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PANCONTINENTAL MINING LIMITED

Report No: 87/79

REPORT ON AN EM37 SURVEY NORTH PINNACLES PROSPECT BULGOBAC E.L. 12/72 TASMANIA

By D.R. Wilson
November 1987

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FIGURES

APPENDIX

Loop 1 (10200E - 10800E)	Loop 2 (10200E - 10800E)	Loop 3 (9600E - 10200E)	Loop 4 (9600E - 10200E)
10000N	10800N	10800N	10000N
10200N	11000N	11000N	10200N
10400N	11200N	11200N	10400N
10600N	11400N	11400N	10600N
10800N	11600N	11600N	10800N

1. INTRODUCTION

Previous exploration by EZ had identified anomalous basemetal geochemistry within altered volcanics on the North Pinnacles prospect (figure 1). Drill hole DPP 215 intersected disseminated basemetal sulphides near an IP anomaly. The 1979 IP survey detected probable disseminated sulphides but no evidence of a good conductor that might represent massive sulphides.

Pancontinental and Outokumpu decided to test the prospect for a deeper basemetal orebody using transient electromagnetics. Between October 5th and 27th, 1987 Geoterrex Pty Limited surveyed the prospect using EM37 equipment. This is a report on the EM37 results.

2. WORK DONE

Eighteen lines of 600m were surveyed from four, 800m x 600m loops. Both the X and Z components of the electromagnetic field were measured. Figure 2 shows the loop layout and lines surveyed. The appendix contains copies of all the data.

3. INTERPRETATION

The low values in all channels throughout the grid indicate resistive rock types and therefore excellent depth penetration.

There are no conductors, that might represent massive sulphides, evident in the data.

4. CONCLUSIONS

This survey has not detected any conductors that might represent a massive sulphide orebody.

The resistive geology and large loop size should have achieved excellent depth penetration for a large target.

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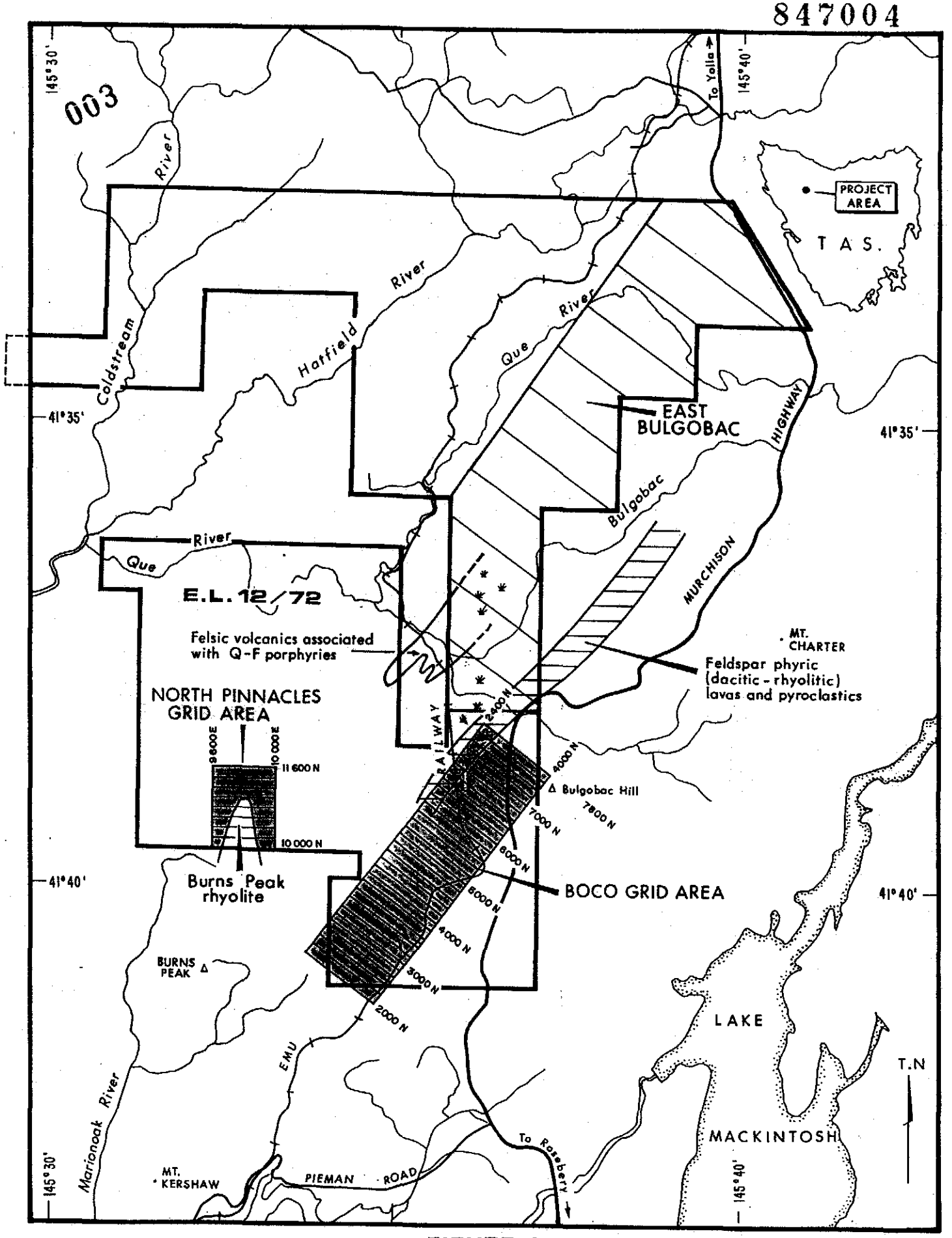


FIGURE 1

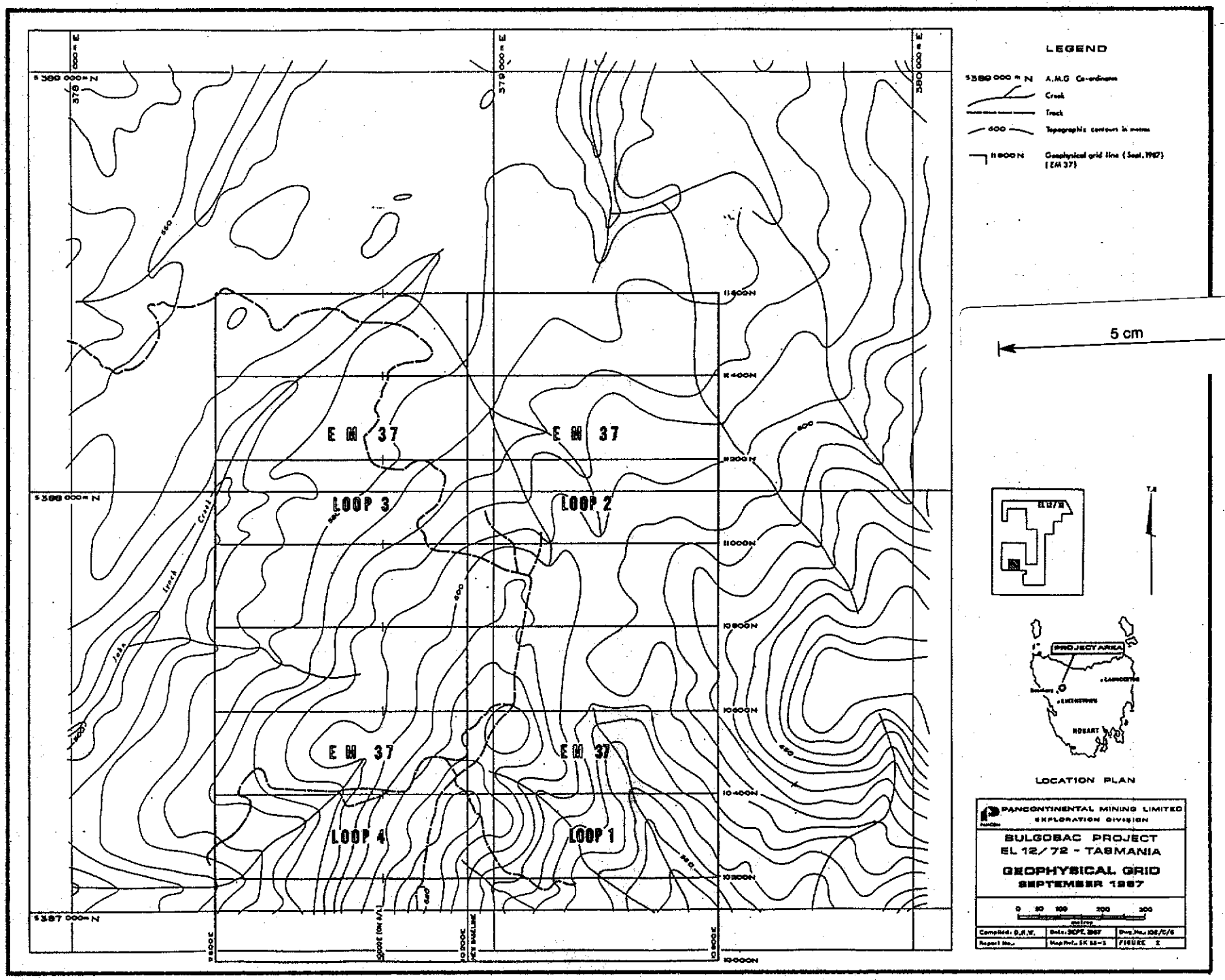
BULGOBAC PROJECT

E.L. 12/72 - TASMANIA

5 cm

SCALE 1:100000

0 1 2 3 4 5 Km


LEGEND
5389 000 m N A.M.G Co-ordinate
Creek
Track
600 Topographic contours in metres
11 900 N Geophysical grid line (Sept. 1987) (EM 37)
5 cm
EM 37
EM 37
LOOP 3
LOOP 2
EM 37
EM 37
LOOP 4
LOOP 1
11900N
11400N
11000N
10900N
10600N
10400N
10200N
10000N
5389 000m N
5387 000m N
378 000m E
379 000m E
380 000m E
PROJECT AREA
ROSART
LOCATION PLAN
PANCONTINENTAL MINING LIMITED
EXPLORATION DIVISION
SULGOBAC PROJECT
EL 12/72 - TASMANIA
GEOPHYSICAL GRID
SEPTEMBER 1987
FIGURE 2

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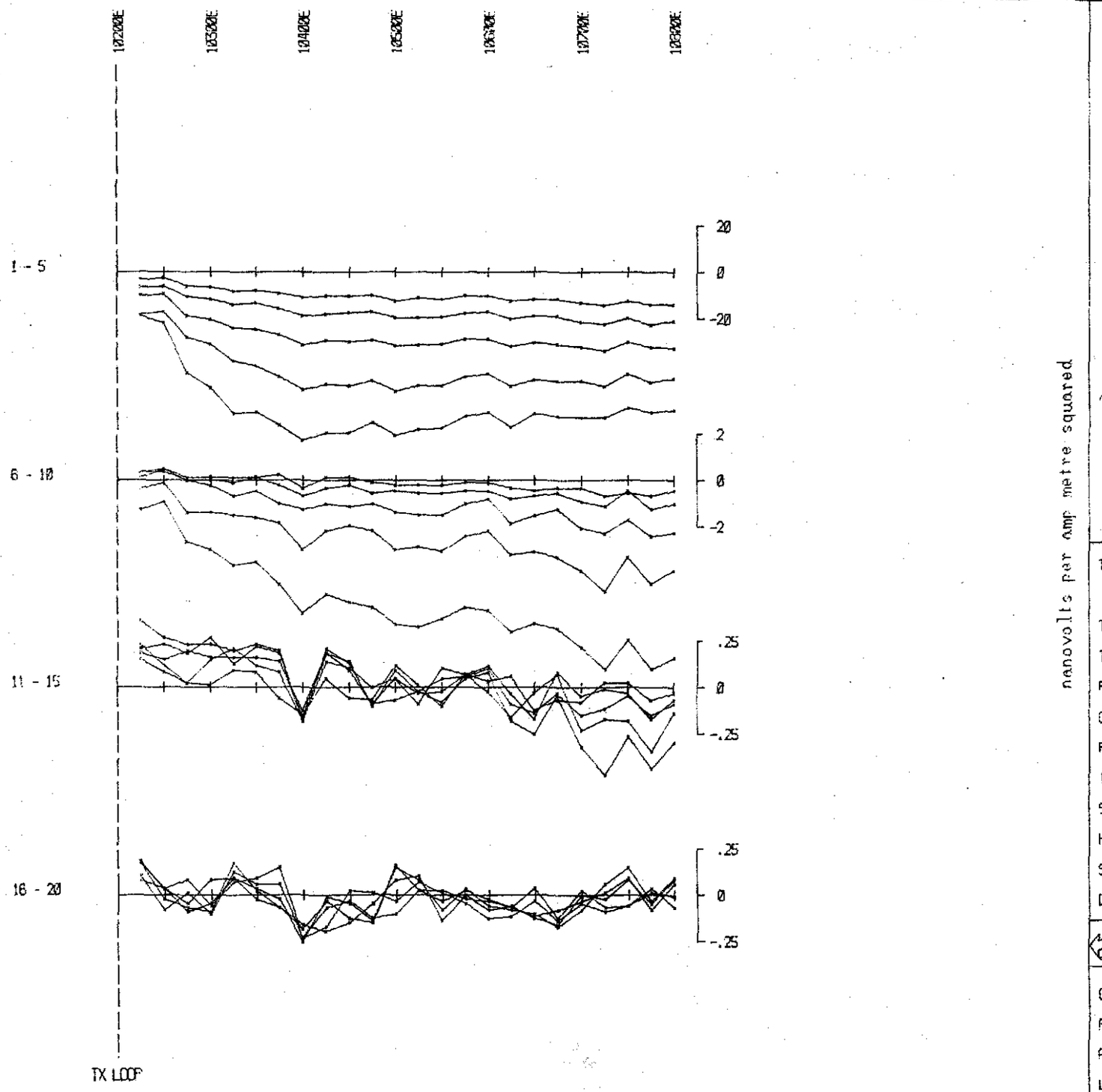
EM-37

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)



5 cm

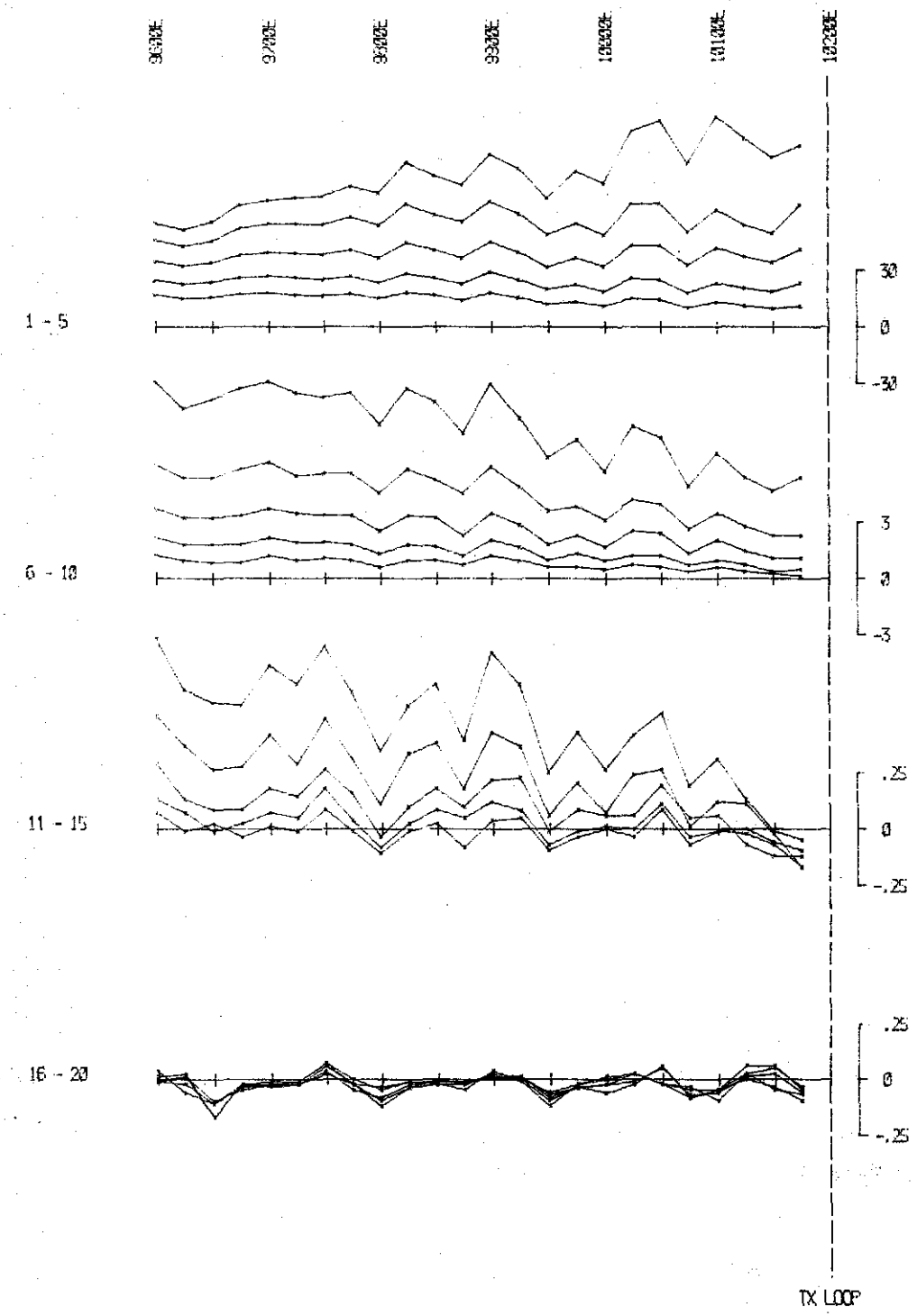
TX LOOP SIDES	: 10800N 9600E
	: 11600N 10200E
TX LOOP SIZE	: 800 m X 600 m
TX TURN OFF TIME	: 525 microsecs.
FIRST GATE TIME	: 88.5 microsecs.
CURRENT	: 13.0 amps
FREQUENCY	: 25 Hz.
INTEGRATION TIME	: 256 cycles
SYNC MODE	: CRYSTAL
HORIZONTAL SCALE	: 1:5000
SURVEYED BY	: SL
DATE	: 16/10/1992

SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.

PROJECT NO. 4 964

CLIENT	: PAN CONT
PROJECT	: 4 964
AREA	: BULGOBAC
LINE	: 11600N X
TX LOOP	: 3

HORIZONTAL COMPONENT (X)



nanovolts per amp metre squared

EM-37

006

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

5 cm

TX LOOP SIDES	:	12300N 10200E
	:	11030N 10000E
TX LOOP SIZE	:	800 m X 600 m
TX TURN OFF TIME	:	430 microsecs.
FIRST GATE TIME	:	83.5 microsecs.
CURRENT	:	12.5 amps
FREQUENCY	:	25 Hz.
INTEGRATION TIME	:	250 cycles
SYNC MODE	:	CRYSTAL
HORIZONTAL SCALE	:	1:5000
SURVEYED BY	:	SL
DATE	:	22/10/1987

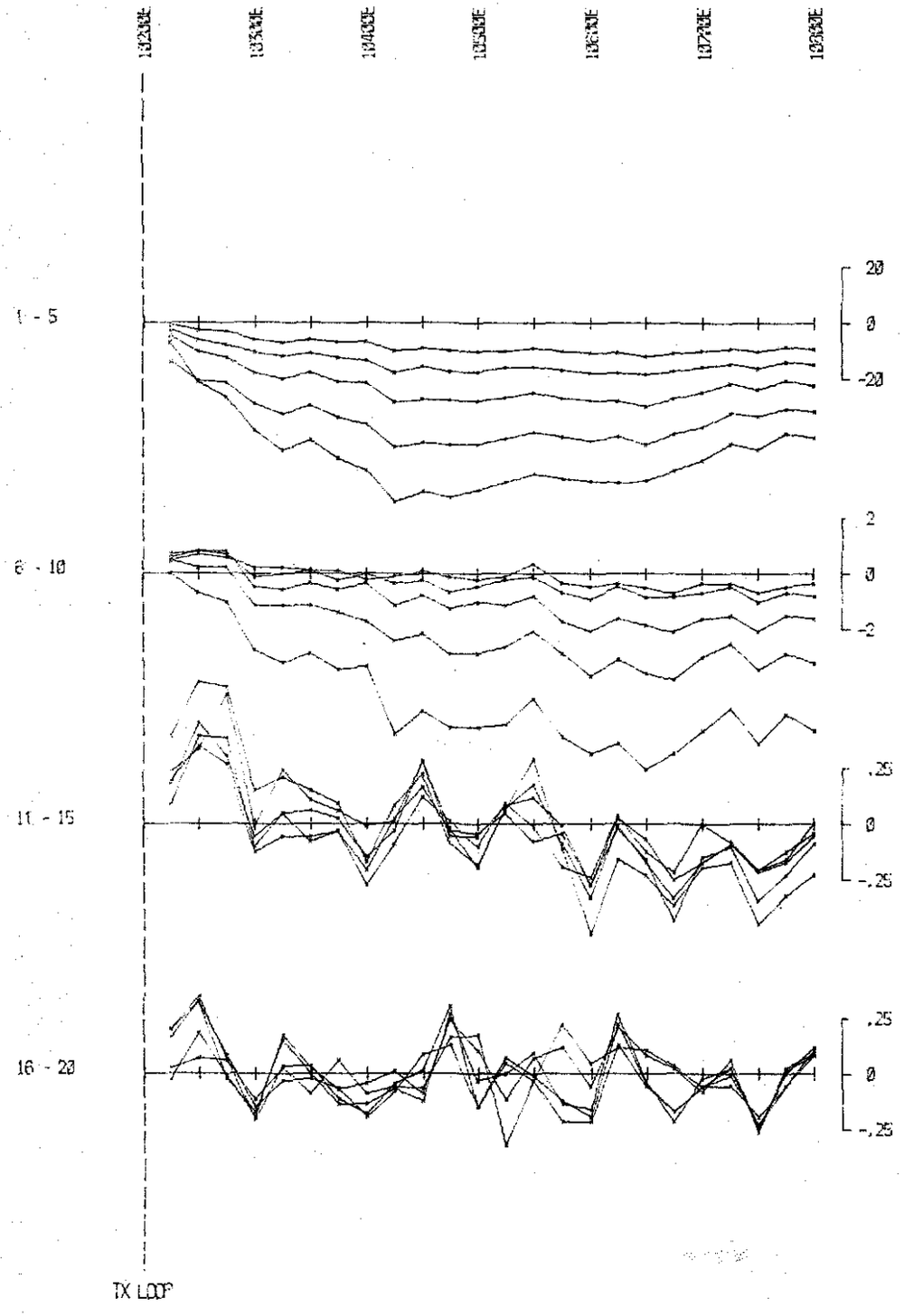
SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.

