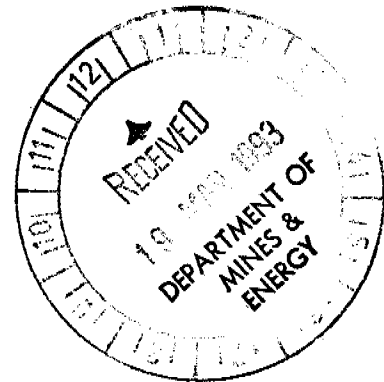


EL 7313 "ROSIE CREEK"

**Report for the Twelve Months ended
21 February 1993**

**By
I MATHISON**

**Peko-Wallsend Operations Ltd
GEOPEKO DIVISION
ACN 000 081 434**



CR 93 / 222

Report No : QB93/8S
Base : Mt Isa
Date : March 1993

MOUNT YOUNG SE53-15
Bing Bong 6166
Rosie Creek 6167

EL 7313 "ROSIE CREEK"

Report No QB93/8S

Distribution List

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APPENDICES

APPENDIX 1 ROSIE CREEK GRAVITY SURVEY - SURVEY AND REDUCTION

APPENDIX 2 PRELIMINARY INTERPRETATION NOTES - ROSIE CREEK AREA BY
DR D LEAMAN**FIGURES**

<u>Fig No</u>	<u>Title</u>	<u>Scale</u>	<u>Dwg No</u>
1	McArthur River Project Location and Tenure Plan	1:1 000 000	QLD 1236
2	EL 7313 - Access and Gridding	1:250 000	QLD 1245
3	EL 7313 Gravity Survey	1:250 000	QLD 1246

1. INTRODUCTION

This report details work completed during the twelve months ended February 1993. Exploration included access preparation, a restricted gravity survey and geophysical interpretation. A planned drilling program could not be completed because the drill rig was unable to travel through the deep sand developed on access tracks.

EL 7313 consists of 68 graticular blocks (220 km²) and is located at Rosie Creek, approximately 60 km north of Borroloola (see Fig 1).

The EL was granted to Peko-Wallsend Operations Ltd on 22.2.91. Personnel from Geopeko's Darwin and Mt Isa Bases conducted field activities in the area during 1992.

Geopeko consider the area to be prospective for stratiform zinc-lead deposits similar to the nearby HYC deposit at McArthur River.

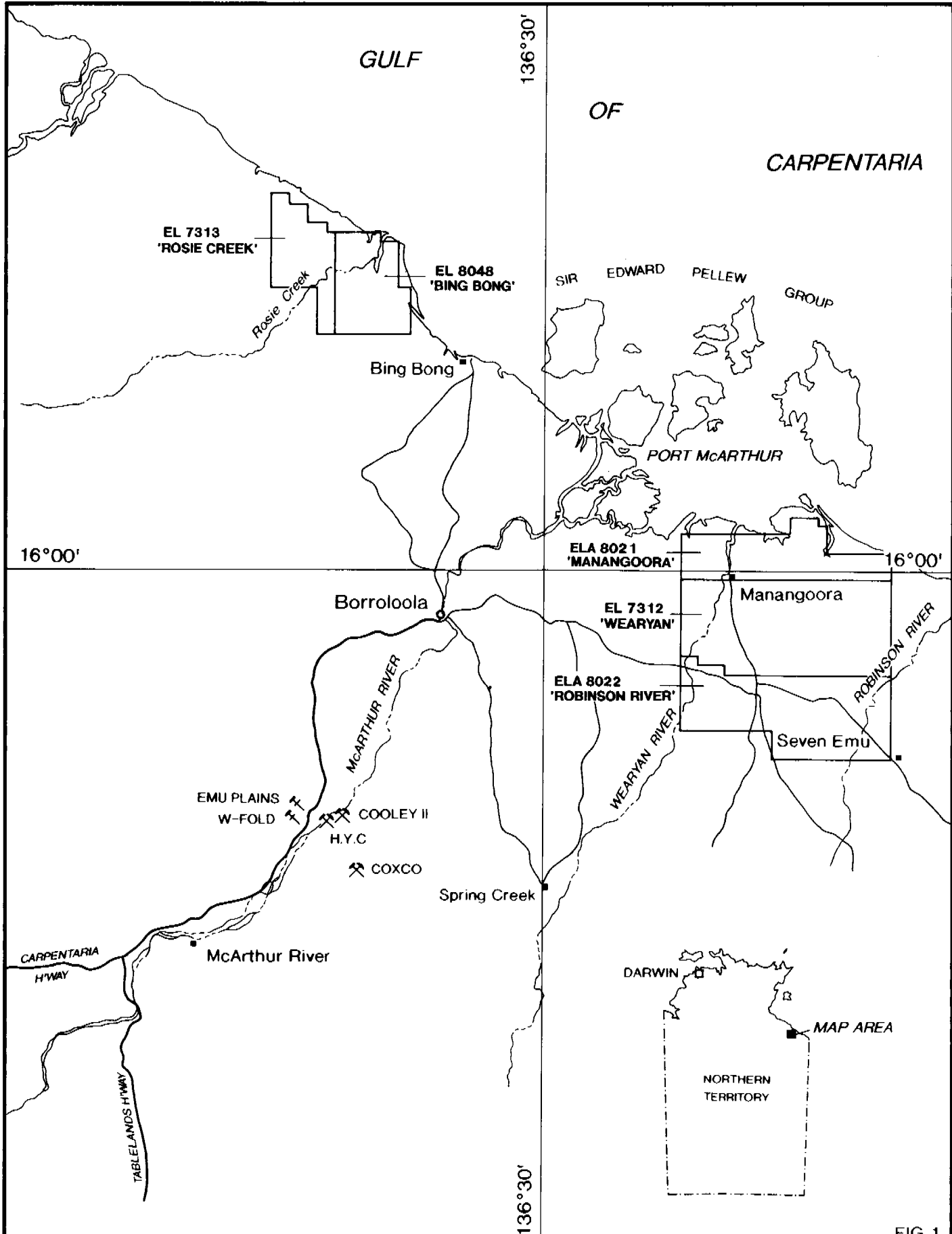

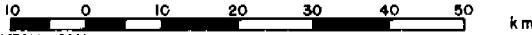


FIG 1

 GEOPEKO A DIVISION OF PEKO-WALLSEND OPERATIONS LTD. A.C.N. 000 081 434	Scale 1: 1 000 000 		
	BRISBANE		
Geo IM	Map Ref.	ROPER RIVER, SD53 & NEWCASTLE WATERS, SE53	
Drawn RH	McARTHUR RIVER PROJECT LOCATION AND TENURE PLAN		
Checked			
Date 09/03/93			Dwg. No QLD 1236

2. CONCLUSIONS

Geophysical interpretation and known geology indicate that the prospective Barney Creek Formation lies within EL 7313 at relatively shallow depths. The interpretation of a thick pile of felsic volcanics, a thickened McArthur Group Sequence and growth faults in the vicinity adds to the prospectivity of the area. Determined exploration using gravity and magnetics, modern deep sensing electromagnetic techniques and diamond drilling has a good chance of locating a stratiform lead-zinc deposit similar to the HYC deposit at McArthur River.

3. RECOMMENDATIONS

An exploration program targeted on a flat lying stratiform lead-zinc deposit should be initiated.

Acquisition of additional gravity data, interpretation of available detailed aeromagnetic data and up-graded gravity data, and EM sounding should be followed by diamond drilling.

4. LOCATION, ACCESS, TOPOGRAPHY AND VEGETATION

EL 7313 is located approximately 60 km north of Borroloola. Access from Borroloola is via the well maintained gravel Bing Bong Road to Bone Lagoon.

Bulldozed station and exploration tracks provide 4WD access to Rosie Creek. Heavy traffic on these roads break down the compacted sandy soil to thick beds of soft sand which make travel slow and difficult. Sand banks in the bed of Rosie Creek are also difficult for heavy vehicles.

The EL covers low lying coastal plains on either side of the deeply incised tidal channel of Rosie Creek. Higher ground supports open to moderately dense messmate, bloodwood and cypress forests. Paper bark swamps, dry in the dry season, occupy most low lying areas.

5. REGIONAL GEOLOGY

Exploration Licence 7313 lies in the central portion of the McArthur Basin within the interpreted northern extension of the Batten Trough.

The McArthur Basin consists of Middle Proterozoic unmetamorphosed sediments and minor volcanics. Three major groups are recognised within the basin. The basal Tawallah Group consisting predominantly of quartz arenite and basic volcanics is overlain by the McArthur Group which are dominated by carbonates and lesser fine grained clastic sediments.

The Carpentarian McArthur Group is overlain by the Adelaidean Roper Group consisting mainly of arenites and lutites.

The McArthur Group is considered prospective for stratiform base metal deposits as it hosts the HYC deposit south of Borroloola and is a time equivalent of the Mt Isa lead-zinc deposits.

McArthur River Group sediments are interpreted as being deposited in shallow marine and sabkha depositional environments.

The Licence area is interpreted to be within the northern extension of the Batten Trough which is interpreted as a graben structure. Major north trending faulting is present along the Batten Trough, in particular, the Emu Fault system which is interpreted as a strike slip fault system.

