ANNUAL REPORT ON EL 2890

28TH OCTOBER 1981

TO

27TH OCTOBER 1982

BY

S.D. TURLEY

OPEN FILE

DISTRIBUTION:

GEOPEKO: DARWIN
SYDNEY
PETROCARB
DEPT. MINES AND ENERGY

DARWIN N.T. NORTHERN TERRITORY GEOLOGICAL SURVEY

CR 82/380

NOVEMBER, 1982
Report on first year of licence. Work consisted of a literature search and data review, an airborne geophysical survey, and 1:50,000 scale regional geological mapping. Follow up of aeromagnetic anomalies is planned.
CONTENTS

1. INTRODUCTION 1
2. PHYSIOGRAPHY 1
3. EXPLORATION PHILOSOPHY 1
4. EXPLORATION HISTORY 2
5. WORK UNDERTAKEN 3
6. EXPENDITURE 4
7. PROPOSED EXPLORATION PROGRAMME 5
8. PROPOSED EXPENDITURE 5

* PLANS

TF 2800 Location and Access
TF 2766 Plan of Exploration Licence
1:50,000 Regional Geology
1:10,000 Airborne Magnetic Data
1:10,000 Airborne Radiometric Data

* N.B. At the time of writing plans covering regional geology, airborne magnetic data and airborne radiometric data were being compiled in the Sydney office of Geopeko. On their completion they will be forwarded for inclusion in this report.
1. INTRODUCTION

This is the first annual report for EL 2890, covering the twelve months from when the exploration licence was granted to Attutra Exploration Company Pty. Ltd., on the 29th October 1981 to the 27th October 1982. During the period under review a joint venture agreement was reached between Peko-Wallsend Operations Ltd. and Petrocarb Exploration N.L., the parent company of Attutra Exploration Pty., Ltd. EL 2890 forms part of the exploration tenure that was included within the "Joint Venture Agreement - Exploration". Tenure maintenance and reporting are now the responsibility of Geopeko, the mineral exploration division of Peko-Wallsend Operations Ltd. The EL covers an area of eight blocks, (25.26km²) in the Mt. Cornish - Huckitta locality, on the Jervois Range 1:100,000 sheet 6152 on the Huckitta 1:250,000 sheet, SF 53-11.

The licence area is located on Jervois Station and is 280km ENE of Alice Springs and 350km WSW of Mount Isa. Vehicle access is via the Plenty Highway and then south along the station track past Mt Cornish Bore.

2. PHYSIOGRAPHY

The licence area is flat lying between 280 - 300m above sea level, and without a well developed drainage system. It is covered by red soil and wind blown sand. The vegetation is restricted primarily to spinifex grass with areas of mallee and gidgea scrub. Climatically the area has short cool winters and long hot summers with summer temperatures exceeding 40°C. The annual rainfall is less than 250mm with poor reliability. The rain falls in storms primarily between November and March. Rock outcrop is restricted to the eastern end of the licence area, along the northern and southern boundaries.

3. EXPLORATION PHILOSOPHY

Attutra applied for EL 2890 because of similarities it showed to the Molyhil environment, namely calc-silicates of Lower...
Proterozoic age within, or adjacent to Middle Proterozoic granites which metasomatize the calc-silicates to skarns. There is regional evidence, both geological and geophysical to suggest that the licence area lies within the eastward extension of the Delny-Mount Sainthill fault zone which is regarded as being highly prospective for Molyhil-type mineralization. From a detailed study of the physical and chemical properties of the Molyhil deposit, notably the highly magnetic nature of the ore-body, caused by the presence of coarse magnetite, it is envisaged that future exploration within the licence area will rely heavily on empirical exploration techniques. To this end the licence area has been flown by a detailed airborne survey.

4. EXPLORATION HISTORY

In 1929 the Jervois mineral field was discovered by two prospectors Hanlon and Mudge, some 30km NW of the licence area. This discovery led to considerable prospecting activity.

In early 1960's New Consolidated Goldfields (A'Asia) Pty. Ltd. explored the Jervois area, with a limited amount of work over the north-western part of the EL.

The first edition of the Huckitta 1:250,000 map was published by the Bureau of Mineral Resources in 1963 following an extensive mapping programme which started in 1957.

