

20 October 2020

## **Quarterly Activities Report** **For the period ended 30 September 2020**

Advanced battery materials development company, Australian Mines Limited (Australian Mines or the Company) (Australian ASX: AUZ; USA OTCQB: AMSLF; Frankfurt Stock Exchange: MJH) is pleased to provide its Quarterly Activities Report for the period ending 30 September 2020.

During the quarter, Australian Mines maintained its focus on the development of its 100%-owned Sconi Cobalt-Nickel-Scandium Project ("Sconi") in North Queensland. The Company's priority remains advancing discussions with potential offtake partners for Sconi, which, when fully operational, will position Australian Mines at the forefront of the battery materials industry<sup>1</sup>. These ongoing discussions are underpinned by the Bankable Feasibility Study<sup>2</sup>, which clearly demonstrates the commercial case for developing the Tier 1 Sconi Project.

The market dynamics of the electric vehicle ("EV") and clean energy storage industries underpin Australian Mines' confidence it will secure an offtake agreement for Sconi. Market forecasts indicate a significant supply constraint will emerge for battery-grade nickel by 2023 due to growing demand from the EV and energy storage industries<sup>3</sup>. To address this 'pinch point' the EV battery manufacturers will need to put in place offtake agreements with new battery material suppliers, such as Australian Mines<sup>4</sup>.

Sconi, when fully developed, will be one of the most cost competitive, cobalt producing nickel operations in the world, with a project life in excess of 30 years. Sconi will also be a fully auditable and ethical source of battery materials, owned by Australian Mines, the first minerals resource company to be certified carbon neutral under the Australian Government's Climate Active program. These characteristics position Sconi to benefit from this growing demand for battery-grade nickel and cobalt.

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<sup>1</sup> Australian Mines Limited, Independent market study places Sconi in the 1<sup>st</sup> quartile of cost curve for global cobalt sulphate and nickel sulphate production, released 12 February 2019

<sup>2</sup> Australian Mines Limited, Sconi to generate \$5 billion in free cashflow, released 13 June 2019

<sup>3</sup> CRU Consulting, Nickel and Cobalt Sulphate Market Study, dated 31 January 2019 (CRU reference 7419)

<sup>4</sup> By way of background, at least three of the potential offtake parties have each indicated that in order to achieve their base-case, conservative EV sales figures, each of these parties would require the equivalent volume of five Sconi Projects by 2023/25. In other words, by 2023/25, the EV sector may potentially require at least 15 additional Sconi-size nickel-cobalt projects to be in production to meet the industry's anticipated demand. Thus, the international interest in development-ready, world-class projects in stable mining jurisdictions such as Australian Mines' 100% owned Sconi Project in North Queensland (Australia), is intensifying.

The timing to execute an offtake agreement for Sconi will be dictated by the demand dynamics of the ultimate end consumers, EV car and battery manufacturers, and the requirement of potential offtake partners to develop new procurement processes to address the needs of this rapidly evolving industry.

Potential offtake partners understand they will need to execute an offtake agreement no later than calendar 2021 to mitigate their nickel supply risk, expected to emerge in 2023, due to Sconi's two-year project development timeline. However, we expect the forecast increase in demand for battery materials will incentivise potential offtake partners to enter into supply agreements earlier, with the objective of securing more favourable terms.

Australian Mines has also pursued additional activities to enhance the commercial attractiveness of Sconi, including new trial production runs of advanced battery materials and an independent study<sup>5</sup> of the available drilling and geological datasets for the project, which identified fourteen significant additional nickel, cobalt and scandium mineralisation targets for follow up.

The new targets will be the subject of an exploration and testing program over the coming year, the results of which will have the potential to drive an upward revision of the Sconi Mineral Resource<sup>5</sup> and the project life span.

Australian Mines is committed to conduct its business in an industry-leading environmental and socially responsible manner. During the quarter, the Company announced it became the first minerals resources company to be certified a Carbon Neutral organisation under the Australian Government's Climate Active program. Climate Active is the most rigorous and credible carbon neutral certification available in Australia.

Commenting on the June 2020 quarter, Australian Mines' Managing Director, Benjamin Bell, said: "The Company is committed, focused and in a strong position to take advantage of the expected increase in global demand for nickel and cobalt, being the essential commodities used by EV battery makers, auto manufacturers (also called "OEMs", or original equipment manufacturers) and in the storage and delivery of clean, sustainable energy sources.

"Our strategic positioning as a potential low cost, long term producer and supplier of ethically derived and socially responsible, battery-grade, cobalt and nickel sulphate materials, operating in a low risk jurisdiction, is an attractive proposition to potential offtake and finance partners, such as global OEMs and EV battery makers alike.

"The Board believes Australian Mines' Bankable Feasibility Study<sup>6</sup> on its Sconi Project demonstrates the Company's potential to be a leading supplier into the nickel and cobalt market for EV battery makers. This is supported by the production of high purity, EV supply chain-ready, battery materials at the Company's demonstration-scale processing plant in Australia<sup>7</sup>."

"We are continuing to engage, as the current global situation dictates, with a range of potential offtake parties to ensure that all due diligence conditions are satisfied. This will allow offtake

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<sup>5</sup> Australian Mines Limited, Additional nickel and cobalt targets identified at Sconi Project, North Queensland, released 15 May 2020

<sup>6</sup> Australian Mines Limited, Sconi to generate \$5 billion in free cashflow, released 13 June 2019

<sup>7</sup> Australian Mines Limited, Sconi offtake sample production runs completed, released 19 June 2020

discussions to progress beyond the current stage and into formal contracts<sup>8</sup>. However, OEM's and battery manufacturers have their own internal proprietary targets and, as a result, Australian Mines does not set the timetable/agenda for these offtake discussions. That said, we are pressing hard for a binding outcome to offtake discussions and will inform the market of any progress in due course."

### **Trial Production Runs**

Australian Mines announced in March 2020<sup>9</sup> that potential offtake partners had requested the Company supply them with battery-grade nickel sulphate and cobalt sulphate crystals, and high purity scandium oxide for independent testing. In June 2020, the Company announced that the production runs to produce those samples were completed<sup>10</sup>.

The production runs carried out at Australian Mines' demonstration plant in Perth, processed ore from our Queensland-based Sconi Project to create high purity on-spec battery-grade nickel sulphate and cobalt sulphate crystals. The quality and purity of these samples were confirmed by an independent NATA-accredited laboratory, with the samples currently being tested and evaluated by the individual potential offtake partners.

The output from the production runs also included a scandium-rich residual solution. This solution is being processed to create high-purity scandium oxide for supply to potential research and development (R&D) partners seeking to expand the industrial applications of scandium.

The Australian and USA Governments as well as the European Union recently classified scandium as a 'critical commodity', which has highlighted the Sconi Project as a potential source of high purity scandium.

As part of this process Australian Mines announced, at the end of the quarter, it had entered into an agreement with Deakin University's *Institute for Frontier Materials* to support a project to develop new aluminium alloys using scandium. If successful, this project will further enhance the commercial potential Australian Mines' Sconi Project.

Australian Mines, through its research and development subsidiary AML Advanced Materials Limited, will provide a total of \$56,000 in funding to the nine-month Optimising of Scandium containing Aluminium Alloys project ("The Project"), which will be matched by an Australian Federal Government Innovations Connections grant.

The Project, which commenced on 12 October 2020, proposes to use high purity scandium oxide sourced from Australian Mines' flagship Sconi Project, employ machine learning algorithms and apply the extensive expertise in alloy development and optimisation at Deakin University to create next generation aluminium alloys. These alloys are being designed to improve the performance of industrial processes within the energy industry.

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<sup>8</sup> The Company does not plan to enter a non-binding memorandum of understanding (MoU) agreement as an intermediate step in any negotiation.

<sup>9</sup> Australian Mines Limited, Company Update, released 9 March 2020

<sup>10</sup> Australian Mines Limited, Sconi offtake sample production runs completed, released 19 June 2020

All the samples produced from Sconi are supporting Australian Mines' ongoing discussions with potential offtake partners to secure a binding offtake agreement and financing for its Sconi Project.

It is expected our selected partner will make a meaningful financial commitment to the project financing of Sconi as part of any offtake agreement.

Mr Bell said, "The recent successful production runs further demonstrate our ability to consistently deliver battery-grade precursor chemicals of cobalt sulphate and nickel sulphate that can be applied directly into the manufacturing process of electric vehicle batteries, and support our negotiations with potential offtake and financing partners.

"Our new partnership with Deakin University to explore the industrial applications of premium-grade scandium oxide, in terms of new aluminium alloy research, highlights the potential additional value-add which exists within our flagship Sconi Project beyond the EV and battery markets. It also recognises the expanding new uses for scandium, which is now recognised as a critical commodity."

