#### **ASX ANNOUNCEMENT**



17 August 2022 ASX : TMS

# Bonanza 63m @ 2.1% Copper and 4.6 g/t Gold Intersection at Bluebird Including 27.55m @ 3.6% Copper and 10 g/t Gold

Latest results herald the discovery of a gold-rich zone within the broader high-grade copper-gold deposit

- Diamond drilling at the Bluebird Copper-Gold Prospect in the Tennant Creek Mineral Field has continued to produce spectacular results, including the <u>discovery of a rich new gold shoot</u> with bonanza intersection grades of up to 38.5 g/t Au within the broader copper-gold zone.
- ➤ The first new diamond drillhole results, from BBDD0012, include the following intersections:
  - o 63.0m @ 2.1 % Cu and 4.6 g/t Au from 153.0m (down hole)
    - including 40.0m @ 3.0 % Cu and 7.3 g/t Au from 155.0m
    - including 27.55m @ 3.6 % Cu and 10.0 g/t Au from 160.45m
    - including **7.0m** @ **1.4** % **Cu** and **38.5 g/t Au** from 181.0m (see Photo 2).
- ➤ These results highlight Bluebird's potential to rival other high-grade copper and gold deposits including Peko (3.7Mt @ 4% Cu, 3.5 g/t Au⁵) and Nobles Nob (2Mt @ 17.3 g/t Au⁵), both located only 20km west of Bluebird.
- Results also enhance prospectivity of additional magnetic-gravity targets within the 5km strike-length Bluebird Corridor including Perseverance, 1.5km west of Bluebird, where previous drill-hits of 3m @ 50.0 g/t Au<sup>6</sup> and 3m @ 43.2 g/t Au<sup>6</sup> have not been followed up.
- Assay results are pending from a further five drillholes in the current diamond drilling program, all of which intersected thick hematite alteration and copper mineralisation (see descriptions, Appendix 1) that remains completely open to the west and at depth.

#### **Tennant Minerals Chairman Matthew Driscoll commented:**

"The latest drilling results from Bluebird are stunning. Not only have we continued to intersect thick, high-grade copper, but we have also discovered a distinct high-grade gold shoot within the broader mineralised zone with spectacular intersection grades of up to 38.5 grams per tonne gold.

"We have really only scratched the surface at Bluebird, with the copper-gold discovery zone still completely open to the west and below 200 metres depth.

"In addition to Bluebird, we have identified at least another 12 untested magnetic/gravity targets with a similar signature to Bluebird along the 5km Bluebird geophysical corridor.

"It is an exciting time for the Company and its shareholders as we await the remaining results from our latest drilling program at Bluebird and define additional new drilling targets along the 5km corridor to continue building and expanding this significant new high-grade copper-gold discovery."





Photo 1: Diamond drilling rig on the BBDD00120 site at the Bluebird copper-gold discovery

Northern Territory focused copper-gold explorer, Tennant Minerals Limited (ASX: TMS) ("Tennant" or "the Company") is very pleased to announce it has received the assay results from the first hole (BBDD0012) of the six-hole Stage 1 diamond drilling program<sup>0</sup> recently completed at the Bluebird copper-gold discovery. BBDD0012 returned a thick intersection of high-grade copper and gold (see cross section Figure 1, longitudinal projection, Figure 2 and Table 1 for all significant intersections) which included:

- o 63.0m @ 2.1% Cu and 4.6 g/t Au from 153.0m (down hole)
  - including 40.0m @ 3.0% Cu and 7.3 g/t Au from 155.0m
  - including 27.55m @ 3.6% Cu and 10.0 g/t Au from 160.45m
  - including 15.55m @ 5.6% Cu and 0.2 g/t Au\_from 160.45m, and,
  - including 7.0m @ 1.4% Cu and 38.5 g/t Au from 181.0m.

Bluebird is located within the Company's 100% owned Barkly Project in the Northern Territory at the eastern edge of the Tennant Creek (copper-gold) Mineral Field (TCMF), which has produced over 5Moz of gold and over 500kt of copper from 1934 to 2005 (see location, Figure 3).

The six-hole (1,700m) Stage 1 follow-up diamond drilling program (details, see Table 2) was designed to scope out and expand the footprint of the recently discovered high-grade copper-gold zone at Bluebird.

All six diamond drillholes intersected intense hematite alteration with visible copper mineralisation including malachite and/or chalcocite (copper sulphide) and native copper (see descriptions, Appendix 1).

The intensely-mineralised copper-gold intersection in BBDD0012 is to the west and deeper (down plunge) than BBDD0009<sup>1</sup>, which intersected **50m @ 2.7% Cu and 0.52 g/t Au** from 158m (down hole) including **24m @ 5.01% Cu, 1.01 g/t Au and 61.7 g/t Ag** from 159m (see cross section 448,380mE, Figure 4 and Figure 2).



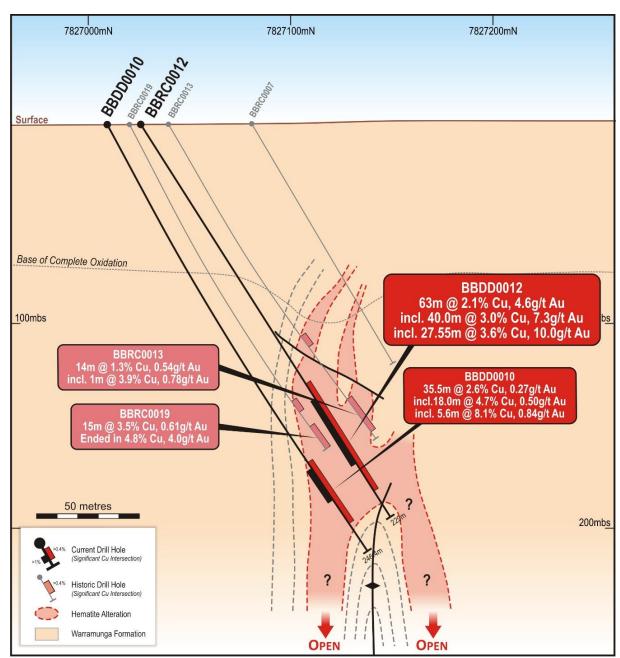


Figure 1: Cross-section 448,360mE with new BBDD0012 intersection and previous BBDD0010 drill-hit

