MILLENNIUM
MINERALS LIMITED

ASX Code: MOY

3 July, 2018

Corporate Details

Ordinary Shares:
791,970,324

Market Capitalisation:
~$150 million

Cash and bullion at 31 March 2018:
~$23.4 million

Debt:
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

Contact Details

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High-grade Ore Reserve for Redbeard

Head grade of 3.5g/t Au makes Redbeard the highest-grade open pit deposit defined at Nullagine to date

Latest exploration results at Golden Gate indicate potential for further High-Grade Resource growth

- **Updated Probable Ore Reserve completed for the Redbeard open pit oxide deposit:**
  - **153,000t @ 3.5g/t Au for 17,200oz of contained gold**
- **Updated Reserve represents a Resource-to-Reserve conversion rate of ~76% and makes Redbeard the highest grade open pit deposit defined at Nullagine to date**
- **Mining to commence in late July, with the deposit expected to contribute to strong production growth in the second half of CY2018 towards a 100kozpa production run rate**
- **Exploration at Redbeard has now transitioned to deeper drilling to assess the potential for a future underground mining operation**
- **Further positive exploration results received from the Golden Gate Mining Centre, located adjacent to Redbeard**
- **Golden Gate was last mined in 2014, producing 55,952oz at an average grade of 2.58g/t Au making it one of the highest-grade open pit oxide ore sources mined at Nullagine**
- **Latest results include:**

  Goshawk Prospect

  - ***3m @ 7.51g/t Au from 53m including 2m @ 10.13g/t Au (GGX0214)***
  - ***4m @ 4.34g/t Au from 36m including 1m @ 10.75g/t Au (GGX0216)***
  - ***7m @ 1.21g/t Au from 29m (GGX0217)***
  - ***6m @ 3.76g/t Au from 14m including 3m @ 6.22g/t Au (GGX0219)***
  - ***18m @ 1.22g/t Au from 5m (GGX0248)***

  H Reef Prospect

  - ***2m @ 3.41g/t Au from 5m (GGX0204)***
  - ***8m @ 1.91g/t Au from 36m (GGX0198)***

  Sparrow Prospect

  - ***6m @ 1.59g/t Au from 25m (GGX0190)***
  - ***4m @ 1.57g/t Au from 43m (GGX0190)***

  Magpie Prospect

  - ***3m @ 3.49g/t Au from 6m, including 1m @ 6.78g/t Au (GGX0089)***
- **Interpretation of results is underway with a view to designing follow-up drilling programs aimed at establishing JORC Maiden Mineral Resources**

Millennium Minerals Limited (**Millennium** or **the Company** – ASX: MOY) is pleased to advise that gold production is on-track to commence from the high-grade Redbeard oxide deposit later this month, with the completion of an updated Probable Ore Reserve estimate comprising 153,000 tonnes grading 3.5g/t Au for 17,200oz of contained gold.

The head grade of 3.5g/t gold makes Redbeard the highest-grade open pit gold deposit defined at the Company's Nullagine Gold Project in WA to date.

The Probable Ore Reserve is based on the Measured and Indicated components of the Redbeard Mineral Resource estimate announced on 25 June 2018, delivering a positive 76% Resource-to-Reserve conversion rate.

Following the completion of the updated Ore Reserve, mining is scheduled to commence at Redbeard in late July, with the deposit expected to contribute to strong production growth from Nullagine over the second half of 2018, with Millennium expecting to achieve its targeted 100kozpa production rate by the end of the year.

A deep drilling program has now commenced to assess the Redbeard deposit's underground potential on an 80m x 80m spaced pattern at approximately 130 metres beneath surface.

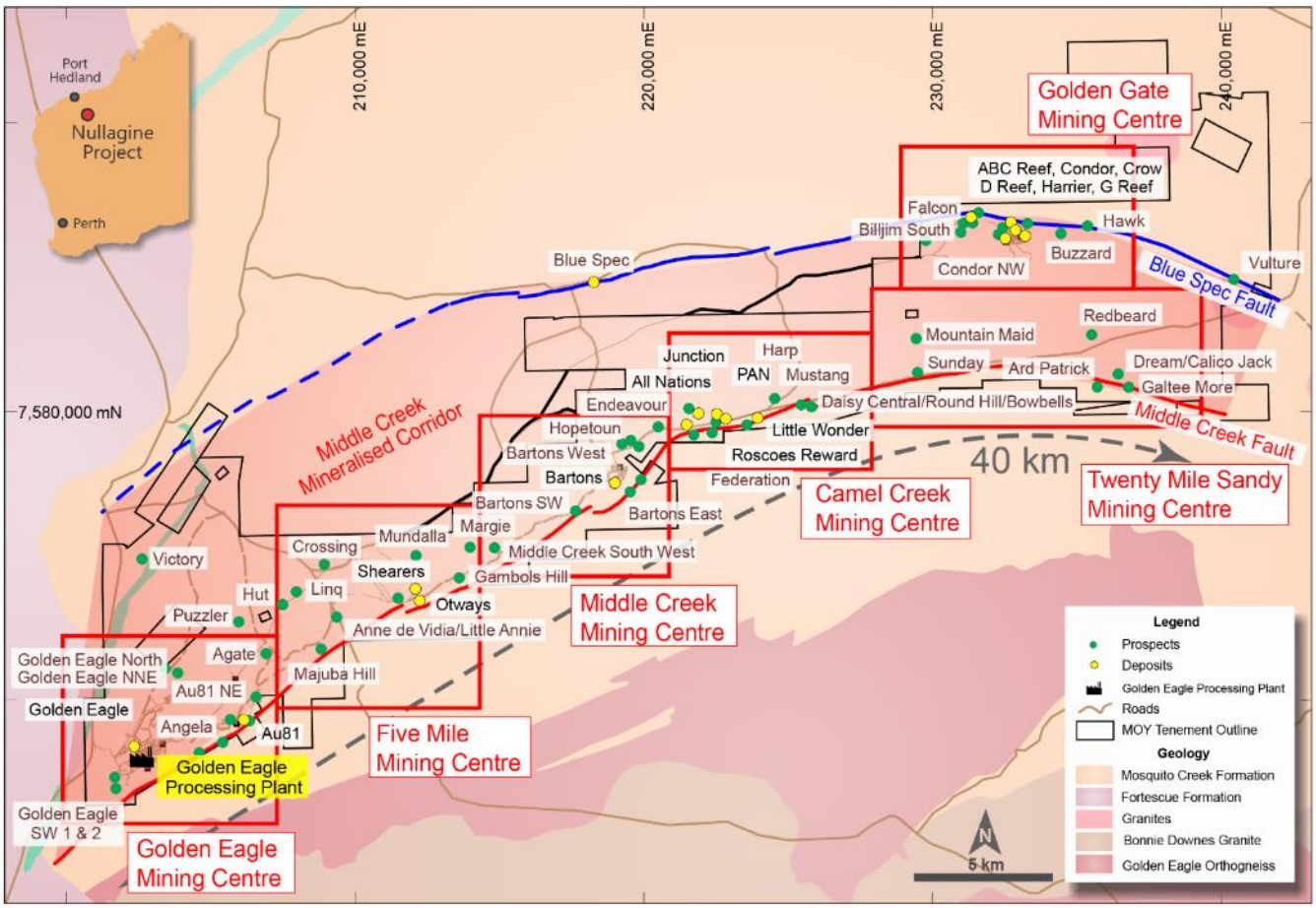

Figure 1: Nullagine Gold Project Location Plan showing key deposits and Mining Centres.

Updated Ore Reserve – Redbeard

The updated Redbeard Ore Reserve has been estimated by Mr Michael Poepjes.

<u>Material Assumptions Applied in Ore Reserves Estimates</u>

Ore Reserves are based upon stratigraphically domained and ordinary kriged block Mineral Resource models. The Ore Reserves estimates are defined from those Mineral Resources by completing pit optimisations and subsequent pit designs based on geotechnical parameters and practical mining considerations.

