Diatreme Resources Limited

ABN: 33 061 267 061

ASX ANNOUNCEMENT

ASX:DRX

QUARTERLY REPORT

HIGHLIGHTS

EXPLORATION ACTIVITIES REPORT QUARTER ENDED 31 MARCH 2017

HIGHLIGHTS

* **Cyclone Zircon Project completes de-risking process with final environmental approval from WA Government, Project now ready to facilitate further large scale investment**
* **Cape Bedford Silica/Heavy Minerals Project set for exploration after negotiations finalised with traditional owners over Compensation and Conduct Agreement**

CYCLONE ZIRCON PROJECT (WA)

Currently the largest undeveloped zircon project in the zircon-rich Eucla Basin, Diatreme's flagship Cyclone Zircon Project achieved an important milestone in the March quarter marking the completion of the 'de-risking' process. A Ministerial Statement giving consent for the project was issued on 9 January 2017, delivering a key project milestone for Cyclone which completed an extensive risk mitigation and permitting/regulatory approval process. Diatreme is now able to advance discussions with potential project partners, funders and product offtakers for direct project participation so the final aspects of the Definitive Feasibility Statement (DFS) can be funded and completed in a timely fashion to capitalise on the upturn in mineral sands prices and forecast constrained supply.

The Annual Review of Diatreme's Resources and Reserves resulted in a minor change to the Cyclone Mineral Resource, which is now reported as 203 Mt at 2.3% containing 4.70 Mt of HM. The change primarily relates to the exclusion of lower grade nearshore mineralisation from the resource following the surrender of E69/2425.

CAPE BEDFORD SILICA/HEAVY MINERALS PROJECT (QLD)

Further progress in this project located near the world's biggest operating silica mine included the conclusion on 18 January 2017 of a Compensation and Conduct Agreement with the traditional owners, Hopevale Congress, to facilitate land access and exploration activity. A Cultural Heritage Agreement is currently being negotiated.

Diatreme has identified high potential targets within the EPM for silica sands and once all agreements are signed and weather conditions are suitable a targeted exploration program will commence.

Diatreme Resources Limited is an Australian based diversified mineral explorer with significant projects in WA and QLD.

Key Projects:
• Cyclone Zircon Project
• Tick Hill Gold Project
• Cape Bedford Silica/HMS Project
• Clermont Copper Project

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

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

Australian Securities Exchange
Codes: DRX

Board of Directors - Non-executive:
William Wang - Chairman
Andrew Tsang
Daniel Zhuang

Executive:
Neil McIntyre – Chief Executive
Ian Reudavey – Chief Geologist
Tuan Do – Company Secretary

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CYCLONE ZIRCON PROJECT (WA)

Currently the largest undeveloped zircon project in the Eucla Basin, the Cyclone Zircon Project continued to advance towards development in the March quarter. The project received final ministerial consent in early January, marking the conclusion of an extensive de-risking process.

During 2016 DRX engaged Sedgman Limited, a leading provider of mineral processing and associated infrastructure solutions to the mineral sands industry, to undertake a Project Enhancement and Update Study. Sedgman reviewed work undertaken for the PFS and subsequent studies and provided an updated assessment of the process plant, some infrastructure and shipping costs and assumptions at a technical and commercial level.

This has provided Diatreme with a greater understanding of the project's potential commercial returns while current industry and market conditions provide an opportunity for cost savings on key capital and operating expenditures, compared to the Prefeasibility Study. The joint study has confirmed the viability of the Cyclone Project and provides DRX with an independent consultant's financial analysis which shows improvements to the project economics.

Mineral Resource and Ore Resource

Discovered in 2007, the Cyclone Deposit is located along the Barton shoreline within the northern Eucla Basin, 25 kilometres within Western Australia from the state border with South Australia. Cyclone is interpreted as a Tertiary beach strandline HM system with analogies to Iluka's Jacinth/Ambrosia HM deposit in the eastern Eucla Basin.

As part of the Annual Review of Diatreme's Mineral Resources and Ore Reserves, the Cyclone Mineral Resource estimate was updated. A revised resource estimate for the Cyclone Mineral Resource is reported as 203 Mt at 2.3% HM (at 1.0% HM cut-off grade), containing 4.70Mt of HM.

TABLE 1: CYCLONE RESOURCE ESTIMATE

Category	HM cut-off %	Material Mt	HM %	HM Mt	Slime %	OS %	Head Grade						Zircon Kt
							Zircon %	Rutile %	Leuco %	HiTi %	Alt Ilm %	Si TiOx %	
MEASURED	2.0	69	3.7	2.58	3.6	3.8	1.06	0.11	0.24	0.88	0.45	0.82	735
MEASURED	1.5	102	3.1	3.14	3.9	4.4	0.88	0.09	0.20	0.73	0.38	0.67	896
MEASURED	1.0	156	2.4	3.81	4.2	5.0	0.69	0.07	0.16	0.58	0.30	0.53	1,079
INDICATED	2.0	13	3.2	0.41	3.8	4.4	0.66	0.07	0.18	1.06	0.55	0.60	83
INDICATED	1.5	24	2.5	0.60	4.1	5.0	0.52	0.05	0.12	0.84	0.41	0.46	123
INDICATED	1.0	48	1.9	0.89	4.4	5.1	0.38	0.04	0.09	0.62	0.30	0.34	183
TOTAL	2.0	82	3.6	2.99	3.6	3.9	1.00	0.10	0.23	0.91	0.47	0.79	818
TOTAL	1.5	126	3.0	3.75	3.9	4.5	0.81	0.08	0.18	0.75	0.38	0.63	1,019
TOTAL	**1.0**	**203**	**2.3**	**4.70**	**4.2**	**5.0**	**0.62**	**0.06**	**0.14**	**0.59**	**0.30**	**0.49**	**1,262**
Mineral Assemblage							**27%**	**3%**	**6%**	**26%**	**13%**	**21%**	
CYCLONE RESOURCE ESTIMATE BY DOMAIN													
STRAND DOMAIN													
MEASURED	1.0	18	6.0	1.08	3.0	2.9	1.74	0.17	0.40	1.42	0.68	1.42	311
INDICATED	1.0	1	6.3	0.08	2.8	3.5	1.35	0.14	0.40	1.79	1.03	1.32	18
TOTAL	**1.0**	**19**	**6.1**	**1.17**	**3.0**	**2.9**	**1.71**	**0.17**	**0.40**	**1.44**	**0.71**	**1.42**	**328**
Strand Mineral Assemblage							**28%**	**3%**	**7%**	**24%**	**12%**	**23%**	
BEACH DOMAIN													
MEASURED	1.0	110	2.1	2.28	4.3	4.7	0.57	0.06	0.14	0.49	0.29	0.43	631
INDICATED	1.0	35	1.8	0.65	4.5	3.8	0.35	0.03	0.09	0.63	0.35	0.31	123
TOTAL	**1.0**	**145**	**2.0**	**2.93**	**4.3**	**4.5**	**0.52**	**0.05**	**0.13**	**0.52**	**0.31**	**0.40**	**754**
Beach Mineral Assemblage							**27%**	**3%**	**6%**	**26%**	**13%**	**21%**	
NEARSHORE DOMAIN													
MEASURED	1.0	28	1.6	0.44	4.6	7.8	0.49	0.06	0.05	0.42	0.08	0.36	137
INDICATED	1.0	11	1.4	0.16	4.2	9.4	0.38	0.04	0.04	0.47	0.06	0.30	43
TOTAL	**1.0**	**39**	**1.5**	**0.60**	**4.5**	**8.3**	**0.46**	**0.05**	**0.05**	**0.43**	**0.07**	**0.34**	**179**
Nearshore Mineral Assemblage							**30%**	**3%**	**3%**	**28%**	**5%**	**22%**	

