BHP MINERALS LIMITED

EXPLORATION LICENCE 3578

BONE LAGOON, MOUNT YOUNG, N.T.

ANNUAL REPORT FOR YEAR ENDED 30 JUNE 1984

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SUMMARY

BHP Minerals Limited where granted EL 3578 in June 1982 and this licence forms part of the McArthur Project with other adjacent licences being EL's 3061, 4240, 4277 and 4362.

The target is shale hosted lead, zinc massive sulphide deposits similar to the HYC deposit.

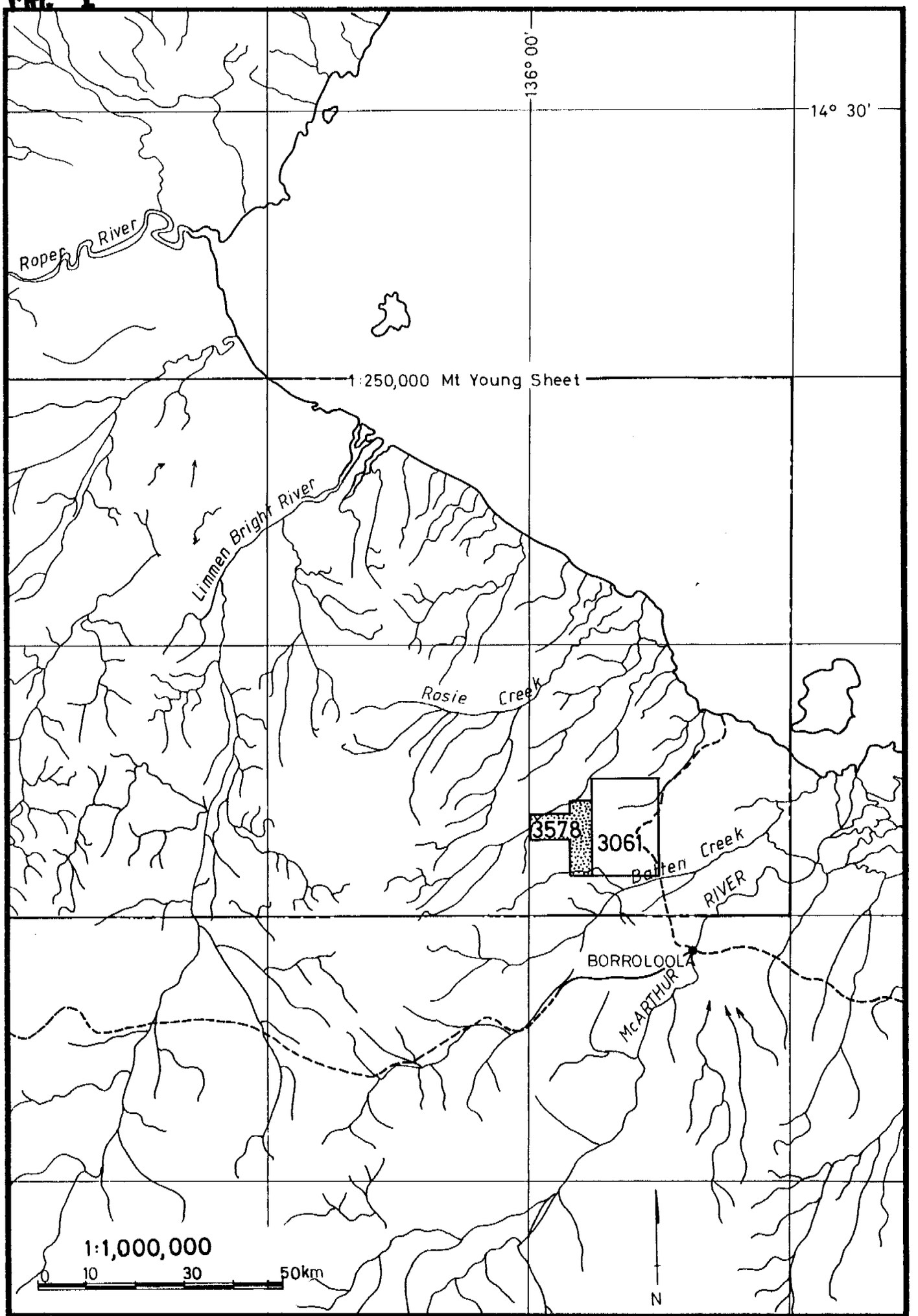
This report details the work carried out in the second year of the licence.

Activities included interpretation of an aeromagnetic survey flown at the end of the first year of the licence, ground EM-37 traverses, a trial CSAMT survey and geophysical down-hole logging of previously drilled holes.

Results partially delineated trends in the development of the Barney Creek Formation and some structures and indicated further work was warranted.

A programme for the Third year of the licence has been proposed and comments of more detailed ground EM-37 work and possible follow up diamond drilling.

FIG. 1



Centre Darwin	THE BROKEN HILL PROPRIETARY CO. LTD.	Project No.
Date 7 : 7 : 83	BONE LAGOON EL's 3578, 3061 LOCATION MAP	Drawing No. A4-16

EXPLORATION LICENCE 3578
BONE LAGOON, MOUNT YOUNG, N.T.
ANNUAL REPORT FOR YEAR ENDED 30 JUNE 1984

1. INTRODUCTION

Exploration Licence 3578 was granted to BHP Minerals Limited on 30 June 1982 and consists of 26 blocks (about 84 square Kilometres).

The northeast corner of the exploration licence is located at latitude 15°47' South longitude 136°07' East on the Mount Young 1:250,000 scale sheet (SD53-15, Figure 1). Access to the area is gained via dry-weather tracks which intersect the gravel road between Borroloola and Bing Bong station about seven and 36 kilometres from Borroloola.

The exploration target in EL 3578 is a shale-hosted lead-zinc massive sulphide deposit modelled on the HYC deposit at McArthur River which is hosted by dolomitic, carbonaceous and pyritic shale of the Barney Creek Formation of the McArthur Group.

Work carried out during the second year of tenure has consisted of:

1. Interpretation of an aeromagnetic survey flown in April/May 1983.

2. Geonics EM-37 traverses using the sounding mode.

3. CSAMT test survey.

4. Down-hole logging of drill holes drilled in 1982.

2. GEOLOGY

Limited remapping was carried out in EL 3578 during the 1983 field season (Figure 2). Outcrop in the area is dominated by Lynott and Yalco Formation of the Batten Sub-group which extend to the south and west beyond the licence boundary. Small outcrops near diamond drill hole McA5 are possibly of Reward Dolomite and Barney Creek Formation and are the only known Umbolooga Sub-Group outcrops in the exploration licence.

Umbolooga Sub-group units were intersected in two diamond drill holes drilled in 1982. Drill hole McA5 intersected Barney Creek Formation before entering Teena Dolomite and the underlying Emmerugga Dolomite. Drill hole McA4 intersected Mallapunyah Formation.

3. GEOPHYSICS

3.1 Aeromagnetic Survey

A detailed aeromagnetic survey was flown over EL 3578 as part of a survey covering the group of exploration licences held in this area. Flight line direction was north-south with flight line spacing 300m and nominal terrain clearance 80m (Figure 3).

Total magnetic intensity contours (Figure 4) indicate a dominant magnetic high in the southern part of the exploration licence and a magnetic lineament which corresponds with EM-37 and CSAMT features between drill holes McA4 and McA5. This feature is interpreted as a fault.

3.2 EM-37 Survey

The geonics EM-37 electromagnetic system was used in both the profiling mode and the sounding mode over a 14.4 kilometre long traverse between drill holes McA5 and BB6, which was drilled by Shell Minerals Limited under previous title and is now within EL 4277 to the north of EL 3578. 10.2 kilometres of the traverse lie within EL 3578, with five of the seven sounding loops and profiling traverses falling within the exploration licence (Figure 2). Profiles are shown in Figures 5 to 8 and sounding data listed in Appendix 1.

Profile SBL1 shows a moderately resistive half-space with no significant lateral changes.

Profile SBL2 shows a small anomalous response at late times located at 2600N, which is co-incident with a lateral change in resistivity detected by the CSAMT survey (Section 3.3) and an aeromagnetic lineament. This is interpreted as a fault which is confirmed by stratigraphic differences between drill holes McA4 and McA5. A weak conductive zone is evident at 3800N.

Profiles SBL3 and SBL4 reflect homogenous, relatively conductive ground.

Soundings along the traverse line (SBL1 to SBL4 and SBL8) all exhibited a low surface resistivity layer up to 100 metres thick which corresponds with Cretaceous sediments.

Sounding SBL1 was located over drill hole McA5 and the sounding data reflect the more conductive black shale of the Barney Creek Formation which was intersected in this hole. Soundings SBL2 and SBL3 and SBL8 do not indicate conductive layers at depth.

In addition to the EM-37 profiling and soundings between McA5, McA4 and BB6, detailed soundings were carried out around drill hole McA5 to investigate the extent of the conductive layer caused by black shale of the Barney Creek Formation. Four soundings were carried out within EL 3578 which indicated that the conductive layer extended in all directions from McA5. Sounding data combined with down-hole logging data indicated potential for further development of the conductive layer to the northwest and southeast of McA5.

3.3 CSAMT Survey

One line of Controlled Source Audio-frequency Magneto Telluric system was surveyed by Zonge Engineering Reasearch Organisation as part of a test survey. The survey was along the traverse line between drill holes McA4 and McA5. Results are shown in figures 9 and 10.

The features which dominate the resistivity pseudo-section are contacts at 2600N and 4400N with a deep zone of low resistivity in between. The contact at 2600N corresponds with aeromagnetic and EM-37 features and is interpreted as a fault.

3.4 Down-Hole logging

Down-hole geophysical logs were run in drill holes McA4 and McA5 which were drilled in 1982. Gamma, resistivity and self potential logs were run (Figures 11 and 12) although McA4 could only be logged to about 60m due to collapse of the hole.

4. PROPOSED PROGRAMME

Work proposed for the 1984 field season consists of:

1. Extension of the EM-37 sounding grid around drill hole McA5 to establish the direction of development of Barney Creek Formation.

2. EM-37 sounding surveys in exploration licences 4240 and 4277 to the north may be extended to the south into EL 3578 if initial interpretation is favourable.

3. Further EM-37 surveys and follow-up diamond drilling may result from initial work.

Estimated expenditure excluding extension of the surveys or drilling, is $15,000.

