CR 8831

FINAL REPORT FOR THE PERIOD ENDING 4 JANUARY 1997

WEARYAN PROJECT

EXPLORATION LICENCES 8995, 8996, 9139, 9187 AND 9438

McARTHUR BASIN, NT

Sheet Reference: Calvert Hills (SE53-08)

D STEPHENS

MARCH 1997

Tenement is held by:

BHP MINERALS PTY LTD
Level 3
3 Plain Street
EAST PERTH WA 6004

REF: \\MINXPER_SRV01\USERS\STEPHENS\SEC\FGDAYR\CREPORT\8831WEARYANPROJ.DOC
13/3/97

SUMMARY

This report details all the exploration completed by BHP Minerals Pty Ltd (BHP) on the Wearyan Project group of tenements, up to 4 January 1997. The Wearyan Project comprises exploration licenses 8995, 8996, 9139, 9187 and 9438 which are located on the Wearyan Shelf within the mid-Proterozoic McArthur Basin. BHP considers the project area to be prospective for mid-Proterozoic age sediment-hosted copper mineralisation.

Exploration during the last twelve months has consisted of two GEOTEM surveys along with limited ground EM follow-up.

One of the surveys was flown over the Redbank district while the other covered the Calvert Dome. The first survey was flown in an effort to detect chalcocite mineralisation over possible mineralised breccia pipes, while the Calvert Dome survey was aimed at detecting conductive mineralisation close to the contact between the Sly Creek Sandstone and the McDermott Formation, which is known to be regionally enriched in copper.

Two shallow flat-lying conductors were chosen from the Little Redbank survey for follow-up. Subsequent moving loop Protem revealed that the discrete conductors were surficial.

Three soundings were completed over the regional conductor defined by the Big Calvert Dome survey. The conductive horizon appears to be the equivalent of the Kiana member, recognised by earlier BHP work further to the west. The soundings were sited where a large NNE trending structure intersected the Calvert fault zone to better resolve the depth and nature of the regional conductor.

In addition to the GEOTEM surveys and associated ground follow-up, all open file stream and soil geochemistry was reviewed for the Wearyan project area. While there are several copper anomalies within the Karns Dolomite, there were no anomalies (that have not already been explained) associated with key structures, and therefor, the copper potential of the area has been down-graded.

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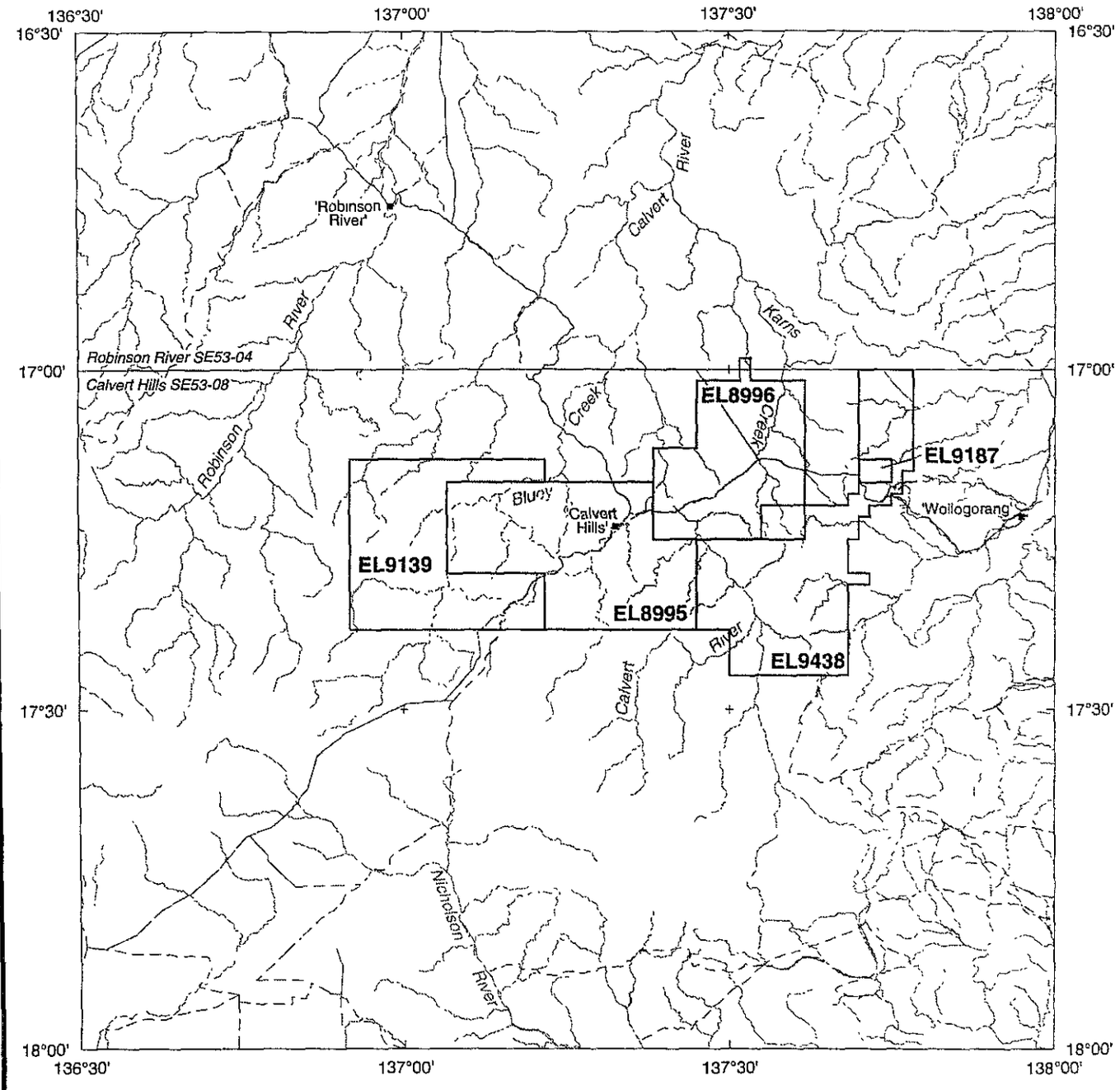

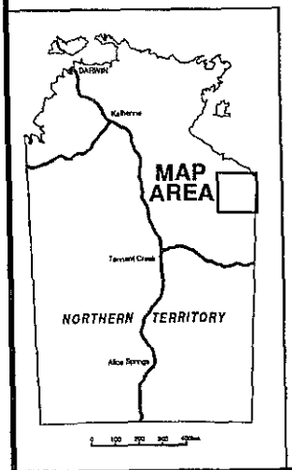

Scale 1 : 1,000,000

0 20 40 60 80 km

UTM Projection Zone 53

Prepared : M.Rennison	BHP	Exploration - BHP Minerals BHP Minerals Pty Ltd . A.C.N 008 694 782	Centre : Perth
Drawn : A.R.Veale	NORTHERN PLATFORMS WEARYAN PROJECT - EL8995, 8996, 9139, 9187, 9438		Drg. No. : A4-5862
Date : 12-3-96	LOCATION OF TENEMENTS		FIGURE 1
Revised : 27-5-96			

1. INTRODUCTION

This is a final report for the Wearyan Project group of and documents all work conducted by BHP Minerals. The Wearyan Project comprises exploration licenses 8995, 8996, 9139, 9187 and 9438 which are located on the Wearyan Shelf within the mid-Proterozoic McArthur Basin. BHP considers the project area to be prospective for mid-Proterozoic age sediment-hosted copper mineralisation. The tenements fall on the Calvert Hills 1:250,000 sheet (SE53-08) and are centered on 17^0 15' S latitude and 137^0 15' E longitude (Figure 1).

Exploration undertaken by BHP has involved literature review of open file reports, the flying of a large aeromagnetic survey, completion of two regional GEOTEM surveys and associated ground EM follow-up.

Total expenditures for each of the tenements is listed in Appendix 1.

Ashton Mining entered into a JV agreement on EL 8996 in late 1996. They did not however conduct any exploration. Their expenditure is also listed in Appendix 1.

1.1 Previous Work

Systematic geological mapping of the project area was first undertaken by the BMR 1956-1961 during the Calvert Hills 1:250,000 sheet mapping project. A Metallogenic Map published in 1989 for the Calvert Hills 1:250,000 Sheet was based on field work completed by the Northern Territory Geological Survey during 1982-1985.

Three main phases of exploration have been conducted in the Wearyan Project tenement area. The earliest exploration was by Australian Geophysical in 1966 to 1970. Subsequent exploration was carried out by Australia Cities Services, Amax, Carpentaria Exploration Company (CEC) and Ashton Mining between 1975 and 1982. CRA Exploration and BHP Minerals have been active in the area since 1990.

A summary of the exploration history is presented in Table 1. Proterozoic outcrop has been thoroughly sampled with stream sediment geochemistry and a number of discrete areas have been detailed with soil sampling. A limited amount of diamond and percussion drilling has been completed, primarily to test targets within the McDermott and Wollogorang Formations. One large airborne TEM survey has been flown and very minor ground TEM and magnetic profiling undertaken.

Uneconomic Pb-Zn mineralisation was discovered by CEC at the Thor prospect near Calvert Hills Homestead and minor copper mineralisation was identified near the top of the McDermott Formation at the Calvert Dome. Ashton Mining identified several horizons with elevated base metals within the Wollogorang Formation. CRA confirmed the presence of a copper/manganese anomalous zone at the Sly Creek Sandstone/McDermott Formation contact.

A major reinterpretation of BHP's Bluey Creek airborne TEM survey was undertaken in early 1995. This survey was flown over an area that includes EL8996 and parts of EL8995 in late-1991 in an effort to detect bedrock conductors related to base metal mineralisation. The first interpretation of the survey was biased towards high conductance anomalies. The reinterpretation was biased towards lower conductance anomalies adjacent to major structures and hosted by Karns or Wollogorang Formation stratigraphy. No new anomalies considered worthy of ground follow-up were identified.

TABLE 1 - Exploration Summary

YEAR	COMPANY	REFERENCE	COMMODITY	NOTES
1966-1970	Australian Geophysical	CR67 5, 67 7 70/5	Base metals	Stream, soil and rock sampling. Mapping. Drilling.
1976-1977	Amax	CR78/103	Base metals	Rock chip sampling

YEAR	COMPANY	REFERENCE	COMMODITY	NOTES
1978-1981	Carpentaria Exploration Company	CR82/88	Base metals	Stream, soil and rock sampling. Costeaning. Diamond drilling.
1982	Ashton Mining	CR83/98	Base metals	Lithogeochemical rock sampling of the Wollogorang Formation.
1990-1992	CRA Exploration	CR93/135, 94/121	Base Metals	Stream, soil and rock sampling. Ground magnetic survey. Diamond and percussion drilling.
1991-1993	BHP Minerals	CR7875	Base metals	Stream, soil and rock sampling. Airborne TEM survey. Ground TEM.

