30 June 2016 EKJV Summary Resource and Reserve Report

ASX ANNOUNCEMENT

3 August 2016

Australian Securities Exchange Code: TBR

Tribune Resources Ltd (ASX: TBR) is pleased to announce the EKJV Resource and Reserve Report at 30 June 2016.

This report was received by the Company from the Joint Venture Manager yesterday.

Tribune's Attributable Interest in the Resources and Reserves in Appendix 1 is 75%.

Anton Billis
Director
Tribune Resources Ltd

Encls:
Memorandum
Appendix 1: Mineral Resources and Ore Reserves
Appendix 2: JORC Table 1 and Competent Persons Statements
Appendix 3: Raleigh Exploration and Resource Definition Results

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MEMORANDUM

TO:	BOARD OF DIRECTORS
FROM:	MICHAEL MULRONEY
DATE:	28 JULY 2016
SUBJECT:	**EKJV SUMMARY RESOURCE AND RESERVE REPORT - 30 JUNE 2016**

EXECUTIVE SUMMARY

The full statement of Mineral Resources and Ore Reserves for the East Kundana Joint Venture (EKJV) as at 30 June 2016 has been completed and is summarized below.

The Mineral Resource and Ore Reserve Statement has been prepared and reported to compile with the Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (2012 edition) with the relevant Competent Persons Statement noted and attached.

The general assumptions for reporting the Mineral Resource and Ore Reserve Statement as at 30 June 2016 are outlined in the accompanying Appendix 1.

Mineral Resources, inclusive of assumed modifying factors, have been estimated using a gold price of A$1,700 per ounce. Further technical and economic evaluation will be required for conversion to Ore Reserves in the future. All Mineral Resources are reported are inclusive of stated Ore Reserves.

Ore Reserves, inclusive of all technical and economic factors, have been estimated using a gold price of A$1,500 per ounce.

EKJV MINERAL RESOURCES

Mineral Resources defined within the EKJV tenements increased to a total of:

5.37 Million tonnes at 10.5 g/t gold for 1.85 Million ounces of gold

Deposit	30 June 2016 ('000 ozs)	30 June 2015 ('000 ozs)	Variation ('000 ozs)
Hornet Pit	64	20	44
Raleigh U/G	247	187	60
Hornet U/G	218	232	(14)
Rubicon U/G	202	181	21
Pegasus U/G	1,094	1,225	(131)
Stockpiles	28	27	1
TOTAL	**1,853**	**1,871**	**(19)**

1. Numbers are quoted on a 100% basis

Comparison with the Mineral Resource Statement for the year ended 30 June 2015 shows a decrease of approximately 19,000 ounces representing the following variations:

- The same resource estimation methodology as June 2015,

- Mining depletion at Rubicon, Hornet, Pegasus and Raleigh
- Substantial extension defined by drilling at Raleigh South

EKJV ORE RESERVE SUMMARY

Ore Reserves defined within the EKJV tenements increased to a total of:

3.57 Million tonnes at 7.5 g/t gold for 0.86 Million ounces of gold

Deposit	30 June 2016 ('000 ozs)	30 June 2015 ('000 ozs)	Variation ('000 ozs)
Hornet Pit	25	-	25
Raleigh U/G	109	87	22
Rubicon-Hornet U/G	220	150	70
Pegasus U/G	479	609	(130)
Stockpiles	28	26	2
TOTAL	**861**	**872**	**(11)**

1. Numbers are quoted on a 100% basis

Comparison with the Ore Reserve statement for the year ended 30 June 2015 shows a decrease of approximately 11,000 ounces representing the following variations:

- Mining depletion at Rubicon, Hornet, Pegasus and Raleigh
- Increase in Ore Reserve at Raleigh and Rubicon-Hornet following conversion of in mine exploration success

Attached in Appendix 1 are the summary tables for the Mineral Resource and Ore Reserve Statement for Rand and Tribune's equity interest in the EKJV for the year ended 30 June 2016.

The applicable Competent Person(s) disclosures and Table 1 compilation under JORC 2012 are appended in Appendix 2.

MICHAEL MULRONEY
Chief Geological Officer
Northern Star Resources Limited

Encls

Appendix 1

MINERAL RESOURCES

As at 30 June 2016

Based on attributable ounces Au	MEASURED			INDICATED			INFERRED			TOTAL RESOURCES		
	Tonnes (000's)	Grade (gpt)	Ounces (000's)	Tonnes (000's)	Grade (gpt)	Ounces (000's)	Tonnes (000's)	Grade (gpt)	Ounces (000's)	Tonnes (000's)	Grade (gpt)	Ounces (000's)
East Kundana Joint Venture (EKJV)												
Surface												
Hornet Pit (49%)				142	4.8	22	193	1.6	10	335	2.9	32
Underground												
Raleigh (50%)	30	64.0	62	32	26.6	28	27	34.1	30	90	41.5	120
Hornet (49%)	100	15.6	50	85	8.9	25	129	7.7	32	315	10.5	107
Rubicon (49%)	25	12.5	10	125	13.5	54	83	13.0	35	232	13.2	99
Pegasus (49%)				1,237	10.1	403	372	11.1	133	1,608	10.4	536
Stockpiles	57	7.7	14							57	7.7	14
Subtotal EKJV - RND & TBR Share	212	20.0	137	1,622	10.2	531	804	9.2	239	2,638	10.7	907

Note :

1. Mineral Resources are inclusive of Reserves
2. Mineral Resources are reported at AUD $1,700/Oz Au
3. Rounding may result in apparent summation differences between tonnes, grade and contained metal content
4. Numbers are 100% attributable to Rand Mining Ltd & Tribune Resources Ltd's share

ORE RESERVES

As at 30 June 2016

Based on attributable ounces Au	PROVED			PROBABLE			TOTAL RESERVES		
	Tonnes (000's)	Grade (gpt)	Ounces (000's)	Tonnes (000's)	Grade (gpt)	Ounces (000's)	Tonnes (000's)	Grade (gpt)	Ounces (000's)
East Kundana Joint Venture (EKJV)									
Surface									
Hornet Pit (49%)				69	5.8	13	69	5.8	13
Underground									
Raleigh (50%)	95	12.9	40	47	9.9	15	143	11.9	55
Rubicon / Hornet (49%)	211	8.3	56	275	6.3	56	486	7.2	112
Pegasus (49%)	149	9.9	47	851	6.8	187	1,001	7.3	235
Stockpiles	55	7.7	14				55	7.7	14
Subtotal EKJV - RND & TBR Share	510	9.5	157	1,243	6.8	271	1,753	7.6	428

Note :

1. Mineral Reserves are reported at the following gold price of AUD $1,500/Oz Au
2. Tonnages include allowances for losses resulting from mining methods with tonnages rounded to the nearest 1,000 tonnes
3. Ounces are estimates of metal contained in the Mineral Reserve and do not include allowances for processing losses.
4. Numbers are 100% attributable to Rand Mining Ltd & Tribune Resources Ltd's share

Appendix 2

JORC Code, 2012 Edition – Table 1 Report: Kundana Underground Resource (30 June 2016), Raleigh Drill Results at July 2016

(Rubicon, Hornet, Pegasus, Drake, Raleigh and Skinners Vein)

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.	Sampling was completed using a combination of Reverse Circulation (RC) and Diamond Drilling (DD). RC drilling was used to drill pre-collars for many of the holes with diamond tails. Diamond drilling constitutes the rest of the drilling. Face sampling is included from active mining areas.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Diamond core was transferred to core trays for logging and sampling. Half core samples were nominated by the geologist from both NQ2 and HQ diamond core with a minimum sample width of either 20cm (HQ) or 30cm (NQ2). RC samples were split using a rig-mounted cone splitter on 1m intervals to obtain a sample for assay. 4m composite spear samples were collected for each hole with 1m samples submitted for areas of known mineralisation or anomalism.
	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 (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.	Samples were taken to Genalysis Kalgoorlie for preparation by drying, crushing to <3mm, and pulverising the entire sample to <75µm. 300g Pulps splits were then dispatched to Genalysis Perth for 50g fire assay charge and AAS analysis.
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.).	Both RC and Diamond Drilling techniques were used at the K2 deposits. DD holes completed pre-2011 were predominantly NQ2 (50.5mm). All resource definition holes completed post-2011 were drilled using HQ (63.5mm) diameter core. Core was orientated using the Reflex ACT Core orientation system. RC Drilling was completed using a 5.75" drill bit, downsized to 5.25" at depth. RC Pre-collar depth was restricted to 180m or less if approaching known mineralisation.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	RC drilling contractors adjust their drilling approach to specific conditions to maximise sample recovery. Moisture content and sample recovery is recorded for each RC sample. No recovery issues were identified during RC drilling. Recovery is often poor at the very beginning of each hole, as is normal for this type of drilling in overburden.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	For diamond drilling, the contractors adjust their rate of drilling and method if recovery issues arise. All recovery is recorded by the drillers on core blocks. This is checked and compared to the measurements of the core by the geological team. Any issues are communicated back to the drilling contractor.
	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.	Recovery is excellent for diamond core and no relationship between grade and recovery was observed. For RC drilling, pre-collars were ended before known zones of mineralisation and recovery was very good through any anomalous zones.
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.	All diamond core is logged for regolith, lithology, veining, alteration, mineralisation and structure. Structural measurements of specific features are also taken through oriented zones.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	All logging is quantitative where possible and qualitative elsewhere. A photograph is taken of every core tray.
	The total length and percentage of the relevant intersections logged.	RC chips are logged in 1m intervals for the entire length of each hole. Regolith, lithology, alteration, veining and mineralisation are all recorded.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	Resource definition DD drill core is cut and half the core is taken for sampling. The remaining half is stored for later use. Whole core sampling may be used for production and grade control drilling.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	All RC samples are split using a rig-mounted cone splitter to collect a 1m sample 3-4kg in size. These samples were submitted to the lab from any zones approaching known mineralisation and from any areas identified as having anomalous gold. Outside of mineralised zones spear samples were taken over a 4m interval for composite sampling.

