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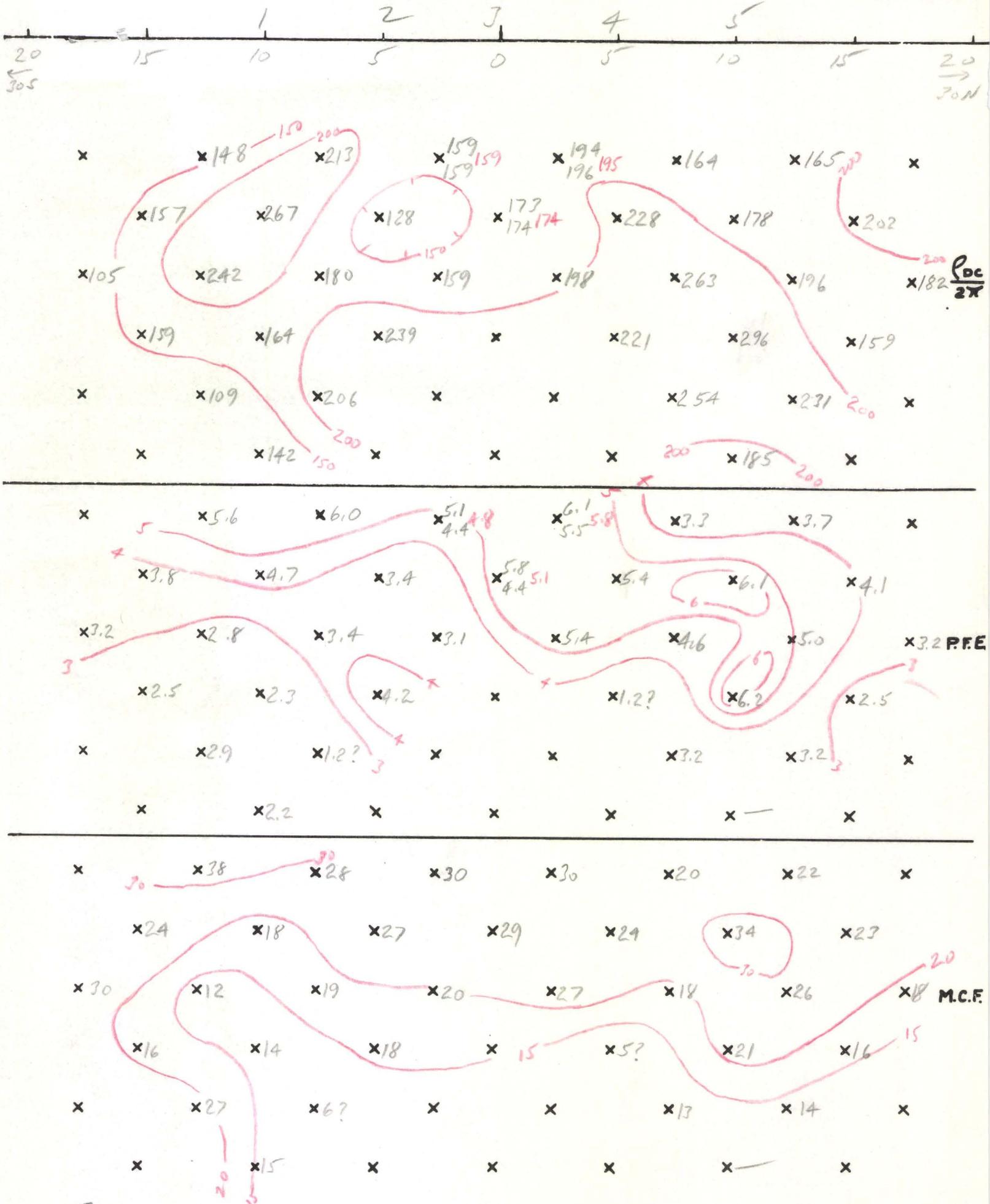
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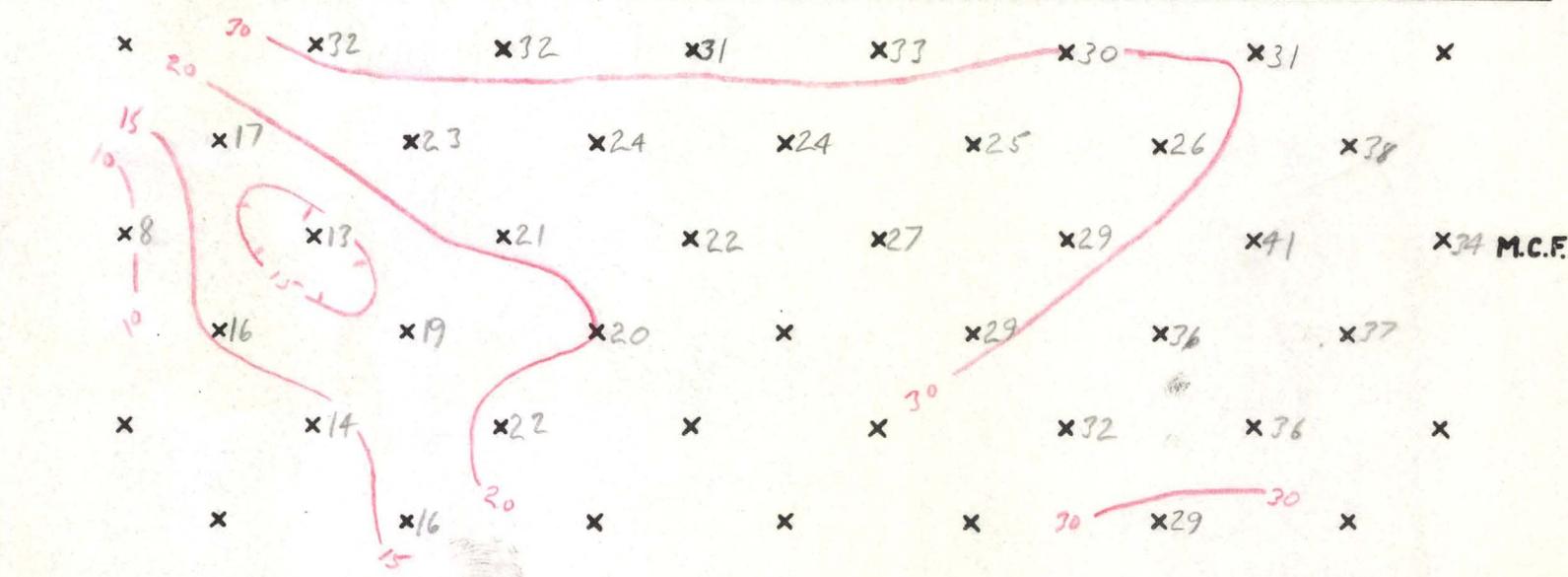
