# Open File Envelope No. 8063

## **EL 1504**

## LAKE GAIRDNER NORTH

## PROGRESS AND FINAL REPORTS TO LICENCE EXPIRY FOR THE PERIOD 11/7/88 TO 10/1/90

Submitted by BHP Gold Mines Ltd 1990

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101 Grenfell Street, Adelaide 5000

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TENEMENT HOLDER: BHP Gold Mines Ltd.

REPORT: Lindemann, C; 1988. EL 1504, Lake Gairdner, SA. Pgs 3-7

Report for the quarter ended 10th October, 1988.

APPENDIX 1: Geochemical analyses. Pgs 8-10

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REPORT: Lindemann, T; 1989. EL 1504, Lake Gairdner, SA. Pgs 11-15
Report for the quarter ended 10th January, 1989.

(BHP-Utah report no. CR6298).

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REPORTS: Jarvis, D M; 1989. Quarterly reports EL's 1504 and Pg. 18 1505 for the period ending 10th April, 1989.

BHP-Utah; 1989. EL 1504 Lake Gairdner, SA. Report Pgs 19-23 for the quarter ended 10th July, 1989. (BHP-Utah report no. CR6470).

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REPORT: Report for the quarter ending 10th October, 1989 not included in envelope.

Jarvis, DM; 1990. EL 1504 Lake Gairdner, SA. Report for the quarter ended 10th January, REPORT:

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1990 and final report. (BHP-Utah report no. not

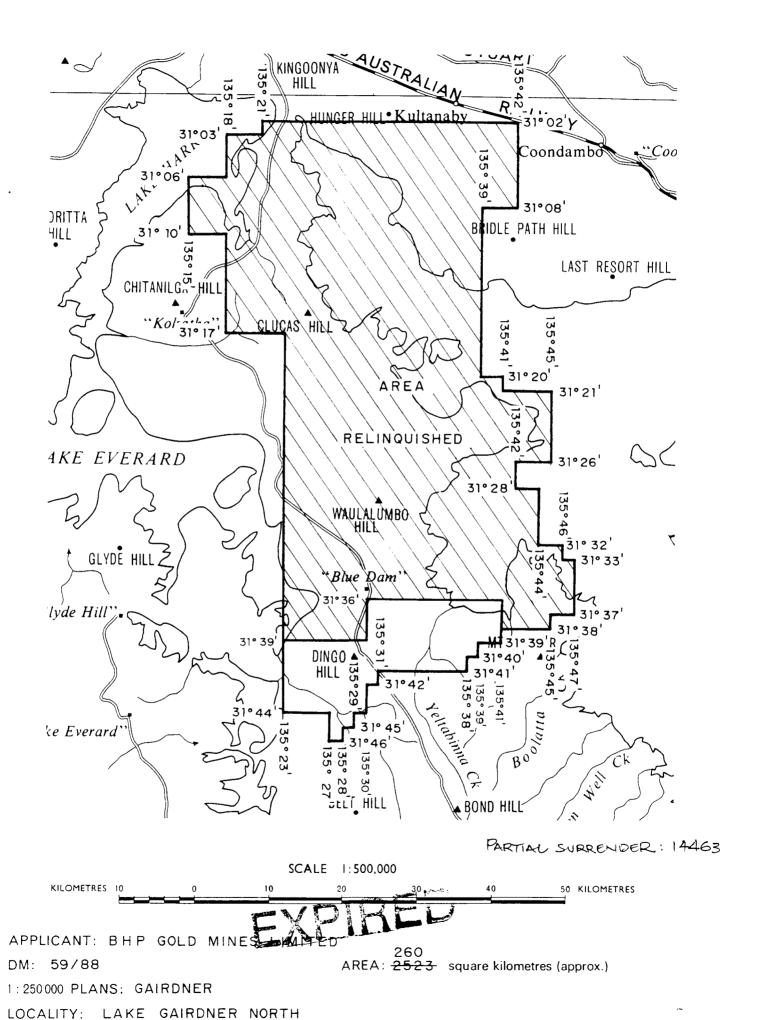
shown).

PLANS:

<u>Scale</u> Company SADME Plan No. Plan No.

Fig 1. EL 1504. Location map. 1:1000000 A4-522 Pg. 29

## SCHEDULE A

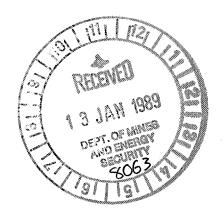


DATE GRANTED: 11.7.88

DATE EXPIRED: 10.7.89

EL No: 1504

EXPLORATION LICENCE 1504 LAKE GAIRDNER, SOUTH AUSTRALIA REPORT FOR THE QUARTER ENDED 10TH OCTOBER, 1988.



C. LINDEMANN

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#### EXPLORATION LICENCE 1504

### LAKE GAIRDNER, SOUTH AUSTRALIA

## REPORT FOR THE QUARTER ENDED 10TH OCTOBER, 1988.

## 1. GENERAL

The Archaean Glenloth Goldfield and the mid-Proterozoic Tarcoola Goldfield occur in Gawler Craton basement rocks which have been intruded by the Hiltaba Granite Suite adjacent to the Chitanilga volcanic complex. Further to the north-east, Olympic Dam is a major 'volcanogenic' gold deposit roughly coeval with the extrusion of the Gawler Range Volcanics.

A search of the S.A.D.M.E. open file EL reports revealed that no previous exploration for gold had taken place in the area of the Glyde Hill and Chitanilga volcanic complexes. These appear to be favourable targets for volcanic-hosted epithermal gold.

## 2. TITLE

Exploration Licence 1504, an area of approximately 1525 square kilometres, was granted to BHP Gold Mines Limited on the 11th July, 1988 for 12 months. Its location is shown in Figure 1.

