

# **ASX** and Media Release

# Quarterly activities report March quarter 2017

#### **HIGHLIGHTS**

- ❖ 12,406 ounces of gold produced in the quarter taking YTD production to 36,973 ounces
- ❖ March 2017 quarter AISC of \$1,475 per ounce, down 8.6% from the December 2016 quarter
- Improving underground mining performance expected to continue to reduce AISC over coming quarters
- Guidance for the combined Challenger and Tarcoola mining operations for the year to 30 June 2017 remains in the range of 52,000 – 56,000 oz
- First tonne of gold since re-start poured at Challenger
- Challenger mill expansion plan well advanced to optimise processing efficiencies with abundant feed available
- Challenger underground exploration program momentum building with significant results achieved that show significant potential to extend mine life
- Drilling on M3/SEZ lodes in upper areas indicate a potential strike length of up to 150 metres which may result in a new production area. Initial stoping now planned in June quarter
- Encouraging initial drill results on the new Enterprise conceptual target located parallel to existing structures which could evolve into a new lode
- Tarcoola IP survey and soil sampling survey completed at Warrigal Prospect which has generated a large RC drill target
- Drilling at the Wondergraph prospect at Tarcoola produced significant gold intersections
- ❖ WGCJV (WPG 29%) dispute resolved; WPG has 100% of Challenger Deeps with new JV to be formed to explore for gold in other tenements
- WGCJV maiden resource announcement of 219,000 oz with significant and active program continuing in June quarter on additional high priority prospects including Monsoon and Typhoon
- Tunkillia IP survey designed

Resources Ltd

Board renewal process progressing

28 April 2017 **WP** 

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#### **RESULTS AT A GLANCE**

Sales and Processing (Challenger Processing Hub)	Units	March Quarter 2017	**Year To Date	December Quarter 2016
Total Ore Processed	Tonnes	147,173	456,478	157,707
Grade Processed	g/t Au	2.75	2.65	2.58
Recovery	%	95.4	94.9	94.9
Gold Recovered	Ounces	12,406	36,973	12,429
All-in Sustaining Cost*	\$/Ounce	1,475	1,575	1,614
Gold Sold	Ounces	13,083	37,326	12,818
Average Gold Price Received	\$/Ounce	1,608	1,661	1,631
Sales Revenue Realised**	A\$000's	21,050	62,029	20,923

Challenger Gold Mine Operations Summary	Units	March Quarter 2017	**Year To Date	December Quarter 2016
Underground Capital Development	m	93	636	149
Total Underground Development	m	1,373	3,808	1,222
Underground Ore Mined	Tonnes	114,251	340,384	117,682
Underground Ore Grade***	g/t Au	3.22	3.11	3.02
Surface Stockpiles Treated****	Tonnes	2,837	81,058	39,582

Tarcoola Gold Mine Operations Summary	Units	March Quarter 2017	**Year To Date	December Quarter 2016
Open Pit Waste Mined	bcm	607,278	775,087	167,809
Open Pit Ore Mined	Tonnes	37,432	46,257	8,825
Grade	g/t Au	1.87	2.05	2.71
Ore Hauled to Processing Facility	Tonnes	24,704	24,704	-
ROM Stockpile	Tonnes	24,894	33,719	8,825

- Notes: \* AISC in relation to underground mining costs include all lateral development and fixed asset additions other than those associated with permanent infrastructure. AISC in relation to open cut mining activities excludes capitalised waste mining costs. AISC includes an appropriate allocation of head office costs.
  - \*\* Production, sales and revenue information is provided for the Challenger gold mine at 100% level (WPG 50% 1 June to 31 July 2016, 100% from 1 August 2016). Current year sales and revenue attributable to the joint venture partner up to 31 July 2016 are 1,891 oz for revenue of \$3,354k
  - \*\*\* Includes stoping ore, development ore and low grade development ore
  - \*\*\*\* Low grade stockpiled material acquired with the Challenger Gold Mine



#### CHALLENGER PROCESSING HUB

#### **OVERVIEW**

During the quarter the Challenger CIP plant poured the first tonne of gold since it was restarted under WPG's management in May 2016. In addition to this milestone, the first blended Challenger-Tarcoola gold bars were produced in February.

Tarcoola ore treated during the quarter was oxide material however higher grade primary material has more recently been to be delivered to the mill. During the quarter, various blend ratios of Challenger and Tarcoola ore were treated, with trials also covering treatment of 100% Tarcoola feed only. These trials were undertaken successfully and steady state operations maintained at approximately blends of 4:1 Challenger to Tarcoola feed. Higher Tarcoola ratios were also successfully treated in intermittent processing. The constraining factor at this time on the oxide feed ratio has been water and an additional bore will be installed to provide additional make-up water in the near future. In addition trials on alternate flocculants are planned to maximise the ability to process oxide material.

Due to the abundant availability of ore from both Challenger and Tarcoola the Challenger mill has been run at full capacity and is the bottleneck in the system. During the quarter the Company commenced studies on the potential to increase the throughput of the Challenger mill. As the Challenger processing plant is largely a fixed cost operation with limited variable cost elements a significant opportunity exists to lower unit treatment and overall costs.

During the quarter, trials to run the Challenger treatment plant at higher throughput rates were undertaken. Indications are that the plant capacity can be increased from the current 600,000 tpa to 700,000 tpa with no material loss of gold recovery and without significant capital expenditure. There is further potential to increase the capacity to 800,000 tpa with some limited additional expenditure and these options are being examined. This would allow an increase in gold production.

At present ore is sourced from both Challenger and Tarcoola however in the future scope exists to expand the resource base at and near to both sites and to modify the scale of mining operations to ensure continuous ore feed. In addition an expanded mill capacity will increase the potential for future toll treatment of third party ore including potentially the WGCJV which announced its maiden resource estimate in the quarter, and with those resources in close proximity to the Challenger mill.

#### **Production and Costs**

Milled tonnes for the quarter were 147,173 @ 2.75 g/t Au with average recovery of 95.4%. Total gold recovered was 12,406 ounces, while gold sold was 13,083 ounces.



All-In-Sustaining Cost (AISC) in the quarter was \$1,475 per ounce recovered, down 8.6% from the December 2016 quarter. Total revenue from bullion sales was \$21.1 million at an average gold price of \$1,608 per ounce. This AISC, whilst unacceptably high, has started to reduce which is reflective of improved mining physicals performance at Challenger.

#### **Production Guidance**

Updated guidance for the combined Challenger and Tarcoola mining operations announced on 13 March 2017 for the year to 30 June 2017 is in the range of 52,000 to 56,000 ounces.

#### CHALLENGER GOLD MINE

#### **PRODUCTION**

The Challenger mine continued operations at full production rates during the quarter. Total ore mined from underground for the quarter was 83,209 tonnes @ 4.02g/t Au (16,242 tonnes from development and 66,967 tonnes from stoping). Underground ore feed to the mill was supplemented by 31,042 tonnes of low grade surface stockpile material.

Initiatives implemented to improve the delivery of mine physical in underground mining operations commenced to be realised in the quarter. The improvements in development metres achieved has allowed mining to be undertaken in an increased number of stoping areas. Further improvements in mining physicals which will continue to positively impact on AISC are anticipated over coming quarters.

