

## **QUARTERLY ACTIVITIES REPORT**

For the period ended 31<sup>th</sup> December 2017

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### **About Crater Gold Mining Limited**

#### **(ASX CODE: CGN)**

*Crater Gold Mining Limited ("CGN" or the "Company") is focussed on exploration of its highly prospective Crater Mountain Gold Project in PNG, which includes two gold resources and evidence of potential copper-gold porphyry mineralisation. The Company is also exploring at the A2 Polymetallic and Golden Gate Graphite projects at Croydon in Queensland, Australia*

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**Russ Parker**  
**Managing Director**

### **Key Points**

#### **CRATER MOUNTAIN GOLD PROJECT, PNG**

- Drill rig purchased for Crater Mountain project
- Independent geologist report on Crater Mountain

#### **A2 POLYMETALLIC PROJECT, QLD**

- SGH sampling program

#### **GRAPHITE PROJECT, QLD**

- Graphite drilling at Golden Gate, Croydon

#### **CORPORATE**

- Company Secretary appointment
- Director resignation
- \$A4 Million Financing Facility executed

## **DEVELOPMENTS DURING THE QUARTER**

### **CRATER MOUNTAIN GOLD PROJECT, PNG**

#### **Nevera Gold Mine:**

During the quarter preparations for the restart of mining operations at the HGZ project continued in earnest. This has involved developing a revised mine plan for approval by the Chief Inspector of Mines ("CIM"), reissue of several operational permits which had lapsed during the period of care and maintenance, and human resources activities, including the re-hiring of past employees, plus the hiring of new employees, and the associated OH&S induction activities.

Recommencement of mining is awaiting the final site inspection by the CIM to assess the site for recommencement of underground operations. We are hoping to schedule that inspection in the next few weeks.

During the quarter the company continued metallurgical testing of samples taken from the 1960 RL and used this information to investigate modifications or changes to the processing equipment on site with a view to increasing the levels of recovery of gold. Modifications will be implemented and refined once ore is being produced from mining at the 1930 RL.

Upcoming exploration drilling will initially be undertaken from within the 1960 RL adits. Commencement of drilling has therefore also had to wait for the CIM approval to recommence underground operations.

#### **Purchase of drill rig for Crater Mountain Gold project:**

During the quarter the Company announced that, in line with its strategy to restart drilling at its flagship Crater Mountain Gold Project, it entered into an agreement to acquire a drill rig to facilitate recommencement of drilling in the near term.

The company purchased an Atlas Copco Diamec 252 drill rig ("**Diamec 252 Drill Rig**") together with additional ancillary equipment, including: (a) a 415 volt 45 kilowatt electric over hydraulic power pack; (b) a 1,000 volt 45 kilowatt electric over hydraulic power pack; (c) an air over 22 kilowatt hydraulic power pack; (d) Bob Cat mounting accessories; (e) and feed frames and positioners, skid mounted and (f) hydraulic motors and pumps.

The Diamec 252 Drill Rig is a very compact drill rig. It's estimated to be able to drill diamond core holes of up to approximately 300 metres in length. Due to its compact size it will fit in the two adits the company has developed at the Nevera Gold Mine and will initially be used to drill from within these adits laterally and at depth extensions of the High Grade Zone ("**HGZ**") mineralisation, including in the approximately 300 metres between the HGZ and Mixing Zone mineralisation areas that has not yet been drill-tested.

#### **Independent expert report - Crater Mountain project:**

Exploration consultant Dorian L. (Dusty) Nicol (Fellow AusIMM, Fellow SEG, RG, CPG) completed a five day site visit to Crater Mountain in September 2017. Mr. Nicol has extensive PNG experience, having worked there in the early 1980's including at Crater Mountain and other projects. He also has extensive experience on similar gold-copper deposits throughout the world.

- Mr. Nicol noted that "Crater Mountain is geologically a very fertile area with the potential to host one or more large gold orebodies. As a Geologist these types of projects really get you excited". His conclusion was that Crater Mountain has significant exploration potential related to several target concepts: High grade gold ore shoots in HGZ (High Grade Zone)
- Additional gold mineralisation targets proximal to HGZ - potentially larger tonnage and more continuous high grade gold mineralisation
- Potential bulk-mineable lower grade mineralisation within HGZ

- Porphyry-style gold-copper mineralisation

His recommendations fell into two basic categories: mine and near-mine (or short-term) exploration and district-scale exploration. The former is key in order to provide further ore for the expansion of the HGZ underground mining operation. For the latter, he outlined recommendations that can be started at relatively low cost with the objective of identifying drill targets for testing.