Criteria	JORC Code explanation	Commentary
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation is considered appropriate.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Field duplicates were taken for RC samples at a rate of 1 in 20.
	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.	Exploration sample preparation was conducted at Genalysis Kalgoorlie. Production sampling was analysed by Bureau Veritas' Kalgoorlie laboratory. Both facilities undertake a similar process commencing with sorting, checking and drying at less than 110°C to prevent sulphide breakdown. Samples are jaw crushed to a nominal -6mm particle size. If the sample is greater than 3kg a Boyd crusher with rotary splitter is used to reduce the sample size to less than 3kg (typically 1.5kg) at a nominal <3mm particle size. The entire crushed sample (if less than 3kg) or sub-sample is then pulverised to 90% passing 75µm, using a Labtechnics LM5 bowl pulveriser. 300g pulp subsamples are then taken with an aluminium scoop and stored in labelled pulp packets.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Grind checks are performed at both the crushing stage(3mm) and pulverising stage (75µm), requiring 90% of material to pass through the relevant size.
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.	A 50g fire assay charge is used with a lead flux in the furnace. The prill is totally digested by HCl and HNO_3 acids before Atomic Absorption Spectroscopy (AAS) determination for gold analysis.
	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.	No geophysical tools were used to determine any element concentrations.
	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.	Certified reference materials (CRMs) are inserted into the sample sequence randomly at a rate of 1 per 20 samples to test the analysis process. Any values outside of 3 standard deviations are re-assayed with a new CRM. Blanks are inserted into the sample sequence at a rate of 1 per 20 samples. This is random, except where high grade mineralisation is expected. Here, a Blank is inserted after the high grade sample to test for contamination. Failures above 0.2gpt are followed up, and re-assayed. New pulps are prepared if failures remain. Field duplicates are taken for all RC samples (1 in 20 sample). No field duplicates are submitted for diamond core. Regular audits of laboratory facilities are undertaken by Northern Star personnel.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	All significant intersections are verified by another Northern Star geologist during the drill hole validation process, and later by a Competent Person to be signed off.
	The use of twinned holes.	No twinned holes were drilled for this data set
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Geological logging was captured using excel templates. Both a hardcopy and electronic copy of these are stored, as well as being loaded in to the database using automatic acquire loaders. Assay files are received in csv format and loaded directly into the database by the Database administrator (DBA). A geologist then checks that the results have inserted correctly. Hardcopy and electronic copies of these are stored.
	Discuss any adjustment to assay data.	No adjustments are made to this assay data.
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.	A planned hole is pegged using a Differential GPS by the field assistants Underground diamond holes are located by mine survey staff During drilling single-shot surveys are every 30m to ensure the hole remains close to design. This is performed using the Reflex Ez-Trac system. Upon hole completion, a Gyroscopic survey is conducted by ABIMS, taking readings every 5m for improved accuracy. This is done in true north.
	Specification of the grid system used.	The final collar position for surface holes is measured after hole completion by Differential GPS in the MGA 94_51 grid.
	Quality and adequacy of topographic control.	Quality topographic control has been achieved through Lidar data and survey pickups of holes over the last 15 years.

Criteria	JORC Code explanation	Commentary
Data spacing and distribution	Data spacing for reporting of Exploration Results.	Drill hole spacing across the area varies. For the Resource definition drilling, spacing was typically 40m x 40m, to allow the resource to be upgraded to indicated. For the Pode drilling spacing was approximately 20m x 20m. The HRPD drilling was much more wide spaced, as this is largely unclassified. Spacing is wider than 160m in some areas.
	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.	The data spacing is considered appropriate
	Whether sample compositing has been applied.	No compositing has been applied to these exploration results, although composite intersections are reported.
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 the structures in the Kundana camp dip steeply (80°) to WSW. The Pode structure has a much shallower dip in a similar direction, approximately 60°. To target these orientations, the drill hole dips of 60-70° towards ~060° achieve high angle intersections on all structures.
	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.	No sampling bias is considered to have been introduced by the drilling orientation.
Sample security	The measures taken to ensure sample security.	Prior to laboratory submission samples are stored by Northern Star Resources in a secure yard. Once submitted to the laboratories they are stored in a secure fenced compound, and tracked through their chain of custody and via audit trails.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	No audits or reviews have recently been conducted on sampling techniques.

Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	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.	The Hornet, Rubicon and Pegasus Projects are held by the East Kundana Joint Venture (EKJV). The EKJV is majority owned and managed by Northern Star Resources Limited (51%). The minority holding in the EKJV is held by Tribune Resources Ltd (36.75%) and Rand Mining Ltd (12.25%). The Hornet, Rubicon Pegasus and Drake deposits are hosted on Mining Lease M16/309. This tenement is subject to two royalty agreements, however neither of these is applicable to the Pegasus deposit. The Raleigh and Skinners deposits are located on Mining Lease M15/993. A small portion of the Raleigh orebody (Raleigh North) crosses on to Mining Lease M16/157
	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.	No known impediments exist and the tenements are in good standing
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	The first reference to the mineralisation encountered at the Pegasus project was a Mines Department report produced by Dr. I. Martin (1987). He reviewed work completed in 1983 – 1984 by a company called Southern Resources who identified two geochemical anomalies, creatively named Kundana #1 and Kundana #2. The Kundana #2 prospect was subdivided into a further two prospects, dubbed K2 and K2A. Between 1987 and 1997, limited work was completed. Between 1997 and 2006 Tern Resources (subsequently Rand Mining and Tribune Resources) and Gilt-Edged mining focused on shallow open pit potential which was not considered viable. In 2011, Pegasus was highlighted by an operational review team and follow-up drilling was planned through 2012. This report is concerned solely with 2014 drilling that led on from this period. Raleigh was discovered by Goldfields Limited in the early 2000's
Geology	Deposit type, geological setting and style of mineralisation.	The Kundana camp is situated within the Norseman-Wiluna Greenstone Belt in an area dominated by the Zuleika Shear Zone, which separates the Coolgardie Domain from the Ora Banda Domain. K2-style mineralisation (Pegasus, Rubicon, Hornet) consists of narrow vein deposits hosted by shear zones located along steeply-dipping overturned lithological contacts. The K2 structure is present along the contact between a black shale unit (Centenary shale) and intermediate volcanoclastics (Spargoville Formation).

Criteria	JORC Code explanation	Commentary
		Minor mineralisation, termed K2B, also occurs further west on the contact between the Victorious Basalt and Bent Tree Basalt (both part of the regional upper Basalt Sequence). A 60° W dipping fault offsets this contact and exists as a zone of vein-filled brecciated material hosting the Pode-style mineralisation. Raleigh is a laminated vein hosted on the Strzelecki structure which is a discrete fault zone within the broader Zuleika Shear. Skinners Vein is a flat splay in the hanging wall of the Raleigh Main Vein.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: easting and northing of the drill hole collar elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar dip and azimuth of the hole down hole length and interception depth hole length.	Too many holes to practically list the complete dataset for the resources, the long section and plan reflect the hole positions used for previous estimation stated. All recent drill intersections for Raleigh Main Vein and Skinners Vein, yet to be reported to the ASX, are presented with this report.
	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.	Exclusion of the drill information will not detract from the understanding of the report.
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.	Assay results are length weighted to make continuous intersections with up to 2m of internal waste may be included.
	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.	No assay results have been top-cut for the purpose of this report. A lower cut-off of 1gpt has been used to identify significant results, although lower results are included where a known ore zone has been intercepted and the entire intercept is low grade.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No metal equivalent values have been used for the reporting of these exploration results
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results.	True widths have been calculated for intersections of the known ore zones based on existing knowledge of the nature of these structures.
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	Both the downhole width and true width have been clearly specified when used.
	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').	Downhole widths are reported.
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.	Appropriate plans and section have been included in this report.
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.	Both high and low grades have been reported accurately, clearly identified with the drill hole attributes and 'From' and 'To' depths.
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.	Metallurgical test work was conducted on 9 Pegasus samples. The results are summarized as follows: All Pegasus recoveries were above 91% for the leach tests Gravity gold recovery estimated at 55% Cyanide consumption 0.62kgpt; Lime 2.29kgpt Oxygen Consumption 60gpt per hour Bond Ball mill work index average 18.1 kWh/t Bond Abrasion Index average 0.1522
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).	Further work will continue in 2015 to extend the Indicated Resource deeper by additional drilling and identify new mineralised shoots on the K2 structure.

Criteria	JORC Code explanation	Commentary
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	At Skinners, definition and extensional drilling are ongoing.

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.	Sampling and logging data is either recorded on paper and manually entered into to the Acquire database or directly transferred from a logging laptop over to the database. There are checks in place to avoid duplicate holes and sample numbers. Where possible, raw data is loaded directly to the database from laboratory and survey derived files.
	Data validation procedures used.	Random checks through use of the data and data validation procedure prior to resource estimation.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	This resource estimate has been conducted by geologists working in the mine and in direct, daily contact with the ore body data used in this resource estimate.
	If no site visits have been undertaken indicate why this is the case.	Multiple site visits undertaken by geologists supervising the drilling programs and preparing the geological interpretation.
Geological interpretation	Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.	The interpretation of the deposit was carried out using a systematic approach to ensure continuity of the geology and estimated mineral resource. The confidence in the geological interpretation is high with the information gained from ore development and underground drilling.
	Nature of the data used and of any assumptions made.	All available geological data was used in the interpretation including mapping, drill holes, 3D photogrammetry, structures.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	No alternative interpretations have been completed.
	The use of geology in guiding and controlling Mineral Resource estimation.	The interpretation of the main K2 structure is based on the presence of quartz veining and continuity between sections on the K2 structure. Drill core logging and face development mapping is used to create 3D constrained wireframes.
	The factors affecting continuity both of grade and geology.	Continuity is affected by the orientation of the K2 structure and several dextral offset fault structures
Dimensions	The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	The dimensions for each deposit reported vary, however typically the following dimensions: Strike length = Up to 1,000m for each K2 and Strzelecki shoot and associated structures Width = ~0.5-2m average, with widths up greater than 5m Depth = from surface to ~700m maximum below surface
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.	Estimation and modelling techniques varies depending on the deposit: **Rubicon, Hornet & Raleigh Resources:** Ordinary Kriging (OK) was used to estimate this resource, using Datamine Studio 3. Two separate domains were used to constrain the main K2 with dilution skins of 0.5m used to constrain the immediate footwall and hangingwall outside the main ore zone. Hangingwall lodes were constrained according to geological features. Each domain is validated against the lithology, and then snapped to the drill-hole and face data to constrain the mineralised envelope as a footwall and hangingwall surface. Compositing of drill-hole samples was completed downhole against any domain flagged in the sample file to belong to the corresponding wireframe for the main K2. Domains within the hangingwall lodes were flagged via use of the 3D wireframes. Post estimation, resource estimations do not have tonnage or grade factors applied. Only gold was estimated and no deleterious elements are noted or estimated.
		Pegasus Resource: Ordinary Kriging was used in areas with good drill coverage, Simple Kriging was used to estimate areas with poor drill coverage.