## 3. FIELD INVESTIGATIONS

A reconnaissance stream sampling programme was planned and carried out during the course of this quarter. A total of thirty (30) 5 kg samples of -2mm material were collected and sent to Classic Comlabs, Adelaide for analysis using the cyanide leach process. Assay results are recorded in Appendix 1 and sample site locations on Figure 2.

At least five samples returned gold values considered to be worthy of further investigation and follow-up work. These five sample sites will be resampled to check the results reported. A further, more comprehensive stream sampling programme is planned to take place in November 1988.

## 4. EXPENDITURE

Expenditure debited to EL 1504 during this first quarter totals \$13,606 and is made up of the following items:-

Wages & Salaries	3,719
Field Support	279
Vehicles	1,493
Geochemistry	1,324
Surveys	87
Tenement Fees	5,823
Office Expenses	233
Administration Expenses	648
	\$13,606

# APPENDIX 1 GEOCHEMICAL ANALYSES





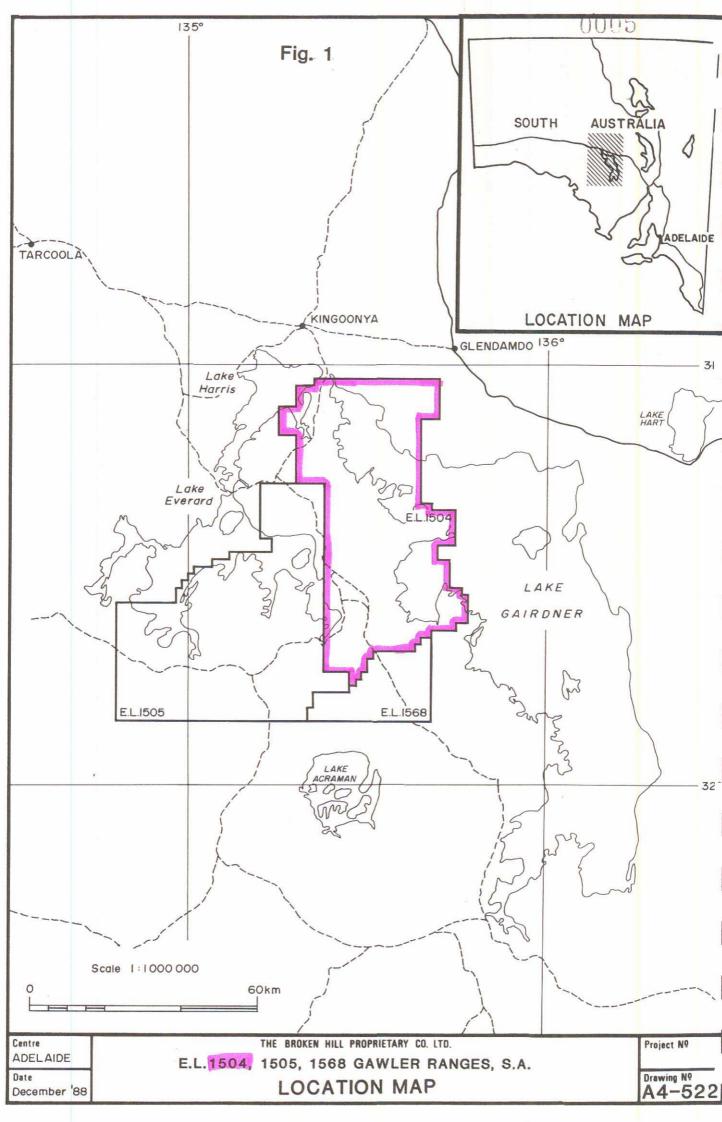
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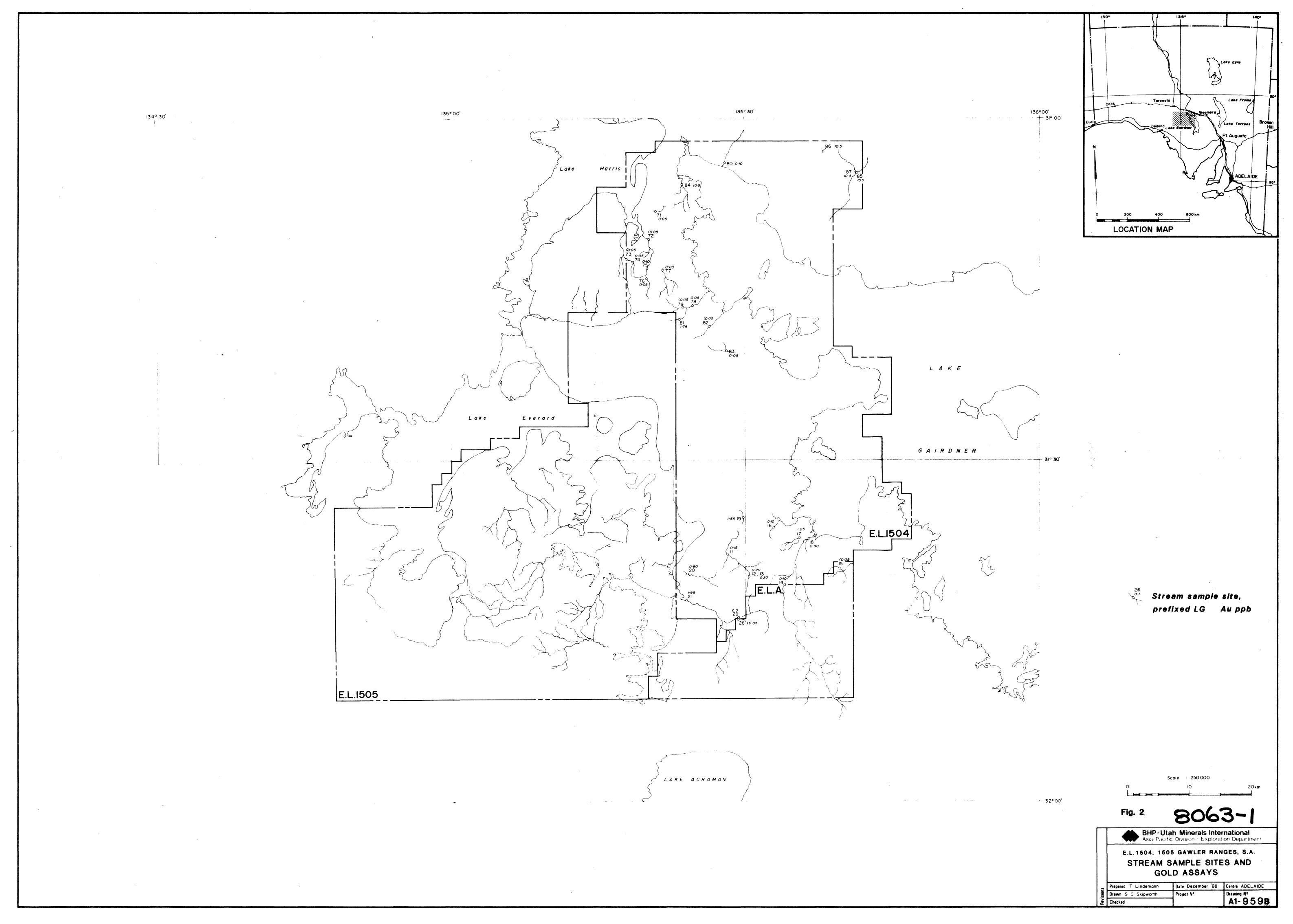
Job: 8AD1508 O/N: 15654

