ST JOE BONAPARTE-AQUITAINE AUSTRALIA
MINERALS-MIMETS

E.L. 2169 THE FENCES ANNUAL REPORT

YEAR ENDING 4th DECEMBER, 1982.

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M. Rowley

DATE : December, 1982.
REPORT NO. : SJB 82-19

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Figure 1 Bonaparte Basin.
Northern Territory Tenements
Scale 1:500,000

PLATES

Plate 1 Interpretation Geology. Cuesta Ridge - Rocky Knob - Bonaparte Basin.
Northern Territory. Scale 1:10,000
(includes northern portion of E.L. 2169 The Fences).

1.0 INTRODUCTION

An ERTS study of the Bonaparte Basin done late in the season has located a northwest-trending lineament which passes through the surface showings near the northern boundary of The Fences E.L. 2169. Several other favourable structural elements are present in the E.L. 2169 region, and a stratigraphic test hole on The Fences E.L. would serve to determine if favourable carbonate stratigraphic units between the Cockatoo Formation and the Milligans Shale Beds are also present in the subsurface on the E.L.

The Licence area lies in the southern axial portion of the Bonaparte Gulf Basin, in the Northern Territory, 5 km from the Western Australia-Northern Territory border and approximately 25 kms south-east of the Sorby Hills base camp (see Fig. 1). Access from Sorby Hills is by a series of station tracks either through Milligans Lagoon along the border fence or through the Spirit Hill Station.

The terms of Exploration Licence 2169, 'The Fences', were granted on 5th December, 1979. After reduction the Licence now covers an area of 19.8 square kilometres and is largely over black soil plain and thick overburden with only poor rock outcrop.

2.0 GEOLOGY

2.1 Surficial Stratigraphy

The surface of the E.L. is generally black soil. The exception is in the northern part of the area, where outcrops of Burt Range Formation and possible Buttons Beds are present. Surface showings of galena occur in the Burt Range Formation. Rocks present at the surface of the E.L. are as follows, from oldest to youngest:

1. Upper Devonian Buttons Beds (Dub):
   The presence of Buttons Beds consisting mainly of sandstones has been queried on Cranney's (1981) map. In the basin, the Buttons Beds rocks are generally tan crystalline dolomites including reefal boundstones, and green silty dolomites.

2. Lower Carboniferous Burt Range Formation (Clb):
   In the E.L. area, three units have been mapped in the Burt Range Formation:- Clb_1, Clb_2 and Clbs (Cranney, 1981). The lowermost Clb_1 unit typically consists of silty dolomites with minor interbedded sandy crystalline dolomite. Rowley (verbal communication) reports colonial coral fossils low in the Clb_1 outcrops at the Broken Heart Hill immediately to the north of the E.L. Some surface showings of galena occur within the Clb_1 unit.

   At the contact between the Clb_1 and Clb_2 in the Cuesta Ridge area there is a quartz-pebble to cobble bed. Drilling in the Territory sometimes cuts a quartz-gritty band at this contact.

   The Clb_2 unit is typically a sandy dolomite, with minor interbedded silty dolomites. In The Fences E.L. area, galena showings occur near the lower and upper contacts of the Clb_2 unit.

Above the Clb_2 in the northern part of the Cuesta Ridge area is a thick sandstone unit with minor sandy dolomite which has been tentatively assigend to the Burvill Beds. This sandstone is known from drilling to be younger than Milligans Beds shales. Veevers and Roberts, 1968, considered the sandstone to be part of the Milligans Beds.

3. Upper Carboniferous Border Creek Formation (Cub): This formation caps the hills in The Fences E.L. area. It is a quartz sandstone and boulder conglomerate.

2.2 Structures

Outcrops of the prospective carbonate units are controlled by the N-trending Spirit Hill fault and the Spirit Hill anticline (see Plate 1) in the Cuesta Ridge area. Mapping in the area to the north of The Fences E.L. 2169 has shown that mineralisation is associated with prominent north-west trending structural features, e.g. joints and minor faults. Further work in the area is needed to establish a clear structural pattern in the Burt Range outcrops.

