



Archer Exploration Limited

# Cobalt Projects

March 2017

# Disclaimers



## **Competent persons statement**

*The exploration results and Exploration Target reported herein, insofar as they relate to mineralisation, are based on information compiled by Mr. Wade Bollenhagen, Exploration Manager of Archer Exploration Limited. Mr Bollenhagen is a Member of the Australasian Institute of Mining and Metallurgy who has more than eighteen years experience in the field of activity being reported. Mr Bollenhagen has sufficient experience which is relevant to the styles of mineralisation and types of deposit under consideration and to the activity that 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' relating to the reporting of Exploration Results. Mr Bollenhagen consents to the inclusion in the report of matters based on his information in the form and context in which it appears.*

## **Forward looking statements**

*The information in this presentation is published to inform you about Archer Exploration Limited and its activities. Some statements in this presentation regarding estimates or future events are forward looking statements.*

*Although Archer Exploration Limited 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 and outcomes will be consistent with these forward-looking statements.*

# Archer Exploration Limited

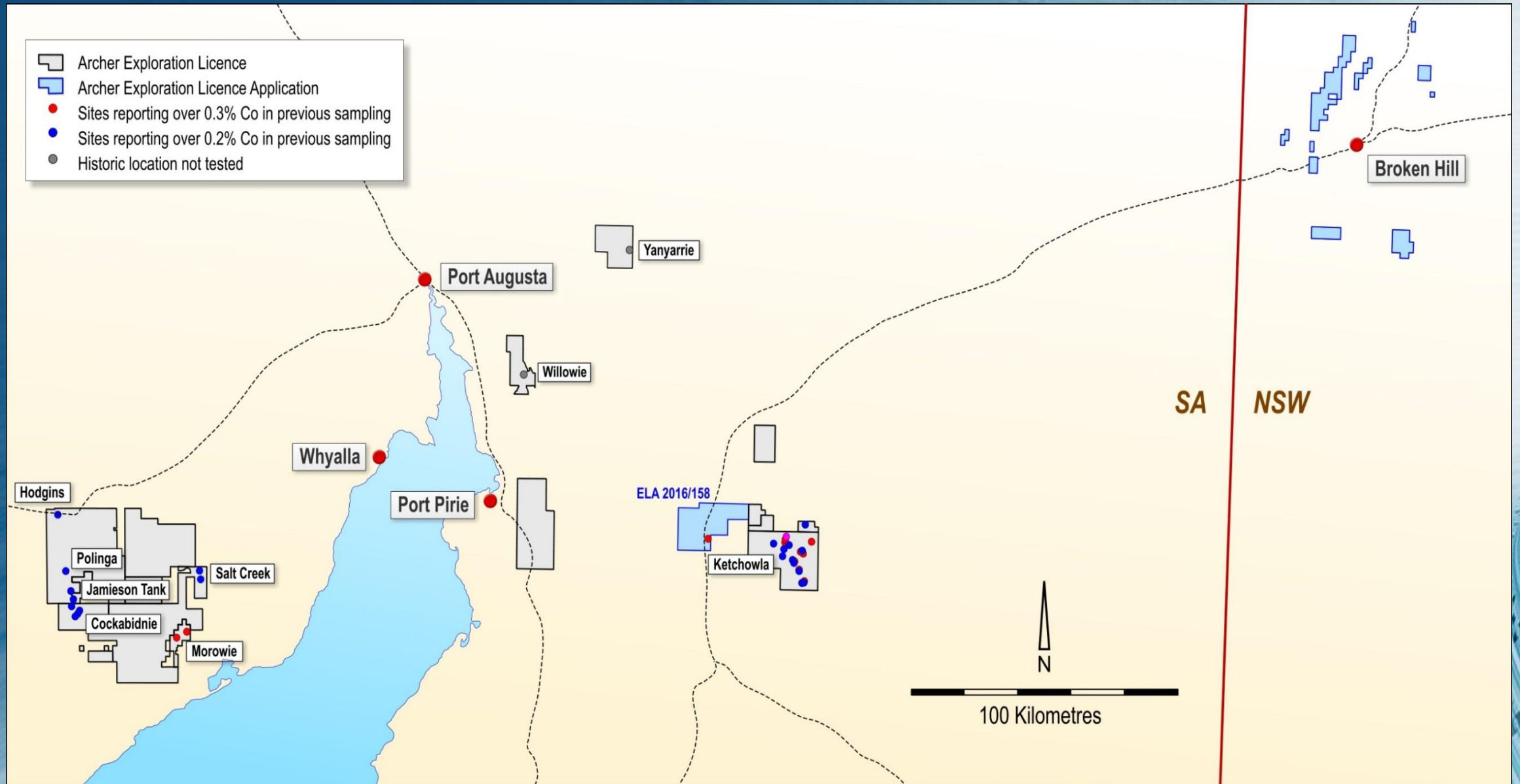
ASX Code:	AXE (listed since 2007)
Share price:	\$0.08
Shares on issue:	~ 137m
Unlisted options	~ 22m (\$0.12, 30/06/17 expiry)
Cash at bank	~ \$2.1m (1/03/17)
EV	~ \$9.0m
Top 20 shareholders	29% (consolidated)
Top 50 shareholders	43% (consolidated)
No. shareholders	1,813

## Directors:

Greg English (Chairman)  
Alice McCleary (NED)  
Paul Rix (NED)

