

EXPLORATION LICENCE 2567 - TAWALLAH

MT. YOUNG, NORTHERN TERRITORY

ANNUAL REPORT FOR THE YEAR ENDED

23rd DECEMBER, 1982.

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SUMMARY.

This report covers exploration activities within EL 2567 during the year ended 23rd December, 1982.

The objective is to locate a major sedimentary hosted lead, zinc, copper (silver) deposit in McArthur Group rocks of Lower Proterozoic age.

Work concentrated on the Tobacco Yard area and consisted of geological mapping and soil sampling. Results downgraded this area and no further work is warranted.

Recommendations for future exploration work on the EL include detailed mapping with sampling at the Gordons Prospect and the area immediately to the north. Consideration will be given to undertaking an appropriate geophysical survey of this area to obtain information about the geology below the cover of Roper sediments.

EXPLORATION LICENCE 2567,
ANNUAL REPORT FOR THE YEAR ENDED
23rd DECEMBER, 1982.

1. GENERAL

EL 2567 was granted to BHP Minerals Limited on the 23rd December, 1980.

This licence is part of a group of licences (EL 1371, 1372, 2567, 2992, 2993 and 3120) collectively referred to as the Tawallah Block and being explored by BHP Minerals Limited principally for sediment hosted base metal mineralization.

Work this year concentrated upon gaining a better understanding of the Tobacco Yard area in the western part of the licence.

2. LOCATION AND ACCESS

The licence area is shown on Figure 1 in relation to the other EL's comprising the Tawallah block. Access is by graded dirt road to Nathan River Station passing through the licence area.

3. TENURE

Exploration licence 2567 was applied for by Dampier Mining Company (now BHP Minerals Limited) on March 27th, 1980. On December 23rd, 1980 the licence was granted for 12 months over an area of 75 graticule blocks.

The licence was renewed for a further 12 months on the 23rd December, 1981.

4. PREVIOUS EXPLORATION

The following is a chronological summary of previous exploration based on reports listed as references:-

1960 - 61 BMR Mt. Young 1:250,000 mapping.

1961 - 62 C.E.C. reconnaissance; one hole drilled at Gordons copper prospect (Marlow 1973).

1968 AMAD N.L. 1976. Regional stream sampling and detailed mapping of Gordons Copper Prospect (McMahon et al 1968).

- 1968 C.E.C. regional stream sampling -
broad spaced samples 1 - 2km²
(Lord 1969).
- 1970 - 71 As above (Harris et al 1971).
- 1977 C.E.C. (EL1372) detailed regional
stream sampling (4 - 5km²) - note
the C.E.C. sample locations have
been replotted onto Figure 3,
herein (Nenke 1977).
- 1978 As above (Nenke 1979).
- 1979 C.E.C. (EL 1372) geological mapping,
based on photo-interpretation of RC9
1:25,000 enlargements (Logan 1980).

5. FIELD INVESTIGATIONS DURING 1981

The main points are summarized below:

- (i) Photogeology, initially on RC9 blow ups and
later on 1:25,000 colour prints.
- (ii) Regional scale (1:25,000) and detailed field
mapping and prospecting.
- (iii) Infill geochemical sampling in the southern
part of EL 2567.
- (iv) Replotting of all previous C.E.C. stream
samples as an overlay to the BHP geology
base plan.

This work was reported in detail in the Annual Report
for 1981.

6. FIELD INVESTIGATIONS DURING 1982

- (i) 1:25,000 scale geological mapping of the
Tobacco Yard area.
- (ii) Geochemical base of slope sampling, Tobacco
Yard area.

6.1. Geological Mapping

Results of the mapping are shown on Figure 2.
Emphasis was on resolving the geology in the Tobacco
Yard area. Lithological boundaries were previously
only imprecisely known. As well, detailed work was
carried out in EL's 2993 and 3120 to the north and
south respectively; the Tobacco Yard area is in the
'middle' of this trend.

Results of the work for ELs 2993 and 3120 are reported separately.

The mapping in EL 2567 resulted in the reclassification of rocks, previously interpreted as Barney Creek Formation, to the Lynott Formation. Some changes in the location of geological boundaries were also made.

Detailed description of the geological units has not changed and is as given in the 1981 annual report.

6.2. Geochemical Surveys

A total of 22 base of slope soil samples were collected from about 10cm below the surface and analysed for copper, lead and zinc. The samples were sieved on site to minus 80 mesh and this portion was analysed by Analabs, Darwin, using method 101, perchloric acid digest, AAS finish.

