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

Exploration Division

EXPLORATION LICENCE 8716

‘MT STIRLING’
(Barrow Creek 1:250,000 Sheet)

FINAL REPORT ON EXPLORATION

Distribution:
Aberfoyle Resources Ltd, Perth (1)
Aberfoyle Resources Ltd, Melbourne (1)
Dept Minerals and Energy, Darwin (1)

Submitted By:
R M Joyce
Exploration Manager
Australian Gold

ARL Report No: NT Mt Stirling 6
May 1998
CONTENTS

SUMMARY

1. INTRODUCTION
   1.1. Location and Access
   1.2. Tenement Status

2. GEOLOGICAL SETTING
   2.1. Regional Geology
   2.2. Local Geology

3. WORK COMPLETED IN THE 12 MONTHS TO 31 OCTOBER 1995
   3.1. Regional Airborne Magnetics Imaging
   3.2. AAPA Site Survey
   3.3. Access
   3.4. RAB Drilling
   3.5. Soil Geochemistry
   3.6. Lag Geochemistry
   3.7. Ground Magnetic Profiles
   3.8. Rehabilitation

4. WORK COMPLETED IN THE 12 MONTHS TO 31 OCTOBER 1996
   4.1. Imaging of the Radiometrics
   4.2. Access Track Clearing
   4.3. Aircore Drilling
      4.3.1. Introduction
      4.3.2. Methodology
      4.3.3. Sub-surface Observations
      4.3.4. Results
      4.3.5. Rehabilitation

5. WORK COMPLETED IN THE 12 MONTHS TO 31 OCTOBER 1997
   5.1. Vacuum Drilling
   5.2. Geochemical Results

6. WORK COMPLETED SINCE 1 NOVEMBER 1997

7. REFERENCES
<table>
<thead>
<tr>
<th>Plate No</th>
<th>Title</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>NT 85</td>
<td>EL 8716 Mt Stirling, 3rd Year Relinquishment Plan</td>
<td>1:250,000</td>
</tr>
<tr>
<td>MTS 56</td>
<td>EL 8716 Mt Stirling, Drillhole Location Plan and Maximum</td>
<td>1:25,000</td>
</tr>
<tr>
<td></td>
<td>Au in Hole</td>
<td></td>
</tr>
<tr>
<td>MTS 57</td>
<td>EL 8716 Mt Stirling, Drillhole Location Plan and Maximum</td>
<td>1:25,000</td>
</tr>
<tr>
<td></td>
<td>As in Hole</td>
<td></td>
</tr>
</tbody>
</table>
SUMMARY

EL 8716 Mt Stirling was granted to Aberfoyle Resources Limited on 1 November 1994. The tenement was surrendered on 3 April 1998, after exploration for Tanami style gold deposits failed to return significant results. Work completed is summarised below:

Work completed in the 12 months to 31 October 1995

- Imaging of regional aeromagnetic data
- Application for, and grant of an AAPA Certificate
- Rehabilitation of station tracks
- RAB drilling (179 holes for 5594 metres) on 19 traverses
- Ground magnetic traverses along the drill lines

Work completed in the 12 months to 31 October 1996

- Imaging of radiometric data
- Clearing of approximately 1.7km of new tracks to allow drill rig access
- Aircore drilling (43 holes/3397.7 metres).

Work completed in the 12 months to 31 October 1997

- Vacuum drilling (29 holes/77 metres).

Work completed between 1 November 1997 and Tenement Surrender Date

- No further work was carried out.
1. INTRODUCTION

Exploration Licence 8716 (Mt Stirling), located approximately 280km NNW of Alice Springs comprises 42 graticular blocks which cover interpreted prospective Bullion Schist. Exploration work conducted by Aberfoyle Resources Ltd (ARL) on EL 8716 has been directed towards the discovery of economic Tanami-style gold mineralisation.

