Company Announcement

21 February 2017

Maiden Gold Resource Estimates – Deep South and Box Well

Hawthorn Resources Limited (ASX:HAW) is pleased to announce to shareholders a Maiden *Indicated* and *Inferred Gold Resource* estimate for the *Deep South Joint Venture Prospect* of:

- ### *1,299,000t @ 1.84 g/t Au for 76,800 ounces of gold*

This new resource estimate is in addition to the Maiden *Indicated* and *Inferred Gold Resource* estimate as announced on *31/01/2017* at the nearby *Box Well Prospect* of:

- ### *2,764,000t @ 1.46 g/t Au for 130,000 ounces of gold*

Both prospects occur in a highly prospective zone of the North East Goldfields of Western Australia where Hawthorn has significant tenement holdings. This area hosts major operating gold mines and resources including the *Sunrise Dam (>10 Moz Au)*, *Wallaby (>7.0 Moz Au)*, *Granny Smith (>2 Moz Au)*, *Mt Morgans (1.7 Moz Au)* and *Jupiter – Heffernans (1.1 Moz Au)* mining centres*.*
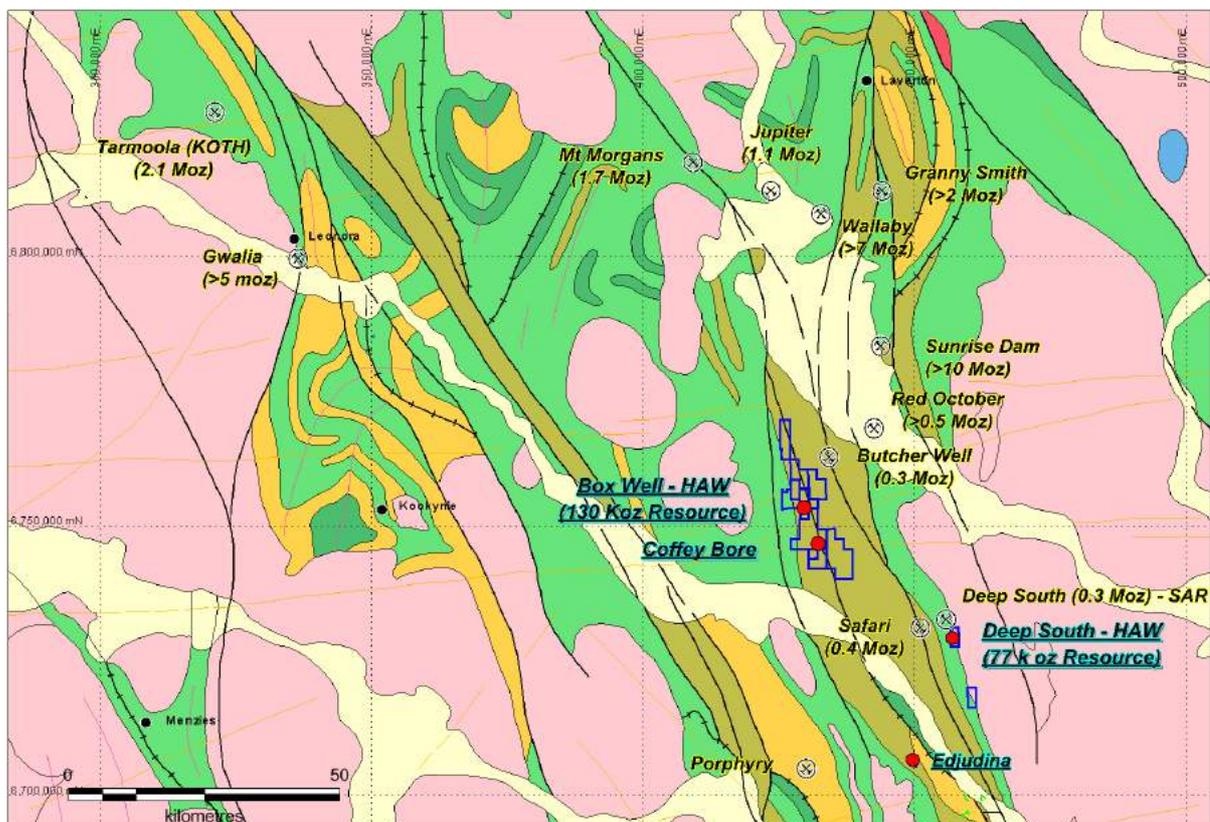

Figure 1. Hawthorn Resources Tenements – Box Well and Deep South Gold Resources

Both the *Box Well* and *Deep South* resources remain open at depth. At *Box Well* the prospective structure remains open and untested for over 7.0 kilometres to the southeast to *Coffey Bore* where Hawthorn has identified a small potential gold resource with mineralisation and alteration

identical in style to **Box Well**. Expansion of the initial resource estimates and the exploration between **Box Well** and **Coffey Bore** is a priority for 2017 and beyond.

Deep South Prospect
(Hawthorn Resources 80%, Westgold Resources Limited 20%).

The **Deep South Prospect** is situated along strike of economic gold mineralisation hosted in the **Deep South-Mexico** gold orebodies owned by Saracen Mineral Holdings Limited ("Saracen"). Saracen continues commercial production from an underground mine, following a successful open pit mining campaign.

Hawthorn has identified a gold mineralised horizon analogous to the adjacent **Deep South** gold orebodies within its tenement package.

A maiden Mineral Resource Estimate for Hawthorn's **Deep South Prospect** was compiled in early 2017 by BM Geological Services ("BMGS") and is reported in accordance with the JORC 2012 Code as per the table below. Further details regarding the estimation are provided in the JORC Code Table 1 document attached.

