MILLENNIUM
MINERALS LIMITED
ASX Code:MOY

Corporate Details

Ordinary Shares:
780,917,069

Market Capitalisation:
~$125 million

Cash and bullion at 30 September 2017:
~$20.1 million

Debt:
NIL

ASX Code: MOY

Board of Directors

Greg Bittar
Non-Executive Chairman

Michael Chye
Non-Executive Director

Tim Kennedy
Non-Executive Director

Peter Lester
Non-Executive Director

Management

Peter Cash
Chief Executive Officer

Dean Will
Chief Operating Officer

Stacey Apostolou
Chief Financial Officer and Company Secretary

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11 October 2017

New high-grade results from Shearers North and Au81 West

Millennium to assess gold potential of widespread conglomerate at Nullagine Gold Project in the Pilbara

Highlights

- **Further impressive results returned from Au81 West prospect, located 3km from the processing plant. Latest results include:**
  - **11m @ 11.69g/t Au from 43m incl. 6m @ 19.62g/t Au (AUGC00145)**
  - **13m @ 1.35g/t Au from 17m incl. 2m @ 6.23g/t Au (AUGC00146)**
  - **7m @ 3.9g/t Au from 18m incl. 2m @ 8.93g/t Au (AUGC00148)**
- **Further broad, near-surface intercepts returned from drilling at Shearers North, 500m north of the previously mined Shearers pit. Results include:**
  - **20m @ 1.42g/t Au from 9m (FMX1874)**
  - **26m @ 1.47g/t Au from 30m incl. 2m @ 5.81g/t Au from 32m (FMX1871)**
  - **6m @ 2.01g/t Au from 33m (FMX1864)**
  - **10m @ 1.48g/t Au from 10m (FMX1866)**
- **The presence of extensive conglomerate beds within the Nullagine Project area has prompted a detailed project-wide review of gold mineralisation within conglomerate**
- **Nullagine also hosts alluvial workings where abundant gold nuggets have been found**
- **Conglomerate and alluvial nuggets have recently been associated with several high-profile gold discoveries in the Pilbara**
- **Nullagine has produced +45,000oz from deposits containing conglomerate, but no detailed assessment has been undertaken of the potential for large-scale conglomerate-hosted gold mineralisation**

