



# Market Release

## Newcrest Mining

15 February 2016



**NEWCREST**  
MINING LIMITED

## **Wafi-Golpu – Update on Stage One Feasibility and Stage Two Prefeasibility Studies**

The Newcrest Board has reviewed the Wafi-Golpu Stage One Feasibility Study and Stage Two Prefeasibility Study prepared by the Wafi-Golpu Joint Venture project team. As planned, the feasibility study for Stage One has completed sufficient work to justify access declines which are required to undertake more drilling of the orebody at depth to inform the next stage of the feasibility study.

The Joint Venture Partners continue to work with the Papua New Guinea Government to finalise a Pre Mine Development Agreement (PMDA) in advance of Board consideration as to whether or not to proceed with access declines.

### **Key Findings of the Feasibility Study<sup>1</sup> work to date:**

- The Golpu porphyry is a world-class copper-gold resource due to its large scale, high grade, long-life with low operating costs and embedded upside options
- The Wafi-Golpu Stage One Feasibility Study investigated the establishment of two block caves (block cave one (BC1) and a deeper block cave two (BC2)), along with associated infrastructure; processing plant, roads, electricity, water management and port facilities
- Financial metrics<sup>2</sup> of Stage One:
  - NPV of USD ~1.1bn (real)
  - IRR of ~15% (real)
  - Payback of ~10 years from commencement of earthworks for access declines
- Block caving was evaluated and confirmed as the preferred mining method for the following reasons:
  - Orebody geometry and indicative geotechnical conditions are suited to block caving
  - It is a high productivity, low operating cost mining method
  - The higher value material located at depth can be brought into production earlier
- Stage One is an initial development of a high quality resource which, by targeting higher-grade sections of the deposit and optimising the capital expenditure profile through a staged development approach, maximises early production and thereby free cash flow
- The Stage Two Prefeasibility Study focused on expanding and optimising BC2 and the establishment of a third block cave (BC3)

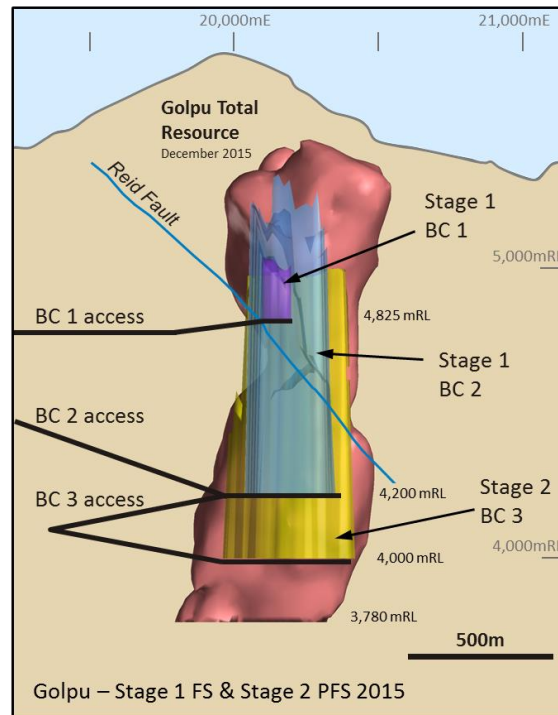
<sup>1</sup> Findings are subject to the further feasibility work described below under the heading 'Further work on the Stage One Feasibility Study' to be undertaken.

<sup>2</sup> As timing for finalisation of the PMDA is uncertain, valuation outcomes are shown at the time of commencement of earthworks for the access declines. Costs are based on 2016 real estimates. Neither the costs nor cost escalation impacts prior to commencement of earthworks are included in the valuation outcomes. All numbers are based on information derived from work undertaken for the Stage One Feasibility Study and are subject to completion of the further feasibility study work, investment approval, receipt of all necessary permits and approvals and market and operating conditions and engineering. Refer to the statement on last page in relation to forward looking statements. All figures are at 100% ownership unless otherwise stated.

- The updated Ore Reserve as at 31 December 2015, based on the Stage Two Prefeasibility Study, is estimated to contain 5.5 million ounces of gold and 2.4 million tonnes of copper (Newcrest's 50% interest)

## Wafi-Golpu Stage One Feasibility Study

Stage One of the development of Golpu focuses on the development of two block caves, BC 1 and BC 2, and all associated infrastructure required to achieve first production.



**Schematic cross section of Golpu porphyry<sup>3</sup>**

The staged development approach has multiple common-path benefits, including:

- de-risking the project
- affording operational optionality and flexibility
- achieving a shorter timeline to achieving commercial production (targeting BC1 first)
- scalability, which affords appropriate business and operational flexibility
- the ability to respond and adapt to changing market conditions
- alignment to existing regional infrastructure

The copper grade of the Golpu concentrate is estimated to be of good quality and with an estimated range of 28-32% while mining high grade porphyry in the first ~10 years. Gold-in-concentrate grade is estimated to be 5-15g/t.<sup>4</sup>

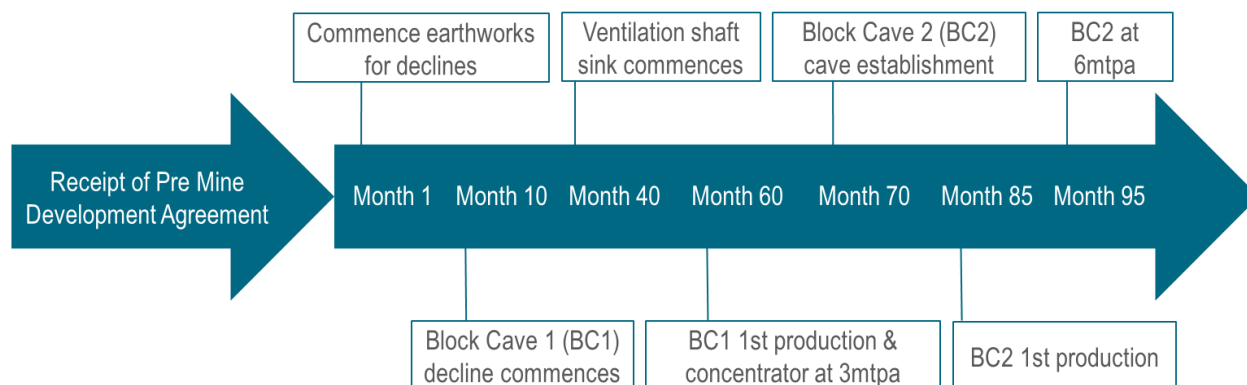
<sup>3</sup> Cave wireframes are a representation of the shape of economic draw of mixed cave material from the Mineral Resource and not a cave excavation shape

<sup>4</sup> Subject to Advanced Exploration Work.

## Key milestones<sup>5,6</sup>

The next key step in the project is to sign a PMDA with the Papua New Guinea Government. Once signed approval will be sought from the Boards of both Wafi-Golpu joint venture parties to proceed with the advanced exploration work and earthworks for access declines.

The final investment decision for full project capital expenditures will be made only after all necessary permits, approvals and consents have been obtained from the Government, landowners and any other relevant stakeholders. Assuming all such approvals are obtained, the development timeline outlined in the Stage One Feasibility Study is set out below.



## Further work on the Stage One Feasibility Study

As planned the following areas will be the focus of further study to optimise the study outcomes and incorporate additional data which will be collected in the Advanced Exploration and Feasibility support stage.

Access declines: Access declines into the orebody are required to fully verify structural and hydrological interpretations of the orebody and inform decisions on the remaining areas of the Feasibility Study

Geotechnical interpretation: Further drilling work is required to support assumptions of the strength of the material in each cave and the rock mass response to fragmentation

Tailings management: Further assessment of tailings strategies

Hydrology: The management of water will be central to the success of the mining operation, primarily due to the nature of the geological environment of the project site. Further investigation and modelling of water will focus on increasing the confidence in the geohydrology model by obtaining additional data from drilling campaigns, modelling the effectiveness of a dewatering bore field around the block cave subsidence zone, and streamflow and surface hydrology modelling and management

Permitting and environmental approvals: Work will continue with the PNG Government on obtaining statutory environmental approvals and other regulatory permits for the project

Port and power: Further assessment of optimal arrangements for port facilities and power supply

## Community engagement

In parallel with further technical studies and project definition, the local communities will be actively engaged and appraised of the project development roadmap and next steps. In the December FY2016 quarter, 90 meetings attracting 2,756 local community participants were held. The three major communities involved are the Hengambu, Yanta and Babuaf spread over 15 villages in the region. The local communities remain supportive of the project.

<sup>5</sup> Timeline is indicative based on the Stage One Feasibility Study and therefore subject to an accuracy range of minus  $\pm 15\%$ , based on the information available

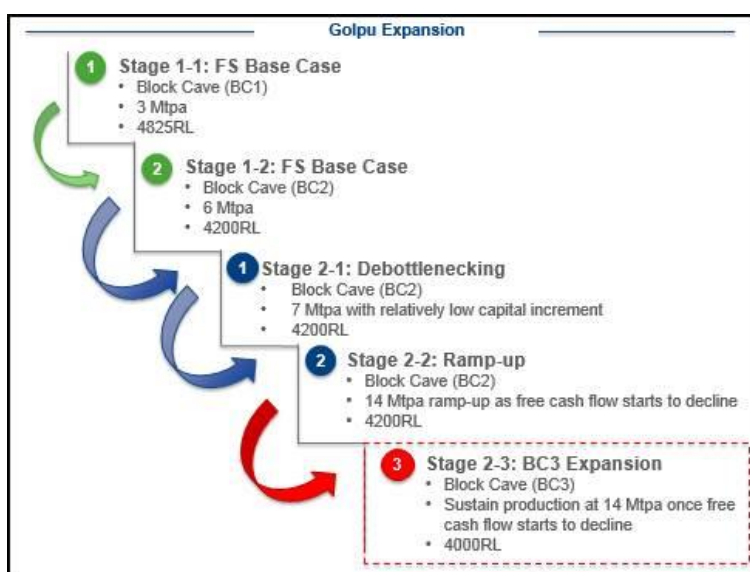
<sup>6</sup> Concentrator expected to achieve 3mtpa approximately three months after BC1 first production

## Wafi-Golpu Stage Two Prefeasibility Study

The first step of Stage Two will be debottlenecking the Stage One processing plant. The aim of the debottlenecking is to increase production capacity of the 6Mtpa Stage One facility to 7Mtpa by making minor and low cost modifications to the process plant grinding circuit and the underground material handling system. (Stage 2-1)

The second step for Stage Two will be to expand processing capacity to 14mtpa and increase the mine's production rate. This will be done by optimising all the inherited Stage One infrastructure and achieving a higher mining production output from BC2, without significant additional infrastructure such as additional ventilation shafts or belt conveyor declines. It is envisaged a second process plant capable of processing 7mtpa would be constructed to bring total plant capacity to 14mtpa. (Stage 2-2)

The third and final stage investigated by the prefeasibility study for Stage Two was the construction of a third block cave. Additional capital is required to extend the decline access and belt conveying system, and establish the associated underground infrastructure. (Stage 2-3)



Key decision points for staged development from Stage One to Stage Two

## Golpu Ore Reserve and Resource

The updated Ore Reserve as at 31 December 2015 is estimated to contain 5.5 million ounces of gold and 2.4 million tonnes of copper (Newcrest's 50% interest). This includes a decrease of 0.7 million ounces of gold and 0.3 million tonnes of copper compared to previous estimates in line with updated long term cost and metal price assumptions and optimised designs in the Wafi-Golpu Stage One Feasibility Study and Stage Two Prefeasibility Study. Note that silver has been removed from the Golpu Ore Reserve as it is no longer considered to be at payable levels in the copper concentrate (Refer Golpu Ore Reserve Table below).