1.2 Rehabilitation

All ground exploration conducted by BHP was of a non-disturbing nature and no rehabilitation has been required.

2. GEOLOGY

The tenements lie on the Wearyan Shelf which forms the southeastern part of the mid-Proterozoic McArthur Basin. The McArthur Basin sequence is divided into four groups, each separated by a regional unconformity: the basal Tawallah Group, which consists mainly of quartz sandstone with subordinate volcanics, carbonates and shales; the McArthur Group, which consists of evaporitic carbonate and interbedded shale with

subordinate sandstone and chert; the Nathan Group, which consists of dolostone, sandstone, chert and shale; and the Roper Group, which consists of alternating sandstone and shale (Jackson et al., 1987).

The oldest rocks within in the tenements belong to the Tawallah Group, outcropping in the large Calvert Dome anticline and along the cross-cutting Calvert Fault. Sandstones and carbonates of the McDermott Formation are exposed in the dome core and are overlain by the Sly Creek Sandstone which grades into glauconitic sandstones of the Aquarium Formation. These units are overlain by the Settlement Creek Volcanics, a mafic volcanic interval comprised mainly of sills and lava flows. Carbonates and sandstones of the Wollogorang Formation outcrop on the northern flank of the dome and along the Calvert Fault. The next stratigraphic units is the Gold Creek Volcanics that have a very restricted outcrop area within the tenements.

These units are overlain by the Masterton Sandstone which Pietsch et al. (1991) place at the top of the Tawallah Group. Unconformably overlying the Tawallah Group is the Karns Dolomite which has been placed in the Nathan Group by Ahmad and Wygralak (1989). The erosional surface that the Karns Dolomite was deposited on cuts down as far as the Aquarium Formation on the northeastern edge of the Calvert Dome indicating a pre-Karns post-Masterton folding event.

A significant portion of the tenement area is covered by a thin layer of Cambrian to Recent sediments.

Structurally the project area is dominated by the NE-trending Calvert Fault and the Calvert Dome.

3. GEOPHYSICS

3.1 Aeromagnetic Survey

A significant area of EL8995 and EL9139 was covered by the Horse Creek

TABLE 2

AIRBORNE MAGNETIC/RADIOMETRIC SURVEY SPECIFICATIONS

Contractor		-	Geoterrex Pty Ltd, Sydney
Magnetometer		-	Scintrex Cesium vapour optical adsorption
Resolution		-	0.01 nT
Cycle Rate		-	0.1 seconds
Sample Interval		-	7 meters
Spectrometer		-	Exploranium GR820 256 Channel
Volume		-	33.56 litres
Cycle Rate		-	1.0 seconds
Sample Interval		-	70 metres
Data Acquisition		-	Geoterrex GEODAS Acquisition System
Total Line km		-	3,152 km
Traverse	line spacing	-	400 metres
	direction	-	000 - 180 degrees
Tie	line spacing	-	5,000 metres
	direction	-	090 - 270 degrees
Mean Terrain Clearance		-	70 metres
Navigation		-	GPS satellite positioning

aeromagnetic survey. The survey was flown to improve the stratigraphic and structural understanding of the Horse Creek area. A total of 3,152 line km was flown along 400 m spaced lines. Survey details are presented in Table 2, flight lines in Plate 1 and total magnetic intensity contours in Plate 2.

The Horse Creek survey can be subdivided into three domains of distinct magnetic character (Plate 3). Domain 1 covers the northern half of the survey area and is distinguished by an extremely high frequency magnetic pattern that is characteristic of a flat lying shallow magnetic source. Comparison with the mapped geology indicates this domain equates to the Settlement Creek Volcanics. Domain 2 is characterized by an extremely low and flat magnetic signal. Sandstones and carbonates of the McDermott Formation, Sly Creek Sandstone and Aquarium Formation are the source for this domain. Domain 3 is of intermediate magnetic character and gradational with domain 2. Correlation with the mapped geology shows this domain has a similar distribution to the McDermott Formation and extrapolation of the known stratigraphic succession indicates that the underlying Seigal Volcanics are the source for domain 3.

Some structural features are also evident within the data. The NE-trending Calvert Fault is clearly visible as a linear disruption within domain 1. A linear feature with slightly higher magnetic intensity runs along the Calvert Fault structure for some distance and may represent a feeder dike to the volcanics. Several antiform structures are evident within the Seigal Volcanics in domain 3 and correlate well with mapped folds in the overlying McDermott Formation.

3.2 GEOTEM

3.2.1 Little Redbank

As part of a regional assessment of the Redbank area, Geoterrex were contracted to fly a regional 25 Hz GEOTEM electromagnetic survey. The survey was flown in 1996 on NNE trending lines spaced 500m apart and was designed to test for conductive base metal mineralisation.

Survey specifications are presented in Table 3 and a flight line diagram is shown on Plate 4. TEM profiles are presented in Appendix 2.

The majority of the Little Redbank survey maps the resistive Masterton Sandstone and Gold Creek Volcanics which subcrop in the area. A more conductive zone in the west lies in an area of Cretaceous overburden.

The survey was flown in an effort to detect either possible chalcocite blankets on top of the Gold Creek Volcanics or sediment hosted copper within the evaporitic Pungalina Member. In either case the target horizon would be close to the surface.

Two anomalies were chosen for follow up in the western edge of the survey area (LRB 1 and 2, discussed below), while another conductor, which was not followed up with ground work, was defined in the northeast area of the survey. This latter anomaly was interpreted to be the Wollogorang Formation at depth. Closer inspection of the Temper conductivity images over this area revealed a zone of lower resistivity (20-30Ωm) within the 60-70Ωm layer commonly associated with the Wollogorang Fm. This area of lower conductivity is traceable over 5 flight lines or about 2.5 km's with a width of ~1km. An anticline running centrally through this area is well mapped by the Temper conductivity sections and the area of highest conductivity lies within the southern limb of this anticline. A small anomaly is also located over one of the known Cu breccia pipes in the area (Sandy Flat) but it is not known whether this is an expression of mineralisation or of culture on the surface.

3.2.2 **Calvert Dome**

As part of the regional assessment of the Calvert Dome, Geoterrex were contracted to fly a regional 25 Hz GEOTEM electromagnetic survey. The survey was flown in 1996 on N-S lines spaced 500m apart and was designed to detect stratiform sediment-hosted Cu-Co mineralisation and large Redbank-style Cu.

25 Hz GEOTEM SPECIFICATIONS

Aircraft	-	CASA C212-2 Turbo Prop
Magnetometer	-	Scintrex Cesium Vapour Optical Absorption
Resolution	-	0.01 nT
Cycle Rate	-	1.0 second
Sample Intervale	-	60 metres
Electromagnetic System	-	GEOTEM III Time Domain EM
Transmitter Base Frequency	-	25 Hz
Transmitter Pulse Width	-	4 msec
Receiver	-	Horizontal (X) and vertical (Z) axis coil in towed bird
Cycle Rate	-	0.25 second (X and Z components)
Sample Interval	-	15 metres

Window mean delay times (msec):									
em1	0.469	em2	0.781	em3	1.094	em4	1.406	em5	4.609
em6	4.766	em7	4.922	em8	5.156	em9	5.469	em10	5.859
em11	6.328	em12	6.875	em13	7.578	em14	8.438	em15	9.453
em16	10.625	em17	12.031	em18	13.750	em19	15.938	em20	18.594

Data Acquisition	-	RMS GR33 Thermal Dot Matrix Recorder
	-	GEODAS Digital Acquisition System
Flight Line Direction	-	0° - 180°
Flight Line Spacing	-	1,000 metres
Mean Terrain Clearance (Tx)	-	105 metres
Mean Terrain Clearance (Bx)	-	54 metres
Navigation	-	GPS satellite positioning/Doppler

Survey specifications are presented in Table 3 and a flight line diagram is shown on Plate 4. TEM profiles are presented in Appendix 2.
The survey defined a large regional conductor close to the contact of the Sly Creek sandstone and the McDermott Formation. This horizon is known to be regionally anomalous in copper and the Geotem survey was to test the contact for anomalous conductivity; either higher conductivity in the case of sulphide rich ore, or possibly lower conductivity caused by silicification associated with mineralisation.

Several areas of higher conductivity were identified and those that lay adjacent to major structures identified in magnetic data were given a higher priority.

3.3 Little Redbank Ground PROTEM

Two lines of moving loop Protem data were collected over anomalies LRB1 and LRB2. Both lines of data showed the anomalies to be due to increased thickness of alluvial overburden. Analysis of the apparent resistivity curves showed a moderately conductive, late time layer that was not resolved by the Geotem system in this area. This is interpreted to be the Wollogorang Formation at depth. Grendl inversions of selected points along the moving loop lines show the conductive layer at depth (400-500m) with a resistivity varying from 25Ωm to >80Ωm within the space of 3 kilometres.

Profiles are shown in Appendix 3.

3.4 Protem Soundings

Three Protem soundings were conducted over the high priority areas mentioned above (Calvert Dome area). The soundings confirmed the existence of a regional conductor (25Ωm/10S) at 40m depth, with no anomalously low resistivity layer able to be detected within this regional conductor. The main purpose of ground follow up in the

case of large flat-lying targets is to better resolve the depth of the conductive units and to detect subtle layers that the Geotem system is unable to resolve.

The sounding inversions are included in Appendix 3.

4. CONCLUSIONS AND RECOMMENDATIONS

A review of the Open File literature indicates areas of mid-Proterozoic outcrop within the project tenements have been well covered by stream sediment sampling. A number of anomalies have been followed up with soil sampling and in some cases drill testing. Horizons with elevated base metals have been discovered within the McDermott and Wollogorang Formations. There are no un-explained anomalies within the Tawallah Group sediments/volcanics.

During the last twelve months, two regional GEOTEM surveys were flown in the Redbank and Calvert Dome areas. Both surveys failed to detect any significant conductors which may have related to sediment-hosted copper mineralisation. Therefor, BHP feels that the potential of the Wearyan project areas has been downgraded and no further work is recommended.

5. REFERENCES

AHMAD, M. and WYGRALAK, A.S., 1989. 1:250,000 Metallogenic Map Series Explanatory Notes and Mineral Deposit Data Sheets Calvert Hills SE53-8, NTGS.

JACKSON, M.J., MUIR, M.D. and PLUMB, K.A., 1987. Geology of the Southern McArthur Basin, Northern Territory. BMR, Geology and Geophysics, Bulletin 220.

PIETSCH, B.A., RAWLINGS, D.J., CREASER, P.M., KRUSE, P.D., AHMAD, M., FERENCZI, P.A. and FINDHAMMER, T.L.R., 1991. 1:250,000 Geological Map Series Explanatory Notes Bauhinia Downs SE53-3, NTGS.