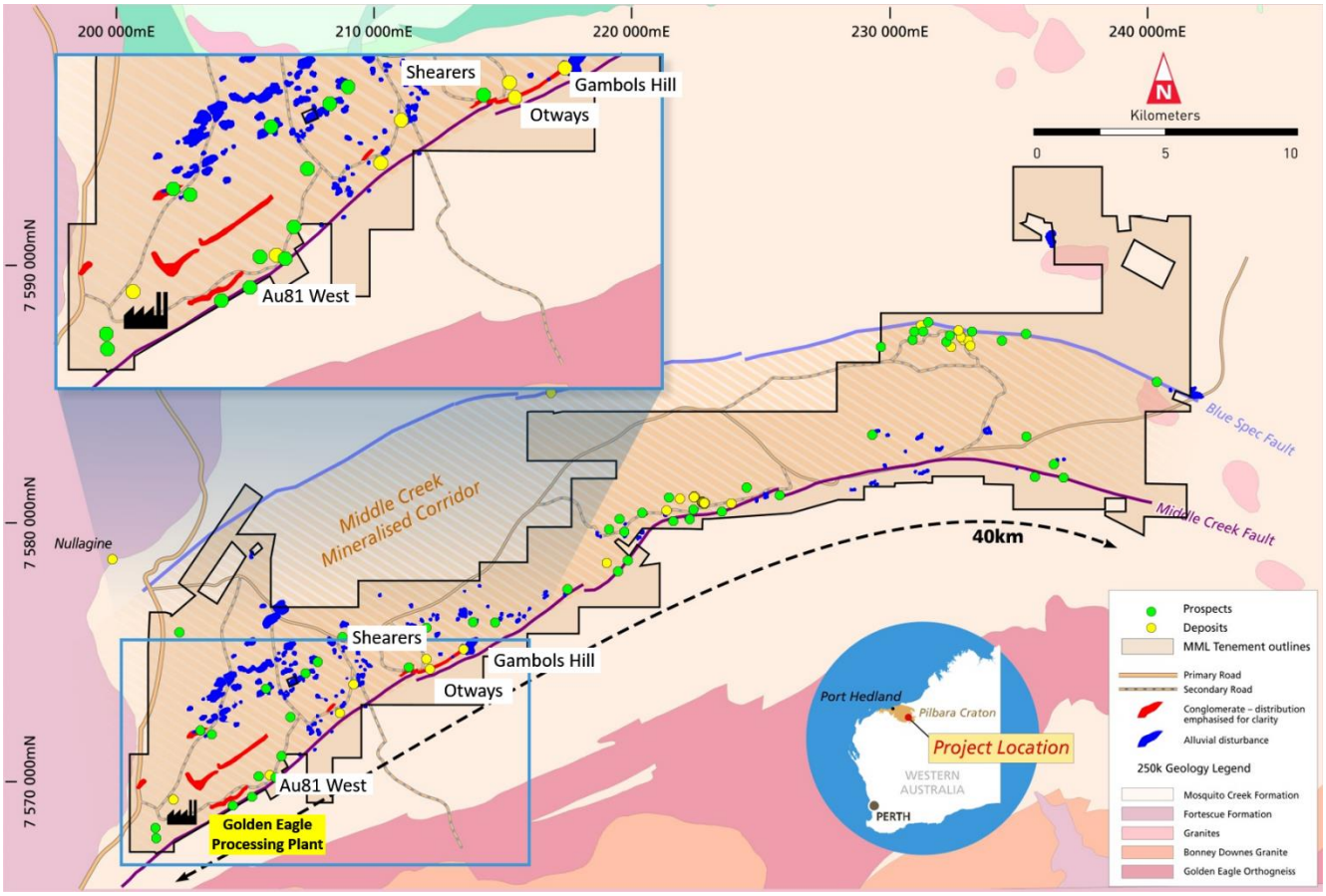

Figure 1: Nullagine Gold Project Location Plan over regional geology with conglomerate and historic alluvial workings and gold nugget discoveries highlighted

Millennium Minerals Limited (**Millennium** or **Company –** ASX**:** MOY) is pleased to announce the receipt of further strong exploration results at its Nullagine Gold Project (**Nullagine** or **Project**) in WA's Pilbara region (Figure 1).

The latest drilling results come from the Au81 West deposit, located 3km north-west of the Nullagine processing plant, and the Shearers North deposit, located 500m north of the Shearers pit. The results provide further support for Millennium's plan to increase the mining inventory and extend the mine life at Nullagine.

In addition, following the recent gold discoveries in the Pilbara associated with conglomerate, Millennium has initiated a review of conglomerate distribution within the Nullagine district. This is designed to evaluate the potential for gold mineralisation within the conglomerate as a separate mineralisation style to the Company's shear-hosted and structurally controlled gold deposits.

Golden Eagle Mining Centre – Au81 West

Millennium has received further outstanding results from the Au81 West prospect, located 3km east of the Nullagine processing plant within the Golden Eagle Mining Centre (see Figure 2).

Results from the latest drilling include:

- **11m @ 11.69g/t Au from 43m incl. 6m @ 19.62g/t Au (AUGC00145)**
- **13m @ 1.35g/t Au from 17m incl. 2m @ 6.23g/t Au (AUGC00146)**
- **7m @ 3.9g/t Au from 18m incl. 2m @ 8.93g/t Au (AUGC00148)**

Au81 West is under cover and is located north-east of the outcropping conglomerate at Golden Eagle (Figure 2).

