

000

72-873.

DICK

756001

UNITED STATES STEEL INTERNATIONAL

(NEW YORK) INC.

CLOSING REPORT

RECONNAISSANCE WORK AND AUGER DRILLING

E.L. 50/70 AND 54/70, KING ISLAND

BY

L. G. SZABO Dip. Geol., I.A.S.

AND

B. HARVEY Dip. Geol., R.M.I.T.

OF

L. G. SZABO AND PARTNERS PTY. LTD.

MELBOURNE, JUNE, 1972

MICROFILMED

ISG REFER REPORT 70-0676

CONTENTS

	Page
I. SUMMARY	1
II. INTRODUCTION	2
III. LOCATION AND ACCESS	3
IV. TENEMENTS	4
V. GEOLOGY	
1. Bedrock	5
2. Dune Deposits	5 & 6
VI. DRILLING AND SAMPLING,	
E.L. 50/70	7
VII. HEAVY MINERALS,	
E.L. 50/70	8
VIII. CONCLUSIONS	
1. Bedrock	9
2. Beachsands	9
IX. RECOMMENDATIONS	10

ACCOMPANYING PLANS

1. E.L. 50/70, Sand dune deposits
2. E.L. 54/70, Sand dune deposits

APPENDIX

Drilling Records (AH-1, AH-2, AH-5, AH-6)

756003

I. SUMMARY

Reconnaissance field traverses and auger drilling was carried out in the areas of E.L. 50/70 and 54/70. The reconnaissance covered both metamorphic basement and Cainozoic dune systems.

Indications of economic mineralisation were not detected.

Further work is not recommended.

June 30, 1972

L. G. SZABO

B. HARVEY

003
II. INTRODUCTION

Previous work carried out by Mt. Costigan Mines Ltd., on an area adjoining E.L. 50/70, indicated an increasing heavy mineral content in the southern new dune structures. This trend was further tested by auger drilling.

In addition, the northern new dune structures of E.L. 50/70 were auger drilled to determine if any enrichments of the heavy mineral content occurs where the old dune system has been re-worked to form the new dune system.

E.L. 54/70 has only been covered by field traverses but targets for more detailed work were not encountered.

This report outlines the results of the work carried out in E.L. 50/70 and also briefly discusses the area covered by E.L. 54/70.

III. LOCATION AND ACCESS1. E.L. 50/70

Exploration Licence 50/70 is situated on the south-west coast of King Island, Tasmania between Fitzmaurice Bay and Surprise Bay.

Access is made by unsealed South Road which runs approximately north-south through the eastern half of the area. From this road numerous unmade tracks lead to the coast, but they do not give good access to the area apart from the immediate grazing land. The loose sand and steep dunes make access to the dunal areas very difficult.

2. E.L. 54/70

Exploration Licence 54/70 is situated on the north-west coast of King Island, Tasmania, in the Duck Bay - Whistler Point area.

Access to the area is reasonably good, as a large part of the area is farming land and many unmade tracks lead to the coast.

IV. TENEMENT

Exploration Licences 50/70 and 54/70 are held by BASSMIN (AUST.) PTY. LTD. and cover areas of approximately 12 and 18 square miles respectively. Both areas are partly crown land and partly privately owned grazing land.

V. GEOLOGY

1. Bedrock

(i) E.L. 50/70

The underlying rocks are of a folded pre-Cambrian, metamorphic complex which includes schists, knotted schists quartzites and phyllites which are rarely found outcropping other than along the coast line.

These metamorphics, are sparsely intruded by 1' - 2' wide dolerite dykes and sills, in which some pyrite and insignificant chalcopyrite has been observed. Small floaters of granite ($\frac{1}{2}$ ' - 1') have also been observed.

To the east and south of Cataraque Point a sheared and foliated gneissic granite is included in the metamorphics and small pegmatitic veins are common.

The pre-Cambrian complex is overlain by low grade regionally metamorphosed pelitic sediments (slatey shale with schistose clayey lenses) which are only exposed in the road metal pit approximately $\frac{1}{2}$ mile west of the eastern boundary of E.L. 50/70. The sediments appear to occupy an intermediate stratigraphic position between the metamorphics and the Grassy sequence (Cambrian?). Thorough examination of these rocks has failed to show the presence of any carbonate type sediments.