Core samples are currently being assayed from a further three mineralised intersections<sup>2</sup> (see locations, Figure 2 and Appendix 1 for descriptions of mineralisation), including:

- BBDD0013 that tested extensions of the high-grade copper-gold zone to the west of BBDD0012, intersecting a 46m zone of hematite alteration, including 21m of intense hematite-magnetite and copper mineralisation (native copper and chalcocite) from 157m downhole.
- **BBDD0014** that tested the top of the Bluebird mineralised zone, intersecting **34m of hematite-silica alteration, including 16m of copper mineralisation** (native copper and malachite) from 130m.
- **BBDD0015**, that tested the Bluebird mineralisation to the west and deeper (down-plunge) from BBDD0012 and intersected **62m of hematite-silica alteration, including a 20m zone of specular-hematite and copper mineralisation** (malachite, native copper, chalcocite) from 277m.

Significantly, the iron-oxide alteration and copper mineralisation intersected in BBDD0015 has changed orientation to dip steeply to the north (see cross section, Figure 5). This steepening of the mineralised zone at depth suggests that some previous holes may have stopped short of the main high-grade zone, which could extend much deeper than previously interpreted (see Figure 2 and Figure 4).



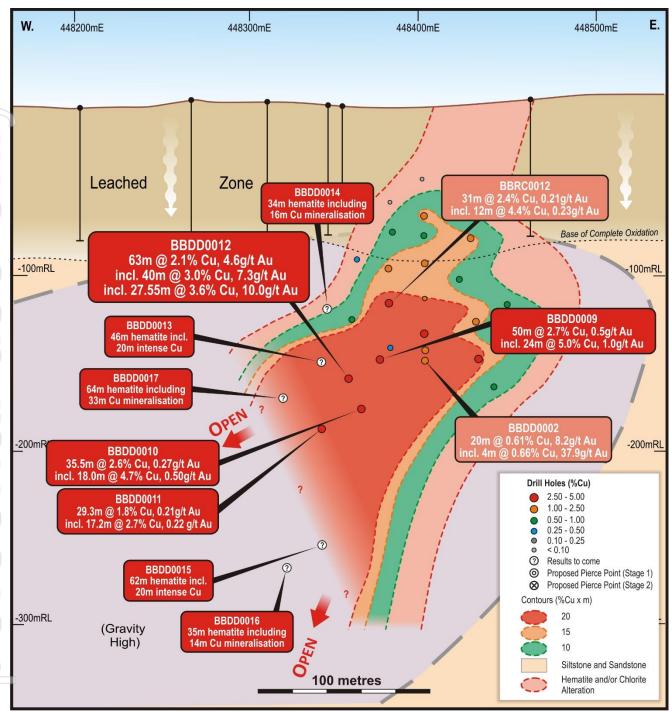


Figure 2: Bluebird longitudinal projection with BBDD0012 intersection, previous copper-gold hits and new holes

A further two step-out diamond drillholes have tested the Bluebird discovery to the west and down-plunge of all previous holes (Figure 2), producing an intersection in **BBDD0017 of 64m hematite alteration from 162m, including a 33m zone of intense hematite-magnetite alteration with visual copper mineralisation** (native copper and chalcocite - see Appendix 1 for descriptions) from 173m.

Also, **BBDD0016** intersected a deeper zone of mineralisation on the same western step-out section (448,320mE) that included two zones of hematite with copper mineralisation that are interpreted to lie on the western and eastern limb of an anticline. The deeper zone includes a **35m zone of hematite alteration** from **291m with 14m of copper mineralisation** (malachite and/or chalcocite - see Appendix 1 for descriptions) from 297m.

Downhole electromagnetics (DHEM) will be carried out shortly from the two western-most holes, BBDD0016 and BBDD0017, to detect in-hole or off hole conductors that may represent extensions or repeats of the Bluebird sulphide zone, which will be targeted for further drilling.



The drilling to date has identified a steep westerly plunging zone of copper-gold mineralisation that extends from 60m to >200m below surface (Figure 1) and at-least 150m along strike in an east-west orientation (Figure 2).

Interpretation of the key drilling intersections utilising structural data from logging of drill core indicates that the thick and high-grade copper and gold intersection in BBDD0012 is associated with steeply dipping structures that have intersected the axis of a shallow-plunging anticline (see Figure 1).

This association of thick and high-grade copper and gold mineralisation developed across the top of anticlinal fold structures is analogous to other major discoveries at Tennant Creek including the Warrego copper-gold deposit (Figure 3) of Peko-Wallsend that produced **6.75Mt @ 1.9% Cu, 6.6 g/t Au**<sup>3</sup> from 1972 to 1989 and the Rover 1 discovery of Castille Resources (ASX:CST) in the southwestern part of the TCMF where a Mineral Resource of **4.7Mt @ 1.63% Cu and 1.73 g/t Au** has recently been announced<sup>4</sup>.

