

### ASX ANNOUNCEMENT

3 AUGUST 2018

**CODE: ALY** 

#### **BOARD OF DIRECTORS**

Mr Lindsay Dudfield Non-Executive Chairman

Mr Leigh Ryan Managing Director

Ms Liza Carpene Non-Executive Director

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SHARES 440,419,481

OPTIONS 29,500,000 (Unlisted)

#### **PROJECTS**

WEST LYNN (earning up to 80%)

LACHLAN (earning up to 80%)

KARONIE (100%)

BRYAH BASIN (80-100%)

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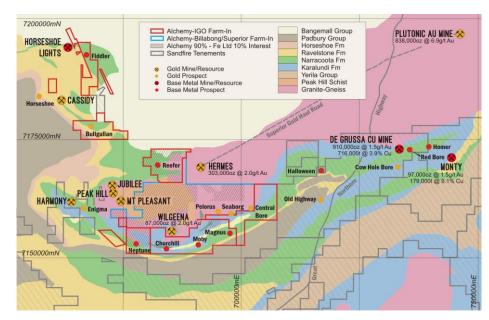


# Hermes South JORC Code 2012 Resource Estimate, Bryah Basin, WA

#### **HIGHLIGHTS**

- JORC Code 2012 Edition compliant uncut inferred resource estimate of 1.37Mt
   @ 2.0 g/t for 87,000oz. Au for Hermes South.
- The revised resource estimate confirms previous JORC code 2004 Edition resource estimate for Wilgeena (re-named Hermes South).
- Additional resource drilling by Billabong Gold planned for the current quarter.

Alchemy Resources Limited (ASX: ALY) ("Alchemy") is pleased to announce the completion of a JORC Code 2012 Edition compliant uncut inferred resource estimate of 1.37Mt @ 2.0 g/t for 87,000oz Au (0.6g/t Au lower cut-off) for the Hermes South deposit (formerly named Wilgeena) located approximately 20 kilometres south-southwest of the Hermes mining operation, and 65 kilometres southwest of the Plutonic gold mine in the Bryah Basin, WA. Hermes South forms part of the farm-in and joint venture agreement with Billabong Gold Pty Ltd, a subsidiary of Superior Gold Inc. (TSX-V: SGI). Billabong Gold is earning an 80% interest with Alchemy's 20% interest then carried on an interest-free deferred basis to production, with repayment from 50% of Alchemy's share of production.



**Figure 1:** Bryah Basin Project – Alchemy, IGO and Billabong Farm-In tenements and gold and base metal prospects over regional geology interpretation.

The Hermes South resource modelling and estimation has been completed by Stephen Godfrey of Resource Evaluation Services Pty Ltd, an external and independent resource consultancy. Details of the updated Hermes South inferred resource estimate, which is very similar to the JORC Code 2004 resource estimate completed by Simon Coxell<sup>1</sup> is shown in Table A below.

Table A: Hermes South JORC Code 2004 and 2012 Inferred Mineral Resource Estimate comparison

Inferred				
Hermes South	Tonnes (Mt)	Au grade (g/t)	Au (oz)	Lower Cut (g/t Au)
Uncut (JORC 2004)	1.37	1.99	87,373	0.5
Uncut (2012)	1.37	1.97	87,093	0.6
Cut (20g/t Au) (2004) Cut (20g/t Au) (2012)	1.37 1.37	1.40 1.53	61,434 67,783	0.5 0.6

Metallurgical test-work undertaken on oxidised core from the Hermes and Hermes South gold deposits, obtained from the diamond drilling program in 2010, indicates that the ore is amenable to treatment in a conventional crush, grind and CIL plant with good recoveries across all size fractions. A high proportion of gold is contained in the coarse fraction, and the test-work indicates that a large percentage (40-60%) of the free gold at Hermes South could be recovered by gravity concentration. No technical issues have been identified that would result in a poor recovery or extenuating cost issues<sup>2</sup>.

The Hermes South Prospect and resource is strategically located and can be readily serviced by extending the existing Billabong Gold haul road that links Plutonic to the Hermes deposit. Recent drilling by Billabong Gold has identified a new shallow parallel lode 150m to the south of the main Hermes South ore zone and confirmed the potential to increase the existing resource down-plunge of currently defined mineralisation (Figure 2).