Deep South Mineral Resource as at 21 February 2017

Classification	COG Au (g/t)	Tonnage (t)	Au (g/t)	Au (oz)
Total Indicated	*0.5*	*277,000*	*2.12*	*18,900*
Total Inferred	*0.5*	*1,022,000*	*1.76*	*57,900*
Total Indicated and Inferred	*0.5*	*1,299,000*	*1.84*	*76,800*

At 1.0 g/t and 1.5 g/t Cut-off Grade

Total Indicated and Inferred	*1.0*	*1,050,000*	*2.08*	*70,200*
Total Indicated and Inferred	*1.5*	*627,000*	*2.66*	*53,600*

Notes:

1   *The Mineral Resource is reported in accordance with the 2012 Edition of the JORC Code*
2   *Contained metal is rounded to the nearest 100 oz*
3   *All resources have been rounded to the nearest 1,000 tonnes*
4   *COG is defined as cut-off grade*
5   *No top-cut of grade deemed necessary as global composite data display homogenous grade profile*
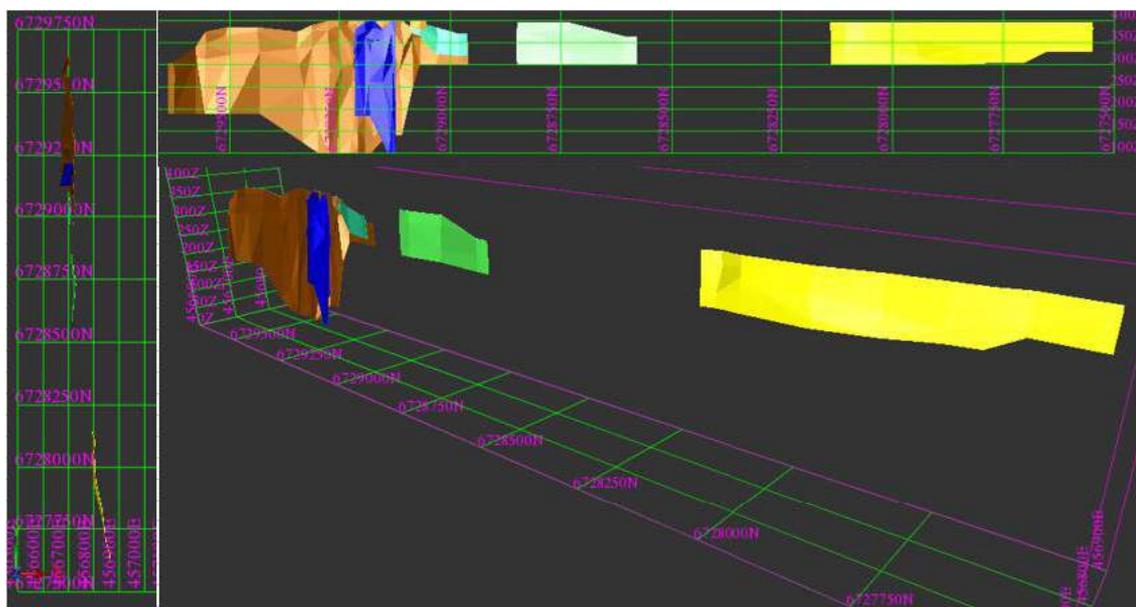6   *The base of the Indicated Mineral Resource is 287m RL, approximately 100 m below surface*

Figure 2. Deep South Resource Wireframe–- Plan (North View), Long Section (East View) and Oblique Long Section (North East view) of Deep South Gold Mineralised lodes - 2000 metres of strike tested to January 2017.
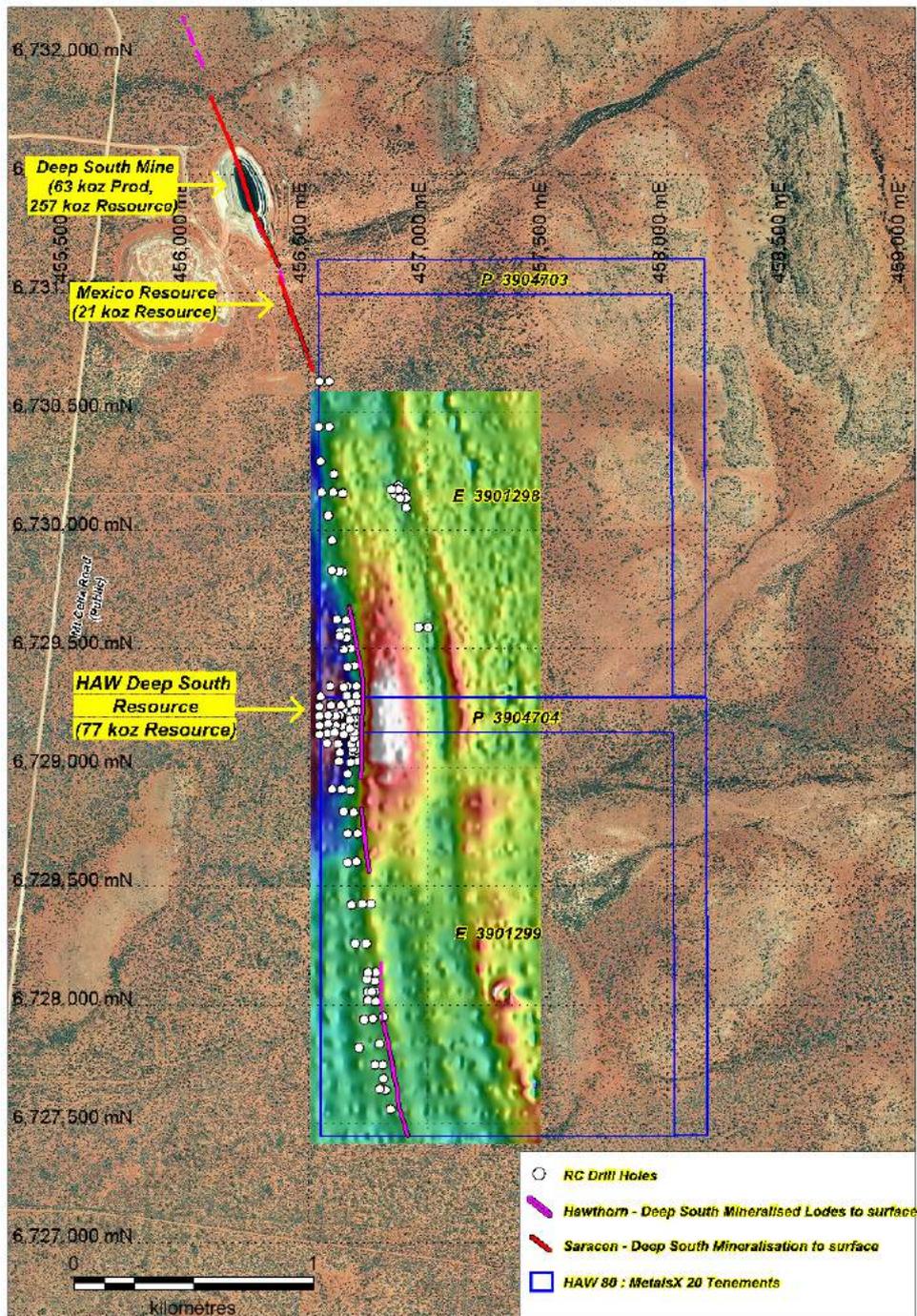
Figure 3. Deep South Resource Plan View

