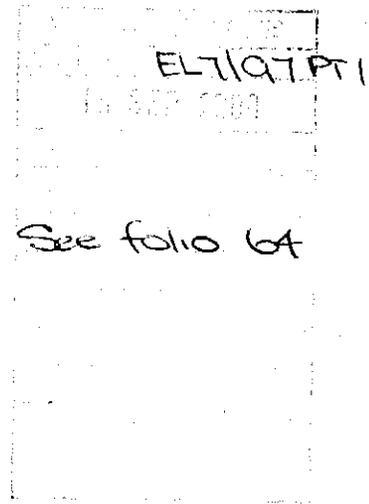
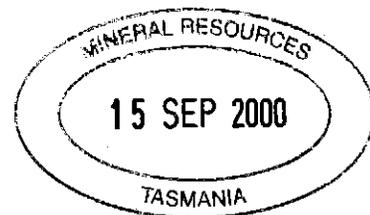


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Annual Report on EL 7/1997 - Nine Mile Beach, King  
Island  
Mineral Holdings Australia Proprietary Limited\*  
Duncan, D.McP.; Rhodes, L. EL7/1997

**EXPLORATION LICENCE 7/97  
NINE MILE BEACH  
KING ISLAND**



**ANNUAL REPORT ON EXPLORATION  
JULY 1999 TO JUNE 2000**

00\_4482

Annual Report on EL 7/1997 - Nine Mile Beach, King  
Island  
Mineral Holdings Australia Proprietary Limited\*  
Duncan, D.McP.; Rhodes, L. EL7/1997

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**31st August 2000**

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**Plan 1- Locality and Mineral Tenement Map, Nine Mile Beach, King Island**

**Plan 2- Tin and Combined Rutile and Zircon Values in Sediments, Nine Mile Beach**

**Plan 3- Previous Drill Holes and Sediment Thicknesses in offshore NE King Island**

**Appendix**

## EL 7/97- Nine Mile Beach, King Island- Annual Report

### 1.0 Introduction

EL 7/97 was granted to Mineral Holdings Australia Pty Ltd in July 1997 for 5 years to 20th June 2002 over an area of 49 sq km in State Waters off Nine Mile Beach in NE King Island (Plan 1).

The licence was designed to cover the sediment accumulations of the present delta of the Sea Elephant River in the south and of a beach-parallel structure to the north representing a previous delta or palaeochannel of the river or an ancient strand line of Nine Mile Beach.

The exploration target is heavy minerals sands containing rutile, ilmenite and zircon (as well as possible credits of cassiterite, gold, rare earths and platinoids). Adjacent onshore deposits at Naracoopa and Cowper Point of 25 million tonnes of 5% zircon and rutile were planned to be developed by Australian Titanium Minerals Ltd. The deposits are now held by Tasmanian Titanium Pty Ltd.

### 2.0 Previous Exploration

A brief review of the Ocean Mining A.G. reports contained in the Mines Department, Hobart was carried out to establish if untested areas of possible heavy mineral sand deposits remained after that company's exploration effort from 1965 to 1969 in the offshore area of Sea Elephant Bay. The final report of exploration recorded that neither of the two major targets selected from survey results was adequately tested by drilling because of persistently heavy sea conditions during the cruises of the vessel Wando River. The two targets were - a major, deep, sediment- filled channel and an area described as Elephant Shoal.

The Ocean Mining exploration consisted of bathymetric and seismic surveys followed by OMAG jetlift sampling by MV Aardvark and drilling by MV Wando River. The 4 fathom sediment thickness contour in Plan 3 outlines the sediment-filled channel off Sea Elephant Beach with three feeder channels extending from the shore, an area of presumably delta sediments at the mouth of Sea Elephant River, and a channel of sediments some 2km off the Nine Mile Beach with a seaward extension of sediments thickening to the east.

Plan 3 also shows the position of 11 drill holes relative to the areas of sediment (marked in green) thicker than 4-fathoms (24 feet). These are described in turn-

Area A- up to 72 feet thickness of sediments interpreted, structure 4 by 1km  
- not tested by hole 7 on edge

Area B- up to 60 feet thickness of sediments interpreted, delta 3 by 3km  
- tested by holes 1, 2 and 3 (two on edge)

Area C- up to 84 feet thickness of sediments interpreted, main structure 10 by 2km  
- tested by holes 4, 5, 6, 8, 9, 10 and 11

Of the eleven holes drilled, only hole 9 showed elevated values of Ti and Zr (Table 2, Duncan & Rhodes, 1998). Overall, only about half of the core was recovered in the drilling. Ocean Mining concluded that, because of the sea conditions which had curtailed the planned drilling program, the potential of these areas remained largely untested for rutile, zircon and cassiterite.

The present licence was designed to cover only Areas A and B within the 3 nautical mile limit (Plan 1). Area C was omitted as it was not thought possible that the licence in Commonwealth Waters would be granted before the expected date of arrival of the dredge- the Volvox Delta. As it turned out, the dredge was not made available to the project as it was required elsewhere on work of greater priority.

While awaiting the availability of a suitable dredge to carry out a bulk sampling program, it was decided to investigate the seabed with abalone divers using 15 foot boats equipped with GPS for navigation. Mineral Holdings acknowledges the work carried out by the divers- Guy Barnes, King Island and Edward Shelmerdine, Melbourne.

Grab sampling of seabed sediments was carried out initially using a jar collecting about 0.4- 0.6 kg sand (samples 1-88 and A-F) and latterly using a 0.75m long bait pump for greater depth penetration of up to 0.60m (samples 101-191). Samples 101 to 158 were taken by bait pump and separated into top and bottom samples and analysed separately as a comparison. There are gaps in the sample number sequence with 89 to 100 not being used. No sample was taken for numbers 51, 192 and 193 as the bottom was reef.

Samples were collected on east-west lines 900m apart with samples every 500m in Area B closing to 250m over Area A where the target was narrower. At each sample site, GPS location was recorded along with water depth (Appendix) and intermittently the type of sediment sampled and the seabed conditions.

Samples (1-30) were passed through a 5mm screen to remove pebbles or shell fragments and the resulting fine fraction analysed for tin, titanium, zirconium and tungsten using XRF fused disc methods at Temco, Bell Bay. The metal concentrations reported (see Appendix) from the laboratory were then recalculated to give the head grades of the sediments as they lie on the sea floor. Later samples were analysed unsorted.

Modifications were necessary to the results presented in the 1998 annual report (Duncan & Rhodes, 1998). The zircon results were too high due to analytical error.

Ten seabed samples of sand already analysed by Temco from Ringarooma Bay and King Island were sent to Amdel for comparison in Sn, TiO<sub>2</sub> and ZrO<sub>2</sub>. Whereas the Sn and Ti compared well, the Zr contents as reported by Amdel were consistently down, sometimes nearly by a factor of ten. This resulted in Temco recalibrating their XRF to produce much more sensitive zircon numbers particularly at low concentrations.

Also, mineralogical studies were conducted on a composite sample prepared by consolidating splits of 33 seabed samples (A, B, C, D, E, F, 31-50 and 52-58).

### 3.0 Current Exploration

Exploration in the current year consisted of reanalysis for zircon content on the sample splits. This was not always possible as some samples were used up entirely in the previous analysis.

Planned bulk sampling was delayed awaiting the availability of suitable dredging equipment.

### 4.0 Results

The complete results are presented in Tables KI 1-14 (there is no Table -11) in the Appendix and plotted on Plan 2 where they are colour-coded to reflect the various concentration classes of heavy minerals (Sn in g/t, Ti O<sub>2</sub> in % and Zr O<sub>2</sub> in %).

