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Phoenix, AZ, 85012
602-771-1601
http://www.azgs.az.gov
inquiries@azgs.az.gov

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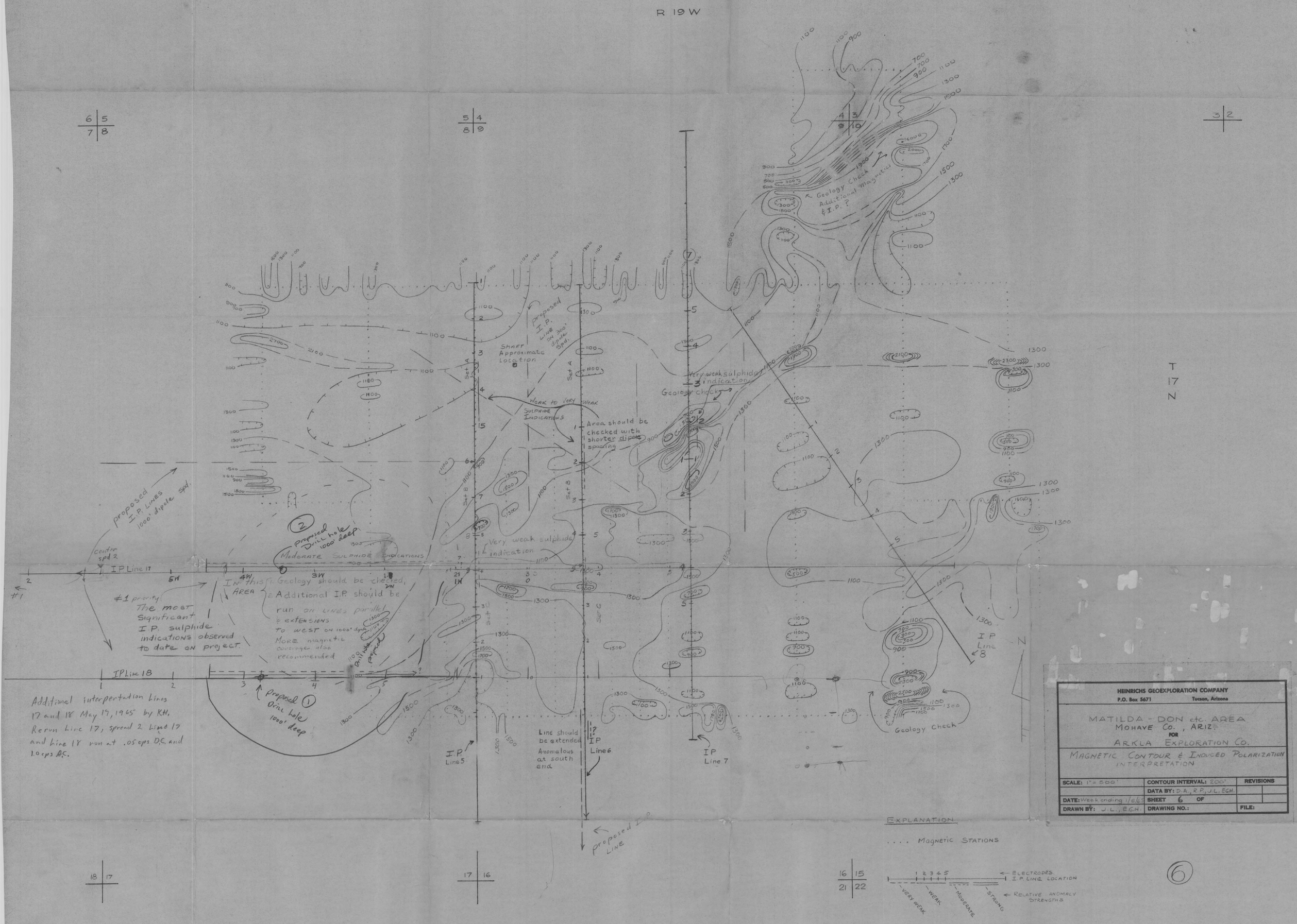
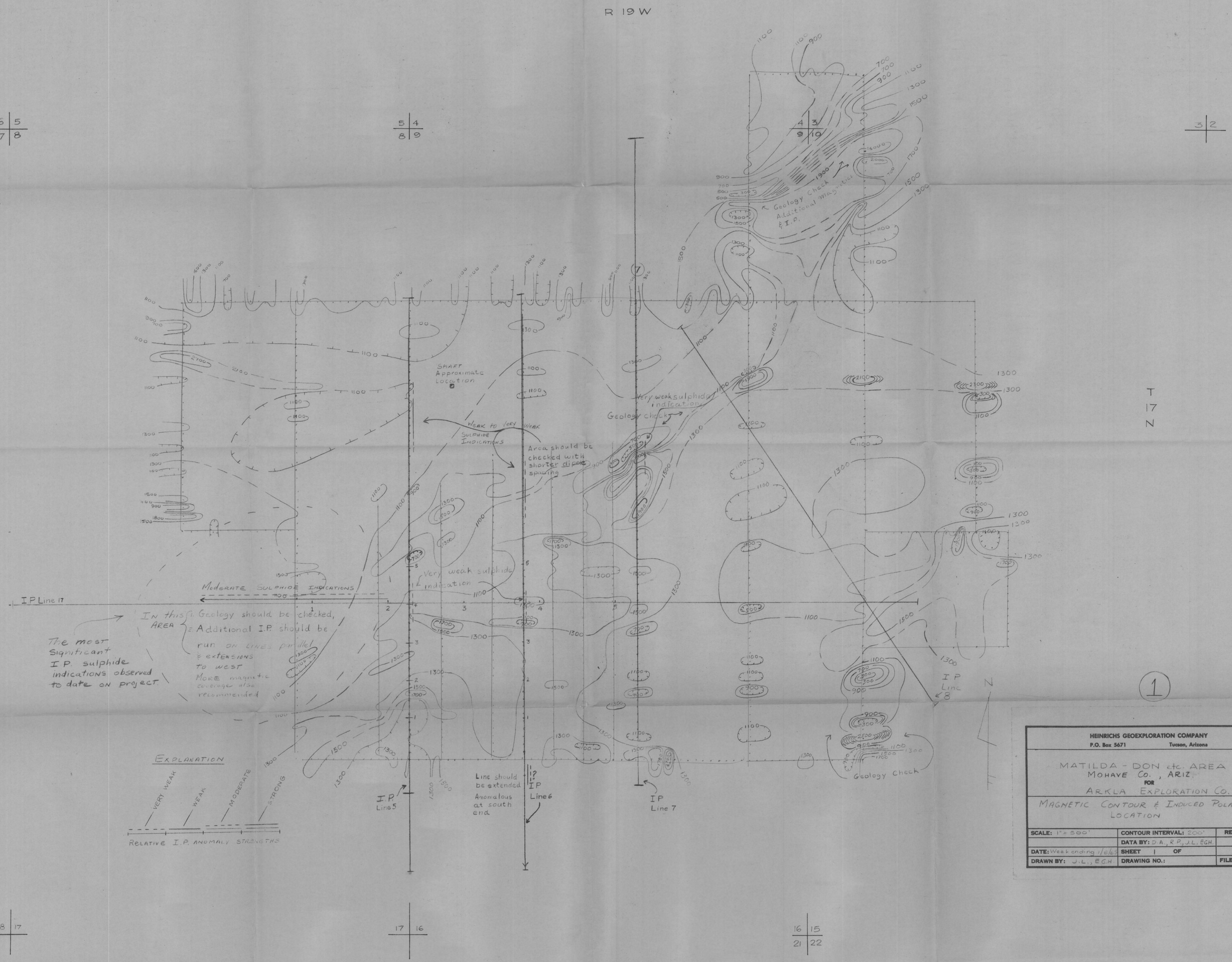

R 19 W
T 17 N
Shaft Approximate Location
proposed I.P. Line on 300' dipole Spd.
Weak to very weak sulphide indications
Area should be checked with shorter dipole spacing
Very weak sulphide indication
Geology check
Geology Check Additional magnetics & I.P.?
proposed I.P. Lines 1000' dipole Spd.
Center Spd 2
IP Line 17
IP Line 18
#1 priority. The most significant I.P. sulphide indications observed to date on project.
Proposed Drill hole 1000' deep
Moderate sulphide indications
In this AREA 1. Geology should be checked, 2. Additional I.P. should be run on lines parallel & extensions to west on 1000' dipole. More magnetic coverage also recommended
Proposed Drill hole 1000' deep
Additional interpertation lines 17 and 18 May 19, 1965 by KH. Rerun Line 17, spread 2 Line 17 and line 18 run at .05 cps D.C. and 1.0 cps A.C.
IP Line 5
Line should be extended Anomalous at south end
IP Line 6
IP Line 7
IP Line 8
Geology Check
proposed I.P. Line
EXPLANATION
. . . . Magnetic Stations
Electrodes
I.P. Line Location
Relative anomaly strengths
Very weak
Weak
Moderate
Strong
HEINRICHS GEOEXPLORATION COMPANY
P.O. Box 5671 Tucson, Arizona
MATILDA - DON etc. AREA
MOHAVE Co., ARIZ.
FOR
ARKLA EXPLORATION Co.
MAGNETIC CONTOUR & INDUCED POLARIZATION INTERPRETATION
SCALE: 1" = 500'
CONTOUR INTERVAL: 200'
DATA BY: D.A., R.P., J.L., E.G.H.
DATE: Week ending 1/8/65
SHEET 6 OF
DRAWN BY: J.L., E.G.H.
DRAWING NO.:
REVISIONS
FILE:
6
FINAL



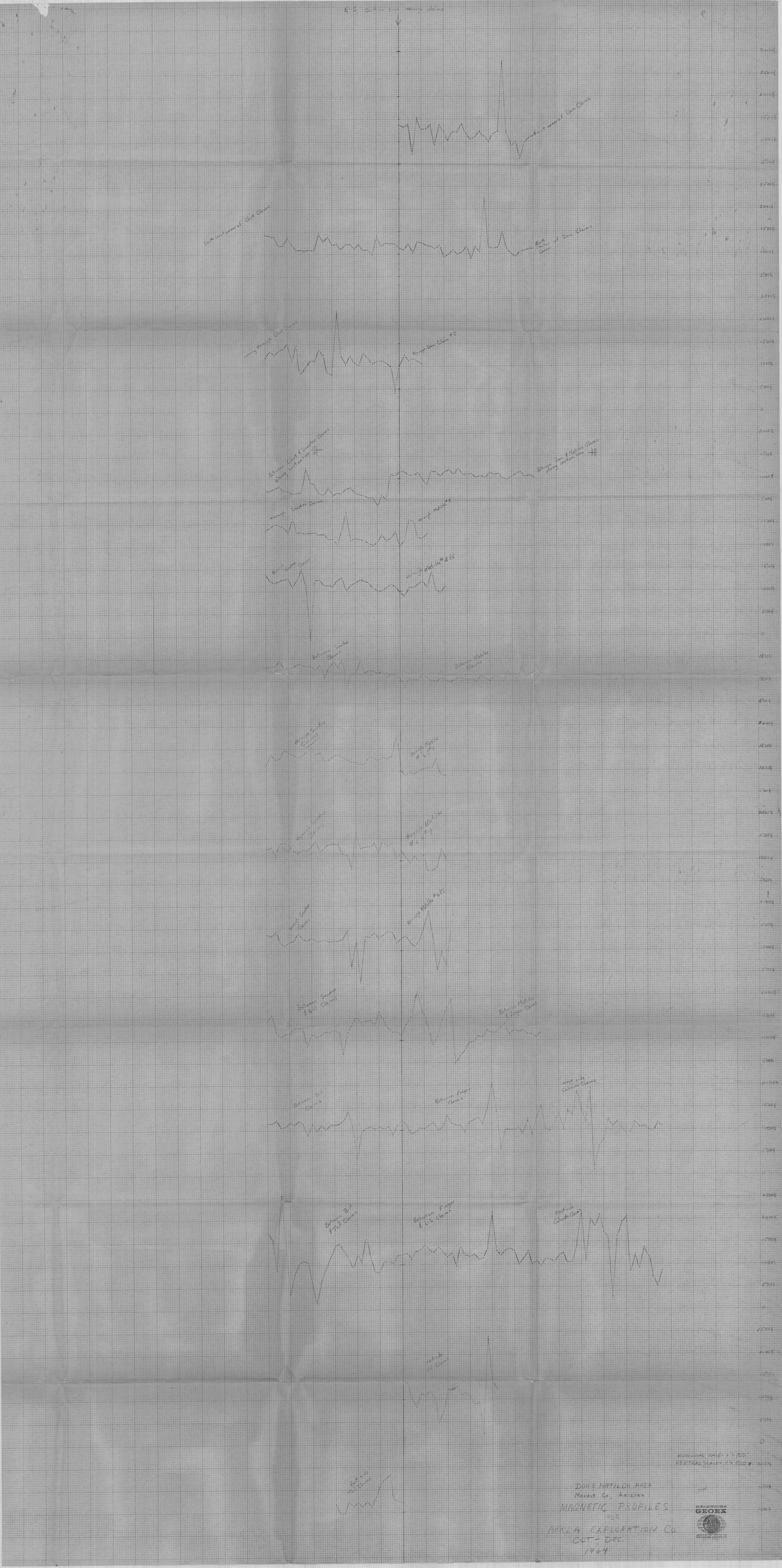
1

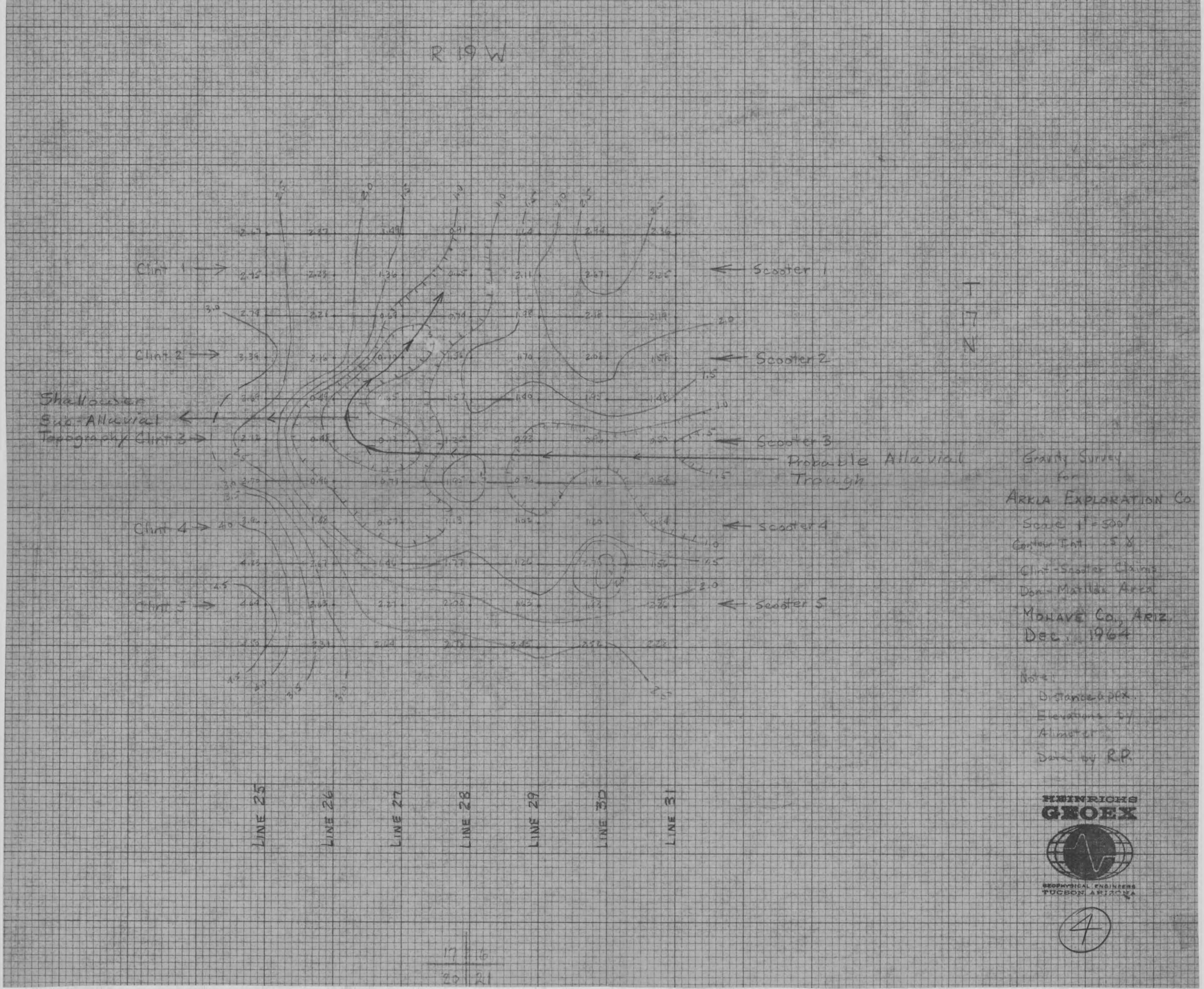
HEINRICHS GEOEXPLORATION COMPANY
P.O. Box 5671 Tucson, Arizona

MATILDA - DON etc. AREA
MOHAVE Co., ARIZ.
FOR
ARKLA EXPLORATION Co.

MAGNETIC CONTOUR & INDUCED POLARIZATION LOCATION

SCALE: 1" = 500'	CONTOUR INTERVAL: 200'	REVISIONS
	DATA BY: D.A., R.P., J.L., E.G.H.	
DATE: Week ending 11/6/63	SHEET 1 OF	
DRAWN BY: J.L., E.G.H.	DRAWING NO.:	FILE:


N-S Section line through claims
West corner of Dan Claims
South corner of Clint Claims
North Center of Dan Claims
Through Clint Claims
Through Dan Claim #5
Between Clint & Scooter Claims along section line 17/14
Between Dan & Matilda Claims along section line 8/4
through Scooter Claims
through Matilda #5
through Scooter Claims
through Matilda #4 & 5
Between Scooter Claims
Between Matilda Claims
through Scooter Claims
through Matilda #6 & 7
through Scooter Claims
through Matilda #6 & 7
through Scooter Claims
through Matilda #6 & 7
Between Scooter & Bill Claims
Between Matilda & Finger Claims
Between Bill Claims
Between Finger Claims
West side Caliente Claims
Between Bill & Tell Claims
Between Finger & L.L. Claims
East side Caliente Claims
East side Tell Claims
HORIZONTAL SCALE - 1" = 500'
VERTICAL SCALE - 1" = 500'
DOW & MATILDA AREA
MOHAVE Co., ARIZONA
MAGNETIC PROFILES
FOR
ARKLA EXPLORATION Co.
OCT. - DEC.
1964
HEINRICHS GEOEX

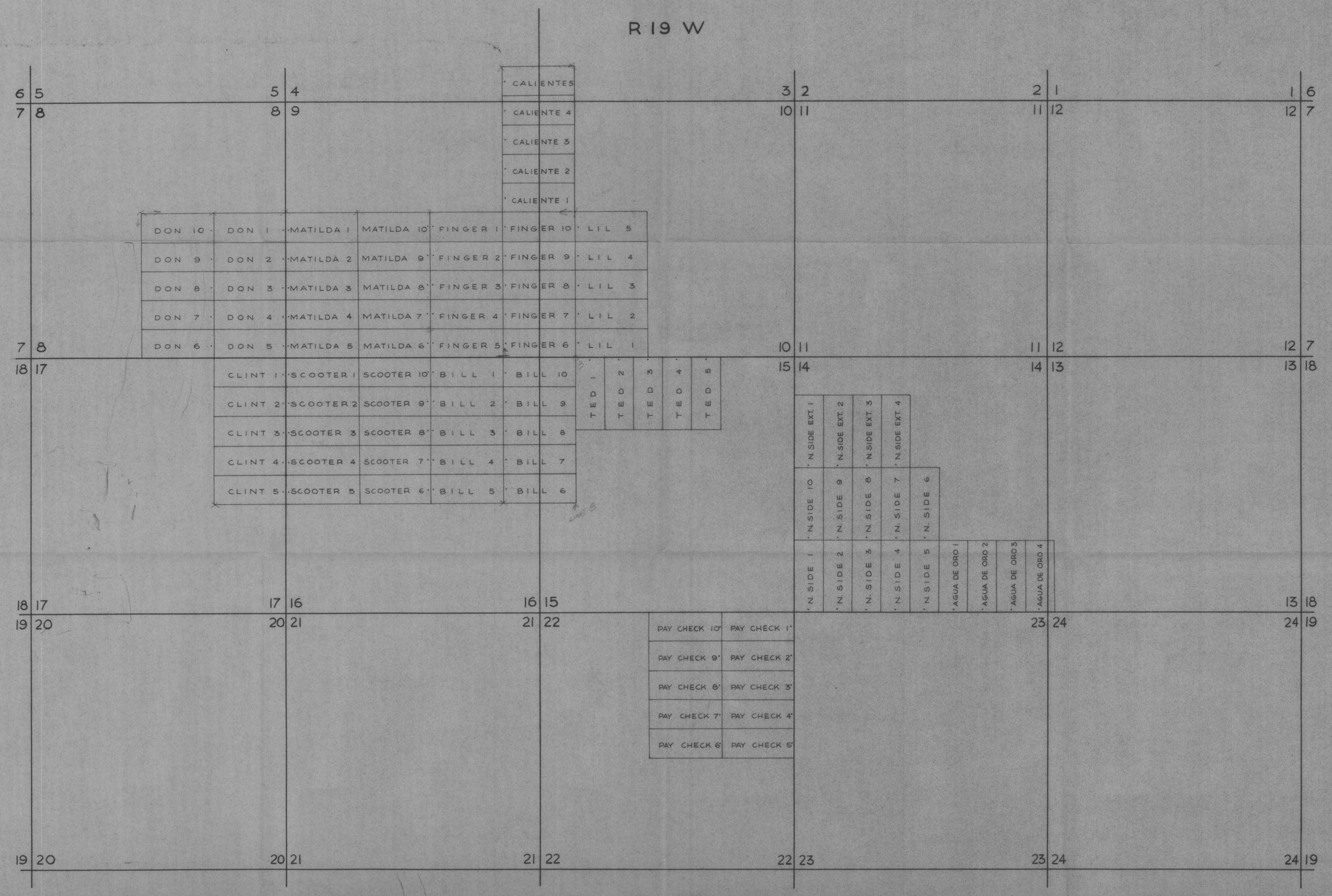


Gravity Survey
for
ARKLA EXPLORATION CO.
Scale 1" = 500'
Contour Int. .5 γ
Clint-Scooter Claims
Don-Matilda Area
MOHAVE CO., ARIZ.
DEC. 1964

Note:
Distance approx.
Elevations by
Altimeter
Data by R.P.

HEINRICHS
GEOEX
GEOPHYSICAL ENGINEERS
TUCSON, ARIZONA

4



INDICATES DIRECTION & RECORD NUMBER OF MAGNETIC TRAVERSE (TOTAL INTENSITY)

INDICATES MAGNETIC STATIONS (VERTICAL INTENSITY)

1 2 3 4 5
4N 2N 0 2S 4S

INDICATES INDUCED POLARIZATION SURVEY LOCATION ELECTRODES & STATIONS

INDICATES GRAVITY STATIONS

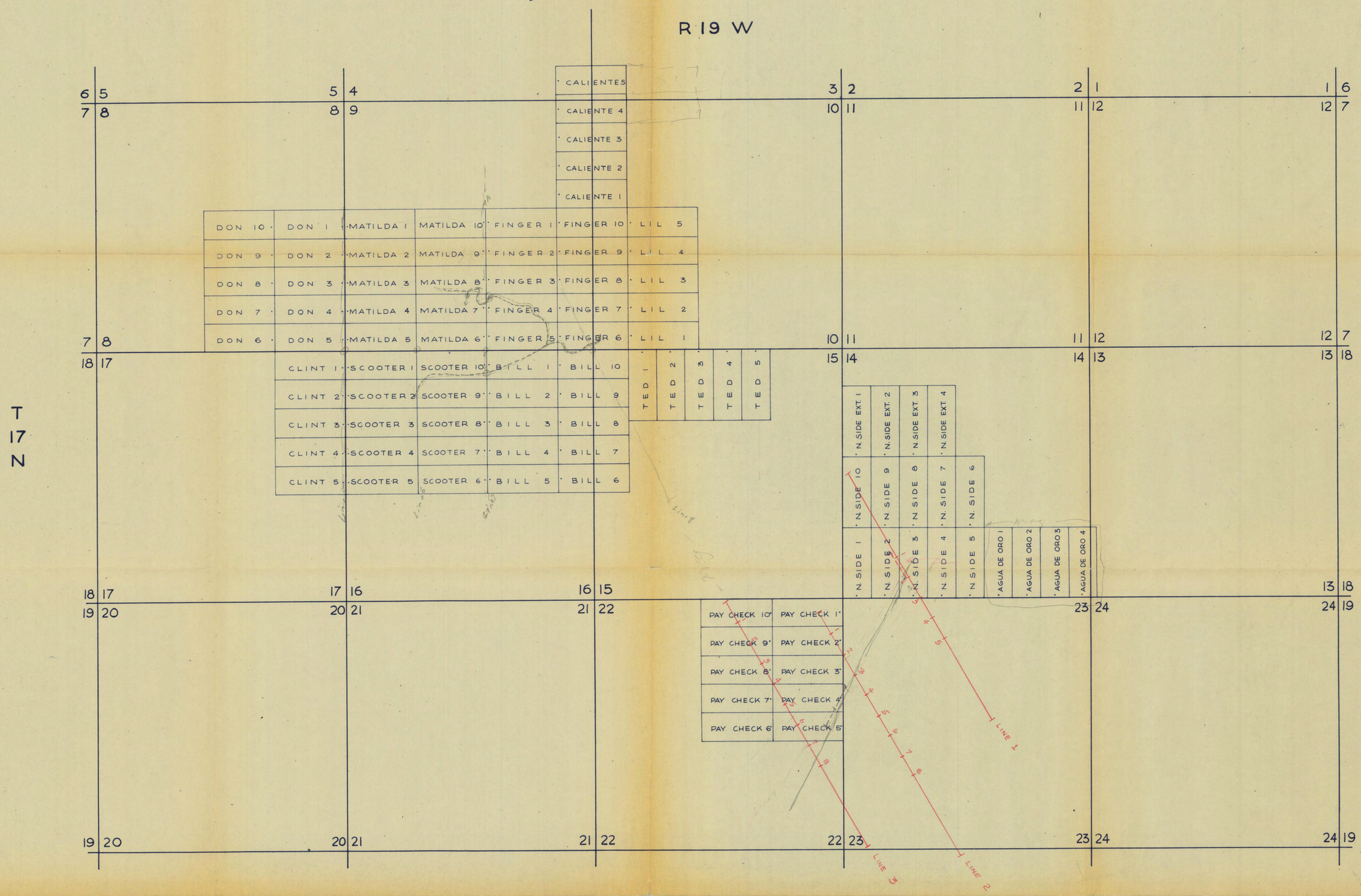
N

HEINRICHS GEOEXPLORATION COMPANY
P.O. Box 5671 Tucson, Arizona

FOR
ARKANSAS LOUISIANA GAS COMPANY

MATILDA - N. SIDE - PAY CHECK AREAS
MOHAVE COUNTY, ARIZONA

SCALE: 1" = 1000'	CONTOUR INTERVAL:	REVISIONS
	DATA BY:	
DATE: OCT. 1964	SHEET OF	
DRAWN BY: I.B.	DRAWING NO.:	FILE:



I.P. Anomalism

I.P. COVERAGE COMPLETED

INDICATES DIRECTION & RECORD NUMBER OF MAGNETIC TRAVERSE (TOTAL INTENSITY)

INDICATES MAGNETIC STATIONS (VERTICAL INTENSITY)

1 2 3 4 5
4N 2N 0 2S 4S

INDICATES INDUCED POLARIZATION SURVEY LOCATION ELECTRODES & STATIONS

INDICATES GRAVITY STATIONS

N

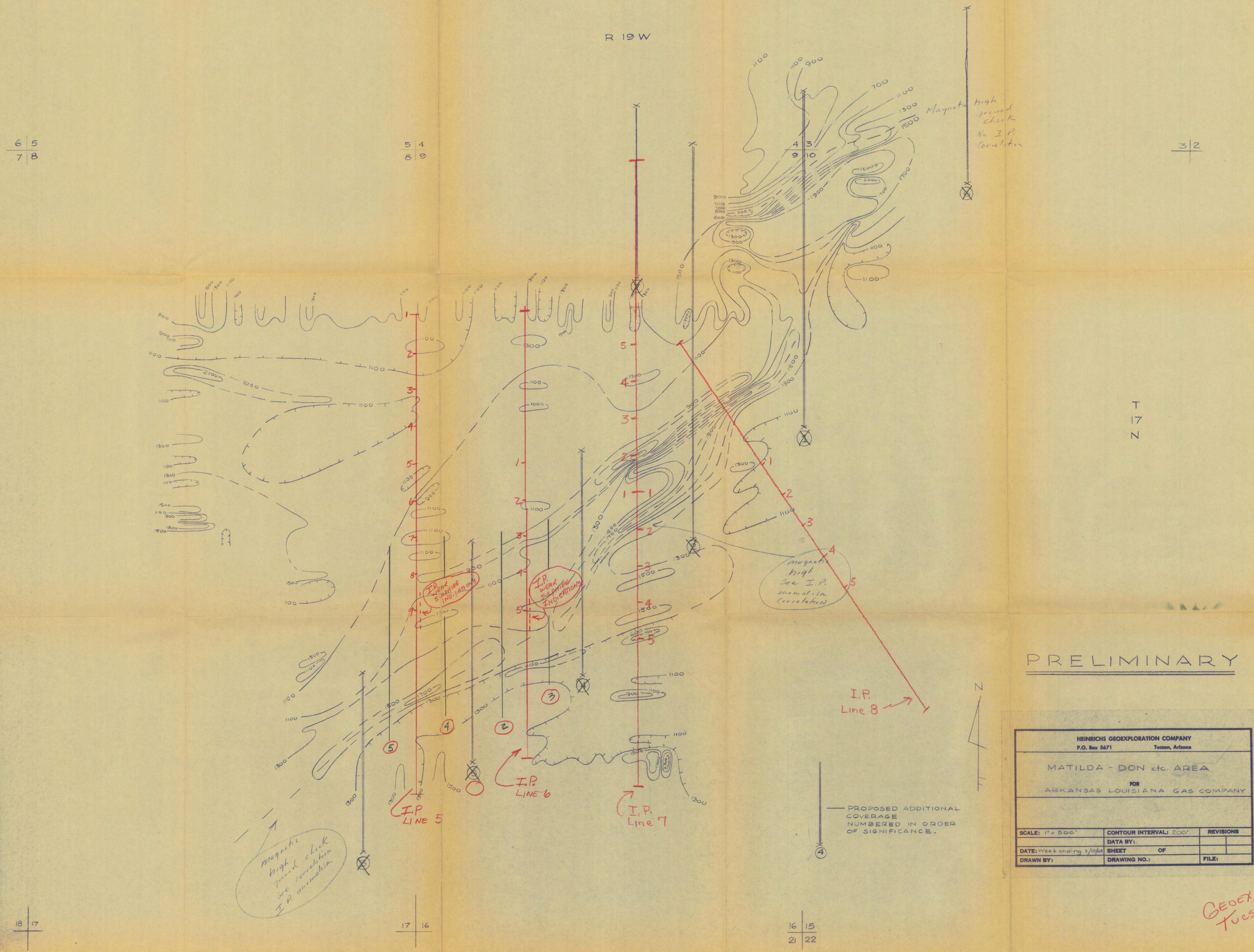
See Roads & etc. Arkla Copy

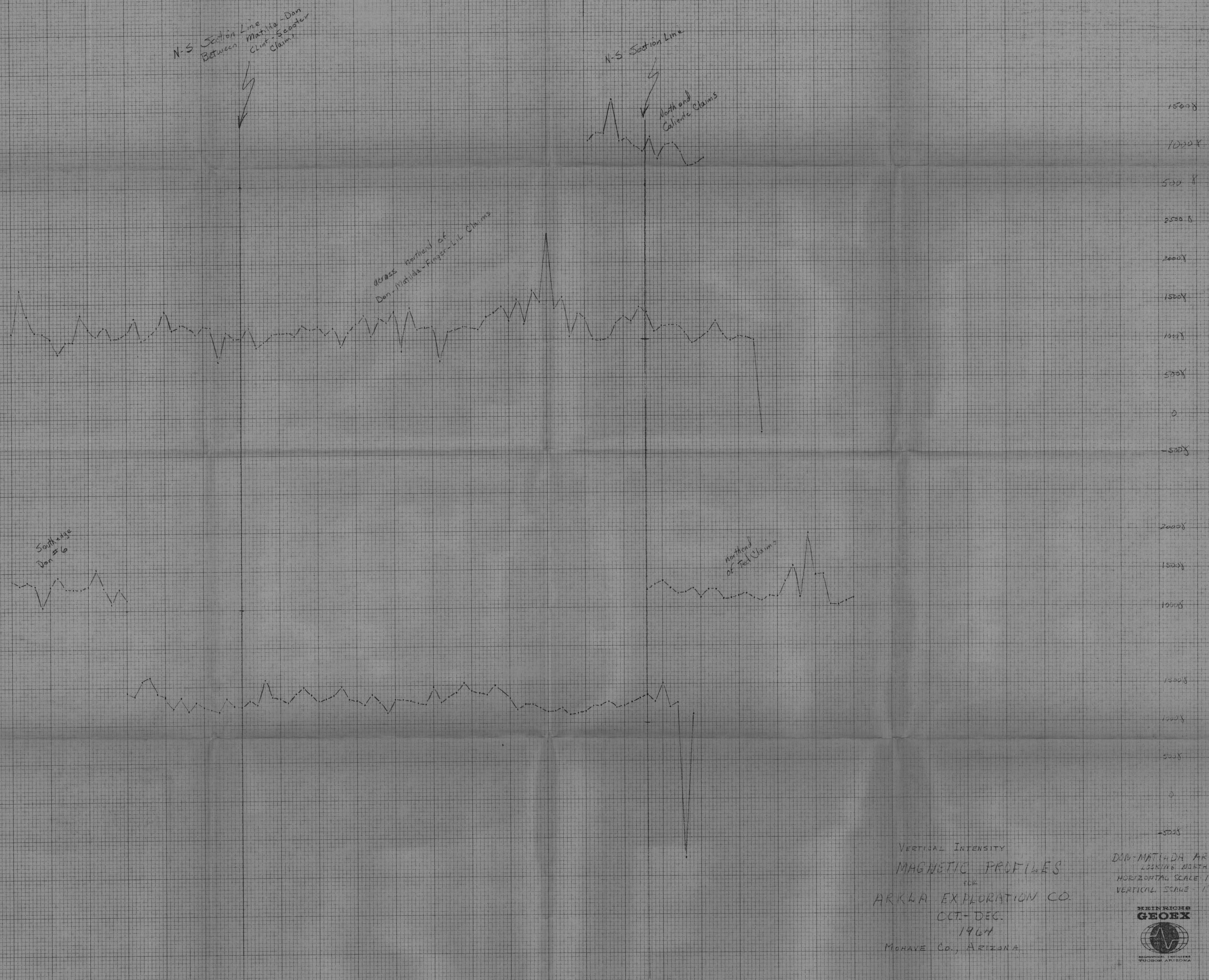
HEINRICHS GEOEXPLORATION COMPANY
P.O. Box 5671 Tucson, Arizona

FOR
ARKANSAS LOUISIANA GAS COMPANY

MATILDA - N. SIDE - PAY CHECK AREAS
MOHAVE COUNTY, ARIZONA

SCALE: 1" = 1000'	CONTOUR INTERVAL:	REVISIONS
	DATA BY:	10/31/64
DATE: OCT. 1964	SHEET 1 OF 2	
DRAWN BY: I.B.	DRAWING NO.:	FILE:


R 19 W
T 17 N
6 5
7 8
5 4
8 9
4 3
9 10
3 2
18 17
17 16
16 15
21 22
Magnetic high ground check No I.P. correlation
I.P. WEAK SULPHIDE INDICATIONS
I.P. WEAK SULPHIDE INDICATIONS
magnetic high See I.P. anomalies correlation
magnetic high ground check See correlation I.P. anomalies
I.P. LINE 5
I.P. LINE 6
I.P. Line 7
I.P. Line 8
N
PROPOSED ADDITIONAL COVERAGE NUMBERED IN ORDER OF SIGNIFICANCE.
PRELIMINARY
HEINRICHS GEOEXPLORATION COMPANY
P.O. Box 5671 Tucson, Arizona
MATILDA - DON etc. AREA
FOR
ARKANSAS LOUISIANA GAS COMPANY
SCALE: 1" = 500'
CONTOUR INTERVAL: 200'
REVISIONS
DATA BY:
DATE: Week ending 1/15/64
SHEET OF
DRAWN BY:
DRAWING NO.:
FILE:
GEDEX TUCSON



VERTICAL INTENSITY

MAGNETIC PROFILES

FOR

ARKLA EXPLORATION CO.

OCT.- DEC.

1964

MOHAVE CO., ARIZONA

DON-MATILDA AREA

LOOKING NORTH

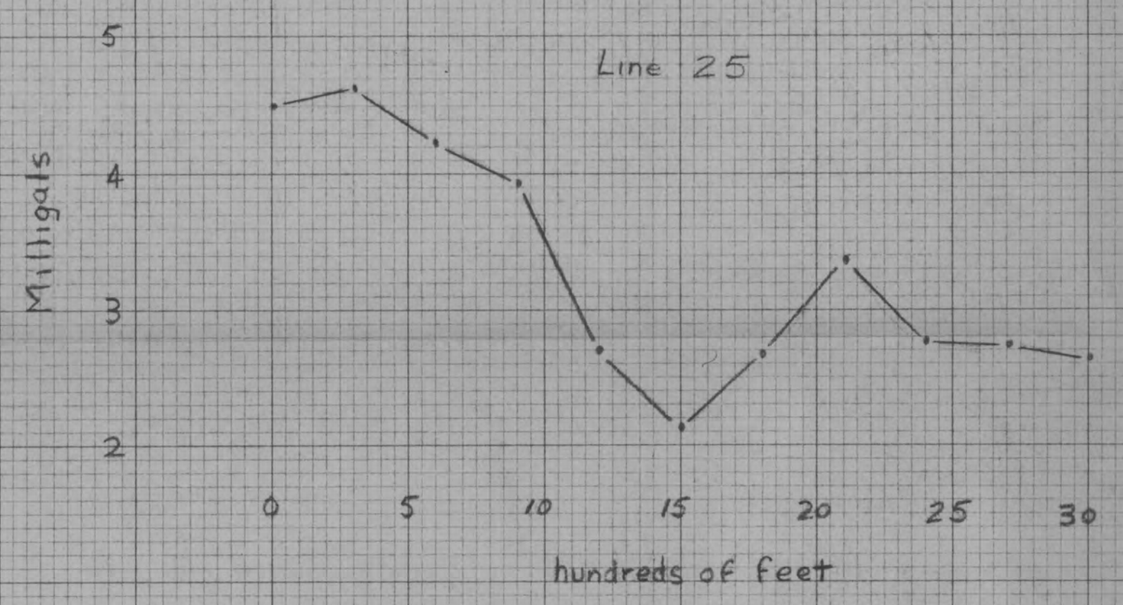
HORIZONTAL SCALE 1"=500'

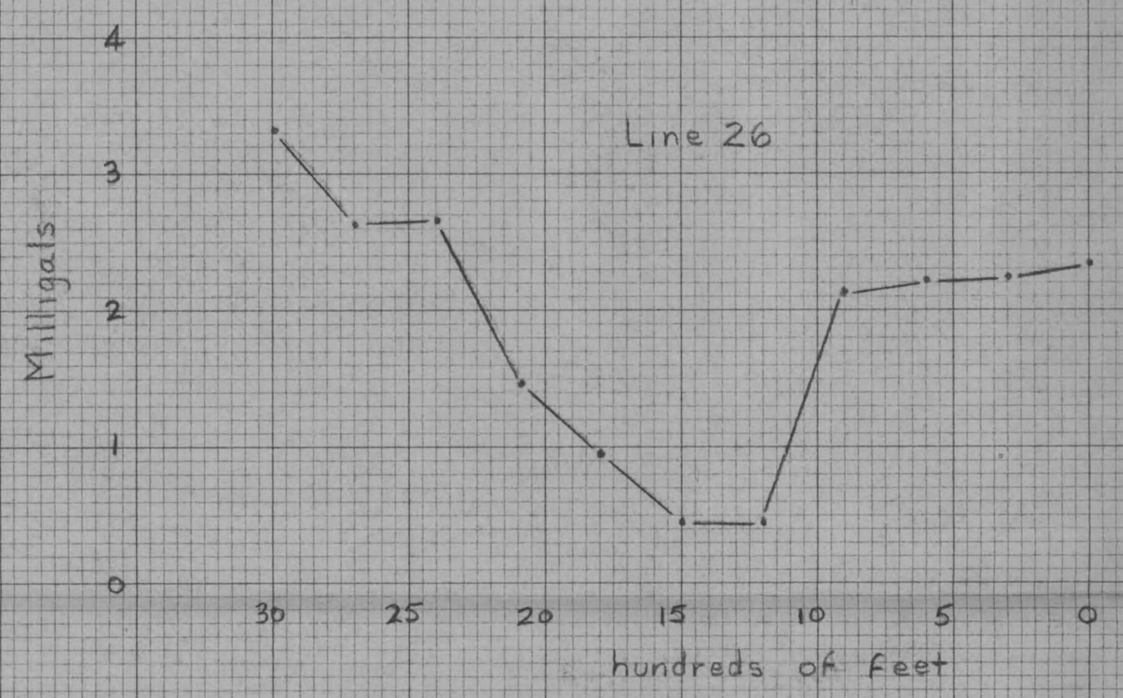
VERTICAL SCALE 1"=500γ

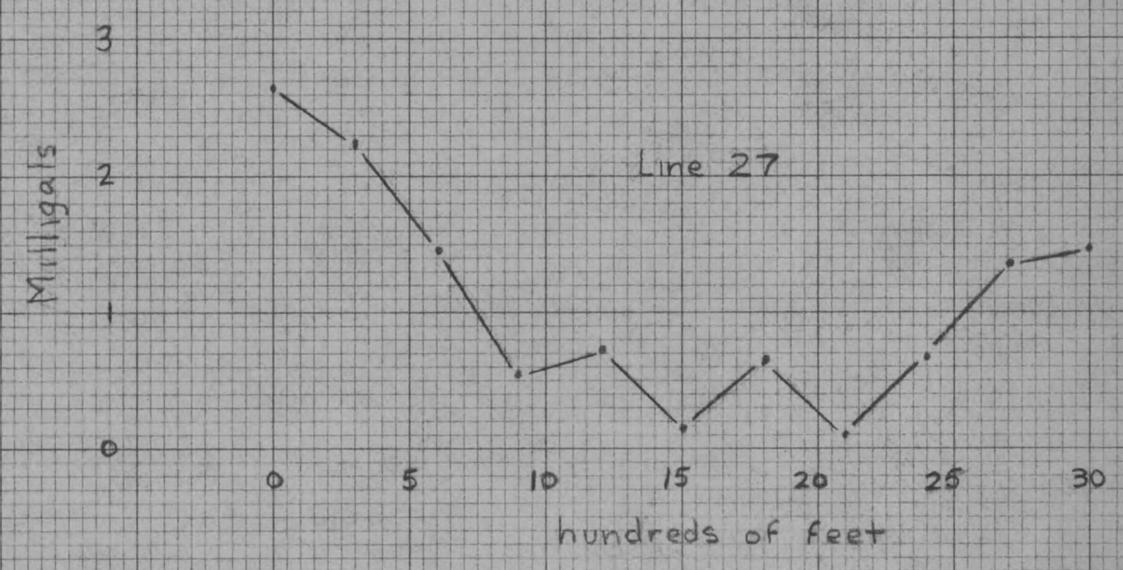
HEINRICHS GEOEX

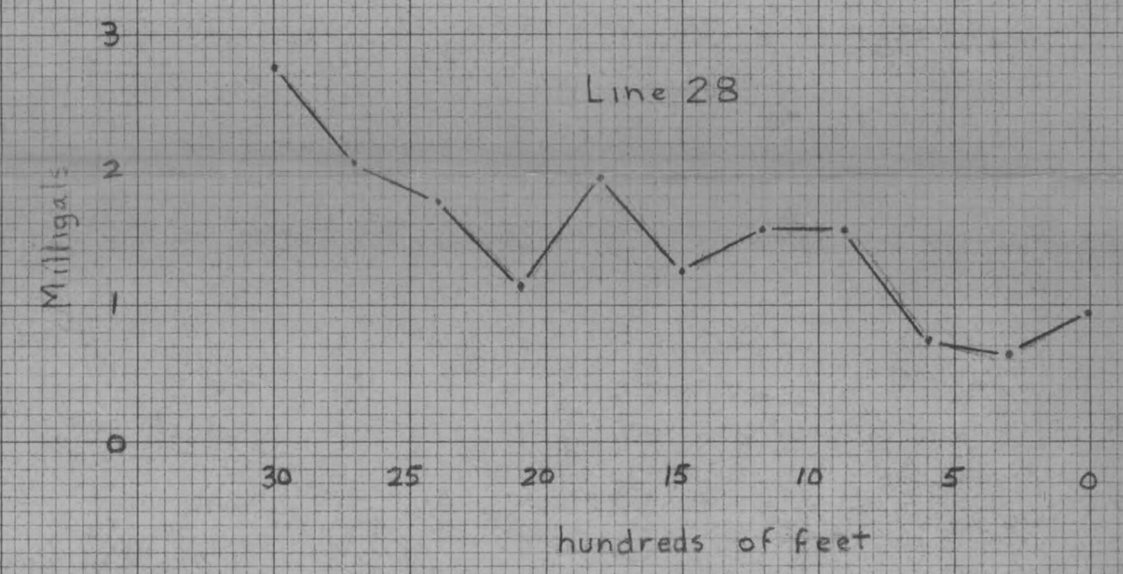
GEOPHYSICAL ENGINEERS

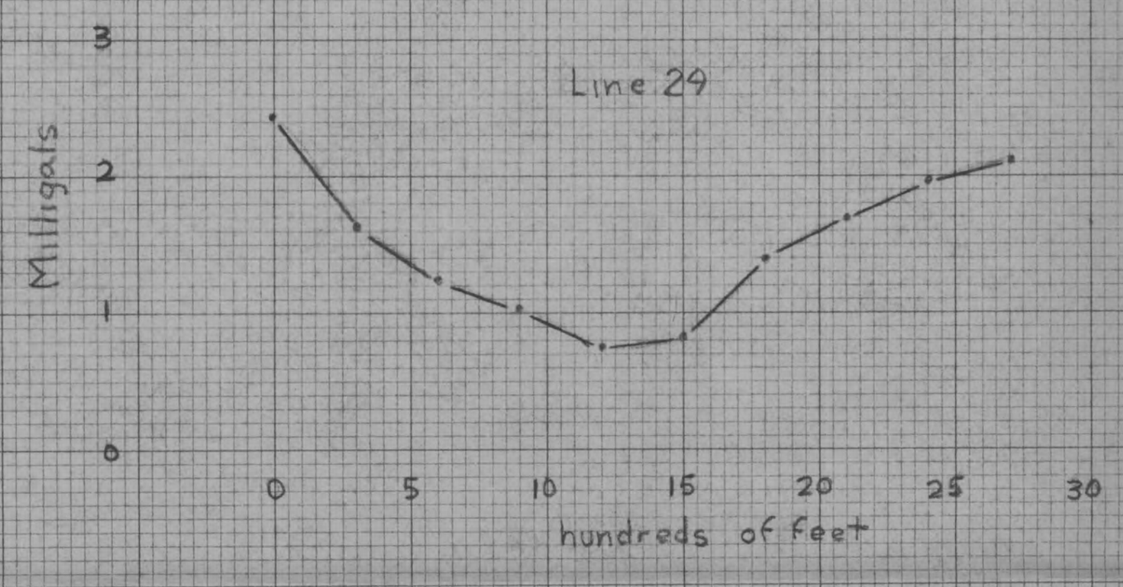
TUCSON, ARIZONA

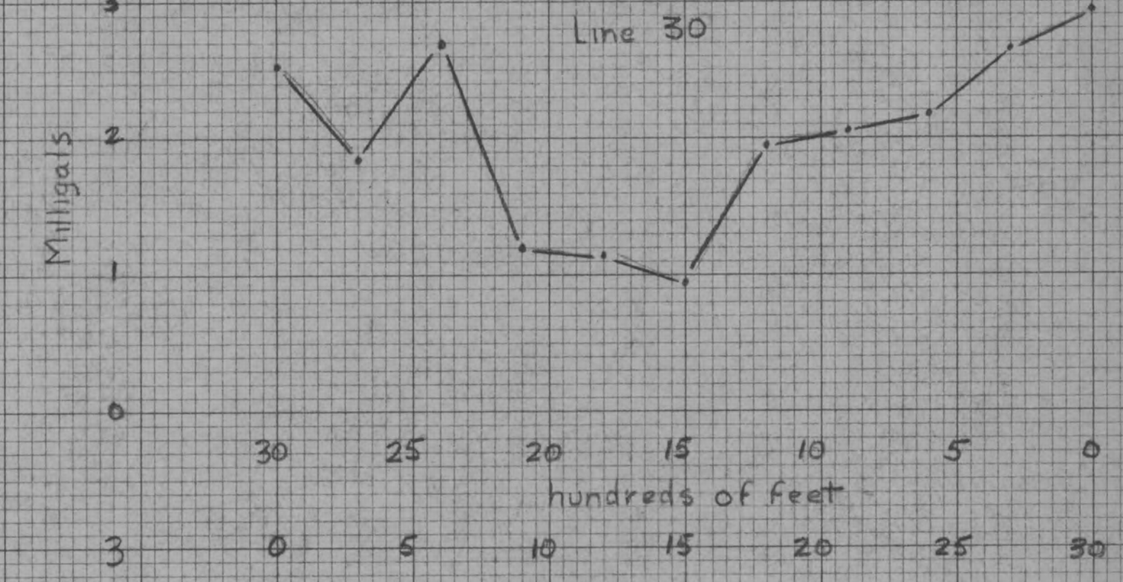










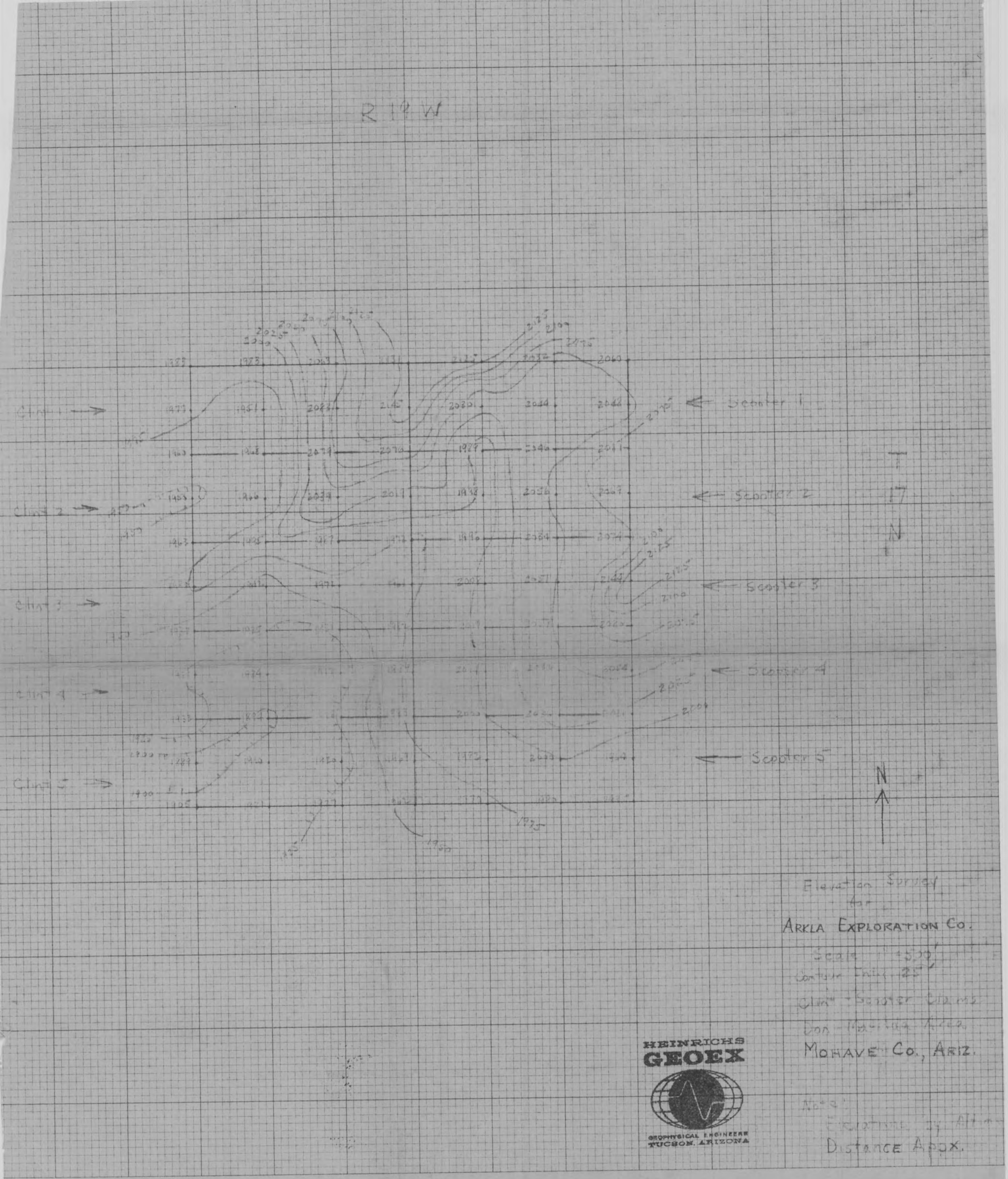


MOHAVE CO., ARIZ.

Don - Matilda Area
Clint - Scooter Claims
Gravity Profiles
for
Arkla Exploration Co.
Dec. 1964

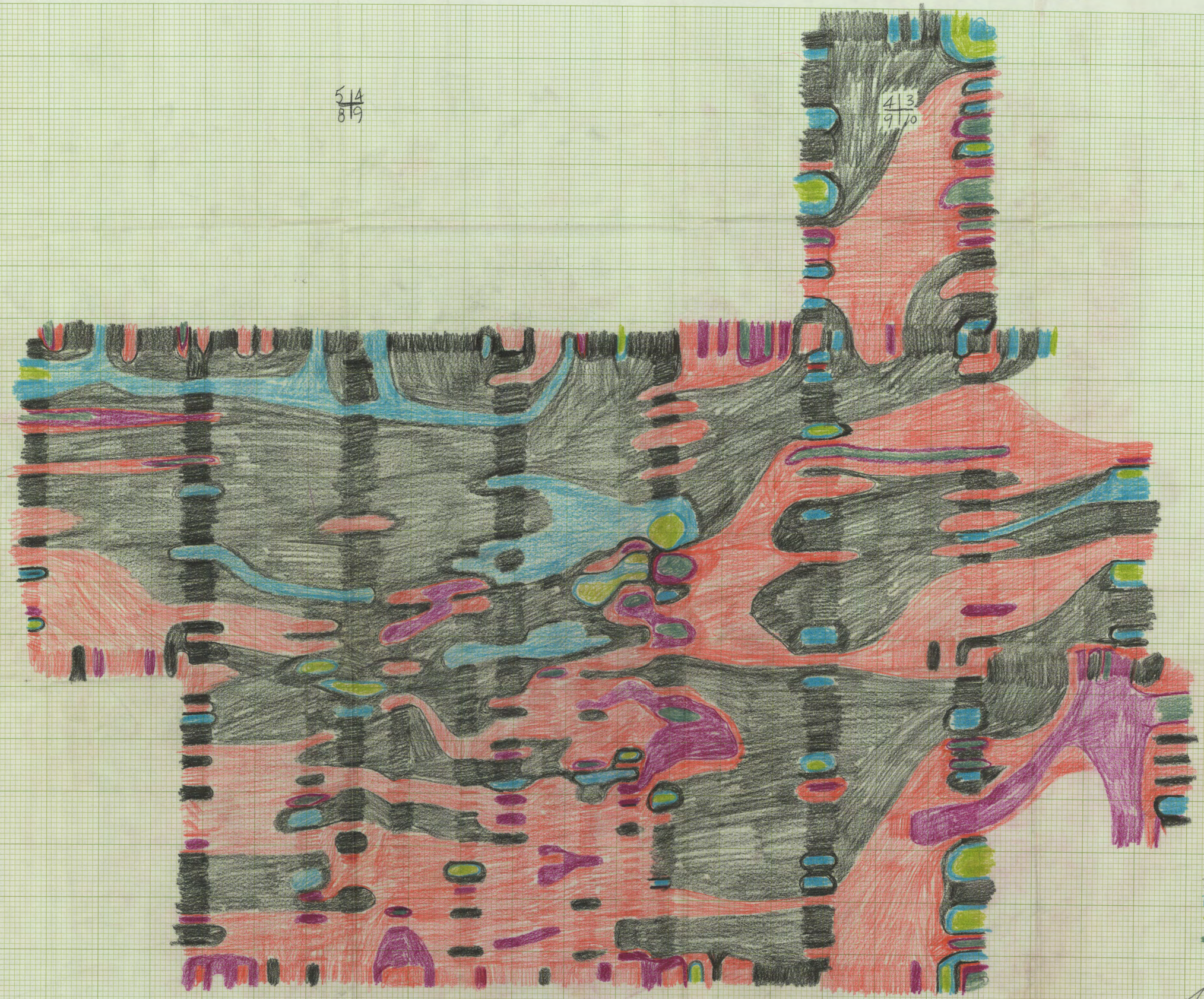
HEINRICHS
GEOEX
GEOPHYSICAL ENGINEERS
TUCSON, ARIZONA

All Profiles looking west
H Scale 1" = 500'
V " 1" = 1 mgl.



STANDARD CROSS SECTION

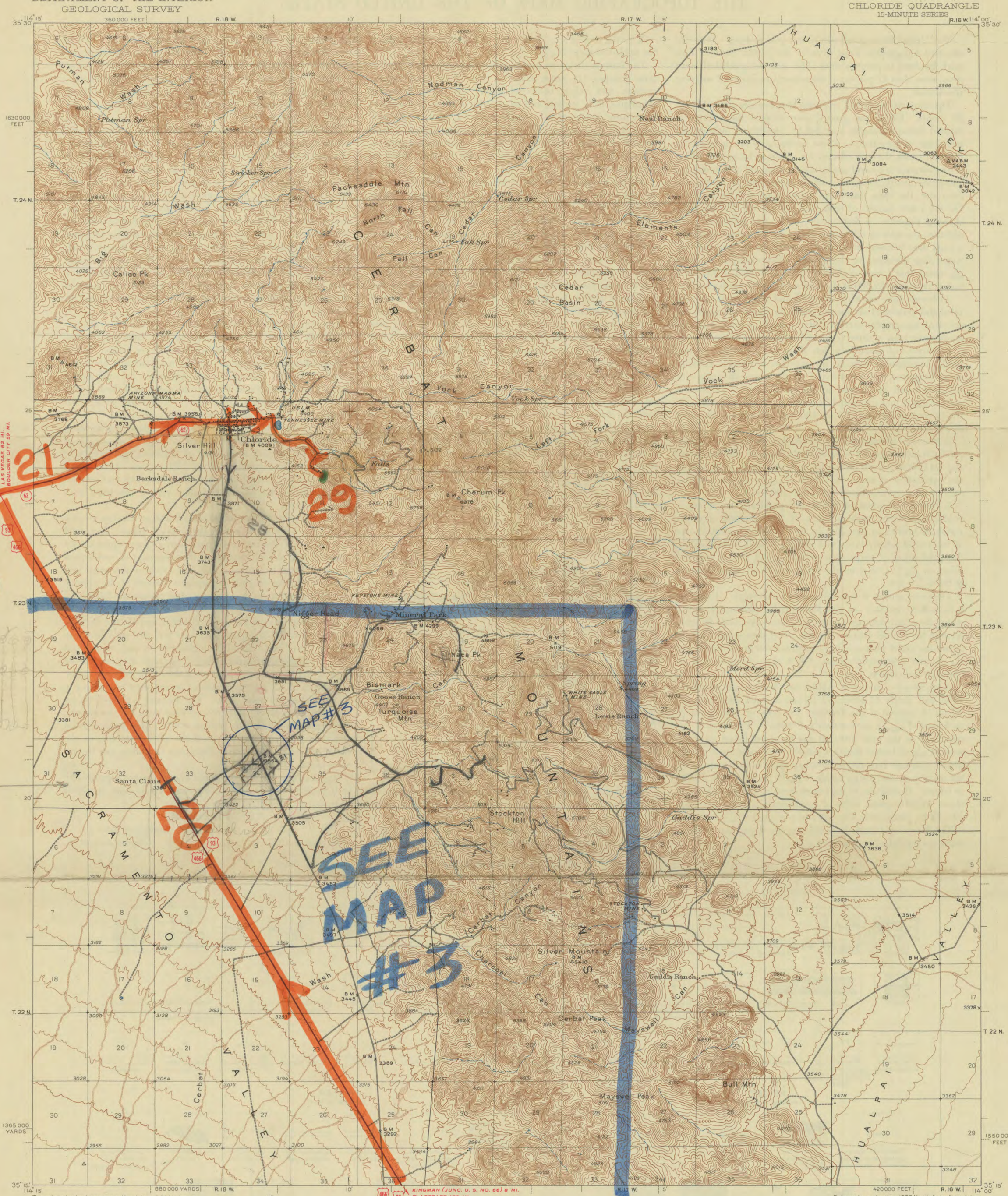
KEUFFEL & ESSER CO.
MADE IN U.S.A.
K+E STANDARD ⊕ CROSS SECTION
10 X 10 TO THE INCH
KEUFFEL & ESSER CO.
MADE IN U.S.A.



ARKLA Expl. Co.
Dec. 1964
Matilda - Don Area
Work Sheet

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

ARIZONA
(MOHAVE COUNTY)
CHLORIDE QUADRANGLE
15-MINUTE SERIES



Topography by Lawrence Hankins, J. M. Holmes, Chester Lloyd, and William Knox
Surveyed in 1939

HEINRICHS GEOEX
GEOPHYSICAL ENGINEERS
TUCSON, ARIZONA

APPROXIMATE MEAN DECLINATION, 1939

Scale 1/62500

Contour interval 50 feet
Datum is mean sea level

ROUTES USUALLY TRAVELED
HARD IMPERVIOUS SURFACES
OTHER SURFACE IMPROVEMENTS
U. S. ROUTE — STATE ROUTE

Polyconic projection. 1927 North American datum
5000 yard grid based on U.S. zone system, F
10000 foot grid based on Arizona (West) rectangular coordinate system

12/16/64

CHLORIDE, ARIZ.
Edition of 1944
N3515-W11400/15

MOMAG
ROUTE MAP

4

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a series of standard topographic maps to cover the United States. This work has been in progress since 1882, and the published maps cover more than 47 percent of the country, exclusive of outlying possessions.

The maps are published on sheets that measure about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale selected for each map being that which is best adapted to general use in the development of the country, and consequently, though the standard maps are of nearly uniform size, the areas that they represent are of different sizes. On the lower margin of each map are printed graphic scales showing distances in feet, meters, miles, and kilometers. In addition, the scale of the map is shown by a fraction expressing a fixed ratio between linear measurements on the map and corresponding distances on the ground. For example, the scale $\frac{1}{62,500}$ means that 1 unit on the map (such as 1 inch, 1 foot, or 1 meter) represents 62,500 of the same units on the earth's surface.

Although some areas are surveyed and some maps are compiled and published on special scales for special purposes, the standard topographic surveys and the resulting maps have for many years been of three types, differentiated as follows:

1. Surveys of areas in which there are problems of great public importance—relating, for example, to mineral development, irrigation, or reclamation of swamp areas—are made with sufficient detail to be used in the publication of maps on a scale of $\frac{1}{31,680}$ (1 inch = one-half mile) or $\frac{1}{24,000}$ (1 inch = 2,000 feet), with a contour interval of 1 to 100 feet, according to the relief of the particular area mapped.

2. Surveys of areas in which there are problems of average public importance, such as most of the basin of the Mississippi and its tributaries, are made with sufficient detail to be used in the publication of maps on a scale of $\frac{1}{62,500}$ (1 inch = nearly 1 mile), with a contour interval of 10 to 100 feet.

3. Surveys of areas in which the problems are of minor public importance, such as much of the mountain or desert region of Arizona or New Mexico, and the high mountain area of the northwest, are made with sufficient detail to be used in the publication of maps on a scale of $\frac{1}{125,000}$ (1 inch = nearly 2 miles) or $\frac{1}{250,000}$ (1 inch = nearly 4 miles), with a contour interval of 20 to 250 feet.

The aerial camera is now being used in mapping. From the information recorded on the photographs, planimetric maps, which show only drainage and culture, have been made for some areas in the United States. By the use of stereoscopic plotting apparatus, aerial photographs are utilized also in the making of the regular topographic maps, which show relief as well as drainage and culture.

A topographic survey of Alaska has been in progress since 1898, and nearly 44 percent of its area has now been mapped. About 15 percent of the Territory has been covered by maps on a scale of $\frac{1}{500,000}$ (1 inch = nearly 8 miles). For most of the remainder of the area surveyed the maps published are on a scale of $\frac{1}{250,000}$ (1 inch = nearly 4 miles). For some areas of particular economic importance, covering about 4,300 square miles, the maps published are on a scale of $\frac{1}{62,500}$ (1 inch = nearly 1 mile) or larger. In addition to the area covered by topographic maps, about 11,300 square miles of southeastern Alaska has been covered by planimetric maps on scales of $\frac{1}{125,000}$ and $\frac{1}{250,000}$.

The Hawaiian Islands have been surveyed, and the resulting maps are published on a scale of $\frac{1}{62,500}$.

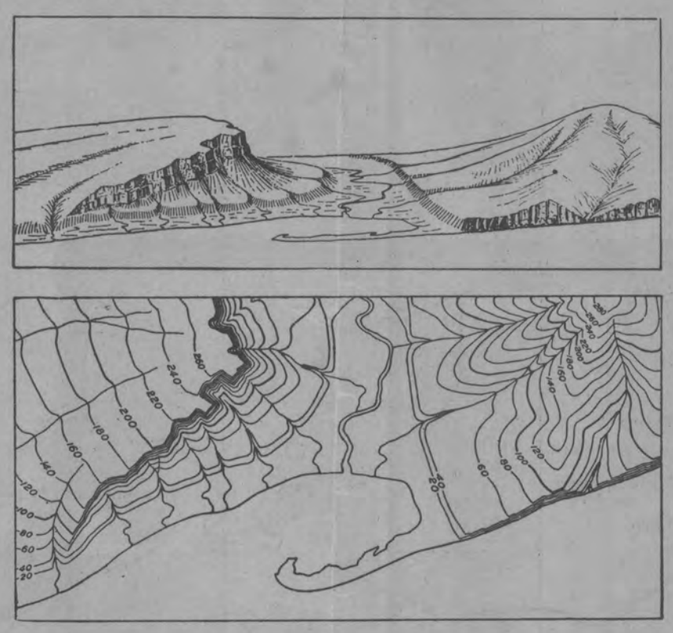
A survey of Puerto Rico is now in progress. The scale of the published maps is $\frac{1}{30,000}$.

The features shown on topographic maps may be arranged in three groups—(1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture (works of man), such as towns, cities, roads, railroads, and boundaries. The symbols used to represent these features are shown and explained below. Variations appear on some earlier maps, and additional features are represented on some special maps.

All the water features are represented in blue, the smaller streams and canals by single blue lines and the larger streams by double lines. The larger streams, lakes, and the sea are accentuated by blue water lining or blue tint. Intermittent streams—those whose beds are dry for a large part of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines in brown, which on a few maps are supplemented by shading showing the effect of light thrown from the northwest across the area represented, for the purpose of giving the appearance of relief and thus aiding in the interpretation of the contour lines. A contour line represents an imaginary line on the ground (a contour) every part of which is at the same altitude above sea level. Such a line could be drawn at any altitude, but in practice only the contours at certain regular intervals of altitude are shown. The datum or zero of altitude of the Geological Survey maps is mean sea level. The 20-foot contour would be the shore line if the sea should rise 20 feet above mean sea level. Contour lines show the shape of the hills, mountains, and valleys, as well as their altitude. Successive contour lines that are far apart on the map indicate a gentle slope, lines that are close together indicate a steep slope, and lines that run together indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.



The sketch represents a river valley that lies between two hills. In the foreground is the sea, with a bay that is partly enclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gently sloping spurs separated by ravines. The spurs are truncated at their lower ends by a sea cliff. The hill at the left terminates abruptly at the valley in a steep scarp, from which it slopes gradually away and forms an inclined tableland that is traversed by a few shallow gullies. On the map each of these features is represented, directly beneath its position in the sketch, by contour lines.

The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the topography of the area mapped: in a flat country it may be as small as 1 foot; in a mountainous region it may be as great as 250 feet. In order that the contours may be read more easily certain contour lines, every fourth or fifth, are made heavier than the others and are accompanied by figures showing altitude. The heights of many points—such as road intersections, summits, surfaces of lakes, and benchmarks—are also given on the map in figures, which show altitudes to the nearest foot only. More precise figures for the altitudes of benchmarks are given in the Geological Survey's bulletins on spirit leveling. The geodetic coordinates of triangulation and transit-traverse stations are also published in bulletins.

Lettering and the works of man are shown in black. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Public roads suitable for motor travel the greater part of the year are shown by solid double lines; poor public roads and private roads by dashed double lines; trails by dashed single lines. Additional public road classification if available is shown by red overprint.

Each quadrangle is designated by the name of a city, town, or prominent natural feature within it, and on the margins of the map are printed the names of adjoining quadrangles of which maps have been published. More than 4,100 quadrangles in the United States have been surveyed, and maps of them similar to the one on the other side of this sheet have been published.

Geologic maps of some of the areas shown on the topographic maps have been published in the form of folios. Each folio includes maps showing the topography, geology, underground structure, and mineral deposits of the area mapped, and several pages of descriptive text. The text explains the maps and describes the topographic and geologic features of the country and its mineral products. Two hundred twenty-five folios have been published.

Index maps of each State and of Alaska and Hawaii showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 percent is allowed on an order amounting to $5 or more at the retail price. The discount is allowed on an order for maps alone, either of one kind or in any assortment, or for maps together with geologic folios. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will be sent on request.

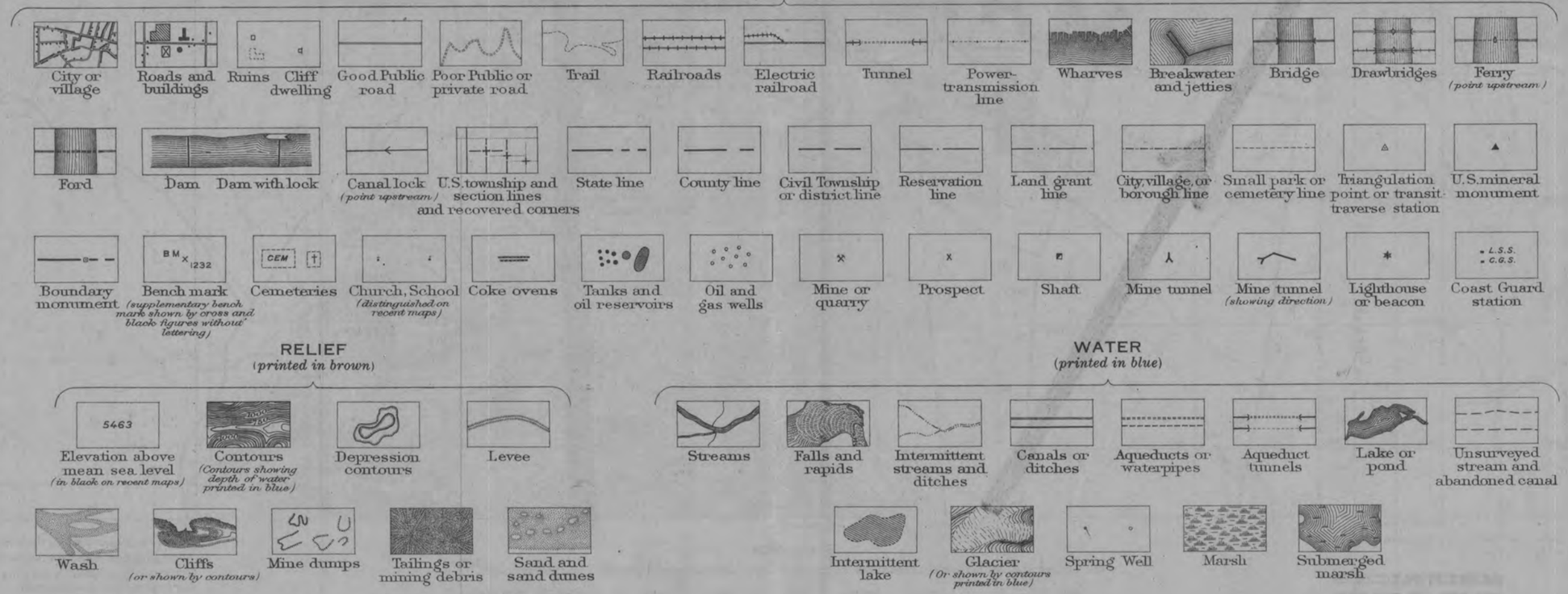
Applications for maps or folios should be accompanied by cash, draft, or money order (not postage stamps) and should be addressed to

THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

November 1937.

STANDARD SYMBOLS

CULTURE
(printed in black)



RELIEF
(printed in brown)

WATER
(printed in blue)

WOODS
(when shown, printed in green)

INDUCED POLARIZATION NOTES
FOR
ARKLA EXPLORATION CO.
NOV. 3 - DEC. 16,
1964

by
HEINRICHS GEOEXPLORATION CO.

SENDER NOTES

INDUCED POLARIZATION

for

ARKLA EXPLORATION

CO.

OCT 23 - DEC 17

1964

by

HEINRICHS GEOEXPLORATION CO.

P.O. BOX 5671

TUCSON, ARIZONA

Rx	D. ANDERSON
	M. LeDUC
Tx	J. Beeler
	R. CRUSER
POT	G. TAUREZ

INDUCED POLARIZATION SENDER NOTES

Project: North Side Line: #2 A North Date: 10-23-64

Send	34	45	23	34	45	12	23	34	45			
Receive	→	→	→	→	→	→	→	→	→			
Time	2	1.6	2	2	1.6	1.8	2	2	1.4			
Range												
Current												
Send	12	23	34	45	12	23	34	45				
Receive	→	→	→	→	→	→	→	→				
Time	1.8	2	2	1.4	2	2	2			CA	2-3	
Range											300	
Current												

INDUCED POLARIZATION SENDER NOTES

Project: North Side Line: #1 "A" South Date: 10-23-64

Send	23	12	34	23	12	45	34	23	12			
Receive	→	→	→	→	→	→	→	→	→			
Time	2.	2.	2.	2.	2.	1.6	2.	2.	2.			
Range												
Current												
Send	45	34	23	12	45	34	23	12				
Receive	→	→	→	→	→	→	→	→		CAL	3-4	
Time	1.6	2	2	1.8	1.6	2	2	1.8			300	
Range												
Current												

A.L.G.Co

INDUCED POLARIZATION SENDER NOTES

Project: Payshock Line: #2 A South Date: 10-26-64

Send	1-2				2-3				3-4			
Receive	→			→				→				→
Time	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2
Range												
Current												
Send	4-5											
Receive	→		→							PA	2.3	
Time	1.8	1.4	1.4	1.4							.300	
Range												
Current												

4.5 1.0

A.L.G. Co.

INDUCED POLARIZATION SENDER NOTES

Project: Paycheck Claim Line: #2 "B" South Date: 10-27-64

Send	5-6				6 7				7-8			
Receive	→			→	→			→	→			→
Time	1.8	1.8	2.	2.	2.	2.	2.	2.	2.	2.	2.	2
Range												
Current												
Send	8-9											
Receive	→			→						Dal	6.7	
Time	2.	2.	2.	2.							300	
Range												
Current												

A.L.G.Co.

INDUCED POLARIZATION "A" SENDER NOTES

10 29-64

Project: Pay Check Claims Line: #2 "A" South Date: 10-28-64

Send	1-2				2-3				3 4			
Receive	→	→	→	→	→	→	→	→	→	→	→	→
Time	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.4	1.8	1.8	2.	2
Range												
Current												

Send	4-5											
Receive	→	→	→	→						CAL	.300	
Time	1.	1.4	1.4	1.4							2-3	
Range												
Current												

A.L.G. Co

INDUCED POLARIZATION SENDER NOTES

Project: Payarech Line: #2 B South Date: 10-29-64

Send	5-6				6-7				7-8			
Receive	→			→	→			→	→			→
Time	1.4	1.4	1.4	1.4	2.	2	2.	2.	2	2.	2.	2.
Range												
Current												
Send	8-9											
Receive	→			→								
Time	1.4	1.4	2.	2						CA/	2-3	
Range											300	
Current										CA/	8 9	
											300	

PAYCHECK

INDUCED POLARIZATION SENDER NOTES

Project: Northside Line: #4 "A" South Date: ~~10-30-84~~ 11-3-84

Send	1-2				23				34			
Receive	→			→	→			→	→			→
Time	1.6	1.6	1.6	1.6	2.	2.	2.	2.	12.	1.2	1.2	1.2
Range												
Current												
Send	4-5											
Receive	→			→								
Time	1.2	1.2	1.2	1.2						CA/	23	
Range											.300	
Current									CA/	4-5 .300		

Pay Check

INDUCED POLARIZATION "" SENDER NOTES

Project: North Side Line: #4B South Date: 11-3-64

Send	5-6				6-7				78			
Receive	→			→	→			→	→			→
Time	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.
Range												
Current												
Send	8-9											
Receive	→			→								
Time	2.	2.	2.								Cal.	6-7 .300
Range										Cal.	8-9 .300	
Current												

INDUCED POLARIZATION SENDER NOTES

Project: DON & Matilda Line: #5 "A" South Date: 11-10-64

Send	1-2				2-3				3-4			
Receive	→				→				→			
Time	1.4	1.4	1.4	1.2	1.8	2.0	1.8	1.8	2.0	2.0	2.0	2.0
Range												
Current												
Send	4-5											
Receive	→											
Time	2.0	2.0	20	2.0								
Range											Cal. 3-4	.300
Current										Cal. 4-5		

INDUCED POLARIZATION SENDER NOTES

Project: Dan & Matilda Line: #2 "B" south Date: 11-10-64

Send	5-6				6-7				7-8			
Receive	→			→	→			→	→			→
Time	1.8	1.8	1.8	1.8	1.4	1.4	1.4	1.4	1.6	1.4	1.6	1.6
Range												
Current												
Send	8-9											
Receive	→			→								
Time	2.0	2.0	2.0									
Range										CA	2-3	
Current											300	

ARKIA

INDUCED POLARIZATION SENDER NOTES

Project: Matidal Line: # 5C south Date: 12-14-64

Send	34	45	23	34	45	12	23	34	45			
Receive	→		→		→	→			→			
Time	2.	2.	1.4	2.	2.	1.	1.4	2.	2.			
Range												
Current												
Send	12	23	34	45	12	23	34	45				
Receive	→		→		→		→					
Time	1.	1.4	2.	2.	1.	1.4	2.	2.			Cal 2-3	
Range											300	
Current												

INDUCED POLARIZATION SENDER NOTES

Project: Arkla Don + Matilda Line: #6 Set "A" North Date:

Send	3-4	4-5		2-3	3-4	4-5		1-2	2-3	3-4	4-5	
Receive	1-2	1-2		1.8	1.2	1.2		2.0	1.8	1.2	1.2	
Time												
Range												
Current												

Send	1-2	2-3	3-4	4-5		1-2	2-3	3-4	4-5			
Receive	2.0	1.8	1.2	1.2		2.0	1.8	1.2				
Time												
Range												
Current												

INDUCED POLARIZATION SENDER NOTES

Project: Matilda Scooter Line: #6 Set 'B' → South Date: Nov 12

Send	2-3	1-2		3-4	3-2	2-1		5-4	4-3	3-2	2-1	
Receive	2.0	2.0		1.4	2.0	2.0		1.2	1.4	2.0	2.0	
Time												
Range												
Current												
Send	5-4	4-3	3-2	2-1		5-4	4-3	3-2	2-1			
Receive	1.2	1.4	2.0			1.2	1.4					
Time											CA/	3.4
Range												3.0
Current												

INDUCED POLARIZATION SENDER NOTES

Project: Matilda Scooter Line: #7 C North Date: 11-17-64

Send	1-2				2-3				3-4			
Receive	→			→	→			→	→			→
Time	1.4	1.4	1.4	1.4	2.	2.	2.	2.	2.	2.	2.	2.
Range												
Current												
Send	4-5											
Receive	→			→								
Time	2.	2.	2.							CP	2-3	
Range											.300	
Current												

ARKLA

INDUCED POLARIZATION SENDER NOTES

Project: Matilda & Scooter Line: #7 "A" South Date: 11-13-64

Send	2.3	1-2	34	23	12	45	34	23	12			
Receive	→		→		→	→			→			
Time	1.6	1.4	1.8	1.6	1.4	2.	1.8	1.6	1.4			
Range												
Current												

Send	45	3-4	2-3	12	45	3-4	23	12				
Receive	→		→		→			→				
Time	2.	1.8	1.6	1.4							CA / 2-3	
Range											.300	
Current												

ARKLA

INDUCED POLARIZATION "A" SENDER NOTES

Project: Matilda & Scooter Line: #7 North Date: 11-13-64

Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5			
Receive	→	→	→	→	→	→	→	→	→			
Time	1.8	2.	1.6	1.8	2.	1.4	1.6	1.8	2.			
Range												
Current												

Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5				
Receive	→	→	→	→	→	→	→	→				
Time	1.4	1.6	16	2.							CAL.	2-3
Range												.300
Current												

Ark 1A

INDUCED POLARIZATION SENDER NOTES

Project: Finger Line: #8 "A" North Date: 11-2020

Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5			
Receive	→		→			→						
Time	2.	2.	2	2	2	2.	2	2.	X			
Range												
Current												

Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5				
Receive	→		→		→		→					
Time	2.	2.	2.	X	2	2	2	X			C/A/2-3	
Range											.300	
Current												

INDUCED POLARIZATION SENDER NOTES

Project: Finger Line: #8 "A" South Date: 11-19-64

Send	2-3	1-2	34	23	12	45	3-4	23	12			
Receive	→		→		→							
Time	2.	2.	2.	2.	2.	2.	2.	2.	2.			
Range												
Current												
Send	45	34	23	12	45	34	23	12				
Receive	→		→		→		→					
Time	2.	2.	2.	2.								
Range										CA	2-3	
Current											30	

INDUCED POLARIZATION SENDER NOTES

Project: 4-Buttes Line: 9 North Date: 11-22-64

Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		3-4	
Receive	→	→	→	→	→	→	→	→	→		CAL	
Time	2,000	→	→	→	→	→	→	→	→		30	
Range												
Current												
Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5				
Receive	→	→	→	→	→	→	→	→				
Time	2,000	→	→	→	→	→	→	→				
Range												
Current												

INDUCED POLARIZATION "A" SENDER NOTES

Project: Foo Butte Line: #9 "A" South Date: 11-21-64

Send	2-3	1-2	3-4	2-3	1-2	45	34	23	12			
Receive	→		→		→		→		→			
Time	2.	2.	2.	2.	2.	2.	2.	2.	2.			
Range North	34	45	23	34	45	12	23	34	45	CA/	34	300
Current	2.	2.	2	2	2	2	2	2	2.			
Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2				
Receive	→		→		→		→					
Time	2.	2.	2	2.	2.	2.						
Range North	12	23	34	45	12	23	34	45		CA/	3-4	
Current	2.	2.	2.	2.	2.	2.	2.	2.			300	

INDUCED POLARIZATION SENDER NOTES

Project: A-B Line: 10 A NORTH Date: 11-23-64

Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5			
Receive	→	→	→	→	→	→	→	→	→			
Time	2.00	→	→	→	→	→	→	→	→			
Range												
Current												
Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5				
Receive	→	→	→	→								
Time	2.00	→	→	→	→	→	→	→				
Range												
Current												

INDUCED POLARIZATION SENDER NOTES

Project: 4-BUTTES Line: 10A South Date: 11-22-64

Send	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		2-3	
Receive	→	→	→	→	→	→	→	→	→		CAL	
Time	2.00	→	→	→	→	→	→	→	→		300	
Range												
Current												
Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2				
Receive	→	→	→	→								
Time	2.00	→	→	→	→	→	→	→				
Range												
Current												

ARKLA

INDUCED POLARIZATION SENDER NOTES

Project: 4 B Line: #10 "B" North Date: 11-25-64

Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5			
Receive	→	→	→	→	→	→	→	→	→			
Time	1.8	2.	1.8	1.6	2.	2.	1.8	1.8	2.			
Range												
Current												
Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5				
Receive	→	→	→	→	→	→	→	→				
Time	2	2	1.8	2.	2.	2.	1.8	2.		CAL	3	4
Range											300	
Current												

ARK 14

INDUCED POLARIZATION "B" SENDER NOTES

Project: 4 B Line: #10 "B" South Date: 11-25-64

Send	2-3	1 2	3-4	2-3	1-2	4 5	3 4	2 3	1 2			
Receive	→	→	→	→	→	→	→	→	→			
Time	1.8	2.	1.8	1.8	2.	2.	1.6	1.8	2.			
Range												
Current												
Send	4 5	3-4	2 3	1-2	4 5	3-4	2-3	1-2				
Receive	→	→	→	→	→	→	→	→				
Time	2.	1.8	2.	2.	2.	1.8	2.	2.				
Range										Cpl 3-4		
Current											.300	

INDUCED POLARIZATION SENDER NOTES

project: 4-Burres Line: 11 North Date: 11-29-64

Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5			
Receive	→	→	→	→	→	→	→	→	→			
Time	2.000	→	→	→	→	→	→	→	→			
Range												
Current												
Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5				
Receive	→	→	→	→	→	→	→	→				
Time	2,000	→	→	→	→	→	→	→				
Range												
Current												

INDUCED POLARIZATION SENDER NOTES

project: 4 Buttes Line: 11 SOUTH EAST Date: 11-30-64

Send	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		2-3	
Receive	→	→	→	→	→	→	→	→	→		CAL	
Time	2,000	→	→	→	→	→	→	→	→		30	
Range												
Current												
Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2				
Receive	→	→	→	→	→	→	→	→				
Time	2,000	→	→	→	→	→	→	→				
Range												
Current												

INDUCED POLARIZATION SENDER NOTES

project: BADGER Line: 12 NORTH Date: 12-2-64

Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5			
Receive	→	→	→	→	→	→	→	→	→			
Time	2.00	→	→	→	→	→	→	→	→			
Range												
Current												
Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5				
Receive	→	→	→	→	→	→	→	→				
Time	2.0	→	→	→	→	→	→	→				
Range												
Current												

INDUCED POLARIZATION SENDER NOTES

project: BADGER Line: 12 SOUTH WEST Date: 12-1-64

Send	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2			
Receive												
Time	2.0											
Range												
Current												
Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2				
Receive												
Time	2.0											
Range												
Current												

INDUCED POLARIZATION SENDER NOTES

Project: West End Line: 13 South Date: 12-3-64

Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		2-3	
Receive	→	→	→	→	→	→	→	→	→		CAL	
Time	2.0	→	→	→	→	→	→	→	→		30	
Range												
Current												
Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5				
Receive	→	→	→	→	→	→	→	→				
Time	2.0	→	→	→	→	→	→	→				
Range												
Current												

INDUCED POLARIZATION SENDER NOTES

Project: West End Line: 13 North Date: 12-3-64

Send	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2			
Receive	→	→	→	→	→	→	→	→	→			
Time	2.00	→	→	→	→	→	→	→	→			
Range												
Current												
Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2				
Receive	→	→	→	→	→	→	→	→				
Time	2.0	→	→	→	→	→	→	→				
Range												
Current												

INDUCED POLARIZATION SENDER NOTES

project: West End Line: 14 South Date: 12-5-64

Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5			
Receive	→	→	→	→	→	→	→	→	→			
Time	2.00	→	→	→	→	→	→	→	→			
Range												
Current												
Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5				
Receive	→	→	→	→								
Time	2.0	→	→	→	→	→	→	→				
Range												
Current												

INDUCED POLARIZATION SENDER NOTES

Project: West End Line: 14 North Date: 12-5-64

Send	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2			
Receive	→		→		→	→			→			
Time	2.00	→							→			
Range												
Current												
Send	4-5	3-4	2-3	1-2	4-5	3-4	23	1-2				
Receive	→			→								
Time	2.00	→						→				
Range												
Current												

INDUCED POLARIZATION SENDER NOTES

Project: West End Line: 15 South Date: 12-8-64

Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5			
Receive	→	→	→	→	→	→	→	→	→			
Time	2.0	→	→	→	→	→	→	→	→			
Range												
Current												
Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5				
Receive	→	→	→	→								
Time	2.0	→	→	→	→	→	→	→				
Range												
Current												

INDUCED POLARIZATION SENDER NOTES

project: West End Line: 15 North Date: 12-8-64

Send	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2			
Receive	→	→	→	→	→	→	→	→	→			
Time	2.00	→	→	→	→	→	→	→	→			
Range												
Current												
Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2				
Receive	→	→	→	→								
Time	2.00	→	→	→	→	→	→	→				
Range												
Current												

INDUCED POLARIZATION SENDER NOTES

Project: WEST END Line: 16 WEST Date: 12-9-64

Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		2-3	
Receive	→	→	→	→	→	→	→	→	→		CAL	
Time	2.00	→	→	→	→	→	→	→	→		300	
Range												
Current												
Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5				
Receive	→	→	→	→								
Time	2.00	→	→	→	→	→	→	→				
Range												
Current												

INDUCED POLARIZATION SENDER NOTES

Project: WEST END Line: 16 EAST Date: 12-10-64

Send	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2			
Receive	→	→	→	→	→	→	→	→	→			
Time	2.00	→	→	→	→	→	→	→	→			
Range												
Current												
Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2				
Receive	→	→	→	→								
Time	2.00	→	→	→	→	→	→	→				
Range												
Current												

~~NOT RUN~~
NO SUCH LINES RUN
D-19
D-25 thru D-29

Missing

D-40A

D-43A
D-44A

D-44B

D-1
D-2
D-3
D-4
D-5
D-6
D.7
D 8
D 9
D 10
D 11
D 12
D 13
D14
D15
D16
D17
D 30
D-31
D-32

D-33
D-34
D-35
D-35A
D-36
D-37 D 37A D 37B
D-38
D-39
D-40
D-41
D-42
D-43
D-44
D-45
D-46
D-47
[redacted]

18 drw 29 to follow

To Don
McCARTHY
Kingman

Corbett Mtn

D-40A
D-43A
D-44A
D-44B

ON MAP.