### Golpu Ore Reserve<sup>7</sup>

	Tonnes (Mt)	Gold Grade (g/t Au)	Copper Grade (% Cu)	Insitu Gold (Moz)	Insitu Copper (Mt)
<b>Probable Ore Reserve</b>	190	0.91	1.3	5.5	2.4

<sup>7</sup> Data is reported to two significant figures to reflect appropriate precision in the estimate and this may cause some apparent discrepancies in totals. The Ore Reserve shown represents Newcrest 50% interest.

The updated Mineral Resource as at 31 December 2015 is estimated to contain 9.3 million ounces of gold and 4.3 million tonnes of copper (Newcrest 50% interest). This includes a decrease of 0.8 million ounces of gold and 0.4 million tonnes of copper compared to previous estimates within an updated notional constraining shell. The Mineral Resource is in line with updated long term cost and metal price assumptions of the Wafi-Golpu Stage Two Prefeasibility Study. (Refer Golpu Mineral Resource Table below). Mineral Resources are reported inclusive of Ore Reserves.

### Golpu Mineral Resource<sup>8</sup>

	Tonnes (Mt)	Gold Grade (g/t Au)	Copper Grade (% Cu)	Silver Grade (g/t Ag)	Insitu Gold (Moz)	Insitu Copper (Mt)	Insitu Silver (Moz)
<b>Indicated Mineral Resource</b>	340	0.71	1.1	1.3	7.9	3.7	14
<b>Inferred Mineral Resource</b>	68	0.63	0.85	1.1	1.4	0.58	2.3
<b>Total Mineral Resource</b>	410	0.70	1.0	1.3	9.3	4.3	17

### About the Wafi-Golpu Project

Newcrest and Harmony Gold Mining Company Limited (Harmony) each currently own 50% of Wafi-Golpu through the Wafi-Golpu Joint Venture. The PNG Government retains the right to purchase, for its pro-rata share of historical costs, up to a 30% equity interest in any mineral discovery at Wafi-Golpu, at any time before the commencement of mining. If the PNG Government chooses to take-up its full 30% interest, the interest of each of Newcrest and Harmony will become 35%.

The Wafi-Golpu deposit is located approximately 60km south-west of Lae in the Morobe Province of PNG which is the second largest city in PNG and will host Wafi-Golpu's export facilities. The proposed mine site sits at an elevation of approximately 400 metres above sea level in moderately hilly terrain and is located near the Watut River approximately 30km upstream from the confluence of the Watut and Markham rivers.

### Location of Wafi-Golpu



<sup>8</sup> Data is reported to two significant figures to reflect appropriate precision in the estimate and this may cause some apparent discrepancies in totals. The Mineral Resource shown represents Newcrest 50% interest.

# Material Changes to Material Mining Projects for the purposes of ASX Listing Rules 5.8 and 5.9 – Golpu

## GOLPU

### Mineral Resource

#### **Geology and Geological Interpretation**

The Wafi mineralisation was first identified in 1979 by CRA Exploration with the discovery of the underlying Golpu Porphyry by Elders Resources Ltd in 1990. Since this time, several companies have completed exploration and resource definition drilling programmes with associated mine development studies. Morobe Mining Joint Venture (MMJV), (50:50 JV between Harmony Gold Ltd and Newcrest Mining Ltd) acquired the project in 2009.

The Golpu deposit is approximately 60km SW of Lae, PNG in a block of deformed Upper Mesozoic to Middle Miocene metasedimentary rocks cut by Miocene-Pliocene calc-alkaline dioritic intrusives. Copper and gold mineralisation results from a porphyry system with the upper portion overprinted by high sulphidation epithermal alteration.

The Golpu Mineral Resource is approximately 800m by 400m elliptical in plan and extends from 200m below surface to approximately 2,000m depth.

The Golpu porphyry system consists of multiple, hornblende - bearing diorite porphyries intruded into host sediments. Intrusives range from small dykes to small stocks. Hydrothermal alteration related to the porphyry Cu-Au mineralisation forms a predictable zonal arrangement grading from potassic core to propylitic margins. A high-sulphidation epithermal system is 'telescoped' over the upper portion of the porphyry system forming a central alunite-quartz (advanced argillic) core grading out to dickite-kaolinite (argillic) with an outer margin of sericite alteration. This results in either epithermal-dominant, interaction (mixed) or porphyry-only zones.

Mineralisation is derived from either the porphyry or epithermal systems. Within the porphyry environment, mineralisation is disseminated, microfracture and stockwork vein controlled. The porphyry system is mineralised with gold, copper, silver and molybdenum. Gold, copper and silver grade from a high grade porphyry core to low grade sediments on the mineralised edge. Post-mineralisation faulting has generated small rotation and local offsets of the original intrusive configuration.

In the overprinting epithermal system, gold occurs within pyrite or as electrum associated with pyrite-energite-tetrahedrite. Mineralisation follows the metasedimentary and volcanic host-rock stratigraphy (approximately 40° dip to east). Arsenic and sulphur are elevated within the high sulphidation epithermal system.

The December 2015 Golpu Mineral Resource model incorporates lithology, alteration, oxidation, sulphide distribution and structure interpretative wireframes developed from the drilling information using implicit modelling interpolations.

#### **Drilling Techniques**

Diamond core drilling has been used for all drill holes used in the Golpu Mineral Resources. Core diameters include PQ, HQ, NQ and BQ diameter with triple tube core barrels where possible to maximise core recovery. Core was typically orientated using the ACE core orientation system. Drill hole collar locations are located using hand held global positioning system (GPS) and completed drillhole collars surveyed in the Wafi Local Grid by a qualified and competent surveyor using a theodolite or differential GPS. Downhole surveys have changed from Eastman single shot cameras to Reflex tools and since 2011 north seeking gyroscopes.

#### **Sampling and Sub-sampling**

Data used for Mineral Resource estimation is obtained primarily from diamond drill core. All available drill holes are sampled with intervals of 1m or 2m intervals. HQ, NQ and the limited BQ diameter core were cut in half and PQ diameters core halved or quartered using a diamond core saw, from which half or quarter is prepared for assay and the remaining core retained in the core farm as reference. Core was logged and photographed prior to cutting. Sample preparation protocols for drilling in the Golpu area have varied over time. Core sample preparation involved drying, crushing, and pulverising to produce a pulped 250g sub sample product with the minimum standard of 95% passing 106 µm. Crushing methods have included jaw crushers and Boyd crushers with sub-sampling by riffle or rotary splitters. Pulverising was historically by LM2 but the majority of samples were prepared with LM5 mills. Repeat samples are obtained from pulverised material at the rate of 1 in 20 samples and check crusher duplicates have also been analysed. The majority of samples used within the Golpu Mineral Resource were prepared at Intertek Laboratory in Lae, PNG.



## Sample Analysis Methods

Historic CRAE and Elders samples (1990-1996) were analysed at Pilbara Laboratories Lae for gold determined by 50g Fire Assay with AAS finish. Multi-element analysis including copper, silver, molybdenum, arsenic and iron was completed using AAS. Harmony and MMJV samples from 2005 were analysed at Intertek Jakarta and more recently Intertek Lae laboratory for gold determined by 30 g Fire Assay with AAS finish. Multi-element analysis including copper, silver, molybdenum, arsenic and iron were analysed by two-acid digest ICPMS/OES finish and more recently four-acid digest with ICPMS/OES finish at the Intertek Jakarta laboratory. Sulphur assays were determined by LECO also at Intertek in Jakarta. Pulp samples shipped to Jakarta after preparation in Lae are re-dried in their original pulp packets at <60°C for a minimum of four hours or until dry before analysis. The analysis methods employed are considered appropriate for the material and mineralisation. A comprehensive Quality Assurance/Quality Control (QAQC) program was included in the analysis programs typically including submission at 1:20 of certified reference material (standards), blanks / barrens, crusher residues and pulp re-assay. Any out of tolerance samples / batches were re-submitted for re-analyses. Sufficient second laboratory analyses have been completed to validate the primary assay laboratory results.

## Estimation Methodology

The grade model is estimated with Ordinary Kriging using pairwise variograms of 10m composites for seven elements: gold, copper, silver, molybdenum, sulphur, arsenic, and iron. The grades are estimated into a block model with 40m x 40m x 40m parent cells with 10m resolution on domain margins. This reflects the estimation precision available from the drillhole spacing and the planned mining method (block caving). The estimation method is based on an underlying 'diffusion' model, where Cu and Au grades trend from lower to higher values from the mineralisation margin to the porphyry core in a relatively continuous relationship. The model has been validated by comparison with informing composite declustered statistics and alternative modelling methods. Risk associated with the inclusion of historical data from previous mining companies (without current industry standard QAQC rigour) has been evaluated by re-modelling without this data. There is no material change when historic data is removed and re-estimated.