### **Sconi Site Development**

Australian Mines is continuing pre-development work for the Sconi mine site. Ultimately, this will include shared public-use infrastructure and continued investment in North Queensland to deliver benefits to local businesses and the community with the view to providing secure, long term jobs. In the short term, pre-construction work is still being tempered by COVID-19 related community restrictions.

Australian Mines' commitment to investing in North Queensland is a central part of developing the Sconi Project into a sustainable business that has the potential to deliver outstanding returns for the Company's shareholders.

The Company's aim is for the operating and capital expenditure associated with the Sconi Project to be spent locally within Queensland, wherever possible. Over 80% of the workforce, for example, are expected to be sourced locally.

Our commitment to sustainability is already delivering business benefits. The Sconi Project has been granted "Prescribed Project" status by the Queensland Government<sup>11</sup>. Being a Prescribed Project will help with the smooth and methodical development of the Sconi mine site into a world-class, Tier 1 project. Australian Mines maintains regular contact with the Queensland Government to maximise the advantages of having "Prescribed Project" status.

In June 2020, Australian Mines was offered a conditional financial support package<sup>12</sup> by the Queensland Government under the Jobs and Regional Growth Fund, which is managed by Department of State Development, Tourism and Innovation. The Company is highly appreciative of the Queensland Government's offer to broaden its ongoing support of the Sconi Project via the Jobs and Regional Growth Funding and Australian Mines continues to

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<sup>11</sup> Australian Mines Limited, Queensland Government provides Sconi *Prescribed Project* status, released 25 January 2019

<sup>12</sup> The Conditions Precedents associated with the conditional financial support package are outlined in Australian Mines' announcement of 15 July 2020 announcement (released via the ASX Markets Announcements Platform)

have regular dialogue with the Department regarding this, and other, State Government support.

### **Carbon Neutral Future**

As part of the Company's commitment to leading Environmental, Social and Governance (ESG) practices, Australian Mines became the first minerals resources company to be certified a Carbon Neutral Organisation under the Australian Government's Climate Action Program during August.

Our focus on becoming 100% carbon neutral is a further investment in building a long-term sustainable future for Australian Mines. It follows on from the Company having its application for membership to the Initiative for Responsible Mining Assurance (IRMA) approved in March 2020. The IRMA is an independent third-party organisation that verifies and certifies socially and environmentally responsible mining. Australian Mines is now working towards IRMA certification specifically for the Sconi Project.

Australian Mines' Managing Director, Benjamin Bell, noted: "Being 100% carbon neutral is a natural extension of Australian Mines' commitment to taking a leadership position on ESG. It follows on from the March 2020 approval of our membership of IRMA and Sconi being given 'Prescribed Project' status in early 2019 by the Queensland Government, which is a recognition of our commitment to the communities where we operate. Australian Mines is a responsible corporate citizen that plans to deliver a globally significant, ethical, reliable and sustainable source of technology metals to the rapidly growing electric vehicle and energy storage industries.

"Investing in becoming a carbon neutral business is investing to build a long-term sustainable future for Australian Mines and long-term value creation for our shareholders. We have joined more than 90 organisations across Australia that have attained certified carbon neutrality, leading to over 22 million tonnes of carbon emissions being offset, which is the equivalent of taking all of Sydney's cars off the road for two years."

### **COVID-19 impact**

COVID-19 is having some indirect impacts on Australian Mines and the broader industry. COVID-19 was responsible for Tesla's Battery Day being postponed from April 2020 to July 2020 and then subsequently being rescheduled for 22 September 2020. This repeated rescheduling of the Tesla Battery Day together with the scheduled (temporary) shutdown of some EV-related manufacturing plants in the northern hemisphere due to the COVID-19 pandemic, has had the effect of elongating Australian Mines' negotiating period with potential offtake partners.

COVID-19 linked travel restrictions have also prevented the ease and immediacy of face-to-face negotiations with potential offtake partners and project financiers and delayed resource expansion work at Sconi. (This expansion work has the potential to significantly expand Sconi's existing cobalt & nickel mineralisation footprint<sup>13</sup>).

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<sup>13</sup> Australian Mines Limited, Additional nickel and cobalt targets identified at Sconi, released via the ASX Announcement platform 15 May 2020



Australian Mines has embraced digital technologies to ensure the Company maintains its focus on safe working practices for its employees, securing a binding offtake agreement/s, and the project financing that will progress Sconi to production.

The Company has continued pre-development work at Sconi, despite pre-construction work being tempered by COVID-19 restrictions. The Company has also developed plans to commence resource expansion work at Sconi, which is ready to be executed immediately travel restrictions are eased.

## Sconi Cobalt-Nickel-Scandium Project, Queensland

Australian Mines' 100%-owned Sconi Project, once developed, is forecast to be one of the most cost-competitive cobalt-producing nickel operations in the world<sup>14,15</sup> and places the Sconi Project in the lowest cost quartile compared to other existing and proposed analogous operations globally<sup>16,17</sup>.

The Project is estimated<sup>18</sup> to produce 1,405,000 tonnes of nickel sulphate and 209,000 tonnes of cobalt sulphate over the project's initial 30-year mine life<sup>19</sup>.

Once in production, the Sconi Project<sup>20</sup> is estimated to produce a total free cashflow after tax of \$5 billion over the initial 30-year project life, for a simple payback of capital of 4.4 years on a pre-tax basis and 5.8 years on a post-tax basis<sup>21</sup>.

With a pre-tax Net Present Value (NPV) of \$1.47 billion, the Sconi Project can genuinely be classed as a world-class cobalt and nickel asset<sup>22</sup>.

During the quarter the Company continued offtake negotiations with a number of interested third parties. Those discussions have progressed to an advanced negotiation stage including key terms such as pricing, volumes and timelines. Australian Mines' offtake negotiations have been supported by an expansion of the battery precursor materials that can be produced from Sconi and are responsive to the rapid developments in the EV battery market. These preliminary, incomplete and confidential discussions are ongoing, and the Company will update the market at the time any agreement/s are reached.

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<sup>14</sup> Australian Mines Limited, Independent market study places Sconi in the 1<sup>st</sup> quartile of cost curve for global cobalt sulphate and nickel sulphate production, released 12 February 2019

<sup>15</sup> The Nickel & Cobalt Sulphate Market Study was commissioned by Australian Mines Limited and completed by commodities research specialist CRU International Limited.

<sup>16</sup> Australian Mines Limited, Independent market study places Sconi in the 1<sup>st</sup> quartile of cost curve for global cobalt sulphate and nickel sulphate production, released 12 February 2019

<sup>17</sup> Based on the outcomes of the financial modelling that was released in Australian Mines' base case Bankable Feasibility Study (BFS) – see Australian Mines' announcement titled BFS supports strong commercial case for developing Sconi, which was released via the ASX on 20 November 2018

<sup>18</sup> Australian Mines Limited, Sconi to generate \$5 billion in free cashflow, released 13 June 2019

<sup>19</sup> The information outlined on this page was previously released to the market by Australian Mines via the ASX platform on 13 June 2019. Australian Mines confirms in the subsequent public report that all the material assumptions underpinning the production targets in the initial public report referred to in rule 5.17 continues to apply and have not materially changed.

<sup>20</sup> Australian Mines Limited, Sconi to generate \$5 billion in free cashflow, released 13 June 2019

<sup>21</sup> The information outlined on this page was previously released to the market by Australian Mines via the ASX platform on 13 June 2019. Australian Mines confirms in the subsequent public report that all the material assumptions underpinning the forecast financial information derived from a production target, in the initial public report referred to in rule 5.17 continues to apply and have not materially changed.

<sup>22</sup> The mineral industry's accepted definition of a "world-class" deposit is a project that exceeds the NPV \$250m threshold. See - <https://www.bhp.com/-/media/bhp/documents/investors/reports/2006/ameconference.pdf>

## Project financing and technology metals pricing

Discussions with project financiers are progressing in parallel with the advanced negotiations with potential offtake partners.

Interest in financing the Sconi Project has been maintained since the publication of the BFS in FY2019<sup>23,24</sup>, but remains contingent on a binding offtake agreement/s.

The battery precursor materials that will be produced at Sconi are not commodities quoted on the London Metal Exchange ("LME"). Consequently, any financing agreement will likely require an agreed pricing mechanism to be included in a binding offtake agreement.

As part of current offtake agreement negotiations, consideration is being given to various pricing mechanisms, including an LME-linked price; a long-term fixed price contract; a floating price linked to an LME commodity price but including a pricing floor and ceiling, amongst others. Agreeing a pricing mechanism in a binding offtake agreement will allow project financiers to gain an understanding of the potential revenue outcomes from the Sconi Project, supporting the finalisation of Sconi project financing.

Australian Mines notes that it has significant commercial flexibility to consider a broad range of potential pricing mechanisms because the Sconi Project, once in production, will be in the lowest cost quartile producers of EV battery materials<sup>25</sup>.

