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REPORT ON SPL NO. 39

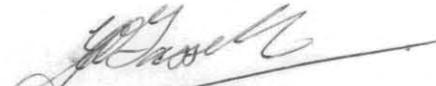
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FRIENDLY BEACHES

TASMANIA

PLANET METALS LTD.

Prepared by:


G.W. Tassell

Approved by:


J. Baird
Chief Minerals Geologist.

March, 1970.

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PHOTOGRAPHS

<u>Plates 1 to 7</u>	Views of beach area and geological features	Following P 7
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APPENDIX

1. Composition of Heavy Mineral Fraction of
31 Beach Samples

DRAWINGS

	<u>Scale</u>
<u>Figure 1:</u> Location Map, SPL 39	1:250,000
<u>Figure 2:</u> Location Plan of bore-holes	1" = 500' <i>In pocket</i>
<u>Figure 3:</u> Section along scout-bore line 5000N	1" = 100'
<u>Figure 4:</u> " " " " " 2000N	1" = 100'
<u>Figure 5:</u> " " " " " 2000S	1" = 100'
<u>Figure 6:</u> " " " " " 8000S	1" = 100'

1. INTRODUCTION

Special Prospecting Licence No. 39 consists of a North-South trending strip of coastline approximately $4\frac{1}{2}$ miles long by $\frac{1}{2}$ mile wide covering the beach and dune-lines and extending in places to $\frac{1}{4}$ mile off-shore. This portion of the coast is known as The Friendly Beaches.

2. LOCATION AND ACCESS

The Friendly Beaches lie on the East coast of Tasmania just south of the fishing village of Bicheno, which is approximately 120 miles from Hobart via the Tasman Highway (see Fig. 1). Access to S.P.L. No. 39 is by means of the Tasman Highway 7.5 miles south to the Coles Bay turnoff, thence 6 miles of good gravel road to the Friendly Beaches turnoff, thence 1.7 miles along a rough sand track which, after heavy rain, is suitable only for four-wheel-drive vehicles.

The latter track bifurcates on entering the prospect area and runs North and South along the edge of the swampy area behind the dunes and open sand (see Fig. 2). It is passable only with much difficulty after heavy rain. The track terminates in the southern portion of the prospect area on the edge of a large lagoon. Another track runs from further along the Coles Bay road to the southern edge of this lagoon but this track is completely impassable after heavy rain.

3. PREVIOUS INVESTIGATIONS

The prospect was previously inspected by the Electrolytic Zinc Company of Australasia Limited who showed no further interest after concluding that the mineral content of the sands was insufficient for their purposes.

An inspection was also made by D.V.G. Tregaskis of John Taylor & Sons, Melbourne. A total of 25 samples was taken by auger, pitting or channel sampling of available sand faces and these samples were analysed in Planet's laboratory. Apart from the samples retained, numerous other samples were taken by auger and shovel for visual inspection and discarded. As a result of the analyses of these samples it was recommended that further investigation be carried out on the older dune areas and the beaches to the North.

4. INVESTIGATIONS

(a) Sampling

101 scout-bore holes were drilled by hand auger at intervals of 100' along lines 1,000' apart and running approximately at right angles to the shore line (see Fig. 2).

Samples were taken over maximum intervals of 5' and preliminary splitting was carried out on site. Holes were drilled to bed-rock (conglomerate, clay or mud) or to beneath the water-table where the auger would not retain the sand. As the whole beach appears to be underlain by gently-dipping conglomerates which are overlain by clays in many places, it is considered that there would be very little depth of sand beneath the water-table. In many holes bedrock was encountered immediately beneath the water-table.

In addition to the samples retained, numerous other samples were taken by auger beyond the older back dunes in the heath and swamp areas. After visual inspection these were discarded owing to high clay, mud and coarse quartz gravel content. Little sand was found in these samples.

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(b) Reconnaissance

During the sampling programme the entire prospect area was covered by foot in order to assess problems of mining such an area, e.g. vegetation and underlying rock formations.

Numerous photographs were taken and some of these are included to illustrate particular features. (See Plates 1 to 7)

The area immediately offshore from SPL 39 could not be inspected in detail due to heavy seas. However, it appears that the conglomerate underlying the beach area extends for some distance seawards and is covered in most parts by kelp. If this is so, the volume of sand within close proximity to the shore line would be very small.

If the grade of heavy minerals is similar to that onshore, and it is thought that this would be so, this, combined with the small volume of sand, would preclude the possibility of an offshore prospect being economic.

In addition to the prospect area several other beaches in the vicinity were visited. There is no beach development on this section of the East coast South of the Friendly Beaches and the beaches visited as far as 10 miles North of Bicheno were found to be very narrow with little dune development.

(c) Laboratory Assays

Samples collected were investigated in Planet's laboratory for their heavy mineral content. Owing to high clay content in some samples a split of 50 grams of sand was washed and dried to remove the clay fraction. The dried remainder was separated using Bromoform into light and heavy fractions which were weighed and calculated as percentages of the total sample.