Significant intercepts from the Billabong Gold Hermes South RC drill program included<sup>3</sup>:

- 3m @ 37.7g/t Au from 27m (BHSRC007), approximately 150m south of existing resource
- 2m @ 5.0g/t Au from 35m (BHSRC007)
- 6m @ 3.0g/t Au from 166m (BHSRC009)
- 4m @ 142.0g/t Au from 56m (BHSRC028), approximately 150m south of existing resource
- **12m @ 6.4g/t Au from 62m** (BHSRC012)
- 4m @ 13.5g/t Au from 50m (BHSRC039)
- 3m @ 11.8g/t Au from 62m (BHSRC017)

Additional drilling is planned in order to determine the potential for Hermes South to become a second open pit and part of the production profile for the Plutonic Gold Operation.

<sup>&</sup>lt;sup>1</sup> Refer to Alchemy Resources ASX Announcement dated 22 October 2012

<sup>&</sup>lt;sup>2</sup> Refer to Alchemy Resources ASX Announcement dated 22 October 2012

<sup>&</sup>lt;sup>3</sup> Refer to Alchemy Resources ASX Announcements dated 30 July 2018

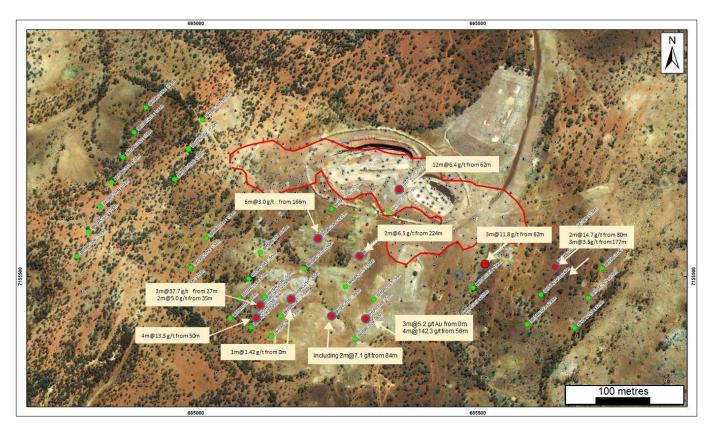


Figure 2: Hermes South - location of drill intercepts and recent RC program over Google Earth image.

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The information in this report that relates to Exploration Results is based on information compiled by Mr Leigh Ryan, who is the Managing Director of Alchemy Resources Limited. Mr Ryan is a Member of the Australian Institute of Geoscientists and has sufficient experience of relevance to the styles of mineralisation and the types of deposits under consideration, and to the activities undertaken, to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' ('JORC Code 2012'). Mr Ryan consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

The information in this report that relates to Mineral Resources at the Hermes South Gold Deposit is based on information compiled by Stephen Godfrey, who is an employee of Resource Evaluation Services Pty Ltd, a consultant to Alchemy Resources Limited. Mr Godfrey is a Member of the Australian Institute of Geoscientists and the Australasian Institute of Mining and Metallurgy and has sufficient experience of relevance to the styles of mineralisation and the types of deposits under consideration, and to the activities undertaken, to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' ('JORC Code 2012'). Mr Godfrey consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

