductile shear zone accreted from rocks of volcanic and sedimentary origins.</li> </ul>
Drill hole Information	<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>	<ul style="list-style-type: none"> <li>All relevant drill hole information has been previously reported to the ASX. No material changes have occurred to this information since it was originally reported.</li> <li>All relevant data has been reported.</li> </ul>
Data aggregation methods	<ul style="list-style-type: none"> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</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>	<ul style="list-style-type: none"> <li>Not relevant when reporting Mineral Resources.</li> <li>No metal equivalent grades have been used.</li> </ul>
Relationship between mineralisation widths and intercept lengths	<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 (eg 'down hole length, true width not known').</li> </ul>	<ul style="list-style-type: none"> <li>Not relevant when reporting Mineral Resources</li> </ul>
Diagrams	<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>	<ul style="list-style-type: none"> <li>Refer to figures within the main body of this report</li> </ul>



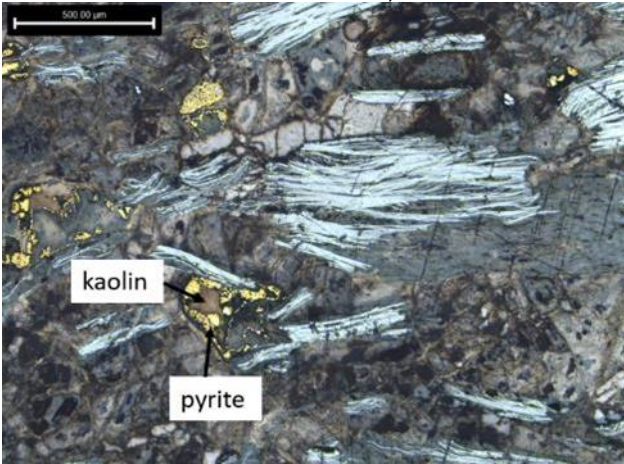
Criteria	JORC Code explanation	Commentary
<i>Balanced reporting</i>	<ul style="list-style-type: none"> <li>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</li> </ul>	<ul style="list-style-type: none"> <li>Not relevant when reporting Mineral Resources</li> </ul>
<i>Other substantive exploration data</i>	<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>	<ul style="list-style-type: none"> <li>Refer to BEM Prospectus and previous announcements.</li> </ul>
<i>Further work</i>	<ul style="list-style-type: none"> <li>The nature and scale of planned further work (eg 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>	<ul style="list-style-type: none"> <li>Additional density measurements to be collected, and updated chemical analysis results for some sample batches will be incorporated to future MRE updates.</li> </ul>

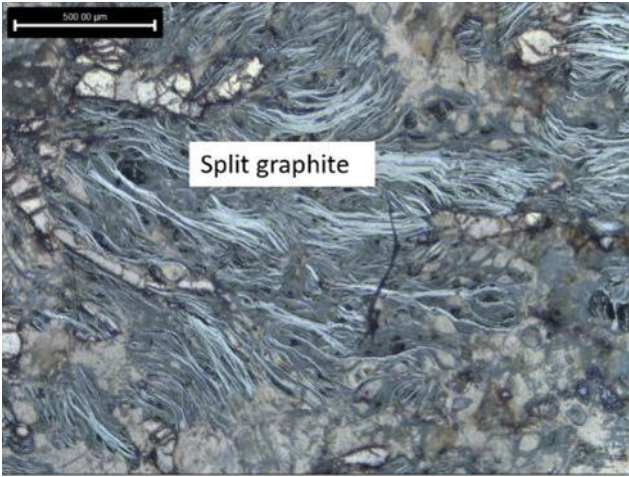
### Section 3 Estimation and Reporting of Mineral Resources

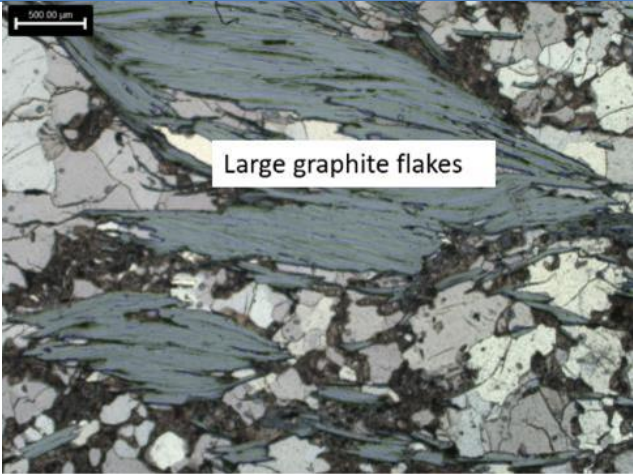
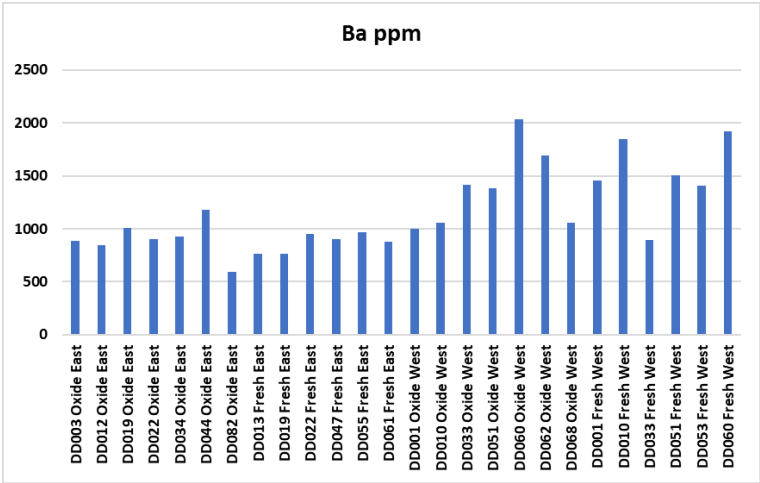
(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
<i>Database integrity</i>	<ul style="list-style-type: none"> <li>Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.</li> <li>Data validation procedures used.</li> </ul>	<ul style="list-style-type: none"> <li>Data used in the Mineral Resource estimate is sourced from a fully relational geological database export. Relevant tables from the data base are exported to MS Excel format and converted to csv format for import into Datamine Studio software.</li> <li>Validation of the data import include checks for overlapping intervals, missing survey data, missing assay data, missing lithological data, and missing collars.</li> </ul>
<i>Site visits</i>	<ul style="list-style-type: none"> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	<ul style="list-style-type: none"> <li>No site visit has been undertaken by the Competent Person however independent consultants who were responsible for estimation and reporting of the previous MRE undertook a site visit in March / April of 2018 and found that "All drilling, sampling and sample preparation procedures were considered of industry standard, well supervised and carried out".</li> <li>The project is being managed in-country for BlackEarth Minerals by an independent geological consultant Mr Jannie Leeuwner who has completed several site visits since Nov 2021 and ensured that all procedures are being carried out to a good industry standard.</li> </ul>

Criteria	JORC Code explanation	Commentary
