

99-4338

587001

ANNUAL REPORT-EL19/93 & T-2 MEL
RINGAROOMA BAY-MINERAL HOLDINGS
D MCP DUNCAN

EXPLORATION LICENCES

EL 19/93 & T-2-MEL

RINGAROOMA BAY, TASMANIA

MICROFILMED
FICHE No.014988-89

SEARCHED	INDEXED
SERIALIZED	FILED
20 MAY 1999	
FBI - MELB	
See EL19/93 Folio 39	
See T2/MEL Folio 24.	

ANNUAL REPORT ON EXPLORATION
MAY 1998 TO APRIL 1999

*1 copy sent to
Commonwealth.*

99-4338

ANNUAL REPORT-EL19/93 & T-2 MEL
RINGAROOMA BAY-MINERAL HOLDINGS
D MCP DUNCAN

for
Mineral Holdings Australia Pty Ltd
2nd Floor,
135, Collins St.,
Melbourne Vic 3000

Compiled by

D. McP Duncan &
McPherson Duncan & Associates
18, Old Summerleas Rd
Kingston Tas 7050

L. Rhodes
Consulting Metallurgist
PO Box 154
St Marys Tas 7215

20th May 1999

TABLE OF CONTENTS

	Page No
1.0 INTRODUCTION.....	3
2.0 PREVIOUS EXPLORATION.....	3
3.0 CURRENT EXPLORATION.....	5
4.0 RESULTS.....	5
5.0 INTERPRETATION.....	6
6.0 CONCLUSIONS.....	7
7.0 FUTURE PROGRAM.....	8
REFERENCES.....	9

Plan 1- Locality Map and Mineral Tenements, Ringarooma Bay

Plan 2- Map of Alluvial Tin Resources, Ringarooma Bay

Plan 3- Tin Values in Sediments (Palaeochannel), Ringarooma Bay

Plan 4- Tin Values in Sediments (Plateau), Ringarooma Bay

Plan 5- TiO₂ Values in Sediments (Old Shoreline), Ringarooma Bay

Plan 6- Drill Holes in Ringarooma Bay by Ocean Mining and BHP-Utah

Table 30- Possible Bulk Sample Sites, Ringarooma Bay

Appendix

ELS 19/93 & T-2-MEL - Ringarooma Bay- Annual Report

1.0 Introduction

EL 19/93 was granted to Mineral Holdings Australia Pty Ltd on 28th April 1997 for a maximum of 5 years to 4th April 2002 over an area of 18sq km at Ringarooma Bay to cover the extension into State Waters of the tin-bearing palaeochannel of the Ringarooma River.

Subsequently, two adjacent ELS were applied for to secure additional areas-landwards and seawards- of potential for alluvial tin. T-2-MEL was applied for on 19th May 1997 covering some 48 sq km in Commonwealth Waters under the Offshore Minerals Act 1994 and was granted for four years from 30th March 1998.

EL 20/97 was applied for on 20th May 1997 to secure the extensions of the palaeochannel both offshore around EL 19/93 and T-2-MEL and onshore to connect up with the Retention Licences 8715 and 8723 at Fosters Marshes and to cover the Bowlers Lagoon area suspected of concealing a former branch of the Ringarooma River. On granting on 20th January 1998, EL 20/97 was amalgamated into EL 19/93 to give a combined area of 52 sq km expiring on 4th April 2002 (Plan 1).

These licences held by Mineral Holdings Australia Pty Ltd consolidate the potential alluvial tin resources in the Ringarooma Bay region both onshore and offshore and allow exploration to proceed in a coherent manner with subsequent economies of scale.

2.0 Previous Exploration

The Ringarooma Tin Project of Mineral Holdings Australia Pty Ltd consists of the tin-bearing palaeochannel of the Ringarooma River in NE Tasmania. Previous exploration as summarised by MacArthur (1995) has shown that the onshore and offshore components of the channel contain indicated resources of 109M cu m at 64g tin/ cu m and 16M cu m at 227g tin/ cu m respectively. In total offshore, there is an inferred resource of 130M cu m of potential tin wash (Plan 2).

Additional values of minerals in the wash offshore include rutile and zircon averaging 55 g/cu m and 110 g/cu m respectively. Ilmenite is expected to be at similar concentrations as zircon. Gold has been recovered from the wash onshore by the Dorset Dredge at 3 mg/cu m while a composite sample from one onshore drill hole assayed 6 mg/ cu m. Monazite(rare earths) and sapphire are present but remain unquantified.

Historically since the 1870s, the Ringarooma catchment has produced over 40,000 tonnes of tin from onshore alluvial mines at Aberfoyle, Pioneer, Endurance and Briseis.

The onshore resource is currently held by MHA under Retention Licences 8715 (6 sq km) and 8723 (7 sq km) and the offshore resource by the same company under

Exploration Licences EL19/93 and T-2-MEL. The extension of the palaeochannel and associated structures into Commonwealth Waters contains the bulk of the known tin resources.

While awaiting the availability of a suitable dredge to carry out a bulk sampling program in 1998, Mineral Holdings 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; Berkeley Dilworth, Bridport 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 1-144) and latterly using a 0.75m long bait pump for greater depth penetration of up to 0.60m (samples 124-144 and 228- 285) collecting up to 1.44kg. Samples 124 to 144 were taken by both methods as a comparison. There are gaps in the sample number sequence with 133, 134, 145-227 and 279 not being used.

Samples were initially on 250-300m centres chosen at random but more recently on east-west lines 1km apart with samples every 500m closing to 250m over target areas like palaeochannels or depot centres. At each sample site, GPS location was recorded along with water depth and an estimate of the grainsize of the sample (see Appendix).

Sea bed outcrops, vegetation and sediment structures (ripples, scours, etc) were also routinely recorded where present from sample 228 onwards.

The samples were passed through a 5mm screen to remove pebbles or shell fragments and the resulting fine fraction analysed for tin, titanium and zirconium 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.

Two modifications are necessary to the results presented in the annual report of last year. The zircon results are too high due to analytical error and some of the seabed samples are plotted in the wrong position due to a systematic misreading of the seaborne GPS.

Ten seabed samples of sand already analysed by Temco from Ringarooma Bay and King Island were sent to Amdel for comparison in Sn, TiO₂ and ZrO₂. 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 and reanalysing sample splits to produce much more sensitive zircon numbers particularly at low concentrations. These results are presented in Tables 1-24 except where no residual sample was left for reanalysis. The samples 135-144 (Tables 25-27) and 228-285 (Tables 28,29) have still to be reanalysed.

The error in seabed plotting was due to the diver misreading the GPS output as minutes and seconds rather than what they actually were- minutes and decimals of a minute. This has marginally affected the position of the samples 228 to 285. The new positions are as plotted on the maps.

3.0 Current Exploration

Exploration in the current year has consisted of a continuation of the previous seabed sampling program to detect concentrations of heavy minerals at or near the present seabed surface. In total, an additional 103 samples have been taken by bait pump to ensure further coverage of the palaeochannel and the old shoreline prospect particularly in areas which returned elevated values in the previous year. In addition, some samples were taken and the seabed inspected at the eight potential bulk sampling sites. Partly because of the misread GPS, the sampling positions were not in the optimum desired locations and the coverage remains incomplete.

Also, during this year, the more important data of previous exploration companies has been captured on an Arc View GIS. All off-shore drill holes and assays, sediment depths and water depths have been entered from previous drilling by Ocean Resources and BHP- Utah in Ringarooma Bay during the 1960s (Plan 6). This program will continue and be extended to the seabed sampling by Mineral Holdings.

Mineralogical studies to determine the amount of uranium and thorium in ilmenite, rutile, zircon and cassiterite were carried out by Amdel. These studies have been performed on a concentrate from the Great Northern Plains area and are being reported in the renewal application for RLs 8715 and 8723 but as they have implications for Ringarooma Bay they are mentioned here.

4.0 Results

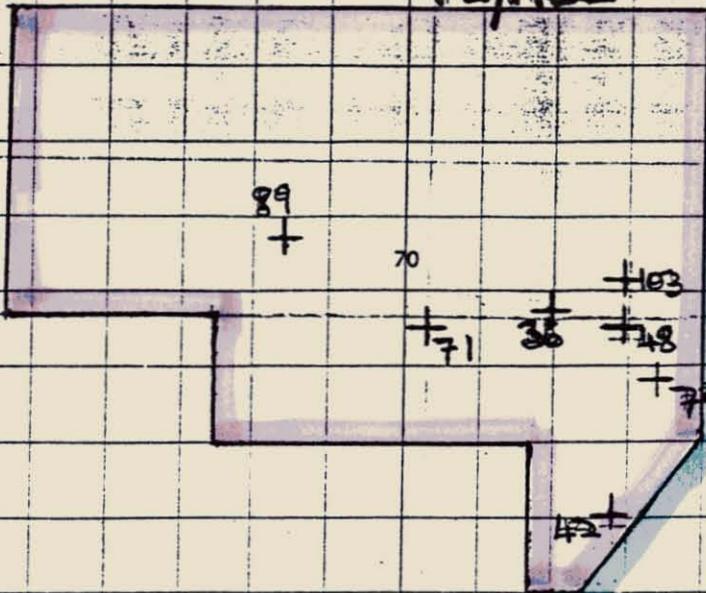
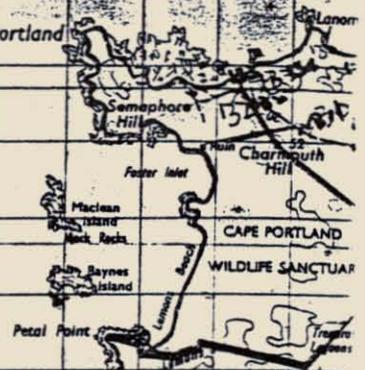
The results are presented in Tables 1-47 in the Appendix and plotted on Plans 3-5 where they are colour-coded to reflect the various concentration classes of heavy minerals. Tin is expressed in plans 3 and 4 and Ti O₂ in plan 5.

Tin concentrations reach up to 694 g/t in one sample with 3 (1%) between 300 and 400 g/t, 14 (5%) between 200 and 300 g/t, 71 (24%) between 100 and 200 g/t, 49 (17%) between 50 and 100 g/t and 157 (53%) less than 50 g/t over a total of 295 samples. The combined samples (jar and pump) define an area of 4 sq km of greater than 100 g/t tin sitting over the palaeochannel and extending to the west (Plan 3). Within that outline there is a smaller hot spot at greater than 200 g/t Sn near 147deg 52mins E and 40deg 49.5mins S. Other spots showing minor clustering of samples over 100 g/t tin are poorly defined. One is closer inshore near the present mouth of the Ringarooma River at 147deg 52.5mins E and 40deg 51.5mins S (Plan 3) and the other is further offshore where the plateau meets the palaeochannel at 147deg 52mins E and 40deg 47mins S (Plan 4).

The TiO₂ concentrations reach up to 2.08% in one sample with 3 (1%) between 0.6 and 1.2%, 16 (5.5%) between 0.3 and 0.6% and 275 (93%) less than 0.3%. They are more sporadic than tin with a tendency to cluster at the hot spot mentioned above but find their best expression in a zone at least 2km long parallel and adjacent to the coastline as defined by the greater than 0.3 % contour (Plan 5).

