

OPEN FILE

ANNUAL REPORT E.L. 4346

26th August, 1984
to
25th August, 1985

Licensee: Aberfoyle Exploration Pty. Ltd.
Operator: Ashton Mining Limited
Sheet
Reference: Brunette Downs (SE 53-11) 1:250,000
Submitted to: Department of Mines & Energy

CR 86 / 023 A

NORTHERN TERRITORY
GEOLOGICAL SURVEY

Ashton Mining Limited
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Brisbane. 4000

November, 1985

ABSTRACT

During the period 26th August, 1984 to 25th August, 1985, Ashton Mining Limited as Manager of the A.D.E. Joint Venture carried out an exploration program in E.L. 4346 aimed at the location of kimberlite pipes.

A program of airborne remote sensing using thematic mapper techniques was undertaken over the whole of the licence area. The data generated from the survey was evaluated in conjunction with a photogeological study. Within Exploration Licence 4346 three low and three lowest priority thematic anomalies were delineated.

Due to the nature of the thematic targets defined, the licence area was not regarded as holding as much potential for kimberlites as ground held elsewhere in the Territory by the Joint Venture.

The licence was subsequently surrendered.

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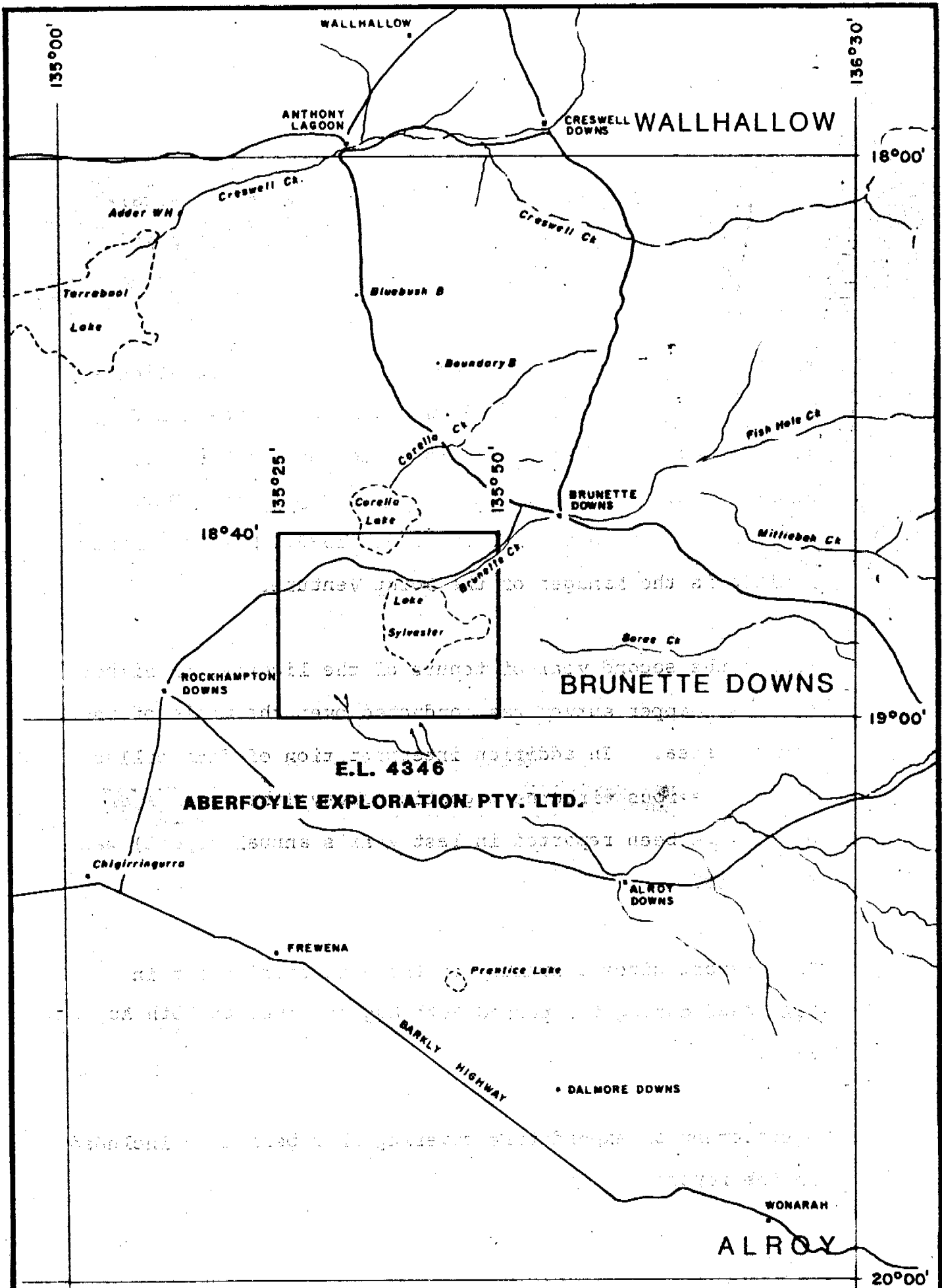