6. PREVIOUS EXPLORATION

Regional Exploration covering the Rosie Creek area during the period 1979-1986 is summarised in Sowerby, 1992. Exploration by Geopeko during 1991 was limited to field reconnaissance and examination of drill core from nearby areas.

7. **EXPLORATION COMPLETED BY GEOPEKO MARCH 1992 - FEBRUARY 1993**

7.1 **ACCESS PREPARATION** (See Fig 2)

A north-south base line was bulldozed from MIM's Rosie Creek Grid. Within EL 7313, three east-west grid tracks were bulldozed. The southern most line, 9 km long, reaches Rosie Creek. Other lines, 2 km and 4 km further north are 5 km long.

7.2 **DRILLING**

Drill pads were prepared at 1 km intervals along the southern grid line. An attempt to mobilise a Mantis Rig operated by Wallis Drilling into the area was unsuccessful. The 6 x 4 rig and 6 x 6 support truck could not travel through soft sand in Rosie Creek and on access tracks further north.

7.3 **GRAVITY**

A semi-detailed gravity survey was completed across the southern part of the EL. The aim of this survey was to detect any major structural changes in this area. Stations were read at 250 m spacings along grid lines and at 800 m spacings along Rosie Creek. Survey and results are detailed in Appendix 1.

7.4 **GEOPHYSICAL DATA**

Dr David Leaman is currently developing an interpretation of the McArthur Basin based on available regional gravity and aeromagnetic data as part of an AMIRA project. Geopeko are a contributor to this project. The Rosie Creek gravity data was forwarded to Dr Leaman for interpretation in the context of his recent regional studies.

Results are detailed in Appendix 2. Dr Leaman supports Geopeko's hypothesis that the depositional centre of the Batten Trough shifted from the west side of the Emu Fault at McArthur River to the east side at Rosie Creek. The main thickness of the McArthur Group at Rosie Creek lies beneath EL 7313 and areas east of Rosie Creek. Dr Leaman also interprets wedges of felsic volcanics beneath both Rosie Creek and the McArthur River area. Several of the stratigraphic and structural features associated with the HYC deposit are present in the Rosie Creek area suggesting that the Rosie Creek is highly prospective for a stratiform lead-zinc deposit similar to the HYC deposit.

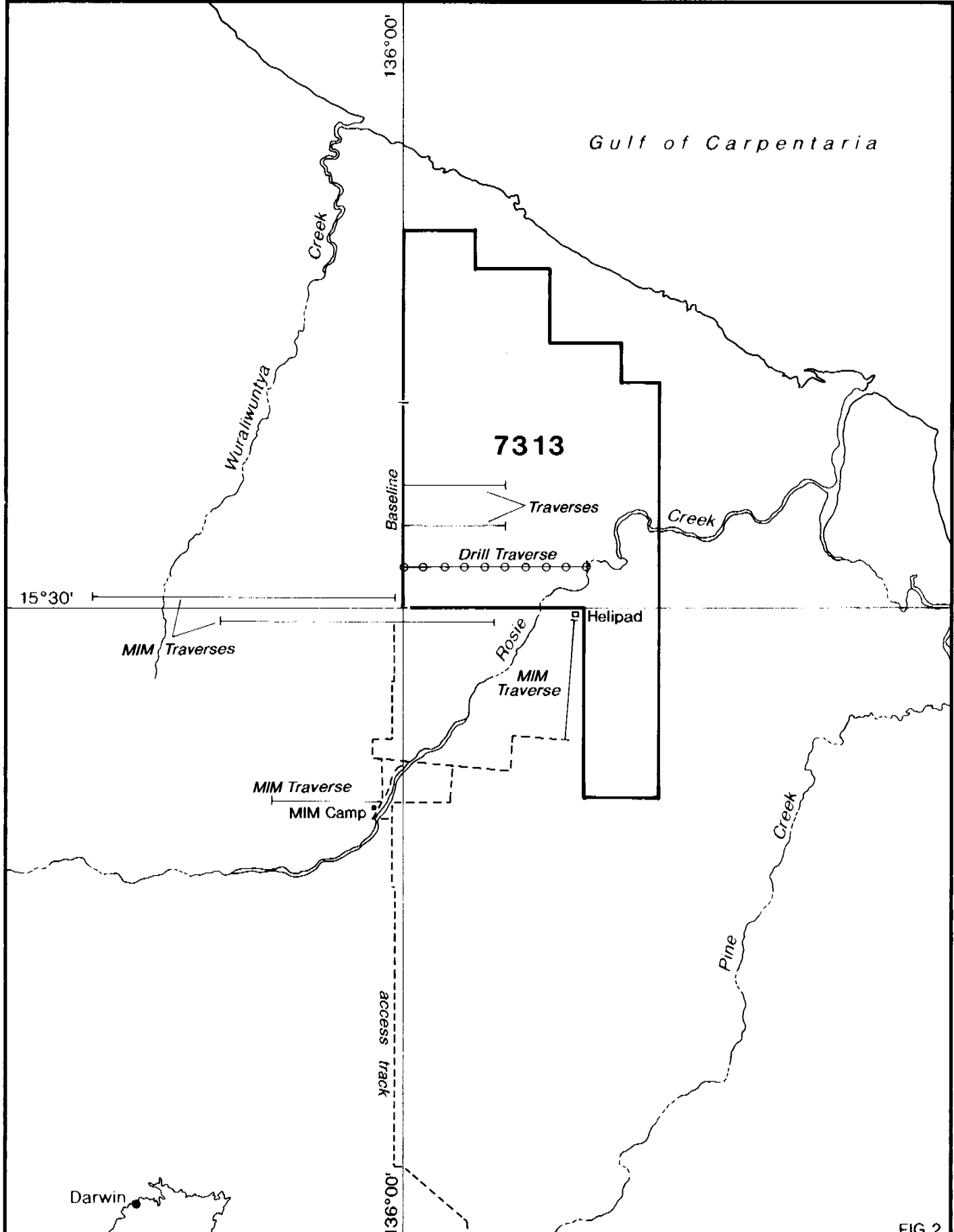




FIG 2

 BRISBANE	GEOPEKO A DIVISION OF PEKO-WALLSEND OPERATIONS LTD. A.C.N. 000 081 434	
	Scale 1: 250 000 	
Geo IM	Map Ref. MOUNT YOUNG. SD53-15	
Drawn RH	EL 7313 - ROSIE CREEK ACCESS AND GRIDDING	
Checked		
Date 17/3/93	McARTHUR RIVER	Dwg. No QLD 1245

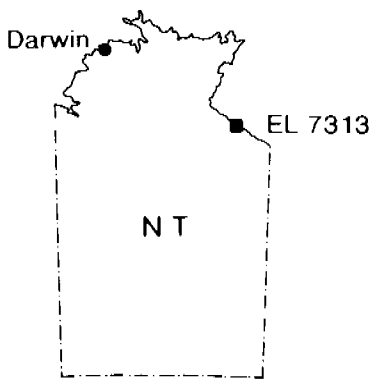
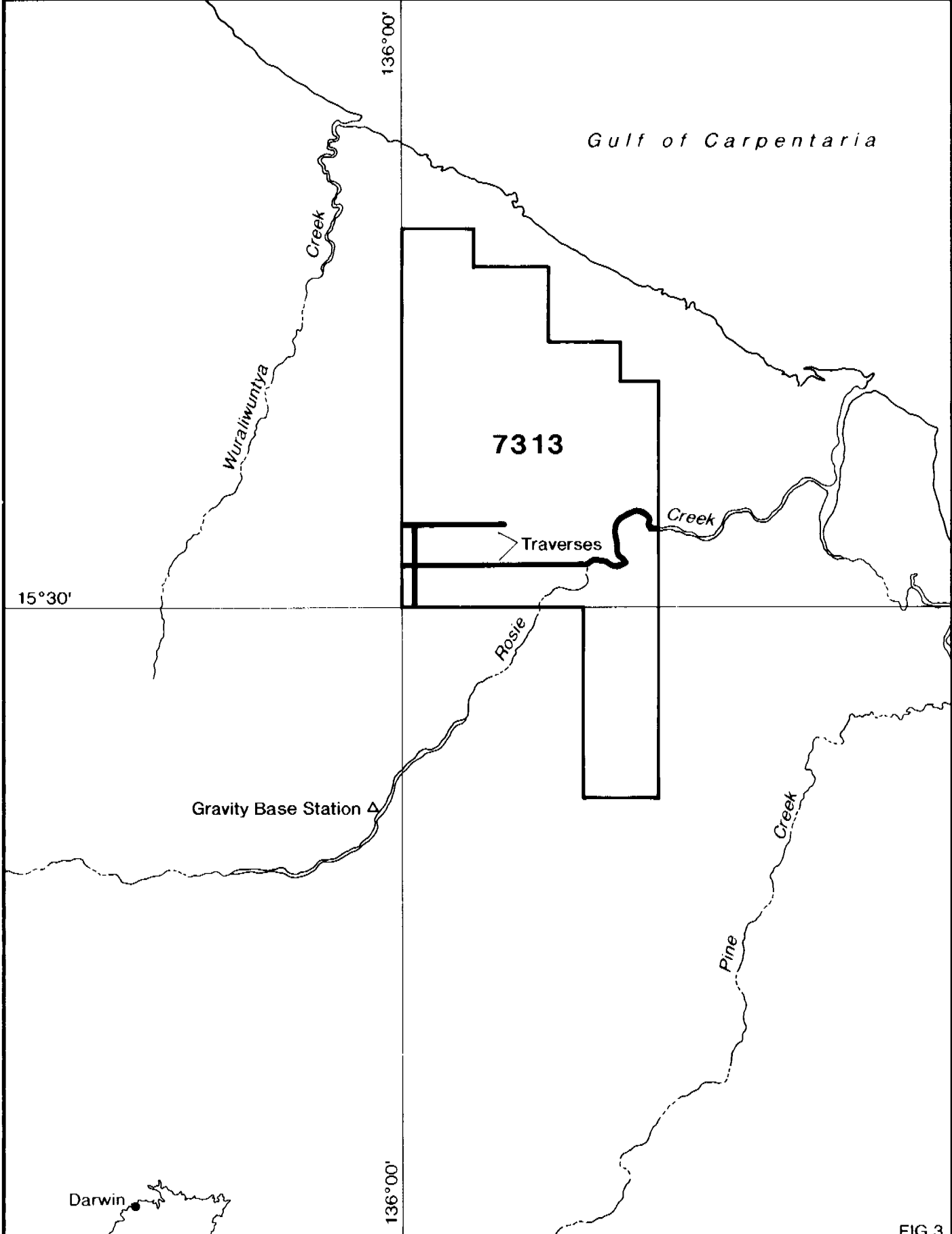