The TiO<sub>2</sub> plus ZrO<sub>2</sub> concentrations reach up to 1.70% with 5 samples (2% of total) over 0.6% and 39 samples in 237 (16% of total) over 0.3%. In the latter category, these values are more common in the northern area compared with the southern area (Plan 2). The highest value of 1.70% occurs just outside the EL boundary in the south and inshore.

In the north, the +0.3% values show no clear correlation with the defined target, while in the south, the values are concentrated almost entirely west of the target. They occur in a zone parallel to the present shoreline and just inshore from the defined targets.

Individually, Ti O<sub>2</sub> values range from 0.02% to 1.29% (average is 0.17%) and Zr O<sub>2</sub> values range from 0.001% to 0.409% (average is 0.037%). There is a tendency for the two values to vary sympathetically.

Tin concentrations reach 100g/t Sn in 4 samples (2%) and over 50g/t in 23 (10%) of the 237 samples. The values tend to be grouped towards the north of the northern target and on the south-western edge of the southern target (Plan 2). The highest tin samples are different from those with the highest combined TiO<sub>2</sub> and ZrO<sub>2</sub> values.

Sizing analyses for metal contents were carried out on 6 samples. The analysis shows that there is both coarse (+600um) and very fine tin (minus 150um) present. Zircon is mostly in the fine grained range (150-300um) and is coarser than the titanium minerals (minus 150um).

Semi quantitative analysis of the composite sample by a mineralogist at Independent Diamond Laboratories Pty Ltd gave 0.09% heavies in the following categories A(20-50%) tourmaline, rock fragments; S(1-10%) almandine, O(20 grains -1%) staurolite, F(5-20 grains) zircon, spinel, amphibole, biotite, epidote, kyanite and T(1-5 grains) rutile, corundum and phosphate. No diamonds or indicator minerals were seen (Appendix).