Grain mounts of the heavy fraction were prepared for optical studies. Quantitative mineral analyses were carried out by point counting 200 grains and calculating the values as percentages of total sample.

The results of these investigations are included as Appendix 1.

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EVALUATION

Estimated volume of sand = 4.6×10^7 cu. ft.

Estimated weight of sand (assuming S.G. of 1.7) = 2.18×10^6 tons.

Value of heavy minerals

Mineral	*Average Grade %	Tonnage	Approx. Price/ton	Value
Heavy minerals	2.78	60,700	-	-
Zircon	0.76	16,600	\$50	\$830,000
Topaz	0.62	13,500	-	-
Garnet	0.50	10,900	-	-
Rutile	0.03	650	\$140	\$91,000
Tourmaline	0.30	6,500	-	-
Opagues	0.50	10,910	-	-
	<u>2.71</u>	<u>59,060</u>		
			<u>Total</u>	<u>\$921,000</u>

* Weighted average taking into consideration the width of each sample.

The above average grades have been calculated from the results of only 31 samples out of a total of 150. However, the average grades are so low and the volume of sand so small that it is extremely unlikely that the potential of the prospect area would be enhanced sufficiently by increased grades in the remaining samples.

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6. RECOMMENDATIONS

It was found that the potential value of the heavy minerals contained in the Friendly Beaches area was not sufficient to warrant further investigation. It is therefore recommended that the option agreement with the holder of Special Prospecting Licence No. 39, Mr. H. Meerding, be relinquished.

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PLATE 1.

VIEW FROM NORTHERN END OF SPL 39
SHOWING CONGLOMERATE WHICH UNDERLIES
MOST OF THE BEACH AND DUNES.
ROCKY HEADLANDS AND HILLS IN THE
DISTANCE ARE RED GRANITE, PROBABLY
THE SOURCE ROCKS FOR THE HEAVY
MINERALS.



PLATE 2. SOUTHERN AREA OF SPL 39 SHOWING CLEAR SAND WITH NO DARK HEAVY MINERAL BANDS (cf. Plate 3)

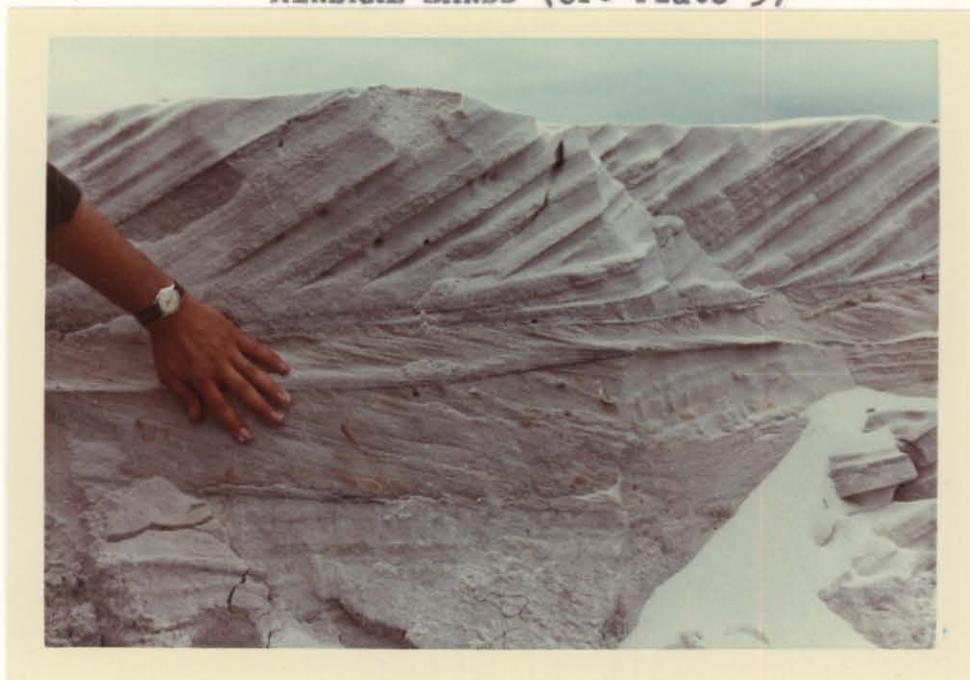


PLATE 3. MID-NORTHERN AREA OF SPL 39 SHOWING CROSS-BEDDING DUE TO WIND AND WATER ACTION AND DARK HEAVY MINERAL BANDS CROSSING CENTRE OF PHOTOGRAPH (cf. Plate 2)



PLATE 4. NORTHERN END OF SPL 39, SHOWING THIN COVER OF SAND CONTAINING SEVERAL DARK HEAVY MINERAL BANDS, AND UNDERLYING SANDY ORGANIC MATERIAL WHICH IS ITSELF UNDERLAIN BY CONGLOMERATE.