PROJECT NO. 4 964

CLIENT	:	PAN CONT
PROJECT	:	4 964
AREA	:	BULOQBAC
LINE	:	11600N X

8470007

HORIZONTAL COMPONENT (X)



nanovolts per amp metre squared

EM-37

007

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

TX LOOP SIDES	:	12900N 9600E
	:	11600N 10200E
TX LOOP SIZE	:	900 m X 600 m
TX TURN OFF TIME	:	325 microsecs.
FIRST GATE TIME	:	89.5 microsecs.
CURRENT	:	13.2 amps
FREQUENCY	:	25 Hz.
INTEGRATION TIME	:	256 cycles
SYNC MODE	:	CRYSTAL
HORIZONTAL SCALE	:	1:5000
SURVEYED BY	:	SL
DATE	:	16/13/1987

SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.

PROJECT NO. 4 964

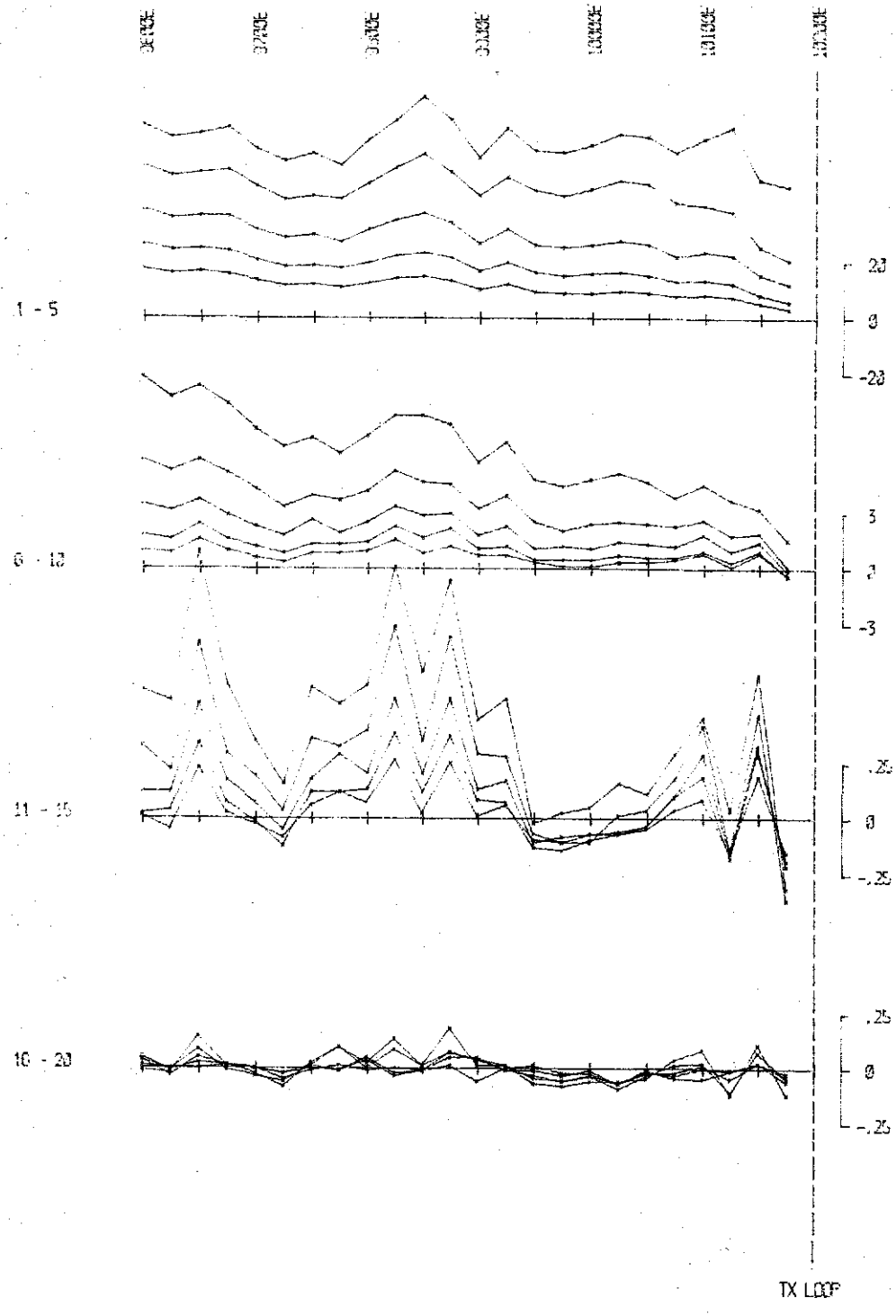
CLIENT : PAN CONT

PROJECT : 4 964

AREA : BULGOPAC

LINE : 11400N X

847008



EM-37

008

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

5 cm

nanovolts per amp metre squared

TX LOOP SIDES	: 10900N	10200E
	: 11600N	10900E
TX LOOP SIZE	: 800 m X 670 m	
TX TURN OFF TIME	: 430 microsecs.	
FIRST GATE TIME	: 68.5 microsecs.	
CURRENT	: 12.5 amps	
FREQUENCY	: 25 Hz.	
INTEGRATION TIME	: 256 cycles	
SYNC MODE	: CRYSTAL	
HORIZONTAL SCALE	: 1:5000	
SURVEYED BY	: SL	
DATE	: 22/10/1997	

SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.

PROJECT NO. 4 964

CLIENT : PAN CONT

PROJECT : 4 964

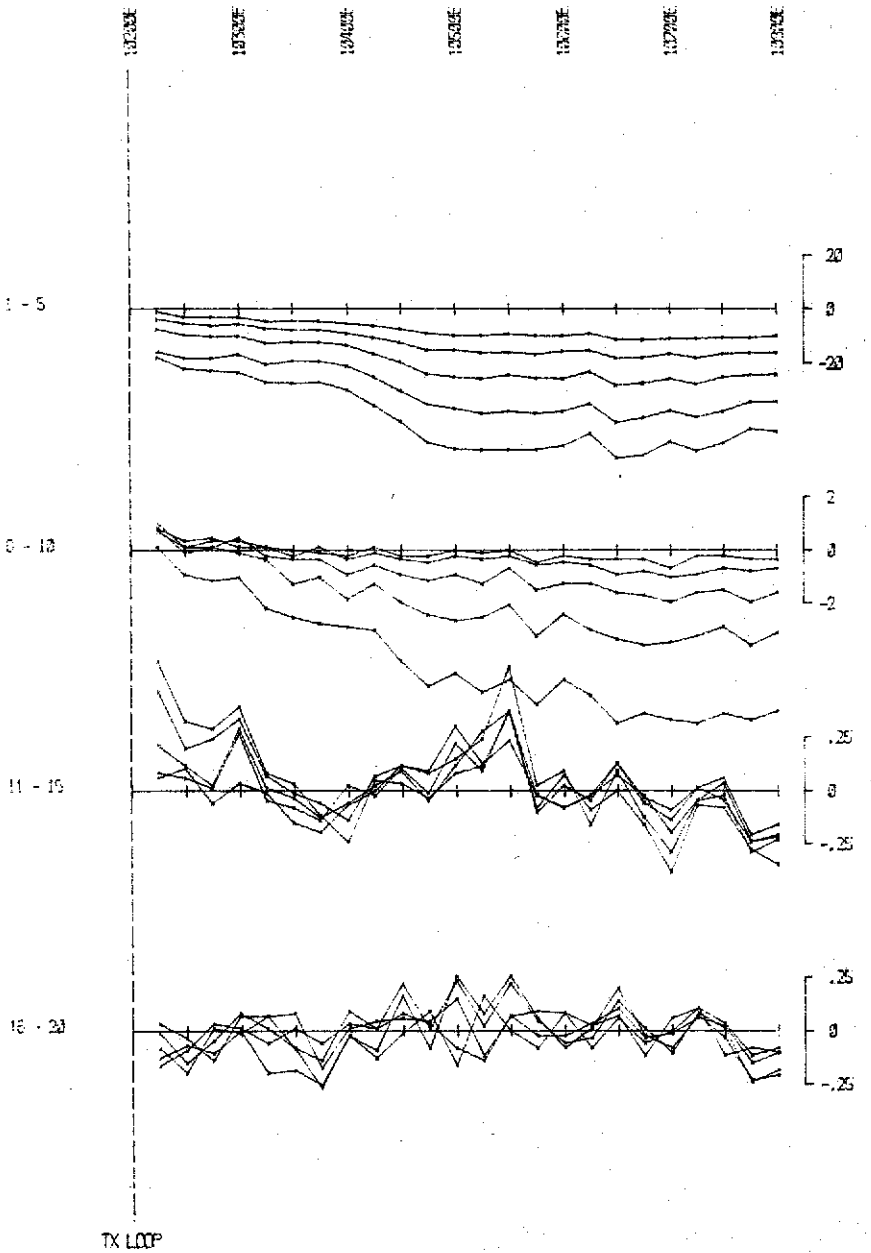
AREA : BULGEBAC

LINE : 11400N X

TX LOOP : 2

847009

HORIZONTAL COMPONENT B (X)



EM-37

009

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

nanovolts per amp meter squared

5 cm

TX LOOP SIDES	: 12300N	9E20E
	: 11600N	10020E
TX LOOP SIZE	: 980 m X 680 m	
TX TURN OFF TIME	: 320 microsecs.	
FIRST GATE TIME	: 60.5 microsecs	
CURRENT	: 13.0 amps	
FREQUENCY	: 25 Hz.	
INTEGRATION TIME	: 256 cycles	
SYNC MODE	: CRYSTAL	
HORIZONTAL SCALE	: 1:5000	
SURVEYED BY	: SL	
DATE	: 10/13/1987	

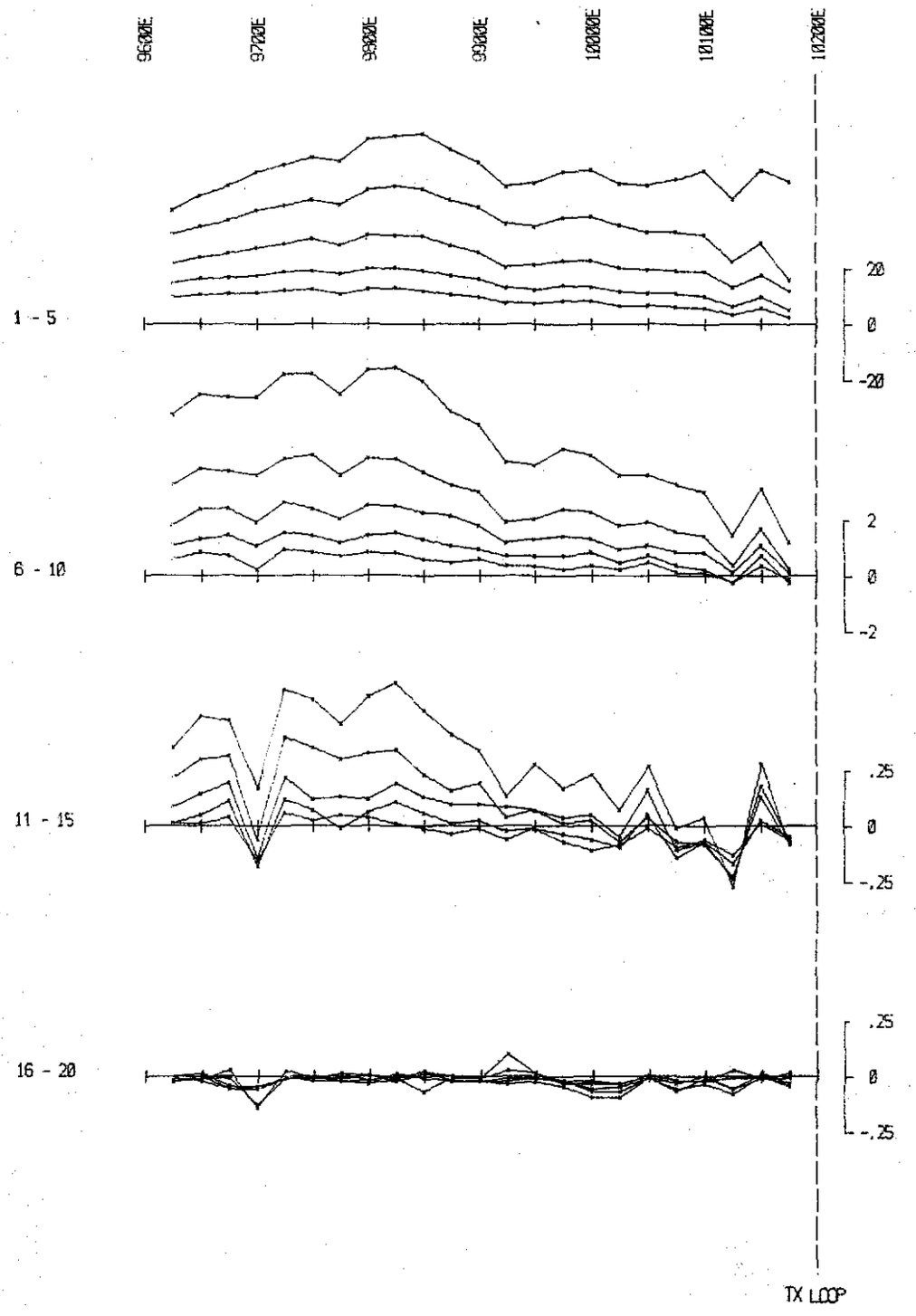
SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.

PROJECT NO. 4 904

CLIENT	: PEN CONT
PROJECT	: 4 904
AREA	: BULOOBAC
LINE	: 11200N X
TX LOOP	: 5

8470010

HORIZONTAL COMPONENT $\dot{B}_x(X)$



nanovolts per amp metre squared

EM-37

FIXED TRANSMITTER SURVEY

010

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

5 cm

TX LOOP SIDES	:	10800N 10200E
	:	11600N 10000E
TX LOOP SIZE	:	800 m X 600 m
TX TURN OFF TIME	:	430 microsecs.
FIRST GATE TIME	:	88.5 microsecs.
CURRENT	:	12.5 amps
FREQUENCY	:	25 Hz.
INTEGRATION TIME	:	256 cycles
SYNC MODE	:	CRYSTAL
HORIZONTAL SCALE	:	1:5000
SURVEYED BY	:	SL
DATE	:	22/10/1987

SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.

PROJECT NO. 4 964

CLIENT	:	PAN CONT
PROJECT	:	4 964
AREA	:	BULGOBAC
LINE	:	11200N X
TX LOOP	:	?

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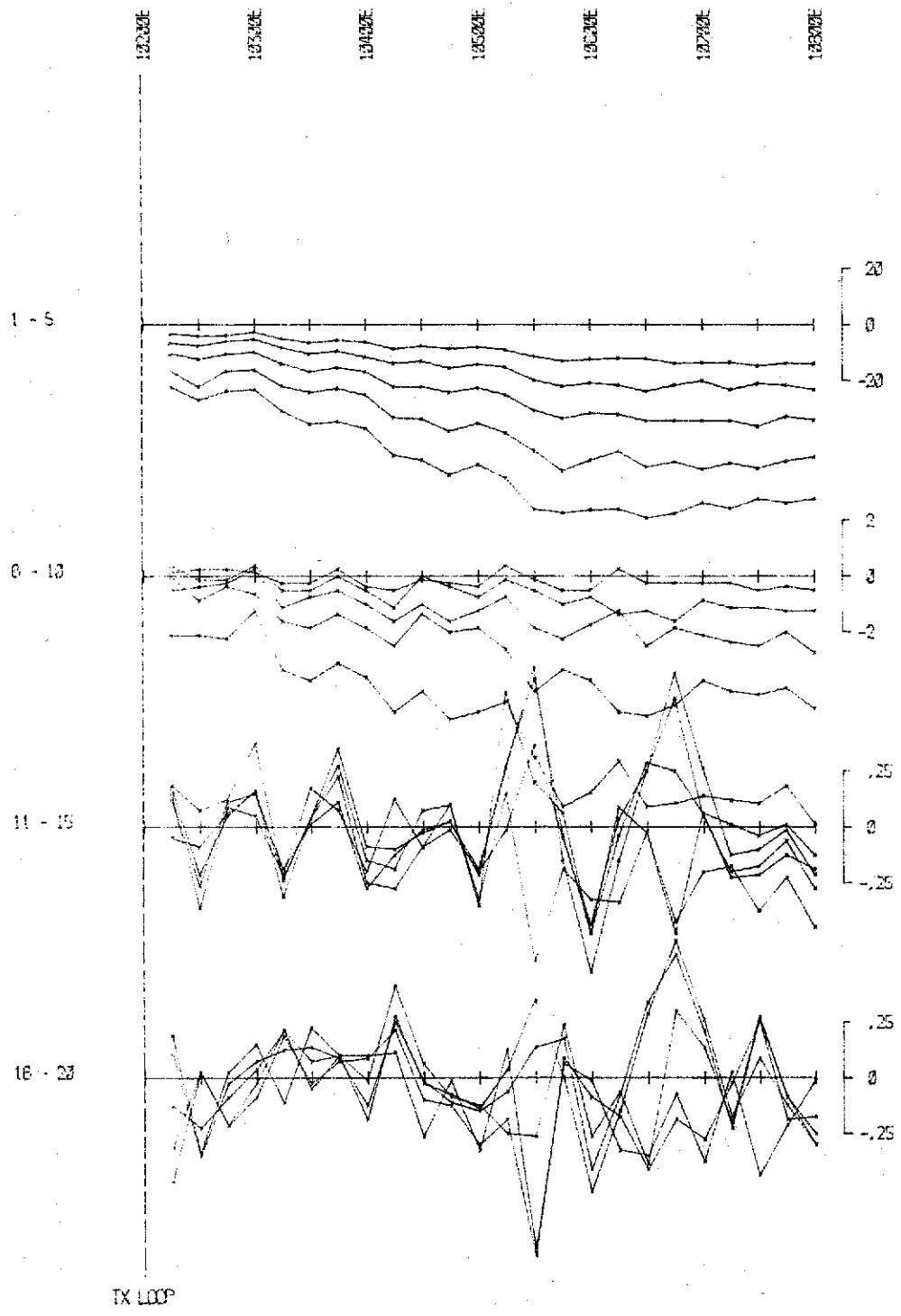
HORIZONTAL COMPONENT B (X)



nanovolts per amp metre squared

EM-37

011

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (dB)

5 cm

TX LOOP SIDES	:	10800N 0600E
	:	11600N 1020E
TX LOOP SIZE	:	800 m X 600 m
TX TURN OFF TIME	:	335 microsecs.
FIRST GATE TIME	:	60.5 microsecs.
CURRENT	:	12 amps
FREQUENCY	:	25 Hz.
INTEGRATION TIME	:	256 cycles
SYNC MODE	:	CRYSTAL
HORIZONTAL SCALE	:	1:5000
SURVEYED BY	:	SL
DATE	:	15/10/1987

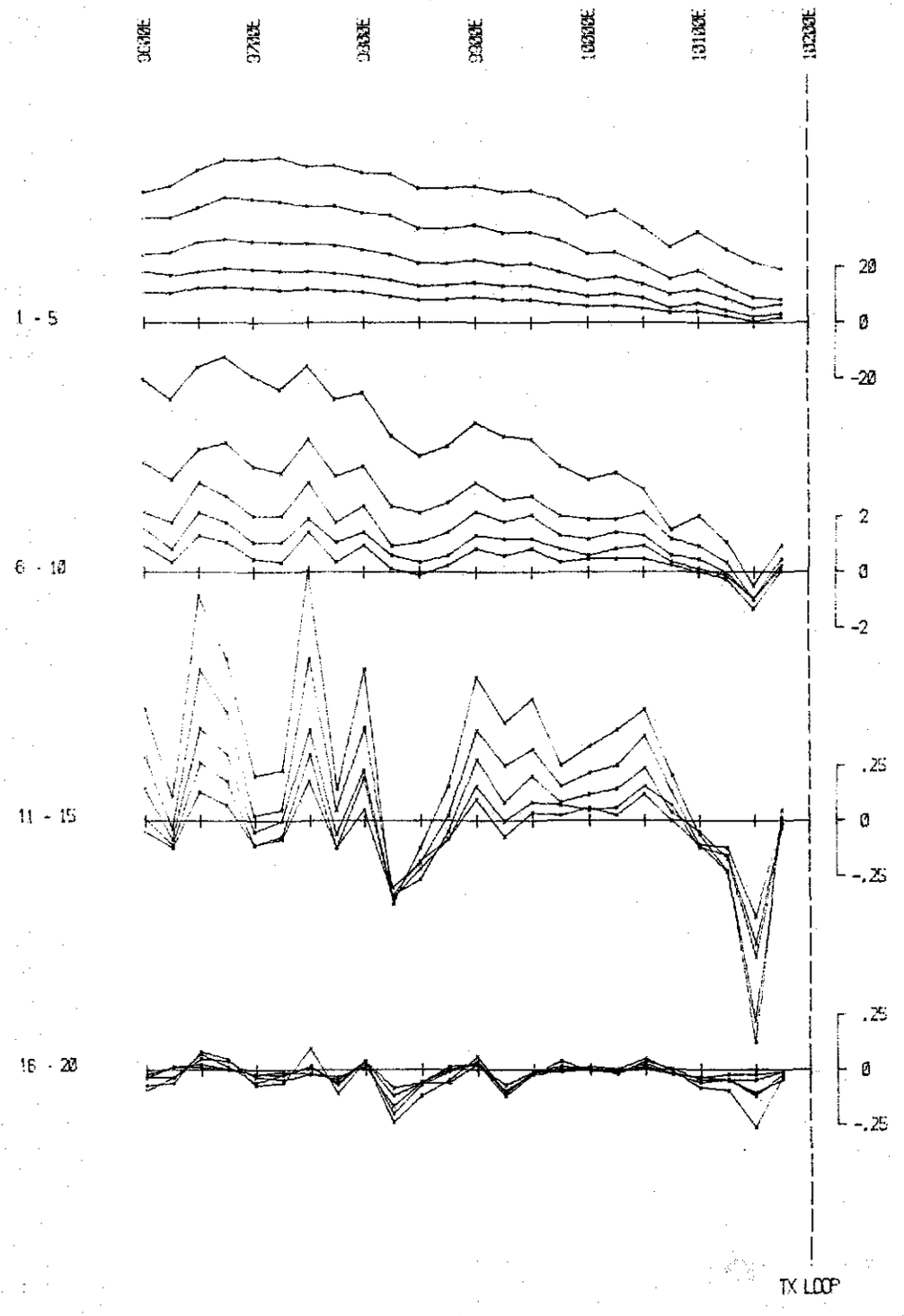
SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.

