

<b>MINES</b>	
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28 JAN 1987	
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Action Officer	Initials
Resubmit to	Date

CSAMT Survey, Final Report

Marionoak Project

near Rosebery, Tasmania

for Aberfoyle Resources Limited

**OPEN FILE**

February, 1986

by

Zonge Engineering and Research Organization

(Australia) Pty Ltd

Job: 578

87-2626

000

958002

ABERFOYLE JOB: 578

INTRODUCTION

At the request of Aberfoyle Resources, Zonge Engineering mobilized a crew to the Marionoak prospect near Rosebery, Tasmania. The crew was mobilized on the 4th of February; work was completed on the 12th of February, 1986.

Approximately 3200 metres of CSAMT coverage was obtained with 100 metre dipoles; 700 metres using 50 metre dipoles. Data was collected from 8HZ to 4096HZ at each station.

The purpose of the survey was to identify and map conductive structure at depth.

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CONCLUSION AND GENERAL DISCUSSION

Detailed interpretation is provided for all four CSAMT survey lines. These lines intersect what appears to be a well established geologic trend with an approximate strike of N 32° W (328°). The baseline station 0 (on all four lines) delineates the approximate boundary of an electrically defined contact. This contact appears to identify a major lithologic change in geologic structure to the northeast: generally resistive to the northeast and conductive at depth to the southwest.

Although all four lines identify conductive structure at depth, line 0000N and 0800N have somewhat different resistivity characteristics than what is observed on lines 1200N and 1600N. It is possible that two distinctive conductive trends occur southwest of station 0:

- (1) a generalized decrease in resistivity at depth and
- (2) specific localized conductive structure.

Localized conductive structure occurs between stations - 2 and - 4 on lines 0000N and 0800N. This shifts to the northeast between stations 1 and - 2 on lines 1200N and 1600N.

Conductive structure appears strongly anisotropic on lines 0000N and 0800N; the anisotropic effect is weak to non-existent on lines 1200N and 1600N.

On lines 0000N and 0800N the localized conductive structure at depth is very intense over several stations, whilst to the north the effect is less intense and more confined laterally.

Magnetic field data (H-field plots) tend to suggest that conductivities at depth are greater on lines 0000N and 0800N than is observed on lines 1200N and 1600N. The Bostick results indicate that the specific localized conductive structure (having a northwest/southeast trend) may be somewhat shallower on line 0800N than is observed on line 0000N, but certainly occurs at a greater depth on lines 1200N and 1600N.

DETAILED INTERPRETATIONCSAMT LINE 0000N

CSAMT data was collected using 100m and 50m dipoles. Overall coverage was provided using 100m dipoles/stations. Select detailed coverage was obtained using 50m dipoles/stations.

Cagniard Resistivity indicates a conductor at depth centered under station - 4. However, Resistivity from Phase places the conductive structure further to the northeast centered under station - 3. The lateral displacement between these two locations can be partially explained by the effect of near surface resistive structure extending southwest from station - 1 to station - 3. Greater confidence would be placed in locating conductive structure below station - 3, but the conductive structure appears to extend well towards station - 4.

Note the Phase Difference data indicates a very pronounced anisotropic effect at depth centered under station - 3 (note values greater than 2000 mr). This observation is supported by magnetic field results obtained on 1985 and 1986 surveys. CSAMT survey results obtained in 1985 are summarized as follows:

Weakly conductive at depth from Cagniard Resistivity; magnetic field data shows resistive structure at depth (inconsistent observation).

CSAMT survey results from this 1986 project are summarized as follows:

Strongly conductive at depth; magnetic field data also indicates conductive structure at depth (supporting observation).

Although data was collected from approximately the same area for the 1985/1986 surveys, the transmitter locations are situated in orthogonal directions. (An anisotropic structure would produce different spatial current distributions strongly related to the position of the EM field source, i.e., the position of the transmitter dipole).

The conductive structure is felt to extend between station - 2 and station - 4.5 (not just in the immediate vicinity of station - 3). This structure is probably defined by several conductive elements (possibly thin vertical plates). A major lithologic change in country rock appears to occur northeast of station - 2.

The Bostick/MT depth section gives some indication of relative depths of resistive/conductive structure along this line.

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CSAMT LINE 0800N

CSAMT data was collected using 100m and 50m dipoles. Overall coverage was provided using 100m dipoles/stations. Select detailed coverage was obtained using 50m dipoles/stations.

Cagniard Resistivity indicates a conductor at depth centered under station - 2. The conductor is perhaps slightly shallower on Line 0800N than is observed on Line 0000N. But it does not appear to be of equal intensity. There is no lateral displacement between the conductor observed by Cagniard Resistivity and Resistivity from Phase data on line 0800N. A resistive contact northeast of station - 1 is near-vertical with no over-hanging resistive structure to the southwest. The conductive structure at depth below station - 2 extends to the southwest to station - 3 (possibly steeply dipping to the southwest from station - 2).

As on line 0000N, the Phase Difference data indicates a very pronounced anisotropic effect under station - 2 extending to station - 3 (note values greater than 2000 mr). The magnetic field data indicates conductive structure at depth. A major lithologic change in country rock appears to occur northeast of station - 1 with resistivities generally increasing to the northeast.

Line 0800N appears to have similar characteristics to that of Line 0000N.

The Bostick/MT depth section gives some indication of relative depths of resistive/conductive structure along this line.

CSAMT LINE 1200N

CSAMT data was collected over the length of this line using 100m dipoles. Note that differences between the Cagniard Resistivity and Phase Difference pseudosections suggest highly variable resistive values for surface/near-surface structure.

The Cagniard Resistivity and Resistivity from Phase data indicate that a well defined lithologic change in the country rock occurs northeast of station 0 and that a near surface (possibly off-line) resistive layer extends southwest of station - 4. General conductive structure at depth appears to extend southwest of station 0, but the primary conductive feature appears to be centered between station 0 and station - 4.

Note that the Phase Difference values do not strongly suggest anisotropic effects except perhaps at depth in the vicinity of station - 4.

The magnetic field results indicate conductive structure at depth. The Bostick/MT depth section gives some indication of relative depths of resistive/conductive structure along this line. Conductivities do not appear to be as intense on line 1200N as have been observed on line 0000N. Note also that anisotropic effects are not as well established on line 1200N in comparison to both lines 0000N and 0800N.

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CSAMT LINE 1600N

CSAMT data was collected over the length of this line using 100m dipoles. Results obtained on Line 1600N are similar to results obtained on Line 1200N.

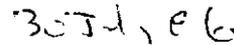
A resistivity contact is observed between station 0 and station 1 and probably identifies a lithologic change in the country rock to the northeast. A near surface resistive layer appears southwest of station - 1 and appears to be a projection along strike of a similar feature observed on Line 1200N.

While the Phase Difference tends to show a general conductive feature at depth which extends to the southwest of station 1, the Cagniard Resistivity and Resistivity from Phase suggest that the primary conductive feature at depth is centered between station 1 and station - 1.

Phase Difference results do not indicate strong anisotropic effects associated with this survey line. Magnetic field results indicate conductive structure at depth. The Bostick/MT depth section gives some indication of the relative depths of resistive/conductive structure along this line. Conductivities are not as intense on this line as observed on line 0000N and line 0800N.



Emmett V. Reed



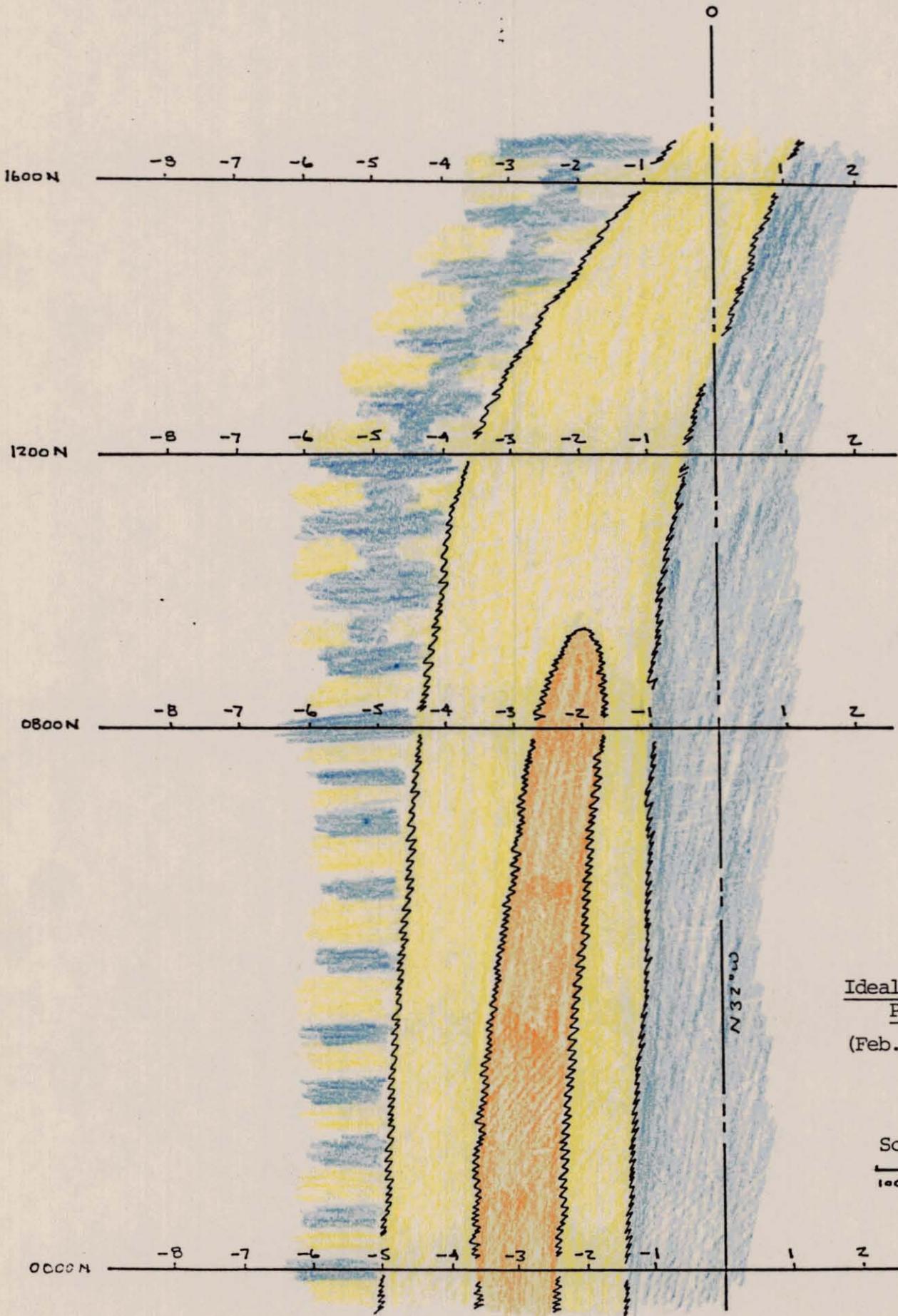
Date

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958008

ABERFOYLE RESOURCES LIMITED

MARIONOAK CSAMT SURVEY



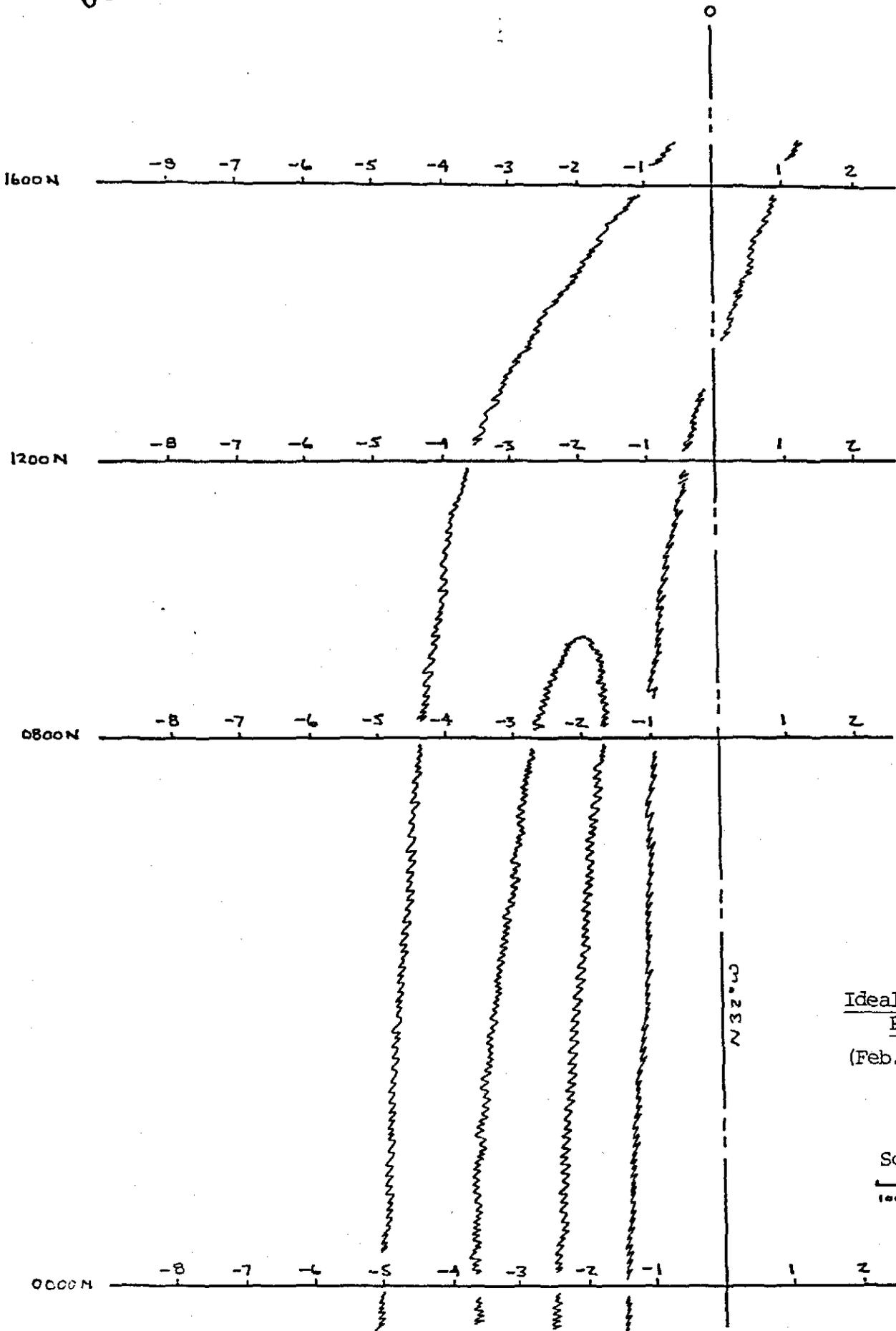
Idealized Geology  
Plan View  
(Feb. 86 Survey)

Scale  
100 meters

5 cm

MARIONOAK CSAMT SURVEY

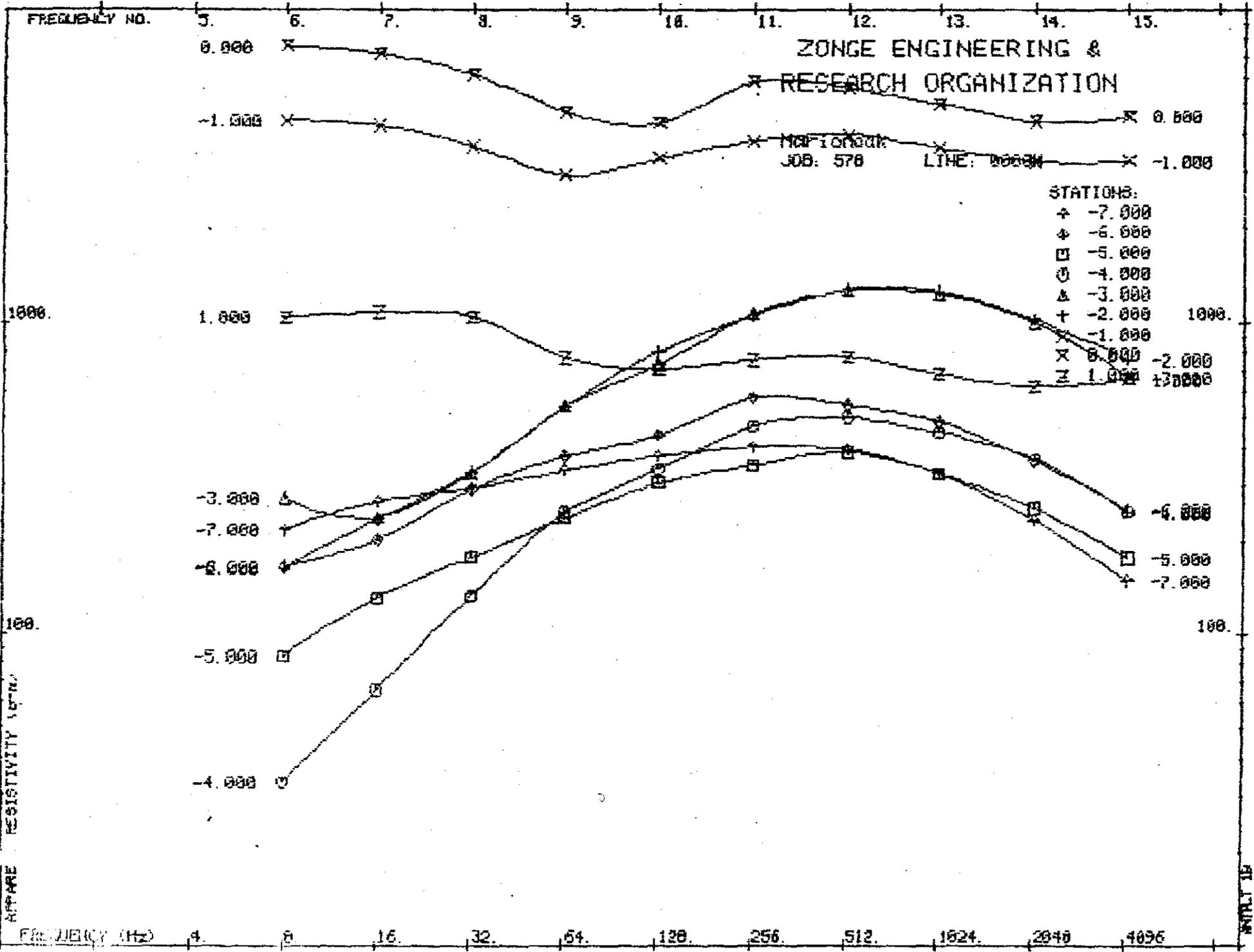
007



Idealized Geologi  
Plan View  
(Feb. 86 Survey)

Scale  
100 metres

5 cm



0000

958010

FREQUENCY NO.

5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15.

# ZONGE ENGINEERING & RESEARCH ORGANIZATION

Marion oak  
JOB: 578

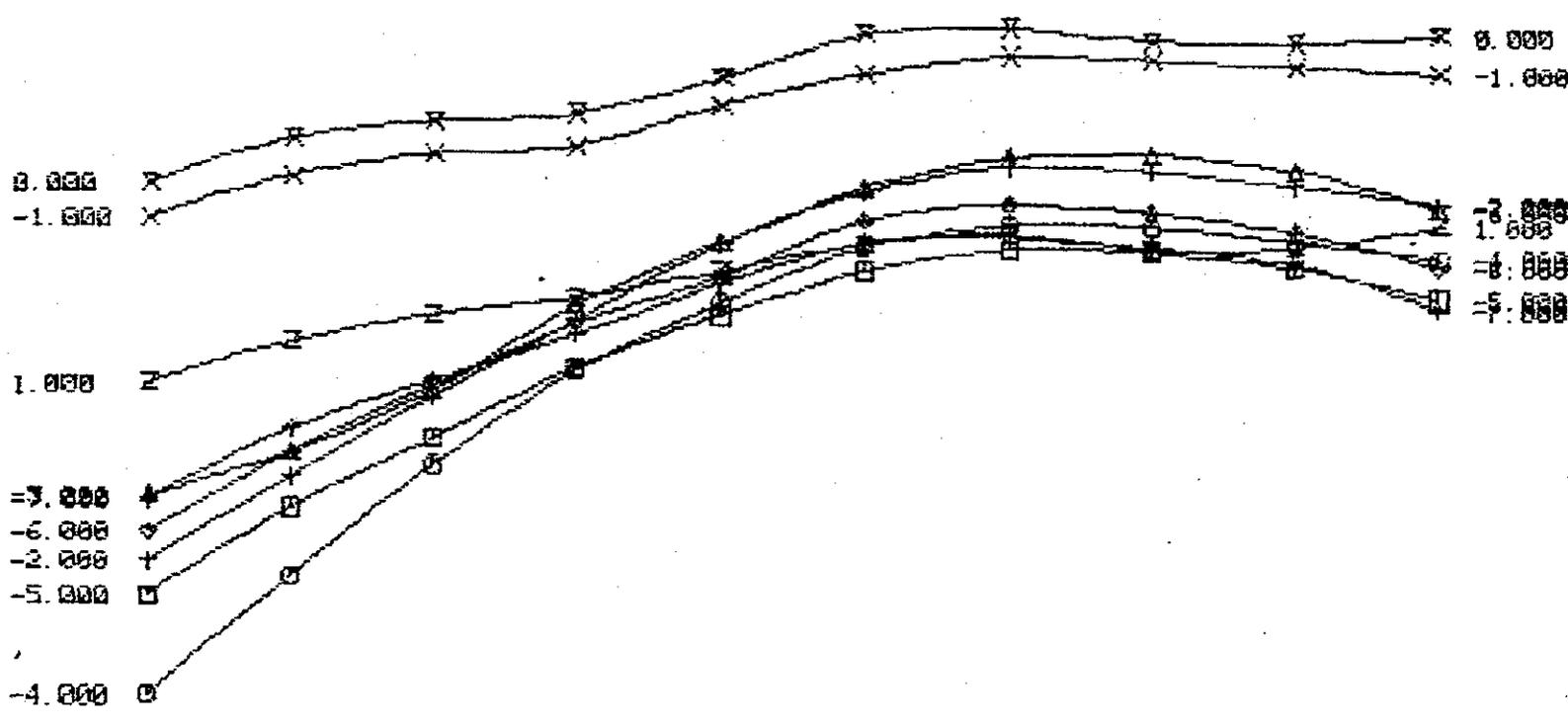
LINE: 8888H

### STATIONS:

- + -7.000
- ◊ -5.000
- ◻ -5.000
- -4.000
- △ -3.000
- + -2.000
- X -1.000
- X 0.000
- Z 1.000

10.

