CASTILLO COPPER LIMITED

ASX Release

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CASTILLO COPPER LIMITED
ACN 137 606 476

Level 6
105 St Georges Terrace
Perth WA, 6000
Australia

Tel: +61 8 6558 0886
Fax: +61 8 6316 3337

Contact:
Alan Armstrong
Executive Director

E-mail:
info@castillocopper.com

For the latest news:

www.castillocopper.com

Directors / Officers:
David Wheeler
Alan Armstrong
Neil Hutchison

Issued Capital:
457 million shares
21 million options

ASX Symbol:
CCZ

High Grade Working Sections Confirmed At Original Cangai Mine

- **Preliminary 3D JORC modelling at Cangai Copper Cobalt Mine (Cangai) uncovers significant high-grade copper-zinc mineralisation in unmined working sections**
- **Supergene ore mineralisation at Cangai open in all directions; ideal for direct shipping ore, with excellent infrastructure and ready access to Newcastle port**
- **Incremental desktop work uncovers Smelter Creek Copper Mine within the Jackaderry South prospect and several satellite copper deposits, which enhances exploration upside**
- **Legacy core samples, exhibiting iron sulphide which includes cobalt mineralisation, are being assayed**
- **Two maiden JORC compliant Inferred Resources are in the final stages of being modelled for Cangai/Jackaderry South (multi-high-grade minerals) and Peak Hill/ Broken Hill (high-grade zinc) prospects**

Castillo Copper Limited's (**CCZ** or **Company**) Board has received a preliminary report from geology consultant ROM Resources Pty Ltd (**ROM Resources**), which has confirmed:

1) 3D modelling showed significant mineralisation for copper-zinc-cobalt-gold-silver in unmined areas of Cangai that was open in all directions;
2) supergene ore mineralisation is open in all directions;
3) discovery of another historic copper mine (Smelter Creek) and several satellite copper deposits within the Jackaderry South project area that enhance exploration upside; and
4) progress on Cangai core samples that are undergoing test-work for cobalt mineralisation.

At a recent meeting, the Board prioritised CCZ's exploration plan and strategic intent with the focus on proving up three JORC compliant resources rapidly. Following discussions with ROM Resources, the priority ordering will be Cangai and the expanded area within the Jackaderry South prospect and Peak Hill/Total project areas in NSW for copper-zinc-cobalt using legacy data, particularly with copper and zinc prices near 5-year highs.

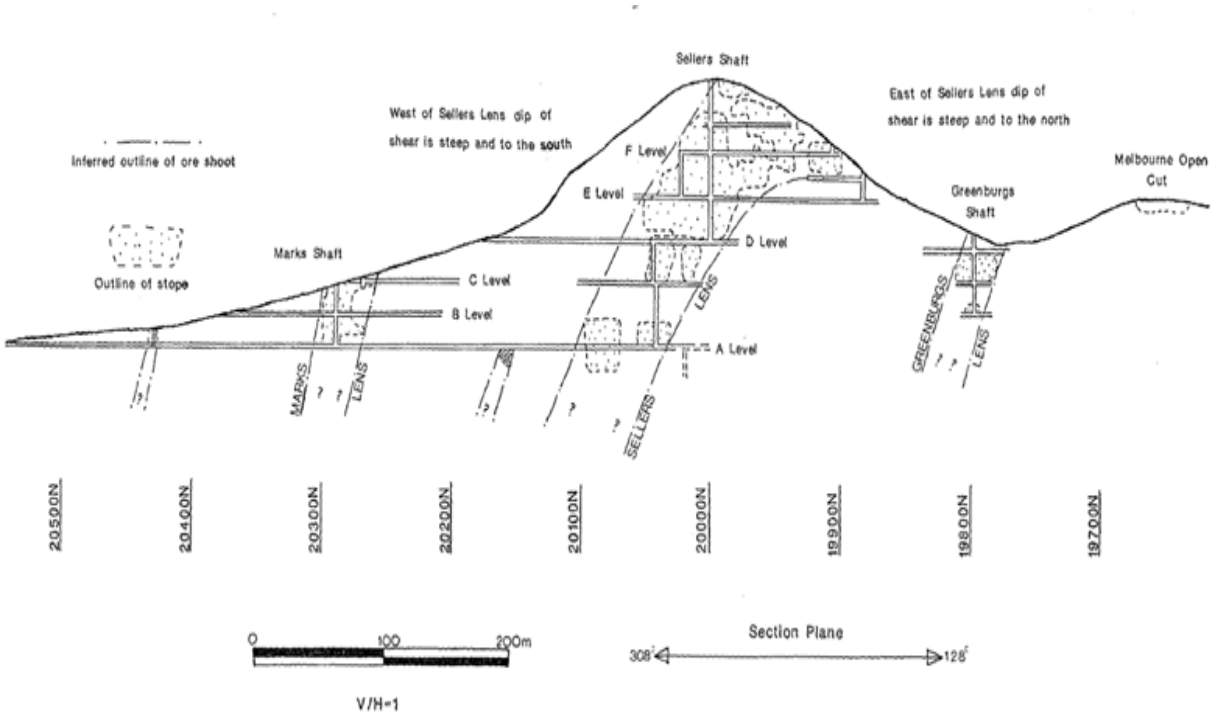
Work on the Big Oxide North/Hill of Grace prospects in Queensland is expected to commence later in the year.

