

28 July 2017

# **Quarterly Activities Report**

Period ended 30 June 2017

# HIGHLIGHTS

# **Demonstration-size Processing Plant**

- Construction of demonstration-size processing plant underway
- On schedule to deliver commercial grade cobalt sulphate, nickel sulphate and scandium oxide products to potential off-take customers this November
- Plant capable of processing more than 15 tonnes of ore per week; delivering 67 kilograms of cobalt sulphate, 500 kilograms of nickel sulphate and 8 kilograms of scandium oxide each week from our world-class Sconi and Flemington Projects

# Sconi Cobalt-Nickel-Scandium Project

- Bankable Feasibility Study advancing to schedule and due for completion at the end of first quarter 2018
- Sconi tracking to become one of the first cobalt-nickel-scandium mining operations commissioned in Australia
- Additional exploration licence applications lodged to increase the Sconi Cobalt-Nickel-Scandium Project footprint by 10 times the original size

# Flemington Cobalt-Scandium-Nickel Project

- Completed resource extension drilling program targeting an increase in overall tonnage as well as maiden cobalt resource (assays due within two weeks)
- Final assay results from drilling program to support Mineral Resource update scheduled for September 2017



# Thackaringa Cobalt Project

- Land access agreement clears way for exploration across the entire project
- Field program targeting repetitions of Cobalt Blue's Pyrite Hill / Railway cobalt mineralisation scheduled to commence this September

# **Financial Position**

• \$4.6 million cash-in-bank and no debt as at 30 June 2017

Australian Mines Limited ("Australian Mines" or "the Company"; ASX: AUZ) is pleased to provide shareholders with its Quarterly Activities Report for the period ended 30 June 2017.

**Managing Director, Benjamin Bell commented,** "Australian Mines is developing two world class cobalt, nickel, scandium projects as the world moves rapidly to cleaner, more sustainable energy sources. Interest from future off-take partners continues to build, driven by battery manufacturers' real concerns over whether current suppliers of raw battery materials can satisfy demand.

"In an era where batteries will be used to power vehicles as well homes and industry, the Sconi and Flemington Projects, which are projected to have mine lives of at least the next 20 years, have the potential to provide 95% of the raw materials used in emerging battery technologies.

"The construction of our demonstration-size plant is very important for Australian Mines. The production of bulk samples of commercial grade cobalt sulphate, nickel sulphate and scandium oxide will fast track negotiations with both potential customers and project financiers.

"Our strategy is to establish a dominant position in the global supply of cobalt and nickel sulphates and scandium oxide products, and we have continued to make significant progress in this regard throughout the June quarter. International manufacturers have made it clear they want to secure long term, reliable supplies of strategic battery and technology metals from a trusted mining jurisdiction like Australia.

"With construction of the processing plant underway, we are on track to begin shipments of bulk samples in November delivering samples from both Sconi and Flemington for end-customers to assess for their specific purposes.

"We are pleased to be in a position where the Sconi Project is one of the few sizable, advanced cobalt projects in Australia and the Flemington Project also shows real potential in meeting the demand for technology metals over coming decades.



"The size of the Sconi tenement portfolio is set to increase 10-fold with our application for five new exploration licences. This gives us operational flexibility around the existing Mining Leases and we also believe this expanded area is highly prospective for additional cobalt-nickel-scandium mineralisation. This creates the potential to significantly expand our existing Mineral Resource at Sconi over the new Financial Year.

"The Pre-Feasibility Study (PFS) for Sconi was based on throughput estimated to deliver an annual average production of 3,010 tonnes of cobalt sulphate and 24,420 tonnes of nickel sulphate for at least the first 20 years. The current Bankable Feasibility Study (BFS) is assessing scenarios which include the construction of a mining and processing operation capable of trebling the amount of cobalt and nickel produced annually.

"Significantly, increasing the Sconi footprint through the EPM applications could provide the space to pursue such an option if deemed economic by our mining studies.

"We were also pleased to complete a resource extension drilling program for the Flemington Project and eagerly await the final assay results as we target a Mineral Resource update in September 2017. We also expect to move straight to a PFS in September and to have that completed in April 2018.

"The latest drilling comes on the back of a Scoping Study released in the March quarter which found high-grade cobalt mineralisation continues beyond the current Mineral Resource Estimate for the Flemington ore body, which is the same mineralisation that continues across our boundary and supports Clean TeQ's Syerston project.

"Australian Mines expects to begin another drilling campaign at Flemington later this year with a view to continuing to extend and increase the mineral endowment. A Mining Lease application has been submitted, environmental studies commenced and water allocation is being secured for any future mining operation.

*"Field exploration of the Thackaringa Cobalt Project is also scheduled to begin in the September quarter following the signing in June of a Land Access Agreement with the relevant landholders. The tenement covered under this access agreement provides Australian Mines with a strategic ground position to the north and south of Cobalt Blue's tenements.* 

*"The Thackaringa field exploration program will target areas identified as having favourable geology on either side of the Cobalt Blue tenements."* 



# Demonstration-size Cobalt, Nickel, Scandium Processing Plant

Construction of the demonstration-size cobalt, nickel, scandium processing plant began in May with the fabrication and build time estimated at six months.