The following material assumptions have been applied to the Ore Reserves:

- Gold price of A$1650 per ounce
- Current mining and processing operating costs
- Geotechnical recommendations (as per current practice and advised by external consultants)

Ore Reserve Classification

The Redbeard Probable Ore Reserve is derived from Measured and Indicated Mineral Resources and surveyed stockpiles. The Mineral Resource estimates reported are inclusive of the Ore Reserves. Inferred Mineral Resource is treated as waste in the pit optimisation and therefore not included in the Ore Reserves estimation process. Only a minor volume of Inferred Resource is extracted within the Redbeard Pit. This will further improve the economics of the project.

Mining Method

The mining method is conventional drill and blast and load and haul with an excavator and large open pit mining equipment. This is considered to be appropriate for the style of mineralisation being exploited and is applied to many similar type operations in Western Australia.

A 10% gradient and 14m width (including safety windrow) is used in in-pit ramp designs.

Geotechnical and hydrogeological recommendations have been applied during pit optimisation and incorporated in design with ongoing reviews. Mining dilution and ore loss factors have been applied during pit optimisations and hence are taken into account in the Ore Reserves estimates.

Ore Processing

The existing 1.5Mtpa nameplate ore processing facility and infrastructure consisting principally of a primary crusher, SAG mill, gravity circuit and carbon-in-leach (CIL) tankage will be utilised for the processing of the Ore Reserves. Metallurgical recovery factors are based on metallurgical tests and ongoing actual plant recovery reconciliation factors. Recovery factors of 93% in the Oxide and Transitional zones of the orebody and 23% in the Fresh Zone has been applied in the Reserve Calculation.

Cut-off Grade

An economical block cut-off grade is calculated and applied to the block model in estimating the Ore Reserves. The cut-off grade for Redbeard is 0.7g/t and includes cartage to the processing plant and ore processing.

Material Modifying Factors

The inputs for the Ore Reserve estimates are consistent with current actual operating practices and experience. Modifying factors of 10% dilution and 5% ore loss have been included within the results. The only key piece of new infrastructure required for the mining of Redbeard is the road to be upgraded from RAV4 to RAV10. All other infrastructure required for the mining and processing of the Ore Reserves is in place and operating. Agreements with all key stakeholders are in place and active.

Mining approvals, Native Vegetation Clearing Permit has been granted and the Mining Proposal for Redbeard has been lodged for environmental approvals.

The Ore Reserve estimate for the Redbeard deposit is summarised in Table 1 below:

Table 1 Redbeard Reserve Summary

Ore Reserve Category	Tonnes (000's)	Grade (g/t)	Ounces (000's)
Proved			
Probable	153	3.5	17.2
Total	**153**	**3.5**	**17.2**

Details of the Ore Reserve estimation methodology and assumptions used are provided in Appendix 2, the JORC Table 1 attached to this announcement.

The Mineral Resource for Redbeard is shown below in Table 2:

Resource Category	Tonnes (000's)	Grade (g/t)	Ounces (000's)
Measured	**167,600**	**3.6**	**19,600**
Indicated	**53,600**	**1.8**	**3,100**
Inferred	**57,300**	**1.4**	**2,500**
Total	**278,500**	**3.0**	**25,200**

The Mineral Resource was estimated by Millennium Minerals Limited and is based on 318 RC holes from 16,222 metres of drilling completed up to 04 June 2018. Tonnages are dry metric tonnes. Minor discrepancies may occur due to rounding. Millennium's resource summary for the deposit is provided in Appendix 1, including details on the approaches and methodologies utilised in the derivation of reported Mineral Resources.

Complete information regarding the Mineral Resource for Redbeard can be found in the ASX Announcement "High Grade Results Lifts Redbeard Resource" released to the ASX on 25 June 2018.

Golden Gate Mining Centre – Final RC Drilling Results

Recent drilling at the historic Golden Gate Mining Centre at Nullagine has highlighted the potential for the area to be re-established as a high-grade oxide mining centre.

The Golden Gate mining centre is located approximately 35km by road from the Nullagine Gold Project processing plant (see Figure 2). Mining commenced in 2013 and was completed for the known deposits (ABC Reef, Condor, Crow, D Reef, Falcon, Harrier and G Reef) in 2015. A total of 674kt @ 2.58g/t was mined for 55,952 ounces. This mining centre typically hosts higher-grade deposits.

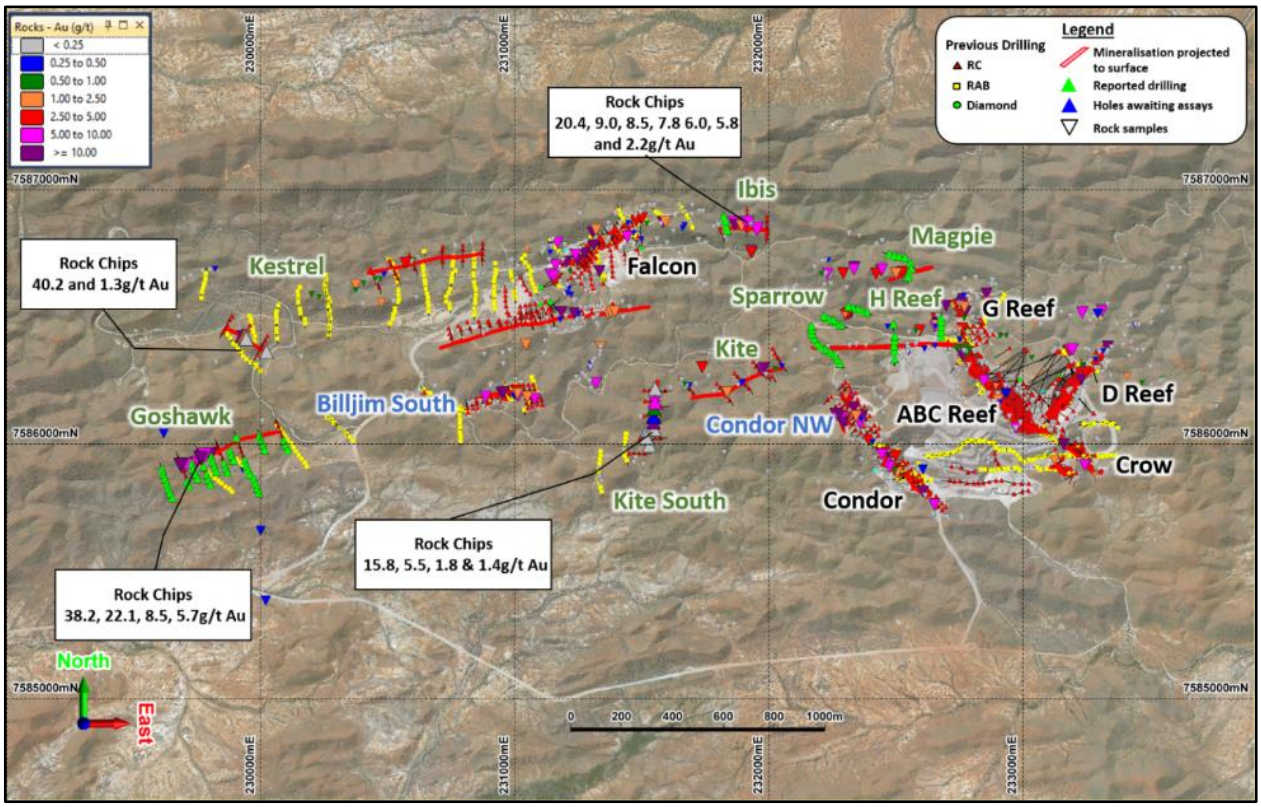

Figure 2 – Location of the prospect/ targets, drilling and rock sample results. Latest rock chip results are annotated.

In 2018, significant exploration has been devoted to the Golden Gate mining centre in light of field mapping and high-grade rock chip results from late 2017 (see ASX announcement 12 December 2017). The aim is to re-establish a mining centre with other high-grade sources to compliment the Condor Northwest deposit (see ASX announcement 26 April 2017) and Billjim South prospect (see ASX announcement 26 April 2017). Billjim South has yet to have its maiden MRE completed.

Further mapping and rock chip results returned since the 12 December 2017 ASX announcement have identified additional targets including Goshawk (best results of 38.2, 22.1, 8.5, 5.7g/t Au), Ibis (best results of 20.4, 9.0, 8.5, 7.8, 6.0, 5.8 and 2.2g/t Au) and Kestrel (peak value of 41.2g/t Au), see Figure 2. Subsequently, RC drilling has commenced to test the grade and thickness of bedrock mineralisation associated with the rock chip anomalism.

