ASX ANNOUNCEMENT **17 September 2015**
ASX Code: BDR

MAIDEN URUCUM UNDERGROUND MINERAL RESOURCE

Beadell Resources Limited ("**Beadell**" or "the **Company**") is pleased to announce a maiden Urucum Underground Mineral Resource, produced in accordance with the 2012 Edition of the Australasian Code for Reporting of Mineral Resources and Ore Reserves (the JORC Code).

Key Highlights

- Total Urucum Underground mineral resource is **4.86 million tonnes @ 4.06 g/t gold for 634,000 ounces** reported above a lower cut off of 1.6 g/t gold.
- Total Measured and Indicated resources are **2.73 million tonnes @ 4.56 g/t gold for 400,000 ounces.**
- Total Inferred resources are **2.13 million tonnes @ 3.42 g/t gold for 234,000 ounces.**
- The very high grade **Central Lode 1** ore shoot located immediately below the Urucum North open pit contains a total resource of **0.59 million tonnes @ 7.54 g/t gold for 143,000 ounces**.
- The **South Lode 1** ore shoot contains **1.46 million tonnes @ 3.70 g/t gold for 174,000 ounces.**
- The **Lode 2** ore shoot contains **0.84 million tonnes @ 3.99 g/t gold for 108,000 ounces.**
- **The Lode 300** ore shoot contains **1.06 million tonnes @ 4.00 g/t gold for 136,000 ounces.**
- This Underground resource does not include any of the Urucum open pit reserve, it is all below the current final open pit.
- AMC Consulting have commenced a preliminary review of the model which will form the basis of the Pre-Feasibility study to be completed by AMC Consulting by the end of 2015.
- A significant proportion of the Urucum underground lode system remains unclassified and outside of this resource due to the wide spaced drilling, leaving significant potential to expand the resource in the future.

Beadell's Managing Director Peter Bowler commented: "We could not be more pleased with the outcome of our drilling program this year. This Maiden underground resource statement, which includes very high grade gold ore in the measured and indicated category, lays the foundation for a Pre-Feasibility study into a low cost sustainable underground operation. The high grade nature of this ore body is particularly pleasing with Central Lode 1 averaging **7.54 g/t**. The profitability of our current 6-year open pit mine plan will most likely be significantly enhanced and extended with the expected positive results from the pre-feasibility study, to be finalised before years end."

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The Urucum Underground mineral resource totalling **4.86 million tonnes @ 4.06 g/t gold for 634,000 ounces** has been estimated using Ordinary Kriging and has been reported at a 1.6 g/t lower cut off. The resource encapsulates the northern most section of the 2 km long, 3 million ounces Urucum orebody and is located immediately below the Urucum North open pit reserve. A summary of the underground resource is presented in Table 1 below. Detailed information regarding the sampling techniques and resource model estimation methodology and parameters is presented in Appendix 1.

Lode	Measured			Indicated			Inferred			Total			Top-cut g/t
	Tonnes ('000)	Grade g/t Au	Ounces ('000)	Tonnes ('000)	Grade g/t Au	Ounces ('000)	Tonnes ('000)	Grade g/t Au	Ounces ('000)	Tonnes ('000)	Grade g/t Au	Ounces ('000)	
South Lode 1	134	2.54	11	1,215	3.83	150	114	3.68	14	**1,463**	**3.70**	**174**	40
Central Lode 1	111	6.72	24	476	7.75	119	5	5.23	1	**592**	**7.54**	**143**	25
Minor Lode 1	-	-	-	5	6.70	1	380	2.37	29	**385**	**2.42**	**30**	25
Lode 2	-	-	-	600	3.89	75	244	4.24	33	**844**	**3.99**	**108**	Uncut
Lode 300	-	-	-	191	3.38	21	869	4.13	116	**1,060**	**4.00**	**136**	Uncut
Minor Lodes	-	-	-	-	-	-	517	2.54	42	**517**	**2.54**	**42**	8-25
Total	**245**	**4.44**	**35**	**2,486**	**4.57**	**365**	**2,129**	**3.42**	**234**	**4,860**	**4.06**	**634**	

Table 1. Urucum Underground Resource

The maiden underground resource is the culmination of over 12 months diamond drilling in which 26 additional orientated diamond holes were completed by Beadell for 9,830 m of drilling.

The Urucum underground resource covers a strike length of approximately 800 m down to a depth of approximately 500 m below the open pit reserve showing a gold endowment of over 1,000 ounces per vertical metre. The lodes form continuous subparallel ore shoots hosted within an approximately 100 m wide Banded Iron Formation (BIF). Three main ore lode horizons have been defined by the drilling and are named Lode 1, Lode 2 and Lode 300 with each lode dipping subvertically and generally separated by 20-30 m (Figure 2). The average true horizontal width of each lode is 6 m.

Continuous high grade shallowly plunging ore lodes are developed along mineralised shear zone hosts. The geometry and plunge of the ore shoots is interpreted to be controlled by gently plunging F2 fold hinges and more steeply dipping fault intersections.