Table 1 Notes

- Rounding may generate differences in last decimal place
- A constant SG of 1.7 has been used to derive material tonnes
- Slime refers to material typically <53um
- OS refers to material typically >2mm
- Mineral Assemblage derived from QEMSCAN® analysis
- Leucoxene (Leuc) – Ti-oxides containing 85 – 95% TiO_2, HiTi - Ti-oxides containing 70 - 85% TiO_2, Altered Ilmenite (Alt Ilm) - Ti-oxides containing <70% TiO_2, Si-bearing Ti-Oxide (Si TiOx) – Ti-oxides containing >10% silica rich Ti minerals.
- "Strand", "Beach" and "Nearshore" represent differing geological domains based upon varying sediment grain size and sorting (i.e. depositional environment), mineralogy and HM grade.

The geological interpretation of the mineralisation includes 3 distinct geological domains:

- a "Beach" domain of well sorted marine and reworked dunal sands occurring as 2 broadly tapered elongate mineralised sand units originating from a common point and extending for over 7km;
- a "Strand" domain of higher grade (>4%) HM mineralisation occurring as a series of continuous elongate strandline features within the broader "Beach" domain;
- A "Nearshore" domain of bimodal marine sands with fine grained HM mineralisation underlying the western beach unit and extending for around 7km as an arcuate feature.

Although these domains display some distinctive geological characteristics, they are expected to be extracted as a combined body of mineralisation. Figure 1 shows the outlines for the Cyclone HM resource domains and the drill hole collars, representative cross sections have been previously presented (ASX announcement 9 April 2015). Technical details concerning the deposit, exploration drilling program and the resource estimation are presented in Appendix 2 (including JORC Table 1).

The change in the Mineral Resource primarily reflects the exclusion of Nearshore mineralisation within E69/2425 (which was surrendered during 2016), with minor changes to the mineralisation wireframes also being made as part of the update. Approximately 8 Mt of low grade Nearshore mineralisation containing 90 kt of HM on the SW margin of the Cyclone Mineral Resource has been excised.

An update to the Probable Ore Reserve was completed as part of the Project Enhancement and Update Study, with a Probable Ore Reserve estimate for the Cyclone Project reported as 138 Mt at 2.6% HM, including 0.72% Zircon, containing 3.52 Mt of HM, including 0.99 Mt of Zircon (ASX Announcement 15 June 2016). The revised estimate primarily relates to the adoption of a revised mining schedule which reduces the amount of lower grade "Nearshore" mineralisation (and associated interburden) mined from the deeper parts of the mine path and omits some lower grade "Beach" mineralisation on the western batter of the mine path in the first three years of operation.

The Probable Ore Reserve represents a 75% conversion rate for contained HM tonnes. The pit design includes 83 Mbcm of overburden with a strip ratio of 1:1. The strip ratio is considerably lower in the early years of the mine operation.

