

## JORC Mineral Resource for Epanko Resource Upgrade Estimate Exceeds Expectations

**HIGHLIGHTS:**

- Indicated Mineral Resource estimate of 12.8Mt at 10.0% TGC for 1,281,200 tonnes of contained graphite.
- Revised ‘Terms of Reference’ for Scoping Study now targeting up to 40,000tpa of graphite production, however new Mineral Resource estimate capable of targeting 100,000tpa production in the future.
- Total Mineral Resource estimate increased by 47% to include 2,223,300 tonnes of contained graphite.
- Resource grade and tonnage exceeds all known current and historic graphite Mineral Resources in Tanzania
- Resource estimate covers only a small footprint within the 100% owned KNL Epanko prospect – significant potential exists for future resource growth.

**Kibaran Resources Limited (ASX: KNL) announces its upgraded JORC Mineral Resource for the Epanko Prospect in Tanzania. A total Indicated and Inferred Mineral Resource of 22.7 million tonnes (Mt), grading 9.8 % Total Graphitic Carbon (TGC), for 2,223,300 tonnes of contained graphite has outperformed all internal expectations.**

The Mineral Resource estimate was carried out by CSA Global Pty Ltd, an independent and internationally recognised mineral industry consultancy group and was based on data sets compiled from drilling, trenching and other geological activity. Further, the Mineral Resource estimate has been classified in accordance with the JORC (2012) Code (Refer Table 1 below).

**Table 1 – Mineral Resource Estimate at 8% cut-off**

Mineral Resource Classification	Tonnage (Mt)	Grade (%TGC)	Contained Graphite (t)
Indicated	12.8	10.0	1,281,200
Inferred	9.9	9.6	942,100
<b>Total</b>	<b>22.7</b>	<b>9.8</b>	<b>2,223,300</b>

**Notes for table 1:**

- Tonnage figures contained within Table 1 have been rounded to nearest 10,000. % TGC grades are rounded to 1 decimal figure.
- The Mineral Resource is quoted from blocks where the TGC (%) grade is greater than 8%.
- Abbreviations used: Mt = 1,000,000 tonnes,

Executive Director Andrew Spinks commented: “The Kibaran Board of Directors is extremely pleased with this outcome, as it not only confirms the confidence shown in drilling results released over the past months but has delivered a result over and above our internal expectations. It places Kibaran in good stead to become a key producer and supplier of premium quality graphite to the sophisticated European market and to that end, the Company is now actively pursuing a second off-take agreement for the Epanko project. Kibaran is in discussion with a number of industrial groups in both Europe and North America in this respect.”

**SCOPING STUDY**

The Indicated Mineral Resource estimate provides Kibaran with a sound technical basis to revise its ‘Terms of Reference’ for its scoping study. The updated study will evaluate the production parameters on up to 40,000tpa and the indicated resource estimate allows for a future study based on an expansion to 100,000tpa of natural flake production subject to future market demand increases. The revised scoping study is well advanced and will be announced prior to month end.

Kibaran believes the Mineral Resource estimate is the highest grade graphite resource yet to be delineated in Tanzania. Furthermore, the prospect appears to be comparable or better in quality terms to past graphite producing operations in the East African region. The notable comparisons include:

- Tanzania: 8.3% TGC from the Merelani Graphite Mine
- Mozambique: 9.5% TGC from the Ancuabe Mine

The Mineral Resource estimate represents only a very small footprint (20%) of Kibaran's Epanko project area and as the mineralisation remains open, there is significant potential for further resource growth; as such the deposit has the potential to support increased production levels to cater for future rises in demand for premium quality, large flake graphite.

### **MINERAL RESOURCE ESTIMATE**

Mineral Resource modelling for the Epanko Prospect was undertaken by CSA Global Pty Ltd ("CSA"), an independent and internationally recognised mining and resource consultancy group. Modelling was based on information compiled by Kibaran's geologists and included geological and drilling data derived from thirty five Reverse Circulation (RC) drill holes, three diamond drill holes and eleven trenches cut across the strike of both zones. The deposit comprises an Eastern Zone and a Western Zone of mineralisation. Both zones have been mapped at surface from natural outcrop. Trenching has demonstrated both grade and strike continuity outside the resource limits.

The Western Zone lodes have a strike length of 1,500 metres, while the Eastern Zone has a strike length of 350 metres. The down dip extent of Western Zone is 50 metres below the deepest mineralisation intercept. The Western Zone was extrapolated along strike beyond the two lines of drilling by a distance of 100m to the north and south, supported by observed mineralised outcrop.

The Western Zone exhibits steeply dipping stratigraphy (80° East), while the Eastern Zone has two lenses, one with a more moderate dip (30° west) and the other sub-vertical. The graphitic mineralisation is open at depth in both zones.

