BILLITON AUSTRALIA

E.L. 6/90

LISLE

Exploration Progress Report for the Period ending 8th June 1991

Author : J.P. Randell

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Distribution:
1. D.M.M.R. Hobart
2. Billiton, Melbourne
3. Billiton, Tasmania

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1. INTRODUCTION

This report details results of exploration activities completed by Billiton Australia during the initial year of exploration.

2. LOCATION & ACCESS

The licence is located within the North-East Province of Tasmania, 30kms to the north-east of Launceston (Fig 1) and is accessed by numerous public and forestry roads. Topography is variable from scree covered basins to steep sided ridges and necessitates the use of 4WD vehicles or foot slogging.

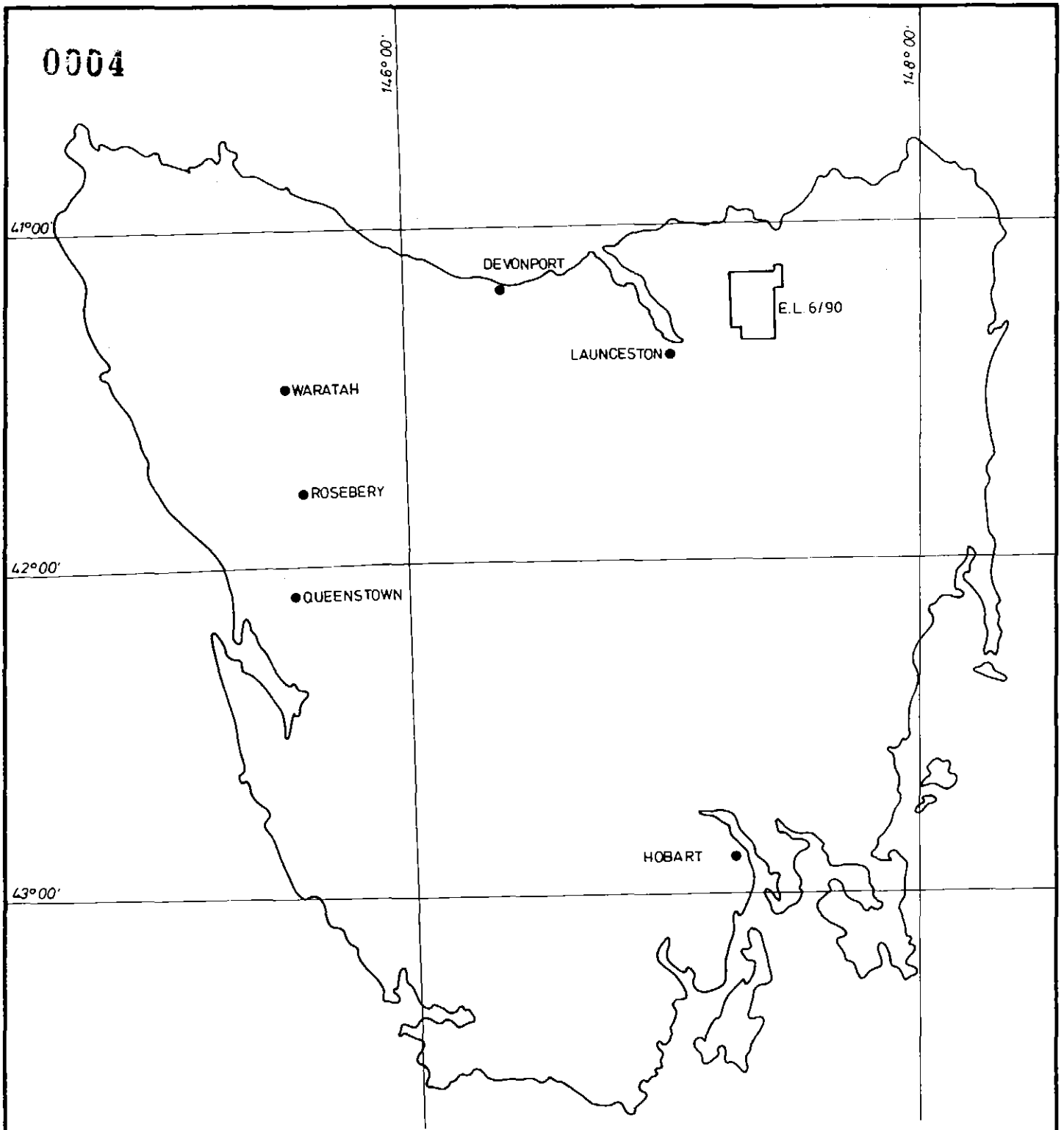
3. LAND TENURE

Exploration licence 6/90, of 182 km^2, was granted to The Shell Company of Australia Limited on 8th June 1990 for a period of 10 years renewable every 12 months. (Fig 2). The licence was acquired by the company under the Department of Mines and Mineral Resources tender system.

Approximately 50% of the area is classified as State Forest whilst the remainder is predominantly private land.

A small group of mining leases is excluded from the tenement area and these are detailed below in Table 1 (see also Fig 2a).

0004



5 cm

Billiton Australia
The Metals Division of the Broken Hill Company of Australia Limited

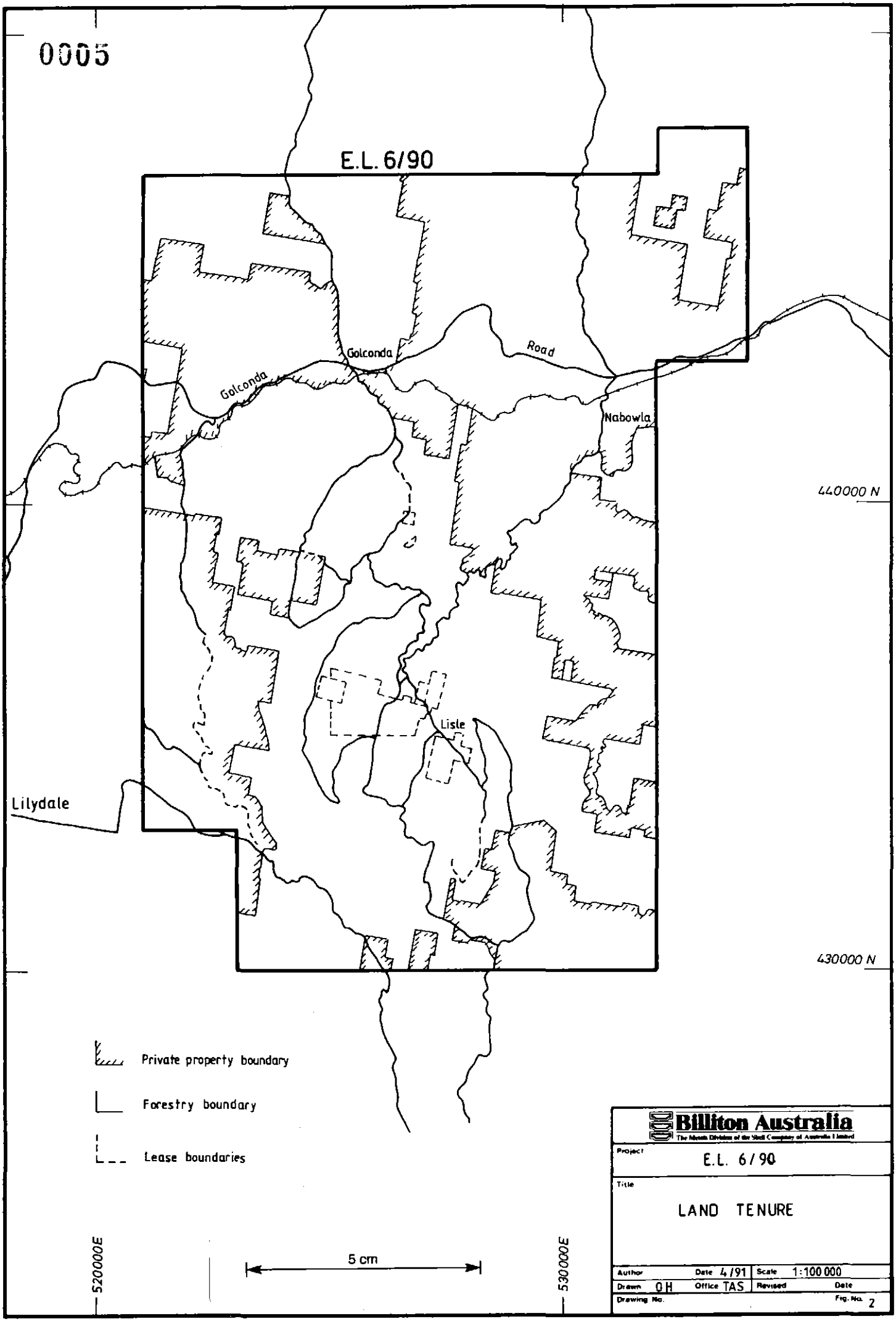
Project: EL 6/90

Title:

