



9 May 2018

ASX Code: WCN

## Cobalt-Nickel Drilling Commences at Coronation Dam project

### Highlights

- Drilling Commences on Cobalt targets at Coronation Dam in Western Australia
- 3,000 metre program to target cobalt mineralisation identified in historical drilling including:
  - 16 metres at 0.42% cobalt and 1% nickel from 20 metres
  - 24 metres at 0.23% cobalt and 0.80% nickel from 20 metres
  - 28 metres at 0.13% cobalt and 0.74% nickel from 8 metres
  - 32 metres at 0.12% cobalt and 0.92% nickel from 4 metres
- Assays from Coglia Well drilling program pending

White Cliff Minerals Limited (“**White Cliff**” or the “**Company**”) is pleased to report that RC drilling has commenced at its 100% owned Coronation Dam cobalt project near Kookynie in Western Australia’s north-eastern goldfields.

The Drilling is targeting extensive shallow cobalt and nickel mineralisation at the Central and Fence line zones identified by historical drilling (Figure 1) previously announced to the ASX on 30 January 2018. Drill results include:

- 16 metres at 0.42% cobalt and 1% nickel from 20 metres including;
- 24 metres at 0.23% cobalt and 0.80% nickel from 20 metres
- 28 metres at 0.13% cobalt and 0.74% nickel from 8 metres
- 32 metres at 0.12% cobalt and 0.92% nickel from 4 metres

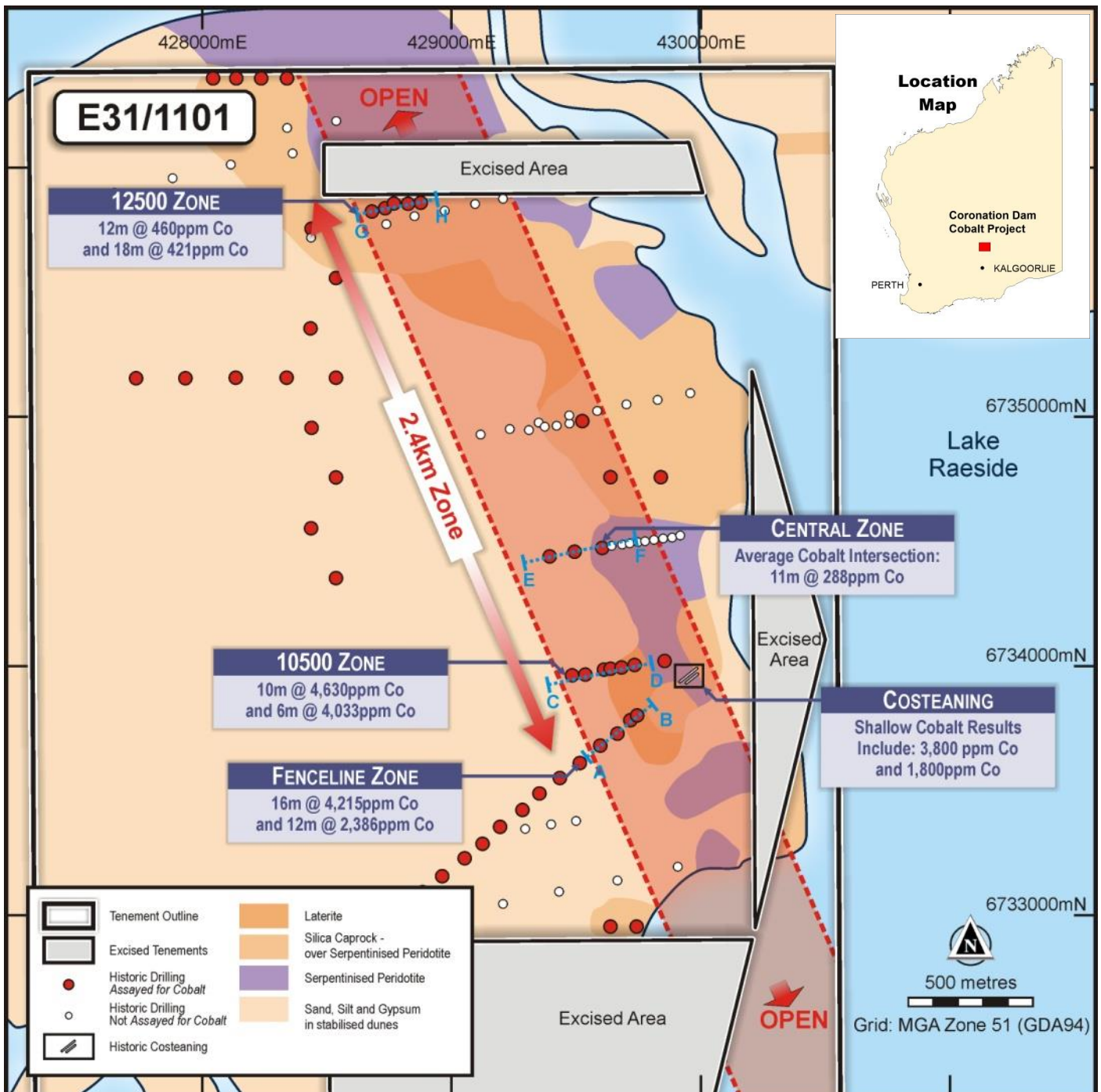
The Initial drill program is testing an 800 metre long section of the 5,700 metre long mineralised zone with 200 metre drill line spacing and 100 metre hole spacing. The drilling is designed to allow JORC compliant resources to be estimated following a second drill program.