FIGURE 1
LOCATION MAP

1.00 INTRODUCTION

Exploration Licence 4346 covered an area of 1,610 square kilometres (500 blocks) on the Brunette Downs 1:250,000 sheet (refer to Figure 1).

The licence, which was granted to Aberfoyle Exploration Pty. Limited on 26th August, 1983, was subject to the A.D.E. Joint Venture Agreement between Ashton Mining Limited, A.O.G. Minerals Limited and Aberfoyle Exploration Pty. Limited, concluded on 9th September, 1980. Ashton Mining Limited is the Manager of the Joint Venture.

During the second year of tenure of the licence, an airborne thematic mapper survey was conducted over the whole of the licence area. In addition interpretation of data collected from a previous airborne magnetic survey (the results of which have been reported in last year's annual report) was completed.

This report gives a summary of the work carried out in E.L. 4346 during the period 26th August, 1984 to 25th August, 1985.

A statement of expenditure covering this period is included in the report.

TABLE 1

SURVEY SPECIFICATIONS.

Instrument: Daedalus 1268 Scanner (11 channels)

Channels available:	Channel	Wave length (µm)
	1	0.42 - 0.45
	2	0.45 - 0.52
	3	0.52 - 0.6
	4	0.605 - 0.625
	5	0.63 - 0.69
	6	0.695 - 0.75
	7	0.76 - 0.9
	8	0.91 - 1.05
	9	1.55 - 1.75
	10	2.08 - 2.35
	11	8.5 - 13

Aircraft: Beech King Air

Flying Altitude: 8000 metres above ground level

Ground Element Size: 20m x 20m

Flight Times: 0930 hours to 1430 hours

Azimuth of Runs: North or South

Overlap between runs: 40%

2.00 AIRBORNE THEMATIC MAPPER SURVEY

An airborne thematic mapper survey, undertaken on behalf of the A.D.E. Joint Venture by the National Safety Council of Australia, Victorian Division ("NSCA"), was flown over the whole of the licence area. Specifications for the survey are given in Table 1.

Thematic mapping was chosen over other remote sensing exploration methods as it had the advantage of using an eleven channel scanner giving a larger number of spectral bands which can be discriminated and because all data collected is digitized allowing for the greatest flexibility in manipulation of the data.

Within Exploration Licence 4346 the exploration method of thematic mapping was aimed primarily to enhance or distinguish between a possible kimberlite body and its surrounding overburden of Cainozoic sand and sandy soils, alluvium, lesser gravel and minor Cambrian dolomite and dolomitic limestone of the Anthony Lagoon Beds in the northern sector of the licence.

The scanner data in the form of 'quick look paper prints' collected from the airborne thematic survey, together with all relevant aerial photography, was forwarded to Hunting Geology and Geophysics (Australia) Pty. Limited for examination.

TABLE 2.