Plan 1  
1:100,000

246000 E

5 cm

R  
A  
I  
T

TARGET A

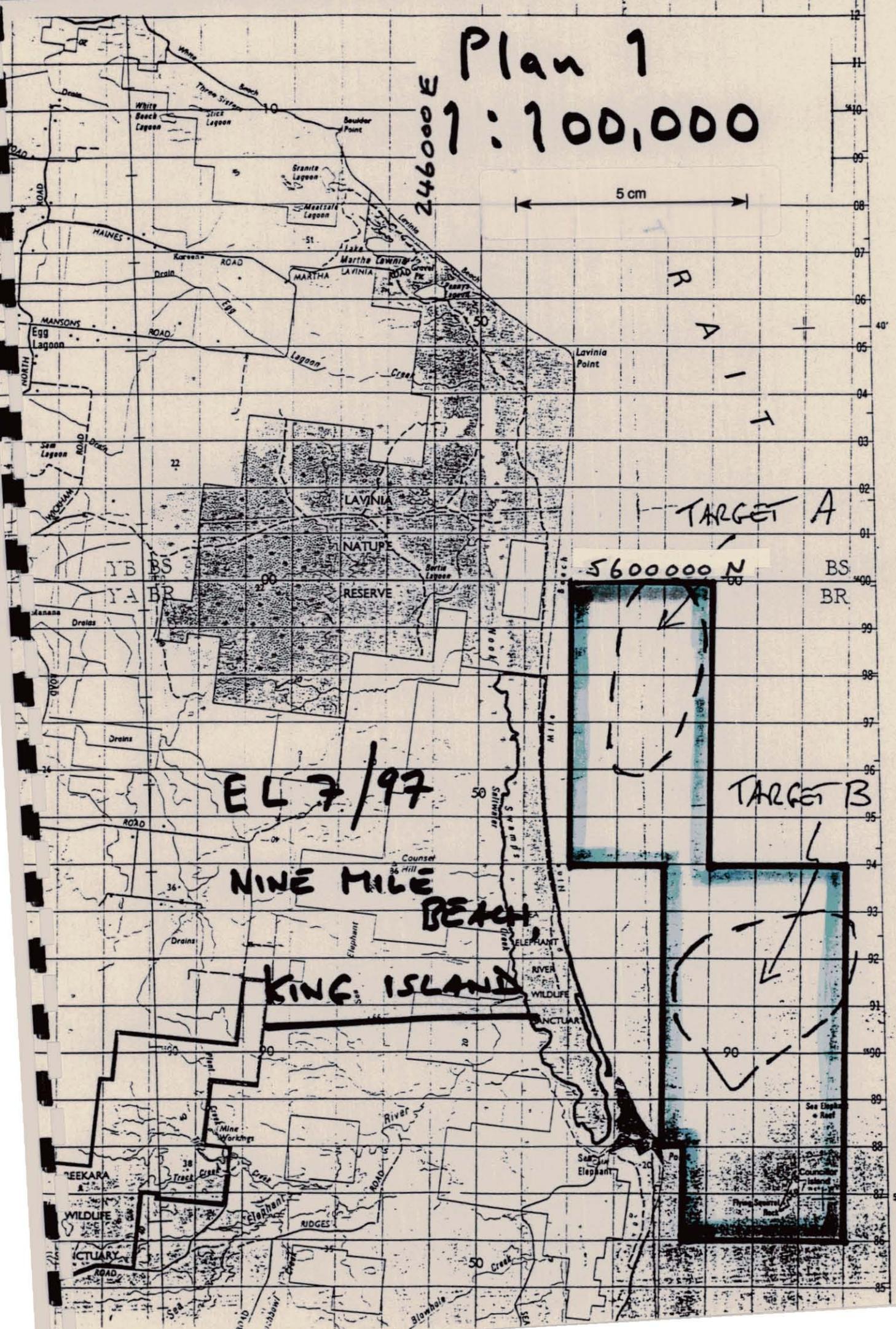
560000 N

TARGET B

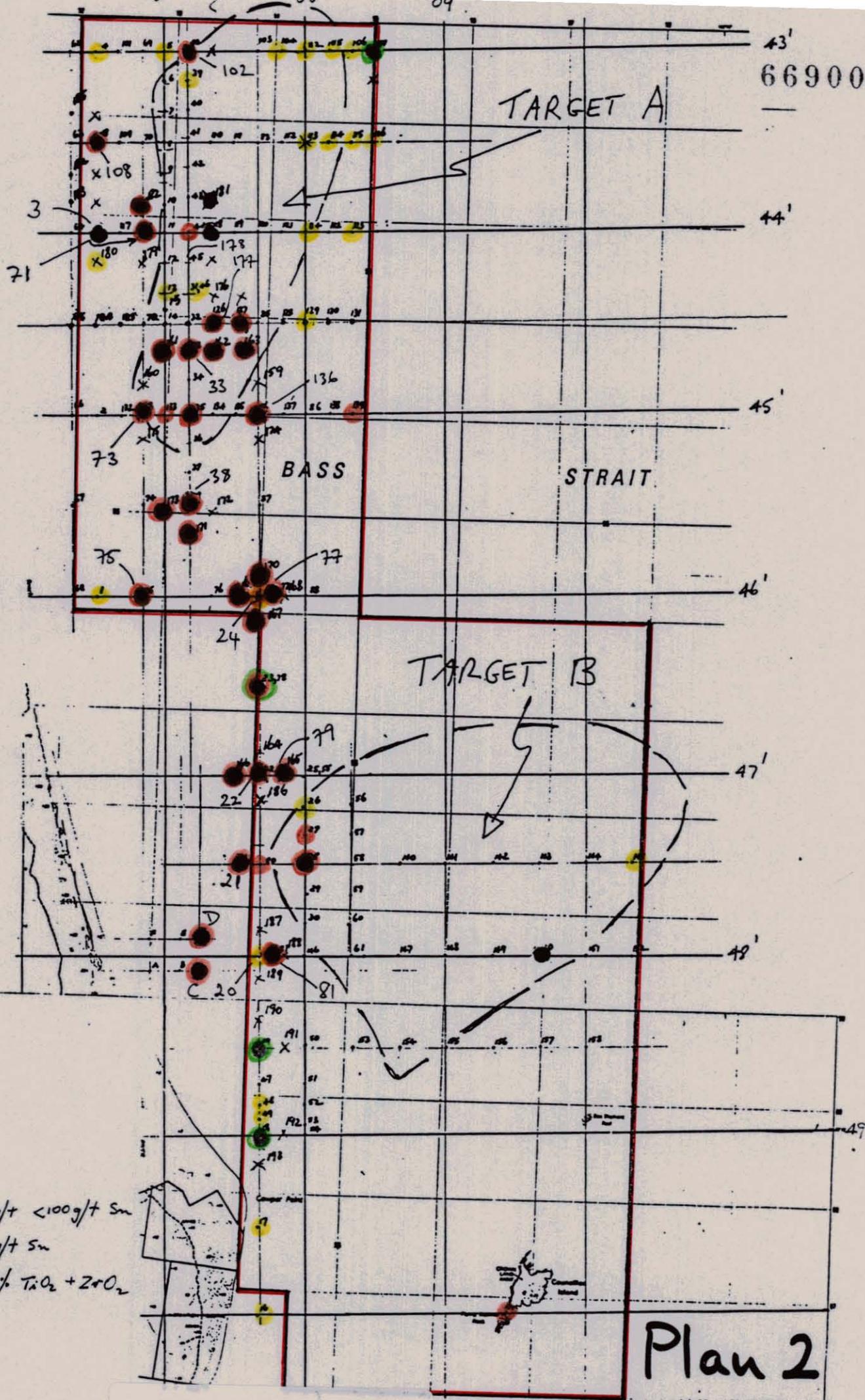
EL 7/97

NINE MILE BEACH

KING ISLAND



43'  
669007



TARGET A

BASS

STRAIT

TARGET B

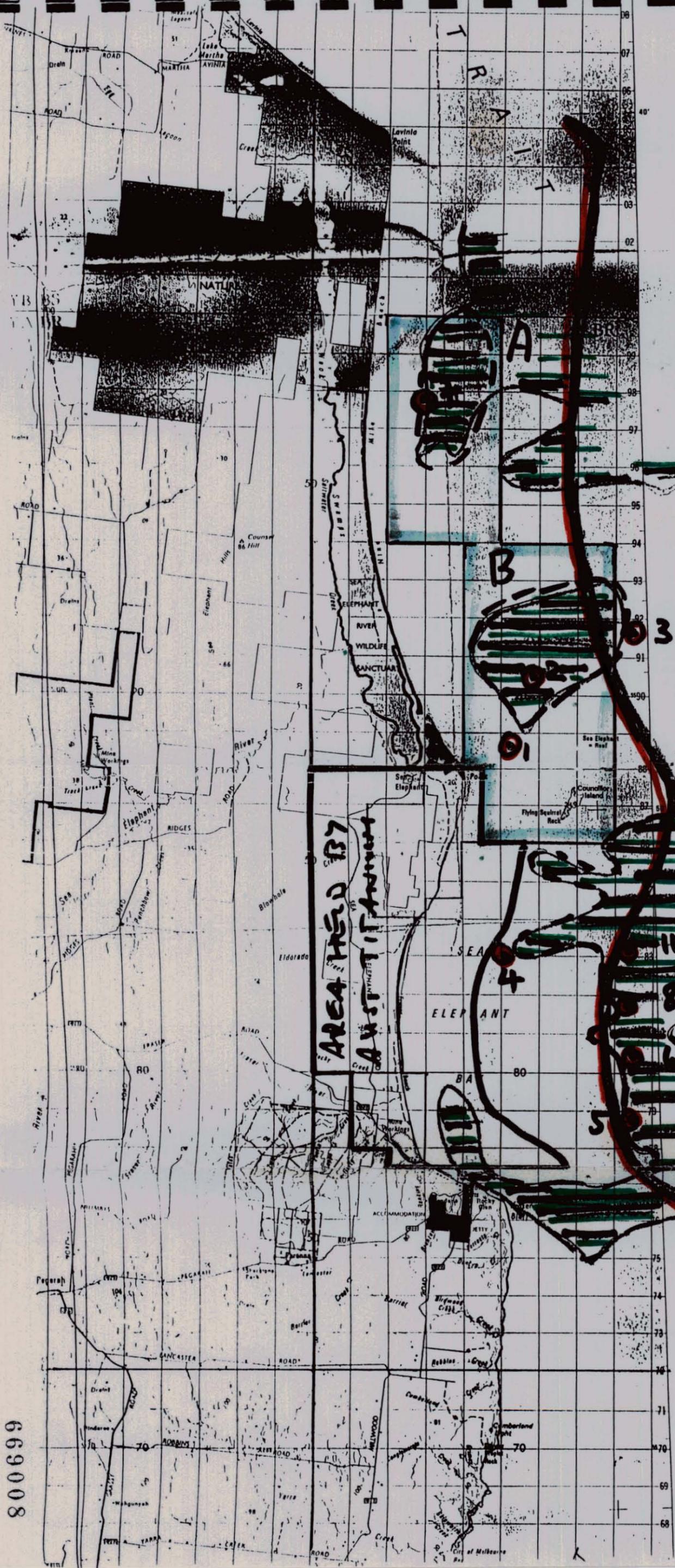
- >50g/t <100g/t Sn
- >100g/t Sn
- >0.3% TiO<sub>2</sub> + ZrO<sub>2</sub>

5 cm

Plan 2

1:50,000

800699



- Forestry Commission: State Forest; with Forest Reserve
- Timber Reserve
- Land Department: Crown Reserve
- Leased or Uncommitted Crown Land
- National Parks & Wildlife Service: State Reserve, etc.
- N.P. & W.S. administered Conservation Area
- Hydro Electric Commission
- Commonwealth administered
- Municipality boundary
- Boundary location uncertain or indefinite
- Conservation Area boundary
- Built up area; National route marker
- Roads maintained for continuous public use
  - Primary road; Route number
  - Secondary road; Route number
  - Minor road; Route number
- Roads of restricted use or access
- Other roads: Bridge
- Vehicular track; Gate
- Walking track

PRODUCED by the Mapping Division, Lands Department Hobart 1984  
 NOMENCLATURE Topographic names on this map have been approved by the Nomenclature Board of Tasmania  
 MAP ACCURACY The average accuracy of this map is  $\pm 25$  metres in the horizontal position of well defined detail and  $\pm 5$  metres in elevation  
 MAP RELIABILITY Topographic information subjected to limited updates Feb 1984  
 PUBLIC RIGHT OF WAY Roads or tracks on this map do not necessarily indicate a public right of way  
 CORRECTIONS To assist in correcting future editions of this map users noting errors and omissions are invited to write to the Director of Mapping GPO Box 44A Hobart Tasmania 7001

LAND TENURE INDEX INFORMATION has been compiled by the Lands Department with assistance from the Forestry Commission. Land tenure is current to Jan 1984. Due to limitations of scale some small areas of land tenure within built up areas or of less than two hectares are not depicted. Colours are designed to indicate the prime managing authority. The indication of a particular land status does not imply right of entry or use. Boundaries of Crown land extend to low water mark. For full particulars users are requested to consult the Registrar General's Division or the Lands Department.

