

**NORTH FLINDERS MINES
RELINQUISHMENT REPORT
EL7649 CLEAR GIFT
FOR PERIOD TO 27TH FEBRUARY 1994**

**Rohan Halfpenny
Mike Hatcher
North Flinders Exploration
May 1994**

PB:RH012

CR 94/385.

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1 INTRODUCTION

This report is a relinquishment report for EL7649 Clear Gift detailing exploration undertaken on the single relinquished graticular block since the tenement was granted in February 1992.

Exploration for Au-Cu-Bi mineralisation within the tenement initially fell under the terms of the Tennant Creek Joint Venture between Roebuck Resources N.L. (ROR) and North Flinders Mines Ltd (NFM). Under the terms of the joint venture signed in April 1991, NFM sole contributed \$1.2M towards exploration to earn a 60% interest in the joint venture. ROR managed exploration, but when the farm-in stage was passed in September 1992, several months later (in January) NFM exercised their right to manage the ongoing exploration programme.

The report is a compilation of work by Keith Fox, Sam Warne, Peter Allchurch (ROR), Mike Hatcher, Bruce Taylor, Andrew Cooper and Rohan Halfpenny (NFM).

2 LOCATION AND ACCESS

EL7649 is located in the centre of the Tennant Creek Goldfield, 5km south southwest of the Gecko Mine (Figure 1). Access to the tenement area is via the bitumen Tennant Creek-Warrego road. The tenement straddles the 2.5km southeast of the Gecko Mine turnoff.

3 TENEMENT DETAILS

EL7649 Clear Gift comprising 2 one minute graticular blocks was granted for a 3 year period on the 28th February 1992. Initially the tenement was in the names of ROR and NFM but on 16th October 1992, ROR withdrew from the tenement and transferred their interest to NFM.

The tenement was located between longitudes 134°05' and 134°07' and latitudes 19°28' and 19°29' and does not contain any mineral claims or leases.

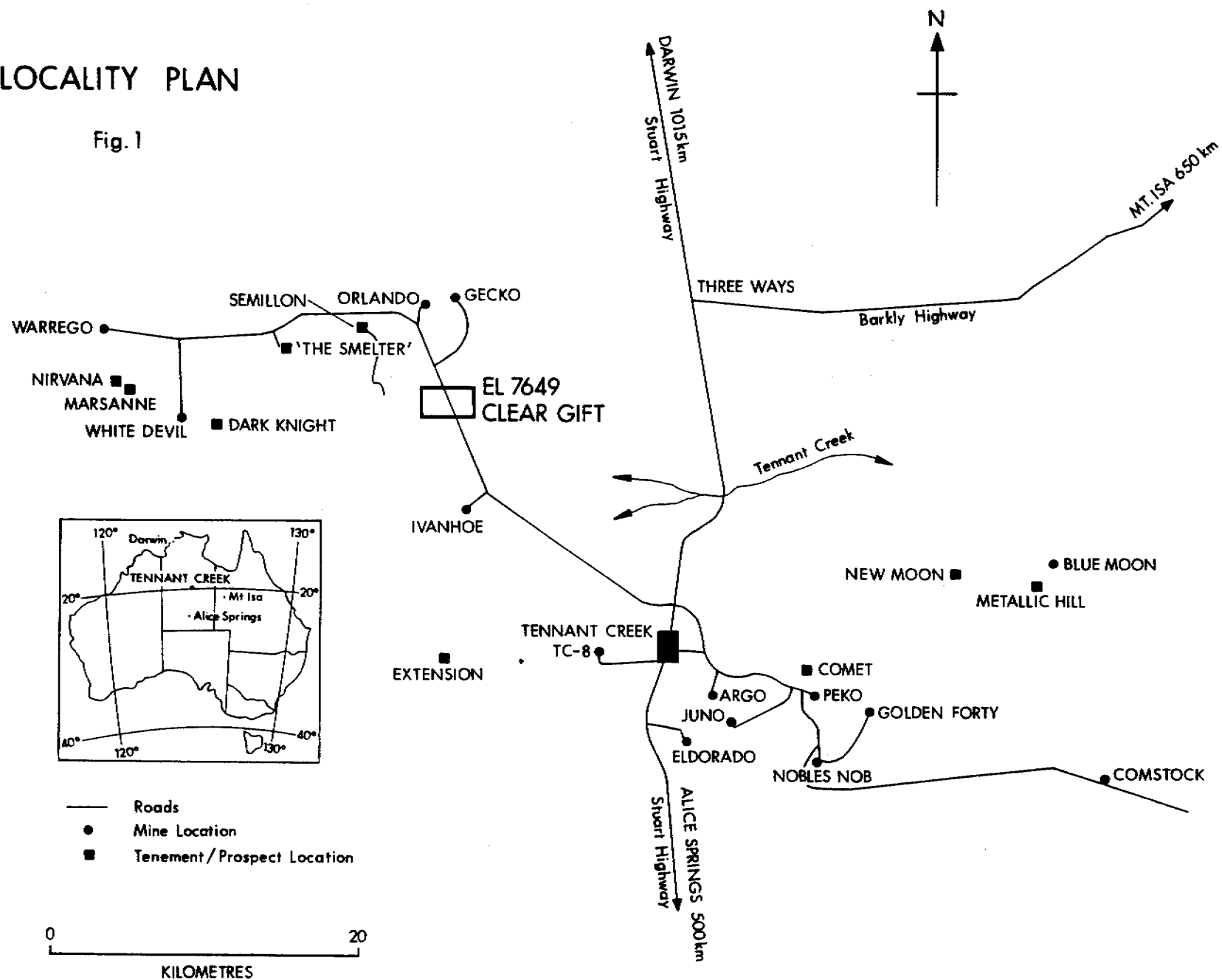
In line with NTDM regulations the exploration licence was halved at the 2 year anniversary since the tenement was granted. The eastern graticular block was relinquished (Figure 2).

