ANNUAL REPORT
FOR EXPLORATION LICENCE NO 8715
FOR THE PERIOD 9/12/96 TO 8/12/97
TANAMI DISTRICT, NORTHERN TERRITORY
SHIRLEY CREEK
BARROW CREEK 1:250,000 SHEET SF 53-6
VOLUME 1 OF 1

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1. **SUMMARY**

Exploration Licence 8715 (Shirley Creek) is being explored for Tanami-style gold mineralisation by Aberfoyle Resources Limited (ARL).

This report documents exploration activity and expenditure on EL 8715 for the 1996/1997 tenement year and outlines proposed exploration and expenditure for the forthcoming year.
2. **INTRODUCTION**

Exploration Licence 8715 (Shirley Creek), located approximately 40km N of Barrow Creek comprises 64 graticular blocks which cover interpreted prospective Bullion Schist Beds. Exploration work conducted by Aberfoyle on EL 8715 has been directed towards the discovery of economic Tanami-style gold mineralisation.

For the 12 months ending 8/12/97, an exploration programme consisting of data compilation, rock chip and costean sampling was completed over previously identified Ni-Cu (Prospect D) anomalism. A summary of work statistics is presented in Table 1.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rockchip/Costean Sampling</td>
<td>18 samples</td>
</tr>
<tr>
<td>Data Compilation</td>
<td>Entire Area</td>
</tr>
</tbody>
</table>

2.1. **Location and Access**

Exploration Licence 8715 lies within the boundaries of the Neutral Junction and Murray Downs Stations, about 40km N of Barrow Creek, refer Figure 1. Local access is via station tracks and newly cleared drill traverse lines.

2.2. **Tenement Status**

EL 8715 (Shirley Creek) was granted to ARL on 9 December 1994 for a period of six years and is currently being explored for Tanami-style gold mineralisation by ARL. The third year reduction has been submitted to the NTDME, effectively reducing the number of blocks from 64 to 13. A tenement schedule is presented in Appendix 1.
3. PREVIOUS WORK

During the early 1970's, Kewanee Australia Pty Ltd conducted a broad based exploration programme within the Crawford-Osborne Range area. This work defined a number of potential base metal targets. Subsequent follow-up drill testing of these targets delineated a sub-economic Cu-Ni resource ('Prospect D') of moderate tonnage. The grade was considered uneconomical for mining purposes and a decision was made to relinquish the ground in late 1973.

Poseidon Gold Ltd (1991/92) completed a work programme including regional soil sampling and limited vacuum drilling. This work delineated several gold-in-soil anomalies up to 12 ppb Au, some of which are located within the current EL 8715. Poseidon did not follow-up these soil anomalies generated but instead elected to relinquish the ground.

For the two years ending 8/12/96, exploration work carried out by ARL concentrated on those areas north of the Osborne Range. A programme incorporating data compilation, access line clearing, AAPA site clearance surveys, ground magnetics and vacuum drilling was completed. Several low order discrete gold anomalies were defined. However, RAB drill testing of these anomalies yielded no significant gold mineralisation. As such, ARL relinquished in its entirety (3 years early) all ground north of the Osborne Range.
4. GEOLOGICAL SETTING

4.1. Regional Geology

The oldest rocks in Barrow Creek are metamorphosed arenites, pelites, carbonates and volcanics of the Arunta Inlier. These rocks have been deformed and regionally metamorphosed to upper greenshist facies possibly between 1810-1750Ma (Black, 1981).

Unconformably overlying the Arunta basement rocks are the Lower Proterozoic, Hatches Creek Group comprising fluvial to shallow marine sediments and felsic to mafic volcanics. This sequence has been subdivided into two units based on deposition characteristics. The lower unit reflects relatively immature sandstones and pelites whilst the upper unit tends to more mature cross-bedded and ripple-marked arenites and siltstones.

After deposition, the Hatches Creek Group was folded about NW axes and metamorphosed to upper greenschist facies.

The Arunta Inlier and Hatches Creek Group were then extensively intruded by granites and pegmatite, possibly around 1660Ma (Blake et al, 1987).

A long period of erosion was followed with subsequent deep weathering during the Tertiary to produce silcrete and ferricrete horizons. During the Quaternary large areas of the plains were covered by a thin veneer of aeolian sands.

4.2. Local Geology

The majority of the licence is covered by Tertiary and Quaternary basin sediments, up to 100m deep in parts. Minor outcropping schist and quartz-feldspar rich porphyry occur within the EL, and are unconformably overlain by Hatches Creek quartzites.
5. **WORK UNDERTAKEN FOR THE PERIOD 9/12/96 TO 8/12/97**

5.1. Rock Chip/Costean Sampling

Rock chip sampling was undertaken on an ad hoc basis over previously identified Ni-Cu surface anomalism at Prospect D. A total of nine samples were collected. Contiguous with this, nine costean (composite) samples were collected from historical Kewanee costean excavations. Sample locations are annotated on Plan 1 with full macroscopic descriptions outlined in Appendix II.

