

## **Corporate Details:**

ASX Code: BAR

Market Cap: \$18.3M (Sep 30) Cash: \$0.63M (Sep 30)

### **Issued Capital:**

373,247,883 ordinary shares

#### **Substantial Shareholders:**

FMR Investments P/L 22%

#### **Directors:**

Executive Chairman & CEO:

Gary Berrell

Non-Executive Directors:

Grant Mooney Jon Young

### Company Secretary:

Grant Mooney

## **Contact Details:**

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# Barra Resources Limited Activity Report for the Quarter Ended 30 September 2016

31 October 2016

# **OVERVIEW**

#### MT THIRSTY COBALT PROJECT

- Drilling for metallurgical testwork to commence early November.
- Scoping study to guide development pathway.
- High calibre independent team to lead scoping study.
- Additional infill resource drilling to upgrade resource categorisation.

#### **BURBANKS GOLD PROJECT**

- 447 ounces of gold produced from within the Birthday Gift Mining Area during the period; gold royalty of \$11,187 received,
- Infill resource drilling at Burbanks North returned excellent results including:

15 metres grading 9.9 grams per tonne gold 8 metres grading 6.2 grams per tonne gold 5 metres grading 7.9 grams per tonne gold, and 3 metres grading 9.9 grams per tonne gold

- Burbanks North scoping study in progress to determine whether to proceed to mining.
- Planning and permitting underway to commence first significant and extensive exploration drilling programs at Main Lode Gold Mine to test near surface mineralised zone and depth potential.

#### PHILLIPS FIND GOLD PROJECT

- Structural mapping of Newminster and Newhaven pits completed.
- Re-assessment of Newminster geological model, following structural pit mapping program, prior to resource estimation.

## **CORPORATE**

Subsequent to end of Quarter, capital raising via Share Purchase Plan (SPP) and share placement to raise \$1.5M announced 10<sup>th</sup> October 2016. \$1.9 million raised (before costs), SPP heavily oversubscribed.

# **CORPORATE**

## CAPITAL RAISING

Subsequent to the end of the quarter, the Company announced a \$500,000 share placement to sophisticated investors together with a Share Purchase Plan (SPP) to raise a further \$1 million (oversubscriptions subject to board approval). Both the SPP and the Placement shares were undertaken at an issue price of 4 cents per share.

A total of \$1.4 million was raised under the SPP with oversubscriptions of \$400,000 being accepted.

Funds raised from the Placement and SPP will be applied towards the Scoping Study for the Mt Thirsty Cobalt Project as well as funding gold exploration activities at the Burbanks and Phillips Find projects.

## **PROJECTS**

## MT THIRSTY COBALT PROJECT

(50% Barra; 50% Conico Ltd - Joint Venture) www.mtthirstycobalt.com

## **Activities**

## **Metallurgical Testwork and Scoping Study**

A six (6) hole reverse circulation (RC) drilling program will commence shortly to obtain new samples for further metallurgical testwork. The holes are twins of previously drilled air core holes and the assay results will also be used for QAQC purposes.

This next phase of metallurgical testwork will expand on and increase the level of confidence in previous testwork undertaken which has shown that agitated leaching using sulphur dioxide (SO<sub>2</sub>) at atmospheric pressure and low temperature (<50°C) recovers up to 80% of the cobalt and over 25% of the nickel within a few hours of leaching. The results of the metallurgical testwork will be fed directly into a Scoping Study over the Mt Thirsty Cobalt Oxide Deposit.

The Scoping Study, to be overseen by a team of highly regarded industry figures headed by former Western Mining Corporation's manager of Metallurgy, Mr. Bob Bourne, will focus on the agitated leaching process to determine the capital and operating expenditure forecasts ahead of a potential pre-feasibility study in 2017. At completion of the Scoping Study, the Mt Thirsty Joint venture (MTJV) will be able to better determine the funding requirements and development options which may be available to bring the project to fruition.