The plant, located in Perth due to the relevant metallurgical expertise in Western Australia, remains on target to be fully operational and processing bulk samples of ore from the Sconi and Flemington projects by November 2017.

The plant uses a conventional pressure acid leach (PAL) front end to dissolve the metals into solution with a solid-liquid separation and standard solvent extraction (SX) and sulphate crystallisation back end to separate out the cobalt, nickel and scandium to produce final products.

Australian Mines engaged The Simulus Group to carry out construction with the short build time attributable in a large part to Australian Mines using standard, readily available processing equipment sourced from dedicated plant suppliers, combined with an established processing flow chart already in use at several large-scale commercial operations around the world.

With a throughput capacity of 2,200 kilograms per day, when run on a continuous basis, this plant has the potential to deliver a weekly output of<sup>1</sup>:

- ✓ 67 kilograms of cobalt sulphate,
- ✓ 500 kilograms of nickel sulphate, and
- ✓ 8 kilograms of scandium oxide.

Commissioning of the plant later this year is expected put Australian Mines in a prime position to strengthen engagement with potential off-take partners in the battery and cobalt trading sectors. The shipping of bulk samples of cobalt sulphate and nickel sulphate to potential customers will serve to reinforce certainty around expected product quality.

In addition to cobalt sulphate and nickel sulphate, the plant will produce bulk samples of scandium oxide for a European auto-manufacturer and other parties interested in producing high strength weldable aluminum.

Australian Mines regards production of commercial grade cobalt, nickel and scandium products as significant in expediting on-going negotiations with potential customers across Europe, Asia and the Middle East.

<sup>&</sup>lt;sup>1</sup> See Appendix 3 of this report for calculations



The demonstration-size processing plant is designed in a way to make it readily scaleable to a full-size plant. The design allows Australian Mines to optimise the processing flow chart and metal recoveries at a smaller scale prior to the design and construction of a larger commercial-scale plant currently proposed to be built at Sconi<sup>2</sup>.



**Figure 1:** Schematic of the processing flow sheet for the demonstration-size plant currently under construction in Perth, Western Australia. This flow sheet represents a standard approach used by industry, which is successfully delivering cobalt sulphate and nickel sulphate to current battery manufacturers. This was also the flow sheet initial proposed by Clean TeQ, according to their publicly available Syerston Project Environmental Report dated May 2016 and submitted to the New South Wales State Government.

<sup>&</sup>lt;sup>2</sup> subject to completion of the Company's Bankable Feasibility Study and funding being secured





#### Figure 2: Comparison schematic:

Green highlighted pathway is Australian Mines' processing flow sheet for producing commercial grade cobalt sulphate, nickel sulphate and scandium oxide (and Clean TeQ's original processing route).

Red highlighted pathway is Clean TeQ's revised processing flow sheet as outlined in their Syerston Project Environmental Report dated May 2016 and submitted to the New South Wales State Government.

As stated by Clean TeQ is their May 2016 report, irrespective of which of the two process plant circuits a given company uses, both will produce the same cobalt sulphate and nickel sulphate products<sup>3</sup>.

<sup>&</sup>lt;sup>3</sup> Source: Clean TeQ Holdings Limited, Syerston Project Environmental Report, dated May 2016

Note: the *Metal Recovery* circuit described in Clean TeQ's revised process is a two part system, which includes solvent extraction (SX) to produce the final cobalt and nickel sulphate products.



# Sconi Cobalt-Nickel-Scandium Project

The Sconi Cobalt-Nickel-Scandium Project is one of the most advanced cobalt projects in Australia as outlined in Figure 3 below.

All relevant mining and environmental licences are in place to support the development of a mining and processing operation at the Sconi Project, and Australian Mines expects to announce a final investment decision in April 2018, a month after the scheduled release of the Bankable Feasibility Study (BFS).

Australian Mines is earning up to a 75% interest in the Sconi Project, located near the historic mining centre of Greenvale in Queensland, from Metallica Minerals Limited (ASX: MLM)<sup>4</sup> through funding the BFS and subsequently securing project finance.

The BFS, being completed by a leading international mine consulting firm, progressed to schedule in the June quarter with this study assessing the feasibility of a number of scenarios for any future operations at Sconi, including much higher production of cobalt and nickel than contemplated in the Pre-Feasibility and Scoping Studies<sup>5</sup>.

Australian Mines moved to substantially increase the Sconi tenement portfolio in the June quarter through five Exploration Permits for Minerals (EPM) applications<sup>6</sup>.

The new EPM applications cover a total area of 1,185 square kilometres and, if granted, will increase the size of the Sconi tenement holding by approximately 10 times in comparison to when the joint venture agreement was signed with Metallica Minerals in October 2016.

Not only does this create a larger buffer around the project's existing Mining Leases, thereby providing increased flexibility for the development of infrastructure for mining operations, but it also potentially allows the Company to expand the existing Mineral Resource<sup>7</sup> beyond its current five kilometre strike length as well as unlocking additional exploration potential.

<sup>&</sup>lt;sup>4</sup> Australian Mines Limited, Strategic acquisitions position Australian Mines to fast-track into a leading global scandium company, released 10 October 2016

<sup>&</sup>lt;sup>5</sup> Australian Mines Limited, Technical Reports, released 31 March 2017.

