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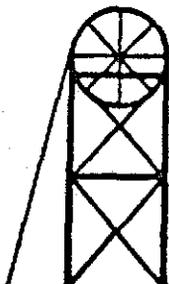
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ELECTROLYTIC ZINC COMPANY  
OF AUSTRALASIA LIMITED

HEAVY MINERAL ASSESSMENT  
EXPLORATION LICENCES NOS.  
1/67 and 9/67  
KING ISLAND

*(2) J.N.  
J.N.*

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**KENNETH McMAHON & PARTNERS PTY, LTD.**  
MINING CONSULTANTS  
291 GEORGE STREET,  
SYDNEY

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ELECTROLYTIC ZINC COMPANY  
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**MICROFILMED**

3rd June, 1968.

Kenneth McMahon & Partners Pty. Ltd.

### INTRODUCTION

The Electrolytic Zinc Company of Australasia Limited retained Kenneth McMahon & Partners Pty. Limited to determine the potential for heavy mineral sands of Exploration Licences 1/67 and 9/67 on King Island, Tasmania.

King Island is on the western approaches of Bass Strait between Tasmania and the mainland, and is about 40 miles long and 15 miles across. The terrain ranges from well-developed grass-covered dunes in the west to low-lying scrub-covered sedimentary plains in the east, with smaller dunal development along the east coast.

A preliminary scout-drilling programme was carried out on the two areas from 22nd to 27th April, 1968. E.L. 1/67 covers about 28 square miles and is situated in the south-west of the island just south of the main township of Currie. E.L. 9/67 has an area of some 35 square miles and covers the northwest corner of the island.

Drilling was carried out under the direction of a supervisor from Kenneth McMahon & Partners Pty. Limited. A Senior Exploration Geologist from the Electrolytic Zinc Company of Australasia Limited visited the areas during the drilling programme.

### SUMMARY & CONCLUSIONS

A total of 43 holes were drilled for 527 feet in the two areas.

With the exception of the small beach at Victoria Cove in E.L. 9/67 in the north-west, only traces of heavy minerals were encountered throughout the two areas. In the case of Victoria Cove beach, the mineralisation appeared to be of local origin and little to no evidence of mineral was found in the dunal areas inland adjacent to the beach. The beach itself was underlain by granite which outcropped in several places.

Small traces of heavy mineral concentration were found at the mouth of Badger Box Creek in the northern part of E.L. 1/67, but no mineralisation of any consequence was found in the adjacent dunal formations.

In the older, low-lying areas inland, only very small traces of mineral were found, and in the case of E.L. 1/67, most of the eastern half consisted of a thin covering of sand over micaceous shales which outcropped in several places. One area in the south-east consisted of ironstone formations and was not drilled.

Whilst the scout-drilling programme was preliminary only, the evidence strongly indicates very little commercial potential in the two areas concerned. It is therefore recommended that no further work be carried out on these areas.

### DESCRIPTION OF AREAS

E.L. 1/67 covers an area of 28 square miles and extends southwards from Badger Box Creek, about 3 miles south of Currie, down to Boggy Creek in Fitzmaurice Bay. The coastal area consists mostly of rocky escarpments with occasional small beaches which consist generally of very coarse-grained sand with little or no mineral.

The major drainage area consists of the Ettrick River roughly in the centre of the coastal border of E.L. 1/67, but no mineral of any consequence was found at the mouth. Badger Box Creek showed some small heavy mineral concentrations but no extension into the frontal dunes was observed.

The well-developed dunes which cover the western half of E.L. 1/67, were all coarse-grained and calcareous in nature and showed evidence of rising and falling lime-rich waters which precipitated calcareous crusts throughout the sands and prevented further penetration of the auger.

E.L. 9/67 covers an area of 35 square miles and occupies the northwest corner of the island, extending from Yellow Rock River in the south up to Cape Wickham, and eastwards about 1½ miles beyond Rocky Point. The west coast consists of a 4-mile long beach in the south ranging to rocky headlands and escarpments in the north. The beach consisted of mainly coarse sand with small traces of mineral only. A very small beach at Victoria Cove revealed good mineral but this did not persist at depth and appears to be very localised. The north coast consists of mainly rock headlands and escarpments with two small beaches of finer sand which showed little trace of mineralisation.