# **JORC Code, 2012 Edition – Table 1**

## **Section 1 Sampling Techniques and Data**

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma	Sampling data considered in the Resource Estimate was derived from diamond, Reverse Circulation (RC), Rotary Air Blast (RAB) and Aircore (AC) drilling completed by various project owners over a period dating back to 1985.  Sampling information from historical data compiled from annual reports shows that
	sondes, or handheld XRF instruments, etc).	'industry standard' work has been completed in most instances.  Listed are the different generations of drilling with the detail of sampling techniques
	limiting the broad meaning of sampling.	for each generation:
	<ul> <li>Include reference to measures taken to ensure sample representivity and the</li> </ul>	HM - RC - 1986. Sampled every 1m interval. Sampling method not recorded.
	appropriate calibration of any measurement	WO - RC - 1990. 4m composite samples collected. Sampling method not recorded.
	<ul><li>tools or systems used.</li><li>Aspects of the determination of</li></ul>	GPM - RC - 1992. Sampled every 1m interval. Sampling method not recorded.
	mineralisation that are Material to the Public Report.	HMR - RAB - 1993. 4m composite samples collected. Sampling method not recorded.
	In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain)	WRAB - RAB - 1993. Spear sampling individual 1m whole sample piles and compositing into 1m, 2m, 3m and 4m composites.
1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems.  Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.	WRC0040-0072 - RC -1993. Drill cuttings were passed through a riffle split cyclone for samples collected in 1m intervals. Samples were otherwise collected as composite samples over 4m intervals.	
	WR -RAB - 1997. All samples were drill sampled every meter and composite scoop sampled over 4 consecutive meters for analysis. Samples returning greater than 100ppb gold were resampled at 1m intervals	
	WRC0073-0112 - RC -1997. Drill samples were collected at 1m intervals via a cyclone and contained in large plastic numbered bags. A riffle splitter collected a 1m sample into calico bag.	
		WGDC001&2 - RC pre-collar - 2010. Spear sample collected for a 4m composite. Re-sampled every 1m by riffle split cyclone into pre-numbered calico bags for 4mCOMPs greater than 0.1g/t.
		WGRC - RC - 2010. Spear sample collected for a 4m composite, 1m SPLIT samples

Criteria	JORC Code explanation	Commentary			
		collected every 1m by riffle split cyclone into pre-numbered calico bags completed on 4mCOMPs greater than 0.1g/t.			
		WGAC - AC - 2011. Spear sample collected for a 4m composite, 1m SPLITS (spear samples) completed on 4mCOMPs greater than 0.1g/t.			
		WGDC006 – DD - 2017. Whole diamond core was sampled and collected in calico bags.			
		WR - RC – unknown			
		WRC - RC – unknown			
		WRD - DD - unknown			
Drilling techniques	Drill type (eg core, reverse circulation, open- hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter,	Historical data between 1986 and 2009 provides details on the drill type only and little in the way of specific rig capabilities or rod sizes. It is assumed that 'industry standard' at the time was used.			
	triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).	WGRC – RC – 2010. 41 RC holes were drilled at an angle of -60deg towards an azimuth of 024 (with the exception of WGRC022 which was drilled -60 deg towards 294). Challenge Drilling completed the program using a KWL350 Rig with 6m rods and hammer bit. Samples were collected by spear or riffle split into calico bags. The remainder of the sample was stored in green bags until rehabilitated.			
		WGAC - AC – 2011. 53 holes were drilled at -60 deg towards 360. Challenge drilled the program using a Challenger R/A 150 rig with 3m rods and an aircore hammer bit. Samples were speared from spoils laid in 10m run on the ground.			
		WGDC – DD- 2011.In April 2011 diamond drill hole WGDC006 was drilled to a depth of 180.2m with a 35.8m deep mud rotary pre-collar. Diamond core was extracted using a NQ-2 tube in 3m runs drilled by Macro Drilling. Core was orientated between 35.8m and 126m using the mechanical lower most point method. Alpha angles were then measured using a wrap-around template. The remainder of the hole could not be orientated due to strongly oxidized core. Specific gravity records were obtained in 2017 by Billabong Gold.			
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	Methods of recording and assessing core and chip sample recoveries for historical data between 1986 and 2009 are unknown.			
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	In WGRC and WGAC pre-fixed holes sample recoveries were logged if drill chip samples were less than 100%.			
	Whether a relationship exists between sample recovery and grade and whether	WGDC core runs were marked up into 1m lengths with any core loss recorded in the sample sheets both digitally and manually in the field. Further records of core loss			

