Aberfoyle Resources Limited
A.C.N. 004 664 108

Exploration Division

NORTHERN TERRITORY GOLD SEARCH
"MT PEAKE CREEK"
EXPLORATION LICENCE 8718
(Mount Peake and Barrow Creek 1:250,000 Sheets)

PARTIAL RELINQUISHMENT REPORT
FOR EXPLORATION ACTIVITIES IN
THE AREA SURRENDERED ON 28 AUGUST 1996

Distribution:

NTDME (1/3)
Aberfoyle Adelaide (2/3)
Aberfoyle Melbourne (3/3)
(Mt Peake Creek Report No 3)

Prepared By:

S L M Hughes
EXPLORATION GEOLOGIST

Endorsed By:

C G Drown
SENIOR GEOLOGIST

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1. INTRODUCTION

Exploration Licence 8718 "Mt Peake Creek" covers some 1397km² of pastoral lease land that was granted to Aberfoyle Resources Limited (ARL) on 29 August 1994 for a period of six years.

In accordance with the Northern Territory Department of Mines and Energy regulations, EL8718 was reduced in land area by 50% on the second anniversary of tenure, 28 August 1996. A total of 217 one minute by one minute graticular blocks were relinquished (Figure 1).

This report outlines the exploration activities carried out by ARL on the abandoned portion of the Mt Peake Creek licence from the date granted up until 28 August 1996.
2. EXPLORATION ACTIVITIES COMPLETED

2.1. AIRBORNE MAGNETICS

During the first year of tenure, the BMR and NTDME aeromagnetic surveys over the tenement area were purchased and imaged using ER-mapper software (Drown, 1995).

Due to the poor quality of the existing magnetic data, the decision was made to contract Geoterrex to fly that portion of EL8718 that lay on the Mount Peake 1:250,000 sheet. The details of the flight paths and equipment specifications were presented in Drown (1995).

The image of the total magnetic intensity in that portion of the survey which falls within the relinquished area is presented in Figure 2. A northwesterly trending linear magnetic feature can be traced through the eastern portion of the areas relinquished. This structure was interpreted by ARL in the southeastern portion of the old licence (Hughes, 1996) Linear Magnetic Anomalies, Plan 4). Recent imaging of the magnetic data has elucidated this lineament which follows the extrapolated trend of the structural geology north of Mt Judith (see Offé and Stewart, 1974).

Though no outcrop occurs in this area, extrapolation of the proximal geology suggests that the area is underlain by lithologies of the Lander Rock Beds intruded by frequent small Carpentarian granite plutons.
2.2. **Radiometrics**

The imaged radiometric data from the 1995 Geoterrex survey which falls within the surrendered area of EL8718 is presented in Figures 3 and 4.

The pseudocolour image of the total count (Figure 3) shows that the Hanson River system, in the southeastern portion of the surrendered area, has a high radiometric count relative to the remainder of the licence. In Figure 4, the Hanson River drainage pattern shows as white and pink colours indicating that the count for uranium, thorium and potassium is sub-equal but weighted toward potassium. This may reflect the concentration of Recent alluvium (clay and felspar rich deflation debris) deposited in the stream course.

In the northern relinquished areas, blue and green wavelengths (Figure 4) reflect the presence of trace amounts of uranium and thorium in the surface cover. The northeasterly draining stream pattern over this region suggests that the surface sediment lode in this northern relinquished area is being sourced from extensive Lander Rock Beds and Central Mt Stuart outcrop near Mt Rennie and Conical Hill.

The Mt Peake geology sheet indicates that the northern surrendered tenement area underlain by a gravity high (+9.5mGals) but the paucity of outcrop makes valid bedrock interpretation difficult.
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EXPLORATION DIVISION

NORTHERN TERRITORY
NT GOLD PROJECT
EL8718 Mt Peake Creek
Radiometric RGB Image from Relinquished Areas
Algorithm: MtP_relinq_RGB_250k.alg

Location Code: SF53-5,6  Scale: 1: 250 000  Date: 12 November, 1996

Compiled: SLMH  Printed: DJ650  Traced: SLMH  Checked: SLMH

Map Projection: TMAMG
Geodetic Datum: AGD66
2.3. LANDSAT TM IMAGING

The Landsat TM data was purchased for Mt Peake Creek during the second year of tenure. Several standard regolith transforms were produced. To help map regolith and sub-crop patterns from the Landsat data, a "supervised classification" was performed using ER-mapper software.

The result of the supervised classification in the relinquished areas is presented in Figure 5. The northern portion of the surrendered areas is revealed by the classification to be dominated by sand plain and burnt spinifex scrub. A northeasterly trend can be distinguished in sporadic quartz veins (indicated in red) which traverse the area. Ground reconnaissance revealed that these veins were brecciated and silica-annealed. None of the samples taken returned anomalous assays of the standard ARL mineral suite, (Au, Cu, Pb, Zn, As, Bi, Mn, Ni).

Faint pink colours indicative of Lander Rock Beds sub-crop are seen in the western portion of the northern surrendered area. From the geology sheet (Offe and Stewart, 1974) it can be seen that this region impinges upon an area to the southwest of Lander Rock Beds outcrop. This suggests that the supervised classification has extended the known distribution of the target sedimentary sequence in to this part of the licence.

The central portions of the relinquished area are "classified" as heavily vegetated and traversed by swathes of recent alluvium and re-vegetating sheet wash (pale green colours in the Hanson River conduit, Figure 5).

In the southern central and far southeast portions of the relinquished ground, the royal blue colours from the Landsat classification indicate the presence of float from the quartz rich lithologies of the Central Mt Stuart Formation. This interpretation is supported when compared to the outcrop geology from the Barrow Creek and Mount Peake 1:250,000 sheets. Much of the Central Mt Stuart Beds mapped in these areas appears to be underlain by granite (Offe and Stewart, 1974 and Smith et al, 1961).
2.4. **RAB DRILLING**

The entire June 1996 RAB drilling programme reported in Hughes (1996) was contained within the portion of EL 8718 retained by ARL after the 28 August 1996 reduction (refer Figure 1) and therefore is not reported here.
3. EXPENDITURE

At the second anniversary of EL 8718 "Mt Peake Creek" the expenditure on the project totalled $142,991.42 (Drown, 1995 and Hughes, 1996).

Disregarding all costs related to the June 1996 RAB drilling (including access to sites, geochemistry and ground geophysical traverses) the monies proportioned to the 217 graticular blocks relinquished on 28 August 1996 stand at $43,247.77.
4. REFERENCES


Hughes, S.L.M., 1996: Exploration Licence 8718 “Mt Peake Creek” (Mount Peake and Barrow Creek 1:250,000 sheets) annual report on exploration for the year ended 28 August, 1996. Aberfoyle Resources unpublished internal report.