10.



ELECTRIC FIELD (volts/m)

FREQUENCY (Hz)

4. 8. 16. 32. 64. 128. 256. 512. 1024. 2048. 4096.

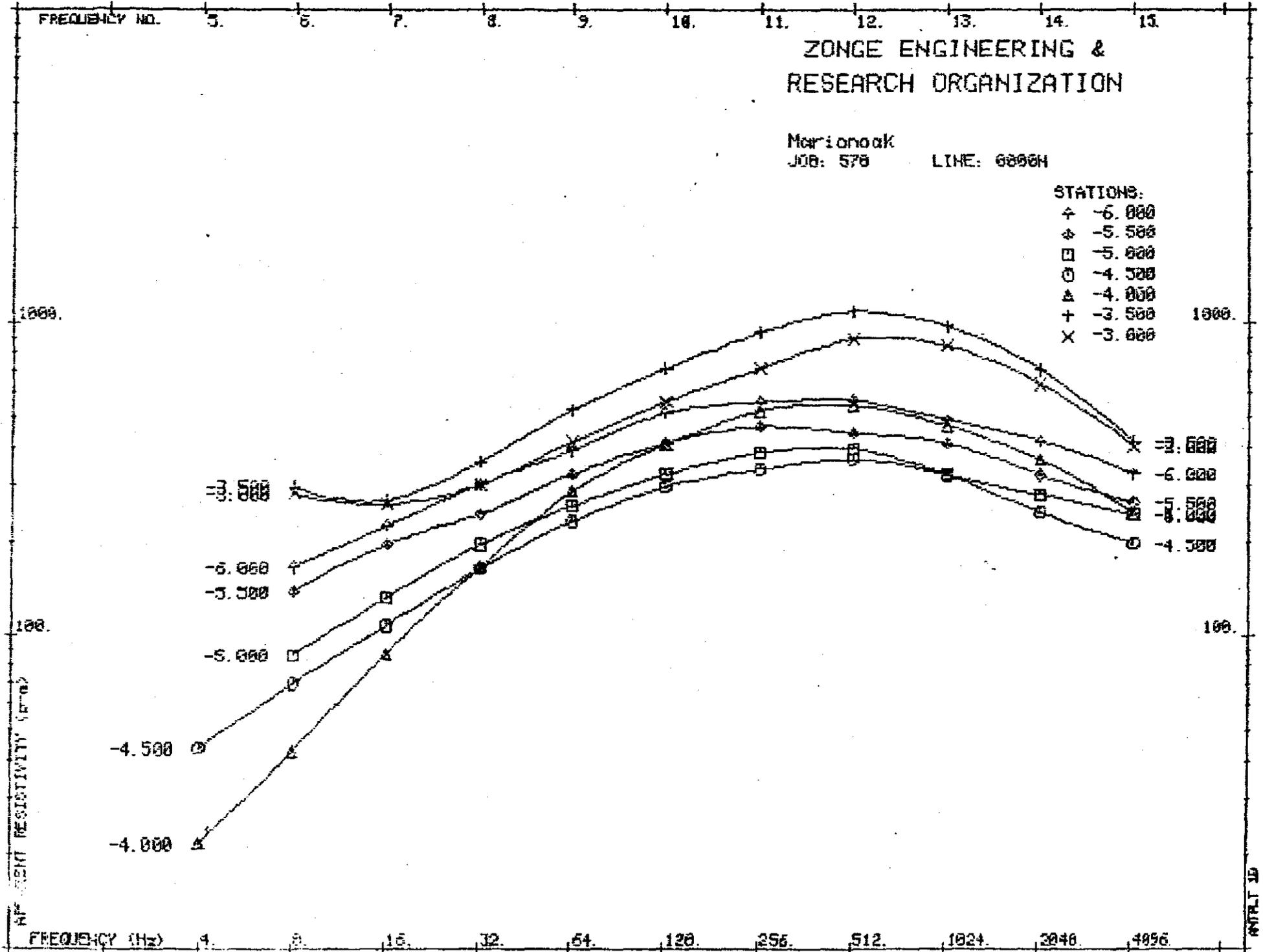
10

009

958011



01 602 325 1588 P.25  
03 4 E.R.O. USEH Highway Y a1  
01/10/1986

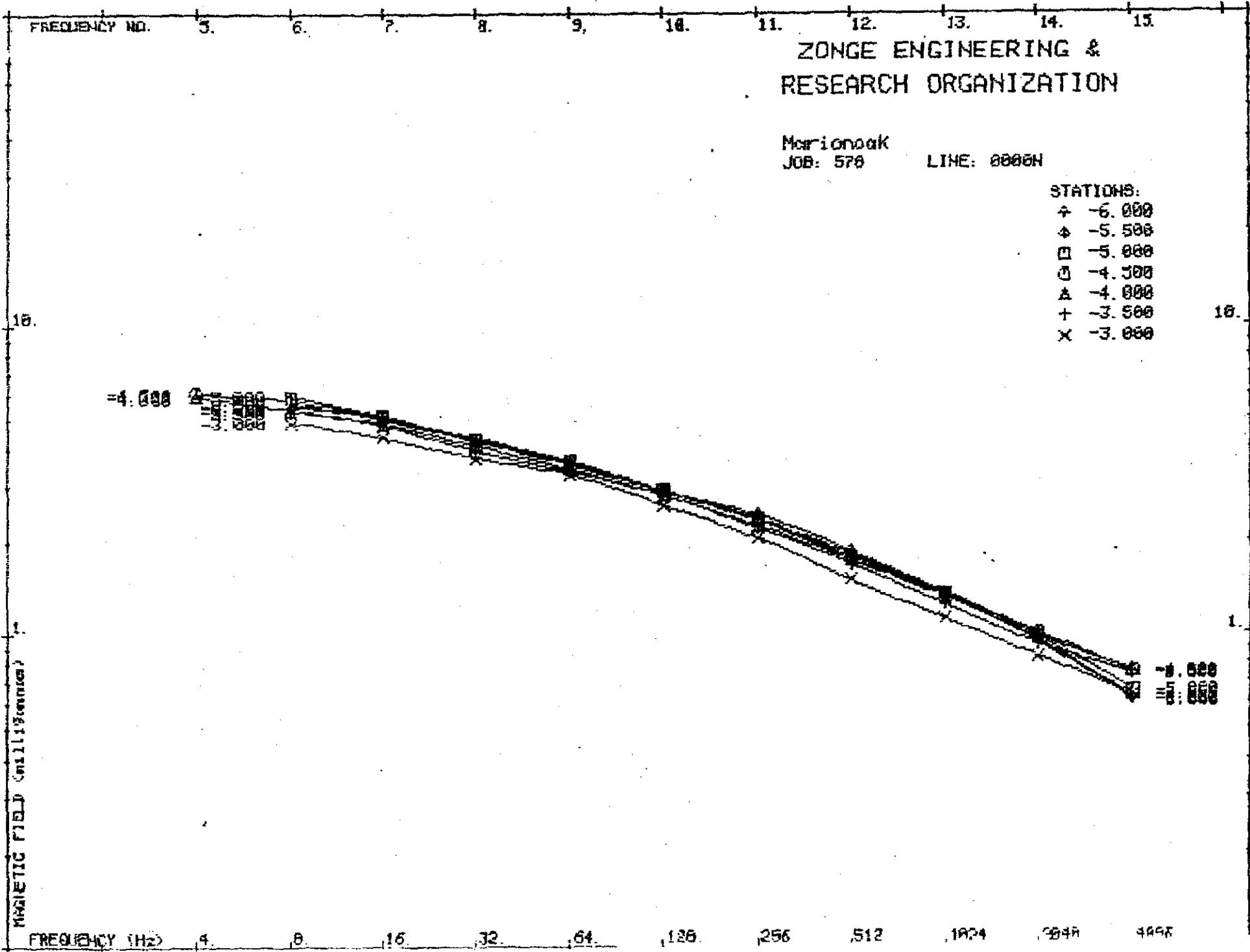


011

958013



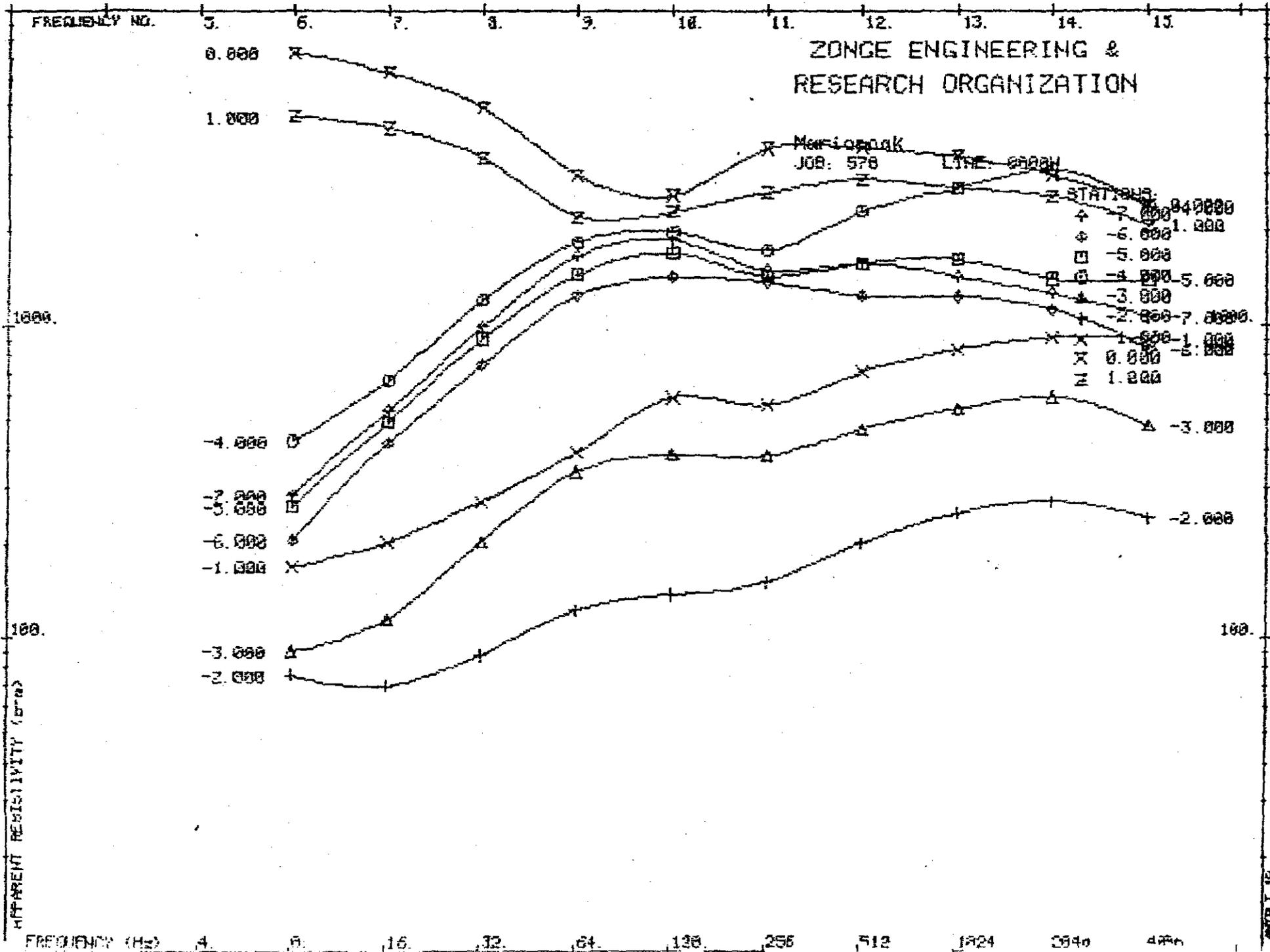
00/10/1 3 8 03 2 E.K.O USA Howdy Y all 01 042 350 1588 P.26



013

958015

INTL 18



014

958016

INSTR 16

FREQUENCY NO.

5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15.

# ZONGE ENGINEERING & RESEARCH ORGANIZATION

Marionook  
JOB: 570

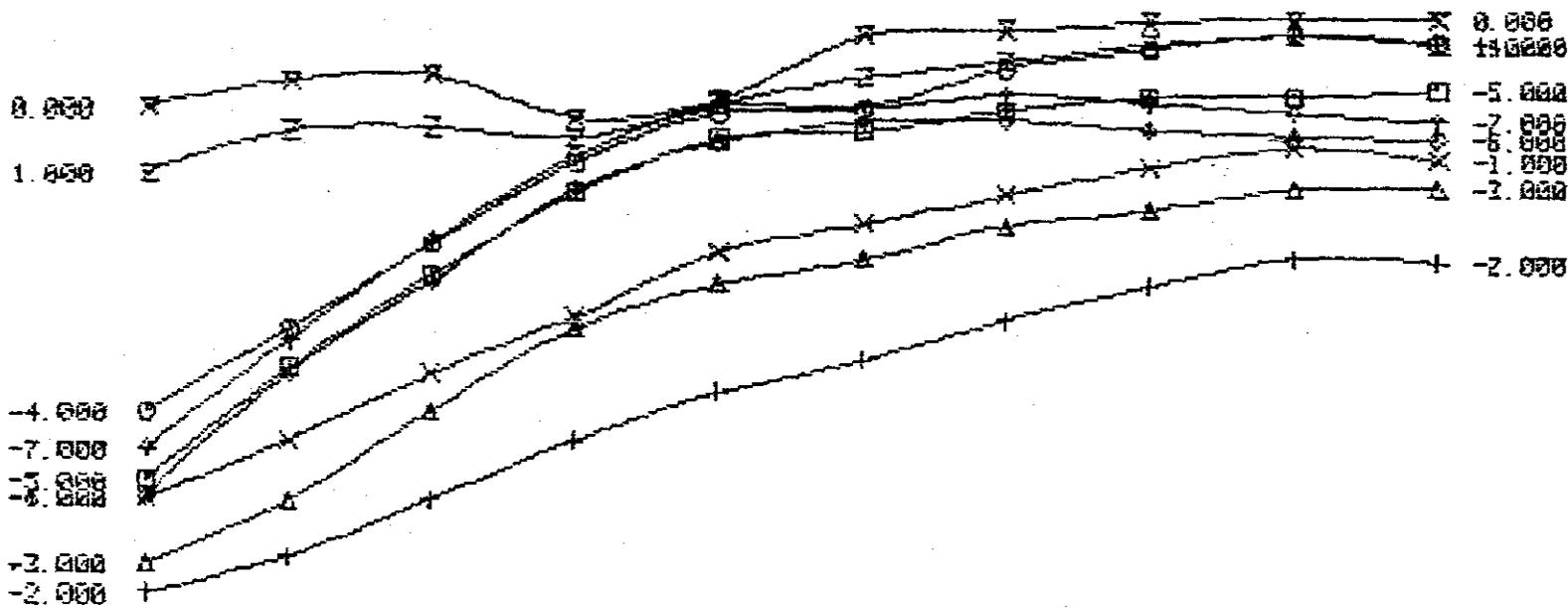
LINE: 6000H

### STATIONS:

- + -7.000
- \* -6.000
- -5.000
- -4.000
- △ -3.000
- + -2.000
- x -1.000
- x 0.000
- z 1.000

10.

10.



ELECTRIC FIELD (volts/m)

FREQUENCY (Hz)

4. 8. 16. 32. 64. 128. 256. 512. 1024. 2048. 4096

WALT 10

015

958017

FREQUENCY NO.

5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15.

# ZONGE ENGINEERING & RESEARCH ORGANIZATION

Norionak  
JOB: 578

LINE: 6666H

### STATIONS:

- + -7.000
- ⊕ -6.000
- -5.000
- -4.000
- △ -3.000
- + -2.000
- X -1.000
- X 0.000
- ≡ 1.000

10.

10.

1

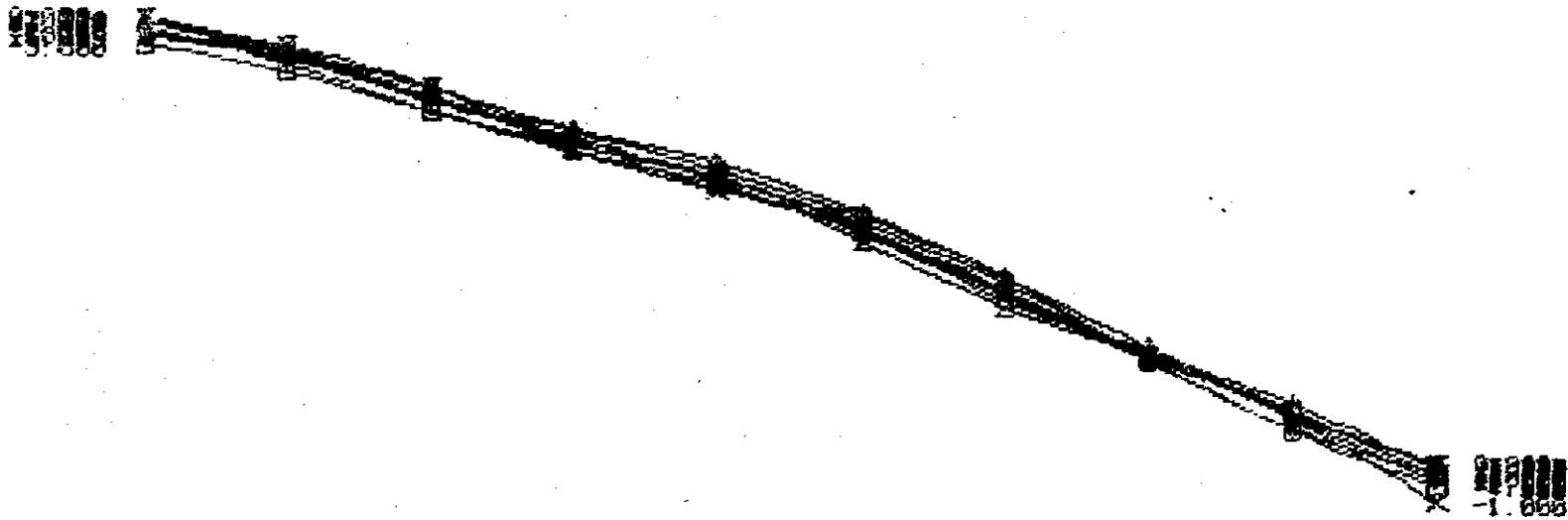
1

MAGNETIC FIELD (milligauss)

WPLT 10

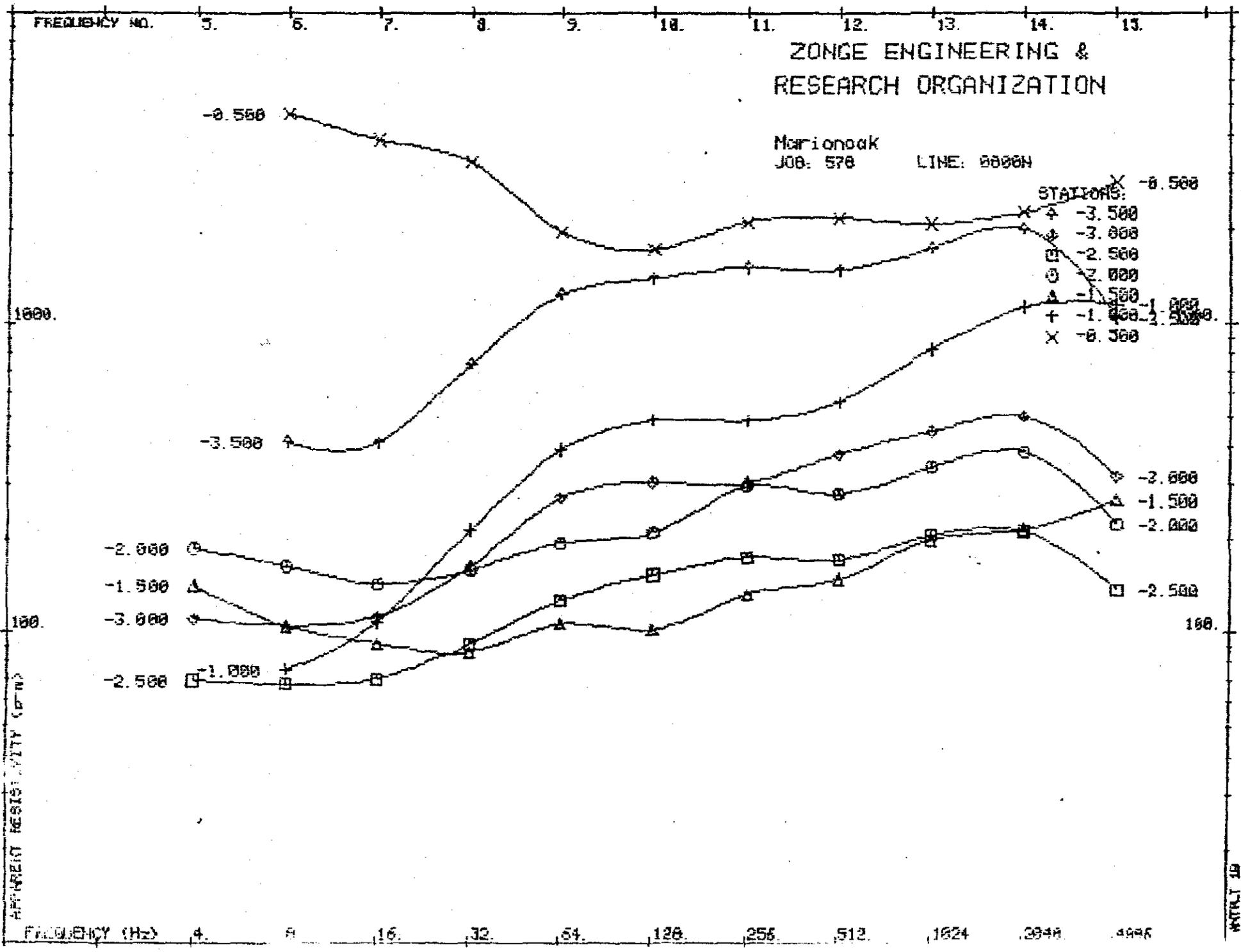
FREQUENCY (Hz)

4. 8. 16. 32. 64. 128. 256. 512. 1024. 2048. 4096



016

958018



017

958019

FREQUENCY NO.

