



# ASX QUARTERLY REPORT

## QUARTER ENDING 31 DECEMBER 2018

### ASX ANNOUNCEMENT

31<sup>st</sup> January 2019

### BARRA RESOURCES LIMITED

A.B.N. 76 093 396 859

### Corporate Details (Dec 31):

ASX Code: BAR  
Market Cap: \$18.1M  
@ 3.4c  
Cash: \$2.3M

### Issued Capital:

530.89M Ordinary Shares  
50M Options

### Substantial Shareholders:

FMR Investments 15.4%  
Mineral Resources Ltd 10.8%

### DIRECTORS

MD & CEO: Sean Gregory  
Chairman: Gary Berrell  
Non-Exec: Jon Young  
Non-Exec: Grant Mooney

### PROJECTS

Mt Thirsty Co-Ni (50%)  
Coolgardie Au (100%)

### CONTACT DETAILS

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[info@barraresources.com.au](mailto:info@barraresources.com.au)

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West Perth, WA 6005  
T: (08) 9481 3911

### MT THIRSTY COBALT PROJECT

- Leach optimisation test work nearing completion
- Positive land access, native title and community engagement
- Resource upgrade to JORC 2012 nearing completion
- Pre-Feasibility Study level engineering and capital estimation is scheduled to commence this quarter on schedule

### BURBANKS GOLD PROJECT

- Maiden Indicated and Inferred Mineral Resource Estimate of 29,900 Oz at 2.59 g/t gold declared for Main Lode Deposit<sup>1</sup>
- Total Mineral Resources at Burbanks increased 24% to 125,300 Oz<sup>1</sup>
- Mineral Resource estimates only a very small proportion of the strike and depth potential of the Burbanks high-grade gold system

### PHILLIPS FIND GOLD PROJECT

- First pass drilling program of approximately 10,000 metres of air-core completed at Phillips Find Gold Project to test Truth target area
- Broad gold anomalism (>0.1g/t gold) up to 33m thick encountered including significant gold intersections (+1.0g/t gold) of 4m @ 4.40 g/t Au and 4m @ 2.95 g/t Au
- Anomalous and highly encouraging gold trends defined and associated with strike extension of the Phillips Find Mine Sequence, that hosts multiple deposits at the Phillips Find Mining Centre
- Program identifies and narrows focus to several new targets that require prioritisation followed by further infill and extensional drilling

### CORPORATE

- As at the end of the quarter, Barra has \$2.3m in cash.



Figure 1: Barra Project Location Plan

<sup>1</sup> Refer to Table 1 for breakdown of the Mineral Resources by category



## MT THIRSTY COBALT PROJECT

*(50% Barra, 50% Conico – Mt Thirsty Joint Venture, MTJV)*

The Mt Thirsty Cobalt Nickel Project is located 16km northwest of Norseman, Western Australia (Figure 2). The project is jointly owned by Barra Resources Limited (Barra, or the Company) and Conico Limited, together the Mt Thirsty Joint Venture (MTJV).

The Project contains the Mt Thirsty Cobalt-Nickel (Co-Ni) Oxide Deposit that has the potential to emerge as a significant cobalt producer.

The MTJV is progressing a Pre-Feasibility Study (PFS) on the project utilising industry leading consultants led by Amec Foster Wheeler Australia Pty Ltd, trading as Wood.

### ACTIVITIES

#### *Front-End Flowsheet Selection*

As announced during the quarter, economic analysis of multiple financial and non-financial criteria enabled the MTJV to confidently select the whole ore leach case for the front-end go-forward flowsheet for the project in preference to the beneficiation options considered. The PFS and subsequent studies are now moving forward knowing that the beneficiation case has been thoroughly investigated and eliminated from further study.