PROJECT NO. 4 964

CLIENT	:	PAN CONT
PROJECT	:	4 964
AREA	:	BULOQBAC
LINE	:	11200N X
TX LOOP	:	?

8470012

HORIZONTAL COMPONENT $\dot{B}_x(X)$



nanovolts per amp metre squared

EM-37

FIXED TRANSMITTER SURVEY

012

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

5 cm

TX LOOP SIDES	:	10300N 10220E
	:	11000N 10300E
TX LOOP SIZE	:	800 m X 600 m
TX TURN OFF TIME	:	430 microsecs.
FIRST GATE TIME	:	30.5 microsecs.
CURRENT	:	12.5 amps
FREQUENCY	:	25 Hz.
INTEGRATION TIME	:	256 cycles
SYNC MODE	:	CRYSTAL
HORIZONTAL SCALE	:	1:5000
SURVEYED BY	:	SL
DATE	:	22/10/1987

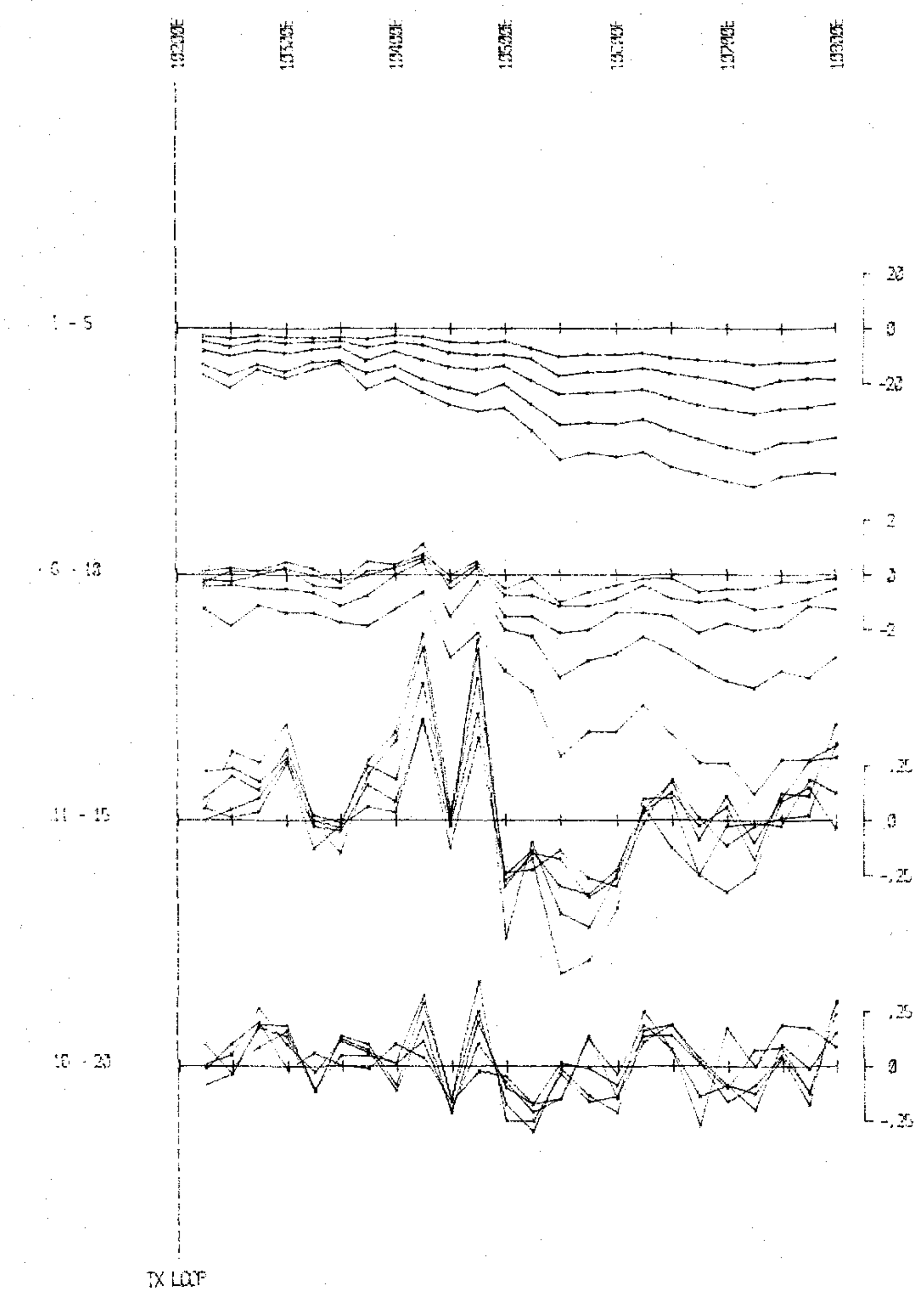
SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.

PROJECT NO. 4 364

CLIENT	:	PAN CONT
PROJECT	:	4 364
AREA	:	BULOOBAD
LINE	:	11000N X
TX LOOP	:	2

8470 13

[redacted]IZ[redacted]AL [redacted]PO[redacted]T [redacted]X)[redacted]



nanovolts per amp metre squared

847014

EM-37

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

013

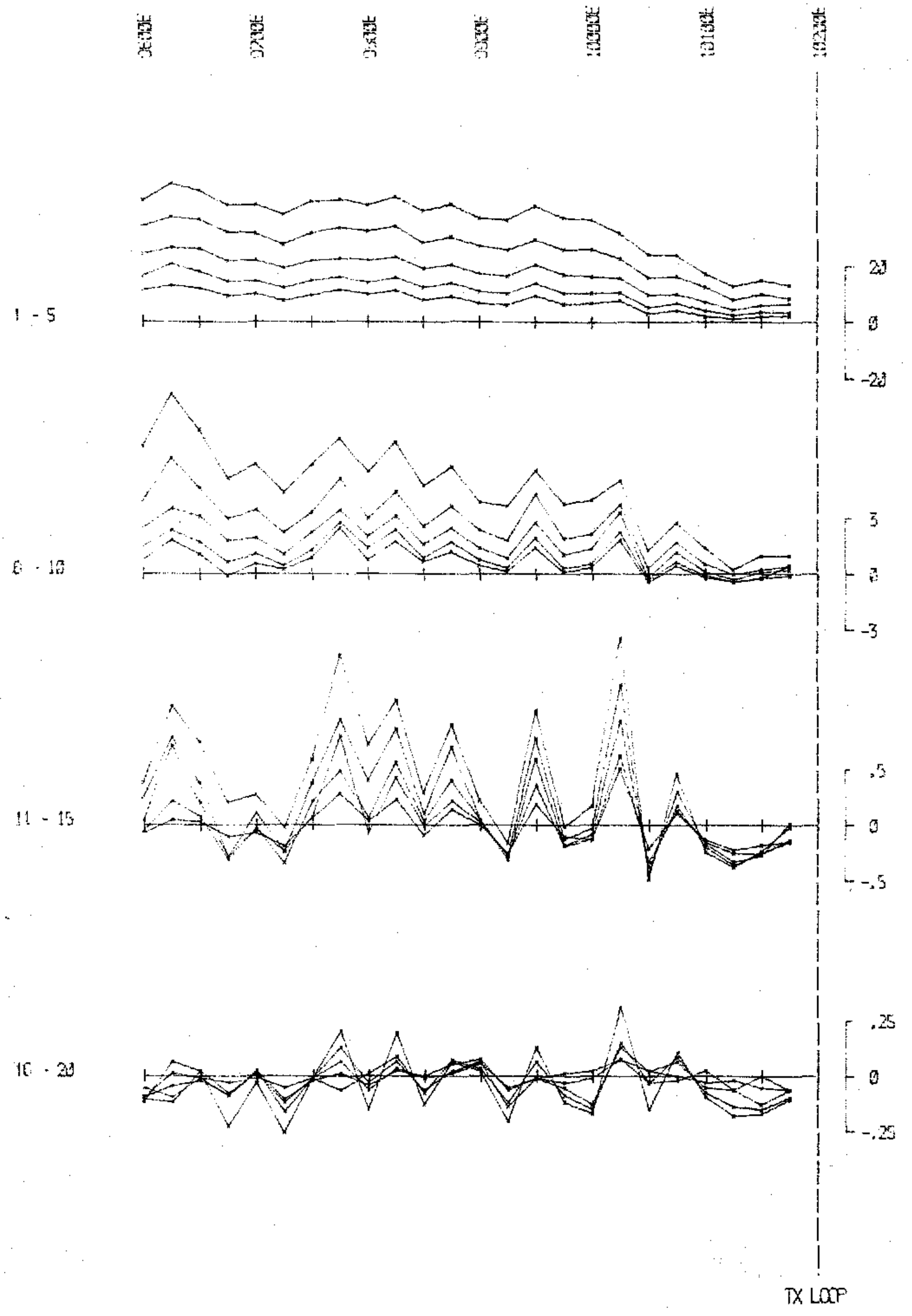
5 cm

TX LOOP SIDES	: 10800N 10200E
	: 11600N 10800E
TX LOOP SIZE	: 800 m x 600 m
TX TURN OFF TIME	: 355 microsecs.
FIRST GATE TIME	: 92.5 microsecs.
CURRENT	: 12 amps
FREQUENCY	: 25 Hz.
INTEGRATION TIME	: 256 cycles
SYNC MODE	: CRYSTAL
HORIZONTAL SCALE	: 1:5000
SURVEYED BY	: SL
DATE	: 15/10/1997

SURVEYED AND COMPILED BY GEOTERREX PTY. LTD. | PROJECT NO. 4 064

CLIENT	: PAN CONT
PROJECT	: 4 064
AREA	: BULODERC
LINE	: 10800N X
TX LOOP	

[redacted]IZ[redacted]AL [redacted]PO[redacted]T [redacted](X)[redacted]



014

EM-37

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

5 cm

TX LOOP SIDES	: 10000N 10200E
	: 10900N 10900E
TX LOOP SIZE	: 800 m X 600 m
TX TURN OFF TIME	: 350 microsecs
FIRST GATE TIME	: 88.5 microsecs
CURRENT	: 14.0 amps
FREQUENCY	: 25 Hz.
INTEGRATION TIME	: 256 cycles
SYNC MODE	: CRYSTAL
HORIZONTAL SCALE	: 1:5000
SURVEYED BY	: SL
DATE	: 20/10/1987

SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.	PROJECT NO. 4 984

CLIENT	: PAN CONT
PROJECT	: 4 984
AREA	: BULGOBAC
LINE	: 10900N X

847015

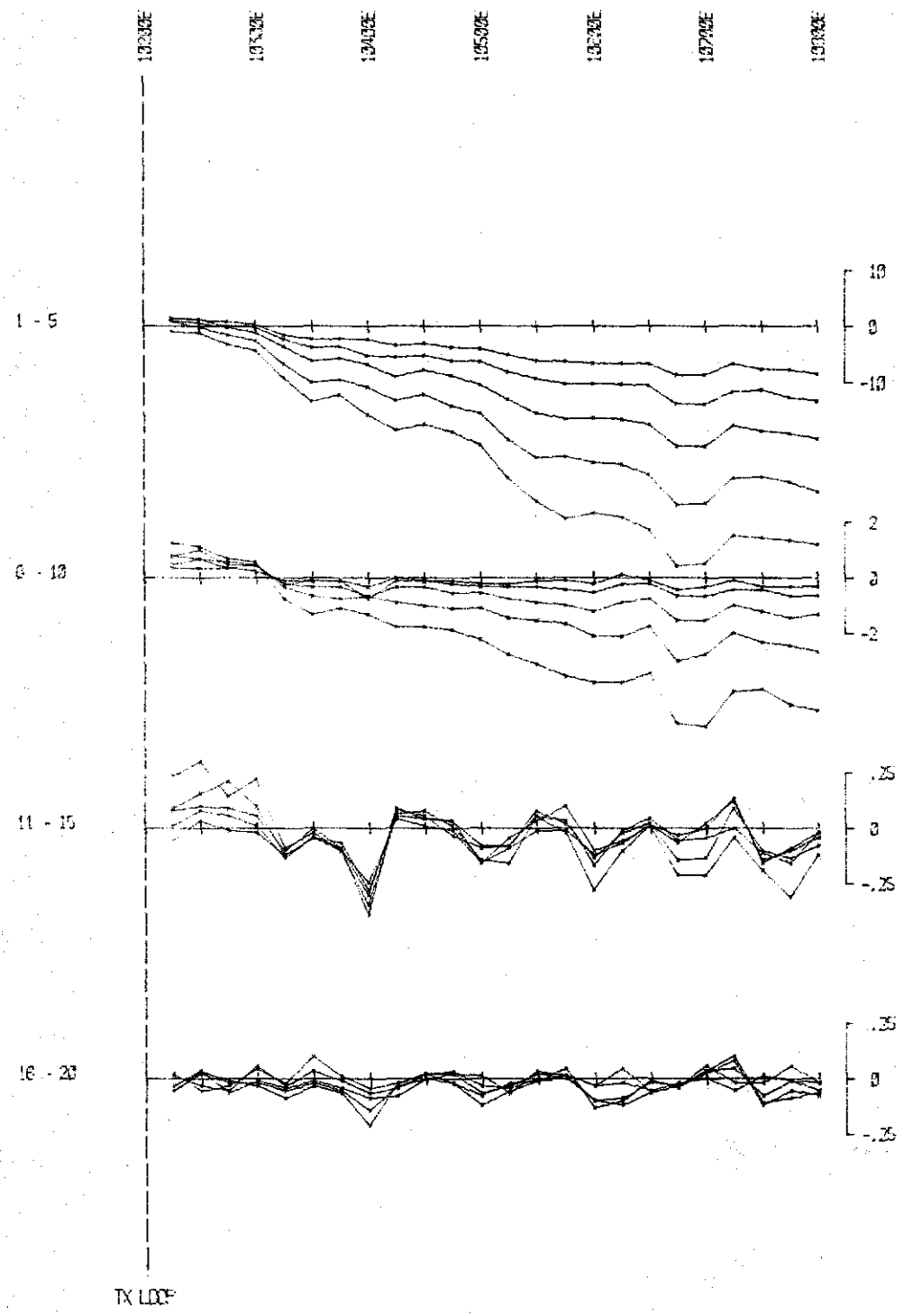
EM-37

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

HORIZONTAL COMPONENT (X)



nanovolts per amp metre squared

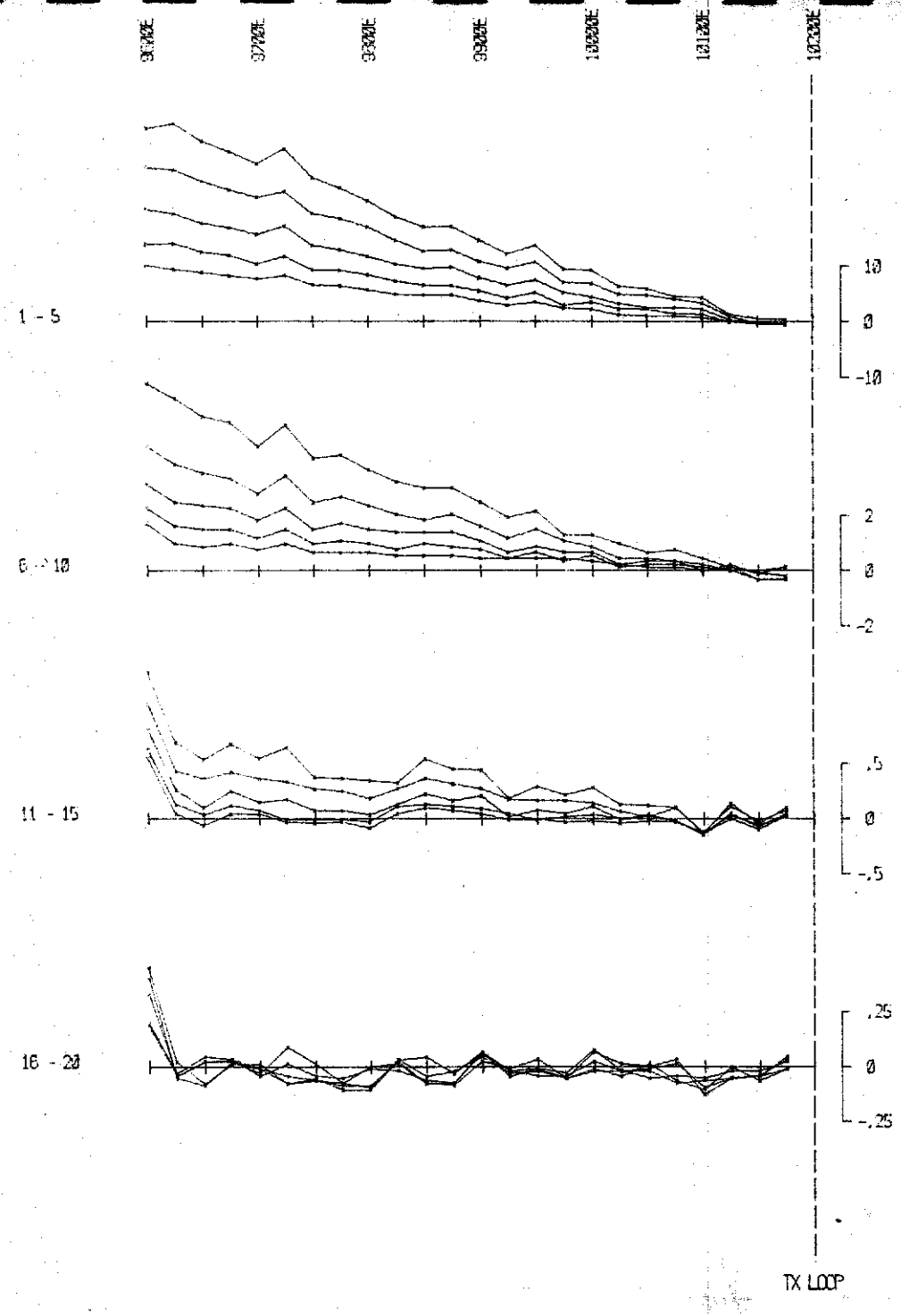
5 cm

TX LOOP SIDES	:	13330N 9670E
	:	13930N 13230E
TX LOOP SIZE	:	600 m X 600 m
TX TURN OFF TIME	:	365 microsecs.
FIRST GATE TIME	:	99.5 microsecs.
CURRENT	:	13.9 amps
FREQUENCY	:	25 Hz.
INTEGRATION TIME	:	256 cycles
SYNC MODE	:	CRYSTAL
HORIZONTAL SCALE	:	1:5000
SURVEYED BY	:	SL
DATE	:	17/10/1997

SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.