Criteria	JORC Code explanation	Commentary
		Drill holes were composited into 1m intervals down hole within each interpreted domain. The composite lengths were allowed to vary between 0.5m and 1.5m to ensure that no sampling was lost during the compositing process. The average grade and total length of the composite data was compared against the average grade and total length of the uncomposited data to check the compositing process. The distribution of composite lengths was checked to ensure that the majority of the composites were close to the targeted length. The local mean value used during Simple Kriging was assigned using the declustered mean of the top-cut composited sample data. Search distances used for estimation based on variogram ranges and vary by domain. Drill spacing is generally around 20m x 20m for the indicated resource and around 40m x 40m for the inferred resource. Top-cuts were applied to the sample data based on a statistical analysis of the data and vary by domain. The Kriging neighbourhood was refined using statistical measures of Kriging quality. The estimated grades were assessed against sample grades and against declustered mean values Post estimation, resource estimations do not have tonnage or grade factors applied.
	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 estimated grades were assessed against sample grades and, where applicable, previous estimates.
	The assumptions made regarding recovery of by-products.	No assumptions are made and only gold is defined for estimation
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	No deleterious elements estimated in the model
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	<u>Rubicon, Hornet, Raleigh:</u> Block size is 5m x 5m sub-blocked to 2.5m x 2.5m to suit the narrow north-south orientation of the majority of the domains Average sample spacing is 3.5m (Rubicon-Hornet) and 3.1m (Raleigh) in the case of face samples. Search ellipsoids are 50m*80m*30m to 75m*80m* 70m (Rubicon-Hornet) & 50m*120m*30m to 75m*120m*75m (Raleigh) varying for each zone and the minimum number of samples required on successive passes. <u>Pegasus:</u> Grades were estimated into 10m(N-S) x 10m(RL) panels.
	Any assumptions behind modelling of selective mining units.	No assumptions made.
	Any assumptions about correlation between variables.	No assumptions made.
	Description of how the geological interpretation was used to control the resource estimates.	"Mineralisation" wireframes are created within the geological shapes based on drill core logs, face samples, 3D digitized mapping and grade. Low grades can form part of an ore wireframe. A dilution 'skin' is translated 0.5m on both the footwall and hangingwall of the main ore wireframe and is estimated separately to the main ore and surrounding waste but not reported.
	Discussion of basis for using or not using grade cutting or capping.	Top-cuts were applied to the composited sample data with the intention of reducing the impact of outlier values on the average grade. Top cuts were selected based on a statistical analysis of the data with a general aim of not impacting the mean by more than 5% and vary by domain (ranging from 1 to 400gpt for individual domains and deposits)
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	Validation is through swath plots comparing composites to block model grades, along 20m eastings and RL. Visually, block grades are assessed against drill hole and face data.
Moisture	Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	Tonnages are estimated on a dry basis.
Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied.	A cut-off grade (COG) of 3.28gpt was developed based on an assumed A$1,700/oz gold price. The COG was calculated by site based engineers using the cost inputs at the producing Kundana operations. A minimum mining width of 2.0m was assumed.
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	Historical mining and reconciliation data does not affect wire frame interpretation.

Criteria	JORC Code explanation	Commentary
	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.	
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.	Metallurgical test work results show that the mineralisation is amendable to processing through the Kanowna Belle treatment plant. Ore processing throughput and recovery parameters were estimated based on historic performance and potential improvements available using current technologies and practices.
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 green fields 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.	A "License to Operate" is held by the operation which is issued under the requirement of the "Environmental Protection Act 1986", administered by the Department of Environment (DoE). The licence stipulates environmental conditions for the control of air quality, solid waste management, water quality, and general conditions for operation. Groundwater licenses are held for water abstraction, including production bore field water use for mineral processing, and mine dewatering, in accordance with the Rights in Water and Irrigation Act 1914. These licenses are also regulated by DoE and are renewable on a regular basis. Kanowna Operations conduct extensive environmental monitoring and management programs to ensure compliance with the requirements of the licenses and lease conditions. An Environmental Management System is in place to ensure that Northern Star employees and contractors exceed environmental compliance requirements. The Kalgoorlie operations (including Kundana) are fully permitted including groundwater extraction and dewatering, removal of vegetation, mineral processing, and open pits.
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.	Bulk density is assumed and comparable to neighbouring deposits at Kundana. Bulk densities from neighbouring deposits were determined from surface DD holes with intervals taken from mineralised and non-mineralised zones within the project area. The bulk densities are derived from wet and dry weighting of core no greater than 30cm total length, with core samples selected by changes in lithology/alteration or every 30-40m where no change is evident.
	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.	No/minimal voids are encountered in the ore zones and underground environment.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Bulk densities are applied to domains for the ore zone, footwall and hangingwall as constrained by the lode wireframes.
Classification	The basis for the classification of the Mineral Resources into varying confidence categories.	Classification is based on a series of factors including: Geologic grade continuity Density of available drilling Statistical evaluation of the quality of the kriging estimate
	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).	All factors taken into account.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	This mineral resource estimate is considered representative.
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	This particular resource has not been audited externally. The 2014 YE Pegasus estimate was audited externally by CSA Global with no significant issues identified. The methodology has not since changed.
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.	This Mineral Resource estimate is considered as robust and representative of the Kundana style of mineralisation. The application of geostatistical methods has helped to increase the confidence of the model and quantify the relative accuracy of the resource.

Criteria	JORC Code explanation	Commentary
	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.	This resource report relates to the entirety of the ore zone and surrounding dilution skins. Each of these will show local variability even though the global estimate reflects the total average tonnes and grade.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	No reconciliation factors are applied to the resource post-modelling.

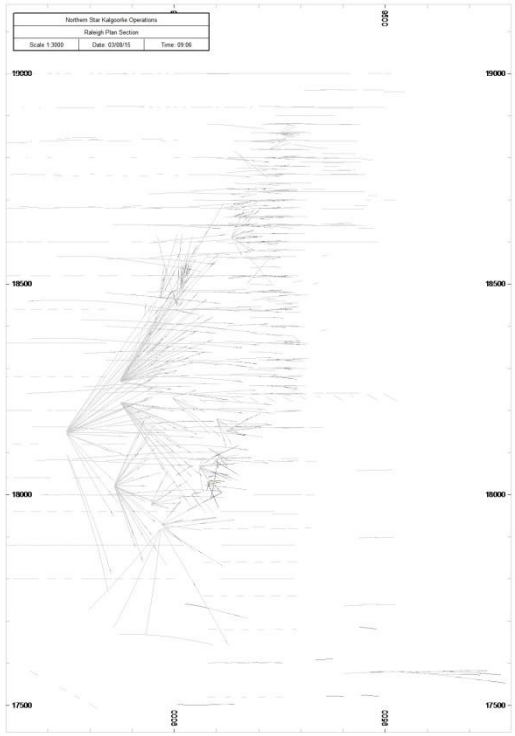
Section 4 Estimation and Reporting of Ore Reserves

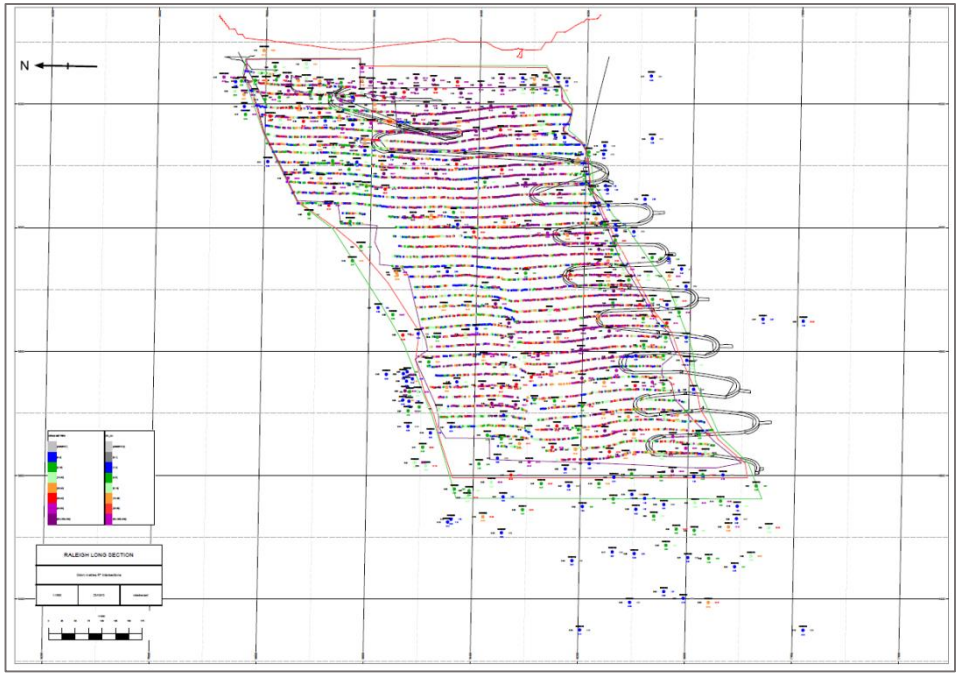
(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

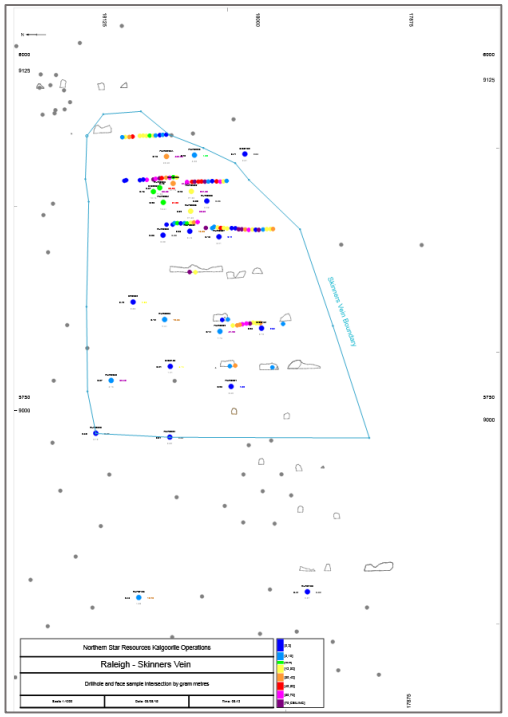
Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.	Northern Star 2016MY resource
	Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	The Mineral Resources are reported inclusive of the Ore Reserves.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	Site visits have been undertaken by the Competent Person. The Competent Person is currently engaged to work on site.
	If no site visits have been undertaken indicate why this is the case.	Site visits undertaken.
Study status	The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.	Feasibility Study.
	The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.	Upgrade of previous Ore Reserve.
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	Break even cut off of 3.70gpt applied based on forecast costs.
Mining factors or assumptions	The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).	Indicated Resources were converted to Probable Ore Reserves subject to mine design physicals and an economic evaluation.
	The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.	Selected mining method deemed appropriate as it has been used at Raleigh since 2005 and Rubicon-Hornet since 2011.
	The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control and pre-production drilling.	Stope strike lengths generally 15m for dilution control purposes.
	The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).	This Table 1 applies to underground mining only.
	The mining dilution factors used.	Based on historical mine performance, mining dilution of 5% rock and 6% paste dilution (11% total) for stoping additional to minimum mining width is applied as well as 10% dilution for ore development.
	The mining recovery factors used.	Mining recovery factor of 95% is applied based on historical data.
	Any minimum mining widths used.	At Rubicon, Hornet, Pegasus and Skinners Vein (Raleigh)- Minimum stope width of 3.0m where the vein is less than 2m wide. 1m additional to vein width when greater than 2m wide. At Raleigh Main Vein - Minimum stope width of 2.7m where the vein is less than 2m wide. 1m additional to vein width when greater than 2m wide.
	The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.	Designed stopes with greater than 50% inferred blocks are excluded from the reported Ore Reserve.
	The infrastructure requirements of the selected mining methods.	Infrastructure in place, currently is an operating mine. Pegasus will make use of existing infrastructure.

