

AQUITAINE AUSTRALIA MINERALS PTY. LTD.

EXPLORATION LICENCE 416

ANNUAL REPORT

FOR THE PERIOD ENDING 27TH JUNE 1976

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By: P. d'Auvergne  
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MG: 708

CR 76 / 094

## ABSTRACT

After a short gradient array test block on E.L. 416 failed to produce conclusive results, it was decided to drill one stratigraphic diamond drill hole into a low magnitude chargeability high discovered during dipole-dipole IP work in 1974.

This hole penetrated dark siltstones and shales with thin interbeds of detrital limestone becoming more frequent at depth. No source for the chargeability anomaly was found other than low grade disseminated pyrite in the silty levels.

This hole can be used to reconstruct the platform and basin-marginal stratigraphy by comparing it with diamond drill holes located approximately three kilometers basinwards and 1.5 kilometres basin-marginwards respectively. The sandy dolomite occurring on the platform is found to become progressively siltier and muddier towards the centre of the basin.

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## 1.0 HISTORY

E.L. 416 was originally granted on 27th June 1972 and work during the 1972 and 1973 field seasons produced encouraging results, including the discovery of one low tonnage, high grade secondary zinc showing.

In 1974, fifty-one mineral claims were pegged in the southern half of E.L. 416 and this part of the E.L. was relinquished. The northern half of the E.L. was retained. The claims are now known as the Ochre Mine Claims.

No known mineralisation existed on the retained portion which contains very few outcrops. The only known outcrops occur in the far west of the E.L. and consist of conglomeratic sandstones of the Border Creek Formation.

## 2.0 PREVIOUS WORK

From the time of the original granting of E.L. 416, geological mapping was followed by extensive ground geophysics and some rotary-percussion and diamond drilling. Much of this previous work was located within that part of E.L. 416 which has been relinquished and retaken as the Ochre Mine Claims.

Only very little work actually lay over the current area of E.L. 416. Some dipole-dipole IP lines extended across the current E.L. 416 but these were part of a larger survey covering adjacent tenements.

Results of previous exploration on E.L. 416 are discussed in RAMDOHR (1972), (1973), (1974) and RAMDOHR and d'AUVERGNE (1975).

### 3.0 EXPLORATION

Concurrent work on adjacent E.L. 675 and the Ochre Mine Claims showed that the encouragingly mineralised Beta structural trend was likely to extend northwards into E.L. 416 while stratigraphical information suggested that potentially mineralized horizons tended to become progressively more deeply buried northwards.

The Beta trend appears to have been partially defined by dipole-dipole chargeability results on lines 6000N and 7000N at approximately 3500E (see plates 4K and 4L of RAMDOHR (1974)).

It was decided to read two gradient array IP blocks covering lines 6800N, 7000N and 7200N extending approximately two kilometers westwards from the western end of line 7000N. The data obtained appears to be unreliable. The two blocks are very difficult to match and strong electromagnetic coupling is suspected. The resistivity and chargeability maps of the area are shown as Figure 2.

To test the northwards extension of the Beta trend as suggested by a low magnitude chargeability high, a stratigraphic diamond drill hole was drilled into the centre of the high. Hole NBO 1001 located on line 7000N at 3500E was precollared by rotary drilling to 50 m and then deepened to 138.9 m by diamond coring.

The hole passed through a series of slightly pyritic siltstones and shales which contain thin detrital limestone interbeds at depth. Logs of this hole are shown as Figures 3 and 4.

### 4.0 CONCLUSIONS

NBO 1001 failed to reveal a source for the chargeability high although low grade pyrite associated with silty laminae may be the source. By using NBO 1001 together with NBC 1001, approximately 1.5 km towards the basin margin and NBH 1001 approximately 3 km towards the basin, a reconstruction of the basin margin in the vicinity of E.L. 416 can be made.

NBC 1001 was drilled into a sandy dolomite. The detrital limestone levels in NBO 1001 and in NBH 1001 (see d'Auvergne (1975)) are considered to be basal equivalents of the sandy dolomite at the bottom of NBC 1001. Figure 5 shows a profile through these holes.

Similar spore morphologies from 92 m in NBO 1001 and from 236 m in NBH 1001 support this correlation.