Australian Mines is working with its potential financiers and offtake partners to ensure the price mechanism included in any binding offtake agreement/s is acceptable to all parties and maximises value for Australian Mines' shareholders.

## Sconi Processing Plant

Australian Mines' proposed Sconi processing plant will utilise proven, industry-standard technology, which has been comprehensively tested via the Company's demonstration-scale plant in Perth, Western Australia.

Sample nickel sulphate and cobalt sulphate crystals produced from Sconi ore using Australian Mines' demonstration plant have already been independently assessed by a range of potential offtake partners and found to meet their exacting standards.

In addition, the intermediate Mixed Nickel-Cobalt Sulphide Precipitate ("MSP") created from Sconi ore, from which the Company's Nickel Sulphate and Cobalt Sulphate crystals are derived, is an attractive product when compared to the MSP currently broadly available in the market.

With a composition of 56.4% Nickel and 5.64% Cobalt, the MSP being produced by Australian Mines from its Sconi ore would compete very favourably with that of Sumitomo Metal Mining,

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<sup>23</sup> Australian Mines Limited, Bankable Feasibility Study Announcement, released via the ASX Announcement platform on 20 November 2019

<sup>24</sup> Australian Mines Limited, Sconi to generate \$5 billion in free cashflow over 30-year mine life, released via the ASX Announcement platform on 13 June 2019

<sup>25</sup> Compared to other existing and proposed analogous operations globally (see Australian Mines Limited, Independent market study places Sconi in the 1st quartile of cost curve for global cobalt sulphate and nickel sulphate production, released via the ASX platform on 12 February 2019)

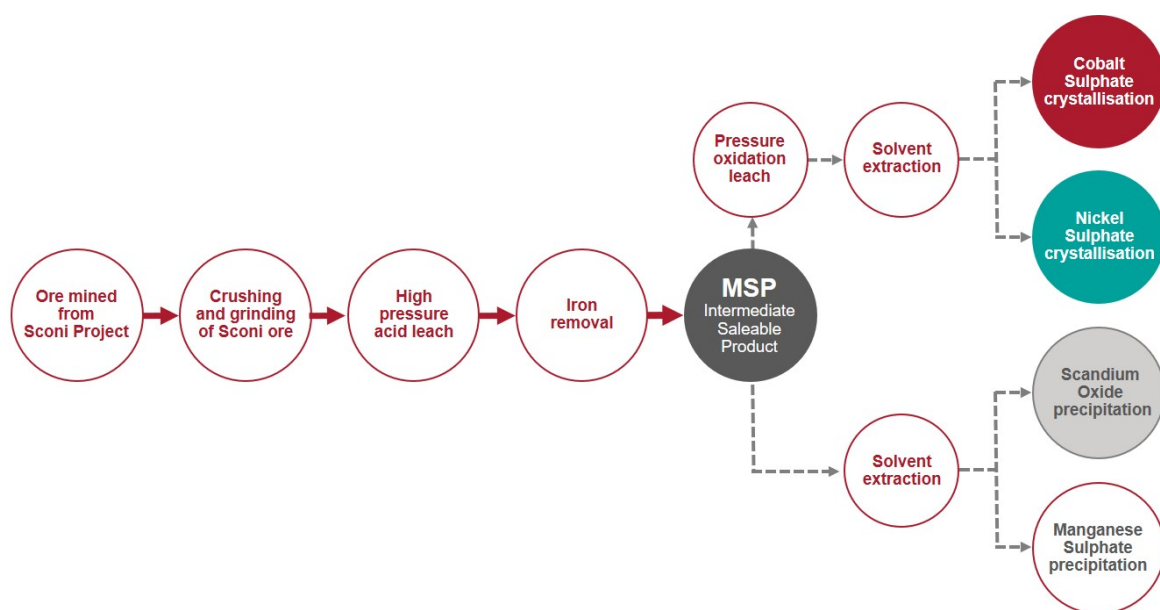
for example, whose Coral Bay HPAL plant produces an MSP containing 55 to 57% Nickel and 4 to 5% Cobalt<sup>26</sup>.

MSP is a saleable product in its own right and the quality of Australian Mines' MSP may make it an attractive source for a potential offtake partner.

Australian Mines, through its negotiations with potential offtake partners, gains insights into the requirements of the EV battery industry. We have built flexibility into the design of the proposed processing flowsheet to ensure the output from the Sconi processing plant continues to meet the required specifications and so the products required by our potential offtake partners can be adapted to any evolution in EV battery chemistry in the future.

Currently, the design of the Sconi processing plant is configured to produce 7 units of Nickel Sulphate for every 1 part of Cobalt Sulphate. This approximates the requirements for the emerging NCM 811 battery, which utilises 8 parts Nickel, 1 part Cobalt and 1 part Manganese. The high nickel content in NCM 811 batteries leads to higher energy density, which means the battery can store more energy.

Australian Mines has successfully bench tested the production of manganese sulphate crystals from Sconi ore and has the flexibility within the proposed Sconi processing plant, to potentially produce the same number of manganese sulphate units per year as cobalt. This mean Sconi could align its annual output to mirror an 811 battery chemistry in all three key battery precursor materials.

