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GIPPSLAND OIL AND MINERALS N.L.

EXPLORATION LICENCE 2/85
NORTH HEEMSKIRK, TASMANIA

REPORT FOR PERIOD MAY 11TH TO AUGUST 10TH 1985

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INVESTIGATIONS CONDUCTED BY: GIPPSLAND OIL AND MINERALS N.L.

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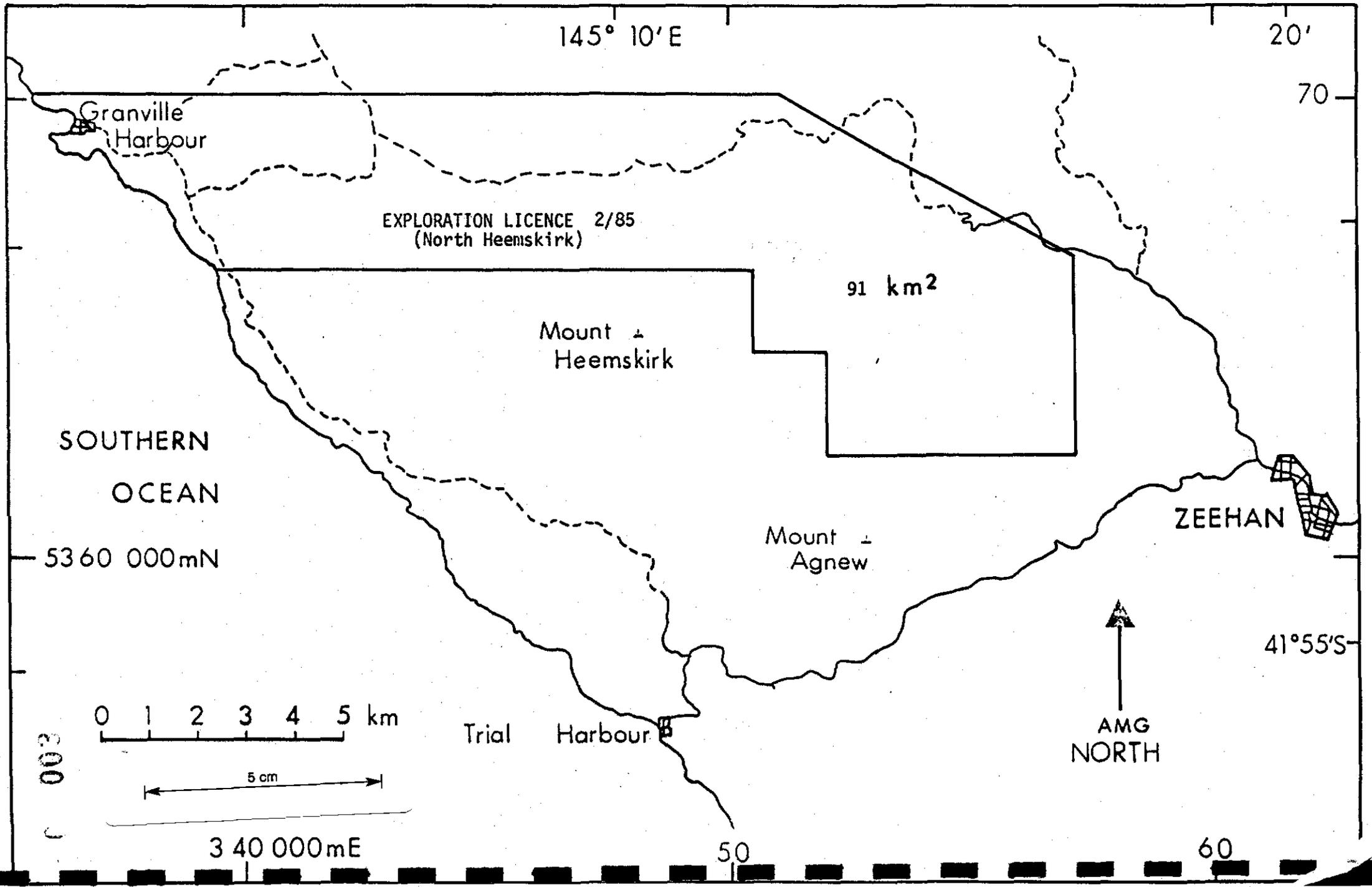
1. INTRODUCTION

Exploration Licence 2/85 (North Heemskirk) of 91 sq. kms was granted on May 10, 1985. The area covered by this title is shown on the accompanying location plan. This area was relinquished from E.L. 47/71 and the same conditions of expenditure and expiry were transferred to the new title. Under these conditions the title will lapse on December 12, 1987. E.L. 47/71 was a joint venture between Aberfoyle Exploration Pty. Limited and Gippsland Oil and Minerals N.L., where Aberfoyle was operator.

