

ASX

ANNOUNCEMENT

25 September 2024

Drilling program to unlock value from Cyclone Zircon Project

- Program to update metallurgical testwork, testing new recovery methods & improved efficiencies, process products and confirm previous drilling results for potential customers and investors
- New air-core drilling program to collect 10 tonnes of heavy mineral sand from Cyclone Zircon Project, WA
- Diatreme aiming to unlock shareholder value from Cyclone, one of the largest undeveloped zircon-rich heavy mineral sands deposits in the Eucla Basin.

Emerging silica and mineral sands developer, Diatreme Resources Limited (ASX: DRX) is launching a new air-core drilling program for its Cyclone Zircon Project in Western Australia, seeking to update metallurgical testwork and confirm previous drilling results from the zircon-rich heavy mineral sands project.

Under the program, 10 tonnes of heavy mineral sand will be obtained from the Cyclone Deposit, taken from areas representing the first three years of planned production under the current mine design. The program aims to collect sufficient samples for processing testwork using the latest equipment and processes, process products and confirm previous drilling results for potential customers and investors.

Diatreme's CEO, Neil McIntyre commented: *"This new drilling program will enable further metallurgical assessment of the Cyclone deposit's amenability to the latest innovative processing technologies, while also reconfirming the Definitive Feasibility Study (DFS) modelling on Cyclone's heavy mineral sands product suite is optimised for both market acceptability and pricing."*

"The 'shovel-ready' Cyclone project is well positioned for development, with all major approvals in place and given the declining global supply and continued demand for these key critical minerals of high-grade zircon and titanium. We look forward to getting back on the ground at Cyclone and unlocking value for shareholders, adding to our flagship low iron, high purity silica sand projects in North Queensland."

Discovered in 2007, Cyclone is located along the Barton shoreline within the Wanna Lakes area of the northern Eucla Basin. It is situated 25 kilometres from Western Australia's state border with South Australia and 220 kilometres north of the transcontinental railway. Diatreme's wholly owned subsidiary, Lost Sands Pty Ltd, holds Mining Lease M69/141 which includes the Cyclone deposit.

The Cyclone project was granted a Mining Lease in 2014 which followed the signing of a Project Agreement with the traditional owners, the Spinifex People. In 2017, the project received final ministerial consent allowing for the development of a mineral sands mine and associated infrastructure. A Definitive Feasibility Study announced in 2018 demonstrated the project's potential as the largest undeveloped, zircon-dominant heavy mineral sands project in the world-class Eucla Basin.

Previous exploration and metallurgical testwork

In 2007, Diatreme completed its first air-core drilling program at Wanna Lakes. The Cyclone deposit was discovered quite early in the program, with Cyclone located at the southeast end of E69/1920. During 2010, there was a small program of resource definition drilling over the Cyclone deposit, while regional drilling to the north and north-east of Cyclone was successful in identifying low grade mineralisation associated with beach sediments in 2010 and 2011. Resource definition drilling continued in 2012 over the deposit.

Metallurgical testwork was completed on a 7-tonne bulk sample in 2011 and a 12-tonne bulk sample in 2013. The 2011 bulk sample was collected from holes drilled across the entire Ore Reserve to produce a representative sample suitable for Preliminary Feasibility Study (PFS) quality process design, whilst the 2013 bulk sample was collected from holes drilled within the planned first two years of production to produce a representative sample suitable for confirmation of the PFS process design.

2024 drilling program

The proposed 2024 Cyclone drilling program encompasses up to 156 holes totalling approximately 5,500m of NQ air-core. Drilling will be on six existing grid lines, with holes nominally 'twinning' and 'infilling' 25m apart from existing holes to:

- Provide more certainty in data, more accurately determine target depth and sampling intervals;
- Two bulk samples to test mineralogy viability for mining development;
- Test new processing and mineral recovery technologies.

The proposed drilling program has been designed to target existing traverses through the first three years of production to create further confidence in the reserve through twinning and infilling existing holes. New data generated will include new geological logging and interpretations based on assaying on 1m intervals.