PROJECT NO. A 984

CLIENT	:	PAN CONT
PROJECT	:	A 984
AREA	:	BULGERAC
LINE	:	13330N X



nanovolts per amp metre squared

EM-37

016

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

5 cm

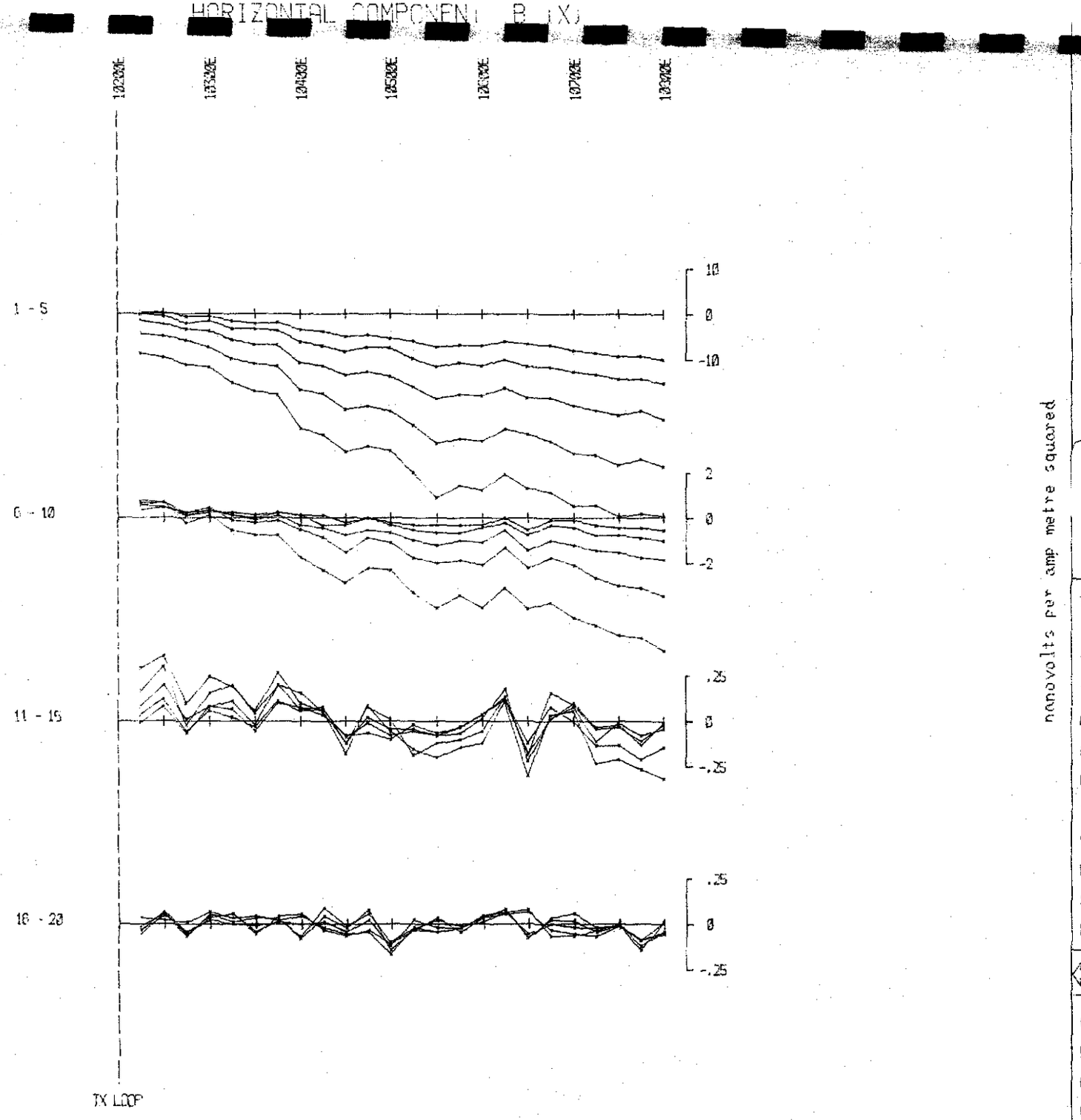
TX LOOP SIDES	: 10000N 10200E
	: 10900N 10800E
TX LOOP SIZE	: 900 m X 800 m
TX TURN OFF TIME	: 350 microsecs.
FIRST GATE TIME	: 83.5 microsecs.
CURRENT	: 14.0 amps
FREQUENCY	: 25 Hz.
INTEGRATION TIME	: 256 cycles
SYNC MODE	: CRYSTAL
HORIZONTAL SCALE	: 1:5000
SURVEYED BY	: SL
DATE	: 20/10/1997

SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.

PROJECT NO. 4 964

CLIENT	: PAN CONT
PROJECT	: 4 964
AREA	: BULGOBAC
LINE	: 10200N X
TX LOOP	: 1

847017



nanovolts per amp metre squared

EM-37

FIXED TRANSMITTER SURVEY

017

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (dB)

5 cm

TX LOOP SIDES	:	10000N 0600E
	:	10320N 10230E
TX LOOP SIZE	:	980 m X 690 m
TX TURN OFF TIME	:	555 microsecs.
FIRST GATE TIME	:	99.5 microsecs.
CURRENT	:	13.5 amps
FREQUENCY	:	25 Hz.
INTEGRATION TIME	:	256 cycles
SYNC MODE	:	CRYSTAL
HORIZONTAL SCALE	:	1:5000
SURVEYED BY	:	SL
DATE	:	17/10/1997

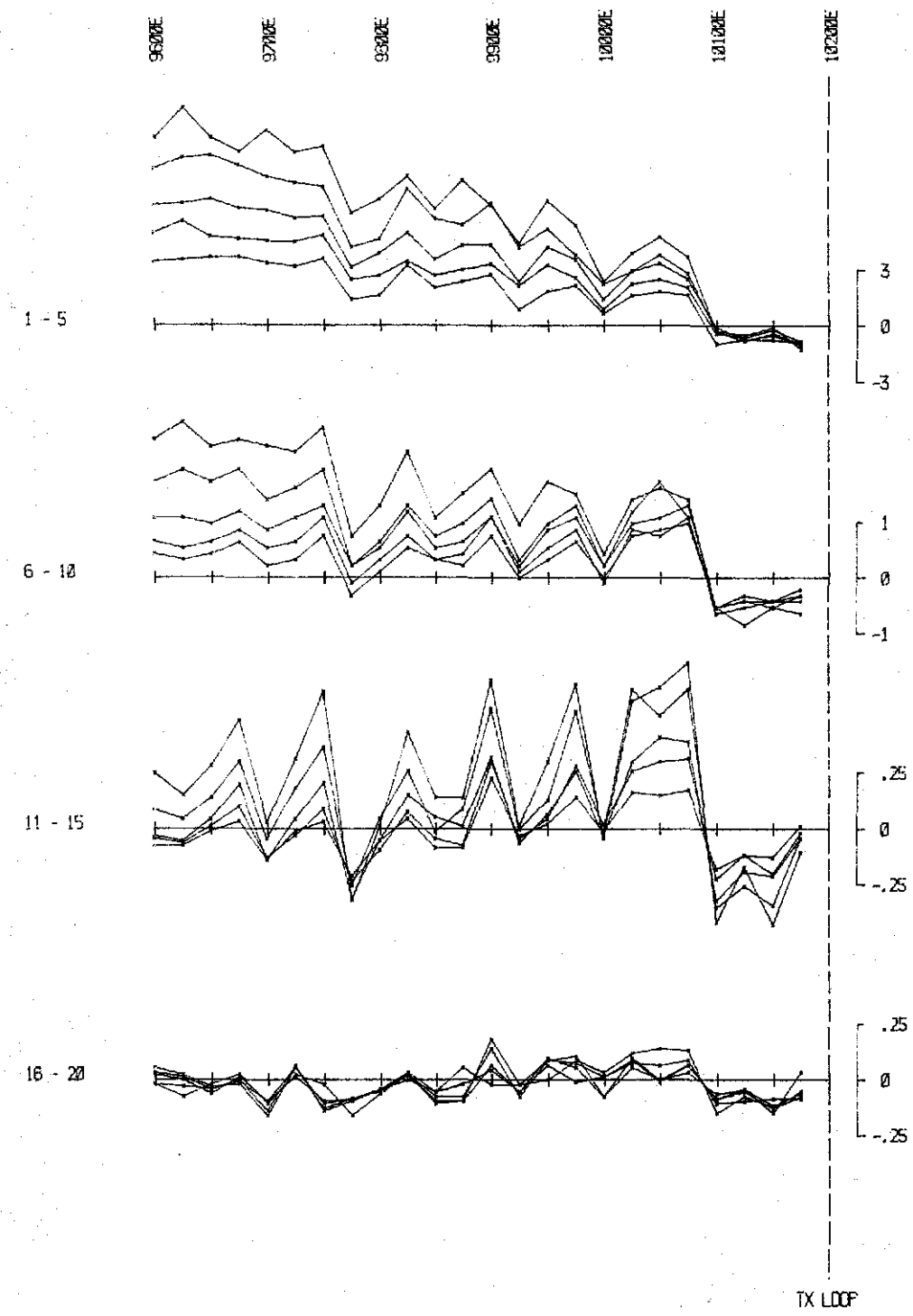
SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.

PROJECT NO. 4 964

CLIENT	:	PAN CONT
PROJECT	:	4 964
AREA	:	BULQUEAC
LINE	:	10400N X
TX LOOP	:	4

847018

HORIZONTAL COMPONENT B (X)



nanovolts per amp metre squared

EM-37

FIXED TRANSMITTER SURVEY

018

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

5 cm

TX LOOP SIDES	:	10000N 10200E
	:	10300N 10300E
TX LOOP SIZE	:	800 m X 600 m
TX TURN OFF TIME	:	350 microsecs.
FIRST GATE TIME	:	88.5 microsecs.
CURRENT	:	14.0 amps
FREQUENCY	:	25 Hz.
INTEGRATION TIME	:	256 cycles
SYNC MODE	:	CRYSTAL
HORIZONTAL SCALE	:	1:5000
SURVEYED BY	:	SL
DATE	:	20/10/1997

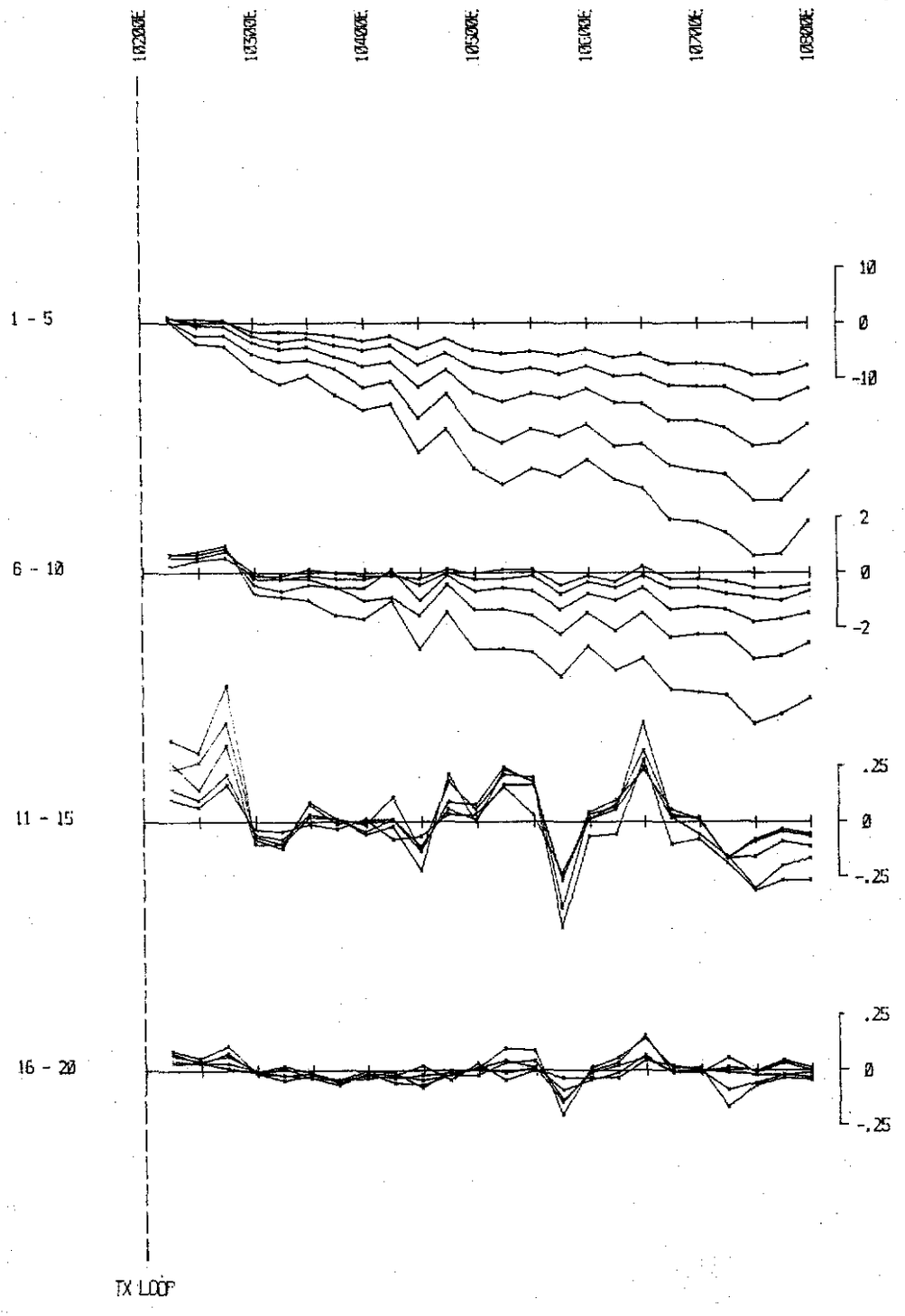
SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.

PROJECT NO. 4 964

CLIENT	:	PAN CONT
PROJECT	:	4 964
AREA	:	BULGOBAC
LINE	:	10400N X
TX LOOP	:	1

8470019

HORIZONTAL COMPONENT $\dot{B}_x$ (X)



nanovolts per amp metre squared

EM-37

019

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

5 cm

TX LOOP SIDES	:	10020N 9600E
	:	10820N 10200E
TX LOOP SIZE	:	800 m X 600 m
TX TURN OFF TIME	:	355 microsecs.
FIRST GATE TIME	:	88.5 microsecs.
CURRENT	:	13.5 amps
FREQUENCY	:	25 Hz.
INTEGRATION TIME	:	256 cycles
SYNC MODE	:	CRYSTAL
HORIZONTAL SCALE	:	1:5000
SURVEYED BY	:	SL
DATE	:	18/10/1987

SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.

PROJECT NO. 4 964

CLIENT. : PAN CONT

PROJECT. : 4 964

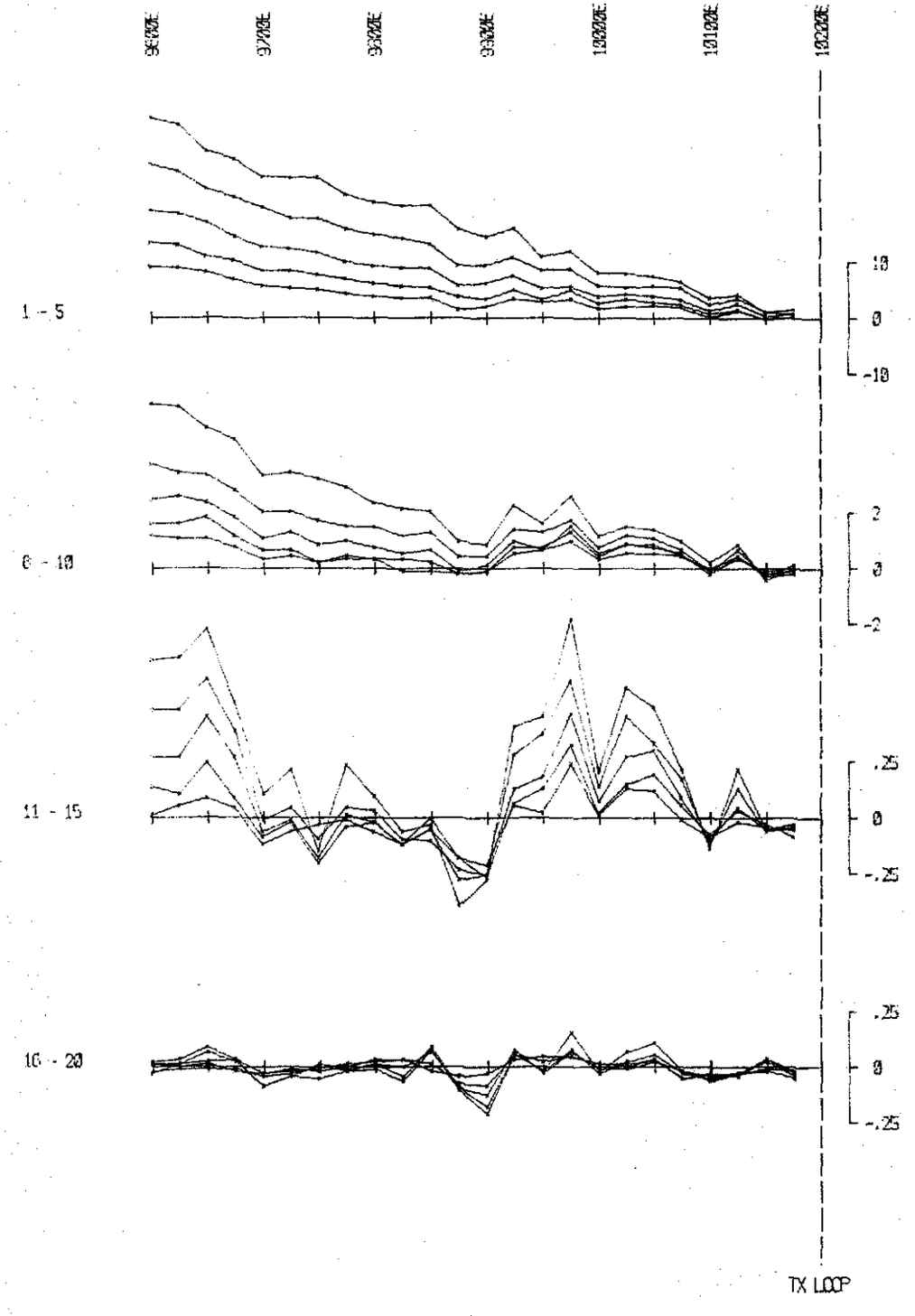
AREA. : BULGOBAC

LINE. : 10200N X

TX LOOP : 4

847020

HORIZONTAL COMPONENT B (X)



nanovolts per amp metre squared

EM-37

020

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

5 cm

TX LOOP SIDES	: 10000N 10200E
	: 10000N 10000E
TX LOOP SIZE	: 800 m X 800 m
TX TURN OFF TIME	: 360 microsecs.
FIRST GATE TIME	: 88.5 microsecs.
CURRENT	: 14.0 amps
FREQUENCY	: 25 Hz.
INTEGRATION TIME	: 256 cycles
SYNC MODE	: CRYSTAL
HORIZONTAL SCALE	: 1:5000
SURVEYED BY	: SL
DATE	: 21/10/1987

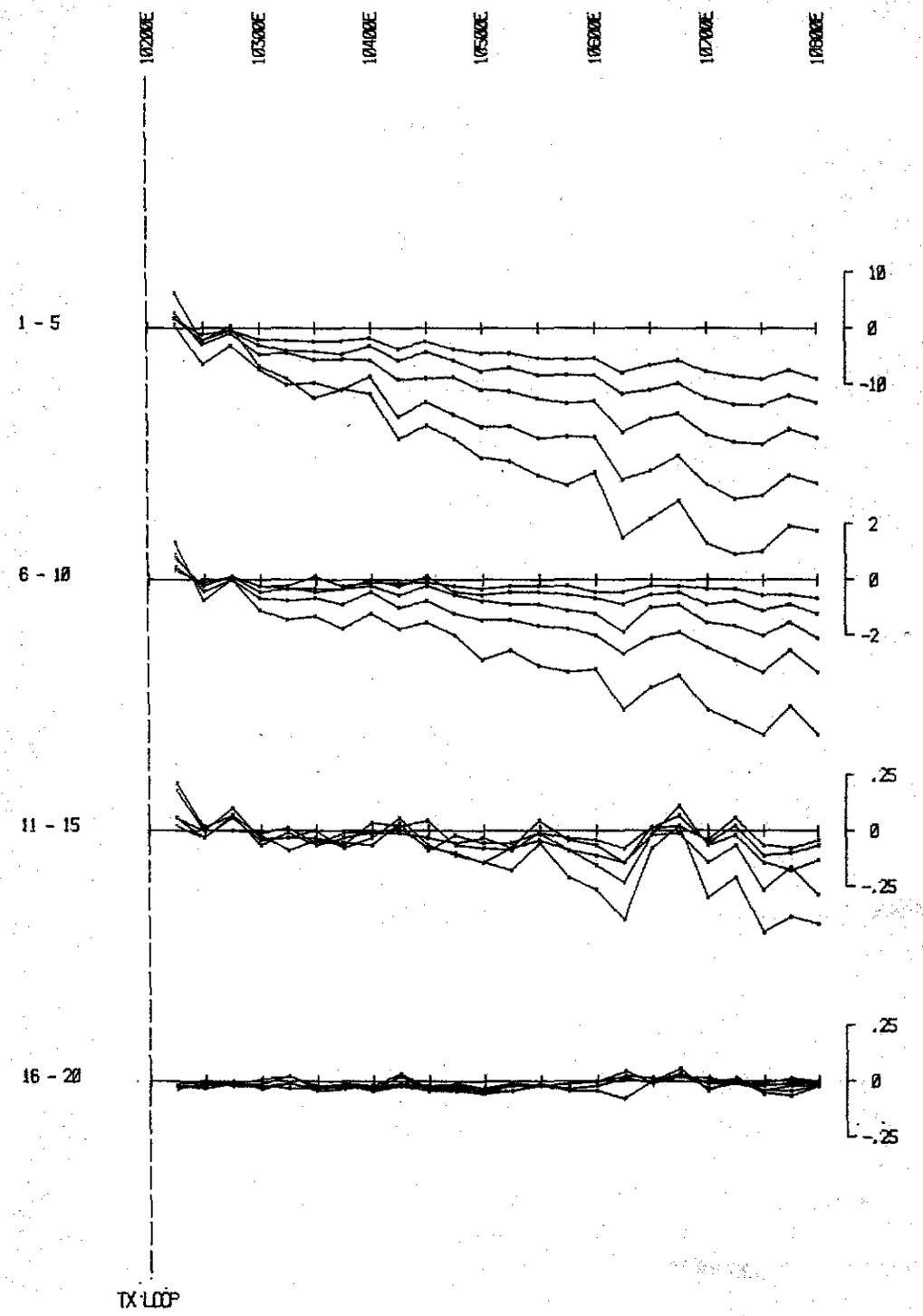
SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.