<sup>&</sup>lt;sup>6</sup> Australian Mines Limited, 10-fold expansion of Sconi tenement area, released 29 June 2017

<sup>&</sup>lt;sup>7</sup> The Mineral Resource Estimate for the Sconi Cobalt-Nickel-Scandium Project is reported under JORC 2012 Guidelines and was reported by Australian Mines Limited on 31 March 2017. The global Mineral Resource for Sconi, as announced on 31 March 2017 is: Measured 17Mt @ 0.80% Ni, 0.07% Co, Indicated 48Mt @ 0.58% Ni, 0.07% Co, Inferred, 24Mt @ 0.41% Ni, 0.06% Co. There has been no Material Change or Re-estimation of the Mineral Resource since this 31 March 2017 announcement by Australian Mines.

Included in Australian Mines' 31 March 2017 announcement is full disclosure on the published cobalt, nickel and scandium production targets as contemplated by both the Scoping Study and subsequent Pre-Feasibility Study of the Sconi Project, with both studies being completed by leading independent mining consulting firms.

These published studies demonstrate that the Sconi Cobalt-Nickel-Scandium Project could support a mine life in excess of 30 years, which the average feed grade for the first 20 years at Sconi being 0.11% cobalt, 0.81% nickel, and 109 g/t scandium.

The product price used in these studies is consistent with pricing used by similar companies in their corresponding economic studies, and are considered conservative. The long-term cobalt price of US\$15 per pound using in the Sconi studies, for example, is significantly lower than the current market price of US\$26 per pound. Moreover, the cobalt price used in the Sconi studies does not factor in the price premium for cobalt sulphate and nickel sulphate products, both of which Australian Mines intends to produce at Sconi.



Company	Mining Lease Granted	Environmental Approval	Mine Study Completed	Av. Cobalt Feed Grade	20+ year Mine Life
Australian Mines   Sconi Project	$\checkmark$	$\checkmark$	$\checkmark$	0.11%	$\checkmark$
Metals X   Wingellina Project	×	$\checkmark$	$\checkmark$	0.08%	$\checkmark$
Clean TeQ Holdings   Syerston Project	×	$\checkmark$	$\checkmark$	0.14%	$\checkmark$
GME Resources   NiWest Project	$\checkmark$	$\checkmark$	×		×
Ardea Resources   Kalgoorlie Nickel Project	$\checkmark$	×	$\checkmark$	0.07%	$\checkmark$
Cassini Resources   West Musgrave Project	$\checkmark$	×	×		×
Cobalt Blue Holdings   Thackaringa Project	$\checkmark$	×	×		
Hammer Metals   Millenium Project	$\checkmark$	×	×		
Barra Resources   Mt Thirsty Project	×	×	×		
Aeon Metals   Walford Creek Project	×	×	×		×
Corazon Mining   Mount Gilmore Project	×	×	X		
Platina Resources   Owendale Project	X	X	X		X

Figure 3: The Sconi Project is one of the most advanced cobalt projects in Australia<sup>8</sup>

# Flemington Cobalt-Scandium-Nickel Project

The Flemington Cobalt-Scandium-Nickel Project is located within 400 kilometres of Sydney and is considered the western continuation of Clean TeQ Holdings' (ASX: CLQ) Syerston deposit<sup>9</sup>.

Australian Mines is acquiring a 100% interest in the Flemington Project from Jervois Mining (ASX: JRV) through a series of options payments and associated fees<sup>10</sup>.

During this quarter, Australian Mines completed a 239-hole resource extension drilling program at Flemington<sup>11</sup>, which was designed to facilitate<sup>12</sup>:

<sup>&</sup>lt;sup>8</sup> Source: Apex Geoscience Pty Ltd

Table based on publicly available information as at 10 July 2017

Whilst Platina Resources has a low grade 0.06% cobalt resource, their PFS of 10 July 2017 stated that the cobalt is insignificant in any future mining operation, and does not contribute to the economics of the project.

Whilst Cobalt Blue have reported a Scoping Study has been completed for their Thackaringa Project, as this Study was undertake on an Inferred Resource, the details of this Study including Capex, Opex, and average cobalt feed grade for the Life Of Mine is not publicly available at present.

<sup>&</sup>lt;sup>9</sup> Australian Mines Limited, Flemington Scoping Study advances project to Pre-Feasibility Study phase, released 15 March 2017 and Australian Mines Limited, Technical Reports, released 31 March 2017

<sup>&</sup>lt;sup>10</sup> Australian Mines Limited, Strategic acquisitions position Australian Mines to fast-track into a leading scandium company, released 10 October 2017

<sup>&</sup>lt;sup>11</sup> Australian Mines Limited, Resource extension drilling commences at Flemington, released 11 May 2017

<sup>&</sup>lt;sup>12</sup> Australian Mines would like to stress to shareholders that there is no guarantee that its recently completed resource extension drilling program at Flemington will result in either a cobalt resource being defined for this project or an increase in the total tonnage of existing scandium Mineral resource (as described in Company's announcement of 31 March 2017).



- i. a maiden cobalt resource estimation for the project,
- ii. an increase in tonnage of the existing high-grade scandium Mineral Resource<sup>13</sup>, and
- iii. an understanding of the nickel potential of the western half of the Tout Complex (the Tout Complex being the geology unit that hosts both Australian Mines' Flemington deposit and Clean TeQ's Syerston mineralisation).