Millennium has previously reported that 160 RC holes have been drilled to test the Goshawk, H Reef, Ibis, Kestrel, Kite, Kite South, Magpie and Sparrow prospects (see ASX announcement 29 May 2018). A further eight RC holes for 432m have since been completed as part of this first pass RC drill program. Assay results returned to date have delivered encouraging results from the H Reef, Goshawk, Ibis, Kite South and Magpie prospects.

Goshawk

A drill program with 80x20m drill pattern was carried to test the east-northeast trending >5g/t Au rock chip anomaly (~150m strike length) that had previous RAB anomalism. The intersections from the limited RAB drilling included: 8m @ 1.15g/t Au from surface (GGRB0473), 4m @ 2.46g/t Au from 12m (GGRB0473), 8m @ 0.99g/t Au from 20m (GGRB0473), 4m @ 1.90g/t Au from 16m (GGRB0472). Assays have been received for the holes drilled at the prospect in May (see ASX announcement 29 May 2018) with the best results of:

- 2m @ 9.8g/t Au from 7m, including 1m @ 16.6g/t Au (GGX0155)
- 9m @ 3.97g/t Au from 27m, including 2m @ 7.49g/t Au (GGX0156)
- 2m @ 9.04g/t Au from 8m, including 1m @ 17.4g/t Au (GGX0160)
- 2m @ 5.36g/t Au from 37m, including 1m @ 9.87g/t Au (GGX0161)
- 7m @ 1.29g/t Au from 5m (GGX0157)

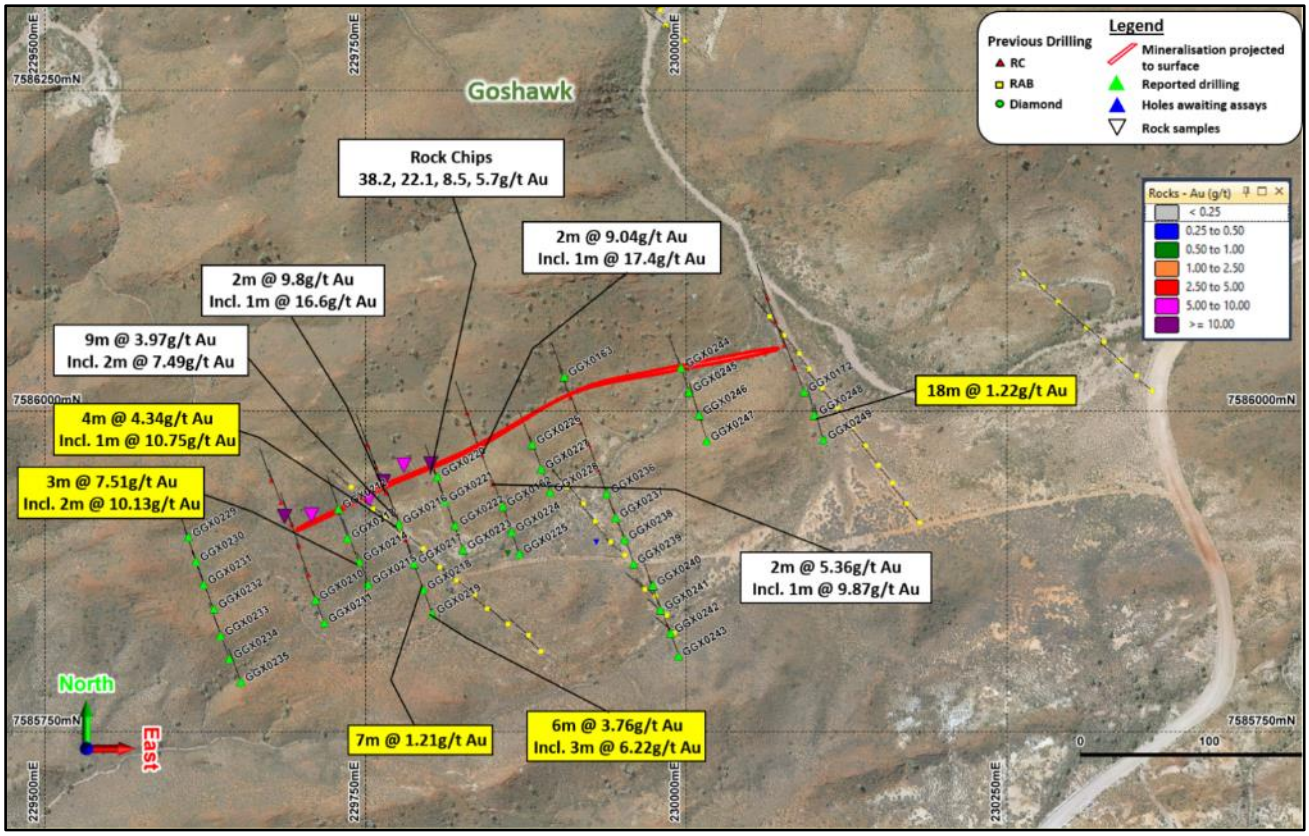

Figure 3 – Goshawk's significant intersections, infill and extensional drilling and rock sample results.

Infill drilling has been carried out on 80 to 40m x 20m spacing of the previous results with the aim of generating a maiden Inferred Resource. A further 80m step-out line was drilled to the west of the previous program. A total of 40 holes for 2,272m (Figure 3) were drilled in this follow-up program (see Table 1 for full results) with the best results of:

- 3m @ 7.51g/t Au from 53m, including 2m @ 10.13g/t Au (GGX0214)
- 4m @ 4.34g/t Au from 36m, including 1m @ 10.75g/t Au (GGX0216)
- 7m @ 1.21g/t Au from 29m (GGX0217)
- 6m @ 3.76g/t Au from 14m, including 3m @ 6.22g/t Au (GGX0219)
- 18m @ 1.22g/t Au from 5m (GGX0248)

Interpretation of these results is underway to determine follow-up drill programs.

H Reef and Sparrow

A total of 18 RC holes for 972m (Figure 4) were drilled on 300 to 180m x 20m spacing to test an east-west soil and rock chip anomaly with a coincident silicified ridge. Results from the Sparrow program appear to confirm the extension of the east-west H Reef trend into this prospect area. Assay results received from this drilling include:

- 8m @ 1.91g/t Au from 36m (GGX0198)
- 2m @ 3.41g/t Au from 5m (GGX0204)
- 6m @ 1.59g/t Au from 25m (GGX0190) - Sparrow
- 4m @ 1.57g/t Au from 43m (GGX0190) – Sparrow