Cobalt mineralisation occurs on several lines, starts at surface and extends to a depth of 50 metres. The mineralisation has developed in the regolith profile above an intensely weathered ultramafic unit which was originally a peridotite. The peridotite is approximately 1 kilometre wide and 5.7 kilometres long within the mining tenement which covers 16km<sup>2</sup>.

White Cliff Managing Director Todd Hibberd said: *“We are very pleased to commence drilling at Coronation Dam as it has the highest cobalt grades in our portfolio of cobalt-nickel projects. The program aims to validate the historical results and create a platform for the Company to rapidly develop JORC compliant cobalt-nickel resources with subsequent drill programs. In an environment of rising cobalt prices, limited cobalt supply capacity and rapidly growing cobalt demand, there is an opportunity to substantially increase shareholder value through the development of the project and other promising cobalt-nickel assets in our portfolio.”*

Immediately following this drill program the Company will complete three-dimensional modelling on the mineralisation in preparation for further drilling and resource estimation.

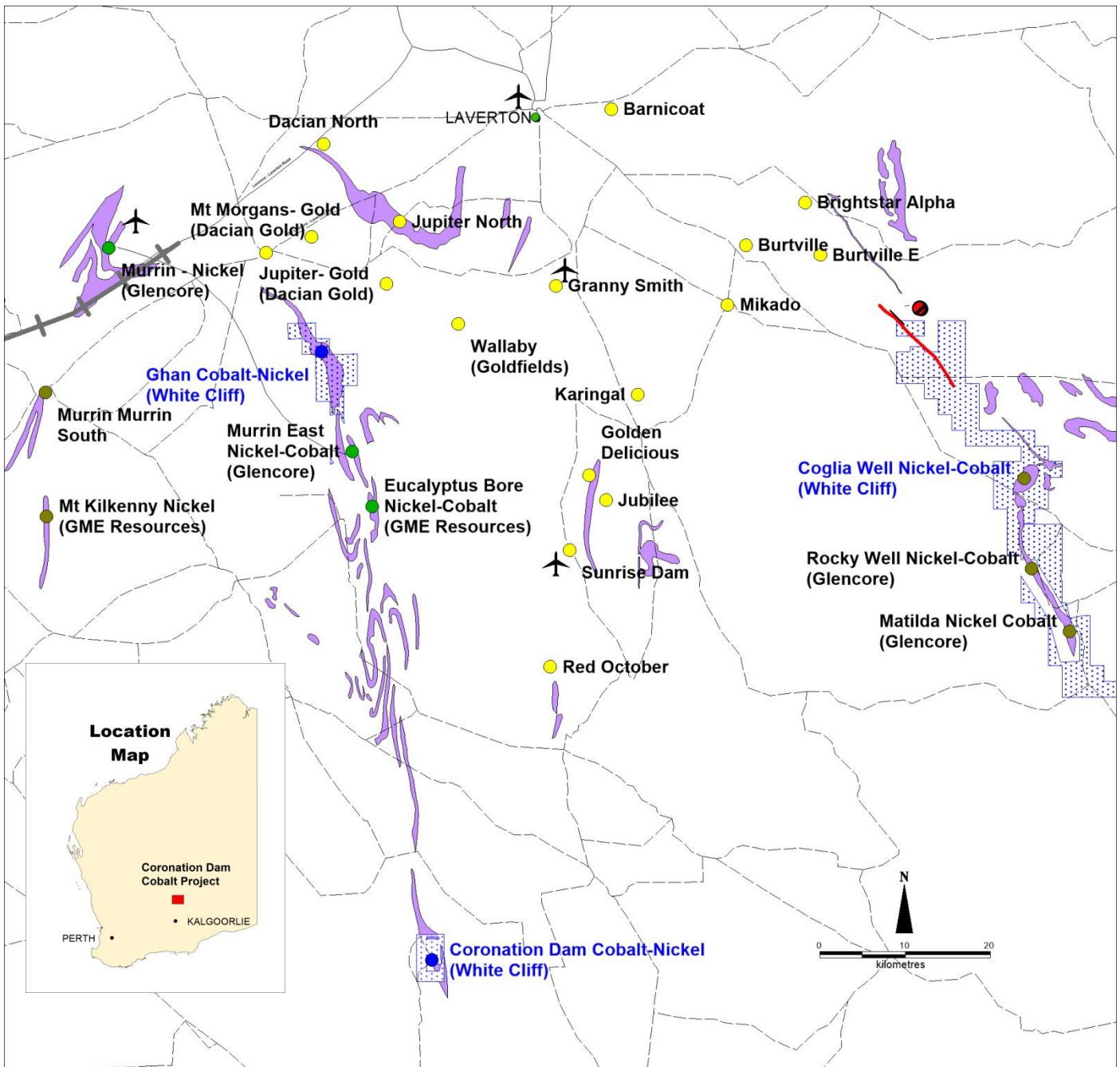
The Company is also waiting on further assay results from the Coglia Well Cobalt drilling program which will be announced to investors as they are received.



**Figure 1:** Location map of drilling and cobalt mineralisation at Coronation Dam near Kookynie in Western Australia. Yellow and green dots are historical drill hole locations.

