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(Incorporated in the Republic of South Africa)  
Reg. No. 1944/017354/06  
ISIN. ZAE000043485 – JSE share code: ANG  
CUSIP: 035128206 – NYSE share code: AU  
JSE Bond Company Code - BIANG  
("AngloGold Ashanti" or the "Company")

**29 March 2019**

**NEWS RELEASE**

**Boston Shaker underground mine to go ahead at Tropicana**

(JOHANNESBURG – PRESS RELEASE)

AngloGold Ashanti Australia Ltd (70% and manager) and Independence Group NL (30%) have approved development of the Boston Shaker Underground Project at the Tropicana Gold Mine in Western Australia.

A Feasibility Study has confirmed that underground mining is technically and financially viable, demonstrating robust economics with an anticipated IRR of 39% for a capital investment of \$79.3 million (100%). See Table 1 for breakdown.

Boston Shaker will contribute higher grade mill feed, resulting in an improved gold production profile and enhanced cash flow. Importantly the underground mine will provide improved cash flow during 2021-2023 when the mine plan includes periods of higher waste stripping in the Havana open pit.

Ore from the underground mine will enable Tropicana gold production to be maintained at between 450,000-500,000 ounces per annum (100%) over the next five years, lifting the average to 480,000 oz. per annum over the five year period.

The project will commence in the June quarter 2019 and first gold is scheduled for the September quarter in 2020.

"Underground mining at Boston Shaker will leverage further value from this high performing operation, achieving pay-back in just over three years," said Ludwig Eybers, AngloGold Ashanti's Chief Operating Officer International.

"An ongoing focus on Operational Excellence has enabled Tropicana to consistently exceed expectations, and I am sure this world class performance will extend into the underground operation."

The expanded ore production from the mine will capitalise on investments made in the Tropicana processing plant, which includes the second ball mill, commissioned in November 2018, increasing throughput capacity to 8.1 Mtpa.

The Boston Shaker ore body remains open at depth and the JV partners will continue to test high grade extensions to the Mineral Resource beneath the Tropicana and Havana pits to

assess the opportunity for further underground mining operations (see Figure 1 in the complete announcement available on the company website – [www.anglogoldashanti.com](http://www.anglogoldashanti.com)).

## **Project Details**

A maiden underground Ore Reserve has been declared at Tropicana, based on an Ore Reserve gold price of \$1,100/oz. The Boston Shaker (100%) Ore Reserve is estimated at 2.8 million tonnes grading 3.84 g/t for 317,000 oz of contained gold – see *Table 2*.

The Boston Shaker underground Mineral Resource estimate is 12.5 Mt at 4.2 g/t for 1.7 Moz – see *Table 3*.

The Feasibility Study was based on the mining of 6.58 million tonnes, grading 3.84 g/t, assuming the systematic conversion of Mineral Resources to Ore Reserves over the life of the mine.

The average underground mining rate will be approximately 1.1 Mtpa (including development) over an eight year mine life to 2026 to produce a total of 732,000 oz. Mining methods will comprise conventional mechanised mining and underhand sublevel open stoping.

The proposed mining fleet comprises: two jumbos, two production drills, three remote-capable loaders and four trucks.

An underground mining contract has been awarded to Macmahon Holdings Ltd (Macmahon), the mining alliance partner at Tropicana since commencement of open pit mining in 2012. As Macmahon will operate both the open pit and underground mines significant operational and management synergies will be delivered.

The underground operation adds an additional year to Tropicana's overall mine life, taking it to 2029 based on the current Measured, Indicated and Inferred Mineral Resource of 136.2 Mt at 1.76 g/t for a contained 7.7 Moz.

Decline development is expected to commence in Q2 2019 with mining of the first stope scheduled to begin in August 2020. The portal will be located in the completed Tropicana Pit, to minimise interaction between the open pit fleet working in the Boston Shaker pit and underground equipment (see Figure 2 in the complete announcement available on the company website – [www.anglogoldashanti.com](http://www.anglogoldashanti.com)).

Average underground mining costs, including geology, are anticipated to be between \$55-\$60/tonne.

Metallurgical test work based on current processing plant conditions indicate a recovery rate of 89.9% from the underground ore. Underground ore will be blended with open pit ore and no changes are anticipated in the plant operating expenditure.

The capital cost (100%) is estimated at \$79.3 million (A\$105.7 million) – see *Table 1* for breakdown.

**Table 1: Boston Shaker Underground Project Capital Cost.**

Description	Total US\$ million (100%, Nominal)	2019 US\$ million (100%, Nominal)	2020 US\$ million (100%, Nominal)
Mining (ORD)	46.6	18.7	27.9
Infrastructure and Indirects	32.7	18.9	13.7
<b>Total Capex</b>	<b>79.3</b>	<b>37.7</b>	<b>41.6</b>

**Table 2: Boston Shaker Underground Ore Reserve (100%) as at 31 December, 2018.**

Category	Mt	g/t	Moz
Proved	-	-	-
Probable	2.8	3.65	0.317
<b>Total</b>	<b>2.8</b>	<b>3.65</b>	<b>0.317</b>

**Table 3: Boston Shaker Underground Mineral Resource (100%) as at 31 December 2018.**

Classification	Open Pit			Underground			Total		
	Mt	g/t	Moz	Mt	g/t	Moz	Mt	g/t	Moz
Measured	0.6	1.66	0.03	-	-	-	0.6	1.66	0.03
Indicated	6.6	1.92	0.41	5.1	4.08	0.67	11.7	2.86	1.07
Inferred	0.0	0.60	0.00	7.5	4.35	1.04	7.5	4.35	1.04
<b>Total</b>	<b>7.2</b>	<b>1.90</b>	<b>0.44</b>	<b>12.5</b>	<b>4.24</b>	<b>1.71</b>	<b>19.8</b>	<b>3.38</b>	<b>2.15</b>

**Table 4: Key Boston Shaker Underground Project Metrics**

		Unit	100%	70%
<b>Capital</b>	Investment	\$A million	105.7	74
		\$US million	79.3	55
<b>Financial Metrics</b>	IRR	%	39	
	Payback period	years	3.3	
	Gold price assumption	USD	1240	
		AUD	1654	
<b>Production Metrics</b>	Life of mine (underground)	years	8	
	Life of mine ore production	Mt	6.58	
	Life of mine underground gold production	oz	732,000	512,400
	Average annual underground ore production	Mtpa	1.1	
	Average underground gold grade	g/t	3.84	

