

Exploration Activities Report Quarter ended 30 June 2014

HIGHLIGHTS

Cyclone Zircon Project (WA)

- Project de-risking activities continued under the Perpetual Mining Holding Limited Heads of Agreement.
- Follow-up flora and fauna Autumn field surveys completed in early April as part of the Public Environmental Review process necessary for EPA approvals.
- Negotiations underway with Pila Nguru (RNTBC) for the Cyclone Project Mining Agreement.

Clermont Copper Project (QLD)

- A review of the Rosevale Porphyry Corridor prospect underway to determine future exploration programme.

Tick Hill Gold Project (QLD)

- Negotiations with Superior Resources completed with the signing of a term sheet in early April for the grant of option to acquire 100% interest in the project.

Project Tenement Rationalisation

- Withdrawal of Mandora tenement application.
- Withdrawal of SA Eucla Basin tenement applications.



Cyclone environmental survey - vegetation photos

Diatreme Resources is an Australian based diversified mineral explorer with significant projects in WA, SA, VIC and Qld.

The Company seeks to develop the Cyclone Zircon Deposit in WA, through a joint venture arrangement, and conducts exploration over a number of project areas prospective for heavy mineral sands, silica sand, copper and gold.

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

Australian Securities Exchange

Codes: DRX, DRXO

Securities

Ordinary shares (DRX):

624,849,042

Listed Options (DRXO):

15,266,611

Board of Directors

Executive:

Neil McIntyre – Acting Managing Director

Non-executive:

William Wang - Chairman

Andrew Tsang

Daniel Zhuang

Joint Company Secretaries:

Leni Stanley

Tuan Do

Key Projects:

- Cyclone Zircon Project
- Clermont Copper Project
- Anabama Copper Iron Project
- Glenthompson Copper Project
- Cape Bedford Silica/HMS Project

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EUCLA BASIN HEAVY MINERAL PROJECT (WA)

Cyclone Zircon Project (WA)

Project de-risking activities under the joint venture with Perpetual Mining Holding Limited continued during the quarter with the focus on preparation of the Public Environment Review (PER) documentation and progressing mining agreement negotiations with the Pila Nguru People. An Aboriginal Heritage report has been completed Pila Nguru's nominated expert and a hydrogeological report has been completed by Ride Consulting for inclusion in the PER. The deep bore that was drilled into the Officer Basin sediments in 2013 has confirmed the presence of a massive regional groundwater aquifer system beneath the Cyclone Project area which has been assessed to be capable of supplying all the project's water requirements. The first bore has been constructed to a depth of 800 metres and will be used to supply water during the construction phase when additional shallower bores as part of the water supply borefield will be constructed.

The hydrogeological report has identified the need for a pump test and geophysical logging of the bore to obtain data necessary for hydrogeological modelling and design the optimum borefield for the mine. The bore intersected 270 metres of high yielding aquifer and a flow of approximately 40 litres per second was airlifted during development of the bore. The mine and wet concentrator will require a water supply of approximately eight gigalitres per year. Results to date have confirmed that the capital cost estimate for water supply used in the Pre-Feasibility Study was appropriate and the operating cost estimate will be confirmed on completion of the pump test and borefield design. The pump test, geophysical logging and design of the borefield are planned to be undertaken following completion of the PER.

The environmental studies and assessment processes have continued in accordance with the PER schedule which has been agreed with the Western Australian Environmental Protection Authority (EPA). A supplementary Aboriginal Heritage survey and report will be completed during Q3 2014 for clearance of the modified alignment of the proposed haul road as required for the PER. Autumn season baseline field surveys for flora and fauna were completed in April to support the requirements for the PER document and as required by the Western Australian Environmental Protection Act 1986. Experienced zoologists from Outback Ecology, a division of MWH Australia Pty Ltd, and Company personnel undertook field surveys for fauna and flora in the project study area which extends from the Cyclone Deposit in the north for a distance of 240 kilometres to the Forrest rail siding in the south. The results of those surveys were analysed and documented during the quarter and are now being compiled in the PER document.