The sample locations are shown on Figure 3 and the results are given in the appendix.

The analysis results show only one high value: 315ppm Cu, sample BJ 9111. This came from dolomitic sandstones of either Balbirini Dolomite or basal Roper Group.

6.3. Recommendations

No further work is warranted in the Tobacco Yard area.

During the 1983 field season, effort should be concentrated on the Gordons Copper Prospect and the area immediately to the north.

Work to be undertaken next year will include detailed mapping accompanied by sampling at Gordons and around the periphery of the Roper basin to the north.

Consideration is being given to an appropriate geophysical survey to test, at depth, the nature of the rocks beneath the Roper cover north of Gordons. Possibly either an EM37 survey or seismic traversing will be undertaken.

Contingent on the results of the geophysical survey and the mapping, drilling of selected targets may be done.

Estimated minimum expenditure for the above programme, excluding drilling, is \$15,000.

7. EXPENDITURE

Expenditure debited to EL 2567 during the nine months March to November, 1982, was:

Wages and Salaries	\$8,875
Messing and Accommodation	1,116
Fares and Mobilisation	1,679
Drilling	74
Transport	1,883
Radio Communications	244
Surveying and Aerial Photographs	539
Plant Hire	345
Consultants	1,563
Mobilisation of Equipment	186
Sample Analysis	310
Geophysics	55
Occupancy and Location Expenses	375
Administration and Overheads	1,740
Other Items	159
	<hr/>
	\$19,143
	<hr/>

Total expenditure to 30th November, 1982, is \$81,624.

This report is submitted to the Department of Mines and Energy as required by Condition 7 of Exploration Licence 2567.

REFERENCES

- BHP MINERALS LIMITED, EL 2567, Annual Report for 1981.
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Exploration Licence No. 1372 'Tawallah Range', N.T.
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APPENDIX

Analysis Results and Description

Soil Samples, EL 2567

B.H.P. MINERALS LTD - GEOCHEMICAL SAMPLES.

EL. 2567..

DATE. 18/8/82

LAB. REPORT.....

METHOD. 101. Analabs Darwin

Sample No.	Location	TYPE			RESULTS P.P.M.					Comments
		Soil	Auger	Stream (width)	Copper	Lead	Zinc			
BS 9108	Tawallah West	✓			5	15	—			
9109	" "	✓			30	5	70			
9110	" "	✓			—	—	—			
9111	" "	✓			315	5	15			
9112	" "	✓			35	15	80			
9113	" "	✓			5	5	—			

B.H.P. MINERALS LTD - GEOCHEMICAL SAMPLES.

EL 3120...

DATE 6/9/82.

LAB. REPORT.....

METHOD. 101. Analabs, Darwin

[illegible]

B.H.P. MINERALS LTD - GEOCHEMICAL SAMPLES.

EL 2567.

DATE 22/10/82

LAB. REPORT... 14.8.16 251

METHOD 101... Analabs Darwin

Sample No.	Location	TYPE			RESULTS P.P.M.						Comments
		Soil	Auger	Stream (width)	Copper	Lead	Zinc				
9735	" "	✓			15	-	10				EL2567 Photo M.A. basin 7/7787
9736	" "	✓			10	-	35				"
9737	" "	✓			10	-	100				"
9738	" "	✓			10	5	70				"

