



**Final Report
For the period to November 2009**

EL 7/2008

EL 8/2008

EL 9/2008

**KING ISLAND
TASMANIA**

DIATREME RESOURCES LIMITED

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ABSTRACT

Diatreme Resources has not conducted any drilling programs over EL 7/2008, EL8/2008 and EL9/2008, King Island. The tenements are deemed to be prospective for mineral sand bearing beach sands.

A field trip was carried out over the three tenements with the aim of locating access roads for drilling and assessing the potential for mineral sand development. Roads that ran in an east-west direction were targeted for the drilling program. These traverse lines were located between 4-6km apart which would give optimal coverage of the area.

Drilling was scheduled to commence in early 2009 using a company owned drill rig but problems with the rig and other difficulties saw the tenements surrendered in November 2009.

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1. INTRODUCTION

King Island is located in Bass Strait above the western corner of Tasmania. It lies approximately 85km north-west of Tasmania and 86km south of Victoria. It is about 28km wide at its widest point and 62km long and covers an area of 1,098 square kilometres.

EL's 7/2008, 8/2008 and 9/2008 are contiguous tenements covering a significant portion of King Island.

The average annual rainfall for King Island is between 850-950 millimetres. The average maximum temperature in summer is mid to low 20's, and the maximum winter temperature of approximately 15 degrees. The average minimum temperature in winter is between 3-5 degrees Celsius. King Island is situated on the fortieth parallel, and therefore is generally quite windy throughout the year.

Tenement Details

EL 7/2008 (Loorana), was granted to Diatreme Resources Ltd on the 20th June, 2008 for a five year period covering an area of 203 square kilometres.

EL 8/2008 (Pearshape), was granted to Diatreme Resources Ltd on the 20th June, 2008 for a five year period covering an area of 230 square kilometres.

EL 9/2008 (Pareena), was granted to Diatreme Resources Ltd on the 20th June, 2008 for a five year period covering an area of 95 square kilometres.