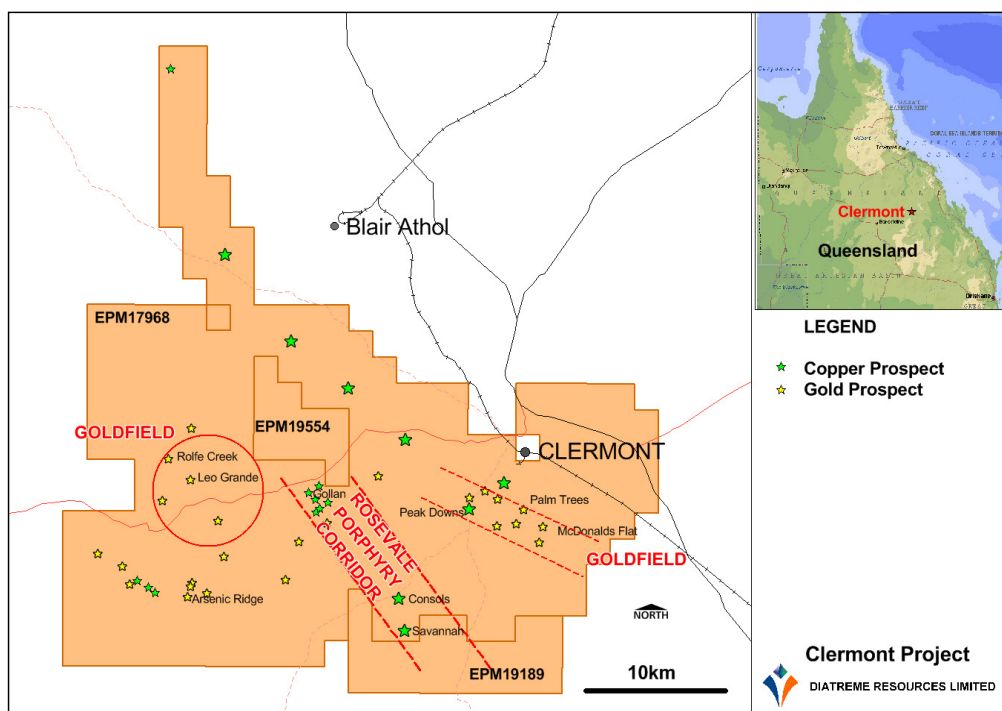
All environmental surveys were designed in close consultation with key stakeholders and regulators including officers from the WA Office of the Environmental Protection Authority (OEPA) and the WA Department of Parks and Wildlife. All field survey work to date has been completed safely and successfully and in accordance with a timeline agreed with the OEPA for orderly preparation and assessment of the PER. The PER document is planned to be finalised and submitted to the EPA late Q3 2014. The PER will include reports covering Fauna, Flora, Aboriginal Heritage, Subterranean Fauna, Hydrology, Hydrogeology, Noise, Dust, Rehabilitation, Mine Closure, and a draft program of Environmental Offsets.

CLERMONT COPPER GOLD PROJECT (QLD)

The discovery of alluvial gold south of Clermont in 1861 triggered one of Queensland's major gold rushes. However, previous mining and exploration around Clermont of the known gold bearing quartz vein systems has shown these to be relatively small. These veins are the likely source of at least some of the alluvial gold deposits in the Clermont area, but alluvial gold mined in most areas is not balanced by the known gold bearing quartz vein and shear occurrences. This is the case immediately south of Clermont where there is no significant known source for the amount of gold that was mined from alluvial leads in this area, suggesting that there are other undiscovered gold bearing sources. It is the potential for new hard rock gold sources near Clermont that is currently driving the gold exploration in this highly prospective district.

Diatreme has conducted mapping over the Clermont goldfields with the aim of locating the source of the gold and to define drilling targets. The exploration model conceptualises a >1 million oz Au potential for the region stretching over a 6km strike length, with analogies to quartz reef hosted Charters Towers & Bendigo/Ballarat style mineralisation. The area around McDonalds Flat has been worked in the past for alluvial and quartz reef gold and it represents the highest density of historic reef workings on the goldfield. Previous drilling in the area by Straits Resources Ltd in the McDonalds Flat area intersected highly anomalous gold intercepts including:

- 10m @ 24.5g/t Au from 17m in hole MFRC19 (including 1m at 233.5 g/t Au from 21m),
- 3m @ 24.1g/t Au from 33m in hole MFRC6.