1.1. Location and Access

Exploration Licence 8716 lies within the boundaries of Mt Stirling Station, some 280km NNW of Alice Springs, refer Plate NT85. Primary access to the southern portion of the tenement is via the unsealed Stirling Station homestead road. A secondary road (unsealed) provides access to the north-east quadrant of the EL. Local access is via station tracks and cleared fencelines passable in dry weather.

1.2. Tenement Status

EL 8716 comprising 42 graticular blocks was granted to ARL on 1 November 1994 for a period of six years. The tenement was surrendered on 3 April 1998.

2. GEOLOGICAL SETTING

2.1. Regional Geology

The Mt. Stirling project area covers part of the Arunta province which comprises a deformed Palaeoproterozoic basement turbiditic sequence of greywacke, quartz sandstone, siltstone, shale, and minor mafic rock and their metamorphic equivalents (schist, gneiss, quartzite, amphibolite).

During the Barramundi Orogeny (1890-1850 Ma, Page & Williams, 1998), the sedimentary sequences in the Arunta were intruded by mafic rocks, deformed and metamorphosed up to amphibolite facies. At the closing stages of the Barramundi Orogeny at about 1820-1800 Ma granite plutons intruded rocks of the Arunta province.
Platform quartzite-shale-carbonate sediments (Reynolds Range Group) unconformably overlie the Barramundi metamorphic rocks and probably represent correlatives of the Hatches Creek Group (Blake et al. 1987). Deformation of the Hatches Creek Group preceded granite intrusion at about 1660 Ma (Blake & Page, 1988) and involved an early phase of upright northwest trending folds and a second episode of northeast folds. Both episodes were accompanied by faulting, thrusting and metamorphism.

The Arunta province remained tectonically active after the Barramundi Orogeny with several metamorphic and deformation events, including the ~1800 Ma Strangways granulite event (Shaw & others, 1984), the 1760-1650 Ma (Windrim & McCulloch, 1986) Aileron retrogressive event and the most recent Carboniferous Alice Springs Orogeny. In the northern Arunta region, significant granitic magnetism occurred at 1780-1770, 1713, 1635 and 1570 Ma.

Unconformably overlying the Arunta Inlier within the Mt. Doreen area are the Neoproterozoic to Palaeozoic sedimentary rocks of the Ngalia basin (Wells and Moss, 1983).

2.2. Local Geology

Approximately 70% of the Mt Stirling tenement area is mapped as being overlain with Quaternary cover (Smith et al, 1961). The majority of the surface outcrop is comprised of the Adelaidian to Early Cambrian Central Mt Stuart Formation and associated Amesbury Quartzite member.

At the base of the Central Mt Stuart Formation in the northeastern extremity of the licence area, Smith et al (1961) have mapped Bullion Schist outcrop (analogous to the Lander Rock Beds): the target sedimentary sequence for ARL's gold search in the Arunta to date. Bullion Schist has also been mapped in the central portion of the tenement near the junction of the main access track and the Rob Roy magnetic feature, G. R. 366000mE, 7609000mN.
Ground reconnaissance during the September aircore drilling programme revealed that the outcrop/subcrop is comparable to that mapped by the BMR in 1961.

Aircore drilling revealed a variety of rock types which were dominated by a quartz-muscovite-sericite+biotite-hornblende schist (the Bullion Schist?) interlayered with slivers of mafic, intermediate volcanic and felsic intrusive lithologies.

3. WORK COMPLETED IN THE 12 MONTHS TO 31 OCTOBER 1995
(Refer Heslop and Drown 1995)

3.1. Regional Airborne Magnetics Imaging

Airborne magnetics data covering the area of EL 8716 flown for the NTDME in June 1981 have been acquired and imaged using ER Mapper software.

Exposure of possible source rocks for the magnetic features is limited. The Arab Steed feature is very tentatively ascribed to a contact metamorphic halo around a granitic body, and the Rob Roy feature to cherty magnetic units of the Early Proterozoic Bullion Schist Beds.