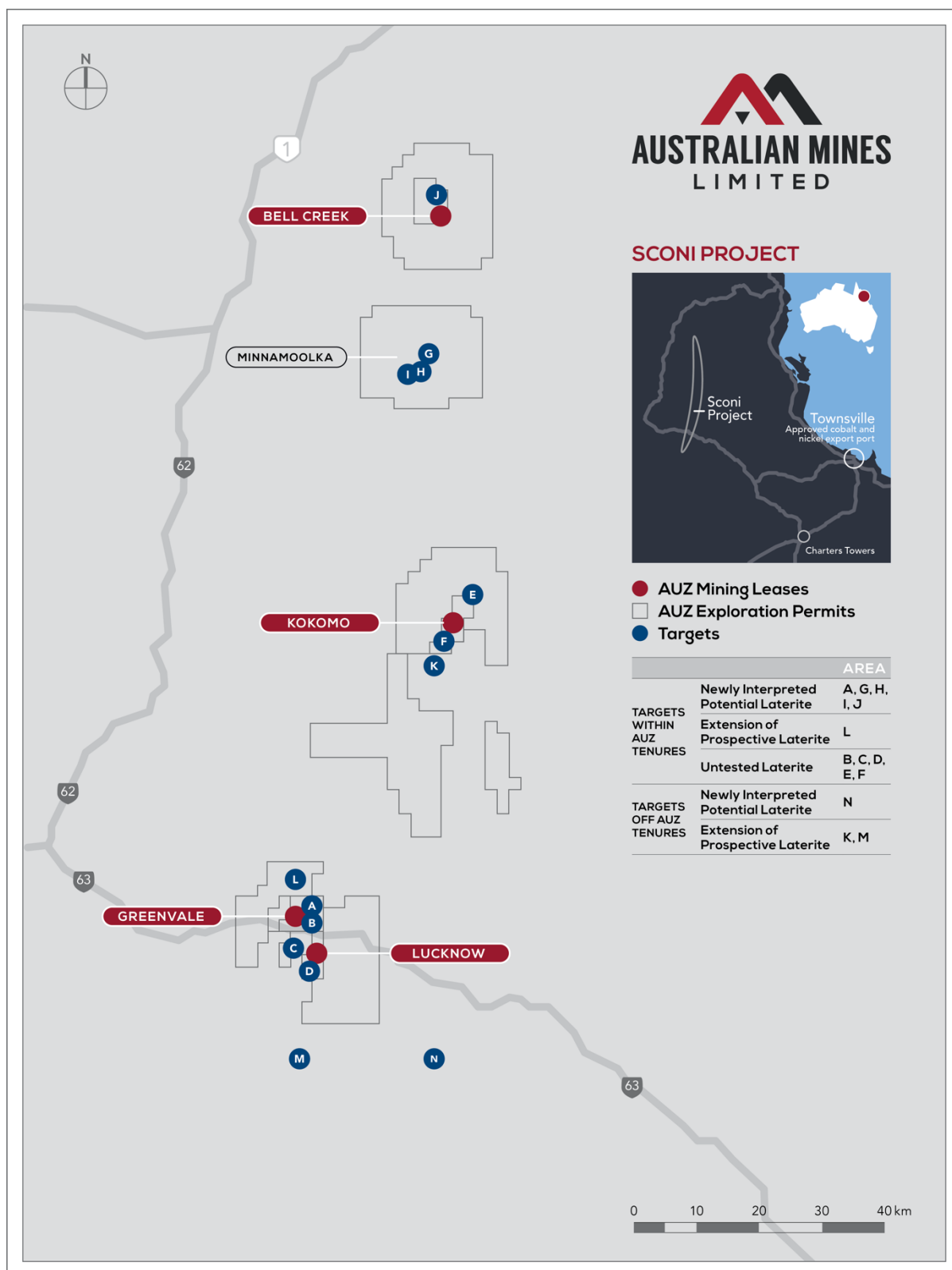


MSP – Mixed Sulphide Precipitate

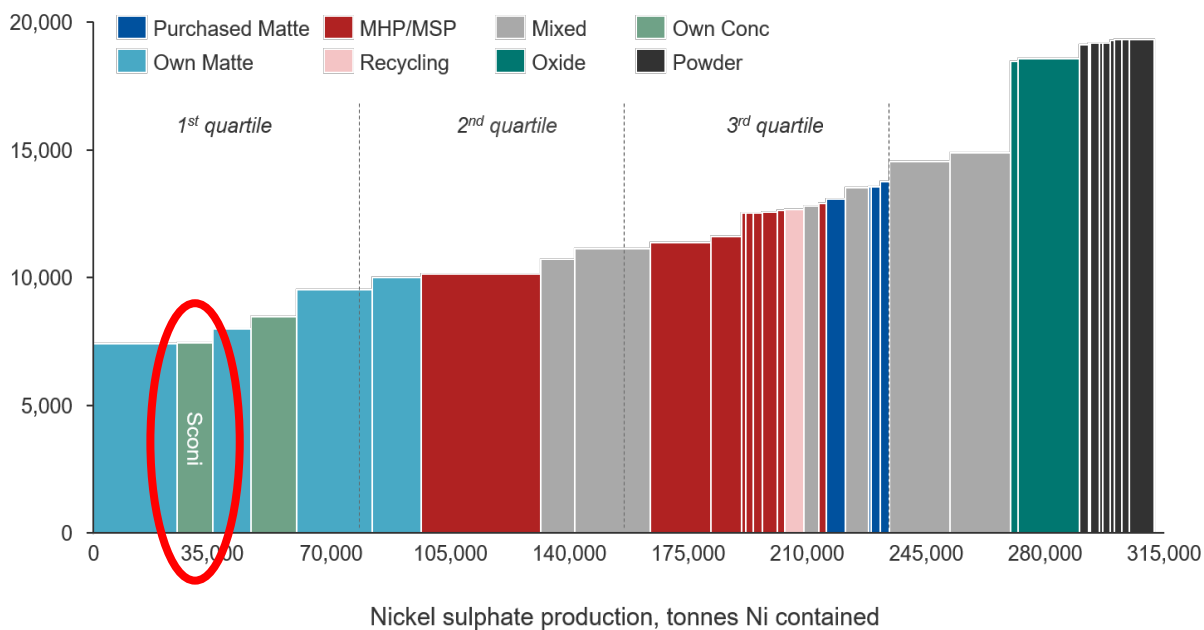
**Figure 1:** Australian Mines' proposed flowsheet for its 2 million tonnes per annum plant at the Sconi Project in North Queensland, Australia. This proposed processing flowsheet is based on proven, industry-standard technology that has been optimised by Australian Mines through the development and operation of the Company's demonstration-scale process plant in Perth, Western Australia.

<sup>26</sup> From: Coral Bay Nickel HPAL Plant Expansion Project, In: Alta 2011 Nickel / Cobalt / Copper Conference, May 23 - 25, 2011, Burwood Convention Centre, Perth, Australia

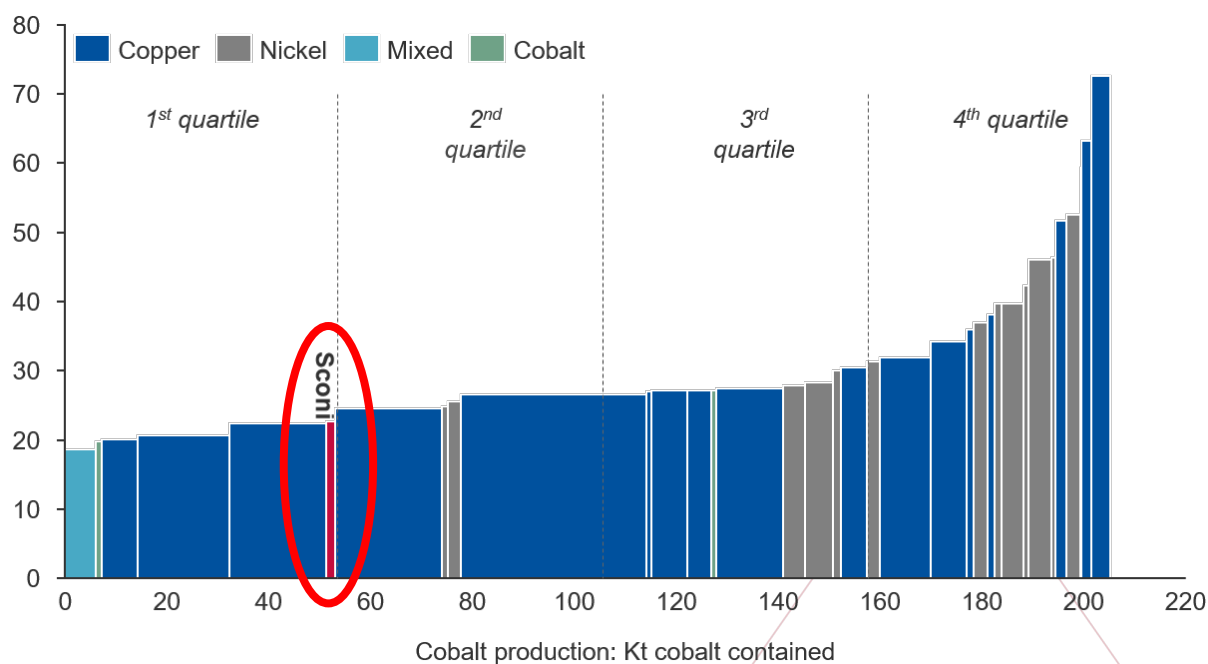




**Figure 2:** The Sconi Project is located in North Queensland, approximately 250 kilometres on sealed roads from an existing export port at the regional centre of Townsville.



**Figure 3:** Nickel sulphate cost curve 2025, nominal USD per tonne of nickel contained<sup>27</sup>



**Figure 4:** Pro rata cost curve of cobalt producers 2025, Nominal USD per lb cobalt<sup>28</sup>

<sup>27</sup> Australian Mines Limited, Independent market study places Sconl in the 1<sup>st</sup> quartile of cost curve for global cobalt sulphate and nickel sulphate production, released 12 February 2019

<sup>28</sup> Australian Mines Limited, Independent market study places Sconl in the 1<sup>st</sup> quartile of cost curve for global cobalt sulphate and nickel sulphate production, released 12 February 2019

## Flemington Project, New South Wales

Australian Mines' 100%-owned Flemington Project is located approximately 370 kilometres west of Sydney in New South Wales, Australia.

This Project hosts a Mineral Resource of 2.5 million tonnes at 0.103% cobalt and 403ppm scandium in the Measured category and 0.2 million tonnes at 0.076% cobalt and 408ppm scandium in the Indicated category<sup>29</sup>.

In late 2019, the Company completed a resource expansion drilling program at Flemington.<sup>30</sup> Assay results from that program<sup>31</sup> indicated that the cobalt and scandium mineralisation remains open to the west and north of the existing Resource. This provides Australian Mines with the opportunity to update the current Mineral Resource Estimate by completing a diamond core drilling program over the areas of known mineralisation at Flemington to acquire additional lithology density measurements.

Given Australian Mines' primary focus remains the development of its globally significant, 100%-owned Sconi Cobalt-Nickel-Scandium Project in North Queensland, the Company would anticipate that any diamond core drilling program at Flemington may occur in the second half of the 2020/21 financial year. Once this additional diamond core drilling program is completed and assays are received, validated and released in accordance with its continuous disclosure obligations, any Mineral Resource update for Flemington will follow.

In addition to cobalt, scandium and nickel mineralisation, a recently completed independent review of the Flemington Project identified several new gold and copper targets that warrant follow-up exploration<sup>32</sup>. Referred to as *Target A* and *Target B* in the Company's June 2020 announcement<sup>33</sup>, these targets are analogous to discoveries at nearby tenements in the Flemington area<sup>34</sup> and share similar geological characteristics<sup>35</sup>. Australian Mines is encouraged that surface copper has been observed by the Company's exploration team in the vicinity of *Target A*.

Australian Mines FY2021 exploration priorities at Flemington, therefore, includes commissioning an Induced Polarisation ("IP") survey over these two prospective targets to define any geophysical anomalies that may be indicative of copper-gold mineralisation at depth, in advance of a targeted drilling program.