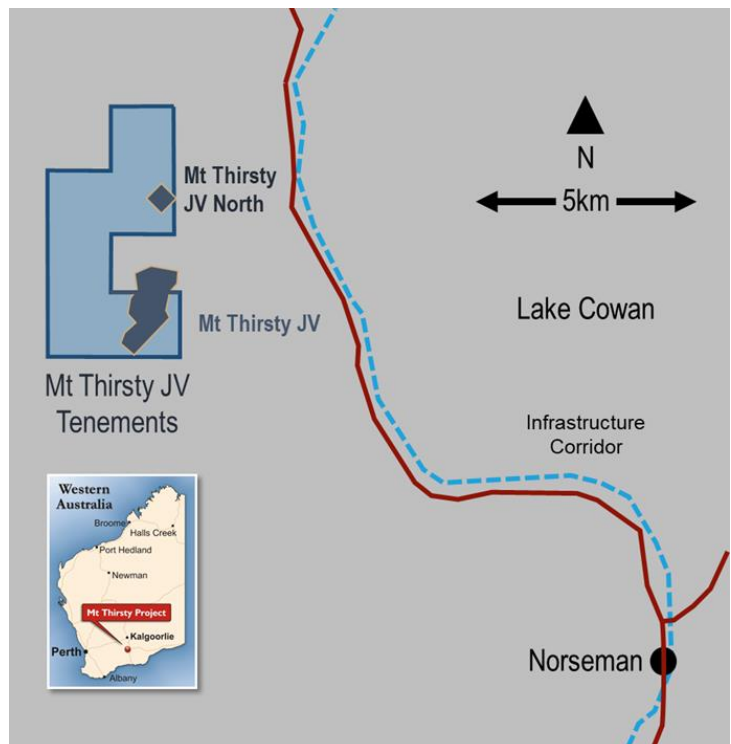
#### *Leaching Optimisation Test Work*

Substantial metallurgical test work is nearing completion at ALS laboratories in Balcatta. This work has focused on adjusting parameters such as feed grade, SO<sub>2</sub> concentration, temperature, process water salinity, grind size, agitator sizing, H<sub>2</sub>SO<sub>4</sub> acid addition and the addition of other reagents. Optimisation of each of these parameters is expected to result in increased metal recoveries. The opportunity lies in the relatively low metal recoveries applied in the 2017 Scoping Study of 73% for cobalt and 21% for Nickel. The MTJV is confident in substantially increasing these recoveries and looks forward to publishing the results as soon as they are finalised in the current quarter. These expected increases in recoveries are anticipated to significantly mitigate the effect of lower cobalt prices on project economics.

#### *Cobalt Market*

The price for cobalt metal has corrected over the last 12 months from a high of US\$90,000/t in March to US\$38,000/t today. This has been due to short term supply exceeding demand as evident by LME warehouse levels which are now at their highest level since Info-mine began tracking cobalt 7 years ago. The supply growth has been led by producers from the Democratic Republic of Congo, increasing their dominance of the market to above 70% and further exacerbating future supply shock risk.

Speculators have been purchasing and stockpiling physical cobalt in expectation of the electric vehicle (EV) revolution. EV sales are growing exponentially from a low base, particularly in China, however the mass adoption of EVs is still ahead of us. When this inevitably occurs, supply growth will be unable to keep pace with demand. Hence the rampant speculation that saw the cobalt price unsustainably rise this time last year.



**Figure 2: Mt Thirsty Project Location Plan**



Substitution away from cobalt through the adoption of 811 cathode chemistry (8 parts nickel, 1 part manganese, 1 part cobalt) to displace 622 cathodes has proved more difficult than major battery manufacturers forecast. Even if this thrifting away from cobalt can be safely implemented, the demand growth is still forecast to significantly outstrip supply. The challenges of 811 highlight the difficulty of technological change disrupting the need for cobalt in batteries within any reasonable investment time frame.

The recent correction of the cobalt price has been sharper than forecasts issued by all major banks as reported by Consensus Economics. Longer term, the fundamentals of the cobalt market remain exceptional with very few high-quality projects such as Mt Thirsty being expected to be available to meet the demand driven by EVs.

### ***Land Access and Community Engagement***

Several land access negotiations were satisfactorily concluded during the quarter for tenure required for groundwater drilling planned to firm up the water source for the project. The remaining land access negotiations are progressing and expected to be resolved to enable ground water drilling to be completed to support the PFS.

Initial meetings with the Shire of Dundas have been very positive with the Shire indicating their strong preference to see support infrastructure located in the town of Norseman, located only 16km from the project. This presents a win-win opportunity for the MTJV to leverage the existing infrastructure in town such as power, water, a recently completed sealed airstrip and other community facilities. Subject to future commercial negotiations, there may be opportunities to have facilities such as a camp owned and operated by 3<sup>rd</sup> parties in town, reducing the capital funding requirements for the MTJV.