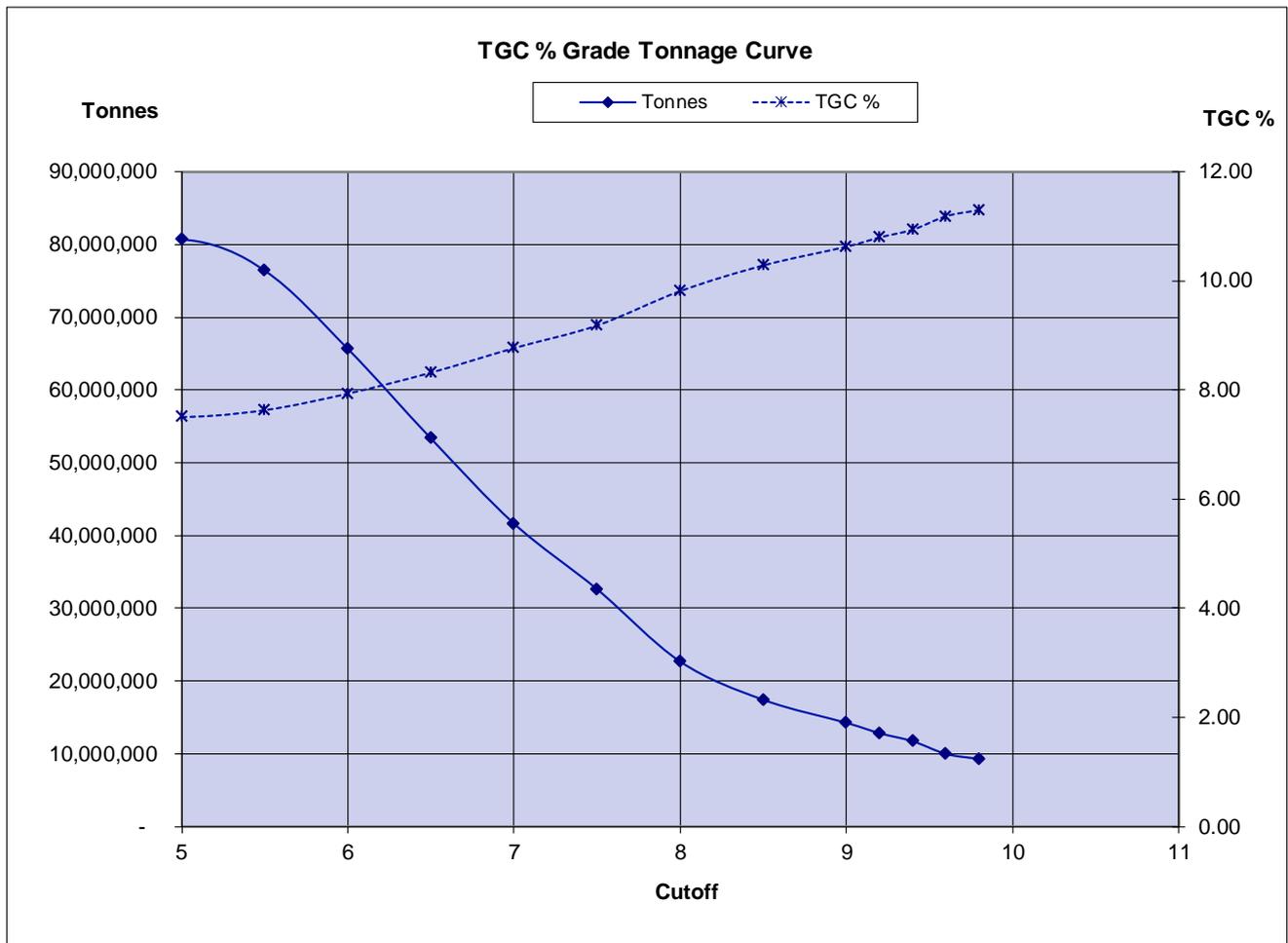
3D modelling of the Epanko graphite mineralisation was undertaken by CSA and block grades were estimated using Ordinary Kriging. A density value of 2.58t/m<sup>3</sup> was applied to the Mineral Resource, based upon density measurements from samples sourced from several of the trenches. Drill samples were assayed by a reputable independent assay laboratory in South Africa.

It is important to note that a substantial amount of graphite mineralisation exists within the model at lower TGC cut-off grades (refer figure 1); at a 5% Cut-off grade, a total 80Mt at 7.5% TGC for 6,052,800 tonnes of contained graphite.

The Mineral Resource was classified according to the JORC Code (2012 Edition). Classification of the Mineral Resource estimates considered the geological understanding of the deposit, QAQC of the samples, density data and drill hole spacing. In addition, Clause 49 of the JORC (2012) code was referred to, with metallurgical characteristics (flake size and distribution, flotation results), as well as marketing agreements, all supporting the Indicated level of classification.

Figure 2 presents a collar plot of the Epanko deposit. A more detailed breakdown of the components making up the Mineral Resource estimate are provided in JORC Table 1, presented at the end of this announcement.

A cross section of a typical section is presented in Figure 3 and the model is shown in Figure 4 and 5



**Figure 1 - Grade Tonnage for all Indicated and Inferred Mineral Resource, Epanko deposit**

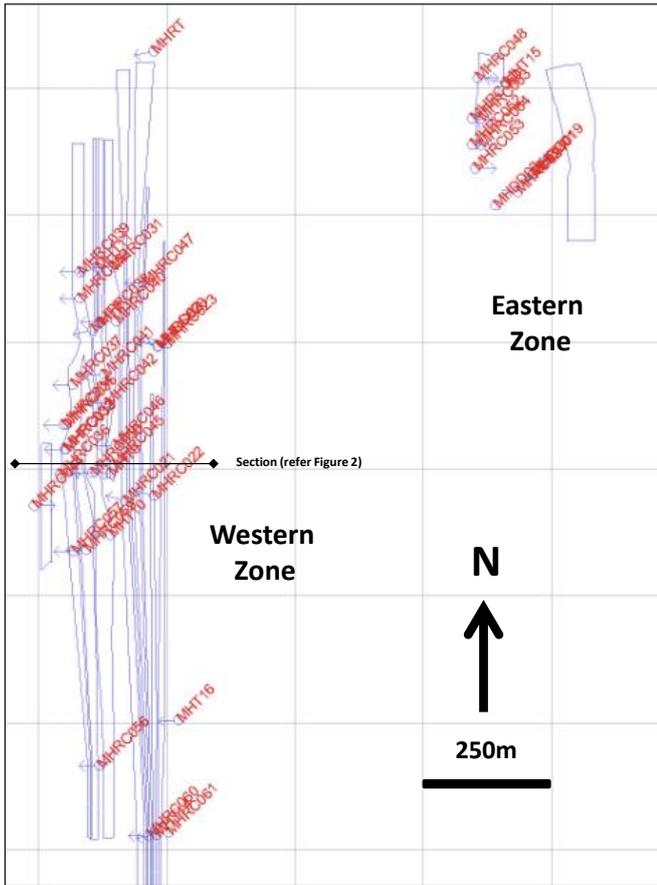
#### **CLAUSE 49, JORC CODE CONSIDERATION**

