



ABN 48 116 296 541

## ASX RELEASE

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### **MINEMAKERS INVESTS TO SECURE A POTENTIAL COST ADVANTAGEOUS PHOSPHORIC ACID PRODUCTION METHOD FOR WONARAH**

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**2 September 2010**

#### **HIGHLIGHTS**

- A License Agreement and a Subscription Agreement (“Agreements”) have been signed with JDCPhosphate, Inc of USA.
- Principal aspects of the Agreements are:
  - Minemakers to invest US\$1M (in an equal mix of cash and Minemakers shares) to buy a cornerstone 6.67% equity in JDC.
  - Subject to further testwork and successful trialling of Wonarah phosphate, Minemakers will have the exclusive rights in Australia to construct a plant, and associated infrastructure, which uses JDC's patented dry kiln process, in order to make super-phosphoric acid at Wonarah.
  - Licensing rights to the process will be available for Minemakers' other phosphate projects, including its extensive Namibian marine deposits.
- The JDC dry kiln process seems to have clear capital and operating cost advantages compared to conventional wet process acid techniques, considerable positive environmental aspects, and can make the higher value superphosphoric acid.
- These advantages are apparently magnified by Wonarah's particular mineralogy and the better economics of freighting a product of higher concentration and value.

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## **Background**

Shareholders have previously been advised that Minemakers aims to use Wonarah rock phosphate to produce phosphate fertilisers. The first step in that objective is production of phosphoric acid. Conventionally, one uses sulphuric acid to attack rock phosphate and, in Wonarah's case, this would involve either the cost of importing and transporting it to site, or producing it on site from imported sulphur after considerable capital expenditure.

JDCPhosphate, Inc ("JDC") of Florida, USA, has secured patents for a dry kiln technique that does not use sulphuric acid and this is likely to lead to clear capital and operating cost savings at Wonarah.

Information can be found on the JDC website ([phosphatesustainability.com](http://phosphatesustainability.com))

*NOTE: Minemakers accepts no responsibility for information on that site.*

## **Apparent Advantages**

There appear to be distinct advantages in using this dry kiln process at Wonarah. They include the following:

- i) Lower grade rock phosphate material can be used in the dry kiln process. Since initiating negotiations with JDC, Minemakers has undertaken an initial test work program in Australia which indicates that, after simple crushing and screening, low to medium grade Wonarah rock phosphate is suitable for the dry kiln process without further upgrading. This means that a beneficiation plant would not need to be constructed and operated as a precursor to phosphoric acid production (the Company may still build such a plant for production of upgraded rock phosphate for export, but at a now lesser size).
- ii) The dry kiln process needs silica, and so the higher than industry average siliceous phosphorites at Wonarah seem particularly suitable for the technique. Additional silica is obtainable from surface sands on site, which are currently being tested for suitability, and necessary carbonate feed for flux can likely be sourced from limestone and dolomite which are being found during our resource delineation drilling at site.
- iii) The dry kiln process will produce 70% phosphoric acid (super phosphoric acid, or SPA) and this sells at a premium price, being able to be used for normal fertiliser production but also potentially for higher grade applications in the food and chemical feed industry. Freight is more economic on a unit of acid basis than standard lower grade (about 52%) phosphoric acid.
- iv) The resultant downstream upgraded phosphate product will be a lesser tonnage than the rock phosphate and so major freight savings will be affected, and expensive capital items such as railway lines can be deferred until full project development, if needs be.
- v) Both capital and operating costs seem to be significantly lower with the dry kiln process compared to conventional wet techniques for the production of phosphoric acid.
- vi) Initial capital cost estimates of a dry kiln plant, inclusive of crushing and grinding circuits, and tailings storage facilities, is US\$150M for a 200,000tpa plant. Current sales price would be about US\$500/t FOB Darwin.

## **Major Aspects of the Agreements**

- i) Minemakers will invest US\$1 million to buy an initial 6.67% equity in JDC; half of this sum will be cash and the other half will be by way of an issue of Minemakers fully paid shares based on the weighted average July price. The Company has the right to purchase a greater stake in JDC in the next three months if it wishes to do so.
- ii) Subject to satisfactory test work in the USA this year and subsequently in a demonstration plant, which is targeted for construction by JDC by 2012, Minemakers will be granted a licence to construct a dry kiln processing plant at Wonarah using JDC's patented process.
- iii) Minemakers will be granted the exclusive Australian rights to the JDC dry kiln process for a period up to commissioning of a plant and for a prolonged time afterwards.
- iv) A licensing fee will be payable on each tonne of phosphoric acid produced, and JDC will receive a fee set at usual EPCM rates related to the capital cost of each module and its associated infrastructure.
- v) The dry kiln process also appears to be eminently suitable for use on the phosphatic sands of the Namibian JV Marine Project. Test work on them will be carried out over the next few months. The License Agreement also covers the ability to gain licensing rights for the dry kiln process to be used in that country.

## **Impact on Development Planning and Project Economics**

On 26 July 2010 Minemakers announced it had entered into an MOU with the Verte Group by which Asian loan funds will be targeted for the development of the Wonarah deposits to their full potential. With the JDC Agreements now signed, the targeted Asian strategic investors can be advised of the potential positive financial impact, in terms of operating and capital costs, of the utilisation of the dry kiln process at Wonarah as part of the development design mix.

Managing Director, Andrew Drummond, stated:

*"We have been assessing the potential of the dry kiln process, and the applicability of Wonarah phosphate to it, for some time and are delighted to have settled these Agreements with JDC. Wonarah phosphate seems particularly suited to the process and there are likely to be large savings in capital, operating and freight costs when it is applied to it. This is obviously a very exciting new development for the Company and Wonarah.*

*In combination with the Australian licence exclusivity, we envisage the potential for a considerable cost advantage to us exporting into Asian markets, compared to conventionally produced phosphoric acid, and there will be considerably lessened by-product issues associated with acid and fertiliser manufacture.*

*We are also keenly looking forward to the results of the Namibian test work in the next quarter or so".*

Andrew Drummond  
**Managing Director**

**Cautionary Statement Regarding Forward-Looking Information**

All statements, trend analysis and other information contained in this letter relative to markets for Minemakers' trends in resources, recoveries, production and anticipated expense levels, as well as other statements about anticipated future events or results constitute forward-looking statements. Forward-looking statements are often, but not always, identified by the use of words such as "seek", "anticipate", "believe", "plan", "estimate", "expect" and "intend" and statements that an event or result "may", "will", "should", "could" or "might" occur or be achieved and other similar expressions. Forward-looking statements are subject to business and economic risks and uncertainties and other factors that could cause actual results of operations to differ materially from those contained in the forward-looking statements. Forward-looking statements are based on estimates and opinions of management at the date the statements are made. Minemakers does not undertake any obligation to update forward-looking statements even if circumstances or management's estimates or opinions should change. Investors should not place undue reliance on forward-looking statements.