APPENDIX 1

EXPENDITURE

E8996 - CALVERT YARD

21 February 1996 to 29 January 1997

Field Support	1,801
Vehicles	76
Equipment	792
Office Expenses	407
Other	43
In-House Services:	
Geophysics	2,575
Sub-Total	**5,694**
20% of Total for Corporate Overheads	1,139
TOTAL	**$6,833**

REF \\MINXPER_SRV01\USERS\RICHARDS\SEC\FGGAS\EXPEND\CALV8996.DOC

E8996 - CALVERT YARD

21 February 1995 to 29 January 1997

Wages and Salaries	9,450
Field Support	3,349
Vehicles	483
Equipment	792
Tenement Costs	2,255
Office Expenses	452
Other	179
Library	83
Computer Expenses	1,691
In-House Services:	
Geophysics	4,069
Geochemistry	480
Sub-Total	**23,283**
20% of Total for Corporate Overheads	4,657
TOTAL	**$27,940**

REF \\MINXPER_SRV01\USERS\RICHARDS\SEC\FGGAS\EXPEND\CALV8996-2.DOC

E8995 - CROCODILE YARD

21 February 1996 to 29 January 1997

Wages and Salaries	2,255
Field Support	1,417
Vehicles	3,374
Equipment	576
Geochemistry	210
Geophysics	51,627
Office Expenses	478
Other	39
Library	1,500
Consultants	1,367
In-House Services:	
Geophysics	5,150
Geochemistry	1,030
Drafting	575
Sub-Total	**69,598**
20% of Total for Corporate Overheads	13,920
TOTAL	**$83,518**

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E8995 - CROCODILE YARD

21 February 1995 to 29 January 1997

Wages and Salaries	12,015
Field Support	4,354
Vehicles	4,694
Equipment	728
Geochemistry	499
Geophysics	80,031
Surveys	1,044
Office Expenses	646
Other	275
Library	2,052
Consultants	2,450
In-House Services:	
Geophysics	6,644
Geochemistry	1,030
Drafting	1,265
Sub-Total	**117,727**
20% of Total for Corporate Overheads	23,545
TOTAL	**$141,272**

REF \\MINXPER_SRV01\USERS\RICHARDS\SEC\FGGAS\EXPEND\CROC8995.DOC

E9438 - RUNNING CREEK

10 May 1996 to 29 January 1997

Wages and Salaries	29,973
Field Support	13,234
Vehicles	4,336
Equipment	1,313
Aircraft Charter	13,040
Geochemistry	9,259
Geophysics	88,422
Surveys	1,081
Office Expenses	3,734
Other	34
Library	97
Consultants	123
In-House Services:	
Geophysics	16,480
Geochemistry	1,030
Drafting	805
Sub-Total	**182,961**
20% of Total for Corporate Overheads	36,592
TOTAL	**$219,553**

REF \\MINXPER_SRV01\USERS\RICHARDS\SEC\FGGAS\EXPEND\RUNN9438.DOC

E9139 - PACKSADDLE CREEK

14 June 1995 to 29 January 1997

Wages and Salaries	6,491
Field Support	2,451
Vehicles	3,209
Equipment	360
Geophysics	65,796
Office Expenses	512
Other	217
Computer Expenses	2,174
Consultants	1,367
In-House Services:	
Geophysics	979
Sub-Total	**83,556**
20% of Total for Corporate Overheads	16,711
TOTAL	**$100,267**

REF. \\MINXPER_SRV01\USERS\RICHARDS\SEC\FGGAS\EXPEND\PACK9139.DOC

E9187 - GOLD CREEK

31 July 1996 to 29 January 1997

Vehicles	321
Equipment	230
Office Expenses	289
In-House Services:	
Geochemistry	2,060
Sub-Total	**2,900**
20% of Total for Corporate Overheads	580
TOTAL	**$3,480**

REF: \\MINXPER_SRV01\USERS\RICHARDS\SEC\FGGAS\EXPEND\GOLD9187-2.DOC

E9187 - GOLD CREEK

31 July 1995 to 29 January 1997

Wages and Salaries	2,604
Field Support	1,942
Vehicles	550
Equipment	230
Geophysics	2,438
Office Expenses	402
Computer Expenses	435
In-House Services:	
Geophysics	464
Geochemistry	2,060
Sub-Total	**11,125**
20% of Total for Corporate Overheads	2,225
TOTAL	**$13,350**