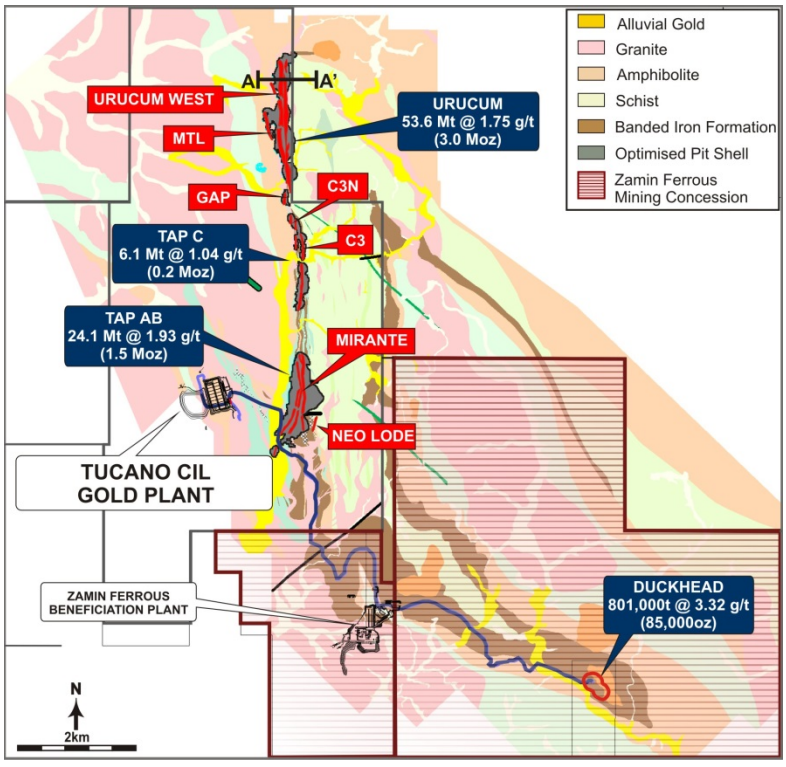

Figure 1. Mining concession plan

Gold mineralisation at Urucum is predominantly stratabound to specific sheared lithological units within the BIF and is characterised by strong disseminated and shear fabric pyrrhotite sulphide. The strong association between gold and pyrrhotite results in a highly visual ore in fresh rock that is easily discernible from unmineralised waste.