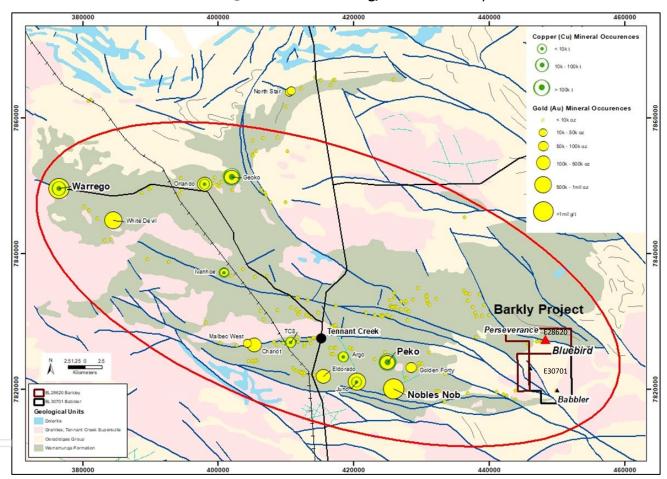


Figure 3: Location of the Barkly Project and major historical mines in the Tennant Creek Mineral Field

#### Planning underway for the Stage 2 follow-up diamond drilling program at Bluebird:

The current follow-up diamond drilling program at Bluebird is designed to scope out and expand the footprint of the high-grade copper-gold mineralisation in two stages, comprising:

- i) The completed Stage 1 diamond drilling program<sup>0</sup> of 6 holes for 1,700m that tested the central thickest part of the shallow, westerly plunging copper-gold shoot and intersected the thick and high-grade copper and gold in BBDD0012. This drilling has extended the zone to the west and to a depth of more than 200m below surface and remains open (see Figure 2), and,
- ii) A Stage 2 diamond drilling program of up to 10 step-out holes for 3,000m<sup>0</sup> to be designed to significantly expand the footprint of the Bluebird discovery to over 300m strike length and potentially >500m vertical depth.



Following receipt of all Stage 1 results and interpretation of structural and alteration data, a 3-dimensional model of the mineralised zone drilled to date will be constructed. This, combined with modelling of geophysical data, will enable fine tuning of the Stage 2 drilling program.

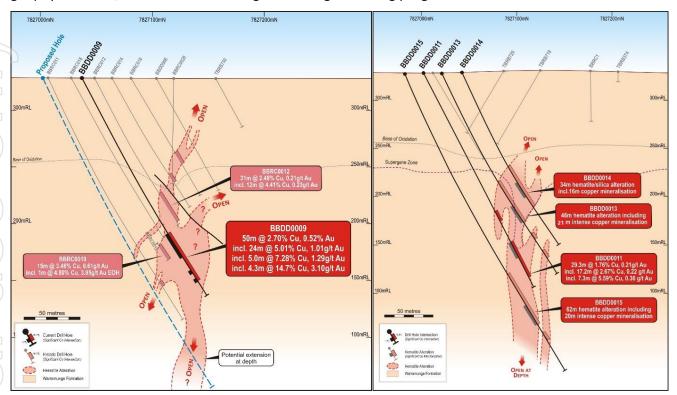


Fig. 4: Cross-section 448,380mE & BBDD0009

Fig. 5: Cross-section 448,340mE & BBDD0013 & 15

#### MULTIPLE COPPER-GOLD TARGETS IDENTIFIED WITHIN THE BLUEBIRD CORRIDOR

The Barkly Project comprises the Barkly (EL 28620) and Babbler (EL 30701) tenements (see location, Figure 3) that are both considered highly prospective for magnetite-hematite (iron-oxide) copper-gold (IOCG) mineralisation.

The intersection of high-grade copper and gold at Bluebird highlights the potential of the Project to host deposits similar to other previously mined ore-bodies in the Tennant Creek Mineral Field such as the Peko deposit that produced 3.7Mt @ 4% Cu and 3.5 g/t Au from 1934 and 1981<sup>5</sup> and Nobles Nob that produced 2Mt @ 17.3 g/t Au from 1947 to 1986<sup>5</sup>, both of which are located only 20km west of Bluebird in an identical geological setting (see Figure 3 for locations).

The Bluebird discovery is associated with a gravity high, that is part of a 5km long gravity anomaly termed the "Bluebird Corridor" (see Figure 6). This gravity anomaly reflects high-density, iron enrichment in the primary zone below the near surface leaching that extends to >60m depth at Bluebird (Figure 2).

Detailed gravity modelling indicates that the high-density iron enrichment zone extends strongly to the west of Bluebird, potentially linking with the Perseverance high-grade gold deposit 1.5km to the west, (Figure 6). Previous RC drilling under the historical gold workings at Perseverance produced shallow high-grade gold intersections such as **3m** @ **50.0** g/t Au from **42m** in PERC015<sup>6</sup> and **3m** @ **43.2** g/t Au from **72m** in PERC001<sup>6</sup>. These high-grade gold intersections have not previously been followed up.

Previous ground magnetics indicates that Bluebird is associated with a linear, west-southwest trending magnetic anomaly and coincident gravity high. The Company has identified at least another 12 similar magnetic-gravity targets along the Bluebird Corridor (Figure 6) that have not been effectively tested. In order to better define these magnetic anomalies, the Company completed a high-resolution drone magnetics survey over the entire 5km Bluebird gravity corridor in April/May 2022.



Processing of the drone magnetics survey data has been finalised and modelling and imaging by Southern Geoscience (SGC) is nearing completion. This new imaging and modelling are expected to better define targets for drill testing. Further reverse circulation (RC) and/or diamond drilling will then be planned to test priority copper-gold targets identified from the magnetics and gravity modelling along the 5km Bluebird Corridor (Figure 6).