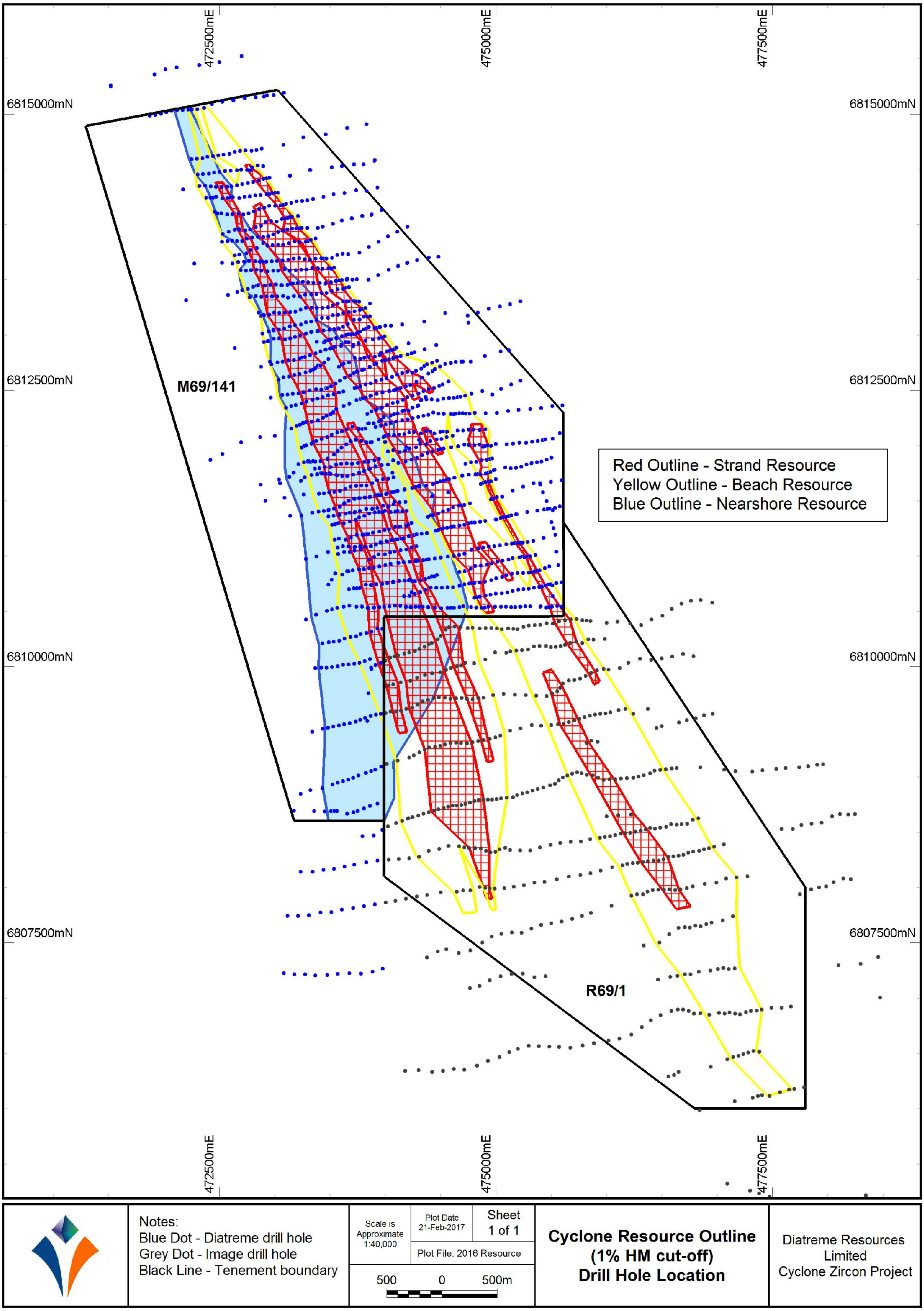


Figure 1: Location Map Cyclone Resource

Environmental Approval

The EPA released recommended approval terms and conditions (positive) for the grant of the Lost Sands "Cyclone Project" environmental approvals to the WA Environment Minister in early August 2016. The Minister's final approval process included a further public comment period of two weeks, which closed in late August 2016. During this period two appeals were received. The response to those appeals was managed and examined for merit or dismissal within the Minister's office independently by the "Office of the Appeals Convenor" (OAC).

Lost Sands as part of the process with the OAC drafted submissions specifically responding to the matters raised within the two appeals. This was straightforward as these matters had been raised previously and dealt with within the original EPA public comment period. Feedback received from the OAC was very positive and the appeals were subsequently upheld with a slight variation in one of the environmental conditions attached to the proposed recommendation for approval. The OAC's final report was subsequently forwarded to the Minister for his final approval late in 2016.

Final ministerial consent (approval) was received on 9 January 2017 as Ministerial Statement No:1052, which allows the Cyclone Project to; *"Develop and operate the Cyclone Mineral Sands Mine, including open cut pits, mining and processing infrastructure, airstrip, accommodation camp, bore fields and haul road construction from the mine site to the Forrest rail siding."*

The ministerial approval is an important step in a project de-risking process undertaken by Diatreme, which has included securing an agreement with the traditional owners, the identification of suitable water supplies and the expansion of the project's forecast mining life following the acquisition of the adjacent Cyclone Extended tenement area.

CAPE BEDFORD SILICA/HMS PROJECT (QLD)

The Cape Bedford EPM17795 is located approximately 200km north of Cairns in North Queensland, and covers the extent of a large Quaternary sand dune field, part of which is currently being mined by Cape Flattery Silica Mines Pty Ltd (CFSM), a wholly owned subsidiary of Mitsubishi Corporation. Cape Flattery has operated since 1967 and is the world's largest silica sand mining operation.

The Cape Bedford / Cape Flattery region of north Queensland is dominated by an extensive Quaternary sand mass and dune field that stretches inland from the present coast for approximately 10km and extends 50km from north to south (see figure below).

Previous exploration has focused on the Cape Flattery area, within the Mining Leases of CFSM, but reconnaissance exploration has been carried out over the entire dunefield in the late 1960's and again in the early 1980's. This exploration confirmed the presence of both silica sand and heavy mineral sands, and Diatreme intends to build on the existing data and initially target those areas (e.g. Nob Point) where prospective silica sand dunes have been identified and access is readily available.

A program of geological / geomorphological mapping, drilling and sample assaying is anticipated to quickly define silica sand resources. Bulk sample collection will allow process flowsheet development and product quality analysis, with scoping studies then undertaken.

The company has completed negotiations with the traditional owners, the Hopevale Congress to formalise a Conduct and Compensation Agreement (CCA), and awaits execution of the agreements. The CCA will allow access for ground disturbing exploration activity and ensure the traditional owners share in the potential economic benefits of this new project.

Six grab samples of silica sand (locations marked on map below) were collected during a recent reconnaissance site visit to the dunefield at Cape Bedford as part of low impact exploration activity permitted prior to a CCA being signed. All samples were submitted for HM analysis and the two samples (D1686, D1687) that displayed visible HM mineralisation subsequently returned HM assays of 3.3% HM and 1.6% HM, respectively. Together with the observation of HM slicks on some of the exposed beaches, this suggests that HM mineralisation may be present at several locations within the EPM.

