



## MARKET UPDATE – RESULTS OF JOINT MINING STUDY FOR CASTLE HILL STAGE 1

ASX: PXG

### KEY POINTS

- Phoenix and Norton jointly commissioned mining consultancy Golder Associates (“Golder”) to complete a Mining Study on the Mick Adams/Kiora and Wadi Projects (Castle Hill Stage 1)
- This study represents an update of the studies delivered to Norton in 2014<sup>1</sup> in accordance with the Option for Licence to Mine and Ore Sale Agreement<sup>2</sup>
- The results of the study indicate the potential for a larger project, delivering 398,200 ounces from mining 8.7 million tonnes grading 1.51 g/t and 94% process recovery<sup>3</sup>
- At A\$1,350/oz gold price, the study shows the project could potentially deliver a \$91 million cash surplus shared equally by Phoenix and Norton
- Final mine design and ore schedule still to be provided by Norton which may result in a different physical and financial outcome from that presented in the Golder study and discussed in this announcement

### BACKGROUND

- *Separate studies were delivered to Norton on 21 February 2014 in accordance with the Option for Licence to Mine and Ore Sale Agreement<sup>2</sup>*
- *Those studies delivered 142,800 ounces from mining of 2.3Mt grading 2.03g/t Au and generated \$35 million net cash flow at A\$1,400 gold price<sup>1</sup>*
- *Norton exercised the Option on 5 August 2014*
- *Under the Option for Licence to Mine and Ore Sale Agreement<sup>2</sup>, Norton fund upfront capital, mining, haulage and milling with Phoenix receiving 50% of the cash surplus*
- *A mining study<sup>3</sup>, commissioned jointly by Phoenix and Norton, has been completed by Golder using an agreed updated JORC compliant geological model completed by Cube Consulting with operating, capital cost assumptions and fleet selection information supplied by Norton*

**Phoenix Gold Ltd**  
ABN 55 140 269 316

73 Dugan Street  
PO Box 100  
Kalgoorlie WA 6430  
Phone +61 8 9021 2704  
Fax +61 8 9021 3393

[www.phoenixgold.com.au](http://www.phoenixgold.com.au)  
[info@phoenixgold.com.au](mailto:info@phoenixgold.com.au)

<sup>1</sup>As released to the ASX on 21 February 2014

<sup>2</sup>Summarised in the Solicitors Report within the Phoenix Prospectus dated 20 October 2010

<sup>3</sup>Studies based on published Mineral Resources released to the ASX on 15 and 19 January 2015. See also qualification and forward looking statements on pages 11 and 12. See also Appendix 1



## RESULTS OF GOLDER MINING STUDY

The study was completed in January 2015 and delivered the following results<sup>4</sup>:

<b>Key operating results – Golder Mining Study</b>		
Waste removed	Mt	48.8
Ore mined	Mt	8.7
Strip ratio	W:O	4.3
Ore Milled	Mt	8.7
Average Grade	g/t	1.51
Contained gold	k oz	423.7
<b>Produced gold at 94% recovery at Norton’s Mill (A)</b>	<b>K oz</b>	<b>398.2</b>
<b>Key financial results (at A\$1,350 per ounce)</b>		
Total Revenue	A\$M	509.7
Waste removal costs	A\$M	(128.3)
Ore mining	A\$M	(29.1)
Haulage and Processing	A\$M	(257.7)
Total operating costs (B)	A\$M	(415.0)
Capital development (funded by Norton)	A\$M	(4.05)
Mine life at 1Mtpa	yrs	8
<b>Surplus cash (to be shared 50:50)</b>	<b>A\$M</b>	<b>90.6</b>
<b>Operating costs per ounce recovered [A / B]</b>	<b>A\$/oz</b>	<b>1,042</b>

### Sensitivity to Gold Price<sup>\*</sup>

<b>Surplus Cash at Different Gold Prices</b>	<b>A\$/oz</b>	<b>\$1,350</b>	<b>\$1,500</b>	<b>\$1,650</b>
Surplus cash (to be shared 50:50)	A\$M	90.6	148.5	206.4

*\*Prepared by Phoenix*

## FINAL MINE DESIGN & ORE SCHEDULE

- *Under the Option for License to Mine Agreement<sup>5</sup> the final mine design and ore schedule is to be provided by Norton and may vary from that proposed by the Golder study*
- *There can be no assurance that the final mine design will correspond to that proposed by Golder in the joint study (and discussed in this announcement) and this will be the subject of further discussions between Phoenix and Norton as part of the negotiations on the Licence to Mine and Ore Sale Agreement<sup>4</sup>*

<sup>4</sup>Studies based on published Mineral Resources released to the ASX on 15 and 19 January 2015. See also qualification and forward looking statements on pages 11 and 12. See also Appendix 1

<sup>5</sup>Summarised in the Solicitors Report within the Phoenix Prospectus dated 20 October 2010



## Overview

Phoenix Gold Limited (ASX: PXG) (“Phoenix” or the “Company”) is pleased to announce the results of the joint Mining Study (“Study”) completed by Golder Associates for Phoenix Gold Ltd and Norton Gold Fields Ltd (“Norton”). The Study incorporated an updated and agreed JORC 12 geological model prepared by Cube Consulting for the Castle Hill Stage 1 project area comprising the Mick Adams, Kiora and Wadi deposits. Updated capital and operating costs were provided by Norton as was updated fleet selection information.

The projects are located on the highly prospective Zuleika and Kunanalling shear zones in the heart of the Western Australian Goldfields (Figure 1) less than 50 km from the regional mining centre of Kalgoorlie.

21<sup>st</sup> January 2015

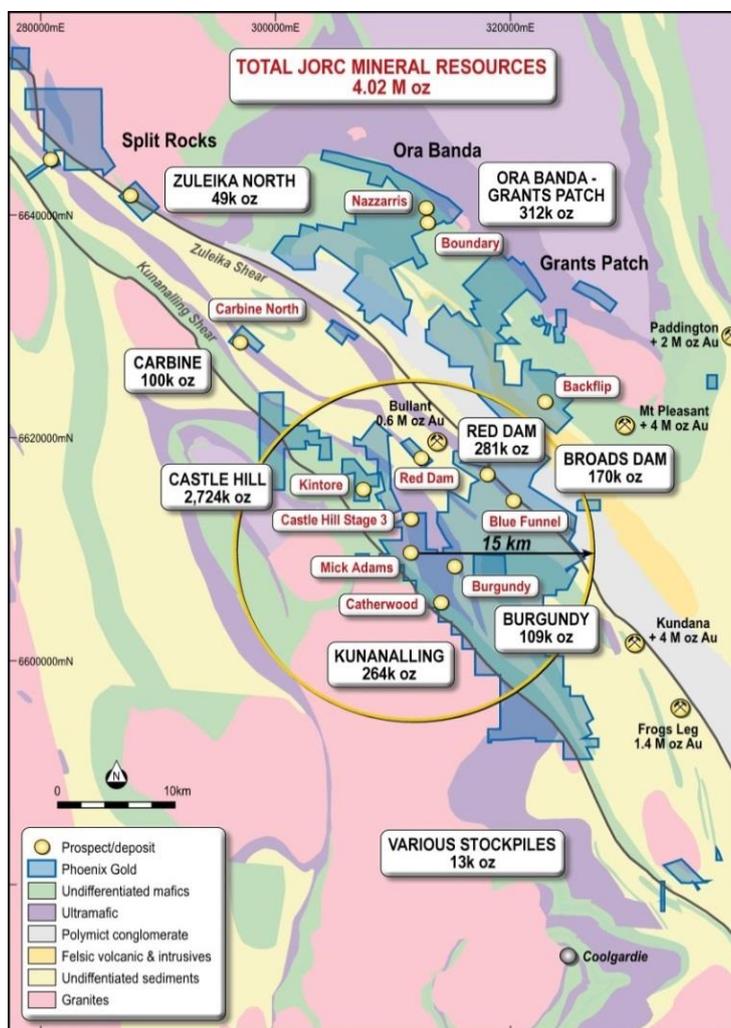


Figure 1: Project locations, Resources summary and regional geology

“While this study is one of many evaluations undertaken, the latest results of the mining study are very encouraging and demonstrate robust project economics, particularly at current gold prices.” Managing Director Jon Price said.

“We look forward to working with Norton on finalising the mine design and ore schedule and completing the Licence to Mine and Ore Sale Agreement.” Mr Price said.



## Golder Mining Study

During the September and December Quarters, Phoenix and Norton commissioned mining consultancy Golder Associates to complete an updated optimisation and mining study. Cube Consulting completed the geological modelling and Resource estimation and metallurgical test work was completed by Independent Metallurgical Operations. The study is based on the current Indicated Mineral Resources which form the basis for reporting a production profile.

The ore is to be transported to the Norton processing facilities at Paddington 35 kilometres to the east. A staged mine design and ore schedule is to be completed by Norton. On completion of this ore schedule, it is anticipated that the formal Agreement would be executed ahead of expected development.