In accordance with Clause 49 of the JORC code (2012), the product specifications and general product marketability were considered to support the Mineral Resource estimate for Industrial Minerals. Independent test work programs has determined (refer announcement 5 June 2013)

- Simple Flotation achieved >96% recovery of graphitic carbon.
- Flotation test work yielded large flake graphite:
- 73.8% in >106µm (micron) fraction; and
- 21.6% in >300µm (micron) fraction
- Ultra High Purity – 99.98% achieved in a simple one-step purification process

Testwork has confirmed the graphite mineralisation is suitable for the 'expanded' and 'spherical' battery market and in fact has no limitations on its uses (refer announcement 7 July 2104). Saleability aspect is supported by the company's binding offtake agreement and sales partner for graphite sales (refer announcement 23 December 2013). Commercial viability is assisted by having the following key attributes (refer table 2).

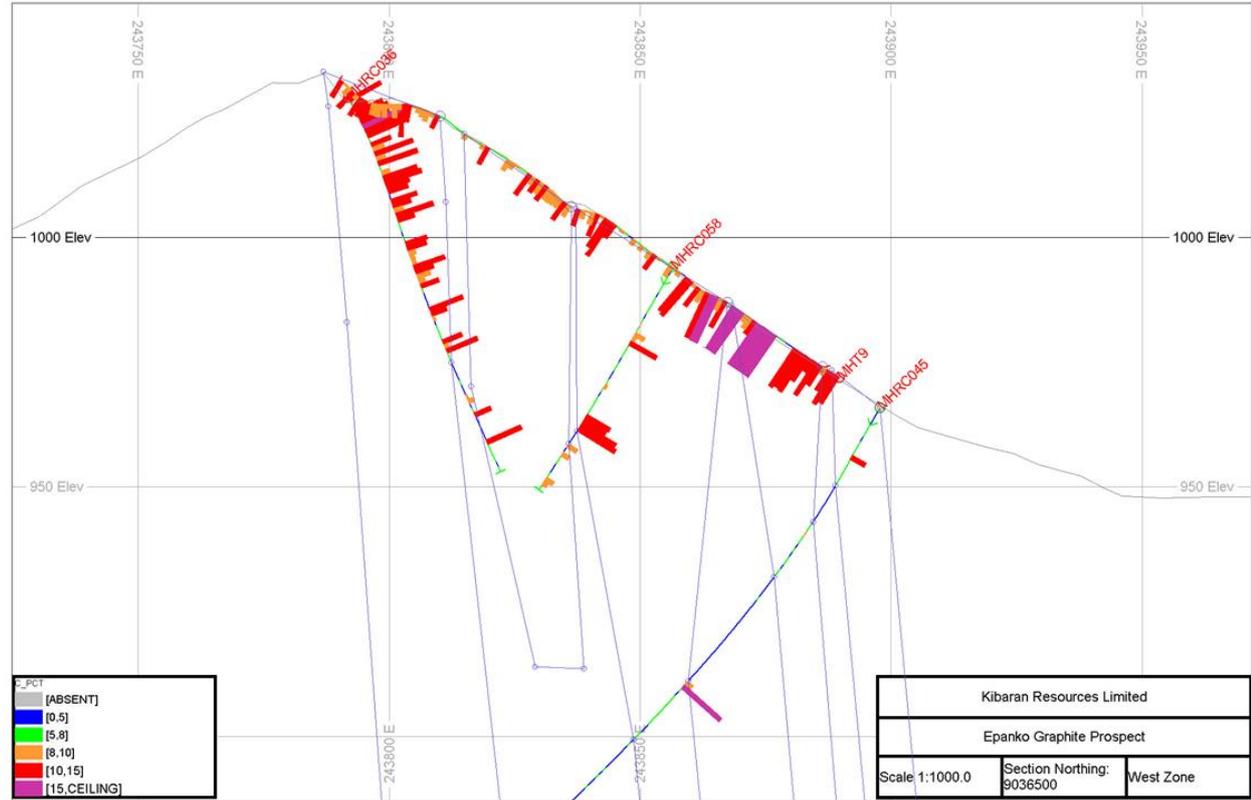
- Low percentage of fine flake (< 75micron) = low value and likely unsaleable
- High percentage of large flake provides higher basket prices and increased saleability



