



10 September 2018

## Corporate Details

### Ordinary Shares:

791,970,324

### Market Capitalisation:

~\$158 million

### Cash and bullion at 30 June 2018:

~\$13.6 million

### Debt at 30 June 2018:

NIL

ASX Code: **MOY**

## Board of Directors

**Greg Bittar**

Non-Executive Chairman

**Bruno Lorenzon**

Non-Executive Director

**Tim Kennedy**

Non-Executive Director

**Peter Lester**

Non-Executive Director

## Management

**Peter Cash**

Chief Executive Officer

**Dean Will**

Chief Operating Officer

**Ray Parry**

Chief Financial Officer and  
Company Secretary

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# Outstanding new high-grade results of up to 54.9 g/t transform outlook for Golden Eagle

## New geological structure identified within the existing pit design, with potential to significantly increase resource

- Significant new north-trending mineralised structure identified within the existing pit design at the flagship Golden Eagle deposit, the largest gold deposit defined at the Nullagine Project to date.
- Assay results include:
  - 4m @ 15.34g/t from 23m, incl. 1m @ 54.90g/t (GERC13443)
  - 8m @ 18.91g/t from 20m, incl. 7m @ 21.45g/t (GERC13442)
  - 3m @ 18.18g/t from 12m, incl. 2m @ 26.60g/t (GERC13444)
  - 1m @ 25.40g/t Au from 22m (GERC13445)
  - 4m @ 5.48g/t from 11m, incl. 1m @ 18.40g/t (GERC13446)
  - 6m @ 3.73g/t from 24m, incl. 2m @ 9.32g/t (GERC13441)
- Newly identified structure runs oblique to the main north-east trending mineralised lodes at Golden Eagle.
- Assay results, together with new modelling, suggests that a number of cross-cutting mineralised structures may be present at Golden Eagle, with potential to expand the near-term mining inventory.
- Follow-up drilling to commence later this month to confirm strike extent and depth potential.
- This represents the second major exploration breakthrough delivered through the Company's reinterpretation of existing high-quality exploration datasets, following the discovery of a new greenfields target at Golden Eagle South West last month.

Millennium Minerals Limited (ASX: MOY) ("Millennium" or the "Company") is pleased to advise that it has made another significant exploration breakthrough at its 100%-owned Nullagine Gold Project in WA.

Recent drilling to test a new geological interpretation of the mineralisation controls at the Golden Eagle deposit has delivered outstanding high-grade assay results which have substantially upgraded the potential for significant increases in the Resource inventory at this flagship deposit.

The new results have been returned in close proximity to current mining areas at Golden Eagle, where a significant pre-strip is in its final stages and mining of high-grade ore is about to commence.

Recent drilling at Golden Eagle has confirmed the presence of a cross-cutting mineralised structure that runs oblique to the main mineralised lodes, with assay results returning broad, high-grade intercepts of gold mineralisation.

Assay results from the drilling include:

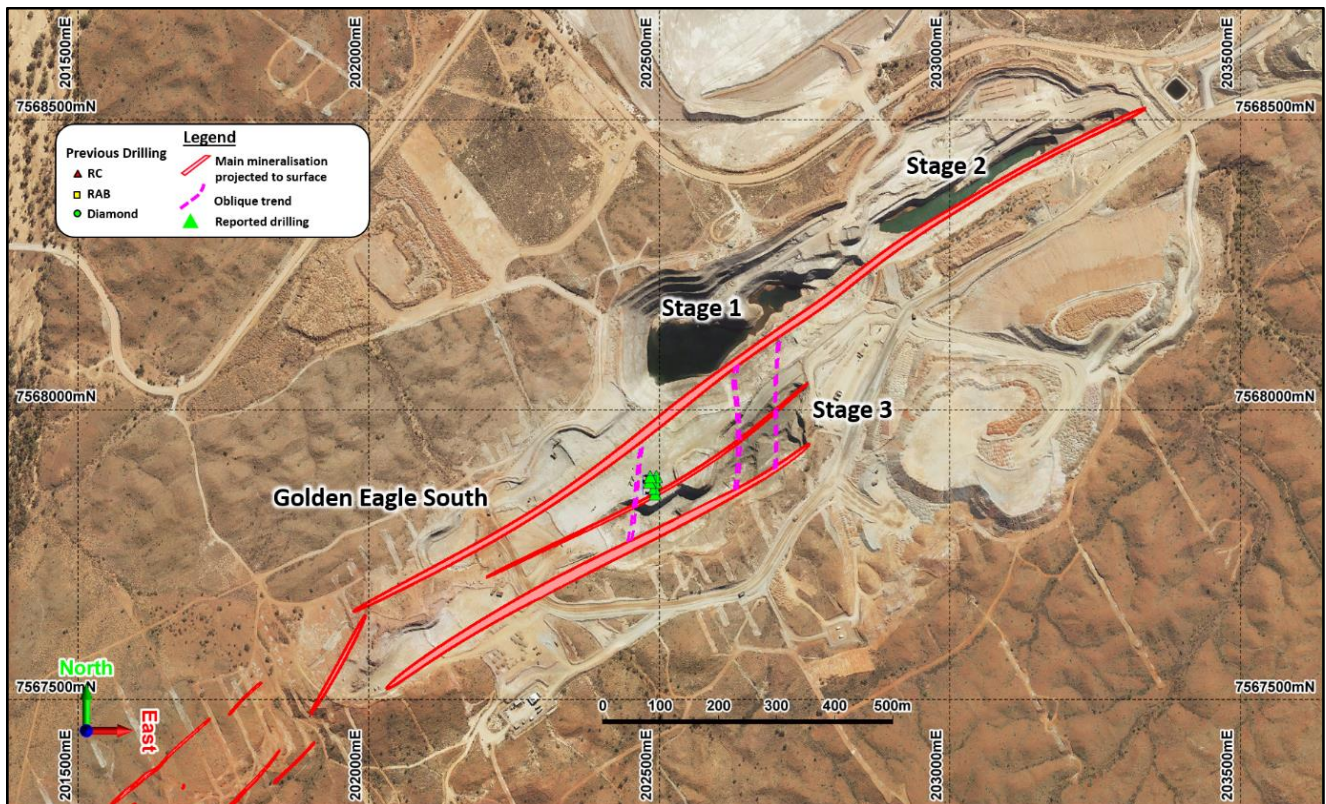
- 4m @ 15.34g/t Au from 23m including 1m @ 54.90g/t Au (GERC13443);
- 8m @ 18.91g/t Au from 20m including 7m @ 21.45g/t Au (GERC13442);
- 3m @ 18.18g/t Au from 12m including 2m @ 26.60g/t Au (GERC13444);
- 1m @ 25.40g/t Au from 22m (GERC13445);
- 4m @ 5.48g/t Au from 11m including 1m @ 18.40g/t Au (GERC13446);
- 6m @ 3.73g/t Au from 24m including 2m @ 9.32g/t Au (GERC13441).

