



# ASX ANNOUNCEMENT

ASX : CXO

2<sup>nd</sup> June 2015

## 10m wide gossan found at Yerelina Zinc Project

### HIGHLIGHTS

- **10m wide gossan found to be high in zinc, lead and silver as part of 2km long mineralised shear zone**
- **Up to 14.7 % zinc, 11.7% lead, and 567 g/t silver assays in previous rock chips from sampling of old workings and gossans discovered by Core on EL 5015 in S.A.**
- **High grade mineralisation identified in at least 5 individual structures to date interpreted to be up to 1.5km long.**
- **Further sampling and soil results expected during the next three weeks**
- **Core awarded SA government co-funding towards the cost of planned diamond drilling program**
- **Drilling approvals submitted to fast track the project**

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Core Exploration Limited (ASX:CXO) is pleased to announce new zinc results from a new 10m wide gossan found at the Company's Yerelina zinc project in northern South Australia.

Representative sampling across the newly identified wide, metal rich gossans on Yerelina Zinc Project in South Australia has identified zones over 10m wide at Big Hill and zinc values up to 5% zinc (XRF refer Section 1) 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 2).

5km to the east of Big Hill, Core's previous mapping campaigns have discovered high grade zinc, lead and silver mineralisation extending over 1 kilometre at Great Gladstone. Of the 38 samples taken along a 1 km section of fault zone at Great Gladstone, 34 returned combined lead and zinc assays in excess of 10,000ppm and over 1 g/t silver with the best assay at 14.7% zinc. Lead values peaked at 12.7% and silver at 567 g/t (Figure 1).



Channel sampling at Great Gladstone indicates grades of 2.5-3% zinc and up to 109g/t silver and 4.9% lead in channel sampling over 300m apart (Table 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 five separate north-south structures identified by Core.

Further channel and rock chip 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.

Prospect	East	North	Interval (m)	Ag g/t	Pb%	Zn%	Pb+Zn%
Big Hill	335193	6671840	10m	25	0.25	0.39	0.64
Big Hill	335202	6671895	11m	20	0.80	0.30	1.20
Great Gladstone	330138	6673585	2m	109	4.90	2.50	7.40
Great Gladstone	330167	6673908	2.5m	33	0.50	3.00	3.60

Table 1. XRF channel surface gossan sampling results, EL 5015, SA.

