Encouraging Graphite Test Work Results

- **Preliminary test work on near-surface, weathered graphitic schists achieves fine flake graphite concentrate grades of up to 96.4% and recoveries of 88% using a conventional grind and flotation concentration flowsheet.**
- **Three excavated and composited samples provided for test work graded 12.56%, 16.09% and 17.16% total carbon.**
- **Drilling program now being designed to delineate full extent of deposit, to identify areas of highest quality graphite and to provide diamond core for test work on fresh, unweathered material.**
- **Kambale is Ghana's only known graphite deposit and is located 6km west of the Upper West capital, Wa, with reliable grid power, water, good roads and commercial air services available.**
- **Ghana is an established and safe mining jurisdiction with a highly skilled workforce, a strong mining services sector and excellent infrastructure**

Castle Managing Director, Stephen Stone said **"We are pleased to have achieved commercially acceptable concentrate grades of up to 96.4% total carbon and good recovery rates of 88% on samples of weathered graphitic schist that graded up to 17.16% total carbon from Castle's Kambale project in the Upper West region of Ghana, West Africa."**

"With this encouragement we are now planning diamond core, RC and aircore drilling campaigns to obtain samples of fresh material for more definitive testing, to delineate the full extent of the Kambale deposit and to examine how the graphite quality varies and, in particular, where the highest quality material occurs."

"Nearly all traditional and emerging sectors of the graphite market are experiencing growth and looming supply constraints of the specific concentrate types they require so we are understandably very keen to evaluate Kambale as fast as possible."

Explorer and project incubator, Castle Minerals Limited (ASX: CDT) ("Castle" or the "Company"), advises that graphite flake characterisation test work on excavated trench samples of weathered graphitic schists at its Kambale graphite project in Ghana's Upper West region achieved commercially acceptable graphite concentrate grades of up to 96.4% total carbon (TC) on a combined final concentrate and TC recoveries of 88% using a conventional grind and concentration-by-flotation process route ("Project")(Photo 1, Figure 1 and Tables 1 and 2)(Appendix 1).

This work was undertaken to provide an early low-cost indication of the Project's ability to produce a commercial grade concentrate and, if so, to justify a drill-out of the deposit to better understand its size, identify any zones of high-quality graphite and to provide a case for a more extensive program of test work using samples of fresh, unweathered graphitic schist.

Fresh material, sourced from deeper within the deposit and at other locations along its extensive strike, may produce better results and possibly improved flake-size distribution.

Kambale is Ghana's only known graphite occurrence of any size and is one of just a few in the central region of West Africa. The reappraisal of the project is consistent with substantially improved market prices for a variety of graphite concentrates and products and generally a very positive supply-demand outlook for the commodity. These are underpinned by its increasing use not only in its more traditional applications but also in the burgeoning manufacture of lithium-ion batteries for use in electric vehicles, consumer electronics and electricity storage applications.

Sampling

Three trenches were excavated at locations selected on the basis of historical drilling that indicated graphitic schist could be easily and cost-effectively accessed. It was recognised from the outset that due to the depth constraints of the excavator this would recover purely weathered graphitic schist material, as opposed to fresh, unweathered material.

Samples from along each trench were composited and placed in three separate drums weighing 30kg each. These were sealed and transported to Ghana's capital, Accra, where a portion of each sample was set aside to remain in Ghana and the balance transported to Perth.

Upon arrival in Perth, all samples were examined and deemed suitable for test work at the Metallurgy Pty Ltd test work laboratory under the supervision of consultants, Independent Metallurgical Operations Pty Ltd ("IMO"), which has considerable experience in graphite metallurgy.

The three composited samples collected and transported from Ghana to Perth assayed 12.56%, 16.09% and 17.16% TC. Loss-on-Ignition values ("LOI") - were 16.83%, 18.22% and 20.41% TC respectively:

Table 1: Excavated composited sample details

	Weight (kg)	Total Carbon (TC%)	LOI (%)
Sample 1	**10.43**	**12.56**	**16.83**
Sample 2	**11.93**	**16.09**	**18.22**
Sample 3	**11.13**	**17.16**	**20.41**

These individual sample grades are well above the historically delineated Inferred Mineral Resource estimate of 14.4Mt at 7.2% TC for 1.03Mt contained graphite (JORC 2004)(Refer ASX release 24 July 2012)[1].

Test work

Test work comprised drying, initial stage crushing, blending and splitting into representative sub-samples which were then sent for TC analysis and determination of LOI.

