Diatreme Resources Limited
ABN: 33 061 267 061

ASX

ANNOUNCEMENT

ASX:DRX

TESTWORK CONFIRMS PROSPECTS FOR NEW SILICA SAND MINE

2 March 2018

- **Results from initial metallurgical testwork show Cape Bedford Silica/Heavy Minerals Project capable of producing high-quality glass-grade silica sand**
- **Plans for additional drilling to allow resource definition at project located near world's biggest silica sand mine**

Prospects for a new world-class silica sand mine in North Queensland have received a boost, with Diatreme Resources Limited (ASX:DRX) announcing today results from initial metallurgical testwork showing the project capable of producing high quality glass-grade silica sand.

Six bulk samples were wet tabled to simulate conventional washing and gravity separation typical of silica sand processing, with c. 80% recovery of a primary silica sand product ranging from 99.6 – 99.9% SiO_2 with <0.02% Fe_2O_3 – easily meeting specifications for glass-grade silica sand.

Situated near the world's largest silica sands mine, Cape Bedford is favourably positioned to access growing markets for silica sand in Asia. The silica sand market is seen reaching nearly US$10 billion in revenues by 2022, amid growth from both developed and emerging markets.

Diatreme's CEO, Neil McIntyre, said: "Cape Bedford's potential as a supplier of high quality silica sand has been reaffirmed by these latest results, with the prospects of generating valuable new jobs for the region and becoming a profitable near-term mining operation as an important part of our mineral sands portfolio.

"We are determined to further test its potential as quickly as possible through additional drilling, based on support from the traditional owners and regulatory approvals, as we work to unlock value for shareholders."

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

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
Gregory Starr
Andrew Tsang
Daniel Zhuang

Executive:
Neil McIntyre – Chief Executive

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

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Cape Bedford Project Summary

*** One of the largest high purity silica exploration land packages in Australia, covering an area of 542 sq km in Queensland's Eastern Cape York region, around 200km north of Cairns**

*** Cape Bedford EPM17795 covers a large Quaternary sand dune field, part of which is currently being mined by Mitsubishi Corporation subsidiary, Cape Flattery Silica Mines Pty Ltd and is the world's largest silica sand mining operation**

*** Closest proximity high-grade undeveloped project to the world's largest silica markets in China, Japan, South Korea and Taiwan**

*** High-grade silica used in glass manufacture, foundry casting, electronics, ceramics and construction – industries in demand and growing in developing Asia, with the market expected to expand at a compound annual growth rate of 7.2% through to 2022, reaching revenues of US$9.6 billion (source: IMARC Group)**

MARKET METRICS

Silica sand is currently enjoying healthy growth, with a CAGR of nearly 8.7% in value terms from 2009 to 2016 and a market value of US$6.3 billion (source: IMARC Group). This has been fuelled by its applications across a range of industries, including glass making, foundry casting, water fibration, chemicals and metals, along with the hydraulic fracturing process. IMARC expects the demand for silica sand to exhibit a CAGR of 7.2% through to 2022, reaching revenues of US$9.6 billion.

As one of the major consumers of high purity silica, the global glass market has recently realised significant growth due to increased demand from the construction and automotive markets, along with expanding per capita income and technological advancements. Currently there are no direct substitutes for silica sand in the majority of its applications. As a result, the threat of competitor products remains low.

Meanwhile, construction sand is a major global industry, with an estimated 11 billion tonnes of sand mined for construction alone in 2010.

The primary structural component in a range of building and construction products, whole-grain silica is used in flooring compounds, roofing shingles, skid-resistant surfaces and other applications requiring packing density and flexural strength. Ground silica adds durability, anti-corrosion and weathering properties in caulks, epoxy-based compounds and sealants.

Growing Asian markets for construction sand include Singapore, with other Asian emerging markets also showing growth, including India and Vietnam. For further information on the silica sand market, refer to Diatreme's ASX announcement dated 30 November 2017.