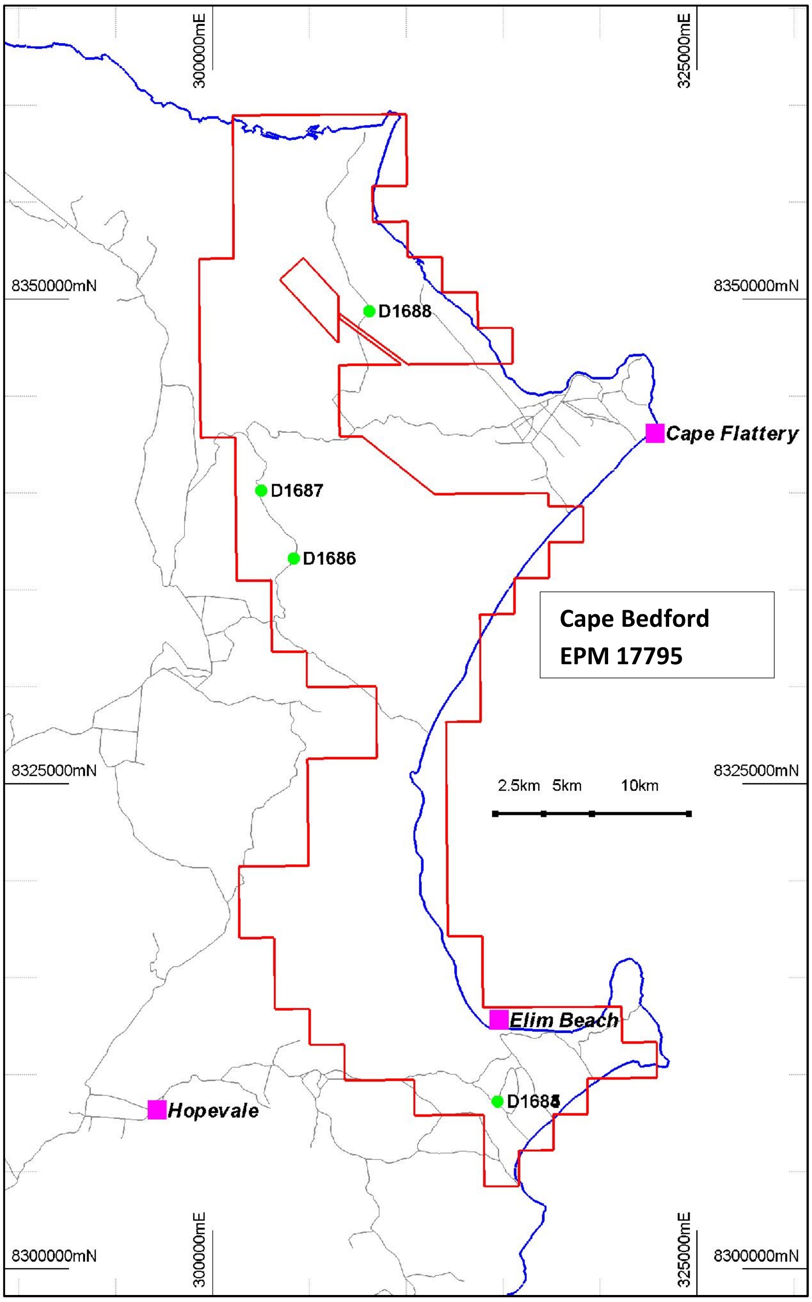
The silica "float" fraction of the reconnaissance grab samples was then submitted for XRF analysis, and all reported ≥99.8% SiO_2 with low levels of Fe_2O_3 (average 0.014%) and Al_2O_3 (average 0.043%). This preliminary work confirms the potential of the widespread silica sand dune material to generate high-quality silica sand.

A preliminary metallurgical test was also undertaken on a 90kg sample of dune material collected from a road cutting immediately south of the Elim Beach campsite. The sample contained low levels of slimes (-45micron) and oversize (+1.0mm), and Heavy Mineral content was determined at 2.6%. The sample processed readily and initial work indicates the sands to be amenable to the use of standard mineral sands process methodologies and equipment.

Wet tabling produced a HMC which was then processed using a simple combination of magnetic separation, further wet tabling, electrostatic separation and magnetic separation to produce a primary ilmenite product, a potential secondary ilmenite concentrate, HiTi/Rutile concentrate and zircon concentrate.

The primary ilmenite product contained 54% TiO2 and low levels of contaminants, particularly Cr_2O_3 and U+Th. The other titanium concentrates display positive characteristics suggesting that chloride grade ilmenite and HiTi products could be produced with further detailed processing. The zircon concentrate returned 60% zircon with the major contaminant being silica, and importantly low levels of Fe_2O_3 and U+Th. Recoveries were deemed appropriate for the level of testwork.

The testwork was not aimed at process development or product development, but is extremely encouraging and indicates that processing of the material into a HMC and final products could be achieved using conventional process equipment and possibly simple process stages.



TICK HILL GOLD PROJECT (QLD)

The Tick Hill Gold Project comprises three granted Mining Lease No's 7094, 7096 and 7097 (totalling 390ha). The Tick Hill Gold Deposit was mined between 1991 and 1995 by Carpentaria Gold Pty Ltd (a subsidiary of MIM Holdings Limited) for the production of 513,333 ounces of gold from 705,000 tonnes of ore at a recovered grade of 22.6 g/t gold (source: MIM – Annual Reports). This makes it one of the highest grade gold deposits in Australia's recent gold producing history.

The transfer of the three ML's to Diatreme Resources was confirmed by the Department in March 2015, triggering the commencement of the DRX Farm-In and Joint Venture Agreement with Superior Resources Limited (ASX:SPQ) over the Tick Hill Gold Project. Under the Joint Venture Agreement, Superior Resources has the right to earn a 50% interest in the project by:

- Completing $750,000 of exploration expenditure;
- Making a payment to DRX of $100,000; and
- Lodging 50% of the Queensland Government security bond on the tenements.

Exploration and assessment of the surface material within the leases (including alluvials, tailings and waste dumps) is to be conducted as a joint operation, with each party contributing 50% of the costs.

The Tick Hill Gold Mine operated from August 1991 through to March 1995, with commissioning of the site processing plant in December 1991. The plant comprised crushing and milling circuits delivering a product with a p80 of 70µm to a CIL circuit. Tailings were discharged into a tailings dam comprising two paddocks of a “turkeys nest” construction in which a perimeter embankment with a clay core retains tailings. Wall heights range from 6m to 10.5m. Since decommissioning the surface has been capped and both the surface and batters seeded, with good vegetation cover now present.

The total reported production for the Tick Hill Gold Mine was 705,000t at 22.6 g/t Au for 15,900kg Au at 97% gold recovery. Some high grade open pit ore was mined and transported to the Carpentaria Gold operations at Ravenswood to provide early cash flow to the project, this has been estimated at 20,000t based on the reported 19,000oz produced at Ravenswood in the 1991/1992 financial year (with head grades for that year of 30.2 g/t Au). This suggests that approximately 685,000t of tailings remain on site, with an estimated grade of around 0.7 g/t Au.

In January 2016 Diatreme announced a maiden Mineral Resource estimate for tailings material located within the rehabilitated tailings dam at Tick Hill (refer *ASX announcement 19 Jan 2016*). The Indicated Resource is estimated at 630kt at 1.08 g/t Au (at 0.5 g/t Au cut-off) containing 680kg (22,000 troy ounces) of gold.