Criteria	JORC Code explanation	Commentary				
	sample bias may have occurred due to	were made when completing RQD measurements on each run length of core.				
		Measures taken to maximise sample recovery and ensure representative nature of the samples in historical data between 1986 and 2009 is unknown, it is assumed 'industry standard' methods were used.				
		For holes drilled by Alchemy Resources Ltd between 2010 and 2014 sample recovery was maximised by ensuring correct drilling techniques were employed. A rig geologist was always onsite for the drilling of each hole to ensure quality sample recovery was obtained.				
		RC drill chip sample recoveries were fairly good for the entire program and there was little concern for sample bias. Minor core loss occurred in WGDC006 which may have created sample bias.				
Logging	Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral	Core and chip samples have been logged geologically to a level of detail to support Mineral Resource estimation. Historical core and chip samples have been geologically logged onto paper using the following recordings for each generation:				
	<ul> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	HM - RC - 1986. Logged every 1m recording colour, lith and grainsize.				
		WO - RC - 1990. Logged in 2m intervals recording colour, lith and alteration.				
		GPM - RC - 1992. Logged every 1m recording lith and weathering.				
		HMR - RAB - 1993. Logged every 1m recording colour, lith, oxidation, veining and grainsize.				
		WRAB - RAB - 1993. Geological intervals were logged recording colour, lith and grainsize.				
		WRC0040-0072 - RC -1993. Logged on geological intervals for lithology, texture.				
		WR -RAB - 1997. Logged on geological intervals for lithology.				
		WRC0073-0112 - RC -1997. Logged on geological intervals for lithology, colour, texture, grainsize and structure.				
		WGRC - RC - 2010. Logged every 1m, colour, lith, oxidation, alteration, texture, veining and grainsize recorded.				
		WGDC001&2 - RC pre-collar - 2010. Logged every 1m, colour, lith, oxidation, alteration, texture, veining and grainsize recorded.				
		WGDC006 -DD - 2010. Diamond core was logged to the nearest mm at lithological contacts.				

Criteria	JORC Code explanation	Commentary
		WR - RC - unknown. No geological logging for WR1 - 100. WR100-164 recorded lithology on geological intervals.
		WRC - RC - unknown. Logged every 1m recording lithology.
		WRD - DD - unknown. Logged on geological intervals for lithology.
		Logging is qualitative based on measurements to the nearest mm on core and 1m on drill chips for all data.
		Core photography was completed between 35.8m and 180.2m on WGDC006.
		100% of the relevant intersections were logged geologically.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	For drilling pre-2009 it is unknown the level of sub-sampling and sample preparation techniques for core or drill chips.
	<ul> <li>rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all</li> </ul>	For drilling post-2009 whole core was taken to be sampled while drill chips were sampled wet or dry and dried at the lab if required. Samples were pulverized using technique PUL-23 to gain a 50g sample. This preparation was considered appropriate for the nature of the sample.
		Clean calico bags were used to avoid contamination. Duplicates and standards were used in sequence after every 25 samples for drill chips to ensure quality control and duplicity representation of samples.
	<ul> <li>representivity of samples.</li> <li>Measures taken to ensure that the sampling is representative of the in situ material</li> </ul>	Standards and blanks used in sequence after every 25 samples for core. Duplicates were not collected as whole core was sampled.
	collected, including for instance results for field duplicate/second-half sampling.  Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample sizes were appropriate to the grain size of the material being sampled.
Quality of assay data and	The nature, quality and appropriateness of	The quality of assay data and laboratory tests from historical work is unknown.
laboratory tests	<ul> <li>the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis</li> </ul>	Due to an issue raised regarding coarse gold/'nugget' effect in the Wilgeena (renamed Hermes South) Mining area, screen fire assay techniques were from 2010 to gain the complete gold analysis of each sample. For samples under a 7g/t gold analysis, believed not as affected by coarse gold, samples were analysed by fire assay with an AAS finish.
	including instrument make and model, reading times, calibrations factors applied and their derivation, etc.	Field standards, duplicates and blanks were submitted in the sampling sequence after every 25 <sup>th</sup> sample. Duplicates were not used for WGDC006 as whole core was used for analysis.

Criteria	JORC Code explanation	Commentary
	Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.	Lab checks were completed by ALS Perth and returned acceptable levels of accuracy.
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	No verification of significant intersections by either independent or alternative company personal was undertaken.  The diamond hole WGDC006 was a twin of an original RC hole WGRC034, but hole deviation resulting in a significant distance between the holes at the ore zone depth.  Historical data was logged onto paper. Data then compiled from annual reports to build the Hermes South database.  The sampling data is entered directly onto field Toughbook – data is stored in the Plutonic Operations acQuire database  Data is stored on the Plutonic Operation server and exported as Access data packages to be used in various software programs.  No adjustments to assay data have been made.
Location of data points	<ul> <li>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	Collar locations are located using a handheld GPS, downhole surveys were completed by digital multi-shot camera every 50m downhole for recent RC and diamond holes.  Local Hermes South Mine grid is used to plan the holes in the Hermes South Mining Centre and MGA94 zone 50 is the standard grid system for final location data.  DGPS of the local mine area was completed in 2010, using these points as a reference an accurate DTM of the terrain is used to gain topographic control.
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> <li>Whether sample compositing has been</li> </ul>	RC and diamond drilling has taken place on lines 20m apart across the strike of mineralisation.  The data spacing and distribution is considered sufficient to establish an appropriate degree of geological and grade continuity appropriate for classification of an Inferred Mineral Resource.  Samples were composited to 1m intervals for resource estimation work.