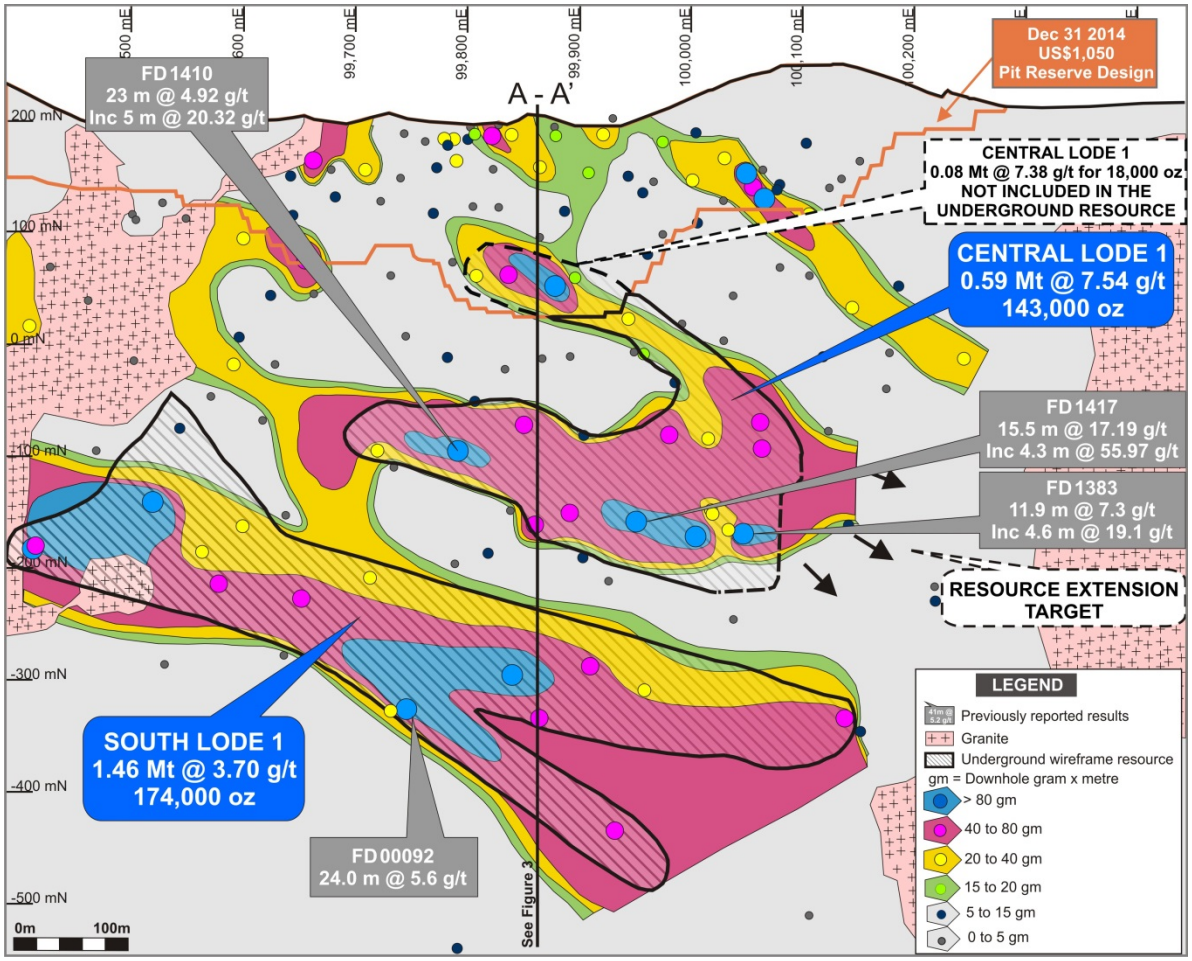

Figure 2. Urucum Lode 1 longsection

The primary lode at Urucum is **Central Lode 1** located immediately below the Urucum North open pit reserve (Figure 2). This lode has been the main target of the diamond drilling program over the last 12 months with results defining a resource of **592,000 tonnes** @ **7.54 g/t gold for 143,000 ounces** of which 99% is classified as measured and indicated.

The **Central Lode 1** resource has been tightly wireframe constrained with excellent scope to expand the high grade resource along the shallow plunge to the north and up dip to the south with further drilling (Figure 2).

The upper limb of the **Central Lode 1** shoot encroaches into the Urucum North open pit; however, no underground resource has been included or reported within the open pit as this forms part of the current open pit reserve. Nevertheless, as part of the Urucum underground prefeasibility study, the high grade **Central Lode 1** mineralisation at the base of the open pit will be considered for inclusion into the underground inventory. An additional **77,000 tonnes** @ **7.38 g/t gold for 18,000 ounces** is located at the base of the Urucum North open pit reserve (Figure 2).

South Lode 1 ore shoot is located approximately 60 – 80 m vertically below Central Lode 1 on the same Lode 1 structure (Figure 2 & 3). It is interpreted that there is linking shoot mineralisation between Central Lode 1 and South Lode 1 along the moderately dipping plunge orientation; although, further drilling is required to define the linking mineralised structures.

The South Lode 1 shoot has been defined over a gently dipping plunge of over 700 m and remains open down dip. The up dip projection of the lode is interpreted to be the main gold bearing lode in the Urucum South open pit, separated by a large cross cutting pegmatite dyke. South Lode 1 has a total resource of **1,463,000 tonnes @ 3.70 g/t gold for 174,000 ounces**.

Lode 2 forms the eastern most parallel lode and is generally wider and slightly lower grade than Lode 1. The constrained lode positions on the Lode 2 structure form the same gently north dipping plunge of the ore shoots, which remains open to the north. Total classified resource for **Lode 2** is **844,000 tonnes @ 3.99 g/t gold for 108,000 ounces**.

Due to the wide spaced drilling at depth on Lode 2, a bulk of the deeper Lode 2 structure remains unclassified and outside of the underground resource. Further drilling and geological modelling is required.

Lode 300 is a newly modelled shear hosted lode that has been interpreted based on extensive structural and lithological evaluation of the recently completed orientated diamond core drilling. The Lode 300 structure is located between Lode 1 and Lode 2 and forms a continuous parallel zone. Previously the Lode 300 mineralisation had been bulked into a wider envelope that formed the open pit resource model. Total resource for **Lode 300 is 1,060,000 tonnes @ 4.00 g/t for 136,000 ounces.**

Several other parallel lodes have been intersected in drilling but have insufficient pierce points to form a classified JORC resource. An example of this is unclassified Lode 100 where a drill intersection of **4.0 m @ 17.5 g/t gold and 9.0 m @ 16.2 g/t** gold in FD1346 remains outside of the underground resource and is clear evidence of the potential to grow the underground resource in the future. In areas where reasonable density of drilling and continuity of mineralisation is demonstrated, some of these ancillary lodes have been included in the reported resource under the classification of Minor Lodes.