T2/MEL

Cape Portland



19/93

EL 19/93

+2

R I N G A R O O M A B A Y

SCOTTSDALE
RINGAROOMA

Tomahawk Island
Tomahawk Point

5 cm

RL 8715

RL 8723

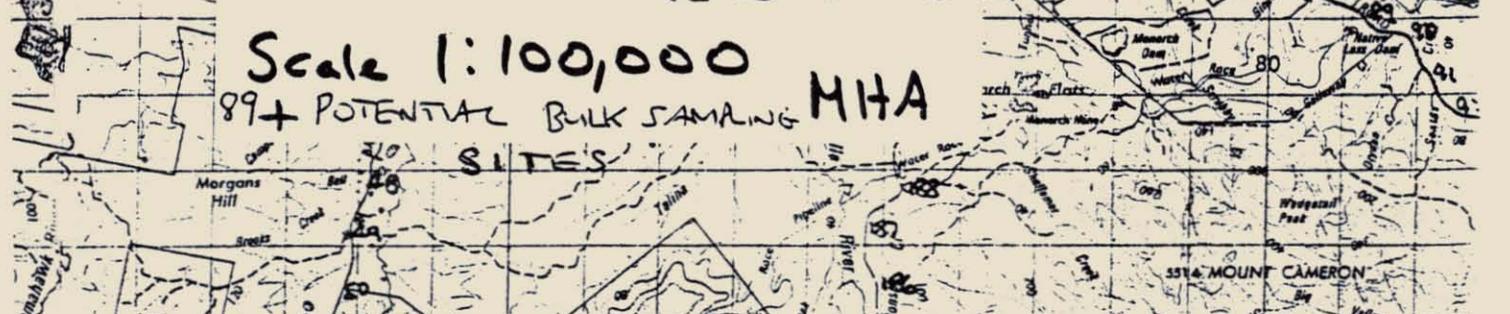
EL 38/97

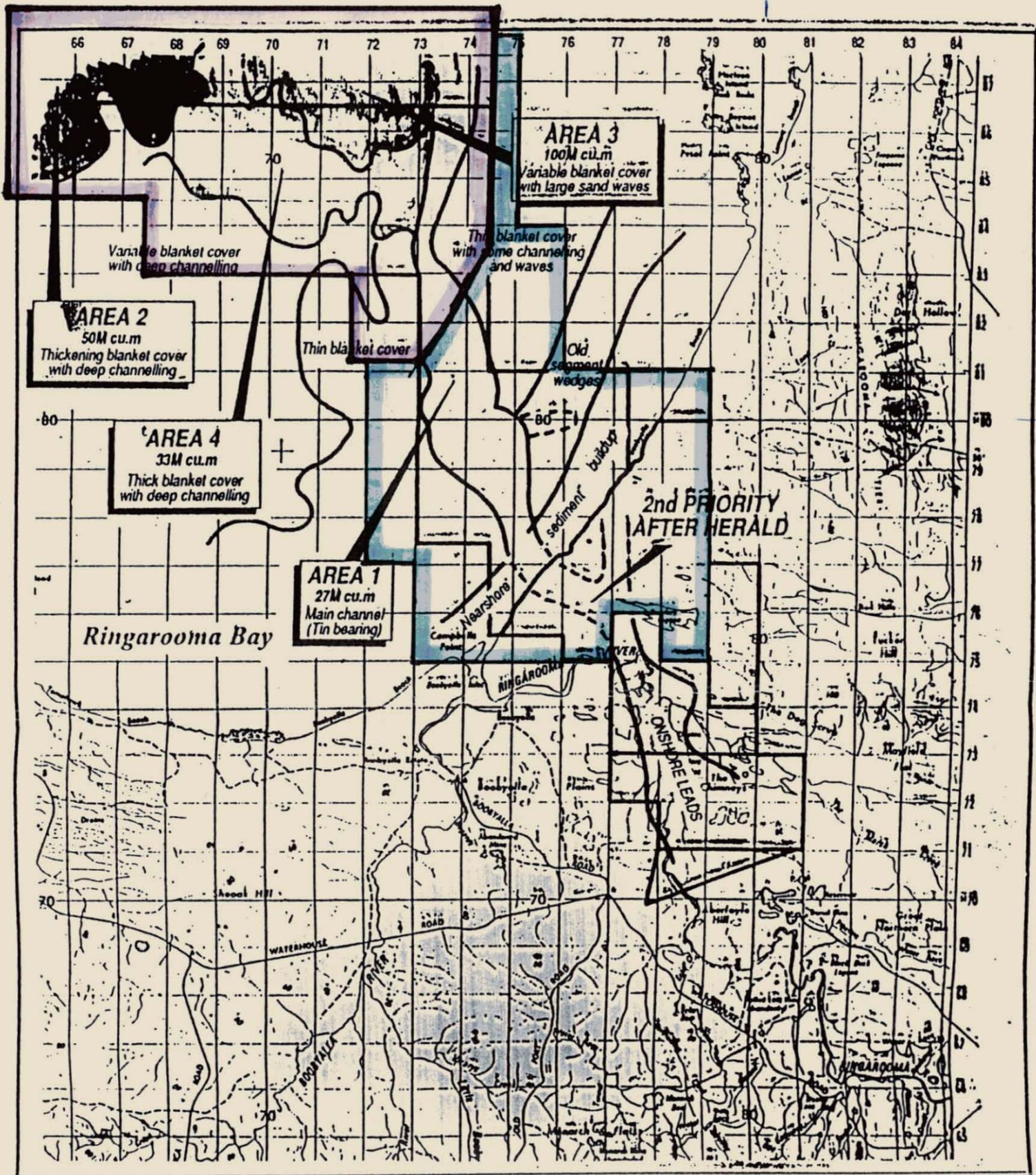
PLAN 1. MINERAL TENEMENTS

Scale 1:100,000

89+ POTENTIAL BULK SAMPLING SITES MHA

SITES





Scale 1:100,000

EL19/93

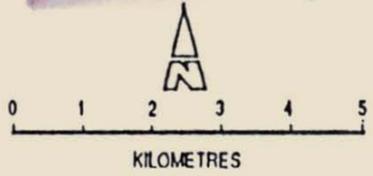
PLAN 2



T2-MEL

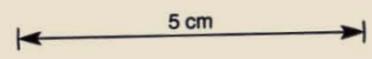
THE RINGAROOMA ALLUVIAL TIN PROPERTY
OFFSHORE TARGET ZONES

Figure 2

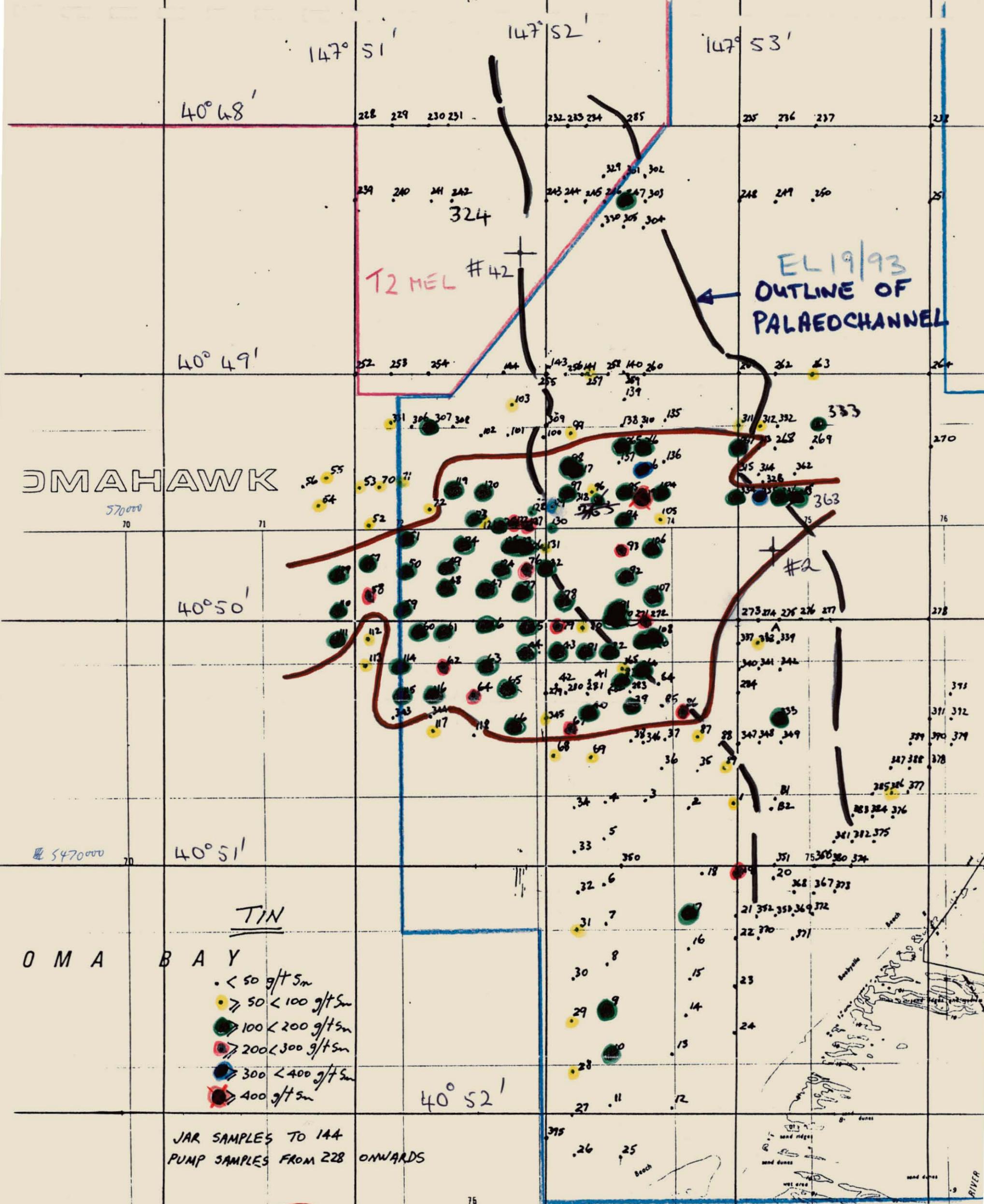


Compiled by: N. MacArthur
Drawn by: Roz Davies

Date: July, 1994



587007



OMAHAWK

570000

70

71

40°50'

40°51'

5470000

70

OMABAY

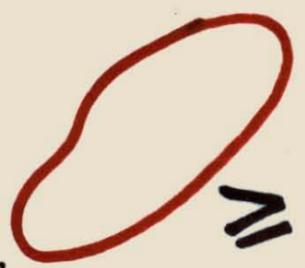
OMABAY

TIN

- < 50 g/t Sn
- ≥ 50 < 100 g/t Sn
- ≥ 100 < 200 g/t Sn
- ≥ 200 < 300 g/t Sn
- ≥ 300 < 400 g/t Sn
- ≥ 400 g/t Sn

JAR SAMPLES TO 144
PUMP SAMPLES FROM 228 ONWARDS

40°52'



≥ 100 g/t Sn
contour

PLAN 3
Scale 1:25,000

587008

5 cm

PLATEAU

PLAN 4

Scale
1:25,000

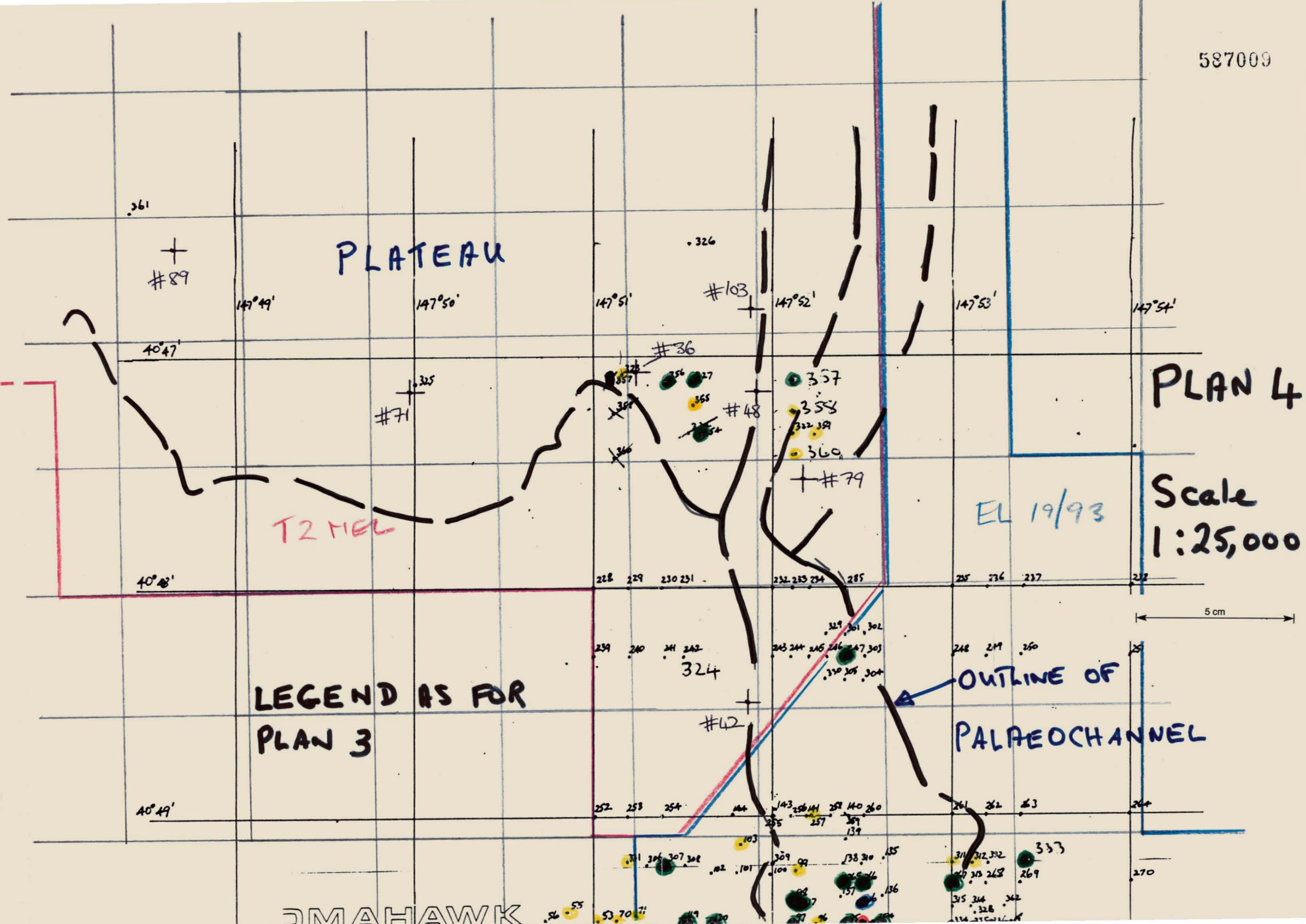
EL 19/93

T2 MEL

LEGEND AS FOR
PLAN 3

OUTLINE OF
PALAEOCHANNEL

5 cm



587010

147°50'