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<sup>29</sup> The Company is not aware of any new information or data that materially affects the information included in the market announcement released by the Company on 31 October 2017 in respect of the Flemington Project and all material assumptions and technical parameters underpinning the Mineral Resource estimates in that announcement continue to apply and have not materially changed.

<sup>30</sup> Australian Mines Limited, Resource extension drilling commences at Flemington project, released 2 October 2019

<sup>31</sup> Australian Mines limited, New copper-gold porphyry targets and potential extensions to cobalt-scandium-nickel mineralisation identified at Flemington Project, New South Wales, released 23 June 2020

<sup>32</sup> Australian Mines Limited, Additional targets identified at Flemington Project, NSW, released via the ASX Announcement platform on 23 June 2020

<sup>33</sup> Australian Mines Limited, Drilling of base metal targets commences at Thackaringa, released via the ASX Announcement platform on 29 June 2020

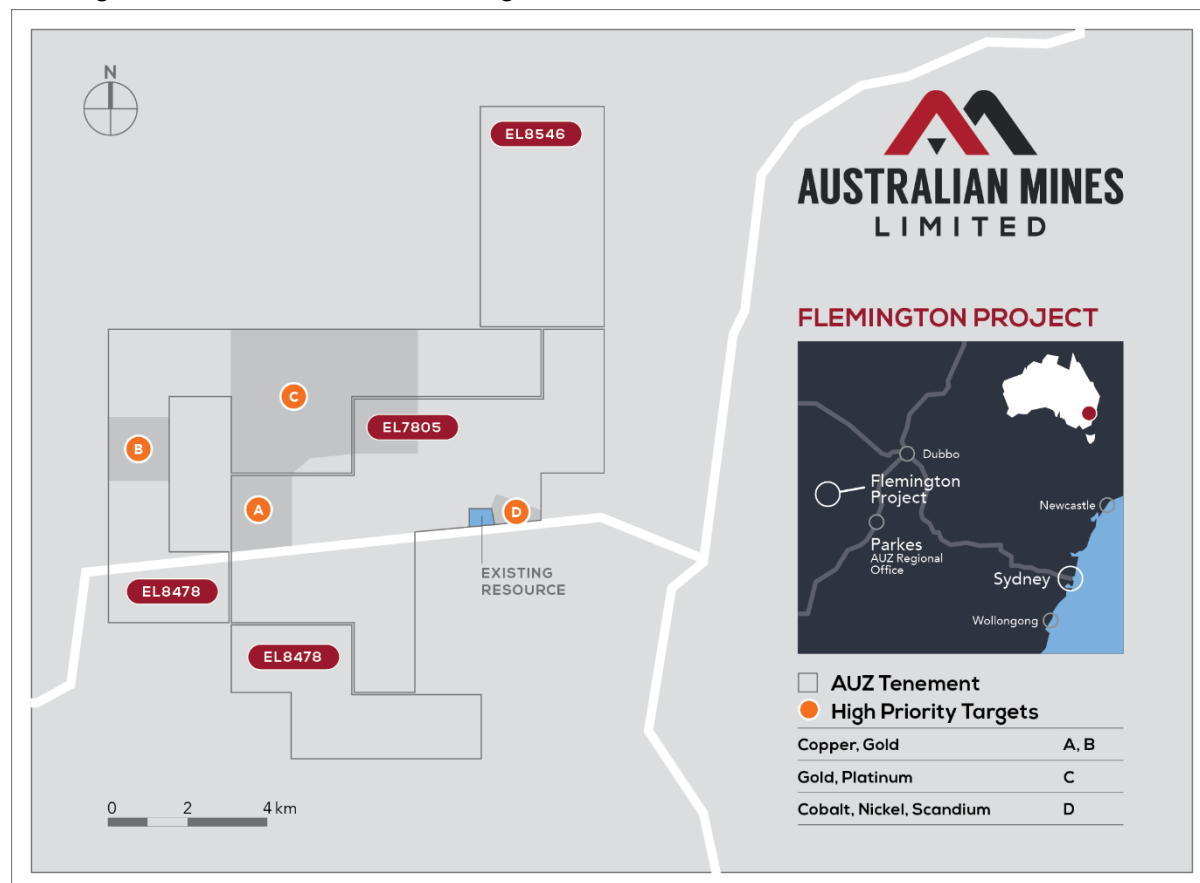
<sup>34</sup> Alkane Resources Gold-Copper Mineralisation at Boda Prospect

[http://investors.alkane.com.au/site/PDF/2491\\_0/DiscoverSignificantPorphyryAuCuMineralisationatBoda](http://investors.alkane.com.au/site/PDF/2491_0/DiscoverSignificantPorphyryAuCuMineralisationatBoda)

<sup>35</sup> Australian Mines Limited, Quarterly Activities report, period ended 30 September 2019, released 22 October 2019

A shallow soil sampling program is also being planned to test the tenor of gold and platinum mineralisation previously noted within the Company's project area<sup>36</sup>. Referred to as *Target C* in Australian Mines' June 2020 announcement<sup>37</sup>, this impressive gold-platinum target encompasses previously mapped intrusion-related gold mineralised quartz veins linked to the mafic-ultramafic intrusion in the north of the project area. This is very encouraging given the Flemington Project is located within the same geological setting as several world-class copper-gold deposits/mineralisation such as Newcrest's Cadia operation and CMOC's Northparkes operation.

The cobalt-nickel-scandium Target D is interpreted as a possible eastern extension of the existing Mineral Resource<sup>38</sup> at Flemington.



**Figure 5:** Australian Mines' 100%-owned Flemington Project is located approximately 370 kilometres west of Sydney in New South Wales, Australia. An independent review, which included utilising machine learning, identified four prospective target areas within the Company's Flemington Project (labelled targets A, B, C and D in this figure) that warrant follow-up exploration.

<sup>36</sup> Australian Mines Limited, Additional targets identified at Flemington Project, NSW, released via the ASX Announcement platform on 23 June 2020

<sup>37</sup> Australian Mines Limited, Drilling of base metal targets commences at Thackaringa, released via the ASX Announcement platform on 29 June 2020

<sup>38</sup> The Mineral Resource Estimate for the Flemington Project is reported under JORC Code 2012 Guidelines and was first reported by Australian Mines Limited on 31 October 2017. The Mineral Resource for Flemington, as announced on 31 October 2017 is: Measured 2.5Mt @ 0.103% Co & 403ppm Sc, Indicated 0.2Mt @ 0.076% Co & 408ppm Sc. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement. The Company confirms that all material assumptions and technical parameters underpinning the estimate continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified

## Broken Hill (previously known as “Thackaringa”) Project, New South Wales

Australian Mines’ 100%-owned Broken Hill Project is an early-stage exploration project located near Broken Hill in New South Wales, Australia.

Previous surface geochemical sampling programs completed by Australian Mines across the Broken Hill project area identified areas of elevated cobalt<sup>39</sup>. Subsequent geophysical surveys across these geochemical anomalies detected a cluster of interpreted bedrock-hosted conductive bodies<sup>40</sup>. Of these anomalies, targets Alpha 1 and Alpha 5 in the northern section of the tenement were classified as “high priority targets” by two separate and independent consulting firms who both concluded these targets represent areas of potential base metal mineralisation that warrant follow up test drilling<sup>41</sup>.

In June 2020, Australian Mines initiated a drill program to test two priority base metal targets<sup>42</sup>.

In combination, the reverse circulation (RC) drilling program and down hole electromagnetic (DHEM) survey at Alpha 1 successfully identified off-hole conductive sources suggestive of sulphide mineralisation<sup>43</sup>

Australian Mines proposes a follow-up drill program targeting these off-hole conductors (once government-imposed COVID-related travel restrictions have been lifted) to further assist the Company in vectoring towards any potential significant sulphide mineralisation at this location.

Interpretation of the results from the drill testing, moving loop electromagnetic (MLEM) and IP surveys at Alpha 5 similarly indicates that a conductive source is located near to where Australian Mines drilled its recent RC holes. In this case, the MLEM and IP data suggests that this body is located immediately east of the Company’s recent drilling, has a low resistivity, dips to the west with the conductivity of the body becoming stronger with depth<sup>44</sup>.

As with the Alpha 1 target, Australian Mines proposes to drill test the buried conductor at Alpha 5 once government-imposed COVID-related travel restrictions have been lifted.