LISLE
LOCATION PLAN

Author	JPR	Date	4/91	Scale	1:1500000
Drawn	OH	Office	TAS	Revised	Date
Drawing No.				Fig. No.	1

0005



Billiton Australia
The Minerals Division of the Shell Company of Australia Limited

Project	E.L. 6/90
Title	LAND TENURE
Author	Date 4/91 — Scale 1:100 000
Drawn OH	Office TAS — Revised — Date
Drawing No.	Fig. No. 2

TABLE 1 : LEASES

TENEMENT	OWNER	AREA	VOLUME
12M/57	J.R. & E.J. Brooks	32HA	OS.Heads
35M/71	C.J.,C.A. Taylor, J. & C.K. Tetlow	2HA	OS.Heads
78M/73	C. Faulkner	2HA	OS.Heads
3M/74	C.J.,C.A. Taylor, J. & C.K. Tetlow	2HA	OS.Heads
14W/74	J.R. & E.J. Brooks	OHA	2S.Heads
17W/74	C. Faulkner	OHA	1S.Heads
48M/78	O.H. Schindler	5HA	OS.Heads
49M/78	O.H. Schindler	5HA	OS.Heads
10W/78	C.J.,C.A. Taylor, J. & C.K. Tetlow	OHA	4S.Heads
55M/80	P. Moore & V. Pearce	4HA	OS.Heads
5M/81	R.C. Synfield	64HA	OS.Heads
1M/82	P.A. Moore & V. Pearce	1HA	OS.Heads
15M/83	R.C. Synfield	2HA	OS.Heads
67M/84	P.A. Moore & V.D. Pearce	3HA	OS.Heads
17M/85	Argyle Minerals N.L.	27HA	OS.Heads
14M/90	Argyle Minerals N.L.	11HA	OS.Heads

0007

5 290000E

5 290000 E

54 400000 N

54 350000 N

5 250000 E

LISLE ROAD

OLD LISLE ROAD

PARSONS CREEK

VIRGINIA ROAD

LONE STAR ROAD

BESSELLS ROAD

17M/85 27ha
ARGYLE MINERALS N.L.
M.L.

35M/71 2ha
C.J. & C.A. Taylor
J. & C.K. Tellow

15M/83 2ha
R.C. Synfield

10W/78
C.J. & C.A. Taylor
J. & C.K. Tellow

Intake 10W/78
4 s'hds

5M/81 64ha
R.C. Synfield
M.L.

Intake 17W/74
2 s'hds

3M/74 2ha
C.J. & C.A. Taylor
J. & C.K. Tellow

Intake 17W/74
1 shd

67M/84 3ha
P. Moore &
V. Pearce

55M/80 4ha
P. Moore &
V. Pearce
M.L.

78M/73
C. Faulkner
M.L.

C. Faulkner

17W/74

48M/78 5ha
O.H. Schindler

49M/78 5ha
O.H. Schindler

Intake 14W/74
2 s'hds

14W/74 J.R. & E.J. Brooks

12M/57 32ha
J.R. & E.J. Brooks
M.L.

5 cm

1 km

N

Billiton Australia
The Metals Division of the Shell Company of Australia Limited

Project	E.L. 6/90
Title	LISLE MINERAL LEASES
Author	Date 5/91 — Scale 1:20 000
Drawn O.H.	Office TAS — Revised — Date
Drawing No.	Fig. No. 2a

4. REGIONAL SETTING

The licence consists predominantly of Mathinna Beds sandstones and siltstones of Ordovician age into which has been intruded various Devonian granitoid phases (Fig 3). Compositionally, these range from adamellites to granodiorites and in the licence occur as apophyses or cupolas partially obscured by Quaternary cover.

Younger cover rocks of Cainozoic - Mesozoic age occur in the extreme south-west and sout-east of the area and occupy an area of approximately 20km^2.

The granitoids are typically strongly weathered and altered and tend to occupy topographic lows surrounded by more resistive Mathinna Beds sediments. The latter occur as elongate ridges aligned with the regional strike, generally in a north-westerly direction.

Six named goldfields occur within the licence and consist of a variable number of old shafts, pits, adits and alluvial sluicing operations. Production has been recorded from the Lisle, Golconda, Panama, Cradle Creek, Denison and Lone Star Goldfields and almost 8 tonnes of gold has been reportedly won.

520000E

530000E

EL 6/90

DENISON

Scottsdale

GOLCONDA

PANAMA

5440000N

CRADLE CREEK

LONE STAR

MATHINNA BEDS

MATHINNA BEDS

LISLE

LILYDALE

PJ

5430000N

Launceston

0 1 2 3 4 5

KMS

DEVONIAN GRANITOID

HORNFELSED MATHINNA BEDS

PJ PERMIAN / JURASSIC

5 cm

Billiton Australia

The Metals Division of the Shell Company of Australia Limited

Project: LISLE

Title: REGIONAL SETTING

Author JPR	Date 4/90	Scale 1:100 000	
Drawn OH	Office TAS	Revised	Date
Drawing No.			Fig. No. 3

5. MINERALIZATION

The Lisle Goldfield is by far the largest mineral field in terms of historical production and extent of old workings. Gold was won essentially from sluicing and panning of numerous streams and documented evidence suggests that the gold has not travelled far. Workings included alluvium and eluvium in terraces and slopes along Main (Lisle), Bessells and Thomas creeks, in a basin-shaped depression possibly representing an old lake bed. There were numerous patchy gold rich horizons in these lacustrine sediments and carbonaceous horizons underlying talus, which produced relatively pure, free, angular (?)crystalline gold. This type of gold suggested a secondary origin.

text stolen from "alluvial gold — Tas"

There does not appear to be an obvious association with quartz veins although minor bedrock gougings were reportedly hosted by thin quartz lodes. The Lisle area is part of a large 5km x 4km topographic depression that is covered by a blanket (10-20m) of pebbly talus from the surrounding hills. Despite extensive searching there appears to be no sizeable bedrock host in the surrounding hills and prospectors have puzzled over the ultimate source of the gold.

Whilst recorded production was only 0.25 tons of gold, it is estimated that total production exceeded 8.5 tons.

The Lone Star and Cradle Creek Goldfields are also in part alluvial but in the main these and the others (Denison, Panama, Golconda) exhibit the more typical quartz vein association. Veins are generally narrow (2-10cms) and of limited strike but some reports indicate the presence of reticulating series of quartz veinlets associated with the old workings.

One mineralization style of interest is alluded to in several old reports at several localities (Cradle Creek, Tobacco Creek). The literature reports the occurrences of "gold impregnated sandstones" which appear to be localized in the contact aureole of the granitoids. These presumably relate to disseminated mineralization hosted by fine sulphide species and/or very fine anastomosing quartz veinlets (as observed at Hogans Road) and could well be the host for much of the mineralization at Lisle.

6. PREVIOUS WORK

The licence covers the mining district of Golconda-Lisle and has been comprehensively reported on by Government Geologists of the day (Twelvetrees 1909, McIntosh Reid (1926). They report extensive alluvial and hard rock operations throughout the district but particularly in the Lisle area and have estimated a total historical production of 0.25 million ounces of gold won predominantly from alluvial sluicing operations. The bedrock source of the gold has remained an enigma since those days as no evidence can be seen at surface for the mineralization host.

Modern exploration has been carried out by Comalco in the 1970's but details of their programmes are not available. From 1983 - 1986 BP Minerals/Seltrust carried out a programme of mapping, rock chip sampling, stream sediment sampling, aeromagnetic surveying and open hole percussion drilling. Their work enabled a characterization of the various gold workings into alluvial, quartz vein hosted and disseminated and showed a geochemical association of gold with arsenic, silver, chalcopyrite and pyrite. The aeromagnetic survey results were of interest as they delineated the subsurface expression of the Lisle magnetic granitoid cupolas and also defined a zone of low magnetic intensity concentrically disposed around the granitoids. BP/ Seltrust interpreted this latter zone to be one of alteration (magnetite degradation) and were particularly interested in small discrete magnetic highs that were scattered throughout this zone. Presumably they regarded these as potential pyrrhotite hosted auriferous deposits.

BP/Seltrust followed up magnetic and geological targets using open hole percussion drilling but the programme suffered from poor drilling conditions. Holes averaged 40-50m depth but often collapsed before a satisfactory test was completed. Samples were collected and analysed for gold but the AAS technique was employed for analysis. Most holes terminated in clays ex-granitoid although some may have intersected both Mathinna Beds and granitoids. No anomalous assays were recorded. ≤ 0.06 g/t

Argyle Minerals from 1986 to 1988 carried out an aerial photo interpretation followed up by limited rock chip sampling and bulk sampling at the Denison River Goldfield. The results indicated limited potential and little else of value was completed.