WE ARE MISSING COPIES.

D-1

D-2
D-3
D-4
D-5
D-6
D-7
D-8
D-9
D-10

D-11

D-12
D-13
D-14
D-15
D-16
D-17
D-18

D-20
D-21
D-22

D-23
D-24

D-30

D-31

D-32

D-33

D-34

D-35 35A

D-36

D-37 37A 37B

D-38

D-39

D-40 40A

D-41

D-42

D-43 43A

D-44 44A 44B

D-45 D-46 D-47

40 40A
41
42 42a 42B 42b 42b-B
43
44 44A
45 45A 45b 45b-A
46 46A
47
48 48A
49 49A
50 51
51 51A
52 52A 52B
53 53A
54
55 55A
56
57
58
59 59A

400

61
62
63
64
65
66
67 ~~68~~
69
100

D-40A
D-37A
D-43A
D-44A
D-44B

SET I

1 1A 1B

2

3 3A 3B

4

5

6 6A ? Repeat

7 7A

8 8A 8b 8ad 8aC 8aB

9 9A 9B 8aA 8a 8c

10 8-1eA 8-1e

11 8-1dB

12 8-1d 8-1B

13 8-1dA 8-1C

14 8-1c 8-1cA

15 15A 8-1b 8-1e

16 16A 16B 16C 8-aD 8-1bA

17

18 18A 18B 18C 18D 18E 18F

19 19A

~~20~~ 20A

a A

~~21~~

~~22~~ 22A

~~23~~ 23A

~~24~~ 24A

~~25~~ 25A

~~26~~

~~27~~ 27A

~~28~~ 28B

~~29~~ 29A

~~30~~

~~31~~

~~32~~

~~33~~

~~34~~

~~35~~

~~36~~

~~37~~ 37A 37B

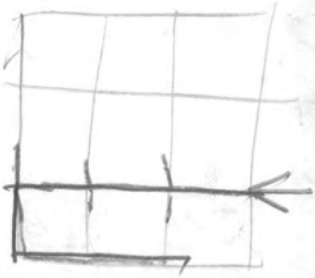
~~38~~ 38A

~~39~~ 39A 39B & C

8-1 a A

8-1 b

d



I.P. Survey Computation Sheet - 5-7-65

Project - Don Matilda, Line 17 ~~[illegible]~~ spd 2, Comp Date 5-8-65, By K.H.

Spd 2 East

Send	23	12	34	23	12	45	34	23	12	45	34	23	12	45
Receive	45 w	→	3-4 w	→		2-3 w	→			1-2 w	→			0-1 w
Range	30	10	30	10	3	30	10	3	3	10	10	3	3	3
I	7A	7A	5A	7A	7A	4A	5A	7A	7A	4A	5A	7A	7A	4A
Vdc (Avg)	47.25	13.87	32.55	12.05	6.32	20.0	10.55	5.84	3.67	6.95	5.13	3.18	2.22	3.86
Kn X 10^{-3}	3	12	3	12	3.0	3	12	30	60	12	30	60	105	30
ρdc	20.2	23.8	19.5	20.7	27.2	15.0	25.3	25.0	31.4	20.8	30.8	27.3	33.3	29.0
VAC Σ	46.6	13.24	31.2	11.50	5.94	19.10	9.98	5.52	3.40	6.56	4.76	2.95	2.02	3.62
Ac-dc CAL.	.983	→												
ρdc/ρAC	1.000	1.029	1.025	1.031	1.048	1.030	1.040	1.040	1.061	1.040	1.060	1.060	1.081	1.049
P.F.E.		2.9	2.5	3.1	4.8	3.0	4.0	4.0	6.1	4.0	6.0	6.0	8.1	4.5
M.C.F.	0	122	128	150	177	200	156	160	191	192	195	220	243	169

Send	34	23	12
Receive	→		
Range	3	3	1
I	5A	7A	7A
Vdc (Avg)	3.07	2.15	1.66
Kn X 10^{-3}	60	105	168
ρdc	36.8	32.2	39.8
VAC Σ	2.84	1.96	1.43
Ac-dc CAL	→		.940
ρdc/ρAC	1.063	1.078	1.092
P.F.E.	6.3	7.8	9.2
M.C.F.	176	242	231

Spd 2 West

Send	3-4	45	23	34	45	12	23	34	45	12	23	34	45	12
Receive	78 w	→	89 w	→		10 11 w	→			11-12 w	→			12-13 w
Range	30	30	30	10	3	30	10	10	3	10	3	3	1	10
I	6A	4A	7A	6A	5A	8A	7A	6A	5A	7A	7A	6A	5A	8A
V dc (Avg)	37.5	7.70	28.6	13.58	5.48	32.6	9.14	5.90	2.66	8.35	4.59	3.35	1.69	6.00
Kn X 10^{-3}	3	12	3	12	30	3	12	30	60	12	30	60	105	30
ρdc	18.7	23.1	12.3	27.2	32.9	12.2	15.7	29.5	32.0	14.3	19.7	33.5	35.5	22.5
VAC Σ	36.4	7.32	27.6	13.04	5.20	31.6	8.76	5.58	2.56	7.96	4.40	3.20	1.50	5.72
Acdc CAL	.986	→											.993	986
ρdc/ρAC	1.016	1.038	1.023	1.023	1.039	1.018	1.026	1.042	1.025	1.033	1.029	1.032	1.062	1.035
P.F.E.	1.6	3.8	2.3	2.3	3.9	1.8	2.6	4.2	2.5	3.3	2.5	3.2	6.2?	3.5
M.C.F.	85	164	187	85	119	147	165	142	78	221	147	96	175?	156

Send	23	34	45
Receive	→		
Range	3	3	1
I	7A	6A	5A
Vdc (Avg)	3.50	2.75	—
Kn X 10^{-3}	60	105	168
ρdc	30.0	98.2	43.0
VAC Σ	3.30	2.56	1.28
Ac-dc CAL	→		943
ρdc/ρAC	1.095	1.020	—
P.F.E.	4.5?	2.0?	—
M.C.F.	150	41	—

INDUCED POLARIZATION SENDER NOTES

Project: DON-MATILDA Line: 17 Spd. 2 WEST Date: MAY 7, 1965

Send	34	45	23	34	45	12	23	34	45	12	23	34
Receive	78W	→	8-9W	→	→	10-11W	→	→	→	11-12W	→	→
Time												
Range												
Current	6A	4A	7A	6A	5A	8A	7A	6A	5A	7A	7A	6A
Send	45	12	23	34	45							
Receive	→	12-13W	→	→	→							
Time												
Range												
Current	5A	8A	7A	6A	5A							

INDUCED POLARIZATION SENDER NOTES

Project: DON & MATILDA Line: 17 Spd 2 EAST Date: MAY 7, 1965

Send	23	12	34	23	12	45	34	23	12	45	34	23
Receive	4-5W	→	3-4W	→	→	2-3W	→	→	→	1-2W	→	→
Time												
Range												
Current	7A	7A	5A	7A	7A	4A	5A	7A	7A	4A	5A	7A
Send	12	45	34	23	12						CAL.	
Receive	→	0-1W	→	→	→							
Time											3A	
Range												
Current	7A	4A	5A	7A	7A							

INDUCED POLARIZATION - RECEIVER NOTES PAGE _____

Project: Don-Matilda Line: 17 and 2 E Int.Cal 568 Date: 7-7-65

Send	23	12	34	23	12	45	34	23	12	45	34	23
Rec.	4.5W →		34W →		→	23W →			→	1W		
~~Time~~	36	10	30	10	3	30	10	3	3	10	3	3
DC-1	23.5 2.42 23.7 22.9	7.18 7.76 6.60 6.00	16.1 16.4	6.07 6.19 5.92 5.86	3.05 3.30 3.19 3.03	10.1 9.9	5.30 5.38 5.20 5.19	2.88 2.91 2.96 3.01	1.82 1.82 1.89 1.82	3.72 3.70 3.20 3.40	2.63 3.02 2.35 2.13	1.58 1.68 1.47 1.44
DC-2	23.6 24.5 23.5	7.38 8.02 6.74 5.78	16.1 16.5	6.08 6.20 6.00	3.18 3.30 3.12	10.1 10.0	5.34 5.36 5.16	2.85 2.83 3.00	1.75 1.83 1.87	3.74 3.61 3.20 3.22	2.38 3.05 2.24 2.01	1.82 1.76 1.30 1.52
Σ												
DC-3	23.8 23.3	7.56 8.18 6.34	16.0 16.6	6.14 5.52	3.30 3.05	10.0 10.0	5.40 5.10	2.80 3.06	1.81 1.90	3.79 3.74 3.20 3.50	2.90 3.17 2.19 1.98	1.85 1.65 1.43 1.55
Dc-4	24.1 23.1	7.56 6.18	16.0 16.5	6.16 5.86	N 3.25 3.00	10.0	5.40 5.19	2.80 3.07	1.80 1.84	3.56 3.62 3.50 3.40	2.94 3.20 2.15 2.06	1.68 1.65 1.58 1.47
Σ												
DC-AV	47.25	13.87	32.55	12.05	6.32	20.0	10.55	5.84	3.67	6.95	5.13	3.18
AC-1	23.3	6.62	15.6	5.74	2.97	9.55	4.98	2.76	1.70	3.28	2.38	1.475
AC-2	23.3	6.62	15.6	5.76	2.57	9.55	5.00	2.76	1.70	3.28	2.38	1.475
Σ	46.6	13.24	31.2	11.50	5.94	19.10	9.98	5.52	3.40	6.56	4.76	2.95
S. P.	-16.9 →			-31.5 →		+13.7 →						
AC-N	.015 →		.102 →			.015 →						

INDUCED POLARIZATION - RECEIVER NOTES PAGE _____

Project: Don Mitfield Line: _____ Int.Cal 58.3 Date: _____

Send	12	45	34	23	1L							
Rec.	→	.0-1.5	→		→							
~~Time~~	3	3	3	3	1							
DC-1	.97 1.02 1.33 1.22	1.90 1.76 1.90 2.13	1.44 1.37 1.74 1.74	1.07 1.11 1.07 1.21	.76 .89 .91 .77							154.5 155.0
DC-2	.86 0.97 1.34 1.26	1.95 1.75 1.58 2.15	1.18 1.38 1.90 1.66	1.15 .95 .89 1.04	.78 .85 .73 .86							155.0 155.0
Σ												
DC-3	.95 .95 1.26 1.28	1.83 1.78 2.05 1.98	1.22 1.44 1.76 1.63	1.40 1.26 1.79 .72	1.60 .79 .68 .72							155.0
Dc-4	1.00 1.01 1.17 1.21	1.78 1.70 2.08 2.12	1.38 1.38 1.67 1.70	1.26 1.44 .95 .80	.98 .98 .72 .90							
Σ		1.71		1.22 .99	.93 .64							3.10
DC-AV	2.22	3.46	3.07	2.15	1.66							3.10
AC-1	1.01	1.81	1.42	.98	.715							1.49
AC-2	1.01	1.81	1.42	.98	.715							1.49
Σ	2.02	3.62	2.84	1.96	1.430							2.98
S. P.	+11.3	-13.1	→	→	→							
AC-N	.01	.01	→	→	→							

.008 IN

32.6
32.5
32.6
32.7
32.7
32.6

5.88+
5.94+
5.96+
5.81+
6.01+
5.88+
5.88+
5.84+

240
24
10
16
18
8720

190

916-
920
9.20
9.10
9.06-
9.12-
9.16-
9.14-

24
9
1

5.90
5.58
32

590) 3200 (5.4
2950
2500

8) 114 (14
8
34

914
876
38

914) 3800 (4.1
3656
1440

INDUCED POLARIZATION - RECEIVER NOTES PAGE _____

Project: Don Matilda Line: 17 spd 2 W2 Int.Cal 50.8 Date: 5-7-65

Send	34	45	23	34	45	12	23	34	45	12	23	34
Rec.	7-8	→	8-9		→	9-10			→	10-11		
Time	30	30	36	10	3	30	10	10	3	10	3.	3
DC-1	18.7 18.8	3.96 3.90 3.80	14.0 14.6	6.58 7.00	2.72 2.67 2.75 2.74	16.8 15.8	4.70 4.66 4.46	2.88 2.62 3.00	1.30 1.31 1.48 1.48	4.10 4.30 4.24 3.94	2.41 2.42 2.10 2.26	1.73 1.60 1.64 1.77
DC-2	18.7 18.8	3.86 3.82	13.9 14.7	6.58 7.02	2.73 2.60 2.72 2.95	16.7 15.9	4.74 4.46	2.94 3.02	1.26 1.32 1.47 1.36	4.10 4.32 4.22	2.44 2.32 2.14 2.22	1.60 1.72 1.90 1.76
Σ					5.44							
DC-3		3.94 3.78	13.9 14.7	6.52 7.08	2.74 2.50 2.72	16.8 15.9	4.64 4.42	2.79 3.22	1.19 1.34 1.50 1.36	4.04 4.19	2.30 2.42 2.20 2.14	1.57 1.50 1.67 1.75
Dc-4		3.90 3.86	13.9	6.50	2.58 2.92	16.7	4.70 4.52	2.66 3.22	1.34 1.37 1.30 1.40	4.22 3.98	2.30 2.42 2.22 2.27	1.62 1.78 1.60 1.50
Σ												
DC-AV	37.5	7.70	28.6	13.58	5.48	32.6	9.14	5.90	2.66	8.35	4.59	3.35
AC-1	18.2	3.66	13.8	6.52	2.60	15.4	4.38	2.79	1.28	3.98	2.20	1.60
AC-2	18.2	3.66	13.8	6.52	2.60	15.4	4.38	2.79	1.28	3.98	2.20	1.60
Σ	36.4	7.32	27.6	13.04	5.20	31.6	8.76	5.58	2.56	7.96	4.40	3.20
S. P.	-20.8	—	-15.0	—	—	+24.7	—	—	—	-17.5	—	—
AC-N	.62	—	.02	—	—	.12	—	—	—	.02	—	—
							2.1	3.4				

-6.04+
-5.80
-5.94+
-5.96+
-5.90
-6.00
-6.22+
-5.82+
-6.14+
-6.14+

26
12
27
8
496
30
25
59.96
300

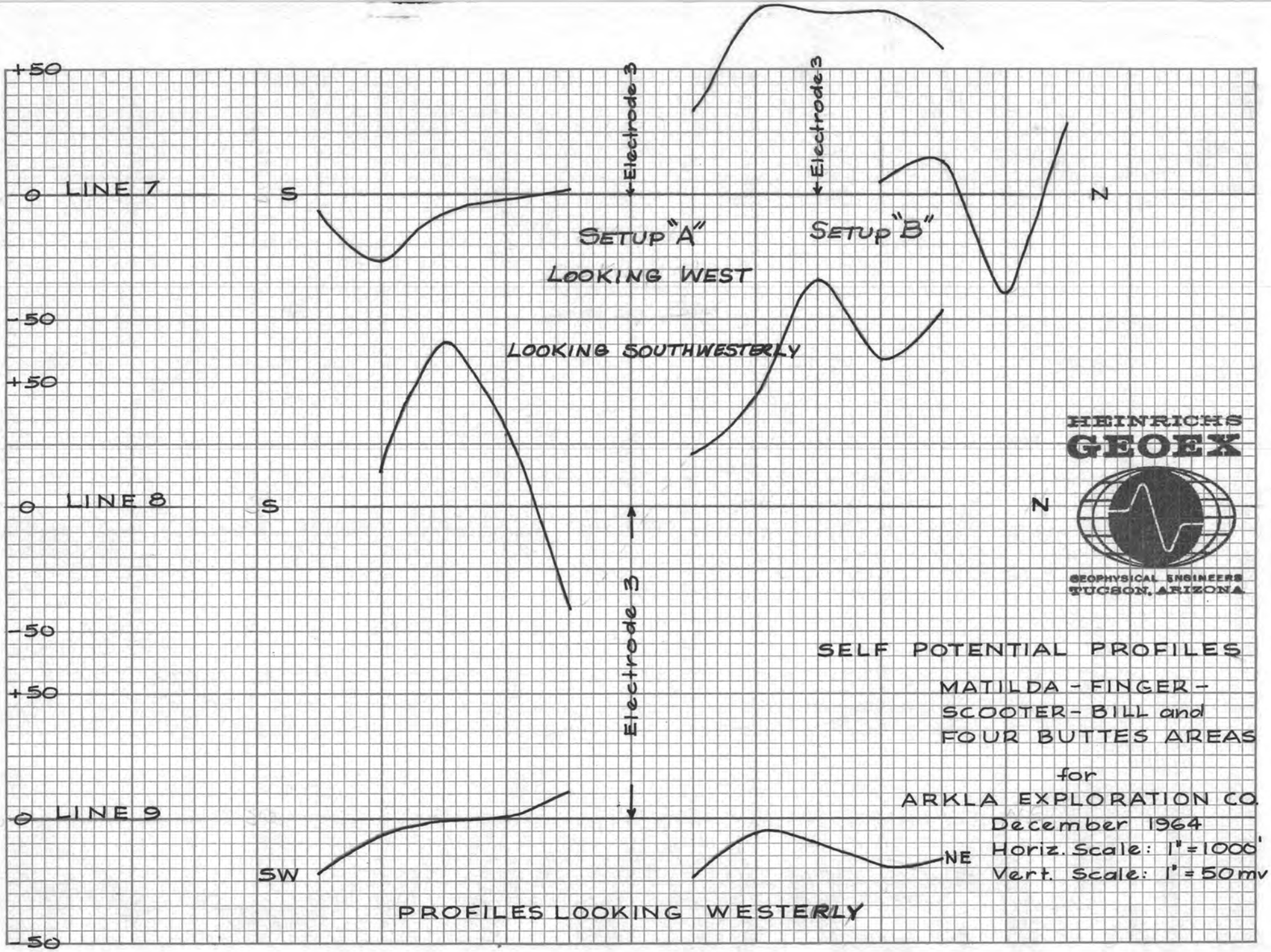
6.00
+72
28

0.046
600) 28.00
24
400

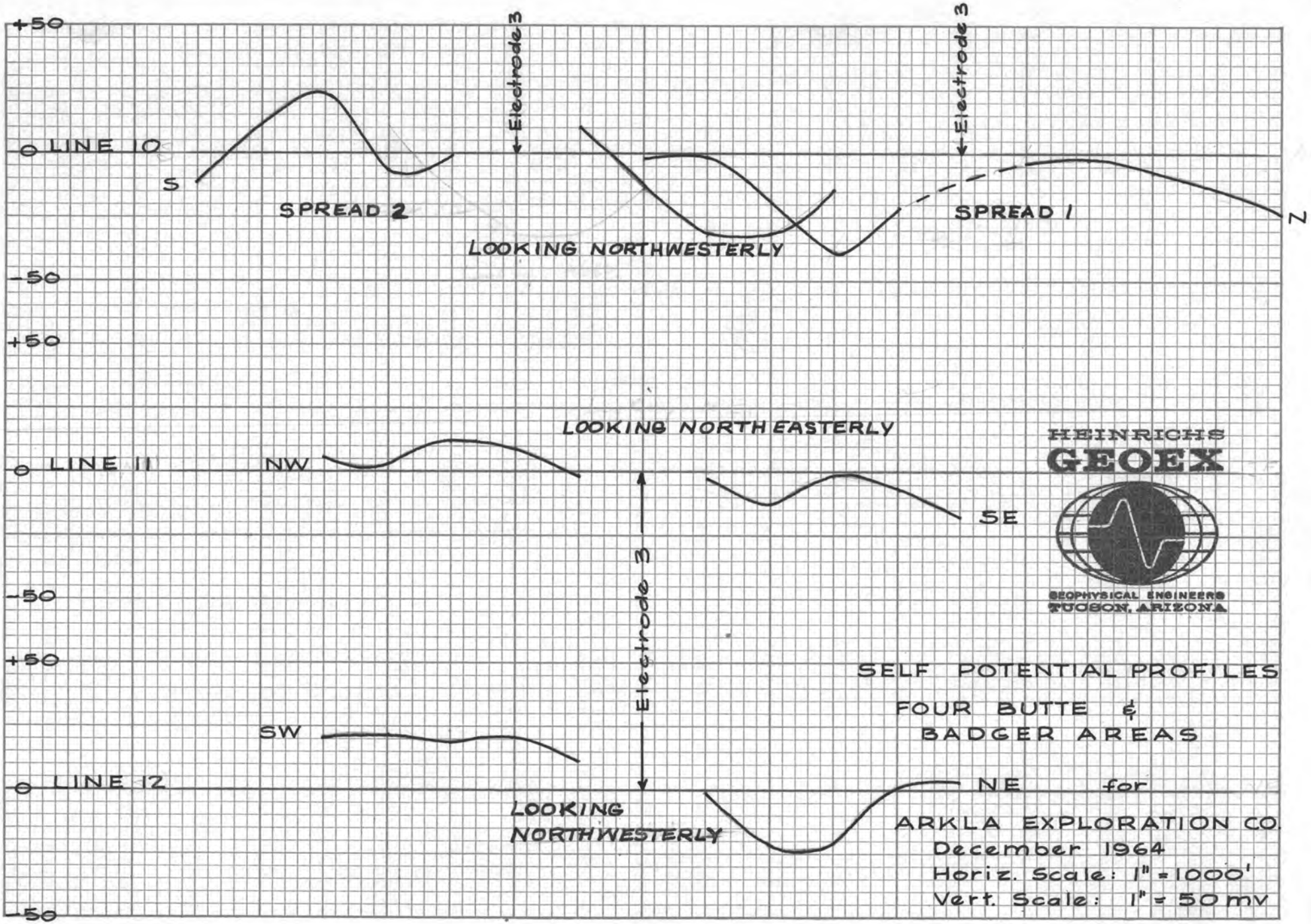
INDUCED POLARIZATION - RECEIVER NOTES PAGE _____

Project: DM Line: 17 spd 2 W 1/2 Int.Cal _____ Date: 5-7-65

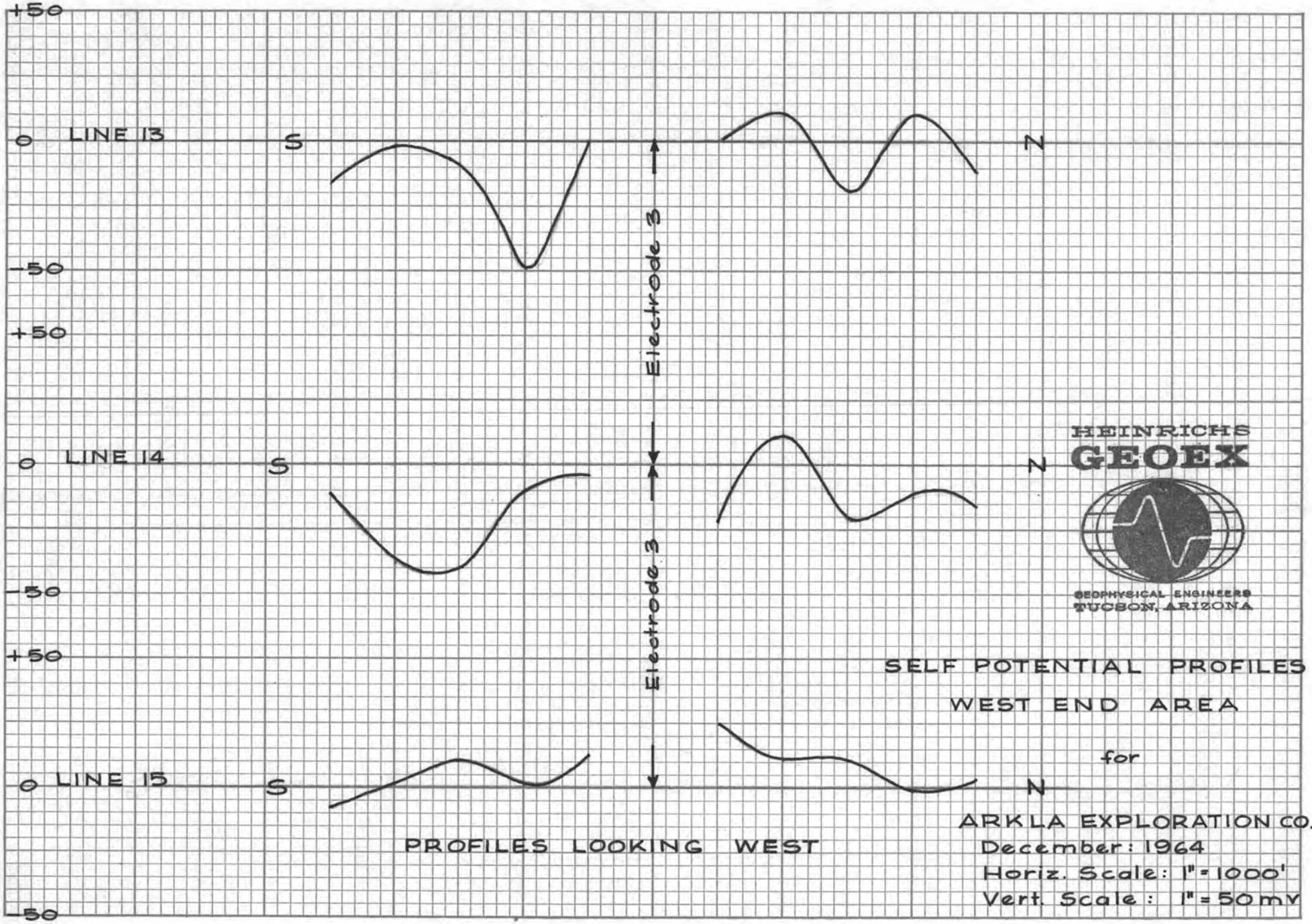
Send	45	12	23	34	45				Cal			
Rec.	→	11-12	→	→	→							
Time	1	10	3	3					300			
DC-1	.83 .96	2.92 2.40 3.12 3.74	1.70 1.87 1.70 1.64	1.22 1.17 1.64 1.56					157 155.5			
DC-2	.68 .92	2.68 2.40 3.26	1.81 1.74	1.33 1.22 1.48 1.50					157 155.5			
Σ												
DC-3	.87 .81	2.70 3.20	1.84 1.63	1.35 1.55								
Dc-4	.86	2.80 3.42	1.84 1.65	1.20 1.65								
Σ												
DC-AV	1.69	6.00	3.50	1.75					312.5			
AC-1	.75	2.86	1.65	1.28	.64				150.5			
AC-2	.75	2.86	1.65	1.28	.64				150.5			
Σ	1.50	5.72	3.30	2.56	1.28				301			
S. P.	—	+16.9	→	→	→							
AC-N	—	.04	→	→	→							
	↑	3.6										
	NG	[illegible]	?	?								



K+E 10 X 10 TO THE INCH 359-5DG
KEUFFEL & ESSER CO. MADE IN U.S.A.



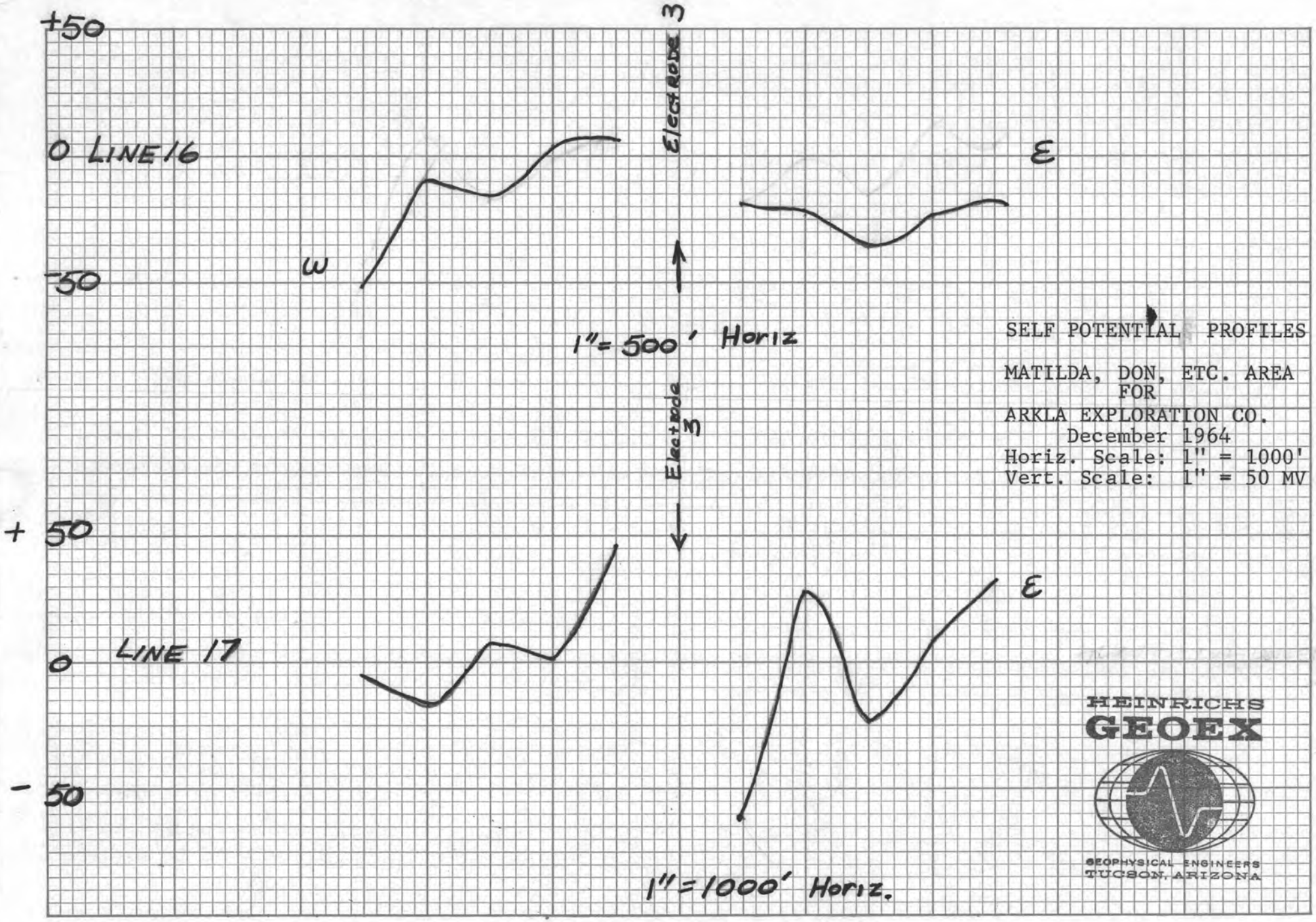
K+E 10 X 10 TO THE INCH 359-5DG
KEUFFEL & ESSER CO. MADE IN U.S.A.



HEINRICHS
GEOEX
GEOPHYSICAL ENGINEERS
TUCSON, ARIZONA

SELF POTENTIAL PROFILES
WEST END AREA
for
ARKLA EXPLORATION CO.
December: 1964
Horiz. Scale: 1" = 1000'
Vert. Scale: 1" = 50 mv

K+E 10 X 10 TO THE INCH 359-5DG
KEUFFEL & ESSER CO. MADE IN U.S.A.

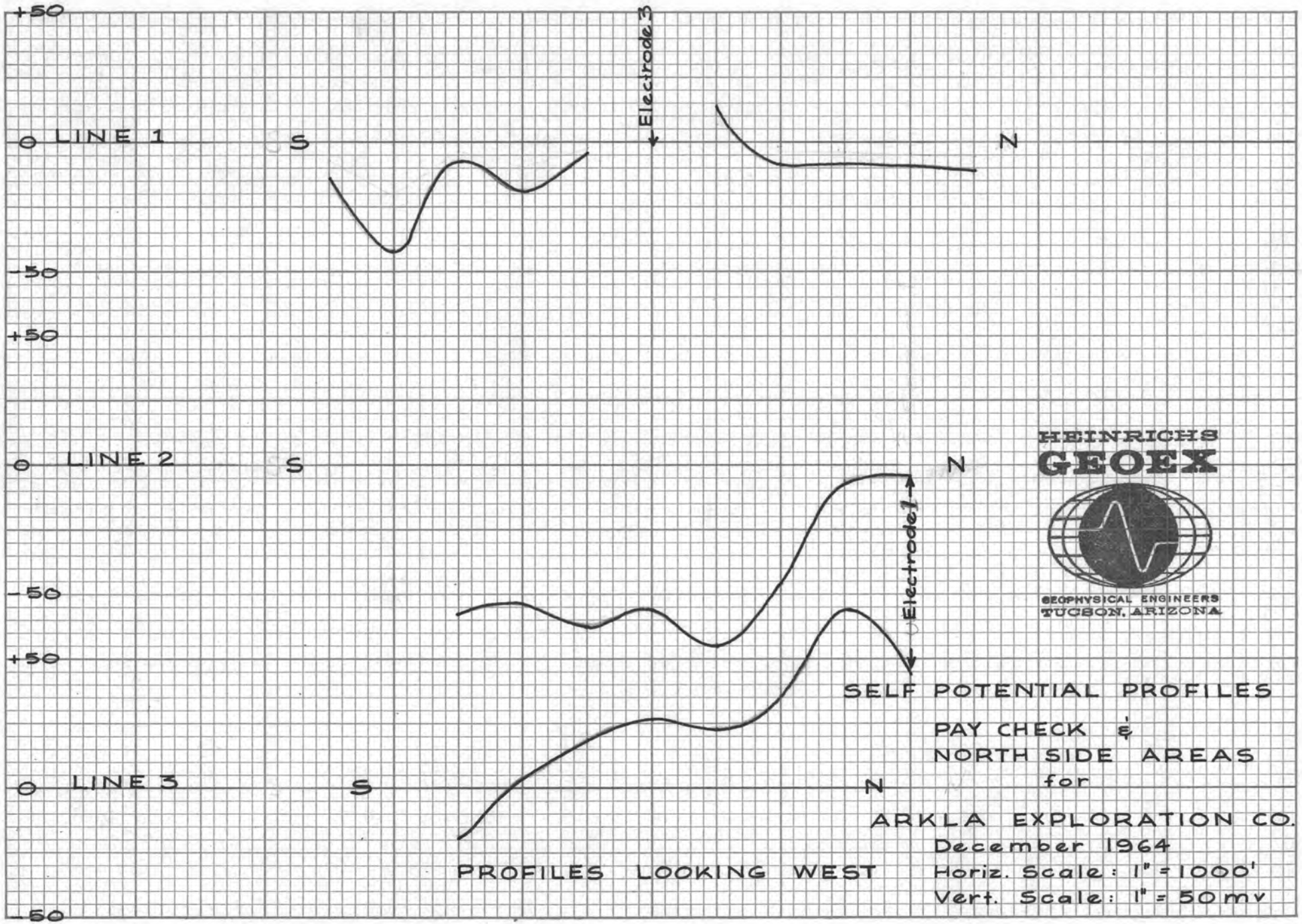


SELF POTENTIAL PROFILES

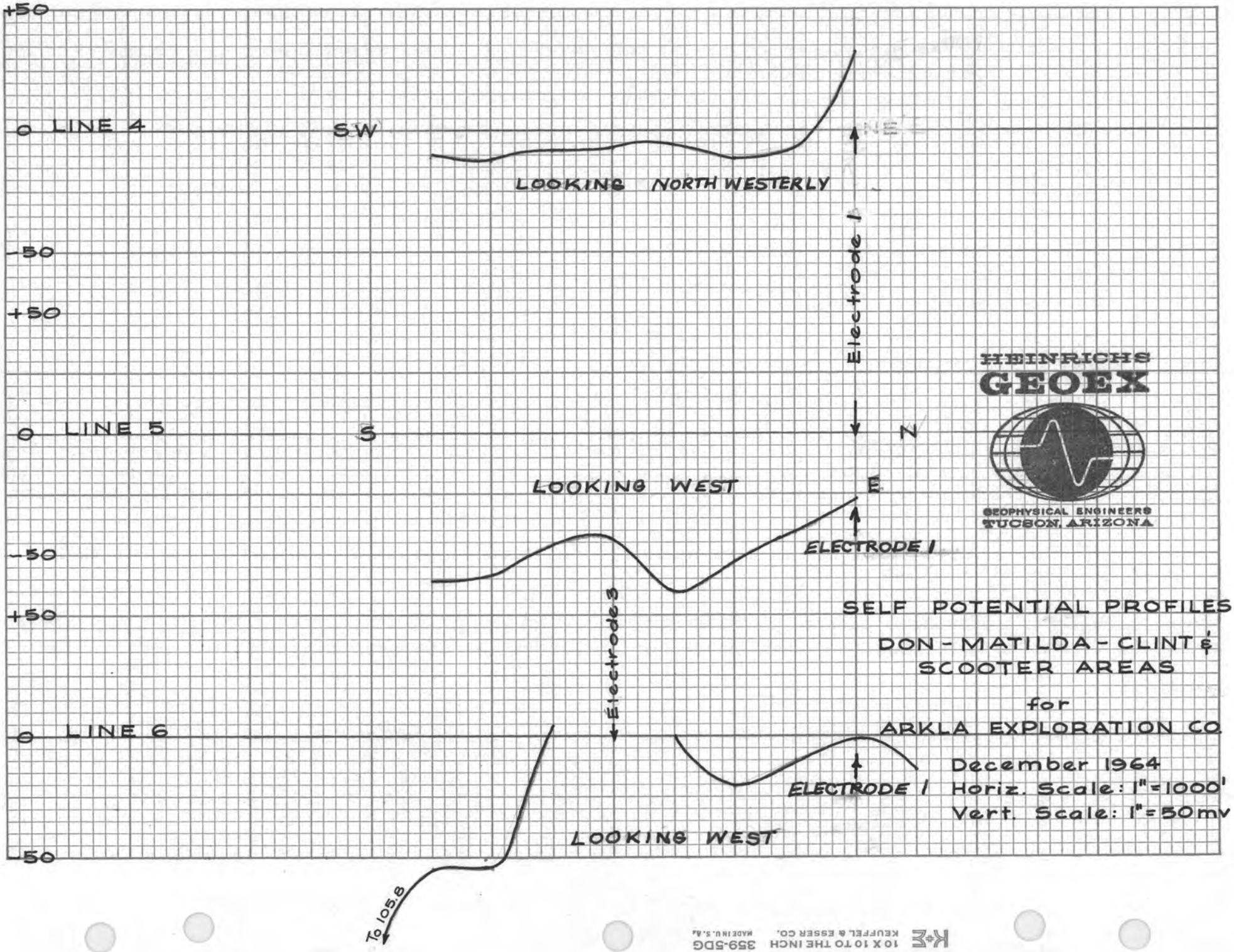
MATILDA, DON, ETC. AREA
FOR
ARKLA EXPLORATION CO.
December 1964
Horiz. Scale: 1" = 1000'
Vert. Scale: 1" = 50 MV

HEINRICHS
GEOEX
GEOPHYSICAL ENGINEERS
TUCSON, ARIZONA

K+E 10 X 10 TO THE INCH 359-5DG
KEUFFEL & ESSER CO. MADE IN U.S.A.



K+E 10 X 10 TO THE INCH 359-5DG
KEUFFEL & ESSER CO. MADE IN U.S.A.



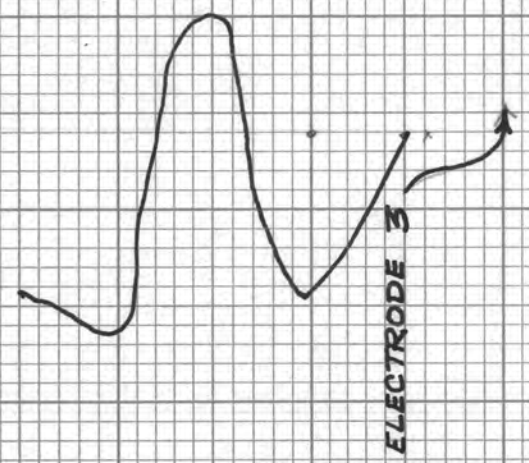
K+E 10 X 10 TO THE INCH 359-5DG
KEUFFEL & ESSER CO. MADE IN U.S.A.

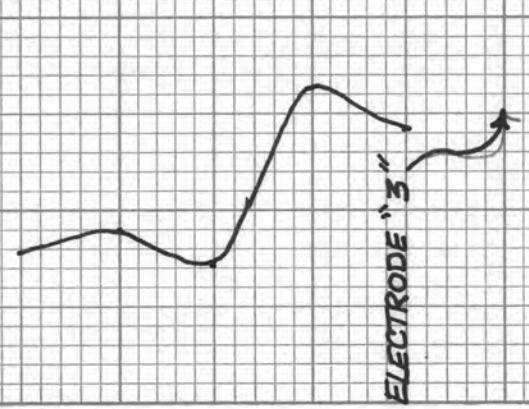
LINE 5 SETUP "C"

SELF POTENTIAL PROFILES

MATILDA, DON, ETC. AREA
FOR
ARKLA EXPLORATION CO.
December 1964

Horiz. Scale : 1" = 1000'
Vert. Scale: 1" = 50 MV



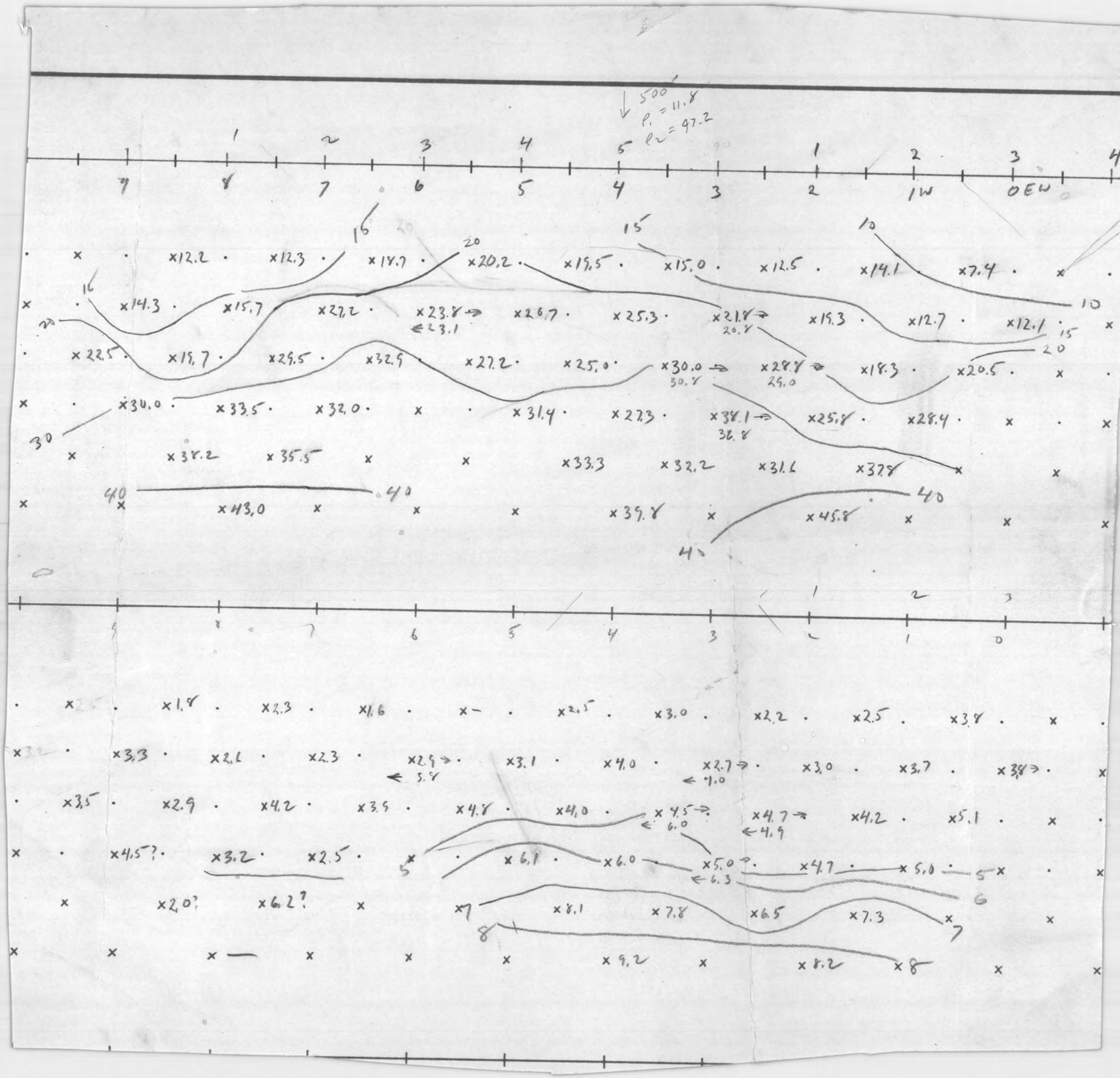


HEINRICHS GEOEX
GEOPHYSICAL ENGINEERS
TUCSON, ARIZONA

LINE 6 SETUP "C"

LOOKING WESTERLY

K+E 10 X 10 TO THE INCH 359-5DG
KEUFFEL & ESSER CO. MADE IN U.S.A.


500'
$\rho_1 = 11.8$
$\rho_2 = 97.2$
1W
0EW

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Don Matilda Line 17 Repeat Field date 5-4-65 Data page_____ Comp. date 5-4-65. Comp by KH

(A) Send	34	45	23	34	45	12	23	34	45	12	23	34
(B) Receive	1-2W	→	23W	→	→	34W	→	→	→	4-5W	→	
(C) n separation	30	10	30	10	10	30	10	3	3	10	10	3
(D) I	10	10	9	10	10	9	9	9	9	9	9	10
(E) Vdc (avg)	24.45	10.12	42.3	10.61	6.84	37.6	14.46	5.45	4.25	16.34	8.62	4.30
(F) DCcal 1.000												
(G) Kn x 10^{-3}	3	12	3	12	30	3	12	30	60	12	30	60
(H) ρ dc=~~ExFxGx10^3/D~~	7.4	12.1	14.1	12.7	20.5	12.5	19.3	18.3	28.4	21.8	28.8	25.8
(I) Vac Σ	23.2	9.60	40.6	10.08	6.40	36.2	13.80	5.18	3.58	15.68	8.10	4.04
(J) ~~AC noise x 2~~												
(K) Vac(corr) =~~$\sqrt{I^2 - J^2}$~~												
(L) AC-DC cal.	.983											
(M) ρ dc/ρac=~~ExL/K~~	1.038	1.038	1.025	1.037	1.051	1.022	1.030	1.042	1.050	1.027	1.047	1.047
(N) PFE=~~(M-1)(10^2)~~	3.8	3.8	2.5	3.7	5.1	2.2	3.0	4.2	5.0	2.7	4.7	4.7
(O) MCF=~~(M-1)(10^5)/H~~	514	314	177	291	248	176	155	229	176	124	163	182

(20)

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

(A) Send	45	12	23	34	45			Cal				
(B) Receive	→	5-6W	→	→	→			23				
(C) n separation	3	3	3	3	3							
(D) I	10	9	9	10	10			34				
(E) Vdc (avg)	3.60	9.01	5.72	3.01	2.73			304				
(F) DCcal	→	→	→	→	→							
(G) Kn x 10^{-3}	105	30	60	105	168							
(H) ρ dc=ExFxGx10^3/D	37.8	30.0	38.1	31.6	45.8							
(I) Vac Σ	3.30	8.48	5.36	2.78	2.48			252				
(J) AC noise x 2												
(K) Vac (corr) =$\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.983											
(M) ρdc/ρac =ExL/K	1.073	1.045	1.050	1.065	1.082							
(N) PFE=(M-1)(10^2)	7.3	4.5	5.0	6.5	8.2							
(O) MCF=(M-1)(10^5)/H	153	150	131	206	179							

27
(17)

961
23
.983

INDUCED POLARIZATION SENDER NOTES

Project: DON-MATILDA Line: 17 A REPEAT Date: MAY 4, 1965

Send	34	45	23	34	45	12	23	34	45	12	23	34
Receive	12W	→	23W	→		34W	→			45W	→	
Time												
Range												
Current	10A	10A	9A	10A	10A	9A	9A	9A	9A	9A	9A	10A
Send	45	12	23	34	45			CAL				
Receive	→	5-6W	→					3A				
Time												
Range												
Current	10A	9A	9A	10A	10A							

INDUCED POLARIZATION - RECEIVER NOTES PAGE 1

Project: Don Matilda Line: 17-a Report Int.Cal _____ Date: 5-4-65

Send	34	45	23	34	45	12	23	34	45	12	23	34
Rec.	1-2 W →		2-3 W	→		34 N			→	[illegible]		
Time	30	10	30	10	10	30	10	3	3	10	10	3
DC-1	11.3 13.05	5.20 4.90	21.2 21.0	5.18 5.34 5.23 5.06	3.50 3.68 3.20 3.18	14.7 18.7 18.7 19.0	7.54 7.83 6.88 6.62	2.65 2.66 2.88 2.88	2.13 2.18 2.14 2.00	8.04 8.26 8.18 8.10	4.01 3.92 4.68 4.66	2.05 1.98 2.22 2.32
DC-2	11.15 13.3	5.15 4.85	21.0 21.2	5.14 5.31 5.62 5.52	3.60 3.66 3.26 3.14	18.8 18.5 18.8	7.88 7.82 6.62	2.58 2.65 2.55	2.12 2.24 2.13	8.18 8.18 8.04 8.02	3.98 3.96 4.60 4.74	2.08 1.98 2.20 3.30
Σ												
DC-3	11.15 13.3	5.34 4.84	21.1 21.2	5.34 5.20 5.00 5.18	3.64 3.76 3.24 3.08	14.9 18.9	7.56 6.70	2.68 2.80	2.08 2.19	8.20 8.39 8.02 8.08	3.90 3.94 4.66 4.70	2.12 2.00 2.20 2.34
Dc-4	11.10 13.4	5.28 4.80	21.1 21.3	5.38 5.36 5.56 5.44	3.62 3.74 3.18 3.10	18.7 19.0	7.94 6.64	2.60 2.85	2.10 2.09	8.32 8.42 8.18 7.90	3.96 3.96 4.72 4.68	2.05 1.96 2.32 2.34
Σ												
DC-AV	24.45	10.12	42.3	10.61	6.84	37.6	14.46	5.49	4.25	16.34	8.62	4.30
AC-1	11.66	4.80	20.3	5.04	3.20	18.1	6.90	2.59	1.99	7.84	4.05	2.02
AC-2	11.60	4.60	20.3	5.04	3.20	18.1	6.90	2.59	1.99	7.84	4.05	2.02
Σ	23.2	9.60	40.6	10.08	6.40	36.2	13.80	5.18	3.98	15.68	8.10	4.04
S. P.	-8.1	—	-11.9	—		+30.2						
AC-N	.015	—	.02	—		.015	—					

INDUCED POLARIZATION - RECEIVER NOTES PAGE 2

Project: Don-Matilda Line: M-a Repeat Int.Cal 516 Date: 5-9-64

Send	45	12	23	34	45				Cal			
Rec.	46 6V	5.66V										
Time	3	10	3	3	3							
DC-1	1.80 1.78 1.83 1.78	4.62 4.38 4.53 4.78	2.13 2.79 2.67 2.96	1.59 1.61 1.35 1.44	1.35 1.37 1.35 1.30				1.52 1.52			
DC-2	1.81 1.81 1.75 1.77	4.38 4.08 4.64 5.00	2.55 2.72 2.98 3.10	1.64 1.47 1.27 1.55	1.31 1.47 1.41 1.29				1.52			
Σ												
DC-3	1.83 1.82 1.81 1.80	4.32 4.04 4.64 4.98	2.74 2.78 2.98 2.95	1.65 1.61 1.36 1.47	1.37 1.55 1.38 1.19							
Dc-4	1.77 1.80 1.82 1.79	4.32 3.98 4.66 5.10	2.78 2.82 3.00 2.87	1.61 1.59 1.47 1.41	1.35 1.62 1.35 1.67							
Σ												
DC-AV	3.60	9.01	5.72	3.01	2.73				304			
AC-1	1.65	4.24	2.68	1.39	1.24				146			
AC-2	1.65	4.24	2.68	1.39	1.24				146			
Σ	3.30	8.48	5.36	2.78	2.48				292			
S. P.	13.8	-35.7										
AC-N	.015	.015										
					50.6							

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Project Don Mill Hill Line 18 F-2 Field date 5-13-64 Data page _____ Comp. date 5-14-64 Comp by KH Page _____

(A) Send	23	12	34	23	12	45	34	23	12	45	34	23
(B) Receive	1-2E	→	23E		→	34E			→	45E		
(C) ~~n separation~~ Range	30	10	30	10	3	30	10	3	1	3	3	3
(D) I	5	4	7	5	4	5	7	5	4	5	7	5
(E) Vdc (avg)	29.0	6.16	41.8	8.81	3.03	21.3	9.63	3.50	1.605	4.58	4.12	2.16
(F) DCcal 1.000												
(G) Kn x 10^{-3}	3	12	3	12	30	3	12	30	60	12	30	60
(H) ρ dc=ExFxGx10^3/D	30.8	18.5	17.9	21.2	22.7	12.8	16.5	21.0	23.1	11.0	17.7	26.0
(I) Vac Σ	28.2	5.80	40.6	8.42	28.4	20.4	9.24	3.34	1.42	4.34	3.88	1.98
(J) AC noise x 2	2											
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	579							→	936	579		
(M) ρ dc/ρac=ExL/K	1.008	1.040	1.009	1.025	1.045	1.022	1.021	1.027	1.059	1.022	1.041	1.079
(N) PFE=(M-1)(10^2)	6.8	4.0	0.9	2.5	4.5	2.2	2.1	2.7	5.9	2.2	4.1	7.9
(O) MCF=(M-1)(10^5)/H	26	216	50	118	198	172	127	128	256	200	232	304

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	12	45	34	23	12			CC1				
(B) Receive	→	5-CE			→			23				
(C) n separation	1	3	3	1	1			300				
(D) I	4	5	7	5	4			3				
(E) Vdc (avg)	—	2.00	236	—	—			305				
(F) DCcal					→							
(G) Kn x 10^{-3}	105	20	60	105	165							
(H) ρ dc=ExFxGx10^3/D	25.7	12.0	20.2	26.5	28.5							
(I) Vac Σ	.98	1.88	2.16	1.26	.68			292				
(J) AC noise x 2												
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	~~1111~~	579	→					1957				
(M) ρdc/ρac =ExL/K		1.042	1.080	—	—							
(N) PFE=(M-1)(10^2)		4.2	8.0									
(O) MCF=(M-1)(10^5)/H		350	378									

28.9 –
28.9 –
29.0
29.2
29.0
28.9 –
29.2 –

– 3

6.08
6.22
6.24
~~6.16~~

6.16
6.08
6.16
6.34
6.10
6.24

6.08 –
6.22 –
6.24 –
6.16 –
6.08 –
6.16 –
6.34 –
6.10
6.02 –
6.24 –

28
5
78

16
7
86
78
164

4.42
4.66 –
4.57 –
4.69 –
4.53 –
4.64 –
4.54 –
4.61 –
4.54 –
4.61 –
4.48 –
4.69
4.50
4.64
4.55

35
37
405

32
43
462
405
867

21.1
21.7
41.8

8.86 –
8.78 –
8.84 –
8.86 –
8.76 –
8.76 –
9.08 –
8.82 –
8.62 –
8.78 –

130
14
24
410
800

26
28
10
406

8.81

21.4 – 27
21.2 –
21.3 –
21.3 –
21.2 –
21.1 –
21.3 –
21.2 –
21.4 –
21.3 –

2.93
~~3.10~~
~~3.15~~
2.89
2.94
2.96 –
3.03 –
3.10 –
3.13 –
3.03 –

25

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3
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13
3
29

30
26

3.03

423 –
408 –
416 –
400
417 –
409 –
415 –
408 –
407 –
411 –
416 –
411 –
418 –
408 –
417 –

38
5
88

9.69 –
9.57 –
9.67 –
9.54 –
9.67 –
9.60
9.66 –
9.68 –
9.68 –
9.60

56
42
15
126
63

~~3.49~~
~~3.51~~
~~3.40~~
~~3.37~~
~~3.57~~
~~3.60~~
~~3.52~~
~~3.53~~
~~3.54~~

3.49 –
3.51 –
3.40
3.37 –
3.57 –
3.60
3.50
3.52 –
3.53 –
3.54 –

24
21
234
27

9
226

269
234
503

46
5
96
68
164

1.60
1.60
1.60
1.68 –
1.59 –
1.63 –
1.56 –
1.54 –
1.51 –
1.55 –
1.68 –
1.64 –
1.54 –
1.62 –

26
40
426

1.61
1.60

20
11
130

22
9
2
130
2
42

132
20
18
7
482
426
908

2.22 –
2.14 –
2.14 –
2.14 –
2.30 –
2.16 –
2.20 –
2.13 –
2.20 –
2.16 –
2.20 –
2.20 –
2.15 –
2.08 –

INDUCED POLARIZATION - RECEIVER NOTES PAGE _____

Project: Don Mi Hilda Line: 18 E end Int.Cal _____ Date: 5-13-65

Send	23	12	34	23	12	4-5	3-4	2-3	1-2	45	3-4	2-3
Rec.	1-2E	→	2-3E	→	→	3-4			→	4-5		
Time	30	10	30	10	3	30	10	3	1	3	3	3
DC-1	14.7 14.6 14.2	3.22 3.12 2.86 2.90	21.1 20.7	4.16 3.24 4.70 4.78	1.45 1.45 1.48 1.67	10.4 10.0 11.0 11.4	4.78 4.98 4.91 5.20	1.73 1.77 1.76 1.76	.84 .94 .76 .57	2.04 2.58 2.38 1.56	2.36 1.90 1.87 2.17	.98 .69 1.24 1.5
DC-2	14.7 14.3	3.36 3.34 2.81	21.1 20.7	4.08 4.00 4.76	1.62 1.36 1.53	10.2 9.9 11.1	4.66 4.30 5.01	1.75 1.78 1.65	.84 .85 .76 .70	2.28 2.65 2.29 1.83	2.21 1.94 1.95 2.22	.90 .65 1.24 .55
Σ												
DC-3	14.5 14.1	3.28 2.80	21.1	4.10 4.66	1.36 1.58	10.2 11.0	4.53 5.14	1.72 1.85	.92 .98 .67 .74	2.40 2.52 2.13 1.64	2.05 1.89 2.12 2.29	.90 .65 1.40
Dc-4	14.8 14.4	3.36 2.88		4.10 4.98	1.38 1.65	10.1 11.2	4.46 5.20	1.75 1.75	.96 .80 .60 .94 .69	2.51 3.00 2.03 1.55	1.97 1.79 2.18 2.38	.76 1.50 1.44 .58
Σ												
DC-AV	29.0	6.16	41.8	8.21	3.03	21.3	9.63	3.50	1.605	4.58	4.12	2.16
AC-1	14.1	2.90	20.3	4.21	1.42	10.2	4.62	1.67	.71	2.17	1.94	.99
AC-2	14.1	2.90	20.3	4.21	1.42	10.2	4.62	1.67	.71	2.17	1.94	.99
Σ	28.2	5.80	40.6	8.42	2.84	20.4	9.24	3.34	1.42	4.34	3.88	1.98
S. P.	-.207		+8.8			-1.2						
AC-N	.02		.02			.02						

2.41 -
2.30
2.43 -
2.18 -
2.35 -
2.44 -
2.34 -
2.35 -
2.50
2.22 -
2.39 -
2.40
2.38 -
2.37 -
2.39 -

25
22
245

40
26
300
245
545

3

1.89 -
2.02 -
2.05 -
2.02 -
1.87 -
2.17 -
1.97 -
2.12 -
2.00 -
2.12 -
1.80 -
2.07 -
1.97 -
2.00 -
1.92 -

39
26
3
1399

20
28
10
600
1399
1999

INDUCED POLARIZATION - RECEIVER NOTES PAGE _____

Project: Don M Hoyle Line: 18 Eend Int.Cal _____ Date: 5-13-65

Send	1.2	45	34	23	12					Cal		
Rec.	→	5.6	→	→	→							
Time		3 ?	3									
DC-1		1.17 1.82 .62 .58	1.11 1.85 1.30 1.65							153 152		
DC-2		1.40 1.02 .65 1.10	1.00 .57 1.43 1.82							155 152		
Σ												
DC-3		1.37 .70 .50 1.37	.75 .58 1.60 1.80							153		
Dc-4		1.67 .65 .30 1.35	.84 .57 1.50 1.82									
Σ		.57										
DC-AV		2.00	2.36							305		
AC-1	.49	.94	1.08	.63	.34					146		
AC-2	.49	.94	1.08	.63	.34					146		
Σ	.98	1.88	2.16	1.26	.68					292		
S. P.	-.87	-12.1										
AC-N	.03	.03 .02	→	→	→							

INDUCED POLARIZATION SENDER NOTES

Project: DON-MATILDA Line: 18 EAST Date: MAY 13, 1965

Send	23	12	34	23	12	45	34	23	12	45	34	23
Receive	12E	→	23E	→	→	34E	→	→	→	45E	→	→
Time												
Range												
Current	5A	4A	4A	5A	4A	5A	7A	5A	4A	5A	7A	5A
Send	12	45	34	23	12							
Receive	→	56E	→	→	→							
Time												
Range												
Current	4A 16*	5A	7A	5A	4A							

2,45-
2,05-
2,22-
2,45-
211-
2,28-
2,16-
~~1,96~~
2,22-
2,27-
2,28-
2,21-
~~1,97~~
2,38-
2,24-

32
14
172
-8
164

30
13
160
3
157
164
321

HEINRICHS GEOEXPLORATION COMPANY

INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Dom Milfilder Line 18 W½ Field date 5-13-65 Data page_____ Comp. date 5-13-65. Comp by KH

(A) Send	34	45	23	34	45	12	23	34	45	12	23	34
(B) Receive	1-2W →		23W →			3-4W →				4-5W →		
(C) n separation Range	30	10	30	10	3	30	10	3	3	10	3	3
(D) I	5	4	7	5	4	5	7	5	4	5	7	5
(E) Vdc (avg)	10.7	7.55	29.7	11.25	3.41	21.4	9.41	5.64	1.55	8.98	5.83	3.59
(F) DCcal 1.000												
(G) Kn x 10^{-3}	3	12	3	12	30	3	12	30	60	12	30	60
(H) ρ dc=ExFxGx10^3/D	24.4	22.6	12.7	27.0	25.6	12.8	16.1	33.8	29.2	21.6	25.0	47.9
(I) Vac Σ	39.2	7.16	28.4	10.72	3.18	20.4	9.00	5.34	1.82	8.56	5.60	3.72
(J) AC noise x 2												
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	979 →											
(M) ρ dc/ρac=ExL/K	1.018	1.032	1.024	1.028	1.050	1.028	1.024	1.034	1.050	1.029	1.020	1.050
(N) PFE=(M-1)(10^2)	1.8	3.2	2.4	2.8	5.0	2.8	2.4	3.4	5.0	2.9	2.0	5.0
(O) MCF=(M-1)(10^5)/H	74	141	189	104	195	218	149	101	171	134	80	104

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

(A) Send	45	12	23	34	45			Cal				
(B) Receive	→	5-6W →										
(C) n separation	1	3	3	3	1							
(D) I	4	5	7	5	4			3A				
(E) Vdc (avg)	1.63	4.29	3.01	2.21	—			305				
(F) DCcal	→											
(G) Kn x 10^{-3}	105	30	60	105	168							
(H) ρ dc=ExFxGx10^3/D	43.8	25.8	26.8	46.6	35.2							
(I) Vac Σ	1.42	4.06	2.85	2.04	.84			292				
(J) AC noise x 2												
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.536	979 →						.957				
(M) ρdc/ρac =ExL/K	1.074	1.033	1.033	1.061	—							
(N) PFE=(M-1)(10^2)	7.4	3.3	3.3	6.1								
(O) MCF=(M-1)(10^5)/H	169	128	123	131								

DC Av 1st ½ 2.204
2nd ½ 2.224

957
22
979

957
22
938

INDUCED POLARIZATION SENDER NOTES

Project: DON-MATILDA Line: 18 WEST Date: MAY 13, 1965

Send	34	45	23	34	45	12	23	34	45	12	23	34
Receive	12W	→	23W	→	→	34W	→	→	→	45W	—	—
Time												
Range												
Current	7A	5A	5A	7A	5A	4A	5A	7A	5A	4A	5A	7A
Send	45	12	23	34	45					CAL		
Receive	→	5-6W										
Time												
Range										3A		
Current	5A	4A	5A	7A	10* 5A							

INDUCED POLARIZATION - RECEIVER NOTES PAGE _____

Project: Dam Mill [illegible] Line: 18 W [illegible] Int.Cal 50.8 Date: 5-13-65

Send	34	45	23	34	45	12	23	34	45	12	23	34
Rec.	1-2W	→	23W		→	34W			→	45W		
Time	30	10	30	10	3	30	10	3	3	[illegible]	3	3
DC-1	21.5 21.9 18.9 18.8	4.1 4.00 3.36 3.52	15.0 14.7	5.36 5.92	1.69 1.10 1.82 2.31	10.99 10.80 10.55 10.66	4.79 5.00 4.49 4.42	3.00 2.82 2.60 2.90	1.06 1.16 .78 .77	4.63 4.57 4.63 4.19	2.80 2.82 3.00 3.25	1.96 1.90 1.91 2.31
DC-2	21.8 21.9 19.0	4.16 4.04 3.50 3.46	15.0 14.7	5.34 5.86	1.30 1.07 2.62 2.38	10.75 10.90 10.65	5.06 5.04 4.59	3.06 2.75 2.70 2.86	1.23 1.18 .79 .92	4.41 5.00 4.16 4.12	2.90 2.76 3.06 2.55	2.02 1.64 2.18 2.40
Σ												
DC-3	21.5 19.0	[illegible] 4.08 3.62 3.50	14.9 14.7	5.36 5.90	1.20 .92 2.20 2.47	10.90 10.50	4.82 4.59	2.82 2.85 2.86 2.75	1.01 .98 1.01 .97	4.76 4.87 4.20 4.30	2.83 3.01 3.01 2.91	1.74 1.56 2.08 2.12
Dc-4	21.9 19.5	4.20 3.48 3.47 3.60	15.0 14.7	5.36	1.09 .98 2.36 2.46	10.95 10.45	4.82 4.41	2.90 2.80 2.66 2.96	1.06 1.02 .80 .91	4.72 4.83 4.40 4.24	2.94 2.85 2.98 3.13	2.07 1.96 1.82 2.22
Σ												
DC-AV	40.7	7.55	29.7	11.25	3.41	21.42	9.41	5.64	1.95	8.98	5.83	3.99
AC-1	19.6	3.58	14.2	5.36	1.59	10.2	4.50	2.67	.91	4.28	2.80	1.86
AC-2	19.6	3.58	14.2	5.36	1.59	10.2	4.50	2.67	.91	4.28	2.80	1.86
Σ	39.2	7.16	28.4	10.72	3.18	20.4	9.00	5.34	1.82	8.56	5.66	3.72
S. P.	+14.5	—	-9.0	—	—	-9.2	—	—				
AC-N	.015	—	.02	—	—	.015	—	—				

3.2 4.6

1.80
2.42
1.84
2.68
1.48
2.94
1.43
2.59
1.90
2.35

4.07 -
4.24 -
- 4.43 -
- 4.26 -
- 4.47 -
- 4.23 -
- 4.22 -
+ 4.44 -
+ 4.24 -
- 4.23 -
- 4.46 +
- 4.18 +
- 4.31 +
- 4.33 +
- 4.19 -

$$\begin{array}{r} 32 \\ 16 \\ \hline 192 \end{array}$$

$$\begin{array}{r} 38 \\ 20 \\ \hline 238 \\ 192 \\ \hline 430 \end{array}$$

$$\begin{array}{r} 28 \\ 15 \overline{)430} \\ 30 \\ \hline 130 \\ 120 \\ \hline \end{array}$$

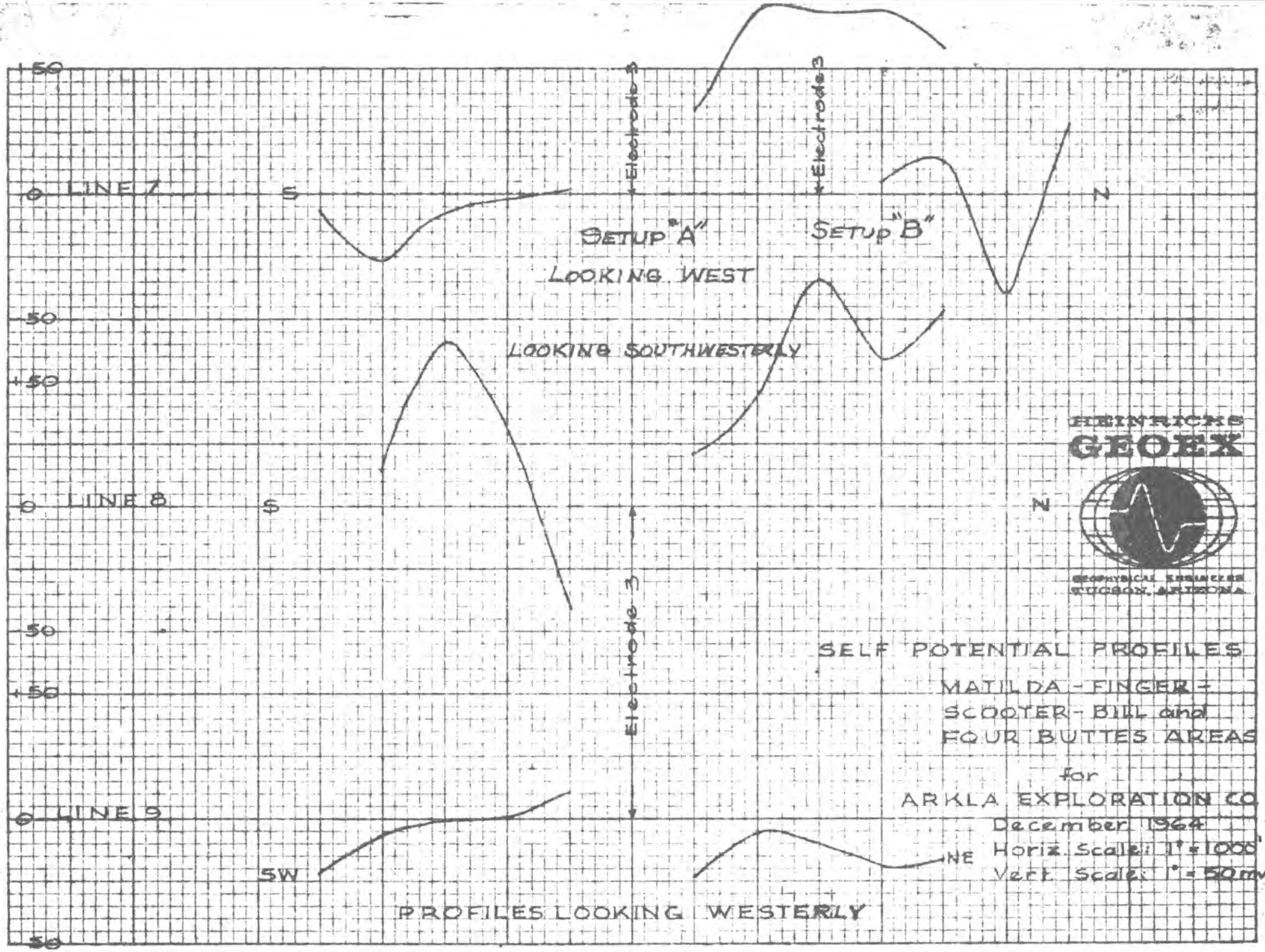
$$\begin{array}{r} 429 \\ 06 \\ \hline 23 \end{array}$$

$$\begin{array}{r} 5.4 \\ 43 \overline{)230} \\ 27 \overline{)5} \\ \hline 150 \end{array}$$

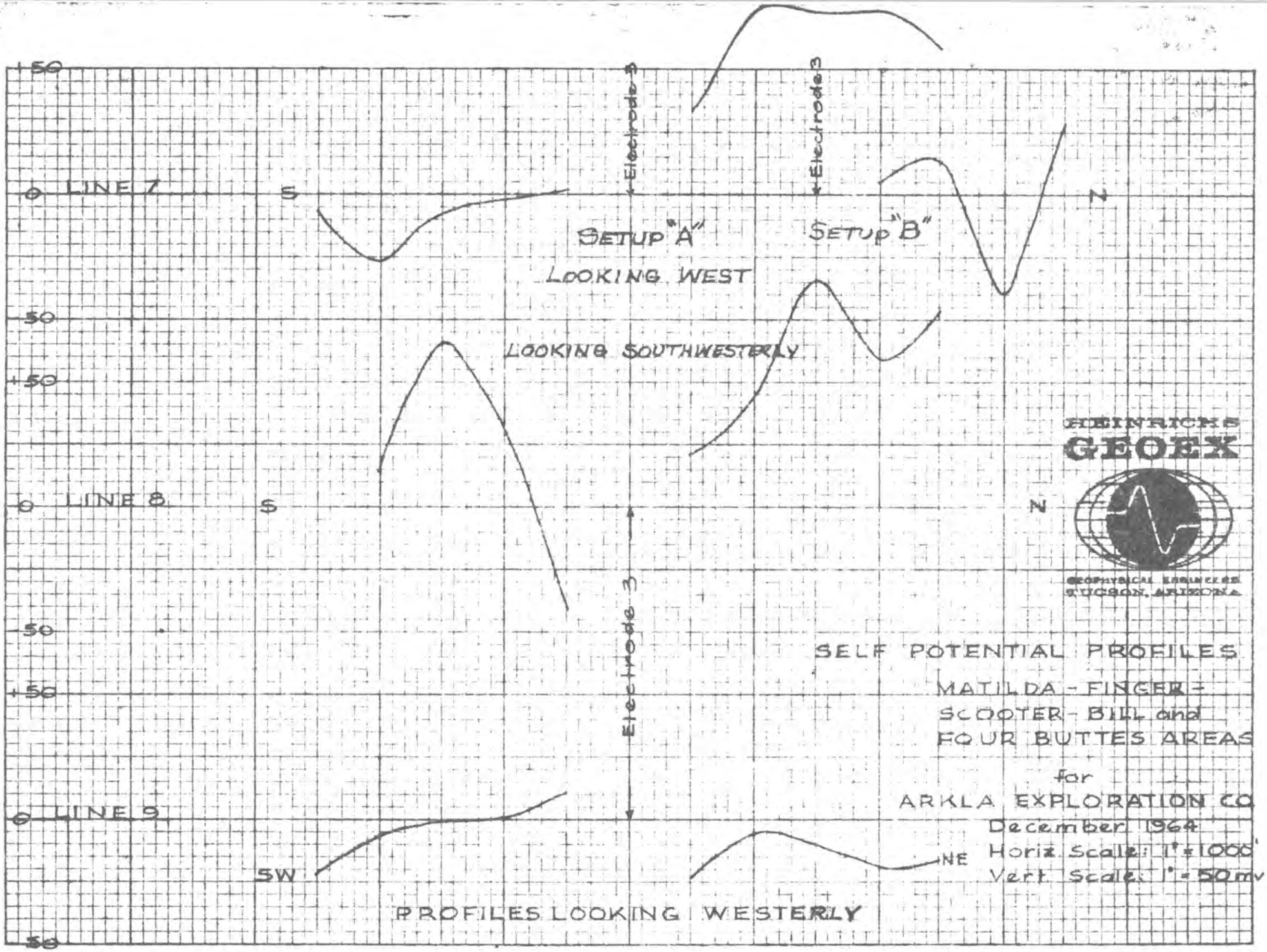
INDUCED POLARIZATION - RECEIVER NOTES PAGE _____

Project: D-M Line: _____ Int.Cal _____ Date: 5-13-85

Send	45	12	22	34	45					Cal		
Rec.	→	5.60	↓	—	—					23		
Time	3 p?	3	3	3	1							
DC-1	.74 .92 .78 .77	1.91 1.81 2.16 2.35	1.64 1.72 1.32 1.60	1.08 .84 1.37 1.48								
DC-2	.88 .91 .79 .73	2.08 1.88 2.35 2.58	1.55 1.36 1.67 1.60	.68 .79 1.54 1.44								
Σ												
DC-3	.73 .78 .08 .89	1.91 1.60 2.56 2.71	1.30 1.58 1.62 1.29	.91 .72 1.20 1.25								
Dc-4	.71 .76 .98 .80	1.67 1.62 2.55 2.57	1.58 1.74 1.18 1.37	1.08 1.13 1.08 1.11								
Σ												
DC-AV	1.63	4.29	3.01	2.21								
AC-1	.71	2.03	1.425	1.02	.42	10.2						
AC-2	.71	2.03	1.425	1.02	.42							
Σ	1.42	4.06	2.850	2.04	.84							
S. P.	-2.3	-25.6	—	—								
AC-N	.015	.015	—	—								



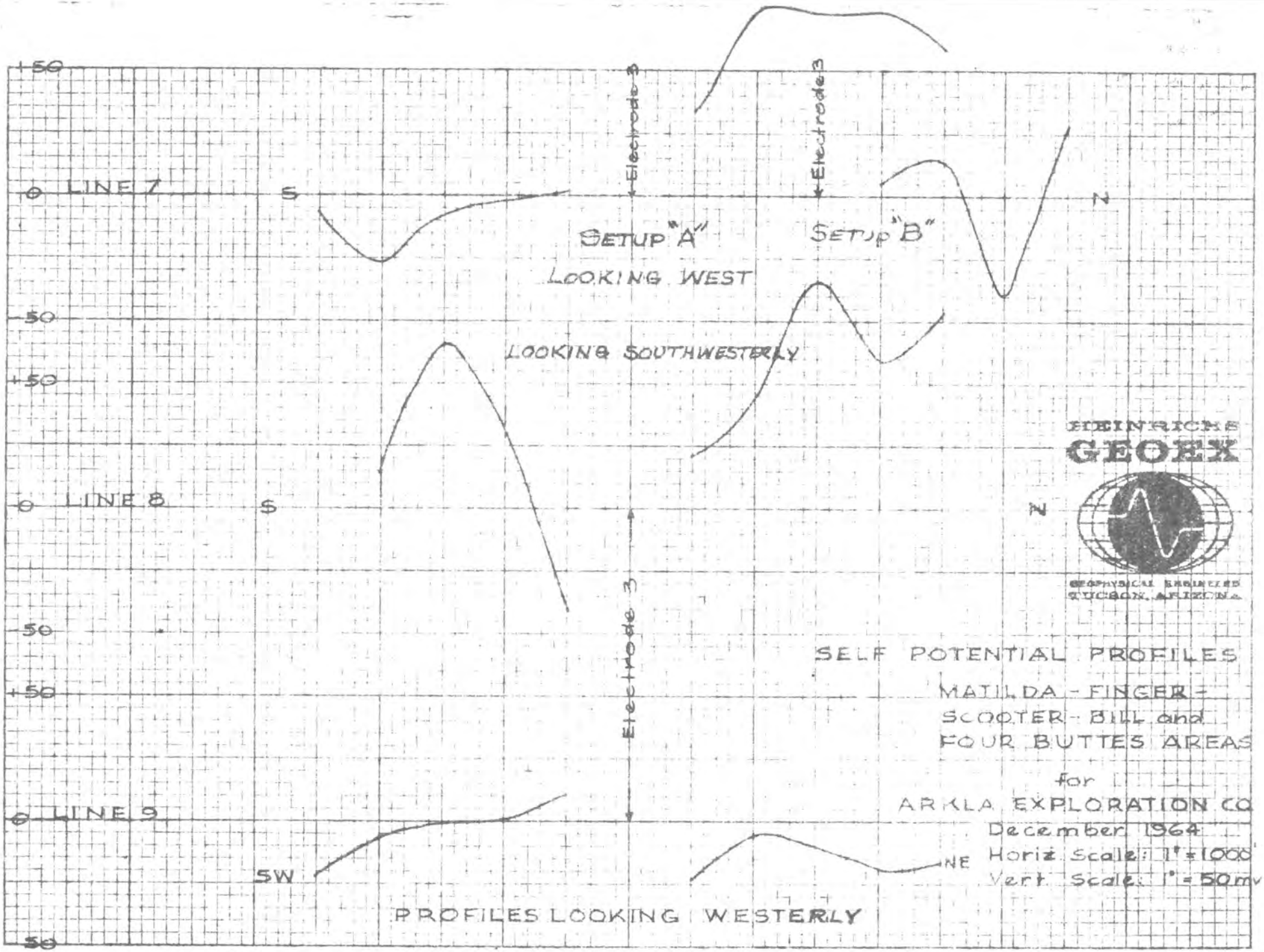
K+E 10 X 10 TO THE INCH 359-5DG KEUFFEL & ESSER CO. MADE IN U.S.A.