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<sup>39</sup> Australian Mines Limited, Large-scale cobalt-in-soil anomalies identified at Thackaringa Project; Sconi continues to advance towards development milestones, released 29 May 2018

<sup>40</sup> Australian Mines Limited, High-priority bedrock conductors detected at Thackaringa Project, New South Wales, released 7 March 2018

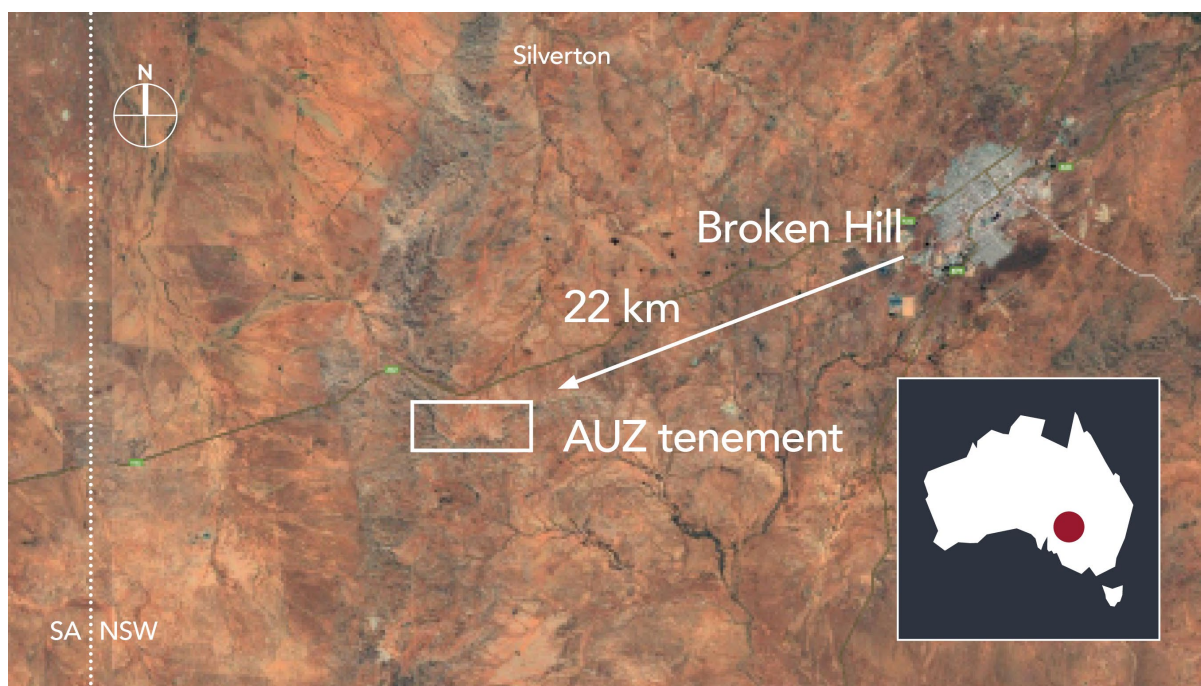
<sup>41</sup> Australian Mines Limited, Drilling of base metal targets commences at Thackaringa Project; New South Wales, released 29 June 2020

<sup>42</sup> Australian Mines Limited, Drilling of base metal targets commences at Thackaringa, released on 29 June 2020

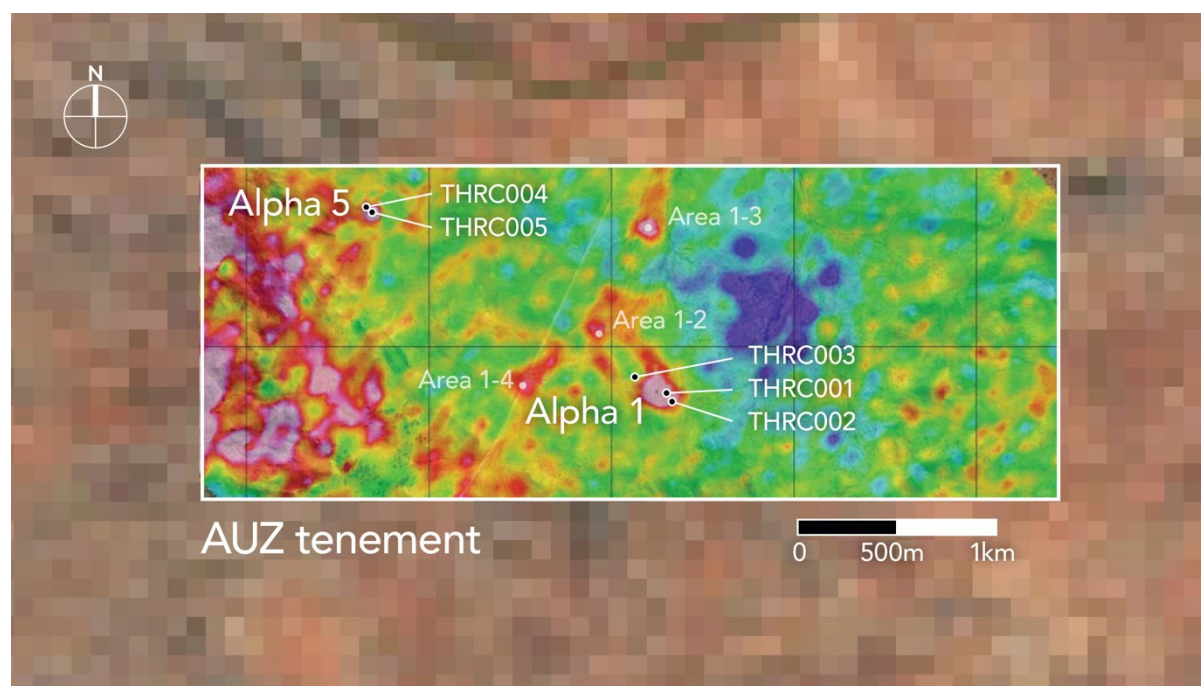
<sup>43</sup> Australian Mines Limited, Positive results support additional drilling at Broken Hill Project, New South Wales, released 6 October 2020

<sup>44</sup> Australian Mines Limited, Positive results support additional drilling at Broken Hill Project, New South Wales, released 6 October 2020





**Figure 6:** Australian Mines' Broken Hill Project is located along strike of, and has the same interpreted geology as, the nearby supergiant Broken Hill lead-zinc-silver deposit.



**Figure 7:** Drill collar location map relative to airborne Versatile Time Domain Electromagnetic (VTEM) anomalies at Australian Mines' Broken Hill Project in New South Wales, Australia.

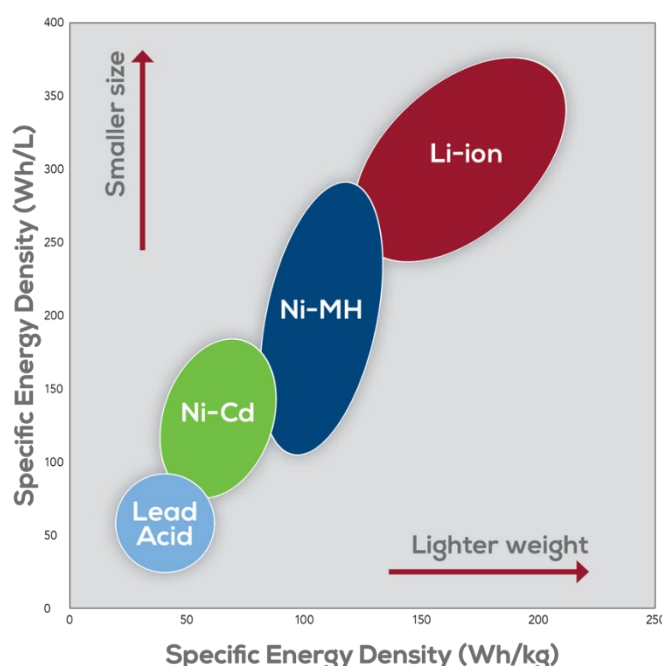
## AML Advanced Materials Limited

Consistent with Australian Mines' focus on the EV and the energy storage industries, the Company has expanded its research and development ("R&D") capabilities to establish the AML Advanced Materials Limited ("AML Advanced Materials") subsidiary<sup>45</sup>.

AML Advanced Materials will seek to leverage the Company's existing R&D activities to become imbedded in the green energy sector. The two principal areas of focus for AML Advanced Materials are power storage and power transmission, which position it as a green energy infrastructure company.

AML Advanced Materials is working towards developing a battery that achieves an energy density target of at least 400 watt-hours per kilogram. This level of energy density would potentially give electric cars more than a 1,000 kilometre range between charges and would begin to make electric powered commercial airplanes an attractive proposition. It is estimated batteries with a minimum energy density of 400 Wh/kg will be required to outperform a kerosene (JET A-1) powered jet aircraft and make electric airplanes commercially viable.

The early-stage, preliminary results of this research to create a 400 watt-hours per kilogram battery are encouraging and more detailed information on this project will be made available if, and when, the appropriate patent protections are in place. Shareholders should note, though, that whilst the initial work is returning positive results, as with all R&D projects, there is no guarantee that this research will lead to a commercially viable product.



**Figure 8:** Australian Mines' subsidiary, AML Advanced Materials, is working towards developing the next generation of battery technology with a target of creating a minimum of a 400 WH/kg battery that extends the industry trend to lighter weight batteries with greater energy density.

