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Induced Polarization Survey

Buckeye Area

Maricopa County, Arizona

for

The Superior Oil Company

Minerals Division

Tucson, Arizona

June 1977

by

Heinrichs GEOEXploration Company

P.O. Box 5964, Tucson, AZ 85703

GEOEX Job #1171

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In Map Pocket
- Induced Polarization Location and Interpretation Plan

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CONCLUSIONS AND RECOMMENDATIONS

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Because of the large dipole lengths used and the rather low resistivities involved, some telluric noise and electromagnetic (EM) coupling interference was present that contributed to the weak IP anomaly. After obtaining more accurate data with 1200 foot dipole detail coverage and making corrections for EM coupling effects, the anomalous IP response was substantially reduced. The remaining very weak anomalism is not recommended as a drill target unless there are other positive and directly correlating factors such as associated increased alteration, structural intersections or increased surface mineralization.

As these factors are apparently not present, no further work is recommended on this zone at this time.

Somewhat stronger IP anomalism is present on the north ends of Lines 3 and 4, near and on exposures of the Quaternary basalt. This response correlates with a zone of anomalism partially delineated on an IP survey run in 1971 by GEOEX for Sierra Mineral Management. Superior has obtained a copy of our report from the property owners and these data can therefore be incorporated and discussed here.

These previous results disclose a moderately strong IP anomaly whose source appears to be relatively flat-lying and mainly confined to within 500 feet of the surface. The anomalism is within a rather conductive zone near the basalt flow remnants and it was speculated that a shallow, thin, IP responsive clay layer might be present below the basalt. Apparently, this zone was never drilled. However, Superior reports that shallow engineering test drilling several miles to the north has disclosed a clay layer about 100 feet thick just below similar Quaternary basalt flow remnants. In all likelihood, this or a similar clay layer is also present below the basalt in this project area and explains the anomalous IP results.

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Based on all the geophysical data available, the best area to test the clay anomaly would be near station 150E on Line 2 of the 1971 survey. This site is about 2000 feet east of the west quarter corner of Section 34, T. 1 S., R. 7 W. A 500 foot programmed vertical hole should suffice to penetrate through the zone of interest.

INTERPRETATION

Line 1 The initial 2000 foot dipole traverse (Spread 1) shows a weak but fairly well defined IP anomaly mainly between stations 0-NW/SE and 30SE. The source is interpreted to be buried about 2000 feet and is compatible with a steeply dipping tabular body about 2000 feet wide. The anomaly may be related to a pronounced resistivity interface located near 40SE. This interface appears to be steeply dipping and separates high resistivity material, perhaps greenstones on the south, from lower resistivity material, perhaps volcanics and alluvium on the north.

This anomaly is best developed on the higher frequency PFEs, i.e., those read at 1.0 and 0.1hz. However, the lower frequency PFEs read at 0.3 and 0.1hz show a correlating slightly weaker but less well defined anomaly. It was believed that EM coupling was not a major factor here in that the response was only slightly diminished by dropping the higher frequency from 1.0hz to 0.3hz and that the poorer definition at 0.3hz was due to more interfering noise as is typical at lower frequencies.

The more detailed and higher quality (less noise) coverage on 1200 foot dipoles (Spread 2) shows a higher frequency PFE anomaly between about 8SE and 38SE that corresponds to the Spread 1 anomaly very well. Based on dipole length - depth penetration equivalences, the n=3 data on the 2000 foot dipole coverage should give a response similar to the n=5 and 6 data with 1200 foot dipoles, and such is the case here. However, the lower frequency PFEs on Spread 2 are much weaker, in fact barely above background and suggest that the higher frequency anomaly is mainly or entirely due to EM coupling even though, based on a simple layered or homogenous earth model, much less coupling was predicted. It is speculated that this "anomalous" coupling is due to eddy current bunching effects near the steeply dipping interface present near 44SE.

To further verify the EM coupling interpretation, an empirical decoupling method was employed on the Spread 2 data. This was done with the PFE data read on 1.0, 0.3 and 0.1hz and also the 3.0, 1.0 and 0.3hz data. The result of these corrections also indicates that the majority of the anomalous response is due to EM coupling. From this it can be presumed that the misleading low frequency PFE results on Spread 1 are primarily due to the high telluric noise level present while reading the line.

In summary, contrary to initial interpretation, the anomaly is probably mostly or entirely due to EM coupling. Any residual true IP response is too weak to be of much interest as a sulfide target.

The remainder of Line 1 shows little of interest except for a very weak, shallow anomaly between 70NW and 100NW. This anomaly is too weak to be of much interest and perhaps represents a local zone of near-surface IP responsive clay as was likely encountered on the north ends of Lines 3 and 4.

Line 2 IP response similar to the Line 1, Spread 1 anomalism is also present on Line 2. The low frequency PFEs are again lower than the high frequency PFEs; to a somewhat greater degree than on Line 1. However, the low frequency PFEs still show two anomalous zones, one centered near 35NW and one near 50SE. Both of these anomalies are directly north of (and on the low resistivity side of) resistivity interfaces, near 10NW and 60SE, similar to the Line 1 interface present near 44SE. Because of this similarity of response, it is also expected that most or all of the Line 2 anomalism is due to EM coupling.

Line 3 This traverse shows anomalous higher frequency PFEs at depth along most of the traverse. However, the lower frequency data, due to reduced EM coupling, is anomalous only on the north end of the line, north of about station 70NW. This response appears relatively shallow and is located on and near a basalt flow remnant and likely corresponds to the probable clay anomalism discussed in the Conclusions and Recommendations section of this report.

Quite low resistivities are seen north of station 40NW where a pronounced resistivity interface is present. These low resistivities persist

to the deepest data in such a manner that a very thick source, probably volcanics, is implied, perhaps in excess of 3000 feet. Somewhat higher resistivity is locally present near 70NW where the traverse crosses a steep basalt capped hill.

A shallow, weak, IP anomaly was delineated near the Butte Mine by Canadian Aero in 1968 using a 500 foot dipole spacing. Their response defined a source about 1000 feet wide and 3000 feet long, oriented northwest-southeast and centered near GEOEX station 40SE on Line 3. Line 3 shows no appreciable anomalism in this area. However, the 1968 anomaly appears to have a source confined to within the upper 200 or 250 feet of the surface and would therefore probably not be detected by 2000 foot dipole coverage unless the response were considerably stronger.

Line 4 The resistivity and IP response on Line 4 is quite similar to Line 3. The main resistivity interface is seen near 30SE and again indicates a very thick and conductive volcanic section lying north thereof. The lower frequency PFE response is again anomalous on the north end of the line, particularly north of approximately 100NW where moderately strong effects are present. This anomalism appears to correlate with the presumed clay IP response zone discussed previously.

Considerable telluric noise was present while reading the south half of the line and some of the deeper IP readings could not be obtained. However, the data that was obtained, through n=4, shows no significant increase with depth and the results are considered conclusively negative down to at least 2000 feet below surface.

Line 5 This is a detail 1200 foot dipole line situated about 1800 feet northeast of Line 1 and shows response quite similar to that seen on Spread 2 of Line 1. Again, the lower frequency PFE data is substantially weaker than the higher frequency data. Two very weak lower frequency anomalies remain, one between 6NW and 12SE and the other lying north of 30NW. As on Line 1, the remaining response is too low to be considered a good IP drilling target without other encouraging correlating factors being present.

A steeply dipping resistivity interface is noted near 24SE that appears to correlate with the interface present near 44SE on Line 1 and is again presumed largely responsible for the anomalous EM coupling effects seen on the higher frequency PFE data.

Line 6 This line is located about 1800 feet southwest of Line 1. The IP response on both frequency pairs is somewhat lower than seen on Lines 1 and 5. The residual lower frequency data shows only a very weak, small, possible anomaly centered near 6SE, again lying just north of a resistivity interface. The interface in this case is positioned near 18SE and correlation with Lines 1, 2 and 5 defines a N70E contact strike.

PROCEDURES

A GEOEX Mark 4 multi-frequency IP system was used on this survey. To allow making optimum EM coupling corrections, four transmitting frequencies were used on all lines: 0.1, 0.3, 1.0 and 3.0hz. The standard collinear dipole-dipole array with "spreads" of seven transmitting electrodes was employed. An initial dipole length of 2000 feet was used on Lines 1 through 4 for the reconnaissance coverage. More detailed follow-up coverage with a dipole length of 1200 feet was obtained on Lines 5 and 6 and Spread 2 of Line 1.

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Heinrichs GEOEXploration Company

Chris S. Ludwig
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GEOEX

GEOEX Job # 1171

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Line 1 The initial 2000 foot dipole traverse (Spread 1) shows a weak but fairly well defined IP anomaly mainly between stations 0-NW/SE and 30SE. The source is interpreted to be buried about 2000 feet and is compatible with a steeply dipping tabular body about 2000 feet wide. The anomaly may be related to a pronounced resistivity interface located near 40SE. This interface appears to be steeply dipping and separates high resistivity material, perhaps greenstones on the south, from lower resistivity material, perhaps volcanics and alluvium on the north.

This anomaly is best developed on the higher frequency PFEs, i.e., those read at 1.0 and 0.1hz. However, the lower frequency PFEs read at 0.3 and 0.1hz show a correlating slightly weaker but less well defined anomaly. It was believed that EM coupling was not a major factor here in that the response was only slightly diminished by dropping the higher frequency from 1.0hz to 0.3hz and that the poorer definition at 0.3hz was due to more interfering noise as is typical at lower frequencies.

The more detailed and higher quality (less noise) coverage on 1200 foot dipoles (Spread 2) shows a higher frequency PFE anomaly between about 8SE and 38SE that corresponds to the Spread 1 anomaly very well. Based on dipole length - depth penetration equivalences, the n=3 data on the 2000 foot dipole coverage should give a response similar to the n=5 and 6 data with 1200 foot dipoles, and such is the case here. However, the lower frequency PFEs on Spread 2 are much weaker, in fact barely above background and suggest that the higher frequency anomaly is mainly or entirely due to EM coupling even though, based on a simple layered or homogenous earth model, much less coupling was predicted. It is speculated that this "anomalous" coupling is due to eddy current bunching effects near the steeply dipping interface present near 44SE.

To further verify the EM coupling interpretation, an empirical decoupling method was employed on the Spread 2 data. This was done with the PFE data read on 1.0, 0.3 and 0.1hz and also the 3.0, 1.0 and 0.3hz data. The result of these corrections also indicates that the majority of the anomalous response is due to EM coupling. From this it can be presumed that the misleading low frequency PFE results on Spread 1 are primarily due to the high telluric noise level present while reading the line.

In summary, contrary to initial interpretation, the anomaly is probably mostly or entirely due to EM coupling. Any residual true IP response is too weak to be of much interest as a sulfide target.

The remainder of Line 1 shows little of interest except for a very weak, shallow anomaly between 70NW and 100NW. This anomaly is too weak to be of much interest and perhaps represents a local zone of near-surface IP responsive clay as was likely encountered on the north ends of Lines 3 and 4.

Line 2 IP response similar to the Line 1, Spread 1 anomalism is also present on Line 2. The low frequency PFEs are again lower than the high frequency PFEs; to a somewhat greater degree than on Line 1. However, the low frequency PFEs still show two anomalous zones, one centered near 35NW and one near 50SE. Both of these anomalies are directly north of (and on the low resistivity side of) resistivity interfaces, near 10NW and 60SE, similar to the Line 1 interface present near 44SE. Because of this similarity of response, it is also expected that most or all of the Line 2 anomalism is due to EM coupling.

Line 3 This traverse shows anomalous higher frequency PFEs at depth along most of the traverse. However, the lower frequency data, due to reduced EM coupling, is anomalous only on the north end of the line, north of about station 70NW. This response appears relatively shallow and is located on and near a basalt flow remnant and likely corresponds to the probable clay anomalism discussed in the Conclusions and Recommendations section of this report.

Quite low resistivities are seen north of station 40NW where a pronounced resistivity interface is present. These low resistivities persist

to the deepest data in such a manner that a very thick source, probably volcanics, is implied, perhaps in excess of 3000 feet. Somewhat higher resistivity is locally present near 70NW where the traverse crosses a steep basalt capped hill.

A shallow, weak, IP anomaly was delineated near the Butte Mine by Canadian Aero in 1968 using a 500 foot dipole spacing. Their response defined a source about 1000 feet wide and 3000 feet long, oriented northwest-southeast and centered near GEOEX station 40SE on Line 3. Line 3 shows no appreciable anomalism in this area. However, the 1968 anomaly appears to have a source confined to within the upper 200 or 250 feet of the surface and would therefore probably not be detected by 2000 foot dipole coverage unless the response were considerably stronger.

Line 4 The resistivity and IP response on Line 4 is quite similar to Line 3. The main resistivity interface is seen near 30SE and again indicates a very thick and conductive volcanic section lying north thereof. The lower frequency PFE response is again anomalous on the north end of the line, particularly north of approximately 100NW where moderately strong effects are present. This anomalism appears to correlate with the presumed clay IP response zone discussed previously.

Considerable telluric noise was present while reading the south half of the line and some of the deeper IP readings could not be obtained. However, the data that was obtained, through n=4, shows no significant increase with depth and the results are considered conclusively negative down to at least 2000 feet below surface.

Line 5 This is a detail 1200 foot dipole line situated about 1800 feet northeast of Line 1 and shows response quite similar to that seen on Spread 2 of Line 1. Again, the lower frequency PFE data is substantially weaker than the higher frequency data. Two very weak lower frequency anomalies remain, one between 6NW and 12SE and the other lying north of 30NW. As on Line 1, the remaining response is too low to be considered a good IP drilling target without other encouraging correlating factors being present.

A steeply dipping resistivity interface is noted near 24SE that appears to correlate with the interface present near 44SE on Line 1 and is again presumed largely responsible for the anomalous EM coupling effects seen on the higher frequency PFE data.

Line 6 This line is located about 1800 feet southwest of Line 1. The IP response on both frequency pairs is somewhat lower than seen on Lines 1 and 5. The residual lower frequency data shows only a very weak, small, possible anomaly centered near 6SE, again lying just north of a resistivity interface. The interface in this case is positioned near 18SE and correlation with Lines 1, 2 and 5 defines a N70E contact strike.

PROCEDURES

A GEOEX Mark 4 multi-frequency IP system was used on this survey. To allow making optimum EM coupling corrections, four transmitting frequencies were used on all lines: 0.1, 0.3, 1.0 and 3.0hz. The standard collinear dipole-dipole array with "spreads" of seven transmitting electrodes was employed. An initial dipole length of 2000 feet was used on Lines 1 through 4 for the reconnaissance coverage. More detailed follow-up coverage with a dipole length of 1200 feet was obtained on Lines 5 and 6 and Spread 2 of Line 1.

All lines were oriented N30°W and Lines 1 through 4 were centered at claim corners specified by Superior. Stations are designated in hundreds of feet slope distance from the center points.

Sending-receiving dipole separations range from 1 to 6 dipole lengths on all seven traverses and typically, for 2000 foot dipoles, this should yield a resolvable depth of penetration from about 600 feet down to perhaps 3000 feet below surface. The 1200 foot dipoles would have a proportionally reduced penetration but with a corresponding increase in resolution. A 0.1, 0.2 and 0.5 dipole separation reading was also taken on each half of the four 2000 foot dipole lines to obtain extra shallow information for control on possible near-surface conductive layers.

Data are presented on "sectional" data sheets, one for each spread, showing successively from top to bottom: the resistivity, the percent frequency effect (PFE) at 0.1 and 1.0hz, and the PFE X 2.1 (decade normalized) at 0.1 and 0.3hz, all contoured in "sectional" form. Metallic conduction factors were not felt to be particularly definitive in this environment and are not presented. Decoupling routines using PFEs at 1.0, 0.3 and 0.1hz and 3.0, 1.0 and 0.3hz were also employed to give additional interpretational leverage.

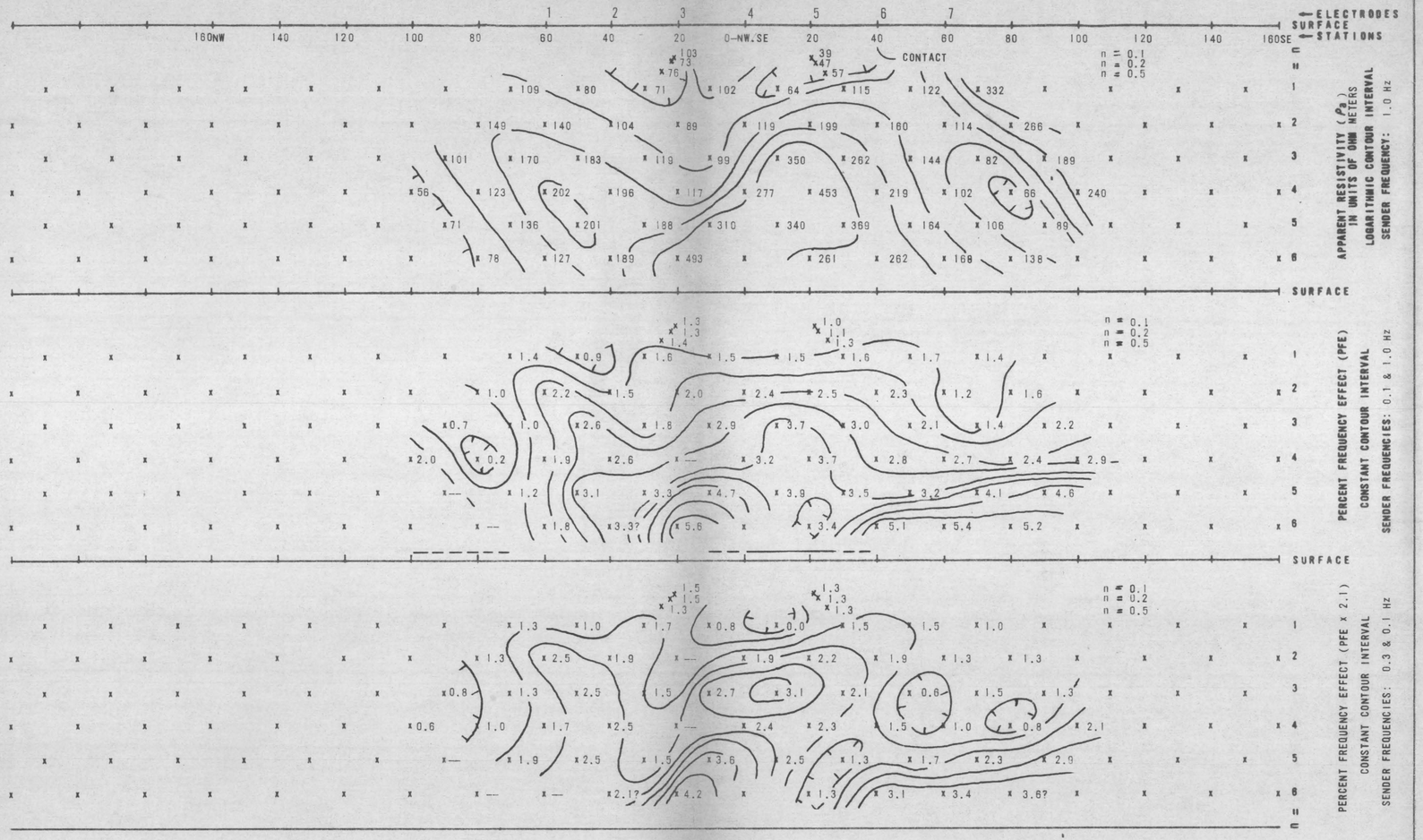
An "Induced Polarization Location and Interpretation Plan" at a scale of 1" = 2000' to overlay the Superior topographic base map is included to show the traverse locations and plan projected IP-resistivity interpretations.

