Rio Tinto Exploration Pty. Limited

A.C.N. 000 057 125

A member of the Rio Tinto Group

EL 30/96 Mersey 1
First and Final Report for the Period
9 November 1996 to 13 November 1997
Burnie SK55-05
1:250,000
Tasmania Australia

Author: J Madden

Date: December 1997

Submitted to: Chief Geologist - South East District

Copies to: Rio Tinto Exploration, GER - Bundoora
Rio Tinto Exploration, SE District - Bundoora
Mineral Resources Tasmania

Submitted by: pp RJ Madden

Accepted by:

Rio Tinto Report No. 23642

FINAL REPORT
EL 30/96-BURNIE
RIO TINTO-J MADDEN

Abstract

EL 30/96 Mersey 1 was acquired to explore for sediment-hosted, fine grained, sulphide-poor gold mineralisation, similar to Carlin or Sepon. The Ordovician Gordon Limestone and Moina Sandstone were thought prospective for this style of mineralisation. Exploration within EL 30/96 was conducted as part of a larger programme involving exploration on adjoining tenements EL 28/96 (Forth 2), EL 57/94 (Mole Creek West) and EL 56/94 (Mackintosh River).

The exploration licence was granted on 9 November 1996 for a period of five years. It covers an area of 242 sq km and is located approximately 70 km WSW of Launceston.

Exploration comprised a data review, followed by a programme of stream sediment sampling. Within EL 30/96, twelve -80# stream sediment, twelve pan concentrates and one rock sample were collected and assayed. Sampling delineated the Five Mile Rise area as anomalous in gold and lead. A review of previous exploration over the Five Mile Rise area identified no gold targets warranting further work. The anomalous stream sediment values are most likely attributed to small gold-base metal workings in the catchment.

No further work was planned over EL 30/96, so the licence was surrendered on 13 November 1997.

No surface disturbing work was undertaken within EL 30/96 and no rehabilitation is required.

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1. Conclusions and Recommendations

Exploration for sediment-hosted gold mineralisation by literature review and stream sediment geochemistry has not identified targets warranting further investigation.

EL 30/96 Mersey 1 was surrendered on 13 November 1997.

2. Introduction

The Mersey 1 EL 30/96 was granted to Rio Tinto Exploration Pty. Limited on 9 November 1996 for a period of five years. The licence covers 242 sq. km (Plan Tv 1084) and lies approximately 70 km WSW of Launceston.

Rio Tinto acquired the licence area to explore for sediment-hosted, fine grained, sulphide-poor gold mineralisation, similar to that at Carlin and Sepon.

The Mersey 1 EL encompasses a complex geological package including Proterozoic metamorphosed sediments on the southern margin, Cambrian Mount Read Volcanics and related intrusives, Ordovician clastics and carbonates, Devonian granites, Tertiary basalt and Quaternary alluvium. Ordovician carbonates of the Gordon Limestone and siliclastics of the Moina Sandstone were thought to be prospective hosts for sediment-hosted gold mineralisation. EL 30/96 Mersey 1 abuts the southern edge of EL10/92 (Titan Resources) which surrounds the Moina mine, and includes the Stormont mines and several other gold prospects.

3. Exploration Completed During the Period of Tenure

Stream sediment gold geochemistry, geology and magnetics were compiled over EL 30/96 and adjoining licences EL 28/96, EL 57/94 and EL 56/94 to select areas prospective for sediment-hosted gold mineralisation. Favourable areas were defined by the presence of Ordovician siliclastics (Moina Sandstone) and carbonates (Gordon Limestone) intruded by Devonian granite. Magnetics were used to define possible faults or buried granite.

A programme of stream sediment sampling was conducted over the four Northern Tasmanian licences between 27 January and 7 February 1997 with a total of 50 - 80# stream sediment, 50 pan concentrate and 20 rock chip samples collected. Of these, 12 stream sediment, 12 pan concentrate and one rock sample were collected from within EL 30/96 (Plan Tv1290). At each selected stream sediment site, a -80# stream sediment sample and a pan concentrate sample were collected.

Sample ledgers and assays are presented as Appendix 1. All samples were assayed by Amdel Adelaide. The -80# stream sediments and rock samples were assayed for: Au by 50g fire assay/ GFAAS finish (FA3);
Ag, As, Bi, Cd, Mo, Pb, Sb, Th, U, W by mixed acid digest/ ICP-MS finish (IC3M);
Co, Cr, Cu, Fe, Mn, Ni, Zn by mixed acid digest/ICP-OES finish (IC3E).
The pan concentrates were assayed for Au by 50g fire assay/ GFAAS finish (FA3).