Criteria	JORC Code explanation	Commentary
Metallurgical factors or assumptions	The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.	All Kundana ore is treated at the Kanowna Belle milling facilities. The plant is made up of crushing, grinding, gravity gold recovery, flotation, roasting, CIL, elution and gold recovery circuits. These facilities are designed to handle approximately 1.8 million tonnes of feed per annum. The plant has the capability to treat both refractory and free milling ores, through either using the flotation circuit and associated concentrate roaster circuit (including carbon-in-leach (CIL) gold recovery), or bypassing the flotation circuit and going directly to a CIL circuit designed to treat flotation tails. The plant campaigns both refractory and free milling ores every month.
	Whether the metallurgical process is well-tested technology or novel in nature.	Milling experience gained since 2005, 9 years' continuous operation.
	The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.	Milling experience gained since 2005, 9 years' continuous operation.
	Any assumptions or allowances made for deleterious elements.	No assumption made.
	The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.	Milling experience gained since 2005, 9 years' continuous operation.
	For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?	Not applicable.
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	Rubicon, Hornet, Pegasus and Raleigh are currently compliant with all legal and regulatory requirements. All government permits and licenses and statutory approvals are either granted or in the process of being granted.
Infrastructure	The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.	All current site infrastructure is suitable to the proposed mining plan.
Costs	The derivation of, or assumptions made, regarding projected capital costs in the study.	Mine development capital cost based on historical performance on site and life-of-mine forward planning. Plant and equipment capital also based on site experience and the LOM plan
	The methodology used to estimate operating costs.	All overhead costs and operational costs are projected forward on an A$/t based on historical data.
	Allowances made for the content of deleterious elements.	No allowances made.
	The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co- products.	Corporate guidance.
	The source of exchange rates used in the study.	Corporate guidance.
	Derivation of transportation charges.	Historic performance.
	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	Historic performance.
	The allowances made for royalties payable, both Government and private.	All State Govt. and third party royalties are built into the cost model.
Revenue factors	The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.	A$1,500/oz gold
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	Corporate guidance
Market assessment	The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.	All product is sold direct at spot market prices.
	A customer and competitor analysis along with the identification of likely market windows for the product.	Not relevant for gold.

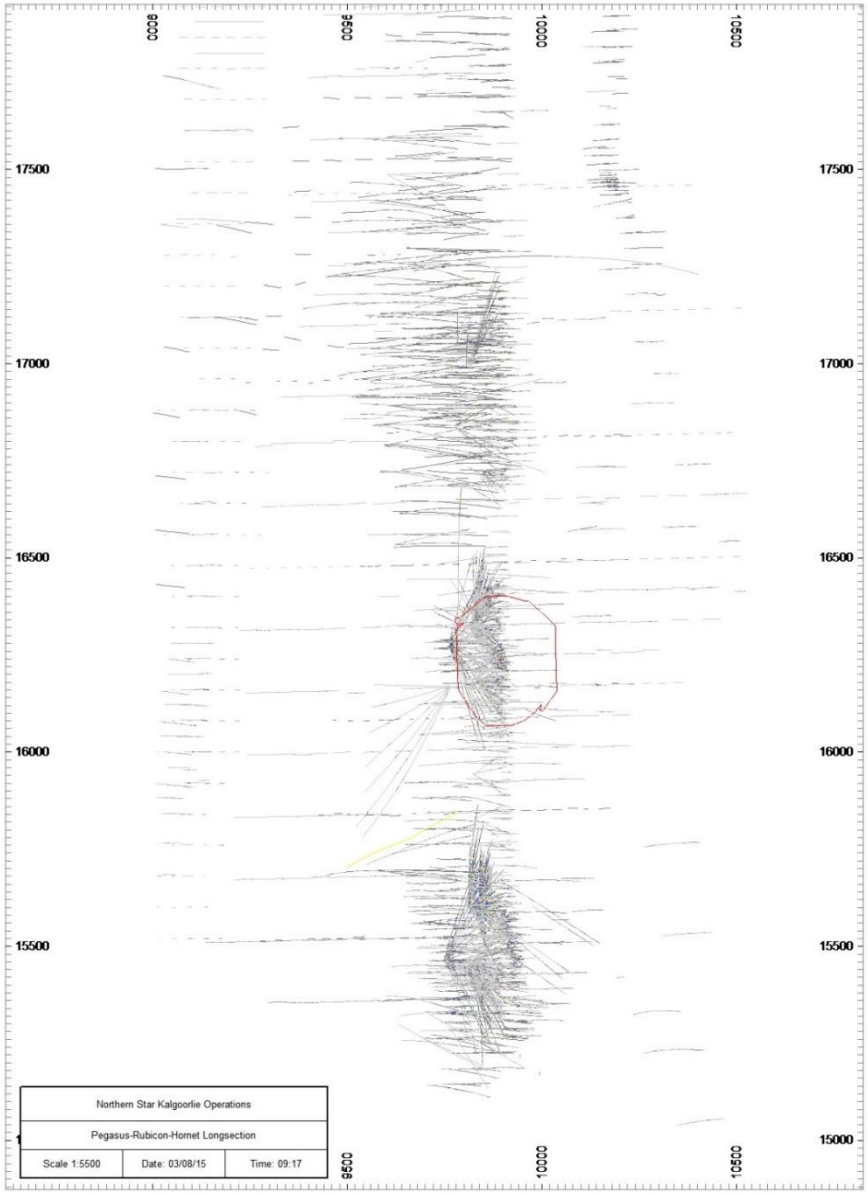
Criteria	JORC Code explanation	Commentary
	Price and volume forecasts and the basis for these forecasts.	Corporate guidance.
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	Not relevant for gold.
Economic	The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.	All costs assumptions are made based on historical performance from the mine and current economic forecast seen as representative of current market conditions.
	NPV ranges and sensitivity to variations in the significant assumptions and inputs.	Sensitivities assessed at varying gold prices.
Social	The status of agreements with key stakeholders and matters leading to social licence to operate.	Agreements are in place and are current with all key stakeholders.
Other	To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:	No issues.
	Any identified material naturally occurring risks.	No issues.
	The status of material legal agreements and marketing arrangements.	No issues.
	The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.	No issues.
Classification	The basis for the classification of the Ore Reserves into varying confidence categories.	All Ore Reserves include Proved (if any) and Probable classifications are based on Mineral Resource classifications as modified by subsequent grade control drilling and face sampling results.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The results accurately reflect the Competent Persons view of the deposit
	The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).	Nil
Audits or reviews	The results of any audits or reviews of Ore Reserve estimates.	There have been no external reviews of this Ore Reserve estimate
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve 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 reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.	Confidence in the model and Ore Reserve ESTIMATE is considered high based on current mine and reconciliation performance.
	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.	Estimates are global but will be reasonable accurate on a local scale.
	Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.	No modifying factors applied. There is high confidence in these models as the areas is well known and well drilled.
	It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Reconciliation results from Rubicon, Hornet, Pegasus and Raleigh to date reflects estimates in the Ore Reserve estimates.