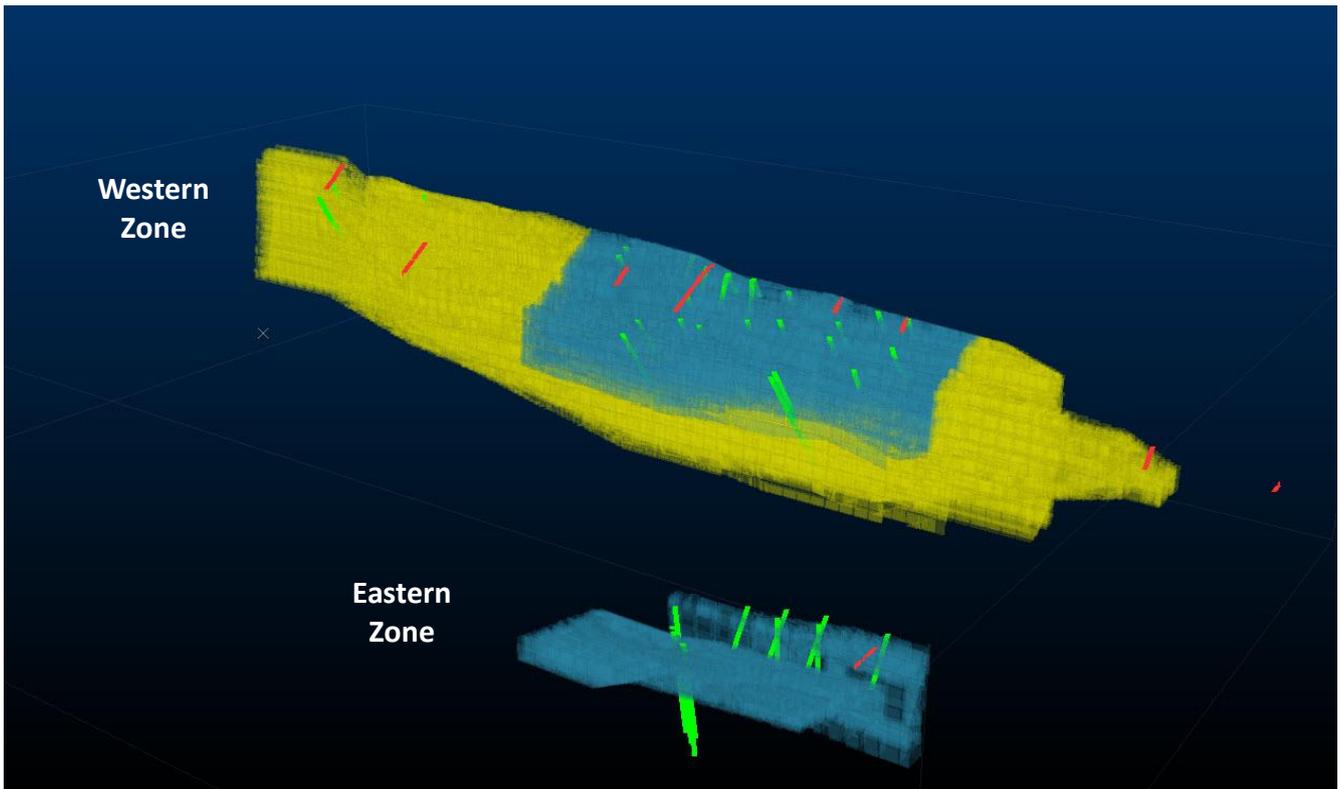
FLAKE SIZE		EPANKO SIZE FRACTION
Jumbo	> 300 microns	21.6
Larger	>180 microns	28.6
Medium	> 106 microns	23.6
Small	> 75 microns	10.4
Fine	< 75 microns	15.8

**Table 2** – Graphite flake distribution based flotation results (refer announcement 5 June)

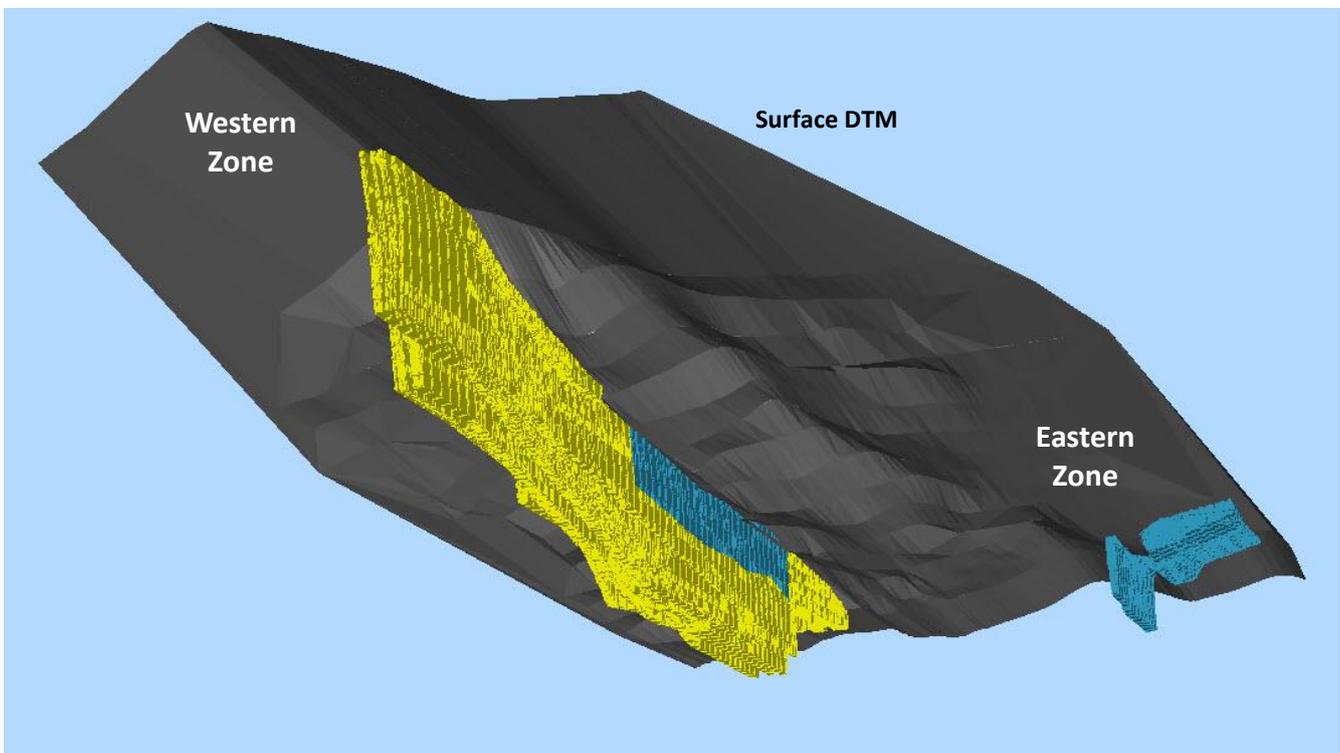
**Figure 2** - Geological plan showing resource interpretation