Meetings were held with representatives of the Ngadju Native Title holders who remain supportive of the project.

### ***Other Studies***

Golder are presently re-estimating the Mt Thirsty Mineral Resource to enable upgrading from JORC 2004 to JORC 2012 to enable an Ore Reserve to be declared at the completion of a positive PFS.

Mine plan optimisation will commence during the current quarter, informed by the new resource block model and metallurgical regressions from the latest test-work.

PFS level engineering and capital estimation is scheduled to commence this quarter on schedule.



## BURBANKS GOLD PROJECT

(100% Barra)

### ACTIVITIES

Barra's 100% owned Burbanks Gold Project is located just 9 km south of Coolgardie in Western Australia (Figure 3).

Barra has identified an Exploration Target for Burbanks of 223,000 to 564,000 Oz (refer ASX Release dated 21/03/2018). The Exploration Target is conceptual in nature and further work is required to declare a Mineral Resource of this magnitude. Based on this Exploration Target, Barra has set itself a strategy to grow its Mineral Resources at its Coolgardie Gold Projects to a critical mass of 500 kOz ahead of a sustainable future re-start in mining operations.

#### Main Lode Resource Estimation

The maiden Indicated and Inferred Mineral Resource of 29,900 Oz at 2.59 g/t gold was reported during the quarter in accordance with the 2012 JORC Code, for the historical Main Lode Underground Mine (see breakdown by Mineral Resource category in Table 1 below).

The maiden Mineral Resource estimate for Main Lode is a significant milestone for Barra. It adds an additional 24% of Mineral Resources to our global Mineral Resource inventory which now stands at 125,300 Oz (Table 1). This represents about a quarter of the upper limit of the Company's previously announced Exploration Target.

The Main Lode Mineral Resource adjoins the existing Birthday Gift Mineral Resource and together the total Mineral Resource now spans 1,500 m in strike length and is fast becoming an extensive and significant mineralised system still with vastly untested depth potential.

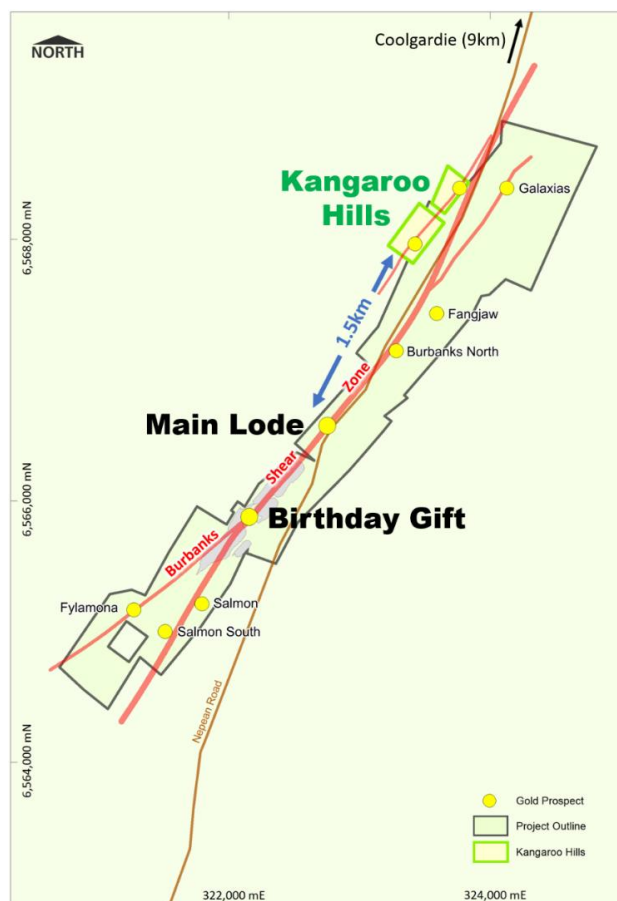
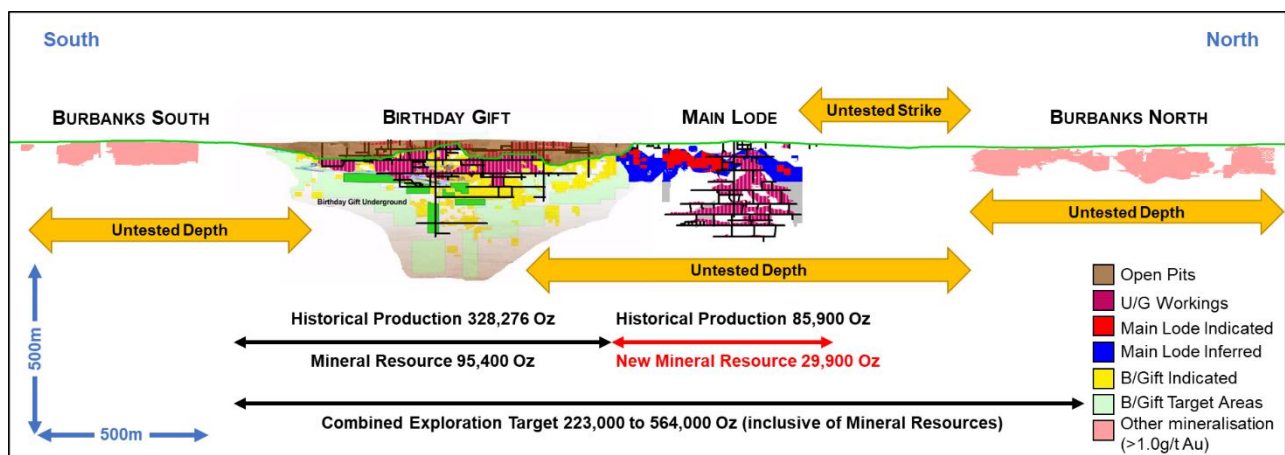