(ii) E.L. 54/70

Underlying most of the area are gneissic rocks.

Regional metamorphic schists outcrop in some places along the coast. Floaters of pegmatitic rocks have also been encountered at the western part of the area.

2. DUNE Deposits

Both new and old dune systems are developed in the areas. The original, sub-marine formed structures are visible, however, most dunes show significant re-structuring by the predominant east-west winds.

(i) E.L. 50/70(a) New Dunes

The new dunes are present in the northern and southern sections of the area. They are sometimes parabolic, being either simple or composite. Simple conical dunes also occur. Average height is approximately 100' - 200' but they may reach 400' above sea level.

Blowouts are common, showing mostly light coloured sands, indicating that no significant heavy mineral enrichment has taken place.

The composition of the new dunes is predominantly sand with some shelly sections. In places elongated lenses of hard, bioclastic limestone have developed up to 5' - 6' wide.

(b) Old Dunes

The old dunes are present in the central coastal area. They do not show particularly strong dune shapes. The northern new dunes appear to have developed directly by the re-working of the old dune system.

The southern new dunes may also have been partially developed from the old dunes but not to the extent as those in the north.

(ii) E.L. 54/70

The dune systems of the area show extensive re-working by wind. The new and old dune systems are present, however they are often mixed and boundaries are difficult to establish.

Blowouts and slope slides show exposures of a white, clean sand derived from the underlying gneissic rocks. Indications of heavy enrichment were not found throughout the exposures.

008
VI. DRILLING AND SAMPLING, E.L. 50/701. Drilling

Drilling was carried out on the 17th and 18th April, 1972. by Associated Diamond Drillers Pty. Ltd., using a tractor mounted Gemco rig and a 2 7/8" auger bit.

A total of four holes were drilled and sampled over a total depth of 214'. Originally 6 holes were proposed, four sited in the northern new dunes and two sited in the southern new dunes. Due to the impossible access to all but the northern end of the northern dunes, only two holes were completed in this area.

2. Sampling

Samples were taken at 6' intervals down the full depth of the holes. This was carried out by pulling the drill flites each 6' and taking the sample from the entire length of the last flite, giving a representative sample for the 6' interval drilled.

From each sample approximately 100cc was panned for the heavy mineral fractions, giving a concentrate of between 2 and 5 grams. Each panned sample was viewed under a stereo-microscope and the total heavy mineral percentages were estimated. When the total heavy concentrate exceeded 0.1% by volume, the zircon, rutile and ilmenite/magnetite contents were estimated. All results have been included in the drill hole logs (see appendix).

None of the samples were considered to be of high enough concentrations to be submitted for assaying.

VII. HEAVY MINERALS, E.L. 50/701. Description of Heavy Minerals

Zircon occurs as a pink, translucent form and a colourless, fluorescent (golden-yellow) form.

Rutile ranges in colour from very dark reddish browns to red.

Ilmenite and magnetite are difficult to distinguish between and have been grouped together for convenience, but the use of a hand magnet suggests that they occur in about equal proportions.

Grain size averages are between 0.06 - 0.2 mm, however the pink zircon grains are twice the size of the average grains.

2. Quantitative estimation

The drill samples examined show low values of heavy minerals.

These estimates were carried out by visual examination of the panned heavy fractions. None of the concentrates were found to be good enough to warrant further and expensive tests.

It must be pointed out that the percentages determined are by volume. This method has limited accuracy. Assuming that the heavy minerals specific gravities are averaged at 4.8 (rutile - zircon - ilmenite - magnetite), and the lighter fractions have a specific gravity of 2.6 (mainly quartz), a conversion factor of

1.8 can be used to convert volume to weight percentages.

The highest concentrations, 0.6% by volume, of heavy minerals occur in Auger Hole AH-6, between 4' - 10', and 34' - 40'. This value becomes 1.1% by weight. Even if +50% error is taken this maximum value becomes 1.7% heavy minerals by weight.

The average for AH-6 is 0.4% heavy minerals, which becomes 1.1% by weight (including +50% error) over the total depth of 41'. The total zircon/rutile content of the heavy fractions is approximately $\frac{1}{3}$, giving a maximum of 0.6% (4' - 10' and 34' - 40') and an average for the hole of 0.4% by weight.