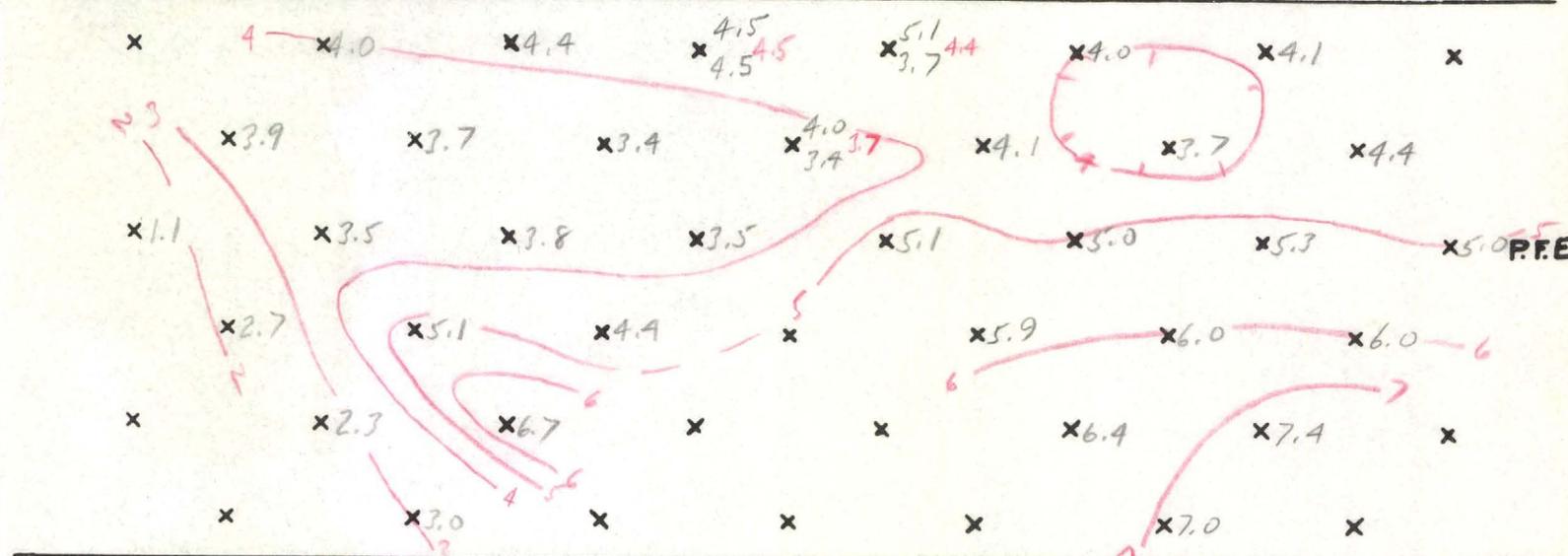
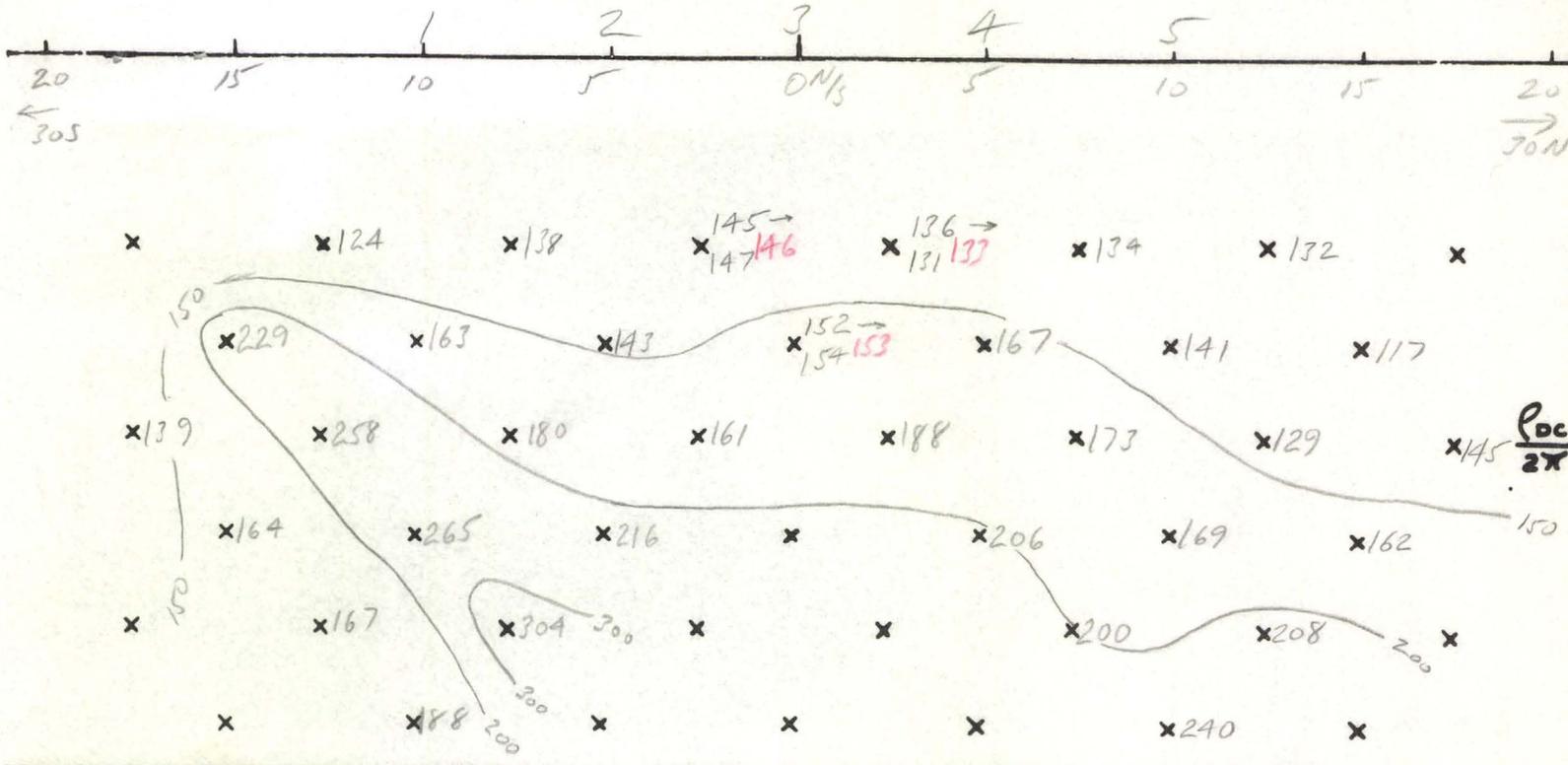
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HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING W