PROJECT NO. A 984

CLIENT : PAN CONT
PROJECT : A 984
AREA : BULOOPAC
LINE : 10200N X
TX LOOP : 1

847021

HORIZONTAL COMPONENT B (X)



nanovolts per amp metre squared

EM-37

021

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

5 cm

TX LOOP SIDES	:	10000N 9600E
	:	10800N 10200E
TX LOOP SIZE	:	800 m X 600 m
TX TURN OFF TIME	:	355 microsecs.
FIRST GATE TIME	:	88.5 microsecs.
CURRENT	:	13.5 amps
FREQUENCY	:	25 Hz.
INTEGRATION TIME	:	256 cycles
SYNC MODE	:	CRYSTAL
HORIZONTAL SCALE	:	1:5000
SURVEYED BY	:	SL
DATE	:	18/10/1987

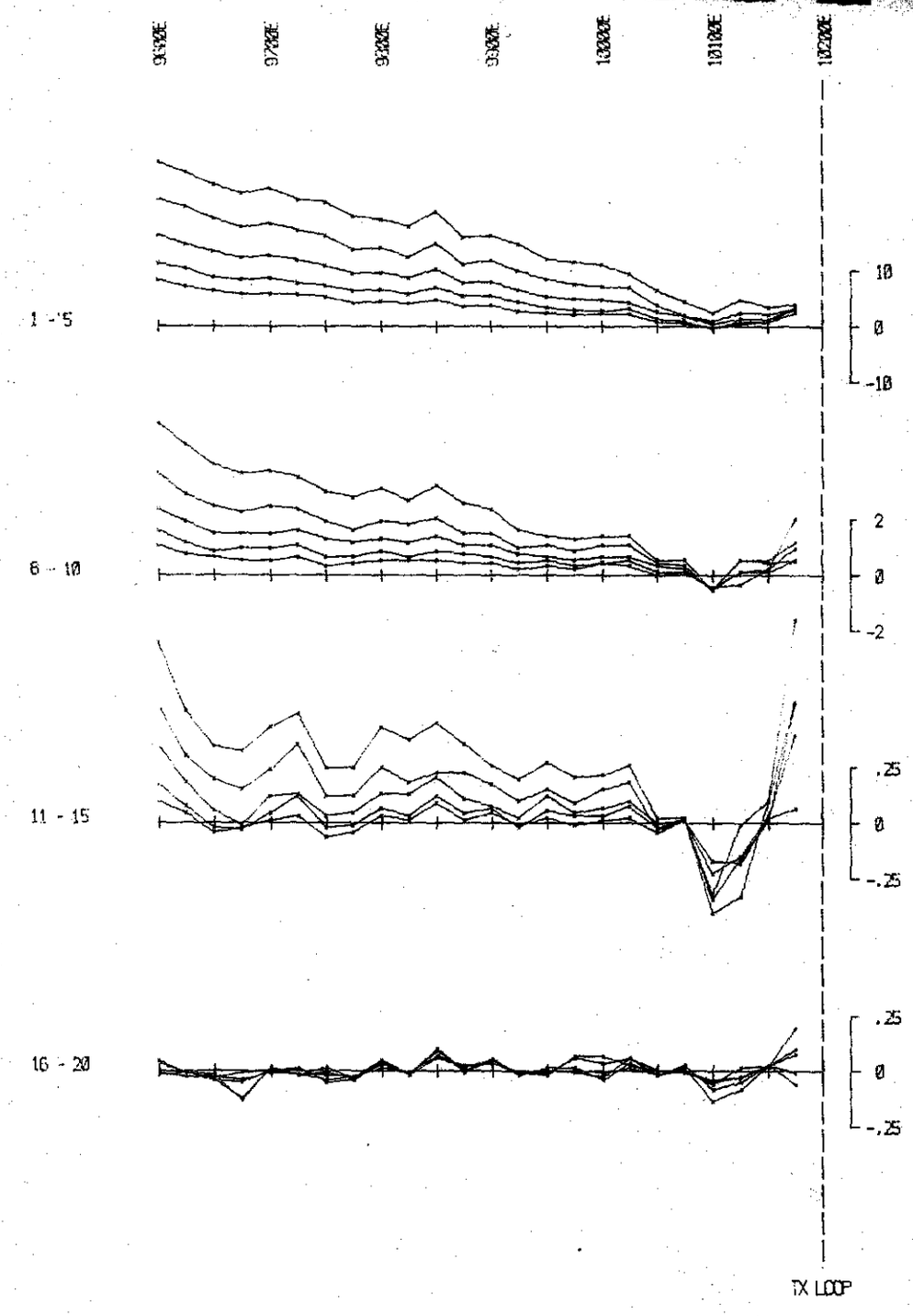
SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.

PROJECT NO. 4 964

CLIENT	:	PAN CONT
PROJECT	:	4 964
AREA	:	BULGOBAC
LINE	:	10000N .X
TX LOOP	:	4

84/022

HORIZONTAL COMPONENT B (X)



nanovolts per amp metre squared

EM-37

FIXED TRANSMITTER SURVEY

022

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

5 cm

TX LOOP SIDES	:	10000N 10200E
	:	10000N 10000E
TX LOOP SIZE	:	000 m X 600 m
TX TURN OFF TIME	:	360 microsecs.
FIRST GATE TIME	:	88.5 microsecs.
CURRENT	:	14.0 amps
FREQUENCY	:	25 Hz.
INTEGRATION TIME	:	256 cycles
SYNC MODE	:	CRYSTAL
HORIZONTAL SCALE	:	1:5000
SURVEYED BY	:	SL
DATE	:	21/10/1987

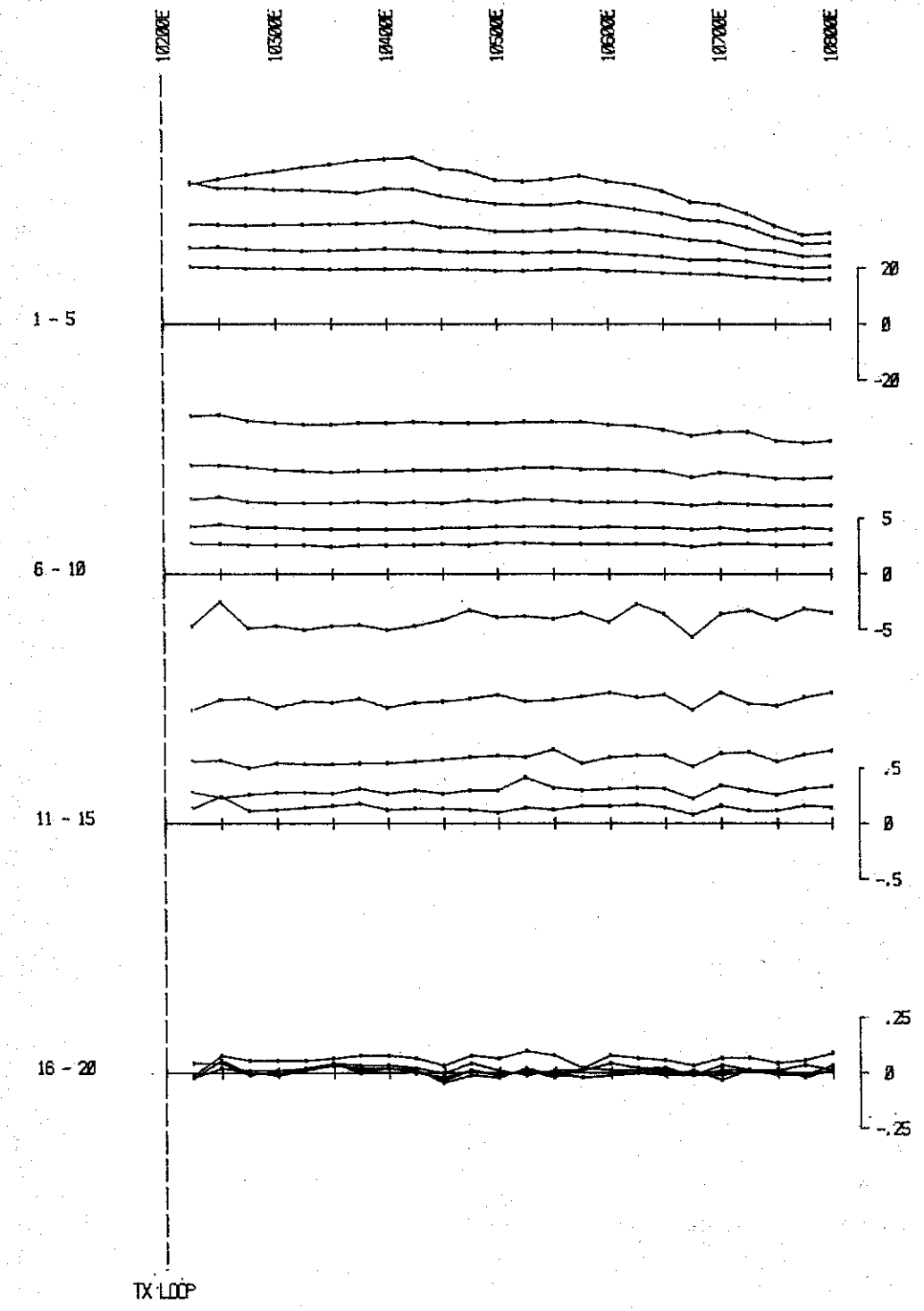
SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.

PROJECT NO. 4 984

CLIENT	:	PAN CONT
PROJECT	:	4 984
AREA	:	BULGOBAC
LINE	:	10000N X
TX LOOP	:	1

8470023

VERTICAL COMPONENT B (Z)



8470024

EM-37

023

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

nanovolts per amp metre squared

5 cm

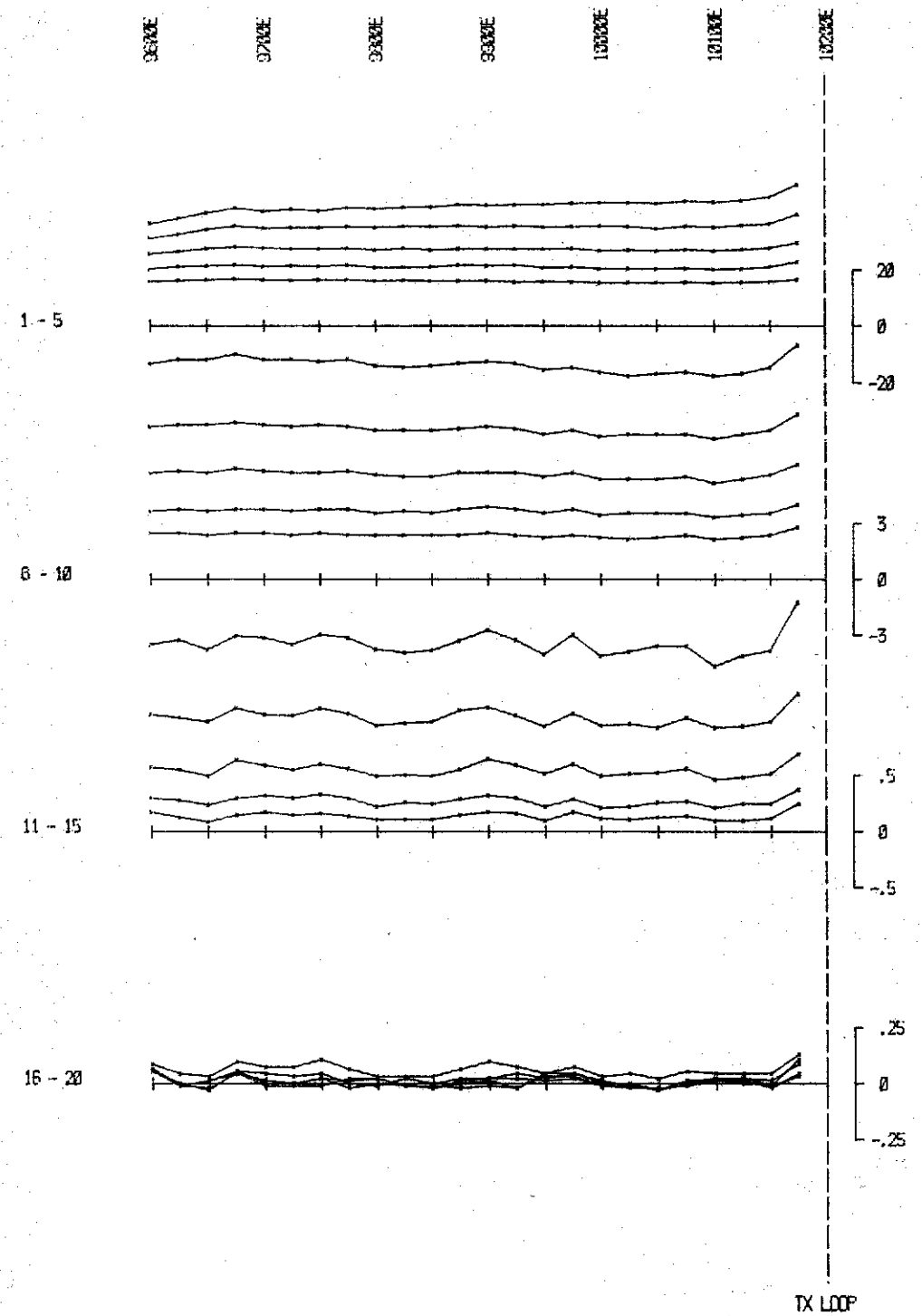
TX LOOP SIDES	:	10000N 9600E
	:	10800N 10200E
TX LOOP SIZE	:	800 m X 600 m
TX TURN OFF TIME	:	355 microsecs.
FIRST GATE TIME	:	88.5 microsecs.
CURRENT	:	13.5 amps
FREQUENCY	:	25 Hz.
INTEGRATION TIME	:	256 cycles
SYNC MODE	:	CRYSTAL
HORIZONTAL SCALE	:	1:5000
SURVEYED BY	:	SL
DATE	:	18/10/1987

SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.

PROJECT NO. 4 964

CLIENT	:	PAN CONT
PROJECT	:	4 964
AREA	:	BULGOBAC
LINE	:	10000N Z
TX LOOP	:	4

VERTICAL COMPONENT B (Z)



nanovolts per amp metre squared

EM-37

024

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

5 cm

TX LOOP SIDES	:	10000N 10200E
	:	10800N 10800E
TX LOOP SIZE	:	800 m X 600 m
TX TURN OFF TIME	:	360 microsecs.
FIRST GATE TIME	:	88.5 microsecs.
CURRENT	:	14.0 amps
FREQUENCY	:	25 Hz.
INTEGRATION TIME	:	256 cycles
SYNC MODE	:	CRYSTAL
HORIZONTAL SCALE	:	1:5000
SURVEYED BY	:	SL
DATE	:	21/10/1987

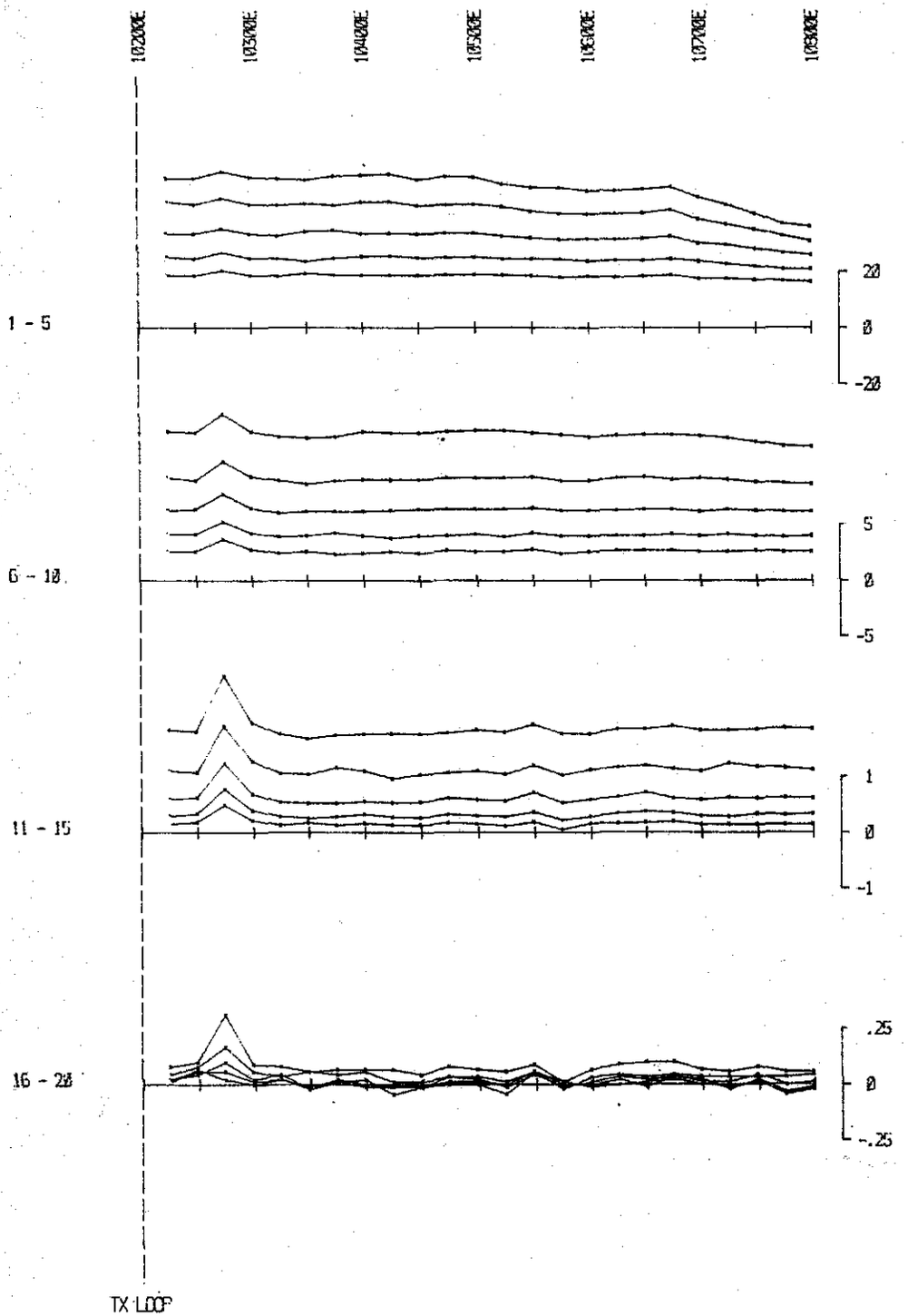
SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.

PROJECT NO. A 964

CLIENT	:	PAN CONT
PROJECT	:	A 964
AREA	:	BULOQBAC
LINE	:	10000N Z
TX LOOP	:	

847025

VERTICAL COMPONENT B (Z)



nanovolts per amp metre squared

EM-37

FIXED TRANSMITTER SURVEY

025

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

5 cm

TX LOOP SIDES	:	10000N 9600E
	:	10800N 10200E
TX LOOP SIZE	:	800 m X 600 m
TX TURN OFF TIME	:	355 microsecs.
FIRST GATE TIME	:	88.5 microsecs.
CURRENT	:	13.5 amps
FREQUENCY	:	25 Hz.
INTEGRATION TIME	:	256 cycles
SYNC MODE	:	CRYSTAL
HORIZONTAL SCALE	:	1:5000
SURVEYED BY	:	SL
DATE	:	16/10/1987

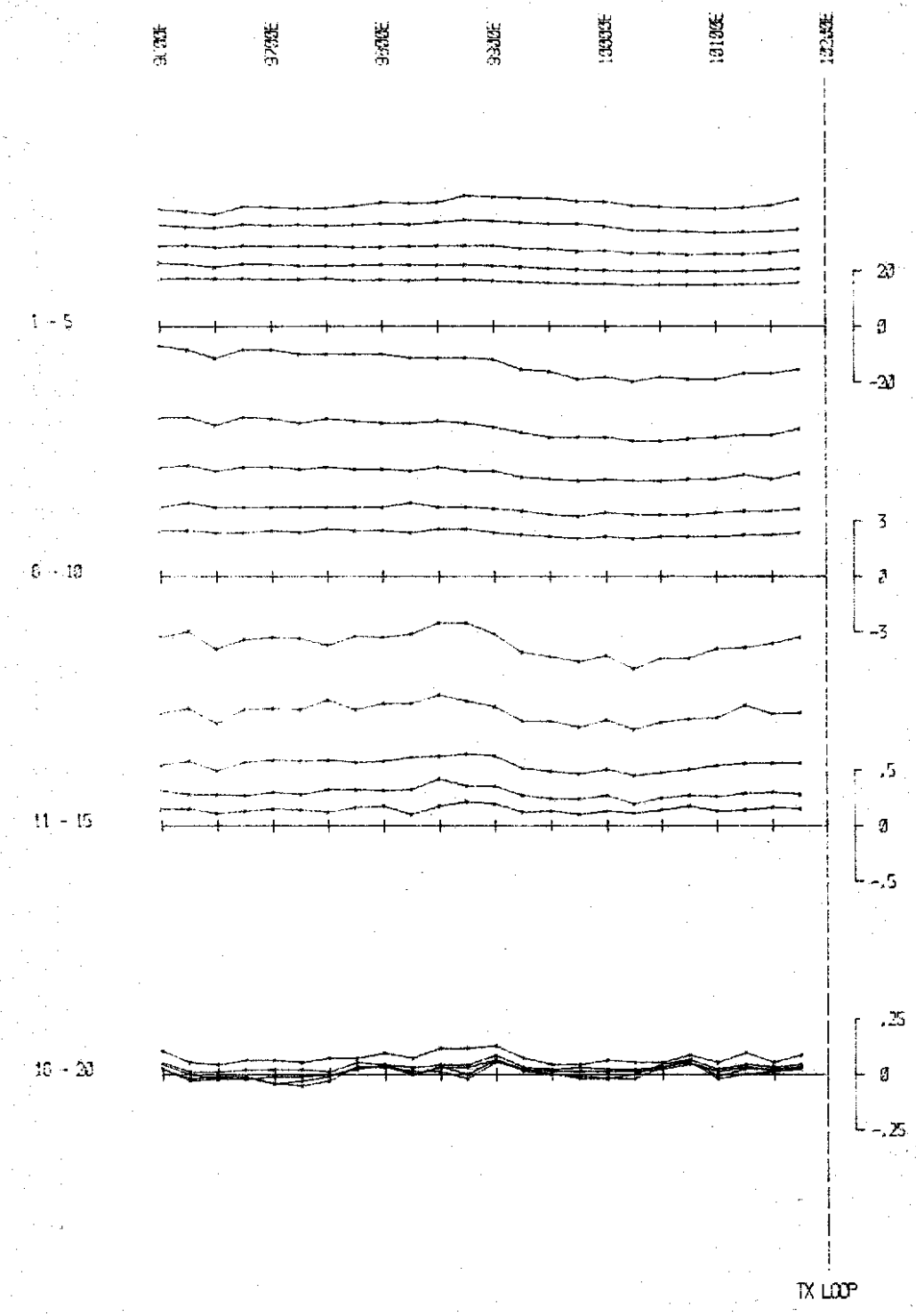
SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.