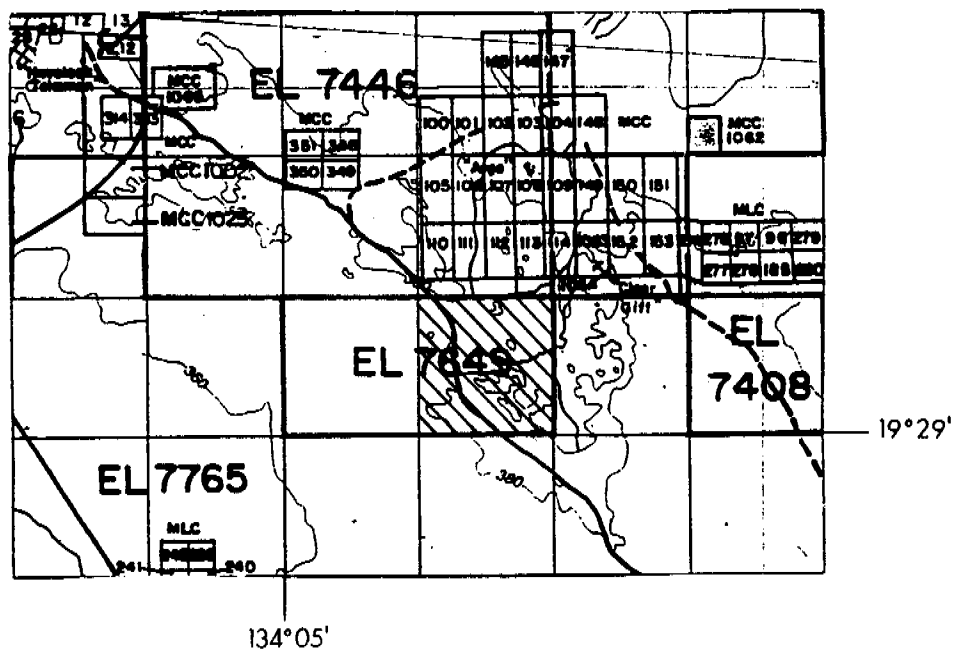
4 REGIONAL GEOLOGY AND METALLOGENY

EL7649 Clear Gift is situated in the Tennant Creek Block in the centre of the Tennant Creek Inlier as defined by Le Messurier & others (1991). The geology consists primarily of Early Proterozoic Warramunga Group sediments (siltstone and greywacke) folded about east-west trending open to tight upright macroscopic folds with a well developed slaty cleavage axial plane (Figure 3). Intruding this package is a number of granite plutons and numerous lenses of porphyry. Two ages of granite have been determined. The Tennant Creek Granite Complex, Cabbage Gum Granite, and Red Bluff Granite have been consistently dated at 1850Ma. In contrast the Warrego Granite is significantly younger with a determined age of 1690Ma.