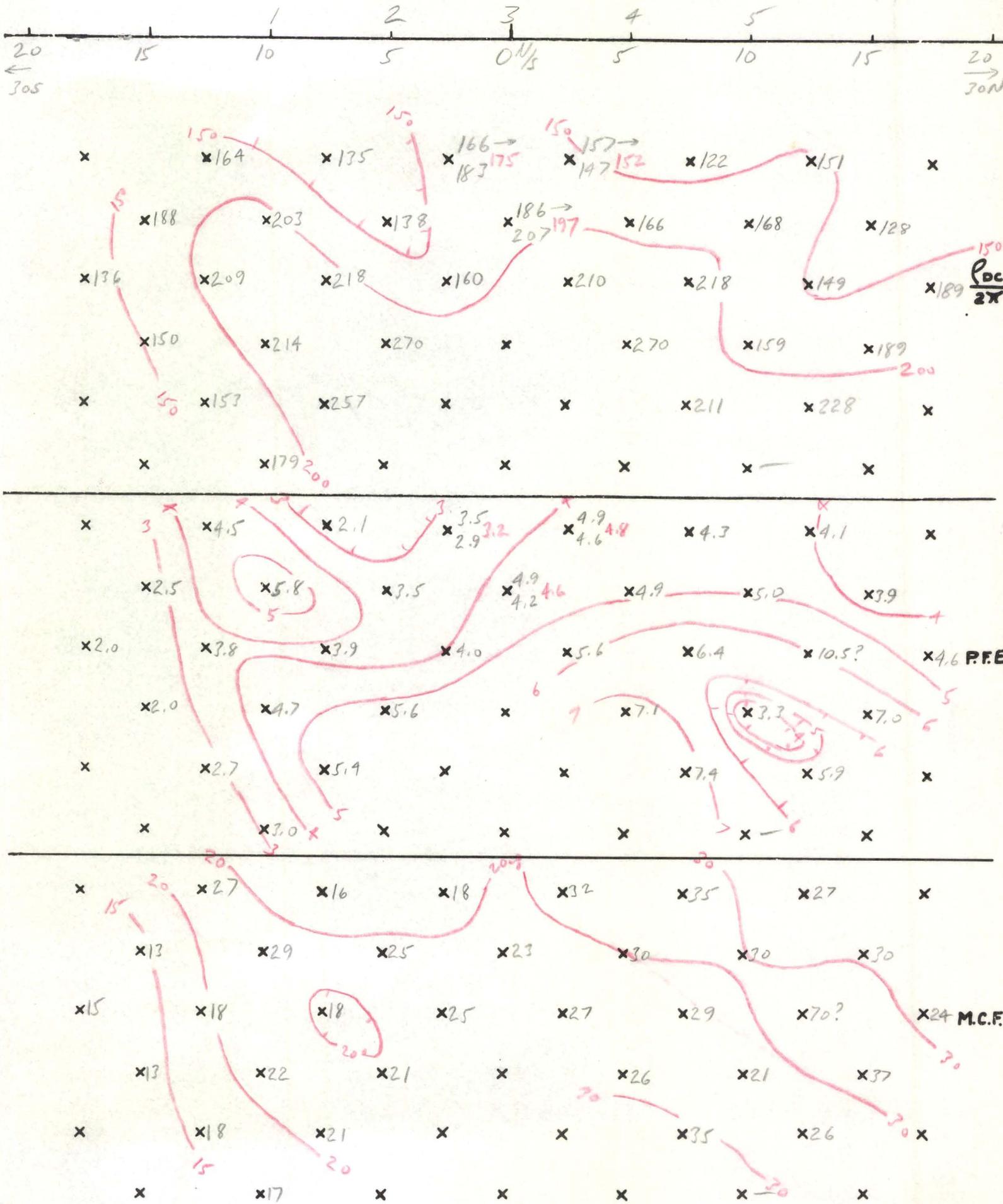
AREA Gunnex Esther Basin LINE 6 E a = 500' SCALE: 1" = 500' DATE: May, 1967

HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING W



AREA Esther Basin Gunnex LINE 6W a = 500' SCALE: 1" = 500' DATE: April 67

HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING W



Gunnex

**INDUCED POLARIZATION SURVEY**

**ESTHER BASIN AREA**

**MOHAVE COUNTY, ARIZONA**

**For**

**Gunnex Limited**

**April - May, 1967**

**By**

**Heinrichs Geoexploration Company  
P. O. Box 5671 Tucson, Arizona 85703  
Phone: 623-0578 Area Code: 602**

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# ARIZONA



INDEX MAP  
ESTHER BASIN AREA  
MOHAVE COUNTY, ARIZONA  
for  
GUNNEX LIMITED

## INTRODUCTION

At the request of Dr. John Walker of Gunnex Limited, Toronto, Canada, Heinrichs Geoexploration Company conducted and completed an induced polarization survey over a portion of the Esther Basin Area, Mohave County, Arizona during the interim April 24 to May 3, 1967.

Three lines were surveyed, all on 500 foot dipole spacings, 600 feet apart and oriented N40E-S40W, centered on a common baseline used for a previous magnetic survey. This gave 18,000 feet of surface coverage of which 10,500 feet is plotted "subsurface" data. For details of location, see the Induced Polarization Location Plan in the map pocket.

The induced polarization information was obtained by the dual frequency system utilizing the colinear dipole-dipole electrode array. Sending frequencies were 0.05 and 3.0 hertz (cycles per second).

The purpose of this survey was to attempt to locate and delineate a primary sulfide source for the oxide copper surface showings. The 500 foot dipole spacing used should give resolvable penetration in the zone from about 150 feet to 600 feet below surface.

Data are presented on sectional data sheets, one for each line, with resistivity, percent frequency effect (PFE) and metallic conduction factor (MCF) contoured in section and self potential (SP) in profile form. For details on this terminology, presentation and interpretation, see the Basis of Induced Polarization Method appended to the report.

Geoex personnel involved in the field work were R. Fedelchak, geophysical crew chief, M. Fraker and D. Phelps, technical assistants. Report, compilation and interpretation were done by the Geoex Tucson staff under the supervision of Chris S. Ludwig, Senior Geophysicist.

## CONCLUSIONS, RECOMMENDATIONS AND INTERPRETATION

No definite sulfide response was seen on the three lines although the rock type has a rather high background response. If this high background response is mostly due to sulfides, a concentration of about 0.2% to 0.6% total sulfides by volume (around 0.4% to 1.2% by weight) is indicated. Unless this sulfide content is mostly copper or other noble, strategic or precious metal sulfides, the concentration is not very encouraging and since schists quite often give non-sulfide-related high background response, this makes it even less encouraging.

Therefore, no further work is recommended in this immediate area. However, the surrounding district does have good mineral potential and we recommend a broad reconnaissance program utilizing magnetics (perhaps aerial) and large dipole spaced I.P. (1,000 foot dipoles) traverses. A preliminary program of this nature could safely be done with a minimum of property negotiation and acquisition expense for the order of \$15,000.00 to \$20,000.00.

The resistivities show a general increase with depth suggestive of deep gradational surface weathering. The south end of the three lines show a drop in resistivity and frequency effects likely due to going into the conglomerate from the schist.

The self potentials show only minor background variations indicating no significant oxidizing sulfide zones within several hundred feet of the surface in the vicinity of the I.P. lines.