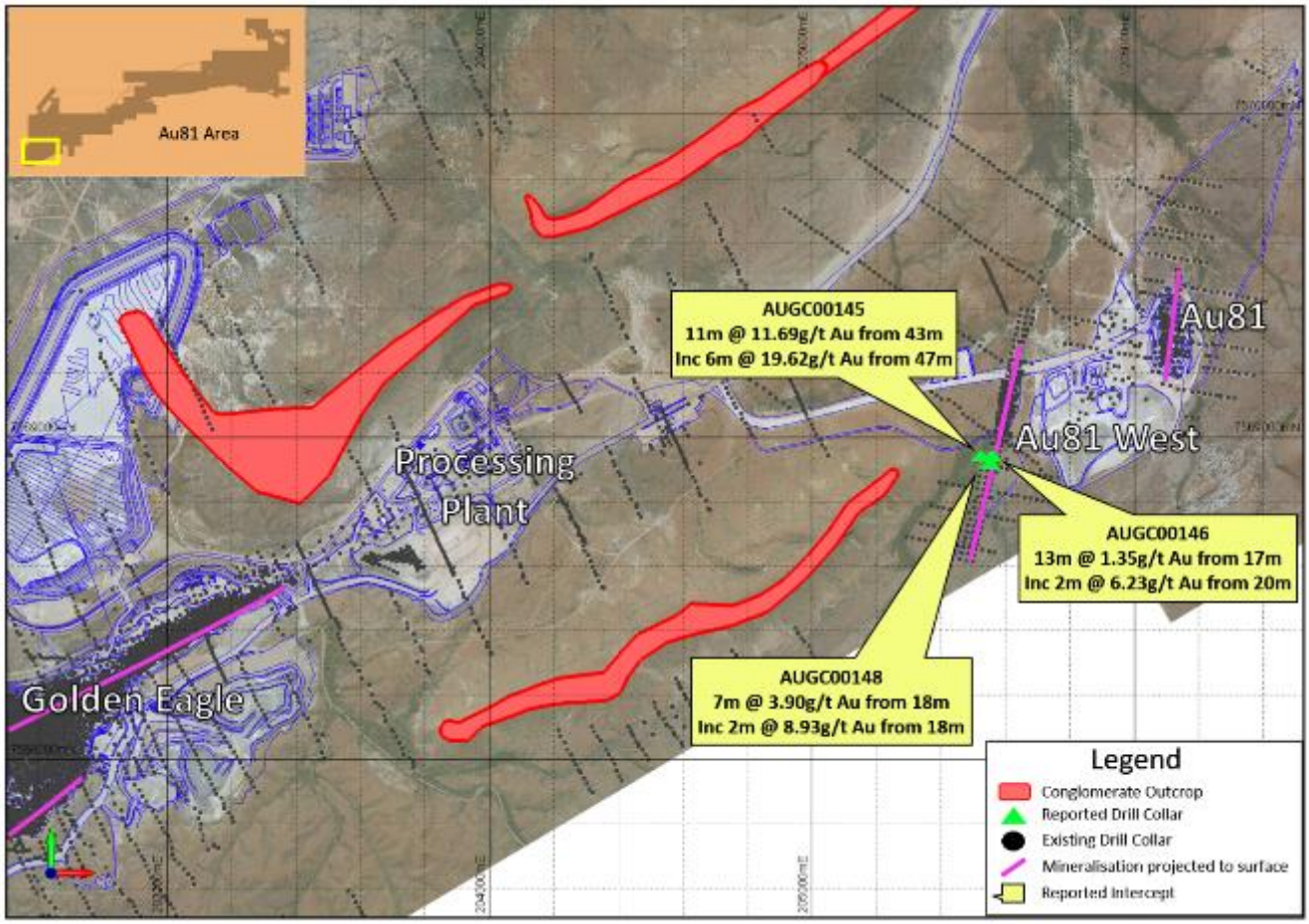

Figure 2: Plan view of the Golden Eagle mining centre showing the Au81 West prospect and the location of conglomerate outcrop in the immediate environs of the Nullagine processing plant

Five Mile Mining Centre – Shearers North

At the Five Mile Mining Centre, recent strong drilling results have been received from Shearers North, located 500m north of the Shearers pit, including:

- **20m @ 1.42g/t Au from 9m (FMX1874);**
- **26m @ 1.47g/t Au from 30m incl. 2m @ 5.81g/t Au from 32m (FMX1871);**
- **6m @ 2.01g/t Au from 33m (FMX1864);**
- **10m @ 1.48g/t Au from 10m (FMX1866); and**
- **7m @ 1.48g/t Au from 22m (FMX1870).**

The ongoing drilling program at Shearers is designed to assess the potential for a cut-back to the existing open pit and to define deeper gold mineralisation as part of Millennium's broader focus on establishing the continuity of its key deposits at depth (see ASX announcements 27 September and 4 October).

The association between Shearers and Shearers North and the conglomerate is being reviewed. Mineralisation at the nearby previously-mined Otways deposit is hosted within the conglomerate and at Gambols the conglomerate is oblique to the mineralisation (Figure 3).

At Shearers, the plunge of the highest-grade areas appear sub-parallel to the intersection of the conglomerate with the Shearers fault (Figure 4). This area is being targeted at depth as well as along the Otways – Gambols Hill trend.

The spatial relationship between some of the recent drilling at Shearers and Shearers North to the outcropping conglomerate at Shearers, Otways and Gambols Hill is shown in Figure 3 below.

The long section in Figure 4 shows some of the recent deeper drilling below the Shearers open pit and the plunge of the higher-grade mineralisation may be associated with the intersection of the conglomerate with the Shearers fault.