5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15.

# ZONGE ENGINEERING & RESEARCH ORGANIZATION

Marionook  
JOB: 578

LINE: 6600H

### STATIONS:

- △ -3.500
- ⊕ -3.000
- -2.500
- -2.000
- △ -1.500
- + -1.000
- X -0.500

10.

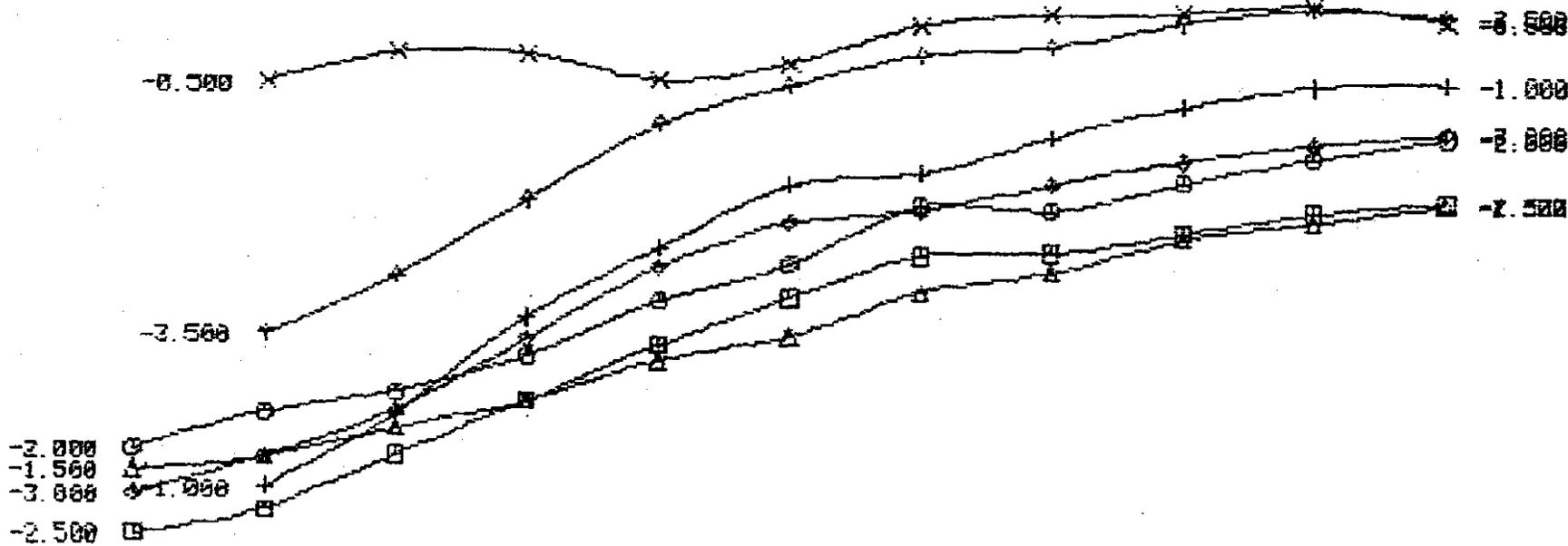
10.

1.

1.

ELECTRIC FIELD (volts/mi)

ST. TRAIL



FREQUENCY (Hz)

4 6 10 20 40 60 100 200 300 500 1000

018

958020

019

FREQUENCY NO. 3. 5. 7. 8. 9. 10. 11. 12. 13. 14. 15.

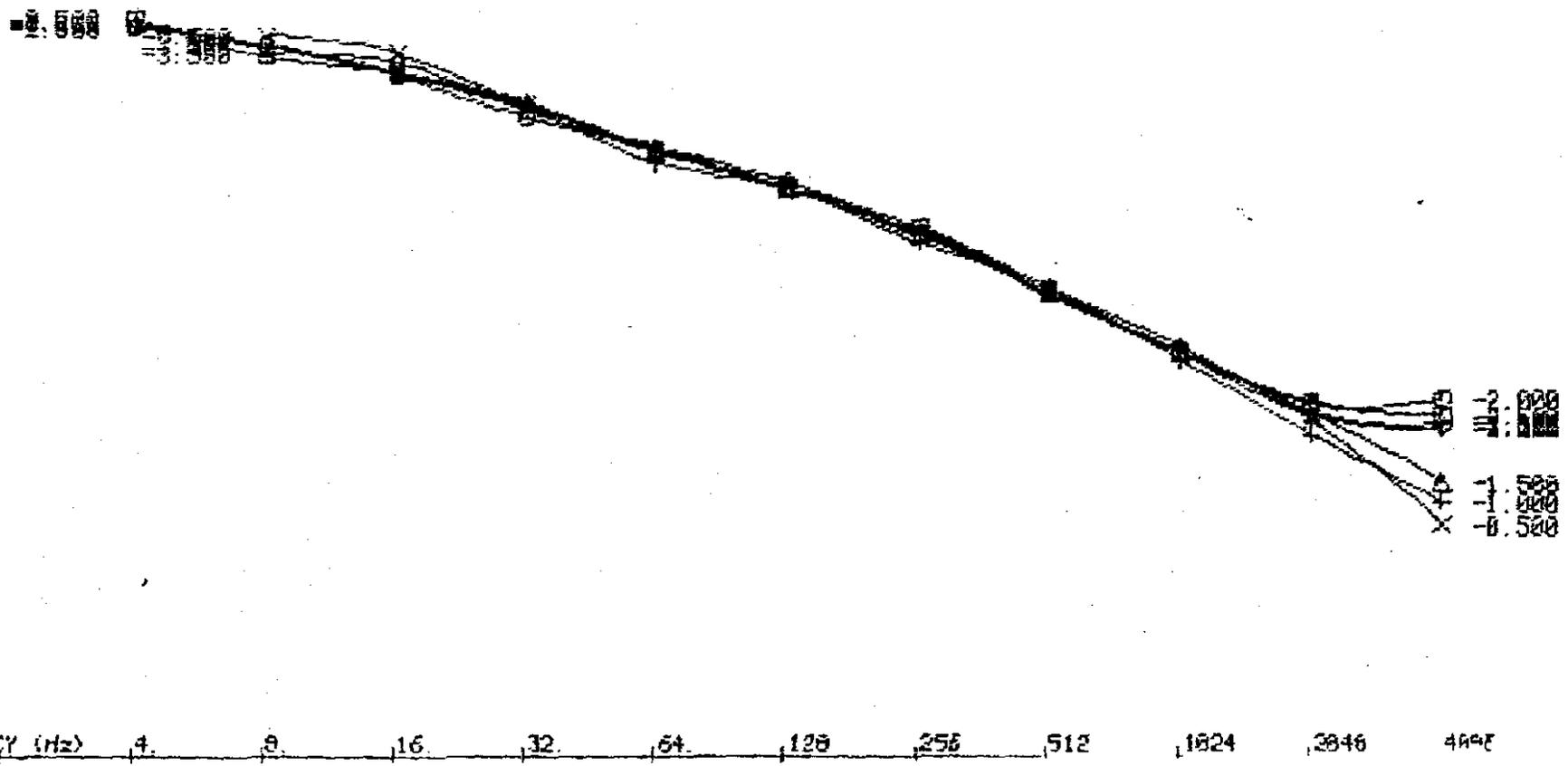
### ZONCE ENGINEERING & RESEARCH ORGANIZATION

Marionook  
JOB: 570 LINE: 8888H

- STATIONS:
- + -3.500
  - 4 -3.000
  - -2.500
  - -2.000
  - △ -1.500
  - + -1.000
  - X -0.500

10.

10.



MAGNETIC FIELD (milliTeslas)

BT 17/11/88

FREQUENCY (Hz) 4. 8. 16. 32. 64. 128. 256. 512. 1024. 2048. 4096

958021



FREQUENCY NO.

5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15.

# ZONGE ENGINEERING & RESEARCH ORGANIZATION

Marionak  
JOB: 576

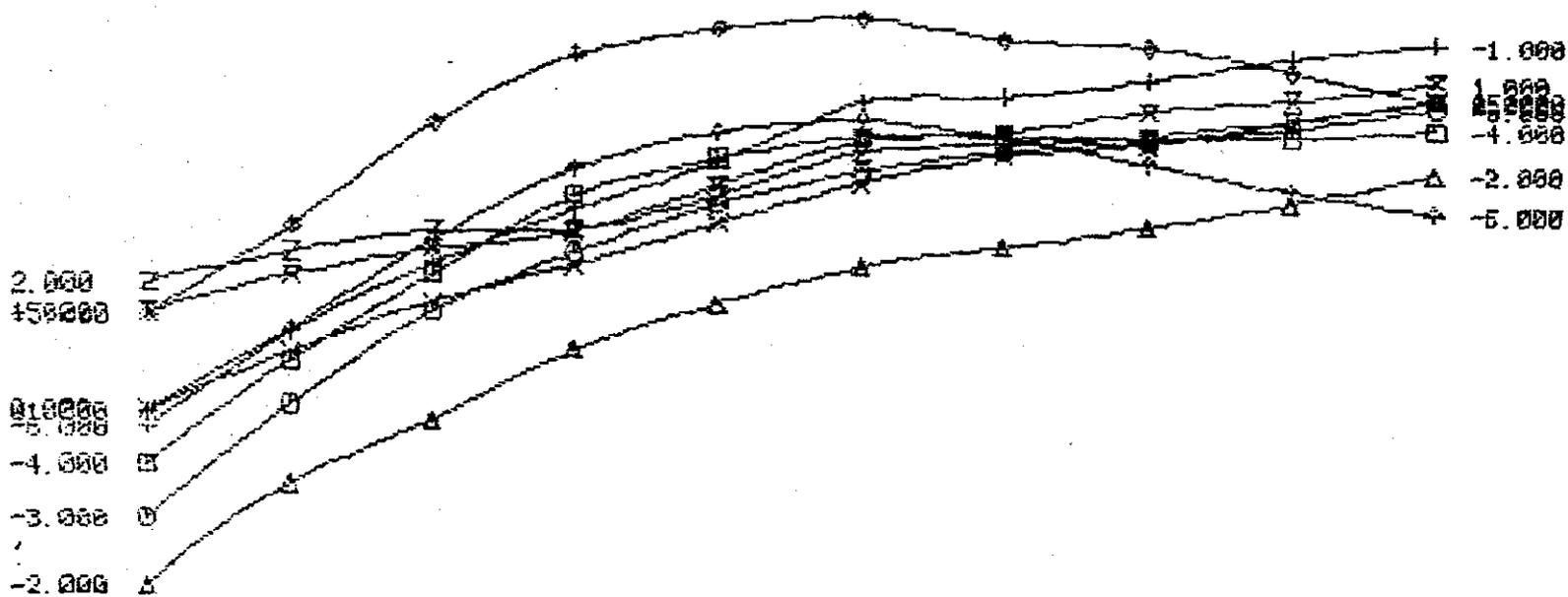
LINE: 1200H

### STATIONS:

- + -5.000
- ⊕ -5.000
- -4.000
- -3.000
- △ -2.000
- + -1.000
- X 0.500
- × 1.000
- z 2.000

10.

10.



1.

1.

ELECTRIC FIELD (V/m)

FREQUENCY (Hz)

4. 8. 16. 32. 64. 128. 256. 512. 1024. 2048. 4096

WTRT 19

021

958023

FREQUENCY NO.

5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15.

# ZONGE ENGINEERING & RESEARCH ORGANIZATION

Marionak  
JOB: 578

LINE: 1288H

### STATIONS:

- + -6.000
- ⊕ -5.000
- -4.000
- -3.000
- △ -2.000
- + -1.000
- X 0.000
- X 1.000
- N 2.000

10.

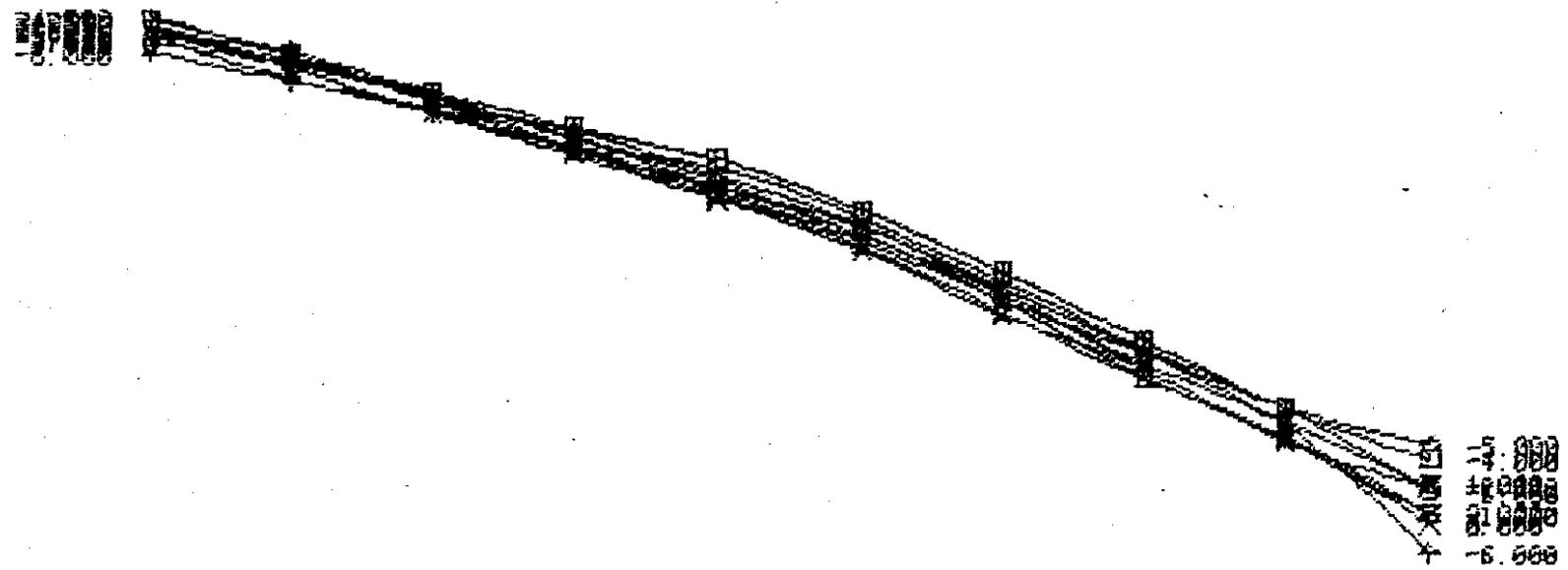
10.

MAGNETIC FIELD (Gauss)

BT LINE

FREQUENCY (Hz)

1. 3. 16. 32. 64. 128. 256. 512. 1024. 2048. 4096.



022

958024

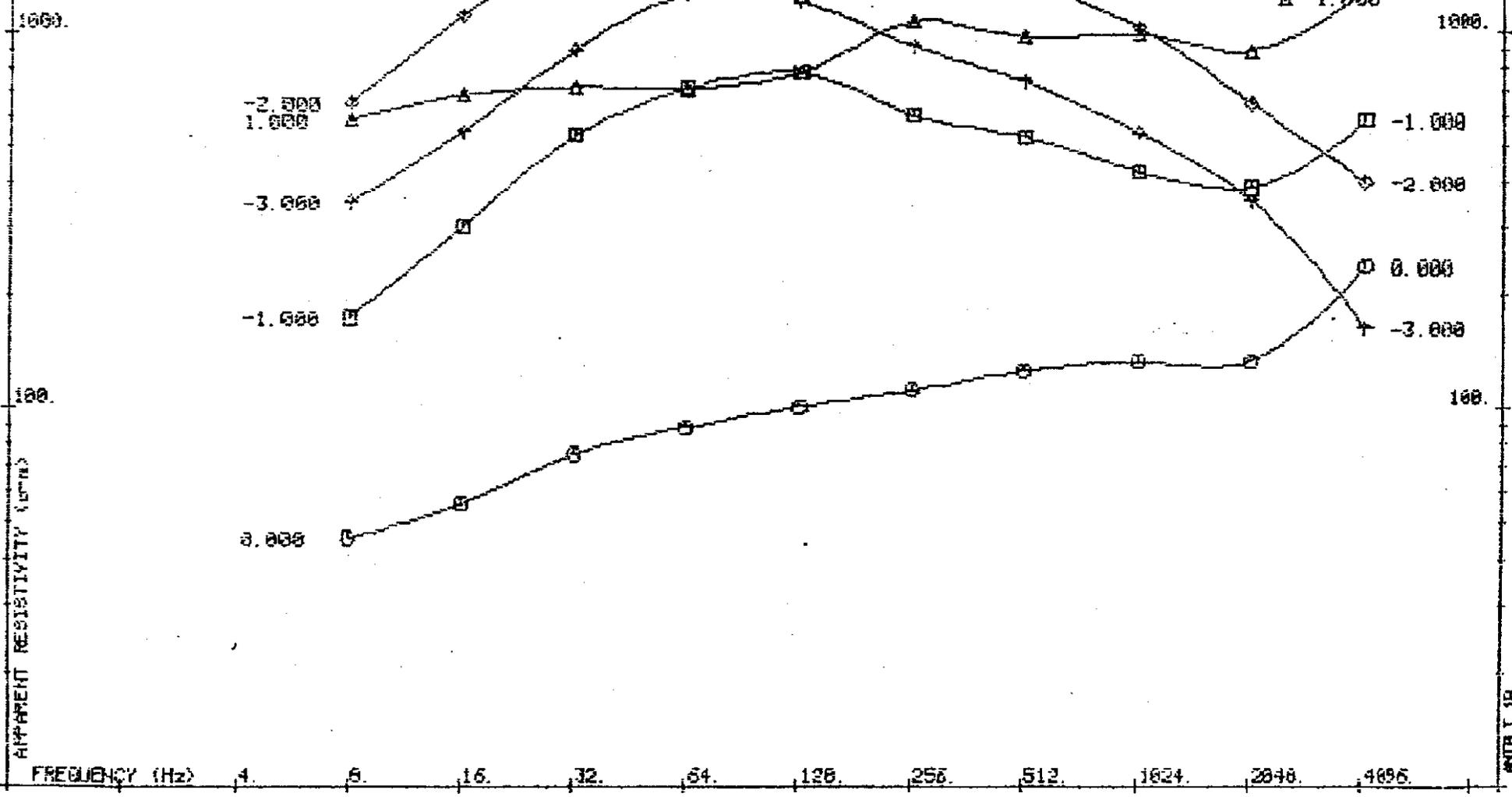
05/10/1966 17 49 Z.E.R.U. USA Howdy : all 01 - 0 100 P.6

FREQUENCY NO. 5 6 7 8 9 10 11 12 13 14 15

# ZONGE ENGINEERING & RESEARCH ORGANIZATION

Marion oak  
JOB: 578 LINE: 1666H

- STATIONS:
- + -3.000
  - \* -2.000
  - -1.000
  - 0.000
  - △ 1.000



023

958025

WPLT 29

01 002 Jan 1588 P.05

10/10/1900 17.50 - E. N. J. - Jan. Monthly Y'

05/10/1900 17.50

FREQUENCY NO.

5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15.

# ZONGE ENGINEERING & RESEARCH ORGANIZATION

Marionook  
JOB: 570 LINE: 1600N

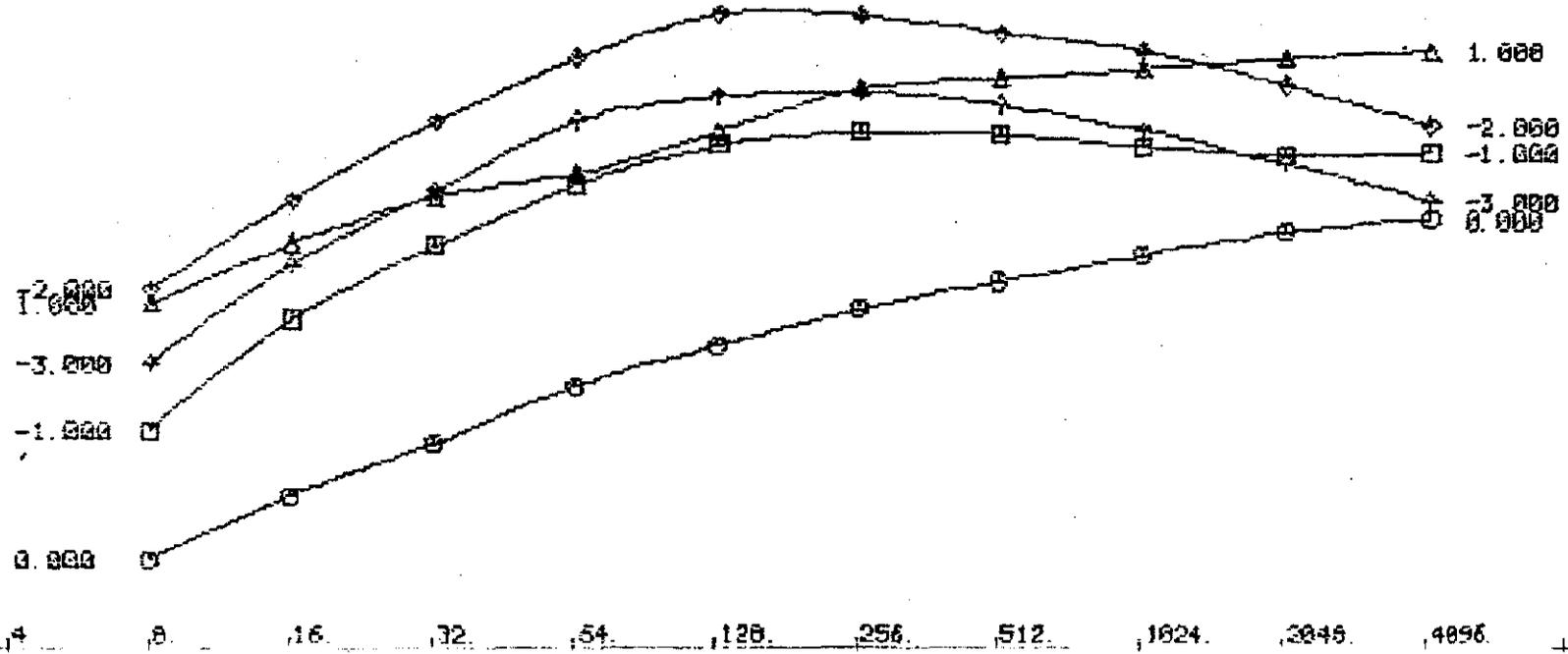
STATIONS:

- ◆ -3.000
- ♠ -2.000
- -1.000
- 0.000
- ▲ 1.000

15.