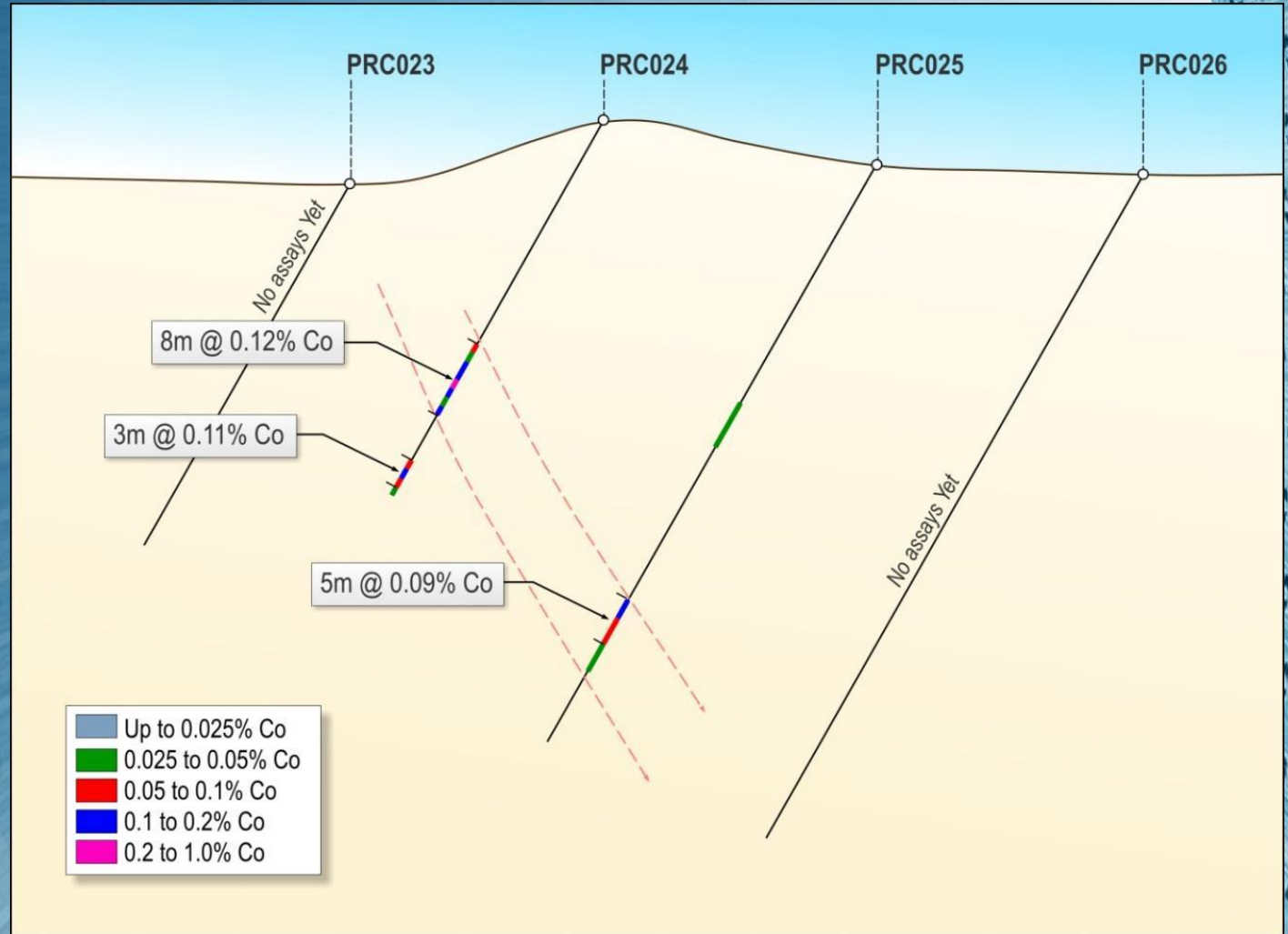


# Cobalt Project Locations



# Overview of Cobalt Projects

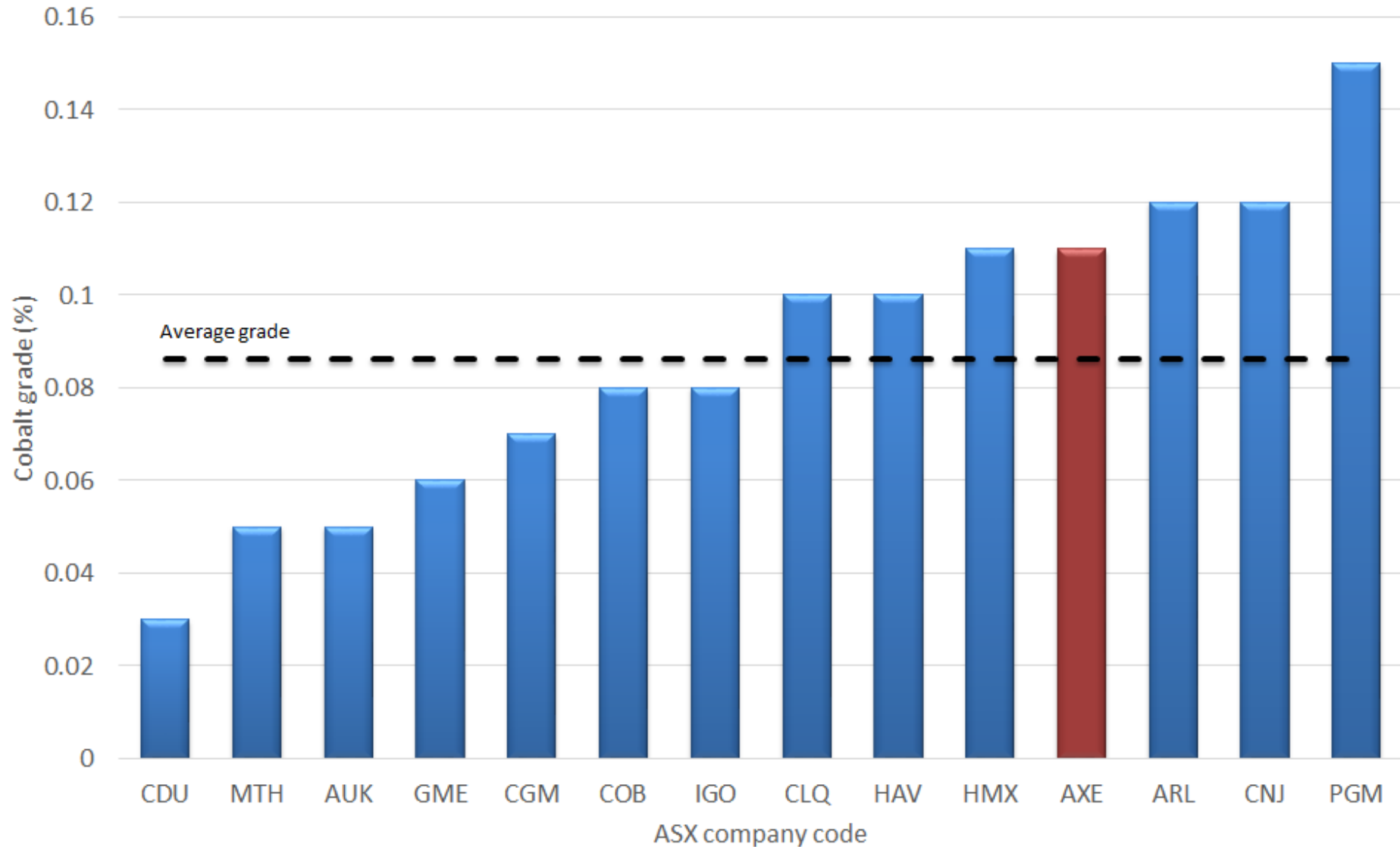
- Archer has acquired a large tenement holding (all 100% owned) that is prospective for cobalt in SA and NSW.
- Archer's cobalt focussed tenement area now exceeds 2,000km<sup>2</sup> with numerous reported cobalt mineralisation in drill holes (see adjacent figure for partial data section at Polinga). Previous exploration has been focussed on base metals.
- Further cobalt assay results to be provided to the market over the coming weeks, with drilling to start in April 2017.





