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GEOPEKO LIMITED

KING ISLAND

REPORT No. KI/74/3

FINAL REPORT ON THE MINERAL POTENTIAL

OF EXPLORATION LICENCE 17/72.

by

S. GRIEVE BROWN

KING ISLAND

JUNE, 1974.

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LIST OF PLANS

Location map of Licence Area.

Aeromagnetic map of Northern King Island. scale 1:25000

Magnetic Anomaly No. 1 showing geophysical
grid and geochemical results. scale 1:2500

*FOR COLOUR GEOLOGICAL PLAN SEE
DRAWING OFFICE FOLDER*

INTRODUCTION

Exploration Licence 17/72 covered 23 square miles in the Phoques Bay area of North West King Island. The area was previously held by King Island Scheelite under E.L. 4/69 and was resecured on the 8th June 1972 prior to the commencement of an airborne magnetic and radiometric survey of the major portion of the Island carried out on behalf of the Company in February 1973.

During the time the area was held under E.L. 4/69 the following exploration programme was conducted.

- Base map compilation from aerial photographs, scale 1:12000.
- Regional photo controlled geological mapping at an approximate scale of 1:12000.
- Detailed geological mapping and U.V. lamping programme along the coastal outcrops.
- A regional geochemical sampling programme consisting of 93 gemco holes drilled to bedrock.
- Detailed bedrock geochemical soil sampling on the Investigator 13 grid.
- Diamond drilling of one vertical hole to 92.90 metres at Investigator 13.

The results of this programme have been reported in Technical Report No. KI/74/1 by S. G. Brown.

This report records the results of the exploration programme originating from the findings of the aeromagnetic survey.

The Exploration Licence was relinquished on the 8th June 1974.

SUMMARY

The aeromagnetic survey delineated one spot high (magnetic anomaly 1) circular in shape and of -250 gammas lying in the extreme south of the E.L. No meaningful results were obtained from the radiometrics.

Follow up ground magnetometer surveys were carried out with subsequent auger drilling and the drilling of one percussion hole. The source of the anomaly was not located by these means due to an overburden of sand in excess of 100 metres deep.

Evaluation of other (similar) magnetic anomalies by auger drilling and percussion drilling showed that they are due to olivine basalt plugs exhibiting strong magnetic character.

Auger drilling across the contact of these basalt plugs have shown no anomalous geochemical trends indicative of introduced mineralization.

CONCLUSIONS

1. The mineral potential of E.L. 17/72 excluding magnetic anomaly No. 1 has been adequately evaluated when the area was held under E.L. 4/69. (Report No. KI/74/1.)
2. Magnetic anomaly No. 1 is considered to be due to an olivine basalt plug rich in magnetite similar to others (magnetic anomalies 2, 3, 4, 15, 16 and 17) located in the north of the Island.
3. By comparison with the other magnetic anomalies whose sources were located and tested for mineralization it is reasonable to assume that magnetic anomaly No. 1 will be barren of introduced mineralization.

RECOMMENDATIONS

It is recommended that no further work be carried out and that the Exploration Licence be left to expire.

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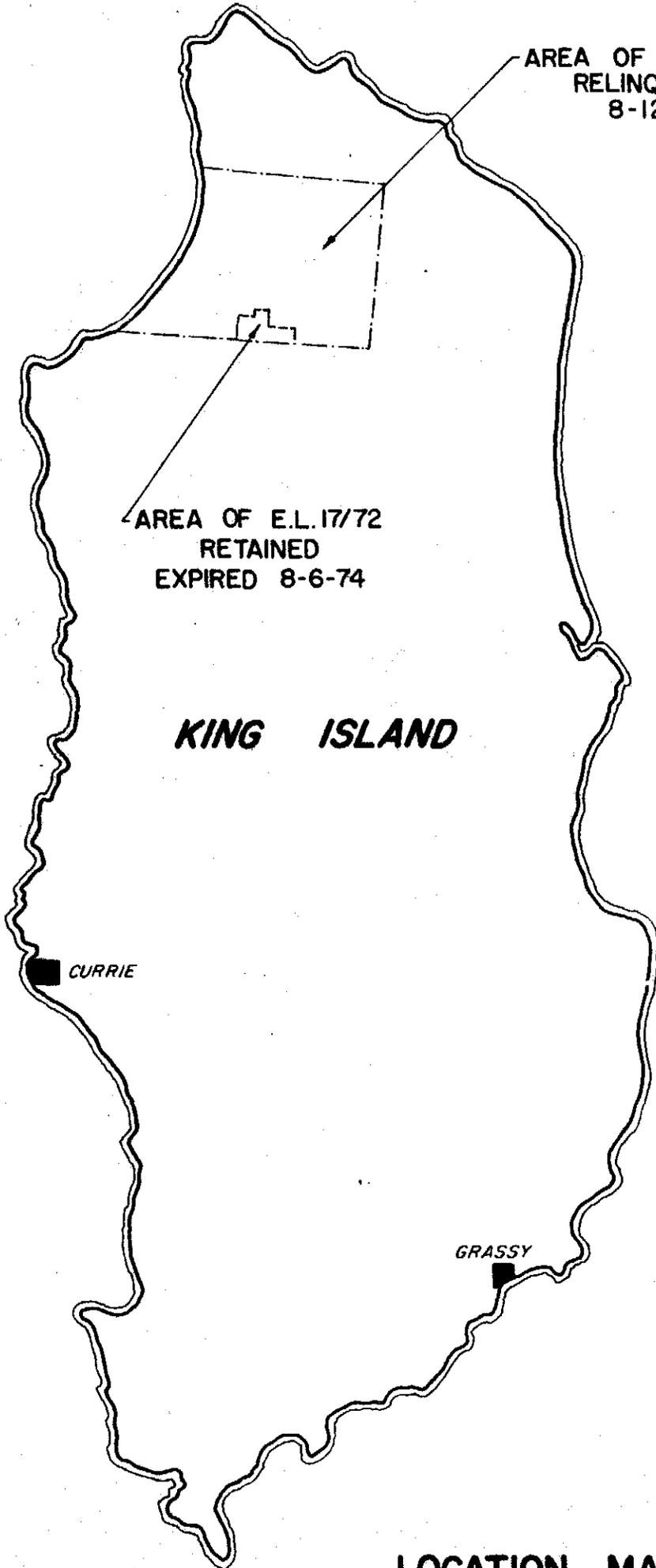
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ACTION SHEET