## Resource Classification

The Mineral Resource is classified based on the confidence in the geological interpretation supported by data spacing and estimation quality parameters. Drill spacing is variable within the Golpu deposit as multiple drilling orientations have been used reflecting the cylindrical configuration, spacing ranges from less than 100m x 100m in the upper portion of the deposit and up to 200m x 200m in the lowest portions of the deposit.

Indicated Mineral Resource, is classified from below the copper enrichment zone to a major interpreted fault (approx. 1,400m below surface). Below this fault, geological and grade continuity is less reliable and is classified as Inferred Mineral Resource to the base of the Mineral Resource. The Mineral Resource is limited to porphyry and porphyry-related altered sediments estimation domains where the estimation quality is sufficient to support the Mineral Resource classification under JORC Code 2012. The Mineral Resource estimate is reported based on a value cut-off economic criteria and a spatial constraint. The input criteria for the value cut-off and spatial constraint are applicable at the time of reporting.

## Cut-off Grade

The Mineral Resource is reported within marginal breakeven shell, which reflects the planned bulk mining method. Inputs to the value estimation includes the MMJV 2015 gold and copper revenues; metal recoveries estimated with recovery algorithms applied in the Wafi-Golpu 2015 PFS; mining, treatment and General and Administration (G&A) cost structure again as developed for the 2015 Wafi-Golpu Stage Two PFS; and offsite realisation costs including transport, smelting and royalties. Gold revenues assumptions are US\$1,300/oz and copper US\$3.40/lb. An enclosing shell was constructed over the block model cells at the estimated margin breakeven value including internal waste and excluding isolated cells. Silver and molybdenum are not included in the value estimation and have no impact on the Mineral Resource volume.

## **Mining and Metallurgical methods and parameters and other modifying factors considered to date.**

The Mineral Resource estimate is reported assuming mass mining by block caving with no internal selectivity. The 40m x 40m x 40m block size and the reporting constraining shell is representative of the planned mining method. The metallurgical recovery includes processing by copper flotation with copper and gold recovery to concentrate only. Extensive testwork has been completed to establish algorithms developed from variability modelling. Metallurgical domains are based on both the host rocktype and alteration. Each metallurgical domain is assigned a recovery algorithm further subdivided on copper:sulphur and gold:sulphur ratios. There are no recognised environmental factors that will prohibit potential mining or milling operations.

## **Ore Reserves**

### **Material Assumptions for Ore Reserves**

A Stage One Feasibility level study was completed in December 2015 for the first stage in the development of a mine comprising of two block caves (BC1 & BC2). In parallel with the Stage One Feasibility study, a Stage Two Prefeasibility study was completed in December 2015 which utilises the Stage One Feasibility study as a base from which to increase the production rate of BC2 and the extension of the scope to include BC3 at the 4000mRL. The Stage Two Prefeasibility study provides supporting basis for this Ore Reserve estimate. Stage Two Prefeasibility studies (on which this Ore Reserve statement is based) defined a three lift block cave mine plan. Extraction levels for the three block caves are; 4825mRL (BC1), 4200mRL (BC2), and the 4000mRL (BC3). It is proposed that the ore be processed on site at the proposed treatment plant using conventional grinding and flotation methods to produce a copper and gold concentrate. Metallurgical test-work has been executed on the Golpu deposit during the 2015 Feasibility and Prefeasibility studies and in preceding studies. The test-work undertaken is of an adequate level to ensure an appropriate representation of metallurgical characterisation and the derivation of corresponding metallurgical recovery factors.

Golpu is a greenfield site and currently does not have infrastructure to support mining operations. Major Infrastructure required is included in the Feasibility and Prefeasibility studies. Capital cost estimates are based on multiple market prices across all technical disciplines. Provision has been made for capital expenditure requirements for new equipment, infrastructure and replacement of infrastructure and equipment during the life of the mine is based on the studies. A contingency has also been factored into the capital cost estimate consistent with the level of accuracy of the study.

Operating cost estimate first principles cost modelling expenses have been quantified as far as possible and where practicable supported by quotations.

### **Ore Reserve Classification**

The Ore Reserve is derived from Indicated resources and incorporates mining dilution appropriate for block cave mining. The Indicated classification is based on geological confidence as a function of continuity and complexity of geological features; data spacing and distribution; and estimation quality parameters including distance to informing samples for block grade estimation. Inferred and un-classified material has been included within the Probable Ore Reserve as mined dilution due to the non-selective nature of block cave mining. This represents 0.9 Moz Au or 8% & 0.3Mt Cu or 6% of the tabled Ore Reserve. Even without consideration of Inferred and unclassified material in the mining inventory, the proportion of Indicated material would still conclusively deliver a Probable Reserve.

### **Mining Method**

Underground mining at Golpu is planned to be undertaken through three block caves, Block Cave (BC) 1, BC2 and BC3. The Feasibility and Prefeasibility studies have been prepared on the basis of:

- a startup mine consisting of BC1 and BC2 with an initial production rate of 6Mtpa increasing to a production rate of 14Mtpa to completion of BC2 which is then replaced by BC3 to exhaustion of the Ore Reserve;
- an Advanced Undercutting strategy employed during cave establishment utilising a W Cut undercut design;
- use of an El Teniente extraction level layout;
- average draw column heights are 160m (BC1), 730m (BC2) and 600m (BC3) with maximum draw column heights of 214m (BC1), 1,025m (BC2) and 1,000m (BC3); and
- access to the mine via twin declines developed from the Watut river flats;
- transport of the ore from the block caves to the surface processing plant via an inclined conveyor network; and
- ventilation via two large diameter shafts located outside the ultimate subsidence zone.



The following Modifying Recovery Factors have been applied totalling 9% of tonnes, 8% of gold metal and 11% of copper metal made up of:

- Ore loss due to unplanned early abandonment of drawpoints; and
- BC3 mining recovery in zone between 700m -1,000m draw column height in drawpoints adjacent to BC2.

Of the total Ore Reserve approximately 44Mt of ore is Inferred or non-classified. This ore contains 8% of the gold metal and 6% of the copper metal in the Ore Reserve and does not have a material impact upon the estimate. As this is dilution material associated with the block cave mining method, it has been incorporated into the Ore Reserve estimate.

### **Ore Processing**

The Feasibility and Prefeasibility studies have been prepared on the basis of processing of ore on site at the proposed treatment plant using conventional single stage SAG and ball mill grinding and flotation methods that is incrementally sized to match the mining rate to produce a copper and gold concentrate. The technology associated with the ore processing is very much an industry standard for this style of deposit.

Metallurgical testwork has been executed on the Golpu deposit during the 2015 Feasibility and Prefeasibility studies and in preceding studies. The testwork undertaken is of an adequate level to ensure an appropriate representation of metallurgical characterisation and the derivation of corresponding metallurgical recovery factors. The testwork analysis indicated that the concentrate did not exceed any of the typical concentration restrictions and meets the expected marketing grades for gold and copper in copper concentrate for sale to target smelters.

### **Cut-off Grade**

The Golpu Ore Reserve employs a value based cut-off by determining the Net Smelter Return (NSR) value based on the outcomes of the studies. The NSR calculation takes into account reserve revenue factors, metallurgical recovery assumptions, transport costs and refining charges and royalty charges. The site operating costs include mining cost, processing cost, relevant site general and administration costs and relevant sustaining capital costs.

### **Estimation Methodology**

Estimation of the Golpu Ore Reserve involved standard steps of mine optimisation, mine design, production scheduling and financial modelling. Factors and assumptions have been based on numerical modelling as well as experience and performance in similar caving operations. The basis of the analysis is considered at Prefeasibility study level or higher.

### **Material Modifying Factors**

A detailed Socio-Economic Impact Assessment has been completed. The assessment indicated that the Project has the potential to deliver significant benefits to local and regional communities and the broader economy of PNG, including taxation and royalty revenues to various levels of Government. The Project is also expected to provide benefits through training and employment opportunities, business and community development programmes, investment in health and education and new/improved regional infrastructure.

A Pre Mine Development Agreement (PMDA) with the Papua New Guinea Government has not yet been approved by the Papua New Guinea Government and this is a prerequisite for the early project expenditure approval to establish exploration positions.

A Level 2B environment permit (EP) has been granted for exploration activities including the construction of the twin declines to the base of the block caves. An application for a Level 3 permit (covering ore extraction and processing) has been submitted and is expected to be granted in CY2018. Grant of the Special Mining Lease is tied to grant of the Level 3 EP.

Feasibility study level analysis has been conducted assessing the potential environmental impacts of the mining and processing operations required for the mining of BC1 and BC2.

Modifying Factors have been applied to take into account ore loss due to unplanned early abandonment of drawpoints and BC3 mining recovery in the zone between 700m-1,000m draw column height in drawpoints adjacent to BC2. These Modifying Factors result in a reduction to the Ore Reserve estimate totalling 9% of tonnes, 8% of gold metal and 11% of copper metal.

Golpu is a greenfield block caving project and will require the following mining infrastructure to support the block caves including ventilation fans and refrigeration equipment, dewatering equipment, crushing and conveying equipment, underground workshop and meal room facilities.

Major Infrastructure required and included in the Feasibility and Prefeasibility studies to support the mining operations are access road, processing plant, tailings storage facility, concentrate export pipeline plus associated dewatering and loading facilities at the Lae Tidal Basin, accommodation camp and power transmission line.

To demonstrate the Ore Reserve as economic it has been evaluated through a standard financial model. All operating and capital costs as well as revenue factors were included in the financial model. This process demonstrated the Ore Reserves for Golpu has a positive Net Present Value (NPV).

The Golpu deposit is located in a seismically active area in a region close to a source of earthquakes that can produce important accelerations at the site. This risk is not considered material to the Ore Reserve estimate.