Geological interpretation	<ul style="list-style-type: none"> <li>Confidence in (or conversely, the uncertainty of ) the geological interpretation of the mineral deposit.</li> <li>Nature of the data used and of any assumptions made.</li> <li>The effect, if any, of alternative interpretations on Mineral Resource estimation.</li> <li>The use of geology in guiding and controlling Mineral Resource estimation.</li> <li>The factors affecting continuity both of grade and geology.</li> </ul>	<ul style="list-style-type: none"> <li>Therefore, it was considered unnecessary for the CP to conduct a site visit at this stage as the CP is confident that the project works are being conducted in an appropriate professional manner.</li> <li>The geology and mineral distribution of the system appears to be reasonably consistent through the two (East and West) primary mineralisation lenses. Infill drilling data has shown the extents, orientation and mineralisation tenor of the mineralised geological units to be very similar to the previous interpretation. Some areas previously interpreted as mineralisation zones have been shown to be depleted by intrusives, but it is not anticipated that materially significant volumes would be affected by any potential additional intrusive units so far not encountered in drilling or recognised from surface geological mapping.</li> <li>Drill hole intercept logging, assay results, trenching and surface geological mapping have formed the basis for the mineralisation domain interpretation. Assumptions have been made on the depth and strike extents of the mineralisation based on drilling and surface mapping information.</li> <li>The extents of the modelled zones are constrained by the information obtained from the drill logging and surface mapping data, with a nominal 3% GC lower cut-off grade applied to the interpreted mineralisation lens extents which corresponds well to the geological logging of graphite mineralised units. Alternative interpretations are unlikely to have a significant influence on the global Mineral Resource estimate, with the deposit being open at depth.</li> <li>Surface mapping and trenching, with logged geological units and chemical analysis data have formed the basis for interpretation of mineralisation zones. A weathered zone boundary surface has been interpreted separating fresh rock material from weathered material based on the geological logs and cross referenced against the core photography as well as S results from chemical analysis.</li> <li>The central part of the western graphite zone was intruded by granitic material which has displaced or stopped away the graphite mineralisation, while sheets of anorthosite with xenoliths are noted in the hanging wall of the east graphite zone. A garnetiferous marker layer has been noted along the base of the eastern graphite zone. The graphite schists and gneisses are generally underlain by a monotonous sequence of grey granulite and gneiss lithologies.</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>Pale green (pistachio green) alteration is noted on some drillholes and may indicate the formation of epidote along fault zones.</li> <li>Thin section examination of density samples and crushed metallurgy feed composites has shown that the graphite mineralisation is hosted mainly by quartzo-feldspathic schist and gneiss of upper amphibolite to granulite grade. Country rocks include felsic and mafic granulites, anorthosite, skarn, syenite and scapolite-bearing marble.</li> <li>Goyazite (Sr-phosphate), woodehouseite (S-phosphate) and crandallite (Ca-phosphate) were described from some thin sections.