Hawthorn is pleased to release this maiden Resource Estimate to shareholders as the resource remains open at depth and commences at or very near surface. Studies on the potential to exploit this resource, which may include mining and transport to a dedicated mill potentially constructed in the vicinity of the **Box Well** gold resource 32 km to the north east by existing public roads will occur during 2017.

Box Well Prospect
(Hawthorn Resources 100%).

At the **Box Well Prospect** a strongly gold mineralised, silicified shear zone has been discovered within a broader, gold mineralised, altered stockwork quartz veined package of felsic volcanics and volcaniclastic sediments.

A maiden Mineral Resource Estimate for the **Box Well Prospect** was compiled in early 2017 by BM Geological Services ("BMGS") and is reported in accordance with the JORC 2012 Code as per the table below. Further details regarding the estimation are provided in the JORC Code Table 1 document attached.

Box Well West Mineral Resource as at 31 January 2017

Classification	COG Au (g/t)	Tonnage (t)	Au (g/t)	Au (oz)
Total Indicated	*0.5*	*1,849,000*	*1.58*	*93,900*
Total Inferred	*0.5*	*915,000*	*1.23*	*36,100*
Total Indicated and Inferred	*0.5*	*2,764,000*	*1.46*	*130,000*

At 1.0 g/t and 1.5 g/t Cut-off Grade

Total Indicated and Inferred	*1.0*	*1,823,000*	*1.81*	*106,000*
Total Indicated and Inferred	*1.5*	*1,195,000*	*2.13*	*82,000*

Notes:

1   The Mineral Resource is reported in accordance with the 2012 Edition of the JORC Code
2   Contained metal is rounded to the nearest 100 oz
3   All resources have been rounded to the nearest 1,000 tonnes
4   COG is defined as cut-off grade
5   No top-cut of grade deemed necessary as global composite data display homogenous grade profile
6   The base of the Indicated Mineral Resource is 287m RL, approximately 100 m below surface

Hawthorn is pleased to release this maiden Resource Estimate to shareholders as the resource, commences at or very near surface and demonstrates significant, coherent lode widths that should be amenable to open-cut mining.

Potential clearly exists to expand the resource, along strike and at depth, and as reported gold mineralisation and alteration discovered at the **Coffey Bore Prospect** 7.0 kilometres south-east along strike of **Box Well** is virtually indistinguishable from that discovered at **Box Well**.

This zone, with pervasive but relatively thin alluvial sheetwash, and virtually no modern or historic drilling, will be a primary focus of Hawthorn's exploration activities in the upcoming year. The goal of this exploration effort will be to identify further resources that may enable a processing mill to be established on site.
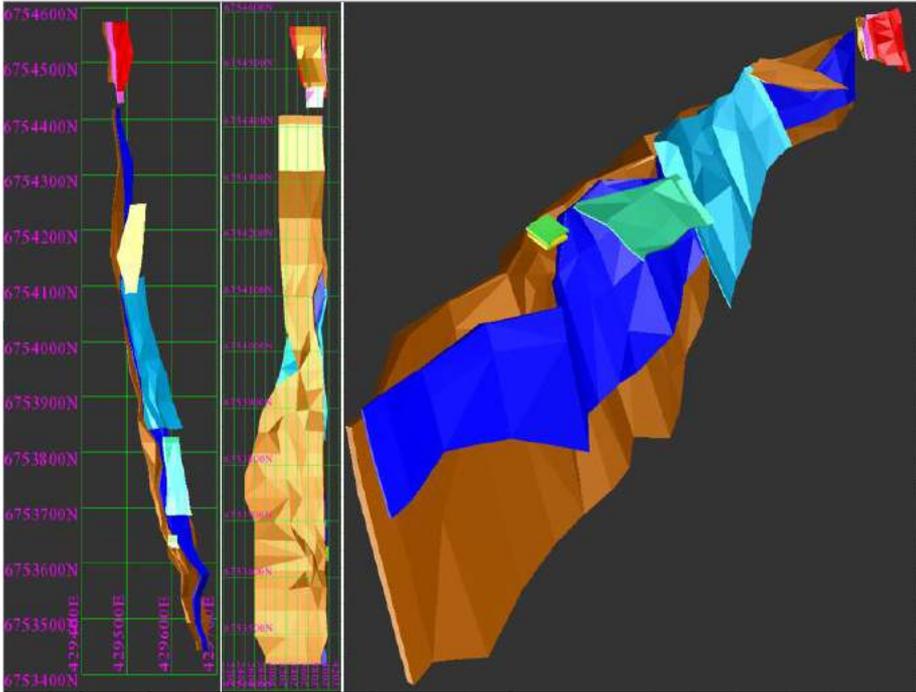