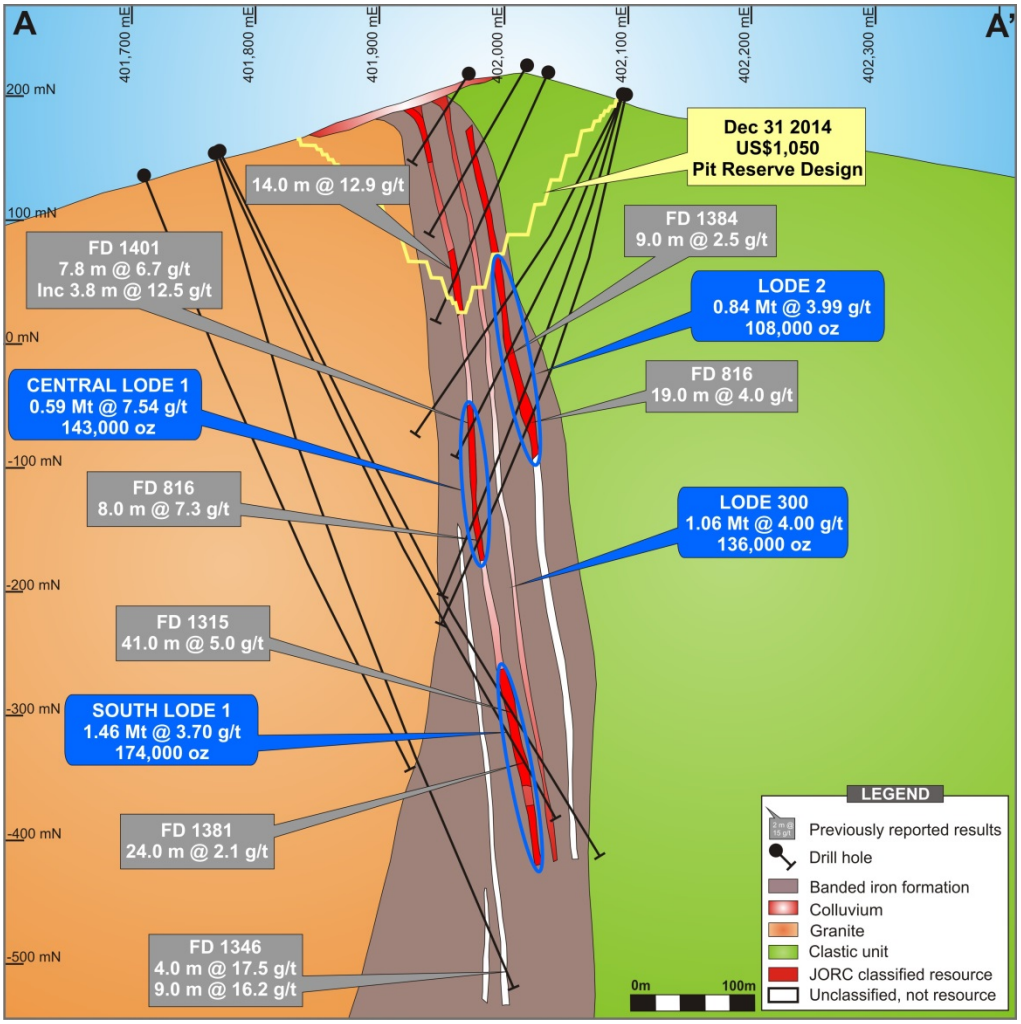

Figure 3. Urucum cross section 99865N

Competency Statement

The information in this report relating to Mineral Resource is based on information compiled by Mr Robert Watkins who is a member of the Australasian Institute of Mining and Metallurgy and who has sufficient experience which is relevant to the styles of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Watkins is an Executive Director of Beadell Resources and consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this report relating to data quality, geological interpretation is based on information compiled by Mr Paul Tan who is a member of the Australasian Institute of Mining and Metallurgy and has sufficient exploration experience which is relevant to the various styles of mineralisation under consideration to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Tan is a full time employee of the Beadell Group and consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this report relating to resource estimation is based on information compiled by Mr Marcelo Antonio Batelochi who is a chartered professional of the Australasian Institute of Mining and Metallurgy and has sufficient exploration experience which is relevant to the various styles of mineralisation under consideration to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Batelochi is a consultant from MB Soluções em Geologia e Mineração Ltda and consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

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APPENDIX 1

JORC Code, 2012 Edition – Table 1 report template

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 (e.g. 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*	The deposit was drilled with Reverse Circulation (RC) 54 holes for 4,824m and Diamond Drill Holes (DD) 151 holes for 48,599m. Beadell drill hole collar locations were picked up by site-based authorized surveyors using a Total Station Leica 407. Downhole surveying was measured by the drilling contractors using a Maxibore II Downhole Survey Instrument for DD holes. Shallow RC holes were picked up at the rig's rod string using Total Station. In late 2013, the survey tool was changed to a Reflex Gyro instrument for use in the drill string. Samples were sent to SGS Geosol in Belo Horizonte for analysis. Certified standards were inserted every 20th sample by Beadell to assess the accuracy and methodology of the laboratory. Field duplicates were inserted every 20th sample of diamond core to assess the repeatability and variability of the gold mineralisation. A blank standard was inserted at the start of every batch of approximately 150 samples. In addition the contract labs SGS Geosol also carried out their own internal standards and lab duplicates for each lot. Results of the QAQC sampling were assessed on a batch by batch basis and were considered acceptable. 1m RC samples were obtained by an adjustable cone splitter attached to the base of the cyclone (1.5kg – 6.0kg) and were utilised for both lithology logging and assaying. Diamond core was used for structural, geotechnical and density measurements as well as lithology logging and assaying. HQ diameter diamond coring has been used through the less competent, near surface oxide material and later changed to NQ with the commencement of more competent oxide or fresh rock. The core has been predominantly been sampled at 1m intervals, with some sampling on geological intervals (0.6m – 1.4m). Density measurements were done for both oxide and fresh whole core with the oxide being weighed before and after drying to determine wet SG, dry SG and moisture content. At the mine exploration sample preparation facility, core samples are dried at 105C, crushed to -8mm then to -2mm and split to 0.9-1kg