7. EXPLORATION COMPLETED 1990-91

Exploration has involved both a preliminary regional assessment and a prospect specific preliminary assessment. Literature and previous exploration results have been reviewed and a research project has commenced. Details are as follows:

a) Regional BLEG Stream Sediment Survey: As part of a regional survey of the North-East Province the licence was screened with a stream sediment survey and within the area of EL 6/90, a total of 26 sample sites have been evaluated. (Samples 16401-12, 16454, 16867-70, 16876-80, 16882, 16884, 16897-98). At each site, a 7kg bulk sample, -80# sample and panned concentrate sample was collected and later analysed for Au and a range of pathfinder elements. The bulk samples were treated using cyanide leach extraction while the remainder were fire assayed for Au, XRF'd Pb, Sn, As and AAS'd Cu, Zn and Ag. Results are included in Appendix 1.

b) Comprehensive BLEG Stream Sediment Survey: a total of 214 stream sediments (Samples 18601-18814) were collected from streams draining Mathinna Beds sediments and Devonian granitoids. Approximately 5kg of stream sediment was collected at each site and sieved on site to retain the -1/4" fraction. Samples were then despatched to Classic Laboratories, Adelaide for cyanide leach gold determination. Results were compiled and a basic statistical treatment completed. Eleven anomalous sites were then re-sampled by duplicate sampling and sampling upstream (Samples 18815-18852, 38 in total). A similar analysis scheme was completed on these samples. All results are presented in Appendix 1.

c) BLEG Composite Soil Survey: a reconnaissance soil sampling programme was completed over the ridges surrounding the Lisle valley. A total of 264 samples (Samples 19401-19664) were collected by compositing five 0.5kg soil samples collected every 20 metres along road edges where undisturbed soil could be obtained. Each composite sample weighed approximately 2-2.5kg and was analysed by Classic Laboratories, Adelaide using a cyanide leach gold determination. Three anomalous areas were re-sampled by compositing five 0.5kg soil samples collected every 10 metres within the anomalous sample interval (Samples 19669-19696, 28 in total). These were also analysed using a cyanide leach method. A complete set of results is contained in Appendix 1

d) Research: A post-graduate student from the C.O.D.E.S. Key Centre, Hobart has commenced a study of the mineralization styles and nature of the gold observed within the Lisle and adjacent mineral fields. In addition, a total of 300 gravity readings have been taken across the Lisle valley to investigate the subsurface contact of the Devonian granitoids.

8. EXPLORATION RESULTS

8.1 BLEG Stream Sediment Survey

Results of the regional survey (Fig 4) indicate three areas of anomalous BLEG geochemistry, one of which lies in the extreme north-east corner of the licence.

Area 1 is situated at the southern end of the Lisle Goldfield at the contact of ?hornfelsed Mathinna Beds with a granitoid cusp. BLEG Au values of 2.2, 3.6ppb Au were recorded here against a background of 0.05ppb Au. Panned concentrate values of 4.7, 11.8gt Au were also recorded from samples at the northern end of the field.

Area 2 includes the Lone Star, Cradle Creek Goldfields with some anomalous responses recorded at the northern end of Lisle and from the Golconda area. Maximum BLEG Au values of 38ppb Au were recorded from 4 samples collected here.

Area 3 is interesting in that it is in an area of no known mineralization approximately 10km north-east of Golconda. Two sample sites recorded anomalous BLEG Au values of 4.3 and 7.5ppb Au respectively. The drainage patterns here would suggest that the area of interest is located at the contact of a granite lobe and hornfelsed sediments.

The comprehensive survey results (Fig 5) indicated two anomalous populations from a basic statistical data analysis viz. mildly anomalous 17-30ppb Au, strongly anomalous >30ppb Au. A maximum assay of 150ppb Au was recorded from Bessells Road while nine other anomalies, ranging from 32-60ppb Au, were recorded. Follow up sampling was completed and results are shown in Table 2.

TABLE 2 : FOLLOW UP BLEG STREAM SEDIMENTS

Anomaly		Original Assay	Duplicate Assay	Original Upstream	Duplicate Upstream
Denison East		50	1.95	-	140
Greeta Road		50	2.1, 2.4	-	2.3
Prestons Rd		24	1.7	24	1.65
Mt. Wilson	a.	40	30	-	7.5, 10
	b.	20	7.5, 0.85	-	17, 1.95
Denison		17	11	-	1.15
Virginia Rd		20	90	-	65, 4.1
Lone Star	a.	30	-	1.65	-
	b.	18	-	-	4.4, 0.65
Tobacco Ck		18	6.5	-	0.2
Lisle Road		60	22	-	7.0, 22, 2.6
Faulkners Rd		32	1.75	-	0.6
Bessells Rd	a.	150	1.0	-	0.1
	b.	20	0.5	-	20

* All results are in ppb Au.
* Data print indicated by '-' represents 'no sample taken'.

The poor agreement between original and duplicate assays is of concern and suggests four possibilities: viz

1) the gold mineralization is coarse and erratic in distribution,

2) samples from the same site have been collected from different sediment trap types,

3) the rate of effluent discharge may have affected the amount and type of sediment retained,

4) there is a lack of precision or sensitivity in the laboratory method.

All are plausible and the true answer may be a combination of all four. At this stage, a detailed orientation survey would need to be planned to address all influencing factors. Confirmatory results were obtained for the Mt. Wilson, Virginia Road and Lisle Road anomalies and field inspection is warranted to explain the source of these anomalous results.

8.2 BLEG Composite Soil Survey

Samples were collected from track verges that cut the margin and hornfelsed aureole of the Lisle granitoid. (Fig 6). Results of this survey indicate that from a total population

of 264, 16 anomalous samples were recorded. Thresholds of 3-5ppb Au (mildly anomalous) and 5.5ppb Au (strongly anomalous) were calculated. The anomalous samples are quite well grouped into three localities with the best being on the western side of the granite. A strike of 700m of 2.4-19 ppb Au is indicated for this anomaly.

Infill sampling was completed and generally confirm the earlier results (see Table 3).

TABLE 3 : FOLLOW UP BLEG SOIL SAMPLING

Original Sample (100m comp)	BLEG Assay	Repeat Samples (50m comp)	Repeat Assay		
19407	1.55	19669	1.40		
		19670	17		LISLE
19408	19	19671	19	150m width	ROAD
		19672	14		ANOMALY
19409	1.85	19673	0.8		
		19674	6.5		
19576	3.7	19675	2.6		
		19676	4.0		
19577	1.6	19677	0.85		
		19678	5.0		LONE
19578	2.8	19679	2.6		STAR
		19680	4.1		ANOMALY
19579	3.7	19681	9.0	>150m width	
		19682	6.5		
19610	3.0	19683	5.5		
		19684	2.5		
19611	12	19685	2.8		
		19686	0.25		
19612	19	19687	13	100m wide	
		19688	14		LONE
19613	2.6	19689	1.5		STAR
		19690	2.8		SOUTH
19614	9.5	19691	4.3		
		19692	4.0		
19615	2.4	19693	5.5		
		19694	0.4		
19616	17	19695	0.2		
		19696	0.35		

Field checking of these sites is required to determine the likely source of the anomalism.

8.3 Research

The C.O.D.E.S. Key Centre at the University of Tasmania have commenced a project to determine the origin of the alluvial gold at the Lisle Goldfield. Preliminary rock chip sampling has been completed and several examples of gold grains have been recovered. Future work is discussed in Appendix 2.

9. CONCLUSIONS

The Lisle licence covers six groups of old gold mining operations that are spatially (and perhaps genetically) associated with small cupolas of Devonian granitoid that have intruded Ordovician Mathinna Beds sandstones and siltstones. There is some evidence to suggest that the favourable locus for the mineralization is within the contact metamorphosed aureole of these granite bodies.

Mineralization styles are varied but by far the greatest production (0.25Moz Au) has been recovered from alluvial operations, especially from the Lisle Goldfield. The source of this gold has not been located but a thin cover of talus has obscured the contact relationships and it is interpreted that the hornfelsed sediments surrounding the granite cupolas are the

ultimate bedrock source. It is also considered that the express -ion of the granite bodies as topographic lows is a reflection of the massive fluid movement through the system that has permit -ted a pervasive alteration and degradation of mineral species. Gold mineralization may well have been mobilized during this event and this may account for the disseminated nature of the mineralization as noted in the literature. Remobilization into quartz filled fissures may have been a later event with the most favourable hosts being those units displaying brittle fracture viz. the silicified and hornfelsed sediments of the contact aureole. Intense weathering of the landscape during ?Cainozoic time could have resulted in the accumulation of the extensive talus and gold into the Lisle Basin drainage system.

Results of the stream sediment and soil sampling programmes have been ambiguous in part although several anomalous zones have been defined. (Fig 7).

10. RECOMMENDATIONS

All stream sediment and soil anomalies need to be ground checked to determine a possible source. This may involve establishment of a small grid from which detailed mapping and sampling can be based.

Image processing of the aeromagnetic data is recommended to determine possible structural corridors that may have provided a locus for mineralization.

0021

Ultimately, a programme of R.C./Percussion drilling should test targets identified within the thermal aureole of the Lisle granitoid.

The research project conducted by C.O.D.E.S. needs to focus on economic implications of the origin of the mineralization as is being proposed.