- Light railway or tramway
- Power transmission line
- Levee or bank; Landmark area
- Landmark object: Quarry, Mine
- Building's, Church, Room, Drive in
- Trig station, Spot elevation
- Chf. Contour with value, Depression
- Lake perennial, Stream perennial
- Lake intermittent, Stream intermittent
- Swamp perennial, intermittent
- Land subject to inundation
- Bore or well, Spring, Tank or small
- Breakwater, Pier, Wharf
- Wreck, exposed, Lighthouse
- Rock, bare or awash, Foreshore flat
- Reef, Rock ledge

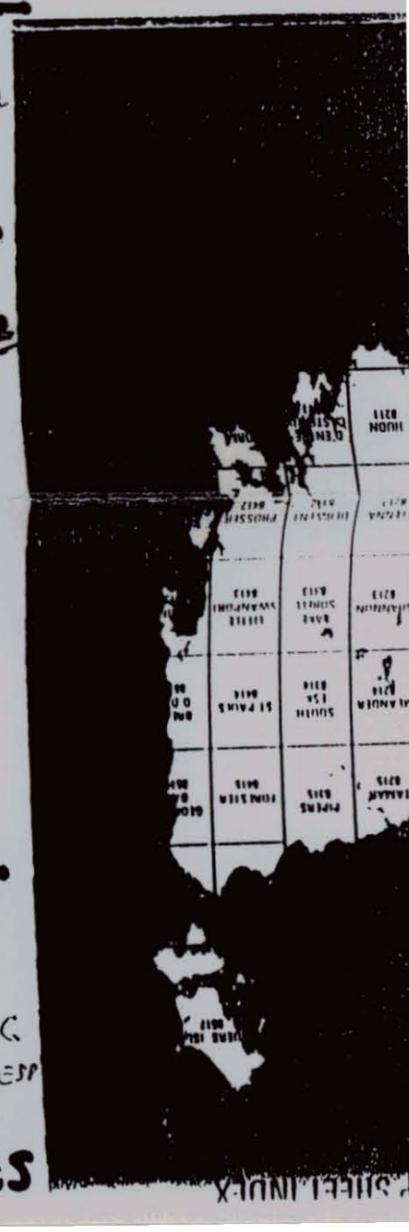
GRID ZONE DESIGNATION  
 54Q UTM  
 1000000 METRE EASTING  
 6000000 METRE NORTHING

TRUE NORTH, GRID NORTH AND MAGNETIC NORTH ARE SHOWN DIAGRAMMATICALLY FOR THE CENTRE OF THE MAP. MAGNETIC NORTH IS CORRECT FOR 1984 AND MOVES EASTERLY BY 0.1" IN ABOUT THREE YEARS

*feathers (E 8m)*  
*x 4 thick seeds.*

3 naut. mile limit  
**PLAN 3**

~~Figure~~  
 Horizontal Drill Rig  
 Wagon River West  
**90 DRILL HOLES**



## 5. Interpretation

Grab sampling by abalone divers of active seabed sediments has detected 16% of values of combined TiO<sub>2</sub> and ZrO<sub>2</sub> in the range 0.3- 1.70% particularly in the northern Area A. These values are encouraging as they are close to the cut off grades of Eastern Australian heavy mineral deposits at 0.5- 0.8%. Occasional values in the range 0.6- 1.7% are close to the average values of rutile and zircon defined for some of the heavy mineral deposits outlined in adjacent areas on onshore King Island (eg. East, Back Beach and Lanherne Deposits).

Tin values of plus 50g/t in some areas show the possibility of useful credits being available in any mineral concentrates produced.

Examination of the bottom values of the bait pump samples shows that some heavy minerals persist at depth at least within the first metre. However, these results cannot be taken as proof of significant heavy mineral grades at depth in the sediments without further drilling or bulk sampling to basement in these areas.

From the limited information to date, there is no real pattern that the higher heavy mineral values are related to either the coarse- or the fine-grained sands.

## 6. Conclusions

Previous exploration by Ocean Mining (Mines Dept Reports TCR 81- 1617, 81-1618 and 81-1619) has shown that areas of potential for mineral sands- particularly rutile and zircon - have been defined offshore from Naracoopa, King Island (particularly hole 9). These areas have structures containing thicker sediments which have been incompletely tested by drilling with occasional elevated values in titanium and zirconium. Onshore, another company- Tasmanian Titanium Pty Ltd- is setting up an operation to develop mineral sand deposits of 25 million tonnes of 5% zircon and rutile.

The current grab sampling program has outlined some values of heavy minerals- zircon and rutile- approaching the cut off concentrations found in established deposits in Eastern Australia. Because of the small sample size, these heavy mineral values are indications only of potential metal concentrations and require follow-up drilling or bulk sampling throughout the sediment column. The seabed sampling results provide hope that sources of heavy minerals and concentrating mechanisms were operating in the past to provide economic deposits in the target areas.

The program has provided additional information on sediments, structures, bedrock, vegetation and depth to the seabed. There is no preference at present for the higher metal values to be with the coarser sediments.

## 7. Future Program

Consideration will be given to completing the seabed sampling program and to follow up the higher metal values. Extensions of the EL by several sq. km. to cover the area

of high metal values adjacent and inshore of the EL towards the present mouth of the Sea Elephant River are now impossible due to applications by Tasmanian Titanium. Extensions of the EL to the south to cover a sediment-filled trough (which includes hole 9) lying 6km offshore of Sea Elephant Beach would be outside the three nautical mile limit in Commonwealth waters and are not justified at present pending good results from the testing of the present targets. All of these areas are considered to be possible palaeochannels of the Sea Elephant and Fraser Rivers.

While waiting for joint venture participation on the substantial drilling program necessary to test the target areas to basement, Mineral Holdings is considering a bulk sampling program.

Mineral Holdings has been monitoring the movements of marine construction vessels currently being operated in Australia by experienced dredging companies such as Van Oord ACZ and Westham Dredging Company and is hoping to use the window of opportunity this provides to avoid the costly location fees reflected in long steaming distances to Australia. Most recently, contracts have been signed with the Marcon Company to bulk sample Ringarooma Bay using a barge-mounted Pneuma pump. Depending on the success of the technology in that program, consideration will be given to sample a number of sites in the King Island licence.

This is an exploration program to test for the presence of heavy mineral resources and is not a full scale mining project. The samples will be removed entirely for processing on land. Because the water depth is within storm-surge base, the seabed contours will be reformed by natural processes rapidly. It is therefore appears that water turbidity due to suspended fines in the excess water returned to the sea will be no more than transitory. It is envisaged that fish and crustacean mortality in the immediate vicinity of the sample points will be a tangible but minor possibility.

## REFERENCES

Anon. 1965. Prospectus for a Joint Offshore Mineral Exploration Program in Australia- Tasmania. Ocean Mining A.G., TCR 81-1617.

Anon. 1967. Tasmania Offshore Exploration Program. Operation Reports-March 1966 to December 1967. Ocean Mining A.G., TCR 81-1618

Anon. 1968. Tasmania Offshore Exploration Program. Operation Reports-January 1967 to December 1967. Ocean Mining A. G., TCR 81-1619

Duncan, D. McP. and Rhodes, L. 1998. Annual Report on Exploration. EL 7/97, Nine Mile Beach, King Island.