As with E.L. 1/67, the western half of E.L. 9/67 consisted of well-developed calcareous sand dunes with numerous sand "blows" occurring just in from the coast adjacent to the beach. Calcareous outcrops were observed in nearly all these blows with little or no indication of mineralisation. Some local mineral concentration was observed on the surface of one "blow" where hole 23 was drilled, but this revealed only traces of mineral beneath the surface.

The eastern half of E.L. 9/67 consists of low-lying grazing plains, having shallow sand thickness over predominantly clay basement. Numerous lagoons and a large lake are features of the central and eastern sections of the area where a large drainage scheme has made available more grazing land.

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### DESCRIPTION OF DRILLING

Drilling was carried out using a standard 3-inch hand auger and 5-ft. aluminium extension drill rods supplied by Dormer Engineering Pty. Ltd., Murwillumbah.

Normal procedure involves removing the top 1 ft. of top soil (which would be removed prior to mining for rehabilitation of the areas concerned) and taking samples from every five feet in cement. The sand is thoroughly mixed and random grab samples of 2-3 lbs. taken. However, in view of the general absence of significant mineralisation in the two areas investigated, samples were taken over wider increments.

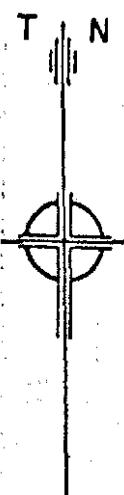
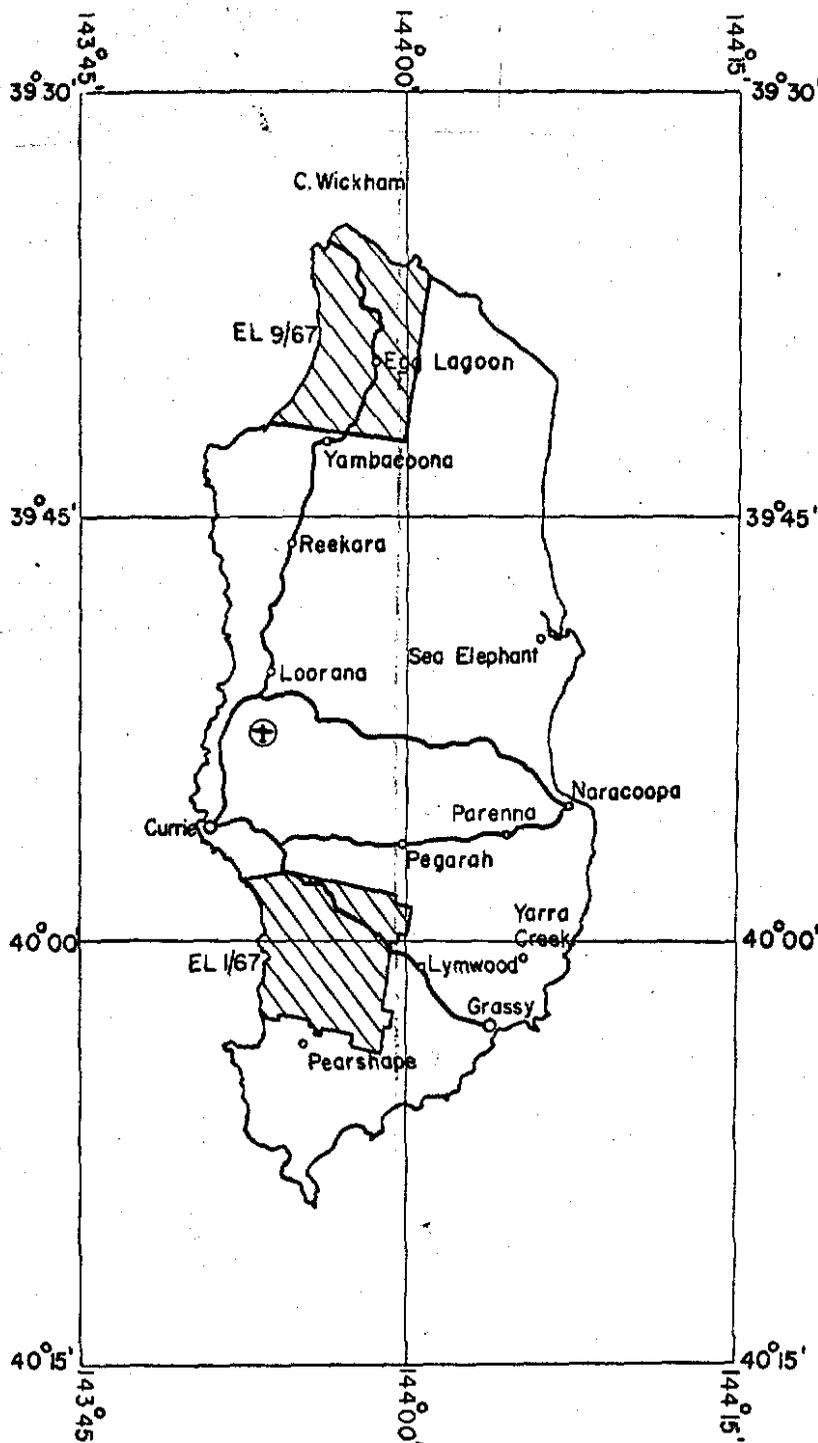
Only samples which showed more than a trace of heavy mineral were submitted for bromoform sink-float assay, and the results are tabulated below. In the interests of economy no mineralogical examination of the heavy mineral was undertaken. However, the heavy mineral fractions have been retained in the event that any further work is required.