	Average annual gold production from project area (Boston Shaker Underground	oz	105,000	73,000
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## JORC Code Competent Persons Statements

*The information that relates to the Tropicana Mineral Resources is based on, and fairly represents information and supporting documentation compiled by Mr Damon Elder, a full-time employee and security holder of AngloGold Ashanti Australia Limited, who is a member of The Australasian Institute of Mining and Metallurgy. Mr Elder has sufficient experience relevant to the type and style of mineral deposits under consideration, and to the activity which has been undertaken, to qualify as a Competent Person as defined in the 2012 edition of the JORC Code. Mr Elder consented to the inclusion in this report of the Tropicana Mineral Resource estimate, based on the information in the form and context in which it appears.*

*The information that relates to the Tropicana Open Pit Ore Reserves is based on, and fairly represents information and supporting documentation compiled by Mr Steven Hulme, a full-time employee and security holder of AngloGold Ashanti Australia Limited, who is a member of The Australasian Institute of Mining and Metallurgy. Mr Hulme has sufficient experience relevant to the type and style of mineral deposit under consideration, and to the activity which has been undertaken, to qualify as a Competent Person as defined in the 2012 edition of the JORC Code. Mr Hulme consented to the inclusion in this report of the Tropicana Open Pit Ore Reserve estimate, based on the information, in the form and context in which it appears.*

*The information that relates to the Tropicana Underground Ore Reserves is based on, and fairly represents information and supporting documentation compiled by Mr Jeff Dang, a full-time employee and security holder of AngloGold Ashanti Australia Limited, who is a member of The Australasian Institute of Mining and Metallurgy. Mr Dang has sufficient experience relevant to the type and style of mineral deposit under consideration, and to the activity which has been undertaken, to qualify as a Competent Person as defined in the 2012 edition of the JORC Code. Mr Dang consented to the inclusion in this report of the Tropicana Underground Ore Reserve estimate, based on the information, in the form and context in which it appears.*

**Ends**

**Johannesburg**

JSE Sponsor: The Standard Bank of South Africa Limited

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Website: [www.anglogoldashanti.com](http://www.anglogoldashanti.com)

**ENDS**

## APPENDIX A

### Section 1: Sampling Techniques and Data

Criteria	Commentary
<b>Sampling techniques</b>	<ul style="list-style-type: none"> <li>- AngloGold Ashanti Australia (AngloGold) has used drilling and subsampling of the cuttings or cores as the data basis for the Mineral Resource estimates of the Tropicana deposits. Details are given in the following subsection.</li> <li>- Drill hole spacings range from 25m×25m grids to 100m×100m grids, with most of the drilling of the Open Pit Mineral Resources on a 50m×50m spacing with 25m×25m testing the starter pits of the Tropicana and Havana initial pits, and the southern end of the Boston Shaker deposit.</li> <li>- A 100m×100m area of Havana was drilled out on a 10m×10m grid to validate the resource model and optimise the grade control sample spacing.</li> <li>- The Boston Shaker Underground Mineral Resource is drilled at 50 x 25m in the upper levels and out to 100 x 100m at deeper levels.</li> <li>- The Underground Mineral Resource down-plunge extensions of Havana Deeps is tested using a 100m×100m grid. Deep +800m deep step-out holes have been drilled on nominal ≈200m×100m to test the high-grade mineralisation of Havana Deeps.</li> <li>- All holes are drilled plunging towards the west to intersect the east dipping mineralised zones</li> </ul>
<b>Drilling techniques</b>	<ul style="list-style-type: none"> <li>- Reverse circulation (RC) percussion drilling using face-sampling bits (5¼ inch or 133mm diameter) has been used to collect samples from the shallower (up-dip) part of the deposits with a nominal maximum RC depth of 150m.</li> <li>- Diamond core drilling has been used for deeper holes, with diamond tails drilled from RC pre-collars. To control the deviation of deep DD holes drilled since 2011, many of these holes were drilled from short ≈ 60m RC pre-collars or using 63.5mm (HQ) diameter core from surface.</li> <li>- Diamond core drilling for Mineral Resource definition is predominantly 47.6mm (NQ) diameter core, with a lesser number of holes drilled for collection of metallurgical and/or geotechnical data using 63.5mm (HQ2, HQ3) or 85mm (PQ) core diameters.</li> <li>- In fresh rock, cores are oriented wherever possible for collection of structural data. Prior to 2009, core orientations are made using the EzyMark tool with the Reflex Ace Tool replacing the system in later drilling programmes.</li> </ul>
<b>Drill sample recovery</b>	<ul style="list-style-type: none"> <li>- RC recovery: <ul style="list-style-type: none"> <li>o Prior to 2008 semi-quantitative assessment was made regarding RC sample recovery with recovery visually estimated as 25%, 50%, 75% or 100% of the expected mass volume of a 1m drilling interval.</li> <li>o Since 2008, AngloGold has implemented quantitative measure on every 25<sup>th</sup> interval where the masses of the sample splits are recorded and compared to the theoretical mass of the sampling interval for the rock type being drilled.</li> <li>o AngloGold found that overall recovery in the regolith was &gt;80% and with total recovery in fresh rock.</li> </ul> </li> <li>- DD Recovery: <ul style="list-style-type: none"> <li>o DD recovery has been measured as percentage of the total length of core recovered compared to the drill interval.</li> <li>o Core recovery is consistently high in fresh rock with minor losses occurring in heavily fractured ground or for DD drilling in the regolith.</li> </ul> </li> <li>- The main methods to maximise recovery have been recovery monitoring as described above and diamond core drilling below ≈150m depth.</li> <li>- No relationships have been noted between sample recovery and grade and sample biases that may have occurred due to the preferential loss or gain of fine or coarse material are considered unlikely.</li> </ul>