5.2. Geochemical Results

18 rock chip/costean samples were submitted to Australian Laboratory Services for low level multi-element analysis. Gold was determined by fire assay with a carbon rod finish. The lower detection limit for gold was 0.01ppm Au. Base metal analysis of Cu (to 5ppm Cu), Pb (to 5ppm Pb), Zn (to 5ppm Zn) and As (to 10ppm As) were determined by aqua regia digestion methods. Assay results are contained in Appendix II and annotated on Plan 1.

6. **EXPENDITURE INCURRED FOR THE PERIOD 9/12/96 TO 8/12/97**

Expenditure incurred on EL 8715 during the period 9/12/96 to 8/12/97 totals $16,850. Summarised expenditure is presented in Table 2.

**TABLE 2**

Expenditure Statement for EL 8715 for the period 9/12/96 to 8/12/97

<table>
<thead>
<tr>
<th>Cost Breakdown</th>
<th>Totals ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geology</td>
<td>8700</td>
</tr>
<tr>
<td>Geochemistry</td>
<td>4400</td>
</tr>
<tr>
<td>Other Services</td>
<td>3500</td>
</tr>
<tr>
<td>Administration</td>
<td>1660</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$18260</strong></td>
</tr>
</tbody>
</table>

* A portion of this cost relates to vacuum drilling completed and reported but not accrued in the 1996 tenement year.
7. **PROPOSED WORK PROGRAMME FOR YEAR FOUR - 9/12/96 TO 8/12/97**

The proposed exploration on the ground south of the Osborne Range for the 1998 tenement year includes:

- Regional (500m x 250m spacings) soil sampling over untested portions of the EL.
- Detailed (200m x 50m spacings) soil sampling over gold-in-soil anomalies (up to 12ppb Au) previously identified and not followed-up by Poseidon Gold Ltd.
- Purchase of 1:25 000 scale aerial photographs.
- Photogeological mapping at 1:25 000 scale.
- Interpretation at 1:25 000 scale aeromagnetics.
- Limited vacuum drilling.

8. **PROPOSED EXPENDITURE FOR YEAR FOUR - 9/12/96 TO 8/12/97**

Given the large reduction (from 64 to 13 blocks) in area of EL 8715, it is proposed that expenditure levels will remain constant at $18000 for the next 12 months. The proposed expenditure for EL 8715 is outlined in Table 3

**TABLE 3**

Proposed Expenditure Statement for EL 8715 for the period 9/12/96 to 8/12/97

<table>
<thead>
<tr>
<th>Cost Breakdown</th>
<th>Totals ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geology</td>
<td>6000</td>
</tr>
<tr>
<td>Geochemistry</td>
<td>10500</td>
</tr>
<tr>
<td>Tenure</td>
<td>500</td>
</tr>
<tr>
<td>Overheads</td>
<td>1000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$18000</strong></td>
</tr>
</tbody>
</table>
9. REFERENCES


APPENDIX 1

Tenement Schedule
TENEMENT SCHEDULE

EL 8715 (Shirley Creek)

Title Holder: Aberfoyle Resources Ltd (100%)
Date Granted: 9/12/1994
Expiry Date: 8/12/2000
Covenant: $18,000
Area: 64 Graticular Blocks
(recently reduced to 13 blocks)
APPENDIX 2

