



## ASX Announcement

### AusTin Mining Limited (ASX:ANW)

5 July 2016

## High Grade Cobalt Results & New Target South of Mt Cobalt

### Highlights

- **New high grade cobalt target centred on historic high grade workings south of Mt Cobalt.**
- **Rock chip samples assaying up to 1.66%Co obtained during recent field reconnaissance.**
- **Overall cobalt target at Mt Cobalt now approximately 800m in length.**

The Directors of Aus Tin Mining Limited (**the Company**) are pleased to announce the results of recent field reconnaissance south of Mt Cobalt located 40km west of Gympie in Queensland. The Company has identified a new cobalt target south of Mt Cobalt centred on a recently identified historic mine, and this new zone extends the overall cobalt target to approximately 800m in length. Rock chip samples taken from within the target area assayed up to 1.66%Co. The Company intends to pursue an exploration program at the target area and assess the feasibility of mining and beneficiation.

Mt Cobalt is situated within EPM 19366 (100% held by Aus Tin Mining) and was historically the centre of mining for high grade, cobalt-manganese rich mineral asbolite (asbolite is also mined in the Democratic Republic of Congo, New Caledonia and Zambia). Historical records for the Smith mine (approximately 200m south of Mt Cobalt itself) report mining a lode approximately 7m in true width to a depth of 25m with a grade of 7.5%Co, 2.5% Ni and 18%Mn<sup>1</sup>. For comparison, typical economic grades reported for cobalt deposits range from 0.1 to 0.15 percent<sup>2</sup>.

Previous exploration undertaken at Mt Cobalt (from 2007 to 2010) focussed on the extensive nickel mineralisation (garnieritic-saprolite) beneath the laterite on Mt Cobalt itself. Whilst secondary cobalt mineralisation is associated with garnierite (a nickel oxide which is distributed broadly at grades of approximately 0.5% nickel), little exploration has been undertaken on the primary asbolite cobalt mineralisation. Until recently, no exploration had been undertaken at the historic Smith high grade cobalt mine south of Mt Cobalt.

Field reconnaissance was undertaken in June 2016 proximate to the historic Smith workings and beyond the southern extent of previous drilling / rock chip sampling at Mt Cobalt. Mapping of the north-south trending mineralised shear zone along strike from the historic Smith workings has generated a new overall target of approximately 800m in total length (Figure 1). Cobalt grades of up to 1.66%Co were obtained from rock chip samples taken within the overall target with further details provided in Table 1.

<sup>1</sup> Source - Report on a Cobalt Lode at the Black Snake near Kilkivan; WH Rands; 1887