## **Infill Resource Drilling**

In conjunction with the Scoping Study, the MTJV will consider undertaking infill drilling to upgrade the current JORC 2004 reported mineral resource estimate to JORC 2012, as well as converting existing Inferred Mineral Resources to the Indicated Mineral Resource category. This conversion should provide greater understanding of project economics. The results of a recently completed preliminary open pit optimization study by CSA Global Consultants will be used to assist in the planning of this infill drilling.

## **Background of Mt Thirsty Project and Cobalt Market**

The Mt Thirsty Cobalt Project is located 20km north-northwest of Norseman, Western Australia. Conico Ltd (ASX:CNJ) is the Joint Venture manager.

The Project contains the Mt Thirsty Cobalt Deposit which has the potential to emerge as a significant cobalt supplier. Further information can be found at <a href="www.mtthirstycobalt.com">www.mtthirstycobalt.com</a>. The deposit contains an Indicated Mineral Resource of 16.6Mt @ 0.14% Co, 0.60% Ni and 0.98% Mn and an Inferred Mineral Resource of 15.3Mt @ 0.11% Co, 0.51% Ni and 0.73% Mn; (The Mt Thirsty Co-Ni Oxide Deposit mineral resource was prepared and first reported in accordance with the JORC Code 2004. It has not been updated since to comply with the JORC Code 2012 on

the basis that the information has not materially changed since it was last reported; refer to ASX announcement 8<sup>th</sup> March 2011: "Resource Upgrade Mt Thirsty Cobalt-Nickel Oxide Deposit", available to view at <a href="https://www.barraresources.com.au">www.barraresources.com.au</a>).

As well as the Cobalt Deposit, the Project also hosts primary nickel sulphide (Ni-S) mineralisation with intersections of Ni-S mineralisation up to 6m down-hole @ 3.5% Ni made by the Joint Venture in 2010 (refer to ASX announcement 19th May 2010: "High Grade Nickel Sulphides Intersected at Mt Thirsty JV" 1, available to view at www.barraresources.com.au).

Barra has excellent exposure to the cobalt market through the 50% interest in the Mt Thirsty Cobalt Project.

Demand for cobalt looks very bright as the world becomes more dependent on rechargeable power sources (Figure 1). Innovations with portable electronics and electric vehicle design are adding to this surging demand. However, the battery industry is also competing with demand for cobalt from producers of superalloys, aircraft turbines and chemical industries.

Demand is likely to escalate exponentially with battery production; however, supply is uncertain due to:

- Over 60% of global supply coming from the politically unstable African countries such the Democratic Republic of Congo, Central African Republic and Zambia.
- Cobalt is largely a by-product of copper and nickel mining and there are an increasing number of mine closures and project deferments due to low commodity prices.

With potential supply constraints and surging demand many commentators see pricing pressure as a likely eventuality.

The undeveloped Mt Thirsty Cobalt Project has a significant JORC 2004 reported resource with a potential to have a long mine life. It is close to all necessary infrastructure (rail, road, power, water, and sea port) and, being in a mining orientated state, has the potential to attract a variety of interested parties including end users of cobalt. The Joint Venture partners are working collaboratively to exploit this joint opportunity.

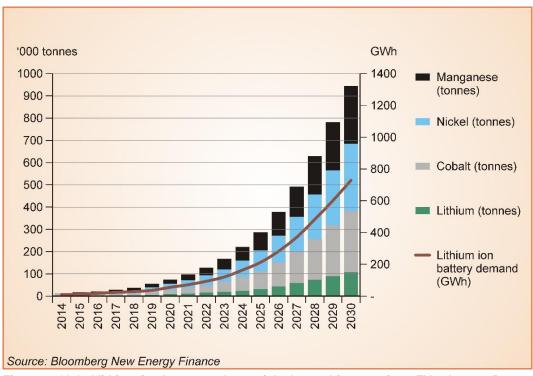


Figure 1: Global lithium-ion battery and materials demand forecast from EV sales, 2015-2030.