REF: \\MINXPER_SRV01\USERS\RICHARDS\SEC\FGGAS\EXPEND\GOLD9187.DOC

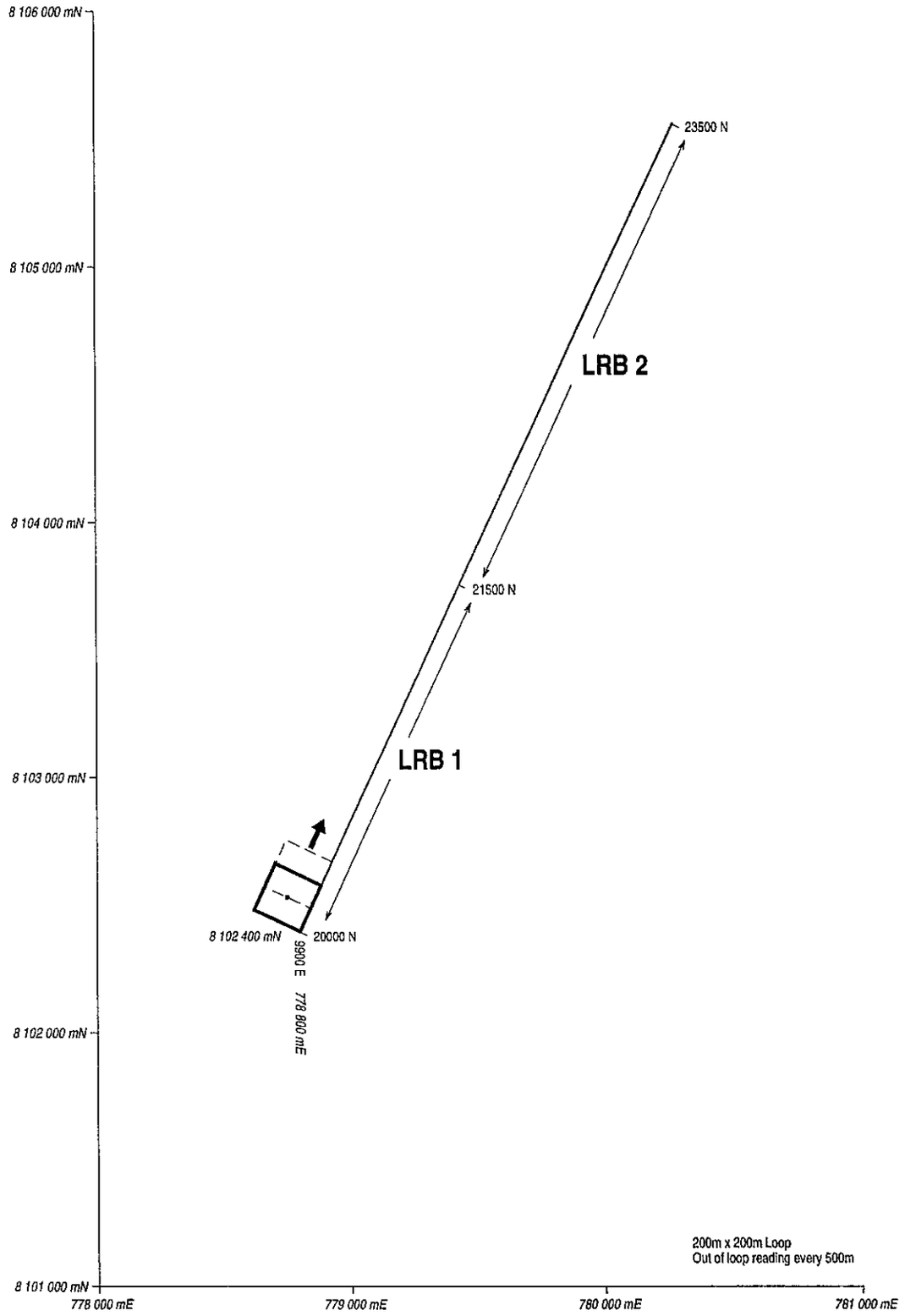
APPENDIX 2

GEOTEM PROFILES

APPENDIX 3

MOVING LOOP PROFILES, AND SOUNDINGS INVERSIONS

LITTLE REDBANK - LRB 1 & LRB 2



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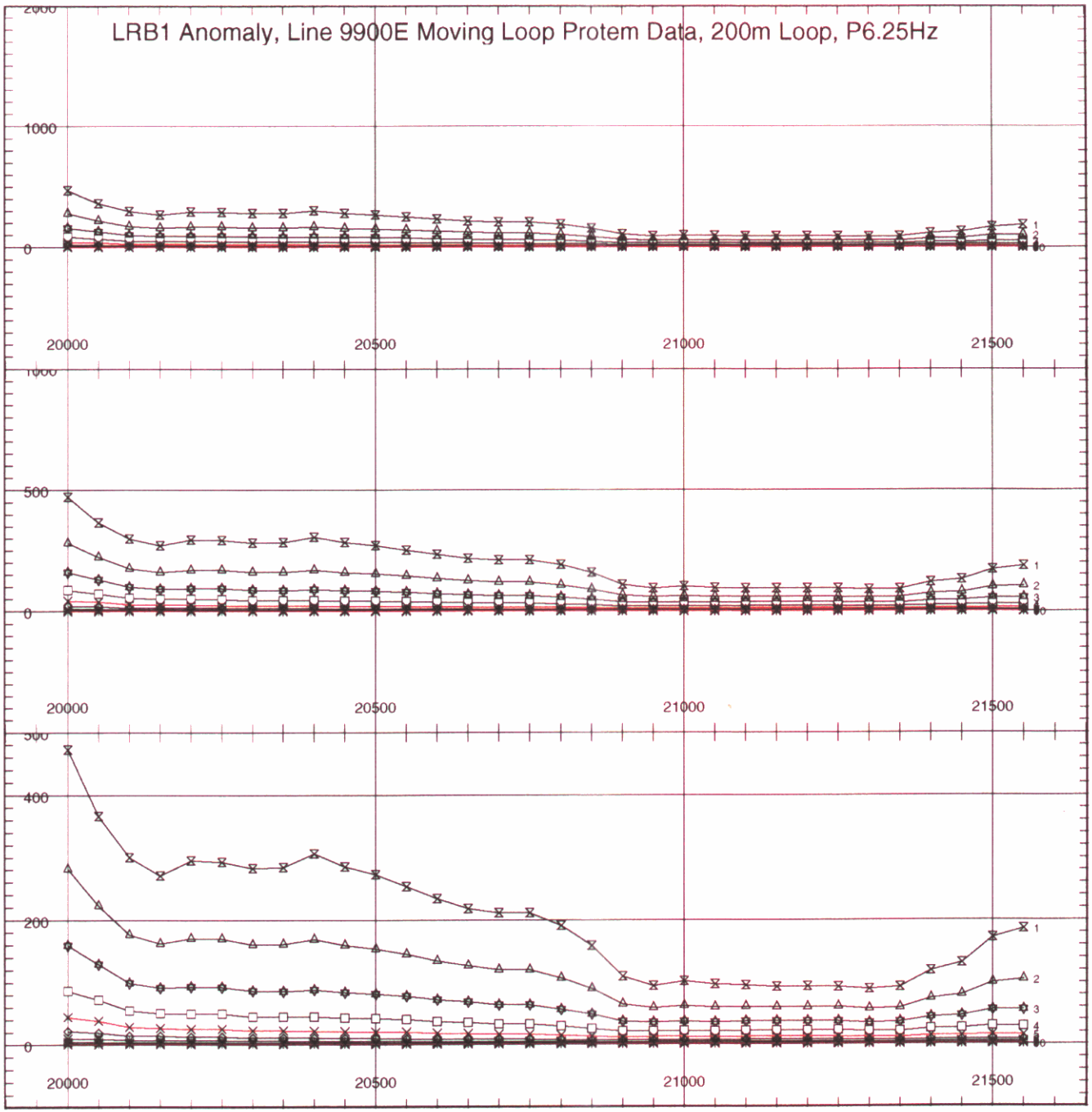
Prepared : C.Miller	BHP	Exploration - BHP Minerals BHP Minerals Pty Ltd., A.C.N 008 694 782	Centre : Perth
Drawn : R.J.Clark	NORTHERN PLATFORMS PROGRAM LITTLE REDBANK		Drg. No. : A4-6256
Date : 12.3.97	LITTLE REDBANK ANOMALY LRB1 & LRB2 MOVING LOOP TEM SURVEY LOCATION		FIGURE
Revised :			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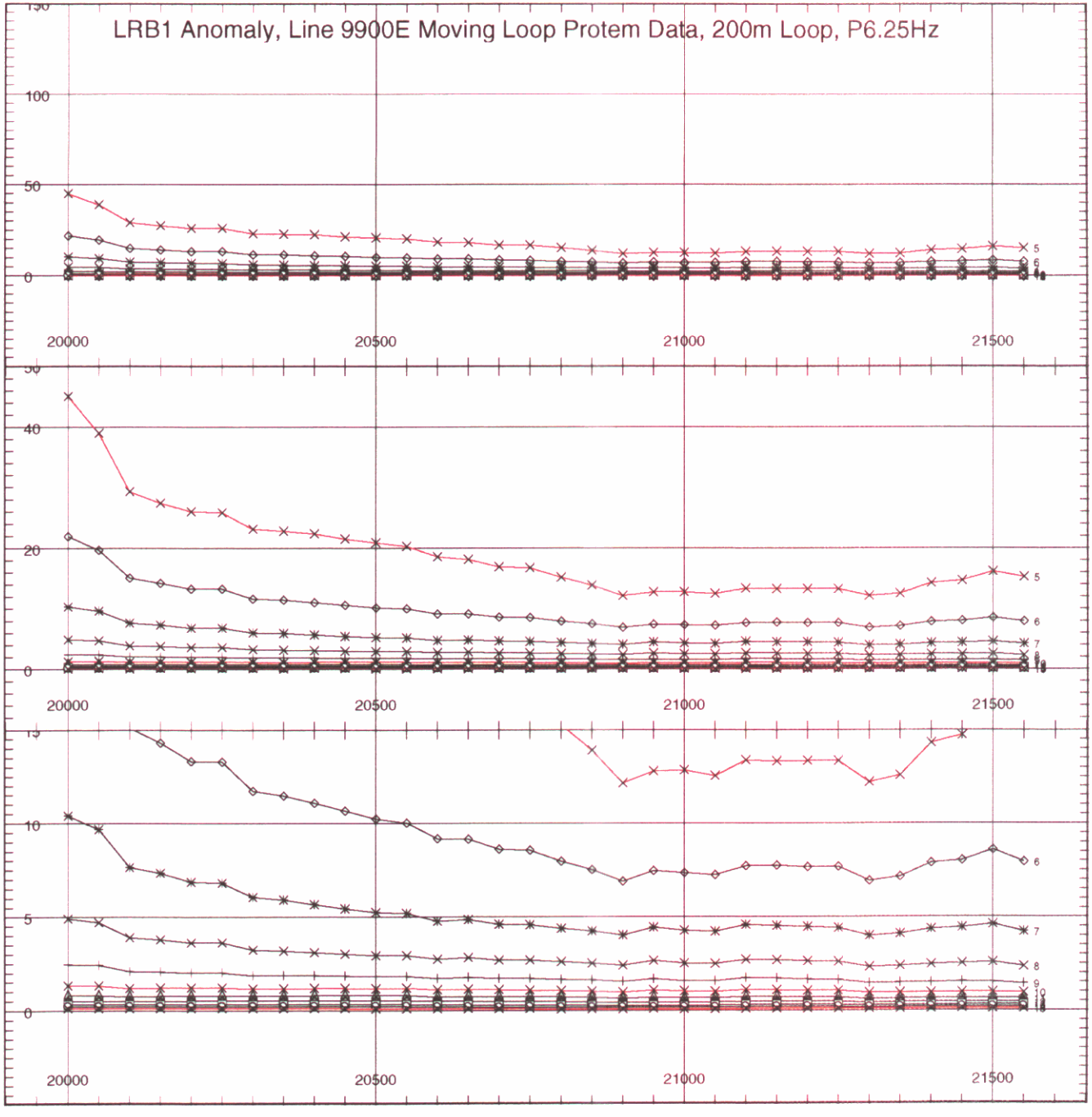
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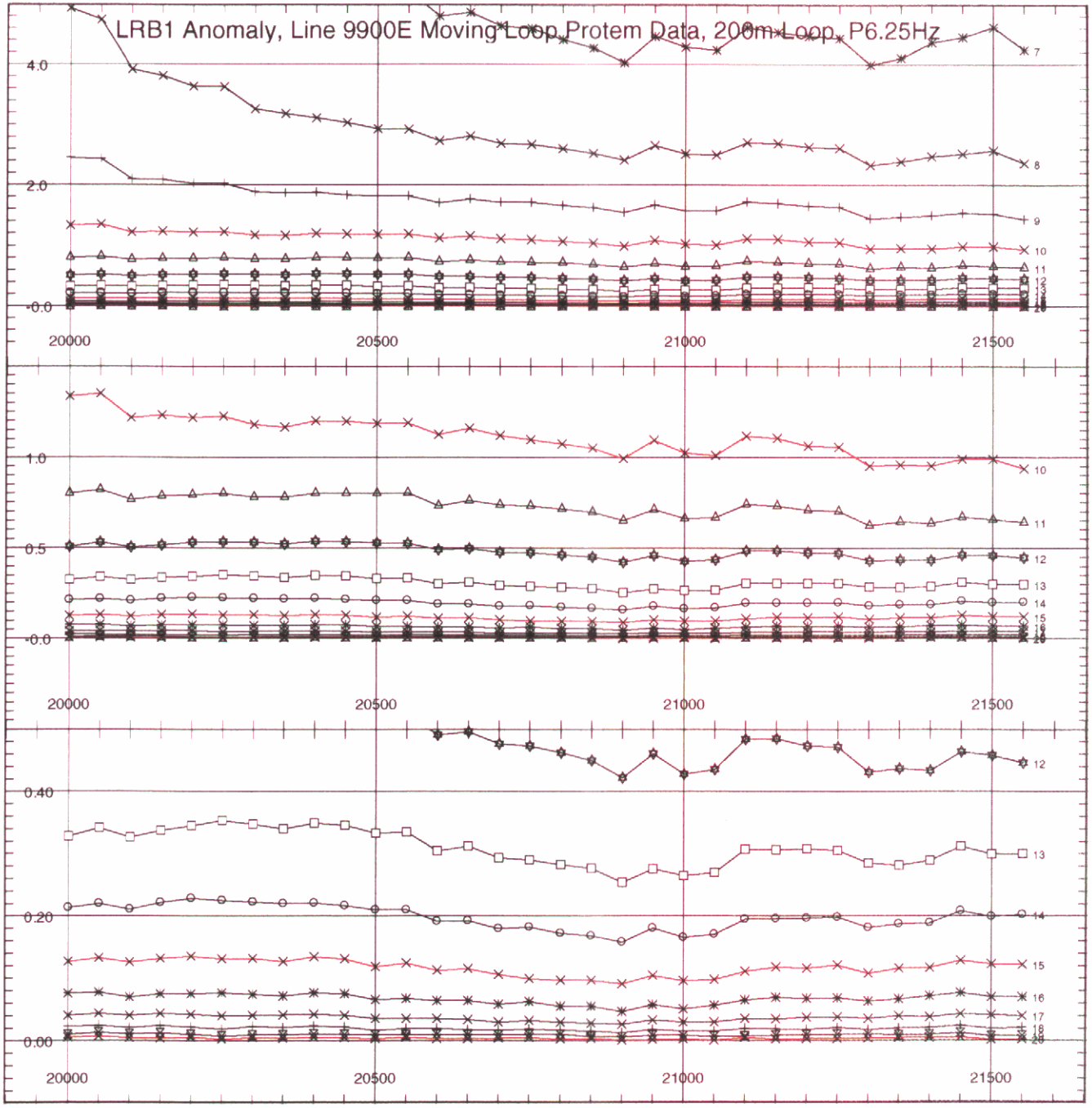
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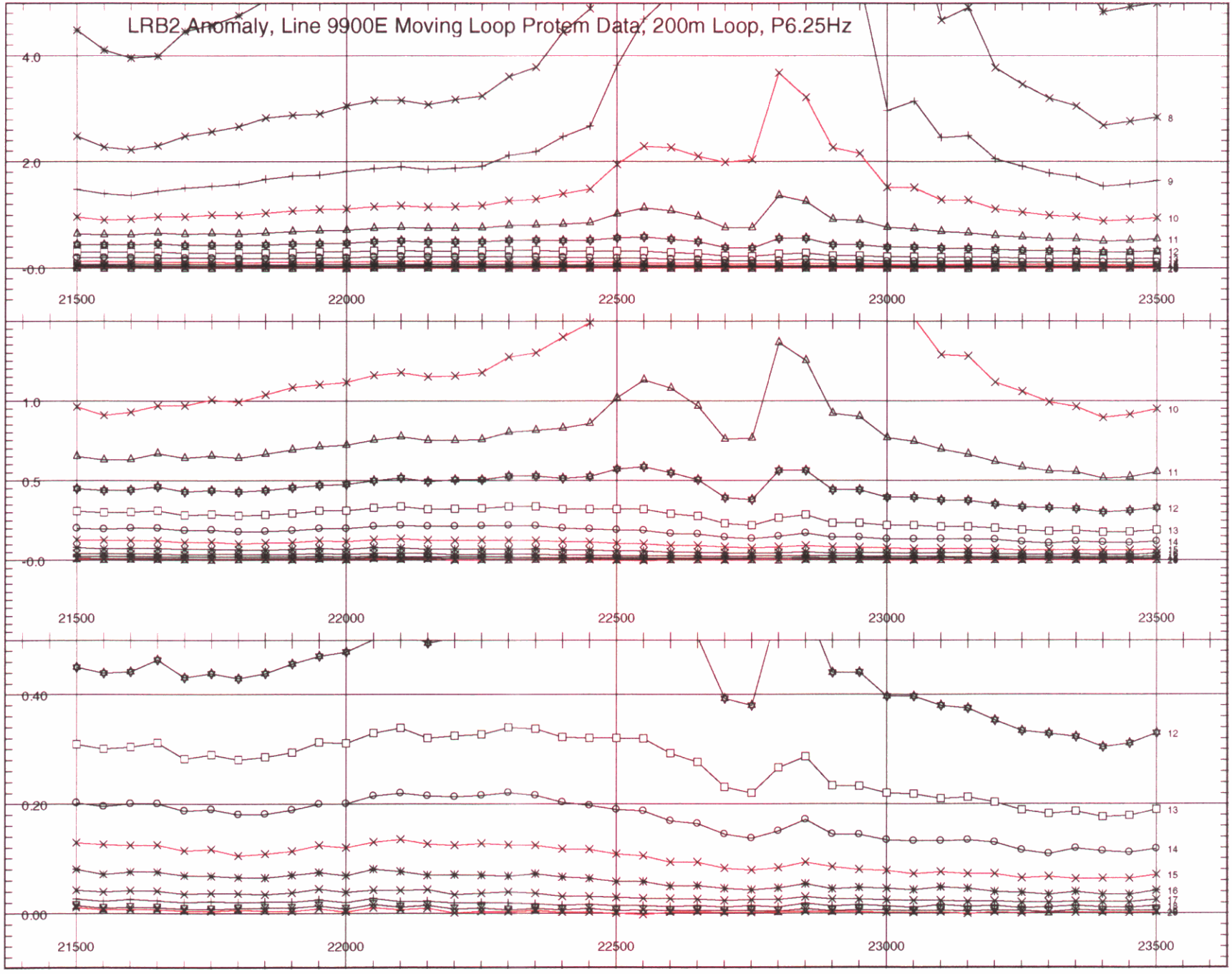
Figure 5.