LOCALITY PLAN

Fig. 1





EL 7649 CLEAR GIFT

Tenement Plan



Fig. 2

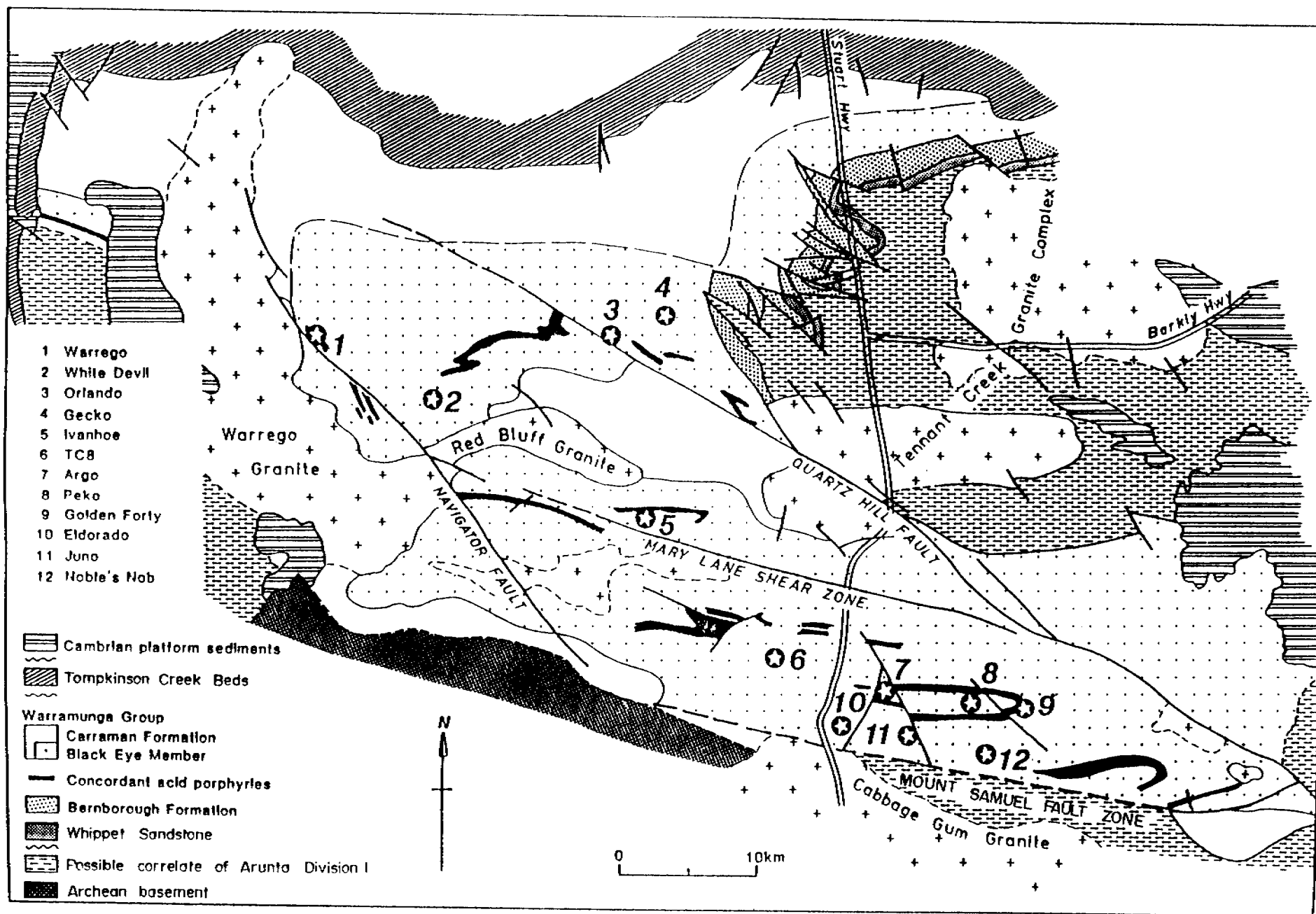


Fig 3 : Geology of the Tennant Creek Goldfield (after Fox, 1990)

These intrusions are crudely aligned east-west parallel to the regional structural grain. Porphyry lenses are common and vary in width from 1 metre to over 500m, and are generally sheared, especially where they are thin. The foliation is co-planar with the slaty cleavage, suggesting the porphyry may be syn-tectonic.

Major occurrences of Au-Cu-Bi mineralisation have a spatial association with massive ironstone lodes. The lodes consist of varying proportions of magnetite, chlorite, hematite, quartz, dolomite and talc. The shape of the lodes is generally ellipsoidal (parallel to slaty cleavage) or planar (parallel to bedding) and may be up to 900m in length (eg Warrego). The distribution of the minerals within the lode varies from deposit to deposit but is broadly a quartz + magnetite stringer zone beneath the lode, passing vertically through massive magnetite + chlorite to dolomite and talc towards the top of the lode. Mineralisation also exhibits a crude vertical zonation from a central gold core, overlain by bismuth (seleniferous bismuth sulphur salts) and an outer copper zone. Gold is common infilling fractures in ironstone, but may also occur within sheared chloritic siltstone (ie White Devil).

