



Australian Securities Exchange
Company Announcements Office

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MRC GRAPHENE/EXPANDABLE GRAPHITE TESTWORK COMMENCES

Mineral Commodities Ltd (ASX: MRC) ("MRC" or "the Company") is pleased to announce that it has entered into a Research Agreement with the University of Adelaide ("UoA") for testing MRC's graphite concentrate from the Munmlinup graphite project for the production of graphene and graphene related products, using the University's proprietary methods.

Graphene is a form of carbon consisting, in its purest form, of a single layer of carbon atoms, although the term is more generally applied to include a few layers of graphene. Graphene has a set of unique properties in its pure form including high electrical and thermal conductivity, mechanical stiffness, and low optical absorbance, that result in it being two hundred times stronger than steel, more conductive than copper and thinner than a sheet of paper. It has a broad suite of potential applications including coatings, composites, electronics, lubricants and additives, and bio-medical uses. However, its use is currently constrained by an inability to produce graphene at an industrial scale.

UoA is at the forefront of Graphene Research in Australia, leading the Australian Research Council ("ARC") Graphene Hub. It is focused on developing graphene production routes that are low cost, environmentally friendly and scalable. It is also focused on developing new graphene based materials.

The research program between MRC and UoA includes: characterisation of the Munmlinup graphite concentrate, testing its feasibility for the production of graphene from the concentrate in powder using a range of graphene production methods established by the University, and evaluating the quality and suitability of the graphene produced for selected end-use applications. This proof of concept study, if successful, will be followed by a pilot scale program.

In addition, MRC is conducting expandable graphite testwork on its Munmlinup graphite concentrate with a European consultancy group, Dorfner ANZAPLAN, to evaluate the expansion characteristics of Munmlinup graphite concentrate.

Expandable graphite is graphite that has been treated with acids and heat resulting in multiples of a hundred-fold increase in volume, which results in a material with high heat, radiation and corrosion resistance. Expandable graphite is then either pressed into foil or sheets for uses including heat management in electronics and for high temperature gaskets and seals. It is

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also used as an additive in polystyrene foam to produce flame retardant foam – which has the potential to be a significant growth driver for natural flake graphite demand.

Previous testwork in 1992, conducted for Gwalia Consolidated, showed that expanded graphite could be produced from coarse (+300 micron) Munmlinup concentrate with an expansion coefficient of at least 200mL/g. However, that sample had been leached to remove impurities prior to the expandable testwork which may have impacted on the expansion results. The current program focuses on evaluating the expansion characteristics of Munmlinup concentrate produced by flotation across a range of sizes. Initial results indicate that expansion coefficients of up to 400 mL/g are achievable on coarse (>300 micron) concentrate, and the finer size fractions are also expandable. Final results are expected in early May.

Executive Chairman Mark Caruso said, *"MRC views expandable graphite as a significant opportunity to value-add on natural flake graphite and provide an alternative, in a burgeoning new market, to traditional markets and to lithium ion battery manufacturing."*

The graphene market has significant medium term potential demand for natural flake graphite once the scale-up issues can be addressed. We are excited and proud to be working with the University of Adelaide in progressing this field.

Our goal is to not just produce natural flake graphite in Australia, but to actively identify and develop value-adding opportunities".

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For enquires regarding this release please contact:

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