See image file Attached.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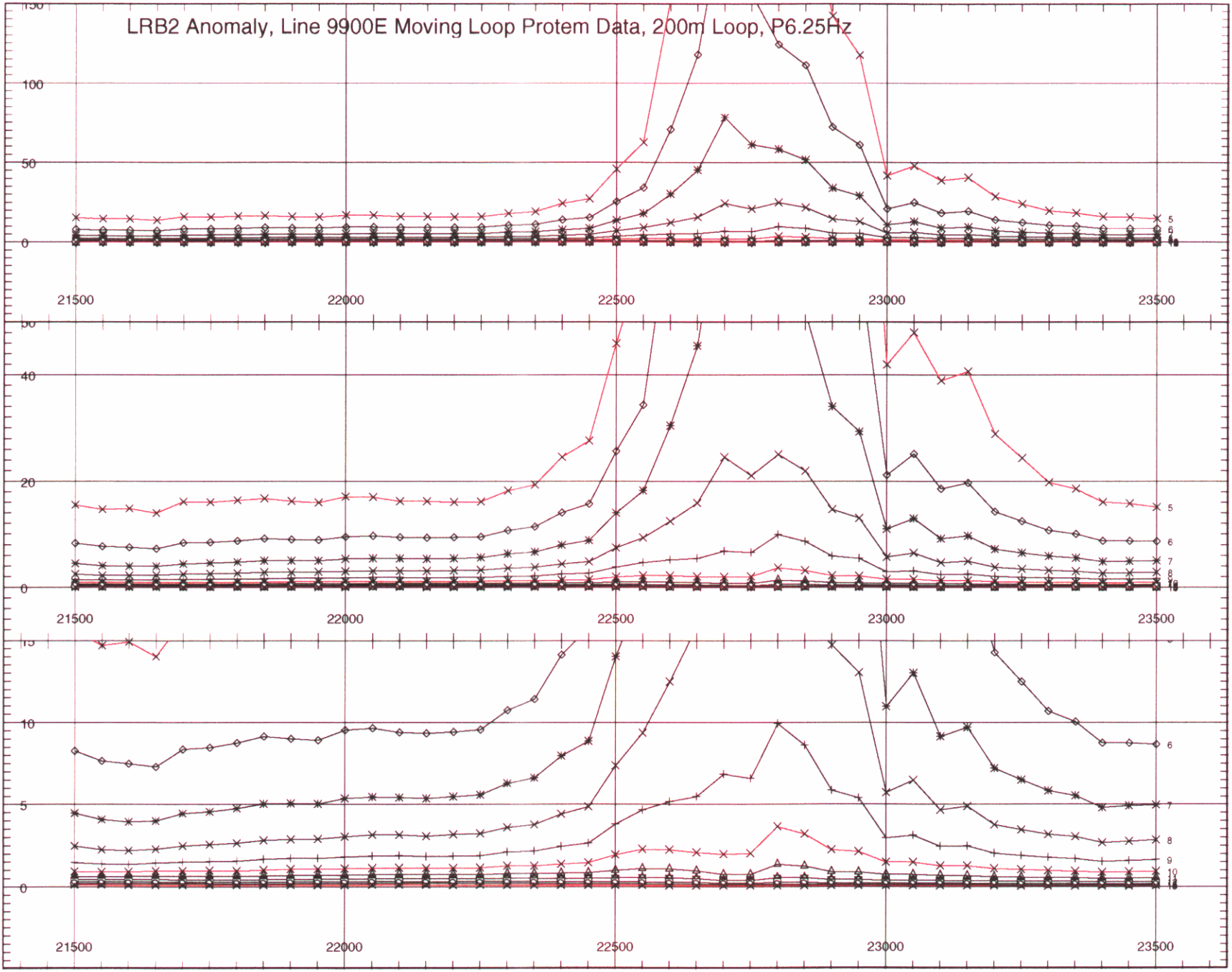
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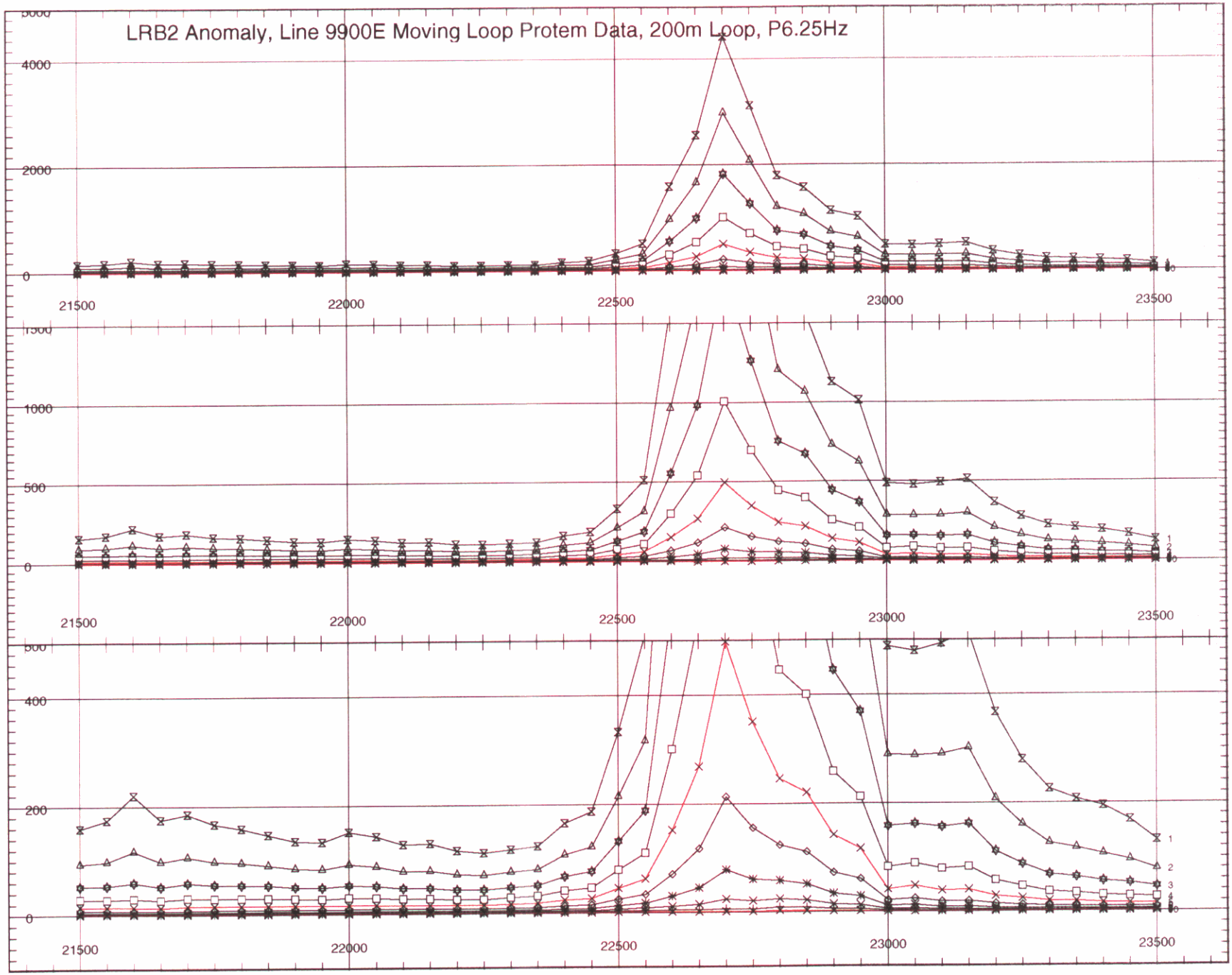
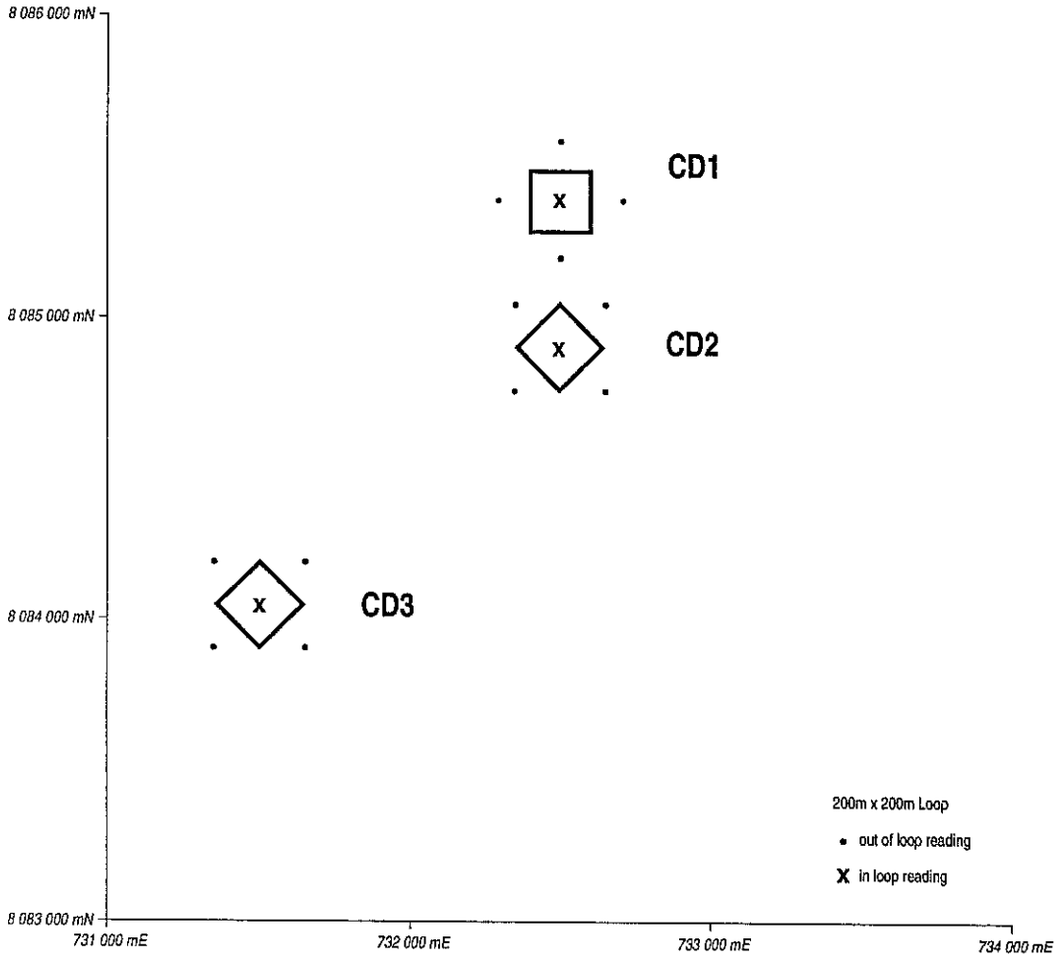
23000
23500
5
6
7
8
10
15
10
5
0
21500
22000
22500
23000
23500
6
7
8
9
10