It is considered that NBO 1001 did not penetrate deep enough and the hole should have been continued to the contact of the shale/siltstone unit with the suspected underlying dolomites. This contact is found elsewhere to contain low grade mineralisation. Future drilling within E.L. 416 should be aimed at this contact and its incidence with structural trends.

#### 5.0 REFERENCES

- RAMDOHR, R. (1973) Exploration Licence 416, Progress Report - December 1972 (MG: 223), Unpub.
- RAMDOHR, R. (1973) Exploration Licence 416, Final Report for the Year Ending 27th June 1973 (MG: 281), Unpub.
- RAMDOHR, R. (1974) Exploration Licence 416, Annual Report for the Period Ending 27th June 1974 (MG: 488), Unpub.
- RAMDOHR, R. & d'Auvergne, P. (1975) E.L. 416 "Ochre Mine". Annual Report for the Period Ending 27th June 1975 (MG: 587), Unpub.
- d'Auvergne, P. (1975) E.L. 1031 "Wide Horizons". Annual Report for the Period Ending 13th November 1975 (MG: 656), Unpub.

6.0 EXPENDITURE

Expenditure on E.L. 416 as recorded on our books for the period  
1st July 1975 to 30th June 1976 is as follows:


Small consumables	\$ 516.86
Miscellaneous supplies	467.80
Printing & drafting supplies	398.93
Salaries - residents	2,278.25
Salaries - temporary personnel	270.28
Payroll tax	127.07
Permit fees and rentals	4.00
Vehicle rentals	55.92
Repairs & maintenance - vehicles	1,784.99
Repairs & maintenance - others	185.02
Electricity & gas rates	129.68
Accommodation & associated expenses	234.93
Air travel	869.72
Transport & freight - land	66.76
Transport & freight - air	59.72
Maps, photographs, etc.	33.05
Drilling	5,529.00
Positioning - surveying	35.95
Site and access preparation	387.50
Mobilisation - demobilisation drilling	462.03
Logging	250.00
Mobilisation - demobilisation - geophysics	512.15
Geophysical surveys	1,703.48
Consulting, S.N.P.A. - C.R.P.	773.06
Analyses	163.96
Other lab. services	338.86
Office supplies	54.79
Telecommunications	11.76
Subscriptions	4.14
Depreciation	353.89
Legal Department expenses	24.00
Mineral geology - lab. & associated expenses	5,467.40
Mineral geology Department - general expenses	789.95
Administration	4,576.60
Direct management costs	46.00
Drafting and printing	903.46
	<hr/>
TOTAL:	\$29,870.96
	<hr/> <hr/>



