

29 May 2018

# **Large-scale cobalt-in-soil anomalies identified at Thackaringa Project; Sconi continues to advance towards development milestones**

## **HIGHLIGHTS**

- **Three zones of anomalous cobalt-in-soils identified in *Target Area A* at Thackaringa Project**
- **Amplitude of cobalt-in-soil anomalies similar to the surface expression of the region's known cobalt deposits**
- **Geochemical sampling program over *Target Area B* and *Target Area C* at Thackaringa Project continuing**
- **Optimisation of demonstration-size plant's flow chart has reduced full circuit running times from 65 hours to 50 hours, in addition to delivering improved cobalt, nickel and scandium recoveries**
  - **Australian Mines' processing plant converting Sconi ore to cobalt sulphate and nickel sulphate products in just over 2 days**
- **Project finance negotiations continue to accelerate as international banking and financial institutions position to fund Sconi Project**



Australian Mines Limited (“Australian Mines” or “the Company”) (Australian ASX: *AUZ*; USA OTCQB: *AMSLF*; Frankfurt Stock Exchange: *MJH*) is pleased to announce surface geochemical sampling over *Target Area A* of the Company’s 100%-owned Thackaringa Project in New South Wales has identified three zones of elevated levels of cobalt.

The cobalt content of these three anomalous zones is reportedly similar to that observed at surface over Cobalt Blue’s (ASX: *COB*) Pyrite Hill and Big Hill cobalt deposits.

Importantly, the elevated cobalt results within one of Australian Mines’ anomalous areas appear to be coincident with the geophysical response observed in the Company’s helicopter-borne electromagnetic (AEM) survey over the Thackaringa tenement package at the end of 2017<sup>1</sup> and confirmed by a follow-up high-resolution Fixed Loop Electromagnetic (FLEM) survey completed in March 2018<sup>2</sup>.

With the anomalous zones being, in part, buried by a shallow alluvial cover, surface expressions of cobalt mineralisation >15ppm is considered significant. This technique, for example, has been successfully used by Alloy Resources (ASX: *AYR*) on its Ophara Cobalt-Gold project directly to the west of the Australian Mines’ Thackaringa Project<sup>3</sup> as well as being the documented geochemical signature of the Pyrite Hill and Big Hill cobalt deposits<sup>4</sup>.

Australian Mines is continuing its soil and surface sampling program at Thackaringa, with the program designed to evaluate the entire tenement package. As such, the Company anticipates making further announcements on the results from its geochemical sampling program throughout the coming quarter.

At the completion of the geochemical exploration program, the new areas of elevated cobalt will be the subject of the Company’s maiden drilling program at Thackaringa, which will also include the testing of the recently-identified bedrock conductor, BR\_02\_CC<sup>5</sup>.

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<sup>1</sup> Australian Mines Limited, High-priority conductors detected at Thackaringa Project, released 7 March 2018