40°50'

40°51'

40°52'

147°52'

147°54'

R O O M A B A Y

EL 19/93

OLD SHORELINE

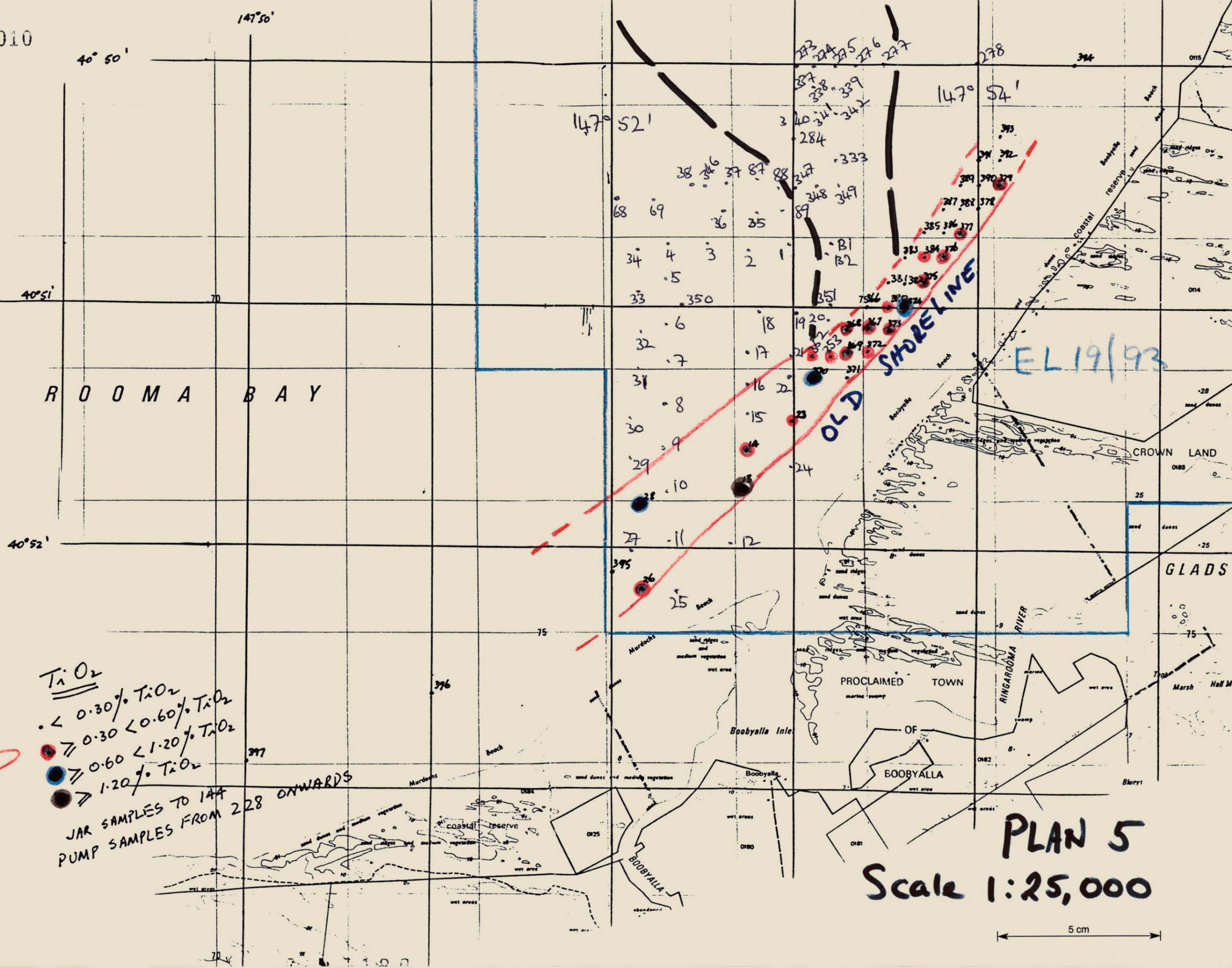
TiO₂

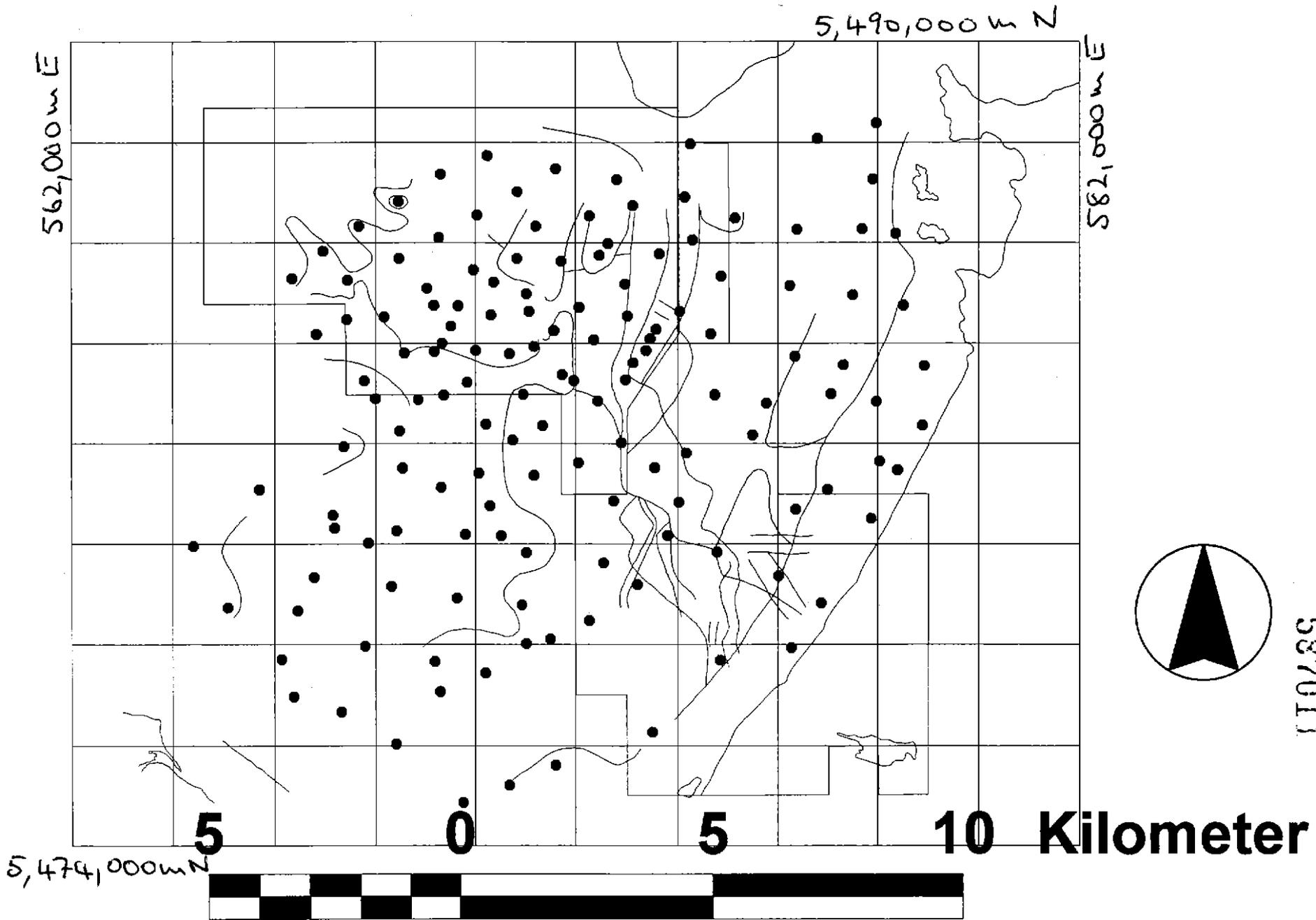
- < 0.30% TiO₂
- ≥ 0.30 < 0.60% TiO₂
- ≥ 0.60 < 1.20% TiO₂
- ≥ 1.20% TiO₂

JAR SAMPLES TO 144
PUMP SAMPLES FROM 228 ONWARDS

PLAN 5
Scale 1:25,000

5 cm





5 cm

Drill Holes in Ringarooma Bay- PLAN 6

The highest tin samples tend to be different from the highest TiO₂ samples apart from samples 129-1 and 272 which are highest in both categories.

The highest ZrO₂ result is 0.19% with 6 (3%) above 0.06%, 11 (5%) between 0.03 and 0.06%, 113 (55%) between 0.01 and 0.03% and 73 (36%) less than 0.01% over the 204 samples for which zircon results are available. There is a marked tendency for elevated zircon values to be associated with elevated TiO₂ values particularly in the zone adjacent to the coastline.

5. Interpretation

Grab sampling by abalone divers of active seabed sediments has outlined a 4sq km area of greater than 100g/t Sn (and up to 694g/t) centred on 147deg 52mins E and 40deg 50mins S and called the "**Palaeochannel Prospect**". The area outlined sits on the interpreted palaeochannel and also extends to the west into a region not previously considered prospective.

The presence of resource grade material on the seafloor could have been expected in the palaeochannel but was not anticipated in an area considered unprospective by previous explorers on the basis of sparse scout drilling with holes (eg #1, #44 and #51) about 1.5km apart. These holes recorded up to 38g/t Sn in the top metre but did not sustain that grade in depth. Therefore these surface results cannot be taken as proof of significant tin grades at depth in the sediments without further drilling to basement in these areas. The possibility of dispersion of tin from the palaeochannel and surface enrichment of values in adjacent areas by undersea currents or wave action has been mentioned in previous reports. The possible dispersion of tin to the west of the palaeochannel is unexpected considering that the onshore drift is presumably west to east so some other factor may be operating such as eddy currents.

The grab sampling program is not effective in defining the rest of the palaeochannel to the north or south although coverage remains incomplete. Not all of the drill holes in the palaeochannel have values greater than 50g/t Sn in the top metre but values increase at depth. Within the palaeochannel and associated plateau, the best tin grades occur in the top 5m of the sediments often outcropping on the seafloor as defined by the 138 drill holes completed by Ocean Mining in 1967 (Plan 6). The holes were mostly 7-800m apart although some were as close as 200m. Mostly, the values die off at depths but there are a few cases where the highest values lie on the bedrock of the channel although this is not reached on every occasion.

The palaeochannel may only be stripped in the area of the grab sample high with covering sediment wedges to the south towards present shore line and thin barren sediment veneers to the north. The grab sample high sits over the break of slope at the start of the plateau in the present day seabed at 25m water depth.

The TiO₂ zone now referred to as the "**Old Shoreline Prospect**" lies inshore at about 15m water depth and has been extended by the recent sampling to 4km in strike length and 500m in width. The zone may be subject to reworking and concentrating in a bar parallel to shore with heavy minerals being added in the present sediment buildup. This corresponds with the toe of a near shore sediment wedge interpreted by BHP-Utah

who drilled 15 holes in the wedge from just west of the Ringarooma River mouth to Petal Point some 10km NE along the coast (Volker, 1968).

These holes record sediment thicknesses from 6m in the SW increasing progressively to 15m in the NE and most of the holes did not find bedrock apart from the two westernmost holes which had no sediment cover at all. The samples were analysed for tin only and the maximum value found was 33.4 g/t. From the drilling, the best tin values although low are to be found most often in the last drill interval of the sediments (although this may be an artefact of the drill method). A composite sample was analysed for Ti and Zr from 5 holes but in the absence of details on the compositing scheme it is not possible to calculate meaningful head grades.

The hope for this prospect is that reworking has gone on when sea level was lower and that the progressive rise in sea level has produced a considerable thickness of mineralisation.

The location of bodies of offshore heavy minerals in these prospects can only be resolved by geophysics and drilling.

6. Conclusions

The grab sampling program has outlined part of the palaeochannel prospect and revealed unexpected resource grade tin in seabed sediments in an area adjacent and to the west which was previously considered unprospective. No additional figures can be added to the resource inventory until a drilling program has confirmed appropriate grades to basement. Because of the small grab sample size, these tin contents are indications only rather than contributing to resource figures. For the same reason, the possible increase of tin values with depth as seen in the pump sampling may not be significant.

The program has not picked up the full extent of the palaeochannel to the north and south but total coverage has not yet been achieved partly because of GPS reading errors.