# Archer cobalt = high grade

Grade of Australian cobalt projects (Co %)



# Cobalt Projects

- Ketchowla Project
  - Numerous cobalt targets identified
  - Drilling to begin in April 2017
- Eyre Peninsula Project
  - Extensive EM strike length to test (+10km)
  - Numerous samples of +0.2% cobalt reported
  - Previous drilling assays awaited (expected in late March) at Polinga
- Broken Hill Project
  - Other cobalt companies (ASX:BPL and ASX:COB) with a current combined JORC Resource of 33.1Mt @ 0.0833% cobalt; positioned into this highly prospective area.
  - No previous cobalt focussed exploration has been conducted



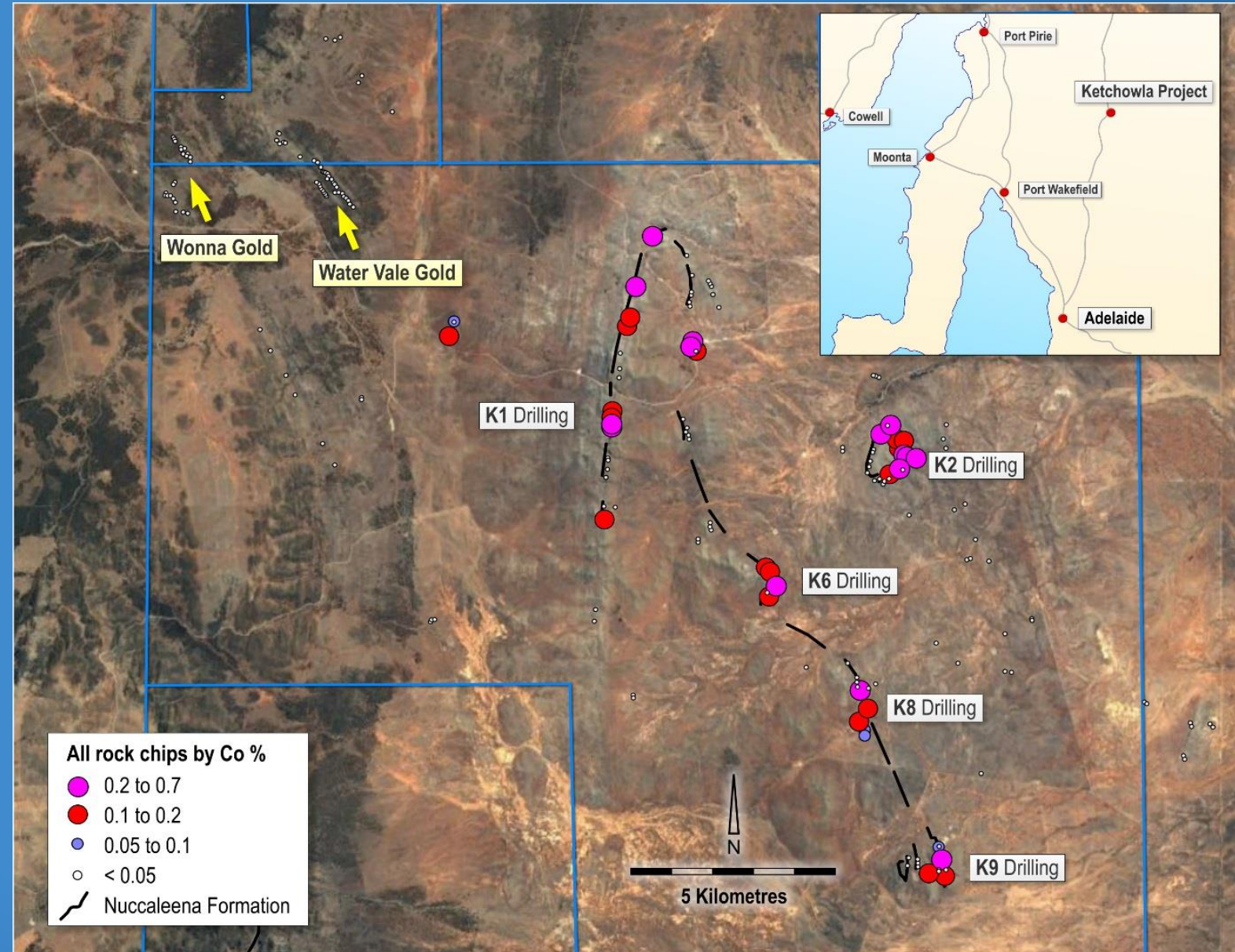
# Ketchowla Project

- Mineralisation extends over 75km x 4.5km area
- Multiple drill targets
- Shallow significant cobalt intercepted near surface:
  - 11m @ 0.11% Co and 12%Mn from 6 to 17m (including 4m @ 0.14% Co and 15.6% Mn)
- Historic exploration has been focussed on base metals
- Significant potential for additional resources, both locally and regionally
- Drill preparation work commenced – drilling to start April 2017