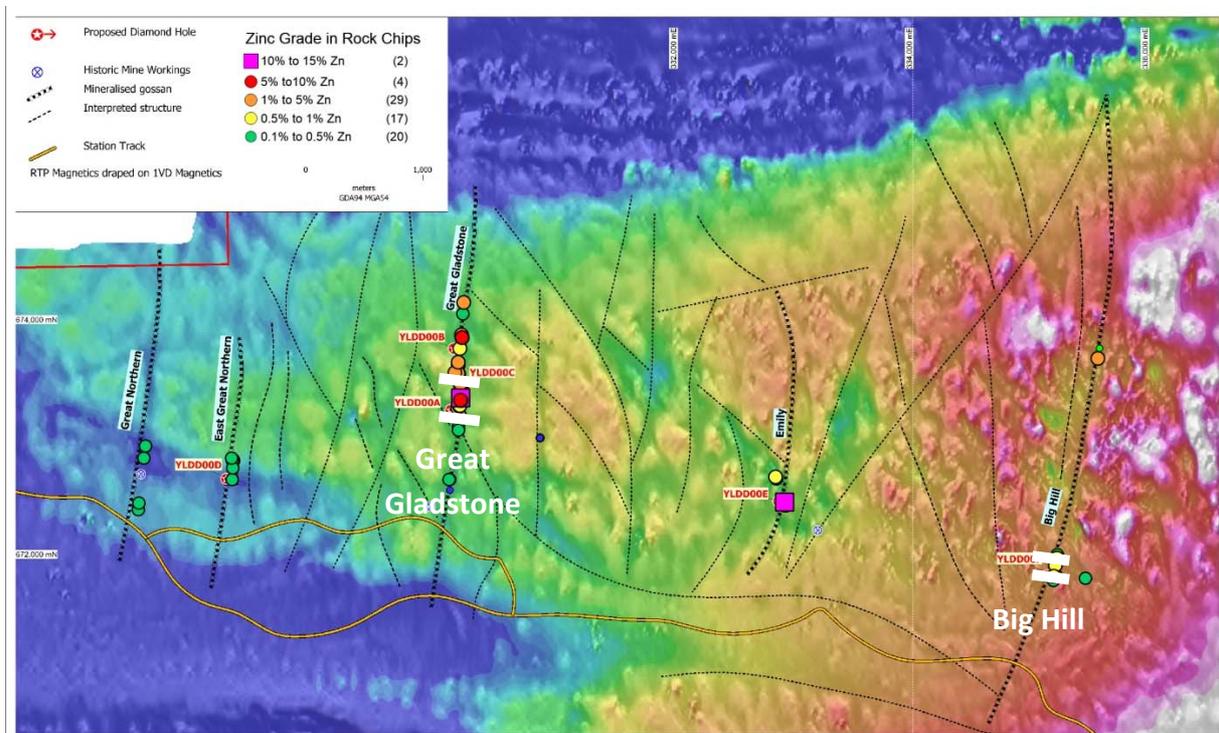


Figure 1. RTP Magnetic Imagery showing structural interpretation, zinc grade in rock chips and channel locations.

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### Exploration to date

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 then undertook a series of reconnaissance sampling and mapping programs at Yerelina during 2012, 2013 and 2014 that identified extensions to the previously identified mineralisation at historical workings.

Core's mapping located and sampled 23 historical mining areas (shafts, drives and trenches) along five separate mineralised faults. To date a total of 118 rock chip samples have been collected from both in situ gossans and mullock heaps adjacent to historic workings (Figure 1). Core is excited by the consistency of grade and scale of the mineralisation identified thus far at the project.



Figure 2. Representative channel sampling of Big Hill gossan material, EL 5105

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## Future Work Program

The finely ground rock material from representative channel samples will be submitted for assay and laboratory results are expecting in the next 3 weeks.

Further channel sampling results are expected from other shear zones as the current field work progresses.

Reconnaissance and infill soil sampling is also underway at Yerelina to test for extensions of currently known shears and discover additional mineralised shears within the 8km x 2km prospective area.

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.

Preparation for drilling at Yerelina including submission of a Program for Environmental Management and Rehabilitation (PEPR) and Cultural Heritage Clearances has commenced to fast track the project for drilling.

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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 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"*

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## Yerelina – May 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>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.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Rock samples collected as ground powder from channels cut using a handheld diamond saw. Depth of cut ~2cm. Fine grained rock material collected in a container behind the cutting disk and bagged.</li> <li>Individual sampling over 0.5 and 1 metre intervals composited to one reportable intersection across each outcropping gossan</li> </ul>
<b>Drilling techniques</b>	<ul style="list-style-type: none"> <li>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).</li> </ul>	<ul style="list-style-type: none"> <li>Outcrop rock cuttings only</li> </ul>
<b>Drill sample recovery</b>	<ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> </ul>	<ul style="list-style-type: none"> <li>Outcrop rock cuttings only</li> </ul>



Criteria	JORC Code explanation	Commentary
	<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. <i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i> <i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i> <i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i></li> <li>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.</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> <li>The nature, quality and appropriateness of the sampling technique is considered adequate for the type of mineralisation and confidence</li> </ul>



Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul style="list-style-type: none"> <li>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>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>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.</li> <li>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.</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>Analysis was undertaken under controlled conditions using a Niton Portable Stand and the analyser directly connected to a computer</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>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> <li>9 samples have been submitted to Intertek Genalysis for check assay using method 4AOM10 (ICP-OES and ICP-MS)</li> </ul>
<b>Verification of sampling and assaying</b>	<ul style="list-style-type: none"> <li>The verification of significant intersections by either independent or alternative company personnel.</li> </ul> <p>the use of twinned holes.</p> <p>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</p>	<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> <li>Analysis data is not adjusted.</li> </ul>



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	<ul style="list-style-type: none"> <li>Discuss any adjustment to assay data.</li> </ul>	
<b>Location of data points</b>	<ul style="list-style-type: none"> <li>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.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</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>Data spacing for reporting of Exploration Results.</li> <li>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.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul style="list-style-type: none"> <li>Initial reconnaissance outcrop sampling only.</li> <li>Initial samples collected at 0.5 to 1m spacing across outcropping gossans</li> <li>Individual samples were composited using weighted average to generate one composite result per traverse</li> </ul>
<b>Orientation of data in relation to geological structure</b>	<ul style="list-style-type: none"> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Initial reconnaissance outcrop sampling only.</li> </ul>
<b>Sample security</b>	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</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>The results of any audits or reviews of sampling techniques and data.</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 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>A weighted average of individual 0.5 or 1 m samples was composited to generate an average grade across each outcrop.</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 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 data</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 method of treatment; metallurgical test results; bulk density,</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 submitted a limited number of samples for petrology.</li> </ul>



Criteria	JORC Code explanation	Commentary
	<i>groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</i>	
<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>