Figure 3: Burbanks Location Plan

Deposit	Cut-Off g/t Au	Indicated			Inferred			Total		
		kt	Grade g/t Au	Ounces	kt	Grade g/t Au	Ounces	kt	Grade g/t Au	Ounces
Christmas Open Pit	1.0	5	6.2	1,100	4	7.8	1,050	9.7	6.89	2,150
Birthday Gift Underground Mine	2.5	180	6.0	34,750	325	5.6	58,500	505	5.74	93,250
Main Lode Deposit	1.0	106	2.8	9,700	254	2.5	20,200	360	2.59	29,900
<b>Total</b>	<b>1.0/2.5</b>	<b>291</b>	<b>4.9</b>	<b>45,550</b>	<b>583</b>	<b>4.3</b>	<b>79,750</b>	<b>874</b>	<b>4.5</b>	<b>125,300</b>

All tonnages reported are dry metric tonnes. Minor discrepancies may occur due to rounding to appropriate figures. For full details of the Birthday Gift and Christmas Pit Mineral Resources, refer to ASX:KDR's 2016 Annual Report.

Table 1 – Burbanks Global Mineral Resources



**Figure 4: Burbanks Long Section showing Mineral Resources at Birthday Gift and Main Lode, other unclassified mineralisation blocks and areas yet to be tested by drilling.**

### *Next Steps*

The addition of the maiden Main Lode Mineral Resource estimate to Burbanks inventory now lays a solid foundation for further growth. When considered in the context of the overall Burbanks mineral system as illustrated in Figure 4, there remain several glaring gaps that represent outstanding drill targets and scope to add significantly more resources.

Barra is utilising the summer period to review the data collected from 3 drilling campaigns during 2018 as well as interpreting the hyperspectral alteration data collected during the Main Lode drilling. These are expected to inform the selection of the drilling targets for 2019 drilling operations which are expected to maintain a similar intensity of drilling to the successful 2018 programs.



## PHILLIPS FIND GOLD PROJECT

(100% Barra)

### ACTIVITIES

#### *First Pass Drilling of Truth Target*

In line with its gold strategy, Barra completed a first pass 338 hole, 9,669m Air Core (AC) drilling program at the Truth target area, within its Phillips Find Gold Project, 50km north of Coolgardie, Western Australia (Figure 5).