Production was primarily from the Challenger West lode with additional material sourced from the Aminus, M2 and M3 lodes. During the quarter development of a cross-cut to give access to newly drilled areas of the M3 lode was commenced with stoping operations in M3 planned to commence late in the next quarter. This represents a new mining area near to surface with significant upside opportunity.

#### **Vent Upgrade**

During the quarter a mine ventilation upgrade to allow drilling to commence in Challenger Deeps was completed. In early April 2017, drilling commenced from underground drill cuddies with encouraging gold assays from the first hole in its Challenger Deeps drilling program announced on 11 April 2017.





Figure 1: primary fan bank at the ventilation shaft collar fully installed and running

#### **NEAR MINE EXPLORATION**

Resource definition and near mine exploration opportunities were pursued during the quarter by a program of underground diamond drilling. This ongoing program of near mine exploration drilling activity is to identify potentially new minable resources that can be accessed from existing underground development.

Significant results were achieved in the quarter and, in particular, a significant opportunity to mine the M3 structure in the upper levels of the mine has been identified. It is anticipated that with further drilling this new area will form a new production area at Challenger.

#### **Challenger West**

During the quarter, a total of eighteen drill holes for 2,258 metres were drilled to infill the Challenger West orebody between 450mRL and the 300mRL. The purpose of the drilling was to test the continuity down plunge of the OD1 - OD5 shoots that have been previously mined on upper levels within Challenger West.

Significant intercepts for the quarter:

- 16CUD1977: 0.53m @ 412.88g/t from 89.00m (Aminus)
- 16CUD1977: 0.30m @ 1,002.76g/t from 115.07m
- 17CUD2045: 2.00m @ 154.75g/t from 106.00m
- 17CUD2046: 0.63m @ 26.60g/t from 64.62m
- 17CUD2048: 0.30m @ 25.80g/t from 16.00m
- 17CUD2051: 1.87m @ 134.35g/t from 97.88m
- 17CUD2052: 0.72m @ 35.13g/t from 62.73m



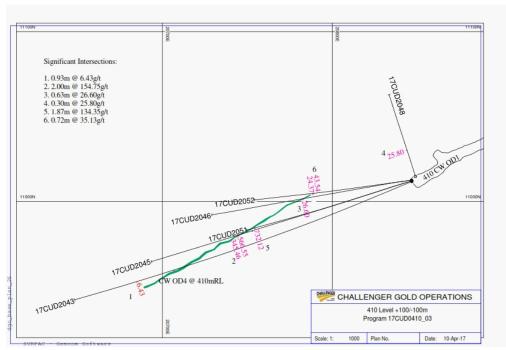


Figure 2: Challenger West OD4 drill results at 410mRL

Drill results from the 370 and 410 levels intersected visible gold in several drill holes, on the Aminus, CW OD1 and CW OD4 ore shoots. The continuation of the OD4 ore shoot down plunge is very encouraging after the drill results received at the 450 level, that were reported in the December 2016 Quarterly report.

A full description of drilling details, including table of significant intercepts is included in Appendix 1 of this report.

#### M3/SEZ

Drilling of the M3 and SEZ ore shoots continued during the quarter, following on from the successful drilling results received in the December quarter on the 1025 level. Nineteen holes for 2,646 metres were completed during the March quarter targeting M3 and SEZ ore shoots on the 980 and 940 levels.

Significant intercepts for the quarter:

- 16CUD1987: 0.68m @ 49.47g/t from 11.32m
- 16CUD1994: 0.30m @ 15.45g/t from 119.17m
- 16CUD1995: 0.81m @ 79.09g/t from 115.19m

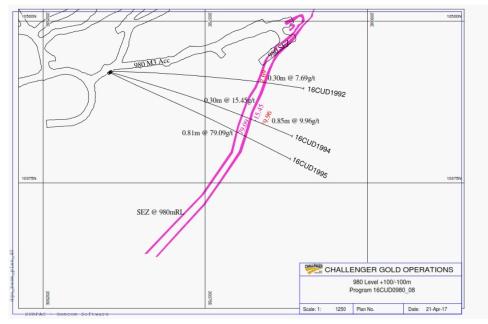


Figure 3: Drill intercepts for SEZ ore shoot at 980 RL

The results received to date on the SEZ lode at the 980 level are encouraging with several drill holes awaiting assay results and those drill holes will be reported next quarter. The M3 and SEZ lodes are located on separate limbs of a folded vein package, with a potential strike length of up to 150 metres.

A full description of drilling details, including table of significant intercepts is included in Appendix 1 of this report.

#### **Enterprise**

The conceptual exploration target of Enterprise was partially drilled during the quarter. The Enterprise target is the down plunge projection of the Challenger SW surface RAB and RC drilling, which contains moderate to low grade gold intercepts. The location of CSSW development at the 975 level provides an excellent drill platform for Enterprise. Five holes totalling 1,807.6 metres were drilled, before the drill rig was moved due to operational drilling requirements. There are 761 metres left to complete on the initial program at Enterprise.

Significant intercept for the quarter:

17CUD2012: 0.39m @ 66.13g/t from 249.61m.

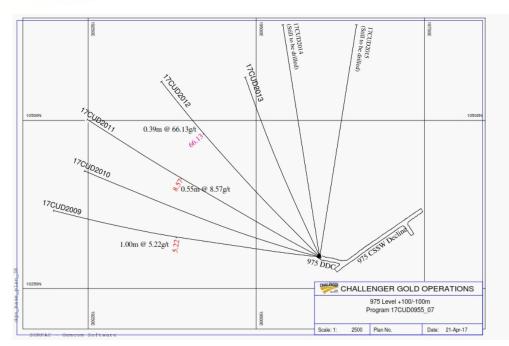


Figure 4: Drill intercepts for Enterprise drill program at the end of March 2017

The results received from the initial Enterprise drill program are highly encouraging, with several holes intersecting several vein packages, some up to three metres wide in core. There are numerous, moderate grade hits from Enterprise between 3 to 10g/t within these vein packages. The completion of the first Enterprise drilling program is still to be completed and based on results received to date, additional drill programs will be planned targeting extensions to the conceptual Enterprise target.

A full description of drilling details, including table of significant intercepts is included in Appendix 1 of this report.

#### **M2**

Two drill programs consisting of sixteen holes for 953.3 metres were drilled on the 1025 and 480 Levels. The target of both programs was potential remnant ore blocks within the M2 ore shoot that could be mined in the future.

Significant intercepts for the quarter:

- 16CUD2004: 1.57m @ 20.25g/t from 16.43m.
- 17CUD2060: 1.00m @ 21.75g/t from 39.00m.
- 17CUD2068: 0.84m @ 262.05g/t from 71.16m.

On the 480 Level, the program was designed to target the M2 S2 lode which was not mined between the 500 and 440 levels, but had been successfully mined above and below these levels. Drilling at the 1025 level only produced one significant intercept. At the end of the March quarter, there were several drill holes awaiting assay results and those drill holes will be reported next quarter.



A full description of drilling details, including table of significant intercepts is included in Appendix 1 of this report.

