

**WESTERN MINING CORPORATION LIMITED  
EXPLORATION DIVISION**

**SIXTH ANNUAL AND FINAL REPORT**

**EL 5122 'BUTCHERS WATERHOLE'**

**11/3/92 - 10/3/93 AND 11/3/87 - 10/3/93**

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Pasadena, S.A.  
May 1993

***Distribution:***

N.T.D.M.E. - Darwin  
W.M.C. - Riverside Quay (text only)  
W.M.C. - Pasadena  
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***Map Reference:***

1:250,000 SE 53-14 TENNANT CREEK  
1:100,000 5759 FLYNN

## SUMMARY

This is the sixth annual and final report on exploration activities carried out on Exploration Licence 5122 (Butchers Waterhole).

The EL was granted on March 11 1987 and subsequently became part of the Joint Venture between Giants Reef Mining and Western Mining Corporation Limited.

Exploration activities have focussed on magnetically lively areas of the EL, but has also re-appraised previous drilling undertaken by the BMR in the area.

Several prospects ('Skink' and 'Goanna') were selected on the basis of their aeromagnetic signature and subjected to geophysical (ground magnetics, TEM) and geochemical (soil sampling, vacuum drilling) investigation. A diamond drill hole was drilled at Skink, but failed to yield encouragement.

A ground magnetic survey was carried out late in the licence's life over another area of interesting aeromagnetics. Three dimensional modelling of the data, although failing to rule out the source of the magnetics as being an ironstone, did not yield sufficient encouragement to warrant further investigations.

Given the concentration of the Joint Venture's resources in other, more prospective areas, the decision was made to allow the EL to expire without the application for any other form of tenement.

Expenditure for the final year was \$17,919 and over the life of the tenement was \$204,024.

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2	1:5,000	Butchers Prospect Magnetic intensity map	Pocket

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1	Ground magnetic data

## 1. LOCATION

Exploration Licence 5122 (Butchers Waterhole) is located approximately 38 kilometres north-north-west of Tennant Creek, within the Phillip Creek pastoral lease (Figure 1).

The EL is accessed by four wheel drive tracks from either the North Star mine to the east or the Phillip Creek homestead to the north-east.

## 2. TENURE

EL 5122 was granted to D.H. Byrne and P. Purich on 11th March 1987 for a period of six years and originally comprised 20 blocks ( 64 km<sup>2</sup>).

The EL became part of the Tennant Creek Joint Venture between Giants Reef Mining and Western Mining Corporation (WMC) in August 1988 and an 80% equity in the EL was transferred to WMC after the earning-in period.

The EL was reduced by 50% in line with statutory requirements on the second, third, fourth and fifth anniversaries of the licence.

In August 1989 a mineral claim was sought to cover a prospective area and this was subsequently granted (MCC 1000).