IMPLICATIONS FROM PRELIMINARY REPORT

The Board believes, based on the compelling evidence presented by ROM Resources in its preliminary geological report, that prioritising work on Cangai and, more broadly, the Jackaderry South prospect will be the fastest route to generating CCZ's first JORC compliant resource for copper-cobalt-zinc utilising legacy data. The next target area is the Peak Hill and Total mineral prospects, given they exhibit contiguous mineralisation and there is ample legacy data.

ROM Resources' team has been working on encoding lithology and assay data, cross-sections, and mining data from Cangai to create a 3D JORC mine model. Most of the data used is decades old, including the cross-section map of the mine highlighting Seller's Shaft (Figure 1), which is the main shear. Interestingly, in Dr Carl Bruhart's 1991 thesis[1], he noted mineralisation was hosted in and adjacent to the main shear.

Figure 1: Cross section of Cangai workings projected onto vertical plane



Source: Bruhart 1991

In the 3D JORC modelling that ROM Resources has progressed on Cangai, based on available surface and sub-surface data, significant mineralisation is open on all sides for copper-zinc-silver-gold in unmined working stations. While legacy mining activities from the early 1900s went down to 85m, using mostly manual labour, one of the historic drill holes completed in the last 30-40 years intersected near vertical ore shoots at 230m, which exhibited significant mineralisation. The JORC modelling process on Cangai is nearing completion and will be released in due course.

In his 1991 report, Bruhart[1] observed that supergene ore with up to 35% copper and 10% zinc (refer to ASX Announcement "High grade supergene ore confirmed at Cangai Copper Cobalt Mine" dated 7 August 2017) was present in and adjacent to the main shear and also occurred in sediments and dykes. This was confirmed by ROM Resources preliminary report, with the incremental observation that it was open in all directions, which implies further potential exploration upside for copper-zinc.

A key benefit with having a **supergene ore resource is the ability to progress direct shipping ore (DSO)**, which generates materially higher margins than processed concentrate. With Cangai's proximity to excellent infrastructure, supergene ore can be trucked to a nearby rail depot that connects to Newcastle port and shipped direct to key north Asian markets.

Incremental desktop work on the Jackaderry South prospect by ROM Resources' team uncovered the historic Smelter Creek Copper Mine, which is within a 5km radius of Cangai. Further, several known satellite copper deposits were unearthed during this process. Collectively, this elevates the prospective size of the total JORC compliant Inferred Resource that can be generated from

[1] Honours thesis by Dr Carl Brauhart UNSW (1991) "The Geology & Mineralisation of the Cangai Copper Mine, Coffs Harbour Block Northeastern New South Wales," CRAE Report No: 17739

Jackaderry South. However, considerable more work, including a future drilling program, needs to be undertaken on these new discoveries.