EXPLORATION OVERVIEW – CAPE BEDFORD

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

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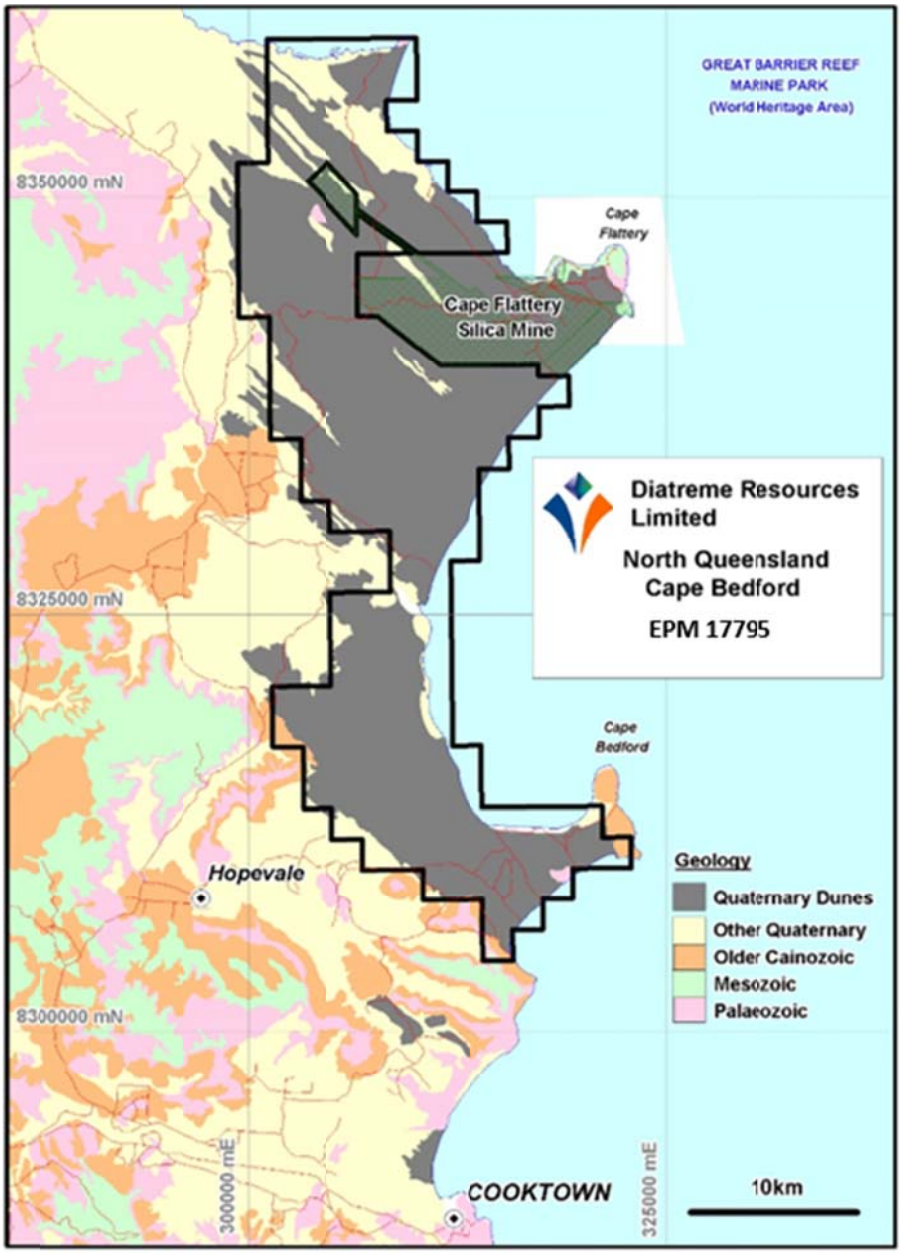
extends 50km from north to south.

Historical exploration has focused on the Cape Flattery area, within the Mining Leases of CFSM, but reconnaissance exploration has been carried out over the entire dune field 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.

The company executed a Conduct and Compensation Agreement (CCA) in January 2017, and a Cultural Heritage Agreement (CHA) in June 2017 with the traditional owners, the Hopevale Congress. The CCA allows access for ground disturbing exploration activity and ensures the traditional owners share in the potential economic benefits of this new project, while the CHA sets out the protocol for cultural heritage issues. Cultural heritage surveys for the first proposed exploration program were undertaken in August and subsequent exploration access granted in September 2017.