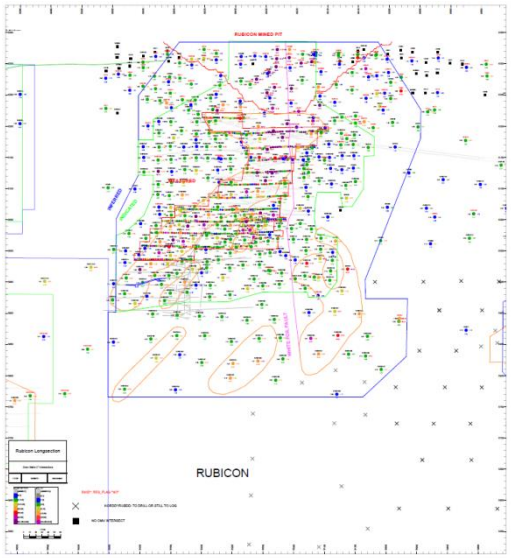


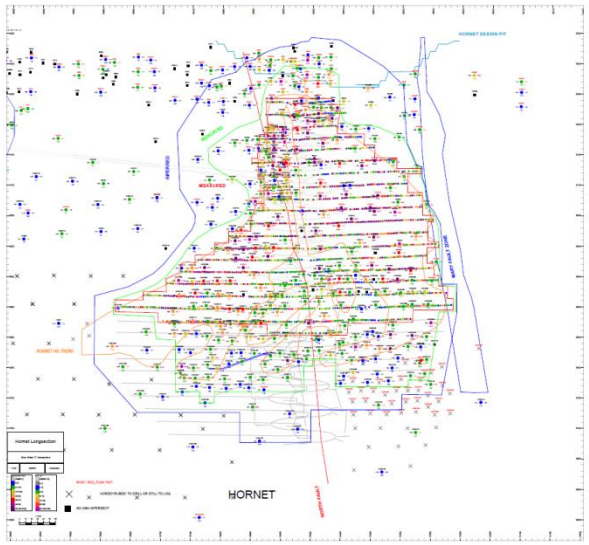


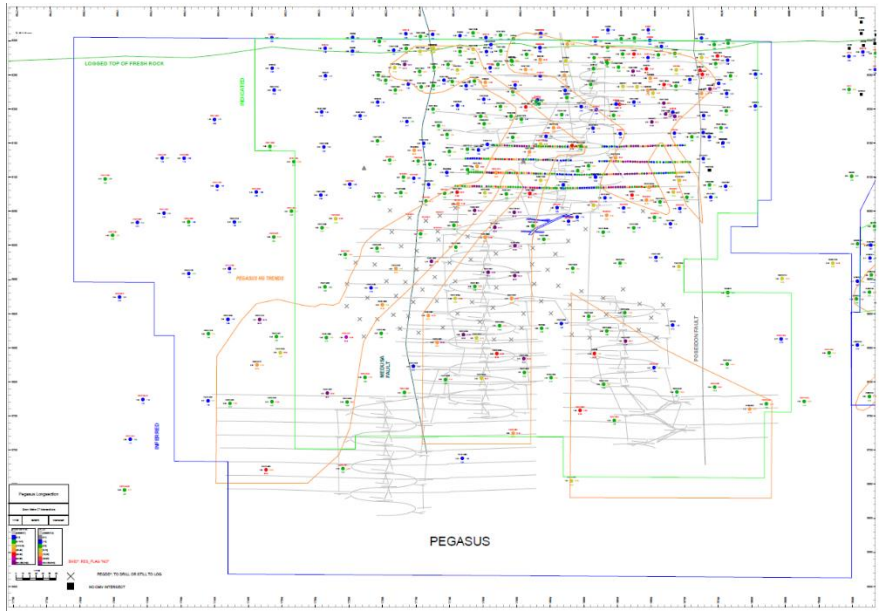


Plan View and Section Views of the Raleigh and Skinners Vein deposits









Plan and sections of the Rubicon Hornet and Pegasus Deposits

JORC CODE, 2012 EDITION – TABLE 1 REPORT: HORNET PIT– 30 JUNE 2016

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.	Sampling was completed using a combination of Reverse Circulation (RC) and Diamond Drilling (DD). RC drilling was used to drill pre-collars for many of the resource definition holes with diamond tails. Diamond drilling constitutes the remainder of the drilling.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Diamond core was transferred to core trays for logging and sampling. Half core samples were nominated by the geologist from both NQ2 and HQ diamond core, with a minimum sample width of either 20cm (HQ) or 30cm (NQ2). RC samples were split using a rig-mounted cone splitter on 1m intervals to obtain a sample for assay. 4m Composite spear samples were collected for most of each hole, with 1m samples submitted for areas of known mineralization or anomalism.
	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.	Samples were taken to Genalysis Kalgoorlie for preparation by drying, crushing to <3mm, and pulverising the entire sample to <75µm. 300g Pulps splits were then dispatched to Genalysis Perth for 50g Fire assay charge and AAS analysis.
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, face sampling, grade control and Diamond Drilling techniques were used at the K2 deposits. Diamond drillholes completed pre-2011 were predominantly NQ2 (50.5mm). All resource definition holes completed post 2011 were drilled using HQ (63.5mm) diameter core. Core was orientated using the Reflex ACT Core orientation system. RC Drilling was completed using a 5.75" drill bit, downsized to 5.25" at depth. 2 RC pre-collars were drilled followed by diamond tails. Pre-collar depth was to 160m or less if approaching known mineralization.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	RC drilling contractors adjust their drilling approach to specific conditions to maximise sample recovery. Moisture content and sample recovery is recorded for each RC sample. No recovery issues were identified in the RC drilling.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	For diamond drilling the contractors adjust their rate of drilling and method if recovery issues arise. All recovery is recorded by the drillers on core blocks. This is checked and compared to the measurements of the core by the geological team. Any issues are communicated back to the drilling contractor.
	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.	Recovery was excellent for diamond core and no relationship between grade and recovery was observed. For RC drilling, pre-collars were ended before known zones of mineralization and recovery was very good through any anomalous zones, so no issues occurred.
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.	All diamond core is logged for Regolith, lithology, veining, alteration, mineralisation and structure. Structural measurements of specific features are also taken through oriented zones.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	All logging is quantitative where possible and qualitative elsewhere. A photograph is taken of every core tray.
	The total length and percentage of the relevant intersections logged.	RC sample chips are logged in 1m intervals for the entire length of each hole. Regolith, lithology, alteration, veining and mineralisation are all recorded.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	All Diamond core is cut and half the core is taken for sampling. The remaining half is stored for later use.
	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	All RC samples are split using a rig-mounted cone splitter to collect a 1m sample 3-4kg in size. These samples were submitted to the lab from any zones approaching known mineralization and from any areas identified as having anomalous gold. Outside of mineralized zones spear samples were taken over a 4m interval for composite sampling.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Sampling quality is deemed appropriate

Criteria	JORC Code explanation	Commentary
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Field duplicates were taken for RC samples at a rate of 1 in 20
	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.	Sample preparation was conducted at Genalysis Kalgoorlie, commencing with sorting, checking and drying at less than 110°C to prevent sulphide breakdown. Samples are jaw crushed to a nominal -6mm particle size. If the sample is greater than 3kg a Boyd crusher with rotary splitter is used to reduce the sample size to less than 3kg (typically 1.5kg) at a nominal <3mm particle size. The entire crushed sample (if less than 3kg) or sub-sample is then pulverised to 90% passing 75µm, using a Labtechnics LM5 bowl pulveriser. 300g Pulp subsamples are then taken with an aluminium scoop and stored in labelled pulp packets.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Grind checks are performed at both the crushing stage(3mm) and pulverising stage (75µm), requiring 90% of material to pass through the relevant size.
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.	A 50g Fire assay charge is used with a lead flux, dissolved in the furnace. The prill is totally digested by HCl and HNO3 acids before Atomic absorption spectroscopy (AAS) determination for gold analysis.
	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.	No geophysical tools were used to determine any element concentrations
	Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie. lack of bias) and precision have been established.	Certified reference materials (CRMs) are inserted into the sample sequence randomly at a rate of 1 per 20 samples to ensure correct calibration. Any values outside of 3 standard deviations are re-assayed with a new CRM. Blanks are inserted into the sample sequence at a rate of 1 per 20 samples, This is random, except where high grade mineralisation is expected where blanks are inserted after the high grade sample to test for contamination. Failures above 0.2gpt are followed up, and re-assayed. New pulps are prepared if failures remain. Field Duplicates are taken for all RC samples (1 in 20 sample). No Field duplicates are submitted for diamond core.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	All significant intersections are verified by a Northern Star geologist during the drill hole validation process, and later by a Competent person to be signed off
	The use of twinned holes.	No known twinned holes were drilled for this data set
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. Discuss any adjustment to assay data.	Geological logging is captured using a wireless remote Acquire database if there network is available. If network is unavailable, data is entered via a remote licence set up into an offline Acquire database then transferred later into the live database. Both a hardcopy and electronic copy of these are stored, as well as being loaded in to the database using automatic acquire loaders. Assay files are received in csv format and loaded directly into the database by the Database administrator (DBA). A geologist then checks that the results have inserted correctly. Hardcopy and electronic copies of these are stored. No adjustments are made to this assay data.
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.	Planned hole locations are pegged using a Differential GPS by the field assistants The collar positions for underground diamond holes are located by the mine surveyors, During drilling, single-shot surveys are every 30m to ensure the hole remains close to design. This is performed using the Reflex Ez-Trac system. Upon hole completion, a gyroscopic survey is conducted by ABIMS taking readings every 5m for improved accuracy. Measurements are taken with reference to true north.
	Specification of the grid system used.	All data is collected using the local mine grid.
	Quality and adequacy of topographic control.	Quality topographic control has been achieved through Lidar data and survey pickups of holes over the last 15 years.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	Drill hole spacing across the area varies. For resource definition drilling, spacing was typically 20m x 20m to allow the resource to be upgraded to an Indicated Resource.
	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.	The data spacing is considered appropriate for Resource and Ore Reserve classification
	Whether sample compositing has been applied.	No compositing has been applied to these exploration results, although composite intersections are reported.

Criteria	JORC Code explanation	Commentary
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 the structures in the Kundana camp dip steeply (80°) to WSW. The Mary Fault structure has a shallow dip but orients to the NW, approximately 60°. To target these orientations the drillhole dips of 60-70° towards ~060° achieve high angle intersections on all structures.
	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.	No sampling bias is considered to have been introduced by the drilling orientation
Sample security	The measures taken to ensure sample security.	Prior to laboratory submission samples are stored by Northern Star Resources in a secure yard. Once submitted to the laboratories they are stored in a secure fenced compound, and tracked through their chain of custody and via audit trails
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	No audits or reviews have recently been conducted on sampling techniques.

Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	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.	All holes mentioned in this report are located within the Mining Lease M16/309 held by The East Kundana Joint Venture (EKJV). The EKJV is majority owned and managed by Northern Star Resources Limited (51%). The minority holding in the EKJV is held by Tribune Resources Ltd (36.75%) and Rand Mining Ltd (12.25%). Mining Lease M16/309 is subject to two royalty agreements. The agreements that are on M16/309 are the Kundana- Hornet Central Royalty and the Kundana Pope John Agreement No. 2602-13.
	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.	No known impediments exist and the tenements are in good standing
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	Since the late 1990's the Hornet area has been drilled heavily, initially by Gilt Edge Mining (GEM) then by Goldfields Exploration Pty Limited who drilled extensively from Hornet all the way to Drake prospects. By 2001-2002, AurionGold Pty Limited had undertaken two infill programs totalling 43 DD and 63 RC holes. In 2003, Placer Dome Asia Pacific (PDAP) acquired 100% ownership and undertook infill drilling programmes for the K2, K2A, K2B and the Mary fault mineralisation. By mid-2003, PDAP drilled a grade control program to cover the K2 mineralisation to a depth of 35m below surface. Since 2003 the drilling campaigns around the Hornet project area has ceased until late 2000's when Barrick Gold drilled a few holes around the Mary Fault area.
Geology	Deposit type, geological setting and style of mineralisation.	The Kundana camp is situated within the Norseman-Wiluna Greenstone Belt, in an area dominated by the Zuleika shear zone, which separates the Coolgardie domain from the Ora Banda domain. K2-style mineralisation (Hornet) consists of narrow vein deposits hosted by shear zones located along steeply-dipping overturned lithological contacts. The K2 structure is present along the contact between a black shale unit (Centenary shale) and intermediate volcanoclastics (Spargoville formation). Minor mineralization, termed K2B, also occurs further west, on the contact between the Victorious Basalt and Bent Tree Basalt (both part of the regional upper Basalt Sequence). A shallow dipping fault, offsets the K2 structure at the south end of Hornet. This contact exists as a brecciated material hosting within the intermediate volcanoclastic tuff.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: easting and northing of the drill hole collar elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar dip and azimuth of the hole down hole length and interception depth	Too many holes to practically list the complete dataset however a summary report has been collated to reflect the hole positions used for estimation.