The results indicate that, in addition to the previous interpretation of a series of parallel north-east trending mineralised lodes at Golden Eagle, the deposit may in fact contain a number of north trending cross-cutting structures. If confirmed, this new interpretation could deliver a significant uplift in both tonnes and grade within the deposit.

Given that the pre-strip of Golden Eagle is currently well advanced, and the results fall within an existing pit shell, any increase in the resource could be rapidly incorporated into the mining schedule.

The discovery was the result of a combination of mapping and geophysical modelling, completed as part of Millennium's ongoing reinterpretation of its existing exploration datasets.

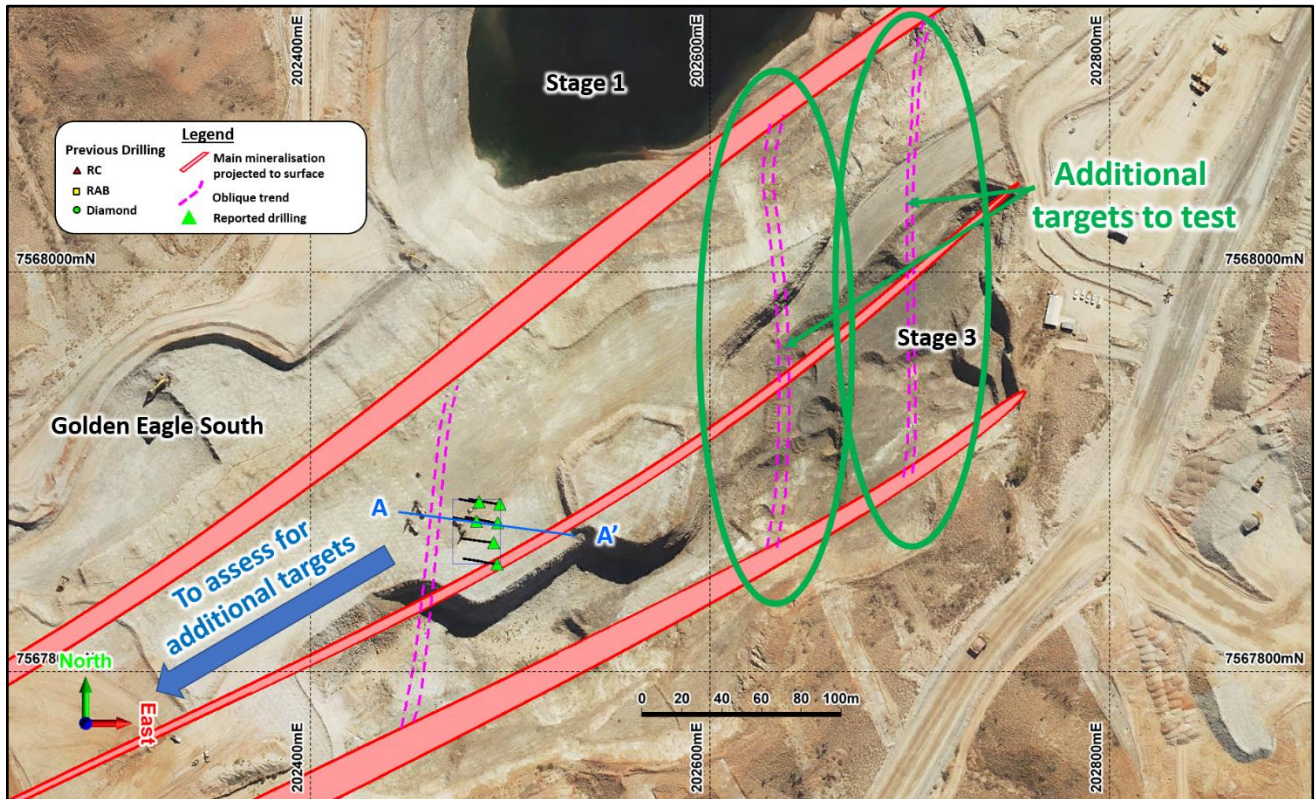
To test the theory, a close-spaced Reverse Circulation drill program was completed comprising six RC holes for 181m, with the holes drilled orthogonal to the mapped and interpreted north-trending mineralised cross-cutting structures. High-grade results were returned from all six holes. See Appendix 1 for hole details and [Figure 1](#) for locations:



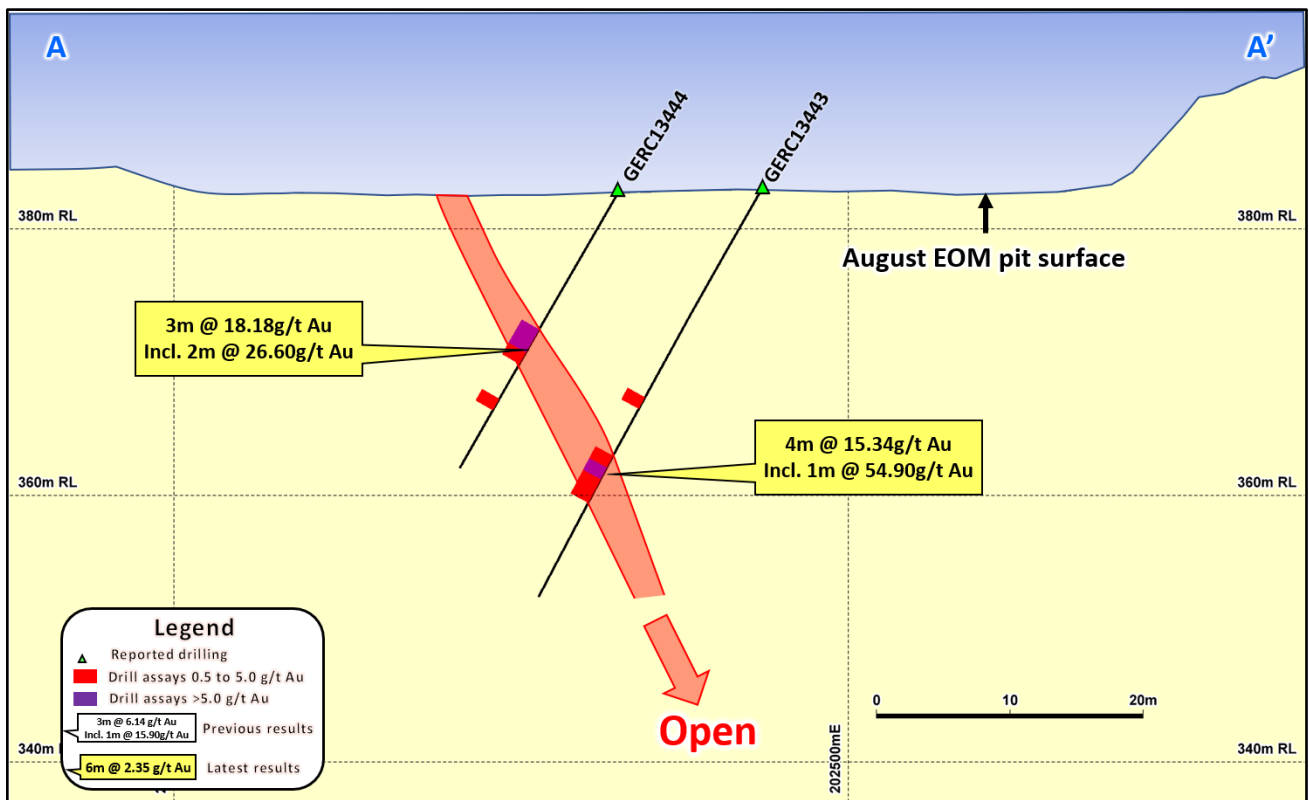
**Figure 1 – Location of reported drilling targeting mineralisation oblique (dashed purple lines) to the bulk of the mineralisation at Golden Eagle (red polygons).**



These results confirm the interpreted easterly dip (see [Figure 3](#) along with [Figure 2](#) for location of cross-section) for the mapped north-trending mineralised zone. Previous drilling targeting the main mineralised trends was oriented to the south-east, which is sub-parallel to the dip of this new high-grade zone, and therefore drilling would have been unlikely to identify the mineralisation.



**Figure 2 – Plan view illustrating reported holes testing the high-grade mineralisation and additional comparable positions (dashed purple lines) to target.**



**Figure 3 – Cross-section illustrating the east dip (sub-parallel to previous drilling) of the high-grade mineralisation.**

Further drilling will be conducted later this month to extend the known strike and dip lengths of this high-grade mineralisation. Further drilling will also be conducted to test similar structural positions identified by the mapping program (see [Figure 2](#)).