However, finding any tin values in the sediments at all is an encouraging sign with the possibility that somewhere in the sediment column a concentrating mechanism will have produced exploitable resource values. The higher tin values are found with the coarse sand and gravel rather than the finer grained sediments.

The old shoreline prospect has been extended to 4km in strike as defined by the > 0.3 and $< 1.2\%$ TiO₂ contour in the recent seabed sampling program. The sediments have been drilled by 15 BHP-Utah holes but only tin analyses were carried with poor results. The drill holes, which mostly did not reach bedrock, do show an increase in sediment thickness to the NE where longshore currents may have preferentially concentrated heavy minerals towards Petal Point.

The seabed sampling program has provided additional information (recorded for sample 228 onwards) on the sediments, structures, bedrock, vegetation and depth of the seabed.

7. Future Program

Consideration will be given to extending the seabed sampling program to follow up areas of high tin values and high titanium and zirconium values, to complete coverage of the palaeochannel and to complete examination of the proposed bulk sampling sites.

While waiting for joint venture participation on the substantial drilling program necessary to raise the resources to the measured category before a decision can be taken on the feasibility of a development project, an event which will almost certainly require a substantial increase in the tin price from the A\$7000 per tonne metal used in the MacArthur 1995 Report, Mineral Holdings is considering a bulk sampling program. Further exploration is warranted as currently the (spot) tin price is A\$10,462 per tonne (Australian Newspaper 19/05/99).

Mineral Holdings is monitoring the movements of marine construction vessels currently being operated in Australia by the WEST HAM 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.

Many options considered in the course of the year included the use of a self propelled split hopper barge using either an airlift technique or a light grab with a crane. These were eventually discounted due to various technical difficulties, the crane because of anticipated structural weakness in the maximum swell conditions liable to be encountered in Bass Strait. A submerged gravel pump operating on the seabed was then considered. At present, a small suction dredge is being deployed in Australian Waters by the above company and will be evaluated for the bulk sampling program on arrival.

Each sample is expected to be about 10 cubic metres. The bulk samples will allow mineral dressing studies, the determination of probable heavy mineral recoveries, grain size studies, the feasibility of dredging at sea and the possible environmental impacts.

Four bulk samples will be taken from Ringarooma Bay and two from King Island. Eight possible sites in Ringarooma Bay from 2 to 10km offshore are listed in Table 30 along with their locations. Final choice of sites will be determined following review of the current sea bed sampling program.

This is an exploration program to upgrade alluvial tin and heavy mineral resources categories 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. The tin wash commonly lies directly on the sea bed with less than 2m of cover as there has been sub-sea stripping of overburden with the best grades of tin being in medium to coarse sands to fine gravels with pebbles to 75mm. 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.

	Hole No	Tin Content(g/cu m)	Inters Depth (m) from sed surface	Total Depth (m) to bedrock	Water Depth (m)	Sediment Type	Location
CHANNEL AREA	2	114	0.9	9.2	25.5	medium sand with gravel	147deg 53.21min E 40deg 49.74min S
	42	129	2.12	4.8	28.8	med-coarse sand with cobbles	147deg 51.86min E 40deg 48.57min S
	48	197	1.06	3.8	34	no log	147deg 51.92min E 40deg 47.20min S
	103	235	5.75	7.9	34	medium sand with silt	147deg 51.89min E 40deg 46.86min S
PLATEAU AREA	36	137	2.7	7.3	34	fine sand with cobbles	147deg 51.25min E 40deg 47.11min S
	71	111	1.21	6.7	35	coarse sand	147deg 50.00min E 40deg 47.20min S
	79	186	3.32	7	33	coarse sand with cobbles	147deg 52.19 min E 40deg 47.57 min S
	89	321	4.27	10.3	35	fine-med sand with gravel	147deg 48.68 min E 40deg 46.61 min S

587015

Table 30 --- BULK SAMPLING SITES---RINGAROOMA BAY

REFERENCES

Anon, 1965-69. Tasmania Offshore Exploration Programme. Ocean Mining A.G. TCR 68-515, and 81-1617, -1618, -1619 and -1620.

MacArthur, N. A. 1995. Pre-feasibility Review, Ringarooma Alluvial Tin Project. Report to Mineral Holdings Australia Pty Ltd

Volker, J. 1968. Report on Off-Shore Drilling- Tasmania, EL 2/65. Utah Development Co. & Broken Hill Pty Co Ltd. TCR 68-514

APPENDIX

- : Tables 1-47--Locations, minus 5mm screen assays, calculated head assays of Sn, TiO₂ and ZrO₂ in sediments (Tables 25-30 not included as zircon contents have yet to be reanalysed)**
- : Analytical Results from BHP-TEMCO, Bell Bay (including the re-analysed zircon results)**

Table 1Location of samples

Sample No.	Latitude	Longitude	Depth (m)
A	40.50.052S	147.53.146E	22.9
B1	40.50.723S	147.53.190E	16.5
B2	40.50.764S	147.53.176E	16.7
1	40.50.729S	147.52.976E	18.3
2	40.50.731S	147.52.746E	16.1
3	40.50.724S	147.52.519E	16.4
4	40.50.727S	147.52.310E	17.6
5	40.50.896S	147.52.313E	16.2
6	40.51.072S	147.52.316E	16.3
7	40.51.237S	147.52.316E	14.3
8	40.51.402S	147.52.322E	13.1
9	40.51.565S	147.52.316E	12.3
10	40.51.760S	147.52.337E	9.0
11	40.51.964S	147.52.343E	5.8
12	40.51.975S	147.52.650E	2.0
13	40.51.748S	147.52.697E	6.4
14	40.51.593S	147.52.733E	8.2
15	40.51.444S	147.52.742E	10.2
16	40.51.326S	147.52.742E	12.2
17	40.51.190S	147.52.736E	13.7
18	40.51.027S	147.52.807E	14.9
19	40.51.027S	147.52.995E	14.9
20	40.51.045S	147.53.196E	11.3

To read latitude and longitude the reading 40.51.045S means 40 degrees 51 minutes and .045 of a minute.

Table 2

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

Sample No.	Total mass of sample		Assays of -5mm fraction		
	g	% -5mm	Sn g/t	TiO ₂ %	ZrO ₂ %
A	361.1	100.0	< 30	0.03	0.007
B1	226.2	66.7	40	0.06	0.013
B2	498.7	59.7	< 30	0.04	0.014
1	222.0	67.2	120	0.09	0.023
2	494.5	76.5	60	0.06	0.016
3	432.7	82.0	< 30	0.02	0.011
4	368.9	65.6	< 30	0.02	0.014
5	258.8	77.9	40	0.09	0.021
6	247.2	65.3	40	0.16	0.021
7	381.5	34.6	100	0.14	0.019
8	487.6	87.5	< 30	0.03	0.013
9	463.1	93.2	140	0.07	0.015
10	341.1	85.6	220	0.16	- -
11	429.9	100.0	< 30	0.21	0.041
12	472.7	100.0	< 30	0.09	0.012
13	449.5	100.0	50	2.08	- -
14	446.4	100.0	< 30	0.55	- -
15	494.5	100.0	< 30	0.16	0.023
16	549.1	84.6	< 30	0.02	0.034
17	210.3	73.2	260	0.08	0.007
18	492.3	89.7	< 30	0.02	- -
19	446.3	91.7	220	0.07	0.029
20	484.5	100.0	< 30	0.10	- -

Samples were taken with a 375g peanut butter glass jar. A full jar of sample gave a mass of sample over 400g. Where sample masses are down around 250g or so, there were a lot of coarse pebbles present about the size of the opening of the jar and it was difficult to get a larger sample.

- - indicates that there was no sample left to do the repeat ZrO₂ assays.

Table 3
Calculated head assays

Sample No.	Calculated Head Assays			
	Sn g/t	TiO ₂ %	ZrO ₂ %	
A	< 30	0.03	0.007	*
B1	26	0.04	0.009	
B2	< 18	0.02	0.008	
1	81	0.06	0.015	
2	46	0.05	0.012	
3	< 25	0.02	0.009	
4	< 20	0.01	0.009	
5	31	0.07	0.016	
6	26	0.10	0.014	
7	35	0.05	0.007	
8	< 26	0.03	0.011	
9	130	0.07	0.014	
10	188	0.13	- -	
11	< 30	0.21	0.041	*
12	< 30	0.09	0.012	*
13	50	2.08	- -	*
14	< 30	0.55	- -	*
15	< 30	0.16	0.023	*
16	< 25	0.02	0.029	
17	190	0.06	- -	
18	< 27	0.02	0.005	
19	202	0.06	- -	
20	< 30	0.10	0.027	*

* Actual head assays

- - indicates that there was no sample left to do the repeat ZrO₂ assays.

Table 4Location of samples

Sample No.	Latitude	Longitude	Depth (m)
21	40.51.198S	147.52.986E	11.6
22	40.51.298S	147.52.985E	8.8
23	40.51.472S	147.52.986E	6.0
24	40.51.666S	147.52.978E	3.4
25	40.52.177S	147.52.386E	1.5
26	40.52.170S	147.52.141E	3.3
27	40.52.010S	147.52.131E	6.1
28	40.51.830S	147.52.144E	12.0
29	40.51.616S	147.52.141E	12.5
30	40.51.441S	147.52.135E	13.7
31	40.51.256S	147.52.160E	15.2
32	40.51.108S	147.52.161E	16.0
33	40.50.948S	147.52.139E	16.2
34	40.50.756S	147.52.145E	18.2
35	40.50.600S	147.52.787E	19.1
36	40.50.616S	147.52.593E	17.7
37	40.50.478S	147.52.625E	19.2

To read latitude and longitude the reading 40.51.045S means 40 degrees 51 minutes and .045 of a minute.

Table 5

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

Sample No.	Total mass of sample		Assays of -5mm fraction		
	g	% -5mm	Sn g/t	TiO ₂ %	ZrO ₂ %
21	575.0	96.7	< 30	0.04	0.009
22	486.4	99.7	< 30	0.28	0.043
23	461.4	100.0	< 30	0.58	- -
24	480.8	100.0	< 30	0.11	0.015
25	440.1	100.0	< 30	0.11	0.010
26	469.0	100.0	< 30	0.54	0.026
27	439.4	100.0	< 30	0.27	0.017
28	468.4	100.0	< 30	0.84	- -
29	291.2	55.7	130	0.18	0.041
30	587.1	76.9	40	0.04	0.010
31	488.7	71.7	100	0.13	0.024
32	477.4	79.2	40	0.08	0.024
33	510.0	94.1	< 30	0.03	0.013
34	489.5	100.0	< 30	0.23	0.043
35	553.9	36.3	50	0.05	0.011
36	519.4	48.7	< 30	0.03	0.010
37	560.7	64.1	30	0.05	0.018

Samples were taken with a 375g peanut butter glass jar. A full jar of sample gave a mass of sample over 400g. Where sample masses are down around 250g or so, there were a lot of coarse pebbles present about the size of the opening of the jar and it was difficult to get a larger sample.

- - indicates that there was no sample left to do the repeat ZrO₂ assays.

Table 6
Calculated head assays

587023

Sample No.	Calculated Head Assays			
	Sn g/t	TiO2%	ZrO2%	
21	< 29	0.04	0.009	
22	< 30	0.28	0.043	
23	< 30	0.58	- -	*
24	< 30	0.11	0.015	*
25	< 30	0.11	0.010	*
26	< 30	0.54	0.026	*
27	< 30	0.27	0.017	*
28	50	0.84	- -	*
29	72	0.10	0.023	
30	31	0.03	0.008	
31	72	0.09	0.017	
32	32	0.06	0.019	
33	< 28	0.03	0.012	
34	< 30	0.23	0.043	*
35	18	0.02	0.004	
36	< 15	0.01	0.005	
37	19	0.03	0.012	

* Actual head assays

- - indicates that there was no sample left to do the repeat ZrO2 assays.

Table 7Location of samples

Sample No.	Latitude	Longitude	Depth (m)
38	40.50.482S	147.52.453E	17.0
39	40.50.342S	147.52.452E	18.7
40	40.50.372S	147.52.245E	18.6
41	40.50.242S	147.52.248E	19.2
42	40.50.266S	147.52.045E	19.3
43	40.50.128S	147.52.046E	19.6
44	40.50.128S	147.51.864E	18.1
45	40.50.021S	147.51.857E	18.9
46	40.50.027S	147.51.671E	18.2
47	40.49.876S	147.51.671E	18.7
48	40.49.854S	147.51.466E	19.7
49	40.49.779S	147.51.465E	19.6
50	40.49.792S	147.51.261E	20.0
51	40.49.658S	147.51.266E	21.2

To read latitude and longitude the reading 40.51.045S means
40 degrees 51 minutes and .045 of a minute.

