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Crater Gold Mining Limited ABN 75 067 519 779

# QUARTERLY ACTIVITIES REPORT

#### For the period ended 30 June 2013

# About Crater Gold Mining (ASX CODE: CGN)

Crater Gold Mining ("CGN" or "the Company") is focussed on development and exploration at the potentially world class Crater Mountain gold project in PNG, at Fergusson Island in PNG and at the A2 polymetallic and Golden Gate graphite projects at Croydon in Queensland.

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

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#### **KEY POINTS**

#### Crater Mountain - Papua New Guinea

- High Grade Zone Exploration Adit regulatory approval received
- High Grade Zone-Preparatory earthworks undertaken
- Airborne geophysical survey completed, interpretation nearly complete

#### Fergusson Island - Papua New Guinea

• Fieldwork recommenced at EL 1972 Gameta

#### **Corporate**

• Rights Issue raised \$6,985,004.80

#### SUBSEQUENT TO END OF QUARTER

#### Fergusson Island - Papua New Guinea

• EL 2180 (Wapolu) granted

#### <u>Golden Gate Graphite Project – Queensland</u>

• EPMA18616, which covers the Golden Gate graphite deposit and at least 5 significant gold exploration targets, has been granted to Global Resources. CGN has an agreement with Global to acquire the lease.

#### **Corporate**

• Name change to "Crater Gold Mining Limited"

# CRATER MOUNTAIN, PNG (CGN earned 90% and moving to 100%)

#### Key developments during the Quarter

- High Grade Zone Exploration Adit regulatory approval received
- High Grade Zone- Preparatory earthworks undertaken
- Airborne geophysical survey completed -interpretation nearly complete

#### High Grade Zone

Whilst the previous focus of the Company to identify and test the large-scale potential in the north of the Nevera prospect has been successful, continuing this program is expensive requiring on-going drilling, metallurgical and engineering assessment. Given the current highly dilutive effect of ongoing fund raising, your Company has suspended expensive exploration and is assessing the feasibility of generating a fast-track small scale development in the High Grade Zone to fund ongoing exploration of the projects large scale potential

Based on artisanal miners' production using very simple mining and gravity separation methods, assays from historic surface trench and bench sampling, and the Company's limited drill results, the High Grade Zone has been assessed as an area where development of small scale, high grade underground mining could be undertaken. It is estimated that there could be gold in the fractures and ore shoots which are known to extend down at least 100m from surface and potentially extend many hundreds of metres deeper to the underlying magmatic source identified during the nearby drilling of the Mixing and Porphyry Zones



# **HIGH GRADE ZONE**

#### Figure 1 - High Grade Zone

During the Quarter the Company obtained a Variation of Approved Programme of exploration license EL 1115 to permit it to evaluate grade and tonnage of the HGZ by conducting limited underground exploration. The Company believes that the most effective way to test the potential of the HGZ is by driving an adit into the zone

Surface earthworks for an adit with crosscuts through the HGZ from a portal in the gully at the base of the mineralised spur have been commenced. Underground drill stations will be established in the

cross-cuts to fan out numerous small-diameter diamond drill holes 60 to 100m long, horizontally and inclined upwards and downwards, using a compressed air operated underground drill rig. By carrying out detailed geological mapping and sampling (in particular plotting the mineralised fractures and identifying the distinctive zoned alteration which surrounds the steeply plunging high grade ore shoots), it will be possible to derive a clear 3-dimensional picture of the mineralisation and assess its potential tonnage and grade to a depth of 60m to 70m below gully level and up to 30m above gully level. Quarrying of benches on the spur will also expose the outcropping structures for detailed mapping and sampling to tie in with the underground results.

Based on the high grade high-sulphidation vertical ore shoot nature of the mineralisation, current indications are that the main potential of the High Grade Zone lies below the artisanal workings in the base of the mineralised spur, extending to an unknown depth but possibly many hundreds of metres. The mineralisation comprises several sets of gold-mineralised sub-vertical narrow rubbly fractures with associated near-vertical bonanza-grade ore shoots up to one metre wide at their intersections, within a steeply-plunging elongate envelope at least 40m wide and more than 60m long related to a high sulphidation epithermal gold mineralising event sourced in the deep intrusions underlying the northern end of the Nevera Prospect.

The Company believes that the Crater Mountain project has both the potential for near term low cost production as well as large scale, bulk tonnage for long term development. With financial markets still displaying volatility for the junior end the Company will focus on generating cash flow from the High Grade Zone.