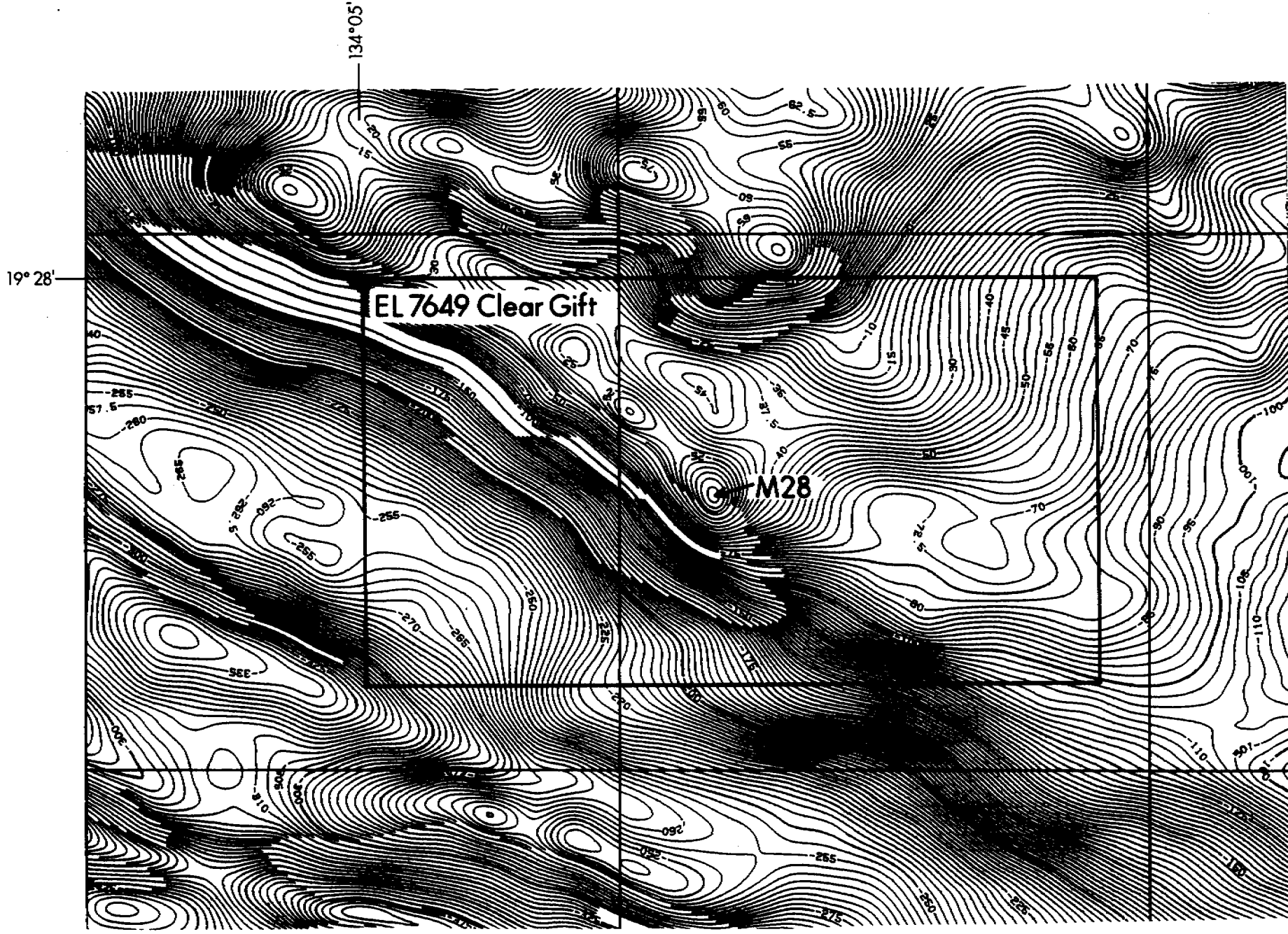
5 PREVIOUS EXPLORATION

In 1988 Metana Minerals and later Placer Exploration carried out exploration in the area and the results of their work is documented in the following reports and a summary of that work follows:

Pearson, J., 1990: Annual Report for Exploration Licence 5625 (Gecko Project Group) for the 12 months ending 31st January 1990, Placer Exploration Report No. NT5/90,

Standing, J., 1991: First Annual Report for Exploration Licence 5625 (gecko Project Area) for the 12 months ending 31st January 1991.

Metana's exploration targeted an aeromagnetic anomaly (M28)(see Figure 4) from the Austrex airborne geophysical survey flown in 1984. The magnetic was located along the north northwest photo-magnetic lineament. Subsequent work by Placer Exploration during 1990 and 1991, as part of a joint venture signed with Metana Minerals during June 1989, involved establishment of a grid over the magnetic anomaly, a ground magnetic survey and geochemical bedrock sampling utilising vacuum drilling. A total of 170 bedrock samples were taken at 40m spaced intervals on lines 80m apart (average hole depth 2m). Bottom of hole samples were assayed for gold, copper, lead, zinc, bismuth, chromium and iron. No anomalous gold or copper mineralisation was recorded, but several bismuth anomalies between 13-59ppm and varying from 40-80m in width and 80-160m in length were located southwest adjacent to, and within 200m of the magnetic high. Subsequently a north-south oriented line of RAB drilling (11 holes for 78m) over the magnetic anomaly to test the repeatability of bedrock assays failed to show any anomalous geochemistry. No further work was recommended.