3.2. AAPA Site Survey

The area of EL 8716 was surveyed by the Aboriginal Areas Protection Authority (AAPA) in mid-1995 and an Authority Certificate issued to Aberfoyle Resources. A number of sites of significance to Aboriginal people were found within EL 8716. The location of these sites has been made known to the relevant company employees.

3.3. Access

Station tracks were used for drill rig access where possible; in other cases lines were cleared using a bulldozer and operator from Neutral Junction Station. An employee of NT Gas supervised construction of the access track at the point at which it crossed the gas pipeline.
3.4. RAB Drilling

A total of 5.594m (179 holes) of RAB drilling was completed in June and September 1995. In the first program, 15 lines (128 holes for 3326m) were drilled over three magnetic anomalies (Exeter, Rob Roy and Arab Steed targets), with the aim of obtaining regolith, geological and geochemical information. In September, a further 51 holes were drilled (2,268m) to infill over the Au-As-Bi anomalism discovered in the first phase of RAB in the northwest of the Arab Steed target.

RAB hole locations are shown in Plates MTS 56 and 57. Assay results and cross sections are reported in Heslop and Drown 1995.

The drilling contract was completed by Tennant Creek - based Stadecote Drilling using an Edson 2000 rig. Equal volume composites of RAB cuttings over three metres (June phase of work) or four metres (September phase) were taken. These were prepared for analysis by Amdel Laboratories in Alice Springs and analysed by Amdel in Adelaide. Gold was determined by fire assay with MS finish (Amdel method FA3M). Cu, Pb, Zn, Fe, Mn, As, Bi and Ni were determined by mixed acid digest with ICP-OES finish (Amdel method IC3E).

Geological and geochemical results are summarised below.

Line 1
was drilled over the southern extremity of the Rob Roy magnetic target. It comprises 8 holes (RO-01-115 to RO-01-121) for 199m. The upper 3 to 15m of the profile consists of unconsolidated Quaternary basin sediments, underlain by a lateritic profile eroded to the saprolite level. Lithologies intersected vary from Late Proterozoic Central Mount Stuart sediments at the western end of the line, through Early Proterozoic Bullion Schists, to a potassic granitoid at the eastern end. No anomalous geochemistry was reported.

Line 2
1km north along the Rob Roy baseline from Line 1 comprises 7 holes (RO-02-122 to RO-02-128) for 137m. Thick Quaternary cover is once again ubiquitous (10-20m),
and lies directly on saprolite. Lithologies are as for Line 1, and geochemistry is similarly subdued.

Line 3
1km north again, consists of 9 holes for 207m (RO-03-1 to RO-03-9). Penetration problems were encountered with the damp unconsolidated Quaternary basin sediments, and no holes reached the base of this unit. Geochemical response is muted and uniform, as typical for these sediments.

Line 4
1km north also failed to penetrate Quaternary cover and consists of only 3 holes (RO-04-111 to RO-04-1132) for 82m. Au is weakly elevated in one sample from RO-04-113. All other geochemistry is unremarkable.

Line 5
1km north, comprises 9 holes (RO-01-102 to RO-05-110) for 236m. Thick Quaternary cover (up to 25m) rests on a complete lateritic profile, and the line is underlain by Bullion Schist for all its length. RO-01-104 exhibits weak bedrock Cu-Zn anomalousism, with a supergene halo in the saprolite. No other holes are geochemically anomalous.

Line 6
1km north over the gas pipeline, consists of 9 holes for 65m (RO-06-93 to RO-06-101). Quaternary cover is loose and sandy, and the lateritic profile is eroded to lower saprolite or weakly weathered bedrock. Western holes terminate in strongly deformed gneisses and metasediments which gives way in the east to Bullion Schist and finally a coarse-grained leucocratic granitoid, distinct from that on Lines 1 and 2. Manganese is anomalous in RO-06-94, probably reflecting concentrating processes associated with weathering.

