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Memorandum Reports
Structural Aspects of the Photogeologic Evaluation
of the Heemskirk and Dundas Areas, Tasmania
E.L. 7/68

Texins Development Pty. Ltd.

VOLUME 1 : DUNDAS AREA

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MEMORANDUM REPORT

STRUCTURAL ASPECTS OF THE PHOTOGEOLOGIC EVALUATION

of the

DUNDAS AREA, TASMANIA

EL7/68

GEOPHOTO RESOURCES CONSULTANTS

BRISBANE, QUEENSLAND, AUSTRALIA

January, 1970.

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INTRODUCTION

The following is a brief discussion of the structural aspects of the Dundas area resulting from the photogeological evaluation. In regard to the rock units mapped, the Zeehan one mile geological sheet was used as a guide for terminology and areal extent. A discussion of the stratigraphy and lithology is not included here.

STRUCTURE

A.H. Blissett (1962) in his Explanatory Report on the Zeehan one mile geological sheet discusses in some detail the major structural features of the Zeehan area and their relationship to Tasmanian geology. In brief summation the dominant structural influence in the area has been Tabberabberan Orogeny of Middle Devonian age which resulted in the establishment of the principal folds and faults and culminated in the granitic intrusions with which mineralization was associated. This pattern has been further complicated by extensive post-Permian faulting.

In the Dundas district it is important to try and identify in the field pre-mineralisation fault sets and post-mineralisation fault sets. The latter probably significantly disrupt the mineralised fault.

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The major flexure in the district is a portion of the Dundas Anticlinal Zone, a N.N.E. trending structure in the central part of the district. Within the area it is a domal structure with the oldest rock (Concert Schist) exposed in its core. Poor exposures of bedding attitudes on the small scale air photographs prohibit accurate delineation of the axial trace. Complex, tight minor folding on the flanks of the major fold with axes generally parallel to it is suggested on the air photographs but cannot be accurately delineated at the small scale of the photographs.

The large number of N.N.E. to N.N.W. trending faults in the area are believed to be related to Tabberabberan Orogeny. As such they have probably had a controlling influence on the distribution of mineralizing fluids. Cross folding generally oriented N.E. to E.W. has affected the major Tabberabberan structures and while possibly contemporaneous are probably somewhat later. Likewise N.E. to E.W. faulting probably developed at a later stage than the original faulting of the Tabberabberan Orogeny.

Post Permian faulting, primarily of Jurassic and early Cainozoic ages is also well developed in the district. This faulting is principally developed in N.W., N.E. and E-W directions. Some of the Post-Permian faulting resulted in reactivation along old Tabberabberan faults and shear zones.

On the air photographs it has not been possible to determine the age of the faults mapped. Consequently only the very general statement can be advanced that N.N.E. and N.N.W. faulting is probably pre-mineralisation in age. The other directions of faulting, while predominantly Tabberabberan in age and pre-mineralization, also include a number of Post-Permian or post-mineralization faults.

GEOPHOTO RESOURCES CONSULTANTS

R. KOPP

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VOLUME 2: HEEMSKIRK AREA

AMG REFERENCE POINTS ADDED

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MEMORANDUM REPORT

STRUCTURAL ASPECTS OF THE PHOTOGEOLOGIC EVALUATION

of the

HEEMSKIRK AREA, TASMANIA

EL7/68

GEPHOTO RESOURCES CONSULTANTS,
BRISBANE, QUEENSLAND, AUSTRALIA

January, 1970

007

INTRODUCTION

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STRUCTURE

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The dominant feature in this district is the Heemskirk Granite Complex which is adamellitic in composition. It is a large stock intruded into the south-west flank of the Heemskirk Anticlinorium, the later being a large N.W. trending regional feature with a portion of it exposed in the N.E. corner of the district. In the southeast part of the district the northern end of the southeast plunging Little Henty Syncline is exposed.

Faulting in the district is dominantly N.W. In the S.E. portion of the district N.E. to E. trending faulting is quite prominent and is possibly related to N.E. cross folds in the dominant N.W. trending Tabberabberan structures. Within the granitic mass a number of north and east trending faults and fractures have been mapped and probably represent tension fractures developed during cooling.

Dating of the numerous faults mapped in the district has not been possible on the air photographs. The majority are believed to belong to Tabberabberan Orogeny.

A notable exception is the Tenth Legion Fault which has been demonstrated to be a Post-Permian fault. It is quite possible that some of the other N.W. trending faults are also Post-Permian or represent Post-Permian reactivation along older fault traces.

Mineralization in the Heemskirk District has resulted from late emanations from the granitic intrusives. A definite zoning pattern for the mineralization has been described in the literature on the area. Emplacement of the mineralization, however, appears to be definitely controlled by the fault pattern. The known major lodes of the district occur as short, rich offshoots from the major faults and appear to be fissure veins. With this in mind a number of distinctive lineations and minor fractures have been mapped as a possible guide to further mineralization.

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LEGEND

QUATERNARY	Q	Alluvium
TERTIARY	Tt	Gravels and conglomerates
	Tl	Limestone
	Ts	Sand, silt and clay
PERMIAN	Eo	Cyrtet Coal Measures
	Ft	Fernreef Group undivided
	Fv	Woodbridge Glacial Formation
	Fz	Zeehan Glacial Formation
DEVONIAN	Dd	Bell Shale
	Dq	Florence Quartzite
SILURIAN	So	Austral Creek Sandstone
	Sx	Xen Quartzite
	Ss	Smees Slate
	Sc	Crofts Quartzite
	Og	Gordon Limestone
ORDOVICIAN	Um	Munda Sandstone
	Oz	Mt Zeehan Conglomerate
	Cd	Dundas Group undivided
CAMBRIAN	Cc	Crimson Creek Formation
PROTEROZOIC	Rm	Dorset Quartzite

IGNEOUS ROCKS

TERTIARY	Tt	basalt
JURASSIC	Jd	diorite
DEVONIAN	Dg	granite
	Cq	gabro, norite and diorite
CAMBRIAN	Cs	serpentine and pyroxene

GEOLOGIC SYMBOLS

- Bedding appears horizontal on photographs
- Dg group 1, less than 3°
- Dg group 2, 3° to 10°
- Dg group 3, 10° to 25°
- Dg group 4, 25° to 45°
- Dg group 5, 45° to nearly vertical
- Bedding appears vertical on photographs
- Overturned bedding
- Dip and strike. Amount of dip cannot be determined on photographs
- Trend lines or strike of structural grain
- Fault, normal or reverse
- Fault, position indefinite
- Fault, inferred
- Transparent fault
- Distinctive lineation Possible fault or fracture
- Dyke or vein
- Joint
- Anticline Arrow denotes plunge, dashed where indefinite, questioned where inferred
- Syncline Arrow denotes plunge, dashed where indefinite, questioned where inferred
- Contact, dashed where indefinite, questioned where inferred
- Change in lithology
- Identifies isolated or faulted segment with labelled area
- Road
- Vehicular track
- Trail
- Mine or prospect

REGIONAL LOCATION MAP



Texas Instruments Incorporated
 SCIENCE SERVICES DIVISION
GEOPHOTO RESOURCES CONSULTANTS
 BRISBANE, AUSTRALIA.

TEXINS DEVELOPMENT PTY. LTD.
 E.L. 7/68 HEEMSKIRK DISTRICT
 010

PHOTOLOGICAL MAP

SCALE 1:25,000

PROJECT 7/68 DRAWING NO. 1/301

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