In March 2016, Diatreme announced that a scoping study completed by an independent external consultant (Metcor) had confirmed the viability of a standalone operation processing the identified tailings resource. Tick Hill has the potential for a 20-month operation processing the tailings via re-grinding and a standard CIP/CIL circuit.

Metallurgical studies were undertaken to help determine the optimal grain size required to balance leach extraction rates with energy requirements for regrinding of the tailings. The cyanide leach testwork showed that gold extraction increases with increasingly finer grind size, but gold extraction of ~90% or higher can be achieved at grind sizes of around P_{80} 35 µm and finer.

Ultra-fine grinding testwork utilising an Isamill™ was conducted to determine the likely energy requirements, with results reported slightly higher than parameters used in the Scoping Study, but further work is required to generate data suitable for use in feasibility studies.

A 50kg sample was processed through a Knelson concentrator during the September quarter to assess the efficiency of gravity separation on the Tick Hill tailings material. Although a gravity concentrate with free gold was produced, the overall gold recovery to concentrate was too low for gravity separation to be considered as an alternate or complementary processing method.

Additional metallurgical testwork is required to allow detailed design of a process flowsheet, determination of capital and operating costs, and development of a financial model to further assess the economic potential for mining and processing of the tailings material.

EUCLA BASIN HM PROJECT (WA)

No field work was undertaken during the quarter, and with the full surrender of exploration tenure E69/2408 in January 2017, the project has reached its end.

A review of the Zephyr mineral resource during 2016 concluded that it was unlikely to represent a viable proposition for development in the short to medium term given its low HM grade and overburden depth. The surrender of E69/2408 has resulted in the exclusion of the Zephyr Mineral Resource (92 Mt at 1.3% HM) from Diatreme’s resource inventory.

CLERMONT COPPER PROJECT (QLD)

A review of the Clermont project, primarily the Rosevale Porphyry Corridor (RPC), is continuing, with development of a proposed exploration strategy.

GRAYS HILL PROJECT (QLD)

The company has identified a number of topographic features within Quaternary sediments on the coastal plain in the eastern part of EPM25117 that may represent targets for HM accumulation. An agreement with the primary landholder is required to facilitate access for reconnaissance exploration and this was not advanced during the quarter.

CASH POSITION

The Company's cash position at 31 March 2017 (Appendix 5B) was $226,000**.**

A final drawdown on the convertible note amount of $500,000 was progressively drawn to the amounts of $200,000 during the December 2016 quarter, and $215,000 during the March 2017 quarter. The final balance of $85,000 was received in April 2017. This will bring the convertible note facility total to $3.0 million.

The company is currently embarking on a further capital raising to fund specific exploration programs and funds from this are expected to be received by May 2017.

APPENDIX 1

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

Dated 27th April 2017
Neil J McIntyre
Chief Executive

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Competent Person Statements

The information in this report that relates to Exploration Results from the Cape Bedford 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.

The information in this report that relates to Exploration Results and Mineral Resource from the Tick Hill Gold 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.

The information in this report, insofar as it relates to Mineral Resources from the Cyclone Zircon Project 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, insofar as it relates to Ore Reserves from the Cyclone Zircon 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.

APPENDIX 1

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

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

State	Tenement Name	Tenement ID	Location	Interest	Holder	Comments
WA	Cyclone	M69/141	Eucla Basin	100%	LSPL	Granted
WA	Cyclone Extended	R69/1	Eucla Basin	100%	DRX	Granted
QLD	Clermont	EPM17968	Clermont	100%	CHAL	Granted
QLD	Grays Hill	EPM25117	Yeppoon	100%	DRX	Granted
QLD	Cape Bedford	EPM17795	Hopevale	100%	DRX	Granted
QLD	Tick Hill	ML7094	Duchess	100%	DRX	Granted
QLD	Tick Hill	ML7096	Duchess	100%	DRX	Granted
QLD	Tick Hill	ML7097	Duchess	100%	DRX	Granted

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

State	Tenement Name	Tenement ID	Location	Interest	Holder	Comments
WA	Wanna Lakes East	E69/2408	Eucla Basin	100%	LSPL	Surrendered

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	Comments
WA	Cyclone Zircon Project	Farm-out Heads of Agreement	LSPL and Perpetual Mining Holding Limited	94%	HoA announced Jan 2014, initial 6% farm-out completed 18 Sept 2014
QLD	Tick Hill Gold Project	Farm-out and Joint Venture Agreement	DRX and Superior Resources Limited	100%	Proposed JV announced Aug 2011, formal Agreement announced Jun 2013, Joint Venture commenced Jan 2015

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

State	Project Name	Agreement Type	Parties	Interest held at end of quarter by exploration entity	Comments
-	-	-	-	-	-

Abbreviations:

E	Western Australia	Exploration Licence	DRX - Diatreme Resources Limited
M	Western Australia	Mining Lease	CHAL – Chalcophile Resources Pty Ltd
R	Western Australia	Retention Licence	LSPL – Lost Sands Pty Ltd
EPM	Queensland	Exploration Permit for Minerals	
ML	Queensland	Mining Lease	

APPENDIX 2

Geology

The Cyclone Deposit is made up of several mineralised strand systems which represent Tertiary beach placer deposits with associated overlying dunal and underlying near shore deposits. The mineralised sands are free flowing with very little induration (rock) and low slimes contents which are favourable to traditional mining techniques. A thin Quaternary cover sequence of aeolian sands and loamy soils overlies the Tertiary sands.

Drilling Program

- All drilling has been completed using the NQ Air Core system of drilling.
- The Cyclone Deposit was discovered and broadly delineated by Diatreme Resources in mid-2007. A small program of re-drilling was carried out in September 2008 over the deposit which highlighted that much of the mineralisation was not recognised during the original drilling program and therefore a more thorough drilling and sampling program was organised and completed by July 2009. Infill drilling was carried out in Dec 2010, focussing on the proposed mine start-up area, Additional infill drilling was carried out in early 2011 in conjunction with drilling for bulk sample collection. Several small programs were completed in the second half of 2011 for infill and edge definition purposes, including southern extensions of the near shore resource. A final program of infill drilling was completed in mid-2012 for edge definition of strand mineralisation and further bulk sample collection.
- Following the discovery of Cyclone, Image Resources confirmed the continuation of mineralisation (i.e. Cyclone Extended) in to their adjoining tenure with three drilling programs subsequently completed. A reconnaissance drilling program in late 2008, a resource definition drilling program in mid-2009 and an infill and edge definition drilling program in mid-2011.
- A total of 2,152 holes for 87,715m of drilling have now been completed over the global Cyclone deposit with the resource estimate using 1,355 holes (1,072 by Diatreme and 283 by Image).
- Most the Cyclone deposit has been drilled at 50m hole spacing and drill lines are generally 150m apart with some lines spaced at 300-500m. The Cyclone Extended deposit has been drilled at 50m holes spacing with drill lines between 250m and 600m apart.
- The grade of heavy minerals for each sample was determined by heavy liquid analysis. Mineralogical assemblage determined by QEMSCAN® (with routine XRF confirmation) over selected sample composite intervals and incorporated in to the geological database.