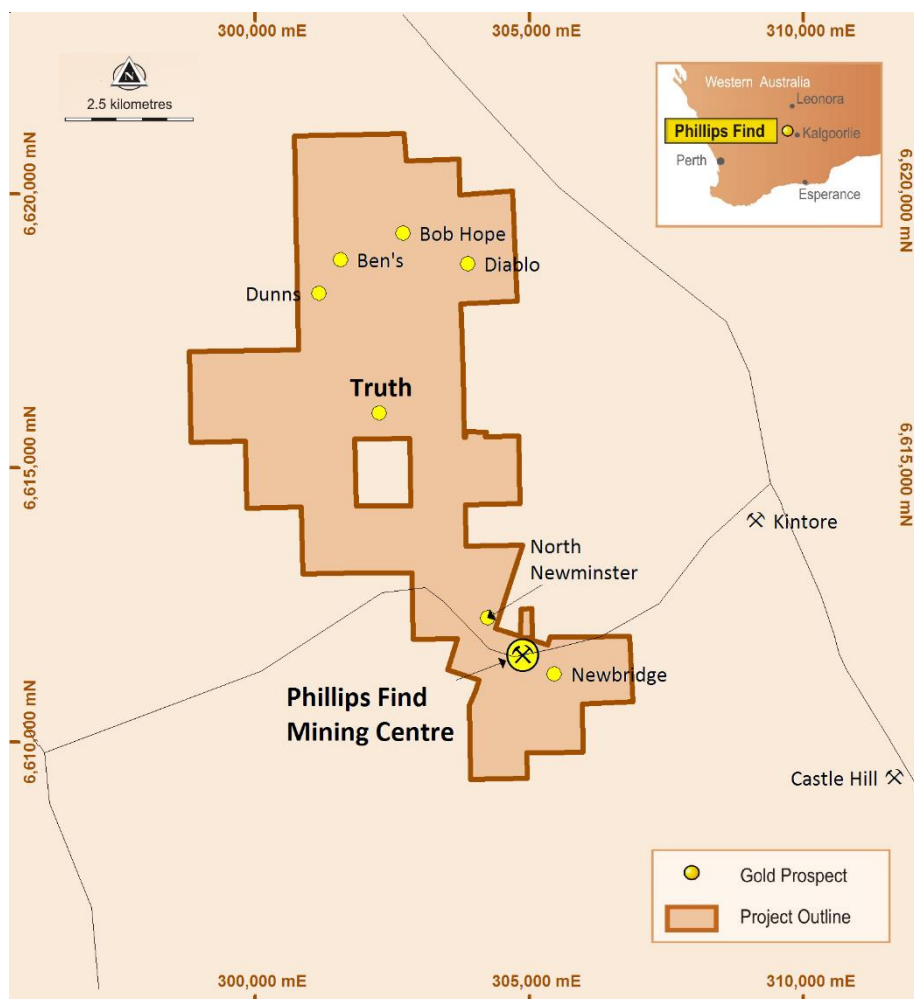


Figure 5: Phillips Find Project location map

The AC drilling program, designed to be a broad spaced first pass test of the 6km x 1.5km Truth target area, successfully intersected multiple zones of low-level gold anomalism over the target area.

Better anomalous gold intersections (+0.10g/t Au) include:

- 20m @ 0.90g/t Au including 4m @ 4.40 g/t Au
- 29m @ 0.49g/t Au including 4m @ 2.95 g/t Au
- 26m @ 0.30 g/t Au
- 33m @ 0.10 g/t Au
- 9m @ 0.32 g/t Au
- 4m @ 0.40 g/t Au
- 8m @ 0.19 g/t Au





- 5m @ 0.23 g/t Au
- 4m @ 0.17 g/t Au
- 3m @ 0.12 g/t Au, and
- 33m @ 0.10g/t Au

Several trends were defined parallel to and associated with weathered bedrock structures along the strike extension of the Phillips Find Mine Sequence geology. The Phillips Find Mine Sequence hosts three open-pit mines at the Phillips Find Mining Centre (PFMC), which has produced a combined 33,000oz of gold to-date. Several new targets have now been identified along strike of the PFMC which now require prioritisation before further follow-up infill AC drilling and testing for mineralisation at depth with reverse circulation (RC) drilling.

Prior to the drilling program the Truth target was defined by a convalescence of intense structural deformation interpreted by mapping and coincident multi-element auger geochemical anomalism both completed in 2017. The location of key lithostratigraphy and structural continuity was not known at a scale required to identify deeper drilling targets. The current work has provided this necessary resolution and provided visibility to the bedrock geology.