### Study parameters and assumptions

It was assumed open cut mining would be conducted by Norton's "Selective Fleet" with ore trucked via existing haulage roads to the Paddington mill. Norton's "Selective Fleet" is comprised of Hitachi EX 1900 (190t) class excavator and 85 tonne Caterpillar 777 trucks.

Material assumptions used by Golder are summarised below:

- Pit optimisation using wall angles based on geotechnical drill holes, detailed geotechnical assessment and allowances for ramps and those stipulated by Norton
- All mining costs for load, haul, drill and blast based on rates provided by Norton
- Metallurgical recoveries for the Paddington mill were agreed based on their operating history and metallurgical test work completed on the projects
- Capital costs (funded by Norton) towards site establishment, roads and infrastructure were estimated by Norton at A\$4.1 million
- All plant maintenance costs, general and administration costs, plant and infrastructure sustaining capital, plant capital charges (charges to incorporate ores from Mick Adams-Kiora and Wadi to the Paddington Mill, tailings dam capital (allowance for additional tailings dam storage for ore treated), sampling plant costs (for additional sampling for grade determination on the mill ROM), haulage costs of ore, road maintenance associated with road haulage, equipment amortisation costs, rehabilitation costs, site overheads and grade control costs were either provided by, or agreed with, Norton
- Mining recovery of 95% and mining dilution of 5%
- All Inferred Resources were excluded from the optimisation for estimation of reserves
- A gold price of \$A1,350 per ounce was used to estimate cut-off grade and economically mineable material
- W.A. state royalty equates to A\$37.50 per ounce and total third party royalties to A\$36.59 per ounce. These royalties were subtracted from the gold price as part of the optimisation process.
- Bulk densities were derived from test work
- A discount factor of 5% was applied for all optimisations
- A life mine ("LOM") schedule was developed by Golder to maintain 1 million tonnes of Run of Mine ("ROM") feed to the Paddington process plant per annum



## Permitting and Environmental Studies

The following environmental work has been completed in support of the proposed mining operation at Mick Adams/Kiora and Wadi:

- Flora and Fauna surveys (inclusive of studies for micro-fauna)
- Surface water assessment
- Heritage surveys
- Waste rock characterisation
- Ground water assessment

There have been no significant matters identified as a result of the environmental studies that would impede the mining operations. Management strategies have been developed to address clearing of vegetation, wildlife interaction and rehabilitation of waste rock dumps. Waste rock characterisation studies have identified the main waste material to be non-acid forming. A suitable area has been identified within the bounds of the Phoenix tenure for the waste rock landform.

Clearing permits and Water Abstraction Licences have been granted over the project area by the Department of Environmental Regulation. Mining Proposals (including Mine Closure Plans) jointly completed by Norton and Phoenix for the project have been submitted prior to commencement of the mining operation. Miscellaneous Licences have been pegged and granted over a nearby borefield and water licences have been granted by the Department of Water.

As part of the Mine Closure Planning process, discussions with stakeholders (local community, pastoralists) have been undertaken. Discussions with the pastoralist regarding post mining land use are in progress.

The Castle Hill Stage 1 Ore Reserve is situated on granted Mining Leases which have a grant life of 21 years and are renewable for a further 21 years. Applications for conversion of three surrounding prospecting licences have been submitted to the Department of Mines and Petroleum. These applications are for location of the heap leach facility.

Miscellaneous Licences have been pegged and granted where required to connect the haulage road network at Castle Hill to the Paddington processing plant run of mine (ROM) pad. Mining Proposals relating to road construction on these licences will be submitted on an as needs basis.

## Infrastructure

The proposed infrastructure utilised to generate cost estimates or required to support the operation in relation to the generation of Ore Reserves are as follows:

- A 3.5M tonne per annum CIL gold processing plant located at Norton's Paddington operation, with operating costs and recoveries provided by Norton based on the plant operation and metallurgical test work
- Waste Landforms have been designed for placement of mine waste and stockpiling of lower grade material to be set aside for Phoenix's proposed Heap Leach facility
- Support infrastructure including an administration building, workshop, store facility, reagents and fuel storage areas and water storage facilities.



## Mineral Resource and Ore Reserve from the Golder Mining Study

21<sup>st</sup> January 2015

The current Mineral Resource for the Mick Adams – Kiora and Wadi project area is summarised below<sup>6</sup>:

Project	Measured Mineral Resource			Indicated Mineral Resource			Inferred Mineral Resource			Total Mineral Resource		
	Mt	Au (g/t)	Au Oz	Mt	Au(g/t)	Au oz	Mt	Au (g/t)	Au Oz	Mt	Au (g/t)	Au Oz
Mick Adams/Wadi - Mill				18.09	1.5	894,000	6.39	1.3	274,000	24.48	1.5	1,168,000
Mick Adams/Wadi - HL				21.54	0.6	400,000	10.98	0.6	198,000	32.52	0.6	598,000
<b>Total</b>				<b>39.63</b>	<b>0.0</b>	<b>1,294,000</b>	<b>17.37</b>	<b>0.0</b>	<b>472,000</b>	<b>57.00</b>	<b>0.0</b>	<b>1,766,000</b>

The Golder Ore Reserve estimate for the milling operation at the project using a fully diluted resource at a cut-off grade of 0.77g/t contains 8.7Mt of mill feed at an average mill feed grade of 1.51g/t Au with an estimated contained 423k oz. The Probable mill ore Reserves are summarised by project below:

Project	Proven Ore Reserve			Probable Ore Reserve			Total Ore Reserve			Cut off
	Mt	Au (g/t)	Au Oz	Mt	Au(g/t)	Au oz	Mt	Au (g/t)	Au Oz	g/t
Kiora				0.11	1.56	5,370	0.11	1.56	5,370	0.8
Mick Adams				8.24	1.50	395,950	8.24	1.50	395,950	0.8
Wadi				0.36	1.94	22,390	0.36	1.94	22,390	0.8
<b>Total</b>				<b>8.70</b>	<b>1.51</b>	<b>423,700</b>	<b>8.702</b>	<b>1.51</b>	<b>423,700</b>	

Note: The reserve estimates have been modified with dilution and mining recovery factors (see Appendix 1)

Tonnes and ounces are rounded, rounding errors may occur

MT = million tonnes, Au (g/t) = gold in grams per tonne

## Geological Summary

The principal lithology to host gold mineralisation at Mick Adams-Kiora and Wadi (Castle Hill Stage 1) is the Kintore Tonalite a large intrusive granitoid of granodioritic composition. The tonalite intrudes a sequence of basaltic and ultramafic rocks to the east and west. The elliptical Kintore Tonalite attenuates to the south to form very long narrow (80m wide in plan) intrusion which hosts the Mick Adams and Wadi gold mineralisation and a dyke swarm to the south-east which hosts the Outridge and Kiora gold mineralisation. Gold mineralisation is also hosted along the eastern margin of the main body of the tonalite at Wookie and Picante. Gold mineralisation in this area is hosted within the tonalite and within the flanking mafic/ultramafic sequence. The Lady Alice gold mineralisation is associated with a fault array hosted entirely within the bulk of the tonalite intrusive. The Lady Alice fault array coincides with the boundary between de-magnetised tonalite to the east and magnetised tonalite to the west.

Vertical vein arrays and kinematic indicators at Mick Adams and Kiora show the primary deformation at Castle Hill was extension with an east block down (sinistral normal) sense of movement, suggesting emplacement of the tonalite coincided with the beginning of an extensional doming event and the start of basin formation. The tonalite has therefore been interpreted as being emplaced in a relay zone between two fault tips. NE trending discrete faults are interpreted to be hard-linked transfer structures (perhaps zones of inherited weakness) which form jogs and hence local areas of dilation in the normal faults. Mick Adams and Wadi are separated by a NE trending fault which has generated an offset of 250m across strike. Both deposits dip shallowly to the east. NW trending shear zones which were re-activated during sinistral transpression accommodate much of the compressional strain and act to preserve the extensional domain.

<sup>6</sup> As announced to the ASX on 15 and 19 January 2015. See also qualification and forward looking statements on pages 11 and 12. See also Appendix 1



21<sup>st</sup> January 2015

Primary mineralisation within the tonalite at Mick Adams and Wadi occurs as discrete narrow west dipping quartz veins containing moderately to extremely high gold grades and as fine disseminated gold within the tonalite groundmass. Visible gold has been observed in drill core in both quartz veins and as blebs in the tonalite groundmass. The disseminated gold is commonly associated with minor blebs of pyrite, arsenopyrite and rare chalcopyrite. High gold grade veins are typically 10 to 20cm thick and commonly occur in extensional arrays of four to five veins generating high grade zones up to 10m in horizontal thickness. Extensional veins are more common along the eastern margin of the tonalite. At the southern end of Mick Adams extensional vein arrays have been intersected in the footwall of the mafic unit proximal to the tonalite contact.