✓

Table 8

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

Sample No.	Total mass of sample		Assays of -5mm fraction		
	g	% -5mm	Sn g/t	TiO ₂ %	ZrO ₂ %
38	567.1	52.7	30	0.05	0.016
39	473.7	74.6	150	0.10	0.010
40	483.8	71.7	170	0.08	0.014
41	490.7	67.9	60	0.07	0.012
42	398.3	72.8	130	0.09	0.005
43	422.2	81.6	150	0.08	0.010
44	466.7	80.7	230	0.07	- -
45	414.4	89.3	160	0.06	0.014
46	324.9	76.5	250	0.08	- -
47	329.5	87.9	210	0.09	0.011
48	398.5	66.9	180	0.08	0.004
49	357.4	63.3	210	0.08	0.013
50	481.9	86.9	210	0.11	- -
51	449.4	68.6	210	0.10	0.017

Samples were taken with a 375g peanut butter glass jar. A full jar of sample gave a mass of sample over 400g. Where sample masses are down around 250g or so, there were a lot of coarse pebbles present about the size of the opening of the jar and it was difficult to get a larger sample.

- - indicates that there was no sample left to do the repeat ZrO₂ assays.

Table 9
Calculated head assays

Sample No.	Calculated Head Assays		
	Sn g/t	TiO2%	ZrO2%
38	16	0.03	0.008
39	112	0.07	0.007
40	122	0.06	0.010
41	41	0.05	0.008
42	95	0.07	0.004
43	122	0.07	0.008
44	186	0.06	- -
45	143	0.05	0.013
46	191	0.06	- -
47	185	0.08	0.010
48	120	0.05	0.003
49	133	0.05	0.008
50	182	0.10	- -
51	144	0.07	0.012

- - indicates that there was no sample left to do the repeat ZrO2 assays.

Table 10Location of samples

Sample No.	Latitude	Longitude	Depth (m)
52	40.49.603S	147.51.054E	20.8
53	40.49.453S	147.51.016E	21.7
54	40.49.529S	147.50.808E	21.9
55	40.49.407S	147.50.846E	22.3
56	40.49.442S	147.50.736E	22.3
57	40.49.773S	147.51.046E	20.8
58	40.49.897S	147.51.066E	20.2
59	40.49.948S	147.51.240E	20.0
60	40.50.040S	147.51.332E	19.5
61	40.50.047S	147.51.457E	19.3
62	40.50.163S	147.51.451E	18.9
63	40.50.195S	147.51.666E	17.8
64	40.50.301S	147.51.606E	17.5
65	40.50.287S	147.51.791E	18.0
66	40.50.445S	147.51.819E	17.8
67	40.50.438S	147.52.121E	19.0
68	40.50.540S	147.52.034E	17.9
69	40.50.556S	147.52.243E	18.8

To read latitude and longitude the reading 40.51.045S means
40 degrees 51 minutes and .045 of a minute.

Table 11

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

Sample No.	Total mass of sample		Assays of -5mm fraction		
	g	% -5mm	Sn g/t	TiO ₂ %	ZrO ₂ %
52	449.4	43.5	200	0.06	- -
53	325.5	71.7	130	0.05	0.010
54	457.5	84.8	60	0.05	0.007
55	484.7	83.1	70	0.05	0.008
56	407.9	97.0	40	0.05	0.013
57	456.4	93.2	110	0.08	0.012
58	454.4	82.4	270	0.09	0.017
59	450.8	96.8	130	0.07	0.007
60	482.4	94.2	200	0.11	0.038
61	453.9	80.4	230	0.10	0.019
62	475.2	93.3	230	0.12	- -
63	443.6	63.6	270	0.08	0.009
64	454.1	81.6	300	0.10	- -
65	530.3	39.8	330	0.07	0.006
66	533.9	91.2	170	0.07	0.011
67	536.9	74.2	340	0.12	0.022
68	454.5	70.9	140	0.11	0.018
69	470.9	83.2	80	0.07	0.011

Samples were taken with a 375g peanut butter glass jar. A full jar of sample gave a mass of sample over 400g. Where sample masses are down around 250g or so, there were a lot of coarse pebbles present about the size of the opening of the jar and it was difficult to get a larger sample.

- - indicates that there was no sample left to do the repeat ZrO₂ assays.

Table 12
Calculated head assays

Sample No.	Calculated Head Assays		
	Sn g/t	TiO2%	ZrO2%
52	87	0.03	- -
53	93	0.04	0.007
54	51	0.04	0.006
55	58	0.04	0.007
56	39	0.05	0.013
57	103	0.07	0.011
58	222	0.07	0.014
59	126	0.07	0.007
60	188	0.10	0.036
61	185	0.08	0.015
62	215	0.11	- -
63	172	0.05	0.006
64	245	0.08	- -
65	131	0.03	0.002
66	155	0.06	0.010
67	252	0.09	0.016
68	99	0.03	0.013
69	67	0.06	0.009

- - indicates that there was no sample left to do the repeat ZrO2 assays.

Table 13Location of samples

Sample No.	Latitude	Longitude	Depth (m)
70	40.49.450S	147.51.129E	23.0
71	40.49.428S	147.51.246E	22.6
72	40.49.544S	147.51.388E	21.9
73	40.49.593S	147.51.615E	21.8
74	40.49.680S	147.51.559E	21.3
75	40.49.626S	147.51.745E	17.6
76	40.49.785S	147.51.893E	19.7
77	40.49.883S	147.51.869E	20.5
78	40.49.912S	147.52.078E	19.7
79	40.50.028S	147.52.052E	20.3
80	40.50.023S	147.52.199E	20.2
81	40.50.137S	147.52.208E	20.3
82	40.50.141S	147.52.338E	20.2
83	40.50.244S	147.52.391E	19.9
84	40.50.253S	147.52.585E	19.4
85	40.50.349S	147.52.603E	20.2
86	40.50.375S	147.52.721E	19.1
87	40.50.474S	147.52.783E	20.0
88	40.50.509S	147.52.901E	19.1
89	40.50.594S	147.52.935E	20.3

To read latitude and longitude the reading 40.51.045S means
40 degrees 51 minutes and .045 of a minute.

Table 14

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

Sample No.	Total mass of sample		Assays of -5mm fraction		
	g	% -5mm	Sn g/t	TiO ₂ %	ZrO ₂ %
70	486.5	90.8	70	0.05	0.011
71	484.0	66.0	140	0.06	0.010
72	519.1	74.3	100	0.06	0.011
73	484.0	83.0	130	0.07	0.010
74	523.0	91.1	150	0.08	- -
75	465.0	84.1	220	0.09	- -
76	446.3	88.4	310	0.08	0.006
77	467.1	91.7	180	0.09	- -
78	449.7	93.0	130	0.10	- -
79	396.1	88.4	250	0.11	- -
80	453.1	74.1	130	0.08	0.013
81	496.1	76.7	230	0.11	0.010
82	437.6	76.7	140	0.10	0.008
83	489.0	76.8	210	0.08	0.008
84	547.5	45.6	100	0.05	0.009
85	512.6	66.7	80	0.04	0.011
86	461.8	93.2	230	0.14	0.017
87	451.0	69.4	140	0.08	0.009
88	536.1	98.1	20	0.02	0.015
89	548.6	67.6	100	0.13	- -

Samples were taken with a 375g peanut butter glass jar. A full jar of sample gave a mass of sample over 400g. Where sample masses are down around 250g or so, there were a lot of coarse pebbles present about the size of the opening of the jar and it was difficult to get a larger sample.

- - indicates that there was no sample left to do the repeat ZrO₂ assays.

Table 15
Calculated head assays

Sample No.	Calculated Head Assays		
	Sn g/t	TiO2%	ZrO2%
70	64	0.05	0.010
71	92	0.04	0.007
72	74	0.04	0.008
73	108	0.06	0.008
74	137	0.07	- -
75	185	0.08	- -
76	274	0.07	0.005
77	165	0.08	- -
78	121	0.09	- -
79	221	0.10	- -
80	96	0.06	0.010
81	176	0.08	0.008
82	107	0.08	0.006
83	161	0.06	0.006
84	46	0.02	0.004
85	53	0.03	0.007
86	214	0.13	0.016
87	97	0.06	0.006
88	20	0.02	0.015
89	68	0.09	- -

- - indicates that there was no sample left to do the repeat ZrO2 assays.

587033

Table 16Location of samples

Sample No.	Latitude	Longitude	Depth (m)
90	40.50.014S	147.52.370E	21.1
91	40.49.957S	147.52.370E	22.0
92	40.49.826S	147.52.417E	22.8
93	40.49.704S	147.52.397E	23.4
94	40.49.591S	147.52.400E	23.9
95	40.49.478S	147.52.408E	25.1
96	40.49.470S	147.52.254E	25.4
97	40.49.485S	147.52.102E	24.9
98	40.49.363S	147.52.119E	25.4
99	40.49.235S	147.52.128E	25.1
100	40.49.251S	147.51.987E	25.1
101	40.49.244S	147.51.795E	24.7
102	40.49.249S	147.51.653E	24.0
103	40.49.125S	147.51.815E	25.0
104	40.49.474S	147.52.596E	24.8
105	40.49.581S	147.52.599E	24.7
106	40.49.704S	147.52.547E	23.1
107	40.49.896S	147.52.556E	22.2
108	40.50.068S	147.52.553E	20.8

To read latitude and longitude the reading 40.51.045S means
40 degrees 51 minutes and .045 of a minute.

Table 17

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

Sample No.	Total mass of sample		Assays of -5mm fraction		
	g	% -5mm	Sn g/t	TiO ₂ %	ZrO ₂ %
90	422.7	65.1	190	0.12	0.009
91	453.8	88.8	180	0.09	0.007
92	492.1	79.3	190	0.08	0.010
93	485.9	72.8	400	0.09	0.006
94	419.2	84.7	180	0.08	0.017
95	450.3	87.3	120	0.09	0.008
96	425.3	100.0	50	0.06	0.010
97	414.5	95.8	110	0.12	- -
98	452.9	98.2	130	0.06	0.007
99	512.3	97.2	90	0.04	0.007
100	523.9	99.4	< 30	0.07	0.034
101	525.2	79.3	40	0.05	0.019
102	497.9	99.5	< 30	0.06	0.022
103	509.9	99.5	50	0.06	0.013
104	462.2	93.9	170	0.11	- -
105	481.2	65.4	140	0.13	0.010
106	429.6	91.5	160	0.10	0.007
107	392.7	76.3	150	0.10	- -
108	417.2	74.3	260	0.14	- -

Samples were taken with a 375g peanut butter glass jar. A full jar of sample gave a mass of sample over 400g. Where sample masses are down around 250g or so, there were a lot of coarse pebbles present about the size of the opening of the jar and it was difficult to get a larger sample.

- - indicates that there was no sample left to do the repeat ZrO₂ assays.

Table 18
Calculated head assays

587035

Sample No.	Calculated Head Assays		
	Sn g/t	TiO2%	ZrO2%
90	124	0.08	0.006
91	160	0.08	0.006
92	151	0.06	0.008
93	291	0.07	0.004
94	152	0.07	0.009
95	105	0.08	0.007
96	50	0.06	0.010 *
97	105	0.11	- -
98	128	0.06	0.007
99	87	0.04	0.007
100	< 30	0.07	0.034
101	32	0.04	0.015
102	< 30	0.06	0.022
103	50	0.06	0.013
104	160	0.10	- -
105	92	0.09	0.007
106	146	0.09	0.006
107	115	0.08	- -
108	193	0.10	- -

- - indicates that there was no sample left to do the repeat ZrO2 assays.

* Actual Head Assays

Table 19Location of samples

Sample No.	Latitude	Longitude	Depth (m)
109	40.49.817S	147.50.898E	23.6
110	40.49.956S	147.50.916E	22.6
111	40.50.069S	147.50.904E	22.2
112	40.50.069S	147.51.064E	21.9
113	40.50.177S	147.51.055E	21.6
114	40.50.179S	147.51.243E	20.5
115	40.50.315S	147.51.241E	20.7
116	40.50.317S	147.51.412E	20.7
117	40.50.451S	147.51.409E	19.5
118	40.50.466S	147.51.633E	19.2
119	40.49.454S	147.51.491E	23.7
120	40.49.470S	147.51.656E	24.3
121	40.49.581S	147.51.642E	23.4
122	40.49.590S	147.51.810E	23.1
123	40.49.690S	147.51.839E	21.3

To read latitude and longitude the reading 40.51.045S means 40 degrees 51 minutes and .045 of a minute.