3.0 1982 EXPLORATION

An ERTS study done late in the 1982 season located a major lineament which passes through the Cuesta Ridge area in close proximity to the known galena showings. Fracture trends parallel to this lineament indicate this zone may be on the order of 2.5 km wide. Field checking of the lineament confirmed associated fault and fracture controlled mineralisation immediately to the north of The Fences E.L., and a portion of this area was mapped in detail.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Field work in the Cuesta Ridge area, immediately north of The Fences E.L. indicates a NW trending structure that intersects the surface showings at Cuesta Ridge and trends across to the Sorby ore pods. This structural zone extends into The Fences E.L., where stratigraphically favourable carbonate units between The Devonian Cockatoo Formation and the Carboniferous Milligans Beds exist. A deep stratigraphic test hole, on the order of 300m at the projected intersection of the Spirit Hill Anticline, the north-trending Spirit Hill fault and the NW-trending lineament, should be drilled.

Further field checking on The Fences E.L. can be done in 1983 to investigate the extent of this lineament.

ANNUAL EXPLORATION REPORT - THE FENCES E.L. 2169

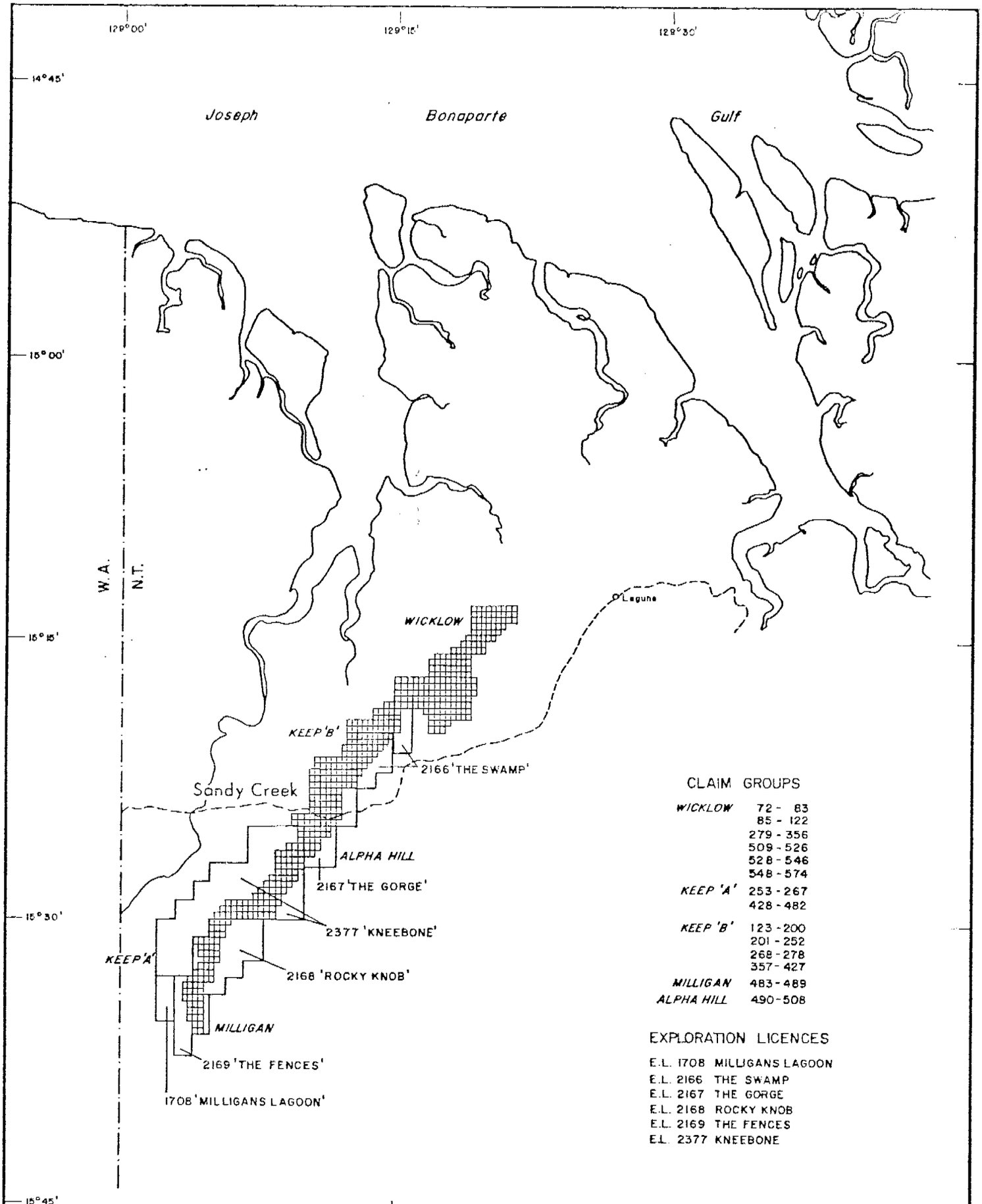
5.0 Summary of Expenditure for the Year ending November 30, 1982