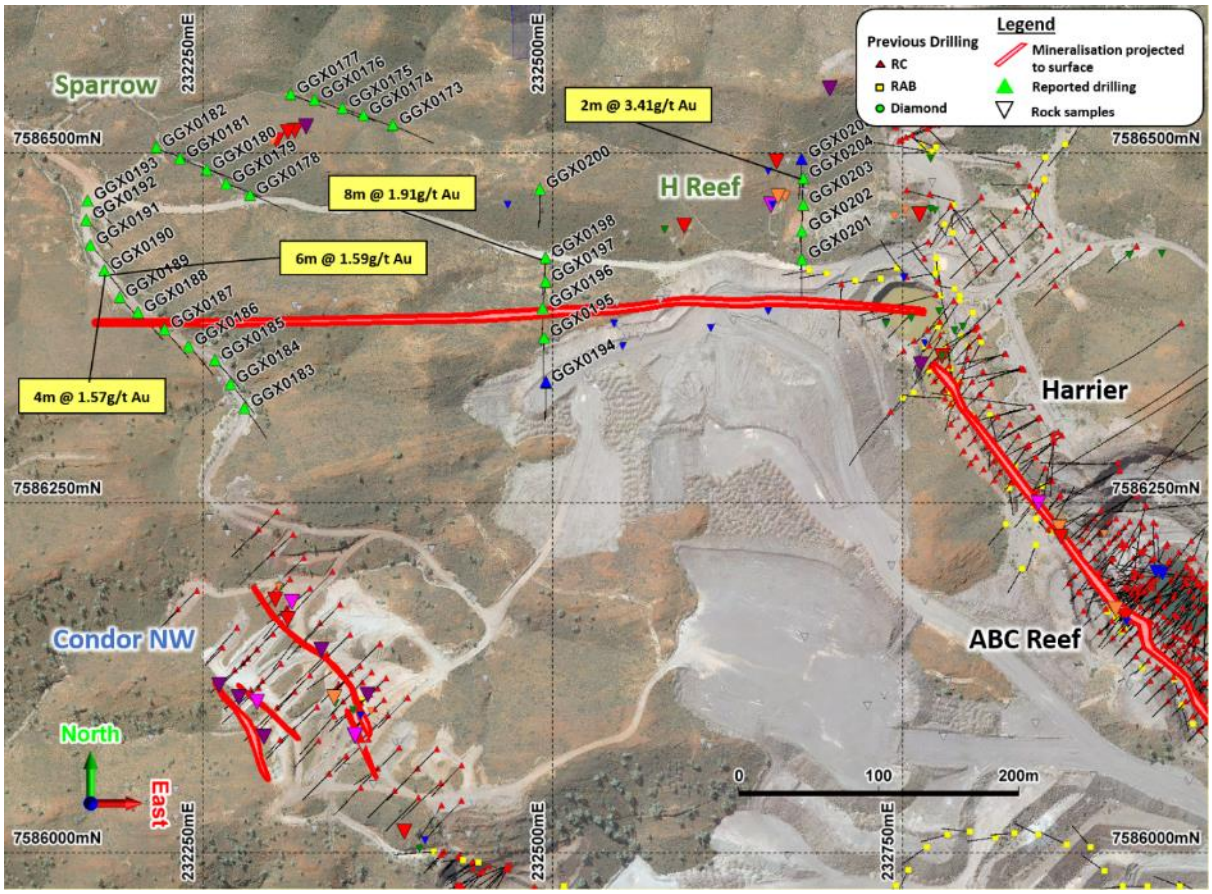

Figure 4 – H Reef significant intersections, infill and extensional drilling and rock sample results.

Drill planning is underway to infill this drilling to confirm the interpreted orientation of the mineralisation.

Magpie

Eight RC holes for 438m were drilled in opportune locations to test east-northeast and north-east trending mineralised veins. All assay results have been returned from the initial program, with best results of 5m @ 1.19g/t Au from 22m (GGX0088) and 3m @ 3.49g/t Au from 6m including 1m @ 6.78g/t Au (GGX0089). Both of these results were from the east-northeast trending vein. Drill planning is under way to test the likely extents of the identified mineralisation.

Kite South, Ibis and Kestrel

Follow-up drilling has also been completed at the Kite South, Ibis and Kestrel prospects within the Golden Gate Mining Centre, with assay results currently awaited.

Management Comment

Millennium Chief Executive Peter Cash said the latest results from both Redbeard and Golden Gate demonstrate the strong potential to develop the adjacent Twenty Mile Sandy and Golden Gate Mining Centres as a major new production hub at Nullagine.

"These are very pleasing results that confirm there's still plenty of high-grade gold yet to be discovered at Nullagine. Given that we only completed the first ever drill hole at Redbeard last November, we are delighted that this has now been confirmed as the highest-grade open pit deposit delineated at Nullagine to date, with a Reserve head grade of 3.5 grams per tonne.

"In addition, we are continuing to see very positive exploration results from numerous other targets within this north-eastern corner of the Nullagine Project area.

"The receipt of further positive exploration results from the Golden Gate Mining Centre, which is located adjacent to Redbeard, indicates the opportunity to potentially re-establish mining operations within this historical high-grade mining centre, and our focus will now be on completing maiden Mineral Resource estimates for these new targets.

"These results, together with the recently announced results from key targets within the Twenty Mile Sandy Mining Centre (see ASX Announcement 25 June 2018), indicate this region could become an important new high-grade production hub for the Company," he said.

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.

Competent Persons Statements – Mineral Resources
The information in the report to which this statement is attached that relates to the Estimation and Reporting of Gold Mineral Resources is based upon information compiled by Mr Graham de la Mare MSc., a Competent Person who is a Fellow of the Australian Institute of Geoscientists (FAIG 1556). Mr de la Mare is a Senior Resource Geologist at Millennium Minerals Ltd. Mr de la Mare has sufficient experience relevant to the style of mineralisation and deposit type under consideration and to the activities being undertaken 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 de la Mare consents to the inclusion in the report of matters based on his information in the form and context in which it appears.

Competent Persons Statements – Ore Reserves
The information in this Release which relates to the Ore Reserve estimates accurately reflect information prepared by Competent Persons (as defined by the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves). '
The information in this public statement that relates to the Ore Reserves at Redbeard is based on information resulting from technical works carried out by Mr Michael Poepjes, who is a member of the Australasian Institute of Mining and Metallurgy.
Mr Michael Poepjes is a full time employee of Millennium Minerals Limited and has sufficient experience which is relevant to the style of mineralisation and type of deposits under consideration and to the activity which she 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 Poepjes consents to the inclusion in the report of the matters based on her information in the form and context in which it appears.

Qualifying Statement

This release may include forward-looking statements. These forward-looking statements are based on Millennium's expectations and beliefs concerning future events. Forward-looking statements are necessarily subject to risks, uncertainties and other factors, many of which are outside the control of Millennium, which could cause actual results to differ materially from such statements. Millennium makes no undertaking to subsequently update or revise the forward-looking statements made in this release, to reflect the circumstances or events after the date of this release.

Table 2 – Significant results to date from the remainder of the initial phase of 2018 Golden Gate RC drilling with follow up results from the Goshawk prospect.

Prospect	Hole_ID	GDA East	GDA North	RL	Azi	Dip	Depth (m)		From (m)	To (m)	Width (m)	Grade (g/t Au)	Gram-metres
Goshawk	GGX0162	229857	7585926	389	340	-60	54				NSA		NSA
Goshawk	GGX0163	229905	7586027	390	340	-60	54				NSA		NSA
Goshawk	GGX0172	230092	7586015	380	340	-60	54				NSA		NSA
H Reef	GGX0194	232495	7586336	442	180	-60	54		9	11	2	1.24	2.5
H Reef	GGX0195	232494	7586368	432	180	-60	54				NSA		NSA
H Reef	GGX0196	232493	7586389	429	180	-60	54		0	2	2	0.93	1.9
									8	9	1	0.57	0.6
									15	16	1	1.15	1.1
									46	47	1	0.54	0.5
H Reef	GGX0197	232495	7586408	423	180	-60	54		21	22	1	1.23	1.2
									37	38	1	0.99	1.0
									41	42	1	0.92	0.9
H Reef	GGX0198	232495	7586425	416	180	-60	54		36	44	8	1.91	15.3
									47	49	2	0.77	1.5
H Reef	GGX0200	232491	7586474	434	180	-60	54				NSA		NSA
H Reef	GGX0201	232678	7586424	412	180	-60	54		33	37	4	0.85	3.4
H Reef	GGX0202	232678	7586444	415	180	-60	54				NSA		NSA
H Reef	GGX0203	232679	7586463	415	180	-60	54				NSA		NSA
H Reef	GGX0204	232679	7586482	416	180	-60	54		5	7	2	3.41	6.8
H Reef	GGX0205	232678	7586496	420	180	-60	54				NSA		NSA
Ibis	GGX0040	231836	7586842	419	180	-60	54				NSA		NSA
Ibis	GGX0041	231831	7586859	417	180	-60	54				NSA		NSA
Ibis	GGX0042	231829	7586880	416	180	-60	54		3	4	1	0.82	0.8
Ibis	GGX0043	231823	7586897	414	180	-60	72				NSA		NSA
Magpie	GGX0080	232474	7586749	406	280	-60	54				NSA		NSA
Magpie	GGX0081	232495	7586742	402	280	-60	54				NSA		NSA
Magpie	GGX0082	232513	7586739	402	280	-60	54				NSA		NSA
Magpie	GGX0083	232536	7586735	404	280	-60	54				NSA		NSA
Magpie	GGX0088	232558	7586715	399	175	-60	60		22	27	5	1.19	6.0
Magpie	GGX0089	232561	7586693	400	175	-60	54		6	9	3	3.49	10.5
								Incl.	7	8	1	6.78	6.8
Magpie	GGX0090	232552	7586675	404	175	-60	54				NSA		NSA
Magpie	GGX0091	232548	7586658	403	175	-60	54				NSA		NSA
Sparrow	GGX0173	232386	7586520	423	110	-60	66		58	63	5	0.75	3.8
Sparrow	GGX0174	232365	7586527	422	110	-60	54				NSA		NSA
Sparrow	GGX0175	232350	7586532	422	110	-60	54				NSA		NSA
Sparrow	GGX0176	232330	7586538	421	110	-60	72				NSA		NSA
Sparrow	GGX0177	232313	7586542	420	110	-60	54				NSA		NSA
Sparrow	GGX0178	232284	7586470	420	110	-60	54				NSA		NSA
Sparrow	GGX0179	232267	7586478	419	110	-60	54				NSA		NSA
Sparrow	GGX0180	232253	7586488	419	110	-60	54		11	12	1	0.81	0.8
									44	45	1	1.66	1.7
Sparrow	GGX0181	232234	7586496	418	110	-60	72				NSA		NSA
Sparrow	GGX0182	232217	7586504	418	110	-60	54				NSA		NSA