**Figure 3** - W-E cross section, Western Zone



**Figure 4** - 3D View of block model showing drillholes (green), trenches (red) and resource blocks coloured on resource classification. Blocks classified as Indicated (blue) and Inferred (yellow). View above topography from the north east to south west.



**Figure 5** - 3D View of block model showing resource blocks coloured on resource classification. Blocks classified as Indicated (blue) and Inferred (yellow). View from below topography from the south east to north west.

**JORC CODE, 2012 EDITION – TABLE 1**  
**Section 1 Sampling Techniques and Data**

Criteria	JORC Code explanation	Commentary
<b>Sampling techniques</b>	<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>	<p>The Epanko deposit was sampled by reverse circulation (RC) holes, diamond core drilling and trenching.</p> <p>Sampling is guided by Kibaran's protocols and QA/QC procedures</p> <p>RC samples are collected by a riffle splitter using a face sampling hammer diameter approximately 140 mm.</p> <p>All samples were sent SGS laboratory in Johannesburg for preparation and LECO analyses. All samples are crushed using LM2 mill to -4 mm and pulverised to nominal 80% passing -75 µm.</p> <p>Diamond core (if competent) is cut using a core saw. Where the material is too soft it is left in the tray and a knife is used to quarter the core for sampling. Trenches were sampled at 0.5m intervals, these intervals were speared and submitted for analyses.</p>
<b>Drilling techniques</b>	<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>	<p>RC holes were drilled in a direction so as to hit the mineralisation orthogonally. Face sample hammers were used and all samples collected dry and riffle split after passing through the cyclone.</p> <p>Diamond drilling was drilled as triple Tubed HQ diameter core.</p>
<b>Drill sample recovery</b>	<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>The RC rig sampling systems are routinely cleaned to minimize the opportunity for contamination; drilling methods are focused on sample quality. Diamond drilling ( triple Tubed HQ diameter core) was used to maximise sample recovery when used.</p> <p>The selection of RC drilling company, having a water drilling background enables far greater control on any water present in the system, ensuring wet samples were kept to a minimum.</p> <p>No relationship exists between sample recovery and grade.</p>
<b>Logging</b>	<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>Geological logging is completed for all holes and representative across the deposit. Logged data is both qualitative and quantitative depending on field being logged.</p> <p>All drill holes and all intervals were logged.</p>
<b>Sub-sampling techniques and sample preparation</b>	<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 RC samples are split using a riffle splitter mounted under the cyclone, RC samples are drilled dry.</p> <p>A small fraction of samples returned to the surface wet. All samples were submitted for assay</p> <p>Diamond core was cut on core saw and quarter core submitted for analyses.</p> <p>Sample preparation at the SGS laboratory involves the original sample being dried at 80° for up to 24 hours and weighed on submission to laboratory. Crushing to nominal -4 mm. Sample is split to less than 2 kg through linear splitter and excess retained. Sample splits are weighed at a frequency of 1/20 and entered into the job results file. Pulverising is completed using LM2 mill to 90% passing -75 µm.</p> <p>QAQC protocols were followed, including the use of field duplicate samples to test the primary sampling step for the RC drilling.</p> <p>Sample sizes are considered appropriate with regard to the grain size of the sampled material.</p>
<b>Quality of assay data and laboratory tests</b>	<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>Drill samples were sent to the SGS Laboratory at Mwanza (Tanzania) for sample preparation, with the pulps sent to SGS Johannesburg for assaying. The following methodology is used by SGS for Total Graphitic Carbon (TGC) analyses.</p> <p>Total carbon is measured using LECO technique. The sample is combusted in the oxygen atmosphere and the IR used to measure the amount of CO2 produced. The calibration of the LECO instrument is done by using certified reference materials.</p> <p>For the analysis of Graphitic Carbon, a 0.3g sample is weighed and roasted at 550oC to remove any organic carbon. The sample is then heated with diluted hydrochloric acid to remove carbonates. After cooling the sample is filtered and the residue rinsed and dried at 75oC prior to analysis by the LECO instrument. The analyses by LECO are done by total combustion of sample in the oxygen atmosphere and using IR absorption from the resulting CO2 produced.</p> <p>Laboratory certificates were sent via email from the assay laboratory to Kibaran. The assay data was provided to CSA in the form of Microsoft XL files and assay laboratory certificates. The files were imported into Datamine.</p> <p>Standards are inserted at approximately a 10% frequency rate. In addition, field duplicates, laboratory duplicates are collectively inserted at a rate of 10% QAQC data analysis has been completed to industry standards.</p>
<b>Verification of sampling and assaying</b>	<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</li> </ul>	<p>Senior Kibaran geological personnel supervised the sampling, and alternative personnel verified the sampling locations. Two RC holes were twinned with diamond drill holes.</p> <p>Primary data are captured on paper in the field and then re-entered into spreadsheet format by the supervising geologist, to then be loaded into the company's database.</p>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	No adjustments are made to any assay data.
<b>Location of data points</b>	<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>Sample locations picked up by hand held GPS.</p> <p>UTM Zone 37 South</p> <p>No coordinate transformation was applied to the data.</p> <p>Downhole surveys collected by multi-shot camera.</p> <p>Topographic DTM was compiled from point data, collected from a series of traverses 50m spaced along strike.</p>
<b>Data spacing and distribution</b>	<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>	<p>Spacings are sufficient for estimation and reporting of a Mineral Resource.</p> <p>Drill hole locations are at a nominal 50 m (Y) by 25 m (X) spacings.</p> <p>Data spacing and distribution are sufficient to establish the degree of geological and grade continuity.</p> <p>No compositing has been applied to exploration data.</p>
<b>Orientation of data in relation to geological structure</b>	<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>Most holes have been orientated towards an azimuth so as to be able intersect the graphitic mineralisation in a perpendicular manner. Drill pad accessibility has required an adjustment to drill hole orientation to a few holes.</p> <p>RC holes were drilled at variable dips to define the geology and contacts of the deposit.</p> <p>Some holes were drilled vertical to test geological contact positions.</p>
<b>Sample security</b>	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	Samples were stored at the company's secure field camp prior to dispatch to the prep lab by contacted transport company, who maintained security of the samples.
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<p>Sampling procedures were independently reviewed by CSA Global as part of the preparation of the Mineral Resource estimate. Kibaran senior geological personnel reviewed sampling procedures on a regular basis.</p> <p>All drill hole results were collated and stored within a Datashed database. A random selection of assays from the database was cross referenced against the laboratory certificates.</p>