#### **Future exploration activities**

The focus of future exploration activities at Challenger for the remainder of the financial year is shown in Figure 4 below.

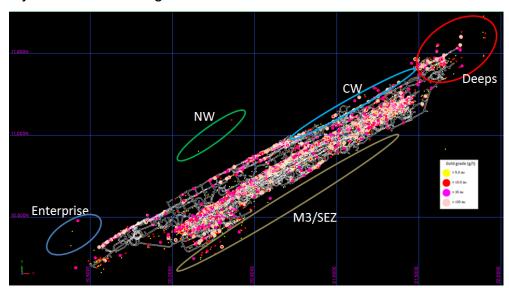


Figure 5: Near Mine exploration targets at Challenger for FY2017/18

Drilling is planned on multiple near mine exploration targets over the next twelve months. The diamond drilling program will be split into two sections – development drilling and near mine exploration drilling. Development drilling involves further drilling into Challenger West, Aminus and remnant opportunities in the historic M1 and M2 lodes. Near mine exploration drilling will target Challenger Deeps, M3/SEZ and Enterprise.

#### **Challenger Deeps**

Drilling commenced at the start of April 2017 on the 135 level, targeting down plunge extensions of the M1, M2, Aminus and Challenger West ore shoots. The results from the first drill hole (17CUD2071) were released on 11 April 2017. The current drill program will take approximately 6 weeks to complete drilling, with assay results expected soon after completion.

#### TARCOOLA GOLD MINE

#### **PRODUCTION**

During the March quarter the Tarcoola gold mine continued operations with haulage to the Challenger processing hub and the recovery of gold commencing in January 2017.

Planned upgrades to the haul road and the traffic management plan were completed and trucking of Tarcoola ore to Challenger for treatment through the Challenger CIP plant commenced in January 2017. The first gold from Tarcoola was poured in February 2017.

A total of 624,293 bcm was mined from the pit, including 37,432 tonnes of ore at a grade of 1.87 g/t containing 2,212 ounces of gold. During the quarter, 24,704 tonnes of ore was hauled to Challenger, and 453 ounces of Tarcoola gold was poured at Challenger. A further 22,949 tonnes of mined ore was stockpiled at Tarcoola.

Heavily oxidised sediments overlying the pit and disturbed ground due to old mine workings in the upper benches were encountered early in the quarter. This surficial zone suffered from gold depletion however expected gold grades were mined from mid-March onwards and grade control drilling activities are now providing reliable estimates of contained gold in mining blocks.

Since January, grade predictability has been steadily improving, and the positive trend is expected to continue as mining moves below the oxidised sediments and the updated geological model becomes available.



Figure 6: Tarcoola ore arrives at Challenger for processing



Figure 7: Last Resource (northern end of pit) – looking north



Figure 8: Perseverance (southern end of pit) – looking west



Figure 9: South – North View of Pit



Figure 10: View of ROM Pad (foreground) with Waste Rock Facility in background

#### **NEAR MINE EXPLORATION**

#### **Warrigal Prospect**

The Warrigal prospect was identified as a high priority exploration area on the Tarcoola mining lease due to the presence of a historical Induced Polarisation (IP) anomaly located below an area of old gold workings. Exploration activities conducted in the quarter have generated a significant RC drill target which is planned to be drilled early in the September quarter.

During the quarter a surface soil sampling program entailing 279 samples on 9 lines spaced 100m apart was completed at the Warrigal prospect (with a sample spacing of 25m and sieved to -0.16mm) and assayed for a multi-element suite. A number of interesting gold and pathfinder element trends were identified which will be used to assist drill planning.

In addition the historical IP geophysical data over the Warrigal Prospect was processed for the first time with inversion software and a chargeability anomaly was identified

The soil sampling program identified elevated arsenic levels on the margins of the chargeability anomaly compared to the rest of the soil survey area. These occur along consistent trends following stratigraphy, presumed to be related to iron sulphides – giving further support for the encouraging chargeability anomaly.

The chargeability anomaly combined with the geochemical target warranted a more detailed 8-line dipole-dipole IP survey (50m spaced electrodes) which was completed in March (as shown in Figure 11). This verified the historical anomaly with added resolution, extended it to the west and closed it off on the eastern end. The data was processed in three ways – 2D sections, 3D gridding of 2D data and 3D UBC modelling. These all correlated well, giving a reliable location for the anomaly.

The chargeability anomaly lies within a resistive unit between a zone of high conductivity and a zone of high resistivity. The mineralisation model to explain the chargeability anomaly could be a disseminated sulphide zone on a lithological\fault boundary, a stock work vein system or high grade veins as depicted conceptually in Figure 12.

The upper margin is modelled at approximately 50m below surface and extends to 150m below surface and the target is approximately 500m in length. RC drill testing is planned early in the September quarter.

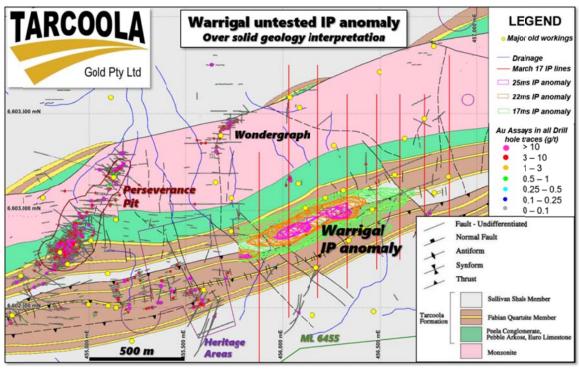


Figure 11 – Warrigal untested IP anomaly (3D chargeability shells) and historical drill hole traces

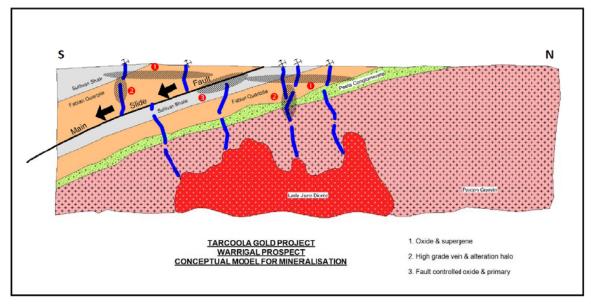


Figure 12 – Warrigal Prospect conceptual model for mineralisation



#### Wondergraph

A small program of 11 Reverse Circulation drill holes totalling 350m was completed at the Wondergraph Prospect, to test historical open down dip and along strike mineralisation. All assays have been received with a peak intersection of **6m @ 4.2g/t Au from 13m** received, shown in Appendix 2 and Figure 13. The target is being evaluated for more potential drilling positions with the intention of defining another resource for the Tarcoola operation.

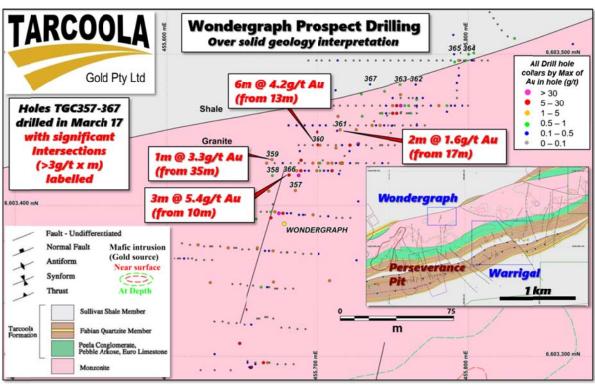


Figure 13 – Location of recent Wondergraph drill hole collars and significant intersections and historical drill hole collars

WPG has rights to 100% of all minerals over an area of 1,207km<sup>2</sup> on ELs 5355 and 5254 surrounding the Tarcoola mine and is reviewing exploration targets with potential for further discoveries.