Metallurgical Testwork

Diatreme has received a proposal from Mineral Technologies for metallurgical testwork on the 10-tonne bulk sample of Cyclone ore. The extensive program of investigations will be conducted over a period of approximately six months and will involve separation and concentration testwork using the latest developments in mineral sand technology.

The objectives of the testwork are to improve recovery and product quality for zircon and the full suite of titanium minerals through improvements to process flowsheets for the wet concentrator plant (WCP) and the mineral separation plant (MSP). These improvements are targeted at improving the project economics by producing higher quality products in line with recent discussions involving potential customers for zirconium and titanium minerals.

WCP testwork will produce a heavy mineral concentrate product (HMC) using a range of equipment and operational settings for screens, spiral concentrators, classifiers and shaking tables. MSP testwork will produce zircon product and TiO₂ products (HiTi) using a range of equipment and settings for screens, electrostatic separators, magnetic separators, acid leach processing and floatation for fine zircon. Potential customers in China and USA are aware of this testwork program and will receive samples of HMC and final products for downstream testwork at their processing facilities.

The Australian components of this testwork program, including supporting activities that are required to prepare the bulk sample and transport it to Mineral Technologies' test facility, will be assessed and are expected to be eligible for partial funding through the Australian Government's Research and Development tax rebate scheme.

Diatreme recently expanded (39 sub blocks) the exploration tenement area surrounding Cyclone, with the grant by the Western Australian Government (DEMIRS) of E69/4143. This strategic application was made immediately following Diatreme being made aware of the area being relinquished by another party. This EPM area further protects Cyclone's existing tenement (mining and retention licence) holdings.

In its Quarterly Review released on 23 July 2024, major producer Iluka Resources reported a weighted average zircon sand price in the second quarter 2024 of US\$1,907 per tonne (2018 DFS pricing of USD1,500), up 2% compared to the first quarter. Iluka expects zircon prices to be "broadly flat" in the third quarter 2024. Iluka also reported a Q2 2024 rutile price of US\$1,690/t and a synthetic rutile price of US\$1,194/t.

These positive market dynamics support Diatreme's aim to maximise shareholder value from Cyclone, amid projected constrained supply and consistent demand for high-grade zircon.