10.

ELECTRIC FIELD (volts/mg)



FREQUENCY (Hz)

4 8 16 32 54 120 256 512 1024 2048 4096

024.

958026

BT LINE



Marionook

CAGNIARD RESISTIVITY

for ABERFOYLE EXPLORATION

values in ohm-meters <RHO-C>

|       |      |
|-------|------|
| 10493 | 399  |
| 6310  | 251  |
| 3681  | 158  |
| 2512  | 100  |
| 1585  | 62.1 |
| 1020  | 39.0 |
| 631   | 23.5 |

027

ZONE # 578  
PLOT BY OPL0T 31  
PLOTTED 08 NOV 88

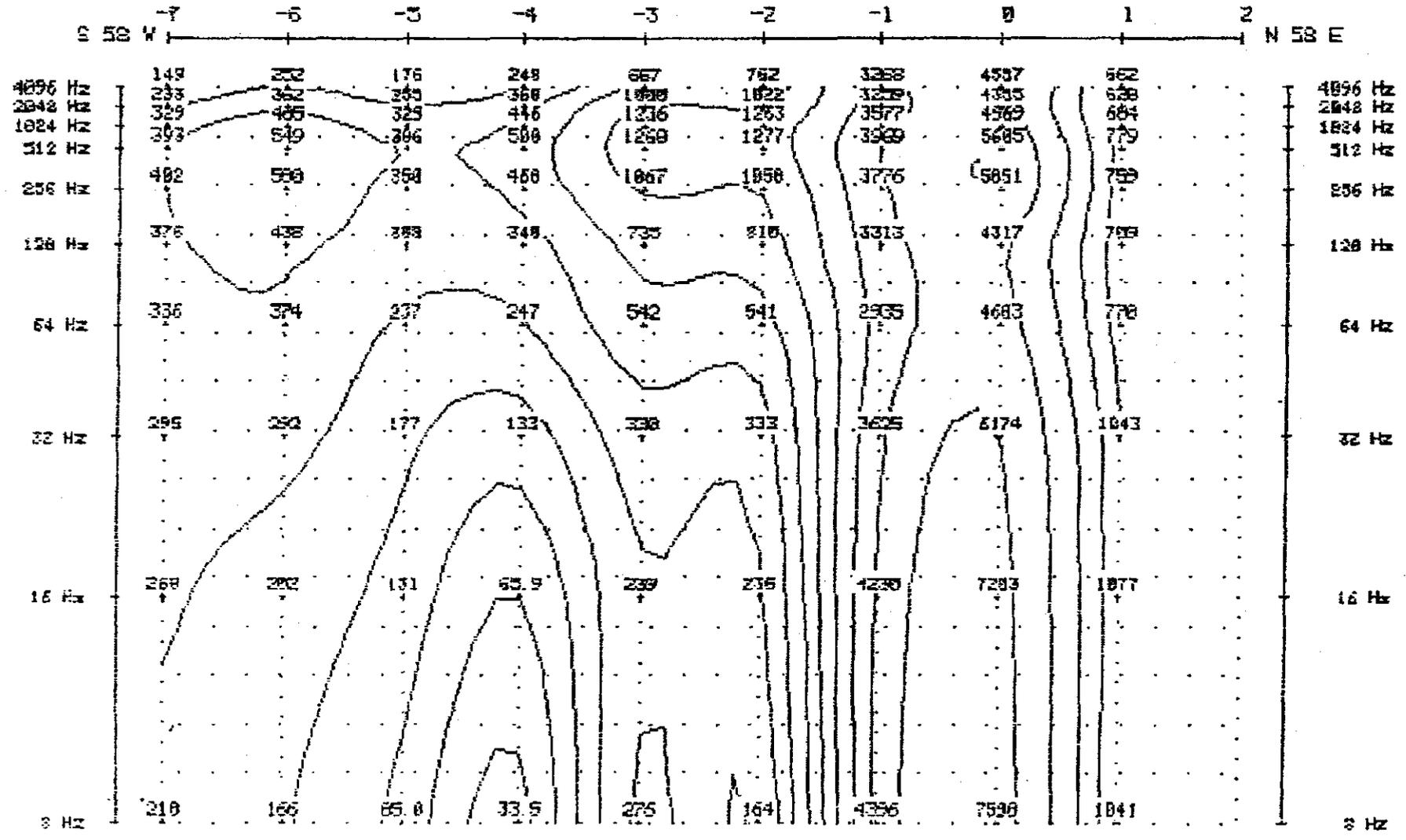
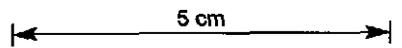
RECEIVER DATA

Length . 100. m Line . N 58 E  
Spacing . 100. m Dipole . N 58 E

TRANSMITTER DATA

Length . 1.3 Km  
Orient . N 85 E  
Distance . 6.8 Km  
Rx to Tx . S-E

Surveyed Feb 88



958028

Line 000  
 Marionak  
 for  
 ABERFOYLE EXPLORATION

CS T R V DATA  
 PHASE DIFFERENCE (E Phase)  
 values in milliradians  
 <PHIFF

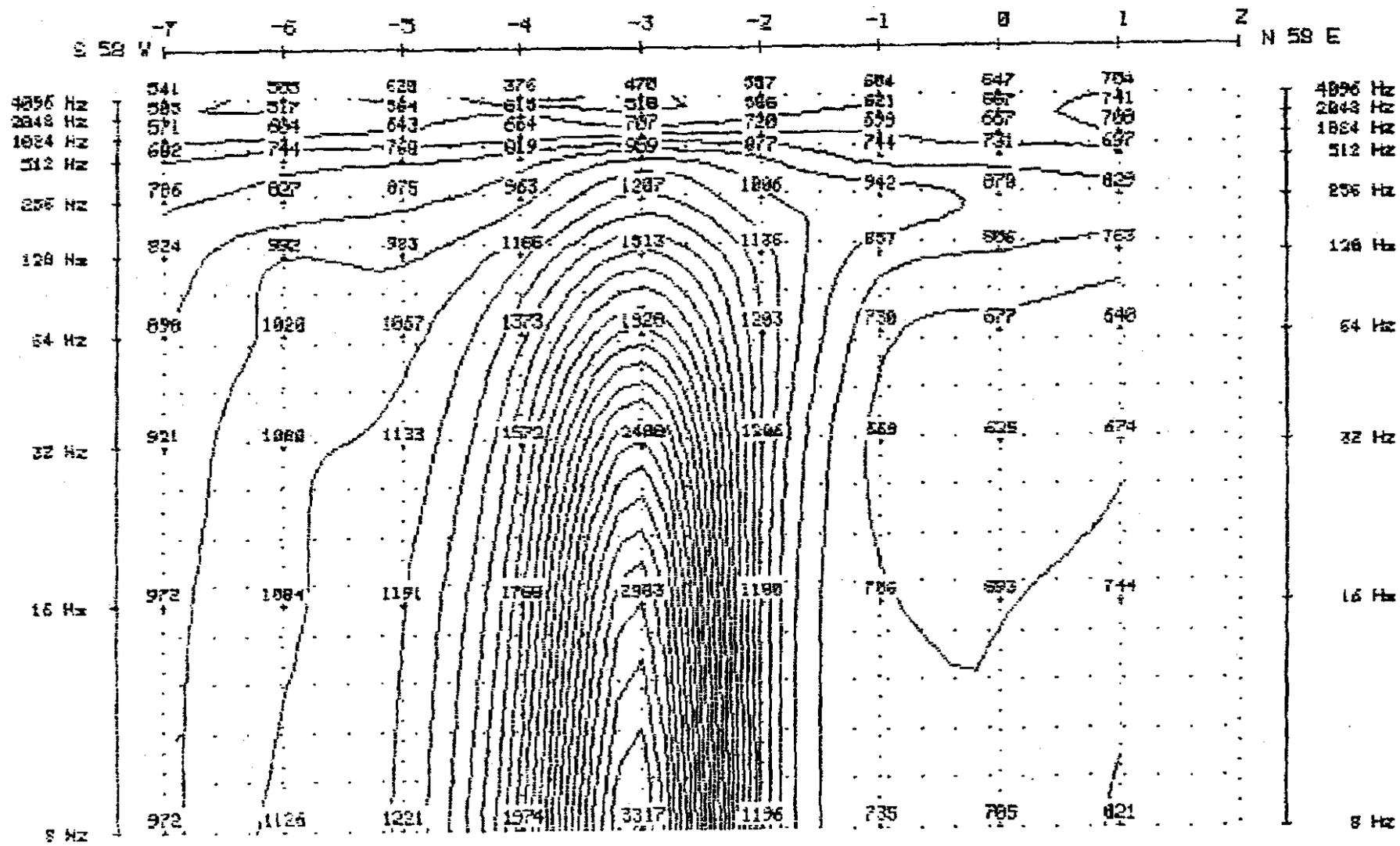
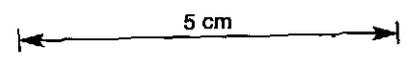
|                  |      |      |
|------------------|------|------|
| Interval: 100.00 | 2300 | 1200 |
|                  | 2200 | 1100 |
|                  | 2100 | 1000 |
|                  | 2000 | 900  |
|                  | 1900 | 800  |
|                  | 1800 | 700  |
|                  | 1700 | 600  |
|                  | 1600 | 500  |
|                  | 1500 | 400  |
|                  | 1400 | 300  |
|                  | 1300 | 200  |

028

ZONE # 576  
 PLOT BY OPL0T 31  
 PLOTTED 29 NOV 55

RECEIVER DATA  
 Length . 100.0 m Line . N 58 E  
 Spacing . 100.0 m Dipole . N 58 E  
 Surveyed . Feb 55

TRANSMITTER DATA  
 Length . 1.3 Km  
 Orient . N 65 E  
 Distance . 6.5 Km  
 Rx to Tx . S-E



958029

Line 0000N  
 Marionook  
 for  
 ABERFOYLE EXPLORATION

CSAMT SURVEY DATA  
 STATIC CORRECTED RESISTIVITY  
 FROM CAGNIARD RESISTIVITY  
 RHO. 250., PHZ. 620., FREQ 15, 4896. 0 Hz

(Plot limited) and LOGARITHMIC CONT  
 ( Interval. 2.28 )

17491  
 631  
 398  
 251  
 158  
 108  
 63.1  
 (46.2)

029

ZONCE 4 578  
 PLOT BY EPL0T 31  
 PLOTTS 21 Jul 85

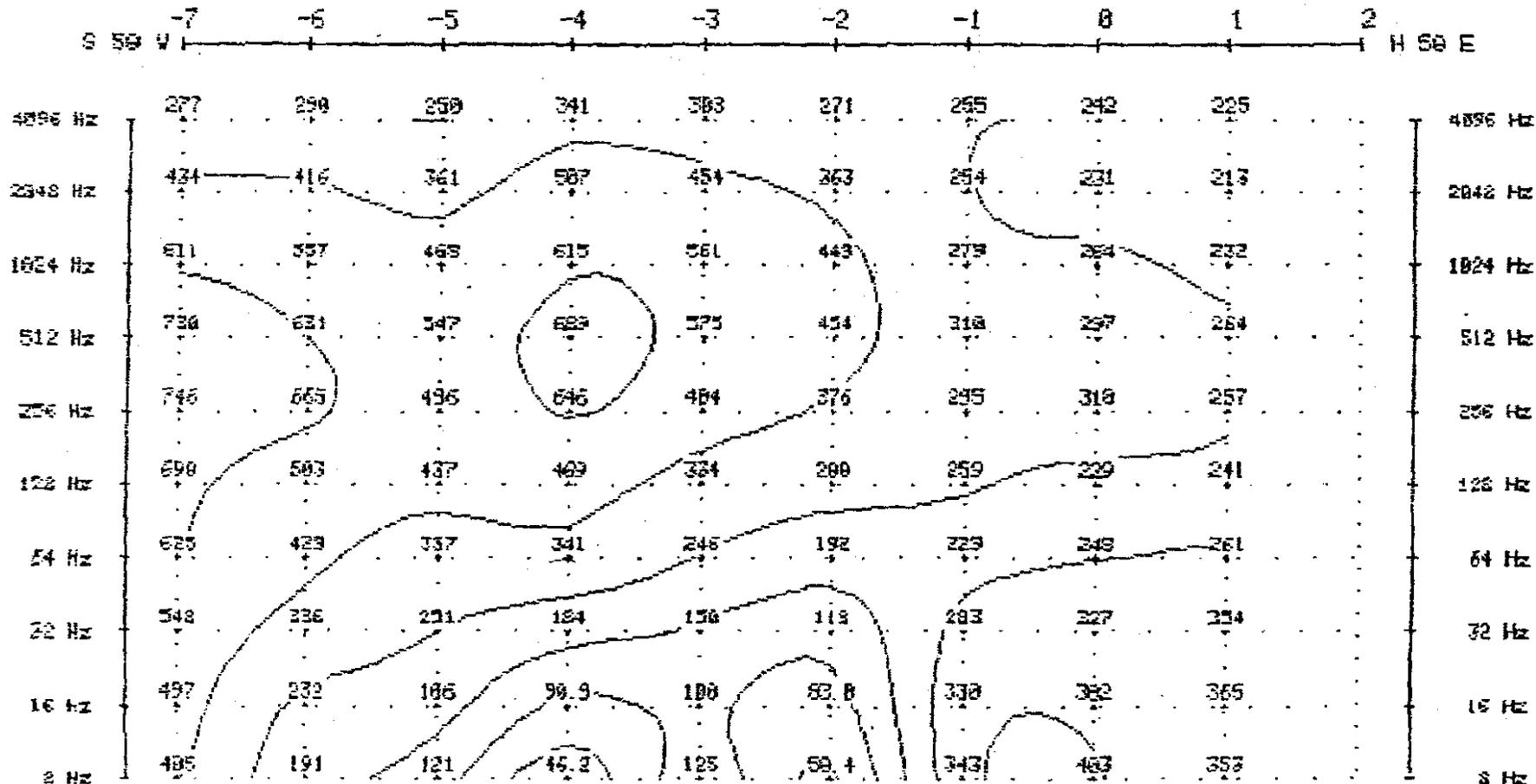
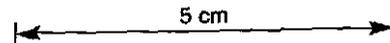
RECEIVER DATA

Length. 100. m Line. N 55 E  
 Spacing. 100. m Dipole. N 55 E

Surveyed. Feb 85

TRANSMITTER DATA

Length. 1.3 Km  
 Orient. N 55 E  
 Distance. 6.3 Km  
 Rx to Tx. S-E



958030

Line 0000N  
 Marionook  
 for  
 ABERFOYLE EXPLORATION

CSAMT SURVEY DATA  
 RESISTIVITY from PHASE  
 USING 4896 HZ PHASE FOR STATIC CORRECTION  
 RHO= 250. REF STA -5

(Plot limits) and LOGARITHMIC CONTOURS  
 ( Interval. 8.20 )

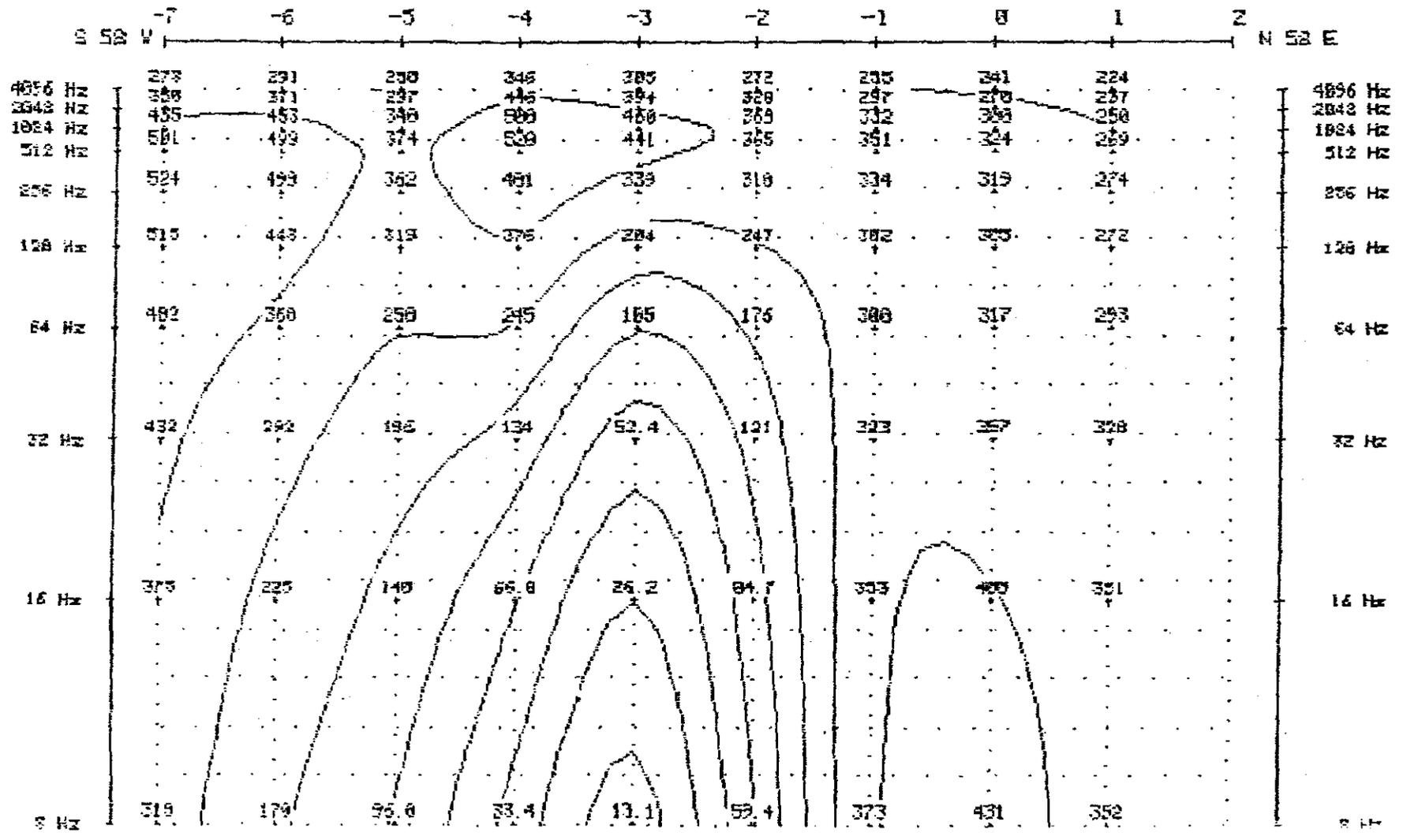
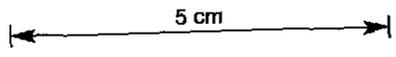
- 527
- 388
- 351
- 198
- 180
- 63.1
- 35.8
- 25.1
- 15.8
- (13.1)

030

ZONE # 578  
 PLOT BY EPLT 31  
 PLOTTED 21 JUL 85

RECEIVER DATA  
 Length . 100.m Line . N 58 E  
 Spacing. 100.m Dipole. N 58 E  
 Surveyed. Feb 85

TRANSMITTER DATA  
 Length . 1.3 Km  
 Orient. . N 65 E  
 Distance. 6.8 Km  
 Rx to Tx. E-E



958031





Line 0000N  
 Marionook  
 for  
 ABERFOYLE EXPLORATION

CSAMT SURVEY DATA  
 RESISTIVITY from PHASE  
 RHO= 250, REF STA= -5, STATIC ADJ BY 4096 HZ

(Plot limited) and LOGARITHMIC CONTOUR  
 (Interval: 0.20)