Reconnaissance Exploration – September 2017

Following the process defined by the CHA, Diatreme assisted with a Cultural Heritage survey in August 2017 over the proposed reconnaissance exploration area in the Nob Point to Elim Beach area in the southern part of EPM17795. A reconnaissance exploration program was subsequently approved, and Diatreme commenced exploration in September 2017 utilising a Company-owned and operated air-core drilling rig. Reconnaissance drilling was planned alongside established roads and tracks, with line clearing and reconnaissance drilling also planned over a dune system in the southern part of the EPM.

During September, 29 holes were drilled along Elim Road and a related beach access track, for a total of 606m with an average hole depth of 21m. The logged geology was reasonably consistent in defining large areas of fine grained quartz sand, but sand colour was variable, with a variety of coloured sands particularly apparent towards Elim Beach. Results from the drilling were presented in the ASX announcement dated 30 November 2017.

Reconnaissance Exploration – October 2017

During October, 26 holes were drilled along cleared access tracks over a dune complex near Nob Point, for a total of 670m with an average hole depth of 26m. The logged geology was reasonably consistent in defining large areas of fine grained quartz sand, but sand colour was variable throughout the drilled area of the dune system, suggesting a complex depositional (and erosional) history for the dune complex.

Several large zones of white, fine grained quartz sand extending over 400m in length along the dune ridges were evident from surface down to 30m depth, with extensive cream coloured sands also logged. This suggests that most of the area drilled represents a body of sand with sufficient size that may allow large scale silica sand extraction for commercial purposes. Results from the drilling were presented in the December 2017 Quarterly Activities Report released to the ASX on 31 January 2018.

Bulk Sample Metallurgical Testwork

Subsequently, bulk samples of approximately 100kg each from six separate drill holes were submitted for preliminary metallurgical testwork to assess the potential to generate a high-quality silica sand product from the white quartz sands intersected from the October drilling program.

The testwork confirmed the potential of the area drilled at Nob Point to generate a high-quality silica sand product suitable for glass making, with a range of 99.61 - 99.87% SiO_2 sand with <0.02% Fe2O3 and 0.04 - 0.06% Al2O3 produced as a primary silica sand product from the testwork, with an average 80% recovery to product.

The secondary silica sand product also displayed high grade silica sand characteristics, with a range of 99.3 - 99.5% SiO_2 with <0.04% Fe2O3 and 0.06 - 0.15% Al2O3 produced. Blending of these two streams could generate a glass-grade silica sand product with 97-98% recovery of feed to product.

Sizing of the primary silica sand product shows it to dominantly comprise 150 – 250um material (~50%), although samples CB047 and CB048 were slightly coarser grained.

The testwork flowsheet comprised:

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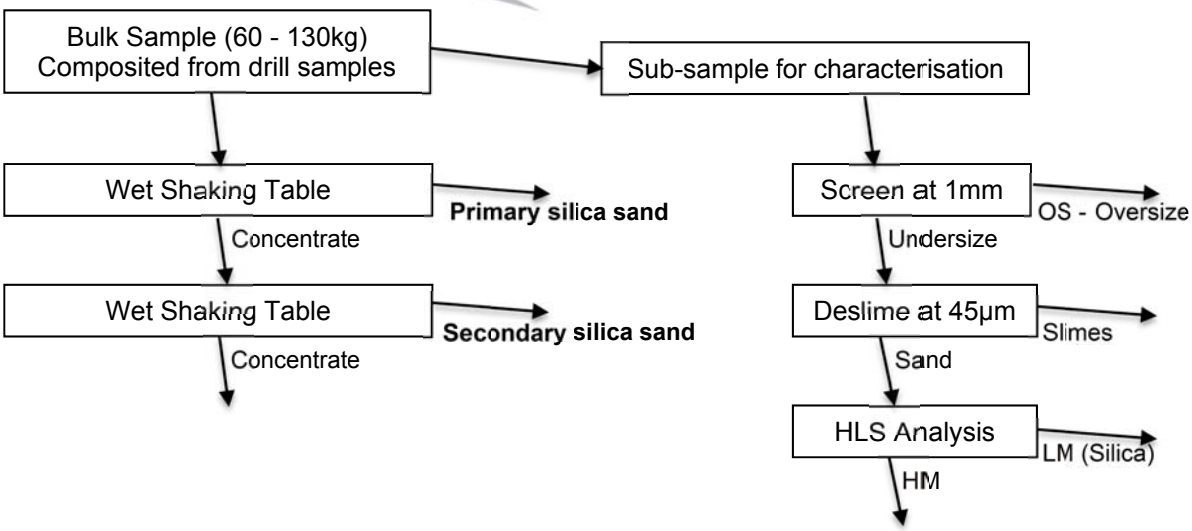

