



**ASX RELEASE**  
**23 October 2015**

## **DRILL RIG MOBILISED FOR GRAPHITE DRILLING**

### Highlights

- Drill rig mobilised to the Esmerelda Graphite Project in north Queensland
- Drilling expected to be completed in early November
- Initial assay results expected by late November

Metallica Minerals Limited ("Metallica") ([ASX:MLM](#)) is pleased to advise that a drill rig has now been mobilised to carry out an initial core drilling program on the company's unique 750 km<sup>2</sup> Esmeralda Graphite Project south of Croydon in north Queensland.

As outlined in Metallica's 15 July 2015 ASX Release, drilling is expected to commence within a week and to be completed early in November 2015. Initial assay results should be available late November. Depending on the results, the company may then undertake further metallurgical analysis to determine the quality and purity of the Esmeralda graphite.

The granite hosted and hydrothermal-style Esmerelda graphite deposit is unlike the more common metamorphic-style deposits, which host an estimated 95% of the world's known graphite. Hydrothermal deposits generally exhibit high purity graphite in either flake or crystalline form.

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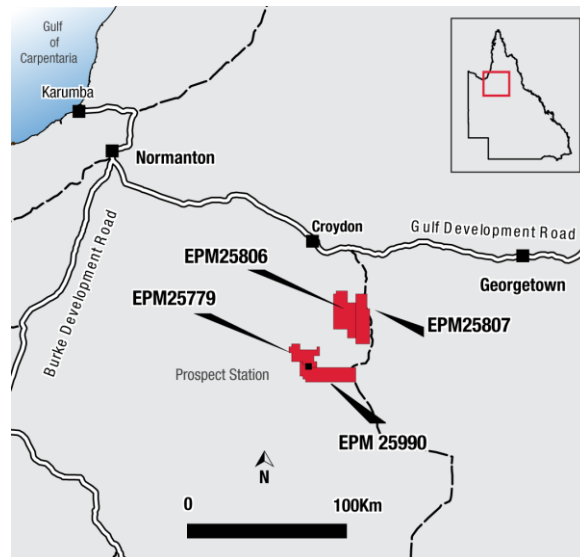
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## Background on the Esmeralda Graphite Project

In July 2015, Metallica Minerals Ltd (“Metallica”) was granted Exploration Permits for Minerals (EPMs) 25779, 25806 and 25807, which make up the Esmeralda Graphite Project. The project, located near Croydon in north Queensland, covers a combined area of over 750 km<sup>2</sup> and is held 100% by Metallica’s wholly owned subsidiary Touchstone Resources Pty Ltd.



Metallica has identified significant graphite occurrences within the Esmeralda Granites in the project area. These occurrences were first identified in 2006 by Metallica during a drilling program that targeted well-defined airborne and ground-defined intense electromagnetic (EM) anomalies. At the time, the drilling focused on base metal and gold-bearing massive sulphide mineralisation. Instead of sulphides, Metallica discovered significant graphite mineralisation. The discovery was unexpected because graphite is rarely associated with igneous rocks, such as granite.

Subsequently, a literature review of graphite occurrences in the Esmeralda Granites and Croydon Volcanics indicated large suites of potentially graphite-bearing igneous rocks. Metallica has identified targets where it is interpreted that hydrothermal processes and/or magmatic differentiation or structural controls could concentrate graphite into significantly higher percentages. Previous percussion drilling, including the 2006 Metallica program, have recorded significant zones of observable graphite mineralisation (>10% graphite visually) while exploring for metals and other types of mineralisation.

Igneous or hydrothermal-style graphite deposits, such as Esmeralda, are rare. The more common metamorphic-style graphite deposits make up about 95% of the world’s known graphite deposits. Hydrothermal-style graphite deposits are typically of high purity graphite in either flake or crystalline form. Examples of this style of mineralisation include the high-grade, narrow-vein Sri Lankan deposits and the Albany graphite deposit in Canada. The carbon source is non-organic and the carbon is thought to be from deep carbon dioxide (CO<sub>2</sub>) or methane (CH<sub>4</sub>) gaseous injection into the magma chamber, which later crystallises out as pure or near-pure carbon (graphite) crystals.

Metallica has developed a hydrothermal mineralisation model for the Esmeralda granite based on work completed by the Bureau of Mineral Resources (BMR) in 1988 and the recent (2013) discovery of the Albany graphite deposit.