ANALITICAL	REPORT

SAMPLE	Au
LG/011	0.15
LG/012	0.20
LG/013	0.20
LG/014	0.10
LG/015	<0.05
LG/016	0.10
LG/017	1.05
LG/018	0.90
LG/019	1.55
LG/020	0.60
LG/021	1.95
LG/028	<0.05
LG/029	2.3
LG/071	0.05
LG/072	<0.05
LG/073	<0.05
LG/074	0.05
LG/075	0.10
LG/076	, 0,.05
LG/077	0.05
LG/078	0.05
LG/079	<0.05
LG/080	0.10
LG/081	1.75
LG/082	<0.05
LG/083	0.05
LG/084	<0.05

LG/085	<0.05
LG/086	<0.05
LG/087	<0.05
UNITS	ppb



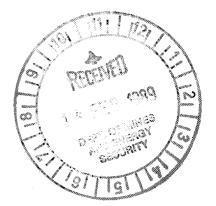


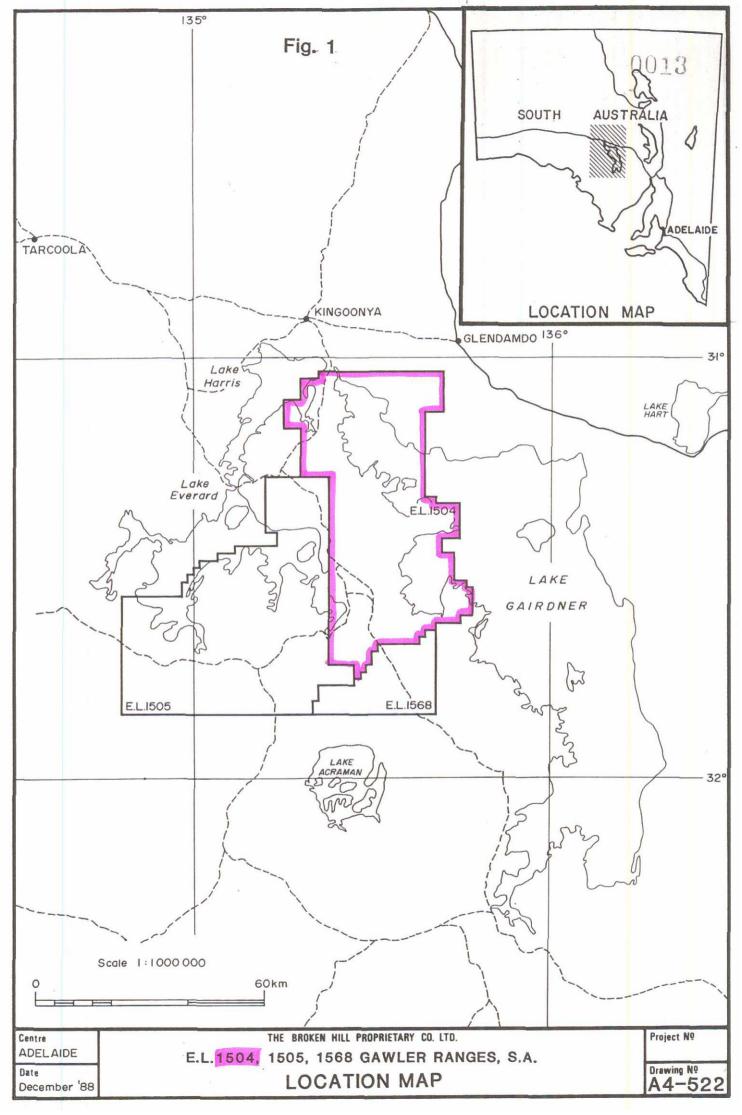
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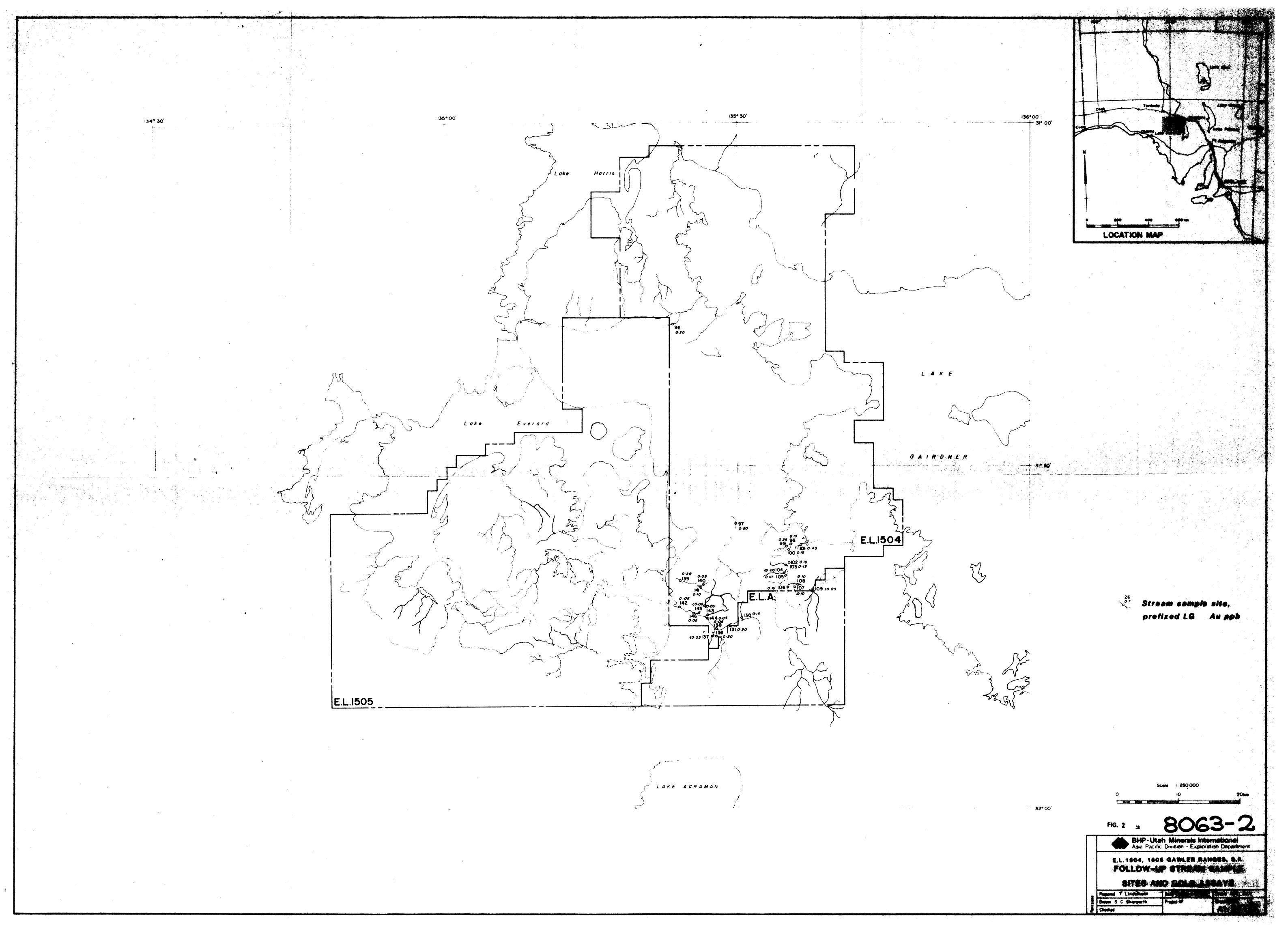
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### EXPLORATION LICENCE 1504

#### LAKE GAIRDNER, SOUTH AUSTRALIA

## REPORT FOR THE QUARTER ENDED 10TH JANUARY, 1989.

### 1. GENERAL

The Archaean Glenloth Goldfield and the mid-Proterozoic Tarcoola Goldfield occur in Gawler Craton basement rocks which have been intruded by the Hiltaba Granite Suite adjacent to the Chitanilga volcanic complex. Further to the north-east, Olympic Dam is a major 'volcanogenic' gold deposit roughly coeval with the extrusion of the Gawler Range Volcanics.

A search of the S.A.D.M.E. open file EL reports revealed that no previous exploration for gold had taken place in the area of the Glyde Hill and Chitanilga volcanic complexes. These appear to be favourable targets for volcanic-hosted epithermal gold.

### 2. TITLE

Exploration Licence 1504, an area of approximately 1525 square kilometres, was granted to BHP Gold Mines Limited on the 11th July, 1988 for 12 months. Its location is shown in Figure 1.

## 3. FIELD INVESTIGATIONS

27 stream samples were taken as a follow-up to the sampling programme carried out during the previous quarter. 7 sites were resampled and another 20 stream samples were taken from adjacent drainage.

The samples consisted of  $5\ kg$  -2 mm material which was analysed at Classic Comlabs, Adelaide using the cyanide leach process.

Comparative results of resampled sites are shown in Table 1 and complete geochemical analysis results can be found in Appendix 1.

## Table 1

Origi	nal Sample	<u>Resample</u>				
No.	Au(ppb)	No.	Au(ppb)			
LG17	1.05	LG 98	.15			
18	. 90	101	. 25			
19	1.55	97	.20			
20	.60	139	.20			
21	1.95	142	.05			
28	<.05	131	.20			
81	1.75	96	.20			

## 4. EXPENDITURE

Expenditure for EL 1504 for the quarter ending 10th January 1989 totals \$5,211 and is made up of the following items:-

Wages & Salaries	3,781
Vehicles	191
Surveys	436
Office Expenses	235
Specialist Services -	
Drafting	320
Administration Expenses	248
	\$5,211

Total expenditure to date for EL1505 is \$18,817.

