



# ASX ANNOUNCEMENT

ASX : CXO

16<sup>th</sup> June 2015

## Further zinc mineralisation found at Yerelina

### HIGHLIGHTS

- **Up to 14% combined lead and zinc at surface in new Grace shear**
- **New Grace shear located 500m west of 10m wide gossan at Big Hill**
- **High grade mineralisation now identified in at least 6 structures over a 8km x 2km prospective area at Yerelina**
- **Core recently awarded SA government co-funding towards the cost of planned diamond drilling program**
- **No systematic modern exploration or drilling has ever been undertaken in the area**

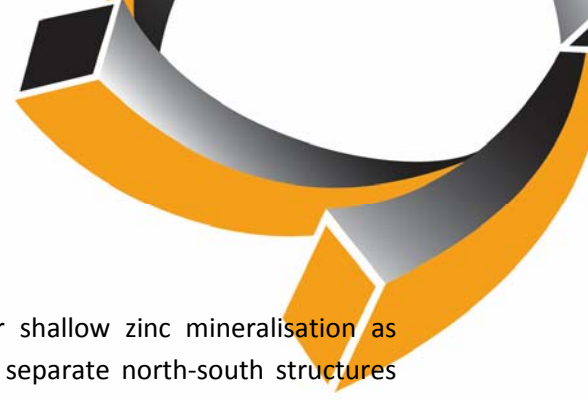
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Core Exploration Ltd's (ASX:CXO) ongoing exploration at Yerelina has identified a new mineralised shear zone with surface grades up to combined 14% zinc and lead. The new Grace shear was found by Core 600m west of the 10m wide gossan identified at the Big Hill shear zone also on the Yerelina zinc project in northern South Australia.

Core's exploration at Yerelina has identified anomalous zinc, lead and copper in soil samples west of Big Hill. Follow-up rock chip sampling of the anomalous soils revealed up to 14% zinc and lead combined in rock chips (handheld XRF) (Figure1).

These new results follow recent representative sampling across the , metal rich gossans over 10m wide at Big Hill and with zinc values up to 5% zinc at Great Gladstone. The 10m wide sub-cropping gossan at Big Hill is the surface expression of the Big Hill mineralised shear zone, which has highly anomalous zinc, lead and silver over at least 2km in sampling to date (Figure 1).

Core's surface mapping, detailed magnetic surveys and remote sensing imagery shows clear evidence of numerous historical workings and outcropping mineralisation that can be mapped over hundreds to thousands of metres in repetitious gossanous vein sets over a very broad 8km wide and



2 km long area. The Yerelina project is highly prospective for shallow zinc mineralisation as evidenced by high grade mineralisation identified on at least six separate north-south structures identified by Core (Figure 2).

Further rock chip and channel sampling along with regional and infill soils are currently underway on the Yerelina Zinc project to test extensions to and potentially discover additional mineralised shear zones.

Core’s 100%-owned Yerelina Project (EL 5015) covers approximately 1,000km<sup>2</sup> and is located 60km north-east of Perilya Limited’s Beltana zinc mine and rail and grid power at nearby Leigh Creek in northern South Australia.

Managing Director Stephen Biggins commented today “These high grade zinc results at surface may only be the tip of the iceberg on the Yerelina Zinc Project.”

“In a short space of time Core has been able to identify a large zinc target that extends over an area 8km wide and has individual targets up to 2km in strike”

**Future Work Program**

Further regional and infill soil sampling is underway at Yerelina to test for extensions of currently known shears and discover additional mineralised shears with in the 8km x 2km prospective area.

Laboratory results from representative channel samples are expected in the next 2 weeks.

Further rock chip, channel sampling and soil results are anticipated as the current field work progresses in the lead up to drilling.

Core has also been recently awarded a grant of \$75,000 as part of the SA Government’s PACE Discovery Drilling 2015 program. The proposed PACE assisted drilling project comprises a total of six angled diamond core holes (total of approx. 1000m) targeted under the known outcropping mineralisation to better understand grade distribution, mineralisation potential and geological controls.

Land access clearances have commenced to fast track the project for drilling as early as possible during Q3 2015.