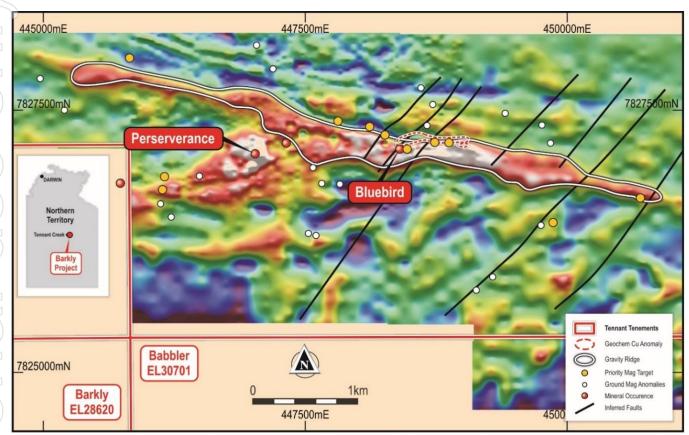


Figure 6: Bouguer 1VD gravity image with Bluebird Prospect and targets along the 5km Bluebird Corridor

Table 1 below includes all significant intersections in BBDD0012:

Drillhole	From	То	Interval	Cu %	Au g/t	Ag g/t	Bi %	Co g/t	Fe %	Cut-off
BBDD0012	153.00	216.0	63.00	2.1	4.6	3.3	0.10	83.0	18.9	0.8% Cu
including	160.45	216.0	55.55	2.3	5.0	3.6	0.11	85.2	20.8	1.0% Cu
including	155.00	195.0	40.00	3.0	7.3	3.7	0.15	124.6	19.5	1.0% Cu
including	160.45	195.0	34.55	3.3	8.0	4.0	0.17	130.6	21.6	2.0% Cu
including	160.45	188.0	27.55	3.6	10.0	4.4	0.18	134.8	22.1	2.0% Cu
including	160.45	176.0	15.55	5.6	0.2	5.0	0.03	83.0	20.7	3.0% Cu
and including	181.00	188.0	7.00	1.4	38.5	4.3	0.61	257.5	23.0	1.0 g/t Au

Table 2 below includes Stage 1 drillhole details to date:

	. abie 2 below metalles stage 2 ammore actains to date.							
Hole #	Dip°	Azi_Grid°	GRID_E	GRID_N	RL	Mud-rotary (m)	DDC (m)	Total Depth (m)
BBDD012	-60	0	448,360	7,827,032	332	87	142	229
BBDD013	-65	0	448,340	7,827,052	332	81	162	243
BBDD014	-65	0	448,340	7,827,072	332	57	151	208
BBDD015	-65	0	448,340	7,827,012	332	57	298	355
BBDD016	-65	0	448,320	7,827,010	332	60	303	363
BBDD017	-65	0	448,320	7,827,030	332	60	243	303
Total						401	1,299	1,700

Appendix 1 includes descriptions of the mineralisation intersected in BBDD0013 to BBDD0017. Results for these holes will be reported when available. Appendix 2 is JORC Table 1, Sections 1 and 2.



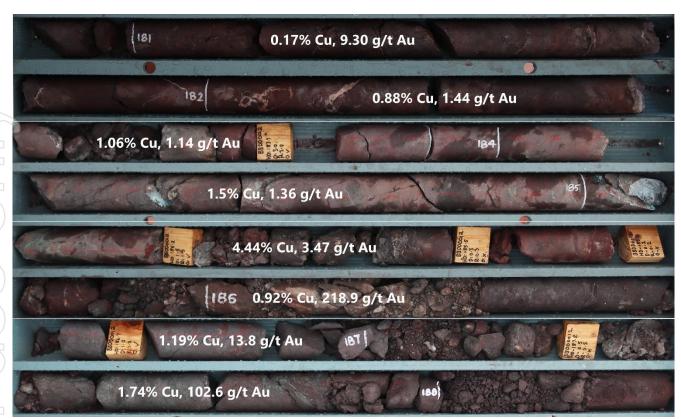


Photo 2: BBDD0012<sup>0</sup> drillcore, hematite breccia and bonanza gold intersection 7.0m @ 1.4 % Cu and 38.5 g/t Au

#### **REFERENCES**

- <sup>0</sup> 06 June 2022. Tennant Minerals (ASX.TMS): "55m Intensely Copper Mineralised Intersection at Bluebird".
- <sup>1</sup> 08 March 2022. Tennant Minerals (ASX. TMS): "Spectacular 50m @ 2.70% copper intersection at Bluebird".
- <sup>2</sup> 6 July 2022. Tennant Minerals (ASX. TMS): "Major extensions of Bluebird Copper-Gold Discovery Intersected".
- <sup>3</sup> Portergeo.com.au/database/mineinfo. Tennant Creek Gecko, Warrego, White Devil, Nobles Nob, Juno, Peko, Argo.
- <sup>4</sup> 08 March 2022. Castile Resources (ASX:CST): "Large Increases in Gold, Copper and Cobalt at Rover 1".
- <sup>5</sup> 18 March 2020. Blina Minerals (ASX: BDI): "High-Grade Copper and Gold Intersected in Drilling program at Bluebird".
- <sup>6</sup> Feb 1995, Posgold. Final Report for Exploration Licence 7693, 2/6/92 to 25/11/94. NTGS Report CR19950192.

\*\*\*FNDS\*\*\*

This release was authorised by the Board of Tennant Minerals Ltd.

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#### **ABOUT TENNANT MINERALS LIMITED**

Tennant Minerals Limited (ASX:TMS) is an exploration and development company with copper-gold projects in the Tennant Creek area of the Northern Territory.

Tennant Mineral's primary focus is the **Barkly** and **Babbler Copper-Gold Projects**, located approximately 45km east of the major copper-gold mineral field of Tennant Creek. The Company is targeting major new, high-grade, copper-gold deposits.

At the **Barkly Project**, the Company has discovered a thick and high-grade copper and gold mineralised zone at the Bluebird Prospect. Drilling to date at Bluebird has identified a steep westerly plunging zone of coppergold mineralisation that extends from 60m to >200m below surface and at-least 150m along strike in an east-west orientation.



Magnetics and gravity modelling indicates that Bluebird is associated with a linear, west-southwest trending magnetic anomaly and coincident gravity high. The Company has identified another 12 similar magnetic-gravity targets along the 5km Bluebird geophysical corridor that have not yet been effectively tested.

The Company is awaiting final results of the Stage 1 drilling program before planning a second stage of drilling to scope the potential of the Bluebird discovery as well as test other gravity – magnetic targets for repeats of Bluebird along the 5km Bluebird Corridor.