Extensional shear zone arrays are also the host of the gold mineralisation at Kiora. Sheeted quartz veins are interpreted as the extensional veins propagating out from the shears. The veins within Kiora are hosted within the tonalite along the contact with ultramafic rocks and have been interpreted as having undergone supergene enrichment. Gold mineralisation at Kiora is also hosted within fault fill veins formed by movement on a shallowly dipping normal fault. Primary mineralisation within the basalt which forms the immediate hangingwall of the Mick Adams mineralisation is characteristically associated with shearing, extensional veining and biotite alteration. This mineralisation has been called Outridge and comprises a number of zones which pinch and swell along strike and down dip. Outridge mineralisation has been interpreted as steeply dipping to the west.

Mick Adams Mineral Resource has the dimensions of 1290m (north) by 100m (east) and has been drilled to an average vertical depth of 275m. The Wadi Mineral resource has the dimensions of 580m (north) by 50m (east) and has been drilled to a depth of 150m.

## **Drilling Techniques**

Drilling data utilised in the mineral resource estimate includes a combination of reverse circulation (RC) and surface diamond core (DDC) drilling. A 5.5" face sampling hammer was used for collection of samples in all RC drill-holes. DDC sampling was a combination of PQ, HQ and NQ2 core sizes dependent on the purpose of the hole. Drill-hole collars were surveyed by a qualified contract surveyor prior to commencement of drilling and after completion of drilling. Down-hole survey measurements were collected by a specialised survey contractor; instruments used were calibrated to industry specifications. All rigs used during drilling were rated to a greater depth than those drilled.

## **Sampling and Subsampling Techniques**

RC percussion samples were collected on 1m intervals down the hole. A sub-sample of 2-4Kg (dependent partially on material type) was separated from the whole sample using a 1:8 cone splitter. Moisture from the samples was monitored and recorded. DDC was either half cut or quarter cut using an automatic diamond saw, for half cut core one half was stored and one half sampled. For quarter cut core one quarter was sampled and submitted for assay, one half was sampled and submitted for metallurgical test-work and the remainder stored in the core tray. The whole length of core was sampled; sample lengths were based on geological intervals logged by the geologist. The minimum sample length was 0.3m and maximum length was 1.2m. Field quality control procedures for RC percussion drilling involved assay standards, blanks and collection of a field duplicate.



## Sample Analysis

Assay laboratories in Kalgoorlie and Perth were used for assaying. Gold assays were determined using a fire assay with 40g charge and AAS finish. All samples were dried indirectly in a gas fired oven to temperature of between 85<sup>o</sup> and 105<sup>o</sup> dependent on the laboratory. The entire sample is crushed rotary split to a 1Kg subsample which is then pulverised to 85% passing 75um and an approximately 200g subsample collected for assay. A 40g is collected by spatula from the 200g subsample for fusion and weight recorded by balance. Laboratories used completed internal standard regimes and re-assayed every 20th sample. Diamond drill core submitted for gold analysis was first crushed in a jaw crusher to a nominal 10mm size before either splitting or pulverisation. Umpire checks were undertaken by different laboratory in Kalgoorlie and or Perth.

## Estimation Method

The block model was constructed using interpolation of grade via a combination of Ordinary Kriging (OK) and Multiple Indicator Kriging (MIK). The MIK interpolation was used for the Mick Adams and Wadi deposits which contain the majority of concentrated drilling data and the bulk of the Castle Hill mineralisation. This method was chosen over the OK method to provide better local grade estimation for mining evaluation. The other deposits are much smaller have so far less concentrated drilling and data points which are more suitable to OK method.

## Cut-off Grade

Cut-off grade for reporting is 0.4/t Au, in line with recommendations from the mining study completed by Golders Pty Ltd Both heap leach and milling options were reviewed with an average cut-off grade of 0.4g/t Au being selected as optimal for heap leach material and a cut-over grade of 0.8g/t Au selected to separate heap leach material from mill material

## Mining and Metallurgical Methods

The preliminary mining studies are based on open cut mining methods using a contract mining fleet and conventional drill and blast mining methods. Limited geotechnical drilling, as well as existing small open cut pits, indicate that ground conditions are suitable for this mining method. Expected mining recovery and dilution rates for mining vary between domains based on the geometry of the domains. No assumptions on mining methodology have been made. Metallurgical tests yielded recoveries of 92% to 98% with high gravity component. The project plans to construct both a conventional mill with cyanide vat leach and a heap leach facility with reticulated cyanide leach. Both processes are planned to use the same carbon absorption, electro win and smelting of gold Doré. At this stage it appears that the mineralisation is free milling and leachable for each of the deposits, for both hard (fresh) and soft rock (transition and oxide) material. Previous mining at Kiora appears to support this assumption.

## Resource Classification

Blocks have been classified as Indicated or Inferred essentially based on data spacing and using a combination of search volume and number of data used for the estimation. Indicated Mineral Resources are defined nominally on 50 x 25m to 25m x 25m spaced drilling. Inferred Mineral Resources are defined by data density greater than 50m x 25m spaced drilling and confidence that the continuity of geology and mineralisation can be extended along strike and at depth.



Classification limits may vary where grade and geology is extremely continuous even though drill spacing extends passed the nominal limits specified. For Mick Adams and Wadi, due to the bulk low grade nature and grade continuity over a large distance it is prudent to classify areas of the tonalite as Indicated if the search criteria were met. At Kiora, a portion of this mineralised zone has been mined in the past which has increased confidence sufficient for Indicated classification to be assigned.

Classification boundaries have been made extended at depth and made more consistent between Mick Adams and Wadi. Indicated boundaries generally lie 25-37.5m below the last drilling information. Inferred boundaries lie nominally 50m+ below the indicated boundary; this has been extended from previous model based on the new deep holes confirming the presence of tonalite hosted mineralisation to the base on most of the deep holes. Wadi boundaries were amended to be consistent with this guideline.

### **Modifying Factors**

No modifying factors have been applied to the resource estimate.

21<sup>st</sup> January 2015



## About Phoenix

Phoenix Gold Ltd is an emerging Australian exploration and development company with an extensive land holding on the Zuleika and Kunanalling shear zones northwest of Kalgoorlie in Western Australia, home to some of Australia's richest gold deposits.

Kalgoorlie-based Phoenix is aiming to significantly grow its JORC-classified resources, complete a definitive feasibility study on core projects and to self-fund aggressive exploration through the development of advanced mining projects that can deliver cash flow in the short term.

The 100% owned Castle Hill gold project is emerging as a flagship asset with the potential to become a multi-million ounce gold mine with excellent metallurgy and close to all major infrastructure. Castle Hill is one of many well-endowed gold systems within Phoenix's portfolio.

With a balanced mix of exploration (new discoveries and extensions) and development of a sustainable production profile, Phoenix aims to grow a significant gold company for the benefit of all stakeholders.

**Table 1: Phoenix Gold – Summary of Mineral Resources**

Project (Mill Feed)	Measured Mineral Resource			Indicated Mineral Resource			Inferred Mineral Resource			Total Mineral Resource		
	Mt	Au (g/t)	Au Oz	Mt	Au(g/t)	Au oz	Mt	Au (g/t)	Au Oz	Mt	Au (g/t)	Au Oz
Mick Adams/Wadi				18.09	1.5	894,000	6.39	1.3	274,000	24.48	1.5	1,168,000
Kintore				3.03	1.6	160,000	4.21	1.8	239,000	7.24	1.7	399,000
Castle Hill Stage 3				2.38	1.4	109,000	1.36	1.3	59,000	3.74	1.4	168,000
Red Dam				2.05	2.1	140,000	1.04	2.2	74,000	3.09	2.2	214,000
Broads Dam				0.13	2.9	12,000	2.16	2.3	158,000	2.29	2.3	170,000
Burgundy	0.49	2.0	31,000	0.40	2.3	29,000	0.09	1.5	4,000	0.98	2.0	65,000
Kunanalling				0.46	2.4	35,000	4.12	1.7	229,000	4.58	1.8	264,000
Ora Banda				2.36	2.0	149,000	2.79	1.8	163,000	5.15	1.9	312,000
Carbine				1.70	1.6	86,000	0.21	2.1	14,000	1.91	1.6	100,000
Zuleika North							0.62	2.5	49,000	0.62	2.5	49,000
Stockpiles				0.08	1.4	4,000				0.08	2.5	4,000
<b>Total</b>	<b>0.49</b>	<b>2.0</b>	<b>31,000</b>	<b>30.68</b>	<b>1.6</b>	<b>1,618,000</b>	<b>22.99</b>	<b>1.7</b>	<b>1,263,000</b>	<b>54.16</b>	<b>1.7</b>	<b>2,913,000</b>

Project (Heap leach feed)	Measured Mineral Resource			Indicated Mineral Resource			Inferred Mineral Resource			Total Mineral Resource		
	Mt	Au (g/t)	Au Oz	Mt	Au(g/t)	Au oz	Mt	Au (g/t)	Au Oz	Mt	Au (g/t)	Au Oz
Mick Adams/Wadi				21.54	0.6	400,000	10.98	0.6	198,000	32.52	0.6	598,000
Kintore				6.68	0.6	131,000	7.87	0.6	156,000	14.55	0.6	287,000
Castle Hill Stage 3				3.80	0.6	68,000	2.01	0.6	36,000	5.81	0.6	104,000
Burgundy	1.04	0.6	22,000	0.86	0.6	18,000	0.22	0.6	4,000	2.12	0.6	44,000
Red Dam				1.89	0.7	44,000	0.97	0.7	23,000	2.86	0.7	67,000
Stockpiles				0.48	0.6	9,000				0.48	0.6	9,000
<b>Total</b>				<b>35.25</b>	<b>0.6</b>	<b>670,000</b>	<b>22.05</b>	<b>0.6</b>	<b>417,000</b>	<b>58.34</b>	<b>0.6</b>	<b>1,109,000</b>