Consumables	36.80
Field Hands Costs	904.55
Travel & Subsistence	35.20
Salary & Assoc - Mineral Dept.	665.00
Salary & Assoc - Land & Contracts	70.00
Depreciation - Buildings/ Support Facilities	214.77
Depreciation - Equipment & Tools	437.55
Depreciation - Transport Equipment	618.47
Depreciation - Furniture & Machines	26.27
Overheads	498.75
Service Fees - Overheads	1,333-95
Service Fees - Vehicles	34-43
Seconded Staff - Aquitaine	1,347.92
Seconded Staff - St. Joe	320.14
General Operating Expenses	14.75
Rent - Real Property	114.12
Travel - Local	289.01
Vehicle Expenses	2.98
Road & Site Construction - Contract	140.00
Total Expenditure for the Twelve Months to 30/11/82	7,104.66

6.0 REFERENCES

CRANNEY, P., (1981): Reinterpretation of the geology of Milligans Lagoon - Cuesta Ridge - Rocky Knob area, Northern Territory. Aquitaine Australia Minerals Pty. Ltd. MG Report 1082 (unpubl.).

VEEVERS, J.J., and ROBERTS, J., 1968: Upper Palaeozoic Rocks, Bonaparte Gulf Basin of Northwestern Australia. Bureau of Mineral Resources, Geology and Geophysics, Bulletin 97.

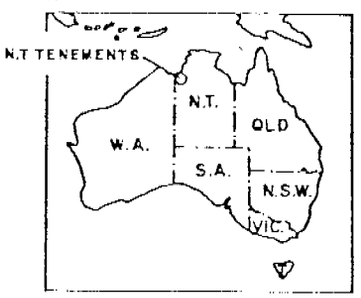


CLAIM GROUPS

WICKLOW	72 - 83
	85 - 122
	279 - 356
	509 - 526
	528 - 546
	548 - 574
KEEP 'A'	253 - 267
	428 - 482
KEEP 'B'	123 - 200
	201 - 252
	268 - 278
	357 - 427
MILLIGAN	483 - 489
ALPHA HILL	490 - 508

EXPLORATION LICENCES

E.L. 1708 MILLIGANS LAGOON
E.L. 2166 THE SWAMP
E.L. 2167 THE GORGE
E.L. 2168 ROCKY KNOB
E.L. 2169 THE FENCES
E.L. 2377 KNEEBONE

