

# Northern Gold NL

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## **MLNs 414 - 418 Rhodes Prospect**

### **2000 ANNUAL REPORT to 31<sup>st</sup> December 2000**

**Burnside (14/2-II) 1:50,000 scale map sheet**

**Title Holder: - Northern Gold N.L.**

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Essential Data Services, W.A.

## **SUMMARY**

MLNs 414 - 418 cover an area known as the Rhodes Prospect, 2.5 kilometres northeast of Mount Paqualin, on the Burnside (14/2-II) 1:50,000 scale map sheet.

Mineralisation at the Rhodes Prospect is hosted within quartz veining and brecciation in Zamu Dolerite, adjacent to the contact with carbonaceous sediments of the Gerowie Tuff Formation, on the western limb of a north trending anticline.

Mineral Lease North 414 to 418 were granted to W.R. Grace Australia Ltd. on the 8<sup>th</sup> of February 1978. The titles were transferred to R. Edwards in 1993. Northern Gold N.L. and Camelot Northern Territory Limited, formerly Reynolds N.T., acquired the tenements in 1995, by exercising an option agreement. The mineral leases were renewed on the 17<sup>th</sup> of May 1999, for a period expiring on the 31<sup>st</sup> of December 2003.

During the 2000 exploration season, Northern Gold N.L. contracted Arnhem Exploration Services to complete an infill soil sampling program over MLNs 414 - 418.

Samples were collected at 40 metre intervals along six, 200 metre spaced lines. A total of 77 soil samples, including duplicates, were submitted to Assaycorp, in Pine Creek, for analysis of Au, using low level fire assay technique, and Ag, As, Cu, Pb and Zn, using MA4/G400M/ICP-MS analytical method.

The soil sampling program outlined a north northeast trending soil anomaly, within the north and west of the area sampled. The peak results returned were 250 ppb Au, 110 ppb Au and 80 ppb Au.

Northern Gold N.L. will complete further data reviews over the Rhodes mineral leases. Detailed structural interpretations of aeromagnetic data will be used in conjunction with surface sampling and drilling data to determine the best methods of exploration to further test the mineralised trend.

The expenditure for the 2000 year of tenure totalled \$6,785.

