



# White Cliff Minerals LTD

Investor Presentation
Australian Cobalt and Nickel
June Quarter Report

June 2018

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#### **Forward Looking Statements**

- This document contains forecasts and forward looking statements which are no guarantee of future performance and which involve certain risks. Actual results and future outcomes will in all likelihood differ from those outlined herein.
- Forward-looking statements are statements that are not historical facts. Words such as "expect(s)", "feel(s)", "believe(s)", "will", "may", "anticipate(s)" and similar expressions are intended to identify forward-looking statements. These statements include, but are not limited to statements regarding future production, resources or reserves and exploration results. All such statements are subject to certain risks and uncertainties, many of which are difficult to predict and generally beyond the control of the Company, that could cause actual results to differ materially from those expressed in, or implied or projected by, the forward-looking information and statements. These risks and uncertainties include, but are not limited to:
  - a) those relating to the interpretation of drill results, the geology, grade and continuity of mineral deposits and conclusions of economic evaluations,
  - b) risks relating to possible variations in reserves, grade, planned mining dilution and ore loss, or recovery rates and changes in project parameters as plans continue to be refined
  - c) the potential for delays in exploration or development activities or the completion of feasibility studies
  - d) risks related to commodity price and foreign exchange rate fluctuations
  - e) risks related to failure to obtain adequate financing on a timely basis and on acceptable terms or delays in obtaining governmental approvals or in the completion of development or construction activities and;
  - f) other risks and uncertainties related to the Company's prospects, properties and business strategy.
- Undue reliance should not be placed on these forward-looking statements that speak only as of the date hereof, and we do not undertake any obligation to
  revise and disseminate forward-looking statements to reflect events or circumstances after the date hereof, or to reflect the occurrence of or nonoccurrence of any events.

# **Quarterly Exploration Summary**



- Exploration completed in June quarter
  - 3,000m RC drill program at Coglia Well cobalt-nickel project
  - 5,000m RC drill program at Coronation Dam cobalt-nickel project
- Extensive cobalt-nickel mineralisation identified including:
  - 16 metres at **0.12% cobalt** and 0.53% nickel from
  - 17 metres at 0.11% cobalt and 1.01% nickel from 78 metres including;
  - 6 metres at 0.22% cobalt 1.6% nickel
  - Single metre cobalt grades of 0.49% and 0.29%
  - Mineralisation **5,000** metres long, **1,000** metres wide, **10-20** metres thick
- Next steps
  - Calculate JORC compliant cobalt-nickel resource
  - Conduct metallurgical test work to establish recovery and leach kinetics
  - Further drilling to expand cobalt-nickel resources

### Cobalt-Nickel Investment Overview



- Multiple advanced Australian cobalt-nickel projects
  - High cobalt grade and large scale resource potential
  - Located near major nickel and cobalt refining infrastructure
  - Multiple development options and 100% owned
- Focus: Drilling to define JORC cobalt-nickel mineral resources
- Investment rationale
  - Extensive cobalt and nickel mineralisation already identified
  - Highly leveraged to rising cobalt and nickel prices
  - Restricted cobalt supply but high cobalt demand
  - Ethical cobalt production from a Tier 1 country Australia
- Initial drilling programs completed results pending

### **Corporate Structure**



- Listed in 2007 (ASX Ticker: WCN)
- Energy Metal Projects Australia
  - Coglia Well Cobalt-Nickel deposit (100%)
  - Coronation Dam Cobalt-Nickel deposit (100%)
  - Ghan Well Cobalt-Nickel deposit (100%)
  - Bremer Range Cobalt-Nickel deposit (100%)
- Gold Projects- Australia and Kyrgyz
  - Merolia Gold project WA (100%)
  - Aucu Gold deposit Kyrgyz Republic (90%)
  - Chanach Copper Kyrgyz Republic (90%)