<b>Total Jan 2015</b>	<b>0.49</b>	<b>2.0</b>	<b>31,000</b>	<b>65.93</b>	<b>1.1</b>	<b>2,288,000</b>	<b>45.04</b>	<b>1.2</b>	<b>1,680,000</b>	<b>112.50</b>	<b>1.1</b>	<b>4,022,000</b>
-----------------------	-------------	------------	---------------	--------------	------------	------------------	--------------	------------	------------------	---------------	------------	------------------

Visit us at [www.phoenixgold.com.au](http://www.phoenixgold.com.au)

For further information please contact

## Investors

Jon Price, Managing Director - PXG  
(08) 90 212 704

[info@phoenixgold.com.au](mailto:info@phoenixgold.com.au)

## Media

Fiona Meiklejohn  
FTI Consulting

(08) 9485 8888 or 0415 660 076



## Qualification Statements

21<sup>st</sup> January 2015

The information in this report that relates to Mineral Resource Estimation for Castle Hill Stage 1 is based on information compiled by Mr Brian Fitzpatrick, Senior Consulting Geologist for Cube Consulting. Mr Fitzpatrick is a Member of the Australasian Institute of Mining and Metallurgy and is also an accredited Chartered Professional Geologist. Mr Fitzpatrick has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral resources and Ore Reserves" (JORC Code). Mr Fitzpatrick consents to the inclusion in this report of the matters based on their information in the form and context in which it appears.

The information in this report that relates to reporting of Exploration Results and Resources other than those mentioned above are based on information compiled by Ian Copeland who is an employee of the company and fairly represent this information. Mr Copeland is a Member of the Australasian Institute of Mining and Metallurgy. Mr Copeland have sufficient experience of relevance to the styles of mineralisation and the types of deposits under consideration, and the activities undertaken, to qualify as Competent Persons as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Copeland consents to inclusion in this report of the matters based on information in the form and context in which it appears.

The information in this report that relates to Ore Reserves relating to Castle Hill is based on information compiled by Mr Glenn Turnbull who is a Fellow of The Institute of Materials, Minerals and Mining. Mr Glenn Turnbull is a full time employee of Golder Associates Ltd and has sufficient experience which is relevant to the engineering and economics of the types of deposits which are covered in this report and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 edition of the 'Australian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Glenn Turnbull consents to the inclusion in this report of matters based on his information in the form and context in which it appears.



## Forward Looking Statements

This release contains forward-looking statements. Wherever possible, words such as "intends", "expects", "scheduled", "estimates", "anticipates", "believes", and similar expressions or statements that certain actions, events or results "may", "could", "would", "might" or "will" be taken, occur or be achieved, have been used to identify these forward-looking statements. Although the forward-looking statements contained in this release reflect management's current beliefs based upon information currently available to management and based upon what management believes to be reasonable assumptions, the Company cannot be certain that actual results will be consistent with these forward-looking statements. A number of factors could cause events and achievements to differ materially from the results expressed or implied in the forward-looking statements. These factors should be considered carefully and prospective investors should not place undue reliance on the forward-looking statements. Forward-looking statements necessarily involve significant known and unknown risks, assumptions and uncertainties that may cause the Company's actual results, events, prospects and opportunities to differ materially from those expressed or implied by such forward-looking statements.

Although the Company has attempted to identify important risks and factors that could cause actual actions, events or results to differ materially from those described in forward-looking statements, there may be other factors and risks that cause actions, events or results not to be anticipated, estimated or intended, including those risk factors discussed in the Company's public filings. There can be no assurance that the forward-looking statements will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements. Accordingly, prospective investors should not place undue reliance on forward-looking statements.

Any forward-looking statements are made as of the date of this release, and the Company assumes no obligation to update or revise them to reflect new events or circumstances, unless otherwise required by law. This release may contain certain forward looking statements and projections regarding: estimated resources and reserves; planned production and operating costs profiles; planned capital requirements; and planned strategies and corporate objectives.

Such forward looking statements/projections are estimates for discussion purposes only and should not be relied upon. They are not guarantees of future performance and involve known and unknown risks, uncertainties and other factors many of which are beyond the control of the Company. The forward looking statements/projections are inherently uncertain and may therefore differ materially from results ultimately achieved. The Company does not make any representations and provides no warranties concerning the accuracy



## Appendix 1 Mick Adams–Kiora and Wadi (Castle Hill gold project)

21<sup>st</sup> January 2015

The following section is provided to ensure compliance with the JORC (2012) requirements for the reporting of the Mineral Resource estimates for the Mick Adams – Kiora and Wadi (Castle Hill Stage 1) deposit. Details relating to the current Reserve estimate for Castle Hill, please refer to the ASX announcements dated 27 December 2013 and 9 January 2014

### Section 1 Sampling Techniques and Data

Criteria	Commentary
<b>Sampling techniques</b>	<ul style="list-style-type: none"> <li>Diamond Drill Core and RC chips are the two main sample types. Drilling has been completed on nominal 50m x 25m grid to 50m x 50m grid, with some infill down to 12.5m x 12.5m. Holes were generally angled at -60° toward 040° in the main deposit areas (Mick Adams, Wadi, Lady Alice and Wookie) with holes at Outridge/Kiora angled toward 220° at -60° to optimally intersect the gold mineralisation. Since the August 2013 resource estimate update, a total of 42 RC holes for 1,720m and 19 diamond holes for 5,843 metres were completed up to the December 2013 resource estimate cutoff date (27/11/2013).</li> <li>Castle Hill is defined by RC percussion and diamond drilling only. Drill hole locations were surveyed by a qualified surveyor and downhole measurements collected by a downhole survey contractor. Instruments used by both surveying contractors were calibrated to industry specifications.</li> <li>Diamond core was geologically logged and sampled to lithological contacts or changes in the nature of mineralisation. Maximum samples length of 1.2m with a minimum sample length of 0.3m. NQ core was half core sampled, HQ core was quarter core sampled.</li> <li>Metallurgical samples were assayed Fe, S, Ag, As, Cu, Ni, Sb, C by acid digest with ICP/MS and Au by 40g fire assay.</li> <li>Geotechnical holes are yet to be assayed, but will be assayed by 40g fire assay.</li> <li>Resource Definition holes were assayed by 40g fire assay.</li> <li>RC chips sampled at 1m downhole intervals from surface. This is riffle or cone split at the rig to produce a sample of approximately 3kg which was pulverised for a 40g fire assay.</li> <li>Selected holes surveyed using downhole gamma for density measurements. These were checked by selected samples being measured for SG by the water displacement method.</li> <li>Magnetic Susceptibility measurements taken.</li> </ul>
<b>Drilling techniques</b>	<ul style="list-style-type: none"> <li>RC drilling, generally angled at -60° towards 040° or 220°</li> <li>RC drilling used a 5.5" face sampling hammer.</li> <li>RC drilling used 3 rigs with minimum specifications of 550CFM@350PSI with an 1150CFM@350PSI booster. All rigs rated to a deeper depth than drilled.</li> <li>Full diamond drilling, generally angled at -60° towards 040° or 220° using HQ sized core. One hole was drilled using PQ core.</li> <li>Diamond tails angled at -60° towards 040° or 220° using NQ sized core.</li> <li>Diamond tail lengths varied between 80 and 300m (mean 159m).</li> <li>13 Diamond holes drilled from surface 80 to 240m down hole (mean 153m)</li> </ul>
<b>Drill sample recovery</b>	<ul style="list-style-type: none"> <li>RC samples were split using a 1:8 cone splitter.                             <ul style="list-style-type: none"> <li>Residue recovery was visually estimated and documented.</li> <li>No biases in sample recovery were observed.</li> <li>Samples were documented as being dry, moist or wet – in excess of 99.5% samples recovered were dry.</li> </ul> </li> <li>Diamond drill core loss (in metres) was measured in the core trays and core loss and recovery (%) recorded in geotechnical records.</li> <li>Most core loss associated with drilling through highly weathered regolith.</li> <li>In general core recoveries exceeded 95% so analysis of diamond tails recovery has not been conducted.</li> </ul>