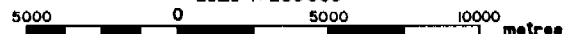


FIG 3

 BRISBANE	GEOPEKO A DIVISION OF PEKO-WALLSEND OPERATIONS LTD. A.C.N. 000 081 434	
	Scale 1: 250 000 	
Geo IM	Map Ref.	MOUNT YOUNG. SD53-15
Drawn RH	EL 7313 - ROSIE CREEK GRAVITY SURVEY	
Checked		
Date 18/3/93	McARTHUR RIVER	Dwg. No QLD 1246

8. DISCUSSION

Field mapping and drilling have confirmed outcrop and subcrop of the prospective Barney Creek Formation a short distance to the south of EL 7313.

Dr Leaman's interpretation indicates that the stratigraphic and structural elements associated with the HYC deposit are similar to those at Rosie Creek. These include thick piles of pre-Tawallah Group felsic volcanics, evidence of faulting contemporaneous with volcanism, thick sequences of McArthur Group sediments and a reduced thickness of the Tawallah Group.

There is a good possibility that a zinc-lead deposit similar to the HYC deposit exists in the Rosie Creek area. Exploration for such a deposit under a thick cover of sand and deeply weathered McArthur Group sediments will require the application of appropriate geophysical techniques supported by diamond drilling.

9. **PROPOSED EXPLORATION PROGRAM MARCH 1993 - FEBRUARY 1994**

- * Upgrade access within the area;
- * Acquire additional gravity data;
- * Interpret gravity data in conjunction with available detailed aeromagnetic data;
- * Survey selected areas with deep sensing EM eg. EM 37 sounding;
- * Test selected targets with diamond drill holes.

10. ACCOUNTED EXPENDITURE MARCH 1992 - FEBRUARY 1993

GEOPEKO	EL 7313	B262
COST CATEGORY	PERIOD	MARCH 92 - FEB 93
SALARIES:	Geologists	9 359
	Geochemists	00
	Geophysicists	573
	Draftsmen	00
	Other Tech. & Gen.	11 702
	Enginrs. & Metall.	00
	Sub-total Salaries	21 633
WAGES:	Field Assistants	4 871
	Drafting	00
	Other	997
	Sub-total Wages	5 868
	Total Payroll	27 501
TENEMENT EXPENSES		1 360
BASE SUPPORT COSTS		13 416
FIELD SUPPORT:		
	Vehicles	4 544
	Travel & Accom.	8 445
	Freight	92
	Supplies	1 852
	Sustenance	1 243
	Premises: Office	180
	Housing	00
	Other	00
	Communications	595
	Maintenance	318
	Other Costs	782
	Depreciation	00
	Total Field Support	18 049
	Total Fixed Costs	60 325
Drilling:	Soil Probe (RAB)	00
	Rev. Circ. (Air Core)	10 000
	Percussion	00
	Diamond	00
	Total Drilling	10 000
Geological Consultants & Maps		3 058
Geochemistry		00
Assaying		00
Mineralogy & Petrology		00
Geophysics:		
	Airborne	00
	Ground	4 213
General Contractors		7 234
Survey & Gridding		315
Data Processing		1 910
Total Exploration Services		16 729
Joint Venture Payments		00
Sundry Income		00
	Total Variable Costs	26 729
Total Fixed & Variable Costs		87 054
	Management Charge	7 056
TOTAL PROJECT COSTS		94 110

11. REFERENCES

- MUIR, M.D., 1983 - Depositional Environments of Host Rocks to Northern Australian Lead-Zinc Deposits, with Special Reference to McArthur River. In "Short Course in Sediment hosted Stratiform Lead-Zinc Deposits" 141-174. Mineralogic Society of Canada.
- PIETSCH, B.A., WYCHES, S., RAWLINGS D.J., CREASER P.M. AND FINDHAMMER T.L.R., 1991 - 1:100 000 Geological Map Series, Explanatory Notes, McArthur River Region, Northern Territory Department of Mines and Energy, N.T.G.S.
- SOWERBY, R.D., 1992 - Annual Report Exploration Licence No. 7313, 22.2.91 - 21.2.92 Unpubl. Geopeko report.

APPENDIX 1
EL 7313 "ROSIE CREEK"
ROSIE CREEK GRAVITY SURVEY
SURVEY AND REDUCTION

LEAMAN GEOPHYSICS

Survey Review, Specification, Reduction, Interpretation
Gravity, Magnetic and Seismic Methods
Structure and Prospect Evaluation

Registered office:

3 MALUKA STREET, BELLERIVE, TAS. 7018

All correspondence to:

GPO BOX 320 D, HOBART, TAS. 7001

Telephone: (002) 44 1233

Fax: (002) 44 6674

MEMORANDUM:

To: Ian Mathison, Geopeko, Brisbane

From: David Leaman, Leaman Geophysics, Hobart

Date: November 27, 1992

Re: ROSIE CREEK GRAVITY SURVEY

SURVEY AND REDUCTION

A limited gravity survey of the Rosie Creek area, Northern Territory, was completed between October 23 and 30, 1992. This note reviews the survey, corrections undertaken and provides comments on the survey and results.

Base for the survey was at Lorella Base Camp (MIM) defined as 15-35-30.47 S, 135-59-11.62 E, at an elevation of 22.17 m AHD and an isogal 84 tied observed gravity of 978418.44 mgal.

Gravity loops of the order of 2-3 hours were observed and the observations were drift corrected. No tidal correction was used in addition. Some stations were repeated after a meter offset. The observer was M. Hambridge.

The meter used was a LaCoste & Romberg G704 with an effective scale constant for this survey of 0.9916 mgal/div.

Repeat stations suggest a reproducibility after adjustment of 0.02 - 0.05 mgal generally but at least two stations showed a deviation of 0.08 - 0.12 mgal.

Base ties to the MIM base and internal base links were established using drift-controlled links.

Most stations were levelled but some, along Rosie Creek, were linked to a mean tidal level. Elevations may be defined to better than 5 mm in most cases but the possible errors for those stations along the creek may exceed 50 cm.

Positions have been determined by satellite navigation but the absolute precision is undeclared. It is unlikely to be significant in terms of this semi-regional survey.

No terrain corrections have been applied. It is assumed that none were necessary but no station location notes exist to justify this conclusion.

Original reductions by Geopeko (Parkes) were based on Isogal65 and the 1930 ellipsoid for theoretical gravity and these have been checked. The spheroid parameters used are not, however, appropriate for use with a station array and observed gravity quoted with respect to Isogal84. Use of the revised values and the 1967 ellipsoid affects only the magnitude of the reduced Bouguer anomalies and not the form of the recovered field. It does mean, however, that the anomaly values can be inset directly into the regional (BMR-AGSO) compilations. Table 1 presents the reduced data set in 84-67 format. All reductions assume AHD and a density of 2.67 gm/cc.

Estimated precision in the Bouguer anomalies is 0.2 to 0.3 mgal for the worst stations (those tidally referenced) and perhaps 0.05 to 0.1 mgal for the others.

The contours of the attached map (Figure 1) reflect this precision and assessed reliability.

CORRELATION WITH REGIONAL DATA

A portion of the BMR-AGSO regional compilation of the gravity field in this part of the McArthur Basin is reproduced in Figure 2. The approximate location of the Geopeko survey is indicated.