Figure 4. Box Well Resource Wireframe Model — Plan (North View), Long Section (East View) and Oblique Long Section (North West view) of Box Well Gold Mineralised lodes - 1200 metres of strike tested to January 2017.

While Hawthorn believes the potential to increase the size of the existing resource is strong, during the upcoming quarter optimization studies will be carried out and a Scoping study may be commissioned to assess the development potential of the current resource.
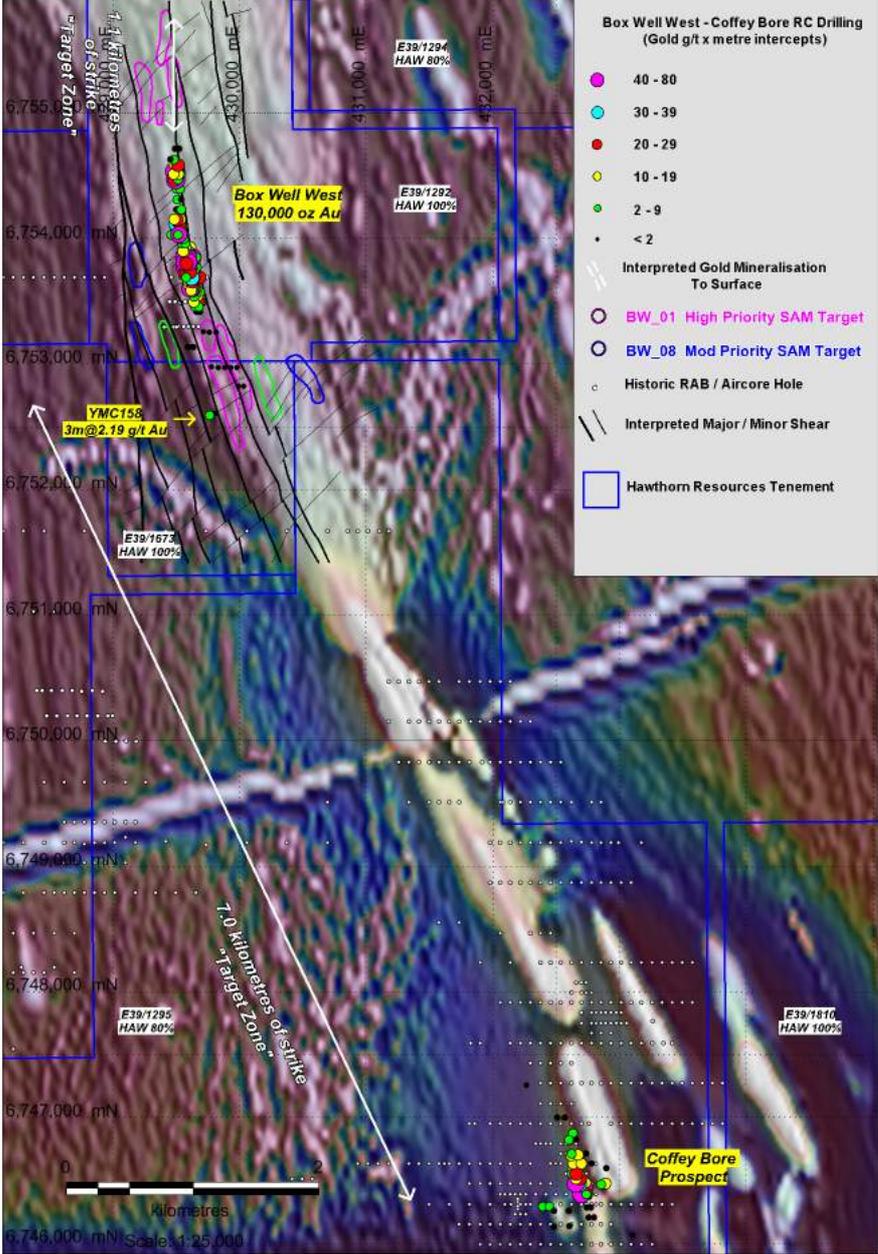

Figure 5. Box Well West - Coffey Bore. Hawthorn RC drilling and Historic RAB/Aircore on Aeromagnetic Data

Summary

As a result of exploration completed by Hawthorn in 2016, two maiden resource estimations have been completed in the **Box Well** and **Deep South Prospects** with a combined total of 207,000 ounces of gold identified to date. Both resources remain open and Hawthorn believes that an excellent prospect to increase these resources remains – with the goal to establish sufficient resources to establish a stand – alone processing facility in the vicinity of **Box Well.**

For further information please contact
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Appendix 1

JORC Code, 2012 Edition – Deep South and Box Well Resource Estimation Data

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 sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.*
	• *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.*
	• *Aspects of the determination of mineralisation that are Material to the Public Report.*
	• *In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 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.*
		• There has been a single Project Manager for the duration of drilling on these Projects.
		• Drill methods include
		• Reverse circulation (RC)
		  a. Box Well - 105 holes,
		  b. Deep South – 107 holes
		• Diamond core (DDH)
		  a. Box Well 3 holes - HQ2 and NQ2
		  b. Deep South 2 holes – HQ2 and NQ2
		• All holes were sampled in 1m intervals.
		• Sampling technique discussed over page in sub sampling technique section.