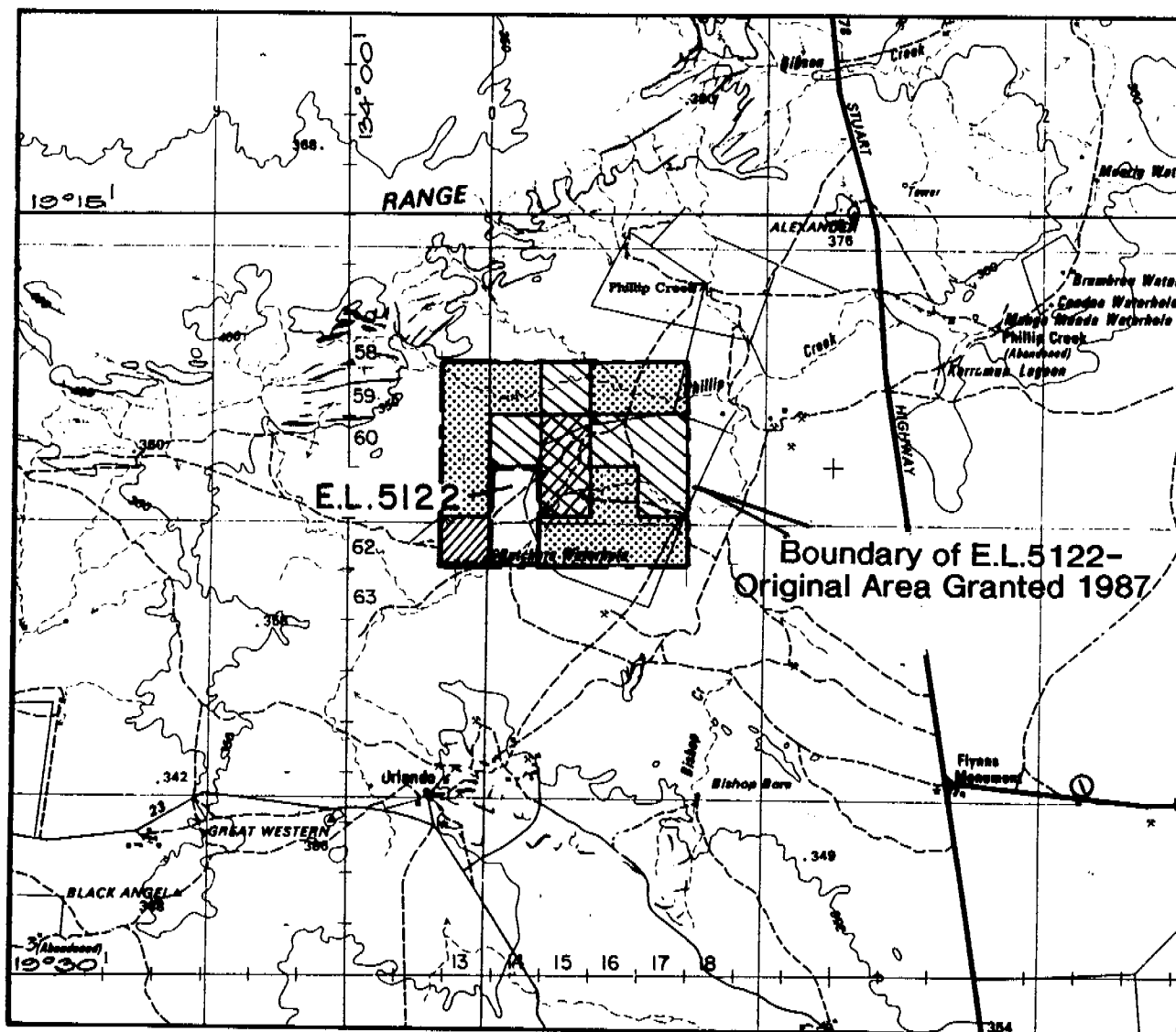
## 3. REGIONAL GEOLOGY

The regional geology of the Tennant Creek field has been detailed in many recent publications and will not be repeated here. Papers contained in AusIMM Monograph 14 (Geology and Mineral Deposits of Australia and Papua New Guinea), Vol 1 pp 829-861 would give the reader an excellent introduction to the regional geology and style of gold-copper mineralisation.






## 4. SUB REGIONAL TO LOCAL GEOLOGY

The Northern Territory Geological Survey have recently re-mapped the TENNANT CREEK and FLYNN 1:100,000 sheets with pre-publication versions compiled at 1:25,000 (Donnellan et al. 1992). The NTGS has kindly supplied WMC with this pre-publication mapping and WMC has re-compiled this at 1:50,000.

The NTGS has suggested a substantial re-organisation of the Lower Proterozoic stratigraphy in the Tennant Creek field. In particular the Warramunga Group (eg. of Le Messurier *et al.* 1990) has been substantially diminished in extent. Parts of the 'old' Warramunga Group and some units previously placed below it have been placed into the Churchills Head Group (and in particular, the Flynn Subgroup) unconformably above the 'new' Warramunga Group. The 'new' Warramunga Group comprises much of what was previously known as the 'Black Eye Member', thought to be most favourable for hosting Tennant Creek style 'ironstones' and hence gold-copper deposits.