Prospect	Hole_ID	GDA East	GDA North	RL	Azi	Dip	Depth (m)		From (m)	To (m)	Width (m)	Grade (g/t Au)	Gram-metres
Sparrow	GGX0183	232280	7586318	431	135	-60	54				NSA		NSA
Sparrow	GGX0184	232270	7586335	429	135	-60	54				NSA		NSA
Sparrow	GGX0185	232259	7586352	428	135	-60	54				NSA		NSA
Sparrow	GGX0186	232240	7586362	426	135	-60	54				NSA		NSA
Sparrow	GGX0187	232223	7586374	425	135	-60	54				NSA		NSA
Sparrow	GGX0188	232204	7586386	424	135	-60	54		11	12	1	0.55	0.6
									19	20	1	0.73	0.7
Sparrow	GGX0189	232191	7586397	421	135	-60	54		5	6	1	1.13	1.1
Sparrow	GGX0190	232180	7586416	418	135	-60	54		25	31	6	1.59	9.5
									43	47	4	1.57	6.3
Sparrow	GGX0191	232170	7586434	418	135	-60	54				NSA		NSA
Sparrow	GGX0192	232167	7586452	418	135	-60	54				NSA		NSA
Sparrow	GGX0193	232168	7586466	417	135	-60	54				NSA		NSA
Goshawk	GGX0210	229711	7585853	389	340	-60	54				NSA		NSA
Goshawk	GGX0211	229718	7585835	388	340	-60	54				NSA		NSA
Goshawk	GGX0212	229729	7585924	391	340	-60	55				NSA		NSA
Goshawk	GGX0213	229736	7585901	395	340	-60	54		0	1	1	1.26	1.3
Goshawk	GGX0213	229736	7585901	395	340	-60	54		31	32	1	1.35	1.4
Goshawk	GGX0214	229745	7585883	394	340	-60	72		48	49	1	0.52	0.5
									53	56	3	7.51	22.5
								Incl.	53	55	2	10.13	20.3
Goshawk	GGX0215	229752	7585865	390	340	-60	54				NSA		NSA
Goshawk	GGX0216	229776	7585912	386	340	-60	54		36	40	4	4.34	17.4
								Incl.	37	38	1	10.75	10.8
Goshawk	GGX0217	229788	7585881	385	340	-60	57		29	36	7	1.21	8.5
									53	54	1	1.12	1.1
Goshawk	GGX0218	229795	7585861	385	340	-60	72				NSA		NSA
Goshawk	GGX0219	229802	7585842	385	340	-60	54		14	20	6	3.76	22.6
								Incl.	15	18	3	6.22	18.7
Goshawk	GGX0220	229806	7585949	387	340	-60	54				NSA		NSA
Goshawk	GGX0221	229812	7585930	385	340	-60	54				NSA		NSA
Goshawk	GGX0222	229820	7585911	385	340	-60	72				NSA		NSA
Goshawk	GGX0223	229826	7585892	384	340	-60	54				NSA		NSA
Goshawk	GGX0224	229864	7585906	383	340	-60	54				NSA		NSA
Goshawk	GGX0225	229870	7585889	383	340	-60	54		4	9	5	0.49	2.5
Goshawk	GGX0226	229880	7585974	388	340	-60	54				NSA		NSA
Goshawk	GGX0227	229887	7585955	385	340	-60	54				NSA		NSA
Goshawk	GGX0228	229894	7585937	383	340	-60	72		22	23	1	0.75	0.8
Goshawk	GGX0229	229612	7585902	396	340	-60	54				NSA		NSA
Goshawk	GGX0230	229618	7585883	399	340	-60	54				NSA		NSA
Goshawk	GGX0231	229624	7585865	399	340	-60	54				NSA		NSA
Goshawk	GGX0232	229632	7585846	401	340	-60	72				NSA		NSA
Goshawk	GGX0233	229637	7585825	402	340	-60	54				NSA		NSA
Goshawk	GGX0234	229644	7585807	395	340	-60	72		1	4	3	1.24	3.7
Goshawk	GGX0235	229653	7585789	390	340	-60	54		23	31	8	0.98	7.8
Goshawk	GGX0236	229938	7585936	382	340	-60	54		25	26	1	0.81	0.8

Prospect	Hole_ID	GDA East	GDA North	RL	Azi	Dip	Depth (m)		From (m)	To (m)	Width (m)	Grade (g/t Au)	Gram-metres
Goshawk	GGX0237	229945	7585917	382	340	-60	54				NSA		NSA
Goshawk	GGX0238	229952	7585900	383	340	-60	54		5	6	1	0.56	0.6
									10	13	3	0.89	2.7
									17	20	3	0.88	2.6
									41	45	4	1.05	4.2
Goshawk	GGX0239	229959	7585881	384	340	-60	54				NSA		NSA
Goshawk	GGX0240	229974	7585864	384	340	-60	54				NSA		NSA
Goshawk	GGX0241	229980	7585845	383	340	-60	54		8	10	2	0.69	1.4
									13	14	1	0.66	0.7
									23	26	3	0.64	1.9
									47	50	3	0.53	1.6
Goshawk	GGX0242	229988	7585827	383	340	-60	54				NSA		NSA
Goshawk	GGX0243	229994	7585809	388	340	-60	54				NSA		NSA
Goshawk	GGX0244	229996	7586034	382	340	-60	54				NSA		NSA
Goshawk	GGX0245	230002	7586015	381	340	-60	54				NSA		NSA
Goshawk	GGX0246	230010	7585997	384	340	-60	54				NSA		NSA
Goshawk	GGX0247	230016	7585977	387	340	-60	54				NSA		NSA
Goshawk	GGX0248	230100	7585997	379	340	-60	54		5	23	18	1.22	22.0
Goshawk	GGX0249	230107	7585978	380	340	-60	54				NSA		NSA

AA= Awaiting Assays and 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 5g/t Au lower cut-off and a maximum of 2 consecutive metres of internal dilution.