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## 1.0 INTRODUCTION

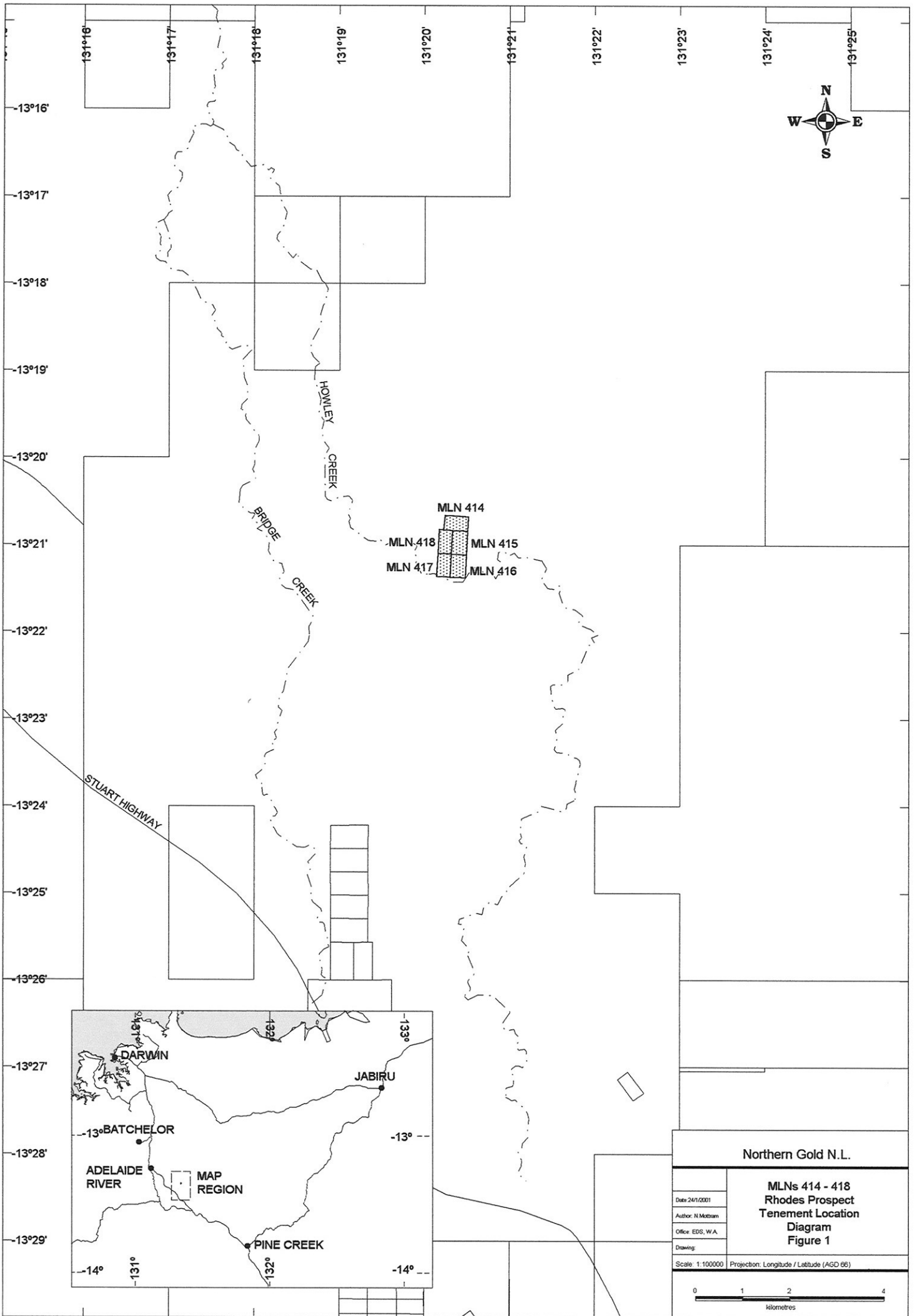
MLNs 414 - 418, the Rhodes Prospect, are located approximately 25 kilometres southeast of Adelaide River, on the Burnside (14/2-II) 1:50,000 scale map sheet. The mineral leases, covering an area totaling 75 hectares, lie between latitudes 13°20'30" south and 13°21'30" south and longitudes 131°20' east and 131°21' east (Figure 1). The mineral leases are situated within the Mount Ringwood Pastoral Lease, PL 718.

Access is via the Stuart Highway to Bridge Creek, then along existing haul roads and station tracks. Access requires four wheel drive vehicles and is restricted to the dry season. During the wet season much of the ground in the area becomes inundated, and creek flow rates are high. There are no permanent creek crossings in this area.

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During the 2000 exploration season, Northern Gold N.L. contracted Arnhem Exploration Services to complete an infill soil sampling program over MLNs 414 - 418. A total of 77 soil samples, including duplicates, were collected at 40 metre intervals along six, 200 metre spaced lines and submitted to Assaycorp, in Pine Creek, for analysis of Au, using low level fire assay technique, and Ag, As, Cu, Pb and Zn, using MA4/G400M/ICP-MS analytical method.

The expenditure for the 2000 year of tenure totalled \$6,785.



<b>Northern Gold N.L.</b>	
<b>MLNs 414 - 418 Rhodes Prospect Tenement Location Diagram Figure 1</b>	
Date: 24/1/2001	
Author: N. Mulsam	
Office: EDS, W.A.	
Drawing:	
Scale: 1:100000	Projection: Longitude / Latitude (AGD 66)

## **2.0 GEOLOGY**

### **2.1 Regional Geology**

MLNs 414 - 418 are situated within the Pine Creek Geosyncline, a tight to isoclinally folded sequence dominated by pelitic and psammitic (continental shelf to shallow marine) Lower Proterozoic sediments with minor inter-layered tuff units. All lithologies in the area have been metamorphosed, with metamorphic grade generally decreasing from amphibolite facies to greenschist facies away from intrusive granite contacts. There are instances of amphibolite grade assemblages (hornblende) within shear zones away from granite contacts. For the purpose of this report the prefix 'meta' is implied but omitted from rock names and descriptions.