Criteria	JORC Code explanation	Commentary
	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.	The exclusion of this data will not adversely impact on the understanding of this release.
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.	No exploration drill hole data is being released.
	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.	No exploration drill hole data is being released.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No exploration drill hole data is being released.
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results.	No exploration drill hole data is being released.
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	No exploration drill hole data is being released.
	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').	No exploration drill hole data is being released.
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.	Appropriate plans and section have been included in the body of this report.
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.	No exploration drill hole data is being released.
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.	Metallurgical test work was conducted on 7 hornet holes in 2011 with gold recoveries following cyanidation above 95%. Lime consumption was high and cyanide consumption was low.
Further work	The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).	Further work will continue in the near future to further attempt to extend the shallow Hornet mineralisation further north towards Rubicon. The drilling extents between Hornet and Rubicon is very sparse.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Future work may be conducted to test the continuity of mineralisation between Hornet and Rubicon

Section 3 Estimation and Reporting of Mineral Resources

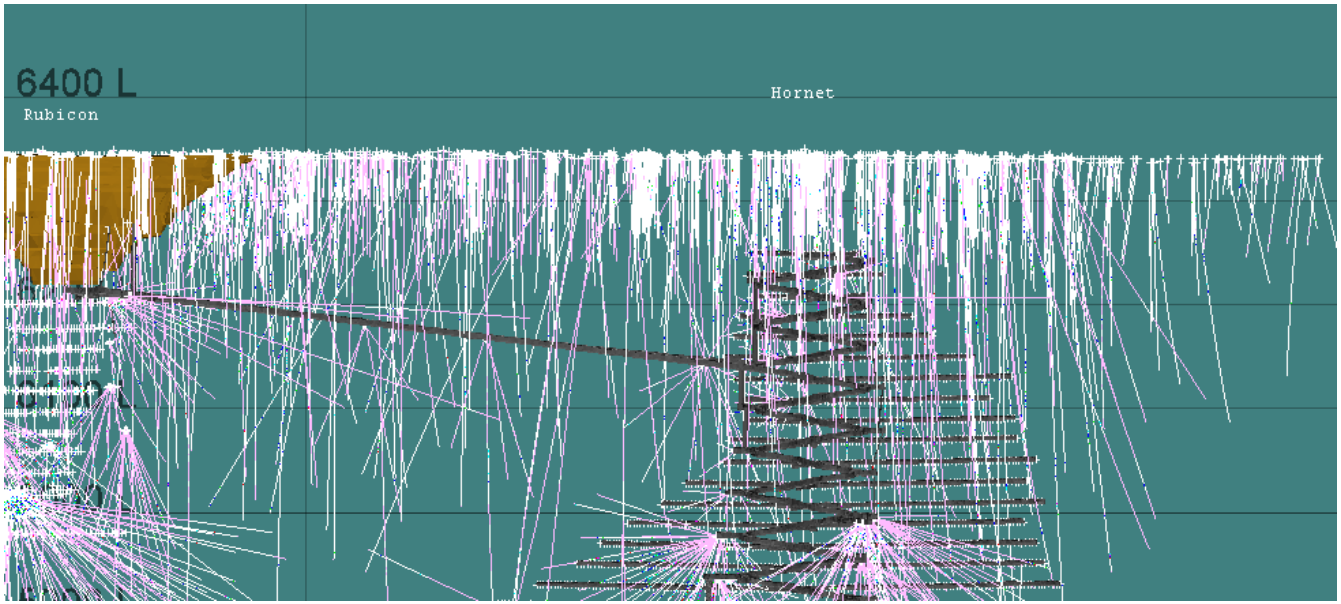
(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

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.	Sampling and logging data is either recorded on paper and manually entered into to an Acquire database, or transferred from a logging laptop into Acquire via an offline database. There are checks in place to avoid duplicate holes and sample numbers.
	Data validation procedures used.	Where possible, raw data is loaded directly to the database from laboratory and survey derived files.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	This resource estimate has been conducted by geologists working in the exploration department and in direct, daily contact with the ore body data used in this resource estimate.
	If no site visits have been undertaken indicate why this is the case.	Multiple site visits undertaken by geologists supervising the drilling programs and preparing the geological interpretation.

Criteria	JORC Code explanation	Commentary
Geological interpretation	Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.	The interpretation of the deposit was carried out using a systematic approach to ensure continuity of the geology and estimated mineral resource. The confidence in the geological interpretation is high with the information gained from ore development and underground drilling.
	Nature of the data used and of any assumptions made.	All available geological data was used in the interpretation including mapping, drillholes, 3D photogrammetry, structures.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	No alternative interpretations have been completed.
	The use of geology in guiding and controlling Mineral Resource estimation.	The interpretation of the main K2 structure is based on the presence of quartz veining and continuity between sections on the K2 structure. Drill core logging and face development mapping is used to create 3D constrained wireframes.
	The factors affecting continuity both of grade and geology.	Continuity is affected by the orientation of the K2 structure, and several dextral offset fault structures
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.	Strike length = > 600m Width = ~1-2m average Depth = from surface to ~500m maximum below surface
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 K2 domain mineralisation was subdivided into three zones to separate the main high grade core and the low grade Hanging wall and footwall alteration halos. The K2 core was defined by the presence of quartz, the alteration zones were constrained based on grade. 3 dimensional wireframes were created in Datamine Studio to define the volumes for the mineralised domains. Simple Kriging was used to estimate the Hornet resource. Drill holes were composited into 1m intervals down hole except for the supergene domains which were composited to 2m. The composite lengths were allowed to vary between 0.5m and 1.5m to ensure that no sampling was lost during the compositing process. The average grade and total length of the composite data was compared against the average grade and total length of the uncomposited data to check the compositing process. The distribution of composite lengths was checked to ensure that the majority of the composites were close to the targeted length. The local mean value used for Simple Kriging was calculated from the declustered mean of the top-cut composited sample data. Search distances used for estimation based on variogram ranges and vary by domain. Drill spacing is generally around 20m x 20m for the Indicated resource and around 40m x 40m for the Inferred resource. Top-cuts were applied to the sample data based on a statistical analysis of the data and vary by domain. The Kriging neighbourhood was refined using statistical measures of Kriging quality. The estimated grades were assessed against sample grades and against declustered mean values
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	Post estimation, resource estimations do not have tonnage or grade factors applied.
	The assumptions made regarding recovery of by-products.	No assumptions are made and only gold is defined for estimation
	Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).	No deleterious elements estimated in the model
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	Parent cell size is 10m x 10m x 10m. Sub-cell to 2.5m x 2.5m to suit the narrow north-south orientation of the majority of the domains. Search ellipsoids vary for each domain but are typically around 50 – 100m down plunge, 50m across plunge and 5m perpendicular to plunge.
	Any assumptions behind modelling of selective mining units.	No assumptions made.
	Any assumptions about correlation between variables.	No assumptions made.
	Description of how the geological interpretation was used to control the resource estimates.	"Mineralisation" wireframes are created within the geological shapes based on drill logging, face samples, and grade. Low grades can form part of an ore wireframe.
	Discussion of basis for using or not using grade cutting or capping.	Top-cuts were applied to the composited sample data with the intention of reducing the impact of outlier values on the average grade. Top cuts were selected based on a statistical analysis of the data with a general aim of not impacting the cut mean by more than 5%. Values selected range from 5gpt to 150gpt and vary by domain.

Criteria	JORC Code explanation	Commentary
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	Validation is through swath plots comparing composites to block model grades, along 20m eastings and RL. Visual checks were also made comparing model grades against the supporting sample data.
Moisture	Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	Tonnages are estimated on a dry basis.
Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied.	Cut-off grades for reporting the resource were developed using a gold price of A$1,700 per ounce and budgeted mining costs for 2015/16.
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.	Historical mining and reconciliation data does not affect wire frame interpretation.
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.	Metallurgical recovery factors have been developed based on extensive experience processing similar material from the Kundana area.
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.	A "Licence to Operate" is held by the operation which is issued under the requirement of the "Environmental Protection Act 1986", administered by the Department of Environment (DoE). The licence stipulates environmental conditions for the control of air quality, solid waste management, water quality, and general conditions for operation. Groundwater licenses are held for water abstraction, including production borefield water use for mineral processing, and mine dewatering, in accordance with the Rights in Water and Irrigation Act 1914. These licenses are also regulated by DoE and are renewable on a regular basis. Kanowna Operations conduct extensive environmental monitoring and management programs to ensure compliance with the requirements of the licences and lease conditions. An Environmental Management System is in place to ensure that Northern Star employees and contractors exceed environmental compliance requirements. The Kalgoorlie operations are fully permitted including groundwater extraction and dewatering, removal of vegetation, mineral processing, and open pits. Kalgoorlie Operations have been compliant with the International Cyanide Management Code since 2008.
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.	Bulk density was determined from surface diamond drillholes with intervals taken from mineralized and non-mineralised zones within the project area. The bulk densities are derived from wet and dry weighting of core no greater than 30cm total length with core samples selected by changes in lithology/alteration or every 30-40m where no change is evident.
	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.	No/minimal voids are encountered in the ore zones.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Bulk densities are applied to domains for the ore zone and interpreted weathering domains
Classification	The basis for the classification of the Mineral Resources into varying confidence categories.	Classification is based on a series of factors including: Geologic grade continuity Density of available drilling Statistical evaluation of the quality of the kriging estimate
	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.	This mineral resource estimate is considered representative.

Criteria	JORC Code explanation	Commentary
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	This resource has not been audited externally. Previous estimates of this area utilising the same, or very similar variables, have been reviewed by internal parties with protocols deemed appropriate.
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.	This mineral resource estimate is considered as robust and representative of the Kundana style of mineralisation. The application of geostatistical methods has helped to increase the confidence of the model and quantify the relative accuracy of the resource.
	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.	This resource report relates to the entirety of the K2 ore zone and surrounding dilution skins. Each of these will show local variability even though the global estimate reflects the total average tonnes and grade.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	No comparison with production data has been made.



Long section of all drilling in the Hornet Pit area

Section 4 Estimation and Reporting of Ore Reserves

(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.	Reported Ore Reserve is based on updated or depleted resource models for all areas of Rubicon/Hornet.
	Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	Mineral Resources are reported inclusive of Ore Reserves.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	No site visit has been conducted by the Competent Person.
	If no site visits have been undertaken indicate why this is the case.	Site visits have been conducted by multiple personnel involved in the project from NST. The Competent Person is satisfied that the descriptions of the planned infrastructure and locality provided by NST along with the surveyed 3D topography are sufficient information to carry out the mine design and classify the Ore Reserves.
Study status	The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.	Pre-Feasibility
	The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.	As above.
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	Cut-off grades were determined based on unit costs from the "pre-feasibility level" mining cost model. Costs have been sourced from contractor quotes based on a mine of similar size.
Mining factors or assumptions	The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).	Ore Reserves have been calculated by generating detailed mining shapes for the proposed open pit. All open pit mining shapes include planned and unplanned dilution, being waste material that is located within the minable shape. Open pit unplanned dilution has been modelled within the mining shapes as a skin of material likely to be taken additional to material considered to be the smallest mining unit (SMU). This method is considered to be appropriate given the expected ground conditions, orebody width and proposed mining style.
	The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.	The selected mining methods for the Hornet deposit are of a bench mining open pit method. The proposed open pit is to be mined using conventional open pit mining methods (drill, blast, load and haul) by a mining contractor utilising 120 t class excavators and 90 t trucks. This method is used widely in mines across Western Australia and is deemed appropriate given the mature of the ore body.
	The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc), grade control and pre-production drilling.	Pit wall slopes are based on recommendations provided by Barrick geotechnical reviews and based upon expected rock type, weathering profile and depth below surface.
	The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).	The mineral resource supplied by NST has been used for the open pit optimisation. To generate a series of 'nested' pit shells, a series of inputs are required to sufficiently estimate the value of the material being mined and the cost of extraction. The optimisation requires an economic value for each block in the model, as well as mining and milling costs. The cost of each block is derived from mining and processing costs, with the mining cost related to the block depth and the milling cost only being used if the block can be economically mined. Mining costs were based on quoted rates from a surface mining contractor for similar scaled operations. Revenue assumptions have been provided by Northern Star.
	The mining dilution factors used.	Physicals are reported within the generated mining shapes for the open pit Ore Reserve. SMU shapes have been generated for the reporting of Ore Reserve physicals. Dilution accounted for within the SMU is 18%; that is waste material carried within the mining shape. Mining recovery is considered to be 100% of the SMU.
	The mining recovery factors used.	No recovery factors were applied.
	Any minimum mining widths used.	The SMU dimensions for the Ore Reserve Estimate are 2.0 m Wide x 5.0 m High x 5.0 m Long.