Figure 1: Cyclone Project location, WA

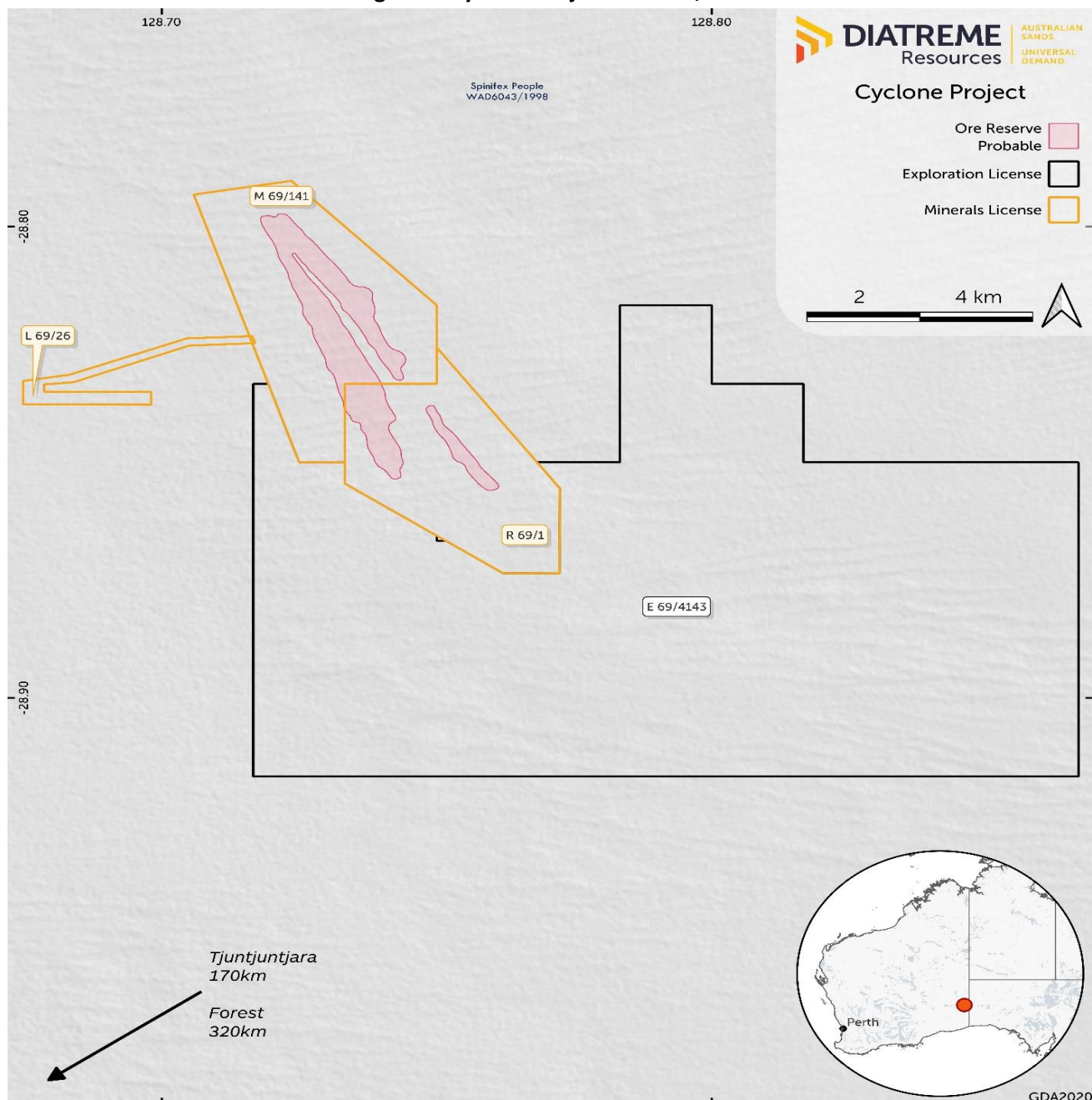




Figure 2: Recent aerial survey at Cyclone

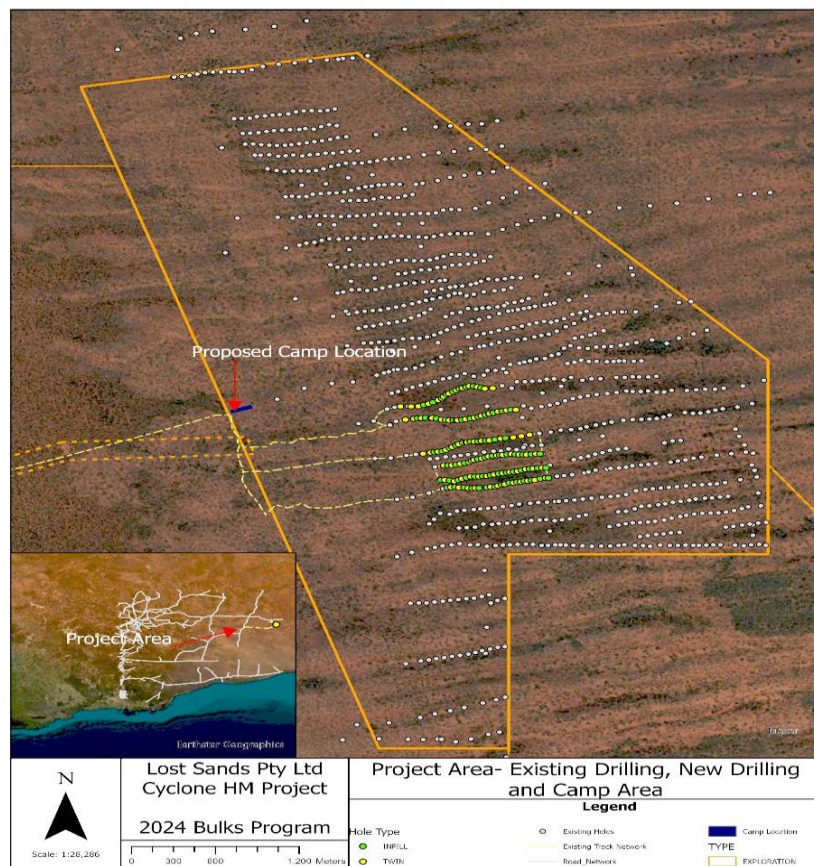


Figure 3: Existing project holes (grey) and planned 2024 holes (green), together with the camping area



This announcement is authorised for release by the Board.