<sup>45</sup> [www.amlam.co.uk](http://www.amlam.co.uk)

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

This ASX announcement has been approved and authorised for release by Benjamin Bell,  
Managing Director of Australian Mines Limited.

Benjamin Bell  
Managing Director  
Australian Mines Limited

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Australian Mines is a member of IRMA, the Initiative for Responsible Mining Assurance. This means we are participating in, and supporting, credible independent third-party verification and certification against a comprehensive best-practice standard that addresses the range of environmental and social issues related to industrial-scale mines.

Additionally, Australian Mines supports the vision of a world where the mining industry respects the human rights and aspirations of affected communities, provides safe, healthy and supportive workplaces, minimizes harm to the environment, and leaves positive legacies.



## Appendix 1: Sconi Project Ore Reserve Estimate

Classification	Pit	Ore (Million tonnes)	Nickel (%)	Cobalt (%)	Scandium (ppm)
Proved	Greenvale	4.49	0.83	0.07	36
	Kokomo	1.52	0.72	0.15	58
	Lucknow	2.07	0.47	0.09	51
	<b>Sub-total</b>	<b>8.08</b>	<b>0.72</b>	<b>0.09</b>	<b>44</b>
Probable	Greenvale	13.08	0.73	0.05	29
	Kokomo	17.43	0.57	0.09	31
	Lucknow	18.71	0.42	0.08	38
	<b>Sub-total</b>	<b>49.22</b>	<b>0.55</b>	<b>0.08</b>	<b>33</b>
Total	Greenvale	17.57	0.76	0.06	31
	Kokomo	18.96	0.58	0.10	33
	Lucknow	20.77	0.42	0.08	39
	<b>TOTAL</b>	<b>57.30</b>	<b>0.58</b>	<b>0.08</b>	<b>35</b>

**Table A1-1:** Sconi Project Ore Reserve summary based on variable nickel equivalent cut-off between 0.40% and 0.45%.

Ore Reserve as per Australian Mines' announcement released via the ASX platform on 13 June 2019. Prepared by specialist mine planning consultants, Orelogy, in accordance with the current 2012 JORC Code.

There has been no Material Change or Re-estimation of the Ore Reserve since this 13 June 2019 announcement by Australian Mines.

The Mineral Resource figures in Tables A2-1 to A2-3 of Appendix 2 are inclusive of the Ore Reserve figures above. Approximately 14% of the Ore Reserves (outlined in the table above) are classified as Proved and 86% are classified as Probable. It should be noted that the Proved and Probable Reserves are inclusive of allowance for mining dilution and ore loss.

## Appendix 2: Mineral Resource Estimates

### Sconi Project, Queensland, Australia

(Effective 14 February 2019)<sup>46</sup>

Classification	Tonnes (million tonnes)	Nickel equivalent (%)	Nickel (%)	Cobalt (%)
Measured	5.05	1.06	0.83	0.07
Indicated	17.24	0.90	0.73	0.05
Inferred	10.34	0.63	0.54	0.04
<b>TOTAL</b>	<b>32.63</b>	<b>0.84</b>	<b>0.69</b>	<b>0.05</b>

**Table A2-1:** Greenvale Mineral Resource

(Lower cut-off grade: Nickel equivalent 0.40%)

Classification	Tonnes (million tonnes)	Nickel equivalent (%)	Nickel (%)	Cobalt (%)
Measured	1.60	0.91	0.53	0.11
Indicated	12.63	0.83	0.47	0.11
Inferred	0.38	0.66	0.55	0.03
<b>TOTAL</b>	<b>14.62</b>	<b>0.83</b>	<b>0.48</b>	<b>0.11</b>

**Table A2-2:** Lucknow Mineral Resource

(Lower cut-off grade: Nickel equivalent 0.55%)

Classification	Tonnes (million tonnes)	Nickel equivalent (%)	Nickel (%)	Cobalt (%)
Measured	1.62	1.17	0.73	0.15
Indicated	19.37	0.83	0.57	0.09
Inferred	7.48	0.70	0.53	0.07
<b>TOTAL</b>	<b>28.47</b>	<b>0.81</b>	<b>0.57</b>	<b>0.09</b>

**Table A2-3:** Kokomo Mineral Resource

(Lower cut-off grade: Nickel equivalent 0.45%)

<sup>46</sup> The Mineral Resource Estimates for the Greenvale, Lucknow and Kokomo deposits are reported under JORC 2012 Guidelines and were reported by Australian Mines Limited on 14 February 2019. There has been no Material Change or Re-estimation of the Mineral Resource since this 14 February 2019 announcement by Australian Mines.

Nickel equivalent (NiEq) calculations are described in detail in Appendix 5 of this report.



Classification	Tonnes (million tonnes)	Nickel equivalent (%)	Nickel (%)	Cobalt (%)
Measured	11.4	1.02	0.84	0.05
Indicated	12.7	0.74	0.64	0.03
Inferred	1.7	0.66	0.55	0.03
<b>Total</b>	<b>25.8</b>	<b>0.86</b>	<b>0.72</b>	<b>0.04</b>

**Table A2-4:** Bell Creek Mineral Resource<sup>47</sup>

(Lower cut-off grade: Nickel equivalent 0.45%).

Classification	Tonnes (million tonnes)	Nickel (%)	Cobalt (%)
Indicated	11.9	0.67	0.03
Inferred	2.4	0.60	0.02
<b>Total</b>	<b>14.3</b>	<b>0.66</b>	<b>0.03</b>

**Table A2-5:** Minnamoolka Mineral Resource<sup>48</sup>

(Lower cut-off grade: Nickel 0.45%)

<sup>47</sup> The Mineral Resource Estimate for the Bell Creek deposit is reported under JORC 2012 Guidelines and was reported by Australian Mines Limited on 29 April 2019. There has been no Material Change or Re-estimation of the Mineral Resource since this 29 April 2019 announcement by Australian Mines.

<sup>48</sup> The Mineral Resource Estimate for the Minnamoolka deposit is reported under JORC 2012 Guidelines and was reported by Australian Mines Limited on 21 October 2019. There has been no Material Change or Re-estimation of the Mineral Resource since this 21 October 2019 announcement by Australian Mines.

**Nickel equivalent (NiEq) calculations are described in detail in Appendix 5 of this report.**

## Flemington Project, New South Wales, Australia

(Effective 31 October 2017)<sup>49</sup>

Classification	Tonnes (million tonnes)	Cobalt (%)	Scandium (ppm)
Measured	2.5	0.103	403
Indicated	0.2	0.076	408
<b>Total</b>	<b>2.7</b>	<b>0.101</b>	<b>403</b>

**Table A2-6:** Flemington Mineral Resource

(Lower cut-off grade: Cobalt 0.03%)

<sup>49</sup> The Mineral Resource Estimates for the Flemington deposit is reported under JORC 2012 Guidelines and were reported by Australian Mines Limited on 31 October 2017. There has been no Material Change or Re-estimation of the Mineral Resource since this 31 October 2017 announcement by Australian Mines.

## Appendix 3: Competent Persons' Statements

### Sconi Project, Queensland, Australia

The Mineral Resource for the Sconi Project contained within this document is reported under JORC 2012 Guidelines. This Mineral Resource for the Greenvale, Lucknow and Kokomo deposits within the Sconi Project were first reported by Australian Mines Limited on 14 February 2019. There has been no Material Change or Re-estimation of the Mineral Resource since this 14 February 2019 announcement by Australian Mines Limited.

The information in this report that relates to Sconi Project's Greenvale, Lucknow and Kokomo Mineral Resources is based on, and fairly reflects, information compiled by Mr David Williams, a Competent Person, who is an employee of CSA Global Pty Ltd and a Member of the Australian Institute of Geoscientists (#4176). Mr Williams has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as Competent Person as defined in the 2012 Edition of the Australasian Code for the Reporting of Exploration Results, Mineral Resources, and Ore Reserves (JORC Code). Mr Williams consents to the disclosure of information in this report in the form and context in which it appears.

The Ore Reserve for the Sconi Project contained within this document is reported under JORC 2012 Guidelines. This Ore Reserve was first reported by Australian Mines Limited on 13 June 2019. There has been no Material Change or Re-estimation of the Ore Reserve since this 13 June 2019 announcement by Australian Mines Limited.

The information in this report that relates to Ore Reserves is based on, and fairly reflects, information compiled by Mr Jake Fitzsimons, a Competent Person, who is an employee of Oreology Consulting Pty Ltd and a Member of the Australian Institute of Mining and Metallurgy (MAusIMM #110318). Mr Fitzsimons has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as Competent Person as defined in the 2012 Edition of the Australasian Code for the Reporting of Exploration Results, Mineral Resources, and Ore Reserves (JORC Code). Mr Fitzsimons consents to the disclosure of information in this report in the form and context in which it appears.