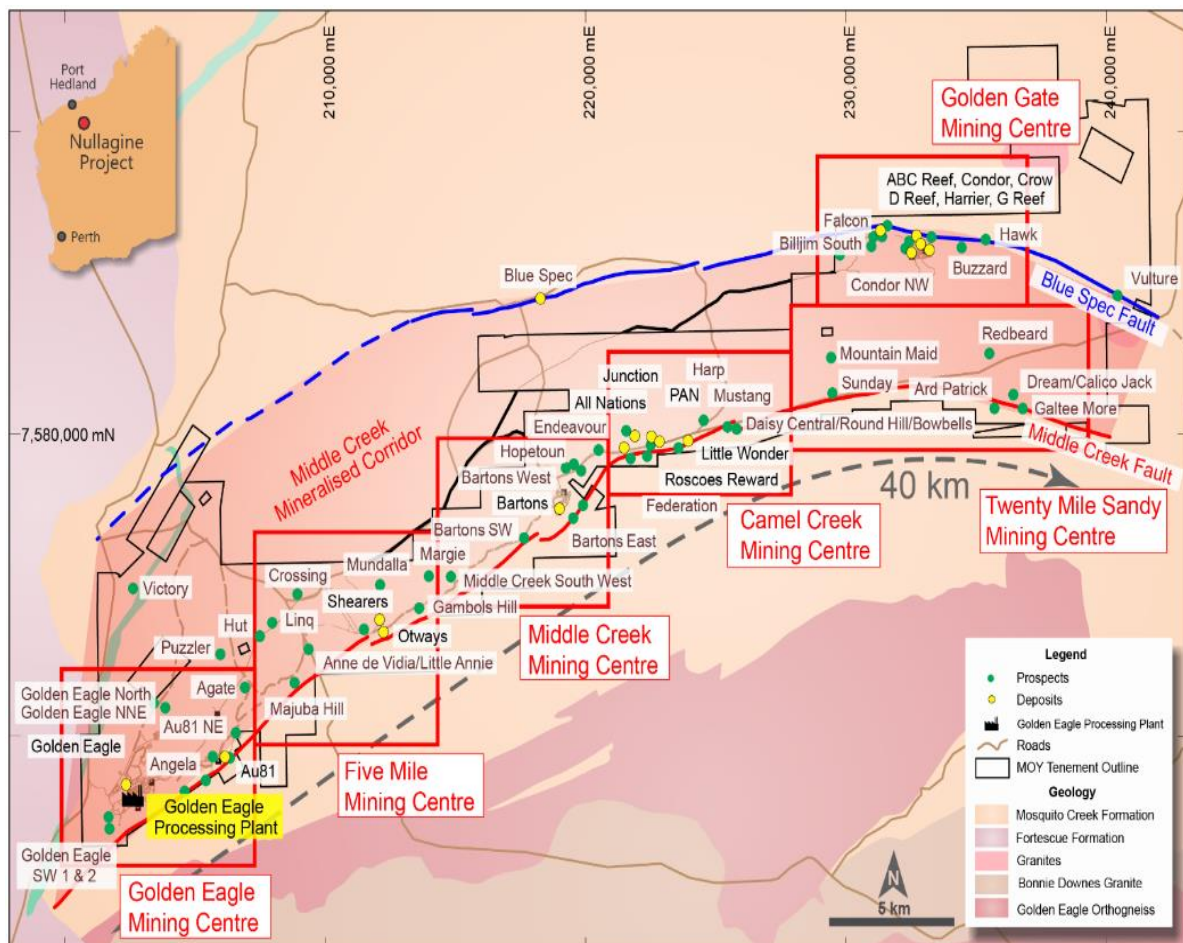
Millennium Chief Executive Peter Cash said the reinterpretation of the Golden Eagle deposit could deliver a major increase in its existing resource and reserve base.

"While it's still early days and there's more work to be done, this could be a genuine game-changer for the Company," he said. "If drilling confirms the presence of multiple high-grade cross-cutting mineralised structures within the deposit, we could be in a position to rapidly expand the near-term mining inventory, with Golden Eagle set to re-enter the production schedule later this year.

"We intend to conduct additional drilling as an immediate priority to test this theory.

"Following the discovery of a major new greenfields exploration target at Golden Eagle South West late last month (see ASX Announcement 27 August 2018), this represents the second major exploration breakthrough delivered through the reinterpretation of our exploration datasets.

"We are continuing to review data across the Nullagine Project area, where we believe there is outstanding potential to identify new discoveries," he said.



**Figure 4: Nullagine Project Location Plan over regional geology**

**ENDS**

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### **Competent Persons Statements – Exploration Results**

*Mr Andrew Dunn (MAIG), a geologist employed full-time by Millennium Minerals Limited, compiled the technical aspects of this Report. Mr Dunn is a member of the Australian Institute of Geoscientists and has sufficient experience that is relevant to this style of mineralization and type of deposit under consideration and to the activity that is being reported on 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 Dunn consents to the inclusion in the report of the matters in the form and context in which it appears.*

## Appendix 1 – Table of significant results for Golden Eagle

Hole_ID	GDA East	GDA North	RL	Azi	Dip	Depth (m)		From (m)	To (m)	Width (m)	Grade (g/t Au)	Gram-metres
GERC13441	202493	7567854	385	275	-60	36	Incl.	24	30	6	3.73	22.4
								26	28	2	9.32	18.6
								33	34	1	0.56	0.6
GERC13442	202492	7567865	385	275	-60	33	Incl.	20	28	8	18.91	151.3
								20	27	7	21.45	150.2
GERC13443	202494	7567874	385	275	-60	35	Incl.	18	19	1	0.50	0.5
								23	27	4	15.34	61.4
								24	25	1	54.90	54.9
GERC13444	202483	7567875	384	275	-60	24	Incl.	12	15	3	18.18	54.5
								12	14	2	26.60	53.2
								18	19	1	2.40	2.4
GERC13445	202495	7567884	384	275	-60	32	Incl.	22	23	1	25.40	25.4
								22	23	1	25.40	25.4
								26	27	1	0.83	0.8
GERC13446	202485	7567885	384	275	-60	21	Incl.	11	15	4	5.48	21.9
								12	13	1	18.40	18.4

AA= Awaiting Assays. NSA = No Significant assays. Intersections are calculated with 0.5g/t Au lower cut-off and a maximum of 2 consecutive metres of internal dilution. Higher grade intersections are calculated with 3g/t Au lower cut-off and a maximum of 2 consecutive metres of internal dilution.