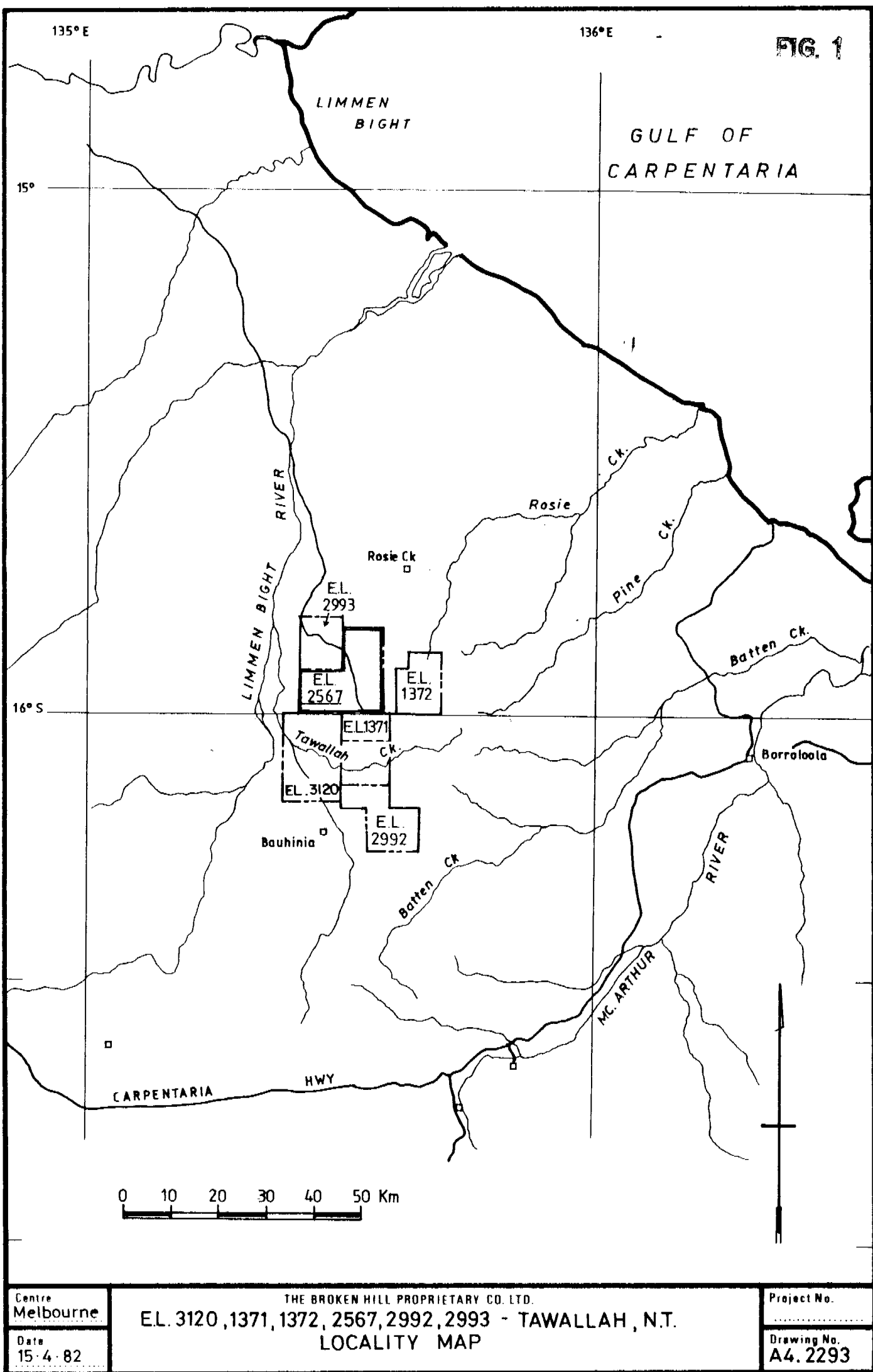
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DATE 22/10/82

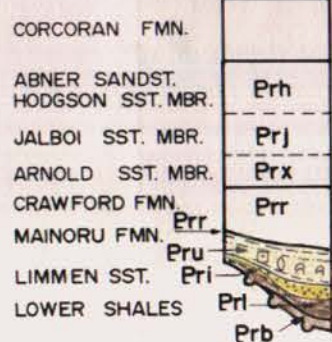
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METHOD 101. *Analabs Darwin*

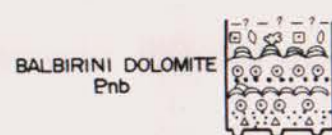
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ROPER GROUP