The broad spaced program was designed to penetrate only the regolith profile by drilling until blade refusal was encountered at the bedrock interface and test for gold dispersion bleeding off potentially mineralised bedrock structures. In this regard, the program exceeded the Company's expectations with several broad zones of low-level gold anomalism encountered and associated with deeply weathered structures and favourable PFMC Mine Sequence geology.

In contrast to the PFMC however where the gold deposits daylighted at surface, most of the Truth target area is obscured by recent alluvial cover and weathering up to 50m depth. Another exciting outcome of the program is that a high proportion of gold anomalism encountered was located beneath recent multi-element auger geochemical anomalism in deeply weathered regolith, and in areas not previously drilled.

Several targets have already emerged from the work (Figure 6). Following further resolution from the interpretation of pending multi-element end of hole drill chip samples (results are expected later during the current quarter), further AC drill programs will be designed for later this year to infill around prioritised targets as well as deeper RC holes targeting mineralised structures at depth.

## CORPORATE

As at the end of the quarter, Barra has \$2.3m in cash to fund it's 50% share of the Pre-Feasibility Study (PFS) for the Mt Thirsty Cobalt-Nickel Oxide Project as well as ongoing exploration and drilling at the Company's Burbanks and Phillips Find Gold projects.

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**SEAN GREGORY**

Managing Director & CEO

*Please refer to our recently updated website for background information on each of Barra's projects.*