### **WESTERN GAWLER CRATON JV (WGCJV)**

The current interests of the parties to the WGCJV are approximately WPG 29%, and Tyranna Resources Ltd (Tyranna) 71%, with Tyranna the manager of the WGCJV. The WGCJV's strategy is to target the more advanced gold prospects which are situated within 50 km of the Challenger gold processing hub and increase the economic scale of these prospects via focused and extensive exploration drilling.

On 24 January Tyranna announced a maiden resource estimate of 219,000 oz of gold at a cut-off grade of 0.5 g/t Au in a number of prospects within the WGCJV (refer to Tyranna's ASX announcement of 24 January 2017 and summarised in Figure 14).

Deposit area			0.5 g/t cut off			0.8 g/t cut off	F
		Mt	Au g/t	Au koz	Mt	Au g/t	Au koz
Golf Bore	Golf Bore	2.98	1.0	96	1.42	1.5	68
	Golf Bore North	0.40	0.9	12	0.15	1.2	6
	Combined	3.38	1.0	107	1.57	1.5	74
Greenewood	d	0.70	1.0	23	0.34	1.4	15
Mainwood		0.36	0.9	10	0.14	1.3	6
Campfire Bore		2.45	1.0	79	1.14	1.4	51
Total		6.89	1.0	219	3.19	1.4	147

Figure 14 – Maiden Jumbuck resource estimates

Tyranna completed a program of reverse circulation drilling at the Typhoon prospect, 35 km SSW of Challenger, during the Quarter and assays are pending (see Tyranna's ASX announcements of 9 March 2017 and 6 April 2017).

These discoveries may ultimately be processed through the Challenger mill if viable and WPG encourages Tyranna to continue exploring in the WGCJV project.

#### **TUNKILLIA**

#### **EXPLORATION**

WPG has 100% of all minerals over an area of 1,604 km<sup>2</sup> on ELs 5670, 5901 and 5790 and is reviewing exploration targets with potential for further discoveries. Regional target generation on the broader Yarlbrinda Shear Zone away from the 223 deposit has been prepared and an Induced Polarisation (IP) survey has been designed.

The review of historical quartz vein data in 3D is ongoing, with the aim of defining the structure of the gold hosting quartz lodes to generate higher grade gold target zones beneath the already defined mineralisation.

No work on progressing the Definitive Feasibility Study was undertaken in the quarter.

# MUCKANIPPIE, ROBINS RISE, LAKE WOORONG AND PERFECTION WELL

With WPG's current focus on fast tracking its gold projects, the Company's efforts were diverted for the quarter from its other South Australian project assets.

There was no substantive work undertaken on these tenements during the quarter, however, a review of these projects and previously proposed programs has been completed and a priority ranking has been generated.



#### **CORPORATE**

#### **BOARD CHANGES**

During the quarter changes to the Board were made that continue to reflect the Company's strategy of renewal, generational change and diversity.

On 1 March 2017, Ms Helen Wiseman, an independent Non-executive Director and Chair of the Audit & Risk Committee, was appointed Lead Independent Director.

Mr Cornel Parshotam, the Company's Chief Operating Officer, was appointed Alternate Director for Mr Gary Jones.

Non-executive Director Dennis Mutton retired on 22 March 2017. Dennis was a Director for 8 years and made a substantial contribution to the Company during his tenure.

#### **EXERCISE OF OPTIONS**

On 31 December 2016 the Company's unexercised \$0.038 options expired and in January 2017 were taken up by the underwriter. Approximately \$181,443 was raised through the issue to the underwriter of 4,774,813 shares on exercise of the remaining options.

#### **HEDGING**

At the end of the quarter the Company had sold forward a total of 12,500 ounces of gold at an average price of A\$1,616/oz. The Company intends to enter into further hedging arrangements in the current quarter.

#### **FINANCIAL POSITION**

As at 31 March 2017 the Company had cash at bank of \$6.5 million and gold bullion at cost of \$1.3 million.

#### **Further Information**

For further information please contact WPG's Chief Executive Officer, Wayne Rossiter on (02) 9251 1044.

### **Forward-Looking Statements**

This document may include forward-looking statements. Forward-looking statements include, but are not limited to statements concerning WPG's planned mining and exploration programs and other statements that are not historical facts. When used in this document, the words such as "could", "plan", "estimate", "expect", "intend", "may", "potential", "should" and similar expressions are forward-looking statements. In addition, summaries of Exploration Results and estimates of Mineral Resources and Ore Reserves could also be forward looking statements.



Although WPG believes that its expectations reflected in these forward-looking statements are reasonable, such statements involve risks and uncertainties and no assurance can be given that actual results will be consistent with these forward-looking statements.

#### **Competent Person Statements**

#### **CHALLENGER**

#### **Exploration activities**

The Challenger exploration activities and results contained in this report are based on information compiled by Mr Kurt Crameri.

Kurt Crameri is a Member of the Australasian Institute of Mining and Metallurgy. He is a Senior Project Geologist and Mining Engineer and a full time employee of WPG Resources Ltd. He has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the December 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code & Guidelines). Kurt Crameri has consented in writing to the inclusion in this report of the matters based on his information in the form and context in which it appears.

#### **TARCOOLA**

#### **Exploration activities**

The Tarcoola exploration activities and results contained in this report are based on information compiled by Mr Paul Wittwer.

Paul Wittwer is a Member of the Australasian Institute of Mining and Metallurgy and the Australian Institute of Geoscientists. He is a Senior Project Geologist and a full time employee of WPG Resources Ltd. He has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the December 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code & Guidelines). Paul Wittwer has consented in writing to the inclusion in this report of the matters based on his information in the form and context in which it appears.