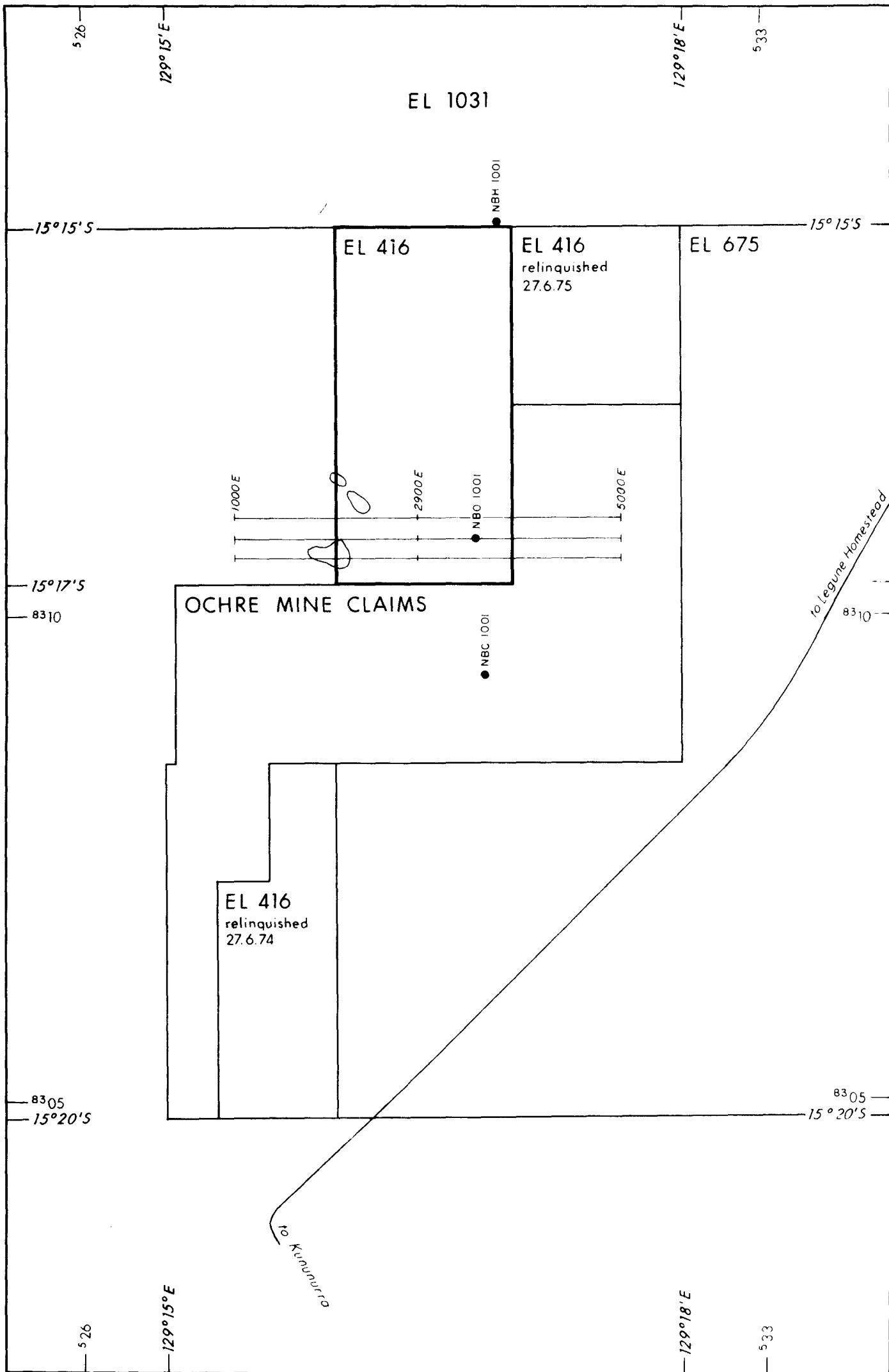
APPENDIX

ROTARY DRILL LOG NBO 1001

## DRILLING LOG


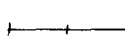

PERMIT E.L. 416 STATE N.A.	P.D.H. NBO 1001 Location R 7000N 3500E Azimuth Depression  VERTICAL	Hole drilled by DAVIES DRILLING Hole started 31.7.75 Hole completed 31.7.75 Hole logged by W. Morris
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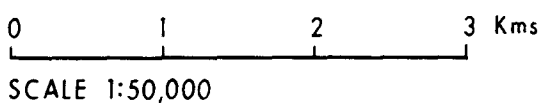
DEPTH (metres)	SAMPLE NUMBER	DESCRIPTION	ASSAYS	
			Pb (%)	Zn (%)
0- 2		Red-brown clay, soil		
2- 4		Yellow sandy clay. Highly calcareous		
4- 6				
6- 8				
8- 10		Grey clay nodules with some silt. Very calcareous	0.10	0.11
10- 12		Chips of whitish-grey calcareous material with yellow clay.		
12- 14		Yellow calcareous clay		
14- 16		Dense puggy weathered shale with much calcareous material.	<0.10	0.05
16- 18		Grey-brown calcareous clay with some gypsum chips.		
18- 20				
20- 22		Grey calcareous carbonaceous siltstone. Approximately 4% pyrite.	<0.10	<0.05
22- 24		Sandy horizon with silicified shell breccia.		
24- 26		Grey siltstone with shell fragments.		
26- 28		Grey carbonaceous slightly calcareous siltstone. Approximately 1% pyrite.	<0.10	<0.05
28- 30				
30- 32				
32- 34			<0.10	<0.05
34- 36		Grey slightly calcareous, carbonaceous siltstone.		
36- 38				
38- 40		Black carbonaceous shale	<0.10	<0.05
40- 42		Grey slightly calcareous carbonaceous shales with some crinoid ossicles and minor pyrite.	<0.10	<0.05
42- 44				
44- 46			<0.10	<0.05
46- 48				
48- 50			<0.10	<0.05
		Hole deepened by diamond drilling to 138m.		