JORC 2012 Edition - Table 1

Section 1 Sampling Techniques and Data

Criteria	JORC Code Explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representatively and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *In cases where 'industry standard' work has been done this would be relatively simple (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.*	• *No surface samples were used in any estimation of Mineral Resources or Ore Reserves.* • *Samples at Redbeard, Goshawk, H Reef, Ibis, Kestrel, Kite, Kite South, Magpie and Sparrow were collected utilising RC drilling. Some samples at Redbeard have been collected utilising Diamond Drilling.* • *Weighing of the second sample split is undertaken to ensure that the sample splitter on the RC drill rig is set up appropriately.* • *Standard samples were inserted to the RC sampling stream at a ratio of 1:50.* • *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 >85% passing-75um, to produce a 50g charge for Fire Assay with AAS finish.* • *Diamond core drilling (HQ3 - size) was completed for RBDD0001 and RBDD0002.* • *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 >85% <10mm in a Jaw Crusher before pulverised to >85% passing 75micron mesh. A 25g sub-sample was digested in an aqua regia solution with Au determined via AAS machine.*
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).*	• *Reverse circulation (RC) drilling was carried out with a 5.5-inch face-sampling bit.* • *Diamond core holes (HQ3 size) were drilled from surface. The core was oriented using a Reflex ACT II orientation tool.*
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• *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).* • *ALS records sample weights on receipt of samples. This was used to help track sample recovery.* • *Core recoveries from diamond drilling are generally >98%.There is no correlation between sample recovery and gold grade.*
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.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.*	• *All of the RC drilling has been captured in chip trays for reference.* • *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.*

Criteria	JORC Code Explanation	Commentary
	• *The total length and percentage of the relevant intersections logged.*	• *RC chip trays are retained at site.* • *All of the intersections were logged.* • *In addition to the information collected for the RC drilling, RQD, structural and Specific Gravity (SG) measurements are taken from the oriented core.* • *All diamond core has been photographed for reference.* • *HQ3 half-core from the diamond core will be retained onsite and is available for metallurgical test work..*
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• *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.* • *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.* • *Field duplicates were taken from the second aperture of the cone splitter at a rate of 1 in 50.* • *Sampling of the diamond core was carried out to geological boundaries with a minimum sample interval of 0.3m. Samples were cut with a core saw with half-core submitted for analysis.*
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.*	• *The industry best practice standard assay method of 50g charge Fire Assay with AAS finish was used to determine total Au content of the RC samples.* • *Commercially prepared, predominantly matrix-matched low, medium & high value certified reference QAQC standards were inserted at a rate of 1:50 into the RC sample stream.* • *The QAQC results from this protocol were considered to be acceptable.* • *No geophysical tools were used to determine any element concentrations used for these results.* • *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 microns 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.* • *HQ3 size diamond core was sampled by using a core saw to cut the samples. Half of the core was submitted to the laboratory for the Au assaying with half core to be used for metallurgical test work. The sample was crushed, pulverised and subsampled at the laboratory to produce a 50 g charge for fire assay, as per*

Criteria	JORC Code Explanation	Commentary
		industry standard methods. Results highlight that sample assay values are accurate.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• *Intersections were checked by alternative company personnel to check they were reported correctly.* • *No twin holes were drilled in the programme. Previous significant intersections were verified with close spaced drilling.* • *Sampling is directly uploaded into the LogChief software and it is synchronised to the database.* • *Assay results were not adjusted.*
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• *Post completion of the drilling the RC collars were surveyed with a Real Time Kinematic (RTK) DGPS device to a ±10mm positional precision. All collars are then validated against planned positions as a cross check. Surveyed collar co-ordinates are uploaded into the Company SQL database.* • *Grid datum is GDA94 51K (East Pilbara).* • *Downhole surveys were completed on all holes at 30m maximum downhole intervals with a preference of an initial survey at ~12m downhole. Initially, surveys were taken using a single shot camera or via electronic multi-shot (EMS) survey tool (Reflex, Camprodual or Camteq), lithologies have negligible magnetic susceptibility (greywacke).* • *Aerial Photogrammetry± LIDAR was produced by Fugro Surveys (±0.2m vertical & ±0.1m horizontal). Survey control points were marked out by licensed surveyor for the Fugro Survey. An error was noted in early RC drilling collar RL co-ordinates (ellipsoid not geoid model); these holes were adjusted to the Fugro DTM surface RL and recorded as DTM RL in the SQL database; the original survey RL was retained. Otherwise there was good agreement of surveyed collars and Fugro DTM.*
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	• *The 2018 RC drilling programmes at Goshawk, H Reef, Ibis, Kestrel, Kite, Kite South, Magpie and Sparrow were conducted on 160 to 80m x20m spacing. At Redbeard RC drilling was conducted at nominal 40m x 20m to 10m x 10m spacing* • *The drill spacing is been sufficient to establish the presence of potentially economic mineralisation. Tighter spaced drilling is required to establish geological and grade continuity. Thus far the tighter drill spacing (40mx20m to 10m x 10m) has been sufficient to establish geological and grade continuity at Redbeard.* • *None of the reported sample intervals were composited. In previous resource estimates some >1m RC assay composites were used. A small number of core composites were retained with a length of less than 1m (minimum 0.3m).*

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.* • *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.*	• *Surface mapping at Redbeard, Goshawk, H Reef, Ibis, Kestrel, Kite, Kite South, Magpie and Sparrow confirms the interpreted strike orientation of mineralisation. The dip of the mineralisation for some of the prospects/ targets remains uncertain.* • *No significant orientation bias has been identified in the data at this point.*
Sample security	• *The measures taken to ensure sample security.*	• *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.* • *Sample security is managed with dispatch dates noted for each sample 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.*
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data reviews.*	• *Internal lab audits conducted by Millennium have shown no material issues.*

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 security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• *The 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.* • *Goshawk * - M46/200 (100% MML);* • *H Reef* - M46/200 & M46/47 (100% MML);* • *Ibis * - M46/200 (100% MML);* • *Kestrel* - M46/200 (100% MML);* • *Kite* - M46/200 (100% MML);* • *Kite South* - M46/200 (100% MML);* • *Magpie* - M46/200 (100% MML);* • *Sparrow* - M46/200 & M46/47 (100% MML);* • *Redbeard*[+] - M46/433 & M46/434 (100% MML);* **These tenements are located within the Njamal title claim (WC99/8).* *[+] A $10/oz royalty payable to Tyson Resources Pty Ltd.*
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• *Exploration by other parties has been reviewed and taken into account when exploring. Millennium has re-drilled in areas that other parties had drilled to gain a greater confidence in those results.*
Geology	• *Deposit type, geological setting and style of mineralisation.*	• *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.*

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.*
	• *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.*
		• *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.*
		• *All of the current drilling with results returned has been reported.*

Criteria	JORC Code Explanation	Commentary
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• *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.* • *All RC samples reported were one metre in length. Weighted average grade aggregation method was used to derive the diamond core intersections.* • *No metal equivalents were used.*
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').*	• *Only selected historic exploration data related to the included targets and prospects are presented.* • *Most of the drilling is perpendicular 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 60-90% of down-hole widths.* • *The drill hole orientations relative to the ore zones have ensured accurate interpretations and 3D modelling.*
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.*	• *Significant exploration results are tabulated in the release with drill hole plans to show them in context.* • *Representative maps have been included in the report along with documentation.*
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.*	• *All of the current drill results have been reported for the project.*
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.*	• *Outcrops of quartz veins have been previously mapped at Redbeard, Goshawk, H Reef, Ibis, Kestrel, Kite, Kite South, Magpie and Sparrow. Mineralisation is primarily associated with a combination of quartz veining, moderate foliation, strong sericite alteration and strong limonite staining or pyrite-arsenopyrite content.* • *Leachwell test work indicate that the Oxide ore is free-milling at Redbeard. Preliminary metallurgical test work at Redbeard is about to commence to establish recoveries of the sulphide ore through the proposed plant upgrade.*

Criteria	JORC Code Explanation	Commentary
Further work	• *The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• *A full interpretation will be carried once the drilling has been completed and the assays returned. The next phase of exploration within the Golden Gate mining centre will be dependent on the results from the current programmes.* • *The Redbeard MRE will be updated with the latest results. Drilling will be planned to test the underground potential of the high-grade ore shoot.*