Line 7
The penultimate line on the Rob Roy target, comprises 9 holes (RO-07-84 to RO-07-92) for 261m. Thin Quaternary cover overlies a variably eroded lateritic profile with well-developed saprolite. Lithologies are similar to Line 6: strongly deformed gneisses
and metasediments giving way to a coarse muscovite-rich granitoid in the east. RO-07-85 displays an interesting Au-Cu-Bi base-of-saprolite elevation, and RO-07-90 a weak bedrock Cu anomaly.

**Line 8**
The northernmost on the Rob Roy target, comprises 11 holes (RO-08-10 to RO-08-20) for 155m. The profile is stripped, in places to less than a metre of loose sandy cover, in the east, but saprolite is fairly well developed in western holes. The highest Au value on the Rob Roy prospect, 12ppb, occurs in RO-08-12, and Cu and Bi are weakly elevated in RO-08-11.

**Line 9**
Drilled over the Exeter magnetic target, comprises 8 holes for 173m (RO-09-21 to RO-09-28). All holes failed to penetrate thick (>35m) silicified Quaternary cover and the line was abandoned.

**Line 10**
Comprising 13 holes for 549m (RO-10-129 to RO-10-38 and RO-10-150 to RO-10-153) was drilled over the northern extremity of the west ‘limb’ of the Arab Steed magnetic target. Quaternary basinal sediments lie on a complete lateritic profile to the east, while to the west thin soil directly overlies saprolite. The western end of the line is dominated by mica schists, the eastern by a deformed granitoid or gneiss. Au values of 65 and 6.2ppb in RO-10-34 prompted 50 metre infill drilling in the central part of this line (RO-10-150 to RO-10-153); however, the second-phase holes returned no anomalous geochemistry. Lead is elevated in RO-10-35, but this is also unsupported by other holes.

**Line 11**
1km south of Line 10, comprises 13 holes for 619m (RO-11-39 to RO-11-48 and RO-11-165 to RO-11-167). Quaternary basin sediments up to 25m thick rest on saprolite. Each end of the line is underlain by mica schists, the central part by a deformed granitoid or gneiss similar to that on Line 10. This unit is once again anomalous geochemically with Au values of 7.0 and 6.4ppb in RO-11-43 and weak As and Bi elevations (RO-11-165, RO-11-41). Once again, however, 50m infill
drilling failed to increase the extent of the Au anomaly. RO-11-41 is weakly anomalous in Cu.

**Line 12**

1km south of Line 11, comprises 10 holes for 250m (RO-12-49 to RO-12-58). All holes failed to penetrate damp Quaternary basin material >40m thick.

**Line 13**

Runs north-south up the "axial" area of the Arab Steed magnetic target. It comprises 10 holes for 256m (RO-13-59 to RO-13-68) all of which failed to penetrate thick Quaternary cover.

**Line 14**

is drilled across the southeast of the Arab Steed target. It comprises 12 holes for 419m (RO-14-69 to RO-14-80), only two of which penetrated cover. These two holes terminated in plasmic clays, and geochemistry is consequently at background levels.

**Line 15**

On the eastern 'limb' of the Arab Steed target, consists of three holes (RO-15081 to RO-15-83) for 95m. Quaternary basinal cover, thickening to the west, overlies saprolite after Central Mount Stuart sediments. This lithology is not interpreted to be prospective and so the line was abandoned.

**Line 16**

Drilled north of the west 'limb' of the Arab Steed target to close off the geochemical anomaly on Line 10, consists of 11 holes (RO-16-129 to RO-16-139) for 621m. Ten to twenty metres of Quaternary basin sediments (to the east) and Quaternary silcretised clays overlie a well-developed saprolite. Apart from minor mica schists in the extreme west, the line is predominantly underlain by the deformed granitoid which hosts the Au-As-Bi anomaly on Lines 10 and 11. Here, however, it is virtually barren. Cu and Bi are elevated in RO-16-138.
Line 17

500m south of Line 16, comprises 10 holes (RO-17-140 to RO-17-149) for 514m. As before, Quaternary cover thickens (to almost 25m) in the east, dwindling to a thin loose soil to the west. The lateritic profile is variably preserved, but uniformly well-developed. All holes terminate in the deformed granitoid/gneiss 'host unit', which is however not anomalous on this line.