The sequence has been intruded by pre-orogenic dolerite sills and a number of syn-orogenic to post-orogenic Proterozoic granitoids. Weakly deformed Middle and Late Proterozoic, Palaeozoic and Mesozoic strata along with Cainozoic sediments and laterite overlie the Pine Creek Geosyncline lithologies.

### **2.2 Local Geology**

Outcrop within the lease boundaries is very poor. Interpretation from more regional studies shows that the Gerowie Tuff of the South Alligator Group is predominant in the area, and the Zamu Dolerite is the lowest stratigraphic unit. Mineralisation at the Rhodes Prospect is hosted within quartz veining and brecciation in Zamu Dolerite, adjacent to the contact with carbonaceous sediments of the Gerowie Tuff Formation, on the western limb of a north trending anticline (Glassock, 1997).

### 3.0 PREVIOUS EXPLORATION

MLNs 414 - 418, the Rhodes Prospect, were previously managed by Western Mining Corporation (WMC) and W. R. Grace Australia Ltd., as part of the Mount Ringwood Joint Venture. The prospect was known as Quest 155. Numerous areas of anomalous gold mineralisation were identified within the region. Results from the exploration completed are reported in Hancock and Muir, 1987.

Northern Gold N.L. conducted RC drilling programs during 1994 and 1995, and baseline surveys between 1992 and 1995 (Canaris, 1994).

During the 1996 exploration season, Northern Gold N.L. completed RC drilling, resource evaluations, metallurgical testwork and an MMI geochemical soil sampling program.

The drilling was undertaken in order to determine the extent and style of bedrock mineralisation around the previous drilling. The majority of the drilling required little site preparation, and where required it consisted of vegetation removal and/or minor drill pad construction (Glassock, 1997).

The drilling program consisted of 21 RC drill holes for a total of 2,620 metres. Samples were sent to Assaycorp in Pine Creek for Fire Assay Au analysis (Glassock, 1997).

Metallurgical test work was carried out on some of the RC drilling samples. A summary of results is shown below.

**Table 1 Metallurgical Test Work Summary**

<b>Ore/Test No.</b>	<b>Grind P80 Target</b>	<b>NaCN Used kg/t</b>	<b>Leach Residue Au g/t</b>	<b>Au Extraction %</b>	<b>Calc'd Head Au g/t</b>
RO 31 Test H5055	106	1.81	0.288	90.25	2.95
RO 42 Test H5056	106	1.42	0.383	87.39	3.04

An orientation survey was completed over the Rhodes Prospect in May 1996, to assess the potential of the geochemical mobile metal ion "MMI" soil sampling technique. Approximately 500 grams of soil, sieved to a -5 millimetre size fraction, was collected every five metres along two 100 metre spaced lines. A total of 102 samples were collected and submitted to Analabs, in Perth, W. A., for "MMI-B" Au,



Ag, Co, Ni, Pd analysis, and “MMI-A” Cd, Cu, Pb and Zn analysis (Glassock, 1997).

The MMI geochemical soil sampling program was successful in highlighting the position of the Rhodes gold ore body. Distinct and coincident anomalies were obtained for the elements Au, Cu, Zn, Co, and Cd and to a lesser extent Ni and Pb. No significant response ratio values were calculated for the element Pd (Glassock, 1997).

During July 1996 and February 1997, ore resource estimates were calculated for the Rhodes Prospect. These are reported in Farrelly, 1996 and 1997.

Northern Gold N.L. completed a review of the sub-surface gold geochemistry at the Rhodes Prospect, utilising all available drilling and surface geochemical data, during the 1999 year of tenure. The results from this study will be used to aid in the evaluation of target size characteristics for planning of regional and infill RC/RAB style drill programs (Mottram, 2000).