EL 7649 CLEAR GIFT

Aeromagnetics

Scale 1:25000

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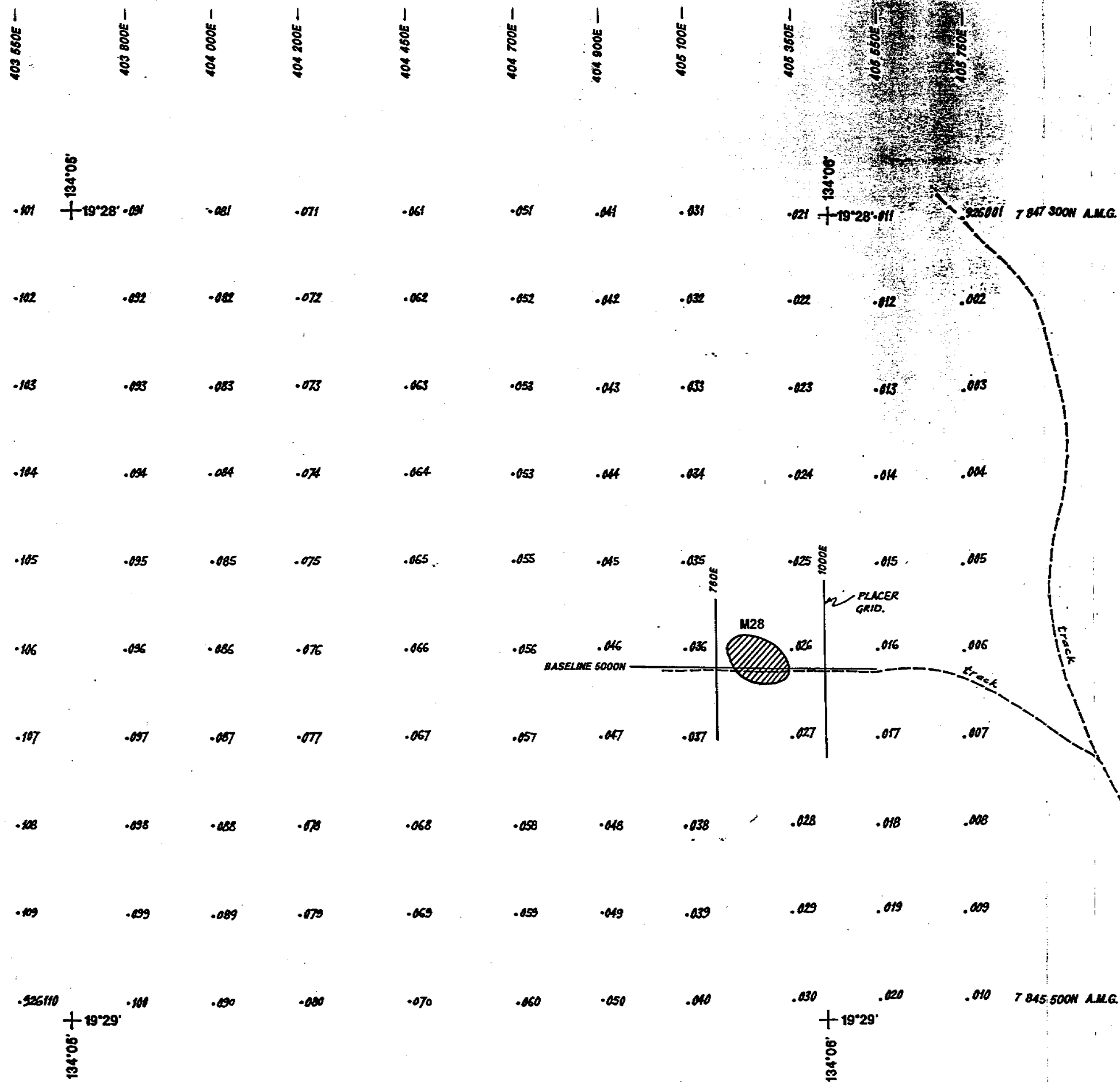
Fig. 4
6/CG/2

6 EXPLORATION PROGRAMME

Since granting of EL7649, exploration for Au-Cu-Bi mineralisation has focussed on the north northwest trending structural discontinuity, specifically northwest along strike from the M28 magnetic anomaly. This anomaly is located within the western retained block along it's eastern margin. As a consequence only minimal work was undertaken on the relinquished block. The programme of 'M' sampling northwest of M28 did however extend slightly east of M28 onto the western edge of the relinquished block. Plans showing the locations and results of 'M' sampling over that part of the relinquished block sampled are shown in Figures 5 & 6. The results were not encouraging.

7 CONCLUSIONS

It is concluded no further is warranted and the eastern block be relinquished.



KEY

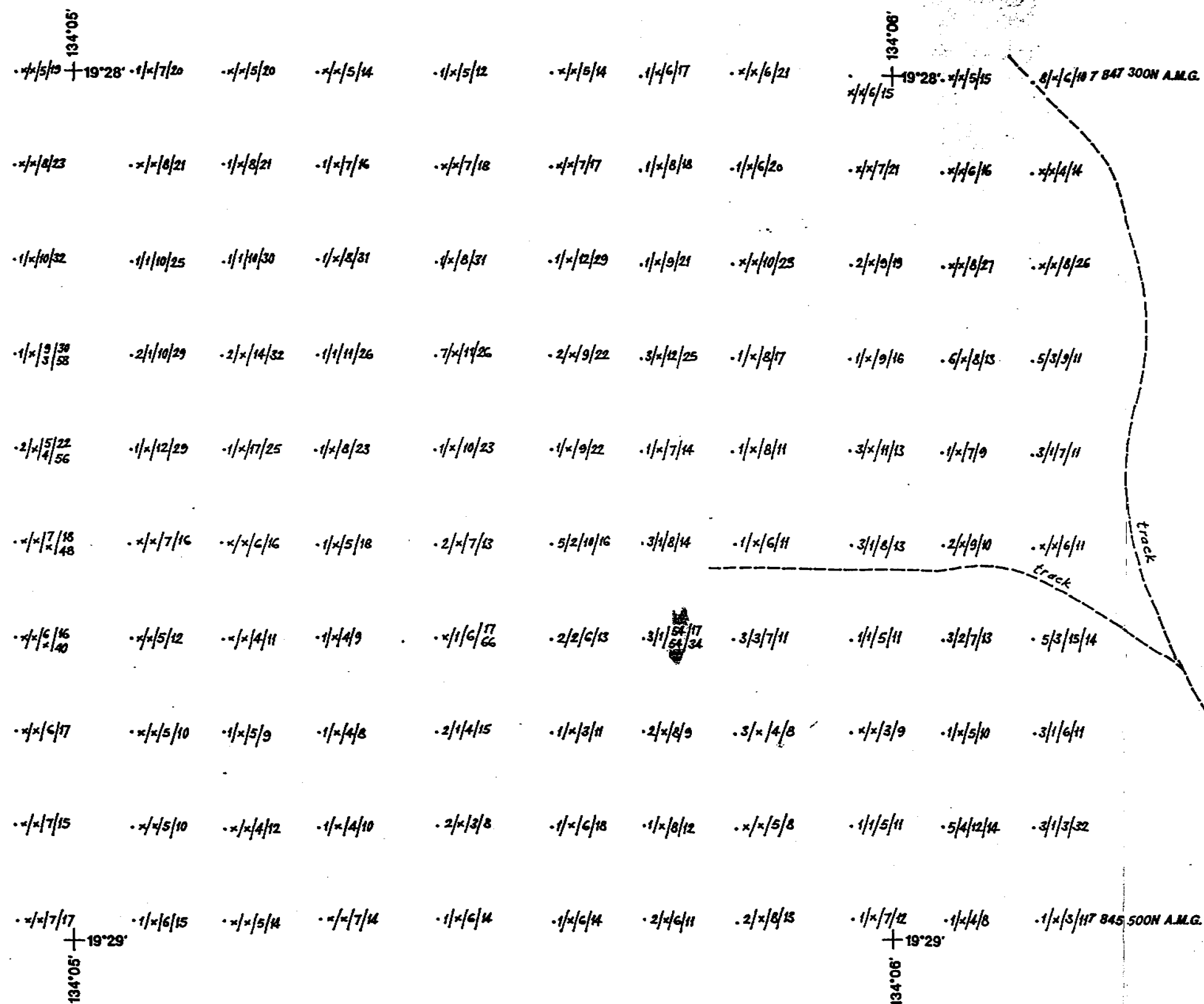
M28
 Location of magnetic alteration feature.