INDEX TO ADJOINING MAPS  
1:100 000 MAPS SHOWN IN BLUE

-  E.L. 5122 - AREA ORIGINALLY GRANTED 1987
-  AREA RELINQUISHED 1980
-  AREA RELINQUISHED 1990
-  AREA RELINQUISHED 1991
-  AREA RELINQUISHED 1992
-  CURRENT AREA of E.L. YEAR 6.

SE 53-9	SE 53-10	SE 53-11
SOUTH LAKE WOODS FLYNN 5560	HELEN SPRINGS MUCKATTI BRUM- CHILLY 5780 SF 53-1	BRUNETTE DOWNS HAYDON 5580
SE 53-13 GREEN SWAMP WELL BRIMATT 5558	SE 53-14 TENNANT CREEK KELLY TENNANT 5658 5758 5858	SE 53-15 ALROY TAVINC 5958
SF 53-1 HANSON 5557	SF 53-2 BOHNEY WELL DORA- DORSET 5857	SF 53-3 FREW RIVER 5657

SHEET SE 53-14  
TENNANT CREEK  
NORTHERN TERRITORY

WESTERN MINING CORPORATION LIMITED - EXPLORATION DIVISION			Scale 1: 250 000
Map Ref.	SE 53-14	LEASING PLAN E.L. 5122	Figure No.
Date	16.3.90		Plan No. 7005 / 86
Author	M.A.W./D.A.B.		
Revised	1-6-93		
TENNANT CREEK JOINT VENTURE N.T.			

## **5. WORK COMPLETED AND EXPENDITURE IN YEAR SIX**

### **5.1 GRIDING**

A grid was pegged in late 1992 to cover an area of weak aeromagnetic anomalism in the northern reaches of the EL.

An AMG datum was established using a hand held MAGELLAN 5000 GPS unit in averaged position mode during a time when 'selective availability' was off. By reference to surveyed points picked up on the same day, accuracy of about 20 metres in both northing and easting is claimed for the datum. This was considered satisfactory for the nature of the survey which was to follow. Lines 40 metres apart were pegged using topefil and compass from 400700 E to 402300 E and from 7861400 N to 7862000 N (21.6 line kilometres).

### **5.2 DETAILED GROUND MAGNETIC SURVEY**

A ground magnetic survey was read over the entire grid in September 1992 using a Scintrex MP3 magnetometer and a 3 meter sensor height. Stations 10 metres apart were read. A base station magnetometer located at 7861800 N, 402110 E cycling every 30 seconds allowed for corrections for diurnal drift.

Data are given in Appendix 1 and a plan of the magnetic contours is presented a Figure 2.

The contoured data confirmed the aeromagnetic anomalies. A north-westerly striking magnetic ridge in the western portion of the grid is likely to be sourced by one of the family of intermediate to basic intrusives intersected elsewhere in the area.

A more discrete magnetic anomaly in the eastern portion of the grid was a more attractive target as the anomaly morphology resembled others in the field known to be sourced by ironstones at varying depths. Consequently a portion of the grid (using every second line) was modelled in three dimensions using WMC in-house software. This modelling was not able to be pursued to a satisfactory final conclusion due to the impending expiry of the EL and priorities elsewhere. The modelling demonstrated that an ironstone could not be ruled out as the source of the eastern magnetic anomaly. However a decision was made that the likelihood was that the source of the anomaly was not a significant ironstone and the EL was allowed to expire without further tenements being applied for by the JV.

### **5.3 EXPENDITURE**

Expenditure on EL 5122 during the sixth and final year of tenure may be broken down as follows :

Expense type	\$
Geological	8835
Geophysical	5310
Geochemical	1
Surveying	0
Drafting	160
Analytical	10
Drilling	0
Leasing	1840
Administration	1763
<b>TOTAL</b>	<b>\$17,919</b>

This compares with the covenant for the year which was set at \$5,000; the total expenditure over the life of the licence has been \$204,024.