Capital Structure – 25 June 18		
Issued Shares	3,849M	
Unlisted Options (1.2c ex price expiring 1 Dec 2018)	30 M	
Listed Options (1.3c ex price expiring 31 Dec 2018)	151 M	
Listed Options (1.0c ex price expiring 30 June 2019)	513 M	
Unlisted Options (0.5c and 1.0c ex price expiring 31 July 2021)	500 M	
Performance Rights (0.8c-1.3c expiring 2018-Dec 2021)	189.3M	
Market Cap (at \$0.003 per share) AUD	\$12 M	
Cash (31 Mar 2018)	\$1.5 M	

Major Shareholders	
IFM Fund	5.7%
Directors & Founders	4.8%
Top 50	48%

<b>Board of Directors</b>	Experience
<b>Executive Chairman</b> Michael Langoulant	Chartered Accountant, BCom, CA, 30 years in public resource companies as MD, CFO, NED, Company Secretary.
Managing Director Todd Hibberd	Geologist, Chemist, Mineral Economist. NZCS, BSc (Hons), MSc, MAusIMM, MAICD, MSEG. 25 years in gold and base metals mining and exploration, formerly with Newmont, Normandy, St Barbara Mines.
Non-exec Director Rodd Boland	Corporate Advisor, BCom, MBA (Notre Dame), 25 years corporate and financial industry experience, Currently M&A advisor with KPMG

### Cobalt-Nickel Investment Thematic



The ore is high value

- 0.1% Cobalt: \$ 85/t USD

- 0.9% Nickel: \$126/t USD

- Total: \$211/t USD

- Gold equivalent grade<sup>#</sup> ~5 g/t
- Orebodies have scale potential
  - 20 -100 million tonnes
- Scale = Low mining costs
  - Shallow ore
  - Low strip ratio
  - Large scale

- The metallurgy is **simple** 
  - Acid leach process
  - Proven technology
  - Implemented at Glencore's Murrin-Murrin processing facility in Western Australia
- The projects are close to nickel processing facilities (30-90 km)
- Possible development options:
  - Sale to Glencore PLC
  - Co-development with partner
  - Off take with cobalt consumer
  - Full mine development

<sup>#</sup> At gold \$US1305/Oz, Nickel 14000/t and Cobalt 85,000/t - 01/05/2018

## **Projects Summary**



### • Coglia Well, Western Australia

- Cobalt and nickel mineralisation up to 7.5km long and 1000 metres wide
- Drill assays up to 0.41% cobalt and 4.2% nickel including:
- 16 metres at 0.16% cobalt and 0.65% nickel
- 12 metres at 2.2% nickel and 0.06% cobalt
- Initial drill program complete- final assay job pending

### Coronation Dam, Western Australia

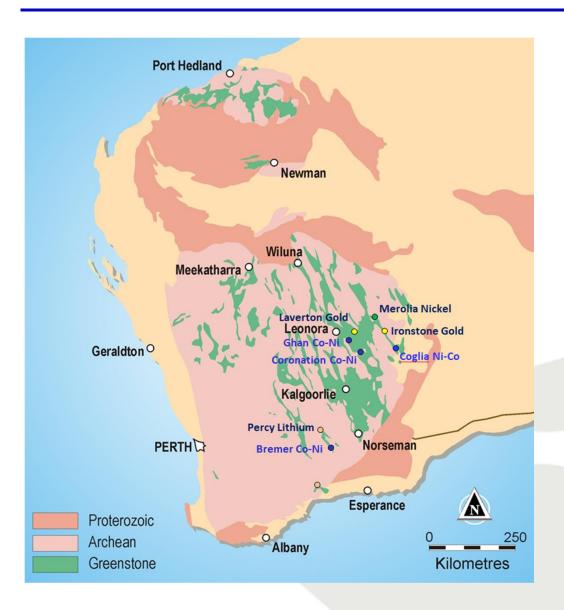
- Near surface cobalt-nickel mineralisation 5.7km long, and 1,000 metres wide
- 16 metres at **0.42% cobalt** and 1.0% nickel
- 24 metres at 0.23% cobalt and 0.8% nickel
- Resource drilling program completed- assays pending