Hence the heavy mineral contents of the dunes drilled are of no significance.

010

VIII. CONCLUSIONS

1. Bedrock, E.L. 50/70 and 54/70

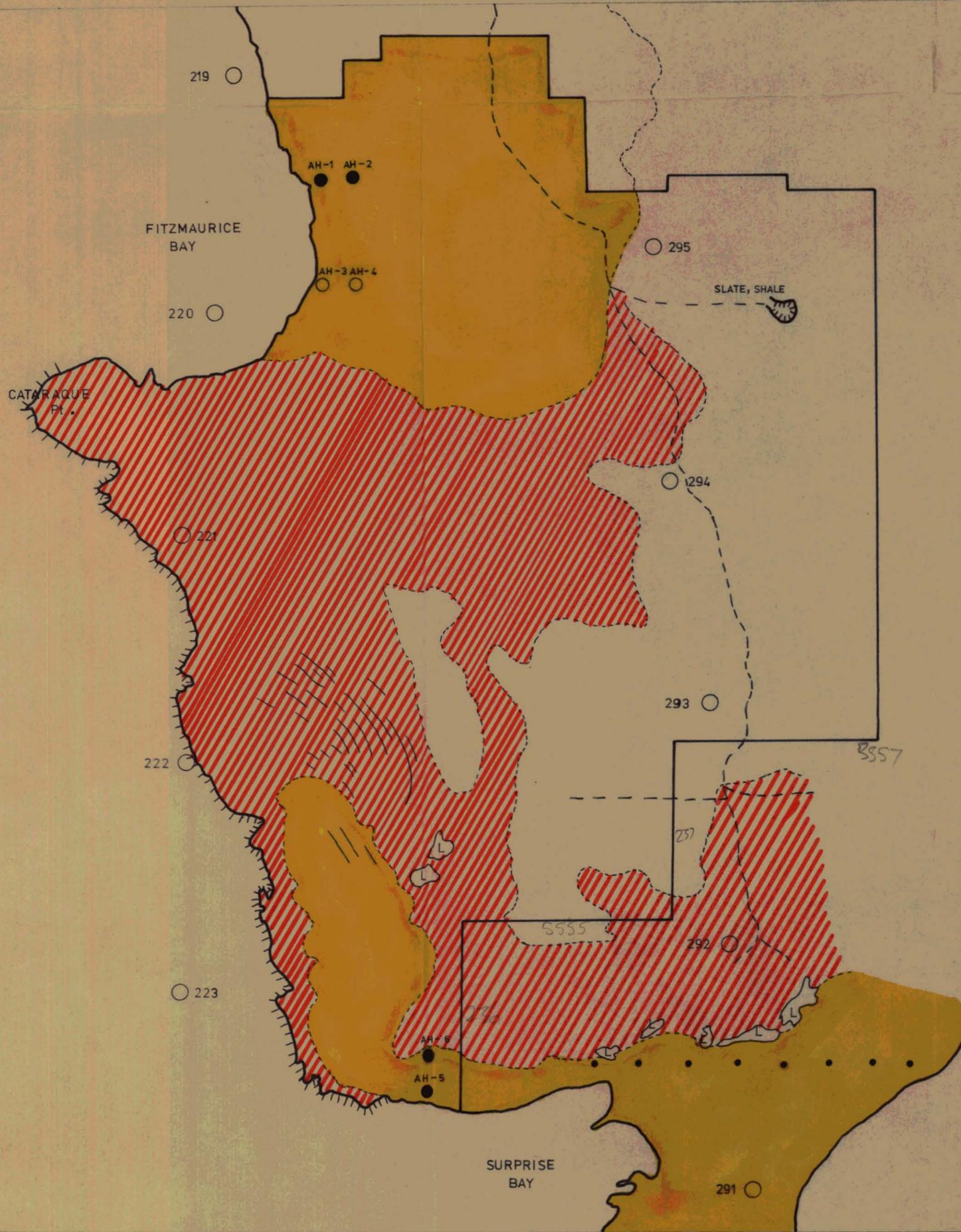
- (i) Metamorphics exposed along the coast of E.L. 50/70 do not show evidence of being economically mineralised.
- (ii) No contact altered rocks have been observed in either areas indicating that there is a very remote chance of Grassy type mineralisation.
- (iii) Due to sparse exposures, unfavourable results of exploration to date, and the fact that contact altered and/or carbonate rocks have remained undetected in both areas, there is no encouragement for seeking exploration targets by sophisticated and expensive means.