## Section 1: Sampling Techniques and Data

Criteria	Commentary
<b>Logging</b>	<ul style="list-style-type: none"> <li>- RC cuttings and DD cores have been logged geologically and geotechnically with reference to AngloGold's logging standard library, to levels of detail that support Mineral Resource estimation, Underground Ore Reserve estimation and metallurgical studies.</li> <li>- Qualitative logging includes codes for lithology, regolith, and mineralisation for both RC and DD, with sample quality data recorded for RC such as moisture, recovery, and sub-sampling methods.</li> <li>- DD cores are photographed, qualitatively structurally logged with reference to orientation measurements where available.</li> <li>- Geotechnical quantitative logging includes QSI, RQD, matrix and fracture characterisation.</li> <li>- The total lengths of all drill holes have been logged.</li> </ul>
<b>Sub-sampling techniques and sample preparation</b>	<ul style="list-style-type: none"> <li>- RC – Primary splitting               <ul style="list-style-type: none"> <li>o Prior to 2007 RC samples were collected from the cyclone stream using a tiered riffle splitter. From 2007 a static cone splitter was introduced and replaced riffles splitters on all rigs.</li> <li>o The RC sampling interval is generally 1m but from 2016, 2m intervals were introduced for RC pre-collars.</li> <li>o The splitters collected a ≈12% split from the primary lot with two 12% splits collected – the first for laboratory submission and second as a reference or replicate. Most samples were collected dry with &lt;2% of samples recorded as being split in moist or wet state.</li> <li>o The main protocol to ensure the RC samples were representative of the material being collected was monitoring of sample recovery and collection and assay of replicate samples.</li> </ul> </li> <li>- DD – Primary sample               <ul style="list-style-type: none"> <li>o DD cores are collected of intervals determined by geological boundaries but generally targeting a 1m length</li> <li>o All NQ cores have been half-core sampled with the core cut longitudinally with a wet diamond blade.</li> <li>o A few of the DD whole cores have been sampled from HQ3 cores drilled to twin RC holes in the regolith or for geotechnical or metallurgical testing.</li> <li>o In 2005, some 1,150m of cores drilled in the oxide zone were chisel split rather than wet cut but this poorer sub-sampling represents &lt;0.01% of the core drilled.</li> </ul> </li> <li>- Laboratory preparation               <ul style="list-style-type: none"> <li>o Sample preparation has taken place at three laboratories since commencement of Mineral Resource definition drilling including SGS Perth (pre- 2006), Genalysis Perth (2006 to April 2016) and SGS Tropicana onsite laboratory (2015 Boston Shaker samples and post-April 2016 – Dec, 2017 samples), and SGS Perth from Jan, 2018 onwards.</li> <li>o RC samples are oven dried then pulped in a mixer mill to a PSD of 90% passing 75 microns before subsampling for fire assay.</li> <li>o SGS prepared DD half-core samples by jaw-crushing then pulverisation of the whole crushed lot to a particle size distribution (PSD) of 90% passing 75 microns. A 50g subsample of the pulp was then collected for fire assay.</li> <li>o Genalysis prepared the samples in a Boyd crusher rotary splitter combo with nominally 2.5kg half-core lots crushed to &lt;3mm then rotary split to ≈ 1 kg before pulverisation and sub-sampling for fire assay.</li> <li>o At SGS Tropicana samples are processed in automated sample preparation system, where samples are crushed in a Boyd crusher to a PSD of 90% passing 2mm then subsampled using a linear sample divider to ~1kg. Samples with mass &lt;800g are manually pulped in a LM2 mill to a PSD of 75 microns before sub-sampling for fire assay.</li> <li>o From May 2016, a jaw crusher has been used to crush half-core samples to a PSD of 100% passing 6mm allowing for diamond core processing at the SGS Tropicana lab.</li> </ul> </li> <li>- Quality controls for sampling and assaying               <ul style="list-style-type: none"> <li>o SGS inserted blanks and standards at a 1:20 frequency in every batch with a duplicate pulp collected for assay every 20<sup>th</sup> sample. Further repeats were also completed at a 1:20 frequency in a random manner.</li> <li>o Sieve checks were completed on 5% of samples to monitor PSD compliance.</li> <li>o Genalysis inserted blanks and standards in every batch and a duplicate pulp was collected for assay on every 25<sup>th</sup> sample and 6% of each batch was randomly selected for replicate analysis. Sieve checks were completed on 5% of samples to monitor PSD compliance.</li> <li>o Tropicana laboratory used barren basalt and quartz to clean equipment between routine samples</li> </ul> </li> <li>- Sample size versus grain size               <ul style="list-style-type: none"> <li>o No specific heterogeneity tests have been carried out but the sample sizes collected are consistent with industry standards for the style of mineralisation under consideration.</li> </ul> </li> </ul>