# Ketchowla Project

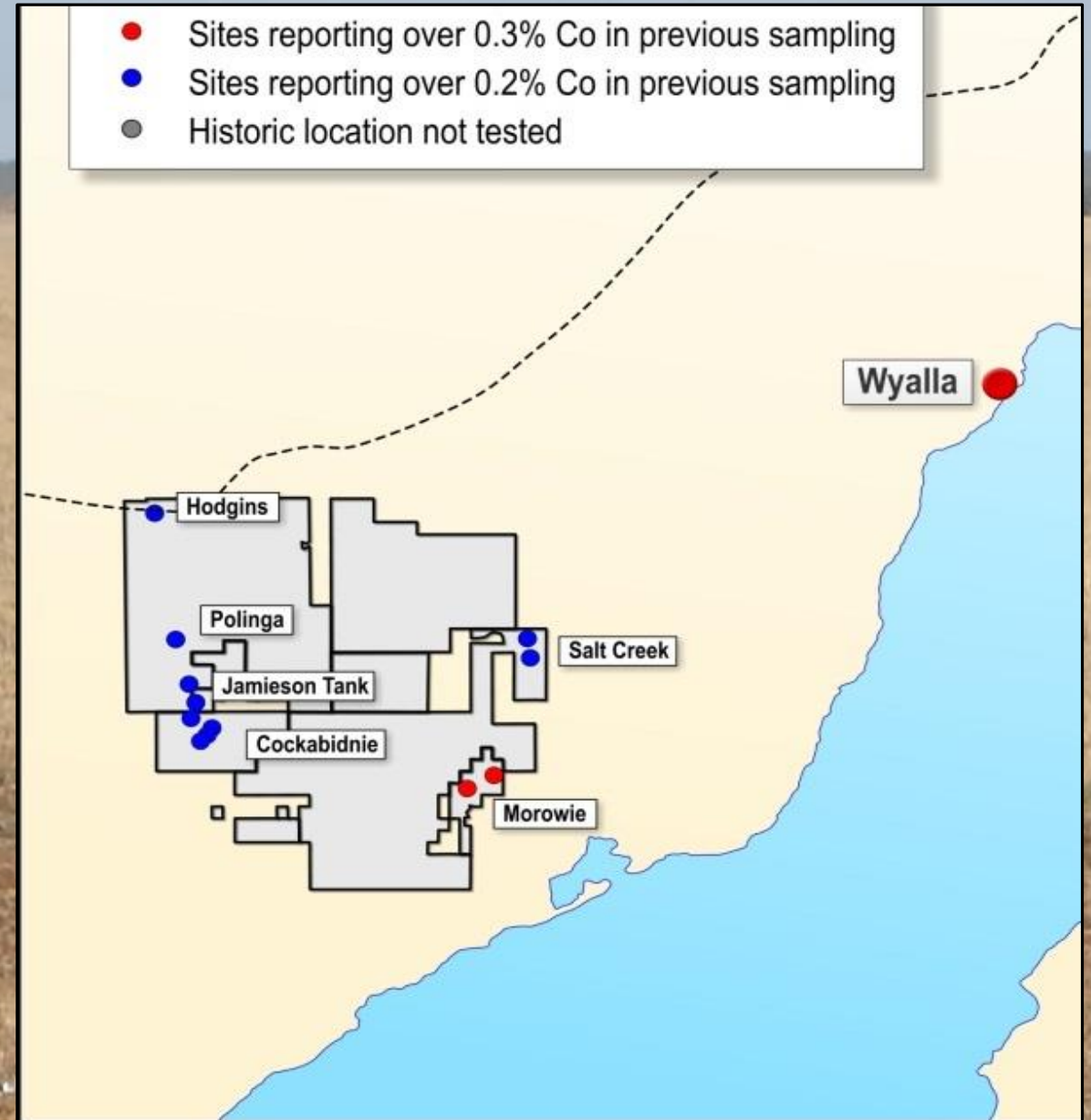
- Ketchowla is made up of 9 different prospects.
- Close proximity to towns, highway and railway.
- Metallurgical test work confirms recovery of cobalt.





# Eyre Peninsula Project

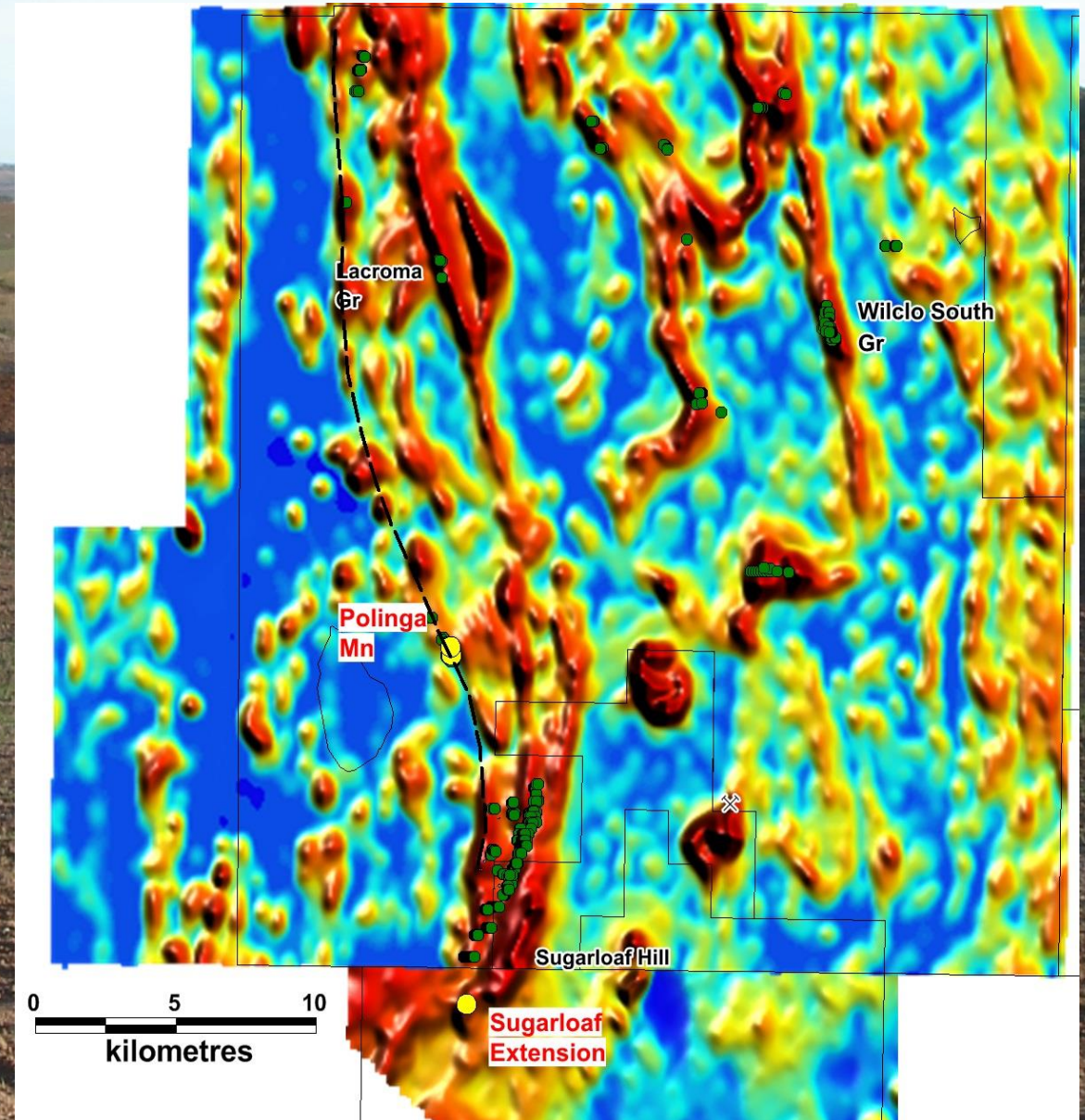
- Large project area (2,500km<sup>2</sup>)
- Cobalt identified in historic drill holes along Polinga corridor
- EM strike length > 10km
- 0.2% Co in southern Polinga area
- Anomalous Co rock chips along Polinga
- Further assay results in coming weeks
- Cobalt in drill and rock chip samples + strong EM conductor = high potential for further cobalt discoveries