APPENDIX 1

Analytical Results, Stream Sediment & Soil Surveys

CLASSIC COMLABS LTD
Analytical Laboratories (INC. IN W.A.)

305 South Road, Mile End South, South Australia. 5031
Telephone: (08) 43 5722 Fax: (08) 234 0321 Telex: LABCOM AA89323

0023

Mr. C. Creogh
Billiton Australia Ltd
30 Mersey Main Road
Spreyton
Devonport
TAS 7310 Australia

Job Number: 9AD0915

Your Reference: 08469/MT24/CJC
Number of Samples: 235
Extra Samples : 0

Date Received: 06-JUN-1989
Date Reported: 28-JUN-1989

This report comprises a cover sheet and pages 1 to 13

This report relates specifically to the samples tested in so far as that the samples as supplied are truly representative of the sample source. Please address any enquiries to Mr. Trevor Francis.

Variations between results on the +80# portions have been noted. The reasons are probably two fold.
1. There is still coarse gold present even after mixermilling.
2. We had very little material to perform the duplicate work (which will throw less emphasis on the duplicate results).

Approved Signature:

for

Dr. John Kikkert
General Manager - Adelaide.
CLASSIC COMLABS LTD

Report Analyte Codes:
N.A. - Not Analysed.
L.N.R. - Listed But Not Received.
I.S. - Insufficent Sample for Analysis.

Distribution Codes:
CC - Carbon Copy
EM - Electronic Media
MM - Magnetic Media

CLASSIC COMLABS LTD
Analytical Laboratories (INC. IN WA)

Job: 9AD0915
O/N: 08469/MT24/CJC

0024

ANALYTICAL REPORT

SAMPLE	Au
16401	<0.05
16402	0.25
16403	0.85
16404	38
16405	2.1
16406	1.90
16407	0.45
16408	1.10
16409	0.10
16410	0.25
16411	4.7
16412	0.30
16413	<0.05
16414	0.05
16415	0.10
16416	0.15
16417	0.20
16418	<0.05
16419	0.05
16420	<0.05
16421	0.25
16422	0.20
16423	0.55
16424	0.25
16425	<0.05
UNITS	ppb
SCHEME	BLEG2

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Analytical Laboratories (INC. IN WA)

Job: 9AD0915
O/N: 08469/MT24/CJC

0025

ANALYTICAL REPORT

SAMPLE	Au
16451	0.15
16452	0.15
16453	0.05
16454	3.6
16455	0.10
16456	1.45
16457	0.15
16458	0.85
16459	0.60
16460	0.45
16461	0.30
16462	0.25
16463	0.55
16464	0.15
16465	14
16466	0.10
16467	0.20
16468	0.10
UNITS	ppb
SCHEME	BLEG2

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Analytical Laboratories (INC. IN W.A.)

Job: 9AD0915
O/N: 08469/MT24/CJC

0026

ANALYTICAL REPORT

SAMPLE	Cu	Zn	Ag	Pb	As	Ba	Au
16401	3	12	<1	2	6	65	<0.01
16402	<2	17	<1	5	3	65	0.01
16403	3	13	<1	7	48	95	0.26
16404	17	24	<1	50	165	105	4.0
16405	5	15	<1	17	32	70	0.46
16406	8	115	<1	19	9	370	0.02
16407	3	44	<1	10	9	200	0.02
16408	2	18	<1	9	8	155	0.19
16409	10	100	<1	15	10	400	0.01
16410	3	24	<1	5	15	130	11.8
16412	<2	11	<1	3	3	90	0.04
16413	<2	24	<1	13	8	440	0.01
16414	<2	18	1	22	2	520	0.01
16415	<2	20	1	13	5	430	0.01
16416	<2	26	2	105	<2	570	0.01
16417	<2	15	2	12	7	460	<0.01
16418	2	16	1	18	5	480	0.01
16419	4	26	1	17	5	460	<0.01
16420	5	26	<1	11	4	410	<0.01
16421	7	14	<1	40	2	210	<0.01
16422	3	12	<1	11	7	260	0.02
16423	3	28	<1	24	10	230	0.08
16425	3	30	<1	24	6	220	0.02
16426	3	18	<1	5	8	190	0.03
16427	4	36	<1	6	5	130	0.02
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm
SCHEME	AAS1	AAS1	AAS2	XRF1	XRF1	XRF1	FA1

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Analytical Laboratories (INC IN WA)

0027

Job: 9AD0915
O/N: 08469/MT24/CJC

ANALYTICAL REPORT

SAMPLE	Cu	Zn	Ag	Pb	As	Ba	Au
16453	12	58	<1	3	5	140	0.02
16454	2	30	<1	13	7	410	0.03
16455	16	140	<1	4	9	150	0.08
16456	4	30	<1	22	13	490	0.01
16457	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
16458	7	50	<1	11	4	440	0.02
16459	2	26	<1	6	5	380	0.01
16460	4	48	<1	11	4	450	0.15
16461	4	30	<1	9	9	360	0.01
16462	3	32	<1	11	9	220	0.02
16463	2	26	<1	11	7	250	0.01
16464	4	44	<1	8	8	150	0.04
16465	4	30	<1	13	7	260	2.9
16466	2	26	<1	13	44	135	0.01
16467	6	28	<1	13	6	440	<0.01
16468	3	32	<1	10	3	240	0.01
16401 -80#	9	62	1	11	7	370	<0.01
16402 -80#	5	60	<1	14	8	200	<0.01
16403 -80#	8	44	2	13	4	185	0.02
16404 -80#	36	46	2	24	130	280	2.3
16405 -80#	11	34	1	62	260	210	0.03
16406 -80#	18	135	<1	20	18	230	<0.01
16407 -80#	9	58	<1	24	10	330	0.07
16408 -80#	3	34	<1	14	9	260	0.04
16409 -80#	14	105	<1	12	3	230	<0.01
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm
SCHEME	AAS1	AAS1	AAS2	XRF1	XRF1	XRF1	FA1

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Analytical Laboratories (INC IN WA)

Job: 9AD0915
O/N: 08469/MT24/CJC

0028

ANALYTICAL REPORT

SAMPLE	Cu	Zn	Ag	Pb	As	Ba	Au
16410 -80#	2	22	<1	12	11	240	0.04
16412 -80#	5	26	<1	16	3	170	0.23
16413 -80#	4	42	<1	22	7	460	0.01
16414 -80#	3	38	<1	22	5	580	<0.01
16415 -80#	3	36	1	24	4	490	<0.01
16416 -80#	8	32	1	22	7	480	<0.01
16417 -80#	5	22	<1	24	7	520	0.02
16418 -80#	7	28	<1	15	5	490	0.02
16419 -80#	6	40	<1	24	6	480	0.01
16420 -80#	4	30	<1	16	6	400	0.01
16421 -80#	3	22	<1	16	4	250	0.02
16422 -80#	3	30	<1	17	7	370	0.01
16423 -80#	10	56	1	28	14	230	<0.01
16425 -80#	10	76	1	22	7	310	0.02
16426 -80#	5	28	<1	11	7	160	0.01
16427 -80#	12	46	1	18	10	260	0.01
16428 -80#	10	84	1	14	8	260	0.02
16429 -80#	3	17	1	9	9	95	1.92
16430 -80#	4	30	<1	10	5	165	0.05
16431 -80#	11	92	<1	18	7	310	0.01
16432 -80#	5	42	<1	28	50	480	0.02
16433 -80#	9	44	1	20	9	330	0.02
16435 -80#	5	50	1	42	10	380	0.01
16436 -80#	4	34	1	24	10	360	0.01
16437 -80#	4	34	<1	15	16	290	0.14
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm
SCHEME	AAS1	AAS1	AAS2	XRF1	XRF1	XRF1	FA1

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Analytical Laboratories (INC IN WA)

Job: 9AD0915
O/N: 08469/MT24/CJC

0029

ANALYTICAL REPORT

SAMPLE	Cu	Zn	Ag	Pb	As	Ba	Au
16438 -80#	5	42	1	19	10	240	0.01
16439 -80#	8	62	1	30	22	330	0.01
16440 -80#	<2	19	<1	54	5	440	0.01
16441 -80#	<2	34	1	54	7	430	0.01
16442 -80#	5	46	2	17	9	370	0.02
16443 -80#	6	52	1	15	7	150	0.01
16444 -80#	11	96	1	15	6	135	<0.01
16445 -80#	2	17	1	12	8	310	<0.01
16446 -80#	3	18	1	14	6	300	<0.01
16447 -80#	2	20	1	15	5	290	<0.01
16448 -80#	4	22	2	4	5	90	<0.01
16449 -80#	9	64	2	10	12	180	<0.01
16450 -80#	<2	17	1	9	9	115	0.08
16451 -80#	2	20	1	13	8	175	<0.01
16452 -80#	<2	28	1	9	6	120	<0.01
16453 -80#	15	64	1	20	6	390	0.01
16454 -80#	6	64	1	11	11	310	<0.01
16455 -80#	38	210	2	28	11	310	<0.01
16456 -80#	9	70	3	11	8	480	<0.01
16457 -80#	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
16458 -80#	20	88	<1	13	9	370	<0.01
16459 -80#	13	90	<1	22	7	550	<0.01
16460 -80#	12	84	<1	26	7	410	<0.01
16461 -80#	12	74	<1	58	12	300	<0.01
16462 -80#	9	66	<1	18	8	280	<0.01
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm
SCHEME	AAS1	AAS1	AAS2	XRF1	XRF1	XRF1	FA1

CLASSIC LABORATORIES LTD
Osman Place, Thebarton, South Australia 5031
Telephone: (08) 43 5722 Facsimile: (08) 234 03251

367051

0030

MT24
Stream Sed
N.E. TAS.
REG.