.040 "M" Sample number & location prefix. 026---

N.B. All co-ordinates are A.M.G. (except for PLACER GRID)

SCALE 1:10 000

CLEAR GIFT	
TENNANT CREEK J.V.	
E.L. 7649 GECKO SOUTH	
"M" SAMPLE LOCATIONS	
WITH	
PLACER GRID & M28 LOCATIONS	
1:250 000 Map Ref: TENNANT CREEK SE53 - 14	
Compiled: K. Fox	Project No.
Drawn: EP.	Date: Sept. 1992
Revised:	FIG 5



KEY

3/1/3/32 = Gold/Bismuth/Copper/Lead
(ppb) (p.p.m.)

x Denotes below detection limit.

Where repeats are shown bottom value is digestion A.

SCALE 1:10 000

CLEAR GIFT	
TENNANT CREEK J.V. E.L. 7649 GECKO SOUTH	
"M" SAMPLE LOCATIONS WITH ANALYTICAL RESULTS	
1:250 000 Map Ref: TENNANT CREEK SE 53 - 14	
Compiled: K. Fox	Project No:
Drawn: E.P.	Date: Sept. 1992
Revised:	FIG 6

8 REFERENCES

HALFPENNY, R.W., 1993: Annual Report Exploration Licence EL7649 (Gecko South) for the year ending 28th February 1993, Tennant Creek 1:250 000 Sheet area.

LE MESSURIER, P., WILLIAMS, B.T., BLAKE, D.H., 1991: Tennant Creek Inlier - Regional Geology and Mineralisation, in Geology of Mineral Deposits of Australia and Papua New Guinea, Ed. F.E. Hughes, The Australian Institute of Mining and Metallurgy, Monograph No.14.

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(TABULATED ASSAY RESULTS TO BE
APPENDED TO ABOVE REPORT)

**Rohan Halfpenny
Mike Hatcher
North Flinders Exploration
May 1994**

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GENALYSIS LABORATORY SERVICES PTY. LTD.

LABORATORY REPORT

COMMENTS ATTENTION: P ALLCHURCH, K FOX ...
COMMENTS 5011...

JOB INFORMATION

JOB CODE : 269.0/932815
NO SAMPLES : 133
ELEMENTS : 12
CLIENT O/N : 00224
DATE RECEIVED : 02/06/92
DATE COMPLETED : 11/06/92

LEGEND

'X' = LESS THAN DETECTION LIMIT
'N/L' = SAMPLE NOT RECEIVED
'4' = RESULTS CHECKED
'()' = RESULTS STILL TO COME
'1/5' = INSUFFICIENT SAMPLE FOR ANALYSIS
'E6' = RESULT x 1,000,000

i

A/ repeats have been performed on coloured residues and anomalies.