NOTE: BASED ON SHEET 4767, LEGUNE OF THE NATIONAL 1:100,000 TOPOGRAPHICAL SERIES  
 EL BOUNDARIES AS AT 26.6.76

**LEGEND**

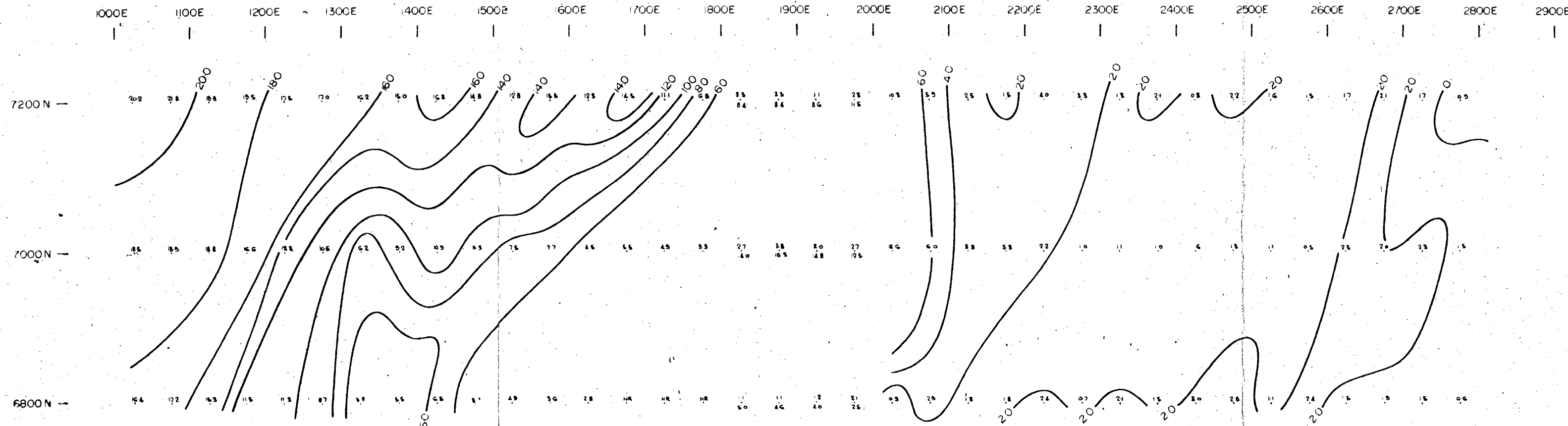
-  outcrop - Border Creek Formation
-  surveyed line
-  diamond drill hole