Criteria	Commentary
<b>Logging</b>	<ul style="list-style-type: none"> <li>• Diamond core and RC chips have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation.</li> <li>• All drillholes were logged in full.</li> <li>• Logging has been conducted both qualitatively and quantitatively – full description of lithologies, alteration and comments are noted, as well as percentage estimates on alteration, veining and sulphide amount.</li> </ul>
<b>Sub-sampling techniques and sample preparation</b>	<ul style="list-style-type: none"> <li>• Diamond Core was half core sampled. The core was cut using an automatic core saw, to divide the mineralisation consistently down the hole, the right hand side of the core (looking down the hole) was selected to provide an unbiased sample.</li> <li>• 5 Diamond holes were assayed from quarter core. The half core was retained for metallurgical testwork.</li> <li>• The whole length of core was sampled.</li> <li>• A minimum sample size of 0.3m and a maximum size of 1.2m, separated on lithology. <ul style="list-style-type: none"> <li>○ Certified Standard reference material was inserted after the 11<sup>th</sup> sample and then after every 37 samples.</li> <li>○ Blank material inserted after 26 samples and then after every 37 samples.</li> <li>○ Blank material was inserted after samples containing visible gold.</li> <li>○ Samples containing visible gold were identified for separate screen fire assay.</li> </ul> </li> <li>• RC percussion samples were collected on 1m intervals. A subsample of 2-4kg was separated using a 1:8 cone splitter. Moisture from the samples was recorded. <ul style="list-style-type: none"> <li>○ Certified Standard reference material was inserted every 30m starting from 15m.</li> <li>○ Blank and field duplicate samples were inserted every 30m starting from 30m.</li> </ul> </li> <li>• Sample size of 2-3 kg is appropriate for grain size of material.</li> </ul>
<b>Quality of assay data and laboratory tests</b>	<ul style="list-style-type: none"> <li>• Assay laboratories in Kalgoorlie and Perth were used for assaying.</li> <li>• Gold assays were determined using a fire assay with 40g charge and AAS finish. Other elements were assayed using an acid digest with ICP-MS finish.</li> <li>• Laboratories used completed internal standard regimes and re-assayed every 20<sup>th</sup> sample.</li> <li>• Umpire checks were undertaken by different laboratory in Kalgoorlie and or Perth.</li> <li>• QAQC for the programme showed acceptable performance.</li> </ul>
<b>Verification of sampling and assaying</b>	<ul style="list-style-type: none"> <li>• RC samples are collected into pre-numbered bags at the rig.</li> <li>• A geologist or field assistant cross-checked the bag numbers against the meter interval before recording them in triplicate into a sample submission book.</li> <li>• Some randomisation of sample numbers was conducted.</li> <li>• Diamond core was cut to lengths documented by the geologist who logged the core.</li> <li>• Data was transferred to excel spreadsheets utilising data validation to improve data quality, prior to loading into Datashed. Validation against assay, lithological and drill meta-data is completed by the software prior to consolidation within the main database.</li> <li>• Primary field data is collated into a file for each drill programme and is stored in the Kalgoorlie office. Electronic data is stored in Datashed, where it can only be changed by a database administrator.</li> <li>• Intercepts have been calculated using Datashed. Selected intercepts have been verified by manual calculation.</li> <li>• The primary returned assay result was used for reporting of all intersections and in mineral resource estimation, no averaging with field duplicates or laboratory repeats was undertaken so as not to introduce volume bias.</li> <li>• Database was viewed by Cube Consulting, who went through sample collection, submission, and entry protocols as part of the resource estimation process.</li> <li>• Historic holes were twinned with RC percussion infill holes. Results confirmed the initial intersection mineralisation and geology.</li> </ul>
<b>Location of data points</b>	<ul style="list-style-type: none"> <li>• Collar locations were routinely surveyed by Minecomp using a differential GPS with an accuracy of ± 2cm. DGPS was referenced back to state survey mark (SSM) network. Elevation values were in AHD RL, no additions or subtractions were made to this measurement.</li> </ul>



Criteria	Commentary
	<ul style="list-style-type: none"> <li>All holes were routinely downhole surveyed using open hole gyro methods using a mix of true north-seeking and non-true north seeking surveys.</li> <li>Diamond tails have been surveyed approximately 30m using a digital electronic magnetic survey tool.</li> <li>Drilling was planned and executed using the MGA94 zone 51 grid.</li> <li>Visual inspection in GIS programmes did not identify any inaccuracies with the spatial position of the drillholes.</li> <li>Topography surveyed in immediate drilling area by qualified surveyor using a Trimble R8 RTK GPS, this was meshed with 2012 30cm Lidar contours.</li> </ul>
<b>Data spacing and distribution</b>	<ul style="list-style-type: none"> <li>Drill Data spacing appropriate to the resource infill aim of the drill programme. The majority of drilling is 50m x 25m, which reduces in areas to approximately 25m x 25m.</li> <li>This spacing is adequate to determine the geological and grade continuity for reporting of Mineral Resources.</li> </ul>
<b>Orientation of data in relation to geological structure</b>	<ul style="list-style-type: none"> <li>Drilling orientated normal to the dip and plunge of the major mineralisation bodies. The different orientations were selected to target different portions of the mineralisation.</li> </ul>
<b>Sample security</b>	<ul style="list-style-type: none"> <li>Samples were collected and documented each weekday. Samples submitted on the day they were collected.</li> <li>Chain of custody supported by the sample logbook and sample reconciliation reports from the laboratories.</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>An internal review of diamond procedures was conducted prior to commencing drilling.</li> </ul>

## Section 2 Reporting of Exploration Results

Criteria	Commentary
<b>Mineral tenement and land tenure status</b>	<ul style="list-style-type: none"> <li>Tenements P16/2429, M16/24, M16/40, M16/152, M16/189, M16/195 and P16/2426 are held 100% by Hayes Mining Pty Ltd.</li> <li>Royalty payable on all tenements.</li> <li>Historic agreements in place with Paddington Gold Pty Ltd. Refer to the solicitors report in the prospectus dated 20 October 2010</li> <li>P16/2426 and P16/2429 are in application for conversion to Mining Lease.</li> <li>Mining Leases have 21 year life renewable for a further 21 years on a continuing basis.</li> <li>No native title claims are current over these tenements.</li> </ul>
<b>Exploration done by other parties</b>	<ul style="list-style-type: none"> <li>Explorations has been conducted by a number of parties previously, including Electrum Resources NL (1985-1989), Castle Hill Resources NL (1989-1996), Goldfields Exploration Ltd (2001) and Cazaly Resources Ltd (2004-2008)</li> <li>The historical data &amp; database has been appraised and is of acceptable quality.</li> </ul>
<b>Geology</b>	<ul style="list-style-type: none"> <li>The Castle Hill Stage 1 resource comprised eight deposits from south to north: Wadi, Mick Adams, Lady Alice, Outridge, Kiora, Wookie, Picante and Ridgeback. All of the deposits are structurally linked, with Wadi and Mick Adams being fault offsets of a single mineralised system. In the December 2012 resource statement the resource estimates for the seven deposits were combined. In both the August 2013 and December 2013 resource updates Picante and Ridgeback have been excluded from the Castle Hill Stage 1 resource estimate as these deposits have not been included in the work completed by Cube Consulting</li> <li>The principal lithology to host gold mineralisation at Castle Hill Stage 1 is the Kintore</li> </ul>



Criteria	Commentary
	<p>Tonalite a large intrusive granitoid of granodioritic composition. The tonalite intrudes a sequence of basaltic and ultramafic rocks to the east and west. The elliptical Kintore Tonalite attenuates to the south to form very long narrow (80m wide in plan) intrusion which hosts the Mick Adams and Wadi gold mineralisation and a dyke swarm to the south-east which hosts the Outridge and Kiara gold mineralisation. Gold mineralisation is also hosted along the eastern margin of the main body of the tonalite at Wookie and Picante. Gold mineralisation in this area is hosted within the tonalite and within the flanking mafic/ultramafic sequence.</p> <p>The Lady Alice gold mineralisation is associated with a fault array hosted entirely within the bulk of the tonalite intrusive. The Lady Alice fault array coincides with the boundary between de-magnetised tonalite to the east and magnetised tonalite to the west.</p> <p>Vertical vein arrays and kinematic indicators at Mick Adams and Kiara show the primary deformation at Castle Hill was extension with an east block down (sinistral normal) sense of movement, suggesting emplacement of the tonalite coincided with the beginning of an extensional doming event and the start of basin formation. The tonalite has therefore been interpreted as being emplaced in a relay zone between two fault tips. NE trending discrete faults are interpreted to be hard-linked transfer structures (perhaps zones of inherited weakness) which form jogs and hence local areas of dilation in the normal faults. Mick Adams and Wadi are separated by a NE trending fault which has generated an offset of 250m across strike. Both deposits dip shallowly to the east. NW trending shear zones which were re-activated during sinistral transpression accommodate much of the compressional strain and act to preserve the extensional domain.</p> <p>Primary mineralisation within the tonalite at Mick Adams and Wadi occurs as discrete narrow west dipping quartz veins containing moderately to extremely high gold grades and as fine disseminated gold within the tonalite groundmass. Visible gold has been observed in drill core in both quartz veins and as blebs in the tonalite groundmass. The disseminated gold is commonly associated with minor blebs of pyrite, arsenopyrite and rare chalcopyrite. High gold grade veins are typically 10 to 20cm thick and commonly occur in extensional arrays of four to five veins generating high grade zones up to 10m in horizontal thickness. Extensional veins are more common along the eastern margin of the tonalite. At the southern end of Mick Adams extensional vein arrays have been intersected in the footwall of the mafic unit proximal to the tonalite contact.</p> <p>Extensional shear zone arrays are also the host of the gold mineralisation at Kiara. Sheeted quartz veins are interpreted as the extensional veins propagating out from the shears. The veins within Kiara are hosted within the tonalite along the contact with ultramafic rocks and have been interpreted as having undergone supergene enrichment. Gold mineralisation at Kiara is also hosted within fault fill veins formed by movement on a shallowly dipping normal fault. Primary mineralisation within the basalt which forms the immediate hangingwall of the Mick Adams mineralisation is characteristically associated with shearing, extensional veining and biotite alteration. This mineralisation has been called Outridge and comprises a number of zones which pinch and swell along strike and down dip. Outridge mineralisation has been interpreted as steeply dipping to the west.</p>
<b>Drill hole Information</b>	<ul style="list-style-type: none"> <li>• Location of data for drilling previously reported on 11th September 2013 shown in Table 4.</li> </ul>
<b>Data aggregation methods</b>	<ul style="list-style-type: none"> <li>• Exploration results reported as length weighed averages (intercepts) using a lower cut of 0.3ppm and/or 0.8ppm dependant on mineralisation. A maximum of 2m internal dilution.</li> <li>• Cutting of high grades was not applied.</li> <li>• Sample lengths from RC percussion drilling are all 1m lengths. Diamond core cut to</li> </ul>



