

30 November 2021

ZEOTECH DUAL-FEED PILOT PLANT PROGRAM UPDATE FIRST SUCCESSFUL CLOSED-LOOP CIRCUIT

Emerging mineral processing technology company, Zeotech Limited (ASX: ZEO, “Zeotech” or “the Company”) is pleased to advise that it has successfully completed its first continuous closed-loop circuit, utilising kaolin feedstock to produce pure Linde Type A synthetic zeolite product. This marks a significant step in progressing the Company’s dual-feed pilot program.

The achievement of a continuous closed-looped circuit will allow Zeotech, and the team at The University of Queensland (“UQ”), to commence pilot plant set-up and construction during Q1 2022.

Highlights

- Successful bench-scale continuous closed-loop circuit achieved utilising kaolin feedstock to produce pure Linde Type A synthetic zeolite product.
- Over 110 optimisation batch tests undertaken using Toondoon kaolin and Li process by-product samples, undertaken since May 2021.
- Over 30 continuous tests completed on individual process steps, involving leaching, filtration/decanting, and precipitation.
- Plant and equipment procurement underway, with construction and commissioning of pilot plant on track to commence early Q1 2022.

The University of Queensland’s School of Chemical Engineering, Associated Professor James Vaughan commented:

“We are extremely pleased with the progress and results achieved on Zeotech dual-feed pilot program during 2021, especially having successfully delivered our first continuous closed-loop circuit.

“The pilot program is on-track, and having completed a continuous closed-loop circuit, utilising kaolin feedstock to produce pure Linde Type A synthetic zeolite product, we are now confident in achieving a continuous circuit with Li process by-product in the near term and then turning our focus towards supporting Zeotech’s team in the construction and commissioning of pilot plant in early 2022.”

Zeotech, Head of Projects, Dr. John Vogrin added:

“The progress achieved to date confirms that our proprietary flowsheet is able to deliver a continuous circuit utilising kaolin and we are close to achieving the same for leached spodumene residue.

“I’d like to thank all the members of the pilot team at UQ and our process engineers for their dedication and commitment, which has achieved great results to date.

www.zeotech.com.au

Zeotech Limited | ASX: ZEO

ACN 137 984 297

Level 27, Santos Place, 32 Turbot Street, Brisbane QLD 4000

P: +61 7 3181 5523 | E: info@zeotech.com.au

“Planning and procurement for both plant and equipment is underway, and we are on track to start construction of the pilot line in the coming months ahead of a busy and exciting 2022.”

Progress to Date

On 16 February 2021¹ Zeotech announced it had committed to the development and construction of a pilot plant and undertaking an extensive test-work program to further optimise the flowsheet of the Company’s low-cost synthetic zeolite manufacturing technology (“IP”). The team at UQ commenced bench-scale optimisation test-work on kaolin in March 2021. Throughout Q3 2021 the kaolin test-work provided advance data to further validate the Company’s proprietary flowsheet.

On the 26 May 2021² the decision was made to expand the single kaolin feed pilot to include Li process by-product as an additional feedstock, and bench-scale optimisation test work commenced in June 2021.

During the H2 2021, the team at UQ completed in excess of 155 batch and continuous test runs.

This work, together with the earlier start date on kaolin test-work, has led to successful development of the first continuous closed-loop circuit utilising Toondoon kaolin as feedstock to produce pure Linde Type A synthetic zeolite product.

Lithium Process By-product

Since June 2021, UQ researchers have completed over 70 optimisation batch tests across a range leaching and precipitation configurations from two separate samples of Li process by-product. Continuous tank reactor precipitation work has been successfully completed and the team is currently undertaking continuous leaching runs.

The inclusion of two separate Li process by-product samples to the pilot program, has increased the variables in validating ZEO’s proprietary flowsheet process steps. Despite this, Zeotech and UQ expect to achieve a continuous closed-loop circuit in the near term.

Next Steps

The completion of a successful continuous closed-loop circuit under the conditions of Zeotech’s proprietary flowsheet, represents a major step in developing the configuration and design data required for scale-up to pilot line construction and commissioning, which is scheduled to commence Q1 2022.

The focus for the remainder of 2021 is aimed at further optimisation of process steps targeted at achieving a continuous closed-loop circuit utilising Li process by-product.

In addition, procurement of plant and equipment for the pilot line set-up has accelerated with key items scheduled for delivery early 2022.

¹ ASX release 16/02/2021 “SYNTHETIC ZEOLITE PILOT PLANT PROGRAM COMMENCES”

² ASX release 26/05/2021 “LITHIUM REFINERY CLEANTECH FORMS PART OF DUAL-FEED PILOT PROGRAM”

This announcement has been approved by the Board.

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For further information please contact:

Peter Zardo – Managing Director
peter@zeotech.com.au
Tel: (+61) 7 3181 5523

Neville Bassett - Company Secretary
info@zeotech.com.au
Tel: (+61) 7 3181 5523

About Zeotech

Zeotech Limited (ASX: ZEO) is a team of dedicated people, working together to build a future focused company, leveraging proprietary technology for the low-cost production of advanced materials 'synthetic zeolites' to deliver solutions aimed at addressing sustainability challenges.

About Zeolites

Synthetic zeolites are manufactured aluminosilicate minerals with a sponge-like structure, made up of tiny pores (frameworks) that make them useful as catalysts or ultrafine filters. They are commonly known as molecular sieves and can be designed to selectively adsorb molecules or ions dependant on their unique construction.

Zeolites play an important role in a cleaner and safer environment.

- zeolites are an effective substitute for harmful phosphates in powder detergent, now banned in many parts of the world because of blue green algae toxicity in waterways;
- as catalysts, zeolites increase process efficiencies = decrease in energy consumption;
- zeolites can act as solid acids and reduce the need for more corrosive liquid acids;
- zeolites adsorbent capabilities see them widely used in water treatment i.e., heavy metal removal including those produced by nuclear fission; and
- as redox catalyst sorbents, zeolites can help remove exhaust gases and CFC's.

Forward-looking Statements

This release may contain certain forward-looking statements with respect to matters including but not limited to the financial condition, results of operations and business of Zeotech and certainty of the plans and objectives of Zeotech with respect to these items.

These forward-looking statements are not historical facts but rather are based on Zeotech current expectations, estimates and projections about the industry in which Zeotech operates, and its beliefs and assumptions.

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Words such as "anticipates," "expects," "intends," "plans," "believes," "seeks," "estimates", "guidance" and similar expressions are intended to identify forward looking statements and should be considered an at-risk statement.

Such statements are subject to certain risks and uncertainties, particularly those risks or uncertainties inherent in the process of developing technology and in the endeavour of building a business around such products and services.

These statements are not guarantees of future performance and are subject to known and unknown risks, uncertainties, and other factors, some of which are beyond the control of Zeotech, are difficult to predict and could cause actual results to differ materially from those expressed or forecasted in the forward-looking statements.

Zeotech cautions shareholders and prospective shareholders not to place undue reliance on these forward-looking statements, which reflect the view of Zeotech only as of the date of this release. The forward-looking statements made in this announcement relate only to events as of the date on which the statements are made. Zeotech will not undertake any obligation to release publicly any revisions or updates to these forward-looking statements to reflect events, circumstances or unanticipated events occurring after the date of this announcement except as required by law or by any appropriate regulatory authority.