### **High Grade Ore Shoots at HGZ**

Mr. Nicol recommended that this exploration should be the highest priority in the short-term, with the objective of identifying additional high grade ore for the existing underground mining operation at the HGZ. High grade gold ore occurs in the HGZ as steeply dipping ore shoots at the intersection of N-S to NE-SW and E-W to NNE-SSW structures. Where these fractures intersect, steeply dipping shoots can form mineable pockets of high-grade (>20 g/t) gold ore.

### **Additional gold mineralisation similar in geologic setting to HGZ**

The geologic setting at Crater Mountain and the extent of gold anomalies in rock samples and stream sediments, as well as the presence of other zones of artisanal gold mining, suggest that there are likely additional zones of gold mineralisation similar to HGZ. According to Mr. Nicol, these would likely occur in a similar geologic setting exhibiting advanced argillic alteration, conceptually near the top of a porphyry copper system. Mr Nicol recommended that a methodical effort should be made to evaluate these additional zones and possibly identify new ones. He noted that at several of the world-class PNG gold deposits (including Porgera, Wafi and Lihir), the eventual major deposit was not the first one drilled or worked on. His opinion is that Crater Mountain is a large, geologically fertile area with the potential to host one or more large gold orebodies.

Additional gold targets at Crater Mountain in and around the HGZ may be expected to occur in similar in geologic setting to HGZ, and exploration needs to find those targets with larger tonnage and more continuous high grade gold mineralisation. Any improvements in tonnage and continuity with respect to the HGZ would be caused by larger mineralized structures and/or intersections of zones of greater fracture densities than occur at the HGZ. Mr Nicol commented that the amount of gold carried in relatively narrow structures at the HGZ and the associated widespread intense alteration, may be indicative of a potentially large and fertile gold mineralised system.

One such prospect review by Mr. Nicol and the team during his visit is the SAW (South Artisanal Working), about 400 meters SW of the HGZ portal. Artisanal miners extracted gold there along EW trending structures from which the Company took rock grab samples containing >20g/t gold. When resources allow, a crew will be sent to open hand contour trenches for several 10's of meters on either side of the workings along at least three benches at ten-meter elevation intervals

### **Potential bulk-mineable lower grade mineralisation within HGZ (and elsewhere)**

Mr Nicol stated in his review that despite the current focus on high grade shoots at HGZ, the possibility of a large tonnage, bulk-mineable, lower-grade gold deposit should not be discounted. He recommended that all altered / mineralised rocks observed, whether on surface or underground, should be channel-sampled and results should be interpreted with an eye for the possibility of a larger, albeit lower-grade but bulk-mineable, target. Something analogous to the Mixing Zone project (24MT @ 1g/t Au; 775,000 ounces as currently defined<sup>1</sup>) would be the target type, though the required target should be somewhat larger and higher grade.

### **Porphyry-style gold-copper mineralization**

Mr Nicol noted all targets discussed above represent, geologically, deposits that could be expected to form at or near the tops of porphyry copper deposits. Therefore, the occurrence of a porphyry copper-gold deposit (Ok Tedi or Wafi type) underneath currently recognised mineralisation remains an intriguing possibility. This target concept is supported by the presence of porphyry-style alteration in

drill core, for example the propylitic and phyllic alteration best developed in Drill Hole NEV020.

### **Golden Gate Graphite project, Qld**

- 2 hole drilling program completed
- Graphite mineralisation intersected in both holes
- Assays for graphite carbon and gold expected shortly

During the quarter the Company completed two diamond core drill holes as part of a confirmatory drilling program at the Gold Gate Graphite Project.