## 4.0 2000 EXPLORATION COMPLETED

During the 2000 exploration season, Northern Gold N.L. contracted Arnhem Exploration Services to complete an infill soil sampling program over MLNs 414 - 418.

### 4.1 Infill Soil Sampling Program

Previous soil sampling programs conducted by Western Mining Corporation and Northern Gold N.L. outlined moderate to high tenor soil anomalies northwest of the Rhodes gold resource, coincident with a significant aeromagnetic anomaly. These anomalies remain open to the east and immediate north of the current resource. The aim of the 2000 infill soil sampling program was to test the potential for gold anomalism associated with a northward extension of the Rhodes resource.

Samples, consisting of approximately 4 kilograms of soil, sieved to a -5 millimetre size fraction, were collected at 40 metre intervals along six, 200 metre spaced lines. A total of 77, B-horizon, soil samples (Sample Nos. 182426 - 437, 182444 - 456, 182462 - 474, 182480 - 492, 182498 - 507, 182512 - 527), including duplicates, were submitted to Assaycorp, in Pine Creek, for analysis of Au, using low level fire assay technique, and Ag, As, Cu, Pb and Zn, using MA4/G400M/ICP-MS analytical method. The analytical methods and detection limits are listed in Table 2. The sample locations are shown on plan in Figure 2 and presented in Appendix 1.

**Table 2** Infill Soil Sampling Program Analytical Methods and Detection Limits

Element	Analytical Method	Digest	Technique	Detection Limit	Units
Au	FALL	FA	AAS	1	ppb
Au(R)	FALL	FA	AAS	1	ppb
Ag	G400M	MA4	ICP-MS	0.05	ppm
As	G400M	MA4	ICP-MS	0.5	ppm
Cu	G400M	MA4	ICP-MS	0.2	ppm
Zn	G400M	MA4	ICP-MS	0.5	ppm
Pb	G400M	MA4	ICP-MS	0.2	ppm

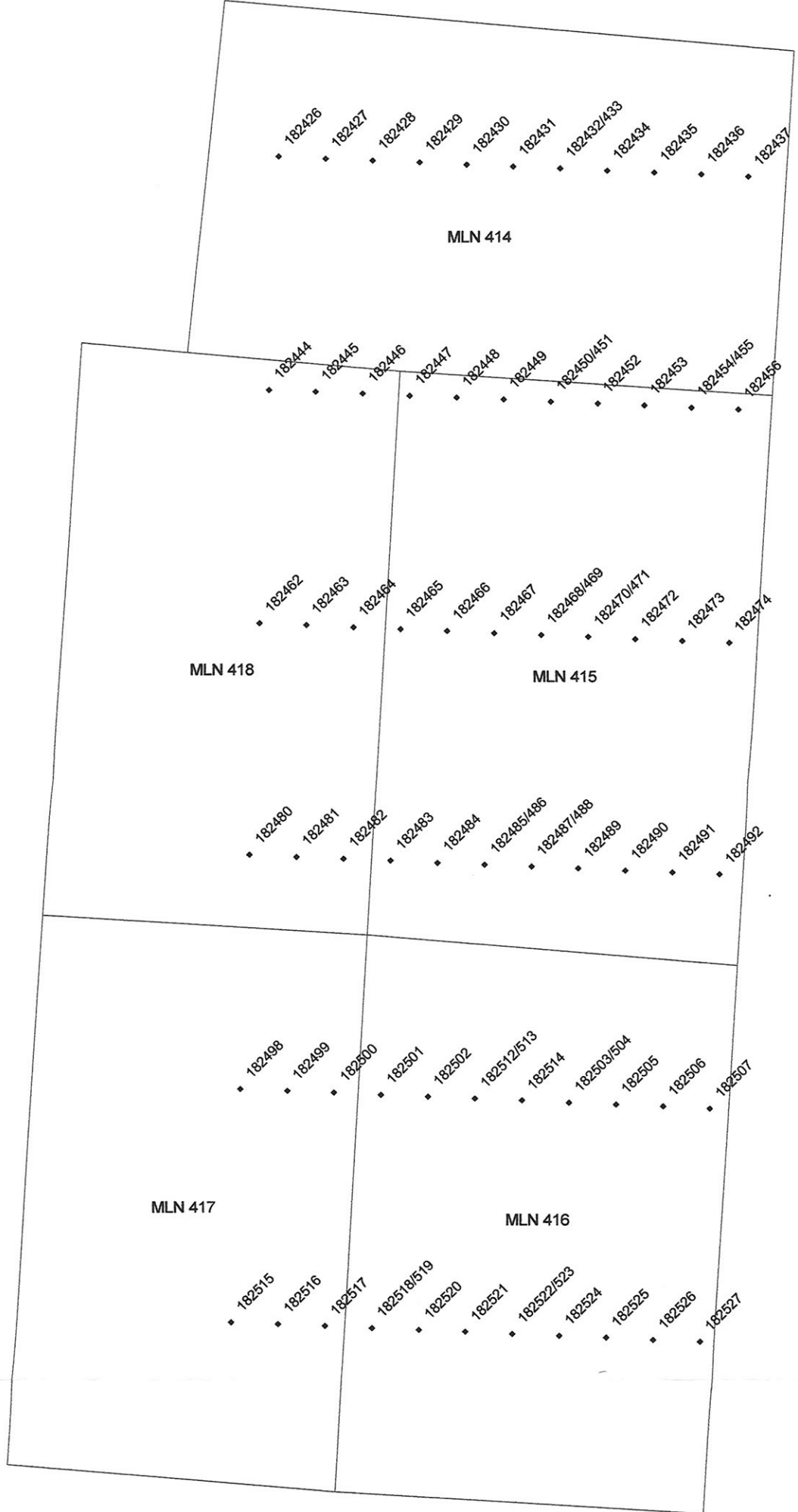
#### **4.1.1 Infill Soil Sampling Program Results**