### Ghan Well, Western Australia

- Near surface cobalt-nickel mineralisation 11km long and to 1.8km wide
- 12 metres at 0.14% cobalt and 0.78% nickel
- 11 metres at 0.14% cobalt and 0.99% nickel

### Location and Infrastructure



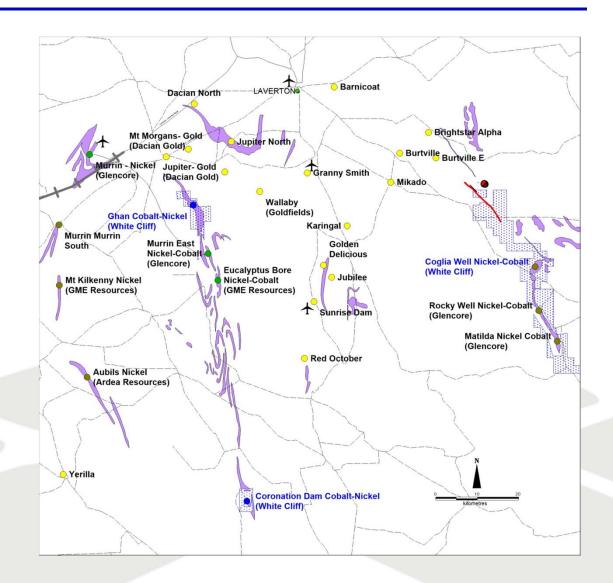


- Western Australia
  - Tier 1: World class location
- Close to regional mining support hubs
  - 250km to Kalgoorlie
  - 760km to Perth
- Excellent access roads
- Adjacent to operating mine
  - Camp/Power/Fuel
  - Mill/Plant
- Within 40km of rail
- Within 30km of Glencore's nickel processing facility

## Regional Mining Activity



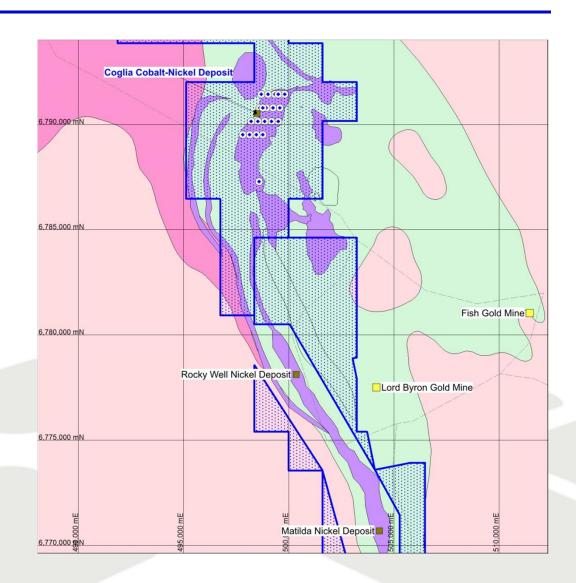
- Murrin nickel-cobalt deposit
  - Total resource: 330 Mt at 1% nickel and 0.064% cobalt
  - Murrin East: 66.4 Mt at 1.1%
     nickel and 0.09% cobalt
  - Rocky Well/Matilda: 29 Mt at
     0.11% cobalt and 1% nickel
  - Glencore PLC
- NiWest nickel-cobalt deposit
  - Total Resource: 81Mt at 1.03%
     nickel and 0.06% cobalt
  - Eucalyptus Bore: 35Mt at 1% nickel and 0.06% cobalt
  - GME Resources