Pan concentrate sample 5474901 reported an anomalous result of 2.23 ppm Au. The -80# stream sediment sample from the same site reported at <1 ppb Au (ie below detection). Thick bush prevented sampling of proposed sample sites 2-3km to the east of 5474901.

The two most gold-anomalous samples from the whole programme drain the Five Mile Rise area, previously explored by RGC under EL 8/88. The -80# samples assayed 900 and 190 ppb Au and the panned concentrates 830 and 25 ppb Au. The -80# samples were also anomalous in lead, reporting 96 and 86 ppm Pb. RGC's work was reviewed to see whether potential for sulphide-poor, sediment-hosted gold mineralisation had been adequately tested (Appendix 2). The Five Mile Rise area is composed of gently north dipping, Ordovician Moina Sandstone. It is covered to the north by Tertiary basalt and unconformably overlies Cambrian sediments and volcanics to the south. RGC undertook gridding, geological mapping, rock and soil geochemistry, ground magnetics and gradient array IP. No drilling was conducted. No obvious gold targets are apparent from RGC's exploration.

4. Discussion of Results

From review of the Five Mile Rise area, it is thought that the anomalous gold in stream sediments may be due to historic small gold-base metal workings. The possibility that gold mineralisation is localised and probably hosted in small veins downgrades the potential of the prospect to host a Rio Tinto sized deposit.

Follow up of anomalous gold in pan concentrate 5474901 was not conducted. The anomaly was regarded as low priority due to the small catchment size, the inaccessibility of the adjacent catchments and background assays in the -80# sample from the same site.

No further work was planned over the tenement area.

5. Rehabilitation

No surface disturbing activities have been undertaken within EL 30/96. No rehabilitation is required.

6. Expenditure

Total expenditure for the Mersey 1 exploration licence EL 30/96, for the period commencing 9 November 1996 and ending 13 November 1997 is $35,552.

7. References

Report 89-3038 RGC EL 8/88

8. Location

1:250,000 Burnie, Queenstown
1:100,000 Mersey, Forth, Cape Sorell

9. Keywords

Gold * Carlin * Sepon * Gordon Limestone * Moina Limestone * Moina Stormont

10. DPO Register

81242 (Refer to table 1)

Table 1

Rio Tinto Exploration Pty. Limited
DPO Register

EL 30/96 Mersey 1

DPO Number	Lab Name	Lab Location	Office Date	Geologist	Tenement Number	Tenement Name	Sample Type	Number of Samples	250,000 Map Sheet	100,000 Map Sheet
81242	Amdel	Adelaide	12/3/97	M. Donnelly	30/96	Mersey 1	Stream Sed. Rk. pan con	12 1 12	Burnie SK55-03	

Table 2

EL 30/96 Mersey 1
Expenditure Table

	TOTAL
Drilling	0
Contractors	0
Laboratory	0
Rent & Property	661
Payroll & Benefits	14,920
Field & Transport	3,451
Travel & Accommodation	1,423
Computer Services	1,159
Professional	480
Office & Miscellaneous	2,126
District Administration	3,371
Regional Costs	7,911
Tenements	50
TOTAL	**35,552**

261010

410000 mE
415000 mE
420000 mE
425000 mE
430000 mE
435000 mE

5405000 mN
5400000 mN
5395000 mN
5390000 mN

Bell Mount

Moina
RL 8810

River Lea

Lake Lea

Lake Cethana

Mersey 1
EL30/96

Forth

Mersey

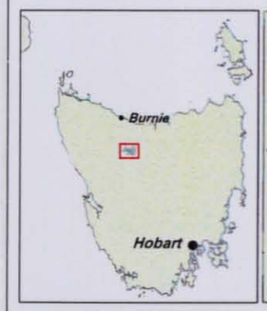
Key

- mountain
- main/secondary road
- highway
- railway
- river (perennial)
- lake
- urban area
- EL