<sup>2</sup> Source – Cobalt; British Geological Society; 2009

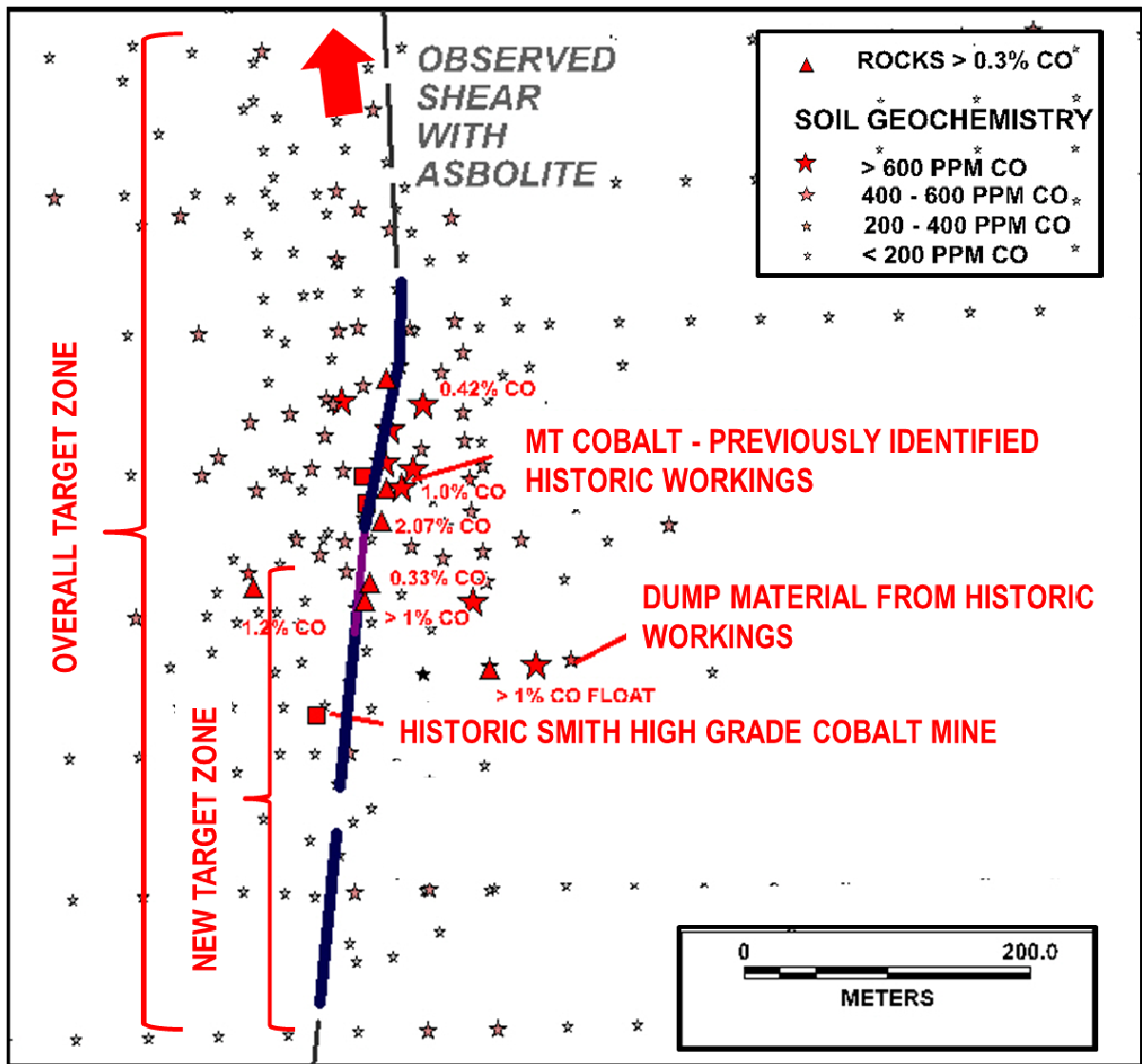


Figure 1 – Target Zone at Mt Cobalt (40km west of Gympie, QLD)

Easting	Northing	Co (%)	Ni (%)	Cu (%)
427662E	7102365N	2.070	0.841	0.317
427661E	7102382N	1.665	0.668	0.210
427742E	7102257N	1.535	0.407	0.219
427575E	7102316N	1.175	0.929	0.178
427652E	7102374N	1.275	0.642	0.160
427657E	7102302N	1.000	0.753	0.179

Table 1 –Selected rock chip results greater than 1.0%Co for all exploration from Overall Target Area (refer Appendix 1)

Mapping and historical review by the Company indicates a steep dip to the west which has not been intersected by previous nickel exploration drilling. Evidence of the shear zone north of Mt Cobalt (Figure 2) could extend the target zone beyond an overall length of 800m.



**Figure 2 – North-South Shear north of Mt Cobalt, dipping steeply west**

The Company intends to undertake further field work to determine suitable sites from which to undertake a drilling program in the second half of 2016. The Company will also assess the technical factors of mining the cobalt lode and undertake preliminary metallurgical test work.

### **About Cobalt**

In 2014/15, cobalt consumption was estimated at 90,150 tonnes, with approximately 49 percent of all cobalt used in rechargeable batteries. Cobalt is a key component of rechargeable batteries, including lithium-ion batteries and chemical consumption is set to grow at more than 7.5 percent per annum to 2020 as a function of the increasing demand for lithium-ion batteries<sup>3</sup>. Cobalt's other main uses include superalloys (18 percent), hard metals (8 percent) and ceramics/pigments (6 percent).

In 2015/16, refined cobalt output is estimated at 92,877 tonnes and mine production at 108,620 tonnes, with approximately 65 percent of global mine production from the Democratic Republic of Congo (DRC). Whilst cobalt is predominantly extracted as a by-product of other metals, notable nickel and copper, an increasing proportion (circa 14,500 tonnes) is being sourced from artisanal mining, notably from the DRC. DRC holds approximately 47 percent of the global cobalt resource base<sup>4</sup>.