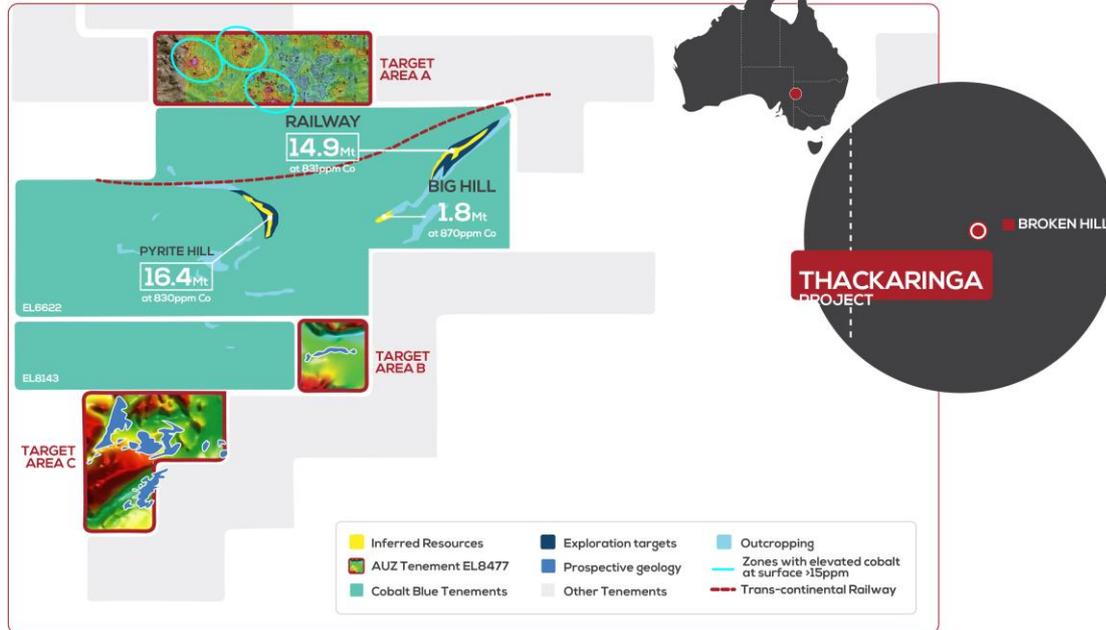
<sup>2</sup> Australian Mines Limited, Ground geophysics results confirm priority sulphide target for drill testing at Thackaringa Project, New South Wales, released 3 May 2018

<sup>3</sup> Alloy Resources Limited, Big New Cobalt Targets from Ophara Soil Sampling, released 3 April 2018

<sup>4</sup> Where has all the cobalt gone? Regolith geochemistry of cobaltiferous pyrite deposits, Broken Hill, NSW, Australia. Cohen et al, April 2015.

<sup>5</sup> Australian Mines Limited, Ground geophysics results confirm priority sulphide target for drill testing at Thackaringa Project, New South Wales, released 3 May 2018

**THACKARINGA PROJECT Tenement MAP**



**Figure 1:** Australian Mines' Thackaringa project in central New South Wales, Australia showing the location of priority target areas. The geochemical results for priority *Target Area A* have demonstrated anomalous zones with elevated levels of cobalt present, with three of these zones returning sample results greater than 15ppm cobalt (shown in circled areas).

**Sconi Project - Development Update**

Australian Mines has also continued to advance its flagship Sconi Cobalt-Nickel-Scandium Project in northern Queensland toward major development milestones in 2018.

Sconi is the only cobalt project in Australia with a 100% off-take agreement already secured for production.

The binding agreement with Korean-headquartered industrial conglomerate SK Innovation commits the parties to the sale and purchase of up to 12,000 tonnes of cobalt sulphate per year and up to 60,000 tonnes of nickel sulphate per year (following an initial production ramp-up period) for a contract period of seven years, with an additional six-year extension option, at SK Innovation's election<sup>6</sup>.

<sup>6</sup> Australian Mines Limited, Australian Mines reaffirms binding off-take agreement term sheet for Sconi Project, Queensland, released 6 March 2018



SK Innovation have been highly engaged and supportive of Australian Mines project development timelines, which are being contemplated as part of the Bankable Feasibility Study optimisation process.

Senior representatives from SK Innovation, together with their banking / finances partners, have travelled to both the Sconi Project site in Queensland and the demonstration-size processing plant in Western Australia as part of the production optimisation process.

The close and on-going engagement between SK Innovation and Australian Mines is providing a rare opportunity to streamline the operation's proposed processing flowsheets to ensure the cobalt sulphate and nickel sulphate end-products meet SK Innovations specifications.

This on-going dialogue is also allowing Australian Mines' to further fine-tune the project's economics ahead of the construction of a full-scale processing plant on site at Sconi scheduled to commence from the end of the year.

For instance, since the demonstration-size processing plant in Perth was commissioned in March 2018, Australian Mines has successfully refined the plant's design, which has resulted in significant improvements in both the recovery rates of the cobalt, nickel and scandium from the ore as well reducing the residence time of the ore within the circuit.

