



# Northern Gold NL

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## **EL 8684 1996/97 ANNUAL REPORT**

**18/07/96 to 17/07/97**

**Moline (15/4-IV) 1:50,000 scale map sheet**

**Title Holder:- Territory Goldfields N.L.**

**Managed by:- Northern Gold N.L.**

# OPEN FILE

August 1997

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NTDME

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CR 97 / 571

## SUMMARY

EL 8684 is located approximately 200 kilometres south - east of Darwin and 35 kilometres north - east of Pine Creek on the Moline (15/4-IV) 1:50,000 scale map sheet.

EL 8684 is located on the eastern edge of the Allamber Springs Granite which occupies the very north - western part of the tenement. The Gerowie Tuff and the Zamu Dolerite are faulted against the overlying Mount Bonnie Formation in the west, with the Burrell Creek Formation of the Finnis River Group occupying the southern area of the tenement.

Dominion Gold Operations Pty. Ltd. completed a literature review and interpretation of airborne magnetic/radiometric data in 1994.

During the 1995/96 field season, Northern Gold N.L. completed an exploration program based on digital data manipulation and regional soil sampling. GIS and satellite imagery were used to log soil types and also to interpret the structural geology of the region. The soil sampling program consisted of four 1,000 metre to 1,800 metre long, 350 metre to 400 metre spaced lines. Samples were collected at 25 metre intervals and composited to 100 metres. A total of 59 samples, including duplicates, were collected and analysed for Au, As, Pb, Cu and Zn using BLEG assay technique. The results from the soil sampling program were disappointing.

EL 8684 was originally granted to Dominion Gold Operations Pty. Ltd. on the 18<sup>th</sup> of July 1994 for a period of five years. The tenement was subsequently acquired by Territory Goldfields N.L., which is now managed by Northern Gold N.L., in June 1995.

During the 1996/97 exploration season, Northern Gold N.L. completed a work program involving digital data acquisition and manipulation, and digital terrain modelling. Northern Gold N.L. acquired orthographic satellite imagery to evaluate the topography of the Moline region.

Further soil sampling and geological mapping is required to fully assess the mineralisation potential within the licence.

The covenant for the 1996/97 year of tenure was \$11,000, and the expenditure totaled \$7,940.