PROJECT NO. A 964

CLIENT	:	PGN CONT
PROJECT	:	A 964
AREA	:	BULGOBAC
LINE	:	10200N Z
TX LOOP	:	4

8470926

VERTICAL COMPONENT (Z)



nanovolts per amp metre squared

EM-37

026

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

5 cm

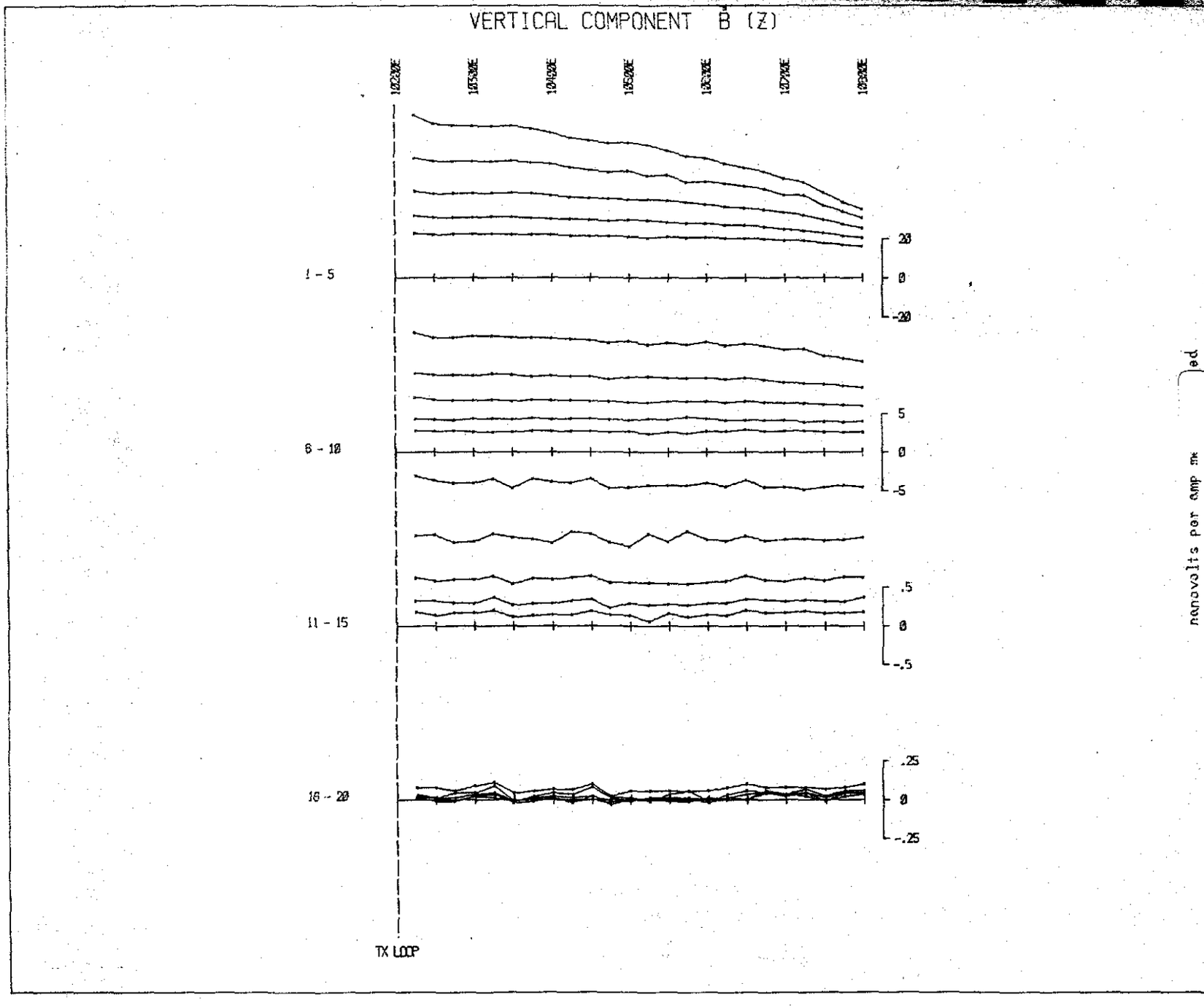
TX LOOP SIDES	:	10800N 10200E
	:	10800N 10800E
TX LOOP SIZE	:	600 m X 600 m
TX TURN OFF TIME	:	360 microsecs.
FIRST GATE TIME	:	88.5 microsecs.
CURRENT	:	14.2 amps
FREQUENCY	:	25 Hz.
INTEGRATION TIME	:	256 cycles
SYNC MODE	:	CRYSTAL
HORIZONTAL SCALE	:	1:5000
SURVEYED BY	:	SL
DATE	:	21/10/1987

SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.

PROJECT NO. 4 964

CLIENT	:	PAN CONT
PROJECT	:	4 964
AREA	:	BULOLEAC
LINE	:	10200N E
TX LOOP	:	1

8470271



EM-37 027

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

5 cm

nanovolts per amp m

TX LOOP SIDES	:	10000N 9600E
	:	10900N 10200E
TX LOOP SIZE	:	900 m X 600 m
TX TURN OFF TIME	:	355 microsecs.
FIRST GATE TIME	:	89.5 microsecs.
CURRENT	:	13.5 amps
FREQUENCY	:	25 Hz.
INTEGRATION TIME	:	256 cycles
SYNC MODE	:	CRYSTAL
HORIZONTAL SCALE	:	1:5000
SURVEYED BY	:	SL
DATE	:	17/10/1987

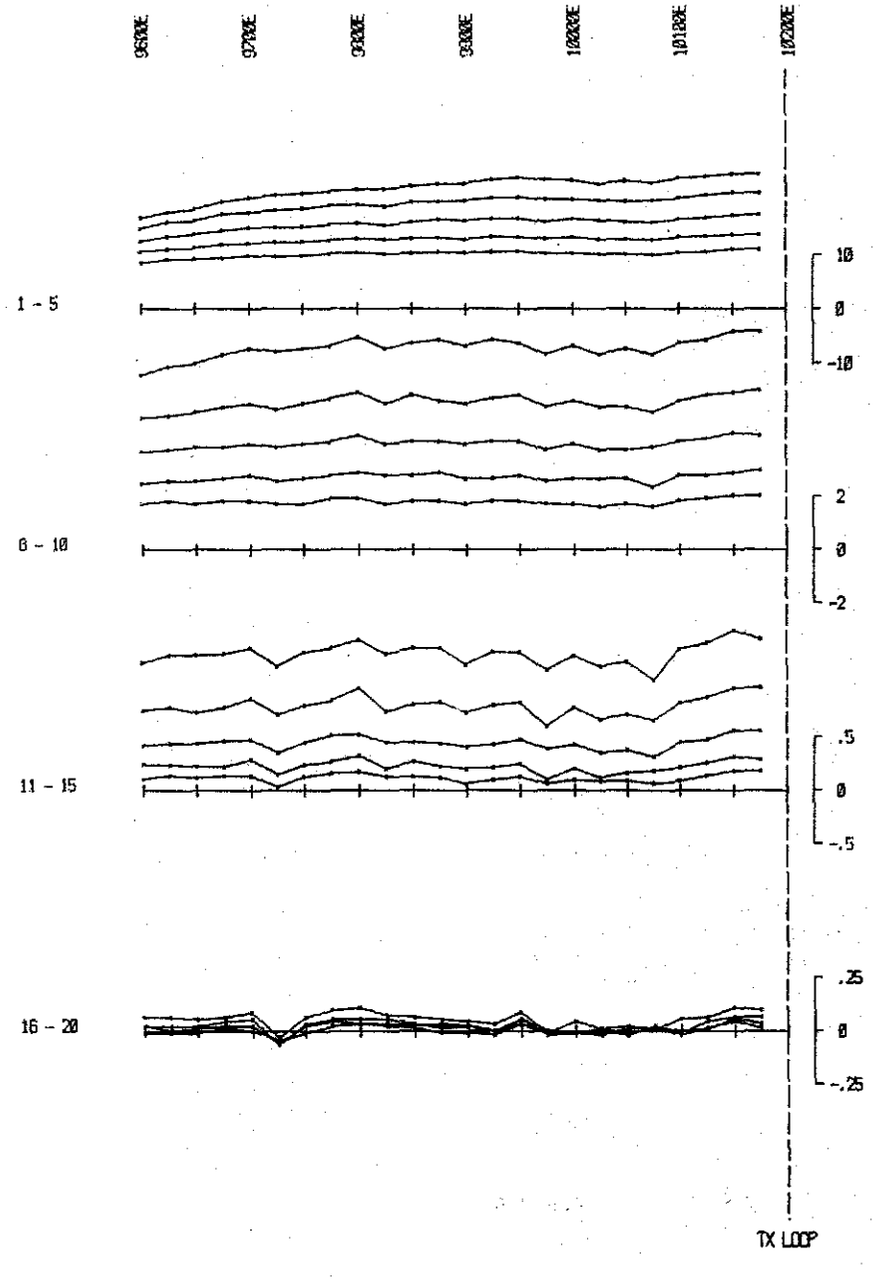
SURVEYED AND COMPILED BY GEOTERREX PTY. LTD. | PROJECT NO. A 984

CLIENT	:	PAN CONT
PROJECT	:	A 984
AREA	:	BULDOBAC
LINE	:	10400N Z
TX LOOP	:	A

84/028

84/028

VERTICAL COMPONENT $\dot{B}$ (Z)



EM-37

028

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

5 cm

nanovolts per amp met

TX LOOP SIDES	:	10000N 10200E
	:	10000N 10000E
TX LOOP SIZE	:	800 m X 800 m
TX TURN OFF TIME	:	350 microsecs.
FIRST GATE TIME	:	93.5 microsecs.
CURRENT	:	14.0 amps
FREQUENCY	:	25 Hz.
INTEGRATION TIME	:	256 cycles
SYNC MODE	:	CRYSTAL
HORIZONTAL SCALE	:	1:5000
SURVEYED BY	:	SL
DATE	:	20/10/1997

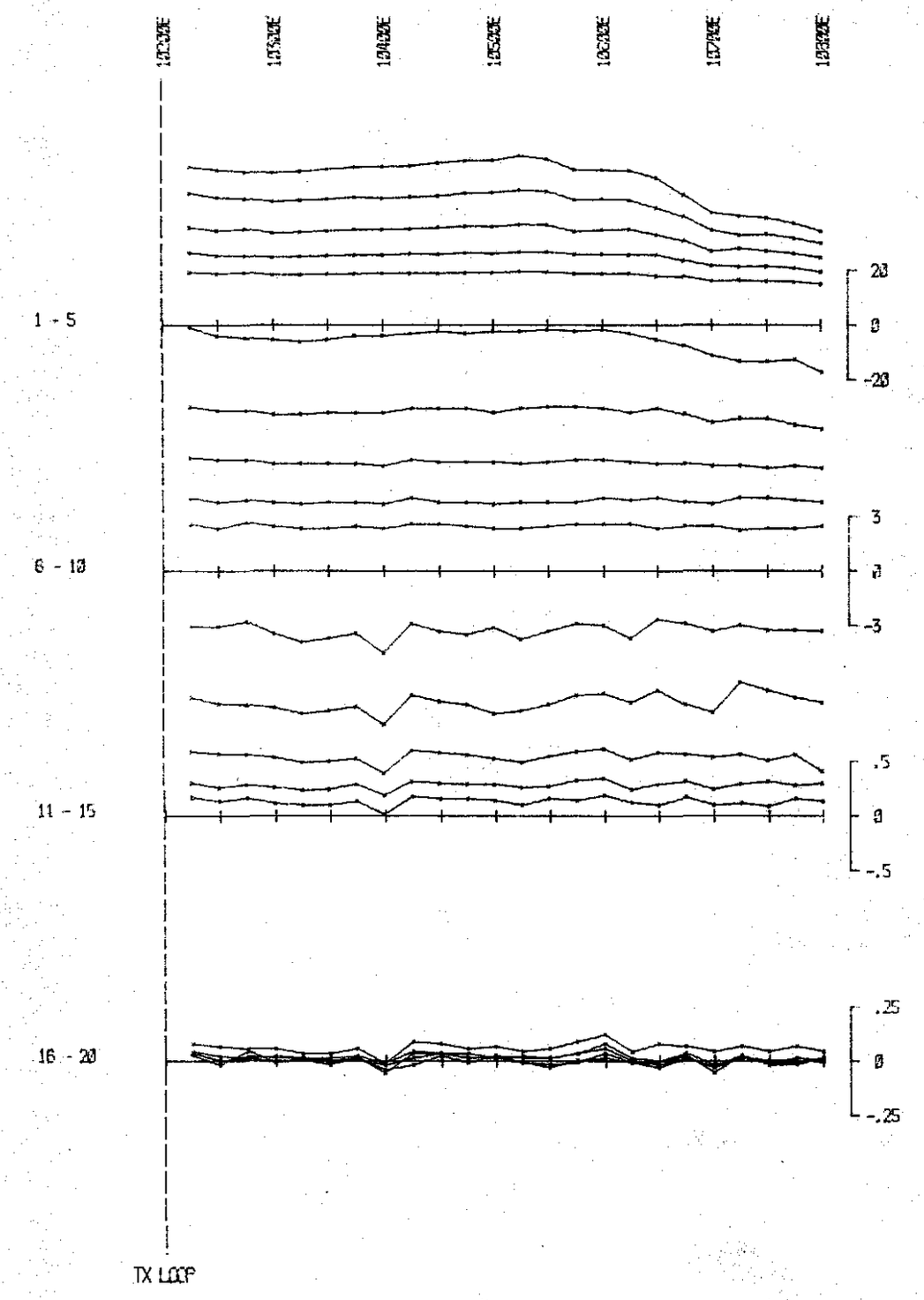
SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.

PROJECT NO. A 964

CLIENT	:	PAN CONT
PROJECT	:	A 964
AREA	:	BULCOBRC
LINE	:	10400N Z
TX LOOP	:	1

847029

VERTICAL COMPONENT B (Z)



nanovolts per amp metre squared

EM-37

029

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

5 cm

TX LOOP SIDES	:	10000N 9600E
	:	10800N 10200E
TX LOOP SIZE	:	800 m X 600 m
TX TURN OFF TIME	:	355 microsecs.
FIRST GATE TIME	:	99.5 microsecs.
CURRENT	:	13.5 amps
FREQUENCY	:	25 Hz.
INTEGRATION TIME	:	256 cycles
SYNC MODE	:	CRYSTAL
HORIZONTAL SCALE	:	1:5000
SURVEYED BY	:	SL
DATE	:	17/10/1997

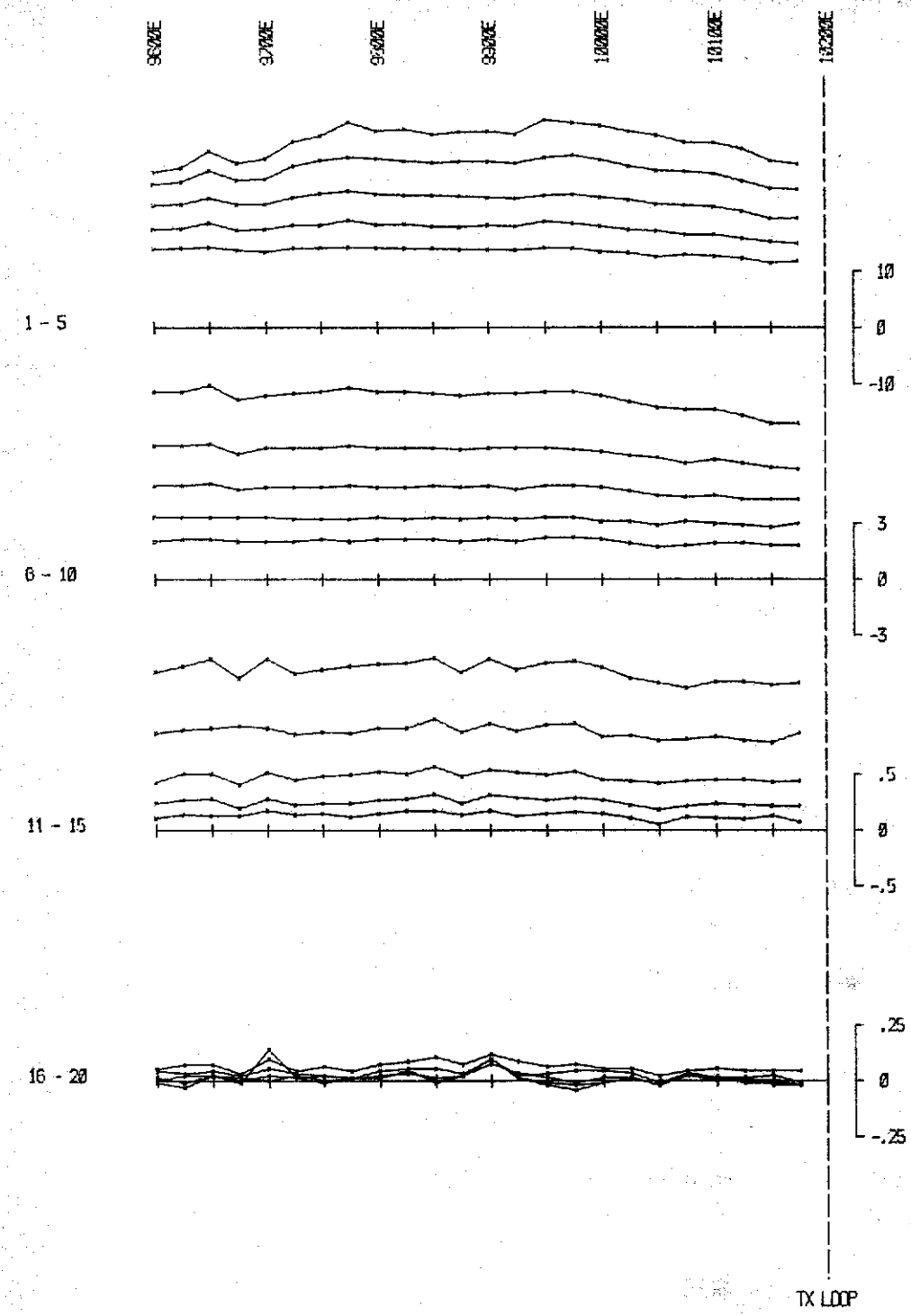
SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.

PROJECT NO. 4 984

CLIENT	:	PAN CONT
PROJECT	:	4 984
AREA	:	BULGOBAC
LINE	:	10800N Z
TX LOOP	:	A

84030

VERTICAL COMPONENT B (Z)



nanovolts per amp metre squared

EM-37

FIXED TRANSMITTER SURVEY

030

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

5 cm

TX LOOP SIDES	:	10200N 10200E
	:	10300N 10000E
TX LOOP SIZE	:	800 m X 600 m
TX TURN OFF TIME	:	350 microsecs.
FIRST GATE TIME	:	88.5 microsecs.
CURRENT	:	14.3 amps
FREQUENCY	:	25 Hz.
INTEGRATION TIME	:	256 cycles
SYNC MODE	:	CRYSTAL
HORIZONTAL SCALE	:	1:5000
SURVEYED BY	:	SL
DATE	:	20/10/1987

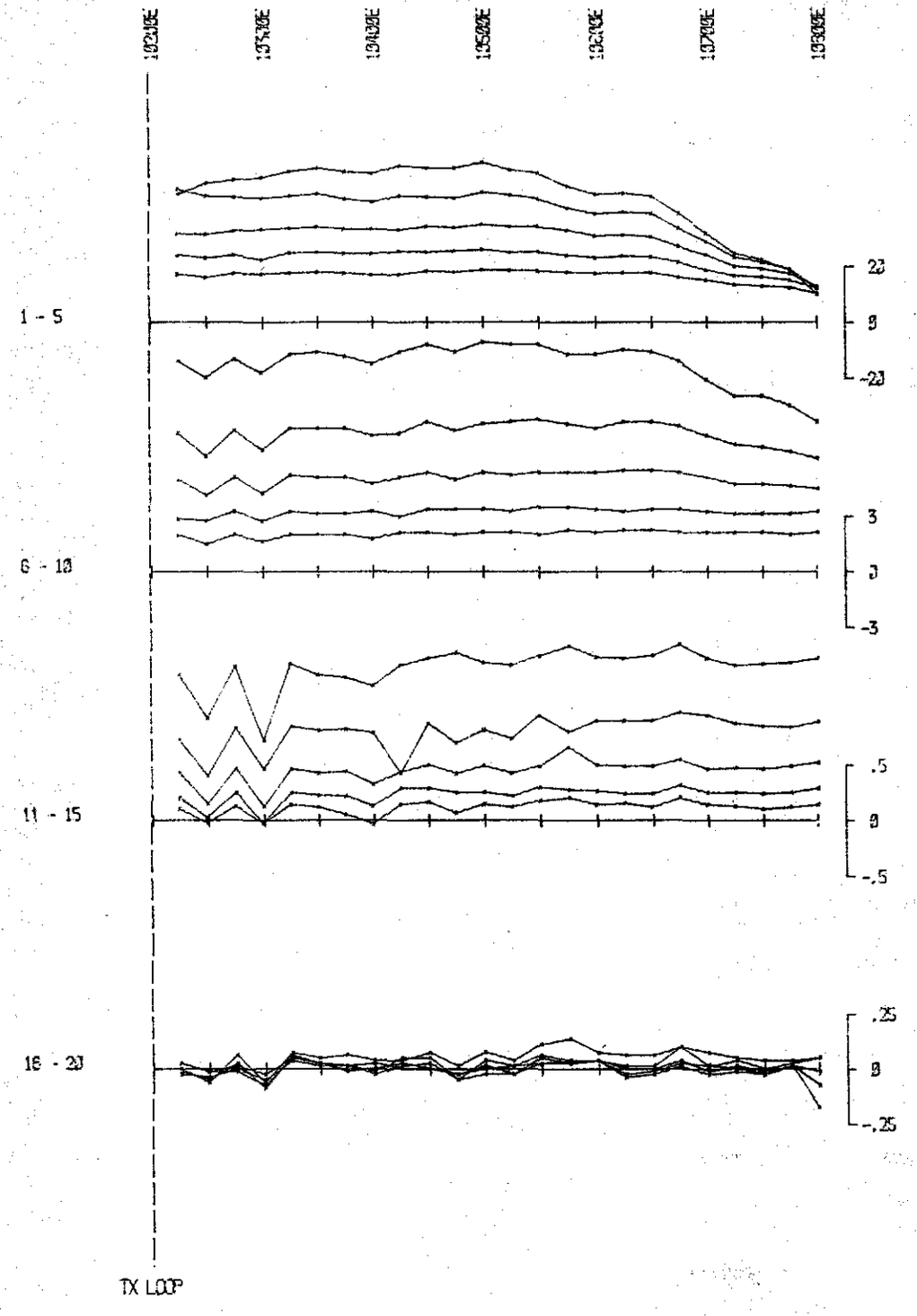
SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.