THEMATIC MAPPER ANOMALIES - E.L. 4346

- 494 L Bru BD8/5246 R39 ch 1-11 Circular dark tonal anomaly.
Thermally anomalous. Seen as
depression in gentle colluvium
slope on air photo. NSC. 250m.
- 495 L Roc BD6/5035 R42 ch 3-8,11 Small dark tonal anomaly on
R43 ch 3-7,8,11 WNW-trending linears in lime-
stone surface. NSC. 100 x 150m.
- 496 X Roc BD6/5035 Slight tonal/textural anomaly in
limestone surface. NSC. 250 x 350m.
- 497 L Roc BD7/5070 R42 ch 1-8,11 Elongate vegetation anomaly on
possible E-W linear. Probably in
a depression. NSC. 100 x 450m.

LISTING OF ANOMALIES

The format used for the listing of anomalies is as follows:-

Anomaly Number	Grading	Map Ref.	Air Photo Number	Scanner Run & Channel No.	Description	Size
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ABBREVIATIONS

Grading

- H = high (highest priority)
- M = medium (definitely worth checking)
- L = low (probably worth checking)
- X = lowest (of low interest unless supported by additional data)

Map Ref

- Bru = Brunette
- Roc = Rockhampton Downs

Air Photo Number

- BD = Brunette Downs

Description

- NSC = No stereo coverage

TABLE 2.

THEMATIC MAPPER ANOMALIES - E.L. 4346

480 X Bru BD8/5250 R36 ch 1-8,11 Circular feature in sand-covered limestone. Less regular on scanner data. NSC. 250m.

487 X Bru BD6/5031 Circular dark tonal anomaly at junction of deflation ridges. NSC.100m.

The procedure used by Hunting in such an examination is listed below:

1. Monoscopic examination of aerial photography.
2. Identification of anomalies from Step 1 on scanner data.
3. Examination of 11 channels of scanner data.
4. Identification of additional anomalies from Step 3 on aerial photography.
5. Stereoscopic examination of all anomalies on aerial photography where stereoscopic coverage was available.
6. Grading of anomalies.

The targets selected by Hunting were rated on a lowest, low, medium or high priority scale. Grading was established solely on the appearance of the anomalous zones without consideration of their position in regard to regional tectonic structures, or their apparent age in relation to residual surfaces.

Within E.L. 4346 three lowest and three low priority thematic targets were outlined, details of these being listed in Table 2. Anomaly locations are given in Plan 1.

3.00 CONCLUSIONS

Thematic mapping has shown a small number of low and lowest priority thematic targets within E.L. 4346. In the light of work carried out by the A.D.E. Joint Venture in the licence and adjoining areas it was decided that exploration efforts should be concentrated in more promising ground held elsewhere in the Territory. Consequently E.L. 4346 was surrendered with effect from 28th August, 1985.

APPENDIX 1.