#### Regional Airborne Geophysical Survey Interpretation Almost Complete

A detailed helicopter-borne magnetics and radiometrics survey over the major part of the Company's Crater Mountain tenements was completed at the beginning of the Quarter, after numerous delays caused principally by bad weather. The survey was designed to cover the majority of the Company's Crater Mountain tenements, excluding only the very high, steep east-west ridgeline of the Crater Mountain main range (resulting in a large northern block and smaller southern block). North-south lines were flown 100 metres apart with east-west tie lines I km apart, and the helicopter maintained a nominal terrain separation of 50 metre above tree-tops. Rain, low cloud base and terrain difficulties resulted in the long duration of the survey, with more stand-by days than productive flying days.

The contracting company Thompson Aviation Limited of Australia spent the following month "levelling" the raw data for terrain clearance before handing them onto the Company's geophysical consultant GeoExplore Pty Ltd of Perth for analysis using a variety of diverse software programs which were in the process of being interpreted and amalgamated into a finished product, with preliminary results starting to come in at the end of the Quarter. Results will be overlaid by the Company on Digital Terrain Models and assessed in detail over the next several months; they are expected to provide new structural and lithological insights as well as highlight individual magnetics- and radiometrics-related targets .The detail will be examined in GIS by overlaying geo-referenced drainage and terrain layers as well as the Company's geological data.

#### Acquisition of 100% of project

CGN has contracted with Triple Plate Junction Plc and Celtic Minerals Ltd to acquire their respective 8% and 2% interests in the Project. This will bring CGN's ownership of the Project to 100%. The acquisition of the interests is subject to the consent of the PNG Minister for Mines.

The Crater Mountain project has for some time represented CGN's flagship project and the movement to full ownership will facilitate ease of administering and running the Project, as well as making the Project more attractive to potential joint venture partners should that be considered as an option.

#### **Background**

The Company's flagship Crater Mountain gold project is located in the Eastern Highlands of Papua New Guinea ("PNG") near the eastern end of the New Guinea Orogen geological province, which lies along the northern edge of the Australian continental plate and occupies the mountainous backbone of the island of New Guinea. The New Guinea Orogen hosts a number of world-class copper-gold deposits including the world's largest copper-gold mine at Grasberg in Indonesia's Papua Province, and Ok Tedi, Frieda River, Yandera and Wafi-Golpu in Papua New Guinea, as well as the Porgera and Hidden Valley gold deposits in Papua New Guinea. All of these deposits share a common geological mode of formation in large mineralised hydrothermal systems underlying variably eroded volcanic complexes from mid-Miocene to recent in age.

The Crater Mountain tenement block comprises andesitic volcanic rocks of the ancestral Pliocene Crater Mountain stratovolcano which grew to an immense size before undergoing caldron collapse on a ring fracture system 20 kilometres in diameter, perhaps 4 million years ago. This event was followed by a long period of volcanic quiescence and deep erosion which continued until about 1 million years ago when renewed andesitic - dacitic volcanic activity formed a string of smaller parasite cones principally within and east of the northeast quadrant of the collapse structure. The volcanic rocks were intruded through and deposited on a rugged basement of Chim Formation Mesozoic marine shales, with intermittent reactivation of north-easterly-, northerly- and north-westerly-trending deep crustal fractures in the basement controlling the geometry of the sub-volcanic magmatic and hydrothermal activity and mineralisation.

Exploration by the Company at Crater Mountain is focused principally at the northern end of the large Nevera Prospect, one of four prospects identified within the Company's licences since exploration commenced in the region in the 1970s (see prospects on simplified geology map below in Figure 1).



Figure 2 - Prospect map - Crater Mountain

The results of mechanical benching and diamond drilling conducted by the Company around the end of a prominent ridge at the northern end of the Nevera Prospect indicate that the Prospect lies within a typical large and complex New Guinea Orogen mineralised hydrothermal system, with excellent potential to host a number of deposits within its bounds. Mineralisation is associated with sub-volcanic magmatic activity related to the locally-prominent Nevera Igneous Complex, and four different types of mineralisation have been identified:

- The relatively shallow "Main Zone" or "Mixing Zone" lying 150m to 300m below the northern end of the Prospect ridge, which comprises low-sulphidation epithermal carbonate-base metal sulphide-gold mixing zone mineralisation in excess of 600m long by 250m wide by 150m thick (with similarities to the Hidden Valley deposit in the nearby Morobe Goldfield).
- Note: A JORC compliant inferred resource of 24Mt at 1.0 g/t Au using a 0.5 g/t Au cut-off for 790,000 ounces has been defined in the Main Zone; this includes 9.4Mt at 1.46 g/t using a 1.0 g/t Au cut-off for 440,000 ozs (this inferred resource is open laterally and perhaps to depth, following down a possible steep plunge to the northeast)
- The "High Grade Zone" ("HGZ") high grade high-sulphidation epithermal quartz-pyrite-gold mineralisation, extending from surface to several hundred metres depth (possibly in excess of 500m); local artisanal miners produced an estimated 15,000 ounces from a small area of shallow workings (maximum 50m depth) in the base of a steep mineralised spur from 2005 to 2012
- A large porphyry copper-gold system identified by drilling at +800m depth below the northern end of the ridge ("Golpu" type from Wafi-Golpu in the Morobe Goldfield)
- A possible lead-zinc related quartz-carbonate-base metal sulphide-gold stockwork vein and breccia feeder zone (for the Mixing Zone mineralisation) at the margin of the deep intrusion (+600m) which is causing intense baking and fracturing of the sub-volcanic basement shales underlying the Mixing Zone (Porgera "Waruwari" type).



MINERALISATION AT THE NORTHERN END OF NEVERA PROSPECT

Figure 3 - Nevera Prospect

# FERGUSSON ISLAND PROJECT, PNG

#### Key developments during the Quarter

#### **Resumption of fieldwork at Fergusson Island**

Late in the Quarter a senior field assistant was sent to EL 1972 on Fergusson Island in Papua New Guinea, to rebuild the camp at Gameta and begin reopening overgrown tracks and trenches and relocate historic drill sites, in preparation for geological work to identify targets for sampling required to carry out floatation and Albion Process testing

#### Subsequent to end of quarter

#### EL 2180 (Wapolu) granted

A new exploration license, EL 2180, has now been granted to Crater Gold Mining Limited and its wholly owned PNG subsidiary Anomaly Ltd (Anomaly), as a result of Anomaly's re-application for the area containing the Wapolu gold deposit on Fergusson Island.

The Wapolu deposit lies within the exploration license, EL 2180, which was lodged following expiry of the original tenement, EL 1025, in early 2012 (Figure 4)

#### **Background**

The Gameta gold deposit and the Wapolu gold deposit, located in close proximity to each other on the north-coast of Fergusson Island in Papua New Guinea, comprise the Company's Fergusson Island Project, upon which over \$15M has been spent since1996.



Figure 4 – Location of Gameta and Wapolu deposits, Fergusson Island, PNG

The Fergusson Island Project comprises two drilled gold deposits, Gameta and Wapolu. CGN previously announced its first resource estimate reported in accordance with the JORC Code for the Gameta deposit, an Inferred Resource of 5.1 million tonnes at 1.8 g/t for 295,000 ounces of gold at a cut-off grade of 1.0 g/t gold. Further drilling down-dip can be expected to increase the size of the resource.

The Gameta gold deposit lies close to the coastline in the north east of Fergusson Island in the D'Entrecasteaux Islands of Papua New Guinea's Milne Bay Province and is located about 30 kilometres east of the Wapolu gold deposit.

The D'Entrecasteaux Islands comprise a number of metamorphic core complexes which form prominent tectonic domes of probable Cretaceous age. The domes consist of a core of high-grade crystalline rocks surrounded by a layered outer zone, between 1 and 2 km thick, composed of amphibolite facies gneisses. This layered zone is separated from over-thrust sub-seafloor oceanic mantle by a decollement (Detachment Fault Zone); overlaying ultramafic rocks of the obducted block are largely serpentinised dunites, harzburgites, and pyroxenites. Thick colluvial deposits of landslide and slump debris mantle the margins of the domes and are prominent at Wapolu.

Mineralisation at Wapolu and Gameta is hosted in the Detachment Fault Zone and within the footwall dioritic gneiss and appears to be both fracture and dyke-related, and sulphide hosted. The overlying ultramafic plate, though strongly dyked, altered and fractured, carries only patchy and sporadic low-grade gold mineralisation.

The two properties have been explored for gold since the early 1980's during which time a total of 296 RC and air core holes (11,646m) and 97 diamond holes (6,401m) have been drilled at Wapolu (EL 2180) and 195 RC holes (10,179m) and 33 diamond holes (4,181m) have been drilled at Gameta (EL 1972). Much of the data from this drilling has not been subject to QA/QC and does not measure up to JORC reporting standards.