**APPENDIX**

- : Tables 1-14 ---Locations, minus 5mm screen assays, calculated head assays of Sn, TiO<sub>2</sub> and ZrO<sub>2</sub> in sediments (including modified zircon results)**
  
- : Mineralogical Data Sheet (No 287) - King Island Composite, Independent Diamond Laboratories Pty Ltd**

Table KI-1Location of samples

Sample No.	Latitude	Longitude	Depth (m)
KI- 1	39.46.00S	144.06.30E ✓	7.3
KI- 2	39.45.00S	144.06.30E ✓	8.8
KI- 3	39.44.00S	144.06.30E ✓	11.1
KI- 4	39.43.00S	144.06.30E ✓	9.4
KI- 5	39.43.00S	144.07.00E ✓	18.6
KI- 6	39.43.10S	144.07.00E ✓	17.8
KI- 7	39.43.20S	144.07.00E ✓	17.7
KI- 8	39.43.30S	144.07.00E ✓	17.1
KI- 9	39.43.40S	144.07.00E ✓	16.7
KI-10	39.43.50S	144.07.00E ✓	16.7
KI-11	39.44.00S	144.07.00E ✓	16.8
KI-12	39.44.10S	144.07.00E ✓	17.0
KI-13	39.44.20S	144.07.00E ✓	18.1
KI-14	39.44.30S	144.07.00E ✓	17.3
KI-15	39.44. <sup>3</sup> 26.2S ?	144.07.00E ✓	17.2

Latitude and longitude readings are in degrees, minutes, seconds and decimal points of a second.

Table KI-2Samples screened on 5mm screen and -5mm fraction assayed

Sample No.	Total mass of sample		Assays of -5mm fraction		
	g	% -5mm	Sn g/t	TiO <sub>2</sub> %	ZrO <sub>2</sub> %
KI- 1	1105.1	99.8	70	0.15	0.010
KI- 2	1118.5	99.9	< 30	0.09	0.005
KI- 3	1054.6	99.8	30	0.27	0.16 #
KI- 4	1097.8	100.0	70	0.04	0.001
KI- 5	1284.8	99.3	60	0.06	0.001
KI- 6	1152.5	94.0	< 30	0.08	0.014
KI- 7	1195.0	98.0	< 30	0.17	0.028
KI- 8	1174.2	99.2	< 30	0.14	0.024
KI- 9	1144.2	99.8	30	0.19	0.022
KI-10	1113.2	97.0	50	0.09	0.008
KI-11	1192.1	99.6	< 30	0.16	0.017
KI-12	1282.6	99.6	< 30	0.13	0.016
KI-13	1161.8	99.8	60	0.25	0.16 #
KI-14	1256.0	99.4	30	0.21	0.033
KI-15	1206.9	98.7	< 30	0.21	0.031

# Original faulty ZrO<sub>2</sub> assays

Table KI-3  
Calculated head assays

Sample No.	Calculated Head Assays			
	Sn g/t	WO <sub>3</sub> g/t	TiO <sub>2</sub> %	ZrO <sub>2</sub> %
KI- 1	70	< 10	0.15	0.010
KI- 2	< 30	10	0.09	0.005
KI- 3	30	10	0.27	0.16 #
KI- 4	70	< 10	0.04	0.001
KI- 5	60	10	0.06	0.001
KI- 6	< 28	< 9	0.08	0.013
KI- 7	< 29	< 10	0.17	0.027
KI- 8	< 30	10	0.14	0.024
KI- 9	30	< 10	0.19	0.022
KI-10	49	10	0.09	0.008
KI-11	< 30	10	0.16	0.017
KI-12	< 30	10	0.13	0.016
KI-13	60	10	0.25	0.16 #
KI-14	30	< 10	0.21	0.033
KI-15	< 30	< 10	0.21	0.031

# Original faulty ZrO<sub>2</sub> assays

Table KI-4Location of samples

Sample No.	Latitude	Longitude	Depth (m)
KI-16	39.50.01S	144.07.39.2E	4.0
KI-17	39.49.30S	144.07.47.9E	4.0
KI-18	39.49.00S	144.07.40E ✓	6.0
KI-19	39.48.30S	144.07.40E ✓	13.5
KI-20	39.47.59.2S	144.07.40.5E	15.8
KI-21	39.47.29.6S	144.07.29.3E ✓	15.8
KI-22	39.47.00S	144.07.40E ✓	17.4
KI-23	39.46.29.2S	144.07.40.3E ✓	17.8
KI-24	39.45.59.6S	144.07.40.3E ✓	19.3
KI-25	39.47.01.7S	144.07.59.6E ✓	18.2
KI-26	39.47.10.8S	144.07.59.5E ✓	17.6
KI-27	39.47.21.6S	144.08.00E ✓	16.6
KI-28	39.47. <sup>3</sup> <del>4</del> <sup>30.5</sup> 1.6S	144.07.58.4E ✓	17.0
KI-29	39.47.41.6S	144.08.01.3E ✓	16.7
KI-30	39.47.50.5S	144.08.00.1E ✓	15.5

Latitude and longitude readings are in degrees, minutes, seconds and decimal points of a second.

Table KI-5Samples screened on 5mm screen and -5mm fraction assayed

Sample No.	Total mass of sample		Assays of -5mm fraction		
	g	% -5mm	Sn g/t	TiO <sub>2</sub> %	ZrO <sub>2</sub> %
KI-16	1076.0	99.9	80	0.07	0.006
KI-17	970.3	100.0	60	0.23	0.023
KI-18	1226.8	100.0	100	0.11	0.010
KI-19	1042.1	100.0	100	0.26	0.025
KI-20	1088.8	100.0	90	0.26	0.015
KI-21	1194.9	99.9	< 30	0.38	0.060
KI-22	1108.0	98.4	50	0.71	0.194
KI-23	1304.6	92.1	110	0.03	< 0.001
KI-24	1099.6	98.9	60	0.28	0.062
KI-25	1230.6	99.9	40	0.19	0.037
KI-26	1202.0	93.2	60	0.13	0.014
KI-27	1392.4	91.5	30	0.28	0.071
KI-28	1191.3	97.8	50	0.44	0.138
KI-29	1094.1	99.9	< 30	0.13	0.033
KI-30	1458.4	97.0	< 30	0.09	0.021

Table KI-6  
Calculated head assays

Sample No.	Calculated Head Assays				
	Sn g/t	WO <sub>3</sub> g/t	TiO <sub>2</sub> %	ZrO <sub>2</sub> %	
KI-16	80	10	0.07	0.006	
KI-17	60	10	0.23	0.023	*
KI-18	100	< 10	0.11	0.010	*
KI-19	100	< 10	0.26	0.025	*
KI-20	90	10	0.26	0.015	*
KI-21	< 30	10	0.38	0.060	
KI-22	49	10	0.70	0.191	
KI-23	101	9	0.03	< 0.001	
KI-24	59	10	0.28	0.061	
KI-25	40	< 10	0.19	0.037	
KI-26	56	9	0.12	0.013	
KI-27	27	9	0.26	0.065	
KI-28	49	10	0.43	0.135	
KI-29	< 30	10	0.13	0.033	
KI-30	< 29	10	0.09	0.020	