</li> <li>Weathering and possibly retrograde metamorphism has resulted in ubiquitous breakdown of feldspar to clay (probably kaolinite) both within oxidized and fresh domains. Sillimanite is noted from the East lens and is also kaolinised. Hyalophane (Ba-K feldspar) is a common accessory mineral in both the East and West lenses. Phlogopite mica occurs in trace and accessory amounts mainly in the West lens. Carbonates (e.g., calcite) is noted commonly as veinlets and accessory grains in the weathered part of the graphite lenses, predominantly in the Eastern lens.</li> <li>Secondary minerals such as goethite and jarosite are noted mainly in the weathered (oxidized) domain, while pyrite occurs within the fresh domain (see photomicrograph below of co-existing pyrite and kaolinite in MNDD045 at 78-80m).</li> </ul>  <ul style="list-style-type: none"> <li>A preliminary review of the chemistry of the metallurgy feed samples indicates that the Western lens is characterized by higher contents of</li> </ul>

Criteria	JORC Code explanation	Commentary
		<p>Ba (see graph below) K, Na and P than the Eastern lens, while the oxidised (weathered) graphite schist appears to have elevated Ca, Fe and Mg which probably reflects secondary carbonates and Fe and Mg minerals such as goethite and smectite respectively.</p> <ul style="list-style-type: none"> <li>Continuity of geology and grade can be identified and traced between drill holes by visual, geochemical and mineralogical characteristics. Additional data is required to more accurately model the effect of any potential geological influences on the down dip and strike extents of the defined mineralised geological units. Confidence in the grade and geological continuity is reflected in the Mineral Resource classification.</li> <li>The CP is of the opinion that the high metamorphic grade (upper-amphibolite to granulite facies) of the Razafy deposit is potentially favourable for the development of coarse graphite flakes. The CP notes however that the ubiquitous kaolinisation of alumino-silicate minerals seen at Razafy has caused flake splitting and size reduction; which requires extra attrition and flotation steps to remove attached or entrained clay gangue. See examples of graphite flakes in thin section below. Scale bars = 0.5 mm. Split graphite in MNDD022 at 30-32 m; Large graphite flakes in MNDD024 at 91-93 m.</li> </ul> <div data-bbox="1288 869 1915 1348">  </div>

Criteria	JORC Code explanation	Commentary
		<div></div> <div><ul style="list-style-type: none"><li>• </li><li>• The largest mineralisation unit is referred to as the East Main lens which has a strike length of approximately 1.3 km. The true width is on average about 30 m, ranging between roughly 20 to 45 m being generally narrower to the north and south and thickest through the center. Depth extent is interpreted to a maximum of approximately 190 m down dip or roughly 155 m below surface, with the average</li></ul></div>
Dimensions	<ul style="list-style-type: none"><li>• The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.</li></ul>	



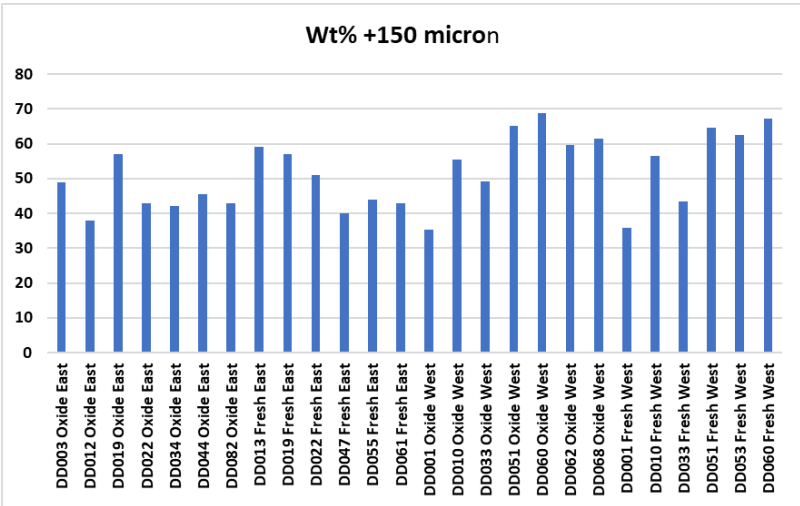
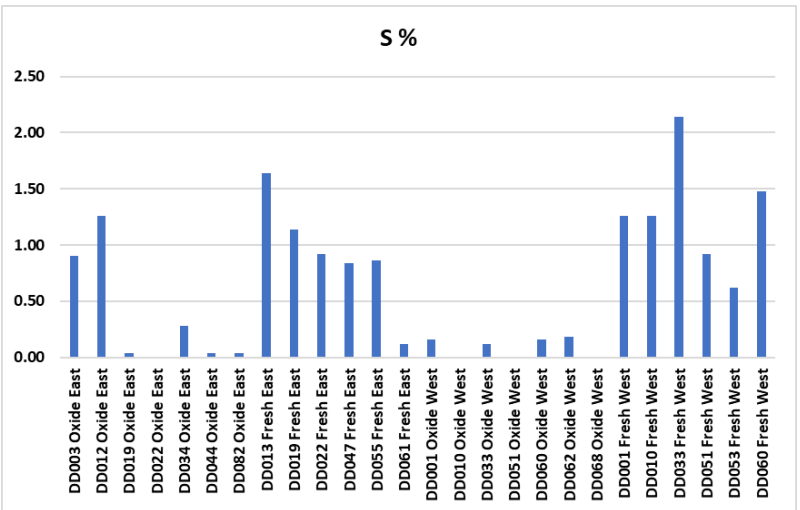
Criteria	JORC Code explanation	Commentary
		<p>down dip depth extent being approximately 155 m and average depth below surface being roughly 130 m.</p> <ul style="list-style-type: none"> <li>• To the west of the East Main lens (roughly 60 m across strike) is the second primary mineralisation lens called the West Main lens which is split into a north and south zone by an intrusive granite unit that affects about a 50 m strike length. The southern West Main lens has a strike length of roughly 550 m, down dip depth on average about 150 m ranging roughly between 115 and 175m, depth below surface on average roughly 130 m ranging between 100 and 150 m, with a true thickness on average about 33 m ranging between 25 and 45 m. The northern West Main lens has a strike length of roughly 850 m, down dip depth on average about 145 m ranging roughly between 115 and 160m, depth below surface on average roughly 120 m ranging between 100 and 130 m, with a true thickness on average about 15 m ranging between 10 and 25 m.</li> <li>• In addition, nine minor generally lower grade lenses, constituting less than 10% of the interpreted mineralisation volume have been interpreted in the footwall, hanging wall and between the primary lenses.</li> </ul>