Resource Estimation

- Geological and mineralisation domains have been interpreted from drill hole data using a nominal 0.8% HM mineralisation envelope. Solid wireframe models have been generated from these interpretations and used to control estimation into a resource block model using an Inverse Distance Cubed interpolation technique for HM, Slimes and Oversize, and Nearest Neighbour interpolation technique for mineralogy.
- The mineral resource has been reported using a 1.0% HM cut-off from this wireframe model.
- A specific gravity of 1.7 was applied to mineralised zone.
- The Cyclone Resource is up to 10.3km long and 2.2km wide. This resource estimate relates to mineralisation within both M69/141 and R69/1.
- Sectional interpretation shows good continuity both along and across the trend of the deposit.
- The resource is classified as Measured and Indicated based on the criteria set out in the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" (JORC, 2012).

Note: The HM (Heavy Minerals) referred to in this report are all those minerals that have a density greater than 2.92 tonnes/cubic metre, as determined by heavy liquid separation. The amount of Valuable Heavy Mineral (VHM) such as Ilmenite, Rutile, Leucoxene and Zircon is determined by other methods (QEMSCAN®). The HM% values do not imply that all the HM is VHM.

JORC Code, 2012 Edition – Table 1

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	• Sampling techniques are mineral sands "industry standard' for dry beach sands with low levels of induration and slime. • Samples are down hole intervals of air-core drill cuttings collected from cyclone mounted rotary splitter, approximately 2-3kg (representing ~20%) of drill material is sampled. • Diatreme samples are 1.5m intervals, Image samples are either 2m or 1m intervals, with visibly mineralised zones typically sampled at 1m intervals. • Sample representivity validated by twin drill holes, sample duplicate analysis and bulk sample testwork. • For Diatreme samples, Heavy Mineral (HM) is defined as mineral grains within 53 to 710 µm size range with an SG greater than 2.9 • For Image samples, Heavy Mineral (HM) is defined as mineral grains within 63 to 1,000 µm size range with an SG greater than 2.9
Drilling techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• Vertical NQ air-core drilling utilizing blade bit, 3m drill runs
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• Visual assessment and logging of sample recovery and sample quality • Reaming of hole and clearance of drill string after every 3m drill rod • Sample chute cleaned between samples and regular cleaning of cyclone to prevent sample contamination • No relationship is evident between sample recovery and grade
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	• Geological logging of the total hole by field geologist, with retention of sample in chip trays to allow subsequent re-interpretation of data • The total hole is logged; logging includes colour, grain size, sorting, induration and estimates of HM, slimes and oversize utilizing panning. • Logging is captured in Micromine data tables, with daily update of field database and regular update of master database.
Sub-sampling	• *If core, whether cut or sawn and whether quarter, half or all core*	• Rotary split on site (approx. 80:20), resulting in approximately 1.5 – 2.0kg of dry

Criteria	JORC Code explanation	Commentary
techniques and sample preparation	*taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	sample (as all mineralization occurs above the water table) • Diatreme sample is then dried, screened and washed to determine oversize and slimes content in company sample preparation facility. 100g sample for HLS (HM assay) is riffle split from homogenized screened and de-slimed sample • Diatreme duplicate HLS splits submitted at 1 in 40, results support sample representivity • Image sample is dried and a 100g split screened and washed to determine oversize and slimes content in contractor sample preparation facility. The remaining sand fraction is then submitted for HLS (HM assay) • Sample size is considered appropriate for the material sampled • Mineralogy samples are typically down hole composites of HM from the mineralized zone(s) with multiple hole composites across section for some of the thinner mineralized zones
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	• Diatreme sample preparation laboratory operated by subsidiary company with methods and procedures adopted from industry standards • Diatreme HM analysis undertaken by recognised independent HM laboratory (Diamantina Labs) utilizing TBE • Image sample preparation and analysis undertaken by recognised independent HM laboratory (Western Geolabs) • Duplicates and external laboratory checks regularly undertaken for HM analysis, acceptable levels of accuracy and precision have been established • Mineralogy of the HM fraction determined by QEMScan analysis. • Valuable heavy minerals reported are Zircon, Rutile (Ti-oxides >95% TiO_2), Leucoxene (Ti-oxides 85-95% TiO_2), HiTi (Ti-oxides 70-85% TiO_2), Altered Ilmenite (Ti-oxides <70% TiO_2) and Si TiOx (siliceous Ti-oxides containing >10% silica rich Ti minerals) • Potentially deleterious minerals are also assayed (e.g. andalusite) as well as proportions of clean, coated and composite grains
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• Significant intersections validated against geological logging and local geology / geological model. • Significant intersections verified by company personnel. • Selected significant intersections independently validated as part of due diligence exercise by BaoTi in 2011. • Several twinned holes occur across the deposit and these have verified the sampling and assaying results. • All data captured and stored in electronic format, with compilation and storage completed by external contractors.
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	• All holes initially located using handheld GPS with an accuracy of 5m • Subsequent DGPS survey of drill hole collars, accurate to within 1m in X and Y as survey was often taken of rehabilitated drill site (i.e. estimated collar location)