\* Actual head assays

Table KI-7Location of samples

Sample No.	Latitude	Longitude	Depth (m)
KI- 31	39.44.20S	144.07.10E	19.0
KI- 32	39.44.30S	144.07.10E	19.0
KI- 33	39.44.40S	144.07.10E	18.8
KI- 34	39.44.50S	144.07.10E	20.0
KI- 35	39.45.00S	144.07.10E	17.5
KI- 36	39.45.10S	144.07.10E	19.0
KI- 37	39.45.20S	144.07.10E	18.0
KI- 38	39.45.30S	144.07.10E	17.5
KI- 39	39.43.10S	144.07.10E	19.8
KI- 40	39.43.20S	144.07.10E	20.4
KI- 41	39.43.30S	144.07.10E	18.6
KI- 42	39.43.40S	144.07.10E	18.2
KI- 43	39.43.50S	144.07.10E	17.9
KI- 44	39.44.00S	144.07.10E	17.8
KI- 45	39.44.10S	144.07.10E	18.6
KI- 46	39.44.20S	144.07.10E	18.0
KI- 47	39.48.38S	144.07.40E	11.0
KI- 48	39.48.46S	144.07.40E	10.0
KI- 49	39.48.54S	144.07.40E	5.0
KI- 50	39.48.30S	144.08.00E	12.5
KI- 51	39.48.38S	144.08.00E	11.3
KI- 52	39.48.46S	144.08.00E	11.0
KI- 53	39.48.56S	144.08.00E	10.0
KI- 54	39.49.00S	144.08.00E	9.5
KI- 55	39.47.00S	144.08.00E	17.1
KI- 56	39.47.10S	144.08.20E	17.0
KI- 57	39.47.20S	144.08.20E	16.4
KI- 58	39.47.30S	144.08.20E	16.2
KI- 59	39.47.40S	144.08.20E	16.0
KI- 60	39.47.50S	144.08.20E	15.4
KI- 61	39.48.00S	144.08.20E	15.0
KI- 62	39.43.00S	144.06.21E	4.4
KI- 63	39.43.30S	144.06.20E	5.1
KI- 64	39.44.00S	144.06.20E	5.6
KI- 65	39.44.30S	144.06.20E	5.6
KI- 66	39.45.00S	144.06.20E	6.0
KI- 67	39.45.30S	144.06.20E	5.0
KI- 68	39.46.00S	144.06.20E	4.0
KI- 69	39.43.00S	144.06.50E	16.6
KI- 70	39.43.30S	144.06.50E	15.8
KI- 71	39.44.00S	144.06.50E	15.4
KI- 72	39.44.30S	144.06.50E	15.8
KI- 73	39.45.00S	144.06.50E	14.3
KI- 74	39.45.30S	144.06.50E	13.7
KI- 75	39.46.00S	144.06.50E	12.2
KI- 76	39.46.00S	144.07.20E	17.9
KI- 77	39.46.00S	144.07.40E	18.1

Sample No.	Latitude	Longitude	Depth(m)
KI- 78	39.46.30S	144.07.40E	16.6
KI- 79	39.47.00S	144.07.40E	16.6
KI- 80	39.47.30S	144.07.40E	15.0
KI- 81	39.48.00S	144.07.40E	13.9
KI- 82	39.43.00S	144.08.00E	24.5
KI- 83	39.43.30S	144.07.40E	21.4
KI- 84	39.44.00S	144.08.00E	21.5
KI- 85	39.44.30S	144.07.40E	21.0
KI- 86	39.45.00S	144.08.00E	21.0
KI- 87	39.45.30S	144.07.40E	20.0
KI- 88	39.46.00S	144.08.00E	19.7
KI- A	39.48.05.2S	144.06.54.3E	4.0
KI- B	39.48.05.7S	144.07.05.2E	7.0
KI- C	39.48.05.5S	144.07.15E	10.0
KI- D	39.47.55S	144.07.15E	11.0
KI- E	39.47.55S	144.07.05E	6.3
KI- F	39.47.55S	144.06.55E	3.3

Latitude and longitude readings are in degrees, minutes, seconds and decimal points of a second.

Table KI-8Description of bottom

Sample No.	
KI- 31	Coarse gravel to 250mm then dark sand
KI- 32	Sand
KI- 33	Coarse gravel
KI- 34	Gravel and sand
KI- 35	Sand
KI- 36	Sand
KI- 37	300mm only - hit layer of shell
KI- 38	Ditto
KI- 39	Gravel and sand
KI- 40	Sand
KI- 41	Sand
KI- 42	Sand
KI- 43	Sand
KI- 44	Sand
KI- 45	Soft sand
KI- 46	Sand
KI- 47	Fine sand
KI- 48	Sand
KI- 49	Sand
KI- 50	Patches of reef
KI- 51	No sample - only reef
KI- 52	Sand
KI- 53	Sand
KI- 54	Sand
KI- 55	Sand
KI- 56	Sand
KI- 57	Sand
KI- 58	Sand
KI- 59	Sand
KI- 60	Sand
KI- 61	Sand
KI- 62	Sand
KI- 63	Sand
KI- 64	Sand
KI- 65	Sand
KI- 66	Sand
KI- 67	Sand
KI- 68	Sand
KI- 69	Sand
KI- 70	Sand
KI- 71	Sand
KI- 72	Sand
KI- 73	Sand
KI- 74	Sand
KI- 75	Sand
KI- 76	Gravel - hit shell at 350mm
KI- 77	Coarse sand

## Sample No.

KI- 78	Coarse sand
KI- 79	Coarse sand - bottom of core sample hard
KI- 80	Coarse sand
KI- 81	Coarse sand
KI- 82	Sand and gravel
KI- 83	Sand and gravel
KI- 84	Sand and gravel
KI- 85	Sand and gravel
KI- 86	Sand and gravel
KI- 87	Sand and gravel
KI- 88	Sand and gravel
KI- A	Fine sand
KI- B	Fine sand
KI- C	Fine sand
KI- D	Fine sand
KI- E	Fine sand
KI- F	Fine sand

Table KI-9

Sample No.	Sn g/t	Assays		
		TiO <sub>2</sub> %	ZrO <sub>2</sub> %	
KI-31	< 30	0.06	0.006	
KI-32	< 30	0.23	0.056	
KI-33	< 30	0.35	0.062	
KI-34	< 30	0.19	0.044	
KI-35	< 30	0.43	0.083	
KI-36	< 30	0.16	0.036	
KI-37	< 30	0.25	0.034	
KI-38	< 30	0.31	0.062	
KI-39	60	0.09	0.019	
KI-40	< 30	0.09	0.010	
KI-41	< 30	0.10	0.015	
KI-42	< 30	0.12	0.017	
KI-43	< 30	0.22	0.043	
KI-44	< 30	0.24	0.056	
KI-45	< 30	0.17	0.036	
KI-46	50	0.21	0.071	
KI-47	< 30	0.18	0.037	
KI-48	50	0.21	0.028	
KI-49	< 30	0.09	0.006	
KI-50	30	0.26	0.19	#
KI-51	No sample			
KI-52	< 30	0.16	0.015	
KI-53	< 30	0.17	0.017	
KI-54	< 30	0.15	0.012	
KI-55	< 30	0.13	0.031	
KI-56	< 30	0.12	0.028	
KI-57	< 30	0.09	0.018	
KI-58	< 30	0.11	0.035	
KI-59	< 30	0.13	0.18	#
KI-60	< 30	0.09	0.019	
KI-61	< 30	0.09	0.020	
KI-62	< 30	0.03	0.001	
KI-63	< 30	0.03	0.002	
KI-64	< 30	0.06	0.006	
KI-65	< 30	0.12	0.016	
KI-66	< 30	0.12	0.015	
KI-67	< 30	0.12	0.006	
KI-68	< 30	0.07	0.001	
KI-69	< 30	0.12	0.012	
KI-70	< 30	0.16	0.032	
KI-71	< 30	0.30	0.17	#
KI-72	< 30	0.15	0.026	
KI-73	< 30	0.67	0.156	
KI-74	< 30	0.20	0.031	
KI-75	< 30	0.33	0.065	
KI-76	< 30	0.20	0.046	
KI-77	< 30	0.56	0.22	#