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<sup>&</sup>lt;sup>1</sup> The Company is not aware of any new information or data that materially affects the information included in the previous announcement and that all of the previous assumptions and technical parameters underpinning the estimates in the previous announcement have not materially changed.

## **BURBANKS GOLD PROJECT (WA)**

(Includes \$25 per ounce Royalty on gold production from within the Birthday Gift Mine Area and 100% Rights to Reservation Area within M15/161, Figure 2)

### **Activities**

## Birthday Gift Mine Area (BGMA) (Royalty Only)

During the period, owner and operator of the BGMA, Kidman Resources Limited (ASX: KDR) (Kidman), produced and sold 447.5 ounces of gold from within the BGMA. Subsequent to the period Barra received a royalty payment of \$11,187.50 based on Kidman's September quarter gold production.

Also during the period Kidman announced a formal sale process for the BGMA. Mining operations were suspended and the Birthday Gift mine was placed on care and maintenance. Kidman has informed the market the sale process is incomplete and will update the market as and when a transaction is agreed.

Period	Gold Produced (oz)*		
Commencement to 31/12/13	886		
2014	7246		
2015	4968		
Q1 2016	775		
Q2 2016	0		
Q3 2016	447		
Total*	14,322		

Table 1: Kidman gold production from Birthday Gift Mine Area. \* Rounded to nearest ounce.

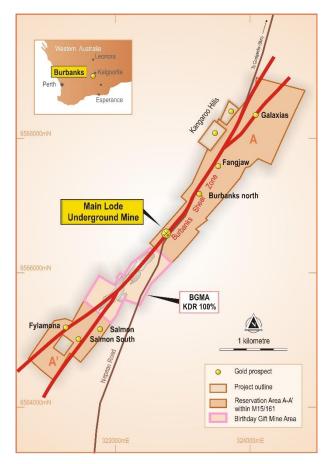


Figure 2: Plan showing Reservation Area (A-A') and BGMA within M15/161.

## Reservation Area (100% Exploration and Mining Rights – Figure 2)

#### **Burbanks North**

An infill resource drilling program consisting of 80 aircore holes (2,438m) was completed at Burbanks North and specifically targeted the shallow oxidised deposit to a depth of 40m below the surface (see recent ASX Release; "Excellent drill results move Burbanks North closer to production", dated 25<sup>th</sup> August 2016, available to view at <a href="https://www.barraresources.com.au">www.barraresources.com.au</a>).

The program was highly successful with best intersections including:

- 15.0 metres grading 9.87 grams per tonne gold
- 8.0 metres grading 6.22 grams per tonne gold
- 5.0 metres grading 7.89 grams per tonne gold
- 3.0 metres grading 9.94 grams per tonne gold
- 3.0 metres grading 3.98 grams per tonne gold

- 4.0 metres grading 5.63 grams per tonne gold, and
- 5.0 metres grading 3.80 grams per tonne gold.

A new resource estimation and scoping study is currently in progress to determine viability and whether to proceed to mining.

With regards to mining, the Company reached agreement with its major shareholder FMR Investments Pty Ltd (FMR) to evaluate and potentially commence open-pit mining of the Burbanks North deposit. Pursuant to the agreement, and based on positive results of the scoping study and a joint decision to mine, the parties will enter a tribute mining agreement with profits to be split 35:65 in FMR's favour. The Company will not be liable for any financial loss.

#### Main Lode Gold Mine

The Company has commenced planning for an extensive reverse circulation (RC) and diamond drilling program at the historic Main Lode Gold Mine (see ASX Release; "Drilling Planned Targeting Historic High Grade Zone at Main Lode Gold Mine", dated 25<sup>th</sup> October 2016, available to view at <a href="https://www.barraresources.com.au">www.barraresources.com.au</a>).

