

**ASX Announcement**
23 September 2009**CYCLONE PROJECT**
(DRX 100%)**RESOURCE UPDATE****Diatreme boosts Cyclone Deposit resource estimate by 50%****Highlights**

- 50% increase in resource estimate for Cyclone Deposit, to 98.4 million tonnes (Mt) at 2.88% heavy minerals (HM)(1% HM cut-off grade), containing 2.8Mt HM.
- Continued expansion of size and quality of deposit in Western Australian side of Eucla Basin, with potential for further expansion in existing and adjacent projects.
- Scoping studies commenced aimed at developing deposit through to mining.
- Potential new long-term supply source for WA mineral sands industry.

Diatreme Resources Limited (ASX:DRX) today announced a 50% increase in the resource estimate for its heavy mineral sands Cyclone Deposit in Western Australia, boosting the potential for a new world-class zircon province in the Eucla Basin.

Rich in lucrative minerals such as zircon - used in ceramics, TV screens and fuel cells - the deposit compares with the Jacinth-Ambrosia project in the South Australian side of the basin, and could represent a source of new long-term supply for the Western Australian mineral sands industry.

Diatreme's Executive Chairman, Tony Fawdon, said following an extensive drilling program, the company had increased the size of the 100% owned Cyclone Deposit to 98.4 million tonnes at 2.88% heavy minerals (1% HM cut-off grade), containing 2.8Mt HM. The new resource is classified as Measured (11.5Mt at 3.44% HM), Indicated (84.4Mt at 2.82% HM) and only a minor amount of Inferred (2.5Mt at 2.38% HM). (Refer Table 1).

TONNES Mt	%HM	% Slimes	% Oversize	MATERIAL
2.51	2.38	3.53	4.08	Inferred
84.36	2.82	4.40	5.91	Indicated
11.52	3.44	4.51	4.72	Measured
98.40	2.88	4.39	5.72	TOTAL

Table 1. Cyclone Resource Estimate.

Diatreme Resources is an Australian based diversified mineral explorer with significant projects in heavy mineral sands, copper, base metals and gold.

The Company owns the **zircon rich Cyclone HM Deposit** in Western Australia, which is situated within the emerging world class **Eucla Basin heavy mineral sands province**, along with 30,000km² of underexplored ground prospective for heavy mineral sands.

The Board and senior personnel exhibit wide experience, ranging through the exploration and development phases of resource management.

Australian Securities Exchange
Code: DRX

Securities

Ordinary shares:

177,093,250

Unlisted 47c options (30 June 2011):

17,550,000

Unlisted 47c options (31 July 2011):

3,000,000

Board of Directors**Executive:**

Tony Fawdon - Chairman/CEO

David Hall - Operations

Non-executive:

Lawrence Litzow

George White

Andrew Tsang

Company Secretary:

Lawrence Litzow

Key Projects:

- Eucla Basin Heavy Minerals Project
- Clermont Copper Project
- Anabama Copper Project
- Bellfield Base Metals Project
- Tick Hill Gold Project

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He said the resource had increased in size by 50% compared with the previous Inferred Resource announced in February 2008 of 60Mt at 3.1% HM (1% HM cut-off), demonstrating a continued expansion of the size and quality of the deposit.

The resource also has a very low slimes (clay) and oversize contents which aids its ability to be mined economically.

“The latest results at Cyclone have greatly increased our confidence in the resource’s potential. The deposit is likely to be further expanded through additional drilling results from the recent drilling program, and further drilling over the company’s extensive tenement holding spanning over 30,000 square kilometres,” Mr Fawdon said.

“Cyclone is potentially the biggest single deposit of heavy minerals in the Eucla Basin, with a very attractive mineral assemblage of approximately 33% zircon, 12% rutile, 27% leucoxene and 17% altered ilmenite, table 2.”

Mineral	% Mass	% Mass Range
Zircon	33	18-42
Rutile	12	5-24
Leucoxene	27	14-43
Altered Ilmenite	17	4-30
Others	11	

Table 2: Average Mineralogy (QEMSCAN - SGS) results from Cyclone Deposit, WA.