<p><i>Estimation and modelling techniques</i></p>	<ul style="list-style-type: none"> <li>• <i>The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.</i></li> <li>• <i>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</i></li> <li>• <i>The assumptions made regarding recovery of by-products.</i></li> <li>• <i>Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).</i></li> <li>• <i>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</i></li> <li>• <i>Any assumptions behind modelling of selective mining units.</i></li> <li>• <i>Any assumptions about correlation between variables.</i></li> <li>• <i>Description of how the geological interpretation was used to control the resource estimates.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The mineralisation has been estimated using ordinary kriging (OK), using Datamine Studio RM software, based on estimation parameters obtained from geostastical and spatial analysis and kriging neighbourhood analysis using Snowden Supervisor software. The OK grade estimation was carried out at the parent cell scale, with sub-blocks assigned parent block grades for the full extent of modelled mineralisation lenses, and an Inverse distance weighting to the power of two (IDS) check estimate was completed concurrently. TGC was estimated separately from S based on the requirement for the S estimate to be additionally be estimated based on the weathering state. Statistical analysis on 2 m composited drill hole data from within the interpreted mineralisation lenses individually to check grade population distributions using histograms, probability plots and summary statistics and the co-efficient of variation. The checks showed there were no significant outlier grades in the interpreted cut-off grade lenses for TGC while top cuts at 1.5% were required for S in the weathered zone for some lenses. The parameters obtained from the spatial (variogram) analysis modelling completed for TGC in the East Main lens was used for all</li> </ul>



Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>• Discussion of basis for using or not using grade cutting or capping.</li> <li>• The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</li> </ul>	<p>grade estimates. The double spherical model had a nugget of 0.076, with a preferred strike direction of 140° for the major axis having been modelled with a range to the first structure (43%) of 45 m and to the second structure (49.4%) at 100 m. The semi major axis is modelled towards at -55° towards 050° with ranges of 25 m and 75 m. The minor axis is modelled at 35° towards 050° with ranges of 6 m and 9 m.</p> <p>Due to changes in the geometry of the mineralisation along strike the search ellipse orientation was varied along strike to suit the overall geometry of the lenses, with the variogram orientation also altered to match the search ellipse orientation.</p> <p>Based on the results of the KNA the search ellipse was 120 m (major) by 70 m (semi-major) by 10 m (minor) for the first search pass, which was then doubled for the second pass and increased 20 fold for the final (3rd) pass to ensure all blocks were estimated. A minimum of 12 and maximum of 24 samples was used for the first pass, reducing to minimum 10 and maximum 20 in the second pass and minimum 6 and maximum 16 for the 3rd pass. A maximum of 4 samples per drill hole was allowed per block estimate with no octant based searching used and block discretization was 3 by 3 by 3 (X, Y, Z).