Given the region is proven to have significant cobalt mineralisation, ROM Resources is part way through testing eight historical core samples from Cangai (Figure 2) at the NSW Geological Survey's core facility. A positive sign is the core samples exhibit iron sulphide, which also carries cobalt mineralisation.

Figure 2: Core samples from Cangai being tested for cobalt mineralisation

Source: ROM Resources

Castillo Copper's Executive Director Alan Armstrong commented: *"The Board is across key global demand/supply drivers that have propelled copper, zinc and cobalt prices to near five-year highs. Notably, from Castillo Copper's perspective, this global macro backdrop is timely and highly fortuitous. Taking note of Rom Resources preliminary report, the Board has formalised its strategic intent to initially focus on proving up two JORC compliant Inferred Resources rapidly for Cangai/Jackaderry South and Peak Hill/Total for copper-zinc-cobalt using legacy data. With the base metal cycle turning the corner, which is coinciding with CCZ ramping up operations, shareholders can expect potentially enhanced leveraged exploration upside."*

For and on behalf of Castillo Copper

David Wheeler

Chairman

Competent Persons Statement

Regarding the Castillo Copper Ltd exploration tenures, the information in this report that relates to Exploration Targets, Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Mark Biggs, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy. Mark Biggs is employed by ROM Resources Pty Ltd.

Mark Biggs 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'. Mark Biggs consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

ABOUT CASTILLO COPPER

Castillo Copper Limited (ASX: CCZ) is an ASX-listed explorer that has assets in eastern Australia and Chile.

The Australian assets, which were acquired outright in mid-2017, comprise six highly prospective copper-cobalt-zinc project areas in New South Wales and Queensland, detailed briefly as follows:

- Jackaderry North and Jackaderry South cobalt projects, which are in the New England Orogen in NSW, are prospective for copper-cobalt;
- Peak Hill and Total minerals projects, are located within a 20km radius of Broken Hill, NSW, are prospective for copper-cobalt-zinc; and
- Big Oxide North and Hill of Grace cobalt projects are in the Mt Isa region, northwest Queensland, and are prospective for copper-cobalt.

Of significance is the historic Cangai Copper Cobalt Mine (within Jackaderry South prospect) as legacy data confirms the presence of supergene ore with up to 35% copper.

The Board is looking to prove up three JORC compliant resources across the Australian project areas then utilise third party processors to fast track product to market via the London Metal Exchange.

The wholly-owned Chilean assets comprise of six exploration concessions across a total area of 1,800 hectares that are well known for high grade copper-gold projects.

JORC Code, 2012 Edition – Table 1 report template

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 (e.g. 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 (e.g. '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.*	• Analysis of the surface samples was all historical from the period 1967-2016. The data was a combination of the NSW Geological Survey surface sampling database and historical annual and relinquishment reports revisited and additional data extracted. Additional analyses are currently being encoded from a 1991 UNSW Honours Thesis (Brauhart 1991). • Nearly 870 sample analyses from stream sediment, soil, and rock chip sources were collated and combined. • Many of the sampling programs, especially from the 1990's did include reference samples and duplicate analyses and other forms of QA/QC checking. • Sampling prior to 1985 generally has higher "below detection limits" and less QA/QC checks. • Regarding historical cores from holes held by the NSW Geological Survey at the Cangai Copper Mine (closed), selected sections were reanalyzed using Pxrf in June 2017. The grades quoted for cored intervals described in section 2 have been measured using a handheld pXRF Analyser. These grades are indicative grades only as the pXRF Analyser does not have the same degree of accuracy as laboratory generated results. • During the period 14-15th August 2017, samples subjected to the XRF testing and some additional intervals where sulphide mineralisation was recognised were selected and the remaining core cut for laboratory testing. Sample details of depths considered for retesting are listed in Table 1, below. The results will be reported once available from the ALS Laboratory, Brisbane. *Table 1: Cangai Core Re-Sample Details*