Appendix 1

Drill Data - Significant Intercepts Challenger

	Exploration Diamond Drill hole Details (Local Grid)								Intercept Deta	nils	
Hole ID	Collar mN	Collar mE	Collar mAHD	Dip	Grid Azi	Hole Length	From (m)	To (m)	Interval (m)	Au (g/t)	Shoot
16CUD1977	11014.88	21022.77	370.782	15	288	190	89.00	89.53	0.53	412.88	AMINUS
100001977	11014.00	21022.77	370.762	15	200	190	115.07	115.37	0.30	1,002.76	CW
							11.32	12.00	0.68	49.47	M3
16CUD1987	10413.64	20238.99	1025.077	10	111	122	21.52	21.82	0.30	9.71	M3
							85.00	86.00	1.00	6.68	SEZ
16CUD1992	10461.03	20302.34	983.08	-5	90	150	117.60	117.90	0.30	7.69	SEZ
16CUD1994	10460.47	20301.87	983.046	-6	106	150	119.17	119.47	0.30	15.45	SEZ
100001334	10400.47	20001.07	303.040	-0	100	150	124.83	125.68	0.85	9.96	SEZ
16CUD1995	10460.24	20301.47	983.116	-6	115	155	115.19	116.00	0.81	79.09	SEZ
16CUD1998	10459.83	20300.64	983.165	-6	144	147	137.00	138.00	1.00	5.42	SEZ
16CUD2004	10422.27	20256.87	1025.461	0	30	40	16.43	18.00	1.57	20.25	M2
16CUD2007	10421.57	20254.52	1026.414	20	325	30	11.39	12.00	0.61	5.61	M2
17CUD2009	10297.34	19592.66	961.807	0	276	401	213.00	214.00	1.00	5.22	Enterprise
							264.44	265.00	0.56	6.38	Enterprise
17CUD2011	10298.15	19593.11	961.831	0	297	400	234.85	235.40	0.55	8.57	Enterprise
17CUD2012	10298.78	19593.4	961.744	0	313	350	249.61	250.00	0.39	66.13	Enterprise
17CUD2043	11011.9	20846.87	415.894	0	248	211	171.98	172.91	0.93	6.43	CW
17CUD2045	11012.17	20846.73	415.862	0	255	160	106.00	108.00	2.00	154.75	CW
17CUD2046	11012.58	20846.71	415.957	1	263	119	64.62	65.25	0.63	26.60	CW
17CUD2048	11014.88	20848.91	415.926	2	343	51	16.00	16.30	0.30	25.80	CW
17CUD2051	11012.17	20846.78	415.348	-14	254	105	97.88	99.75	1.87	134.35	CW
17CUD2052	11012.58	20846.64	415.021	-21	263	100	62.73	63.45	0.72	35.13	CW
							39.00	40.00	1.00	21.75	M2
17CUD2060	11049.25	21077.12	483.801	16	83	100	47.00	48.00	1.00	11.09	M2
							51.50	52.20	0.70	7.01	M2
17CUD2068	11049.25	21077.06	482.493	-17	83	80	71.16	72.00	0.84	262.05	M2

Appendix 2

Drill Data - Significant Intercepts Tarcoola: Wondergraph significant intersections (>3 g/t x m are reported only), using a 0.5g/t cut off

	Exploration Diamond Drill hole Details (Local Grid)								Intercept Deta	ails	
Hole ID	Collar mN	Collar mE	Collar mAHD	Dip	Grid Azi	Hole Length	From (m)	To (m)	Interval (m)	Au (g/t)	Comments
TGC0360	6603440.07	455700	141.953	-60	90	30	13	19	6	4.2	includes 1m @ 8.7g/t
TGC0366	6603420.05	455681.1	142.126	-60	90	24	10	13	3	5.4	includes 1m @ 15g/t
TGC0359	6603430.20	455670	141.826	-60	90	48	35	36	1	3.3	
TGC0361	6603450.01	455715	141.838	-60	90	40	17	19	2	1.6	

# Challenger JORC Code, 2012 Edition – Table 1

# **Section 1 Sampling Techniques and Data**

Criteria	Commentary
Sampling	Underground BQ drill core is whole core sampled, ranging from 0.3m to 1.3m sample intervals.
techniques	<ul> <li>Each sample is crushed to 4mm and pulverised to 75 microns through the PAL (pulverizing aggressive leach) process. In the PAL process, each sample is pulverised in an aqueous solution with cyanide bearing assay tabs and a collection of assorted ball bearings. Each sample is processed in the PAL for one hour, resulting in an Au_CN complex bearing liquor and remnant pulverised sample.</li> </ul>
Drilling techniques	<ul> <li>Underground diamond drilling is undertaken by Challenger Gold Operations. Challenger Gold operates two LM75 underground drill rigs with separate power pack running BQ wireline gear.</li> </ul>
	No diamond core was oriented.
Drill sample recovery	<ul> <li>All drill core is presented as whole core in core trays by Challenger Gold drillers. Core blocks are inserted at the end of every run. Any core loss is noted by the diamond driller on an additional core block if required.</li> </ul>
	<ul> <li>Any core loss is discussed with the drillers in a process of constant improvement to maximise returns. In the case of core loss, generally only fine material is lost through grinding. Any discrepancies between the measured length of the core and that of the core blocks are identified and recorded in logging as gaps in the lithology and also in the geotechnical logging.</li> </ul>
	<ul> <li>Unless a mineralised leucosome is ground away, there is no sample bias due to fines loss.</li> </ul>
Logging	<ul> <li>All drill core is geologically logged (lithology, mineralisation, structure) and geotechnically logged (Q value – rock quality) down to cm-scale.</li> <li>(Any leucosome greater than 0.20m in length is recorded as a separate lithology.</li> </ul>
	<ul> <li>The logging is quantitative in nature as lithology percentages and compositions are recorded and all geotechnical logging relies on measurements for the calculation of Q values.</li> </ul>
	<ul> <li>All core is digitally photographed, one core tray per photo, with photos stored on site server for reference.</li> </ul>
Sub-sampling	Samples taken from BQ underground core are full core sampled.
techniques and sample preparation	<ul> <li>The sample is submitted to the site laboratory for analysis. All samples are dried at a maximum temperature of 90 degrees Celsius to drive off moisture that would interfere with splitting the sample. After drying, samples are crushed using a Boyd Crusher to approximately 4mm in size and then split through a rotary sample splitter to produce a sub-sample. The crusher is cleaned regularly, with barren material (bricks) crushed through it to ensure no smearing prior to the sample run being crushed. Each reject sample is retained for resampling if required.</li> </ul>

