

21<sup>st</sup> May 2019

## FYI ADVANCES PILOT PLANT TOWARDS FIRST HPA PRODUCT

### Key points

- FYI's pilot plant program nearing completion of construction, with test-work results expected by the end of June
- The testwork results will be invaluable to understanding the process and operating parameters that are important to advancing the development of the Cadoux Kaolin Project
- The pilot plant should produce sufficient quantities of HPA for product application testing by potential end users and customers that will assist negotiating off-take agreements; and to help support project financing
- The pilot plant should produce high quality, ultra-pure 99.99% (4N) and 99.999% (5N) alumina (Al<sub>2</sub>O<sub>3</sub>) for the fast-growing high specification HPA market
- The Pilot Plant advances FYI's HPA strategy to become fully integrated, low-risk, low cost producer of high purity 4N + 5N alumina products
- FYI will become the first ASX-listed HPA company to have built and produced product from its own pilot plant

High Purity Alumina (HPA) developer, FYI Resources Ltd (ASX: FYI) ("FYI" or "the Company") is pleased to advise the Company's pilot plant program is nearing completion of the implementation stage for testing of feedstock for production of kaolin to high purity alumina (HPA) from its 100%-owned Cadoux Kaolin Project in Western Australia.

The pilot plant has been designed and engineered to test the HPA production flowsheet developed by FYI; to assess the supporting process engineering technology; and to optimise and de-risk the flowsheet ahead of full-scale production.

**FYI Resources Managing Director, Roland Hill, said,** "The pilot plant is another key element of our disciplined HPA strategy that will ensure the Cadoux Kaolin Project is de-risked towards production.

We have arranged to deliver sufficient quantities of HPA product to our potential customers, which will greatly assist in negotiating binding off-take agreements and importantly project financing.

We are looking forward to seeing the results of our pilot plant trials and correlating them against our testwork to validate our ultra-high quality HPA process and importantly, to support our PFS and BFS economic case."

### Pilot Plant Development and Construction

FYI's flowsheet design is a collaboration between Independent Metallurgical Operations (IMO - FYI's project metallurgical manager) and FYI's process engineering manager, GR Engineering (GRES). The pilot plant is located at IMO's metallurgical laboratory in Welshpool, Western Australia, in an area permitted for the purposes of the testwork.

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The pilot plant has been designed and engineered to produce high quality, ultra-pure 99.99% (4N) and 99.999% (5N) alumina ( $\text{Al}_2\text{O}_3$ ) for the fast-growing (~17% CAGR) high specification HPA market. The pilot plant is expected to optimise the HPA flowsheet designed by the Company and to de-risk the operational performance of the process.

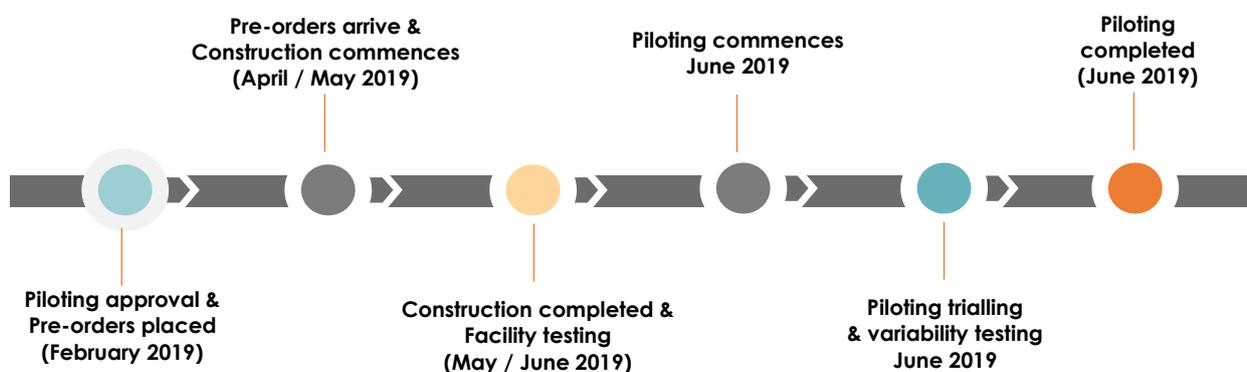


FYI's dedicated pilot plant testwork facility arriving at Welshpool and delivery of various test-work equipment

### Pilot Plant Summary

Item	Detail
Planning, design and purchasing	November 2018 – March 2019 (completed)
Implementation	April 2019 (commenced)
Construction completed & testing	May/June 2019
Operating time	Continuous (24/7)
Operating period	1 week June 2019
Plant design	Modular
Output	170 kgs (per week)
Target grade	>99.99% $\text{Al}_2\text{O}_3$