SNO	MgE	MgN	Medium	Ag (g/t)	Pb (%)	Zn (%)
201057	334550	6672137	insitu XRF	239	12.93	1.22
201056	334563	6672121	insitu XRF	0	0.12	0.28
201058	334548	6672146	insitu XRF	25	1.2	0.47
201059	334542	6672154	insitu XRF	33	1.7	0.65
201060	334530	6672175	insitu XRF	19	0.69	0.51

Table 1: Grace Shear - Insitu Niton XRF readings

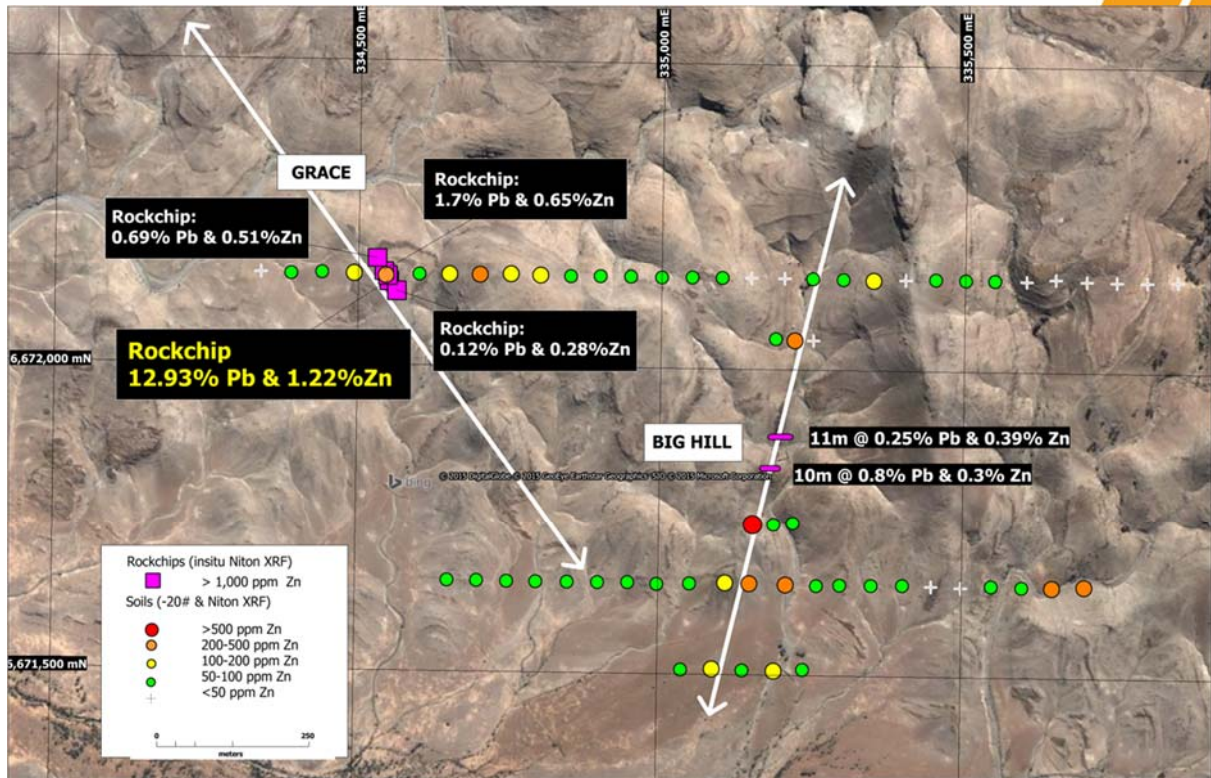


Figure 1. New soil and rock-chip results (XRF), previous channel sampling (XRF) and interpreted Grace and Big Hill shear zones, EL 5015, Yerelina.