The Mineral Resource for the Bell Creek deposit, located within the Sconi Project, contained within this document is reported under JORC 2012 Guidelines. This Mineral Resource was first reported by Australian Mines Limited on 29 April 2019. There has been no Material Change or Re-estimation of the Mineral Resource since this 29 April 2019 announcement by Australian Mines Limited.

The information in this report that relates to the Sconi Project's Bell Creek Mineral Resource is based on, and fairly reflects, information compiled by Mr David Williams, a Competent Person, who is an employee of CSA Global Pty Ltd and a Member of the Australian Institute of Geoscientists (#4176). Mr Williams has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as Competent Person as defined in the 2012 Edition of the Australasian Code for the Reporting of Exploration Results, Mineral Resources, and Ore Reserves (JORC Code). Mr Williams consents to the disclosure of information in this report in the form and context in which it appears.

The Mineral Resource for the Minnamoolka deposit, located within the Sconi Project, contained within this document is reported under JORC 2012 Guidelines. This Mineral Resource was first reported by Australian Mines Limited on 21 October 2019. There has been no Material Change or Re-estimation of the Mineral Resource since this 21 October 2019 announcement by Australian Mines Limited.

The information in this report that relates to the Sconi Project's Minnamoolka Mineral Resources is based on, and fairly reflects, information compiled by Mr David Williams, a Competent Person, who is an employee of CSA Global Pty Ltd and a Member of the Australian Institute of Geoscientists (#4176). Mr Williams has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as Competent Person as defined in

the 2012 Edition of the Australasian Code for the Reporting of Exploration Results, Mineral Resources, and Ore Reserves (JORC Code). Mr Williams consents to the disclosure of information in this report in the form and context in which it appears.

### **Flemington Project, New South Wales, Australia**

The Mineral Resource for the Flemington Project contained within this document is reported under JORC 2012 Guidelines. This Mineral Resource was first reported by Australian Mines Limited on 31 October 2017. There has been no Material Change or Re-estimation of the Mineral Resource since this 31 October 2017 announcement by Australian Mines Limited.

Information in this report that relates to Flemington Project's Exploration Results is based on information compiled by Mr Mick Elias, who is a Fellow of the Australasian Institute of Mining and Metallurgy. Mr Elias is a director of Australian Mines Limited. Mr Elias has sufficient experience relevant to this style of mineralisation and type 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 Elias consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

### **Broken Hill Project, New South Wales, Australia**

The information in this report that relates to the Broken Hill Project's Exploration Results is 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.



## Appendix 4: Forward Looking Statements

This announcement contains forward looking statements. Forward looking statements can generally be identified by the use of forward looking words such as, 'expect', 'anticipate', 'likely', 'intend', 'should', 'could', 'may', 'predict', 'plan', 'propose', 'will', 'believe', 'forecast', 'estimate', 'target', 'outlook', 'guidance', 'potential' and other similar expressions within the meaning of securities laws of applicable jurisdictions.

There are forward looking statements in this document relating to the outcomes of the Sconi Project Bankable Feasibility Study and ongoing refinement work as outlined in this report. Actual results and developments of projects and the market development may differ materially from those expressed or implied by these forward-looking statements. These, and all other forward-looking statements contained in this announcement are subject to uncertainties, risks and contingencies and other factors, including risk factors associated with exploration, mining and production businesses. It is believed that the expectations represented in the forward looking statements are reasonable but they may be affected by a variety of variables and changes in underlying assumptions which could cause actual results or trends to differ materially, including but not limited to price fluctuations, actual demand, currency fluctuations, drilling and productions results, resource estimations, loss of market, industry competition, environmental risks, physical risks, legislative, fiscal and regulatory changes, economic and financial market conditions in various countries and regions, political risks, project delay or advancement, approvals and cost estimates.

Any forward-looking statement is included as a general guide only and speak only as of the date of this document. No reliance can be placed for any purpose whatsoever on the information contained in this document or its completeness. No representation or warranty, express or implied, is made as to the accuracy, likelihood or achievement or reasonableness of any forecasts, prospects, returns or statements in relation to future matters contained in this document. Australian Mines does not undertake to update or revised forward-looking statements, or to publish prospective financial information in the future, regardless of whether new information, future events or any other factors affect the information contained in this announcement, except where required by applicable law and stock exchange listing requirements. To the maximum extent permitted by law, Australian Mines Limited and its Associates disclaim all responsibility and liability for the forward-looking statements, including, without limitation, any liability arising from negligence. Recipients of this document must make their own investigations and inquiries regarding all assumptions, risks, uncertainties and contingencies which may affect the future operations of Australian Mines Limited or Australian Mines Limited's securities.





## Appendix 5: Nickel equivalent calculation – Sconi Project, Queensland

NiEq grades reference in this report were calculated according to the following formula:

$$\text{NiEq} = \frac{[(\text{nickel grade} \times \text{nickel price} \times \text{nickel recovery}) + (\text{cobalt grade} \times \text{cobalt price} \times \text{cobalt recovery})]}{(\text{nickel price} \times \text{nickel recovery})}$$

The formula was derived using the following commodity prices and recoveries:

Forex US\$:A\$ = 0.71,

Nickel – A\$27,946/t and 94.8% recovery,

Cobalt – A\$93,153/t and 95.7% recovery.

Prices and recoveries effective as at 10th February 2019.

Metal recovery data was determined by variability test work of nickel and cobalt solvent extraction during the inhouse pilot plant test work program. Results typically achieved between 90% and 99% from samples with nickel and cobalt grades aligned with expected mine grades as reported from the Mineral Resource model. Lower recoveries of between 85% and 90% were achieved from some lower-grade samples to determine economic cut off grades.

It is the opinion of Australian Mines that all the elements included in the metal equivalents calculation have a reasonable potential to be recovered and sold. Detail supporting the formula are provided further on in this document.

The Competent Person and Australian Mines believe there are reasonable prospects for eventual economic extraction of the Mineral Resources from the Sconi Project. Consideration was given to the relatively shallow depth of the mineralisation, existing infrastructure near to the project including sealed road access, power, labour and water, and positive results from the 2018 Feasibility Study.

The Competent Person and Australian Mines also believe there are reasonable prospects for eventual economic extraction of the Mineral Resources from the Bell Creek and Minnamoolka deposits. Consideration was given to the relatively shallow depth of the mineralisation, and positive results from the 2018 Feasibility Study for the Greenvale and Lucknow deposits located to the south of Bell Creek and Minnamoolka deposits, which share similar geological characteristics to the Bell Creek and Minnamoolka deposits.



## Appendix 6: Tenement Information

### Mining tenements held at end of the quarter

Location	Project	Tenement	Status	Interest
<b>AUSTRALIA</b>				
Queensland	Sconi	ML 10366	Granted	100%
Queensland	Sconi	ML 10342	Granted	100%
Queensland	Sconi	ML 10324	Granted	100%
Queensland	Sconi	ML 10332	Granted	100%
Queensland	Sconi	ML 20549	Granted	100%
Queensland	Sconi	MLA 10368	Pending	100%
Queensland	Sconi	MDL 515	Granted	100%
Queensland	Sconi	MDL 387	Granted	100%
Queensland	Sconi	EPM 25834	Granted	100%
Queensland	Sconi	EPM 25865	Granted	100%
Queensland	Sconi	EPM 25833	Granted	100%
Queensland	Sconi	EPM 26575	Granted	100%
Queensland	Sconi	EPM 26577	Granted	100%
Queensland	Sconi	EPM 26578	Granted	100%
Queensland	Sconi	EPM 26579	Granted	100%
Queensland	Sconi	EPM 26559	Granted	100%
New South Wales	Flemington	EL 7805*	Granted	100%
New South Wales	Flemington	EL 8546	Granted	100%
New South Wales	Flemington	EL 8478	Granted	100%
New South Wales	Flemington	EL 8855	Granted	100%
New South Wales	Broken Hill	EL 8477	Granted	100%

\* The New South Wales Department of Planning, Industry and Environment, Division of Resources and Geoscience notified Flemington Mining Operations Pty Limited (a wholly-owned subsidiary of Australian Mines Limited) that it has renewed Exploration Licence No 7805 (1992) ("**EL 7805**") for a period of 3 years. This tenement now expires in 2023.

### Mining tenements acquired and disposed of during the quarter

Location	Project	Tenement	Status	Interest	Comments
New South Wales	Unallocated	EL8870	Relinquished	0%	-

### Beneficial percentage interests held in farm-in or farm-out agreements at end of the quarter

Location	Project	Agreement	Parties	Interest	Comments
-	-	-	-	-	-

Beneficial percentage interests in farm-in or farm-out agreements acquired or disposed of during the quarter

Location	Project	Agreement	Parties	Interest	Comments
-	-	-	-	-	-