Criteria	Commentary
	geological boundaries so incorporates shorter sample length, length weighting is used to ensure a logical mean grade is determined.
<b>Relationship between mineralisation widths and intercept lengths</b>	<ul style="list-style-type: none"> <li>• Drilling grids have been designed to intersect the mineralisation orthogonal to dip and strike, in instance of Mick Adams and Wadi deposit it is known the deposit dips toward 040 at 60 to 70 degrees, so drilling is predominantly designed facing 220 dipping at 60 degrees. Historic drilling was completed both toward 040 and 220 to test internal distribution of the gold mineralisation. Statistical analysis of this data has indicated there is no bias in either direction. Drilling toward 040 enables interception of lithological boundaries, while generation of a reasonable approximation of the horizontal width of the deposit.</li> <li>• True thickness depends on the mineralisation style.</li> </ul>
<b>Diagrams</b>	<ul style="list-style-type: none"> <li>• Appropriate maps and sections are shown in the 11<sup>th</sup> September 2013 announcement.</li> </ul>
<b>Balanced reporting</b>	<ul style="list-style-type: none"> <li>• Significant results are shown in the 11<sup>th</sup> September 2013 announcement.</li> </ul>
<b>Other substantive exploration data</b>	<ul style="list-style-type: none"> <li>• Magnetic susceptibility relates to the rock type.</li> <li>• Density measurements taken by downhole surveys of 11 RC holes. Further select samples from diamond drilling were assessed through the water displacement method.</li> <li>• Metallurgical drilling (5 diamond holes) was assayed for a multi-element suite.</li> </ul>
<b>Further work</b>	<ul style="list-style-type: none"> <li>• A staged design study and ore schedule is underway for this area with the intention of bringing the area into production in the near future.</li> </ul>

### Section 3 Estimation and Reporting of Mineral Resources

Criteria	Commentary
<b>Database integrity</b>	<ul style="list-style-type: none"> <li>• Drilling Database is maintained by Phoenix Gold in Datashed software, look-up tables and fixed formatting are used for entering logging, spatial and sampling data for the deposit databases. Sample numbers are uniquely coded and pre-numbered bags used. Data transfer for downhole survey and assaying information is electronic via email or USB data stick. Historical data is validated and formatted into the Phoenix standard field settings for each record category. These workflow methods minimise the potential of errors.</li> <li>• Cube received data directly exported from Datashed in ASCII format, then completed validation checks on the database comparing collar points to the topography, maximum hole depths checks between tables and the collar data, duplicate numbering, missing data, and interval error checks using validation rules in MS Excel before importing records into MS Access. Cube then verified the data using visual inspection of the drillholes in Surpac v6.3.2, in 3D to identify inconsistencies of drill hole traces.</li> </ul>
<b>Site visits</b>	<ul style="list-style-type: none"> <li>• Brian Fitzpatrick (Senior Consultant – Cube Consulting) who is the Competent Person conducted 5 site visits. Two site visits included viewing of the diamond drill core for Mick Adams, Wadi, Kintore and Red Dam. During the site visits, Brian Fitzpatrick inspected the deposit area including old workings, RC drilling and sampling, and the core farm. Notes and photographs were taken along with discussions with site personnel regarding geology and mineralisation of the deposits, procedures, sampling and database procedures, and Quality Control procedures. Minor recommendations were made during a visit to the RC rig involving sample splitting. Also minor recommendations were reported for Quality Control practises. It was recommended during the first site visit that more sampling for Bulk Density Determinations was required and this was being</li> </ul>



21<sup>st</sup> January 2015

Criteria	Commentary
	<p>addressed in subsequent site visits. No other major issues were encountered.</p> <ul style="list-style-type: none"> <li>•</li> </ul>
<b>Geological interpretation</b>	<ul style="list-style-type: none"> <li>• The confidence in the geological interpretation of the Castle Hill Deposits is good as a result of recent infill RC and diamond core drilling programs. The Castle Hill Stage 1 deposits are structurally linked, with Wadi and Mick Adams being fault offsets of a single mineralised system. The principal lithology to host gold mineralisation at Castle Hill Stage 1 is the Kintore Tonalite a large intrusive granitoid of granodioritic composition. The tonalite intrudes a sequence of basaltic and ultramafic rocks to the east and west. The elliptical Kintore Tonalite attenuates to the south to form very long narrow (80m wide in plan) intrusion which hosts the Mick Adams and Wadi gold mineralisation and a dyke swarm to the south-east which hosts the Outridge and Kiara gold mineralisation. Gold mineralisation is also hosted along the eastern margin of the main body of the tonalite at Wookie and Picante. Gold mineralisation in this area is hosted within the tonalite and within the flanking mafic/ultramafic sequence.</li> <li>• Historical open pit workings provide exposure to some of the deposit rock types, structures and styles of mineralisation. Petrography and multi element geochemistry have been completed on recent drilling. Structural logging and analysis has been carried out on oriented diamond drill core and assisted with interpretation and modelling.</li> <li>• The main deposits are hosted within the tonalite lithologies with broad domains and recent drilling has refined the outer limits of the tonalite boundary and deeper extensions. The narrower deposits hosted within contact margins and thin dyke units have been refined as new infill drilling has confirmed continuity or distinctions between supergene mineralisation and primary mineralisation.</li> <li>• Primary mineralisation is predominantly hosted within the tonalite at Mick Adams and Wadi, and occurs as discrete narrow west dipping quartz veins containing moderately to extremely high gold grades and as fine disseminated gold within the tonalite groundmass. Extensional shear zone arrays are also the host of the gold mineralisation at Kiara. The veins within Kiara are hosted within the tonalite along the contact with ultramafic rocks and have been interpreted as having undergone supergene enrichment. Gold mineralisation at Kiara is also hosted within fault fill veins formed by movement on a shallowly dipping normal fault. Primary mineralisation within the basalt which forms the immediate hangingwall of the Mick Adams mineralisation is characteristically associated with shearing, extensional veining and biotite alteration. This mineralisation domain has been called Outridge and comprises a number of zones which pinch and swell along strike and down dip. Outridge mineralisation has been interpreted as steeply dipping to the west.</li> <li>• The Mick Adams tonalite hosted mineralisation is a broadly consistent zone, but it is likely to contain a series of stacked wide sub-domains of mineralisation separated by discrete zones of poor mineralisation. Where extensional veins are more common at Mick Adams and Wadi, gold mineralisation has greater continuity as is the case along the eastern margin of the tonalite. The smaller deposits continuity and size controlled by where the tonalite dykes pinch and swell, and extensional shear zone arrays host mineralisation. The shear zones occur along the contact with ultramafic rocks. Supergene mineralisation is well developed over the central portions of the high grade domains.</li> </ul>
<b>Dimensions</b>	<ul style="list-style-type: none"> <li>• The Castle Hill Stage 1 Mineral Resource area has dimensions of 4 km (strike length) by 500 m (width) and 480 m (elevation). The maximum depth known to date for the deepest mineralisation at Mick Adams is 480m below the surface. Multiple lode systems exist within this area, dominated by the Mick Adams main tonalite-hosted lode and the Wadi Tonalite. Mick Adams and Wadi are separated by a NE trending fault which has generated an offset of 250m across strike.</li> </ul>
<b>Estimation and modelling</b>	<ul style="list-style-type: none"> <li>• The block model was constructed using interpolation of grade via a combination of Ordinary Kriging (OK) and Multiple Indicator Kriging (MIK). The MIK interpolation was used for the Mick Adams and Wadi deposits which contain the majority of concentrated</li> </ul>



