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Sconi offtake sample production runs completed

Advanced battery materials development company Australian Mines Limited (“Australian Mines” or “the Company”) (Australia ASX: AUZ; USA OTCQB: AMSLF; Frankfurt Stock Exchange: MJH) can confirm the production runs to supply battery-grade cobalt sulphate and nickel sulphate to potential offtake partners, as announced via the ASX Market Announcements Platform on 9 March 2020, have been completed.

Australian Mines’ ability to produce high purity samples supports the ongoing negotiations to secure binding offtake agreement(s) and financing for Australian Mines’ 100%-owned Sconi Cobalt-Nickel-Scandium Project in North Queensland, Australia. These negotiations continue to make good progress but are now expected to extend into the second half of calendar year 2020, as a consequence of the disruption caused by the COVID-19 pandemic.

The production runs, carried out at Australian Mines’ demonstration plant in Perth (see Figures 1 to 4), processed ore from our Queensland-based Sconi Project to create high purity on-spec¹ nickel sulphate and cobalt sulphate crystals (see Figure 5). These samples will now also be tested by each of the individual potential offtake partners.

The output from the production runs includes a scandium-rich residual solution, which is presently 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 is driving significant additional interest in the Sconi Project as a source of high purity scandium.

Australian Mines Managing Director, Benjamin Bell, commented: “Our 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.

¹ As measured by an independent and reputable laboratory, which is NATA accredited to ISO 17025 quality standard, demonstrating the samples meet commonly accepted battery grade specifications.

“We will continue to operate the demonstration plant to produce premium-grade scandium oxide for a potential R&D partner that is working on new uses for scandium, which is now recognised as a critical commodity.”

*** ENDS ***

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

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Figure 1: Australian Mines has been producing commercial-grade cobalt sulphate and nickel sulphate from its demonstration-scale processing plant in Perth, Western Australia since 2018. This work continues to be overseen by Australian Mines' Chief Operating Officer, Mr Tim Maclean (shown), who has 30 years of base metals operations experience including building and managing nickel laterite processing plants for some of the world's largest miners.



Figure 2: Sampling of the thickener overflow at Australian Mines' demonstration plant. The thickener is the final stage of the beneficiation plant after screening, crushing and grinding of the Sconi ore. The thickener underflow is pumped to the slurry storage tank ahead of being fed into the autoclave.



Figure 3: The autoclave at Australian Mines' demonstration plant. Cobalt-nickel-scandium rich slurry is heated to 250°C at 40 atmosphere pressure and mixed with sulphuric acid inside a titanium-lined autoclave vessel to quickly and efficiently leach the nickel, cobalt and scandium into solution.



Figure 4: Laboratory example, taken at Australian Mines' demonstration plant, of the separation and purification of nickel sulphate and cobalt sulphate using solvent extraction and ion exchange.

- Left: Nickel Sulphate ion exchange
- Centre: Nickel Sulphate solvent extraction
- Right: Cobalt Sulphate solvent extraction



Figure 5: Representative samples of the larger quantity of cobalt sulphate (pink) and nickel sulphate (green) crystals recently produced at Australian Mines' demonstration plant. These samples were produced using ore extracted from Australian Mines' 100%-owned Sconi Project, located in North Queensland, Australia. These samples, once again, re-affirm Australian Mines' ability to produce commercial grade² cobalt sulphate and nickel sulphate from its Sconi Project for supply to the global electric vehicle market.

² As measured by an independent and reputable laboratory, which is NATA accredited to ISO 17025 quality standard, demonstrating the samples meet commonly accepted battery grade specifications.