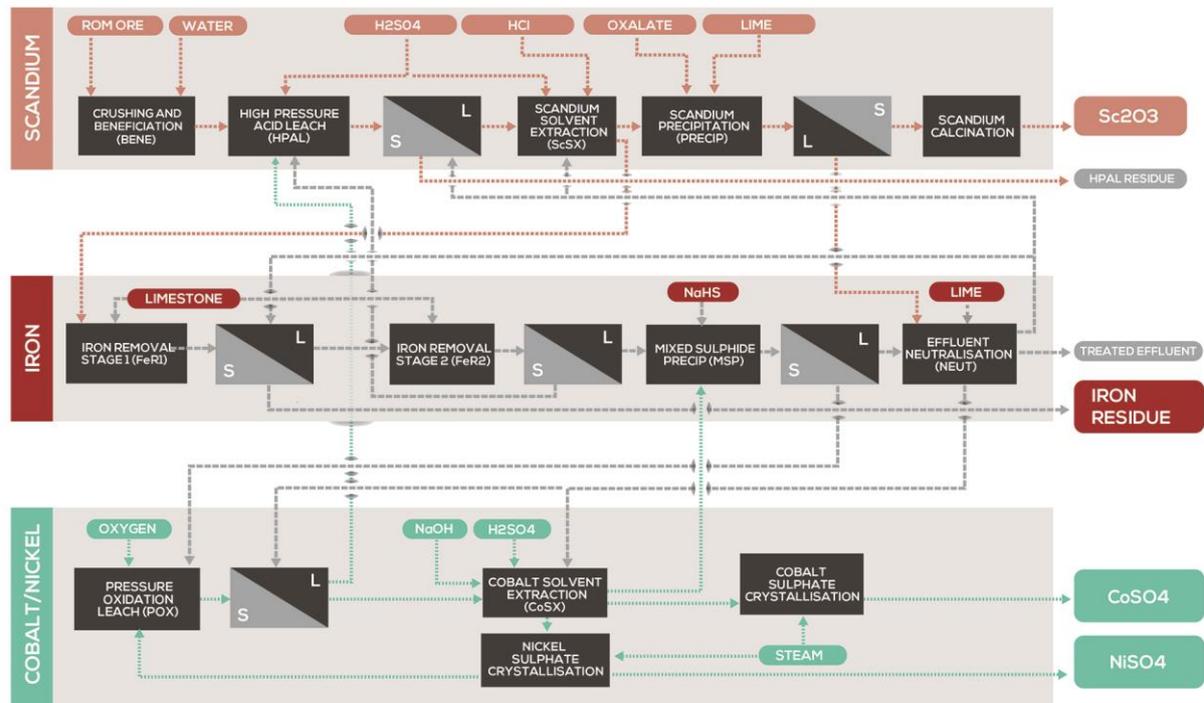
The ore within the autoclave now has a residence time of less than 45 minutes and this, in turn, has allowed the Company to successfully reduce the time it takes to run a full circuit from 65 hours to 50 hours.

The demonstration-size plant uses a replica processing flow-sheet to that contemplated for the full-scale operation to be built at the Sconi Project site in Queensland. This continuous processing test work has not only given the Company a unique, pre-construction opportunity to optimise the full-scale plant for maximum recoveries from the Sconi deposit, it will be utilised to process future ore samples from the highly analogous mineralisation identified at the Company's Flemington Cobalt-Scandium-Nickel Project in New South Wales.

Australian Mines is also utilising the plant to demonstrate its ability to produce high-purity scandium oxide from Sconi (initially), which is not committed in the SK Innovation off-take agreement or contemplated in the economic modelling being completed as part of the Bankable Feasibility Study. Any off-take agreement for scandium will, therefore, provide considerable upside to revenue and shareholder value.

Australian Mines is actively engaged with a range of potential off-take partners for scandium, and will continue to provide samples to these parties during the course of this year.