Criteria	JORC Code explanation	Commentary
	Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. '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 (e.g. submarine nodules) may warrant disclosure of detailed information.	before being pulverised to 1mm. This sample is quartered cut to between 200-400g before being pulverised to 95% passing 105µm. The final pulp is quartered again to achieve a sample of 100 - 200g and is sent to SGS laboratories in Belo Horizonte for fire assay. At the same preparation facility RC 1m samples are dried at 140C, crushed to -2mm (if aggregated) and riffle split to 1kg. The 1 kg sample is then pulverised to 1mm and quarter cut to between 200 and 400g. This sample is then pulverised to 95% passing 105µm and quarter cut to a 100-200g sample to send to SGS.
Drilling techniques	• *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. 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.).*	A 5.5'' diameter face sampling hammer was used for RC drilling. Diamond drilling in the resource area comprises HQ and NQ sized core. Core orientations were completed using a Reflex Act II RD/NQ orientation tool.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.*	Diamond core recovery was logged and recorded in the database, with no significant core loss issues occurring in the mineralised zones. The diamond drilling contract includes penalty rates for poor core recovery to encourage drillers to maximise sample recovery. Average core recovery is 99% for the mineralised zones. Coreyard staff measure and record the recovery of the core shortly after it is received. This information is later used to adjust the drill contractor payment invoice. Diamond core was reconstructed on racks for orientation and marking. Depths are checked and measured against those marked by the drilling contractors on core blocks.
	• *Measures taken to maximise sample recovery and ensure representative nature of the samples.*	RC samples were visually checked for recovery, moisture and contamination. The drilling contractor utilised a cyclone and cone splitter to provide uniform sample size. The cone splitter was cleaned at the end of every 3m rod and the cyclone cleaned at the completion of every hole.
	• *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.*	Sample recoveries for diamond and RC holes were high within the mineralised zones. No significant bias is expected.
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.*	Lithology, alteration, veining, mineralisation, structure (foliation, bedding etc.), weathering, resistance (knife scratch test), recovery, RQD, density were all logged for the diamond core using Logchief software and saved in an SQL (Datashed) database. Whole core photographs were taken and all half-core was retained in a core yard

Criteria	JORC Code explanation	Commentary
		for future reference. Lithology, alteration, veining, mineralisation and weathering were logged from the RC chips and stored in Datashed. Chips from selected holes were also placed in chip trays and stored in a designated building at site for future reference.
	• *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.*	All logging is qualitative except for density, recovery and RQD. All core photography has been completed shortly after being received at the core yard and always prior to cutting.
	• *The total length and percentage of the relevant intersections logged.*	All drill holes are logged in full.
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.*	All core was cut in half onsite (HQ & NQ) with a core saw or with a chisel in the case of clay/soft oxide. Half core samples for analysis were all collected from the same side. Where field duplicates are taken, the other half of the core is used as the duplicate sample. At the on-site sample preparation facility the half core sample is dried, crushed to -8mm, then to -2mm and split to approximately 1kg for pulverisation.
	• *If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.*	The RC drilling utilised a cyclone and cone splitter to produce samples in the 1kg to 6kg range. Once collected the sample is dried, crushed to -2mm and split at the site sample preparation lab down to approximately 1kg prior to pulverisation.
	• *For all sample types, the nature, quality and appropriateness of the sample preparation technique.*	The 1 kg sample is then pulverised to 1mm and quarter cut to between 200 and 400g. This sample is then pulverised to 95% passing 105µm and quarter cut to a 100-200g sample to send to SGS.
	• *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.*	Beadell has inserted its own QAQC samples within every batch as follows; Certified standards and blanks were inserted at every 25th sample to assess the accuracy and methodology of the external laboratory (SGS), and field duplicates were inserted every 20th sample to assess the repeatability and variability of the gold mineralisation. In addition the contract labs SGS Geosol and ACME also carried out their own internal standards, lab duplicates for each lot. The results of the field duplicates show an acceptable level of repeatability of gold analysis.
	• *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field*	Screen fire analysis was completed on several intersections where