Sample	% weight recovery*	SiO_2 %	Al_2O_3 %	Fe_2O_3 %	TiO_2 %
CB037	86	99.67	0.04	0.01	0.02
CB038	69	99.78	0.06	0.02	0.03
CB047	79	99.66	0.04	0.01	0.02
CB048	83	99.87	0.04	0.01	0.02
CB053	84	99.61	0.05	0.01	0.02
CB054	84	99.64	0.05	0.01	0.02

Primary Silica Sand testwork
*relative to primary wet table feed

Sample	% weight recovery*	SiO_2 %	Al_2O_3 %	Fe_2O_3 %	TiO_2 %
CB037	12	99.5	0.11	0.03	0.07
CB038	28	99.5	0.11	0.04	0.07
CB047	18	99.5	0.06	0.01	0.03
CB048	14	99.5	0.06	0.02	0.05
CB053	15	99.3	0.12	0.03	0.07
CB054	15	99.3	0.15	0.04	0.08

Secondary Silica Sand testwork
*relative to primary wet table feed

Size	CB037		CB038		CB047		CB048		CB053		CB054	
µm	%	Cum%	%	Cum%	%	Cum%	%	Cum%	%	Cum%	%	Cum%
1000	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
850	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1
600	1.5	1.6	0.9	1.0	4.6	4.7	1.7	1.9	1.0	1.1	1.7	1.8
425	5.7	7.3	3.9	4.9	21.5	26.2	8.8	10.7	5.4	6.5	6.3	8.1
300	14.9	22.1	12.7	17.6	34.3	60.6	20.4	31.1	15.3	21.9	16.3	24.4
250	12.9	35.0	13.1	30.6	15.1	75.7	13.7	44.8	14.2	36.1	15.2	39.7
150	53.5	88.5	60.4	91.0	21.4	97.2	44.7	89.6	52.2	88.3	49.3	89.0
125	6.9	95.4	5.8	96.8	1.0	98.2	5.8	95.4	6.9	95.2	6.1	95.1
90	2.9	98.3	2.0	98.7	0.6	98.8	2.8	98.2	3.7	98.9	2.9	98.0
45	1.6	99.9	1.3	100.0	1.1	99.9	1.6	99.8	1.1	100.0	1.9	99.9
0	0.1	100.0	0.0	100.0	0.1	100.0	0.2	100.0	0.0	100.0	0.1	100.0

Primary Silica Sand sizing (% retained)

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Sample	Bulk kg	Sample kg	OS %	Slimes %	HM %	ZrO_2% In HM	TiO_2% In HM
CB037 (3-21m)	95	0.52	0.3	2.5	0.19	4.2	24.8
CB038 (3-21m)	92	0.50	0.1	1.4	0.32	7.0	32.4
CB047 (3-27m)	133	0.50	0.0	2.1	0.06	1.7	14.5
CB048 (3-27m)	121	0.51	0.0	2.0	0.18	5.1	30.6
CB053 (3-21m)	96	0.51	0.0	2.2	0.16	3.9	24.7
CB054 (3-12m)	60	0.50	0.1	3.1	0.18	4.1	22.7