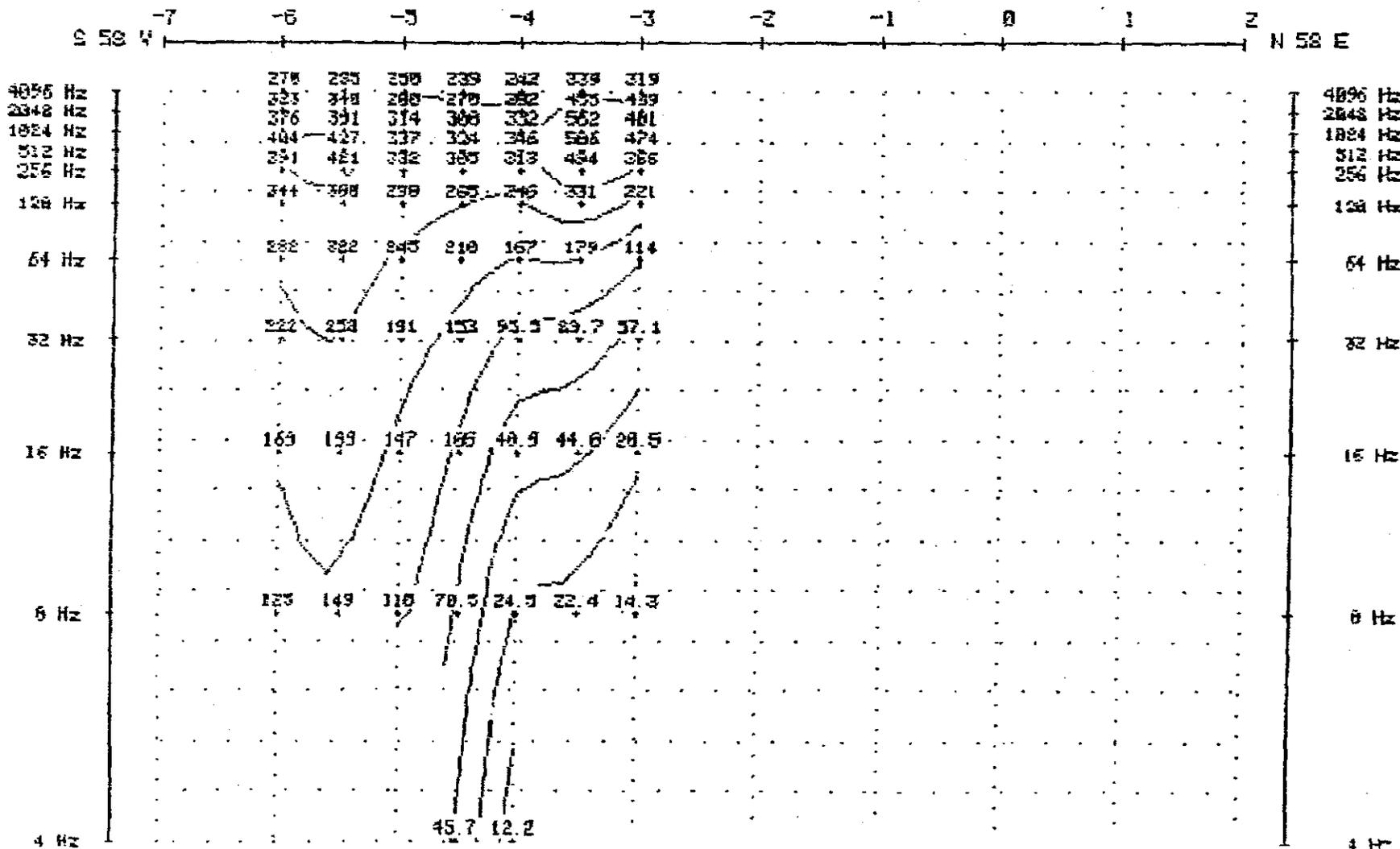
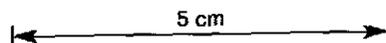
16251  
 398  
 251  
 158  
 100  
 63.1  
 39.8  
 25.1  
 15.8  
 112.21

033

ZENITH # 576  
 PLOT BY CLOYD 34  
 PLOTTED 27 Jul 86

RECEIVER DATA  
 Length . 58.0 m Line N 58 E  
 Spacing. 58.0 m Dipole N 58 E  
 Surveyed. Feb 86

TRANSMITTER DATA  
 Length . 1.3 Km  
 Orient. . N 58 E  
 Distance. 6.8 Km  
 Rx to Tx. S-E



958034

Line 0800N  
 Marionook  
 for  
 ABERFOYLE EXPLORATION

COMMIT SURVEY DATA  
 PHASE DIFFERENCE ( E Phase  
 values in milliradians  
 <PDIFF

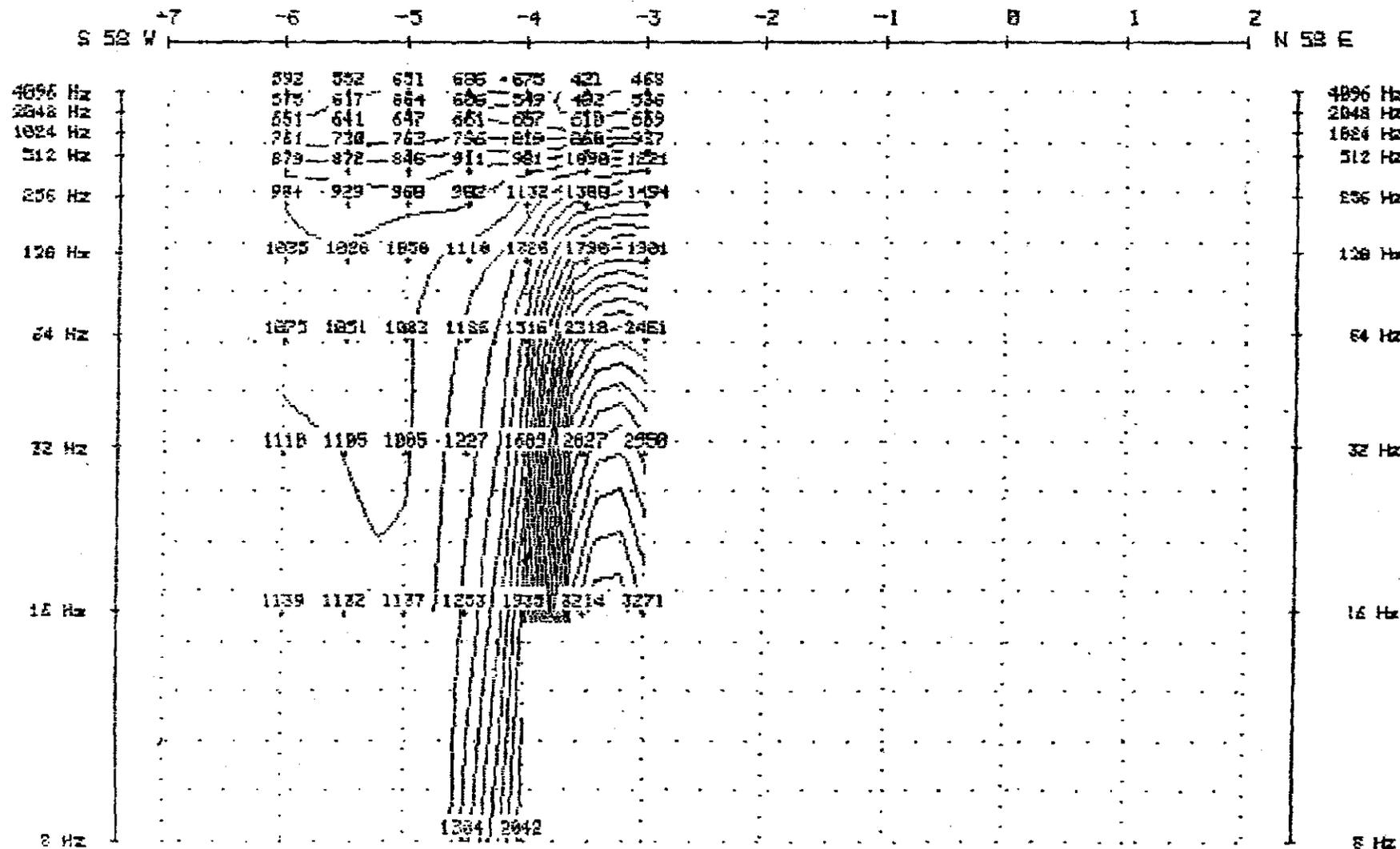
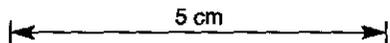
11 117 117  
 ( Interval: 100.00 )

|       |      |     |
|-------|------|-----|
| 13464 | 2400 | 127 |
| 3460  | 2300 | 120 |
| 2360  | 2200 | 110 |
| 3200  | 2100 | 100 |
| 3100  | 2000 | 90  |
| 3000  | 1900 | 80  |
| 2900  | 1800 | 70  |
| 2800  | 1700 | 60  |
| 2700  | 1600 | 50  |
| 2600  | 1500 | 40  |
| 2500  | 1400 | 30  |

ZONCE # 578  
 PLOT BY CPLOT 31  
 PLOTTED ON May 86

RECEIVER DATA  
 Length . 58.0 m Line . N 58 E  
 Spacing . 58.0 m Dipole . N 58 E  
 Surveyed . Feb 86

TRANSMITTER DATA  
 Length . 1.3 Km  
 Orient . N 65 E  
 Distance . 6.8 Km  
 Rx to Tx . S-E



958033

LIP BARRON  
Marionook  
for  
ABERFOYLE EXPLORATION

CSAMT SURVEY DATA  
CAGNIARD RESISTIVITY

Plot 1 (1st) and LOGARITHMIC CONF  
K 1.3 20 2

values in ohm-meters  
<RHO-C

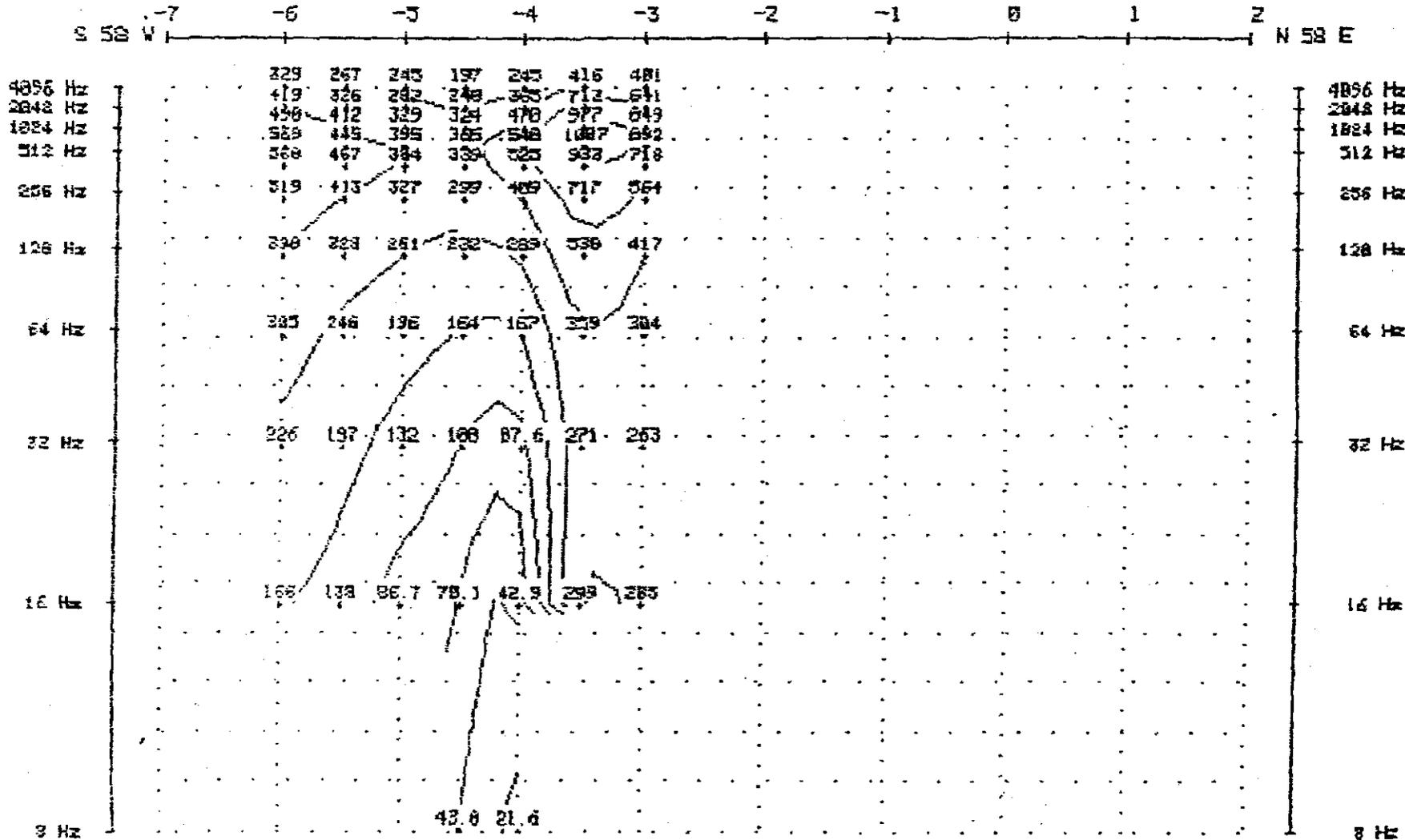
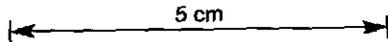
(1175)  
1000  
531  
390  
251  
150  
100  
53.1  
39.0  
25.1  
121.0

035

ZONE # 578  
PLOT BY OPLDT 31  
PLOTTED 03 Nov 86

RECEIVER DATA  
Length . 50.0 m Line . N 50 E  
Spacing . 50.0 m Dipole . N 50 E  
Surveyed . Feb 86

TRANSMITTER DATA  
Length . 1.3 Km  
Orient . N 50 E  
Distance . 6.3 Km  
Rx to Tx . S-E



958036

Line 0800N  
Marionook  
for  
ABERFOYLE EXPLORATION

CSAMT SURVEY DATA  
CAGNIARD RESISTIVITY

Plot Interval and LOGARITHMIC CONTOURS  
( Interval: 0.20 )

values in ohmmeters  
<RHO-C>

10.0K 431.  
5310 360.  
3961 251.  
2512 150.  
1585 100.  
1000 69.42

036

RECEIVER DATA

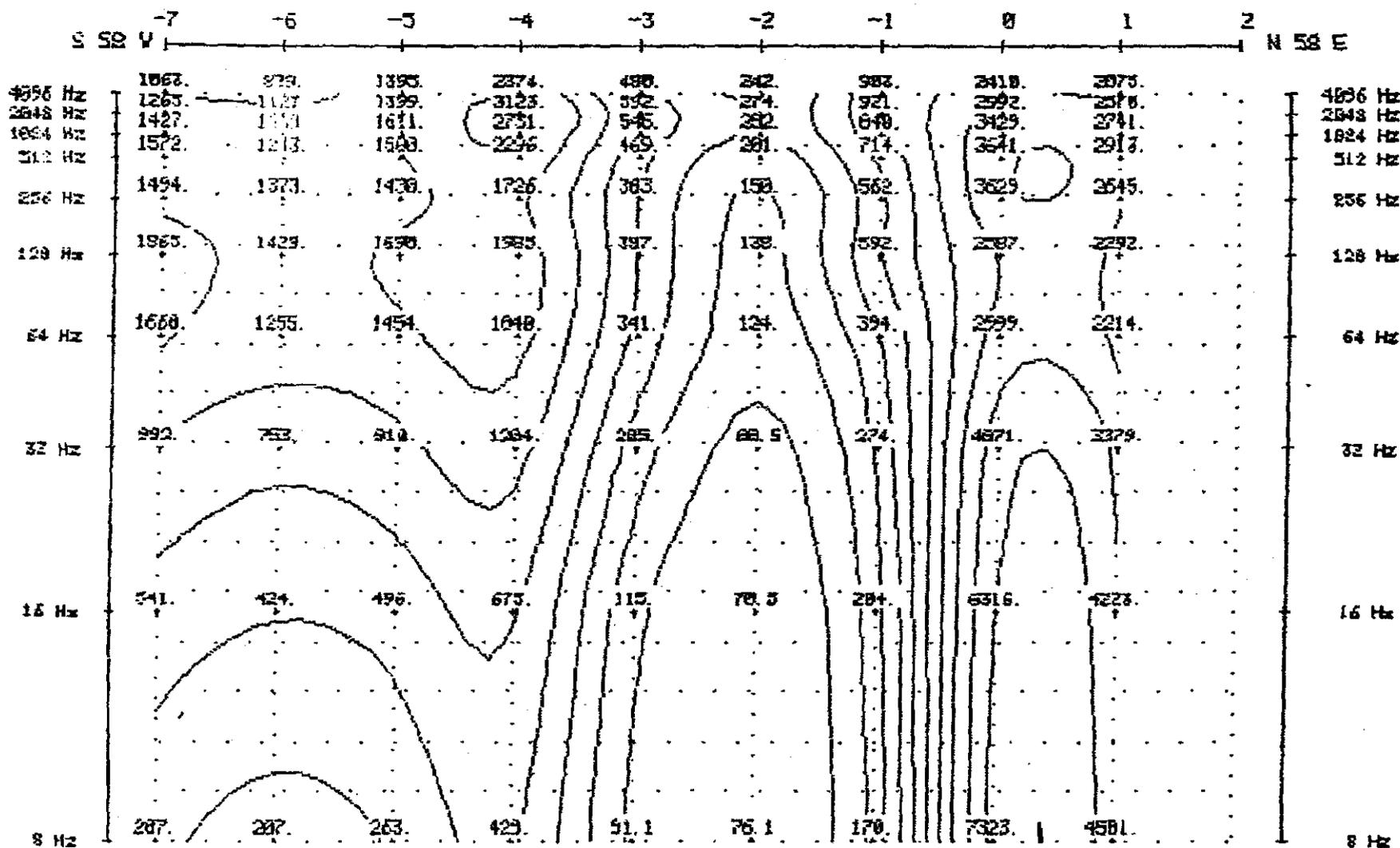
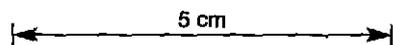
Length . 100.m Line . N 58 E  
Spacing . 100.m Dipole . N 58 E

TRANSMITTER DATA

Length . 1.3 Km  
Orient . N 63 E  
Distance . 7.6 Km  
Rx to Tx . S-E

Surveyed Feb 85

TRACE # 578  
PLOT # 1  
PLOTTER OR NOV 85



05/10/1986 17 55 Z E R O USA Handy Y'all 01 542 325 1588 0.13

958037

05/10/1986 17:55 C.I.E.R. USA Howdy Y'all 01 602 325 1588 P.14

# Line 0800N Marionook for ABERFOYLE EXPLORATION

## CSAMT SURVEY DATA PHASE DIFFERENCE ( ~~E Phase~~ -H ) values in milliradians <PDIFF

Plot Interval and ARITHMETIC CONTOURS  
( Interval: 100.00 )

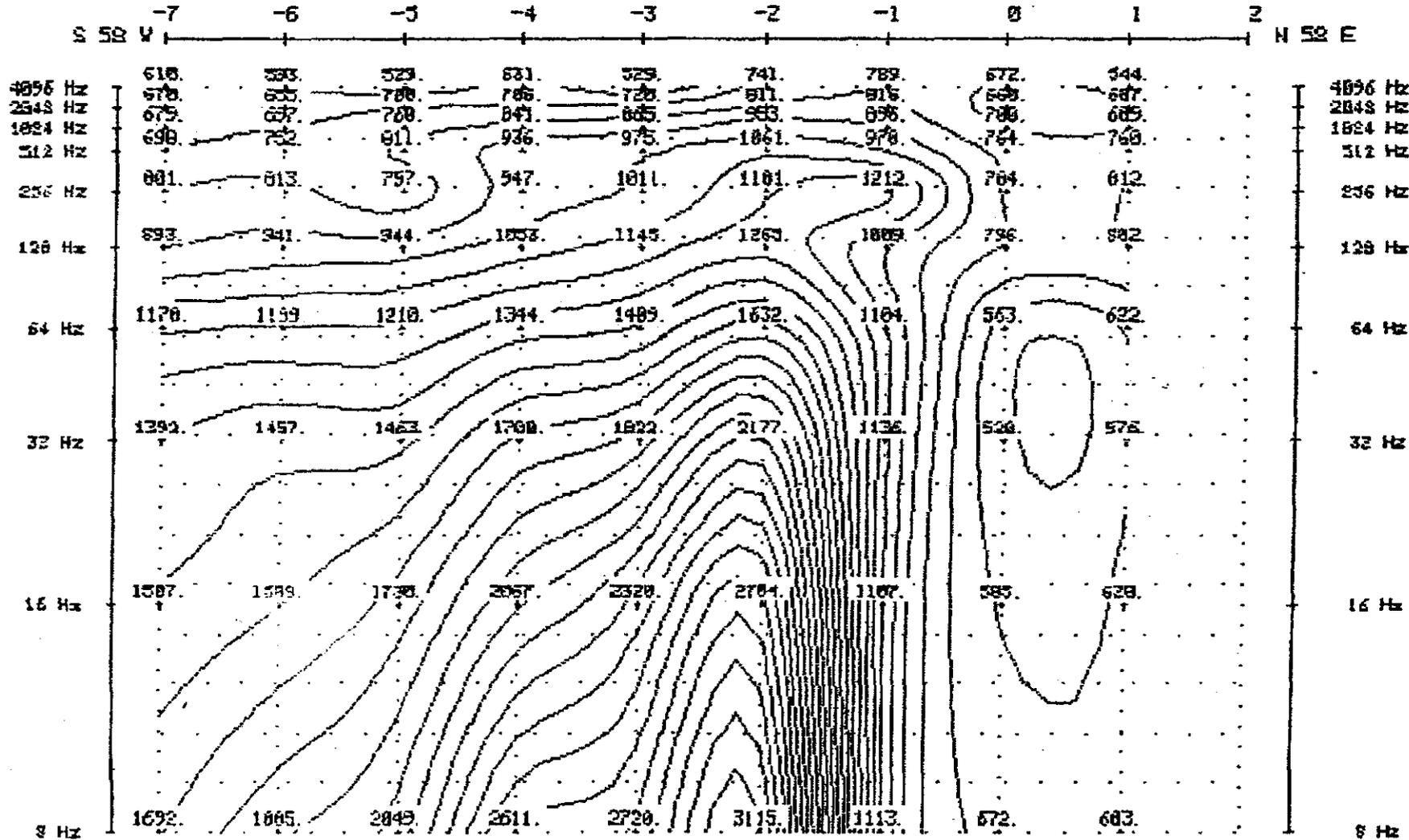
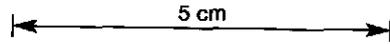
|        |       |       |
|--------|-------|-------|
| 3189.1 | 2200. | 1200. |
| 3100.  | 2100. | 1100. |
| 3000.  | 2000. | 1000. |
| 2900.  | 1900. | 900.  |
| 2800.  | 1800. | 800.  |
| 2700.  | 1700. | 700.  |
| 2600.  | 1600. | 600.  |
| 2500.  | 1500. | 500.  |
| 2400.  | 1400. | 400.0 |
| 2300.  | 1300. |       |

037

ZONCE # 578  
PLOT BY CPLOT J4  
PLOTTED 09 NOV 95

RECEIVER DATA  
Length . 100. m Line . N 38 E  
Spacing. 100. m Dipole. N 38 E  
Surveyed. Feb 85

TRANSMITTER DATA  
Length . 1.3 Km  
Orient. . N 83 E  
Distance. 7.6 Km  
Rx to Tx. S-E



