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MT. COSTIGAN MINES LTD.
REPORT ON DRILLING OF
LANHERNE BEACH
KING ISLAND, TASMANIA.

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1. INTRODUCTION

A programme of drilling with a Gemco auger rig was undertaken on the Ianherne Beach under the supervision of Kenneth McMahon & Partners Pty. Ltd. Work started on 18th May, 1967, and continued until 28th June.

This report sets out the results of this drilling programme and the reserves proved of Heavy Mineral, Rutile and Zircon. The plans and sections of the grid lines are separate from this report.

2. SUMMARY AND CONCLUSIONS

1. Drilling on the Lanherne Beach was originally carried out by Mount Costigan Mines Ltd. using a Gemco auger rig with a spacing between grid lines of 100 feet.

Reserves proved by this earlier work amounted to 1,818,751 tons of sand containing 32,737 tons of Rutile and 36,375 tons of Zircon.

2. The purpose of this present drilling programme was to extend the area drilled and to act as a check on earlier work. The programme amounted to:-

No. of holes drilled	152
No. of samples taken	686
Total footage drilled	4,298
Average depth of hole	28 feet.

3. Hand drilling was not used because previous experience proved it was unsuitable in this area, which in places contains a good deal of clay.
4. Reserves have been divided into two categories, namely, above the water table, and total reserves above and below the water table.

Category	Sand (Tons)	Heavy Mineral		Rutile		Zircon	
		%	Tons	%	Tons	%	Tons
Above water table	1,429,195	9.71	147,144	11.92	17,542	9.18	13,515
Above and below water table	4,012,635	8.93	358,387	11.87	42,542	9.14	32,783

5. Cassiterite is present in the Lanherne Beach in minor amounts only, and for reserve purposes this mineral can be disregarded. Details are given in Section 6 of this report.

3. MINING TENEMENT

All the reserves located by this drilling programme lie within the area of Special Prospector's Licence No. 2.

4. DESCRIPTIONS OF DRILLING PROGRAMME

Drilling was carried out using a truck-mounted Gemco drill Model 110A with a 20ft. mast supplied by Monier Drilling Co. Pty. Ltd. on a time contract basis.

Samples were generally taken in increments of 5 feet, care being taken to force feed the auger to avoid carrying material up the flights. When bringing the auger to surface, the outside of the flights containing the sample was cleared of sand, so that a true representative sample could be obtained from the inside of the flights.

Assaying of the samples, each of which amounted to from 1 to 2 lbs. weight, was done in the Mining Department of the University of Queensland, Brisbane.

Heavy mineral percentages were determined by the bromoform sink-float method, and concentrates were grouped according to area and the percentage of individual minerals was determined by Geochemical and Mineralogical Laboratories Pty. Ltd., Sydney.

The Grid Lines originally set out by Mt. Costigan Mines Ltd. for their original work were used again and extended where necessary. Drilling took place on grid lines running east-west, situated 400 feet apart. Holes were drilled on these lines at intervals of 100 feet, which distance was closed to 50 feet in the rich westerly area adjacent to the Fraser River.

5. ORE RESERVES

The reserves on the Lanherne Beach, Naracoopa, are summarised in the following two tables:-

TOTAL ABOVE & BELOW WATER TABLE

Line	Sand (Tons)	Heavy Mineral		Rutile		Zircon	
		%	Tons	%	Tons	%	Tons
2	120,657	6.62	10,400	12.0	1,248	15.0	1,560
6	548,850	7.43	40,796	11.3	4,606	14.2	5,819
10	413,527	13.20	54,596	9.9	5,407	17.1	9,318
14	348,887	23.26	81,148	14.5	11,729	4.6	3,718
18	467,357	9.33	43,610	13.7	6,008	5.8	2,516
22	737,543	9.48	69,923	10.4	7,299	7.2	5,063
26	529,543	5.19	27,525	9.6	2,657	6.3	1,722
31	409,988	4.55	18,669	11.8	2,202	10.0	1,866
35	436,283	2.69	11,720	11.8	1,386	10.0	1,171
TOTAL	4,012,635	8.93	358,387	11.87	42,542	9.14	32,763

ABOVE WATER TABLE

Line	Sand (Tons)	Heavy Mineral		Rutile		Zircon	
		%	Tons	%	Tons	%	Tons
2	37,404	5.40	2,020	12.0	242	15.0	303
6	155,536	6.83	10,637	12.7	1,350	10.1	1,079
10	62,257	29.22	18,191	8.0	1,455	21.0	3,820
14	104,692	30.85	32,297	14.5	4,683	4.5	1,453
18	198,700	10.12	20,125	13.7	2,767	5.9	1,183
22	382,237	10.76	41,158	10.9	4,471	8.4	3,474
26	67,324	5.81	3,912	9.5	370	8.3	324
31	193,652	6.06	11,741	11.8	1,383	10.0	1,173
35	227,393	3.10	7,063	11.6	821	10.0	706
TOTAL	1,429,195	9.71	147,144	11.92	17,542	9.18	13,515

6. ANALYSIS OF HEAVY MINERAL CONCENTRATES

The following table gives details of the grouping of the Heavy Mineral concentrates for assay purposes and the analysis of each group. Minerals were determined by grain counting under the microscope, except cassiterite, which was assayed by the wet method.

Group No.	Locality	Percentage of Heavy Mineral Concentrate			
		Rutile	Zircon	Ilmenite	Cassiterite
1	Line 2/162'-562' Line 6/162'-662' Line 10/162'-812'	12.0	15.0	6.0	0.073
2	Line 2/662'-862' Line 6/712'-1112' Line 10/1062'-1312'	8.0	21.0	7.0	0.034
3	Line 14/137'-737' Line 18/112'-762'	11.0	11.0	7.5	0.017
4	Line 14/837'-1387' Line 18/862'-1662'	14.5	4.5	2.5	0.022
5	Line 22/112'-912' Line 26/137'-937'	13.0*	21.5	4.0	0.030
6	Line 22/1012'-1812' Line 26/1037'-1537'	9.5	4.5	4.5	0.011
7	Line 31/162'-962' Line 35/162'-1012'	13.0	10.0	7.5	0.003
8	Line 31/1062'-1662' Line 35/1112'-2012'	11.5	10.0	3.0	0.017

* This fraction contains much Leucoxene.

The gangue mineral is mostly tourmaline.