Market Update

CobaltBlue
green energy technology

05 Feb 2019

February 2019 – Drilling Campaign Update

Cobalt Blue Holdings Ltd

A Green Energy Exploration Company

ASX Code: **COB**

Commodity Exposure:

Cobalt & **Sulphur**

Directors & Management:

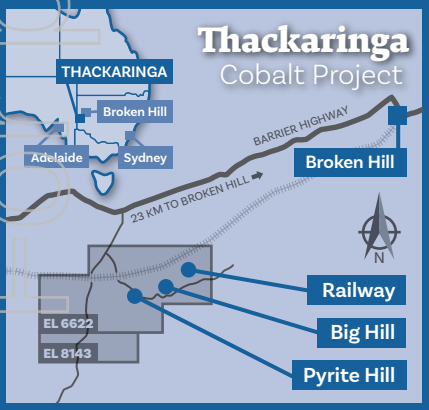
Robert Biancardi	Non-Exec Chairman
Hugh Keller	Non-Exec Director
Rob McDonald	Non-Exec Director
Joe Kaderavek	CEO & Exec Director
Robert Waring	Company Secretary

Capital Structure:

Ordinary Shares at 05/02/2019:	**124.6m**
Options (ASX Code: COBO):	**25.4m**
Market Cap (undiluted):	**$21.1m**

Share Price:

Share Price at 05/02/2019:	**$0.17**



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Pyrite Hill Drilling Delivers Strong Results

KEY POINTS:

- Cobalt Blue Holdings Limited (ASX: COB) as the Thackaringa Joint Venture Manager, is pleased to announce further results from its resource definition drilling program at Thackaringa, NSW.
  - Results from infill drilling support potential for an improved Mineral Resource classification at Pyrite Hill. Significant intersections include:
    - 18THR024 – 70m at 1,150ppm Co, 11.5% Fe & 12.5% S from 30m
    - 18THR025 – 92m at 1,253ppm Co, 12.1% Fe & 12.5% S from 45m
    - 18THR026 – 90m at 1,086ppm Co, 10.3% Fe & 10.7% S from 52m
    - 18THR028 – 60m at 1,691ppm Co, 17.2% Fe & 17.8% S from 57m
    - 18THR029 – 62m at 1,271ppm Co, 13% Fe & 12.7% S from 42m
  - Deep drilling intersections at Pyrite Hill confirm continuity of mineralisation at depth. Significant intersections include:
    - 18THR014 – 47m at 985ppm Co, 12.8% Fe & 11.6% S from 283m
    - 18THR027 – 36m at 1,018ppm Co, 10.9% Fe & 9.7% S from 266m
- Updated Resource Model due end Q1 2019.

With the recent cessation of drilling, COB is pleased to announce results which will further support an updated Mineral Resource estimate. In addition, COB is continuing to advance current work programs including further bulk test work, optimisation of power studies, tailings studies, project mining, environmental and engineering studies.

Drilling Results

Targeting Improved Mineral Resource Classification – Infill Drilling

The recent campaign targeted definition of a component of Measured Mineral Resources through enhancement of geological confidence and data density by infill drilling. The infill program focussed on the upper extent of the Pyrite Hill deposit which extends over 1.2km along strike and is currently drill tested as continuing to (approximately) 300m down dip.

The positive results of the program reinforced the validity of the existing geological model. At the north-western extent of Pyrite Hill the mineralised domain is generally undeformed and dips at approximately 50° to the northeast.

Significant intersections from infill drilling of this section of the deposit are summarised in Table 1.

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Table 1. **Significant intersections from infill drilling completed at the north-western extent of the Pyrite Hill deposit**

Hole	From (m)	To (m)	Interval (m)	Co (ppm)	Fe (%)	S (%)
18THR006	64	122	58	1173	11.0	11.7
18THR008	86	131	45	915	11.9	10.2
18THR011	103	130	27	1126	13.1	11.5
18THR012	118	160	42	1138	13.0	11.7
18THR013	105	122	17	1374	12.4	13.3
18THR015	55	81	26	1147	10.8	12.1
18THR016	69	86	17	1206	12.7	12.1
18THR017	48	64	16	1054	10.9	11.5
18THR018	33	52	19	932	9.9	10.9
18THR019	39	56	17	1419	15.7	17.0
18THR020	69	77	8	1785	19.5	20.2
18THR021	23	45	22	970	11.8	12.4
18THR022	26	55	29	1126	11.3	11.7
18THR023	39	87	48	875	11.8	10.3
18THR024	30	100	70	1150	11.5	12.5

In the central part of the deposit, rapid thickening of mineralisation occurs in correlation with a general change in strike to the south and coincident steepening of dip to approximately 60° to the east. Within this section, recent drilling confirmed substantial thicknesses of mineralisation less than 150m below surface. Significant intersections are summarised in Table 2.

Table 2. **Significant intersections from infill drilling completed at the central – southern extent of the Pyrite Hill deposit**

Hole	From (m)	To (m)	Interval (m)	Co (ppm)	Fe (%)	S (%)
18THR005	34	84	50	923	9.7	9.2
and	125	133	8	654	10.6	10.4
18THR007	150	179	29	1297	15.2	12.2
18THR009	178	200	22	1056	10.5	9.4
18THR010	131	158	27	1554	15.1	15.3
18THR025	45	137	92	1253	12.1	12.5
18THR026	52	142	90	1086	10.3	10.7
18THR028	57	117	60	1691	17.2	17.8
18THR029	42	104	62	1271	13.0	12.7
18THR030	83	128	45	1664	18.0	17.9
18THR031	61	79	18	1098	10.8	12.8
18THR032	61	110	49	1230	11.1	11.8

Mineral Resource Growth

A potential down-dip extension of the Pyrite Hill deposit was identified as a significant opportunity for Mineral Resource growth during the Preliminary Feasibility Study (PFS). The recent campaign allowed completion of an initial phase of drilling to test this target with holes intersecting mineralisation approximately 180–280m below surface and the mineralisation remaining open at depth.