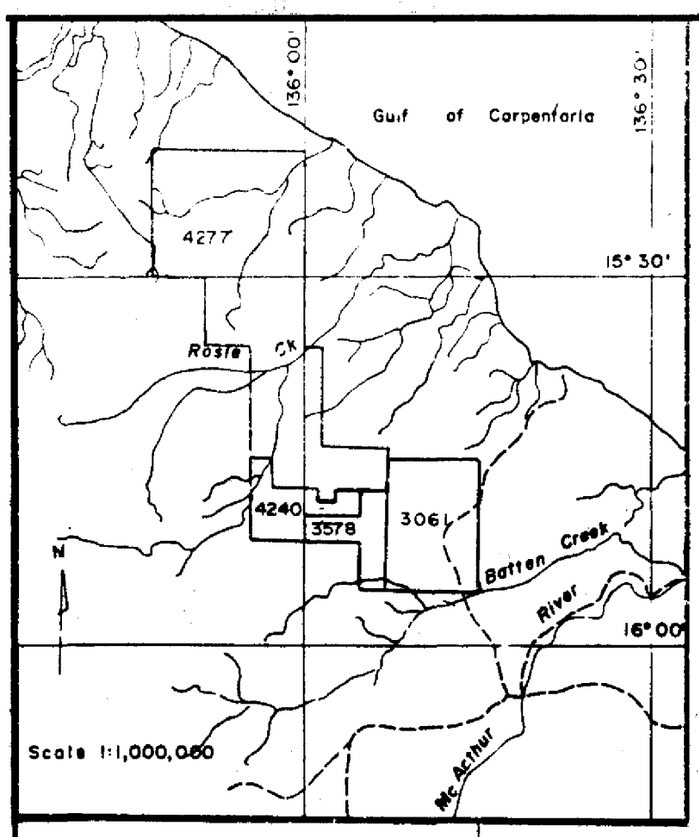
5. EXPENDITURE

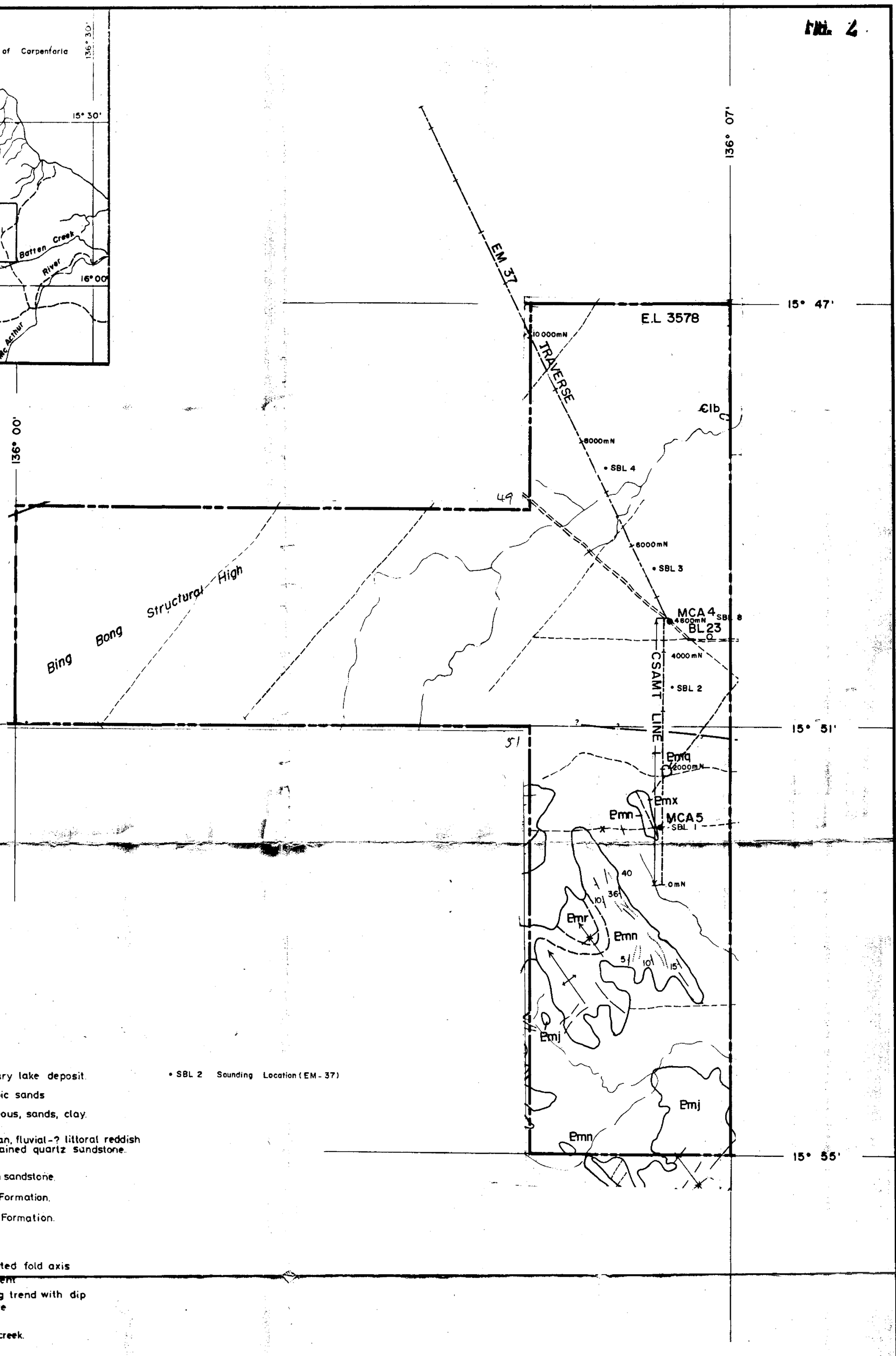
Expenditure debited to Exploration Licence 3578 during the year ended 30th June, 1984 was:

Wages and Salaries	11,712
Field Support	2,824
Vehicles	2,727
Equipment	3,467
Geochemistry	493
Geophysics	1,686
Surveys	626
Sundries	554
Services	27,996
Administration & Overheads	4,994
	$54,938

Total expenditure on Exploration Licence 3578 to 30th June, 1984 is: $139,563.

FIG. 2.





Qal Quaterary lake deposit.
Cainozoic sands
Kl Cretaceous, sands, clay.
€lb Cambrian, fluvial-? littoral reddish f-m grained quartz sandstone.
Pmr Stretton sandstone.
Pmj Yalco Formation.
Pmn Lynott Formation.

• SBL 2 Sounding Location (EM-37)

Fault
Interpreted fold axis
Lineament
Bedding trend with dip
Fracture
River, creek.
Track

N

Scale 1:50,000

0 1 2 3 4 5km

NORTHERN TERRITORY GEOLOGICAL SURVEY

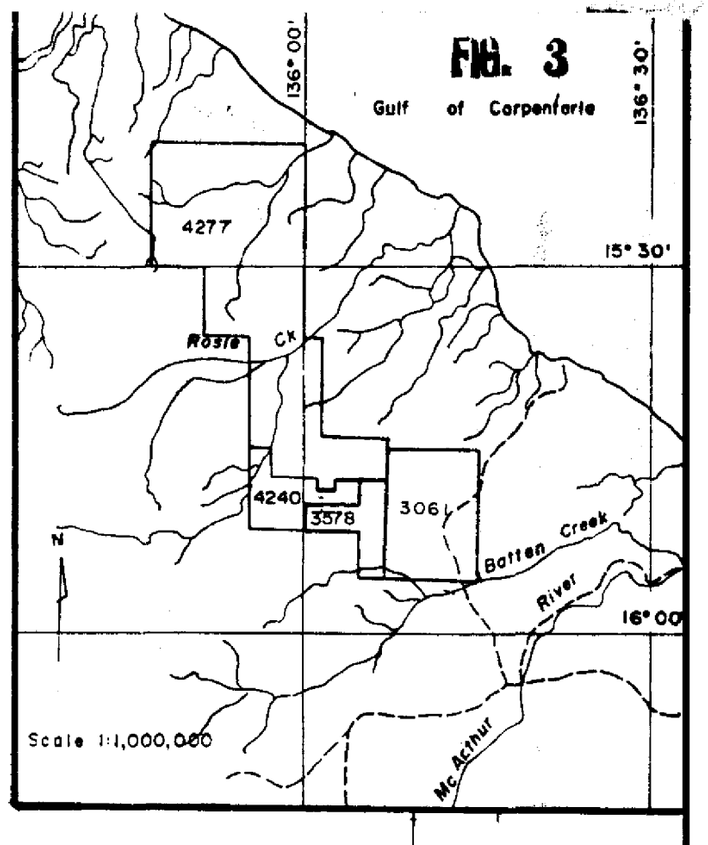
CR84/171

THE BROKEN HILL PROPRIETARY CO. LTD.
EXPLORATION DEPARTMENT

EL 3578, BONE LAGOON, N.T.

GEOLOGY - EM 37 SURVEY LOCATIONS

Revisions:			
	Drawn: M.R / D.P.C.	Date: 23/7/84	Centre: Darwin
	Traced: Hilary	Project No:	Drawing No: A2-60
	Checked:		



136° 00'

15° 47'

15° 51'

15° 55'

136° 07'

136.05

136.85

Scale 1:50,000

0 1 2 3 4 5kms

N

DETAILS OF SURVEY

FLOWN BY : GEOTERREX
DATE : MAY 1983
1:250,000 SHEET : MT YOUNG SD53-15
TENEMENT : 3061
PROJECTION IS TRANSVERSE MERCATOR. AMG ZONE : 53

LINE SPACING : 800m
SURVEY HEIGHT : 80m
MAGNETOMETER : CESIUM VAPOUR

COMPTON SCATTERING RATIO ALPHA : 0.29
COMPTON SCATTERING RATIO BETA : 0.43
COMPTON SCATTERING RATIO GAMMA : 0.72

DETAILS OF PROCESSING

PROCESSED BY BHP EXPLORATION : CAMBERWELL

IGRF REMOVED	25-Aug-83
ITERATIVE HEADING ERROR ADJUSTMENT (LINE BY LINE)	25-Aug-83
FLIGHT / TIE LINE CROSSOVER ADJUSTMENT	"
GRADIENT CUTOFF = 0.2 . MAXIMUM MOVE DISTANCE = 60 METRES	
5000 nT ADDED TO DATA	29-Nov-83
DATA WAS GRIDDED AND CONTOURED USING GRID PROGRAM GPOGRL	29-Nov-83

TIE LINES WERE NOT CONTOURED
CONTOUR INTERVAL 1.0 nT
GRIDDING PARAMETERS:
MESH SIZE 60m x 60m
SCAN DISTANCE (800m,500m)
CORRELATION USED: MINIMUM ANOMALY AMPLITUDE 50nT
FILTER WAVE LENGTH 1500m
CORRELATION DISTANCE 400m
PIECEWISE SPLINE TECHNIQUE USED
SMOOTHING USED: POLYNOMIAL SMOOTHING
SMOOTHING RADIUS 300 m

NORTHERN TERRITORY GEOLOGICAL SURVEY

CR84/171

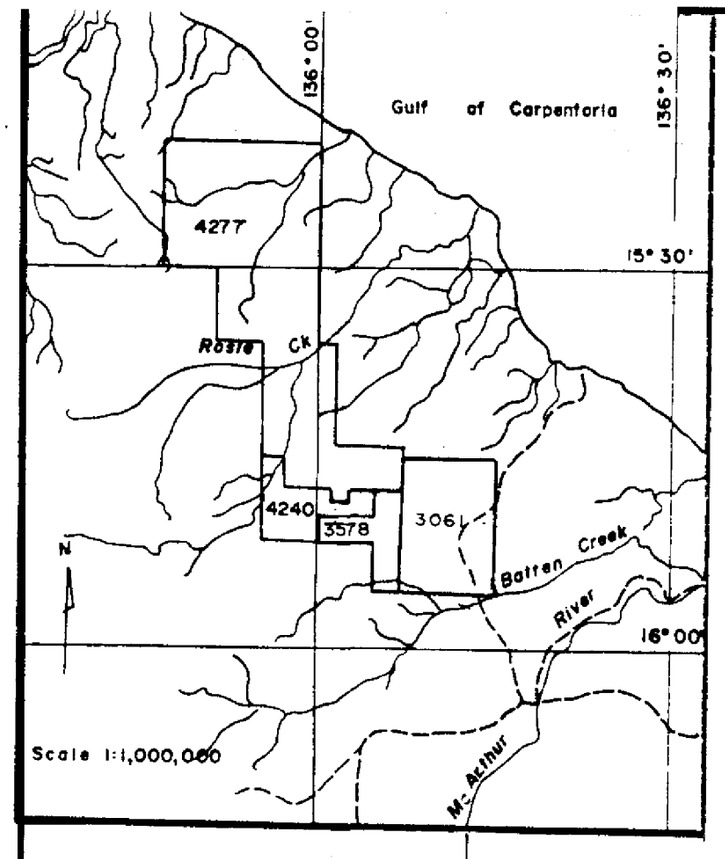
THE BROKEN HILL PROPRIETARY CO. LTD.
EXPLORATION DEPARTMENT

EL 3578, BONE LAGOON, N.T

FLIGHT PATHS

Revisions:			
	Drawn: D. P. C	Date: 25 - 7 - 84	Centre: Darwin
	Traced: Hilary	Project No:	Drawing No: A2 - 61
	Checked:		

FIG. 4



136° 07'

15° 47'

136° 00'

E.L.3578

E.L.3578

15° 51'

15° 55'

Scale 1: 50,000

0 1 2 3 4 5km

N

NORTHERN TERRITORY GEOLOGICAL SURVEY

CR84/171

THE BROKEN HILL PROPRIETARY CO. LTD.
EXPLORATION DEPARTMENT

EL 3578, BONE LAGOON, N.T.