Global cobalt supply/demand is forecast to be in deficit from 2016<sup>4</sup> owing to a combination of lower nickel and copper prices curtailing cobalt production as a by-product, increased pressure on artisanal mining in Africa and increasing demand. Consequently prices are expected to rise strongly from current levels of circa US\$23,000/t, with CRU forecasting prices above US\$35,000/t<sup>3</sup>.

On behalf of the Board  
KM Schlobohm  
Company Secretary

<sup>3</sup> Source – CRU, 2016

<sup>4</sup> Source - Cobalt Market Review 2015-2016; Darton Commodities Ltd, 2016

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Electronic copies and more information are available on the Company website: [www.austinmining.com.au](http://www.austinmining.com.au)

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**About Aus Tin Mining (the Company)**

Aus Tin Mining Limited (ASX: ANW) has a vision to become a major Australian tin producer. The Company is currently recommissioning the high grade Granville Tin Project located north of Zeehan (TAS). Subject to regulatory approvals, the Company intends to expand the Granville Tin Project and undertake exploration to extend the Life of Mine. The Company is also developing the world class Taronga Tin Project located near Emmaville (NSW). The Company defined and announced its maiden JORC compliant resource for the Taronga Tin Project in late 2013, and testwork and exploration activities on site have revealed potential credits for copper, silver, tungsten, molybdenum, lithium and rubidium. Highly prospective regional targets have also been established within the Company's broader tenement footprint, and within trucking distance of the proposed processing site at Taronga. Plans for a staged development of the Taronga Tin Project are in formation, together with the associated approvals processes.

The Company also maintains an active exploration program. The Company holds a portfolio of exploration licenses prospective for nickel, cobalt and copper (Kilkivan QLD); and tin, copper, silver, tungsten and lithium (Torrington NSW) and nickel (TAS).

### **Forward Looking Statement**

This announcement may contain certain statements and projections provided by or on behalf of Aus Tin Mining Limited (Aus Tin Mining) with respect to the anticipated future undertakings. These forward-looking statements reflect various assumptions by or on behalf of Aus Tin Mining. Accordingly, these statements are subject to significant business, economic and competitive uncertainties and contingencies associated with exploration and/or mining which may be beyond the control of Aus Tin Mining which could cause actual results or trends to differ materially, including but not limited to price fluctuations, exploration results, reserve and resource estimation, environmental risks, physical risks, legislative and regulatory changes, political risks, project delay or advancement, ability to meet funding requirements, factors relating to property title, native title and aboriginal heritage issues, dependence on key personnel, share price volatility, approvals and cost estimates. Accordingly, there can be no assurance that such statements and projections will be realised. Aus Tin Mining makes no representations as to the accuracy or completeness of any such statement of projections or that any forecasts will be achieved.

Additionally, Aus Tin Mining makes no representation or warranty, express or implied, in relation to, and no responsibility or liability (whether for negligence, under statute or otherwise) is or will be accepted by Aus Tin Mining or by any of their respective officers, directors, shareholders, partners, employees, or advisers as to or in relation to the accuracy or completeness of the information, statements, opinions or matters (express or implied) arising out of, contained in or derived from this presentation or any omission from this presentation or of any other written or oral information or opinions provided now or in the future to any interested party or its advisers. In furnishing this presentation, Aus Tin Mining undertakes no obligation to provide any additional or updated information whether as a result of new information, future events or results or otherwise.

Nothing in this material should be construed as either an offer to sell or a solicitation of an offer to buy or sell securities. It does not include all available information and should not be used in isolation as a basis to invest in Aus Tin Mining Limited.

### **COMPETENT PERSON STATEMENT**

The information in this presentation that relates to Exploration Targets and Exploration Results is based on information compiled by Mr Nicholas Mather B.Sc (Hons) Geol., who is a Member of The Australian Institute of Mining and Metallurgy. Mr Mather is employed by Samuel Capital Pty Ltd, which provides certain consultancy services including the provision of Mr Mather as a Director of Aus Tin Mining. Mr Mather has more than five years experience which is relevant to the style of mineralisation and type of deposit being reported and to the activity, which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Minerals Resources and Ore Reserves' (the JORC Code). This public report is issued with the prior written consent of the Competent Person(s) as to the form and context in which it appears.