In-line with the Company's Gold Strategy (ASX Release 22<sup>nd</sup> July 2016; "Corporate Gold Strategy", available to view at <a href="www.barraresources.com.au">www.barraresources.com.au</a>) and following the recent drilling success at Burbanks North, the Company is now targeting the high-grade Main Lode Gold Mine to significantly boost its gold resource inventory.

Drilling will test the upper and lower levels of the mine environment where high grade mineralization has been encountered from historical operations. RC drilling will target an area approximately 400 metres in strike to a vertical depth of 100 metres below the surface whilst diamond drilling will test below Level 8 from 280 to 380 metres below the surface (Figure 3).

Permitting for the drilling program is presently underway and, subject to timely government approval, commencement of drilling is scheduled to commence during the current quarter.

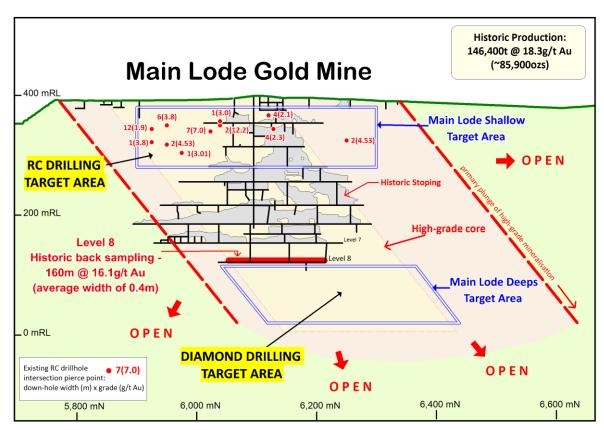


Figure 3: Burbanks Main Lode Gold Mine schematic long section showing historic mining areas, plunge of highgrade gold mineralisation and target areas for drilling.

<sup>\*</sup> Intersections shown in diagram are from historic RC drilling, and RC drilling by Barra completed in 2008 and previously reported in the following ASX Release which can be viewed at <a href="www.barraresources.com.au">www.barraresources.com.au</a>; 28/08/2008 Burbanks Mainlode RC Update. The Company is not aware of any new information or data that materially affects the information included in the relevant market announcements and that all material assumptions and parameters used in the relevant market announcements continue to apply and have not materially changed.

## **Background of Burbanks Project**

The Burbanks Project is centred 9km southeast of Coolgardie, Western Australia.

The Company holds sole and exclusive exploration and mining rights (Reservation Rights) to certain areas within M15/161 (Figure 2). The Reservation Rights include the historic Main Lode Gold Mine, which has produced 146,000t @ 18.3g/t Au for approximately 85,900ozs of gold between 1885 and 1914, as well as several important prospects including Burbanks North, Pipeline, Fangjaw and Salmon South. The Company also holds (100%) the Kangaroo Hills prospecting licences adjacent to M15/161.

The mining lease, M15/161, is owned by Kidman Resources Limited (ASX:KDR) who operate the Birthday Gift Underground Mine within the Birthday Gift Mining Area (BGMA). In addition to the Reservation Rights, the Company also has a royalty on all gold produced from within the BGMA.

## PHILLIPS FIND GOLD PROJECT (WA)

(100% Barra\*)

\*except for Carbine South tenements which are held 85% Barra

#### **Activities**

## Phillips Find Mining Centre (PFMC)

The Company engaged structural mapping consultants Model Earth Pty Ltd to map both the Newminster and Newhaven pits in detail. The objective of the program is to enhance our understanding of the structural and lithological controls on mineralisation within the pit environment and to increase our level of confidence to better constrain resource model domains.

The Company is reviewing the results, conclusions and recommendations from the mapping program and any implications, if any, there may be regarding the existing geological models being developed for Newminster and Newhaven. This process needs to be completed prior to proceeding to a new resource estimation.

The ultimate aim is to develop a geological model for the PFMC that will be used for predictive targeting for any near-mine and regional opportunities.