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## 1.0 INTRODUCTION

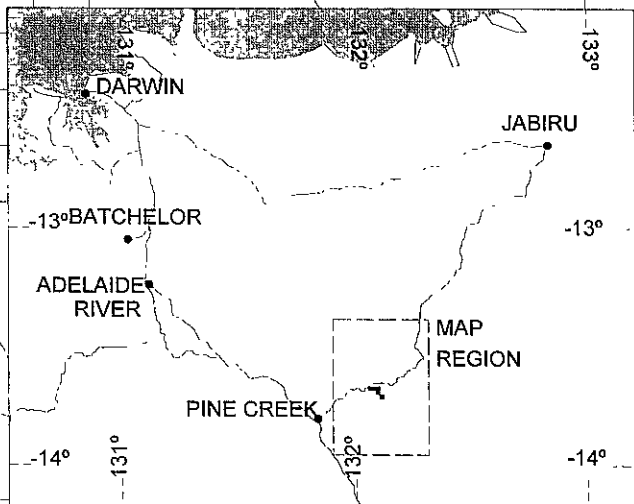
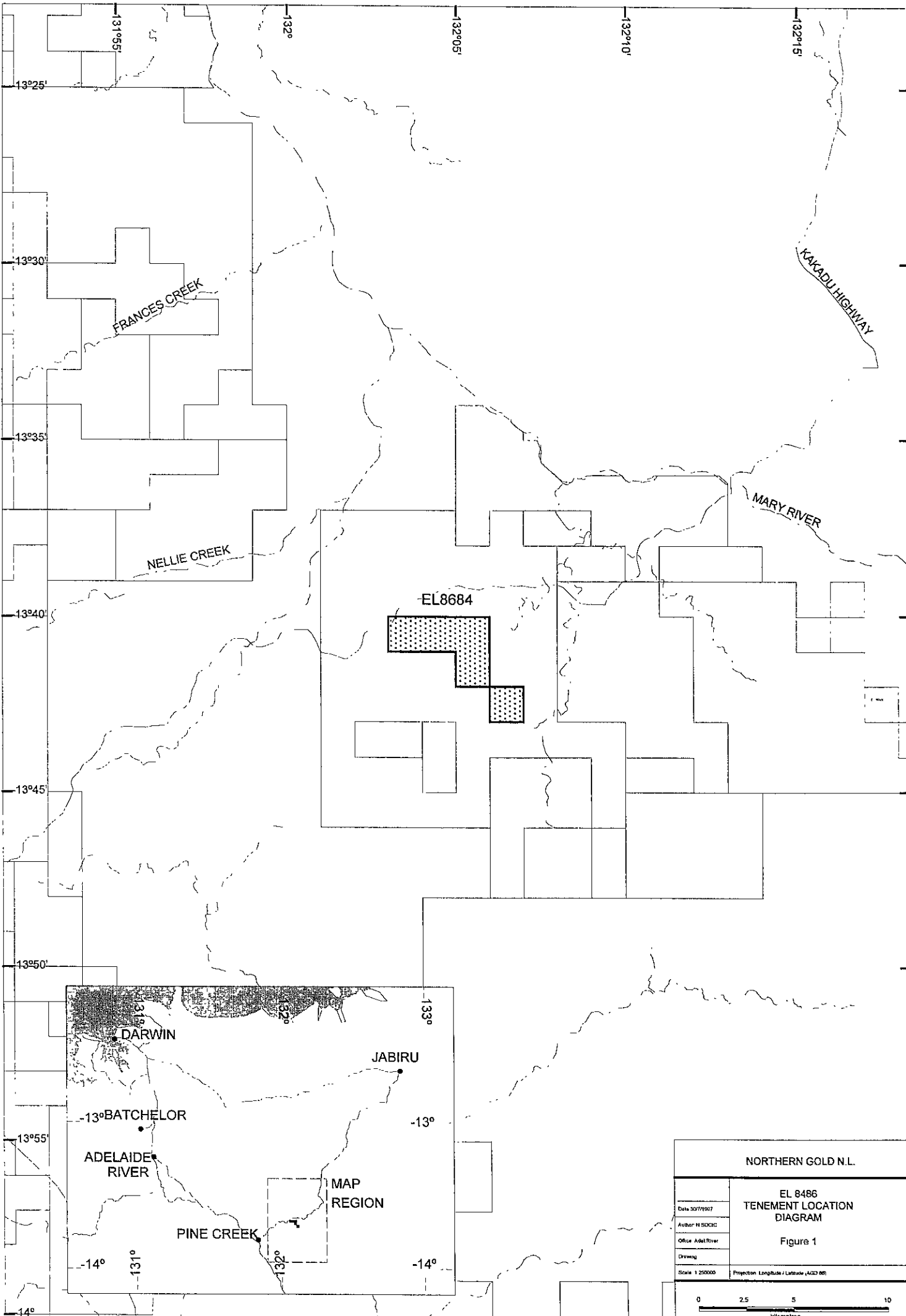
EL 8684 is situated approximately 200 kilometres south - east of Darwin and 35 kilometres north - east of Pine Creek on the Moline (15/4-IV) 1:50,000 scale map sheet. The licence, which covers 5 blocks, 16 square kilometres in area, lies between latitudes 13°40' south and 13°43' south and longitudes 132°03' east and 132°07' east (Figure 1). EL 8684 is situated within Perpetual Pastoral Lease No. 1134, held by Mary River Cattle Station Pty. Ltd.

The tenement is accessed via Kakadu Highway from Pine Creek, which passes directly to the north, and then via pastoral tracks through the licence area.

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During the 1996/97 exploration season Northern Gold N.L. completed a work program involving digital data acquisition and manipulation, and digital terrain modelling. The data was obtained and used in conjunction with aerial mapping, site visits and previous digital data interpretations.

The covenant for the 1996/97 year of tenure was \$11,000, and the expenditure totaled \$7,940.



NORTHERN GOLD N.L.	
EL 8486 TENEMENT LOCATION DIAGRAM	
Figure 1	
Date 30/7/1997	
Author N. SODIG	
Office Adelaide River	
Drawing	
Scale 1:250000	Projection Longitude / Latitude (GDA 86)

## **2.0 GEOLOGY**

### **2.1 Regional Geology**

EL 8684 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 purpose 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 large number of late syn-orogenic to post-orogenic Proterozoic granitoids. Largely undeformed Middle and Late Proterozoic, Palaeozoic and Mesozoic strata, as well as Cainozoic sediments and laterites, overly the Pine Creek Geosyncline.