Whilst the Company had anticipated receiving the assay results from this program around mid-July, the commercial laboratory is experiencing a greater than expected number of samples from its Australian and New Caledonian clients. As such, Australian Mines now expects to receive the assay results from its Flemington drilling program within the next two weeks, at which time these results will be reported to the market.

The commissioning of the Flemington resource extension drilling program by Australian Mines followed the release of a positive Scoping Study for this project<sup>14</sup>, which found that:

- ✓ a future operation at Flemington will have a very low strip ratio of 0.9 waste : 1.0 t of ore (so more mineralised ore than waste is moved during mining). This represents a competitive advantage for Australian Mines as it will likely result in significantly lower overall mining costs for any future operation at Flemington compared to typical laterite mining operations,<sup>15</sup>
- ✓ the Flemington ore is well suited to a hydrometallurgical processing flowsheet (such as a pressure acid leach and solvent extraction system, thereby permitting Australian Mines to use proven processing equipment and methodologies),
- ✓ it will have a long projected operating life, estimated at over 30 years of production, and
- ✓ cobalt and scandium mineralisation potentially continues beyond the current Mineral Resource<sup>16</sup>

<sup>&</sup>lt;sup>13</sup> See Australian Mines Limited announcement dated 31 March 2017 for full details of the Flemington Mineral Resource Flemington Mineral Resource: Measured 2.67Mt @ 435g/t Sc, Indicated 0.47Mt @ 426g/t Sc for total Mineral Resource of 3.14Mt @ 434g/t Sc. There has been no Material Change or Re-estimation of the Mineral Resource since this 31 March 2017 announcement by Australian Mines Limited.

<sup>&</sup>lt;sup>14</sup> Australian Mines Limited, Flemington Scoping Study advances project to Pre-Feasibility Study phase, released 15 March 2017 and Australian Mines Limited, Technical Reports, released 31 March 2017

<sup>&</sup>lt;sup>15</sup> According to Metals X, a typical laterite deposit has a stripping ratio of 3 – 5 waste : 1 ore

<sup>(</sup>https://www.metalsx.com.au/system/assets/26/original/Nickel\_Division.pdf).

<sup>&</sup>lt;sup>16</sup> See Australian Mines Limited announcement dated 31 March 2017 for full details of the Flemington Mineral Resource Flemington Mineral Resource: Measured 2.67Mt @ 435g/t Sc, Indicated 0.47Mt @ 426g/t Sc for total Mineral Resource of 3.14Mt @ 434g/t Sc. There has been no Material Change or Re-estimation of the Mineral Resource since this 31 March 2017 announcement by Australian Mines Limited.



Full details of the Scoping Study, including the underlying assumptions, are reported in Australian Mines' announcement dated 31 March 2017, which is available on the Company's website (www.australianmines.com.au) or through the ASX website at www.asx.com.au (using ticker code "AUZ").

Following receipt of the assays from the recent resource extension drill program, the Company anticipates releasing an updated Mineral Resource estimate<sup>17</sup> by early-September, in preparation for a Pre-Feasibility Study (PFS) scheduled to starting that same month.



**Figure 4:** Located in central New South Wales, 370 kilometres west of Sydney, the Flemington Project is a direct continuation of Clean TeQ's Syerston ore body, separated purely by a tenement boundary.

<sup>&</sup>lt;sup>17</sup> See Australian Mines Limited announcement dated 31 March 2017 for full details of the Flemington Mineral Resource Flemington Mineral Resource: Measured 2.67Mt @ 435g/t Sc, Indicated 0.47Mt @ 426g/t Sc for total Mineral Resource of 3.14Mt @ 434g/t Sc. There has been no Material Change or Re-estimation of the Mineral Resource since this 31 March 2017 announcement by Australian Mines Limited.



# Thackaringa Cobalt Project

Australian Mines' 100%-owned Thackaringa Cobalt Project immediately adjoins Cobalt Blue's (ASX: COB) Pyrite Hill / Railway / Thackaringa cobalt project in New South Wales.

Mapping undertaken by the New South Wales' Geological Survey indicates that the favourable geology hosting Cobalt Blue's neighboring cobalt mineralisation appears to continue through Australian Mines' project area.

The presence of potential cobalt-bearing rocks within the Company's Thackaringa Project was reaffirmed by Australian Mines' exploration team who subsequently identified three high-priority target areas (nominally labeled *Target Areas A*, *B* and *C* in Figure 5) that warrant further testing.

Encouraged by the results of its comprehensive review and analysis of the open-file data, last month, Australian Mines signed a Land Access Agreement with the relevant landholders, which allows the Company to immediately commence exploration across its entire Thackaringa project area<sup>18</sup>.

Mindful that June to August is the prime lambing season across the Broken Hill region, Australian Mines has elected to delay its on-ground activities at Thackaringa until September at which time the Company's will commence a two-pronged exploration program of:

- i. Tight-spaced surface geochemical sampling program on a 100 by 40 metre regular grid over each of the three high-priority cobalt target areas, and
- ii. Airborne electromagnetic (EM) survey over the entire tenement area.