# Eyre Peninsula Project

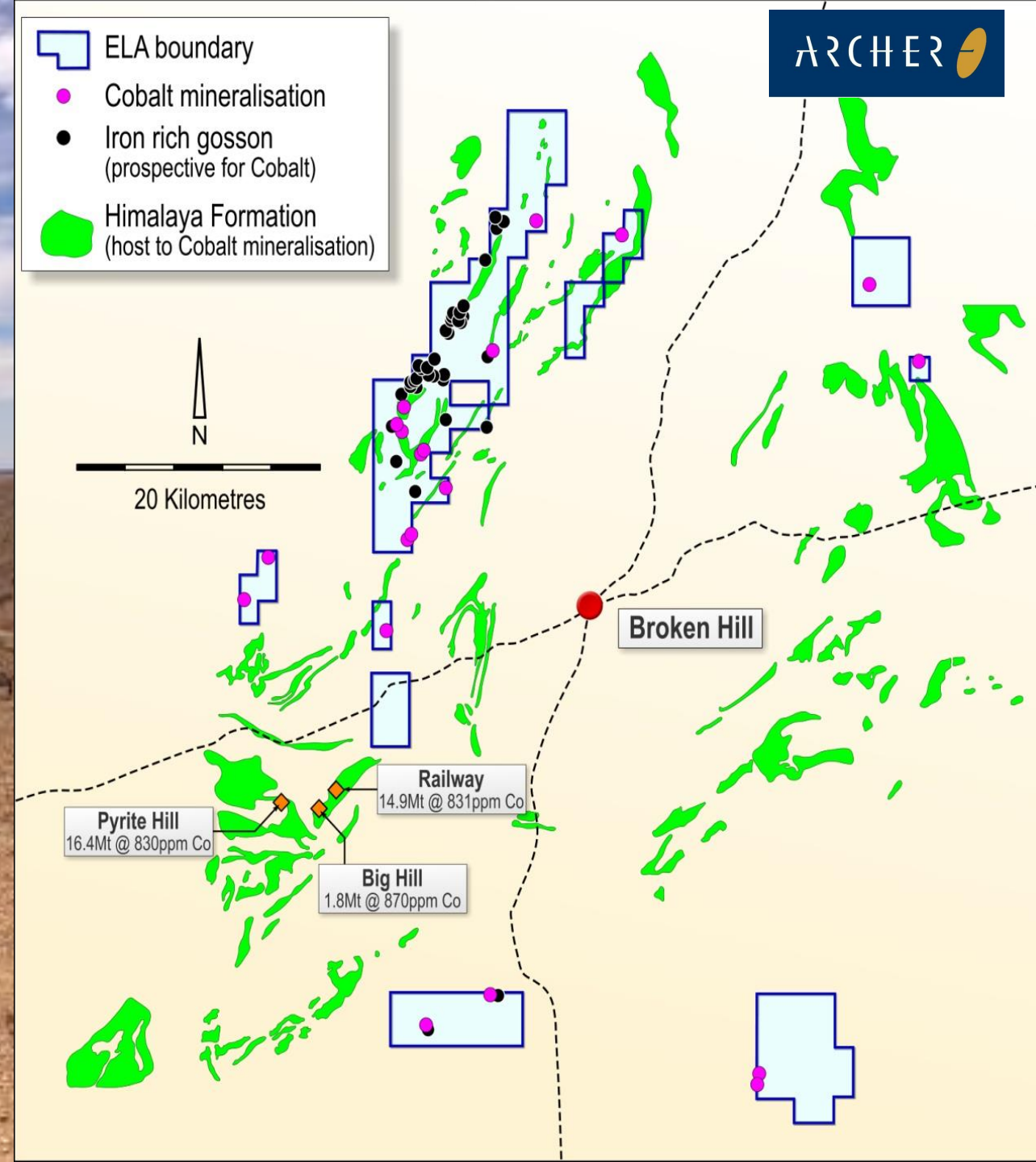
- 8m @ 0.2% cobalt from 30m to 38m (ASX announcement 23 January 2017)
- Additional pulps and drill samples have been submitted for assay – results expected in coming weeks
- Extensive manganese focussed drilling by Monax and others completed over Waddikee :
  - Holes and rock chips often not assayed for cobalt
  - Archer to continue to access drill data and pulps





# Broken Hill

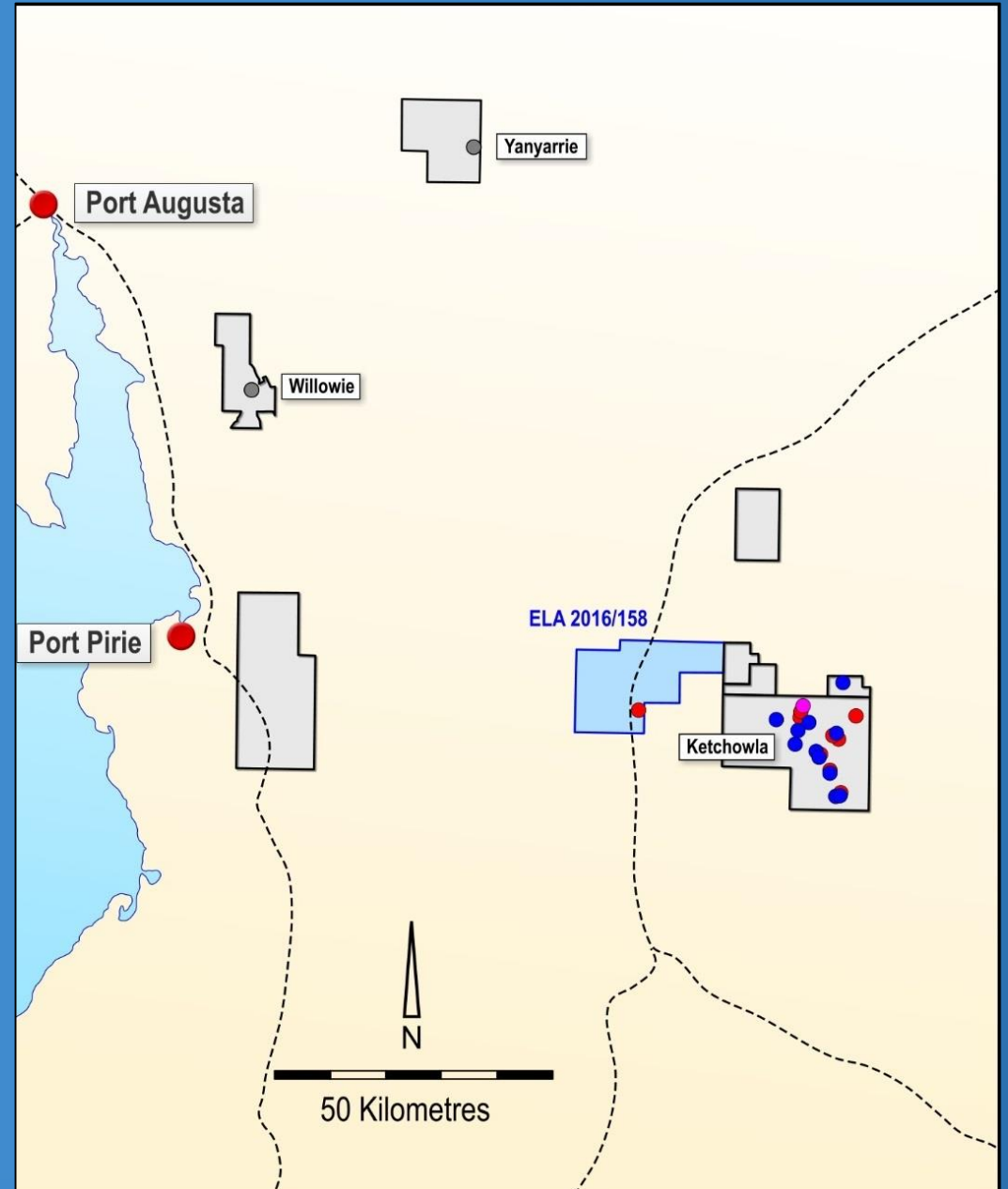
- Cobalt at Big Bill and Pyrite Hill (ASX:BPL and ASX:COB) associated with Thackaringa and Himalaya Group also present on Archer ground.
- Archer's extensive research has identified Thackaringa Group northern extensions identified on Archer's tenements.
- Other cobalt companies positioning into this highly prospective area.
- Exploration for cobalt still in its infancy.
- No cobalt focussed exploration has been conducted.
- The mix of Broken Hill Group sequences and presence of a number of historical workings in the area give rise to a number of cobaltiferous exploration targets.