Criteria	JORC Code explanation	Commentary
	• *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• UTM coordinates, Zone 52, GDA94 datum. • Topographic surface generated from processing Ikonos satellite imagery and DGPS control points, collar RL's levelled against this surface to ensure consistency in the database and with the block model.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	• Diatreme drill lines established at 150m to 300m spacing in interdunal swales with holes 50m apart in the beach mineralisation, 50-100m apart in the areas of nearshore only mineralisation and 25-50m apart in the narrower higher grade strand mineralisation. • Image drill lines established at 250m to 500m spacing in interdunal swales with holes 50m apart in the main body of mineralisation and 50-100m apart on the marginal areas of mineralisation. • Drill spacing and distribution is sufficient to allow valid interpretation of geological and grade continuity appropriate to the estimation procedure and classification applied. • Sample compositing (down hole and occasionally across / along section) has been undertaken for determination of mineralogy.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• The mineralisation displays an average strike around 340°, whereas the overlying Quaternary dune field has dune ridges dominantly trending 80° - 260°. Exploration data is therefore well orientated to sample the mineralised feature without bias.
Sample security	• *The measures taken to ensure sample security.*	• Sample collection and transport from the field undertaken by company personnel following company procedures. • Diatreme HLS samples dispatched to laboratory in secure packaging via Australia Post.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• A prospective JV partner (BaoTi) undertook a geological due diligence exercise in 2011 with positive results. • Several experienced mineral sands geologists have been involved in generation of the exploration methods, procedures and geological database.

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• The Cyclone deposit occurs within adjoining tenements M69/141 and R69/1 in Western Australia. M69/1 is held by Lost Sands Pty Ltd, a wholly owned subsidiary of Diatreme Resources, and R69/1 is held by Diatreme Resources. • The tenements are in good standing • A Project Agreement is in place with the native title party (Pila Nguru)
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Exploration within R69/1 has been undertaken by Image Resource, although exchange of data was first established under a MoU in September 2010. • The general drilling, sampling and assaying techniques utilised by Image are consistent with those utilised by Diatreme, and as such the data is of similar quality to that generated by Diatreme. • Diatreme acquired all data for R69/1 with the tenement purchase in Mar 2015
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The Cyclone mineral resource comprises several stacked and re-worked beach strandline mineral sand deposits associated with a Tertiary age coastal shoreline feature. • Mineralisation occurs within bimodal near-shore sands, beach / surf zone strandlines, homogenous beach sands, and overlying aeolian dune sands. • Quaternary cover overlies the deposit, and a shallow weathering profile with calcrete and ferruginous induration has developed.
Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* ○ *easting and northing of the drill hole collar* ○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* ○ *dip and azimuth of the hole* ○ *down hole length and interception depth* ○ *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	• The Cyclone mineral resource has been estimated using data from 1,355 drill holes and it is not considered appropriate to tabulate each drill hole • Representative cross sections along the strike of the mineralization to illustrate some of the drill data and the nature of the mineralisation were attached to previous announcements (23 Jan 2012, 9 Jan 2014, 9 Apr 2015). • Representative cross sections showing drill holes and block model data are not attached to this announcement as there has been no significant change in the geological interpretation and modelling methods since April 2015.
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for*	• Image drill data was composited to 1.5m intervals within corresponding geological domains to standardise intervals for resource estimation.

Criteria	JORC Code explanation	Commentary
	such aggregation should be stated and some typical examples of such aggregations should be shown in detail. • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	• As the mineralization is associated with in-situ coastal marine sands it is essentially horizontal, with a maximum slope of 1°. • All drilling is vertical; hence the drill intersection is essentially equivalent to the true width of mineralisation.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• A map of the drill collar locations is incorporated with the main body of the announcement. Representative cross-sections are not attached as there is no significant change to those presented in previous announcements (23 Jan 2012, 9 Jan 2014, 9 Apr 2015).
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• Not applicable, resource estimate considers all material within the mineralisation domains. • Resource estimate is presented using variable cut-off grade and by geological domain to allow an understanding of grade distribution.
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• Geological observations consistent with beach placer / strand mineralisation • Several bulk samples (up to 12t) and subsequent metallurgical tests have characterized the nature of the mineralisation and confirmed that conventional processing techniques can be applied to produce marketable products. Some HM is coated and acid leaching +/- attritioning may be required for efficient separation / processing • No bulk density measurements have been undertaken • No groundwater was intersected during drilling • A Quaternary weathering profile including calcrete and rubbly laterite has developed above and within the upper part of the mineralisation. Minor cementing and silicification of the mineralised sand can occur, but the mineralisation is dominantly (>95%) unconsolidated sand • Siliceous coatings and intergrowths on some HM grains are the only known deleterious substances. U+Th levels are <500pm for zircon product
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• Not applicable, project is proceeding to feasibility study based on comprehensive exploration program completed to date. • The limits of mineralisation have been established by the comprehensive exploration program completed to date.

Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* • *Data validation procedures used.*	• Drill data logged electronically in the field, manual and automatic validation undertaken prior to loading in to master database • The master database is managed by external consultants • General database validation using Micromine prior to resource estimation • Detailed database validation by manual/visual checking using Micromine
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• Competent Person has undertaken several site visits and supervised numerous exploration drilling campaigns and is familiar with the terrain, mineralization and geological characteristics of the deposit
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation.* • *The use of geology in guiding and controlling Mineral Resource estimation.* • *The factors affecting continuity both of grade and geology.*	• A general geological model for mineralisation has been developed based on exploration data and published models for beach placer development, with minor modification to accommodate locally observed features. This allows high confidence in the geological interpretation of the Cyclone deposit • The data is of sufficient density that alternative interpretations will not materially affect the Mineral Resource estimate. • The deposit has been split in to three domains, based upon geology and HM grade, for the purposes of resource estimation. • The 'Beach' domain comprises beach sands and minor dune and reworked beach sands, and typically displays transitional upper and lateral boundaries, with a distinct basal contact associated with surf zone grit and gravel. • The 'Strand' domain comprises beach strandline mineralization and typically displays transitional upper and seaward lateral boundaries with a sharp basal contact associated with surf zone grit and gravel, it occurs wholly within the Beach domain (i.e. a subset of the' Beach' domain). • The 'Nearshore' domain comprises bi-modal fine grained marine sands with grit and typically displays transitional contacts. • A nominal 4% HM grade was used to delineate the Strand domain, with lower grade material occasionally included to maintain continuity and smooth shape. • A nominal 0.8% HM grade was used to delineate the Beach and Nearshore domain boundaries, with lower grade material sometimes included to maintain geological continuity and a smooth geometry. • The use of pure geological domains would result in a much larger, but lower grade, mineral resource estimate for Cyclone due to the transitional grade boundaries • Grade continuity is significantly shorter across strike than along strike due to factors relating to deposition and sorting of material in a beach environment
Dimensions	• *The extent and variability of the Mineral Resource expressed as length*	• The Beach domain has two primary 'arms' with a strike of around 7.0 and 9.5