## APPENDIX 1

GEOCHEMICAL ANALYSES





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Job: 8AD3599 O/N: GJ1,GJ2 Sheet 11519

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SAMPLE	Au
LG 96	0.20
LG 97	0.20
LG 98	0.15
LG 99	0.25
LG 100	0.15
LG 101	0.45
LG 102	0.15
LG 103	0.15
LG 104	<0.05
LG 105	0.10
LG 106	0.10
LG 107	0.10
LG 108	0.10
LG 109	<0.05
LG 130	0.15
LG 131	0.20
LG 136	0.20
LG 137	<0.05
LG 138	0.05
LG 139	0.20
LG 140	0.05
LG 141	0.10
LG 142	0.05
LG 143	<0.05
LG 144	0.05
LG 145	<0.05
LG 146	0.05
UNITS SCHEME	ppb BLEG2

125-129 Rundle Street Kent Town, South Australia 5067 PO Box 860 Norwood, South Australia 5067 Telephone 08 362 9961 Telex AA82206 Facsimile 08 362 9622



5th May 1989

The Director General, SA Department of Mines & Energy, PO Box 151, EASTWOOD. SA 5063

Dear Sir,

## RE: QUARTERLY REPORTS EL's 1504 & 1505

This letter summarizes exploration activity within EL 1504 - Lake Gairdner and EL 1505 Lake Everard for the quarterly period 11/1/89 to 10/4/89.

Due to heavy rains and the closure of roads accessing EL's 1504 and 1505 follow-up exploration planned for the quarter was not achieved. However this work has now been carried out, the results of which will be included in the July 1989 Quarterly Report.

Expenditure incurred for the three month period ending March 31st is as follows:-

	<u>EL 1504</u>	EL 1505
Wages & Salaries Field Support Other Specialist Services Group Administration	2526 226 726 930 662	2458 226 523 - 481
	\$5070	\$3688

Hope this is satisfactory.