# Other Cobalt Prospects

- Cobalt previously reported at Yanyarri and Yarcowie
- Yanyarri: northern extensions of Adelaidean formation, same as Ketchowla
- Yarcowie: adjacent to Ketchowla, potential for extensions of Ketchowla style mineralisation
- Previous explorers searching for base metals with only some assays done for cobalt
- Field work to commence in Q2 2017



# Future work program

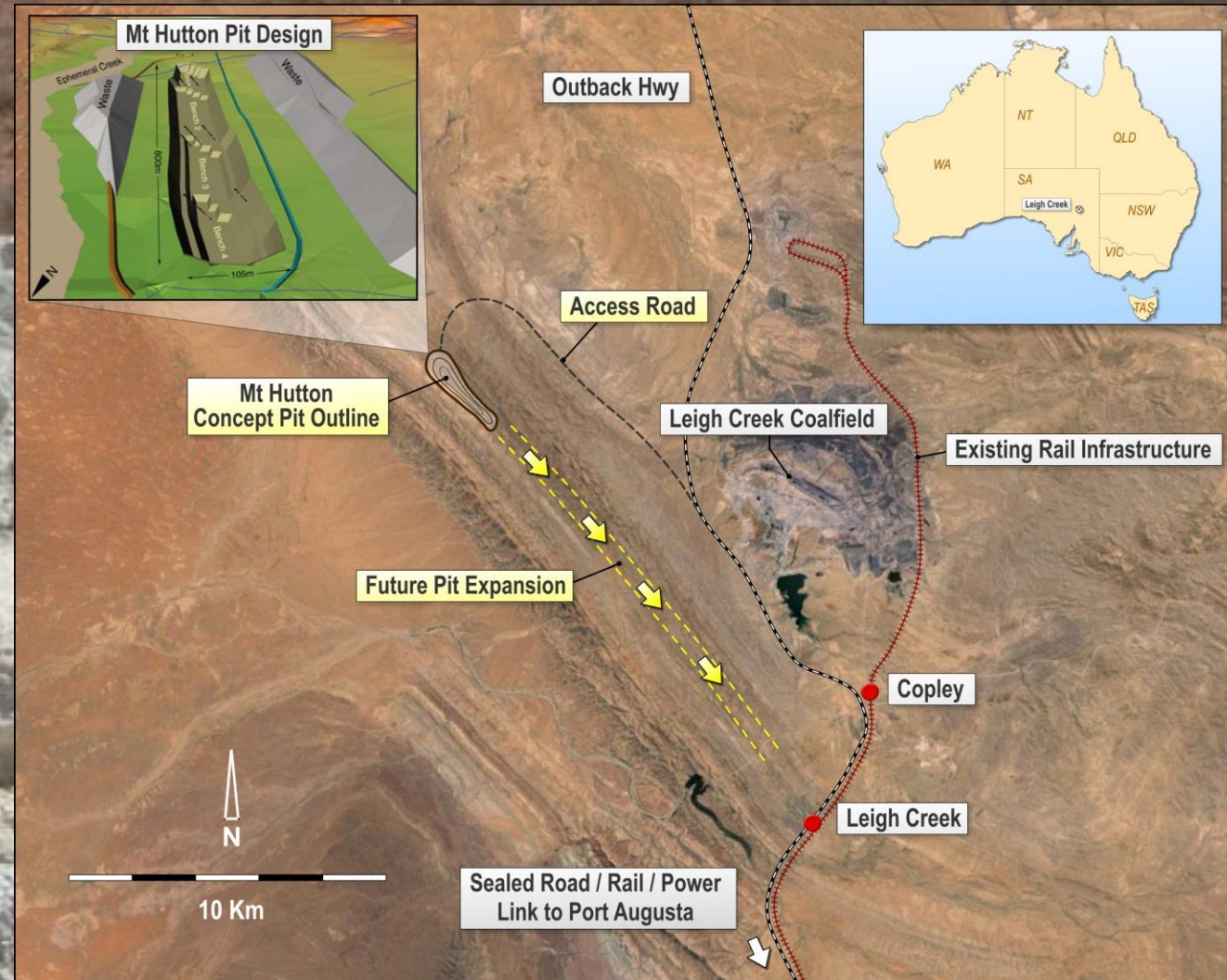
## *Steady cobalt focussed exploration activities and news flow*