Criteria	Commentary
	<ul> <li>Each sample can be tracked by its sample number through the entire laboratory process and results for the original samples and all QAQC samples are presented in digital form to the site geologists.</li> </ul>
Quality of assay data and laboratory tests	<ul> <li>Assaying at Challenger is completed using the PAL process (pulverizing aggressive leach). This process effectively replicates the process in the Challenger mill. Each sample is pulverised in aqueous solution with cyanide bearing assay tabs and a collection of assorted ball bearings. Each sample is processed in the PAL for one hour, resulting in an Au_CN complex bearing liquor and remnant pulverised sample. The pulverised material is 95% passing 75 microns, the ideal liberation size for gold at Challenger.</li> </ul>
	<ul> <li>Every twentieth sample is duplicated for the original sample bag (re-split) to produce a duplicate. Every sample run (53 samples) will contain at least two duplicates, a blank and a standard (prepared by Gannet Holdings Pty Ltd). These are to ensure that the sub-sampling is representative, that the PAL is correctly cleaned between sample runs and that the PAL is pulverising the samples correctly for full gold extraction.</li> </ul>
	<ul> <li>Following PAL processing, the samples are individually decanted, centrifuged and prepared for analysis in an AAS by solvent separation using DIBK (20 minutes). The sample is then aspirated through the AAS to produce a reading. The AAS is calibrated for each sample run using analytical reagent prepared standards (of 1.0, 5.0, 10.0 and 20.0 g/t Au) from Rowe Scientific. Each sample is adjusted for sample weight in Labman software to produce the gold grade in ppm. These grades are presented to site Geologists in MS Excel .csv spread sheets.</li> </ul>
	• For each sample job; blanks, standards and duplicates are examined to ensure that the blanks are below detection (0.01ppm), the standards are within 8% (experimental accuracy) and that the duplicates are 'reasonable' with respect to the nugget effect of the Challenger deposit. Any sample jobs that fail these checks will be re-analysed from re-splits of the original samples. In addition, all the blanks, standards and duplicates are examined quarterly to ensure that the laboratory is maintaining overall operating standards.
Verification of sampling and assaying	<ul> <li>Significant intercepts were verified by Challenger Mine Geologists and the Senior Mine Geologist. Any significant intercepts in exploration drilling and selected significant intercepts from underground production diamond drilling are submitted to Genalysis at least annually for external analysis. This analysis is undertaken by SP-02 or SP-03 sample preparation followed by partial fire assay using a 50 gram charge (FA50). These results are compared to the original PAL results to ensure that the site analyses are repeatable. While the two analysis processes are different, a correlation 0.94 has been achieved for the last comparison, undertaken in June 2016, and 0.83 to 0.98 over the last two years.</li> </ul>
	No twinned holes were drilled
	<ul> <li>All core logging data is captured digitally on company laptop computers and stored on the site server, which is backed up daily. All sample information is recorded both in the relevant logs/face sheets and in sample submission forms that are submitted to the laboratory (on and off site). This allows checking that all samples are present and accounted for by laboratory staff. Assay results are generated as MS Excel .csv files that are stored on the site server and are manually merged with the primary logging/face sheet information. This merged data (logs, collar information and assays) are all imported to the site Diamond Drilling Database in MS Access for use in Surpac. All information imported to the database is checked by the importer in MS Access and Surpac to ensure the correct location/display of data. Ongoing checks are carried out by the entire technical team as the data is used.</li> </ul>
	• The only modification of assay data, following creation by Labman software is altering of results below detection, <0.01g/t Au, to 0.001g/t Au,

Criteria	Commentary						
	averaging of duplicate results to produce an 'au_plot' grade for plotting and application of c80, c140 and c180 cut-offs to the primary data. All of these modifications are undertaken using the merged data in MS Excel (using standard forms), prior to importing to MS Access						
Location of data points	<ul> <li>All surveys on site are carried out by qualified Surveyors using a Total Station Leica theodolite from known wall stations determined from surface stations located by GPS. Surveying in this manner provides three dimensional collar co-ordinates and development pickups to mm- scale accuracy. Drill hole collars are surveyed in the same way as the rest of the workings with collar dip and azimuth determined by surveying a rod that fits into the drill holes. The collar surveys are transmitted electronically to the site Geologists who merge this information into the MS Excel logs for each drill hole. Down hole surveying of underground diamond drill core is undertaken with a single-shot electric down hole compass/camera at a minimum of every 30m down hole.</li> </ul>						
	All survey data is stored as local Challenger Mine Grid.						
	<ul> <li>Challenger Mine Reduced Level (RL) = AHD + 1000m so AHD 193m level = 1193mRL.</li> </ul>						
	Transformations between AMG and local grids: origin, azimuth						
	AMG origin and azimuth conversions are based on the following coinciding points.						
	AMG84 Co-ordinates Station Name mN mE mAHD CH10 6693784.890 363338.265 194.97 CH20 6693917.900 363657.477 50.069 Origin 6693379.301 363699.494 194.410 Flat Battery 6693411.735 363510.463 194.314						
	Challenger Mine Grid co-ordinates         Station Name       mN       mE       mAHD         CH10       10524.890       19860.005       1194.977         CH20       10499.951       20204.989       1050.069         Origin       10000.000       20000.000       1194.410         Flat Battery       10114.083       19845.777       1194.314						
	Challenger Mine Grid North 0° = 329.0° MAGNETIC						
	• Challenger Mine Grid North 0° = 333° 14'41"AMG (grid bearing + 26°45'19" = AMG bearing)						
	• Challenger Mine Grid 31° = Magnetic North 0°						
	Topographic control is taken from the surface stations (above) and traversed to the operating areas through the use of wall stations.						
Data spacing and	<ul> <li>Underground drilling is drilled at either 20m horizontal or from 20 to 100m vertically spaced fans. Holes are designed to intersect the lodes at 15 to 25m spacing along strike, as close to perpendicular to the strike of the lodes with fold closures specifically targeted. Underground and</li> </ul>						

Criteria	Commentary
distribution	surface drilling is adequate to broadly define the lodes for the purposes of level planning.
	No sample compositing of underground diamond drilling has been applied
Orientation of data in relation to geological structure	The orientation of underground drill holes are designed to be as perpendicular to the lode system as possible. During any grade calculation (be it production or resource) these structure parallel drill holes are examined for their effect on the final grade result, and where appropriate, excluded from the grade calculations, thus reducing the effect of any sample bias.
Sample security	Samples are submitted to the site laboratory as soon as practical after sampling in individually numbered calico sample bags (labelled CUD for diamond drilling). Analysis is not undertaken until all descriptive paperwork is correctly submitted for the samples. From acceptance of the samples, each sample is tracked on site through Labman software to ensure that each assay is correctly matched with its sample. Any discrepancy between submitted samples and the paperwork is identified and may result in the entire sample job being resampled form original material prior to analysis. External laboratories utilise their own systems for sample tracking.
Audits or reviews	Data reviews are undertaken on an ongoing basis by site Geologists while using the data. Any errors identified (either by staff, MS Access or Surpac) is queried and corrected as a part of a program of continual improvement.
	Lab audits are done annually, showing that operating procedures for sample management, QAQC and result consistency are being adhered to.

# **Section 2 Reporting of Exploration Results**

Criteria	Commentary
Mineral tenement and land tenure status	<ul> <li>All exploration was undertaken within the current Challenger Mine Lease ML6103. The underlying Exploration Licence EL5661 comprises 687 square kilometres within the Woomera Prohibited Area, straddling the Mobella and Commonwealth Hill pastoral leases.</li> </ul>
Exploration done by other parties	<ul> <li>Previous exploration and mining activities at Challenger Gold Mine have been conducted by Dominion Gold (1995-2010) and Kingsgate Consolidated (2010-2016)</li> </ul>
Geology	<ul> <li>Challenger occurs within the Mulgathing Complex of the Gawler Craton and the area is characterised by Archaean to mid-Proterozoic gneissic country rock. Original granulite facies metamorphism is overlaid by retrograde amphibolite facies recrystallization around 1650 - 1540 Ma (Tomkins, 2002). Saprolitic clays extended to 50 m depth within the ore zone, reflecting a deeper base of oxidation.</li> </ul>
	High-grade gold mineralisation is associated with coarse-grained quartz veins with feldspar, cordierite and sulphides dominated by arsenopyrite, pyrrhotite and lesser telluride. These veins are interpreted as migmatites that have undergone partial melting, with this melting reflecting a precursor hydrothermal alteration event (McFarlane, Mavrogenes and Tomkins, 2007).