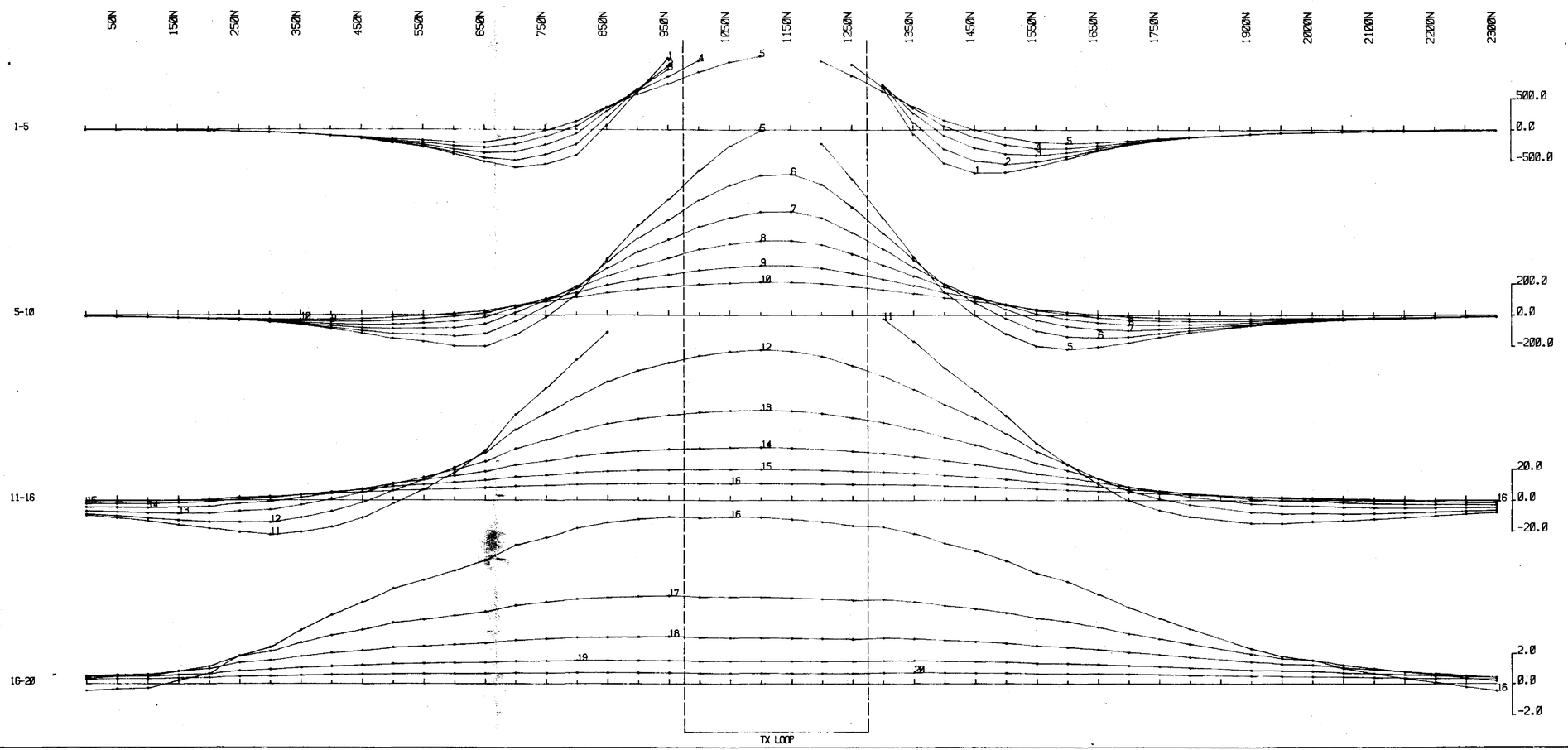
TOTAL MAGNETIC INTENSITY

Drawn: D.P.C	Date: 25·7·84	Centre: Darwin
Traced: Hilary	Project No:	Drawing No.: A2-62
Checked:		

Revisions:

FIG. 5

VERTICAL COMPONENT B (Z)



nanovolts per amp.metre squared

EM-37

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

NORTHERN TERRITORY GEOLOGICAL SURVEY

CR84/171

TX LOOP SIDES	: 975N	2004
	: 1275N	4E
TX LOOP SIZE	: 600m X 300m	
TX TURN OFF TIME	: 344 microsecs	
CURRENT	: 15.0 amps	
FREQUENCY	: 25 Hz	
INTEGRATION TIME	: 256 cycles	
SYNC MODE	: CRYSTAL	
HORIZONTAL SCALE	: 1:5000	
SURVEYED BY	: J.P.	
DATE	: 28-MAY-1983	

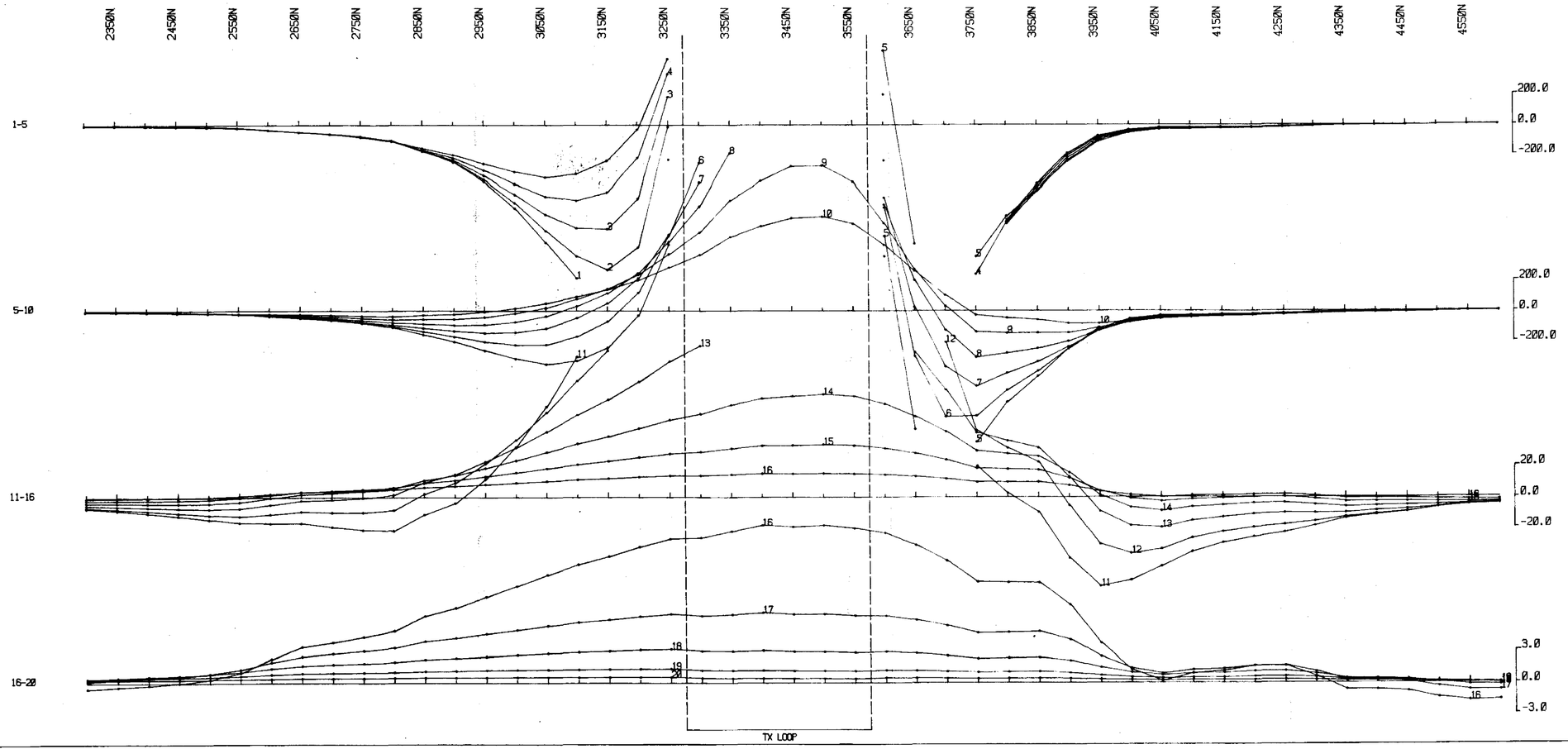
SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.

PROJECT NO. 85-1470

CLIENT	: The BHP Co.Ltd.
PROJECT	: BONE LAGOON
AREA	: McArthur River
LINE	: 1E Z
TX LOOP	: BL1

FIG. 6

VERTICAL COMPONENT B (Z)



nanovolts per amp.metre squared

EM-37

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

NORTHERN TERRITORY GEOLOGICAL SURVEY

CR84/171

TX LOOP SIDES	:	3275N	200W
	:	3575N	400E
TX LOOP SIZE	:	600m X 300m	
TX TURN OFF TIME	:	322 microsecs	
CURRENT	:	17.5 amps	
FREQUENCY	:	25 Hz	
INTEGRATION TIME	:	256 cycles	
SYNC MODE	:	CRYSTAL	
HORIZONTAL SCALE	:	1:5000	
SURVEYED BY	:	J.P.	
DATE	:	30-MAY-1983	

