



ASX Release

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SCONI PROJECT CONTINUOUS PILOT METALLURGICAL TESTWORK SUCCESSFULLY COMPLETED

HIGHLIGHTS:

- **Successfully completed metallurgical testwork which will provide the SCONI scandium-cobalt-nickel project with crucial process design criteria for the Definitive Feasibility Study**
- **Average metal extractions >95% for nickel & cobalt and >85% for scandium**
- **HPAL pilot plant and solvent extraction pilot plant ran together as a fully integrated closed circuit for 8 continuous days, proving the processing flowsheet for the SCONI project**

Australian resource development company Metallica Minerals Limited (**ASX: MLM**) is pleased to announce the successful completion of the second phase of its pilot metallurgical test programme on representative SCONI scandium-cobalt-nickel ores.

Earlier this year, Metallica completed the first phase of the metallurgical testwork in two separate steps. The first step involved the leaching of metals into a pregnant leach solution (PLS) through the High Pressure Acid Leach (HPAL) pilot plant at SGS Lakefield Orestest (SGSLO) in Perth, Western Australia. The second step used a purpose built, solvent extraction plant at HRL Testing in Brisbane, Queensland to recover scandium from the PLS and subsequently refine the scandium into high purity (>99.9%) scandium oxide – this was completed in July with excellent results (Refer to MLM ASX Release dated 25th July 2012).

In the recent phase of testwork, Metallica transported the solvent extraction pilot plant to Perth and integrated it with the HPAL pilot plant. The fully integrated closed circuit pilot plant operated continuously for 8 days, demonstrating the efficacy of the process. This was crucial in proving the flowsheet selected for the SCONI project and for obtaining detailed data that will be used to design the processing plant in the Definitive Feasibility Study.

Results

A blended bulk sample of representative moderate grade nickel/cobalt/scandium ores from the SCONI Greenvale, Lucknow and Kokomo Ni-Co & Sc deposits was processed through the pressure leach autoclave at 265°C for a continuous 8-day period. Approximately 2,800kg of typical SCONI ore blend at an average feed grade of 1.2% Ni (nickel), 0.08% Co (cobalt), and 103g/t Sc₂O₃ (scandia) was leached during the campaign and high average metal extractions were achieved: >95% Ni and Co, >85% Sc. (See **Figure 1** below).