</p> <p>Model validation was carried out visually, graphically, and statistically to ensure that the block model grade reasonably represents the drillhole data. Cross sections, long sections and plan views were initially examined visually to ensure that the model grades honour the local composite drillhole grade trends. These visual checks confirm the model reflects the trends of grades in the drillholes.</p> <p>Statistical comparison of the mean drillhole grades with the block model grade shows reasonably similar mean grades. The IDS check estimate shows similar grades to the OK model, adding confidence that the grade estimate has performed well. The model grades and drill grades were then plotted on histograms and probability plots to compare the grade population distributions. This showed reasonably similar distributions with the expected smoothing effect from the estimation taken into account.</p> <p>Swath or trend plots were generated to compare drillhole and block model grades with TGC compared at 40 m E, 40 m N and 10 m RL intervals. The trend plots demonstrate reasonable spatial correlation between the model estimate and drillhole grades after consideration of drill coverage, volume variance effects and expected smoothing.</p>

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>No reconciliation data is available as no mining has taken place.</li> </ul>
Moisture	<ul style="list-style-type: none"> <li>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</li> </ul>	<ul style="list-style-type: none"> <li>Tonnages have been estimated on a dry, in situ basis, and samples were generally dry. No moisture values could be reviewed as these have not been captured.</li> </ul>
Cut-off parameters	<ul style="list-style-type: none"> <li>The basis of the adopted cut-off grade(s) or quality parameters applied.</li> </ul>	<ul style="list-style-type: none"> <li>Visual analysis of the drill assay results demonstrated the lower cut-off interpretation of 3% TGC corresponds to natural break in the grade population distribution as well as corresponding well to the geological logging of graphite mineralised geological units. Metallurgical testing of composite intervals covering the full grade range of interpreted mineralisation appear to have delivered saleable products and as such all material within the interpreted mineralisation zones have been classified as Mineral Resources amenable to eventual economic exploitation.</li> </ul>
Mining factors or assumptions	<ul style="list-style-type: none"> <li>Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.</li> </ul>	<ul style="list-style-type: none"> <li>It has been assumed that these deposits will be amenable to open cut mining methods and are economic to exploit to the depths currently modelled using the cut-off grade applied.</li> <li>No assumptions regarding minimum mining widths and dilution have been made.</li> </ul>
Metallurgical factors or assumptions	<ul style="list-style-type: none"> <li>The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.</li> </ul>	<ul style="list-style-type: none"> <li>BEM reported initial metallurgical test results for a composite of MNDD series drill samples processed by ALS in Perth in 2018. Approximately 65% of the concentrate was coarser than 150 micron and &gt; 96% TGC purity.</li> <li>BEM reported metallurgical testwork by the Chinese BGRIMM technology group in April 2021. A sixty (60) tonne bulk sample was taken in the east zone of the Razafy deposit (digging site centered on 487,040mE, 7,285,860mN). The excavation location was chosen between drillholes MNDD047 and MNDD048, with trench MNT012 confirming the location of the strata and graphite grades, in an area where the mineralisation is thick and the base of oxidation close to the topographical surface. Approximately 40% of the final concentrate had flakes greater than 150 µm at &gt; 95% fixed carbon. The process flow incorporated 2 ball milling stages, 8 stages of stirred mill</li> </ul>