Cyclone’s potential value is demonstrated by the high price of zircon and titanium minerals. According to broker research, the zircon price is forecast to reach US\$950 per tonne this year – up from US\$785/t in 2007 – with rutile expected to reach US\$575/t and ilmenite US\$100/t. Leucoxene prices range around US\$150-300/t, depending on titanium content and impurity levels.

Diatreme’s wholly owned subsidiary Lost Sands Pty Ltd has now conducted over 42,500 metres of drilling at Cyclone, with the mineralisation covering an area up to five kilometres long and up to 2.5 kilometres wide. Since the previous resource estimate, the company has concentrated on infill and extension drilling aimed at expanding the resource base and increasing confidence in the overall resource.

The deposit is located within the highly prospective Wanna Lakes area of the Eucla Basin, 25 kilometres inside WA from the state border with South Australia and 220 kilometres north of the transcontinental railway.

“The deposit is of significant size on a global scale and could be compared with the Jacinth-Ambrosia project in the eastern Eucla Basin, which will create hundreds of jobs for South Australia over the life of the project,” Mr Fawdon said.

“The southern extension of the Cyclone Deposit is already being explored by Image Resources, who have recently completed a resource drilling program on their portion of the deposit.”

Mr Fawdon said the company was awaiting results from an additional 2,446 drilling assays, which would be completed in the coming weeks to allow for a final resource estimate to be made. The deposit’s size is expected to further increase as a result of the additional assays, with potential for further incremental additions.

The recent round of exploration included the drilling of bulk samples for testwork on the deposit, which is scheduled for later in 2009.

“Diatreme has already initiated scoping studies on Cyclone in preparation for a pre-feasibility study on the resource,” Mr Fawdon said.

“By moving quickly now, we can not only save time and costs on the full pre-feasibility study, but also ensure we are in an excellent position to potentially progress to mining.”



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Mr Fawdon said the zircon market remained strong due to the growth of consumption in China, which had become the world's top consumer with consumption of around 400,000 tonnes of zircon a year.

China's per capita consumption of 0.2 kilograms is still below the 0.8 kilograms of zircon's other main market of Europe, indicating the potential for further demand growth as Asia's fastest growing major economy increases infrastructure and construction spending.

"Diatreme has maintained an aggressive exploration program throughout the recent economic downturn, which has been strongly supported by our major shareholders and new investors, particularly from China and the nearby region," he said.

"The heavy mineral sands discovery at Cyclone along with our other mineral sands projects in the South and Western Australian sides of the Eucla Basin are complemented by our exciting copper, gold and base metals projects in Queensland and South Australia.

"Diatreme has an excellent outlook, and we are confident of making the transition from explorer to producer in an environment of rising global commodity prices."

About Diatreme Resources

Diatreme Resources Limited (ASX code: DRX) is a diversified Australian mineral explorer with significant projects in heavy mineral sands, copper, base metals and gold.

Based in Brisbane, Queensland, the company listed on the Australian Securities Exchange in June 2005 and has approximately 1,900 shareholders. Current market capitalisation is around \$27.5 million (as at September 21, 2009).

About zircon

Zircon is a mineral sand used in the production of ceramics, including sanitary ware, tiles and tableware. It is also used in refractories, TV glass and foundry applications. Zircon is the source material for zirconia and a range of chemicals used in high-tech applications, including fuel cells and abrasives. Zirconium metal is used in nuclear fuel rods, while zirconia is used in jewellery.

Global zircon consumption in 2008 is estimated at 1.3 million tonnes, with China the largest single consumer followed by Western Europe, North America, Japan and other countries.