### Pilot Plant Timeline



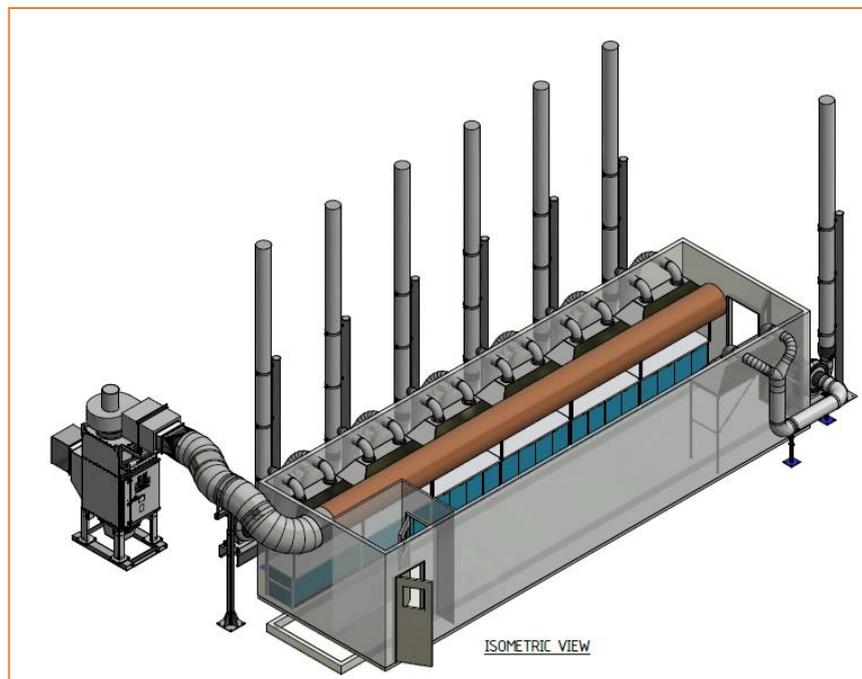
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### Pilot plant technical information

The pilot plant has been designed for the purposes of testing FYI's innovative HPA flowsheet and the associated risk management and observation in process changes during scaling up of production. As a system increases in size, system properties that depend on quantity of matter may change, the exact nature of the thermodynamics and the reaction kinetics of the process change in a non-linear fashion. The pilot plant studies will allow FYI to test and observe the particular results that are individual to this process.

Factors that may change in the transition to a production scale that FYI's pilot plant testwork will investigate, include:

- Reaction kinetics
- Chemical equilibrium
- Material properties / mass and energy balances
- Fluid dynamics
- Thermodynamics
- Equipment selection and limitations
- End product (HPA) uniformity and homogeneity



Schematic view of FYI's pilot plant for HPA testwork

**For more information please contact:**

#### **Roland Hill**

Managing Director  
Tel: +61 414 666 178  
roland.hill@fyiresources.com.au

#### **Simon Hinsley**

Investor & Media Relations  
Tel: 0401 809 653  
simon@nwrcommunications.com.au

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### About FYI Resources Limited

FYI's is positioning itself to be a significant producer of high purity alumina (4N or HPA) in a rapidly developing LED, electric vehicle, smartphone and television screen as well as other associated high-tech product markets.

The foundation of the HPA strategy is the superior quality aluminous clay (kaolin) deposit at Cadoux and positive response that the feedstock has to the Company's moderate temperature, atmospheric pressure HCl flowsheet. The strategy's quality attributes combine resulting in world class HPA project potential.

FYI is progressing positively with its Bankable Feasibility Studies (BFS) and pilot plant production studies supporting a planned production of 8,000 tonnes per year of 4N and 5N HPA.

### FYI Resources PFS Summary Results (September 2018)



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## **Competent Persons Statements**

### **Ore Reserves**

The information in this report that relates to Ore Reserves is based on information compiled by Mr. Steve Craig, who is a Fellow of the Australasian Institute of Mining and Metallurgy. Steve Craig is a full-time employee of Oreology Consulting Pty Ltd and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". The information is extracted from the Ore Reserve announcement released 29 October 2018 and is available to view on the Company's website at [www.fyiresources.com.au](http://www.fyiresources.com.au).