Head feed characterisation testwork

Sample	% weight recovery*	ZrO_2% In HM	TiO_2% In HM
CB037	0.12	6.7	32.5
CB038	0.25	9.8	39.9
CB047	0.03	4.4	23.1
CB048	0.10	6.5	35.9
CB053	0.12	8.3	35.3
CB054	0.13	10.3	38.3

Secondary Concentrate HLS HM testwork
*relative to primary wet table feed

The head feed characterisation work shows that the raw sand material has very low levels of oversize and fines, as is typical of coastal aeolian sand dunes. Heavy mineral content is also quite low, but does contain a significant proportion of zircon and titanium minerals such that if any concentrations of HM are present within the dune mass they would have the potential to generate a valuable by-product HM concentrate.

Selected drill samples were also submitted to a specialist laboratory to commence a series of tests to determine the characteristics of the Nob Point dune sand and assess its potential for use as a construction sand. To date only sizing data has been reported, and this confirmed that the sand would be suitable as a fine-grained aggregate for concrete, provided that other physical and chemical characteristics are in specification. Further testwork is pending.

Exploration Target

Based upon the results from reconnaissance drilling and the initial metallurgical testwork, an Exploration Target for potential high-grade silica sand has been generated for the Nob Point dune area of 15 million to 20 million tonnes of high quality silica sand.

The potential quality and grade of this Exploration Target is conceptual in nature. There has been insufficient exploration to estimate a Mineral Resource; it is uncertain if further exploration will result in the estimation of a Mineral Resource.

The Exploration Target includes two interconnected dune ridges within the broad dune structure between the Nob Point access road to the SW and the Deep Creek lowlands and swamp to the NE. The potential volume is estimated by extrapolating the base RL of the pale sands (or logged water table) observed in reconnaissance drilling, SW and NE to intersect the edge of the dune mass. Extrapolation of a practical batter slope NW and SE between drill holes along the ridge lines that define the limit of the white and cream coloured sand mass provide the strike extent of the target.

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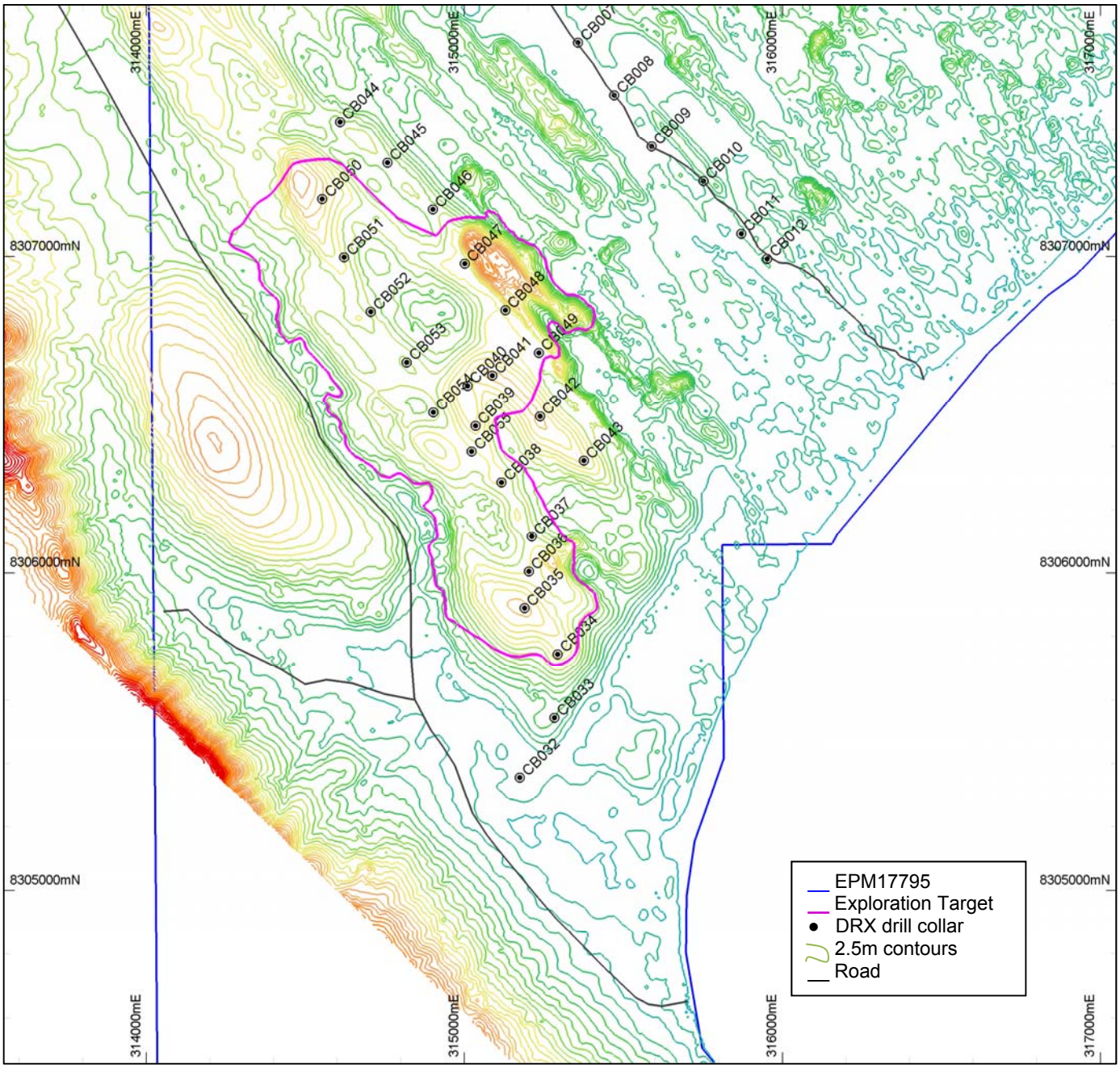
The estimate assumes that between 60% and 90% of the dune sand is mineable and an in-situ bulk density of 1.6t/m^3 is used to calculate tonnage. A target grade of 99% SiO_2 is considered appropriate as drill samples assayed to date exceed this value, and metallurgical testwork has demonstrated an increase in grade using conventional processes. The area is readily accessible from existing roads, and in close proximity to a potential barge / ship loading site.