Respectfully submitted,

Heinrichs GEOEXploration Company

Chris S. Ludwig
Chief Geophysicist

CSL:mt



1171

LINE NO.
I
SPREAD(S)
I
BEARING
N 30° W

INDUCED POLARIZATION TRAVERSE SECTIONAL DATA SHEET

of

BUCKEYE AREA
MARICOPA COUNTY, ARIZONA

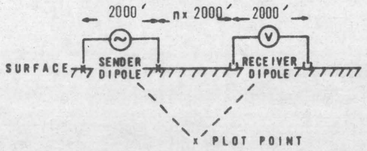
for

THE SUPERIOR OIL COMPANY
MINERALS DIVISION

RELATIVE ANOMALY STRENGTH

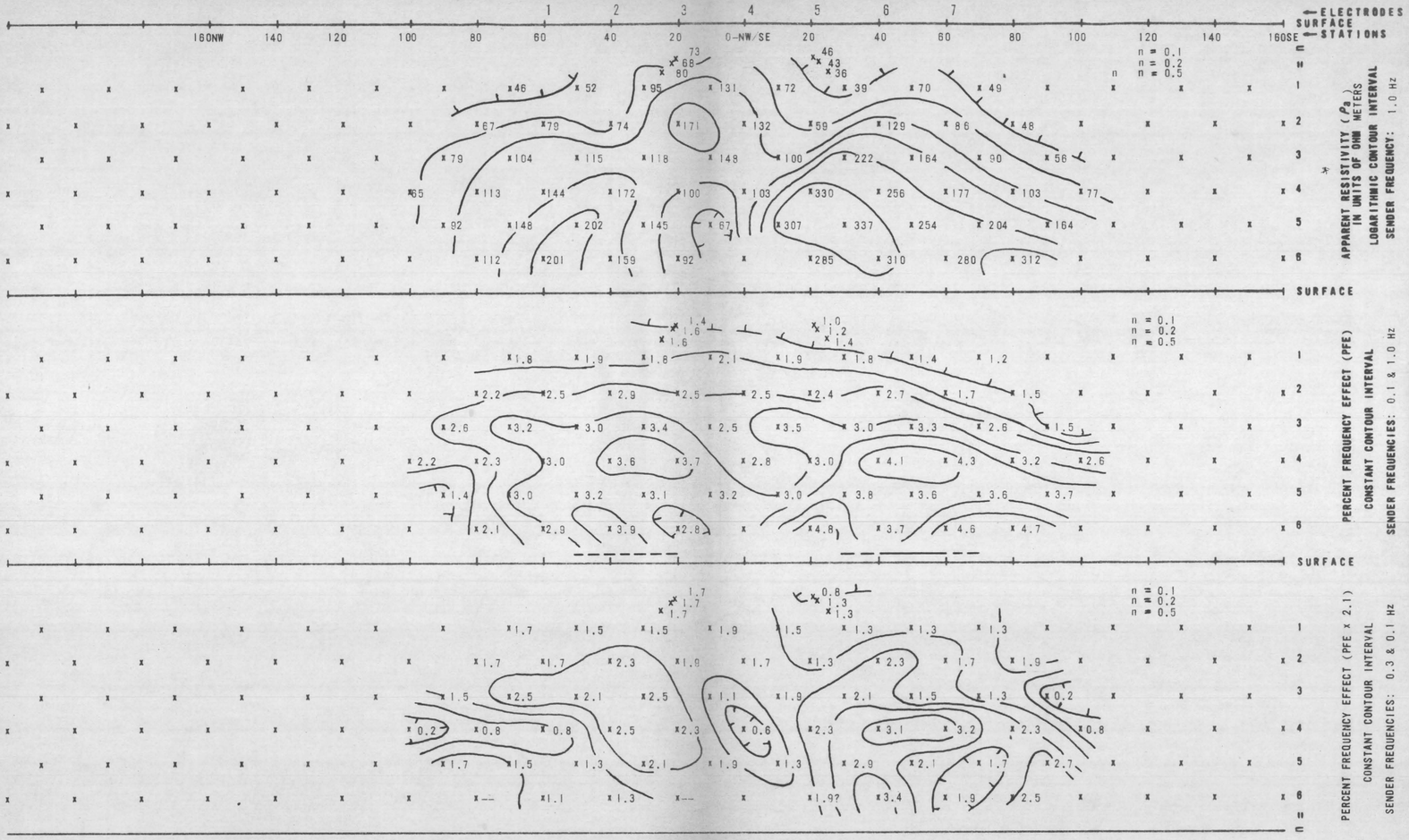
VERY WEAK — WEAK — MODERATE — STRONG

DIPOLE-DIPOLE ELECTRODE ARRAY



DATE
MAY 1977

HEINRICH GEOEXPLORATION COMPANY
806 W. GRANT ROAD, POST OFFICE BOX 5964, TUCSON, ARIZ., 85703, PHONE: (602)623-0578



1171

LINE NO. 2
SPREAD(S) 1
BEARING N 30° W

INDUCED POLARIZATION TRAVERSE SECTIONAL DATA SHEET

of

BUCKEYE AREA
MARICOPA COUNTY, ARIZONA

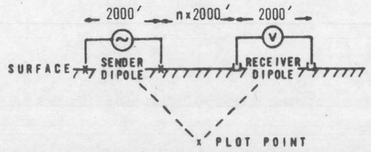
for

THE SUPERIOR OIL COMPANY
MINERALS DIVISION

RELATIVE ANOMALY STRENGTH

VERY WEAK | WEAK | MODERATE | STRONG

DIPOLE-DIPOLE ELECTRODE ARRAY



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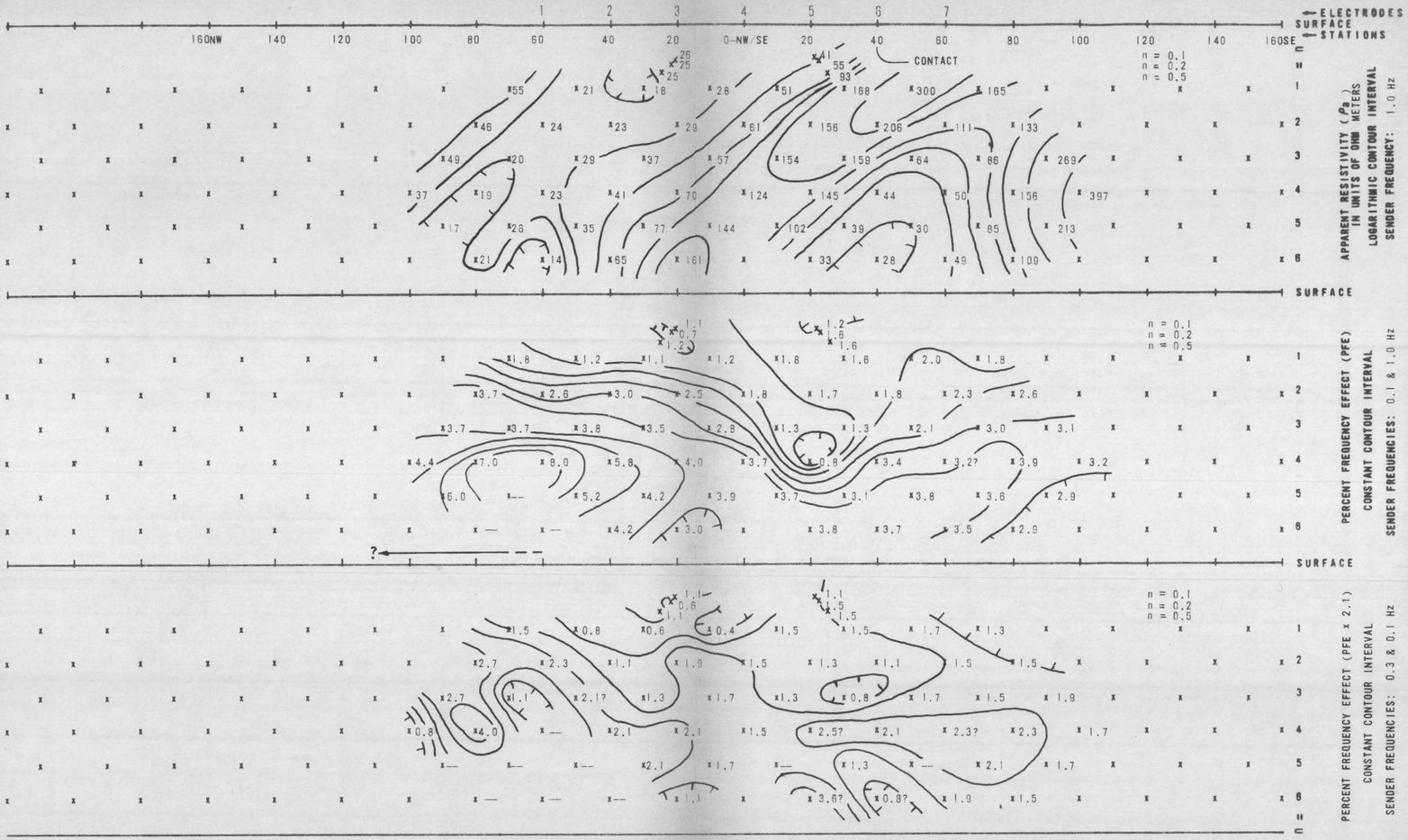
MAY 1977

HEINRICHS GEOEXPLORATION COMPANY
806 W. GRANT ROAD, POST OFFICE BOX 5984, TUCSON, ARIZ., 85703, PHONE: (602)623-0578



1171

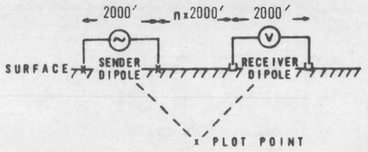
LINE NO. 3
SPREAD(S) I
BEARING N 30° W

INDUCED POLARIZATION TRAVERSE SECTIONAL DATA SHEET of BUCKEYE AREA MARICOPA COUNTY, ARIZONA for THE SUPERIOR OIL COMPANY MINERALS DIVISION

RELATIVE ANOMALY STRENGTH

VERY WEAK | WEAK | MODERATE | STRONG

DIPOLE-DIPOLE ELECTRODE ARRAY



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MAY 1977

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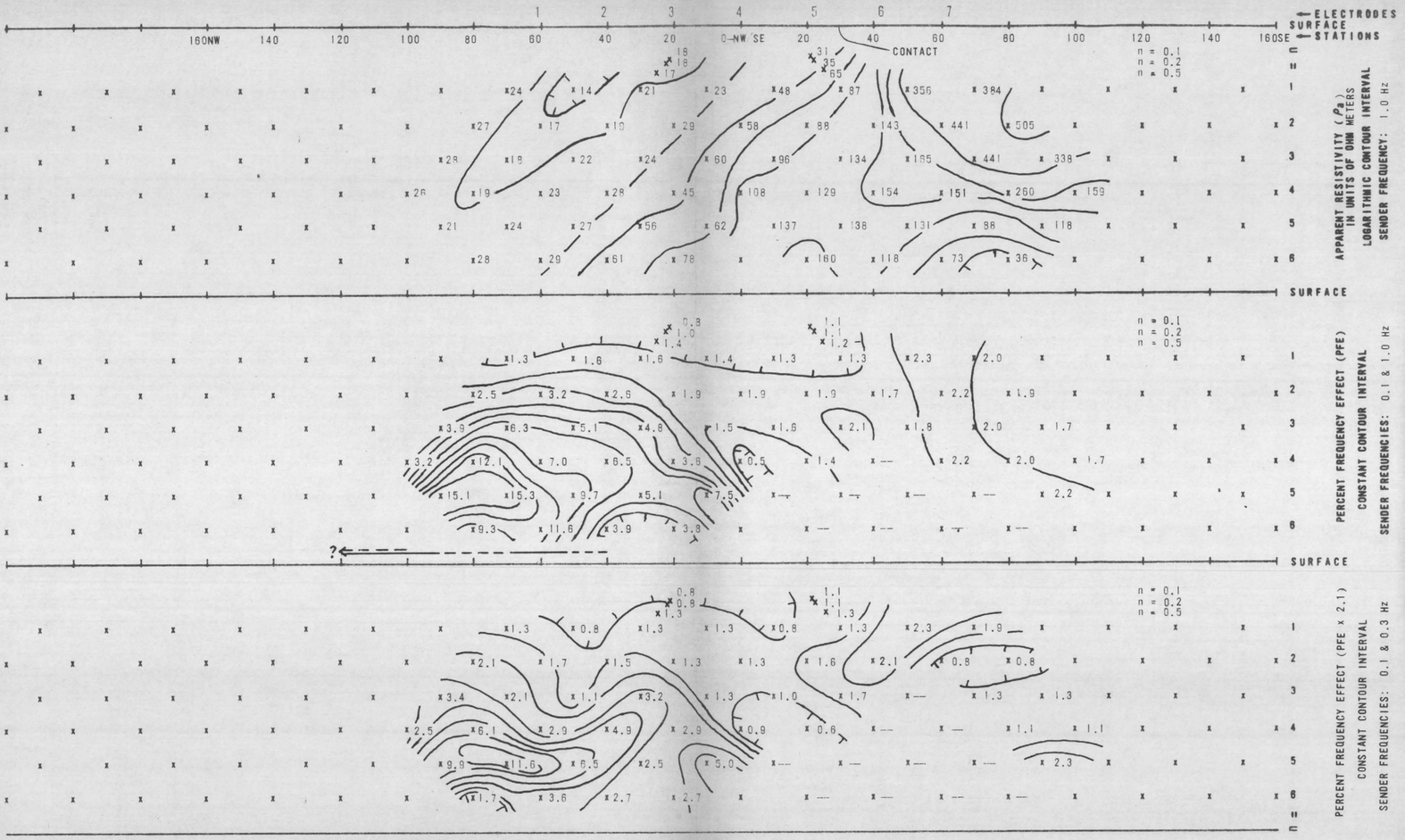
806 W. GRANT ROAD, POST OFFICE BOX 5964, TUCSON, ARIZ., 85703, PHONE: (602)623-0578



1171

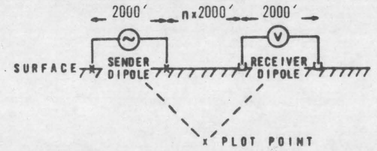
LINE NO. 4
SPREAD(S) 1
BEARING N 30° W

INDUCED POLARIZATION TRAVERSE SECTIONAL DATA SHEET of BUCKEYE AREA MARICOPA COUNTY, ARIZONA for THE SUPERIOR OIL COMPANY MINERALS DIVISION

RELATIVE ANOMALY STRENGTH

VERY WEAK | WEAK | MODERATE | STRONG

DIPOLE-DIPOLE ELECTRODE ARRAY



DATE
MAY 1977

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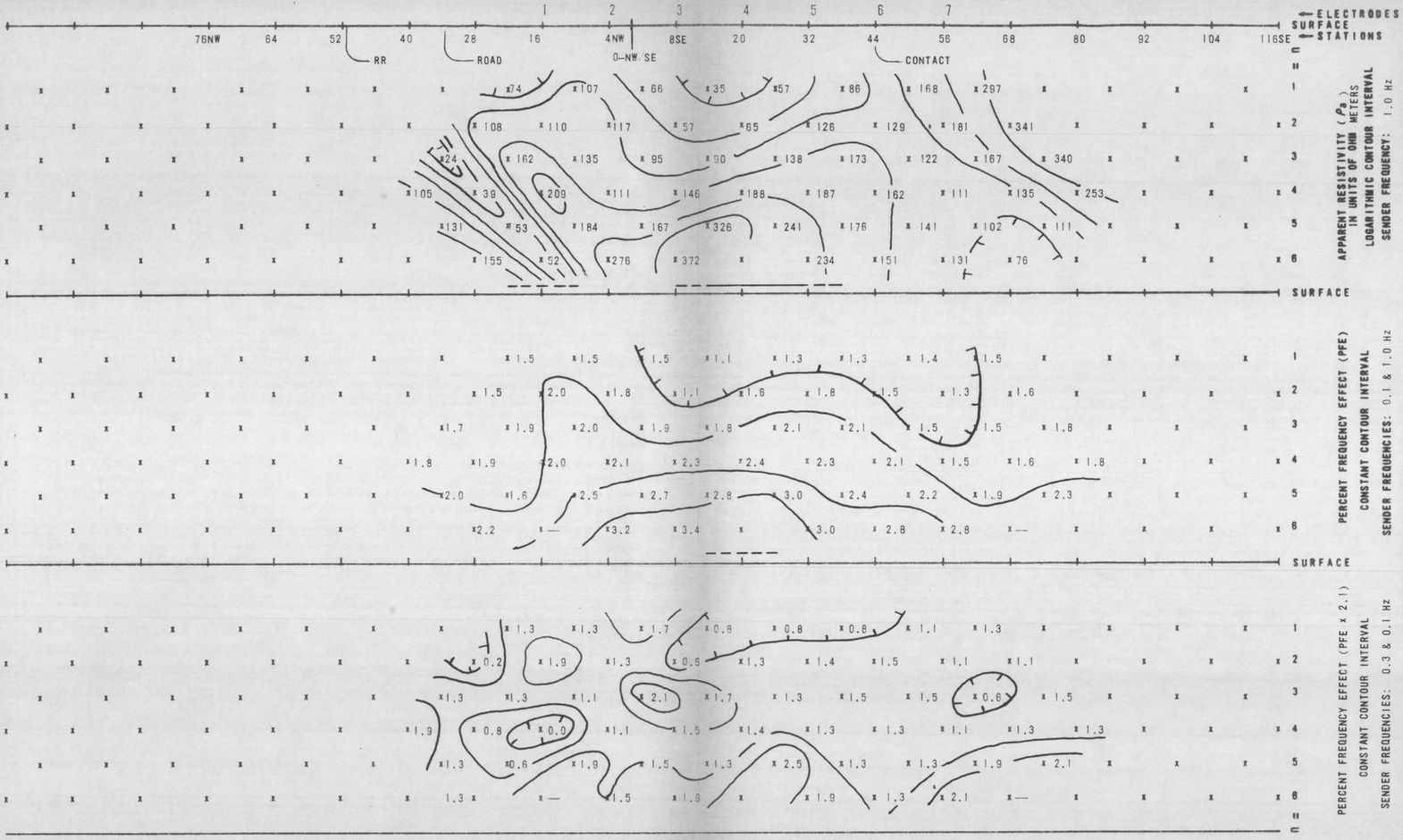
806 W. GRANT ROAD, POST OFFICE BOX 5964, TUCSON, ARIZ., 85703, PHONE: (602)623-0578



1171

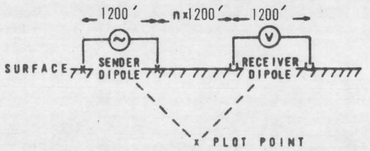
LINE NO. I
SPREAD(S) 2
BEARING N 30° W

INDUCED POLARIZATION TRAVERSE SECTIONAL DATA SHEET of BUCKEYE AREA MARICOPA COUNTY, ARIZONA for THE SUPERIOR OIL COMPANY MINERALS DIVISION