## Block-Flow Diagram



**Figure 2:** Australian Mines' commercial processing plant benefits from using a conventional, industry standard processing flowsheet and construction design.

Since the signing of the binding off-take with SK Innovation, project financing negotiations have accelerated significantly with Australian Mines actively engaged in discussions with a range of global financial institutions<sup>7</sup>.

The catalyst for this rapid escalation of interest from international banks and project finance institutions are SK Innovations repeated statements to foreign media that Australian Mines will be the sole provider of cobalt to SK Innovation's battery plants around the world<sup>8</sup>, including their Hungarian battery plant which is contracted to supply electric vehicle batteries to a number of premium German automotive companies from 2021.

<sup>7</sup> Australian Mines will make further announcements pertaining to its funding discussions as, and when, they reach an appropriate stage. Presently, most of these negotiations are at a due diligence phase.

<sup>8</sup>

[https://translate.google.com.au/translate?hl=en&sl=ko&u=http://www.fntimes.com/html/view.php%3Fud%3D2018041112571223671ab245d71a\\_18&prev=search](https://translate.google.com.au/translate?hl=en&sl=ko&u=http://www.fntimes.com/html/view.php%3Fud%3D2018041112571223671ab245d71a_18&prev=search)



Such statements from SK Innovation is a strong show of public support for Australian Mines and its ability to deliver the Sconi Project into production, which, naturally, instills a high level of confidence across the banking / finance sector as it confirms beyond doubt the importance Australian Mines holds within SK Innovations ever-expanding global battery business.

\*\*\*ENDS\*\*\*

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**Australian Mines' Priority Projects:** The Company's focus remains on its battery materials portfolio of project including the Sconi Cobalt-Nickel-Scandium Project located in northern Queensland; the Flemington Cobalt-Scandium-Nickel Project in central New South Wales; the greenfields Thackaringa Cobalt Project in western New South Wales.

## Appendix 1: JORC Code, 2012 Edition

### Section 1 Sampling Techniques and Data

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 '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.</i></li> </ul>	<p>Rangott Mineral Exploration, under the supervision of Australian Mines Limited, is undertaking a surface geochemical sampling program over the company's Thackaringa Project in New South Wales.</p> <p>This program was undertaken using a nominal sampling grid of 100 metre x 40 metres over the entire project area.</p> <p>This program is designed to sample the "C-horizon", being the soil that is considered to be in-situ weathered bedrock. The depth of this horizon is typically within 30 centimetres of the surface at Thackaringa, suggesting that the project area has limited transported cover.</p> <p>Sample collection was done using industry standard methods, with the samples being assayed by a well-renowned and independently certified commercial assay laboratory in Australia.</p>
<b>Drilling techniques</b>	<ul style="list-style-type: none"> <li>• <i>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).</i></li> </ul>	<p>This report does not contain any drill results</p>
<b>Drill sample recovery</b>	<ul style="list-style-type: none"> <li>• <i>Method of recording and assessing core and chip sample recoveries and results assessed.</i></li> <li>• <i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i></li> <li>• <i>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.</i></li> </ul>	<p>This report does not contain any drill results</p>

Criteria	JORC Code explanation	Commentary
<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>	This report does not contain any drill results
<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>	This report does not contain any drill results
<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>	<p>This report does not contain any drill results.</p> <p>Sample collection was done using industry standard methods, with the samples being assayed by a well-renowned and independently certified commercial assay laboratory in Australia.</p> <p>All acquired data was subject to QA/QC by Australian Mines' external sample database consultants.</p> <p>No adjustments were made to the data.</p>

