EL 7114

FINAL REPORT

To 29 June 1992

Pine Creek Sheet SD 52.08 Burrundie 14/6-IV, 5270.4

Compiled for Northern Gold NL
Warren Cooper
September 1992
SUMMARY

A first-pass exploration programme of geological mapping, soil sampling and rock chip sampling was carried out on EL 7114 to test the area for Au and base metal mineralization.

The rock chip sampling program produced disappointing results, with all samples close to or below the Au detection level except for one sample that returned 0.75 ppm Au from a gossanous quartz vein. The soil sampling also gave disappointing results.

Due to the negative results, EL 7114 was surrendered.
CONTENTS

1 INTRODUCTION
   1.1 Title and Location
   1.2 Previous Exploration

2 GEOLOGY
   2.1 Regional Geology
   2.2 Local Geology

3 EXPLORATION COMPLETED
   3.1 Geophysics
   3.2 Soil Sampling
   3.3 Rock chip sampling

4 CONCLUSIONS

5 REFERENCES

6 EXPENDITURE

7 PROPOSED PROGRAM

APPENDICES
Appendix 1: Rockchip sample descriptions and results
Appendix 2: Soil sampling results
Appendix 3: Geological Map

FIGURES
1 Location diagram
2 Magnetics Contour Map
3 Soil Sampling locations
4 Soil Sample Results, Au
5 Rock Chip Locations
6 Rock Chip Results, Au
1 INTRODUCTION

1.1 Title and location
EL 7114 was granted on 26th November 1990 to Northern Gold for a period of four years. The licence covers eight blocks and had an expenditure covenant of $1,500 for the second year of tenure.
EL 7114 is located approximately 9 km north of Emerald Springs (Fig. 1) within the Cullen Mineral Field. Access to the tenement is via the Fountain Head Road which passes through the tenement, and within the tenement by four wheel drive vehicles only due to the nature of the terrain.

The tenement was surrendered on 29 June 1992.

1.2 Previous Work
EL 3138, which included EL 7114, was granted to Geopeko Ltd. in 1981. Geopeko carried out regional stream sediment sampling and follow up detailed soil sampling in 1982 (Nicholson and Radford, 1982). No detailed work was carried out over the present area of EL 7114.
Anaconda Australia took over the tenement in 1984 and relinquished the area in 1985 (Kavanagh 1984).
The ground was subsequently obtained by C.S.R. Exploration as EL 4734, which consisted of 16 graticular blocks. C.S.R. carried out an airborne magnetic survey followed by a limited stream sediment sampling program, targeting dolerite hosted gold mineralisation. Cyprus Gold Australia Corporation entered into a Joint Venture of EL 4734 in late 1987, and subsequently carried out detailed rock chip and stream sediment sampling programs. The ground covering EL 7114 was relinquished in 1990 (Dreverman 1990).
2 GEOLOGY

2.1 Regional Geology
EL 7114 is situated within the Pine Creek Geosyncline, a tightly to isoclinally folded sequence of mainly pelitic and psammitic Lower Proterozoic sediments with interlayered tuff units. All the lithologies in the area have been metamorphosed to low, and in places medium grade, metamorphic assemblages. For the purposes of this report the prefix meta is implied, but omitted from the rock names and descriptions. The sequence has been intruded by pre-orogenic dolerite sills of the Zamu Dolerite and a number of late syn-orogenic to post-orogenic Proterozoic granitoids. Largely undeformed Middle and Late Proterozoic, Palaeozoic and Mesozoic strata as well as Cenozoic sediments and laterite overlie the Pine Creek Geosyncline lithologies.

3.1 Local Geology
Geological reconnaissance was carried out over EL 7114 and a geological map has been completed (Appendix 3).
The geology of EL 7114 is dominated by the Prices Springs Granite which is commonly exposed as low bouldery outcrop. The majority of the tenement is covered by low black soil flats and residual sandy soils over the granite.
The granite contains an elongate lens of dolerite and sediments of the Koolpin formation that are an extension of the rocks found to the south-east as a inlier or as a roof pendent. The shales and siltstones within this lens have been contact metamorphosed and the formation of chiastolite common. The dolerite is preserved as a medium grained massive amphibolite that has intruded the sediments as sills.
3.1 (cont.)