Criteria	Commentary
	Three main types of leucosome/vein styles have been defined:
	1. quartz dominant veins, which may be remnant pre-metamorphic mineralised veins
	2. polysilicate veins, which are dominant in the main ore zones and host the majority of the mineralisation
	3. Pegmatitic veins, which are unmineralised, late stage, with cross-cutting relationships.
	The gold mineralisation is structurally controlled through emplacement of the partial melt into relatively low-strain positions. McFarlane, Mavrogenes and Tomkins (2007), using Monazite geochronology proposed a 40 Ma period between 2460 and 2420 Ma of repeated high-temperature events.
	The Challenger Structure can be defined as a laterally extensive shear zone with shoots that plunge 30° to 029° (AMG). These ore shoots are defined by leucosome veins, which are characteristically ptygmatically folded. The small-scale folding is parasitic to the overall larger scale folding that can be interpreted from drill core. The folding is interpreted as pre peak metamorphism along with gold mineralisation. Post-folding, the Challenger shoots were subjected to extreme WNW-ESE shortening and extension directed shallowly to the NE.
	Reference: Androvic, P, Bamford, P, Curtis, J, Derwent, K, Giles, A, Gobert, R, Hampton, S, Heydari, M, Kopeap, P and Sperring, P, 2013. Challenger Gold Mine, Australasian Mining and Metallurgical Operating Practices, AusIMM. 1097-1112.
Drill hole Information	See Appendix 1 to this report.
Data aggregation methods	• For all results at Challenger Gold Mine, a low cut-off of 0.01g/t Au is applied (limit of detection), these results are replaced with 0.001g/t Au in the drilling database to flag that they are below detection. The assay result is stored as au_plot in the database and variable top cuts of c80g/t, c140g/t and c180g/t are used where required. No upper grade truncation is used for significant intercepts.
	• Reported mineralised intercepts are based on consistent zones of mineralisation greater than 5 g/t and intervals over 0.3 metres.
	No metal equivalent values have been used.
Relationship between mineralisation widths and intercept lengths	<ul> <li>All mineralisation widths are reported as depths down hole as all underground drilling is designed to be as perpendicular to the lodes as possible. As this exploration is entirely for resource development, any significant intercepts used in lode modelling are constrained by the resulting model, producing a de-facto true width for further calculations.</li> </ul>
Diagrams	Diagrams have been included in the main body of the report.
Balanced reporting	<ul> <li>The results recorded in Table 1 show significant intercepts greater than 5g/t. The assay results reported in this report range from &lt;0.01 to 1,002.76ppm gold.</li> </ul>

Criteria	Commentary
Other substantive exploration data	• Visible gold was observed in drill holes 16CUD1977 at 89m and 115.13m, 17CUD2045 at 106.88m and 17CUD2048 at 16.12m.
Further work	<ul> <li>Planned underground drilling for the current financial year focuses on infilling the lower levels of the Challenger West resource, further definition drilling of Challenger SSW, lateral conceptual exploration targets (Enterprise) and drilling of Challenger Deeps to extend the mine life.</li> </ul>

# Tarcoola JORC Code, 2012 Edition – Table 1

# **Section 1 Sampling Techniques and Data**

Criteria	Commentary
Sampling techniques	RC drill holes are 122mm diameter and samples every metre are taken directly off the drill rig cyclone splitter at a 1/8 split
	<ul> <li>Each sample is crushed to 4mm and pulverised to 75 microns through the PAL (pulverising aggressive leach) process. In the PAL process, each sample is pulverised in an aqueous solution with cyanide bearing assay tabs and a collection of assorted ball bearings. Each sample is processed in the PAL for one hour, resulting in an Au_CN complex bearing liquor and remnant pulverised sample.</li> </ul>
Drilling techniques	Reverse Circulation, 122mm diameter
Drill sample recovery	<ul> <li>Cyclone has a cutter to separate samples – drilling is paused at each metre when the sample is taken and recommenced when the new bag is put on</li> </ul>
	No sample bias is expected.
Logging	<ul> <li>Each metre in the program is individually sieved and geologically logged (lithology, mineralisation, alteration) down to m-scale, not just mineralised intervals</li> </ul>
	The logging is quantitative in nature as lithology percentages and compositions are recorded
Sub-sampling	Samples taken from the cyclone splitter are all dry
techniques and sample preparation	• The sample is submitted to the Challenger Mine site laboratory for analysis. All samples are dried at a maximum temperature of 90 degrees Celsius to drive off moisture that would interfere with splitting the sample. After drying, samples are crushed using a Boyd Crusher to approximately 4mm in size and then split through a rotary sample splitter to produce a sub-sample. The crusher is cleaned regularly, with barren material (bricks) crushed through it to ensure no smearing prior to the sample run being crushed. Each reject sample is retained for resampling if required.
	<ul> <li>Each sample can be tracked by its sample number through the entire laboratory process and results for the original samples and all QAQC samples are presented in digital form to the Tarcoola and Challenger site geologists.</li> </ul>
Quality of assay data and laboratory tests	<ul> <li>Assaying at Challenger is completed using the PAL process (pulverising aggressive leach). This process effectively replicates the process in the Challenger mill. Each sample is pulverised in aqueous solution with cyanide bearing assay tabs and a collection of assorted ball bearings. Each sample is processed in the PAL for one hour, resulting in an Au_CN complex bearing liquor and remnant pulverised sample. The pulverised material is 95% passing 75 microns, the ideal liberation size for gold at Challenger.</li> </ul>

Criteria	Commentary
	<ul> <li>Every twentieth sample is duplicated for the original sample bag (re-split) to produce a duplicate. Every sample run (53 samples) will contain at least two duplicates, a blank and a standard (prepared by Gannet Holdings Pty Ltd). These are to ensure that the sub-sampling is representative, that the PAL is correctly cleaned between sample runs and that the PAL is pulverising the samples correctly for full gold extraction.</li> </ul>
	<ul> <li>Following PAL processing, the samples are individually decanted, centrifuged and prepared for analysis in an AAS by solvent separation using DIBK (20 minutes). The sample is then aspirated through the AAS to produce a reading. The AAS is calibrated for each sample run using analytical reagent prepared standards (of 1.0, 5.0, 10.0 and 20.0 g/t Au) from Rowe Scientific. Each sample is adjusted for sample weight in Labman software to produce the gold grade in ppm. These grades are presented to site Geologists in MS Excel .csv spread sheets.</li> </ul>
	• For each sample job; blanks, standards and duplicates are examined to ensure that the blanks are below detection (0.01ppm), the standards are within 8% (experimental accuracy) and that the duplicates are 'reasonable' with respect to the nugget effect of the Tarcoola deposit. Any sample jobs that fail these checks will be re-analysed from re-splits of the original samples. In addition, all the blanks, standards and duplicates are examined quarterly to ensure that the laboratory is maintaining overall operating standards.
	<ul> <li>Soil samples were prepared and analysed by Bureau Veritas laboratories in Wingfield with Fire Assay (40g charge) and a mixed-acid digest and ICP-MS for a multi element suite.</li> </ul>
Verification of sampling and assaying	<ul> <li>Significant intercepts were verified by the Senior Mine Geologist and Senior Project Geologist. Significant intercepts in Tarcoola exploration drilling (greater than 0.5g/t) are submitted to Genalysis for external analysis. This analysis is undertaken by SP-02 or SP-03 sample preparation followed by partial fire assay using a 50 gram charge (FA50). These results are compared to the original PAL results to ensure that the site analyses are repeatable. While the two analysis processes are different, a reasonable correlation is expected.</li> </ul>
	No twinned holes were drilled
	• All logging data is captured digitally on company laptop computers and stored in a dropbox cloud. All sample information is recorded both in the relevant logs and in sample submission forms that are submitted to the laboratory (on and off site). This allows checking that all samples are present and accounted for by laboratory staff. Assay results are generated as MS Excel .csv files that are stored on the site server and are manually merged with the primary logging information. This merged data (logs, collar information and assays) are all imported to the site Diamond Drilling Database in MS Access for use in Surpac. All information imported to the database is checked by the importer in MS Access and Surpac to ensure the correct location/display of data. Ongoing checks are carried out by the entire technical team as the data is used.
	<ul> <li>The only modification of assay data, following creation by Labman software is altering of results below detection, &lt;0.01g/t Au, to 0.005g/t Au, undertaken using the merged data in MS Excel (using standard forms), prior to importing to MS Access</li> </ul>
Location of data points	<ul> <li>All surveys on site are carried out by qualified personnel using the Tarcoola Mine Leica jigger GPS, providing collar co-ordinates to cm-scale accuracy in the same datum (GDA94 zone 53) as the rest of the site. Collar dip and azimuth were not surveyed but the drill rig is lined up on surveyed azi lines. The collar surveys are transmitted electronically to the site Geologists who merge this information into the MS Excel logs for each drill hole. Down hole surveys were not completed.</li> </ul>