Graphite mineralisation, hosted in intensely hydrothermally altered granite, was intersected in both holes approximately at the depths previously documented from nearby historical drill holes. Half core samples of the mineralised intervals are now being assayed at the ALS-Chemex Laboratory in Brisbane where they will be assayed for graphite carbon and gold, with assay results due shortly

Samples will then be selected for petrological and mineralogical examination, designed to determine what elements are associated with the graphite and to determine the graphite grain size characteristics. Based on the results of these stages, composite samples will be selected for detailed metallurgical test work to determine graphite quality and recoveries. Holes were drilled to geotechnical standard using triple tube equipment.

### **Previous Graphite evaluation work**

Metallurgical testwork by previous explorers at Golden Gate has not been conclusive. Testwork that was previously undertaken by the Company on drill core and surface grab chip samples provided contrary results that indicated that some of the graphite samples may have been of amorphous quality. However, mineralogical examination of the drill core test samples suggested that the material may well have been flake graphite that had been pulverised by the action of the RC drilling bit used. Also, the surface grab chip samples were oxidised and not ideal for metallurgical testing.

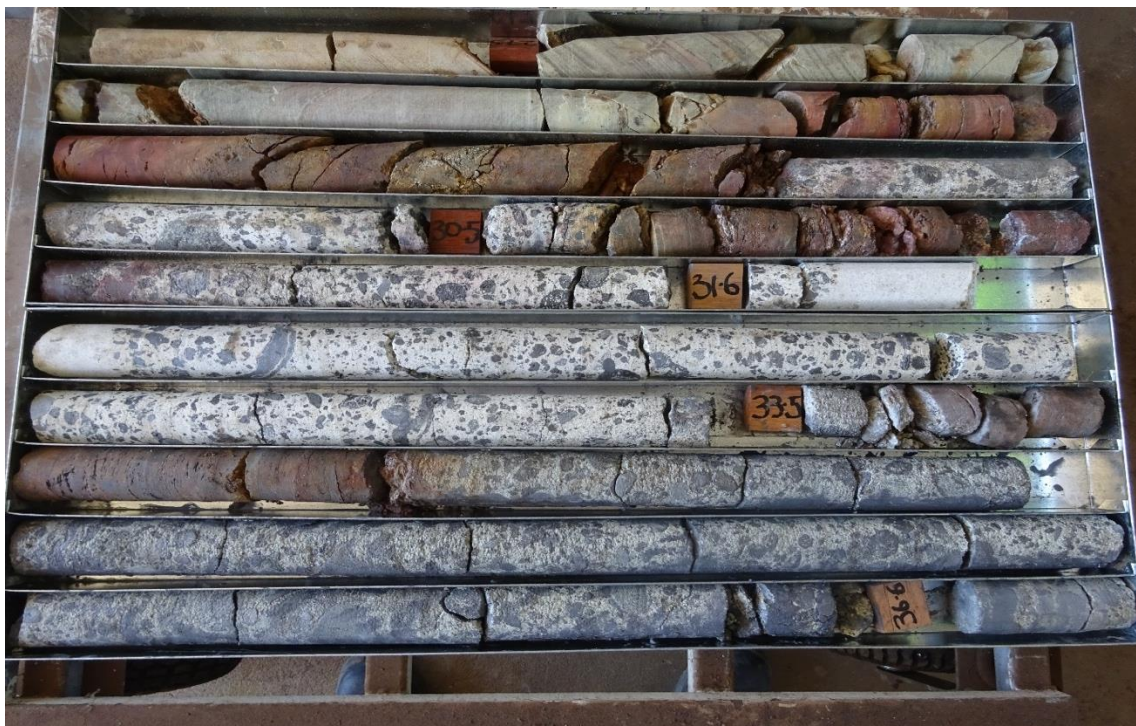


Figure 1- Graphite mineralisation from approximately 29.3m from the 1<sup>st</sup> drill hole.

## **A2 Polymetallic SGH sampling program completed**

- Collection of soil samples from the A2 Polymetallic Project completed.
- Samples dispatched to Actlabs Canada, for SGH technique assay
- Results due shortly

The Company completed a grid based soil sampling program at the A2 Polymetallic project during the quarter. The program involved the collection of B-Horizon soil samples from 361 sites together with 16 selected duplicates for a total of 377 samples.