Criteria	JORC Code explanation	Commentary
	The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.	Inferred material has not been included within this Ore Reserve estimate (treated as waste) but has been considered in LOM planning. It is assumed that Inferred material will be converted to Ore Reserve via grade control drilling which has been provided for and will be carried out ahead of mining.
	The infrastructure requirements of the selected mining methods.	Infrastructure required for the proposed Hornet Open Pit have been accounted for and included in all work leading to the generation of the Ore Reserve estimate. As there is currently infrastructure in place for the Rubicon/Hornet underground operations and the life of the project is limited planned infrastructure includes: Offices, workshops and associated facilities; Dewatering pipeline; Access Road; Waste Dump; and RoM Pad. Processing will be conducted offsite at NST Konawa Bell operation, hence no processing infrastructure is required.
Metallurgical factors or assumptions	The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.	Ore from the Hornet Open Pit operations is treated at the NST owned Kanowna Belle processing facility located adjacent to the Kanowna Belle mine. The plant is designed to handle approximately 1.8 million tonnes of feed per annum and has the capability to treat both refractory and free milling ores through the flotation circuit and associated concentrate roaster circuit, including carbon-in-leach (CIL) gold recovery, or bypassing the flotation circuit and going directly to a CIL circuit that is designed to treat flotation tails. Ore from the Rubicon/Hornet underground operations is currently processed at the Kanowna Bell facility.
	Whether the metallurgical process is well-tested technology or novel in nature.	Well tested for surface and underground ore.
	The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.	Metallurgical test work was carried out by ALS Ammtec on representative samples for the Hornet deposit. Based on current information provided by NST from Kanowna Bell metallurgical recovery factors are as follows: Oxide – 94% Transitional – 94% Fresh – 94%
	Any assumptions or allowances made for deleterious elements.	There has been no allowance for deleterious elements.
	The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.	Metallurgical test work was carried out by ALS Ammtec on representative samples for the Hornet deposit.
	For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?	Not applicable, gold only.
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	Environmental impacts and hazards are being considered as part of the DOIR application process. Waste rock characterisation and hydrogeological investigations indicates the rock mass is considered non-acid forming. Tailings from the open pit operation are proposed to be stored within the existing Tailings Storage Facility (TSF) at Kanowna Bell. A previously granted clearing permit has expired. This will be re-applied for and expected to be granted closer to expected start of the pit.
Infrastructure	The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.	There is currently infrastructure in place for the Rubicon/Hornet underground operations. Additional infrastructure is planned for the planned Hornet operations. TSF facilities are located Kanowna Belle processing facility located adjacent to the Kanowna Belle mine. It has been assumed that all development of surface infrastructure will be completed to enable to development of the Hornet Open Pit Resource. It has been assumed that there will be sufficient water available to develop the Project.
Costs	The derivation of, or assumptions made, regarding projected capital costs in the study.	Capital and operating costs have been sourced from supplier and contractor quotes as well as Entech's cost database through the "pre-feasibility study" process.

Criteria	JORC Code explanation	Commentary
	The methodology used to estimate operating costs.	A capital and operating cost model has been developed and has been used to complete a life of mine cash flow estimate.
	Allowances made for the content of deleterious elements.	Nil allowance, none expected.
	The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co- products.	Single commodity pricing for gold only, using a long-term gold price of A$1,500 per ounce as per NST corporate guidance
	The source of exchange rates used in the study.	NST report in Australian dollars. Therefore, no exchange rate is used or required
	Derivation of transportation charges.	All transportation charges are based supplier and contractor quotes. This cost component has been used to determine the cut-off grades as well as applied to the operating cash flow estimate.
	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	Processing costs are based on data supplied by NST. This cost component has been used to determine the cut-off grades as well as applied to the operating cash flow estimate.
	The allowances made for royalties payable, both Government and private.	WA State Government royalty of 2.5%. This cost component has been used to determine the cut-off grades as well as applied to the operating cash flow estimate.
Revenue factors	The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.	Revenue has been based on the commodity price and exchange data provided by NST. Single commodity pricing for gold only, using a long-term gold price of A$1,500 per ounce. 2.5% WA State Government royalty.
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	Corporate guidance.
Market assessment	The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.	Gold doré from the mine is to be sold at the Perth Mint.
	A customer and competitor analysis along with the identification of likely market windows for the product.	Not applicable.
	Price and volume forecasts and the basis for these forecasts.	Not applicable.
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	Not applicable.
Economic	The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.	The Ore Reserve estimate is based on a financial model for that has been prepared at a "pre-feasibility study" level of accuracy economic modelling. All inputs from mining operations, processing, transportation and sustaining capital as well as contingencies have been scheduled and evaluated to generate a full life of mine cost model. Economic inputs have been sourced from suppliers or generated from database information relating to the relevant area of discipline. A discount rate of 0% has been applied. The NPV of the project is strongly positive at the assumed commodity prices.
	NPV ranges and sensitivity to variations in the significant assumptions and inputs.	Sensitivities were conducted on metal price fluctuations of A$1,500 ± $200 per ounce. Due to the current short life, the project is not seen as highly sensitive to cost inputs.
Social	The status of agreements with key stakeholders and matters leading to social licence to operate.	Agreements are in place and are current with all key stakeholders including traditional land owner claimants
Other	To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:	None
	Any identified material naturally occurring risks.	None
	The status of material legal agreements and marketing arrangements.	None
	The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the	All permitting was in place but the clearing permit has expired. This will be re-applied for and expected to be granted closer to expected start of the pit.

Criteria	JORC Code explanation	Commentary
	materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.	
Classification	The basis for the classification of the Ore Reserves into varying confidence categories.	All Ore Reserves are reported as Probable classification which is made up of only Indicated Resource material. The Ore Reserve shapes have been generated using practical mining constraints.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The results appropriately reflect the Competent Persons view of the deposit
	The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).	No Measured Mineral Resource contributes to Probable Ore Reserves.
Audits or reviews	The results of any audits or reviews of Ore Reserve estimates.	The Ore Reserves reporting processes has been subjected to an internal review by Entech's senior technical personnel in July 2016.
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve 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 reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.	The design, schedule and financial model on which the Ore Reserve is based has been completed to a "pre-feasibility study" standard, with a corresponding level of confidence.
	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.	All modifying factors have been applied to design mining shapes on a global scale.
	Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.	The Ore Reserve is quoted to a "pre-feasibility' level. There is high confidence in the modifying factors and quoted Ore Reserve as physicals have been reported within minable shapes optimised to the SMU within the final pit design.
	It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	

Competent Persons Statements

The information in this announcement that relates to exploration results, data quality, geological interpretations and Mineral Resource estimations for the EKJV Project areas is based on information compiled by Nick Jolly and fairly represents this information. Mr. Jolly is a Member of the Australian Institute of Mining and Metallurgy who is a full-time employee of Northern Star Resources Limited who has sufficient experience which is relevant to the style 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. Jolly consents to the inclusion in this announcement of the matters based on this information in the form and context in which it appears.

The information in this announcement that relates to Ore Reserve estimations for the Company's Project areas is based on information compiled by Jeff Brown and fairly represents this information. Mr. Brown is a Member of the Australian Institute of Mining and Metallurgy who is a full-time employee of Northern Star Resources Limited and has sufficient experience which is relevant to the style 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. Brown consents to the inclusion in this announcement of the matters based on this information in the form and context in which it appears.

