CSR LIMITED
ALUMINIUM, MINERALS & CHEMICALS DIVISION
EXPLORATION & DEVELOPMENT GROUP

FIRST AND FINAL REPORT 1983-84
EXPLORATION LICENCE 4190
PLENTY RIVER, NORTHERN TERRITORY
HAY RIVER 1:250,000 SHEET SF 53-16
EMR 93/84

OPEN FILE

DARWIN
September 1984

D.S. HEYWORTH
NORTHERN TERRITORY GEOLOGICAL SURVEY

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FIG. 1 LOCATION MAP E.L. 4190 PLENTY RIVER N.T.
## Keywords

<table>
<thead>
<tr>
<th>Northern Territory</th>
<th>Aeromagnetics</th>
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1. INTRODUCTION

CSR Limited applied for an Exploration Licence in the Simpson Desert approximately 450 kilometres east of Alice Springs. No exploration took place on the tenement due to a dispute with the Northern Territory Geological Survey regarding premium payments on magnetic tapes of airborne geophysical data.
2. SUMMARY

Exploration Licence 4190 was granted to CSR Limited on 27th June, 1983.

The area was originally chosen for exploration after the release of airborne data by the Northern Territory Geological Survey in 1981. The magnetic intensity contours revealed the possible presence of a concealed granite in the northwest of the Plenty River 1:100,000 sheet.

CSR Limited planned to re-interpret the original survey data using in-house expertise and facilities. Funds and personnel were made available. However a dispute arose on the cost of providing the data and CSR Limited relinquished the tenement rather than establish a precedent of premium payments to the Northern Territory Geological Survey.
3. LOCATION, ACCESS AND TOPOGRAPHY

E.L. 4190 is located approximately 450 kilometres east of Alice Springs on the edge of the Simpson Desert.

Access to the area is via an unsealed road from Alice Springs to Tarlton Downs. There are no tracks throughout the Licence.

The topography of the Licence is flat with much of the area covered by blown sands and dunes. The Hay River crosses the eastern edge while Plenty River crosses the western side. Both rivers are dry except during rains.
4. TENEMENT

E.L. 4190 was granted to CSR Limited on 27th June, 1983, for a period of six years. The Licence covered 1,417 square kilometres.

The area is subject to the Simpson Desert Aboriginal Land Claim. However, the Licence was granted as the land claim is not due to be heard by the Land Commissioner until 1985.

The area is described as follows: "All that piece or parcel of land in the Northern Territory of Australia containing an area of 1,417 square kilometres more or less the boundaries of which are described as follows subject to all applications for mining tenements and excluding therefrom all mining tenements granted or registered and all reserves included within the definition of "reserve" in Section 7 of the Mining Act.

Commencing at the intersection of latitude 23°30' East, thence proceeding to the intersection of latitude 23°00' South with longitude 137°00' East, thence proceeding to the intersection of latitude 23°30' South with longitude 137°00', thence proceeding to the intersection of latitude 23°30' South with longitude 136°30', thence proceeding to the point of commencement."
5. PREVIOUS INVESTIGATIONS

There has been no known exploration in this region, although extensive exploration has taken place 65 kilometres northwest in the Jervis Range area. Mineralisation discovered in this area includes Pb-Zn-Ag deposits and Cu deposits of probable stratiform nature and tungsten mineralisation usually occurring as scheelite in calc-silicate rocks.

The area was considered prospective for scheelite deposits and other hydrothermal deposits associated with a granitic intrusion into calc-silicate rocks. A major fault system trending through the Jervis Range area could pass through the area covered by E.L. 4190.

The Northern Territory Geological Survey conducted an airborne magnetic survey in 1981 and the Licence was applied for on the basis of utilising the data from this survey. The Plenty River 1:100,000 Magnetic Intensity Map (Number 6251) shows an area of undulating magnetic intensity in the northwest corner. Several magnetic anomalies occur around this distinct area. A preliminary interpretation of this feature is that it is a concealed granite with possible peripheral skarn deposits. The granite has a sharp contact to the north and metamorphics underlie the southern part of the area. These increase in thickness to the south.
6. REGIONAL GEOLOGY

Little geological mapping has been undertaken on the Hay 1:250,000 Sheet due to the lack of outcrop and desert conditions. The geology is summarised by Smith (1963). A summary is shown on Table 1.

The most dominant unit to the east of the E.L. consists of the Archean to Lower Proterozoic metapelites and metavolcanics in the Arunta Block. These have been metamorphosed to biotite schist, muscovite schist, andalusite schist, quartz-feldspar-gneiss and quartz-hornblende gneiss.

This sequence was intruded by Lower Proterozoic granites (Walpole et al, 1961) with associated aplite and pegmatite dykes.

The Lower Proterozoic rocks were covered by the Upper Proterozoic Grant Bluff Formation and Field River Beds which comprise glauconitic sandstones, boulder beds and dolomites.

This sequence is covered in places by a Palaeozoic sequence of sandstones and dolomites.
7. **EXPLORATION**

The planned exploration programme was to have included detailed interpretation of the geophysical data to define the granite. This would have been followed up by a detailed ground magnetic survey.

After detailed interpretation of this data, a shallow drilling programme would have been conducted to test anomalous areas and stratigraphy.

The planned exploration was stalled at the first stage due to the request by the Northern Territory Geological Survey for a $1,000 premium on the magnetic tapes containing the survey data. CSR Limited could not justify the payment of this government surcharge on what is essentially public information.

The only solution to this deadlocked situation was for CSR to relinquish the property.
8. CONCLUSIONS

Since no exploration has taken place, no conclusions can be made. However, the original concept is still unanswered and perhaps another company may wish to apply for the area. The cost of exploration in such a remote sand covered area would be high.
9. REFERENCES

Geology of the Green Parrot and Reward Silver-Lead Deposits, Jervois Range, Northern Territory.

SMITH, K.G. (1963)
Explanatory Notes, Hay River, Northern Territory.
Bureau of Mineral Resources, Geology and Geophysics.

WALPOLE, B.P. and SMITH, K.G. (1961)
Geochronology of Proterozoic Granites in the Northern Territory, Australia. Part 2 - Stratigraphy and Structure.

DSH/SS
September 1984
EXPLORATION LICENCE 4190, "PLENTY RIVER"

SUMMARY OF EXPENDITURE

27 JUNE 1983-10 JULY 1984

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