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GENALYSIS (11/06/92)

Part 1 / Page 1

ELEMENTS UNITS DETECTION METHOD	Au ppb 1 B/ETA	Au-Rp1 ppb 1 B/ETA	Fe % 0.01 B/AAS	Fe % 0.01 A/OES	Cu ppm 1 B/AAS	Cu ppm 1 A/AAS	As ppm 5 B/AAS	As ppm 2 A/MS	Pb ppm 1 B/AAS	Pb ppm 2 A/AAS	Bi ppm 1 B/AAS
SAMPLE NUMBERS											
1 926001	8	*	11.20		6		X		10		X
2 926002	X		14.00		4		10		14		X
3 926003	X		19.50		8		X		26		X
4 926004	3		11.40		9		X		11		3 *
5 926005	3		12.00		7		X		11		1
6 926006	X		18.00		6		X		11		X
7 926007	5	*	25.00		15		X		14		3 *
8 926008	3		19.00		6		X		11		1
9 926009	3		14.00		3		X		32 *		1
10 926010	1		10.80		3		X		11		X
11 926011	X		18.00		5		10		15		X
12 926012	X		17.00		6		5		16		X
13 926013	X		19.50		8		5		27		X
14 926014	6	*	9.40		8		X		13		X
15 926015	1		12.50		7		X		9		X
16 926016	2		11.60		9		X		10		X
17 926017	3		14.50		7		5		13		2
18 926018	1		12.50		5		X		10		X
19 926019	5	*	16.50		12		X		14		4
20 926020	1		9.60		4		X		8		X
21 926021	X		15.50		6		5		15		X
22 926022	X		20.00		7		5		21		X
23 926023	2		15.50		9		X		19		X
24 926024	1		15.00		9		X		16		X
25 926025	3		15.00		11		X		13		X
26 926026	3		17.00		8		X		13		1
27 926027	1		10.20		5		X		11		1
28 926028	X		9.60		3		X		9		X
29 926029	1		12.00		5		X		11		1
30 926030	1		13.50		7		X		12		X
31 926031	X		17.00		6		X		21		X
32 926032	1		20.00		6		X		20		X
33 926033	X		16.00		10		X		23		X
34 926034	1		17.50		8		X		17		X
35 926035			11.40		8		X		11		X
36 926036			11.80		6		X		11		X
37 926037	3		17.50		7		X		11		3
38 926038	3		12.50		4		X		8		X
39 926039	X		11.00		5		X		8		X
40 926040	2		18.50		8		X		13		X

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GENERALYSIS (11/06/92)

Part 1 / Page 2

ELEMENTS UNITS DETECTION METHOD	Au ppb 1 B/ETA	Au-Rpt ppb 1 B/ETA	Fe % 0.01 A/AAS	Fe % 0.01 A/OES	Cu ppm 1 B/AAS	Cu ppm 1 A/AAS	As ppm 5 B/AAS	As ppm 2 A/MS	Pb ppm 1 B/AAS	Pb ppm 2 A/AAS	Bi ppm 1 B/AAS
41 926041	1		16.00		6		5		17		X
42 926042	1		20.00		8		10 *		18		X
43 926043	1		22.00		9		5		21		X
44 926044	3		20.50		12		X		25		X
45 926045	1		17.50		7		X		14		X
46 926046	3		16.50		8		X		14		1
47 926047	3		16.50	16.00	54	54 *	X	2	17	34 ?	1
48 926048	2		10.20		8		X		9		X
49 926049	1		16.50		8		X		12		X
50 926050	2		13.00		6		X		11		X
51 926051	X		20.00		5		5		14		X
52 926052	X		21.00		7		5		17		X
53 926053	1		25.00		12		X		29		X
54 926054	2		23.00		9		X		22		X
55 926055	1		24.50		9		X		22		X
56 926056	5 *		20.00		10		X		16		2
57 926057	2		12.00		6		X		13		2
58 926058	1		17.00		3		X		11		X
59 926059	1		31.00		6		X		18		X
60 926060	1		17.50		6		X		14		X
61 926061	1		14.00		5		X		12		X
62 926062	X		23.00		7		X		18		X
63 926063	1		22.50		8		X		31 *		X
64 926064	2		21.00		11		X		26		X
65 926065	1		21.00		10		X		23		X
66 926066	2		21.00		7		X		13		X
67 926067	X		45.00	47.00	6	X	10 *	22 *	17	* 66 *	1
68 926068	2		15.50		4		X		15		1
69 926069	2		20.00		3		X		8		X
70 926070	1		23.50		6		X		14		X
71 926071	X		15.50		5		X		14		X
72 926072	1		17.50		7		X		16		X
73 926073	1		22.50		8		X		31 *		X
74 926074	1		22.50		11		5		26		1
75 926075	1		22.00		8		X		23		X
76 926076	1		23.50		5		X		18		X
77 926077	1		13.00		4		X		9		X
78 926078	1		14.00		4		X		8		X
79 926079	1		19.00		4		X		10		X
80 926080	X		26.00		7		5		14		X

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GENALYSIS (11/06/92)