Activity	Date
Notices of entry have been issued for Ketchowla - Archer to undertake follow up sampling and identify drill sites.	Mar – Apr 2017
Ketchowla RC drilling	Apr – Jun 2017
Assay Polinga drill samples and identify new drill targets	Feb – Apr 2017
Yanyarri and Yarcowie mapping and sampling	May – Jun 2017
Broken Hill area mapping and sampling	May – Jun 2017 (subject to grant)
Identify and acquire new cobalt projects	Feb – Aug 2017



# Magnesite Project

- World's largest cryptocrystalline magnesite deposit
- No capital required for production process.
- Arrium bulk trials to confirm characteristics of monolithic deadburn magnesia product (MDBM)
- Market for MDBM continuing to grow
- Advanced discussions with local kiln operators about toll processing





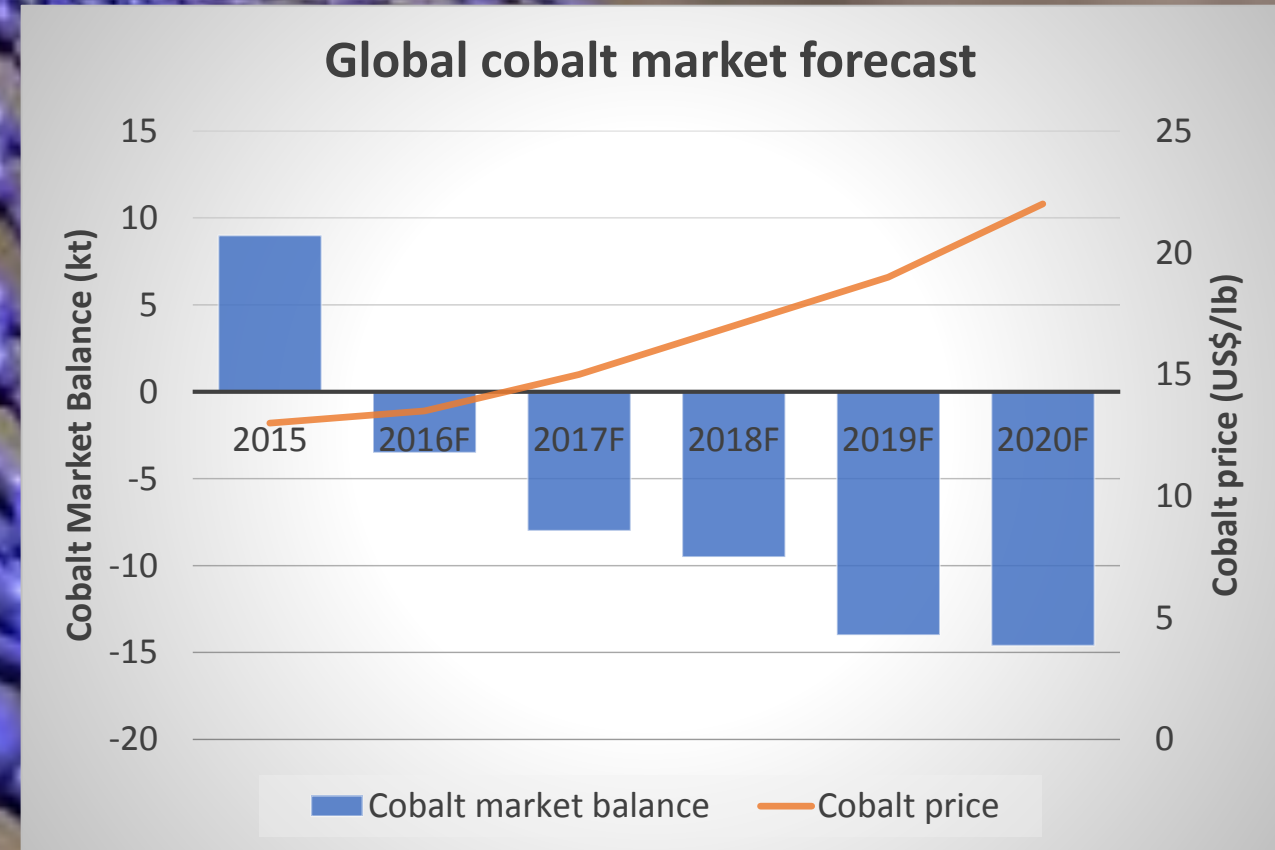
# Why invest in Archer?

- Strong portfolio of cobalt rich mineralisation
- All tenements 100% owned - maximum uplift for Archer
- High grade cobalt ( $> 0.1\%$ ) reported in historic drilling on multiple tenements
- Cobalt: surging demand and tight supply (potential DRC disruption in 2018)
- Archer already has large holding of granted tenements
- Fully funded with cobalt focussed drilling to commence April 2017
- Pipeline of potential cobalt projects and cobalt news flow