Sample No.	Sn g/t	Assays	
		TiO <sub>2</sub> %	ZrO <sub>2</sub> %
KI-78	< 30	0.26	0.058
KI-79	< 30	0.30	0.053
KI-80	< 30	0.25	0.066
KI-81	30	0.41	0.149
KI-82	70	0.10	0.002
KI-83	< 30	0.18	0.021
KI-84	50	0.12	0.019
KI-85	< 30	0.24	0.046
KI-86	< 30	0.23	0.048
KI-87	< 30	0.20	0.042
KI-88	< 30	0.22	0.081
KI- A	< 30	0.14	0.012
KI- B	40	0.13	0.010
KI- C	< 30	1.29	0.409
KI- D	< 30	0.56	0.114
KI- E	30	0.12	0.007
KI- F	< 30	0.19	0.031

# Original faulty ZrO<sub>2</sub> assays

Table KI-10Location of samples*Sampling complete  
7/2/50*

Site No.	Latitude	Longitude
KI- 101	39.43.00S	144.06.40E
KI- 102	39.43.00S	144.07.10E
No samples	39.43.00S	144.07.20E
No samples	39.43.00S	144.07.30E
KI- 103	39.43.00S	144.07.40E
KI- 104	39.43.00S	144.07.50E
KI- 105	39.43.00S	144.08.10E
KI- 106	39.43.00S	144.08.20E
KI- 107	39.43.00S	144.08.30E
KI- 108	39.43.30S	144.06.30E
KI- 109	39.43.30S	144.06.40E
KI- 110	39.43.30S	144.07.20E
KI- 111	39.43.30S	144.07.30E
KI- 112	39.43.30S	144.07.50E
KI- 113	39.43.30S	144.08.00E
KI- 114	39.43.30S	144.08.10E
KI- 115	39.43.30S	144.08.20E
KI- 116	39.43.30S	144.08.30E
KI- 117	39.44.00S	144.06.40E
KI- 118	39.44.00S	144.07.20E
KI- 119	39.44.00S	144.07.30E
KI- 120	39.44.00S	144.07.40E
KI- 121	39.44.00S	144.07.50E
KI- 122	39.44.00S	144.08.10E
KI- 123	39.44.00S	144.08.20E
KI- 124	39.44.30S	144.06.30E
KI- 125	39.44.30S	144.06.40E
KI- 126	39.44.30S	144.07.20E
KI- 127	39.44.30S	144.07.30E
KI- 128	39.44.30S	144.07.50E
KI- 129	39.44.30S	144.08.00E
KI- 130	39.44.30S	144.08.10E
KI- 131	39.44.30S	144.08.20E
KI- 132	39.45.00S	144.06.40E
KI- 133	39.45.00S	144.07.00E
KI- 134	39.45.00S	144.07.20E
KI- 135	39.45.00S	144.07.30E
KI- 136	39.45.00S	144.07.40E
KI- 137	39.45.00S	144.07.50E
KI- 138	39.45.00S	144.08.10E
KI- 139	39.45.00S	144.08.20E
KI- 140	39.47.30S	144.08.40E
KI- 141	39.47.30S	144.09.00E
KI- 142	39.47.30S	144.09.20E
KI- 143	39.47.30S	144.09.40E
KI- 144	39.47.30S	144.10.00E
KI- 145	39.47.30S	144.10.20E

Site No.	Latitude	Longitude
KI- 146	39.48.00S	144.08.00E
KI- 147	39.48.00S	144.08.40E
KI- 148	39.48.00S	144.09.00E
KI- 149	39.48.00S	144.09.20E
KI- 150	39.48.00S	144.09.40E
KI- 151	39.48.00S	144.10.00E
KI- 152	39.48.00S	144.10.20E
KI- 153	39.48.30S	144.08.20E
KI- 154	39.48.30S	144.08.40E
KI- 155	39.48.30S	144.09.00E
KI- 156	39.48.30S	144.09.20E
KI- 157	39.48.30S	144.09.40E
KI- 158	39.48.30S	144.10.00E

Latitude and longitude readings are in degrees, minutes,  
and seconds.

Table KI-12

Sample No.	Sn g/t	Assays		#
		TiO <sub>2</sub> %	ZrO <sub>2</sub> %	
KI-101 B	< 30	0.10	0.16	#
KI-101 T	< 30	0.13	0.020	
KI-102 T	< 30	0.34	0.012	
KI-103 B	< 30	0.05	0.005	
KI-103 T	30	0.06	0.002	
KI-104 B	50	0.10	0.19	#
KI-104 T	60	0.10	0.016	
KI-105 B	60	0.09	0.20	#
KI-105 T	30	0.11	0.18	#
KI-106 B	60	0.10	0.19	#
KI-106 T	90	0.10	0.011	
KI-107 B	100	0.14	0.20	#
KI-107 T	100	0.16	0.20	#
KI-108 B	< 30	0.11	0.17	#
KI-108 T	< 30	0.30	0.21	#
KI-109 B	30	0.06	0.18	#
KI-109 T	< 30	0.05	< 0.001	
KI-110 B	< 30	0.08	0.20	#
KI-110 T	< 30	0.08	0.009	
KI-111 B	< 30	0.06	0.17	#
KI-111 T	< 30	0.09	0.015	
KI-112 B	< 30	0.10	0.16	#
KI-112 T	< 30	0.12	0.017	
KI-113 B	< 30	0.06	0.17	#
KI-113 T	< 30	0.08	0.011	
KI-114 B	60	0.07	0.18	#
KI-114 T	< 30	0.08	0.006	
KI-115 B	60	0.07	0.18	#
KI-115 T	30	0.09	0.008	
KI-116 B	50	0.11	0.18	#
KI-116 T	40	0.11	0.010	
KI-117 B	< 30	0.24	0.18	#
KI-117 T	< 30	0.22	0.18	#
KI-118 B	< 30	0.16	0.17	#
KI-118 T	< 30	0.4717	0.029	
KI-119 B	< 30	0.13	0.12	#
KI-119 T	< 30	0.16	0.033	
KI-120 B	< 30	0.14	0.16	#
KI-120 T	< 30	0.16	0.019	
KI-121 B	< 30	0.15	0.15	#
KI-121 T	< 30	0.16	0.025	
KI-122 B	< 30	0.10	0.15	#
KI-122 T	< 30	0.10	0.015	
KI-123 B	60	0.08	0.16	#
KI-123 T	< 30	0.11	0.016	
KI-124 B	< 30	0.14	0.18	#
KI-124 T	< 30	0.09	0.006	