The licence area straddles the northern contact of the Devonian Heemskirk Granite with the enveloping sequence of Adelaidean-Cambrian sediments (Oonah Quartzite etc.). This intrusive is the source of tin (tungsten) and base metal (Pb-Ag-Zn-Cu) mineralisation, including Queen Hill, Severn and Montana. Several tin prospects have been located in the North Heemskirk area such as the St. Dizier-Central Anomaly-Big H Zone, Donnelly's and Twelve Mile Creek. A small tin resource has been drilled out at St. Dizier on mineral leases held by Apollo-Renison joint venture.

Most of the tin occurrences are skarn related mineralisation traced from past workings, outcropping gossan or by follow-up of magnetic and E.M. anomalies. A substantial amount of alluvial tin has been recovered from sections of the Tasman River. Minor tin occurrences have been found in greisen patches at the margins of the intrusive body. Current exploration is a continuation by Gippsland of the work conducted by Aberfoyle (previously Cominco) from 1974-84.

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2. GEOLOGY

Regional mapping has been completed by Cominco at a scale of 1:10,000 and described by C. Young in the Quarterly Report on E.L. 47/71 for the period ending June 30, 1980 (Q.H. 56 Volumes 1 & 2). The text is reproduced in full below:

"Rocks of the Precambrian Oonah Quartzite and Slate Formation are the oldest in the mapped area. Within this formation dolomite horizons are known to occur (St. Dizier). The Precambrian sediments have been metamorphosed and metasomatised by the Heemskirk Granite, a Devonian intrusive which underlies approximately 50% of the mapped area. Jurassic dolerite covers large areas to the north-east, and remnants of Tertiary basalt flows occur on topographic highs to the north-west. Large areas are covered by Tertiary quartz-rich gravels and unconsolidated sediments.

LITHOLOGIES

Oonah Quartzite and Slate Formation

The predominant rock types are quartzite and slate with some siltstone. Dolomite horizons have been recorded at St. Dizier and "Big H". The rocks are highly deformed and have been affected by at least two major deformations. Close to the Heemskirk Granite, the sediments have been both metamorphosed and metasomatised. Metamorphic effects are most obvious in black carbonaceous slates, where abundant chiastolite porphyroblasts have nucleated, and carbon occurs as fine graphite. Metasomatic effects appear to post-date thermal metamorphic changes. Close to the granite, intense pyro-metasomatic effects occur, and are best observed in carbonate horizons. Magnetite skarn occurs as a result of a metasomatic alteration of dolomite horizons at St. Dizier and "Big H".

At distances of greater than 200m from the granite contact, metasomatic changes are indicated by the replacement of originally argillaceous layers by tourmaline - muscovite assemblages, giving rocks a banded appearance with alternating layers of tourmaline - muscovite and granular quartzite. Sericitisation of the contact metamorphic andalusite porphyroblasts in black slates is common.

Pervasive pyrite veining is common in the black slates adjacent to the St. Dizier skarn horizon and pyrite aggregates were also noted in cherty siltstones in the Rock Creek area.

Heemskirk Granite

The Heemskirk Granite is a large irregular stock, similar in age and composition to the Housetop, Pieman and Meredith Granites. The bulk of the intrusive is a porphyritic biotite granite/adamellite. The granite contains numerous narrow greisen veins (Montagu) and is also the source of the abundant alluvial Sn deposits in the St. Dizier area. Partial alteration and greisenisation is noted in the St. Dizier area.

Jurassic Dolerite

Large areas in the north-east of the licence area are covered by Jurassic Dolerite, thought to occur as sills. The dolerite has a strong magnetic signature and is also marked by a distinctive vegetation. Quaternary dolerite talus is common.

Tertiary Basalt

The remains of Tertiary Basalt flows occur on topographic highs within the Precambrian sediments, and like the dolerite sills, are marked by distinct vegetation changes.

Tertiary Conglomerates, Sediments and Gravels

Poorly consolidated, Precambrian and granite derived sediments occur to thicknesses greater than 20m in low lying areas within the Precambrian rocks. These Tertiary sediments commonly contain tin concentrations, and have been mined for alluvial Sn."