RELATIVE ANOMALY STRENGTH

VERY WEAK | WEAK | MODERATE | STRONG

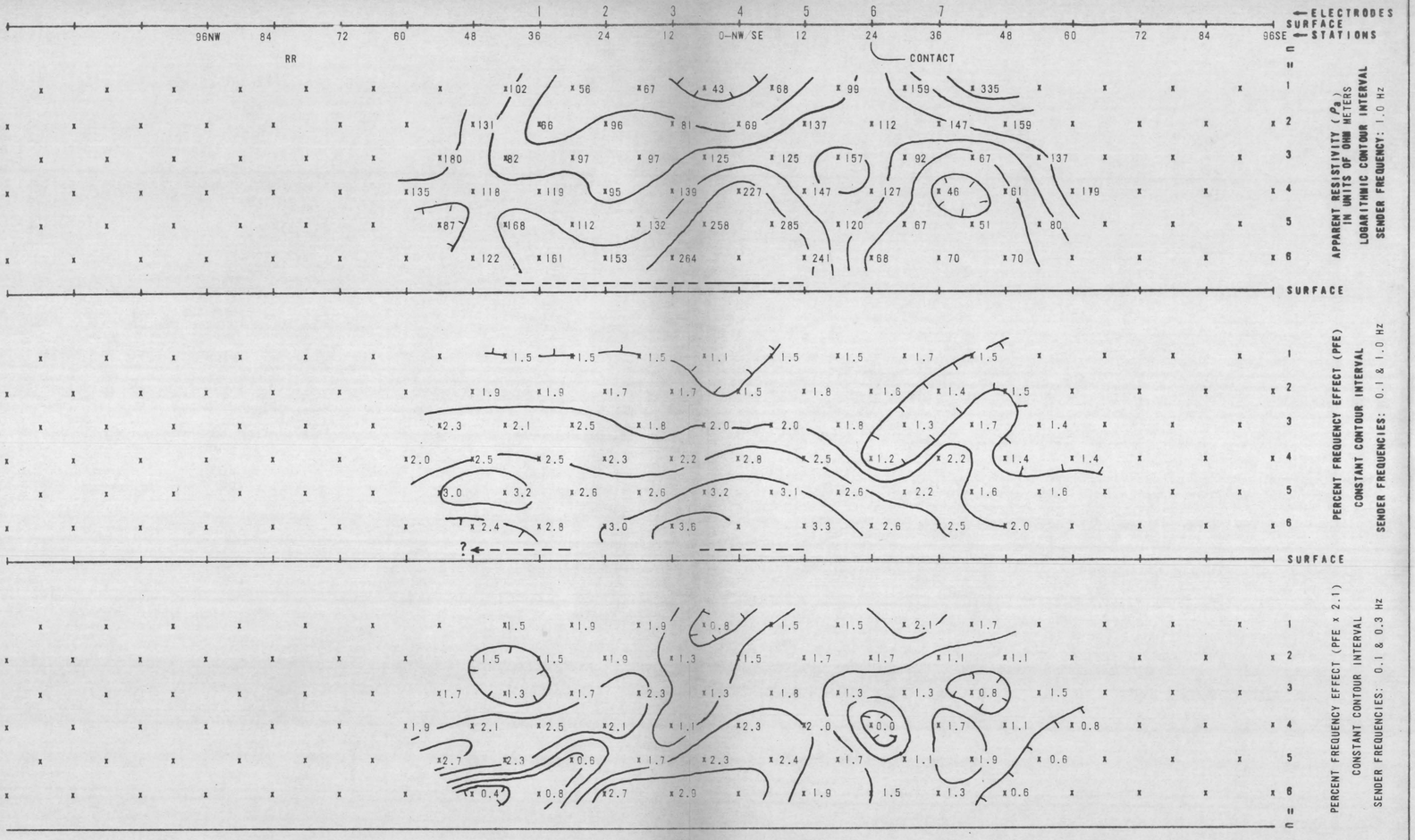
DIPOLE-DIPOLE ELECTRODE ARRAY



DATE

MAY 1977

HEINRICHS GEOEXPLORATION COMPANY
808 W. GRANT ROAD, POST OFFICE BOX 5964, TUCSON, ARIZ., 85703, PHONE: (602)623-0578



1171

LINE NO. 5
SPREAD(S) 1
BEARING N 30° W

INDUCED POLARIZATION TRAVERSE SECTIONAL DATA SHEET

of

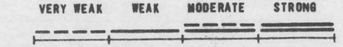
BUCKEYE AREA
MARICOPA COUNTY, ARIZONA

for

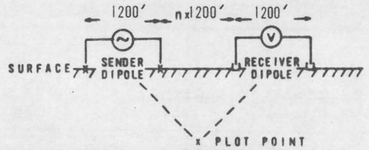
THE SUPERIOR OIL COMPANY
MINERALS DIVISION

RELATIVE ANOMALY STRENGTH

VERY WEAK — WEAK — MODERATE — STRONG



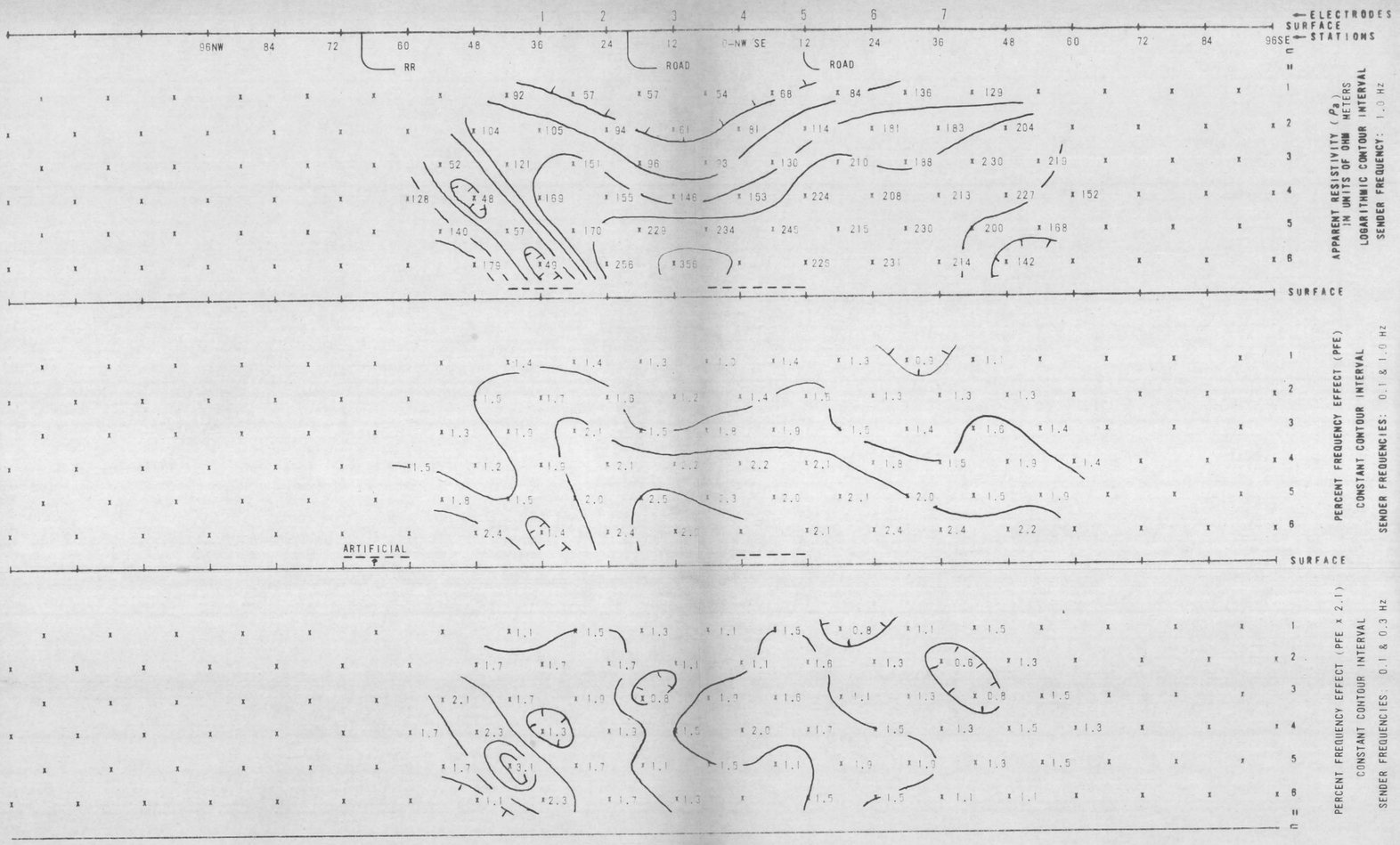
DIPOLE-DIPOLE ELECTRODE ARRAY



DATE

MAY 1977

HEINRICH GEOEXPLORATION COMPANY
806 W. GRANT ROAD, POST OFFICE BOX 5964, TUCSON, ARIZ., 85703, PHONE: (602)623-0578



1171

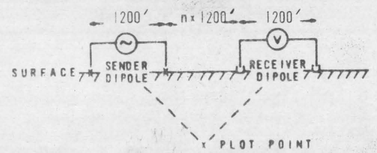
LINE NO. 6
SPREAD(S) I
BEARING N 30° W

INDUCED POLARIZATION TRAVERSE SECTIONAL DATA SHEET of BUCKEYE AREA MARICOPA COUNTY, ARIZONA for THE SUPERIOR OIL COMPANY MINERALS DIVISION

RELATIVE ANOMALY STRENGTH

VERY WEAK | WEAK | MODERATE | STRONG

DIPOLE-DIPOLE ELECTRODE ARRAY



DATE
MAY 1977

HEINRICHS GEOEXPLORATION COMPANY
806 W. GRANT ROAD, POST OFFICE BOX 5964, TUCSON, ARIZ., 85703, PHONE: (602)623-0578

Line 3

Line 4

Line 5

Line 6

Surprise Well

AGUA CALIENTE

BM 998

BM 971

BM 958

PACIFIC SOUTHERN TRAIL

BM 888 Well

Crag (Site)

Centennial PIPELINE

Yellow Medicine Hills 1615

BM 1050

WC

Jackpot Mine

Dixie Mine

ROAD

JEEP TRAIL

BM 1027

Gillespie

Petterson Tank

Butte Mine

Black Butte

TRAIL

JEEP

AGUA TRAIL

R8W R7W

Harqua BM 1078

Idazona Mines

Arlington Valley

Well 978

Tank

Webb Well 1026

Harcan Mine

Webb Mtn

Buckeye Copper

Wash

Spring

BM 956

BM 874

PACIFIC

Signal Mtn

Buckeye Copper Mine Well

lines @ N30W

1" = 2000'

Topo Map

AZ

I.P. L. & I.P.
Buckeye Area
Maricopa County, Arizona
for
T.S.O.C.
M.D.
June 1977
by
GEOEX
Job # 1171

Topo Map
Buckeye Proj, AZ
1" = 2000'
lines @ N30°W

INDUCED POLARIZATION LOCATION AND INTERPRETATION PLAN

of

BUCKEYE AREA – MARICOPA COUNTY, ARIZONA

for

THE SUPERIOR OIL COMPANY
MINERALS DIVISION

by

HEINRICHS GEOEXPLORATION COMPANY
P.O. BOX 5964, TUCSON, AZ. 85703

JOB NUMBER 1171 MAY 1977

J. P. E.

0 5000 10000
SCALE IN FEET

N

R8W | R7W
T1S
T2S

ROAD
AGUA CALIENTE
S.P. RAILROAD
ARTIFICIAL
SPREAD 1
SPREAD 2
VERY WEAK
a = 1200' LOW FREQUENCY INTERPRETATION
RESISTIVITY INTERFACE
LOW ρ / HIGH ρ

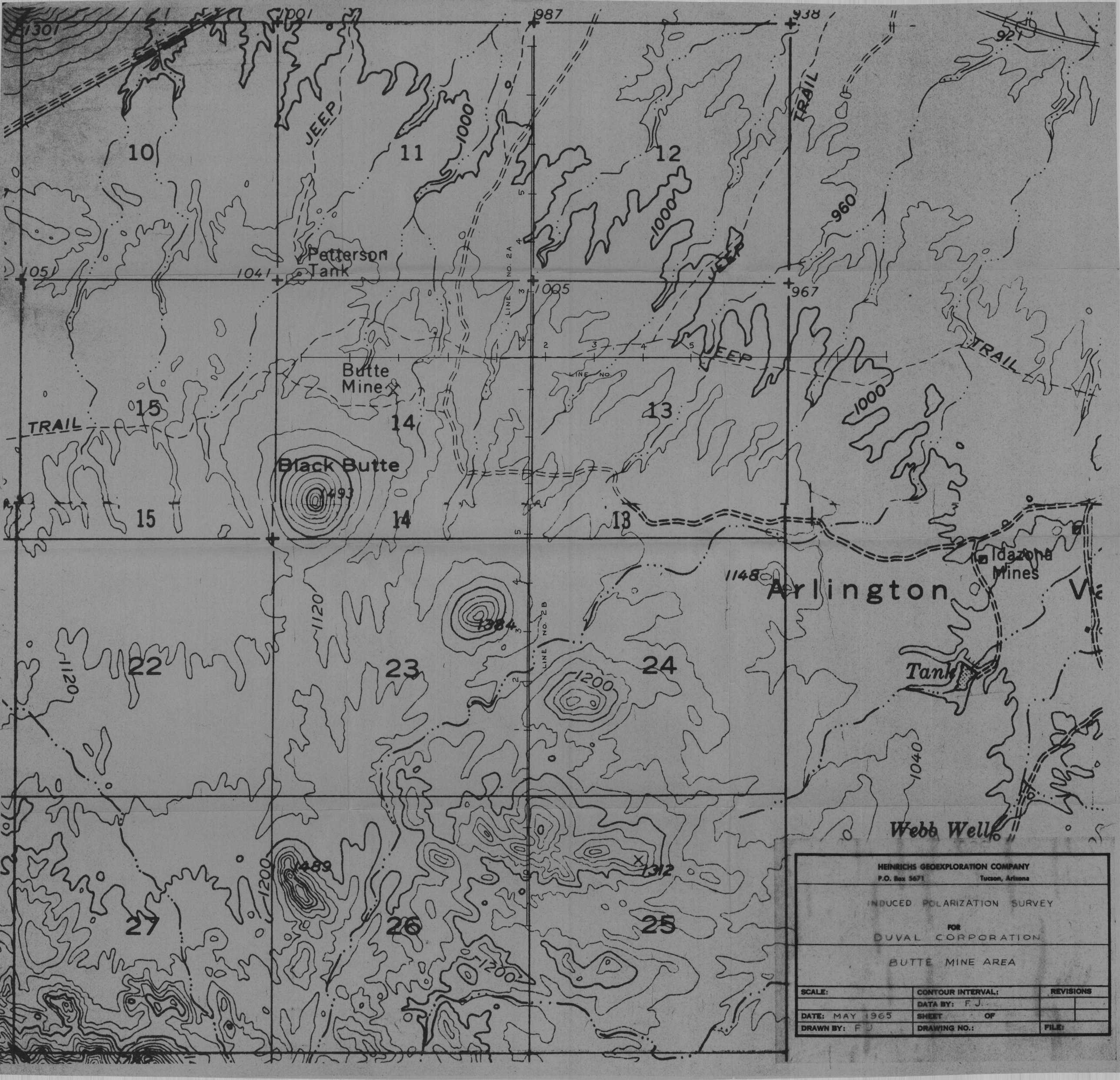
LINE 1
LINE 2
LINE 3
LINE 4
LINE 5
LINE 6