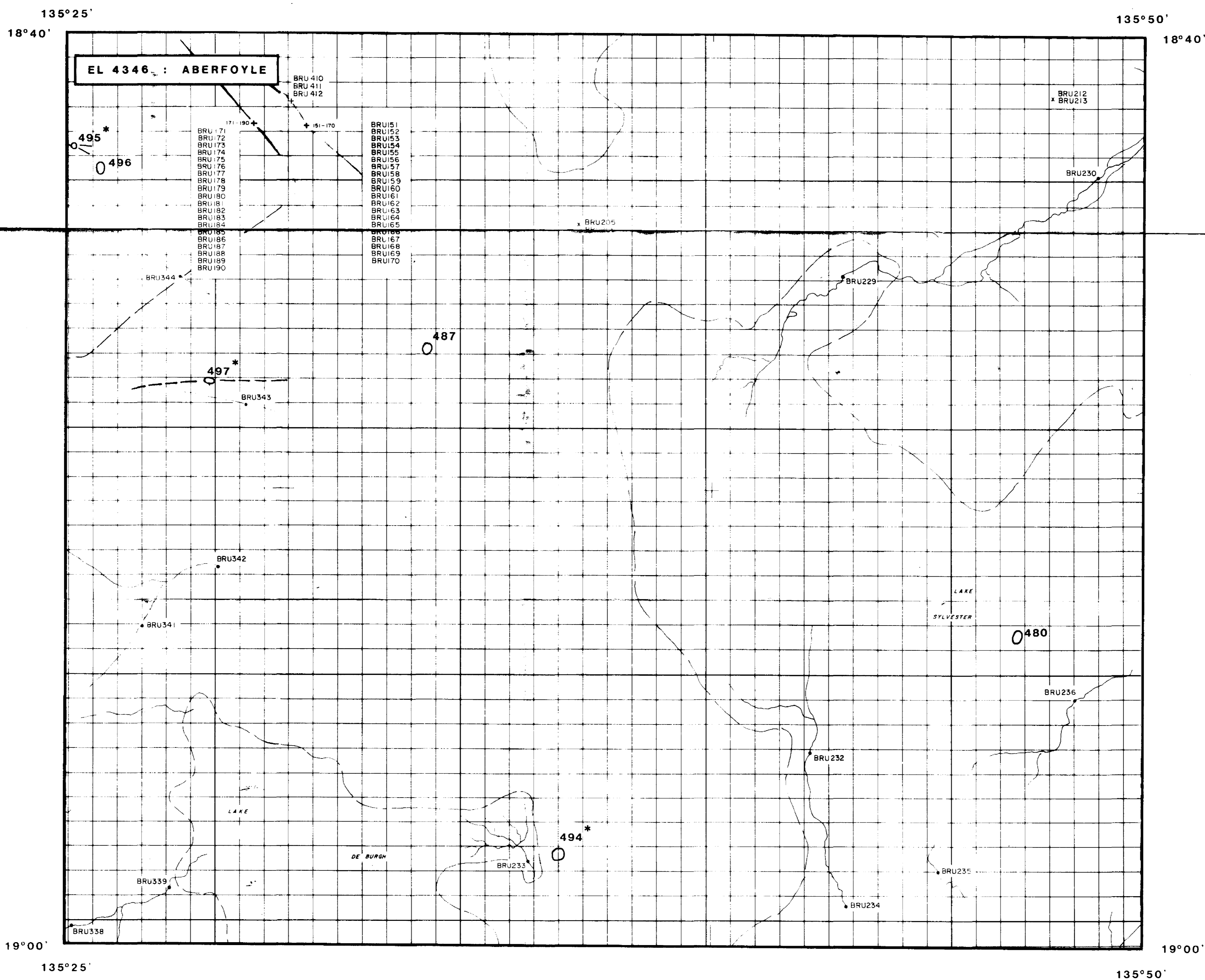
A.D.E. JOINT VENTURE

EXPLORATION LICENCE NO. 4346

EXPENDITURE FOR THE YEAR ENDED 25.8.85

	\$
Salaries	5,901
Field & Laboratory Expenses	15,842
Miscellaneous	4,645
	<hr/>
Expenditure for year:	26,388
	<hr/> <hr/>

Date Licence Granted: 26.8.83



LEGEND

- Gravel sample
- + Loam sample
- x Rock sample
- 123 Sample for period ending 25/01/1984 (previously reported)
- 456 Sample for period ending 25/01/1985

THEMATIC MAPPER ANOMALY

- Approximate size and shape of anomaly
- 342 Anomaly number
- *** Anomaly grading - high
- ** - medium
- * - low
- - - - - lowest
- pa Position approximate
- Fracture or other linear feature
- - - - - Weak linear
- ▲▲▲ Ridge
- - - - - Dyke

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 NORTHERN TERRITORY
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 ABERFOYLE EXPLORATION PTY LTD
 A.D.E. JOINT VENTURE
 E.L. 4346
 THEMATIC MAPPER
 ANOMALY LOCATIONS
PLAN 1
 0 1 2 3 4 5 KM
 Scale 1:100 000
 ASHTON MINING LIMITED NOVEMBER, 1985