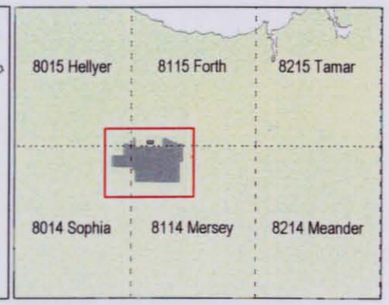
5 cm

0 2 4 6 8km

Scale 1:100,000



Location Diagram



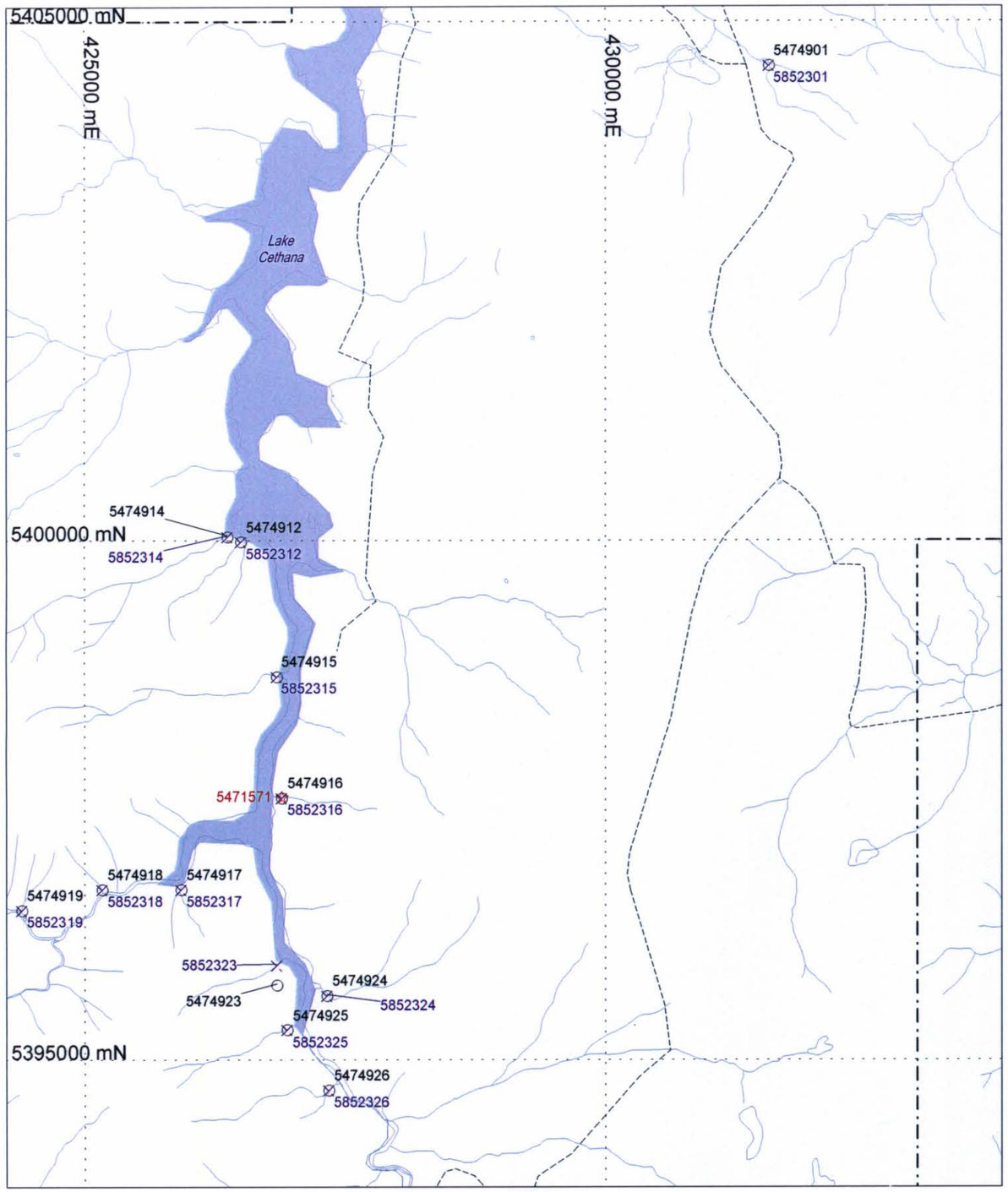
Map Sheet Reference

RIO TINTO EXPLORATION PTY. LIMITED

Mersey 1 EL30/96 and Moina RL8810

Location Plan

Author: T v Strokirch	Reference: SK55-03 Burnie
Drawn: N Waterman	File Name: Tv1084.wor
Date: October 1997	Report No: 23642
Scale: 1:100,000	Plan No: Tv1084