### **2.2 Local Geology**

EL 8684 is located on the eastern edge of the Allamber Springs Granite which occupies the very north - western part of the tenement.

The Gerowie Tuff and the Zamu Dolerite are faulted against the overlying Mount Bonnie Formation in the west, with the Burrell Creek Formation of the Finnis River Group occupying the southern area of the tenement (Figure 2). The fault trends west north - west to south - east through the tenement.

### 3.0 PREVIOUS EXPLORATION

Mining at the Evelyn Mine, north - east of EL 8684, first began in 1886. The workings consisted of seven shafts with the deepest at 38 metres. The area was mined again between 1903 and 1912 by Chinese workers and the mine dumps were treated by Silver Mountain for Ag, Pb and Zn between 1924 and 1926 (Fawcett, 1995).

There are numerous gold and base metal workings throughout the Wandie area. During recent years, exploration in this area has been carried out by numerous companies including (Fawcett, 1995):-

- Moline Management
- Cyprus Gold Aust. Corporation
- Geopeko Ltd.
- Lachlan Resources
- Zapopan N.L.
- Arimco N.L.
- Billiton Aust.
- Aardeau Mining
- RGC Exploration Pty Ltd
- Newcrest Mining Ltd

Dominion Gold Operations Pty. Ltd. completed a literature review and interpretation of airborne magnetic/radiometric data in 1994.

Acquisition of Aerodata (1987-1988) multiclient data by Dominion was completed in 1988. Interpretation of this data was undertaken to identify favourable lithological and structural settings for gold mineralisation (Fawcett, 1995).

During the 1995/96 field season, Northern Gold N.L. completed an exploration program based on digital data manipulation and regional soil sampling.

Landsat Imagery, SPOT Imagery and AGSO mapping were obtained and used in conjunction with aerial mapping. GIS and satellite imagery were used to log soil types and also to interpret the structural geology of the region (Socic, 1996).

Northern Gold N.L. also completed a soil sampling program over EL 8684 during the 1995/96 field season. The soil sampling program consisted of four 1,000 metre to 1,800 metre long, 350 metre to 400 metre spaced lines. Samples were collected at 25 metre intervals and composited to 100 metres. A total of 59 samples (Sample Nos. 142388 - 142446), including duplicates, were collected

and sieved to -6 millimetre fraction. All samples were submitted to Assaycorp, in Pine Creek, using BLEG assay technique and analysed for Au, As, Pb, Cu and Zn (Socic, 1996).