Line 18

is an infill between Line 10 and 11, and consists of 11 holes (RO-18-154 to RO-18-164) for 586m. Relatively thin (<15m) Quaternary cover lies directly on saprolite Lithologies display the usual pattern of a plug of 'host unit' sandwiched between mica schist units. Geochemistry is not anomalous.

Line 19

an infill between Lines 11 and 12, consists of 11 holes (RO-19-168 to RO-19-178) for 547m. Approximately 15m of Quaternary sediments overlie a variably eroded, well-developed, lateritic profile. All holes terminate in mica schists, and As and Bi are significantly anomalous (RO-19-171 and RO-19-172; RO-19-174 respectively). Au is at background levels in all holes.

3.5. Soil Geochemistry

The Rob Roy target was covered with a 500m x 100m soil sample grid for a total 180 samples. Geochemistry is generally subdued and homogenous, with the highest Au value 2.10ppb and the highest As value 8ppm, and no spatial trends readily apparent.

3.6. Lag Geochemistry

The Au-As-Bi RAB anomaly to the northwest of the Arab Steed target was covered with 66 pisolite/ferruginous lag samples, in an attempt to close the anomaly off to the north. This was hampered by scarcity of suitable sample media in the northern areas. Arsenic anomalism extends to the northern boundary of the sample area, but is confined to its eastern side, while Au anomalism is patchy, dying out to the north. Highest Au value is 5.20ppb, and highest As 56ppm.
3.7. Ground Magnetic Profiles

Ground magnetics were read over the 14 RAB lines drilled on EL 8716 at the Rob Roy and Arab Steed targets. The data were collected using Scintrex ENVI-MAG proton procession magnetometers. Diurnal corrections were facilitated by use of a base station magnetometer with field data corrected at the completion of the survey.

Interpretation of the line data led to the following conclusions:

Rob Roy Target

Line 1  Poorly defined low amplitude anomaly
Line 2  As above
Line 3  Broad shallow sources at each end
Line 4  Broad low amplitude source at depth (>100m)
Line 5  Three well-resolved multiple shallow sources
Line 6  Complex package of shallow multiple sources
Line 7  Sloping background, individual sources not resolvable
Line 8  As above

Arab Steed Target

Line 10 Multiple sources
Line 11 Higher amplitude anomaly with source at a similar depth to other lines
Line 12 Broad shallow source
Line 13 Broad source - line possible read along strike
Line 14 Flat-topped anomaly from broad shallow source
Line 15 Source poorly defined
3.8. Rehabilitation

At the completion of drilling, each RAB hole was capped using plastic octoplugs. All drillhole collars and sites were left in a tidy condition and all rubbish removed.

4. WORK COMPLETED IN THE 12 MONTHS TO 31 OCTOBER 1996
(Refer Hughes and Drown 1996)

4.1. Imaging of the Radiometrics

The radiometric data was purchased by ARL in the first year of tenure as part of the NTDME aeromagnetics. A magnetic image was produced and presented in Heslop and Drown (1995).

During the second year of tenure, imaging of the radiometric data was completed using ER-mapper software.

4.2. Access Track Clearing

The majority of the magnetic anomalies to be investigated in this September 1996 phase of exploration on the Mt Stirling Project were accessible from existing station tracks and previously cleared drill lines.