## Section 2 Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
<b>Mineral tenement and land tenure status</b>	<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>	<p>The tenements are 100% owned by Kibaran wholly owned subsidiary and are within granted and live prospecting licenses.</p> <p>The Mahenge project consists of PL 8204/2012</p>
<b>Exploration done by other parties</b>	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<p>Historical reports exist for the project area as the region was first recognised for graphite potential in 1914 and 1959.</p> <p>No recent information exists.</p>
<b>Geology</b>	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	The Mahenge Project is hosted within a quartz-feldspar-carbonate graphitic schist, part of a Neoproterozoic metasediment package, including marble and gneissic units. Two zones of graphitic schist have been mapped, named the East Zone and the West Zone.
<b>Drill hole Information</b>	<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>	Sample and drill hole coordinates are provided in market announcements dated 14th July and 21st July 2014.
<b>Data aggregation methods</b>	<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>	<p>No high-grade cuts were necessary.</p> <p>Aggregating was made for intervals that reported over 1% TGC (Total graphitic carbon). The purpose of this is to report intervals that may be significant to future metallurgical work.</p> <p>There is no implication about economic significance. Intervals reporting above 8% TGC are intended to highlight a significant higher grade component of graphite, there is no implication of economic significance.</p> <p>No equivalents were used.</p>

Criteria	JORC Code explanation	Commentary
<b>Relationship between mineralisation widths and intercept lengths</b>	<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>	<p>All RC holes have been orientated towards an azimuth so as to be able intersect the graphitic mineralisation orthogonally.</p> <p>Given dip variations are mapped down hole length are reported, true width not known from the exploration results.</p>
<b>Diagrams</b>	<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>	See main body of report.
<b>Balanced reporting</b>	<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>	Results are presented previous announcements, such as 21st July 2014.
<b>Other substantive exploration data</b>	<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>Field mapping was conducted early in the geological assessment of the license area to define the geological boundaries of the graphitic schist with other geological formations. Geological mapping of trenches cut across the strike of the host geological units provided important information used to compile the Mineral Resource estimate.</p> <p>Details of metallurgical testwork are detailed in the body of this report, and in Section 3 of this Table.</p>
<b>Further work</b>	<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>	Diamond drilling is planned to be completed for further metallurgical testwork.

### Section 3 Estimation and Reporting of Mineral Resources

Criteria	JORC Code explanation	Commentary
<b>Database integrity</b>	<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>	<p>Data used in the Mineral Resource estimate is sourced from a data base dump. Relevant tables from the data base are exported to MS Excel format and converted to csv format for import into CAE Studio 3 (Datamine) software for use in the Mineral Resource estimate.</p> <p>Validation of the data import include checks for overlapping intervals, missing survey data, missing assay data, missing lithological data, and missing collars. Every 10<sup>th</sup> assay value was cross checked against the laboratory certificates.</p>
<b>Site visits</b>	<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>	<p>The Competent Person (Mineral Resources) visited site in March 2014. The RC drilling rig was in operation and the CP was able to review drilling and sampling procedures. Outcrop showing mineralisation was examined and geologically assessed. Planned drill sites were examined and assessed with respect to strike and dip of the interpreted geological model.</p> <p>Trenches were examined and a re-enactment of sampling procedures was presented by the Kibaran geological staff. Sample storage facilities were inspected. There were no negative outcomes from any of the above items, and all samples and geological data were deemed fit for purpose, and could be included in the Mineral Resource estimate.</p>
<b>Geological interpretation</b>	<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>	<p>There is a reasonably high level of confidence in the geological interpretation, based upon lithological logging of diamond drill core, and RC chips. Trenches cut orthogonal to the strike of the geology demonstrated the geometry of the deposit, and clearly showed graphitic mineralisation. Deposit scale geological mapping provide a geological framework for the interpretation.</p> <p>Drill hole intercept logging and assay results (RC and diamond core), structural interpretations from drill core and geological logs of trenches have formed the basis for the geological interpretation. Assumptions were made on depth and strike extension of the graphitic schists, using drill hole and trench sample assays as anchor points at depth and at intervals along strike. Geological mapping also support the geological assumptions built into the Mineral Resource.</p> <p>No alternative interpretations were considered because the exposed geology in outcrop support the current interpretation.</p> <p>Graphitic mineralisation is hosted within a graphitic schist, which is mapped along it's strike continuity within the license area. Grade (total graphitic carbon, TGC) is assumed to be likewise continuous with the host rock unit. Metallurgical characteristics, principally flake size, has been observed to be of a consistent nature when observed in outcrop, trench exposure and diamond drill core at numerous locations within the license area.</p> <p>The interpretation of the mineralisation domains is based upon a pre-determined lower cut-off grade for TGC. A variation to the cut-off grade will affect the volume and average grade of the domains.</p>
<b>Dimensions</b>	<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>	The Epanko Mineral Resource estimate is approximately 1,750 m in strike, 290 m in plan width and reaches 350 m depth below surface.
<b>Estimation and</b>	<ul style="list-style-type: none"> <li>The nature and appropriateness of the estimation technique(s)</li> </ul>	CAE Studio 3 (Datamine) software was used for all geological modelling, block