Mr. Jeff Randell
Billiton Australia Ltd
PO Box 860
DEVONPORT
TAS 7310

Job Number: 9AD3555

Your Reference: 11709/MT24/JPR
Number of Samples: 266
Extra Samples : 0

Date Received: 04-DEC-1989
Date Reported: 29-DEC-1989

This report comprises a cover sheet and pages 1 to 6

This report relates specifically to the samples tested in so far as that the samples as supplied are truly representative of the sample source. Please address any enquiries to Mr. Trevor Francis.

BLEG + -80#
Stream Sed.

Approved Signature:

for J Kikkert.

Dr. John Kikkert
General Manager - Adelaide.

MM Mr Jeff Randell Devonport

Report Analyte Codes:
N.A. - Not Analysed.
L.N.R. - Listed But Not Received.
I.S. - Insufficent Sample for Analysis.

Distribution Codes:
CC - Carbon Copy
EM - Electronic Media
MM - Magnetic Media

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0031

ANALYTICAL REPORT

Job: 9AD3555
O/N: 11709/MT24/JPR

Sample	Au	Ag
16864	0.10	<0.02
16865	0.10	<0.02
16866	0.05	<0.02
16867	<0.05	<0.02
16868	<0.05	<0.02
16869	0.35	<0.02
16870	0.45	<0.02
16871	0.05	<0.02
16872	2.0	<0.02
16873	<0.05	<0.02
16874	<0.05	<0.02
16875	<0.05	<0.02
16876	0.10	<0.02
16877	2.1	<0.02
16878	7.5	<0.02
16879	4.3	<0.02
16880	0.35	<0.02
16881	0.50	<0.02
16882	0.40	<0.02
16883	0.45	0.02
16884	2.2	<0.02
16885	1.50	<0.02
16886	<0.05	<0.02
16887	0.05	<0.02
16888	0.15	<0.02
16889	0.10	<0.02
16890	<0.05	<0.02
16891	0.05	<0.02
16892	<0.05	<0.02
16893	<0.05	<0.02
16894	<0.05	<0.02
16895	0.05	<0.02
16896	1.25	<0.02
16897	0.05	0.02
16898	0.15	<0.02
16899	<0.05	<0.02
16900	<0.05	<0.02
17001	<0.05	<0.02
17002	<0.05	<0.02
17003	<0.05	<0.02
17004	0.10	<0.02
17005	0.10	<0.02
17006	0.25	<0.02
17007	0.15	<0.02
17008	22	<0.02
17009	0.15	<0.02
17010	0.10	<0.02
17011	0.20	<0.02
17012	0.20	<0.02
17013	160	<0.02
Units	ppb	ppm
Detn Limit	0.05	0.02
Scheme	BLEG2	BLEG1C

CLASSIC LABORATORIES LTD

Job: 9AD3555
O/N: 11709/MT24/JPR

ANALYTICAL REPORT

0032

Sample	As	Sn	Pb	Cu	Zn	Ag	Au
16864 -80	8	4	14	14	56	<1	<0.01
16865 -80	6	6	10	7	40	<1	<0.01
16866 -80	9	<4	11	4	40	<1	0.16
16867 -80	8	6	15	8	68	<1	I.S.
16868 -80	6	<4	8	7	65	<1	0.02
16869 -80	6	<4	18	14	150	<1	0.07
16870 -80	5	6	17	12	140	1	<0.01
16871 -80	2	6	<2	4	11	<1	0.01
16872 -80	3	<4	2	2	30	<1	<0.01
16873 -80	2	5	4	3	6	<1	0.02
16874 -80	2	<4	<2	3	4	<1	<0.01
16875 -80	3	<4	4	3	5	<1	<0.01
16876 -80	5	6	11	8	92	<1	<0.01
16877 -80	5	6	5	5	22	<1	0.01
16878 -80	2	<4	2	2	12	<1	0.08
16879 -80	4	4	4	6	19	<1	<0.01
16880 -80	4	8	9	9	54	1	0.01
16881 -80	5	4	4	10	42	1	<0.01
16882 -80	7	6	7	9	62	1	<0.01
16883 -80	8	4	13	14	90	1	<0.01
16884 -80	5	<4	6	10	26	1	0.22
16885 -80	7	8	8	5	36	1	0.02
16886 -80	4	<4	6	4	26	<1	<0.01
16887 -80	6	6	10	9	58	1	0.01
16888 -80	3	4	8	25	15	<1	0.01
16889 -80	2	5	5	3	15	1	0.01
16890 -80	2	4	7	2	14	<1	<0.01
16891 -80	5	5	8	5	22	<1	<0.01
16892 -80	2	4	20	4	40	<1	0.01
16893 -80	4	<4	24	12	78	1	0.01
16894 -80	3	4	25	2	11	<1	<0.01
16895 -80	3	4	19	3	34	1	0.02
16896 -80	3	6	20	5	55	1	0.01
16897 -80	6	<4	7	9	72	1	0.01
16898 -80	46	4	20	18	115	1	<0.01
16899 -80	2	6	8	<2	15	<1	0.02
16900 -80	3	<4	14	5	13	1	<0.01
17001 -80	2	4	34	3	17	<1	0.09
17002 -80	8	5	30	3	36	1	<0.01
17003 -80	2	4	38	5	30	1	0.01
17004 -80	4	22	35	5	32	1	<0.01
17005 -80	<2	15	38	8	38	1	<0.01
17006 -80	5	6	7	20	38	1	<0.01
17007 -80	7	<4	10	7	48	1	<0.01
17008 -80	17	5	22	14	98	1	0.01
17009 -80	7	6	18	8	28	1	<0.01
17010 -80	8	8	19	10	62	<1	<0.01
17011 -80	12	5	20	12	82	<1	0.01
17012 -80	5	10	18	6	34	<1	0.01
17013 -80	10	5	20	7	36	<1	0.07
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detn Limit	2	4	2	2	2	1	0.01
Scheme	XRF1	XRF1	XRF1	AAS1	AAS1	AAS2	FA1

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Osman Place, Thebarton, South Australia 5031
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0033

367034

NE AV
S.SEDS.

Mr. Jeff Randell
Billiton Australia Ltd
PO Box 860
DEVONPORT
TAS 7310

Job Number: 0AD0229

Your Reference: 11717/MT24/JPR
Number of Samples: 189
Extra Samples : 0

Date Received: 24-JAN-1990
Date Reported: 06-FEB-1990

This report comprises a cover sheet and pages 1 to 8

This report relates specifically to the samples tested in so far as that the samples as supplied are truly representative of the sample source. Please address any enquiries to Mr. Trevor Francis.

Pan Conc. Stream Seds.

Approved Signature:

for

Dr. John Kikkert
General Manager - Adelaide.

MM Mr Jeff Randell Devonport

Report Analyte Codes:
N.A. - Not Analysed.
L.N.R. - Listed But Not Received.
I.S. - Insufficent Sample for Analysis.