Both surveys define a significant E-W local gradient which, in regional terms, is seen to extend from the Emu Fault to the Gulf. The additional definition provided by the new data shows that this gradient is irregular but the subtle N-S protrusion implied in the regional survey is now well defined but trends NW-SE.

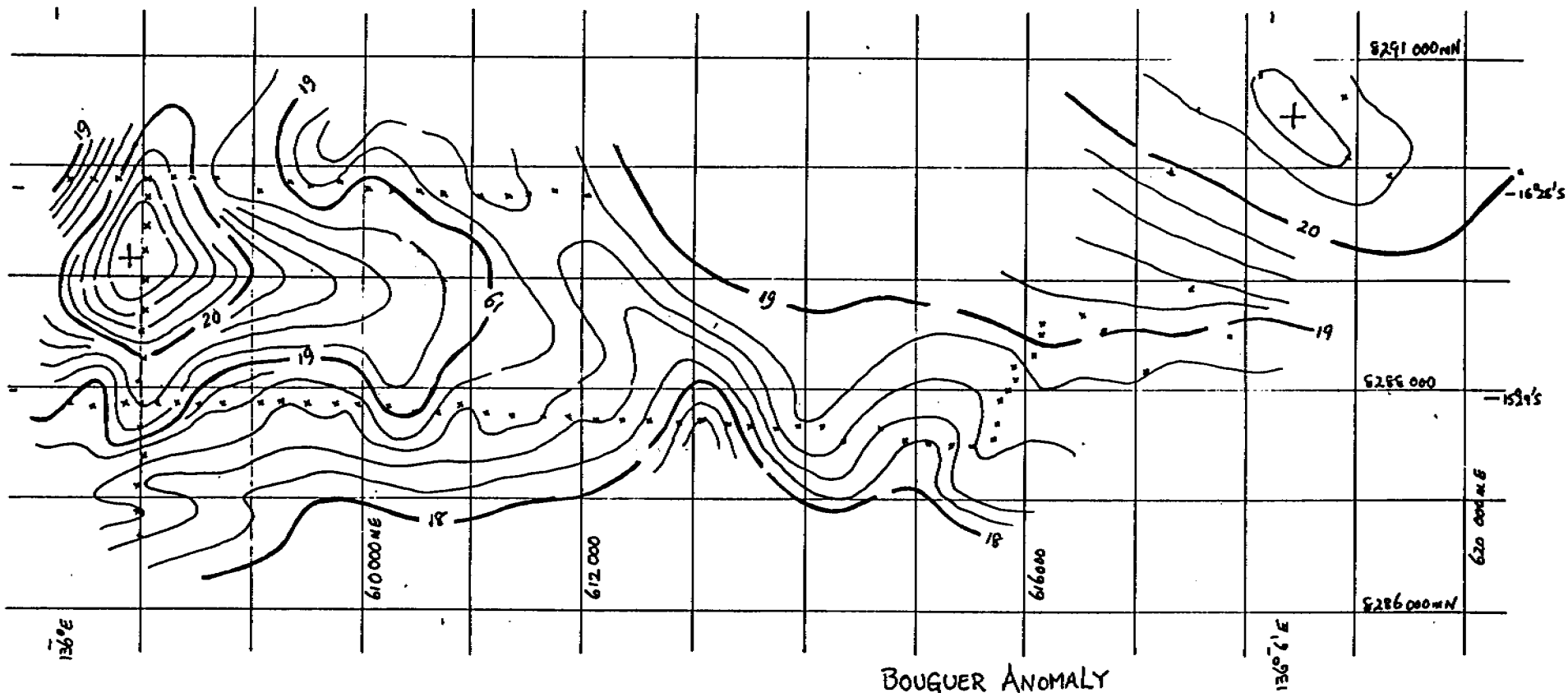
No detailed or close correlations are possible between the two data sets due to differences in scale and station spacing but the results are generally consistent.

The general subtlety of most features implies relatively deep sources although some gradients may be imperfectly defined by the current station spacings. Given the presence of Palaeozoic or Recent cover in the region this is not surprising.

It may also be commented that regional magnetic data support the trends implied in the two gravity surveys indicating some real features have been defined.

Sgd.

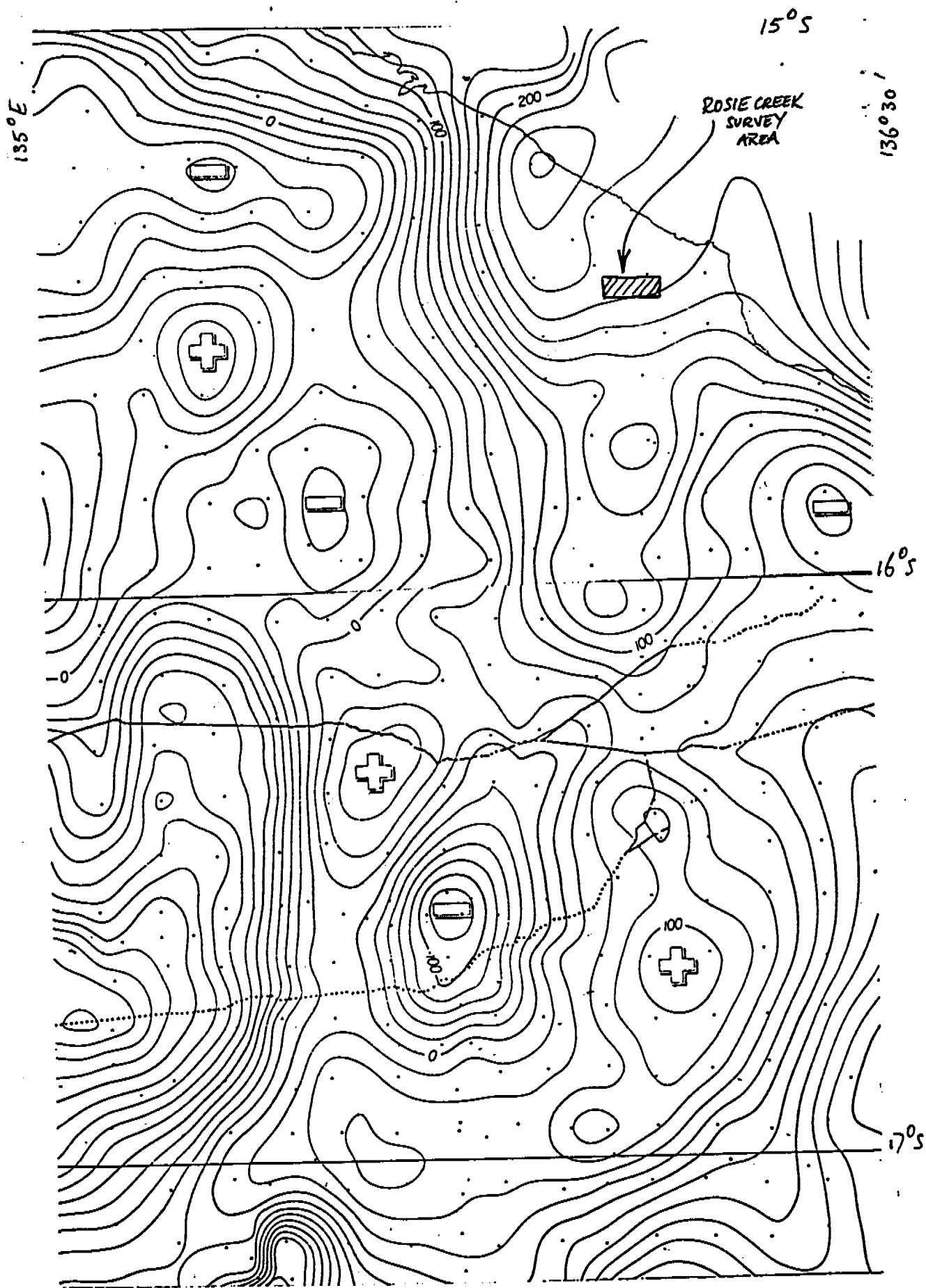




BOUGUER ANOMALY
 GEOPKO : ROSIE CREEK GRAVITY SURVEY N.T. 1992
 this compilation: Leaman Geophysics, Hobart

density: 2.67 t/m^3
 0.2 mgal contour interval

FIGURE 1



REGIONAL COMPILATION - BOUGUER ANOMALY 2.67
(BMR-AGSO)