Hole name	Core Library	Core Library Location	Drilling Program	Year Drilled	Depth	Testing Depths 1	Testing Depths 2	Testing Depths 3
DD91CG5	Londonderry	3D/L7/8-9	Cangai Copper Mine - Grafton	1991	275	35 - 60	210 - 240	
DD91CG4	Londonderry	3D/L7/6-7	Cangai Copper Mine - Grafton	1991	180	105 -120	165 -180	

DD91CG 3	Londonderry	3D/L7/3-5	Cangai Copper Mine - Grafton	1991	402.4	70 - 85	145 - 165	270 - 300
DD91CG 2	Londonderry	3D/L6/18-19	Cangai Copper Mine - Grafton	1991	421.1	80 - 100	140 - 160	236 - 370
DDH5	Londonderry	5B/L7/17-18	Cangai Copper Mine - Grafton	1972	132.7	70 - 130		
DDH2	Londonderry	5B/L7/17	Cangai Copper Mine - Grafton	1972	228.6	190 - 228		
BJAC1	Londonderry	3I/L6/4	Jackadgery - Cangai	1982	226.7	34 - 66	100 - 108	121 - 220
BJAC2	Londonderry	3I/L6/5	Jackadgery - Cangai	1982	193.5	36 - 55	64 - 75	122 - 190

Drilling techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. 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.).*	• There are several drillholes near EL 8625 that could be investigated for relevant and similar geology that are held by the department, and could be retested. • The closest set of drill holes (ten (10) in total) with available core for analysis are in the tenure, at the Cangai copper mine. To the north of EL 8625, seventeen (17) drill holes were completed for copper-gold exploration at the Just-in-Time mine and Coaldale Prospects. Those cores are also available from the NSW Core Library. Drilling was a combination of RAB, RC with limited diamond cored holes.
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.*	• Not applicable in this study as no new drilling has been undertaken yet.
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.*	• The drilling that did occur was completed to modern-day standards. • No downhole geophysical logging took place.
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*	• No new samples were obtained. Historical cores from Cangai Mine lodged with the NSW Geological Survey are generally sawn with half or quarter core remaining. • Industry acceptable standards and blanks were used as certified reference material to ensure satisfactory performance of the pXRF.

	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.*	• QAQC results indicate that the sampling is accurate and precise.
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.*	• All the analyses bar a few (<75 out 2,600) samples were laboratory tested in various NATA-registered laboratories throughout Australia. Many of the earlier CRA Exploration stream sediment and soil samples were analysed by CRA internal laboratories. • XRF geochemical data taken from field portable XRF Olympus. • Duration of sampling 30 seconds per filter (3 filters). • Calibration of the unit was carried out on the unit at the start of the sampling at the core library. • The following elements were analysed; Ag, As, Se, Ca, K, S, Ba, Sb, Sn, Cd, Pd, Zr, Sr, Rb, Pb, Hg, Zn, W, Cu, Ni, Co, V, Ti, Au, Fe, Mn, Cr, Sc, Mo, Th, U, Ta.
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.*	• Over 220 surface samples have had their assays duplicated. • None of the historical data has been adjusted.
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.*	• In general, locational accuracy does vary, depending upon whether the samples were digitised off plans or had their coordinated tabulated. Many surface samples were reported to AGD66 or AMG84 and have been converted to MGA94. • Locational accuracy therefore varies between 2-50m. The list of historical drillholes investigated is shown in Table 2.