Distribution Codes:
CC - Carbon Copy
EM - Electronic Media
MM - Magnetic Media

REGIONAL STREAM SEDIMENT ANALYSES
ALSO REPORTED IN 92-3337

367055

CLASSIC LABORATORIES LTD

Job: OAD0229
O/N: 11717/MT24/JPR

0034

ANALYTICAL REPORT

Sample	Au Avg	Au Dp1	Au Dp2	Au Dp3	As	Sn	Pb
16851	<0.01	--	--	--	<2	<4	<2
16852	0.03	--	--	--	8	<4	10
16853	0.02	--	--	--	<2	6	<2
16854	<0.01	--	--	--	<2	<4	<2
16855	0.02	--	--	--	<2	<4	3
16856	<0.01	--	--	--	15	<4	6
16857	<0.01	--	--	--	4	<4	<2
16858	L.N.R.	--	--	--	L.N.R.	L.N.R.	L.N.R.
16859	<0.01	--	--	--	8	4	13
16860	<0.01	--	--	--	<2	<4	2
16861	0.01	--	--	--	<2	8	5
16862	0.20	<0.30	--	--	<2	<4	5
16863	0.02	--	--	--	3	<4	20
16864	0.04	--	--	--	<2	6	8
16865	0.01	--	--	--	5	15	11
16866	<0.01	--	--	--	3	6	11
16867	0.02	--	--	--	12	28	11
16868	<0.01	--	--	--	4	6	16
16869	0.07	--	--	--	2	<4	<2
16870	<0.01	--	--	--	4	<4	20
16871	0.05	--	--	--	3	<4	<2
16872	<0.01	--	--	--	9	<4	6
16873	0.08	<0.40	--	--	<2	<4	<2
16874	0.02	--	--	--	<2	<4	5
16875	0.01	--	--	--	<2	<4	<2
16876	<0.01	--	--	--	<2	<4	4
16877	<0.01	--	--	--	<2	6	3
16878	0.17	<0.20	--	--	<2	<4	2
16879	0.18	<0.30	--	--	2	<4	<2
16880	<0.01	--	--	--	<2	<4	3
16881	0.04	--	--	--	3	<4	5
16882	<0.01	--	--	--	4	<4	7
16883	0.02	--	--	--	8	<4	12
16884	1.20	1.02	1.40	--	2	<4	12
16885	<0.01	--	--	--	4	<4	4
16886	0.01	--	--	--	<2	<4	<2
16887	<0.01	--	--	--	<2	5	<2
16888	<0.01	--	--	--	<2	<4	4
16889	<0.01	--	--	--	<2	<4	<2
16890	<0.01	--	--	--	<2	<4	4
16891	<0.01	<0.30	--	--	2	<4	<2
16892	0.29	0.08	0.50	--	<2	<4	15
16893	0.02	--	--	--	<2	<4	7
16894	<0.01	--	--	--	<2	<4	14
16895	0.08	<0.30	--	--	<2	<4	20
16896	0.01	--	--	--	5	<4	17
16897	0.01	--	--	--	7	<4	8
16898	<0.01	--	--	--	42	18	19
16899	0.01	--	--	--	<2	<4	6
16900	<0.01	--	--	--	<2	<4	3
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detn Limit	0.01	0.01	0.01	0.01	2	4	2
Scheme	FA1	FA1	FA1	FA1	XRF1	XRF1	XRF1

CLASSIC LABORATORIES LTD

Job: 0AD0229
O/N: 11717/MT24/JPR

ANALYTICAL REPORT

0035

Sample	Cu	Zn	Ag
16851	<2	<2	<1
16852	4	20	<1
16853	<2	5	<1
16854	<2	4	<1
16855	<2	<2	<1
16856	<2	6	<1
16857	<2	<2	<1
16858	L.N.R.	L.N.R.	L.N.R.
16859	13	26	<1
16860	2	11	<1
16861	<2	6	<1
16862	2	5	<1
16863	8	115	<1
16864	2	12	<1
16865	3	26	1
16866	4	20	1
16867	8	42	1
16868	8	60	1
16869	<2	4	<1
16870	9	120	1
16871	<2	3	<1
16872	9	88	1
16873	<2	5	<1
16874	<2	7	<1
16875	<2	2	<1
16876	<2	26	1
16877	3	9	1
16878	2	5	1
16879	3	11	1
16880	4	30	1
16881	6	46	1
16882	10	58	1
16883	14	84	1
16884	4	20	1
16885	2	22	1
16886	19	50	1
16887	3	32	1
16888	<2	8	1
16889	2	8	1
16890	4	5	1
16891	2	6	1
16892	<2	11	1
16893	3	20	1
16894	<2	4	<1
16895	2	9	<1
16896	2	32	1
16897	11	90	1
16898	18	100	1
16899	<2	11	<1
16900	<2	10	<1
Units	ppm	ppm	ppm
Detn Limit	2	2	1
Scheme	AAS1	AAS1	AAS2

CLASSIC LABORATORIES LTD
Incorporated in WA, a wholly owned subsidiary of Amdel Ltd
Osman Place, Thebarton, South Australia 5031
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0036

Mr. Jeff Randell
Billiton Australia Ltd
PO Box 860
DEVONPORT
TAS 7310

FINAL ANALYSIS REPORT

AMENDED

Your Order No: 11731/LD59/JPR Our Job Number : OAD2376

Samples received : 25-JUL-1990 Results reported : 22-AUG-1990
No. of samples : 478
Report comprises a cover sheet and pages 1 to 11

This report relates specifically to the samples tested in so far as that the samples as supplied are truly representative of the sample source.

Samples originally reported with N.A. have been analysed and results placed in this report.

Note:
If you have any enquiries please contact Mr David Eardley-Harris quoting the above job number.

Approved Signatory:

John Waters
Technical Manager - Adelaide

MM Mr Jeff Randell Devonport

Report Codes:
N.A. - Not Analysed.
L.N.R. - Listed But Not Received.
I.S. - Insufficent Sample.

Distribution Codes:
CC - Carbon Copy
EM - Electronic Media
MM - Magnetic Media

"RELIABLE ANALYSES AT COMPETITIVE COST"

CLASSIC LABORATORIES LTD

0037

Job: 0AD2376
O/N: 11731/LD59/JPR

ANALYTICAL REPORT

DATA BASE NO.	Sample	Au
10601	18601	0.10
10602	18602	0.20
	18603	0.30
	18604	0.45
	18605	0.20
	18606	0.80
10607	18607	0.20
	18608	0.30
10609	18609	0.35
10610	18610	0.15
10611	18611	0.45
	18612	0.40
	18613	0.30
	18614	7.5
	18615	0.30
	18616	40
	18617	0.75
	18618	0.10
	18619	1.60
10620	18620	0.50
	18621	0.55
	18622	0.45
	18623	0.65
	18624	0.40
	18625	0.35
	18626	20
	18627	<0.05
	18628	0.05
	18629	1.20
10630	18630	0.15
	18631	0.25
	18632	0.30
	18633	0.90
	18634	<0.05
	18635	<0.05
	18636	0.30
	18637	1.60
	18638	0.15
	18639	0.20
10640	18640	0.05
	18641	1.20
	18642	0.10
	18643	6.0
	18644	0.15
10645	18645	32
	Units	ppb
	DL	0.05
	Scheme	BLEG2

DELETE, POINT NOT ON MAP

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0038

ANALYTICAL REPORT

Job: OAD2376
O/N: 11731/LD59/JPR

	Sample	Au
10646	18646	0.10
	18647	26
	18648	1.90
	18649	0.50
	18650	20
	18651	3.7
	18652	2.1
	18653	150
	18654	0.30
	18655	12
	18656	2.6
	18657	0.15
	18658	0.20
	18659	0.35
	18660	0.70
	18661	0.70
	18662	0.70
	18663	0.20
	18664	60
	18665	0.30
	18666	0.55
	18667	26
	18668	2.0
	18669	30
	18670	0.80
	18671	0.25
	18672	1.65
	18673	1.05
	18674	0.55
	18675	0.20
	18676	18
	18677	0.05
	18678	2.2
	18679	0.15
	18680	0.15
	18681	0.60
	18682	0.25
	18683	1.10
	18684	0.05
	18685	0.40
	18686	0.15
	18687	0.55
	18688	0.10
	18689	0.10
10690	18690	0.30
	Units	ppb
	DL	0.05
	Scheme	BLEG2

CLASSIC LABORATORIES LTD

Job: 0AD2376
O/N: 11731/LD59/JPR

ANALYTICAL REPORT

0039

Sample	Au
10691	
18691	0.35
18692	0.30
18693	3.5
18694	1.40
18695	0.05
18696	<0.05
18697	0.40
18698	0.10
18699	2.2
18700	0.65
18701	1.65
18702	18
18703	20
18704	0.15
18705	6.0
18706	0.15
18707	1.45
18708	1.00
18709	50
18710	2.2
18711	15
18712	0.20
18713	0.20
18714	0.35
18715	12
18716	0.65
18717	<0.05
18718	0.85
18719	24
18720	24
18721	0.40
18722	0.20
18723	0.25
18724	0.20
18725	0.35
18726	0.40
18727	0.05
18728	L.N.R.
18729	0.10
18730	0.20
18731	0.10
18732	1.60
18733	0.10
18734	13
10735 18735	0.05
Units	ppb
DL	0.05
Scheme	BLEG2

CLASSIC LABORATORIES LTD

Job: 0AD2376
O/N: 11731/LD59/JPR

ANALYTICAL REPORT

0040

Sample	Au
10736	<0.05
18737	0.05
18738	0.10
18739	<0.05
18740	0.75
18741	0.05
18742	0.20
18743	0.05
18744	0.10
18745	0.45
18746	0.45
18747	<0.05
18748	0.30
18749	0.25
18750	0.05
18751	0.25
18752	0.55
18753	0.05
18754	<0.05
18755	0.05
18756	<0.05
18757	1.95
18758	0.05
18759	0.05
18760	0.15
18761	0.15
18762	<0.05
18763	0.10
18764	0.10
18765	0.05
18766	<0.05
18767	<0.05
18768	<0.05
18769	<0.05
18770	0.05
18771	<0.05
18772	<0.05
18773	<0.05
18774	0.15
18775	0.30
18776	0.10
18777	0.05
18778	<0.05
18779	0.10
18780	0.15
Units	ppb
DL	0.05
Scheme	BLEG2

