ASX
ANNOUNCEMENT

16 August 2018

Bulk Sample Testwork verifies Cape Bedford's high-quality silica sand product

- **Bulk sample process testwork confirms Cape Bedford Silica/Heavy Minerals Project's Nob Point Prospect capable of producing high-quality silica sand product (99.9% SiO2)**

- **Product capable of being made using standard wet gravity spiral concentrator, with 88% recovery rate from bulk sample to high-value end product**

- **Diatreme now focusing on further infill drilling, commercial scoping study and commencement of licensing and permitting studies following successful definition of Maiden Inferred Mineral Resource**

Prospects for a new silica sand mine in Far North Queensland have received another boost, with Diatreme Resources Limited (ASX:DRX) announcing today positive testwork results showing the Cape Bedford Silica/Heavy Minerals Project is capable of producing a world-class silica sand product at 99.9% SiO2.

Bulk sampling from the project's Nob Point Prospect also showed the product could be produced at a high recovery rate of 88%. It also demonstrated that processing would be relatively straightforward due to minimal oversize, a low level of slimes (3%) and easy removal of heavy minerals (0.19%) on spiral separators.

Similarly, mining is expected to be a simple operation due to the small amount of overburden present which can be easily removed. An initial operation with annual production of 300,000 to 500,000 tonnes of high-grade silica product is envisaged, pending further studies and discussions with potential customers.

The successful results follow the Company's announcement of a maiden Inferred Mineral Resource for the project's Nob Point Prospect of an estimated 21.6 million tonnes @ > 99% SiO2 (refer ASX announcement 13 August 2018).

Diatreme's CEO, Neil McIntyre, said the results provided further evidence of the potential for a valuable new silica sand mine.

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"Cape Bedford is showing great promise, with these results following the positive maiden Inferred Resource for the project's Nob Point Prospect," he said.

"Looking forward, we anticipate Nob Point has the potential to become a long-life operation, providing jobs for the local community and cashflow that will allow Diatreme to expand exploration further north and west, with the aim of identifying additional silica and heavy mineral resources."

Located 200km north of Cairns and near the world's largest silica sand mine at Cape Flattery, the Cape Bedford project is seen capable of supplying fast-growing Asian markets with high-grade silica sand used in high-end glass manufacturing within the automotive, construction, electronics and other sectors. The global silica sand market is seen reaching nearly US$10 billion in revenues by 2022, with a healthy compound annual growth rate of 7.2% (source: IMARC Group).

Bulk Sample Process

A 1.8 tonne representative bulk sample extracted from the Cape Bedford Inferred Mineral Resource using Diatreme's air core drill rig was submitted to IHC Robbins (IHCR) for testing, 104 samples with average weight of 17.3kg were delivered to the IHCR's process testwork facility. All material recovered from each 3m drill interval was included in the sample.

Fig 1 *- Map showing drill hole locations and the inferred resource outline from maiden resource report (ASX release 13th August 2018)*