(1) This information was prepared and first disclosed in 2012 under the JORC Code 2004. It has not been updated since to comply with the JORC Code 2012 on the basis that the information has not materially changed since it was last reported. Substantial work is required in order to bring the resource into compliance with JORC Code 2012. A timeline and budget for this work has not been established. Several factors not limited to geology, metallurgy, environment, heritage, licencing and permitting, commodity price and market conditions will singularly or in combination impact on decisions to undertake and complete this work.

The samples also underwent optical mineralogy using a Scanning Electron Microscopy via Diamantina Laboratories. This noted the presence of gangue silicate intergrowths (mainly kaolin) within the graphite flakes which were able to be broken down during the beneficiation process (refer below).

The three samples each underwent an initial stage grind followed by a rougher flotation stage and then a series of re-grind and cleaner flotation stages until a "saleable" concentrate target grade of ~94% had been achieved. Reagent consumptions and other performance measurements were also recorded throughout the process. During the initial stage grind, coarse flake was visually observed as shown in Photo 1.

Photo 1: Sample 2 initial stage grind oversize

Two of the three samples were very similar in mineralogy, head grade and flotation characteristics so, to reduce study time and costs, the flotation test on one of the two samples was ceased after the initial rougher flotation stage

The test work was not 'locked-cycle' in that tailings were not recycled from previous flotation stages which, had they been, would have most likely resulted in increased TC recoveries.

Due to the rise in industry exploration activity, test work product assaying times were longer than originally anticipated.

Several stages of grinding and flotation successfully separated the graphite from the other mineral phase(s) and removed the majority of the gangue. This resulted in a predominantly fine size flake graphite concentrate (<-75um) being produced.

This flake - gangue intergrowth mineralogy is not untypical of rocks sourced from a shallow depth where the primary silicates tend to break down. This may not be the case with material sourced from deeper, fresher zones and hence the need to conduct future test work on this material.

Next steps

Given the success of this phase of test work in producing a 'saleable' concentrate, and in line with IMO's recommendations, Castle is designing an RC and diamond core drilling program to better define the Kambale deposit's limits which geophysics and mapping indicate is likely to be considerably more extensive than presently delineated by drilling.

The drilling will provide important information on the variability of graphite grade and other attributes throughout the deposit and, importantly, provide quality diamond core samples for the IMO recommended test work on fresh unweathered material.

ADDITIONAL INFORMATION

Project background

The Kambale graphite deposit was identified in the 1960s by Russian geologists prospecting for manganese.

The Project is located 6km west of the Upper West region capital of Wa which is 400km north, via good sealed roads, of a major rail head at Kumasi. It is then approximately 240km by rail to the international port of Tema, 30km west of the capital Accra, which provides direct access to global export markets. An alternative international port at Sekondi - Takoradi is located approximately 230km west of Accra.

The Wa region has an excellent infrastructure comprising a commercial airport, reliable grid power, water and many other services.

Ghana is an established and safe mining jurisdiction with a well-trained and very capable minerals industry workforce. Its mining services and supply sector is strong and the national and local infrastructure is generally excellent with grid power, water, sealed roads, transport and commercial air services locally at Wa.

Licencing

The Project is located within a 137km^2 prospecting licence (PL10/47) held by Carlie Mining Limited, a wholly owned subsidiary of Castle, registered in Ghana. The Government of Ghana has the right to acquire a 10% free carried interest in all licenses in Ghana and is entitled to a 5% Gross Royalty on production. The Kambale licence is currently progressing through a renewal process.

Geology

The Russians undertook a program of trenching and drilled 25 holes to a maximum depth of 25m. A subsequent report noted "two main zones of graphitic schists averaging around 10% to 15% graphite within which there were higher grade zones and that the graphite is the flakey variety with fine crystals (usually less than 0.25mm)." *Report on the Geology and Minerals of the South Western Part of the Wa Field Sheet, Pobedash, I.D. 1991.*

The mineralisation consists of north-east trending, sub-parallel zones of meta-sediment hosted graphite, steeply dipping to the north west. Mineralisation is hosted within Lower Proterozoic Birimian (~2.2Ma) meta-sediments within the Wa-Lawra greenstone belt. The metasedimentary rocks, namely phyllites, and quartz - biotite schists generally trend north-easterly and dip between 50^o and 75^o to the south west.