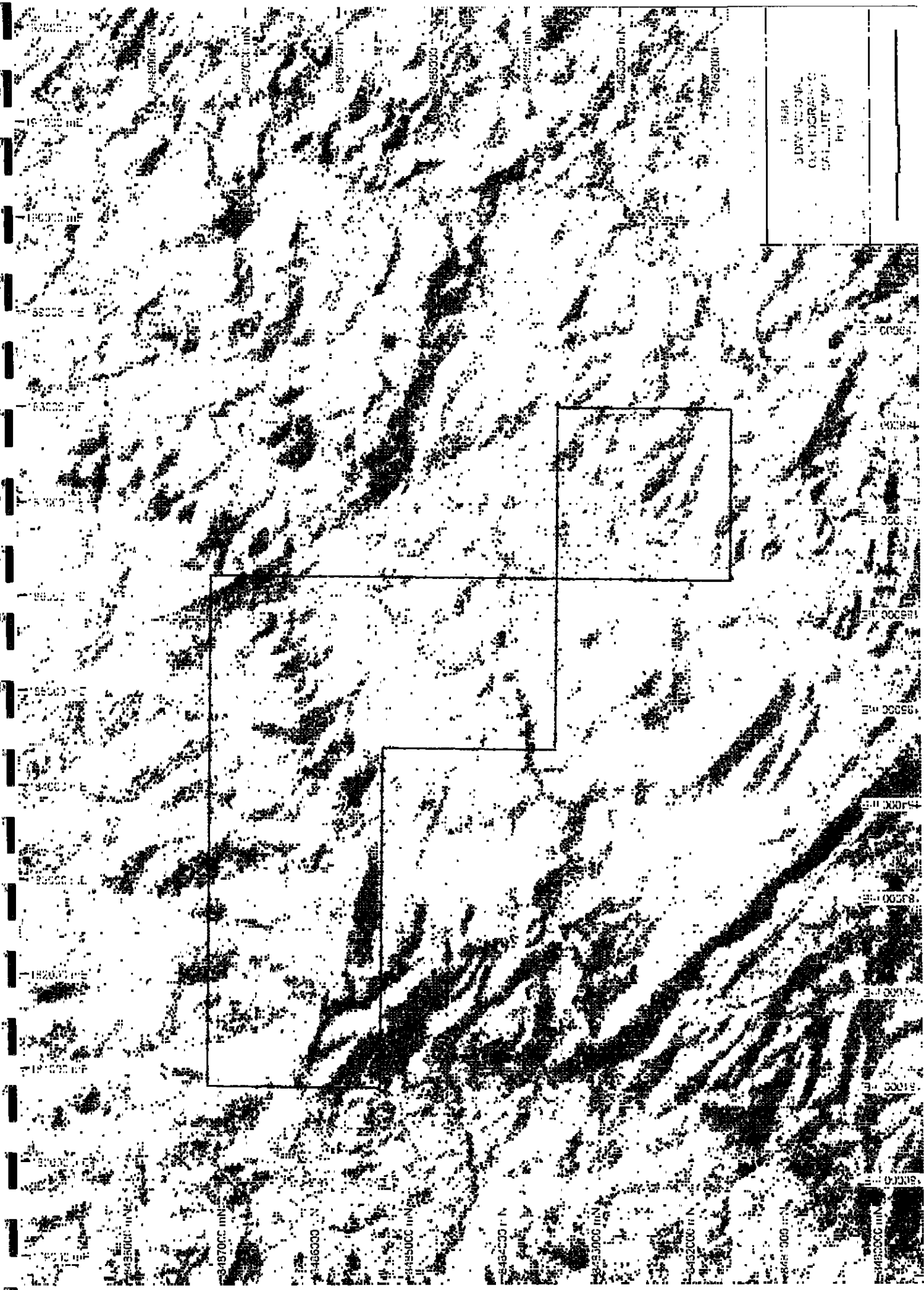
The results from the soil sampling program were disappointing, with the highest value returned being 0.5 ppb Au (Sample No. 142393, 8483541N : 186900E and Sample No. 142445, 8482402N : 188000E). The results for all other elements analysed were poor (Socic, 1996).