## Section 1: Sampling Techniques and Data

Criteria	Commentary
	<ul style="list-style-type: none"> <li>○ A 2008 sampling variability study found that 72% of the gold in the samples tested was in size fraction &lt;300 microns, and that repeated sampling of the same lot have very low variance between replicates.</li> </ul>
<b>Quality of assay data and laboratory tests</b>	<ul style="list-style-type: none"> <li>- No geophysical tools were used to determine any element concentrations material to the Mineral Resource estimate.</li> <li>- All Mineral Resource prepared pulps have undergone 50g fire assay which is considered a total assay for gold.</li> <li>- As discussed above all laboratories have used industry standard quality control procedures with standards used to monitor accuracy, replicate assay to monitor precision, blanks to monitor potential cross contamination and sieve tests to monitor PSD compliance.</li> <li>- AngloGold has also used other 'umpire' laboratories to monitor accuracy including Genalysis Perth (prior to November 2006), SGS (from November 2006 to August 2007) and ALS Perth (since August 2007), with these check assaying campaigns coinciding with each Mineral Resource update.</li> <li>- AngloGold has reviewed the quality sample results on a batch by batch and monthly basis and has found that the overall performance of the laboratories used for Mineral Resource estimation samples is satisfactory.</li> </ul>
<b>Verification of sampling and assaying</b>	<ul style="list-style-type: none"> <li>- Significant intersections of mineralisation are routinely verified by AngloGold senior geological staff and have also been inspected by several independent auditors as describe further below.</li> <li>- Twin holes have been drilled to compare results from RC and DD drilling with the DD results confirming that there is no material down-hole smearing of grades in the nearby RC drilling and sampling.</li> <li>- All logging and sample data is captured digitally in the field using Field Marshall Software, prior to upgrade to Micromine's Geobank in 2016. Data is downloaded daily to the Tropicana Exploration Database (Datashed) and checked for accuracy, completeness and structure by the field personnel.</li> <li>- Assay data is merged electronically from the laboratories into a central Datashed database, with information verified spatially in Vulcan software. AngloGold maintains standard work procedures for all data management steps.</li> <li>- An assay importing protocol has been set up to ensure quality samples are checked and accepted before data can be loaded into the assay database</li> <li>- All electronic data is routinely backed up to AngloGold's server in Perth and provided to IGO via FTP transfer.</li> <li>- There have been no adjustments or scaling of assay data other than setting below detection limit values to half detection for Mineral Resource estimation work.</li> </ul>
<b>Location of data points</b>	<ul style="list-style-type: none"> <li>- All completed drill hole collar locations of surface holes have been using RTK GPS equipment, which was connected to the state survey mark (SSM) network.</li> <li>- The grid system is GDA94 Zone 51 using AHD elevation datum.</li> <li>- Prior to 2007, drill hole path surveys have been completed on all holes using Eastman single shot camera tools, with down-hole gyro tools used for all drilling post 2007.</li> <li>- A digital terrain model was prepared by Whelan's Surveyors from aerial photography flown in 2007, which has been supplemented with collar data surveyed using RTK GPS. This model is considered to have centimetre-scale accuracy.</li> </ul>
<b>Data spacing and distribution</b>	<ul style="list-style-type: none"> <li>- The drill hole spacing nominally ranges from 25mN×25mE to 100mN×100mE (local grid) over most of the Mineral Resource area with a small area of 10mN×10mE used for grade control calibration work.</li> <li>- Most of the Open Pit Mineral Resources has been tested on a 50mN×50mE grid with closer spaced 25mN×25mE patterns in the upper parts of the deposit.</li> <li>- Open Pit Grade Control is completed on a 12mN×12mE pattern.</li> <li>- The Boston Shaker Underground Mineral Resource is drilled at 50 x 25m in the upper levels and out to 100 x 100m at deeper levels.</li> <li>- The Havana Deeps Underground Mineral Resource has been drilled on a 100mN×100mE pattern.</li> <li>- Down-hole sample intervals are typically 1m with 2m compositing applied for Mineral Resource estimation work.</li> <li>- The Competent Person considers that these data spacings are sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Underground Ore Reserve estimation procedures applied, and the JORC Code classification applied.</li> </ul>
<b>Orientation of data in relation to geological structure</b>	<ul style="list-style-type: none"> <li>- Most drill hole are oriented to intersect the shallowly east dipping mineralisation at a high angle and as such, a grade bias introduced by the orientation of data in relation to geological structure is highly unlikely.</li> </ul>

## Section 1: Sampling Techniques and Data

Criteria	Commentary
<b>Sample security</b>	<ul style="list-style-type: none"> <li>- The chain-of-sample custody is managed by AngloGold.</li> <li>- Samples were collected in pre-numbered calico bags, which are then accumulated into polyweave bags for transport from the collection site. The accumulated samples are then loaded into wooden crates and road hauled to the respective laboratories (Perth) or processed onsite at Tropicana.</li> <li>- Sample dispatches are prepared by the field personnel using a database system linked to the drill hole data.</li> <li>- Sample dispatch sheet are verified against samples received at the laboratory and any missing issued such as missing samples and so on are resolved before sample preparation commences.</li> <li>- The Competent Person considers that the likelihood of deliberate or accidental loss, mix-up or contamination of samples is considered very low.</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>- Field quality control data and assurance procedures are reviewed on a daily, monthly and quarterly basis by AngloGold field personnel and senior geological staff.</li> <li>- The field quality control and assurance of the sampling was audited by consultant QG in 2007 and 2009. The conclusion of the audit was that the data was suitable for Mineral Resource estimation work.</li> </ul>

## Section 2: Reporting of Exploration Results

Criteria	Explanation
<b>Mineral tenement and land tenure status</b>	<ul style="list-style-type: none"> <li>- The Tropical Gold Mine Mineral Resources are located wholly within WA mining lease M39/1096, which commenced on 11 Mar 2015 and has a term of 21 years (expiry 10 Mar 2036).</li> <li>- Tropicana Gold Mine in a joint venture between AngloGold (70%) and IGO (30%) with AngloGold as manager.</li> <li>- Gold production is subject to WA State royalties of 2.5% of the value of gold value.</li> <li>- There are no material issues relating to native title or heritage, historical sites, wilderness or national parks, or environmental settings</li> <li>- The tenure is secure at the time of reporting and there are no known impediments to exploitation of the Mineral Resource and Underground Ore Reserve and on-going exploration of the mining lease.</li> </ul>
<b>Exploration done by other parties</b>	<ul style="list-style-type: none"> <li>- AngloGold entered in to a JV with IGO in early 2002 with the main target of interest being a WMC gold soil anomaly of 31ppb, which was reporting in a WA government open file report. Prior to the JV, the WMC soil sampling program was the only known exploration activity and the only dataset available were WA government regional magnetic and gravity data.</li> </ul>
<b>Geology</b>	<ul style="list-style-type: none"> <li>- The Tropicana Gold Mine is on the western margin of a 700km long magnetic feature that is interpreted to the collision suture zone between the Archean age Yilgarn Craton to the west and the Proterozoic age Albany-Fraser Origan to the east of this feature. The gold deposits are hosted by a package of Archean age high metamorphic grade gneissic rocks.</li> <li>- Four distinct structural domains have been identified – Boston Shaker, Tropicana, Havana and Havana South, which represent the same mineral deposit offset by NE striking faults that post-date the mineralisation.</li> <li>- The gold mineralisation is hosted by a shallowly SW dipping sequence of quartz-feldspar gneiss, amphibolite, granulite and meta-sedimentary chert lithologies.</li> <li>- The gold mineralisation is concentrated in a 'favourable horizon' of quartz-feldspar gneiss, with a footwall of garnet gneiss, amphibolite or granulite.</li> <li>- Mineralisation is characterised by pyrite disseminations, bands and crackle veins within altered quartz-feldspar gneiss. Higher grades are associated with close-spaced veins and sericite and biotite alteration.</li> <li>- Mineralisation presents as stacked higher grade lenses within a low-grade alteration envelope. Geological studies suggest the mineralisation is related to shear planes that post-date the development of the main gneissic fabric and metamorphic thermal maximum.</li> </ul>