Respectfully submitted,

HEINRICHS GEOEXPLORATION COMPANY

*Chris S. Ludwig*

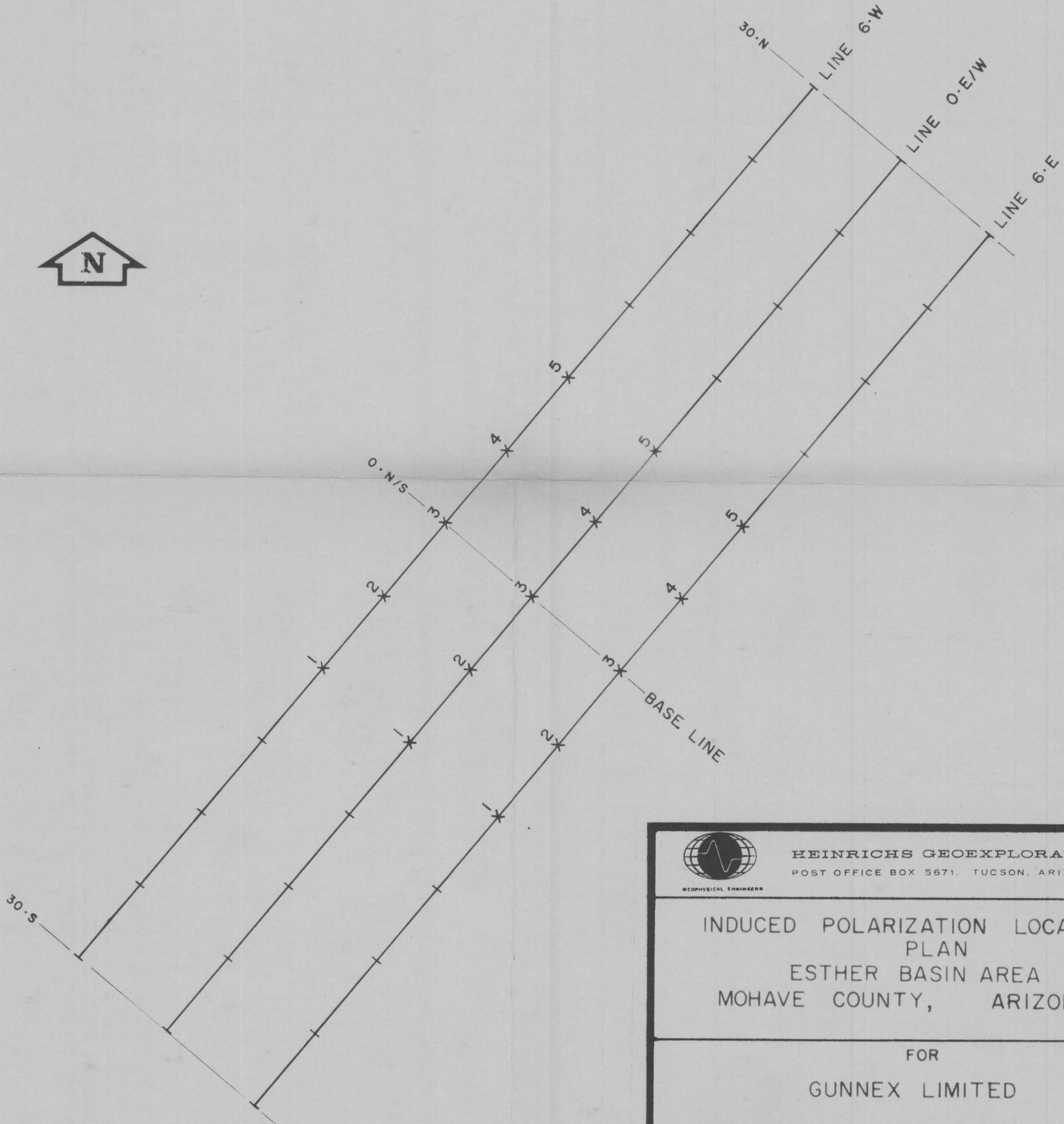
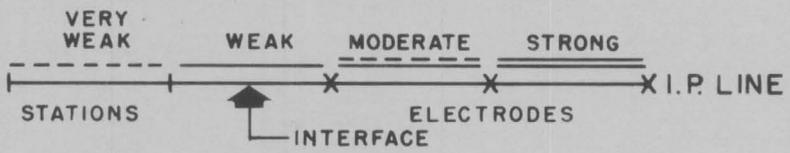
Chris S. Ludwig  
Senior Geophysicist

APPROVED:

*Walter E. Heinrichs Jr.*  
Walter E. Heinrichs Jr.  
President & General Manager