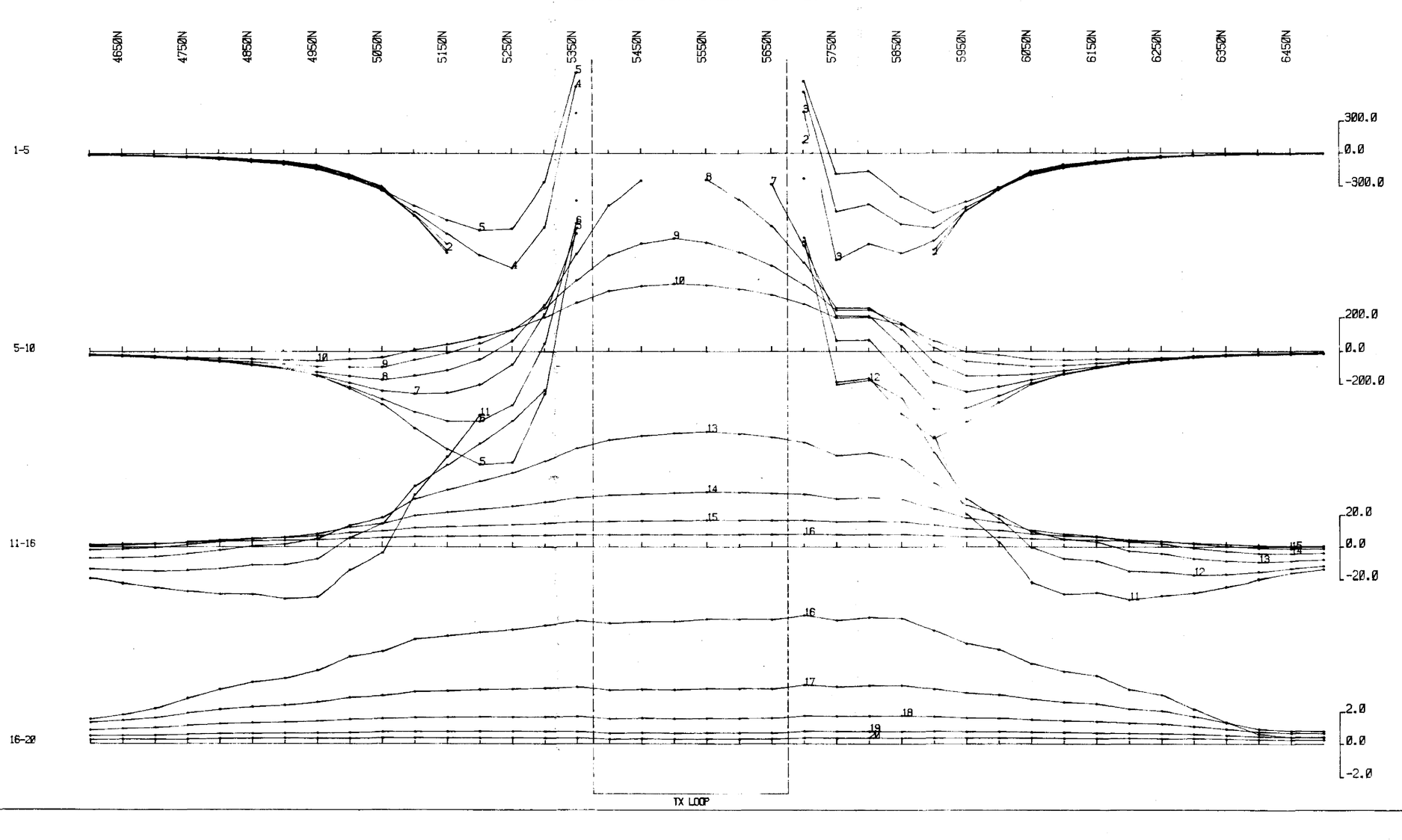
SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.

PROJECT NO. 65-1470

CLIENT	:	The BHP Co. Ltd.
PROJECT	:	BONE LAGOON
AREA	:	McArthur River
LINE	:	1E Z
TX LOOP	:	BL2

FIG. 7

VERTICAL COMPONENT B (Z)



nanovolts per amp.metre squared

EM-37

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

NORTHERN TERRITORY GEOLOGICAL SURVEY

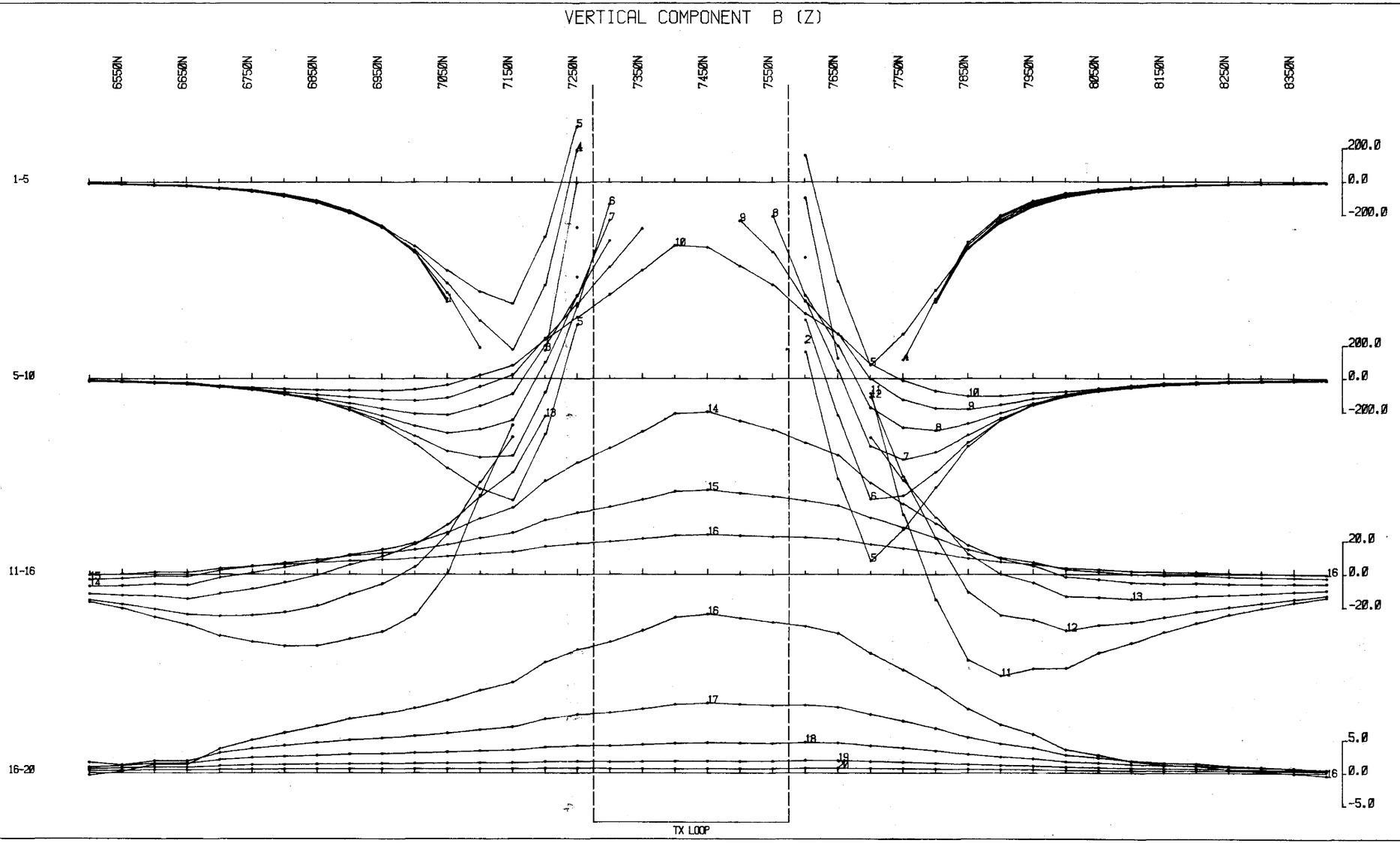
CR84/171

TX LOOP SIDES	: 5375N	200W
	: 5675N	400E
TX LOOP SIZE	: 600m X 300m	
TX TURN OFF TIME	: 328 microsecs	
CURRENT	: 17.0 amps	
FREQUENCY	: 25 Hz	
INTEGRATION TIME	: 256 cycles	
SYNC MODE	: CRYSTAL	
HORIZONTAL SCALE	: 1:5000	
SURVEYED BY	: J.P.	
DATE	: 31-MAY,1983	

SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.

PROJECT NO. 85-270

CLIENT	: The BHP Co.Ltd.	
PROJECT	: BONE LAGOON	
AREA	: McArthur River	
LINE	: 1E	Z
TX LOOP	: BL3	



nanovolts per amp.metre squared

EM-37

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

NORTHERN TERRITORY GEOLOGICAL SURVEY

CR84/171

TX LOOP SIDES	: 7275N	200W
	: 7575N	400E
TX LOOP SIZE	: 600m X 300m	
TX TURN OFF TIME	: 312 microsecs	
CURRENT	: 15.8 amps	
FREQUENCY	: 25 Hz	
INTEGRATION TIME	: 256 cycles	
SYNC MODE	: CRYSTAL	
HORIZONTAL SCALE	: 1:5000	
SURVEYED BY	: J.P.	
DATE	: 31-MAY,1988	

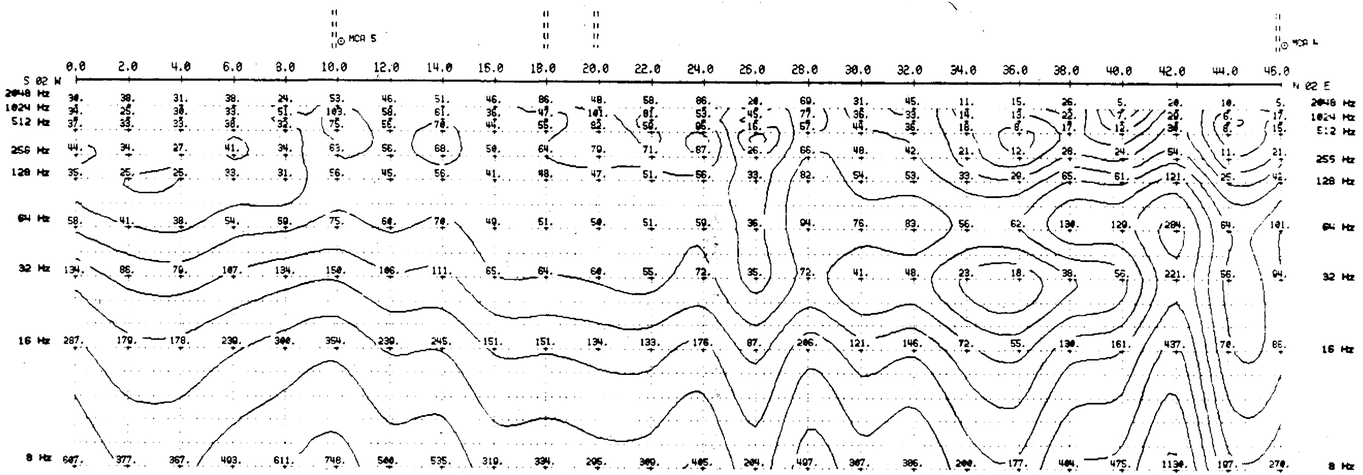
SURVEYED AND COMPILED BY	PROJECT NO.
GEOTERREX PTY. LTD.	85-270

CLIENT	: The BHP Co. Ltd.	
PROJECT	: BONE LAGOON	
AREA	: McArthur River	
LINE	: 1E	Z
TX LOOP	: BL4	

CR84/171

NORTHERN TERRITORY
GEOLOGICAL SURVEY

FIG. 9



CAGNIARD RESISTIVITY values, in OHM-METERS.

LOGARITHMIC CONTOURS (Interval: 0.20)

6.31	100.
10.0	158.
15.8	251.
25.1	398.
39.8	631.
63.1	1000.

Zonge # 384
Plot by CPLOT 9E
Plotted NOV 08 1983

CSAMT SURVEY DATA

CAGNIARD RESISTIVITY values, in OHM-METERS.