958035

07/27/1986 17:26 Z.E.R.O. USA Howdy Y'all 01 602 325 1588 P.10

Line 0800N  
 Marionook  
 for  
 ABERFOYLE EXPLORATION

CSAMT SURVEY DATA  
 RESISTIVITY from PHASE  
 USING 4096 HZ FOR STATIC ADJUSTMENT  
 RHO= 500. REF STA = -6

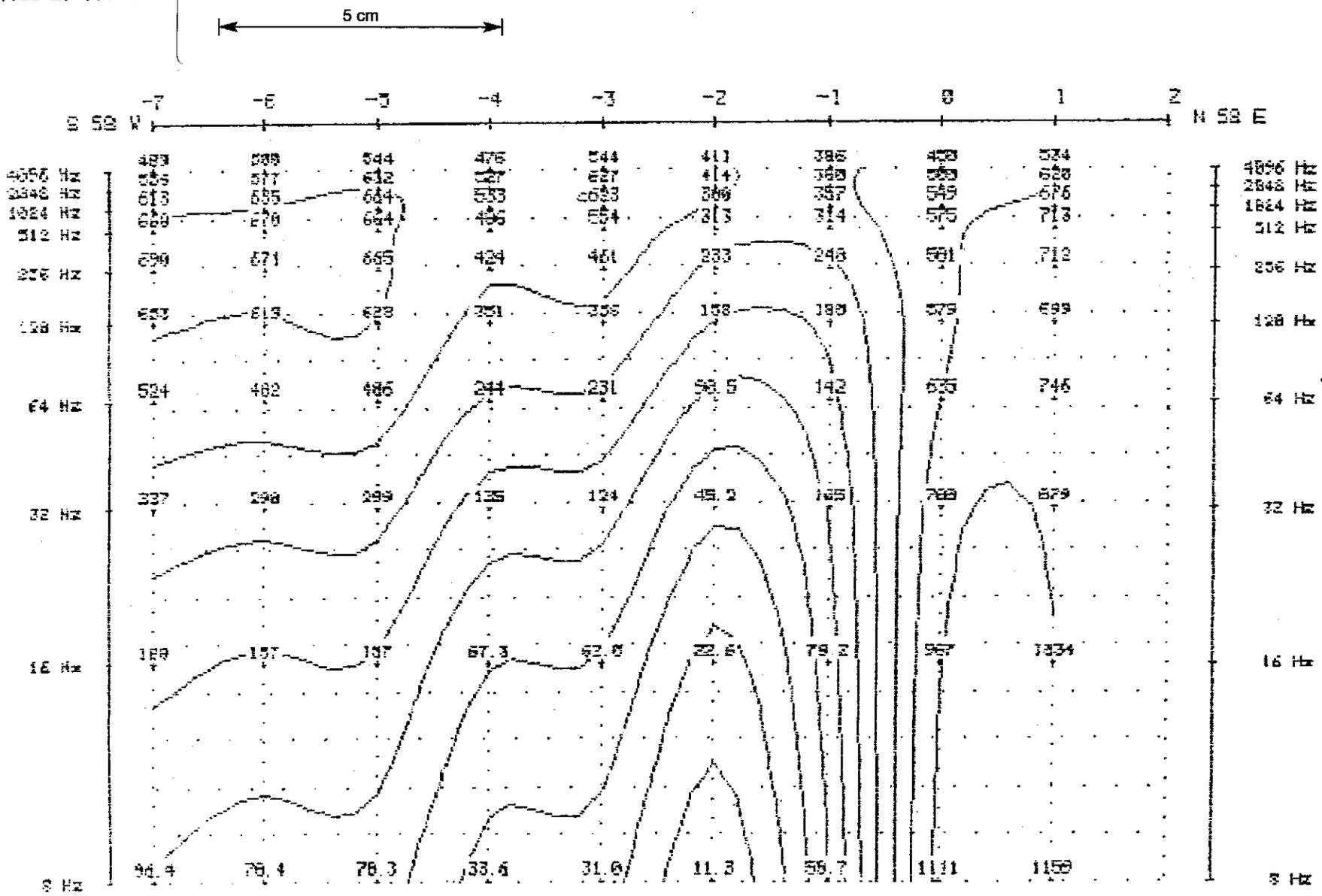
|          |      |      |
|----------|------|------|
| Interval | 2.28 | 160  |
|          |      | 23.1 |
|          |      | 35.6 |
|          |      | 25.1 |
|          |      | 15.6 |
|          |      | 11.3 |

ZONE 4 078  
 PLOT BY CLOY 51  
 PLOTTED 23 Jul 86

RECEIVER DATA  
 Length: 100.0 m Line: N 53 E  
 Spacing: 100.0 m Dipole: N 53 E  
 Surveyed: Feb 86

TRANSMITTER DATA  
 Length: 1.3 Km  
 Orient.: N 53 E  
 Distance: 7.8 Km  
 Rx to Tx: S-E

038



958039



Line 00  
 Marionook  
 for  
 ABERFOYLE EXPLORATION

PHASE DIFFERENCE (E - H)  
 VALUES IN MILLIRADIANS  
 < PDIFF

| Dist               | to   | AR | IC | DURE |
|--------------------|------|----|----|------|
| (Interval: 100.00) |      |    |    |      |
| 3500               | 2500 |    |    | 1400 |
| 3500               | 2400 |    |    | 1300 |
| 3400               | 2300 |    |    | 1200 |
| 3300               | 2200 |    |    | 1100 |
| 3200               | 2100 |    |    | 1000 |
| 3100               | 2000 |    |    | 900  |
| 3000               | 1900 |    |    | 800  |
| 2900               | 1800 |    |    | 700  |
| 2800               | 1700 |    |    | 600  |
| 2700               | 1600 |    |    | 500  |
| 2600               | 1500 |    |    | 400  |

RECEIVER DATA

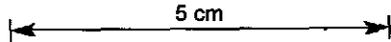
Length . 58.8 Line . N 58 E  
 Spacing. 58.8 Dipole. N 58 E

Surveyed. Feb 85

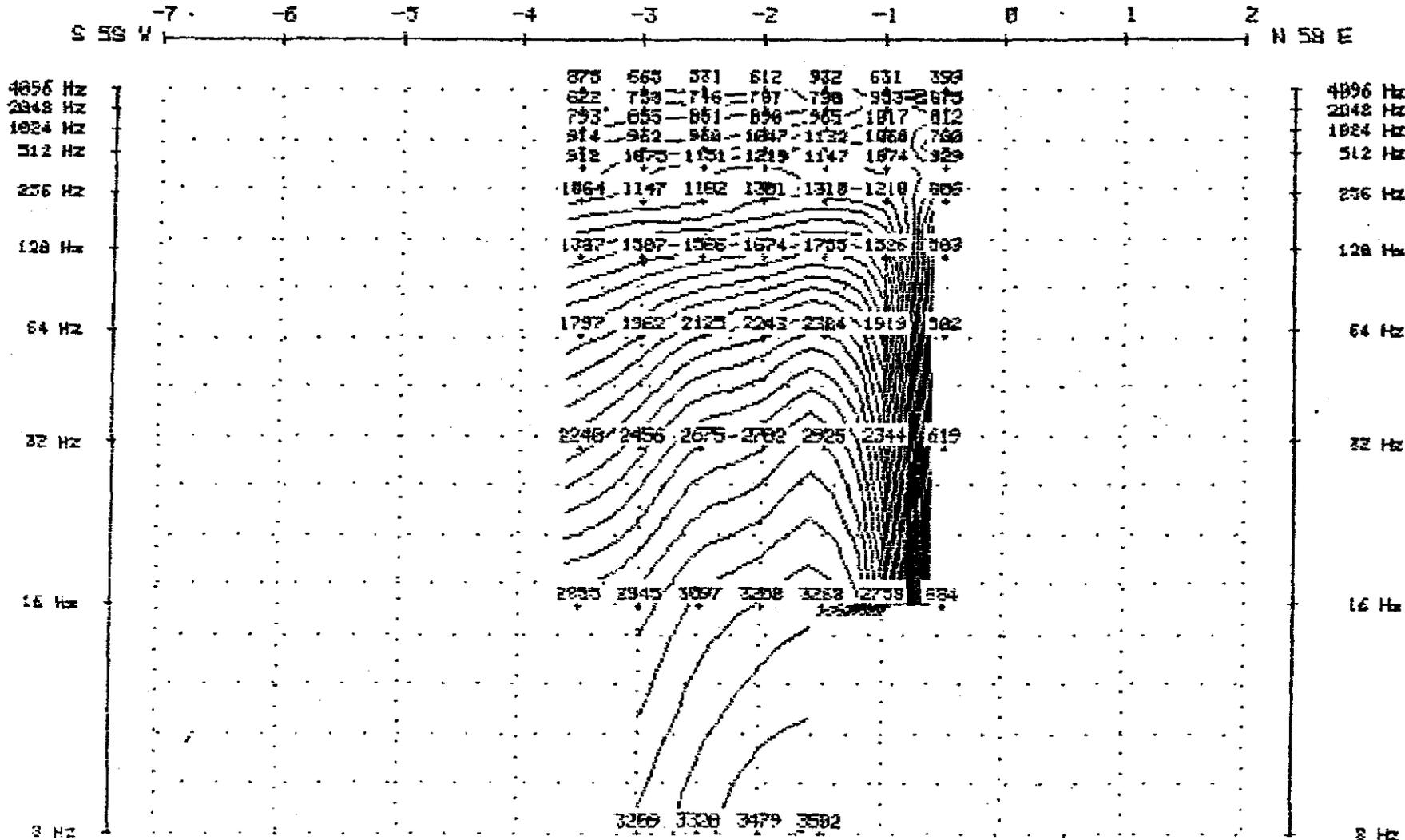
TRANSMITTER DATA

Length . 1.3 Km  
 Orient. . N 63 E  
 Distance. 7.6 Km  
 Rx to Tx. S-E

ZONCE # 578  
 PLOT BY C/PLOT 31  
 PLOTTED 10 May 85



040



958041

Line 0800N  
Marionook  
for  
ABERFOYLE EXPLORATION

CSAMT SURVEY DATA  
RESISTIVITY from PHASE

USING 4896 HZ FOR STATIC ADJUSTMENT  
RHO= 544. REF STA= -3

(Plot limits) and LOGARITHMIC CONTOURS  
( Interval. 0.20 )

|      |        |
|------|--------|
| 1542 | 63.1   |
| 1800 | 29.8   |
| 631  | 25.1   |
| 398  | 15.8   |
| 251  | 18.0   |
| 158  | 8.31   |
| 100  | 04.543 |

041

ZONE # 578  
PLOT BY CLOT 34  
PLOTTED 27 Jul 85

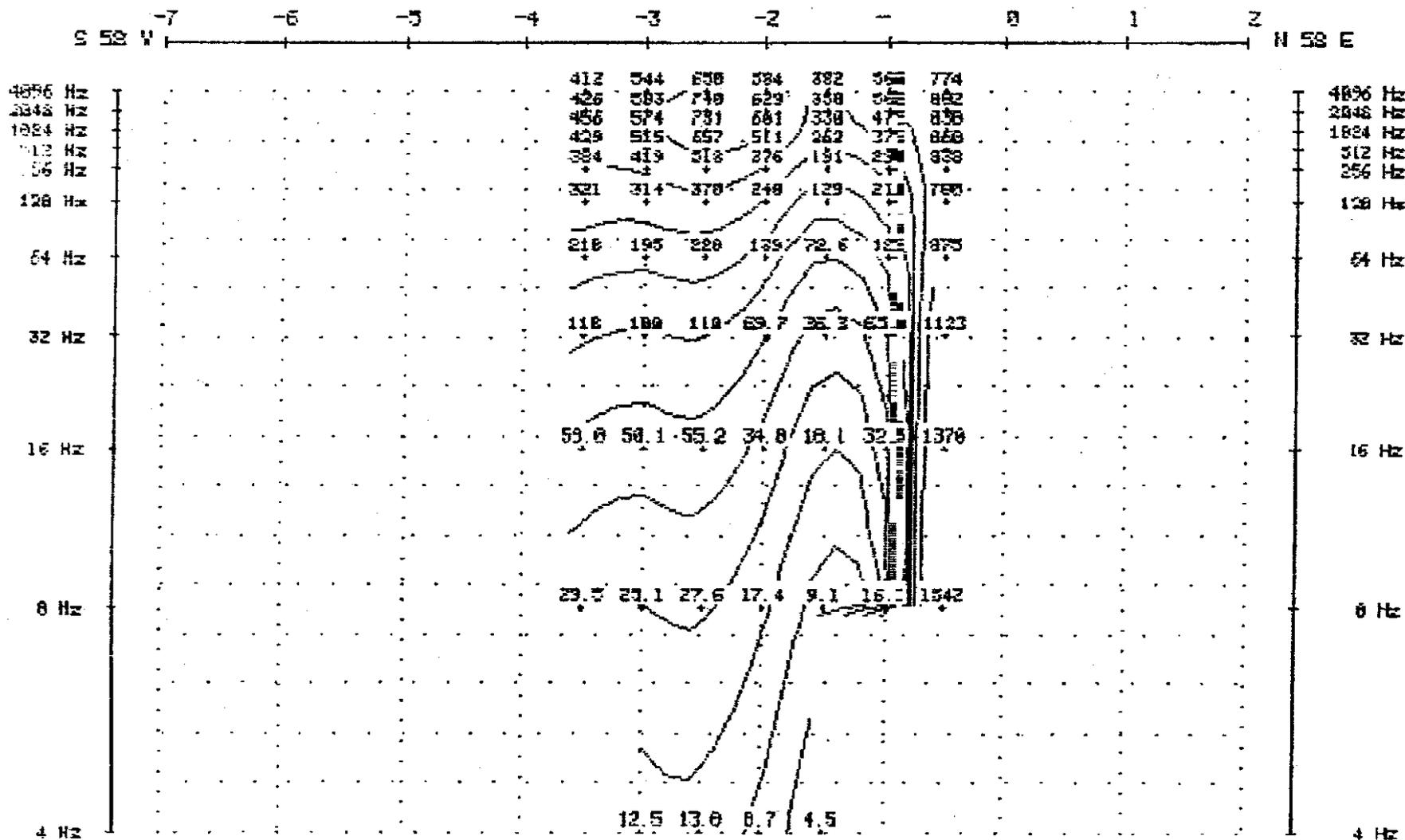
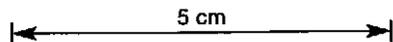
RECEIVER DATA

Length . 30.0 m Line . N 38 E  
Spacing. 30.0 m Dipole. N 38 E

Surveyed. Feb 85

TRANSMITTER DATA

Length . 1.3 Km  
Orient. . N 65 E  
Distance. 7.6 Km  
Rx to Tx. S-E



958042

Line 0800N  
 Marionak  
 for  
 ABERFOYLE EXPLORATION

CSAMT SURVEY DATA  
 RESISTIVITY from PHASE  
 DEPTH FROM BOSTICK DEPTH  
 RHO= 544. REF STA= -3. STATIC ADJ BY 4896 HZ

(Plot listed and LOGARITHMIC CONTRAS  
 ( Interval, 2.26 )

|      |      |
|------|------|
| 6833 | 39.8 |
| 631  | 25.1 |
| 396  | 15.8 |
| 251  | 10.0 |
| 158  | 6.21 |
| 100  | 4.54 |
| 63.1 |      |

PLICE # 578  
 PLOT BY OPL0T 31  
 PLOTTED 27 Jul 95

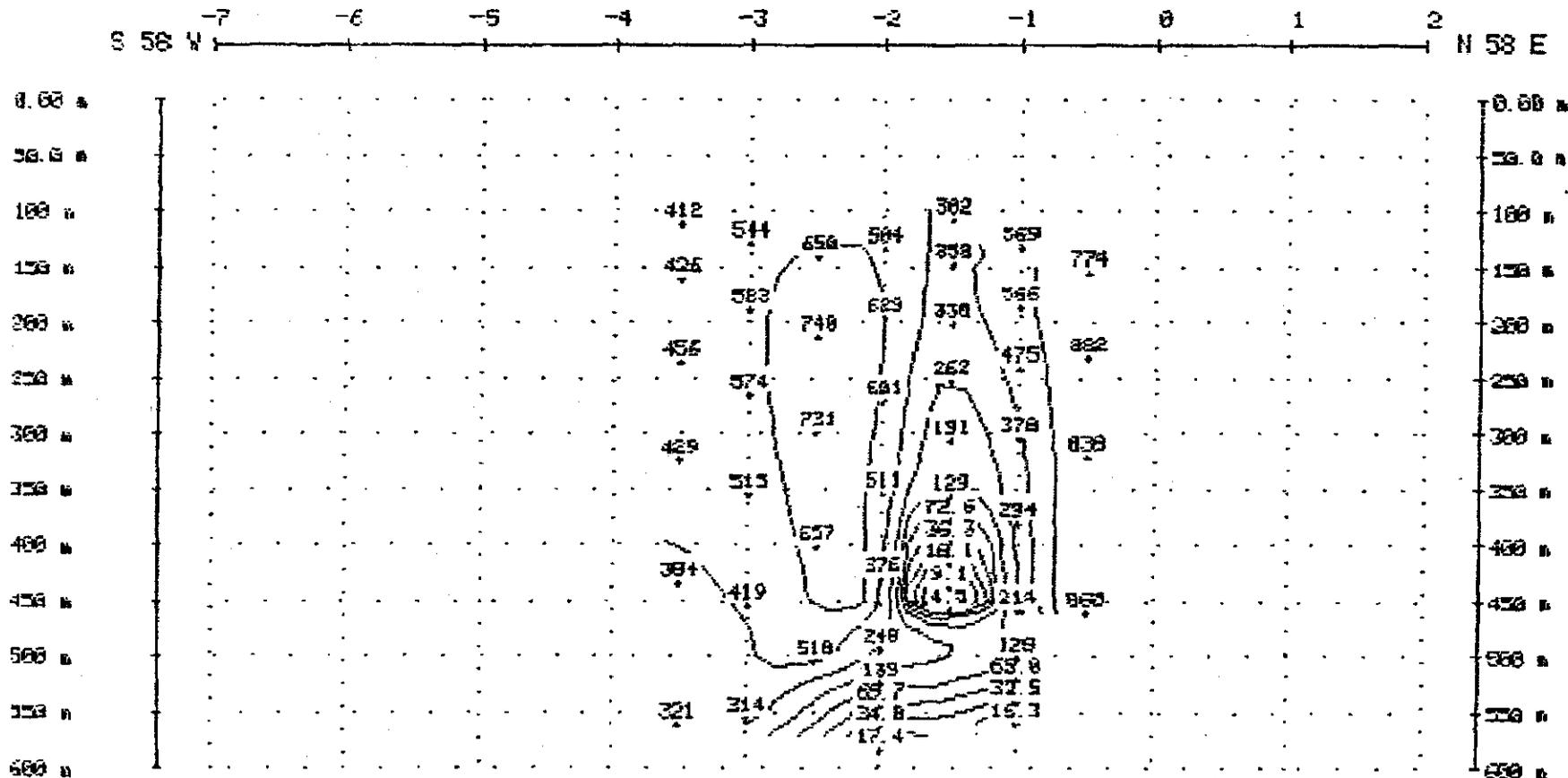
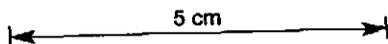
RECEIVER DATA

Length . 58.0 Line . N 58 E  
 Spacing. 58.0 Dipole. N 58 E

Surveyed. Feb 95

TRANSMITTER DATA

Length . 1.3 Km  
 Orient. . N 58 E  
 Distance. 7.6 Km  
 Rx to Tx. S-E



042

958043

# CAGNIARD RESISTIVITY

## Marionook for ABERFOYLE EXPLORATION

values in ohm-meters  
<RHO-C

|       |        |
|-------|--------|
| 44961 | 398    |
| 3681  | 251    |
| 2612  | 158    |
| 1585  | 188    |
| 1000  | 63.1   |
| 631   | 154.31 |

### RECEIVER DATA

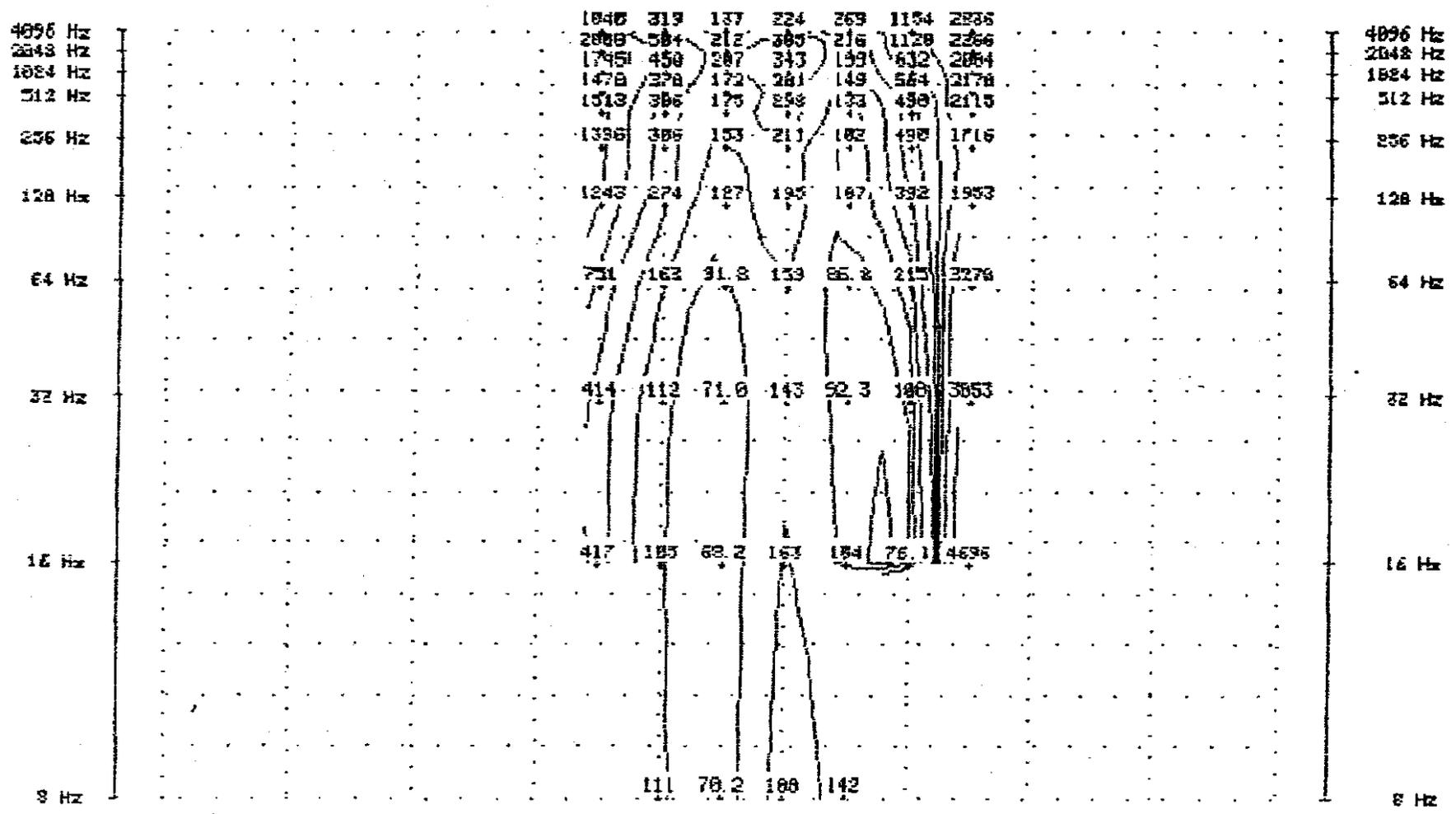
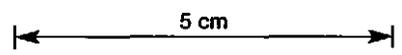
Length: 58.8 m Line: N 58 E  
Spacing: 58.8 m Dipole: N 58 E