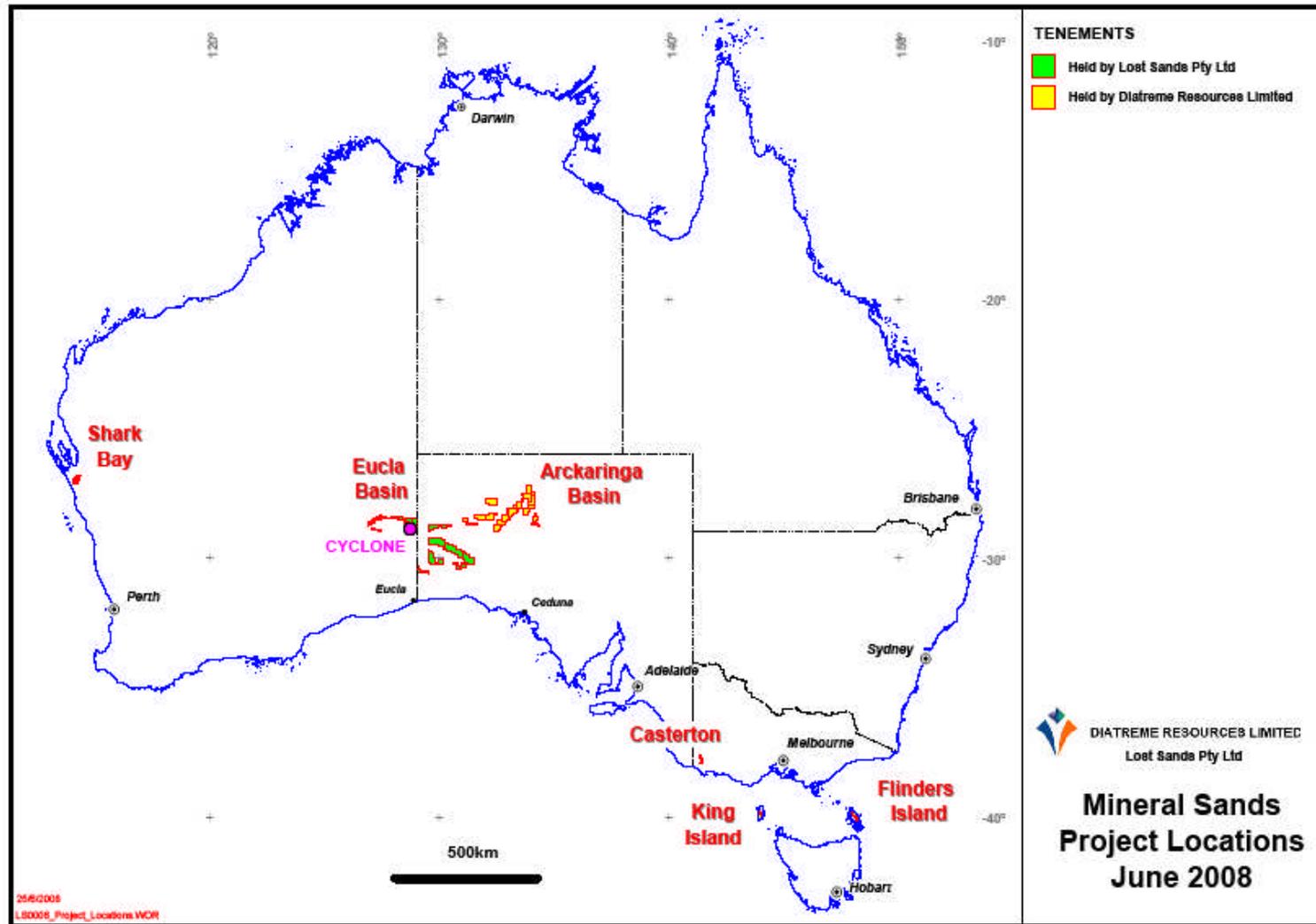


Figure 1 - Location Map of King Island, Australia.