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<b>Drill hole Information</b>	<ul style="list-style-type: none"> <li>- A summary of the drill holes used to prepare the Mineral Resource estimate is not practical for this public report. The Mineral Resource estimate gives a best-balanced view of all the drill hole information.</li> </ul>
<b>Data aggregation methods</b>	<ul style="list-style-type: none"> <li>- No drill hole related exploration results are included in this report.</li> <li>- No metal equivalent values are considered in the Mineral Resource estimate.</li> </ul>
<b>Relationship between mineralisation widths and intercept lengths</b>	<ul style="list-style-type: none"> <li>- No drill hole related exploration results are included in this report.</li> <li>- All Mineral Resource drilling intersects mineralisation at a high angle, and as such approximates true thickness in most cases.</li> </ul>
<b>Diagrams</b>	<ul style="list-style-type: none"> <li>- IGO has included representative diagrams have been included in prior ASX public reports.</li> </ul>
<b>Balanced reporting</b>	<ul style="list-style-type: none"> <li>- The Mineral Resource is based on all available data and as such provides the best-balanced view of the Tropicana gold deposits.</li> </ul>
<b>Other substantive exploration data</b>	<ul style="list-style-type: none"> <li>- Information relating to other exploration data, such as density, metallurgical assumptions are detailed in Section 3 further below.</li> </ul>
<b>Further work</b>	<ul style="list-style-type: none"> <li>- Exploration drilling is continuing within tenements with no major Mineral Resource update is planned at the time of reporting.</li> </ul>

## Section 3: Estimation and Reporting of Mineral Resources

Criteria	Commentary
<b>Database integrity</b>	<ul style="list-style-type: none"> <li>- AngloGold captures field data and drill hole logging directly in to handheld devices or laptop computers using Field Marshall and Geobank software.</li> <li>- The drill hole data is managed in DataShed software, which is an industry recognised system for management of geoscientific drill hole information. Logging, assays and survey information is loaded directly into Datashed using data import routines, with loading procedures incorporating quality control checking and validation.</li> <li>- Data is validated following loading through visual inspection of results on-screen both spatially and using database queries and cross section plots. Typical checks carried out against original records to ensure data accuracy include items such as overlapping records, duplicate records, missing intervals, end of drill hole checks and so on.</li> </ul>

## Section 3: Estimation and Reporting of Mineral Resources

Criteria	Commentary
<b>Site visits</b>	<ul style="list-style-type: none"> <li>- The Competent Person is site based and is actively involved in the management and supervision of the Mineral Resource estimation.</li> </ul>
<b>Geological interpretation</b>	<ul style="list-style-type: none"> <li>- To control the Mineral Resource estimation process, three dimensional digital solids were prepared in LeapFrog software for the mineralised zones, dykes, shears and garnet (mostly hangingwall) gneiss.</li> <li>- Mineralised solids are prepared using a nominal 0.3g/t Au drill hole cut-off grade to encompass the gold mineralisation targeted for Mineral Resource estimation. The dykes, shears and garnet gneiss solids are prepared from geological logging. Regolith units are prepared as surfaces below topography based on the geological logging.</li> <li>- The resulting models encompass the mineralisation, the post-mineralisation barren dykes, the shears controlling higher grade mineralisation and the main waste rock units that are the footwall and hangingwall to the mineralisation.</li> </ul>
<b>Dimensions</b>	<ul style="list-style-type: none"> <li>- The Open Pit Mineral Resource is reported within an open pit Lerchs-Grossman-Analysis (LGA) pit optimisation 'shell' based on a gold price of \$A1,778/tr.oz. (\$US1,400 /tr.oz), and life-of-mine pit designs.</li> <li>- This reporting shell has dimensions of approximately 4.7km along strike, up to 1km wide and up to 450m deep, spanning all the major deposits.</li> <li>- The Underground Mineral Resource extends from the base of the Open Pit Resource below the Open Pit designs with plan extents in long dimension down dip to the SE by up to 900 m and up to ≈200m wide. A smaller lode extends from the Havana South pit with down dip extents of ≈200m and up to 200m wide. Other parts of the Underground Mineral Resource are below the other pits.</li> </ul>
<b>Estimation and modelling techniques</b>	<ul style="list-style-type: none"> <li>- The Mineral Resource excluding Boston Shaker, was updated in July 2018: <ul style="list-style-type: none"> <li>o A single model was created to estimate both the Open Pit and Underground Mineral Resource.</li> <li>o Has been estimated from the drill hole data available to 11 July 2018, which included 15,556 drill holes for a total of 1,172,907m of drilling of which, 1,285 holes were DD for 479,972m and 2,474 holes were RC for 284,552m. An additional 11,797 RC Grade Control holes were used in the estimate (408,383m).</li> <li>o The drill hole data was composited to 2m lengths within geological estimation domains using Vulcan software.</li> <li>o Grade top-cut or caps were applied to the composites after examining cumulative probability plots of the data, and high-grade estimation limits were applied to limit the spatial spread of high grades in weakly mineralised domains.</li> <li>o The composite data was declustered in each estimation domain using cell declustering with varying cell sizes, to determine a stable declustered mean grade.</li> <li>o Gold continuity was interpreted for each estimation domain and grades for large panels were estimated using ordinary block kriging in Isatis software, with estimation panel dimension 24mE×36mN×10mElv.</li> <li>o A multi-pass search was used to account for the different drill hole spacings after incorporating the grade control drilling into the estimate. A short search-radius was used to estimate blocks in and around the grade control data, with an expanding search up to 120 x 120m used for wider-spaced data.</li> <li>o Selective Mining Unit (SMU) grades were then estimated for each panel using the Local Uniform Conditioning method, where the SMU grade distribution within each panel is estimated through a change of support then the SMUs are localised using kriging so the distribution within the panel reflects the local grade trends in nearby data. The information effect of 12mE×12mN grade control information was accommodated in the change of support from panels to SMUs</li> <li>o The SMU dimensions were set to prepare multiple SMUs per panel with SMU dimensions of 12mE×12mN×3.33mElv. The elevation heights nominally match the mining flicht heights applied at each area.</li> <li>o The estimate model was validated by comparing (input) data declustered means for each domain to the respective (output) block estimated grades both globally within each domain and locally using moving window 'swath-plot'. On screen visual inspections were also completed in plan and section to ensure that the grade trends observed in the data were acceptably reproduced in the estimates without over extrapolation in areas of sparse drilling.</li> <li>o Comparison of the Open Pit estimate forecasts to mine production indicates acceptable forecasting performance for monthly, quarterly and annual recompilation periods.</li> </ul> </li> <li>- The Boston Shaker Mineral Resource was updated in January 2019: <ul style="list-style-type: none"> <li>o A single model was created to estimate both the Open Pit and Underground Mineral Resource.</li> <li>o Has been estimated from the drill hole data available to 22<sup>nd</sup> January 2019, which included 1,471 drill holes for a total of 191,340m.</li> <li>o Estimation parameters were kept consistent with the previous estimate (detailed above).</li> </ul> </li> <li>- Sulphur is modelled as a secondary variable.</li> </ul>