Results received to date reflect the deepest drilling intersections at Pyrite Hill and have confirmed strong continuity of mineralisation grade and thickness. Significant intersections are summarised in Table 3.

Table 3. **Significant intersections from extensional drilling completed at the Pyrite Hill deposit (approximately 180–280m below surface) supporting potential for Mineral Resource growth through down-dip extension.**

Hole	From (m)	To (m)	Interval (m)	Co (ppm)	Fe (%)	S (%)
18THR014	283	330	47	985	12.8	11.6
18THR027	266	302	36	1018	10.9	9.7

Further assays are anticipated in mid-February.

Figure 1. **Pyrite Hill deposit 2018–2019 drill hole collar plan illustrating drill holes relative to historical drilling. The inputs and results underpinning the 'upside pit shell' are as released 4 July 2018 'Thackaringa Pre-Feasibility Study Announced'.**

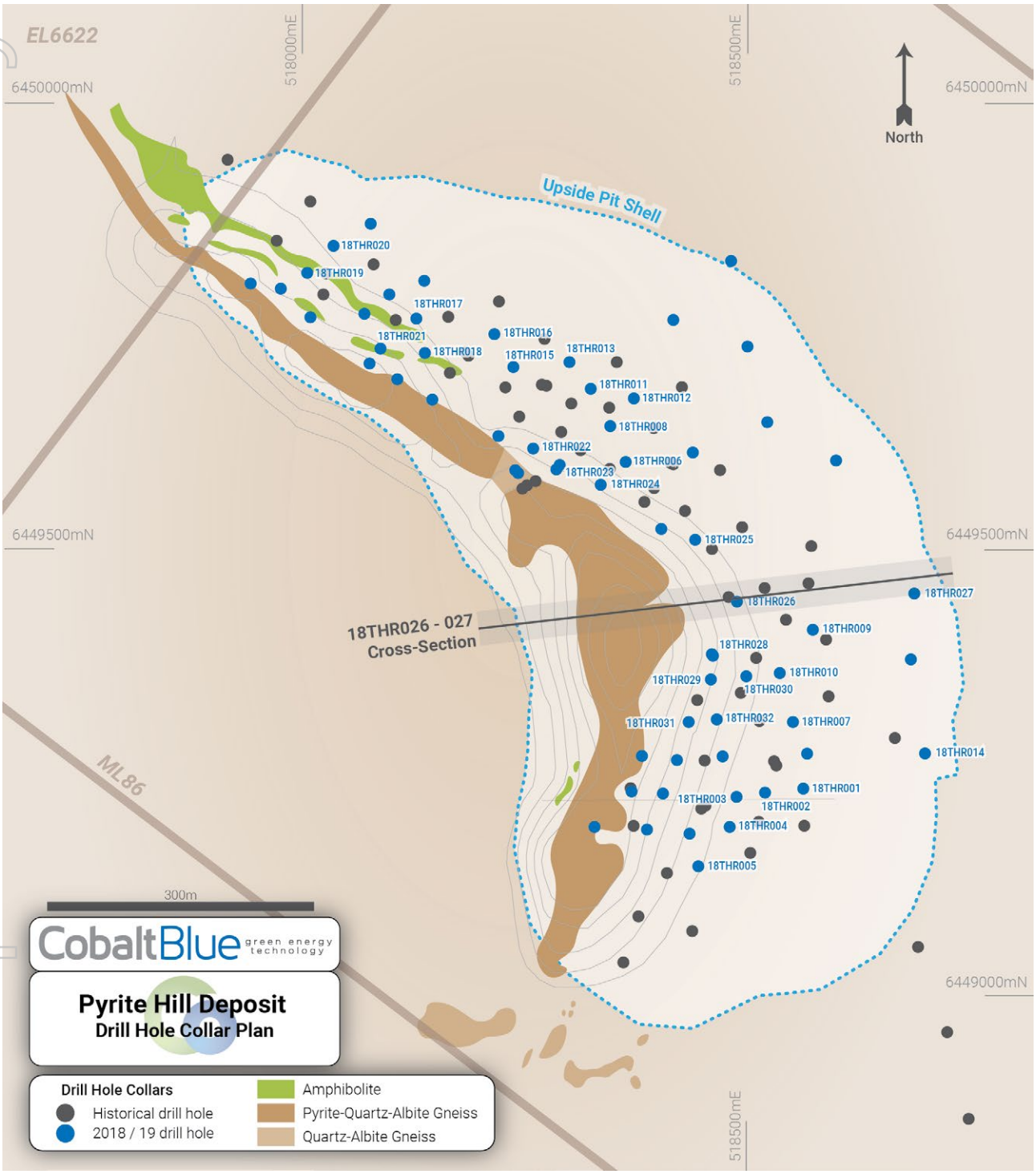