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## **6. SUMMARY OF OTHER WORK COMPLETED OVER THE LIFE OF THE LICENCE**

### **6.1 YEAR 1**

In Year one Byrne and Purich conducted a literature search, regional geological mapping and rock chip sampling and assaying and petrography of BMR diamond drill holes 8 and 9. This data is presented in the First Annual Report for EL 5122 by Byrne (1988). Little positive encouragement was obtained from this limited program, although the area still remained prospective.

Expenditure in year 1 was \$10,719

### **6.2 YEAR 2**

Little work was completed on EL 5122 in the second year due to the transfer of the EL to The Joint Venture with WMC. WMC began a regional compilation of data and an assessment of the data obtained to date on the JV licences.

Expenditure attributable to EL 5122 in this period was \$22,993.

### **6.3 YEAR 3**

Mapping was conducted over outcrops in the northern and eastern portions of the EL. Soil sampling conducted on a 100 x 50 metre grid (7861400 N to 7861800 N and 405650 E to 406050 E) over a area of iron enrichment, folding and faulting at the apparent fault truncation of the 'North Star shear zone' yielded no anomalism.

Two moderately discrete aeromagnetic anomalies attracted attention in this year and were named 'Skink' and 'Goanna'. The peaks were read with ground magnetics and, due to cover of windblown sands and silts, small grids of vacuum drilling were read across each anomaly. Three lines 200 metres apart with holes 50 metres apart were drilled, with holes typically 15 metres deep. Little geochemical anomalism was evident in the assays; it is very likely that the holes were not drilled to sufficient depth to be effective.

Data relating to the above work was reported in Evans (1990). Expenditure in Year 3 was \$53,351.

### **6.4 YEAR 4**

Both the Skink and Goanna anomalies were traversed with TEM in year 4 but no conclusive results were obtained. A diamond drill hole (TBWD 58) targeted the Skink anomaly. The hole was drilled to a depth of 342 metres and intersected a poorly mineralised shear system, with magnetite and pyrite and also a thick doleritic intrusive. No significant gold, copper or bismuth assays were returned. The drill hole was partially logged with downhole magnetics. This data is reported in Evans (1991).

Expenditure in year 4 was \$91,401.

### **6.5 YEAR 5**

A Mineral Claim was granted over the Skink area in early 1990. No field work was completed on EL 5122 in year 5. Expenditure attributable to EL 5122 was \$7,641



7. **REFERENCES**

- Byrne, N. (1988) Exploration Licence 5122 Annual Report for First Year of Tenure 11 March 1987 - 10th March 1988. Unpublished N. Byrne & Associates report.
- Donnellan, N., Hussey, K. and Morrison, R. (1992) Brief Notes on the Stratigraphy and Structure of the Tennant Creek and Flynn 1:100,000 map sheet areas, Northern Territory (and Preliminary geological Legend). Unpublished notes for pre-publication versions of map sheets.
- Evans, R. (1989) Second Annual Report Exploration Licence 5122 March 11 1988 to March 10 1989. Unpublished WMC report to the N.T.D.M.E.
- Evans, R. (1990) Third Annual Report Exploration Licence 5122 March 11 1989 to March 10 1990. Unpublished WMC report to the N.T.D.M.E.
- Evans, R. (1991) Fourth Annual Report Exploration Licence 5122 March 11, 1990 to March 10, 1991. Unpublished WMC report to the N.T.D.M.E.
- Le Messurier, P., Williams, B.T. and Blake, D.H. 1990. Tennant Creek Inlier - Regional Geology and Mineralisation, in Geology of the Mineral Deposits of Australia and Papua New Guinea. (Ed. F.E. Hughes) pp 829 - 838. The AusIMM Melbourne.

## **APPENDIX 1**

### **GROUND MAGNETIC DATA**

# **DIGITAL DATA HELD**