## Section 3: Estimation and Reporting of Mineral Resources

Criteria	Commentary
<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>- Open Pit           <ul style="list-style-type: none"> <li>o The Open Pit estimate is reported within a pit optimisation shell with an assumed gold prices of \$US1,400/tr.oz (\$A1,778/tr.oz) and cost assuming back-filling of pits ('Long Island Study').</li> <li>o On the basis described above, and assuming lower processing costs and higher metallurgical oxide ore, the cut-off are <math>\geq 0.3\text{g/t Au}</math> for oxide Mineral Resources and <math>\geq 0.4\text{g/t Au}</math> for transitional and fresh Mineral Resources.</li> </ul> </li> <li>- Underground           <ul style="list-style-type: none"> <li>o The Underground estimate cut-off grade is based on the assumptions of the Boston Shaker pre-feasibility study, and uses a gold price of \$US1,400/tr.oz (\$A1,778/tr.oz) and underground mining and processing cost assumptions for fresh Mineral Resource.</li> <li>o The cut-off grade for reporting the Underground Mineral Resource on this basis is <math>\geq 1.8\text{g/t Au}</math>.</li> </ul> </li> </ul>
<b>Mining factors or assumptions</b>	<ul style="list-style-type: none"> <li>- The mining factors and assumption for the Open Pit Mineral Resource is the current mining method of conventional truck and shovel mining with blasting of 10 m benches in Tropicana and Havana and blasting of 7.5 m benches in Boston Shaker.</li> <li>- Open Pit ore is mined in three 1/3 blast height flitches, with ore predefined by 12mEx12mN RC grade control drilling and 1m downhole sampling.</li> <li>- The assumed Open Pit mining selectivity are the SMU dimensions assumed for the LUC estimates.</li> <li>- The assumption for the Underground Mineral Resource is long-hole open stoping between 25m levels.</li> <li>- No Mineral Resource margin (extremal) dilution has been modelled in either estimate.</li> <li>- Eventual prospects of economic extraction for the Open Pit resource have been assessed through pit optimisation studies and reporting the Mineral Resource within pit designs and an optimisation shell.</li> <li>- The Boston Shaker Underground Mineral Resource is currently the focus of a study into Underground mining.</li> </ul>
<b>Metallurgical factors or assumptions</b>	<ul style="list-style-type: none"> <li>- The ore processing method at Tropicana is well-established with conventional, crushing, grinding then carbon-in-leach extraction of gold followed by electrowinning to produce gold bars.</li> <li>- An average metallurgical recovery as described in Section 4 further below, has been assumed for both the Open Pit and Underground Mineral Resources based on metallurgical testing completed as part of the Feasibility Study for the Havana Open Pit.</li> </ul>
<b>Environmental factors or assumptions</b>	<ul style="list-style-type: none"> <li>- Tropicana Gold mine operates under an environmental management plan that meets or exceeds all statutory and legislative requirements.</li> <li>- Mined waste rock is disposed in waste dumps which are progressively rehabilitated as mining progresses with any potentially acid generating waste encapsulated in non-acid generating material.</li> <li>- A tailing storage facility is used to contain and capture process residues.</li> <li>- The mine produces rehabilitation plans for ongoing rehabilitation and mine closure plans, and the costs are included in the financial model.</li> </ul>
<b>Bulk density</b>	<ul style="list-style-type: none"> <li>- AngloGold routinely collects <i>in situ</i> bulk density measurements on <math>\approx 10\text{cm}</math> long core segments using the Archimedes principle method of dry weight versus weight in water. There are <math>\approx 200,000</math> density measurements in the estimation database with the vast majority (<math>\sim 98\%</math>) of measurements from fresh rock and the remainder in the regolith or cover.</li> <li>- Measurements are collected over 1m to 5m intervals targeting intervals that are deemed representative of key lithologies in fresh rock. Density has been collected on core within the regolith from 'core-from-surface' drill holes, with the measurement method accounting for voids.</li> <li>- Depending on rock type density ranges of <math>1.89\text{ t/m}^3</math> to <math>2.18\text{ t/m}^3</math> in the saprolite and ranges from <math>2.56\text{ t/m}^3</math> to <math>2.96\text{ t/m}^3</math> in the transitional and fresh rock domains.</li> <li>- Density is estimated by ordinary block kriging in the Mineral Resource estimates apart from a few minor domains with sparse data (such as the regolith), where density is assigned as a mean of the data.</li> </ul>
<b>Classification</b>	<ul style="list-style-type: none"> <li>- The basis of classification of the Tropicana estimates into different JORC Code confidence categories is drill hole spacing as follows:           <ul style="list-style-type: none"> <li>Open Pit:               <ul style="list-style-type: none"> <li>o Measured Mineral Resources: average 25mEx25mN collar spacing</li> <li>o Indicated Mineral Resources: average 50mEx50mN collar spacing</li> </ul> </li> </ul> </li> </ul>