# **Background of Phillips Find Project**

The Phillips Find Project is centred 50km north-northwest of Coolgardie, Western Australia.

The project covers over 10 kilometres in strike of prospective greenstone stratigraphy and includes the Phillips Find Mining Centre (PFMC) where 32,839 ounces of gold has been produced between 1998 and December 2015 from three open-pit operations; Bacchus Gift, Newhaven and Newminster. Exploration potential within the project is excellent with numerous targets defined by auger geochemical anomalism, aeromagnetic interpretation and drilling.

The most recent mining activity at the PFMC was the Newminster open-pit which was mined in two stages between January 2013 and September 2015. A total of 111,082t @ 2.52g/t Au was mined producing 9,018oz of gold. With open-pit mining now complete at Newminster, the Company is now focussed on advancing the underground potential of the PFMC with the aim developing a viable medium to long-term underground mining operation.

## **TENEMENTS**

The following tenement changes occurred during the quarter (see Appendix 1 for Tenement Listing at end of report):

- Prospecting licences P16/2390-2398, 2410, 2757, and P16/2783-2784 were surrendered at Phillips Find.
- New prospecting licences P16/2989-2995 were applied for at Phillips Find.
- Mining leases M16/550-552 were applied for pursuant to Section 49 of the Mining Act over current prospecting licences P16/2401, 2404, and P16/2422-2425.
- Mining lease application M63/527 was withdrawn at Mt Thirsty. The application covered the same area as recently granted R63/4 (formerly E63/373).

# **CORPORATE**

## **Recent Announcements**

Date	Announcement
25/10/2016	Drill Testing Main Lode High Grade Zone Planned
19/10/2016	Chairman's Update
17/10/2016	Annual Report to shareholders
17/10/2016	Notice of Annual General Meeting
17/10/2016	Underwriting of Share Purchase Plan
10/10/2016	Share Purchase Plan
10/10/2016	\$1.5M SPP & Placement Funds Cobalt and Gold Work
04/10/2016	Drilling/Scoping Study to Commence at Mt Thirsty Cobalt JV
15/09/2016	Full Year Statutory Accounts
25/08/2016	Shallow High Grade Drilling Results from Burbanks North
01/08/2016	Staged Mining Agreement for Burbanks North
28/07/2016	Quarterly Cashflow Report
28/07/2016	Quarterly Activities Report

Note: All announcements are available on the Company's website.