LRB2 Anomaly, Line 9900E Moving Loop Protem Data, 200m Loop, P6.25Hz
4000
2000
0
21500
22000
22500
23000
23500
1000
500
0
21500
22000
22500
23000
23500
400
200
0
21500
22000
22500
23000
23500
1
2
3



CALVERT DOME - CD1, CD2, CD3

Scale 1 : 25,000

0 500 1000 1500 2000 metres

Prepared : C.Miller	BHP	Exploration - BHP Minerals BHP Minerals Pty. Ltd , A.C.N 008 694 782	Centre : Perth
Drawn : R.J.Clark	NORTHERN PLATFORMS PROGRAM		Drg. No. : A4-6257
Date : 12.3.97	CALVERT DOME CD1, CD2, CD3 SOUNDINGS LAYOUT		FIGURE
Revised :			

SOUNDING: cd1c : Vers 2
2000 : , 5500N , 20000E.
corrected 3 layer

cd1cA2

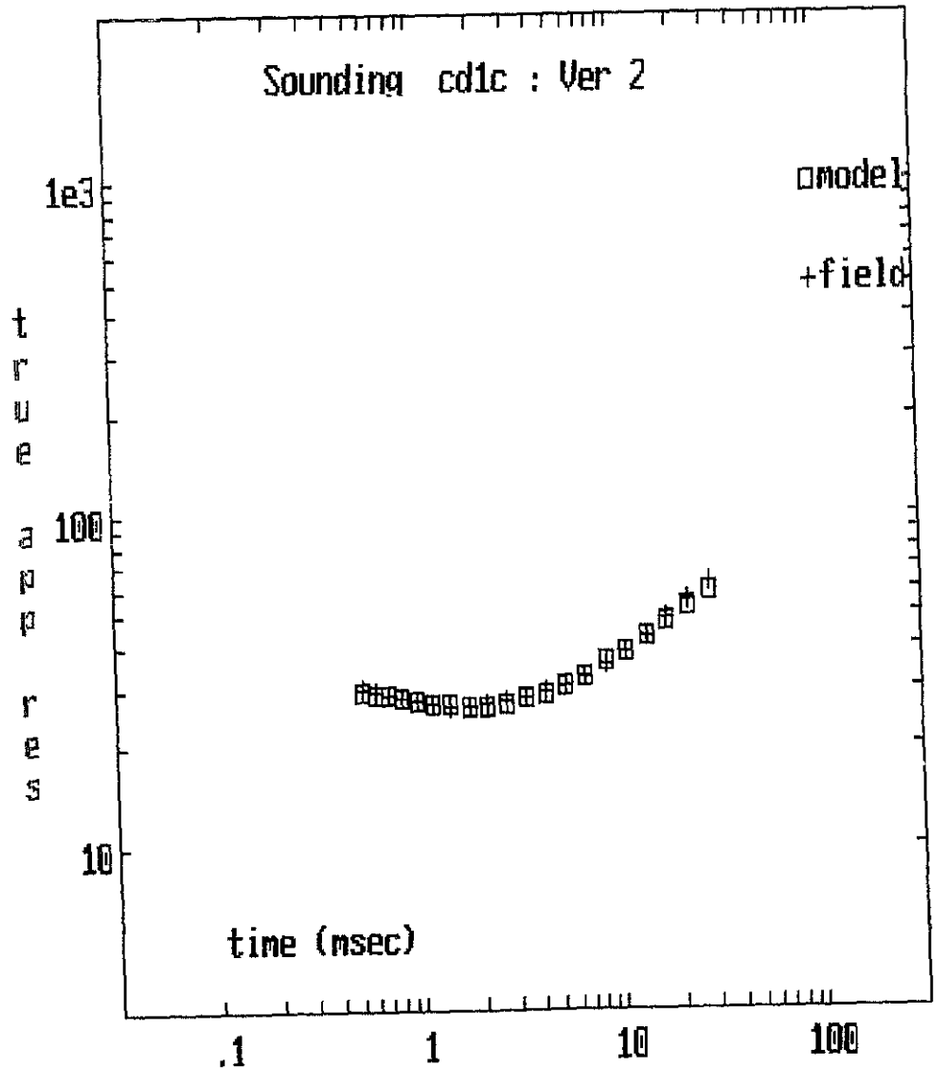
* 32.5 ohm.m (39.2 m.) (39.2 m.) * 32.5

* 28.1 ohm.m * 219 m. * 28.1

* 259 m.

* 178 ohm.m * 178

STD ERR= 1.0% ; S= 10 S



E= 2%
S= 10S

SOUNDING: cd2c : Vers 1
1020 : , 5000N , 10200E.
cd2 corrected with east reading

cd2cA1

* 14.8 ohm.m (25.4 m.) (25.4 m.)

* 14.8

* 21.5 ohm.m * 135 m.

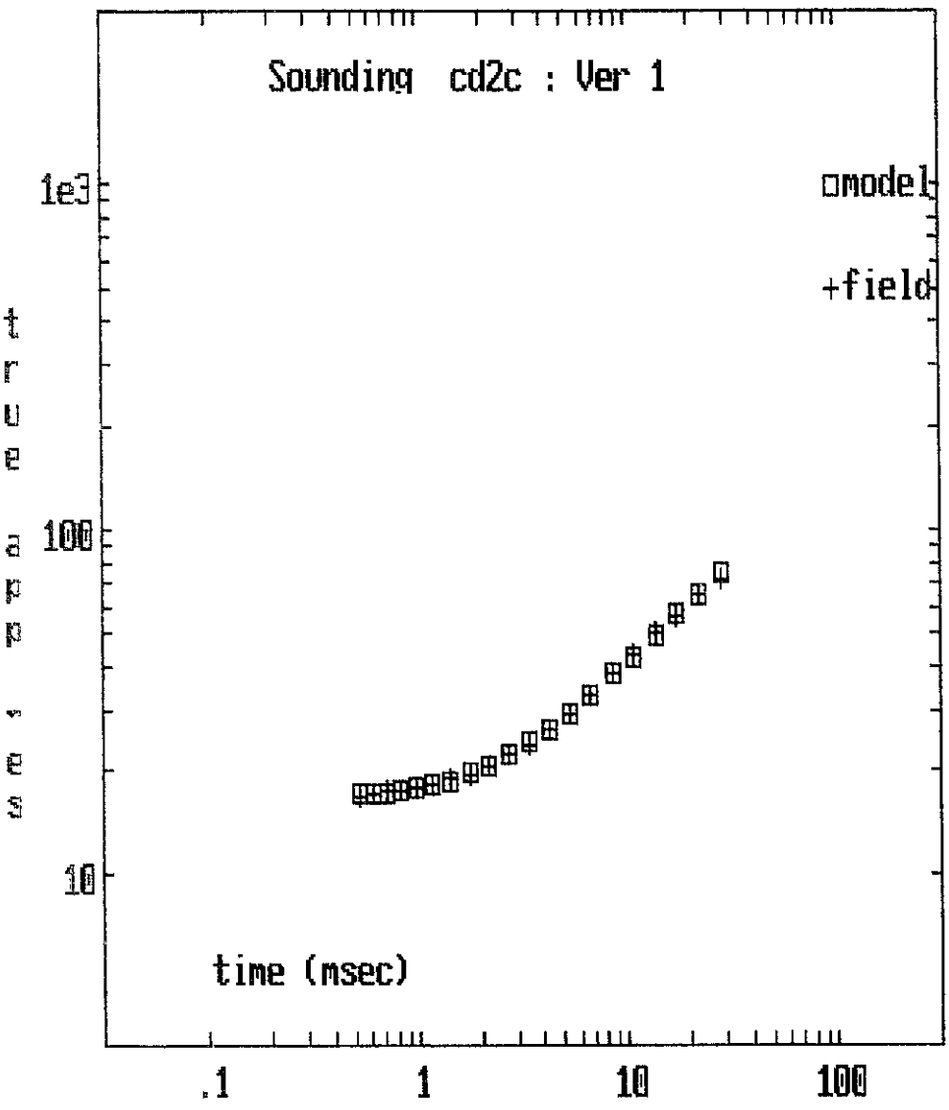
* 21.5

* 161 m.

* 273 ohm.m

* 273

STD ERR= 1.4% : S= 8 S



E= 1%
S= 85

SOUNDING: cd3c : Vers 1
5200 : , 10000N, 5200E ,
cd3 corrected with east reading

cd3cA1

* 18.5 ohm.m (28.5 m.) (28.5 m.)

* 18.5

* 26.6 ohm.m * 209 m.