Table 2: Cangai Diamond Drilling

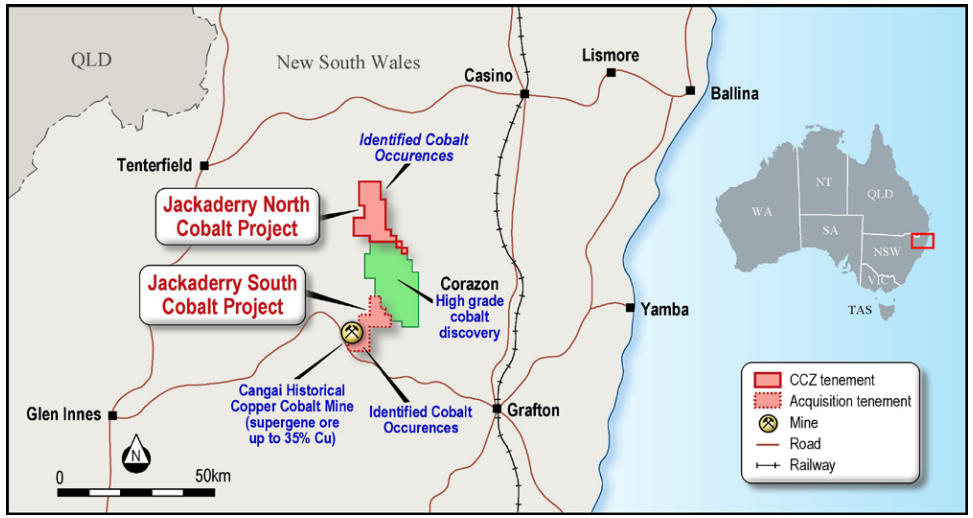
Year	Company	Hole No	Dip	Azimuth (M)	Length (m)	Interval (m)	True Width (m)	Grade Cu(%)
1972	Union Corp	DDH2	70	037	228	204.93-207.32	2.13	1.94
						(204.93-206.4	0.9	2.91)
						(204.93-205.46	0.35	5.5)
		DDH5	35	026	132.9	(shear intersected near end of hole)		
1984	WMC	BJAC1	60	215	226.7	(testing I.P., TEM, geochhemistry in mine area)		
		BJAC2	60	0l0	192.5			
1991	CRAE	DD91GC 1,2	70	035	421.1	294.85- 295.5		1.36
		3	52	031	402.4	287 - 288.35		0.33
		4	45	042	180	(testing magnetic anomalies to S.E.)		
		5	45	002	275	226.64 - 227.47		0.38

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 average surface sample spacing across the tenure varies per element, e.g. for cobalt the RMS spacing between sample points is 165m, ranging down to 124m for nickel. • No sample compositing has been applied.
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*	• The current database was augmented with sub-surface samples, (encoding completed 16th August 2017). • Additional surface bedding and foliation data, and that from some of the accessible underground mine adits is being compiled form a UNSW Honours thesis (Brauhart 1991)

	and reported if material.	The majority of the known copper-gold mineralisation around Cangai strikes from 290-330 degrees, as shown by Figure 3, below: Figure 3 Orientation of Copper-Gold Mineralisation around the Cangai Mine shown on Google Earth 
Sample security	• *The measures taken to ensure sample security.*	• Sixteen new samples were cut from DDH2, DDH5, DD91GC2, and DD91GC4. Chain of custody sample sheets were filled out for these samples for both the NSW Geological Survey and ALS Laboratories. Samples were bagged and have been freighted by Toll Holdings from the Prospectors Supplies warehouse in Dural Sydney to ALS Laboratories Brisbane.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• No audits or reviews have yet been undertaken.

Section 2 Reporting of Exploration Results

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

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.*	• Castillo Copper holds EL 8625 of 35 units (155 km^2). The tenure has been granted for a period of thirty-six months until 17th July 2020, for Group 1 minerals. The location of the tenure is shown in Figure 1 below: Figure 1: Location of EL 8625 Jackadgery North 
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	Previous explorers (Brownlow, 1989; Abraham-Jones, 2012) have noted that a 'basement window' of exposed magmatic hydrothermal alteration and historical copper workings may represent the western and upper extent of a much larger hydrothermal system concealed under Mesozoic cover to the east, prospective for: • Quartz-tourmaline-sulphide-cemented, magmatic-hydrothermal breccia hosted copper-gold-molybdenum-cobalt (Cu-Au-Mo-Co) deposit; • Concealed porphyry copper-gold-molybdenum-cobalt (Cu-Au-Mo-Co) ore body associated with quartz diorite to tonalitic porphyry apophyses proximal to the tourmaline-sulphide cemented breccia's; • Potential also exists for copper-gold (Cu-Au) skarn;