### The Coronation Dam Cobalt Project

The Coronation Dam Cobalt Project is located 90km south of Glencore's Murrin Murrin mining operation and 45km south of GME Resources' proposed Mt Kilkenny nickel-cobalt processing facility in WA's north-eastern goldfields (Figure 2). The project is surrounded by world class mining infrastructure and multiple operating mines. Glencore is currently mining cobalt and nickel from the Murrin East open pit which contained an initial resource of 66 million tonnes at 1.1% nickel and **0.09% Cobalt**.



**Figure 2:** Location and infrastructure map of the Coronation Dam and Ghan Well cobalt projects. The area is serviced by rail, roads, towns, airports and Glencore’s nickel processing facility at Murrin Murrin

The Coronation Dam project area covers 16km<sup>2</sup> and contains an outcropping ultramafic unit that is approximately 1 kilometre wide and 5.7 kilometres long within the tenement.

Cobalt-nickel mineralisation occurs as a shallow layer of cobalt-enriched manganiferous oxides that form between the smectite clays and the overlying ferruginous clays. High grade cobalt mineralisation typically occurs between the surface and 50 metres depth and is associated with nickel mineralisation.

Existing drilling has only partly tested the mapped ultramafic unit, indicating there is potential to identify significant additional mineralisation.

The proximity of Coronation Dam to the Murrin Murrin nickel refinery is likely to have a strong, positive impact on the possibility of economic development of both the cobalt and nickel mineralisation. While the Company has not yet calculated a mineral resource, it is clear that the potential exists for the project to host one of substantial size.