Section 1 Sampling Techniques and Data

Criteria	JORC Code Explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <li>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.</li> <li>Include reference to measures taken to ensure sample representatively and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>No surface samples were used in any estimation of Mineral Resources or Ore Reserves.</li> <li>Sampling at Golden Eagle was carried out using the Reverse Circulation (RC) drilling. Standard samples were inserted to the sampling stream at a ratio of 1:50.</li> <li>RC drilling was carried out with a 5.5-inch face-sampling bit, 1m samples collected through a cyclone and cone splitter to form a 2 - 3kg sub-sample. All sub-samples were fully pulverised at the laboratory to &gt;85% passing - 75um, to produce a 50g charge for Fire Assay with AAS finish.</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <li>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).</li> </ul>	<ul style="list-style-type: none"> <li>Reverse circulation (RC) drilling was carried out with a 5.5-inch face-sampling bit.</li> </ul>
Drill sample recovery	<ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>A record of the RC sample recovery and moisture content was recorded by on rig geologists. Overall sample weight and quality were good to very good (1.5-3.0 kg).</li> <li>ALS records sample weights on receipt of samples. This was used to help track sample recovery.</li> <li>Core recoveries from diamond drilling were generally &gt;98%.</li> <li>There is no observed correlation between sample recovery and gold grade.</li> </ul>
Logging	<ul style="list-style-type: none"> <li>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.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>All of the RC drilling has been captured in chip trays.</li> <li>Geological logging is both qualitative and quantitative in nature. Logging is carried out for lithology, colour, grain size, regolith, alteration, weathering, veining and mineralisation. Sulphide and vein content were logged as a percentage of the interval.</li> <li>RC chip and core trays are retained at site.</li> <li>All of the intersections were logged.</li> </ul>

Criteria	JORC Code Explanation	Commentary
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> <li>• If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>• If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>• For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>• Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>• 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.</li> <li>• Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul style="list-style-type: none"> <li>• The recent 1 metre RC samples were split using a rig mounted cone splitter. The vast majority of the samples were dry with moist and wet samples were recorded.</li> <li>• The sample sizes are industry-standard and considered to be appropriate to correctly represent mineralisation at the deposits based on: the style of mineralisation, the thickness and consistency of the intersections, the sampling methodology and assay ranges for gold.</li> <li>• Field duplicates were taken from the second aperture of the cone splitter at a rate of 1 in 50.</li> </ul>
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> <li>• The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>• For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> <li>• 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.</li> </ul>	<ul style="list-style-type: none"> <li>• The industry best practice standard assay method of 50g charge Fire Assay with AAS finish was used to determine total Au content.</li> <li>• Commercially prepared, predominantly matrix-matched low, medium &amp; high value certified reference QAQC standards were inserted at a rate of 1:50 into the sample stream.</li> <li>• The QAQC results from this protocol were considered to be acceptable.</li> <li>• No geophysical tools were used to determine any element concentrations used for these results.</li> <li>• Sample preparation checks for fineness were carried out by the laboratory as part of their internal procedures to ensure the grind size of 85% passing 75 micron was being attained. Laboratory QAQC involves the use of internal lab standards using certified reference material, blanks, splits and replicates as part of the in house procedures.</li> <li>• Results highlight that sample assay values are accurate.</li> </ul>
Verification of sampling and assaying	<ul style="list-style-type: none"> <li>• The verification of significant intersections by either independent or alternative company personnel.</li> <li>• The use of twinned holes.</li> <li>• Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>• Discuss any adjustment to assay data.</li> </ul>	<ul style="list-style-type: none"> <li>• Intersections were checked by alternative company personnel to check they were reported correctly.</li> <li>• No twin holes were drilled in the programme. Previous significant intersections were verified with close spaced drilling.</li> <li>• Sampling is directly uploaded to the Logchief software and it is synchronised to the database.</li> <li>• Assay results were not adjusted.</li> </ul>
Location of data points	<ul style="list-style-type: none"> <li>• Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> </ul>	<ul style="list-style-type: none"> <li>• Post completion of the drilling the drill collars were surveyed with a Real Time Kinematic (RTK) DGPS device to a <math>\pm 10\text{mm}</math> positional precision. All collars are then validated against planned positions as a cross check. Surveyed collar co-ordinates</li> </ul>