Yours faithfully,

D.M. Jarus

D.M. JARVIS Principal Geologist

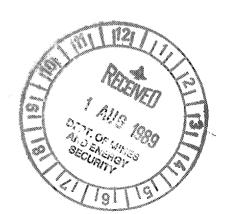


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EXPLORATION LICENCE 1504 LAKE GAIRDNER, SOUTH AUSTRALIA

REPORT FOR THE QUARTER ENDED 10TH JULY 1989

Our ref: Gairdner.Q1

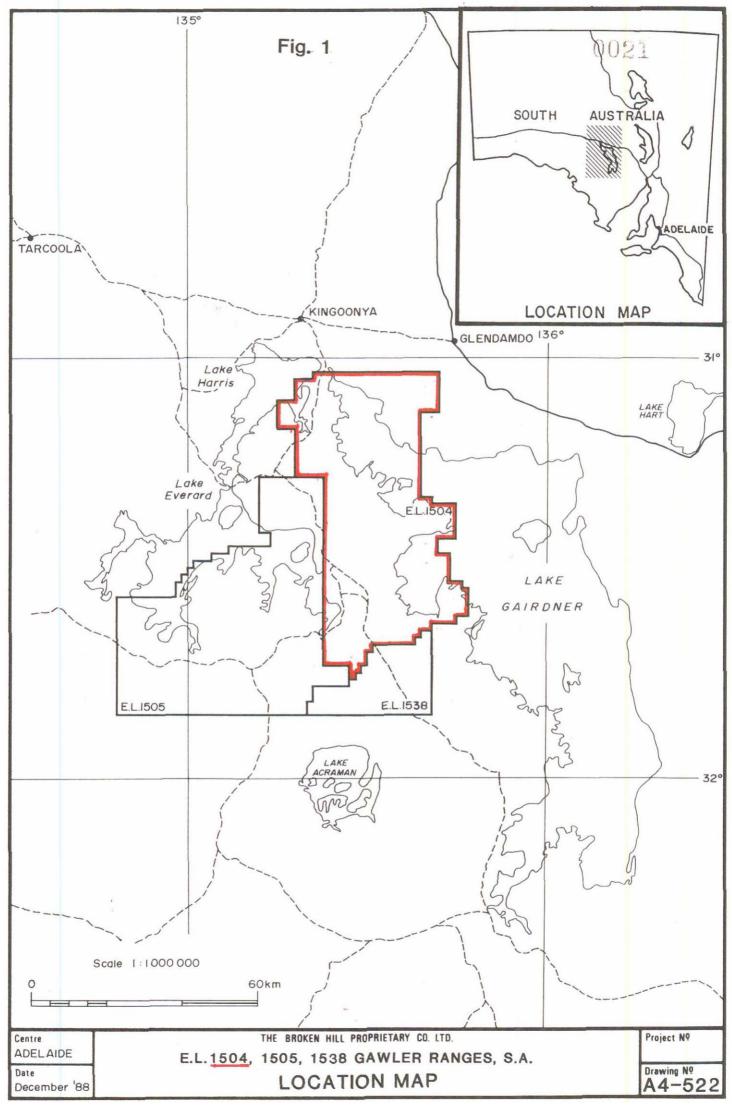


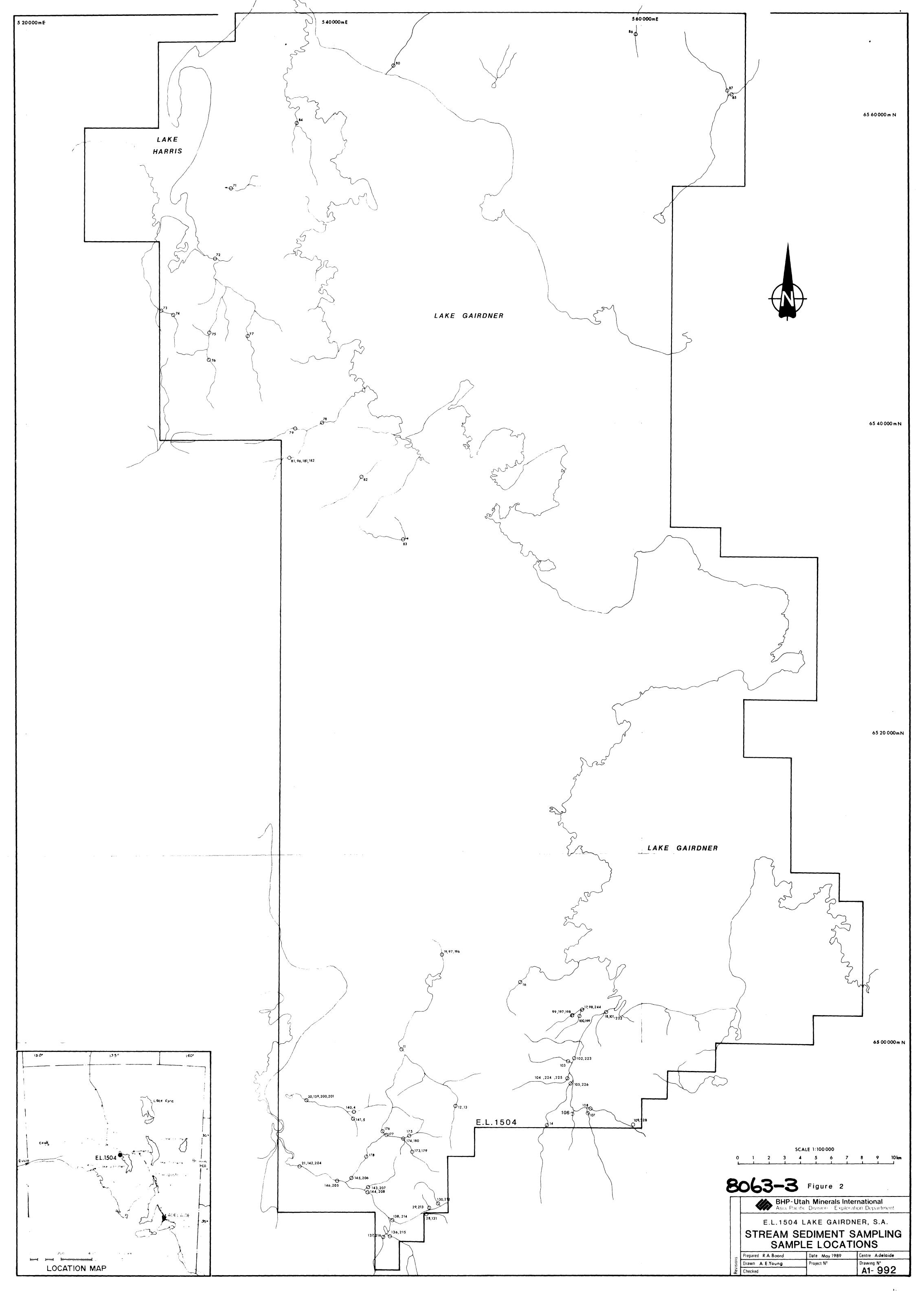
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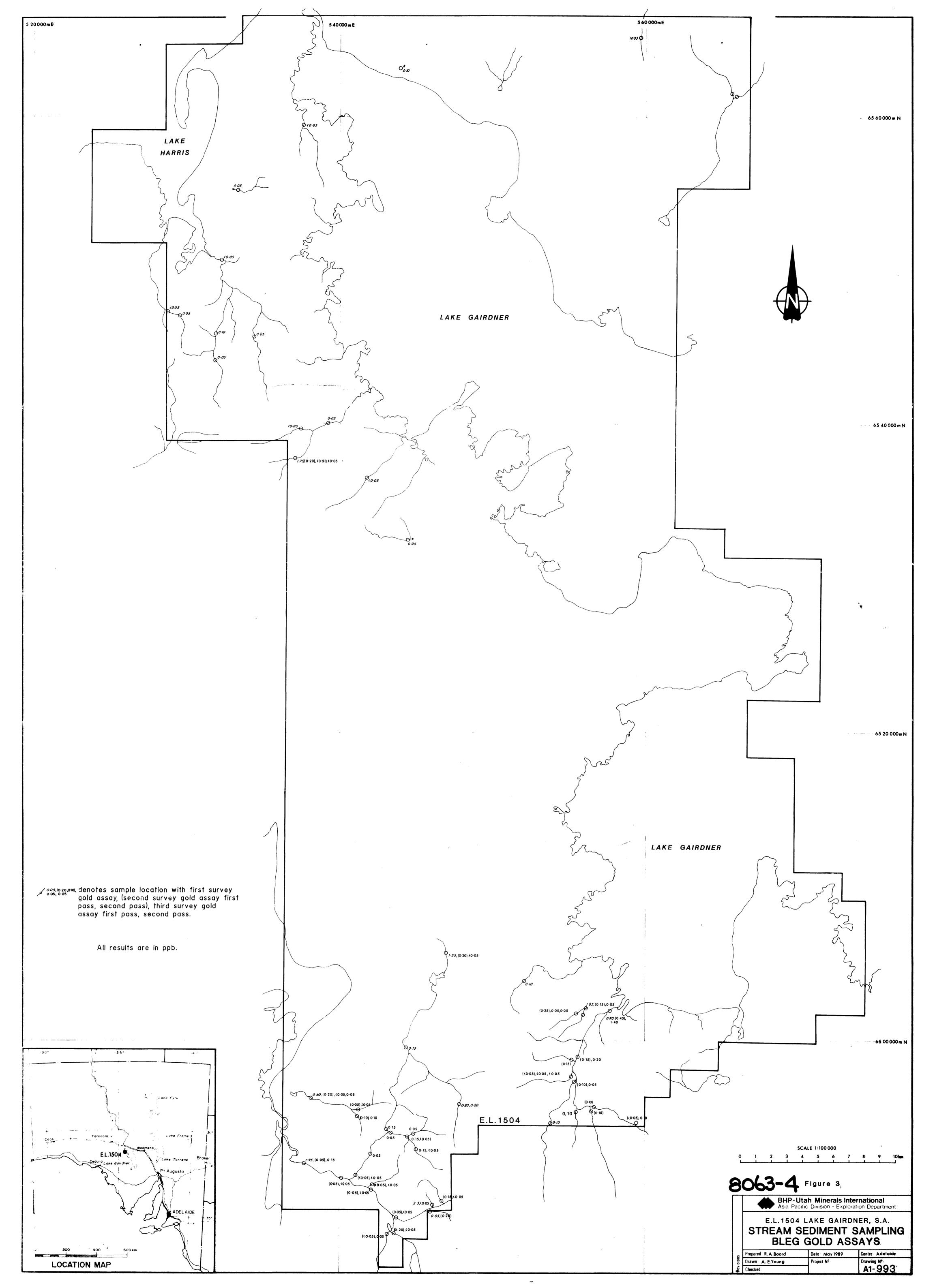
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## **APPENDICES**