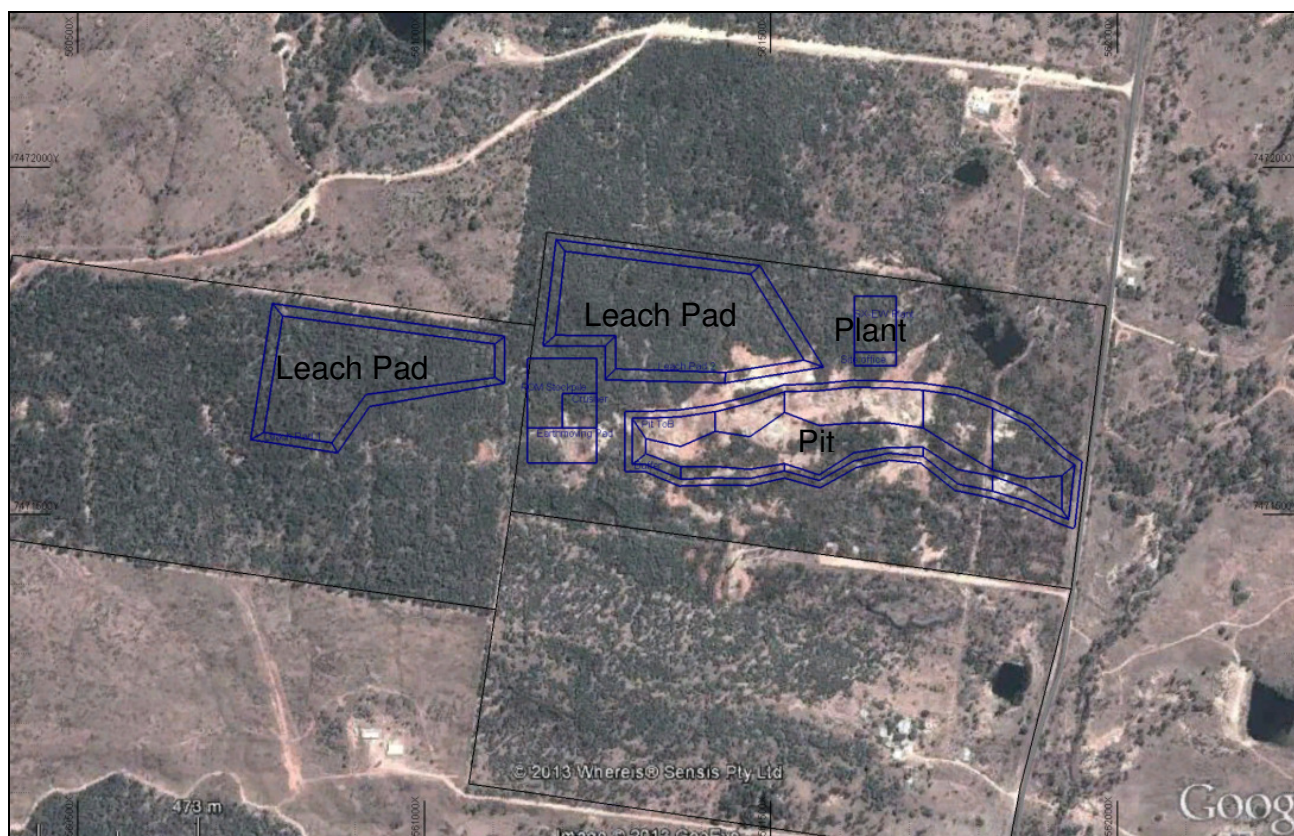
Location of Clermont tenements and prospects as at 1 June 2014

Reconnaissance exploration was undertaken in the catchment headwaters of Expedition Creek during the quarter, to prospect for the source of the extensive alluvial gold that was mined over a 4km long section of the creek bed and flood plain in the early 1990's. Numerous rock chip samples of the various vein and altered country rock were submitted for assay, but none returned significant results and further mapping and exploration is required.