Line "1"

Bone Lagoon

for

BROKEN HILL PROPRIETARY CO LTD

RECEIVER DATA
Dipole Length : 656.ft, 200.m
Stn. Spacing : 656.ft, 200.m
Line Orient.: N 02 E
Dipole Orient.: N 02 E

TRANSMITTER DATA
Length : 1524 m
Orient. : N 02 E
Distance: 6.5 Km
Rx to Tx: E SE

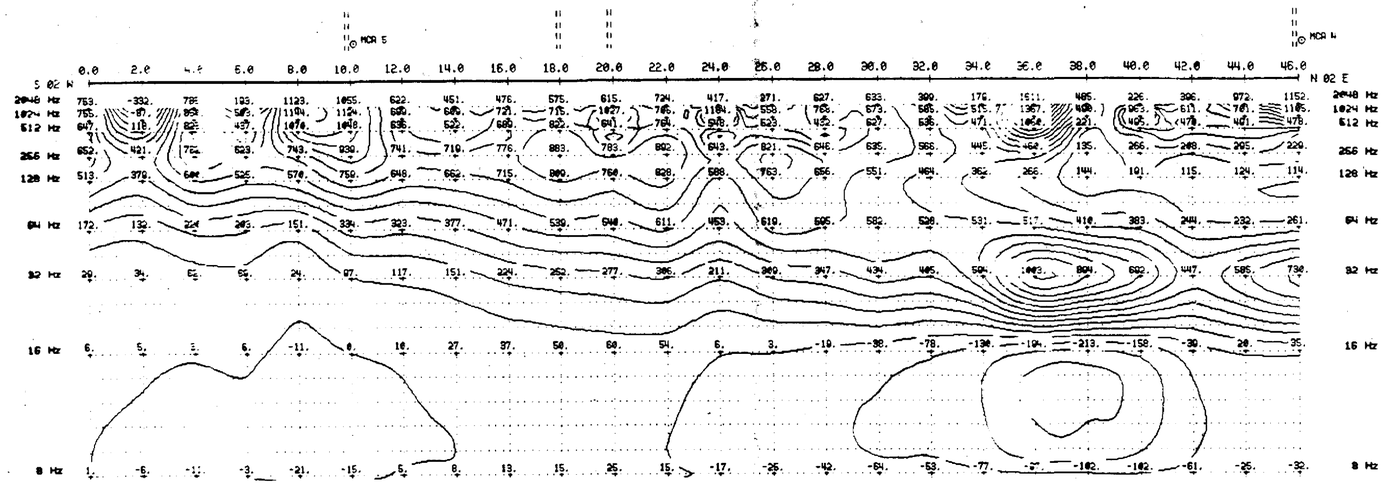
Date of survey: Sep 83

CULTURE SYMBOL LEGEND

DRILL HOLE

DIRT ROAD

ZONGE ENGINEERING & RESEARCH ORGANIZATION



PHASE ANGLE values, in milli-radians.
(Ephz - Hphz)

ARITHMETIC CONTOURS (Interval: 100.00)

-300.	400.	1100.
-200.	500.	1200.
-100.	600.	1300.
0.00	700.	1400.
100.	800.	1500.
200.	900.	1600.
300.	1000.	

Range = 30%
Plot by CPLOT 3E AVERAGED.
Plotted NOV 08 1989

NORTHERN TERRITORY
GEOLOGICAL SURVEY

CR84/171

FIG.10

CSAMT SURVEY DATA

PHASE ANGLE values, in milli-radians.

Line "1"

Bone Lagoon

for

BROKEN HILL PROPRIETARY CO LTD

RECEIVER DATA
Dipole Length : 656.ft, 200.m
Stn. Spacing : 656.ft, 200.m
Line Orient.: N 02 E
Dipole Orient.: N 02 E

TRANSMITTER DATA
Length : 1524 m
Orient. : N 02 E
Distance: 6.5 Km
Rx to Tx: E SE

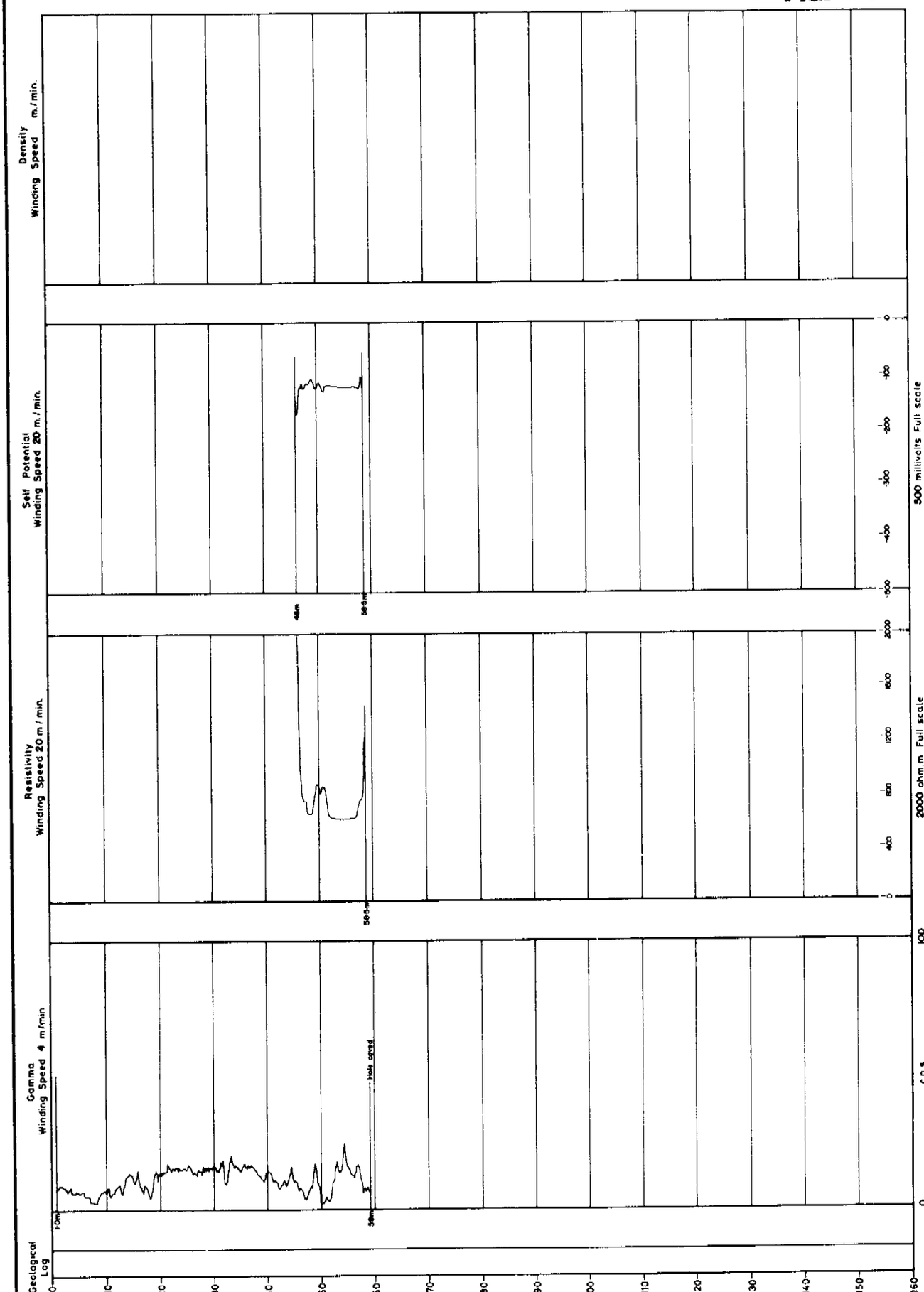
Date of survey: Sep 89

CULTURE SYMBOL LEGEND

DRILL HOLE — DIRT ROAD

ZONGE ENGINEERING & RESEARCH ORGANIZATION

FIG. 11 - Fig.



DRILL HOLE : McA 4	
LOCATION : 8249240mN A.M.G. 618440mE 41m A.H.D.	
DRILL TYPE : Diamond	
CASING TYPE : P.V.C. to 48m	
INCLINATION : Vertical	
DEPTH DRILLED : 181·70m	
DEPTH LOGGED : 59m	
LOGGING UNIT : SIE T450E	
DATE : 18-9-83	

Fig. No.
To accompany
Dated

NORTHERN TERRITORY GEOLOGICAL SURVEY

CR84/171

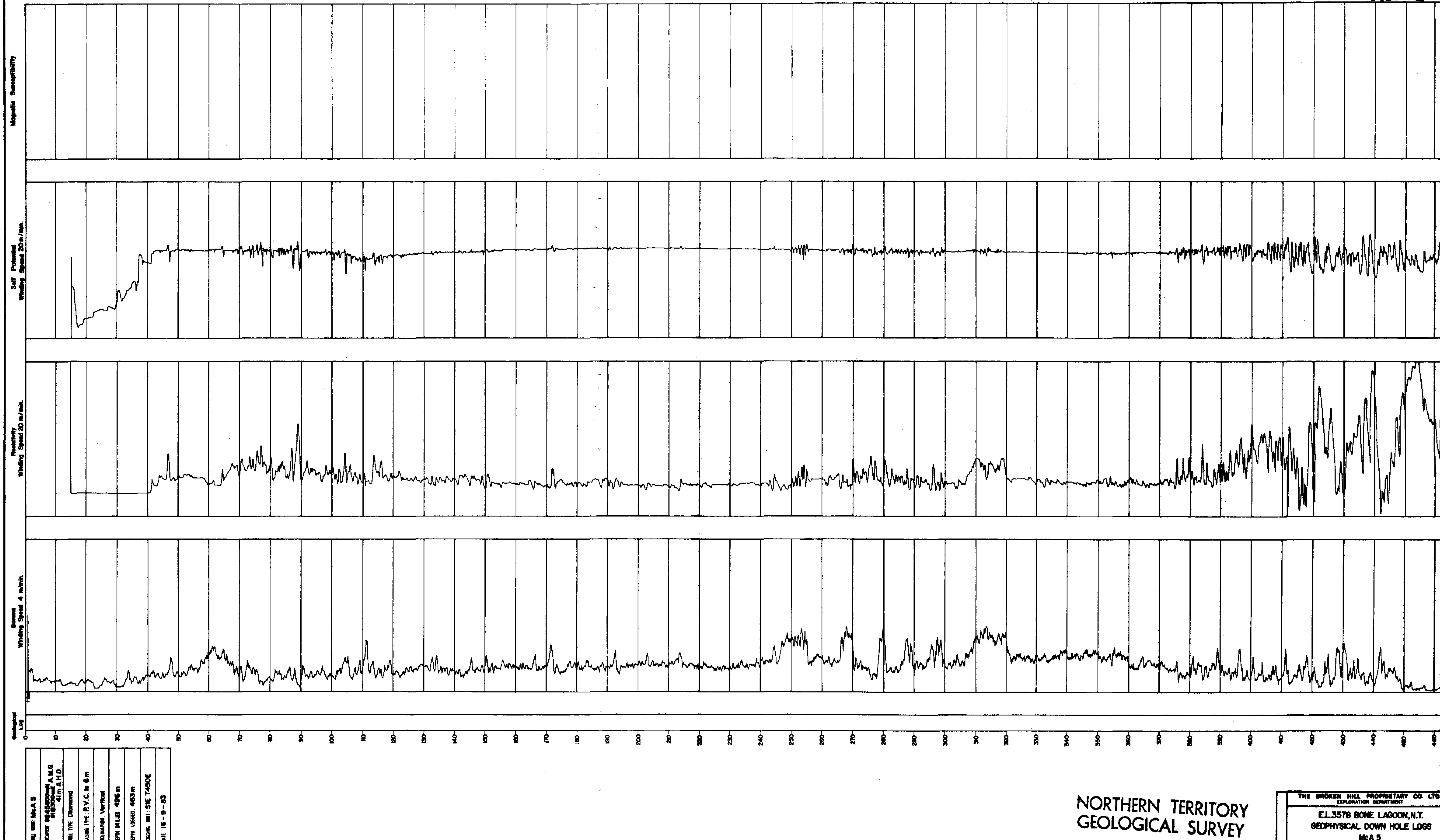
THE BROKEN HILL PROPRIETARY CO. LTD.
EXPLORATION DEPARTMENT

E.L.3578 BONE LAGOON, N.T.
GEOPHYSICAL DOWN HOLE LOGS
McA 4

Drawn: D.G.P.	Date: 27·9·83	Centre: Adelaide	
Traced: A.R.V.	Project No.:	Drawing No.: A2-	
Checked:			

Revisions:

FIG.12



NORTHERN TERRITORY
GEOLOGICAL SURVEY

CR84/171

THE BROKEN HILL PROPRIETARY CO. LTD.
EXPLORATION DEPARTMENT

E.L.3578 BONE LAGOON, N.T.
GEOPHYSICAL DOWN HOLE LOGS
McA 5

Drawn: D.G.P./M.M.	Date: 27-9-83	Centre: ADELAIDE
Traced: A.R.V.	Project No:	Drawing No: A1-
Checked:		