Criteria	JORC Code explanation	Commentary
<b>modelling techniques</b>	<p><i>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></p> <ul style="list-style-type: none"> <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> <li><i>Discussion of basis for using or not using grade cutting or capping.</i></li> <li><i>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</i></li> </ul>	<p>modelling, grade interpolation, MRE classification and reporting. GeoAccess Professional and Snowden Supervisor were used for geostatistical analyses of data. The TGC interpretations were based upon a lower cut-off of 5% TGC and geological interpretations of mineralised outcrop and trenches, and logging of diamond drill core and RC chips. The Mineral Resource model consists of 14 zones of TGC mineralisation, with 12 zones in the Western Lode and 2 zones in the Eastern lode. Mineralisation domains were encapsulated by means of 3D wireframed envelopes. Domains were extrapolated along strike or down plunge to half a section spacing or if a barren hole cut the plunge extension before this limit. Top cuts were not used to constrain extreme grade values because the TGC grade distribution did not warrant their use. All samples were composited to 1m intervals, following a review of sample length distribution that most sample lengths were 1m. All drill hole data (RC and Diamond) and trench assays were utilised in the grade interpolation. A Quality Assurance study of the RC drilling coupled with a 3 hole due diligence and twin drilling programme confirmed the RC drill holes could be used with the diamond core samples as part of the grade interpolation. A statistical study of the trench assay data similarly demonstrated a similar population to the conventional drilling sample assay results.</p> <p>A block model with parent cell sizes 25m x 25m x 25m was constructed, compared to typical drill spacing of 50m x 50m.</p> <p>Grade estimation was by Ordinary Kriging (OK) with Inverse Distance Squared (IDS) estimation was concurrently run as a check estimate. A minimum of 4 and maximum of 16 composited samples were used in any one block estimate for the Eastern Zone, and – 25 samples for the Eastern Zone. A maximum of 5 composited samples per drill hole were used in any one block estimate. Cell Discretisation of 5 x 5 x 5 was used. Grade interpolation was run within the individual mineralisation domains, acting as hard boundaries.</p> <p>The current Mineral Resource was checked against the previously reported Mineral Resource and showed an increase in global tonnage with a slight decrease in TGC % grade, commensurate with geological interpretations following the 2014 drilling programme and received assay results.</p> <p>No depletion of the Mineral Resource due to mining activity was required due to no mining having occurred historically. The Mineral Resource was projected and truncated at the northern boundary of the license area.</p> <p>No by products were modelled.</p> <p>No selective mining units were assumed in this model.</p> <p>The grade model was validated by 1) creating slices of the model and comparing to drill holes on the same slice; 2) swath plots comparing average block grades with average sample grades on nominated easting, northing and RL slices; and 3) mean grades per domain for estimated blocks and flagged drill hole samples. No reconciliation data exists to test the model.</p>
<b>Moisture</b>	<ul style="list-style-type: none"> <li><i>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</i></li> </ul>	Tonnages are estimated on a dry basis.
<b>Cut-off parameters</b>	<ul style="list-style-type: none"> <li><i>The basis of the adopted cut-off grade(s) or quality parameters applied.</i></li> </ul>	A reporting cut-off grade of 8% TGC was previously used to report the Mineral Resource, and is in line with other reported Mineral Resources in East Africa.
<b>Mining factors or assumptions</b>	<ul style="list-style-type: none"> <li><i>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.</i></li> </ul>	<p>It is assumed the deposit, if mined, will be developed using open pit mining methods. No assumptions have been made to date regarding minimum mining widths or dilution.</p> <p>The largest mineralisation domains in plan view have an apparent width of over 80m which may result in less selective mining methods, as opposed to (for example) mining equipment that would need to be used to mine narrow veins in a gold mine.</p>
<b>Metallurgical factors or assumptions</b>	<ul style="list-style-type: none"> <li><i>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.</i></li> </ul>	<p>Flotation achieved greater than 96% recovery of graphitic carbon, with concentrate grading 93% fixed carbon. Flotation yielded large flake graphite (detailed results in Table 2):</p> <ul style="list-style-type: none"> <li>- 73.8% measured greater than 106 microns (µm)</li> <li>- 21.6% measured in the +300 micron (µm) fraction</li> </ul> <p>The recovered flake graphite is clean, with no visible natural mineral impurities. The graphite concentrate is amenable to standard metallurgical recovery processes. The recovered product is considered marketable, with a binding offtake and partnership agreement with a major European graphite trader announced on 23rd December 2013. As announced on 7th July 2014, metallurgical testwork has yielded results exceeding 99.9% carbon from a simple one step process after flotation, with extremely low levels of impurities also reported.</p> <p>Further testwork is planned in the coming months following a diamond core drilling programme. Petrographic analyses, further flake distribution and flotation testwork are all planned.</p>
<b>Environmental factors or assumptions</b>	<ul style="list-style-type: none"> <li><i>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.</i></li> </ul>	<p>No assumptions have been made to date regarding possible waste and process residue disposal options.</p> <p>The deposit is located within and surrounding the area of the Epanko village farming area, and Kibaran are holding on going discussions with local landholders and community groups to keep them well informed of the status and future planned directions of the project.</p> <p>Epanko is located in a sub-equatorial region of Tanzania and is subject to heavy seasonal rainfall, with rapid growth of vegetation in season. No major waterways are located within the project area.</p> <p>The Company has received approval for its environmental and social scoping study from the Tanzanian National Environmental Management Council (NEMC). The next stage of fieldwork has now commenced, in line with the Terms of Reference approved by NEMC.</p> <p>The Environmental and Social Impact Assessment (ESIA) work, required for the Mining</p>