PLATE 5. MID-NORTHERN AREA OF SPL 39. A CLAY CONGLOMERATE LAYER WHICH CAN BE SEEN AT WATER LEVEL, UNDERLIES DUNES IN THIS AREA.

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PLATE 6.

LOOKING SOUTH FROM LARGE DUNE IN CENTRE
OF SPL 39. NOTE PRESENCE OF CONGLOMERATE
AT WATER'S EDGE AND LOW-LYING LAGOONAL
AREA AT BACK OF DUNES.

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PLATE 7.

LOOKING NORTH FROM LARGE DUNE IN CENTRE
OF SPL 39. NOTE PRESENCE OF CONGLOMERATE
AT WATER'S EDGE AND EXTENSIVE WIDTH OF
BEACH AND DUNE AREA BUT SCARCITY OF LARGE
DUNES.

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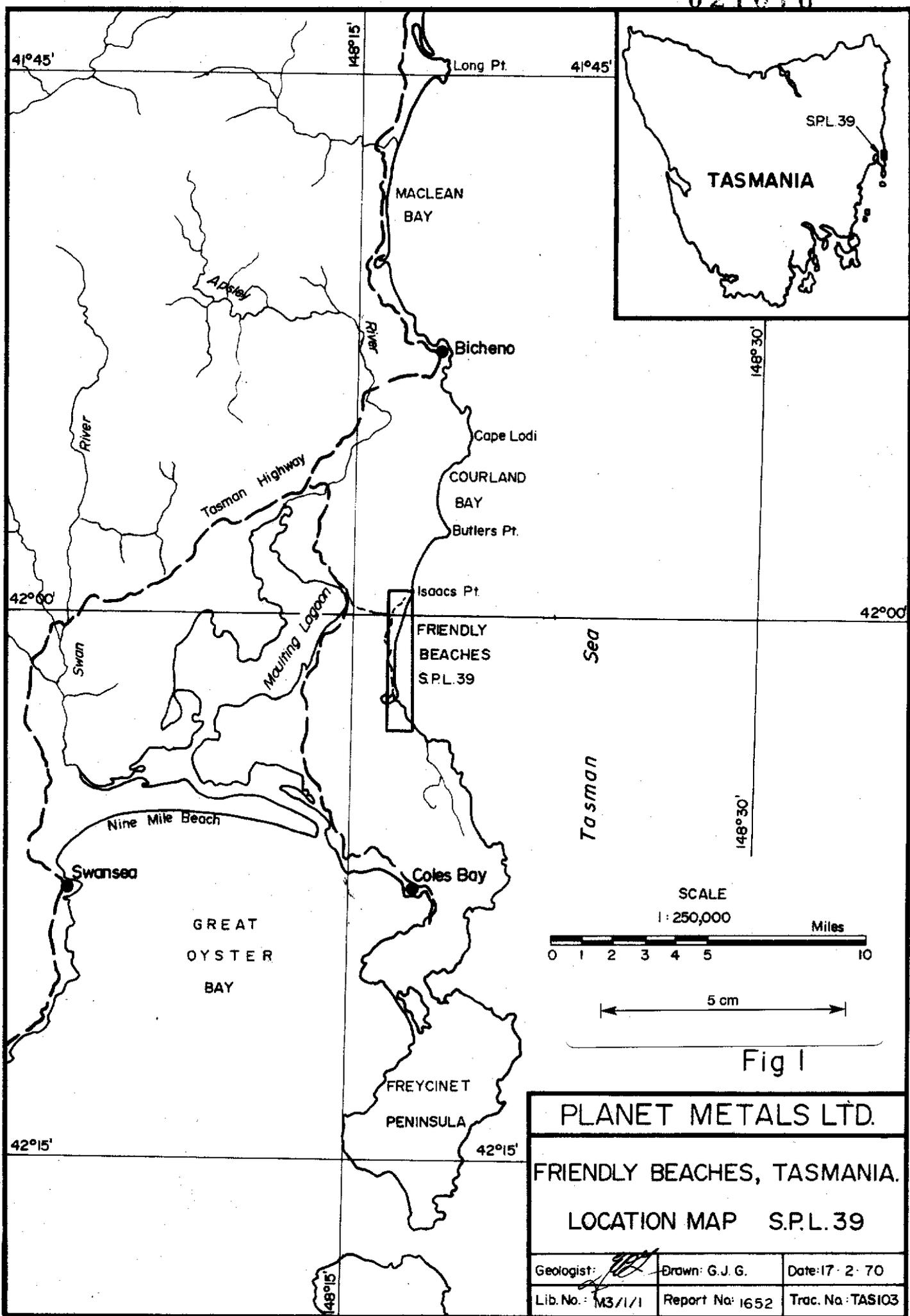
Appendix I