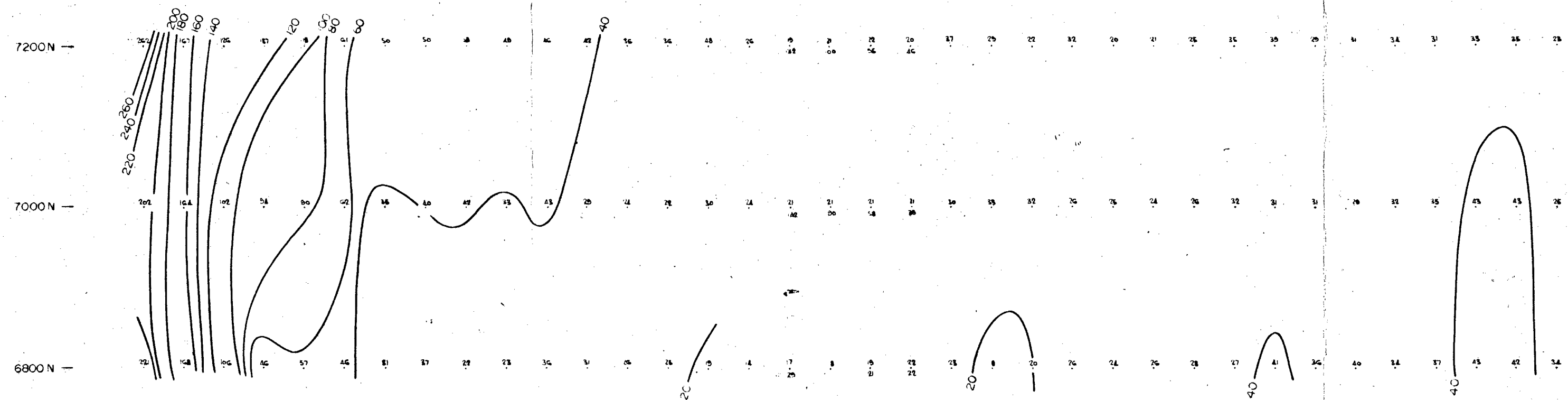
EL 416 - OCHRE MINE  
 LOCATION DIAGRAM

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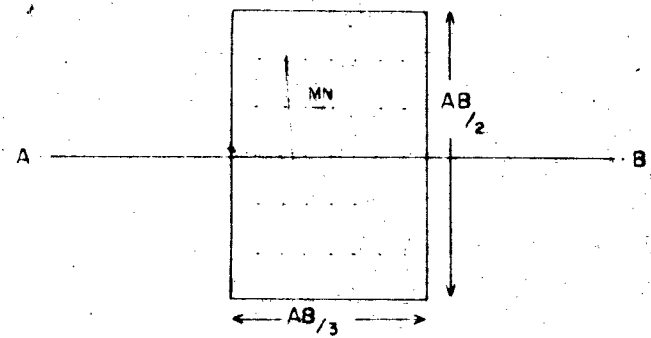
Apparent Chargeability



Apparent Resistivity



GRADIENT ELECTRODE CONFIGURATION



Gradient Array	AB = 2000 m	MN = 50 m
Date May - June 1975	Job No 85-450	Scale 1:5000

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AQUITAINE AUSTRALIA MINERALS PTY. LIMITED

BONAPARTE BASIN - Northern Territory  
 EL 416 OCHRE MINE AREA  
 Induced Polarization & Resistivity Survey  
 Gradient array contour map  
 7200 N, 7000 N, 6800 N

author: R.Ramdohr, P.d Auvergne	report: MG 708	FIGURE 2
date: August, 75	drawing no. 13316	



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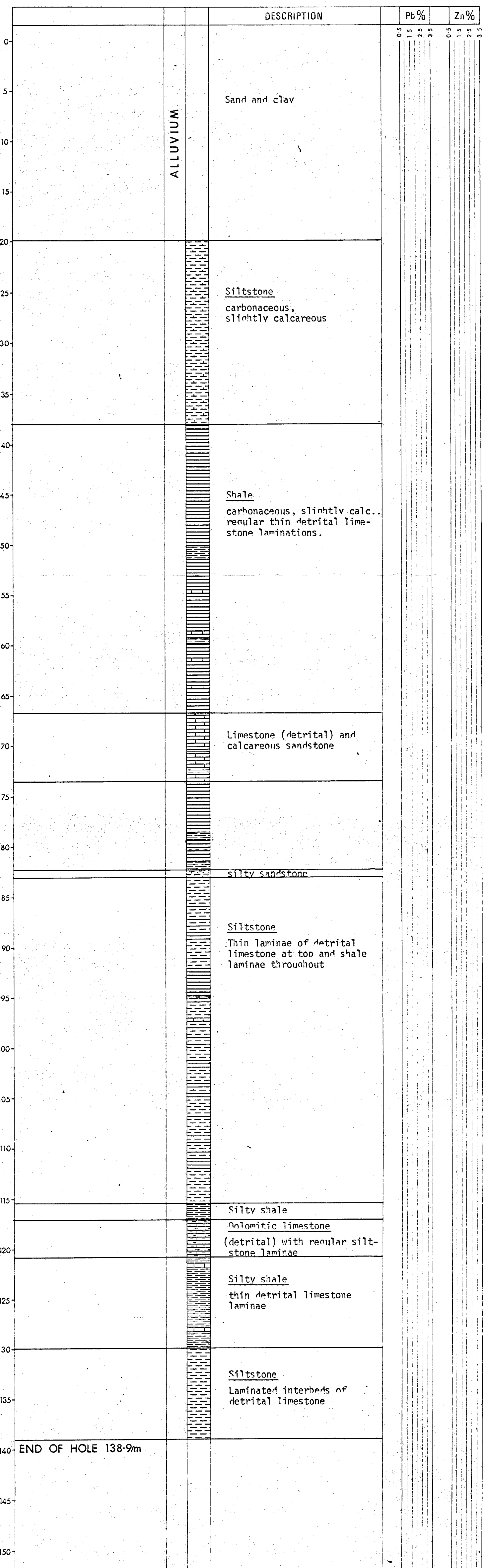
AQUITAINE AUST. MINERALS PTY. LTD. -