Appendix 3

RALEIGH SIGNIFICANT INTERSECTIONS - Exploration

Drill Hole #	Easting (Mine Grid)	Northing (Mine Grid)	Drill hole collar RL (Mine Grid)	Dip (degrees)	Azimuth (degrees, Mine Grid)	End of hole depth (m)	Downhole From (m)	Downhole To (m)	Downhole Intersection (m)	Au (gpt) uncut	Est True Thickness (m)
RURD282	9112	18049	6060	-9	137	85.1	72.24	72.50	0.3	93.2	0.1
RURD286	9112	18050	6059	-31	167	138.0	117.90	119.25	1.4	68.1	0.3
RURD287	9113	18050	6059	-67	139	113.5	91.59	92.54	1.0	69.7	0.3
RURD289	9121	18146	6119	8	140	148.0			NSI		
RURD290	9121	18145	6119	7	154	178.8			NSI		
RURD292	9128	18154	6118	-11	132	104.3			NSI		
RURD293	9121	18145	6118	-8	145	130.2			NSI		
RURD294	9121	18145	6118	-7	159	173.9			NSI		
RURD295	9073	18018	5995	23	84	104.7	92.15	93.00	0.9	34.9	0.6
RURD296	9073	18018	5995	23	121	116.9	97.82	98.50	0.7	43.6	0.3
RURD297	9073	18018	5994	-14	127	93.0	72.55	73.20	0.7	18.3	0.4
RURD298	9073	18018	5994	-11	153	131.5	107.52	108.20	0.7	30.5	0.1
RURD299	8923	17883	5788	6	107	119.8	107.87	110.30	2.4	7.1	1.7
RURD300	8923	17883	5788	6	130	140.9			NSI		
RURD301	8923	17883	5788	4	145	182.8	159.15	160.75	1.6	3.9	0.4
RURD304	8923	17883	5786	-48	116	137.9	119.60	120.75	1.2		
RURD306	8921	17881	5786	-31	155	186.0	168.90	169.70	0.8	5.7	0.1
RURD307	8873	17846	5650	-1	116	129.0			NSI		
RURD308	8873	17846	5650	-1	136	156.2			NSI		
RURD309	8873	17846	5649	-28	120	126.0			NSI		
RURD311	8873	17846	5649	-50	124	150.0			NSI		
RURD314	8873	17846	5649	-64	133	197.4	158.40	159.00	0.6	90.8	0.2
RURD320	9029	17963	5922	0	169	230.7	211.30	212.80	1.5	11.8	0.3
RURD320	9029	17963	5922	0	169	230.7	213.80	214.80	1.0	27.3	0.2
RURD321	9029	17963	5922	-8	165	173.1	155.00	156.20	1.2	61.1	0.1
RURD322	9029	17963	5922	-7	170	197.3	182.40	183.95	1.6	7.4	0.3
RURD324	9029	17963	5922	-24	172	170.7	154.00	155.16	1.2	102.0	0.4
RURD326	9029	17964	5921	-40	177	179.9	155.00	156.00	1.0	25.9	0.8
RURD331	8873	17848	5649	-28	75	123.1	100.00	100.50	0.5	3.7	0.5
RURD331	8873	17848	5649	-28	75	123.1			NSI		
RURD332	8873	17848	5649	-34	60	138.1	107.80	109.30	1.5	10.7	1.4
RURD332	8873	17848	5649	-34	60	138.1	125.00	125.75	0.8	4.2	0.7
RURD332	8873	17848	5649	-34	60	138.1			NSI		
RURD332	8873	17848	5649	-34	60	138.1			NSI		
RURD332	8873	17848	5649	-34	60	138.1			NSI		
RURD333	8873	17848	5649	-41	51	150.0			NSI		
RURD334	8873	17848	5649	-55	66	150.0	135.90	136.30	0.4	2.4	0.3
RURD335	8873	17848	5649	-65	65	168.0	151.20	152.64	1.4	2.0	1.0
RURD337	9113	18053	6060	9	51	117.0			NSI		
RURD338	9113	18053	6061	12	77	93.0			NSI		
RURD339	9113	18049	6061	13	116	86.5	70.45	70.85	0.4	4.6	0.2
RURD340	9113	18049	6061	8	145	113.7	100.64	101.68	1.0	6.8	0.2
RURD341	9112	18049	6061	4	160	159.0	144.05	144.55	0.5	10.9	0.3
RURD345	9112	18049	6060	-8	172	210.0	186.00	186.80	0.8	19.7	0.4
RURD347	9112	18050	6059	-27	180	222.1	215.00	216.50	1.5	7.0	0.6
RURD348	8972	17918	5856	-7	104	106.0	87.13	87.47	0.3	7.1	0.3
RURD349	8972	17918	5855	-19	118	105.0	86.09	86.40	0.3	5.1	0.3
RURD349	8972	17918	5855	-19	118	105.0	86.40	87.62	1.2	4.5	0.8
RURD352	8971	17917	5856	-4	149	155.8	136.70	137.00	0.3	67.1	0.1
RURD355	8971	17917	5856	-8	161	195.4	181.00	182.80	1.8	12.0	0.1
RURD356	9029	17963	5922	5	167	236.7	204.90	206.10	1.2	28.9	0.3
RURD361	9044	18017	5993	9	161	285.5	265.25	266.90	1.7	2.8	0.1
RURD363	9044	18017	5993	7	169	450.8			NSI		
RURD388	9114	18050	6060	-9	132	90.1	68.00	69.00	1.0	2.1	0.5
RURD392	9113	18050	6059	-25	140	84.0	66.90	67.30	0.4	34.3	0.2
RURD393	9113	18050	6059	-16	151	102.0	85.85	86.15	0.3	136.0	0.1
RURD393	9113	18050	6059	-16	151	102.0	86.15	86.50	0.4	15.4	0.2
RURD394	9113	18050	6059	-18	161	132.0	113.50	114.10	0.6	2.4	0.0
RURD398	9112	18050	6059	-23	168	155.7	134.88	135.75	0.9	1.6	0.2
RURD399	9112	18050	6059	-21	172	168.1	152.30	153.40	1.1	134.5	0.3
RURD402	9112	18049	6059	-28	172	174.0	152.49	153.00	0.5	3.4	0.3

RALEIGH SIGNIFICANT INTERSECTIONS - Resource Definition											
Drill Hole #	Easting (Mine Grid)	Northing (Mine Grid)	Drill hole collar RL (Mine Grid)	Dip (degrees)	Azimuth (degrees, Mine Grid)	End of hole depth (m)	Downhole From (m)	Downhole To (m)	Downhole Intersection (m)	Au (gpt) uncut	Est True Thickness (m)
RURD284	9113	18053	6059	-56	92	92.4	68.65	69.15	0.5	2.7	0.4
RURD302	8927	17896	5787	-41	57	149.8			NSI		
RURD305	8923	17883	5786	-38	142	158.9			NSI		
RURD312	8872	17845	5649	-40	148	170.8	144.18	144.63	0.5	2.6	0.3
RURD316	9030	17963	5923	10	145	147.2	120.50	121.00	0.5	2.2	0.3
RURD317	9030	17963	5923	9	153	155.6			NSI		
RURD318	9030	17963	5923	8	159	175.4	154.32	158.60	4.3	4.4	2.5
RURD325	9029	17964	5921	-20	178	239.9	225.80	227.00	1.2	29.4	0.5
RURD326	9029	17964	5921	-40	177	179.9	155.00	156.00	1.0	25.9	0.7
RURD330	8857	18071	5676	-55	123	189.2	172.25	172.95	0.7	14.2	0.3
RURD336	9113	18051	6059	-28	50	110.5	78.26	78.56	0.3	22.7	0.3
RURD342	9112	18049	6059	-12	166	150.0	132.60	134.74	2.1	27.3	0.4
RURD343	9112	18049	6059	-15	172	182.8	167.35	168.00	0.7	4.4	0.2
RURD344	9112	18049	6059	-23	175	186.1	165.25	167.00	1.8	90.8	0.5
RURD346	9112	18050	6059	-18	178	270.0	240.60	241.00	0.4	2.5	0.2
RURD350	8971	17917	5857	11	137	152.8	132.25	132.80	0.6	339.0	0.2
RURD351	8971	17917	5856	-6	133	124.0	104.43	104.80	0.4	459.0	0.2
RURD353	8971	17917	5856	-13	146	146.7	116.90	119.10	2.2	10.5	1.3
RURD353	8971	17917	5856	-13	146	146.7	123.00	124.00	1.0	4.7	0.2
RURD357	9029	17964	5922	1	167	215.7	191.50	192.34	0.8	55.0	0.4
RURD359	9029	17964	5922	-4	171	230.7	204.95	206.00	1.1	268.0	0.3
SKVGC112	9031	17964	5922	-25	132	96.0	78.20	79.25	1.1	70.1	0.5
SKVGC162	9103	17954	5920	-61	259	55.0	32.00	36.00	4.0	21.2	2.5
SKVGC162	9103	17954	5920	-61	259	55.0	47.63	48.00	0.4	36.7	0.2
SKVGC163	9103	17954	5920	-62	283	51.2	28.60	31.00	2.4	5.8	1.5
SKVGC163	9103	17954	5920	-62	283	51.2	32.83	33.20	0.4	6.4	0.3
SKVGC163	9103	17954	5920	-62	283	51.2	42.49	43.00	0.5	3.6	0.3
SKVGC164	9103	17954	5920	-53	297	50.1	30.10	33.15	3.1	13.2	2.9
SKVGC164	9103	17954	5920	-53	297	50.1	35.65	36.10	0.5	2.4	0.4
SKVGC165	9103	17955	5919	-57	315	49.1	27.56	30.00	2.4	2.9	2.3
SKVGC165	9103	17955	5919	-57	315	49.1	31.00	35.75	4.8	12.2	4.4
SKVGC166	9103	17954	5920	-45	317	50.2	30.75	33.35	2.6	16.4	2.6
SKVGC166	9103	17954	5920	-45	317	50.2	37.01	37.75	0.7	2.4	0.7
SKVGC167	9103	17955	5919	-47	334	51.0	29.00	31.00	2.0	11.7	1.7
SKVGC167	9103	17955	5919	-47	334	51.0	35.80	36.50	0.7	42.7	0.6
SKVGC167	9103	17955	5919	-47	334	51.0	39.82	40.35	0.5	4.9	0.5
SKVGC168	9104	17966	5919	-45	316	49.0	33.00	35.20	2.2	30.4	2.1
SKVGC169	9104	17966	5919	-37	327	53.3	39.85	41.57	1.7	14.4	1.6
SKVGC170	9108	17983	5919	-44	317	45.3	11.00	13.30	2.3	11.6	2.2
SKVGC170	9108	17983	5919	-44	317	45.3	17.00	17.87	0.9	14.1	0.8
SKVGC170	9108	17983	5919	-44	317	45.3	21.85	22.25	0.4	3.1	0.3
SKVGC170	9108	17983	5919	-44	317	45.3	26.50	27.00	0.5	4.5	0.4
SKVGC170	9108	17983	5919	-44	317	45.3	32.60	40.00	7.4	15.4	7.2
SKVGC171	9110	17998	5918	-49	301	42.2	13.40	14.00	0.6	23.2	0.4
SKVGC171	9110	17998	5918	-49	301	42.2	16.00	17.37	1.4	11.1	1.3
SKVGC171	9110	17998	5918	-49	301	42.2	24.00	30.85	6.9	16.9	6.8
SKVGC172	9109	17998	5919	-34	314	44.1	0.00	2.35	2.4	7.3	2.0
SKVGC172	9109	17998	5919	-34	314	44.1	7.00	13.10	6.1	5.0	5.9
SKVGC172	9109	17998	5919	-34	314	44.1	29.53	33.00	3.5	21.7	3.4
SKVGC172	9109	17998	5919	-34	314	44.1	36.40	37.75	1.4	2.4	1.3
SKVGC172	9109	17998	5919	-34	314	44.1	38.89	39.43	0.5	2.2	0.5
SKVGC173	9110	18006	5919	-29	305	42.2	3.50	8.00	4.5	5.7	4.2
SKVGC173	9110	18006	5919	-29	305	42.2	13.00	15.00	2.0	33.1	1.9
SKVGC173	9110	18006	5919	-29	305	42.2	20.50	21.60	1.1	32.2	1.0
SKVGC173	9110	18006	5919	-29	305	42.2	26.50	38.40	11.9	1.6	11.5
SKVGC174	9110	18007	5919	-37	325	42.2	1.00	5.12	4.1	3.0	3.9
SKVGC174	9110	18007	5919	-37	325	42.2	12.00	12.45	0.5	2.5	0.4
SKVGC174	9110	18007	5919	-37	325	42.2	17.70	18.00	0.3	3.0	0.3
SKVGC174	9110	18007	5919	-37	325	42.2	25.60	31.00	5.4	24.1	1.0
SKVGC174	9110	18007	5919	-37	325	42.2	35.00	35.40	0.4	5.3	0.1
SKVGC175	9110	18007	5919	-22	337	51.4	31.40	34.00	2.6	8.6	2.0
SKVGC175	9110	18007	5919	-22	337	51.4	41.10	41.40	0.3	28.6	0.2
SKVGC176	9110	18007	5919	-6	341	50.9	2.00	18.00	16.0	12.2	10.7
SKVGC176	9110	18007	5919	-6	341	50.9	23.60	26.00	2.4	2.5	1.6
SKVGC176	9110	18007	5919	-6	341	50.9	32.00	32.95	1.0	11.9	0.6
SKVGC176	9110	18007	5919	-6	341	50.9	42.80	44.00	1.2	3.2	0.8
SKVGC176	9110	18007	5919	-6	341	50.9	45.80	46.10	0.3	3.6	0.2
SKVGC176	9110	18007	5919	-6	341	50.9	47.30	47.95	0.7	20.7	0.4