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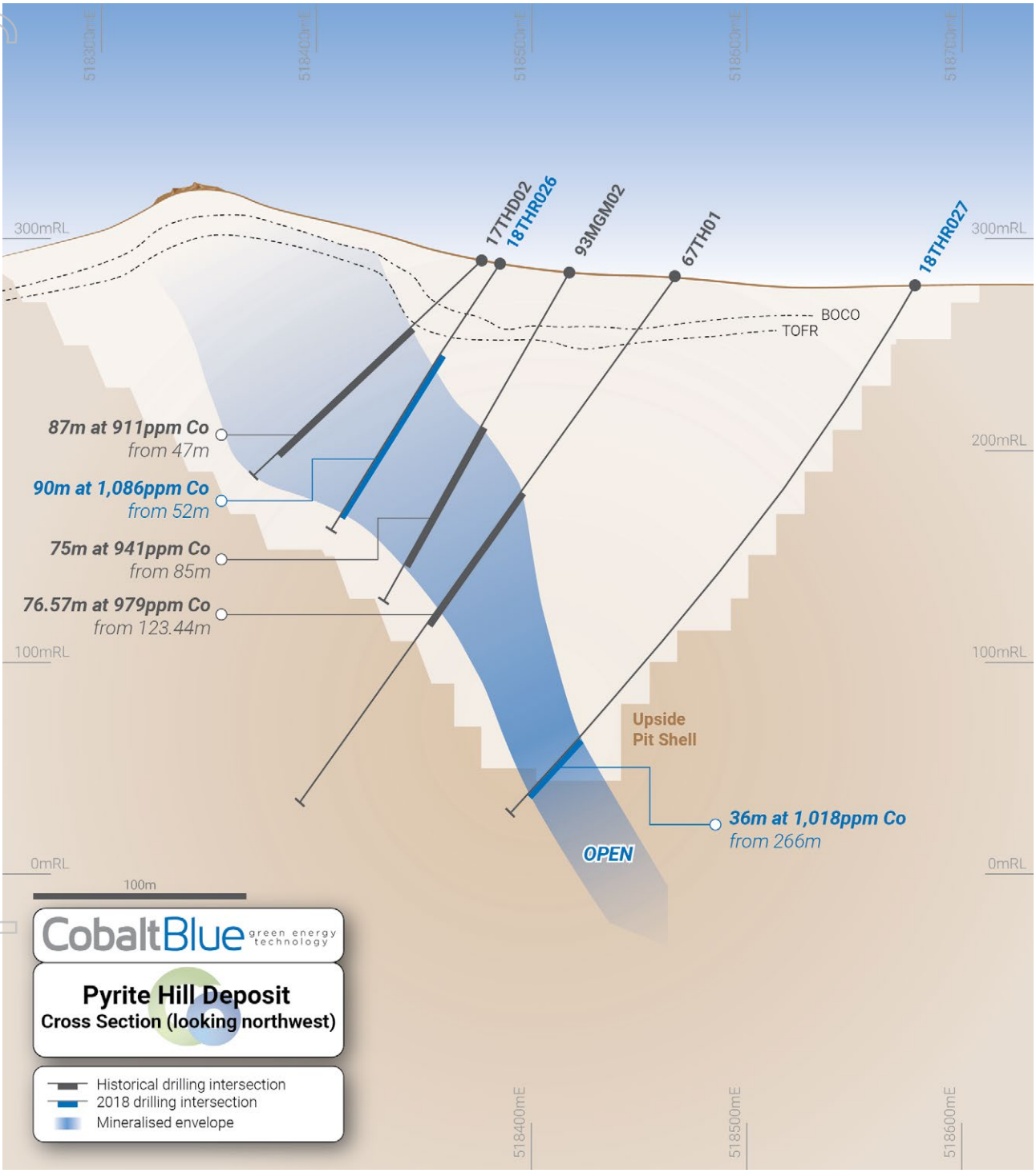
Figure 2. **Pyrite Hill deposit drilling cross section showing strong continuity of mineralisation grade and thickness down-dip. Significant intersections are as released 4 May 2017 '2017 Update – Strong Drilling Results Continue' and the inputs and results underpinning the 'upside pit shell' are as released 4 July 2018 'Thackaringa Pre-Feasibility Study Announced'.**



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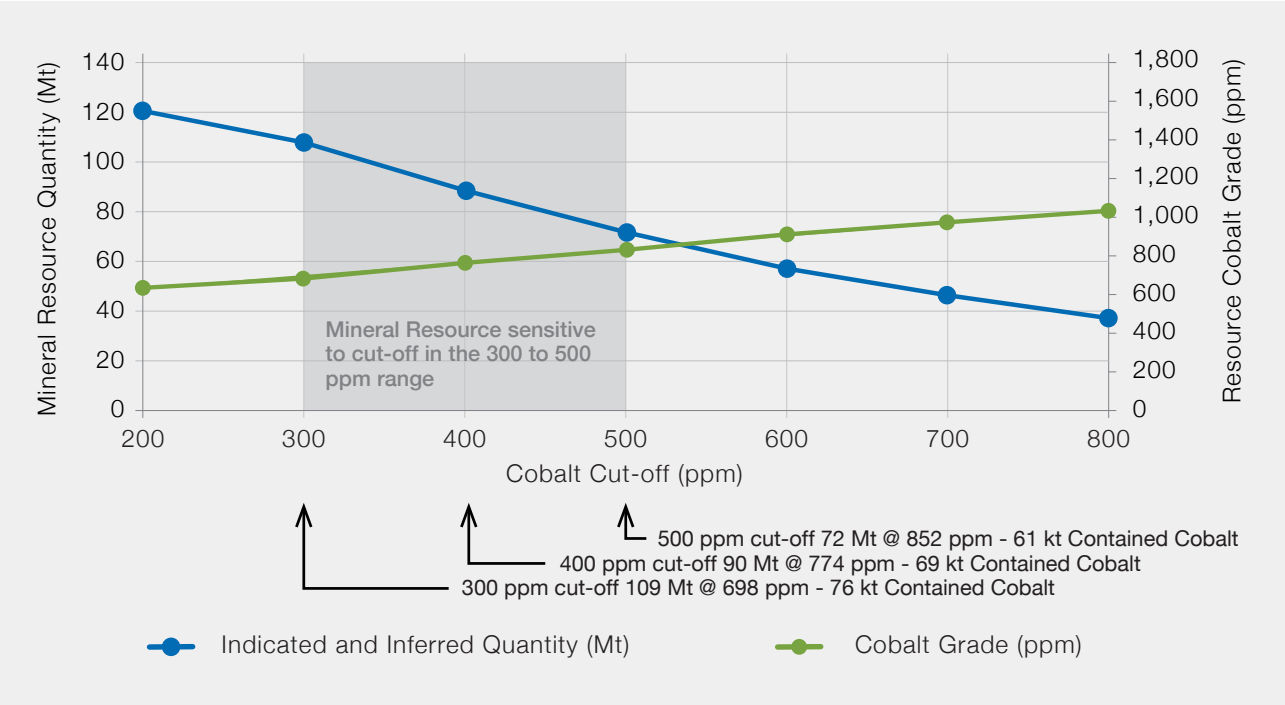
Mineral Resource Upgrade Pending

A Mineral Resource update is expected by the end of Q1 2019 and is anticipated to consider a revised cut-off grade potentially incorporating revenue streams from elemental sulphur; an economic by-product of the processing pathway defined in the PFS. Sulphur revenues were not considered when reporting the previous (March 2018) Mineral Resource estimate.