The soil sampling program outlined a north northeast trending soil anomaly, within the north and west of the area sampled. The peak results returned were 250 ppb Au (Repeat analysis, Sample No. 182462, 8523038.01N : 753212.12E), 110 ppb Au (Sample No. 182447, 8523237.67N : 753344.36E) and 80 ppb Au (Sample No. 182446, 8523239.50N : 753303.33E).

The assay results from the infill soil sampling program are presented in Appendix 1.

752750 mE 753000 mE 753250 mE 753500 mE 753750 mE 754000 mE

8523750 mN  
8523500 mN  
8523250 mN  
8523000 mN  
8522750 mN  
8522500 mN  
8522250 mN  
8522000 mN



Northern Gold N.L.	
MLNs 414 - 418 2000 Infill Soil Sampling Program Location Plan	
Figure 2	
Date: 24/1/2001	Author: N. Mottram
Office: EDI, W.A.	
Scale: 1:5000	Projection: AMG Zone 52 (AGD 68)

## 5.0 2000 EXPENDITURE

The expenditure for the 2000 year of tenure totalled \$6,785. Details of this expenditure are listed below in Table 3.

**Table 3 MLNs 414 - 418 2000 Expenditure**

<b><u>COSTS</u></b>	<b><u>AMOUNT</u></b>
Tenement Management	130
Report and Plan Preparation	100
Data Review	125
Geological Contractors	1,900
Assays	2,140
Casual Wages	1,050
Salaries	210
<b>Subtotal</b>	<b>5,655</b>
Administration @ 20%	1,130
<b>TOTAL</b>	<b><u>\$6,785</u></b>

## 6.0 2001 PROPOSED WORK PROGRAM

During the 2001 year of tenure, Northern Gold N.L. will complete further data reviews over the Rhodes mineral leases. Detailed structural interpretations of aeromagnetic data will be used in conjunction with surface sampling and drilling data to determine the best methods of exploration to further test the mineralised trend.

The cost of these programs is estimated at \$4,500.

## **7.0 REFERENCES**

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## **APPENDIX 1**

### **2000 Infill Soil Sampling Program Locations and Assay Results**