APPENDIX 1 SURVEY 3 - GOLD ASSAY RESULTS







### EXPLORATION LICENCE 1504

### LAKE GAIRDNER, SOUTH AUSTRALIA

## REPORT FOR THE QUARTER ENDED

### 10TH JULY 1989

### 1. INTRODUCTION

The Lake Gairdner Exploration Licence is located approximately 20km south-east of Kingoonya encompassing an area of outcropping and subcropping Gawler Range Volcanics (Figure 1). Title is in the name of BHP Gold Mines Limited. The area is of interest as part of a continuing regional search for epithermal gold and base metals.

This report summarizes the results of exploration activity within Exploration Licence 1504 in fulfilment of Quarterly Reporting requirements for the period 11th April 1989 to 10th July 1989.

## 2. REGIONAL STREAM SEDIMENT SAMPLING PROGRAMME

Since acquiring EL 1504 three stream sediment sampling programmes have been undertaken (Figure 2). The third programme was undertaken in response to the finding that sample variability may explain differences between Surveys 1 and 2 duplicate samples, active stream sediments being collected in the first pass programme and trap site sediments being collected in the follow-up programme and/or that laboratory error may have contributed to the highly anomalous results reported in Survey 1.

A total of 27 samples, plus 6 duplicates were taken as part of Survey 3. Of these 15 recorded detectable gold (detection limit 0.05 ppb Au). Six samples recorded values greater than or equal to the calculated threshold of 0.15 ppb Au (Appendix 1).

## 3. FUTURE EXPLORATION

Future exploration is planned to include follow-up sampling of the defined anomalous catchment areas.

\$ 5028

## 4. EXPENDITURE

Exploration expenditure for the quarterly period April to 30th June 1989 is as follows:-

Salaries and Wages	\$1972
Field Support - Accommodation etc.	352
Vehicles	150
Geochemistry	1245
Surveys - maps, photographs	50
Office Expenses	44
In House Specialist Services	560
Administration Charge	655
	:

## APPENDIX ONE

SURVEY 3 - GOLD ASSAY RESULTS

SCHEME

BLEG2

. 179 .





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Job: 9AD0286

ANALYTIC	AL REPORT	O/N: GJ1-GJ2/009202
SAMPLE	Au	
LG 173	0.15	Duplicate sample No. 179
LG 174	0.15	Duplicate sample No. 179 Duplicate sample No. 180.
LG 175	0.05	
LG 176	0.15	
LG 177	0.05	
LG 178	0, 05	
LG 179	<0.05	
LG 180	<0.05	
LG 181	<0.057	
LG 182	<0.05	Duplicate sample
LG 196	<0.05	
LG 197	<0.057	Ouplicate camela
LG 198	<0.05	Duplicate sample
LG 199	0.10	
LG 200	<0.057	Duplicate carella
LG 201 ·	0.05	Duplicate sample
LG 204	0.15	
LG 205	<0.05	•
LG 206	<0.05	
LG 207	<0.05	
LG 20.8	<0.05	
LG 212	<0.05	
LG 213	<0.05	
LG 214	<0.05	
LG 215	<0.05	
LG 216	0.05	
UNITS	ppb	





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Job: 9AD0613 O/N: 15553/K10

ANALYTICAL	REPORT	•
SAMPLE	Au	
LG 222	1.40	
LG 223	0.20	
LG 224	<0.057	Duplicate cample
LG 225	<0.05	Duplicate sample
LG 226	0.05	
LG 228	0.10	
LG 244	.0.05	
UNITS SCHEME	ppb BLEG2	

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EXPLORATION LICENCE 1504
LAKE GAIRDENER SOUTH AUSTRALIA
REPORT FOR QUARTER ENDED
10TH JANUARY 1990
FINAL REPORT