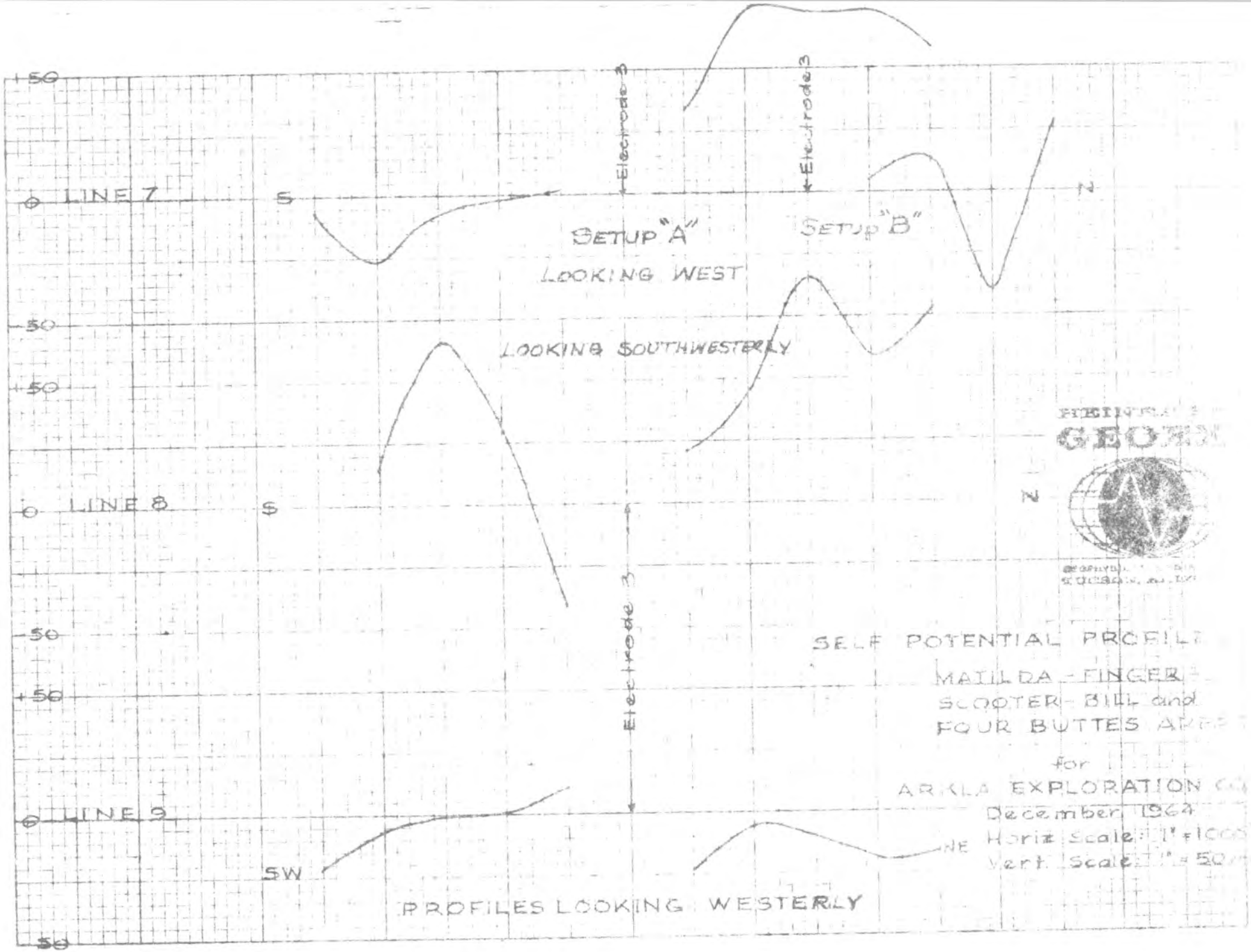
HEINRICHS
GEOEX
GEOPHYSICAL ENGINEERS
TUCSON, ARIZONA

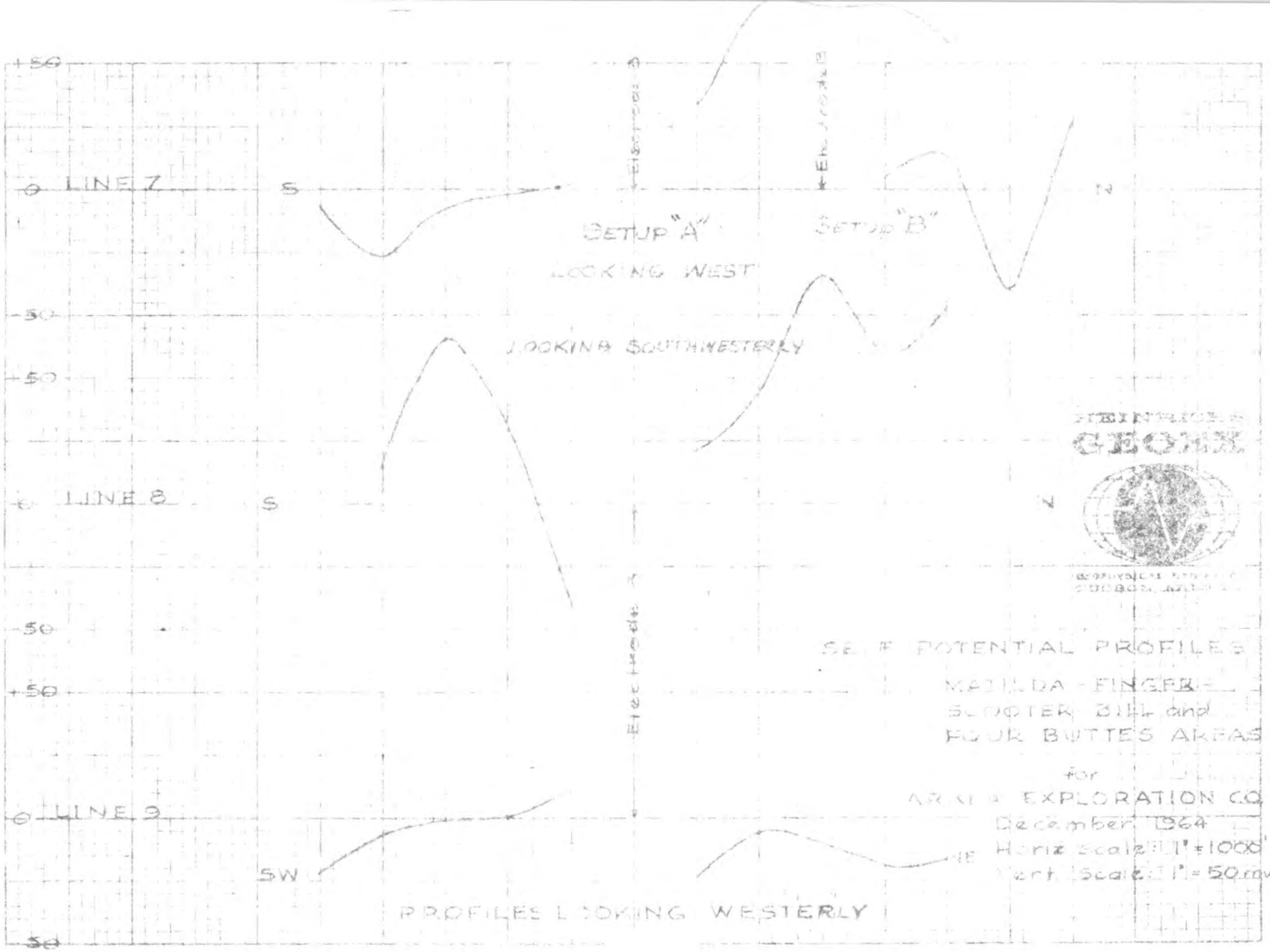
SELF POTENTIAL PROFILES
MATILDA - FINGER -
SCOOTER - BILL and
FOUR BUTTES AREAS
for
ARKLA EXPLORATION CO
December 1964
Horiz. Scale: 1" = 1000'
Vert. Scale: 1" = 50mv

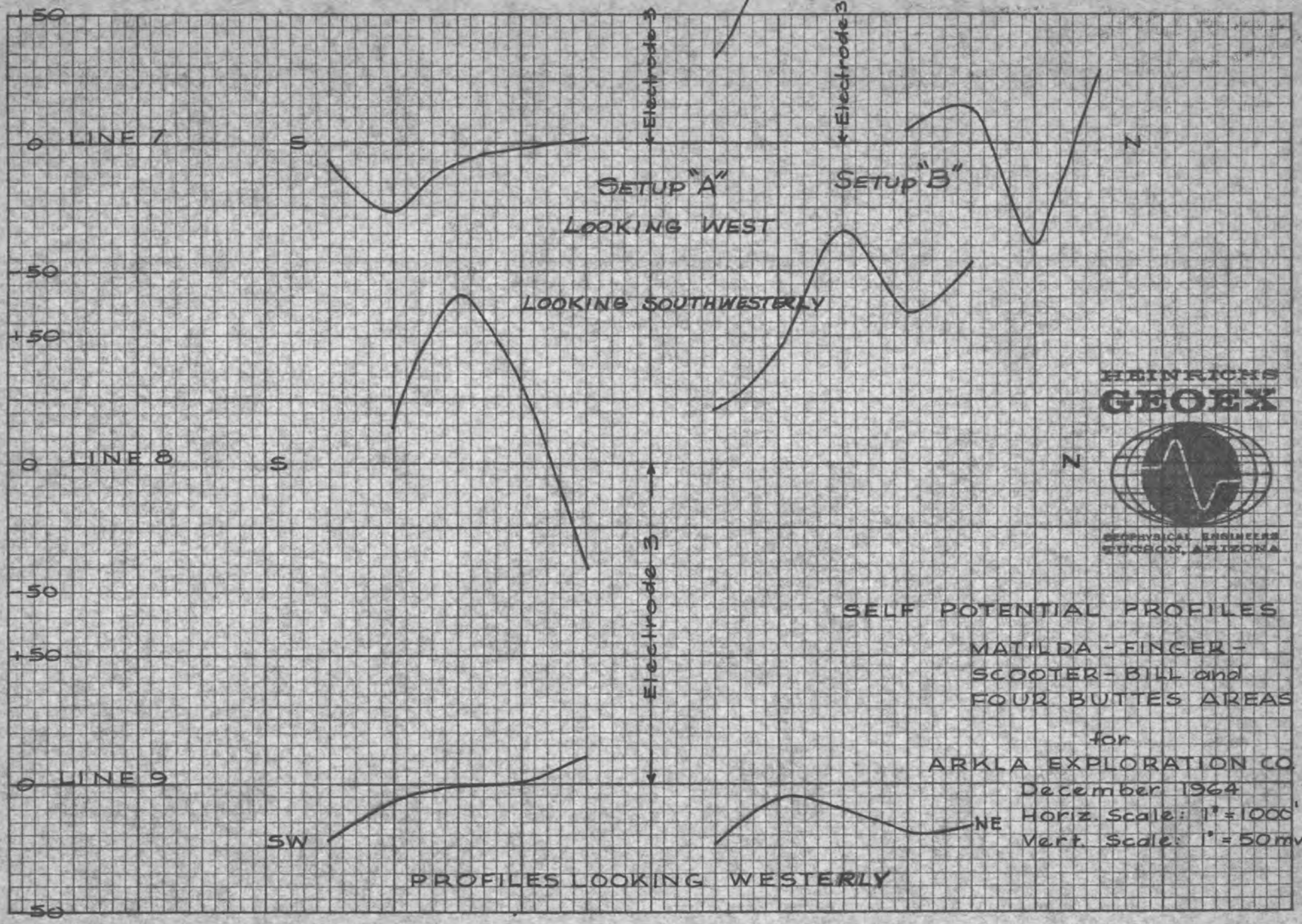
K+E 10 X 10 TO THE INCH 359-5DG
KEUFFEL & ESSER CO. MADE IN U.S.A.



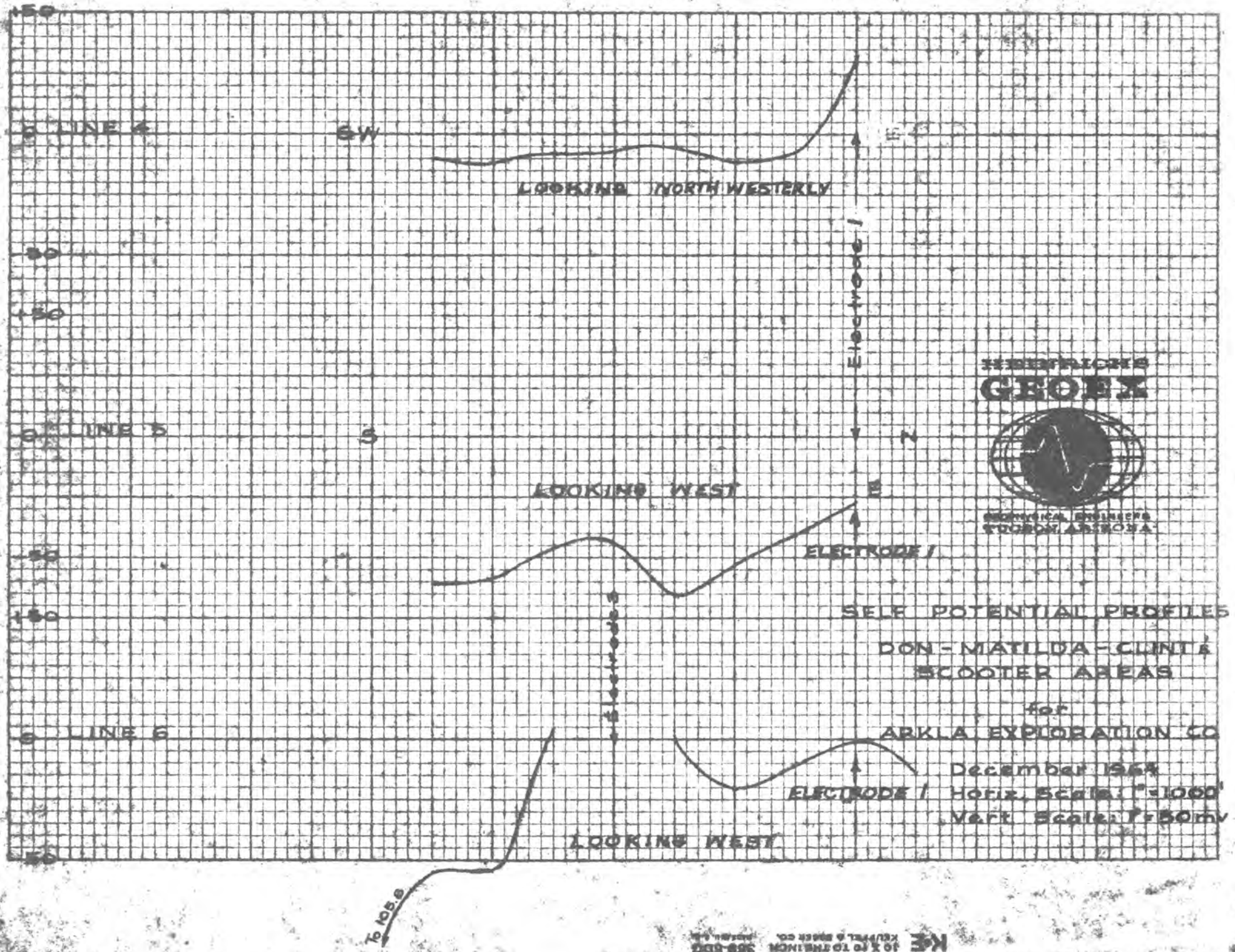
K+E 10 X 10 TO THE INCH 359-5DG KEUFFEL & ESSER CO. MADE IN U.S.A.


+50
0 LINE 7
S
Electrode 3
Electrode 3
N
SETUP "A"
SETUP "B"
LOOKING WEST
-50
LOOKING SOUTHWESTERLY
+50
0 LINE 8
S
N
-50
Electrode 3
+50
0 LINE 9
SW
NE
-50
PROFILES LOOKING WESTERLY
SELF POTENTIAL PROFILE
MATILDA - FINGER
SCOOTER - BILL and
FOUR BUTTES AREA
for
ARKLA EXPLORATION CO.
December 1964
Horiz. Scale: 1" = 1000'
Vert. Scale: 1" = 50'

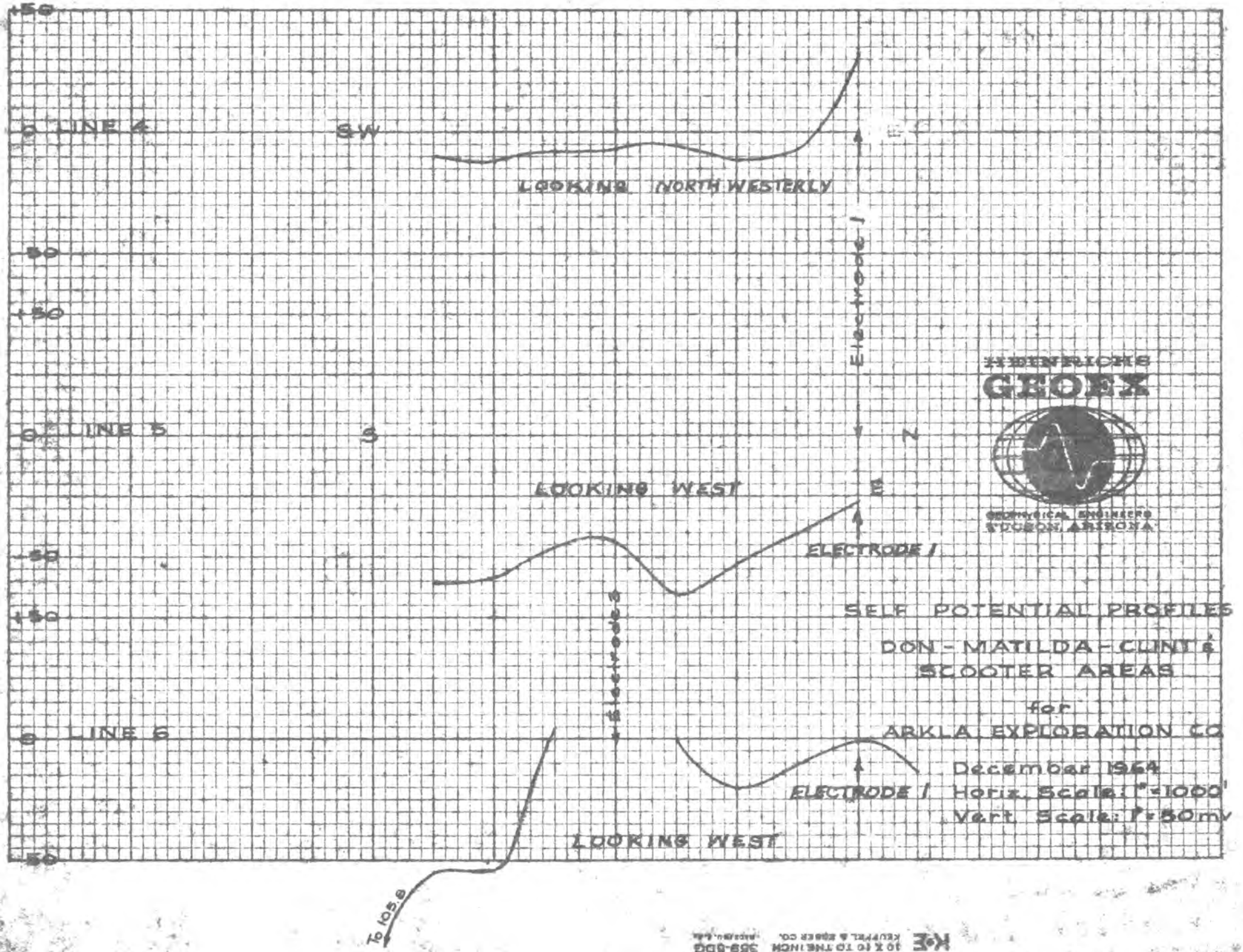

+50
0 LINE 7
S
N
SETUP "A"
SETUP "B"
LOOKING WEST
-50
LOOKING SOUTHWESTERLY
+50
0 LINE 8
S
N
-50
+50
0 LINE 9
SW
NE
PROFILES LOOKING WESTERLY
-50
GEOMX
SELF POTENTIAL PROFILES
MATILDA - FINGER
SCOOTER HILL and
FOUR BUTTES AREAS
for
ARMCO EXPLORATION CO
December 1964
Horiz Scale: 1" = 1000'
Vert Scale: 1" = 50 mv

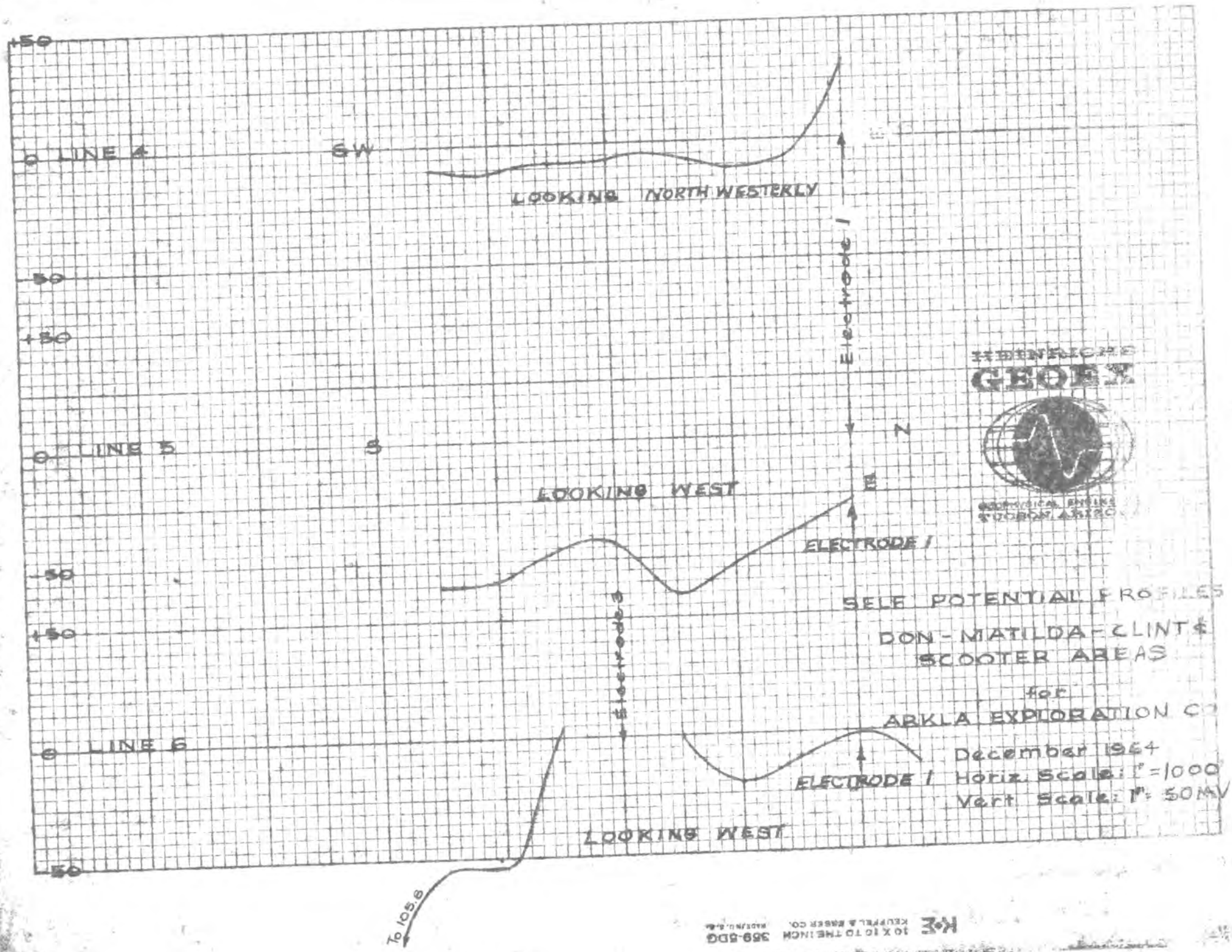


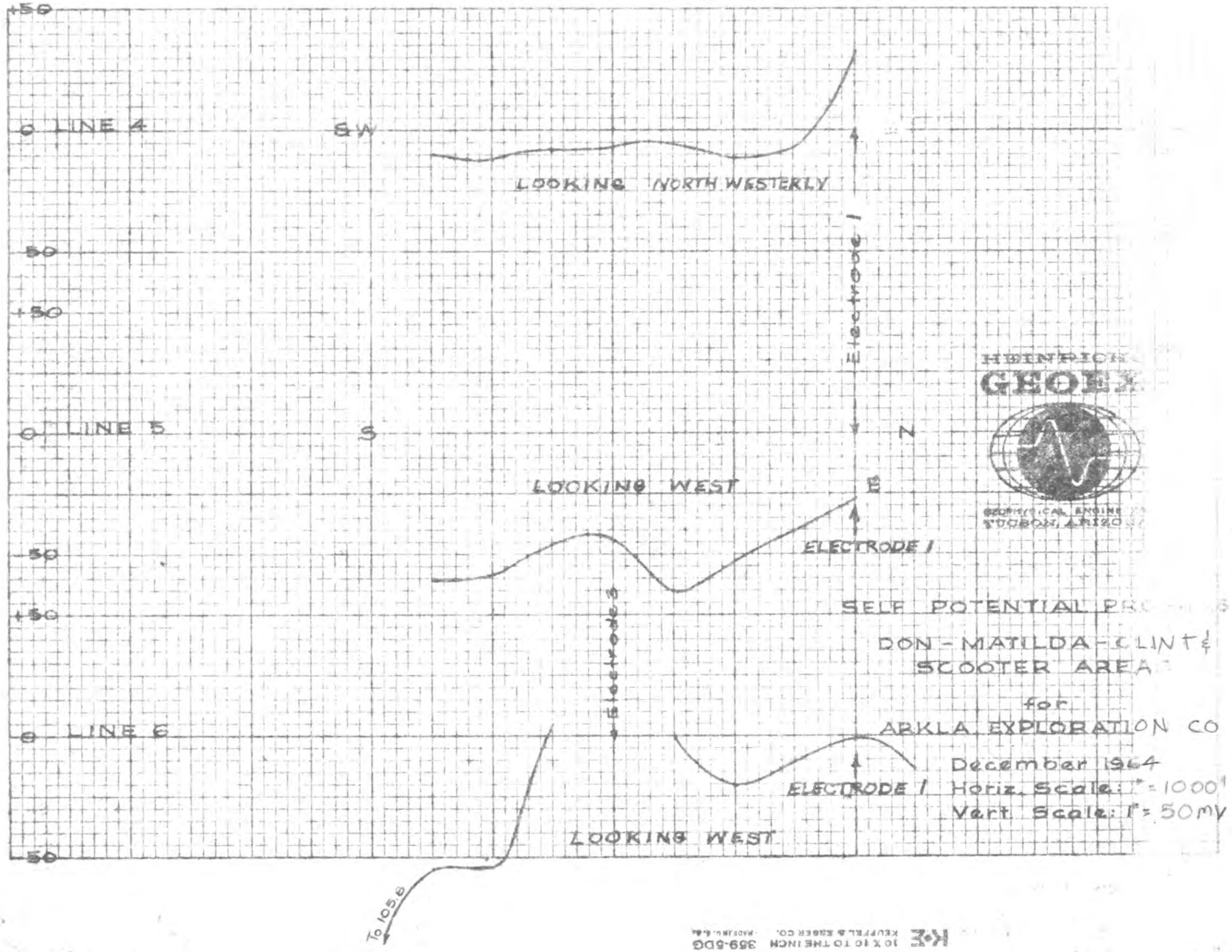
K+E 10 X 10 TO THE INCH 359-5DG
KEUFFEL & ESSER CO. MADE IN U.S.A.



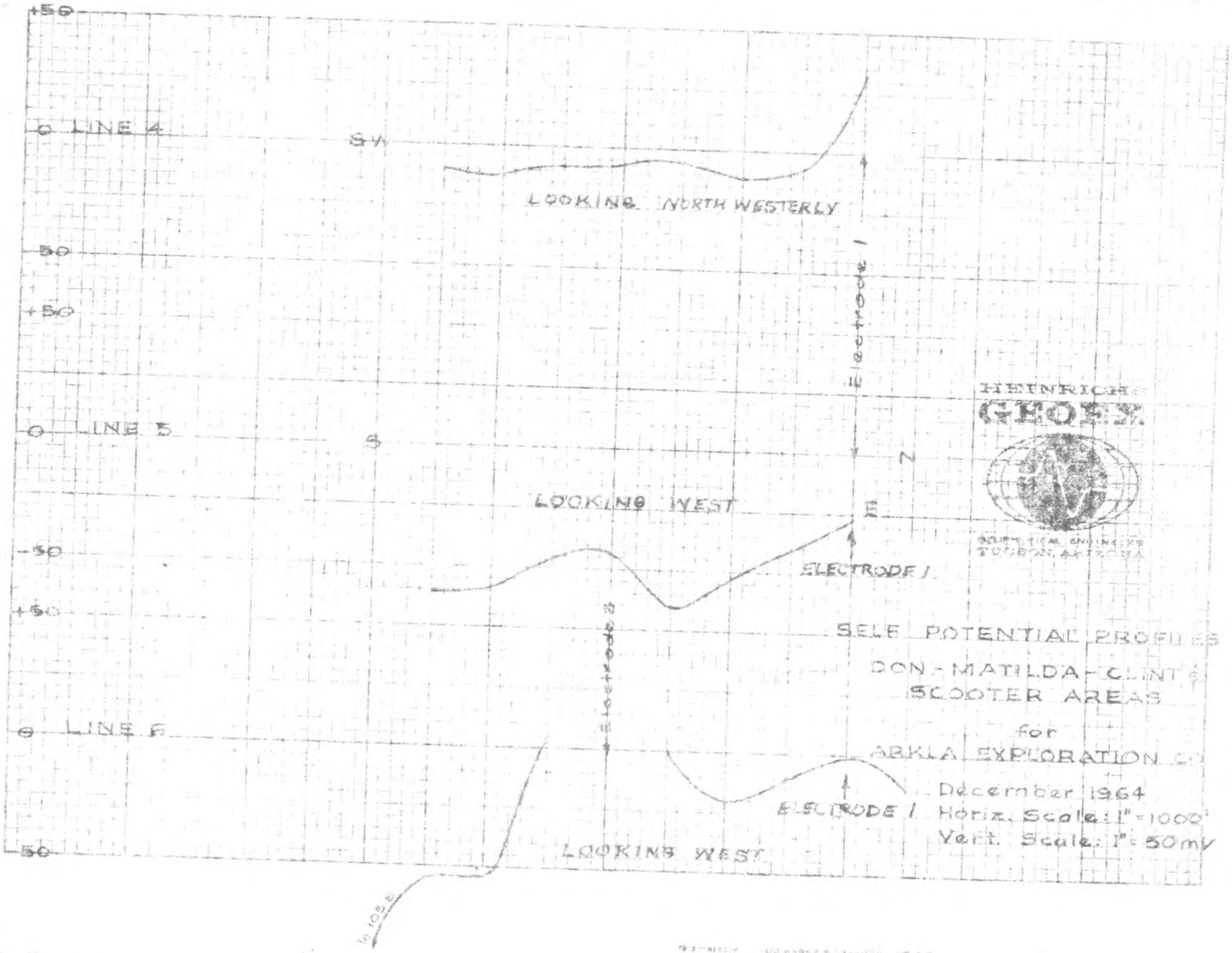
+50
LINE 4
SW
LOOKING NORTH WESTERLY
Electrode 1
-50
+50
LINE 5
S
N
LOOKING WEST
E
ELECTRODE 1
-50
+50
Electrode 3
LINE 6
ELECTRODE 1
LOOKING WEST
-50
To 105.6
HEINRICHS
GEOEX
GEOPHYSICAL ENGINEERS
TUCSON, ARIZONA
SELF POTENTIAL PROFILES
DON - MATILDA - CLINT &
SCOOTER AREAS
for
ARKLA EXPLORATION CO
December 1964
Horiz. Scale: 1" = 1000'
Vert. Scale: 1" = 50 mv

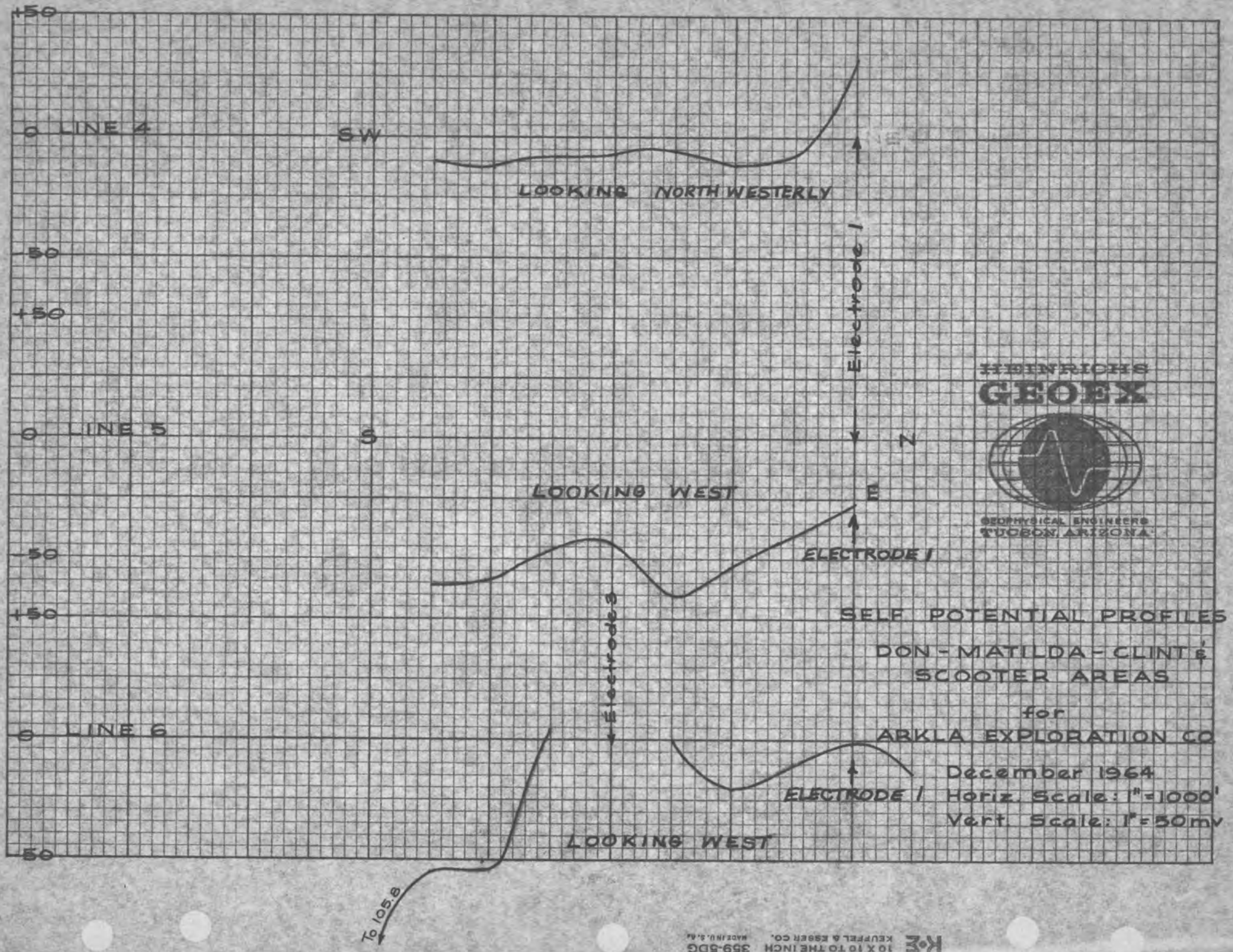

+50
0 LINE 4
SW
LOOKING NORTH WESTERLY
-50
+50
Electrode 1
0 LINE 5
S
N
LOOKING WEST
E
-50
ELECTRODE 1
+50
Electrode 1
0 LINE 6
ELECTRODE 1
LOOKING WEST
-50
To 105.8
HEINRICHS
GEOEX
GEOPHYSICAL ENGINEERS
TUCSON, ARIZONA
SELF POTENTIAL PROFILES
DON - MATILDA - CLINT &
SCOOTER AREAS
for
ARKLA EXPLORATION CO
December 1964
Horiz. Scale: 1" = 1000'
Vert. Scale: 1" = 50mv


+50
0 LINE 4
SW
LOOKING NORTH WESTERLY
-50
+50
0 LINE 5
S
N
LOOKING WEST
E
ELECTRODE 1
-50
+50
0 LINE 6
ELECTRODE 1
LOOKING WEST
-50
To 105.6
HEINRICHS
GEOEX
GEOPHYSICAL ENGINEERS
TUCSON, ARIZ.
SELF POTENTIAL PROFILES
DON - MATILDA - CLINTS
SCOOTER AREAS
for
ARKLA EXPLORATION C
December 1964
Horiz. Scale: 1" = 1000
Vert. Scale: 1" = 50 MV

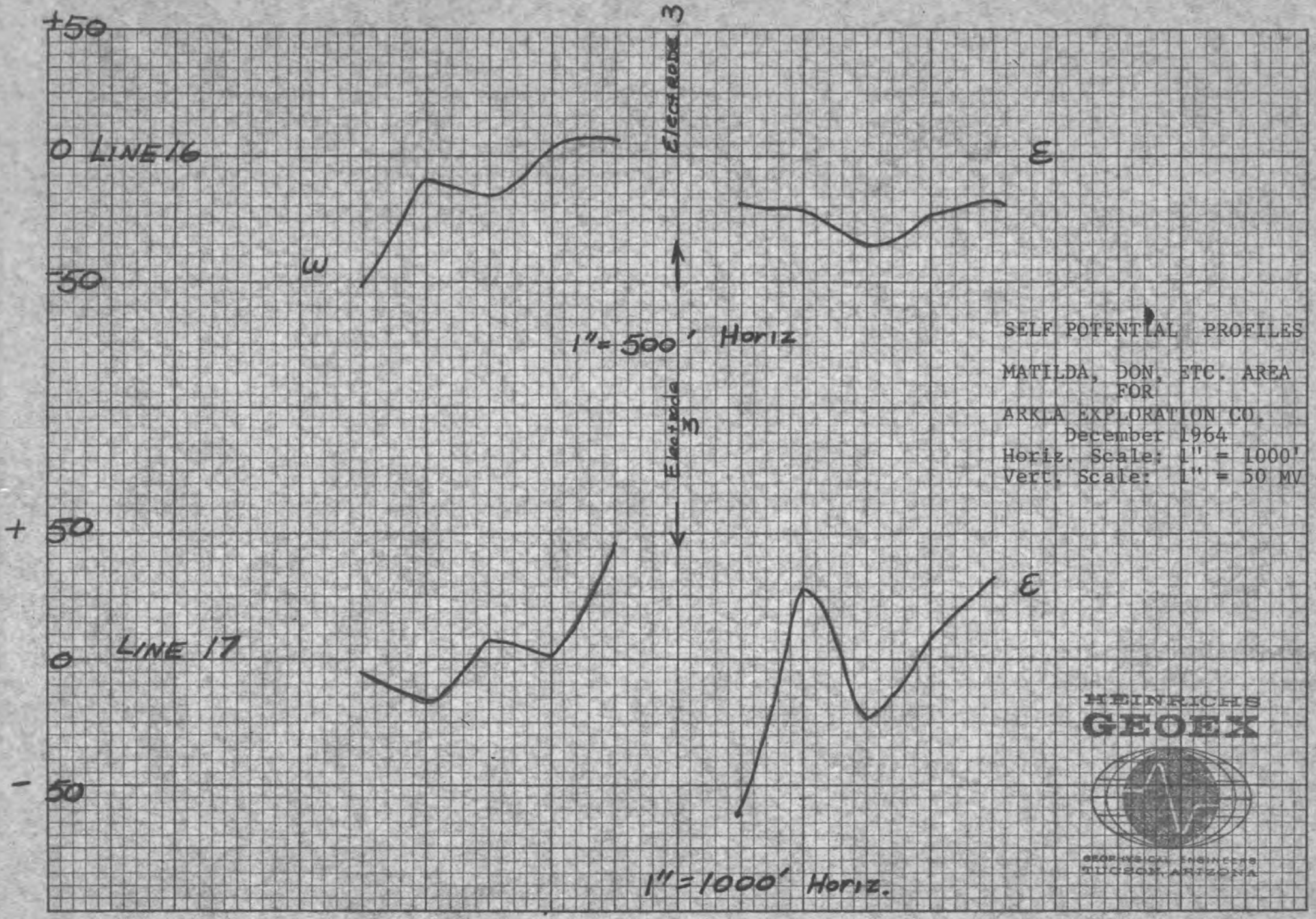


K+E 10 X 10 TO THE INCH 359-5DG
KEUFFEL & ESSER CO. MADE IN U.S.A.

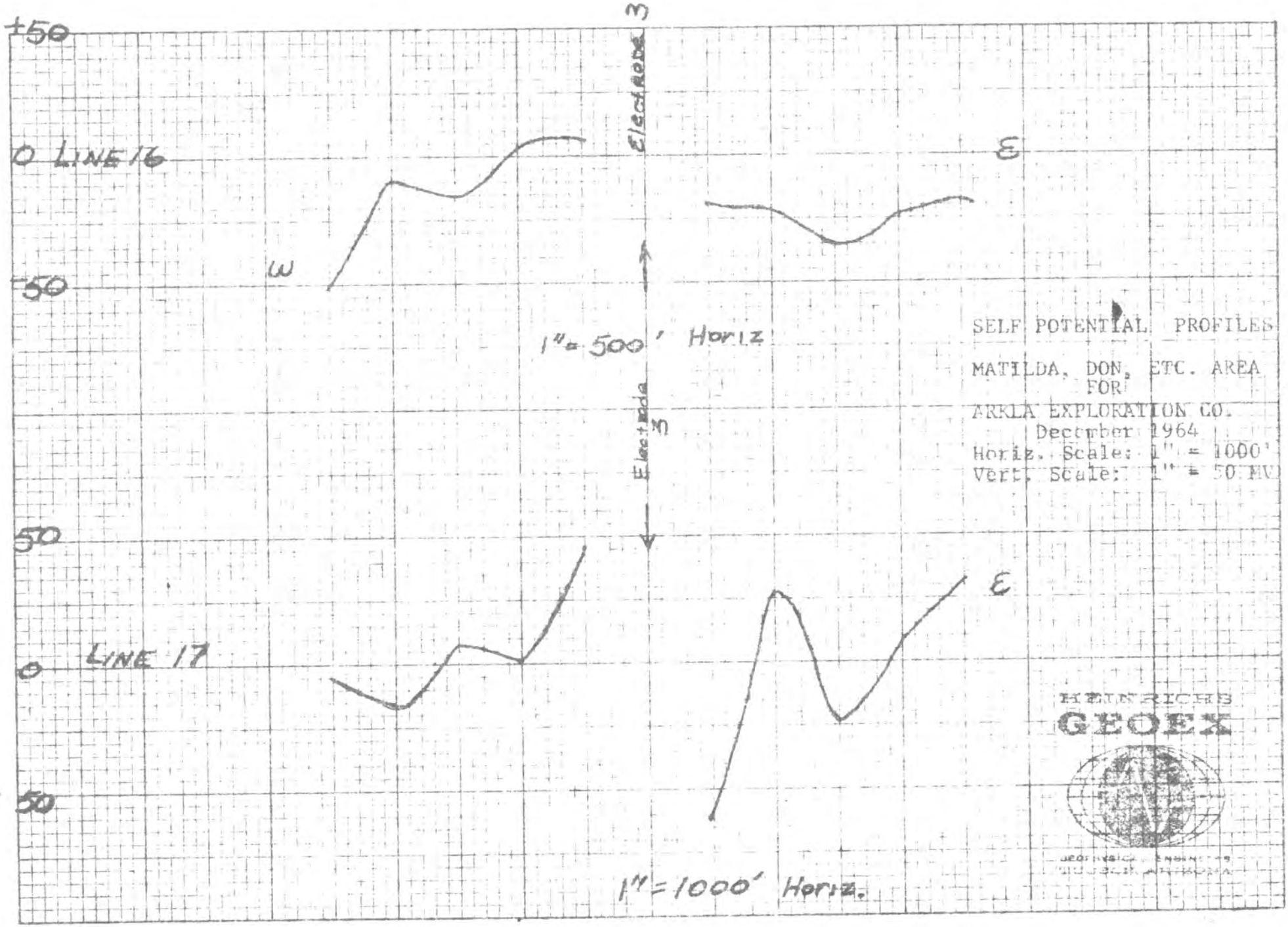

+50
0 LINE 4
SW
LOOKING NORTH WESTERLY
-50
+50
Electrode 1
0 LINE 5
S
N
LOOKING WEST
E
-50
ELECTRODE 1
+50
Electrode 2
0 LINE 6
ELECTRODE 1
-50
LOOKING WEST
To 105.8
HEINRICHS
GEOEX
GEOPHYSICAL ENGINEERS
TUCSON, ARIZONA
SELF POTENTIAL PROFILES
DON-MATILDA-CLINT &
SCOOTER AREAS
for
ARKLA EXPLORATION CO
December 1964
Horiz. Scale: 1" = 1000'
Vert. Scale: 1" = 50 mV

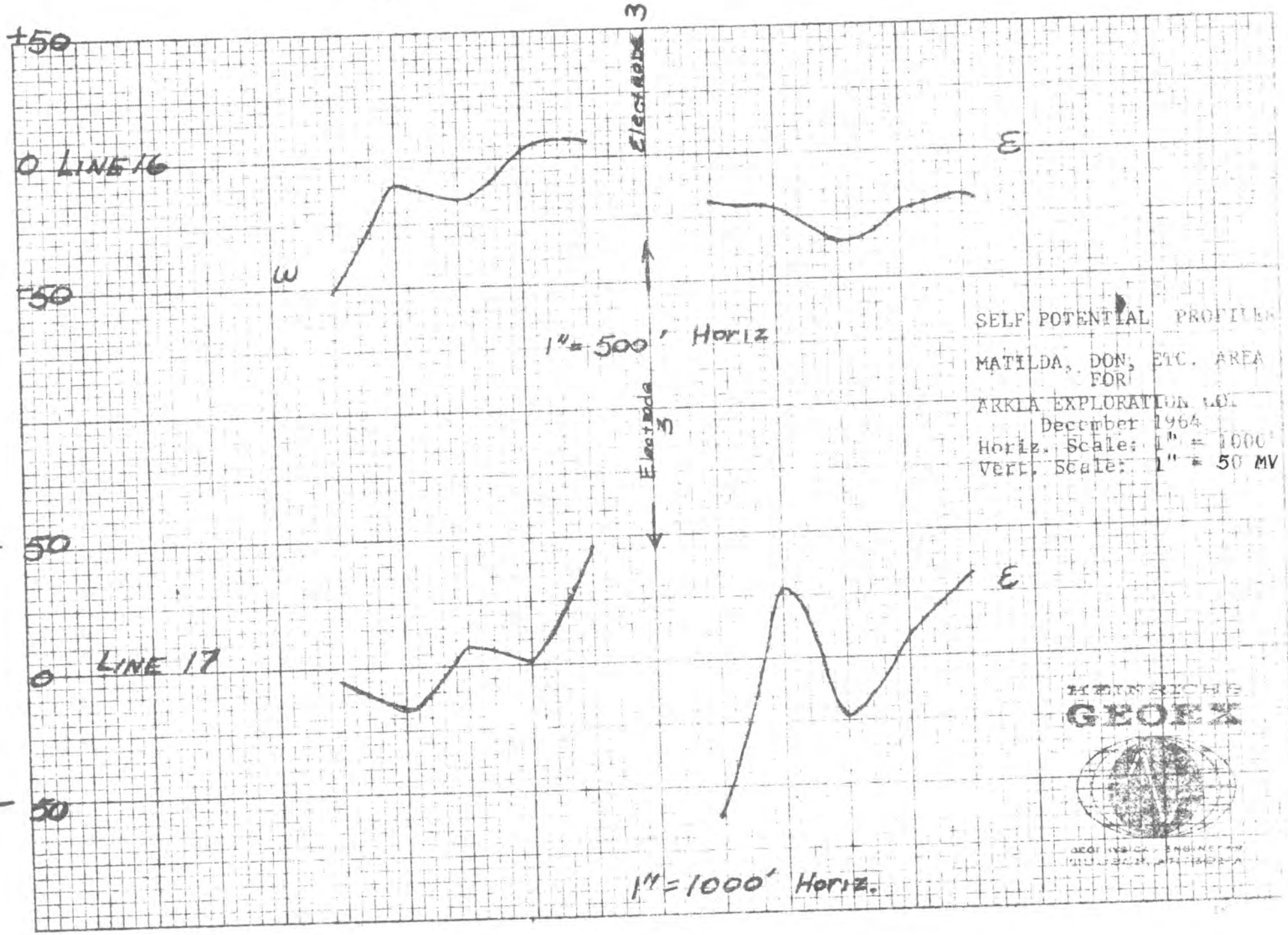


K+E 10 X 10 TO THE INCH 359-5DG
KEUFFEL & ESSER CO. MADE IN U.S.A.

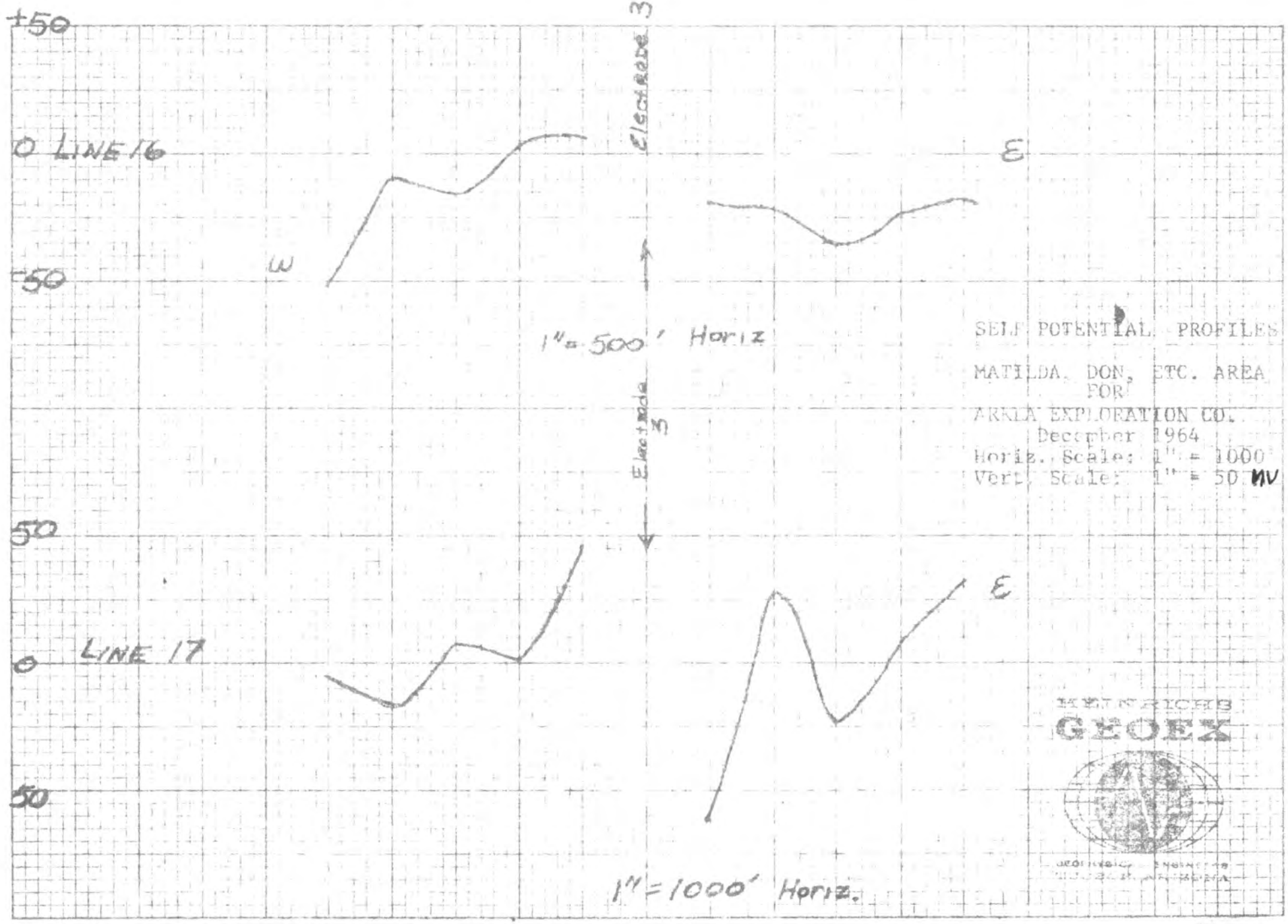


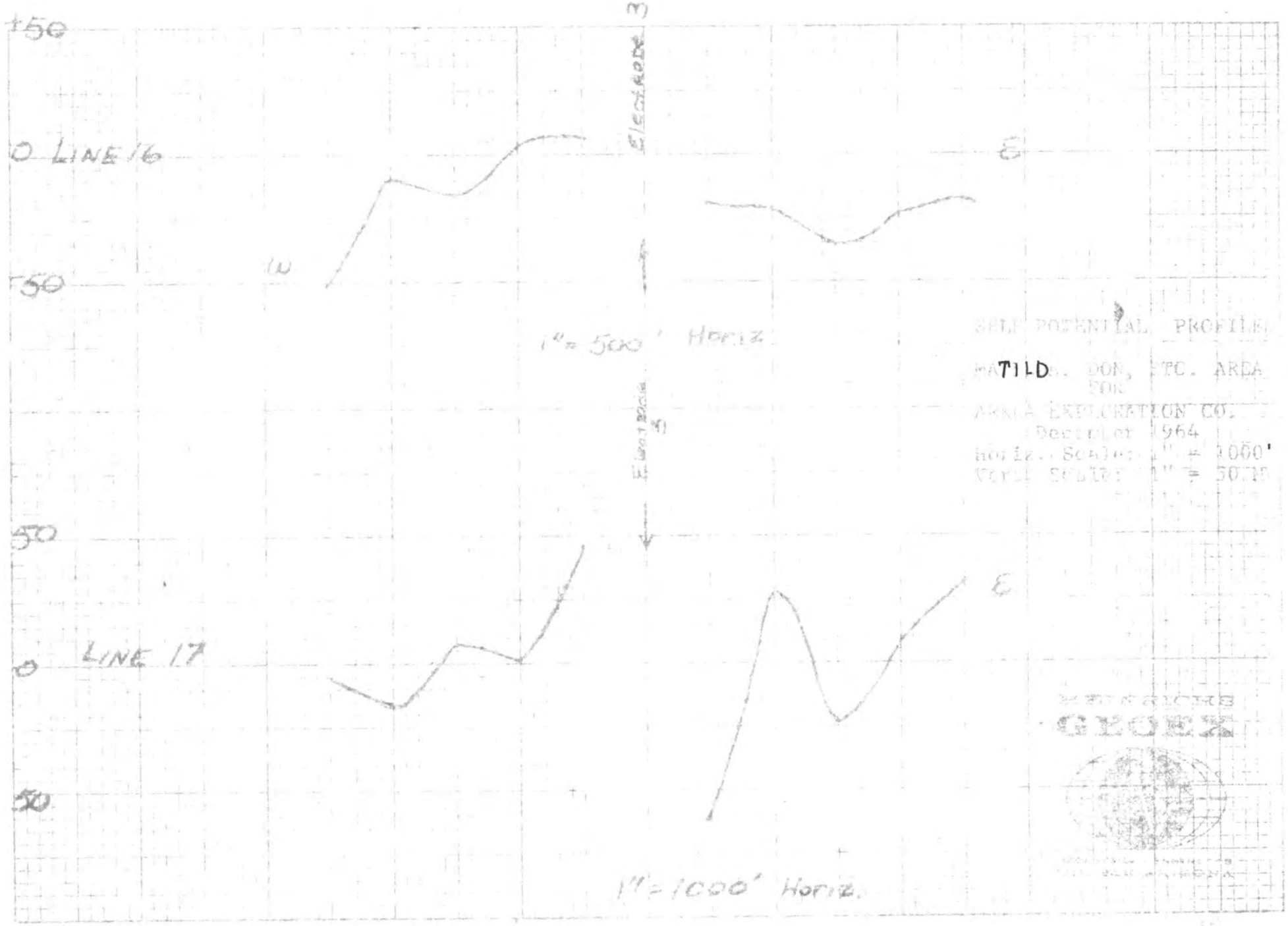
K+E 10 X 10 TO THE INCH 359-5DG
KEUFFEL & ESSER CO. MADE IN U.S.A.

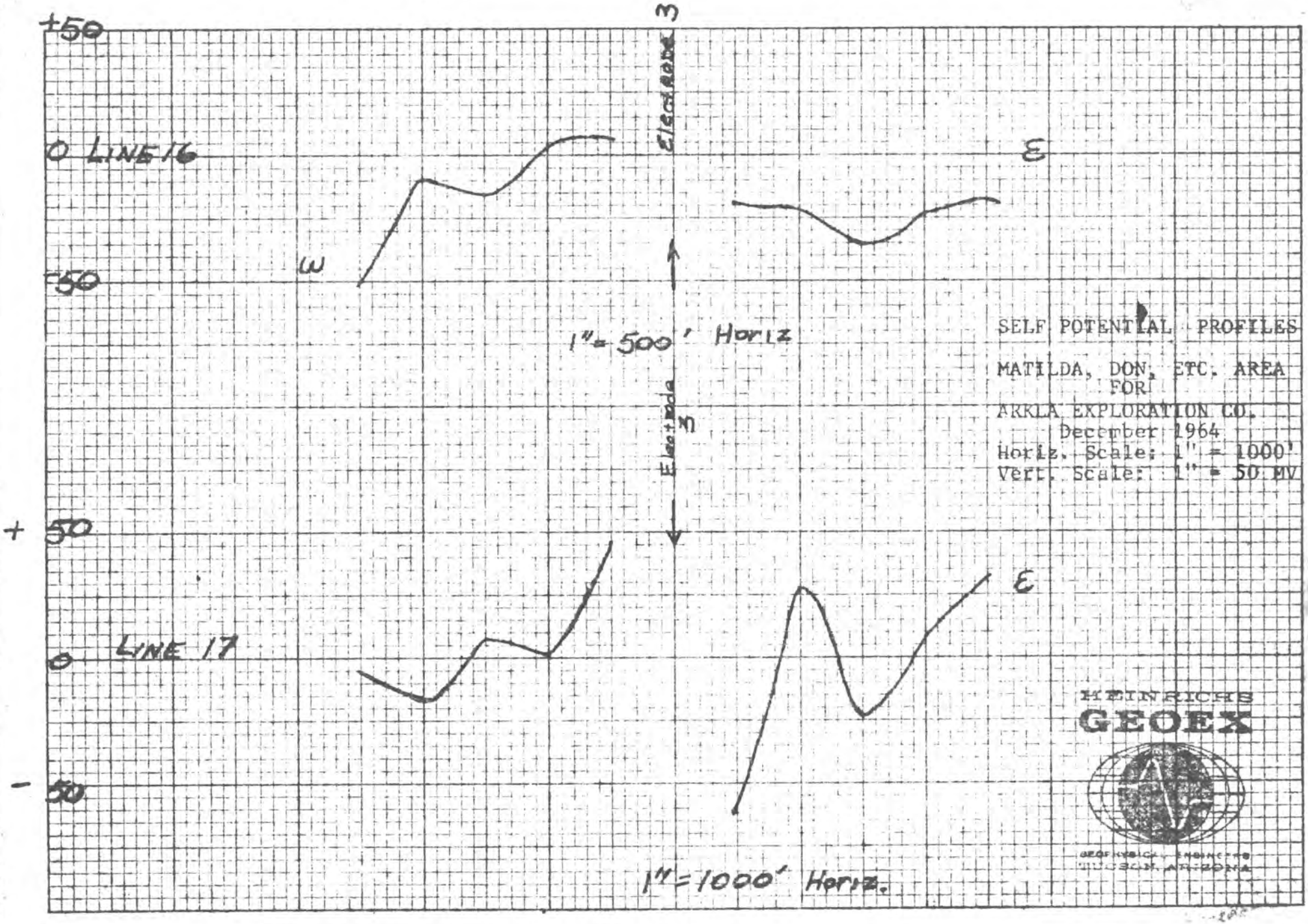

+50
0 LINE 16
-50
W
E
1" = 500' Horiz
Electrode 3
+ 50
0 LINE 17
- 50
E
1" = 1000' Horiz.
SELF POTENTIAL PROFILES
MATILDA, DON, ETC. AREA
FOR
ARKLA EXPLORATION CO.
December 1964
Horiz. Scale: 1" = 1000'
Vert. Scale: 1" = 50 MV
HEINRICHS
GEOEX



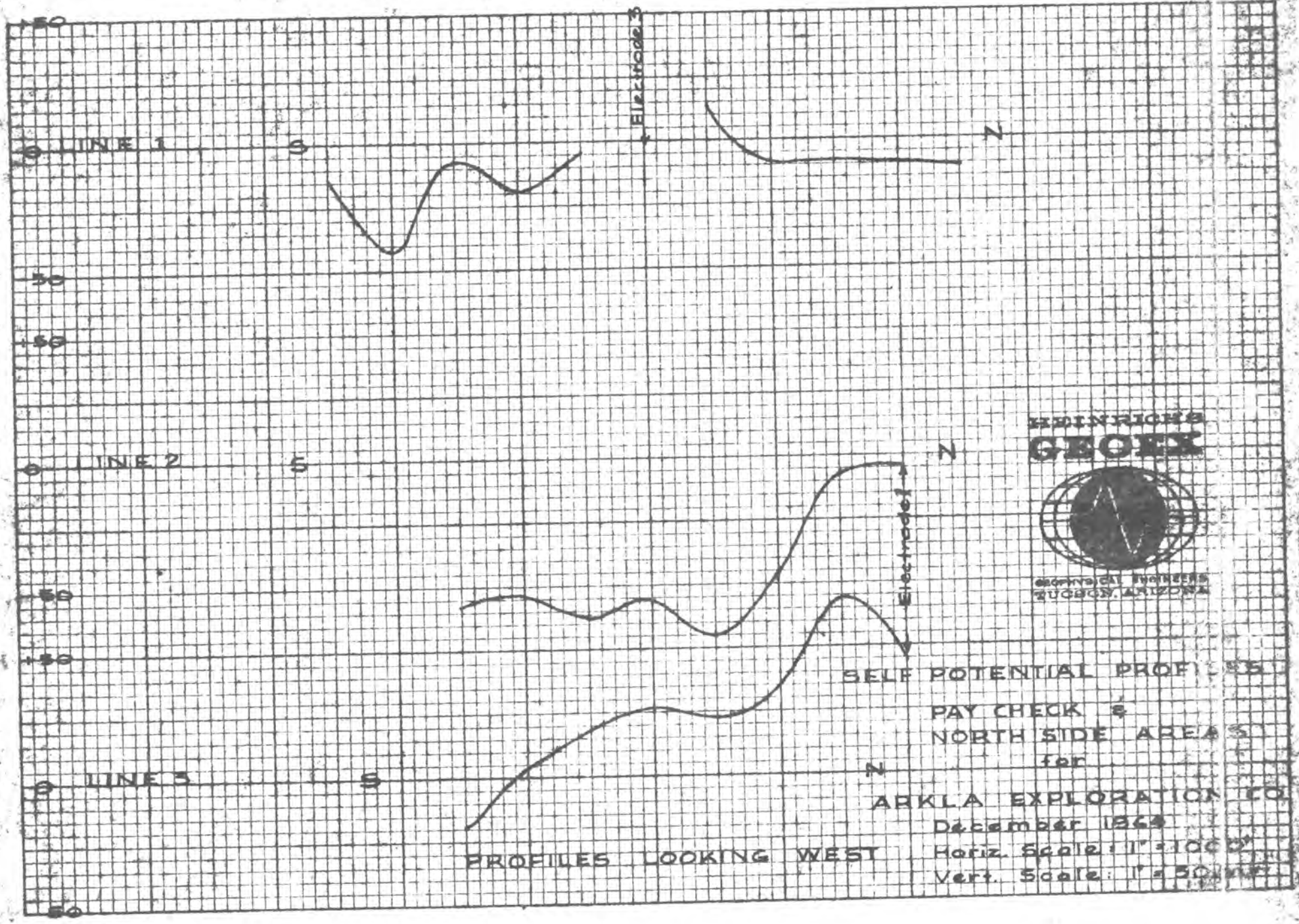
K&E 10 X 10 TO THE INCH 359-5DG KEUFFEL & ESSER CO. MADE IN U.S.A.


+50
0 LINE 16
-50
W
Electrode 3
E
1" = 500' Horiz
Electrode 3
+ 50
LINE 17
0
- 50
E
1" = 1000' Horiz.
SELF POTENTIAL PROFILES
MATILDA, DON, ETC. AREA
FOR
ARKLA EXPLORATION CO.
December 1964
Horiz. Scale: 1" = 1000'
Vert. Scale: 1" = 50 MV
GEOEX

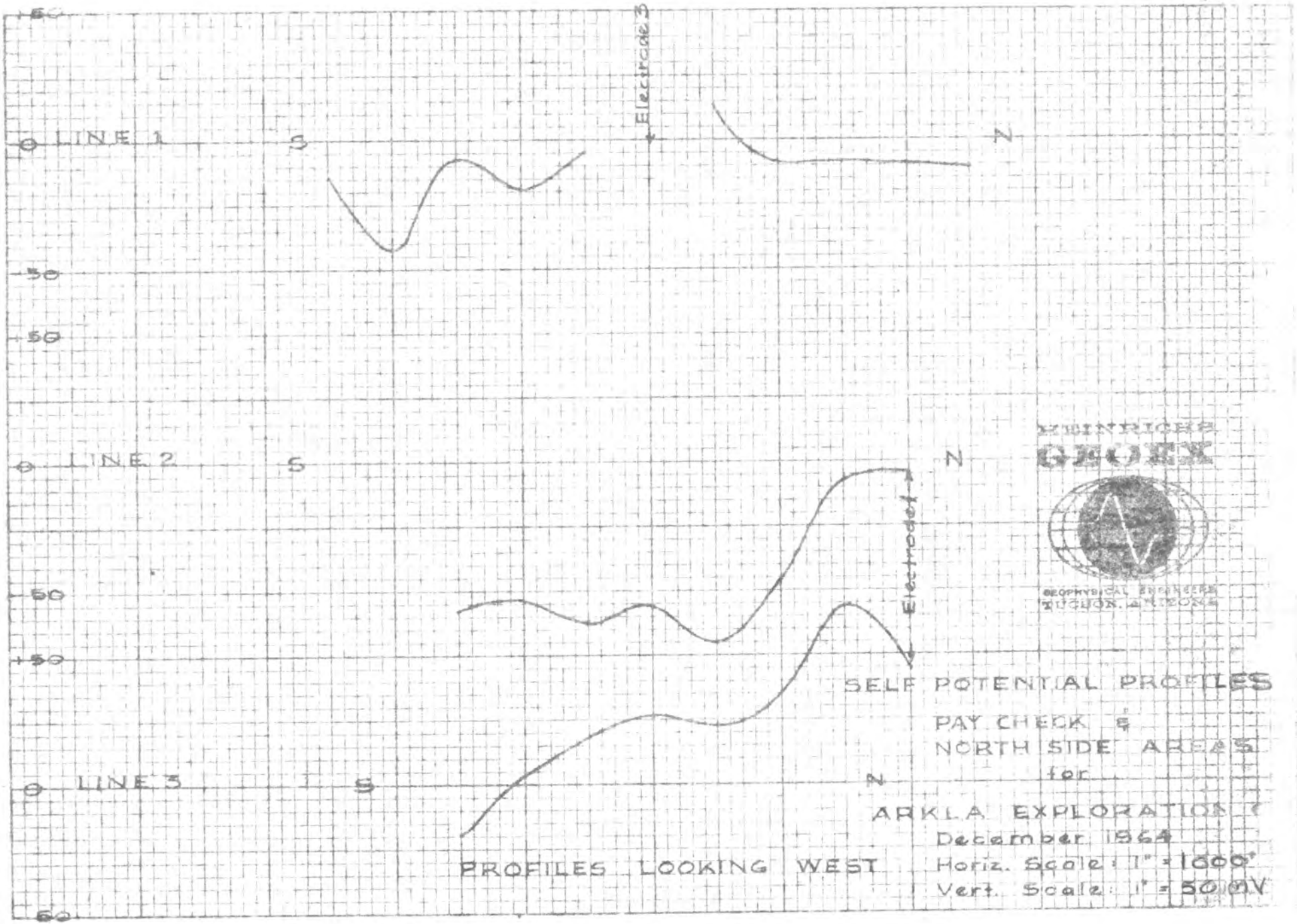

+50
0 LINE 16
-50
+50
0 LINE 17
-50
W
E
Electrode 3
Electrode 5
1" = 500' Horiz
1" = 1000' Horiz.
SELF POTENTIAL PROFILE
MATILD. DON, ETC. AREA
FOR
ARMCA EXPLORATION CO.
December 1964
Horiz. Scale: 1" = 1000'
Vert. Scale: 1" = 50 M
GEOEX



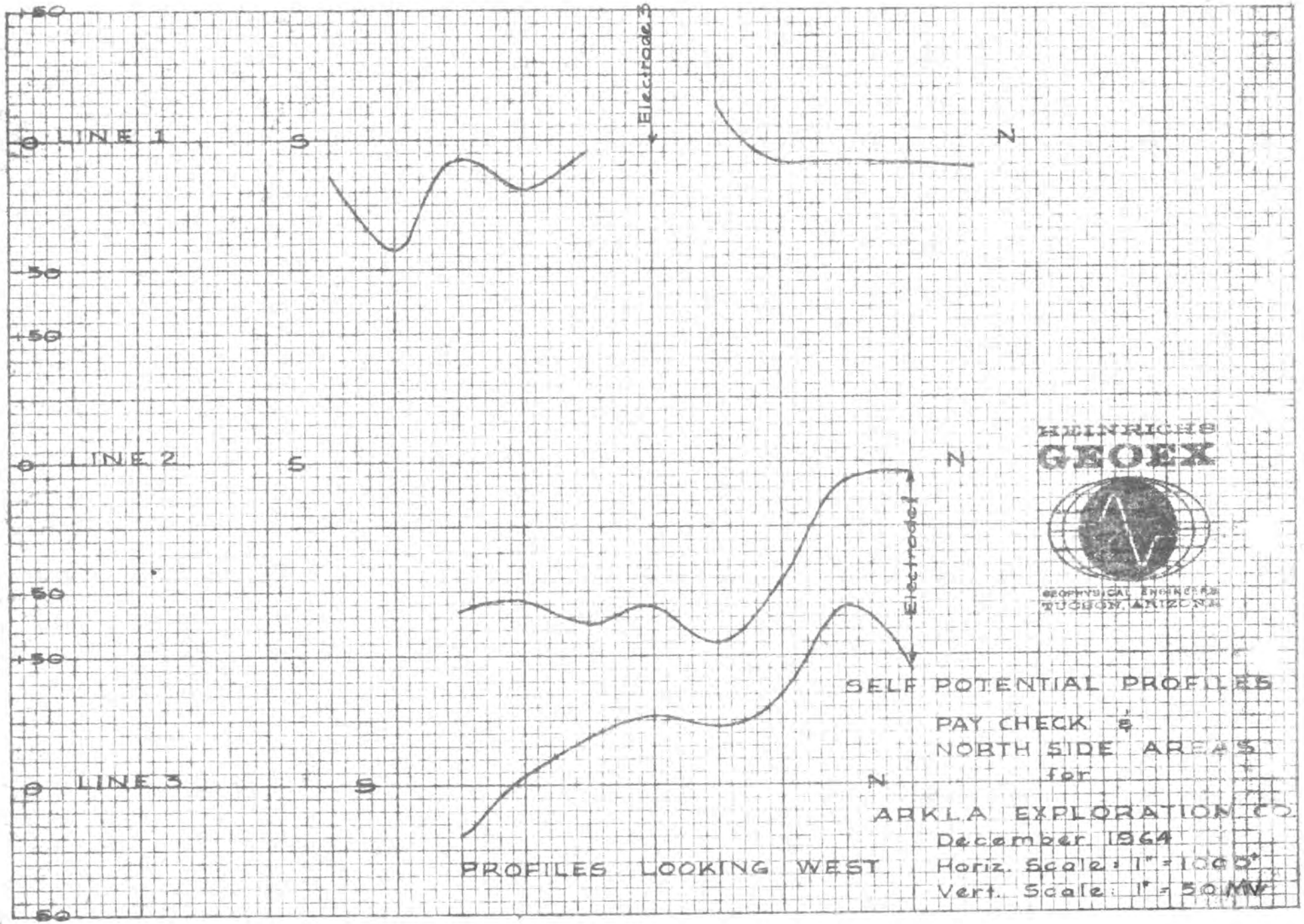
K+E 10 X 10 TO THE INCH 359-5DG KEUFFEL & ESSER CO. MADE IN U.S.A.



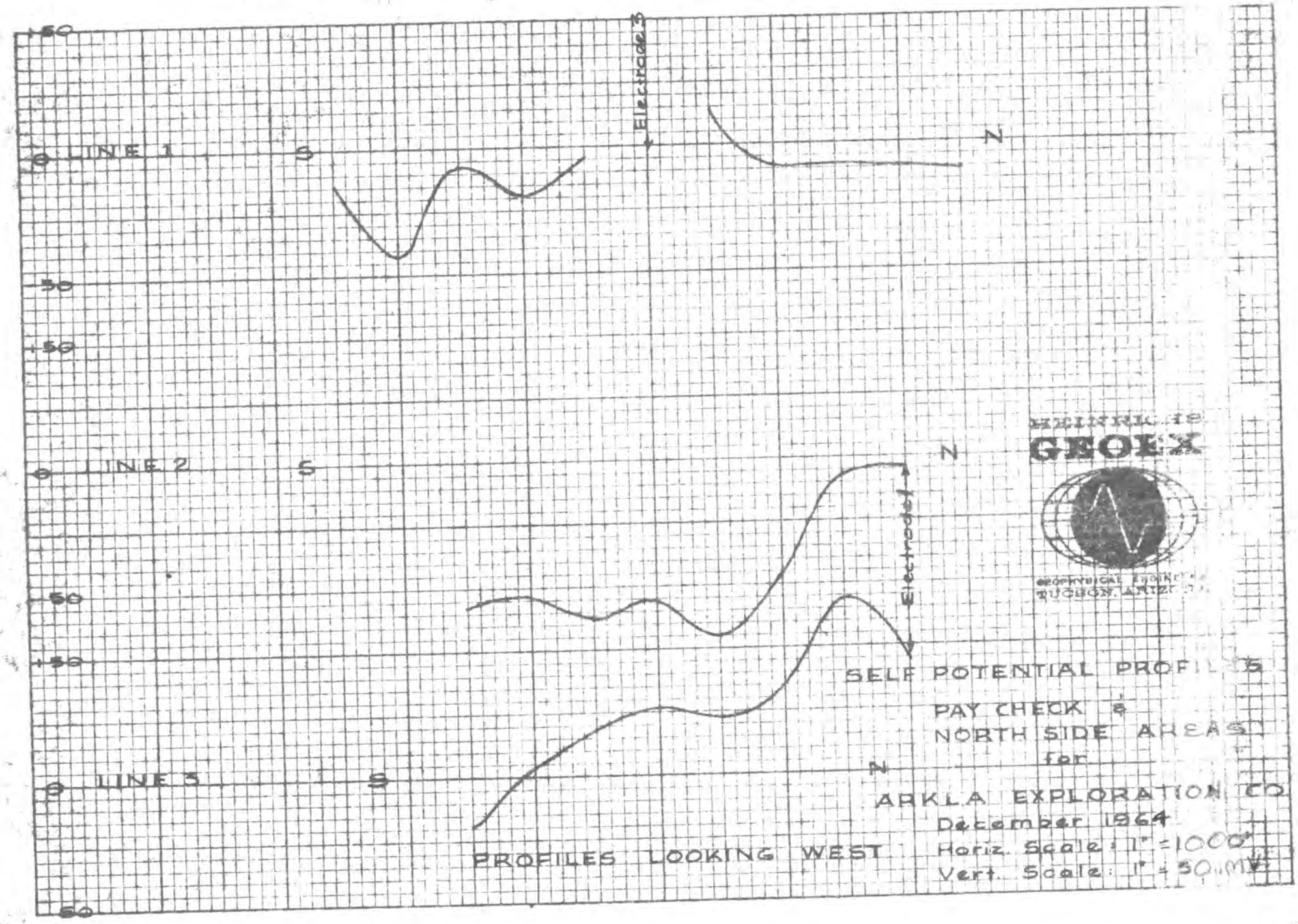
K+E 10 X 10 TO THE INCH 359-5DG KEUFFEL & ESSER CO. MADE IN U.S.A.



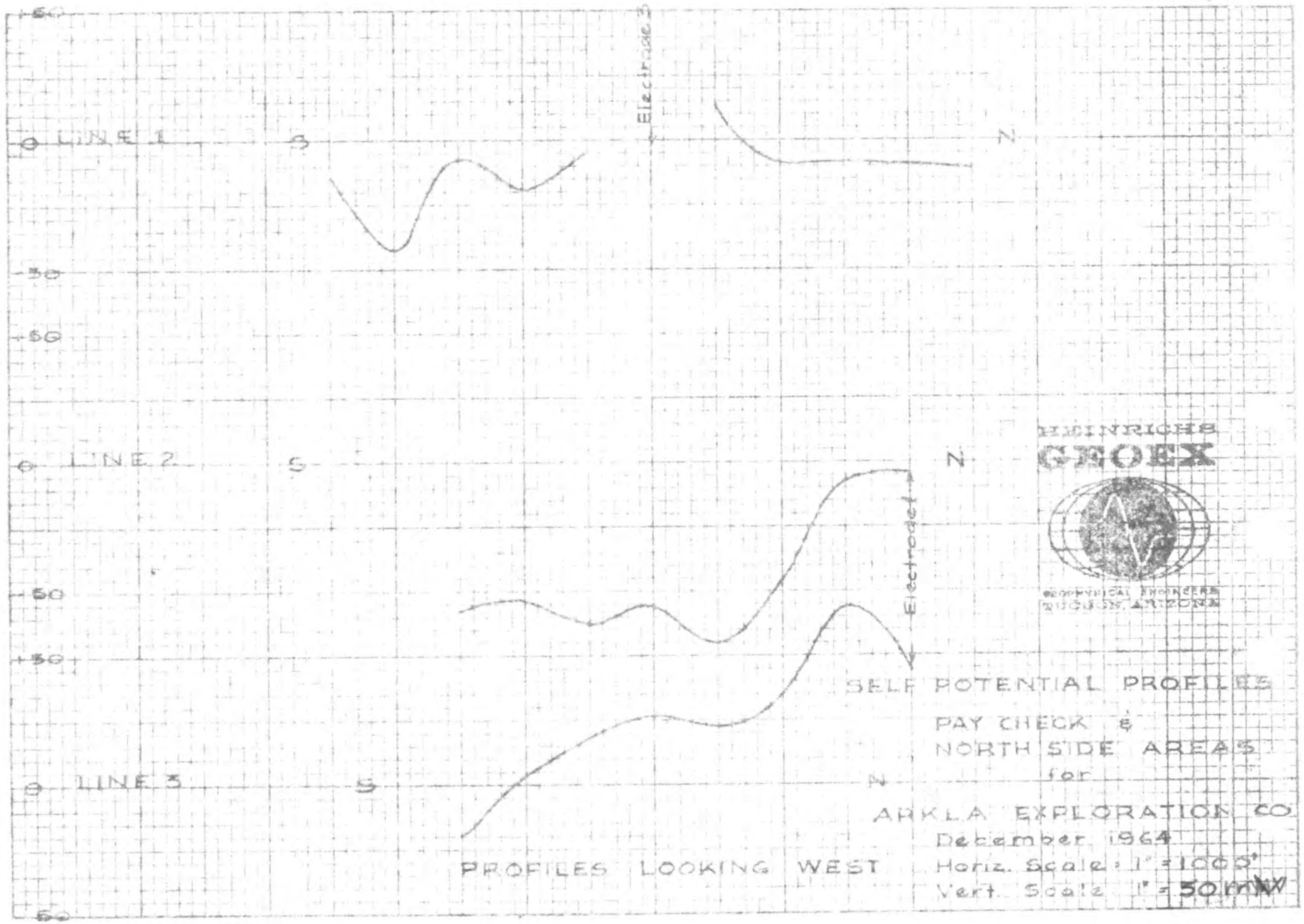
K+E 10 X 10 TO THE INCH 359-50G KEUFFEL & ESSER CO. MADE IN U.S.A.

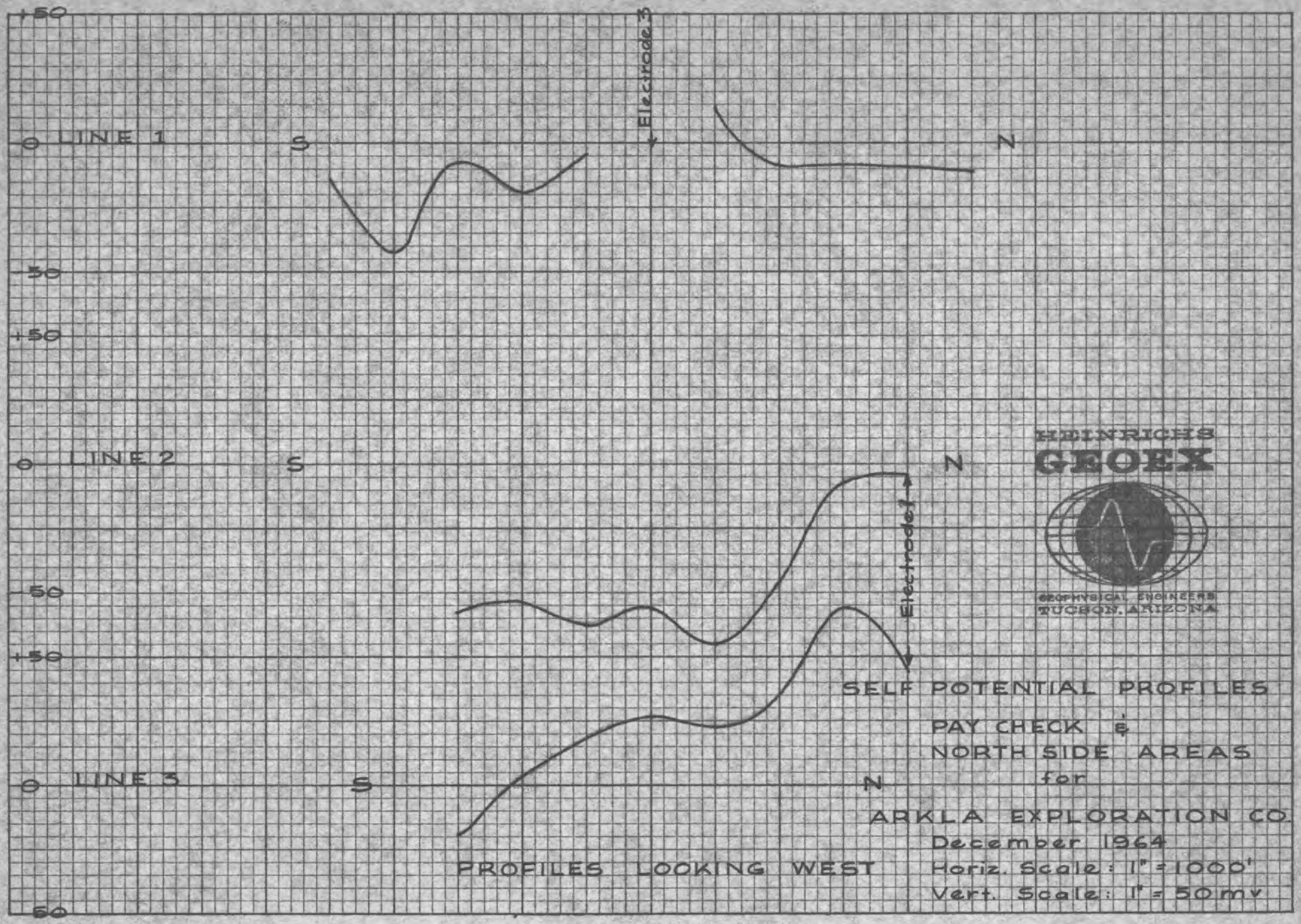


K+E 10 X 10 TO THE INCH 359-5DG
KEUFFEL & ESSER CO. MADE IN U.S.A.

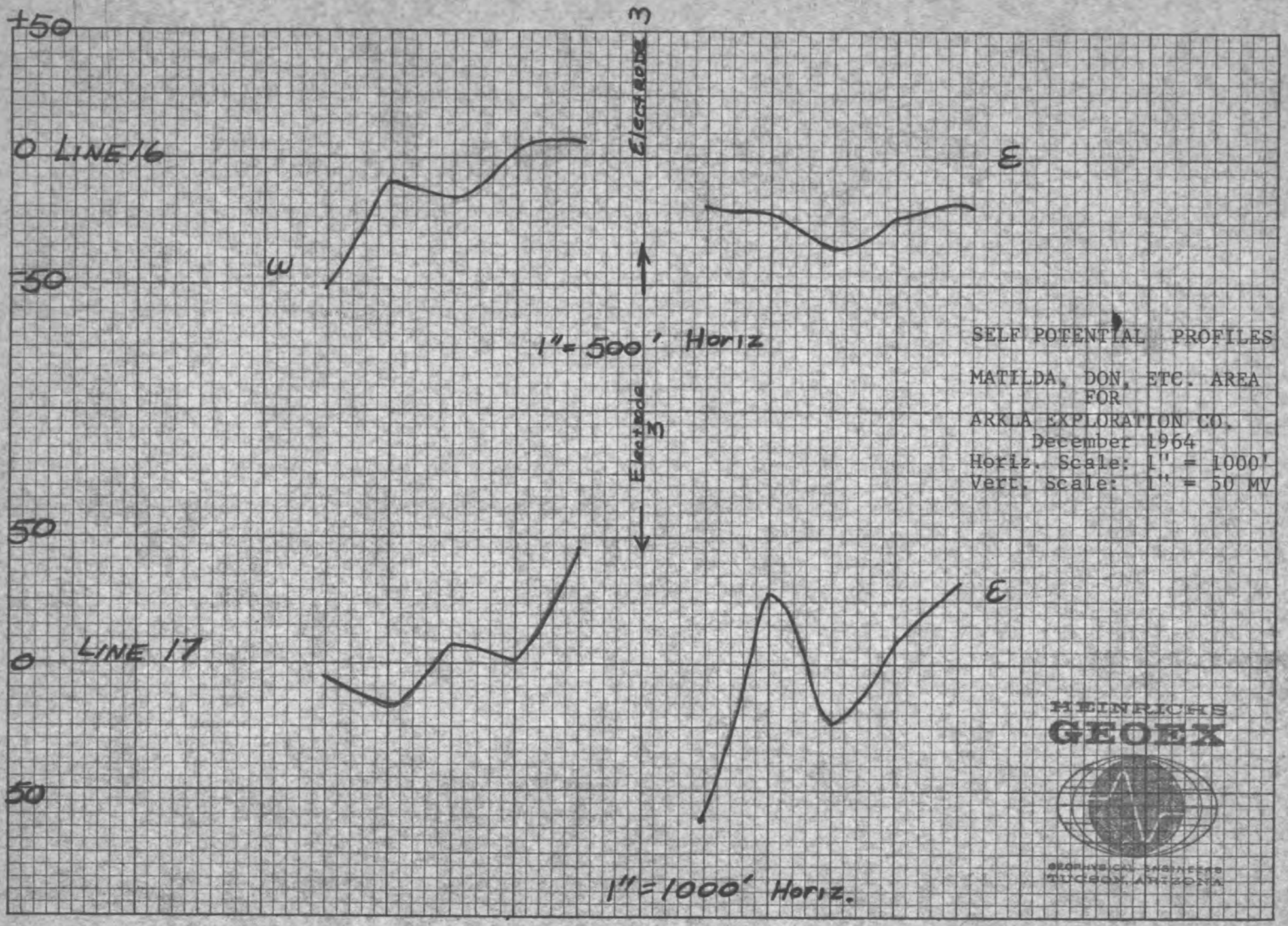


K&E 10 X 10 TO THE INCH 359-5DG KEUFFEL & ESSER CO. MADE IN U.S.A.