FIGURE 2

LEAMAN GEOPHYSICS GRAVITY REDUCTION

ROSIE CREEK GEOPEKO 1992

BASE VALUE	BASE NUMBER	METER	CAL DATE	SCALE	DENSITY	ELEV DATUM		
978418.44	9999.0000	704	10192	0.9916	2.67	0.00		
NUMBER	EASTING	NORTHING	HEIGHT	OBS GRAV	THEO GRAV	CORR	BOUG AN	
9200.0001	608000.0	8287825.0	14.73	978416.39	978399.91	0.00	19.38	
9200.0002	615697.0	8287535.0	11.97	978416.35	978400.02	0.00	18.69	
9200.0003	615518.0	8287456.0	11.30	978416.38	978400.05	0.00	18.55	
9200.0004	615310.0	8287487.0	11.57	978416.12	978400.04	0.00	18.36	
9200.0005	615098.0	8287527.0	11.33	978415.94	978400.02	0.00	18.15	
9200.0006	614898.0	8287558.0	11.30	978415.91	978400.01	0.00	18.13	
9200.0007	614639.0	8287603.0	11.27	978416.15	978399.99	0.00	18.38	
9200.0008	614369.0	8287568.0	11.56	978416.25	978400.00	0.00	18.52	
9200.0009	614162.0	8287625.0	11.49	978416.32	978399.98	0.00	18.60	
9200.0010	613943.0	8287631.0	12.61	978416.26	978399.98	0.00	18.76	
9200.0011	613745.0	8287610.0	11.28	978416.34	978399.99	0.00	18.57	
9200.0012	613502.0	8287649.0	12.76	978415.80	978399.97	0.00	18.34	
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9200.0016	612600.0	8287705.0	11.37	978415.93	978399.95	0.00	18.22	
9200.0017	612380.0	8287732.0	12.49	978416.25	978399.94	0.00	18.77	
9200.0018	612061.0	8287721.0	12.09	978415.91	978399.94	0.00	18.34	
9200.0019	611854.0	8287742.0	11.89	978416.19	978399.94	0.00	18.59	
9200.0020	611618.0	8287759.0	11.73	978416.29	978399.93	0.00	18.67	
9200.0021	611374.0	8287777.0	12.20	978416.01	978399.92	0.00	18.49	
9200.0022	611146.0	8287789.0	11.98	978416.08	978399.92	0.00	18.52	
9200.0023	610931.0	8287807.0	11.97	978416.19	978399.91	0.00	18.63	
9200.0024	610669.0	8287796.0	11.60	978416.47	978399.92	0.00	18.83	
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9200.0026	610229.0	8287807.0	12.34	978416.65	978399.91	0.00	19.16	
9200.0027	609985.0	8287826.0	13.10	978415.85	978399.91	0.00	18.52	
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9200.0029	609504.0	8287820.0	13.30	978416.03	978399.91	0.00	18.74	
9200.0030	609264.0	8287847.0	13.22	978415.94	978399.90	0.00	18.64	
9200.0031	609079.0	8287844.0	12.63	978416.29	978399.90	0.00	18.87	
9200.0032	608783.0	8287829.0	12.49	978416.40	978399.91	0.00	18.95	
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9200.0037	607577.0	8287808.0	15.21	978415.87	978399.92	0.00	18.95	
9200.0038	607309.0	8287843.0	15.52	978416.02	978399.90	0.00	19.17	
9200.0039	607998.0	8287627.0	14.76	978416.37	978399.99	0.00	19.28	
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9200.0043	607977.0	8286608.0	14.89	978415.90	978400.42	0.00	18.41	
9200.0044	607969.0	8288026.0	14.56	978416.58	978399.83	0.00	19.61	
9200.0045	608004.0	8288232.0	14.00	978416.96	978399.74	0.00	19.98	
9200.0046	607996.0	8288506.0	15.50	978416.94	978399.62	0.00	20.37	
9200.0047	608018.0	8288729.0	15.09	978417.23	978399.53	0.00	20.67	
9200.0048	608023.0	8288970.0	14.34	978417.48	978399.43	0.00	20.87	

NUMBER	EASTING	NORTHING	HEIGHT	OBS GRAV	THEO GRAV	CORR	BOUG AN
9200.0049	608036.0	8289208.0	14.12	978417.48	978399.33	0.00	20.93
9200.0050	608040.0	8289459.0	14.14	978417.37	978399.22	0.00	20.93
9200.0051	608043.0	8289723.0	13.75	978417.35	978399.11	0.00	20.94
9200.0053	608043.0	8289842.0	13.78	978417.20	978399.06	0.00	20.85
9200.0054	607775.0	8289845.0	14.50	978416.14	978399.06	0.00	19.93
9200.0055	607539.0	8289838.0	14.77	978415.48	978399.07	0.00	19.31
9200.0056	607305.0	8289867.0	14.68	978415.22	978399.05	0.00	19.05
9200.0057	608262.0	8289863.0	13.44	978416.82	978399.05	0.00	20.41
9200.0058	608458.0	8289879.0	13.18	978416.46	978399.05	0.00	20.00
9200.0059	608769.0	8289843.0	12.88	978415.69	978399.06	0.00	19.16
9200.0060	609076.0	8289788.0	12.45	978415.89	978399.08	0.00	19.26
9200.0061	609302.0	8289831.0	12.56	978415.62	978399.07	0.00	19.03
9200.0062	609512.0	8289798.0	12.78	978415.19	978399.08	0.00	18.62
9200.0063	609780.0	8289815.0	12.50	978415.24	978399.07	0.00	18.62
9200.0064	610026.0	8289782.0	12.31	978415.74	978399.08	0.00	19.08
9200.0065	610268.0	8289768.0	12.16	978415.69	978399.09	0.00	18.99
9200.0066	610537.0	8289733.0	12.12	978415.47	978399.10	0.00	18.74
9200.0067	610772.0	8289728.0	11.98	978415.41	978399.11	0.00	18.66
9200.0068	611027.0	8289706.0	11.85	978415.44	978399.11	0.00	18.65
9200.0069	611311.0	8289697.0	12.08	978415.24	978399.12	0.00	18.50
9200.0070	611491.0	8289739.0	11.94	978415.42	978399.10	0.00	18.66
9200.0071	611745.0	8289778.0	11.93	978415.45	978399.08	0.00	18.71
9200.0072	612012.0	8289683.0	11.80	978415.73	978399.12	0.00	18.93
9200.0073	617066.0	8288152.0	10.89	978416.39	978399.75	0.00	18.78
9200.0074	620464.0	8289976.0	0.41	978418.92	978398.98	0.00	20.01
9200.0075	619282.0	8289906.0	0.45	978419.09	978399.01	0.00	20.17
9200.0076	618911.0	8290076.0	0.00	978419.20	978398.94	0.00	20.26
9200.0077	618845.0	8290660.0	0.24	978418.87	978398.70	0.00	20.21
9200.0078	618115.0	8290884.0	0.11	978418.90	978398.61	0.00	20.31
9200.0079	617506.0	8290484.0	0.31	978418.92	978398.78	0.00	20.20
9200.0080	617288.0	8289971.0	0.17	978418.99	978398.99	0.00	20.03
9200.0081	617405.0	8288846.0	0.21	978418.70	978399.46	0.00	19.28
9200.0082	617825.0	8288465.0	0.32	978418.44	978399.62	0.00	18.88
9200.0083	616499.0	8288657.0	10.66	978416.57	978399.54	0.00	19.12
9200.0084	616741.0	8288568.0	10.51	978416.50	978399.58	0.00	18.98
9200.0085	615775.0	8287640.0	11.27	978416.39	978399.97	0.00	18.63
9200.0086	615745.0	8287806.0	11.89	978416.28	978399.90	0.00	18.72
9200.0087	615726.0	8287980.0	11.48	978416.40	978399.83	0.00	18.83
9200.0088	615827.0	8288067.0	11.51	978416.26	978399.79	0.00	18.73
9200.0089	615932.0	8288147.0	11.26	978416.29	978399.76	0.00	18.74
9200.0090	615865.0	8288314.0	11.24	978416.29	978399.69	0.00	18.81
9200.0091	616026.0	8288481.0	11.14	978416.47	978399.62	0.00	19.04
9200.0092	616167.0	8288524.0	11.31	978416.44	978399.60	0.00	19.06

APPENDIX 2

EL 7313 "ROSIE CREEK"

PRELIMINARY INTERPRETATION NOTES - ROSIE CREEK AREA

BY DR D LEAMAN

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MEMORANDUM:

To: I.J. Mathison, Geopeko, Brisbane.

From: D.E. Leaman, Leaman Geophysics, Hobart.

Date: November 30, 1992.

Re: PRELIMINARY INTERPRETATION NOTES - ROSIE CREEK AREA

My memo of November 27 notes that your new gravity infill survey in the Rosie Creek area is consistent with, and details somewhat, the regional data base. Unfortunately the gravity field in the Rosie Creek region is not strongly characterised and subtle interfering responses preclude many simple analyses.

Regional work as part of Amira Project P384 has, however, allowed some review of the setting of the EL and the origin of some of the detailed character observed.

The figures referred to below have been drawn from the first progress report for that project.

Figure 1 presents a simplified geology base overlaid with the regional gravity field. The Rosie Creek area is highlighted.

Figure 2 (Fig 6 of P384) presents two regional models, one of which passes very close to the Rosie Creek area (19). This model suggests the presence of a thick felsic volcanic pile (Scrutton Volcanics), negligible (or none) covering sequence of thick mafics, a variable Tawallah Group sequence with podded volcanics and loss of upper formations - perhaps never deposited - and all overlain unconformably by McArthur Group at least 2 km thick between the Emu Fault arms (Figure 3).

This section is quite unlike profile 17 some 30 km to the south, where the mafic sequence is dominant. This difference has been confirmed by transverse line analysis. Much of the granitic component within the basement peters out near profile 17 east of the Emu Fault but persists to the north west of the fault.