Criteria	JORC Code explanation	Commentary
	duplicate/second-half sampling.	visible gold was observed in order to negate a coarse gold bias in the fire assay result.
	• *Whether sample sizes are appropriate to the grain size of the material being sampled.*	Sample sizes (1kg to 6kg) at are considered to be a sufficient size to accurately represent the gold mineralisation based on the mineralisation style, the width and continuity of the intersections and the sampling methodology. Field duplicates of diamond core have routinely been collected to ensure monitoring of the sub-sampling quality. Acceptable precision and accuracy is noted in the field duplicates albeit the majority of these were outside the very high grade zones.
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.*	All gold assaying completed by external laboratories (SGS in Belo Horizonte and ACME laboratories) and using a 30g charge for fire assay analysis with an AAS finish. This technique is industry standard for gold and considered appropriate.
	• *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.*	Geophysical tools not used.
	• *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.*	Beadell has inserted its own QAQC samples within every batch as follows; Certified standards and blanks were inserted at every 25th sample to assess the accuracy and methodology of the external laboratory (SGS Geosol), and field duplicates were inserted every 20th sample to assess the repeatability and variability of the gold mineralisation. In addition the contract labs SGS Geosol and ACME also carried out their own internal standards, lab duplicates for each lot. Each analysis batch (approx. 150 samples) is checked to ensure that the standards fall within the accepted levels of standard deviation. Where any standard assay exceeds 3 standard deviations or where more than one standard falls between 2 and 3 standard deviations, the entire batch is resubmitted for analysis.

Criteria	JORC Code explanation	Commentary
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.*	The high grade intersections of core at Urucum have been observed by various visiting geological consultants. Very high grade intersections occur associated with pyrrhotite where visible gold is occasionally present.
	• *The use of twinned holes.*	Twinned diamond holes have been undertaken at Urucum.
	• *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.*	All geological logging information is entered directly into Logchief and synchronised with the Datashed database. Other field data (e.g. sampling sheets, downhole surveys etc.) are entered into excel spreadsheets formatted for Datashed importation. Lab assay reports are directly imported into Datashed along with all QAQC data and metadata. Data importation was done by Maxwell Geoservices staff under contract by Beadell Resources. In 2014 data entry into the Datashed Brazilian database commenced with geology site personnel. All data loading procedures have been documented by Maxwell Geoservices.
	• *Discuss any adjustment to assay data.*	Data below the detection limit is defined with a negative value, e.g. <0.01 = -0.01.
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.*	Beadell drill hole collar locations were picked up by site-based authorized surveyors using Total Station Leica 407, calibrated to a base station (expected accuracy of 20mm). Downhole surveying was measured by the drilling contractors using a Maxibore II Downhole Survey Instrument for DD holes. Shallow RC holes were picked up at the collar and 2 points on the rod string using Total Station, 13 deeper RC holes were re-entered using a Rede Diamond Rig and Downhole Surveyed using Maxibore II. Maxibore II surveys were completed every 3m down the drill hole.
	• *Specification of the grid system used.*	The grid system is SAD 69 Zone 22N.
	• *Quality and adequacy of topographic control.*	Beadell Brasil Ltda Survey Staff generate a monthly digital terrain model (DTM) from Total Station surface pickups of the deposit.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.*	The underground resources have been drilled up to a maximum 700 vertical metres below surface on a nominal 50 m x 50 m drill pattern, however due to unavoidable hole deviation in deeper holes the spacing is variable. Deeper inferred resources are at approximately 100 x 100 m spacing. Holes are generally angled either east or west to intersect the orebody.
	• *Whether the data spacing and distribution is sufficient to establish the*	

Criteria	JORC Code explanation	Commentary
	degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.	The data spacing and distribution is sufficient to demonstrate spatial and grade continuity of the mineralised domains to support the definition of Inferred, Indicated and Measured Mineral resources under the 2012 JORC code.
	• *Whether sample compositing has been applied.*	Drill hole samples have been composited to a nominal 2 m interval for the resource calculation.
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.*	The majority of drilling is orientated with a 60 – 70 degree dip east west, which generally intercepts the mineralisation at a reasonable high angle of intersection.
	• *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.*	Diamond drilling has been drilled at Urucum from both east and west directed which is orthogonal to the consistent north-south strike of the mineralisation. Detailed structural logging of recent diamond drilling has been used to carefully wireframe the dip of the mineralisation.
Sample security	• *The measures taken to ensure sample security.*	Samples are securely sealed and stored onsite, until delivery to Macapa via the company contracted driver, who then also delivers the samples directly to airlines cargo dispatch facility for delivery to Belo Horizonte. Sample submission forms are sent with the samples to the laboratory and the laboratory emails a confirmation that the samples have been received along with a job number for tracking purposes.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	Geology audits and site visit were completed in 2012 and 2015 by independent consultants to review sampling procedures and QAQC practices. This visit concluded the sampling to be at an industry standard, and of sufficient quality to carry out a Mineral Resource Estimation.

Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.*	Urucum is located on the 851.676/1992 mining concession centrally located within the northern state of Amapa, Brazil. The mining concession is owned by Beadell Brasil Ltda.

