30 January 2024

METHANE EMISSIONS CONTROL TRIALS ADVANCE TO INFIELD VALIDATION AT CLEANAWAY LANDFILL SITE

Emerging mineral processing technology company, Zeotech Limited (ASX: ZEO, "Zeotech" or "the Company") is pleased to provide an update on its methane emissions control program ("Program") at Griffith University ("Griffith"), which has progressed to an infield validation trial at one of Cleanaway Waste Management Limited's ("Cleanaway") landfills.

The decision to advance the trial towards infield validation follows very promising results achieved during Activity A and B of the Program and highlights the considerable potential of the Company's methane control innovation with large industry partners.

HIGHLIGHTS

- Zeotech proceeds with field validation of its zeoteCH$_4$® methane control technology at Cleanaway's landfill site following successful outcomes from extended methane oxidation trials undertaken during Activity B of the Program.
- Two of the Company's zeoteCH$_4$® products have shown constant high oxidation rates over a 3-month period of greater than 70% following initial inoculation and will be taken forward into field validation.
- zeoteCH$_4$® products taken forward to infield validation are manufactured utilising the Company's Toondoon kaolin mineral and a coal combustion by-product from a South East Queensland generator, under a patent-pending process developed by the Company inhouse during 2023.
- zeoteCH$_4$® products can act as effective host sites for methanotroph communities, alongside maintaining constant high levels of oxidation for a prolonged period with minimal intervention following inoculation.

Griffith University, School of Environment and Science, Australian Rivers Institute, Dr. Chris Pratt commented:

"Our most recent work has delivered robust constant methane oxidation efficiencies and strong methanotroph zeolite acclimatisation. The expansion of Activity B enabled more extensive and in-depth trials, which ultimately achieved the outcomes required to move forward with infield trials at Cleanaway's landfill site."

"We remain excited to be working on such a valuable project which could potentially contribute to Australia's pledge to reduce methane emissions by 30% by 2030."

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Zeotech, Chief Executive Officer, Scott Burkhart added:

"We are extremely excited to be transitioning from the lab environment and moving into field trials to further validate our solution and unlock the real-world commercial potential of Zeotech's methane control innovation."

"Zeotech would like to thank Dr. Chris Pratt and his team at Griffith University for their ongoing focus and dedication, which was required to achieve the results needed to advance to infield trials."

"We also thank Dr. Taku Ide and the team at Cleanaway for their ongoing collaboration and support to facilitate the infield trials at their landfill site."

Methane Emissions Control Program

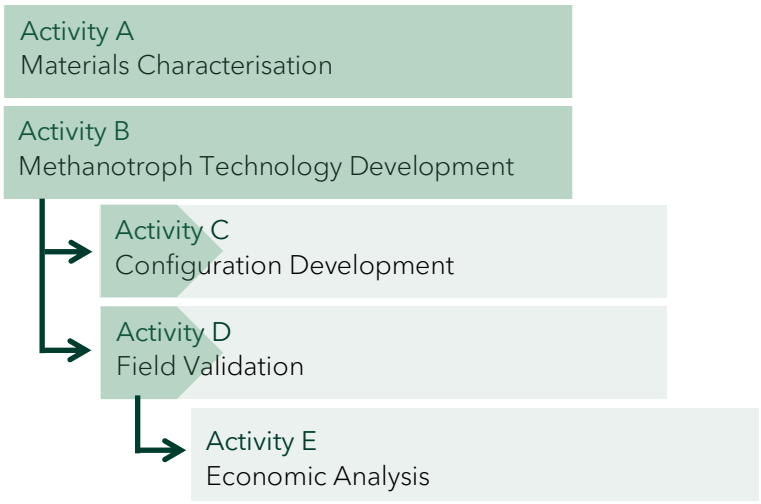

Figure 1 - Key activities under the Methane Emissions Control Program with the dark green indicating the approximate progress of each activity.

Program Background

The Program commenced at Griffith in February 2023, and aims to develop zeolite-based technology (biofilter) to be deployed within the surface capping soil of landfills to adsorb and eliminate methane emissions through a process of chemical or biological oxidation, and potentially mitigate a greenhouse gas which has 28 times the global warming potential of carbon dioxide[1].