Figure 4 shows that the deep mafic sequence is less than 1 km thick in the Rosie Creek area and may be locally absent. The ENE trend of the onlapped high is evident.

Figure 5 is of more interest. This diagram was omitted from the progress report for P384. The text refers to it, as does the caption for the original Figure 9 of that report, but the wrong figure was drafted for the report. The reported diagram presents the total thickness of both felsic and mafic sequences. The replacement diagram presents only the thickness of felsic units.

Figure 5 shows that the Rosie Creek area lies above a thick felsic pile trending ENE-NE. The area is not, apparently, marginal to this pile but does occupy a NW-trending re-entrant. This feature had been inferred from regional data but it clearly corresponds to the transverse feature detailed in the new partial infill survey. This is certainly a real feature.

Figure 5 also demonstrates that the Rosie Creek area bears some striking similarities to the HYC region.

The HYC mineralised area also lies near a thickened portion of the felsic pile in a complex zone with re-entrants implying active faulting during and after deposition of the pile. Major structures clearly intersect in the region and that these are of crustal scale. Less detailed analysis has been completed near Rosie Creek but the elements are present. It is possible that the eastern arm of the Emu Fault may curl northward to pass through the disrupted zone. Note that the eastern arm of the Emu Fault is not mapped far to the north of Borroloola due to cover.

Figure 6 suggests variations in thickness of members of the Tawallah Group and analysis in the Rosie Creek region has indicated some local podding of volcanics. The heavy lines in the figure indicate the approximate position of faults presumed to be active during deposition. The eastern feature may well be a part of the eastern arm of the Emu Fault.

The Rosie Creek area, and in particular the area covered by the new gravity survey, may be considered to be of considerable exploration interest on several grounds based on these preliminary investigations.

1. Proven host rock sequences are present, and are inferred to include thick dolomitic components, even though there is negligible outcrop.
2. The potential host sequence is quite thick.
3. The central part of the area was syn depositionally faulted at least up to the time of deposition of the host cover - a process which may well have continued.
4. A substantial felsic volcanic pile underlies the region. Such an association would imply the possibility of Pb-Zn ores rather than Cu-based ores.

Refinements of this view depend on

1. further regional analysis specific to a 50x50 km area focussed on Rosie Creek in order to better locate the structural elements which may be critical to detailed targetting. This is important given the presence of post Cambrian cover.
2. more complete gravity coverage of the EL which may allow qualitative definition of local elements and perhaps displace some of (1) above.
3. review of extant magnetic data. Much of the regional picture described has evolved from assessment of regional magnetic data only. No detailed coverages have been utilised.

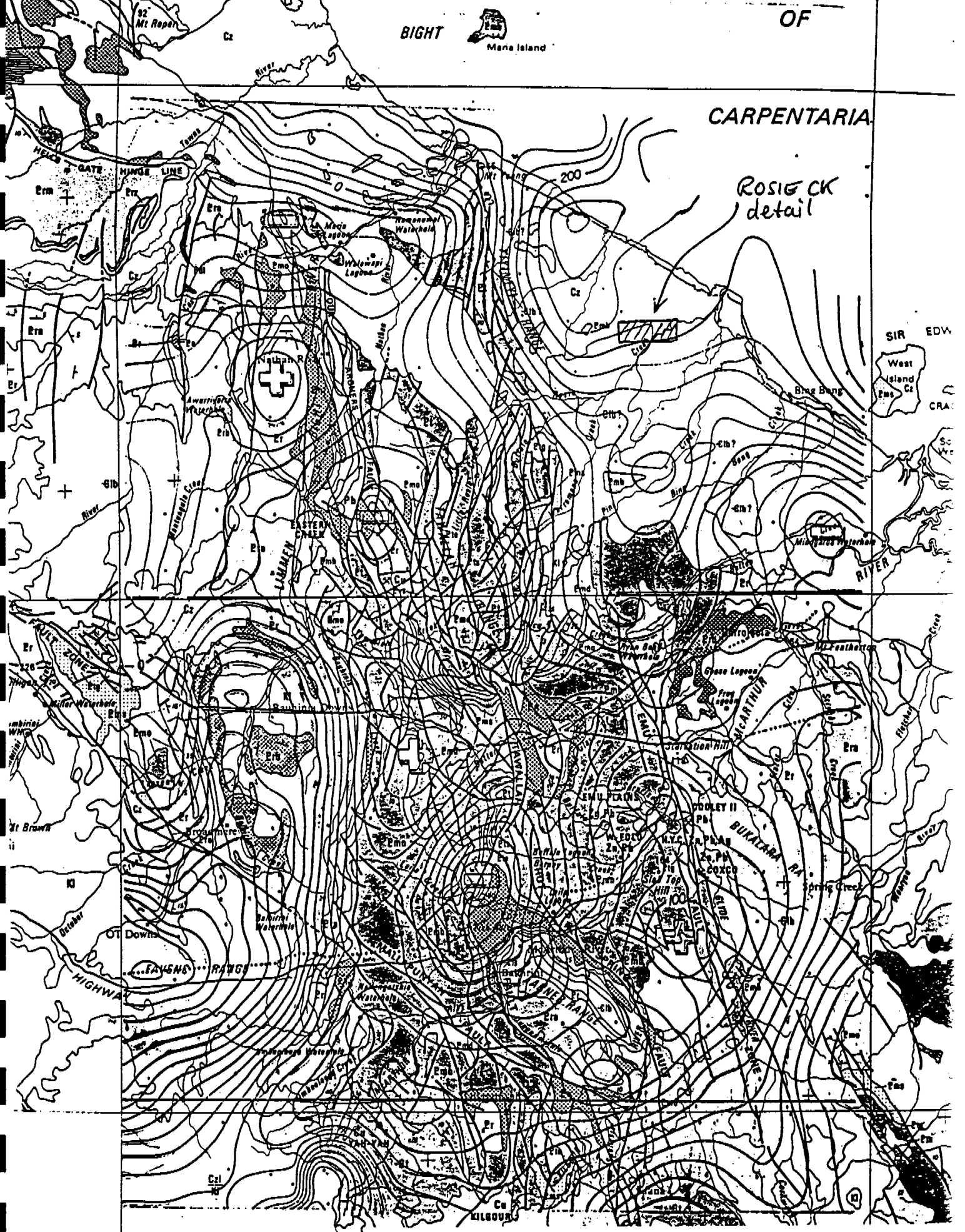
These clarifying suggestions may appear to be at least partially and mutually exclusive and some balance may need to be struck between treatments and desired objectives. For example, 2 alone, will not be specific since it requires an inset overview. The required analysis has been shown to be feasible but may need to be handled by 3D procedures beyond the point shown in existing figures. Some combination is certainly recommended if a target focus is required for initial drilling.