Table 20Samples screened on 5mm screen and -5mm fraction assayed

Sample No.	Total mass of sample		Assays of -5mm fraction		
	g	% -5mm	Sn g/t	TiO ₂ %	ZnO ₂ %
109	428.8	73.6	160	0.08	0.010
110	353.5	73.9	160	0.07	0.012
111	438.1	83.4	200	0.09	0.012
112	336.1	70.5	110	0.08	0.012
113	522.5	89.6	70	0.07	0.013
114	423.3	95.8	130	0.08	0.014
115	332.4	84.5	130	0.08	0.010
116	425.5	96.4	130	0.08	0.011
117	286.8	96.7	70	0.10	0.013
118	490.2	67.0	50	0.09	0.016
119	408.5	75.4	160	0.10	0.011
120	228.8	77.4	240	0.07	0.008
121	336.1	63.1	80	0.05	0.006
122	300.6	95.5	250	0.06	0.005
123	295.3	47.9	350	0.07	0.013

Samples were taken with a 375g peanut butter glass jar. A full jar of sample gave a mass of sample over 400g. Where sample masses are down around 250g or so, there were a lot of coarse pebbles present about the size of the opening of the jar and it was difficult to get a larger sample.

Table 21
Calculated head assays

587038

Sample No.	Calculated Head Assays		
	Sn g/t	TiO ₂ %	ZrO ₂ %
109	118	0.06	0.007
110	118	0.05	0.009
111	167	0.08	0.010
112	78	0.06	0.008
113	63	0.06	0.012
114	125	0.08	0.013
115	110	0.07	0.008
116	125	0.08	0.011
117	68	0.10	0.013
118	33	0.06	0.011
119	121	0.08	0.008
120	186	0.05	0.006
121	51	0.03	0.004
122	239	0.06	0.005
123	168	0.03	0.006

Table 22Location of samples

Sample No.	Latitude	Longitude	Depth (m)
124	40.49.774S	147.51.790E	20.7
125	40.49.688S	147.51.812E	21.0
126	40.49.783S	147.51.905E	21.4
127	40.49.623S	147.51.913E	22.6
128	40.49.548S	147.51.931E	23.5
129	40.49.528S	147.52.048E	24.8
130	40.49.642S	147.52.043E	23.0
131	40.49.783S	147.51.991E	22.3
132	40.49.777S	147.52.003E	22.1

To read latitude and longitude the reading 40.51.045S means 40 degrees 51 minutes and .045 of a minute.

Table 23

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

Sample No.	Total mass of sample		Core depth m	Core Recovery %	Assays of -5mm fraction		
	g	% -5mm			Sn g/t	TiO ₂ %	ZrO ₂ %
124	435.5	97.9			140	0.11	0.012
124-1	636.0	96.0	0.24	34.1	110	0.09	0.019
125	149.9	75.3			150	0.07	0.004
125-1	491.7	88.9	0.18	26.4	270	0.13	0.024
126	247.5	98.5			110	0.10	0.016
126-1	296.5	95.9	0.11	15.9	280	0.15	0.024
127	399.9	94.2			260	0.13	0.010
127-1	500.2	99.3	0.19	26.8	260	0.13	0.017
128	361.2	99.6			160	0.09	0.008
128-1	784.3	94.2	0.29	42.0	140	0.11	- -
129	358.3	74.8			70	0.08	0.010
129-1	967.2	98.9	0.36	51.8	320	0.12	0.021
130	395.1	94.9			130	0.06	0.008
130-1	816.1	97.1	0.31	43.8	110	0.08	0.013
131	318.0	94.1			90	0.14	0.020
131-1	795.3	97.7	0.30	42.6	130	0.11	0.016
132	364.1	94.2			120	0.10	0.012
132-1	661.4	99.2	0.25	35.4	170	0.12	0.020

Samples were taken with a 375g peanut butter glass jar. A full jar of sample gave a mass of sample over 400g. Where sample masses are down around 250g or so, there were a lot of coarse pebbles present about the size of the opening of the jar and it was difficult to get a larger sample.

The sample numbers with a subscript -1 were taken with the bait pump.

- - indicates that there was no sample left to do the repeat ZrO₂ assays.

Table 24
Calculated head assays

587041

Sample No.	Calculated Head Assays		
	Sn g/t	TiO ₂ %	ZrO ₂ %
124	137	0.11	0.012
124-1	106	0.09	0.018
125	113	0.05	0.003
125-1	240	0.12	0.021
126	108	0.10	0.016
126-1	268	0.14	0.023
127	245	0.12	0.009
127-1	258	0.13	0.017
128	169	0.09	0.008
128-1	132	0.10	- -
129	52	0.06	0.007
129-1	316	0.12	0.021
130	123	0.06	0.003
130-1	107	0.08	0.013
131	85	0.13	0.019
131-1	127	0.11	0.016
132	113	0.09	0.011
132-1	169	0.12	0.020

- - indicates that there was no sample left to do the repeat ZrO₂ assays.

Sample numbers with the subscript -1 were taken with the bait pump.

Table 31Location of samples

Sample No.	Latitude	Longitude	Depth (m)	Bottom
301	40.48.20'S	147.52.40'E	28.5	Sandy
302	40.48.20'S	147.52.50'E	29.0	Sandy
303	40.48.30'S	147.52.50'E	29.5	Sandy
304	40.48.40'S	147.52.50'E	31.0	Sandy
305	40.48.40'S	147.52.40'E	31.0	Sandy
306	40.49.20'S	147.51.30'E	26.0	Sandy
307	40.49.20'S	147.51.40'E	26.5	Sandy
308	40.49.20'S	147.51.50'E	27.0	Pebbly
309	40.49.20'S	147.52.00'E	27.8	Sandy
310	40.49.20'S	147.52.50'E	27.7	Sandy
311	40.49.20'S	147.53.00'E	28.0	Sandy
312	40.49.20'S	147.53.10'E	28.0	Sandy
313	40.49.30'S	147.53.10'E	29.5	Sandy
314	40.49.40'S	147.53.10'E	29.2	Sandy
315	40.49.40'S	147.53.00'E	28.5	Small Pebbles
316	40.49.40'S	147.52.50'E	28.5	Small Pebbles
317	40.49.40'S	147.52.15'E	28.0	Sandy
318	40.49.50'S	147.52.15'E	29.0	Sandy
319	40.49.50'S	147.52.50'E	29.0	Pebbly
320	40.50.10'S	147.52.50'E	24.0	Pebbly

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

Table 32

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

Sample No.	Total mass	Core	Core	Assays of -5mm fraction			
	of sample g	% -5mm	depth m	Recovery %	Sn g/t	TiO ₂ %	ZrO ₂ %
301	442.9	98.6	0.17	23.7	< 30	0.06	< 0.010
302	405.4	96.3	0.15	21.7	< 30	0.07	0.016
303	745.4	98.6	0.28	40.0	< 30	0.07	0.012
304	732.7	91.8	0.28	39.3	< 30	0.08	< 0.010
305	635.0	98.1	0.24	34.0	< 30	0.13	0.019
306	674.0	98.3	0.25	36.1	< 30	0.07	< 0.010
307	909.6	98.2	0.34	48.8	130	0.10	0.012
308	703.3	85.7	0.26	37.7	40	0.09	< 0.010
309	778.9	96.3	0.29	41.8	< 30	0.06	0.011
310	823.1	99.5	0.31	44.1	< 30	0.03	< 0.010
311	658.8	88.8	0.25	35.3	60	0.11	0.016
312	537.6	88.8	0.20	28.8	60	0.12	0.020
313	553.7	74.2	0.21	29.7	30	0.10	< 0.010
314	1289.0	81.1	0.46	69.1	< 30	0.05	< 0.010
315	1335.5	97.6	0.50	71.6	< 30	0.09	0.019
316	851.8	91.6	0.32	45.7	360	0.08	0.015
317	822.5	90.6	0.31	44.1	220	0.13	0.024
318	1333.8	98.7	0.50	71.5	< 30	0.09	0.015
319	611.4	99.2	0.23	32.8	700	0.13	0.021
320	983.6	93.2	0.37	52.7	110	0.12	0.030

All samples were taken with the bait pump.

Table 33
Calculated head assays

Sample No.	Calculated Head Assays		
	Sn g/t	TiO ₂ %	ZrO ₂ %
301	< 30	0.06	< 0.010
302	< 29	0.07	0.015
303	< 30	0.07	0.012
304	< 28	0.07	< 0.009
305	< 29	0.13	0.019
306	< 29	0.07	< 0.010
307	128	0.10	0.012
308	34	0.06	< 0.009
309	< 29	0.06	0.011
310	< 30	0.03	< 0.010
311	53	0.10	0.014
312	53	0.11	0.018
313	22	0.07	< 0.007
314	< 24	0.04	< 0.008
315	< 29	0.09	0.019
316	330	0.07	0.014
317	199	0.12	0.022
318	< 30	0.09	0.015
319	694	0.13	0.021
320	103	0.11	0.023

Table 34

Location of samples

Old Site No.	Sample No.	Latitude	Longitude	Depth (m)	Bottom
329	321	40.48.41 ¹⁶ 'S	147.46.37 ¹² 'E	37.0	Sand Ripples
79	322	40.47.34'S	147.52.11'E	34.5	Sand Ripples
36	323	40.47.07'S	147.51.15'E	36.0	Sand Ripples
42	324	40.48.34'S	147.51.52'E	32.0	Sand Ripples
71	325	40.47.12'S	147.50.00'E	34.0	Pebbles/Sand
103	326	40.48.52'S	147.51.53'E	36.0	Sand Ripples
48	327	40.47.12'S	147.51.55'E	34.5	Sand Ripples
2	328	40.49.44'S	147.53.15'E	28.0	Sand Ripples

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

Old Site No. is the site number given to drill hole locations by Ocean Mining in the mid 1960's.

Table 35

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

Sample No.	Total mass	Core	Core	Assays of -5mm fraction			
	of sample g	% -5mm	depth m	Recovery %	Sn g/t	TiO ₂ %	ZrO ₂ %
321	631.1	95.7	0.24	33.8	< 30	0.19	0.017
322	1015.3	96.8	0.38	54.4	100	0.07	0.019
323	1181.4	87.3	0.44	63.3	60	0.09	0.018
324	1689.6	99.0	0.63	90.5	< 30	0.04	< 0.010
325	878.8	90.0	0.33	47.1	< 30	0.07	< 0.010
326	1568.0	96.3	0.59	84.0	< 30	0.08	0.020
327	954.3	97.4	0.36	51.1	140	0.06	< 0.010
328	1142.0	93.9	0.43	61.2	< 30	0.08	0.015

All samples were taken with the bait pump.

Table 36
Calculated head assays

Sample No.	Calculated Head Assays		
	Sn g/t	TiO ₂ %	ZrO ₂ %
321	< 29	0.18	0.016
322	97	0.07	0.018
323	52	0.08	0.016
324	< 30	0.04	< 0.010
325	< 27	0.06	< 0.009
326	< 29	0.08	0.019
327	136	0.06	< 0.010
328	< 28	0.08	0.014

Table 37Location of samples

Sample No.	Latitude	Longitude	Depth (m)	Bottom
329	40.48.20'S	147.52.30'E	30.0	Sand Ripples
330	40.48.40'S	147.52.30'E	32.0	Sand Ripples
331	40.49.20'S	147.51.20'E	25.5	Sand Ripples
332	40.49.20'S	147.53.20'E	27.0	Sand Ripples
334	40.49.50'S	147.53.00'E	26.5	Pebbles
335	40.49.50'S	147.53.10'E	27.0	Pebbles
336	40.49.50'S	147.53.20'E	27.0	Sand Ripples
337	40.50.10'S	147.53.00'E	24.0	Sand Ripples
338	40.50.10'S	147.53.10'E	23.5	Sand Ripples
339	40.50.10'S	147.53.20'E	22.5	Sand Ripples
340	40.50.20'S	147.53.00'E	24.0	Sand Ripples
341	40.50.20'S	147.53.10'E	23.5	Sand Ripples
342	40.50.20'S	147.53.20'E	22.0	Sand Ripples
343	40.50.40'S	147.51.20'E	20.0	Pebbles
344	40.50.40'S	147.51.40'E	20.5	Pebbles
345	40.50.40'S	147.52.00'E	21.0	Pebbles
346	40.50.50'S	147.52.50'E	20.0	Pebbles
347	40.50.50'S	147.53.00'E	22.0	Sand Ripples
348	40.50.50'S	147.53.10'E	21.5	Sand Ripples
349	40.50.50'S	147.53.20'E	19.5	Sand Ripples
350	40.51.00'S	147.52.40'E	15.5	Reef
351	40.51.00'S	147.53.20'E	12.5	Sand Ripples
352	40.51.20'S	147.53.10'E	9.5	Sand Ripples
353	40.51.20'S	147.53.20'E	9.0	Sand Ripples

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

Table 38

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

Sample No.	Total mass of sample		Core depth m	Core Recovery %	Assays of -5mm fraction		
	g	% -5mm			Sn g/t	TiO ₂ %	ZrO ₂ %
329	1328.0	95.1	0.50	71.2	40	0.05	< 0.010
330	1170.5	94.5	0.44	62.7	< 30	0.05	< 0.009
331	1101.5	88.0	0.41	59.0	80	0.07	< 0.010
332	578.0	79.1	0.22	31.0	< 30	0.03	< 0.010
334	953.9	87.3	0.36	51.1	130	0.12	0.015
335	1106.2	76.6	0.41	59.3	400	0.11	0.017
336	1064.0	84.7	0.40	57.0	220	0.07	0.013
337	863.4	90.1	0.32	46.3	< 30	0.21	< 0.010
338	1074.7	86.9	0.40	57.6	90	0.08	0.019
339	1172.1	94.5	0.44	62.8	< 30	0.07	< 0.010
340	639.5	82.2	0.24	34.3	< 30	0.06	< 0.010
341	1249.7	99.9	0.47	67.0	< 30	0.13	0.015
342	1268.0	99.7	0.47	68.0	< 30	0.13	< 0.010
343	679.6	99.5	0.25	36.4	< 30	0.20	0.054
344	900.4	94.0	0.34	48.3	< 30	0.11	0.017
345	316.0	96.2	0.12	16.9	60	0.11	0.021
346	1035.2	89.0	0.39	55.5	< 30	0.13	0.025
347	1535.4	99.3	0.57	82.3	< 30	0.10	0.017
348	1500.0	90.1	0.56	80.4	< 30	0.05	< 0.010
349	1610.1	99.7	0.60	86.3	< 30	0.07	< 0.010
350	949.8	94.4	0.35	50.9	< 30	0.03	< 0.010
351	1881.7	100.0	0.70	100.8	< 30	0.18	0.017
352	1276.8	100.0	0.48	68.4	< 30	0.53	0.067
353	1437.7	99.9	0.54	77.0	< 30	0.48	0.043

All samples were taken with the bait pump.