Criteria	JORC Code explanation	Commentary
	(along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	km, a width of up to 0.8 km, with the top of ore reaching to 6m below ground surface, and the base of mineralisation typically between 24 to 30m below ground surface. • The Strand domain forms a higher-grade core of the Beach domain, with 6 individual strands recognized. Strands range from 2.5 to 7km in length, from 50 to 400m in width, and 2 to 12m in thickness • The Nearshore domain has a strike of 6.5 km, a width up to 1.1 km, but is typically only 4 – 6m thick. It often abuts the base of the Beach domain, but can be separated by up to 8m of low grade material, or on its south-western edge can occur without the presence of overlying beach mineralisation
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.* • *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* • *The assumptions made regarding recovery of by-products.* • *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).* • *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* • *Any assumptions behind modelling of selective mining units.* • *Any assumptions about correlation between variables.* • *Description of how the geological interpretation was used to control the resource estimates.* • *Discussion of basis for using or not using grade cutting or capping.* • *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	• Resource estimation was undertaken using Micromine software, with inverse distance cubed interpolation method used for HM, Slimes and Oversize, and Nearest Neighbour for mineral assemblage. Mineral tonnes are calculated for each block, then total mineral assemblage calculated i.e. mineral assemblage values applied locally (weighted) and not as an unweighted global average • Parent blocks size of 50m x 20m x 2m with 5 x 4 x 4 sub-blocking to neatly fit wireframes • Three domains (as discussed above) were modelled separately and then combined to form a single block model for reporting purposes • A minimum 3m thickness was applied to domain shapes, as this represents a minimum selective mining thickness • A primary search ellipse of 275m x 55m x 5m oriented at 340° with a 0.8° dip to the west was used, minimum 3 samples and maximum 16 samples • The resource estimate shows good correlation with previous estimates and also with wireframe volumes and raw drill assay data • No top cut was applied as the high-grade assays are believed to be a true sample of the grade of well-developed continuous beach strandlines • The domain boundaries do not extend beyond halfway to the adjoining drill hole or drill line • The block model was validated visually and statistically against drillhole data. • A hard boundary between the 'Beach' and 'Strand' domains was used to estimate grades for the Strand Domain, to prevent excessive dilution and smoothing of what is interpreted as a distinct high grade strandline. • A soft boundary between the 'Beach' and 'Strand' domains was used to estimate grades for the 'Beach' Domain, to reflect the transitional upper and seaward contacts of the strandline mineralisation.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• Tonnages are estimated on a dry basis.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• A 1% HM cut-off grade was utilized for reporting of the resource as this is believed to represent an appropriate grade considering the mineral

Criteria	JORC Code explanation	Commentary
		assemblage, proposed mining technique and project economics.
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	• Conventional open pit 'dry' mining for mineral sands, with overburden removal by truck and shovel, and ore mining utilising in-pit dozer traps and slurry pumping. A minimum mining dimension of 100m width and 3m thickness is considered practical • As the resource estimate has been generated and utilised for feasibility studies the mining assumptions are considered to be rigorous.
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	• Several programs of metallurgical testwork and process flow development have been undertaken by Mineral Technologies (MT) • Conventional wet concentrator plant for mineral sands, primarily utilising spiral separation with secondary screening and classification to achieve high HMC quality • Testwork indicates >90% recovery of zircon to HMC, the primary economic driver of the resource • Conventional mineral separation plant, primarily utilizing magnetic and electrostatic separation with secondary screening, classification and gravity separation to achieve mineral products • As the resource estimate has been utilised for feasibility studies the metallurgical assumptions are considered to be rigorous
Environmen-tal factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.*	• The Cyclone project occurs within a vast vegetated dune field of the Great Victoria Desert in a remote location and does not display any unique environmental characteristics • Environmental management practices similar to those currently used in the mineral sands industry, but modified for the local environment, will be applied • Tailings will initially be disposed of in purpose built facilities, before reverting to in-pit tailings backfill
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• Assumed bulk density of 1.7 utilised for tonnage estimates, based on both the theoretical density of mature sand deposits with relatively low levels of slime and HM, and similar HM deposits in Australia. • The mineralised material is reasonably homogenous over the extent of the resource and there is not expected to be material changes in the bulk density throughout the resource.

Criteria	JORC Code explanation	Commentary
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.* • *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* • *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• The primary factor for resource classification is drill spacing i.e. HM assay data density, as the geological setting and style of mineralisation is well understood and relatively consistent. • Infill drilling during 2011 and 2012 confirmed HM grade continuity and allowed higher confidence in the current drill pattern. • Additional mineral assemblage data is required to achieve similar levels of confidence and continuity as for HM data. • The classification used reflects the Competent Persons understanding of the deposit.
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• The 2016 Mineral Resource estimate has utilised a similar approach to the 2010 estimate which was undertaken by an independent technical expert.
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• A high level of confidence is placed on tonnage estimates (for the stated cut-off grade) as the geometry of mineralisation is well understood and the bulk density is considered accurate. • A high level of confidence is placed on HM grade estimates, due to the data density, sample analysis techniques and methods of estimation. However, there is some evidence from bulk sampling that HM grade may be under-estimated by drilling / modelling, but this is not unusual for air-core drilling of unconsolidated sand deposits. Further investigations will be undertaken. • A high level of confidence is placed on slimes grade estimates, due to the data density, sample analysis techniques and methods of estimation. • A moderate level of confidence is placed on oversize grade estimates, due to the use of mechanised drilling techniques which can grind/pulverise indurated material and hence lead to under-estimation of oversize. Induration can also occur in an irregular manner and therefore be difficult to quantify by drilling alone. • A high to moderate level of confidence is placed on the global mineral assemblage estimate, as there is a reasonable number of QEMScan assays of composite samples from across the full extent of the deposit and the grade interpolation method accounts for variation through the deposit • A moderate level of confidence is placed on the local mineral assemblage estimates, as the use of composites may mask short range changes in mineral assemblage vertically through the mineralisation. Similarly, there exist some significant lateral variations in mineral assemblage, and the current data density is not sufficient to accurately define the boundary of mineral assemblage domains