Exploration Licence 17/72 was relinquished on the
8th June 1974.

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AREA OF E.L. 17/72
RETAINED
EXPIRED 8-6-74

AREA OF E.L. 17/72
RELINQUISHED
8-12-73

KING ISLAND

CURRIE

GRASSY

**LOCATION MAP
E.L. 17/72**

GEOPHYSICS

The southern portion of this E.L. was covered by the airborne magnetic and radiometric survey carried out over the major portion of King Island in February 1973 by Canadian Aero Services on behalf of Geopeko Limited.

No meaningful results were obtained from the radiometric survey.

One anomaly (designated magnetic anomaly No. 1) was detected within the E.L. on the aeromagnetic results and a series of ground magnetometer traverses were carried out in order to locate it. The results of the ground magnetics showed the anomaly to be an intense magnetic low of circular shape.

No other anomalous areas or trends were indicated by the aeromagnetic data.

GEOLOGY

The geology within Exploration Licence 17/72 consists of West Coast Granite and metasediments overlain by a thick deposit of recent sands and gravels. These rock types have been described previously (Report KI/74/1) and no additional information has been obtained during the present programme.

It is assumed, by comparison with the magnetic anomalies (No's 2, 3, 4 and 15) occurring elsewhere in the northern portion of the Island and which have been identified as magnetite rich olivine basalt plugs, that the source of

magnetic anomaly No. 1 is also due to a similar plug of olivine basalt intruded into the metasediments in the extreme south of the licence area.

Due to the extremely deep overburden of sand the source of the anomaly was not tested. Auger drilling was carried out to a depth of 36 metres and percussion drilling (PDH MA1-1) to a depth of 103.63 metres before being abandoned due to the instability of the overlying sands.

By comparison with other magnetic anomalies of similar character, whose contacts have been geochemically tested and which appear to be barren of introduced mineralization, it would seem very unlikely that any economic mineralization should occur associated with magnetic anomaly No. 1.

As previously stated (Report KI/74/1) it appears from the results of the exploration programme to date that there is no real potential for the occurrence of economic mineralization within the licence area.

GEOPEKO LIMITED



S. Grieve Brown
GEOLOGIST

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J. Geol. Soc. Aust. Vol. 12 pp 295 - 332.



A

B

C

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MAGNETIC CONTOUR PLAN
 SHOWING LOCATION OF AUGER DRILL HOLES

- ⊙ Percussion Drill Hole
- Geomc Hole
- Road
- Boundary E.L. 17/72
- Boundaries of areas covered by larger scale maps

FLIGHT ALTITUDE 92 METRES
 TRAVERSE 200 METRES
 CONTOUR INTERVAL 5 SAMMAS
 TOTAL MAGNETIC INTENSITY TOTAL COUNT
 CONTOUR INTERVAL 25 SAMMAS
 PROJECTION INTEGRATED CO-ORD SYSTEM
 SURVEYED AND COMPILED MARCH - MAY 1975
 ASC PROJECT NO. 7302

SHEET INDEX

3	3
2	2
1	1

AIRBORNE GEOPHYSICAL SURVEY
 KING ISLAND
 TASMANIA
 GEOPEKO LIMITED
TOTAL MAGNETIC INTENSITY
 REGIONAL FIELD REMOVED
 SCALE 1:25,000

FLOWN AND COMPILED BY AERO SERVICE (AUST) PTY LTD
 CANBERRA, N.S.W.