## Section 3: Estimation and Reporting of Mineral Resources

Criteria	Commentary
	<ul style="list-style-type: none"> <li>○ Inferred Mineral Resources: average 100mE×100mN collar spacing (or less) when evidence of geological or grade continuity is sufficient to support grade estimation.</li> </ul> <p>Underground:</p> <ul style="list-style-type: none"> <li>○ Measured Mineral Resources: average 12.5mE×12.5mN intercept spacing</li> <li>○ Indicated Mineral Resources: average 25mE×50mN intercept spacing</li> <li>○ Inferred Mineral Resources: average 100mE×100mN collar spacing (or less) when evidence of geological or grade continuity is sufficient to support grade estimation.</li> <li>○ The Underground Mineral Resource is filtered to remove isolated blocks that are unlikely to pay for development to be included in the mine plan.</li> </ul> <ul style="list-style-type: none"> <li>- AngloGold considers that the Measured Resource support mine planning with a 90% confidence interval of ±15% on tonnage or grade on a quarterly production basis, with Indicated Resources have the same confidence but applicable on an annual production basis.</li> <li>- The Competent Person considers this classification takes in to account all relevant factors such as data reliability, confidence in the continuity of geology and grades, and the quality, quantity and distribution of the data.</li> <li>- The classification reflects the view of the Competent Person reporting the estimate.</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>- The Open Pit estimate methodology was audited by consultant QG in 2007, 2009 and 2011.</li> <li>- Consultants Golder Associates audited the 2015 estimate in 2015.</li> <li>- Consultants Optiro reviewed and endorsed the Mineral Resource Estimate in November 2017.</li> <li>- AngloGold also conducts internal peer reviews on the completion of estimate updates.</li> </ul>
<b>Relative Accuracy/Confidence</b>	<ul style="list-style-type: none"> <li>- AngloGold has carried out some non-conditional simulation studies to confirm the relationship between drill spacing and 90% confidence interval assumptions and found the study results in agreement with the drill spacing classification criteria described above.</li> <li>- The trail grade 10mE×10mN control pattern drilled within an 100m×100m areas during the project Feasibility Study has also confirmed the precision assumptions and confidence the Mineral Resource estimate in that area</li> <li>- Mine reconciliation for the life-of-mine to date is satisfactory.</li> </ul>

## Section 4: Estimation and Reporting of Ore Reserves

Criteria	Commentary
<b>Mineral Resource estimate for conversion to Ore Reserves</b>	<ul style="list-style-type: none"> <li>- The estimate used for the Open Pit Ore Reserves is described in the preceding sections of this JORC table 1.</li> <li>- The estimate used for the Underground Ore Reserve study is the Underground estimate described in the preceding sections of this JORC table 1.</li> <li>- The Tropicana Mineral Resource is reported inclusive of the Open Pit and Underground Ore Reserves.</li> </ul>
<b>Site visits</b>	<ul style="list-style-type: none"> <li>- The Competent Person(s) for the Ore Reserve visits site several times per year and as such has a good knowledge of the operation and has regular contact with personnel providing key inputs to the estimate.</li> </ul>
<b>Study status</b>	<ul style="list-style-type: none"> <li>- Open Pit <ul style="list-style-type: none"> <li>○ Mine design using conventional mining methods and current processing operations confirming that the mine plans are technically feasible and economically viable.</li> </ul> </li> <li>- Underground <ul style="list-style-type: none"> <li>○ The level of study for the Underground Ore Reserve estimate is commensurate with industry expectations of a Pre-Feasibility Study as described in the JORC Code, with all material Modifying Factors considered in the Underground Ore Reserve estimate.</li> <li>○ Mine design using conventional mining methods and current processing operations confirming that the mine plans are technically feasible and economically viable.</li> </ul> </li> </ul>
<b>Cut-off parameters</b>	<ul style="list-style-type: none"> <li>- Pit <ul style="list-style-type: none"> <li>○ The Open Pit estimate cut-off grade is reported within a pit design with an assumed gold price of \$US1,100/tr.oz (\$A1,509/tr.oz) and costs assuming back-filling of pits.</li> </ul> </li> </ul>