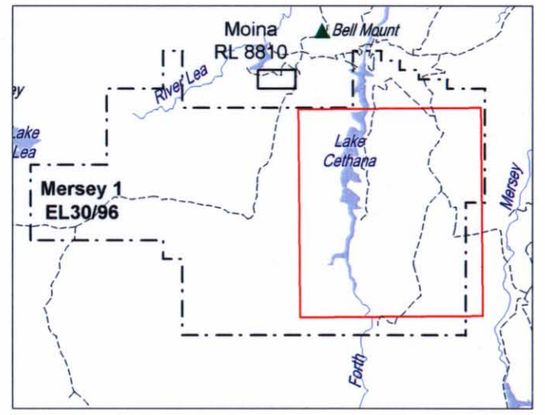


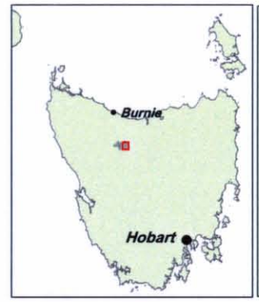
Key

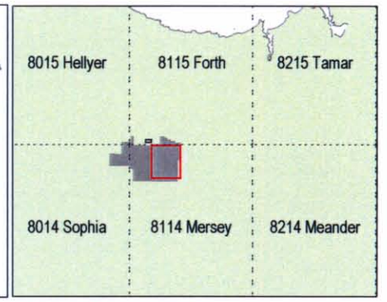
- mountain
- track
- railway
- drainage
- lake
- EL

- ○ 5474923 Pan Concentrate Sample
- × 5852391 Stream Sediment Sample
- ☆ 5471571 Rock Sample

5 cm







Location Diagram ***Map Sheet Reference***

RIO TINTO EXPLORATION PTY. LIMITED

Mersey 1 EL30/96

Exploration Summary

Author: S Russell	Reference: SK55-03 Burnie
Drawn: N Waterman	File Name: Tv1290.wor
Date: December 1997	Report No: 23642
Scale: 1:50,000	Plan No: Tv1290

261012

Lake Cethana

Potential under Tb?

Tb

Om

Eu

chargeability

A

B

C

magnetic basement structure

Veins trend NNW in the broader Cethana - Dove Rv area. (?)

5cm

Chargeability features that were recommended for drill testing by RGC (Deakin, 1990).

wacker bedrock sampling

2060 Au ppb for -200#SS (RGC)
995 Au ppb for Par Con (RGC)

Workings from published geol
None located on RGC's 1:5000 mapping
so very rough !!

A = Pb-Zn-As soil anomalism (800m x 250m) confirmed by wacker. Cut by magnetic basement structure.

B = Au-Pb-As-Zn in soil. Downgraded by wacker results & areal extent.

C = Pb-only soil anomaly 800m x 100m confirmed by wacker 100-1000ppm Pb (very weak Au to 66ppb).

Au Detection limit = 8 ppb

Analabs (1990) Method 309 30g fire assay

jmap 100m

CRA Exploration Pty Limited		
Five Mile Rise, Nth Tas		
RGC Geochem - Au ppb		
SUMMARY		
Geol: MJD	Scale: 1:10000	Report:
Drawn: STM	Date: 25/6/97	Plan:

Appendix 1

Sample Register

SAMPLE NO	EL NAME	EL NUMBER	DPO	SAMPLE TYPE	CATEGORY	AMG EAST	AMG NORTH	ZONE	DOMINANT LITH	Au	Au Dp1	Co	Cr	Cu	Fe	Mn	Ni	Zn	Ag	As	Bi	Cd	Mo	Pb	Sb	Th	U	W
5852301	MERSEY1	30/96	81242	-80#SS	SS	431570	5404585	55	Sss	<1		2	32	7	9400	70	8	11	0.4	2	1.1	0.1	0.9	20	0.5	2.8	0.76	0.8
5852312	MERSEY1	30/96	81242	-80#SS	SS	426510	5400000	55	G, Sss	900	1030	<2	15	6	4900	65	3	17	0.6	7	0.4	<0.1	0.3	96	<0.5	3.3	0.55	2.2
5852314	MERSEY1	30/96	81242	-80#SS	SS	426380	5400050	55	Sss	190	150	12	59	14	26900	390	35	40	0.7	4.5	0.7	<0.1	0.3	86	<0.5	4.6	0.66	1.4
5852315	MERSEY1	30/96	81242	-80#SS	SS	426850	5398700	55	igr	1		16	160	47	52600	600	56	76	0.5	2.5	0.3	0.2	1	17.5	<0.5	13	2.5	4.1
5852316	MERSEY1	30/96	81242	-80#SS	SS	426900	5397530	55	K, Igr	15		18	82	16	33000	420	29	46	0.4	3	0.4	0.1	1.7	13	0.5	41.5	6.5	6.5
5852317	MERSEY1	30/96	81242	-80#SS	SS	425930	5396650	55	Mq	2		14	25	58	20400	390	27	100	0.8	7.5	0.4	0.3	0.7	29	<0.5	12.5	2.8	4.7
5852318	MERSEY1	30/96	81242	-80#SS	SS	425170	5396650	55	Mph	<1		10	54	20	41200	550	17	56	0.4	4	0.3	0.2	0.4	15	<0.5	10.5	2.9	2.3
5852319	MERSEY1	30/96	81242	-80#SS	SS	424400	5396450	55	BnCsf	3		13	77	16	47000	800	12	165	0.4	4	0.4	0.7	0.4	23.5	<0.5	10	3.2	2.7
5852323	MERSEY1	30/96	81242	-80#SS	SS	426850	5395920	55	Msc	3		22	54	44	25400	1050	32	92	0.3	8	0.3	0.4	1.1	20	0.5	11	2.5	3
5852324	MERSEY1	30/96	81242	-80#SS	SS	427330	5395630	55	Msc	<1		33	175	36	73300	950	97	105	0.2	2.5	0.1	0.2	0.4	9.5	<0.5	6	1.05	1
5852325	MERSEY1	30/96	81242	-80#SS	SS	426950	5395300	55	Msc	1		16	43	28	27500	1050	18	63	0.5	6	0.3	0.2	0.6	20	<0.5	9	1.65	2.5
5852326	MERSEY1	30/96	81242	-80#SS	SS	427350	5394720	55	Mph	2	2	16	44	29	27100	900	22	69	0.2	4.5	0.2	0.2	0.2	15.5	<0.5	8.5	2.1	0.6

SAMPLE NO	EL NAME	EL NUMBER	DPO	SAMPLE TYPE	CATEGORY	AMG EAST	AMG NORTH	ZONE	GOLD COUNT	DOMINANT HM	AMOUNT	OTHER HM	TRAP SITE	Au ppm	Au Dp ppm
5474901	MERSEY1	30/96	81242	PANCON	HM	431570	5404585	55	0				poor	2.23	2.53
5474912	MERSEY1	30/96	81242	PANCON	HM	426510	5400000	55	0		trace		fair	0.83	
5474914	MERSEY1	30/96	81242	PANCON	HM	426380	5400050	55	0	hematite	trace		good	0.025	
5474915	MERSEY1	30/96	81242	PANCON	HM	426850	5398700	55	0	magnetite	trace		poor	0.33	
5474916	MERSEY1	30/96	81242	PANCON	HM	426900	5397530	55	0	hematite	abundant	magnetite	fair	0.026	
5474917	MERSEY1	30/96	81242	PANCON	HM	425930	5396650	55	0				poor	0.01	
5474918	MERSEY1	30/96	81242	PANCON	HM	425170	5396650	55	0	magnetite	abundant		good	0.015	
5474919	MERSEY1	30/96	81242	PANCON	HM	424400	5396450	55	0	magnetite	abundant		poor	0.003	
5474923	MERSEY1	30/96	81242	PANCON	HM	426850	5395730	55	0				poor	0.016	
5474924	MERSEY1	30/96	81242	PANCON	HM	427330	5395630	55	0	magnetite	trace			0.001	
5474925	MERSEY1	30/96	81242	PANCON	HM	426950	5395300	55	0	magnetite	trace			0.002	
5474926	MERSEY1	30/96	81242	PANCON	HM	427350	5394720	55	0	magnetite	trace			0.011	

SAMPLE NO	EL NAME	EL NUMBER	DPO	CATEGORY	AMG EAST	AMG NORTH	ZONE	FIELD ID	TEXTURE	ALT/MIN	COLOUR	MAG SUS	COMMENTS	Au	Co	Cr	Cu	Fe	Mn	Ni	Zn	Ag	As	Bi	Cd	Mo	Pb	Sb	Th	U	W
5471571	MERSEY1	30/96	61242	RK float	426900	5397530	55	Igr	Fo, Vq	He	K	5	Heatite and quartz veining	-0.001	5	220	-2	21.6	85	-2	-2	0.3	3.5	3.8	-0.1	5.5	7	1	3.7	1.05	75

Appendix 2

Memo from M. Donnelly

261018

RIO TINTO

(1) Mike - as we discussed, there's not much left at this project. A conclusion which can be made from the data (& work completed) is that gold mineralization is very localized, possibly in small veins, and as such is not a Rio Tinto target. No further work required.
Tim 15/7/97

Memorandum

To: **Tim McConachy**
Copy: Torbjorn von Strokirch
From: Mike Donnelly
Date: **11 July 1997**

(2) Copy TVS.