On the strength of a feasibility study completed in 1993 on the Wapolu Deposit by Macmin/ Union Resources based on their 1992 resource model a mining operation was initiated at Wapolu in December 1995. The operation was based on an estimated mining reserve of 2.0 Mt at 2.4 g/t Au and was planned to process 500,000 tonnes per annum for a 4 year mine life. Following crushing and grinding the process plant combined CIP (200,000 tpa) and NaCN vat leach (300,000 tpa) with overall gold recoveries predicted to be approximately 80% (resulting in roughly 30,000 ounces per year gold recovery). Mining was abandoned in 1997 due to poor performance arising from lower processing throughput than budgeted (including unforseen bouldery and clayey feed problems), and lower feed head grade and lower gold recovery than was predicted.

## CROYDON GOLD & GRAPHITE PROJECT – QUEENSLAND, AUSTRALIA

#### Subsequent to end of quarter

The Company announced in July last year that it had entered into an agreement with Global Resources Corporation Limited ("Global") to acquire from Global an Exploration Permit for Minerals in the Croydon District in North Queensland. At the time the relevant Exploration Permit was under application by Global. The exploration Permit has now been granted to Global by the Queensland Department of Natural Resources and Mines. The appropriate steps are now being taken for the Exploration Permit to be transferred to CGN, less a 6% interest to be reserved to Global.

#### **Background**

A potentially large graphite deposit is located within EPM 8795 and EPMA 18616 at the Golden Gate Project at Croydon, North Queensland.

In July 2004, the Company, when named Gold Aura Ltd, undertook preliminary assessment of a large graphite deposit located at the Golden Gate gold mine. The graphite deposit was systematically drilled as part of a regional gold exploration program in the late 1980's by Central Coast Exploration (CCE). Three vertical reverse circulation holes were also drilled by the Company between 2005 and 2007 that confirmed that a thick graphite zone was present at Golden Gate.

The Golden Gate graphite project is located partially on Exploration Permit Mining EPM8795 and continues onto the contiguous EPMA18616. The graphite deposit has undergone electromagnetic geophysical surveys and systematic drilling during the late 1980's and limited drilling and testwork by CGN in 2004. Typical RC drill intercepts from CCE drilling in 1989 are presented in Table 1.

#### SUMMARY OF RC DRILLING RESULTS AT GOLDEN GATE NOVEMBER 1989 (CCE Report #192/90)

Hole # GGRC 2001	Co-ordinates		End of Hole	Graphite Intercept	Width (m)	Average %C @ 2% cut-off
	24201N	9550E	50m	44 - 50	6	3.5
<b>GGRC 2002</b>	23998N	9584E	44m	-	-	-
<b>GGRC 2003</b>	24000N	9701E	91m	48 - 78	30	7.3
<b>GGRC 2004</b>	23859N	9642E	76m	32 - 74	42	6.6
<b>GGRC 2005</b>	24101N	9773E	97m	37 - 93	56	6.0
<b>GGRC 2006</b>	24200N	9799E	93m	60 - 89	29	4.5
<b>GGRC 2007</b>	24200N	9699E	60m	3 - 56	53	5.8
<b>GGRC 2008</b>	24300N	9649E	66m		~	-
<b>GGRC 2009</b>	24399N	9699E	66m	-	-	-
<b>GGRC 2010</b>	24699N	9799E	30m	3 - 7	4	3.6
<b>GGRC 2011</b>	24901N	9700E	66m	-	-	-
<b>GGRC 2012</b>	25000N	9949E	48m	2 - 40	38	4.8
<b>GGRC 2013</b>	24999N	10049E	66m	-	-	-
<b>GGRC 2014</b>	25200N	10050E	80m	55 - 78	23	4.8/3.3
<b>GGRC 2015</b>	23799N	9324E	48m	5 - 24	19	3.8
<b>GGRC 2016</b>	25384N	9898E	48m	17 - 24	7	2.5
<b>GGRC 2017</b>	25599N	10099E	48m	7 - 28	21	3.8
<b>GGRC 2018</b>	24395N	10312E	66m	-	-	-
<b>GGRC 2019</b>	26600N	10400E	60m	-	-	-

Table 1 - Drill intercepts reported by Central Coast Exploration from drilling in 1989 at Golden Gate

The deposit has a north-westerly strike and shallow easterly dip, which is similar to graphitic mineralisation identified at Jolly Tar, approximately 10 kilometres to the southeast. Hydrothermal or magmatic graphite deposits are an important source of graphite with examples being mined in Sri Lanka and Sweden that produce both flake and amorphous graphite.