# Coglia Well Cobalt-Nickel Project (100%)



- Extensive cobalt-nickel system:
  - 5,000+ metres long
  - 1,000 metres wide
  - 10-20 metres thick
- Cobalt-nickel drilling including:
  - **16** metres at **0.16% Co** & 0.65% Ni
  - **12** metres at **2.2% Ni** & 0.06% Co
  - 4 metres at **3.0% Ni** & 0.06% Co
- Strong copper anomalies hinting at sulphide potential
- Near processing infrastructure
  - 100km from Murrin-Murrin nickelcobalt plant (Glencore PLC)



# Coglia Well Cobalt-Nickel Exploration

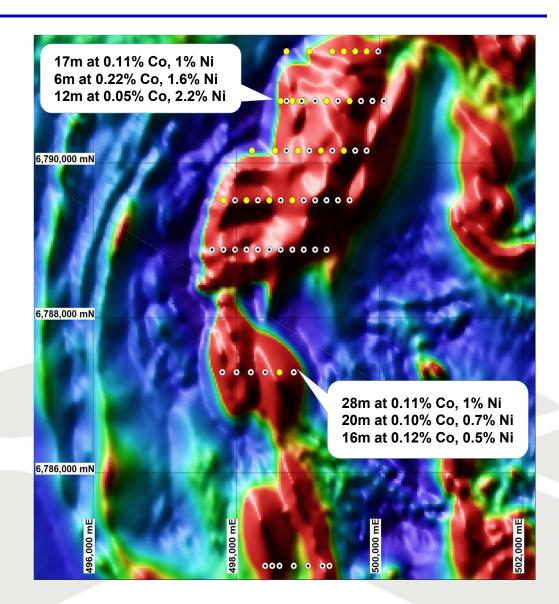


#### Current drilling

- Testing extents of resource
- Testing strong cobalt results on southern half of tenement
- 3,000 metres RC-completed
- Extensive cobalt-nickel identified
- Assays pending

#### Next Steps:

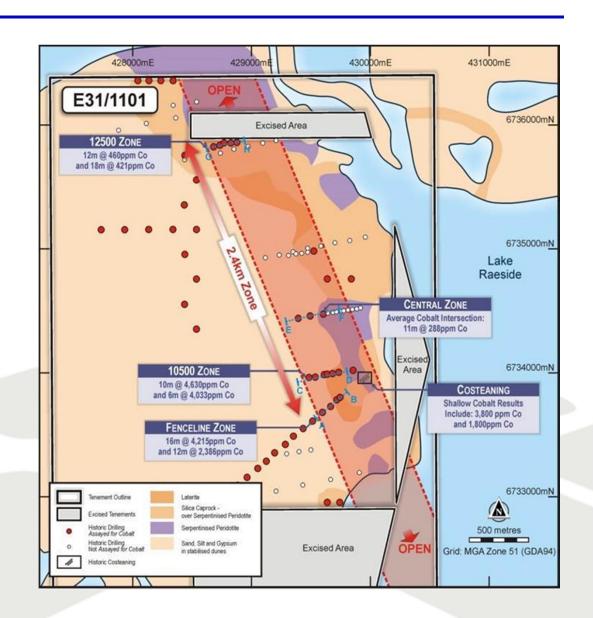
- Metallurgical test work
- Upgrade characteristics
- Acid leach kinetics
- Resource drilling



## Coronation Dam Cobalt-Nickel Project (100%)



- Extensive cobalt-nickel system:
  - 5,700 metres long
  - 1,000 metres wide
  - 15-30 metres thick
- Drilling results include:
  - 16 metres at 0.42% Co and 1.0% Ni
  - 10 metres at 0.46% Co and 1.2% Ni
  - 24 metres at 0.23% Co and 0.8% Ni
  - 28 metres at 0.13% Co and 0.74% Ni
  - 32 metres at 0.12% Co and 0.92% Ni
- Near mining infrastructure
  - 90km from Murrin-Murrin nickelcobalt plant (Glencore PLC)