Criteria	JORC Code explanation	Commentary
		<p>regrinding, and 10 concentrating stages. Most gangue minerals were reported to be kaolinite.</p> <ul style="list-style-type: none"> <li>• BEM announced on 4th June 2019 that expandable graphite had been produced at a laboratory scale by specialist NGS Trading and Consulting in Germany. Based on the preliminary tests undertaken, expansion volumes of up to 400 cm<sup>3</sup>/g were achieved. Key attributes towards producing an attractive expandable product including moisture, portion of volatile matter, loss on ignition (LOI), carbon content and ash content were all deemed positive. Low calcite contents were considered by NGS to indicate that the BEM flake graphite is suitable for the application in the refractory industry and other applications.</li> <li>• BEM announced on 12th August 2019 that spherical graphite had been produced by Dorfner ANZAPLAN using concentrate from a pilot plant run by APS Perth. Dorfner ANZAPLAN concluded that the measured values after optimisation were in the range of typical comparable products. Spherical graphite production yields of 35-52% were achieved</li> <li>• Twenty six composites of half core from the 2018 MNDD series holes were submitted to ALS for crushing, grinding, attritioning and flotation tests in early 2021. Although this project is not finalized, on average, the samples returned just over 50% of flakes greater than 150 micron diameter (see graph below). The average purity (arithmetic, not weighted by length) was 96.2% TGC. The West lens appears to have coarser recovered flakes than the East lens.</li> <li>• Recoveries (as a percentage of feed grade TGC) averaged 87%. The highest recoveries appear to be from the West lens, whilst the lowest recovery of approximately 30% were from hole MNDD022 in the northern part of the East lens.</li> <li>• Metallurgical testwork samples achieved concentrate grades &gt; 95% graphitic carbon.</li> <li>• Feed samples from the fresh domain are higher in S than the weathered (oxide) domain, reflecting the occurrence of pyrite in fresh rocks (see graph below).</li> <li>• The CP is of the opinion that metallurgical testing to date including the current 26 samples from MNDD holes, indicates that graphite concentrates of marketable size and purity may be extracted from the Razafy deposit and that this supports the classification of the Mineral</li> </ul>

Criteria	JORC Code explanation	Commentary																																																																																																												
		<p>Resource as an industrial mineral according to Clause 49 of the JORC Code.</p> <div><div><p>Wt% +150 micron</p><table><tr><th>Sample</th><th>Wt% +150 micron</th></tr><tr><td>DD003 Oxide East</td><td>48</td></tr><tr><td>DD012 Oxide East</td><td>38</td></tr><tr><td>DD019 Oxide East</td><td>58</td></tr><tr><td>DD022 Oxide East</td><td>43</td></tr><tr><td>DD034 Oxide East</td><td>42</td></tr><tr><td>DD044 Oxide East</td><td>46</td></tr><tr><td>DD082 Oxide East</td><td>43</td></tr><tr><td>DD013 Fresh East</td><td>59</td></tr><tr><td>DD019 Fresh East</td><td>57</td></tr><tr><td>DD022 Fresh East</td><td>51</td></tr><tr><td>DD047 Fresh East</td><td>40</td></tr><tr><td>DD055 Fresh East</td><td>44</td></tr><tr><td>DD061 Fresh East</td><td>43</td></tr><tr><td>DD001 Oxide West</td><td>35</td></tr><tr><td>DD010 Oxide West</td><td>56</td></tr><tr><td>DD033 Oxide West</td><td>49</td></tr><tr><td>DD051 Oxide West</td><td>65</td></tr><tr><td>DD060 Oxide