The genesis of the flake graphite in Kambale is believed to be a result of high-grade metamorphism (amphibolite-granulite facies).

Initial evaluation by Castle

Encouraged by elevated graphite prices in 2012, Castle located several of the Russian prospecting trenches and undertook three consecutive phases of drilling comprising RAB (251 holes, 5,621m), aircore (89 holes, 2,808m) and reverse circulation (3 holes, 303m). Mapping noted occasional outcrops of manganese and graphitic schist as well as graphite in termite mounds.

Figure 1: Kambale Graphite Project Location

Along with a review of a wide-spaced Geological Survey of Ghana regional electromagnetic survey dataset, Castle outlined a roughly elongate, north-south orientated, ~10km-long region considered prospective for graphitic schist horizons, the host to multiple lenses of graphite mineralisation. The horizons can be up to 50m wide and are weathered (oxidised) to variable depths before they transition into fresh material.

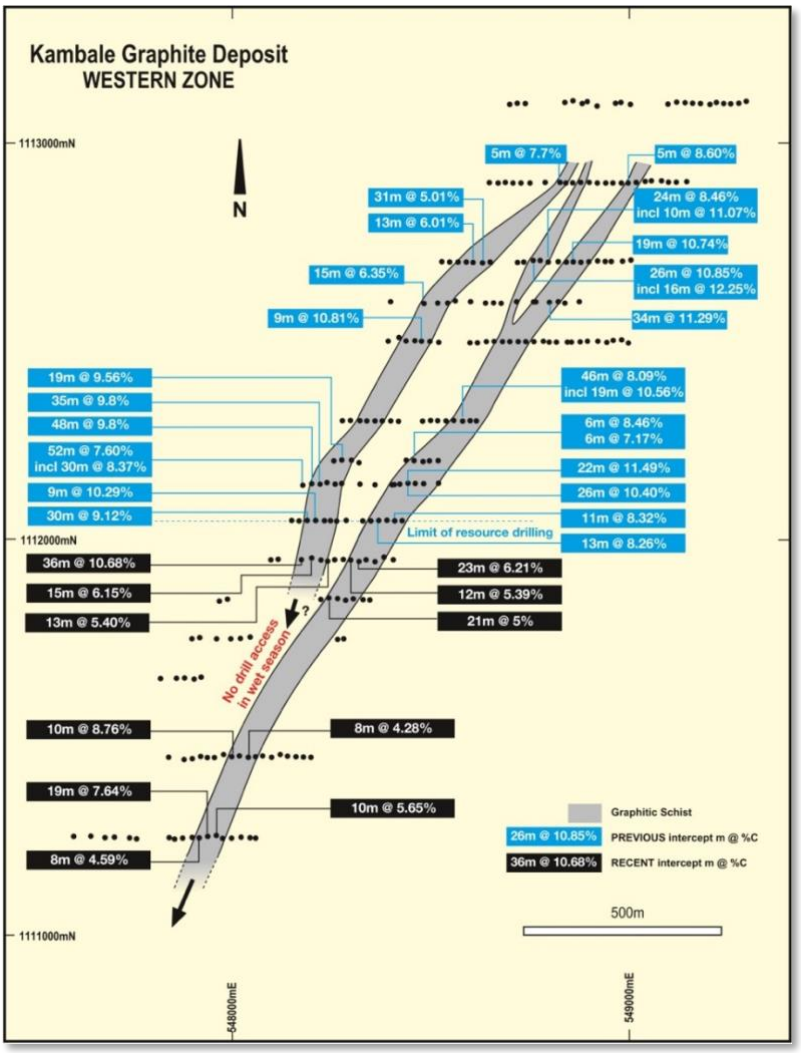
The geophysics data also indicated that the graphitic schist host could be traced for several additional kilometres north and south. This is yet to be confirmed by drilling.

Following the completion of the first two phases of drilling an independent Mineral Resource estimate defined a maiden Inferred Resource (JORC 2004) of 14.4Mt at 7.2%C (graphitic carbon) for 1.03Mt contained graphite, including 6.0Mt @ 8.6%TC for 0.52Mt contained graphite (JORC 2004)[(1)](refer ASX release 24 July 2012). This extended over a strike of 1.25km and to a maximum depth of 110m.

The third phase of drilling extended mineralisation to a total strike of 2km.

In 2012 Castle undertook a very limited program of test work on RC chips which returned mixed results. Thereafter, little work was undertaken until the more recent improvement in graphite prices prompted a re-evaluation of the project in early 2021.