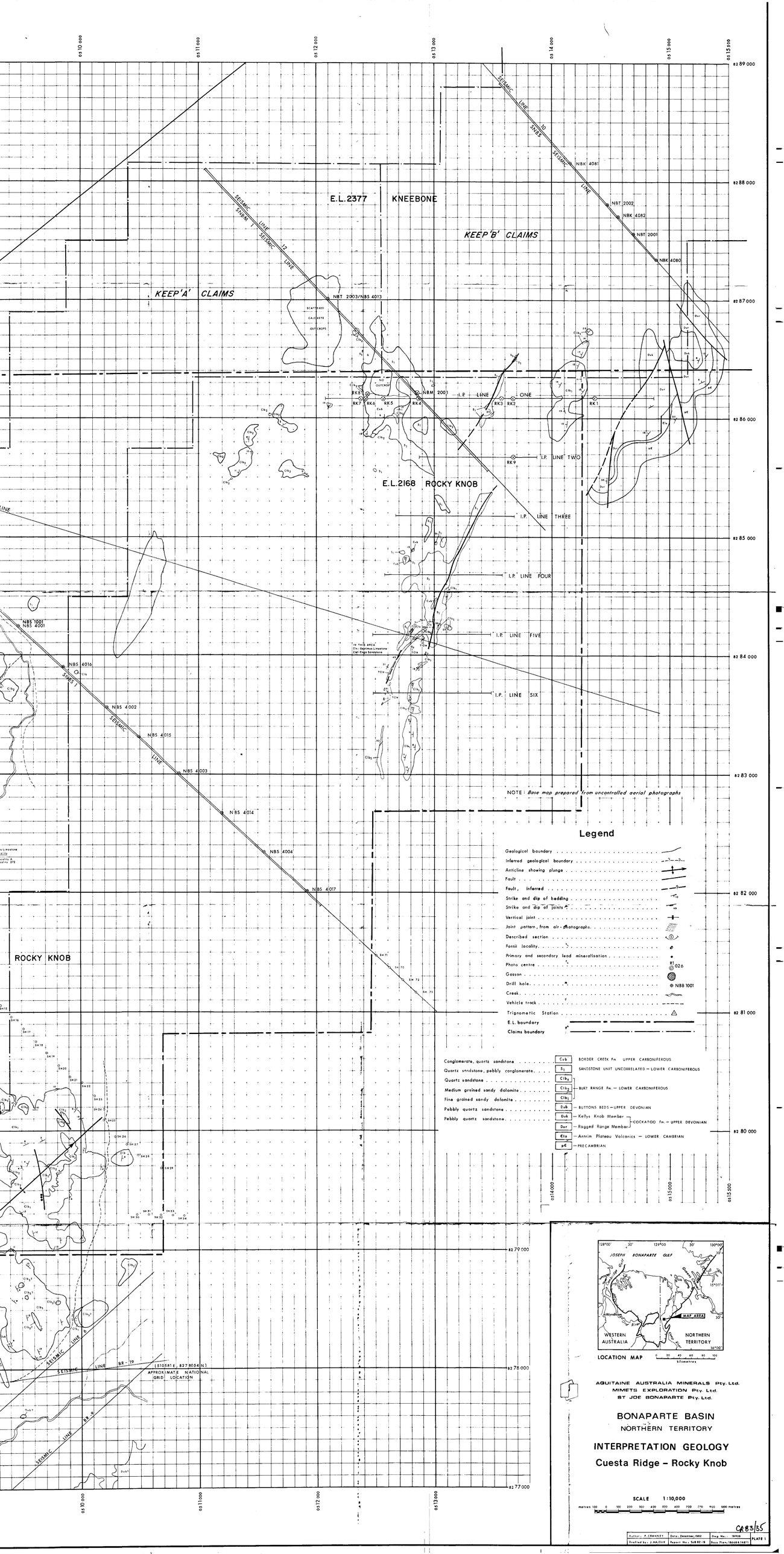


ST. JOE – A.A.M. – MIMETS

BONAPARTE BASIN

NORTHERN TERRITORY TENEMENTS

Author: M.ROWLEY	Date: DECEMBER, 1982	Scale 1:500,000	FIG. 1
Drawn: GJF	Report No.: SJB 82-19	Cat. No.: 750-M-2	



NOTE : *Base map prepared from uncontrolled aerial photographs*

Legend

- Geological boundary
- Inferred geological boundary
- Anticline showing plunge
- Fault
- Fault, inferred
- Strike and dip of bedding
- Strike and dip of joints
- Vertical joint
- Joint pattern, from air-photographs
- Described section
- Fossil locality
- Primary and secondary lead mineralisation
- Photo centre — 026
- Gossan
- Drill hole — NBB 1001
- Creek
- Vehicle track
- Trignometic Station
- E.L. boundary
- Claims boundary

Conglomerate, quartz sandstone	Cub	BORDER CREEK Fm — UPPER CARBONIFEROUS
Quartz sandstone, pebbly conglomerate	S_1	SANDSTONE UNIT UNCORRELATED — LOWER CARBONIFEROUS
Quartz sandstone	$C1b_4$	BURT RANGE Fm. — LOWER CARBONIFEROUS
Medium grained sandy dolomite	$C1b_3$	
Fine grained sandy dolomite	$C1b_2$	
Pebbly quartz sandstone	Dub	BUTTONS BEDS — UPPER DEVONIAN
Pebbly quartz sandstone	Duk	Kellys Knob Member — COCKATOO fm. — UPPER DEVONIAN
	Dur	Ragged Range Member
	€to	Antrim Plateau Volcanics — LOWER CAMBRIAN
	p€	PRECAMBRIAN

LOCATION MAP

AQUITAINE AUSTRALIA MINERALS Pty. Ltd.
MIMETS EXPLORATION Pty. Ltd.
ST JOE BONAPARTE Pty. Ltd.