Anthony J Fawdon
Executive Chairman/CEO

For further information:

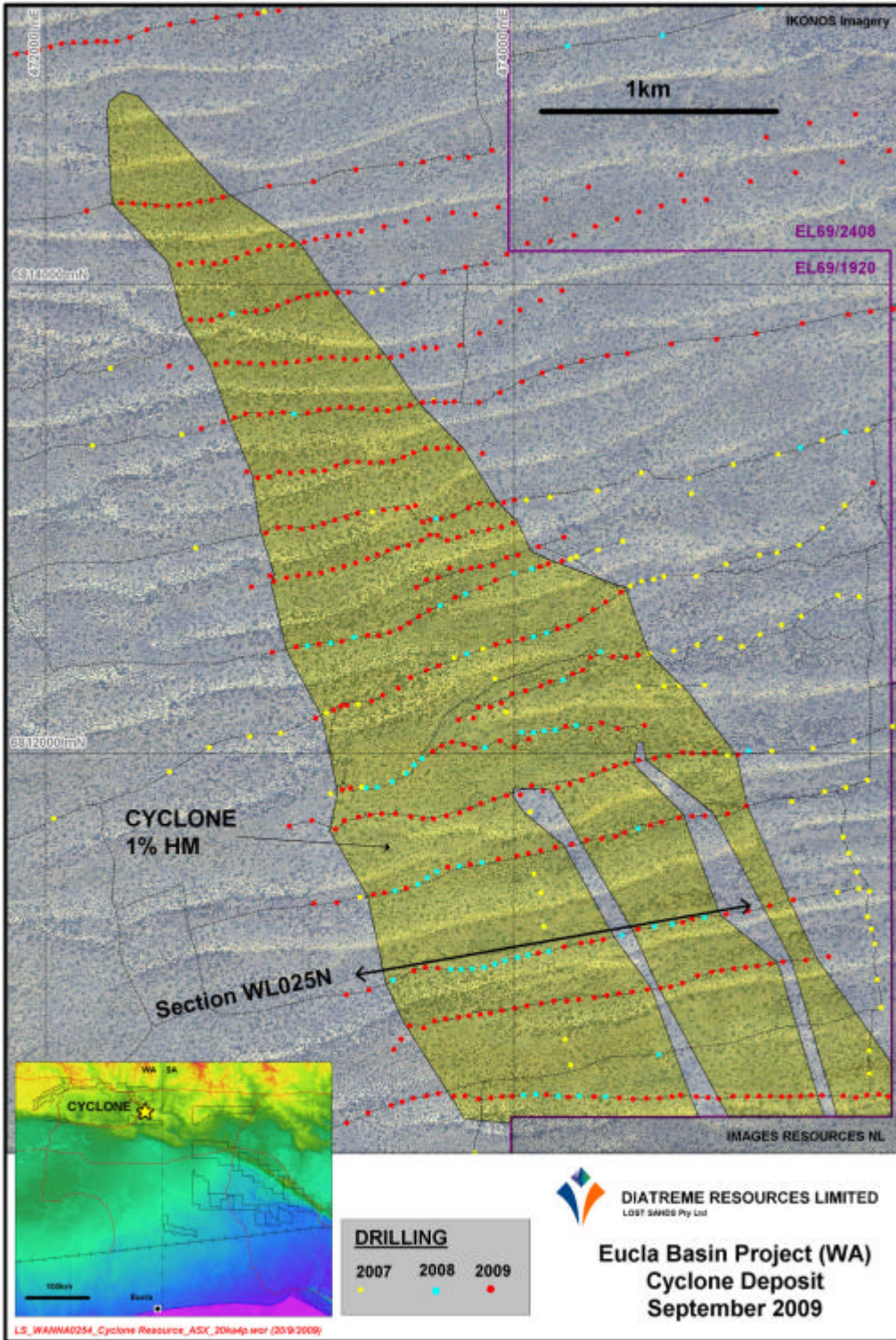
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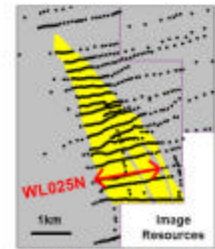
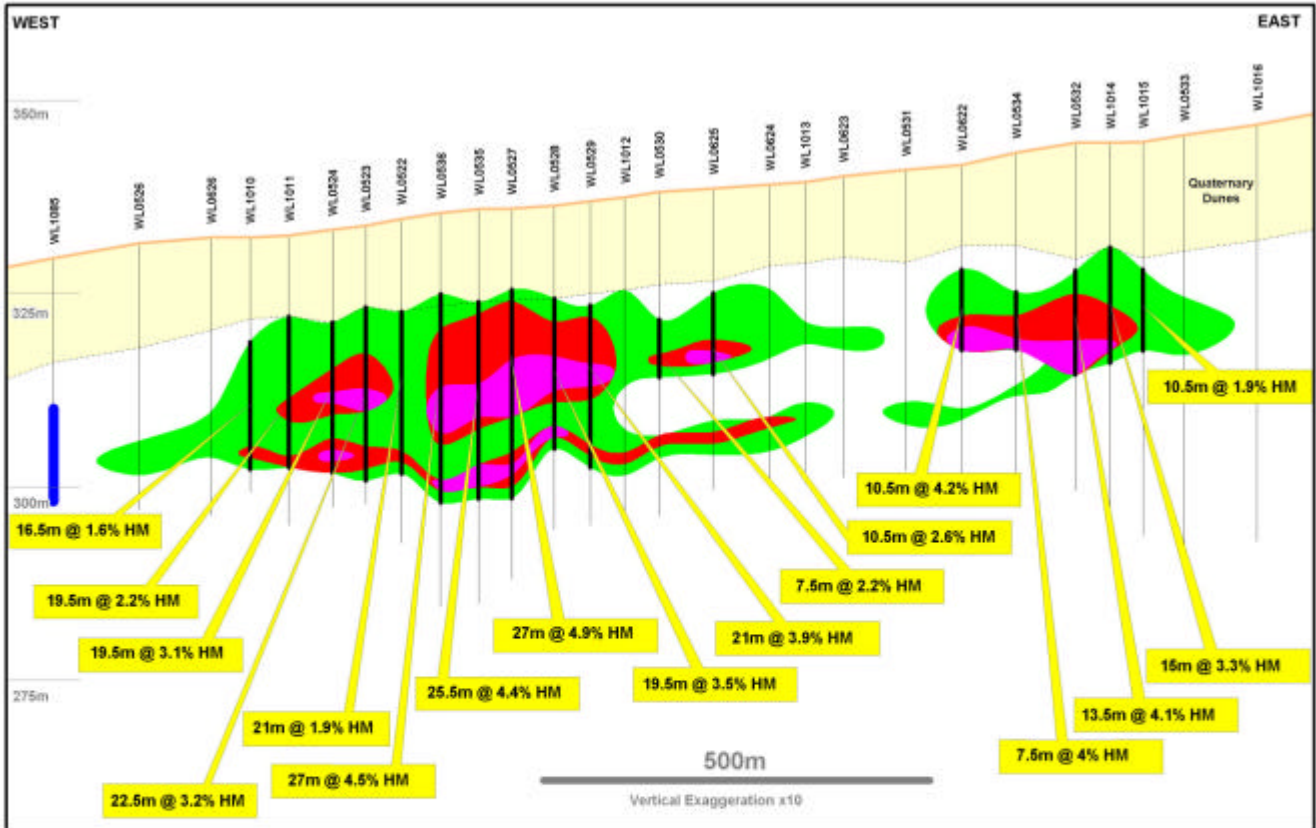
For media queries:

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Competent Person Statement

The information in this report, insofar as it relates to Exploration Results and Mineral Resources is based on information compiled by company personnel under the supervision Mr David Jelley, of David Jelley Pty Ltd, who is a Member of the Australasian Institute of Mining and Metallurgy. Mr Jelley 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 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Jelley consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.





LEGEND

- >5% HM
- >3% HM
- >1% HM

Assays pending

Intersections at 1% HM cutoff



DIATREME RESOURCES LIMITED
LOST SANDS Pty Ltd

**EUCLA BASIN PROJECT
Western Australia
CYCLONE DEPOSIT
LINE WL025N**

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