The main north-south trending magnetic lineament joins a “U”-shaped feature in the central body of the tenement near G.R:370350mE, 7614800mN. This junction is overlain by Central Mt Stuart Formation of unknown thickness. To enable rig access to the planned drill sties in this area, approximately 1.7 kilometres of new track was cleared by the station owner under the supervision of ARL staff. The track was pushed towards a rare incursion in the Central Mt Stuart Formation caused by erosion in a shallow gully.

Unfortunately, due to the unconsolidated nature of the Quaternary aeolian sands, once the crust on the regolith was broken by the station’s bulldozer, the track was rendered impassable to the drill rig.
4.3. Aircore Drilling

4.3.1. Introduction

A total of 3397.7 metres from 43 aircored holes was completed on EL 8716 during the second year of tenure.

The aircore, reverse circulation drilling method was chosen for this programme because of it’s proven ability to penetrate through thick clay sequences such as those intercepted in previous rounds of drilling on the Mt Stirling ground.

The September programme concentrated on cleared lines and station tracks which traversed magnetic features delineated by the NTDME aeromagnetic survey purchased during the first year of tenure (Heslop and Drown, 1995).

Drill Torque from Townsville were contracted to complete the drill programme using a purpose built TD375 truck mounted drill rig with 300psi/600cfm on-board compressor.

All holes, excepting two, were completed to refusal in slightly weathered bedrock or fresher. At the eastern end of the southern line (Line 14) the weathering profile extended below 96 metres and the holes contained abundant water making progress extremely difficult.

The majority of holes intersected good quality water. Seven water samples were collected from the area and sent to the Alice Springs Power and Water Authority for potability tests.

A detail of the drill hole locations and corresponding bottom of hole lithologies is presented in Hughes and Drown 1996, along with cross sections of the drilling, interpreted geology and geochemistry.
4.3.2. Methodology

The first hole of the September programme was drilled 60° towards grid west to try to obtain better coverage of the ground between holes that were known to be collared in subvertical lithologies. Although AC19-187 was completed, the drill rig was not adequately equipped for angle holes and the remainder of the programme was completed with vertical holes for safety considerations.

Vertical 3½” aircore holes were drilled as infill to that part of the Arab Steed RAB drilling that was thought to be ineffective and to extend the drill coverage through the centre and to the southeast of the ‘U’-shaped magnetic anomaly.

Composite samples were collected over 1 to 5 metres with each sample containing a similar amount from each pile of cuttings to make the sample weight up to approximately 3kg. Each sample was bagged in a calico and sealed inside a plastic bag to help prevent cross-sample contamination.

All samples were submitted to Amdel Laboratories in Alice Springs for preparation and assay. Due to work commitments, these samples were later passed to their laboratory in Adelaide.

Gold was determined by fire assay using a 50g charge, with the results read by ICP-MS (Amdel method FA3M). Base metals were determined using multi-acid digest with ICP-OES finish (Amdel method IC3E).

4.3.3. Sub-surface Observations

*Quaternary Cover*

A thin veneer of Quaternary transported material is present on all the drill lines completed on EL 8716. The Quaternary cover consists of 1-15m of aeolian sand overlying polythic gravels and haematite stained dense red clay bands with discrete pisolithic lag horizons.
Tertiary Transported Cover

Tertiary/Cainozoic basin sequences were intersected in the drilling to a downhole depth of 61m (AC12-181). On all lines except the western most (Line 21) the Tertiary cover was intersected below the Quaternary transported cover. Both of these sediment packages were deposited on an exhumed residual laterite profile.

The top of the Tertiary lateritic profile is stripped leaving poorly developed mottled and pallid zones in contact with the overlying Quaternary.

Between the Quaternary and the Tertiary a distinctive haematite stained dense clay layer is developed over much of the basin (see Lines 13 and 19 in particular) which has been interpreted as an ancient surface (?)soil/regolith layer.

The bulk of the Tertiary basin sediments are characterised by very pale grey sandy clays which are densely packed (the sand grains are very poorly sorted with grain sizes varying from fine grained to small pebbles). On Line 12, 19 and the southern portion of Line 20, towards the base of the Tertiary sequence, dense plasticine clay horizons, resembling those produced in lacustrine environments, were intersected (part of the same lake system?).