The Program has unlocked significant new knowledge, and the Company is taking practical steps to protect the intellectual property being generated by exploring the patentability of novel aspects of Zeotech's technology.

A key commercial advantage of the Company's zeoteCH_4® product is that it is manufactured utilising proprietary patent-pending zeolite synthesis processes developed in-house by the Company during 2023.

[1] IPCC. Climate Change 2014: Synthesis Report 2014. 100-year global warming potential (GWP)

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Early activity in the Program has focussed on collecting and evaluating the properties of the landfill capping soils gathered from the landfill site operated by industry partner, Cleanaway, together with analysis of the chemical methane adsorption and oxidation capacities of the Company's targeted zeoteCH$_4$® products.

Methane Oxidation

The primary mechanism for methane abatement is from a process of biological oxidation using methane consuming bacteria named methanotrophs.

In November, the Company announced that early batch experiments had displayed promising oxidation efficiencies of 70-80% for two of the tested zeoteCH$_4$® compounds, and microbes are actively colonising and co-existing with the zeoteCH$_4$® products.

Results also showed promise for stand-alone chemical oxidation efficiencies of up to 15% at ambient temperature and pressure. This additional process was therefore contributing toward the overall effectiveness of the Company's zeoteCH$_4$® products as a practical methane abatement technology.

Biofilter Development

Activity B is now complete, and continual trials over a 3-month period have demonstrated that two of the Company's zeoteCH$_4$® products have achieved continuously high oxidation rates of greater than 70%, following the initial inoculation period.

Further, testing on new configurations that are more closely aligned to the intended infield design has shown oxidation rates exceeding 90%, which highlights the potential to enhance constant oxidation rates as the Program aims to further optimise the technology during the field validation stage.

The positive results build on the batch experiments announced in November and show that the Company's zeoteCH$_4$® products can act as effective host sites for methanotroph communities, alongside maintaining constant high levels of oxidation for a prolonged period with minimal intervention following inoculation.

Completion of Activity B triggers a 'stop/go' provision within the research agreement with Griffith. Based on the positive results to date and high levels of constant methane oxidation, Zeotech and Griffith have decided to advance to Activity C – Configuration Development, and Activity D – Field Validation, which will be undertaken at Cleanaway's landfill facility.

The two zeoteCH$_4$® products taken forward to infield validation are manufactured utilising feedstock from the Company's Toondoon kaolin mineral, together with a circular product using Toondoon kaolin combined with a coal combustion by-product from a South East Queensland generator.

The latter product is manufactured under process conditions associated with the Company's 'methods of preparing a zeolite' patent application lodged in July 2023, and has the potential to offer a circular solution for substantial quantities of coal combustion by-products, alongside contributing to greenhouse gas mitigation.

The promising results to date demonstrate the Program is developing an effective technology and methodology for practical and potentially novel inoculation of the zeolite material that can now be tested in industry methane-emitting settings, such as landfill.

Future Work

Upcoming activities will focus on developing and evaluating scalable configurations for the Company's zeoteCH_4® products developed under Activity B.

Following successful configuration development, the Program will move infield at Cleanaway's host landfill site where soil samples were collected earlier in the Program. Three (3) field test plots measuring 20m^2 have been reserved at the host site for this purpose.

Griffith and Cleanaway team members undertaking Program trial cell selection site at Cleanaway's Landfill

Field validation will require substantial volumes of each zeoteCH_4® product. Zeotech's in-house laboratory team has advanced production of the targeted product that has delivered sufficient inventories to meet volumes required for the field validation stage, which is expected to commence from February 2024 and conclude in approximately July 2024.

This announcement has has been approved by the Board.

- End -

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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 'manufactured zeolites' to deliver solutions aimed at addressing sustainability challenges.

About Cleanaway

Cleanaway is Australia's leading total waste management, industrial and environmental services company. Cleanaway have supported Australian businesses for over 50 years with over 6,300 expert staff and a fleet of over 5,300 specialist vehicles across more than 250 locations around Australia.

Cleanaway's mission is to make a sustainable future possible. They are leaders not just through their total waste management solutions but also by achieving the triple bottom line of sustainability:

- a financially strong and resilient business;
- contributing to a thriving population through employment and community engagement; and
- leading their industry to protect our planet for generations to come.

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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.

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