Criteria	JORC Code explanation	Commentary
	applied.	
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	The orientation of the sampling is suitable for the interpreted mineralisation and no sample bias is observed.  The relationship between the drilling orientation and the orientation of the key mineralised structures is considered unbiased.
Sample security	The measures taken to ensure sample security.	Samples for analysis were bagged into large plastic bagged and transported on a daily basis to laboratories via company vehicle and transport company to Perth. Bulk residual samples were stored on site. No bulk sample security measures were required.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	None available.

## **Section 2 Reporting of Exploration Results**

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</li> </ul>	Mining Lease 52/1049 is located in the Wilgeena Mining Centre in the Peak Hill Mineral Field. Alchemy Resources (Three Rivers) Pty Ltd are the owners of the tenement subject to a Farm-in and Joint Venture Agreement with Billabong Gold Pty Ltd whom also manage the tenement. There are no native title interests, historical sites, wilderness or national park and environmental settings.  The Mining Lease commenced in 2010 for a term of 21 years to expire in 2031.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	Hermes South (Wilgeena) has a history of exploration and mining including two test pits developed in early 1986 by Esmeralda Exploration Ltd which produced 2,722oz of gold from 28,500t at 2.97g/t. Plutonic and Homestake Gold then held the exploration title over the area through the 90s and 2000s including further RAB and RC drilling. Alchemy Resources commenced AC, RC and Geotechnical Diamond drilling in 2010 – 2011 for resource definition. Billabong Gold Pty Ltd took over Farmin and Joint Venture interests from Northern Star Resources Ltd in 2016 and have recently reviewed the Hermes South area and analysed WGDC006 diamond core for gold.
Geology	Deposit type, geological setting and style of mineralisation.	Gold discovered in the Hermes South Mining Centre lies within oxidized Proterozoic Peak Hill Schist. The Peak Hill Schist comprises quartz-sericite schist and quartz-muscovite schist and is located on the south-western tip of the Marymia Inlier.  Gold mineralization occurs within a predominantly metasedimentary sequence of Proterozoic schists and mafic volcanic units associated with the development of string linear fabrics (070-080) (axial planar shearing?) and quartz veining dipping at 65 degrees to the south in fairly predictable and consistent zones. An overall plunge to grid east is indicated.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:     easting and northing of the drill hole collar elevation or RL (Reduced Level – elevation)	Information material to the understanding of the exploration results reported by Alchemy is provided in the text of the public announcements released to the ASX. No material information has been excluded from the announcements.

Criteria	JORC Code explanation	Commentary
	<ul> <li>above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li> </ul>	
Data aggregation methods	<ul> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	Exploration drill intercepts generally use a 1.0g/t Au lower grade cut-off, no upper cut-off grade, maximum 1m internal waste, and all >1g/t Au intercepts are reported, and used to differentiate mineralised material from un-mineralised material for public reporting.  No metal equivalents or aggregated have been used.
Relationship between mineralisation widths and intercept lengths	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').</li> </ul>	The orientation of the drilling at Hermes South is generally at ~80 degrees to the strike of mineralisation and at an angle of ~70 degrees to the dip of mineralization which introduces a 30% bias (increase) in reported downhole widths compared to true ore widths.
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported	Appropriate maps, sections and mineralised drill intersection details are provided in public announcements released to the ASX. Similar diagrams accompany this report.

Criteria	JORC Code explanation	Commentary
	These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	Exploration results reported in Alchemy's public announcements and this report are comprehensively reported in a balance manner.
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	N/A
Further work	<ul> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	Further work planned at Hermes South includes additional RC and diamond drilling to test for continuity and mineralisation at depth along strike to the east, and provide bulk density samples and oxidation state data to improve future resource modelling.