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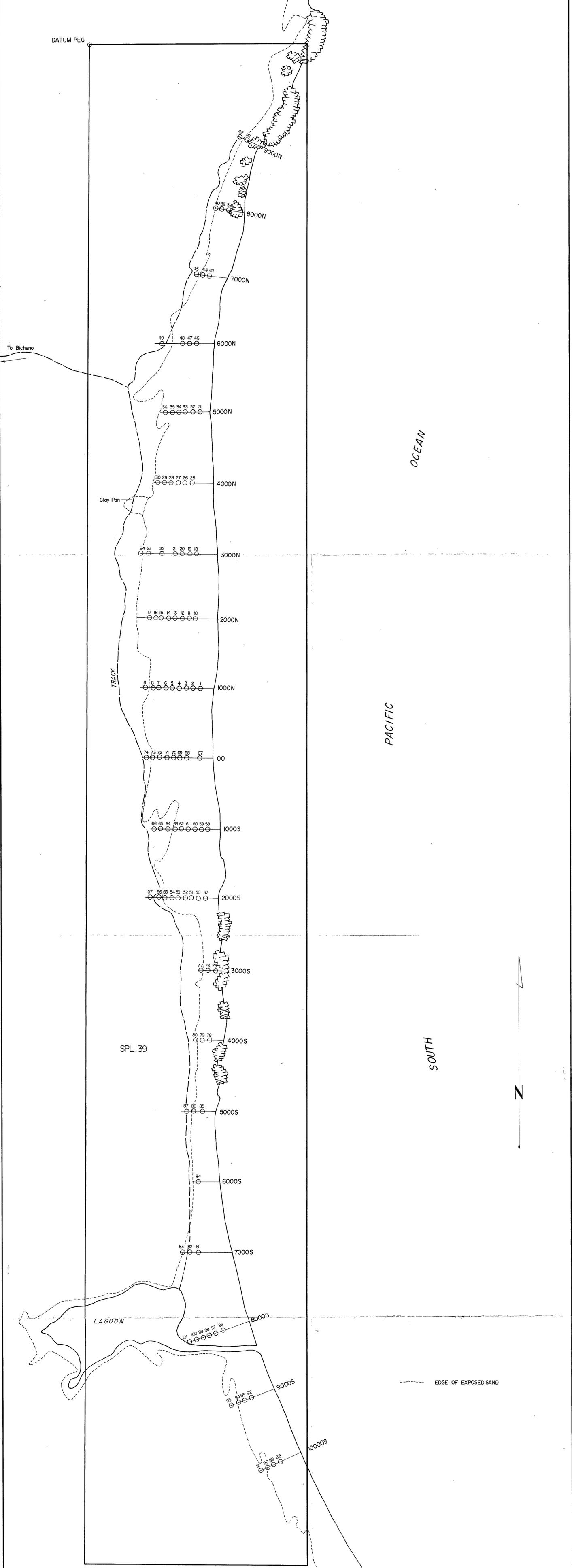
Composition of Heavy Mineral Fraction
of 31 Beach Samples

Sample No.	Total % of Total Sample	Composition % of Total Sample					
		Zircon	Rutile	Topaz	Garnet	Tourmaline	Opagues
GWT4	5.55	3.07	0.08	0.82	0.76	0.08	0.57
GWT14	6.98	0.85	0.09	2.53	1.12	1.15	1.12
GWT31	6.29	1.47	0.09	1.37	1.43	0.56	1.31
GWT38	9.55	2.85	0.19	1.90	1.99	0.61	1.94
GWT47	2.88	0.34	0.05	1.09	0.46	0.50	0.39
GWT53	0.64	0.09	0.003	0.23	0.01	0.15	0.13
GWT54	0.98	0.14	0.009	0.36	0.01	0.13	0.30
GWT60	1.33	0.18	0.01	0.41	0.27	0.21	0.18
GWT71	1.50	0.16	-	0.61	0.23	0.23	0.26
GWT72	7.44	3.35	0.07	0.77	1.54	0.44	1.25
GWT73	1.37	0.32	0.006	0.41	0.17	0.17	0.33
GWT74	1.78	0.56	0.008	0.28	0.47	0.11	0.30
GWT75	2.99	0.35	0.11	0.82	0.61	0.61	0.41
GWT76	0.36	0.03	0.007	0.12	0.02	0.09	0.07
GWT77	0.80	0.07	0.003	0.28	0.12	0.16	0.14
GWT78	0.39	0.01	0.011	0.17	0.04	0.10	0.05
GWT79	0.67	0.06	0.006	0.30	0.03	0.12	0.12
GWT80	1.75	0.11	0.01	0.67	0.46	0.27	0.20
GWT104	1.17	0.16	0.01	0.38	0.25	0.16	0.17
GWT105	4.19	1.12	0.06	0.70	0.87	0.37	1.02
GWT106	0.50	0.06	0.007	0.17	0.08	0.09	0.06
GWT107	0.46	0.03	0.004	0.15	0.09	0.07	0.08
GWT108	1.42	0.14	0.01	0.51	0.28	0.21	0.23
GWT109	2.16	0.25	0.01	0.65	0.50	0.25	0.44
GWT118	0.82	0.06	0.01	0.28	0.16	0.17	0.11
GWT119	1.77	0.40	-	0.44	0.40	0.10	0.38
GWT120	1.16	0.33	0.01	0.24	0.26	0.11	0.17
GWT121	2.00	0.51	0.009	0.52	0.40	0.14	0.35
GWT128	0.41	0.09	0.002	0.11	0.04	0.05	0.009
GWT140	5.86	2.51	0.02	0.26	0.79	0.38	1.84
GWT141	10.81	3.21	0.05	2.24	1.65	0.90	2.7
AVERAGE	2.78	0.76	0.03	0.62	0.50	0.30	0.50