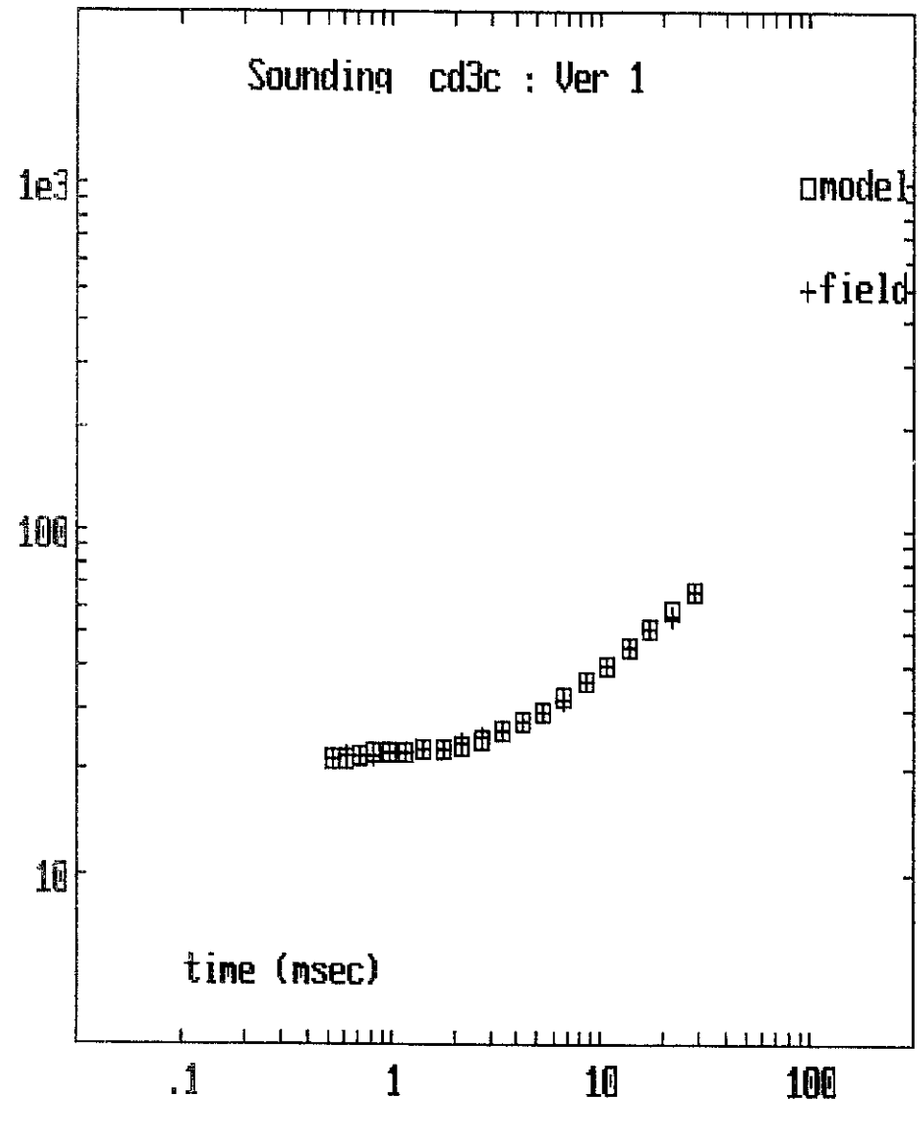
* 26.6

* 238 m.

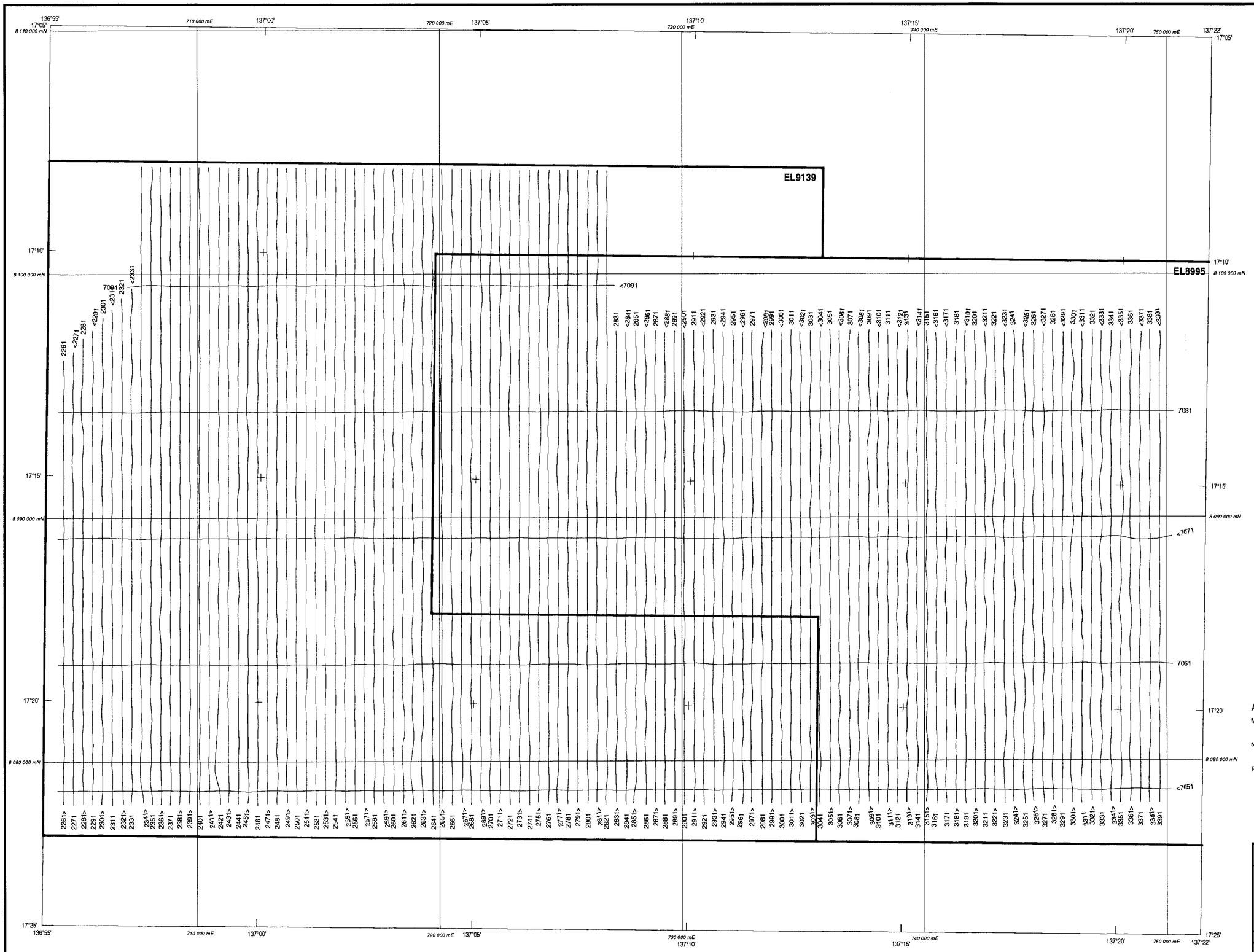
288 ohm.m

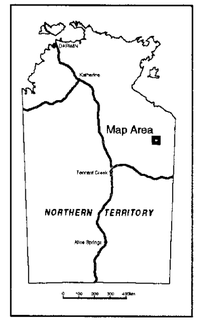
288

STD ERR= 1.0% ; S= 9 S



E= 1%
S= 95





CR97/182

EL8995 BHP Tenement boundary & number

AIRBORNE SURVEY SPECIFICATIONS

MAGNETOMETER : Cesium Vapour optical absorption
Sensitivity : 0.001 nT

NOMINAL LINE DIRECTION : Traverse lines 0/180 degrees
Tie lines 90/270 degrees

FLIGHT PATH NAVIGATION : SERCEL NR 103 GPS Navigation system with a SINGER KEARFOTT AN/ASN 128 Doppler system

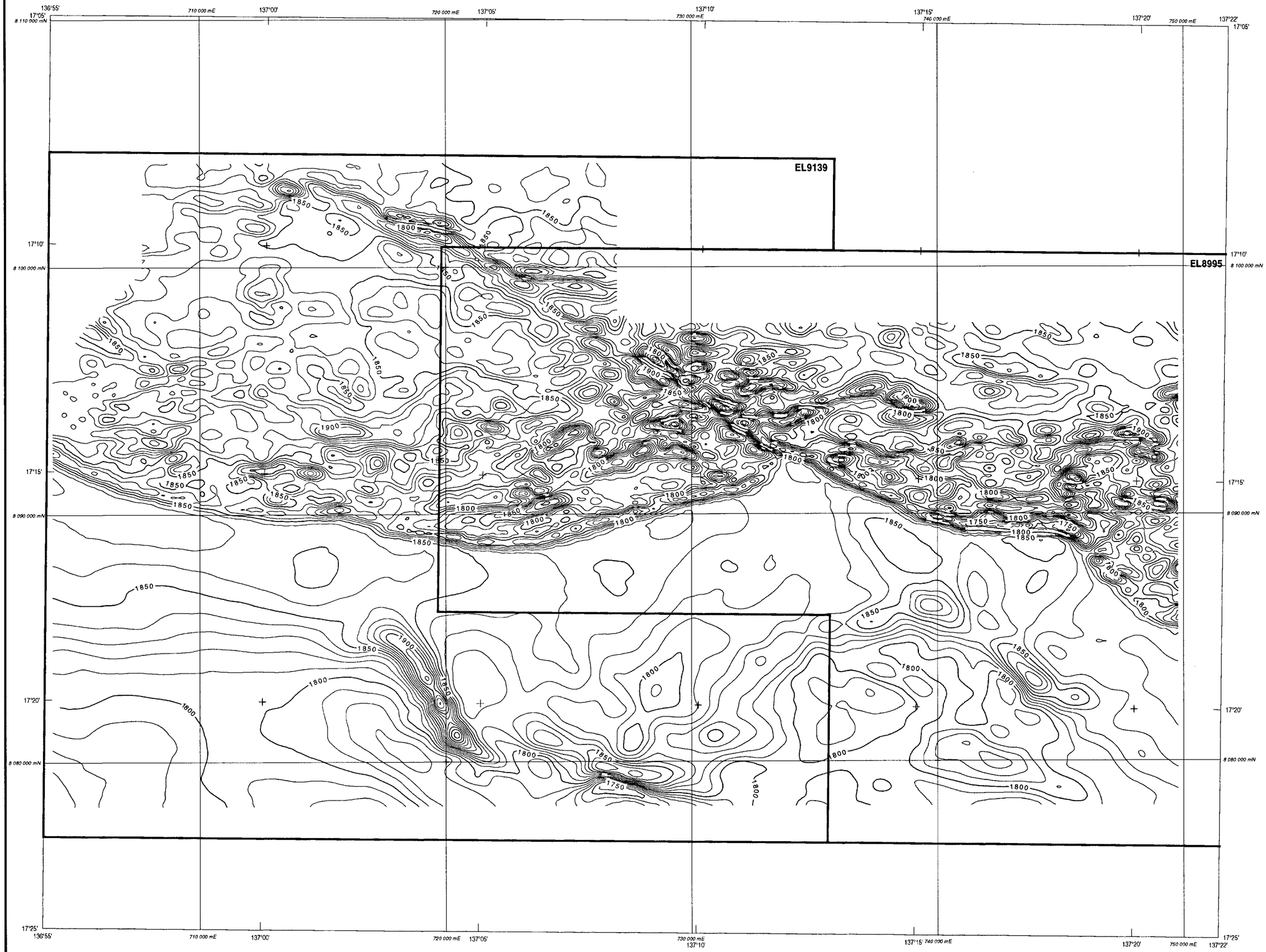
Scale 1 : 100,000

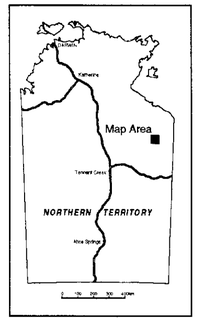
0 2 4 6 8 km

BHP **Exploration - BHP Minerals**
BHP Minerals Pty. Ltd., A.C.N. 008 694 782

NORTHERN PLATFORMS
WEARYAN PROJECT
AEROMAGNETIC SURVEY FLIGHT LINES

Prepared : M.Rennison	Date : 13.3.96	PLATE 1
Drawn : R.J.Clark	Revised : 10.3.97	
Centre : Perth	Drawing No : A1-6840	