I.P. LINE
STATION
ELECTRODE

VERY WEAK
WEAK
MODERATE
} RELATIVE ANOMALY STRENGTH

+ SECTION CORNER
23 SECTION NUMBER

NOTE: THIS SHEET OVERLAYS BASE MAP FURNISHED BY THE SUPERIOR OIL COMPANY, MINERALS DIVISION



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

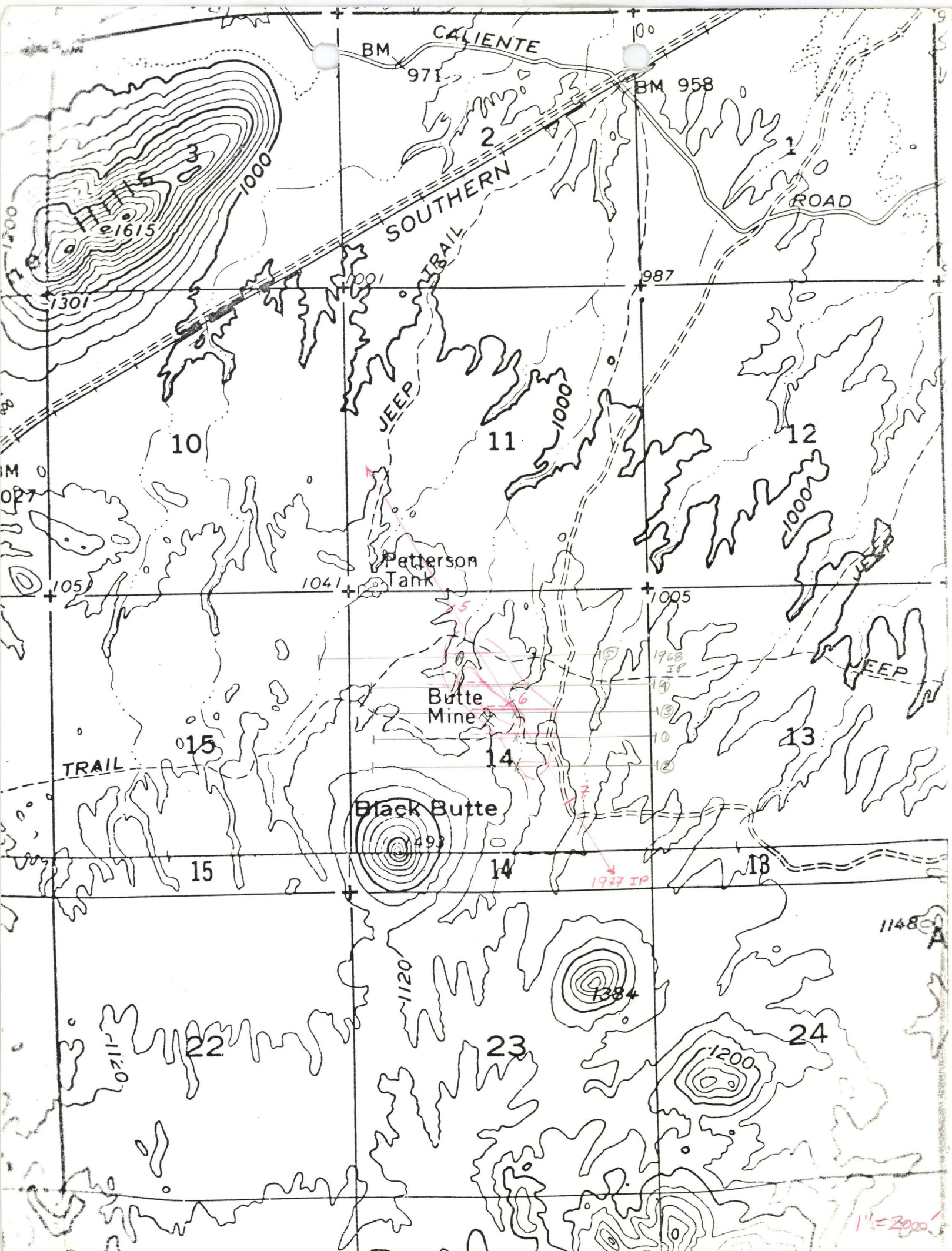
INDUCED POLARIZATION SURVEY

FOR

DUVAL CORPORATION

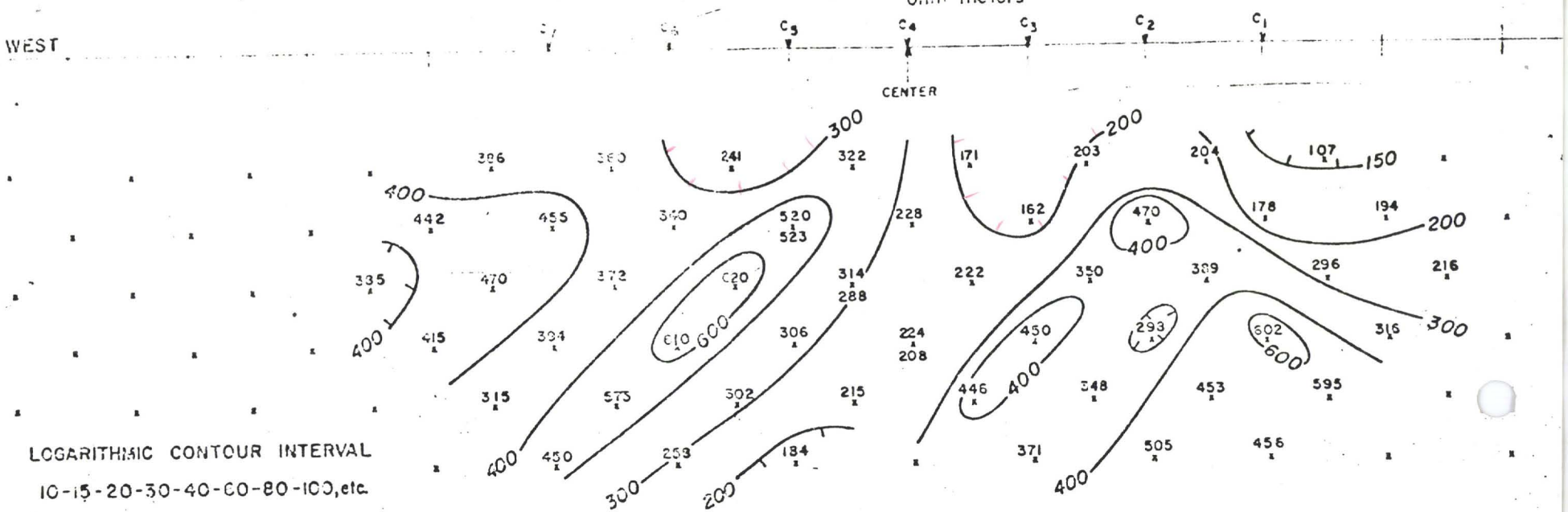
BUTTE MINE AREA

SCALE:	CONTOUR INTERVAL:	REVISIONS
	DATA BY: F.J.	
DATE: MAY 1965	SHEET OF	
DRAWN BY: F.J.	DRAWING NO.:	FILE:


CALIENTE
BM 971
BM 958
SOUTHERN
TRAIL
ROAD
JEEP
Petterson Tank
Butte Mine
Black Butte
1493
1615
1384
1200
1148
1120
1000
1001
987
1041
1005
1301
1968 IP
1977 IP
1" = 2000'

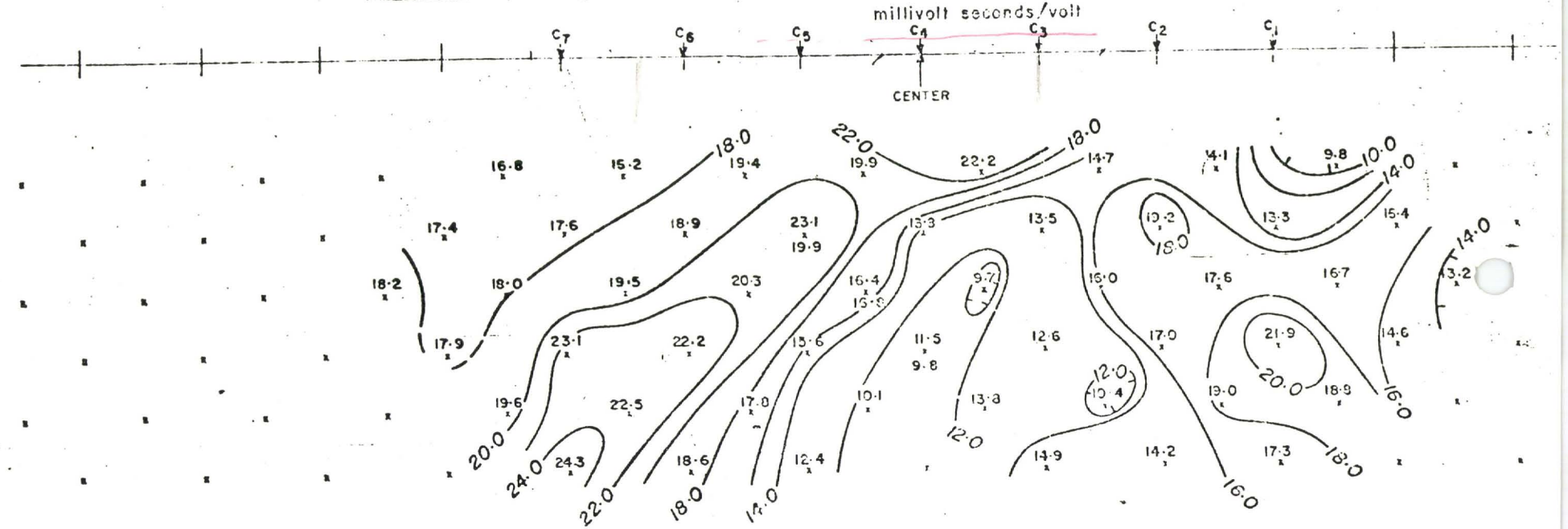
APPARENT RESISTIVITY

ohm meters

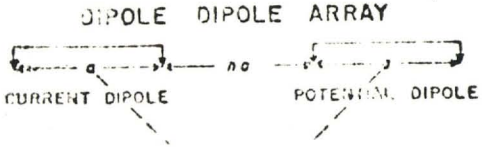


APPARENT POLARIZATION

millivolt seconds/volt



DIPOLE DIPOLE ARRAY



LINE . . . . . N° 1

LOOKING . . . . . N

DIPOLE

LEGEND

FENCE

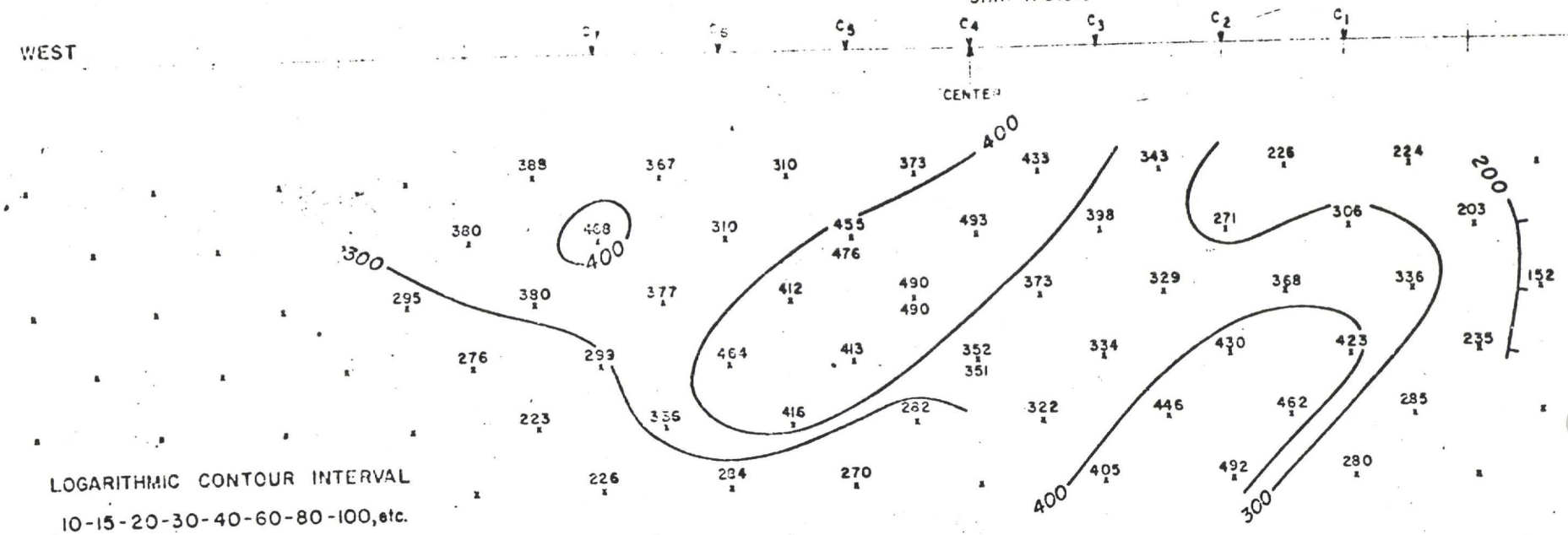
PIPELINE

Mineral

TUCSON,

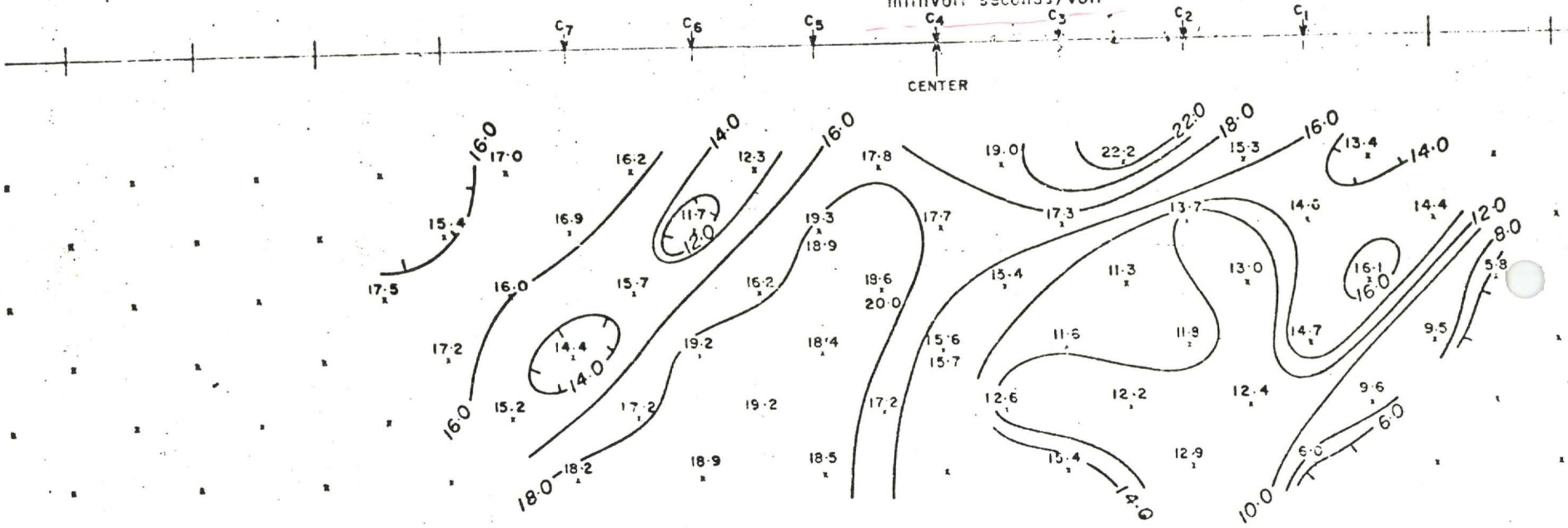
APPARENT RESISTIVITY

ohm meters

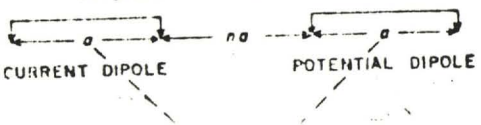


APPARENT POLARIZATION

millivolt seconds/volt



DIPOLE DIPOLE ARRAY



LINE . . . . . N° 2

LOOKING . . . . . N

DIPOLE LENGTH . . . . . 500'

LEGEND

FENCE . . . . .

PIPELINE . . . . .

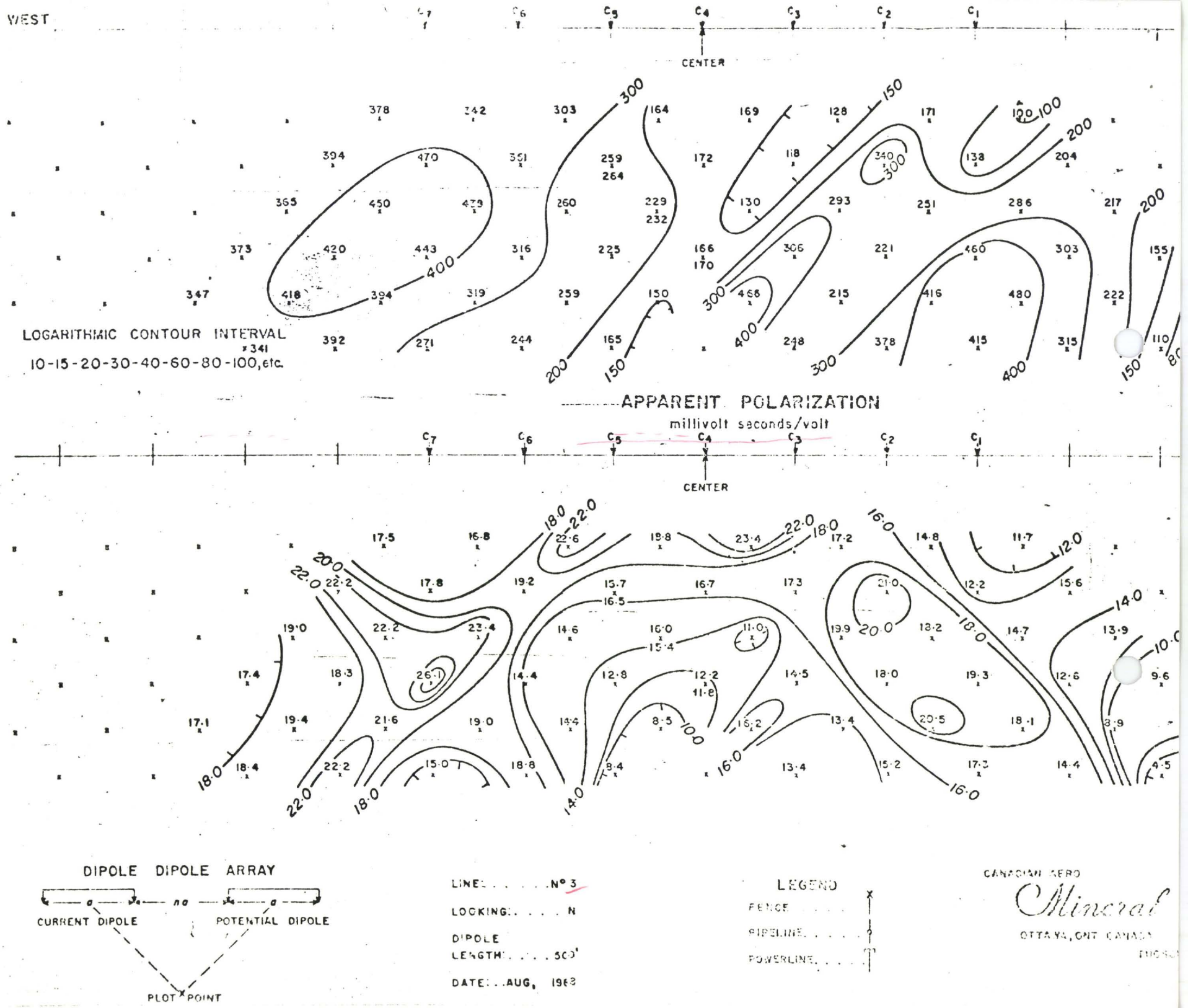
POWERLINE . . . . .