### Coronation Dam Cobalt-Nickel Exploration

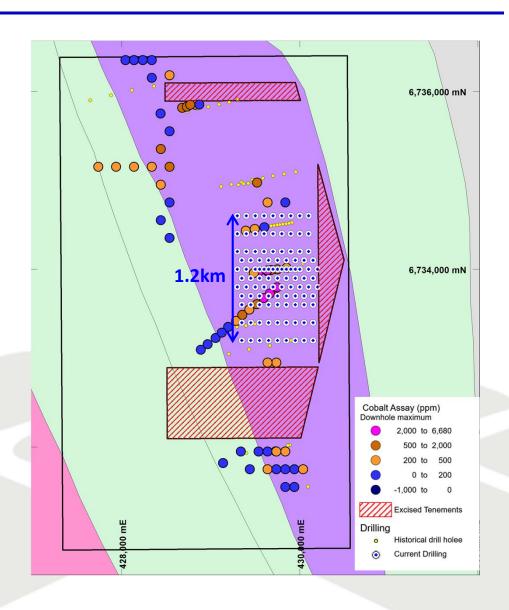


### Current drilling

- Testing central 1,200 metre zone of cobalt-nickel mineralisation
- 5,000m RC drilling- completed
- Strong mineralisation logged
- Assays pending

#### Next Steps:

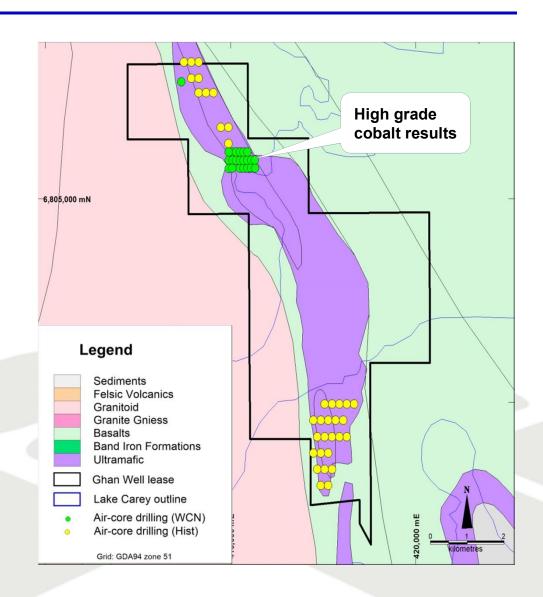
- Resource Estimation (August 18)
- Test metallurgy
- Test ore upgrade characteristics
- Test acid leach kinetics
- Further resource drilling



# Ghan Well Cobalt-Nickel Project (100%)



- Extensive cobalt-nickel layer
  - Shallow oxide ore
  - Large tonnage potential
- Drilling results include:
  - 6m at 0.21% Co and 0.78% Ni
  - 4m at 0.27% Co and 0.75% Ni
  - 8 m at 0.16% Co and 0.83% Ni
  - 12m at 0.15% Co and 0.78% Ni
  - 11m at 0.15% Co and 0.99% Ni
- Near mining infrastructure
  - 26 km from Murrin-Murrin nickelcobalt plant (Glencore PLC)



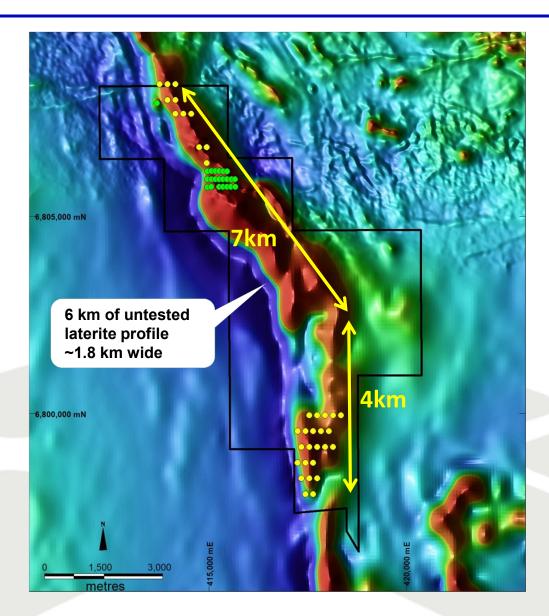
## Ghan Well Cobalt-Nickel Exploration



- Large scale target
  - 11,000m long ultramafic target
  - 600 1,800m wide
- Limited existing drilling
  - 54 RC holes, 2,557 metres
  - 6.3 km completely untested
  - 5.3 km sporadically tested