# Increasing cobalt demand

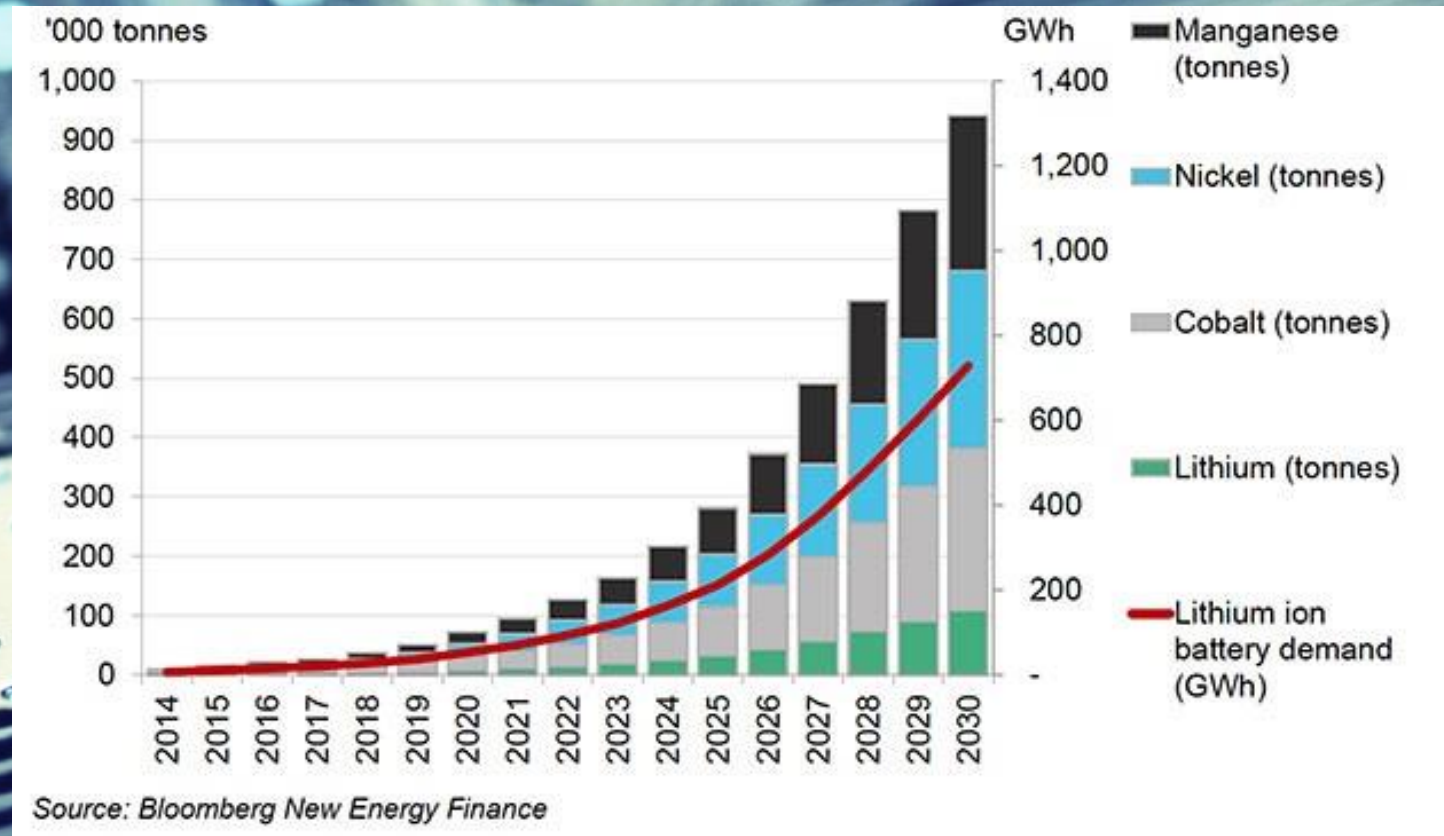
- Demand for cobalt looks strong and is forecast to increase substantially by 2018 (Hallgarten & Co)
- Cobalt is usually a by-product of nickel and copper: cobalt supply under pressure
- 65% of world cobalt produced from DRC
- DRC has a long history of conflict, national elections delayed to 2018 (could prove a flashpoint if current president, Joseph Kabila, refuses to step down as required by law)
- Upward pressure on cobalt prices expected to continue





# Battery growth to drive cobalt demand

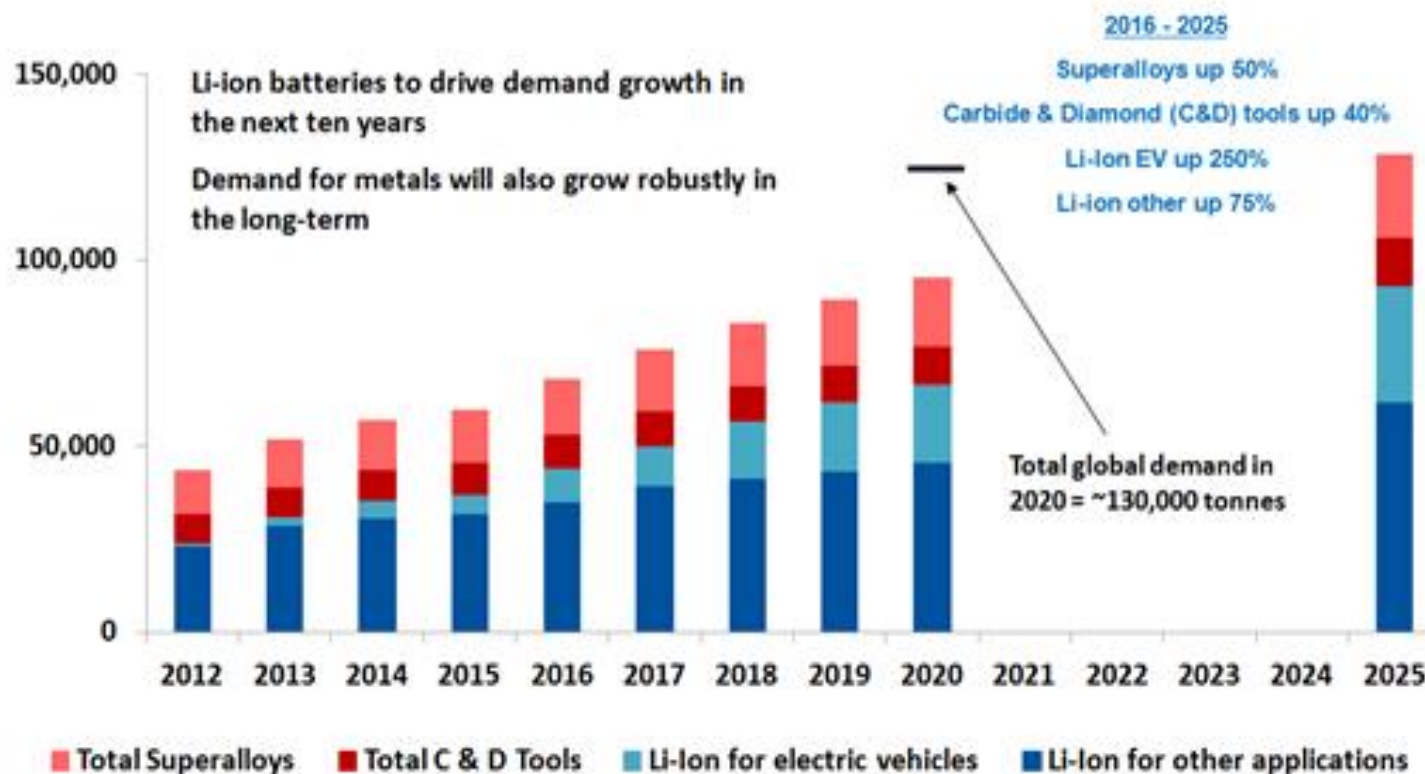
- 49% of all cobalt produced to be used in Li-ion batteries, cobalt is critical to cathode development (3.6g of cobalt in each mobile phone and 8kg of Co in each electric vehicle)
- Tesla Model 3 will consume roughly 7.5 million kilograms of cobalt just for that one model, that one run of vehicles
- Li-ion battery production is more likely to be constrained by cobalt supplies than by lithium availability





*"The increasing popularity of Li-ion batteries in electric vehicles and a range of modern electronic devices leads us to forecast cobalt demand for these applications to grow by 8 per cent per annum for the next five years,"*  
(Edward Spencer, mining and metals analyst at CRU in London)

## CRU expects cobalt demand for key metallurgical and non-metallurgical sectors to grow strongly over the next 10 years



# Archer Exploration

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