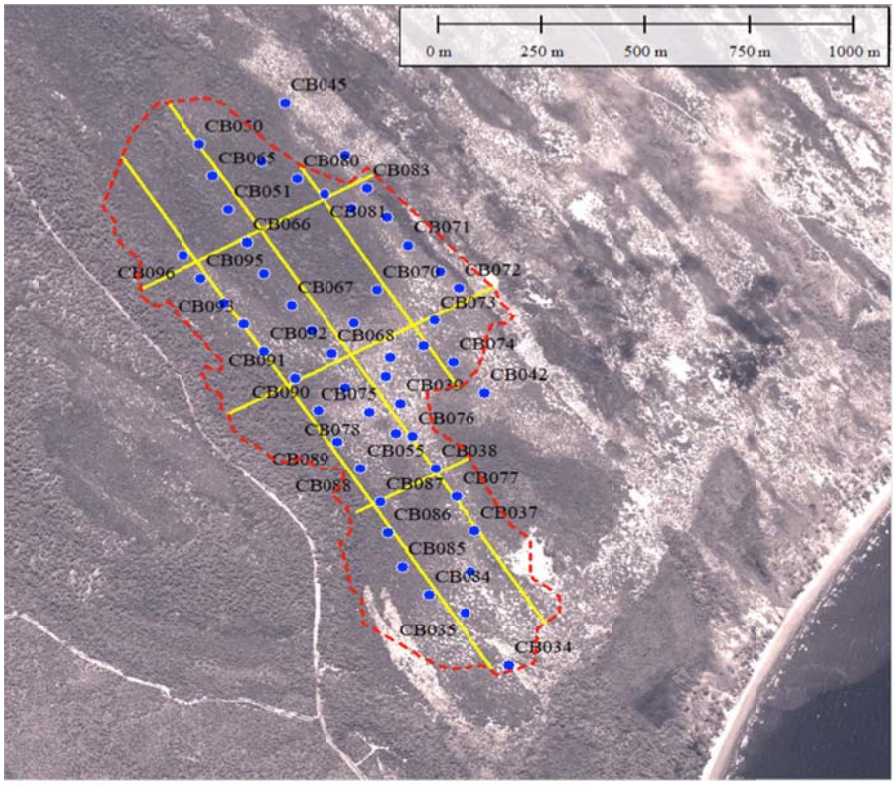

Fig 2.*Table of samples showing hole number, depth interval, sample number, SiO2 grade and sample weight*

Hole ID	From	To	Sample ID	SiO2 %	Sample kg	Hole ID	From	To	Sample ID	SiO2 %	Sample kg
CB065	6	9	D2138	99.67	18.3	CB072	3	6	D2187	99.19	18
CB065	9	12	D2139	99.35	18.6	CB072	6	9	D2188	99.28	18.7
CB065	12	15	D2140	99.69	19.9	CB072	9	12	D2189	99.28	21
CB065	15	18	D2141	99.7	16.1	CB072	12	15	D2190	99.18	19
CB065	18	21	D2142	99.63	15.4	CB072	15	18	D2191	99.32	22
CB067	0	3	D2153	99.42	8.7	CB074	15	18	D2207	99.28	17.6
CB067	3	6	D2154	99.59	16.8	CB074	18	21	D2208	98.8	14.7
CB067	6	9	D2155	99.19	18.8	CB074	21	24	D2209	99.1	14.6
CB067	9	12	D2156	99.45	18.3	CB074	24	27	D2210	99.23	14.9
CB067	12	15	D2157	99.25	21.5	CB074	27	30	D2211	99.23	14.1
CB067	15	18	D2158	99.21	18.9	CB074	30	33	D2212	99.06	12.3
CB067	18	21	D2159	99	13	CB075	15	18	D2219	98.85	16
CB069	0	3	D2167	99.22	10.7	CB075	18	21	D2220	99.1	17.5
CB069	3	6	D2168	99.42	18.2	CB075	21	24	D2221	99.13	16.3
CB069	6	9	D2169	99.26	20.8	CB075	24	27	D2222	99.45	16.6
CB069	9	12	D2170	99.44	18.8	CB075	27	30	D2223	99.12	16.6
CB069	12	15	D2171	99.77	16.7	CB076	9	12	D2228	99.48	16.5
CB069	15	18	D2172	99.77	16.3	CB076	12	15	D2229	99.59	21.2
CB070	0	3	D2173	99.75	8	CB076	15	18	D2230	99.36	15.6
CB070	3	6	D2174	99.92	16.7	CB076	18	21	D2231	99.34	13.7
CB070	6	9	D2175	99.27	18	CB077	12	15	D2238	99.54	18.5
CB070	9	12	D2176	99.92	17.6	CB077	15	18	D2239	99.25	17.7
CB071	3	6	D2178	99.94	15.1	CB078	3	6	D2242	99.38	17
CB071	6	9	D2179	99.36	19.2	CB078	6	9	D2243	99.3	16.8
CB071	9	12	D2180	99.67	19.6	CB078	9	12	D2244	99.78	16.8
CB071	12	15	D2181	98.92	16.5	CB078	12	15	D2245	99.21	16.1
CB071	15	18	D2182	99.25	17.9	CB079	9	12	D2250	99.42	18.3
CB071	18	21	D2183	99.53	15.5	CB079	12	15	D2251	99.61	16.4
CB071	21	24	D2184	99	17.2	CB080	3	6	D2255	99.15	16.7