CLASSIC LABORATORIES LTD

367042

0041

ANALYTICAL REPORT

Job: 0AD2376
O/N: 11731/LD59/JPR

Sample	Au
18781	0.20
18782	0.15
18783	0.10
18784	0.25
18785	<0.05
18786	0.35
18787	0.40
18788	0.60
18789	0.35
18790	3.7
18791	0.50
18792	0.05
18793	<0.05
18794	<0.05
18795	0.70
18796	0.50
18797	0.55
18798	17
18799	0.95
18800	0.80
18801	0.20
18802	0.20
18803	0.35
18804	0.50
18805	5.0
18806	0.15
18807	<0.05
18808	0.10
18809	0.60
18810	0.45
18811	0.20
18812	<0.05
18813	48
18814	1.00
19401	0.60
19402	0.50
19403	1.45
19404	2.9
19405	3.1
19406	1.40
19407	1.55
19408	19
19409	1.85
19410	1.90
19411	1.60
Units	ppb
DL	0.05
Scheme	BLEG2

CLASSIC LABORATORIES LTD

0042

ANALYTICAL REPORT

Job: 0AD2376
O/N: 11731/LD59/JPR

Sample	Au
19412	1.05
19413	3.2
19414	1.60
19415	1.70
19416	1.50
19417	6.0
19418	0.90
19419	2.0
19420	1.50
19421	3.0
19422	1.80
19423	1.65
19424	1.75
19425	0.80
19426	1.35
19427	0.60
19428	2.2
19429	0.90
19430	0.40
19431	0.55
19432	0.45
19433	0.65
19434	0.85
19435	0.90
19436	0.60
19437	1.05
19438	0.40
19439	1.00
19440	1.00
19441	1.05
19442	3.5
19443	0.30
19444	0.50
19445	0.55
19446	0.30
19447	0.45
19448	0.50
19449	0.45
19450	0.55
19451	1.90
19452	0.75
19453	0.65
19454	0.25
19455	1.30
19456	1.20
Units	ppb
DL	0.05
Scheme	BLEG2

SOIL

CLASSIC LABORATORIES LTD

367044

Job: OAD2376
O/N: 11731/LD59/JPR

0043

ANALYTICAL REPORT

Sample	Au
19457	0.90
19458	0.40
19459	1.00
19460	2.0
19461	0.40
19462	0.10
19463	0.10
19464	0.10
19465	0.10
19466	0.80
19467	1.05
19468	1.30
19469	1.10
19470	2.00
19471	1.60
19472	1.35
19473	0.50
19474	1.10
19475	1.45
19476	0.60
19477	0.65
19478	0.30
19479	0.10
19480	0.25
19481	0.15
19482	<0.05
19483	<0.05
19484	0.30
19485	0.70
19486	0.15
19487	0.50
19488	0.10
19489	0.20
19490	0.75
19491	0.20
19492	0.05
19493	0.20
19494	0.10
19495	0.05
19496	0.10
19497	0.10
19498	<0.05
19499	0.10
19500	0.30
19501	0.60
Units	ppb
DL	0.05
Scheme	BLEG2

SOIL

CLASSIC LABORATORIES LTD

0044

ANALYTICAL REPORT

Job: 0AD2376
O/N: 11731/LD59/JPR

Sample	Au
19502	0.40
19503	0.50
19504	1.10
19505	1.95
19506	1.55
19507	0.70
19508	0.70
19509	0.45
19510	0.20
19511	0.50
19512	0.60
19513	0.80
19514	1.10
19515	1.10
19516	0.85
19517	2.3
19518	0.65
19519	0.70
19520	1.30
19521	1.30
19522	1.20
19523	0.85
19524	0.20
19525	0.10
19526	3.3
19527	1.20
19528	0.95
19529	1.40
19530	1.50
19531	2.5
19532	2.1
19533	3.3
19534	2.9
19535	1.50
19536	2.1
19537	1.90
19538	1.25
19539	1.50
19540	0.75
19541	0.85
19542	0.30
19543	0.90
19544	0.55
19545	0.20
19546	0.35
Units	ppb
DL	0.05
Scheme	BLEG2

SOIL

CLASSIC LABORATORIES LTD

0045

ANALYTICAL REPORT

Job: 0AD2376
O/N: 11731/LD59/JPR

Sample	Au
19547	1.40
19548	0.90
19549	0.95
19550	1.15
19551	1.15
19552	1.10
19553	1.30
19554	1.25
19555	0.25
19556	0.95
19557	1.00
19558	0.95
19559	0.45
19560	0.10
19561	0.25
19562	0.20
19563	0.40
19564	0.10
19565	<0.05
19566	<0.05
19567	<0.05
19568	0.05
19569	<0.05
19570	<0.05
19571	0.05
19572	0.05
19573	0.10
19574	0.60
19575	1.35
19576	3.7
19577	1.60
19578	2.8
19579	3.7
19580	4.9
19581	1.10
19582	0.15
19583	0.50
19584	0.65
19585	1.10
19586	0.70
19587	0.30
19588	0.70
19589	0.80
19590	1.90
19591	3.0
Units	ppb
DL	0.05
Scheme	BLEG2

SOIL

CLASSIC LABORATORIES LTD

Job: 0AD2376
O/N: 11731/LD59/JPR

0046

ANALYTICAL REPORT

Sample	Au
19592	0.55
19593	1.85
19594	1.40
19595	0.80
19596	0.45
19597	0.25
19598	0.30
19599	<0.05
19600	0.05
19601	0.10
19602	0.60
19603	1.40
19604	1.35
19605	0.80
19606	0.10
19607	0.30
19608	0.80
19609	2.5
19610	3.0
19611	12
19612	19
19613	2.6
19614	9.5
19615	2.4
19616	17
19617	2.3
19618	2.7
19619	2.8
19620	0.90
19621	1.10
19622	0.60
19623	0.85
19624	0.40
19625	0.65
19626	0.70
19627	0.25
19628	0.40
19629	0.30
19630	0.35
19631	0.55
19632	0.05
19633	0.05
19634	0.05
19635	0.05
19636	0.05
Units	ppb
DL	0.05
Scheme	BLEG2

Soil

CLASSIC LABORATORIES LTD

0047

ANALYTICAL REPORT

Job: 0AD2376
O/N: 11731/LD59/JPR

Sample	Au
19637	0.20
19638	0.25
19639	0.50
19640	0.35
19641	0.30
19642	0.35
19643	0.70
19644	0.75
19645	0.55
19646	0.40
19647	0.40
19648	0.25
19649	0.70
19650	0.60
19651	0.85
19652	0.40
19653	0.35
19654	0.10
19655	0.25
19656	0.10
19661	0.10
19662	0.15
19663	0.05
19664	0.05
19657	<0.05
19658	<0.05
19659	0.05
19660	0.05
Units	ppb
DL	0.05
Scheme	BLEG2

SOIL

CLASSIC LABORATORIES LTD
Incorporated in WA: a wholly owned subsidiary of Amdel Ltd
Osman Place, Thebarton, South Australia 5031
Telephone: (08) 43 5722 Facsimile: (08) 234 0321

0048

367049

Mr. Jeff Randell
Billiton Australia Ltd
PO Box 860
DEVONPORT
TAS 7310

F I N A L A N A L Y S I S R E P O R T

Your Order No: 11734/LD59/JPR Our Job Number : 0AD3257

Samples received : 03-OCT-1990 Results reported : 22-OCT-1990
No. of samples : 66
Report comprises a cover sheet and pages 1 to 2

This report relates specifically to the samples tested in so far as that the samples as supplied are truly representative of the sample source.

Note:
If you have any enquiries please contact Miss Anne Reed quoting the above job number.

Approved Signatory:

John Waters
Technical Manager - Adelaide

MM Mr Jeff Randell TAS

Report Codes:
N.A. - Not Analysed.
L.N.R. - Listed But Not Received.
I.S. - Insufficent Sample.