Drilling techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, 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).*	• RC is 5.5 inch and 4.75 hammer drilling and • DDH is HQ and NQ size in diameter. Core is oriented for structural logging via Digital Orientation methods
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• Assessment of RC recovery is by visual means. DDH drilling recovery is logged. Recovery is good there is no known relationship between recovery and mineralisation grade in holes. • No effect between recovery and grade has been detected
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate*	• Chip samples have been geologically logged for all relevant geological and some structural data. Logging for this program

Criteria	JORC Code explanation	Commentary
	Mineral Resource estimation, mining studies and metallurgical studies. • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	has been digitally captured, and are capable of being included in a Mineral Resource Estimation. Chips are retained in chip trays • Every metre is individually logged • Holes since 2015 have been digitally logged on site and uploaded into the main database on a weekly basis. • All DDH core is logged and photographed

Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.*
	• *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.*
	• *For all sample types, the nature, quality and appropriateness of the sample preparation technique.*
	• *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.*
	• *Measures taken to ensure that the sampling is representative of the in situ material 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.*
		• Holes were split using a riffle splitter and a rotary splitter with approximately 50 RC holes drilled with each category at Box Well.
		• Most holes drilled at Deep South (71 of 107) using rotary splitter
		• Most samples are dry (>97.9%). Wet samples are not sent through a riffle splitter and if through the rotary splitter the splitter is cleaned between wet sample metres
		   ○ Samples are collected in appropriate sized plastic bags
		   ○ Initial "spear" samples to the corner of each bag was carried out with samples composited over 4 metres and sent for fire assay.
		   ○ Composite Samples returning > 0.10 g/t Au over 4 metres, have had individual 1 metre split samples submitted for assay, or where geologic zones of interest are identified by the site geologist
		   ○ Individual metre samples weigh approximately 25 kg with individual 1 metre splits of 2.5-3.5 kg obtained and stored on site.
		   ○ CRM standards, blanks and duplicates submitted with assays

Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (eg standards, blanks,*	• Samples are assayed by Fire Assay, 30 g charge at Bureau Veritas , Kalgoorlie • A range of five different gold grade CRM standards have been submitted at a rate of 6 / 100 samples. • The number of each individual standard sample submitted is moderate in each assay job - however at least one standard is submitted in each run of 1 metre reassays where possible.

Criteria	JORC Code explanation	Commentary
	duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.	- CRM standards submitted in 4 m composite sampling at the same rate - Analysis on individual standards is ongoing with each standard inserted performing reasonably well with no major variance observed. - Re-assay / umpire sampling program is underway - Blanks (1 or 2 / 100) submitted - these have performed reasonably with results less than 0.01 g/t gold - No distinct or systemic bias has been detected - Some sample batches had individual standards in excess of 2 standard deviations but overall the performance of the standard assays was adequate. - All other standards perform reasonably. - Blanks have been submitted these have performed reasonably with results less than 0.01 g/t gold, approx. 4% of samples returning grades up to 0.1g/t gold.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.* *The use of twinned holes.* *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* *Discuss any adjustment to assay data.*	**Box Well Resource Estimation** - YMD001 & 003 are twin holes of existing RC holes YMC121 & 095 - Drillholes YMD002 is sited between existing identified RC holes. - These Diamond Core drillholes have not been assayed at this time. Metallurgical testwork is ongoing - Onsite geologist data verified by Exploration Manager - Laboratory data is supplied electronically to site and head office - Project data is currently stored at the head office of the company and in onsite laptops, with a weekly offsite backup of all data. - Geological logging is entered by technical staff and reviewed for correctness. - Samples for assay are collected from drillsite upon collection and transported to a camp until a batch is despatched for assay by Hawthorn staff to the laboratory. - No other twinned holes in the database

Criteria	JORC Code explanation	Commentary
		Deep South Resource Estimation • DSD001 is a twinned hole of DSC073 (17m @ 2.35 g/t Au) • DSD002 is a twinned hole of DSC072 (3m @8.15 g/t Au) • All other comments as per the **Box Well Resource Estimation** comments above
Location of data points	• *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.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• The grid used in both estimations is GDA 94 Zone 51. • All collars have been picked up by registered surveyors using a DGPS • Surface land form is generally flat and surveyed drillholes have been incorporated into a topographic surface.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *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.* • *Whether sample compositing has been applied.*	• For both Resource estimations data is sufficiently closely spaced to ensure geological and grade continuity. Drilling is spaced between 15 m to 80 m along strike, and 15 m to 40 m across strike. 1 m intervals are sampled downhole. • The resource has been classified as Indicated and Inferred based on the density of drill data, the good geological understanding of the deposit and the consistency of gold grade received. • Dataset was composited at 1 metre intervals • Selection criteria required a minimum of 75% of the sample being in the composited window before inclusion.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *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.*	**Box Well** • The majority of drilling at **Box Well** is at -55 ° drilled towards 265 - 270°. Orientations are at or within 10 degrees to the interpreted right angle of the strike of mineralisation. Dip of mineralisation is believed to be at 60-70° to the E or ENE, with a second set of mineralised features dipping at 30° to the E or ENE.