Since the Golden Gate graphite deposit is reasonably well defined, the Company's exploration program will focus on collection of fresh drill core samples for modern metallurgical testwork. Past testwork done on RC chip samples and near surface grab samples with contradictory results.

The area is well served by infrastructure with the port of Karumba on the Gulf of Carpentaria that services the Century Pb-Zn mine being within 150 kilometres from regional centre of Croydon.



Figure 5 - Location Map of EPM18616 showing the Golden Gate graphite deposit as well as principal gold exploration targets.

#### Gold Exploration Targets on EPM18616

The geology of the Croydon Goldfield consists of the mid Proterozoic Esmeralda Granite and the comagmatic Croydon Volcanics while the gold mineralisation is much younger at 300Ma (similar in age to the Mt Leyshon or Kidston gold deposits). Approximately 80% of past production has come from granite-hosted veins known as granite lodes up to 9m thick and controlled by shallow NE dipping reverse faults. Lodes in volcanic host rocks had a maximum thickness of 4.5m in sub-vertical faults.

Gold mineralisation occurs in planar quartz veins, stockworks and breccias. The granite lodes are also spatially associated with graphite and base metals with the most significant graphite development known to date being at the Golden Gate mine.

The acquisition of EPM18616 will consolidate the length of the Golden Gate lode within tenements held by CGN. Five priority exploration targets along the trend of the Golden Gate lode have been identified. These areas were selected as having potential for gold mineralisation under shallow cover. Future exploration will involve ground geophysics (IP & EM surveys) across target trends followed by drilling.

### <u>CORPORATE</u>

#### Key developments during the Quarter

#### Cancellation of Options

18.5 million options issued under the Company's Employee Share Option Plan to directors and contractors of the Company were cancelled by agreement between the Company and the various option holders effective 5 June 2013.

#### <u>Rights Issue – results</u>

The Company's fully underwritten 18 for 10 renounceable rights issue closed on 22 April 2013. The Company raised \$ \$6,985,004.80 under the rights issue.

#### Share Consolidation - cancellation

During the quarter the Company also announced its intention following completion of the rights issue and subject to Shareholder approval, to undertake a share consolidation.

The Company's board of directors subsequently decided to withdraw the share consolidation resolution (which proposed a 1 for 100 share consolidation) from consideration at the Company's general meeting held on 9 July 2013 .The Board believed that in the current volatile gold market a consolidation was not in the best interests of the Company. As Resolutions 3 - 10 (which provided for the issue of incentive options to various persons) were framed on a post-consolidation basis it was not appropriate that they be considered and the Board decided to withdraw them as well.

#### Subsequent to end of Quarter

#### Change of the Company's name to "Crater Gold Mining Limited".

At the Company's general meeting held on the 9th July the sole resolution "That the name of the Company be changed to "Crater Gold Mining Limited" with effect from the date on which the Australian Securities & Investments Commission records the change of name in its records." was put to shareholders and was passed. The name change subsequently took effect on 15 July 2013.

#### Investment in Kenai Resources

Kenai Resources Ltd (TSXV: KAI "Kenai") and Serabi Gold plc (AIM:SRB and TSX:SBI "Serabi") announced that they entered into an agreement, subject to the approval of shareholders of Kenai and other conditions precedent, whereby Serabi would acquire all the issued and outstanding common shares of Kenai ("Kenai Shares") by way of a Plan of Arrangement ("the Arrangement").

On 5 July 2013 Kenai approved the transaction. As a result CGN will receive 17.1 million Serabi shares.

# **COMPETENT PERSON STATEMENTS**

The information contained in this report that relates to exploration results at Croydon, Queensland is based on information compiled by J. V. McCarthy, MAusIMM, consulting Geologist. Mr McCarthy is a Member of The Australasian Institute of Mining and Metallurgy and has the relevant experience in relation to the mineralisation being reported upon to qualify as a Competent Person as defined in the 2004 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr McCarthy consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

The information contained in this report relating to exploration results and mineral resources at Crater Mountain, PNG is based on information compiled by Mr P Macnab, Non-Executive Director of Gold Anomaly Limited. Mr Macnab is a Fellow 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 2004 Edition of the Australiasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Macnab 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 contained in this report relating to exploration results and mineral resources at Fergusson Island, PNG is based on information compiled by Mr P Macnab, Non Executive Director of Gold Anomaly Limited. Mr Macnab is a Fellow 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 2004 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Macnab consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.