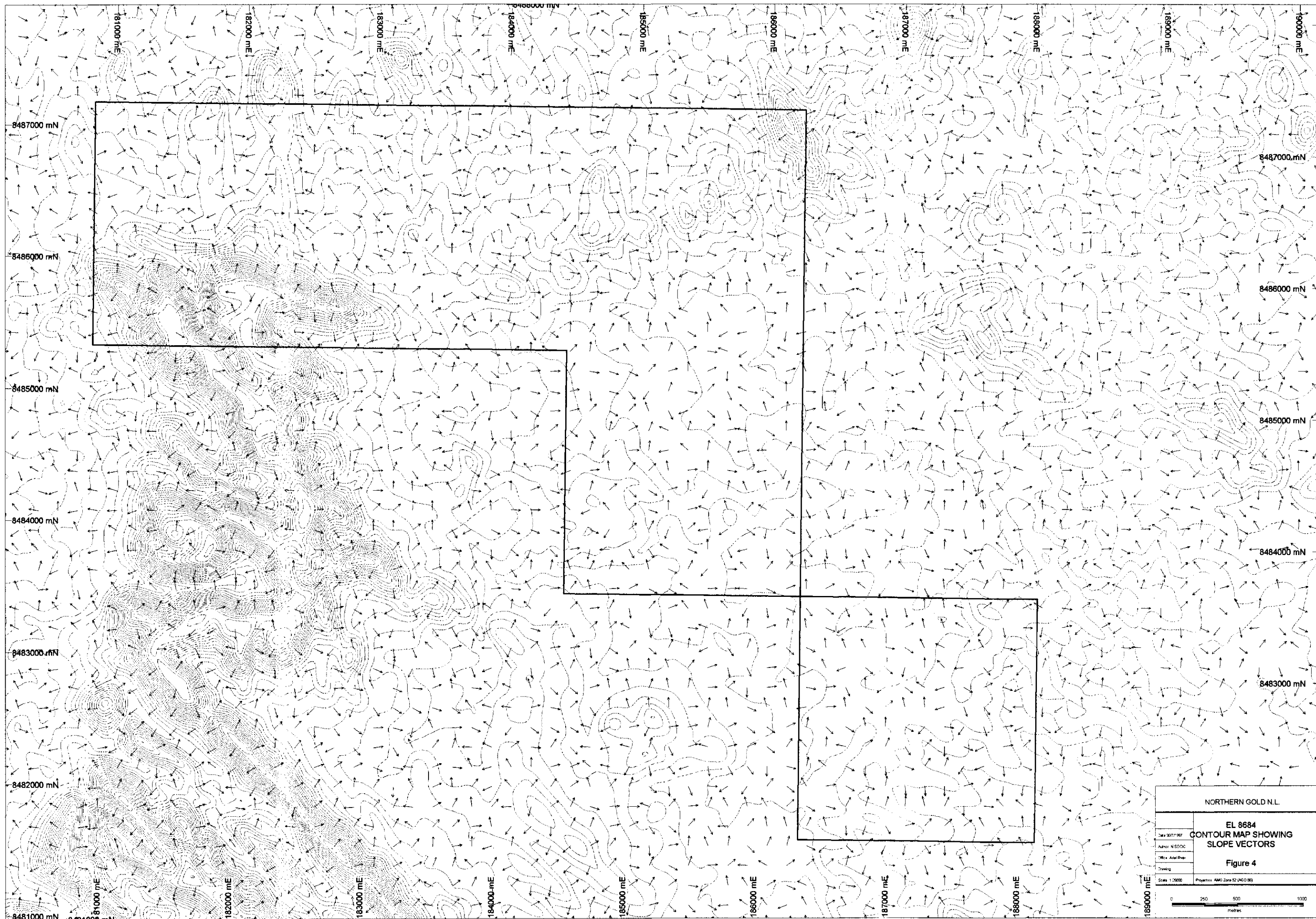
## **4.0 1996/97 EXPLORATION PROGRAM**

During the 1996/97 exploration season Northern Gold N.L. completed a work program involving digital data acquisition and manipulation, and digital terrain modelling. The data was obtained and used in conjunction with aerial mapping, site visits and previous digital data interpretations.

Northern Gold N.L. acquired orthographic satellite imagery to evaluate the topography of the Moline region (Figure 3). A contour map was compiled using this imagery, showing the slope vectors of the terrain, indicating possible dispersion directions of mobile elements (Figure 4).



3 DIVISION  
OPERATIONAL  
CALCULATION  
PAGE 1



## 5.0 1996/97 EXPENDITURE

Expenditure on EL 8684 during the 1996/97 year of tenure totaled \$7,940. Details of this expenditure are listed below as Table 1.

**Table 1**                      **EL 8684 1996/97 Expenditure**

<b><u>COSTS</u></b>	<b><u>AMOUNT</u></b>
Report Compilation	370
Tenement Management	540
Data Review	390
Photocopying	165
Stationary and Office Expenses	60
Computing	80
Motor Vehicle Expenses and Fuel	150
Satellite Image Acquisition and Manipulation	1,525
DTM Manipulation	2,155
Casual Wages	220
Salaries	1,250
<b>Subtotal</b>	<b>6,905</b>
Administration @ 15%	1,035
<b>TOTAL</b>	<b><u>\$7,940</u></b>

## 6.0 1997/98 PROPOSED WORK PROGRAM

The proposed exploration for the 1996/97 year of tenure will include regional soil sampling, assaying and geological mapping.

An estimate of the cost of these programs is listed below as Table 2.

**Table 2 EL 8684 1997/98 Proposed Work Program**

<b><u>COSTS</u></b>	<b><u>AMOUNT</u></b>
Regional Soil Sampling	1,800
Assaying	900
Geological Mapping	800
<b>TOTAL</b>	<b><u>\$3,500</u></b>

Further soil sampling and geological mapping is required to fully assess the mineralisation potential within the licence.

EL 8684 is a part of the Moline Project Area, which will be Northern Gold N.L.'s highest priority for exploration during the 1997 field season.

## 7.0 REFERENCES

- FAWCETT, C. (1995). EL 8684 - Evelyn Creek. Annual Report, 18.7.94 - 17.7.95.  
Unpublished report by Territory Goldfields N.L. for the NTDME.
- SOCIC, N., (1996). EL 8684, 1996 Annual Report, 18/7/95 - 17/7/96.  
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