The axis of the Tertiary basin runs through holes AC19-191, AC12-184 and AC13-214. The depth of the basin shallows gradually to the north, where it laps on to granite basement at hole AC20-202. Line 19 traverses the width of the basin with hole AC19-187 marking the western and AC19-212 marking the eastern extents of the basin.

The Weathering Profile

No insitu ferruginous laterite was intersected during the drilling on Mt Stirling. In all cases, the residual profile was stripped to at least the pallidzone and often to the upper saprolite.
Basement Lithologies

Quartz-biotite-muscovite-sericite-hornblende schists dominated the basement lithologies intersected in the September round of aircore drilling. They are thought to correlate to the Bullion Schist/Lander Rock Beds.

The basement schists represent a strongly metamorphosed sediment package with more competent bands of psammitic, pelitic and greywacke variants intersected in holes AC12-182, AC19-208, AC14-215-218. These holes are often associated with lithologies other than the Bullion Schist and may represent perturbations in the original sedimentary sequence.

In the west and north of the drilled area, granitic lithologies dominate with some quartz and pegmatite veining intersected. Near hole AC20-196 a package of sediments rich in volcanoclastics of intermediate composition was intersected. A similar unit was intersected in the eastern drilling in hole AC19-211.

Sporadic, narrow, schistose, mafic ?intrusives were intersected frequently near hole AC19-210 which also seems to be the focus of a sediment package with a higher degree of facies variation in comparison to the bulk of the Bullion Schist.

4.3.4. Results

Only six samples returned assays greater than 5.6ppb Au. The maximum assay returned was 13ppb Au from AC13-214 at GR: 367330ME, 7613680MmN. Holes AC19-190, 209, AC13-214 and AC14-218, all containing anomalous amounts of gold, lie on a northwest/southeast trend line. All anomalous assays returned in this September round of aircore drilling, except AC19-209, are contained within Bullion Schists (equivalent to the Lander Rock Beds).
Copper

The highest copper value attained from the September aircore drilling was 220ppm. Weakly anomalous copper concentrated around holes 367000mE on lines 12 and 19. Holes AC13-213 and 214, in veined Bullion Schist, also carried anomalous results. In hole AC19/209, 13 contiguous metres assayed with anomalous copper in mafic lithologies (64-77m) and although hosted by different lithologies, weak copper results were returned from AC19-210 and 212.

Lead

Six composite samples returned lead assays greater than 62ppm.

The weakly anomalous lead values were clustered around AC19-208 (near the high copper in AC13-213 and 214). The other holes containing anomalous lead composites were scattered widely over the licence area.

Zinc

The distribution of the samples anomalous with respect to zinc were similar to those hosting anomalous copper (ie AC12-182, 183, AC19-188, 199, 209, 212 and AC20-198).

Arsenic

Analysis of the log normal distribution of arsenic values returned from composite sampling of the Mt Stirling aircore samples revealed that values above 40ppm arsenic could be regarded as significant.

The highest arsenic value of 500ppm was returned between 30.5 and 32m in hole AC19-188. Significantly, this sample interval also returned an anomalous total iron assay of 14.6% indicating that the arsenic may have been scavenged by the iron rich ?mottled zone that was preserved at this interval.

The holes that were highly anomalous with respect to arsenic aligned to a northwest/southeast trend (also reflected in weakly anomalous gold assays) (ie holes AC12-185, 186, AC19-187, 188, 189). On the eastern end of Line 12,
the arsenic anomaly is associated with the residual profile but on the western end of Line 19, the highest arsenic values are found at or above the Tertiary/residual interface. The arsenic assays in holes AC10-187 and 188 decrease rapidly in the residual profile suggesting that the arsenic is being carried (and concentrated?) by the ground water travelling along the Tertiary/residual interface and that the bedrock source for the arsenic anomaly, as yet, may be undetected.