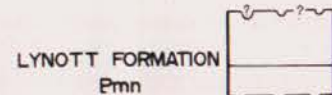


NATHAN GROUP

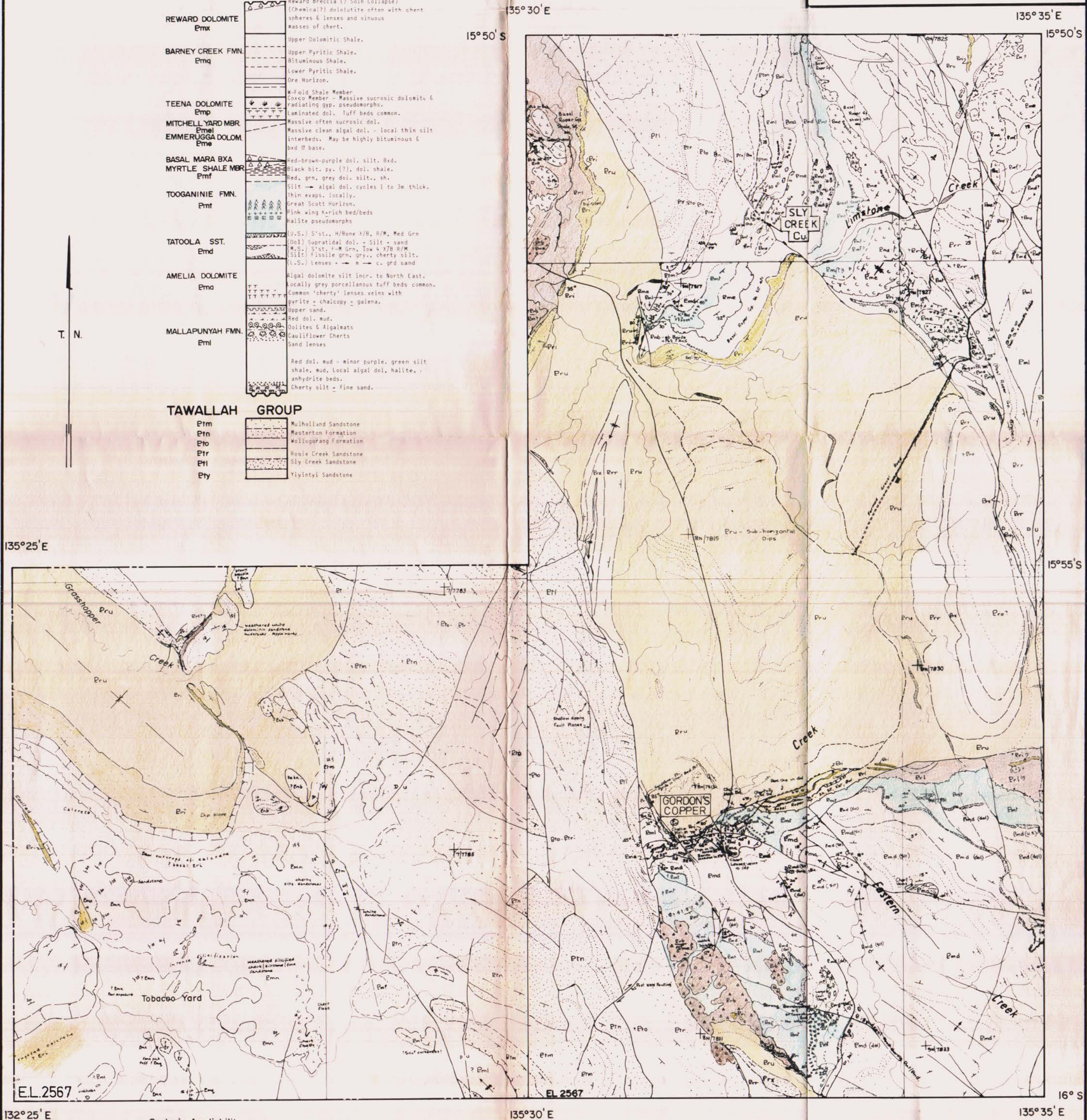
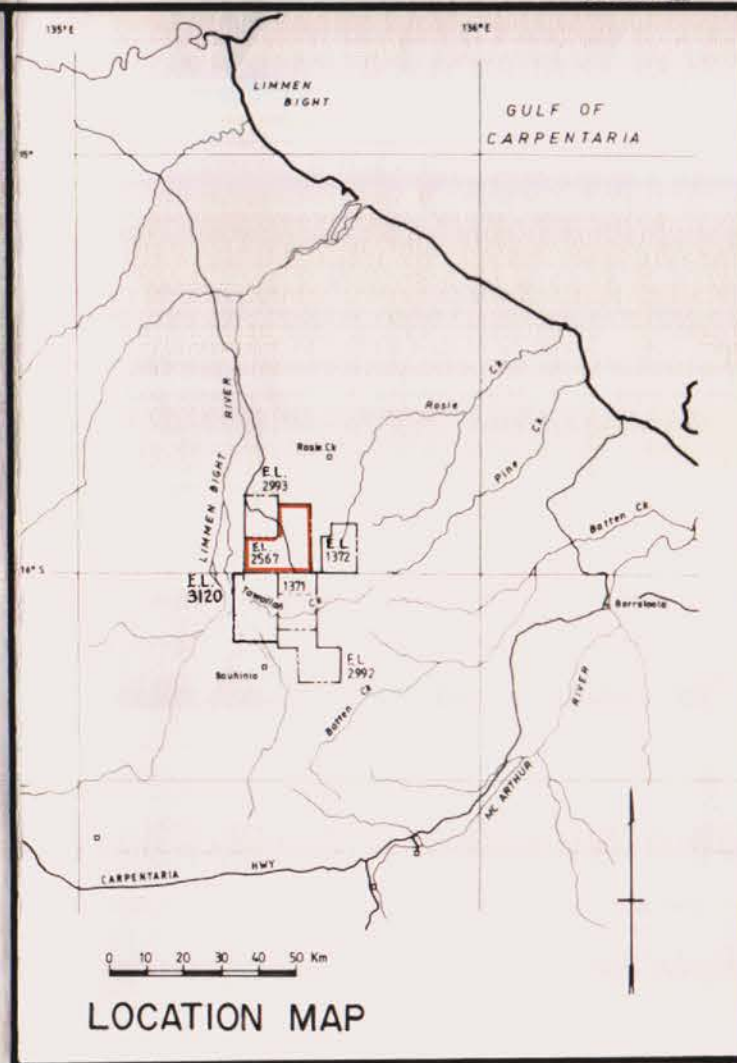
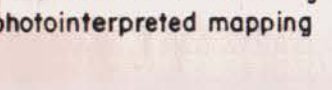
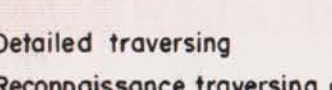
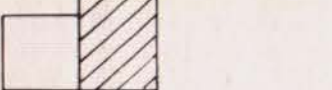
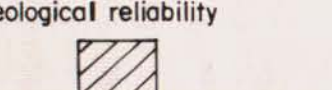
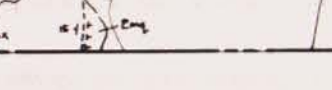
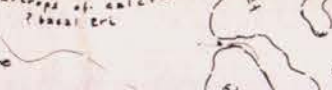
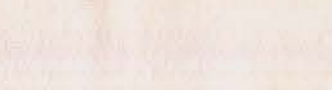