BIGHT

OF

CARPENTARIA

Rosie CK detail



BMR GEOLOGY AND REGIONAL BOUGUER ANOMALIES

FIGURE 1

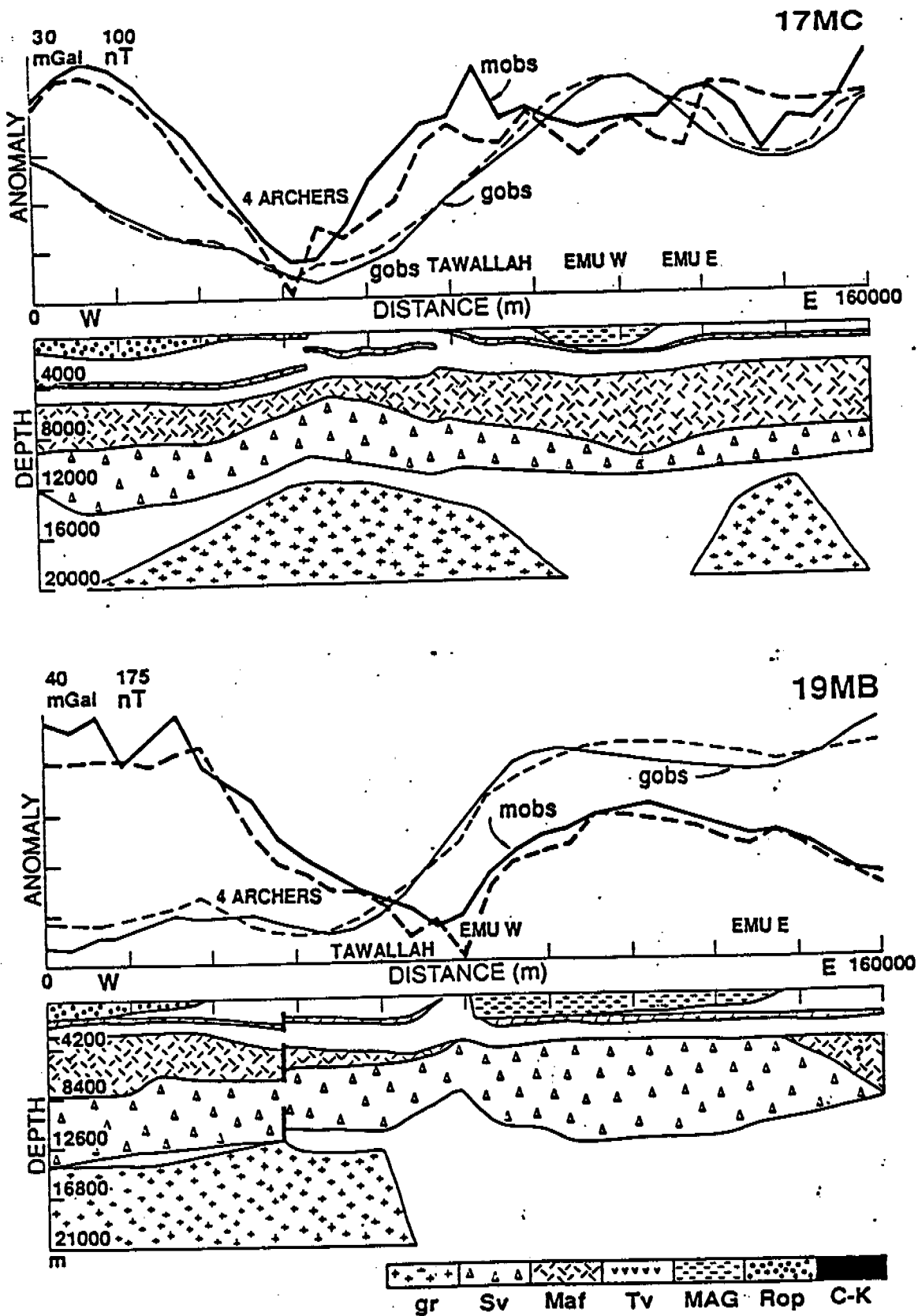


Figure 6 — Modelled solutions for lines 17 and 19.

FIGURE 2

0 50 km

24

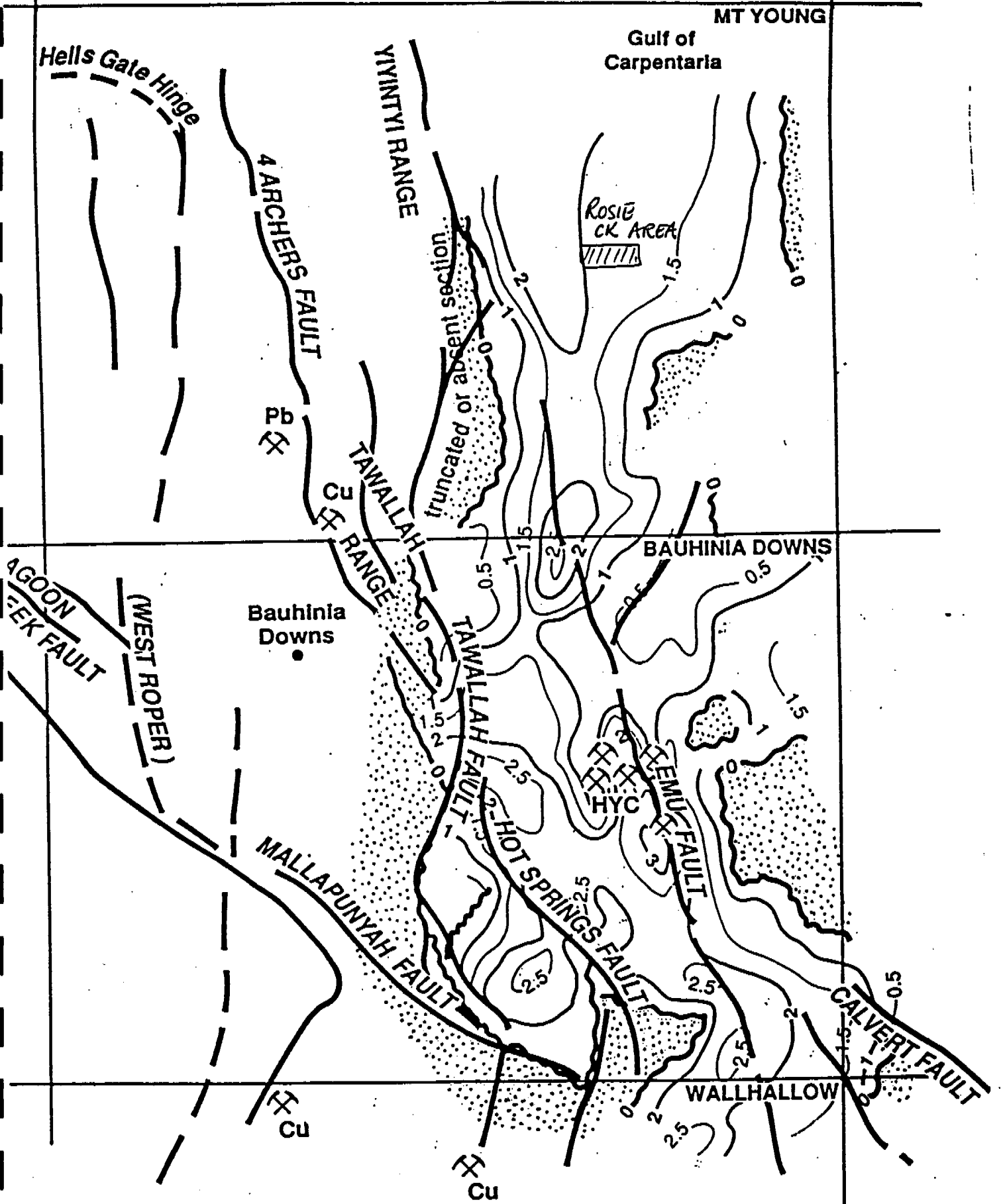


Figure 13. — Interpreted distribution of more massive sequences in the eastern McArthur Group. Structural and depositional truncations indicate the present distribution and suggest it was once more widespread, especially to the east. There are only localised indications of control by the Emu Fault system. Contours in km show residual present day thicknesses.