### TRANSMITTER DATA

Length: 1.3 Km  
Orient.: N 65 E  
Distance: 7.6 Km  
Rx to Tx: S-E

Surveyed Feb 65

ZONE # 578  
PLOT BY C/LOT 34  
PLOTTED 10 MAY 65



043

958044

Line 1200N  
 Marionook  
 for  
 ABERFOYLE EXPLORATION

CSAMT SURVEY DATA  
 CAGNIARD RESISTIVITY

Plot limits and LOGARITHMIC CONTOURS  
 (Interval: 0.20)

values in ohmmeters  
 (RHO-C)

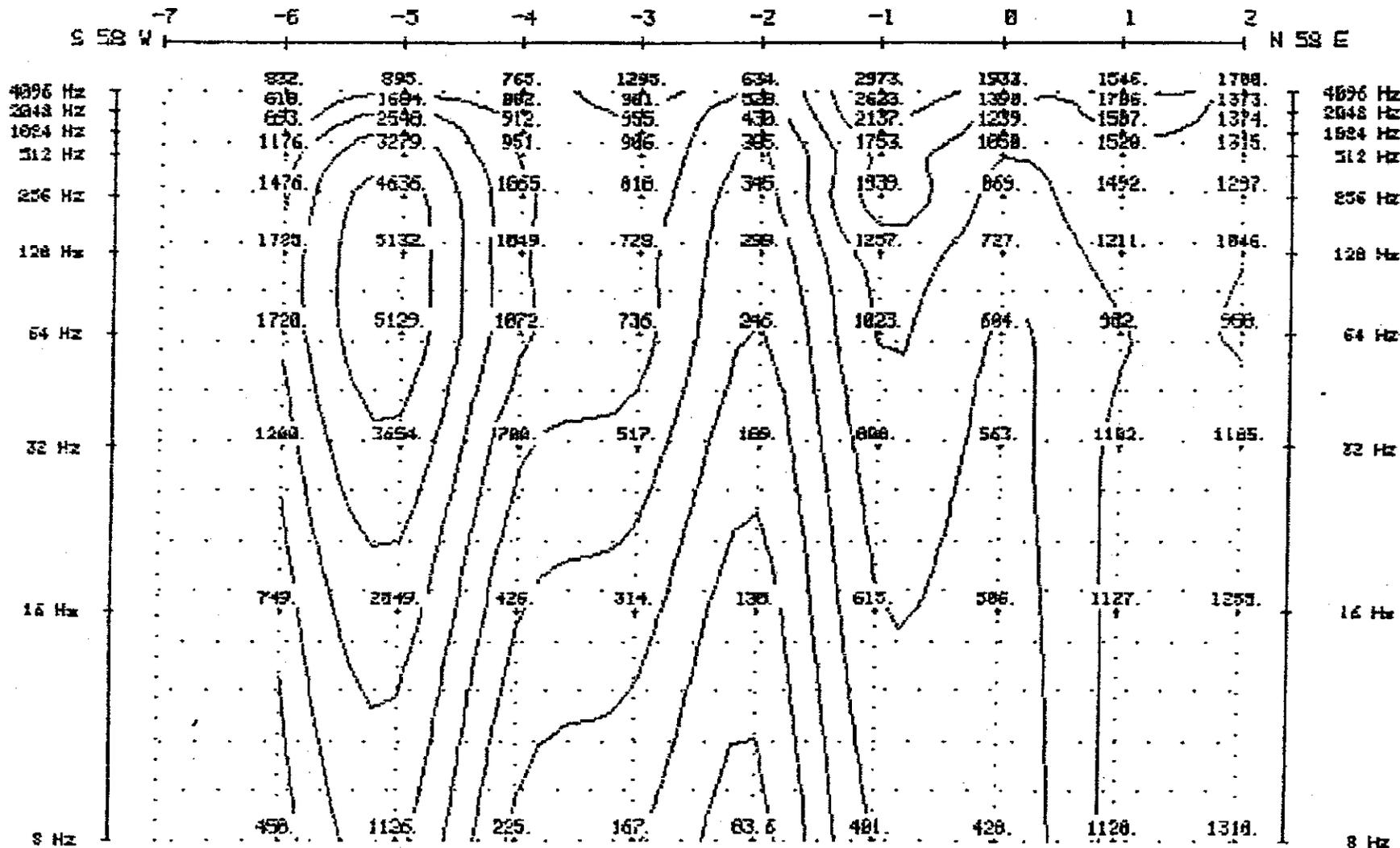
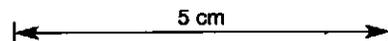
- 15285.1
- 3981.
- 3512.
- 1585.
- 1608.
- 631.
- 398.
- 251.
- 158.
- 102.
- 183.51

04A

ZONE # 578  
 PLOT BY CPLD 31  
 PLOTTED 18 NOV 98

RECEIVER DATA  
 Length . 180. m Line . N 58 E  
 Spacing . 180. m Dipole . N 58 E  
 Surveyed . Feb 98

TRANSMITTER DATA  
 Length . 1.3 Km  
 Orient . N 63 E  
 Distance . 8.0 Km  
 Rx to Tx . S-E



958045

Line 1200N  
Marionook  
for  
ABERFOYLE EXPLORATION

CSAMT SURVEY DATA  
PHASE DIFFERENCE ( E - H )  
values in milliradians  
<PDIFF

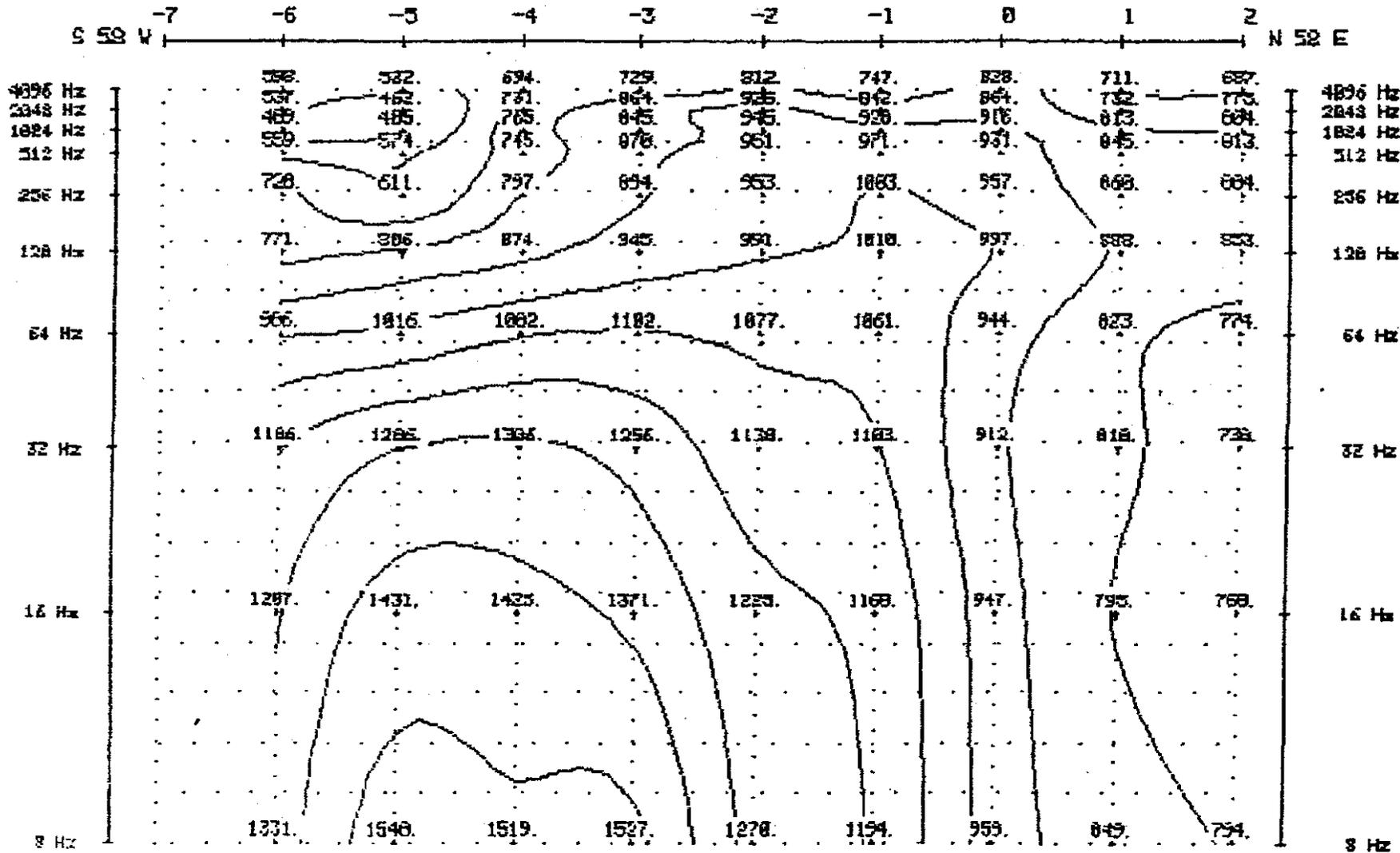
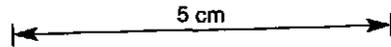
Plot limits and ARITHMETIC CONTOURS  
( Interval, 100.00 )

|        |       |
|--------|-------|
| 1553.1 | 900.  |
| 1500.  | 800.  |
| 1400.  | 700.  |
| 1300.  | 600.  |
| 1200.  | 500.  |
| 1100.  | 400.  |
| 1000.  | 300.  |
|        | 200.  |
|        | 100.  |
|        | 0.    |
|        | -100. |
|        | -200. |
|        | -300. |
|        | -400. |
|        | -500. |
|        | -600. |
|        | -700. |
|        | -800. |
|        | -900. |

ZONCE # 578  
PLOT BY G.PLOT 31  
PLOTED 10 MAY 66

RECEIVER DATA  
Length . 100.0 Line . N 50 E  
Spacing . 100.0 Dipole . N 50 E  
Surveiled For 05

TRANSMITTER DATA  
Length . 1.3 Km  
Orient . N 65 E  
Distance . 9.0 Km  
Rx to Tx . S-E



045

958046

Line 1200N  
 Marionook  
 for  
 ABERFOYLE EXPLORATION

CSAMT SURVEY DATA  
 RESISTIVITY from PHASE

Plot [1200N] and LOGARITHMIC CONTOURS  
 ( Interval: 8.26 )

RHO= 1000, REF STA= -3.0, STATIC ADJ BY 4096 HZ  
 <RHO-C>PHZRHO

07451  
 2512  
 1585  
 1808  
 631  
 398  
 251  
 158  
 11391

ZONE # 578  
 PLOT BY CPlot 31  
 PLOTTED 27 Jul 95

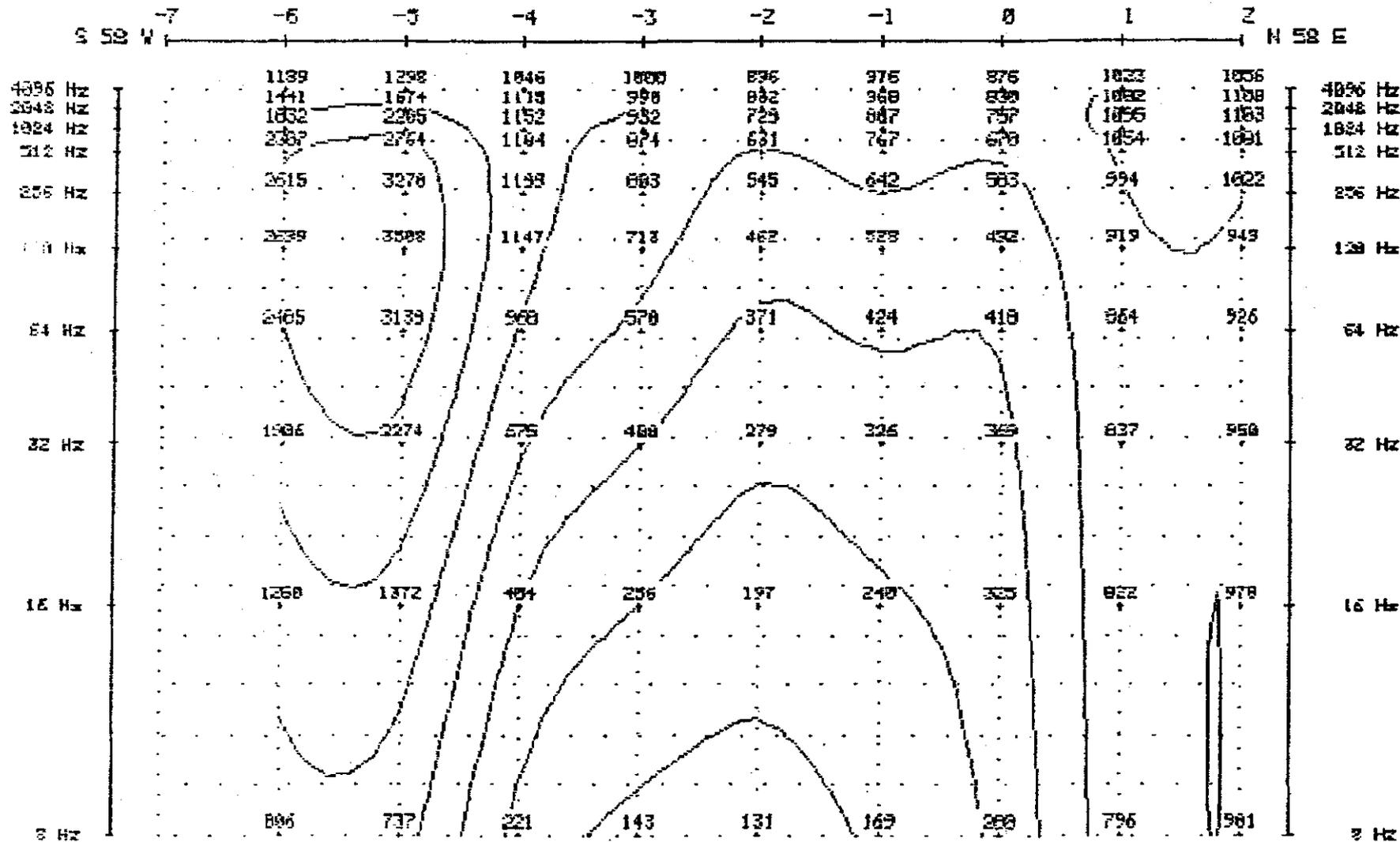
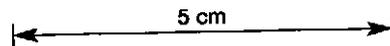
RECEIVER DATA

Length . 188.0 m Line . N 58 E  
 Spacing . 188.0 m Dipole . N 58 E

Surveyed. Feb 95

TRANSMITTER DATA

Length . 1.3 Km  
 Orient . N 65 E  
 Distance . 8.0 Km  
 Rx to Tx . S-E



046

958047

Line 1200N  
 Marionook  
 for  
 ABERFOYLE EXPLORATION

CSAMT SURVEY DATA  
 RESISTIVITY from PHASE

Plot listed and LOGARITHMIC CONTOURS  
 ( Interval, 0.20 )

DEPTH FROM BOGICK DEPTH  
 RHO= 1000. RE STA= -3.0. STATIC ADJ BY 4096 HZ

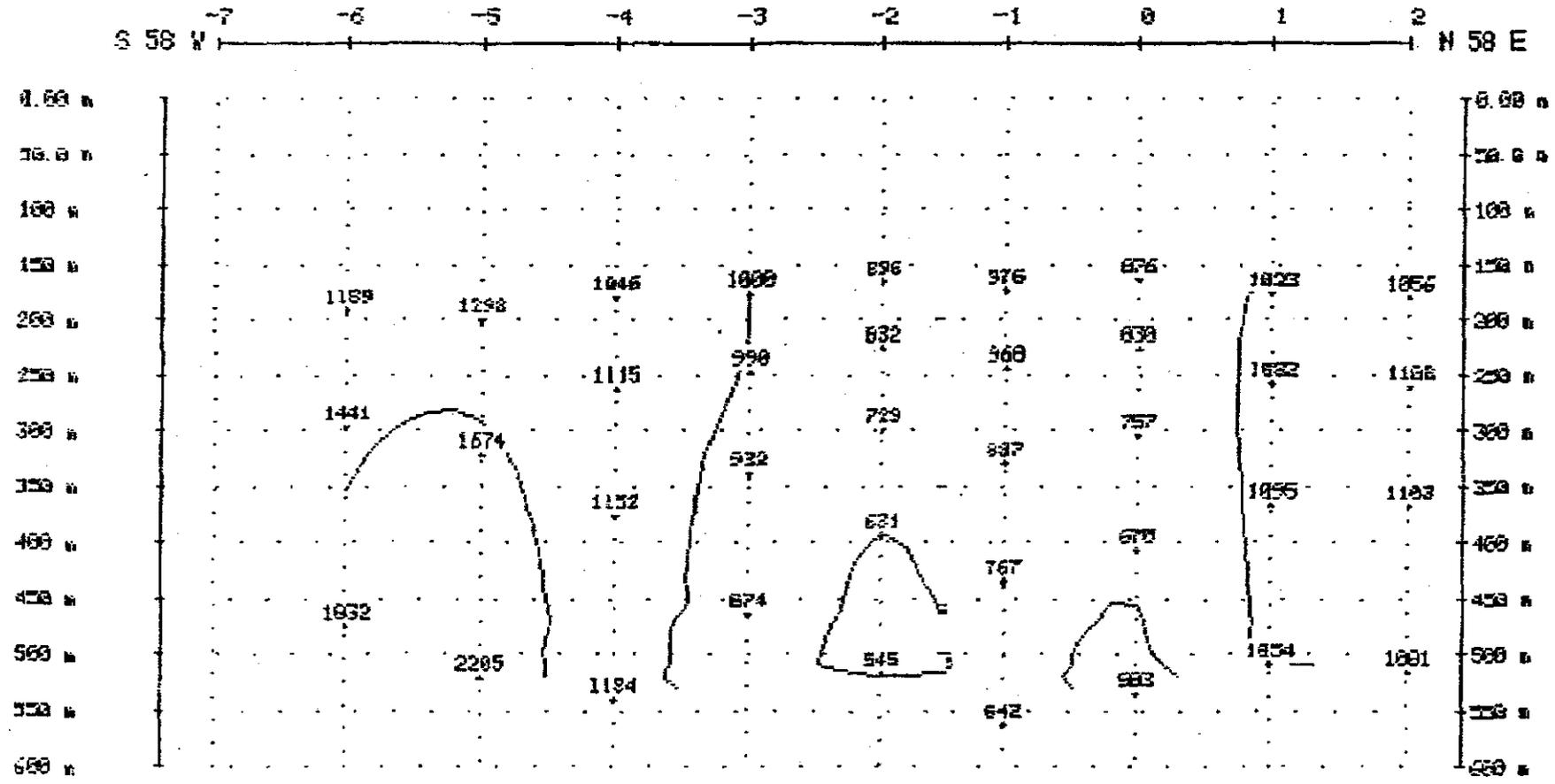
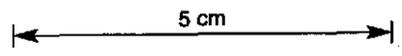
(2205)  
 1585  
 1000  
 671  
 (545)

047

TRACE # 579  
 PLOT BY OPL0T 31  
 PLOTTED 27 Jul 86

RECEIVER DATA  
 Length, 100.M Li: . N 38 E  
 Spacing, 100.M Di: 16. N 38 E  
 Surveyed, Feb 86

TRANSMITTER DATA  
 Length, 1.3 Km  
 Orient., N 63 E  
 Distance, 3.0 Km  
 Rx to Tx, S-E



958048

Line 1200N  
 Marionook  
 for  
 ABERFOYLE EXPLORATION

CSAMT SURVEY DATA  
 RESISTIVITY from PHASE

(Plot listed and LOGARITHMIC CONTOURS  
 ( Interval, 2.22 )