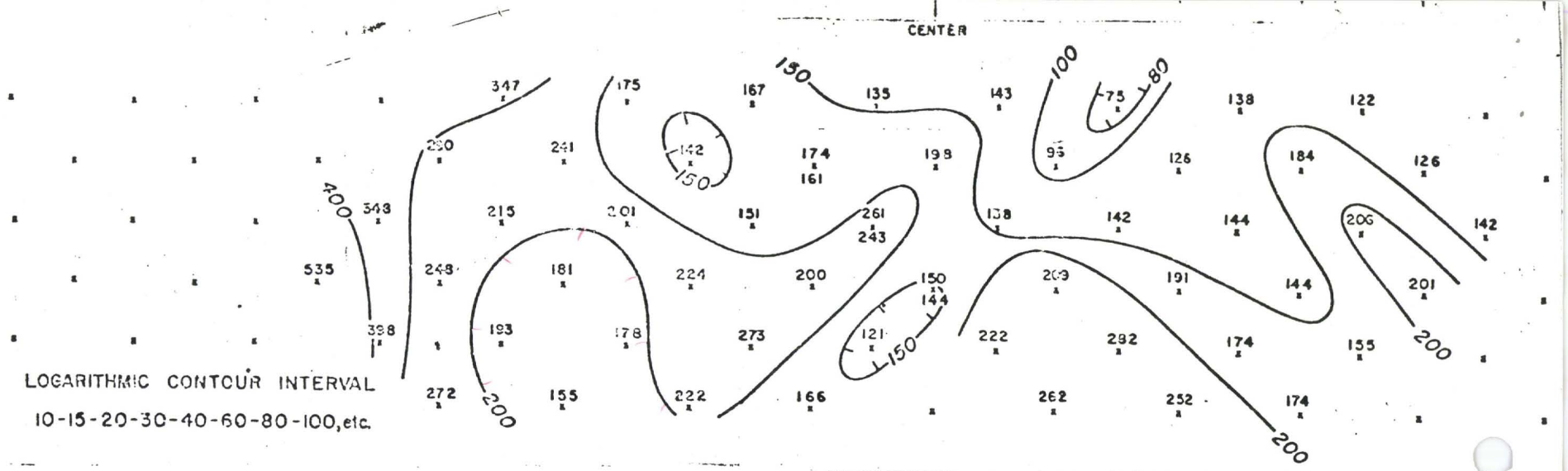
CANADIAN AERO

Mineral

OTTAWA, ONT. CANADA

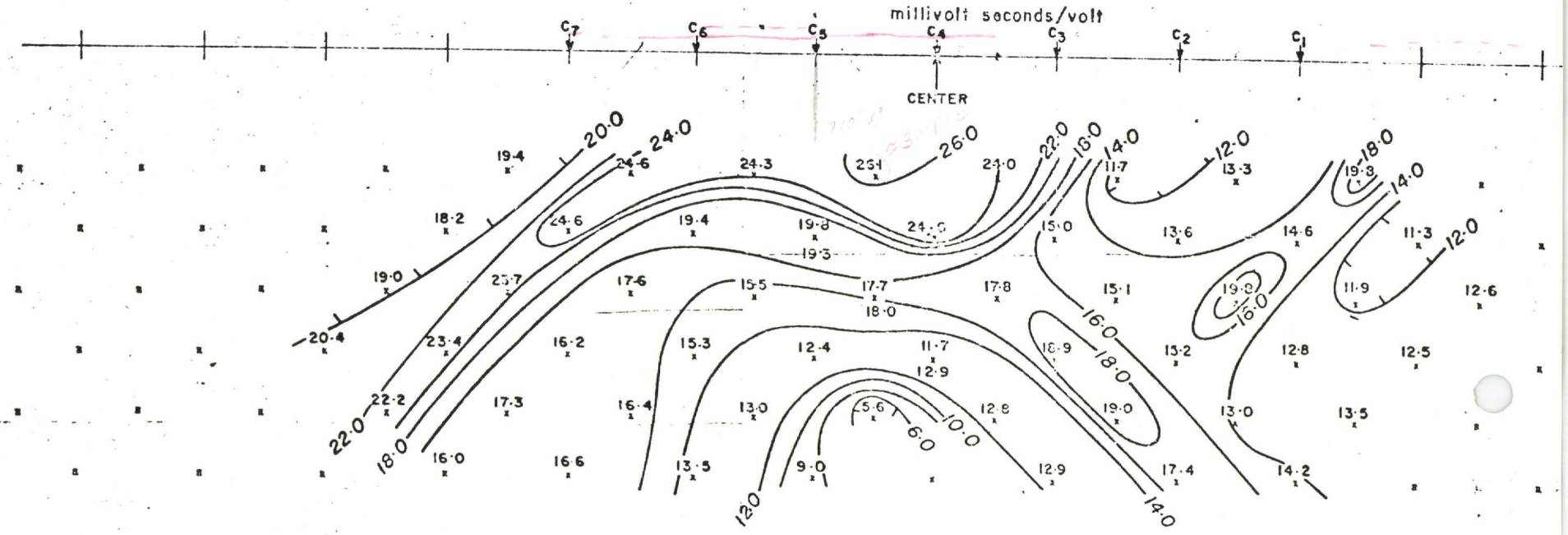
TUCSON


WEST
C7
C6
C5
C4
C3
C2
C1
CENTER
LOGARITHMIC CONTOUR INTERVAL
x341
10-15-20-30-40-60-80-100,etc.
APPARENT POLARIZATION
millivolt seconds/volt
DIPOLE DIPOLE ARRAY
a
na
a
CURRENT DIPOLE
POTENTIAL DIPOLE
PLOT POINT
LINE . . . . . N° 3
LOOKING . . . . N
DIPOLE
LENGTH . . . . 500'
DATE . . AUG, 1963
LEGEND
FENCE . . . . .
PIPELINE . . . . .
POWERLINE . . . .
CANADIAN AERO
Mineral
OTTAWA, ONT CANADA

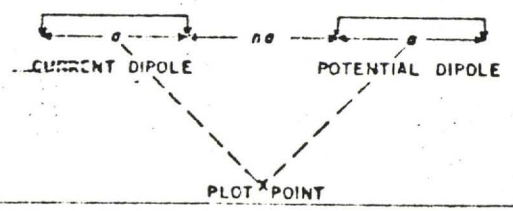


APPARENT POLARIZATION

millivolt seconds/volt



DIPOLE DIPOLE ARRAY



LINE: . . . . . N°4

LOOKING: . . . . . N

DIPOLE LENGTH: . . . . 500'

DATE: . . . AUG, 1959

LEGEND

FENCE X

PIPELINE . . . . . ⊙

POWERLINE . . . . . T

CANADIAN AERO

Mineral

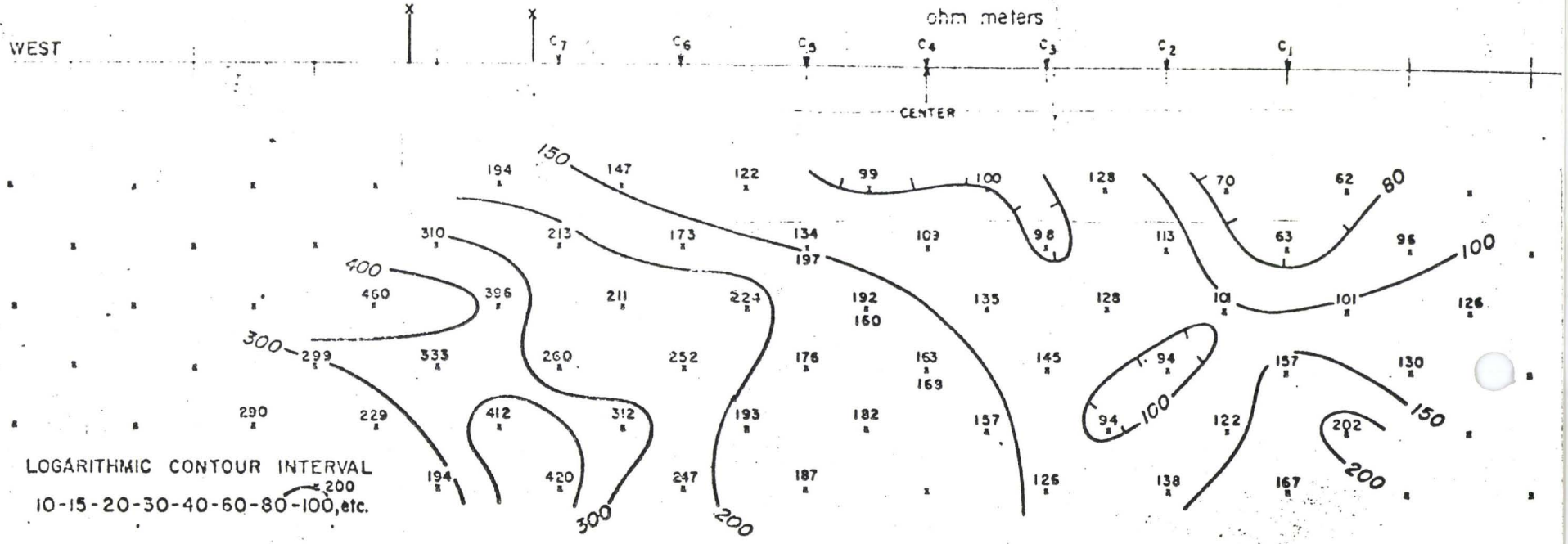
OTTAWA, ONT. CANADA

TUCSON

FREEPORT EXPLORATION COMPANY

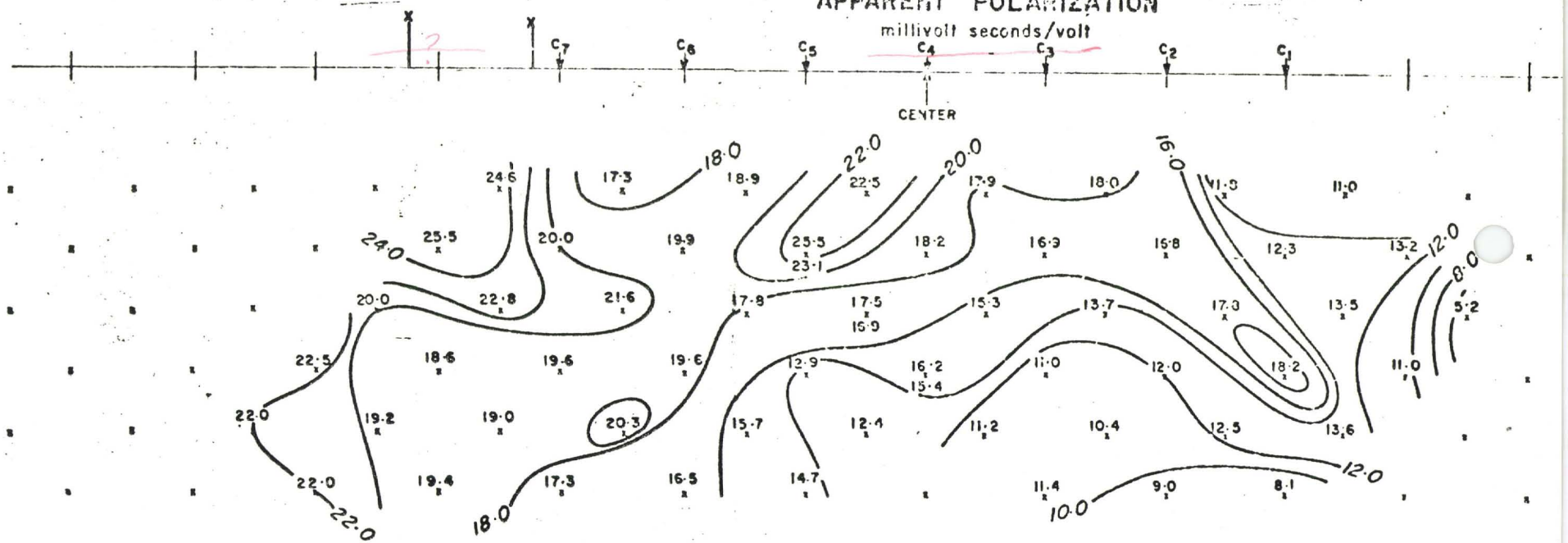
APPARENT RESISTIVITY

ohm meters



APPARENT POLARIZATION

millivolt seconds/volt



DIPOLE DIPOLE ARRAY

CURRENT DIPOLE — POTENTIAL DIPOLE

LINE: . . . . . N° 5

LOOKING: . . . . . N

LEGEND

FENCE . . . . .

CANADIAN AERO

Mineral

HEINRICHS GEOEXPLORATION COMPANY
806 W. GRANT RD., P.O. BOX 5964 TUCSON, ARIZ. 85703. PH: (602) 623-0578

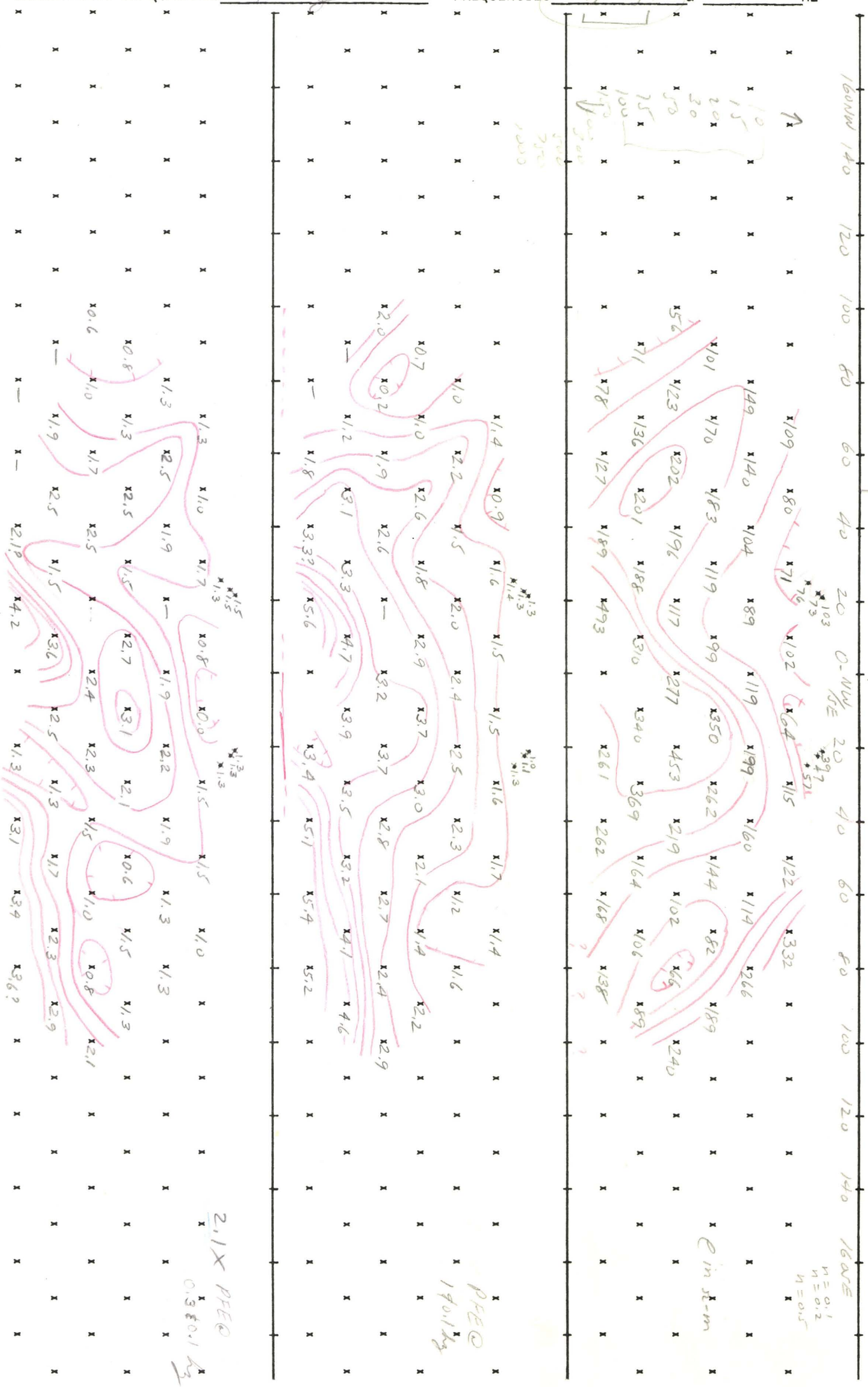
JOB # 1171 CLIENT T. S. O. C.

DATE May 1977 AREA Buckeye

LINE# 1 SP 1 a= 200' BEARING N 30° W

RESISTIVITY FREQUENCIES 1.0 Hz

FREQUENCIES 0.1, 0.3, 1 & _____ Hz



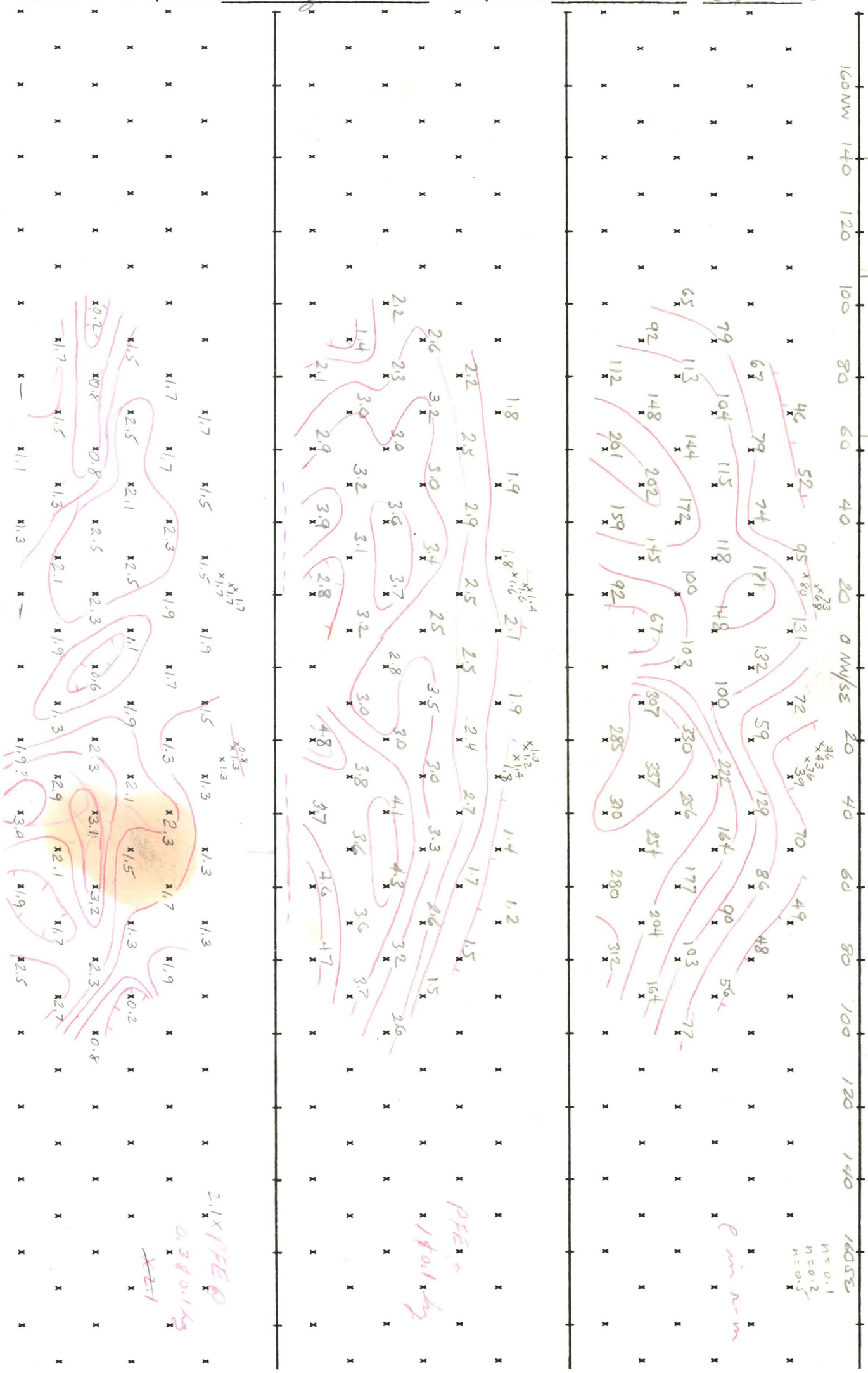
HEINRICHS GEOEXPLORATION COMPANY
806 W. GRANT RD., P.O. BOX 5964 TUCSON, ARIZ. 85703. PH: (602) 623-0578

JOB # 1171 CLIENT I.S.O.C.