GARY BERRELL

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**Executive Chairman** 



**Project Location Map** 

# **APPENDIX**

# **TENEMENT LISTING**

Tenement	Project	Location	Change in Inte			Comments		
	Project		End of Quarter	Acquired	Disposed			
M15/161		WA	0	Subj	ect to Reserva	tion Rights and Royalty only (Figure 2)		
P15/5249	Burbanks	WA	100					
P15/5412		WA	100		<u> </u>			
E63/1267	_	WA	50					
E63/1790	Mt Thirsty	WA	50			Application		
P16/2045	į	WA	50			Application		
R63/4	<u> </u>	WA	50	50		A II II AANIA I		
M63/527	2	WA	0		50	Application Withdrawn (over former E63/373)		
M16/130		WA	100					
M16/133		WA	100					
M16/168		WA	100					
M16/171		WA	100					
M16/242		WA	100					
M16/258		WA	100					
P16/2390		WA	0		100			
216/2391		WA	0		100			
216/2392		WA	0		100			
216/2393		WA	0		100			
216/2394		WA	0		100			
216/2397		WA	0		100			
216/2398		WA	0		100			
216/2399	]	WA	100		1			
216/2400	]	WA	100		1			
P16/2401		WA	100					
P16/2403		WA	100					
P16/2404		WA	100					
P16/2405		WA	100					
P16/2406		WA	100					
P16/2407	Phillips Find	WA	100					
P16/2408	S	WA	100					
P16/2410	i≘	WA	0		100			
P16/2578	.ie	WA	100					
P16/2702		WA	100					
P16/2757		WA	0		100			
P16/2783		WA	0		100			
P16/2784		WA	0		100			
P16/2785		WA	100					
P16/2786		WA	100					
P16/2422		WA	85					
216/2423		WA	85			15% - Hayes Mining Pty Ltd		
P16/2424		WA	85			1376 - Hayes Milling Fty Ltu		
P16/2425		WA	85					
P16/2989		WA	100	100		Application		
P16/2990		WA	100	100		Application		
P16/2991		WA	100	100		Application		
P16/2992		WA	100	100		Application		
P16/2993		WA	100	100		Application		
P16/2994		WA	100	100		Application		
P16/2995	]	WA	100	100		Application		
M16/550		WA	100	100		Application (over P16/2407)		
M16/551	]	WA	100	100		Application (over P16/2401)		
M16/552	<u> </u>	WA	100	100		Application (over P16/2422-2425)		
E30/333		WA	0					
M30/43	]	WA	0	]				
M30/60	]	WA	0					
M30/84	]	WA	0	30% Interest in Nickel Rights Only				
/I30/97	≥	WA	0					
M30/98	Riverina Nickel JV	WA	0					
M30/127		WA	0					
VI30/133		WA	0					
M30/182		WA	0					
P30/1074		WA	0					
P30/1111	βį	WA	0					
P30/1112	WA 0							
P30/1113	1	WA	0	1				
	1	WA	0	1				
P30/1114								

Tenement Project		Lagation	Change in Interest (%) during Quarter		g Quarter	Comments
Tenement P	Project	Location	End of Quarter	Acquired	Disposed	Comments
P30/1116		WA	0			
P30/1117		WA	0			
P30/1118		WA	0			
P30/1119		WA	0			
P30/1120		WA	0			

#### **Abbreviations**

AC=Aircore, Au=gold, Co=cobalt, DEC=Department of Environment and Conservation, DD=Diamond, DMP=Department of Mines and Petroleum, g=grams, g/t=grams per tonne, kg=kilograms, km=kilometres, lb/s=pound/s, LME=London Metal Exchange, It=litre, m=metres, min=minutes, ml=millilitre, mm=millimetre, Mn=manganese, Mt=million tonnes, Ni=nickel, oz/ozs=ounce/s, pH=measure (1-10) of acidity (1 acid, 7 neutral, 10 basic), ppb=parts per billion, ppm=parts per million, RAB=Rotary Air Blast, RC=Reverse Circulation, RL=Reduced Level, t=tonnes, tpa=tonnes per annum μm=micro metres, @= grading, %=percent, °C=degrees celsius.

#### 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 on the basis of interpretations or conclusions contained in this report will therefore carry an element of risk.

It should not be assumed that the reported Exploration Results will result, with further exploration, in the definition of a Mineral Resource

#### Competent Persons Statement

The information in this report which relates to Exploration Targets, Exploration Results and Mineral Resources for the Phillips Find Project and Burbanks 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. Mr Harvey 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 for Reporting of Exploration Results, Mineral Resources and Ore Reserves" (the JORC Code). Mr Harvey consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this report that relates to Exploration Targets, Exploration Results and Mineral Resources for the Mt Thirsty Project is based on and fairly represents information compiled by Michael J Glasson and Robert N Smith, Competent Persons who are members of the Australian Institute of Geoscientists. Mr Glasson and Mr Smith are employees of Tasman Resources Ltd and in this capacity act as part time consultants to Conico Ltd. Mr Glasson and Mr Smith hold shares in Conico Ltd. Mr Glasson and Mr Smith have sufficient experience which is relevant to the style of mineralisation and type of the deposits under consideration and to the activity being 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. Mr Glasson and Mr Smith consent to the inclusion in the report of the matters based on their information in the form and context in which it appears.