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 74-1025

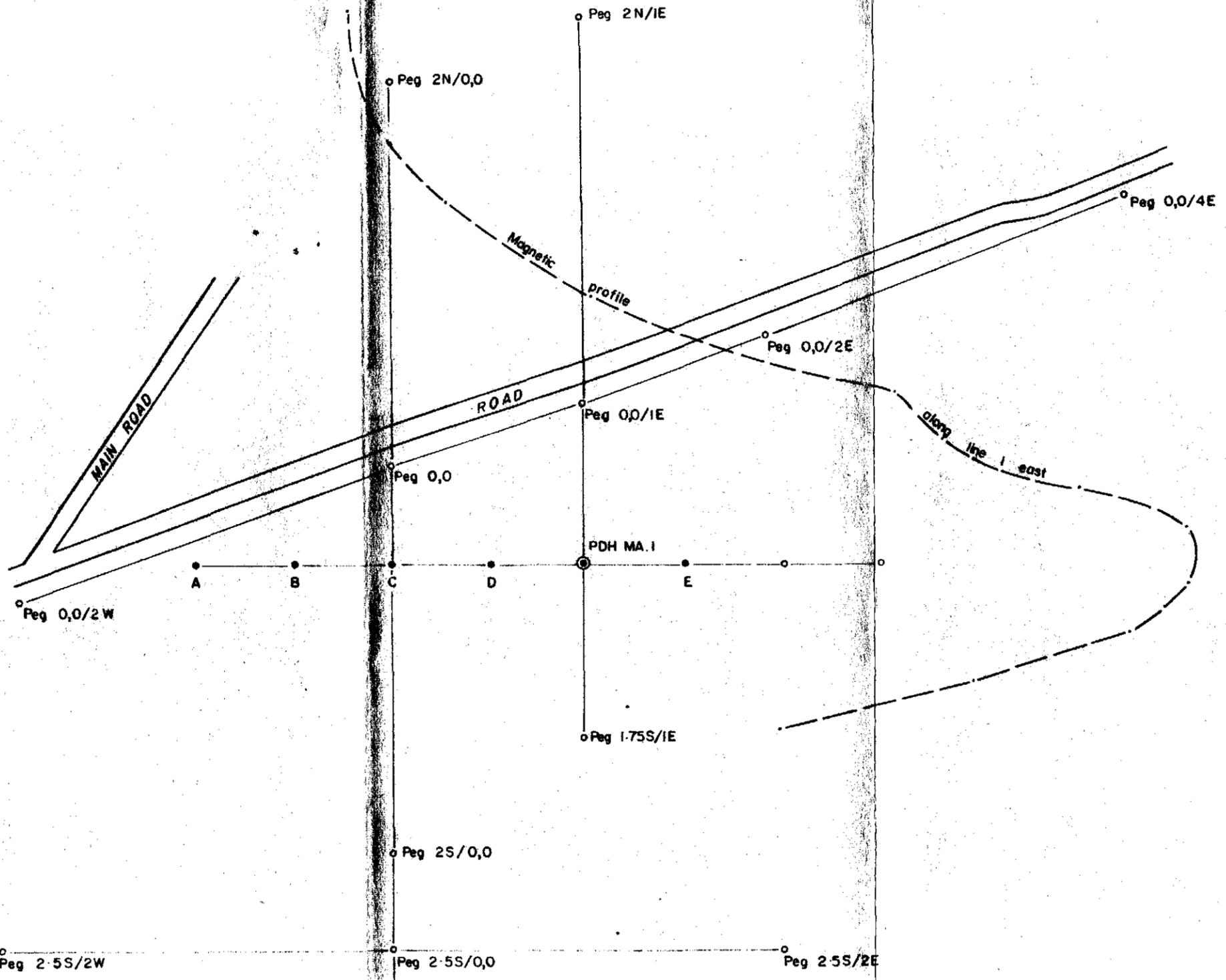
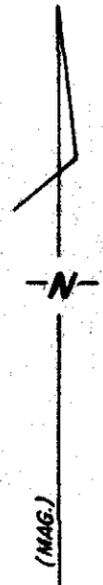


+ 200 gamma +100 0 -100 - 200 gamma

GEOCHEMISTRY RESULTS

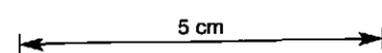
	A	B	C	D	E
Cu	5	5	5	5	45
Ni	<5	5	20	5	15
Zn	15	20	20	15	30
Co	<5	<5	<5	5	<5
Cr	5	5	35	<5	20
Pb	<20	<20	20	<20	<20

all results in p.p.m.



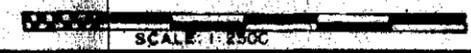
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LEGEND:
 ○ Grid pegs
 ● Auger holes (A,B,C,D,E)
 - - - Magnetic profile (superimposed onto location plan) vert. scale: 1cm = 20 gamma




DATE: OCT., 1973
 GEOLOGIST: S. G. B.
 DRAWN: K. D.
 CHECKED: MCR

GEOPEKO LIMITED
 KING ISLAND GROUP



No. KG-16-4

E.L. 17/72

MAGNETIC ANOMALY No. 1
SHOWING GEOCHEMISTRY RESULTS