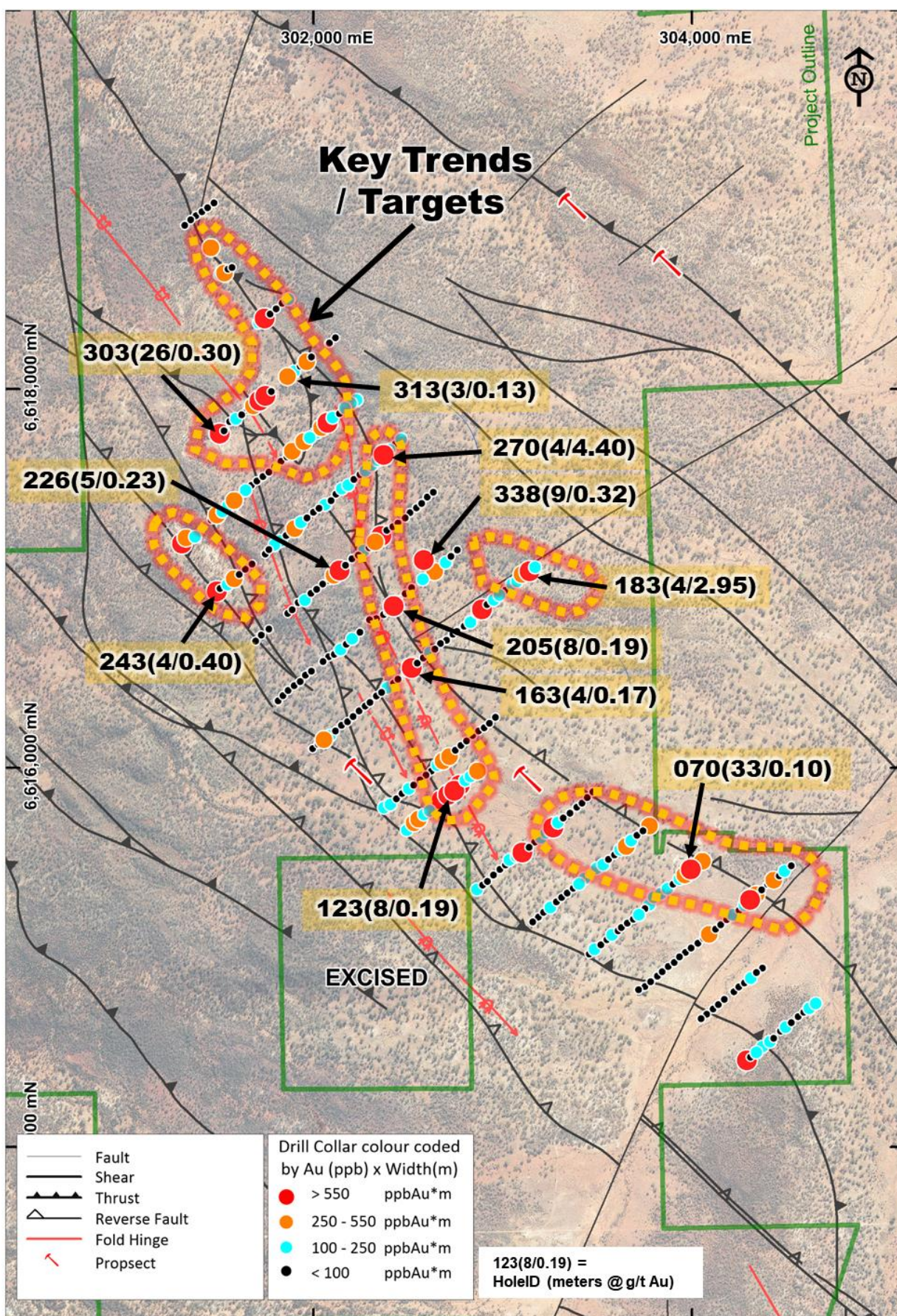


Figure 6 – AC drilling anomalism, best results and mineralised trend over structural interpretation





## DISCLAIMER

*The interpretations and conclusions reached in this report are based on current geological theory and the best evidence available to the authors at the time of writing. It is the nature of all scientific conclusions that they are founded on an assessment of probabilities and, however high these probabilities might be, they make no claim for complete certainty. Any economic decisions that might be taken based on interpretations or conclusions contained in this report will therefore carry an element of risk.*

*This report contains forward-looking statements that involve a number of risks and uncertainties. These forward-looking statements are expressed in good faith and believed to have a reasonable basis. These statements reflect current expectations, intentions or strategies regarding the future and assumptions based on currently available information. Should one or more of the risks or uncertainties materialise, or should underlying assumptions prove incorrect, actual results may vary from the expectations, intentions and strategies described in this report. 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' STATEMENTS

*The information in this report which relates to Exploration Targets, Exploration Results and Mineral Resources for the Phillips Find and Burbanks Projects is based on and fairly represents information compiled by Mr Gary Harvey who is a Member of the Australian Institute of Geoscientists and a full-time employee of Barra Resources Ltd.*

*The information in this report which relates to Exploration Results for the Mt Thirsty Project is based on and fairly represents information compiled by Mr Michael J Glasson who is a Member of the Australian Institute of Geoscientists contracted to Conico Limited. Mr Glasson holds shares in Conico Ltd.*

*Messers Harvey and Glasson have sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as Competent Persons as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" (the JORC Code). They consent to the inclusion in the report of the matters based on their information in the form and context in which it appears.*

## APPENDIX 1 - ASX ANNOUNCEMENTS DURING THE QUARTER

Date	Announcement
17/01/2019	Phillips Find Drilling Results
8/11/2018	2018 Annual General Meeting Presentation
30/10/2018	Main Lode Maiden Resource at Burbanks
25/10/2018	Phillips Find Drilling Commences at Truth
22/10/2018	Excellent Progress on Mt Thirsty PFS Work
19/10/2018	Kambalda Geology Symposium Presentation
8/10/2018	Notice of Annual General Meeting



## APPENDIX 2 – TENEMENT LISTING

There were no tenement changes during the quarter.

Tenement	Project	Location	Change in Interest (%) during Quarter		
			End of Quarter	Acquired	Disposed
E63/1267	Mt Thirsty	WA	50		
E63/1790		WA	50		
P16/2045		WA	50		
R63/4		WA	50		
M15/161	Burbanks	WA	100		
P15/5249		WA	100		
P15/5412		WA	100		
M16/130	Phillips Find	WA	100		
M16/133		WA	100		
M16/168		WA	100		
M16/171		WA	100		
M16/242		WA	100		
M16/258		WA	100		
M16/550		WA	100		
P16/2702		WA	100		
P16/2785		WA	100		
P16/2786		WA	100		
P16/2985		WA	100		
P16/2986		WA	100		
P16/2987		WA	100		
P16/2988		WA	100		
P16/2989		WA	100		
P16/2990		WA	100		
P16/2991		WA	100		
P16/2992		WA	100		
P16/2993		WA			100
P16/2994		WA			100
P16/2995		WA			100
P16/2998		WA	100		
P16/2999		WA	100		
P16/3037		WA	100		
P16/3038		WA	100		
P16/3039		WA	100		
P16/3040		WA	100		
P16/3041		WA	100		
P16/3042		WA	100		
P16/3043		WA	100		