Silica Sand Exploration Target over Nob Point dune system

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Proposed Exploration Drilling – Southern Area

Planning for the next stage of exploration drilling in the southern EPM area is underway, with a vegetation survey partially completed in January 2018 to assess the presence of a threatened vegetation species within the NW extension of the Nob Point dunes drilled in October. A second target area is currently being surveyed, but given the timeline for the vegetation survey reporting and subsequent applications for vegetation clearing, no further drilling is likely until after the tropical wet season (second quarter 2018).

Compilation of the reconnaissance data together with a high-resolution satellite image (and related topographic data processing) that was acquired in September 2017 helped facilitate detailed planning for the next stages of exploration.

A combination of infill drilling and further reconnaissance drilling is proposed for the Nob Point dune area drilled in October 2017, to provide further data for geological interpretation and confirmation of the continuity of the white sand mass. This drilling is planned to allow a mineral resource estimate to be compiled for part of the Nob Point dune system.

Proposed Exploration Drilling - Regional

During 2018, Diatreme intends to carry out regional reconnaissance drilling over accessible areas of the EPM. This proposed exploration will be subject to appropriate (cultural heritage) approvals being obtained from Hopevale Congress to proceed with exploration activity.

Diatreme has identified numerous areas of interest for both silica sands and mineral sands exploration, and will work with Hopevale Congress and government departments to gain any necessary approvals for the exploration program to be further expanded.

Diatreme's CEO Mr McIntyre added: "Cape Bedford could prove a highly valuable addition to our project pipeline as we progress our exploration activities. Our flagship Cyclone Zircon Project in Western Australia remains our primary focus and is currently progressing through final definitive feasibility studies towards mine establishment. Recent industry forecasts point to an improving pricing environment for mineral sands, and amid constrained supply, our projects are perfectly placed to capitalise for shareholders' benefit."

For further information, please contact:

Neil McIntyre, CEO

Competent Person Statement

The information in this report, insofar as it relates to Exploration Results 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.