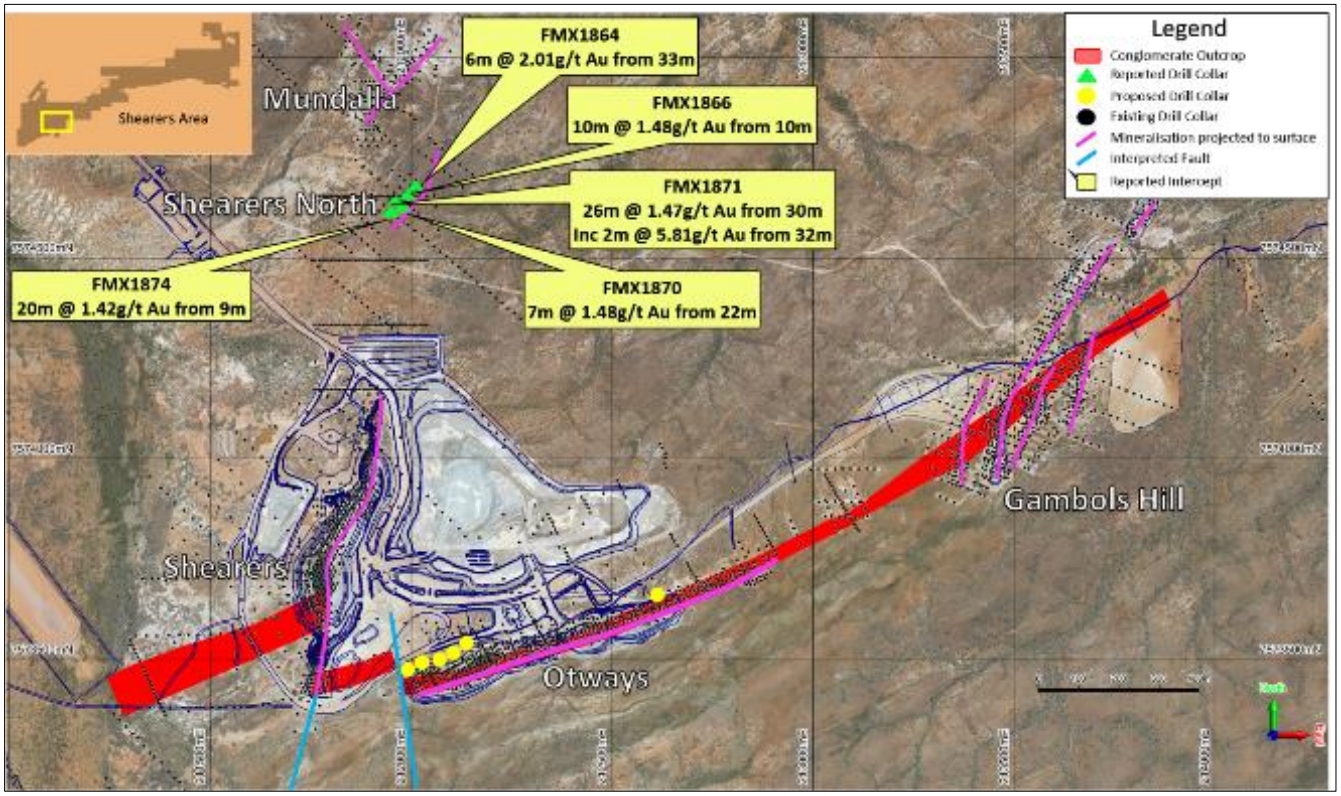

Figure 3: Five Mile Mining Centre showing outcropping conglomerate (in red), the location of some of the recent strong gold intercepts at Shearers North and planned drilling along the Otways-Gambols Hill trend

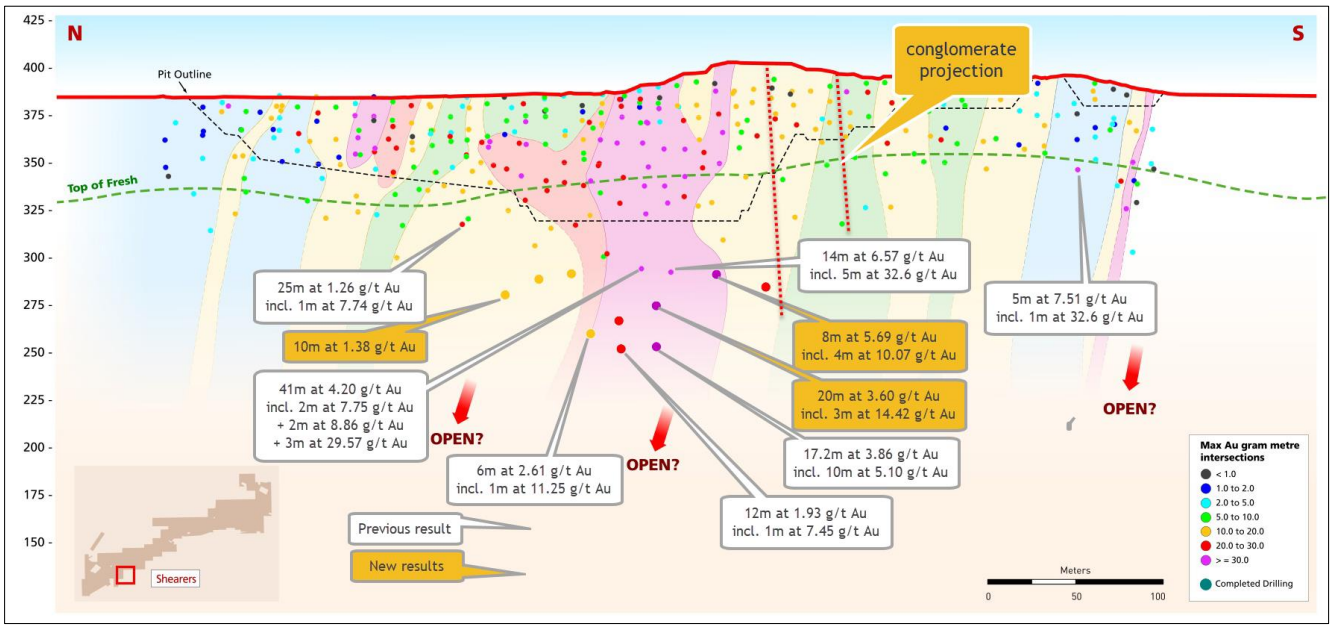

Figure 4: Shearers long section showing the recent deeper drilling and the relationship to the conglomerate

Conglomerate in the Mosquito Creek Formation

The Mosquito Creek Formation (MCF) underlies the majority of Nullagine. The MCF, forms part of the the Mosquito Creek Basin, a Mesoarchaean clastic sedimentary basin in the Pilbara Craton of WA. The MCF is a turbiditic sedimentary sequence with rock types ranging from conglomerate through gritstone, sandstone, siltstone and shale.

Millennium has been actively exploring and mining gold in the MCF since 2012.

Several deposits at the Five Mile Mining Centre including Shearers, Otways and Gambols (45koz Au mined) are hosted within, or in close association with, MCF conglomerates which can be seen at numerous locations throughout the district (Figure 5), and in the pit wall at Gambols Hill (Figure 6).

Previous targeting around these deposits and elsewhere in the MCF has focussed on shear-hosted mineralisation, however given the resurgence of interest in conglomerate-hosted paleoplacer style gold in the Pilbara, this potential will be the focus of a dedicated review.