Criteria	Commentary
<p><b>techniques</b></p>	<p>drilling data and the bulk of the Castle Hill mineralisation. This method was chosen over the OK method to provide better local grade estimation for mining evaluation. The other deposits are much smaller have so far less concentrated drilling and data points which are more suitable to OK method.</p> <ul style="list-style-type: none"> <li>• The influence of extreme grade values was reduced by top-cutting where required. The top-cut levels were determined using a combination of top-cut analysis tools (grade histograms, log probability plots and CVs). Top-cuts were reviewed and applied on a domain basis.</li> <li>• For each deposit mineralised domains were digitised on to cross-section using 3D strings and then wireframed to generate solids. Geology was used to separate the different mineralised zones, within these zones a threshold grade of 0.3g/t Au was used to separate mineralised rock from un-mineralised rock. Sub-domains were generated to represent each material type across each of the primary mineralised zones. Drillhole sample data was flagged using domain codes generated from three dimensional mineralisation domains and oxidation surfaces. Sample data was composited to either one metre or two metre downhole length using a best fit-method. There were consequently no residuals. Intervals with no assays were excluded from the compositing routine.</li> <li>• Changes in the estimation parameters for the December 2013 estimate included the following: 1. Re-interpretation of Variogram Model – The addition of close-spaced drillholes to the Mick Adams dataset has resulted in better definition of the short range structure in the variogram model, which influences the recoverable resource methodology (LMIK) used at Mick Adams. The short range structure has been reduced from 40m (Aug 13) to 20m (Dec 13). This results in a reduction in grade above the 0.8g/t cut-off and displaces tons and metal to lower grades; 2. Application of the Information Effect Correction – The information effect correction is applied to take account of the fact that even following tight grade control drilling, imperfect block selections will be made during mining. This correction was applied to the Dec 13 resource, but not the Aug 13 resource.</li> <li>• For mineralised domains estimated using OK method, interpolation parameters were set to a minimum number of 4 composites and a maximum number of 24 composites for the estimate. Maximum search ellipse of 100 metres was used.</li> <li>• The maximum distance of extrapolation from data points was half the drill spacing.</li> <li>• Computer software used for the modelling and estimation was Surpac v. 6.3.2 with Isatis software used to conduct geostatistical analysis and grade interpolation for MIK estimation for specific lode domains.</li> <li>• This Mineral Resource is updated from the August 2013 Mineral Resource statement for Castle Hill. Comparison tables were setup to compare previous model estimates, and OK versus MIK estimates in order to check the impact of new infill drilling and to assess the appropriateness of the different estimation techniques.</li> <li>• There has been previous mine production at Mick Adams and Wadi where shallow open pit mining has taken place, and at Kiara, where a small open pit operation took place.</li> <li>• No by-product recoveries were considered.</li> <li>• Arsenic (ppm) was assayed for the most recent drilling, but not estimated. Although some arsenopyrite has been seen in high grade veins at Mick Adam, the visible gold in these veins do not appear to be associated directly with the sulphides.</li> <li>• The parent block size used is 10mN, 10m E and 2.5m RL and sub-blocked to 5.0mN x 2.5mE x 1.25mRL. The bulk of the drilling data was on 50m x 25m and 25 x 25m spaced sections.</li> <li>• No assumptions of selective mining units were made.</li> <li>• No correlation between gold and other elements has been assessed for any of the deposits.</li> <li>• The mineralised domains acted as a hard boundary to control the Mineral Resource estimate.</li> <li>• Composite gold grade distributions within these zones assessed to determine if a high grade cut should be applied. In general only a very small number of outlier values are</li> </ul>



Criteria	Commentary
	<p>included in the estimation domains that required top-cut values to be applied.</p> <ul style="list-style-type: none"> <li>Block model validation was conducted by the following means:</li> <li>Visual inspection of block model estimation in relation to raw drill data on a section by section basis.</li> <li>Volumetric comparison of the wireframe/solid volume to that of the block model volume for each domain.</li> <li>A global statistical comparisons of input and block grades, and local composite grade (by northing and RL) relationship plots (swath plots), to the block model estimated grade for each domain.</li> <li>Comparison the cut grade drill hole composites with the block model grades for each lode domain in 3D.</li> <li>Limited open pit mining has taken place and therefor no reconciliation data is available.</li> </ul>
<b>Moisture</b>	<ul style="list-style-type: none"> <li>The tonnages are estimated on a dry basis.</li> </ul>
<b>Cut-off parameters</b>	<ul style="list-style-type: none"> <li>Cut-off grade for reporting is 0.4/t Au, in line with recommendations from the mining study completed by Golders Pty Ltd Both heap leach and milling options were reviewed with an average cut-off grade of 0.4g/t Au being selected as optimal for heap leach material and a cut-over grade of 0.8g/t Au selected to separate heap leach material from mill material.</li> </ul>
<b>Mining factors or assumptions</b>	<ul style="list-style-type: none"> <li>The preliminary mining studies are based on open cut mining methods using a contract mining fleet and conventional drill and blast mining methods. Limited geotechnical drilling, as well as existing small open cut pits, indicate that ground conditions are suitable for this mining method. Expected mining recovery and dilution rates for mining vary between domains based on the geometry of the domains. No assumptions on mining methodology have been made.</li> </ul>
<b>Metallurgical factors or assumptions</b>	<ul style="list-style-type: none"> <li>Initial metallurgical tests yielded recoveries of 92% to 98% with high gravity component. The project plans to construct both a conventional mill with cyanide vat leach and a heap leach facility with reticulated cyanide leach. Both processes are planned to use the same carbon absorption, electro win and smelting of gold Dior. At this stage it appears that the mineralisation is free milling and leachable for each of the deposits, for both hard (fresh) and soft rock (transition and oxide) material. Previous mining at Kiora appears to support this assumption.</li> </ul>
<b>Environmental factors or assumptions</b>	<ul style="list-style-type: none"> <li>Initial flora and fauna surveys at Castle Hill have not discovered any significant impediments to the proposed operations at this stage. The project does lie within the Great Western Woodlands. Stygofauna surveys are yet to be completed but it is unlikely, based on similar nearby studies to be an issue. The major host rock for the deposits is a tonalite. There are very few sulphides associated with either the mineralisation or the waste material. It is not expected that either the tailings, or waste land forms are going to contain any deleterious elements. There is limited topsoil coverage over the project area. Saprolite clays in existing pits appear to support vegetation recovery without rehabilitation. There is very limited ground water in the project area, so mining and processing effects on the water table are not expected to be significant. Studies are on-going to confirm these initial observations and assumptions.</li> </ul>
<b>Bulk density</b>	<ul style="list-style-type: none"> <li>Bulk densities derived from dry density measurements of drill core and open pit measurements from the Mick Adam/Wadi deposits. Densities were also based on historic measured data by Mikado Resources in 1998, and from assumptions.</li> <li>The current density measurements completed include selected holes surveyed using downhole gamma for density measurements. These were checked by selected samples being measured for SG by the water displacement method. Density measurements have also been taken by downhole surveys of 11 RC holes. Further select samples from diamond drilling were assessed through the water displacement method.</li> <li>Bulk density was assigned within the block model attribute 'density' according to the weathering profiles and rock types.</li> </ul>



# ASX Announcements

21<sup>st</sup> January 2015

Criteria	Commentary
<b>Classification</b>	<ul style="list-style-type: none"> <li>• Blocks have been classified as Indicated or Inferred essentially based on data spacing and using a combination of search volume and number of data used for the estimation. Indicated Mineral Resources are defined nominally on 50 x 25m to 25m x 25m spaced drilling. Inferred Mineral Resources are defined by data density greater than 50m x 25m spaced drilling and confidence that the continuity of geology and mineralisation can be extended along strike and at depth.</li> <li>• Classification limits may vary where grade and geology is extremely continuous even though drill spacing extends passed the nominal limits specified. For Mick Adams and Wadi, due to the bulk low grade nature and grade continuity over a large distance it is prudent to classify areas of the tonalite as Indicated if the search criteria were met. At Kiora, a portion of this mineralised zone has been mined in the past which has increased confidence sufficient for Indicated classification to be assigned.</li> <li>• For the December 2013 classification the following changes were made - the classification boundaries have been made extended at depth and made more consistent between Mick Adams and Wadi. Indicated boundaries generally lie 25-37.5m below the last drilling information. Inferred boundaries lie nominally 50m+ below the indicated boundary, this has been extended from previous model based on the new deep holes confirming the presence of tonalite hosted mineralisation to the base on most of the deep holes. Wadi boundaries were amended to be consistent with this guideline.</li> <li>• The Mineral Resource estimate appropriately reflects the Competent Person’s view of the deposit.</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>• The Castle Hill Mineral Resource estimates have been updated from the August 2013 model. Interpretations and wireframing were completed by Phoenix Gold and updated by Cube following additional drilling data in December 2013. Block modelling of Mick Adams and Wadi work completed in August 2013 by Phoenix and Cube was updated and expanded in December 2013. The satellite resource areas of Outridge, Kiora, Wookie and Lady Alice have not been changed from the August model. Audits and peer reviews of work carried out by Phoenix and Cube in 2013 have been conducted by other Cube staff.</li> </ul>
<b>Discussion of relative accuracy/ confidence</b>	<ul style="list-style-type: none"> <li>• The recent input drill data is comprehensive in its coverage of the gold mineralisation at Castle Hill Stage 1. This information has increased the knowledge of the geological controls on mineralisation which has been used to develop the current Mineral Resource estimate. The MIK estimation provides a better estimate of local grade estimate for mining evaluation over OK estimation and is also a robust estimate for a broad bulk mineralised zone within which local variability in grade will be high. Outside of Mick Adams and Wadi Deposits, local variations can be expected within the interpreted mineralised domains. The use of OK has assisted in reducing the risk associated with any high nugget observed in the gold distribution. The additional benefit of OK is it inherently assists in declustering the data during the estimate.</li> <li>• The Mineral Resources constitute a global resource estimate.</li> <li>• Modelling has provided an understanding of the global grade distribution – but not the local grade distribution. Close spaced grade control drilling is required to gain an understanding of the local grade distribution and local mineralisation controls. Understanding of these aspects will play an important role in the project’s success. Although the Mick Adam deposit has been trial mined before, the standard of sampling and record keeping is not sufficient for this trial to be used to reconcile against the current model.</li> </ul>