The samples were dispatched to and received by Actlabs Canada. As previously announced (6<sup>th</sup> November 2017, "Exploration Programme Commenced- A2 Polymetallic Project"), the SGH sampling technique is a cost effective, deep penetrating geochemical technique which has been successful at other prospects world-wide in being able to detect geochemical anomalism for metals from depths of up to 900 metres.

The grid based sampling program covered the previously drilled mineralised holes at the A2 Polymetallic project site (a zone 1,250m long by 600m wide) and the entire aeromagnetic anomaly, most of which is currently untested. It is anticipated that the SGH technique will collaborate the previously intersected mineralisation identified by the drilling, and further identify extensions of the known mineralisation( refer to Figure 2)

Priority targets identified will be tested by drilling after the wet season in 2018.

## **SGH soil sampling**

Spatiotemporal Geochemical Hydrocarbon (SGH) is a cost effective, a deep penetrating geochemical technique that involves the analysis of shallow surface soil samples to detect various buried mineralised targets, including among them polymetallic targets. The analysis involves the testing for the geochemical signature of specific hydrocarbons, measured in parts per trillion, which are present in surficial residues from the decomposition of bacteria and microbes that feed on the target commodity during their life cycle. Specific classes of hydrocarbons are associated with the presence of certain minerals and are therefore useful in exploration work for delineating drilling targets.

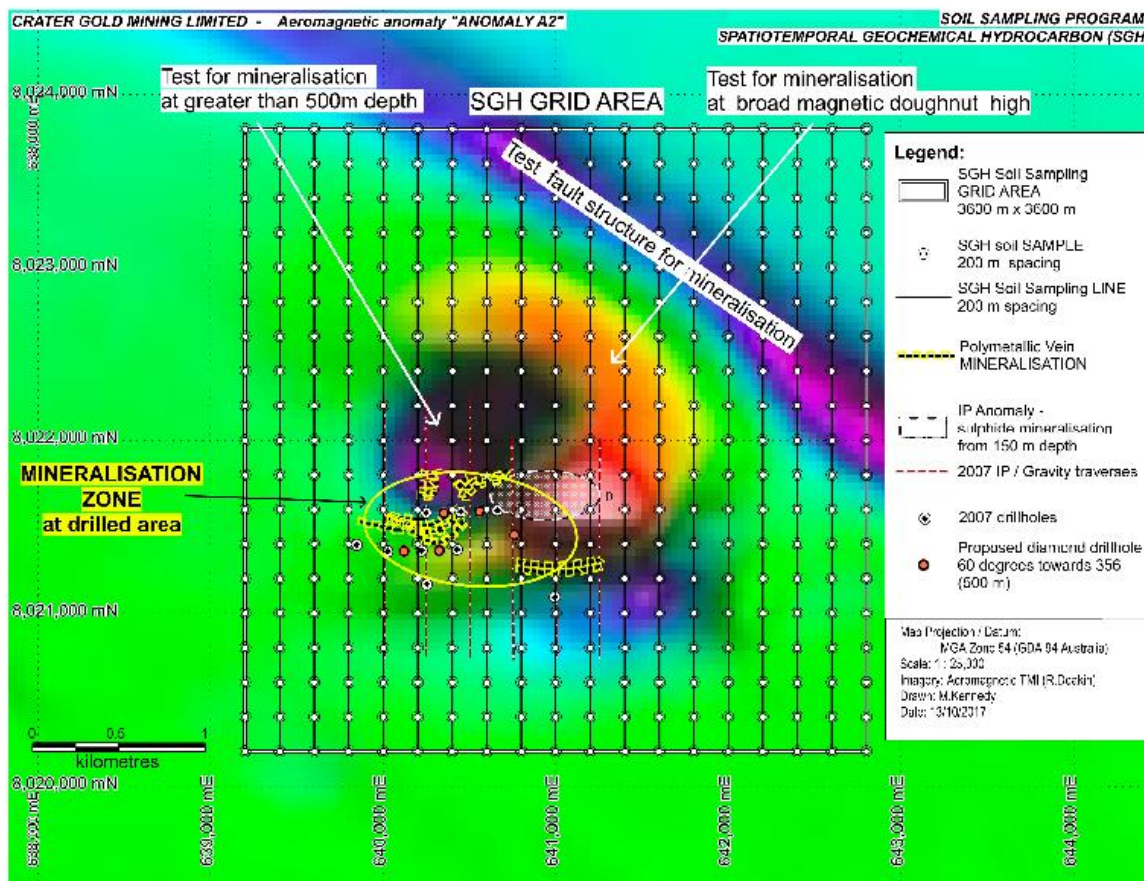


Figure 2: SGH soil grid covering and overlapping the A2 Anomaly and previous drilling.