RELATIVE ANOMALY STRENGTH



HEINRICHS GEOEXPLORATION CO.  
POST OFFICE BOX 5671, TUCSON, ARIZONA, 85703

GEOPHYSICAL ENGINEERS

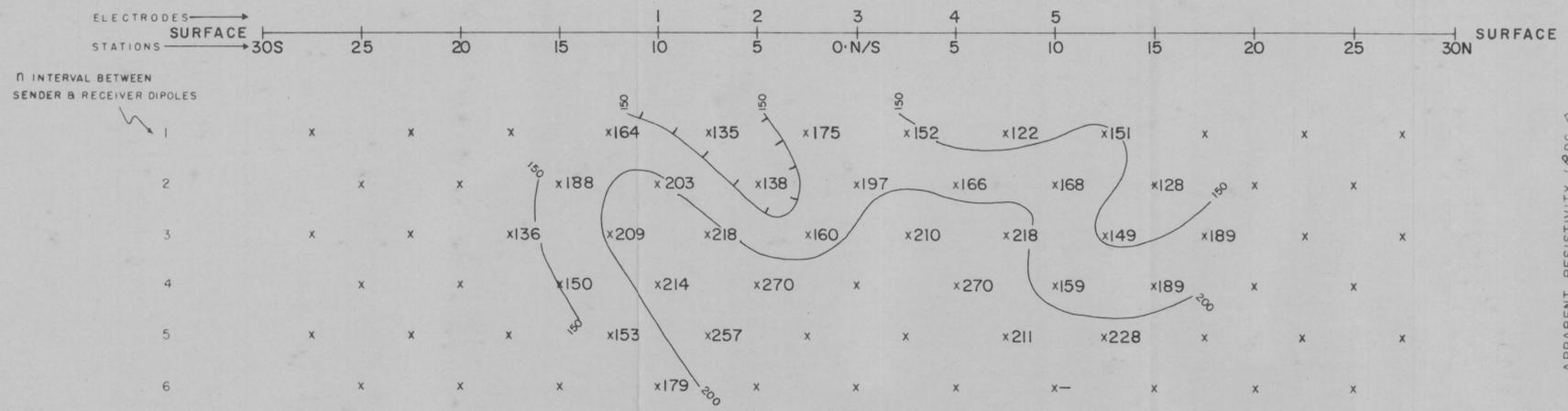
INDUCED POLARIZATION LOCATION  
PLAN  
ESTHER BASIN AREA  
MOHAVE COUNTY, ARIZONA

FOR  
GUNNEX LIMITED

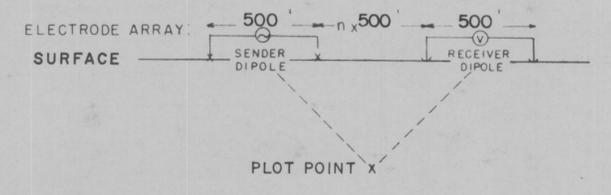
Scale: 1" = 600'

Date APRIL 1967

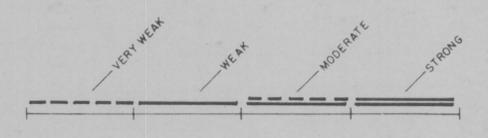




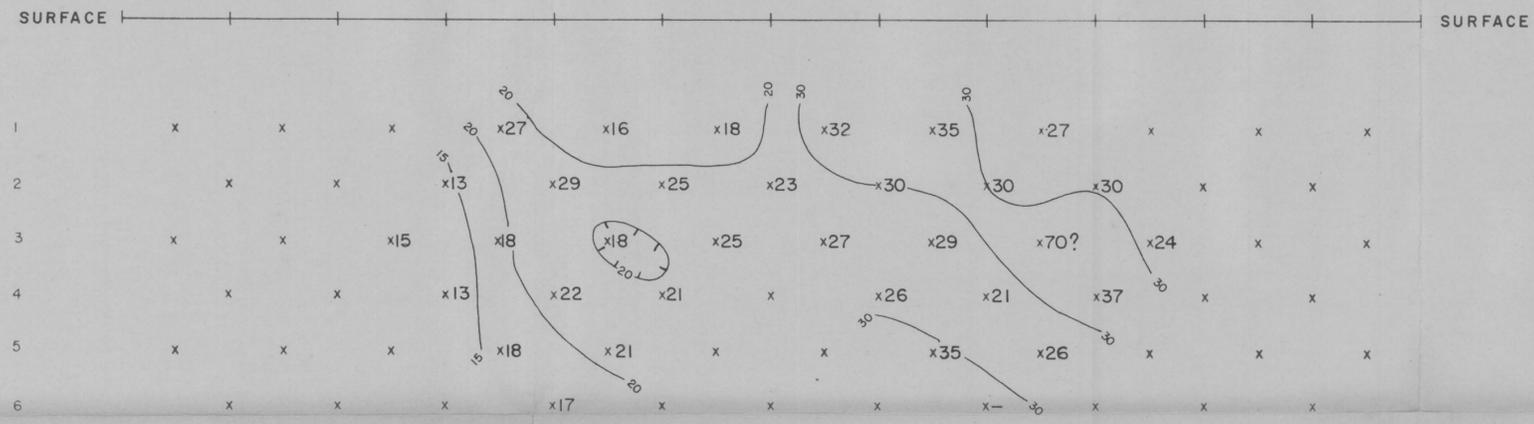
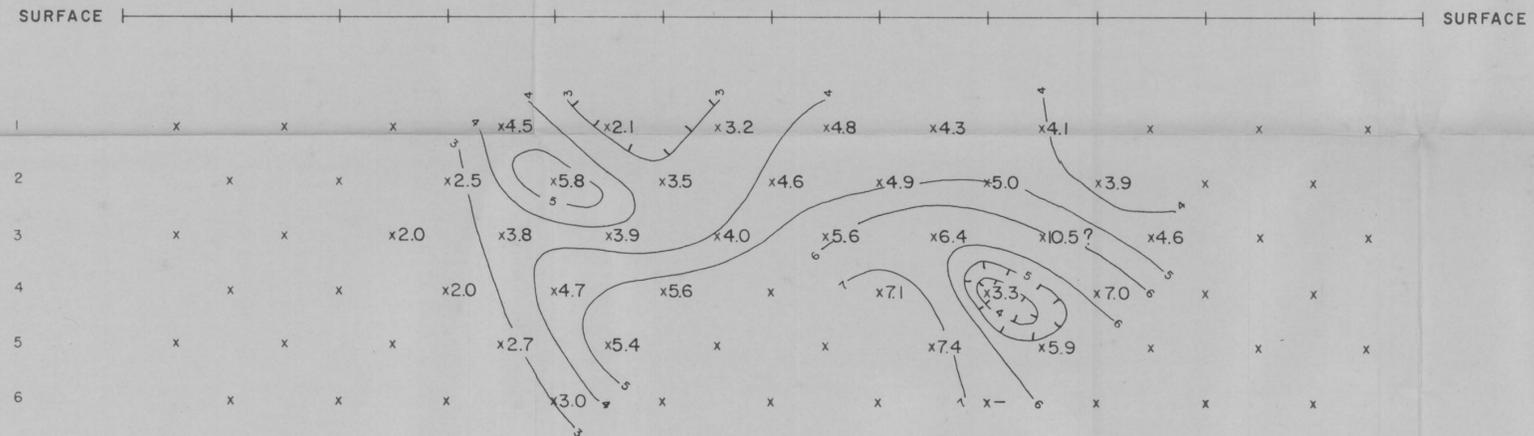
EXPLANATION