DATE May 1977 AREA BUCKEYE

LINE# 2 SP 1 a= 2000' BEARING N 30° W

RESISTIVITY FREQUENCIES 1.0 hz FREQUENCIES 0.1, 0.3, 1.0 & 3.0 Hz



HEINRICHS GEOEXPLORATION COMPANY

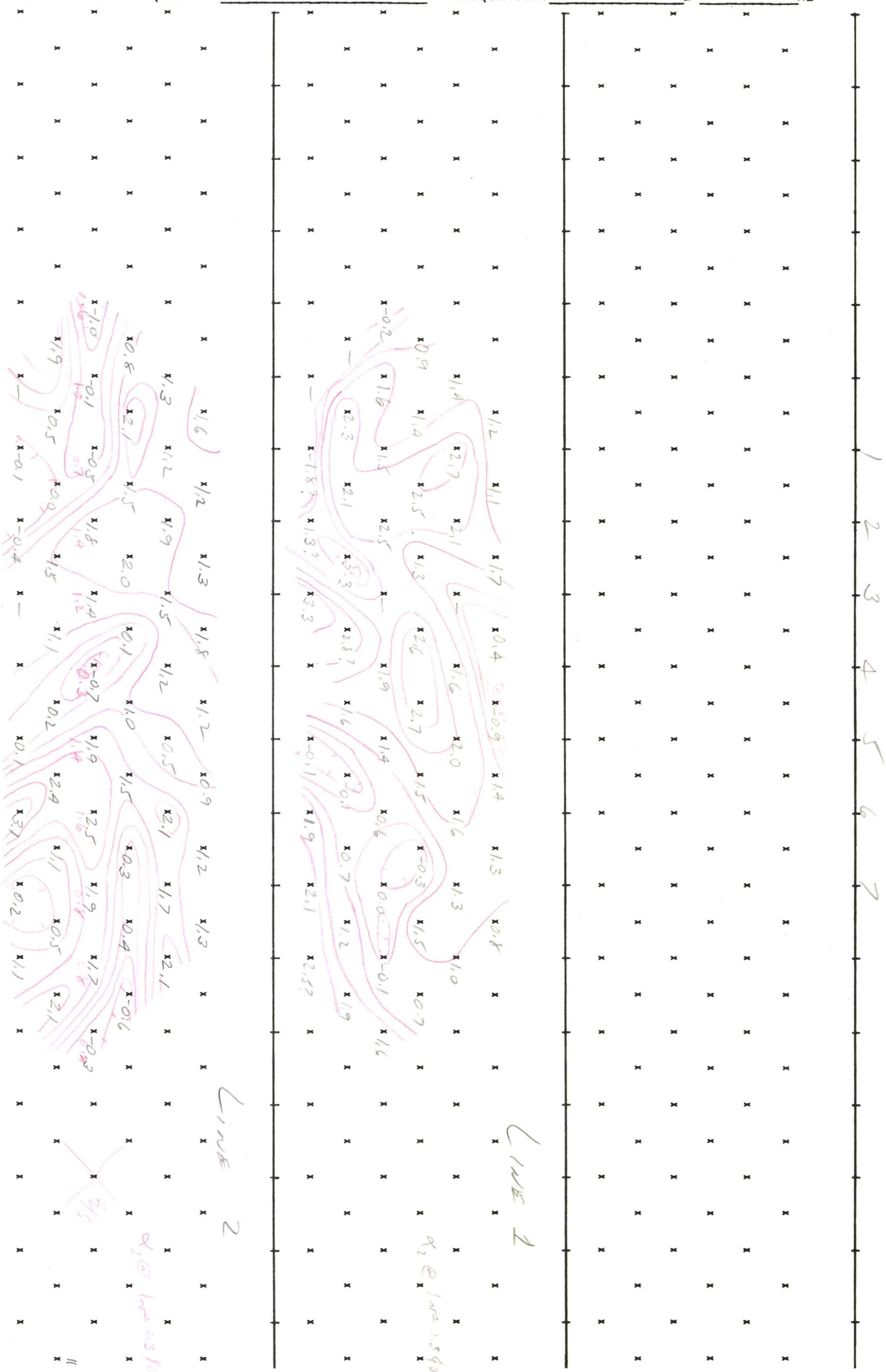
806 W. GRANT RD., P.O. BOX 5964 TUCSON, ARIZ. 85703. PH: (602) 623-0578

JOB # 1121 CLIENT _____

DATE _____ AREA _____

LINE# 1 & 2 SP 1 a= 2000' BEARING _____

RESISTIVITY FREQUENCIES _____ FREQUENCIES _____ & _____ Hz



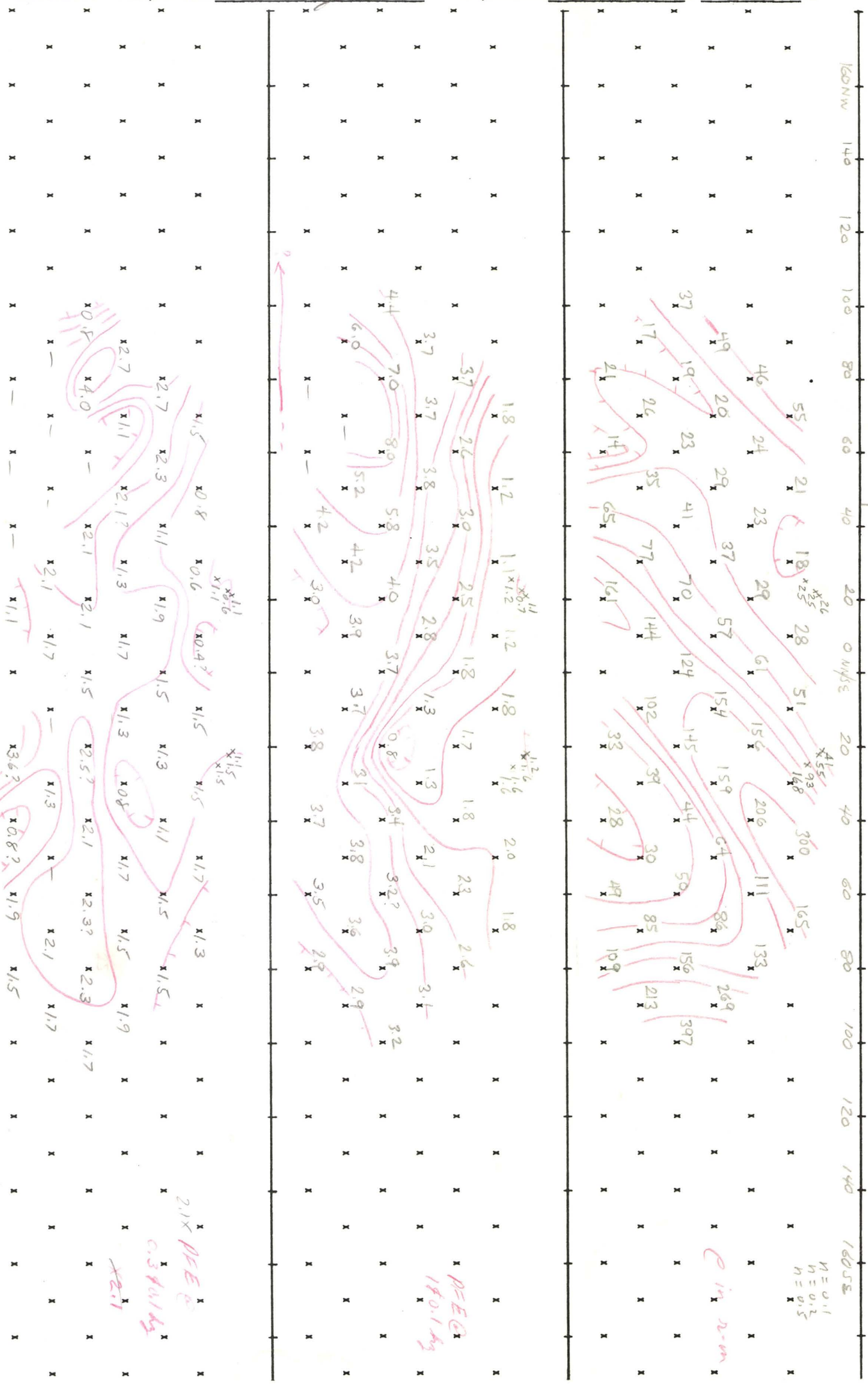
HEINRICHS GEOEXPLORATION COMPANY
806 W. GRANT RD., P.O. BOX 5964 TUCSON, ARIZ. 85703. PH: (602) 623-0578

JOB # 1171 CLIENT T. S. O. C.

DATE May 1977 AREA BUCKEYE

LINE# 3 SP 1 a= 2000' BEARING N 30° W

RESISTIVITY FREQUENCIES 1.0 Hz FREQUENCIES 3 - 0.3 & 1 - 0.1 Hz



HEINRICHS GEOEXPLORATION COMPANY
806 W. GRANT RD., P.O. BOX 5964 TUCSON, ARIZ. 85703. PH: (602) 623-0578

JOB # 1171 CLIENT T.S.O.C.

DATE May 1977 AREA ROCKEYE

LINE# 4 SP 1 a= 1000' BEARING N 30°W

RESISTIVITY FREQUENCIES 1.0 hz FREQUENCIES 390.3 & 1801 Hz

HEINRICHS GEOEXPLORATION COMPANY
806 W. GRANT RD., P.O. BOX 5964 TUCSON, ARIZ. 85703. PH: (602) 623-0578

JOB # 1171 CLIENT T.S.O.C.

DATE May 1977 AREA Buckeye

LINE# 1 SP 2 a= 1200' BEARING N30°W

RESISTIVITY FREQUENCIES 1.0 hz FREQUENCIES 0.1, 0.3, 1.0 & 3.0 Hz

HEINRICHS GEOEXPLORATION COMPANY

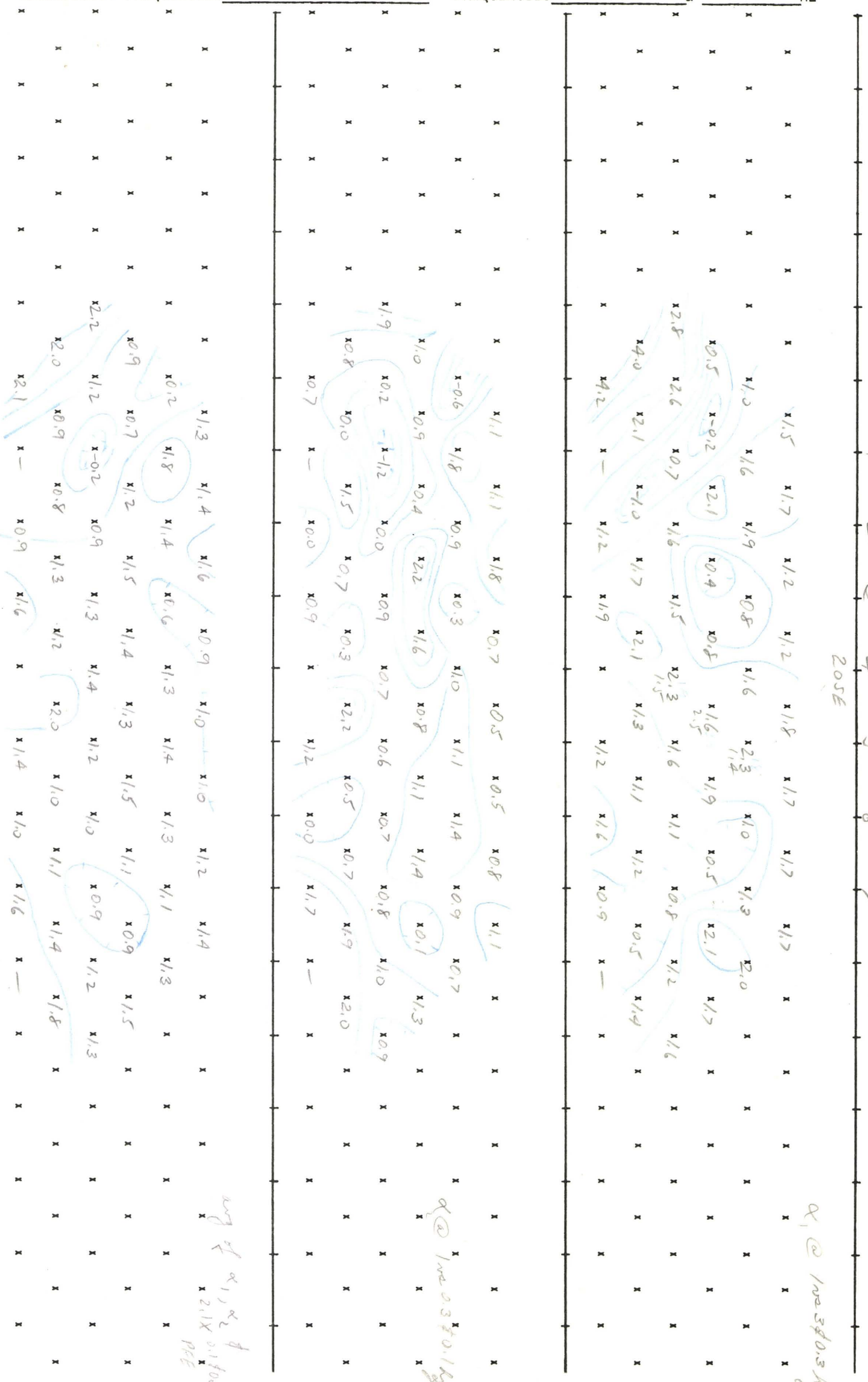
806 W. GRANT RD., P.O. BOX 5964 TUCSON, ARIZ. 85703. PH: (602) 623-0578

JOB # 1171 CLIENT _____

DATE _____ AREA _____

LINE# 1 SP 2 a= 120' BEARING _____

RESISTIVITY FREQUENCIES _____ FREQUENCIES _____ & _____ Hz



HEINRICHS GEOEX EXPLORATION COMPANY
806 W. GRANT RD., P.O. BOX 5964 TUCSON, ARIZ. 85703. PH: (602) 623-0578

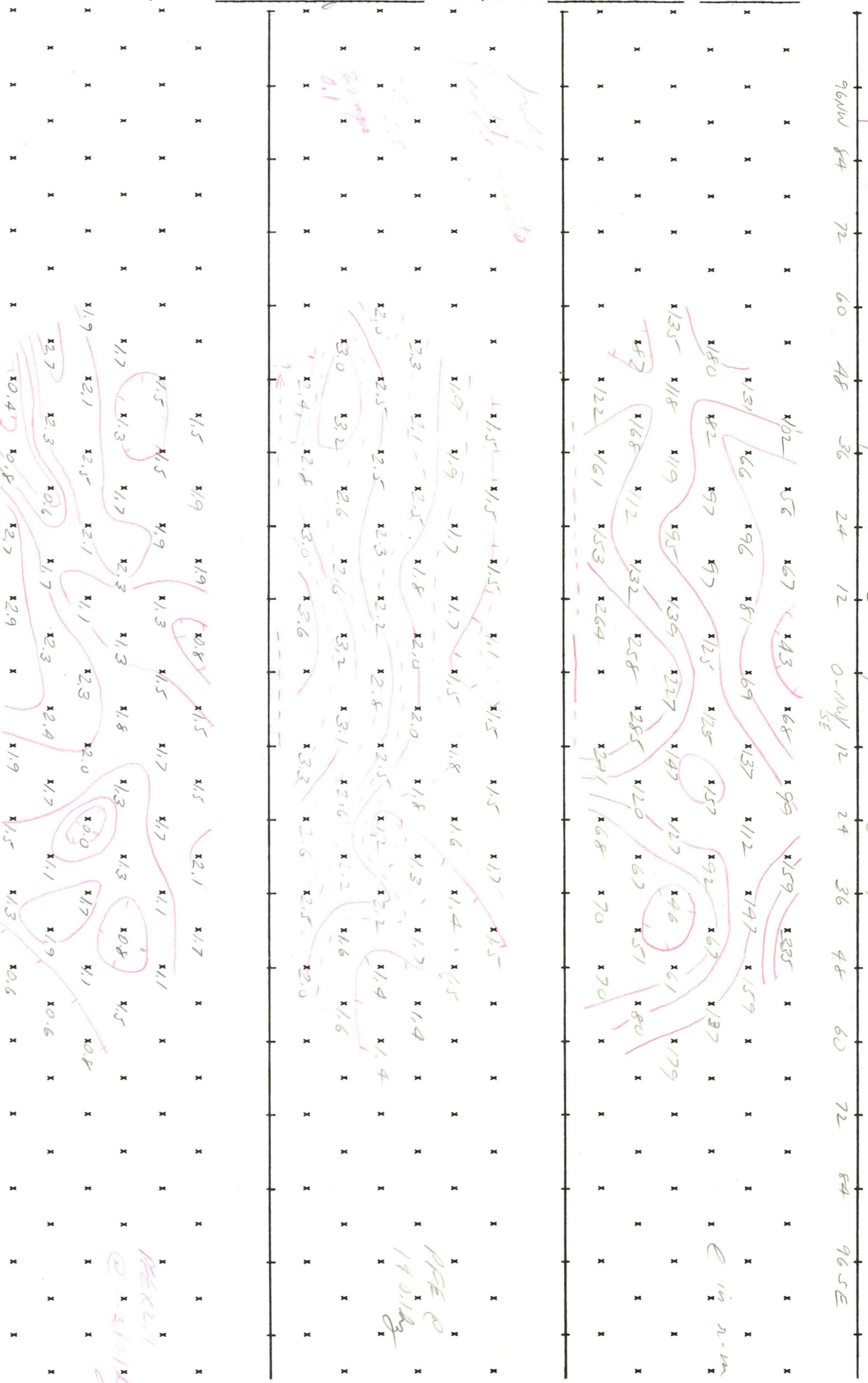
JOB # 1171 CLIENT T. S. O. C.

DATE May 1977 AREA Buckeye

LINE# 5 SP 1 a= 1200' BEARING N30°W

RESISTIVITY FREQUENCIES 1.0 Hz

FREQUENCIES 0.1, 0.3, 1.0 & 3.0 Hz



HEINRICHS GEOEXPLORATION COMPANY
806 W. GRANT RD., P.O. BOX 5964 TUCSON, ARIZ. 85703. PH: (602) 623-0578

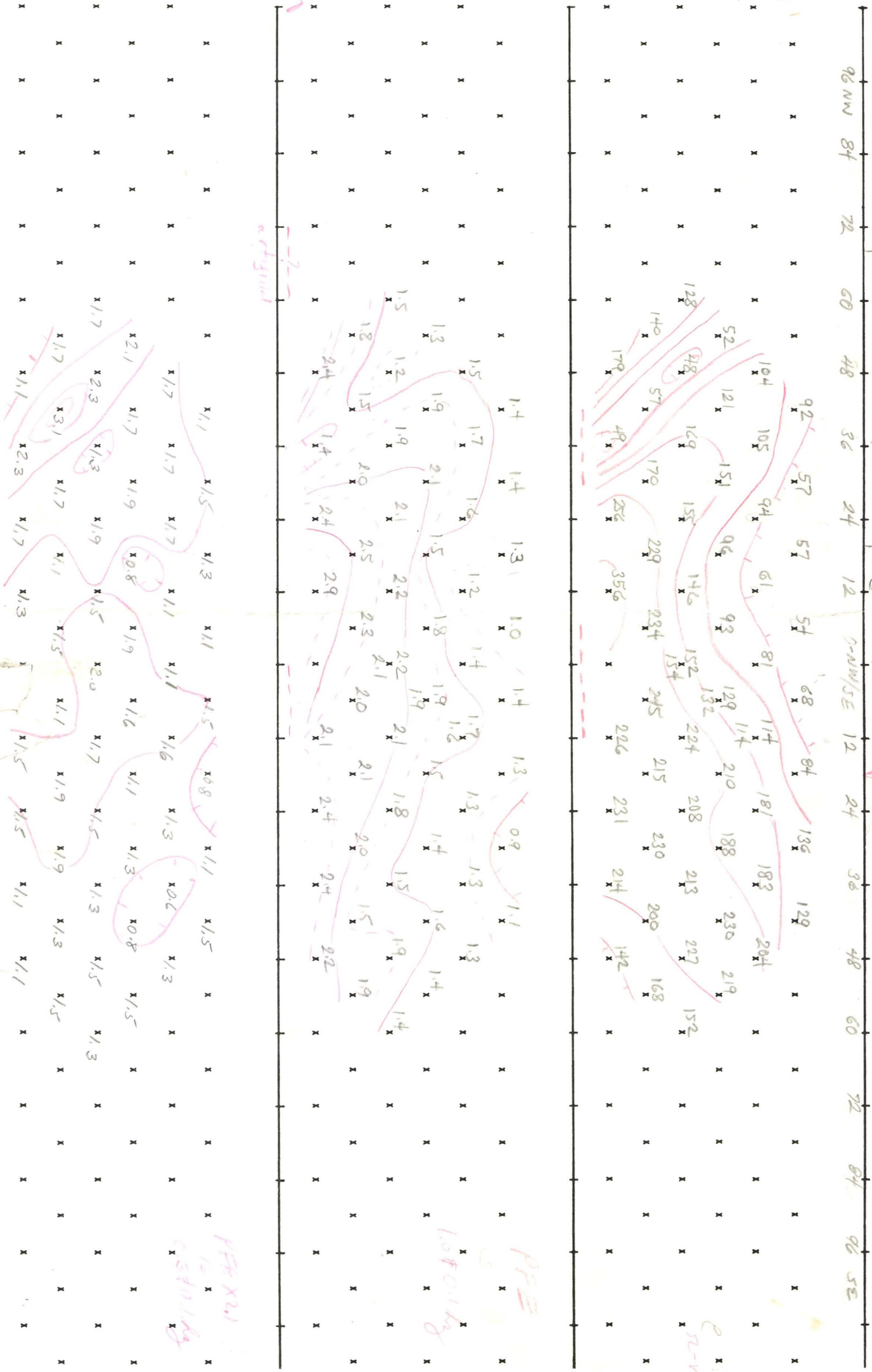
JOB # 1171 CLIENT T.S.O.C.