3. PREVIOUS EXPLORATION: SUMMARY DETAILS OF MAIN PROSPECTS

a) Donnelly's

Following Dighem and ground magnetic surveys, a tin gossan was found. This magnetite-skarn mineralisation which assays up to 1.35% Sn is located adjacent to and partly within the Heemskirk Granite. The sedimentary sequence (Oonah Quartzite and equivalents) contains: quartzite, interbedded mudstone and quartzite, mudstone, skarn and calc-silicate. Mapping has revealed at least two different skarn horizons. Ground magnetic coverage has located several anomalies in this area. Soil sampling indicates that areas anomalous in tin, tungsten, copper, lead and zinc are located about the features detailed by ground magnetics.

No drill testing has been conducted.

b) St. Dizier Zone

This zone is comprised of three mineralised skarn occurrences located along an E-W trending suite of contact metamorphosed sediments. (St. Dizier, Central Anomaly and Big H.)

The mapped area shows a magnetite-pyrrhotite zone bounded to the north by tourmalinized sediments and quartzites and to the south by argillites.

The western area of mineralisation (St. Dizier) is contained within leases held by an Apollo Group/Renison J.V. A potential reserve of 600,000 tonnes at 0.6% Sn has been outlined by drilling.

In the Central Anomaly area there are at least three parallel skarn horizons. Ground magnetics delineated a magnetite bearing skarn horizon with an interpreted depth of 130 metres. Previous drilling by Picklands Mather in 1967 intersected a narrow interval of tin (1.2m at 0.45% Sn) in hole 101. This hole was 200m west of the magnetic anomaly and drilled parallel to strike.

The skarn horizons in the Central Anomaly region need further exploration by drilling to determine whether the anomalies represent economic mineralisation at depth. Unlike St. Dizier and Big H, where the mineralisation is near the surface, the depth of the anomalies in the Central Anomaly region prohibits further evaluation by surface exploration.

c) Twelve Mile Creek

Originally selected as a conductive zone from the Dighem Survey. The area is dominantly argillaceous sediments and a SIROTEM survey did locate a narrow conductor with a strike length of 100m. However, the ground magnetic survey outlined a lenticular anomaly with a strike length of 600 metres and of a similar appearance to the anomalies about the St. Dizier skarn zone. The area has limited outcrop and this possible skarn occurrence remains untested.

d) Tasman River Zone

An area of anomalous magnetics and low resistivity delineated in the Dighem survey. A zone of possible skarn horizon is indicated by ground magnetics conducted over a gridded area.

e) Silver Stream

The Silver Stream mag. anomaly has a small area of gossan over a probable skarn of at least 400 metres strike extent. Magnetite content is low and a weak disseminated source or thin horizon is suggested.

f) Dighem Anomalies 228C and 229A

These anomalies are considered to be possible conductor anomalies with associated magnetic responses. Limited IP and ground magnetic surveys have located the anomalies as a 120 gamma peak.

g) Junction Anomaly

A possible deep skarn (300m) untested by previous limited work.

h) N.W. Anomaly plus Granite Anomalies

These magnetic anomalies are believed to be situated within the Heemskirk Granite.

4. CURRENT WORK

- a) Research and Reassessment: Since taking over the exploration activities, most of the time has been spent in reviewing and assessing the previous data.
- b) Field work: An orientation trip was completed to check access, location of grids and become familiar with regional and prospect geology.

A new road through the licence was under construction and a large number of new outcrops have been exposed in road cuts and road-fill quarries. The new outcrops will assist in providing additional geological data about St. Dizier and Donnelly's Lookout. In addition, several calc-silicate horizons have been exposed immediately south of the abandoned Eureka tin mine. While the Eureka area does not have a prominent aeromagnetic signature the geological setting is favourable for skarn mineralisation.

No recent exploration has been conducted in this area which warrants more detailed mapping and sampling.

5. EXPENDITUREFor period ending July 31, 1985

	<u>\$</u>
Contract Personnel	38.06
Travel and Subsistence	599.25
Transportation	388.80
Accommodation	196.00
Sundry Equipment	267.43
Survey and Gridding	75.00
Salaries: Minerals Department	11,060.00
Salaries: J. V. Department	920.00
Subtotal	13,544.54
Overheads	2,031.67
TOTAL	<u>15,576.21</u>