Criteria	JORC Code explanation	Commentary
		• It is understood that there is no bias introduced by the drilling direction. **Deep South** • The majority of drilling at **South** is at -60 ° drilled towards 085 - 090°. Orientations are at or within 10 degrees to the interpreted right angle of the strike of mineralisation. Dip of mineralisation is believed to be at 75-80° to the W • Drill hole traces deviate remarkably in several holes with 10-15° deviations towards the south common. Downholes surveys are taken at a minimum of 30 metre intervals. • It is understood that there is no bias introduced by the drilling direction however.
Sample security	• *The measures taken to ensure sample security.*	• All RC samples submitted to the laboratory are collected directly from the splitter with the sample bag tied. During sample collection for all holes a staff member is always present. Samples are delivered to the laboratory by company staff. • 1M Sample bags are kept on drill site until results of 4 m composite assays are completed. • Assay pulps are recovered from laboratory and stored in locked storage sheds
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• To the competent person for the mineral resource estimations knowledge there have been no audits or reviews of sampling techniques and data.

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	• *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,*	• The resource estimate is on a tenement solely held by Hawthorn Resource at Box Well West

Criteria	JORC Code explanation	Commentary
land tenure status	historical sites, wilderness or national park and environmental settings. • 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.	• The resource estimate at Deep South is within tenements held in an 80 : 20 Joint Venture between Hawthorn Resources and Westgold Resources Limited • There are no known issues and the tenements are in good standing at this time
Exploration done by other parties	• Acknowledgment and appraisal of exploration by other parties.	• The **Box Well** tenements were soil sampled by Anglogold Australia, WMC and Delta Gold between 1986 – 2000. No further work was carried out on the tenements until Hawthorn obtained the tenement. • Targets at Box Well were RAB drilled by Hawthorn in late 2014. Follow-up RC programs were drilled in April, July and November 2015. • The **Deep South** tenements have a limited exploration history with Gutnick Resources carrying out tenement wide RA brilling on 200 -800 metre fences and 40 – 80 metre drill spacing between 1999 - 2003. No further work was carried out on the tenements until Hawthorn obtained the tenements. • Targets at were RC drilled by Hawthorn in 2010-2012. Follow-up RC programs were drilled in 2014, with extra holes drilled in 2016 in order to obtain the current resource estimation.
Geology	• Deposit type, geological setting and style of mineralisation.	**Box Well** • Locally the geology consists of intermediate schists and igneous intrusives adjacent to sediments. Basaltic andesite, felsic volcanics and volcaniclastics trend in a north west- south east direction. The northern tenements are dominated by interbedded undifferentiated sediments and andesite. Differentiated doleritic sills intrude into conglomeritic and polymictic sands stones towards the east of the tenements. Interbedded ultramafic, peridote-bearing intrusives and dolerite form a distinctive north-west trend in along the west of the tenements. These lithologies can be overlain by Cenozoic ferruginous clay, colluvium and

Criteria	JORC Code explanation	Commentary

silts. Several significant drainage systems in the licence are associated with alluvium, clay, silt and sand.

- A key feature of several deposits in the area is the close association of gold mineralisation on the margins of – if not outright hosted by – syenitic porphyries, which has been demonstrated in the Coffey Bore area of Hawthorn's adjoining tenement E39/1295. At Box Well West thin syenite porphyries are known, however the mineralisation appears to within a N-S striking shear zone that has brecciated felsic volcanic lithologies,with later silicification prominent.

Deep South

- The Deep South Belize Project tenements are interpreted to consist of a west to east sequence of shales, cherty felsic meta-sediments, mafic and ultramafic rocks, and diorite to granodiorite dykes that abut against a strongly foliated monzogranite. The contact between the highly foliated silicified quartzo-feldspathic sediments and the fine grained basalt is strongly deformed and interpreted to be associated with the Safari Fault system. Rare pegmatoid dyke are observed in the Paradise Well area of the Project Area.

The ultramafic rocks consist of fine grained peridotites to talc carbonate schists whilst the mafic rocks are fine grained tholeiitic to high-Mg spinifex textured basalt.

- Little outcrop is observed in the tenements, with a few sparse outcrops of sheared psammite and ultramafics occasionally identified. A significant 5-10m thick transported colluvial layer is observed in most of the non-outcropping areas and would seem to limit the effectiveness of conventional soil geochemistry. Weathering beneath this transported soil later is generally very shallow with only 2-5 metres of weathered saprock occurring

Criteria	JORC Code explanation	Commentary
		above fresh rock base.
		• The project area is located and stretches between 0.5-20.0 kms to the south-south- east of the Deep South open pit which has produced approximately 63,000 ounces of gold and has a reported remnant resource of approximately 237,000 ounces of gold, of which an underground probable reserve of 120,000 ounce of gold has been reported. This reserve is currently being developed by Saracen Mineral Holdings Limited.
		The primary structure controlling this mineralisation is interpreted to have a north-west to south-east trend and extends into and through the project area, while other parallel structure are believed likely.
		• Gold mineralisation at Deep South and within the project area is hosted by steep west-dipping, quartz-carbonate-pyrrhotite-magnetite veins within quartz rich metasediments and adjacent to lenticular ultramafic units. The entire mineralised package is spatially associated with a series of dolerite dykes that are generally slightly oblique to the mineralised horizon

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:*
	  o *easting and northing of the drill hole collar*
	  o *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar*
	  o *dip and azimuth of the hole*
	  o *down hole length and interception depth*
	  o *hole length.*
	• *If the exclusion of this information is justified on the basis that the*
		• All drillholes have previously been reported at the time of their drilling.