DATE May 25 1977 AREA Buckeye

LINE# 6 SP 1 a= 1200' BEARING N30°W

RESISTIVITY FREQUENCIES 1 Hz

FREQUENCIES 1 & 3 Hz



I.P. RECEIVER NOTES, JOB No. 1171, AREA BUCKEYE

LINE 1, HALF N, SP. 1, a = 1000', BEARING N 30° W

SENDER STA. 0 = ELECTRODE No. 4, DATE 4-4-77

HEINRICHS GEOEX

SEND	5-6	6-7	4-5	5-6	6-7	3-4	3-4	3-4	3-4	4-5
RECEIVE ⟫ IN LOOP 5	0-2000N		2040N			2.1-4.1	2.2-4.2	2.5-4.5	4.0-6.0	
MULTIPLIER	1	1	1	1	1	100	10	10	1	0.1
PFE										
CUR. (AMPS)	5.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
POINT NO.										
SEP. (n)	1	2	1	2	3	.1	.2	.5	1	2
H. F. MV MV	64	202	102	119	356	103	73	76	71	89
DRIFT MCF	23	13	15	20	11	13	18	18	22	20
3.0 PFE K_n/1000	-1.5	-3.4	-2.1	-3.8	-5.6	-0.3	-0.6	-0.9	-1.7	-3.2
0.3 PFE P_{CAL}	1.6	1.8	1.2	1.6	2.5	0.7	0.7	0.9	0.9	-1.4 ± 1.2
0.1 PFE PFE_C	1.3	2.7	1.3	2.2	3.8	1.1	1.1	1.3	1.4	1.8
3.0 MV $\rho/2\pi$	28.3	17.85	45.0	13.1	15.7	1180	368	107	31.4	9.82
DRIFT MCF	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	+0.3	0.0	0.0
S.P.										
NOISE 0.1 Cor	1.5	2.9	1.5	2.4	4.0	1.3	1.3	1.4	1.6	2.0
POT RES. 0.3	1.5	1.7	1.1	1.5	2.4	0.6	0.6	0.8	0.8	~
CULT & CMTS	0.0	2.5	0.8	1.9	3.4	1.5	1.5	1.3	1.7	—

2(3,1)23 2.6-0.9 1.7-2.3 1.4-0.4 0.9-1.6 1.9-2.9 1.1-1.6 0.9-0.6 1.2-1.2 0.6-1.7

I.P. RECEIVER NOTES, JOB No. 1171, AREA BUCKEYE — PAGE 2

LINE Φ, HALF N, SR. 1, a = 2000', BEARING N30W

SENDER STA. 0 = ELECTRODE No. 4, DATE 4-4-77

HEINRICHS GEOEX

SEND	5-6	6-7	2-3	3-4	4-5	5-6	6-7	1-2	2-3	3-4
RECEIVE			60-80N					80-100N		
MULTIPLIER	0.1	0.1	1	1	0.1	0.1	0.1	1	1	1
PFE										
CUR. (AMPS)	5.0	5.0	5.0	8.0 8.7	5.7	5.0	5.7	5.0	5.6	7.5
POINT NO.										
SEP. (n)	3	4	1	2	3	4	5	1	2	3
H.F. (MV)	99	281	80	113 104	119	117	310	109	140	183
DRIFT MCF	89	12	11	11 14	13		15	13	14	13
3.0 PFE K_n/1000	-4.3	-5.9	0.3	0.4 8.3	-0.3	-2.4	-2.5	-0.5	1.5	0.2 0.1 0.4
0.3 PFE P_{CAL}	1.7	2.5	0.5	0.6	1.2	1.5	3.1	0.9	1.1	1.5 1.2 1.8
0.1 PFE PFE_C	2.7	3.3	0.7	1.2 2.3	1.6	N.R	4.5	1.2 1.9 1.4	2.0 2.8	2.4 2.2 2.6
3.0 MV P/2π	4.35	6.19	35.2	20.0	5.98	2.58	4.46	48.05	17.6	12.1
DRIFT MCF	0.1	0.0	-0.1	-0.3	0.0	±0.0	±0.0	0.0	0.0 ±0.2	0.1 -0.3 +0.3
S.P.						±0.6	±0.4			
NOISE 16a	2.9	3.5	0.9	0.1 0.7 2.2 1.5	1.8		0.3 1.8 4.4 0.1 3.0 2.2	1.4	2.2	2.6
POT RES.	1.6	2.4	0.4	0.6	1.1	1.4 ~	4.7 3.0	0.8	1.0	1.4
CULT & CMTS	2.7	2.3	1.0	X1.9	X1.5	~0	X 3.6	1.3	2.5	X2.5
	0.8 2.6	1.7 1.6	1.0 1.1	1.8 2.1	2.4 1.3	1.7	5.7 2.8	1.5 1.2	3.4 2.7	3.5 2.5

I. P. RECEIVER NOTES, JOB No. 1171 AREA BUCKEYE

LINE 1, HALF N, SR. 1, a = 2000', BEARING N 30 W

SENDER STA. 0 = ELECTRODE No. 4, DATE 4-4-77

HEINRICHS GEOEX

SEND	4-5	5-6	6-7	1-2	2-3	3-4	4-5	5-6	1-2	2-3
RECEIVE				100-120N					120-140N	
MULTIPLIER	0.1	0.1	0.1	1	0.1	0.1	0.1	0.1	0.1	0.1
PFE										
CUR. (AMPS)	5.0	5.0	5.7	5.0	5.7	8.0	5.0	5.0	4.5	5.7
POINT NO.										
SEP. (n)	4	5	6	2	3	4	5	6	3	4
H. F. (MV)	196	188	493	149	170	202	201	189	101	123
DRIFT MCF	18	18	11	6.7	4.7	8.4	15		3.0	3.3
3.0 PFE K_n/1000	-0.7 $^{-0.4}_{-0.9}$	-2.0 $^{-1.5}_{-2.5}$	-3.3 $^{-3.0}_{-3.6}$	-1.0	2.0 $^{2.8}_{1.7}$	0.2	-0.7 $^{+1.0}_{-0.2}$	-2.0 $^{-1.3}_{-2.8}$	-1.7	4.4 $^{4.5}_{4.3}$
0.3 PFE P_{CAL}	1.5 $^{1.1}_{1.8}$	2.7 $^{2.0}_{3.3}$	3.7 $^{3.5}_{3.9}$	0.5	0.5 $^{0.8}_{0.2}$	1.2 $^{1.9}_{0.5}$	2.0 $^{1.7}_{2.3}$	2.4 $^{1.2}_{3.7}$	0.3 $^{0.2}_{0.5}$	-0.4 $^{-0.2}_{-0.8}$
0.1 PFE PFE_C	2.4 $^{2.3}_{2.5}$	3.1 $^{1.5}_{4.3}$	5.4 $^{5.3}_{5.6}$	0.8 $^{0.7}_{0.9}$	0.8 $^{0.7}_{0.9}$	1.7	2.9 $^{3.2}_{2.7}$	NR $^{4.8}_{}$	0.3	-0.2
3.0 MV P/2π	4.33	2.365	4.43	16.4	8.52	7.11	2.535	1.49	4.01	3.08
DRIFT MCF	0.0 ± 0.2	-0.1 $^{-0.4}_{+0.2}$	+0.1 $^{-0.3}_{+0.3}$	-0.1	0.0 ± 0.4	0.0 ± 0.3	0.0 ± 0.4	+0.2 $^{-0.4}_{+0.6}$	-0.4	-0.2
S. P.										
NOISE 0.1 Gn	2.6	3.3	5.6	1.0	1.0	1.9	3.1	3.3 ?	WINDY 1.1	0.2
POT RES.	1.4	2.6	3.6	0.4	0.4	1.1	1.9	2.3	0.3	-0.3
CULT & CMTS	2.5	1.5	X4.2	1.3	X1.3	X1.7	2.5	2.1 ?	0.8	X1.0

2.9 2.5 5.0 0.3 6.7 3.3 0.1 1.4 2.2 1.4 2.8 1.5 5.7 2.1 4.3 1.3 -0.7 0.9 2.3 1.6

I.P. RECEIVER NOTES, JOB No. 1171, [illegible] BUCKEYE

LINE 1, HALF N, SP. 1, a = 2000', BEARING N 30 W

SENDER STA. 0 = ELECTRODE No. 4, DATE 4-4-77

HEINRICHS GEOEX

SEND	3-4	4-5	1-2	2-3	3-4		1-2	3-4	2-3		
RECEIVE			140-160N				CAL	CAL	4.5-6.5		
MULTIPLIER	0.1	.01	0.1	.01	.01		1	1			
PFE											
CUR. (AMPS)	8.0	5.0	4.5	5.7	8.0		1	1			
POINT NO.											
SEP. (n)	5	6	4	5	6						
H.F. MV	286	127	56	71	78						
DRIFT MCF	2.3	1.2	32								
3.0 PFE K_n/1000	1.4 1.0 1.8	-2.2 -1.5 -3.2	-0.6 1.7	3.8 1.7	-1.3 -2.4		+0.3	+0.3			
0.3 PFE P_{CAL}	OH -9.5 9.0	2.1 1.2 2.8	0.3 3.4	-3.2 0.9	-4.2 0.7		+0.1	+0.1			
0.1 PFE PFE_C	1.0 0.4 1.6	1.5 1.2 1.7	1.8 3.7 -0.1	-2.3 -4.6	-3.9 -0.3		-0.2	-0.2			
3.0 MV $\rho/2\pi$	2.75	My.999	Avg 1.11	My.014	My.980		101.4	101.3			
DRIFT MCF	0.0±0.2	-0.3	0.0 ±0.4	+0.3	-0.1 +0.5 -0.6		0.0	0.0			
S.P.											
NOISE 0.1 Gn	1.2	1.8 3	2.0	~	~						
POT RES.	0.3	2.0 3	1.7 ~	~	~						
CULT & CMTS	X 1.9	~	X 0.6	X ~	X ~						

1.6 2.3 2.3 1.8 -0.2 — —

I. P. RECEIVER NOTES, JOB No. 1171 AREA BUCKEYE

LINE 1, HALF S, SP. 1, a = 2000', BEARING N 30° W

SENDER STA. 0 = ELECTRODE No. 4, DATE 4-5-77

HEINRICHS GEOEX

SEND	4-5	4-5	4-5	4-5	3-4	2-3	1-2	5-6	4-5	3-4
RECEIVE	21.91s	22.42s	30.50s	40.60s				60.80s		
MULTIPLIER	10	10	1	1	1	1	0.1	1	1	1
PFE										
CUR. (AMPS)	5.0	5.0	5.0	5.0	8.0	5.7	4.5	5.0	5.0	8.0
POINT NO.										
SEP. (n)	.1	.2	.5	1	2	3	4	1	2	3
H. F. MV	39	47	57	115	196	344	274	122	160	262
DRIFT MCF	26	23	23	14	10	9.6	10	11	12	10
1.0 PFE K_n/1000	-0.2	-0.3	-0.7	-1.3	-3.0	-4.7	$-5.8^{-5.5}_{-6.1}$	-1.0	-2.9	-4.6
0.3 PFE ρ_{CAL}	0.5	0.6	0.8	1.0	$1.4^{1.2}_{1.6}$	$2.1^{1.6}_{2.5}$	1.9	1.1	1.5	2.1
0.1 PFE PFE_c	0.8	0.9	1.1	$1.4^{1.2}_{1.6}$	$2.0^{1.8}_{2.2}$	$3.3^{3.2}_{3.4}$	2.8	1.5	2.1	2.8
3.0 MV $\rho/2\pi$	445.5	236	81.2	50.5	345.5	17.3	5.44	52.8	17.3	18.2
DRIFT MCF	0.0	0.0	0.0	0.0	0.0 ± 0.2	$+0.1^{+0.6}_{-0.2}$	0.0 ± 0.3	0.0	0.0	0.0
S. P.										
NOISE	1.0	1.1	1.3	1.6	2.2	3.5	3.0	1.7	2.3	3.0
POT RES.	0.4	0.5	0.7	0.9	1.3	2.1	1.8	1.0	1.4	2.0
CULT & CMTS	1.3	1.3	1.3	1.5	1.9	2.9	2.5	1.5	1.9	2.1
	1.4	1.4	1.2	1.4	1.7	2.6	2.2	1.3	1.6	1.5

I.P. RECEIVER NOTES, JOB No. 1171, A BUCKEYE

LINE 1, HALF S, SR. 1, a = 2000', BEARING N 30°W

SENDER STA. 0 = ELECTRODE No. 4, DATE 4-6-77

PAGE 6

HEINRICHS GEOEX

SEND	2-3	1-2	6-7	5-6	4-5	3-4	2-3	1-2	6-7	
RECEIVE			80-100s						CAL	
MULTIPLIER	1	0.1	10	1	0.1	0.1	0.1	0.1	1	
PFE										
CUR. (AMPS)	5.7	5.0	5.0	5.0	5.3	8.0	5.7	5.0		
POINT NO.										
SEP. (n)	4	5	1	2	3	4	5	6		
H.F. MV	453	340	332	114	144	219	369	261		
DRIFT	7.5	11	3.9	11	15	43	10	13		
1.0 PFE K_n/1000	-6.4	-6.7	-1.0	-2.2	-4.4	-6.1	-7.5	-8.4	+0.2	
0.3 PFE P_{CAL}	2.6	2.8 3.9	0.8	0.5	1.7	2.0	2.8	2.7 2.3	-0.1	
0.1 PFE PFE_C	3.5 3.0	3.7 3.4	1.4	1.3	2.2	2.9 2.8 3.1	3.7 3.5 3.6	3.5 3.3 3.8	+0.1	
3.0 MV $P/2\pi$	11.2	4.22	144	12.3	6.225	7.59	5.21	2.02	99.7	
DRIFT MCF	0.0	0.0 ±0.2	-0.2	-0.1	0.0	0.0	+0.2	0.0 ±0.3	0.0	
S.P.										
NOISE 0.1 Cn	3.7	3.9	13.4	1.2	2.1	2.8	3.7 3.5	3.4		
POT RES.	2.6	2.7	0.9	0.6	1.8	2.1	2.9	2.8		
CULT & CMTS	2.3	2.5	1.0	1.3	0.6	1.5	1.3	1.3		
	1.4	1.6	0.8	1.3	-0.3	0.6	-0.1	-0.1		

I. P. RECEIVER NOTES, JOB No. 1171, A BUCKEYE

LINE 1, HALF S, SR. 1, a = 2000', BEARING N 30°W

SENDER STA. 0 = ELECTRODE No. 4, DATE 4-6-77 ? double dump?

HEINRICHS GEOEX

SEND		6-7	5-6	4-5	3-4	2-3	6-7	5-6	4-5	3-4
RECEIVE		100-120S					120-140S			
MULTIPLIER		1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
PFE										
CUR. (AMPS)		5.0	5.0	5.0	8.0	5.7	5.0	5.0	5.0	8.0
POINT NO.										
SEP. (n)		2	3	4	5	6	3	4	5	6
H. F. MV		266	82	102	164	262	189	66	106	168
DRIFT		6.0	17	26	19	19	12	37	39	22
1.0 PFE	K_n/1000	-1.8	-4.0	-6.2	-8.5	-9.2	-3.3	-6.8 $^{-6.6}_{-7.0}$	-8.1	-10.2 $^{-9.8}_{-10.6}$
0.3 PFE	P_{CAL}	0.9	0.5 $^{-0.3}_{+0.9}$	2.1 $^{1.6}_{2.8}$	2.3 $^{2.0}_{2.8}$	3.5 $^{3.2}_{3.8}$	1.5	1.9 $^{1.1}_{2.8}$	2.9 $^{2.3}_{3.3}$	3.7 $^{3.2}_{4.1}$
0.1 PFE	PFE_C	1.7	1.3 $^{1.0}_{1.8}$	2.8 $^{2.5}_{3.2}$	3.3 $^{3.2}_{3.7}$	5.2 $^{4.7}_{5.2}$	2.3	2.4 $^{2.0}_{2.7}$	4.2 $^{3.6}_{4.9}$	5.4 $^{5.0}_{5.8}$
3.0 MV	$P/2\pi$	28.8	3.55	2.21	3.26	2.32	8.21	1.425	1.32	2.09
DRIFT	MCF	-0.1	-0.4	0.0 $\pm$0.3	-0.1	0.0 $\pm$0.2	0.0	-0.2	-0.1 $\pm$0.7	-0.2 $^{0.0}_{-0.4}$
S. P.										
NOISE	S/N	1.6	1.4	2.7	3.2	5.1	2.2	2.4	4.1	3.7 5.4
POT RES.		1.0	0.7	2.2	2.4	3.6	1.6	2.0	3.0	3.8
CULT & CMTS		1.3	1.5	1.0	1.7	3.1	1.3	0.8	2.3	3.4
		1.0	1.5	0.0	0.7	1.9	0.7	-0.1	1.2	2.1

I. P. RECEIVER NOTES, JOB No. 1171, A ROCHESTE

LINE 1, HALF 5, SR. 1, a = 2000', BEARING N 30° W

SENDER STA. 0 = ELECTRODE No. 4, DATE 4-6-77

HEINRICHS GEOEX

SEND		6-7	5-6	4-5							
RECEIVE		140-160S									
MULTIPLIER		0.1	0.1	0.1							
PFE											
CUR. (AMPS)		5.0	5.0	5.0							
POINT NO.											
SEP. (n)		4	5	6							
H. F. MV		240	89	138							
DRIFT		12	33	38							
1.0 PFE	K_n/1000	-5.0	-7.9 -8.1	-10.3							
0.3 PFE	P_{CAL}	1.8	3.1 1.8 4.6	NR 2.0 4.9							
0.1 PFE	PFE_C	2.9	4.8 4.0 5.8	5.3 5.5							
3.0 MV	$P/2\pi$	5.21	1.10	1.07							
DRIFT	MCF	-0.2	+0.5 0.3 +0.3	+0.1 +0.3							
S. P.											
NOISE 0.1 Hz		2.9	2.9 4.6	5.2							
POT RES.		1.9	3.2	3.5 ≈?							
CULT & CMTS		2.1	2.9	3.6?							
		1.6	1.9	2.5?							