Table 39
Calculated head assays

Sample No.	Calculated Head Assays		
	Sn g/t	TiO ₂ %	ZrO ₂ %
329	38	0.05	< 0.010
330	< 28	0.05	< 0.009
331	70	0.06	< 0.009
332	< 24	0.02	< 0.008
334	113 •	0.10	0.013
335	306 •	0.08	0.013
336	186 •	0.06	0.011
337	< 27	0.19	< 0.009
338	73	0.07	0.017
339	< 28	0.07	< 0.009
340	< 25	0.05	< 0.008
341	< 30	0.13	0.015
342	< 30	0.13	< 0.010
343	< 30	0.20	0.054
344	< 28	0.10	0.016
345	58	0.11	0.020
346	< 27	0.12	0.022
347	< 30	0.10	0.017
348	< 27	0.05	< 0.009
349	< 30	0.07	< 0.010
350	< 28	0.03	< 0.009
351	< 30	0.18	0.017
352	< 30	0.53	0.067
353	< 30	0.48	0.043

Table 40Location of samples

Sample No.	Latitude	Longitude	Depth (m)	Bottom
333	40.49.40'S	147.53.20'E	24.7	Sand/Pebbles
354	40.47.34'S	147.51.58'E	33.0	Sand
355	40.47.22'S	147.51.55'E	32.4	Sand
356	40.47.12'S	147.51.42'E	33.0	Sand
357	40.47.12'S	147.52.08'E	32.4	Sand
358	40.47.24'S	147.52.11'E	33.0	Sand
359	40.47.34'S	147.52.24'E	32.0	Sand
360	40.47.44'S	147.52.11'E	31.9	Sand

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

Table 41Samples screened on 5mm screen and -5mm fraction assayed

Sample No.	Total mass	% -5mm	Core	Core	Assays of -5mm fraction		
	of sample g		depth m	Recovery %	Sn g/t	TiO ₂ %	ZrO ₂ %
333	664.8	98.9	0.25	35.6	200	0.09	0.022
354	765.6	90.7	0.29	41.0	190	0.06	0.018
355	623.6	87.9	0.23	33.4	100	0.07	0.018
356	970.7	97.7	0.36	52.0	150	0.05	0.018
357	1210.0	99.7	0.45	64.8	100	0.06	0.022
358	1005.9	98.4	0.38	53.9	80	0.11	0.012
359	958.1	98.9	0.36	51.3	60	0.05	0.018
360	1097.7	98.3	0.41	58.8	80	0.05	0.017

All samples were taken with the bait pump.

Table 42
Calculated head assays

Sample No.	Calculated Head Assays		
	Sn g/t	TiO ₂ %	ZrO ₂ %
333	198 ●	0.09	0.022
354	172 ●	0.05	0.016
355	88	0.06	0.016
356	147 ●	0.05	0.018
357	100 ●	0.06	0.022
358	79	0.11	0.012
359	59	0.05	0.013
360	79	0.05	0.017

Table 43Location of samples

Sample No.	Latitude	Longitude	Depth (m)	Bottom
361	40.46.37S	147.48.41E	36.5	Gravel
362	40.49.40S	147.53.30E	26.5	Sand/Pebbles
363	40.49.50S	147.53.30E	26.5	Sand/Pebbles
364	40.50.20S	147.52.50E	21.7	Sand/Pebbles
365	40.50.20S	147.52.40E	21.6	Sand/Pebbles
366	40.51.00S	147.53.40E	8.6	Sand
367	40.51.10S	147.53.40E	7.6	Sand
368	40.51.10S	147.53.30E	8.7	Sand
369	40.51.20S	147.53.30E	7.5	Sand
370	40.51.30S	147.53.10E	8.3	Sand
371	40.51.29S	147.53.30E	5.9	Sand
372	40.51.20S	147.53.40E	5.8	Sand
373	40.51.10S	147.53.50E	5.3	Sand
374	40.51.00S	147.53.60E	5.8	Sand
375	40.50.90S	147.53.70E	6.6	Sand
376	40.50.80S	147.53.80E	6.3	Sand
377	40.50.70S	147.53.90E	5.8	Sand
378	40.50.60S	147.54.00E	6.2	Sand
379	40.50.50S	147.54.10E	6.2	Sand

Latitude and longitude readings are in degrees, minutes and hundredths of a minute.

Table 44

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

Sample No.	Total mass	% -5mm	Core depth m	Core Recovery %	Assays of -5mm fraction		
	of sample g				Sn g/t	TiO ₂ %	ZrO ₂ %
361	822.9	96.7	0.31	44.1	< 30	0.07	0.010
362	479.0	85.4	0.18	25.7	40	0.09	0.015
363	729.2	94.8	0.27	39.1	110	0.12	0.013
364	581.1	68.3	0.22	31.1	150	0.08	0.019
365	990.7	89.6	0.37	53.1	60	0.10	0.024
366	1318.8	100.0	0.49	70.7	< 30	0.21	0.014
367	896.5	100.0	0.33	48.0	< 30	0.43	0.046
368	936.0	100.0	0.35	50.2	< 30	0.41	0.038
369	979.0	100.0	0.37	52.5	< 30	0.58	0.063
370	1044.4	100.0	0.39	56.0	< 30	0.90	0.190
371	1001.6	100.0	0.37	53.7	< 30	0.13	0.013
372	661.6	100.0	0.25	35.5	< 30	0.35	0.047
373	645.5	100.0	0.24	34.6	< 30	0.57	0.066
374	556.1	100.0	0.21	29.8	< 30	0.62	0.063
375	824.0	99.6	0.31	44.2	< 30	0.43	0.043
376	548.5	100.0	0.20	29.4	< 30	0.49	0.062
377	1050.2	100.0	0.39	56.3	< 30	0.32	0.021
378	1045.0	100.0	0.39	56.0	< 30	0.25	0.014
379	756.0	100.0	0.28	40.5	< 30	0.47	0.065

All samples were taken with the bait pump.

Table 45
Calculated head assays

Sample No.	Calculated Head Assays			
	Sn g/t	TiO ₂ %	ZrO ₂ %	
361	< 29	0.07	0.010	
362	34	0.08	0.013	
363	104	0.11	0.012	
364	102	0.05	0.013	
365	54	0.09	0.022	
366	< 30	0.21	0.014	*
367	< 30	0.43	0.048	*
368	< 30	0.41	0.038	*
369	< 30	0.58	0.063	*
370	< 30	0.90	0.190	*
371	< 30	0.13	0.013	*
372	< 30	0.35	0.047	*
373	< 30	0.57	0.085	*
374	< 30	0.62	0.083	*
375	< 30	0.43	0.043	
376	< 30	0.49	0.062	*
377	< 30	0.32	0.021	*
378	< 30	0.25	0.014	*
379	< 30	0.47	0.065	*

* Actual head assays

Sample 375 Calculated head assay was the same as the actual head assay.

Location of samples

Sample No.	Latitude	Longitude	Depth (m)	Bottom
380	40.51.00S	147.53.50E	8.3	Sand
381	40.50.90S	147.53.50E	8.5	Sand
382	40.50.90S	147.53.60E	7.6	Sand
383	40.50.80S	147.53.60E	9.0	Sand
384	40.50.80S	147.53.70E	8.1	Sand
385	40.50.70S	147.53.70E	8.9	Sand
386	40.50.70S	147.53.80E	7.5	Sand
387	40.50.60S	147.53.80E	8.7	Sand
388	40.50.60S	147.53.90E	7.5	Sand
389	40.50.50S	147.53.90E	8.7	Sand
390	40.50.50S	147.54.00E	7.7	Sand
391	40.50.40S	147.54.00E	8.6	Sand
392	40.50.40S	147.54.10E	7.2	Sand
393	40.50.30S	147.54.10E	8.1	Sand
394	40.50.00S	147.54.50E	6.2	Sand
395	40.52.10S	147.52.00E	5.8	Reef covered by 2" of sand
396	40.52.60S	147.51.00E	7.6	Reef covered by 2" of sand
397	40.52.90S	147.50.00E	4.1	Reef covered by 2" of sand

Latitude and longitude readings are in degrees, minutes and hundredths of a minute.

Table 47

Sample No.	Total mass of sample g	Core depth m	Core Recovery %	Assays		
				Sn g/t	TiO ₂ %	ZrO ₂ %
380	1057	0.40	56.7	< 30	0.38	0.015
381	1272	0.48	68.2	40	0.21	0.018
382	863	0.33	46.3	30	0.17	0.018
383	1397	0.53	74.9	< 30	0.19	0.017
384	1266	0.48	67.9	< 30	0.34	0.017
385	919	0.35	49.3	< 30	0.24	0.016
386	759	0.29	40.7	70	0.28	0.016
387	1126	0.42	60.4	40	0.16	0.018
388	1119	0.42	60.0	< 30	0.20	0.016
389	1476	0.56	79.1	< 30	0.20	0.016
390	1390	0.52	74.5	30	0.27	0.018
391	987	0.37	52.9	70	0.17	0.019
392	1091	0.41	58.5	50	0.22	0.018
393	1121	0.42	60.1	70	0.17	0.019
394	720	0.27	38.6	< 30	0.25	0.015
395	242	0.09	13.0	90	0.14	0.015
396	1313	0.49	70.4	< 30	0.04	0.010
397	1129	0.43	60.5	< 30	0.04	< 0.010

All samples were taken with the bait pump.

587059

CHEMICAL LABORATORY : INPLANT ANALYSIS REPORT

DATE: 25th Feb. '97

REFERENCE: Sand Samples

TO: Neil M. Thomas / Lawry Rhodes

RE-ANALYSED

RESULTS

*

CALCULATED

SAMPLE IDENT.	%Sn	%TiO ₂	%ZrO ₂	%ZrO ₂	HEADS
Q131 A	<0.003	0.03	0.15	0.007	0.007
Q132 B1-	0.004	0.06	0.16	0.013	0.009
Q133 B2-	<0.003	0.04	0.14	0.014	0.008
Q134 1-	0.012	0.09	0.15	0.023	0.015
Q135 2-	0.006	0.06	0.14	0.016	0.012
Q136 3-	<0.003	0.02	0.15	0.011	0.009
Q137 4-	<0.003	0.02	0.15	0.014	0.009
Q138 5-	0.004	0.09	0.14	0.021	0.016
Q139 6-	0.004	0.16	0.15	0.021	0.014
Q140 7-	0.010	0.14	0.16	0.019	0.007
Q141 8-	<0.003	0.03	0.15	0.013	0.011
Q142 9-	0.014	0.07	0.15	0.015	0.014

COMMENTS:ANALYST: OFCHEMIST:

QA/DOC:12

REV 02

DATE: 22.03.95

AUTHORISED BY: R. GELSTON.