The Company is also planning geophysics and follow-up drill targeting on its **Babbler Project**, which adjoins the Barkly tenement to the south. The Company has been awarded \$66,000 co-funding under the 2022 Northern Territory Governments' Geophysics and Drilling Collaborations program for an exploration hole testing key copper-gold targets within the underlying Warramunga Formation at Babbler. A detailed gravity survey is planned to further define the drilling targets to be tested following the Stage 2 program at Bluebird.

#### CAUTIONARY STATEMENT REGARDING FORWARD LOOKING INFORMATION

This release contains forward-looking statements concerning Tennant Minerals Ltd. Forward-looking statements are not statements of historical fact and actual events and results may differ materially from those described in the forward-looking statements as a result of a variety of risks, uncertainties and other factors. Forward-looking statements are inherently subject to business, economic, competitive, political and social uncertainties and contingencies. Many factors could cause the Company's actual results to differ materially from those expressed or implied in any forward-looking information provided by the Company, or on behalf of, the Company. Such factors include, among other things, risks relating to additional funding requirements, metal prices, exploration, development and operating risks, competition, production risks, regulatory restrictions, including environmental regulation and liability and potential title disputes.

Forward looking statements in this release are based on the company's beliefs, opinions and estimates of Tennant Minerals Ltd as of the dates the forward-looking statements are made, and no obligation is assumed to update forward looking statements if these beliefs, opinions and estimates should change or to reflect other future developments.

#### COMPETENT PERSONS DECLARATION

The information in this report that relates to exploration results is based on information compiled or reviewed by Mr Nick Burn who is Exploration Manager for Tennant Minerals Ltd and a member of the Australian Institute of Geoscientists. Mr Burn has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 edition of the 'Australasian Code of Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Burn consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

#### **ASX LISTING RULES COMPLIANCE**

In preparing this announcement the Company has relied on the announcements previously made by the Company and specifically dated 09 December 2014, 24 September 2019, 18 March 2020, 06 December 2021, 13 December 2021, 21 December 2021, 8 March 2022, 15 March 2022, 24 March 2022, 4 April 2022, 13 May 2022, 06 June 2022 and 06 July 2022. The Company confirms that it is not aware of any new information or data that materially affects those announcements previously made, or that would materially affect the Company from relying on those announcements for the purpose of this announcement.



# Appendix 1. Descriptions and visual estimates of mineralisation intersected, BBDD0013, 14, 15, 16 & 17 *Cautionary note regarding visual estimates:*

In relation to the disclosure of visual mineralisation in the tables below, the Company cautions that visual estimates of oxide, carbonate and sulphide mineralisation material abundance should never be considered a proxy or substitute for laboratory analyses. Laboratory ICP-MS and ICP-OES analyses are required to determine widths and grade of the elements (e.g., copper, Cu) associated with the visible mineralisation reported from preliminary geological logging. The Company will update the market when laboratory analytical results are received and compiled.

ВВ	BBDD0013							
	From	То	Lith Zone	Alteration	Visible mineralisation			
(	0.0	80.7		Rotary PCD pre-collar				
8	30.7		Hanging Wall	Weakly fractured; scattered zones of irregular to cross-cutting qtz veining	129.4-131.05m: 0.1% native Cu in veinlets & blebs 131.05-131.19m: 0.1% malachite in veinlets & blebs 131.19-131.8m: 0.1% native Cu in veinlets & blebs 131.8-138.6m: nil			
13	38.6	145.5		Weakly chloritic	No visual copper minerals.			
14	45.5	147.65	Upper Ironstone	Intensely altered brecciated FeOX ironstone				
14	17.65	152.05	Hanging Wall metasiltstone	Unaltered				
15	52.05	157.0		Weakly chloritic	No visual copper minerals.			
15	57.0	164.5		Strong to intense silica- hematite alteration: jasper-FeOX	Disseminated copper sulphides (Chalcocite?) 1 to 5%			
16	64.5		MAIN SILICA-FeOX ALTERATION ZONE	Intense hematite-magnetite	Disseminated copper sulphides (Chalcocite?) 1 to 5%			
16	58.75	178.0		Strong to intense silica- hematite alteration: jasper-FeOX	0.1% blebby native Cu			
17	78.0	242.5	metaciltatone	Pervasive weak hem alteration, Patchy weak chlorite alteration				



BBDD001	3BDD0014							
From	То	Lith Zone	Alteration	Visible mineralisation				
0.0	56.8	Rotary PCD pre-collar						
56.8		metasiltstone	weakly fractured; scattered zones of irregular to crosscutting qtz veining					
110		MAIN SILICA-FeOX ALTERATION ZONE		0.1 to 1% Cu, including native copper &/or malachite				
130		•	Moderate to intense patchy FeOX alteration	Several zones of 1 to 5% native copper and/or malachite.				
160	_		Inferred weak hem &/or chlorite alteration					

BBDD001	. <u>5</u>						
From	То	Lith Zone	Alteration	Visible mineralisation			
0.0	56.8		Rotary PCD pre-collar				
56.8	276.9	Hanging Wall metasiltstone	84.9-96.5m: abundant fault breccia with clay infill				
			169.2-193.8m: abundant fault breccia, minor vein quartz below 177.6m				
			231.5-234.2m: abundant distorted vein quartz				
			234.2-246.9m: minor distorted vein quartz;	<1% fine disseminated (Cu) sulphides			
			260.7-272.3m: some strongly fractured zones				