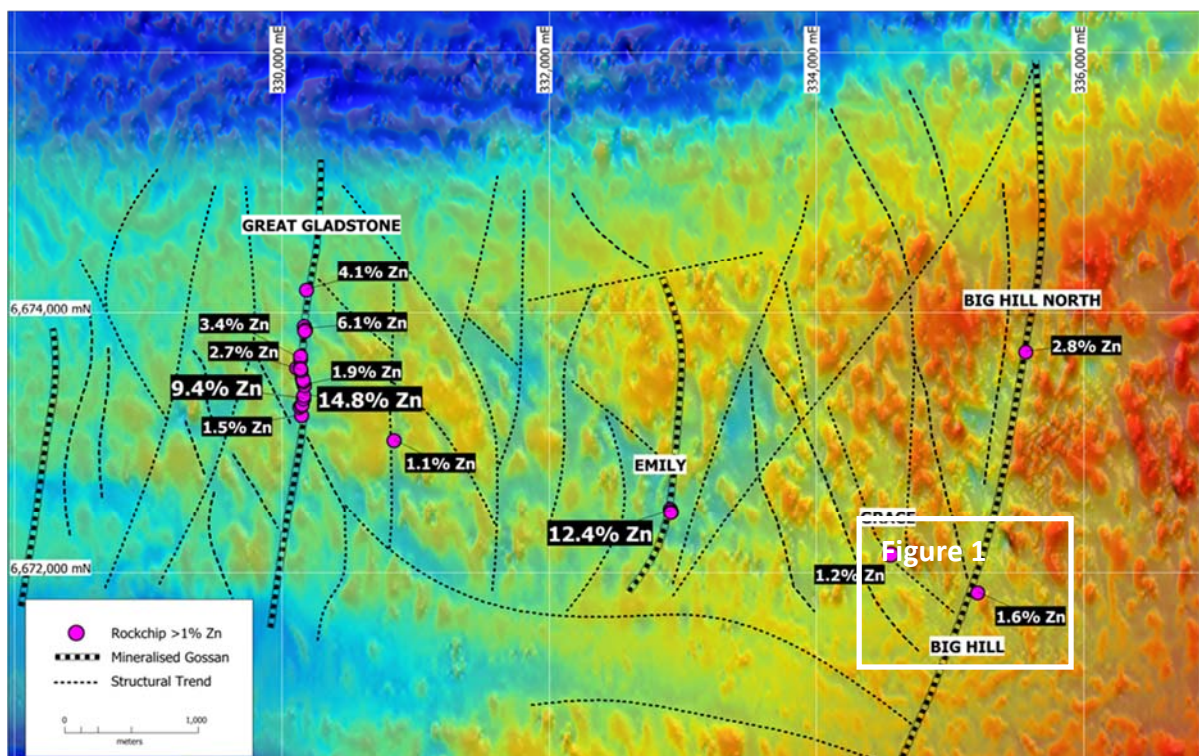


Figure 2. Multiple mineralised shear zone and interpreted to be repeated over 8km wide area overlain on magnetic image, EL 5015 Yerelina.





## Yerelina Project Background

High-grade silver-lead-zinc mineralisation within Tapley Hill Formation was historically mined 100 years ago at Yerelina in the northern Flinders Ranges. Whilst there remains clear evidence of numerous historical workings and outcropping mineralisation that can be mapped in repetitious, kilometre long vein sets over a very broad area, no systematic modern exploration has been undertaken and the area has never been drill tested.

Core's analysis of modern satellite imagery and the Company's detailed heli-borne magnetic and radiometric survey data have identified that these workings are hosted by a large scale system of repeated north/south regional structures. The Company identified that potential gossanous outcrop and host structure could be seen in the landscape to both the north and the south of the historical workings and multiple potential repeats of the known mineralised faults have been identified as magnetic lows (Figure 2).

The Company has located and sampled 23 historical mining areas (shafts, drives and trenches) along six separate mineralised faults to date.

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*The information in this report that relates to Exploration Results and Mineral Resources is based on information compiled by Stephen Biggins (BSc(Hons)Geol, MBA) as Managing Director of Core Exploration Ltd who is a member of the Australasian Institute of Mining and Metallurgy and is bound by and follows the Institute's codes and recommended practices. He has sufficient experience which is relevant to the styles of mineralisation and types of deposits under consideration and to the activities 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. Biggins consents to the inclusion in the report of the matters based on his information in the form and context in which it appears. This report also references information previously released under JORC Code 2012 to the ASX on 02/06/15 titled "10m wide gossan found at Yerelina Zinc Project".*