Criteria	JORC Code explanation	Commentary
status	• *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.*	Urucum is located on granted mining concessions which are regulated by normal Brazilian mining and environmental law.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	Beadell Brasil Ltda acknowledges the previous operator MPBA for the discovery of the Urucum deposit.
Geology	• *Deposit type, geological setting and style of mineralisation.*	The Urucum orebody is an orogenic structurally controlled gold mineralising system hosted in Paleoproterozoic rocks. Gold mineralisation at Urucum occurs over a 2 km strike length and is associated with the subparallel intersection of a north-south shear zone and a BIF (Banded Iron Formation) unit which also host significant quantities of friable iron ore. The texture and mineralogy along the shear zone indicates high-temperature hydrothermal alteration and sulfidation. The Urucum underground resource covers a strike length of approximately 800 m down to a depth of approximately 500 m below the open pit reserve showing a gold endowment of over 1,000 ounces per vertical metre. The lodes form continuous subparallel ore shoots hosted within an approximately 100 m wide Banded Iron Formation (BIF). Three main ore lode horizons have been defined by the drilling and are named Lode 1, Lode 2 and Lode 300 with each lode dipping subvertically and generally separated by 20-30 m (Figure 2). The average true horizontal width of each lode is 6 m. Continuous high grade shallowly plunging ore lodes are developed along mineralised shear zone hosts. The geometry and plunge of the ore shoots is interpreted to be controlled by gently plunging F2 fold hinges and more steeply dipping fault intersections. Gold mineralisation at Urucum is predominantly stratabound to specific sheared lithological units within the BIF and is characterised by strong disseminated and shear fabric pyrrhotite sulphide. The strong association between gold and pyrrhotite results in a highly visual ore in fresh rock that is easily discernible from unmineralised waste.

Criteria	JORC Code explanation	Commentary
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 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.*	Drill hole information has not been included because it is not Material to the resource and reserve update. Individual drill hole results have been released in previous announcements.
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. 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.*	Drill hole information has not been included because it is not Material to the resource and reserve update. Individual drill hole results have been released in previous announcements.
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 (e.g. 'down hole length, true width not known').*	Drill hole information has not been included because it is not Material to the resource and reserve update. Individual drill hole results have been released in previous announcements.
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.*	Drill hole information has not been included because it is not Material to the resource and reserve update. Individual drill hole results have been released in previous announcements.
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.*	Drill hole information has not been included because it is not Material to the resource and reserve update. Individual drill hole results have been released in previous announcements.
Other substantive exploration	• *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,*	Other exploration information has not been included because it is not Material to the resource and reserve update. Other exploration information has been released in previous announcements.

Criteria	JORC Code explanation	Commentary
data	*groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	
Further work	• *The nature and scale of planned further work (e.g. 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.*	All deposits remain open at depth. The timing of Infill and extension drilling at Urucum underground will be determined at completion of the Urucum Underground prefeasibility study.

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.*	The database was checked against the original raw data with respect to drill collar locations and down-hole surveys, and final drill hole depths. All data with respect to sample intervals has been (overlaps and duplicate records) have been verified. No issues were identified with the data.
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 Tan is a member of The Australian Institute of Mining and Metallurgy and is a Competent Person who has visited this site on numerous occasions. In the opinion of the competent person, the drilling, sampling and mining practices used on site are of a high industry standard.
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.*	Detailed structural analysis of orientated core was used to aid in the structural interpretation of the Urucum underground lodes. This varied from previous interpretations where a larger envelope was wireframed as part of the Urucum open pit resource estimate. The change to wireframing a tightly constrained lode as opposed to wireframing a broad through going envelope is considered to have had a significant effect on the mineral resource estimate going from an open pit resource model to an underground lode estimate. The mineralisation at Urucum, while structurally emplaced, does tend to be stratabound being hosted in specific lithologies and along lithological contacts. Geology was used to guide the interpretation and orientation of the lode geometries.
Dimensions	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below*	Gold mineralisation at Urucum is over a 2 km strike length and is associated with the subparallel intersection of a north-south shear