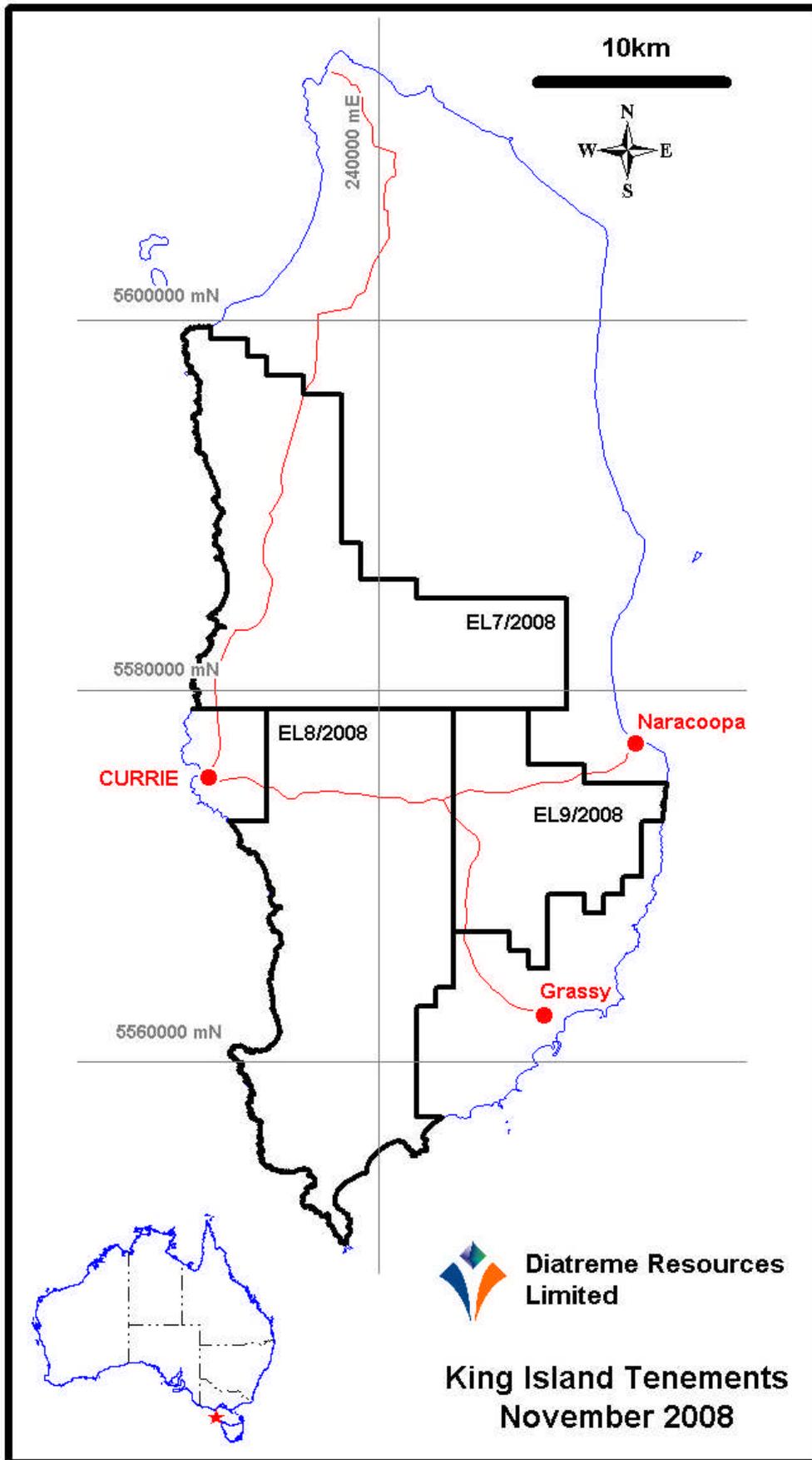


Figure 2 - Location Map of King Island tenements, EL7/2008, 8/2008 and EL9/2008.

2. REVIEW OF PREVIOUS WORK

Mineral Sand exploration

Records of placer mining and exploration in the Naracoopa area date back to 1905 when the British Flag Prospecting and Mining Syndicate NL separated approximately 5 tonnes of cassiterite and 1.5 oz gold from heavy mineral beach sands immediately north of the mouth of the Fraser River. Intermittent small scale tin mining and prospecting continued near the mouth of Fraser River until the first systematic rutile/zircon exploration drilling was conducted in 1952 by Mt Isa Mines, at Cowper Point.

Onshore exploration in the area lead to the commencement in 1969 of a dragline and truck mining operation and a full wet and dry rutile/ zircon plant at Naracoopa. The operation ceased in 1977, after producing approximately 20,000 tonnes rutile and 23,000 tonnes zircon.

A number of companies have conducted reconnaissance and regional scale marine science and sampling surveys offshore since the mid 1960's. Ocean Mining A G, Amdex Mining Pty Ltd, Australian Zircon Pty Ltd and Australian Titanium Minerals Pty Ltd are the most notable of these companies. However, due to Diatreme's exploration of onshore deposits only, this work will not be discussed further.

King Island Scheelite

Scheelite was first discovered at Grassy in 1911 and almost continuous mining since 1937 has produced over 60,000 tonnes WO₃ from the No. 1/Dolphin deposit at Grassy and the Bold Head deposit, three kilometres to the north.

The deposits formed within a 150–200m thick sequence of contact metamorphosed and metasomatised olitic and calcareous sedimentary rocks of the lower part of the Grassy Group. The host rocks pass up into a thick (2,500m) metavolcanic sequence, presumably equivalent to the upper volcanic part of the Grassy Group in the City of Melbourne Bay area.

3. GEOLOGY

The geology of King Island is dominated by a suite of Proterozoic rocks, Devonian granite and an extensive cover of Pleistocene to recent sand systems (Figure 3). The western half of the island consists of Mesoproterozoic (1300 Ma) amphibolite-grade metasediments, regionally deformed and metamorphosed at c. 1290 Ma and intruded by 760 Ma granite (Calver, 2007). The metasediments strike N–S and the granite is regionally concordant. The eastern half of the island mainly consists of a thick succession of relatively unmetamorphosed siltstone, probably a correlate of the lower Neoproterozoic (c. 1000–750 Ma) Cowrie Siltstone of northwest Tasmania (Calver, 2007). The contact between the metasediments and the siltstone is concealed by surficial sediments, and its nature (whether a fault or unconformity) is unknown.