PROJECT NO. 4 964

CLIENT	:	PAN CONT
PROJECT	:	4 964
AREA	:	BULGOBAC
LINE	:	10300N Z
TX LOOP	:	1

847031

VERTICAL COMPONENT B (Z)



nanovolts per amp metre squared

EM-37

031

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

5 cm

TX LOOP SIDES	:	10300N 9610E
	:	11040N 10210E
TX LOOP SIZE	:	800 m X 600 m
TX TURN OFF TIME	:	555 microsecs.
FIRST GATE TIME	:	89.5 microsecs.
CURRENT	:	12 amps
FREQUENCY	:	25 Hz.
INTEGRATION TIME	:	256 cycles
SYNC MODE	:	CRYSTAL
HORIZONTAL SCALE	:	1:5000
SURVEYED BY	:	SL
DATE	:	15/10/1987

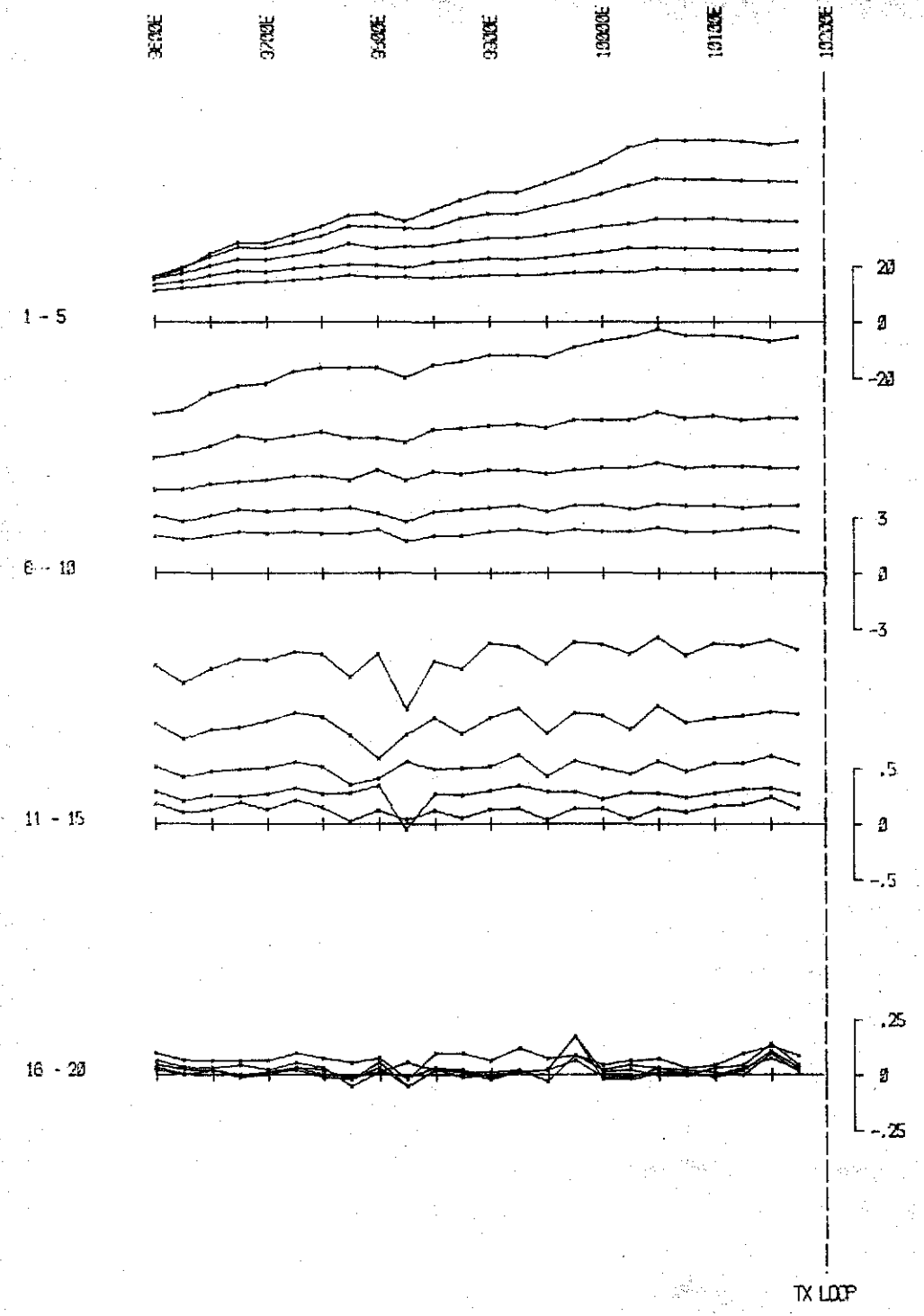
SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.

PROJECT NO. 4 964

CLIENT	:	PAN CONT
PROJECT	:	4 964
AREA	:	BULGOBAC
LINE	:	10300N Z
TX LOOP	:	3

8470032

VERTICAL COMPONENT B (Z)



nanovolts per amp

EM-37

032

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED B SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

5 cm

TX LOOP SIDES	:	10000N 10230E
	:	10000N 10300E
TX LOOP SIZE	:	300 m X 600 m
TX TURN OFF TIME	:	350 microsecs.
FIRST GATE TIME	:	98.5 microsecs.
CURRENT	:	14.0 amps
FREQUENCY	:	25 Hz.
INTEGRATION TIME	:	252 cycles
SYNC MODE	:	CRYSTAL
HORIZONTAL SCALE	:	1:5000
SURVEYED BY	:	SL
DATE	:	20/10/1997

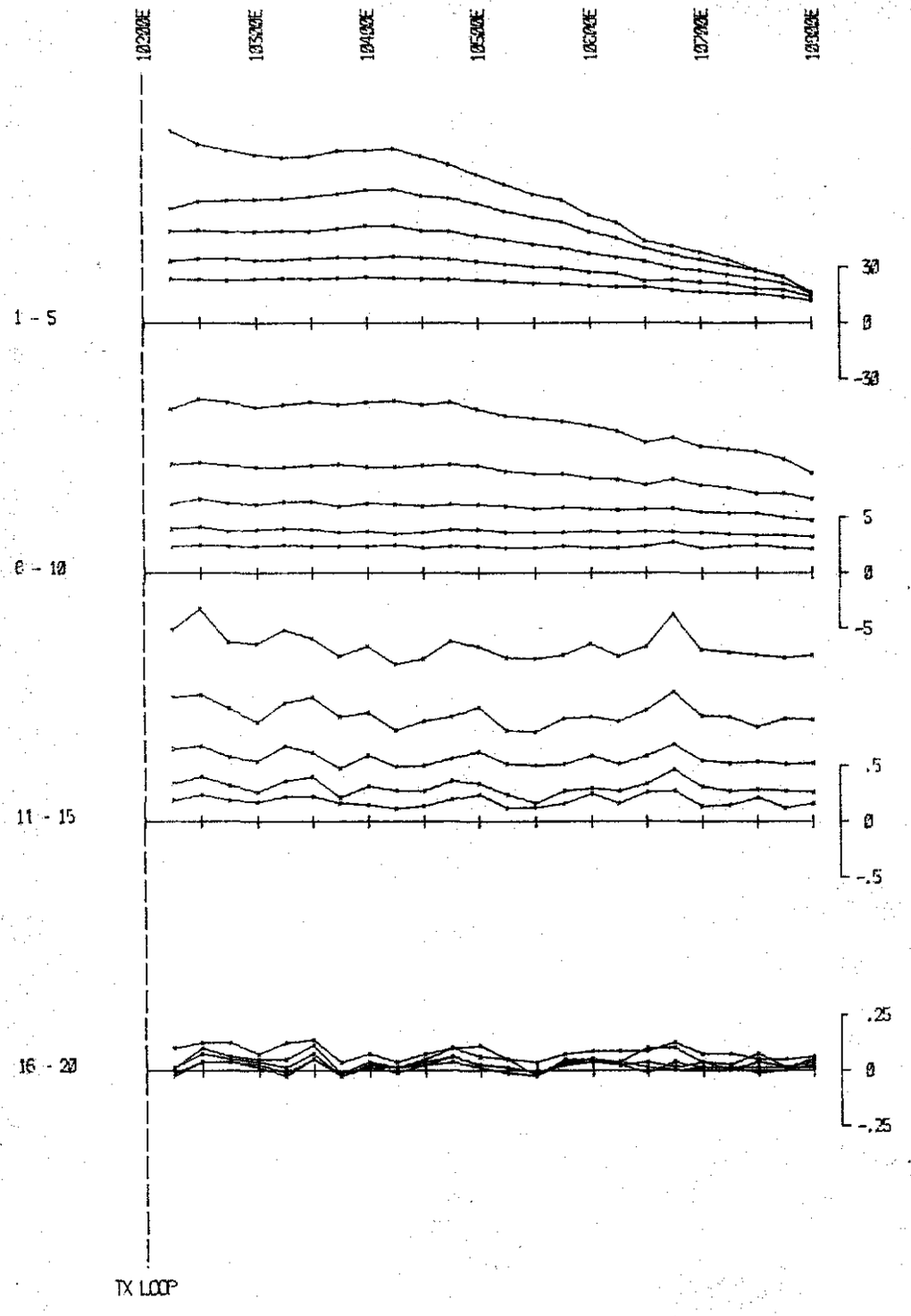
SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.

PROJECT NO 4 964

CLIENT	:	PAN CONT
PROJECT	:	4 964
AREA	:	BULOQBAC
LINE	:	10000N Z
TX LOOP	:	1

8470333

VERTICAL COMPONENT B (Z)



nanovolts per amp metre squared

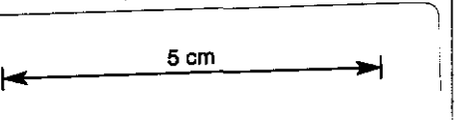
EM-37

FIXED TRANSMITTER SURVEY

033

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)



TX LOOP SIDES	:	10800N 9600E
	:	11600N 10200E
TX LOOP SIZE	:	800 m X 600 m
TX TURN OFF TIME	:	335 microsecs.
FIRST GATE TIME	:	88.5 microsecs.
CURRENT	:	12 amps
FREQUENCY	:	25 Hz.
INTEGRATION TIME	:	256 cycles
SYNC MODE	:	CRYSTAL
HORIZONTAL SCALE	:	1:5000
SURVEYED BY	:	SL
DATE	:	15/10/1987

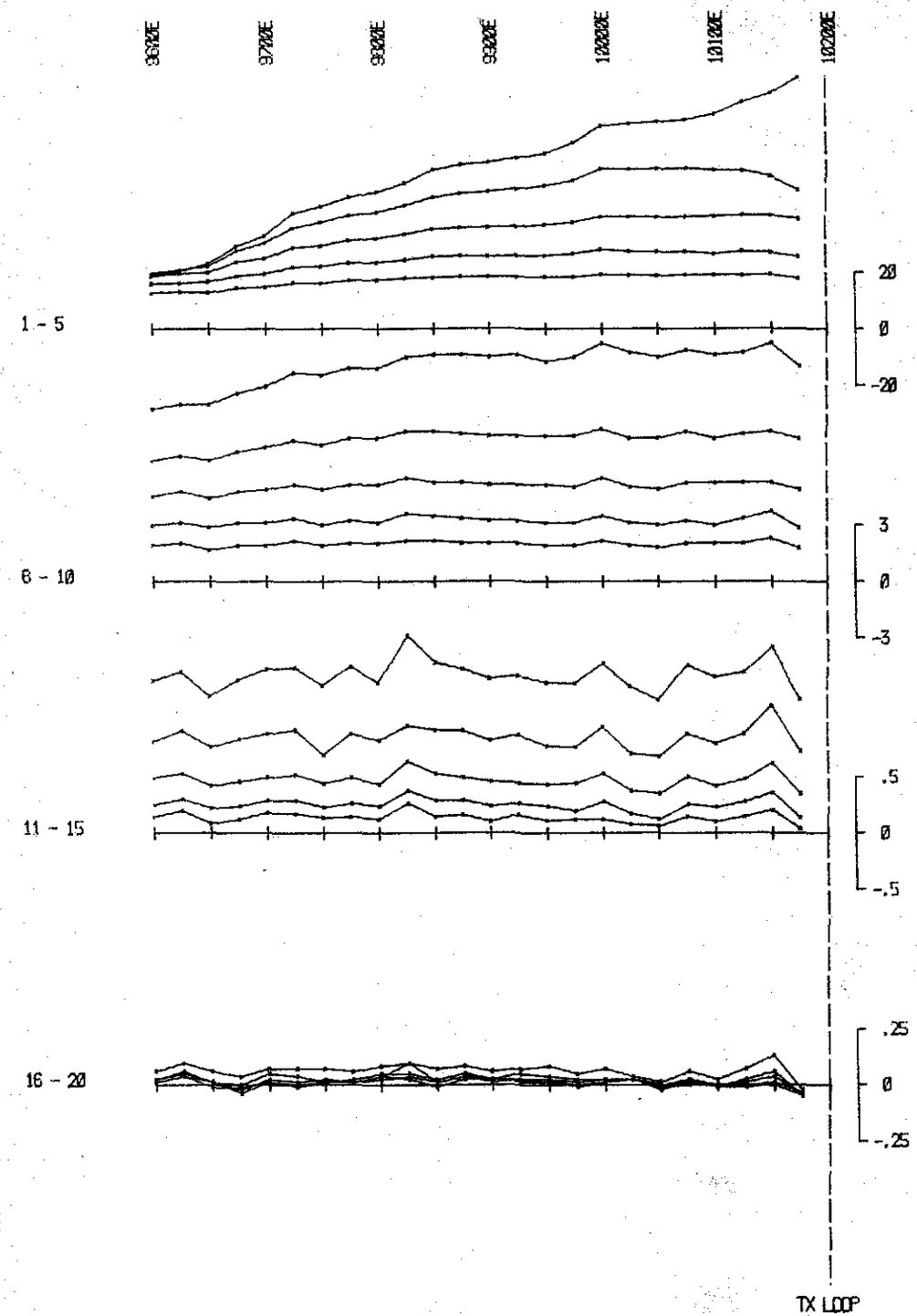
SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.

PROJECT NO. 4 984

CLIENT	:	PAN CONT
PROJECT	:	4 984
AREA	:	BULOOBAC
LINE	:	11000N
TX LOOP	:	3

847034

VERTICAL COMPONENT B (Z)



nanovolts per amp metre squared

EM-37

034

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

5 cm

TX LOOP SIDES	:	10300N 10200E
	:	11600N 10000E
TX LOOP SIZE	:	900 m X 600 m
TX TURN OFF TIME	:	430 microsecs.
FIRST GATE TIME	:	88.5 microsecs.
CURRENT	:	12.5 amps
FREQUENCY	:	25 Hz.
INTEGRATION TIME	:	256 cycles
SYNC MODE	:	CRYSTAL
HORIZONTAL SCALE	:	1:5000
SURVEYED BY	:	SL
DATE	:	22/10/1987

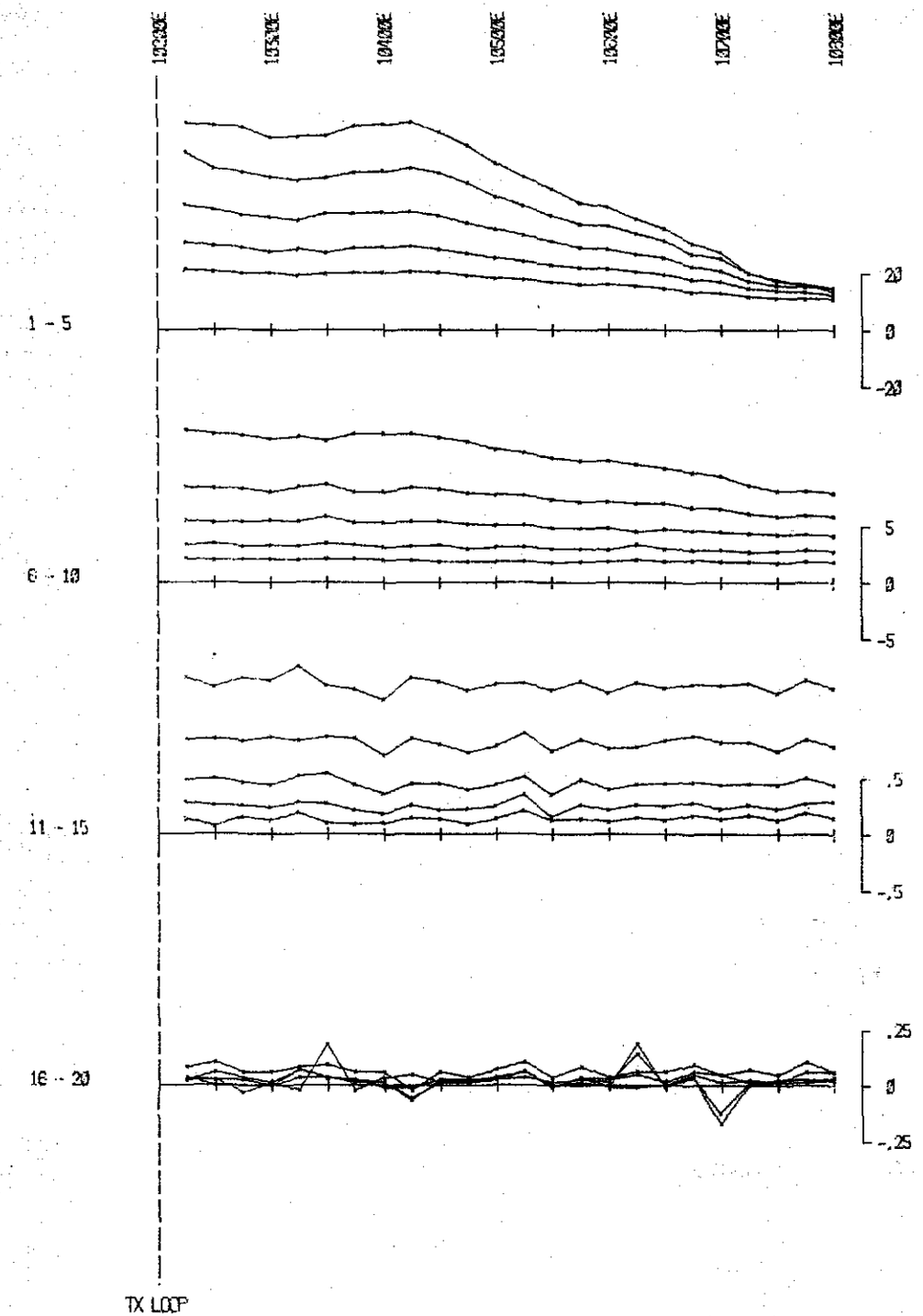
SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.

PROJECT NO. 4 984

CLIENT	:	PAN CONT
PROJECT	:	4 984
AREA	:	BULGOBAC
LINE	:	11000N Z
TX LOOP	:	2

847035

VERTICAL COMPONENT B (Z)



nanovolts per amp metre squared

EM-37

035

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

5 cm

TX LOOP SIDES	:	10300N 9600E
	:	11600N 10200E
TX LOOP SIZE	:	300 m X 600 m
TX TURN OFF TIME	:	325 microsecs.
FIRST GATE TIME	:	33.5 microsecs.
CURRENT	:	13.0 amps
FREQUENCY	:	25 Hz.
INTEGRATION TIME	:	256 cycles
SYNC MODE	:	CRYSTAL
HORIZONTAL SCALE	:	1:5000
SURVEYED BY	:	SL
DATE	:	16/10/1987

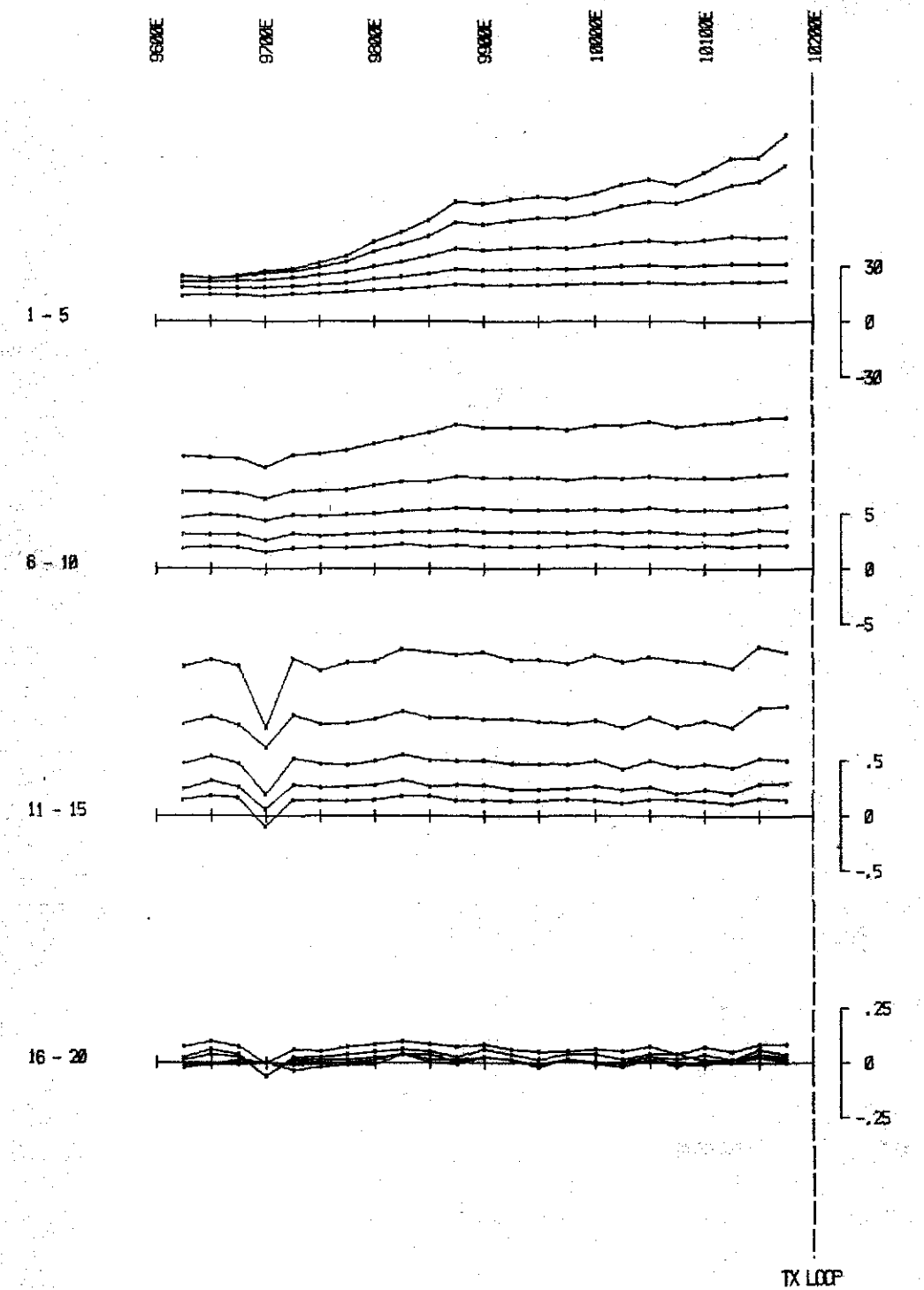
SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.