	BBDD0015 Cont.					
	From	То	Lith Zone	Alteration	Visible mineralisation	
	276.9	296.75	Main alteration (mineralised) zone	276.9-283.6m: fractured & brecciated moderately to strongly silicified & FeOX zone scattered specular hematite & black hematite alteration	1% malachite & chrysocolla on fractures	
)				283.6-285.2m: Mylonite & sheared deformed quartz	trace <1% malachite	
				285.2-287.6m: patchy irregular shiny black hematite (sulphides?); dark matrix may be silicified vfg tectonic 'flour'	1% fine malachite stockwork	
]				287.6-291.65m: brecciated	289.8-291.65: patchy 1% chrysocolla on fractures	
				291.65-293.25m: moderate pervasive red hematite alteration; brecciated in part	trace <1% malachite on fractures	
				293.25-294.75m: moderate dark hematite alteration; brecciated	patchy 1% chrysocolla on fractures	
	296.75	354.7	Foot Wall metasiltstone	294.75 to 342.3m: Pervasive reddish hematite alteration, scattered fracturing	294.75-296.0m: trace <1% malachite on fractures	
)				342.3-354.7 (EOH): pervasive moderate silica alteration & minor patchy hematite alteration		



BBDD0	BBDD016							
From	То	Lith Zone	Alteration	Visible mineralisation				
0.0	56.9		Rotary PCD pre-collar	r				
56.9	290.5	Hanging Wall metasiltsone	108-182m: Weak qtz stockwork,					
)			185-191.4m: Weak qtz stockwork 191.4-192m: Intense chlorite alteration					
			192-228.2m: Scattered thin zones blacker vitreous chlorite alteration, some reddish hem staining; some vein qtz below 228m	trace malachite				
			231.8- 290.5m: Patchy stronger qtz stockwork, esp below 240m					
290.5	297.6	Main CHL zone	Intense hematite chlorite alteration					
297.6	315.2		Patchy intense completely overprinting chlorite alteration	0.1 to 0.5% malachite from 294 to 315m				
315.2	325.1	Lower CHL QTZ zone	Some strong qtz stockwork, minor chlorite alteration					
325.1	362.7	Footwall Metasiltstone	Qtz stockwork in upper 0.5m, 20cm intense chlorite alteration at 326m below qtz stockwork	No visual copper minerals.				

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			-	105 101 Am. Moderate stadens ali	
	D		-	185-191.4m: Weak qtz stockwork	
				191.4-192m: Intense chlorite	
			-	alteration	tue ee meele ehite
				192-228.2m: Scattered thin zones	trace malachite
				blacker vitreous chlorite alteration,	
				some reddish hem staining; some vein qtz below 228m	
			-	231.8- 290.5m: Patchy stronger qtz	
				stockwork, esp below 240m	
				Stockwork, esp below 240111	
)					
	290.5	297.6	Main CHL	Intense hematite chlorite alteration	
)	207.6	245.2	zone	5	0.4.1. 0.5%   1.1%   6
	297.6	315.2		Patchy intense completely	0.1 to 0.5% malachite from 294
7	245.2	225.4	Lavier CIII	overprinting chlorite alteration	to 315m
ソ	315.2	325.1	Lower CHL	Some strong qtz stockwork, minor	
	325.1	362.7	QTZ zone Footwall	Ota stockwork in upper 0.5m, 20cm	No visual conner minerals
	323.1	302.7	Metasiltstone	Qtz stockwork in upper 0.5m, 20cm intense chlorite alteration at 326m	No visual copper minerals.
7			Wietasiitstoffe	below qtz stockwork	
				Delow que stockwork	
-	BBDD01	L7			
1	From	То	Lith Zone	Alteration	Visible Mineralisation
	0	59.6		PCD Rotary Drilling	
	59.6	162.7	Hanging	139.7-162.7m: moderate chlorite	
			Wall	alteration on fractures & in breccia	
)			Siltstone	zones	
1					
\					
)					
	162.9	171.2		162.9 -163.2m: Intense hematite	
	102.3	1,1.2		ironstone	
				163.2 - 164.8m: Strongly silicified	
1			Upper	163.2 - 164.8m: Strongly silicified siltstone	
			Upper 'Mineralised	siltstone	
				siltstone 164.8 - 168.4m: Siltstone breccia	
			'Mineralised	siltstone 164.8 - 168.4m: Siltstone breccia 168.4 - 171.2m: Intense hematite	
	171.2	212.5	'Mineralised	siltstone 164.8 - 168.4m: Siltstone breccia	173 -203m: tr disseminated
	171.2	212.5	'Mineralised Zone'	siltstone 164.8 - 168.4m: Siltstone breccia 168.4 - 171.2m: Intense hematite ironstone & patchy strong chlorite	173 -203m: tr disseminated chalcocite 0.1 to 1%, minor
	171.2	212.5 213.85	'Mineralised Zone'	siltstone 164.8 - 168.4m: Siltstone breccia 168.4 - 171.2m: Intense hematite ironstone & patchy strong chlorite 171.2 - 212.5m: Siliceous siltstone &	
			'Mineralised Zone' Intermediate Zone	siltstone 164.8 - 168.4m: Siltstone breccia 168.4 - 171.2m: Intense hematite ironstone & patchy strong chlorite 171.2 - 212.5m: Siliceous siltstone & chloritic sandstone	chalcocite 0.1 to 1%, minor
			'Mineralised Zone' Intermediate Zone Lower	siltstone 164.8 - 168.4m: Siltstone breccia 168.4 - 171.2m: Intense hematite ironstone & patchy strong chlorite 171.2 - 212.5m: Siliceous siltstone & chloritic sandstone 212.5 -213.85m: Intense hematite ironstone	chalcocite 0.1 to 1%, minor native copper
			'Mineralised Zone'  Intermediate Zone  Lower 'Mineralised	siltstone 164.8 - 168.4m: Siltstone breccia 168.4 - 171.2m: Intense hematite ironstone & patchy strong chlorite 171.2 - 212.5m: Siliceous siltstone & chloritic sandstone 212.5 -213.85m: Intense hematite	chalcocite 0.1 to 1%, minor native copper 203 -206m: zone of blebby
			'Mineralised Zone'  Intermediate Zone  Lower 'Mineralised	siltstone 164.8 - 168.4m: Siltstone breccia 168.4 - 171.2m: Intense hematite ironstone & patchy strong chlorite 171.2 - 212.5m: Siliceous siltstone & chloritic sandstone 212.5 -213.85m: Intense hematite ironstone 213.5 -213.85m: Jasper: intense	chalcocite 0.1 to 1%, minor native copper 203 -206m: zone of blebby
	212.5	213.85	'Mineralised Zone'  Intermediate Zone  Lower 'Mineralised Zone'	siltstone  164.8 - 168.4m: Siltstone breccia  168.4 - 171.2m: Intense hematite ironstone & patchy strong chlorite  171.2 - 212.5m: Siliceous siltstone & chloritic sandstone  212.5 -213.85m: Intense hematite ironstone  213.5 -213.85m: Jasper: intense silica & hematite alteration	chalcocite 0.1 to 1%, minor native copper 203 -206m: zone of blebby
	212.5	213.85	'Mineralised Zone'  Intermediate Zone  Lower 'Mineralised Zone'	siltstone  164.8 - 168.4m: Siltstone breccia  168.4 - 171.2m: Intense hematite ironstone & patchy strong chlorite  171.2 - 212.5m: Siliceous siltstone & chloritic sandstone  212.5 -213.85m: Intense hematite ironstone  213.5 -213.85m: Jasper: intense silica & hematite alteration  Weak chlorite alteration & quartz	chalcocite 0.1 to 1%, minor native copper 203 -206m: zone of blebby
	212.5	213.85 223.8m	'Mineralised Zone'  Intermediate Zone Lower 'Mineralised Zone'  Footwall	siltstone  164.8 - 168.4m: Siltstone breccia  168.4 - 171.2m: Intense hematite ironstone & patchy strong chlorite  171.2 - 212.5m: Siliceous siltstone & chloritic sandstone  212.5 -213.85m: Intense hematite ironstone  213.5 -213.85m: Jasper: intense silica & hematite alteration  Weak chlorite alteration & quartz veining	chalcocite 0.1 to 1%, minor native copper 203 -206m: zone of blebby chalcocite (2%)