West</td><td>69</td></tr><tr><td>DD062 Oxide West</td><td>60</td></tr><tr><td>DD068 Oxide West</td><td>61</td></tr><tr><td>DD001 Fresh West</td><td>36</td></tr><tr><td>DD010 Fresh West</td><td>57</td></tr><tr><td>DD033 Fresh West</td><td>43</td></tr><tr><td>DD051 Fresh West</td><td>65</td></tr><tr><td>DD053 Fresh West</td><td>62</td></tr><tr><td>DD060 Fresh West</td><td>68</td></tr></table></div><div><p>S %</p><table><tr><th>Sample</th><th>S %</th></tr><tr><td>DD003 Oxide East</td><td>0.90</td></tr><tr><td>DD012 Oxide East</td><td>1.25</td></tr><tr><td>DD019 Oxide East</td><td>0.05</td></tr><tr><td>DD022 Oxide East</td><td>0.00</td></tr><tr><td>DD034 Oxide East</td><td>0.25</td></tr><tr><td>DD044 Oxide East</td><td>0.05</td></tr><tr><td>DD082 Oxide East</td><td>0.05</td></tr><tr><td>DD013 Fresh East</td><td>1.65</td></tr><tr><td>DD019 Fresh East</td><td>1.15</td></tr><tr><td>DD022 Fresh East</td><td>0.90</td></tr><tr><td>DD047 Fresh East</td><td>0.85</td></tr><tr><td>DD055 Fresh East</td><td>0.85</td></tr><tr><td>DD061 Fresh East</td><td>0.10</td></tr><tr><td>DD001 Oxide West</td><td>0.15</td></tr><tr><td>DD010 Oxide West</td><td>0.00</td></tr><tr><td>DD033 Oxide West</td><td>0.10</td></tr><tr><td>DD051 Oxide West</td><td>0.00</td></tr><tr><td>DD060 Oxide West</td><td>0.15</td></tr><tr><td>DD062 Oxide West</td><td>0.15</td></tr><tr><td>DD068 Oxide West</td><td>0.00</td></tr><tr><td>DD001 Fresh West</td><td>1.25</td></tr><tr><td>DD010 Fresh West</td><td>1.25</td></tr><tr><td>DD033 Fresh West</td><td>2.15</td></tr><tr><td>DD051 Fresh West</td><td>0.90</td></tr><tr><td>DD053 Fresh West</td><td>0.60</td></tr><tr><td>DD060 Fresh West</td><td>1.45</td></tr></table></div></div>	Sample	Wt% +150 micron	DD003 Oxide East	48	DD012 Oxide East	38	DD019 Oxide East	58	DD022 Oxide East	43	DD034 Oxide East	42	DD044 Oxide East	46	DD082 Oxide East	43	DD013 Fresh East	59	DD019 Fresh East	57	DD022 Fresh East	51	DD047 Fresh East	40	DD055 Fresh East	44	DD061 Fresh East	43	DD001 Oxide West	35	DD010 Oxide West	56	DD033 Oxide West	49	DD051 Oxide West	65	DD060 Oxide West	69	DD062 Oxide West	60	DD068 Oxide West	61	DD001 Fresh West	36	DD010 Fresh West	57	DD033 Fresh West	43	DD051 Fresh West	65	DD053 Fresh West	62	DD060 Fresh West	68	Sample	S %	DD003 Oxide East	0.90	DD012 Oxide East	1.25	DD019 Oxide East	0.05	DD022 Oxide East	0.00	DD034 Oxide East	0.25	DD044 Oxide East	0.05	DD082 Oxide East	0.05	DD013 Fresh East	1.65	DD019 Fresh East	1.15	DD022 Fresh East	0.90	DD047 Fresh East	0.85	DD055 Fresh East	0.85	DD061 Fresh East	0.10	DD001 Oxide West	0.15	DD010 Oxide West	0.00	DD033 Oxide West	0.10	DD051 Oxide West	0.00	DD060 Oxide West	0.15	DD062 Oxide West	0.15	DD068 Oxide West	0.00	DD001 Fresh West	1.25	DD010 Fresh West	1.25	DD033 Fresh West	2.15	DD051 Fresh West	0.90	DD053 Fresh West	0.60	DD060 Fresh West	1.45
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<i>Environmental factors or assumptions</i>	<ul style="list-style-type: none"> <li>Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.</li> </ul>	<ul style="list-style-type: none"> <li>No assumptions regarding waste and process residue disposal options have been made. It is assumed that such disposal will not present a significant hurdle to exploitation of the deposit and that any disposal and potential environmental impacts would be correctly managed as required under the regulatory permitting conditions.</li> </ul>