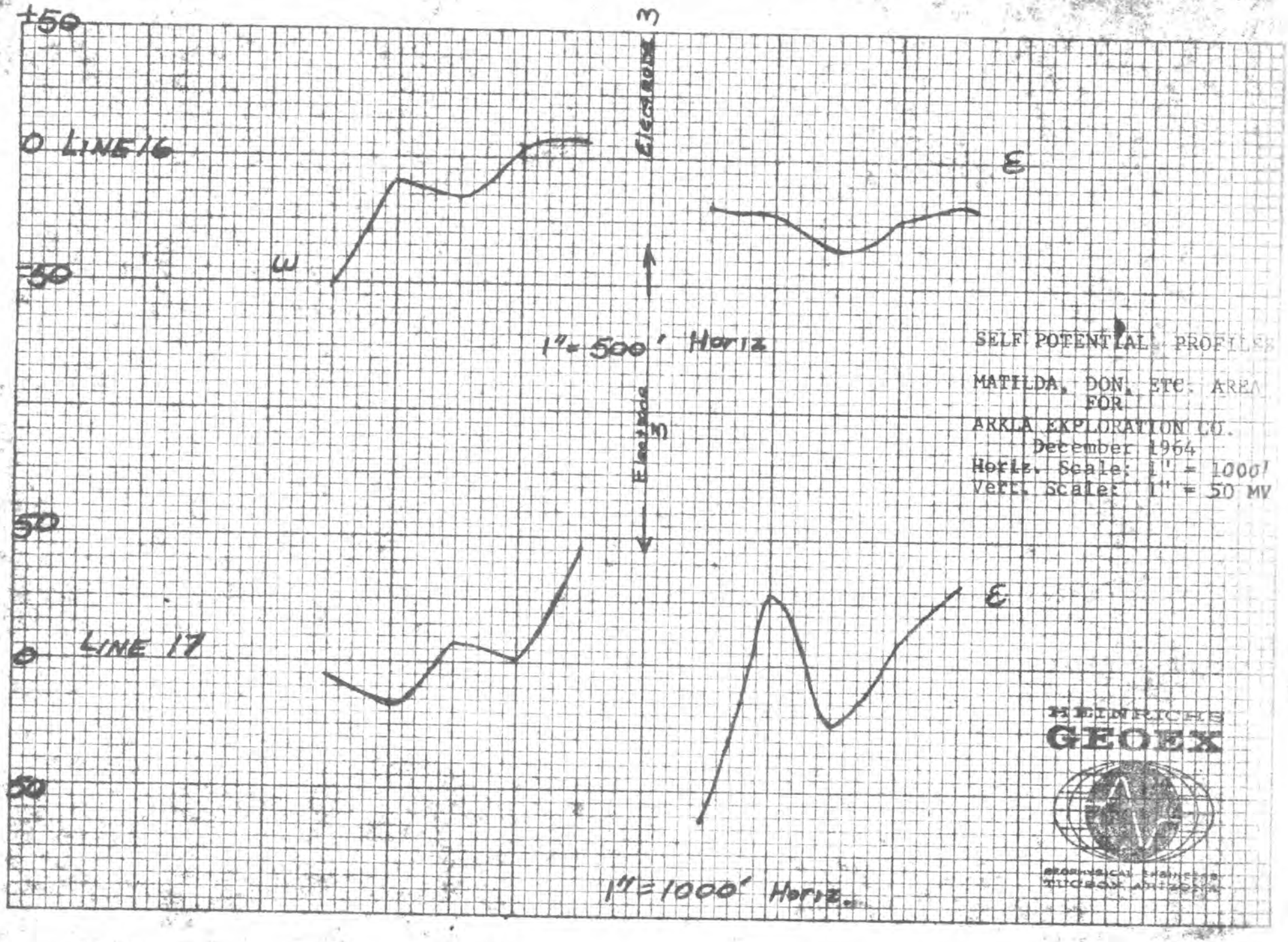

+60
0 LINE 1
S
Electrode 3
N
-50
+50
0 LINE 2
S
N
Electrode 1
-50
+50
0 LINE 3
S
N
-60
PROFILES LOOKING WEST
HEINRICHS
GROEX
GEOPHYSICAL ENGINEERS
BISBEE, ARIZONA
SELF POTENTIAL PROFILES
PAY CHECK &
NORTH SIDE AREAS
for
ARKLA EXPLORATION CO
December 1964
Horiz. Scale: 1" = 1000'
Vert. Scale 1" = 50 mV

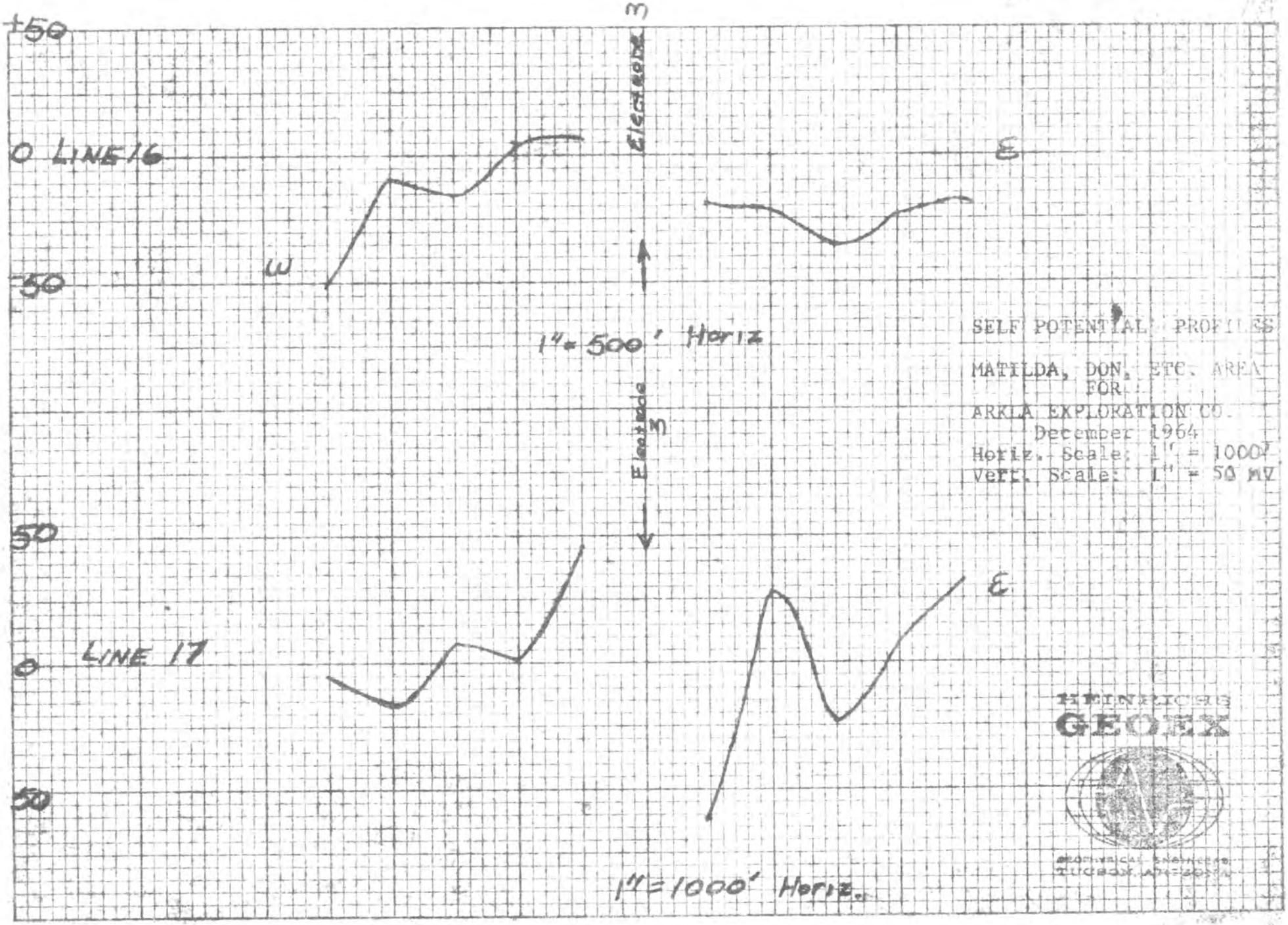


K+E 10 X 10 TO THE INCH 359-5DG
KEUFFEL & ESSER CO. MADE IN U.S.A.



K+E 10 X 10 TO THE INCH 359-5DG
KEUFFEL & ESSER CO. MADE IN U.S.A.


+50
0 LINE 16
-50
ω
Electrode 3
ε
1" = 500' Horiz
Electrode 3
+ 50
0 LINE 17
- 50
ε
1" = 1000' Horiz.
SELF POTENTIAL PROFILES
MATILDA, DON, ETC. AREA
FOR
ARKLA EXPLORATION CO.
December 1964
Horiz. Scale: 1" = 1000'
Vert. Scale: 1" = 50 MV
HEINRICHS
GEOEX
GEOPHYSICAL ENGINEERS
TUCSON ARIZONA

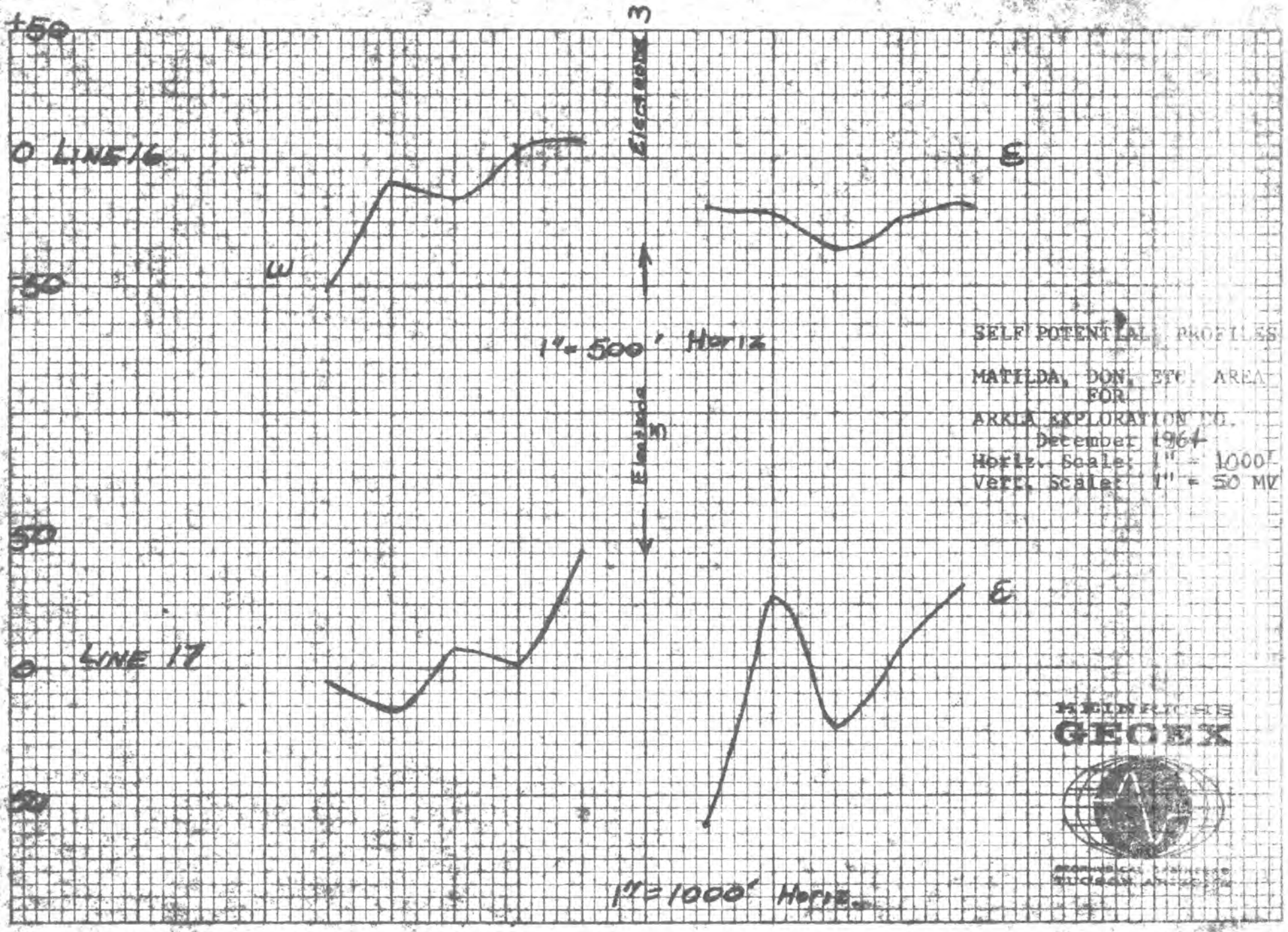


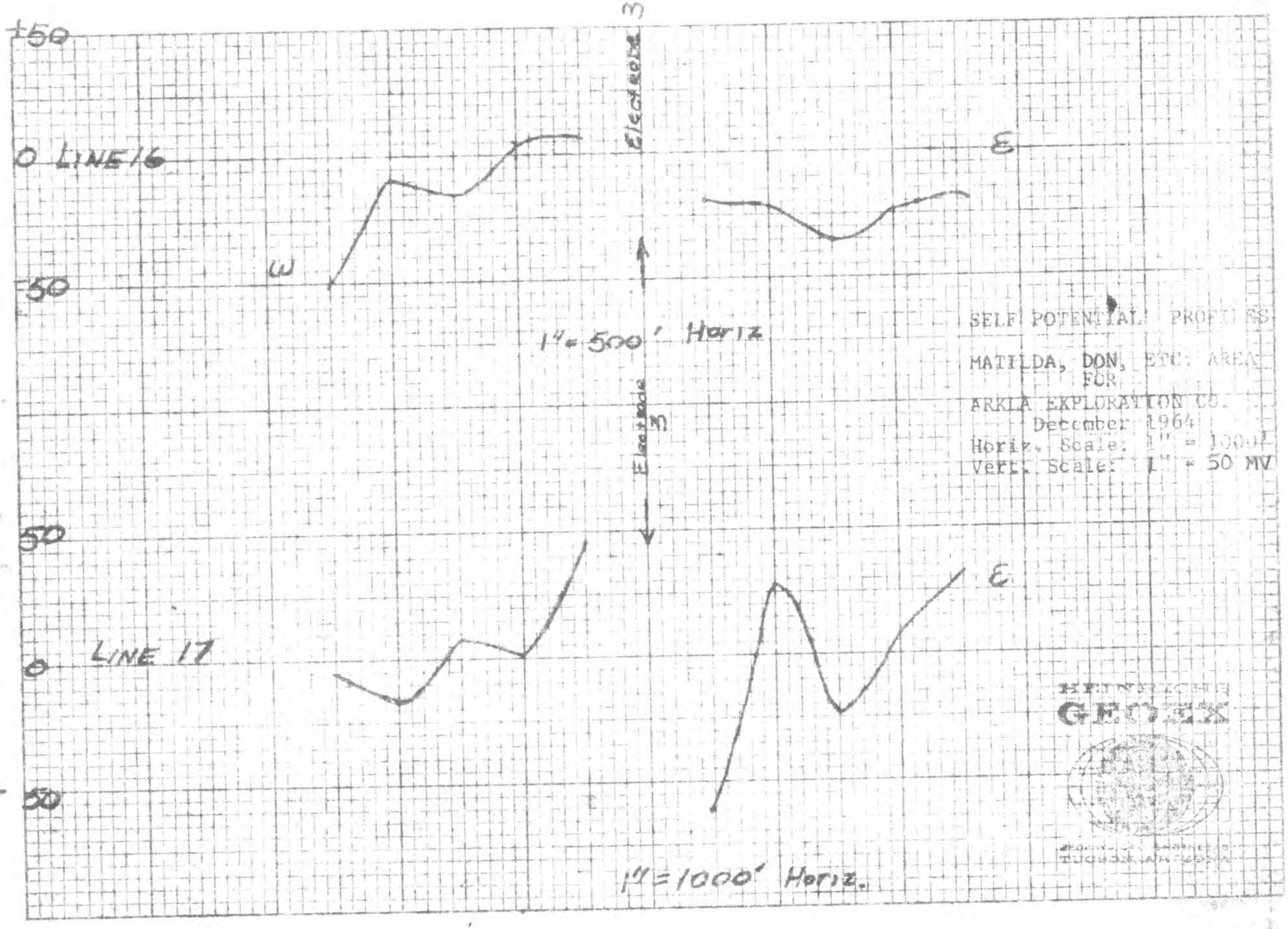
SELF POTENTIAL PROFILES

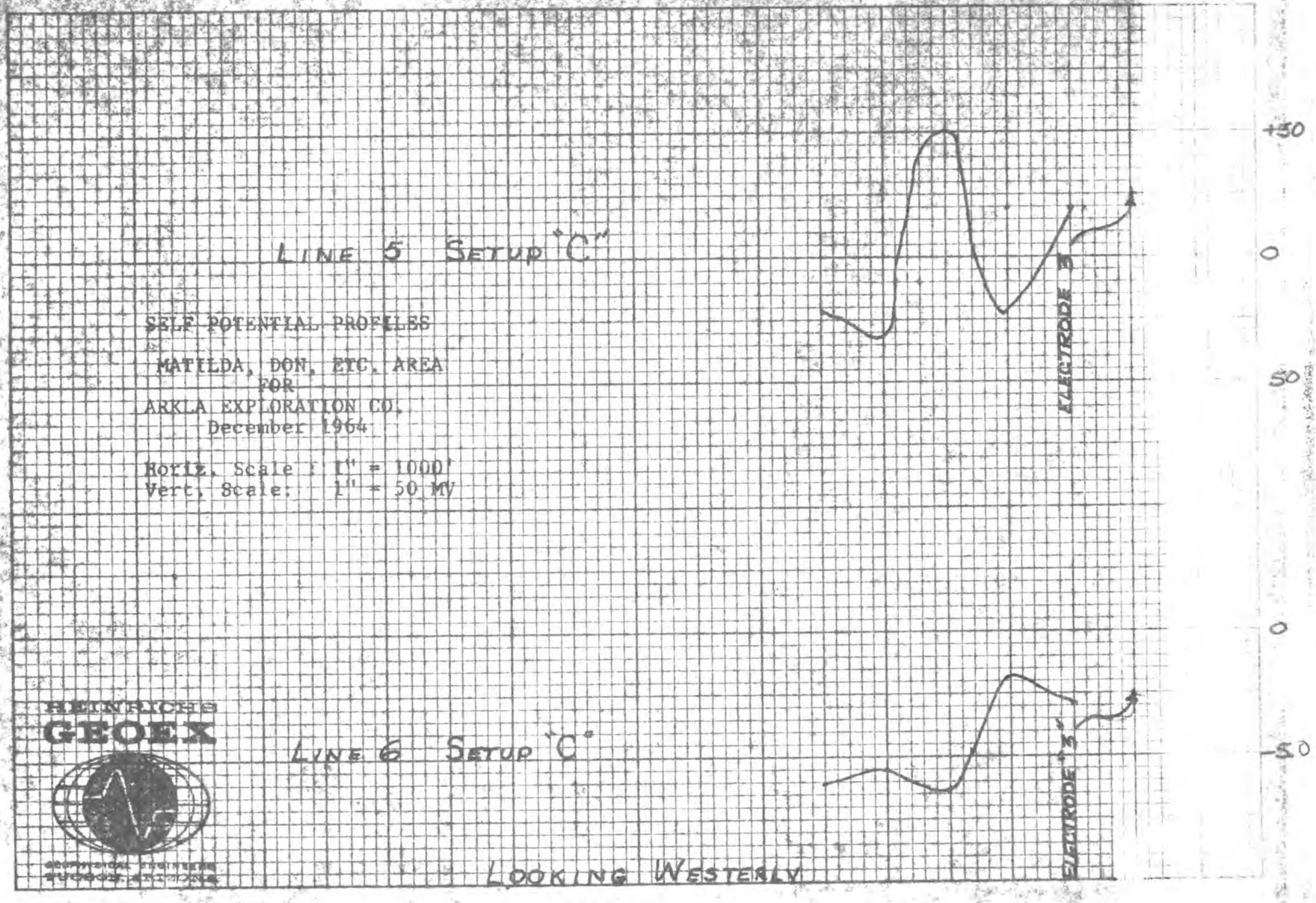
MATILDA, DON, ETC. AREA
FOR
ARKLA EXPLORATION CO.
December 1964
Horiz. Scale: 1" = 1000'
Vert. Scale: 1" = 50 MV

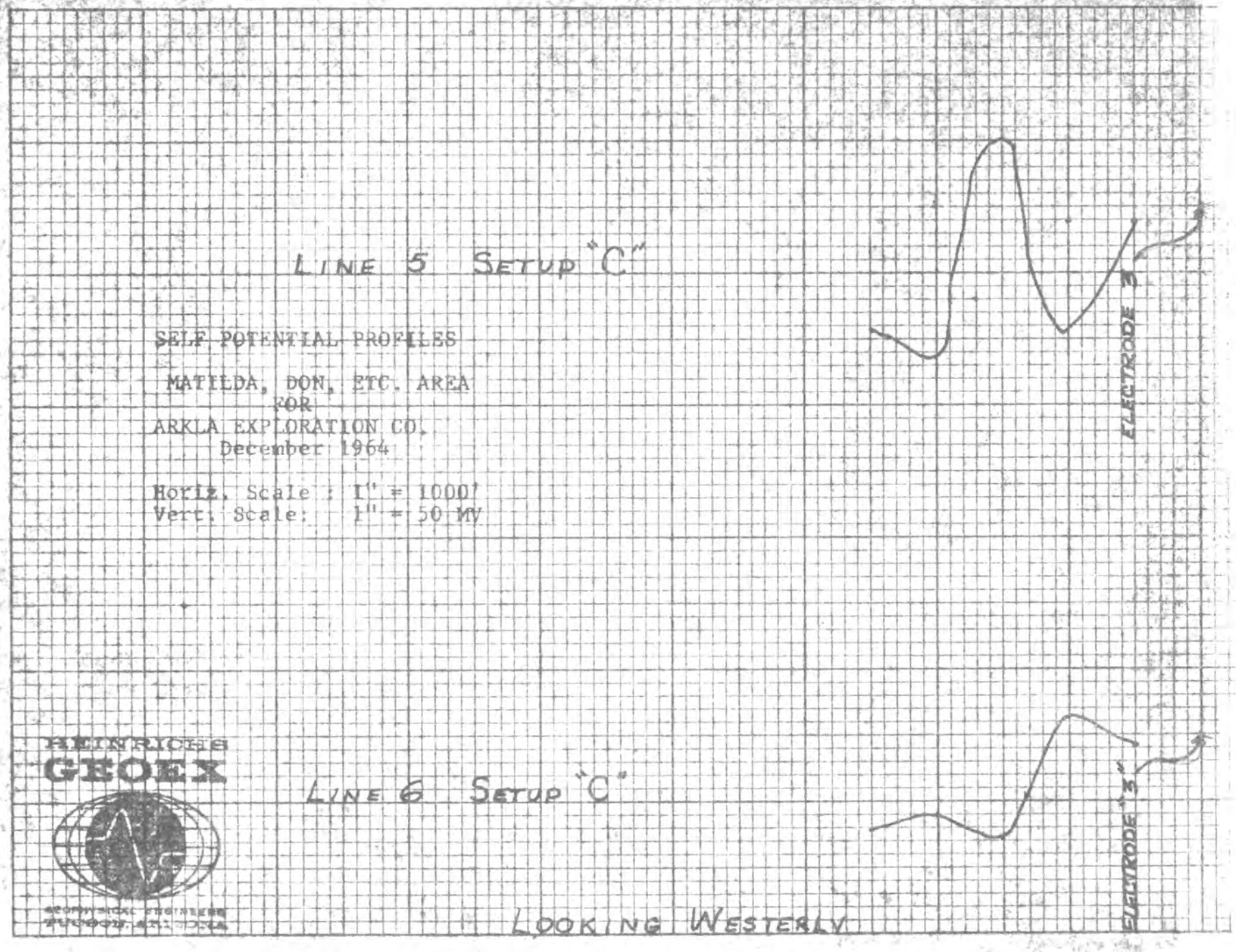
HEINRICHS
GEOEX
GEOPHYSICAL ENGINEERS
TUCSON, ARIZONA

K+E 10 X 10 TO THE INCH 359-5DG
KEUFFEL & ESSER CO. MADE IN U.S.A.


+50
0 LINE 16
-50
W
E
1" = 500' Horiz
Elevation
+50
0 LINE 17
-50
E
1" = 1000' Horiz.
SELF POTENTIAL PROFILES
MATILDA, DON, ETC. AREA
FOR
ARKLA EXPLORATION CO.
December 1964
Horiz. Scale: 1" = 1000'
Vert. Scale: 1" = 50 MV
MINERALOGIS
GEOEX


+50
0 LINE 16
-50
W
E
Electrode 3
1" = 500' Horiz
Electrode 3
+ 50
0 LINE 17
- 50
E
1" = 1000' Horiz.
SELF POTENTIAL PROFILES
MATILDA, DON, ETC. AREA
FOR
ARKLA EXPLORATION CO.
December 1964
Horiz. Scale: 1" = 1000'
Vert. Scale: 1" = 50 MV
GEOTEX


LINE 5 SETUP "C"
SELF POTENTIAL PROFILES
MATILDA, DON, ETC. AREA
FOR
ARKLA EXPLORATION CO.
December 1964
Horiz. Scale : 1" = 1000'
Vert. Scale: 1" = 50 MV
ELECTRODE 3
+50
0
50
0
-50
HEINRICHS
GEOEX
LINE 6 SETUP "C"
ELECTRODE "3"
LOOKING WESTERLY

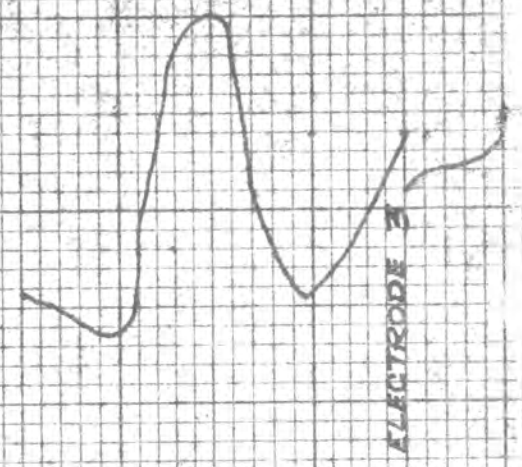

LINE 5 SETUP "C"
SELF POTENTIAL PROFILES
MATILDA, DON, ETC. AREA
FOR
ARKLA EXPLORATION CO.
December 1964
Horiz. Scale : 1" = 1000'
Vert. Scale: 1" = 50 MV
+50
0
-50
ELECTRODE "3"
0
-50
LINE 6 SETUP "C"
ELECTRODE "3"
HEINRICHS
GEOEX
LOOKING WESTERLY

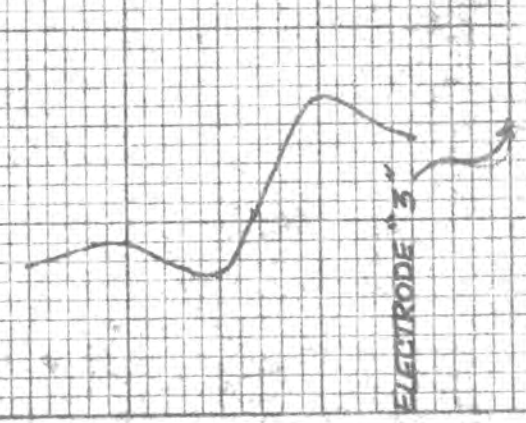
SELF POTENTIAL PROFILES

MATILDA, DON, ETC. AREA
FOR
ARKLA EXPLORATION CO.
December 1964

Horiz. Scale: 1" = 1000'
Vert. Scale: 1" = 50 MV

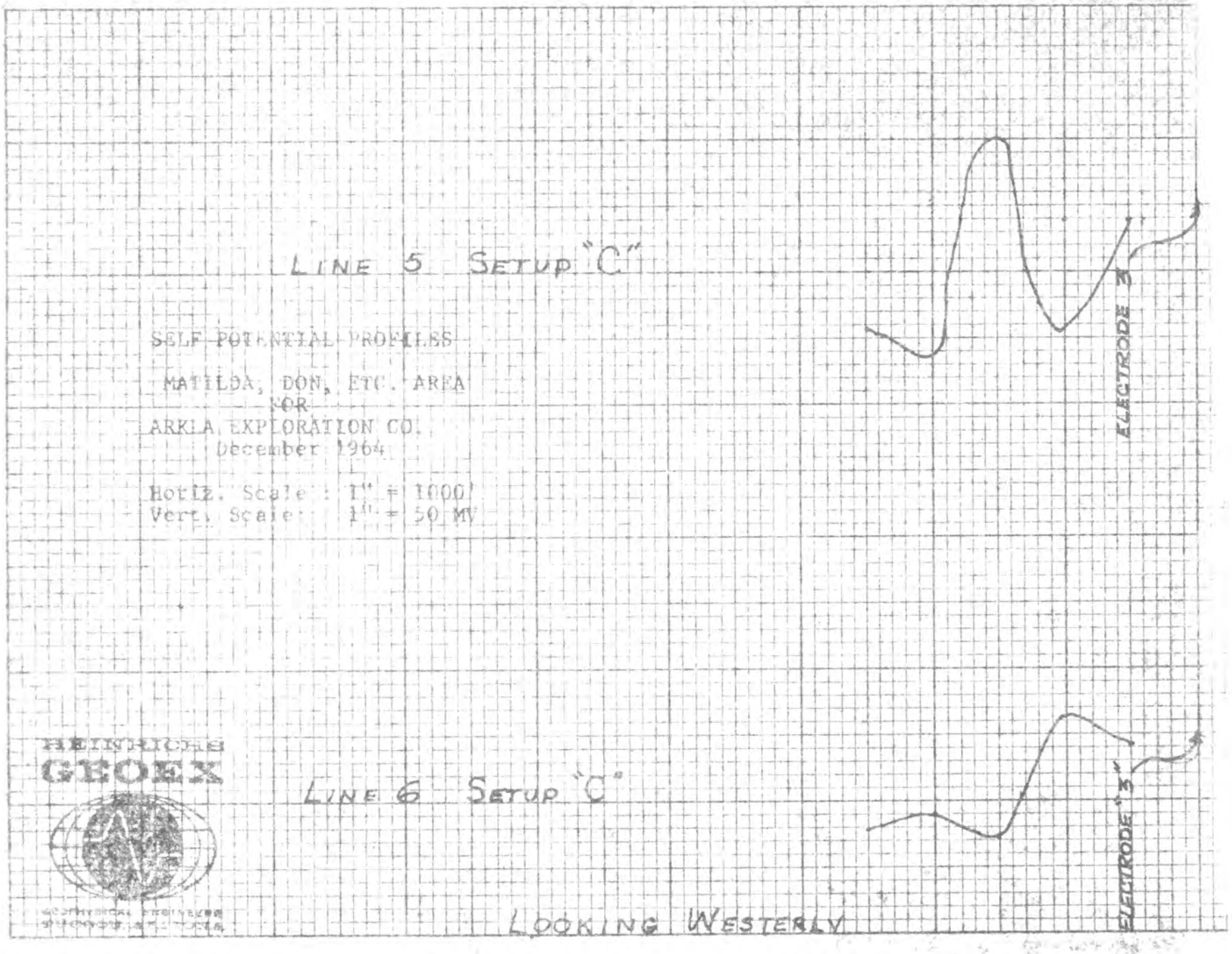
HEINRICHS
GEOEX
GEOPHYSICAL ENGINEERS
HOUSTON, TEXAS



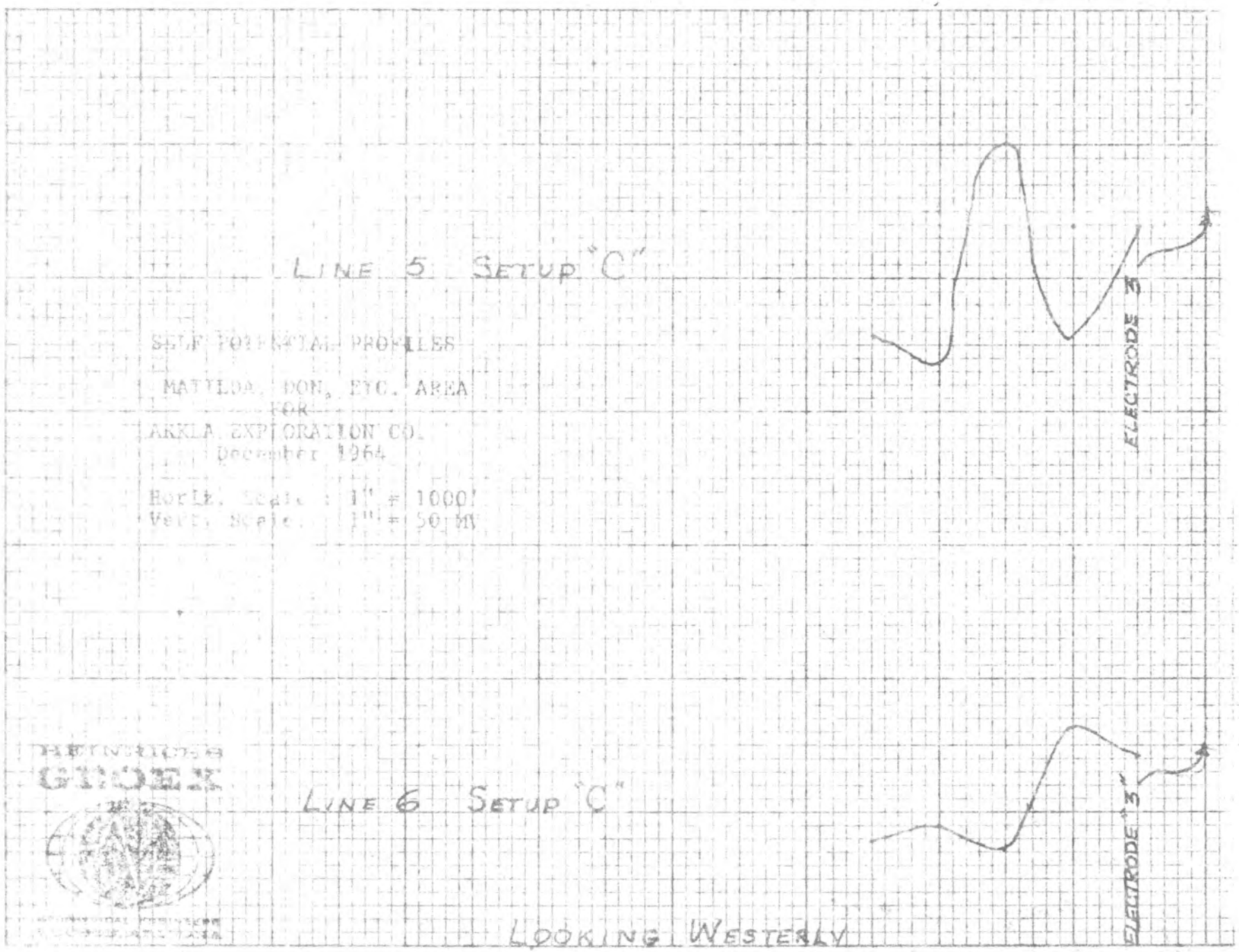


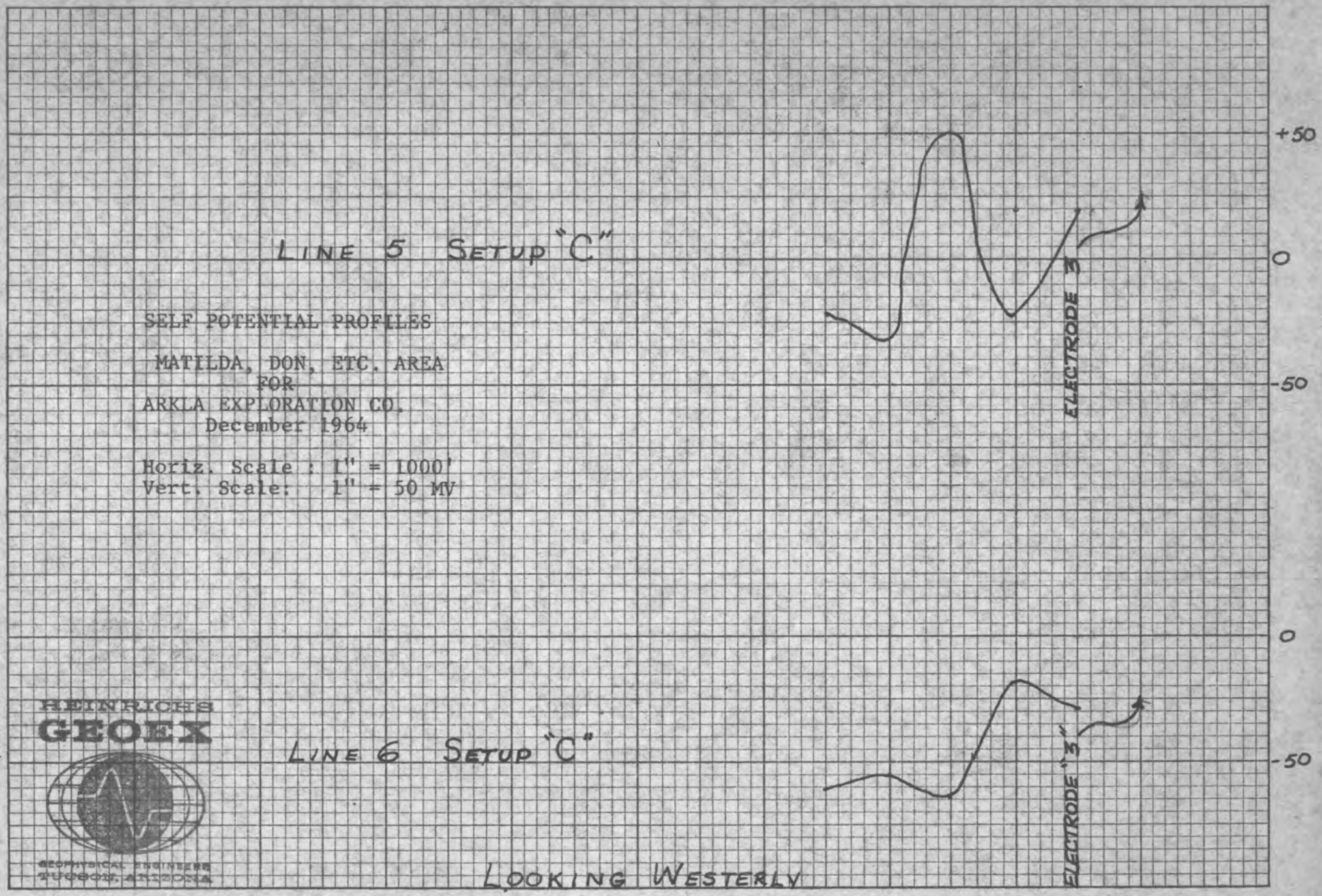
LOOKING WESTERLY

K+E 10 X 10 TO THE INCH 359-50G
KEUFFEL & ESSER CO. MADE IN U.S.A.



K&E 10 X 10 TO THE INCH 359-50G
KEUFFEL & ESSER CO. MADE IN U.S.A.


LINE 5 SETUP "C"
SELF POTENTIAL PROFILES
MATILDA, DON, ETC. AREA
FOR
ARKLA EXPLORATION CO.
December 1964
Horiz. Scale : 1" = 1000'
Vert. Scale : 1" = 50 MV
+50
0
-50
ELECTRODE "3"
LINE 6 SETUP "C"
0
-50
ELECTRODE "3"
LOOKING WESTERLY



K+E 10 X 10 TO THE INCH 359-5DG
KEUFFEL & ESSER CO. MADE IN U.S.A.

ARKLA

DATA

Don - Matilda

FIELD DATA

&

EXTRA Copies

Check to be sure we have all data then throw away

INDUCED POLARIZATION - RECEIVER NOTES PAGE _____

Project: ARKLA DON Line: 5 Sec "A" GOING SOUTH Int.Cal _____ Date: 11-9-64

Send	1-2	→	→	→	2-3	→	→	→		CAL		
Rec.	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5		2-3	4-5	
Time	30	10	3	3	30	10	3			30	30	
DC-1	11.5	2.32	1.63	0.61	15.1	4.52	1.49			16.8	16.2	
DC-2	11.2	2.34	1.65	.59	15.5	4.53	1.45			16.8	16.3	
Σ	22.7									33.6		
DC-3	11.5	2.32	1.65	55	15.1	4.53	1.39			16.8	16.2	
Dc-4	11.3	2.34	1.68	57	15.4	4.51	1.50			16.8	16.2	
Σ	22.8						1.40					
DC-AV							1.51			33.8	15.1	
AC-1	10.7	2.25	1.57	—	14.2	4.40	1.35			15.8	15.3	
AC-2	10.6	2.25	1.55	.01	14.0	4.39	1.35			15.8		
Σ										31.6		
S. P.	-16.0				-8.5	-27.8						
AC-N	.05				.10							

INDUCED POLARIZATION - RECEIVER NOTES PAGE_____

Project:_____ Line:_____ Int.Cal_____ Date:_____

Send	3-4	→		→	45	→		→				
Rec.	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5				
Time	30	10	3		30	10						
DC-1	19.5	4.2			11.0	3.41						
DC-2	19.4	3.95			11.0	3.25						
Σ												
DC-3	19.5	4.2			11.0	3.25						
Dc-4	19.4	4.0			11.0	3.21						
Σ												
DC-AV												
AC-1	18.2	3.80	11.		10.	16.5						
AC-2	18.1	3.80			10.	16.5						
Σ												
S. P.	26.8				12.1	21.1						
AC-N	.10				0.2	0						
					(10)	(30)						

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Northside Claims Line #1 Set "B" Going North Field date 10-23-64 Data page 1 Comp. date_____. Comp by_____

(A) Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5			
(B) Receive	10-15N →		15-20N	→		20-25N	→				Calibration	
(C) n separation	10	3	100	3	1	100	10	1	1		30	
(D) I	2.0	1.60	2.0	2.0	1.60	1.80	2.0	2.0	1.40			
(E) Vdc (avg)	7.05	1.273	79.5	2.71	1.13	103	9.20	1.575	.605		25.6	
(F) DCcal	1.172											
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15	1.5	6.0	15.0	30.0			
(H) ρdc=ExFxGx10^3/D	6.23	7.80	70	9.55	12.4	101	32.6	13.8	15.2			
(I) Vac Σ	7.0	1.740	74.0	2.70	1.160	97.0	9.0	1.480	.580		25.4	
(J) AC noise x 2	0	→	→	0	→	→	0	→	→			
(K) Vac(corr) = $\sqrt{I^2 - J^2}$											Dc cal =	
(L) AC-DC cal.	.994	.998	1.015	.998	1.041	1.015	.994	1.041	1.041		$\frac{30}{25.6}$ = 1.172	
(M) ρdc/ρac=ExL/K	1.005	1.020	1.090	1.010	1.015	1.065	1.018	1.107	1.085			
(N) PFE=(M-1)(10^2)	0.5	2.0	9.0	1.0	1.5	6.5	1.8	10.7	8.5		Ac-Dc Cal	
(O) MCF=(M-1)(10^5)/H	80.0	257.0	129.0	10.5	12.1	65.0	55.2	77.5	560		25.4/25.6=.993	

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

(A) Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5				
(B) Receive	25-30N →			→	30-35N	→		→				
(C) n separation	3	1	1	1	3	1	1					
(D) I	1.8	2.0	2.0	1.4	2.0	2.0	2.0	—				
(E) Vdc (avg)	3.00	1.50	.367	?	2.085	1.485	.190					
(F) DCcal	1.172			!								
(G) Kn x 10^{-3}	6.0	15.0	30.0	52.5	15.0	30.0	52.5					
(H) ρdc=ExFxGx10^3/D	11.7	13.2	6.45		18.3	26.2	5.9					
(I) Vac Σ	3.04	1.50	.380	.160	2.10	1.480	.180					
(J) AC noise x 2	0 →			0 →		0 →						
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.998	1.041	1.041	1.041	.998	1.041	1.041					
(M) ρdc/ρac =ExL/K	.985	1.040	1.010	—	.993	1.045	1.095					
(N) PFE=(M-1)(10^2)	-1.5	4.0	1.0	—	-.7	4.5	9.5					
(O) MCF=(M-1)(10^5)/H	250	304	155	—	40.5	178	1620					

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project North side Claims Line #1 Field date 10-23-64 Data page 1 Comp. date_____. Comp by_____

Set "A" Going South

(A) Send	2-3	1-2	3-4	3-2	2-1	5-4	4-3	3-2	2-1		Calibration	
(B) Receive	10-15S	→	12-20S	→	→	20-25S	→	→	→			
(C) n separation	10	3	10	10	1	10	1	3	1			
(D) I	2.0	2.0	2.0	2.0	2.0	1.6	2.0	2.0	2.0			
(E) Vdc (avg)	13.3	2.22	6.87	5.50	1.55	8.40	1.82	2.28	.800		26.2	
(F) DCcal	1.155											
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	1.5	1.5	6.0	15.0	30.0			
(H) ρdc=ExFxGx10^3/D	11.6	7.8	6.0	19.1	13.5	9.1	6.4	19.8	13.9			
(I) Vac Σ	13.0	2.16	6.8	5.40	1.56	8.30	1.82	2.24	.780		26.0	
(J) AC noise x 2	0	→	→	0	→	→	0	→	→			
(K) Vac(corr) = $\sqrt{I^2 - J^2}$											Dc =	30/26 = 1.155
(L) AC-DC cal.	.994	.998	.994	.994	1.041	.994	1.041	.998	1.041			
(M) ρdc/ρac=ExL/K	1.020	1.025	1.005	1.010	1.035	1.010	1.042	1.015	1.065		Ac Dc =	
(N) PFE=(M-1)(10^2)	2.0	2.5	.5	1.0	3.5	1.0	4.2	1.5	6.5		26/26.2	.993
(O) MCF=(M-1)(10^5)/H	173	320	83	52.3	360	110	660	76	470			

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

(A) Send	5-4	4-3	3-2	2-1	5-4	4-3	3-2	2-1				
(B) Receive	25-30S	→	→	→	30-35S	→	→	→				
(C) n separation	3	1	1	1	1	1	1	1				
(D) I	1.6	2.0	2.0	1.8	1.6	2.0	2.0	1.8				
(E) Vdc (avg)	3.01	1.04	1.46	.460	1.29	.515	.825	.280				
(F) DCcal	1.155											
(G) Kn x 10^{-3}	6.0	15.0	30.0	52.5	15.0	30.0	52.5	84.0				
(H) ρdc=ExFxGx10^3/D	12.9	9.05	25.7	15.4	14.0	9.0	25.0	15.2				
(I) Vac Σ	2.96	1.04	1.40	.460	1.30	.500	.820	.280				
(J) AC noise x 2	0	→	→	0	→	→	0	→				
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.998	1.041	1.041	1.041	1.041	1.041	1.041	1.041				
(M) ρdc/ρac =ExL/K	1.013	1.038	1.082	1.040	1.032	1.072	1.047	1.040				
(N) PFE=(M-1)(10^2)	1.3	3.8	8.2	4.0	3.2	7.2	4.7	4.0				
(O) MCF=(M-1)(10^5)/H	101	423	320	260	230	800	190	260				

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INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page 3

Pay check

Project Claims Line #2 Set "B" Field date Oct 22 Data page _____ Comp. date Oct 28. Comp by ML

→ South

(A) Send	5-6 →				6-7 →					Cal		
(B) Receive	7-8	8-9	9-10	10-11	8-9	9-10	10-11	11-12				
(C) n separation	10	3	1	1	10	3	1	1				
(D) I	1.8	1.8	2.0	2.0	2.0	2.0	2.0	2.0				
(E) Vdc (avg)	16.4	3.10	1.560	.990	13.23	3.59	1.810	.740		29.4		
(F) DCcal	1.022	→	→	→	→	→	→	→				
(G) Kn x 10^{-3}	1.5	6.0	15	30	1.5	6.0	15	30				
(H) ρdc=ExFxGx10^3/D	14.0	10.6	12.0	15.2	10.3	11.0	13.9	11.4				
(I) Vac Σ	15.4	2.84	1.50	.965	12.30	3.34	1.720	.700		27.6		
(J) AC noise x 2	.02	.02	.04	.04	.02	.04	.04	.04				
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.934	.938	.981	.981	.934	.938	.981	.981		Dc Cal = 1.022		
(M) ρ dc/ρac=ExL/K	.995	1.015	1.020	1.010	1.005	1.000	1.035	1.035				
(N) PFE=(M-1)(10^2)	-.5	1.5	2.0	1.0	0.5	0	3.5	3.5		Ac-DC = .933		
(O) MCF=(M-1)(10^5)/H	36	141	167	66	49	0	252	307				
S.P.	+13.5	-5.7	+8.9	-4.2				-7.5				

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	7-8 →				8-9 →							
(B) Receive	9-10	10-11	11-12	13-12	10-11	11-12	12-13	13-14				
(C) n separation	10	3	1	1	10	3	1	1				
(D) I	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0				
(E) Vdc (avg)	11.05	3.97	1.280	1.200	10.1	1.895	1.180	.875				
(F) DCcal	1.022	→	→	→	→	→	→	→				
(G) Kn x 10^{-3}	1.5	6.0	15	30	1.5	6.0	15	30				
(H) ρ dc=ExFxGx10^3/D	8.5	12.2	9.9	18.5	7.8	5.8	9.1	13.5				
(I) Vac Σ	10.20	3.70	1.24	1.145	9.40	1.760	1.140	.820				
(J) AC noise x 2	.04	.04	.04	.02	.04	.04	.02	.02				
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.934	.938	.981	.981	.934	.938	.981	.981				
(M) ρdc/ρac =ExL/K	1.015	1.005	1.015	1.030	1.005	1.010	1.015	1.045				
(N) PFE=(M-1)(10^2)	1.5	0.5	1.5	3.0	0.5	1.0	1.5	4.5				
(O) MCF=(M-1)(10^5)/H	176	41	152	162	64	172	166	334				
S.P.			+6.3					-13.7				

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INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page 4

Project Paycheck Claims Line #2 Set A Field date Oct 26 Data page _____ Comp. date _____. Comp by _____

→ South

(A) Send	1-2	→		→	2-3	→		→			Calibration	
(B) Receive	3-4	4-5	5-6	6-7	4-5	5-6	6-7	7-8				
(C) n separation	100	3	1	1	10	3	1	1			30	
(D) I	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0				
(E) Vdc (avg)	76	2.28	1.084	.630	7.2	2.31	1.26	.760			29.4	
(F) DCcal	1.040	→	→	→	→	→	→	→				
(G) Kn x 10^{-3}	1.5	6.0	15.0	30.0	1.5	6.0	15.0	30.0				
(H) ρ dc=ExFxGx10^3/D	59.4	7.1	8.4	9.80	5.60	7.20	9.30	11.9				
(I) Vac Σ	72	2.14	1.020	.660	6.6	2.12	1.20	.720			27.6	
(J) AC noise x 2	.06	.04	.04	.04	.04	.04	.04	.04				
(K) Vac(corr) = $\sqrt{I^2 - J^2}$				.605				.723			Dc Cal =	1.040
(L) AC-DC cal.	.959	.942	.985	.985	.938	.942	.985	.985			Ac Dc =	.937
(M) ρ dc/ρac=ExL/K	1.015	1.005	1.045	1.030	1.025	1.025	1.035	1.038				
(N) PFE=(M-1)(10^2)	1.5	0.5	4.5	3.0	2.5	2.5	3.5	3.8				
(O) MCF=(M-1)(10^5)/H	25.0	71	535	308	445	347	376	320				
S.P.	-4.2	-1.0	-41.8	+24.3				-12.7				

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	3-4	→		→	4-5	→		→				
(B) Receive	5-6	6-7	7-8	8-9	6-7	7-8	8-9	9-10				
(C) n separation	30	10	3	1	10	3	1	1				
(D) I	2.0	2.0	2.0	2.0	1.40	1.40	1.40	1.40				
(E) Vdc (avg)	20.95	6.25	3.45	1.14	15.17	4.54	1.285	.730				
(F) DCcal	1.040	→	→	→	→	→	→	→				
(G) Kn x 10^{-3}	1.5	6.0	15.0	30.0	1.5	6.0	15.0	30.0				
(H) ρ dc=ExFxGx10^3/D	16.4	19.5	27.0	17.9	12.0	20.3	14.3	16.3				
(I) Vac Σ	19.4	5.70	3.14	1.10	14.0	4.2	1.20	.700				
(J) AC noise x 2	.04	.04	.04	.160	.04	.04	.160	.100				
(K) Vac (corr) = $\sqrt{I^2 - J^2}$							1.17	.695				
(L) AC-DC cal.	.937	.938	.942	.985	.938	.942	.985	.985				
(M) ρdc/ρac =ExL/K	1.005	1.030	1.035	1.022	1.015	1.020	1.080	1.030				
(N) PFE=(M-1)(10^2)	0.5	3.0	3.5	2.2	1.5	2.0	8.0	3.0				
(O) MCF=(M-1)(10^5)/H	32	154	130	123	88	98	560	184				
S.P.				+6.7				+21.0				

Ark/A

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Don + Matilda Claims → South Line #5 Set "A" Field date Nov 10 Data page_____ Comp. date Nov 13. Comp by_____

(A) Send	1-2				2-3						Cal	
(B) Receive	3-4	4-5	5-6	6-7	4-5	5-6	6-7	7-8				
(C) n separation	30	10	3	3	30	10	3	3				
(D) I	1.40	1.40	1.40	1.20	1.8	2.0	1.8	1.8			32.8	
(E) Vdc (avg)	26.4	6.0	3.45	1.000	29.5	11.9	3.06	1.00				
(F) DCcal	.915 →											
(G) Kn x 10^{-3}	1.5	6.0	15	30	1.5	6.0	15.0	30.0				
(H) ρ dc=ExFxGx10^3/D	24.9	23.5	34.8	22.8	22.5	33.0	23.2	15.1			31.4	
(I) Vac Σ	24.8	5.8	3.26	.950	27.0	11.0	2.84	1.050				
(J) AC noise x 2	.04	.02	.04	.02	.02	.04	.02	.04			Ac-Dc=	.957
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.957 →										Dc =	.915
(M) ρ dc/ρac=ExL/K	1.020	1.00	1.015	1.065	1.045	1.038	1.030	—				
(N) PFE=(M-1)(10^2)	2.0	0	1.5	0.5	4.5	3.8	3.0					
(O) MCF=(M-1)(10^5)/H	81	0	43	22	200	115	130					
S-P.	-27.1				-14.1							

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

(A) Send	3-4				4-5							
(B) Receive	5-6	6-7	7-8	8-9	6-7	7-8	8-9	9-10				
(C) n separation	30	10	3	3	30	10	3	3				
(D) I	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0				
(E) Vdc (avg)	41.5	8.70	2.42	1.89	23.6	4.15	2.80	1.200				
(F) DCcal	.915 →											
(G) Kn x 10^{-3}	1.5	6.0	15.0	30.0	1.5	6.0	15.0	30.0				
(H) ρ dc=ExFxGx10^3/D	28.4	23.8	16.4	26.0	16.2	11.5	19.2	16.5				
(I) Vac Σ	38.6	8.20	2.30	1.75	22.4	4.0	2.58	1.150				
(J) AC noise x 2	.04	.02	.04	0.1	.02	.04	0.1	0.1				
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.957 →											
(M) ρdc/ρac =ExL/K	1.032	1.015	1.010	1.035	1.010	1.000	1.040	1.000				
(N) PFE=(M-1)(10^2)	3.2	1.5	1.0	3.5	1.0	0	4.0	0				
(O) MCF=(M-1)(10^5)/H	113	63	61	123	62	0	210	0				
	-11.6				-12.8	+25.1	+8.2	-18.5				

Not checked

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Arkla Don + Matilda Claims Line #5 Set "B" Field date Nov 10 Data page Nov 13 Comp. date_____. Comp by_____

→ South

(A) Send	5-6				6-7							
(B) Receive	7-8	8-9	9-10	10-11	8-9	9-10	10-11	11-12				
(C) n separation	10	10	3	3	10	3	3	3				
(D) I	1.80	1.80	1.80	1.80	1.40	1.40	1.40	1.40				
(E) Vdc (avg)	10	4.52	2.10	1.24	8.31	2.22	1.05	.430				
(F) DCcal	.930 →											
(G) Kn x 10^{-3}	1.5	6.0	15.0	30.0	1.5	6.0	15.0	30.0				
(H) ρ dc=ExFxGx10^3/D	7.85	14.2	16.6	19.6	8.5	9.0	10.6	8.75				
(I) Vac Σ	9.40	4.40	2.01	1.18	7.9	2.12	.990	.410				
(J) AC noise x 2	0.1	0.1	0.1	.08	0.1	0.1	.08	0.2				
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.950 →											
(M) ρ dc/ρac=ExL/K	1.012	—	1.000	1.00	1.000	1.000	—	1.000				
(N) PFE=(M-1)(10^2)												
(O) MCF=(M-1)(10^5)/H												
S.P.	+22.0				-1.9							

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

(A) Send	7-8				8-9							
(B) Receive	9-10	10-11	11-12	12-13	10-11	11-12	12-13	13-14				
(C) n separation	10	3	3	3	30	3	3	3				
(D) I	1.60	1.40	1.60	1.60	2.0	2.0	2.0					
(E) Vdc (avg)	8.07	1.85	1.02		16.2	2.65	1.05					
(F) DCcal	.930 →											
(G) Kn x 10^{-3}	1.5	6.0	15.0	30	1.5	6.0	15.0					
(H) ρ dc=ExFxGx10^3/D	7.30	7.50	9.1		11.5	7.6	7.5					
(I) Vac Σ	7.90	1.78	.760	.560	15.90	2.53	1.04					
(J) AC noise x 2	0.1	.08	0.2	0	.08	0.2	.500					
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.950 →											
(M) ρdc/ρac =ExL/K	—	—	1.270	—	—	—	—					
(N) PFE=(M-1)(10^2)												
(O) MCF=(M-1)(10^5)/H												
	-13.1				-2.9	+2.4	-46.2					

HEINRICHS GEOEXPLORATION COMPANY

INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Don & Matilda Claims Line #5 Set "A" → South Field date Nov 4 Data page_____ Comp. date Nov 5. Comp by ML.

(A) Send	1-2				2-3					Calibration		
(B) Receive	3-4	4-5	5-6	6-7	4-5	5-6	6-7	7-8		#1	#2	
(C) n separation	30	3	3	1	30	10	3	1		30	30	
(D) I	1.2	1.2	1.2	1.2	1.6	1.6	1.6	1.6				
(E) Vdc (avg)	21.0	5.07	2.75	.922	25.5	8.80	2.42	.855		29.6	29.7	
(F) DCcal	1.015	1.015	1.015	1.010	1.015	1.015	1.010	1.010				
(G) Kn x 10^{-3}	1.5	6.0	15.0	30.0	1.5	6.0	15.0	30.0				
(H) ρ dc=ExFxGx10^3/D	26.5	25.8	35.0	23.4	24.4	33.5	23.0	16.3				
(I) Vac Σ	19.0	4.66	2.50	.850	23.0	7.90	2.16	.820		26.6	27.6	
(J) AC noise x 2	.02	.04	.02	.02	.04	.02	.02	.04				
(K) Vac(corr) = $\sqrt{I^2 - J^2}$										Dc = 1.015	Dc = 1.010	
(L) AC-DC cal.	.900	.905	.905	.978	.900	.901	.935	.978		Ac-Dc =	Ac-Dc =	
(M) ρ dc/ρac=ExL/K	1.000	—	—	1.060	—		1.050	1.020		.900	.930	
(N) PFE=(M-1)(10^2)				6.0			5.0	2.0				
(O) MCF=(M-1)(10^5)/H												

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

(A) Send	3-4				4-5							
(B) Receive	5-6	6-7	7-8	8-9	6-7	7-8	8-9	9-10				
(C) n separation	30	10	3	1	30	3	3	—				
(D) I	1.8	1.8	1.8	2.0	2.0	2.0	2.0					
(E) Vdc (avg)	34.3	6.9	2.06	1.34	20.6	3.90	—	—				
(F) DCcal	1.015	1.010	1.010	1.010	1.010	1.010	1.010					
(G) Kn x 10^{-3}	1.5	6.0	15.0	30.0	1.5	6.0	15.0	30.0				
(H) ρ dc=ExFxGx10^3/D	29.0	23.2	17.4	20.1	15.6	11.8	13.2					
(I) Vac Σ	31.1	6.20	1.90	1.27	18.6	3.6	1.73	—				
(J) AC noise x 2	.02	.02	.04	.04	.02	.04	.04					
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.900	.931	.935	.978	.930	.931	.931					
(M) ρdc/ρac =ExL/K		1.035	1.015	1.032	1.030	1.010	—					
(N) PFE=(M-1)(10^2)		3.5	1.5	3.2	3.0	1.0						
(O) MCF=(M-1)(10^5)/H												

Work Reported

ARKLA

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project FOUR BUTTES Line #9 Field date 11-21-64 Data page_____ Comp. date 11-22-64. Comp by DA

SOUTH →

(A) Send	3-2	2-1	4-3	3-2	2-1	5-4	4-3	3-2	2-1		2-3	
(B) Receive	10-15S	→	15-20S	→	→	20-25S	→	→	→			
(C) n separation	30	10	100	3	3	30	10	3	3		30	
(D) I	2.000	→	→	→	→	→	→	→	→			
(E) Vdc (avg)	26.7	4.46	47.15	4.075	1.895	41.75	10.085	1.29	1.135		33.0	
(F) DCcal	.908	→	→	→	→	→	→	→	→			
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15.0	1.5	6.0	15.0	30.0			
(H) ρ dc=ExFxGx10^3/D	3.63	2.42	6.41	2.22	2.58	56.5	5.40	1.75	3.07			
(I) Vac Σ	25.0	4.33	46.0	3.80	1.83	38.5	8.73	1.32	1.09		31.2	
(J) AC noise x 2	.06	→	.04	→	→	.10	→	→	→			
(K) Vac(corr) = $\sqrt{I^2 - J^2}$											DC =	.908
(L) AC-DC cal.	.944	→	→	→	→	→	→	→	→			
(M) ρ dc/ρac=ExL/K	1.005	.973	.966	1.035	.987	1.021	1.010	.929	.989		DC-AC	= .944
(N) PFE=(M-1)(10^2)	0.5			3.5		2.1	1.0					
(O) MCF=(M-1)(10^5)/H	14			16		37	19					
SP	+11.0		-10.1			-1.5						

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

(A) Send	5-4	4-3	3-2	2-1	5-4	4-3	3-2	2-1				
(B) Receive	25-30S	→	→	→	30-35S	→	→	→				
(C) n separation	10	3	3	3	3	3						
(D) I	2.000	→	→	→	→	→						
(E) Vdc (avg)	9.02	3.20	0.63		3.23	1.20						
(F) DCcal	.908	→	→	→	→	→						
(G) Kn x 10^{-3}	6.0	15	30		15	30						
(H) ρ dc=ExFxGx10^3/D	4.92	4.36	1.72		4.39	3.27						
(I) Vac Σ	8.86	3.03	0.62	0.68	3.04	1.06						
(J) AC noise x 2	.16	→	→	→	.20	→						
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.944	→	→	→	→	→						
(M) ρdc/ρac =ExL/K	.959	.995	.957		1.001							
(N) PFE=(M-1)(10^2)					0.1							
(O) MCF=(M-1)(10^5)/H					23							
	-5.8				-15.3							

NOT CORRECTED

ARLGCO

INDUCED POLARIZATION "A" SENDER NOTES

Project: Don & Matilda Line: #2 Date: 11-4-64

Send	1 2				2-3				3 4			
Receive	→	→	→	→	→	→	→	→	→	→	→	→
Time	1.2	1.2	1.2	1.2	1.6	1.6	1.6	1.6	1.8	1.8	1.8	2.0
Range												
Current												
Send	4-5											
Receive	→	→	→	→								
Time	2.0	2.0	2.0								Cal 2-3 .300	
Range										Cal 4-5 .300		
Current												

INDUCED POLARIZATION - RECEIVER NOTES PAGE

Project: Don + Matilda Claims Line: #5 Set "A" Int.Cal Date: Nov 4

→ South

Send	1-2				2-3					Calibration		
Rec.	3-4	4-5	5-6	6-7	4-5	5-6	6-7	7-8		#1		
Time	30	3	3	1	30	10	3	1		30		
DC-1	10.2	2.53	1.45	.400 .530	12.6	4.40	1.22	.440		14.8	14.8	
DC-2	10.8	2.53	1.30	.380 .540	12.9	4.40	1.19	.410		14.8	14.9	
Σ	21.0	5.06	2.75	.930 .920	25.5	8.80	2.41	.850		29.6	29.7	
DC-3	10.2	2.46	1.45	.370 .550	12.6	4.40	1.22	.460		14.8	14.8	
Dc-4	10.8	2.63	1.30	.270 .660	12.9	4.40	1.20	.400		14.8	14.9	
Σ	21.0	5.09	2.75	.930 .920	25.5	8.80	2.42	.800		29.6	29.7	
DC-AV	21.0	5.07	2.75	.922	25.5	8.80	2.42	.855		29.6	29.7	
AC-1	9.5	2.33	1.25	.425	11.5	3.95	1.08	.410		13.3	13.8	
AC-2	9.5	2.33	1.25	.425	11.5	3.95	1.08	.410		13.3	13.8	
Σ	19.0	4.66	2.50	.850	23.0	7.90	2.16	.820		26.6	27.6	
S. P.	-25.3				14.1							
AC-N	.01				.02							

INDUCED POLARIZATION - RECEIVER NOTES PAGE _____

Project: Don + Matilda Claims Line: #5 Sol "A" South Int.Cal _____ Date: None

Send	3-4				4-5							
Rec.	5-6	6-7	7-8	8-9	6-7	7-8	8-9	9-10				
Time	30	10	3	1	30	3	3					
DC-1	16.9	3.6	.970	.710	10.3	1.93						
DC-2	17.4	3.3	1.08	.630	10.3	1.96						
Σ	34.3	6.9	2.05	1.340	20.6	3.89						
DC-3	16.9	3.6	.970	.725	10.3	1.95						
Dc-4	17.4	3.3	1.10	.630	10.3	1.97						
Σ	34.3	6.9	2.07	1.355	20.6	3.93						
DC-AV	34.3	6.9	2.06	1.340	20.6	3.90						
AC-1	15.5	3.10	.950	.635	9.3	1.80	.850					
AC-2	15.6	3.10	.950	.635	9.3	1.80	.880					
Σ	31.1	6.20	1.90	1.270	18.6	3.6	1.73					
S. P.	-10.2				+14.2	+24.0	-.9					
AC-N	.01				.01	.02	.02					

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Project Arkla A Butler Line #9 Field date 11-21-64 Data page _____ Comp. date 11-22-64 Comp by DA Page _____

NORTH EAST →

(A) Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		3-4	
(B) Receive	10-15N →		15-20N →			20-25N →					CAL	
(C) n separation	30	10	30	3	3	100	10	3	3		30	
(D) I	2.000 →											
(E) Vdc (avg) 1	20.0	4.515	26.0	3.90	2.235	85.7	6.37	1.96	1.20		32.4	
(F) DCcal	.999 →											
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15.0	1.5	6.0	15.0	30.0			
(H) ρ dc=ExFxGx10^3/D	30.0	2.71	39.0	2.34	3.36	128.55	3.82	3.33	36.0			
(I) Vac Σ 2	19.0	4.38	24.2	3.73	2.09	83.0	6.18	1.78	1.12		30.2	
(J) AC noise x 2	.10 →		.16 →			.16 →						
(K) Vac(corr) = $\sqrt{I^2 - J^2}$											DC =	.999
(L) AC-DC cal.	.943											
(M) ρ dc/ρac=ExL/K	.993	.969	1.011	987	1.008	974	.971	1.032	1.005		AC-DC =	.943
(N) PFE=(M-1)(10^2)			1.1		0.8			3.2	0.5			
(O) MCF=(M-1)(10^5)/H			2.8		238			96	14			
S.P.	-22.3		+15.6			-3.5						

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by DA

(A) Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5				
(B) Receive	25-30N →			→	30-35N →			→				
(C) n separation	30	10	3	3	10	3	3	3				
(D) I	2.000 →							→				
(E) Vdc (avg)	27.9	4.10	2.005	1.435	8.62	1.70	0.92	0.68				
(F) DCcal	999 →							→				
(G) Kn x 10^{-3}	6.0	15.0	30.0	52.5	15	30	52.5	84.0				
(H) ρ dc=ExFxGx10^3/D	166.5	61.49	60.45	75.45	116.2	51.0	47.7	41.50				
(I) Vac Σ	26.1	3.99	1.70	1.35	8.30	1.61	0.80	0.61				
(J) AC noise x 2	.16 →			→	.16 →			→				
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	943 →							→				
(M) ρdc/ρac =ExL/K	1.005	970	1.107	1.000	978	994	1085	1.049				
(N) PFE=(M-1)(10^2)	0.5		10.7	0			8.5	9.9				
(O) MCF=(M-1)(10^5)/H	3		166				177	118				
	-9.0				+2.5							

SPREAD #1

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project A BUTTES Line #10 Spread Field date 11-23-64 Data page_____ Comp. date 11-24-64. Comp by DA.

N →

(A) Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		3-4	
(B) Receive	10-15 N	→	15-20 N	→	→	20-25 N	→	→	→		CAL	
(C) n separation	30	10	10	3	1	30	10	3	1		30	
(D) I	2.000	→	→	→	→	→	→	→	→			
(E) Vdc (avg) 2	19.425	5.75	13.375	3.235	1.315	25.0	4.40	2.05	1.10		30.8	
(F) DCcal	.974	→	→	→	→	→	→	→	→			
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	1.5	1.5	6.0	1.5	3.0			
(H) ρ dc=ExFxGx10^3/D	28.35	33.58	19.50	18.78	19.20	36.38	25.70	31.95	29.45			
(I) Vac Σ 3	18.97	5.60	13.24	3.16	1.280	24.6	4.36	1.98	1.09		30.6	
(J) AC noise x 2	.04		.06			.06						
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.994	→	→	→	→	→	→	→	→		DC=	974
(M) ρ dc/ρac=ExL/K	1.018	1.021	1.004	1.016	1.021	1.010	1.010	1.029	1.032			
(N) PFE=(M-1)(10^2)	1.8	2.1	0.4	1.6	2.1	1.0	.0	2.9	3.2		AC-DC=	994
(O) MCF=(M-1)(10^5)/H	64	63	20	85	52	28	39	91	109			

SP -3.5 +0.7 -4.5

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

(A) Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5				
(B) Receive	25-30 N	→	→	→	30-35 N	→	→	→				
(C) n separation	10	3	1	1	3	1	1	→				
(D) I	2.000	→	→	→	→	→	→	→				
(E) Vdc (avg) 2	8.10	1.945	1.01	.593	2.93	.880	.530	.340				
(F) DCcal	.974	→	→	→	→	→	→	→				
(G) Kn x 10^{-3}	6.0	15	30	52.5	15	30	52.5	84.0				
(H) ρ dc=ExFxGx10^3/D	47.30	28.10	29.45	30.12	42.75	25.65	27.10	27.85				
(I) Vac Σ	7.90	1.87	.980	.580	.280	.820	.500	.330				
(J) AC noise x 2	.06				.04							
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.994	→	→	→	→	→	→	→				
(M) ρdc/ρac =ExL/K	1.018	1.032	1.025	1.015	1.047	1.065	1.052	1.024				
(N) PFE=(M-1)(10^2)	1.8	3.2	2.5	1.5	4.7	6.5	5.2	2.4				
(O) MCF=(M-1)(10^5)/H	38	114	85	50	110	254	192	86				

Not Corrected

Corr

HEINRICHS GEOEXPLORATION COMPANY

INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page _____

Project 4 Butte Line #10 Spr 1 Field date 11-23-63 Data page _____ Comp. date 11-23-63 Comp by D.A.

SOUTH WEST →

(A) Send	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		2-3	
(B) Receive	10-15s	→	15-20s	→	→	20-25s	→	→	→		CAL	
(C) n separation	10	10	10	3	3	10	3	1	1		30	
(D) I	2.000	→	→	→	→	→	→	→	→			
(E) Vdc (avg)	11.195	5.81	10.17	3.005	2.44	16.54	2.96	1.355	1.227		31.0	
(F) DCcal	.968											
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15.0	1.5	6.0	15.0	30.0			
(H) ρ dc=ExFxGx10^3/D	16.21	33.65	15.78	17.45	35.40	24.00	17.38	19.65	35.25			
(I) Vac Σ	10.87	5.63	9.98	2.92	2.36	16.00	2.86	1.32	1.185		30.4	
(J) AC noise x 2	.04		.04			.044						
(K) Vac(corr) = $\sqrt{I^2 - J^2}$											DC =	.968
(L) AC-DC cal.	.983	→	→	.987	.987	.983	.987	1.030	1.030			
(M) ρ dc/ρac=ExL/K	1.007	1.015	1.003	1.016	1.019	1.015	1.020	1.055	1.065		AC-DC =	.982
(N) PFE=(M-1)(10^2)	0.7	1.5	0.3	1.6	1.9	1.5	2.0	5.5	6.5			
(O) MCF=(M-1)(10^5)/H	43	45	19	92	54	62	115	280	184			
S.P.	-20.8		-17.9			+18.9						

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2				
(B) Receive	25-30s	→	→	→	30-35s	→	→	→				
(C) n separation	3	1	1	1	1	1	1	1				
(D) I	2.000	→	→	→	→	→	→	→				
(E) Vdc (avg)	3.745	.470	.252	.260	1.405	.741	.435	.458				
(F) DCcal	.968											
(G) Kn x 10^{-3}	6.0	15.0	30.0	52.5	15	30	52.5	84.0				
(H) ρ dc=ExFxGx10^3/D	21.73	6.82	7.31	13.42	20.38	21.50	22.02	37.15				
(I) Vac Σ	3.62	.454	.240	.250	1.370	.720	.420	.440				
(J) AC noise x 2	.04				.04							
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.987	1.030	→	→	→	→	→	→				
(M) ρdc/ρac =ExL/K	1.022	1.065	1.080	1.071	1.055	1.060	1.068	1.072				
(N) PFE=(M-1)(10^2)	2.2	6.5	8.0	7.1	5.5	6.0	6.8	7.2				
(O) MCF=(M-1)(10^5)/H	101	95	109	528	271	279	308	94				
S.P.	+18.9				-1.9							

HEINRICHS GEOEXPLORATION COMPANY

INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Paycheck Claims Line #3 Lot "A" Field date 28 Oct Data page 3 Comp. date Oct 29. Comp by_____

Going South

(A) Send	1-2	→	→	→	2-3	→	→	→		Cal		
(B) Receive	3-4	4-5	5-6	6-7	4-5	5-6	6-7	7-8				
(C) n separation	30	3	1	1	30	3	1	1				
(D) I	1.20	1.20	1.20	1.20	1.2	1.2	1.2	1.4				
(E) Vdc (avg)	42.0	3.90	1.215	.825	28.6	3.89	1.715	.963		30.6		
(F) DCcal	.982	→	→	→	→	→	→					
(G) Kn x 10^{-3}	1.5	6.0	15.0	30	1.5	6.0	15.0	30				
(H) ρ dc=ExFxGx10^3/D	56.0	19.1	14.7	20.1	34.7	18.9	21	20.2				
(I) Vac Σ	38.0	3.64	1.170	.800	26.4	3.56	1.645	.920		28.6		
(J) AC noise x 2	.02	.02	.02	.02	.02	.02	.02	.02				
(K) Vac(corr) = $\sqrt{I^2 - J^2}$										Dc =	.982	
(L) AC-DC cal.	.935	.940	.983	.983	.935	.940	.983	.983		Ac-Dc =	.935	
(M) ρ dc/ρac=ExL/K	1.035	1.010	1.020	1.015	1.050	1.025	1.025	1.030				
(N) PFE=(M-1)(10^2)	3.5	1.0	2.0	1.5	5.0	2.5	2.5	3.0				
(O) MCF=(M-1)(10^5)/H	62	52	135	75	190	132	119	148				
S-P.	-6.4				+24							

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

(A) Send	3-4	→	→	→	4-5	→	→	→				
(B) Receive	5-6	6-7	7-8	8-9	6-7	7-8	8-9	9-10				
(C) n separation	30	3	3	1	10	3	1	1				
(D) I	1.80	1.80	2.0	2.0	1.00	1.4	1.4	1.4				
(E) Vdc (avg)	28.6	6.10	2.000	1.190	10.70	2.4	1.06	.450				
(F) DCcal	.982	→	→	→	→	→	→					
(G) Kn x 10^{-3}	1.5	6.0	15.0	30	1.5	6.0	15.0	30.0				
(H) ρ dc=ExFxGx10^3/D	23.4	20.0	14.8	17.5	15.8	10.2	11.1	9.5				
(I) Vac Σ	26.0	5.50	1.840	1.145	9.80	2.21	1.000	.450				
(J) AC noise x 2	.02	.02	.02	.02	.02	.02	.02	.04				
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.935	.940	.940	.983	.936	.940	.983	.983				
(M) ρdc/ρac =ExL/K	1.027	1.045	1.022	1.020	1.022	1.023	1.038	1.090				
(N) PFE=(M-1)(10^2)	2.7	4.5	2.2	2.0	2.2	2.3	3.8	9.0				
(O) MCF=(M-1)(10^5)/H	115	225	149	114	139	225	340	950				
S-P.	-32.7				-13.0	+.9	-3.9	-21.7				

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Paycheck Claims Line #3 Set 3" → South Field date Oct 29 Data page_____ Comp. date Nov 29. Comp by_____

(A) Send	5-6 →				6-7 →					Cal		
(B) Receive	7-8	8-9	9-10	10-11	8-9	9-10	10-11	11-12				
(C) n separation	3	1	1	1	10	3	1	1		30		
(D) I	1400	1400	1400	1400	2000 →							
(E) Vdc (avg)	4.82	1.486	.420	.360	11.12	1.835	1.236	1.010		30.05	29.75	
(F) DCcal	997	997	1.008	1.008	997	1.008 →						
(G) Kn x 10^{-3}	1.5	6.0	15.0	30	1.5	6.0	15.0	30				
(H) ρ dc=ExFxGx10^3/D	5.14	6.37	4.53	7.74	8.29	5.49	9.31	15.2				
(I) Vac Σ	4.46	1.415	.415	.340	10.36	1.780	1.170	.958		27.6	27.45	
(J) AC noise x 2	.04 →											
(K) Vac (corr) = $\sqrt{I^2 - J^2}$									DC =	997	1.008	
(L) AC-DC cal.	.925	.968	.972	.972	.921	929	972	972	AC-DC =	.920	.924	
(M) ρ dc/ρac=ExL/K	1.000	1.015	.984	1.028	1.000	—	1.024	1.013		.924		
(N) PFE=(M-1)(10^2)	—		—		—							
(O) MCF=(M-1)(10^5)/H												

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

(A) Send	7-8 →				8-9 →							
(B) Receive	9-10	10-11	11-12	12-13	10-11	11-12	12-13	13-14				
(C) n separation	10	3	3	1	10	3	3	1				
(D) I	2000 →				1400	1400	2000	2000				
(E) Vdc (avg)	7.70	3.26	2.11	1.130	7.18	3.21	1.805	.930				
(F) DCcal	1.008 →											
(G) Kn x 10^{-3}	1.5	6.0	15.0	30	1.5	6.0	15.0	30				
(H) ρ dc=ExFxGx10^3/D	5.82	9.84	15.9	16.8	7.73	13.80	13.6	14.0				
(I) Vac Σ	7.20	3.00	1.930	1.080	6.65	2.95	1.663	.880				
(J) AC noise x 2	.04 →											
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.925	.929	.929	.972	.925	.929	.929	.972				
(M) ρdc/ρac =ExL/K	.992											
(N) PFE=(M-1)(10^2)	—											
(O) MCF=(M-1)(10^5)/H												

1009
997
2006

HEINRICHS GEOEXPLORATION COMPANY

INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Paycheck Claims Line #4 SET "A" Going S-W- Field date 3 Nov Data page_____ Comp. date Nov 4. Comp by M.L.

(A) Send	1-2				2-3					Calibration		
(B) Receive	3-4	4-5	5-6	6-7	4-5	5-6	6-7	7-8		#1	#2	
(C) n separation	100	10	31	1	10	3	1	1				
(D) I	1.160	1.600	1.600	1.600	2.0	2.0	2.0	2.0				
(E) Vdc (avg)	110	9.12	2.20	1.35	18.4	2.90	1.455	.890		29.4	29.7	
(F) DCcal	1.040	1.040	1.040	1.020	1.040	1.040	1.020	1.020				
(G) Kn x 10^{-3}	1.5	6.0	15.0	30.0	1.5	6.0	15.0	30.0				
(H) ρ dc=ExFxGx10^3/D	108	35.8	21.5	25.7	14.3	9.1	11.1	15.2				
(I) Vac Σ	104.4	8.5	2.04	1.290	17.1	2.67	1.390	.860		28.0	27.7	
(J) AC noise x 2	.02	→										
(K) Vac(corr) = $\sqrt{I^2 - J^2}$										DC=1.040	DC=1.020	
(L) AC-DC cal.	.975	.954	.958	.981	.954	.958	.981	.981		Ac-Dc=	Ac-Dc=	
(M) ρ dc/ρac=ExL/K	1.000	1.025	1.030	1.028	1.027	1.040	1.028	1.015		.953	.933	
(N) PFE=(M-1)(10^2)	0	2.5	3.0	2.8	2.7	4.0	2.8	1.5				
(O) MCF=(M-1)(10^5)/H	0	70	140	110	190	440	250	99.				