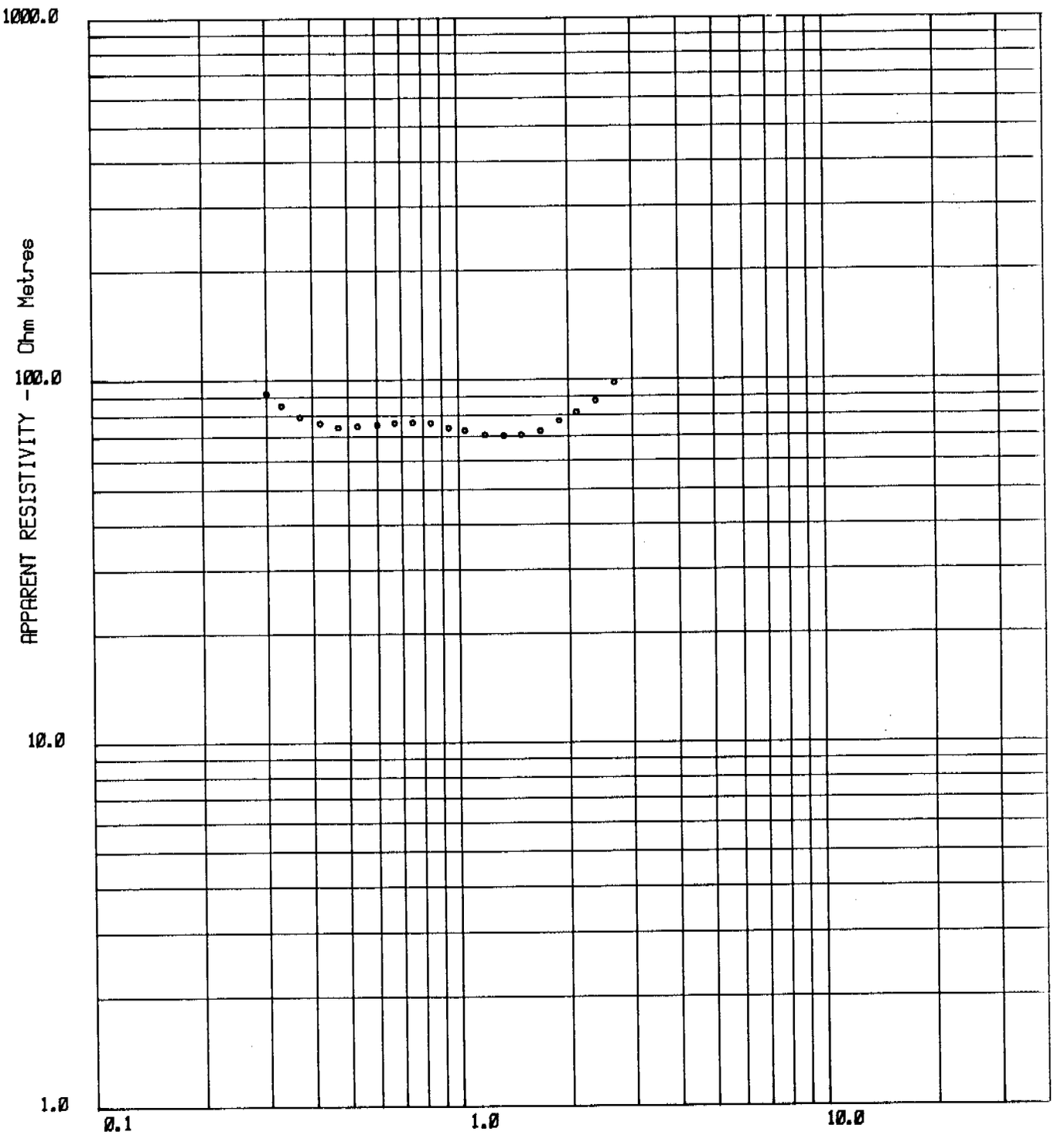
APPENDIX 1

SOUNDING PLOTS

EM-37 SOUNDING

VERTICAL COMPONENT B (Z)

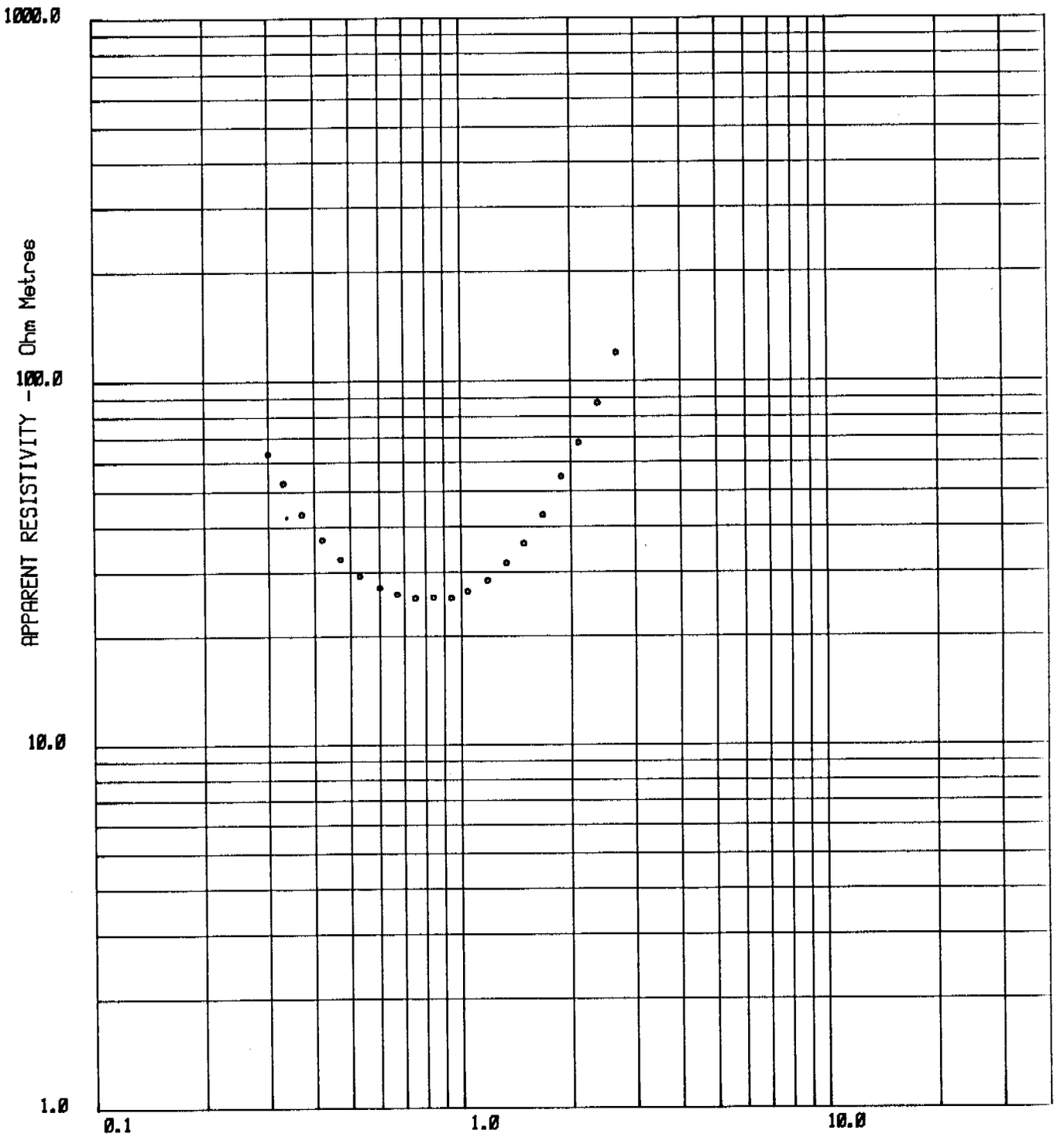
TX LOOP CENTRE	: 250	CLIENT	: The BHP Co. Ltd.
	: 1125	PROJECT	: BONE LAGOON
TX LOOP SIZE	: 300 metres	AREA	: McArthur River
	: 300 metres	JOB No.	: 85-1470
TX CURRENT	: 19.7 amps	SURVEYED BY	: J.P.
TX TURNOFF	: 292 microsecs	DATE	: 29-MAY,1983
FREQUENCY	: 25 Hz	SOUNDING No.	: SBL1



EM-37 SOUNDING

VERTICAL COMPONENT B (Z)

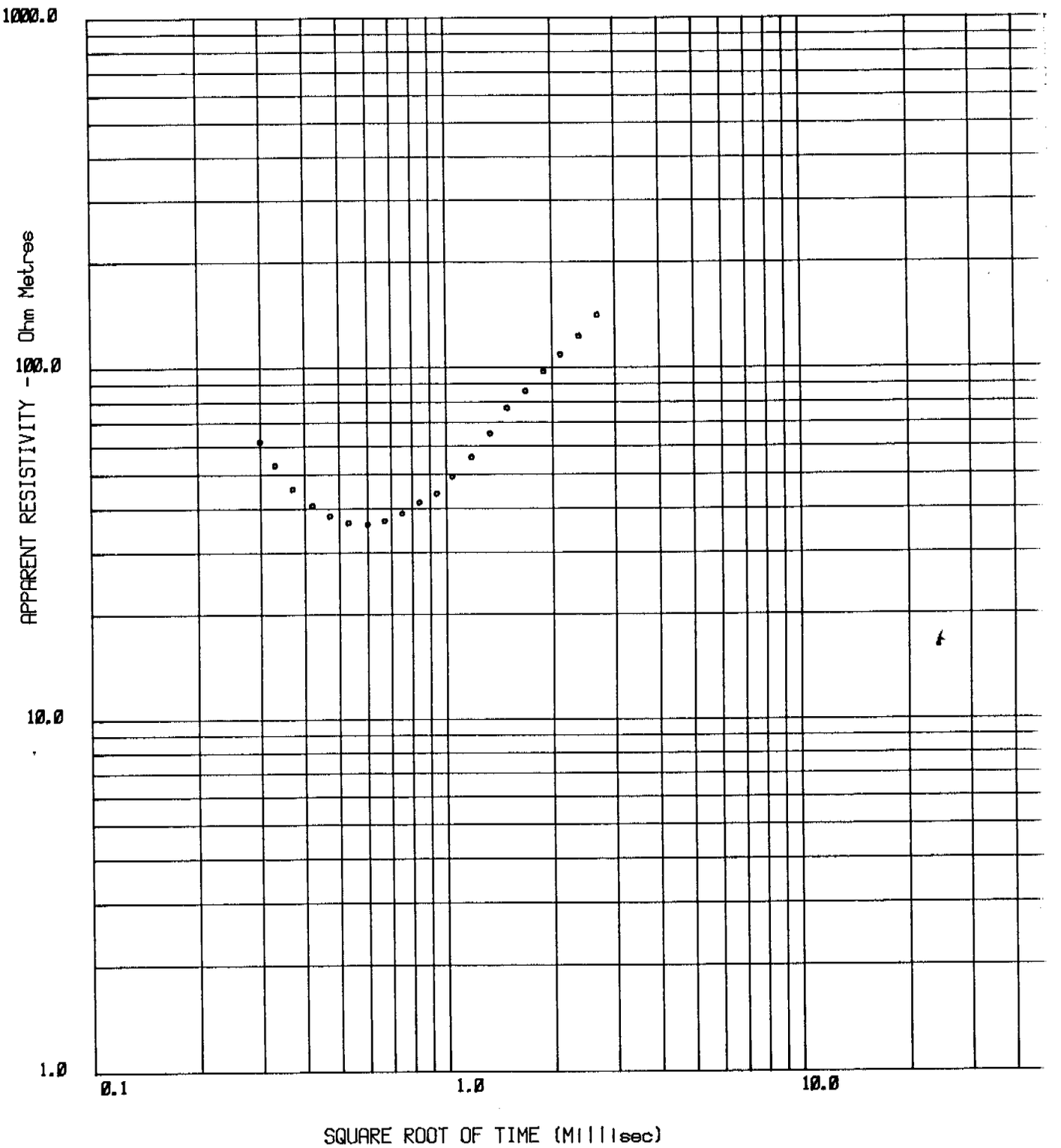
TX LOOP CENTRE	: 250	CLIENT	: The BHP Co. Ltd.
	: 3425	PROJECT	: BONE LAGOON
TX LOOP SIZE	: 300 metres	AREA	: McArthur River
	: 300 metres	JOB No.	: 85-1470
TX CURRENT	: 17.3 amps	SURVEYED BY	: J.P.
TX TURNOFF	: 228 microsecs	DATE	: 30-MAY,1983
FREQUENCY	: 25 Hz	SOUNDING No.	: SBL2