Criteria	JORC Code explanation	Commentary
	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.	
Data aggregation methods	• *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.* • *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.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• Intervals reported are general greater than 2.00 gram x metres – unless geologically significant • Wireframes constructed with domains of a minimum downhole width of 3 metres (a horizontal width of >2.0metres) to reflect a realistic minimum width for open pit mining • There has been no top-cutting applied in either Box Well or Deep South.
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *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').*	• Down hole lengths reported – true widths are estimated at approximately 80-90% of downhole reported width at both Deep South and Box Well.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• Refer to Figures 3 – 5 above and the Resource estimate tables • Further diagrams have been appended to Reports and Quarterly Activities Reports to the ASX by Hawthorn Resources since 2012
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.*	• Not applicable
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.*	**Box Well** • A total of 290 core samples were assessed for Specific Gravity by wax immersion at Bureau Veritas Kalgoorlie • 17 Holes at Box Well were surveyed by a Geovista Dual gamma probe operated by ABIMS Pty Ltd • Density data from the diamond core was used as a benchmark for calibration of the downhole survey density data **Deep South** • A total of 70 core samples were assessed for Specific Gravity

Criteria	JORC Code explanation	Commentary
		by wax immersion at Bureau Veritas Kalgoorlie • 16 Holes at Box Well were surveyed by a Geovista Dual gamma probe operated by ABIMS Pty Ltd • Density data from the diamond core was used as a benchmark for calibration of the downhole survey density data
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	**Box Well** • Further RC drilling is likely to occur in the upcoming quarter at Box Well to extend the recently announced resource estimate • Exploration programs including SAM surveys, RAB and RC drilling between the Box Well and Coffey Bore prospects will continue. • The position of the proposed hole collars is likely to be commercially sensitive. **Deep South** • Limited but targeted RC drilling is likely to occur in the upcoming quarter at Deep South following modelling and optimization of the existing resource.

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 initial collection and its use for Mineral Resource estimation purposes.* • *Data validation procedures used.*	• Logging was initially undertaken onto paper logs and the data then transcribed into digital spreadsheets. Since 2014 the data has been captured digitally at the drillsite and uploaded into a main database. • Data is reviewed by the Exploration Manager, with several holes reclogged by the Exploration Manager to obtain further information and amended as required. • Data was validated by checking: o All collar co-ordinates were within the tenement area.

Criteria	JORC Code explanation	Commentary

		o Overlapping FROM and TO values in the geology, assay, density and geotechnical tables.
		
		  o Downhole survey dip and bearing angles appear reasonable.
		
		  o Duplicate records or duplicate drillholes.
		
		  o If there were any anomalous assay values.

Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• Mr Moody regularly visits the site and directs work in his role as Exploration Manager.
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation.* • *The use of geology in guiding and controlling Mineral Resource estimation.* • *The factors affecting continuity both of grade and geology.*	**Box Well** • At the Box Well Prospect a strongly gold mineralised, silicified shear zone has been discovered within a broader, gold mineralised, altered stockwork quartz veined package of felsic volcanics and volcaniclastic sediments. • Despite an extensive history of modern exploration in the prospect area this newly identified mineralised unit had not previously been identified or drilled, prior to Hawthorn's exploration discovery. • The gold mineralised zones dip consistently at 40 and 65 degrees to the east or north east. The mineralised widths vary between 3 – >30 metres true width. The generally thick and consistent nature of the mineralisation intersected to date indicates that limited dilution may be occur should an open pit mining operation be developed. • Drilling to date has not indicated that the gold mineralisation develops a plunge orientation, however this remains a possibility • All available geological data including RC and DDH drilling has been used in the interpretation. • It is understood that there are no known factors which would affect the geological continuity and grade. **Deep South** • Gold mineralisation at Deep South area is hosted by steep west-dipping, quartz-carbonate-pyrrhotite-magnetite veins within quartz rich metasediments and adjacent to lenticular ultramafic units. The mineralisation is analogous to that currently mined in the Saracen Mineral Holdings Ltd – Deep South Mine. • The gold mineralised zone dips consistently at 70 and 80 degrees

Criteria	JORC Code explanation	Commentary
		to the west. The mineralised widths vary between 3 – 12 metres true width.
		• All available geological data including RC and DDH drilling has been used in the interpretation.
		• It is understood that there are no known factors which would affect the geological continuity and grade.
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.*	**Box Well**
		• The zone of mineralization extends for approximately 1500 m along strike, 3 to 30 m across strike and from near surface (1-2 m BSL) up to 180 m vertically.
		• Limited drilling has occurred between 100 metres and 180 metres vertical depth
		• The 100 m BSL (287 m RL) was used as a vertical constraint for Indicated material based on both a lack of drillholes beneath this depth and an estimate of the realistic notional mining depth of an open cut pit
		Deep South
		• The zone of mineralization extends 2000 m along strike, 3 to 12 m across strike and from near surface (3-8 m BSL) up to 290 m vertically.
		• Limited drilling has occurred between 140 metres and 290 metres vertical depth
		The 100 m BSL (303 m RL) was used as a vertical constraint for Indicated material based on both a lack of drillholes beneath this depth and an estimate of the realistic notional mining depth of an open cut pit
Estimation and modelling techniques	• *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.*	**Box Well**
		• There are no by-products currently known.
		• At this time there has been no estimation for deleterious elements as the data collection is ongoing.
		• There is no correlation between gold grades and any other element known at this time.
	• *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.*	• There is no relationship between grade and structure or depth. A potential correlation between mineralisation and brecciation of a fine grained silicified felsic tuff and or lava unit is considered possible.
	• *The assumptions made regarding recovery of by-products.*	
	• *Estimation of deleterious elements or other non-grade variables of*	• Surpac software was used for the estimation.