Table of Assay Results

Area	Hole No.	Sample No.	Depth of Hole (ft.)	Bottom Material	Sample Increment (ft.)	% H.M.
E.L.						
1/67	3	6	17	Clay	0-10	0.41
"	7	10	25	Clay & water	0-10	0.40
"	12	14	8	Calcareous material	0-8	0.60
"	13	15	4	Water	0-4	0.54
"	18	20	5	Indurated sand & water	0-5	0.52
"	20	22	30	Calcareous sand	0-30	0.77
E.L.						
9/67	21	24	19	"	5-19	0.97
"	23	27	20	Sandstone	0-20	0.81
"	24	29	21	Water	0-21	0.34
"	27	32	20	Broke auger	0-20	0.37
"	28	33	24½	Rock	0-20	0.80
"	29	36	5	Rock & water	0-5	3.81
"	30	37	3½		0-3½	2.72
"	32	39	18	Clay	0-18	0.19
"	34	41	11	Decomposed granite	0-11	0.62
"	36	43	7	Water	0-7	0.27
"	39	46	6	Water	0-6	0.39

Assaying was carried out by Geochemical & Mineralogical Laboratories Pty. Ltd., of Sydney.

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Electrolytic Zinc Company of Australasia Limited

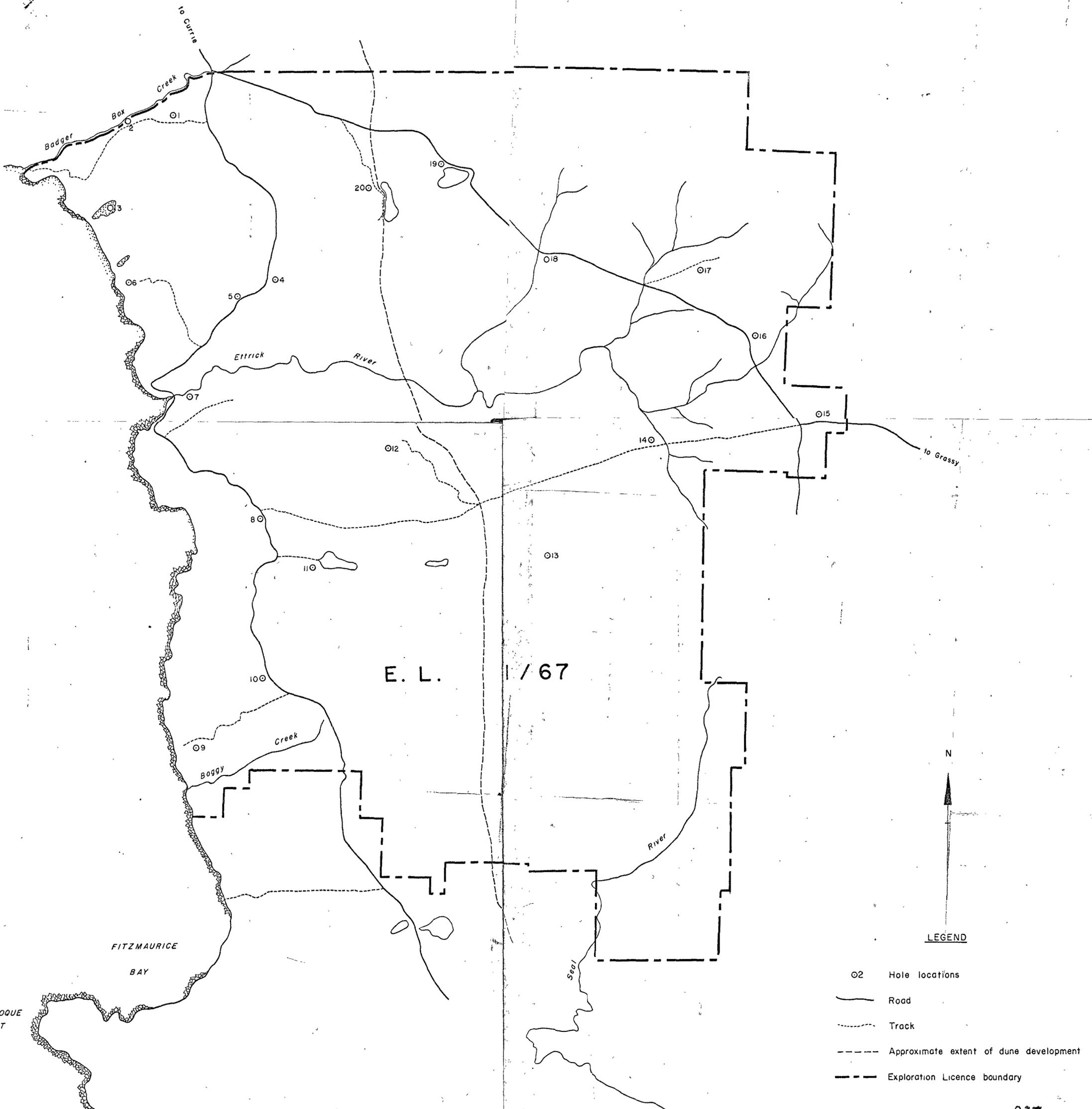
LOCATION MAP  
 showing  
 EL 1/67 and EL 9/67  
 KING ISLAND  
 TASMANIA