Figure 2: Plan of Kambale Western Zone showing better graphite RC drilling intercepts (Total Carbon %)(refer to and extracted from ASX release 24 August 2012)



Graphite Market

The graphite market is diverse and specialised with each sector requiring graphite concentrates with specific specifications. Deposit type, size and geometry, flake size, shape, grade and purity / impurity type, production costs, proximity to specific markets and supply logistics, jurisdiction and many other factors all combine to determine the commercial viability of a particular deposit.

The current consensus is that the multi-sector global demand for graphite is supportive of a medium to long-term positive outlook for the mineral.

The reader is directed to numerous recent publications, conference proceedings, market research papers and corporate websites of companies engaged in graphite exploration, project development or production for informed commentary and analysis of the graphite market.

ESG

Castle management and its in-country representatives have spent over 12 years successfully operating in Ghana and in particular its Upper West region where they have established an excellent reputation for creating numerous employment and small business opportunities, community engagement, the promotion of youth and women's development, managing community expectations, maintaining the highest environmental operating standards whilst always respecting local culture and laws.

Table 2: Kambale Project Inferred Mineral Resource Estimate (5%C cut-off grade) (JORC 2004) (Refer ASX release 24 July 2012)[(1)]

Type	Tonnes (Mt)	Graphitic Carbon (%)	Contained Carbon (t)
Oxide Material	3.4	7.1	243,000
Fresh Material	11.0	7.2	793,000
Total	**14.5**	**7.2**	**1,036,000**

NB: Errors may occur due to rounding

The Mineral Resource estimate was made in July 2012 and complied with recommendations in the Australasian Code for Reporting of Mineral Resources and Ore Reserves (2004) by the Joint Ore Reserves Committee (JORC). Castle is not aware of any new information or data that materially affects the information included in the JORC 2004 Mineral Resource estimate and that all material assumptions and technical parameters underpinning the Mineral Resource estimate continue to apply.

The resource estimate released in July 2012 did not include any assumptions about mining, mining dilution, metallurgy or processing methods. No bulk density measurements were undertaken.

The Mineral Resource estimate is not compliant with Australian Code for Reporting of Exploration Results, Mineral Resource and Ore Reserves - 2012 edition. No additional technical work has been done since the Mineral Resource estimate was made. There is insufficient information available for the resource to be re-estimated to be compliant with the Australian Code for Reporting of Exploration Results, Mineral Resource and Ore Reserves - 2012 edition. It is possible that following additional technical work, and should a Competent Person be able to undertake a re-estimation of the Mineral Resource to comply with JORC Code 2012, that the Mineral Resource may materially change and/or reduce.

Authorised for release to ASX by the Board of Castle Minerals Limited:

Stephen Stone
Managing Director
stone@castleminerals.com
+61 (0)418 804 564

PREVIOUSLY REPORTED INFORMATION RELATING TO THIS RELEASE

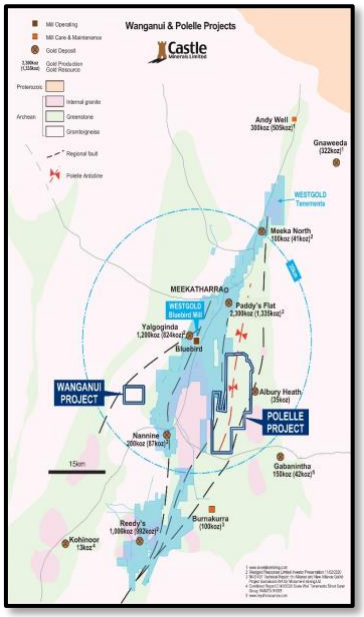
Additional details, where applicable, can be found in the releases referenced in this Release and/or in the following releases lodged by the Company with the ASX:

Previous releases to ASX related to Kambale Graphite Project

Date	ASX Release Headlines
05.08.21	Kambale Graphite Test Work Update
03.06.21	Graphite Test Work Underway
15.03.21	Castle to Reappraise Kambale Graphite Project, Ghana
17.09.12	Drilling doubles strike length of Kambale Graphite deposit
03.09.12	Metallurgical test work confirms commercial potential of Kambale graphite deposit
24.08.12	High-grade graphite intercepts extend Kambale deposit
24.07.12	Maiden resource confirms Kambale as one of the World's largest graphite deposits
06.07.12	Large high-grade graphite deposit confirmed at Kambale
21.03.12	Kambale Graphite Drilling - wide zones of graphite intersected on Wa project

About Castle Minerals Limited

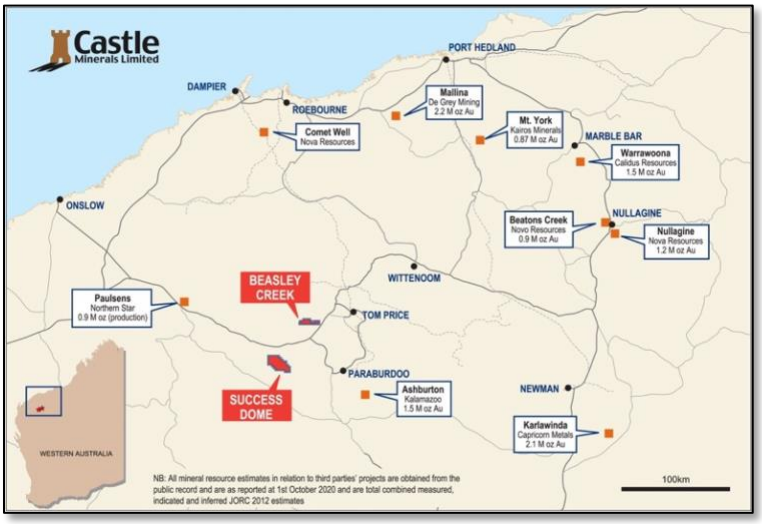
Castle Minerals is an Australian Securities Exchange (ASX: CDT) listed and Perth, Western Australia headquartered company with interests in several projects in Western Australia and Ghana that are prospective for gold, base metals, graphite and other minerals.



The Earaheedy Basin project comprises applications for seven exploration licence encompassing terrane prospective for base and precious metals in the Earaheedy and Yerrida basins base metals provinces. The project comprises the Withnell, Terra Rossa and Tableland sub-projects. The Withnell application is adjacent to the evolving Chinook-Magazine zinc-lead project of Rumble Resources Ltd (ASX: RTR). The four Terra Rossa applications are immediately east of the Thaduna copper deposit.

The **Beasley Creek** project lies on the northern flanks of the Rocklea Dome in the southern Pilbara. The strategy is to define orogenic-style, structurally controlled gold targets within the various Archean sequences. These lie immediately above and below the 16km east-west striking conglomerate horizons which had been the initial focus of exploration by Castle. The sheared granite - greenstone contact and the "Paulsen Gold Mine" type setting within the gabbro/dolerite units that intrude the Hardey Sandstone in the northern part of the project area, are of particular interest.

The **Success Dome** project is a recent application for an exploration licence in the Ashburton structural corridor and is located midway between the Paulsen's and Ashburton gold deposits. It is prospective for gold and base metals. More locally, Success Dome lies immediately adjacent to the southern margin of the Hamersley Basin and 40km southwest of Castle's Beasley Creek gold project. Major thrust faults and sub-parallel shear zones highlighted in the regional magnetic and gravity data, combined with additional detailed geophysics data from previous explorers, brought this available area to Castle's attention.



The **Polelle** project (E51/1843, 162.5km^2), 25km south of Meekatharra and 7km southeast of the operating Bluebird Mine, hosts a mainly obscured and minimally explored greenstone belt. The belt is comprised of a combination of prospective lithological units and major structural features including the Albury Heath shear which hosts the Albury Heath deposit (Inferred Resource of 528,000t at 2.09g/t Au for 35,479oz Au) immediately adjacent to the east boundary of Castle's licence. Aeromagnetic's have indicated that the southwest trending Albury Heath shear and a splay structure are traceable onto the Polelle project area for some 12km.

At the **Wanganui** project (E51/1703, 18.4km^2), 33km south-west of the active Meekatharra mining centre and 15km south-west of the operating Bluebird gold mine, the opportunity is to test for down-plunge and along strike extensions to the existing Main Lode North and South deposits, as well as for other similar targets. The Main Lode mineralisation, which can be intermittently traced for at least 1km, is one of at least four structurally related mineralised zones.

In **Ghana, West Africa**, Castle has a substantial and contiguous tenure position in the country's Upper West region. Ghana has a long history of gold exploration and mining with several world-class gold mining operations owned by Tier 1 mining companies. Castle's Ghana licence holdings encompass large tracts of highly prospective Birimian geological terrane, the host to many of West Africa's and Ghana's multi-million-ounce gold mines. The project area is also host to the **Kambale** graphite project.

Castle retains a **4% net smelter precious metal royalty** over the adjacent Julie West licence, a key component of Azumah Resources Limited's Wa Gold Project.

Cautionary Statement

All of Castle's projects in Australia are considered to be of grass roots or of relatively early stage exploration status. There has been insufficient exploration to define a Mineral Resource. No Competent Person has done sufficient work in accordance with JORC Code 2012 to conclusively determine or to estimate in what quantities gold or other minerals are present. It is possible that following further evaluation and/or exploration work that the confidence in the information used to identify areas of interest may be reduced when reported under JORC Code 2012.

The **Kambale graphite deposit** is at an early stage in its evaluation with little known about how extensive the deposit is or how the graphite quality varies within it. Work to date has been undertaken on an easily accessible area which may or may not be representative of the broader deposit once that is known.

To date, the area investigated at Kambale has produced from weathered samples a fine flake size concentrate of a potentially commercially acceptable grade at a reasonably high recovery. This type of concentrate is presently priced at the lower-end of price ranges as compared to prices for larger flake size concentrates. Definitive test work on fresh material and material from other parts of the deposit has yet to be undertaken.

Forward Looking Statement

Statements regarding Castle's plans, forecasts and projections with respect to its mineral properties and programs are forward-looking statements. There can be no assurance that Castle's plans for development of its mineral properties will proceed. There can be no assurance that Castle will be able to confirm the presence of Mineral Resources or Ore Reserves, that any mineralisation will prove to be economic or that a mine will be successfully developed on any of Castle's mineral properties. The performance of Castle may be influenced by a number of factors which are outside the control of the Company, its Directors, staff or contractors.

Competent Persons Statement

The scientific and technical information in this Report that relates to the geology of the deposits and exploration results is based on information compiled by **Mr Stephen Stone**, who is Managing Director of Castle Minerals Limited. Mr Stone is a Member of the Australian Institute of Mining and Metallurgy 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'. Mr Stone is the Qualified Person overseeing Castle's exploration projects and has reviewed and approved the disclosure of all scientific or technical information contained in this announcement that relates to the geology of the deposits and exploration.

The information in this Release that relates to metallurgical test work is based on information compiled and/or reviewed by **Mr Peter Adamini** who is a member of The Australasian Institute of Mining and Metallurgy. Mr Adamini is a full-time employee of Independent Metallurgical Operations Pty Ltd. Mr Adamini consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

KAMBALE SAMPLING AND TEST WORK RESULTS SEPTEMBER 2021

Appendix: JORC Code 2012 Edition – Table 1

Section 1: Sampling Techniques and Data

Criteria	JORC Code explanation	Certified Person Commentary
Sampling techniques	Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.	The metallurgical samples are collected from excavator dug trench samples undertaken as part of the 2021 programme.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Senior geological personnel supervised the excavator and trench sampling program and visually determined the sample was representative of the material excavated.
	Aspects of the determination of mineralisation that are Material to the Public Report.	
	In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3kg was pulverised to produce a 30g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.	The three trenching sites were selected on the basis of previous drilling identified zones where material could be accessed by excavator. Five samples of approximately 10kg each were collected from each trench. The individual samples were numbered and placed and sealed in an airtight drum and transported to Accra. Each sample bag was then scoop sampled and the extracted material combined and homogenised to provide a single representative sample of that particular trench weighing approximately 10kg. The samples were placed in a sealed drum and transported by air to Perth use in the planned metallurgical test work programme.
Drilling techniques	Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).	Not Applicable
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	Not Applicable
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	Not Applicable
	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.	Not Applicable
Logging	Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.	The material was geologically logged at site and the excavated trench mapped.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	Logging was qualitative. Photographs of the material and sampling at each site were taken .