## Section 4: Estimation and Reporting of Ore Reserves

Criteria	Commentary
	<ul style="list-style-type: none"> <li>o On the basis described above, the cut-off is <math>\geq 0.6\text{g/t Au}</math> for oxide Ore Reserve and <math>\geq 0.7\text{g/t Au}</math> for transitional and fresh Ore Reserve.</li> <li>- Underground               <ul style="list-style-type: none"> <li>o The Underground estimate cut-off grade is based on the assumptions of the Boston Shaker pre-feasibility study and the net return of gold produced at the processing plant for each ore type, and uses a gold price of \$US1,100/tr.oz (\$A1,509/tr.oz).</li> <li>o The specific cut-offs for reporting the Underground Ore Reserve are <math>\geq 3.17\text{g/t AU}</math> for fresh rock.</li> </ul> </li> <li>- Costs include processing and maintenance fixed and variable costs, general administration costs, ore premium including re-handle and overhaul, closure costs and all non-mining related stay-in-business capital expenses. Underground costs include development and stoping cost.</li> </ul>
<b>Mining factors or assumptions</b>	<ul style="list-style-type: none"> <li>- Open Pit               <ul style="list-style-type: none"> <li>o The open cut material is scheduled to be mined using conventional methods using a large hydraulic shovel/excavator fleet matched with large rear dump trucks. The pits are designed based on 10.0m to 12.5m benches.</li> <li>o Overall Wall angles for the open pit designs range between <math>\sim 36</math> degrees for the footwall and 59 degrees for the hangingwall. Conventional drill and blast techniques are used to break the rock.</li> <li>o Within the open pit resource model ore loss and dilution is accounted for in the selectivity of the SMU sizes volume, as such no further factors applied.</li> </ul> </li> <li>- Underground               <ul style="list-style-type: none"> <li>o The underground is designed using conventional longitudinal and transverse stoping method. The stopes are designed with a footwall angle of 40 degrees.</li> <li>o Planned mining dilution for the underground operation has been designed into the mining shapes, with a further 10% unplanned dilution factor applied.</li> <li>o New infrastructure appropriate for an underground mine of the size and life of the Underground Ore Reserve has been planned and costed.</li> <li>o Mining recovery of development ore is assumed to be 100% and production ore is assumed to be 95%.</li> </ul> </li> <li>- Inferred Mineral Resources are excluded from both the Open Pit and the Underground Ore Reserve estimates.</li> </ul>
<b>Metallurgical factors or assumptions</b>	<ul style="list-style-type: none"> <li>- The metallurgical process for Tropicana ores is established and is a process flow of crushing (grinding rolls), grinding, and the recovery of gold through carbon-in-leach and electrowinning to produce gold bars.</li> <li>- Gold recovery factors are based on extensive metallurgical testing and range from 92.5% recovery in mineralised transported material down to 89.9% recovery in fresh rock.</li> <li>- No deleterious elements are present in the ore.</li> <li>- In the project Feasibility Study Pilot scale test work was carried out on large diameter (PQ) core collected in a spatially representative manner from the deposit. To date metallurgical recoveries have been consistent with the forecasts from these studies.</li> <li>- As a gold mine, the gold doré bars produced are not subject to any specification requirements.</li> </ul>
<b>Environmental</b>	<ul style="list-style-type: none"> <li>- Tropicana Gold mine operates under an environmental management plan that meets or exceeds all statutory and legislative requirements.</li> <li>- Rock waste is disposed in waste dumps which are progressively rehabilitated as mining progresses with any potentially acid generating waste encapsulated in non-acid generating material.</li> <li>- A tailing storage facility is used to contain and capture process residues.</li> <li>- The mine produces rehabilitation plans for ongoing rehabilitation and mine closure plans, and the costs are included in the financial model.</li> </ul>
<b>Infrastructure</b>	<ul style="list-style-type: none"> <li>- All processing and support infrastructure is in place as part of the established open pit mine.</li> <li>- Underground specific infrastructure is planned to be installed and costed.</li> <li>- No other significant infrastructure is anticipated and sustaining capital cost for infrastructure are included in the financial model.</li> </ul>
<b>Costs</b>	<ul style="list-style-type: none"> <li>- The capital cost of infrastructure have been provided by suppliers and engineering consultants.</li> <li>- Budget level mining operating costs are provided by the mining contractor.</li> <li>- Processing, maintenance and general administration costs have been obtained by the Tropicana budget.</li> <li>- As discussed there are no deleterious elements and as such related costs are not relevant.</li> <li>- The source of \$AU to \$US exchange rates is AngloGold/IGO corporate guidance.</li> </ul>

## Section 4: Estimation and Reporting of Ore Reserves

Criteria	Commentary
	<ul style="list-style-type: none"> <li>- Transportation charges for gold doré bars is relatively minor and are charged on a contract basis with the refinery.</li> <li>- Treatment and refining charges are included in the refining contract and there are no specification ore penalties associated with treatment and refining.</li> <li>- WA State royalties are levied at 2.5% of the value of gold produced.</li> </ul>
<b>Revenue factors</b>	<ul style="list-style-type: none"> <li>- The assumption for gold prices for the Underground Ore Reserve is based on corporate guidance and assessment of historical prices</li> <li>- The \$AU to \$US exchange rate is also based on corporate guidance and assessment of historical exchange rates.</li> </ul>
<b>Market assessment</b>	<ul style="list-style-type: none"> <li>- The primary product being produced is gold within the same parameters and methods as current operations.</li> <li>- The market is the same as current operations.</li> </ul>
<b>Economic</b>	<ul style="list-style-type: none"> <li>- The inputs into the economic analysis for the Underground Ore Reserve update have already been described above under previous subsections.</li> <li>- The economic evaluation has been carried out on a real basis (adjusted for inflation) with rates provided by AngloGold corporate.</li> <li>- The confidence in majority of the economic inputs is high as Tropicana is an operating mine and as such, costs (operating and capital) are well understood.</li> <li>- The confidence in metal prices and exchange rates is consistent with routine industry practices with the data derived from reputable forecasters.</li> <li>- The discount rate used for NPV calculations is derived from the weighted average cost of capital in Australia.</li> </ul>
<b>Social</b>	<ul style="list-style-type: none"> <li>- Tropicana Gold Mine has all necessary agreements in place with key stakeholders and matters leading to social licence to operate.</li> </ul>
<b>Other</b>	<ul style="list-style-type: none"> <li>- There are no material naturally occurring risks associated with the Tropicana operation.</li> <li>- There are no material legal agreements or marketing arrangements not already discussed in prior sub sections.</li> <li>- There are no unresolved third-party matters hindering the extraction of the Underground Ore Reserve.</li> <li>- Necessary government and statutory approvals are currently in application.</li> </ul>
<b>Classification</b>	<ul style="list-style-type: none"> <li>- The Open Pit and Underground Ore Reserve has been classified into Proven and Probable Ore Reserve as per the JORC classification based on the underlying MRE classification in the MRE model, with Measured Mineral Resources converted to Proven Ore Reserves, and Indicated Mineral Resources converted to Probable Ore Reserves.</li> <li>- The classifications applied to the estimate are consistent with the opinion of the Competent Person(s) reporting the both the Open Pit and Underground Ore Reserve.</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>- The current Underground Ore Reserve estimate has been reviewed internally by AngloGold personnel.</li> </ul>
<b>Discussion of relative accuracy/ confidence</b>	<ul style="list-style-type: none"> <li>- AngloGold has carried out simulation to quantify the confidence in the Underground Ore Reserve – refer to the commentary at the end of Section 3 above.</li> <li>- The main driver of accuracy and confidence is the spacing of the pre-production drilling, which is captured in the Mineral Resource JORC Code classifications underpinning the Underground Ore Reserve estimates.</li> <li>- Confidence in both the Open Pit and Underground Ore Reserve inputs is high given the mine is in operation and costs, prices and recoveries are well understood.</li> <li>- The Underground Ore Reserve estimates are considerate to have sufficient local accuracy to support mine planning and production schedules with Proved Underground Ore Reserves considered a reliable basis for quarterly production targeting and Probable Underground Ore Reserves reliable for annual production targets.</li> <li>- Confidence in the mine design and schedule are high as mining rates and modifying factors are based on actual site performance. Mine designs are consistent with what has been effective previously.</li> <li>- The mine to mill reconciliation data to date indicates the forecast precision of the estimates is good with the Ore Reserve estimate being slightly conservative.</li> </ul>