Figure 5: Conglomerate of the Mosquito Creek Formation

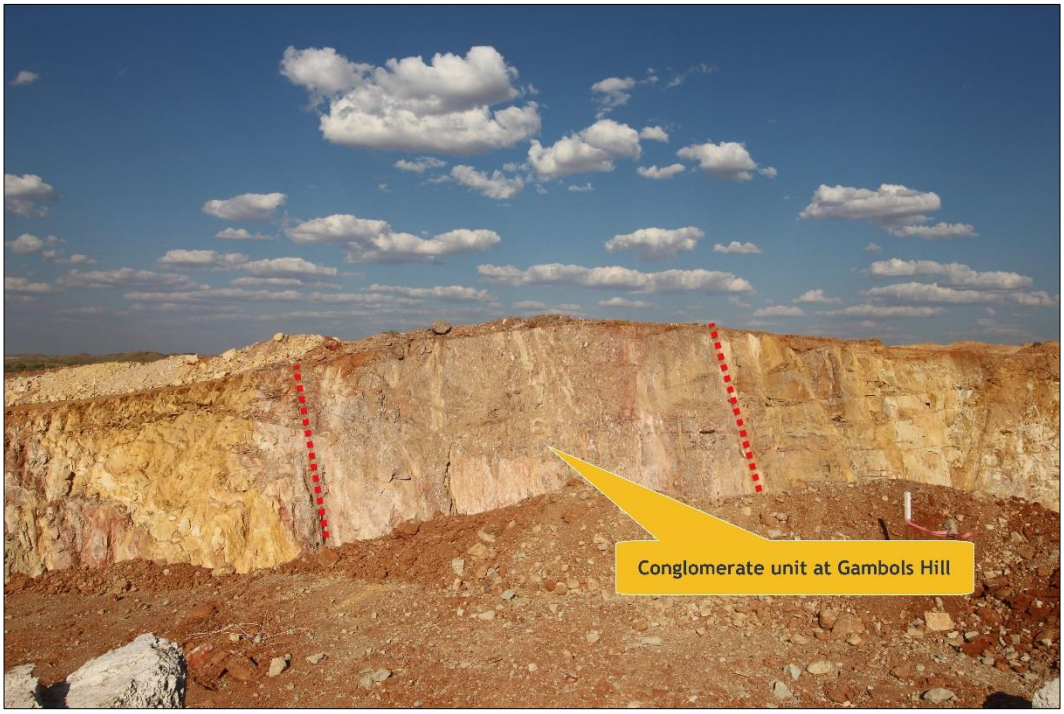

Figure 6: Conglomerate in the pit wall at Gambols Hill

The review will include interogation of our extensive historic surface geochemical database, mapping, sampling and a series of holes to be drilled below the open pit at Shearers and the Otway – Gambols Hill trend.

Management Comment

Millennium Chief Executive Peter Cash said it was increasingly clear that Nullagine had substantial potential at depth and the ongoing exploration campaign was designed to test the extent of this opportunity.

"We will accelerate the deeper drilling underway at Shearers and Bartons with a view to establishing underground operations at these deposits.

"Given the growing view that recent gold-in-conglomerate discoveries in the Pilbara could be an indicator of broader potential for this style of mineralisation, we are now placing an increased emphasis targeting the conglomerate at Nullagine," Mr Cash said.

"This will include drilling focused in part around areas where we have mined extensive quantities of shallow gold from conglomerate and other areas where we know gold mineralisation exists within conglomerate but has not been fully tested or mined.

"Conglomerate has been mapped throughout the Nullagine project area, however until recently has not been the subject of a dedicated targeting exercise for conglomerate hosted gold mineralisation.

"Regardless of the outcome of this review we are confident that our expanded deeper drilling program will help unlock Nullagine's potential at depth."

ENDS

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Competent Persons Statement – Exploration Results

Mr Steven Oxenburgh (MAusIMM (CP), MAIG), a geologist employed full-time by Millennium Minerals Limited, compiled the technical aspects of this Report. Mr Oxenburgh 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 Oxenburgh 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 Au81 West