EL8995 BHP Tenement boundary & number

CR97/182 1

AIRBORNE SURVEY SPECIFICATIONS

MAGNETOMETER : Cesium Vapour optical absorption
Sensitivity : 0.001 nT

NOMINAL LINE DIRECTION : Traverse lines 0/180 degrees
Tie lines 90/270 degrees

FLIGHT PATH NAVIGATION : SERCEL NR 103 GPS Navigation system with a SINGER KEARFOTT AN/ASN 128 Doppler system

Scale 1 : 100,000

0 2 4 6 8 km

BHP

Exploration - BHP Minerals
BHP Minerals Pty. Ltd., A.C.N. 008 694 782

NORTHERN PLATFORMS
WEARYAN PROJECT
AEROMAGNETIC SURVEY CONTOURS

Prepared : M.Rennison	Date : 13.3.96	PLATE 2
Drawn : R.J.Clark	Revised : 10.3.97	
Centre : Perth	Drawing No : A1-6841	

136°55' 710 000 mE 137°00' 720 000 mE 137°05' 730 000 mE 137°10' 740 000 mE 137°15' 750 000 mE 137°20' 137°22'

17°05' 8 110 000 mN

17°10' 8 100 000 mN

17°15' 8 090 000 mN

17°20' 8 080 000 mN

17°25'

EL9139

EL8995

Feeder dykes?
to Pte

Calvert Fault

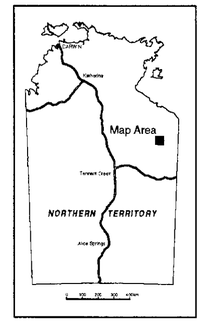
Aeromagnetic Survey Boundary

DOMAIN 1
Settlement Creek Volcanics (Pte)

DOMAIN 2
Aquarium Fm (Ptq)
Sly Creek Snst (Ptl)
McDermott Fm (Ptd)

Anticlines
in Pts

DOMAIN 3
Seigal Volcanics at depth
(Pts)



EL8995 BHP Tenement boundary & number

CR 97 / 182

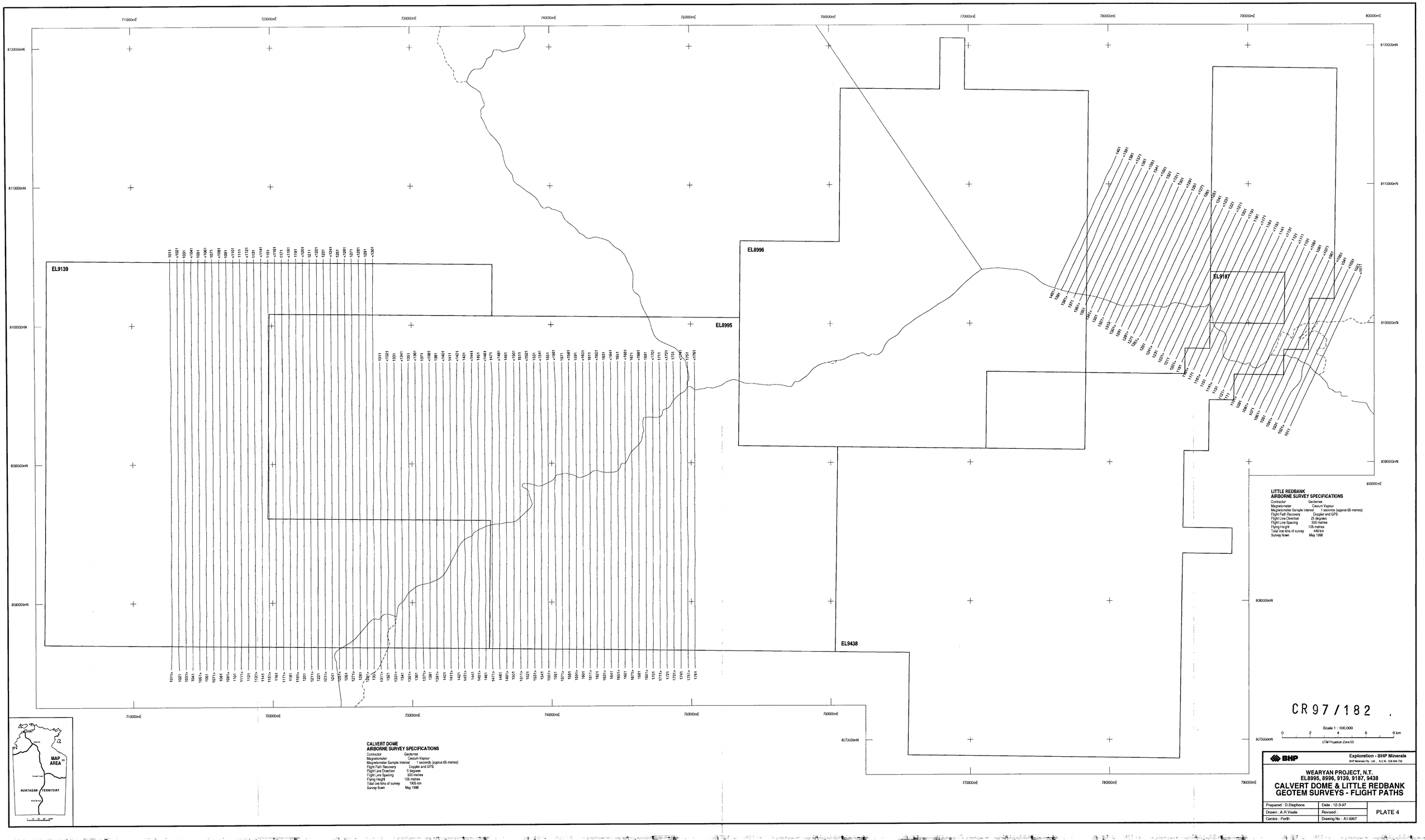
Scale 1 : 100,000

0 2 4 6 8 km

BHP Exploration - BHP Minerals
BHP Minerals Pty. Ltd., A.C.N. 008 694 782

NORTHERN PLATFORMS
WEARYAN PROJECT
AEROMAGNETIC SURVEY INTERPRETATION

Prepared : M.Rennison	Date : 13.3.96	PLATE 3
Drawn : R.J.Clark	Revised :	
Centre : Perth	Drawing No : A1-6842	



CALVERT DOME
AIRBORNE SURVEY SPECIFICATIONS

Contractor	Geoterrex
Magnetometer	Cesium Vapour
Magnetometer Sample Interval	1 seconds (approx 65 metres)
Flight Path Recovery	Doppler and GPS
Flight Line Direction	0 degrees
Flight Line Spacing	500 metres
Flying Height	105 metres
Total line kms of survey	1905 km
Survey flown	May 1996

LITTLE REDBANK
AIRBORNE SURVEY SPECIFICATIONS

Contractor	Geoterrex
Magnetometer	Cesium Vapour
Magnetometer Sample interval	1 seconds (approx 65 metres)
Flight Path Recovery	Doppler and GPS
Flight Line Direction	25 degrees
Flight Line Spacing	500 metres
Flying Height	105 metres
Total line kms of survey	449 km
Survey flown	May 1996

CR97/182

Scale 1 : 100,000
0 2 4 6 8 km
UTM Projection: Zone 53

BHP
Exploration - BHP Minerals
BHP Minerals Pty. Ltd. A.C.N. 008 694 782

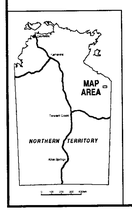
WEARYAN PROJECT, N.T.
EL8995, 8996, 9139, 9187, 9438
CALVERT DOME & LITTLE REDBANK GEOTEM SURVEYS - FLIGHT PATHS

Prepared : D.Stephens	Date : 12-3-97	PLATE 4
Drawn : A.H.Veale	Revised :	
Centre : Perth	Drawing No : A1-6907	

710000mE 720000mE 730000mE 740000mE 750000mE 760000mE 770000mE 780000mE 790000mE 800000mE

8120000mN
8110000mN
8100000mN
8090000mN
8080000mN
8070000mN

EL9139
EL8995
EL8996
EL9187
EL9438



CALVERT DOME
AIRBORNE SURVEY SPECIFICATIONS

Contractor	Geoterrex
Magnetometer	Cesium Vapour
Magnetometer Sample Interval	1 seconds (approx 65 metres)
Flight Path Recovery	Doppler and GPS
Flight Line Direction	0 degrees
Flight Line Spacing	500 metres
Flying Height	105 metres
Total line kms of survey	1905 km
Survey flown	May 1996
Contour interval	10nT

LITTLE REDBANK
AIRBORNE SURVEY SPECIFICATIONS

Contractor	Geoterrex
Magnetometer	Cesium Vapour
Magnetometer Sample Interval	1 seconds (approx 65 metres)
Flight Path Recovery	Doppler and GPS
Flight Line Direction	25 degrees
Flight Line Spacing	500 metres
Flying Height	105 metres
Total line kms of survey	449 km
Survey flown	May 1996
Contour interval	10nT

CR97/182

Scale 1 : 100,000
0 2 4 6 8 km
UTM Projection Zone 53

BHP
Exploration - BHP Minerals
BHP Minerals Pty. Ltd. A.C.N. 008 694 782

WEARYAN PROJECT, N.T.
EL8995, 8996, 9139, 9187, 9438
CALVERT DOME & LITTLE REDBANK GEOTEM SURVEYS - TMI CONTOURS

Prepared : D.Stephens	Date : 12-3-97	PLATE 5
Drawn : A.R.Veale	Revised :	
Centre : Perth	Drawing No : A1-6908	