Scale 1:500,000

Date: May, 1968

PLATE 0

Kenneth McMahon & Partners Pty. Limited



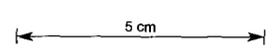
LEGEND

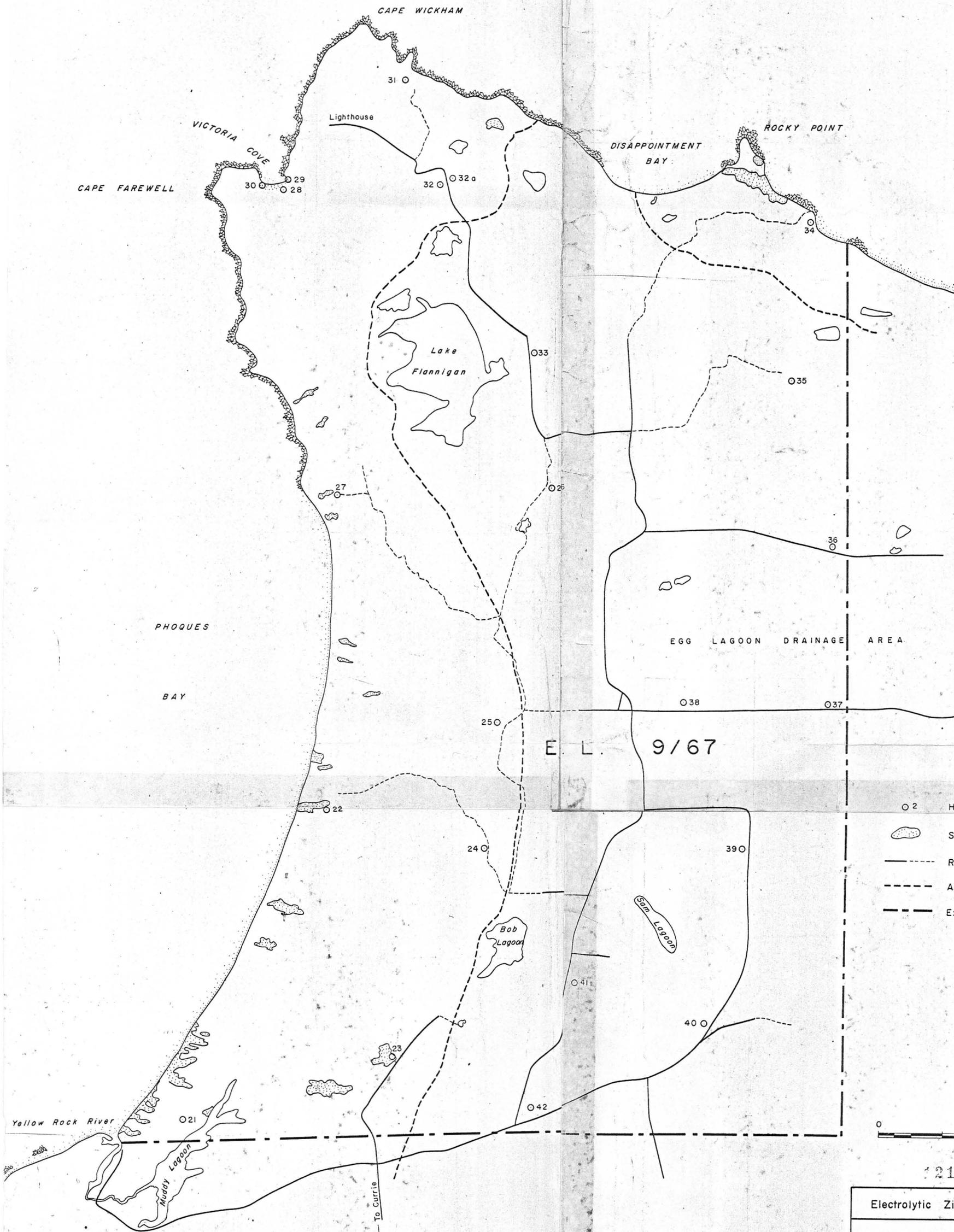
- 2 Hole locations
- Road
- - - Track
- - - - Approximate extent of dune development
- - - - - Exploration Licence boundary

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Electrolytic Zinc Company of Australasia Ltd	
BORE HOLE LOCATION PLAN	SCALE 2ins. to
EXPLORATION LICENCE No.1/67	DATE MAY 19
KING ISLAND - TASMANIA	PLATE 1/
Kenneth McMahon & Partners Pty. Ltd.	





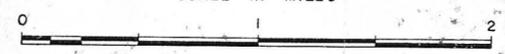
E. L. 9/67

**LEGEND**

- O 2 Hole locations
- Sand blows
- Road-track
- Approximate extent of dune development
- Exploration Licence boundary



SCALE IN MILES



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Electrolytic Zinc Company of Australasia Ltd.

BORE HOLE LOCATION PLAN  
EXPLORATION LICENCE No.9/67  
KING ISLAND - TASMANIA

SCALE 2ins. to 1ml.  
DATE MAY. 1968  
PLATE II

Kenneth McMahon & Partners Pty. Ltd.