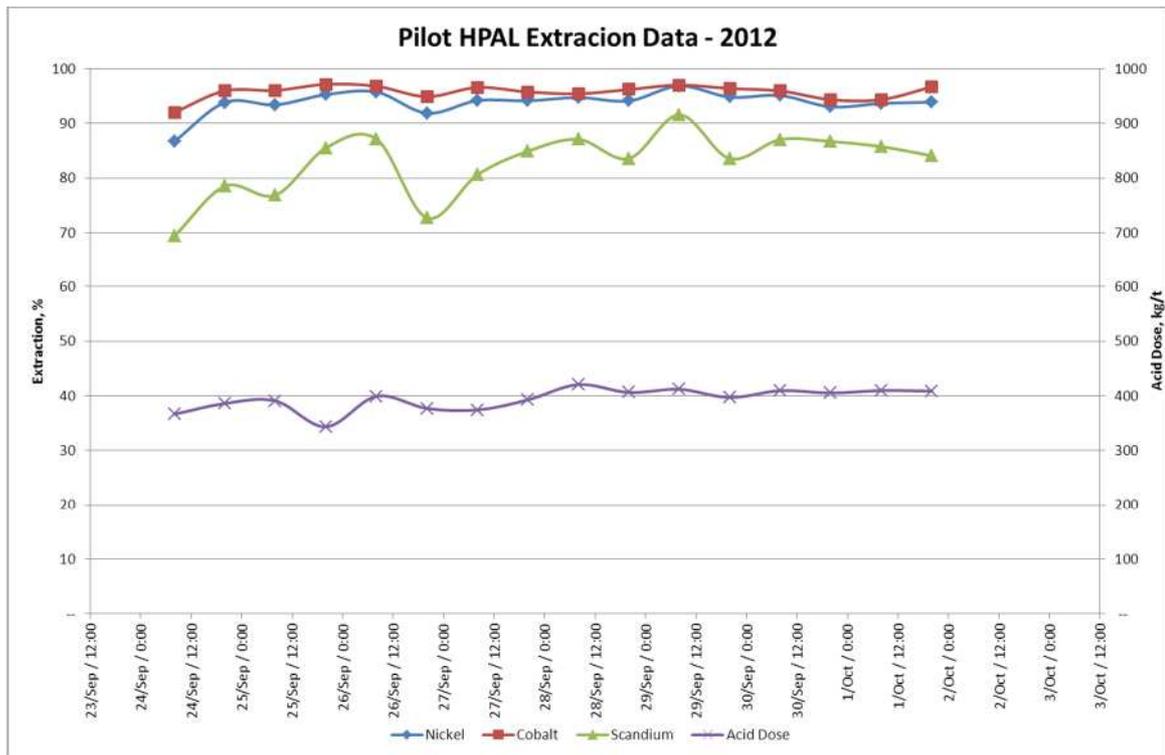


Figure 1: Sc-Co-Ni Metal Extraction (LHS) & Acid Consumption (RHS)

The average iron, magnesium and aluminium content of the samples were 25%, 4.3%, 3.9% respectively and presented no significant issues in the continuous pilot testwork. The acid consumption was also modest, averaging around 400 kg/tonne.

The high pressure acid leach (HPAL) was integrated with a purpose built solvent extraction circuit to recover scandium from the pregnant leach solution (PLS). In excess of 96% of the dissolved scandium was recovered into a crude hydroxide intermediate, which will be further refined to pure scandium oxide (Sc₂O₃) in Brisbane. Metallica's 100% owned proprietary refining process has recently been demonstrated to produce >99.9% pure scandium oxide from a similar hydroxide feed (see ASX Release dated 25th July 2012).

Metallica CEO Gavin Becker commented that “these results, in conjunction with those previously reported from our earlier pilot program, demonstrate the robustness of the selected process to achieve high scandium, nickel and cobalt extraction and recovery from a range of SCONI ore types. This testwork has provided the SCONI Project process design criteria and is a crucial foundation for the Definitive Feasibility Study of the proposed full scale operation at Greenvale. Having the majority of the metallurgical testwork successfully completed with consistently positive results is a major step towards our aim of becoming a significant producer of nickel and the world's first long-term reliable scandium producer.”

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Figure 2: Metallica metallurgical testwork team

Scandium

Scandium (Element 21 of the periodic table) is considered one of the 17 rare earth elements (REE) and one of the most useful and valuable. High-grade, large tonnage, easily mineable scandium deposits with favourable metallurgy and location are scarce, making it a commodity that is difficult to obtain in large quantities.

Scandium has unique properties that can enhance the world's technological future. Scandium is one of the most potent strengthening elements that can be alloyed with aluminium to create stronger master alloys with applications in aerospace, transport and high performance sporting equipment.

Scandium is also used in the production of the most efficient solid oxide fuel cells (SOFC's). As the western world transitions towards green energy, SOFC's will become more widely used, providing clean and efficient energy that is driven by natural gas.

The importance of scandium to the world market cannot be overestimated, especially with the massive worldwide expansion of natural gas usage and gas distribution infrastructure. Natural gas and fuel cells are the future, and Metallica believes scandium is going to be a part of that future by getting the most amount of electrical and thermal energy from the least amount of fuel – where efficient cleaner energy is the gateway to a more sustainable society.

The use of scandium has been limited by its scarcity and lack of reliable supply. The current total world supply of scandium is estimated to be around ten tonnes of scandium oxide per annum, all of which is sourced as a by-product from other strategic metal processing.

High purity scandium oxide currently sells at prices in the range of US\$3,000-8,000/kg depending on product quantity and purity.

To learn more about scandium, see Metallica's March 2012 Quarterly Report (**Pages 18 & 19**) and the 3 page summary - **A New "Spice" Metal to Enhance Industry & Life** on the Metallica website.