Peak Downs Copper Prospect

The Peak Downs Copper Deposit, discovered in 1862, is situated 6km to the southwest of Clermont. This lode is considered prospective for Girilambone-style copper oxide mineralisation together with some potential for gold. The rich copper ore mined from within the oxidised portions of the Main Lode, together with extensive float of malachite, azurite and less common native copper throughout the extent of the Peak Downs system are all indicative of a significant zone of supergene enriched copper-gold mineralisation.

The Peak Downs copper workings extend over a total strike length of 2.5km. The lode was mined to a maximum depth of 107m. Production figures for all the Peak Downs workings indicate that over 100,000 tonnes with an average grade of 17% copper was mined and smelted by the Peak Downs Copper Mining Company between 1862 and 1877. Potential remains at Peak Downs for the development of the remaining near surface mineralised material. Diatreme is actively pursuing joint venture participation over this project and has been in preliminary discussions with a potential partner.



Peak Downs Copper Prospect - conceptual minesite layout, pit and heap leach pads.

TICK HILL GOLD PROJECT (QLD)

Negotiations with Superior Resources Limited (ASX:SPQ) were carried out during Q1 with a term sheet signed in early April (see ASX release dated 10 April 2014 for full details) for the grant of an option to acquire 100% interest in the project.

The key terms of the option arrangement are:

- Superior is granted an option to acquire a 100% legal and beneficial interest in the Project in return for the issue to Diatreme of 10,000,000 ordinary shares in Superior. The shares will be:
 - issued within 10 days of completion of the transfer of the Project mining leases to Diatreme; and
 - escrowed for a period of 12 months from the date of issue.
- The term of the option is three years, commencing on the date of completion of the transfer of the Project mining leases to Diatreme and extendable for an additional period of not less than 12 months;
- If Superior elects to exercise the option, then at the election of Diatreme, Superior will pay Diatreme six million dollars (\$6,000,000) or the equivalent in ordinary shares in Superior (30 day VWAP per share), or any combination of cash and shares. The issue of any shares to Diatreme will be subject to the approval of Superior shareholders;
- During the option period, Superior:
 - will have the exclusive right to manage, plan and conduct exploration activities on the Project;
 - retains the right under the JVA to be transferred a 50% interest in the Project upon spending \$750,000 on exploration activities;
 - may mine and process existing surface material, including waste dumps, on the basis of each party funding 50% of the costs or as otherwise agreed between the parties. The revenue generated by such an operation will be apportioned between the parties in accordance with their respective proportionate contributions to the costs.



PROJECT TENEMENT RATIONALISATION

In maintaining the company's focus on core projects, a number of exploration tenement applications have been abandoned as a result of internal, ongoing prospectivity reviews. Appendix 1 provides details of the mining tenements disposed during the quarter.

Mandora Heavy Mineral Sands: Following receipt of preferred Heritage Agreements from the respective Native Title parties, Diatreme elected to withdraw the tenement application based upon the restrictions to exploration access that were proposed.

Eucla Basin Heavy Mineral Sands Project: Significant exploration has been conducted over many years and a well developed understanding of the Eucla Basin geology gained, resulting from the discovery of the Cyclone Deposit. Following ongoing internal reviews, the Company has now reduced its ground holding in the basin, retaining only those areas which contain potential for the discovery of new deposits which may enhance the Cyclone Project.

CASH POSITION

The Company's cash position at 30 June 2014 (Appendix 5B) was \$481K, with additional funding for the Cyclone Zircon Project totalling \$1.25M being received during June 2014 quarter.

APPENDIX 1

Appendix 1 provides information required under ASX listing rule 5.3.3 for mineral exploration entities.

Dated 30 July 2014

Neil J McIntyre
Acting Managing Director

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Competent Person Statements

The information in this report, insofar as it relates to Exploration Results from the Clermont projects is based on information compiled by Mr Ian Reudavey, who is 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 that relates to Exploration Results and Mineral Resources from the Cyclone Zircon Project is based on information compiled by Mr Ian Reudavey, a Competent Person who is a Member of the Australian Institute of Geoscientists. Mr Reudavey is a full time employee of Diatreme Resources Limited. Mr Reudavey has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity being 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 his information in the form and context in which it appears.