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DATUM PEG



OCEAN

PACIFIC

SOUTH

SPL. 39

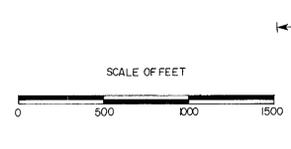
LAGOON

EDGE OF EXPOSED SAND

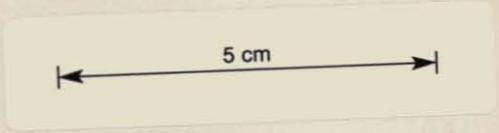
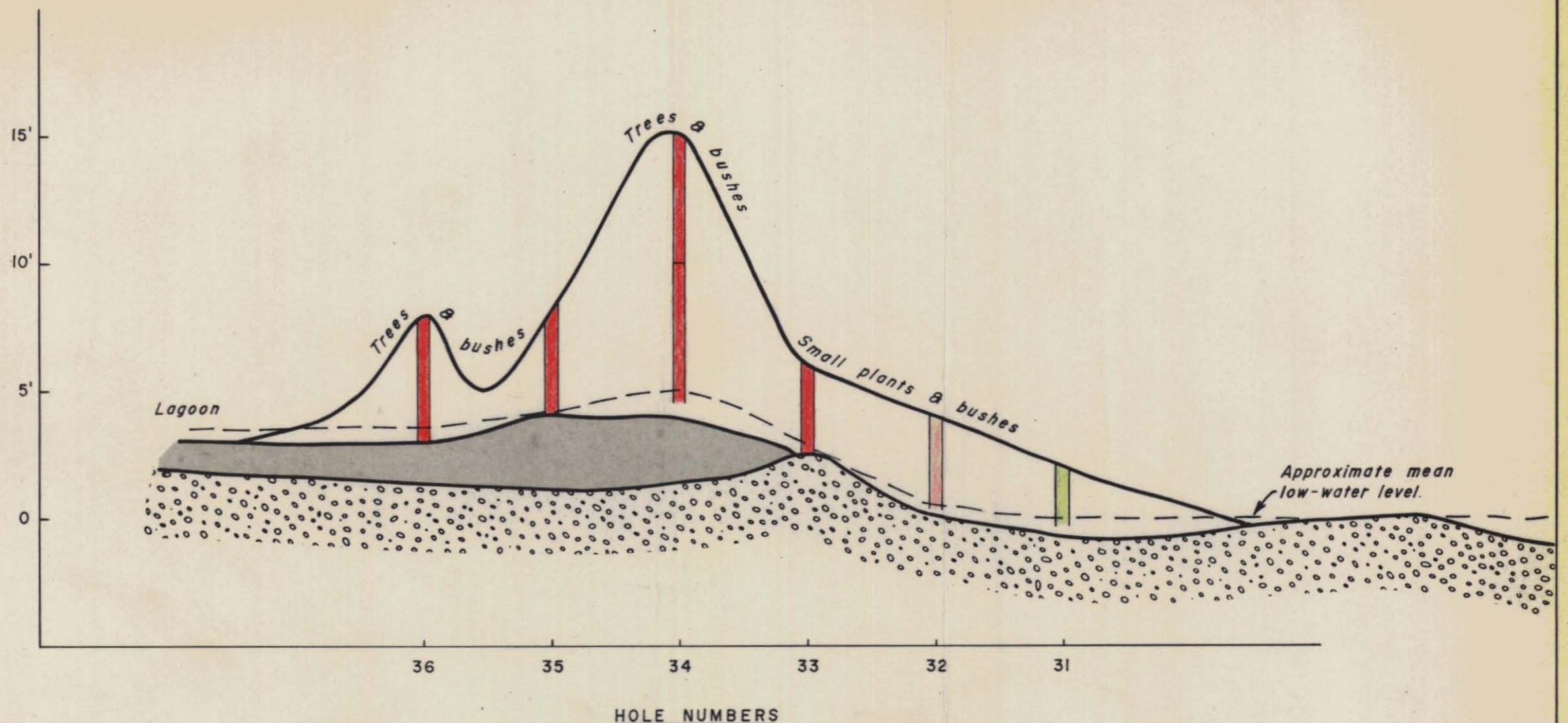