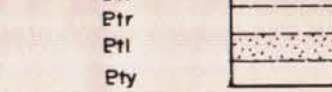
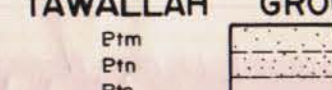
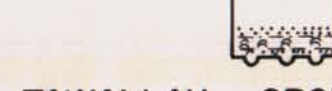
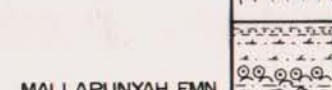
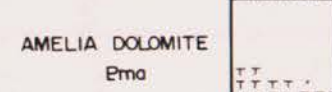
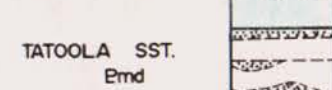
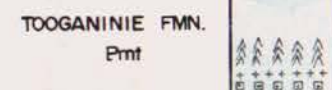
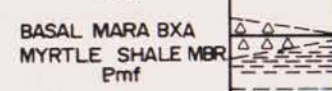
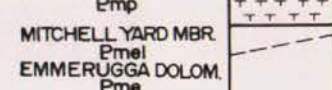
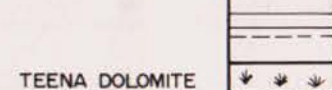
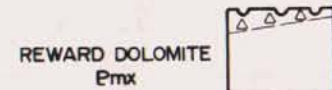