## **Section 3 Estimation and Reporting of Mineral Resources**

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary				
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its	Provisional manual data validation checks were run by Billabong. Jorvik Resources ran their own validation checks on the database supplied for the 2017 resource estimate conducted on behalf of Billabong Gold, including:				
	initial collection and its use for Mineral Resource estimation purposes.	Visual checking of drill hole collar locations relative to surface topography				
	Data validation procedures used.	Consistency of end of hole depths in the collar, survey, geology and assay datasets;				
		Gaps and overlapping sampling and logging intervals in the geology and sample/assay datasets;				
		RES has reviewed the database validation and no material errors were identified in the data provided.				
Site visits	<ul> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	No site visit undertaken due to time and money constraints. A site visit will be conducted prior to the next resource update.				
Geological interpretation	<ul> <li>Confidence in (or conversely, the uncertainty of ) the geological interpretation of the mineral deposit.</li> <li>Nature of the data used and of any assumptions made.</li> <li>The effect, if any, of alternative interpretations on Mineral Resource estimation.</li> <li>The use of geology in guiding and controlling Mineral Resource estimation.</li> <li>The factors affecting continuity both of grade and geology.</li> </ul>	The confidence in the current geological interpretation of the Hermes South area is considered to be good and is consistent with the mineralisation geometry and styles observed in the open pit and drill core.				
		Assay data has been used to interpret mineralisation domains based on a nominal 0.2g/t Au lower cut-off grade which was selected based on visual inspection of grade continuity between mineralised drill intersections.				
		Mineralisation outlines were snapped to the drill holes and the resulting strings were used to construct wireframe solids to constrain resource estimation.				
		The current interpretation accounts for all of the available geological data. Significant changes to the current interpretation are considered impractical.				
		The mineralisation constraints modelled to constrain resource estimation have been defined using all available geological and structural data and are consistent with the mineralisation geometry and styles observed in the open pit and drill core.				
		Observation of smaller scale fault structures in the open pit workings and drill core indicate there is likely to be greater short range variations in mineralisation grades,				

Criteria	JORC Code explanation	Commenta	Commentary					
		thicknesses, and orientation than reflected at the scale of the current geological interpretation.						
Dimensions	The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	The mineralisation strikes approximately east-west and dip to the south at between 45 and 65 degrees, with a slightly plunge to the east-southeast. The length of the mineralisation along strike is approximately 500m and mineralisation defined by currently available drilling extends to approximately 130m below surface.  This Mineral Resource has the following coordinate extents:					The length of the alisation defined by	
			l	Block Model I	Extents			
			Minimum	Maximum	Extent (m)	Parent Block Size	Sub- Block Size	
		Easting	685040	685640	600	10	5	
		Northing	7155500	7155800	300	10	5	
		mRL	438	578	140	5	2.5	
Estimation and modelling techniques	<ul> <li>The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.</li> <li>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</li> <li>The assumptions made regarding recovery of by-products.</li> <li>Estimation of deleterious elements or</li> </ul>	unbiased g Isatis™ by OK was un mineralised of 10mx10r Standard k the best glo	lobal estima Jorvik in 201 dertaken in \ I block mode nx5m and si riging neighb bbal estimate	te. Statistical 17 and the res Vulcan™ usin el. The Wilgee ub-celling who pourhood ana	and geos sults adop ng one or t ena/Herme ere require llyses wer e. Becaus	statistical a ted by RE two passe es South b ed. e undertal se of the g	analyses was for the 2 s to fully polock mode ken for eacenerally hi	ch lode to provide gh nugget effects