BONAPARTE BASIN
NORTHERN TERRITORY

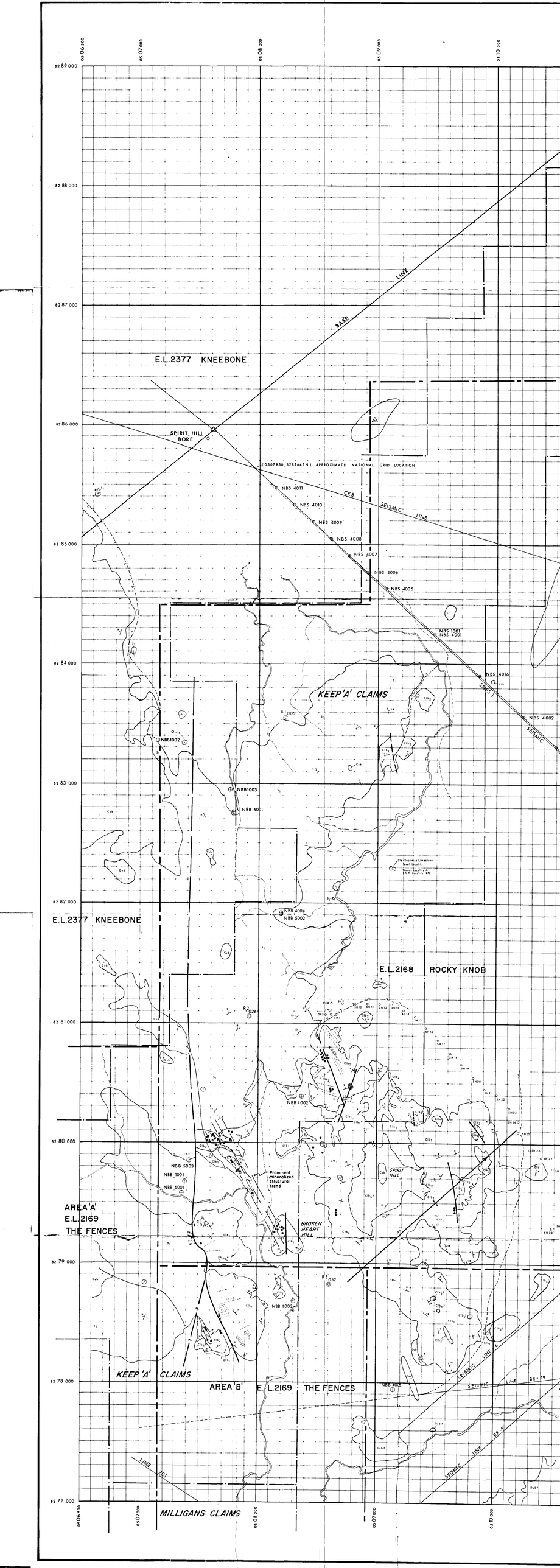
INTERPRETATION GEOLOGY
Cuesta Ridge – Rocky Knob

SCALE 1:10,000

metres 100 0 100 200 300 400 500 600 700 750 900 1000 metres

CR83/35

Author: P. CRAWNEY	Date: December, 1982	Dwg. No.: 18928	PLATE 1
Drafted by: J. MAJOR	Report No.: SUB 82-19	Base Plan: 5868 & 5881	


E.L.2377 KNEEBONE
BASE LINE
SPIRIT HILL BORE
(0507950, 8285645N) APPROXIMATE NATIONAL GRID LOCATION
CK8
SEISMIC LINE
NBS 4011
NBS 4010
NBS 4009
NBS 4008
NBS 4007
NBS 4006
NBS 4005
NBS 1001
NBS 4001
NBS 4016
SEISMIC
NBS 4002
KEEP 'A' CLAIMS
NBB1002
NBB1003
NBB 5001
NBB 4004
NBB 5002
E.L.2377 KNEEBONE
E.L.2168 ROCKY KNOB
NBB 4002
NBB 5003
NBB 1001
NBB 4001
Prominent mineralized structural trend
SPIRIT HILL
BROKEN HEART HILL
AREA 'A'
E.L.2169
THE FENCES
NBB 4003
KEEP 'A' CLAIMS
AREA 'B' E.L.2169 THE FENCES
NBB 4005
SEISMIC LINE BR-19
SEISMIC LINE BR-9
SEISMIC LINE 6
LINE 201
MILLIGANS CLAIMS
82 89 000
82 88 000
82 87 000
82 86 000
82 85 000
82 84 000
82 83 000
82 82 000
82 81 000
82 80 000
82 79 000
82 78 000
82 77 000
05 06 500
05 07 000
05 08 000
05 09 000
05 10 000