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PLANET MANAGEMENT & RESEARCH PTY. LTD		
FRIENDLY BEACHES, TASMANIA.		
LOCATION OF DRILL HOLES		
Geologist	Drawn by GUG	Date 10 3 70
Lib No: M3/1/2	Report No: 1652	Trac No: TAS/08



- REFERENCE**
- Unconsolidated sand
 - Black semi-consolidated sandy mud
 - Conglomerate
 - Approximate water table

- HEAVY MINERAL PERCENTAGES**
- Less than 4%
 - 4% to 8%
 - More than 8%

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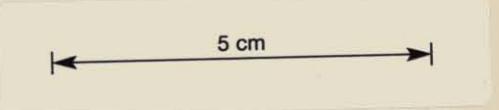
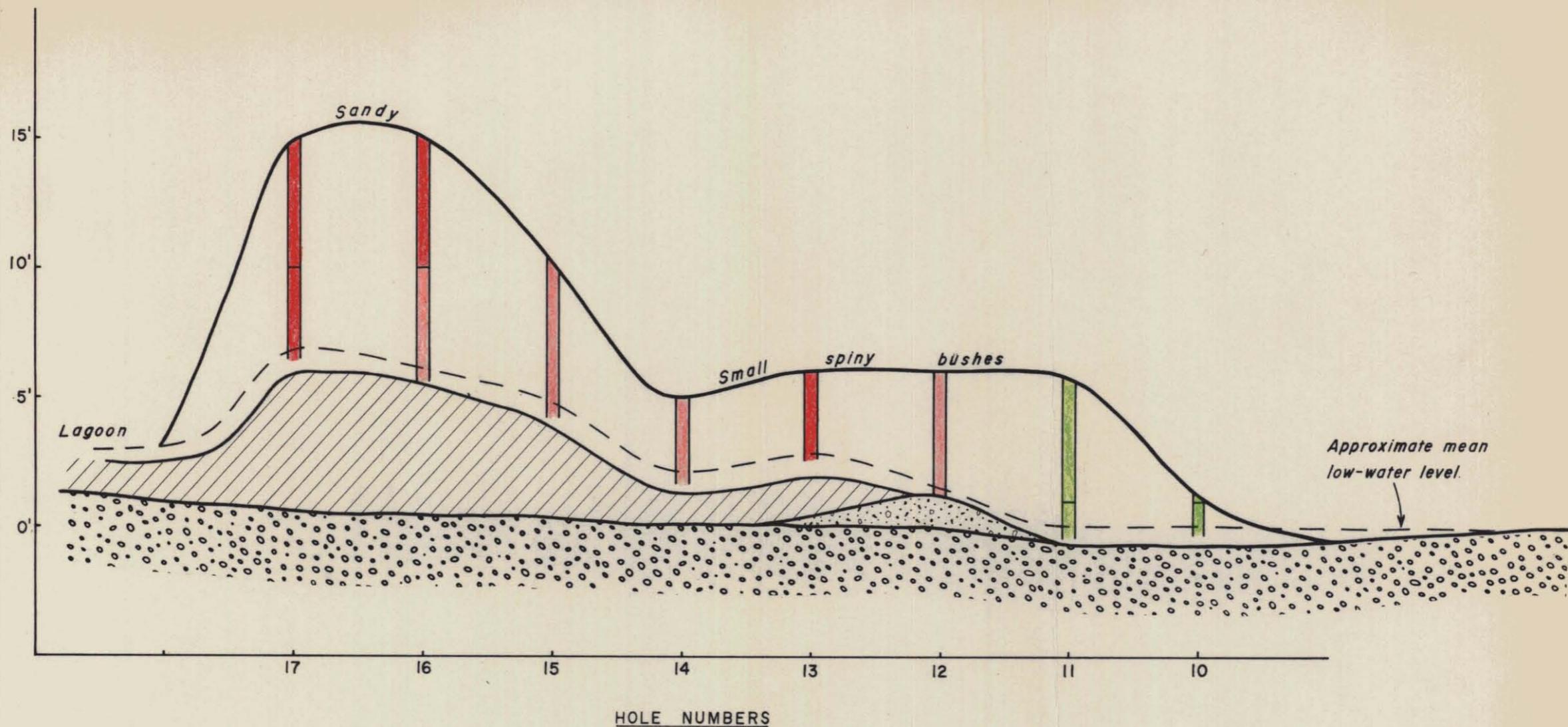
Horizontal Scale of Feet

0 100 200

Vertical Scale Exaggerated

PLANET METALS LTD.		
FRIENDLY BEACHES TASMANIA		
SECTION ALONG SCOUT-BORE LINE 5000N		
Geologist: <i>[Signature]</i>	Drawn by: J.M.	Date: 27-2-'70
Lib. No. M3/1/4	Report No. 1652	Tracing No. Tas.105