Criteria	JORC Code Explanation	Commentary
	<ul style="list-style-type: none"> <li>• <i>Specification of the grid system used.</i></li> <li>• <i>Quality and adequacy of topographic control.</i></li> </ul>	<p><i>are uploaded into the Company SQL database.</i></p> <ul style="list-style-type: none"> <li>• <i>Grid datum is GDA94 51K (East Pilbara).</i></li> <li>• <i>Downhole surveys were completed on all holes at 30m maximum downhole intervals with a preference of an initial survey at ~12m downhole. Surveys were taken using a single shot camera or via electronic multi-shot survey tool (Reflex, Camprodual or Camteq), lithologies have negligible magnetic susceptibility (greywacke). Re-surveying was carried out to check the quality of measurements.</i></li> <li>• <i>Hole RLs were compared to the pit surface pick up carried out by mine surveyors.</i></li> </ul>
<i>Data spacing and distribution</i>	<ul style="list-style-type: none"> <li>• <i>Data spacing for reporting of Exploration Results.</i></li> <li>• <i>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.</i></li> <li>• <i>Whether sample compositing has been applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>RC drilling varied from 10m X 20m to 10mx10m.</i></li> <li>• <i>Thus far the drill spacing has been sufficient to establish geological and grade continuity.</i></li> <li>• <i>None of the reported sample intervals were composited. In previous resource estimates some &gt;1m RC assay composites were used. A small number of core composites were retained with a length of less than 1m (minimum 0.3m).</i></li> </ul>
<i>Orientation of data in relation to geological structure</i>	<ul style="list-style-type: none"> <li>• <i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i></li> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Geological mapping and structural measurements have been taken from the area and mostly confirm the presence of the interpreted orientation of mineralisation as defined by the drilling. Based upon the above information the drilling of this mineralised zone was largely perpendicular to it.</i></li> <li>• <i>Sample bias is not considered to be significant for the targeted zone. However, any mineralisation parallel to the main trend of Golden Eagle would have significant sample bias in these holes.</i></li> </ul>
<i>Sample security</i>	<ul style="list-style-type: none"> <li>• <i>The measures taken to ensure sample security.</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Samples were given an ID, cross checked by field personnel that they corresponded to the assigned interval. Samples were collected on completion of each hole and delivered to the onsite assay laboratory for dispatch to Perth. Monitoring of sample dispatch is undertaken for samples sent from site and to confirm that samples have arrived in their entirety and intact at their destination.</i></li> <li>• <i>Sample security is managed with dispatch dates noted for each samples by the technician, this is checked and confirmed at the Perth laboratory on receipt of samples and discrepancies are corrected via telephone link up with the on-site and Perth laboratories.</i></li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>• <i>The results of any audits or reviews of sampling techniques and data reviews.</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Internal lab audits conducted by Millennium have shown no material issues.</i></li> </ul>

## Section 2 Reporting of Exploration Results

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

Criteria	JORC Code Explanation	Commentary
Mineral tenement and land tenure status	<ul style="list-style-type: none"> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings. The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</li> </ul>	<ul style="list-style-type: none"> <li>All the deposits and prospects lie within fully granted Mining Leases within the Pilbara Gold Field (46), as detailed below. All the tenements are in good standing with no known impediments.</li> <li>Golden Eagle<sup>^*</sup> - M46/186 &amp; M46/300 (100% MML);</li> </ul> <p><sup>^</sup> These tenements are located within the Palyku title claim (WC99/16).</p> <p><sup>*</sup> A \$10/oz royalty payable to Tyson Resources Pty Ltd.</p>
Exploration done by other parties	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>Exploration by other parties has been reviewed and taken into account when exploring. Previous RAB &amp; RC drilling. Millennium has re-drilled in areas that other parties had drilled to gain a greater confidence in those results.</li> </ul>
Geology	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul style="list-style-type: none"> <li>The Nullagine Project deposits are structurally controlled, sediment hosted, lode Au style of deposit. They are all situated in the Mosquito Creek Basin that consists predominantly of Archean aged, turbidite sequences of sandstone, siltstone, shale and conglomerate units.</li> </ul>
Drill hole Information	<ul style="list-style-type: none"> <li>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: <ul style="list-style-type: none"> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li> </ul>	<ul style="list-style-type: none"> <li>Provided in a table that relates exploration results to the drill hole information including: hole co-ordinates, RL, dip, azimuth, end of hole depth, downhole length and interception depths.</li> <li>All of the current drilling with results returned has been reported.</li> </ul>

Criteria	JORC Code Explanation	Commentary
Data aggregation methods	<ul style="list-style-type: none"> <li>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.</li> <li>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul style="list-style-type: none"> <li>All of the exploration prospects have their significant intersections reported with a lower cut-off of 0.5g/t Au and maximum of two consecutive metres of internal dilution. Higher grade intersections use a lower cut-off of 5g/t Au and maximum of two consecutive metres internal dilution.</li> <li>All samples reported were one metre in length. Thus no aggregation methods were required to derive intersections.</li> <li>No metal equivalents were used.</li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').</li> </ul>	<ul style="list-style-type: none"> <li>Only selected previous exploration data related to the included target is presented for sake of clarity.</li> <li>The relationships between the quoted intersections are shown on the relevant plans/cross-sections within the release. Most of the drilling is orthogonal to the mineralisation; however, in early exploration the dip direction is sometimes uncertain and thus holes some holes can be drilled sub-parallel to the mineralisation producing longer and higher grade intersection than the true intercept. Quoted widths are down-hole widths. True-widths are likely to be approximately 70-90% of down-hole widths. The drill hole orientations relative to the ore zones have ensured accurate interpretations and 3D modelling.</li> </ul>
Diagrams	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Significant exploration results are tabulated in the release with drill hole plans to show them in context.</li> <li>Representative maps have been included in the report along with documentation.</li> </ul>
Balanced reporting	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>All of the current drill results have been reported for the project.</li> </ul>
Other substantive exploration data	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Pit mapping has indicated additional structures that could have been poorly tested by previous drilling. The mineralisation at Golden Eagle is primarily associated with a combination of moderate foliation, strong silica± albite± sericite alteration and strong limonite staining or pyrite± arsenopyrite content.</li> </ul>
Further work	<ul style="list-style-type: none"> <li>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including</li> </ul>	<ul style="list-style-type: none"> <li>Further drilling is planned at Golden Eagle to follow up on the strike and depth extents of this high-grade mineralisation. A review of additional zone of similar mineralisation will be carried out and drill tested accordingly.</li> </ul>