Distribution Codes:
CC - Carbon Copy
EM - Electronic Media
MM - Magnetic Media

"RELIABLE ANALYSES AT COMPETITIVE COST"

CLASSIC LABORATORIES LTD

367050

0049

Job: 0AD3257
O/N: 11734/LD59/JPR

ANALYTICAL REPORT

Sample	Au
18815	4.1
18816	65
18817	90
18818	0.20
18819	6.5
18820	22
18821	2.6
18822	7.0
18823	22
18824	1.75
18825	0.60
18826	0.40
18827	1.95
18828	11
18829	1.15
18830	140
18831	2.4
18832	2.3
18833	1.70
18834	7.5
18835	17
18836	1.95
18837	10
18838	30
18839	0.20
18840	0.30
18841	0.10
18842	0.10
18843	1.00
18844	20
18845	0.50
18846	0.65
18847	4.4
18848	1.65
18849	4.6
18850	0.35
18851	0.30
18852	0.15
19669	1.40
19670	17
19671	19
19672	14
19673	0.80
19674	6.5
19675	2.6
Units	ppb
DL	0.05
Scheme	BLEG2

CLASSIC LABORATORIES LTD

367051

0050

ANALYTICAL REPORT

Job: 0AD3257
O/N: 11734/LD59/JPR

Sample	Au
19676	4.0
19677	0.85
19678	5.0
19679	2.6
19680	4.1
19681	9.0
19682	6.5
19683	5.5
19684	2.5
19685	2.8
19686	0.25
19687	13
19688	14
19689	1.50
19690	2.8
19691	4.3
19692	4.0
19693	5.5
19694	0.40
19695	0.20
19696	0.35
Units	ppb
DL	0.05
Scheme	BLEG2

APPENDIX 2

Lisle - Golconda Area.
First Quarterly Report on Research for Billiton Australia

Lisle - Golconda Area

First Quarterly Report on Research For Billiton Australia

The Lisle and associated goldfields were significant producers of alluvial gold in the latter part of last century. Most of the known gold deposits have a close spatial association with Devonian granitoids. The aim of this research project is to attempt to determine the origin of the alluvial gold. Work on this project commenced in February 1991.

Work Completed to Date

1. A literature survey of open file information at the Tasmanian Department of Resources and Energy was conducted. This yielded a large amount of historical information and indicated that little modern exploration or research has been carried out in the Lisle area.

2. Initial fieldwork was carried out in February 1991 in conjunction with data acquisition for a semi-regional gravity survey of the Nabowla - Lisle - Denison area.

Seven samples of alluvial gold were obtained by panning, this included two from the Denison Goldfield and the remainder from the Lisle valley. Heavy mineral concentrates from a number of these locations were also sampled. Preliminary studies of gold grain morphology show a wide variety of grain shapes within individual samples. Gold grains from the Denison Goldfield are in general coarser than those from the Lisle valley and frequently have small pieces of vein quartz attached.

Samples of sulphide bearing quartz veins were obtained from several old workings in the Denison Goldfield, the Enterprise Mine at Golconda, The Lebrinna Mine, the Fairthorne Prospect at Lone Star and from the Panama Goldfield. Polished thin sections of these samples are currently being prepared.

3. Samples of granitoid material have been collected from the Lisle valley, Golconda and Nabowla areas. Drillcore from the Department of Mines drillholes Lisle 1 and Lisle 2 was also inspected and sampled.

These samples will be used for physical property testing, XRF analysis and petrographic inspection. Preliminary indications are that the Lisle granitoid is a seperate and distinct intrusion from the western portion of the Scottsdale batholith. It should be interesting to compare the major

and trace element chemistry of the Lisle granitoid with other granitoids from N.E. Tasmania, including the Golden Ridge granitoid.

Work To Be Completed In The Next Quarter:

1. Arrangements have been made to use the proton probe at CSIRO North Ryde from the 10th till the 15th of June. Probe work will be directed towards characterising the trace element content of the alluvial gold grains from Lisle and Denison and comparing them with the trace element distributions in gold grains from vein deposits both within the Lisle - Golconda area and from other N.E.Tasmanian deposits, particularly, Mathinna area and Golden Ridge.

2. Characterisation of heavy mineral concentrates associated with the alluvial gold and comparison with the heavy mineral components of the Mathinna Beds and the Lisle granitoid

3. XRF analysis of Lisle granitoid and comparison with other NE Tasmanian granitic rocks.

4. A further sampling trip will be conducted in April in order to sample alluvial and vein material from the Tobacco and Cradle Creek area and to obtain more samples from the Panama Goldfield, including granitoid samples if possible. Some effort will also be put into looking for the "gold impregnated sandstones" reported by Ried (1925) which are shown to exist in the upper reaches of Tobacco Creek.

Michael Roach
C.O.D.E.S.
4/4/91

9983

E. L. 6/90

PREVIOUS PRODUCTION 0·25 MILL. OZS

ARGYLE MINERALS CONSOL. LEASES

CRADLE CREEK GOLDFIELD

GOLCONDA GOLDFIELD

DENISON GOLDFIELD

LISLE GOLDFIELD

LONE STAR GOLDFIELD

Golden Crest

Enterprise

Bessell Reward

Fairthorne

Panama

Lebrina

Sms Dg Tb Sma Jd Pl

530000E

525000E

544500N

544000N

543500N

543000N

367055

5 cm

Billiton Australia
The Metals Division of the Shell Company of Australia Limited

Project	E. L. 6/90		
Title	GEOLOGICAL SETTING AND REGIONAL STREAM SEDIMENT RESULTS		
Author JPR	Dept. TAS	Scale 1 25000	
Drawn OH	Date 8/90	Revised	Date
Checked	Date	S'ceded	Date
Sheet No. FIG. 4		Drawing No. D/LD 59/001	

91-3259.

9984

DATA BASE NUMBERS : SUBTRACT 8000 FROM SAMPLE NO.
i.e. 18642 becomes 10642 } numbers 18601 – 18652 (10601–10652) only
18652 becomes 10652

Can't find 18608

Sample site • 18787 Sample no
0.4 Assay ppb Au

Strongly anomalous >10ppb Au

Sample site (follow up) x

Mildly anomalous >17ppb Au

367056

5 cm

Billiton Australia
The Metals Division of the Shell Company of Australia Limited

Project	LISLE
Title	BLEG STREAM SEDIMENT SURVEY SAMPLE LOCATIONS AND ASSAY RESULTS
Author J.P.R. Dept. TAS	Scale 1:25000
Drawn O.H. Date 8/90	Revised Date
Checked Date	S'ceded Date
Sheet No. FIG 5	Drawing No. D/LD 59/002

91-3259.

9985

5440000 N

5435000 N

5430000 N

520000E

525000E

530000E

535000E

ORIGINAL SAMPLE (100m comp)	BLEG ASSAY	REPEAT SAMPLES (50m comp)	REPEAT ASSAY
19576	3.7	19675	2.6
		19676	4.0
19577	1.6	19677	0.85
		19678	5.0
19578	2.8	19679	2.6
		19680	4.1
19579	3.7	19681	9.0
		19682	6.5
19580	4.9	?	
		?	

>150m width

ORIGINAL SAMPLE (100m comp)	BLEG ASSAY	REPEAT SAMPLES (50m comp)	REPEAT ASSAY
19407	1.55	19669	1.40
		19670	1.2
19408	1.9	19671	1.9
		19672	1.4
19409	1.85	19673	0.8
		19674	6.5

150m width

ORIGINAL SAMPLE (100m comp)	BLEG ASSAY	REPEAT SAMPLES (50m comp)	REPEAT ASSAY
19610	3.0	19683	5.5
		19684	2.5
19611	1.2	19685	2.8
		19686	0.25
19612	1.9	19687	1.3
		19688	1.4
19613	2.6	19689	1.5
		19690	2.8
19614	9.5	19691	4.3
		19692	4.0
19615	2.4	19693	5.5
		19694	0.4
19616	1.7	19695	0.2
		19696	0.35

100m wide

LONE STAR NORTH

LISLE ROAD

LONE STAR SOUTH

367057

5 cm

Billiton Australia
The Metals Division of the Shell Company of Australia Limited

Project	E.L. 6/90 LISLE
Title	LISLE GOLDFIELD BLEG RECONNAISSANCE SOIL SURVEY RESULTS

Author	JPR	Dept.	TAS	Scale	1:25000
Drawn	OH	Date	4/91	Revised	Date
Checked		Date		S'ceded	Date
Sheet No.	FIG 6			Drawing No.	

91-3259

9986

520000 E

530000 E

EL 6/90

DENISON

DENISON EAST

48

Golconda

MT WILSON

40

50 GREETA ROAD

Scottsdale

Lebrina

GOLCONDA

20

VIRGINIA ROAD

PANAMA

24 PRESTONS ROAD

5440000N

CRADLE CREEK

LONE STAR CREEK

30

LONE STAR

18

TOBACCO CREEK

60 LISLE ROAD

MATHINNA BEDS

LISLE ROAD ANOMALY

MATHINNA BEDS

LONE STAR NORTH ANOMALY

Recorded Production 0·25 Moz Au

LISLE

32 FAULKNERS ROAD

700m @ 3-19ppb Au

LONE STAR SOUTH ANOMALY

LILYDALE

PJ

150 BESSELLS ROAD

5430000N

Launceston

50 BLEG STREAM SEDIMENT ANOMALY WITH MAX BLEG Au ASSAY

DEVONIAN GRANITOID

HORNFELSED MATHINNA BEDS

PJ PERMIAN / JURASSIC

BLEG Composite soil traverse and Anomaly

Goldfield

0 1 2 3 4 5

KMS

Billiton Australia

The Metals Division of the Shell Company of Australia Limited

Project: LISLE

Title: REGIONAL SETTING AND LOCATION OF BLEG STREAM AND SOIL ANOMALIES

Author JPR	Date 4/90	Scale 1:100 000	
Drawn OH	Office TAS	Revised	Date
Drawing No.			Fig. No. 7