CB080	6	9	D2256	99.29	20	CB085	9	12	D2298	99.6	16.5
CB080	9	12	D2257	99.56	18	CB085	12	15	D2299	99.62	15
CB080	12	15	D2258	99.39	18.2	CB086	3	6	D2305	99.62	12.5
CB080	15	18	D2259	98.83	16.5	CB086	6	9	D2306	99.38	13.3
CB080	18	21	D2260	99.12	17	CB086	9	12	D2307	99.17	14.5
CB081	3	6	D2262	99.07	16.8	CB086	12	15	D2308	99.29	12.8
CB081	6	9	D2263	99.68	18.6	CB087	3	6	D2311	99.36	14.1
CB082	3	6	D2270	99.07	15.5	CB087	6	9	D2312	99.45	19.5
CB082	6	9	D2271	98.55	18	CB088	3	6	D2315	99.54	19.2
CB082	9	12	D2272	98.96	18.9	CB088	6	9	D2316	99.5	18.3
CB082	12	15	D2273	99.31	18.4	CB093	3	6	D2334	99.63	15.5
CB082	15	18	D2274	99.06	17.6	CB093	6	9	D2335	99.69	18.6
CB083	3	6	D2278	99.28	17.6	CB093	9	12	D2336	99.82	17.4
CB083	6	9	D2279	99.43	19	CB093	12	15	D2337	99.89	20.7
CB083	9	12	D2280	98.66	22.3	CB094	6	9	D2341	99.56	17
CB083	12	15	D2281	99.23	18.2	CB094	9	12	D2342	99.81	18
CB083	15	18	D2282	99.11	20	CB094	12	15	D2343	99.94	22.3
CB083	18	21	D2283	99.65	21	CB095	3	6	D2348	99.39	16.4
CB084	6	9	D2287	99.79	19.3	CB095	6	9	D2349	99.78	20.6
CB084	9	12	D2288	99.23	21.2	CB095	9	12	D2350	99.63	18.8
CB084	12	15	D2289	98.97	16.1	CB095	12	15	D2351	99.54	19.7
CB084	15	18	D2290	99.31	14.8	CB096	6	9	D2356	99.21	21.4
CB085	6	9	D2297	99.05	17	CB096	9	12	D2357	99.01	17.8

IHCR testing procedure

- Samples were inspected by IHCR and three surface samples (D2153, D2167, D2173) were excluded from the testwork due to excessive topsoil mixed with the silica
- 7kg taken from the other 101 drill samples as listed in the bulk sample table
- Total sample used for process testwork was approximately 700kg
- Mix and homogenise the bulk sample and remove a 50kg sample
- Remove a 500g head sample from 50kg sample and characterise for oversize (+2.0mm, +1.0mm), slimes (-45µm) and heavy mineral (+2.85sg)
- Submit sample of heavy mineral, light mineral and slimes for XRF analyses

Fig 3. Bulk sample characterisation tables

	Wt (g)	Wt %	TiO2 %	Fe2O3 %	SiO2 %	Al2O3 %	Cr2O3 %	MgO %	MnO %	ZrO2 %	P2O5 %	U XRF ppm	Th XRF ppm
+2.85sg	1.3	0.19	31.10	14.40	26.20	16.20	0.20	1.29	0.66	3.69	0.07	38	32
-2.85sg	692.2	99.81	0.03	0.03	99.70	0.03	0.00	0.00	0.00	0.02	0.00	21	0
Sand	693.5	100.00	0.09	0.06	99.56	0.06	0.00	0.00	0.00	0.03	0.00	21	0
Slimes (-45µm)		3.01	0.61	0.29	97.80	0.39	0.01	0.03	0.01	0.05	0.01	0.00	0.00

- Representative sub-sample taken from the bulk sample for sighter test work on Mineral Technologies MG 12 spiral separator operating at 2.5tph and 35% solids
- Representative process samples taken from the MG12 spiral and submitted for XRF analyses

Fig 4. Test results for Mineral Technologies MG12 spiral process

Stream	Wet Weight	Pour off Weight	Dry Weight	Wt %	Assay TiO2 %	Assay Fe2O3 %	Assay SiO2 %	Distribution TiO2 %	Distribution Fe2O3 %	Distribution SiO2 %
Concentarate	0.43	0.29	0.21	3.58	1.11	0.47	97.5	60.7	53.1	3.5
Middlings	1.28	1.09	0.83	13.91	0.05	0.03	99.7	10.4	12.8	13.9
Tails	14.22	6.42	4.94	82.51	0.02	0.01	99.9	28.9	34.1	82.6
Total Combined Weight	15.92	7.79	5.98	100.00	0.07	0.03	99.78	100.0	100.0	100.0
	Approx 80% Solids	6.23								