3D-SGH interpretations can generate geochemical anomalies for ‘blind’ mineralisation for a range of commodities and can also predict depth to mineralisation for drill targeting. The best response appears to be for mineralization associated with high quantities of sulphides.

## **Corporate:**

### **\$A4M Finance Facility**

The Company announced that it secured a \$A4.0 million unsecured loan facility enabling it to continue to advance its flagship Crater Mountain gold project and it’s Queensland Polymetallic and Graphite projects.

The funding was made by way of an unsecured loan facility from the Company’s major shareholder, Freefire Technology Ltd (“Freefire”). The first \$A1 million in funding is available at the option of the Company, with the balance of \$A3 million requiring the consent of Freefire prior to a draw down request being executed.

### **Company Secretary Resignation/Appointment**

The Company announced that Ms Andrea Betti joined Crater Gold Mining Ltd as Company Secretary, effective Monday 9<sup>th</sup> October 2017.

Ms Betti is an accounting and corporate governance professional with over 20 years experience in accounting, corporate governance, finance and corporate banking. She has a Bachelor of Commerce, Graduate Diploma in Corporate Governance, Graduate Diploma in Applied Finance and Investment and a Masters of Business Administration. Ms Betti has acted as Chief Financial Officer and Company

Secretary for companies in the private and public sector, as well as senior executive roles in the banking and finance industry.

Mr Heath Roberts has resigned as Company Secretary, effective 9<sup>th</sup> October 2017, and the Company thanks him for his many years of service and dedication.

### **Resignation of Director**

Mr Richard Johnson resigned as a Director of the company on the 6<sup>th</sup> of December 2017

## **COMPETENT PERSONS STATEMENT**

### *Presentation of technical data and Competent Persons review*

Resource estimates contained in this report were previously announced in the Company's ASX news releases of:

- 21-12-11 Initial Resource Estimate (This information was prepared and first disclosed under the JORC Code 2004. It has not been updated since to comply with the JORC Code 2012). The Company confirms that it is not aware of any new information or data that materially affects the information included in that announcement, and that all material assumptions and technical parameters underpinning the estimates continue to apply and have not materially changed.
- 14-11-16 titled 'Maiden JORC Gold Resource at HGZ Project, Crater Mountain, PNG'.

Such resource estimates are subject to the relevant assumptions, qualifications and procedures described in the relevant ASX news releases.

To date, the Company has only announced estimates of Inferred Mineral Resources. Nothing in this report or prior announcements by the Company constitutes presentation of Mineral Reserves. As such, economic analysis cannot be applied based on the data contained.

The information contained in this report relating to exploration results and mineral resource estimates is based on and fairly represents information and supporting documentation prepared by Mr. Anthony Williamson or prepared by appropriately qualified external technical experts and reviewed by him. Mr Williamson is a Member of the Australian Institute of Geoscientists and has the relevant experience in relation to the mineralisation being reported upon 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. Williamson consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

The Company has an 'exploration target' of 'multi-million ounces' for the epithermal gold resources at the Nevera Prospect at Crater Mountain Project. A targeting exercise was carried out by Mining Associates ("MA") for the Nevera prospect using a simple 10x10x10m block model informed by 5m bench channel samples (not including rock chips) and a Nearest Neighbour ("NN") estimation technique with a limited search range. The NN method was chosen so that no averaging of the grades occurred although there is a risk that estimates can be over selective. As the initial target is highly selective narrow underground mining, this is an acceptable approach. An initial examination of the composited data shows two natural breaks in Au grade distribution. one at about 0.4g/tAu and a second at about 10g/tAu. MA suggests that these represent low grade and high mineralisation events respectively. The block model was informed using a 100m spherical search so that no assumption was made of the direction and trend of mineralisation. Informing samples consisted of 2,766 5m downhole composites and 1,479 5m bench samples. No domain selection was used, but no blocks above the topography were estimated. Volume covered is about 700m long, 700m wide and 100m to 350m deep (variable with topography). This is certainly suitable for both selective mining and a bulk open pit. A bulk density of 2.5 t/m<sup>3</sup> was used for reporting, the grade tonnage plot using cut-off grades from 1 to 20g/t Au was reported. The target for Nevera prospect bulk open pit mining using a cut-off grade 1g/t Au is 24Mt @ 2.7g/t Au for 2Moz of contained Au. The target for the HGZ only for selective underground mining using a cut-off grade 10g/t is 60-100koz @ 13-30g/t. The exploration targets are conceptual in nature as there has been insufficient exploration to define them as Mineral Resources. It is uncertain if further