<i>Bulk density</i>	<ul style="list-style-type: none"> <li>Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.</li> <li>The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.</li> <li>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</li> </ul>	<ul style="list-style-type: none"> <li>Density has been measured by means of caliper, wax coated immersion, uncoated immersion and gas pycnometer methods. The gas pycnometer results have not been used as this method is not considered suitable for the deposit material. 40 historically collected density measurements apparently done by water displacement methods were available but since the exact interval measured are not known this data was used for comparison purposes only. A total of 54 measurements of full core by means of caliper completed by Blackearth geologists fall within the mineralisation envelopes with half in fresh rock and half in weathered zone. QC checks by means of uncoated immersion for 21 samples were completed in the laboratory, while Snowden completed 18 caliper check measurements on half core samples. The QC checks validated that the caliper measurements were delivering reasonable results and therefore the caliper measurements have been used as the primary source for density values assigned to the model. Detailed assessment of the samples selected was required after analysis showed the weathered material has a mean value of 2.29, which is the same as that for the fresh rock. This showed that in the weathered zone a sample selection bias existed towards competent core pieces. As a result, the value applied to model required discounting to be considered reasonable.</li> <li>The density measurements collected are considered appropriate for the material types.</li> <li>Based on the sample selection bias noted it was decided that the mineralised weathered zone material should be assigned the mean value from all methods for the 6 samples of full core caliper that had the additional QC measures in the form of uncoated immersion and half core measurements, being 2.15 t/m<sup>3</sup>. For the fresh mineralised</li> </ul>

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		material a mean caliper measured density of 2.3 t/ m <sup>3</sup> is assigned. For waste rock the mean caliper density of 2.5 t m <sup>3</sup> and 2.7 t/m <sup>3</sup> for weathered and fresh material is assigned. All density assigned is a dry bulk density.
Classification	<ul style="list-style-type: none"> <li><i>The basis for the classification of the Mineral Resources into varying confidence categories.</i></li> <li><i>Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</i></li> <li><i>Whether the result appropriately reflects the Competent Person's view of the deposit.</i></li> </ul>	<ul style="list-style-type: none"> <li>Classification of the MRE was carried out accounting for the level of geological understanding of the deposit, quality of samples, density data and drillhole spacing.</li> <li>The MRE has been classified as Inferred and Indicated in accordance with the JORC Code (2012 Edition) using a qualitative approach. All factors that have been considered have been adequately communicated in Section 1 and Section 3 of this Table.</li> <li>Overall the mineralisation trends are reasonably consistent over the drill sections.</li> <li>The MRE appropriately reflects the view of the Competent Persons.</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li><i>The results of any audits or reviews of Mineral Resource estimates.</i></li> </ul>	<ul style="list-style-type: none"> <li>No external audits have been undertaken.</li> </ul>
Discussion of relative accuracy/ confidence	<ul style="list-style-type: none"> <li><i>Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.</i></li> <li><i>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.</i></li> <li><i>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</i></li> </ul>	<ul style="list-style-type: none"> <li>The relative accuracy of the MRE is reflected in the reporting of the Mineral Resource as per the guidelines of the JORC Code (2012).</li> <li>The Mineral Resource statement relates to global estimates of in situ tonnes and grade.</li> </ul>