#### **APPENDIX 2: JORC 2012 Edition Table 1**

### **Section 1 Sampling Techniques and Data**

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <li>Nature and quality of sampling (e.g., cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (e.g., 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g., submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul> <li>Exploration results are based on industry best practices, including sampling, assay methods, and appropriate quality assurance quality control (QAQC) measures.</li> <li>Core samples (2021) are taken as half HQ3 core and sampled on nominal 1m intervals, with sampling breaks adjusted to geological boundaries where appropriate.</li> <li>Reverse Circulation (RC), 2020 program: RC drill chips were collected at 1m intervals via a cone splitter in pre-numbered calico bags. The quantity of sample was monitored by the geologist during drilling.</li> <li>RC samples of between 3-4kg were sent to the laboratory where they were pulverised to at least 85% passing 75 microns. The pulp sample is then split to produce a sample for analysis.</li> <li>Diamond drill samples submitted to the laboratory are crushed and pulverised followed by a four-acid total digest and multielement analysis by inductively coupled plasma optical emission spectrometry (ICP-OES) and inductively coupled plasma mass spectrometry (ICP-MS). Gold and precious metal analysis are completed by a 50g fire assay collection with inductively coupled plasma optical emission spectrometry (ICP-OES) finish.</li> </ul>
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).	<ul> <li>RC drilling (2020) was conducted using a 5<sup>1</sup>/<sub>4</sub>" face sampling hammer, with holes drilled -60 degrees.</li> <li>Rotary mud (RM) drilling (2021-22) was completed with 126mm PCD hammer with holes drilled between -60 and -65 degrees.</li> <li>2021-22 Diamond drillholes were collared using RM drilling and switched to HQ3 approximately 30m before the target position is intersected. All coordinates are quoted in GDA94 datum unless otherwise stated.</li> </ul>
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</li> </ul>	<ul> <li>RC sample recovery is monitored by the field geologist. Low sample recoveries are recorded on the drill log. The geologist is present during drilling to monitor the sample recovery process. There were no significant sample recovery issues encountered during the drilling program.</li> <li>RM sample recovery was monitored by the site geologist, logged and a sample record was retained for future interpretation. No analysis of rotary mud collars was undertaken.</li> </ul>



Criteria	JORC Code explanation	Commentary
		The quality of diamond core samples is monitored by the logging of various geotechnical parameters, and logging of core recovery and competency.
	<ul> <li>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul> <li>All logging is completed according to industry best practice.</li> <li>RC chips are logged at 1m intervals using a representative sample of the drill chips.         Logging records include lithology, alteration, mineralisation, colour and structure.</li> <li>RM chips are logged at 2m intervals using a representative sample of the drill chips.         Logging records include lithology, alteration, mineralisation and colour</li> <li>Detailed diamond drillcore information on lithology, sample quality, structure, geotechnical information, alteration and mineralisation are collected in a series of detailed self-validating logging templates.</li> </ul>
Sub-sampling techniques and sample preparation	<ul> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate/second-half sampling.</li> <li>Whether sample sizes are appropriate to the grain size of the material being</li> </ul>	<ul> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique is considered adequate as per industry best practice.</li> <li>RC samples of 3-4kg are collected at 1m intervals using a cone splitter. The sample size is appropriate for the style of mineralisation and the grain size of the material being sampled.</li> <li>RC samples are dried at the laboratory and then pulverised to at least 85% passing 75 microns.</li> <li>RM samples were not analysed. A sample was retained for future interpretation.</li> <li>Core is cut using an Almonte automated core cutting saw. Half core is taken for sampling.</li> </ul>
Quality of assay data and laboratory tests	<ul> <li>sampled.</li> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> <li>Nature of quality control procedures adopted (e.g., standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e., lack of bias) and precision have been established.</li> </ul>	<ul> <li>All samples were submitted to the Intertek Laboratories sample preparation facility at Alice Springs in the Northern Territory where a pulp sample is prepared. The pulp samples are then transported to Intertek in Townsville Australia for analysis.</li> <li>Pulp sample(s) were digested with a mixture of four Acids including Hydrofluoric, Nitric, Hydrochloric and Perchloric Acids for a total digest.</li> <li>Analysis of 2020 RC drilling; Cu, Pb, Ag, Bi, Co Ni, Sb have been determined by Inductively Coupled Plasma (ICP) Mass Spectrometry (MS-OES).</li> <li>Analysis of 2021 core drilling; Ag, Al, As,Ba,Bi,Ca,Cd,Ce,Co,Cr,Cu,Fe,K,La,Li,,Mg,Mn, Mo,Na,Ni,P,Pb,S,Sb,Sc,Sn,Sr,Te,Ti,TI,V,W,Zn</li> </ul>