PROJECT NO. 4 984

CLIENT	:	PAN CONT
PROJECT	:	4 984
AREA	:	BULGERAC
LINE	:	11200N Z
TX LOOP	:	3

8470036

VERTICAL COMPONENT B (Z)



nanovolts per amp metre squared

EM-37

036

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

5 cm

TX LOOP SIDES	:	10800N 10200E
	:	11600N 10800E
TX LOOP SIZE	:	800 m X 600 m
TX TURN OFF TIME	:	430 microsecs.
FIRST GATE TIME	:	88.5 microsecs.
CURRENT	:	12.5 amps
FREQUENCY	:	25 Hz.
INTEGRATION TIME	:	256 cycles
SYNC MODE	:	CRYSTAL
HORIZONTAL SCALE	:	1:5000
SURVEYED BY	:	SL
DATE	:	22/10/1987

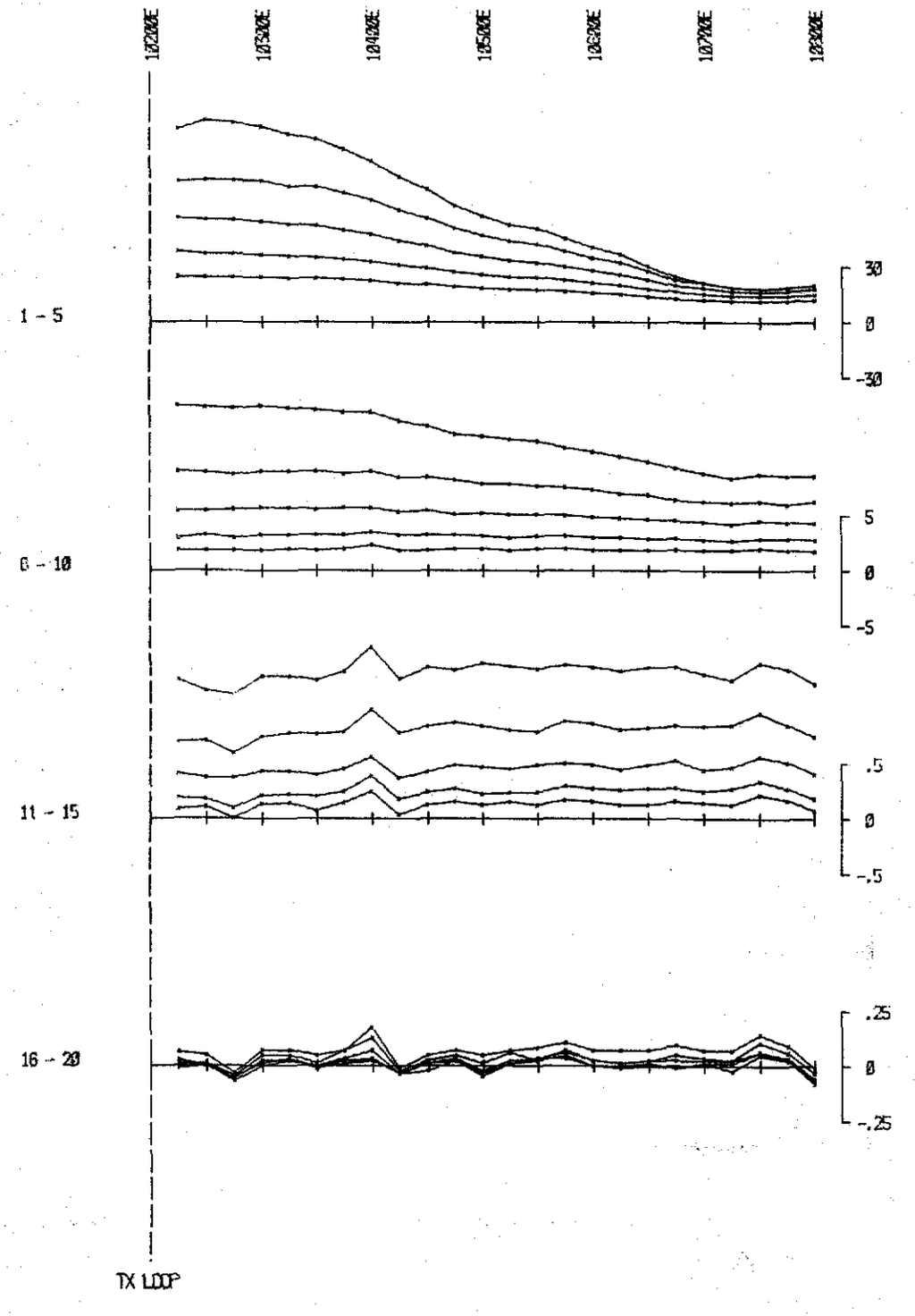
SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.

PROJECT NO. 4 964

CLIENT	:	PAN CONT
PROJECT	:	4 964
AREA	:	BULGOBAC
LINE	:	11200N Z
TX LOOP	:	2

84/037

VERTICAL COMPONENT B (Z)



nanovolts per amp metre squared

EM-37

037

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

5 cm

TX LOOP SIDES	:	10900N 9600E
	:	11600N 10200E
TX LOOP SIZE	:	900 m X 600 m
TX TURN OFF TIME	:	325 microsecs.
FIRST GATE TIME	:	99.5 microsecs.
CURRENT	:	13.0 amps
FREQUENCY	:	25 Hz.
INTEGRATION TIME	:	256 cycles
SYNC MODE	:	CRYSTAL
HORIZONTAL SCALE	:	1:5000
SURVEYED BY	:	SL
DATE	:	16/10/1987

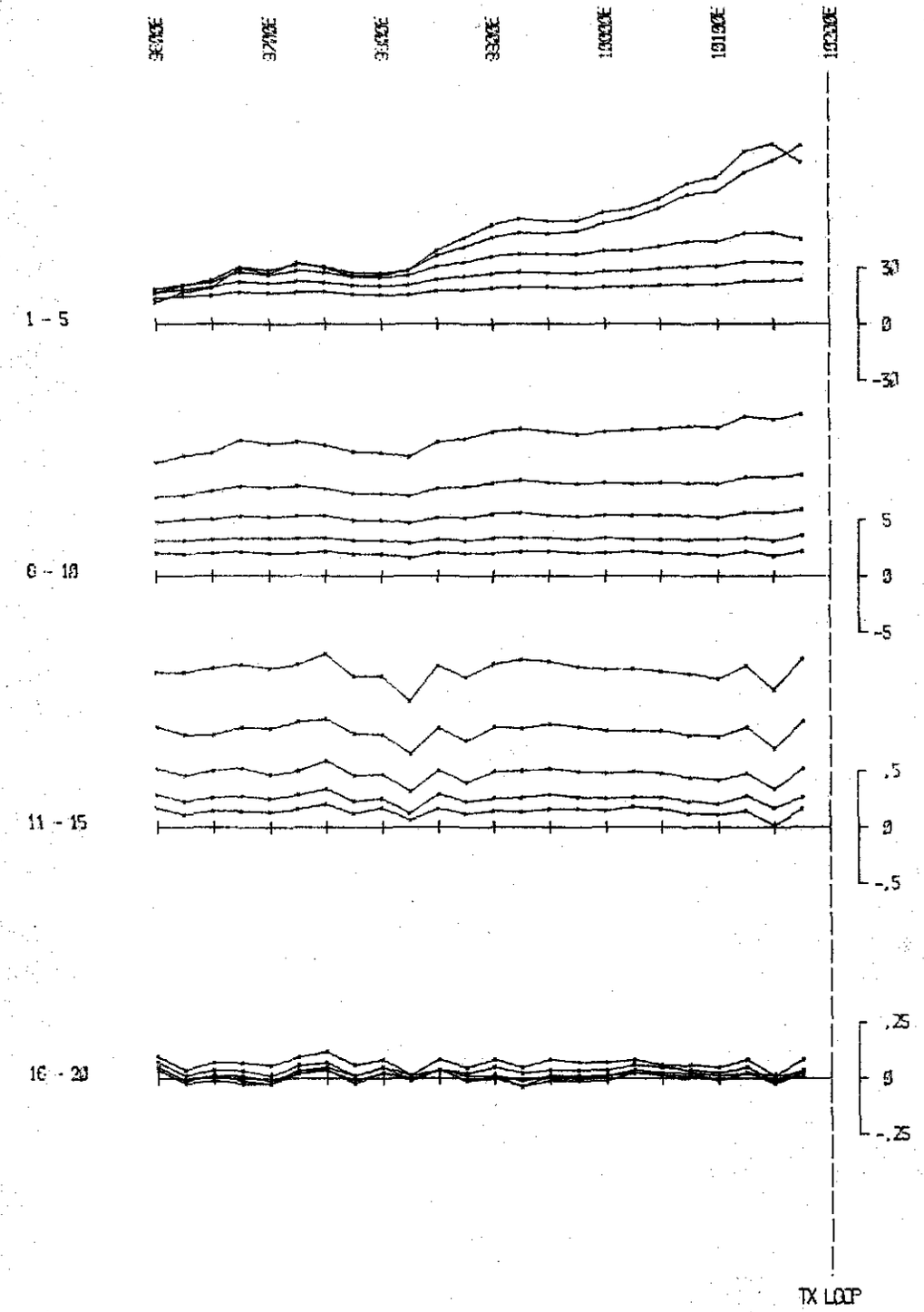
SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.

PROJECT NO. 4 984

CLIENT	:	PRN CONT
PROJECT	:	4 984
AREA	:	BULGOBAC
LINE	:	11400N Z
TX LOOP	:	Z

847038

VERTICAL COMPONENT B (Z)



nanovolts per amp metre squared

EM-37

0.3a

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

5 cm

TX LOOP SIDES	:	10800N 10200E
	:	11800N 10800E
TX LOOP SIZE	:	600 m X 600 m
TX TURN OFF TIME	:	430 microsecs.
FIRST GATE TIME	:	90.5 microsecs.
CURRENT	:	12.5 amps
FREQUENCY	:	25 Hz.
INTEGRATION TIME	:	256 cycles
SYNC MODE	:	CRYSTAL
HORIZONTAL SCALE	:	1:5000
SURVEYED BY	:	SL
DATE	:	22/10/1987

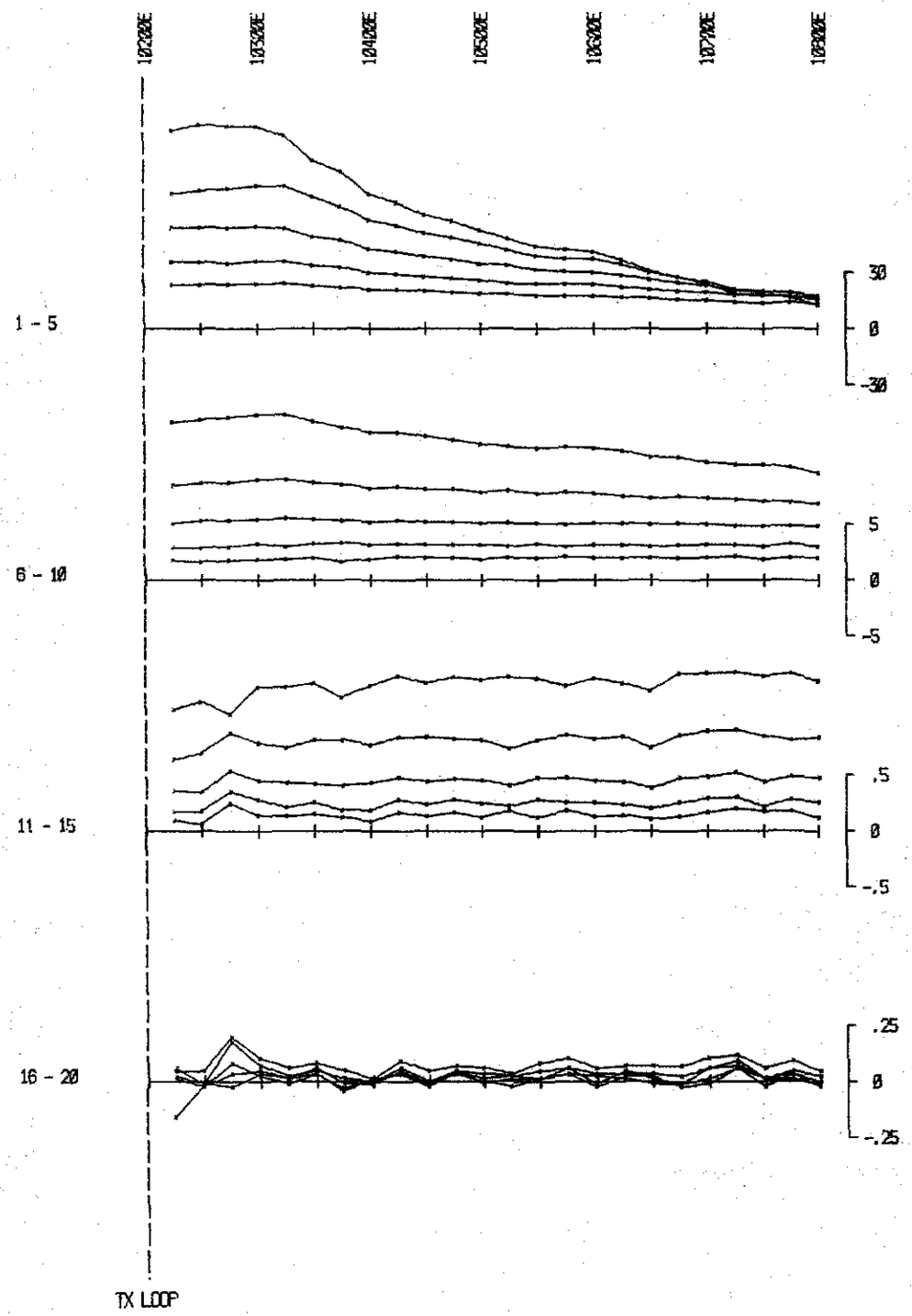
SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.

PROJECT NO. 4 964

CLIENT	:	PRN CONT
PROJECT	:	4 964
AREA	:	BULGOBAC
LINE	:	11400N Z
TX LOOP	:	2

847039

VERTICAL COMPONENT B (Z)



nanovolts per amp metre squared

EM-37

FIXED TRANSMITTER SURVEY

035

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

5 cm

TX LOOP SIDES	:	10800N 9600E
	:	11600N 10200E
TX LOOP SIZE	:	800 m X 600 m
TX TURN OFF TIME	:	325 microsecs.
FIRST GATE TIME	:	88.5 microsecs.
CURRENT	:	13.0 amps
FREQUENCY	:	25 Hz.
INTEGRATION TIME	:	256 cycles
SYNC MODE	:	CRYSTAL
HORIZONTAL SCALE	:	1:5000
SURVEYED BY	:	SL
DATE	:	16/10/1987

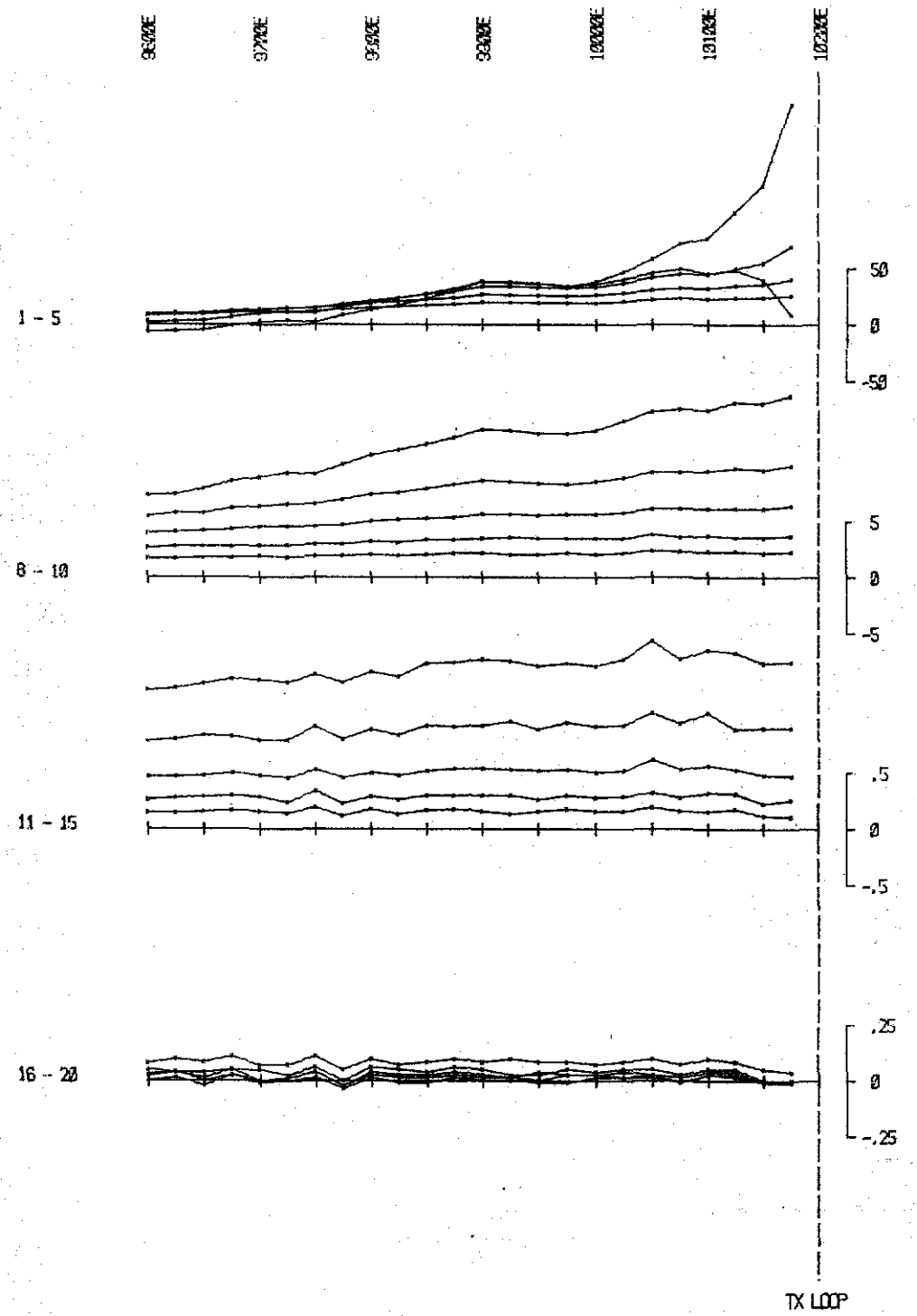
SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.

PROJECT NO. 4 984

CLIENT	:	PAN CONT
PROJECT	:	4 984
AREA	:	BULOOBAC
LINE	:	11600N Z
TX LOOP	:	3

84/040

VERTICAL COMPONENT B (Z)



nanovolts per amp metre squared

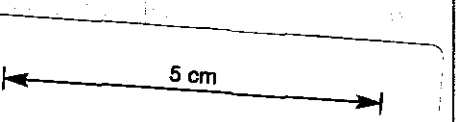
EM-37

040

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)



TX LOOP SIDES	:	10800N 10200E
	:	11600N 10000E
TX LOOP SIZE	:	800 m X 600 m
TX TURN OFF TIME	:	430 microsecs.
FIRST GATE TIME	:	88.5 microsecs.
CURRENT	:	12.5 amps
FREQUENCY	:	25 Hz.
INTEGRATION TIME	:	256 cycles
SYNC MODE	:	CRYSTAL
HORIZONTAL SCALE	:	1:5000
SURVEYED BY	:	SL
DATE	:	22/10/1987

SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.

PROJECT NO. A 964

CLIENT	:	PAN CONT
PROJECT	:	A 964
AREA	:	BULOCBAC
LINE	:	11600N Z
TX LOOP	:	2

84/041