### **Mineral Resources**

The information in this report that relates to Mineral Resources is based on information compiled by Mr Grant Louw, under the direction and supervision of Dr Andrew Scogings, who are both full-time employees of CSA Global. Dr Scogings is a Member of the Australasian Institute of Mining and Metallurgy and a Member of the Australian Institute of Geoscientists. He is a Registered Professional Geologist in Industrial Minerals. Dr Scogings has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as Competent Person as defined in the 2012 Edition of the "Australasian Code for the Reporting of Exploration Results, Mineral Resources, and Ore Reserves". The information is extracted from the PFS announcement dated 25 September 2018 and is available to view on the Company's website at [www.fyiresources.com.au](http://www.fyiresources.com.au).

### **Metallurgy**

The information in this report that relates to metallurgy and metallurgical test work is based on information reviewed and compiled by Mr Daryl Evans, a Competent Person who is a Fellow of the Australian Institute of Mining and Metallurgy (AusIMM). Mr Evans is an employee of Independent Metallurgical Operations Pty Ltd, and is a contractor to FYI. Mr Evans has sufficient experience that is relevant to this style of processing and type of deposit under consideration, and to the activity that he has undertaken to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves". Announcements in respect to metallurgical results are available to view on the Company's website at [www.fyiresources.com.au](http://www.fyiresources.com.au).

The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the findings in the relevant market announcements continue to apply and have not materially changed and that all material assumptions and technical parameters underpinning the estimate in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original announcement.

## **Cautionary Statement**

### **Substance of PFS**

The PFS referred to in this announcement is a study of the potential viability of the Cadoux Project. It has been undertaken to understand the technical and economic viability of the Project.

The PFS is based on the material assumptions outlined in the PFS announcement released to ASX on 25 September 2018 and summarised in the Summary of Material Assumptions and Modifying Factors description and tables (appendix 2 and 3) attached to the PFS document. These include assumptions about the availability of funding. While the Company considers all of the material assumptions to be based on reasonable grounds, there is no certainty that they will prove to be correct or that the range of outcomes indicated by this PFS will be achieved.

To achieve the range of outcomes indicated in the PFS funding in the order of US\$197 million will likely be required. Investors should note that there is no certainty that the Company will be able to raise the amount of funding when needed. It is also possible that such funding may only be available on terms that may be dilutive to or otherwise affect the value of the Company's existing shares.

It is also possible that the Company could pursue other "value realisation" strategies such as a sale, partial sale or joint venture of the Project. If it does, this could materially reduce the Company's proportionate ownership of the Project.

Given the uncertainties involved, investors should not make any investment decisions based solely on the results of the PFS.

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### General and forward-looking statements

The contents of this announcement reflect various technical and economic conditions, assumptions and contingencies which are based on interpretations of current market conditions at the time of writing. Given the nature of the resources industry, these conditions can change significantly and without notice over relatively short periods of time. Consequently, actual results may vary from those detailed in this announcement.

Some statements in this announcement regarding estimates or future events are forward-looking statements. They include indications of, and guidance on, future earnings, cash flow, costs and financial performance. Such forward-looking statements are provided as a general guide only and should not be relied on as a guarantee of future performance. When used in this announcement, words such as, but are not limited to, "could", "planned", "estimated", "expect", "intend", "may", "potential", "should", "projected", "scheduled", "anticipates", "believes", "predict", "foresee", "proposed", "aim", "target", "opportunity", "nominal", "conceptual" and similar expressions are forward-looking statements. Although the Company believes that the expectations reflected in these forward-looking statements are reasonable, such statements involve risks and uncertainties, and no assurance can be given that actual results will be consistent with these forward-looking statements.

The contents of this release are also subject to significant risks and uncertainties that include but are not limited to those inherent in mine development and production, geological, mining, metallurgical and processing technical problems, the inability to obtain and maintain mine licences, permits and other regulatory approvals required in connection with mining and processing operations, competition for among other things, capital, acquisitions of reserves, undeveloped lands and skilled personnel, incorrect assessments of the value of projects and acquisitions, changes in commodity prices and exchange rates, currency and interest rate fluctuations and other adverse economic conditions, the potential inability to market and sell products, various events which could disrupt operations and/or the transportation of mineral products, including labour stoppages and severe weather conditions, the demand for and availability of transportation services, environmental, native title, heritage, taxation and other legal problems, the potential inability to secure adequate financing and management's potential inability to anticipate and manage the foregoing factors and risks.

All persons should consider seeking appropriate professional legal, financial and taxation advice in reviewing this announcement and all other information with respect to the Company and evaluating the business, financial performance and operations of the Company. Neither the provision of this announcement nor any information contained in this announcement or subsequently communicated to any person in connection with this announcement is, or should be taken as, constituting the giving of investment or financial advice to any person. This announcement does not take into account the individual investment objective, financial or tax situation or particular needs of any person.