EM-37 SOUNDING

VERTICAL COMPONENT B (Z)

TX LOOP CENTRE	: 250	CLIENT	: The BHP Co. Ltd.
	: 5525	PROJECT	: BONE LAGOON
TX LOOP SIZE	: 300 metres	AREA	: McArthur River
	: 300 metres	JOB No.	: 85-1470
TX CURRENT	: 15.0 amps	SURVEYED BY	: J.P.
TX TURNOFF	: 202 microsecs	DATE	: 30-MAY,1983
FREQUENCY	: 25 Hz	SOUNDING No.	: SBL3

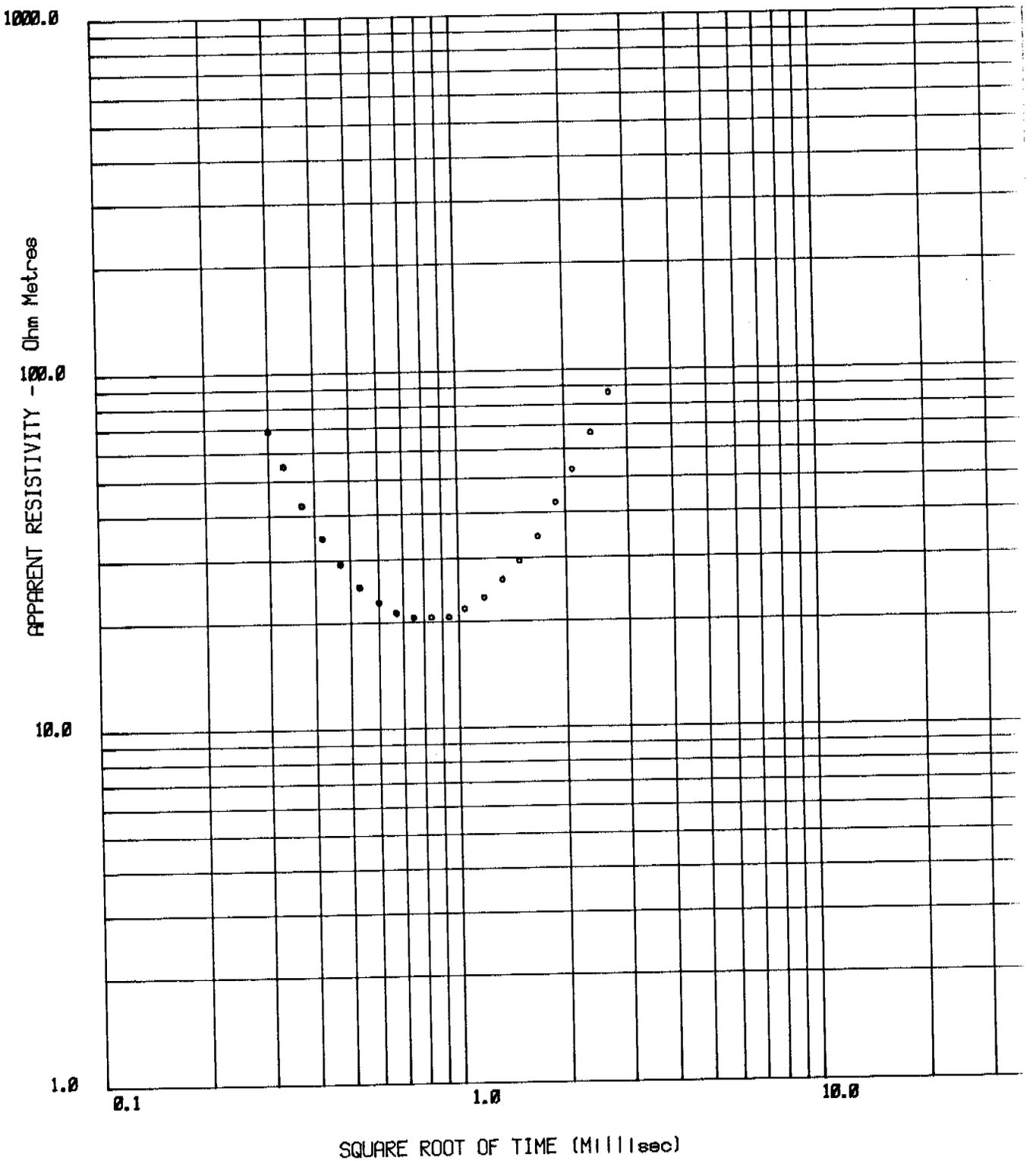


EM-37 SOUNDING

VERTICAL COMPONENT B (Z)

TX LOOP CENTRE	: 250
	: 7425
TX LOOP SIZE	: 300 metres
	: 300 metres
TX CURRENT	: 15.0 amps
TX TURNOFF	: 210 microsecs
FREQUENCY	: 25 Hz

CLIENT	: The BHP Co. Ltd.
PROJECT	: BONE LAGOON
AREA	: McArthur River
JOB No.	: 85-1470
SURVEYED BY	: J.P.
DATE	: 31-MAY,1983
SOUNDING No.	: SBL4



Sounding No.: SBL 1

Date: May 29, 1983

Component: Z

Location: Bone Lagoon (centred @ 1125N, 250E)

A = 300 metres

B = 300 metres

I = 19.7 Amps

T/o = 292 micro sec.

Base Frequency = 25 Hz

CHANNEL	TIME (msec)	GAIN	VALUE	$TIME^{\frac{1}{2}}$	Apparent Resistivity
1	.0885	3	3250.8	.30	91.8
2	.109	3	2575.5	.33	85.1
3	.140	3	1876.3	.37	79.1
4	.177	3	1319.3	.42	76.0
5	.220	3	910.0	.47	74.9
6	.280	3	583.3	.53	74.7
7	.355	3	365.3	.60	75.2
8	.443	3	230.3	.67	76.2
9	.563	3	140.0	.75	76.4
10	.712	3/6	86.0/683.3	.84	75.9/76.2 (76.1)
11	.876	6	457.2	.94	73.8
12	1.087	6	290.4	1.04	72.6
13	1.400	6	170.7	1.18	70.6
14	1.772	6	100.0	1.33	70.2
15	2.210	6	59.1	1.49	70.6
16	2.820	6/9	32.3/253.98	1.68	71.9/72.7 (72.3)
17	3.570	9	132.35	1.89	77.1
18	4.460	9	71.40	2.11	81.3
19	5.667	9	35.73	2.38	87.4
20	7.160	9	17.05	2.68	97.8

Interpreted Model:

Sounding No.:	SBL 1	A	=	300	metres
Date:	May 29, 1983	B	=	300	metres
Component:	X	I	=	19.7	Amps
Location:	Bone Lagoon (centred @ 1125N, 250E)	T/o	=	292	micro sec.
		Base Frequency	=	25 Hz	

CHANNEL	TIME (msec)	GAIN	VALUE	$TIME^{\frac{1}{2}}$	Apparent Resistivity
1	.0885	3	-222	.30	
2	.109	3	-181	.33	
3	.140	3	-131	.37	
4	.177	4	- 86	.42	
5	.220	3	- 54	.47	
6	.280	3	- 32	.53	
7	.355	3	- 19	.60	
8	.443	3	- 12	.67	
9	.563	3	- 7	.75	
10	.712	3	- 4	.84	
11	.876	3	- 3.5	.94	
12	1.087	3	- 2.1	1.04	
13	1.400	3	- 1.3	1.18	
14	1.772	3	- 0.7	1.33	
15	2.210	3	- 0.5	1.49	
16	2.820	3	- 0.4	1.68	
17	3.570	3	- 0.3	1.89	
18	4.460	3	- 0.2	2.11	
19	5.667	3	- 0.2	2.38	
20	7.160	3	- 0.2	2.68	

Interpreted Model:

Sounding No.: SBL 2

Date: May 30, 1983

Component: Z

Location: Bone Lagoon (centred @ 3425N, 250E)

A = 300 metres

B = 300 metres

I = 17.3 Amps

T/o = 228 micro sec.

Base Frequency = 25 Hz

CHANNEL	TIME (msec)	GAIN	VALUE	$TIME^{\frac{1}{2}}$	Apparent Resistivity
1	.0885	2	3062.8	.30	63.3
2	.109	2	2816.0	.33	52.8
3	.140	2	2445.5	.37	43.3
4	.177	2	2032.3	.42	36.9
5	.220	2	1629.5	.47	32.6
6	.280	2	1197.8	.53	29.3
7	.355	2	834.5	.60	27.2
8	.443	2	563.3	.67	26.1
9	.563	2	349.5	.75	25.5
10	.712	2	209.3	.84	25.6
11	.876	2/4	132.2/530.80	.94	25.5/25.5 (25.5)
12	1.087	4	304.55	1.04	26.6
13	1.400	4	153.38	1.18	28.5
14	1.772	4	74.85	1.33	31.8
15	2.210	4	36.80	1.49	36.0
16	2.820	4/9	16.15/489.10	1.68	42.2/43.8 (43.0)
17	3.570	9	198.58	1.89	54.7
18	4.460	9	83.85	2.11	67.7
19	5.667	9	32.05	2.38	87.0
20	7.160	9	11.20	2.68	119.5

Interpreted Model:

Sounding No.: SBL 2

Date: May 30, 1983

Component: X

Location: Bone Lagoon (centred @ 3425N, 250E)

A = 300 metres

B = 300 metres

I = 17.3 Amps

T/o = 228 micro sec.

Base Frequency = 25 Hz

CHANNEL	TIME (msec)	GAIN	VALUE	$TIME^{\frac{1}{2}}$	Apparent Resistivity
1	.0885	4	515	.30	
2	.109	4	814	.33	
3	.140	4	1032	.37	
4	.177	4	1076	.42	
5	.220	4	987	.47	
6	.280	4	787	.53	
7	.355	4	571	.60	
8	.443	4	380	.67	
9	.563	4	223	.75	
10	.712	4	119	.84	
11	.876	4	66.1	.94	
12	1.087	4	28.8	1.04	
13	1.400	4	8.1	1.18	
14	1.772	4	0.2	1.33	
15	2.210	4	- 1.5	1.49	
16	2.820	4	- 1.5	1.68	
17	3.570	4	- 1.2	1.89	
18	4.460	4	- 0.8	2.11	
19	5.667	4	- 0.5	2.38	
20	7.160	4	- 0.3	2.68	

Interpreted Model:

Sounding No.:	SBL 2	A	=	300	metres
Date:	May 30, 1983	B	=	300	metres
Component:	Y	I	=	17.3	Amps
Location:	Bone Lagoon (centred @ 3425N, 250E)	T/o	=	228	micro sec.
		Base Frequency	=	25	Hz

CHANNEL	TIME (msec)	GAIN	VALUE	$TIME^{\frac{1}{2}}$	Apparent Resistivity
1	.0885	4	406	.30	
2	.109	4	688	.33	
3	.140	4	904	.37	
4	.177	4	959	.42	
5	.220	4	889	.47	
6	.280	4	712	.53	
7	.355	4	512	.60	
8	.443	4	338	.67	
9	.563	4	193	.75	
10	.712	4	102	.84	
11	.876	4	56.7	.94	
12	1.087	4	27.2	1.04	
13	1.400	4	10.8	1.18	
14	1.772	4	4.0	1.33	
15	2.210	4	1.4	1.49	
16	2.820	4	.3	1.68	
17	3.570	4	- 0.2	1.89	
18	4.460	4	- 0.4	2.11	
19	5.667	4	- 0.3	2.38	
20	7.160	3	- 0.3	2.68	

Interpreted Model:

Sounding No.: SBL 3

Date: May 30, 1983

Component: Z

Location: Bone Lagoon (centred @ 5525N, 250E)

A = 300 metres

B = 300 metres

I = 15.0 Amps

T/o = 202 micro sec.