2. Beach Sands

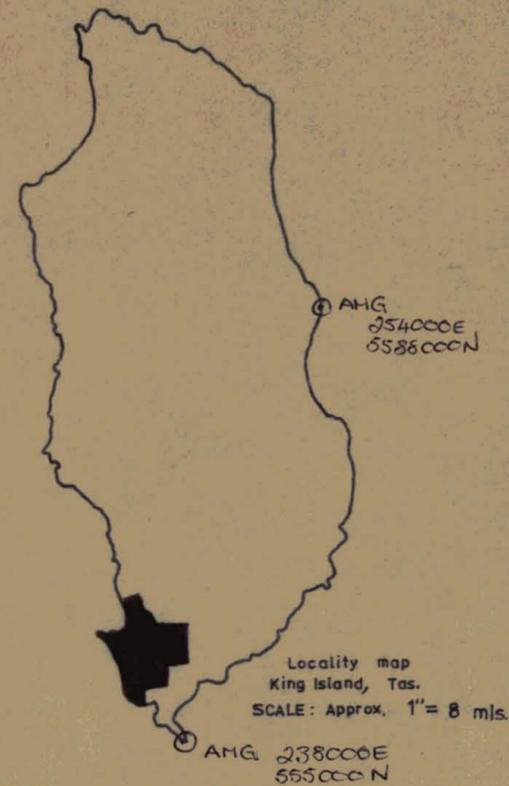
- (i) The increasing trend of heavy mineral content indicated by the Mt. Costigan Mines Ltd. drill holes does not show any significant change in the southern new dunes of E.L. 50/70.
- (ii) The re-working of the old dune system to the new dune system in the north of E.L. 50/70 has not been accompanied by any large scale enrichments of heavy minerals.
- (iii) Drilling and blowout exposures in E.L. 50/70 do not show increasing trends of heavy mineral concentrations which would indicate the presence of economic enrichments.
- (iv) Sand dune blowout and slope slide exposures in E.L. 54/70 do not indicate the presence of heavy mineral concentrations.
- (v) No evidence showing heavy mineral concentrations of economic size and grade are present in the areas covered by E.L. 50/70 and E.L. 54/70.

IX. RECOMMENDATIONS

Further exploration is not recommended in either areas.



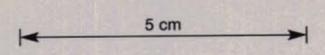
TRUE NORTH ↑



LEGEND

- 295 Air photo center point
- AH Auger hole drilled
- AH Auger hole proposed — not drilled
- New dunes
- ▨ Old dunes
- L Lagoons
- ⚡ Cliffs of pre-Cambrian metamorphics
- Auger holes by previous explorers
- ≡ Dune structures

756017



United States Steel International (New York) Inc.		
Exploration Licence 50/70 King Island, Tasmania		
Sand dune deposits		
		016 72-873
SURVEYED AND COMPILED BY		
L.G.SZABO Dip. Geol. I.A.S. Exploration and Mine Geological Consultant		
DEC. 1971 — MAY 1972		
SCALE 1" = 1/2 mls.	Drawn: J. Balint	Drg. No: 1
Checked:	Date: MAY 1972	

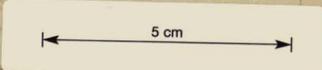
05/7



LEGEND

- 243 ○ Air photo center point
- Sand dunes
- L Lagoons

756018



United States Steel International (New York), Inc.		
Exploration Licence 54/70- King Island, Tasmania		
Sand dune deposits		017 72-873
SURVEYED AND COMPILED BY L.G. SZABO Dip. Geol. I.A.S. Exploration and Mine Geological Consultant DEC. 1971 - MAY 1972		
Scale: 1" = 1/2 mls.	Drawn: J. Balint	Drg. No: 2
Date: MAY 1972	Checked:	

05/7