Criteria	JORC Code explanation	Commentary
<b>Verification of sampling and assaying</b>	<ul style="list-style-type: none"> <li>• <i>The verification of significant intersections by either independent or alternative company personnel.</i></li> <li>• <i>The use of twinned holes.</i></li> <li>• <i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></li> <li>• <i>Discuss any adjustment to assay data.</i></li> </ul>	This report does not contain any drill results
<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>	<p>Location of the sample points and survey surveys were obtained via hand-held GPS, which are accurate to +/- 3 metres. This level of accurate is considered more than satisfactory for a geophysical survey of this type.</p> <p>All data is presented in GDA94 / MGA zone 54</p>
<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>	<p>This program was conducted using a nominal sampling grid of 100 metre x 40 metres over the entire project area</p> <p>This data will not be used to establish a Mineral Resource or Ore Reserve.</p>
<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>	<p>This survey geochemical sampling program was conducted on a regular north-south, east-west grid.</p> <p>The tight sample spacing of this program (100 metres by 40 metres) all but eliminates any possible sampling biases.</p>
<b>Sample security</b>	<ul style="list-style-type: none"> <li>• <i>The measures taken to ensure sample security.</i></li> </ul>	All samples are assigned a unique reference number and stored in tamper-evident bags. No breach of protocols was observed or reported during this program.
<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>	No audits have been carried out.

## Section 2: Reporting of Exploration Results

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>The Thackaringa Project is located 22 kilometres southwest of Broken Hill (in New South Wales, Australia) and comprises Exploration Licence numbers (EL) 8477</p> <p>Australian Mines is the registered owner of EL8477 and holds 100% interest in this tenement.</p> <p>There are no third-party agreements, royalties or similar associated with this tenement.</p>
<b>Exploration done by other parties</b>	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<p>Apart from an aerial geophysical survey completed by BHP 30 years ago, Australian Mines is unaware of any material historic exploration that has been completed over its Thackaringa Project.</p>
<b>Geology</b>	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<p>Australian Mines' 100%-owned Thackaringa project lies 22 kilometres southwest of Broken Hill.</p> <p>The tenement is considered prospective for Broken Hill-type lead-zinc-silver and cobalt mineralisation.</p> <p>The area consists of the highly metamorphosed packages of the Thackaringa Group, Sundown Group, and Parnell Formation.</p> <p>Several large retrograde schist shear zones cross cut the tenement</p>
<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> <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>	<p>This report does not contain any drill results</p>

Criteria	JORC Code explanation	Commentary
<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>	This report does not contain any drill results.
<b>Relationship between mineralisation widths and intercept lengths</b>	<ul style="list-style-type: none"> <li><i>These relationships are particularly important in the reporting of Exploration Results.</i></li> <li><i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i></li> <li><i>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').</i></li> </ul>	This report does not contain any drill results
<b>Diagrams</b>	<ul style="list-style-type: none"> <li><i>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.</i></li> </ul>	Appropriate maps and sections are included in the body of this report.
<b>Balanced reporting</b>	<ul style="list-style-type: none"> <li><i>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.</i></li> </ul>	This report does not contain any drill results.
<b>Other substantive exploration data</b>	<ul style="list-style-type: none"> <li><i>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.</i></li> </ul>	<p>On 7 March 2018, Australian Mines announced via the ASX platform, that the company had identified high-priority geophysical conductors within Target Area A of its Thackaringa Project. The company is presently preparing to drill test these geophysical anomalies and will provide further information to the market prior to the commencement of any drill program.</p> <p>Other exploration data collected by the company is not considered as material to this report at this stage.</p>

Criteria	JORC Code explanation	Commentary
		Further data collection will be reviewed and reported when considered material.
<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>	Further exploration work for Australian Mines' Thackaringa project may include a reverse circulation (RC) drill program, which would be designed to test the interpreted source of the geochemical anomalies described in this report.

## **Appendix 2: Competent Person's Statement**

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### **Thackaringa Cobalt Project**

Information in this report that relates to the Thackaringa Project's Exploration Results are based on information compiled by Benjamin Bell who is a member of the Australian Institute of Geoscientists. Mr. Bell is a full-time employee and Managing Director of Australian Mines Limited. Mr. Bell has sufficient experience that is relevant to the styles of mineralisation and types of deposit under consideration 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, Mineral Resources and Ore Reserves'. Mr. Bell consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.