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

(A) Send	3-4				5-6							
(B) Receive	6-7	7-8	8-9	9-10	7-8	8-9	9-10	10-11				
(C) n separation	10	3	3	1	10	3	1	1				
(D) I	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20				
(E) Vdc (avg)	14.8	4.76	2.50	1.21	9.32	3.35	1.385	.938				
(F) DCcal	1.040	1.020	1.020	1.020	1.020	1.020	1.020	1.020				
(G) Kn x 10^{-3}	1.5	6.0	15.0	30.0	1.5	6.0	15.0	30.0				
(H) ρ dc=ExFxGx10^3/D	19.2	24.3	32	31	12.0	17.0	17.7	24				
(I) Vac Σ	13.7	4.44	2.34	1.175	8.60	3.18	1.345	.890				
(J) AC noise x 2	.02	→										
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.954	.938	.938	.981	.934	.938	.981	.981				
(M) ρdc/ρac =ExL/K	1.030	1.005	1.010	1.015	1.015	1.000	1.012	1.035				
(N) PFE=(M-1)(10^2)	3.0	0.5	1.0	1.5	1.5	0	1.2	3.5				
(O) MCF=(M-1)(10^5)/H	157	24.6	31.0	48	125	0	68	141				

HEINRICHS GEOEXPLORATION COMPANY

INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Paycheck Claims Line #4 Set "B" Going S.W. Field date Nov 3 Data page_____ Comp. date Nov 4 . Comp by mL

(A) Send	5-6				6-7					Calibration		
(B) Receive	7-8	8-9	9-10	10-11	8-9	9-10	10-11	11-12		#1	#2	
(C) n separation	10	3	3	1	10	3	1	1				
(D) I	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0				
(E) Vdc (avg)	17.5	4.31	2.32	.638	13.1	4.25	1.015	.692		29.6	29.7	
(F) DCcal	1.015	1.015	1.015	1.010	1.015	1.015	1.010	1.010				
(G) Kn x 10^{-3}	1.5	6.0	15	30	1.5	6.0	15.0	30.0				
(H) ρ dc=ExFxGx10^3/D	13.3	13.1	17.6	9.70	10.0	12.8	7.70	10.50				
(I) Vac Σ	16.0	3.96	2.13	.590	12.0	3.90	.960	.680		27.6	27.6	
(J) AC noise x 2	.04	→										
(K) Vac(corr) = $\sqrt{I^2 - J^2}$										Dc= 1.015	Dc= 1.010	
(L) AC-DC cal.	.928	.932	.975	.978	.928	.932	.978	.978		Ac-Dc=	Ac-Dc=	
(M) ρ dc/ρac=ExL/K	1.015	1.017	1.060	1.050	1.015	1.015	1.030	1.000		.927		.930
(N) PFE=(M-1)(10^2)	1.5	1.7	6.0	5.0	1.5	1.5	3.0	0				
(O) MCF=(M-1)(10^5)/H	114	130	340	515	150	117	390	0				

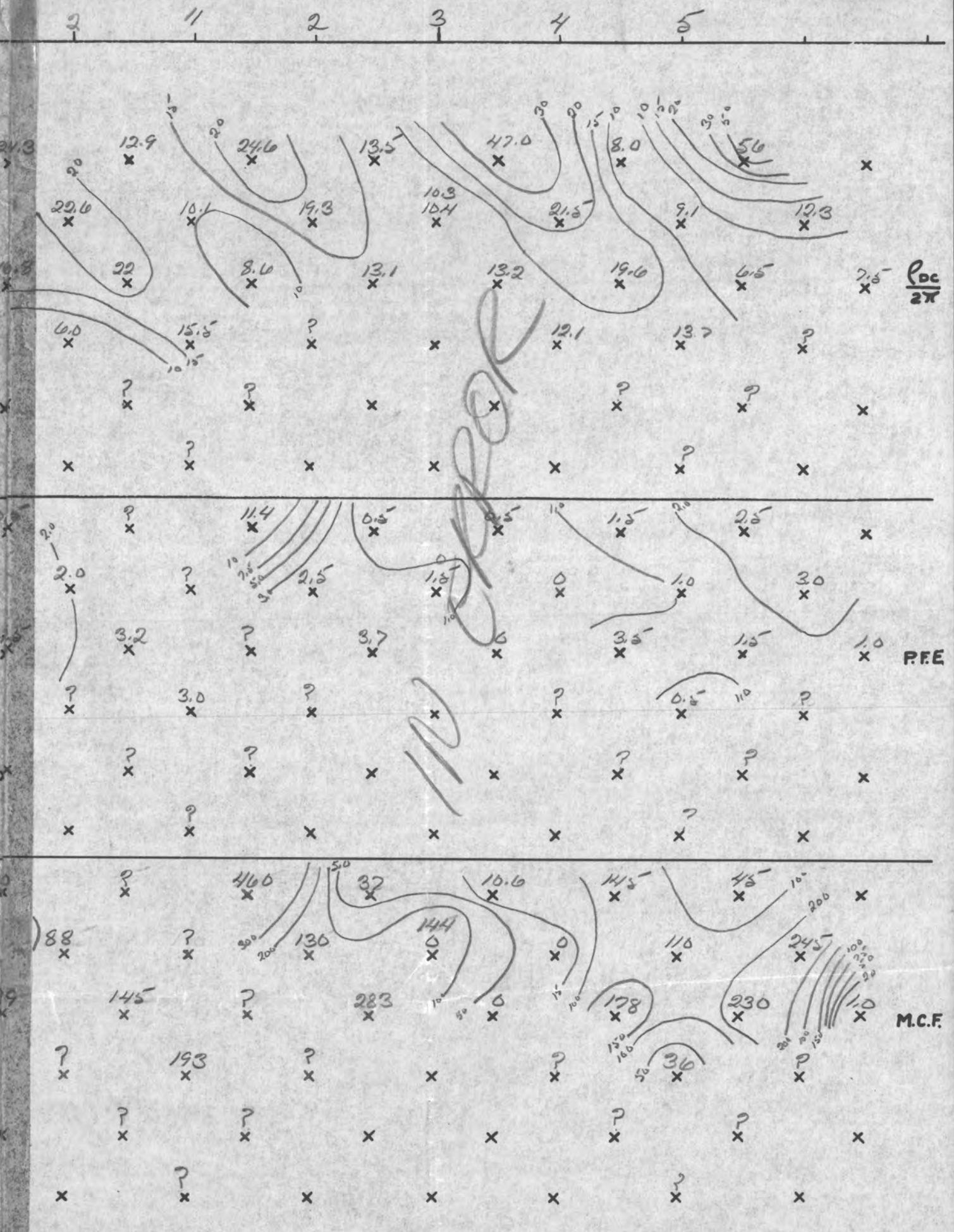
Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

(A) Send	7-8				8-9							
(B) Receive	9-10	10-11	11-12	12-13	10-11	11-12	12-13	13-14				
(C) n separation	10	3	1	1	10	3	1					
(D) I	2.0	2.0	2.0	2.0	2.0	2.0	2.0					
(E) Vdc (avg)	13.05	2.23	1.205	.812	8.0	2.62	1.400					
(F) DCcal	1.015	1.010	1.010	1.010	1.010	1.010	1.010					
(G) Kn x 10^{-3}	1.5	6.0	15	30	1.5	6.0	15					
(H) ρ dc=ExFxGx10^3/D	10.0	6.8	9.1	12.3	6.1	8.0	10.6					
(I) Vac Σ	12.0	2.04	1.175	.770	7.34	2.44	1.320					
(J) AC noise x 2	.04	→										
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.928	.935	.978	.978	.931	.935	.978					
(M) ρdc/ρac =ExL/K	1.010	1.022	1.005	1.035	1.020	1.010	1.035					
(N) PFE=(M-1)(10^2)	1.0	2.2	.5	3.5	2.0	1.0	3.5					
(O) MCF=(M-1)(10^5)/H	100	325	55	284	330	125	330					

HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING

AREA _____ LINE #7 a = 500 ' SCALE: _____

HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING EAST



AREA Tilda + Scooter LINE #7 a = 500 ' SCALE: 1" = 50 8' DATE: Nov 16

HEINRICHS GEOEXPLORATION COMPANY

INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Matilda & Scooter Line #7 Set "A" → South Field date Nov 13 Data page 1 Comp. date Nov 14. Comp by_____

(A) Send	2-3	2-1	4-3	3-2	2-1	5-4	4-3	3-2	2-1		Cal	
(B) Receive	10-15S →		15-20S →			20-25S →						
(C) n separation	30	3	10	10	3	100	3	3	3			
(D) I	1.60	1.40	1.80	1.60	1.40	2.0	1.80	1.60	1.40		33	
(E) Vdc (avg)	54.5	2.64	10.84	5.98	1.35	82	3.01	2.29	.620			
(F) DCcal	.910 →											
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15.0	1.5	6.0	15.0	30.0			
(H) ρdc=ExFxGx10^3/D	47.0	10.3	8.00	21.5	13.2	56	9.1	19.6	12.1		31.4	
(I) Vac Σ	52.0	2.52	10.20	5.70	1.30	76	2.84	2.10	.600			
(J) AC noise x 2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1			
(K) Vac(corr) = $\sqrt{I^2 - J^2}$											Ac-Dc =	.952
(L) AC-DC cal.	.952 →											
(M) ρdc/ρac=ExL/K	1.005	1.000	1.015	1.000	1.000	1.025	1.010	1.035	—		Dc =	.910
(N) PFE=(M-1)(10^2)	0.5	0	1.5	0	0	2.5	1.0	3.5				
(O) MCF=(M-1)(10^5)/H	10.6	0	145	0	0	45	110	178				
S.P.	+2.3		-4.0			-6.1						

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

(A) Send	5-4	4-3	3-2	2-1	5-4	4-3	3-2	2-1				
(B) Receive	25-30S →				30-35S →							
(C) n separation	3	3	3	—	3	3						
(D) I	2.0	1.80	1.60	1.40	2.0	1.80						
(E) Vdc (avg)	4.50	.850	.805		1.050							
(F) DCcal	.910 →											
(G) Kn x 10^{-3}	6.0	15	30		15	30						
(H) ρdc=ExFxGx10^3/D	12.3	6.5	13.7		2.5							
(I) Vac Σ	4.16	.800	.760		1.040							
(J) AC noise x 2	0.1	0.1	0.1		0.1							
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.952 →											
(M) ρdc/ρac =ExL/K	1.630	1.015	1.005		1.000							
(N) PFE=(M-1)(10^2)	3.0	1.5	0.5		0							
(O) MCF=(M-1)(10^5)/H	245	230	36		0							
	-19.1				+20.2							

HEINRICHS GEOEXPLORATION COMPANY

INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project MATILDA + SCOOTER Line #7 SET "B" Field date Nov 13 Data page_____ Comp. date Nov 14. Comp by_____

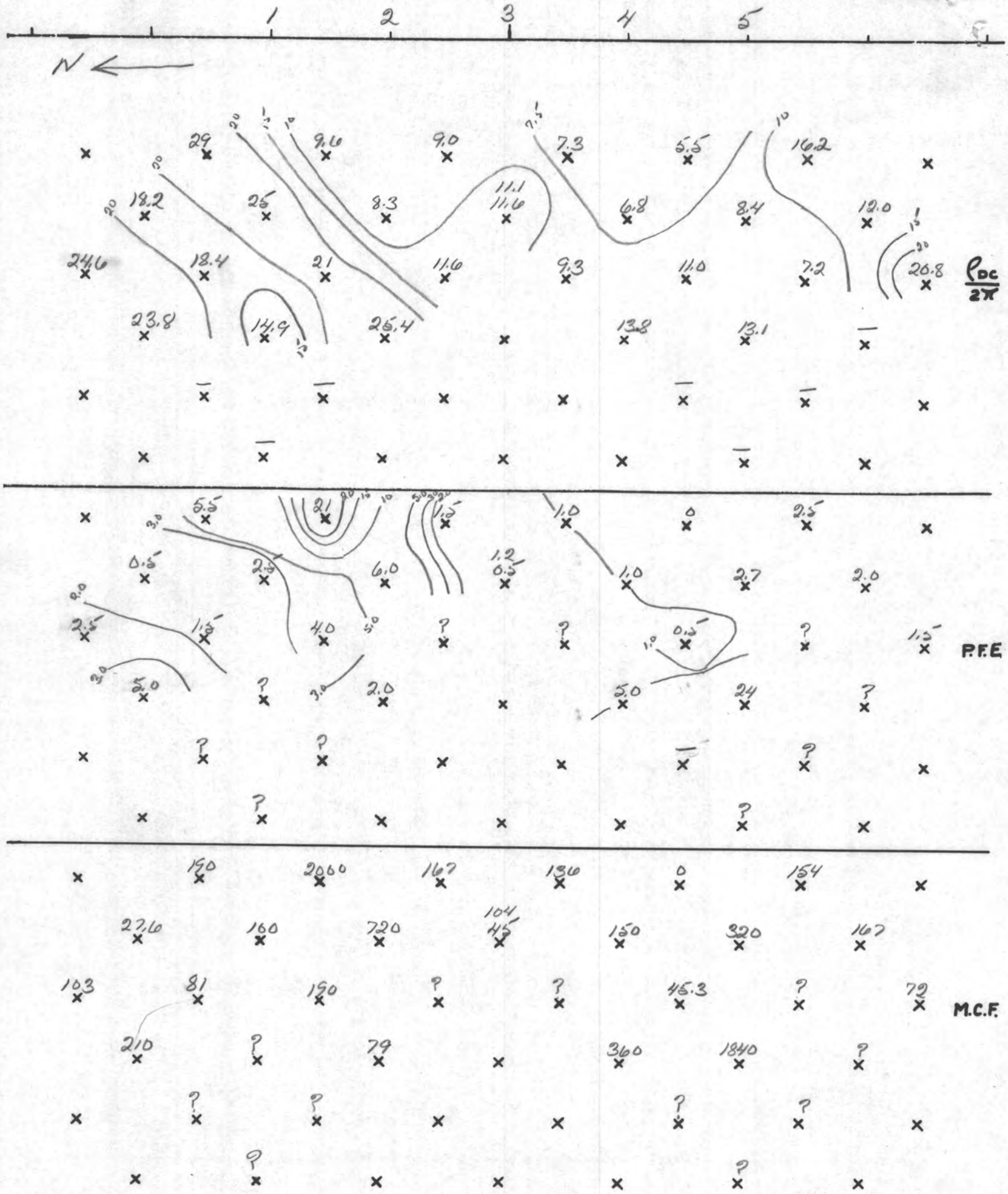
→ NORTH

(A) Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		Cal.	
(B) Receive	10-15N →		15-20N →			20-25N →						
(C) n separation	30	3	30	10	3	10	3	3	3			
(D) I	1.80	2.0	1.60	1.80	2.00	1.40	1.60	1.80	2.0		32.4	
(E) Vdc (avg)	18.1	4.04	29.2	6.43	1.95	13.4	3.00	1.150	—			
(F) DCcal	.900 →											
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15.0	1.5	6.0	15.0	30.0		31	
(H) ρ dc=ExFxGx10^3/D	13.5	10.4	24.6	19.3	13.1	12.9	10.1	8.6				
(I) Vac Σ	12.3	3.80	27.4	6.0	1.80	12.6	2.90	1.10	.400		Ac-Dc=	.957
(J) AC noise x 2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1			
(K) Vac(corr) = $\sqrt{I^2 - J^2}$											Dc=	.900
(L) AC-DC cal.	.957 →											
(M) ρ dc/ρac=ExL/K	1.005	1.015	1.114	1.025	1.037							
(N) PFE=(M-1)(10^2)	0.5	1.5	11.4	2.5	3.7							
(O) MCF=(M-1)(10^5)/H	37.0	144	460	130	283							
S.P.	+33.5		+40.9			-5.0						

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

(A) Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5				
(B) Receive	25-30N →				30-35N →							
(C) n separation	10	2	3		3	3						
(D) I	1.46	1.60	1.60	2.0	1.40	1.60	1.60					
(E) Vdc (avg)	5.85	2.63	.925		1.740	1.080						
(F) DCcal	.900 →											
(G) Kn x 10^{-3}	6.0	15.0	30.0		15.0	30.0						
(H) ρ dc=ExFxGx10^3/D	22.6	22.0	15.5		16.8	6.05						
(I) Vac Σ	5.50	2.44	.860		1.64	1.00	.400					
(J) AC noise x 2	0.1	0.1	0.1		0.1	0.1	0.1					
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.957 →											
(M) ρdc/ρac =ExL/K	1.020	1.032	1.030		1.015	—						
(N) PFE=(M-1)(10^2)	2.0	3.2	3.0		1.5							
(O) MCF=(M-1)(10^5)/H	88	145	198		89							
	+2.4				-12.4							

HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING EAST



AREA Matilda & Scooter LINE #6 a = 500' SCALE: 1" = 500' DATE: Nov 16

Ark IA

500'

HEINRICHS GEOEXPLORATION COMPANY

INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project MATilda + Don Claims Line #6 SET "A" Field date Nov 11 Data page_____ Comp. date Nov 13. Comp by_____

→ North

(A) Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		Cal.	
(B) Receive	10-15N →		15-20N			20-25N						
(C) n separation	10	3	10	3	3	30	10	3	3			
(D) I	1.2	1.2	1.8	1.2	1.2	2.0	1.8	1.2	1.2			
(E) Vdc (avg)	7.6	2.45	12.15	1.75	.880	40.0	7.98	1.75	1.07		33.0	
(F) DCcal	.953											
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15.0	1.5	6.0	15.0	30.0			
(H) ρ dc=ExFxGx10^3/D	9.0	11.6	9.6	8.3	11.6	29	25.0	21.0	25.4		31.4	
(I) Vac Σ	7.10	2.30	11.2	1.55	.840	36.8	7.40	1.60	1.00			
(J) AC noise ~~x 2~~	.06	.06	0.1	0.1	0.1	0.1	0.1	0.1	0.1		Ac-Dc=	.950
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.950 →										Dc=	~~.950~~
(M) ρ dc/ρac=ExL/K	1.015	1.012	1.210	1.060	—	1.055	1.025	1.040	~~1.020~~			
(N) PFE=(M-1)(10^2)	1.5	1.2	21.0	6.0		~~5.5~~	2.5	4.0	~~2.0~~			
(O) MCF=(M-1)(10^5)/H	167	104	2000	720		~~190~~	100	190	79			
S-P.	0		-20.5			+10.5						

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

(A) Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5				
(B) Receive	25-30N →				30-35N							
(C) n separation	10	3	3		3.0	3.0						
(D) I	2.0	1.8	1.2		2.0	1.80						
(E) Vdc (avg)	6.35	2.30	.625		3.45	1.50						
(F) DCcal	.953											
(G) Kn x 10^{-3}	6.0	15.0	30.0		15.0	30.0						
(H) ρ dc=ExFxGx10^3/D	18.2	18.4	14.9		24.6	23.8						
(I) Vac Σ	6.0	2.15	.600		3.20	1.35						
(J) AC noise x 2	0.1	0.1	0.1		0.1	0.1						
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.950 →											
(M) ρdc/ρac =ExL/K	1.005	1.015	—		1.025	1.050						
(N) PFE=(M-1)(10^2)	0.5	1.5			2.5	5.0						
(O) MCF=(M-1)(10^5)/H	27.6	81			103	210						
	+8.7				-13.4							

Conventional 5 dipoles

HEINRICHS GEOEXPLORATION COMPANY

INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Arkla Matilda + Don Claims Line #6 Set "A" Going North Field date Nov 11 Data page_____ Comp. date Nov 13. Comp by_____

(A) Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		Cal.	
(B) Receive	10-15N →		15-20N →			20-25N →						
(C) n separation	10	3	10	3	3	30	10	3	3			
(D) I	1.2	1.2	1.8	1.2	1.2	2.0	1.8	1.2	1.2			
(E) Vdc (avg)	7.6	2.45	12.15	1.75	.880	40.0	7.98	1.75	1.07		33.0	
(F) DCcal	.953 →											
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15.0	1.5	6.0	15.0	30.0			
(H) ρ dc=ExFxGx10^3/D	9.0	11.6	9.6	8.3	11.6	29	25.0	21.0	25.4			
(I) Vac Σ	7.10	2.30	11.2	1.55	.840	36.8	7.40	1.60	1.00		31.4	
(J) AC noise x 2	.06	.06	0.1	0.1	0.1	0.1	0.1	0.1	0.1			
(K) Vac(corr) = $\sqrt{I^2 - J^2}$											Ac-Dc	.950
(L) AC-DC cal.	.950 →											
(M) ρ dc/ρac=ExL/K	1.015	1.012	1.210	1.060	—	1.055	1.025	1.040	1.020		Dc =	.953
(N) PFE=(M-1)(10^2)	1.5	1.2	21.0	6.0		5.5	2.5	4.0	2.0			
(O) MCF=(M-1)(10^5)/H	167	104	2000	720		190	100	190	79			
S.P.	0		-20.5			+10.5						

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

(A) Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5				
(B) Receive	25-30N →				30-35N →							
(C) n separation	10	3	3		3.0	3.0						
(D) I	2.0	1.8	1.2	1.20	2.0	1.80	1.20	1.20				
(E) Vdc (avg)	6.35	2.30	.625		3.45	1.56						
(F) DCcal	.953 →											
(G) Kn x 10^{-3}	6.0	15.0	30.0	52.5	15.0	30.0						
(H) ρ dc=ExFxGx10^3/D	18.2	18.4	14.9		24.6	23.8						
(I) Vac Σ	6.0	2.15	.600		3.20	1.35						
(J) AC noise x 2	0.1	0.1	0.1		0.1	0.1						
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.950 →											
(M) ρdc/ρac =ExL/K	1.005	1.015	—		1.025	1.050						
(N) PFE=(M-1)(10^2)	0.5	1.5			2.5	5.0						
(O) MCF=(M-1)(10^5)/H	27.6	81			103	210						
	+8.7				-13.4							

HEINRICHS GEOEXPLORATION COMPANY

INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Matilda Scooter Claims Line #6 Set "B" Field date Nov 12 Data page_____ Comp. date Nov 13. Comp by_____

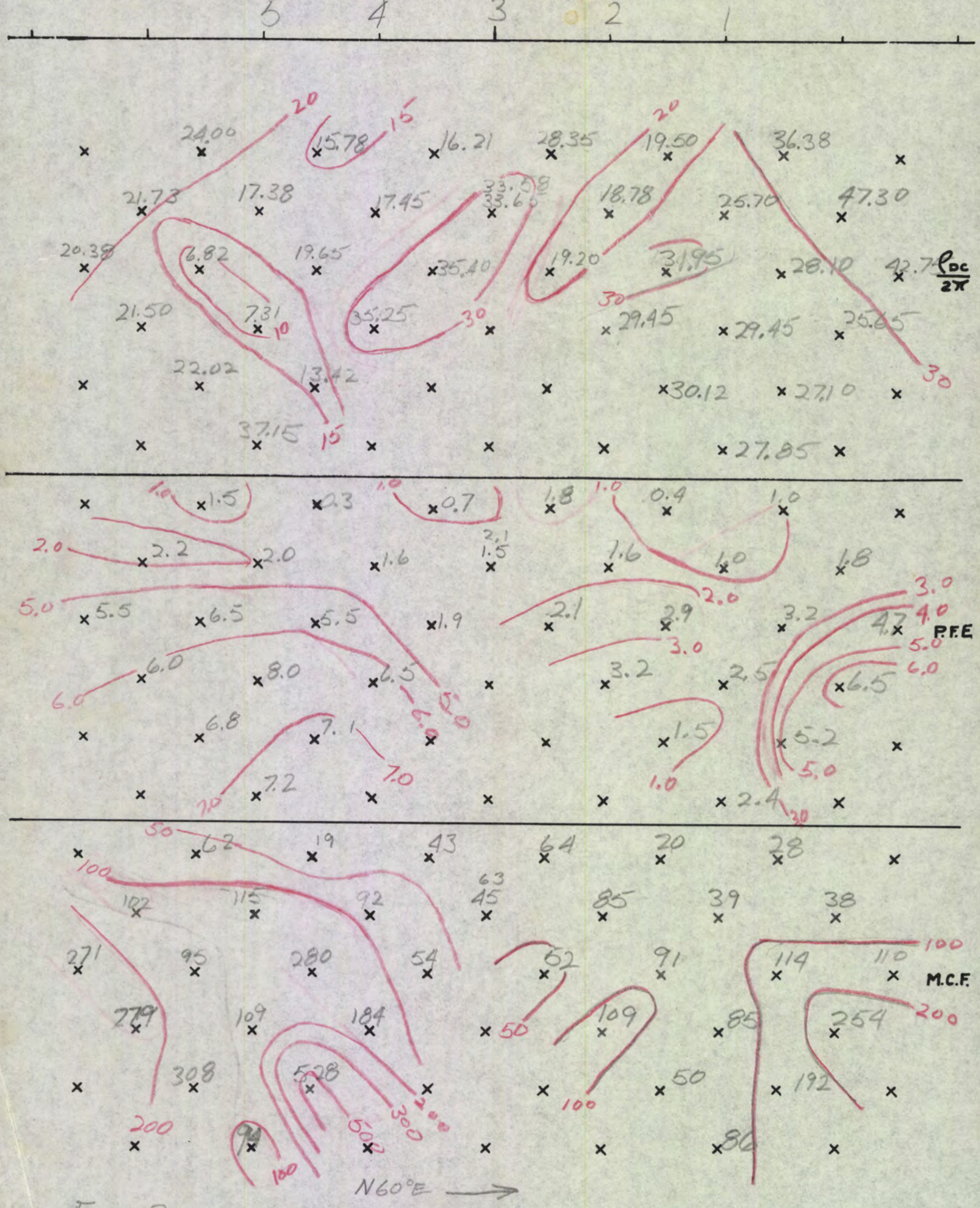
→ South

(A) Send	2-3	1-2	3-4	3-2	2-1	5-4	4-3	3-2	2-1		Cal.	
(B) Receive	10-15S	→	15-20S	→	→	20-25S	→	→	→			
(C) n separation	10	3	10	3	3	10	3	3	3			
(D) I	2.0	2.0	1.4	2.0	2.0	1.2	1.4	2.0	2.0			
(E) Vdc (avg)	10.67	4.03	5.60	2.47	1.350	14.18	2.13	1.60	1.000		32.7	
(F) DCcal	.920	→	→	→	→	→	→	→	→			
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15.0	1.5	6.0	15.0	30.0			
(H) ρ dc=ExFxGx10^3/D	7.35	11.1	5.5	6.8	9.3	16.2	8.4	11.0	13.8			
(I) Vac Σ	10.0	3.70	5.40	2.32	1.300	13.10	2.00	1.50	.900		31.0	
(J) AC noise x 2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1			
(K) Vac(corr) = $\sqrt{I^2 - J^2}$											Ac-Dc =	.947
(L) AC-DC cal.	.947	→	→	→	→	→	→	→	→		Dc =	.920
(M) ρ dc/ρac=ExL/K	1.010	1.005	1.000	1.010	—	1.025	1.027	1.0500	1.050			
(N) PFE=(M-1)(10^2)	1.0	.5	0	1.0		2.5	2.7	.5	5.0			
(O) MCF=(M-1)(10^5)/H	136	45	0	150		154	320	45.3	360			
S-P.	+4.1		-54.5			0						

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

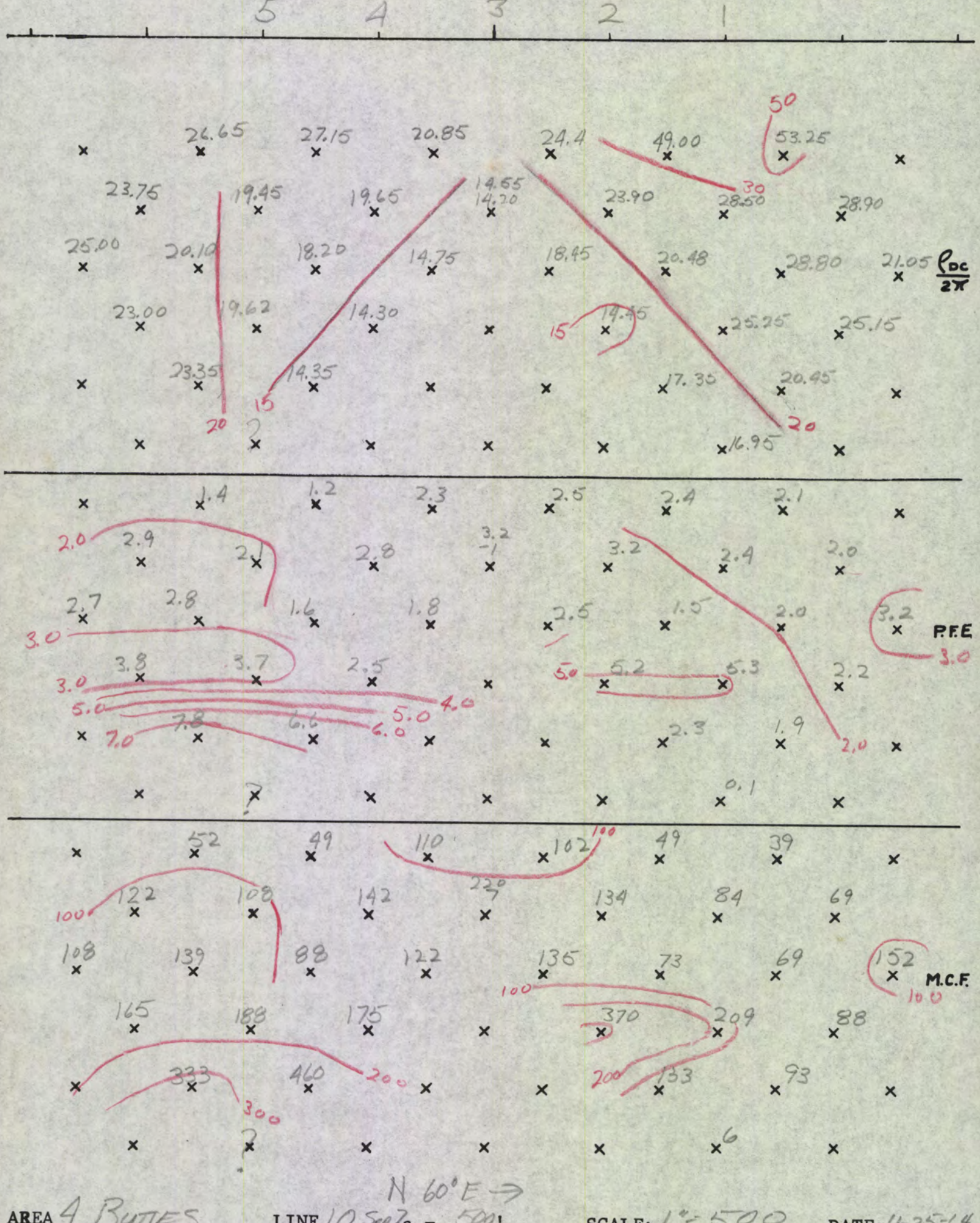
(A) Send	5-4	4-3	3-2	2-1	5-4	4-3	3-2	2-1				
(B) Receive	25-30S	→	→	→	30-35S	→	→	→				
(C) n separation	3	3	3		3							
(D) I	1.2	1.4	2.0		1.2							
(E) Vdc (avg)	2.61	.730	.950		.900							
(F) DCcal	.920	→	→		→							
(G) Kn x 10^{-3}	6.0	15.0	30.0		15.0							
(H) ρ dc=ExFxGx10^3/D	12.0	7.2	13.1		20.8							
(I) Vac Σ	2.42	.700	.720		.840							
(J) AC noise x 2	0.1	0.1	0.1		0.1							
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.947	→	→	→	→							
(M) ρdc/ρac =ExL/K	1.020	—	1.240		1.015							
(N) PFE=(M-1)(10^2)	2.0		24		1.5							
(O) MCF=(M-1)(10^5)/H	167		1840		72							
	-46.3				+5.6							

HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING N-W



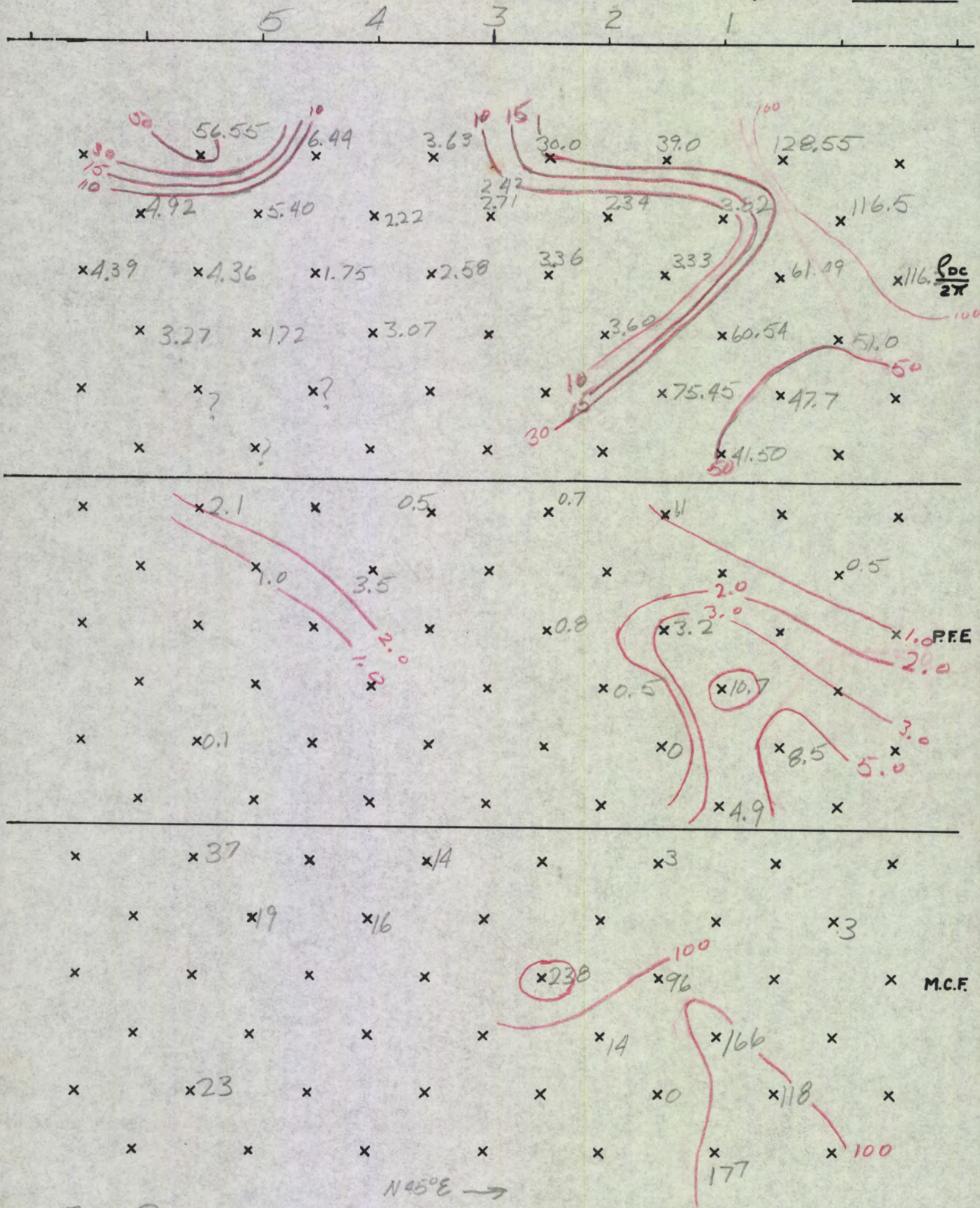
AREA FOUR BUTTES LINE 10 a = 500' SPR 1 SCALE: 1" = 500 DATE: 11-24-64

HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING N-W



AREA 4 BUTTES LINE 10 SpRZa = 500' SCALE: 1" = 500 DATE: 11-25-64

HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING N-W



AREA Four Buttes LINE 9 a = 500' SCALE: 1" = 500' DATE: Nov 23

HEINRICHS GEOEXPLORATION COMPANY

INDUCED POLARIZATION SURVEY COMPUTATION SHEET

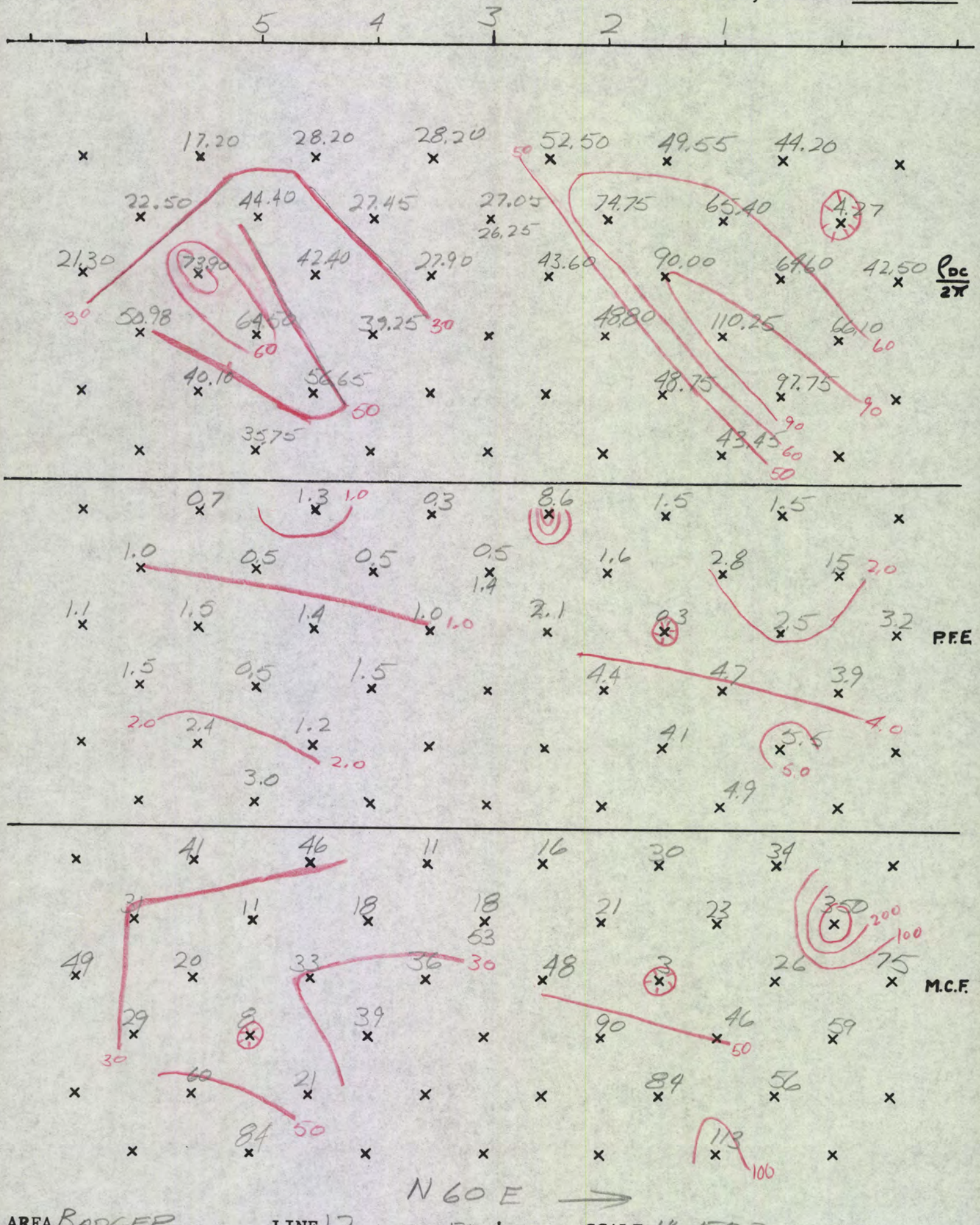
Project ARKLA Line #10 Spr 4 Field date 11-23-64 Data page _____ Comp. date 11-23-64. Comp by DA Page _____

(A) Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		3-4	
(B) Receive	10-15N	→	15-20N	→	→	20-25	→	→	→		CAL	
(C) n separation	30	10	10	3	1	30	10	3	1		30	
(D) I	2000	→	→	→	→	→	→	→	→			
(E) Vdc (avg)	19.425	5.75	13.375	3.235	1.315	25.0	4.40	2.10			30.8	
(F) DCcal	.974	→	→	→	→	→	→	→	→			
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15	1.5	6.0	15	30			
(H) ρ dc=ExFxGx10^3/D	28.35	33.58	19.50	18.78	19.20	36.38	25.70	30.60				
(I) Vac Σ	18.97	5.60	13.24	3.16	1.280	24.6	4.36	2.00			30.6	
(J) AC noise x 2	.04		.06			.06						
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.994	.995	.995	.999	1.042	.994	.995	.999			DC =	.974
(M) ρ dc/ρac=ExL/K	1.014	1021	1.004	1.021	1.040	1.010	1.003	1.049				
(N) PFE=(M-1)(10^2)	1.4	2.1	0.4	2.1	4.0	1.0	0.3	4.9			AC-DC =	.994
(O) MCF=(M-1)(10^5)/H	50	63	21	101	21	27	12	160				
SP.	-3.3		+0.3			-4.9						

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	1-2											
(B) Receive	25-30											
(C) n separation	10											
(D) I	2000											
(E) Vdc (avg)	8.00											
(F) DCcal	.974											
(G) Kn x 10^{-3}	6.0											
(H) ρ dc=ExFxGx10^3/D	46.65											
(I) Vac Σ	7.80											
(J) AC noise x 2	.18											
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.995											
(M) ρdc/ρac =ExL/K	1.021											
(N) PFE=(M-1)(10^2)	2.1											
(O) MCF=(M-1)(10^5)/H	47											
	-6.7											

HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING N-W



AREA BADGER LINE 12 a = 500' SCALE: 1" = 500 DATE:

HEINRICHS GEOEXPLORATION COMPANY

INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Project BADGER Line 12 Set "A" Field date 12-2-64 Data page _____ Comp. date 12-2-64. Comp by DA Page _____

(A) Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	34	4-5		3-4	
(B) Receive	10-15N	→	15-20N	→		20-25N	→					
(C) n separation	100	10	100	30	10	100	30	10	3			
(D) I	2.000											
(E) Vdc (avg)	71.0	9.22	68.0	25.25	5.90	59.6	22.1	12.14	3.295		30.4	
(F) DCcal	.988											
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15	1.5	6.0	15	30			
(H) ρ dc=ExFxGx10^3/D	52.5	26.25	49.55	74.75	43.60	44.20	66.40	90.00	48.80			
(I) Vac Σ	65.0	8.96	66.0	24.50	5.70	58.0	21.20	11.63	3.11		30.0	
(J) AC noise x 2	.04		.04			.04						
(K) Vac(corr) = $\sqrt{I^2 - J^2}$											DC =	.988
(L) AC-DC cal.	.988											
(M) ρ dc/ρac=ExL/K	1.086	1.014	1.015	1.016	1.021	1.015	1.028	1.003	1.044		AC-DC =	.988
(N) PFE=(M-1)(10^2)	8.6	1.4	1.5	1.6	2.1	1.5	2.8	0.3	4.4			
(O) MCF=(M-1)(10^5)/H	16	53	30	21	48	34	23	3	90			
S.P.	-0.3		-21.6			+0.3						

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5				
(B) Receive	25-30N	→	→	→	30-35N	→	→	→				
(C) n separation	30	10	10	3	10	10	3	1				
(D) I	2.000											
(E) Vdc (avg)	1.36	8.74	7.48	1.88	5.75	4.45	3.77	1.150				
(F) DCcal	.988											
(G) Kn x 10^{-3}	6.0	15	30	52.5	15	30	52.5	84.0				
(H) ρ dc=ExFxGx10^3/D	4.27	64.60	110.25	48.75	42.50	66.10	97.75	43.45				
(I) Vac Σ	1.32	8.40	6.10	1.78	5.50	4.22	3.52	1.080				
(J) AC noise x 2	.04				.06							
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.988											
(M) ρdc/ρac =ExL/K	1.015	1.025	1.047	1.041	1.032	1.039	1.055	1.049				
(N) PFE=(M-1)(10^2)	1.5	2.5	4.7	4.1	3.2	3.9	5.5	4.9				
(O) MCF=(M-1)(10^5)/H	350	76	46	84	75	59	56	113				
S.P.	+23.3				+0.8							

HEINRICHS GEOEXPLORATION COMPANY

INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project BADGER Line 12 Sec "A" Field date 12-1-64 Data page_____ Comp. date 2-1-64. Comp by OA

(A) Send	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		2-3	
(B) Receive	10-15S →		15-20S →			20-25S →					CAL	
(C) n separation	30	10	30	10	3	30	30	10	3		30	
(D) I	2.000											
(E) Vdc (avg)	37.95	9.10	37.9	9.22	3.76	23.04	14.86	5.70	2.64		30.2	
(F) DCcal	.993											
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15	1.5	6.0	15	30			
(H) ρdc=ExFxGx10^3/D	28.20	27.05	28.20	27.45	22.90	17.20	44.40	42.40	39.25			
(I) Vac Σ	37.10	8.90	36.8	9.02	3.66	22.50	14.55	5.52	2.55		29.7	
(J) AC noise x 2	.04		.04			.06						
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.984										DC=	.993
(M) ρ dc/ρac=ExL/K	1.003	1.005	1.013	1.005	1.010	1.007	1.005	1.014	1.015		AC-DC=	.984
(N) PFE=(M-1)(10^2)	0.3	6.5	1.3	0.5	1.0	0.7	0.5	1.4	1.5			
(O) MCF=(M-1)(10^5)/H	11	18	46	18	36	41	11	33	39			

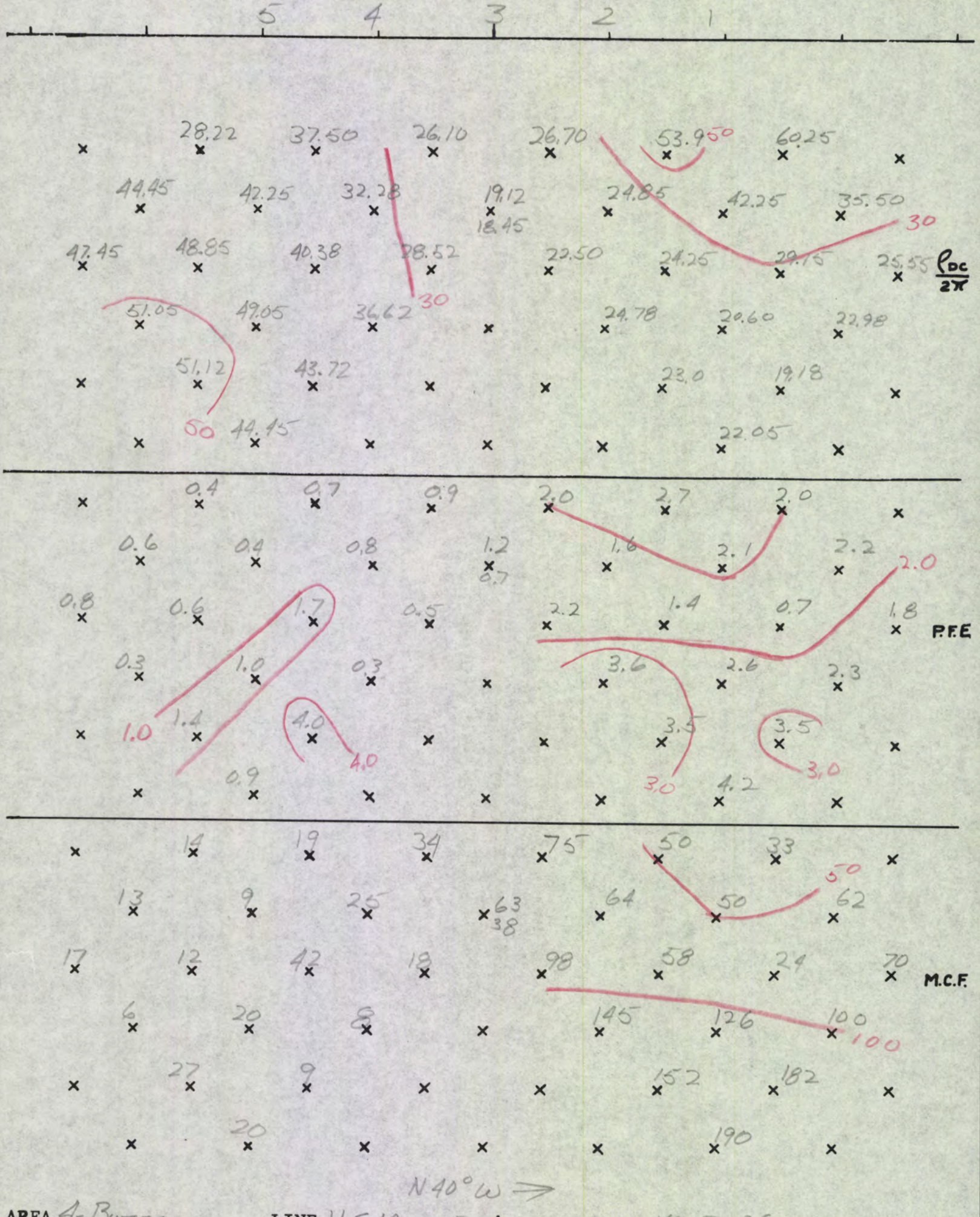
S.P. +12 +8.8 -2.3

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

(A) Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2				
(B) Receive	25-30S →				30-35 →							
(C) n separation	10	10	2	3	3	3	3	1				
(D) I	2.000											
(E) Vdc (avg)	10.93	9.80	4.34	2.18	2.86	3.42	1.54	.860				
(F) DCcal	.993											
(G) Kn x 10^{-3}	6.0	15	30	52.5	15	30	52.5	84.0				
(H) ρ dc=ExFxGx10^3/D	22.50	73.90	64.50	56.65	21.30	50.98	40.10	35.75				
(I) Vac Σ	10.65	9.50	4.24	2.12	2.78	3.31	1.48	.820				
(J) AC noise x 2	.04				.04							
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.984											
(M) ρdc/ρac =ExL/K	1.010	1.015	1.005	1.012	1.011	1.015	1.024	1.030				
(N) PFE=(M-1)(10^2)	1.0	1.5	0.5	1.2	1.1	1.5	2.4	3.0				
(O) MCF=(M-1)(10^5)/H	31	20	8	21	49	29	60	84				

S.P. +3.3 -0.4

HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING S-W



AREA 4-Buttes LINE 11 Sol A a = 500' SCALE: 1" = 500' DATE: 11-30-64

HEINRICHS GEOEXPLORATION COMPANY

INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project 4 Batter Line 11 Set A Field date 11-30-64 Data page_____ Comp. date 11-30-64 Comp by DA

(A) Send	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		2-3	
(B) Receive	10-15S →		15-20S →		→	20-25S →			→		CAL	
(C) n separation	30	10	30	10	3	100	10	10	3		30	
(D) I	2.000											
(E) Vdc (avg) 2	36.2	6.40	52.0	11.20	3.96	53.0	14.65	5.60	2.54		31.2	
(F) DCcal	.962											
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15	1.5	6.0	15	30			
(H) ρ dc=ExFxGx10^3/D	26.10	18.45	37.50	32.28	28.52	28.22	42.25	40.38	36.62			
(I) Vac Σ 3	35.2	6.24	50.6	10.90	3.86	51.8	14.30	5.40	2.48		30.6	
(J) AC noise x 2	.04		.04			.04						
(K) Vac(corr) = $\sqrt{I^2 - J^2}$											DC =	.962
(L) AC-DC cal.	.981											
(M) ρ dc/ρac=ExL/K	1.009	1.007	1.007	1.008	1.005	1.004	1.004	1.017	1.003		AC-DC =	.981
(N) PFE=(M-1)(10^2)	0.9	0.7	0.7	0.8	0.5	0.4	0.4	1.7	0.3			
(O) MCF=(M-1)(10^5)/H	34	38	19	26	18	14	9	42	8			
S.P.	-3.0		-9.6			+10.4						

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

(A) Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2				
(B) Receive	25-30S →			→	30-35S →			→				
(C) n separation	10	10	3	3	10	3	3	1				
(D) I	2.000											
(E) Vdc (avg)	15.40	6.78	3.40	1.73	6.58	3.55	2.03	1.100				
(F) DCcal	.962											
(G) Kn x 10^{-3}	6.0	15	30	52.5	15	30	52.5	84.0				
(H) ρ dc=ExFxGx10^3/D	44.45	48.85	49.05	43.72	47.45	51.05	51.12	44.45				
(I) Vac Σ	15.00	6.60	3.30	1.63	6.40	3.47	1.96	1.070				
(J) AC noise x 2	.06				.04							
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.981											
(M) ρdc/ρac =ExL/K	1.006	1.006	1.010	1.040	1.008	1.003	1.014	1.009				
(N) PFE=(M-1)(10^2)	0.6	0.6	1.0	4.0	0.8	0.3	1.4	0.9				
(O) MCF=(M-1)(10^5)/H	13	12	20	9	17	6	27	20				
SP	-4.7				+0.5							

ARKLA

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

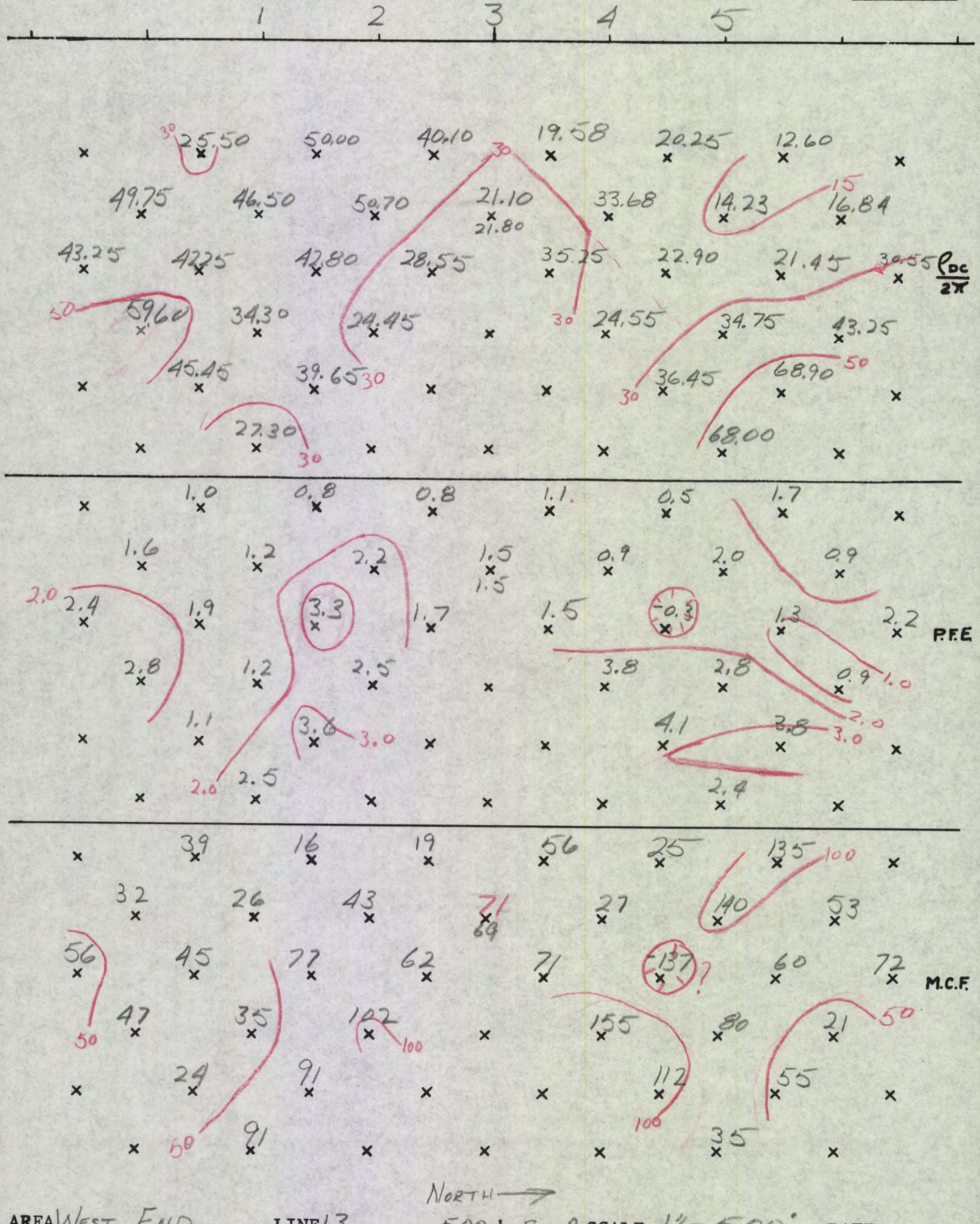
Project 4-BUTTES Line 11 SET A Field date 11-29-64 Data page_____ Comp. date 11-29-64 Comp by DA

(A) Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5			
(B) Receive	10-15N	→	15-20N	→	→	20-25N	→	→	→		CAL	
(C) n separation	30	10	100	10	3	100	10	3	3		30	
(D) I	2.0											
(E) Vdc (avg)	36.5	6.55	73.8	8.515	3.08	82.5	14.45	3.32	1.695		30.8	
(F) DCcal	.974	→	→	→	→	→	→	→	→			
(G) Kn x 10^{-3}	1.5	6.0	1.5	8.0	15	1.5	6.0	15	30			
(H) ρ dc=ExFxGx10^3/D	26.70	19.12	53.9	24.85	22.50	60.25	42.25	24.25	24.78			
(I) Vac Σ	35.4	6.40	71.0	8.30	2.98	80.0	14.0	3.24	1.62		30.5	
(J) AC noise x 2	.06		.06			.06						
(K) Vac(corr) = $\sqrt{I^2 - J^2}$											DC =	.974
(L) AC-DC cal.	.990											
(M) ρ dc/ρac=ExL/K	1.020	1.012	1.027	1.016	1.022	1.020	1.021	1.014	1.036		AC-DC =	.990
(N) PFE=(M-1)(10^2)	2.0	1.2	2.7	1.6	2.2	2.0	2.1	1.4	3.6			
(O) MCF=(M-1)(10^5)/H	75	63	50	64	98	33	50	58	145			
SP	-0.9		+10.8			+3.1						

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

(A) Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5				
(B) Receive	25-30N	→	→	→	30-35N	→	→	→				
(C) n separation	10	3	1	1	3	3	1	1				
(D) I	2.0											
(E) Vdc (avg)	12.15	3.91	1.410	.900	3.50	1.57	.750	.540				
(F) DCcal	.974											
(G) Kn x 10^{-3}	6.0	15	30	52.5	15	30	52.5	84.0				
(H) ρ dc=ExFxGx10^3/D	35.50	29.15	20.60	23.0	25.53	22.98	19.18	22.05				
(I) Vac Σ	11.74	3.84	1.360	.860	3.40	1.52	.720	.520				
(J) AC noise x 2	.06				.08							
(K) Vac (corr) = $\sqrt{I^2 - J^2}$							.716	.513				
(L) AC-DC cal.	.990											
(M) ρdc/ρac =ExL/K	1.022	1.007	1.026	1.035	1.018	1.023	1.035	1.042				
(N) PFE=(M-1)(10^2)	2.2	0.7	2.6	3.5	1.8	2.3	3.5	4.2				
(O) MCF=(M-1)(10^5)/H	62	24	126	152	70	100	182	190				
	-8.7				+1.8							

HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING West



AREA West End LINE 13 a = 500' SET A SCALE: 1" = 500' DATE:

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project West End Line 13 SKA" Field date 12-3-64 Data page_____ Comp. date 12-3-64. Comp by DA

(A) Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		2-3	
(B) Receive	10-155	→	15-205	→	→	20-255	→	→	→		CAC	
(C) n separation	100	10	100	30	3	30	30	10	3		30	
(D) I	2.000											
(E) Vdc (avg)	53.8	7.30	67.0	17.0	3.84	34.20	15.60	5.75	1.64		30.2	
(F) DCcal	994											
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15	1.5	6.0	15	30			
(H) ρ dc=ExFxGx10^3/D	40.10	21.80	50.00	50.70	28.55	25.50	46.50	42.80	24.45			
(I) Vac Σ	52.60	7.10	65.60	16.40	3.72	33.40	15.20	5.50	1.58		29.8	
(J) AC noise x 2	.04		.04			.04						
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.987										DC	.994
(M) ρ dc/ρac=ExL/K	1.008	1.015	1.008	1.022	1.017	1.010	1.012	1.033	1.025			
(N) PFE=(M-1)(10^2)	0.8	1.5	0.8	2.2	1.7	1.0	1.2	3.3	2.5		AC-DC	.987
(O) MCF=(M-1)(10^5)/H	19	69	16	43	62	39	26	77	102			

S.P. +0.3 -55.2 +41.7

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

(A) Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5				
(B) Receive	25-305	→	→	→	30-355	→	→	→				
(C) n separation	10	10	3	1	10	3	3	1				
(D) I	2.000											
(E) Vdc (avg)	8.35	5.67	2.30	.760	5.80	4.00	1.74	.655				
(F) DCcal	994											
(G) Kn x 10^{-3}	6.0	15	30	52.5	15	30	52.5	84.0				
(H) ρ dc=ExFxGx10^3/D	49.75	42.25	34.30	39.65	43.25	59.60	45.45	27.30				
(I) Vac Σ	8.10	5.50	2.24	.724	4.63	3.84	1.70	.630				
(J) AC noise x 2	.06				.06							
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.987											
(M) ρdc/ρac =ExL/K	1.016	1.019	1.012	1.036	1.024	1.028	1.011	1.025				
(N) PFE=(M-1)(10^2)	1.6	1.9	1.2	3.6	2.4	2.8	1.1	2.5				
(O) MCF=(M-1)(10^5)/H	32	45	35	91	56	47	24	91				

S.P. +6.7 -14.7

HEINRICHS GEOEXPLORATION COMPANY

INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project WESTEND Line 13 Set "A" Field date 12-3-64 Data page_____ Comp. date_____. Comp by_____

(A) Send	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		3-4	
(B) Receive	10-15N →		15-20N →			20-25N →					COL	
(C) n separation	30	10	30	10	10	30	10	3	3		30	
(D) I	2.000											
(E) Vdc (avg)	26.20	7.20	27.00	11.24.	4.81	16.80	4.75	3.06	1.64		30.00	
(F) DCcal	1.000											
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15	1.5	6.0	15	30			
(H) ρ dc=ExFxGx10^3/D	19.58	21.10	20.25	33.68	35.25	12.60	14.23	22.90	24.55			
(I) Vac Σ	25.60	7.00	26.50	11.00	4.67	16.45	4.60	3.03	1.56		29.6	
(J) AC noise x 2	.06		.06			.04						
(K) Vac(corr) = $\sqrt{I^2 - J^2}$											DC =	1.000
(L) AC-DC cal.	.987											
(M) ρ dc/ρac=ExL/K	1.011	1.015	1.005	1.009	1.014	1.017	1.020	.997	1.038		AC-DC=	.987
(N) PFE=(M-1)(10^2)	1.1	1.5	0.5	0.9	1.4	1.7	2.0	-0.3	3.8			
(O) MCF=(M-1)(10^5)/H	56	72	25	27	40	135	140	-137	155			

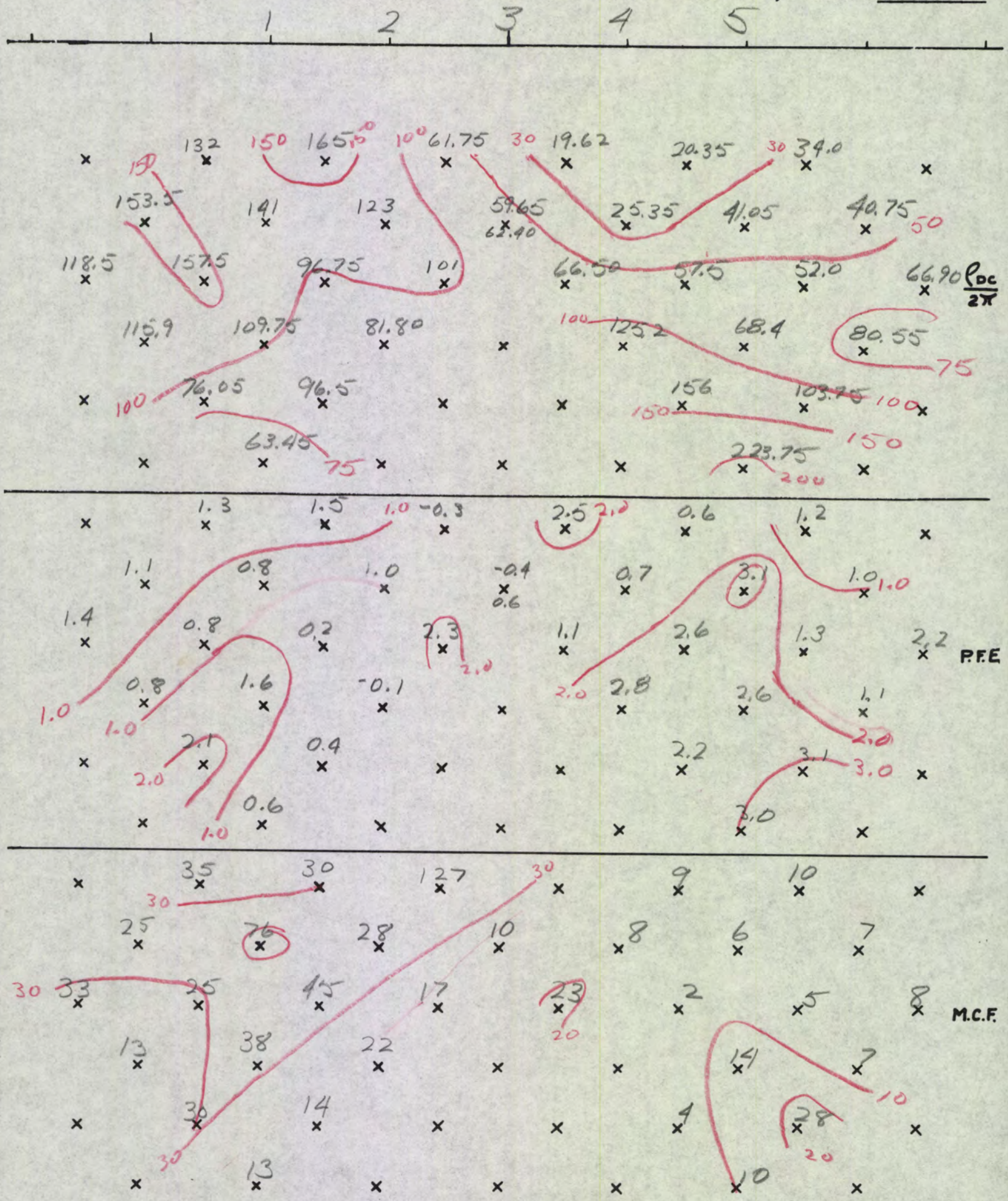
S.P. +1.1 +10.1 -30.4

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

(A) Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2				
(B) Receive	25-30N →				30-35N →							
(C) n separation	10	3	3	3	3	3	3	3				
(D) I	2.000											
(E) Vdc (avg)	5.625	2.86	2.32	1.39	4.08	2.88	2.625	1.62				
(F) DCcal	1.000 →											
(G) Kn x 10^{-3}	6.0	15	30	52.5	15	30	52.5	84.0				
(H) ρ dc=ExFxGx10^3/D	16.84	21.45	34.75	36.45	30.55	43.25	68.90	68.00				
(I) Vac Σ	5.50	2.78	2.23	1.32	3.94	2.82	2.52	1.56				
(J) AC noise x 2	.06				.04							
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.987											
(M) ρdc/ρac =ExL/K	1.009	1.013	1.028	1.041	1.022	1.009	1.038	1.024				
(N) PFE=(M-1)(10^2)	0.9	1.3	2.8	4.1	2.2	0.9	3.8	2.4				
(O) MCF=(M-1)(10^5)/H	53	60	80	112	72	21	55	35				

S.P. +30.6 -23.4

HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING West



AREA West END LINE 15 a = 500' SCALE: 1" = 500' DATE: 12-8-64

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project West END Line 15 Set "A" Field date 12-8-64 Data page_____ Comp. date 12-8-69. Comp by DA

(A) Send	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		3-4	
(B) Receive	10-15N		15-20N			20-25N					CAL	
(C) n separation	30	30	30	10	10	100	30	10	10			
(D) I	2.000											
(E) Vdc (avg)	26.40	20.06	27.40	8.54	8.95	45.80	13.80	7.10	8.55		30.3	
(F) DCcal	.992											
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15	1.5	60	15	30			
(H) ρ dc=ExFxGx10^3/D	19.62	59.65	20.35	25.35	66.50	34.00	41.05	57.50	125.20			
(I) Vac Σ	25.85	20.00	26.90	8.36	8.76	44.60	13.20	6.84	8.22		29.95	
(J) AC noise x 2	.04		.04			.04						
(K) Vac(corr) = $\sqrt{I^2 - J^2}$											DC =	.992
(L) AC-DC cal.	.989											
(M) ρ dc/ρac=ExL/K	1.025	.996	1.006	1.007	1.011	1.012	1.031	1.026	1.028		AC-DC =	.989
(N) PFE=(M-1)(10^2)	2.5	-0.4	0.6	0.7	1.1	1.2	3.1	2.6	2.8			
(O) MCF=(M-1)(10^5)/H	127	7	30	28	17	35	76	45	22			
S.P.	+19.3		-7.9			-0.3						

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

(A) Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2				
(B) Receive	25-30N				30-35N							
(C) n separation	30	10	10	10	10	10	3	10				
(D) I	2.000											
(E) Vdc (avg)	13.70	7.00	4.60	6.00	9.00	5.42	3.98	5.38				
(F) DCcal												
(G) Kn x 10^{-3}	6.0	15	30	52.5	15	30	52.5	84.0				
(H) ρ dc=ExFxGx10^3/D	40.75	52.00	68.40	156.0	66.90	80.55	103.75	223.75				
(I) Vac Σ	13.40	6.82	4.43	5.80	8.70	5.30	3.82	5.16				
(J) AC noise x 2	.06				.06							
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.989											
(M) ρdc/ρac =ExL/K	1.010	1.013	1.026	1.022	1.022	1.011	1.031	1.030				
(N) PFE=(M-1)(10^2)	1.0	1.3	2.6	2.2	2.2	1.1	3.1	3.0				
(O) MCF=(M-1)(10^5)/H	25	25	38	14	33	13	30	13				
S.P.	-12.1				+3.7							

HEINRICHS GEOEXPLORATION COMPANY

INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

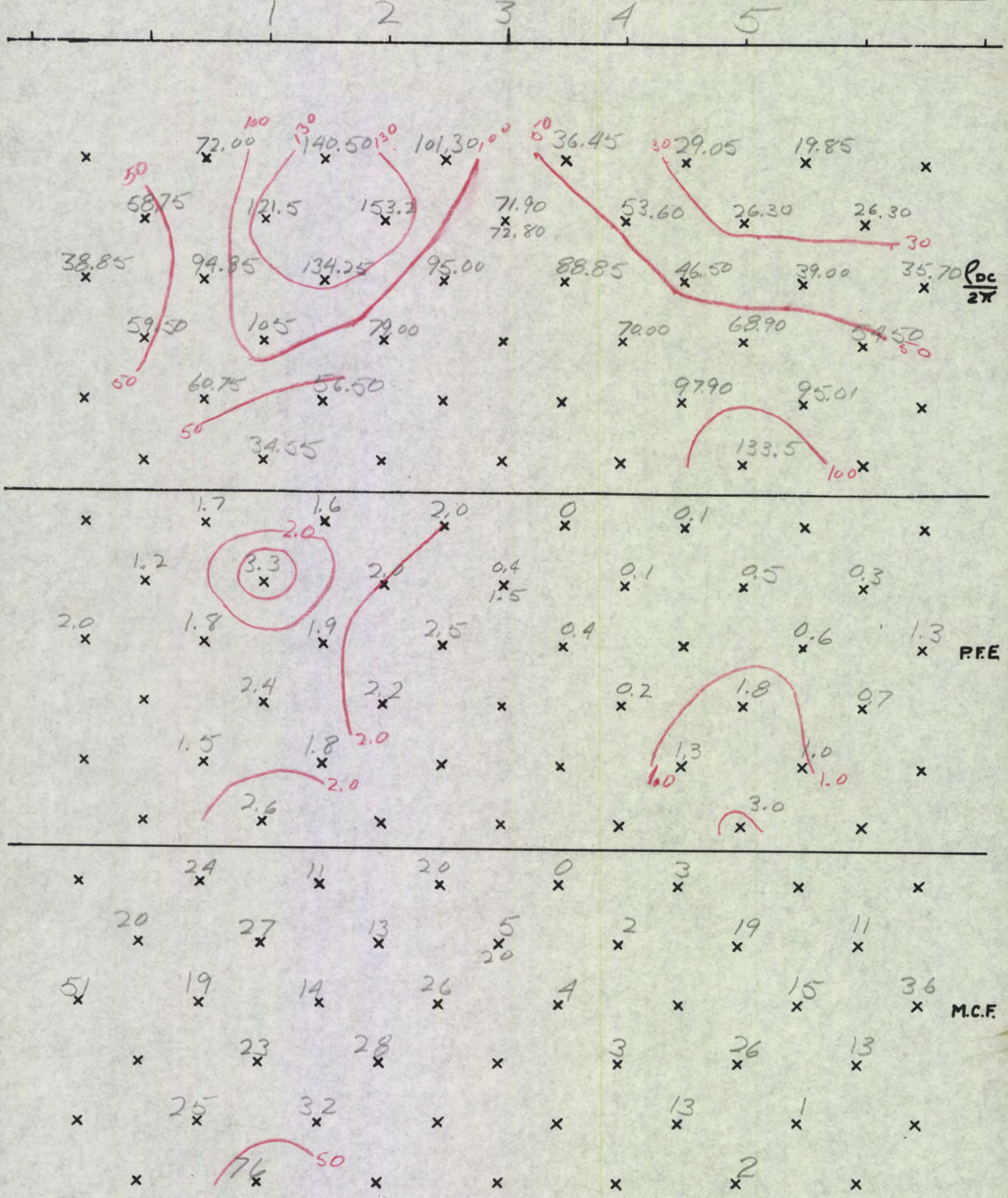
Project West End Line 15 Set "A" Field date 12-8-64 Data page_____ Comp. date 12-8-64. Comp by DA

(A) Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		2-3	
(B) Receive	10-15S →		15-20S			20-25S					CAL	
(C) n separation	100	30	300	30	10	300	100	10	10		30	
(D) I	2.000											
(E) Vdc (avg)	82.40	20.80	220.0	41.00	14.40	176.00	47.00	12.90	5.46		30.00	
(F) DCcal	1.000											
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15	1.5	6.0	15	30			
(H) ρ dc=ExFxGx10^3/D	61.75	62.40	165.0	123.0	101.00	132.00	141.00	96.75	81.80			
(I) Vac Σ	81.00	20.25	212.0	39.98	14.05	170.00	45.60	12.60	5.36		29.40	
(J) AC noise x 2	.04		—			.06						
(K) Vac(corr) = $\sqrt{I^2 - J^2}$											DC=	1.000
(L) AC-DC cal.	.980											
(M) ρ dc/ρac=ExL/K	.997	1.006	1.015	1.010	1.023	1.013	1.008	1.002	.999		AC-DC=	.980
(N) PFE=(M-1)(10^2)	-0.3	0.6	1.5	1.0	2.3	1.3	0.8	0.2	-0.1			
(O) MCF=(M-1)(10^5)/H	21	10	9	8	23	10	6	2	2			
S.P.	+ 12.4		-10.9			+9.6						

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

(A) Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5				
(B) Receive	25-30S				30-35S							
(C) n separation	100	30	10	3	30	10	3	3				
(D) I	2.000											
(E) Vdc (avg)	51.30	21.20	7.36	3.68	15.80	7.73	2.88	1.52				
(F) DCcal	1.000											
(G) Kn x 10^{-3}	6.0	15	30	52.5	15	30	52.5	84.00				
(H) ρ dc=ExFxGx10^3/D	153.50	157.5	109.75	96.50	118.50	115.90	76.05	63.45				
(I) Vac Σ	49.60	20.60	7.10	3.59	15.25	7.50	2.76	1.48				
(J) AC noise x 2	.04				.06							
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.980											
(M) ρdc/ρac =ExL/K	1.011	1.008	1.016	1.004	1.014	1.008	1.021	1.006				
(N) PFE=(M-1)(10^2)	1.1	0.8	1.6	0.4	1.4	0.8	2.1	0.6				
(O) MCF=(M-1)(10^5)/H	7	5	14	4	8	7	28	10				
S.P.	-10.5				-7.9							

HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING West



AREA West END LINE 14 a = 500' SCALE: 1" = 500' DATE: 12-5-64

SOUTH →

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Project West End Line 14 Sol'A' Field date 12-5-64 Data page _____ Comp. date 12-5-64. Comp by DA Page _____

(A) Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		2-3	
(B) Receive	10-15 S →		15-20 S →			20-25 S →					CAL	
(C) n separation	100	30	300	100	10	100	30	30	10		30	
(D) I	2,000											
(E) Vdc (avg)	137.00	24.60	190.00	51.20	12.815	97.20	41.00	18.10	5.36		30.4	
(F) DCcal	.987											
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15	1.5	6.0	15	30			
(H) ρ dc=ExFxGx10^3/D	101.30	72.80	140.50	153.2	95.00	72.00	121.5	134.25	79.00			
(I) Vac Σ	133.00	23.95	185.00	49.60	12.50	94.60	39.30	17.60	5.20		30.1	
(J) AC noise x 2	.06		.04			.04						
(K) Vac(corr) = $\sqrt{I^2 - J^2}$											DC =	.987
(L) AC-DC cal.	.991											
(M) ρ dc/ρac=ExL/K	1.020	1.015	1.016	1.020	1.025	1.017	1.033	1.019	1.022		AC-DC =	.991
(N) PFE=(M-1)(10^2)	2.0	1.5	1.6	2.0	2.5	1.7	3.3	1.9	2.2			
(O) MCF=(M-1)(10^5)/H	20	20	11	13	26	24	27	14	28			

S.P. -4.6 -5.3 -30.6

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5				
(B) Receive	25-30 S →				30-35 S →							
(C) n separation	30	10	10	3	10	10	3	1				
(D) I	2,000											
(E) Vdc (avg)	19.85	12.70	6.80	2.18	5.25	4.01	2.34	.810				
(F) DCcal	.987											
(G) Kn x 10^{-3}	6.0	15	30	52.5	15	30	52.5	84.0				
(H) ρ dc=ExFxGx10^3/D	58.75	94.85	105	56.50	38.85	59.50	60.75	34.55				
(I) Vac Σ	19.40	12.36	6.56	2.12	5.10	3.98	2.28	.780				
(J) AC noise x 2	.04				.04							
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.991											
(M) ρdc/ρac =ExL/K	1.012	1.018	1.024	1.018	1.020	998	1.015	1.026				
(N) PFE=(M-1)(10^2)	1.2	1.8	2.4	1.8	2.0	-0.2	1.5	2.6				
(O) MCF=(M-1)(10^5)/H	20	19	23	32	51	—	25	76				

S.P. +2.5 +26.2

NORTH →

HEINRICHS GEOEXPLORATION COMPANY

INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project West Eno Line 14 Sec "A" Field date 12-5-64 Data page_____ Comp. date 12-5-64. Comp by DA

(A) Send	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		3-4	
(B) Receive	10-15N →		15-20N →			20-25N →					CAL	
(C) n separation	100	30	30	30	10	30	10	10	10		30	
(D) I	2.000											
(E) Vdc (avg)	49.00	24.00	39.00	18.00	11.92	26.80	8.82	6.25	4.70		30.2	
(F) DCcal	.993											
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15	1.5	6.0	15	30			
(H) ρ dc=ExFxGx10^3/D	36.45	71.90	29.05	53.60	88.55	19.85	26.30	46.50	70.00			
(I) Vac Σ	48.00	23.40	38.30	17.60	11.64	26.40	8.60	6.10	4.60		29.6	
(J) AC noise x 2	.04		.04			.04						
(K) Vac(corr) = $\sqrt{I^2 - J^2}$											DC=	.993
(L) AC-DC cal.	.980											
(M) ρ dc/ρac=ExL/K	1.000	1.004	1.001	1.001	1.004	.996	1.005	.983	1.002		AC-DC=	.980
(N) PFE=(M-1)(10^2)	0.0	0.4	0.1	0.1	0.4	-0.4	0.5	—	0.2			
(O) MCF=(M-1)(10^5)/H	0	5	3	2	4	—	19	—	3			

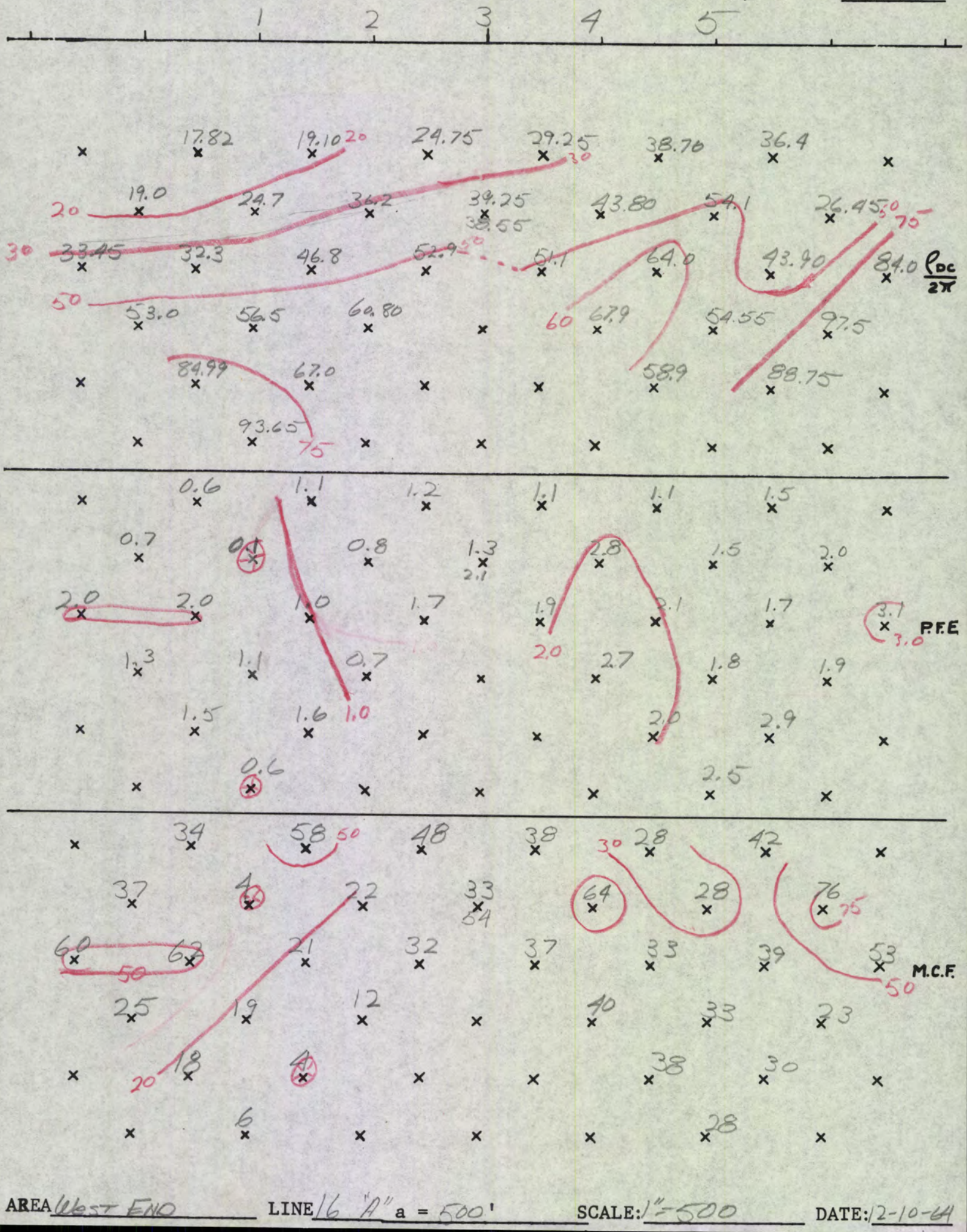
S.P. -22.0 +33.6 -32.9

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

(A) Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2				
(B) Receive	25-30N →				30-35N →							
(C) n separation	10	10	10	3	10	3	3	3				
(D) I	2.000											
(E) Vdc (avg)	8.845	5.24	4.62	3.76	4.80	3.70	3.65	3.16				
(F) DCcal	.993											
(G) Kn x 10^{-3}	6.0	15	30	52.5	15	30	52.5	84.0				
(H) ρ dc=ExFxGx10^3/D	26.30	39.00	68.90	97.90	35.70	54.50	95.01	133.5				
(I) Vac Σ	8.64	5.10	4.44	3.64	4.64	3.60	3.54	3.00				
(J) AC noise x 2	.04				.04							
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.980											
(M) ρdc/ρac =ExL/K	1.003	1.006	1.018	1.013	1.013	1.007	1.010	1.030				
(N) PFE=(M-1)(10^2)	0.3	0.6	1.8	1.3	1.3	0.7	1.0	3.0				
(O) MCF=(M-1)(10^5)/H	11	15	26	13	36	13	1	2				

S.P. +8.8 -3.7

HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING NORTH



AREA West End LINE 16 "A" a = 500' SCALE: 1" = 500 DATE: 12-10-64

HEINRICHS GEOEXPLORATION COMPANY

INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project WEST END Line 16 SET "A" Field date 12-9-64 Data page_____ Comp. date 12-9-64. Comp by DA

(A) Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		2-3	
(B) Receive	10-15ω		15-20ω			20-25ω					CAL	
(C) n separation	30	10	30	10	10	30	10	10	3		30	
(D) I	2.000	→										
(E) Vdc (avg)	32.50	12.90	25.10	12.075	6.95	23.45	8.12	6.16	4.00		29.60	
(F) DCcal	1.012											
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15	1.5	6.0	15	30			
(H) ρ dc=ExFxGx10^3/D	24.75	39.25	19.10	36.20	52.90	17.82	24.70	46.80	60.80			
(I) Vac Σ	31.60	12.50	24.40	11.76	6.72	22.90	7.96	6.00	3.90		29.10	
(J) AC noise x 2	.04		.04			.06						
(K) Vac(corr) = $\sqrt{I^2 - J^2}$											DC. =	1.012
(L) AC-DC cal.	.984											
(M) ρ dc/ρac=ExL/K	1.012	1.013	1.011	1.008	1.017	1.006	1.001	1.010	1.007		AC-DC	.984
(N) PFE=(M-1)(10^2)	1.2	1.3	1.1	0.8	1.7	0.6	0.1	1.0	0.7			
(O) MCF=(M-1)(10^5)/H	48	33	58	22	32	34	4	21	12			
S.P.	+6.5		-1.9			-18.3						

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

(A) Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5				
(B) Receive	25-30ω				30-35ω							
(C) n separation	10	10	3	3	10	3	3	3				
(D) I	2.000	→										
(E) Vdc (avg)	6.25	4.25	3.72	2.52	4.40	3.49	3.19	2.20				
(F) DCcal												
(G) Kn x 10^{-3}	6.0	15	30	52.50	15	30	52.50	84.00				
(H) ρ dc=ExFxGx10^3/D	19.00	32.30	56.50	67.00	33.45	53.00	84.99	93.65				
(I) Vac Σ	6.10	4.10	3.62	2.44	4.24	3.38	3.09	2.15				
(J) AC noise x 2	.06				.06							
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.												
(M) ρdc/ρac =ExL/K	1.007	1.020	1.011	1.016	1.020	1.013	1.015	1.006				
(N) PFE=(M-1)(10^2)	0.7	2.0	1.1	1.6	2.0	1.3	1.5	0.6				
(O) MCF=(M-1)(10^5)/H	37	62	19	4	60	25	18	6				
	+ 6.7				-42.8							