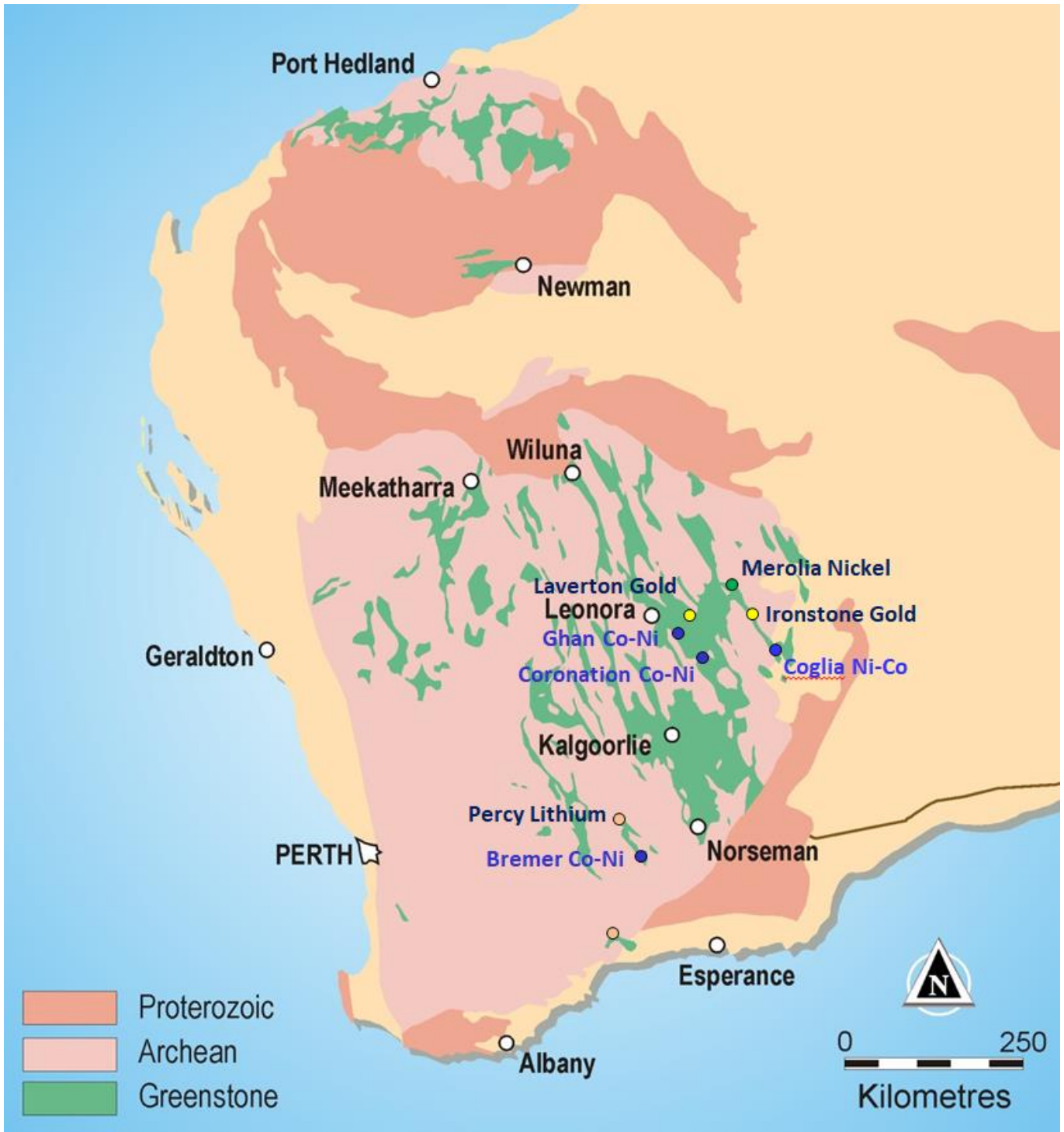


Figure 3: Western Australia project map

For further information please contact:

[www.wcminerals.com.au](http://www.wcminerals.com.au)

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

Todd Hibberd  
Managing Director  
+61 8 9321 2233  
Suite 2, Level 1,  
47 Havelock Street, West Perth WA 6872

## About White Cliff Minerals Limited

**White Cliff Minerals Limited** is a Western Australian based exploration company with the following main projects:

**Kyrgyz Copper-Gold Project (90%):** The Project contains extensive porphyry related gold and copper mineralisation starting at the surface and extending over several kilometres. Drilling during 2014-6 has defined a **gold deposit** currently containing an inferred resource of 1.8Mt at 5.2 g/t containing 302,000 ounces of gold and 608,000 tonnes at 0.64% copper containing 3870 tonnes of copper. Drilling has also defined a significant **copper deposit** at surface consisting of 10Mt at 0.41% copper containing 40,000 tonnes of copper.