JORC Table 1 Section 3 Estimation and Reporting of Mineral Resources

Criteria	JORC Code explanation	Commentary
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* • *Data validation procedures used.*	• *Logging data is captured electronically on Logchief data loggers and synchronised to the database. Data used for Mineral Resource estimation is stored within an SQL database and is managed using DataShed software.* • *A database audit was run to compare drill hole collar locations to check survey locations and topographic survey.* • *Validation also included a visual check of drill hole traces plotted on screen. Any suspect information is sent to the Database Administrator to correct.*
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• *The Competent Person is a fulltime employee of MOY. A site visit was undertaken by the Competent Person in October 2017 to verify the extent of existing Nullagine mining operations, locate drill collars from previous drilling, review drilling and mining operations and to inspect existing open pits at the Nullagine operation.*
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation.* • *The use of geology in guiding and controlling Mineral Resource estimation.* • *The factors affecting continuity both of grade and geology.*	• *The confidence in the geological interpretation is considered robust, with a continuous mineralised structure defined at surface by outcropping quartz vein, and at depth by close spaced, good quality RC and diamond drilling.* • *The deposit consists of a linear main lode that dips steeply to the south, and various minor parallel lodes, which have been interpreted based on logging and assay data from samples taken at regular intervals from angled RC drill holes.* • *The nature of the interpreted lodes defined by current drilling does not allow for alternative interpretations. The primary lode at the deposit consists of a high grade quartz reef with a very distinct and sharp boundary between mineralised and non-mineralised material.* • *Surface mapping of an outcropping quartz vein has verified dip and lode geometry and has been used to define the mineralisation wireframes. Lithological logging defines quartz veining associated with mineralisation. Mineralisation interpretation was based on a 0.5 Au ppm cut-off grade.* • *The surface outcropping quartz vein is mineralised along a 2km strike length and has been used to successfully target mineralisation at depth, as the influence of structure on the geological interpretation is well understood.*
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 Redbeard Mineral Resource area extends over a strike length of 600m and has a vertical extent of 108m from surface at 380mRL to 272mRL. All the lodes are encompassed within a N-S width of 80m.*

Criteria	JORC Code explanation	Commentary
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.* • *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* • *The assumptions made regarding recovery of by-products.* • *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).* • *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* • *Any assumptions behind modelling of selective mining units.* • *Any assumptions about correlation between variables.* • *Description of how the geological interpretation was used to control the resource estimates.* • *Discussion of basis for using or not using grade cutting or capping.* • *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	• *Using parameters derived from modelled variograms, Ordinary Kriging (OK) was used to estimate average block grades within the deposit. In addition, Inverse distance squared (ID2) and nearest neighbour (NN) estimates were run in support of the kriging estimate. The OK interpolation technique is suitable as it allows the measured spatial continuity to be incorporated into the estimate and results in a degree of smoothing which is appropriate for the nature of the mineralisation. Drill hole sample data was coded using mineralisation wireframes. Samples were composited to 1m as all samples within the interpreted wireframes was conducted across 1m intervals.* • *Three estimation passes were used in the model.* • *Three estimation passes were used in the model. The first pass used a range of 15m, with a minimum of 6 samples. For the second pass, the range was extended to 30m, with a minimum of 4 samples. The third pass used a range 60m with a minimum of 2 samples. A maximum of 10 samples was used for each pass. A constraint of 4 samples per hole was used.* • *The extrapolation distance from the end points was 5m along strike, half the drill hole spacing.* • *Surpac software was used for the estimation.* • *High grade cuts of between 1.5g/t and 14.25g/t were applied to 1m composite data. A total of 40 composites were cut.* • *Mineralised domains were interpreted using a 0.5g/t Au cut-off.* • *A maiden resource estimate was completed by MOY in January 2018 upon completion of first pass drilling. Completion of a 10m grade control infill drilling program has resulted in the reporting of this latest estimate.* • *No assumptions have been made regarding recovery of by-products.* • *No estimation of deleterious elements was carried out. Only Au was interpolated into the block model.* • *The parent block dimensions used were 5m NS by 5m EW by 2.5m vertical with sub-cells of 1.25m by 1.25m by 2.5m. The parent block size was selected on the basis of results of a kriging neighbourhood analysis and equates to being approximately 50% of the closest drill spacing at the deposit.* • *An orientated ellipsoid search was used to select data and was based on parameters derived from the variography.* • *Selective mining units were not modelled in the Mineral Resource model. The block size used in the model was based on drill sample spacing and lode orientation. At Nullagine, the open pit mining utilises 5m high benches and 2.5m flitches. The 1.25m NS and 1.25m EW sub-blocks are selected to best represent the narrow lodes and variable geometries.*

Criteria	JORC Code explanation	Commentary
		• *Only Au assay data was available, therefore correlation analysis was not possible.* • *The deposit mineralisation was constrained by wireframes constructed using a 0.5g/t Au cut-off grade in association with logged geology. The internal high grade domains were constructed using a nominal 3g/t Au cut-off. The wireframes were applied as hard boundaries in the estimate.* • *High grade cuts were applied to some lodes based on statistical analysis.* • *For validation, trend analysis was completed by comparing the interpolated blocks to the sample composite data for each lode. Visual verification of sections was also used to confirm the block estimates.*
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• *Tonnages and grades were estimated on a dry in situ basis. No moisture values were reviewed.*
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• *The Mineral Resource has been reported at a 0.5g/t Au cut-off based on assumptions about economic cut-off grades for open pit mining. MOY has numerous operating open pits and the 0.5g/t Au cut-off has been determined as the most suitable economic cut-off grade.*
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.*	• *It is assumed that the deposit will be mined mechanically via open pit mining methods similar to the existing pits at the Nullagine Project.* • *No mining parameters or modifying factors have been applied to the Mineral Resource.*
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 has been conducted at the deposit utilising bottle roll analyses.* • *Average Au recovery values were assigned to the block model using sulphide oxidation surfaces generated from drill hole logging of observed sulphides.* • *Recoveries at the deposit have proven acceptable for treatment at MOY's operating CIL gold processing facility.*
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,*	• *Environmental Surveys continue across the Nullagine Gold Operation including surface water assessments and flora and fauna required for ongoing approvals to be submitted across a number of new and existing areas. These assessments will compliment previous survey works and studies completed and include the submission of a Mining Proposal for the Redbeard deposit. As part of this submission all Heritage surveys have been conducted in line with Traditional*

Criteria	JORC Code explanation	Commentary
	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.	*Owners requests and current deeds of operation.*
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• *A total of 52 bulk density determinations have been reported at the deposit using the water immersion technique (or wax coating method). Average values were applied to the regolith profile based on material type which was defined by surfaces generated from drill hole logging of regolith.* • *Bulk density values used in the resource were 2.37t/m3, 2.47t/m3 and 2.7t/m3 for oxide, transitional and fresh mineralisation respectively.* • *Bulk density has not been estimated. Limited sampling locations have resulted in an average value being assigned to each material type.*
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.* • *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* • *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• *Mineral Resources were classified in accordance with the Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC, 2012). The Mineral Resource was classified as Measured, Indicated and Inferred Mineral Resource on the basis of data quality, sample spacing, lode continuity, and geostatistical estimation parameters such as slope of regression and kriging efficiency.* • *The Measured Mineral Resource was applied to the majority of Domain 1 (including the internal high grade Domains 100 and 101) where mineralisation continuity was robust and defined by 10m by 10m drill spacing. Blocks through this area were filled in the first or second estimation pass. The Indicated Mineral Resource was applied to Domain 1 (and internal high grade Domains 100 and 101) through areas having good continuity of mineralisation and defined by 20m spaced drilling. The Inferred Mineral Resource category was applied to the remainder of Domain 1, all of Domain 3, 13, and 103 where mineralisation continuity was defined by limited drilling and grades were more erratic across sections.* • *The Mineral Resource estimate appropriately reflects the view of the Competent Person.*
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• *An internal audit of the Mineral Resource estimate was completed by MOY's Senior Resource geologist.*

Criteria	JORC Code explanation	Commentary
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• *The current Mineral Resource model provides a global estimate of the in-situ Au mineralisation at the deposit with a high degree of confidence.* • *No formal confidence intervals have been derived by geostatistical or other means; however, the use of quantitative measures of estimation quality such as the Kriging efficiency and the slope of regression allows the Competent Person to be assured that appropriate levels of precision have been attained within the relevant resource confidence categories.* • *With respect to the Mineral Resource estimated at the deposit, the geological interpretation for geology, weathering and mineralisation domains is adequate for the estimation of Measured, Indicated and Inferred Mineral Resources.* • *Mining of many of the similar style MOY deposits at the Nullagine operations and project reconciliation with the resource estimates, provides a further degree of assurance in the estimate results.*