Criteria	JORC Code explanation	Commentary
	economic significance (eg sulphur for acid mine drainage characterisation). • *In the case of block model interpolation, the block size in relation to the average 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.*	• Block model cell sizes of 5 mE x 15 mN x 5 mZ were used • Variogram modelling completed using Snowdens Supervisor software • Models were generated on normal scores variograms and back transformed for use in Surpac • Modelling was completed on 1 Lode of 7 known lodes as it was the only lode with sufficient data to create a reasonable variogram model. • Ore lodes with insufficient sample were estimated using Inverse Distance (squared) estimation techniques. • The variogram model for 1 Lode had two structures and was a nested-spherical model. • Each lode was assessed individually for bias from extreme grades • Composite statistics from the global dataset produced a Coefficient of Variation of 1.19, a value representative of a homogenous dataset with a single population of grades. Based on this assessment it was deemed unnecessary to top cut the data. **Deep South** • There are no by-products currently known. • At this time there has been no estimation for deleterious elements as the data collection is ongoing. • There is no correlation between gold grades and any other element known at this time. • There is no relationship between grade and structure or depth, however high grade shoots of mineralisation are known within the mineralised envelope. These shoots appear to plunge steeply to the north. Some potential exist for shoots that are essentially blind to surface • 6 mineralised lodes were modelled • Surpac software was used for the estimation. • Block model cell sizes of 5 mE x 12.5 mN x 5 mZ were used • Variogram modelling completed using Snowdens Supervisor software • Models were generated on normal scores variograms and back transformed for use in Surpac • Modelling was completed on 1 Lode of the 6 known lodes as it was the only lode with sufficient data to create a reasonable variogram model.

Criteria	JORC Code explanation	Commentary
		• Ore lodes with insufficient sample were estimated using Inverse Distance (squared) estimation techniques. • The variogram model for 1 Lode had two structures and was a nested-spherical model.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• Tonnage has been calculation on a dry bulk density. No allowance for moisture has been made.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• A range of cut-off grade models have been produced – with 0.5, 1.0 & 1.5 g/t Au reported.
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.*	**Box Well** • Open pit mining is proposed once the extent of the resource is fully understood. Minimal mining dilution is expected due to the broad nature of the ore lodes at Box Well. • Hawthorn has reported that they may optimize the known resource as it stands currently and may commence a Scoping study to assess the economics of the project following the optimization. An assessment of the potential to establish a new processing mill may be made exploiting the existing resource. **Deep South** • Open pit mining is proposed once the extent of the resource is fully understood. Some mining dilution is expected, but not as yet quantified, due to the thin to moderate width of the ore lodes. • Hawthorn has reported that they may optimize the known resource as it stands currently and may commence a Scoping study to assess the economics of the project following the optimization.
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 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.*	• No detailed metallurgical recovery work has been undertaken at this time at either Box Well or Deep South • Further work is ongoing to confirm that there are no deleterious properties at either Box Well or Deep South

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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.*	• Work is required to confirm that there will be no impact from acid rock drainage (ARD) from waste material at both prospects • Any tailings placement to be stored on site will require detailed environmental assessment.
Bulk density	• *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.* • *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.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	**Box Well** • A total of 290 core samples were assessed for Specific Gravity by wax immersion at Bureau Veritas Kalgoorlie • 17 Holes at Box Well were surveyed by a Geovista Dual gamma probe operated by ABIMS Pty Ltd • Density data from the diamond core was used as a benchmark for calibration of the downhole survey density data **Deep South** • A total of 70 core samples were assessed for Specific Gravity by wax immersion at Bureau Veritas Kalgoorlie • 16 Holes at Box Well were surveyed by a Geovista Dual gamma probe operated by ABIMS Pty Ltd • Density data from the diamond core was used as a benchmark for calibration of the downhole survey density data •

Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.*
	• *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).*
	• *Whether the result appropriately reflects the Competent Person's view of the deposit.*
		Box Well
		• The Box Well Resources was classified as either Indicated or Inferred based on a number of factors, such as
		   ○ Distance to nearest sample
		   ○ Number of samples used for estimation and
		   ○ Estimation pass
		• In addition, an elevation boundary 100 m below surface (287 mRL) was used as a vertical constraint for Indicated material, based upon on both a lack of drillhole intercepts beyond this depth and achievable mining parameters - with open cut pits typically not

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		exceeding 100 vertical metres.
		
		Deep South
		• The Deep South Resource was classified as either Indicated or Inferred based on a number of factors, such as
		    o Distance to nearest sample
		    o Number of samples used for estimation and
		    o Estimation pass
		• In addition, an elevation boundary 100 m below surface (303 mRL) was used as a vertical constraint for Indicated material, based upon on both a lack of drillhole intercepts beyond this depth and achievable mining parameters - with open cut pits typically not exceeding 100 vertical metres.

Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• There have been not audits or reviews at this time.
Discussion of relative accuracy/ confidence	• *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.* • *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.* • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• At this time the Indicated Mineral resources are being considered for further technical evaluation. • Following metallurgical / hydrological / geotechnical assessments to be carried out in the upcoming quarters a Scoping study may be produced that assesses the economic viability of each resources • Further drilling both along strike and at depth has been recommended by the Competent Person