Criteria	JORC Code explanation	Commentary
	surface to the upper and lower limits of the Mineral Resource.	zone and a BIF (Banded Iron Formation). The Urucum underground resource covers the northernmost end of the Urucum orebody in an area of approximately 1000 m strike by 600 m depth below the open pit reserve. Three main ore lode horizons have been defined by the drilling and are named Lode 1, Lode 2 and Lode 300 with each lode dipping 80 degrees to the east and generally separated by 20-30 m Individual lodes have an average true horizontal width of 6 m. Sulphide content ranges from 5% to 10% and is predominantly pyrrhotite.
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.* • *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* • *The assumptions made regarding recovery of by-products.* • *Estimation of deleterious elements or other non-grade variables of economic significance (e.g. 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.*	Urucum has been modelled separately and imported into sub-blocked Surpac models. Blocks of 8m x 20m x 20m (x,y,z) were defined and ordinary kriging was used to estimate gold block grades within individual lode wireframes. The estimated block centroids were then imported into a Surpac subblocked model with the same parent cell size and a subcell size of 1 x 5 x 2.5m (x,y,x) to maintain resolution of the gold estimate against the lode boundaries. At Urucum Underground a 3 neighbourhood octant searches were considered. 1st Neighbourhood; Constraints of 4 consecutive empty octants, a minimum of 4 samples and 2 drill holes within the search area were applied to undertake the kriging estimation. A maximum search related to vectors N0/0, N90/90 and N90/0. Radii of 100x65x8m respectively were employed based on visual inspection representing about 70% of Sill of Lodes 1, 2, 3. 2nd Neighbourhood; A minimum number of 4 samples with a constraint of 4 consecutive empty octants within the search area were applied (2 drill hole minimum). A maximum search with the same vector of the 1st Neighbourhood and radius related to semivariogram range of 250x110x10m was employed. 3rd Neighbourhood; A search range of 500x500x50m was employed to populate remaining blocks within the lode wire and a minimum of 2 samples required to perform the estimation All lodes at were constrained within the tightly constrained wireframes defining gold mineralization using a 1.5 g/t envelope.

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		At Urucum various top cuts were applied depending on the statistical distribution of gold within each lode or domain for each deposit. The top cut is a rounded value based on the tail of the Au log histogram and is generally around 98.5-99% of the grade distribution. A summary of top cuts applied is; South Lode 1 top cut 40 g/t Central Lode 1 top cut 25 g/t Minor Lode 1 top cut 25 g/t Lode 2 Uncut Lode 300 Uncut Minor Lodes 8-25 g/t The Urucum gold lode mineralisation contains considerable magnetite By-product associated with the BIF which forms a high quality and high Grade concentrate when milled through the magnetic separation plant. Currently the magnetic separation plant at Tucano is on care and maintenance, while mostly oxide gold ores are being processed however future processing of Urucum underground fresh rock ore is likely to yield significantly valuable iron concentrate by-product. For the purposes of the gold resource and subsequent pre-feasibility study, no economic value will be attributed to the iron concentrate.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	All tonnages were calculated using dry density.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	A lower cut off of 1.5 g/t was used to wireframe the lode envelopes.
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.*	The Urucum underground scoping study defined several alternative underground mining methods. These were considered in the application of the lode wireframing and classification to ensure a minimum true horizontal width x grade was achieved. The resource estimate represents an undiluted resource model with no external dilution being added. The addition of dilution will be done by AMC as part of the Pre-feasibility study to determine mineable SMU blocks.
Metallurgical factors or	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of*	Extensive metallurgical test work has been completed at Urucum by previous owners and Beadell during the DFS. All studies confirm the

Criteria	JORC Code explanation	Commentary
assumptions	*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.*	free milling nature of the primary mineralisation and recoveries of 90% are expected.
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 greenfield 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.*	Both the mine and the processing facility have full environmental licensing in place for the open pit operation. An underground development of the Urucum orebody is considered to involve only limited additional environmental studies and regulatory permit addendums. The Urucum open pit is currently being mined.
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.*	Geological modelling at Urucum were undertaken and density estimations constrained by lithology and lode. Lithology coding runs were done in order from oldest to youngest. Cross cutting, late stage pegmatite dykes were modelled using Minesight Implicit Modeller and used to overprint both the geological and gold grade model. In some cases manual wireframing of the pegmatites was done in preference. An extensive database of fresh rock density measurements have been recorded at Urucum and have been used to estimate the density in the resource model. .
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.* • *Whether appropriate account has been taken of all relevant factors (i.e. 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.*	Slope of regression was used to classify the resource into the following categories; Inferred = 0 – 0.5, Indicated = 0.5 – 0.85, Measured = 0.85 – 1.0. Lode 2 used Inferred 0 – 0.35, Indicated 0.35 – 85, Measured 0.85 – 1.0. Several classified lodes were manually adjusted to non-resource unclassified on the basis of lower geological confidence and minimum true width x gram meter requirements.
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	Urucum swath plots were used for comparison of the kriged grade, sample mean grade, delcustered mean, nearest neighbourhood grade and resource classification. A check of the resource classification was done using swath plots of the slope of regression.

Criteria	JORC Code explanation	Commentary
		In all cases a reasonable correlation of samples and model blocks was observed in the measured and indicated categories. The gold lodes were reviewed against the database used in the estimation to check the estimation on a section by section basis. AMC consulting are currently completing peer reviews of the resource estimate as part of the Urucum Underground Pre-feasibility study.
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.*	The Urucum underground resource model has been tightly constrained to the high grade lodes, representing a changed approach to the previous open pit resource estimate which encapsulated a large through going envelope along the entire length of the lode shear zone. The previous open pit resource estimate is considered to have incurred a high degree of smoothing as a result of the large envelope being used with Ordinary Kriging. The new underground resource model is considered to be a more accurate estimate of the high grade lode mineralisation.