Base Frequency = 25 Hz

CHANNEL	TIME (msec)	GAIN	VALUE	TIME$^{\frac{1}{2}}$	Apparent Resistivity
1	.0885	2	3037.5	.30	61.8
2	.109	2	2651.8	.33	53.2
3	.140	2	2136.8	.37	45.6
4	.177	2	1631.5	.42	40.9
5	.220	2	1193.0	.47	38.2
6	.280	2	794.5	.53	36.5
7	.355	2	499.5	.60	36.1
8	.443	2	303.5	.67	37.0
9	.563	2	168.8	.75	38.8
10	.712	2/5	89.8/723.3	.84	41.8/41.6(41.
11	.876	5	415.54	.94	44.1
12	1.087	5	215.63	1.04	49.2
13	1.400	5	98.70	1.18	55.9
14	1.772	5	45.05	1.33	65.1
15	2.210	5/9	21.50/332.35	1.49	75.0/76.8(75.
16	2.820	9 in/ 9 out	148.73/156.84	1.68	88.5/85.7
17	3.570	9 in/ 9 out	64.15/73.06	1.89	106.2/97.4
18	4.460	9 in/ 9 out	29.30/36.00	2.11	124.6/108.7
19	5.667	9 in/ 9 out	12.40/16.69	2.38	149.5/122.6
20	7.160	9 in/ 9 out	5.03/7.64	2.68	185.9/140.7

Interpreted Model:

Sounding No.: SBL 3

Date: May 30, 1983

Component: X

Location: Bone Lagoon (centred @ 5525N, 250E)

A = 300 metres

B = 300 metres

I = 15.0 Amps

T/o = 202 micro sec.

Base Frequency = 25 Hz

CHANNEL	TIME (msec)	GAIN	VALUE	$TIME^{\frac{1}{2}}$	Apparent Resistivity
1	.0885	5	1545	.30	
2	.109	5	1596	.33	
3	.140	5	1470	.37	
4	.177	5	1203	.42	
5	.220	5	896	.47	
6	.280	5	582	.53	
7	.355	5	349	.60	
8	.443	5	199	.67	
9	.563	5	105	.75	
10	.712	5	55	.84	
11	.876	5	32.1	.94	
12	1.087	5	17.2	1.04	
13	1.400	5	7.6	1.18	
14	1.772	5	3.0	1.33	
15	2.210	5	1.0	1.49	
16	2.820	5	0.2	1.68	
17	3.570	5	0	1.89	
18	4.460	5	- 0.1	2.11	
19	5.667	5	- 0.2	2.38	
20	7.160	5	- 0.2	2.68	

Interpreted Model:

Sounding No.: SBL 3

Date: May 30, 1983

Component: Y

Location: Bone Lagoon (centred @ 5525N, 250E0

A = 300 metres

B = 300 metres

I = 15.0 Amps

T/o = 202 micro sec.

Base Frequency = 25 Hz

CHANNEL	TIME (msec)	GAIN	VALUE	$TIME^{\frac{1}{2}}$	Apparent Resistivity
1	.0885	5	-1773	.30	
2	.109	5	-1567	.33	
3	.140	5	-1212	.37	
4	.177	5	- 852	.42	
5	.220	5	- 564	.47	
6	.280	5	- 338	.53	
7	.355	5	- 201	.60	
8	.443	5	- 126	.67	
9	.563	5	- 78	.75	
10	.712	5	- 49	.84	
11	.876	5	- 32.6	.94	
12	1.087	5	- 18.8	1.04	
13	1.400	5	- 8.4	1.18	
14	1.772	5	- 3.3	1.33	
15	2.210	5	- 1.1	1.49	
16	2.820	5	- 0.3	1.68	
17	3.570	5	- 0.2	1.89	
18	4.460	5	0	2.11	
19	5.667	5	- 0.1	2.38	
20	7.160	5	- 0.1	2.68	

Interpreted Model:

Sounding No.:	SBL 4	A	=	300	metres
Date:	May 31, 1983	B	=	300	metres
Component:	Z	I	=	15.0	Amps
Location:	Bone Lagoon (centred @ 7425N, 250E)	T/o	=	210	micro sec.
		Base Frequency	=	25 Hz	

CHANNEL	TIME (msec)	GAIN	VALUE	$TIME^{\frac{1}{2}}$	Apparent Resistivity
1	.0885	3	5002.8	.30	68.9
2	.109	3	4883.8	.33	55.1
3	.140	3	4574.5	.37	42.8
4	.177	3	4090.3	.42	34.6
5	.220	3	3478.3	.47	29.3
6	.280	3	2716.8	.53	25.2
7	.355	3	1951.8	.60	22.8
8	.443	3	1364.0	.67	21.3
9	.563	3	859.0	.75	20.6
10	.712	3	515.5	.84	20.6
11	.876	3	322.78	.94	20.6
12	1.087	3	182.80	1.04	21.7
13	1.400	3	91.00	1.18	23.3
14	1.772	3	44.20	1.33	26.1
15	2.210	3/7	22.15/344.75	1.49	29.1/29.7 (29
16	2.820	7	154.45	1.68	34.3
17	3.570	7/9	64.30/246.40	1.89	42.0/43.2 (42
18	4.460	9	106.65	2.11	52.6
19	5.667	9	41.63	2.38	66.6
20	7.160	9 in/ 9 out	14.88/15.9	2.68	90.1/86.2

Interpreted Model:

Sounding No.: SBL 4

Date: May 31, 1983

Component: X

Location: Bone Lagoon (centred @ 7425N, 250E)

A = 300 metres

B = 300 metres

I = 15.0 Amps

T/o = 210 micro sec.

Base Frequency = 25 Hz

CHANNEL	TIME (msec)	GAIN	VALUE	$TIME^{\frac{1}{2}}$	Apparent Resistivity
1	.0885	3	111	.30	
2	.109	3	119	.33	
3	.140	3	117	.37	
4	.177	3	104	.42	
5	.220	3	84	.47	
6	.280	3	57	.53	
7	.355	3	35	.60	
8	.443	3	19	.67	
9	.563	3	9	.75	
10	.712	3	5	.84	
11	.876	3	4.6	.94	
12	1.087	3	3.7	1.04	
13	1.400	3	2.9	1.18	
14	1.772	3	1.8	1.33	
15	2.210	3	1.0	1.49	
16	2.820	3	0.4	1.68	
17	3.570	3	0	1.89	
18	4.460	3	-0.1	2.11	
19	5.667	3	-0.2	2.38	
20	7.160	3	-0.1	2.68	

Interpreted Model:

Sounding No.: SBL 4

Date: May 31, 1983

Component: Y

Location: Bone Lagoon (centred @ 7425N, 250E)

A = 300 metres

B = 300 metres

I = 15.0 Amps

T/o = 210 micro sec.

Base Frequency = 25 Hz

CHANNEL	TIME (msec)	GAIN	VALUE	$TIME^{\frac{1}{2}}$	Apparent Resistivity
1	.0885	3	-257	.30	
2	.109	3	-409	.33	
3	.140	3	-543	.37	
4	.177	3	-596	.42	
5	.220	3	-566	.47	
6	.280	3	-465	.53	
7	.355	3	-340	.60	
8	.443	3	-226	.67	
9	.563	3	-133	.75	
10	.712	3	- 72	.84	
11	.876	3	- 42.4	.94	
12	1.087	3	- 21.3	1.04	
13	1.400	3	- 9.2	1.18	
14	1.772	3	- 3.6	1.33	
15	2.210	3	- 1.3	1.49	
16	2.820	3	- 0.5	1.68	
17	3.570	3	- 0.1	1.89	
18	4.460	3	- 0.1	2.11	
19	5.667	3	- 0.2	2.38	
20	7.160	3	- 0.2	2.68	

Interpreted Model:

Sounding No.: SBL 8

Date: June 3, 1983

Component: Z

Location: Bone Lagoon (centred @ 4750N, 250E) near d.h. MCA 4

A = 300 metres

B = 300 metres

I = 16.8 Amps

T/o = 222 micro sec.

Base Frequency = 25 Hz

CHANNEL	TIME (msec)	GAIN	VALUE	$TIME^{\frac{1}{2}}$	Apparent Resistivity
1	.0885	2	2857.8	.30	66.0
2	.109	2	2419.8	.33	58.1
3	.140	2	1899.5	.37	50.9
4	.177	2	1427.3	.42	46.3
5	.220	2	1039.0	.47	43.6
6	.280	2	689.3	.53	42.0
7	.355	2	433.8	.60	41.6
8	.443	2	267.5	.67	42.3
9	.563	2	151.3	.75	44.0
10	.712	2/5	83.0/670.50	.84	46.7/46.4(46.6)
11	.876	5	398.23	.94	48.2
12	1.087	5	216.15	1.04	52.3
13	1.400	5	103.80	1.18	57.7
14	1.772	5	49.20	1.33	65.7
15	2.210	5/9	23.70/364.13	1.49	75.3/77.4(76.4)
16	2.820	9	161.33	1.68	90.2
17	3.570	9 in/9 out	67.58/74.55	1.89	110.1/103.1
18	4.460	9 in/9 out	30.45/36.38	2.11	130.6/116.0
19	5.667	9 in/9 out	12.53/16.90	2.38	159.7/130.8
20	7.160	9 in/9 out	4.90/7.85	2.68	203.5/148.6

Interpreted Model:

Sounding No.: SBL 8

Date: June 3, 1983

Component: Y

Location: Bone Lagoon (centred @ 4750N, 250E) near d.h. MCA 4

A = 300 metres

B = 300 metres

I = 16.8 Amps

T/o = 222 micro sec.

Base Frequency = 25 Hz

CHANNEL	TIME (msec)	GAIN	VALUE	$TIME^{\frac{1}{2}}$	Apparent Resistivity
1	.0885	5	Overflow	.30	
2	.109	5	-6020	.33	
3	.140	5	-4861	.37	
4	.177	5	-3590	.42	
5	.220	5	-2527	.47	
6	.280	5	-1595	.53	
7	.355	5	- 961	.60	
8	.443	5	- 571	.67	
9	.563	5	- 314	.75	
10	.712	5	- 170	.84	
11	.876	5	- 100.7	.94	
12	1.087	5	- 52.7	1.04	
13	1.400	5	- 22.8	1.18	
14	1.772	5	- 9.1	1.33	
15	2.210	5	- 3.4	1.49	
16	2.820	5	- 1.0	1.68	
17	3.570	5	- 0.3	1.89	
18	4.460	5	- 0.1	2.11	
19	5.667	5	0	2.38	
20	7.160	5	- 0.1	2.68	

Interpreted Model: