

## Kambale Graphite RC Drilling Program Completed

- Expanded 52-hole, 5,353m RC drilling campaign completed.
- Graphitic schist intersections observed in several new zones is very encouraging for resource growth.
- Samples being prepared in Ghana, with assaying to be undertaken in Perth and first assay results expected in September.
- A diamond core drilling program will then be designed to recover sufficient material for metallurgical test work and flow sheet development.
- Diamond core drilling likely to commence late October / early-November after seasonal rains and local crop harvesting completed.
- Field team undertaking a broad reconnaissance of the Kambale region to evaluate for additional graphite occurrences.
- Market commentary continues to forecast a substantial graphite supply deficit over the next decade with increased demand coming mainly for fine flake graphite concentrates for use in the manufacture of EV and stationary batteries.

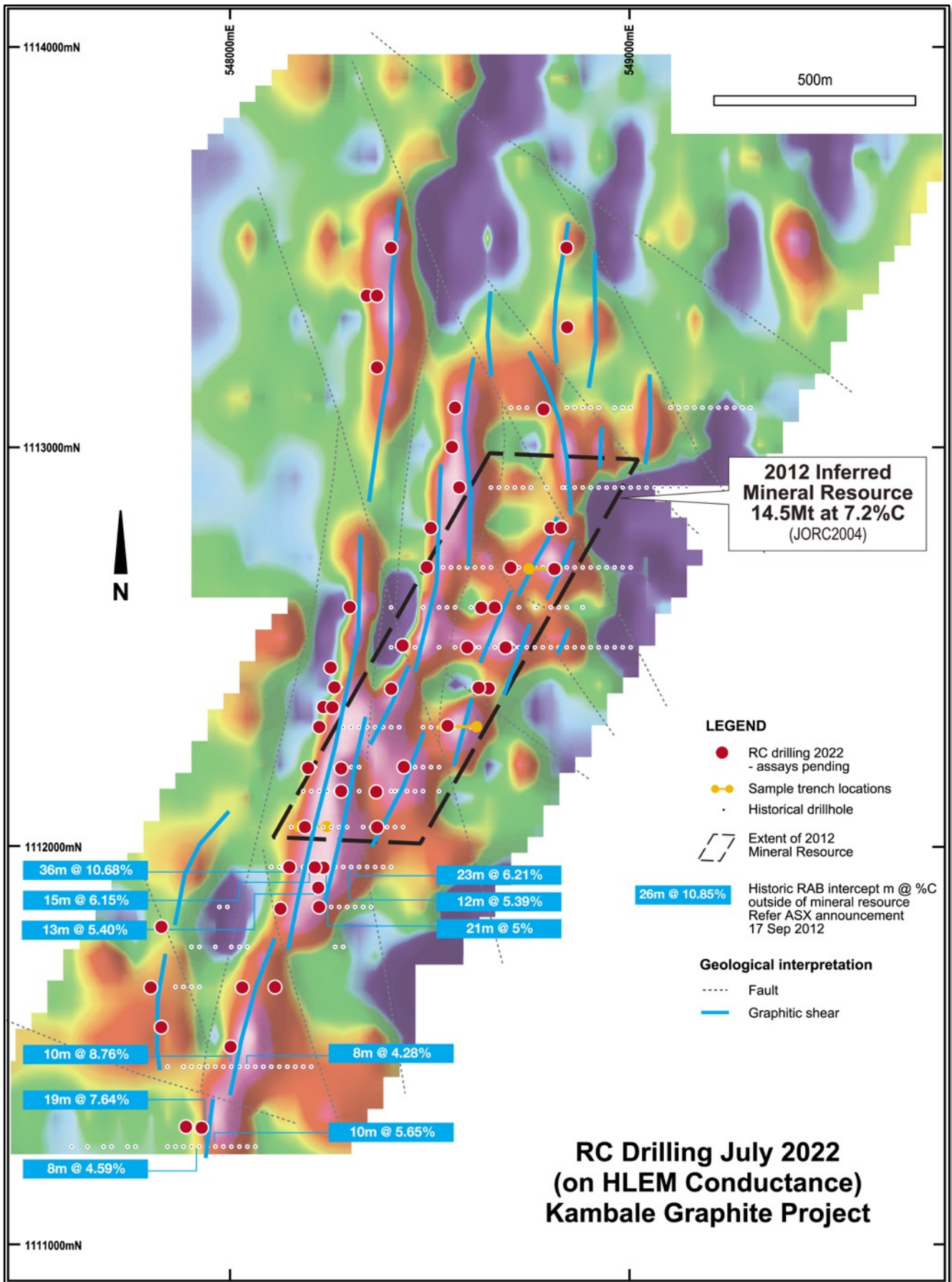
Castle Managing Director, Stephen Stone commented *“The 52-hole, 5,353m Kambale graphite project RC drilling program went extremely smoothly with six holes added to extend some new and excellent looking zones of graphitic schist encountered in several fringe areas.*

*We are expecting to receive assays in early September and once these are processed and evaluated we will design a diamond core drilling program to obtain samples for Phase 2 test work.*

*Everything we read about the graphite market forecasts a major supply deficit if the expected growth in electric vehicle manufacture is realised and the world continues its decarbonisation quest.”*



Plan showing 52 RC holes for 5,353m completed in August 2022 at Kambale





Junior explorer and project incubator, Castle Minerals Limited (ASX: CDT) (“Castle” or the “Company”), advises that it has completed 52 RC holes for 5,353m at its flagship Kambale graphite project, Ghana with six holes added to the program in response to excellent looking graphitic schist encountered in new areas and along trend from previously drilled zones.

The program was designed primarily to expand the footprint of the deposit and to better understand those areas outside of the known Inferred Resource of 14.5Mt at 7.2%C (graphitic carbon) for 1.04Mt contained graphite (JORC 2004)(refer Table 1).

An additional aim was to investigate the continuity of higher grade zones that will be the focus of HQ diamond core drilling in Q4 to obtain samples for Phase 2 test work on fresh, un-weathered material.

Most of the RC drill hole locations were guided by a recently completed ground HLEM geophysical survey that identified numerous conductive plates many of which correlate well with known areas of graphitic schist but with several having no drill holes nearby.

First assay results are expected to be received from Intertek laboratory, Perth, in September.

Numerous drill hole chip samples were also collected for petrological examination to better understand the mineralogy of the deposit and any implications this may have for processing and purification. Most of the intersected graphitic zones are within shears within a granodiorite host.

Proposed HQ diamond core drilling will commence as soon as possible and most likely in late October / early-November after the assay results and petrological work have been evaluated and subject to the cessation of seasonal rains and local crop harvesting.

The field team is also undertaking a broad reconnaissance of the Kambale region to evaluate for additional graphite occurrences.

Ghana-based Sahara Mining Services has been appointed to provide independent in-country QA/QC review and a JORC Exploration Target range estimate once the assay results become available.

Test work and preliminary flow sheet development is scheduled for later in 2022 and will be undertaken in Perth by IMO Pty Ltd. It is hoped that this work will also produce a suitable quantity of concentrate to enable a high-level market positioning assessment to be undertaken.

**1 metre interval RC drill samples being bagged prior to splitting and sampling for assaying.**

**Castle Managing Director, Stephen Stone, in-country director and Project Manager, Paul Amoako-Atta, and Senior Geologist, George Asamoah-Boadu, examining RC drill chip trays**



## Project background

The Kambale graphite deposit was identified in the 1960s by Russian geologists prospecting for manganese. They 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 flaky 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 which is host to the fine flake graphite. The Lower Proterozoic Birimian (~2.2Ma) meta sedimentary rocks, namely phyllites, and quartz - biotite schists, generally trend north-easterly and dip between 50° and 75° to the north west. The schists are hosted mainly in granodiorite.

The genesis of the flake graphite in Kambale is believed to be the result of high-grade metamorphism (amphibolite-granulite facies) which has converted trapped amorphous carbon into the characteristic fine crystalline layers.

Castle reviewed this historical work and a wide-spaced, regional-scale electromagnetic survey dataset inherited from previous licence holder, Newmont Limited. This work outlined a roughly elongate, north-south orientated, ~10km-long region considered prospective for graphitic schist horizons which may host multiple lenses of graphite mineralisation, similar to what is already outlined from drilling and trenching at Kambale. These lenses or horizons can vary in length and be up to 50m wide, creating substantial deposits of graphite.

Encouraged by firm graphite prices in 2012, Castle 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.

Following the completion of the first two phases of Castle’s drilling, an independent Mineral Resource estimate defined a maiden Inferred Resource (JORC 2004) of 14.5Mt at 7.2%C (graphitic carbon) for 1.03Mt contained graphite, including 6.0Mt @ 8.6%TC for 0.52Mt contained graphite (JORC 2004)(Table 1)(refer ASX release 24 July 2012). This extended over a strike of 1.25km and to a maximum depth of 110m. A third phase of drilling extended mineralisation to a total strike length of 2km.

In 2012 Castle undertook a very limited program of bench-scale test work on RC chips, which was not an ideal sample, and 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.

In September 2021 Castle reported that preliminary test work on sub-optimal near-surface, weathered graphitic schists yielded very encouraging fine flake graphite concentrate grades of up to 96.4% and recoveries of 88% using a conventional multiple grind and flotation concentration flowsheet. Three excavated and composited samples provided for the test work graded 12.56%, 16.09% and 17.16% total carbon.

In March 2022, a ground electromagnetic (HLEM) survey demonstrated a strong correlation between drill confirmed graphite mineralisation and zones of high conductivity. Several high conductivity zones extending well outside of the existing Inferred Resource boundary were also highlighted indicating the possibility of extensions of the known graphitic schists into sparsely or undrilled areas.

## Logistics

The Project is located 6km west of the Upper West region capital of Wa which is 400km north, via good sealed roads, of Kumasi. From Kumasi it is approximately 240km south east by rail or road 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 small 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.

## ESG

Castle management has spent over 14 years successfully operating in Ghana and in particular its Upper West region. The Company has established an excellent reputation for its pro-active commitment to community engagement, local employment and training, the promotion of youth and women's development, maintaining the highest environmental operating standards and overall operating ethically and sustainably whilst carefully managing community expectations.

Prior to embarking on any specific exploration program the Company's Ghanaian team conducts comprehensive discussions with all stakeholders to fully inform them as to the Company's activities and to identify sites of cultural, religious, social and economic sensitivity and to appropriately mitigate any matters of concern. Compensation for access and any disruption is paid at a minimum as per statutory guidelines.

## Licensing

The Project is located within a 137km<sup>2</sup> 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 as per the Ghana Mining Act. An offer of a licence renewal by Ghana MINCOM was received and the requested statutory consideration and annual ground rents paid. Receipt of the licence agreement from the Minister's office is now awaited.

## Graphite market

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

The current medium to long term outlook for the broader graphite concentrates market is one of escalating demand and a looming supply deficit driven in particular by its un-substitutable use in the fast-growing EV battery and stationary power storage sectors.

There is an increasing proportion of natural graphite being used in battery anode manufacture which also requires a fine flake graphite as the primary raw material. Hence, prices for fine flake graphite have shown a steady upward trend in the past twelve months.

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.

**Landowner and local farmer meeting with Castle Managing Director, Stephen Stone, to discuss the Kambale project and the RC drilling program.**





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

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

### MINERAL RESOURCE ESTIMATE

**Table 1: Kambale Project Inferred Mineral Resource Estimate (5%C cut-off grade) (JORC 2004)**

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

*Refer ASX release 24 July 2012. 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.

### PREVIOUSLY REPORTED INFORMATION RELATING TO THIS RELEASE

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

Headline	Date
More Graphite Zones at Kambale	11 July 2022
Drilling Campaign Launched at Kambale Graphite Project	14 June 2022
Kambale Graphite EM Survey Increases Size Expectations	31 March 2022
EM Survey Commences at Kambale Graphite Project Ghana	14 March 2022
Encouraging Graphite Test Work Results	21 September 2021
Kambale Graphite Test Work Update	5 August 2021
Graphite Test Work Underway	3 June 2021
Castle to Reappraise Kambale Graphite Project, Ghana	15 March 2021
Drilling Doubles Strike length of Kambale Graphite Deposit	17 September 2012

Headline	Date
Metallurgy Test Work Confirms Commercial Potential of Kambale Graphite Deposit	3 September 2012
High Grade Graphite intercepts Extend Kambale Deposit	24 August 2012
Maiden Resource Confirms Kambale as One of World's Largest Graphite Deposits	24 July 2012
Large High Grade Deposit Confirmed at Kambale	6 July 2012
Extensive Zones of High Grade Graphite Intersected	9 May 2012

### About Castle Minerals Limited

Castle Minerals Limited 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 battery metals (lithium and graphite), base metals and gold.

The **Earaheedy Basin** project encompasses terrane prospective for base and precious metals in the Earahedy and Yerrida basins base metals provinces. The project comprises the **Withnell**, **Terra Rossa** and **Tableland** sub-projects. The Withnell granted licence is adjacent to the evolving Chinook-Magazine zinc-lead project of Rumble Resources Ltd (ASX: RTR) and north of the Strickland Metals Limited (ASX: STK) Iroquois prospect. The four Terra Rossa licences (three granted, one application) are east of the Thaduna copper deposits.

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. Lithium anomalism is also being followed-up.

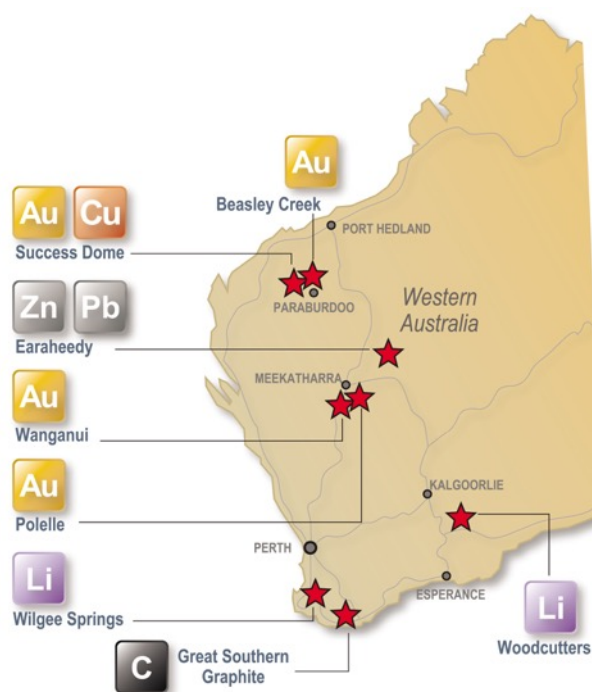
The **Success Dome** project lies in the Ashburton structural corridor and is located midway between the Paulsen's and Ashburton gold deposits. It is prospective for gold and base metals.

The **Polelle** project (E51/1843, 162.5km<sup>2</sup>), 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 immediately adjacent to the east boundary of Castle's licence.

At the **Wanganui** project (E51/1703, 18.4km<sup>2</sup>), 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 **Wilgee Springs** project (ELA70/5880, 120km<sup>2</sup>), along strike from and within the same metamorphic belt as the World-Class Greenbushes lithium mine, 25km to the south in Western Australia's South-Western region, provides an opportunity to explore using the latest geochemical and geophysical techniques for spodumene bearing pegmatites beneath a lateritic cover that has previously hampered exploration.

The **Woodcutters** project (ELA15/1847/1847, 242km<sup>2</sup>) is prospective for lithium bearing pegmatites, 25km southeast of the Bald Hill lithium mine in the Bald Hill pegmatite field region and 25km northwest of the Buldania lithium deposit.



The **Great Southern Graphite** project (EL70/5514/5963) comprises two granted licences encompassing the historical **Kendenup** graphite workings and the adjacent **Martagallup** graphite occurrences and one application (ELA70/6116) covering a graphite occurrence at **Mt. Barrow**.

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 open-ended **Kambale** graphite project for which test work on near-surface samples produced a 96.4% total carbon fine flake graphite concentrate.

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.

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. Drilling and preliminary test work has been undertaken on an easily accessible area which may or may not be representative of the broader deposit once that is known. A fine flake size concentrate of a potentially commercially acceptable grade at a reasonably high recovery was produced. Definitive test work on fresh material and material from other parts of the deposit has yet to be undertaken.

### 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.

### 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.