It is expected that the airborne geophysical (EM) survey will 'map' the cobalt-hosting pyritic geology present across project area, with a particular emphasis on identifying sub-cropping cobaltiferous rocks that may not be readily apparent when outcrop mapping.

The detailed soil sampling and rock chip program, on the other hand, will enable Australian Mines to accurately target its maiden drilling campaign at Thackaringa allowing for an accelerated progression from early-stage exploration to potential resource estimation<sup>19</sup>.

<sup>&</sup>lt;sup>18</sup> Australian Mines Limited, Access agreement signed for Thackaringa Cobalt Project, released 9 June 2017

<sup>&</sup>lt;sup>19</sup> Whilst Australian Mines is greatly encouraged by the historic open-file exploration data available over its Thackaringa Cobalt Project, shareholders should not expect that further work at Thackaringa will result in a Mineral Resource being estimated or the delineation of an ore body.





**Figure 5:** Australian Mines' Thackaringa Cobalt Project immediately adjoins Cobalt Blue's Pyrite Hill and Railway cobalt projects in central New South Wales.

# Arunta West Copper-Gold Project

The Arunta West Copper-Gold Project, located 600 kilometres west of Alice Springs near the Western Australia and Northern Territory border, is a joint venture between Australian Mines and Jervois Mining (ASX: JRV), which takes in three tenements covering 345 square kilometres in the proven Lake Mackay district of Western Australia.

Australian Mines separately holds a 100% interest in two tenements adjoining the Arunta West JV area, covering an additional 1,100 square kilometres.

Included within the Arunta West joint venture area is the North Dovers iron-oxide copper-gold (IOCG) target.

North Dovers was first identified by BHP in the 1990s during their extensive search for Australia's next potential Olympic Dam<sup>20</sup>.

<sup>&</sup>lt;sup>20</sup> Exploration and Discovery Services Pty Ltd, Preliminary data review for the West Arunta Project, internal report for Australian Mines Limited, dated May 2016



With a co-incident gravity and magnetic anomaly, probable electromagnetic (EM) conductor associated with the buried gravity feature, and a subtle gold-in-soil anomaly, North Dovers does appear to tick many of the boxes required when exploring for potential Olympic Dam or Ernest Henry-style ore bodies<sup>21</sup>.

Given the impressive size of the North Dovers anomaly (~8 kilometres wide), Australian Mines' first priority at Arunta West is to identify the optimal location for the maiden drill hole into this promising target<sup>22</sup>.

The Company is, therefore, presently preparing to mobilise an exploration crew to its Arunta West Project, including experienced geophysical contractor, Haines Surveys, who will complete detailed ground gravity survey over the North Dovers copper-gold target, as well as completing further reconnaissance of the secondary Mantati base metal prospect.

Australian Mines' Arunta West geophysical program is anticipated to be completed this quarter, and the Company will update shareholders as results become available.

# **Doolgunna-Marymia Gold Project**

The Doolgunna-Marymia Gold Project is situated approximately 900 kilometres north of Perth and within 50 kilometres of the Canadian-listed Superior Gold's Plutonic Gold Mine.

The project is being explored under a joint venture agreement with Riedel Resources (ASX: RIE), with Australian Mines on track to satisfying its exploration spending obligations to earn an 80% interest in the project by May 2018.

According to an international, independent resource consulting firm, the Company's Dixon prospect, which has already demonstrated an ability to host high-grade gold mineralisation<sup>23</sup>, appears to have similar geological characteristics and gold-hosting potential as Breaker Resources' (ASX: BRB) Lake Roe gold project, located further south near Kalgoorlie<sup>24</sup>.

<sup>&</sup>lt;sup>21</sup> Please note that whilst the exploration results received from Australian Mines' North Dover's target to date is suggestive that IOCG mineralisation may be present, there is no guarantee that this project hosts an Olympic Dam or Ernest Henry-type ore body and shareholders should not expect further work at North Dovers will result in the delineation of an IOCG ore body.

<sup>&</sup>lt;sup>22</sup> A review of the Western Australian Department of Mines and Petroleum (DMP) open-file records indicate that the North Dovers IOCG target is presently untested by any drilling.

As noted by Andrew Watson of Anterrra Consulting "Until the 1970's Olympic Dam was completely unknown lying under 100's metres of unremarkable weathered rock and a thick cover of sandstone and limestone. However, it was a large gravity anomaly that was picked out from a survey and then drilled. The first hole missed, and the next 9 missed as well (but intercepted large widths of alteration and sub-economic mineralization) it was the 10<sup>th</sup> hole RD-10 which hit 170 metres of 2% Copper" – from https://www.geologyforinvestors.com/great-deposits-olympic-dam/.

 <sup>&</sup>lt;sup>23</sup> Australian Mines Limited, High-grade gold zone extended at Dixon prospect, released 6 November 2015
<sup>24</sup> Apex Geoscience Limited, Lake Roe Gold Project Overview and Comparison to Dixon Prospect, Western Australia, internal company report, dated 18 September 2016



During the quarter, therefore, Australian Mines completed the necessary on-ground preparation work for a proposed air core drilling program at Dixon, which has been designed to test the prospect's 6-kilometre-long auriferous target zone.