A revised cobalt equivalent cut-off grade has the potential to increase the reportable Mineral Resource where sulphur revenues are included. Mineral Resource quantities at selected lower cobalt cut-off grades include:

- 400 ppm Co cut-off: Potential for a Mineral Resource increase to 90 Mt with 69 kt contained cobalt (+13%).
- 300 ppm Co cut-off: Potential for a Mineral Resource increase to 109 Mt with 76 kt contained cobalt (+25%).

Figure 3. **Thackaringa Mineral Resource grade tonnage curve**



Development of the revised cobalt equivalency cut-off grade is advancing in parallel with the Mineral Resource estimate.

In addition, COB is assessing the potential inclusion of partially oxidised, near surface material in the pending estimate where the recent drilling at Pyrite Hill intersected variable zones of sulphide mineralisation throughout the oxidation profile. Significant, shallow intersections that support this concept received to date include:

- 18THD001 – 24m at 673ppm Co, 9.8% Fe & 7.1% S from 6.9m
- 18THD003 – 15.05m at 658ppm Co, 11.3% Fe & 7.6% S from 18.65m

Currently COB has the following beneficial interests in the tenements:

- EL 6622 – 93.68%* beneficial interest Cobalt Blue Holdings Limited
- EL 8143 – 93.68%* beneficial interest Cobalt Blue Holdings Limited
- ML 86 – 93.68%* beneficial interest Cobalt Blue Holdings Limited
- ML 87 – 93.68%* beneficial interest Cobalt Blue Holdings Limited

Cobalt Blue Background

Cobalt Blue ("COB") is an exploration company focussed on green energy technology. Work programs are advancing to enable an upgrade of the Mineral Resource at the Thackaringa Cobalt Project in New South Wales to include Measured Resources.

Cobalt is a strategic metal in strong demand for new generation batteries, particularly lithium-ion batteries now being widely used in clean energy systems.

* Refer COB's and BPL's ASX announcements dated 4 December 2018 for COB's explanation of the dilution of BPL's interest in the Joint Venture to 6.32% and for the steps BPL is taking to dispute this.

Potential to extend the Mineral Resource at Pyrite Hill, Big Hill, Railway and the other prospects is high. Numerous other prospects within COB's tenement package are at an early stage and under-explored. COB is in a Joint Venture with BPL to develop the Thackaringa Cobalt Project.

Looking forward, we would like our shareholders to keep in touch with COB updates and related news items, which we will post on our website, the ASX announcements platform, as well as social media such as Facebook (f) and LinkedIn (in). Please don't hesitate to join the 'COB friends' on social media and to join our newsletter mailing list at our website.

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Previously Released Information

This ASX announcement refers to information extracted from the following reports, which are available for viewing on COB's website http://www.cobaltblueholdings.com

- 16 January 2019: Drilling Campaign Paused. Technical Work Programs Continue
- 22 December 2018: Appointment of Director
- 13 December: Change of Board
- 07 December 2018: Capital Raising
- 05 December 2018: Thackaringa Cobalt Project Drilling and Water Supply Update
- 04 December 2018: Thackaringa JV dilution triggered
- 01 November 2018: Thackaringa Feasibility Study Drilling Campaign Commences
- 24 October 2018: COB decides not to exercise its rights to proceed further under Thackaringa Joint Venture Farmin Earning Period Provisions
- 18 September 2018: CEO's Letter to Shareholders
- 13 September 2018: Bankable Feasibility Study Commences with Drilling Campaign and Project Optimisation Studies
- 05 September 2018: Thackaringa TJV – Completion of Stage 2 Earning Obligations
- 04 July 2018: Thackaringa Pre Feasibility Study Announced
- 20 April 2018: Thackaringa JV – Stage One Completed
- 19 March 2018: Thackaringa – Significant Mineral Resource Upgrade
- 05 March 2018: PFS – Calcine and Leach Testwork Complete – Strong Results
- 24 January 2018: Significant Thackaringa Drilling Program complete – Resource Upgrade pending

COB confirms it is not aware of any new information or data that materially affects the information included in the original market announcements, and, in the case of estimates of Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed. COB confirms that the form and context in which the Competent Person's findings presented have not been materially modified from the original market announcement.

Competent Person's Statement

The information in this report that relates to Exploration Targets, Exploration Results, Mineral Resources and Ore Reserves is based on information compiled by Mr Peter Buckley, a Competent Person who is a Member of The Australian Institute of Geoscientists (MAIG). Mr Buckley is employed by Left Field Geoscience Services and engaged by Cobalt Blue Holdings on a consulting basis.

Mr Buckley has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken 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 Buckley consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

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Appendix 1 - JORC Code, 2012 Edition - Table 1

Section 1 - Sampling Techniques and Data

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

Criteria	JORC Code Explanation	Commentary

Sampling techniques	■ *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.*
	■ *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.*
	■ *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.*
		2018 - 2019 Drilling Program
		■ Forty-eight (48) RC ('Reverse Circulation') and twenty-two (22) diamond drill holes were completed to infill historical holes and support re-estimation of Mineral Resources. There were sixty-four (64) holes drilled at the Pyrite Hill deposit and six (6) at the Railway deposit. This release includes results for drill holes inclusive of 18THD001 - 003 (released 5 December 2018) and 18THR001 - 032 (18THR001 - 004 released 5 December 2018 and 18THR005 - 032 released herein):
		  ■ Diamond drilling (18THD001- 003) was used to obtain core from which irregular intervals were sawn with:
		  ■ one half core dispatched for assay by mixed acid digestion and analysis via ICP-MS + ICP-AES reporting a suite of 48 elements (sulphur >10% by LECO);
		  ■ the other half was retained for future metallurgical test work and archival purposes.
		  ■ RC drilling (18THR001 – 032) was used to obtain a representative sample by means of a cone splitter with samples submitted for assay by mixed acid digestion and analysis via ICP-MS + ICP-AES reporting a suite of 48 elements (sulphur >10% by LECO).