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.* • *Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.*	• *A technical description of the Mineral Resource is presented in the preceding sections to this table.* • *The Mineral Resource are reported as wholly inclusive of the Ore Reserves*
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits* • *If no site visits have been undertaken indicate why this is the case*	• *The Competent Person for this Ore Reserves Statement is a full time employee of Millennium Minerals Ltd and visits the site on a regular basis.*
Study status	• *The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.* • *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.*	• *The Nullagine Gold Project is currently in production, and such an operational mine plan exists. Thus, actual operational costs, values and parameters have been utilised for Modifying Factors as part of this updated Ore Reserve.* • *Actual operating costs and modifying factors have been applied in the pit optimisation and Ore Reserve estimates* • *No Inferred Mineral Resource is included in any of the updated Ore Reserves estimates.*
Cut-off parameters	• *The basis of the cut-off grade(s) or quality parameters applied.*	• *Economic cut-off grades are calculated for all the deposits.* • The cut off grade applied to the Oxide and Transitional material is 0.6g/t. The cut off grade applied to the fresh material 2.6g/t due to the decreased recovery. Less than 1,000t of Fresh material is included within this Ore Reserve Estimate.
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).* • *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 assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc), grade control and pre-production drilling.* • *The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).* • *The mining dilution factors used.* • *The mining recovery factors used.* • *Any minimum mining widths used.* • *The manner in which Inferred Mineral Resources are utilised in*	• *The method used to convert Mineral Resources to Ore Reserves is based upon pit optimisation to identify the economic shell within which a design process is completed to achieve a practical mine design.* • *As the Nullagine Gold Project is currently in production, any mining factors applied as part of this updated Ore Reserve are based on actual data sourced from the project.* • *The mining method is conventional drill and blast and load and haul with an excavator and large open pit mining equipment. A combination of a 90 tonne rigid truck fleet and 40 tonne articulated fleet are currently being used at the Nullagine Project to mine the varying Ore Reserves.* • *The geotechnical parameters are based on the recommendations from a geotechnical study by independent consultants with batter heights, 60^0 batter angles and 5m wide berms. The geotechnical consultant has an ongoing involvement with the project and recommendations made reflect operational reviews following site visits over the course of the project.* • *Mining loss factor of 5% is applied in the pit optimisation and Ore*

Criteria	JORC Code Explanation	Commentary
	mining studies and the sensitivity of the outcome to their inclusion. • *The infrastructure requirements of the selected mining methods.*	*Reserve estimation process.* • *A mining dilution factor of 10% is applied in the pit optimisation and Ore Reserve estimation process.* • *No Inferred Mineral Resource are included in the Ore Reserves estimation process* • *A 25m mining width is applied on all benches except good-bye cuts* • *A 10% - gradient and 14m width (including safety windrow) are used for in-pit ramp.* • *A RAV 4 network exists to cart the material from Redbeard to the Processing Plant. As part mining Redbeard, this road will be upgrade from RAV 4 to RAV10. All other infrastructure required for the project is currently onsite.*
Metallurgical factors or assumptions	• *The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.* • *Whether the metallurgical process is well-tested technology or novel in nature.* • *The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.* • *Any assumptions or allowances made 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.* • *For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?*	• *The existing Nullagine Processing facility will be utilised for processing the Ore* • *The Nullagine processing plant is currently in operation and has been since 2012. It is an industry standard 1.5 Mt pa primary crusher, SAG mill, gravity circuit and carbon-in-leach tankage facility.* • *This is conventional, well-tested technology, and is appropriate for the lode style of mineralisation in all the Project deposits, as demonstrated by successful plant operation since commercial production was declared in February 2013.* • *Recovery factors of 93% within the oxide and transitional materials have been assumed in the estimation of the Ore Reserves. A Recovery Factor of 23% has been assumed for the fresh material. The recovery factors are based on comprehensive test work on metallurgical core holes, mini BLEG and Leachwell analyses on RC and Diamond Core samples.* • *The Ore Reserves are quoted 'delivered to mill' basis; this excludes metallurgical recovery factors.* • *No allowance was made for deleterious elements as none of concern were noted in work to date.*
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.*	• *As the Nullagine Gold Project is currently in operation and as such the appropriate Environmental Management Plans (EMP) have been submitted and approved by the Department of Mines. The EMP will be reviewed on a continuous basis.* • *Environmental approval for mining at Redbeard is currently being sought. The proposal for Redbeard is inline with other operations at Nullagine and is expected to be received.* • *Waste Rock Dump designs take into consideration any Potential Acid Forming Material (PAF) and are design to meet the license requirements. Designs take into consideration stability and erosion measures and will*

Criteria	JORC Code Explanation	Commentary
		be rehabilitated as per the license requirements. • *Hydrology studies completed for both surface and ground water flows, with no significant considerations for the proposed mining operations.*
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.*	• *The appropriate infrastructure is currently in place as this is an operating mine. A road network exists, but will be upgraded from RAV4 to RAV10 to reduce cartage costs between the mine and the processing plant.*
Costs	• *The derivation of, or assumptions made, regarding projected capital costs in the study.* • *The methodology used to estimate operating costs.* • *Allowances made for the content of deleterious elements.* • *The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co- products.* • *The source of exchange rates used in the study.* • *Derivation of transportation charges.* • *The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.* • *The allowances made for royalties payable, both Government and private.*	• *Adequate capital costs were considered in this study for the development of Redbeard.* • *The Nullagine Gold Project is currently in production. The mining and processing costs applied in the pit optimisation are based on actual operational costs.* • *All costs are in Australian Dollars so no direct exchange rate has been applied.* • *The additional cost of carting the ore material from each mining site to the existing processing plant is included, to provide final tailored processing costs per satellite site.* • *Allowances were made for government royalties, native titles and refining charges.* WA State Government Royalty: 2.5% Native Title: 1% Third party royalty: A$10/Oz
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.* • *The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.*	• *A gold price of A$1650/oz has been used in the pit optimisation for Ore Reserve estimates and for reporting cut-off grades. Appropriate allowances were made for government royalties, native titles and refining charges.*
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.* • *A customer and competitor analysis along with the identification of likely market windows for the product.* • *Price and volume forecasts and the basis for these forecasts.* • *For industrial minerals, the customer specification, testing and acceptance requirements prior to a supply contract.*	• *Production from the Nullagine Gold project is sold as a mixture of spot and hedges gold sales.*

Criteria	JORC Code Explanation	Commentary
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.* • *NPV ranges and sensitivity to variations in the significant assumptions and inputs.*	• *The Ore Reserves have been evaluated through the standard financial model. All operating and capital costs have been included in the financial model. The process has demonstrated that Ore Reserves have a positive NPV.*
Social	• *The status of agreements with key stakeholders and matters leading to a social licence to operate.*	• *All key stakeholder agreements, including Native title and Pastoral Lease holder agreements, are in place. The Company has close working relationships with communities surrounding the Project.*
Other	• *To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:* • *Any identified material naturally occurring risks.* • *The status of material legal agreements and marketing arrangements.* • *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.*	• *The Nullagine Gold Project is currently in operation. Therefore, much of the standard pre-operational estimates and unknowns that can be associated with Pre-Feasibility or Feasibility studies have little or no application to this updated Ore Reserve.* • *There are no known significant naturally occurring risks to the project.* • *The Mining Proposal approval process has commenced and is expected to be grated within the next few weeks.* • *Redbeard is located on granted Mining Leases.*
Classification	• *The basis for the classification of the Ore Reserves into varying confidence categories.* • *Whether the result appropriately reflects the Competent Person's view of the deposit.* • *The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).*	• *All Proved and Probable Ore Reserves have been derived from Measured and Indicated Mineral Resources respectively.* • *Measured Mineral Resources were downgraded to Probable Ore Reserves as mining operations have not commenced at Redbeard.* • *The estimated Ore Reserves are, in the opinion of the Competent Person, appropriate for this style of deposit.*
Audits or reviews	• *The results of any audits or reviews of Ore Reserve estimates.*	• *An internal audit of the Ore Reserve estimate has been carried out.*

Criteria	JORC Code Explanation	Commentary
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 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.* • *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.* • *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.*	• *The Nullagine Gold Project is currently in production and therefore actual operational costs, values and parameters have been utilised. The Mineral Resource and Ore Reserves are considered to be an extension of current operations* • *The accuracy of the estimates will be subject to regular reconciliation and ongoing monitoring.*