## Section 4 Estimation and Reporting of Ore Reserves

21<sup>st</sup> January 2015

Criteria	Commentary
<i>Mineral Resource estimate for conversion to Ore Reserves</i>	<ul style="list-style-type: none"> <li>The Mineral Resource for the Mick Adams-Kiora and Wadi pits have been estimated by Cube Consulting Pty Ltd and announced on 15 and 19 January 2015 at a cut-off of 0.8 g/t</li> <li>The Mineral Resources are reported as wholly inclusive of the Ore Reserves.</li> </ul>
<i>Site visits</i>	<ul style="list-style-type: none"> <li>A site visit was made to the Castle Hill operations on the 9 October 2013 with Mr Grant Haywood (PXG) and Mr Glenn Turnbull (Golders).</li> </ul>
<i>Study status</i>	<ul style="list-style-type: none"> <li>Some previous mining activities have been carried out in the Castle Hill area, with shallow open pits having been abandoned relatively recently.</li> <li>A Feasibility Study has been completed with the Ore Reserves part of this study.</li> </ul>
<i>Cut-off parameters</i>	<ul style="list-style-type: none"> <li>A 0.4 g/t cut-off grade has been used and was selected on the basis of \$US1,173/oz gold exchange rate of 0.87.</li> </ul>
<i>Mining factors or assumptions</i>	<ul style="list-style-type: none"> <li>The method used to convert Mineral Resource to Ore Reserves is based upon a pit optimisation identifying the economic shell within which a practical mining design has been applied.</li> <li>The mining method chosen is conventional open pit mining.</li> <li>The nature of the tonalite and grade profile lends itself to flitch mining within 10 m mining benches.</li> <li>An ore loss allowance of 5%.</li> <li>Geotechnical design criteria have been provided by Golder geotechnical and incorporated within the mine design parameters for the pits.</li> <li>A mining dilution of 5% is anticipated with this type of operation based upon experience in similar scale and type of operations.</li> <li>No inferred material has been scheduled within the pit designs.</li> <li>The site will require haul road establishment, and provision of services include water and power. A semi-portable workshop and office facilities will be provided by the successful mining contractor as part of the mining contract.</li> </ul>
<i>Metallurgical factors or assumptions</i>	<ul style="list-style-type: none"> <li>A dedicated process (HL) plant is planned for the operation, to process the lower grade material not suitable for Toll Mill treatment.</li> <li>Bulk and laboratory sample test have been carried out by &lt;Lab and Test Results Here&gt;</li> <li>Metallurgical testwork was undertaken by Independent Metallurgical Operations Ltd inclusive of master composites for ore sources and 12 variability domains. Testwork included Comminution Testwork, Gravity and Leaching Testwork, Rheology Testwork, Ore Characterisation, Materials Handling, , Site Water Characterisation, Leach and CIL Amenability Testwork, Oxygen Uptake and Gravity, CIL Optimisation Testwork, Adsorption Characterisation Testwork, Slurry Detoxification, Flotation Testwork, Bulk Grind and Leach for External Tailings Testwork. Conservative recovery factors are 94% process plant, 60% Heap Leach Fresh ore, 70% Heap Leach Transitional ore and 78% Heap Leach Oxide ore.</li> <li>Levels of deleterious elements sampled are sufficiently low in content.</li> </ul>
<i>Environmental</i>	<ul style="list-style-type: none"> <li>Soil and Waste Characterisation, Flora and Fauna surveys, Surface Water Assessments and Hydrogeological Assessments of the areas involved in Castle Hill Stage 1 have all been undertaken. There have been no significant impacts identified as a result of the studies that could impede mining the deposits, however management strategies for</li> </ul>



21<sup>st</sup> January 2015

Criteria	Commentary
	<p>potential impacts have been developed to address clearing (vegetation/topsoil/drainage), wildlife interaction, waste and environmental incidents. The material within the pit is non-acid forming (NAF) and sterile land to north west of the Mick Adams deposit has been identified as suitable for waste rock landforms. The design of the waste rock landform has been developed based on the characterised materials to allow the best outcomes for rehabilitation/closure, this includes &lt;18° batters, 10m backward sloping berms for every 10ms in height. Mining Proposals for the project are drafted and will be submitted three months prior to mining. Water licencing applications are submitted to the Department of Water and dewatering licences will be submitted to the Department of Environmental Regulation. Field studies and monitoring of rehabilitation will be ongoing to continually improve the knowledge of the area to allow successful rehabilitation outcomes.</p>
<i>Infrastructure</i>	<ul style="list-style-type: none"> <li>Material will be processed at the nearby Paddington Mill. On-site infrastructure will include offices, laydown area and workshop</li> </ul>
<i>Costs</i>	<ul style="list-style-type: none"> <li>Costs have been estimated based on mining and processing rates supplied by Norton. These are estimated from mining and processing of nearby Norton open pits utilising various fleet configuration.</li> <li>Royalty has been estimated based on the WA Governments formula for calculating gold revenue mining royalties.</li> </ul>
<i>Revenue factors</i>	<ul style="list-style-type: none"> <li>Head grade and metal content are derived from the Mineral Resource and modifying factors described above.</li> <li>The financial analysis in this report is based on a gold price of US \$1,173/oz and 0.87 exchange rate.</li> <li>The gold doré is planned to be transported via recognised security service from the gold room of the Castle Hill processing plant to the gold refinery at Perth International Airport, Western Australia.</li> <li>Refined gold (99.5% pure) is sold into the spot market through AGR Matthey and bullion banks.</li> <li>Contract payments and terms are expected to be typical of similar contracts for the refining and sale of doré produced from other operations elsewhere in Australia.</li> </ul>
<i>Market assessment</i>	<ul style="list-style-type: none"> <li>Historical gold price and forward looking estimates have been used for the gold price. Price flexing has been carried out to determine the robustness of the project viability.</li> </ul>
<i>Economic</i>	<ul style="list-style-type: none"> <li>Inputs to economic analysis include factors described above including ore &amp; metal quantities from mining/processing schedule, (incl. described recovery/processing parameters), cost quotes and estimates and price assumptions.</li> <li>Discount rate derived from LIBOR rate calculations</li> </ul>
<i>Social</i>	<ul style="list-style-type: none"> <li>Access agreements with pastoral leases are in progress.</li> </ul>
<i>Other</i>	<ul style="list-style-type: none"> <li>An updated Mine Management Plan will need to be submitted with the Western Australia Department of Mines. There is no reason to suggest approvals and authorisations will not be provided.</li> </ul>
<i>Classification</i>	<ul style="list-style-type: none"> <li>Indicated Resources have been converted to Probable Ore Reserves. There are no Measured Mineral Resources within the Castle Hill Stage 1 deposits.</li> <li>The estimated Ore Reserves and mining method are in the opinion of the Competent Person appropriate for this style of deposit.</li> </ul>
<i>Audits or reviews</i>	<ul style="list-style-type: none"> <li>All inputs to the estimation of ore reserves have been subject to internal reviews.</li> </ul>
<i>Discussion of relative accuracy/</i>	<ul style="list-style-type: none"> <li>The assessment of relative accuracy using statistical or geostatistical techniques is not considered appropriate.</li> <li>The local estimate of Ore Reserves available for technical and economic evaluation is 8.7</li> </ul>



Criteria	Commentary
<i>confidence</i>	<p>Mt of Toll Mill feed material at 1.51 g/t for 423,700 ounces of contained gold prior to processing. A further 7.1Mt at 0.57 g/t for 131,800 ounces of contained gold prior to processing is to be processed through an on-site Heap Leach processing facility. The combined Ore Reserves available for technical and economic evaluation is 15.8 Mt at 1.09 g/t for 555,500 ounces of contained gold prior to processing.</p> <ul style="list-style-type: none"><li>• There are no additional factors or areas of uncertainty remaining to be disclosed which could have material adverse impacts on project viability.</li></ul>

21<sup>st</sup> January 2015