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Criteria	JORC Code Explanation	Commentary
Drilling techniques	■ *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).*	**2018 - 2019 Drilling Program** ■ RC drilling (18THR001 – 032) utilised standard hole diameters (4.5”-5.5”) with a face sampling hammer. ■ Diamond drilling (18THD001-003) utilised a HQ3 triple tube system with core orientation by the Boart Longyear TruCore™ Core Orientation system.

Drill sample recovery	■ *Method of recording and assessing core and chip sample recoveries and results assessed.*
	■ *Measures taken to maximise sample recovery and ensure representative nature of the samples.*
	■ *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.*
		2018 - 2019 Drilling Program
		Diamond Drilling
		■ Core recovery is determined by measurement of core recovered versus core drilled. A triple-tube system was used to maximise sample recovery:
		  ■ Core recovery of 97.5% was achieved during completion of drill holes 18THD001 - 003.
		  ■ No relationship between sample recovery and grade has been observed.
		
		Reverse Circulation Drilling
		■ Reverse circulation sample recoveries were visually estimated during drilling programs. Where the estimated sample recovery was below 100% this was recorded in field logs by means of qualitative observation.
		■ Reverse circulation drilling employed sufficient air (using a compressor and booster) to maximise sample recovery.
		■ No relationship between sample recovery and grade has been observed.

Logging	■ *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.* ■ *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* ■ *The total length and percentage of the relevant intersections logged.*	■ A qualified geoscientist has logged all reported drill holes in their entirety. This logging has been completed to a level of detail considered to accurately support Mineral Resource estimation and metallurgical studies. The parameters logged include lithology, alteration, mineralisation and oxidation. These parameters are both qualitative and quantitative in nature. ■ Diamond drilling completed during 2018–2019 has been subject to geotechnical logging with parameters recorded including rock-quality designation (RQD), fracture frequency and hardness. ■ Representative reference trays of chips from reverse circulation drilling are retained for archival purposes ■ All reference chip trays are photographed in a wet and dry state with photographs retained as digital files ■ All diamond drill core is photographed in a wet and dry state with photographs retained as digital files

Drill Hole/s	Total Length Logged	% Intersections Logged
18THR001 - 032	4,674m	100%
18THD001 - 003	119.5m	100%

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Criteria	JORC Code Explanation	Commentary

Sub-sampling techniques and sample preparation	■ *If core, whether cut or sawn and whether quarter, half or all core taken.*
	■ *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.*
	■ *For all sample types, the nature, quality and appropriateness of the sample preparation technique.*
	■ *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.*
	■ *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.*
	■ *Whether sample sizes are appropriate to the grain size of the material being sampled.*
		2018 - 2019 Drilling Program
		Diamond Drilling
		■ All HQ3 drill core from 18THD001 - 003 was sawn into halves, with:
		  ■ One half core submitted for assay.
		  ■ One half core retained for archive and further metallurgical test work.
		■ It is considered that the water used for core cutting is unlikely to have introduced sample contamination.
		■ Sample sawing and processing for test work were undertaken according to 'standard industry practice' to maximise sample representivity.
		■ No second-half sampling was undertaken.
		■ Sample sizes are considered appropriate to the grain size of the material being sampled.
		
		Reverse Circulation Drilling
		■ Sub-sampling of reverse circulation chips was achieved using a cone splitter.
		■ During drilling operations, the splitter was regularly cleaned to prevent down hole sample contamination.
		■ Dry sampling was achieved for 90% of samples with the use of adequate air delivered by a compressor and booster, where groundwater was encountered.
		■ During reverse circulation drilling of 18THR001 - 032 duplicate samples were collected at an average rate of 1:18 samples.
		■ Assay results include analysis of 255 field duplicate pairs from thirty-two (32) RC drill holes (18THR001 – 032).
		■ A measure of the average precision of the sampling, sample preparation and assaying methods, given by the mean per cent difference (MPD) assay values of the duplicate pairs is summarised below. Overall, the sampling and assay precision for Co, Fe and S at economically significant grades is regarded as reasonable.
		
		Mean percent difference assay values of field duplicate pairs collected during drilling of 18THR001 - 032
		
		■ Sample sizes are considered appropriate to the grain size of the material being sampled.

Co Cut-Off	Sample Count	Cobalt MPD	Iron MPD	Sulphur MPD
All	255	11%	7%	12%
400ppm	68	10%	7%	9%

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Criteria	JORC Code Explanation	Commentary

Quality of assay data and laboratory tests	■ *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.*
	■ *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.*
	■ *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.*
		2018 - 2019 Drilling Program
		■ The assay techniques employed for drilling (diamond and RC) samples include mixed acid digestion and analysis via ICP-MS + ICP-AES reporting a suite of 48 elements (sulphur >10% by LECO). This method is considered appropriate for the targeted mineralisation and regarded as a 'near total' digestion technique with resistive phases not expected to affect cobalt analyses.
		■ All samples were processed at ALS Adelaide, South Australia. ALS is a NATA Accredited Laboratory and qualifies for JAS/ANZ ISO9001:2008 quality systems. ALS also maintains internal QAQC procedures (including analysis of standards, repeats and blanks).
		■ To monitor the accuracy of assay results for 18THR001 - 032 & 18THD001 - 003:
		  ■ CRM standards were included in the 18THR001 - 032 & 18THD001 - 003 assay sample stream at an average rate of 1:18.
		  ■ Internal lab standards were routinely included in the 18THR001 - 032 & 18THD001 - 003 assay sample stream by ALS Laboratories at an average rate of 1:12 samples.
		  ■ Internal lab repeats were routinely completed by ALS Laboratories at an average rate of 1:17 samples. A measure of the average precision, sample preparation and assaying methods, given by the mean per cent difference (MPD) assay values of the lab repeat pairs is summarised below.