Along the southeast coast, the siltstone succession is overlain by an upper Cryogenian to Ediacaran, east-dipping succession of diamictite, cap dolostone, shale and mafic volcanic rocks (basalt and picrite) (Calver, 2007). Along the east coast, three small, early Carboniferous granite stocks intrude the Neoproterozoic sedimentary rocks (Calver, 2007). Scheelite orebodies occur in the contact aureoles of the two southern granite stocks. Most of the interior of the island is covered by Quaternary surficial sediments. A number of small Tertiary basalt plugs are known, and Tertiary limestone outcrops on the east coast (Calver, 2007).

The prominent features of the Quaternary geomorphology are the Old and New dune systems. These dunes manifest on the island in a range of ways including dune barrage lagoons, inland sand sheets, coastal emerged marine surfaces and raised storm beach and beach ridge deposits (Orr, 2003). The island is rimmed by the Old and New dunes systems with the Old dune system further inland than the New dunes. Lagoons and coastal dune lakes have formed in places where these dunes have block drainage systems (Orr, 2003). Analysis of raised beach and emergent marine deposits has provided a means of documenting relative sea-level changes and neo-tectonic displacements (Jennings, 1959).

The Coastal Geomorphology of King Island

Jennings (1959) suggests that the east coast presents slight indications of a 225-ft sea level stand and there is also stronger evidence for one at 120-150ft from the same area. Widespread constructional and erosional features of the Old Shoreline System give evidence of a falling sequence of levels from 65 feet down to the present level with the most marked halts at 40-50 feet and 20-30 feet. They are provisionally inferred to belong to the Last Interglacial. He suggests that the Old dunes formed during this time. His study also shows that the New dunes were formed during the Holocene. The associated New Shoreline system is considered to relate to a Mid-Recent 10-ft sea level stand and the emergence from it.