Whilst the exact timetable for the Dixon drill program is still to be confirmed, the Company anticipates that this drilling will occur no later than November 2017.

## **Marriotts Nickel Project**

No activity was undertaken on Australian Mines' 100%-owned Marriotts Nickel Project during this reporting period and the Company has no immediate plans to commence further exploration or development activities at Marriotts in 2017.

Australian Mines believes that the potential remains to increase the existing Mineral Resource<sup>25</sup> at Marriotts given the right economic environment.

# Corporate Activity

#### General Meeting

The Company held a General Meeting at 10.30am (Australian East Standard Time, AEST) on 11 April 2017 at the Royal South Yarra Lawn Tennis Club, 310 Williams Road North, Toorak Victoria. All resolutions put at the meeting were passed<sup>26</sup> by shareholders.

#### **Promotional Activities**

Australian Mines' promotional activities during the June quarter included a significant investor and potential customer road show by Managing Director Benjamin Bell in the Middle East, Europe and Asia.

Post-period close, the Company exhibited at the Aluminum China 2017 Expo in Shanghai. This followed a successful series of introductions to potential offtake partners at a similar end-customer trade event in late 2016.

## \*\*\*ENDS\*\*\*

<sup>&</sup>lt;sup>25</sup> See Australian Mines Limited's announcement dated 15 November 2007 for full details of the Marriotts Mineral Resource

Marriotts Mineral Resource: Indicated 0.46Mt @ 1.12% Ni; Inferred 0.37Mt @ 1.15% Ni for total Mineral Resource of 0.83Mt @ 1.13% Ni. There has been no Material Change or Re-estimation of the Mineral Resource since this 15 November 2007 announcement by Australian Mines.

The Mineral Resources of the Marriotts Nickel Project is reported under JORC 2004 Guidelines, as there has been no Material Change or Re-estimation of the Mineral Resource since the introduction of the JORC 2012 Code. Future estimates of the Marriotts Nickel Project resource will be completed to JORC 2012 Guidelines.

<sup>&</sup>lt;sup>26</sup> Australian Mines Limited, Results of General Meeting, released 11 April 2017



# For further information:

Shareholders contact: Benjamin Bell Managing Director Ph: +61 8 9481 5811 E: bbell@australianmines.com.au

Media contact: Michael Cairnduff Cannings Purple Ph: +61 406 775 241 E: mcairnduff@canningspurple.com.au





# **Competent Persons' Statements**

#### Sconi Cobalt-Nickel-Scandium Project

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

#### Flemington Cobalt-Scandium-Nickel Project

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

#### **Doolgunna-Marymia Gold Project**

Information in this report that relates to Doolgunna - Marymia Gold Project Exploration Results, Mineral Resources or Ore Reserves 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.

#### **Arunta West Copper-Gold Project**

Information in this report that relates to Arunta West Copper-Gold Project Exploration Results, Mineral Resources or Ore Reserves 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.

#### **Marriotts Nickel Project**

The information in this report that relates to the Marriotts Nickel Project Exploration Results, Mineral Resources or Ore Reserves 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 is appears. This document contains Mineral Resources of the Marriotts Nickel Project that are reported under JORC 2004 Guidelines, as there has been no Material Change or Re-estimation of the Mineral Resource since the introduction of the JORC 2012 Code. Future estimates of the Marriotts Nickel Project resource will be completed to JORC 2012 Guidelines.



# Appendix 1: Tenement Information

# Mining tenements held at end of the quarter

Location	Project	Tenement Status		Interest
AUSTRALIA				
Queensland	Sconi	ML 10366	Granted	0%
Queensland	Sconi	ML10342	Granted	0%
Queensland	Sconi	ML10324	Granted	0%
Queensland	Sconi	ML 10332	Granted	0%
Queensland	Sconi	ML 20549	Granted	0%
Queensland	Sconi	ML 10368	Granted	0%
Queensland	Sconi	MDL 515	Granted	0%
Queensland	Sconi	MDL 387	Granted	0%
Queensland	Sconi	EPM 25834	Granted	0%
Queensland	Sconi	EPM 25865	Granted	0%
Queensland	Sconi	EPM 25833	Granted	0%
Queensland	Sconi	EPM 26575	Pending grant	0%
Queensland	Sconi	EPM 26576	Pending grant	0%
Queensland	Sconi	EPM 26577	Pending grant	0%
Queensland	Sconi	EPM 26578	Pending grant	0%



Queensland	Sconi	EPM 26579	Pending grant	0%
New South Wales	Flemington	EL 7805	Granted	0%
New South Wales	Flemington	EL 8546	Granted	0%
New South Wales	Flemington	EL 8478	Granted	100%
New South Wales	Flemington	MLA 538	Pending grant	100%
New South Wales	Flemington	ELA 5495	Pending grant	100%
New South Wales	Thackaringa	EL 8477	Granted	100%
Western Australia	Doolgunna-Marymia	E 52/2394	Granted	51%
Western Australia	Doolgunna-Marymia	E 52/2395	Granted	51%
Western Australia	Arunta West	E 80/4820	Granted	0%
Western Australia	Arunta West	E 80/4986	Pending grant	0%
Western Australia	Arunta West	E 80/4897	Pending grant	0%
Western Australia	Arunta West	E 80/5031	Granted	100%
Western Australia	Arunta West	E 80/5032	Granted	100%
Western Australia	Marriotts	M 37/096	Granted	100%

#### Purchase Agreement – Flemington Cobalt-Scandium-Nickel Project

Australian Mines announced on 10 October 2016 that the Company had entered into an Option Agreement with Jervois Mining Limited (ASX: JRV) to acquire 100% of the Flemington Cobalt-Scandium-Nickel Project near Fifield in New South Wales.