Extensive mineralisation occurs around both deposits demonstrating significant expansion potential. The project is located in the Kyrgyz Republic, 350km west-southwest of the capital city of Bishkek and covers 57 square kilometres. The Chanach project is located in the western part of the Tien Shan Belt, a highly mineralised zone that extending for over 2500 km, from western Uzbekistan, through Tajikistan, Kyrgyz Republic and southern Kazakhstan to western China.

**Merolia Project (100%):** The project consists of 771 square kilometres of the Merolia Greenstone belt and contains extensive ultramafic sequences including the Diorite Hill layered ultramafic complex, the Rotorua ultramafic complex, the Coglia ultramafic complex and a 51 kilometre long zone of extrusive ultramafic lava's. The intrusive complexes are prospective for nickel-copper sulphide accumulations possibly with platinum group elements, and the extrusive ultramafic rocks are prospective for nickel sulphide and nickel-cobalt accumulations. The project also contains extensive basalt sequences that are prospective for gold mineralisation including the Ironstone prospect where historical drilling has identified 24m at 8.6g/t gold.

**Bremer Range (100%):** The project covers over 127 square kilometres in the Lake Johnson Greenstone Belt, which contains the Emily Ann and Maggie Hayes nickel sulphide deposits. These mines contain approximately 140,000 tonnes of nickel. The project area has excellent prospectivity for both komatiite associated nickel-cobalt mineralisation and amphibolite facies high-grade gold mineralisation.

**Lake Percy (100%)** The Lake Percy tenement (E63/1222i) contains substantial nickel anomalism associated with outcropping ultramafic units. The Company also holds 100% of the adjacent 20km<sup>2</sup> tenement (E63/1793) which also contains untested outcropping ultramafics.

**Laverton Gold Project (100%):** The project consists of 136 square kilometres of granted tenements in the Laverton Greenstone belt. The core prospects are Kelly Well and Eight Mile Well located 20km southwest of Laverton in the core of the structurally complex Laverton Tectonic zone immediately north of the Granny Smith Gold Mine (3 MOz) and 7 kilometres north of the Wallaby Gold Mine (7 MOz).

**Ghan Well Cobalt Project (100%):** The project consists of one tenement (39km<sup>2</sup>) in the Wiluna-Norseman greenstone belt 10km north of the Murrin East nickel-cobalt mining operation. The tenement contains an extensive ultramafic unit that contains zones of cobalt mineralisation associated with nickel mineralisation. The Cobalt grades range for 0.01% to 0.75% cobalt and occur within a zone of manganiferous oxides that form in the regolith profile.

**Coronation Dam Cobalt Project (100%):** The project consists of one tenement (16km<sup>2</sup>) in the Wiluna-Norseman greenstone belt 50km south of the Murrin East nickel-cobalt mining operation. The tenement contains an extensive ultramafic unit that contains zones of cobalt mineralisation associated with nickel mineralisation. The Cobalt grades range for 0.01% to 0.75% cobalt and occur within a zone of manganiferous oxides that form in the regolith profile.

### JORC Compliance

The Information in this update that relates to Exploration Results is based on information compiled by Mr Todd Hibberd, who is a member of the Australasian Institute of Mining and Metallurgy. Mr Hibberd is a full time employee of the Company. Mr Hibberd has sufficient experience which is relevant to the style of mineralisation and type of deposits 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 (the JORC Code)'. Mr Hibberd consents to the inclusion of this information in the form and context in which it appears in this report.