*This report also includes exploration information that was prepared and first disclosed by Core under the JORC Code 2004. It has not been updated since to comply with the JORC Code 2012 on the basis that the information has not materially changed since it was last reported. The information in all previous announcements has been compiled by Mr Stephen Biggins as the Competent Person and who provided his consent for all previous announcements. The information that was reported in announcements previously released under JORC Code 2004 is the announcement dated 19/03/2013 titled "High Grade Lead-Zinc-Silver Assays from S.A. Project"*



## Yerelina – June 2015– JORC 2012

### Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary
<b>Sampling techniques</b>	<ul style="list-style-type: none"> <li><i>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.</i></li> <li><i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i></li> <li><i>Aspects of the determination of mineralisation that are Material to the Public Report.</i></li> <li><i>In cases where 'industry standard' work has been done this would be relatively simple (eg 'RC 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.</i></li> </ul>	<ul style="list-style-type: none"> <li>-20 mesh sieved soil samples (~200g) and insitu outcrop xrf Readings (~500g) where soil under developed.</li> <li>Soil samples collected at 50 metre centres on random spaced traverses</li> <li>Soil samples collected from a nominal 5-10cm depth</li> </ul>
<b>Drilling techniques</b>	<ul style="list-style-type: none"> <li><i>Drill type (eg core, RC, 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).</i></li> </ul>	<ul style="list-style-type: none"> <li>Soil sampling and insitu XRF readings only</li> </ul>
<b>Drill sample</b>	<ul style="list-style-type: none"> <li><i>Method of recording and assessing core and chip sample recoveries</i></li> </ul>	<ul style="list-style-type: none"> <li>Soil sampling and insitu XRF readings only</li> </ul>



Criteria	JORC Code explanation	Commentary
<b>recovery</b>	<p><i>and results assessed.</i></p> <ul style="list-style-type: none"> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>	
<b>Logging</b>	<ul style="list-style-type: none"> <li>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.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>Various sample site parameters are recorded for each site including: Terrain, Cover Characteristics, Presence of organics, soil type, lag type, sub-crop type, and vegetation.</li> <li>Rock chips photographed</li> </ul>
<b>Sub-sampling techniques and sample preparation</b>	<ul style="list-style-type: none"> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> </ul> <p><i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i></p> <p><i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i></p> <p><i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i></p> <ul style="list-style-type: none"> <li>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field</li> </ul>	<ul style="list-style-type: none"> <li>See Sampling section above for a description of sampling and sub-sampling techniques.</li> <li>Sample sizes are considered appropriate for the expected grainsize of mineralisation.</li> <li>Every twentieth sample collected for analysis was duplicated. A certified standard was analysed in sequence every 25 analyses.</li> <li>Subsampling techniques are undertaken in line with standard operating practices in order to ensure no bias associated with sub-sampling.</li> </ul>



Criteria	JORC Code explanation	Commentary
	<p><i>duplicate/second-half sampling.</i></p> <ul style="list-style-type: none"> <li><i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i></li> </ul>	<ul style="list-style-type: none"> <li>The nature, quality and appropriateness of the sampling technique is considered adequate for the type of mineralisation and confidence level being attributed to this initial sampling.</li> </ul>
<b>Quality of assay data and laboratory tests</b>	<ul style="list-style-type: none"> <li><i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i></li> <li><i>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.</i></li> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>Analysis was undertaken using Core Exploration's Niton XL3t 950 GOLDD+ handheld XRF (SN:61847) in "SOIL" mode</li> <li>Soil analysis was undertaken under controlled conditions using a Niton Portable Stand and the analyser directly connected to a computer.</li> <li>In situ rockchip readings were taken using the same Niton XRF without extracting a sample from the rock outcrop</li> <li>The Niton has a new XRF tube and was calibrated by Portable Analytical Solutions in March 2015</li> <li>Analysis time was 90 seconds (30 seconds for each window)</li> <li>No other calibration adjustments were made.</li> <li>Soil samples were wrapped in a single layer of cling film for analyses and standards when used were also wrapped in a single layer of cling film. Only negligible attenuation was observed analysing standards with or without the cling film wrap</li> <li>Duplicates and a certified standard (Niton RCRAApp which was considered appropriate for silver and base-metals) were inserted in sequence as detailed above.</li> </ul>
<b>Verification of sampling and</b>	<ul style="list-style-type: none"> <li><i>The verification of significant intersections by either independent or alternative company personnel.</i></li> </ul>	<ul style="list-style-type: none"> <li>Primary data is captured directly into an in-house referential and integrated database system designed and managed by the Exploration Manager. All analysis data is cross-validated within the database by various integrity scripts.</li> </ul>