The Flemington Project comprises the granted tenements EL7805 and EL8546 (previously pending exploration tenement ELA5370), which was subsequently granted by the New South Wales Department of Trade and Investment, Resources and Energy Division on 30 March 2017).



Under the terms of this agreement, Australian Mines has been granted a series of options to enable the Company to purchase 100% of the Flemington Scandium-Cobalt Project:

- Option 1: a non-refundable fee which Australian Mines paid upon execution of the agreement for the option period to 5January 2017;
- Option 2: a non-refundable fee which Australian Mines paid in December 2016 for the option period to 5 April 2017;
- Option 3: a non-refundable fee which Australian Mines paid in April 2017 for the option period to 2 October 2017;
- Option 4: a non-refundable \$500,000 fee payable by Australian Mines upon expiry of Option 3 for a further 6 months to 31 March 2018; and
- Option 5: a non-refundable \$500,000 fee payable by Australian Mines upon expiry of Option 4 for a further 6 months to 27 September 2018.

The total purchase price of the Flemington Cobalt-Scandium-Nickel Project will be \$6 million, minus the total of all option fees paid. The agreement with Jervois Mining also includes a 1.5% gross sales royalty on all proceeds from the sale of products derived from the Flemington assets. Australian Mines has the right to withdraw from this acquisition at any time.

Australian Mines is the operator and manager of the Flemington Project.

Location	Project	Tenement	Status	Interest	Comments
AUSTRALIA					
Western Australia	Arunta West	E 80/5031 E 80/5032	Granted Granted	100% 100%	-

## Mining tenements acquired and disposed of during the quarter



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

Location	Project	Agreement	Parties	Interest	Comments
AUSTRALIA					
Queensland	Sconi	Joint Venture Agreement	Australian Mines and Metallica Minerals	0%	Announced 10 October 2016
Western Australia	Doolgunna- Marymia	Heads of Agreement	Australian Mines and Riedel Resources	51%	Announced 30 April 2014 and 29 May 2015
Western Australia	Arunta West	Joint Venture Agreement	Australian Mines and Jervois Mining	0%	Announced 23 May 2016

## Sconi Cobalt-Nickel-Scandium Joint Venture

Australian Mines announced on 10 October 2016 that the Company had entered into a joint venture agreement with Metallica Minerals Limited (ASX: MLM) to earn up to a 75% interest in the advanced Sconi Cobalt-Nickel-Scandium Project near the historic mining centre of Greenvale in northern Queensland.

The key terms of the Sconi joint venture agreement include:

- Australian Mines can earn a 50% interest in the Sconi Cobalt-Nickel-Scandium Project by completing a Bankable Feasibility Study (BFS) on the project by October 2020 (or spend \$10 million on the project by this date whichever occurs first).
- Australian Mines can earn an additional 25% (taking the total to 75%) in the Sconi Cobalt-Nickel-Scandium Project by procure thing funding contemplated in the BFS no later than 18 months following completion of this study.
- Australian Mines has the right to withdraw from this joint venture at any time.

Australian Mines is the operator and manager of the Project.



#### Doolgunna – Marymia Joint Venture

Australian Mines currently holds a 51% interest in the Australian Mines – Riedel Resources (ASX: RIE) joint venture tenements of E52/2394 & E52/2395, with Australian Mines on track to satisfying its exploration spending obligations to earn an 80% interest in these tenements by May 2018.

Australian Mines is the operator and manager of the Doolgunna-Marymia Project.

#### Arunta West Joint Venture

Under the Arunta West joint venture agreement, Australian Mines has the right to farm into Jervois Mining's three exploration licenses of E80/4820 (granted), E80/4896 (under application) and E80/4897 (under application), which cover a total area of approximately 345 square kilometres.

The key terms of this agreement include:

- Australian Mines must spend a minumum of \$350,000 on exploration by 23 May 2018 to acquire a 51% interest in the Arunta West Project.
- Following the acquistion of the intial 51%, Australian Mines may elect to acquire an additional 29% (taking the total to 80%) in the Arunta West Project by spending a further \$3.15 million on exploration within a further 24 month period.

The Company remains on track to satisfy its exploration spending obligations and earn its initial 51% interest in these tenements by May 2018.

Australian Mines is the operator and manager of the Arunta West Project.