Mean percent difference assay values of lab repeats completed during assay of 18THR001 - 032 & 18THD001 - 003

Co Cut-Off	Sample Count	Cobalt MPD	Iron MPD	Sulphur MPD
All	285	3%	2%	3%*
400ppm	68	2%	2%	2%*

**Excludes 39 repeat assays which exceeded the upper limit of the assay methodology.*

■ Overall, the sampling and assay precision for Co, Fe and S at economically significant grades is regarded as reasonable.

CRM standard assay performance for the 18THR001 - 032 & 18THD001 - 003 sample stream

		Cobalt				Iron				Sulphur			
Standard ID	Count	1SD	2SD	3SD	+3SD	1SD	2SD	3SD	+3SD	1SD	2SD	3SD	+3SD
OREAS 523 (728 ppm Co)	34	23	9	-	2	24	16	-	2	24	16	-	2
OREAS 521 (386 ppm Co)	32	24	6	1	1	25	6	-	1	30	1	-	1
OREAS 166 (1970 ppm Co)	43	33	9	-	1	9	11	7	16	6	-	36	1
OREAS 165 (2445 ppm Co)	43	37	5	-	1	5	13	15	10	24	18	1	-
OREAS 163 (230 ppm Co)	35	30	5	-	-	-	3	6	26	7	22	5	1
OREAS 162 (631 ppm Co)	36	28	6	-	2	6	10	6	14	21	11	2	2
OREAS 160 (2.8 ppm Co)	38	34	2	1	1	23	11	2	2	29	-	-	9

The performance of CRM standards OREAS 162 - 166 for iron analysis is subject to further investigation where 42% of assays reported outside 3SD.

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Criteria	JORC Code Explanation	Commentary
Verification of sampling and assaying	■ *The verification of significant intersections by either independent or alternative company personnel.* ■ *The use of twinned holes.* ■ *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* ■ *Discuss any adjustment to assay data.*	■ All significant intersections are verified by the Company's Exploration Manager and an alternative Company representative. ■ No drill holes were twinned during the 2018 – 19 drilling program. ■ Drilling data, inclusive of geological logging, collar, survey, sampling and geotechnical parameters from the 2018 - 2019 drilling program is captured electronically using the logging application LogChief which incorporates inbuilt validation tools. Data captured by the application is loaded into the Thackaringa drilling database by Maxwell GeoServices. ■ The Thackaringa drilling database exists in electronic form under the independent management of Maxwell GeoServices. The Maxwell Data Schema (MDS) strictly applies integrity rules to all downhole and measurement recordings. If data fails the integrity rules, the data is not loaded into the database. The MDS stores every instance (record) of data loading and data modification inclusive of who loaded and modified that data. ■ Samples returning assays below detection limits are assigned half detection limit values in the database.
Location of data points	■ *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.* ■ *Specification of the grid system used.* ■ *Quality and adequacy of topographic control*	■ Historical drill collars have been relocated and surveyed using a differential GPS (DGPS). In the instances where no collar could be located the position has been derived from georeferenced historical plans. ■ Down hole surveys using digital cameras were completed on all drilling post 2000. Down hole surveys for some earlier drilling were estimated from hole trace and section data where raw survey data was not reported. ■ All 2016 - 2019 drill hole collars were located and surveyed with DGPS by an independent surveyor with reported accuracy of ±0.05m in horizontal and vertical measurement* **18THR0028 was not accessible at the time collar surveys were completed by DGPS. 18THR028 was located by handheld GPS with an estimated accuracy of ±3m in horizontal and vertical measurement.* ■ Downhole surveys using digital cameras were completed for all 2016 - 2019 drill-holes. ■ All data is recorded in the GDA94 datum; UTM Zone 54 (MGA54). ■ 3D validation of drilling data has been completed by independent geological consultants to support detailed geological modelling in Micromine™ software. ■ The quality of topographic control is deemed adequate in consideration of the results presented in this release.

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Criteria	JORC Code Explanation	Commentary
Data spacing and distribution	■ *Data spacing for reporting of Exploration Results.* ■ *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.* ■ *Whether sample compositing has been applied.*	■ The data density of existing drill holes at the Pyrite Hill deposit has been materially increased by the 2016 - 2019 drilling programs. Drilling density varies along strike generally responsive to exploration targeting and interpreted geological complexity with the average drill line spacing for Pyrite Hill being 30 - 40m. ■ Drilling density is also illustrated in drilling plans presented within this release. ■ 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 as determined by independent Competent Person ■ No sample compositing has been applied to reported intersections
Orientation of data in relation to geological structure	■ *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* ■ *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material*	■ The 2018 - 2019 drill holes at the Pyrite Hill deposit were typically angled between -50° to -60° to the horizontal and drilled perpendicular to the mineralised trend. ■ Drilling orientations are adjusted along strike to accommodate folded geological sequences. ■ At Pyrite Hill mineralisation is gently dipping and mineralised intersections will be close to true width. ■ The drilling orientation is not considered to have introduced a sampling bias on assessment of the current geological interpretation.
Sample security	■ *The measures taken to ensure sample security.*	■ Sample security procedures are considered to be 'industry standard'. ■ During the 2018 – 2019 drilling program, samples were periodically despatched directly from Broken Hill to Adelaide (ALS) by an independent courier ■ The Company considers that risks associated with sample security are limited given the nature of the targeted mineralisation.

Audits or reviews	■ *The results of any audits or reviews of sampling techniques and data.*	■ In late 2016 an independent validation of the Thackaringa drilling database was completed:
		  ■ The data validation process consisted of systematic review of drilling data (collars, assays and surveys) for identification of transcription errors.
		  ■ Following review, historical drill hole locations were also validated against georeferenced historical maps to confirm their location.