Sample No.	Sn g/t	Assays		#
		TiO2%	ZrO2%	
KI-125 B	< 30	0.06	0.18	#
KI-125 T	< 30	0.15	0.027	
KI-126 B	< 30	0.26	0.15	#
KI-126 T	< 30	0.31	0.070	
KI-127 B	< 30	0.31	0.19	#
KI-127 T	< 30	0.38	0.098	
KI-128 B	< 30	0.20	0.14	#
KI-128 T	< 30	0.22	0.041	
KI-129 B	< 30	0.05	0.18	#
KI-129 T	50	0.06	0.022	
KI-130 B	< 30	0.21	0.17	#
KI-130 T	< 30	0.25	0.040	
KI-131 B	30	0.11	0.19	#
KI-131 T	< 30	0.11	0.017	
KI-132 B	< 30	0.07	0.19	#
KI-132 T	< 30	0.10	0.021	
KI-133 B	< 30	0.21	0.16	#
KI-133 T	< 30	0.23	0.086	
KI-134 B	< 30	0.06	0.14	#
KI-134 T	< 30	0.08	0.011	
KI-135 B	< 30	0.05	0.14	#
KI-135 T	< 30	0.21	0.040	
KI-136 B	< 30	0.27	0.18	#
KI-136 T	< 30	0.46	0.19	#
KI-137 T	< 30	0.14	0.053	
KI-138 B	< 30	0.11	0.19	#
KI-138 T	< 30	0.10	0.026	
KI-139 B	< 30	0.24	0.20	#
KI-139 T	< 30	0.26	0.067	
KI-140 B	< 30	0.07	0.16	#
KI-140 T	< 30	0.07	0.013	
KI-141 B	< 30	0.13	0.17	#
KI-141 T	< 30	0.13	0.046	
KI-142 B	< 30	0.10	0.15	#
KI-142 T	< 30	0.08	0.001	
KI-143 B	< 30	0.03	0.15	#
KI-143 T	< 30	0.05	0.004	
KI-144 T	< 30	0.02	0.14	#
KI-145 T	60	0.05	0.001	
KI-146 B	< 30	0.14	0.15	#
KI-146 T	< 30	0.13	0.035	
KI-147 B	< 30	0.23	0.16	#
KI-147 T	< 30	0.18	0.046	
KI-148 B	< 30	0.22	0.13	#
KI-148 T	< 30	0.11	0.030	
KI-149 B	< 30	0.15	0.16	#
KI-149 T	< 30	0.12	0.013	
KI-150 B	< 30	0.27	0.19	#
KI-150 T	< 30	0.15	0.17	#

Sample No.	Sn g/t	Assays		#
		TiO2%	ZrO2%	
KI-151 B	< 30	0.07	0.18	#
KI-151 T	< 30	0.04	0.006	
KI-152 T	< 30	0.03	< 0.001	
KI-153 B	< 30	0.04	0.14	#
KI-153 T	< 30	0.05	< 0.003	
KI-154 B	< 30	0.06	0.14	#
KI-154 T	< 30	0.07	0.040	
KI-155 B	< 30	0.06	0.14	#
KI-155 T	< 30	0.08	0.010	
KI-156 B	< 30	0.05	0.14	#
KI-156 T	< 30	0.07	0.013	
KI-157 B	< 30	0.09	0.15	#
KI-157 T	< 30	0.07	0.007	
KI-158 B	< 30	0.05	0.17	#
KI-158 T	< 30	0.04	0.001	
Councillor Island	< 30	* 0.39	0.18	#

# Original faulty assays

Table KI-13

Location of samples

Site No.	Latitude	Longitude	Depth(m)	Bottom
KI- 159	39.44.50S	144.07.40E	20.0	Coarse sand
KI- 160	39.44.50S	144.06.50E	15.5	Scattered reef, coarse grit
KI- 161	39.44.40S	144.07.00E	16.0	Coarse grit
KI- 162	39.44.40S	144.07.20E	18.0	Coarse grit
KI- 163	39.44.40S	144.07.30E	18.7	Coarse grit
KI- 164	39.46.50S	144.07.40E	17.0	Coarse sand
KI- 165	39.47.00S	144.07.50E	17.4	Coarse sand
KI- 166	39.47.00S	144.07.30E	16.4	Coarse sand
KI- 167	39.46.10S	144.07.40E	18.0	Coarse sand
KI- 168	39.46.00S	144.07.50E	19.2	Coarse sand
KI- 169	39.46.00S	144.07.30E	17.8	Coarse sand
KI- 170	39.45.50S	144.07.40E	17.0	Coarse sand
KI- 171	39.45.40S	144.07.10E	16.6	Coarse sand
KI- 172	39.45.30S	144.07.20E	17.8	Coarse sand
KI- 173	39.45.30S	144.07.00E	15.5	Coarse sand
KI- 174	39.45.10S	144.07.40E	20.6	Coarse sand
KI- 175	39.45.10S	144.06.50E	15.3	Coarse sand
KI- 176	39.44.20S	144.07.20E	18.7	Coarse sand
KI- 177	39.44.30S	144.07.20E	19.3	Coarse sand
KI- 178	39.44.10S	144.07.10E	18.4	Coarse sand
KI- 179	39.44.10S	144.06.50E	15.3	Coarse sand
KI- 180	39.44.10S	144.06.30E	9.6	Fine sand
KI- 181	39.43.50S	144.07.20E	18.7	Coarse sand
KI- 182	39.43.50S	144.06.50E	14.8	Coarse sand
KI- 183	39.43.50S	144.06.20E	5.4	Fine sand
KI- 184	39.43.40S	144.06.20E	5.1	Fine sand
KI- 185	39.43.20S	144.06.20E	4.6	Fine sand
KI- 186	39.47.10S	144.07.40E	17.9	Coarse sand
KI- 187	39.47.50S	144.07.40E	15.5	Coarse sand
KI- 188	39.48.00S	144.07.50E	15.0	Coarse sand
KI- 189	39.48.10S	144.07.40E	14.8	Coarse sand
KI- 190	39.48.20S	144.07.40E	13.4	Coarse sand
KI- 191	39.48.30S	144.07.50E	12.6	Coarse sand
KI- 192	39.49.00S	144.07.50E	11.5	Reef
KI- 193	39.49.10S	144.07.40E	10.0	Reef

Latitude and longitude readings are in degrees, minutes, and seconds.

Table KI-14

Sample No.	Sn g/t	Assays		Core Recovery %	Depth m
		TiO <sub>2</sub> %	ZrO <sub>2</sub> %		
KI-159	< 30	0.24	0.048	83.3	0.58
KI-160	< 30	0.12	0.022	89.0	0.62
KI-161	< 30	0.34	0.098	95.2	0.66
KI-162	< 30	0.44	0.130	95.0	0.66
KI-163	< 30	0.31	0.059	82.4	0.57
KI-164	< 30	0.24	0.054	34.8	0.24
KI-165	< 30	0.24	0.055	88.9	0.62
KI-166	< 30	0.56	0.170	83.3	0.58
KI-167	< 30	0.28	0.098	74.8	0.52
KI-168	30	0.14	0.032	67.5	0.47
KI-169	< 30	0.31	0.031	89.1	0.62
KI-170	< 30	0.23	0.076	86.7	0.60
KI-171	< 30	0.40	0.140	63.1	0.44
KI-172	< 30	0.21	0.072	82.5	0.57
KI-173	< 30	0.25	0.093	98.6	0.69
KI-174	< 30	0.03	< 0.01	88.1	0.61
KI-175	< 30	0.16	0.052	93.7	0.65
KI-176	< 30	0.21	0.052	81.5	0.57
KI-177	< 30	0.09	0.055	71.1	0.50
KI-178	< 30	0.15	0.017	81.5	0.57
KI-179	< 30	0.15	0.033	65.6	0.46
KI-180	80	0.12	0.042	69.3	0.48
KI-181	< 30	0.09	0.024	95.8	0.67
KI-182	< 30	0.37	0.099	74.2	0.52
KI-183	< 30	0.13	< 0.01	77.9	0.54
KI-184	< 30	0.09	0.013	66.6	0.46
KI-185	< 30	0.10	0.018	79.5	0.55
KI-186	< 30	0.11	0.036	99.4	0.69
KI-187	< 30	0.13	0.028	84.0	0.59
KI-188	< 30	0.13	0.043	96.4	0.67
KI-189	< 30	0.09	0.023	102.8	0.70
KI-190	< 30	0.11	0.019	107.1	0.70
KI-191	< 30	0.09	0.013	105.1	0.70