Part 1 / Page 3

ELEMENTS UNITS DETECTION METHOD	Au ppb 1 C/ETA	Au-Rpt ppb 1 B/ETA	Fe % 0.01 B/AAS	Fe % 0.01 A/QES	Cu ppm 1 B/AAS	Cu ppm 1 A/AAS	As ppm 5 B/AAS	As ppm 2 A/MS	Pb ppm 1 B/AAS	Pb ppm 2 A/AAS	Bi ppm 1 B/AAS
81 926081	X		19.50		5		5		20		X
82 926082	1		20.00		8		X		21		X
83 926083	1		24.00		10		X		30		1
84 926084	2		24.00		14		X		32		X
85 926085	1		26.50		17		X		25		X
86 926086	X		27.00		6		5		16		X
87 926087	X		16.50		4		X		11		X
88 926088	1		14.00		5		X		9		X
89 926089	X		16.00		4		X		12		X
90 926090	X		20.50		5		X		14		X
91 926091	1		22.00		7		5		20		X
92 926092	X		19.50		8		X		21		X
93 926093	1		25.50		10		X		25		1
94 926094	2		26.00		10		X		29		.
95 926095	1		27.00		12		X		29		X
96 926096	X		27.00		7		X		16		X
97 926097	X		30.00		5		X		12		X
98 926098	X		19.50		5		X		10		X
99 926099	X		16.00		5		X		10		X
100 926100	1		26.50		6		X		15		X
101 926101	X		24.00		5		5		19		X
102 926102	X		24.00		8		X		23		X
103 926103	1		27.00		10		X		32		X
104 926104	1		23.20*	29.50	9	3	5	16	30	* 58	X
105 926105	2		27.30	29.00	5	4	5	10	22	* 56	X
106 926106	X		24.00	29.00	7	X	X	4	18	* 48	X
107 926107	X		24.50	25.50	6	X	X	6	16	* 40	X
108 926108	X		22.00		6		X		17		X
109 926109	X		18.50		7		X		15		X
110 926110	X		21.50		7		X		17		X
111 CG-6-124	11	6	30.00		13		5		21		7
112 CG-6-125	2		31.00		15		5		19		7
113 CG-6-126	7		28.00		17		X		25		4
114 CG-6-127	11	11	32.00		19		X		29		4
115 CG-6-128	13	8	31.00		20		X		30		4
116 CG-6-129	8		33.00		20		X		26		2
117 CG-6-130	4		28.50	29.50	17	9	X	6	30	* 56	5
118 CG-6-131	4		30.00		16		5		30		3
119 CG-6-132	5		30.00		15		X		25		2
120 CG-6-133	3		31.00		14		5		26		2

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GENALYSIS (11/06/92)

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ELEMENTS	Au	Au-Rpt	Fe	Fe	Cu	Cu	As	As	Pb	Pb	Bi
UNITS	ppb	ppb	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
DETECTION	1	1	0.01	0.01	1	1	5	2	1	2	1
METHOD	D/ETA	D/ETA	D/AAS	A/OES	D/AAS	A/AAS	D/AAS	A/MS	D/AAS	A/AAS	D/AAS
121 CG-6:134	2		26.50		15		X		24		3
122 CG-6:135	3		22.50		14		X		23		3
123 CG-6:136	3		30.00		14		X		22		3
124 CG-6:137	3		29.50		15		X		24		3
125 CG-6:138	2		30.00		14		X		27		3
126 CG-6:139	2		35.00	35.00	16	7	5	10	32	68	2
127 CG-6:140	5		31.00		19		X		26		3
128 CG-6:141	6		31.00		19		X		29		4
129 CG-6:142	5		33.00		19		X		26		2
130 CG-6:143	23	16	29.50		21		X		29		3
131 CG-6:144	5		29.00		20		X		28		4
132 CG-6:145	7		31.00		21		X		28		3
133 CG-6:146	13	12	28.50	30.00	24	23	X	8	32	* 62	5
Ch.0001(926001)	) 7		12.50		7		X		10		1
Ch.0026(926026)	) 2		17.00		0		X		15		2
Ch.0051(926051)	) 1		19.00		5		5		15		X
Ch.0076(926076)	) X		22.00		5		5		14		X
Ch.0101(926101)	) X		23.00		5		5		16		X
Ch.0126(CG-6:139)	) 2		31.00		13		X		33		2
STD: A104	62										
STD: A104			2.55		230		160		114		64

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GENERALYSIS (11/06/92)

Part 2 / Page 1

ELEMENTS	Bi
UNITS	ppm
DETECTION	0.5
METHOD	A/MS

SAMPLE NUMBERS

1 926001
2 926002
3 926003
4 926004
5 926005

6 926006
7 926007
8 926008
9 926009
10 926010

11 926011
12 926012
13 926013
14 926014
15 926015

16 926016
17 926017
18 926018
19 926019
20 926020

21 926021
22 926022
23 926023
24 926024
25 926025

26 926026
27 926027
28 926028
29 926029
30 926030

31 926031
32 926032
33 926033
34 926034
35 926035

36 926036
37 926037
38 926038
39 926039
40 926040

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GENALYSIS (11/06/92)

Part 2 / Page 2

ELEMENTS	BI
UNITS	ppm
DETECTION	0.5
METHOD	A/MS

41 926041
42 926042
43 926043
44 926044
45 926045

46 926046
47 926047 2.0
48 926048
49 926049
50 926050

51 926051
52 926052
53 926053
54 926054
55 926055

56 926056
57 926057
58 926058
59 926059
60 926060

61 926061
62 926062
63 926063
64 926064
65 926065

66 926066
67 926067 2.5
68 926068
69 926069
70 926070

71 926071
72 926072
73 926073
74 926074
75 926075

76 926076
77 926077
78 926078
79 926079
80 926080

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GENALYSIS (11/06/92)

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ELEMENTS
UNITS
DETECTION
METHOD

Bi
ppm
0.5
A/MS

81 926081
82 926082
83 926083
84 926084
85 926085

86 926086
87 926087
88 926088
89 926089
90 926090

91 926091
92 926092
93 926093
94 926094
95 926095

96 926096
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112 CG-6:125
113 CG-6:126
114 CG-6:127
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