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Criteria	JORC Code Explanation	Commentary
Audits or reviews (continued)		▪ Three (3) drill holes at Big Hill were found to be incorrectly located. One collar was located and surveyed by GPS and two were digitised from georeferenced historical plans (reported to the nearest metre) as the collars had been destroyed. These corrections were captured in the Big Hill Mineral Resource estimate. ▪ Total depths for all holes were checked against original reports. ▪ Final 3D validation of drilling data has been completed by independent geological consultants to support detailed geological modelling in Micromine™ software. ■ Audits and reviews of QAQC results and procedures are further described in preceding sections of this table including **Quality of assay data and laboratory tests**, **Sub-sampling techniques** and **sample preparation** and **Logging**.

Section 2 - Reporting of Exploration Results
(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code 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 Thackaringa Cobalt project is located approximately 25 kilometres west-southwest of Broken Hill and comprises two exploration (EL) and two mining leases (ML) including: ■ The project is subject to a joint venture agreement between COB and Broken Hill Prospecting Limited (ASX: BPL). Currently Cobalt Blue has the following beneficial interests in the tenements: ▪ EL 6622 – 93.68%* beneficial interest Cobalt Blue Holdings Limited ▪ EL 8143 – 93.68%* beneficial interest Cobalt Blue Holdings Limited ▪ ML 86 – 93.68%* beneficial interest Cobalt Blue Holdings Limited ▪ ML 87 – 93.68%* beneficial interest Cobalt Blue Holdings Limited ■ The nearest residence (Thackaringa Station) is located approximately three kilometres west of EL6622.

Tenement	Grant Date	Expiry Date
EL6622	30/08/2006	30/08/2020
EL8143	26/07/2013	26/07/2020
ML86	05/11/1975	05/11/2022
ML87	05/11/1975	05/11/2022

* Refer COB's and BPL's ASX announcements dated 4 December 2018 for COB's explanation of the dilution of BPL's interest in the Joint Venture to 6.32% and for the steps BPL is taking to dispute this.

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Criteria	JORC Code Explanation	Commentary
Mineral tenement and land tenure status (continued)		■ EL6622 is transected by the Transcontinental Railway; the Barrier Highway is located the north of the licence boundaries. ■ The majority of the project tenure is covered by Western Lands Lease which is considered to extinguish native title interest. However, Native Title Determination NC97/32 (Barkandji Traditional Owners 8) is current over the area and may be relevant to Crown Land parcels (e.g. public roads) within the project area. ■ The project tenure is more than 90 kilometres from the nearest National Park and or Wilderness Area (Kinchega National Park) and approximately 20 kilometres south of the nearest Water Supply Reserve (Umberumberka Reservoir Water Supply Reserve) ■ The Company is not aware of any impediments to obtaining a licence to operate in the area.
Exploration done by other parties	■ *Acknowledgment and appraisal of exploration by other parties.*	■ A detailed and complete record of all exploration activities undertaken prior to 2016 is appended to the JORC Table 1 which forms part of the Cobalt Blue Prospectus Document, available on the COB website.
Geology	■ *Deposit type, geological setting and style of mineralisation.*	**Regional Geological Setting** ■ The Thackaringa project is located in a deformed and metamorphosed Proterozoic supracrustal succession named the Willyama Supergroup, which is exposed as several inliers in western New South Wales, including the Broken Hill Block (Willis, et al., 1982). ■ Exploration by Cobalt Blue Holdings Limited has been focused on the discovery and definition of cobaltiferous pyrite deposits ■ The project area covers portions of the Broken Hill and Thackaringa group successions which host the majority of mineralisation in the region, including the Broken Hill base-metal deposit. The Sundown Group suite is also present. The extensive sequence of quartz-albite-plagioclase rock that hosts the cobaltiferous pyrite mineralisation is interpreted as belonging to the Himalaya Formation, which is stratigraphically at the top of the Thackaringa Group. **Local Geological Setting** ■ The oldest rocks in the region belong to the Curnamona Craton which outcrops on the Broken Hill and Euriowie blocks. ■ The overlying Proterozoic rocks have been broadly subdivided into three major groupings, of which the oldest groups are the highly deformed metasediments and igneous derived rocks of the Thackaringa and Broken Hill groups. They comprise a major part of the Willyama Supergroup and host the giant Broken Hill massive Pb-Zn-Ag sulphide ore body. EL6622 is within the Broken Hill block of the Curnamona Craton.

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Criteria	JORC Code Explanation	Commentary
Geology (continued)		**Mineralisation Style** ■ The Thackaringa mineral deposits (Pyrite Hill, Big Hill and Railway) are characterised by large tonnage cobaltiferous-pyrite mineralisation hosted within siliceous albitic gneisses and schists of the Himalaya Formation. ■ Cobalt mineralisation exists within stratabound pyritic horizons where cobalt is present within the pyrite lattice. Mineralogical studies have indicated the majority of cobalt (~85%) is found in solid solution with primary pyrite (Henley 1998). ■ A strong correlation between pyrite content and cobalt grade is observed.
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*	■ See drill hole summaries below.