Stream	Wet Weight	Pour off Weight	Dry Weight	Wt %	Assay TiO2 %	Assay Fe2O3 %	Assay SiO2 %	Distribution TiO2 %	Distribution Fe2O3 %	Distribution SiO2 %
Concentarate	0.71	0.53	0.36	6.25	0.84	0.36	98.3	67.9	64.4	6.1
Middlings	1.61	1.38	1.04	18.20	0.04	0.02	100.0	9.6	11.6	18.2
Tails	14.47	5.67	4.33	75.55	0.02	0.01	100.0	22.4	24.1	75.6
Total Combined Weight	16.79	7.58	5.73	100.00	0.08	0.03	99.9	100.0	100.0	100.0
	Approx 80% Solids	6.06								

- Process bulk material over MG12 spiral separator to produce a concentrate, middlings and tailings
- Representative process samples taken from the MG12 spiral and submitted for XRF analyses

*Fig 5. Process test results for MG12 spiral separator **(silica product highlighted)***

MG12	Wt	Wt %	TiO2 %	Fe2O3 %	SiO2 %	Al2O3 %	Cr2O3 %	MgO %	MnO %	ZrO2 %	P2O5 %	U XRF ppm	Th XRF ppm
Conc	2.14	3.5	1.39	0.57	97.3	0.44	0.01	0.05	0.03	0.23	0.01	0	0
Mid	5.01	8.2	0.06	0.05	99.4	0.12	0.00	0.02	0.00	0.00	0.00	0	0
Tail (Prod)	53.94	88.3	0.03	0.02	99.9	0.07	0.00	0.01	0.00	0.00	0.01	0	0
Feed	61.09	100.0	0.08	0.04	99.7	0.08	0.00	0.01	0.00	0.01	0.01	0	0

Testing Outcomes

- One stage of Mineral Technologies MG12 spiral will produce a high quality (99.9% SiO2) silica product with a recovery of 88% from the Nob Point Prospect resource area at Cape Bedford
- The bulk sample test work also demonstrated that the processing plant will be relatively simple due to negligible oversize, minimal heavy mineral (0.19%), low level of slimes (3%), and very good removal of heavy mineral on spiral separators.

Next Steps - Mining Scoping Study Expectations

- Mining is expected to be a simple operation due to the small amount of overburden which can easily be removed, and the resource material is free digging sand dune above the water table
- An initial mining operation with annual production of 300,000 to 500,000 tonnes of high grade silica product is envisaged, dependent on the discussions with potential customers and the likely initial market penetration for the project
- The Nob Point resource will initially be developed as a long-life operation allowing exploration to expand further north and west in EPM17795, with the objective of identifying additional silica and heavy mineral resources.

Mr McIntyre added: "With the support of the traditional owners and potentially low mining and processing costs, Cape Bedford is looking extremely attractive as a source of near-term cashflow for Diatreme. The timing is right and with conditions looking positive we are confident of developing Cape Bedford for the benefit of all stakeholders, adding to the growing anticipated value of our flagship Cyclone Zircon Project and other projects."