In 1972 the western part of the licence area was granted to the Attutra Mining Co. Pty. Ltd., a subsidiary of Petrocarb Exploration NL, initially as AP 3161 which was later changed to EL 740. Petrocarb at that time owned the Jervois Mine and were exploring the area for further reserves of base metals. Following the discovery of the Molyhil deposit in 1971 by the Johannsen family the area was later considered prospective for tungsten and molybdenum. A joint venture agreement was reached between Petrocarb Exploration NL and Willstone (Pty) Ltd., a subsidiary of Union Corporation Ltd of South Africa, in November 1973.
Willstone commenced an exploration programme in May 1974 which included regional geological traverses, with coloured aerial photography at a scale of 1:25,000. Although geochemical follow-up work was reported no further work was undertaken on the area covered by EL 2890. A final report was written on exploration licence 740 on 23rd November 1974.

From 1977 to 1980 the licence area was covered in part by EL 1584 which was granted to Otter Exploration on 10.8.77. The exploration undertaken by Otter included field reconnaissance, mapping, sampling and systematic radiometric surveying with field evaluation of anomalies. The Otter programme failed to find sufficient signs of mineralisation and the the area was dropped in 1980. Apart from the exploration programmes mentioned above a number of major exploration companies have been active in the vicinity of EL 2890 within the past 10 years.

5. WORK UNDERTAKEN

i. Literature Search and Data Review

The first part of the exploration programme was a literature search at the Department of Mines and Energy both in Alice Springs and Darwin. This search covered the eastern half of the Arunta Block with particular reference to the Huckitta 1:250,000 sheet. Much of the information concerning the licence area and its immediate environs is summarized under section 4 - Exploration History - of the report.

ii. Regional Geology

The licence area has formed part of a regional geological mapping programme which covered the southern half of the Huckitta 1:250,000 sheet. The mapping was undertaken at a scale of 1:50,000 using government produced RC 9 photographs. The EL is located toward the eastern part of the Arunta complex, a belt of Lower to Middle Proterozoic rocks that spreads in a wedge across the southern part of the Northern Territory, narrowing towards the east. Within the licence area the geology is composed of remnants of Lower Proterozoic metasediments composed...
of schists and gneisses, the latter varying in composition from
quartzofeldspathic gneisses to those composed of calc-silicates.
The metasediments have been enveloped by the intrusion of Middle
Proterozoic granites. Subsequent erosion has denuded the area
leaving the metasediments present as only roof pendants within the
granites. A large proportion of the area is covered by Quaternary
wind blown sand which masks much of the underlying basement.

iii Airborne Geophysical Survey

After studying the Molyhil deposit it was decided to undertake
a detailed airborne magnetic survey over selected areas of the
tenure held by the Peko-Petrocarb joint venture. EL 2890 formed
part of one such area. The survey was flown with a line spacing
of 150m, at a mean terrain clearance of 80m with an average
sample interval of 45m. The preliminary data from this survey was
produced at 1:10,000 and 1:50,000, the latter scale is to coincide
with the regional mapping. Preliminary observations of the
results from the magnetic survey give no obvious indications
of anomalies caused by Molyhil-type bodies. However, to date,
comparatively little follow up work has been undertaken and
it is too early to dismiss the area. The airborne survey has
provided evidence in the form of a trough of magnetic lows to
suggest a nearly east-west fault entering the licence area from
the west. It is likely that this structure represents a possible
eastward continuation of the Delny-Mount Sainthill fault zone.

6. EXPENDITURE

EL 2890 forms part of a regional exploration programme and
therefore expenditure has been allocated on an aerial basis.

Expenditure 30.9.82 to 31.10.82: $4,438

Covenant for first licence year: $2,000
7. PROPOSED EXPLORATION PROGRAMME

As outlined EL 2890 forms part of the tenure held on behalf of the Peko-Petrocarb joint venture. Geopeko, as agents for the joint venture, are undertaking a regional exploration programme in the search for skarn hosted scheelite-molybdenite mineralisation. The basis for future exploration will be the airborne magnetic survey, recently carried out by Geopeko. The results from this survey combined with the regional geological mapping will provide targets for further investigation by geological, geophysical and geochemical techniques. This work if successful will lead to detailed diamond drilling.

8. PROPOSED EXPENDITURE

The proposed expenditure is $5,000 per year for the next two years with anticipated increases to $10,000 per year thereafter. Should a significant discovery be made then final year expenditures would be greatly increased.