McARTHUR GROUP

BATTEN SUBGROUP



UMBLOOGA SUBGROUP



Geological reliability

Detailed traversing

Reconnaissance traversing and photointerpreted mapping

SCALE 1:50,000

0 1 2 3 4 5 Kilometres

THE BROKEN HILL PROPRIETARY CO. LTD. EXPLORATION DEPARTMENT

EL 2567, TAWALLAH, N.T.

DETAILED & INTERPRETATED GEOLOGY

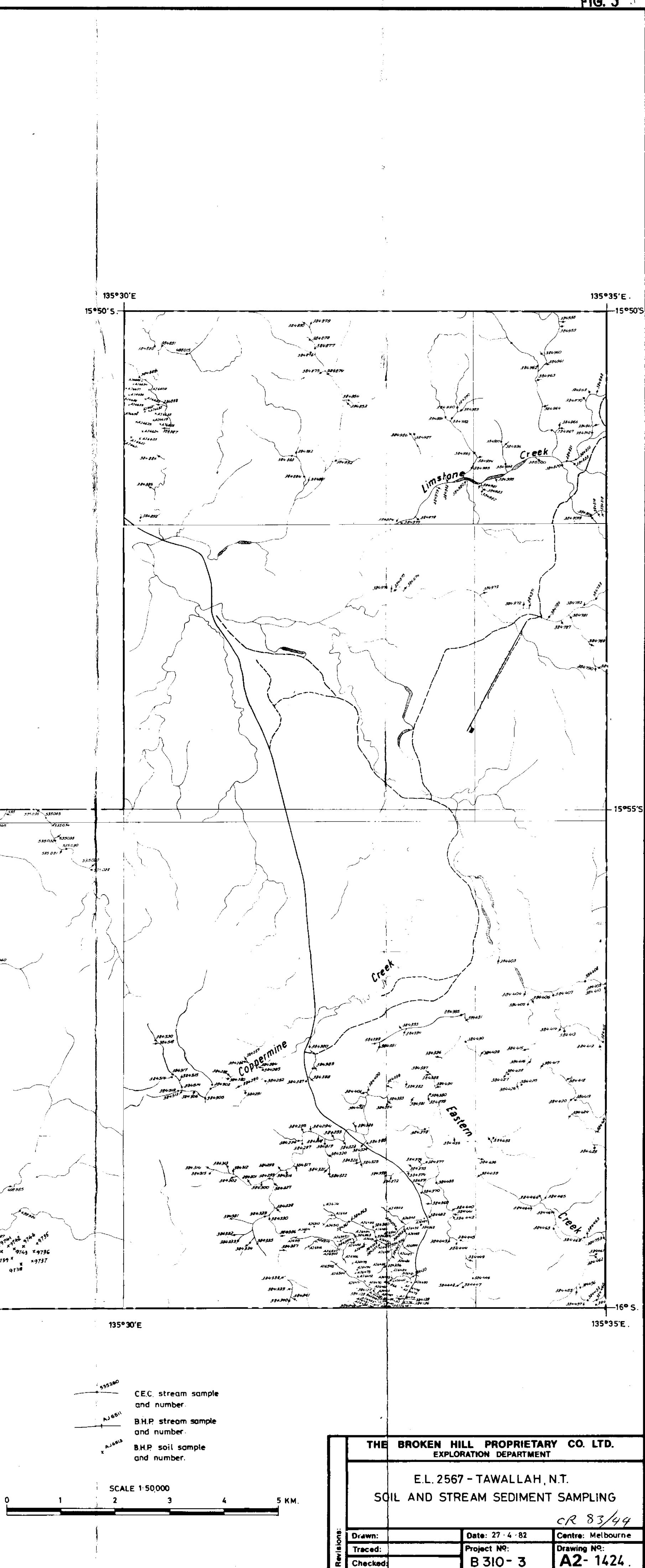
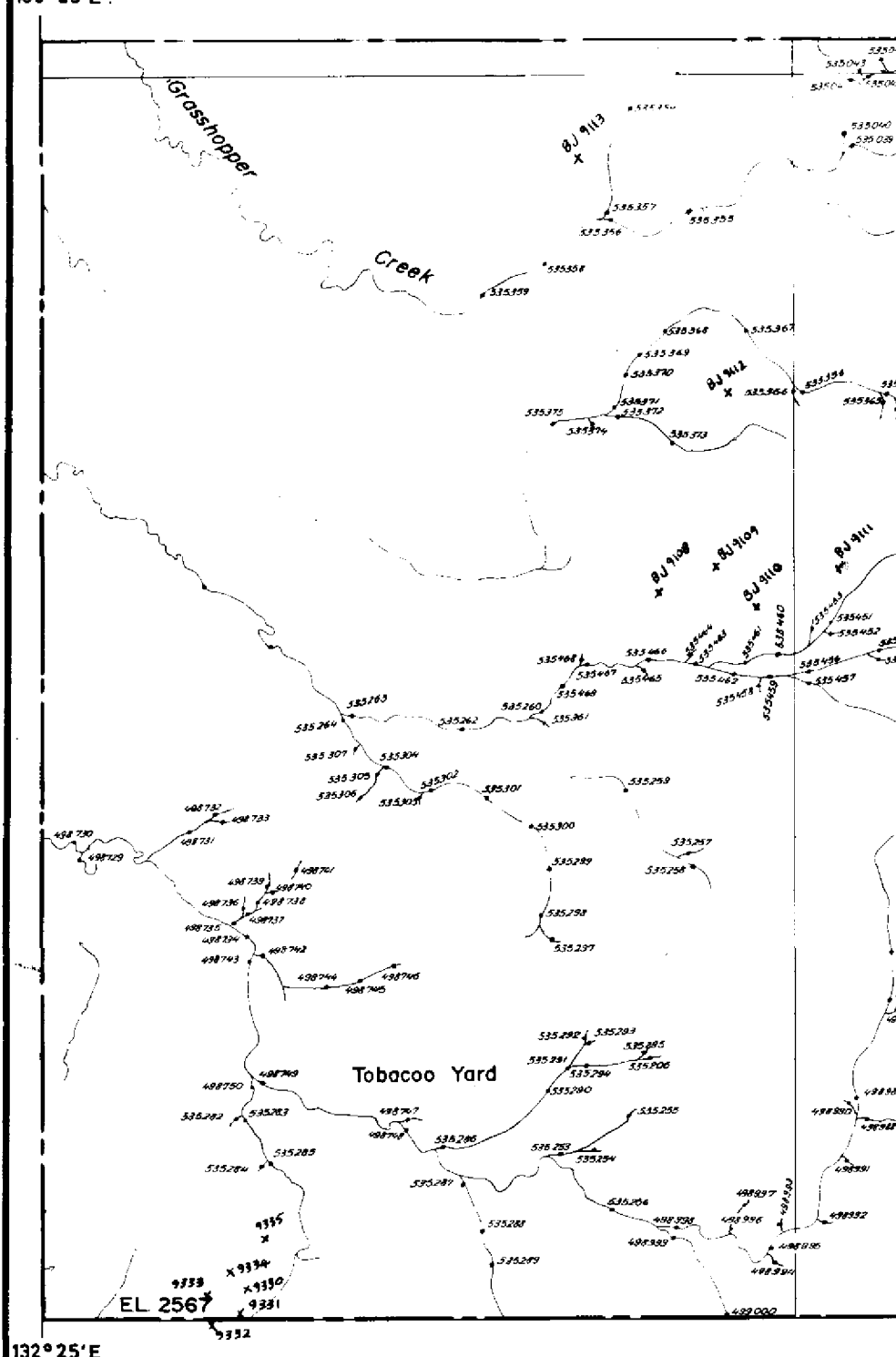
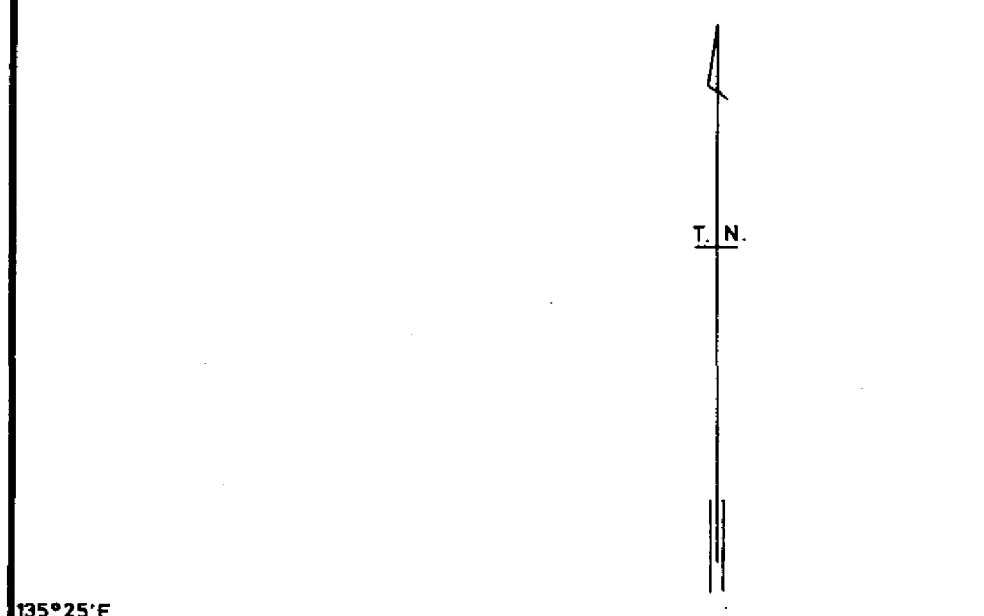
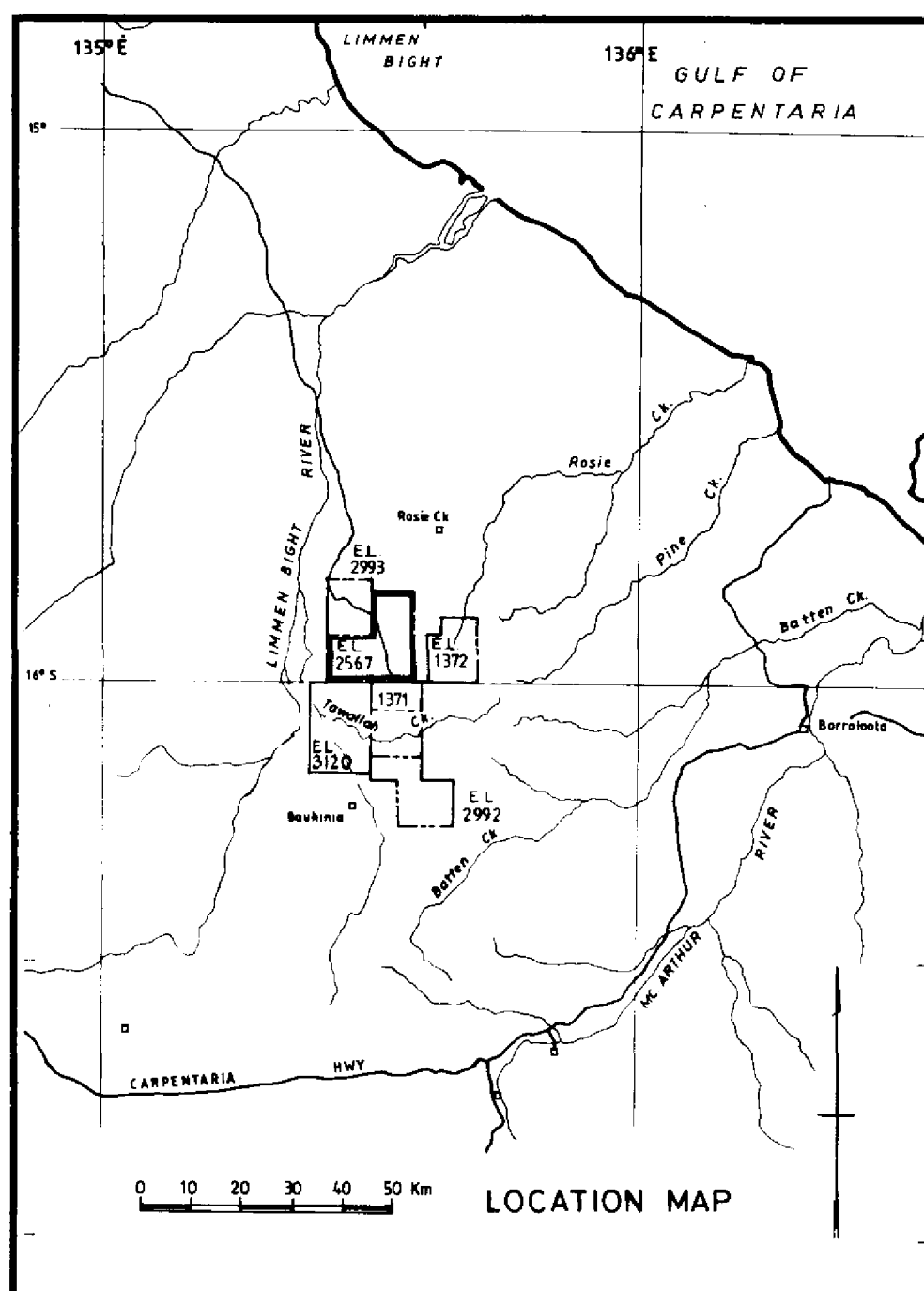
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	SOIL AND STREAM SEDIMENT SAMPLING		
	CR 83/44		
Drawn:		Date: 27 - 4 - 82	Centre: Melbourne
Traced:		Project No:	Drawing No:
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