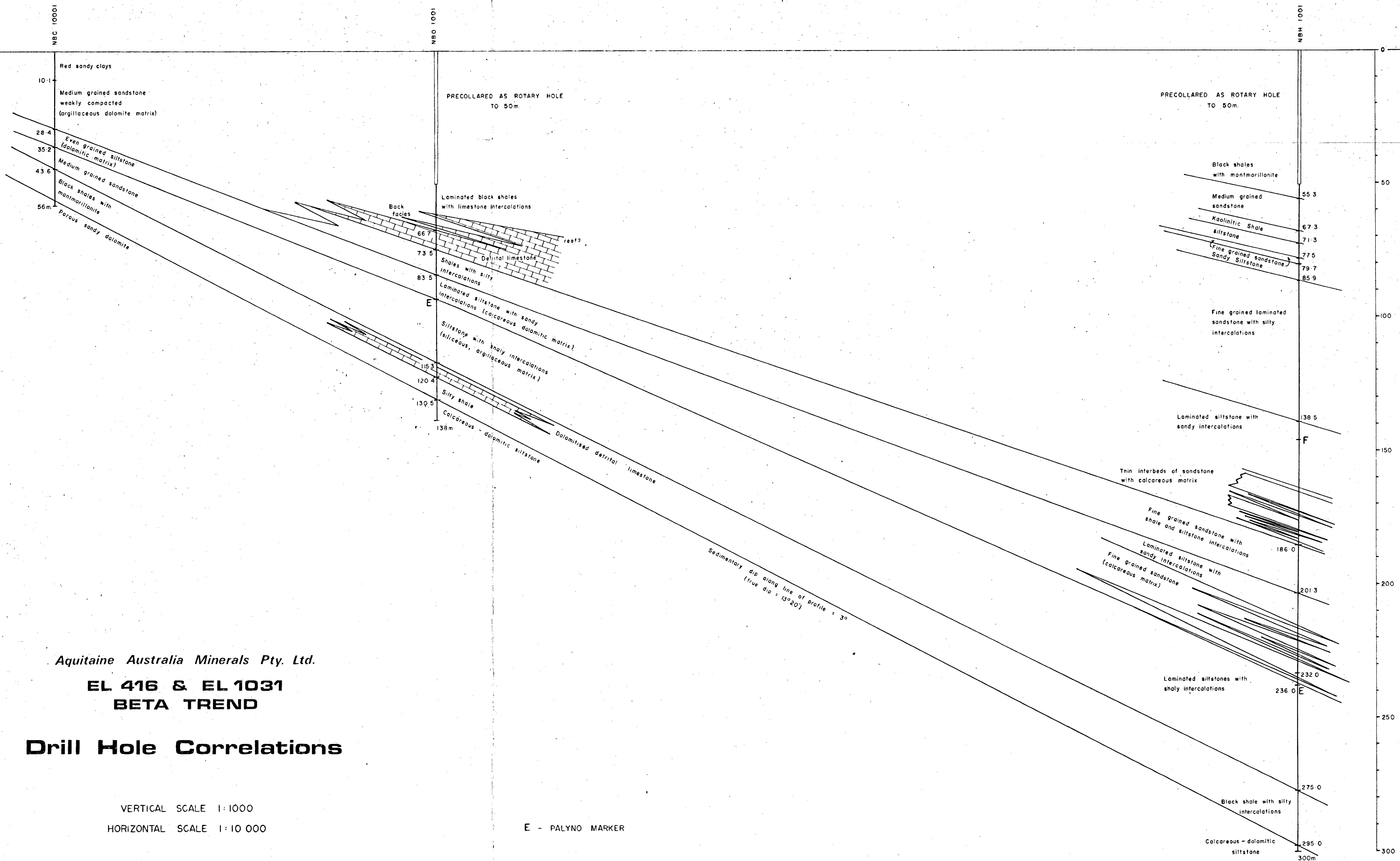
BONAPARTE GULF BASIN

NBO 1001

CO-ORDINATES

National grid	Aquitaine grid
..... N	R. 7000 N
..... E	3500 E





Aquitaine Australia Minerals Pty. Ltd.

**EL 416 & EL 1031  
BETA TREND**

**Drill Hole Correlations**

VERTICAL SCALE 1:1000  
HORIZONTAL SCALE 1:10 000