Criteria	JORC Code explanation	Commentary
		<ul> <li>have been determined by Inductively Coupled Plasma (ICP) Mass Spectrometry (MS-OES).</li> <li>Gold was analysed by Fire Assay with a 25g charge and an ICP-MS finish with a 5ppb Au detection limit.</li> <li>A Field Standard, Duplicate or Blank is inserted every 25 samples. The Laboratory inserts its own standards and blanks at random intervals, but several are inserted per batch regardless of the size of the batch.</li> </ul>
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul> <li>All significant intercepts are reviewed and confirmed by at least two senior personnel before release to the market.</li> <li>No adjustments are made to the raw assay data. Data is imported directly to Datashed in raw original format.</li> <li>All data are validated using the QAQCR validation tool with Datashed. Visual validations are then carried out by senior</li> </ul>
Location of data points	<ul> <li>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul> <li>staff members.</li> <li>All drill hole collars were located with a handheld GPS with an accuracy of +/-5m. At the completion of the drilling program all holes were surveyed by DGPS.</li> <li>Downhole surveys (2020 RC) were taken at 30m intervals using a Reflex single shot camera. The camera records azimuth and dip of hole.</li> <li>Downhole surveys for the 2021 diamond drilling were taken at 6-12m intervals by solid state gyro to maintain strong control of drill direction</li> <li>Survey co-ordinates: GDA94 MGA Zone 53.</li> </ul>
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing, and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul> <li>Data spacing and distribution used to determine geological continuity is dependent on the deposit type and style under consideration. Where a mineral resource is estimated, the appropriate data spacing, and density is decided and reported by the competent person.</li> <li>For mineral resource estimations, grades are estimated on composited assay data. The composite length is chosen based on the statistical average, usually 1m. Sample compositing is never applied to interval calculations reported to market. A sample length weighted interval is calculated as per industry best practice.</li> </ul>
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if</li> </ul>	<ul> <li>Orientation of sampling is as unbiased as possible based on the dominating mineralised structures and interpretation of the deposit geometry.</li> <li>If structure and geometry is not well understood, sampling is orientated to be perpendicular to the general strike of stratigraphy and/or regional structure.</li> </ul>



Criteria	JORC Code explanation	Commentary
	material.	
Sample security	The measures taken to ensure sample security.	<ul> <li>All samples remain in the custody of company geologists and are fully supervised from point of field collection to laboratory drop-off.</li> </ul>
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	None yet undertaken for this dataset

## **Section 2 Reporting of Exploration Results**

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

(Criteria listed in the preceding section also apply to this section.)			
Criteria	JORC Code explanation	Commentary	
Mineral tenement and land tenure status	<ul> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</li> </ul>	The Company controls two contiguous Exploration Licences, EL 28620 and EL30701 located east of Tennant Creek. All tenure is in good standing at the time of reporting. There are no known impediments with respect to obtaining a licence to operate in the area.	
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	Several other parties have undertaken exploration in the area between the 1930s through to the present day including Posgold, Meteoric Resources and Blaze Resources.	
Geology	Deposit type, geological setting and style of mineralisation.	The Barkly Project covers sediments of the Lower Proterozoic Warramunga Group that hosts all of the copper-gold mines and prospects in the Tennant Creek region. At the Bluebird prospect copper-gold mineralisation is hosted by an ironstone unit within a west-northwest striking fault. The ironstone cross cuts the sedimentary sequence that mostly comprises of siltstone.	
Drill hole Information	<ul> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:         <ul> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li> </ul>	<ul> <li>For drilling details of the 2020 RC drilling program refer to Appendix 1 of the ASX announcement of 18 March 2020 by Blina Minerals (ASX: BDI): "High-Grade Copper and Gold Intersected in Drilling program at Bluebird"</li> <li>For drilling details of the 2014 Diamond and RC programs refer to Appendix 1 of the ASX announcement of 24 September 2019 by Blina Minerals (ASX: BDI): "Strategic Acquisition of High-Grade Gold-Copper Project".</li> </ul>	
Data aggregation methods	<ul> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g., cutting of high grades) and cut-off grades are</li> </ul>	All exploration results are reported by a length weighted average. This ensures that short lengths of high-grade material receive	



Criteria	JORC Code explanation	Commentary
	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.	f
Relationship mineralisatio and intercep	• These relationships are particularly important in the reporting of Exploration	<ul> <li>All holes are drilled as perpendicular as practical to the orientation of the mineralised unit and structure. Intersection lengths are interpreted to be close to true thickness.</li> </ul>
Diagrams	<ul> <li>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</li> </ul>	<ul> <li>Refer to Figures 1, 2, 4 and 5 for appropriate sections though the Bluebird mineralisation including pierce point locations, and Figures 3 and 6, plan views showing location of the Bluebird prospect and Barkly Project respectively.</li> </ul>
Balanced rep		<ul> <li>All background information is discussed in the announcement.</li> <li>No new results are reported in this announcement.</li> <li>Refer to Tables in previous referenced releases for details of previous results.</li> </ul>
Other substa		
Further work		repeats of the high-grade Bluebird copper gold shoot within the 5km Bluebird Corridor.