## Appendix 1

The following information is provided to comply with the JORC Code (2012) requirements for the reporting of the Exploration Results and Mineral Resource

### Section 1 Sampling Techniques and Data

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

Criteria	JORC Code Explanation	Commentary
Sampling Techniques	<p>Nature and quality of sampling (eg 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</p> <p>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</p> <p>Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg '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 (eg submarine nodules) may warrant disclosure of detailed information.</p>	<p>This ASX Release reports on exploration results from of the Company's Coronation Dam project area.</p> <p><b>Soil Sampling:</b> Where conducted, prospects are sampled by manual scoop sampling on nominal 200m x 100m grid spacing or at nominal 100 by 50m grid. Samples collected consist of 100-200 grams of soil.</p> <p><b>Soil Analysis:</b> Where conducted, XRF analysis is conducted on the fines from RC chips using a hand-held Olympus Innov-X Spectrum Analyser. These results are only used for onsite interpretation and preliminary base metal assessment subject to final geochemical analysis by laboratory assays.</p> <p><b>AC/RC Sampling:</b> <i>Where conducted</i>, All samples from the RC drilling are taken as 1m samples. Samples are sent to Bureau Veritas Laboratories for assaying. Appropriate QAQC samples (standards, blanks and duplicates) are inserted into the sequences as per industry best practice. Samples are collected using cone or riffle splitter. Geological logging of RC chips is completed at site with representative chips being stored in drill chip trays.</p> <p>The sample collar locations are picked up by handheld GPS. Soil samples were logged for landform, and sample contamination. Sampling was carried out under standard industry protocols and QAQC procedures.</p> <p>All samples are analyzed for base metals by X-Ray Fluorescence Spectrometry at the Bureau Veritas laboratory in Perth, Australia</p>
Drilling Techniques	<p>Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg 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).</p>	<p>Where conducted, Air Core Drilling is conducted with a 600CFM/450PSI compressor, with 90mm (3.5 inch) diameter blade or face sampling hammer bit. RC drilling is conducted with a 1100CFM/750PSI compressor with 135mm (5.25inch) diameter face sampling hammer bit using industry standard processes.</p>
Drill sample recovery	<p>Method of recording and assessing core and chip sample recoveries and results assessed</p> <p>Measures taken to maximise sample recovery and ensure representative nature of the samples.</p> <p>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.</p>	<p>Calculated volume of 1m AC sample is 12.6 – 16.5 kg, RC is 22.5-30kg based on rock densities of 2.0 and 2.6 g/cm<sup>3</sup>. Sample bags were visually inspected for volume to ensure minimal size variation. Where variability was observed, sample bags were weighed. Sampling was carried out under standard industry protocols and QAQC procedures.</p> <p>No measures have been deemed necessary.</p> <p>No studies have been carried out.</p>
Logging	<p>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.</p> <p>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) Photography The total length and percentage of the relevant intersections logged.</p>	<p>Drill samples have been geologically logged and have been submitted for petrological studies. Samples have been retained and stored. The logging is considered sufficient for JORC compliant resource estimations.</p> <p>Logging is considered qualitative.</p> <p>Refer to text in the main body of the announcement.</p>
Sub-sampling techniques and sample preparation	<p>If core, whether cut or sawn and whether quarter, half or all core taken.</p>	<p>Not Applicable- no core drilling was carried out.</p>