Criteria	JORC Code explanation	Commentary						
other non-grade variables of economic significance (eg sulphur for acid mine	Lode	Pass	Min/Max Samples	Se	arch(	(m)		
	<ul> <li>drainage characterisation).</li> <li>In the case of block model interpolation, the block size in relation to the average</li> </ul>	101	1	6/40	x 60	у 80	z 15	
sample spacing and the search employed.  • Any assumptions behind modelling of selective mining units.  • Any assumptions about correlation between variables.  • Description of how the geological interpretation was used to control the resource estimates.  • Discussion of basis for using or not using grade cutting or capping.  • The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	102	1		60 60	80 80	15 15		
	103	2	6/60 4/60	50 80	15 30	10 20		
	104 105	1	6/40 7/40	36 60	60 60	30 5		
	106	1	6/40 6/40	60	60 80	15 15		
	107 108	1	5/60 6/40	50 60	15 60			
	Previous Mineral Resource estimates were undertaken by Inverse Distance weighting and top cutting at 20g/t was applied. The global results compare reasonably well.  No assumptions have been made regarding by-products as no by products are considered to be economically material to the project.							
		No deleterious elements have been estimated as no deleterious elements are considered to be material to the resource estimate.						
	The estimation block size is suitable for the sample spacing and search employed at the Inferred level of resource confidence reported. The estimation block size will be refined in future estimates through the use of neighbourhood analyses.							
	No selective mining units were assumed in this estimate as studies into the mine design criteria have not commenced.							
		This was a single variable	e estima	tion for gold	(Au)	•		
	The Mineral Resource estimate was undertaken using hard boundaries as defined by the mineralisation lode wireframes.							
	Spatial restraining using a 5 m limit on samples >= 20 g/t Au was used to control the influence of outlier composite samples. Blocks beyond 5 m used 20 g/t Au cut samples.							
		Validation of the block mo	odel incl	uded visual	checl	ks of	block	model construction and

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		domain coding, volume check of mineralisation zones against resource wireframes. Validation of the estimate included visual checks against resource wireframes and drill holes, comparison of block grades with input composite data via statistics. The estimate has honoured the raw data and appears to be appropriately smoothed.
Moisture	Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	All tonnages are dry.
Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied.	A nominal modelling grade cut-off grade of 0.2g/t Au was used to interpret and model 3-D wireframes outlining the mineralised domains. This cut-off grade effectively represents an upper threshold at which robust 3 dimensionally continuous zones of mineralisation can be modelled without including significant sub-grade mineralisation that is unlikely to be of economic value.
Mining factors or assumptions	Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	It is anticipated that the mining of the Hermes South resource will be by traditional open pit mining methods.
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources	No metallurgical assumptions or predictions are reflected in the resource block model. However, records of historical production in the district demonstrate that the mineralisation is amenable to the recovery of gold using carbon-in-leach methods.

Criteria	JORC Code explanation	Commentary
	may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	No significant environmental constraints are envisaged. The resource area is situated on a granted Mining Lease
Bulk density	<ul> <li>Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.</li> <li>The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.</li> <li>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</li> </ul>	Bulk density was assumed on the basis that the depth of the weathering profile at the prospect is consistent. SG was based on a nominal value of 2.1 tm <sup>-3</sup> above 490 m RL and 2.6 tm <sup>-3</sup> below 490 m RL.  SG values were based on Hermes South (Wilgeena) and other nearest gold workings (including Hermes).  No information was available relating to historical bulk density estimates at the prospect.  The size of the bulk density dataset is insufficient to enable any statistical analysis and bulk density assignment was nominal only.

Criteria	JORC Code explanation	Commentary
Classification	<ul> <li>The basis for the classification of the Mineral Resources into varying confidence categories.</li> <li>Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</li> <li>Whether the result appropriately reflects the Competent Person's view of the deposit.</li> </ul>	The Mineral Resource Classification is based on confidence in the geological and grade continuity in relation to the drill hole spacing. Where present, the mineralisation appears to be highly continuous, albeit with significant local variations in grade. Higher confidence local estimates therefore require a drill spacing and density information that adequately represents the local variation in the mineralised intersection grades.  Block model grade estimates based on informing mineralised drill intersections have been classified as Inferred Resources using wireframes based on digitised outlines considering the geological complexity, data quantity, and drill hole spacing informing the mineralisation interpretation within each mineralised domain.  The resource classification constraints take into account all of the JORC Table 1 assessment parameters.  The Mineral Resource estimate appropriately reflects the view of the Competent Person.
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	Audits and reviews are confined to internal corporate procedures.
Discussion of relative accuracy/ confidence	<ul> <li>Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.</li> <li>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</li> <li>These statements of relative accuracy and confidence of the estimate should be</li> </ul>	The public reporting of the Mineral Resource estimate is in accordance with JORC Code (2012 edition) guidelines.  The statement relates to global estimates of tonnes and grade. The confidence intervals have been based on estimates at the parent block size.  Historical production using traditional open cut methods has been undertaken within the resource area by previous owners of the Project. No production data was reviewed during the preparation of the resource estimate.

Criteria	JORC Code explanation	Commentary
	compared with production data, where available.	