Rock Chip/Costean Macroscopic Descriptions

and

Analytical Results
### SHIRLEY CREEK - EL8715
#### ROCK CHIP/COSTEAN SAMPLES

<table>
<thead>
<tr>
<th>Sample</th>
<th>Easting</th>
<th>Northing</th>
<th>Au</th>
<th>Cu</th>
<th>Pb</th>
<th>Zn</th>
<th>As</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1025685</td>
<td>405062</td>
<td>7644677</td>
<td>-0.01</td>
<td>51</td>
<td>-5</td>
<td>105</td>
<td>10</td>
<td>Grey, fine grained, interbedded, laminated sandstone/siltstone. cleavage; dip: 74/strike: 282/bedding: dip: 85/strike: 090</td>
</tr>
<tr>
<td>1025686</td>
<td>405054</td>
<td>7644704</td>
<td>0.01</td>
<td>4650</td>
<td>31</td>
<td>120</td>
<td>30</td>
<td>Highly weathered, dirty grey, massive sandstone. Possibly, quartz greywacke?</td>
</tr>
<tr>
<td>1025687</td>
<td>405050</td>
<td>7644712</td>
<td>0.03</td>
<td>7150</td>
<td>28</td>
<td>136</td>
<td>180</td>
<td>Highly weathered, quartz/malachite/hematite vein/arenite/quartz dolerite? 50% quartz - 50% hematite/quartz vein strike:112</td>
</tr>
<tr>
<td>1025688</td>
<td>405056</td>
<td>7644728</td>
<td>-0.01</td>
<td>4560</td>
<td>94</td>
<td>549</td>
<td>110</td>
<td>Highly weathered/fine to medium grained gabbro with common limonitic pita. Minor hairline limonite infill</td>
</tr>
<tr>
<td>1025689</td>
<td>405051</td>
<td>7644728</td>
<td>0.03</td>
<td>23100</td>
<td>67</td>
<td>119</td>
<td>30</td>
<td>Intensely altered (chlorite/sericite) medium grained gabbro with trace malachite alteration in places.</td>
</tr>
<tr>
<td>1025690</td>
<td>405046</td>
<td>7644729</td>
<td>0.04</td>
<td>44200</td>
<td>402</td>
<td>681</td>
<td>100</td>
<td>Highly weathered and altered (chlorite/carbonate/sericite??) laminated siltstone. Bleached 3cm mafic dyke dip: 86 strike:065. Common boxworks after sulphides.</td>
</tr>
<tr>
<td>1025691</td>
<td>405041</td>
<td>7644729</td>
<td>0.02</td>
<td>98800</td>
<td>432</td>
<td>67</td>
<td>100</td>
<td>20cm massive milky quartz, commonly fractured with malachite/azurite/hematite/jasperoidal/silica alteration selvedges.</td>
</tr>
<tr>
<td>1025692</td>
<td>405036</td>
<td>7644730</td>
<td>0.02</td>
<td>9500</td>
<td>626</td>
<td>163</td>
<td>40</td>
<td>Highly weathered altered blocky gabbro. Relatively unaltered.</td>
</tr>
<tr>
<td>1025693</td>
<td>405090</td>
<td>7644766</td>
<td>0.01</td>
<td>1000</td>
<td>-5</td>
<td>-5</td>
<td>20</td>
<td>Interbedded, fine to medium grained, steeply dipping sandstone/siltstone. Minor scour and fill structures. Trace limonitic infill fractures and blocky quartzite. Bedding; dip: 70/strike:100.</td>
</tr>
<tr>
<td>1025694</td>
<td>405038</td>
<td>7644752</td>
<td>0.01</td>
<td>93</td>
<td>-5</td>
<td>-5</td>
<td>-10</td>
<td>20cm massive milky quartz with common hematitic staining on edges. Strike: 145.</td>
</tr>
<tr>
<td>1025695</td>
<td>405037</td>
<td>7644755</td>
<td>0.01</td>
<td>16500</td>
<td>32</td>
<td>300</td>
<td>100</td>
<td>Highly weathered and altered(chlorite/sericite/carbonate?) gabbro and gossanous (hematite/malachite/azurite/silica) material.</td>
</tr>
<tr>
<td>1025696</td>
<td>405032</td>
<td>7644753</td>
<td>0.09</td>
<td>112000</td>
<td>151</td>
<td>188</td>
<td>300</td>
<td>Float. Altered gabbro with common sulphide boxworks. Jasperoidal rich gossan with malachite/hematitic alteration.</td>
</tr>
<tr>
<td>1025697</td>
<td>405031</td>
<td>7644757</td>
<td>0.03</td>
<td>3880</td>
<td>15</td>
<td>71</td>
<td>130</td>
<td>Outcrop. Fine, highly altered and weathered gabbro with common boxworks after sulphides. 5cm milky quartz and malachite vein on the northern edge of contact.</td>
</tr>
<tr>
<td>1025698</td>
<td>405018</td>
<td>7644776</td>
<td>0.04</td>
<td>3880</td>
<td>228</td>
<td>71</td>
<td>130</td>
<td>Float. Altered gabbro plus malachite/azurite stained gossanous material. Minor quartz veining.</td>
</tr>
<tr>
<td>1025699</td>
<td>405017</td>
<td>7644779</td>
<td>0.06</td>
<td>55200</td>
<td>129</td>
<td>60</td>
<td>70</td>
<td>Outcrop. Weathered and altered gabbro. 10cm malachite/azurite stained gossan.</td>
</tr>
<tr>
<td>1025700</td>
<td>405050</td>
<td>7644852</td>
<td>0.01</td>
<td>3380</td>
<td>5</td>
<td>131</td>
<td>40</td>
<td>Highly weathered gossanous and brecciated quartz with chlorite alteration selvedges.</td>
</tr>
<tr>
<td>1025702</td>
<td>404987</td>
<td>7644916</td>
<td>0.01</td>
<td>515</td>
<td>8</td>
<td>57</td>
<td>10</td>
<td>Highly weathered, coarse grained gabbro with common limonitic staining and infill fractures.</td>
</tr>
<tr>
<td>1025701</td>
<td>405059</td>
<td>7644864</td>
<td>0.01</td>
<td>1190</td>
<td>-5</td>
<td>100</td>
<td>110</td>
<td>Highly weathered, limonite altered quartz arenite.</td>
</tr>
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APPENDIX 3

Bibliographic Data Sheet
<table>
<thead>
<tr>
<th>REPORT NUMBER</th>
<th>NT SHIRLEY CREEK 4</th>
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<td>NO 8715 FOR THE PERIOD 9/12/96 TO 8/12/97,</td>
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<td>BARROW CREEK DISTRICT, NORTHERN TERRITORY</td>
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<td>ABERFOYLE RESOURCES LTD</td>
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<td></td>
<td>COSTEAN SAMPLING</td>
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<td>DATA COMPILATION</td>
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<td>TECTONIC UNIT</td>
<td>ARUNTA INLIER</td>
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<tr>
<td>1:250 000 MAP SHEET</td>
<td>BARROW CREEK SF53-6</td>
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