HEINRICHS GEOEXPLORATION COMPANY

INDUCED POLARIZATION SURVEY COMPUTATION SHEET

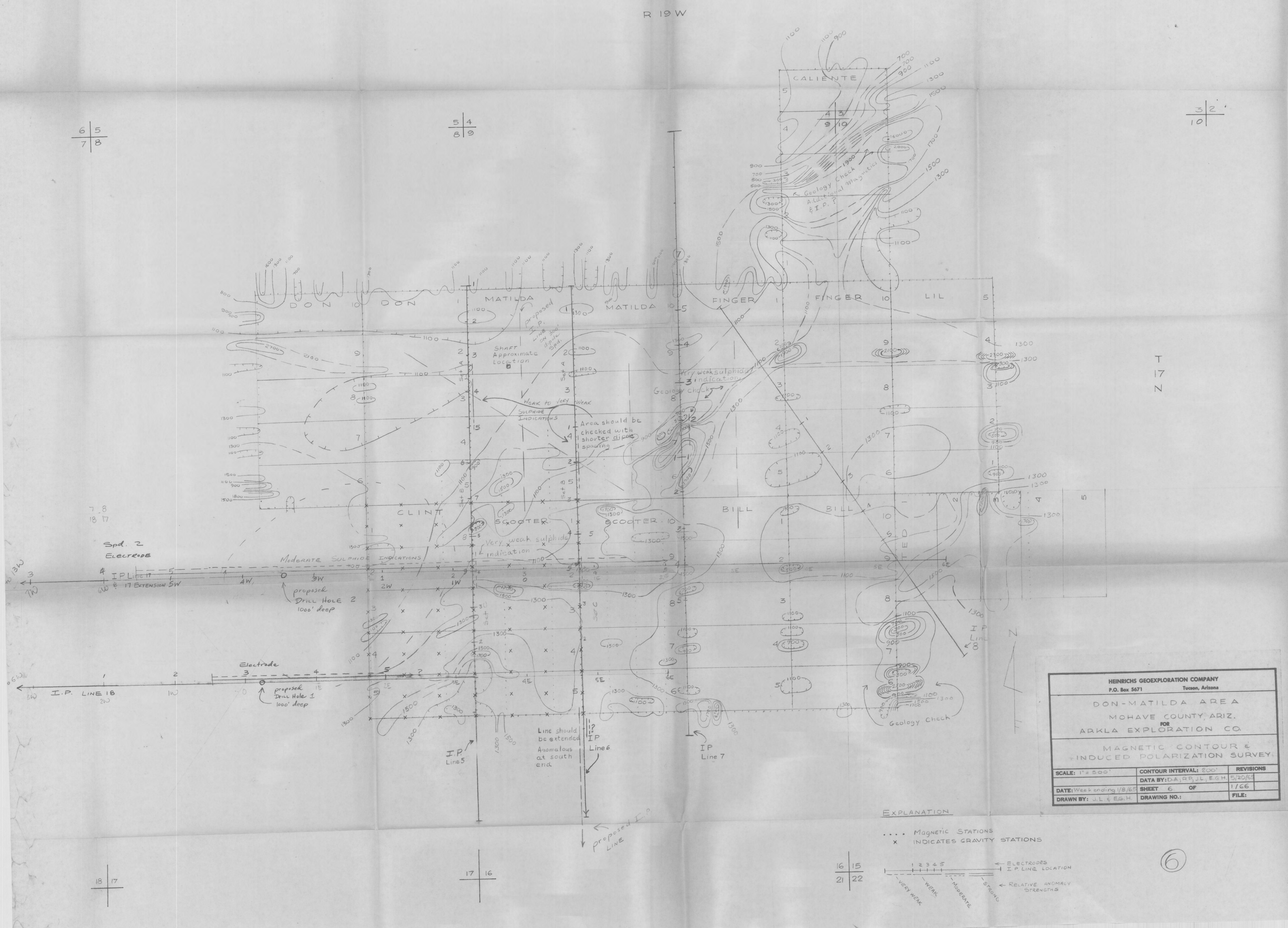
Page

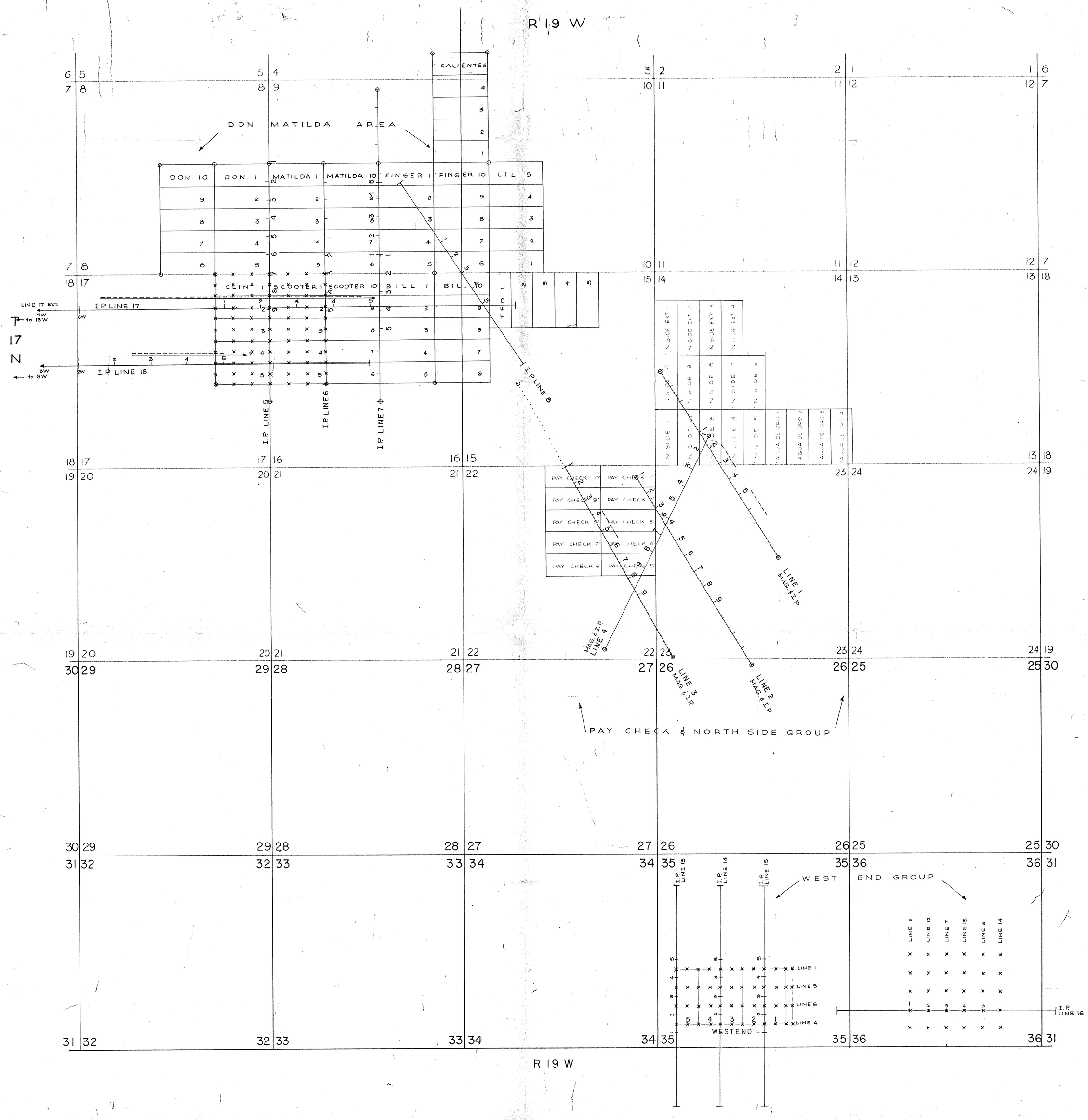
Project West End Line 16 Set "A" Field date 12-10-64 Data page _____ Comp. date 12-10-64. Comp by DA

(A) Send	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		3-4	
(B) Receive	10-15E		15-20E			20-25E					CAL	
(C) n separation	30	10	100	30	10	100	30	10	10		30	
(D) I	2.000											
(E) Vdc (avg)	39.30	12.925	52.00	14.70	6.88	49.00	18.20	8.66	4.55		30.2	
(F) DCcal	.993											
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15	1.5	6.0	15	30			
(H) ρ dc=ExFxGx10^3/D	29.25	38.55	38.70	43.80	51.10	36.40	54.10	64.00	67.90			
(I) Vac Σ	38.60	12.56	51.00	14.20	6.70	48.00	17.80	8.42	4.40		30.0	
(J) AC noise x 2	.04		.04			.04						
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.993										DC =	.993
(M) ρ dc/ρac=ExL/K	1.011	1.021	1.011	1.028	1.019	1.015	1.015	1.021	1.027			
(N) PFE=(M-1)(10^2)	1.1	2.1	1.1	2.8	1.9	1.5	1.5	2.1	2.7		AC-DC =	.993
(O) MCF=(M-1)(10^5)/H	38	54	28	64	37	42	28	33	46			
S.P.	-19.1		-1.3			-15.1						

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2				
(B) Receive	25-30E				30-35E							
(C) n separation	10	10	3	3	10	10	3	3				
(D) I	2.000											
(E) Vdc (avg)	8.88	5.90	3.70	2.01	7.90	5.75	3.74	2.13				
(F) DCcal	.993											
(G) Kn x 10^{-3}	6.0	15	30	52.5	15	30	52.5	84.0				
(H) ρ dc=ExFxGx10^3/D	26.45	43.90	54.55	52.45	58.90	84.00	97.50	88.75				
(I) Vac Σ	8.64	5.76	3.61	1.96	7.62	5.60	3.61	2.06				
(J) AC noise x 2	.04				.04							
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.993											
(M) ρdc/ρac =ExL/K	1.020	1.017	1.018	1.020	1.031	1.019	1.029	1.025				
(N) PFE=(M-1)(10^2)	2.0	1.7	1.8	2.0	3.1	1.9	2.9	2.5				
(O) MCF=(M-1)(10^5)/H	76	39	33	38	53	23	30	28				
S.P.	+10.9				+4.9							


R 19 W
T 17 N
CALIENTE
DON
DON
MATILDA
MATILDA
FINGER
FINGER
LIL
CLINT
SCOOTER
SCOOTER
BILL
BILL
Geology Check
Additional Magnetics & I.P.?
proposed I.P. Line on 300' dipole Spd.
Shaft Approximate Location
Very weak sulphide indication
Geology check
Weak to Very Weak Sulphide Indications
Area should be checked with shorter dipole spacing
Very weak sulphide indication
Moderate Sulphide Indications
Spd. 2
Electrode
I.P. Line 17 & 17 Extension SW
proposed Drill Hole 2 1000' deep
Electrode
I.P. LINE 18
proposed Drill Hole 1 1000' deep
Line should be extended
Anomalous at south end
I.P. Line 5
I.P. Line 6
I.P. Line 7
I.P. Line 8
proposed I.P. LINE
Geology Check
EXPLANATION
.... Magnetic Stations
x Indicates gravity stations
Electrodes
I.P. Line Location
Relative anomaly strengths
Very weak
Weak
Moderate
Strong
HEINRICHS GEOEXPLORATION COMPANY
P.O. Box 5671 Tucson, Arizona
DON-MATILDA AREA
MOHAVE COUNTY, ARIZ.
FOR
ARKLA EXPLORATION CO.
MAGNETIC CONTOUR & INDUCED POLARIZATION SURVEY
SCALE: 1" = 500'
CONTOUR INTERVAL: 200'
DATA BY: D.A., R.P., J.L., E.G.H.
DATE: Week ending 1/8/65
SHEET 6 OF 1/66
DRAWN BY: J.L. & E.G.H.
DRAWING NO.:
REVISIONS
5/20/65
FILE:
6



× INDICATES GRAVITY STATIONS

– – – – – INDICATES IP ANOMALISM

INDICATES DIRECTION & RECORD NUMBER OF MAGNETIC TRAVERSE (TOTAL INTENSITY)

INDICATES MAGNETIC STATIONS (VERTICAL INTENSITY)

1 2 3 4 5
4N 2N 0 2S 4S
INDICATES INDUCED POLARIZATION SURVEY LOCATION ELECTRODES & STATIONS

N

HEINRICHS GEOEXPLORATION COMPANY
P.O. Box 5671 Tucson, Arizona

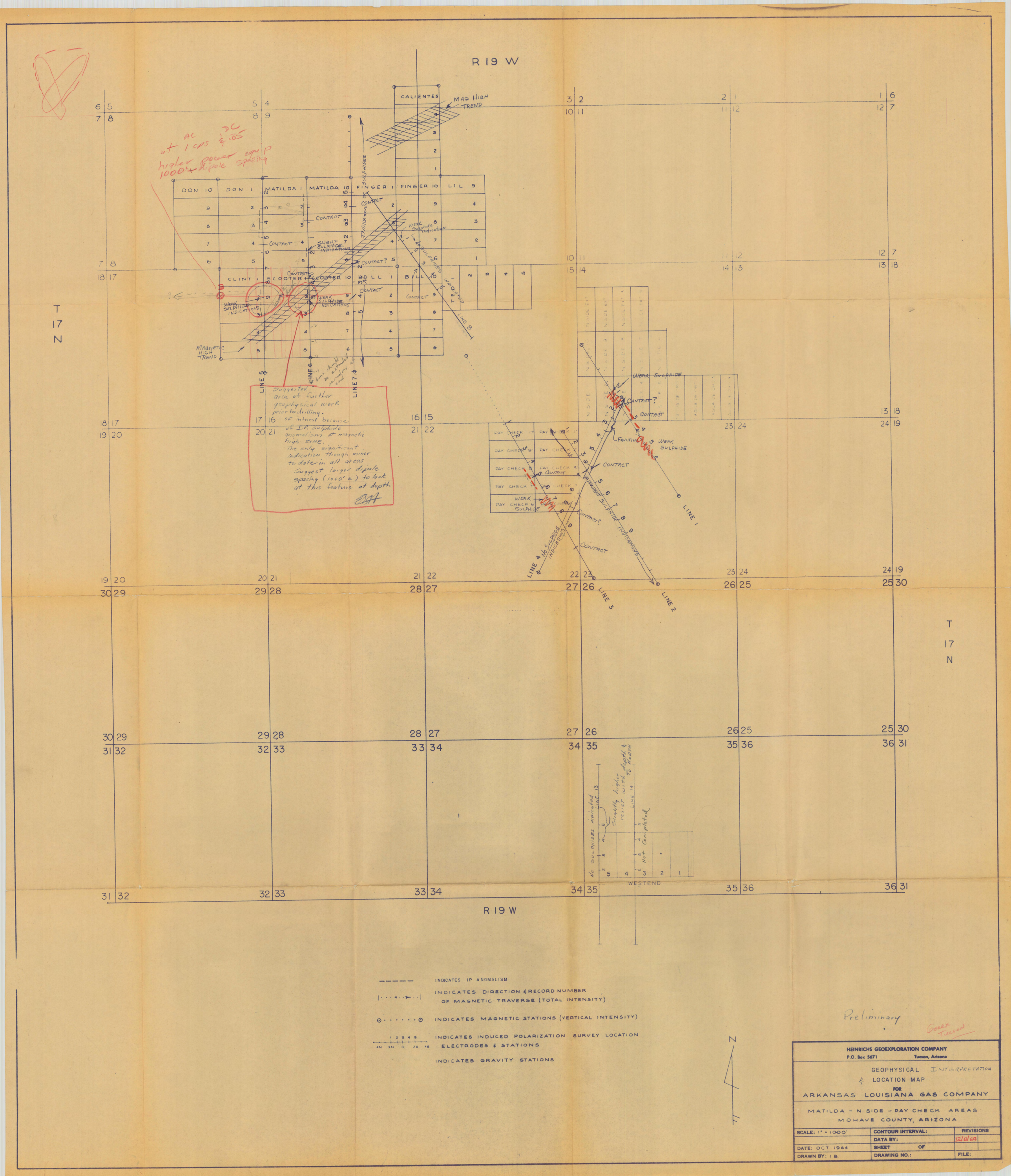
GEOPHYSICAL LOCATION MAP

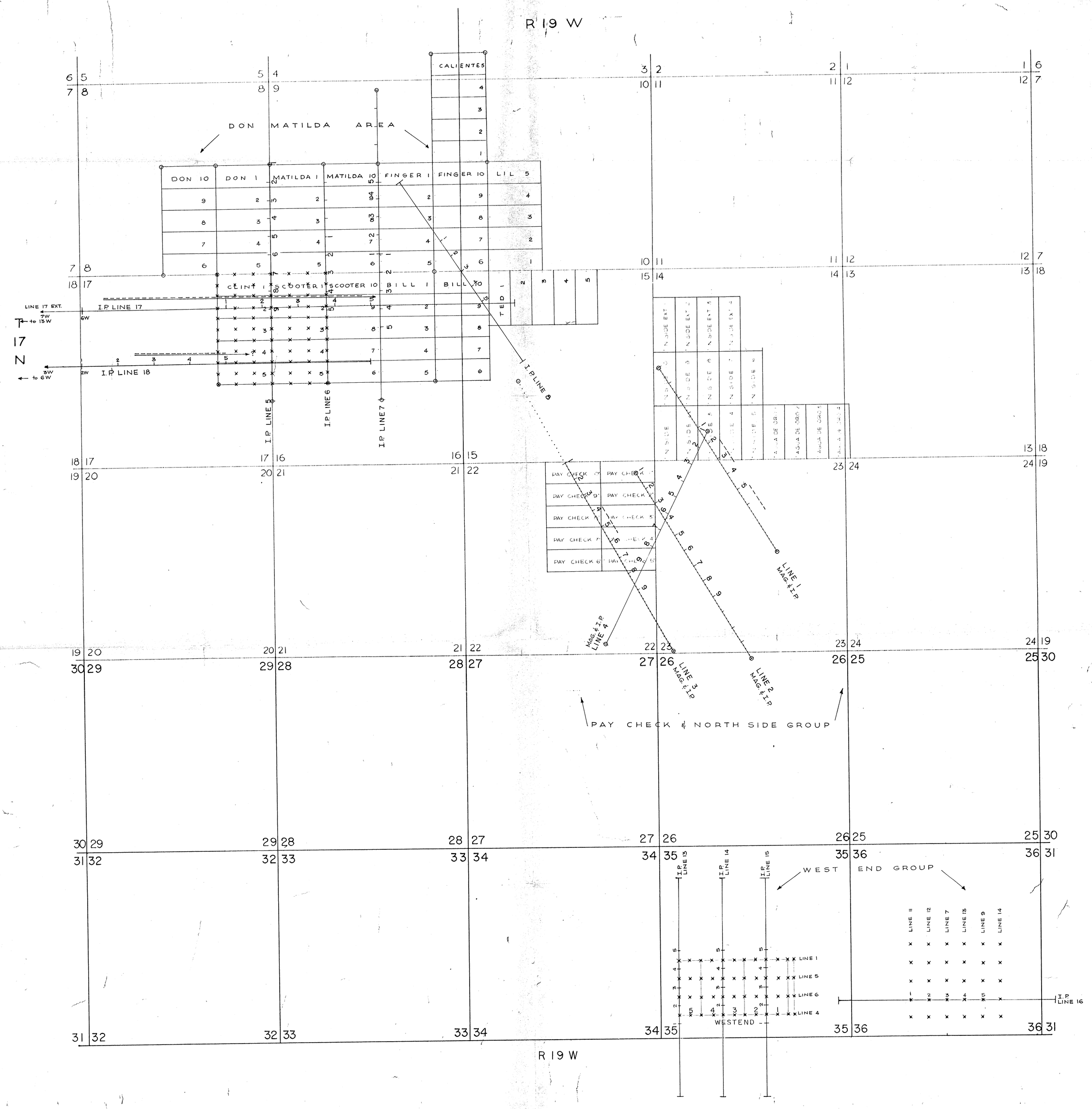
FOR

ARKANSAS LOUISIANA GAS COMPANY

DON-MATILDA-N. SIDE-PAY CHECK-
WEST END AREAS
MOHAVE COUNTY, ARIZONA

SCALE: 1" = 1000'	CONTOUR INTERVAL:	REVISIONS
	DATA BY:	1/66
DATE: OCT 1964	SHEET OF	
DRAWN BY:	DRAWING NO.:	FILE:


R 19 W
T 17 N
CALIENTES
MAG HIGH TREND
DON 10
DON 1
MATILDA 1
MATILDA 10
FINGER 1
FINGER 10
LIL 5
CLINT 1
SCOOTER 1
SCOOTER 10
BULL 1
BULL 10
TED 1
CONTACT
SLIGHT SULPHIDE INDICATIONS
WEAK SULPHIDE INDICATIONS
MAGNETIC HIGH TREND
LINE 5
LINE 6
LINE 7
LINE 8
LINE 1
LINE 2
LINE 3
LINE 4
PAY CHECK 1
PAY CHECK 2
PAY CHECK 3
PAY CHECK 4
PAY CHECK 5
PAY CHECK 6
PAY CHECK 7
PAY CHECK 8
PAY CHECK 9
WEAK SULPHIDE
CONTACT?
FAULTING
No SULPHIDE INDICATIONS
WESTEND
No SULPHIDES indicated LINE 13
Slightly higher resist with depth to NORTH
LINE 14
Not Completed
Suggested area of further geophysical work prior to drilling.
of interest because of I.P. sulphide anomalism & magnetic high ZONE.
The only significant indication though, minor to date in all areas
Suggest larger dipole spacing (1000' ±) to look at this feature at depth
AC at 1 cps & DC
higher power equip
1000'+ dipole spacing
INDICATES IP ANOMALISM
INDICATES DIRECTION & RECORD NUMBER OF MAGNETIC TRAVERSE (TOTAL INTENSITY)
INDICATES MAGNETIC STATIONS (VERTICAL INTENSITY)
INDICATES INDUCED POLARIZATION SURVEY LOCATION ELECTRODES & STATIONS
INDICATES GRAVITY STATIONS
N
Preliminary
Geex Tucson
HEINRICHS GEOEXPLORATION COMPANY
P.O. Box 5671 Tucson, Arizona
GEOPHYSICAL INTERPRETATION & LOCATION MAP
FOR
ARKANSAS LOUISIANA GAS COMPANY
MATILDA - N. SIDE - PAY CHECK AREAS
MOHAVE COUNTY, ARIZONA
SCALE: 1" = 1000'
CONTOUR INTERVAL:
REVISIONS
DATA BY:
12/8/64
DATE: OCT 1964
SHEET OF
DRAWN BY: I B
DRAWING NO.:
FILE:



× INDICATES GRAVITY STATIONS

– – – – – INDICATES IP ANOMALISM

INDICATES DIRECTION & RECORD NUMBER OF MAGNETIC TRAVERSE (TOTAL INTENSITY)

⊙ · · · · · · ⊙ INDICATES MAGNETIC STATIONS (VERTICAL INTENSITY)

1 2 3 4 5 — 4N 2N 0 2S 4S INDICATES INDUCED POLARIZATION SURVEY LOCATION ELECTRODES & STATIONS

N

HEINRICHS GEOEXPLORATION COMPANY
P.O. Box 5671 Tucson, Arizona

GEOPHYSICAL LOCATION MAP

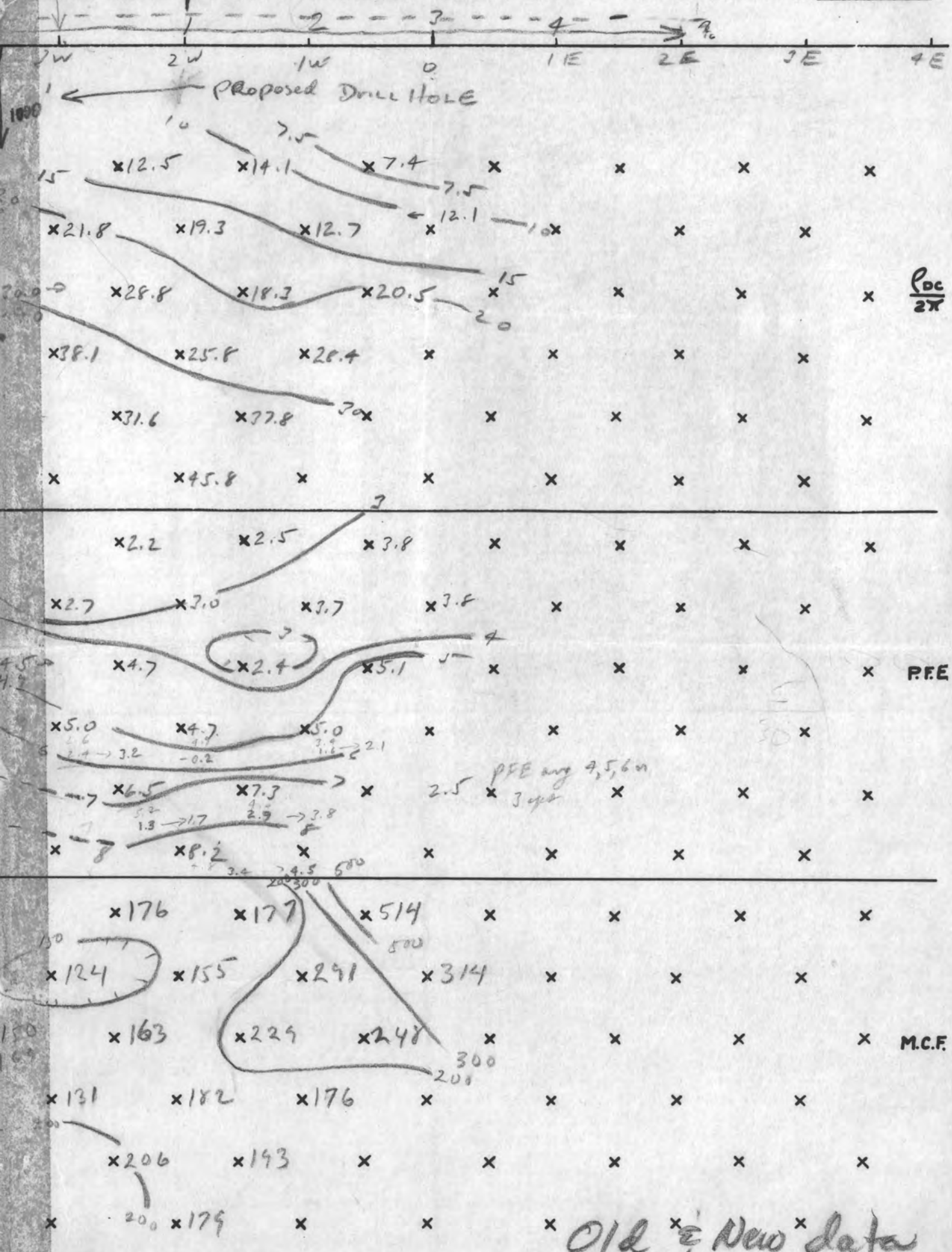
FOR

ARKANSAS LOUISIANA GAS COMPANY

DON-MATILDA - N. SIDE - PAY CHECK - WEST END AREAS
MOHAVE COUNTY, ARIZONA

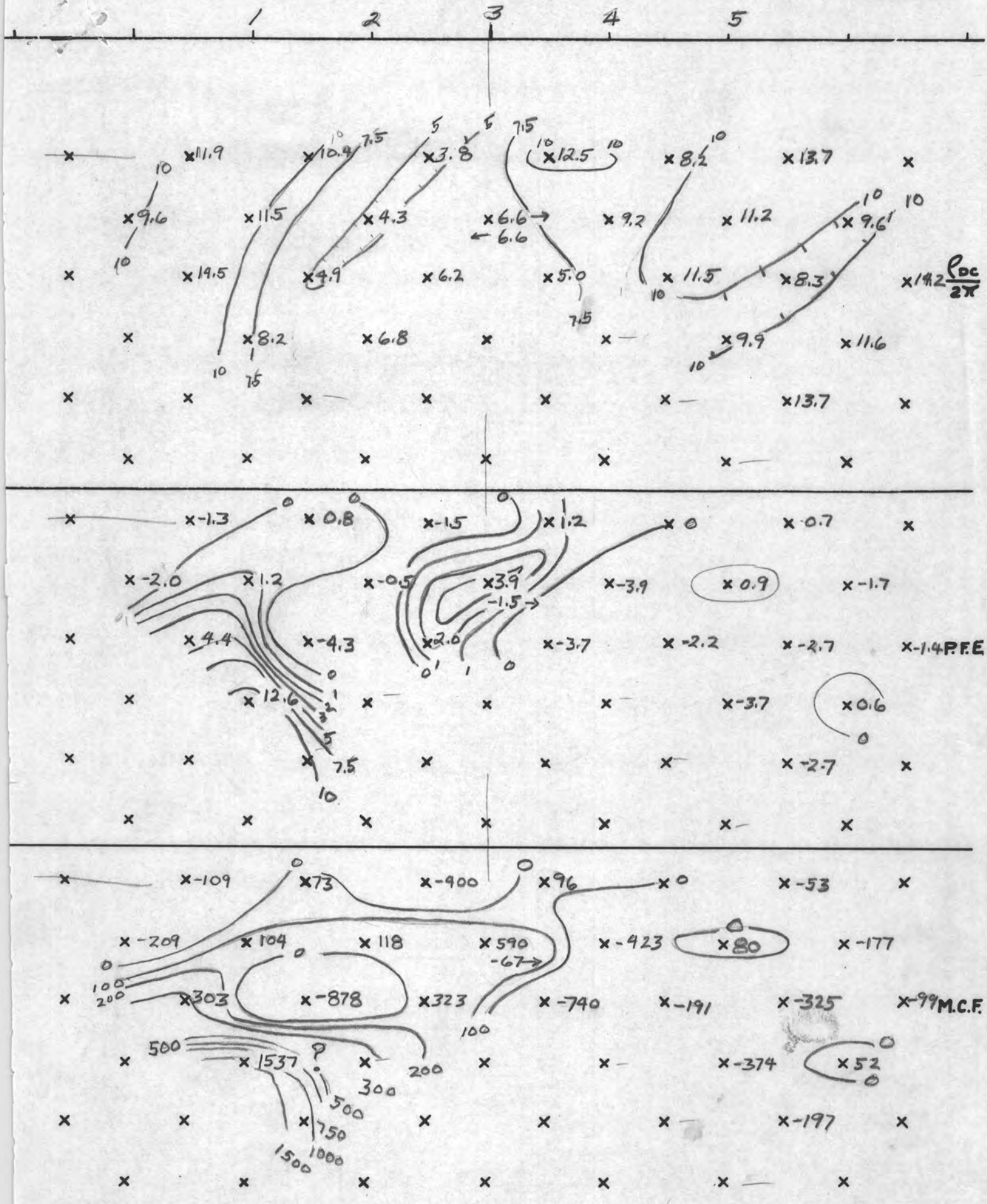
SCALE: 1" = 1000'	CONTOUR INTERVAL:	REVISIONS
	DATA BY:	1/66
DATE: OCT 1964	SHEET OF	
DRAWN BY:	DRAWING NO.:	FILE:

EINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING North



Matilda LINE 17 repeat lines a = 1000' SCALE: 1" = 100' DATE: 5-14-65

HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING W



ARKLA Mohave Co.

AREA BILL & FINGER LINE #8 a = 500' SCALE: 1" = 500' DATE: 11-20-64

HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING WEST

1 2 3 4 5

× × 11.9 × 10.4 × 3.8 × 12.5 × 8.2 × 13.7 ×

× 9.6 × 11.5 × 4.3 × 6.6 6.6 × 9.2 × 11.2 × 9.6

× × 14.5 × 4.9 × 6.2 × 5.0 × 11.5 × 8.3 × 14.2 ρ_{DC} / 2X

× × 8.2 × 6.8 × × 9.9 × 11.6

× × × × × × × 13.7 ×

× × × × × × ×

× × -1.3 × 0.8 × -1.5 × 1.2 × 0 × 0.7 ×

× -2.0 × 1.2 × -0.5 × 3.9 × -3.9 × 0.9 × -1.7

× × 4.4 × -4.3 × 2.0 × -3.7 × -2.2 × -2.7 × -1.4 P.F.E

× × 12.6 × × × × -3.7 × 0.6

× × × × × × × -2.7 ×

× × × × × × ×

× × -109 × 73 × -400 × 96 × 0 × -53 ×

× -209 × 104 × 118 × 590 × -423 × 80 × -177

× × 303 × -878 × 323 × -740 × -191 × -325 × -99 M.C.F.

× 500 × 1537? × × × × -374 × 52

× × × × × × × -197 ×

× × × × × × ×

AREA ARKLA Hall & Finger LINE #8 a = 500' SCALE: 1"=500' DATE: 11-20-64

HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING WEST

1 2 3 4 5

×	×	11.9	×	10.4	×	3.8	×	12.5	×	8.2	×	13.7	×	
×	9.6	×	11.5	×	4.3	×	6.6	×	9.2	×	11.2	×	9.6	
×	×	14.5	×	4.9	×	6.2	×	5.0	×	11.5	×	8.3	×	14.2 ρ_{DC} / 2π
×	×	8.2	×	6.8	×	×	×	×	×	9.9	×	11.6		
×	×	×	×	×	×	×	×	×	×	×	×	13.7	×	
×	×	×	×	×	×	×	×	×	×	×	×	×		

×	×	-1.3	×	0.8	×	-1.5	×	1.2	×	0	×	0.7	×	
×	-2.0	×	1.2	×	-0.5	×	3.9	×	-3.9	×	0.9	×	-1.7	
×	×	4.4	×	-4.3	×	2.0	×	-3.7	×	-2.2	×	-2.7	×	-1.4 P.F.E
×	×	12.6	×	×	×	×	×	×	×	-3.7	×	0.6		
×	×	×	×	×	×	×	×	×	×	×	×	-2.7	×	
×	×	×	×	×	×	×	×	×	×	×	×	×		

×	×	-109	×	73	×	-400	×	96	×	0	×	-53	×	
×	-209	×	104	×	118	×	590	×	-423	×	80	×	-177	
×	×	303	×	-878	×	323	×	-740	×	-191	×	-325	×	-99 M.C.F.
×	500	×	1537?	×	×	×	×	×	×	-374	×	52		
×	×	×	×	×	×	×	×	×	×	×	×	-197	×	
×	×	×	×	×	×	×	×	×	×	×	×	×		

AREA ARKLA Hill & Finger LINE #8 a = 500 SCALE: 1"=500' DATE: 11-20-64

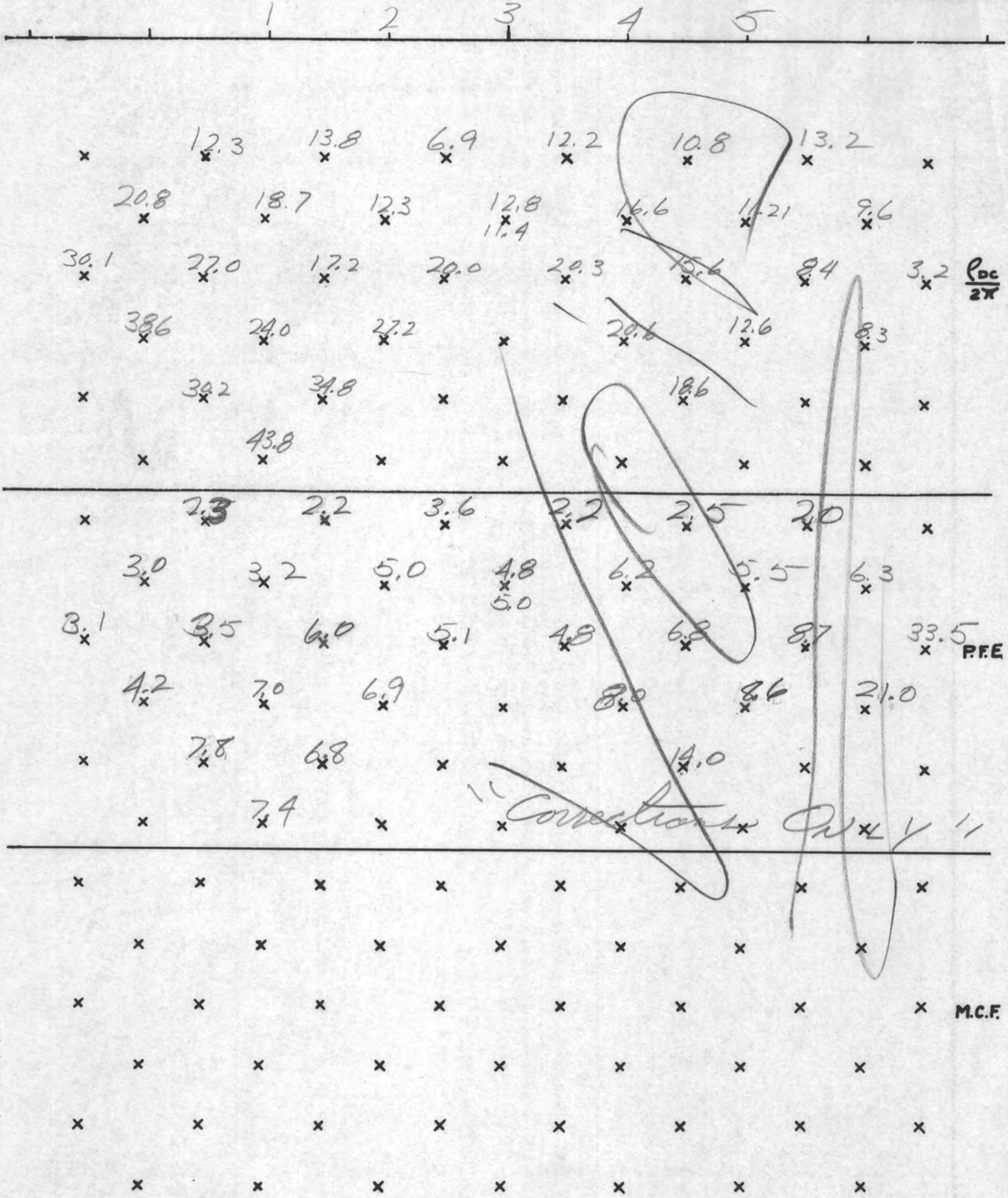
HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING WEST

1 2 3 4 5

×		×	11.9	×	10.4	×	3.8	×	12.5	×	8.2	×	13.7	×					
	×	9.6	×	11.5	×	4.3	×	6.6 6.6	×	9.2	×	11.2	×	9.6					
×		×	14.5	×	4.9	×	6.2	×	5.0	×	11.5	×	8.3	×	14.2	$\frac{\rho_{DC}}{2\pi}$			
	×		×	8.2	×	6.8	×		×		×	9.9	×	11.6					
×		×		×		×		×		×		×	13.7	×					
	×		×		×		×		×		×		×						
×		×	-1.3	×	0.8	×	-1.5	×	1.2	×	0	×	0.7	×					
	×	-2.0	×	1.2	×	-0.5	×	3.9	×	-3.9	×	0.9	×	-1.7					
×		×	4.4	×	-4.3	×	2.0	×	-3.7	×	-2.2	×	-2.7	×	-1.4	P.F.E			
	×		×	12.6	×		×		×		×	-3.7	×	0.6					
×		×		×		×		×		×		×	-2.7	×					
	×		×		×		×		×		×		×						
×		×	-109	×	73	×	-400	×	96	×	0	×	-53	×					
	×	-209	×	104	×	118	×	590	×	-423	×	80	×	-177					
×		×	303	×	-878	×	323	×	-740	×	-191	×	-325	×	-99	M.C.F.			
	×	500	×	1537?	×		×		×		×	-374	×	52					
×		×		×		×		×		×		×	-197	×					
	×		×		×		×		×		×		×						

AREA ARELA Hill & Finger LINE #8 a = 500 SCALE: 1"=500' DATE: 11-20-64

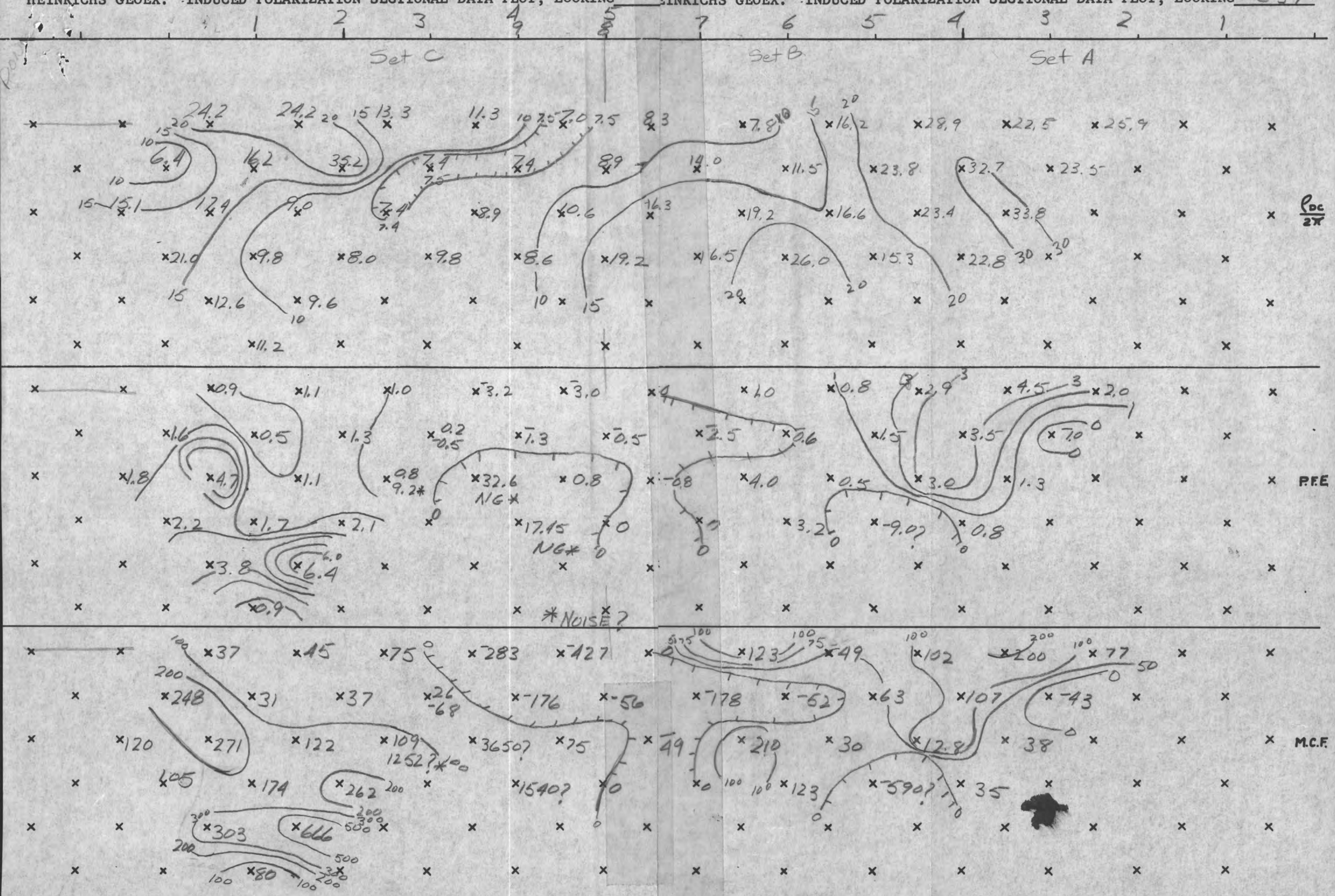
HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING North



AREA_____ LINE_____ a = ' SCALE:_____ DATE:_____

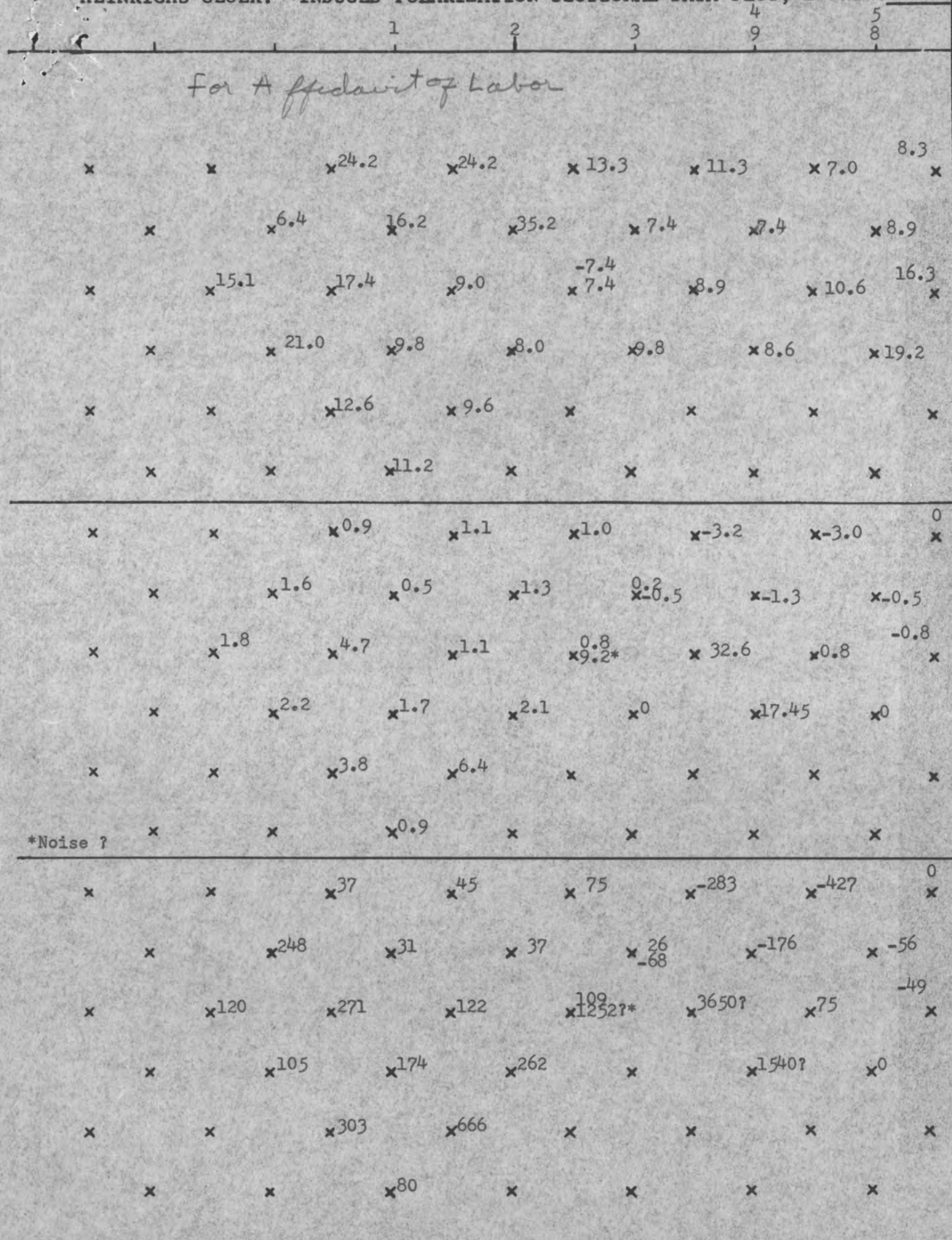
HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING

HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING West

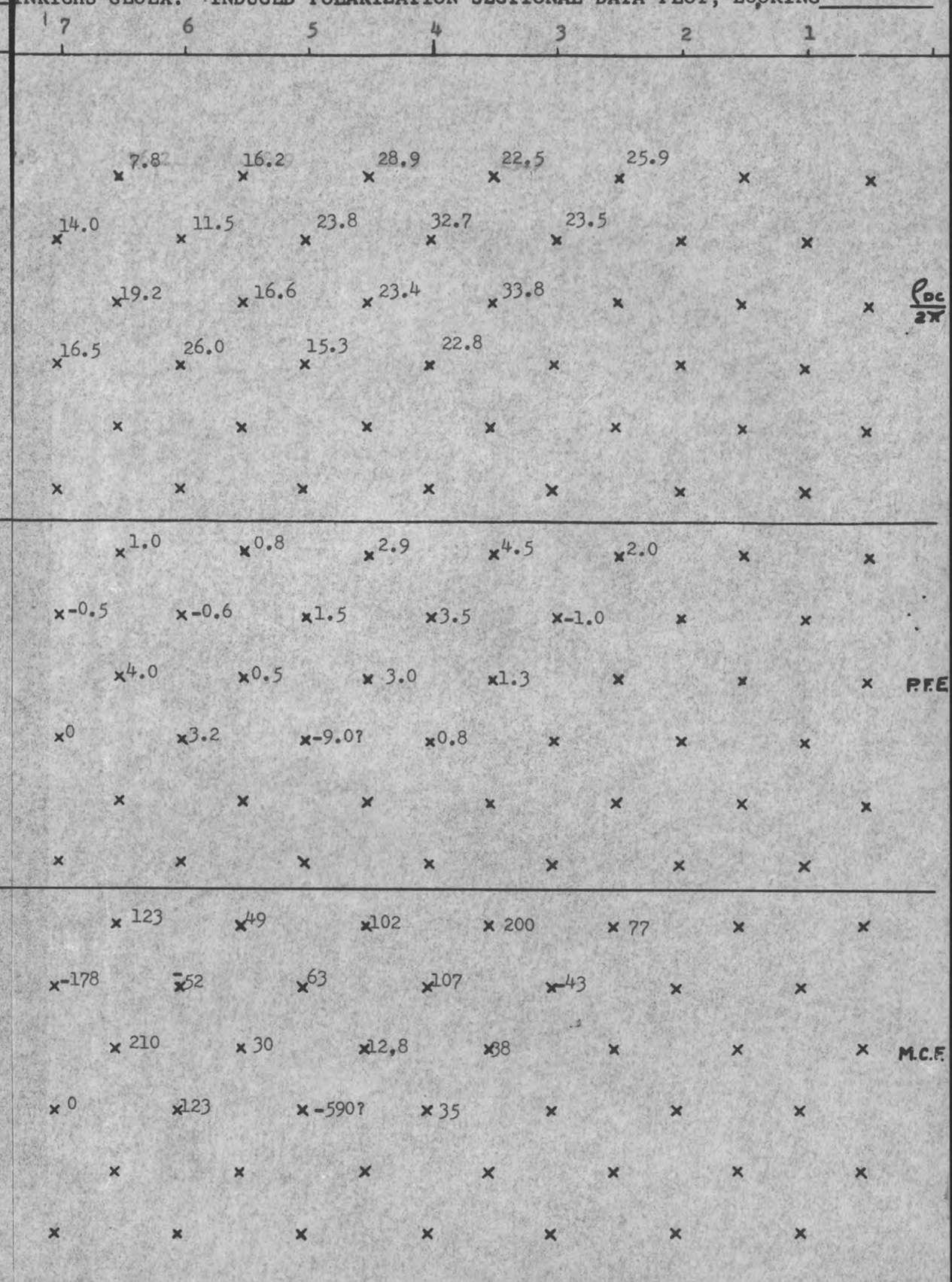


EA Don Matilda LINE 5 a = 500' SCALE: 1" = 500 DATE: 11-10-64 LINE 5 a = ' SCALE: DATE:

HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING



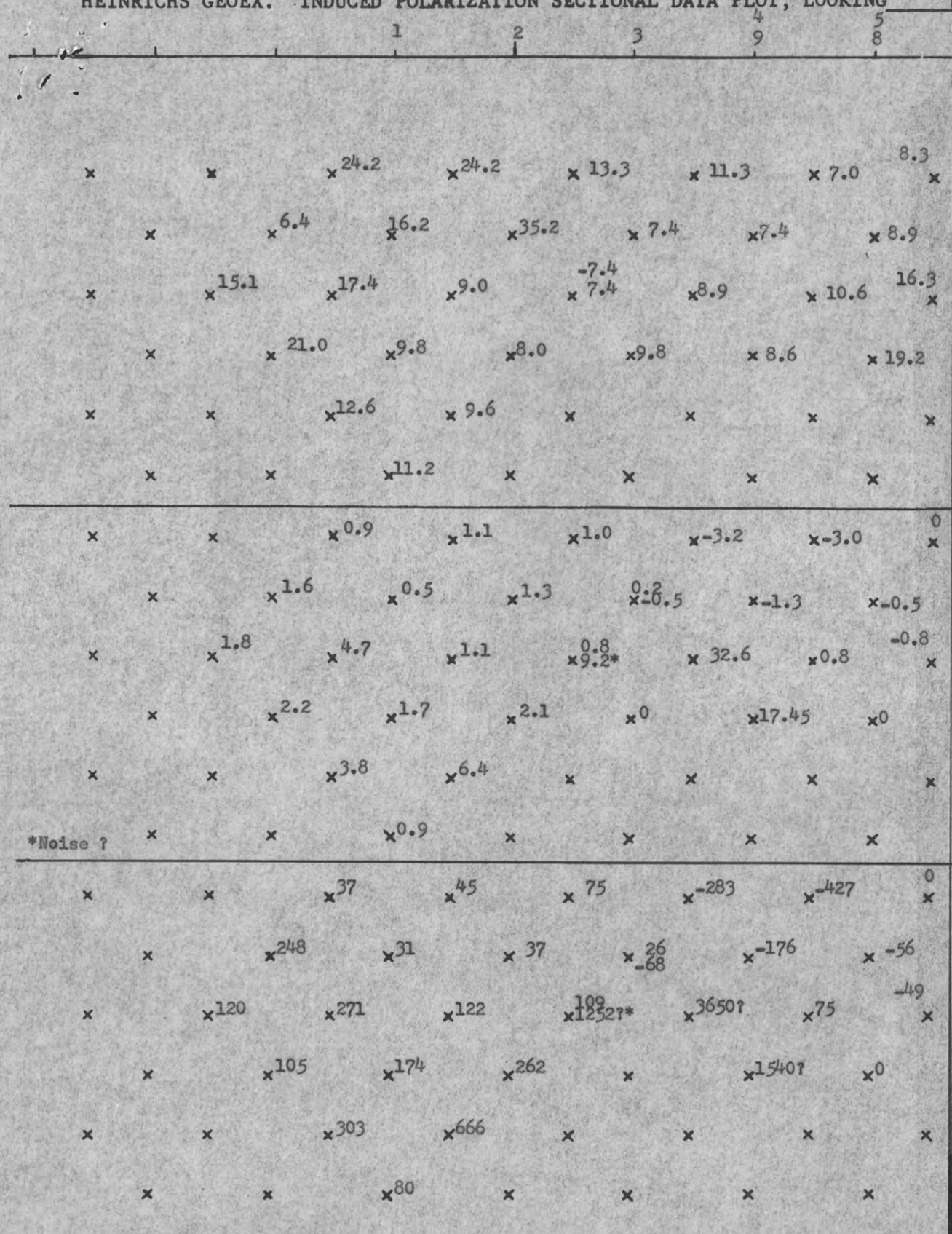
INRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING WEST



AREA Don Matilda LINE 5 a = 500 ' SCALE: 1"=500 DATE: 11-10-64

LINE 5 a = ' SCALE: DATE:

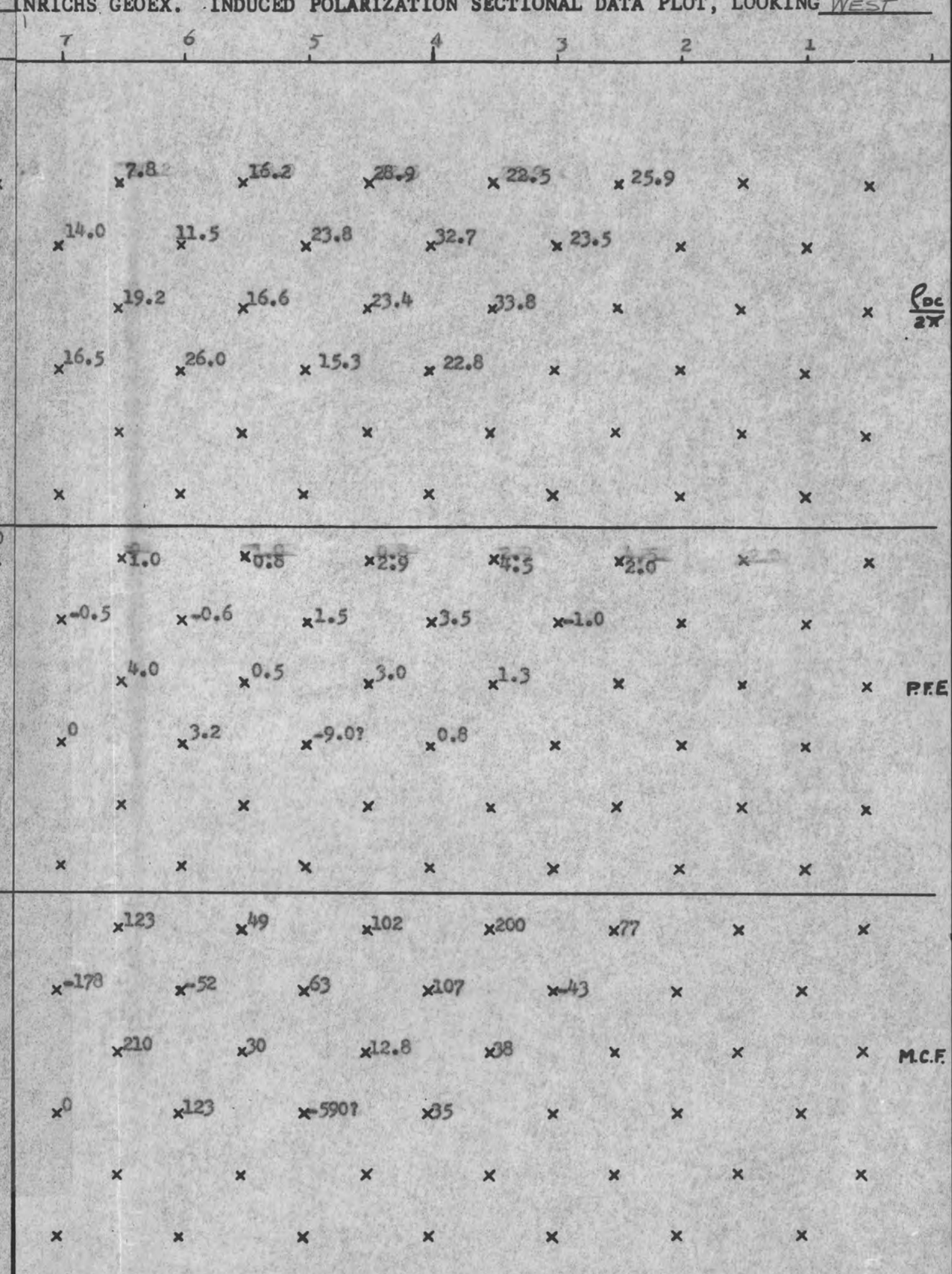
HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING



*Noise ?

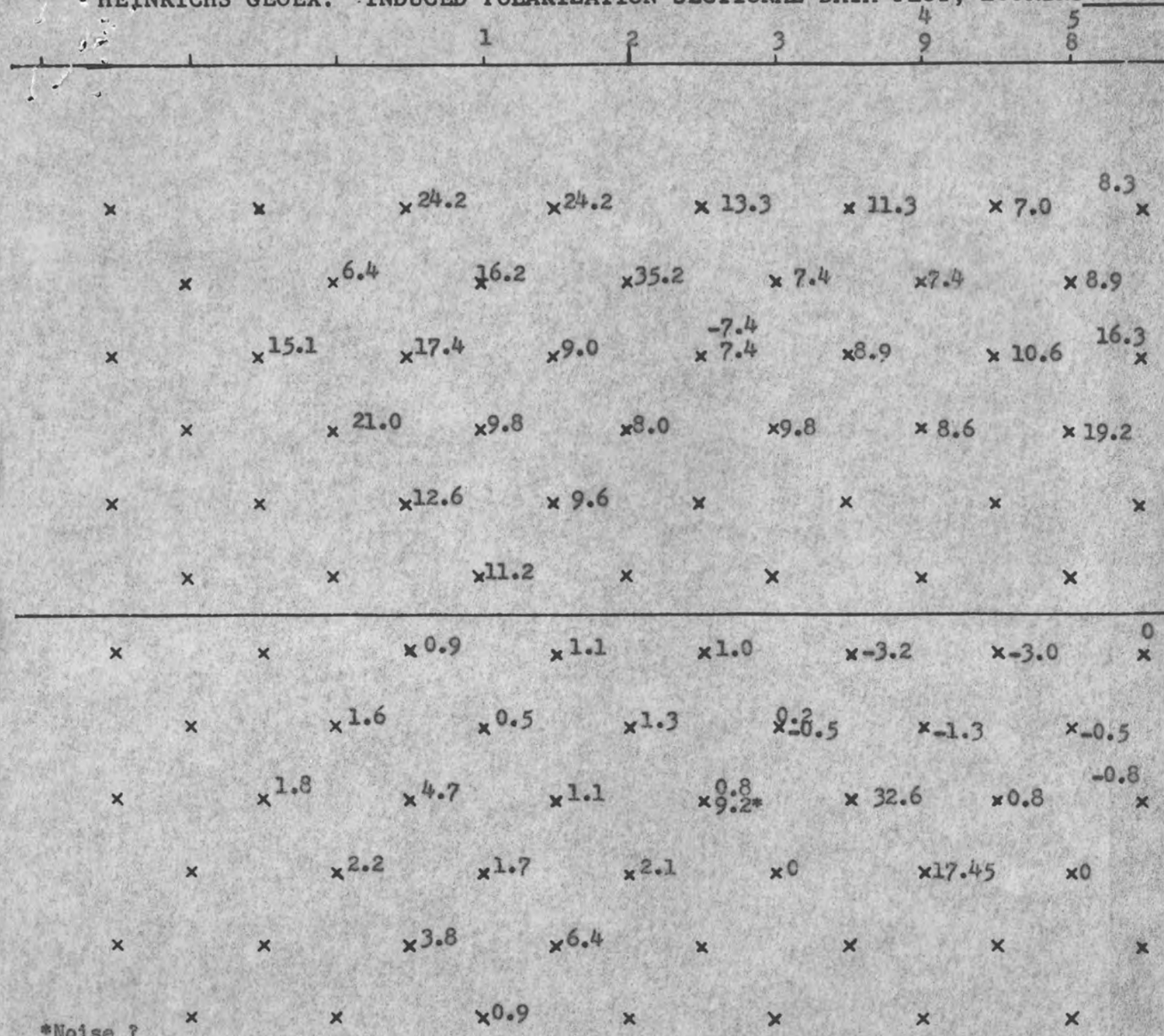
AREA Don Matilda LINE 5 a = 500 ' SCALE: 1"=500 DATE:

INRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING WEST



11-10-64 LINE 5 a = ' SCALE: DATE:

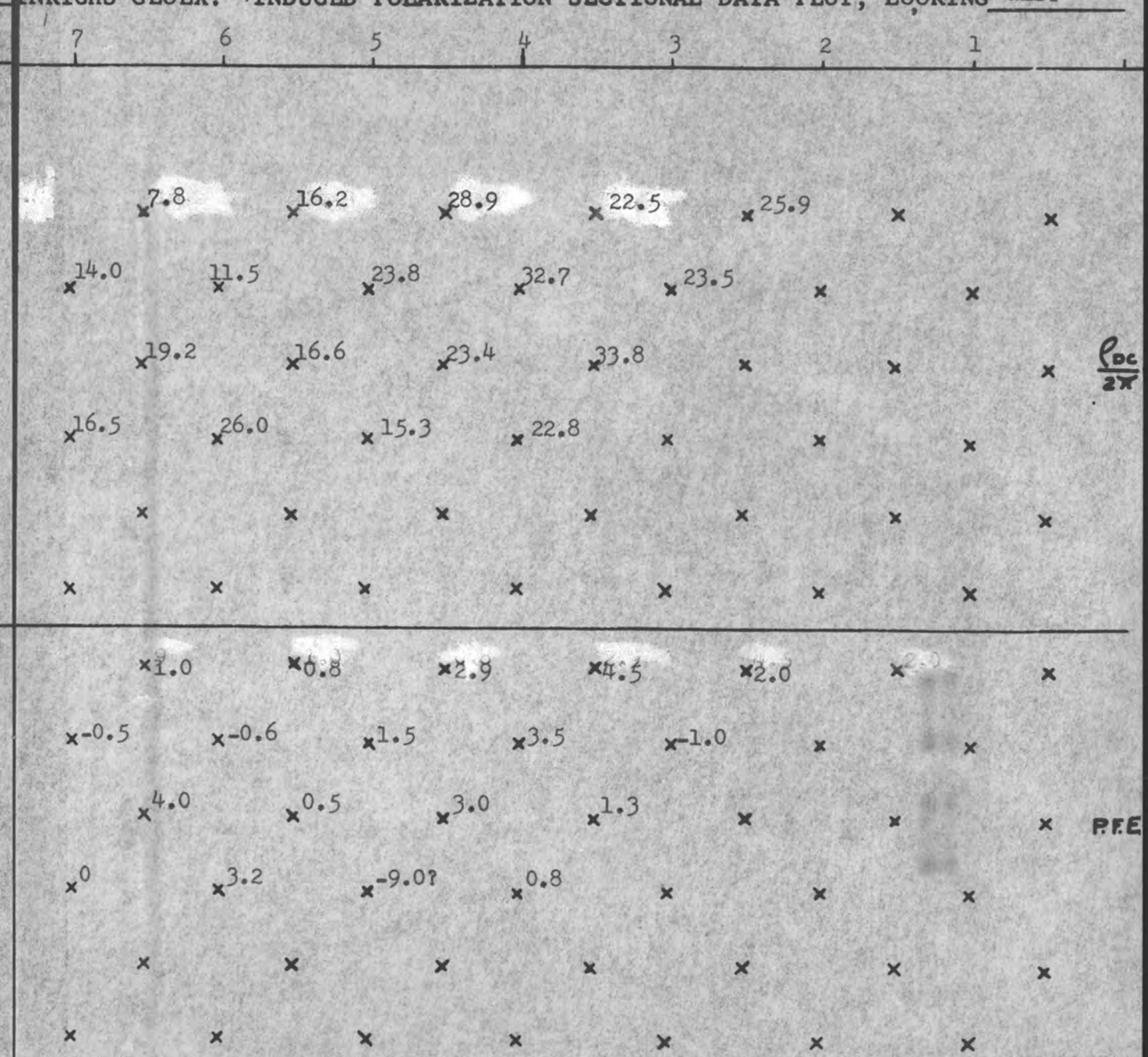
HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING



*Noise ?

AREA Don Matilda LINE 5 a = 500 ' SCALE: 1"=500 DATE:

INRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING WEST



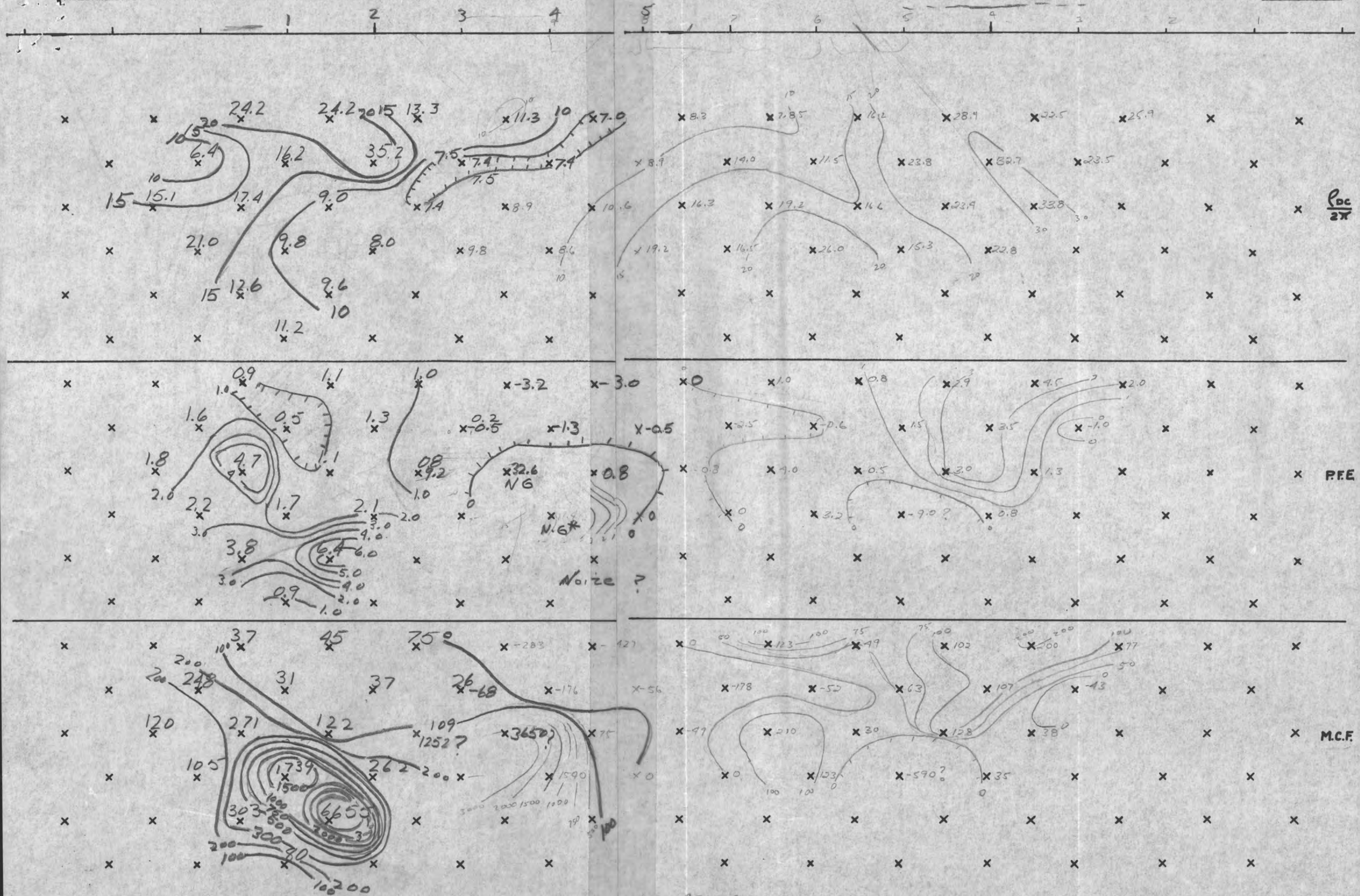
ρ_{DC} / 2π

P.F.E.

M.C.F.

11-10-64 LINE 5 a = ' SCALE: DATE:

HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING



AREA DON-MATILDA LINE 5 a = 500' SCALE:

AREA ARKLA DON & MATILDA LINE 5 a = 500' SCALE: 1" = 500' DATE: 11-10-64

HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING W

AREA _____ LINE #7 a = ' SCALE: _____

AREA ARKLA MATILDA & SCOOTER LINE 7 a = 500 ' SCALE: 1" = 500' DATE: 11-13-69

HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING W

ELECTRODE 5 4 3

for Affidavit of Labor

	56.0	8.23	46.5			4.0
12.3	9.1	20.4	10.3	11.2		
7.5	6.5	19.6	13.2			13.5
	13.7	12.1				

	2.7	1.1	0			
3.0	1.0	0	1.8			
0	1.8	3.8	-1.0			3.7
	1.6	-0.3				

	48	134	0			0
245	110	0	161			
0	277	194	-76			274
150	117	-25				

ARKLA DON

AREA Matilda & Scooter LINE 7 a = 500 ' SCALE: 1"=500'

HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING W

2 1 2 3 4 5 6 7

	25.3	13.3	24.3	15.7	30.4	19.7		
19.8	10.4	23.2	190	20.6	33.1	29.0		
	8.9	22.8	17.2	22.7	19.1	33.2	42.1	
5.6	16.0	18.7		20.7	17.3	58.0	50.3	
		12.1						

ρ_{DC} / 2π

	1.9	1.7	0.5	-1	1.0	-0.5		
2.5	1.0	1.7	6.0	1	0.5	0.5		
0	3.2	1.5	0	-2	3.0	0.5		
	3.6	3.4		0	-0.5	2.0	-2.3	

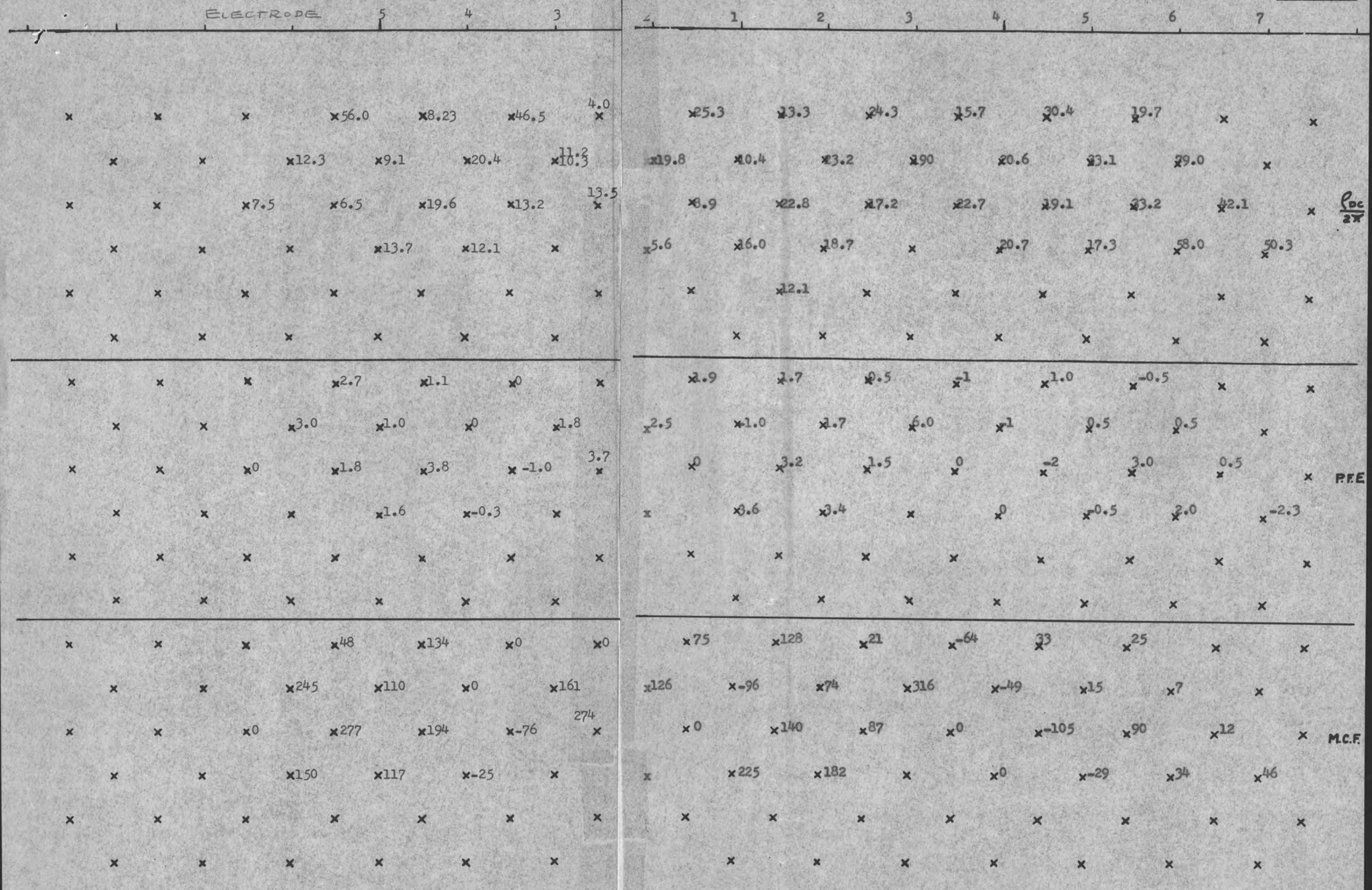
P.F.E.

	75	128	21	-64	33	25		
126	-96	74	316	-49	15	7		
0	140	87	0	-105	90	12		
	225	182		0	-29	34	46	

M.C.F.

AREA _____ LINE _____ a = ' SCALE: _____ DATE: 11-64

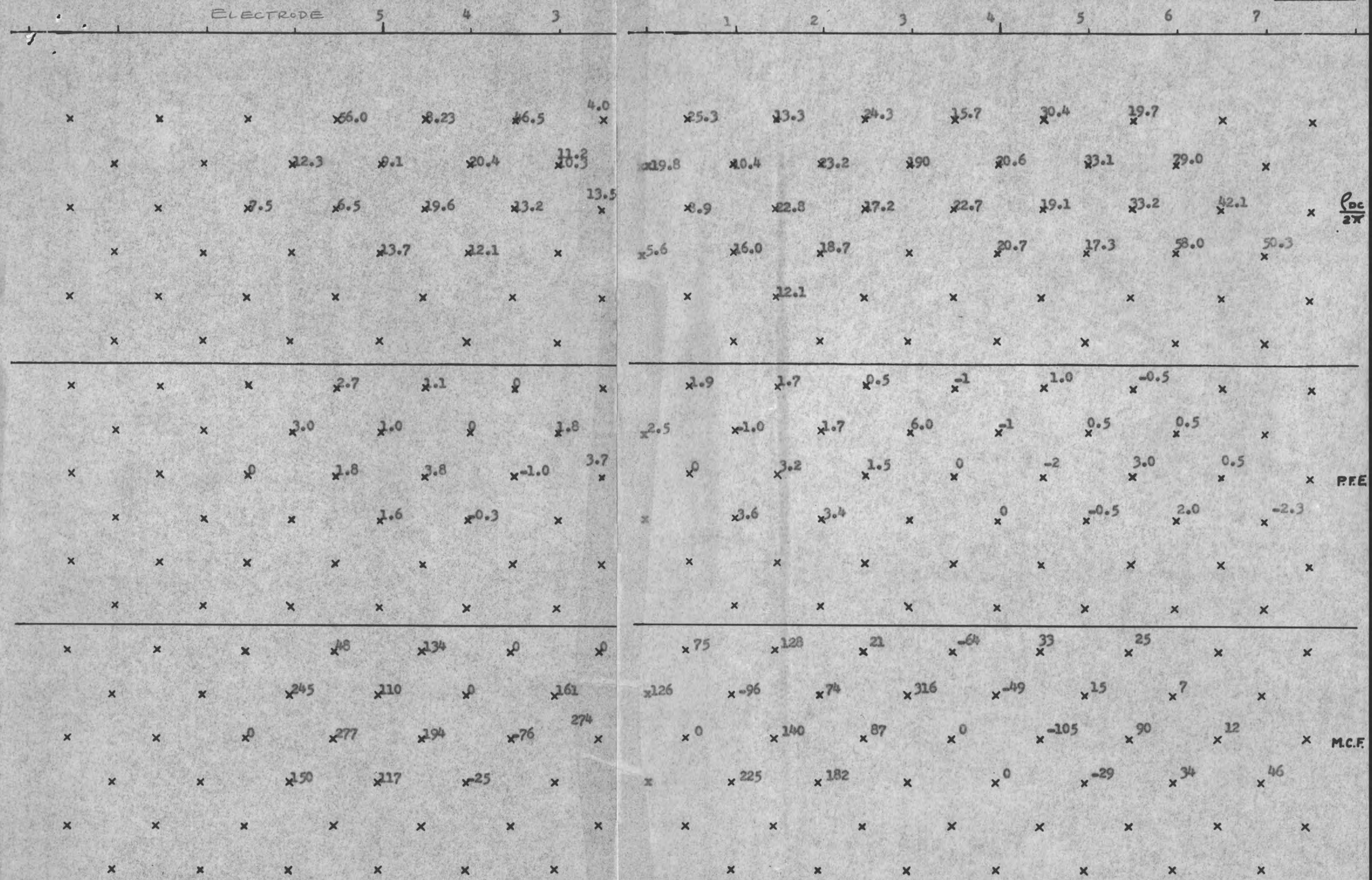
HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING W



AREA Matilda & Scooter (ARKLA DON) LINE 7 a = 500 ' SCALE: 1"=500'

AREA _____ LINE _____ a = ' SCALE: _____ DATE: 11-64

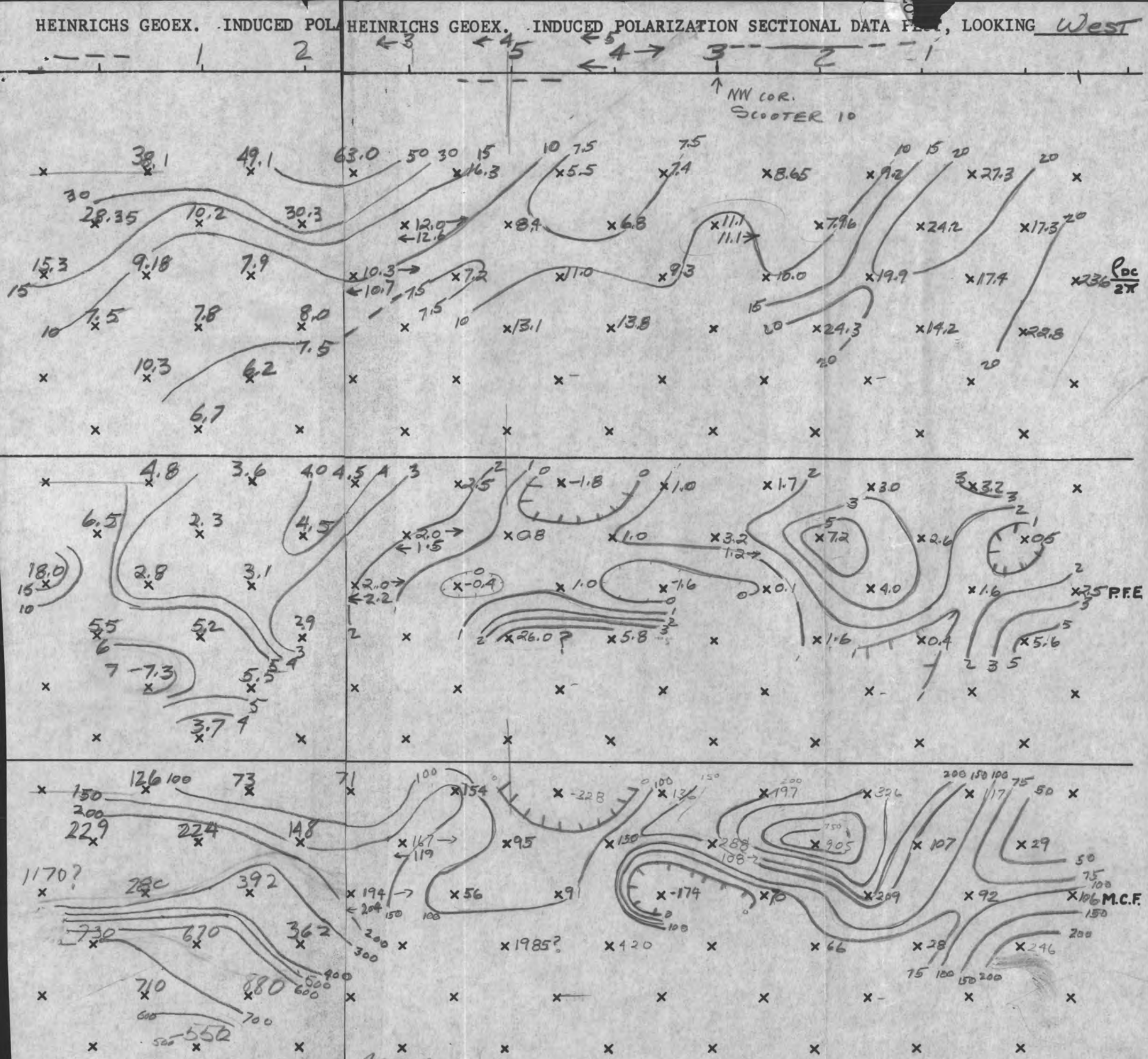
HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING W



AREA ARKLA DON Matilda & Scooter LINE 7 a = 500 ' SCALE: 1"=500'

AREA _____ LINE _____ a = ' SCALE: _____ DATE: 11-64

HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA FEET, LOOKING West

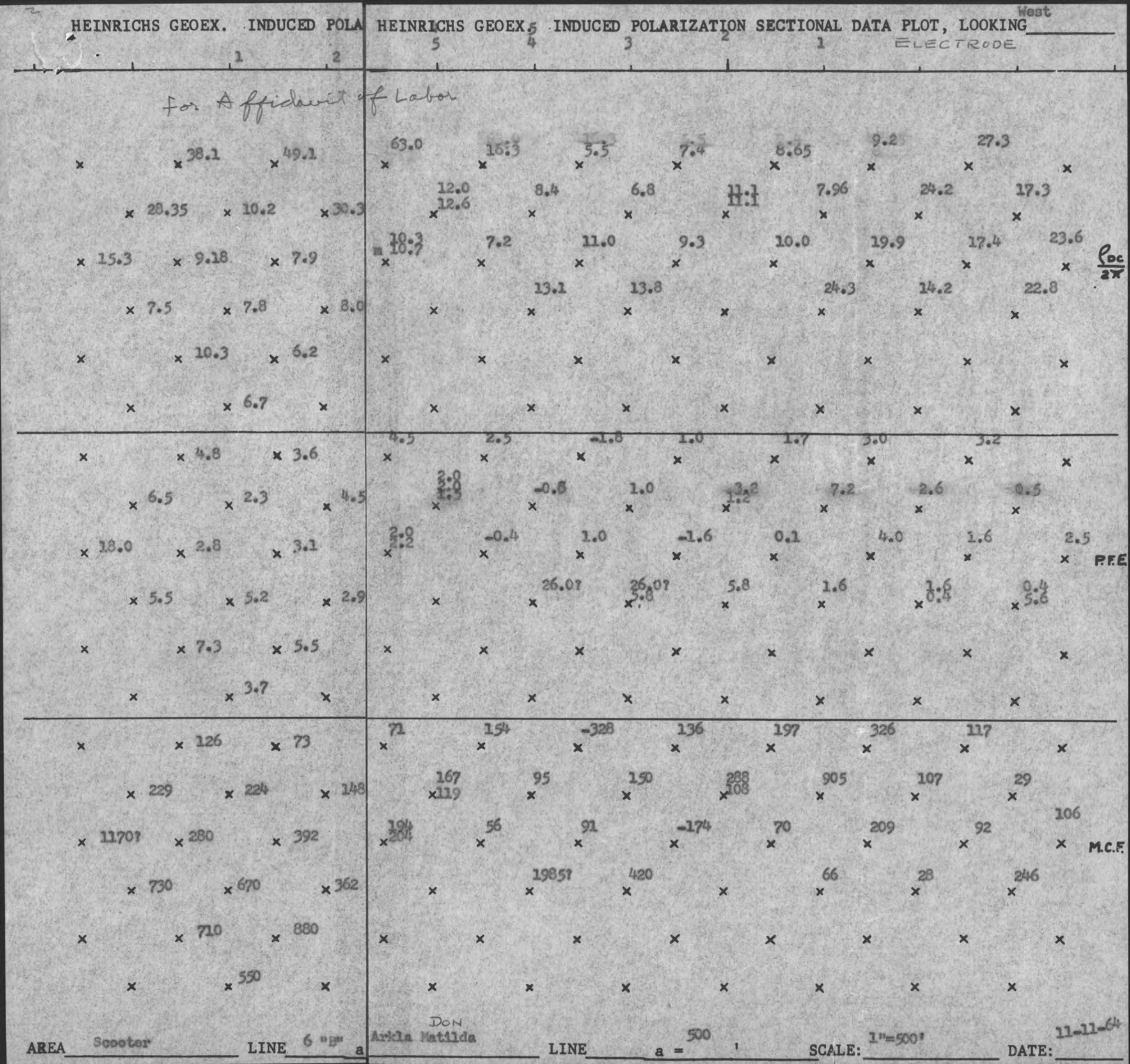


A SCOOTER LINE 6"B" a LINE 6 a = 500' SCALE: 1"=500' DATE: 11-11-69

HEINRICHS GEOEX. INDUCED POLA HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING West