Hole_ID	GDA East	GDA North	RL	Azi	Dip	Depth (m)		From (m)	To (m)	Width (m)	Grade (g/t Au)	Gram-metres
ARC0441	205607	7568743	413	100	-60	54				AA		AA
ARC0442	205627	7568739	414	100	-60	54				AA		AA
ARC0443	205647	7568736	413	100	-60	54				AA		AA
ARC0444	205580	7568827	409	100	-60	54				AA		AA
ARC0445	205599	7568823	409	100	-60	54				AA		AA
ARC0446	205619	7568820	409	100	-60	54				AA		AA
ARC0447	205639	7568816	409	100	-60	54				AA		AA
ARC0448	205658	7568812	411	100	-60	54				AA		AA
ARC0449	205678	7568808	414	100	-60	54				AA		AA
ARC0450	205697	7568804	415	100	-60	54				AA		AA
ARC0451	205717	7568801	414	100	-60	54				AA		AA
ARC0452	205738	7568798	411	100	-60	54				AA		AA
ARC0453	205758	7568795	411	100	-60	54				AA		AA
ARC0454	205777	7568792	413	100	-60	54				AA		AA
ARC0455	205587	7568903	407	100	-60	54				AA		AA
ARC0456	205607	7568900	407	100	-60	54				AA		AA
ARC0457	205627	7568897	407	100	-60	54				AA		AA
ARC0458	205646	7568894	407	100	-60	54				AA		AA
ARC0459	205666	7568890	407	100	-60	54				AA		AA
ARC0460	205685	7568886	410	100	-60	54				AA		AA
ARC0461	205705	7568883	409	100	-60	54				AA		AA
ARC0462	205724	7568880	411	100	-60	54				AA		AA
ARC0463	205744	7568876	409	100	-60	66				AA		AA
ARC0465	205496	7568842	408	100	-60	54				AA		AA
ARC0466	205476	7568845	408	100	-60	54				AA		AA
ARC0467	205456	7568849	408	100	-60	54				AA		AA
ARC0468	205437	7568853	408	100	-60	54				AA		AA
ARC0469	205417	7568856	408	100	-60	54				AA		AA
ARC0470	205397	7568860	408	100	-60	54				AA		AA
ARC0471	205458	7568708	414	100	-60	54				AA		AA
ARC0472	205440	7568712	418	100	-60	54				AA		AA
ARC0473	205418	7568715	420	100	-60	54				AA		AA
ARC0474	205399	7568717	421	100	-60	54				AA		AA
ARC0475	205380	7568722	418	100	-60	54				AA		AA
ARC0476	205361	7568727	416	100	-60	54				AA		AA
ARC0477	205343	7568730	413	100	-60	54				AA		AA
ARC0479	205530	7568914	407	100	-60	79				AA		AA
ARC0480	205544	7568932	407	100	-60	78				AA		AA
AUGC00142	205569	7569018	405	100	-60	54		40	47	7	1.05	7.3
								51	52	1	0.55	0.6
AUGC00144	205582	7569000	405	100	-60	36		22	26	4	2.59	10.4
							Incl.	24	25	1	5.00	5.0
AUGC00145	205545	7568911	407	100	-60	60		43	54	11	11.69	128.6
							Incl.	47	53	6	19.62	117.7
								59	60	1	0.83	0.8
AUGC00146	205564	7568908	407	100	-60	54		7	8	1	0.83	0.8
								17	30	13	1.35	17.6
							Incl.	20	22	2	6.23	12.5
AUGC00147	205524	7568898	407	100	-60	84		60	62	2	1.10	2.2
AUGC00148	205574	7568889	408	100	-60	48		2	4	2	2.17	4.3
								8	10	2	0.78	1.6
								14	15	1	0.64	0.6
								18	25	7	3.90	27.3
							Incl.	18	20	2	8.93	17.9
								28	30	2	1.64	3.3
AUGC00149	205521	7568878	407	100	-60	84		53	59	6	1.97	11.8
								64	65	1	0.93	0.9

Hole_ID	GDA East	GDA North	RL	Azi	Dip	Depth (m)		From (m)	To (m)	Width (m)	Grade (g/t Au)	Gram-metres
AUGC00150	205517	7568858	407	100	-60	84		46	57	11	1.08	11.9
								62	63	1	1.30	1.3
AUGC00151	205514	7568839	408	100	-60	84		41	42	1	0.60	0.6
								49	58	9	1.99	17.9
							Incl.	52	53	1	5.67	5.7
								61	65	4	1.96	7.8
								83	84	1	0.51	0.5
AUGC00152	205515	7568815	408	100	-60	66		43	48	5	1.61	8.1
								51	54	3	1.75	5.3
AUGC00153	205559	7568811	409	100	-60	42		2	7	5	0.61	3.1
								15	19	4	1.80	7.2
AUGC00154	205507	7568799	408	100	-60	66		6	7	1	0.92	0.9
								47	51	4	1.22	4.9
AUGC00154	205507	7568799	408	100	-60	66		58	60	2	4.18	8.4
AUGC00155	205527	7568796	409	100	-60	48		19	20	1	1.04	1.0
								26	31	5	3.61	18.0
							Incl.	26	28	2	5.88	11.8
								34	40	6	1.63	9.8
AUGC00156	205537	7568791	409	100	-60	42		11	17	6	1.65	9.9
								21	26	5	0.86	4.3
AUGC00157	205504	7568780	408	100	-60	60				AA		AA
AUGC00158	205523	7568776	409	100	-60	42				AA		AA
AUGC00159	205535	7568771	409	100	-60	30				AA		AA
AUGC00160	205492	7568744	409	100	-60	60				AA		AA
AUGC00161	205510	7568741	409	100	-60	42				AA		AA
AUGC00162	205528	7568738	409	100	-60	24				AA		AA
AUGC00163	205484	7568726	410	100	-60	60				AA		AA
AUGC00164	205504	7568722	409	100	-60	42				AA		AA
AUGC00165	205524	7568719	410	100	-60	24				AA		AA
AUGC00166	205479	7568706	410	100	-60	60				NSA		NSA
AUGC00167	205499	7568703	410	100	-60	48		12	15	3	0.98	2.9
								35	36	1	0.55	0.6
AUGC00168	205519	7568700	410	100	-60	24				NSA		NSA
AUGC00169	205476	7568687	411	100	-60	60		4	6	2	0.76	1.5
AUGC00170	205495	7568683	411	100	-60	42				NSA		NSA
AUGC00171	205515	7568679	412	100	-60	24				NSA		NSA
AUGC00172	205473	7568672	411	100	-60	66		27	28	1	0.70	0.7
AUGC00173	205492	7568668	412	100	-60	48		20	22	2	0.57	1.1
								35	36	1	1.06	1.1
AUGC00174	205512	7568665	415	100	-60	24		9	10	1	0.66	0.7
AUGC00175	205465	7568640	412	100	-60	66				AA		AA
AUGC00176	205484	7568636	413	100	-60	54		16	18	2	1.26	2.5
								41	42	1	0.55	0.6
AUGC00177	205504	7568633	417	100	-60	54		33	34	1	0.86	0.9
AUGC00178	205459	7568621	413	100	-60	60				AA		AA
AUGC00179	205479	7568617	413	100	-60	54				AA		AA
AUGC00180	205498	7568614	416	100	-60	54				AA		AA
AUGC00181	205561	7568949	407	100	-60	48		30	32	2	1.21	2.4
								35	37	2	1.79	3.6
AUGC00182	205575	7568946	407	100	-60	30		4	5	1	0.86	0.9
								16	18	2	0.75	1.5
								23	24	1	1.18	1.2
AUGC00183	205565	7568928	407	100	-60	42		3	4	1	0.60	0.6
								9	10	1	0.60	0.6
								22	26	4	0.82	3.3
AUGC00184	205578	7568925	407	100	-60	30		1	3	2	0.95	1.9
								6	13	7	1.18	8.3