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## Appendix 1: Golpu

### JORC Code 2012 Edition – Table 1

#### Section 1 Sampling Techniques and Data

<b>Criteria</b>	<b>Commentary</b>
<b>Sampling techniques</b>	<p>Diamond drill holes are the principal source of geological and grade information for the Golpu deposit. Diamond core drilling was used to obtain continuous samples ranging in size from PQ3 to NQ3 with rare intervals of BQ which were cut into half (in the case of HQ, NQ and BQ) and into half or quarter (in the case of PQ) using a diamond core saw, from which half or quarter is prepared for assay and the remaining core retained in the core farm as reference.</p> <p>The half or quarter core sent for assay was bagged in labelled calico sample bags with the sample number scribed on an aluminium strip included in the bag. The calico bags were placed in larger polyweave bags and transported by road or helicopter to Lae by company employees. Sampling intervals are typically 1m or 2m fixed intervals. The entire half or quarter core is dispatched for sample preparation. Core recovery is recorded to ensure a representative sample is obtained.</p> <p>All core was logged and photographed prior to cutting. Some core was wrapped in tape during sampling to maintain core quality. Oriented core is cut along the orientation line at the bottom of hole to reduce the possibility of sample bias. Sample numbers and drill hole intervals were recorded by the responsible geologist and used by technicians for cutting and sampling. A sample despatch sheet documenting the sample numbers and required assay work was sent with each sample batch to the laboratory.</p> <p>All drill core is sampled and assayed over the entire hole length. However empirical rock strength data is required for geotechnical input to mine designs - since 2011 approximately 20cm of whole core was taken at 50m intervals from all holes for Unconfined Compressive Strength testing which were not assayed. This is not considered to present a material impact on sample quality due to the disseminated, stockwork and micro-fracture infill nature of the mineralisation.</p>
<b>Drilling techniques</b>	Diamond core drilling, PQ, HQ, NQ and BQ in diameter, triple tube core barrels and oriented typically using the ACE core orientation system.
<b>Drill sample recovery</b>	Core recovery is recorded for all diamond drilling on a metre by metre basis as a percentage. Sample recovery was 96.4% over the entire drilling dataset including oxide material and the adjacent Wafi epithermal mineralisation but increases to 98.4% within the Golpu Mineral Resource volume. All drilling is conducted using triple tube core barrels and appropriate core handling protocols. No material relationship has been identified between core recovery and grade due to the diffuse nature of the mineralisation in the Golpu porphyry-style deposit.
<b>Logging</b>	All diamond drill core has been geologically and geotechnical logged to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. Geological logging is both qualitative and quantitative and records lithology, mineralisation, alteration mineralogy, weathering, structures and other physical characteristics of the core.
<b>Sub-sampling techniques and sample preparation</b>	Sample preparation protocols for drilling in the Golpu area has varied over time. However all core is sawn half or quarter core typically cut beside the orientation line. Only minor intervals of second half core submission has been conducted. The entire sawn half or quarter core is submitted for the first stage of sample preparation. All subsequent sampling is by riffle or rotary splitters to ensure sub-sample representivity until homogenised in the pulverisers. Grind size screening was typically applied also to maximise sub-sampling representivity and to ensure compliance to sub-sampling sample mass requirements.

	<p>Historic sampling from CRAE/Elders drilling 1990-1996 was prepared at Pilbara (Analabs) Laboratories in Lae. All samples were dried and jaw crushed to a nominal 5mm, then entirely pulverised to 180 microns. A sub sample of 500g was obtained with a riffle splitting device which was pulverised in a LM2 to nominal 75 micron. A 100g sub sample (pulp) was obtained and despatched for analysis.</p> <p>Sample preparation for Harmony and MMJV drill holes 2005-2011 was carried out at Intertek Lae sample preparation facility with pulps sent to Intertek Jakarta for assay. All samples were dried at 60°C and then jaw crushed to nominal 2mm. A sub sample of 1.5kg was obtained with a riffle splitting device which was pulverised to 75 micron using LM2 mill. An approximate 250g sub sample (pulp) was obtained and despatched for analysis.</p> <p>Sample preparation for MMJV drill holes 2012-2014 was carried out at the Intertek sample preparation facility in Lae. All samples were dried at 60°C, then crushed in a Boyd Crusher to a minimum 95% passing 2.8mm. A sub sample of 3.5kg (<math>\pm 0.5</math>kg) is obtained using a Rotary Splitting Device (RSD) and pulverised in a LM5 mill with a minimum 95% passing 106 microns. An approximate 250g sub sample (pulp) was obtained and despatched for analysis. Representative pulverised material and crushate reject is retained for all samples. Repeat samples are obtained from pulverised material at the rate of 1 in 20 samples and check crusher duplicates have also been analysed.</p> <p>The sampling techniques used over the history of the project are considered appropriate for assessment of porphyry mineralised systems.</p>
<p><b>Quality of assay data and laboratory tests</b></p>	<p>QAQC protocols for Golpu drilling have varied over the project's 24 year history.</p> <p>CRAE and Elders (1990-1996) sampled at Pilbara Laboratories Lae did not have the support of regular submission standards or duplicates and but were supported by regular submission of pulp splits to a second laboratory. Gold was determined by 50g Fire Assay with AAS finish and multi-element analyses including copper, silver, molybdenum, arsenic and iron were determined using AAS. Approximately 20% of composites used in the Golpu Mineral Resource model are derived from CRAE / Elders drilling – this are located in the upper Golpu Porphyry where there is also significant drill data acquired by Harmony.</p> <p>Drilling by Harmony and MMJV 2005-2014 was analysed at Intertek Laboratories Jakarta and included submission of certified standards, blanks, quarter core duplicates and re-assay of selected pulp splits at a second laboratory. Gold was determined by 50 or 30g Fire Assay with AAS finish, multi-element analyses including copper, silver, molybdenum, arsenic and iron was determined by 2 acid ICPMS/OES finish analyses. From October 2013 multi-element analyses have been determined by 4-acid (full) digest with ICPMS/OES finish. From 2013 gold has been analysed at the Intertek Lae Laboratory. Total sulphur was determined by Leco.</p> <p>Pulp samples shipped to Jakarta are re-dried in their original pulp packets at &lt;60°C for a minimum of 4 hours or until dry before analysis. Certified reference materials were inserted at the rate of 1 in 20 samples. Matrix-matched samples from coarse reject Wafi-Golpu sample material were homogenised, independently certified and implemented into the QA sample stream from April 2013. Pulp samples (second sample from LM5 bowl) within each sample batch are submitted at the rate of 1 in 20 samples. Coarse duplicates have also been analysed and additionally 5% of all pulps with accompanying new standards are checked at an independent laboratory.</p> <p>Assay results are assessed on a per-batch basis on receipt of assays to determine appropriate levels of accuracy and bias in gold and copper analyses. The acceptance tolerance must be within defined site QAQC protocols. Routine check assay programmes are conducted on a periodic basis. All preparation and analytical laboratories including check laboratories have been reviewed for operational procedures and QAQC compliance by project geologist and QAQC chemists.</p> <p>The analysis methods employed are considered appropriate for the material and mineralisation. No material issues have been identified that invalidate the use of primary assays now held in the Wafi-Golpu Datashed database for Golpu deposit grade estimations.</p>

<p><b>Verification of sampling and assaying</b></p>	<p>All field data is captured digitally into a Logchief logging system, stored electronically in a Datashed database, and exported to a Lae based Datashed database, which is maintained by the Database Manager. Digital assay files are received directly from the laboratory and input directly to Datashed. Significant intersections are reported by the geology team, and verified by the Geology Manager.</p> <p>No specific holes have been twinned at Golpu. However due to the drilling configuration (typically towards grid west or to grid west on the common sections and multiple holes from a single drill pad with small variation in dip), multiple holes cross in close proximity. No inconsistency in sampling and assaying have been identified.</p> <p>No adjustment has been made to reported assays for use in the estimation of the Mineral Resource.</p>
<p><b>Location of data points</b></p>	<p>The local grid called Wafi Local Grid (WLG) is a planar grid oriented approximately 45 degrees from north which is used for block modelling and geology databases. The height datum is Mean Sea Level but 5,000m is added for WLG. WLG is datum point referenced to PNG Geodetic Datum 1994. Topographic control is by digital terrain models derived from a high resolution Lidar survey of the Golpu area conducted in 2007 with a reported spatial accuracy of 0.2m.</p> <p>Drill hole collar locations are located using hand held global positioning system (GPS) and completed drillhole collars surveyed in the Wafi Local Grid by a qualified and competent surveyor using a theodolite or differential GPS.</p> <p>Downhole surveys were completed on all holes typically at 18m and then every 30m down the hole. Elders and CRAE drillholes were surveyed using an Eastman single shot camera and Harmony / MMJV drillholes were surveyed using a Reflex downhole survey tool. From 2011 surveys have been conducted by a fully competent and licensed contractor using a north-seeking gyroscope instrument.</p> <p>For all periods of the drilling programme, downhole surveying was determined using the latest available methodology. These are considered sufficiently accurate to locate all assays to the level of precision required for classification as an Indicated or Inferred Mineral Resource.</p>
<p><b>Data spacing and distribution</b></p>	<p>Drillhole spacing within the Golpu deposit ranges from less than 100m x 100m in the upper portion of the deposit and up to 200m x 200m in the lower portions of the deposit. The drill spacing is considered sufficient to establish the degree of geological and grade continuity appropriate for Mineral Resource classification of a large porphyry gold/copper system. Drillholes are entirely sampled at regular 1m or 2m intervals regardless of lithological or mineralogical boundaries. Assays are composited to 10m downhole intervals for use in grade estimation.</p>
<p><b>Orientation of data in relation to geological structure</b></p>	<p>The Golpu mineralised system is approximately elliptical in plan elongated towards 345 degrees WLG with a steep west to sub-vertical dip. The majority of drilling is oriented across this orientation, but the dataset does include holes drilled parallel to the long axis. Most holes are complete transects through the porphyry and enclosing mineralised host sediments. The orientation of sampling is considered unbiased toward known structures and adequate for the diffuse nature of the mineralisation style i.e. porphyry gold copper mineralisation.</p>
<p><b>Sample security</b></p>	<p>Diamond drill core is delivered directly from the drill rig at the end of each shift by the drill crew to the logging shed within the fenced and patrolled Wafi Camp security compound. Core is marked up and photographed as soon as possible to identify any core loss and ensure size and consistency of the samples. Historically all core was sawn in half at the Wafi site and half core for assay bagged into calico bags and in turn secured in plastic bags. Samples are identified by both internal aluminium tags and external labelling. Recently whole core was directly shipped as plastic-wrapped and secured trays to the dedicated core farm within the security patrolled compound at Nine Mile, Lae. Core is sawn, bagged and identified as for the Wafi site procedures.</p>