587060



CHEMICAL LABORATORY : INPLANT ANALYSIS REPORT

DATE: 25th Feb. '97

 TEMCO
 Bell Bay
 BHP Manganese

REFERENCE: Sand Samples

TO: Neil M. Thomas / Lawry Rhodes

 RE-ANALYSED
 RESULTS

CALCULATED

SAMPLE IDENT.		%Sn	%TiO ₂	%ZrO ₂		%ZrO ₂		HEADS
10-	Q143	0.022	0.15	0.14		—		
11		<0.003	0.21	0.15		0.041		0.041
12		<0.003	0.09	0.14		0.012		0.012
13-		0.005	2.08	0.24		—		
14		<0.003	0.55	0.15		—		
15		<0.003	0.16	0.14		—	0.023	0.023
16-		<0.003	0.02	0.15			0.034	0.029
17-	Q150	0.026	0.08	0.15		0.007		0.005
18-		<0.003	0.02	0.13		—		←
19-	Q152	0.022	0.07	0.15		0.029		
20		<0.003	0.10	0.14		—		0.027

COMMENTS:

ANALYST: CF

CHEMIST: *L. Jones*

QA/DOC:12

REV:02

DATE:22.03.95

AUTHORISED BY: R.GELSTON

CHEMICAL LABORATORY : INPLANT ANALYSIS REPORT

DATE: 4.4.97

REFERENCE: Mineral Sands samples

TO: L.Rhodes

RE-ANALYSED

RESULTS

CALCULATED

SAMPLE IDENT.	Sn(ppm)	TiO ₂ (%)	ZrO ₂ (%)				%ZrO ₂	HEADS
21- (Q197) ✓	<30	0.04	0.14				0.009	0.009
22- (Q198) ✓	<30	0.28	0.15				0.043	0.043
23 (Q199)	<30	0.58	0.17				—	
24 (Q200) ✓	<30	0.11	0.14				0.015	0.015
25 (Q201) ✓	<30	0.11	0.13				0.010	0.010
26 (Q202) ✓	<30	0.54	0.16				0.026	0.026
27 (Q203) ✓	<30	0.27	0.15				0.017	0.017
28 (Q204)	50	0.84	0.19				—	
29- (Q205) ✓	130	0.18	0.15				0.041	0.023
30- (Q206) ✓	40	0.04	0.13				0.010	0.008
31- (Q207) ✓	100	0.13	0.15				0.024	0.017
32- (Q208) ✓	40	0.08	0.14				0.024	0.019
33- (Q209) ✓	<30	0.03	0.14				0.013	0.012
34 (Q210) -	<30	0.23	0.14				0.043	0.043
35- (Q211) -	50	0.05	0.15				0.011	0.004
36- (Q212) -	<30	0.03	0.14				0.010	0.005
37- (Q213) ✓	30	0.05	0.15				0.018	0.012

COMMENTS:

ANALYST: DG

CHEMIST: *R. Rhodes*

CHEMICAL LABORATORY : INPLANT ANALYSIS REPORT

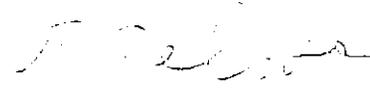
DATE: 4.4.97

REFERENCE: Mineral Sands samples

TO: L.Rhodes

REANALYSED
RESULTS
CALCULATED

SAMPLE IDENT.	Sn(ppm)	TiO ₂ (%)	ZrO ₂ (%)	ZrO ₂	HEADS
38- (Q218) ✓	30	0.05	0.13	0.016	0.008
39- (Q219) ✓	150	0.10	0.16	0.010	0.007
40- (Q220) ✓	170	0.08	0.15	0.014	0.010
41- (Q221) -	60	0.07	0.15	0.012	0.008
42- (Q222) ✓	130	0.09	0.16	0.005	0.004
43- (Q223) ✓	150	0.08	0.16	0.010	0.008
44- (Q224)	230	0.07	0.15	—	—
✓ 45- (Q225) ✓	160	0.06	0.15	0.013	0.013
46- (Q226)	250	0.08	0.16	—	—
✓ 47- (Q227) ✓	210	0.09	0.15	0.011	0.010
✓ 48- (Q228) -	180	0.08	0.16	0.004	0.003
✓ 49- (Q229) -	210	0.08	0.14	0.013	0.008
50- (Q230)	210	0.11	0.16	—	—
✓ 51- (Q231) -	210	0.10	0.14	0.017	0.012

COMMENTS:ANALYST: OF KDCHEMIST: 

QA/DOC/12

REV/02

DATE/22.03.95

AUTHORISED BY: R.GELSTON

CHEMICAL LABORATORY : INPLANT ANALYSIS REPORT

DATE: 26.5.97

MISSING TABLES

REFERENCE: Mineral Sands samples

TO: L.Rhodes

RE-ANALYSED
RESULTS

CALCULATED

SAMPLE IDENT.	Sn(ppm)	TiO ₂ (%)	ZrO ₂ (%)	ZrO ₂	HEADS
52- (Q258)	200	0.06	0.16	—	
53- (Q259) ✓	130	0.05	0.16	0.010	0.007
54- (Q260) ✓	60	0.05	0.16	0.007	0.006
55- (Q261) ✓	70	0.05	0.16	0.008	0.007
56- (Q262) ✓	40	0.05	0.16	0.013	0.013
57- (Q263) ✓	110	0.08	0.17	0.012	0.011
58- (Q264) ✓	270	0.09	0.17	0.017	0.014
59- (Q265) ✓	130	0.07	0.17	0.007	0.007
60- (Q266) ✓	200	0.11	0.16	0.038	0.036
61- (Q267) ✓	230	0.10	0.16	0.019	0.015
62- (Q268)	230	0.12	0.16	—	
63- (Q269) ✓	270	0.08	0.17	0.009	0.006
64- (Q270)	300	0.10	0.17	—	
65- (Q271) ✓	330	0.07	0.17	0.006	0.002
66- (Q272) ✓	170	0.07	0.17	0.011	0.010
67- (Q273) ✓	340	0.12	0.16	0.022	0.016
68- (Q274) ✓	140	0.11	0.16	0.018	0.013
69- (Q275) ✓	80	0.07	0.14	0.011	0.009

COMMENTS:

ANALYST: CFAR

CHEMIST: *R. Rhodes*

QAIDCO 13

REV 00

DATE 22.03.95

AUTHORISED BY: P. BELSTON

CHEMICAL LABORATORY : INPLANT ANALYSIS REPORT

DATE: 4.6.97

REFERENCE: Mineral Sands samples

TO: L.Rhodes

RE-ANALYSED RESULTS

CALCULATED

SAMPLE IDENT.	Sn(ppm)	TiO ₂ (%)	ZrO ₂ (%)	ZrO ₂	HEADS
70- (Q276) ✓	70	0.05	0.13	0.011	0.010
71- (Q277) ✓	140	0.06	0.14	0.00	0.007
72- (Q278) ✓	100	0.06	0.15	0.011	0.008
73- (Q279) ✓	130	0.07	0.16	0.010	0.008
74- (Q280)	150	0.08	0.15	—	
75- (Q281)	220	0.09	0.16	—	
76- (Q282) -	310	0.08	0.18	0.006	0.005
77- (Q283)	180	0.09	0.17	—	
78- (Q284)	130	0.10	0.18	—	
79- (Q285)	250	0.11	0.18	—	
80- (Q286) ✓	130	0.08	0.18	0.013	0.010
81- (Q287) ✓	230	0.11	0.17	0.010	0.008
82- (Q288) ✓	140	0.10	0.17	0.008	0.006
83- (Q289) ✓	210	0.08	0.17	0.009 0.008	0.006
84- (Q290) ✓	100	0.05	0.17	0.011 0.009	0.004
85- (Q291) ✓	80	0.04	0.17	0.017 0.011	0.007
86- (Q292) ✓	230	0.14	0.18	0.009 0.017	0.016
87- (Q293) ✓	140	0.08	0.17	0.010 0.009	0.006
88- (Q294) ✓	20	0.02	0.16	0.015	0.015
89- (Q295)	100	0.13	0.17	—	

COMMENTS:

ANALYST: CFAR:BG

CHEMIST: *L. Rhodes*

CHEMICAL LABORATORY : INPLANT ANALYSIS REPORT

DATE: 17.6.97

REFERENCE: Mineral Sands samples

TO: L.Rhodes

RE-ANALYSED
RESULTS
CALCULATED

SAMPLE IDENT.	Sn(ppm)	TiO ₂ (%)	ZrO ₂ (%)	% ZrO ₂	HEADS
90- (Q332) ✓	190	0.12	0.18	0.009	0.006
91- (Q333) ✓	180	0.09	0.16	0.007	0.006
92- (Q334) ✓	190	0.08	0.18	0.010	0.008
93- (Q335) ✓	400	0.09	0.17	0.006	0.004
94- (Q336) ✓	180	0.08	0.17	0.011	0.009
95- (Q337) ✓	120	0.09	0.17	0.008	0.007
96- (Q338) ✓	50	0.06	0.15	0.010	0.010
97- (Q339)	110	0.12	0.16	—	
98- (Q340) ✓	130	0.06	0.17	0.007	0.007
99- (Q341) ✓	90	0.04	0.13	0.007	0.007
100- (Q342) ✓	<30	0.07	0.14	0.034	0.034
101- (Q343) ✓	40	0.05	0.14	0.019	0.015
102- (Q344) -	<30	0.06	0.13	0.022	0.022
103- (Q345) ✓	50	0.06	0.15	0.013	0.013
104- (Q346)	170	0.11	0.16	—	
105- (Q347) -	140	0.13	0.16	0.010	0.007
106- (Q348) ✓	160	0.10	0.17	0.007	0.006
107- (Q349)	150	0.10	0.15	—	
108- (Q350)	260	0.14	0.17	—	

COMMENTS:

ANALYST: CF AH DC

CHEMIST: *L. Rhodes*

CHEMICAL LABORATORY : INPLANT ANALYSIS REPORT

DATE: 20.6.97

REFERENCE: Mineral Sands samples

TO: L.Rhodes

RE-ANALYSED
RESULTS

CALCULATED

SAMPLE IDENT.	Sn(ppm)	TiO ₂ (%)	ZrO ₂ (%)	ZrO ₂ /TiO ₂	HEADS			
109- (Q399) ✓	160	0.08	0.17	0.010	.007			
110- (Q400) ✓	160	0.07	0.16	0.012	.009			
111- (Q401) ✓	200	0.09	0.16	0.012	0.010			
112- (Q402) ✓	110	0.08	0.15	0.012	.008			
113- (Q403) ✓	70	0.07	0.15	0.013	.012			
114- (Q404) ✓	130	0.08	0.17	0.014	.013			
115- (Q405) ✓	130	0.08	0.17	0.010	.009			
116- (Q406) ✓	130	0.08	0.16	0.011	.011			
117- (Q407) ✓	70	0.10	0.16	0.013	.013			
118- (Q408) ✓	50	0.09	0.15	0.016	.011			
119- (Q409) ✓	160	0.10	0.16	0.011	.008			
120- (Q410) -	240	0.07	0.16	0.008 0.008	.006			
121- (Q411) -	80	0.06	0.16	0.006	.004			
122- (Q412) ✓	250	0.06	0.17	0.005	.005			
123- (Q413) -	350	0.07	0.17	0.013	.006			

COMMENTS:

ANALYST: CF KD

CHEMIST: *[Signature]*

CHEMICAL LABORATORY : INPLANT ANALYSIS REPORT

DATE: 04.12.97

REFERENCE: Mineral Sands samples

TO: L. Rhodes

RE-ANALYSED
RESULTS.
CALCULATED

SAMPLE IDENT.	Sn(ppm)	TiO ₂ (%)	ZrO ₂ (%)	CALCULATED	HEADS		ZrO ₂ %	HEADS
124 (Q602) ✓	140	0.11	0.18	137	0.11	0.18	0.012	.012
124- (Q603) ✓	110	0.09	0.19	106	0.09	0.18	0.019	.018
125 (Q604) ✓	150	0.07	0.19	113	0.05	0.14	0.004	.003
125- (Q605) ✓	270	0.13	0.18	240	0.12	0.16	0.024	.021
126 (Q606) ✓	110	0.10	0.18	101	0.10	0.13	0.016	.016
126- (Q607) ✓	280	0.15	0.19	261	0.14	0.18	0.024	.023
127 (Q608) -	260	0.13	0.19	245	0.12	0.17	0.016	.009
127- (Q609) ✓	260	0.13	0.19	253	0.13	0.17	0.017	.017
128 (Q610) ✓	160	0.09	0.18	159	0.09	0.13	0.008	.008
128- (Q611)	140	0.11	0.18	132	0.10	0.17		
129 (Q612) ✓	70	0.08	0.18	52	0.08	0.13	0.010	.007
129- (Q613) ✓	320	0.12	0.19	310	0.12	0.17	0.021	.021
130 (Q614) -	130	0.06	0.19	123	0.06	0.13	0.003	.003
130- (Q615) -	110	0.08	0.19	107	0.08	0.13	0.013	.013
131 (Q616) -	90	0.14	0.19	79	0.14	0.17	0.020	.019
131- (Q617) -	130	0.11	0.20	121	0.11	0.20	0.016	.016
132 (Q618) ✓	120	0.10	0.19	113	0.10	0.17	0.012	.011
132- (Q619) ✓	170	0.12	0.20	161	0.12	0.20	0.020	.020

COMMENTS:

ANALYST: AR.KC

CHEMIST: 