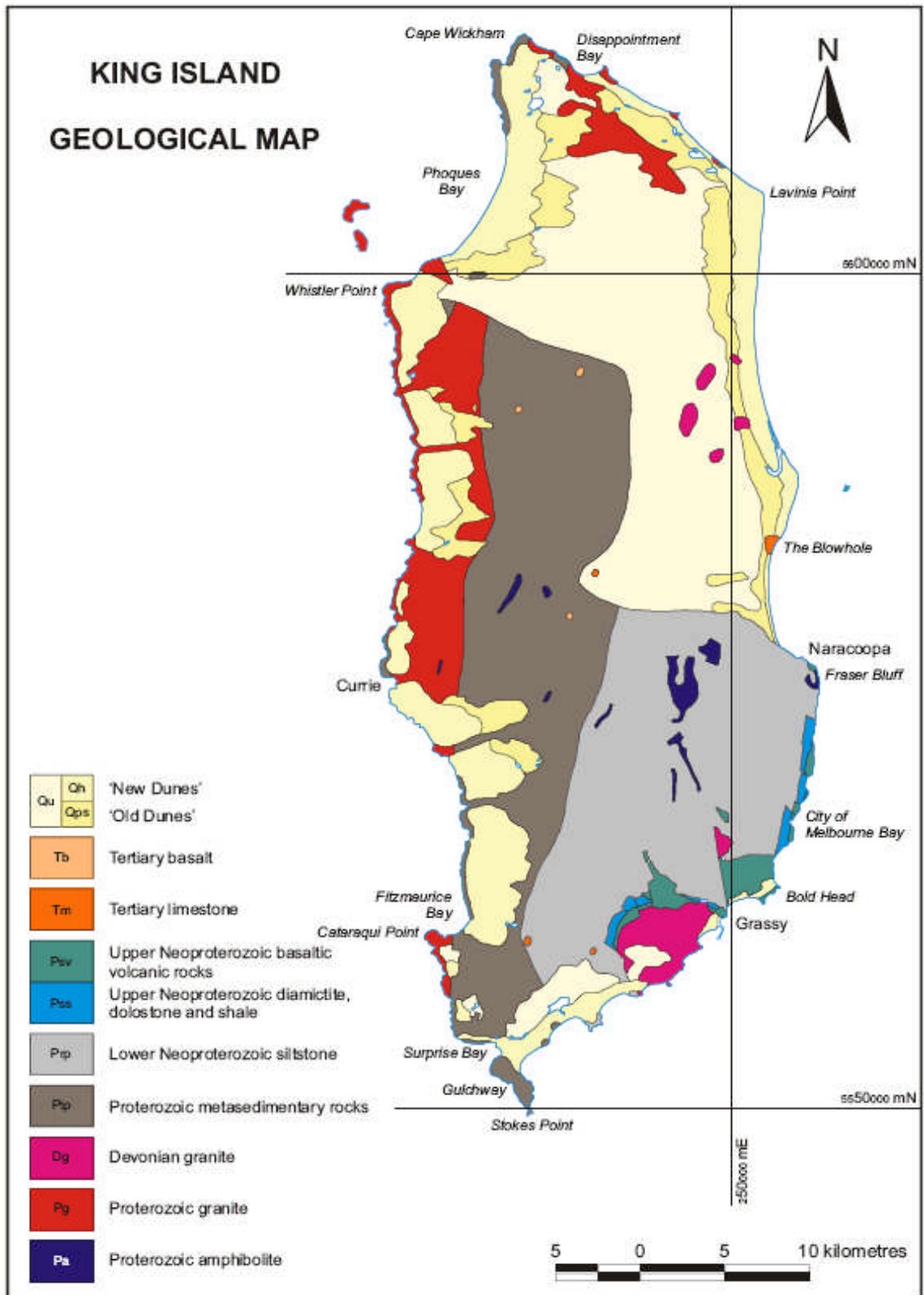


Figure 3 – Geology of King Island (Calver, 2007)

4. EXPLORATION CONDUCTED

During a reconnaissance trip to King Island in November 2008 an assessment of the area was carried out which included panning for mineral sands within the dune fields and beaches. Unfortunately, very little heavy mineral was noted during this trip. During this trip, drilling traverses to test the deeper stratigraphy were planned but never drilled.



Figure 4 – Location map of proposed exploration drilling lines.

5. CONCLUSIONS

In conclusion, Diatreme believes that King Island is prospective for heavy mineral sands along in the Naracoopa area where significant heavy minerals were noted on the beach which has been periodically mined since the 1970's. The remainder of the island showed very little signs of heavy mineral accumulations.

6. EXPENDITURE

A total of \$33,460 has been spent over the three tenements (EL 7/2008, 8/2008 & 9/2008) to 16 November 2009. This is broken down as follows:

EL 7/2008

Geoscientific Costs:	\$ 7,733
Drilling and Gridding Costs:	\$ 0
Land Access Costs:	\$ 0
Rehabilitation Costs:	\$ 0
Feasibility Study Costs:	\$ 0
Other Costs:	\$ 0
Administration Costs:	\$ 8,059
<u>TOTAL</u>	<u>\$ 15,792</u>

EL 8/2008

Geoscientific Costs:	\$ 7,802
Drilling and Gridding Costs:	\$ 0
Land Access Costs:	\$ 0
Rehabilitation Costs:	\$ 0
Feasibility Study Costs:	\$ 0
Other Costs:	\$ 0
Administration Costs:	\$ 9,083
<u>TOTAL</u>	<u>\$ 16,885</u>

EL 9/2008

Geoscientific Costs:	\$ 7,596
Drilling and Gridding Costs:	\$ 0
Land Access Costs:	\$ 0
Rehabilitation Costs:	\$ 0
Feasibility Study Costs:	\$ 0
Other Costs:	\$ 0
Administration Costs:	\$ 3,959
<u>TOTAL</u>	<u>\$ 11,555</u>

7. REFERENCES

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Jennings, J N. 1959. The coastal geomorphology of King Island, Bass Strait, in relation to changes in the relative level of land and sea. Records Queen Victoria Museum Launceston. NS 11.

Orr, M, 2003. *King Island, Bass Strait*. School of Geography and Environmental Science, Monash University, VIC.

8. KEYWORDS

King Island, Heavy Mineral Sands, Beach, Drilling, EL7/2008, EL8/2008, EL9/2008,
Diatreme Resources Limited.