	<p>Whether transported as whole core in trays or bagged sawn core samples, all transport is always under the direct supervision of WGJV employees within tamper evident packaging from site until delivery to the Intertek Laboratory in Lae. Pulps and crusher residues are returned from the Lae laboratory to the Nine Mile core farm for long term storage again under direct supervision of WGJV staff.</p> <p>Core samples are prepared in Intertek, Lae within their secured premises and pulps are air-freighted by international couriers to Intertek Laboratory in Jakarta, Indonesia for assaying. A detailed labelling, documentation and tamper evident packing protocol is in place for this transfer. Pulps are stored on a long term basis in Jakarta. Assay results from Intertek Jakarta are returned to MMJV network and loaded to the Wafi database by dedicated administrators after correlation against despatch records and after passing QAQC protocols.</p>
<b>Audits or reviews</b>	<p>Internal reviews of core handling, sample preparation and assays laboratories were conducted on a regular basis by both project personnel and owner representatives. External consultants also reviewed sampling protocols and based on heterogeneity studies for sampling mass and sampling precision provided recommendations to improve QAQC early in the drilling program.</p> <p>In the Competent Persons opinion, the sample preparation, security and analytical procedures are consistent with current industry standards and are entirely appropriate and acceptable for the styles of mineralisation identified and will be appropriate for use in Mineral Resource estimates. There are no identified drilling, sampling or recovery factors that materially impact the adequacy and reliability of the results of the drilling programme in place on the Wafi-Golpu Property.</p>

## Section 2 Reporting of Exploration Results

<b>Criteria</b>	<b>Commentary</b>
<b>Mineral tenement and land tenure status</b>	<p>The Wafi-Golpu project is located in Exploration Licence (EL440) within the Morobe Province of Papua New Guinea. The property is located at approximately 6°52'S latitude, 146°27'E longitude approximately 60 km southwest of Lae, the nearest commercial centre within the region with a population of about 90,000.</p> <p>The owner of the project is the Wafi-Golpu unincorporated joint venture (WGJV), one of three unincorporated joint ventures in the Morobe Province of Papua New Guinea between subsidiaries of Newcrest (50%) and Harmony (50%) referred to collectively as the Morobe Mining Joint Ventures (MMJV). The WGJV holds two exploration licences covering a total area of approximately 129 km<sup>2</sup>, registered in the name of the WGJV participants Newcrest PNG2 Ltd (50%) (a wholly owned Newcrest subsidiary) and Wafi Mining Limited (50%) (a wholly owned Harmony subsidiary). Key proposed infrastructure areas are located on adjoining EL1105.</p> <p>EL440 tenement licence expires in March 2016 and a renewal was lodged in December 2015 which is currently pending. The EL1105 tenement licence expires in January 2017. Both tenements remain in good standing.</p> <p>Subject to the project being developed, a royalty of 2% of net smelter revenue and a Mining Levy of 0.25% is payable to the Government of Papua New Guinea.</p> <p>A compensation agreement with local landowners is in place whereby specified payments are made due to impacts of exploration activities including loss of trees, impact on water resources, access restrictions, and disturbance to sacred sites and burial sites.</p> <p>Consistent with the current administrative practice of the Government of Papua New Guinea and under the terms of the Wafi-Golpu exploration licences, the Government of Papua New Guinea has reserved the right to acquire up to a 30% equitable interest in the project. In January 2011, the PNG Government indicated an intention to exercise the option, nominating the State-owned Petromin PNG Holdings Limited to take up the interest. The option is exercisable at any time prior to commencement of mining. Under the terms of the State option set out in the Wafi-Golpu exploration licences, the price payable for the interest is the proportionate share of the accumulated exploration</p>

	<p>expenditure at the point of exercise. Post-exercise, the State holding entity will be responsible for their proportionate share of continuing exploration, development and project costs.</p>
<b>Exploration done by other parties</b>	<p>Exploration has been conducted by the MMJV since 2008. Previous exploration activity has been documented by many workers, and notably includes Harmony, Abelle, Elders and CRA during their tenure since the 1970's. The Golpu Porphyry was discovered by Elders in 1991 and the high grade Hornblende (Livana) Porphyry by MMJV in 2010. Data transferred from previous exploration programmes has been assessed for quality and risk associated with inclusion of this data evaluated in the Mineral Resource estimation.</p>
<b>Geology</b>	<p>The Golpu deposit lies in a block of deformed Upper Mesozoic to Middle Miocene metasedimentary to sedimentary rocks cut by Miocene-Pliocene calc-alkaline dioritic intrusives. Copper and gold mineralisation results from a multiple intrusive porphyry system with the upper portion overprinted by high sulphidation epithermal alteration. Post mineral faulting has displaced and rotated the original intrusive configuration.</p> <p>The deformational history of PNG is characterised by accretion during oblique collision of the Australian and Pacific plates. A series of arc-normal transfer structures formed across PNG which taped mantle derived melts to high crustal levels. One of these structures termed the Wafi Transfer Structure is interpreted to have facilitated the emplacement of the Golpu intrusives.</p> <p>The Golpu Porphyry system consists of multiple, hornblende-bearing diorite porphyries intruded into host sediments. The porphyries are separated based on their spatial position, and where not texturally destroyed, into coarse hornblende-rich, feldspathic-rich or quartz 'eye' inclusions variants. Intrusives range from small dykes to small stocks and apophyses. Individual intrusions pinch and swell vertically over tens of metres and form stocks, pipes and dykes.</p> <p>The Golpu deposit is approximately 800m by 400m elliptical in plan and extends from 200m below surface to approximately 2,000m. Hydrothermal alteration related to the porphyry gold-copper mineralisation forms a predictable zonal arrangement grading from potassic core to propylitic margins. A high-sulphidation epithermal system is 'telescoped' over the upper portion of the porphyry system forming a central alunite-quartz (advanced argillic) core grading out to dickite-kaolinite (argillic) with an outer margin of sericite alteration. This results in either epithermal-dominant, interaction (mixed) or porphyry-only zones within the Golpu deposit.</p> <p>Mineralisation is derived from either the porphyry or epithermal systems. Within the porphyry environment, mineralisation is disseminated, microfracture and stockwork vein controlled. The dominant copper-gold sulphide species varies laterally and vertically within the deposit from an inner bornite (plus chalcocopyrite) core, chalcocopyrite as the dominant copper sulphide grading to a pyrite only shell. The porphyry system is mineralised with gold, copper, silver and molybdenum. The Livana Porphyry is the main mineralised porphyry. Other porphyries act either as weak mineralisers or as benign hosts.</p> <p>In the high sulphidation epithermal system which is 'telescoped' over the upper portion of the Golpu Porphyry, gold occurs within pyrite or as electrum associated with pyrite-enargite-tetrahedrite. Abundant arsenian pyrite results in high sulphur and elevated arsenic levels in the epithermal altered volume. Mineralisation broadly follows the metasedimentary and volcanic host rocks stratigraphy (40° dip to east).</p>
<b>Drill hole Information</b>	<p>No exploration has been reported in this statement, therefore there is no drill hole information to report. This section is not relevant to this report on Mineral Resources.</p> <p>Comments relating to drill hole information relevant to the Mineral Resource estimate can be found in Section 1 – "Sampling techniques", "Drilling techniques" and "Drill sample recovery".</p>
<b>Data aggregation methods</b>	<p>No exploration has been reported in this release, therefore there are no drill hole intercepts to report. This section is not relevant to this report on Mineral Resources.</p>

	Comments relating to data aggregation methods relevant to the Mineral Resource estimate can be found in Section 1 – “Sampling techniques”, “Drilling techniques” and “Drill sample recovery”.
<b>Relationship between mineralisation widths and intercept lengths</b>	No exploration has been reported in this release, therefore there are no relationships between mineralisation widths and intercept lengths to report. This section is not relevant to this report on Mineral Resources.
<b>Diagrams</b>	No exploration has been reported in this release; therefore no exploration diagrams have been produced. This section is not relevant to this report on Mineral Resources.
<b>Balanced reporting</b>	No exploration has been reported in this release, therefore there are no results to report. This section is not relevant to this report on Mineral Resources.
<b>Other substantive exploration data</b>	No exploration has been reported in this release, therefore there are no results to report. This section is not relevant to this report on Mineral Resources.
<b>Further work</b>	No further exploration is planned for the Golpu Mineral Resource volume. Specific underground drill programs have been designed within the 2015 Golpu FS BC1 and BC2 volumes to increase confidence in local grade precision and refine geotechnical conditions at critical mine and supporting infrastructure locations. Such programs would be implemented after establishment of access declines. Proposed additional surface drilling is confined to infill geotechnical investigations of access paths. These proposed drill programmes are not exploration related.

### Section 3 Estimation and Reporting of Mineral Resources

<b>Criteria</b>	<b>Commentary</b>
<b>Database integrity</b>	<p>Data from the Golpu Project is stored within the MMJV ‘Datashed’ software database located at the Lae office, PNG. Drill core is logged directly into laptops in the core shed with periodic integration to the MMJV database. Assay data is received from the laboratory in digital format which is subsequently uploaded to the MMJV database using import templates. All data uploaded to the database must pass a data integrity checks and reviews. User access to the database is controlled by a hierarchy of permissions and are controlled by MMJV database administrators with oversight of data integrity by an external Datashed software specialist.</p> <p>Historical assay data collated by CRAE was imported into the MMJV database from an existing MS Access database. The process used by CRAE to transfer assay data into their database is not recorded, however checks of the assay data in the database with the original hardcopy results indicate they are satisfactory for use in a Mineral Resource estimate.</p> <p>Detailed data review was completed before the estimation of the Golpu December 2015 Mineral Resource estimate. Checks included validation of collar surveys against planned locations and downhole surveys consistency of hole path. Assays were reviewed and compared against observed mineralisation. Logging records were reviewed against core photographs as part of the interpretative geology compilation. All corrections were completed before final data extraction for input to the Mineral Resource estimation.</p>
<b>Site visits</b>	The Competent Person is an employee of Newcrest Mining and travelled to site on a regular basis as a former member of the MMJV team during the last resource drilling campaign. Site visits validated the documented mapping, drilling, logging and sampling processes and on-site data management. Laboratory visits to the Lae preparation laboratory, Lae fire assay laboratory and Jakarta assaying facilities were conducted to verify assaying and QAQC procedures.
<b>Geological interpretation</b>	The December 2015 geology model for the Golpu deposit includes lithology, alteration, oxidation, sulphide distribution and structures wireframes. Fault wireframes include major thrust faults which displace mineralisation. The most significant thrust is the Reid Fault