File: Mersey 1 - Technical

Assessment of Five Mile Rise, Northern Tasmania

A programme of stream sediment sampling was conducted in the Cethana area of northern Tasmania in January-February 1997, exploring for sediment-hosted, fine grained, sulphide-poor gold mineralisation, similar to Carlin or Sepon.

The two most anomalous samples for gold drain the Five Mile Rise area, previously explored by RGC between 1988 and 1990 under EL8/88. CRAE's -80# samples assayed 900 and 190 ppb Au and the panned concentrates 830 and 25 ppb Au. The -80# samples were also anomalous in lead, reporting 96 and 86 ppm Pb.

RGC's work was reviewed to see whether potential for sulphide-poor, sediment hosted gold mineralisation had been adequately tested. The prospect was identified by anomalous gold in -200# stream sediments and panned concentrates. Gold and base metal workings occur within the area. RGC undertook gridding, geological mapping, rock and soil geochemistry, ground magnetics and gradient array IP. No drilling was conducted.

The Five Mile Rise area is composed of gently north dipping, Ordovician Moina Sandstone. It is covered to the north by Tertiary basalt and unconformably overlies Cambrian sediments and volcanics to the south. RGC interpret the prospect to be located above the southeast end of the Devonian Dalcoath Granite (?). Evidence of the old workings is scarce, as they are presumed covered or collapsed.

A 2.8km east-west baseline was established and gridlines put in at 200m line spacing.

The gradient array IP survey did not identify anomalous conductors. Chargeability anomalies were suggested for drill testing, though none was conducted.

A soil C horizon geochemical programme of 836 samples collected at 25m spacing along each of the 200m spaced lines was conducted. Samples were analysed for Au by 30g fire assay; Sn by XRF; Cu, Pb, Zn, Ag, Bi by perchloric acid digest /AAS finish, as was As, though with hydride generation.

Rio Tinto Exploration Pty. Limited (ACN 000 057 125)
4 Research Avenue Bundoora Vic 3083 Australia
Telephone +61 3 9230 1137 Facsimile +61 3 9230 1166
POSTAL ADDRESS: PRIVATE BAG 3 MDC BUNDOORA VIC 3083 AUSTRALIA

A bedrock wacker sampling programme of 84 samples was conducted over selected lines with elevated soil geochemistry. Approximately 55 rock samples were collected during geological mapping. Only rare, widely spaced samples reported anomalous gold to a maximum of 0.91 ppm Au.

The extensive geochemical coverage produced no coherent gold anomalies. Areas A, B and C shown on the accompanying plan returned anomalous soil geochemistry values. Each lies within Moina Sandstone.

Area A exhibits anomalous Pb-As-Zn over an 800m x 250m area, with maximum values of 2450 ppm Pb, 105 ppm As and 605 ppm Zn. The soil geochemistry is confirmed by a wacker line across the eastern end of the anomaly where anomalous values to 9000 ppm Pb, 900 ppm Zn, 85 ppm Cu and 36 ppm Zn were reported. This base metal anomaly lies on a NNE trending magnetic basement structure interpreted by RGC from ground magnetics. Magnetic basement is estimated at 100-200m depth.

Area B is defined by Au-Pb-As-Zn soil anomalism, but is downgraded by wacker results and areal extent.

Area C is an 800m x 100m Pb-only soil anomaly (maximum 4300 ppm Pb), confirmed by 100-1000 ppm Pb in wacker samples.

No obvious gold targets are apparent from RGC's exploration of the Five Mile Rise area. The high levels of gold in stream sediments remain unexplained, other than to say that the small, now covered gold-base metal workings shed gold into the creeks.

To further advance the prospect the following could be attempted:

- Detailed geological mapping and additional rock sampling in area A to identify source of base metal anomalism and look for evidence of a NNE trending structure. Wacker sampling on a 100m x 25m grid (estimate 180 samples) if insufficient outcrop.
- Assess thickness of Tertiary basalt to north, as mineralisation may be concealed by the basalt. Collect stream sediment samples from any first order creeks draining into Sunday Creek from the north.
- Collect stream sediment samples from immediate vicinity of anomaly C to test if gold present.

M. Donnelly

Mike Donnelly
Senior Geologist