APPENDIX 1

DISCLOSURES REQUIRED UNDER ASX LISTING RULE 5.3.3

- Mining tenements held at the end of the quarter and their location

State	Tenement Name	Tenement ID	Location	Interest	Holder	Comments
SA	Anabama North	EL4783	Anabama	100%	CHAL	Granted
SA	Anabama	EL5138	Anabama	100%	CHAL	Granted
SA	Noorina 1	EL 5045	Eucla Basin	100%	LSPL	Granted
SA	Noorina 2	EL 5046	Eucla Basin	100%	LSPL	Granted
SA	Elliston	EL 5429	Eucla Basin	100%	DRX	Granted
WA	Wanna Lakes	E69/1920	Eucla Basin	100%	LSPL	Granted
WA	Wanna Lakes East	E69/2408	Eucla Basin	100%	LSPL	Granted
WA	Wanna-South	E69/2425	Eucla Basin	100%	LSPL	Granted
WA	Serpentine	E69/3113	Eucla Basin	100%	LSPL	Granted
WA	Cyclone	M(A) 69/141	Eucla Basin	100%	LSPL	Application
QLD	Clermont	EPM17968	Clermont	100%	CHAL	Granted
QLD	Parapet	EPM19189	Clermont	100%	CHAL	Granted
QLD	Expedition Ck	EPM19544	Clermont	100%	CHAL	Granted
QLD	Cape Bedford	EPM(A)17795	Cape Bedford	100%	DRX	Application
QLD	Grays Hill	EPM(A)25117	Yeppoon	100%	DRX	Application
QLD	Tick Hill	ML7094	Duchess	100%	MIM*	Granted
QLD	Tick Hill	ML7096	Duchess	100%	MIM*	Granted
QLD	Tick Hill	ML7097	Duchess	100%	MIM*	Granted
VIC	Glenthompson	EL5478	Glenthompson	100%	CHAL	Granted

- Mining tenements acquired and disposed of during the quarter and their location

State	Tenement Name	Tenement ID	Location	Interest	Holder	Comments
SA	Eucla 5	EL(A) 05/934	Eucla Basin	100%	DRX	Abandoned
SA	Eucla 6	EL(A) 05/935	Eucla Basin	100%	DRX	Abandoned
SA	Eucla 9	EL(A) 08/235	Eucla Basin	100%	DRX	Abandoned
WA	Mandora	E(A) 45/4022	Canning Basin	100%	DRX	Abandoned

- Beneficial percentage interests held in farm-in or farm-out agreements at end of the quarter

State	Project Name	Agreement Type	Parties	Interest held at end of quarter by exploration entity or child entity	Comments
WA	Cyclone Zircon Project	Farm-out Heads of Agreement (HoA)	LSPL and Perpetual Mining Holding Limited	100%	Agreement in principle announced July 2013 and HoA announced Jan 2014
SA	Anabama Iron Project	Farm-out Heads of Agreement (HoA)	CHAL and Braemar Iron Pty Ltd	100%	HoA announced Jan 2013
QLD	Tick Hill Gold Project	Option & Sale Agreement	DRX and MIM	100%	Option exercised by DRX
QLD	Tick Hill Gold Project	Farm-out Agreement	DRX and Superior Resources Limited	100%	Announced Aug 2011, subject to pre-conditions relating to pre-existing option and sale agreement between DRX and MIM



- **Beneficial percentage interests in farm-in or farm-out agreements acquired or disposed of during the quarter**

Not Applicable this quarter

Notes:

MIM* - Under the Tick Hill Option and Sale Agreement, DRX has exercised an option to acquire the Tick Hill Gold Project. DRX has entered into a joint venture arrangement with Superior Resources Limited.

Abbreviations:

EPM(A)	Queensland	Exploration Permit for Minerals (Application)
EL(A)	South Australia	Exploration Licence (Application)
E(A)	Western Australia	Exploration Licence (Application)
ML	Queensland	Mining Lease
M(A)	Western Australia	Mining Lease (Application)
L(A)	Western Australia	Miscellaneous Licence (Application)
DRX	Diatreme Resources Limited	
CHAL	Chalcophile Resources Pty Ltd	
LSPL	Lost Sands Pty Ltd	
MIM	Mount Isa Mines	