Criteria	Commentary
	No local Reduced Level (RL) is used, just the Australian Height Datum (AHD
	Topographic control is good with the survey system used
Data spacing and distribution	Drill spacing at Wondergraph is nominally 10m spaced collars.
	No sample compositing of RC drilling has been applied
Orientation of data in relation to geological structure	The orientation of RC drill holes are designed to be as perpendicular to the lode system as possible.
Sample security	<ul> <li>Samples are submitted to the site laboratory as soon as practical after sampling in individually numbered calico sample bags (labelled TRC for RC drilling). Analysis is not undertaken until all descriptive paperwork is correctly submitted for the samples. From acceptance of the samples, each sample is tracked on site through Labman software to ensure that each assay is correctly matched with its sample. Any discrepancy between submitted samples and the paperwork is identified and may result in the entire sample job being resampled form original material prior to analysis. External laboratories utilise their own systems for sample tracking.</li> </ul>
Audits or reviews	<ul> <li>Data reviews are undertaken on an ongoing basis by site Geologists while using the data. Any errors identified (either by staff, MS Access or Surpac) is queried and corrected as a part of a program of continual improvement.</li> <li>Lab audits are done annually, showing that operating procedures for sample management, QAQC and result consistency are being adhered to.</li> </ul>

# **Section 2 Reporting of Exploration Results**

Criteria	Commentary
Mineral tenement and land tenure status	<ul> <li>All exploration was undertaken within the current Tarcoola Mine Lease ML6455. The underlying Exploration Licence EL5355 comprises 1183 square kilometres, on the Wilgena pastoral lease, part of which is within the Woomera Prohibited Area,</li> </ul>
Exploration done by other parties	<ul> <li>Abundant previous exploration and mining activities at Tarcoola have been conducted since discovery of the field in 1893, but more recent work (since 1995) by Mungana Goldmines, Stellar Resources, Anglo Gold and Grenfell Resources was used. Due diligence and resurveying of drill holes etc. was completed by Mungana and all information is considered accurate.</li> </ul>
Geology	• The Tarcoola Project covers a portion of the north-western Gawler Craton centred over the historic Tarcoola goldfield, where Archaean and Proterozoic rocks form the basement to an extensive cover of Phanerozoic sediments. The Archaean basement has been extensively

Criteria	Commentary
	deformed, whereas the Proterozoic rocks have been weakly to moderately deformed.
	• At Perseverance (current Tarcoola open pit mine), gold mineralisation is hosted within sedimentary rocks of the Tarcoola Formation and granite, both of Proterozoic age. The granite is variably in fault contact with or unconformably overlain by the sediments, which consists of conglomerate, limestone, sandstone, siltstones, and shale. A suite of later intrusions (Lady Jane Diorite) cut both the sedimentary rocks and the granite.
	<ul> <li>Mafic high level intrusives associated with the 1590Ma Hiltaba Magmatic Event are considered to control the spatial setting of both gold and base metal mineralisation.</li> </ul>
	• Three deformation events have been recognised in the area. D1 is characterised by open folding and NNW-directed thrusting, responsibly for the southerly dip of the sedimentary package at Perseverance. Steeply dipping NW and NE trending brittle faults developed during D2. These structures host and control the gold mineralisation in the Tarcoola Ridge area. The third deformation event (D3) is represented by the late E-W trending barren quartz veins.
	• Gold has locally been remobilised and enriched in the weathering profile. The base of complete oxidation occurs typically 10-40m below surface, and the base of partial oxidation occurs at a depth of ~20-60m.
	• Within the primary zone, sericite-quartz-pyrite alteration zones are spatially associated with the mineralisation, and overprint earlier hematite-magnetite alteration. An outer halo of chlorite (+/-leucoxene and pyrite) is developed. Pyrite, galena and sphalerite are the main associated sulphide minerals, with subordinate amounts of chalcopyrite bornite and/or arsenopyrite noted.
	• Veins can be discrete or form wider stockwork zones, and are surrounded by broader quartz-sericite alteration envelopes which can host lower grade background halos of mineralisation. Dispersed supergene mineralisation in the oxide zone can be largely detached from veining.
	<ul> <li>For more detail see: Budd, A &amp; Skirrow, R, 2007. The Nature and Origin of Gold Deposits of the Tarcoola Goldfield and Implications for the Central Gawler Gold Province, South Australia. Economic Geology, 2007.</li> </ul>
Drill hole Information	See Appendix 1 to this report.
Data aggregation methods	<ul> <li>For all results from the Challenger Gold Mine laboratory, a low cut-off of 0.01g/t Au is applied (limit of detection), these results are replaced with 0.005g/t Au in the drilling database to flag that they are below detection. No upper grade truncation is used for significant intercepts.</li> </ul>
	<ul> <li>Reported mineralised intercepts are based on consistent zones of mineralisation greater than 3 g/t x m using 0.5g/t cut off and intervals over 1 metre.</li> </ul>
	No metal equivalent values have been used.
Relationship between	<ul> <li>All mineralisation widths are reported as depths down hole as drilling is designed to be as perpendicular to the lodes as possible. As this exploration is entirely for resource development, any significant intercepts used in lode modelling are constrained by the resulting model,</li> </ul>

Criteria	Commentary
mineralisation widths and intercept lengths	producing a de-facto true width for further calculations.
Diagrams	Diagrams have been included in the main body of the report.
Balanced reporting	The assay results received for this drilling range from <0.01 to 14.97ppm gold.
Other substantive exploration data	Gold intersections occurred within quartz veins
Further work	Planned further drilling may be conducted to better define the lode once it is modelled in 3D