Fig. 3



- REFERENCE**
- Unconsolidated sand
 - Clay
 - Clay & pebbles
 - Conglomerate
 - Approximate water table

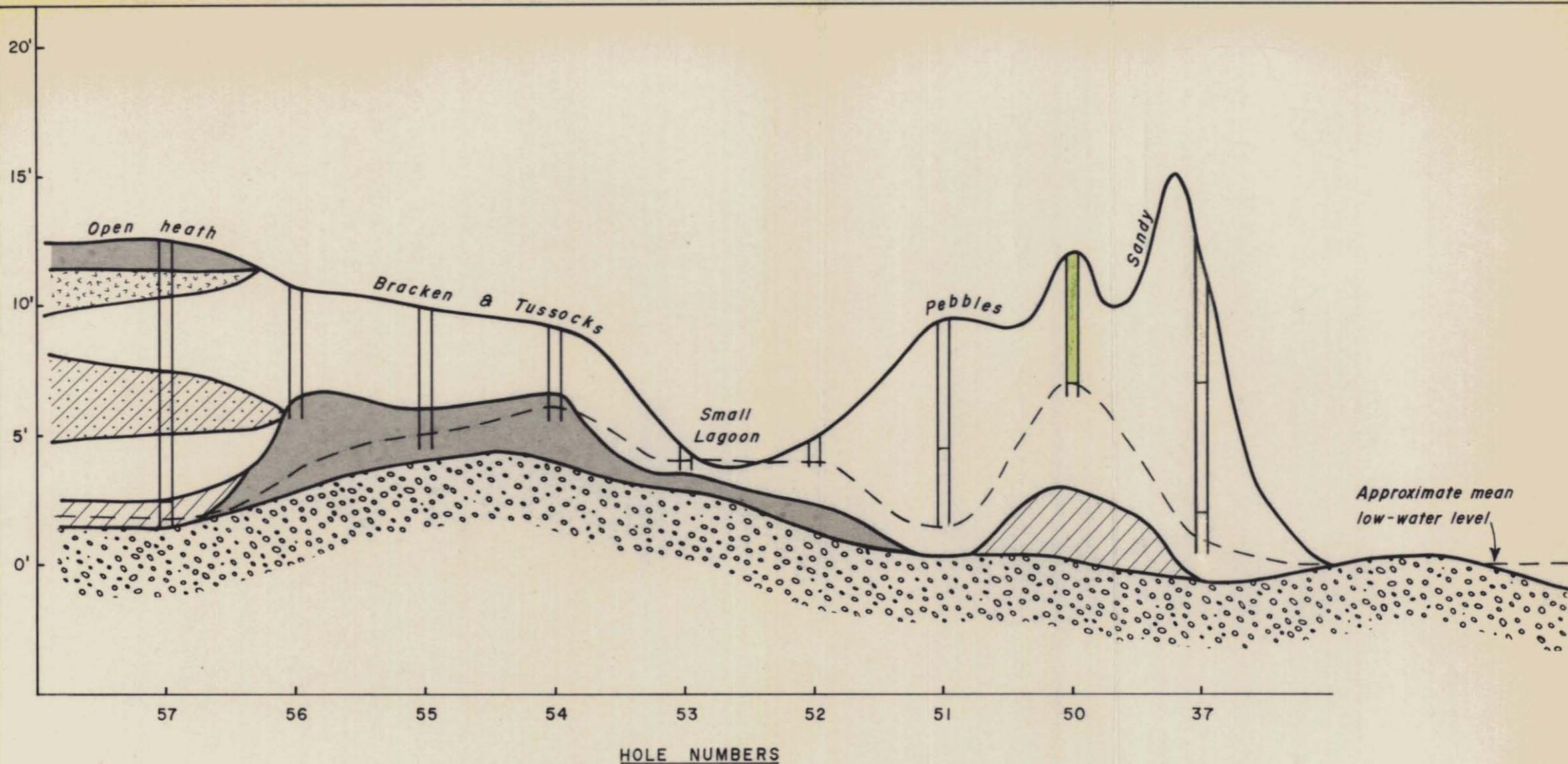
- HEAVY MINERAL PERCENTAGES**
- Less than 4 %
 - 4 % to 8 %
 - More than 8 %

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Horizontal Scale of Feet
 0 100 200
 Vertical Scale Exaggerated

PLANET METALS LTD.		
FRIENDLY BEACHES TASMANIA		
SECTION ALONG SCOUT-BORE LINE 2000 N		
Geologist: <i>[Signature]</i>	Drawn by: J. M.	Date: 27.2.'70
Lib. No. M3/1/3	Report No. 1652	Tracing No. Tas.104

Fig. 4



- REFERENCE**
- Unconsolidated sand
 - Clay
 - Sand & coarse quartz
 - Indurated sandy clay
 - Black soil & mud
 - Conglomerate
 - Approximate water table