#### Next steps

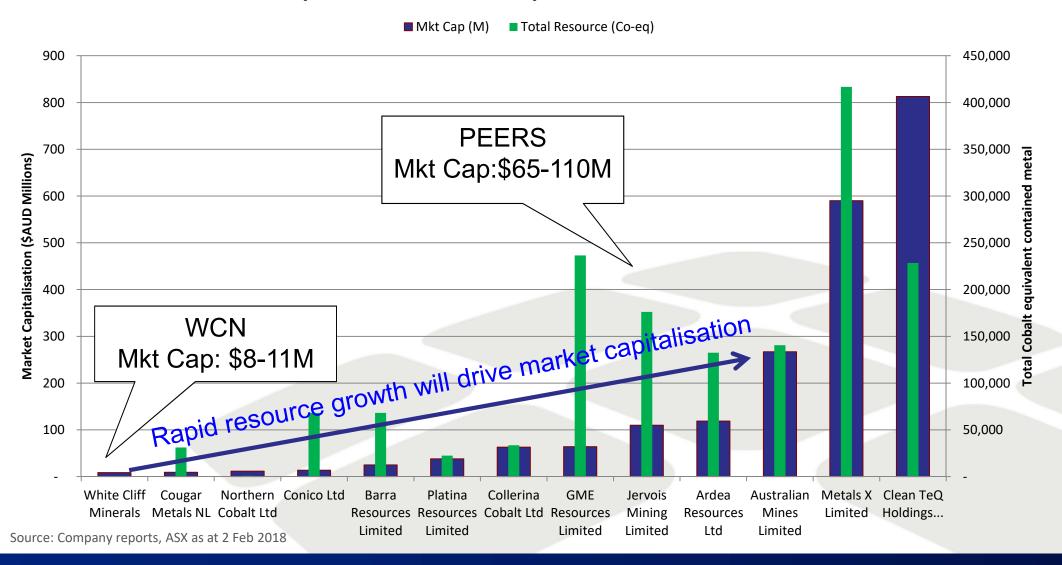
- Test extents of resource
- 3,000 metres RC drilling
- Proposed metallurgy
  - Test upgrade characteristics
  - Test acid heap leachability



### Australian Cobalt-Nickel Peer Comparisons



#### Market Capitalisation and Co-equivalent total contained metal



## Why Cobalt?



- Strong cobalt price outlook:
  - Limited supply capacity
  - Strong demand growth
  - Structural shift in technology applications (electric vehicles)
- Forecast supply/demand deficit to 2025
  - 2017: US\$60,000/t
  - 2018: US\$70,000/t forecast#
  - 2025:US\$75,000/t forecast#

60,000

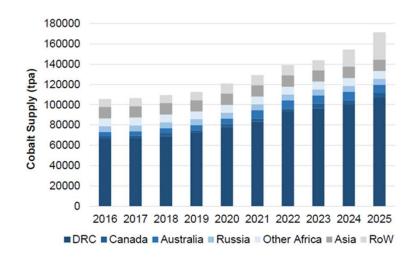
<sup>50.000</sup> 20,000 10,000 40.00 Surplus (+)/ Deficit (tpa) -5000 -10000 -15000 25.00 -20000 -25000 20.00 Market Balance — Cobalt Price (US\$/lb)