FIGURE 3

0 50 km

20

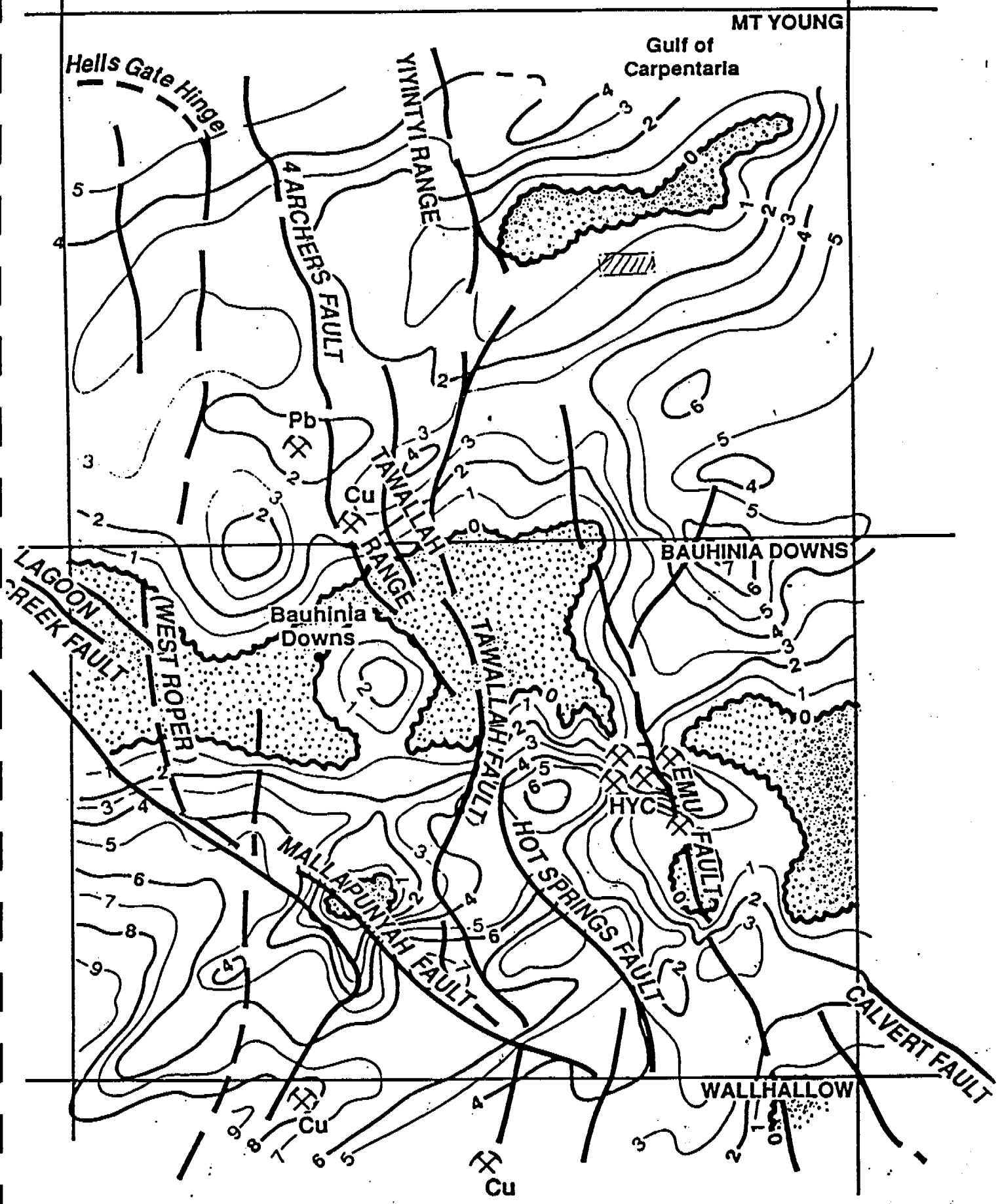
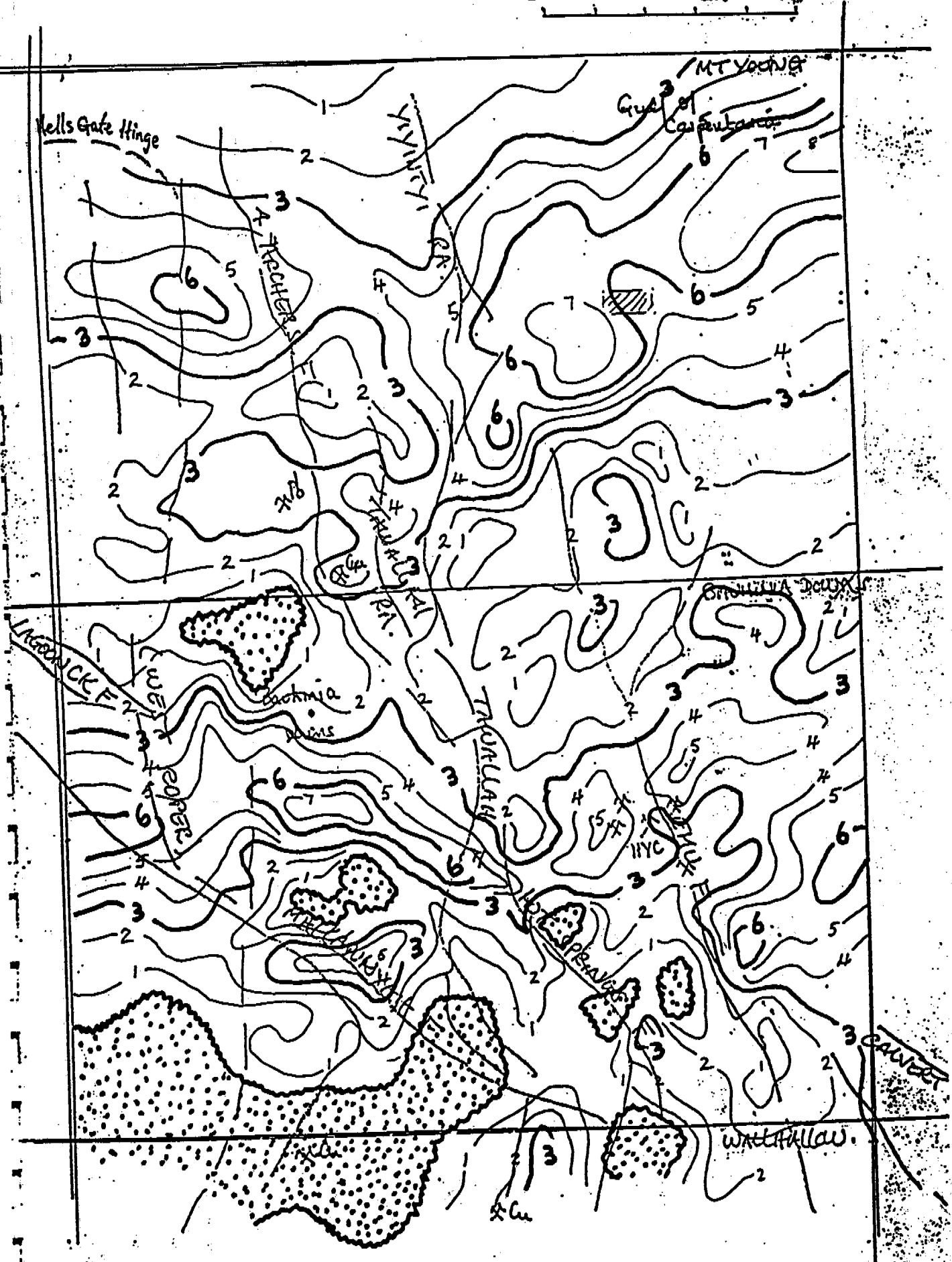


Figure 10 --- Interpreted thickness of major mafic volcanic units which post date the Scrutton Volcanics. These rocks may correlate with the Seigal or Eastern Creek Volcanics of other regions. Note the strong E-W and NE bias in the deposition and the clear presence of a proto-Emu Fault. The Tawallah Range region was high during formation.

FIGURE 4

0 Km 50



BATTEN TROUGH
Thickness of felsic Scutton Volcanics . Contours in Km.

12 Oct 02
PRELIMINARY
FIGURE 5

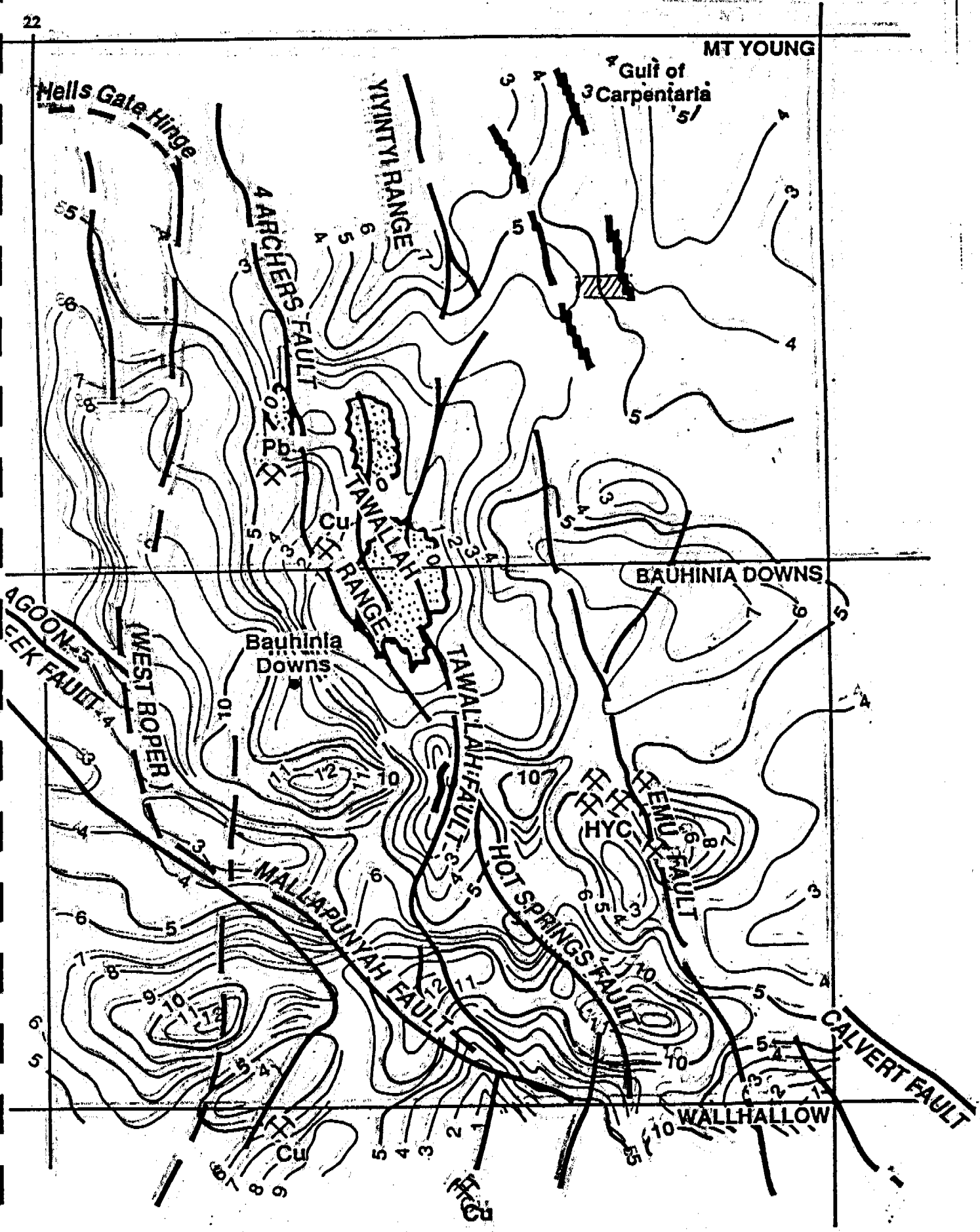


Figure 12 — Interpreted thickness of upper Tawallah mafic volcanics. This interpretation must be considered approximate since many variables may interfere with the conclusions and the analysis completed is limited in terms of these units. The figure does stress the disturbed and variable nature of the units in the region of the Mallaapunyah and southern Emu Faults. Contours are in hundreds of metres.

FIGURE 6