exploration will result in the determination of a Mineral Resource under the JORC Code 2012. The exploration targets are not being reported as part of any Mineral Resource.

No new information or data

This report contains references to exploration results and Mineral Resource estimates, all of which have been cross-referenced to previous announcements made by the Company. The Company confirms that it is not aware of any new information or data that materially affects the information included in the relevant announcements and in the case of estimates of Mineral Resources that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed.

The information contained in this report that relates to Exploration Results at the Golden Gate Graphite and the A2 Polymetallic Projects near Croydon, Queensland, is based on information compiled by Ken Chapple, who is an Associate Member of The Australasian Institute of Mining and Metallurgy and a Fellow of the Australian Institute of Geoscientists. Mr Chapple has been assisting the Company as a technical consultant relating to his areas of expertise. Mr Chapple has sufficient experience relevant to the style of mineralisation and type of deposit involved to qualify as a Competent Person as defined in the 2012 JORC Code. Mr Chapple is an independent principal geological consultant with KCICD Pty Ltd and consents to the inclusion in the report of matters based on his information in the form and context in which it appears.

Forward Looking Statements

This Announcement may contain forward looking statements. The words 'anticipate', 'believe', 'expect', 'project', 'forecast', 'estimate', 'likely', 'intend', 'should', 'could', 'may', 'target', 'plan' and other similar expressions are intended to identify forward- looking statements. Indications of, and guidance on, future earnings and financial position and performance are also forward- looking statements. Forward-looking statements are subject to risk factors associated with the Company's business, many of which are beyond the control of the Company. It is believed that the expectations reflected in these statements are reasonable but they may be affected by a variety of variables and changes in underlying assumptions which could cause actual results or trends to differ materially from those expressed or implied in such statements. There can be no assurance that actual outcomes will not differ materially from these statements. You should not place undue reliance on forward-looking statements and neither Crater Gold Mining Limited nor any of its directors, employees, servants, advisers or agents assume any obligation to update such information.

**Schedule of Crater Gold Mining Limited tenements:**

Particulars	Project Name	Registered Holder	% Owned	Status	Expiry	Area (Km <sup>2</sup> )
EPM 8795	Croydon	CGN	100	Granted	6/09/2018	19.2
EPM 13775	Wallabadah	CGN	100	Granted	5/03/2020	32
EPM 16002	Foote Creek	CGN	100	Granted	30/01/2018	28.8
EPM 18616	Black Mountain	CGN	100	Granted	18/06/2018	96
EL 1115	Crater Mountain	Anomaly Ltd <sup>1</sup>	100	Renewal lodged	25/09/2016	41
EL 2203	Ubaigubi	Anomaly Ltd <sup>1</sup>	100	Renewal lodged	10/09/2017	88
EL 2249	Crater Mountain	Anomaly Ltd <sup>1</sup>	100	Renewal lodged	10/11/2017	10
EL 2318	South Crater	Anomaly Ltd <sup>1</sup>	100	Renewal lodged	10/09/2017	20
EL 2334	Crater Mountain	Anomaly Ltd <sup>1</sup>	100	Renewal lodged	21/05/2017	68
EL 2335	Crater Mountain	Anomaly Ltd <sup>1</sup>	100	Renewal lodged	22/05/2017	78
ML 510	Crater Mountain	Anomaly Ltd <sup>1</sup>	100	Granted	4/11/2019	1.58

<sup>1</sup> Anomaly Limited is CGN's 100% owned PNG subsidiary.