Criteria	JORC Code explanation	Commentary
<b>assaying</b>	<p><i>the use of twinned holes.</i></p> <p><i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></p> <p><i>Discuss any adjustment to assay data.</i></p>	<ul style="list-style-type: none"> <li>Analysis data is not adjusted.</li> </ul>
<b>Location of data points</b>	<ul style="list-style-type: none"> <li><i>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.</i></li> <li><i>Specification of the grid system used.</i></li> <li><i>Quality and adequacy of topographic control.</i></li> </ul>	<ul style="list-style-type: none"> <li>All coordinates are recorded in GDA 94 MGA Zone 53.</li> <li>Surveys were undertaken by Core Exploration staff using a hand-held GPS this tool has an accuracy of approximately 3m.</li> </ul>
<b>Data spacing and distribution</b>	<ul style="list-style-type: none"> <li><i>Data spacing for reporting of Exploration Results.</i></li> <li><i>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.</i></li> <li><i>Whether sample compositing has been applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>Initial reconnaissance soil and outcrop sampling only.</li> <li></li> </ul>
<b>Orientation of data in relation to geological structure</b>	<ul style="list-style-type: none"> <li><i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i></li> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>Initial reconnaissance soil and outcrop sampling only.</li> </ul>
<b>Sample security</b>	<ul style="list-style-type: none"> <li><i>The measures taken to ensure sample security.</i></li> </ul>	<ul style="list-style-type: none"> <li>Samples are retained by the company for future reference and are stored in CXO's Adelaide office</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li><i>The results of any audits or reviews of sampling techniques and data.</i></li> </ul>	<ul style="list-style-type: none"> <li>No audits or reviews have been undertaken</li> </ul>





## Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
<b>Mineral tenement and land tenure status</b>	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Yerelina is contained within EL 5015 that is 100% held by Sturt Exploration Pty Ltd a wholly owned subsidiary of Core Exploration Ltd.</li> <li>Core Exploration manages EL 5015.</li> <li>EL 5015 is located on Mt Freeling Station.</li> <li>All drilling was undertaken outside of Heritage, Conservation or National Parks on EL 5015.</li> </ul>
<b>Exploration done by other parties</b>	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>Modern exploration is very limited in the Yerelina area however extensive historical workings dating back to 1908 are evident as a number of shafts and drives</li> </ul>
<b>Geology</b>	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul style="list-style-type: none"> <li>The mineralisation style targeted is silver and base-metal veining within an antiformal structure of Tapley Hill Formation</li> </ul>
<b>Drill hole Information</b>	<ul style="list-style-type: none"> <li>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: <ul style="list-style-type: none"> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Initial reconnaissance soil and outcrop sampling only.</li> </ul>



Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>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.</li> </ul>	
<b>Data aggregation methods</b>	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul style="list-style-type: none"> <li>Initial reconnaissance soil sampling only. No metal equivalents are reported.</li> </ul>
<b>Relationship between mineralisation widths and intercept lengths</b>	<ul style="list-style-type: none"> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>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').</li> </ul>	<ul style="list-style-type: none"> <li>Initial reconnaissance soil and outcrop sampling only.</li> </ul>
<b>Diagrams</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>See attached plans showing sample density.</li> </ul>
<b>Balanced reporting</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>All rock cutting analyses are reported</li> </ul>
<b>Other substantive exploration</b>	<ul style="list-style-type: none"> <li>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</li> </ul>	<ul style="list-style-type: none"> <li>Exploration activity is very limited at Yerelina however CXO collected heli-magnetic and radiometric data in 2012, undertook previous rock-chip sampling of anomalous gossans / historical mullock piles and</li> </ul>



Criteria	JORC Code explanation	Commentary
<b>data</b>	<i>method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</i>	submitted a limited number of samples for petrology.
<b>Further work</b>	<ul style="list-style-type: none"> <li><i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></li> <li><i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i></li> </ul>	<ul style="list-style-type: none"> <li>Subject to Board approval drilling may be undertaken</li> </ul>