		Considerable exploration has taken place in and around the Cangai Copper Mine (closed) by several large explorers such as Western Mining and CRA Exploration, the results of which are covered in the Local Geology section.
Geology	• *Deposit type, geological setting and style of mineralisation.*	**Regional Geology** The underlying geology is contained within the Coffs Harbour Block, east of the Demon Fault. The major basement unit is the Silurian-Devonian Silverwood Group (locally the Willowie Creek Beds), a mixed sequence of tuffaceous mudstones, intermediate to basic igneous rocks, slates, and phyllites, a low stage of regional metamorphism. Overlying this rock formation is a younger tectonic melange of Early Carboniferous age – the Gundahl Complex of slates, phyllites and schist, with chert, greenstone and massive lithic greywackes. These rocks are intruded by the Early Permian Kaloe Granodiorite, which also in turn is intruded by numerous later-stage mafic dykes. **Local Geology** The local geology is well understood as considerable exploration has taken place in and around the Cangai Copper Mine (closed) by several major explorers such as Western Mining and CRA Exploration, the results of which are covered in the section below. **Western Mining 1982-1984** Western Mining found that the recognition of substantial amounts of pyrrhotite in high grade ore collected from mine dumps led to the reappraisal of previous explorer's ground magnetics (Brown, 1984). Two soil anomalies were identified @ +60ppm Cu (max 1100ppm) and several strong linear magnetic anomalies (=250nT above background). Soil sampling and detailed ground inspections conducted over the linear magnetic high failed to identify any anomalous geochemistry or a possible source lithology. A 180m diamond drill hole was drilled to test the anomaly. Given the poor results of both the drilling and the follow-up stream sediment sampling, no further work was recommended. The decision was made to relinquish the licence in 1984.

CRA Exploration 1991-1992

CRA Exploration examined the geological form, setting and genesis of the mineralisation at the Cangai Copper Mine over several years. The work carried out consisted of geological mapping, collection of rock chip samples, and underground investigations at the mine site. Drill core from a CRA exploration program and mine dumps were also inspected. They concluded that the Cangai Copper Mine is hosted by sedimentary rocks of the Siluro-Devonian Willowie Creek Beds of tuffaceous mudstones, tuffaceous sandstones and conglomerates. Mineralisation appears to be associated with steeply plunging ore shoots in and adjacent to the main shear zone (Figure 2). Massive primary ore consists of chalcopyrite, pyrite and pyrrhotite with lesser sphalerite and minor arsenopyrite and galena. A detailed, well documented report was produced, but no reasons were given for the relinquishment of the licence.

Figure 2 Rock Chip Sampling at Cangai Copper Mine

Appendix 5 Ore Sample Assays

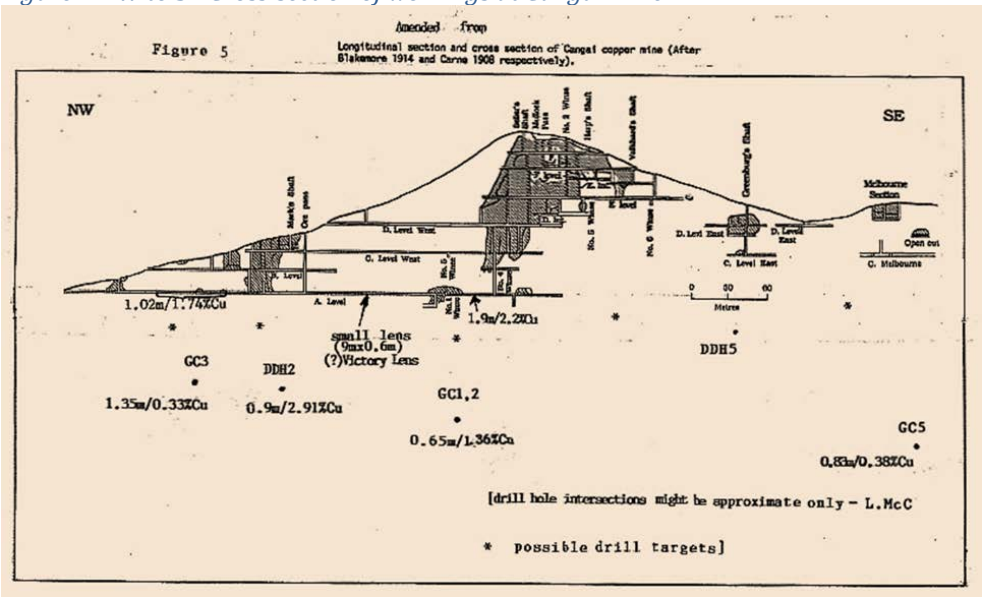
Similar dump samples to those collected by the author were submitted for analysis by CRA Exploration. Selected assays are presented below. Values are ppm unless otherwise stated.