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

Appendix 2 – Table of significant results for Shearers North

Hole_ID	GDA East	GDA North	RL	Azi	Dip	Depth (m)		From (m)	To (m)	Width (m)	Grade (g/t Au)	Gram-metres
FMX1850	212019	7574766	389	130	-60	54				NSA		NSA
FMX1851	212038	7574752	393	130	-60	54		29	33	4	0.56	2.2
								37	38	1	0.89	0.9
FMX1852	212050	7574741	396	130	-60	54		0	2	2	2.01	4.0
								6	10	4	1.57	6.3
FMX1853	212068	7574728	394	130	-60	54				NSA		NSA
FMX1854	212083	7574715	391	130	-60	54				NSA		NSA
FMX1855	212099	7574703	390	130	-60	54				NSA		NSA
FMX1856	212112	7574690	389	130	-60	54				NSA		NSA
FMX1857	212128	7574676	388	130	-60	54				NSA		NSA
FMX1858	212058	7574656	389	130	-60	54				NSA		NSA
FMX1859	212043	7574669	390	130	-60	54				NSA		NSA
FMX1860	212027	7574682	391	130	-60	54		3	10	7	0.78	5.5
								14	18	4	1.15	4.6
FMX1861	212011	7574695	391	130	-60	54		37	40	3	2.85	8.5
								43	47	4	1.01	4.0
FMX1862	211996	7574707	390	130	-60	54				NSA		NSA
FMX1863	212023	7574661	391	130	-60	60		0	4	4	1.02	4.1
FMX1864	212006	7574675	391	130	-60	54		0	1	1	0.96	1.0
								33	39	6	2.01	12.1
FMX1865	212017	7574638	391	130	-60	54		40	41	1	4.23	4.2
FMX1866	212002	7574651	391	130	-60	54		10	20	10	1.48	14.8
								24	25	1	0.61	0.6
FMX1867	211986	7574664	390	130	-60	54		47	54	7	0.95	6.7
FMX1868	211971	7574677	388	130	-60	60		24	29	5	0.52	2.6
								32	33	1	0.99	1.0
FMX1869	211991	7574608	392	130	-60	54		0	5	5	1.07	5.4
FMX1870	211975	7574622	392	130	-60	54		1	8	7	1.34	9.4
								22	29	7	1.48	10.4
FMX1871	211961	7574634	391	130	-60	66		30	56	26	1.47	38.2
							Incl.	32	34	2	5.81	11.6
FMX1872	211945	7574647	389	130	-60	60		54	59	5	1.03	5.1
FMX1873	211969	7574600	393	130	-60	54		5	8	3	1.01	3.0
								14	17	3	0.49	1.5
FMX1874	211957	7574611	392	130	-60	54		3	4	1	1.06	1.1
								9	29	20	1.42	28.4
								47	48	1	0.64	0.6
FMX1875	211965	7574578	392	130	-60	54				NSA		NSA
FMX1876	211950	7574591	392	130	-60	54		2	9	7	1.30	9.1
								13	14	1	0.84	0.8
FMX1877	211935	7574603	391	130	-60	54		0	1	1	0.51	0.5
								37	42	5	0.78	3.9
								45	46	1	0.56	0.6
FMX1878	211919	7574617	389	130	-60	54				NSA		NSA
FMX1879	211918	7574563	389	130	-60	54				AA		AA
FMX1880	211904	7574575	389	130	-60	54				AA		AA
FMX1881	211891	7574587	389	130	-60	54				AA		AA
FMX1882	211878	7574597	388	130	-60	54		13	19	6	1.66	10.0
								30	31	1	0.82	0.8
FMX1883	211853	7574564	387	130	-60	54		30	31	1	2.07	2.1
FMX1884	211851	7574515	386	130	-60	54				NSA		NSA
FMX1885	211837	7574526	387	130	-60	54		6	10	4	0.66	2.6
								16	26	10	0.85	8.5
FMX1886	211822	7574538	386	130	-60	60		44	52	8	0.84	6.7