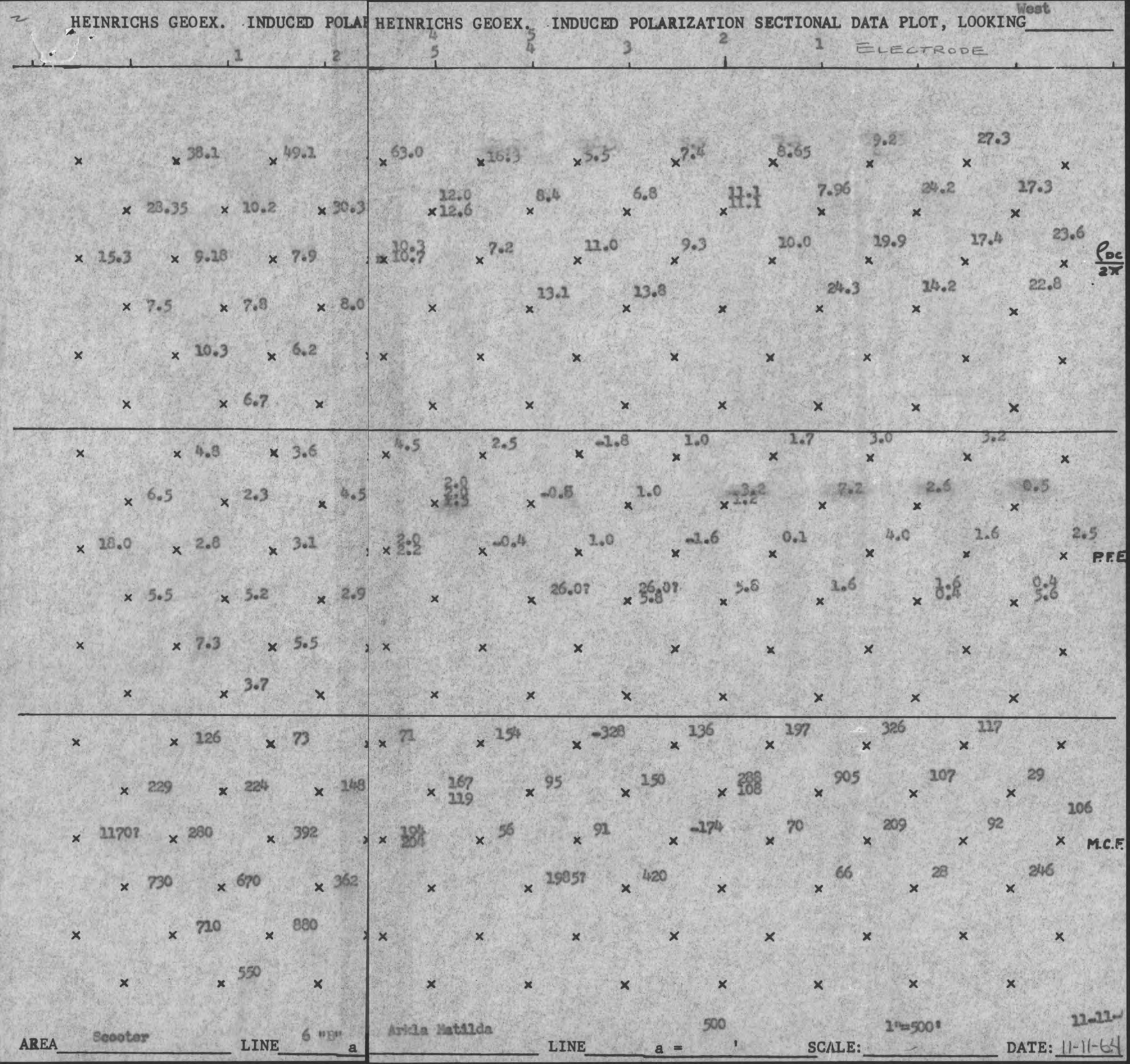
ELECTRODE

for Affidavit of Labor

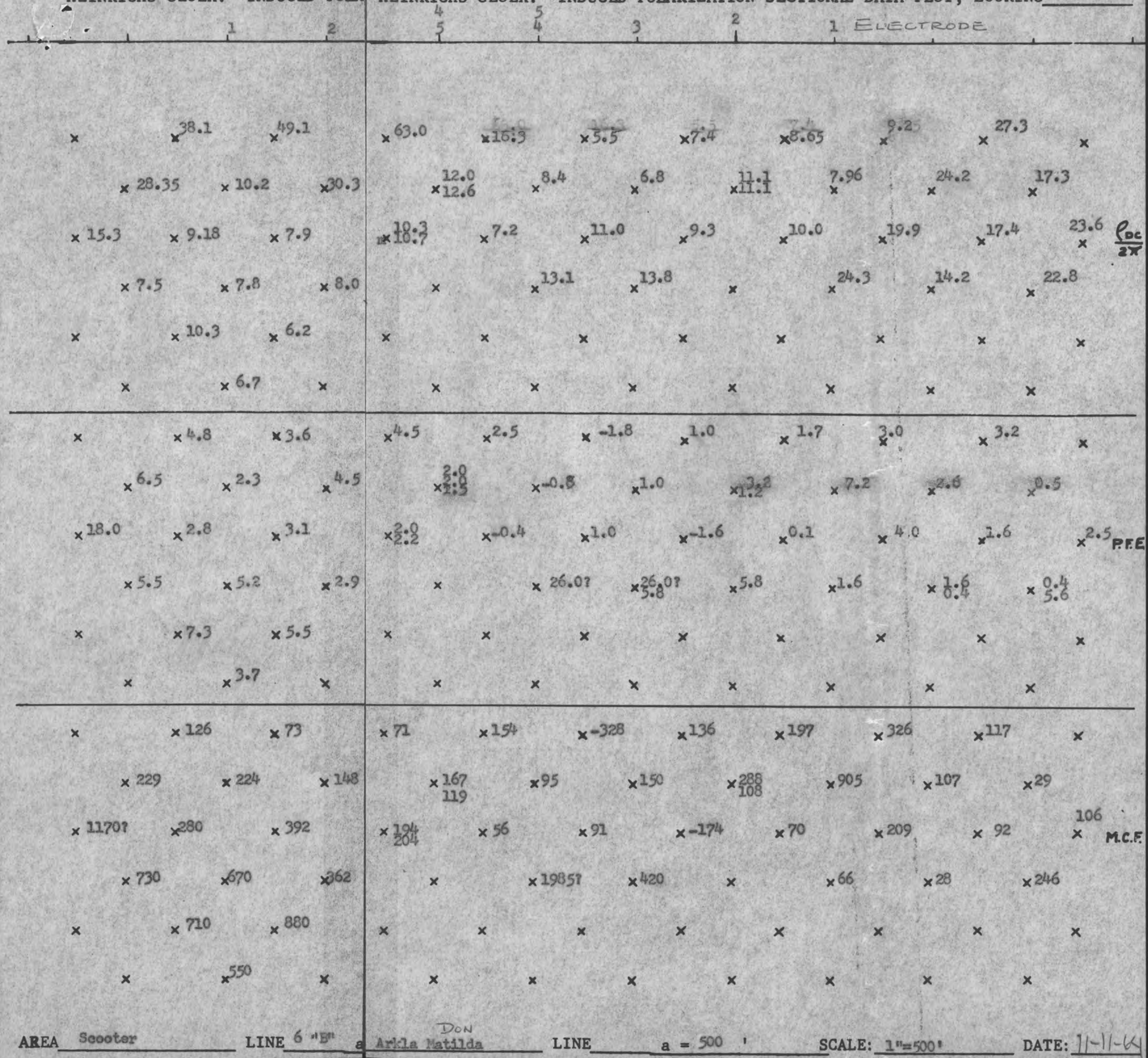


AREA Scooter LINE 6 "B" a Arkla Matilda DON LINE a = 500 ' SCALE: 1"=500' DATE: 11-11-64

HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING West



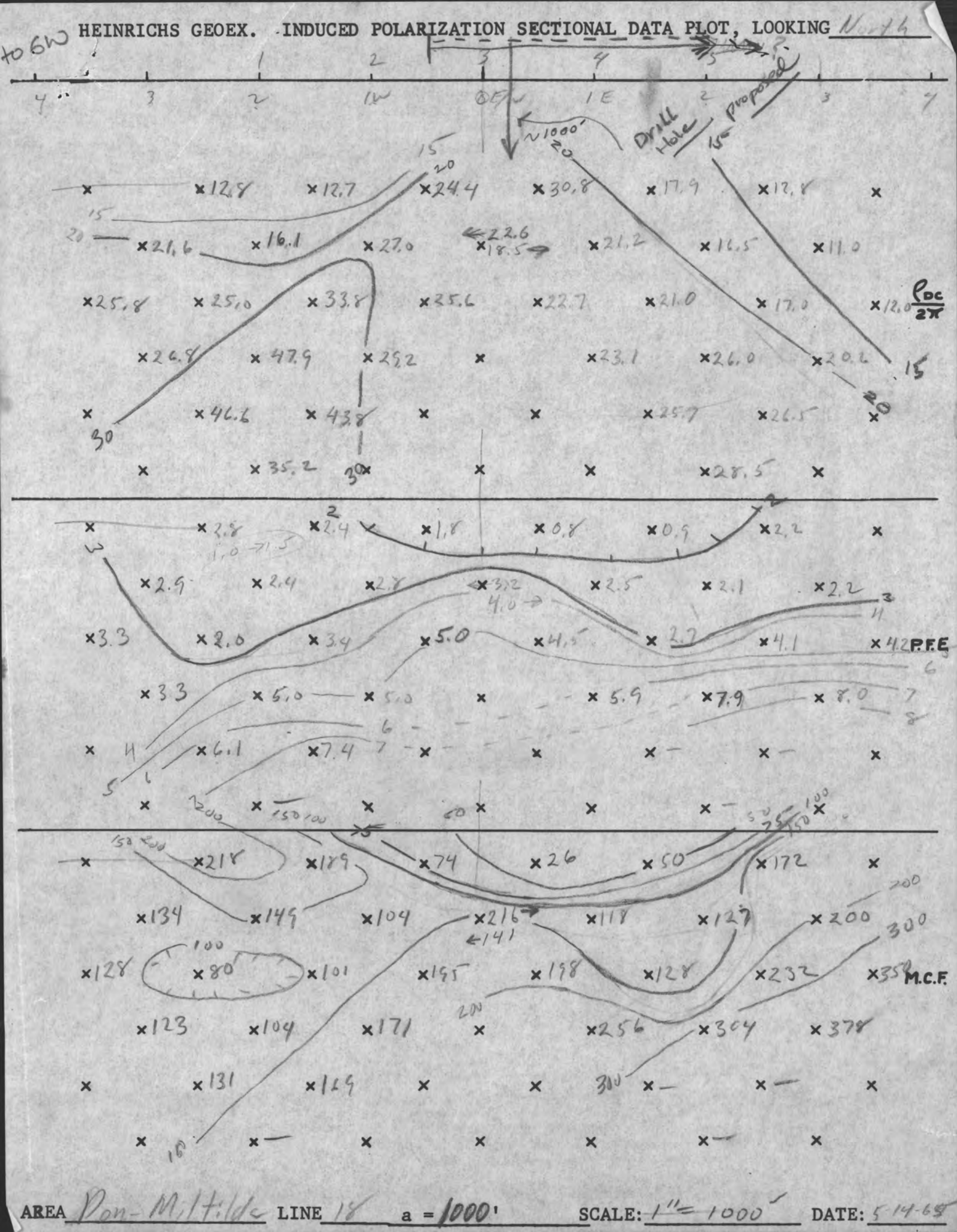
HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING West



AREA Scooter LINE 6 "B" a Arkla Matilda (DON) LINE a = 500 ' SCALE: 1"=500' DATE: 11-11-64

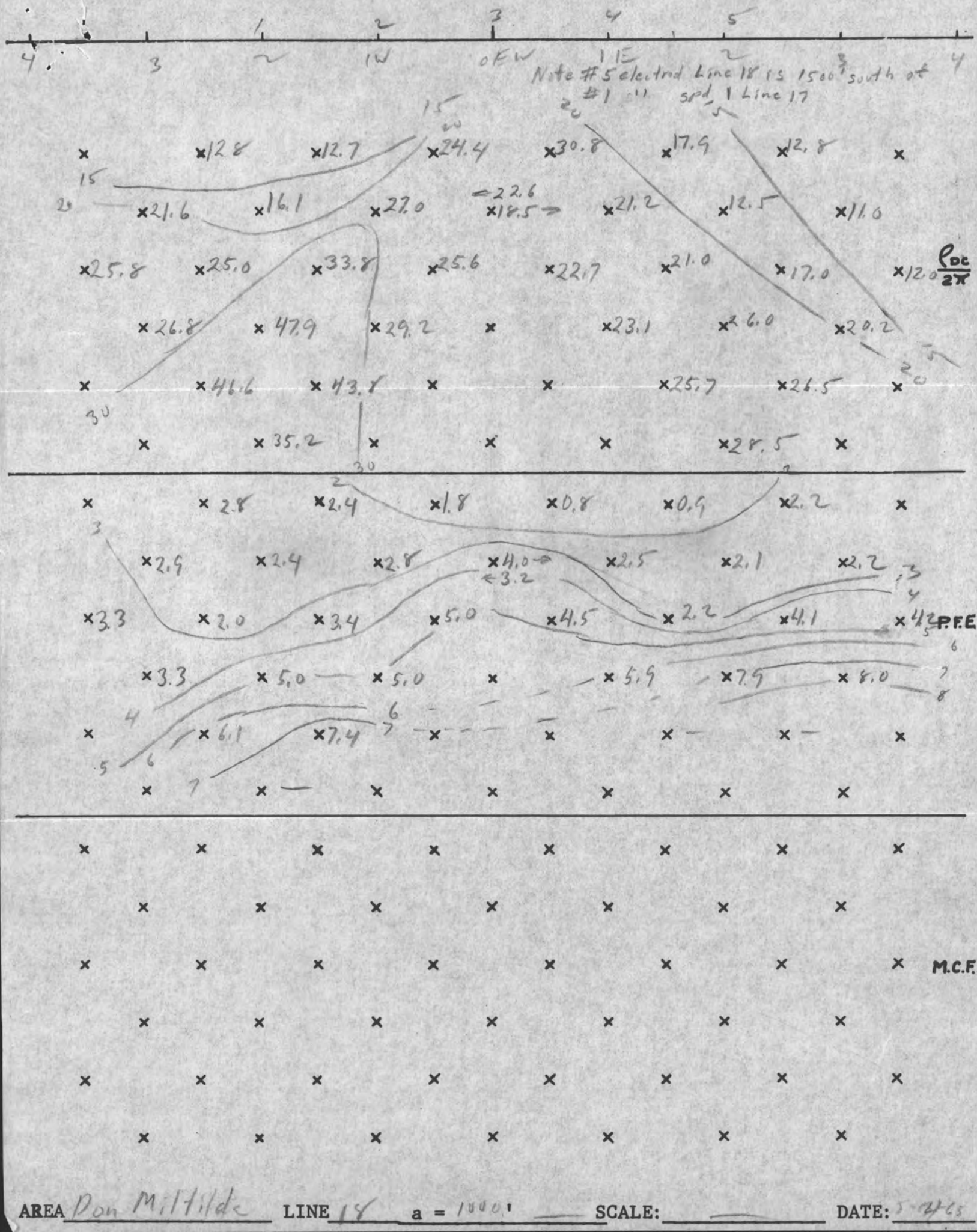
to GW

HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING North



AREA Don-Mildred LINE 18 a = 1000' SCALE: 1" = 1000' DATE: 5-14-65

HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING North



AREA Don Millilde LINE 18 a = 1000.' SCALE: DATE: 5-24-85

Keith
801 Spring st
Kingman Ariz

KINGMAN, ARIZ.
MAY 14
PM
1965

FIGHT TB
SUPPORT YOUR
TB ASSOCIATION

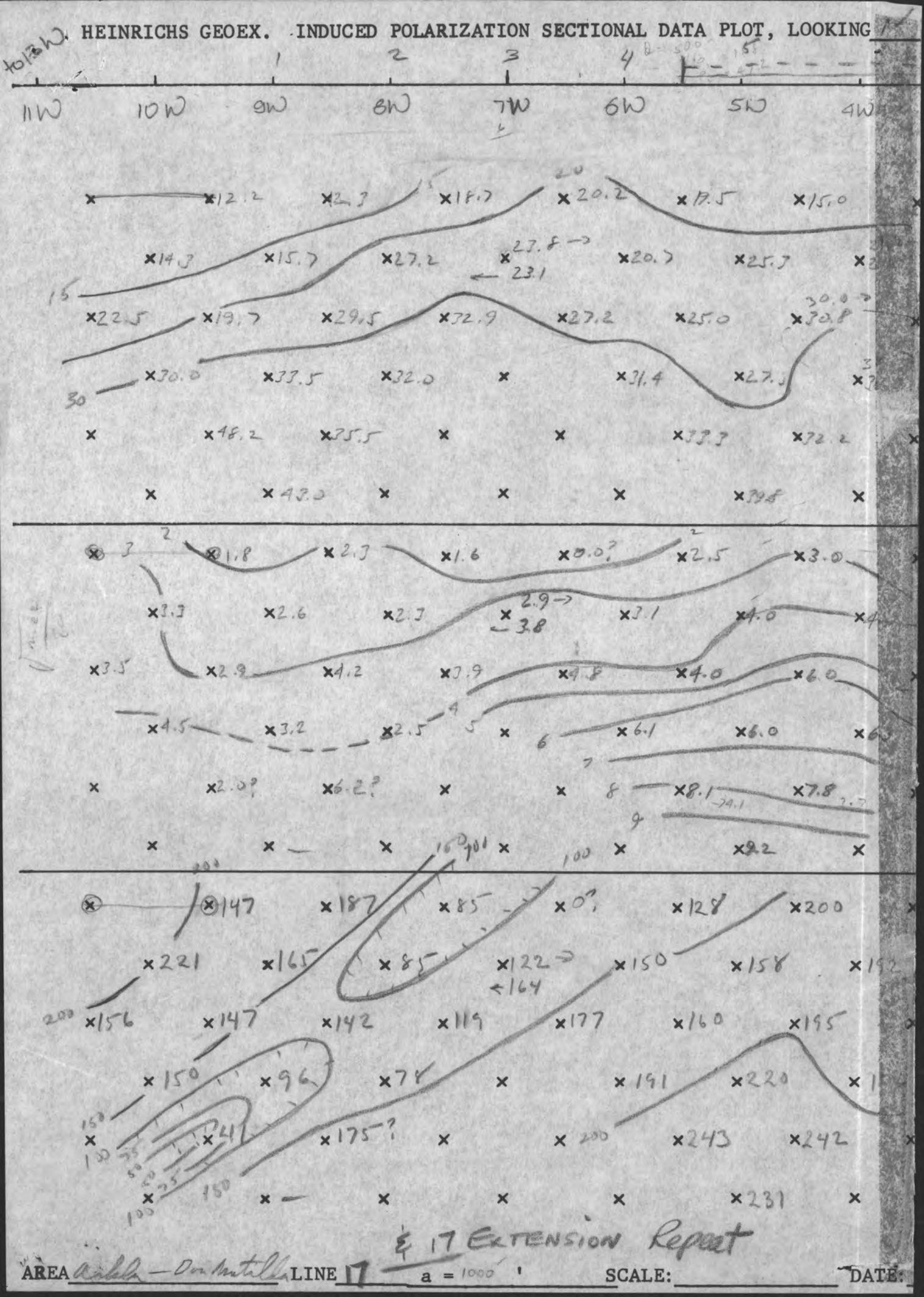
5c
U.S. POSTAGE

Heinrichs Geoex
Box 5671
Tucson Arizona

MAY 1965
GEOEX

Chris

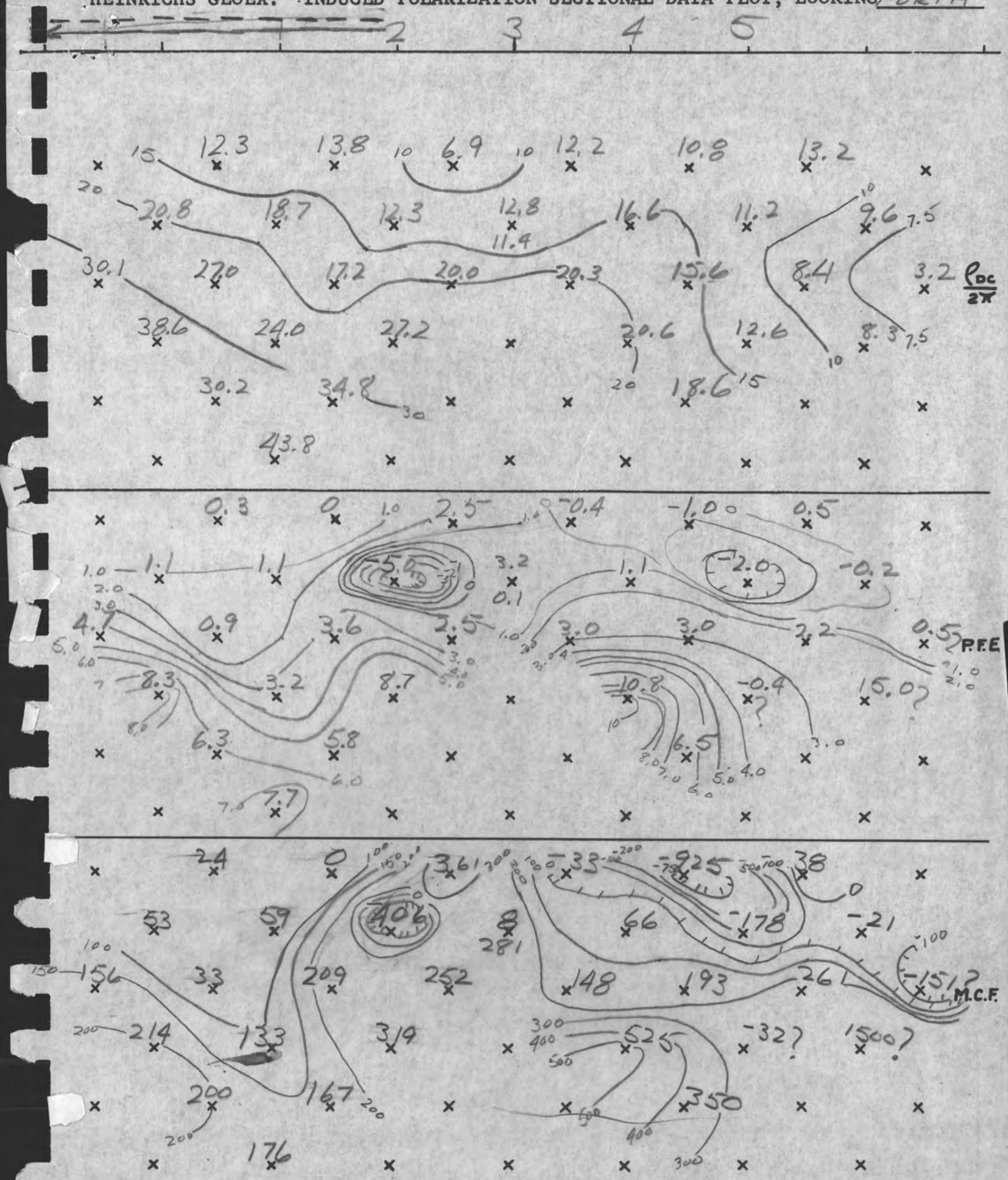
HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING



& 17 EXTENSION Repeat

AREA Arkla — Don Matilda LINE 17 a = 1000' SCALE: DATE:

HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING NORTH



AREA Scooter #2 LINE #17 a = 1000' SCALE: 1" = 1000 DATE: 12-17-64

HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING NORTH

1 2 3 4 5

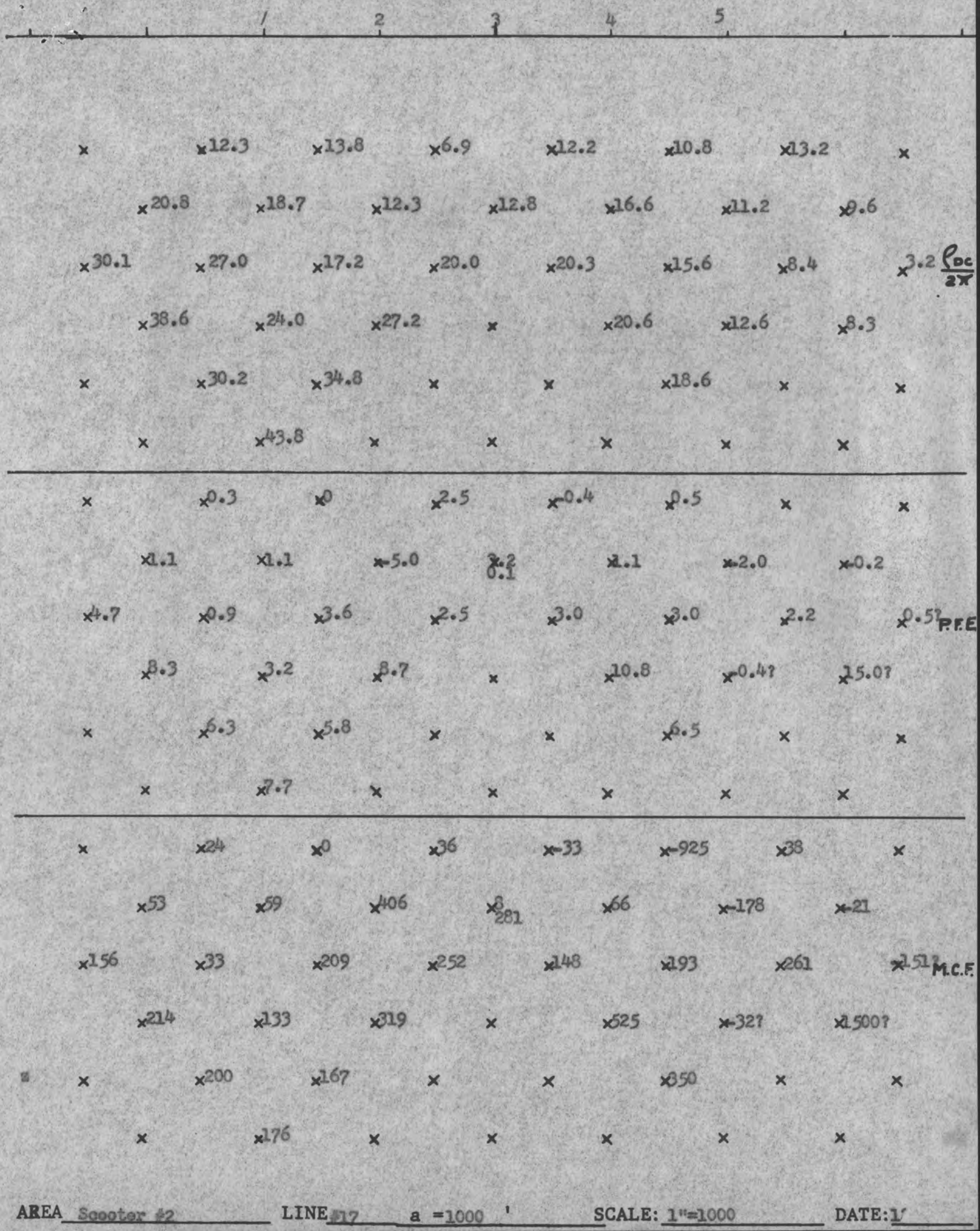
×	×12.3	×13.8	×6.9	×12.2	×10.8	×13.2	×
×20.8	×18.7	×12.3	×12.8	×16.6	×11.2	×9.6	
×30.1	×27.0	×17.2	×20.0	×20.3	×15.6	×8.4	×8.2 $\frac{\rho_{DC}}{2\pi}$
×38.6	×24.0	×27.2	×	×20.6	×12.6	×8.3	
×	×30.2	×34.8	×	×	×18.6	×	×
×	×43.8	×	×	×	×	×	

×	×0.3	×0	×2.5	×0.4	×2.5	×	×
×1.1	×1.1	×5.0	×2 0.1	×1.1	×2.0	×0.2	
×4.7	×0.9	×3.6	×2.5	×2.0	×3.0	×2.2	×2.5? P.F.E.
×8.3	×3.2	×8.7	×	×10.8	×0.4?	×5.0?	
×	×6.3	×5.8	×	×	×6.5	×	×
×	×7.7	×	×	×	×	×	

×	×24	×0	×36	×33	×925	×38	×
×53	×59	×406	×281	×66	×178	×21	
×156	×33	×209	×252	×48	×93	×61	-×51? M.C.F.
×214	×133	×319	×	×25	×327	×500?	
×	×200	×167	×	×	×50	×	×
×	×176	×	×	×	×	×	

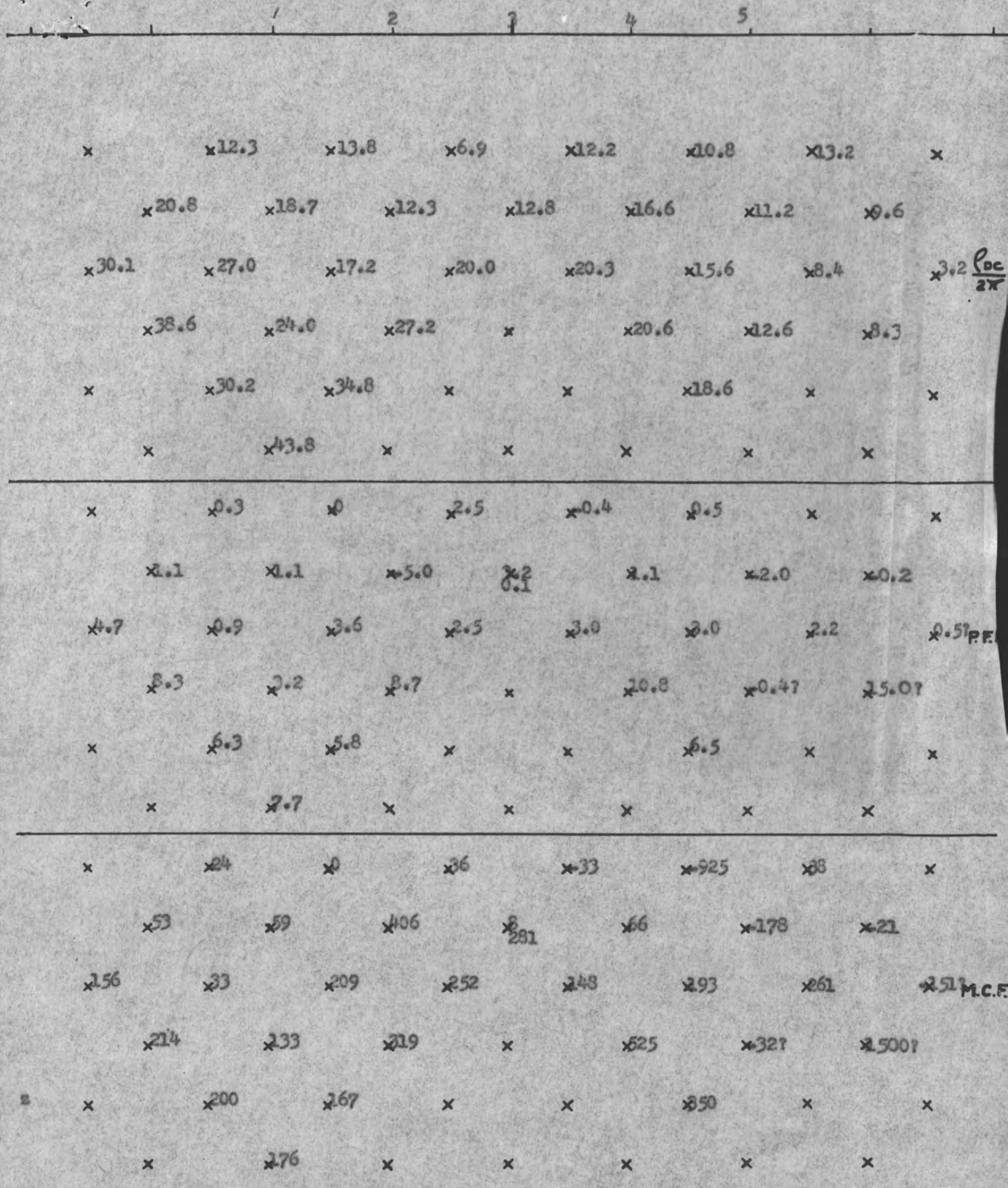
AREA Scooter #2 LINE 17 a 1000 ' SCALE 1"=1000 DATE 12-17-64

HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING NORTH



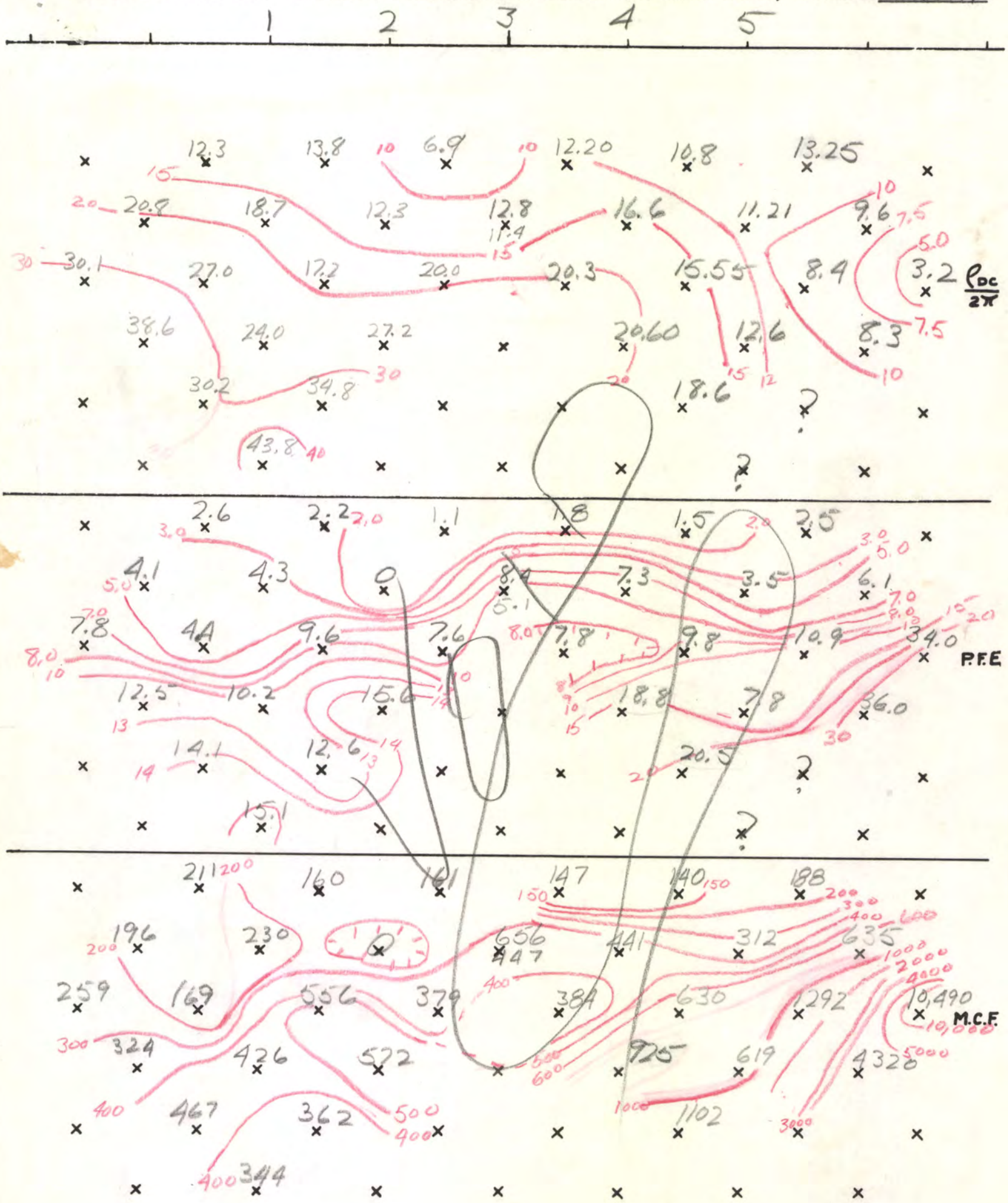
AREA Scooter #2 LINE #17 a =1000 ' SCALE: 1"=1000 DATE: 1'

HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING NORTH



AREA Scooter #2 LINE #17 a =1000 ' SCALE: 1"=1000 DATE:

HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING NORTH



AREA Scooter #2 LINE 17 a = 1000' SCALE: 1" = 1000' DATE:

ROUGH DRAFT January 5, 1966

DON MATILDA REPORT FOR F

At the request of Mr. M. L. Pugh, chief geophysicist, Arkla Exploration Company, Heinrichs Geoexploration Company conducted Induced Polarization, magnetic, and gravity surveys in the Don Matilda Area, Mohave County, Arizona.

5 The Induced Polarization (I.P.) survey gave the most diagnostic results and will be considered first. Six I.P. lines were run consisting of 10 spreads giving a total surface of 63,000 feet of which 43,000 feet is subsurface plotted data. Lines 5,6,7 were run north-south 1500' apart on 500' dipole spacing. Line 8, strikes N34^{0}W and lies to the east of line seven. Lines 17, and 18 were run EW on 1000 dipole spacing. Point 0-EW on lines 17 lies roughly 1200' S38^{0}E of common corner 17/16. Point 0-EW on line 18 lies roughly 3150' S52^{0}E of common conrner 17/16. Lines 5,6,7, and 17 consist of two spreads each while lines 8 and 18 are single spreads.

The selections of 500 and 1000 foot dipole separations were made to maximize ground coverage per unit time, data resolution, and probability of locating economically sized sulfide bodies within about 1200" of the surface.

The Induced Polarization measurements were made with the dual frequency technique on a dipole-dipole electrode configuration. On lines 5,6,7 & 8 the two frequencies used were .05 and 3.0 cycles per second, and on lines 17 and 18, 0.05 and 1.0 cycles per second were used to reduce electromagnetic inductive coupling interference, at an increased power level of 8 amps @ 500 VOLTS

The data ~~were~~ were presented on sectional data sheets, one for each line, showing resistivity, percent frequency effect (PFE) and metallic conduction factor (MCF), contoured in section, and self potential (SP)

in profile form. An induced polarization location and interpretation plan was also presented in conjunction with the magnetic contour map.

Heinrichs personnel involved in the I.P. field work were Marcel Le Duc, party chief and geophysicist, Dan Anderson, Party chief and observer, and George Miguel, Gene Juarez, Ron Palmer, John Beeler, Technical assistants.

Magnetic data ~~was~~ were compiled using a fluxgate vertical intensity Jalander magnetometer of sensitivity = 20 gammas. Approximately 15 miles of coverage consiting roughly of 750-100' stations on a N-S grid. East-West tie lines were run and diurnal drift was check at a base station 3 times per day. Heinrichs Personnel were Dan Anderson, crew chief, and George Miguel, technical assistant.

put in other reports

A gravity survey was run by Ron Palmer and consisted of 77 stations on a 3000 foot square grid centered 4000' N of common corner ~~2021~~ 1716. Combined Bouguer and Free Air as well as latitude and drift corrections were made but terrain and tidal corrections were neglected becasue of contractual agreement.

Instrument used?

CONCLUSIONS AND RECOMMENDATIONS

1. A zone of moderate polarization effects was located between 5500 west and 1500 east on line 17 and from 500' west to 2000 or more feet east on line 18, the eastern portion of anomalies being open ended.

2. This anomalism may be due to sulfide mineralization of about 1% total sulfide by volume. It is of marginal priority but some increase with depth is noted. In addition this anomalism could be entirely due to combination of coupling, ~~reis~~ resistivity or geometric effects and therefore is not necessarily related to sulfides. It does, however, correlate with a projected gravity high which indicates denser or shallower material. Because of proximity with gold mineralization, weak mineralization could be significant and therefore, a drill hole ~~was~~ has been recommended, to help explain this feature.

3. Also because of associated gold mineralization, some very weak and narrow I.P. ~~features~~ indications were noted. The most impressive of these is on line 7 between electrode 1 & 2 north. Here a dike or vein like structure does correlate with magnetics.

Additional geologic work or I. P. lines using shorter spaced electrodes could better validify and locate this feature.

4. Other similar very weak indications which also warrant geologic investigation and possible further I.P. and, or, drilling are found on line 6 at electrode 2 north and on line 5 at electrode 4 north.

5. Additional correlation between magnetics and geology will be necessary to derive full benefit from magnetic data. Some recommendations are made on the magnetic contour map.

Northside Claims

SECTIONAL DATA SHEETS

INDUCED POLARIZATION COMPUTATIONS

for

ARKLA EXPLORATION COMPANY

November 3 - December 16, 1964

by

HEINRICHS GEOEXPLORATION COMPANY
P. O. Box 5671 Tucson, Arizona

Computed by: M. Leduc
D. Anderson

Checked by: J. P. Matthews, Jr.

Sectional Data Sheets
on 2nd Copy only

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page 1

Project Northside Claims Line #1 Set "A" → North Field date 10-23 Data page _____ Comp. date 10-23-64 Comp by P.M.-M.L.

(A) Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		Cal.	
(B) Receive	10-15N →		15-20N →			20-25N →						
(C) n separation	10	3	100	3	1	100	10	1	1		30	
(D) I 3	2.0	1.60	2.0	2.0	1.60	1.80	2.0	2.0	1.40			
(E) Vdc (avg) 1 4	7.05	1.773	79.5	2.71	1.13	103	9.20	1.575	.605		25.6	
(F) DCcal 1	1.172 →											
(G) Kn x 10^{-3} 2	1.5	6.0	1.5	6.0	15.0	1.5	6.0	15.0	30.0			
(H) ρ dc=ExFxGx10^3/D	6.23	7.80	70.0	9.55	12.4	101	32.6	13.8	15.2		25.4	
(I) Vac Σ 2	7.0	1.74	74.0	2.70	1.16	97.0	9.0	1.48	.580			
(J) AC noise x 2	0 →										Dc Cal	1.172
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.994	.998	1.015	.998	1.041	1.015	.994	1.041	1.041		Ac Dc	.993
(M) ρ dc/ρac=ExL/K	1.009	1.017	1.090	1.003	1.015	1.025	1.018	1.117	1.085			
(N) PFE=(M-1)(10^2)	0	1.7	9.0	0.3	1.5	3.5	1.8	11.1	8.5			
(O) MCF=(M-1)(10^5)/H	0	218	128	31	121	35	55	805	567			
S.P.	+14.2		-22.6			-.3						

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5				
(B) Receive	25-30N →				30-35N →							
(C) n separation	3	1	1	1	3	1	1					
(D) I 3	1.8	2.0	2.0	1.4	2.0	2.0	2.0					
(E) Vdc (avg) 1 4	3.00	1.50	.367		2.085	1.490	.190					
(F) DCcal 1	1.172 →											
(G) Kn x 10^{-3} 2	6.0	15.0	30.0	52.5	15.0	30.0	52.50					
(H) ρ dc=ExFxGx10^3/D	11.7	13.2	6.45	7.03	18.3	26.2	5.9					
(I) Vac Σ 2	3.04	1.50	.380	.160	2.10	1.480	.180					
(J) AC noise x 2	0 →											
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.998	1.041	1.041	1.041	.998	1.041	1.041					
(M) ρdc/ρac =ExL/K	.985	1.040	1.050	—	.993	1.049	1.10					
(N) PFE=(M-1)(10^2)	-1.5	4.0	5.0	—	-.70	4.9	10					
(O) MCF=(M-1)(10^5)/H	-128	303	775	—	39	187	1695					
S.P.	-.8				-1.0							

ρ Ac

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page 2

Project North side Claims Line #1 Set B Field date 10-23 Data page _____ Comp. date 10-23-64. Comp by ML

→ South

(A) Send	2-3	1-2	3-4	3-2	2-1	5-4	4-3	3-2	2-1		Cal	
(B) Receive	10-25S →		15-20S →			20-25S →						
(C) n separation	10	3	10	10	1	10	1	3	1		30	
(D) I	2.0	2.0	2.0	2.0	2.0	1.6	2.0	2.0	2.0			
(E) Vdc (avg)	13.3	2.22	6.87	5.50	1.55	8.40	1.82	2.28	.800		26.2	
(F) DCcal	1.155 →											
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15	1.5	6.0	15.0	30.0			
(H) ρ dc=ExFxGx10^3/D	11.6	7.8	6.0	19.1	13.5	9.1	6.4	19.8	13.9			
(I) Vac Σ 2	13.0	2.16	6.8	5.40	1.56	8.30	1.82	2.24	.780		26.0	
(J) AC noise x 2	0 →											
(K) Vac(corr) = $\sqrt{I^2 - J^2}$											Dc Cal = 1.155	
(L) AC-DC cal.	.994	.998	.994	.994	1.041	.994	1.041	.998	1.041			
(M) ρ dc/ρac=ExL/K	1.017	1.026	1.005	1.012	1.035	1.007	1.041	1.015	1.067		Ac Dc = .993	
(N) PFE=(M-1)(10^2)	1.7	2.6	0.5	1.2	3.5	0.7	4.1	1.5	6.7			
(O) MCF=(M-1)(10^5)/H	146	334	83	63.0	259	77	642	76	482			
S.P.	-4.0		-15.8			+12.3						

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	5-4	4-3	3-2	2-1	5-4	4-3	3-2	2-1				
(B) Receive	25-30S →				30-35S →							
(C) n separation	3	1	1	1	1	1	1	1				
(D) I	1.6	2.0	2.0	1.8	1.6	2.0	2.0	1.8				
(E) Vdc (avg)	3.01	1.04	1.46	.460	1.29	.515	.825	.280				
(F) DCcal	1.155 →											
(G) Kn x 10^{-3}	6.0	15.0	20.0	52.5	15.0	30.0	52.5	84.0				
(H) ρ dc=ExFxGx10^3/D	12.9	9.05	25.7	15.4	14.0	9.0	25.0	15.2				
(I) Vac Σ	2.96	1.04	1.46	.460	1.30	.500	.820	.280				
(J) AC noise x 2	0 →											
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.998	1.041	1.041	1.041	1.041	1.041	1.041	1.041				
(M) ρdc/ρac =ExL/K	1.015	1.041	1.086	1.040	1.024	1.022	1.047	1.041				
(N) PFE=(M-1)(10^2)	1.5	4.1	8.6	4.1	3.4	7.2	4.7	4.1				
(O) MCF=(M-1)(10^5)/H	116	453	335	266	243	800	188	270				
S.P.	-34.7				+28.1							

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page 3

Project Pay check Claims Line #2 Set "A" Field date Oct 26 Data page _____ Comp. date 10-26-64. Comp by ML.

Going South

(A) Send	1-2	→	→	→	2-3	→	→	→		Calibration		
(B) Receive	3-4	4-5	5-6	6-7	4-5	5-6	6-7	7-8				
(C) n separation	100	3	1	1	10	3	1	1		30		
(D) I	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0				
(E) Vdc (avg)	76	2.28	1.084	.630	7.2	2.31	1.26	.760		29.4		
(F) DCcal	1.040	→	→	→	→	→	→					
(G) Kn x 10^{-3}	1.5	6.0	15.0	30.0	1.5	6.0	15.0	30.0				
(H) ρ dc=ExFxGx10^3/D	58.2	6.97	8.4	9.65	5.6	7.06	9.64	11.6				
(I) Vac Σ	72	2.14	1.020	.600	6.6	2.12	1.200	.720		27.6		
(J) AC noise x 2	.06	.04	.04	.04	.04	.04	.04	.04				
(K) Vac(corr) = $\sqrt{I^2 - J^2}$	—	—	—	~~.605~~	—	—	—	.723				
(L) AC-DC cal.	.959	.942	.985	.985	.938	.942	.985	.985		DC Cal = 1.040		
(M) ρ dc/ρac=ExL/K	1.012	1.005	1.047	1.034	1.025	1.025	1.035	1.042				
(N) PFE=(M-1)(10^2)	1.2	0.5	4.7	3.4	2.5	2.5	3.5	4.0		AC-DC Cal =		.937
(O) MCF=(M-1)(10^5)/H	210	72	560	352	447	354	304	345				

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	3-4	→	→	→	4-5	→	→	→				
(B) Receive	5-6	6-7	7-8	8-9	6-7	7-8	8-9	9-10				
(C) n separation	30	10	3	1	10	3	1	1				
(D) I	2.0	2.0	2.0	2.0	1.40	1.40	1.40	1.40				
(E) Vdc (avg)	20.95	6.25	3.45	1.14	15.7	4.54	1.285	.730				
(F) DCcal	1.040	→	→	→	→	→	→	→				
(G) Kn x 10^{-3}	1.5	6.0	15.0	30.0	1.5	6.0	15.0	30.0				
(H) ρ dc=ExFxGx10^3/D	16.0	19.1	26.4	17.5	16.6	19.9	14.0	15.9				
(I) Vac Σ	19.4	5.70	3.14	1.100	14.0	4.2	1.20	.700				
(J) AC noise x 2	.04	.04	.04	.160	.04	.04	.160	.100				
(K) Vac (corr) = $\sqrt{I^2 - J^2}$	—	—	—	1.087	—	—	1.17	.695				
(L) AC-DC cal.	.937	.938	.942	.985	.938	.942	.985	.985				
(M) ρdc/ρac =ExL/K	1.011	1.030	1.035	1.020	1.018	1.018	1.054	1.020				
(N) PFE=(M-1)(10^2)	1.1	3.0	3.5	2.0	1.8	1.8	5.4	2.6				
(O) MCF=(M-1)(10^5)/H	69	157	133	114	108	90	386	163				

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Project Paycheck Claims Line #2 Set "B" Field date Oct 27 Data page 28 Comp. date 28 . Comp by M.L.

→ South

(A) Send	5-6	→		→	6-7	→		→		Cal.		
(B) Receive	7-8	8-9	9-10	10-11	8-9	9-10	10-11	11-12				
(C) n separation	10	3	1	1	10	3	1	1				
(D) I 3	1.8	1.8	2.0	2.0	2.0	2.0	2.0	2.0				
(E) Vdc (avg) 4	16.4	3.10	1.560	.990	13.23	3.59	1.810	.740		29.4		
(F) DCcal 1	1.022	→	→	→	→	→	→	→				
(G) Kn x 10^{-3} 2	1.5	6.0	15	30	1.5	6.0	15	30				
(H) ρ dc=ExFxGx10^3/D	14.0	10.6	12.0	15.2	10.1	11.0	13.9	11.4				
(I) Vac Σ	15.4	2.84	1.500	.965	12.30	3.34	1.720	.700		27.6		
(J) AC noise x 2	.01	.01	.02	.02	.01	.02	.02	.02				
(K) Vac(corr) = $\sqrt{I^2 - J^2}$	—	—	—	—	—	—	—	—		Dc Cal =		1.022
(L) AC-DC cal.	.934	.938	.981	.981	.934	.938	.981	.981				
(M) ρ dc/ρac=ExL/K	.995	1.015	1.020	1.010	1.065	1.050	1.035	1.035		Ac - Dc Cal =		.933
(N) PFE=(M-1)(10^2)	-.5	1.5	2.0	1.0	0.5	0	3.5	3.5				
(O) MCF=(M-1)(10^5)/H	36	141	167	66	49	0	252	307				

Project Line Field date Data page Comp. date Comp by

(A) Send	7-8	→		→	8-9	→		→				
(B) Receive	9-10	10-11	11-12	12-13	10-11	11-12	13-12	13-14				
(C) n separation	10	3	1	1	10	3	1	1				
(D) I 3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0				
(E) Vdc (avg) 4	11.05	3.97	1.280	1.200	10.1	1.895	1.180	.875				
(F) DCcal 1	1.022	→	→	→	→	→	→	→				
(G) Kn x 10^{-3} 2	1.5	6.0	15	30	1.5	6.0	15	30				
(H) ρ dc=ExFxGx10^3/D	8.5	12.2	9.9	18.5	7.8	5.8	9.1	13.5				
(I) Vac Σ	10.20	3.70	1.24	1.145	9.4	1.760	1.140	.820				
(J) AC noise x 2	.02	.02	.02	.01	.02	.02	.01	.01				
(K) Vac (corr) = $\sqrt{I^2 - J^2}$	—	—	—	—	—	—	—	—				
(L) AC-DC cal.	.934	.938	.981	.981	.934	.938	.981	.981				
(M) ρdc/ρac =ExL/K	1.015	1.005	1.015	1.030	1.005	1.010	1.015	1.045				
(N) PFE=(M-1)(10^2)	1.5	0.5	1.5	3.0	0.5	1.0	1.5	4.5				
(O) MCF=(M-1)(10^5)/H	176	41	152	162	64	172	166	334				

No C1 Read. is S.P.M.

Looking North East

HEINRICHS GEOEXPLORATION COMPANY

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Project Payckeck Claims Line #3 Set "A" Field date 28 Oct Data page 3 Comp. date Nov 29. Comp by ML

→ South

(A) Send	1-2				2-3							
(B) Receive	3-4	4-5	5-6	6-7	4-5	5-6	6-7	7-8				
(C) n separation	30	3	1	1	30	3	1	1				
(D) I	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.40				
(E) Vdc (avg)	42.0	3.90	1.215	.825	28.6	3.89	1.715	.963		30.6		
(F) DCcal	.982	→								982		
(G) Kn x 10^{-3}	1.5	6.0	15.0	30.	1.5	6.0	15.0	30.0				
(H) ρ dc=ExFxGx10^3/D	56.0 51.5	19.1	14.9	20.1	34.7 35.1	18.9 19.1	21.0	20.2				
(I) Vac Σ	38.0	3.64	1.170	.800	26.4	3.56	1.645	.920		28.6		
(J) AC noise x 2	.02	.02	.02	.02	.02	.02	.02	.02				
(K) Vac(corr) = $\sqrt{I^2 - J^2}$	—	—	—	—	—	—	—	—				
(L) AC-DC cal.	.935	.940	.983	.983	.935	.940	.983	.983		.935		
(M) ρ dc/ρac=ExL/K	1.035	1.010	1.020	1.015	1.013	1.028	1.025	1.030		48		
(N) PFE=(M-1)(10^2)	3.5	1.0	2.0	1.5	1.3	2.8	2.5	3.0		3		
(O) MCF=(M-1)(10^5)/H	62	52	135	75	37	147	119	148				
S-P	-6.4				+24							

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

(A) Send	3-4				4-5							
(B) Receive	5-6	6-7	7-8	8-9	6-7	7-8	8-9	9-10				
(C) n separation	30	3	3	1	10	3	1	1				
(D) I	1.80	1.80	2.0	2.0	1.00	1.40	1.40	1.40				
(E) Vdc (avg)	28.6	6.10	2.00	1.190	10.70	2.40	1.06	.450				
(F) DCcal	.982	→										
(G) Kn x 10^{-3}	1.5	6.0	15.0	30.0	1.5	6.0	15.0	30.0				
(H) ρ dc=ExFxGx10^3/D	23.4	20.0	14.8	17.5	15.8	10.2	11.1	9.5				
(I) Vac Σ	26.0	5.50	1.840	1.145	9.8	2.21	1.00	.400				
(J) AC noise x 2	.02	.02	.02	.02	.02	.02	.02	.02				
(K) Vac (corr) = $\sqrt{I^2 - J^2}$	—	—	—	—	—	—	—	—				
(L) AC-DC cal.	.935	.940	.940	.983	.936	.940	.983	.983				
(M) ρdc/ρac =ExL/K	1.027	1.043	1.022	1.023	1.022	1.021	1.042	1.105				
(N) PFE=(M-1)(10^2)	2.7	4.3	2.2	2.3	2.2	2.1	4.2	10.5				
(O) MCF=(M-1)(10^5)/H	115	215	149	131	139	210	378	1108				

CAL READING? J.P.M.

COPY J.P.M

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INDUCED POLARIZATION SURVEY COMPUTATION SHEET

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Project Paycheck Line #3 Set B" → South Field date Oct 28 Data page _____ Comp. date Nov 29. Comp by M.L.

(A) Send		5-6				6-7					CAL		
(B) Receive		7-8	8-9	9-10	10-11	8-9	9-10	10-11	11-12				
(C) n separation		3	1	1	1	10	3	1	1				
(D) I	3	1.400	1.40	1.40	1.40	2.00	2.00	2.00	2.00				
(E) Vdc (avg) (2)	4	4.82	1.486	.420	.360	11.12	1.835	1.235	1.010		30.05		
(F) DCcal	1	.997	.997	1.008	1.008	.997	1.008	1.008	1.008		.997		
(G) Kn x 10^{-3}	2	1.5	6.0	15.0	30.0	1.5	6.0	15.0	30.0				
(H) ρ dc=ExFxGx10^3/D	>	5.14	6.37	4.53	7.78	8.31	5.55	9.33	15.3		27.6		
(I) Vac Σ (3)		4.46	1.415	.415	.340	10.36	1.780	1.170	.958				
(J) AC noise x 2		.04	→		↓								
(K) Vac(corr) = $\sqrt{I^2 - J^2}$					.338								
(L) AC-DC cal. (1)		.925	.968	.972	.972	.921	.929	.972	.972		.920		
(M) ρ dc/ρac=ExL/K		1.000	1.016	.985	1.024	.9900	.958	1.026	1.024				
(N) PFE=(M-1)(10^2)		0	1.6	-1.5	2.4	-1.0	-4.2	2.6	2.4				
(O) MCF=(M-1)(10^5)/H		0	251	-331	308	-120	-757	279	157				

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send		7-8				8-9							
(B) Receive		9-10	10-11	11-12	12-13	10-11	11-12	12-13	13-14				
(C) n separation		10	3	3	1	10	3	3	1				
(D) I	3	2.00	2.00	2.00	2.00	1.400	1.40	2.00	2.00				
(E) Vdc (avg) (2)	4	7.70	3.26	2.11	1.130	7.18	3.21	1.805	.930		29.75		
(F) DCcal	1	1.008	→								1.008		
(G) Kn x 10^{-3}	2	1.5	6.0	15.0	30.0	1.5	6.0	15.0	30.0				
(H) ρ dc=ExFxGx10^3/D	>	5.82	9.86	15.9	17.1	7.76	13.8	13.6	14.0				
(I) Vac Σ (3)		7.20	3.0	1.93	1.080	6.65	2.95	1.663	.880		27.95		
(J) AC noise x 2		.04	→										
(K) Vac (corr) = $\sqrt{I^2 - J^2}$													
(L) AC-DC cal. (1)		.925	.929	.929	.972	.925	.929	.929	.972		.924		
(M) ρdc/ρac =ExL/K		.990	1.01	1.016	1.017	1.000	1.01	1.008	1.027				
(N) PFE=(M-1)(10^2)		-1.0	1.0	1.6	1.7	0	1.0	.8	2.7				
(O) MCF=(M-1)(10^5)/H		-172	101	101	99	0	73	59	193				

Loop Ring North East

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INDUCED POLARIZATION SURVEY COMPUTATION SHEET

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Project Paycheck Claims Line #4 Set "A" → S-W Field date Nov 3 Data page _____ Comp. date Nov 4. Comp by MK

(A) Send	1-2				2-3					Calibration		
(B) Receive	3-4	4-5	5-6	6-7	4-5	5-6	6-7	7-8		#1	#2	
(C) n separation	100	10	3	1	10	3	1	1				
(D) I	1.600	1.600	1.600	1.600	2.000	2.000	2.000	2.000				
(E) Vdc (avg)	110	9.12	2.20	1.35	18.4	2.90	1.455	.890		29.4	24.7	
(F) DCcal	1.040	1.040	1.040	1.020	1.040	1.040	1.020	1.020				
(G) Kn x 10^{-3}	1.5	6.0	15.0	30.	1.5	6.0	15.0	30.0				
(H) ρ dc=ExFxGx10^3/D	108 c	35.8	21.5 c	25.7 c	14.3 c	9.1 c	11.1 c	13.6				
(I) Vac Σ	104.4	8.5	2.04	1.290	17.1	2.67	1.390	.860		28.0	27.7	
(J) AC noise x 2	.02 →									1.02		1.01
(K) Vac(corr) = $\sqrt{I^2 - J^2}$										Dc=1.040 c	Dc=1.020	
(L) AC-DC cal.	.975	.954	.958	.981	.954	.958	.981	.981		Ac Dc=	Ac Dc=	
(M) ρ dc/ρac=ExL/K	1.027	1.024	1.032	1.028 c	1.027	1.040	1.028	1.015		.953		.933
(N) PFE=(M-1)(10^2)	2.7 c	2.4	3.2	2.8	2.7	4.0 c	2.8 c	1.5 c				
(O) MCF=(M-1)(10^5)/H	85	67	149	110	190	446	252	110				
S-P.	+33.5				-46.2							

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	3-4				4-5							
(B) Receive	5-6	6-7	7-8	8-9	6-7	7-8	8-9	9-10				
(C) n separation	10	3	3	1	10	3	1	1				
(D) I	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20				
(E) Vdc (avg)	14.8	4.76	2.50	1.21	9.32	3.35	1.385	.938				
(F) DCcal	1.040	1.020	1.020	1.020	1.020	1.020	1.020	1.020				
(G) Kn x 10^{-3}	1.5	6.0	15.0	30.0	1.5	6.0	15.0	30.0				
(H) ρ dc=ExFxGx10^3/D	19.2 c	24.3 c	32 c	31 c	12.0 c	17.0 c	17.7 c	24.0 c				
(I) Vac Σ	13.7	4.44	2.34	1.175	8.60	3.18	1.345	.890				
(J) AC noise x 2	.02 →											
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.954	.938	.938	.981	.934	.938	.981	.981				
(M) ρdc/ρac =ExL/K	1.030	1.065	1.000	1.014	1.012	.990	1.012	1.035				
(N) PFE=(M-1)(10^2)	3.0	.5	1.0	1.1	1.2	-1.0	1.0	3.5				
(O) MCF=(M-1)(10^5)/H	157	21.8	3.0	35	100	59	57	146				
	-5.0				+6.1	-5.0	-3.7	-17.0				

Looking South East

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

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Project Paycheck Claims Line #4 Set "B" Going S-W Field date Nov 3 Data page _____ Comp. date Nov 4. Comp by M.L

(A) Send	5-6				6-7					Cal		
(B) Receive	7-8	8-9	9-10	10-11	8-9	9-10	10-11	12-11		#1	#2	
(C) n separation	10	3	3	1	10	3	1	1		30	30	
(D) I	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0				
(E) Vdc (avg)	17.5	4.31	2.32	.638	13.1	4.25	1.015	.692		29.6	29.7	
(F) DCcal	1.015	1.015	1.015	1.010	1.015	1.015	1.010	1.010				
(G) Kn x 10^{-3}	1.5	6.0	15.0	30.0	1.5	6.0	15.0	30.0				
(H) ρdc=ExFxGx10^3/D	13.3	13.1	17.6	9.70	10.0	12.8	7.70	10.5				
(I) Vac Σ	16.0	3.96	2.13	.590	12.0	3.90	.960	.680		27.6	27.6	
(J) AC noise x 2	.04 →											
(K) Vac(corr) = $\sqrt{I^2 - J^2}$										Dc= 1.015	Dc= 1.010	
(L) AC-DC cal.	.928	.932	.937	.978	.928	.932	.978	.978		Ac Dc=	Ac Dc =	
(M) ρ dc/ρac=ExL/K	1.015	1.014	1.016	1.056	1.015	1.015	1.020	1.000		.927		.930
(N) PFE=(M-1)(10^2)	1.5	1.4	1.6	5.6	1.5	1.5	2.0	0				
(O) MCF=(M-1)(10^5)/H	114	107	910	577	150	117	260	0				
S.P.	-2.0				-0.5							

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	7-8				8-9							
(B) Receive	9-10	10-11	11-12	12-13	10-11	11-12	12-13	13-14				
(C) n separation	10	3	1	1	10	3	1					
(D) I	2.0	2.0	2.0	2.0	2.0	2.0	2.0					
(E) Vdc (avg)	13.05	2.23	1.205	.812	8.0	2.62	1.400					
(F) DCcal	1.015	1.010	1.010	1.010	1.010	1.010	1.010					
(G) Kn x 10^{-3}	1.5	6.0	15.0	30.0	1.5	6.0	15					
(H) ρ dc=ExFxGx10^3/D	10.0	6.8	9.1	12.3	6.1	8.0	10.6					
(I) Vac Σ	12.0	2.04	1.175	.770	7.34	2.44	1.820					
(J) AC noise x 2	.04 →											
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.928	.935	.978	.978	.931	.935	.978					
(M) ρdc/ρac =ExL/K	1.010	1.022	1.003	1.032	1.015	1.005	1.039					
(N) PFE=(M-1)(10^2)	1.0	2.2	0.3	3.2	1.5	0.5	3.9					
(O) MCF=(M-1)(10^5)/H	100	325	33	260	246	63	368					
	-4.6				+1.0	-40.7	-40.4					

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INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page 9

Project Dorr & MaTilda Claims Line #5 Set "A" → South Field date Nov 10 Data page _____ Comp. date Nov 13. Comp by M. C.

(A) Send	1-2				2-3						Cal	
(B) Receive	3-4	4-5	5-6	6-7	4-5	5-6	6-7	7-8				
(C) ~~n separation~~ Meter Scale	30	10	3	3	30	10	3	3				
(D) I	1.40	1.40	1.40	1.20	1.8	2.0	1.8	1.8				
(E) Vdc (avg)	26.4	6.0	3.45	1.00	29.5	11.9	3.06	1.00			32.8	
(F) DCcal	.915	→										
(G) Kn x 10^{-3}	1.5	6.0	15	30	1.5	6.0	15.0	30.0				
(H) ρ dc=ExFxGx10^3/D	25.9	23.5	33.8	22.8	22.5	32.7	23.4	153				
(I) Vac Σ	24.8	5.8	3.26	.950	27.0	11.0	2.84	1.050			31.4	
(J) AC noise x 2	.04	.02	.04	.02	.02	.04	.02	.04				
(K) Vac(corr) = $\sqrt{I^2 - J^2}$	—	—	—	—	—	—	—	—			Ac-Dc = .957	
(L) AC-DC cal.	.957	→	—	—	—	—	—	—				
(M) ρ dc/ρac=ExL/K	1.020	990	1.013	1.008	1.045	1.035	1.030	-910			Dc = .915	
(N) PFE=(M-1)(10^2)	2.0	-1.0	1.3	0.8	4.5	3.5	3.0	-9.0				
(O) MCF=(M-1)(10^5)/H	77	-43	38	35	200	107	128	-590				
S.P.	-22.1				-14.1							

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	3-4				4-5							
(B) Receive	5-6	6-7	7-8	8-9	6-7	7-8	8-9	9-10				
(C) n separation	30	10	3	3	30	10	3	3				
(D) I	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0				
(E) Vdc (avg)	41.5	8.70	2.42	1.89	23.6	4.15	2.80	1.200				
(F) DCcal	.915	→										
(G) Kn x 10^{-3}	1.5	6.0	15.0	30.0	1.5	6.0	15.0	30.0				
(H) ρ dc=ExFxGx10^3/D	28.4	23.8	16.6	26.0	16.2	11.5	19.2	16.5				
(I) Vac Σ	38.6	8.20	2.30	1.75	22.4	4.0	2.58	1.150				
(J) AC noise x 2	.04	.02	.04	0.1	.02	.04	0.1	0.1				
(K) Vac (corr) = $\sqrt{I^2 - J^2}$	—	—	—	—	—	—	—	—				
(L) AC-DC cal.	.957	→	—	—	—	—	—	—				
(M) ρdc/ρac =ExL/K	1.029	1.015	1.005	1.032	1.008	994	1.040	1.000				
(N) PFE=(M-1)(10^2)	2.9	1.5	0.5	3.2	0.8	-0.6	4.0	0				
(O) MCF=(M-1)(10^5)/H	102	63	30	123	49	-52	210	0				
	-11.6				-12.8	+25.1	+8.2	-18.5				

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page 10

Project Arkla Don + Matilda Claims Line #5 → South Set "B" Field date Nov 10 Data page Nov 13 Comp. date _____. Comp by M L

(A) Send	5-6				6-7						Cal:	
(B) Receive	7-8	8-9	9-10	10-11	8-9	9-10	10-11	11-12				
(C) n separation	10	10	3	3	10	3	3	3				
(D) I	1.80	1.80	1.80	1.80	1.40	1.40	1.40	1.40				
(E) Vdc (avg)	10.0	4.52	2.10	1.24	8.31	2.22	1.05	.430			32.4	
(F) DCcal	.930	→										
(G) Kn x 10^{-3}	1.5	6.0	15.0	30.0	1.5	6.0	15.0	30.0				
(H) ρ dc=ExFxGx10^3/D	7.85	14.0	16.3	19.2	8.3	8.9	10.6	8.6				
(I) Vac Σ	9.40	4.40	2.01	1.18	7.9	2.12	.990	.410			30.8	
(J) AC noise x 2	0.1	0.1	0.1	.08	0.1	0.1	.08	0.2				
(K) Vac(corr) = $\sqrt{I^2 - J^2}$	—	—	—	—	—	—	—	359			Ac-Dc	=.950
(L) AC-DC cal.	.950	→										
(M) ρ dc/ρac=ExL/K	1.018	.975	.992	1.000	1.000	.995	1.008	1.114			Dc =	.930
(N) PFE=(M-1)(10^2)	1.8	-2.5	-0.8	0	0	-0.5	0.8	11.4	-?			
(O) MCF=(M-1)(10^5)/H	123	-178	-49	0	0	-56	75	1540	-?			
S.P.	+22.0				-1.9							

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	7-8				8-9							
(B) Receive	9-10	10-11	11-12	12-13	10-11	11-12	12-13	13-14				
(C) n separation	10	3	3	3	30	3	3	3				
(D) I	1.60	1.40	1.60	1.60	2.0	2.0	2.0					
(E) Vdc (avg)	8.07	1.85	1.02		16.2	2.65	1.05					
(F) DCcal	.930	→										
(G) Kn x 10^{-3}	1.5	6.0	15.0	30.0	1.5	6.0	15.0	30.0				
(H) ρ dc=ExFxGx10^3/D	7.03	7.37	8.9	9.8	11.3	7.4	7.34					
(I) Vac Σ	7.90	1.78	.760	.560	15.40	2.53	1.04					
(J) AC noise x 2	0.1	.08	0.2	.0	.08	0.2	.500					
(K) Vac (corr) = $\sqrt{I^2 - J^2}$			.733 ?				91.2					
(L) AC-DC cal.	.950	→										
(M) ρdc/ρac =ExL/K	.97	.987	1.325	—	.968	.995	1.092					
(N) PFE=(M-1)(10^2)	-3.0	-1.3	32.5		-3.2	-0.5	9.2					
(O) MCF=(M-1)(10^5)/H	-427	-176	3650		-283	-68	1252					
	-13.1				-2.9	+2.4	-46.2					

A.C. P

#5 in Set "C" is the SAME AS SETH →

#8 IN LINE 5

HEINRICHS GEOEXPLORATION COMPANY

INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page 10 CONT.

Project MATILDA Line 5 Set C Field date 12-14-64 Data page _____ Comp. date 12-14-64. Comp by DA

(A) Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		2-3	
(B) Receive	10-15S		15-20S			20-25S					CAL	
(C) n separation	30	3	30	10	1	30	3	1	1		30	
(D) I	2.000	2.000	1.400	2.000	2.000	1.000	1.400	2.000	2.000			
(E) Vdc (avg)	18.00	2.55	22.85	11.90	.995	16.40	3.84	1.22	.540		30.4	
(F) DCcal	.987								→			
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15	1.5	6.0	15	30			
(H) ρ dc=ExFxGx10^3/D	13.32	7.55	24.19	35.25	7.375	24.25	16.25	9.02	8.00			
(I) Vac Σ	17.50	2.50	22.20	11.56	.970	15.98	3.76	1.187	5.20		29.90	
(J) AC noise x 2	.06		.04			.04						
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.984								→		DC =	987
(M) ρ dc/ρac=ExL/K	1.010	1.002	1.011	1.013	1.008	1.009	1.005	1.011	1.021			
(N) PFE=(M-1)(10^2)	1.0	0.2	1.1	1.3	0.8	0.9	0.5	1.1	2.1		AC-DC=	984
(O) MCF=(M-1)(10^5)/H	75	26	45	37	109	37	31	122	262			

S.P. +19.7 -39.9 +71.4

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	1-2	2-3	2-4	4-5	1-2	2-3	3-4	4-5				
(B) Receive	25-30S				30-35S							
(C) n separation	3	3	1	1	1	1	1	1				
(D) I	1.000	1.400	2.000	2.000	1.000	1.400	2.000	2.000				
(E) Vdc (avg)	2.18	1.640	.660	.370	1.020	.9925	.485	.270				
(F) DCcal												
(G) Kn x 10^{-3}	6.0	15	30	52.5	15	30	52.5	84.0				
(H) ρ dc=ExFxGx10^3/D	6.45	17.35	9.78	9.60	15.10	20.98	12.55	11.20				
(I) Vac Σ	2.11	1.54	.640	.345	.982	.956	.460	264				
(J) AC noise x 2	04			.040	.04			.040				
(K) Vac (corr) = $\sqrt{I^2 - J^2}$				.342				2638				
(L) AC-DC cal.										$.345^2$ =	.1190	
(M) ρdc/ρac =ExL/K	1.016	1.047	1.017	1.064	1.018	1.022	1.038	1.009		− $.04^2$ −	.0016	
(N) PFE=(M-1)(10^2)	1.6	4.7	1.7	6.4	1.8	2.2	3.8	0.9			$\sqrt{.1174}$	
(O) MCF=(M-1)(10^5)/H	248	271	1739	6655	120	105	303	80				

S.P. −82.9 +10.6

$.264^2$ = .7000

− $.04^2$ 16

$\sqrt{.6984}$

ARKLA

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page 11

Project MATILDA & DON Line #6 "A" 500' GOING NORTH Field date NOV 12 Data page _____ Comp. date 12 NOV RE Comp by J.P.M.

(A) Send	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2	4-5	3-4	2-3
(B) Receive	5-10	→	10-15	→	→	15-20	→	→	→	20-25	→	→
(C) n separation	10 (1)	3 (2)	10 (1)	3 (2)	3 (3)	30 (1)	10 (2)	3 (3)	3 (4)	10	3	3
(D) I (3)	1.200	1.200	1.800	1.200	1.200	2.000	1.800	1.200	1.200	2.000	1.800	1.200
(E) Vdc (avg) (4)	7.6	2.45	12.15	1.75	.880	40.0	7.98	1.75	1.07	6.35	2.30	.625
(F) DCcal (1)	910	→	→	→	→	→	→	→	→	→	→	→
(G) Kn x 10^{-3} (2)	15	6	1.5	6	15	1.5	6	15	30	6	15	30
(H) ρ dc=ExFxGx10^3/D	8.65	11.10	9.2	7.96	10.0	27.3	24.2	19.9	24.3	17.3	17.4	14.2
(I) Vac Σ ξ	7.10	2.3	11.2	1.55	.840	36.8	7.4	1.6	1.0	6.0	2.15	.60
(J) AC noise x 2	—	—	—	—	0.1	—	—	—	—	—	—	.1
(K) Vac(corr) = $\sqrt{I^2 - J^2}$	—	—	—	—	.835	—	—	—	—	—	—	.592
(L) AC-DC cal.	.950	→	→	→	→	→	→	→	→	→	→	→
(M) ρ dc/ρac=ExL/K	1.017	1.012	1.030	1.072	1.001	1.032	1.026	1.040	1.016	1.005	1.016	1.004
(N) PFE=(M-1)(10^2)	1.7	1.2	3.0	7.2	0.1	3.2	2.6	4.0	1.6	0.5	1.6	0.4
(O) MCF=(M-1)(10^5)/H	197	108	326	905	10	117	107	209	66	29	92	28

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	1-2	4-5	3-4	2-3	1-2		CAL					
(B) Receive	20-25	25-30	→	→	→							
(C) n separation	—	3	3	←	←							
(D) I 3	—	2.000	1.800									
(E) Vdc (avg) (4)	—	3.45	1.50	—	—		33.0					
(F) DCcal 1	910	→	→				910					
(G) Kn x 10^{-3} 2	5	15	30									
(H) ρ dc=ExFxGx10^3/D		23.6	22.8									
(I) Vac Σ ξ	—	3.2	1.35				31.4					
(J) AC noise x 2	—	—	—									
(K) Vac (corr) = $\sqrt{I^2 - J^2}$		—	—									
(L) AC-DC cal.	.950	→	→	→	→		.950					
(M) ρdc/ρac =ExL/K		1.025	1.056									
(N) PFE=(M-1)(10^2)		2.5	5.6									
(O) MCF=(M-1)(10^5)/H		106	246									

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page 12

Project Matilda + Scooter Claims Line #6 Set "B" Field date Nov 12 Data page _____ Comp. date Nov 13 . Comp by M.L.

→ South

(A) Send	~~2-3~~	~~1-2~~	~~3-4~~	~~3-2~~	~~2-1~~	~~5-4~~	~~4-3~~	~~3-2~~	~~2-1~~		Cal.	
(B) Receive	10-15S	→	15-20S	→	→	20-25S	→	→	→	— ?		
(C) n separation	10	3	10	3	3	10	3	3	3			
(D) I	2.0	2.0	1.4	2.0	2.0	1.2	1.4	2.0	2.0			
(E) Vdc (avg)	10.67	4.03	5.60	2.47	1.350	14.18	2.13	1.60	1.000		32.7	
(F) DCcal	.920	→								—	?920	
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15.0	1.5	6.0	15.0	30.0			
(H) ρ dc=ExFxGx10^3/D	7.35	11.1	5.5	6.8	9.3	16.2	8.4	11.0	13.8			
(I) Vac Σ	10.0	3.70	5.40	2.32	1.300	13.10	2.00	1.50	.900		31.0	
(J) AC noise x 2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1			
(K) Vac(corr) = $\sqrt{I^2 - J^2}$									.895			
(L) AC-DC cal.	.947	→								—	?947	
(M) ρ dc/ρac=ExL/K	1.010	1.032	982	1.010	.984	1.025	1.008	1.010	1.058			
(N) PFE=(M-1)(10^2)	1.0	3.2	-1.8	1.0	-1.6	2.5	0.8	1.0	5.8			
(O) MCF=(M-1)(10^5)/H	136	288	-328	150	-174	154	950	96.3	420			
S.P.	+4.1		-59.5			0						

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	~~5-4~~	~~4-3~~	~~3-2~~	~~2-1~~	~~5-4~~	~~4-3~~	~~3-2~~	~~2-1~~				
(B) Receive	25-30S	→	→	→	30-35S	→	→	→	— ?			
(C) n separation	3	3	3		3							
(D) I	1.2	1.4	2.0		1.2							
(E) Vdc (avg)	2.61	.730	.950		.900							
(F) DCcal	.920	→										
(G) Kn x 10^{-3}	6.0	15.0	30.0		15.0							
(H) ρ dc=ExFxGx10^3/D	12.0	7.2	13.1		10.3							
(I) Vac Σ	2.42	.700	.720		.840							
(J) AC noise x 2	0.1	0.1	0.1		0.1							
(K) Vac (corr) = $\sqrt{I^2 - J^2}$		.694	.713		.835							
(L) AC-DC cal.	.947	→										
(M) ρdc/ρac =ExL/K	1.020	996	1.260		1.020							
(N) PFE=(M-1)(10^2)	2.0	-0.4	26		2.0							
(O) MCF=(M-1)(10^5)/H	167	56	1985		194							
	-46.3		57.5 46.7 / 105.8		+5.6							

#4 on S B 5 N in 6 425

#5 " " " = " 4 " " 6 SOUTH →

HEINRICHS GEOEXPLORATION COMPANY

INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page 12 CONT.

Project SCOOTER 2 Line 6 Set ~~B~~ C Field date 12-15-64 Data page _____ Comp. date 12-15-64. Comp by DA

(A) Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		2-3	
(B) Receive	10-15S		15-20S			20-25S					CAL	
(C) n separation	100	3	100	10	1	100	3	1	1		30	
(D) I	2.0	1.6	1.8	2.0	1.6	1.6	1.8	2.0	1.6			
(E) Vdc (avg)	84.00	3.35	59.00	10.10	1.14	44.00	3.08	1.055	~~2.69~~	.425	30.0	
(F) DCcal	1.000											
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15	1.5	6.0	15	30			
(H) ρ dc=ExFxGx10^3/D	63.00	12.60	49.10	30.30	10.68	38.10	10.25	7.92	~~50.45~~	8.0		
(I) Vac Σ	79.97	3.28	56.60	9.60	1.11	41.80	2.985	1.02	~~2.60~~	412	29.84	
(J) AC noise x 2	.04		04			04						
(K) Vac(corr) = $\sqrt{I^2 - J^2}$									00 PS		DC =	1.000
(L) AC-DC cal.	995											
(M) ρ dc/ρac=ExL/K	1045	1.015	1.036	1.045	1.022	1.048	1.023	1.031	1.029		AC-DC	.995
(N) PFE=(M-1)(10^2)	4.5	1.5	3.6	4.5	2.2	4.8	2.3	3.1	2.9			
(O) MCF=(M-1)(10^5)/H	71	119	73	148	204	126	224	392	362			

S.P. -27.7 +10.6 -47.1

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5				
(B) Receive	25-30S				30-35S							
(C) n separation	10	1	1	1	3	1	1	1				
(D) I	1.6	1.8	2.0	1.6	1.6	1.8	2.00	1.6				
(E) Vdc (avg)	7.56	1.10	.520	.190	.1.64	450	.255	.120				
(F) DCcal	1.000											
(G) Kn x 10^{-3}	6.0	15	30	52.50	15	30	52.50	84.00				
(H) ρ dc=ExFxGx10^3/D	28.35	9.18	7.80	62.25	15.35	7.50	10.30	6.74				
(I) Vac Σ	7.06	1.064	.492	.180	1.38	425	236	.116				
(J) AC noise x 2	.04			06	.04			.04				
(K) Vac (corr) = $\sqrt{I^2 - J^2}$				.179				.115				
(L) AC-DC cal.	995											
(M) ρdc/ρac =ExL/K	1.065	1.028	1.052	1.055	1.180	1.055	1.073	1.037				
(N) PFE=(M-1)(10^2)	6.5	2.8	5.2	5.5	180	5.5	7.3	3.7				
(O) MCF=(M-1)(10^5)/H	229	280	670	88	117	730	710	550				

S.P. +19.2 -11.5

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

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Project MATILDA & SCOOTER Line #7 SET "B" Field date NOV 13 Data page _____ Comp. date NOV 14 Comp by M.L.

→ NORTH

(A) Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		Cal	
(B) Receive	10-15N →		15-20N →			20-25N →						
(C) n separation	30	3	30	10	3	10	3	3	3			
(D) I	1.80	2.0	1.60	1.80	2.00	1.40	1.60	1.80	2.0			
(E) Vdc (avg)	18.1	4.04	29.2	6.43	1.95	13.4	3.00	1.150			32.4	
(F) DCcal	.925 →											
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15.0	1.5	6.0	15.0	30.0			
(H) ρ dc=ExFxGx10^3/D	14.0	11.2	25.3	19.8	13.5	13.3	10.9	8.88	5.55	low is	A.C.	
(I) Vac Σ	17.3	3.80	27.4	6.0	1.80	12.6	2.90	1.100	.400		31	
(J) AC noise x 2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1			
(K) Vac(corr) = $\sqrt{I^2 - J^2}$	—	—	—	—	—	—	—	—	—		Ac-Dc	.952
(L) AC-DC cal.	.952 →											
(M) ρ dc/ρac=ExL/K	1.000	1.018	1.019	1.025	1.037	~~1.017~~	.990	~~0~~			Dc=	~~.900~~
(N) PFE=(M-1)(10^2)	10	~~1.5~~ 1.8	1.9	2.5	3.7	1.7	-1.0	0				.925
(O) MCF=(M-1)(10^5)/H	00	161	75	126	279	128	-96	0				
	+33.5		+40.9			-5.0						

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5				
(B) Receive	25-30N →				30-35N →							
(C) n separation	10	3	3		3	3						
(D) I	1.40	1.60	1.60	2.0	1.40	1.60	1.60					
(E) Vdc (avg)	5.85	2.63	.925		1.240	1.080						
(F) DCcal	97 ~~.900~~ →											
(G) Kn x 10^{-3}	6.0	15.0	30.0		15.0	30.0						
(H) ρ dc=ExFxGx10^3/D	23.2	22.8	16.0		17.2	18.7	12.1	low is	AC.			
(I) Vac Σ	5.60	2.44	.860		1.64	1.00	.400					
(J) AC noise x 2	0.1	0.1	0.1		0.1	0.1	0.1					
(K) Vac (corr) = $\sqrt{I^2 - J^2}$	—	—	855		—	—						
(L) AC-DC cal.	.952 →											
(M) ρdc/ρac =ExL/K	1.017	1.032	1.036		1.050	~~1.034~~						
(N) PFE=(M-1)(10^2)	1.7	3.2	3.6		1.5	3.4						
(O) MCF=(M-1)(10^5)/H	74	140	225		87	182						
	+24				-12.4							

1000

Comp JPM

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

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Project MATILDA & SCOOTER Line #7 Set "A" → South Field date Nov 13 Data page _____ Comp. date Nov 14. Comp by H.L

(A) Send	2-3	1-2	4-3	3-2	2-1	5-4	4-3	3-2	2-1		Cal.	
(B) Receive	10-15S →		15-20S →			20-25S →						
(C) n separation	30	3	10	10	3	100	3	3	3			
(D) I	1.60	1.40	1.80	1.60	1.40	2.0	1.80	1.60	1.40			
(E) Vdc (avg)	54.5	2.64	10.84	5.98	1.35	82	3.01	2.29	.620		33	
(F) DCcal	.910 →											
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15	1.5	6.0	15	30			
(H) ρ dc=ExFxGx10^3/D	46.5	10.3	8.23	20.4	13.2	56.0	9.1	19.6	12.1			
(I) Vac Σ	52.0	2.52	10.20	5.70	1.30	76	2.84	2.10	.600		31.4	
(J) AC noise x 2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.6	0.1			
(K) Vac(corr) = $\sqrt{I^2 - J^2}$	—	—	—	—	—	—	—	—	.592		Ac - Dc	= .952
(L) AC-DC cal.	.952 →											
(M) ρ dc/ρac=ExL/K	1.00	1.000	1.015	1.000	1.990	1.027	1.010	1.038	.997		Dc =	.910
(N) PFE=(M-1)(10^2)	.05	0	1.1	0	-1.0	2.7	1.0	3.8	-0.3			
(O) MCF=(M-1)(10^5)/H	10	0	13.4	0	-76	48	110	194	-25			
S-Pl	+2.3		-4.0			-6.1						

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	5-4	4-3	3-2	2-1	5-4	4-3	3-2	2-1				
(B) Receive	25-30S →				30-35S →							
(C) n separation	3	3	3	—	3	3						
(D) I	2.0	1.80	1.60	1.40	2.0	1.80						
(E) Vdc (avg)	4.50	.850	.805		1.090							
(F) DCcal	.910 →											
(G) Kn x 10^{-3}	6.0	15	30		15	30						
(H) ρ dc=ExFxGx10^3/D	12.3	6.5	13.7		7.5							
(I) Vac Σ	4.16	.800	.760		1.040							
(J) AC noise x 2	0.1	0.1	0.1		0.1							
(K) Vac (corr) = $\sqrt{I^2 - J^2}$		.795	.754									
(L) AC-DC cal.	.952 →											
(M) ρdc/ρac =ExL/K	1.030	1.018	1.016		1.000							
(N) PFE=(M-1)(10^2)	3.0	1.8	6.6		0							
(O) MCF=(M-1)(10^5)/H	245	273	167		0							
	-19.1				+20.2							

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

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Project Arkla Matilda + Scooter Line #7 Field date Nov 17 Data page _____ Comp. date Nov 18. Comp by M.L.

SET "B" ONE WAY Going North.