	<p>which displaces the upper Golpu mineralisation approximately 200m up-dip with a small displacement to the north.</p> <p>All lithological, porphyry-related alteration and fault models were constructed in Leapfrog software using implicit modelling interpolations from primary logging codes and modified for interpretative correlations of logged intervals. The implicit modelling methodology is considered less subjective than traditional sectional interpretations.</p> <p>ASD and 'Corescan' spectral mineralogical data was used in conjunction with the current logged alteration dataset. This enables a higher level of resolution of the layered epithermal system especially for subdivision of clays and other difficult to distinguish indicator minerals of alteration type and intensity.</p> <p>Estimation domains are a combination of mineralised porphyry or host units, alteration type and fault partition.</p> <p>All geological contacts are honoured in the geological interpretations used for grade estimation domains. The confidence in the geological volumes and lithological and faulted contact correlations that were used in the estimation domains is reflected in the resource classification. The geological and structural framework used in the Mineral Resource has also been externally reviewed. It concluded that the current model is supported by contacts seen in core and makes kinematic and geometric sense with no obvious flaws. There is sufficient drill data to constrain the geological model that alternative interpretations will not be materially different from the framework used in the 2015 Mineral Resource. The geological and structural model has defined the major structural and lithological contacts that impact grade continuity.</p>
<b>Dimensions</b>	<p>The Golpu deposit is approximately 800m by 400m elliptical in plan and extends from 200m below surface to approximately 2,000m depth.</p>
<b>Estimation and modelling techniques</b>	<p>The Golpu Mineral Resource grades were estimated with Ordinary Kriging using pairwise variograms of 10m composites for seven elements: gold, copper, silver, molybdenum, sulphur, arsenic, and iron with Vulcan software using domain specific variograms and search for informing 10m composites using the variogram anisotropy. The grades were estimated into a block model with 40m x 40m x 40m parent cells with 10m x 10m x 10m resolution on domain margins. This reflects the estimation precision available from the drillhole spacing of less than 100m x 100m in the upper portion of the deposit and up to 200m x 200m in the lower portions of the deposit and the planned mining method (block caving). Variograms are typically low nugget (7-17% for gold and 5-30% for copper) with long ranges. Search parameters vary by element and estimation domain but reflect the orientation and ranges of the variograms. The maximum number of samples per block typically restricts the actual distance of informing samples to substantially less than the search limits. While there are spatial associations between elements, all are estimated independently.</p> <p>The grade estimation is based on an underlying 'diffusion' model where grade trends from lower to higher values from the mineralisation margin to the porphyry core in a relatively continuous relationship. Domain drift is apparent for the porphyry system and pairwise variograms were used for modelling grade continuity. Contact analyses indicated the Hornblende (Livana) Porphyry has abrupt grade contacts and is modelled independently. Estimation domains are also bounded at all major thrust faults where drilling has demonstrated clear grade truncations. Most other estimation domains are continuous 'diffusive' transitions from mineralised porphyry margins to the mineralisation limit regardless of host lithology. All porphyry-related domains are modelled with an orientation defined by the elongation of the porphyry system. All epithermal, oxidation and cover sequence domains have shallow dips to grid east again reflecting their overall orientation.</p> <p>Top-cuts were applied to gold and copper composite grades but have no impact on global estimated Mineral Resources. No top cuts were applied to arsenic composites. This is a potential contaminant in copper concentrate and sensitivity to high grade arsenic composites is required to evaluate the final As content potentially delivered to concentrate.</p>

	<p>Silver and molybdenum are modelled as they may reach potentially extractable by-products however silver and molybdenum are not included in the revenue estimation. Sulphur and iron are estimated as they inform sulphide speciation and gold:sulphur and copper:sulphur ratios are included in metallurgical recovery models.</p> <p>The model has been validated by comparison with informing composite declustered statistics and alternative modelling methods including conditional simulations. Alternative models constructed included nearest neighbour, inverse distance, raw variogram Ordinary Kriging, Discrete Gaussian Model, and Conditional Simulation models with Sequential Gaussian into nodes and Direct Block Simulation using Turning Bands into 10m blocks. The impact of independently domaining the Livana Porphyry as a 'hard' boundary compared to incorporation into a continuous grade trend was also evaluated.</p> <p>The risk associated with the inclusion of historical data has been evaluated by re-modelling without the non-QAQC validated data - there is no material change between models. Historical assays have been included in the Mineral Resource estimate to improve local estimation precision only.</p> <p>There are no selective mining units applied to the Mineral Resource reflecting the planned mining method.</p> <p>The grade, recovery and value models used to quantify the Golpu Mineral Resource are considered appropriate for the style of mineralisation and are suitable for the required estimation precision for the planned mining method – block caving.</p>
<b>Moisture</b>	All tonnages are calculated and reported on a dry tonnes basis.
<b>Cut-off parameters</b>	<p>The Mineral Resource estimate is reported within a break-even value shell using the 2015 Mineral Resource revenues from gold and copper only and the cost structure from the 2015 Stage Two PFS (Life-of-Mine-Plan based on 14Mt/year from block cave mining with processing by sulphide flotation producing a copper concentrate for pumping to Lae port and shipment to overseas smelters). Costs include block cave mining, treatment / processing and General and Administration (G&amp;A). Net Smelter Return (NSR) includes metallurgical recoveries and off-site realisation (TCRC) including royalties. Gold revenues assumptions are US\$1,300/oz and copper US\$3.40/lb.</p> <p>The value of each in-situ block is estimated and a smoothed shell generated at the break-even margin. The shell includes internal below value cut-off blocks and excludes isolated above cut-off blocks. While not a block-cave design, the shell is representative the bulk mining method planned – block caving. All Mineral Resources are constrained within the margin breakeven 'value' shell representing the limit to eventual economic extraction.</p> <p>This methodology is a change from the 2014 Mineral Resource which was reported at a 0.2% copper grade shell - based on the 2012 PFS revenue and cost structure.</p>
<b>Mining factors or assumptions</b>	The Mineral Resource estimate is reported within a notional constraining shell at the marginal break-even cut-off, based on mass mining by block caving with no internal selectivity. The 40m x 40m x 40m block-model size and the application of a constraining spatial shell that reports all internal materials and excludes above margin break-even blocks aside the shell reflects the non-selective planned mining method.
<b>Metallurgical factors or assumptions</b>	<p>The metallurgical recovery included in the margin estimation is based on ore processing by copper flotation with copper and gold recovery to copper sulphide concentrate.</p> <p>Significant test-work has been completed to establish recovery algorithms for copper and gold. Metallurgical domains are based on the host lithology and alteration type. Each metallurgical domain is assigned a recovery algorithm further subdivided on copper:sulphur and gold:sulphur ratios. Estimated metallurgical recovery is included in the quantification of the Mineral Resource reporting cut-off. For the Mineral Resource cut-off, recovery models are applied for porphyry, high chalcopyrite porphyry, sediments and epithermal alteration domains.</p> <p>Silver and molybdenum are included in the Mineral Resource reporting volume but revenues are not included in the margin value estimation in line with the 2015 Stage Two PFS. There is no dedicated recovery and revenue path in the 2015 Life-of-Mine PFS for</p>



	<p>these elements but both have reasonable prospects of eventual economic extraction with only minor changes to the metallurgical flow-sheet. Current modelling indicates silver in copper concentrate will not consistently be above payable grades but this can be potentially achieved during concentrate marketing negotiations. Molybdenum will similarly not always be above cut-off grades however potentially economic grades are present within the block-cave volume.</p>
<b>Environmental factors or assumptions</b>	<p>Based on environmental characterisation completed to date, there are no recognised physico-chemical or biological environmental factors that will limit potential mining or milling operations. Geochemical assessment of rock and tailings has been completed to quantify acid forming characteristics and composition of the material. Waste rock locations, construction and dump design alternatives have been evaluated and designed given this information, with adequate controls allowed for acid rock drainage management. Hydrological models have been undertaken and test water bores have been constructed to evaluate mine vicinity water flows. Mine water will require treatment for both entrained silt contents and acid rock drainage and pH management before eventual discharge to the receiving environment. Treatment of water will ensure a quality that meets PNG Receiving Water Criteria to mitigate potential impacts to downstream communities and the environment. Options for terrestrial tailings dams have been evaluated and viable options designed. All development and production activities will be permitted by the PNG Department of Environment and Conservation under the Environment Act (2000).</p>
<b>Bulk density</b>	<p>Bulk density has been determined on 10cm core samples typically at 10m intervals down all holes. Methods used to derive bulk density values include air/water (approximately 95%) and wax/water (approximately 5%) where samples are friable. The average bulk density, after statistical review and removal of outliers, is assigned to domains derived from a combination of oxidation, alteration and lithology. The assignment of a constant bulk density per domain assumes limited internal variation within the domain. No elements reflecting sulphide mineralogy are considered significantly abundant to correlate bulk density and grade within the reported Mineral Resource volume.</p>
<b>Classification</b>	<p>The Mineral Resource is classified based on: geological confidence as a function of continuity and complexity of geological features; data spacing and distribution; and estimation quality parameters including distance to informing samples for block grade estimation.</p> <p>Indicated Mineral Resource, where the geological framework can be modelled with confidence and mineralisation continuity can be assumed, is classified from below the intense epithermal alteration zone to the 4,100m Wafi Grid Level (WGL) - approx. 1,400m below surface or to a major interpreted fault at similar depth. Below this fault and above 3780m WGL, drillhole spacing is increased and geological and grade continuity is less reliable – this volume is classified as Inferred Mineral Resource. All Mineral Resources are constrained within the margin breakeven 'value' shell representing the limit to eventual economic extraction.</p> <p>It is the Competent Person's view that the classifications used for the Mineral Resources are appropriate for the deposit.</p>
<b>Audits or reviews</b>	<p>The geological and structural framework used in the Mineral Resource has been externally reviewed. It concluded that the current model is supported by contacts seen in core and makes kinematic and geometric sense with no obvious flaws. The Mineral Resource estimate was the subject of independent external review by Australian Mining Consultants Pty Ltd (AMC) in 2014. No material issues were identified in these reviews and AMC concluded that the estimates had been prepared using accepted industry practice and classified and reported in accordance with the JORC 2012 Code.</p>
<b>Discussion of relative accuracy/ confidence</b>	<p>For an Indicated Resource estimate it is considered reasonable for the local relative uncertainty to be +/- 15% in tonnage, grade and metal (exclusive of each other, i.e., each variable has to satisfy the criteria) for an annual production volume at a 90% confidence level. Direct block co-simulations (gold and copper) of the annual production volumes represented by the average height of draw for BC1 and BC2 in the 2015 Golpu FS were evaluated to demonstrate confidence intervals. This evaluation indicate this criterion can</p>

	be satisfied. Relative uncertainties and confidence level estimates are considered for both copper and gold as they are both significant economic contributors. There is no production from the Golpu deposit to compare relative accuracy and confidence.
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#### Section 4 – Estimation and Reporting of Ore Reserves