Hole_ID	GDA East	GDA North	RL	Azi	Dip	Depth (m)		From (m)	To (m)	Width (m)	Grade (g/t Au)	Gram-metres
FMX1890	211969	7574310	387	130	-60	54				NSA		NSA
FMX1891	211952	7574324	386	130	-60	54				NSA		NSA
FMX1892	211935	7574337	386	130	-60	54				NSA		NSA
FMX1893	211920	7574351	386	130	-60	54				NSA		NSA
FMX1894	211908	7574361	385	130	-60	54				NSA		NSA
FMX1895	211892	7574376	385	130	-60	54				NSA		NSA
FMX1896	211876	7574389	385	130	-60	54				NSA		NSA
FMX1897	211861	7574402	385	130	-60	54		7	8	1	6.89	6.9
							Incl.	7	8	1	6.89	6.9
FMX1898	211846	7574415	385	130	-60	54				NSA		NSA
FMX1899	211828	7574429	385	130	-60	54				NSA		NSA
FMX1900	211814	7574441	385	130	-60	54				NSA		NSA
FMX1901	211799	7574453	385	130	-60	54		20	26	6	1.65	9.9
							Incl.	24	25	1	5.18	5.2
								40	41	1	0.58	0.6
FMX1902	211784	7574466	385	130	-60	54		40	41	1	0.55	0.6
								50	54	4	1.16	4.6
FMX1903	211769	7574478	384	130	-60	54				NSA		NSA
FMX1904	211754	7574491	385	130	-60	54				NSA		NSA
FMX1905	211738	7574504	385	130	-60	54				NSA		NSA
FMX1906	211722	7574517	385	130	-60	54				NSA		NSA
FMX1907	212286	7574337	389	130	-60	54				NSA		NSA
FMX1908	212272	7574349	389	130	-60	54		14	15	1	0.62	0.6
FMX1909	212256	7574362	388	130	-60	54				AA		AA
FMX1910	212241	7574374	388	130	-60	54				AA		AA
FMX1911	212225	7574388	388	130	-60	78				AA		AA
FMX1912	212210	7574401	387	130	-60	54				AA		AA
FMX1913	212195	7574414	387	130	-60	54				AA		AA
FMX1914	212180	7574426	387	130	-60	54				AA		AA
FMX1915	212165	7574439	387	130	-60	54				AA		AA
FMX1916	212148	7574453	387	130	-60	54				AA		AA
FMX1917	212133	7574465	387	130	-60	54				AA		AA
FMX1918	212117	7574479	387	130	-60	54				AA		AA
FMX1919	212101	7574492	387	130	-60	54				AA		AA
FMX1920	212086	7574505	387	130	-60	54				AA		AA
FMX1921	212070	7574517	387	130	-60	54				AA		AA
FMX1923	212152	7574706	388	130	-60	54				NSA		NSA
FMX1924	212137	7574719	389	130	-60	54				NSA		NSA
FMX1925	212121	7574732	389	130	-60	54				NSA		NSA
FMX1926	212105	7574746	390	130	-60	54				NSA		NSA
FMX1927	212090	7574758	389	130	-60	54				NSA		NSA
FMX1928	212076	7574771	388	130	-60	54		0	2	2	0.93	1.9
FMX1929	212060	7574784	388	130	-60	72		10	11	1	0.52	0.5
								30	32	2	2.15	4.3
FMX1930	212044	7574796	387	130	-60	72		33	34	1	0.60	0.6
								54	55	1	0.73	0.7
								59	66	7	1.39	9.7

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

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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.* • *Sampling at Shearers North and AU81 West was carried out using the Reverse Circulation (RC) drilling.* • *Standard samples were inserted to the 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.* • *Rock chip samples were selected over zones interpreted to be mineralised and are biased towards mineralisation. Rock chip samples are taken to identify areas to prioritise drilling programmes.*
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.*
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 on 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.* • *There is no observed 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.* • *The total length and percentage of the relevant intersections logged.*	• *All of the drilling has been captured in chip trays.* • *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.* • *RC chip trays are retained at site.* • *All of the intersections were logged.*
Sub-sampling techniques and	• *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*	• *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.*

Criteria	JORC Code Explanation	Commentary
sample preparation	*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.*	• *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 with additional field duplicates taken in the expected mineralised zones.* • *No duplicates or standards were inserted into the rock chip samples batches. Normal internal laboratory checks were run.*
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.* • *Commercially prepared, predominantly matrix-matched low, medium & high value certified reference QAQC standards were inserted at a rate of 1:50 into the 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 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.* • *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.* • *Sampling is directly uploaded to 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. 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). Selected re-surveying was carried out to check the quality of measurements.*

Criteria	JORC Code Explanation	Commentary
		• *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.*	• *RC drilling was conducted at nominal 100-40m x 20m spacing.* • *Thus far the drill spacing has been sufficient to establish geological and grade continuity.* • *None of the reported sample intervals were composited.*
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.*	• *Geological mapping and structural measurements have been taken from Shearers North and AU81 West and largely confirms the interpreted orientation of mineralisation as defined by the drilling. Based upon the above information the drilling was largely perpendicular to the mineralisation.* • *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 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.*
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.*	*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.* • *Shearers North * – M46/261[+] and M46/262[+] (both 100% MML);* • *AU81 West * – M46/443[+] (100% MML)* **These tenements are located within the Njamal (WC1999/008) and Palyku (WC1999/016) title claims* *[+] 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. Previous RAB drilling was conducted by Wedgetail Exploration NL. Millennium has re-drilled this area to gain high quality representative samples.*
Geology	• *Deposit type, geological setting and style of mineralisation.*	• *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 conglomerate, sandstones, siltstones and shales.*

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 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 samples reported were one metre in length. Thus no aggregation methods were required to derive 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 70-90% 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.*	• *The outcrops of quartz veins have been previously mapped at Shearers North. The mineralisation at Shearers North is primarily associated with a combination of quartz veining, moderate foliation, strong sericite alteration and strong limonite staining or pyrite content.*
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.*	• *Further RC drilling will be planned to extend the mineralisation along strike from current holes.*