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About Cyclone Zircon Project

Discovered in 2007, the Cyclone Zircon deposit is located along the Barton shoreline within the Wanna Lakes area of the northern Eucla Basin, 25 kilometres from Western Australia's state border with South Australia and 220 kilometres north of the transcontinental railway.

In November 2014, Western Australia's Department of Mines and Petroleum granted a Mining Lease (M69/141) for the project, which followed the signing of a Project Agreement with the traditional owners, the Spinifex People. In January 2017, the project received final ministerial consent allowing for the development of a mineral sands mine and associated infrastructure.

A Definitive Feasibility Study was completed in November 2018, reaffirming Cyclone's potential as the largest undeveloped zircon dominant heavy minerals project in the world-class Eucla Basin.

About Diatreme Resources

Diatreme Resources (ASX:DRX) is an emerging Australian producer of mineral and silica sands based in Brisbane. Our key projects comprise the Northern Silica Project and the Galalar Silica Sand Project in Far North Queensland, located adjacent to the world's biggest silica sand mine at Cape Flattery, together with the recently acquired Cape Flattery Silica Project.

In Western Australia's Eucla Basin, Diatreme's 'shovel-ready' Cyclone Zircon Project is considered one of a handful of major zircon-rich discoveries of the past decade. Diatreme also owns 100% of the Clermont Copper-Gold Project in central Queensland.

Global material solutions group Sibelco is Diatreme's development partner on its silica projects portfolio. Sibelco has completed a two tranche investment of \$35 million, taking its total project interest to 26.8%, with the balance (73.2%) held by Diatreme. In addition, Sibelco made a \$13.97 million investment at the corporate level.

Diatreme's silica sand resources will contribute to global decarbonisation by providing the necessary high-grade, premium quality silica for use in the solar PV industry. The Company has a strong focus on ESG, working closely with its local communities and other key stakeholders to ensure the long-term sustainability of our operations, including health, safety and environmental stewardship.

Diatreme has an experienced Board and management, with expertise across all stages of project exploration, mine development and project financing together with strong community and government engagement skills.

For more information, please visit www.diatreme.com.au

ASX releases referenced for this release:

- 30 July 2024 – "Quarterly Activities/Appendix 5B Cash Flow Report"
- 15 November 2018 – "Positive DFS confirms Cyclone Zircon Project to proceed"
- 10 January 2017 – "Cyclone Project secures final ministerial approval"
- 24 November 2014 – "Cyclone Project Mining Lease approved"
- 17 November 2014 – "Cyclone Project Traditional Owners agreement signed"

Diatreme confirms that it is not aware of any new information or data that materially affects the information included in the original releases and that all material assumptions and technical parameters underpinning the estimates in the original releases continue to apply and have not materially changed. Diatreme confirms that the form and context in which the competent person's findings are presented have not been materially modified from the original releases.

Competent Person Statement

The information in this report, insofar as it relates to Mineral Resources at the Cyclone Project is based on information compiled by Mr Ian Reudavey, who was a full-time employee of Diatreme Resources Limited and a Member of the Australian Institute of Geoscientists. Mr Reudavey has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he has undertaken 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'. Mr Reudavey consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.

The information in this report, insofar as it relates to Ore Reserves at the Cyclone Project is based on information compiled by Mr Phil McMurtrie, who is a director of Tisana Pty Ltd (a consultant to Diatreme Resources Limited), and a Member of the Australasian Institute of Mining and Metallurgy. Mr McMurtrie has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he has undertaken 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'. Mr McMurtrie consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.

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