DEPTH FROM BOSTICK DEPTH  
 RHO= 1000. REF STA= -2. STATIC ADJ BY 4056 HZ

13837  
 2512  
 1585  
 1088  
 431  
 188  
 1265

ZONCE # 578  
 PLOT BY CPLY 31  
 PLOTTED 27 Jul 85

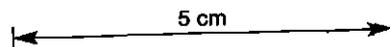
RECEIVER DATA

Length, 198.0 m Line, N 33 E  
 Spacing, 198.0 m Dipole, N 33 E

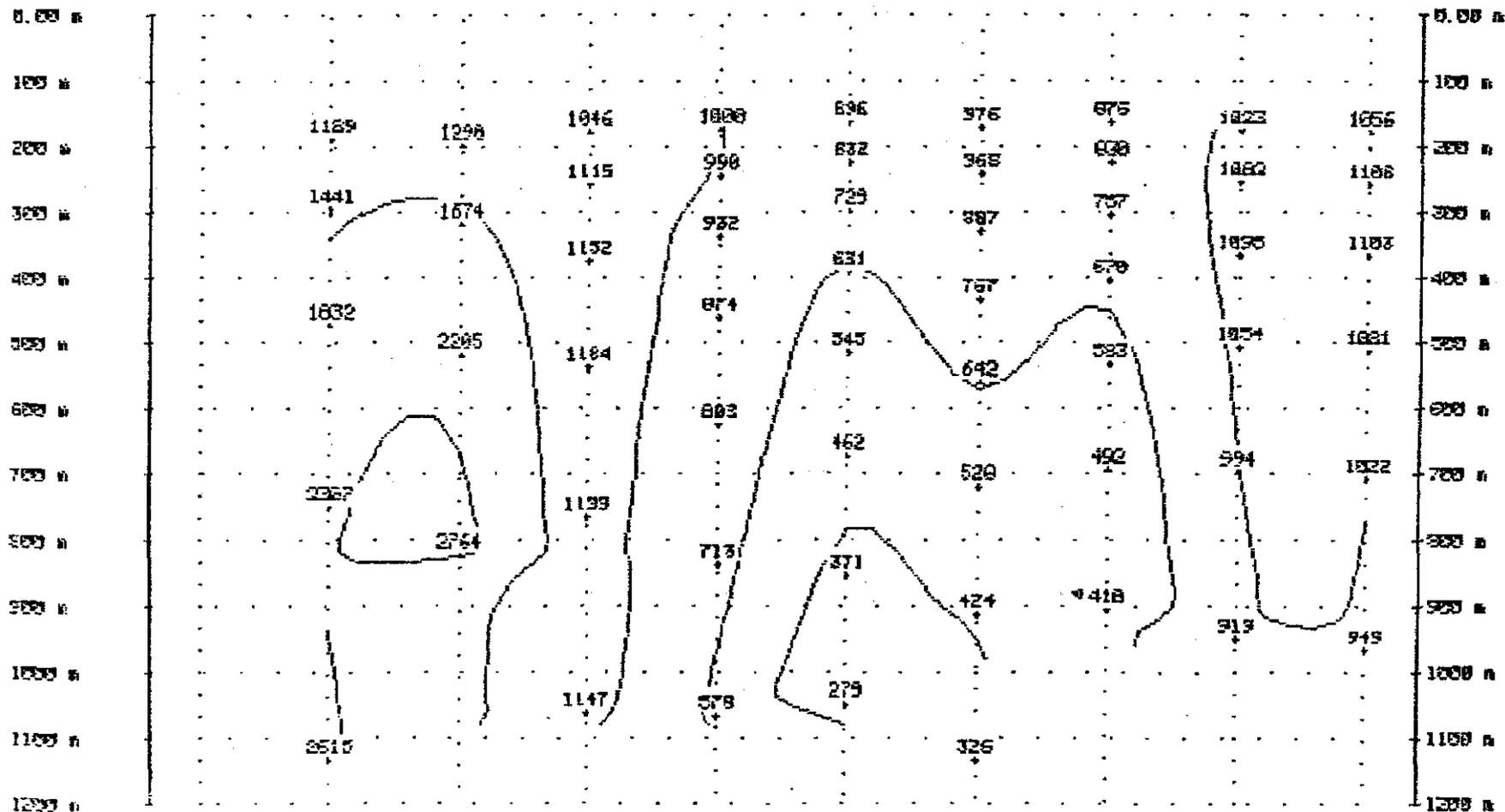
TRANSMITTER DATA

Length, 1.3 Km  
 Orient, N 63 E  
 Distance, 3.8 Km  
 Rx to Tx, S-E

Surveyed, Feb 85



-7 -6 -5 -4 -3 -2 -1 0 1 2  
 S 53 W N 53 E



048

958049

Line 1660N

Marionook

for  
AERFOYLE EXPLORATION

# CAGNIARD RESISTIVITY

values in ohmmeters  
<RHO-C

Plot 1660N  
Int. 0.1. 0.20

(2500)  
2512  
1585  
1600  
631  
390  
251  
150  
100  
63.1  
145.5

### RECEIVER DATA

Length . 100. m Line . N 50 E  
Spacing . 100. m Dipole . N 50 E

Surveyed Feb 86

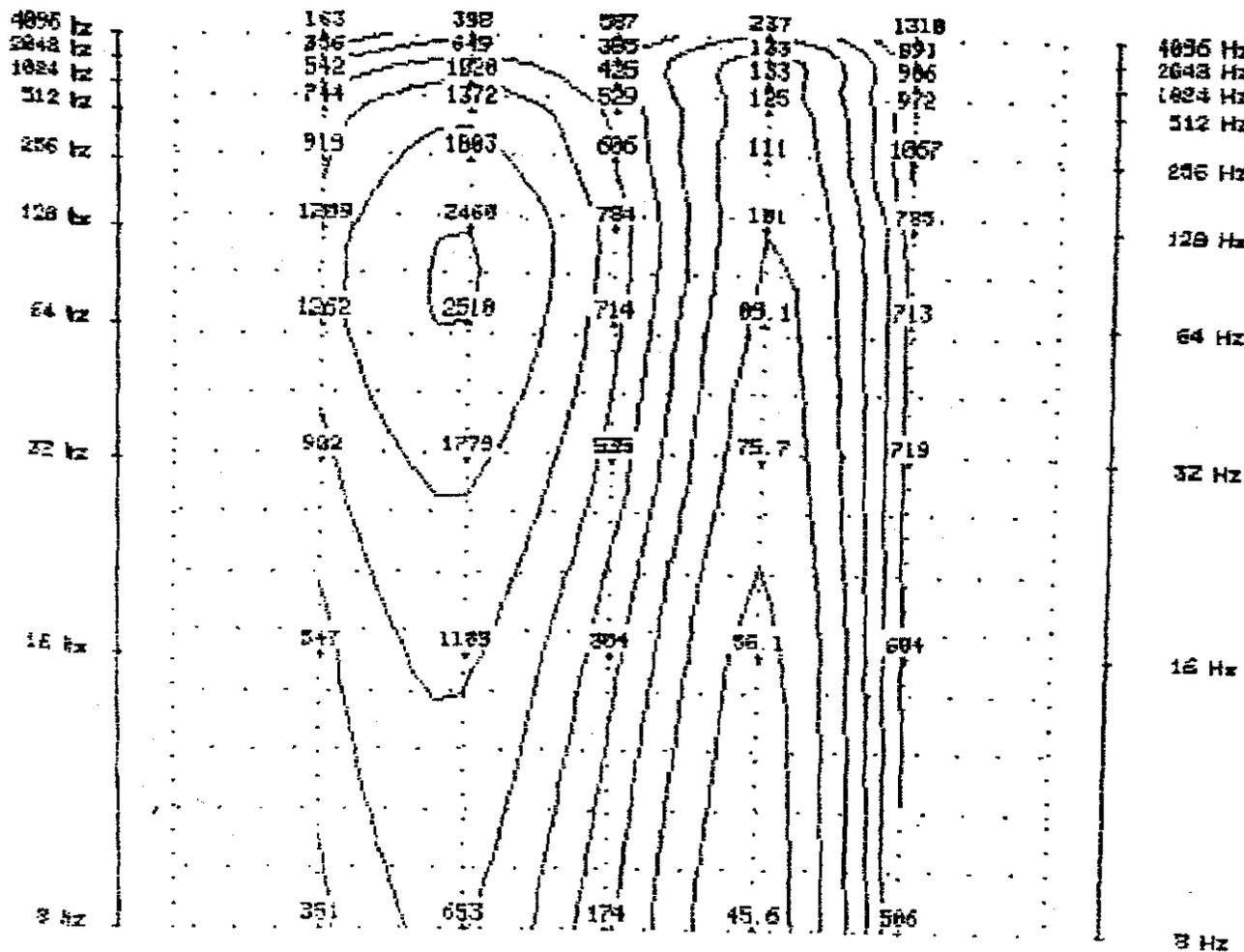
### TRANSMITTER DATA

Length . 1.3 K m  
Orient. . N 60 E  
Distance . 9.4 K m  
Rx to Tx . S-E

ENGINE 4 96  
PLOT BY CRY 21  
PLOTTER 19 Feb 86

5 cm

4 -3 -2 -1 0 1 2  
S 50 W N 50 E



049

958050

U 7 200 41 47 R U USM Howdy Hall 01 042 325 1588 P.01

Line 1600N  
 Marionook  
 for  
 ABERFOYLE EXPLORATION

CSAMT SURVEY DATA  
 RESISTIVITY from PHASE DIFF

RHO= 400, REF STA= -2, STATIC ADJ BY 4096 HZ  
 <RHO-C>PHZRHO>SAVE

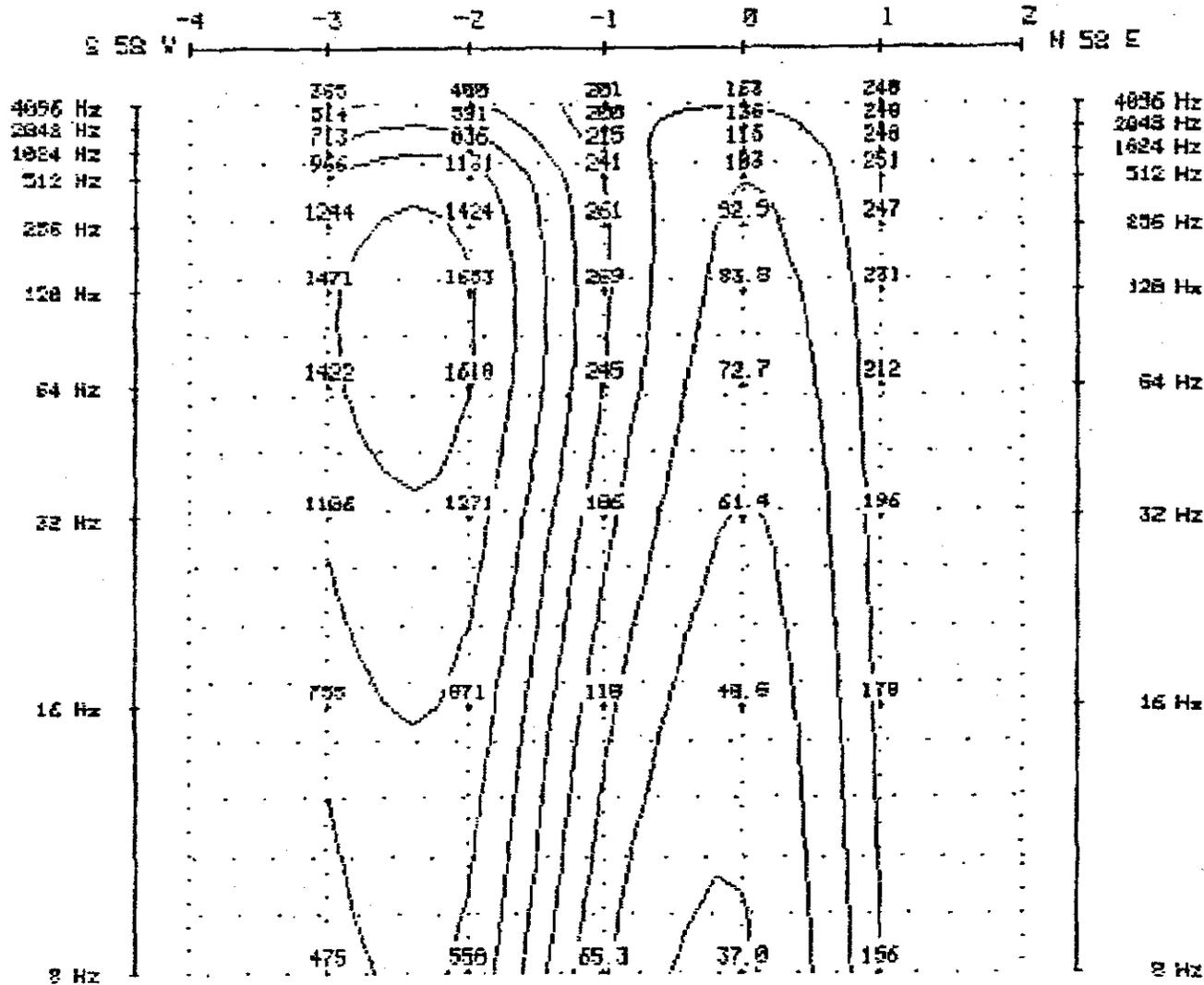
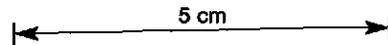
Plot limits and LOGARITHMIC CONTOURS  
 ( Interval, 8.28 )

12000  
 1505  
 1000  
 631  
 398  
 251  
 158  
 100  
 63.1  
 39.6  
 [35.7]

ZONE # 578  
 PLOT BY DPL0T 31  
 PLOTTED 27 Jul 85

RECEIVER DATA  
 Length, 190.0 m Line, N 32 E  
 Spacing, 190.0 m Dipole, N 32 E  
 Surveyed, Feb 85

TRANSMITTER DATA  
 Length, 1.3 Km  
 Orient., N 63 E  
 Distance, 8.4 Km  
 Rx to Tx, E-E



050

958051

Line 1600N

CSHIT SURVEY DATA

DP 1st and HME CNT

Marionook

PHASE DIFFERENCE (E - H)

(Interval, 100.00)

for  
ABERFOYLE EXPLORATION

values in millions  
<PDIFF

|       |     |
|-------|-----|
| 14943 | 600 |
| 1400  | 700 |
| 1300  | 600 |
| 1200  | 500 |
| 1100  | 400 |
| 1000  | 300 |
| 900   | 250 |

ZONCE # 578  
PLOT BY C/PLT 31  
PLOTTED 10 MAY 85

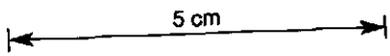
RECEIVER DATA

Length . 100.m Line . N 58 E  
Spacing . 100.m Dipole . N 58 E

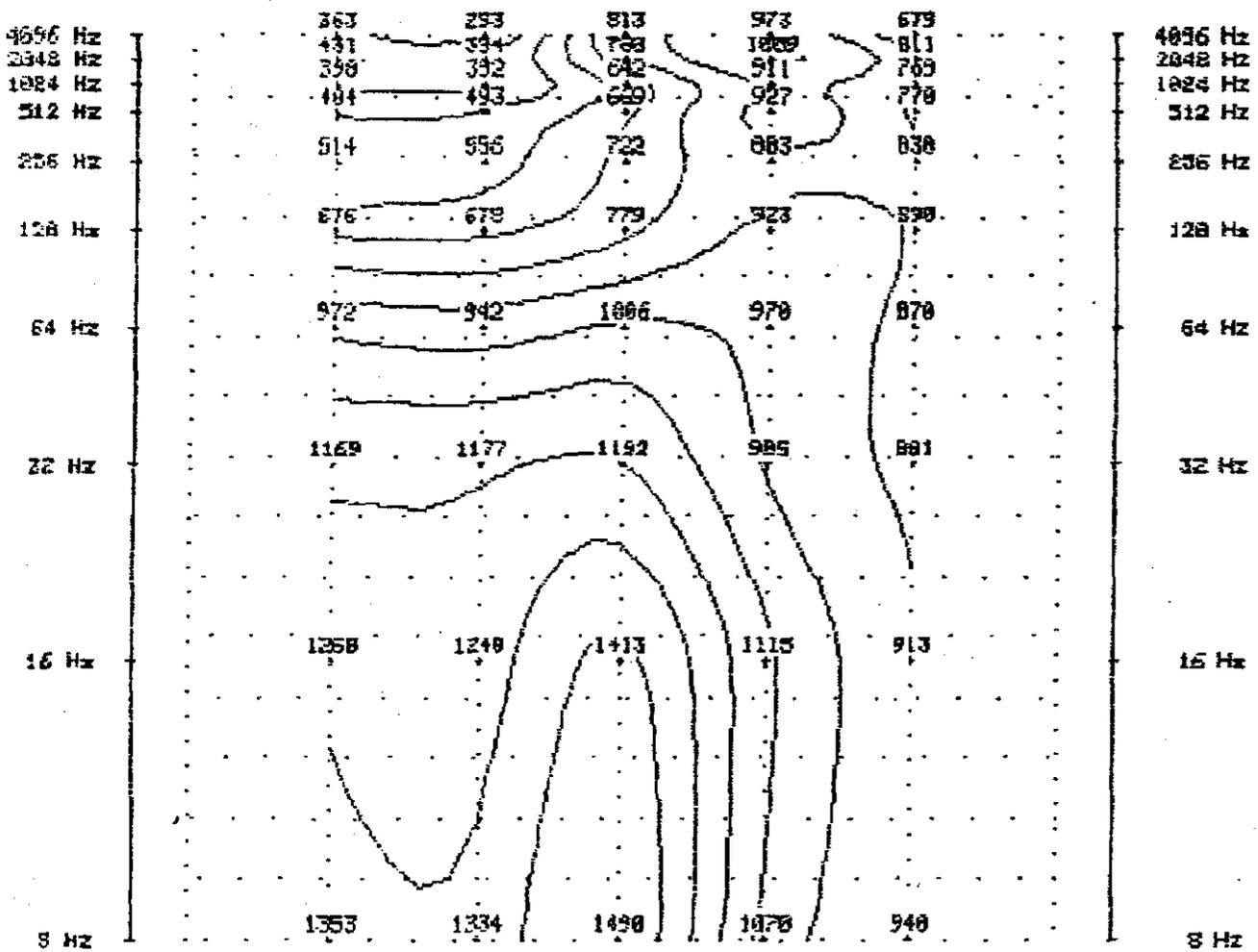
TRANSMITTER DATA

Length . 1.3 Km  
Orient . N 63 E  
Distance . 8.4 Km  
Rx to Tx . S-E

Surveiled Feb 85



W 58 W      -4      -3      -2      -1      0      1      2      N 58 E



958052

100

Line 1600N  
 Marionook  
 for  
 ABERFOYLE EXPLORATION

CSAMT SURVEY DATA  
 RESISTIVITY from PHASE

(Plot 1s+2s) and LOGARITHMIC CONTOURS  
 ( Interval: 0.20 )

DEPTH FROM BOSTICK DEPTH  
 RHO= 400. REF STA= -2. STATIC ADJ BY 4096 HZ

RECEIVER DATA

Length . 100. m Line . N 58 E  
 Spacing . 100. m Dipole . N 58 E

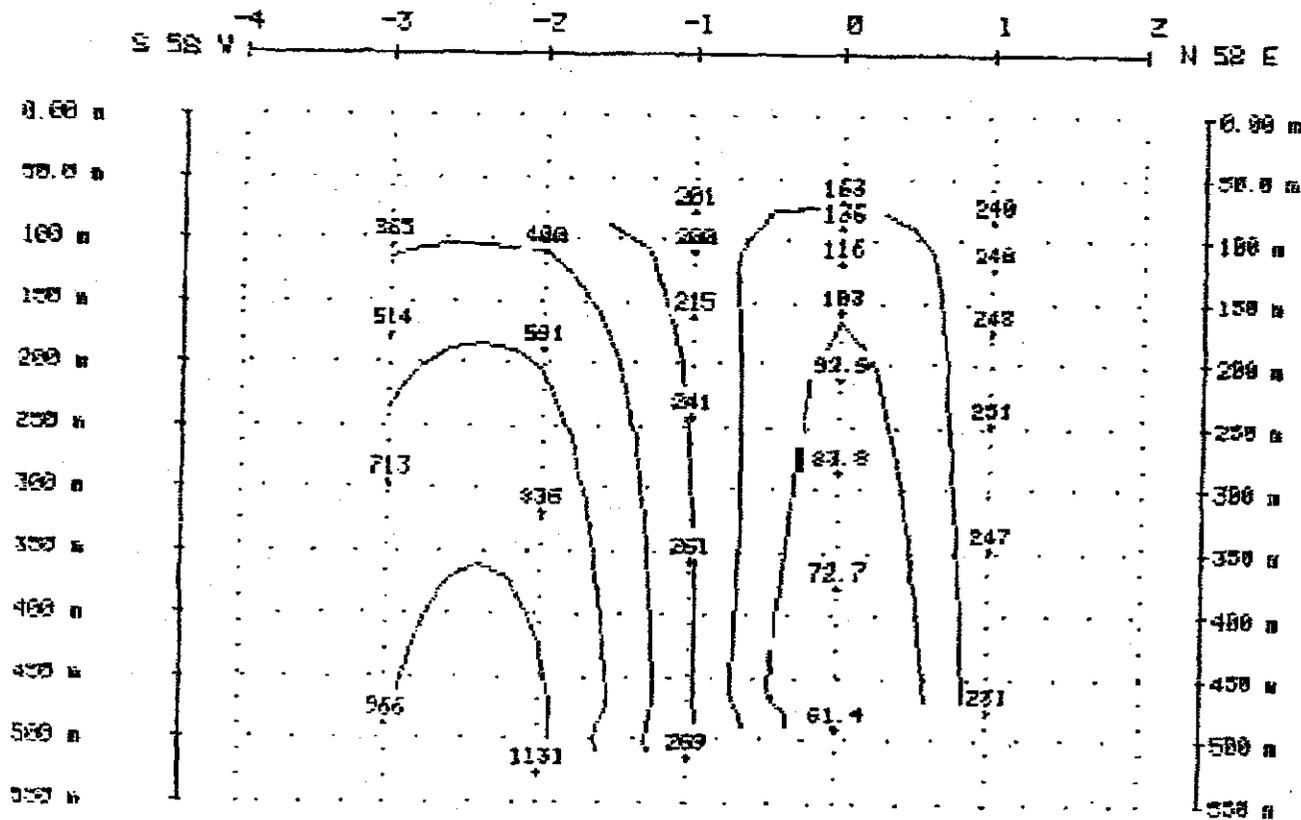
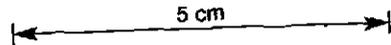
Surveyed. Feb 95.

TRANSMITTER DATA

Length . 1.3 Km  
 Orient . N 63 E  
 Distance . 3.4 Km  
 Rx to Tx . S-E

11223  
 1000  
 231  
 198  
 251  
 158  
 100  
 63.1  
 161.43

ZONCE # 57B  
 PLOT BY CPLYT 31  
 PLOTTED 27 Jul 95



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