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		Licence application is underway.
<b>Bulk density</b>	<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>	<p>Density was calculated from 20 grab samples taken from across the project region, with density measured by Pycnometer at a commercial laboratory. An average density value of 2.58t/m<sup>3</sup> was determined from the 20 samples, with individual values ranging from 2.49 to 2.69. These values are typical of the densities of the host rock types.</p>
<b>Classification</b>	<ul style="list-style-type: none"> <li>The basis for the classification of the Mineral Resources into varying confidence categories.</li> <li>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).</li> <li>Whether the result appropriately reflects the Competent Person's view of the deposit.</li> </ul>	<p>Classification of the Mineral Resource estimates was carried out taking into account the geological understanding of the deposit, QAQC of the samples, density data and drill hole spacing. Metallurgical results related to flake size and sample purity, as well as marketing agreements in place supported the classification, as per Clause 49 (JORC 2012).</p> <p>The Mineral Resource is classified as Indicated and Inferred, with geological evidence sufficient to assume geological and grade (and quality) continuity between points of observation where data and samples are gathered. The Inferred classification level was applied to the volumes where geological evidence is sufficient to imply but not verify geological, grade and quality continuity.</p> <p>All available data was assessed and the competent person's relative confidence in the data was used to assist in the classification of the Mineral Resource.</p> <p>The current classification assignment appropriately reflects the Competent Person's view of the deposit.</p>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>The results of any audits or reviews of Mineral Resource estimates.</li> </ul>	No audits or reviews of the current Mineral Resource estimate have been undertaken.
<b>Discussion of relative accuracy/confidence</b>	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</li> </ul>	<p>An inverse distance estimation algorithm was used in parallel with the ordinary Kriged interpolation, with results very similar to the Kriged results.</p> <p>No other estimation method or geostatistical analysis has been performed.</p> <p>The Mineral Resource is a local estimate, whereby the drill hole data was geologically domained above nominated TGC cut-off grades, resulting in fewer drill hole samples to interpolate the block model than the complete drill hole dataset, which would comprise a global estimate.</p> <p>Relevant tonnages and grade above nominated cut-off grades for TGC are provided in the introduction and body of this report. Tonnages were calculated by filtering all blocks above the cut-off grade and sub-setting the resultant data into bins by mineralisation domain. The volumes of all the collated blocks were multiplied by the dry density value to derive the tonnages. The graphite metal values (g) for each block were calculated by multiplying the TGC grades (%) by the block tonnage. The total sum of all metal for the deposit for the filtered blocks was divided by 100 to derive the reportable tonnages of graphite metal.</p> <p>No production data is available to reconcile results with.</p>

**About Kibaran Resources Limited:**

*Kibaran Resources Limited (ASX: KNL or “Kibaran”) is an exploration company with highly prospective graphite and nickel projects located in Tanzania.*

*The Company’s primary focus is on its 100%-owned Epanko deposit, located within the Mahenge Graphite Project. Epanko currently has an Inferred Mineral Resource Estimate of 22.7Mt, grading 9.8% TGC, for 2.2Mt of contained graphite, defined in accordance with the JORC Code. This initial estimate only covers 20% of the project area. Metallurgy has found Epanko graphite to be large flake and expandable in nature.*

*Kibaran also has rights to the Merelani-Arusha Graphite Project, located in the north-east of Tanzania. Merelani-Arusha is also considered to be highly prospective for commercial graphite.*

*Graphite is regarded as a critical material for future global industrial growth, destined for industrial and technology applications including nuclear reactors, lithium-ion battery manufacturing and a source of graphene.*

*In addition, the Kagera Nickel Project remains underexplored and is located along strike of the Kabanga nickel deposit, owned by Xstrata, which is considered to be the largest undeveloped, high grade nickel sulphide deposit in the world.*



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The information in this report that relates to Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Mr Andrew Spinks, who is a Member of The Australasian Institute of Mining and Metallurgy included in a list promulgated by the ASX from time to time. Andrew Spinks is a director of Kibaran Resources Limited and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the “Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves”. Andrew Spinks consents to the inclusion in the 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 and Mineral Resources is based on information compiled by Mr David Williams, who is a Member of The Australasian Institute of Mining and Metallurgy included in a list promulgated by the ASX from time to time. David Williams is employed by CSA Global Pty Ltd and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the “Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves”. David Williams consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.