Criteria	Commentary
<b>Mineral Resource estimate for conversion to Ore Reserves</b>	<p>A technical description of the Mineral Resource estimate that provided the basis for the December 2015 Golpu Ore Reserve estimate is presented in the preceding sections to this table.</p> <p>The Golpu deposit lies in a block of deformed Upper Mesozoic to Middle Miocene metasedimentary to sedimentary rocks cut by Miocene-Pliocene calc-alkaline dioritic intrusives. Copper and gold mineralisation results from a multiple intrusive porphyry system with the upper portion overprinted by high sulphidation epithermal alteration. Post mineral faulting has displaced and rotated the original intrusive configuration.</p> <p>The Golpu Mineral Resource grades were estimated with Ordinary Kriging using pairwise variograms of 10m composites for seven elements: gold, copper, silver, molybdenum, sulphur, arsenic, and iron. The grades were estimated into a block model with 40m x 40m x 40m parent cells with 10m x 10m x 10m resolution on domain margins. This reflects the estimation precision available from the drillhole spacing and the planned mining method (block caving).</p> <p>The reported Golpu Mineral Resources are inclusive of Ore Reserves.</p>
<b>Site visits</b>	The Competent Person for the Ore Reserve estimate travelled to site in April 2015. The intent of this site visit was to validate technical work used in the preparation of this Ore Reserve estimate.
<b>Study status</b>	A Stage One Feasibility level study was completed in December 2015 for the first stage in the development of a mine comprising of two block caves (BC1 & BC2). In parallel with the Stage One Feasibility study a Stage Two Prefeasibility study was completed in December 2015 which utilises the Stage One Feasibility study as a base from which to increase the production rate of BC2 and the extension of the scope to include BC3 at the 4000mRL. The Stage Two Prefeasibility study provides supporting basis for this Ore Reserve estimate.
<b>Cut-off parameters</b>	The Golpu Ore Reserve employs a value based cut-off by determining the Net Smelter Return (NSR) value based on the outcomes of the studies. The NSR calculation takes into account reserve revenue factors, metallurgical recovery assumptions, transport costs and refining charges and royalty charges. The site operating costs include mining cost, processing cost, relevant site general and administration costs and relevant sustaining capital costs.
<b>Mining factors or assumptions</b>	<p>Estimation of the Golpu Ore Reserve involved standard steps of mine optimisation, mine design, production scheduling and financial modelling. Factors and assumptions have been based on numerical modelling as well as experience and performance in similar caving operations. The basis of the analysis is considered at Prefeasibility study level or higher.</p> <p>Preceding Prefeasibility studies completed in 2012 and 2014 deemed block caving to be the appropriate mining method to maximise the economic output of the Mineral Resource. The 2015 Stage One Feasibility and Stage Two Prefeasibility studies (on which this Ore Reserve statement is based) defined a three lift block cave mine plan. Extraction levels for the three block caves are; 4825mRL (BC1), 4200mRL (BC2), and the 4000mRL (BC3).</p> <p>Geotechnical assessment during the studies has resulted in the following key mine design parameters:</p>

Criteria	Commentary										
	<b>Mine Design Parameter</b>		<b>Value</b>								
	Undercutting Strategy		Advanced Undercut								
	Undercut Design		W Cut with Apex level								
	Extraction Level Layout		El Teniente								
	Extraction Spacing		BC1 28m x 20m BC2 30m x 20m BC3 30m x 18m								
	Draw Cone Radius		BC1 11m BC2 10m BC3 10m								
	Draw Column Height		<table border="1"> <thead> <tr> <th data-bbox="927 712 1174 757">Average</th> <th data-bbox="1174 712 1453 757">Maximum</th> </tr> </thead> <tbody> <tr> <td data-bbox="927 757 1174 813">BC1 160m</td> <td data-bbox="1174 757 1453 813">BC1 214m</td> </tr> <tr> <td data-bbox="927 813 1174 869">BC2 730m</td> <td data-bbox="1174 813 1453 869">BC2 1,025m</td> </tr> <tr> <td data-bbox="927 869 1174 927">BC3 600m</td> <td data-bbox="1174 869 1453 927">BC3 1,000m</td> </tr> </tbody> </table>	Average	Maximum	BC1 160m	BC1 214m	BC2 730m	BC2 1,025m	BC3 600m	BC3 1,000m
Average	Maximum										
BC1 160m	BC1 214m										
BC2 730m	BC2 1,025m										
BC3 600m	BC3 1,000m										
	<p>Access to the mine is proposed to be via twin declines developed from the Watut river flats to an initial data collection platform at BC1 to provide additional geological, geotechnical, hydrogeological and metallurgical data for further design optimisation. From this point, the access declines would continue to BC2 and ultimately BC3. An inclined conveyor network would facilitate the transport of the ore from the block caves to the surface processing plant. Ventilation would be achieved via two large diameter shafts located outside the ultimate subsidence zone.</p> <p>The following Modifying Recovery Factors have been applied totalling 9% of tonnes, 8% of gold metal and 11% of copper metal made up of:</p> <ul style="list-style-type: none"> <li>Ore loss due to unplanned early abandonment of drawpoints</li> <li>BC3 mining recovery in zone between 700m -1,000m draw column height in drawpoints adjacent to BC2</li> </ul> <p>The geological model is made up of Indicated, Inferred and background mineral resource categories. There is no Measured Mineral Resource. Mine plans are based on the extraction of caving blocks solely delineated on the basis of Indicated material according to block model classifications.</p> <p>Of the total Ore Reserve approximately 44Mt of ore is Inferred or non-classified. This ore contains 8% of the gold metal and 6% of the copper metal in the Ore Reserve and does not have a material impact upon the estimate. As this is dilution material associated with the block cave mining method, it has been incorporated into the Ore Reserve estimate.</p> <p>Golpu is a greenfield block caving project and will require the following mining infrastructure to support the block caves:</p> <ul style="list-style-type: none"> <li>Ventilation fans and refrigeration equipment</li> <li>Dewatering equipment</li> <li>Crushing and conveying equipment</li> <li>Underground Workshop and meal room facilities</li> </ul>										

Criteria	Commentary
<b>Metallurgical factors or assumptions</b>	<p>The ore will be processed on site at the proposed treatment plant using conventional single stage SAG and ball mill grinding and flotation methods that are incrementally sized to match the mining rate to produce a copper and gold concentrate. The technology associated with the ore processing is very much an industry standard for this style of deposit.</p> <p>The key metallurgical testwork for the Golpu deposit can be grouped into four main programmes as follows:</p> <ul style="list-style-type: none"> <li>• Testwork completed prior to 2011 on samples from above 5120mRL</li> <li>• 2012 PFS Variability testwork and Metallurgical Domain Model completed on samples over the vertical extent of the known Golpu deposit from 5120mRL to 3850mRL across 14 exploration drill holes.</li> <li>• 2013/14 Variability and flowsheet development testwork from 102 composites in the 2012 PFS programme. Variability samples were prepared from material selected from exploration drill holes to provide spatial and grade variability within the respective domains. The testwork samples were obtained from 14 exploration drill holes across seven metallurgical domains</li> <li>• 2014/15 Feasibility Study Testwork programme executed testwork through the chosen process flowsheet using bulk samples from a mine plan targeting the development of two block caves. Based on the mine development, the ore types identified in the early years of production included domains 29 (Sericitic metasediment), domain 30 (Sericitic porphyry) and domain 33 (Actinolite porphyry) and account for 92% of material mined within the planned block caves.</li> </ul> <p>A bulk composite sample from drillholes was generated for the Feasibility Study testwork programme. Three dimensional modelling was used for sample selection and verification, based on a representative mine plan for BC1 and BC2. A chemical analysis was undertaken of final concentrate derived from a bulk flotation to test major elements and potential deleterious elements. The analysis indicated that the concentrate did not exceed any of the typical concentration restrictions and meets the expected marketing grades for gold and copper in copper concentrate for sale to target smelters.</p>
<b>Environmental</b>	<p>Feasibility study level analysis has been conducted assessing the potential environmental impacts of the mining and processing operations required for the mining of BC1 and BC2.</p> <p>NAF (Non-Acid Forming) waste rock would be produced from the first 2,000m of the twin declines. This material would be used to construct the retaining wall, base and access road for the PAF (Potentially Acid Forming) cells. PAF would be expected to be encountered from 2,000m for the remaining scope of the mine. This material would either be stored in cells encapsulated in impervious material or treated via the processing plant.</p>
<b>Infrastructure</b>	<p>Golpu is a greenfield site and currently does not have infrastructure to support mining operations. Major Infrastructure required and included in the Feasibility and Prefeasibility studies are:</p> <ul style="list-style-type: none"> <li>• Access road</li> <li>• Processing plant</li> <li>• Tailings storage facility</li> <li>• Concentrate export pipeline plus associated dewatering and loading facilities at the Lae Tidal Basin</li> <li>• Accommodation camp</li> <li>• Power transmission line</li> </ul>
<b>Costs</b>	<p>Capital and Operating costs have been determined in USD as part of the Feasibility/Prefeasibility level studies.</p> <p>Capital cost estimates are based on multiple market prices across all technical disciplines. Provision has been made for capital expenditure requirements for new equipment, infrastructure and replacement of infrastructure and equipment during the life of the mine.</p>