	1	2	3	4	5	6
Cu	15.3%	28.6%	12.4%	14.8%	10.6%	11.0%
Pb	640	1200	1800	7550	800	2500
Zn	4.68%	1.27%	2.35%	9.50%	6400	5.10%
Ag	76	86	30	49	160	150
As	4750	1650	4850	3800	4750	7150
Mn	185	240	370	430	155	150
Au	1.80	2.50	0.72	2.30	1.32	1.85
Fe	30.9%	22.6%	28.2%	32.9%	33.8%	27.4%
S	27.5%	3.73%	16.6%	29.6%		
Co	70	25	300	330	370	300
V					<10	<10
Ba					<10	20
Ni					<5	<5
Bi					30	80
Cd					14	90

Sample description

1 Massive chalcopyrite-pyrite ore
2 Oxide material
3 Massive pyrite chalcopyrite rock with gangue clasts
4 Well banded pyrite-sphalerite ore
5 Weakly banded massive sulfide
6 Weakly banded massive sulfide

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:* o *easting and northing of the drill hole collar* o *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* o *dip and azimuth of the hole* o *down hole length and interception depth* o *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	• During late May 2017, ROM Resources personnel visited the NSW Geological Survey core storage facility at Londonderry in the Western Sydney area, to view, log and resample Cangai Mine cores. Of the ten (10) drillholes completed by various exploration and mining companies (including Western Mining and CRA Exploration) during the period 1972-1991, eight (8) had core stored with the Department. • As this was a preliminary visit, and many of the core only had quarter core samples remaining it was decided to scan targeted areas with a portable pXRF machine, and record the average grade for a suite of minerals over that interval which were generally 0.5-2m in length. • The drillholes were sited in and around the mined-out areas and generally the target intervals were of andesite or tuff that had been brecciated and displaying multi-sulphide mineralisation were tested. Some of the intervals tested had normal laboratory results available, but only for Cu, Au, Ag, Pb and Zn. Comparisons have yet to be made with the pXRF values, only to note that pXRF copper values were higher than the comparable assayed interval. • A summary of selected results for all holes combined is given below in Table 3. In all 22 elements were tested. • Total Minerals considers that if laboratory retesting of the core for cobalt is achieved then, combined with the mine working data and other geological information, sufficient data exists to calculate a small copper-cobalt-zinc resource based on the unmined portions of the now closed Cangai Copper Mine. *Table 3: Summary of Cangai pXRF Testing* **Element** / **Total Tests** / **Anomalous Threshold (ppm)** / **Number of Anomalous Values** / **Highest Value ppm** **Cu** / 37 / 500 / 17 / 190,000 (19%) **Pb** / 37 / 600 / 3 / 2,500 **Zn** / 37 / 600 / 5 / 1,860 **Co** / 37 / 50 / 4 / 730 **Au** / 37 / 5 ppb / 1 / 25ppb **Ag** / 37 / 2 / 2 / 15 **U** / 37 / 50 / 1 / 170

		Note: pXRF testing is indicative only, and further laboratory testing is required. It should be noted that the main purpose of the pXRF testing was to confirm the presence of cobalt which was previously not analysed.
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.*	• No compositing has taken place.
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 (e.g. 'down hole length, true width not known').*	• Figure 3, below is a cross-section showing the four (4) main near vertical mineralised zones at the Cangai Mine. *Figure 3 NW to SE Cross-section of workings at Cangai Mine*  • Follow-up work is recommended (Phase 2), particularly the anomalous zones