RELATIVE ANOMALY STRENGTH



LOOKING N 50° W



ESTHER BASIN AREA

SECTIONAL DATA SHEET

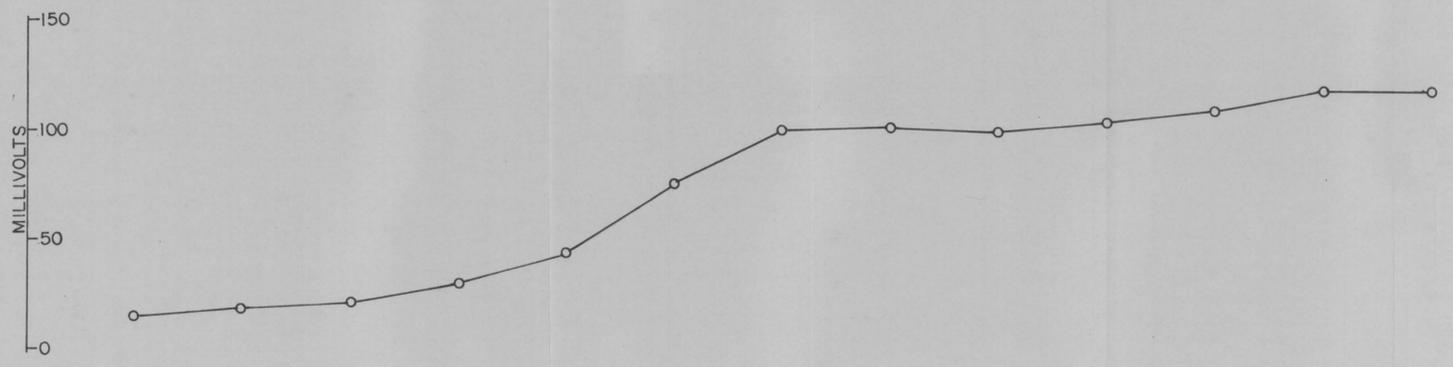
LINE NO. 0-E/W

INDUCED POLARIZATION TRAVERSE

HEINRICHS GEOEXPLORATION COMPANY

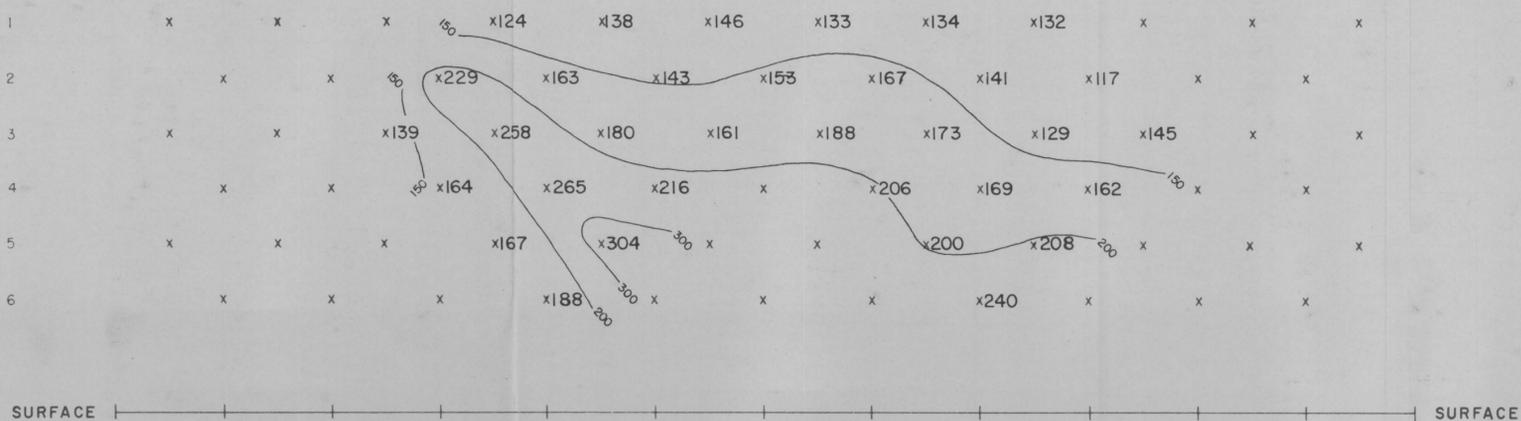
SCALE: 1" = 500' DATE: APRIL 1967

FOR GUNNEX LIMITED



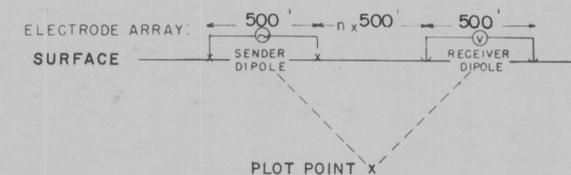
ELECTRODES SURFACE  
STATIONS SURFACE  
30S 25 20 15 10 5 0-N/S 5 10 15 20 25 30N SURFACE