Quartz veins are found throughout the tenement and are dominated by the long, bucky, white type of vein that is common in the region along late fault zones. These types of quartz vein are generally unmineralized.
3 EXPLORATION COMPLETED

Northern Gold completed a first-pass exploration program designed to test the area for gold and base metal mineralisation. This involved a literature search of open file reports in the Department of Mines, interpretation of geophysical data, geological mapping, rock chip sampling and soil sampling over the area of EL 7114.

3.3 Geophysics

Northern Gold purchased aerial geophysics of the Pine Creek area from Aerodata. Northern Gold received magnetic, uranium and Potassium data. EL 7114 lies within the area covered by the geophysics. The survey had the following specifications:

Aircraft Rockwell Shrike Commander 500S
Magnetometer Scintrex V201 Split Beam Cesium Vapour
Resolution: 0.04 nanoTesla
Cycle Rate: 0.2 second
Sample Interval: 14 meters
Spectrometer 256 Channel Geometrics Exploranium GR800B
Processed Channels:
Total Count 0.4 - 3.01 MeV
K40 1.37 - 1.56 MeV
Bi214 1.67 - 1.86 MeV
Tl208 3.02 - 6.00
Cosmic 3.02 - 6.00
Volume: 33.56 litres
Cycle Rate: 1.0 second
Sample Interval: 70 meters
Data Acquisition Hewlett Packard 9000 Series
Computer Aerodata Digital Data Acquisition System
Flight Line Spacing Traverse Lines: 200 meters
Tie Lines 5000 meters
Flight Line Direction Traverse Lines: 090-270 degrees
Tie Lines: 180-360 degrees
Survey Height 70 meters – mean terrain clearance
Results of the geophysics were used primarily as imaged processed data for regional interpretation of exploration concepts. These images are not suitable to submit in a individual Licence report as the information affects many other areas and possible future targets. However, a copy of the total field magnetic intensity contour map of the licence is included as Figure 2.

3.2 Soil Sampling
Two soil lines were collected from within EL 7114. The first line was along a 400 meter long quartz vein (sample numbers 16701 to 16715) with the second line traversing the inlier of dolerite and shales to the north of the tenement (sample numbers 16716 to 16723). Samples were collected every 25 meters and composited to 50 meters. Approximately 2 kg of soil sieved to -6mm mesh was collected for each composite sample. Samples were collected and analysed for Au by BLEG and base metals by AAS.

Results for the soil sampling program were all below the anomalous threshold values for all the elements assayed for. Au values ranged from 0.05 to 4.70 ppb with the majority of samples returning values below 1 ppb. Sample locations and results are presented in Figures 3, 4 and Appendix 2.

3.3 Rock Chip Sampling
Rock chip samples were collected from the area and these were submitted to Analabs in Darwin for analysis of Au by fire assay, and Cu, Pb, Zn and As by AAS.

Results for the rock chip samples were not encouraging with one sample over 0.01 ppm Au (sample
3.3 (cont.)

number 16621). This was a sample collected from a gossanous quartz vein hosted by dolerite and returned a value of 0.75 ppb Au.
Sample descriptions, locations and results are presented in Appendix 1 and Figures 5 to 6.
4 CONCLUSIONS

Results of the first pass exploration over EL 7114 were not encouraging and no areas of potential for hosting economic mineralisation were identified. One rock chip collected from a gossanous quartz vein in the south of the tenement returned a value of 0.75 ppm. Due to the limited extent of the vein there appears to be limited potential for significant mineralisation.
5 REFERENCES


6 EXPENDITURE

As no field work was conducted in 1992 on EL 7114, approximately $500 was spent on report preparation and data finalization.
Rock Chip Descriptions