The information in this Announcement that relates to Mineral Resources is based on information extracted from the report entitled "Maiden JORC Resource Estimated for the Taronga Tin Project" created on 26<sup>th</sup> August 2013 and is available to view on [www.austinmining.com.au](http://www.austinmining.com.au). Aus Tin Mining confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

In the information in this Announcement that relates to Ore Reserves is based on information extracted from the report entitled "Pre-Feasibility Advances the Taronga Tin Project" created on 7<sup>th</sup> April 2014 and is available to view on [www.austinmining.com.au](http://www.austinmining.com.au). Aus Tin Mining confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

**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
<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 ‘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.</li> </ul>	<ul style="list-style-type: none"> <li>These are continuous chip samples from rock exposures and in some cases floaters.</li> <li>The area has few exposed outcrops except close to old mine excavations. The samples have been selected on the basis of their grade being greater than 1% in order to demonstrate that such grades are present, and support reports to that effect by government geologists. It is assumed that similar grades can be found by drilling under adjacent scree cover.</li> <li>All assays have been by accredited laboratories, not by portable XRF or other in house techniques.</li> </ul>
<b>Drilling techniques</b>	<ul style="list-style-type: none"> <li>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).</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> <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</li> </ul>	



Criteria	JORC Code explanation	Commentary
	<i>fine/coarse material.</i>	
<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>	
<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> <li>• If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>• For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>• Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</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> <li>• Whether sample sizes are appropriate to the grain size of the material being sampled.</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>• All rocks were assayed by an accredited laboratory using acid digestion and MS-ICP. The samples greater than 15 Co were reassayed by ALS using a specific ore grade technique Co-OG62</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> <li>• The use of twinned holes.</li> <li>• Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>• Discuss any adjustment to assay data.</li> </ul>	<ul style="list-style-type: none"> <li>• Grades of greater than 1% cobalt were reported by Queensland Government geologists in 1887.</li> </ul>
<b>Location of</b>	<ul style="list-style-type: none"> <li>• Accuracy and quality of surveys used to locate drill holes (collar and down-</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>data points</b>	<p>hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</p> <ul style="list-style-type: none"> <li>• Specification of the grid system used.</li> <li>• Quality and adequacy of topographic control.</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>	
<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>	
<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 were bagged and tagged and shipped to the assay laboratory by independent third party transport.</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>• The samples were taken by different personnel over several programs.</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>	<p>Samples were taken from EPM 19366, wholly owned by Aus Tin Ltd.</p> <p>The permit is currently in good standing, and the site is not affected by landowner or environmental impediments.</p>

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<b>Criteria</b>	<b>JORC Code explanation</b>	<b>Commentary</b>
<b>Exploration done by other parties</b>	<ul style="list-style-type: none"> <li>• <i>Acknowledgment and appraisal of exploration by other parties.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Previous work was done and reported by DGR Global Ltd.</li> </ul>
<b>Geology</b>	<ul style="list-style-type: none"> <li>• <i>Deposit type, geological setting and style of mineralisation.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The mineralisation is classified as a lode or shear mineralised system hosting cobalt, copper, nickel, and gold . The better grades are expected to be controlled by discrete structures, and enrichments related to weathering..</li> </ul>
<b>Drill hole Information</b>	<ul style="list-style-type: none"> <li>• <i>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:</i> <ul style="list-style-type: none"> <li>○ <i>easting and northing of the drill hole collar</i></li> <li>○ <i>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</i></li> <li>○ <i>dip and azimuth of the hole</i></li> <li>○ <i>down hole length and interception depth</i></li> <li>○ <i>hole length.</i></li> </ul> </li> <li>• <i>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.</i></li> </ul>	
<b>Data aggregation methods</b>	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>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.</i></li> <li>• <i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i></li> </ul>	
<b>Relationship between</b>	<ul style="list-style-type: none"> <li>• <i>These relationships are particularly important in the reporting of Exploration Results.</i></li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>mineralisation widths and intercept lengths</b>	<ul style="list-style-type: none"> <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>	
<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>	
<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>	
<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, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</li> </ul>	Soil sampling map provided in Figure 1
<b>Further work</b>	<ul style="list-style-type: none"> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul style="list-style-type: none"> <li>Subject to obtaining the necessary approvals, drilling will be undertaken to test the exploration target.</li> <li>Figure 1</li> </ul>