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About Cape Bedford

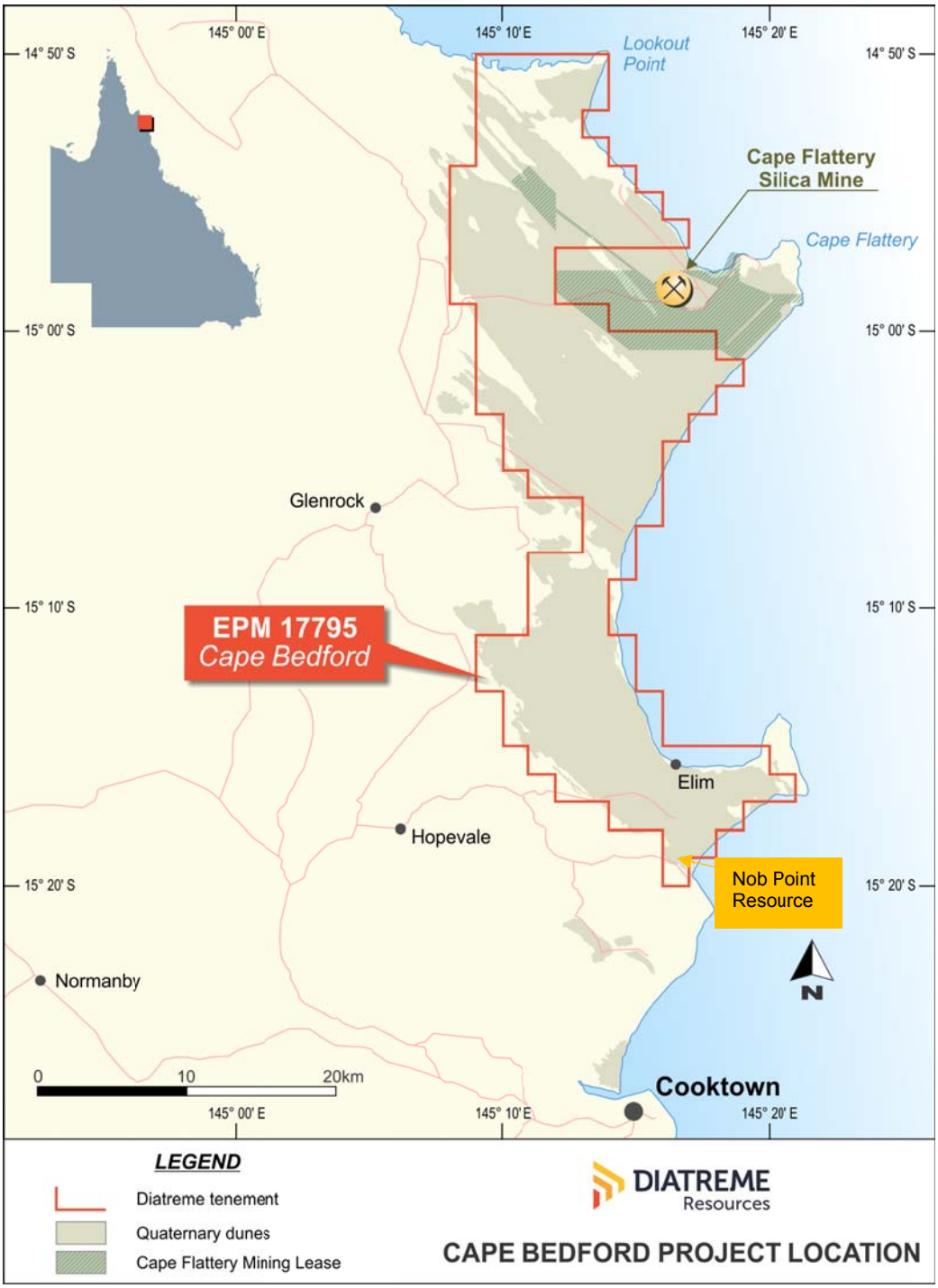
The Cape Bedford EPM17795 is located approximately 200km north of Cairns in North Queensland, and covers the extent of a large Quaternary sand dune field, part of which is currently being mined by Cape Flattery Silica Mines Pty Ltd (CFSM), a wholly owned subsidiary of Mitsubishi Corporation. Cape Flattery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

Following the signing in 2017 of a Conduct and Compensation Agreement and a Cultural Heritage Agreement with the traditional owners, Hope Vale Congress, Diatreme has worked closely with Hope Vale Congress to maximise the economic benefits for the local community.

In August 2018, Diatreme defined a maiden Inferred Mineral Resource for the project's Nob Point Silica Sand Prospect located in the southern area of the tenement (refer ASX announcement released 13 August 2018).


145° 00' E
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14° 50' S
15° 00' S
15° 10' S
15° 20' S
Lookout Point
Cape Flattery Silica Mine
Cape Flattery
Glenrock
EPM 17795
Cape Bedford
Elim
Hopevale
Nob Point Resource
Normanby
N
0
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20km
Cooktown
LEGEND
Diatreme tenement
Quaternary dunes
Cape Flattery Mining Lease
DIATREME Resources
CAPE BEDFORD PROJECT LOCATION