Criteria	JORC Code Explanation	Commentary
	<i>the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i>	

## Section 1 Sampling Techniques and Data

Criteria	JORC Code Explanation	Commentary
<b>Sampling techniques</b>	<ul style="list-style-type: none"> <li>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.</li> <li>Include reference to measures taken to ensure sample representatively and the appropriate calibration of any measurement tools or systems used.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Samples were collected using Reverse circulation (RC) drilling.</li> <li>Weighing of the second sample split is undertaken to ensure that the sample splitter on the RC drill rig is set up appropriately.</li> <li>Standard samples were inserted to the RC sampling stream at a ratio of 1:50.</li> <li>RC drilling was carried out with a 5.5-inch face-sampling bit, 1m samples collected through a cyclone and cone splitter to form a 2-3 kg sub-sample. All sub-samples were fully pulverised at the laboratory to &gt;85% passing 75 µm, to produce a 50 g charge for Fire Assay with AAS finish.</li> <li>Rock chip samples were taken from outcrop that appeared to be mineralised. Samples were comprised of chips taken across the outcrop of interest to comprise a sample weighing between 1.5 and 3.5 kg. These were crushed to &gt;85% &lt;10 mm in a Jaw Crusher before being pulverised to &gt;85% passing 75 µm. A 25 g sub-sample was digested in an aqua regia solution with Au determined via AAS machine.</li> </ul>
<b>Drilling techniques</b>	<ul style="list-style-type: none"> <li>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).</li> </ul>	<ul style="list-style-type: none"> <li>RC drilling was carried out with a 5.5-inch face-sampling bit.</li> </ul>
<b>Drill sample recovery</b>	<ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and</li> </ul>	<ul style="list-style-type: none"> <li>A record of the RC sample recovery and moisture content was recorded by the rig geologists. Overall sample weight and quality were good to very good (2 to 3.5 kg).</li> <li>ALS records sample weights on receipt of samples. This was used to help track sample recovery.</li> <li>There is no correlation between sample recovery and gold grade.</li> </ul>

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	<i>whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</i>	
<b>Logging</b>	<ul style="list-style-type: none"> <li>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.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>All of the RC drilling has been captured in chip trays for reference.</li> <li>Geological logging is both qualitative and quantitative in nature. Logging is carried out for lithology, colour, grain size, regolith, alteration, weathering, veining and mineralisation. Sulphide and vein content were logged as a percentage of the interval.</li> <li>RC chip trays are retained at site.</li> <li>All of the intersections were logged.</li> </ul>
<b>Sub-sampling techniques and sample preparation</b>	<ul style="list-style-type: none"> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>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.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul style="list-style-type: none"> <li>One metre RC samples were split using a rig mounted cone splitter. The vast majority of the samples were dry with the moist and wet samples were recorded.</li> <li>The sample sizes are industry-standard and considered to be appropriate to correctly represent mineralisation at the deposits based on: the style of mineralisation, the thickness and consistency of the intersections, the sampling methodology and assay ranges for gold.</li> <li>Field duplicates were taken from the second aperture of the cone splitter at a rate of 1 in 50.</li> </ul>
<b>Quality of assay data and laboratory tests</b>	<ul style="list-style-type: none"> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>The industry best practice standard assay method of 50 g charge Fire Assay with AAS finish was used to determine total Au content of the RC samples.</li> <li>Commercially prepared, predominantly matrix-matched low, medium &amp; high value certified reference QAQC standards were inserted at a rate of 1:50 into the RC sample stream.</li> <li>The QAQC results from this protocol were considered to be acceptable.</li> <li>No geophysical tools were used to determine any element concentrations used for these results.</li> <li>Sample preparation checks for fineness were carried out by the laboratory as part of their internal procedures to ensure the grind size of 85% passing 75 µm was being attained. Laboratory QAQC involves the use of internal lab standards using certified reference material, blanks, splits and replicates as part of the in-house procedures.</li> <li>Results highlight that sample assay values are accurate.</li> </ul>