Criteria	Commentary
	<p>Contingency has also been factored into the capital cost estimate consistent with the level of accuracy of the study.</p> <p>Operating cost estimate first principles cost modelling expenses have been quantified as far as possible and where practicable supported by quotations.</p> <p>No cost impact is expected from deleterious elements. It has therefore not been necessary to include realisation penalties (additional costs) relating to minor elements when preparing the Ore Reserve estimate.</p> <p>Transport and refining charges have been based on forecast supply and demand assumptions.</p> <p>The following allowances have been made for royalties payable in the preparation of the Ore Reserve estimate:</p> <ul style="list-style-type: none"> <li>• Royalty of 2.00% of net smelter revenue (i.e. gross revenue from all mining sales adjusted for realisation and freight charges)</li> <li>• Mining Levy of 0.25% of gross revenue from all mining sales (adjusted for realisation and freight charges)</li> </ul>
<b>Revenue factors</b>	<p>Long term metal prices and exchange rate assumptions adopted in the Ore Reserve estimate are US\$1,200/oz for gold and US\$3.00/lb for copper.</p> <p>The Golpu Ore Reserve employs a value based cut-off by determining the Net Smelter Return (NSR) value based on the outcomes of the studies. The NSR calculation takes into account reserve revenue factors, metallurgical recovery assumptions, transport costs and refining charges and royalty charges. The site operating costs include mining cost, processing cost, relevant site general and administration costs and relevant sustaining capital costs.</p>
<b>Market assessment</b>	<p>Market assessment was undertaken as part of the Stage One Feasibility Study. It covered the key areas of:</p> <ul style="list-style-type: none"> <li>• The demand, supply and stock situation for gold and copper, consumption trends and factors likely to affect supply and demand into the future</li> <li>• A customer and competitor analysis</li> <li>• Prices as per revenue factor assumptions are US\$1,200/oz for gold and US\$3.00/lb for copper. and volume forecasts derived from the Ore Reserve production schedule</li> </ul> <p>Supply and demand for copper/gold concentrate from Golpu is not a constraint in the estimation of the Ore Reserve.</p> <p>Based on the concentrate product forecast derived from the 2015 Feasibility Study, silver and molybdenum are not expected to be consistently at sufficient levels in concentrate to be paid by the target smelters under current market conditions. This outcome has resulted in the removal of silver and molybdenum from the Ore Reserve estimate and revenue is not included in the Project evaluations.</p>
<b>Economic</b>	<p>The Ore Reserve has been evaluated through a financial model. All operating and capital costs as well as revenue factors stated in this document were included in the financial model. This process demonstrated the Golpu Ore Reserve to have a positive NPV.</p> <p>Sensitivities were conducted on the key input parameters including commodity prices, capital and operating costs, ore grade, discount rate, exchange rate and recovery which confirmed the estimate to be robust. The NPV range has not been provided as it is commercially sensitive.</p>



Criteria	Commentary
<b>Social</b>	<p>To assess the social and economic impacts of the Project upon communities, a detailed Socio-Economic Impact Assessment has been completed. The assessment indicated that the Project has the potential to deliver significant benefits to local and regional communities and the broader economy of PNG, including taxation and royalty revenues to various levels of Government. The Project will also provide benefits through training and employment opportunities, business and community development programmes, investment in health and education and new/improved regional infrastructure. The Northern Access Road in particular will improve access to existing services and facilities for more than 5,000 people in the lower Watut.</p> <p>The land in which the Project is located is under customary land title, some of which has been in dispute since mineral exploration began in the early 1980s. Determination of landowners is a prerequisite to discussing and securing key agreements for project development, including: the Compensation Agreement, Resettlement Agreement and the Development Forum processes. Recognition of legitimate landowners, and protection of their rights, will be vital to the maintenance of social licence and the appropriate participation in these agreements.</p>
<b>Other</b>	<p>A Pre Mine Development Agreement (PMDA) with the Papua New Guinea Government has not yet been approved by the Papua New Guinea Government and this is a prerequisite for the early project expenditure approval to establish exploration positions.</p> <p>A Level 2B environment permit (EP) has been granted for exploration activities including the construction of the twin declines to the base of the block caves. An application for a Level 3 permit (covering ore extraction and processing) has been submitted and is expected to be granted in 2018. Grant of the Special Mining Lease is tied to grant of the Level 3 EP.</p> <p>The Golpu deposit is located in a seismically active area in a region close to a source of earthquakes that can produce important accelerations at the site. This risk is not considered material to the Ore Reserve estimate.</p>
<b>Classification</b>	<p>The Ore Reserve classification is based on Indicated resources. This classification is based on geological confidence as a function of continuity and complexity of geological features, data spacing and distribution,; and estimation quality parameters including distance to informing samples for block grade estimation. Inferred and un-classified material has been included within the Probable Ore Reserve as mined dilution due to the non-selective nature of block cave mining. This represents 0.9 Moz gold or 8% &amp; 0.3Mt copper or 6% of the tabled Ore Reserve. Even without consideration of Inferred and unclassified material in the mining inventory, the proportion of Indicated material would still conclusively deliver a Probable Reserve.</p> <p>It is the Competent Person's view that the classifications used for the Ore Reserves are appropriate.</p>
<b>Audits or reviews</b>	<p>AMC Consultants (AMC) were commissioned to conduct an independent review of the Ore Reserve estimation processes and results.</p> <p>AMC concluded that the Ore Reserve estimates had been prepared using normal industry practice and has been appropriately classified as Probable Ore reserve. AMC did not identify any material issues with the estimate.</p>
<b>Discussion of relative accuracy/ confidence</b>	<p>The accuracy of the global estimates within this Ore Reserve is mostly determined by the order of accuracy associated with the Mineral Resource model, the geotechnical input and the cost factors used.</p> <p>The Competent Person views the Golpu Ore Reserve a reasonable assessment. The remaining areas of uncertainty at the current study stage are:</p> <ul style="list-style-type: none"> <li>• Hydrogeology confidence level</li> <li>• Geotechnical parameters</li> </ul>

## **Forward Looking Statements**

These materials include forward looking statements. Often, but not always, forward looking statements can generally be identified by the use of forward looking words such as “may”, “will”, “expect”, “intend”, “plan”, “estimate”, “anticipate”, “continue”, and “guidance”, or other similar words and may include, without limitation, statements regarding plans, strategies and objectives of management, anticipated production or construction commencement dates and expected costs or production outputs.

Forward looking statements inherently involve known and unknown risks, uncertainties and other factors that may cause the Company’s actual results, performance and achievements to differ materially from any future results, performance or achievements. Relevant factors may include, but are not limited to, changes in commodity prices, foreign exchange fluctuations and general economic conditions, increased costs and demand for production inputs, the speculative nature of exploration and project development, including the risks of obtaining necessary licences and permits and diminishing quantities or grades of reserves, political and social risks, changes to the regulatory framework within which the Company operates or may in the future operate, environmental conditions including extreme weather conditions, recruitment and retention of personnel, industrial relations issues and litigation.

Forward looking statements are based on the Company and its management’s good faith assumptions relating to the financial, market, regulatory and other relevant environments that will exist and affect the Company’s business and operations in the future. The Company does not give any assurance that the assumptions on which forward looking statements are based will prove to be correct, or that the Company’s business or operations will not be affected in any material manner by these or other factors not foreseen or foreseeable by the Company or management or beyond the Company’s control.

Although the Company attempts and has attempted to identify factors that would cause actual actions, events or results to differ materially from those disclosed in forward looking statements, there may be other factors that could cause actual results, performance, achievements or events not to be as anticipated, estimated or intended, and many events are beyond the reasonable control of the Company. Accordingly, readers are cautioned not to place undue reliance on forward looking statements. Forward looking statements in these materials speak only at the date of issue. Subject to any continuing obligations under applicable law or any relevant stock exchange listing rules, in providing this information the Company does not undertake any obligation to publicly update or revise any of the forward looking statements or to advise of any change in events, conditions or circumstances on which any such statement is based.

## **Ore Reserves and Mineral Resources Reporting Requirements**

As an Australian Company with securities listed on the Australian Securities Exchange (“ASX”), Newcrest is subject to Australian disclosure requirements and standards, including the requirements of the Corporations Act 2001 and the ASX. Investors should note that it is a requirement of the ASX listing rules that the reporting of ore reserves and mineral resources in Australia comply with the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the “JORC Code”) and that Newcrest’s ore reserve and mineral resource estimates comply with the JORC Code.

## **Competent Person’s Statement**

The information in this report that relates to Golpu Mineral Resources is based on information compiled by the Competent Person, Mr Paul Dunham, who is a member of The Australasian Institute of Mining and Metallurgy. Mr Paul Dunham, is a full-time employee of Newcrest Mining Limited or its relevant subsidiaries, holds options and/or shares in Newcrest Mining Limited and is entitled to participate in Newcrest’s executive equity long term incentive plan, details of which are included in Newcrest’s 2015 Remuneration Report. Mineral Resource growth is one of the performance measures under that plan. Mr Paul Dunham has sufficient experience which is relevant to the styles 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 JORC Code 2012. Mr Paul Dunham consents to the inclusion of material of the matters based on his information in the form and context in which it appears.

The information in this report that relates to Golpu Ore Reserves is based on information compiled by the Competent Person, Mr Pasqualino Manca, who is a member of The Australasian Institute of Mining and Metallurgy. Mr Pasqualino Manca, is a full-time employee of Newcrest Mining Limited or its relevant subsidiaries, holds options and/or shares in Newcrest Mining Limited and is entitled to participate in Newcrest’s executive equity long term incentive plan, details of which are included in Newcrest’s 2015 Remuneration Report. Ore Reserve growth is one of the performance measures under that plan. Mr Pasqualino Manca has sufficient experience which is relevant to the styles 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 JORC Code 2012. Mr Pasqualino Manca consents to the inclusion of material of the matters based on his information in the form and context in which it appears.

## **Non-IFRS Financial Information**

Newcrest results are reported under International Financial Reporting Standards (IFRS). This report includes a non-IFRS financial information, being Total Operating Costs, Cash Costs and Total Production Costs. These measure is used internally by management to assess the performance of the business and make decisions on the allocation of resources and are included in this presentation to provide greater understanding of the underlying performance of the Company’s operations. When reviewing business performance, this non-IFRS information should be used in addition to, and not as a replacement of, measures prepared in accordance with IFRS, available on Newcrest’s website and on the ASX platform. Non-IFRS information has not been subject to audit or review by Newcrest’s external auditor.