	The total length and percentage of the relevant intersections logged.	Not Applicable
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	Not Applicable
	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	Not Applicable
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Not Applicable
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Not Applicable
	Measures taken to ensure that the sampling is representative of the insitu material collected, including for instance results for field duplicate/second-half sampling.	Sample preparation work was conducted by IMO Pty Ltd at its Metallurgy Pty Ld laboratory in Perth. This comprised sample drying and stage crushing to P_{100} 3.35mm. Samples were homogenised three times utilising an RSD and split into 2kg charges to test work.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	The sample size is considered representative for the material sampled.
Quality of assay data and laboratory tests	The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.	• Flake graphite concentrate analysis was conducted by Nagrom, Kelmscott, Western Australia and Intertek, Australia, consisting of Total Carbon (TC) and Loss on Ignition (LOI1000). • Analysis for TC by Nagrom were performed using a Lablift CS2000 carbon and sulphur analyser. The sample is weighed and placed in crucibles on the sample changer carousel, after which the sample is combusted at 1400°C in an oxygen stream. The process converts all carbon in the sample to carbon dioxide which is then measured in an infrared absorption cell. • Analysis for TC by Intertek were performed using the same procedure. • Analysis for LOI1000 by Nagrom and Intertek is the percentage weight loss that occurs when a dry graphite sample is heated in air at 1000°C until constant weight in a LECO TGA701 TGA instrument to determine LOI1000 values. • The LOI and TC methods used by Nagrom and Intertek are considered appropriate for analysing the purity of flake graphite concentrates The crushing, flotation and regrind process used by Metallurgy Pty Ltd is considered to be an appropriate industry standard method for liberation of graphite flakes.
	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.	No geophysical surveys undertaken.
	Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	No external reference material was included.

Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	Interpretation of the data was undertaken by a independent consultant.
	The use of twinned holes.	Not Applicable.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Location and sample description data was collected in the field by recording GPS waypoints and hand recording sample number.
	Discuss any adjustment to assay data.	No adjustments made.
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	A GPS receiver was used to record the location of the trenches. The accuracy of the receives is 3 - 5m which is appropriate for the purposes of the program.
	Specification of the grid system used.	WGS1984 Complex UTM Zone 30N
	Quality and adequacy of topographic control.	Sample locations were recorded by handheld GPS receivers.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	
	Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.	Data has not been used in mineral resource estimation.
	Whether sample compositing has been applied.	Sample composites were prepared in Accra (refer above) and in the metallurgical test work laboratory.
Orientation of data in relation to geological structure	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	Not Applicable
	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.	Not Applicable
Sample security	The measures taken to ensure sample security.	The program was overseen by the Company's Ghana director, in-country manager and consulting geologist. Samples were sealed in drums by a contract geological team employed by Castle. The drums were transported to Accra by the geologist. At Accra the geological team opened the drums to prepare composite samples under the supervision of the in-country consultant. 10kg – 15 kg subsamples were extracted from each drum.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	No audits have been completed.

Section 2: Reporting of Exploration Results

Criteria	JORC Code explanation	Certified Person Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The Kambale Project is located In the Upper West region of Ghana on PL10/47. The tenement is held in the name of Carlie Mining Limited ("Carlie"). Carlie is a Ghanaian registered company wholly owned subsidiary of Castle Minerals Limited. The Government of Ghana has the right to acquire a 10% free carried

		interest in all mineral licenses in Ghana and is entitled to a 5% Gross Royalty on production.
	The security of the tenure held at the time of reporting along with any known impediments to obtaining a license to operate in the area.	The licence is currently progressing through a renewal process and under the Ghana Mining Act remains secure whilst this is being finalised. There are no known impediments to this occurring.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	The Kambale Graphite deposit was initially discovered by geological surveys of the former USSR during the 1970's who were exploring for manganese. During 2012 Castle undertook several RAB and RC drilling programs that defined the current deposit and completed resource calculations.
Geology	Deposit type, geological setting and style of mineralisation.	Graphitic mineralisation at Kambale is hosted within Lower Proterozoic Birimian (~2.2Ma) meta-sediments within the Wa-Lawra greenstone belt. The mineralisation is hosted within north-east trending, sub-parallel zones of strongly sheared meta-sediments, steeply dipping to the north west.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: • easting and northing of the drill hole collar • elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar • dip and azimuth of the hole • down hole length and interception depth • hole length.	Not Applicable
	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.	Not Applicable
Data aggregation methods	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated	Not Applicable
	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.	Not Applicable
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	Not Applicable
Relation-ship between mineral-	These relationships are particularly important in the reporting of Exploration Results.	Not Applicable
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	Not Applicable

isation widths and intercept lengths	If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').	Not Applicable
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	Appropriate maps are provided in the body of the text.
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	Not Applicable
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	Metallurgical test work as described in this report
Further work	The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).	The company intends to undertake additional drilling to better define the resource and its extensions, and to obtain fresh drill core for further metallurgical test work
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Not applicable