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<b>Verification of sampling and assaying</b>	<ul style="list-style-type: none"> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul style="list-style-type: none"> <li>Intersections were checked by alternative company personnel to check they were reported correctly.</li> <li>No twin holes were drilled in the programme. Previous significant intersections were verified with close spaced drilling.</li> <li>Sampling is directly uploaded to the LogChief software and it is synchronised to the database.</li> <li>Assay results were not adjusted.</li> </ul>
<b>Location of data points</b>	<ul style="list-style-type: none"> <li>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li>Post completion of the drilling the RC collars were surveyed with a Real Time Kinematic (RTK) DGPS to a <math>\pm 10</math> mm positional precision. All collars were then validated against planned positions as a cross check. Surveyed collar co-ordinates are uploaded into the Company SQL database.</li> <li>Grid datum is GDA94 51K (East Pilbara).</li> <li>Downhole surveys were completed using a using a gyroscope and are considered to be accurate.</li> </ul>
<b>Data spacing and distribution</b>	<ul style="list-style-type: none"> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul style="list-style-type: none"> <li>The two drill holes collars were 215 m apart and were designed to test a zone of variable magnetism associated with NE-trending structures.</li> <li>None of the reported sample intervals were composited. Data aggregation for reporting is described in this table.</li> </ul>
<b>Orientation of data in relation to geological structure</b>	<ul style="list-style-type: none"> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	<ul style="list-style-type: none"> <li>Drilling was designed perpendicular to targets associated with interpreted NE-trending structures. However, there is currently insufficient information to confirm the orientation of the reported mineralisation.</li> </ul>
<b>Sample security</b>	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>Samples were given a unique identification number, cross checked by field personnel that they corresponded to the assigned interval. Samples were collected on completion of each hole and delivered to the onsite assay laboratory for dispatch to Perth. Monitoring of sample dispatch is undertaken for samples sent from site and to confirm that samples have arrived in their entirety and intact at their destination.</li> <li>Sample security is managed with dispatch dates noted for each samples by the technician, this is checked and confirmed at the Perth laboratory on receipt of samples and discrepancies are corrected via telephone link up with the on-site and Perth laboratories.</li> </ul>



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<b>Audits or reviews</b>	<ul style="list-style-type: none"><li><i>The results of any audits or reviews of sampling techniques and data reviews.</i></li></ul>	<ul style="list-style-type: none"><li><i>Internal lab audits conducted by Millennium have shown no material issues.</i></li></ul>

## Section 2 Reporting of Exploration Results

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

Criteria	JORC Code Explanation	Commentary
<b>Mineral tenement and land tenure status</b>	<ul style="list-style-type: none"> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</li> </ul>	<ul style="list-style-type: none"> <li>The Nullagine Gold Project prospects and deposits lie within fully granted Mining Leases within the Pilbara Gold Field (46), as detailed below. All the tenements are in good standing with no known impediments.</li> <li>M46/186 (100% MML);</li> <li>M46/267 (100% MML);</li> <li>M46/300 (100% MML);</li> <li>These tenements are located within the Palyku title claim (WC99/16) and there is a \$10/oz royalty payable to Tyson Resources Pty Ltd.</li> </ul>
<b>Exploration done by other parties</b>	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>Millennium has reviewed exploration undertaken by other parties at Nullagine. Previous work has not assessed exploration targets similar to those described in this announcement.</li> </ul>
<b>Geology</b>	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul style="list-style-type: none"> <li>The Nullagine Gold Project deposits are structurally controlled, sediment-hosted, lode gold style deposits. They are all situated in the Mosquito Creek Basin that consists predominantly of Archean aged, turbidite sequences of sandstone, siltstone, shale and minor conglomerate units.</li> </ul>
<b>Drill hole Information</b>	<ul style="list-style-type: none"> <li>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: <ul style="list-style-type: none"> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li> </ul>	<ul style="list-style-type: none"> <li>A summary of the reported drilling is provided in a table and includes: hole co-ordinates, RL, dip, azimuth, end of hole depth, downhole length and interception depths.</li> <li>All of the current drilling with results returned has been reported.</li> </ul>

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<b>Data aggregation methods</b>	<ul style="list-style-type: none"> <li>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.</li> <li>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul style="list-style-type: none"> <li>All of the exploration prospects have their significant intersections reported with a lower cut-off grade of 0.5 g/t Au and maximum of two consecutive metres of internal dilution. Higher grade intersections use a lower cut-off grade of 3 g/t Au and maximum of two consecutive metres internal dilution.</li> <li>All RC samples reported were one metre in length.</li> <li>No metal equivalents were used.</li> </ul>
<b>Relationship between mineralisation widths and intercept lengths</b>	<ul style="list-style-type: none"> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').</li> </ul>	<ul style="list-style-type: none"> <li>The drilling was planned perpendicular to the strike of interpreted mineralised structures; however, in early exploration the dip direction is sometimes uncertain. It is not known whether the reported drilling is unbiased or drilled sub-parallel to the mineralisation which would result in longer and higher-grade intersection than the true intercept.</li> <li>Quoted widths are downhole widths.</li> </ul>
<b>Diagrams</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Significant exploration results are tabulated in the release with drill hole plans to show them in context.</li> <li>Representative maps have been included in the report along with documentation.</li> </ul>
<b>Balanced reporting</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>All of the current drill results have been reported for the project.</li> </ul>
<b>Other substantive exploration data</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Outcrops of quartz veins have been previously mapped at Golden Eagle. Mineralisation is primarily associated with a combination of quartz veining, shearing, strong sericite alteration and strong limonite staining or pyrite-arsenopyrite content.</li> </ul>
<b>Further work</b>	<ul style="list-style-type: none"> <li>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul style="list-style-type: none"> <li>Further drilling is proposed to follow up on the intersected mineralisation.</li> <li>A gravity survey will commence in the coming weeks. This survey will support the interpretation of geology, alteration and structures associated with the mineralisation in three dimensions.</li> </ul>