- HEAVY MINERAL PERCENTAGES**
- Less than 4%
 - 4% to 8%
 - More than 8%

5 cm

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Horizontal Scale of Feet

0 100 200

Vertical Scale Exaggerated

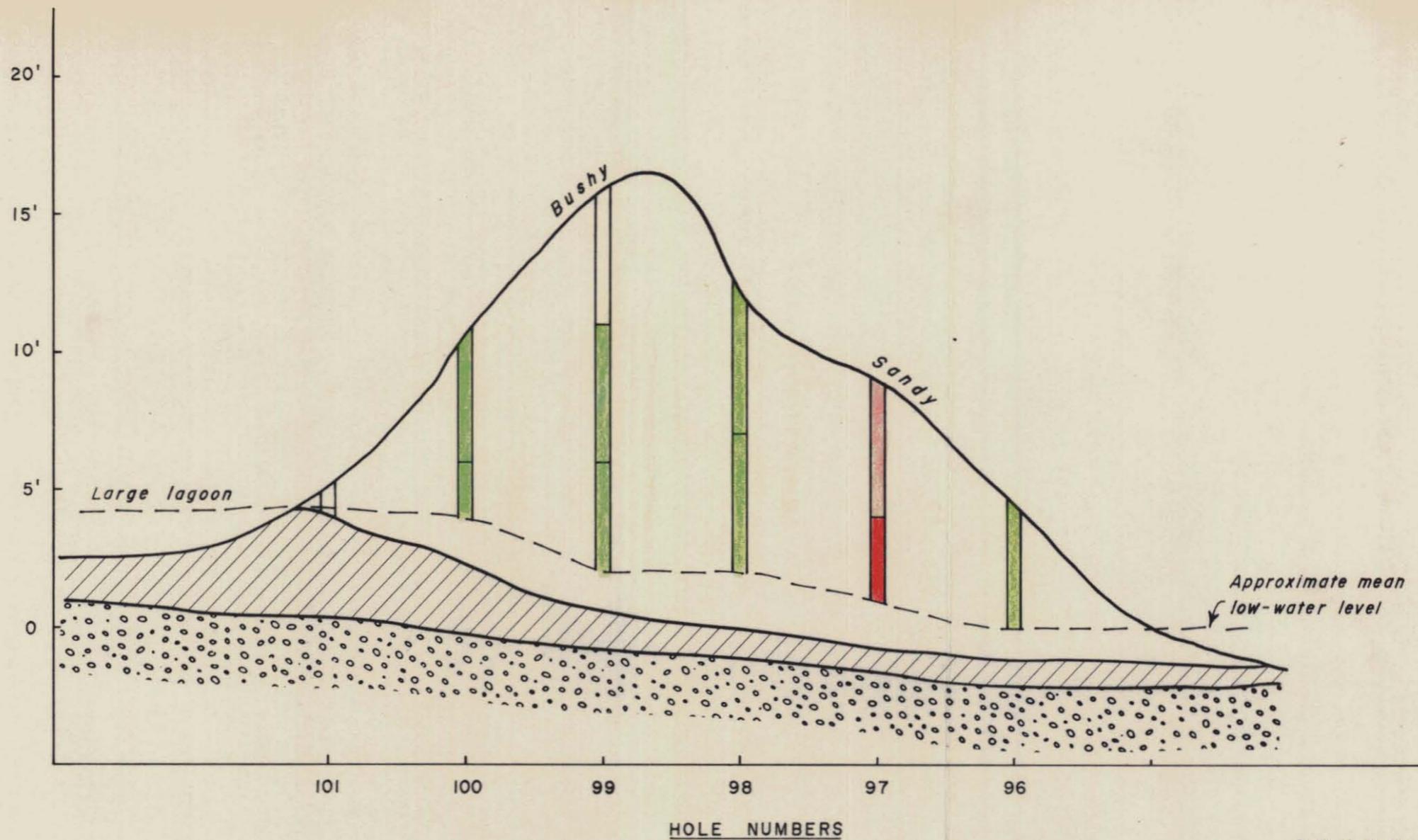
PLANET METALS LTD.

FRIENDLY BEACHES
TASMANIA

SECTION ALONG
SCOUT-BORE LINE 2000 S

Fig. 5

Geologist:	Drawn by: J.M.	Date: 27-2-'70
Lib. No. M3/1/5	Report No. 1652	Tracing No. Tas.106



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5 cm

Horizontal Scale of Feet

0 100 200

Vertical Scale Exaggerated

- REFERENCE**
-  Unconsolidated sand
 -  Clay
 -  Conglomerate
 -  Approximate water table

- HEAVY MINERAL PERCENTAGES**
-  Less than 4%
 -  4% to 8%
 -  More than 8%

PLANET METALS LTD.

FRIENDLY BEACHES
TASMANIA

SECTION ALONG
SCOUT-BORE LINE 8000S

Geologist: 	Drawn by: J.M.	Date: 3-3-'70
Lib. No. M3/1/6	Report No. 1652	Tracing No. Tas.107

Fig.6