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

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



# **Appendix 2: Mineral Resource Estimates**

# Mineral Resource for the Sconi Cobalt-Nickel-Scandium Project<sup>27</sup>

Measured Resource:	0.7 million tonnes	208 g/t Scandium
Indicated Resource:	6.5 million tonnes	174 g/t Scandium
Total Resource:	7.2 million tonnes	177 g/t Scandium
Total Scandium Oxide (Sc <sub>2</sub> 0 <sub>3</sub> )*:	1,950 tonnes	(using a 100g/t Sc lower cut-off)

Measured Resource:	17 million tonnes	0.80% Nickel	0.07% Cobalt
Indicated Resource:	48 million tonnes	0.58% Nickel	0.07% Cobalt
Inferred Resource:	24 million tonnes	0.41% Nickel	0.04% Cobalt
Total Resource:	89 million tonnes	0.58% Nickel	0.06% Cobalt
Total Contained Metal:	514,000 tonnes	of Nickel metal	
	54,500 tonnes	Using a COG of 0.7% NiEq	

As reported by Australian Mines in its announcement of 31 March 2017, the Sconi Cobalt-Nickel-Scandium Project, once in production, is anticipated to have an average feed grade of 0.11% cobalt and 0.81% nickel for the first 20 years of its projected Life of Mine<sup>28</sup>.

<sup>&</sup>lt;sup>27</sup> The Mineral Resource Estimate for the Sconi Cobalt-Nickel-Scandium Project is reported under JORC 2012 Guidelines and was first reported by Australian Mines Limited on 31 March 2017. There has been no Material Change or Re-estimation of the Mineral Resource since this 31 March 2017 announcement by Australian Mines Limited. The NiEq is similarly described in the Company's 31 March 2017 announcement.

<sup>\*</sup> Total contained scandium metal tonnage multiplied by 1.53 to convert to total Sc<sub>2</sub>O<sub>3</sub>, being the saleable scandium product <sup>28</sup> Australian Mines Limited, Technical Reports, released 31 March 2017



# Mineral Resource for the Flemington Cobalt-Scandium-Nickel Project<sup>29</sup>

Measured Resource:	2.67 million tonnes	435 g/t Scandium
Indicated Resource:	0.47 million tonnes	426 g/t Scandium
Total Resource:	3.14 million tonnes	434 g/t Scandium
Total Scandium Oxide (Sc <sub>2</sub> 0 <sub>3</sub> )*:	2,085 tonnes	(using a 200 g/t Sc lower cut-off)

As reported by Australian Mines in its announcement of 11 May 2017, the Company is targeting a Mineral Resource update for the Flemington Project during the coming quarter, which is anticipated to include a maiden cobalt resource<sup>30</sup>.

## Mineral Resource for the Marriotts Nickel Project<sup>31</sup>

Indicated Resource:	0.46 million tonnes	1.12% Nickel
Inferred Resource:	0.37 million tonnes	1.15% Nickel
Total Resource:	0.83 million tonnes	1.13% Nickel
Total Contained Nickel Metal:	9,400 tonnes	(using a 0.5% Ni lower cut-off)

<sup>&</sup>lt;sup>29</sup> The Mineral Resource Estimate for the Flemington Cobalt-Scandium-Nickel Project is reported under JORC 2012 Guidelines and was first reported by Australian Mines Limited on 31 March 2017. There has been no Material Change or Re-estimation of the Mineral Resource since this 31 March 2017 announcement by Australian Mines Limited.

<sup>\*</sup> Total contained scandium metal tonnage multiplied by 1.53 to convert to total Sc<sub>2</sub>O<sub>3</sub>, being the saleable scandium product

product <sup>30</sup> Australian Mines Limited, Resource extension drilling commences at Flemington, released 11 May 2017

<sup>&</sup>lt;sup>31</sup> The information regarding Australian Mines' Mineral Resource Estimate for the Marriotts Nickel Project has been extracted from various Company announcements, which are available on the Australian Mines Limited's website (www.australianmines.com.au) or through the ASX website at www.asx.com.au (using ticker code "AUZ"). Australian Mines Limited confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the estimates in that market announcement continue to apply and have not materially changed. Australian Mines Limited confirms that the form and context in which the Competent Person's findings are presented have not materially modified from the original market announcement. The Marriotts Mineral Resources is reported under JORC 2004 Guidelines, as there has been no Material Change or Re-estimation of the Mineral Resource since the introduction of the JORC 2012 Code. Future estimates of the Marriotts Nickel Project resource will be completed to JORC 2012 Guidelines.



# Appendix 3: Estimated Production Achievable from Demonstration-Size Processing Plant

		Scandium	Cobalt	Nickel
East rate	ka/dov	2200	2200	2200
	ку/цау	2200	2200	2200
Feed grade	ppm	370		
Feed grade	%	0.04%	0.11%	0.81%
Leach extraction	%	94%	94%	94%
Wash recovery	%	99%	99%	99%
Iron removal loss	%	0%	2%	2%
SX recovery	%	99%	99%	99%
Precipitation recovery	%	99.5%	99.5%	99.5%
Overall recovery from leach feed to	%	92%	90%	90%
Motel and duction rete	ka/day	0.75	0.17	10.01
Metal production rate	kg/day	0.75	Z.17	16.01
Molecular weight (metal)	g/mol	45	59	59
Product form		Scandium oxide (Sc2O3)	Cobalt Sulphate (CoSO4.6H2O)	Nickel Sulphate (NiSO4.6H2O)
Molecular weight (product)	g/mol	137.92	262.93	262.69
End product production rate	kg/day	1.14	9.70	71.65
End product production rate*	kg/week	8.01	67.90	501.57

\* when run of a continuous basis