16614: quartz vein
16615: veined siliceous siltstone
16616: as above
16617: quartz vein in carbonaceous, chiastolitic Koolpin
16618: veined shear in carbonaceous Koolpin
16619: quartz vein
16620: brecciated siltstone with quartz infill
16621: gossanous quartz vein in dolerite
### Rock Chip Results

<table>
<thead>
<tr>
<th>Sample No</th>
<th>Au ppm</th>
<th>Cu ppm</th>
<th>Pb ppm</th>
<th>Zn ppm</th>
<th>Ag ppm</th>
<th>As ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>16614</td>
<td>X</td>
<td>10</td>
<td>41</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>16615</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>16616</td>
<td>X</td>
<td>5</td>
<td>338</td>
<td>7</td>
<td>0.6</td>
<td>X</td>
</tr>
<tr>
<td>16617</td>
<td>X</td>
<td>10</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>16618</td>
<td>X</td>
<td>10</td>
<td>20</td>
<td>14</td>
<td>0.7</td>
<td>100</td>
</tr>
<tr>
<td>16619</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>11</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>16620</td>
<td>0.05</td>
<td>220</td>
<td>43</td>
<td>23</td>
<td>0.6</td>
<td>260</td>
</tr>
<tr>
<td>16621</td>
<td>0.75</td>
<td>75</td>
<td>61</td>
<td>17</td>
<td>0.6</td>
<td>420</td>
</tr>
</tbody>
</table>

X: below detection limit
APPENDIX 2
APPENDIX 3
### Soil Sampling Results

<table>
<thead>
<tr>
<th>Sample No</th>
<th>Au (ppb)</th>
<th>Cu (ppm)</th>
<th>Pb (ppm)</th>
<th>Zn (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>16701</td>
<td>1.1</td>
<td>10</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>16702</td>
<td>1.45</td>
<td>10</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>16703</td>
<td>0.2</td>
<td>5</td>
<td>X</td>
<td>5</td>
</tr>
<tr>
<td>16704</td>
<td>0.1</td>
<td>5</td>
<td>X</td>
<td>5</td>
</tr>
<tr>
<td>16705</td>
<td>0.65</td>
<td>5</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>16706</td>
<td>0.2</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>16707</td>
<td>0.25</td>
<td>5</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>16708</td>
<td>0.4</td>
<td>5</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>16709</td>
<td>0.2</td>
<td>5</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>16710</td>
<td>0.05</td>
<td>5</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>16711</td>
<td>0.1</td>
<td>5</td>
<td>110</td>
<td>10</td>
</tr>
<tr>
<td>16712</td>
<td>0.05</td>
<td>5</td>
<td>30</td>
<td>10</td>
</tr>
<tr>
<td>16713</td>
<td>0.1</td>
<td>5</td>
<td>20</td>
<td>5</td>
</tr>
<tr>
<td>16714</td>
<td>0.25</td>
<td>5</td>
<td>20</td>
<td>5</td>
</tr>
<tr>
<td>16715</td>
<td>0.25</td>
<td>5</td>
<td>30</td>
<td>10</td>
</tr>
<tr>
<td>16716</td>
<td>0.8</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>16717</td>
<td>1.65</td>
<td>35</td>
<td>15</td>
<td>50</td>
</tr>
<tr>
<td>16718</td>
<td>3.15</td>
<td>15</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>16719</td>
<td>2.35</td>
<td>25</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>16720</td>
<td>2.7</td>
<td>75</td>
<td>30</td>
<td>130</td>
</tr>
<tr>
<td>16721</td>
<td>4.7</td>
<td>75</td>
<td>30</td>
<td>135</td>
</tr>
<tr>
<td>16722</td>
<td>0.85</td>
<td>30</td>
<td>10</td>
<td>40</td>
</tr>
<tr>
<td>16723</td>
<td>1.05</td>
<td>20</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>16724</td>
<td>0.7</td>
<td>20</td>
<td>5</td>
<td>10</td>
</tr>
</tbody>
</table>

X: below detection limit