Criteria	JORC Code Explanation	Commentary
	<p>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</p> <p>For all sample types, the nature, quality and appropriateness of the sample preparation technique</p> <p>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples</p> <p>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</p> <p>Whether sample sizes are appropriate to the grain size of the material being sampled</p>	<p>Samples were riffle split from 30kg or 16kg down to 3kg. Where samples were too wet to riffle split, samples were tube sampled.</p> <p>Samples were collected using a face sampling hammer which pulverises the rock to chips. The chips are transported up the inside of the drill rod to the surface cyclone where they are collected in one metre intervals. The one metres sample is riffle split to provide a 2.5-3kg sample for analysis. Industry standard protocols are used and deemed appropriate.</p> <p>At this stage of the exploration no sub sampling is undertaken.</p> <p>The whole sample collected is pulverised to 75um in a ring mill and a 200g sub-sample is collected. A 2-30 gram sub sample of the pulverised sample is analysed. Field duplicates are not routinely collected.</p> <p>The sample sizes are considered to be appropriate to correctly represent the sought after mineralisation style.</p>
Quality of assay data and laboratory tests	<p>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</p> <p>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.</p> <p>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established</p>	<p>The samples have been cast using a 12:22 flux with added sodium nitrate, to form a glass bead which has been analysed by XRF.</p> <p>Ni, Co, Mg, Fe, Mn, Zn, Cu, Al, Cr, As, Ca, Si, Cl have been determined by X-Ray Fluorescence Spectrometry</p> <p>Laboratory QAQC involves the use of internal lab standards using certified reference material, blanks, splits and replicates as part of the in house procedures.</p>
Verification of sampling and assaying	<p>The verification of significant intersections by either independent or alternative company personnel.</p> <p>The use of twinned holes</p> <p>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols</p> <p>Discuss any adjustment to assay data</p>	<p>Significant intersections in drill samples have been verified by an executive director of the Company.</p> <p>Not Applicable.</p> <p>Primary data was collected using a set of standard Excel templates on paper and re-entered into laptop computers. The information was sent to WCN in-house database manager for validation and compilation into an Access database.</p> <p>No adjustments or calibrations were made to any assay data used in this report.</p>
Location of data points	<p>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.</p> <p>Specification of the grid system used.</p> <p>Quality and adequacy of topographic control.</p>	<p>Sample locations were recorded using handheld Garmin GPS. Elevation values were in AHD RL and values recorded within the database. Expected accuracy is + or – 5 m for easting, northing and 10m for elevation coordinates.</p> <p>No down hole surveying techniques were used due to the sampling methods used.</p> <p>The grid system is MGA_GDA94 (zone 51).</p> <p>Topographic surface uses handheld GPS elevation data, which is adequate at the current stage of the project.</p>
Data spacing and distribution	<p>Data spacing for reporting of Exploration Results.</p> <p>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.</p> <p>Whether sample compositing has been applied.</p>	<p>The nominal drill sample spacing is 1 metre down hole. Each drill hole targets a specific target so there is no nominal drill spacing.</p> <p>The mineralised domains have not yet demonstrated sufficient continuity in both geological and grade continuity to support the definition of Mineral Resource and Reserves, and the classifications applied under the 2012 JORC Code.</p> <p>Not applicable.</p>
Orientation of data in relation to geological structure	<p>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</p> <p>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to</p>	<p>The soil sampling method is used to provide a surface sample only.</p> <p>No orientation based sampling bias has been identified in the data at this point.</p>

Criteria	JORC Code Explanation	Commentary
	have introduced a sampling bias, this should be assessed and reported if material	
Sample security	The measures taken to ensure sample security.	Sample security is managed by the Company. Since at this stage these are field analyses, no sample transit security has been necessary.
Audits of reviews	The results of any audits or reviews of sampling techniques and data.	The Company carries out its own internal data audits. No problems have been detected.

## Section 2 Reporting of Exploration Results

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

Criteria	Explanation	Commentary
Mineral tenement and land tenure status	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. 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.	The sample positions occur is located within Exploration Licenses E31/1101 which is 100% owned by White Cliff Minerals Limited or a subsidiary.  The tenements are in good standing and no known impediments exist.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	Extensive historical exploration for platinum, gold and nickel mineralisation has been carried out by Placer Dome, WMC, Comet Resources and their predecessors. Occurrences of nickel laterite mineralisation were identified but was deemed uneconomic at the time
Geology	Deposit type, geological setting and style of mineralisation.	The geological setting is of Archaean aged mafic and ultramafic sequences intruded by mafic to felsic porphyries and granitoids. Mineralisation is mostly situated within the regolith profile of the ultramafic units. The rocks are strongly talc-carbonate altered. Metamorphism is mid-upper Greenschist facies. The target mineralisation has yet to be identified but is analogous to Kambalda or Sally Malay style or nickel sulphide deposits.
Drill Hole Information	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: easting and northing of the drill hole collar elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar dip and azimuth of the hole down hole length and interception depth hole length. If the exclusion of this information is justified on the basis that the information is not	Drilling detailed in Tables 1-3 in the main body of the announcement.
Data Aggregation methods	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are 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	No length weighting has been applied due to the nature of the sampling technique. No top-cuts have been applied.  Not applicable for the sampling methods used.  No metal equivalent values are used for reporting exploration results.
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results: If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').	The sampling technique used defines a surficial geochemical expression. No information is attainable relating to the geometry of any mineralisation based on these results.
Diagrams	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	Refer to figs. in the body of text.
Balanced Reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results	All results are reported.
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical	Nil.



Criteria	Explanation	Commentary
	survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	
Further Work	The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling). Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	RAB/AC drilling will be used to further define the nature and extent of the geochemical anomalism, and to gain lithological information.