(A) Send	1-2				2-3					Cal.		
(B) Receive	3-4	4-5	5-6	6-7	4-5	5-6	6-7	7-8				
(C) n separation	30	3	3	3	30	10	3	3				
(D) I	1.40	1.40	1.40	1.40	2.00	2.00	2.00	2.00				
(E) Vdc (avg)	24.6	4.8	2.30	1.05	22.8	7.45	2.77	1.25		32.7		
(F) DCcal	.920 →											
(G) Kn x 10^{-3}	1.5	6.0	15.0	30.0	1.5	6.0	15.0	30.0				
(H) ρ dc=ExFxGx10^3/D	24.3	19.0	22.7	20.7	15.7	20.6	19.1	17.3				
(I) Vac Σ	23.4	4.30	2.20	1.00	22.0	7.18	2.70	1.20		31.2		
(J) AC noise x 2	.06	.06	0.1	.10	.04	0.1	.10	.06				
(K) Vac(corr) = $\sqrt{I^2 - J^2}$	—	—	—	—	—	—	—	—		Dc	= .920	
(L) AC-DC cal.	.955 →											
(M) ρ dc/ρac=ExL/K	1.005	1.067	1.000	1.000	.990	.990	.980	.995		Ac - Dc	= .955	
(N) PFE=(M-1)(10^2)	0.5	6.0	0	0	-1	-1	-2	-0.5				
(O) MCF=(M-1)(10^5)/H	21	316	0	0	-64	-49	-105	-29				
S.P.	+55				+8.2							

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	3-4				4-5							
(B) Receive	5-6	6-7	7-8	8-9	6-7	7-8	8-9	9-10				
(C) n separation	30	10	3	3	30	10	10	30				
(D) I	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				
(E) Vdc (avg)	44.0	12.0	4.82	4.2	28.5	26.8	6.1	3.64				
(F) DCcal	.920 →											
(G) Kn x 10^{-3}	1.5	6.0	15.0	30.0	1.5	6.0	15.0	30.0				
(H) ρ dc=ExFxGx10^3/D	30.4	33.1	33.2	58.0	19.7	74.0	42.1	50.3				
(I) Vac Σ	41.6	11.4	4.46	3.94	27.4	25.4	5.8	3.56				
(J) AC noise x 2	0.10	.10	.06	.10	.10	.06	.10	.10				
(K) Vac (corr) = $\sqrt{I^2 - J^2}$	—	—	—	—	—	—	—	—				
(L) AC-DC cal.	.955 →											
(M) ρdc/ρac =ExL/K	1.010	1.005	1.030	1.020	.995	1.005	1.005	.977				
(N) PFE=(M-1)(10^2)	1.0	0.5	3.0	2.0	-0.5	0.5	0.5	-2.3				
(O) MCF=(M-1)(10^5)/H	33	15.0	90	34	25	7	12	46				
	-53.6				+68.5	+2.9	-1.6					

CHL?

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INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page 16

Project Ark IA Bill + Finger Claims Line #8 → North Field date Nov 20 Data page _____ Comp. date Nov 20. Comp by _____

(A) Send	4-3	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		Cal.	
(B) Receive	10-15N →		15-20N →			20-25N →						
(C) n separation	30	3	10	3	3	30	3	3			30	
(D) I	2.0 →											
(E) Vdc (avg)	18.2	2.41	11.9	3.35	.730	20.2	4.08	1.69			33.0	
(F) DCcal	.910 →											
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15.0	1.5	6.0	15.0				
(H) ρ dc=ExFxGx10^3/D	12.5	6.6	8.20	9.20	5.0	13.7	11.2	11.5				
(I) Vac Σ	16.6	2.26	11.0	3.22	.700	18.8	3.74	1.600			30.5	
(J) AC noise x 2	—	—	—	—	—	—	—	—				
(K) Vac(corr) = $\sqrt{I^2 - J^2}$	—	—	—	—	—	—	—	—			Ac-Dc = .923	
(L) AC-DC cal.	.923 →											
(M) ρ dc/ρac=ExL/K	1.012	.985	1.000	.961	.963	.993	1.009	.977			Dc = .910	
(N) PFE=(M-1)(10^2)	1.2	-1.5	0	-3.9	-3.7	-0.7	0.9	-2.2				
(O) MCF=(M-1)(10^5)/H	96	-67	0	-423	-423	-740	80	-191				

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5				
(B) Receive	25-30N →				30-35N →							
(C) n separation	3	3	3		3	3	3					
(D) I	2.0 →											
(E) Vdc (avg)	3.51	1.200	.780		2.07	.850	.580					
(F) DCcal	.910 →											
(G) Kn x 10^{-3}	6.0	15	30		15	30	52					
(H) ρ dc=ExFxGx10^3/D	9.6	8.30	9.9		14.2	11.6	13.7					
(I) Vac Σ	3.30	1.14	.700		1.940	.780	.580					
(J) AC noise x 2	—	—	—		—	—	—					
(K) Vac (corr) = $\sqrt{I^2 - J^2}$	—	—	—		—	—	—					
(L) AC-DC cal.	.923 →											
(M) ρdc/ρac =ExL/K	.983	.978	.963		.986	1.006	.973					
(N) PFE=(M-1)(10^2)	-1.7	-2.7	-3.7		-1.4	0.6	-2.7					
(O) MCF=(M-1)(10^5)/H	-177	-325	-374		-99	52	-197					

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page 16

Project ARKLA Four Buttes Line # 9 Field date 11-21-64 Data page _____ Comp. date 11-22-64 Comp by DA

North East →

(A) Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		3-4	
(B) Receive	10-15N	→	15-20N	→	→	20-25N	→	→	→		CAL	
(C) n separation	30	10	30	3	3	100	10	3	3		30	
(D) I	2.000	—	—	—	—	—	—	—	→			
(E) Vdc (avg)	20.0	4.515	26.0	3.90	2.235	85.7	6.37	1.96	1.20		32.4	
(F) DCcal	.926	—	—	—	—	—	—	—	→			
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15.0	1.5	6.0	15.0	30.0			
(H) ρ dc=ExFxGx10^3/D	30.~~8~~ 13.9	12.5	18.1	10.8	15.5	59.55	17.7	13.6	16.7			
(I) Vac Σ	19.0	4.38	24.2	3.73	2.09	83.0	6.18	1.78	1.12		30.2	
(J) AC noise x 2	.10	→	.16	→	→	.16	→	→	→			
(K) Vac(corr) = $\sqrt{I^2 - J^2}$	—	—	—	—	—	—	—	—	1.107		DC=	.926
(L) AC-DC cal.	.932											
(M) ρ dc/ρac=ExL/K	.981	.958	1.000	.975	.996	.963	.960	1.027	1.016		AC DC	.932
(N) PFE=(M-1)(10^2)	-1.9	-4.2	0	-2.5	-0.4	-3.7	-4.0	2.7	1.0			
(O) MCF=(M-1)(10^5)/H	-137	-336	—	-232	-26	-62	-226	198	60			

SP -22.3 +15.6 -3.5

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	1 2	2 3	3 4	4 5	1 2	2 3	3 4	4 5				
(B) Receive	25 30N				30 35N							
(C) n separation	30	10	3	3	10	3	3	3				
(D) I	2.000											
(E) Vdc (avg)	27.9	4.60	2.005	1.435	8.62	1.70	0.92	0.68				
(F) DCcal	.926											
(G) Kn x 10^{-3}	6.0	15.0	30.0	52.5	15	30	52.5	84.0				
(H) ρ dc=ExFxGx10^3/D	17.2.5	28.4	27.85	34.8	59.9	23.6	22.3	26.4				
(I) Vac Σ	26.1	3.99	1.70	1.35	8.30	1.61	0.80	0.61				
(J) AC noise x 2	.16	—	—		.16	—						
(K) Vac (corr) = $\sqrt{I^2 - J^2}$				1.342	—	—	.785	.588				
(L) AC-DC cal.	.932											
(M) ρdc/ρac =ExL/K	996	958	1.100	996	968	984	1072	1.076				
(N) PFE=(M-1)(10^2)	-0.4	-4.2	10.0	-0.4	-3.2	-1.6	7.2	7.6				
(O) MCF=(M-1)(10^5)/H	-5	-148	360	-12	-53	-99	323	288				

-9.0 +2.5

Ark IA

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INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page 17

Project Bill & Finger Claims Line #8 Field date Nov 19 Data page _____ Comp. date Nov 20. Comp by D.A.

→ South

(A) Send	3-2	2-1	4-3	3-2	2-1	5-4	4-3	3-2	2-1		Cal	
(B) Receive	10-15S →		15-20S			20-25S						
(C) n separation	10	3	30	3	3	30	3	3	3		30	
(D) I	2.00											
(E) Vdc (avg) ✓	5.50	2.40	16.0	1.55	.910	17.4	4.20	.720			32.9	
(F) DCcal ✓	.912											
(G) Kn x 10^{-3} ✓	1.5	6.0	1.5	6.0	15.0	1.5	6.0	15.0	30	AC	ρ	
(H) ρ dc=ExFxGx10^3/D	37.6	6.60	10.9	4.25	6.20	11.9	11.5	4.90	6.8			
(I) Vac Σ	5.2	2.15	15.0	1.45	.830	16.4	3.86	.700	.500		30.6	
(J) AC noise x 2	—	—	—	—	—	—	—	—	—			
(K) Vac(corr) = $\sqrt{I^2 - J^2}$	—	—	—	—	—	—	—	—	—			
(L) AC-DC cal.	.930											
(M) ρ dc/ρac=ExL/K	.985	1.038	.992	.995	1.020	.987	1.012	.957			Dc =	.912
(N) PFE=(M-1)(10^2)	-1.5	3.9	0.8	-0.5	2.0	-1.3	1.2	-4.3?			Dc-Ac =	.930
(O) MCF=(M-1)(10^5)/H	-400	590	73	118	323	-109	104	-878				

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	5-4	4-3	3-2	2-1	5-4	4-3	3-2	2-1				
(B) Receive	25-30S			→	30-35S			→				
(C) n separation	3	3	3									
(D) I	2.00											
(E) Vdc (avg)	3.50	2.10	.600									
(F) DCcal	.912											
(G) Kn x 10^{-3}	6.0	15	30									
(H) ρ dc=ExFxGx10^3/D	9.6	14.5	8.2									
(I) Vac Σ	3.42	1.87	.500									
(J) AC noise x 2	—	—										
(K) Vac (corr) = $\sqrt{I^2 - J^2}$	—	—	.496									
(L) AC-DC cal.	.930											
(M) ρdc/ρac =ExL/K	.980	1.094	1.126									
(N) PFE=(M-1)(10^2)	-2.0	4.4	12.6?									
(O) MCF=(M-1)(10^5)/H	-209	303	1537									

HEINRICHS GEOEXPLORATION COMPANY

INDUCED POLARIZATION SURVEY COMPUTATION SHEET

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Project 4 Buttes Line #10 SPR I Field date 11-23-64 Data page _____ Comp. date 11-23-64 Comp by DA

NORTH YN

(A) Send	34	45	23	34	45	12	23	34	45		34	
(B) Receive	10-15N		15-20N			20-25N					CAL	
(C) n separation	30	10	10	3	1	30	10	3	1		30	
(D) I	2.000											
(E) Vdc (avg)	19.425	5.75	13.375	3.235	1315	25.0	4.40	2.05	1.10		30.8	
(F) DCcal	.974											
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15	1.5	6.0	1.5	30			
(H) ρ dc=ExFxGx10^3/D	28.35	33.58	19.50	18.76	19.26	36.88	24.80	31.95	28.45			
(I) Vac Σ	1897	5.60	13.24	3.16	1.280	24.6	4.36	1.98	1.06		30.6	
(J) AC noise x 2	.04	—	.06	—	—	.06	—	—	—			
(K) Vac(corr) = $\sqrt{I^2 - J^2}$	—	—	—	—	—	—	—	—	—			
(L) AC-DC cal.	.994						1.004				DC	.974
(M) ρ dc/ρac=ExL/K	1.018	1021	1.004	1.016	1021	1.010	~~1010~~	1029	1.032			
(N) PFE=(M-1)(10^2)	1.8	2.1	0.4	1.6	2.1	1.0	~~1.0~~ 0.4	2.9	3.2		AC DC	.994
(O) MCF=(M-1)(10^5)/H	~~64~~ 127	~~63~~	20 41	~~85~~	~~52~~	~~28~~	~~39~~	~~91~~	~~109~~			
SP	-3.5	121	+0.7	169	210	-4.555	33	193	199			

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	12	23	34	45	1-2	23	34	45				
(B) Receive	25-30N				30-35N							
(C) n separation	10	3	1	1	3	1	1	1				
(D) I	2.000											
(E) Vdc (avg)	8.10	1.945	1.01	.593	2.93	.880	530	340				
(F) DCcal	.974											
(G) Kn x 10^{-3}	6.0	15	30	52.5	15	30	52.5	84.0				
(H) ρ dc=ExFxGx10^3/D	42.33	28.20	29.45	30.12	42.75	28.85	27.50	27.85				
(I) Vac Σ	7.90	1.87	.980	.580	2.80	.820	.500	.330				
(J) AC noise x 2	.06	—	—		.04	—	—					
(K) Vac (corr) = $\sqrt{I^2 - J^2}$	—	—	—	.578	—	—	—	.328				
(L) AC-DC cal.	.994				1.041							
(M) ρdc/ρac =ExL/K	1.018	1.032	1.025	1.020	~~1.047~~	1.065	1.052	1.031				
(N) PFE=(M-1)(10^2)	1.8	3.2	2.5	12.0	~~4.7~~ 4.1	6.5	5.2	3.1				
(O) MCF=(M-1)(10^5)/H	~~38~~	~~114~~	~~85~~		~~110~~	~~254~~	~~192~~					
	76	225	170	132	192	508	385	223				

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page 18

Project Four Buttes Line # 9 Field date 11-21-64 Data page _____ Comp. date 11-22-64 Comp by DA

(A) Send	3-2	2-1	4-3	3-2	2-1	5-4	4-3	3-2	2-1		2-3	
(B) Receive	10-15S	→	15-20S	→	→	20-25S	→	→	→			
(C) n separation	30	10	100	3	3	30	10	3	3		30	
(D) I	2.000	→	→	→	→	→	→	→	→			
(E) Vdc (avg)	26.7	4.46	47.15	4.075	1.895	41.75	10.085	1.29	1.135		33.0	
(F) DCcal	.908	→	→	→	→	→	→	→	→			
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15.0	1.5	6.0	15.0	30.0			
(H) ρ dc=ExFxGx10^3/D	3.63 18.2	2.42 12.1	6.41 32.1	2.22 11.1	2.58 12.9	56.55 28.5	5.40 27.4	1.95 8.8	3.07 15.4			
(I) Vac Σ	25.0	4.33	46.0	3.80	1.83	38.5	8.73	1.32	1.09		31.2	
(J) AC noise x 2	.06	—	04	—	—	.10						
(K) Vac(corr) = $\sqrt{I^2 - J^2}$											DC =	908
(L) AC-DC cal.	.944	→	→	→	→	→	→	→	→			
(M) ρ dc/ρac=ExL/K	1.008	.973	.966	1.012	.977	1.025	1.090	.929	.983		DC-AC =	.944
(N) PFE=(M-1)(10^2)	0.8	-2.7	-3.4	1.2	-2.3	2.5	9.0	-7.1	-1.7			
(O) MCF=(M-1)(10^5)/H	44	-223	-106	108	-178	88	329	-807	-110			
SP.	+ 11.0		-10.1			-1.5						

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	5-4	4-3	3-2	2-1	5-4	4-3	3-2	2-1				
(B) Receive	25-30S	→	→	→	30-35S	→	→	→				
(C) n separation	10	3	3	3	3	3						
(D) I	2.000	→	→	→	→	→						
(E) Vdc (avg)	9.02	3.20	0.63		3.23	1.20						
(F) DCcal	.908	→	→	→	→	→						
(G) Kn x 10^{-3}	6.0	15	30	52.5	15	30	52.5					
(H) ρ dc=ExFxGx10^3/D	4.92 27.2	4.36 21.8	1.72 8.6	3.16.2	4.39 22.0	3.27	16.4					
(I) Vac Σ	8.86	3.03	0.62	0.68	3.04	1.06						
(J) AC noise x 2	.16	→	→	→	.20	1.05						
(K) Vac (corr) = $\sqrt{I^2 - J^2}$			.60									
(L) AC-DC cal.	.944	→	→	→	→	→						
(M) ρdc/ρac =ExL/K	.959	.995	.992		1.003	1.078						
(N) PFE=(M-1)(10^2)	-4.1	-0.5	-0.8		0.3	7.8						
(O) MCF=(M-1)(10^5)/H	-151	-23	-93		36	475						
					-15.3							

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Project 4 B Line #10 SPD. #1 Field date 11-23-64 Data page _____ Comp. date 11-23-64. Comp by J.P.M.

SOUTH ½

(A) Send	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2	4-5	3-4	2-3
(B) Receive	5-105	→	10-155	→	→	15-205	→	→	→	20-255	→	→
(C) n separation	10	10	10	3	3	10	3	1	1	3	1	1
(D) I	2000	→	→	→	→	→	→	→	→	→	→	→
(E) Vdc (avg)	11.195	5.81	10.17	3.005	2.49	16.59	2.96	1.355	1.227	3.745	.470	.252
(F) DCcal	.968	→	→	→	→	→	→	→	→	→	→	→
(G) Kn x 10^{-3}	1.5	6	1.5	6	15	1.5	6	15	30	6	15	30
(H) ρ dc=ExFxGx10^3/D	8.1	16.9	7.4	8.7	17.7	12.0	8.6	9.8	17.8	10.9	8.4	3.7
(I) Vac Σ	10.87	5.63	9.98	2.92	2.36	16.00	2.86	1.32	1.185	3.62	4.54	.240
(J) AC noise x 2	.04	.04	.04	.04	.044	—	—	—	.04	—	—	.04
(K) Vac(corr) = $\sqrt{I^2 - J^2}$	—	—	—	—	—	—	—	—	—	—	—	.2865
(L) AC-DC cal.	.982	→	→	→	→	→	→	→	→	→	→	→
(M) ρ dc/ρac=ExL/K	1.01	1.031	0	1.010	1.015	1.016	1.016	1.008	1.017	1.016	1.016	1.047
(N) PFE=(M-1)(10^2)	1.0	3.1	0	1.0	1.5	1.6	1.6	0.8	1.7	1.6	1.6	4.7
(O) MCF=(M-1)(10^5)/H	124	189	—	115	85	133	186	82	96	147	471	1270

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	1-2	4-5	3-4	2-3	1-2		2-3					
(B) Receive	20-255	25-305	→	→	→							
(C) n separation	1	1	1	1	1		30					
(D) I	2000	→	→	→	→		800					
(E) Vdc (avg)	.262	1.405	.741	.435	.458		31.0					
(F) DCcal	.968	→	→	→	→		.968					
(G) Kn x 10^{-3}	52.5	15	30	52.5	89							
(H) ρ dc=ExFxGx10^3/D	6.6	10.4	10.8	11.1	18.7							
(I) Vac Σ	.250	1.370	.720	.420	.440		30.4					
(J) AC noise x 2	.04	.04	—	—	—							
(K) Vac (corr) = $\sqrt{I^2 - J^2}$	.247	—	—	—	—							
(L) AC-DC cal.	.982	→	→	→	→		.982					
(M) ρdc/ρac =ExL/K	1.040	1.007	1.010	1.026	1.023							
(N) PFE=(M-1)(10^2)	4.0	0.7	1.0	2.6	2.3							
(O) MCF=(M-1)(10^5)/H	607	67	93	232	123							

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Project 4 B Line #10 SPR1 Field date 11-23-64 Data page _____ Comp. date 112364 Comp by DA

(A) Send	23	12	34	23	12	45	34	23	12		23	
(B) Receive	10-15S		15 20S			20-25S					CH1	
(C) n separation	10	10	10	3	3	10	3	1	1		30	
(D) I	2.000	→										
(E) Vdc (avg)	11.195	5.81	10.17	3.005	2.44	16.54	2.96	1.355	1.227		31.0	
(F) DCcal	.968											
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15.0	1.5	6.0	150	30.0			
(H) ρ dc=ExFxGx10^3/D	16.21	33.65	15.78	17.45	35.40	24.00	17.38	19.65	35.25			
(I) Vac Σ	10.87	5.63	9.98	2.92	2.36	16.00	2.86	1.32	1.185		30.4	
(J) AC noise x 2	.04		.04			.044						
(K) Vac(corr) = $\sqrt{I^2 - J^2}$											DC	.968
(L) AC-DC cal.	.983	—	—	.987	.987	.983	.987	1.030	1.030			
(M) ρ dc/ρac=ExL/K	1.007	1.015	1.003	1.016	1.019	1.015	1.020	1.55	1.065		ACDC	.982
(N) PFE=(M-1)(10^2)	0.7	1.5	0.3	1.6	1.9	1.5	2.0	5.5	6.5			
(O) MCF=(M-1)(10^5)/H	43	45	19	92	54	62	115	280	184			
SP	-20.8		-17.9			+18.9						

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	45	34	23	12	45	34	23	12				
(B) Receive	25 30S	→			30-25S	→						
(C) n separation	3	1	1	1	1	1	1	1				
(D) I	2.000	→										
(E) Vdc (avg)	3745	.470	.252	.260	1.405	.741	.435	.458				
(F) DCcal	.968											
(G) Kn x 10^{-3}	6.0	15.0	30.0	52.5	15	30	52.5	84.0				
(H) ρ dc=ExFxGx10^3/D	21.73	6.82	7.31	13.42	20.38	21.50	22.62	37.15				
(I) Vac Σ	3.62	4.54	.240	.250	1.370	.720	.420	.440				
(J) AC noise x 2	.04											
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.987	1.030										
(M) ρdc/ρac =ExL/K	1.022	1.065	1.080	1.071	1.055	1.060	1.068	1.072				
(N) PFE=(M-1)(10^2)	2.2	6.5	8.0	7.1	5.5	6.0	6.8	7.2				
(O) MCF=(M-1)(10^5)/H	101	95	109	528	271	279	308	94				
SP	+18.9				-1.9							

All ρ dc calculations need to be devided by 2 - the current value

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Project 4 BUTTES Line 10 SPR2 Field date 11-25-64 Data page _____ Comp. date 11-25-64 Comp by DA

NORTH →

(A) Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		3-4	
(B) Receive	10-15N →		15-20N →			20-25N →					CAL	
(C) n separation	30	3	30	3	1	30	3	1	1		30	
(D) I 3	1.8	2.0	1.8	1.6	2.0	2.0	1.8	1.8	2.0			
(E) Vdc (avg) 1 4	16.70	2.43	33.50	3.915	1.260	36.425	4.885	1.400	.487		30.8	
(F) DCcal 1	.974											
(G) Kn x 10^{-3} 2	1.5	6.0	1.5	6.0	15	1.5	6.0	15	30			
(H) ρ dc=ExFxGx10^3/D	13.6	7.1	27.2	14.3	9.2	26.6	15.9	11.4	7.1			
(I) Vac Σ 2 3	16.20	2.36	32.50	3.77	1.220	35.40	4.73	1.370	.460		30.6	
(J) AC noise x 2	.04	—	.04	—	—	.06	—	—	.456			
(K) Vac(corr) = $\sqrt{I^2 - J^2}$	—	—	—	—	—	—	—	—				
(L) AC-DC cal. V	.994										DC	.974
(M) ρ dc/ρac=ExL/K	1.030	1.023	1.025	1.032	1.027	1.023	1.026	1.016	1.060			
(N) PFE=(M-1)(10^2)	3.0	2.3	2.5	3.2	2.7	2.3	2.6	1.6	6.0		AC-DC	.994
(O) MCF=(M-1)(10^5)/H	221	324	92	224	284	86.	163	140	845			

SP +10.9 -24.4 -18.5

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5				
(B) Receive	25-30N →				30-35N →							
(C) n separation	10	3	1	1	1	1	1	1				
(D) I 3	2.0	2.0	1.8	2.0	2.0	2.0	1.8	2.0				
(E) Vdc (avg) 1 4	5.95	1.97	.7775	.340	1.440	.860	.400	.2075				
(F) DCcal 1	.974											
(G) Kn x 10^{-3} 2	6.0	15	30	52.5	15	30	52.5	84.0				
(H) ρ dc=ExFxGx10^3/D	17.4	14.4	12.6	8.7	10.5	12.6	11.4	8.5				
(I) Vac Σ 2	.580	1.92	.730	.330	1.385	.835	.390	.200				
(J) AC noise x 2	.04	—	—		.04	—						
(K) Vac (corr) = $\sqrt{I^2 - J^2}$	—	—	—	.328	—	—	.388	.196				
(L) AC-DC cal.	.994											
(M) ρdc/ρac =ExL/K	1.020	1.020	1.064	1.030	1.034	1.022	1.026	1.052				
(N) PFE=(M-1)(10^2)	2.0	2.0	6.4	3.0	3.4	2.2	2.6	5.2				
(O) MCF=(M-1)(10^5)/H	115	139	508	345	324	174	228	612				

+0.4 +17.9

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Project 4 BUTTES Line 10 Spe 2 Field date 11-25-64 Data page _____ Comp. date 11-25-64 Comp by DA

SOUTH HALF

(A) Send	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		2-3	
(B) Receive	10-15S	→	15-20S	→	→	20-25S	→	→	→		CAL	
(C) n separation	10	3	30	3	1	30	3	1	1		30	
(D) I 3	1.8	2.000	1.8	1.8	2.0	2.0	1.6	1.8	2.0			
(E) Vdc (avg) 4	14.44	2.48	18.50	3.36	1.018	18.20	3.29	1.240	.488			
(F) DCcal 1	.977										30.7	
(G) Kn x 10^{-3} 2	1.5	6.0	1.5	6.0	15	1.5	6.0	15	30			
(H) ρ dc=ExFxGx10^3/D	11.8	7.26	15.1	10.9	7.5	13.3	12.1	10.1	7.25			
(I) Vac Σ	13.98	2.38	18.10	3.24	.990	17.80	3.19	1.18	.473		30.4	
(J) AC noise x 2	.04	—	.04	—	—	.04	—	—	—			
(K) Vac(corr) = $\sqrt{I^2 - J^2}$	—	—	—	—	—	—	—	—	—			
(L) AC-DC cal. 1	.992										DC	.977
(M) ρ dc/ρac=ExL/K	1.023	1.034	1.012	1.028	1.020	1.014	1.023	1.041	1.023			
(N) PFE=(M-1)(10^2)	2.5	3.4	1.2	2.8	2.0	1.4	2.3	4.1	2.3		AC-DC	992
(O) MCF=(M-1)(10^5)/H	212	468	79	267	267	105	190	406	320			
SP	-0.3		-5.9			+30						

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2				
(B) Receive	25-30S	→	→	→	30-35S	→	→	→				
(C) n separation	10	3	1	1	3	1	1	1				
(D) I 3	2.0	1.8	2.0	2.0	2.0	1.8	2.0	2.0				
(E) Vdc (avg) 2 4	4.05	1.37	.670	.280	1.71	.785	.455	—				
(F) DCcal 1	.977											
(G) Kn x 10^{-3} 2	6.0	15	30	52.5	15	30	52.5	84.0				
(H) ρ dc=ExFxGx10^3/D	11.9	11.2	9.8	7.14	12.5	12.8	11.6	8.04	A.C.			
(I) Vac Σ 3	3.90	1.32	.640	.260	1.65	.750	.420	1.96				
(J) AC noise x 2	.04	—	—	↓	.06	—						
(K) Vac (corr) = $\sqrt{I^2 - J^2}$				.256		.746	.408					
(L) AC-DC cal. 1	.992											
(M) ρdc/ρac =ExL/K	1.029	1.030	1.040	1.084	1.029	1.042	1.104	?				
(N) PFE=(M-1)(10^2)	2.9	3.0	4.0	8.4	2.9	4.2	10.4					
(O) MCF=(M-1)(10^5)/H	244	268	408	1170	232	328	897					
	-12.0				-22.6							

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Project ARKLA A-BUTTES Line 1 SET A N 40° W → Field date 11-29-64 Data page _____ Comp. date 11-29 . Comp by DA

(A) Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		2-3	
(B) Receive	10-15N →		15-20N	→		20-25N	→				CAL	
(C) n separation	30	10	100	10	3	100	10	3	3		30	
(D) I	2.000	→										
(E) Vdc (avg)	36.5	6.55	73.8	8.515	3.08	82.5	14.45	3.32	1.695		30.8	
(F) DCcal	.974											
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15	1.5	6.0	15	30			
(H) ρ dc=ExFxGx10^3/D	26.7	19.12	53.9	24.85	22.50	60.25	12.25	24.25	24.78		30.5	
(I) Vac Σ	35.4	6.40	71.0	8.30	2.98	80.0	14.0	3.24	1.62			
(J) AC noise x 2	.06		.06			.06						
(K) Vac(corr) = $\sqrt{I^2 - J^2}$											DC =	.974
(L) AC-DC cal.	.990											
(M) ρ dc/ρac=ExL/K	1.020	1012	1027	1016	1022	1020	1021	1014	1036		AC-DC	990
(N) PFE=(M-1)(10^2)	2.0	1.2	2.7	1.6	2.2	2.0	2.1	1.4	3.6			
(O) MCF=(M-1)(10^5)/H	75	63	50	64	98	33	50	58	145			

SP. -0.9 +10.8 +3.1

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5				
(B) Receive	25-30N →			→	30-35N	→		→				
(C) n separation	10	3	1	1	3	3	1	1				
(D) I	2.000	→										
(E) Vdc (avg)	12.15	3.91	1.410	.900	3.50	1.57	.750	.540				
(F) DCcal	.974											
(G) Kn x 10^{-3}	6.0	15	30	52.5	15	30	52.5	84.0				
(H) ρ dc=ExFxGx10^3/D	35.50	29.15	20.60	23.0	25.55	22.98	19.18	22.05				
(I) Vac Σ	11.74	3.84	1.360	.860	3.40	1.52	.720	.520				
(J) AC noise x 2	.06				.08							
(K) Vac (corr) = $\sqrt{I^2 - J^2}$							.716	.513				
(L) AC-DC cal.	.990											
(M) ρdc/ρac =ExL/K	1.022	1.007	1026	1035	1.018	1.023	1030	1.027				
(N) PFE=(M-1)(10^2)	2.2	0.7	2.6	3.5	1.8	2.3	3.0	2.7				
(O) MCF=(M-1)(10^5)/H	62	24	126	152	70	100	182	190				

-8.7 +1.8

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Project 4 Butte Line 11 Set A Field date 11-30-64 Data page _____ Comp. date 11-30-64. Comp by DA

SOUTH 40° EAST →

(A) Send	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		2-3	
(B) Receive	10-15S →		15-20S →			20-25S →					CAL	
(C) n separation	30	10	30	10	3	100	10	10	3		30	
(D) I	2.000											
(E) Vdc (avg)	36.2	6.40	52.0	11.20	3.96	53.0	14.65	5.60	2.54		31.2	
(F) DCcal	.962											
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15	1.5	6.0	15	30			
(H) ρ dc=ExFxGx10^3/D	26.10	18.45	37.50	32.28	28.52	38.22	42.25	40.38	36.62			
(I) Vac Σ	35.2	6.24	50.6	10.90	3.86	51.8	14.30	5.40	2.48			
(J) AC noise x 2	.04		.04			.04						
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.981											
(M) ρ dc/ρac=ExL/K	1.009	1.007	1.007	1.008	1.005	1.004	1.004	1.017	1.003			
(N) PFE=(M-1)(10^2)	0.9	0.7	0.7	0.8	0.5	0.4	0.4	1.7	0.3			
(O) MCF=(M-1)(10^5)/H	34	38	19	25	18	~~14~~ 10	9	42	8			
S.P.	-30		-9.6			+10.4						

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2				
(B) Receive	25-30S →				30-35S →							
(C) n separation	10	10	3	3	10	3	3	1				
(D) I	2.000											
(E) Vdc (avg)	15.40	6.78	3.40	1.73	6.58	3.55	2.03	1.100				
(F) DCcal	.962											
(G) Kn x 10^{-3}	6.0	15	30	52.5	15	30	52.5	84.0				
(H) ρ dc=ExFxGx10^3/D	44.45	48.85	49.05	43.72	47.45	51.05	51.12	44.45				
(I) Vac Σ	15.00	6.60	3.30	1.63	6.40	3.47	1.96	1.070				
(J) AC noise x 2	.06				.04							
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.981											
(M) ρdc/ρac =ExL/K	1.006	1.006	1.010	1.040	1.008	1.003	1.014	1.009				
(N) PFE=(M-1)(10^2)	0.6	0.6	1.0	4.0	0.8	0.3	1.4	0.9				
(O) MCF=(M-1)(10^5)/H	13	12	20	9	17	6	27	20				
S.P.	-4.7				-19.5							

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Project Badger Line 12 Set "A" Field date 12-2-64 Data page _____ Comp. date 12-2-64 Comp by DA

(A) Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		3-4	
(B) Receive	10-15N →		15-20N →			20-25N →					CAL	
(C) n separation	100	10	100	30	10	100	30	10	3		30	
(D) I	2.000											
(E) Vdc (avg)	71.00	9.22	68.00	25.25	5.90	59.6	22.1	12.14	3.295		30.4	
(F) DCcal	.988											
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15	1.5	6.0	15	30			
(H) ρ dc=ExFxGx10^3/D	52.5	26.25	49.55	74.75	43.60	44.20	65.40	90.00	48.80			
(I) Vac Σ	65.0	8.96	66.00	24.50	5.70	58.00	21.20	11.63	3.11		30.0	
(J) AC noise x 2	.04			.04		.04						
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.988										AC=	.988
(M) ρ dc/ρac=ExL/K	1.086	1.014	1.015	1.016	1.021	1.015	1.028	1.003	1.044			
(N) PFE=(M-1)(10^2)	8.6	1.4	1.5	1.6	2.1	1.5	2.8	0.3	4.4		AC-DC	.988
(O) MCF=(M-1)(10^5)/H	16	53	30	21	48	34	23	3	90			

SP -0.3 -21.6 +0.3

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5				
(B) Receive	25-30N →				30-35N →							
(C) n separation	30	10	10	3	10	10	3	1				
(D) I	2.000											
(E) Vdc (avg)	1.36	8.74	7.48	1.88	5.75	4.45	3.77	1.150				
(F) DCcal	.988											
(G) Kn x 10^{-3}	6.0	15	30	52.50	15	30	52.50	84.0				
(H) ρ dc=ExFxGx10^3/D	4.27	64.60	110.25	48.75	42.50	66.10	97.75	43.45				
(I) Vac Σ	1.32	8.40	6.10	1.78	5.50	4.22	3.52	1.080				
(J) AC noise x 2	.04				.06							
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.988											
(M) ρdc/ρac =ExL/K	1.015	1.025	1.047	1.041	1.032	1.039	1.055	1.049				
(N) PFE=(M-1)(10^2)	1.5	2.5	4.7	4.1	3.2	3.9	5.5	4.9				
(O) MCF=(M-1)(10^5)/H	350	26	46	84	75	59	56	113				

S.P. +23.3 +0.8

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HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

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Project BADGER Line 12 Sec "A" Field date 12-1-64 Data page _____ Comp. date 12-1-64. Comp by DA

(A) Send	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2			
(B) Receive	10-15S →		15-20S	→		20-25S	→					
(C) n separation	30	10	30	10	3	30	30	10	3			
(D) I	2.000	→										
(E) Vdc (avg)	37.95	9.10	37.9	9.22	3.76	23.04	14.86	5.70	2.64			
(F) DCcal	.993											
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15	1.5	6.0	15	30			
(H) ρ dc=ExFxGx10^3/D	28.20	27.05	28.20	27.45	27.90	17.20	44.40	42.40	39.25			
(I) Vac Σ	37.10	8.90	36.8	9.02	3.66	22.50	14.55	5.52	2.55			
(J) AC noise x 2	.04		.04			.06						
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.984											
(M) ρ dc/ρac=ExL/K	1.003	1.005	1.013	1.005	1.010	1.007	1.005	1.014	1.015			
(N) PFE=(M-1)(10^2)	0.3	0.5	1.3	0.5	1.0	0.7	0.5	1.4	1.5			
(O) MCF=(M-1)(10^5)/H	11	18	46	18	36	41	11	33	39			

S.P. +12 +8.8 -2.3

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2				
(B) Receive	25-30S →			→	30-35S →			→				
(C) n separation	10	10	3	3	3	3	3	1				
(D) I	2.000	→						→				
(E) Vdc (avg)	10.93	9.80	4.34	2.18	2.86	3.42	1.54	.860				
(F) DCcal	.993											
(G) Kn x 10^{-3}	6.0	15	30	52.5	15	30	52.5	84.0				
(H) ρ dc=ExFxGx10^3/D	32.50	73.90	64.50	56.65	21.30	50.98	40.10	35.75				
(I) Vac Σ	10.65	9.50	4.24	2.12	2.78	3.31	1.48	.820				
(J) AC noise x 2	04				.04							
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.984											
(M) ρdc/ρac =ExL/K	1.010	1.015	1.005	1.012	1.011	1.015	1.024	1.030				
(N) PFE=(M-1)(10^2)	1.0	1.5	0.5	1.2	1.1	1.5	2.4	3.0				
(O) MCF=(M-1)(10^5)/H	31	20	8	21	49	29	60	84				

S.P. +3.3 -0.4

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INDUCED POLARIZATION SURVEY COMPUTATION SHEET

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Project WEST END Line 13 Set "A" Field date 2-3-64 Data page _____ Comp. date 12-3-64. Comp by DA

SOUTH →

(A) Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		2-3	
(B) Receive	10-15S →		15-20S			20-25S					CAL	
(C) n separation	100	10	100	30	3	30	30	10	3			
(D) I	2.000											
(E) Vdc (avg)	53.8	7.30	67.0	17.0	3.84	34.20	15.60	5.75	1.64		30.2	
(F) DCcal	.994											
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15	1.5	6.0	15	30			
(H) ρ dc=ExFxGx10^3/D	40.10	21.80	50.0	50.70	28.55	25.50	46.50	42.80	24.45			
(I) Vac Σ	52.60	7.10	65.60	16.40	3.72	33.40	15.20	5.50	1.58		29.8	
(J) AC noise x 2	.04		04			.04						
(K) Vac(corr) = $\sqrt{I^2 - J^2}$											DC =	.994
(L) AC-DC cal.	.987											
(M) ρ dc/ρac=ExL/K	1.008	1.015	1.008	1.022	1.017	1010	1.012	1.033	1.025		AC-DC =	.987
(N) PFE=(M-1)(10^2)	0.8	1.5	0.8	2.2	1.7	1.0	1.2	3.3	2.5			
(O) MCF=(M-1)(10^5)/H	19	69	16	43	62	39	26	77	102			
SP	+0.3		-55.2			+41.7						

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5				
(B) Receive	25-30S				30-35S							
(C) n separation	10	10	3	1	10	3	3	1				
(D) I	2.000											
(E) Vdc (avg)	8.35	5.67	2.30	.760	5.80	4.00	1.74	.655				
(F) DCcal	.994											
(G) Kn x 10^{-3}	60	15	30	52.5	15	30	52.5	84.0				
(H) ρ dc=ExFxGx10^3/D	49.75	42.25	34.30	39.65	43.25	59.60	45.45	27.30				
(I) Vac Σ	8.10	5.50	2.24	.724	4.63	3.84	1.70	.630				
(J) AC noise x 2	.06				.06							
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.987											
(M) ρdc/ρac =ExL/K	1.016	1.019	1.012	1.036	1.024	1.028	1.011	1.025				
(N) PFE=(M-1)(10^2)	1.6	1.9	1.2	3.6	2.4	2.8	1.1	2.5				
(O) MCF=(M-1)(10^5)/H	32	45	35	91	56	47	24	91				
	+6.7				-14.7							

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INDUCED POLARIZATION SURVEY COMPUTATION SHEET

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Project West END Line 13 SET A Field date 12-3-64 Data page _____ Comp. date 12-3-64. Comp by DA

NORTH →

(A) Send	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		3-4	
(B) Receive	10-15N →		15-20N →			20-25N →					CAC	
(C) n separation	30	10	30	10	10	30	10	3	3		30	
(D) I	2.000											
(E) Vdc (avg)	26.20	7.20	27.00	11.24	4.81	16.80	4.75	3.06	1.64		30.0	
(F) DCcal	1.000											
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15	1.5	6.0	15	30			
(H) ρ dc=ExFxGx10^3/D	19.58	21.10	20.25	33.68	35.25	12.60	14.23	22.90	24.55			
(I) Vac Σ	25.60	7.00	26.50	11.00	4.67	16.45	4.60	3.03	1.56		29.6	
(J) AC noise x 2	.06		.06			.04						
(K) Vac(corr) = $\sqrt{I^2 - J^2}$											DC	1.000
(L) AC-DC cal.	.987											
(M) ρ dc/ρac=ExL/K	1.011	1.015	1.005	1.009	1.014	1.017	1.020	.997	1.038		AC-DC	.987
(N) PFE=(M-1)(10^2)	1.1	1.5	0.5	0.9	1.4	1.7	2.0	-0.3	3.8			
(O) MCF=(M-1)(10^5)/H	56	71	25	27	40	135	140	~~-177~~ -14!	155			

S.P. +1.1 +10.1 -30.4

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2				
(B) Receive	25-30N →				30-35 →							
(C) n separation	10	3	3	3	3	3	3	3				
(D) I	2.000											
(E) Vdc (avg)	5.625	2.86	2.32	1.39	4.08	2.88	2.625	1.62				
(F) DCcal	1.000											
(G) Kn x 10^{-3}	6.0	15	30	52.5	15	30	52.5	84.0				
(H) ρ dc=ExFxGx10^3/D	16.84	21.45	34.75	36.45	30.55	43.25	68.90	68.00				
(I) Vac Σ	5.50	2.78	2.23	1.32	3.94	2.82	2.52	1.56				
(J) AC noise x 2	.06				.04							
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.987											
(M) ρdc/ρac =ExL/K	1.009	1.013	1.028	1.041	1.022	1.009	1.038	1.029				
(N) PFE=(M-1)(10^2)	0.9	1.3	2.8	4.1	2.2	0.9	3.8	2.9				
(O) MCF=(M-1)(10^5)/H	53	60	80	112	72	21	55	35				

S.P. +30.6 -23.4

North → Arkla Ont

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INDUCED POLARIZATION SURVEY COMPUTATION SHEET

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Project West End Line 14 Set "A" Field date 12-5-64 Data page _____ Comp. date 12-5-64. Comp by D.A.

(A) Send	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		3-4	
(B) Receive	10-15N →		15-20N →			20-25N →					CAL	
(C) n separation	100	30	30	30	10	30	10	10	10		30	
(D) I	2.000 →											
(E) Vdc (avg)	49.00	24.00	39.00	18.00	11.92	26.80	8.82	6.25	4.70			
(F) DCcal	.993											
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15	1.5	6.0	15	30			
(H) ρ dc=ExFxGx10^3/D	36.45	71.90	29.05	53.60	88.85	19.85	26.30	46.50	70.00			
(I) Vac Σ	48.00	23.40	38.20	17.60	11.64	26.40	8.60	6.10	4.60			
(J) AC noise x 2	.04		.04			.04						
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.980											
(M) ρ dc/ρac=ExL/K	1.000	1.004	1.001	1.001	1.004	.996	1.005	.983	1.002			
(N) PFE=(M-1)(10^2)	0	0.4	0.1	0.1	0.4	-0.4	0.5	-1.7	0.2			
(O) MCF=(M-1)(10^5)/H	0	5	3	2	4	-5	19	-36	3			
SP	-22.0		+33.6			-32.9						

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2				
(B) Receive	25-30N →				30-35N →							
(C) n separation	10	10	10	3	10	3	3	3				
(D) I	2.000 →											
(E) Vdc (avg)	8.845	5.24	4.62	3.76	4.80	3.70	3.65	3.16				
(F) DCcal	.993											
(G) Kn x 10^{-3}	6.0	15	30	52.5	15	30	52.5	84.0				
(H) ρ dc=ExFxGx10^3/D	26.30	39.00	68.90	97.90	35.70	54.50	95.01	133.5				
(I) Vac Σ	8.64	5.10	4.44	3.64	4.64	3.60	3.54	3.00				
(J) AC noise x 2	.04				.04							
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.980											
(M) ρdc/ρac =ExL/K	1.003	1.006	1.018	1.013	1.013	1.007	1.010	1.030				
(N) PFE=(M-1)(10^2)	0.3	0.6	1.8	1.3	1.3	0.7	1.0	3.0				
(O) MCF=(M-1)(10^5)/H	11	15	26	13	36	13	1	2				
SP	+8.8				-3.7							

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Scale → Angeles Forest

HEINRICHS GEOEXPLORATION COMPANY
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Project WEST END Line 14 S/A Field date 12-5-64 Data page _____ Comp. date 12-5-64. Comp by DA

(A) Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		2-3	
(B) Receive	10-15 S	→	15-20 S	→		20-25 S	→	→	→		CAL	
(C) n separation	100	30	300	100	10	100	30	30	10		30	
(D) I	2.000	→	→	→	→	→	→	→	→			
(E) Vdc (avg)	137.00	24.60	190.00	51.20	12.815	97.20	41.00	18.10	5.36		30.4	
(F) DCcal	.987											
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15	1.5	6.0	15	30			
(H) ρ dc=ExFxGx10^3/D	101.30	72.80	140.50	153.2	95.00	72.00	121.50	134.25	79.00			
(I) Vac Σ	133.00	23.95	185.00	49.60	12.50	94.60	39.30	17.60	5.20		30.1	
(J) AC noise x 2	.06		.04			.04						
(K) Vac(corr) = $\sqrt{I^2 - J^2}$											DC =	.987
(L) AC-DC cal.	.991											
(M) ρ dc/ρac=ExL/K	1.020	1.015	1.016	1.020	1.025	1.017	1.033	1.019	1.022		AC-DC	.991
(N) PFE=(M-1)(10^2)	2.0	1.5	1.6	2.0	2.5	1.7	3.3	1.9	2.2			
(O) MCF=(M-1)(10^5)/H	20	20	11	13	26	24	27	14	28			
S.P.	-4.6		-5.3			-30.6						

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5				
(B) Receive	25-30 S	→	→	→	30-35 S	→	→	→				
(C) n separation	30	10	10	3	10	10	3	1				
(D) I	2.000	→	→	→	→	→	→	→				
(E) Vdc (avg)	19.85	12.70	6.80	2.18	5.25	4.01	2.34	.810				
(F) DCcal	.987											
(G) Kn x 10^{-3}	6.0	15	30	52.5	15	30	52.50	84.00				
(H) ρ dc=ExFxGx10^3/D	58.75	94.85	105	56.50	38.85	59.50	60.75	34.55				
(I) Vac Σ	19.40	12.36	6.56	2.12	5.10	3.98	2.28	.780				
(J) AC noise x 2	.04				.04							
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.991											
(M) ρdc/ρac =ExL/K	1.012	1.018	1.024	1.018	1.020	.998	1.015	1.026				
(N) PFE=(M-1)(10^2)	1.2	1.8	2.4	1.8	2.0	-0.2	1.5	2.6				
(O) MCF=(M-1)(10^5)/H	20	19	23	32	51	-3	25	26				
S.P.	+2.5				+26.2							

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Project West End Line 15 Set A Field date 12-8-64 Data page _____ Comp. date 12-8-64. Comp by DA

(A) Send	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		3-4	
(B) Receive	10-15N		15-20N			20-25N					CAL	
(C) n separation	30	30	30	10	10	100	30	10	10		30	
(D) I	2.000	→	→	→	→	→	→	→	→			
(E) Vdc (avg)	26.40	20.06	27.40	8.54	8.95	45.80	13.80	7.10	8.55		30.3	
(F) DCcal	.992	→	→	→	→	→	→	→	→			
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15	1.5	6.0	15	30			
(H) ρ dc=ExFxGx10^3/D	19.62	59.65	20.35	25.35	66.50	34.00	41.05	57.50	125.20			
(I) Vac Σ	25.85	20.00	26.90	8.36	8.76	44.60	13.20	6.84	8.22		29.95	
(J) AC noise x 2	.04		.04			.04						
(K) Vac(corr) = $\sqrt{I^2 - J^2}$											DC =	.992
(L) AC-DC cal.	.989	→	→	→	→	→	→	→	→			
(M) ρ dc/ρac=ExL/K	1.025	.996	1.006	1.007	1.011	1.012	1.031	1.026	1.028		AC-DC=	.989
(N) PFE=(M-1)(10^2)	2.5	-0.4	0.6	0.7	1.1	1.2	3.1	2.6	2.8			
(O) MCF=(M-1)(10^5)/H	127	-7	30	28	17	35	76	45	22			
S.P.	+19.3		-7.9			-0.3						

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2				
(B) Receive	25-30N				30-35N							
(C) n separation	30	10	10	10	10	10	3	10				
(D) I	2.000	→	→	→	→	→	→	→				
(E) Vdc (avg)	13.70	7.00	4.60	6.00	9.00	5.42	3.98	5.38				
(F) DCcal												
(G) Kn x 10^{-3}	6.0	15	30	52.5	15	30	52.5	84.0				
(H) ρ dc=ExFxGx10^3/D	40.75	52.00	68.40	156.00	66.90	80.55	103.75	223.75				
(I) Vac Σ	13.40	6.82	4.43	5.80	8.70	5.30	3.82	5.16				
(J) AC noise x 2	.06				.06							
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.989											
(M) ρdc/ρac =ExL/K	1.010	1.013	1.026	1.022	1.022	1.011	1.031	1.030				
(N) PFE=(M-1)(10^2)	1.0	1.3	2.6	2.2	2.2	1.1	3.1	3.0				
(O) MCF=(M-1)(10^5)/H	25	25	38	14	33	13	30	13				
S.P.	-12.1				+3.7							

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

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Project West End Line 15 S.HA" Field date 12 8-64 Data page _____ Comp. date 12-8-64. Comp by DA

(A) Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		2-3	
(B) Receive	10-15S		15-20S			20-25S					CAL	
(C) n separation	100	30	300	30	10	300	100	10	10		30	
(D) I	2.000	→	→	→	→	→	→	→	→			
(E) Vdc (avg)	82.40	20.80	220.00	41.00	14.40	176.00	47.00	12.90	5.46		30.00	
(F) DCcal	1.000	→	→	→	→	→	→	→	→			
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15	1.5	6.0	15	30			
(H) ρ dc=ExFxGx10^3/D	61.75	62.40	165.00	123.00	101.00	132.00	141.00	96.75	81.80			
(I) Vac Σ	81.00	20.25	212.00	39.98	14.05	170.00	45.60	12.60	5.36		29.40	
(J) AC noise x 2	.04		.00			.06						
(K) Vac(corr) = $\sqrt{I^2 - J^2}$											DC =	1.000
(L) AC-DC cal.	.980	→	→	→	→	→	→	→	→			
(M) ρ dc/ρac=ExL/K	.997	1.006	1.015	1.010	1.023	1.013	1.008	1.002	.999		AC-DC-	.980
(N) PFE=(M-1)(10^2)	-0.3	0.6	1.5	1.0	2.3	1.3	0.8	0.2	-0.1			
(O) MCF=(M-1)(10^5)/H	-5	10	9	8	23	10	6	2	-1			
S.P.	+12.4		-10.9			+9.6						

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5				
(B) Receive	25-30S				30-35S							
(C) n separation	100	30	10	3	30	10	3	3				
(D) I	2.000	→	→	→	→	→	→	→				
(E) Vdc (avg)	51.30	21.20	7.36	3.68	15.80	7.73	2.88	1.52				
(F) DCcal	1.000	→	→	→	→	→	→	→				
(G) Kn x 10^{-3}	6.0	15	30	52.5	15	30	52.5	84.0				
(H) ρ dc=ExFxGx10^3/D	153.50	157.50	109.75	96.50	118.50	115.90	76.05	63.45				
(I) Vac Σ	49.60	20.60	7.10	3.59	15.25	7.50	2.76	1.48				
(J) AC noise x 2	.04				.06							
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.980	→	→	→	→	→	→	→				
(M) ρdc/ρac =ExL/K	1.011	1.008	1.016	1.004	1.014	1.008	1.021	1.006				
(N) PFE=(M-1)(10^2)	1.1	0.8	1.6	0.4	1.4	0.8	2.1	0.6				
(O) MCF=(M-1)(10^5)/H	7	5	14	4	8	7	28	10				
SP	-10.5				-7.9							

EAST

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page 33

Project WEST END Line 16 Seg "A" Field date 12-10-64 Data page _____ Comp. date 12-10-64 Comp by DA

(A) Send	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		3-4	
(B) Receive	10-15E	→	15-20E	→	→	20-25E	→	→	→		CAL	
(C) n separation	30	10	100	30	10	100	30	10	10		30	
(D) I	2.000	→	→	→	→	→	→	→	→			
(E) Vdc (avg)	39.30	12.925	52.00	14.70	6.88	49.00	18.20	8.66	4.55		30.2	
(F) DCcal	.993	→	→	→	→	→	→	→	→			
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15	1.5	6.0	15	30			
(H) ρ dc=ExFxGx10^3/D	29.25	38.55	38.70	43.80	51.10	36.40	54.10	64.00	67.90			
(I) Vac Σ	38.60	12.56	51.00	14.20	6.70	48.00	17.80	8.42	4.40		30.0	
(J) AC noise x 2	.04		.04			.04						
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.993	→	→	→	→	→	→	→	→		DC =	.993
(M) ρ dc/ρac=ExL/K	1.011	1.021	1.011	1.028	1.019	1.015	1.015	1.021	1.027			
(N) PFE=(M-1)(10^2)	1.1	2.1	1.1	2.8	1.9	1.5	1.5	2.1	2.7		AC-DC	.993
(O) MCF=(M-1)(10^5)/H	38	54	28	64	37	42	28	33	40			
S.P.	-19.1		-1.3			-15.1						

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2				
(B) Receive	25-30E	→	→	→	30-35E	→	→	→				
(C) n separation	10	10	3	3	10	10	3	3				
(D) I	2.000	→	→	→	→	→	→	→				
(E) Vdc (avg)	8.88	5.90	3.70	2.01	7.90	5.75	3.74	2.13				
(F) DCcal	.993	→	→	→	→	→	→	→				
(G) Kn x 10^{-3}	6.0	15	30	52.5	15	30	52.5	84.0				
(H) ρ dc=ExFxGx10^3/D	26.45	43.90	54.55	52.45	58.90	84.00	97.50	88.75				
(I) Vac Σ	8.64	5.76	3.61	1.96	7.62	5.60	3.61	2.06				
(J) AC noise x 2	.04				.04							
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.993	→	→	→	→	→	→	→				
(M) ρdc/ρac =ExL/K	1.020	1.017	1.018	1.020	1.031	1.019	1.029	1.025				
(N) PFE=(M-1)(10^2)	2.0	1.7	1.8	2.0	3.1	1.9	2.9	2.5				
(O) MCF=(M-1)(10^5)/H	76	39	33	38	53	23	30	28				
S.P.	+10.9				+4.9							

West →

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page 34

Project West End Line 16 Set "A" Field date 12-9-64 Data page _____ Comp. date 12-9-64 Comp by D.A.

(A) Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		2-3	
(B) Receive	10-15W		15-20W			20-25W					CAL	
(C) n separation	30	10	30	10	10	30	10	10	3		30	
(D) I	2.000	→	→	→	→	→	→	→	→			
(E) Vdc (avg)	32.50	12.90	25.10	12.075	6.95	23.45	8.12	6.16	4.00		29.60	
(F) DCcal	1.012	→	→	→	→	→	→	→	→			
(G) Kn x 10^{-3}	1.5	6.0	1.5	6.0	15	1.5	6.0	15	30			
(H) ρ dc=ExFxGx10^3/D	24.75	39.25	19.10	36.20	52.90	17.82	24.70	46.80	60.80			
(I) Vac Σ	31.60	12.50	24.40	11.76	6.72	22.90	7.96	6.00	3.90		29.10	
(J) AC noise x 2	.04		.04			.06						
(K) Vac(corr) = $\sqrt{I^2 - J^2}$											DC =	1.012
(L) AC-DC cal.	.984	→	→	→	→	→	→	→	→			
(M) ρ dc/ρac=ExL/K	1.012	1.013	1.011	1.008	1.017	1.006	1.001	1.010	1.007		AC-DC	.984
(N) PFE=(M-1)(10^2)	1.2	1.3	1.1	0.8	1.7	0.6	0.1	1.0	0.7			
(O) MCF=(M-1)(10^5)/H	48	33	58	22	32	34	4	21	12			
S.P.	+6.5		-1.9			-18.3						

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5				
(B) Receive	25-30W				30-35W							
(C) n separation	10	10	3	3	10	3	3	3				
(D) I	2.000	→	→	→	→	→	→	→				
(E) Vdc (avg)	6.25	4.25	3.72	2.52	4.40	3.49	3.19	2.20				
(F) DCcal												
(G) Kn x 10^{-3}	6.0	15	30	52.50	15	30	52.50	84.00				
(H) ρ dc=ExFxGx10^3/D	19.00	32.30	56.50	67.00	33.45	53.00	84.99	93.65				
(I) Vac Σ	6.10	4.10	3.62	2.44	4.24	3.38	3.09	2.15				
(J) AC noise x 2	.06				.06							
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.												
(M) ρdc/ρac =ExL/K	1.007	1.020	1.011	1.016	1.020	1.013	1.015	1.006				
(N) PFE=(M-1)(10^2)	0.7	2.0	1.1	1.6	2.0	1.3	1.5	0.6				
(O) MCF=(M-1)(10^5)/H	37	62	19	4	60	25	18	6				
S.P.	+6.7				-42.8							

#3 [illegible] is in the East →
CENTER OF SCOOTER #2

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page 35

Project Scooter 2 Line 17 East Field date 12-15-64 Data page 1 Comp. date 12-15-64. Comp by DA

(A) Send	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		3-4	
(B) Receive	20-30E	→	30-40E	→	→	40-50E	→	→	→		CAL	
(C) n separation	10	3	10	3	1	10	3	1	1		30	
(D) I	1.40	2.000	2.00	1.40	2.00	2.00	2.00	1.40	2.00			
(E) Vdc (avg)	5.80	2.00	7.31	1.97	1.38	9.00	1.90	.738	.700		30.5	
(F) DCcal	.983								→			
(G) Kn x 10^{-3}	3.0	12.0	3.0	12.0	30	3.0	12.0	30	60			
(H) ρ dc=ExFxGx10^3/D	12.20	12.80	10.75	16.56	20.30	13.25	11.21	15.55	20.60			
(I) Vac Σ	5.60	1.81	7.07	1.80	1.255	8.64	1.80	.660	.595		30.0	
(J) AC noise x 2	.06	→	.06	→	→	.06	→	→	.06			
(K) Vac(corr) = $\sqrt{I^2 - J^2}$	0.000							→	.589		DC=	.983
(L) AC-DC cal.	.983								→			
(M) ρ dc/ρac=ExL/K	1.018	1.084	1.015	1.073	1.078	1.025	1.035	1.098	1.188		AC-DC=	.983
(N) PFE=(M-1)(10^2)	1.8	8.4	1.5	7.3	7.8	2.5	3.5	9.8	18.8			
(O) MCF=(M-1)(10^5)/H	147	656	140	441	384	188	312	630	925			

S.P. -61.2 +87.2 -50.2

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2				
(B) Receive	50-60E	→	→	→	60-70E	→	→	→				
(C) n separation	3	1	1	1	1	1						
(D) I	2.00	2.00	1.40	2.00	2.00	2.00	Could	Not				
(E) Vdc (avg)	1.63	.572	.300	.360	.220	.270						
(F) DCcal	.983											
(G) Kn x 10^{-3}	12.0	30.0	60.0	105.0	30	60	READ					
(H) ρ dc=ExFxGx10^3/D	9.60	8.42	12.60	18.55	3.24	8.32						
(I) Vac Σ	1.51	.510	280	300	180	210						
(J) AC noise x 2	.06	→	→	→	.08	→						
(K) Vac (corr) = $\sqrt{I^2 - J^2}$	0.000	.506	273	.294	.161	.195						
(L) AC-DC cal.	.983	→	→	→	→	→						
(M) ρdc/ρac =ExL/K	1.061	1.109	1.078	1205	1.340	1.360						
(N) PFE=(M-1)(10^2)	6.1	10.9	7.8	20.5	34.0	36.0						
(O) MCF=(M-1)(10^5)/H	635	1292	619	1102	10,490	4320						

S.P. + 32.0 +24.3

West →

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page 36

Project Scooter 2 Line 17 West Field date 12-17-64 Data page 2 Comp. date 12-17-64 Comp by DA

(A) Send	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		2-3	
(B) Receive	20-30 W		30-40 W			40-50 W					CAL	
(C) n separation	10	3	10	3	1	10	3	1	1		30	
(D) I	2.00	2.00	1.60	2.00	2.00	2.00	1.60	2.00	2.00			
(E) Vdc (avg)	4.60	1.90	7.34	2.05	1.33	8.20	2.46	1.15	.910		30.00	
(F) DCcal	1.000	→										
(G) Kn x 10^{-3}	3	12	3	12	30	3	12	30	60			
(H) ρ dc=ExFxGx10^3/D	6.94	11.40	13.75	12.30	19.95	12.30	18.68	17.25	27.25			
(I) Vac Σ	4.42	1.76	6.98	1.915	1.20	7.76	2.29	1.02	.764		29.15	
(J) AC noise x 2	.04	→	.04	→	.06	→			→			
(K) Vac(corr) = $\sqrt{I^2 - J^2}$	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
(L) AC-DC cal.	.973	→							→		DC=	1.000
(M) ρ dc/ρac=ExL/K	1.011	1.051	1.022	1.000	1.076	1.026	1.043	1.096	1.156			
(N) PFE=(M-1)(10^2)	1.1	5.1	2.2	0	7.6	2.6	4.3	9.6	15.6		AC-DC=	.973
(O) MCF=(M-1)(10^5)/H	161	447	160	—	379	211	230	556	572			

S.P. +46.7 -46.3 +7.3

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5				
(B) Receive	50-60 W				60-70	W						
(C) n separation	3	3	1	1	3	1	1	1				
(D) I	2.00	1.60	2.00	2.00	2.00	1.60	2.00	2.00				
(E) Vdc (avg)	3.46	1.44	.800	.662	2.07	1.030	.600	.522				
(F) DCcal	1.000	→						→				
(G) Kn x 10^{-3}	12	30	60	105.0	30	60	105	168				
(H) ρ dc=ExFxGx10^3/D	20.75	26.98	24.00	34.75	30.10	38.60	30.15	43.80				
(I) Vac Σ	3.23	1.34	.705	.570	1.87	.880	.510	.440				
(J) AC noise x 2	.05				.04							
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.973	→						→				
(M) ρdc/ρac =ExL/K	1.041	1.044	1.102	1.126	1.078	1.125	1.141	1.151				
(N) PFE=(M-1)(10^2)	4.1	4.4	10.2	12.6	7.8	12.5	14.1	15.1				
(O) MCF=(M-1)(10^5)/H	196	169	426	362	259	324	467	344				

-24.1 +11.9

Set 7 Including Coupling Corr.

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page 37

Project Scorpion 2 Line 17 Field date 12-15-64 Data page _____ Comp. date 12-30-64. Comp by DA

(A) Send												
(B) Receive												
(C) n separation												
(D) I												
(E) Vdc (avg)												
(F) DCcal												
(G) Kn x 10^{-3}												
(H) ρ dc=ExFxGx10^3/D	12.2	12.8	10.8	16.6	20.3	13.2	11.21	15.55	20.60			
(I) Vac Σ												
(J) AC noise x 2												
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.												
(M) ρ dc/ρac=ExL/K												
(N) PFE=(M-1)(10^2)	-0.4	0.1	-1.0	1.1	3.0	0.5	-2.0	3.0	10.8			
(O) MCF=(M-1)(10^5)/H	-33	8	-925	66	148	38	-178	193	525			

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send												
(B) Receive												
(C) n separation												
(D) I												
(E) Vdc (avg)												
(F) DCcal												
(G) Kn x 10^{-3}												
(H) ρ dc=ExFxGx10^3/D	9.6	8.42	12.6	18.55	3.24	8.32						
(I) Vac Σ												
(J) AC noise x 2												
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.												
(M) ρdc/ρac =ExL/K												
(N) PFE=(M-1)(10^2)	-0.2	2.2	-0.4?	6.5	0.5?	15.0?						
(O) MCF=(M-1)(10^5)/H	-21	261	-32?	350	-151?	1500						

West → Complex Conditions Applied

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page 38

Project Scooter #2 Line 17 West Field date 12-15-64 Data page _____ Comp. date 12-30-64 Comp by DA

(A) Send												
(B) Receive												
(C) n separation												
(D) I												
(E) Vdc (avg)												
(F) DCcal												
(G) Kn x 10^{-3}												
(H) ρ dc=ExFxGx10^3/D	6.94	11.4	13.75	12.3	19.95	12.3	18.68	17.25	27.25			
(I) Vac Σ												
(J) AC noise x 2												
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.												
(M) ρ dc/ρac=ExL/K												
(N) PFE=(M-1)(10^2)	2.5	3.2	0	-5.0	2.5	0.3	1.1	3.6	8.7			
(O) MCF=(M-1)(10^5)/H	361	281	0	406	252	24	59	209	319			

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send												
(B) Receive												
(C) n separation												
(D) I												
(E) Vdc (avg)												
(F) DCcal												
(G) Kn x 10^{-3}												
(H) ρ dc=ExFxGx10^3/D	20.75	26.98	24.00	34.75	30.10	38.6	30.15	43.80				
(I) Vac Σ												
(J) AC noise x 2												
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.												
(M) ρdc/ρac =ExL/K												
(N) PFE=(M-1)(10^2)	1.1	0.9	3.2	5.8	4.7	8.3	6.3	7.7				
(O) MCF=(M-1)(10^5)/H	53	33	133	167	156	214	200	176				

REPORT OF GEOPHYSICAL SURVEY

PREPARED FOR AFFIDAVIT OF LABOR

This is a report of a geophysical survey of the claims hereinafter described, done as a part of the requirements for annual labor for the period from September 1, 1964 to September 1, 1965.

These claims consist of a contiguous group situated in Sections 8, 9, 10, 15, 16, 17, T17N, R19W, G & S R B & M in Mohave County, Arizona. The claims are owned by Arkla Exploration Company and the work was performed by the undersigned at the request of and at the expense of said owners.

The claims are more particularly described on the claim notices which are recorded in the records of Mohave County, Arizona as follows:

NAME OF CLAIM	DOCKET	PAGE
Scooter 1 thru 10	5V	85 thru 94
Ted 1 thru 6	5V	229 thru 232, 436,437
Don 1 thru 10	5V	110 thru 114, 217 thru 221
Matilda 1 thru 10	5V	125 thru 134
Finger 1 thru 10	5V	115 thru 124
Caliente 1 thru 4	5V	251 thru 254
Lil 1 thru 5	5V	233 thru 237
Clint 1 thru 5	5V	105 thru 109
Bill 1 thru 10	5V	95 thru 104

The work was done on these claims and was done for the benefit of the group as a whole. The geophysical work done consists of 22 magnetic profiles and 5 induced polarization profiles and 7 gravity profiles. The location of the work performed in relation to points of discovery and boundaries of the claims and the nature and extent thereof is shown on plats identified as: Index to Geophysical Surveys, Magnetic and Gravity Survey and Induced Polarization Sectional Data Sheets for Lines 5, 6, 7 & 8 and Line 17, Mobile magnetic tapes portions of Lines 7 and D-20 and the ten plats are further identified as Don Matilda area, Mohave County, Arizona, Heinrichs Geoexploration Company, November and December 1964 for Arkla Exploration Company and are attached hereto by this reference and are made a part hereof.

The cost of the geophysical work done on the group of claims during this assessment period was in excess of sixty-nine hundred dollars ($6,900.00). The basic findings from the geophysical work are as indicated on the attached plats.

All of this geophysical work was done under the direction of Mr. Walter E. Heinrichs, Jr., President & General Manager of Heinrichs Geoexploration Company, Tucson, Arizona at the request of said owners. The persons who worked on said survey in addition to Mr. Walter E. Heinrichs, Jr. are as follows: E. Grover Heinrichs, Ronald E. Palmer, Dan Anderson, George Miguel, John Beeler, Dave Jones, Gene Juarez, Keith Henson and Chris Ludwig, all employees of Heinrichs Geoexploration Company.

Mr. Walter E. Heinrichs, Jr., is a registered professional mining engineer, No. 2447, State of Arizona, with many years of experience in making geophysical surveys, and all of the other persons performing said work are either graduate geophysical engineers, geologists, technicians or helpers.

Registered Professional Engineer (Mining) CERTIFICATE EXPIRES WALTER E. HEINRICHS, JR. DEC. 31, 1965 ARIZONA, U.S.A.

Walter E. Heinrichs, Jr.

STATE OF ARIZONA)
) ss.
COUNTY OF MOHAVE)

WALTER E. HEINRICHS, JR., being first duly sworn deposes and says:

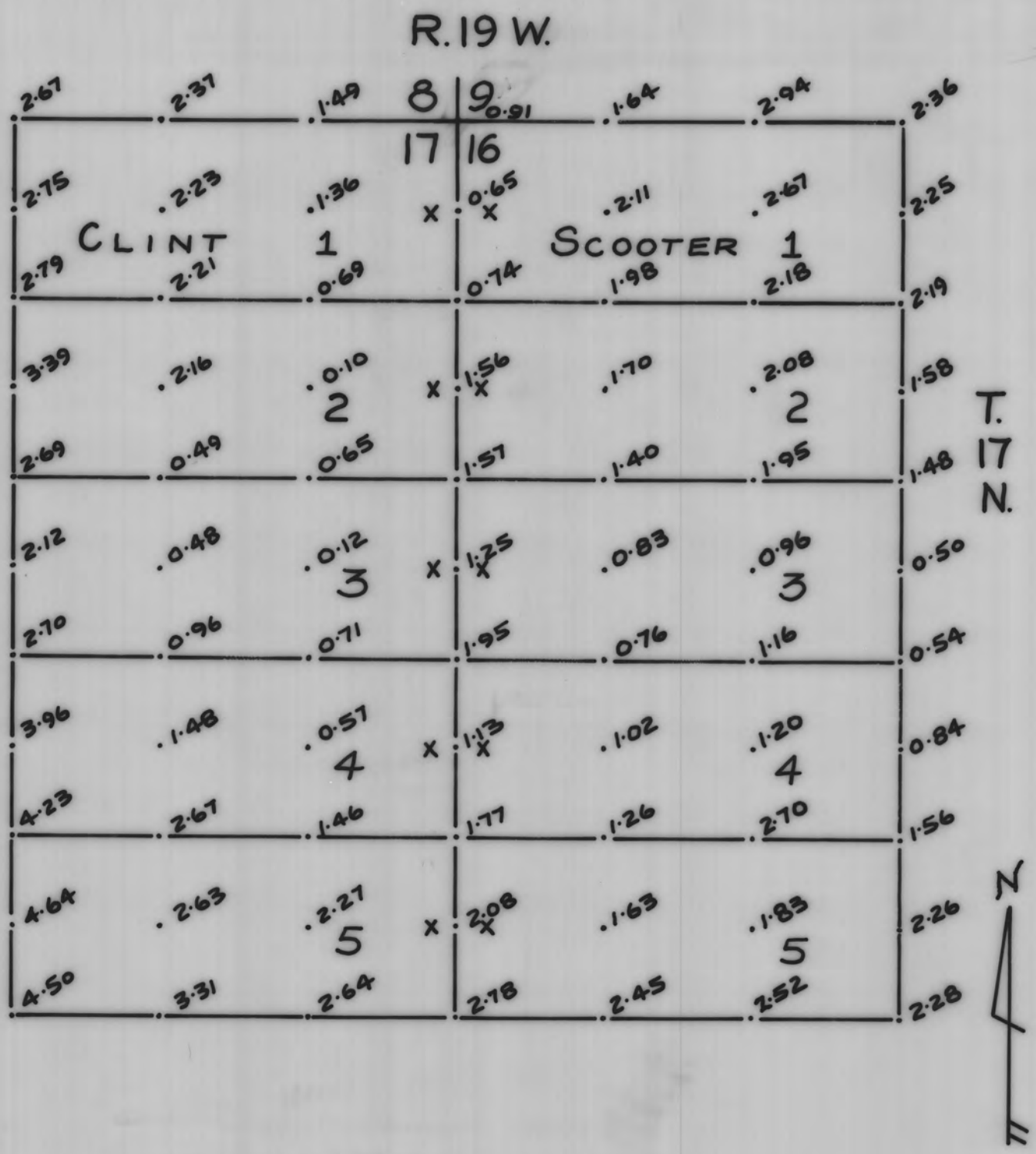
That he is the President & General Manager of Heinrichs Geoexploration Company of Tucson, Arizona; that he has read the foregoing report of Geophysical Survey, knows the contents thereof, and that the same is true.

Walter E. Heinrichs, Jr.

Subscribed and sworn to before me this 26th day of November 1965.

M. Jean Heinrichs
Notary Public

My commission expires: July 20, 1969.

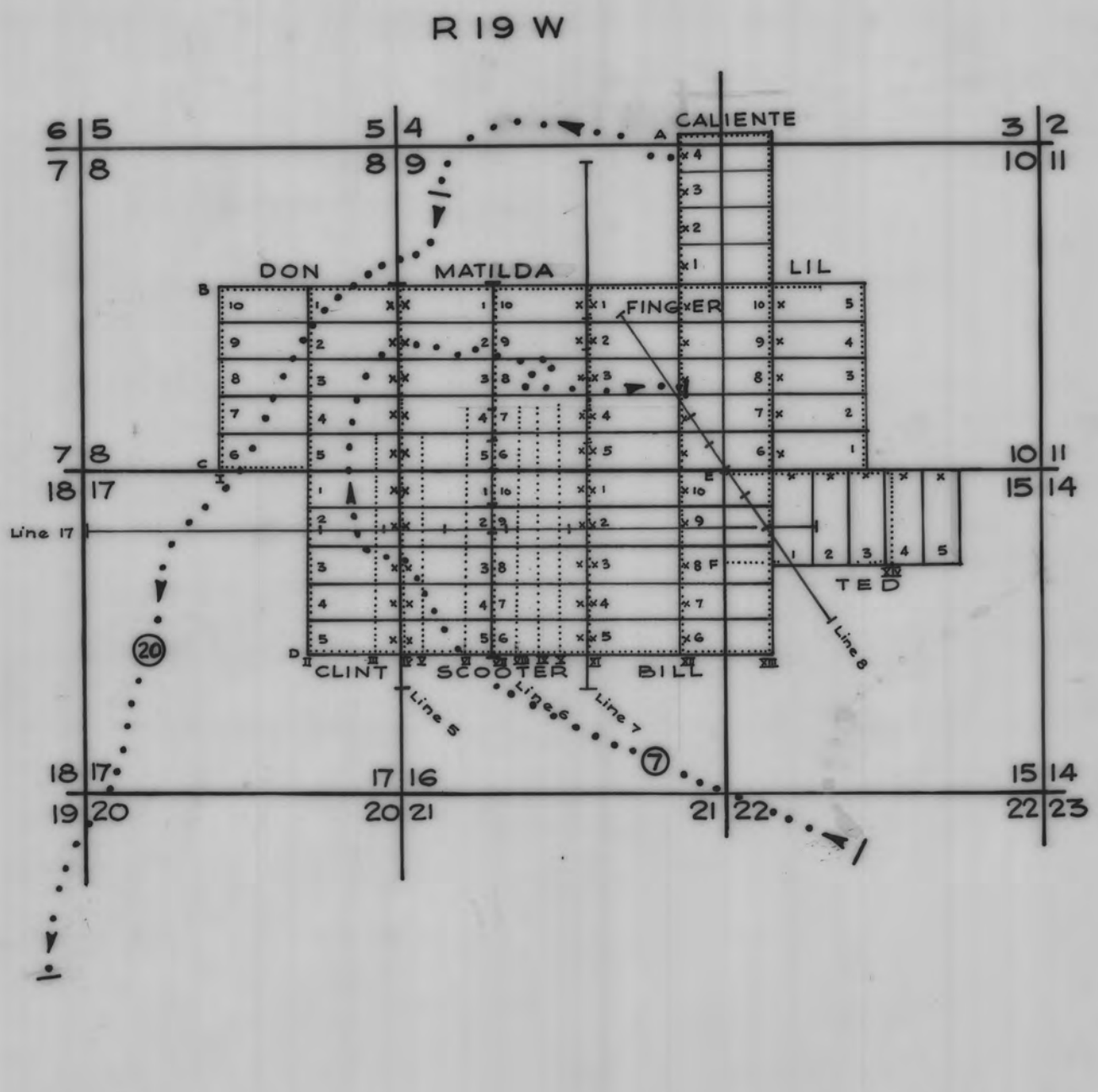


x Location Monument
DENSITY : 2.65 g./c.c.

BOUGUER GRAVITY SURVEY
FOR AFFIDAVIT OF LABOR
FOR
ARKLA EXPLORATION COMPANY
Mohave County Arizona
Scale: 1" = 500' Date: Nov. 1964

BY

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



x Location Monument

Induced Polarization Line

Mobile Magnetometer Traverse (Total Intensity)

Magnetic Traverse (Vertical Intensity)

INDEX TO GEOPHYSICAL SURVEYS FOR AFFIDAVIT OF LABOR FOR ARKLA EXPLORATION COMPANY

Mohave County Arizona

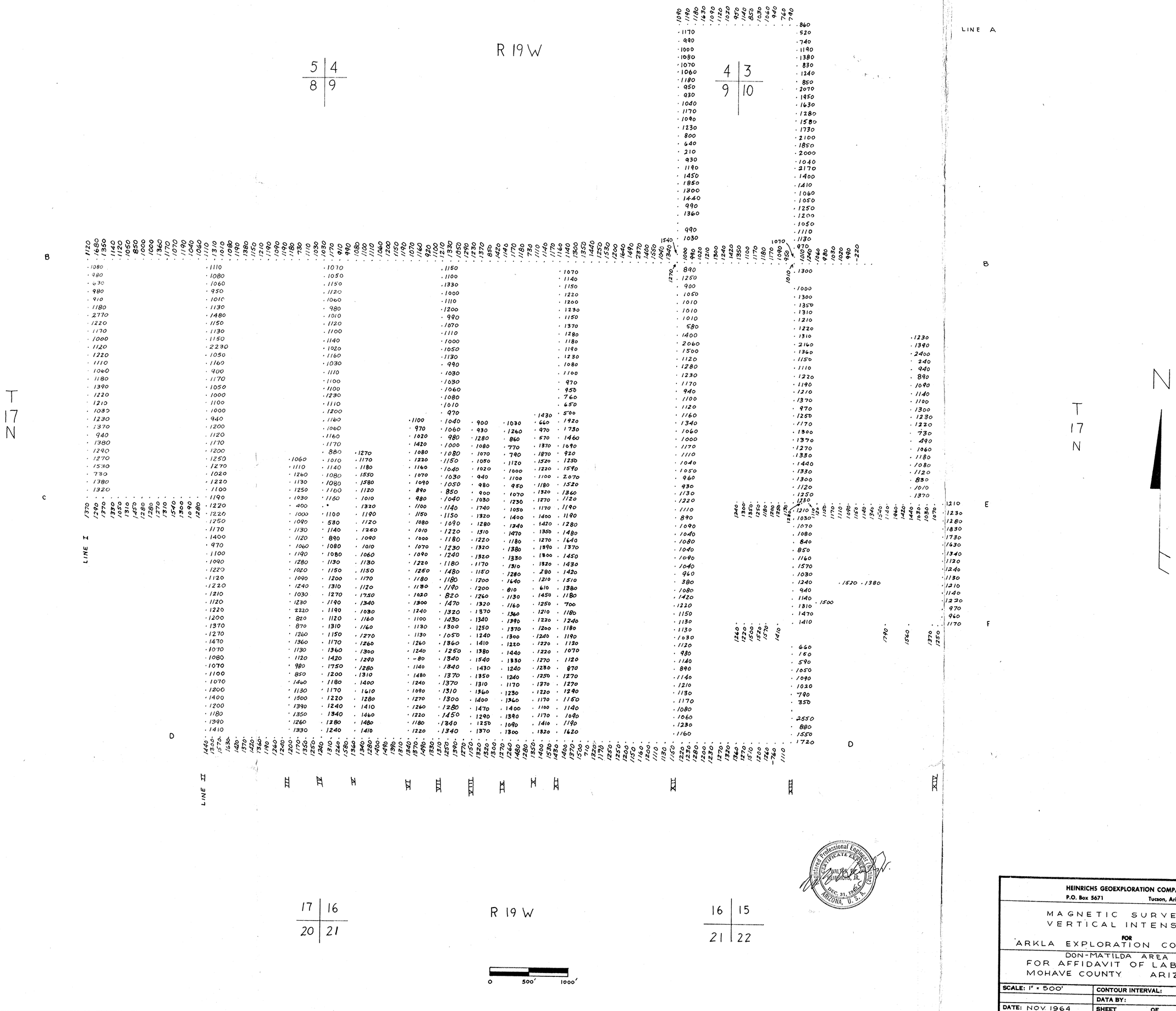
Scale: 2" = 1mile ± Date: Nov. 1964

BY

HEINRICHS GEOEXPLORATION CO.

POST OFFICE BOX 5671, TUCSON, ARIZONA, 85703

GEOPHYSICAL ENGINEERS

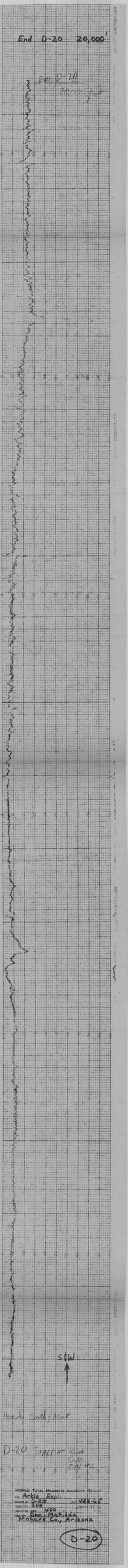


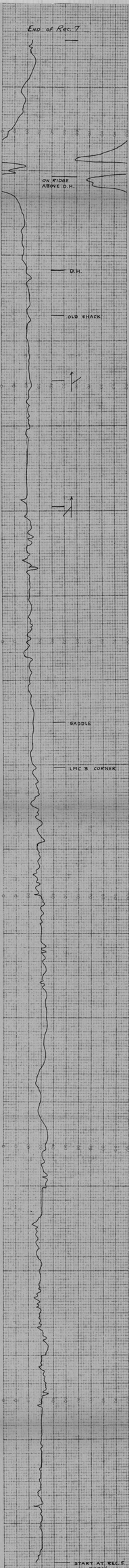
HEINRICHS GEOEXPLORATION COMPANY
P.O. Box 5671 Tucson, Arizona

MAGNETIC SURVEY
VERTICAL INTENSITY
FOR
ARKLA EXPLORATION COMPANY

DON-MATILDA AREA
FOR AFFIDAVIT OF LABOR
MOHAVE COUNTY ARIZONA

SCALE: 1" = 500'	CONTOUR INTERVAL:	REVISIONS
	DATA BY:	
DATE: NOV. 1964	SHEET OF	
DRAWN BY: R. P.	DRAWING NO.:	FILE:


End D-20 20,000
End D-20
SEW
D-20 Start at West
D-20
MOMAG TOTAL MAGNETIC INTENSITY RECORD
Arkla Expl.
Mohave Co. Arizona
D-20



HEINRICHS GEOEXPLORATION CO.
1191 SOUTH TOWER BUILDING
TULSA, OKLAHOMA 74101
GEOPHYSICAL CONSULTANTS

MOMAG TOTAL MAGNETIC INTENSITY RECORD

FOR: AEKLA EXPLORATION CO.

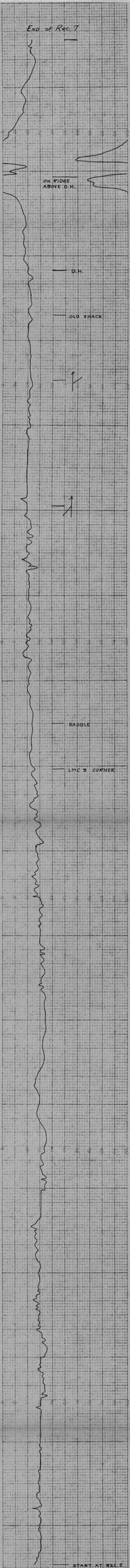
RECORD NO. 7 DATE 12-7-64

SENSITIVITY 200 GAUSS/IN.

HORIZONTAL SCALE 400 FT/IN.

LOCATION: Dos-MATILDA Area
Mohave Co., Arizona

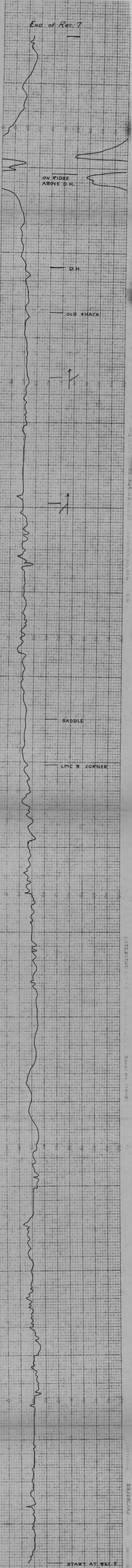
7



HEINRICHS GEOEXPLORATION CO.
1335 FIFTH TUCSON, ARIZONA 85703
PHONE (602) 882-5511
CONFIDENTIAL REPORT

MONRO TOTAL MAGNETIC INTENSITY RECORD
FOR AEKLA EXPLORATION CO.
RECORD NO. 7 DATE 12-1-64
SENSITIVITY 200 GAMMA/IN.
HORIZONTAL SCALE 400' FT/IN.
LOCATION Dos Matilda Area
Mohave Co., Arizona

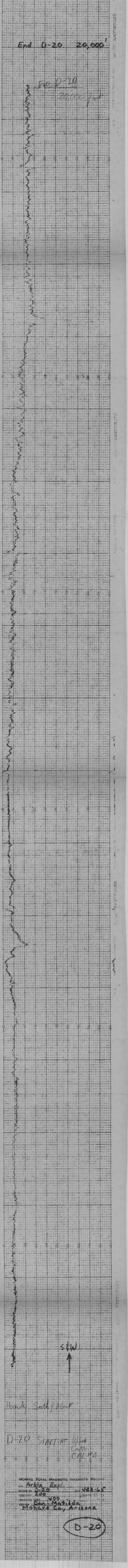
7



HEINRICHS GEOEXPLORATION CO.
FOR ELECTRICAL RESISTIVITY
FROM DATA ON: 10-1-64
CONFIDENTIAL DISCLOSURE

MONRAD TOTAL MAGNETIC INTENSITY RECORD
FOR: ARKLA EXPLORATION CO.
RECORD NO. 7 DATE 10-1-64
SENSITIVITY 200 GAMMA/IN.
HORIZONTAL SCALE 400' FT./IN.
LOCATION: Dog-MATILDA AREA
Mohave Co., Arizona

7


End D-20 20,000'
End D-20
24,000 feet
S
N
Heavy South Dip
D-20 Start at: West
Depth
0 ft. HA
MOMAG TOTAL MAGNETIC INTENSITY RECORD
Arkla Expl.
D-20
200
Dia. Matilda
Mohave Co, Arizona
D-20