*Nickel*

Elevated nickel contents from the recent round of drilling were more commonly associated with material logged as mafic in origin. A notable exception to this occurred in hole AC19-190 where the interval 72 to 77m was logged as a limonite pervaded psammitic unit. An assay of 110ppm Ni from this interval was associated with anomalous gold (at 5.8ppb Au) at 80m down hole depth.

In hole AC13-214, anomalous nickel was recorded intermittently from 72 to 89 metres in association with a carbonate altered ?intermediate volcanic/volcanoclastic unit. A 13ppb Au sample was returned from the top composite.

*Manganese*

High manganese results were returned from 4 holes in the recent drilling.

Significantly, the highest manganese result returned was from hole AC19-188, which also returned high copper (up to 140ppm Cu) from the same composite samples. (The 500ppm As was higher up in the hole). Bottom of hole lithologies include gabbro, amphibolite and possibly ultramafic (65-70m) suggesting that the copper-manganese association may be of primary origin.

In hole AC19-212, elevated manganese and iron were noted between 38 and 42m.
Iron

The highest total value returned was from AC14-215, 44 to 47m (43.7%). From drill logs this interval was recorded as siliceous ?banded iron. No other elements recorded anomalous values from this interval or hole.

Hole AC19-212 recorded elevated total iron in conjunction with high manganese. In the drill holes, these elevated values exhibited themselves as black crusts that were erroneously logged as ex-sulphides (they were not characterised by elevated Au or Cu-Pb-Zn).

Bismuth

Hole AC20-201 returned the only significant bismuth analysis with values up to 400ppm Bi recorded. Drill logs record the anomalous interval as being haematite altered granite with some evidence of colliform banding in veins below 66m (Appendix I). Elevated lead was also recorded from this hole between 60 and 66m.

4.3.5. Rehabilitation

At the completion of drilling, each aircore hole was plugged using a plastic ‘octoplug’ pushed down the collar to a depth of approximately 2 metres. The hole was then back filled with cuttings from around the collar and tamped firm.

All rubbish was removed and each site left in a tidy condition.

5. WORK COMPLETED IN THE 12 MONTHS TO 31 OCTOBER 97
(Refer Ashby and Schusterbauer 1997)

For the 12 month period ending 31/10/97, an exploration program including data compilation and GPS gridding was completed. This was followed by a vacuum drilling program designed to test the occurrence of shallow expressions of gold mineralisation.
5.1. Vacuum Drilling

During the month of October, 1997, a program of regional vacuum drilling on 500m x 250m spacings over sub-cropping Bullion Schist was carried out in the northeast sector of the tenement. The program was designed to enable a better understanding of the geology, regolith and associated geochemistry of the area. A total of 29 holes for 77m were drilled.

Dominant lithotypes intersected included saprolitic clay after granite, mica schist, granite, and siltstone. No quartz veining or alteration was observed.

5.2. Geochemical Results

Two vacuum samples were taken for each hole - a Bottom-of-Hole bedrock sample and a sample at the transported/residual interface. A total of 58 samples were collected and submitted to Australian Laboratory Services (Alice Springs) for analysis of Au and As.

Gold was determined using a 50g aqua regia digest with a carbon rod AAS finish. The lower detection limit for gold was 0.001ppm Au. Arsenic was determined by aqua regia digestion followed by AAS measurement. A 1ppm As detection limit was used for arsenic determinations.

Gold values were uniformly low (<2ppb Au). A peak BOH gold value of 2ppb Au was reported in drillhole VA040029 comprising a graphitic schist. A maximum arsenic value of 17ppm As was obtained.

6. WORK COMPLETED SINCE 1 NOVEMBER 1997

There was no further work completed on EL 8716 between 1 November 1997 and the date on which the tenement was surrendered.
7. REFERENCES