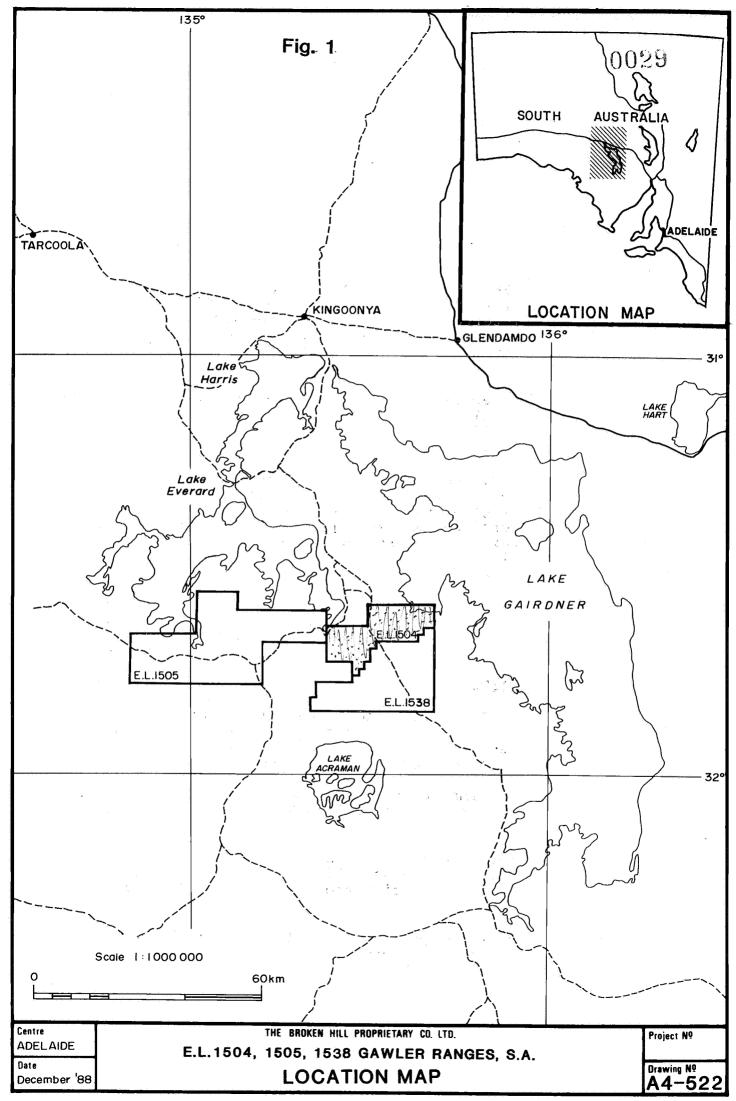
D.M. JARVIS ADELAIDE

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2.	TENEMENT HISTORY
3.	RESULTS OF STREAM SAMPLING SURVEYS
4.	EXPENDITURE

## LIST OF ILLUSTRATIONS

FIGURE 1: LOCATION MAP EL 1504 LAKE GAIRDENER



### EXPLORATION LICENCE 1504

## LAKE GAIRDNER, SOUTH AUSTRALIA

### REPORT FOR QUARTER ENDED

## 10TH JANUARY 1990

## FINAL REPORT

## 1. <u>INTRODUCTION</u>

In early 1988 BHP Gold Limited targeted the Gawler Ranges Volcanic Province on northern Eyre Peninsula as possible geological terrane favourable for the occurrence of epithermal style gold mineralization. Moreover BHP's interest was kindled by the realization that no comprehensive or systematic search for gold mineralization in the acid volcanics areas per se, had seemingly been carried out. Various analogies were drawn with other well known felsic volcanic terranes, e.g., Croydon Goldfield in North Queensland along with its associated tin mineralization (c.f. South Lake, S.A.)

Large bulk stream sediment sample surveys were carried with samples weighing approximately 5kg each. These were assayed for gold using bulk cyanide leach techniques. Whilst several samples reported detectable gold, which on first appraisal were thought to be of interest, it was subsequently concluded that the reported values were more likely reflecting background geochemical effects.

This report is being compiled as normal quarterly report as required under the Regulations, but it also serves as the Final/Surrender Report. No additional field work was carried out during the quarter ended 10th January 1990.

## 2. TENEMENT HISTORY

Title to EL 1504 commenced on the 11th July 1988 for a period of 12 months. Subsequently, application was made for an Extension of Term. This was granted extending the period of tenure overall to 18 months.

At the same time the areal extent of the original title applied for was reduced from 2523 sq. km. down to 260 sq. kms.

Figure 1 included herewith shows the size extent of the original Licence area as well as the much smaller Licence area retained at the time the Extension of Term was granted.

At the end of the period tenure (11.1.1990) it was decided not to seek renewal of title.

#### 3. RESULTS OF STREAM SAMPLING SURVEYS

Present day drainage channels are only poorly developed in the Gawler Rangers in general. Often samples had to be collected in the lowest parts of valleys between groups of hills. Actual channels are ephemeral only.

As mentioned above, bulk (5 kg) samples were collected in all phases of a three phase sampling programme. All samples were assayed for gold using bulk cyanide leaching techniques. Samples were assayed at Classic Comlabs facilities in Adelaide, S.A.

A first pass reconnaissance sampling programme was carried out during April/May 1988. Material from the active part of the stream channel was collected for screening and assaying. Samples were positioned and sites controlled by the existing road/track network crossing the area of interest. The results of this survey were initially regarded as encouraging, with samples assaying up to a maximum of 2.3 parts per billion.

The second phase of sampling occurred in November 1988. Follow-up samples were collected, but this time samples were inadvertently taken in "trap" sites rather that the random sampling of active stream sedement. In this instance, assay result were unexpectedly disappointing. This second phase of the field work failed to back up the anamolous gold geochemistry reported by the first phase of sampling with all samples assaying less than lppb.

In March 1989 a third phase of sampling was undertaken covering not only previously anomalous sites in EL 1538 Yeltabinna.

For this third survey a total of 62 samples were taken throughout the three exploration licence areas mentioned. 54 weakly anomolous sites were resampled. Of these eight (8) samples were deliberately duplicated.

Yet again the results of this follow up sampling phase were alsopointing. Although 29 samples contained detectabel gold, only 5 samples recorded gold values /reated than 0.20ppb. The highest single samples reported a value of 1.44ppb.

The conclusion was reached that none of the gold assay results were of sufficient interest to warrant further work. Clearly, variability in sampling survey. Given the extremely low levels of results being reported, also that samples were reporting just above the lower limits of detection, the facts suggested that economic concentrations of gold mineralization was highly unlikely to occur within EL 1504.

Most likely the majority of the reported results of detectable gold were reflecting background gold values only.

## 4. EXPENDITURE

No additional expenditure was incurred on EL 1504 Lake Gairdner during the quarter ended 10th January 1990.

Total expenditure allocated to EL 1504 during the life of the tenement totals \$35,131 which includes a 10% administration charge.