n INTERVAL BETWEEN  
SENDER & RECEIVER DIPOLES



APPARENT RESISTIVITY ( $\rho_{DC}$ )  
IN UNITS OF OHM FEET  
CONTOUR INTERVAL LOGARITHMIC  
SENDER FREQUENCY: 0.05 c.p.s.

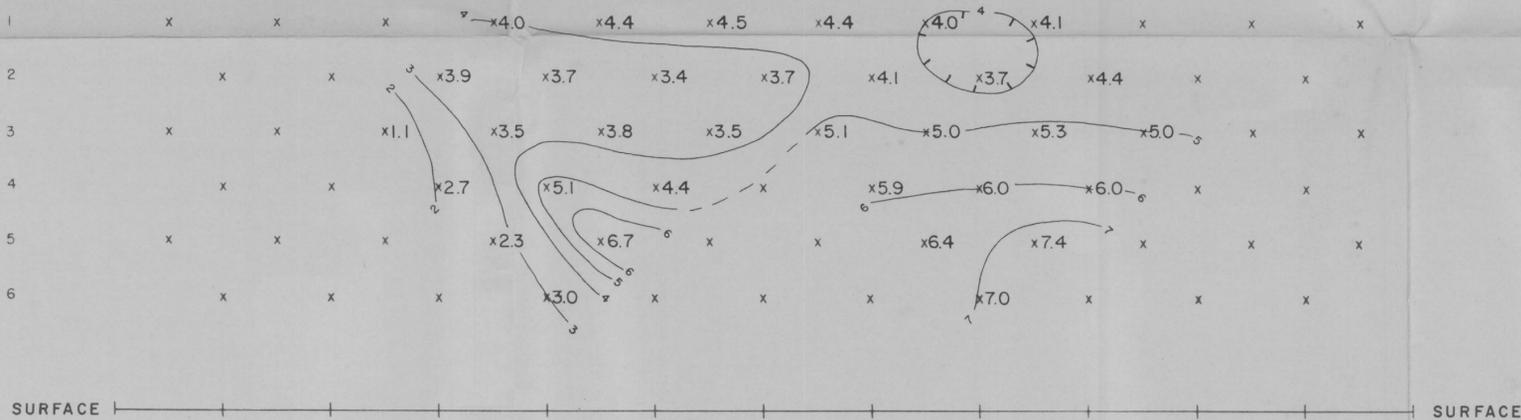
EXPLANATION



RELATIVE ANOMALY STRENGTH



LOOKING N50° W



PERCENT FREQUENCY EFFECT (PFE)  
CONTOUR INTERVAL CONSTANT  
SENDER FREQUENCIES: 0.05 & 3.0 c.p.s.

ESTHER BASIN AREA

SECTIONAL DATA SHEET

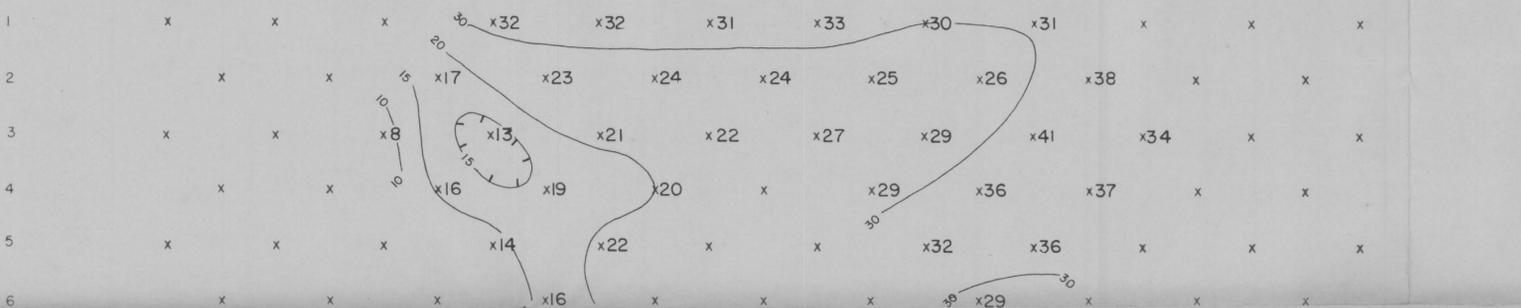
LINE NO. 6W

INDUCED POLARIZATION TRAVERSE

HEINRICHS GEOEXPLORATION COMPANY

SCALE: 1" = 500' DATE: APRIL 1967

FOR  
GUNNEX LIMITED



APPARENT "METALLIC CONDUCTION" FACTOR (MGF)  
(MGF = PFE x 1000)  
CONTOUR INTERVAL LOGARITHMIC

SELF POTENTIAL

MILLIVOLTS  
50  
0