Hole ID	Deposit	Max Depth (m)	NAT Grid ID	Easting	Northing	RL	Dip	Azimuth	Hole Type
18THD001	Pyrite Hill	30.9	MGA94_54	518219.66	6449624.39	291.25	-60	226	DDH
18THD002	Pyrite Hill	54.9	MGA94_54	518238.34	6449585.82	296.53	-60	226	DDH
18THD003	Pyrite Hill	33.7	MGA94_54	518240.6	6449583.32	296.57	-60	316	DDH
18THR001	Pyrite Hill	216	MGA94_54	518559.01	6449231.18	280.96	-60	270	RC
18THR002	Pyrite Hill	208	MGA94_54	518516.02	6449226.4	283.47	-60	270	RC
18THR003	Pyrite Hill	162	MGA94_54	518484.17	6449221.88	285.58	-60	270	RC
18THR004	Pyrite Hill	180	MGA94_54	518476.48	6449188.87	286.37	-60	270	RC
18THR005	Pyrite Hill	150	MGA94_54	518441.66	6449144.93	288.01	-60	270	RC
18THR006	Pyrite Hill	144	MGA94_54	518360.85	6449595.72	285.45	-60	226	RC
18THR007	Pyrite Hill	192	MGA94_54	518547.66	6449305.68	283.41	-55	270	RC
18THR008	Pyrite Hill	144	MGA94_54	518343.97	6449635.49	283.55	-53	226	RC
18THR009	Pyrite Hill	216	MGA94_54	518569.36	6449408.25	281.08	-60	260	RC
18THR010	Pyrite Hill	168	MGA94_54	518532.73	6449360.12	284.92	-60	260	RC
18THR011	Pyrite Hill	162	MGA94_54	518322.22	6449676.84	283.22	-60	226	RC
18THR012	Pyrite Hill	174	MGA94_54	518370.03	6449666.15	281.38	-60	226	RC
18THR013	Pyrite Hill	138	MGA94_54	518298.17	6449706.47	281.98	-60	226	RC

DDH Diamond drill hole
RC Reverse circulation drill hole

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Hole ID	Deposit	Max Depth (m)	NAT Grid ID	Easting	Northing	RL	Dip	Azimuth	Hole Type
18THR014	Pyrite Hill	342	MGA94_54	518694.51	6449270.48	276.9	-60	270	RC
18THR015	Pyrite Hill	96	MGA94_54	518235.64	6449701.08	283.82	-60	226	RC
18THR016	Pyrite Hill	102	MGA94_54	518214.75	6449737.47	282.55	-60	226	RC
18THR017	Pyrite Hill	78	MGA94_54	518127.79	6449754.95	285.64	-60	226	RC
18THR018	Pyrite Hill	66	MGA94_54	518137.36	6449716.74	289.22	-60	226	RC
18THR019	Pyrite Hill	72	MGA94_54	518006.92	6449805.88	291.23	-60	226	RC
18THR020	Pyrite Hill	96	MGA94_54	518035.63	6449835.82	287.23	-60	226	RC
18THR021	Pyrite Hill	60	MGA94_54	518087.53	6449721.83	294.28	-60	226	RC
18THR022	Pyrite Hill	66	MGA94_54	518257.71	6449610.19	290.01	-60	226	RC
18THR023	Pyrite Hill	102	MGA94_54	518284.04	6449587.56	291.55	-60	226	RC
18THR024	Pyrite Hill	114	MGA94_54	518333.23	6449569.57	289.63	-50	226	RC
18THR025	Pyrite Hill	150	MGA94_54	518438.4	6449508.58	289	-50	226	RC
18THR026	Pyrite Hill	150	MGA94_54	518485.03	6449439.15	288.92	-60	260	RC
18THR027	Pyrite Hill	314	MGA94_54	518681.9	6449447.29	276.64	-60	260	RC
18THR028	Pyrite Hill	132	MGA94_54	518458	6449379	296.62	-60	260	RC
18THR029	Pyrite Hill	120	MGA94_54	518455.88	6449353.13	296.54	-60	260	RC
18THR030	Pyrite Hill	138	MGA94_54	518495.52	6449356.57	290.04	-60	260	RC
18THR031	Pyrite Hill	96	MGA94_54	518431.08	6449305.58	298.32	-55	270	RC
18THR032	Pyrite Hill	126	MGA94_54	518462.16	6449308.34	292.63	-60	270	RC

DDH Diamond drill hole
RC Reverse circulation drill hole

Criteria	JORC Code Explanation	Commentary

Data aggregation methods	■ *In reporting Exploration Results, weighting averaging techniques, maximum and/ or minimum grade truncations (e.g. 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.*
		■ Drill hole intercept grades are reported as down-hole length-weighted averages with any non-recovered sample within the reported intervals treated as no grade. The cut-off used for selecting significant intersections reflects the overall tenor of mineralisation, in most cases >500ppm cobalt.
		■ Drill hole intercepts may include cobalt intersections <500ppm, though these typically do not exceed twelve (12) consecutive metres e.g.
		  ■ **18THR024** - 70m at 1,150ppm Co, 11.5% Fe & 12.5% S from 30m *includes 4m at 385ppm Co, 5.5% Fe & 6.5% S from 36m and 2m at 151ppm Co, 3.5% Fe & 2.6% S from 60m*
		  ■ **18THR025** - 92m at 1,253ppm Co, 12.1% Fe & 12.5% S from 45m *includes 12m at 301ppm Co, 5.2% Fe & 4.6% S from 96m*
		■ No top cuts have been applied when calculating average grades for reported significant intersections.

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Criteria	JORC Code Explanation	Commentary
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 drillhole 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 (e.g. 'down hole length, true width not known').*	■ Drill holes at the Thackaringa project are typically angled between 50° to 60° and drilled perpendicular to the mineralised trend with drilling orientations adjusted along strike to accommodate folded geological sequences. ■ Mineralisation at the Pyrite Hill deposit is gently dipping and mineralised intersections will be close to true width. ■ All drill intersections are reported as down hole lengths.
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.*	■ Appropriate maps and sections are presented in the accompanying ASX release.
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.*	■ Only mineralised drill hole intersections regarded as highly anomalous and of economic interest are reported. The proportion of each hole represented by the reported intervals can be ascertained from the sum of the reported intervals divided by the total drill hole depth. ■ All assay results for drill holes included in the various Mineral Resource estimates have been considered and comprise results not necessarily regarded as anomalous.
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 survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	■ No further exploration data is deemed material to the results presented in this release. ■ Further information on past exploration activities and results are detailed in preceding ASX Announcements listed in the accompanying release.

Criteria	JORC Code Explanation	Commentary
Further work	■ *The nature and scale of planned further work (e.g. 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.*	■ COB is continuing to advance current work programs including further bulk test work, optimisation of power studies, tailings studies, project mining, environmental and engineering studies. ■ Diagrams highlighting areas of possible extension are presented in the accompanying ASX release.

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