		(which are in the process of being digitised off the 1908 and 1912 mine plans (Brauhart 1991), should become priority targets for geological mapping, ground magnetic and EM surveys. • Data is also being extracted from a thorough UNSW Honours Thesis as referenced below: Brauhart, C. (1991). The Geology & Mineralisation of the Cangai Copper Mine, Coffs Harbour Block Northeastern New South Wales. CRAE Report No: 17739. University of NSW.
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.*	• Current surface anomalies are shown on maps in the report. All historical surface sampling has had their coordinates converted to MGA94, Zone 54.
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 avoiding misleading reporting of Exploration Results.*	• No new exploration results have been reported, but regarding the surface sampling, no results other than duplicates or reference standard assays have been omitted.
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.*	• Historical explorers have also conducted airborne and ground gravity, magnetic, EM, and resistivity surveys over parts of the tenure area but this is yet to be collated.
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.*	While further desktop work is still required, as cobalt was not the focus of previous exploration activities, Total Minerals intends to commence suitable fieldwork within the next few months to assist in gathering data that could identify a resource to 2012 JORC standards. Drillhole and assay data will have to be encoded and validated. New laboratory assaying will be required of the historic core to confirm pXRF readings. Conclusions by CRA Exploration in 1991 noted “that because of uncertainty over shoot pitch and correlation between longitudinal sections generated by the various mining companies it is not clear whether the historic drilling was well suited to test for copper ore extensions”. No JORC Resources have been outlined to date at Cangai, but there is potential for further economic mineralisation of (probably) moderate size:

		• As lower grade aureoles (3+%) around and below stopes (CRAE's drilling was 90-150m below the deepest level worked); • Blind deposits between the shoots in areas not tested to date (e.g. below the 1m @ 1.74% over 60m in “A” Level northwest of Marks Shoot; • Along the lateral extension of the line of lode as suggested by ground magnetics (part of which may fall outside EL 8625).

Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* • *Data validation procedures used.*	The original data was encoded initially to Excel spreadsheets at this stage, split per element. As evaluation has continued, the data has been migrated to a more appropriate relational database, (ABB's GDB)
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• A site visit was arranged for Tuesday 8th August 2017 and was undertaken by Neil Hutchison and Alan Armstrong, Directors of Castillo Copper (see Figure 4). • Figure 4 Outcropping Tuff and Mudstone near the Historical Cangai Mine 
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*	• Modelling is in progress, with the drillhole database has been loaded to a 3D modelling package, and validation is in progress.

	• *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation.* • *The use of geology in guiding and controlling Mineral Resource estimation.* • *The factors affecting continuity both of grade and geology.*	• Mineralisation, where present, exists in volcanic rock-hosted breccia's in or near fault intersections and other structural disturbances. • The mineralisation appears to be coincident with the outcrop of ferruginised laterite.
Dimensions	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	• Currently defined surface anomalies are 35-120m long elongated zones contained within a much more extensive mineralised zone (at least 690m at Cangai)
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.* • *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* • *The assumptions made regarding recovery of by-products.* • *Estimation of deleterious elements or other non-grade variables of economic significance (e.g. Sulphur for acid mine drainage characterisation).* • *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* • *Any assumptions behind modelling of selective mining units.* • *Any assumptions about correlation between variables.* • *Description of how the geological interpretation was used to control the resource estimates.* • *Discussion of basis for using or not using grade cutting or capping.* • *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	• No mineral resource estimates yet determined.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• Only limited moisture analyses were contained in the dataset.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• No cut-off grades yet determined for copper, zinc, silver or cobalt
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining*	• Mining factors not yet determined

	reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	• No assumptions made.
Environmen-tal factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.*	• Not required as no mineral resource estimated.
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• No bulk density measurements obtained so far.
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.* • *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* • *Whether the result appropriately reflects the Competent Person's*	• No resource estimated calculated as yet

	view of the deposit.	
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• No audit has taken place.
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• No mineral estimate calculated.