<sup>#</sup> Canaccord Genuity research

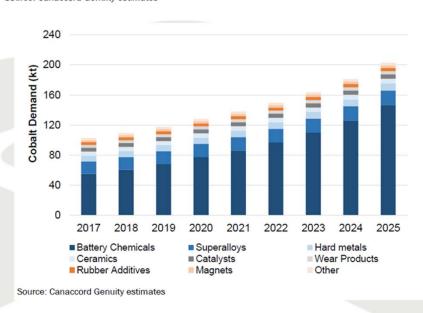
## Cobalt Supply and Demand Dynamics



- Limited supply capability
  - By-product of copper mining
  - By-product of nickel mining
  - Inelastic supply curve
  - Sensitive to sovereign risk
    - 56% supply from DRC<sup>2016</sup>
- Strong demand curve
  - Structural shift in technology applications (electric vehicles)
    - Rapid growth in battery market from low base
    - = long term demand growth



Source: Canaccord Genuity estimates



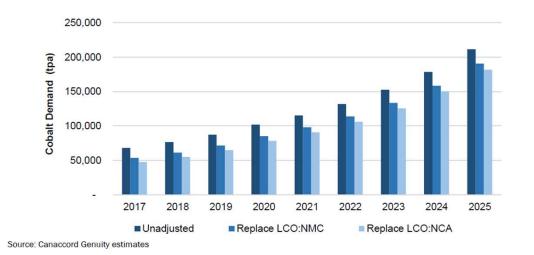
## Cobalt: Here to Stay

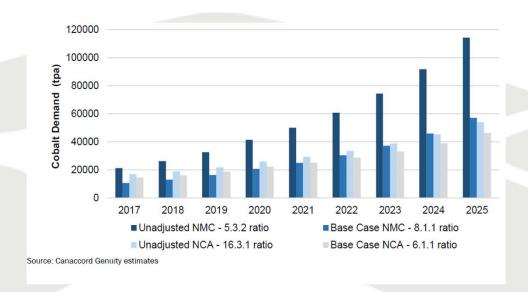


- Substitution risks electronics
  - Changing battery type:
    - LCo replaced with NMC
    - LCo replaced with NCA
  - Low probability of rapid replacement of LCo due to industry incumbents



- Change of cathode composition:
  - Replace cobalt with nickel
  - Similar energy densities but:
  - Faster discharge rates
- Cobalt demand still projected to grow under all scenarios





## Summary



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- Initial drilling programs completed results pending

### **Important Information**



#### **Competent Person Statement**

• The information in this report that relates to Exploration Targets is based on information compiled by Mr Todd Hibberd, B.Sc Hons (Geol), MSc (mineral economics), Dip Bus, Member AusIMM, Member AICD and an employee of White Cliff Minerals Limited. Mr Hibberd has sufficient experience that is relevant to the style of mineralization 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. Mr Hibberd consents to the inclusion in the report of the matters based on this information in the form and context in which it appears.

#### **Exploration Results and Mineral Resource Reporting**

- The information in this report that relates to Exploration Results is extracted from the following announcements:
  - announcement entitled "Significant Cobalt Mineralisation Identified at Ghan Well Prospect" dated 29 May 2017;
  - announcement entitled; "Substantial Cobalt-Nickel Mineralisation identified at WA project" dated 29 January 2018 and;
  - announcement entitled "Cobalt and Nickel Mineralisation identified at Coglia Well" dated 5 February 2018.
  - announcement entitled "Thick, Near-Surface Cobalt Mineralisation at Coglia Well" dated 20 April 2018.
  - announcement entitled "Drilling Intersects More Cobalt Mineralisation at Coglia Well" dated 18 June 2018.
  - The above announcements are available to view at <a href="http://wcminerals.com.au/asx-announcements/">http://wcminerals.com.au/asx-announcements/</a>
- The Company is not aware of any new information that materially affects the information included in the above announcements relating to relating to Exploration Results and Mineral Resources and all material assumptions and technical parameters underpinning the exploration Mineral Resource estimates continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Persons findings are presented have not been materially modified from original market announcements

### Contacts



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