I. P. SENDER NOTES

JOB No. 1171 AREA BUCKEYE

LINE 1, HALF N., SP. 2,000, DATE MAY 4, '77

PAGE 1

HEINRICHS GEOEX

SEND	5-6	6-7	4-5	5-6	6-7	3-4	3-4	3-4	3-4	4-5
RECEIVE	0-20	~~3-11~~	20-40			22-42	24-44	30-50	40-60	
RANGE										
VOLTAGE	760	520	480	760	640	280	280	280	280	470
CURRENT	5.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
SEND	5-6	6-7	2-3	3-4	4-5	5-6	6-7	3-4	1-2	
RECEIVE			60-80						CAL	
RANGE										
VOLTAGE	740	640	440	440	510	720	700	460	120	
CURRENT	5.0	5.0	5.0	8.0	5.7	5.0	5.7	8.7	1.0	

FREQUENCIES 1.0 - .3 - .1 - 3.0

SENDER No. 26721-5 POWER UNIT ID

OPERATOR MAY

RECEIVER No. 20693 HOURS RUN

OPERATOR FISHER

COMMENTS:

I. P. SENDER NOTES

JOB No. 1171 AREA BUCKEYE

LINE 1, HALF N., SP. 2,000 DATE MAY 5, '77

HEINRICHS GEOEX

SEND	1-2	2-3	3-4	4-5	5-6	6-7	1-2	2-3	3-4	4-5
RECEIVE	80-100						100-120			
RANGE										
VOLTAGE	500	490	440	480	720	700	500	500	470	470
CURRENT	5.0	5.6	7.5	5.0	5.0	5.7	5.0	5.7	8.0	5.0
SEND	5-6	1-2	2-3	3-4	4-5	1-2	2-3	3-4		
RECEIVE		120-140				140-160				
RANGE										
VOLTAGE	720	450	490	460	470	440	490	445		
CURRENT	5.0	4.5	5.7	8.0	5.0	4.5	5.7	8.0		

FREQUENCIES 1.0 - .3 - .1 - 3.0

SENDER No. 26721-5 POWER UNIT ID

OPERATOR MAY

RECEIVER No. 20693 HOURS RUN

OPERATOR FISHER

COMMENTS:

I.P. SENDER NOTES

JOB No. 1171 AREA BUCKEYE

LINE 1, HALF 5, SP 2,000, DATE MAY 5, '77

PAGE 3

HEINRICHS GEOEX

MAY 6, '77

SEND	4-5	4-5	4-5	4-5	3-4	2-3	1-2	5-6	4-5	3-4
RECEIVE	21-415	22-425	30-50	40-60				60-80		
RANGE										
VOLTAGE	445	445	445	445	440	480	420	700	470	460
CURRENT	5.0	5.0	5.0	5.0	8.0	5.7	4.5	5.0	5.0	8.0
SEND	2-3	1-2	1-2	6-7	5-6	4-5	3-4	2-3	1-2	6-7
RECEIVE				80-100						100-120
RANGE										
VOLTAGE	480	480	130	570	710	500	460	490	480	545
CURRENT	5.7	5.0	1.0	5.0	5.0	5.3	8.0	5.7	5.0	5.0

FREQUENCIES 1-.3-.1-3-1

SENDER No 267215 POWER UNIT ID

OPERATOR MAY

RECEIVER No 20693 HOURS RUN

OPERATOR FISHER

COMMENTS:

I.P. SENDER NOTES

JOB No. 1171 AREA BUCKEYE

LINE 1, HALF 5, SP. 2,000, DATE MAY 6, '77

HEINRICHS GEOEX

SEND	5-6	4-5	3-4	2-3	6-7	5-6	4-5	3-4	6-7	5-6
RECEIVE	100-120				120-140				140-160	
RANGE										
VOLTAGE	690	460	445	480	545	700	460	445	545	700
CURRENT	5.0	5.0	8.0	5.7	5.0	5.0	5.0	8.0	5.0	5.0
SEND	4-5									
RECEIVE										
RANGE										
VOLTAGE	450									
CURRENT	5.0									

FREQUENCIES 1-,3-,1-3-1

SENDER No. 26721-S POWER UNIT ID

OPERATOR MAY

RECEIVER No. 20693 HOURS RUN

OPERATOR FISHER

COMMENTS:

I. P. RECEIVER NOTES, JOB No. 1171, AREA RUCKEYE

LINE 2, HALF NW, SR. 1, a = 2000', BEARING N 30° W

SENDER STA. 0 = ELECTRODE No. 4, DATE 5-10-77

HEINRICHS GEOEX

SEND	5-6	6-7	4-5	5-6	6-7	3-4	3-4	3-4	3-4	4-5
RECEIVE	0-20 N		20-40 N			22-42 N	22-42 N	30-50 N	40-60 N	
MULTIPLIER	0.1	0.1	1	1	0.1	10	10	10	1	1
PFE Ground	1.9	2.4	2.1	2.5	3.8	1.4	1.6	1.6	1.8	2.5
CUR. (AMPS)	5.7	5.7	5.7	5.0	5.0	5.0	5.0	5.0	5.0	5.9
POINT NO.										
SEP. (n)	1	2	1	2	3	.1	.2	.5	1	2
H. F. MV	72	59	131	132	100	73	68	80	95	171
DRIFT MCF	26	40	16	19	38	19	23	20	19	15
1.0 PFE K_n/1000	-2.5	-5.0	-2.3	-4.1	-6.1	-0.5	-0.6	-1.2	-1.9	-3.5
0.3 PFE P_{CAL}	1.3	1.9 1.6 2.1	1.3	1.8 1.6 2.0	2.1 1.2 2.8	0.7	0.9	0.9	1.2	1.7
0.1 PFE PFE_C	1.8 1.6 2.0	2.3 1.8	2.0	2.4 1.9 2.8	3.7 1.6 5.0	1.3	1.5	1.5	1.7	2.4
3.0 MV $P/2\pi$	36.0	7.43	65.8	14.5	4.41	832	341	112	41.9	22.2
DRIFT MCF	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	-0.1	0.0	0.0
S. P.										
NOISE	RAIN STORM APPROACHING - WINDY									
POT RES.	5-9-77 Rained out									
CULT & CMTS	Lightning, Too many Road G.N									
	1.1	0.8	1.2	1.2	0.6	1.0	1.4	1.0	1.2	1.4

I. P. RECEIVER NOTES, JOB NO. 1171, AREA BUCKEYE

LINE 2, HALF NW, SP. 1, a = 200', BEARING N 30°W

SENDER STA. 0 = ELECTRODE NO. 4, DATE 5-9-77

HEINRICHS GEOEX

PAGE 2

SEND	5-6	6-7	2-3	3-4	4-5	5-6	6-7	1-2	1-2	2-3	3-4
RECEIVE			GO-80N					CAL.	80-100N		
MULTIPLIER	0.1	0.1	1	0.1	0.1	0.1	.01	1	1	0.1	0.1
PFE	2.5	2.8	1.9	2.9	3.4	3.9	3.2		1.8	2.5	3.0
CUR. (AMPS)	5.0	5.0	4.5	5.0	5.9	5.0	5.0		5.0	4.5	5.0
POINT NO.											
SEP. (n)	3	4	1	2	3	4	5		1	2	3
H. F. MV	148	103	52	74	118	100	67		46	79	115
DRIFT MCF	17	28	37	38	29	39	48		39	32	26
1.0 PFE K_n/1000	-5.3	-7.0	-1.4	-2.5	-3.5	-3.6	-6.0	+0.3	+1.6	-2.4	-2.9
0.3 PFE P_{CAL}	2.1	3.2	1.3	1.9	2.3	2.7	2.4	+0.1	1.1	1.8	2.1
0.1 PFE PFE_c	2.4	2.8	1.8	2.8	3.3	3.8	3.1	-0.1	1.7	2.4	2.9
3.0 MV $P/2\pi$	6.49	2.27	20.5	8.11	6.11	2.20	.844	101.1	20.2	7.81	5.05
DRIFT MCF	0.0±0.2	0.0±0.3	0.0	0.0	0.0	+0.3	0.0±0.1	0.0	0.0	0.0	+0.1
S. P.											
NOISE											
POT RES.											
CULT & CMTS											

1.8 2.3

Railroad G3N

Road 1.4 G3.5 N2

1.1 2.7 1.9 2.6 2.9 3.7 1.4 1.2

I. P. RECEIVER NOTES, JOB No. 1171, AREA BUCKEYE

LINE 2, HALF NW, SR. 1, a = 2000', BEARING N 30° W

SENDER STA. 0 = ELECTRODE No. 4, DATE 5-9-77

HEINRICHS GEOEX

SEND	4-5	5-6	6-7	1-2	2-3	3-4	4-5	5-6		
RECEIVE				100-120N						
MULTIPLIER	0.1	0.1	.01	0.1	0.1	0.1	0.1	0.1		
PFE Cor.	3.6	3.1	2.8	2.2	3.2	3.0	3.2	3.9		
CUR. (AMPS)	5.9	5.0	5.0	5.0	4.5	5.0	5.9	5.0		
POINT NO.										
SEP. (n)	4	5	6	2	3	4	5	6		
H. F. MV	172	145	92	67	104	144	202	159		
DRIFT	21	21	30	33	31	21	16	25		
1.0 PFE K_n/1000	-3.6	-4.3	-5.8 5.7	-2.9	-3.1	-3.4	-4.3	-4.7		
0.3 PFE P_{CAL}	2.5 1.8 3.2	2.2 1.9 2.5	3.5 2.8 4.4	1.5	2.1	2.7	2.7 2.6 2.9	3.4 3.0 3.9		
0.1 PFE PFE_C	3.5	2.9 3.3 3.4	2.8 1.6 3.8	2.1 1.8 2.3	3.1 1.8 4.2	2.9	3.1 3.8 3.2	3.8 3.5 4.1		
3.0 MV $P/2\pi$	4.46	1.82	.723 .49	7.35	4.10	3.17	3.00	1.25		
DRIFT MCF	-0.1	-0.2 -0.6 +0.2	+0.2 -1.0 +1.2	0.0	0.0	+1.1 +0.4 -1.3	-0.1 -0.2 -0.1	0.0 +0.6 -0.6		
S. P.				Read 108N						
NOISE										
POT RES.										
CULT & CMTS										

3.4 2.2 4.3 1.3 2.7 4.0 3.4 4.9

I. P. RECEIVER NOTES, JOB NO. 1171, AREA BUCKEYE

LINE 2, HALF NW, SR. 1, a = 2000', BEARING N 30° W

SENDER STA. 0 = ELECTRODE NO. 4, DATE 5-9-77

HEINRICHS GEOEX

SEND	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5	4-5	4-5
RECEIVE	120-140N				140-160N			2R-42	24-44	30-50
MULTIPLIER	0.1	0.1	0.1	0.1	0.1	0.1	.01	10	10	1
PFE Cal.	2.6	2.3	3.0	2.9	2.2	1.4	2.1	1.0	1.2	1.9
CUR. (AMPS)	5.0	4.5	5.0	5.7	5.0	4.5	5.0	5.7	5.8	5.9
POINT NO.										
SEP. (n)	3	4	5	6	4	5	6	.1	.2	.5
H. F. MV	79	113	148	201	65	92	112	46	43	36
DRIFT	33	20	20	14	34	15	19	22	28	38
1.0 PFE K_n/1000	-3.5	-3.5	-3.9	-5.0	-4.5	-3.5	-4.0	-0.4	-0.5	-1.3
0.3 PFE P_{CAL}	2.0	2.0	2.4	2.5	2.2	0.7	2.6	0.7	0.7	0.9
0.1 PFE PFE_c	2.5	2.2	2.9	3.0	2.1	1.2	2.1	0.9	1.1	1.3
3.0 MV $P/2\pi$	3.46	2.23	1.86	1.805	1.425	1.04	.879	605	254.5	60.6
DRIFT MCF	+0.1 ±0.3	0.0 ±0.3	+0.1 ±0.4	+0.4 ±0.4	0.0 ±0.3	-0.2 ±0.5	+0.2 ±0.4	0.0	0.0	0.0
S. P.										
NOISE										
POT RES.										
CULT & CMTS					Road 140N					

2.2 2.2 2.9 2.2 2.0 -1.1 3.3 1.0 1.0 0.9

I. P. RECEIVER NOTES, JOB No. 1171, AREA BUCKS 4E

LINE 2, HALF SE, SP. 1, a = 2000', BEARING N 30° W

SENDER STA. 0 = ELECTRODE No. 4, DATE 5-9-77

HEINRICHS GEOEX

SEND		4-5	3-4	2-3	1-2	5-6	4-5	3-4	2-3	1-2	6-7
RECEIVE		40-60S				60-80S					CAL
MULTIPLIER		1	0.1	0.1	0.1	1	1	0.1	0.1	0.1	
PFE		1.8	2.4	3.3	2.7	1.4	2.7	3.0	3.0	3.0	
CUR. (AMPS)		5.7	5.0	4.5	5.0	5.0	5.7	5.0	4.5	5.0	
POINT NO.											
SEP. (n)		1	2	3	4	1	2	3	4	5	
H. F. MV		39	59	101	104	70	129	222	330	307	
DRIFT		47	40	33	26	20	21	14	9.1	10	
1.0 PFE	K_n/1000	-2.2	-4.8	-5.9	-6.6	-1.6	-4.7	-6.2	-7.3	-8.0	
0.3 PFE	P_{CAL}	1.3	1.9	2.5	2.5	0.9	1.7	2.1	2.0	2.5	
0.1 PFE	PFE_C	1.7	2.3	3.2	2.6	1.3	2.6	2.8	2.8	2.9	
3.0 MV	$P/2\pi$	19.3	6.52	4.01	2.29	30.95	16.2	9.75	6.53	3.865	
DRIFT	MCF	0.0	0.0	0.0±0.1	-0.1	0.0	-0.1	-0.3	-0.2	0.0±0.6	
S. P.											
NOISE											
POT RES.											
CULT & CMTS											
		1.3	1.0	1.7	1.2	0.7	0.5	0.6	0.5	0.2	

I. P. RECEIVER NOTES, JOB NO. 1171, AREA BUCKEYE

LINE 2, HALF SE, SR. 1, a = 2000', BEARING N30°W

SENDER STA. 0 = ELECTRODE NO. 4, DATE 5-9-77

HEINRICHS GEOEX

SEND	6-7	5-6	4-5	3-4	2-3	1-2	6-7	5-6	4-5	3-4
RECEIVE	80-100s						100-120s			
MULTIPLIER	1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
PFE Cm	1.2	1.7	3.3	4.1	3.8	4.7	1.5	2.6	4.3	5.6
CUR. (AMPS)	5.0	5.0	5.7	5.0	4.5	5.0	5.0	5.0	5.9	5.0
POINT NO.										
SEP. (n)	1	2	3	4	5	6	2	3	4	5
H. F. MV	49	86	164	256	337	285	48	90	177	254
DRIFT	26	20	20	16	11	16	31	29	24	14
1.0 PFE K_n/1000	-0.9	-3.0 $\frac{-2.8}{-3.2}$	-5.3	-6.4	-8.2	-8.1 $\frac{-7.5}{-8.6}$	-2.5	-4.6	-6.7	-8.0
0.3 PFE P_{CAL}	0.7	1.0 $\frac{0.9}{1.1}$	2.7	2.7 $\frac{3.0}{2.5}$	2.5 $\frac{2.9}{2.1}$	NR $\frac{2.5}{2.6}$	0.7 $\frac{0.3}{1.0}$	2.1	2.9 $\frac{2.5}{3.2}$	2.7 $\frac{2.2}{3.0}$
0.1 PFE PFE_c	1.1	1.6 $\frac{1.7}{1.8}$	3.2	4.0	3.7 $\frac{3.8}{3.8}$	4.6 $\frac{4.5}{4.8}$	1.4 $\frac{1.3}{1.5}$	2.5	4.2	3.5 $\frac{3.3}{3.6}$
3.0 MV $\rho/2\pi$	21.5	9.46	8.22	5.63	3.81	2.24	5.25	3.97	4.58	3.19
DRIFT MCF	0.0	0.0 ± 0.2	+0.2 $^{+0.5}_{-0.3}$	+0.1 $^{+0.3}_{-0.2}$	-0.1 $^{+0.8}_{-0.7}$	-0.3 $^{+1.2}_{-0.9}$	-0.1	0.0	+0.3 $^{+0.2}_{+0.5}$	-0.3 $^{+0.4}_{+0.1}$
S. P.										
NOISE										
POT RES.										
CULT & CMTS										

0.7 0.0 2.6 1.9 0.1 — -0.5 1.6 2.0 0.8

I. P. RECEIVER NOTES, JOB No. 1171, AREA Buchste

LINE 2, HALF SE, SR. 1, a = 2000', BEARING N 30°W

SENDER STA. 0 = ELECTRODE No. 4, DATE 5-9-77

HEINRICHS GEOEX

SEND	2-3	6-7	5-6	4-5	3-4	6-7	5-6	4-5		
RECEIVE		120-140S				140-160S				
MULTIPLIER	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1		
PFE	3.7	1.5	3.2	3.6	4.6	2.6	3.7	4.7		
CUR. (AMPS)	4.5	5.0	5.0	5.9	5.0	5.0	5.0	5.9		
POINT NO.										
SEP. (n)	6	3	4	5	6	4	5	6		
H. F. MV	310	56	103	204	280	77	164	312		
DRIFT	12	27	31	18	16	34	23	12		
1.0 PFE K_n/1000	-10.0	-4.1	-7.3	-9.1	-9.1	-6.0	-8.1	-9.4		
0.3 PFE P_{CAL}	2.2 $^{1.8}_{2.4}$	1.5 $^{1.0}_{2.0}$	2.2 $^{2.1}_{2.4}$	2.9 $^{2.7}_{3.1}$	3.8 $^{3.6}_{4.1}$	2.4 $^{2.1}_{2.6}$	2.5 $^{2.3}_{2.6}$	3.6 $^{3.3}_{3.9}$		
0.1 PFE PFE_C	3.4 $^{2.2}_{3.6}$	1.4 $^{1.0}_{1.9}$	3.1 $^{2.6}_{3.2}$	3.5 $^{3.3}_{3.9}$	4.5 $^{4.0}_{5.1}$	2.5 $^{2.3}_{2.7}$	3.6 $^{3.0}_{4.4}$	4.6 $^{4.2}_{5.2}$		
3.0 MV $P/2\pi$	2.195	2.47	2.27	3.02	2.20	1.69	2.06	2.89		
DRIFT MCF	-0.4 $^{-0.8}_{+0.4}$	0.0	0.0 $\pm$0.2	0.0 $\pm$0.1	0.0 $\pm$0.2	-0.2 $\pm$0.2	0.0 $\pm$0.5	0.1 $^{+0.4}_{-0.3}$		
S. P.										
NOISE										
POT RES.										
CULT & CMTS										
	-1.8	0.4	0.0	0.5	2.8	1.5	0.1	2.0		

I. P. SENDER NOTES

JOB No. 1174 AREA BUCKEYE

LINE 2, HALF N, SP. 2,000, DATE MAY 10, '77

PAGE 1

HEINRICHS GEOEX

SEND	5-6	6-7	4-5	5-6	6-7	3-4	3-4	3-4	3-4	4-5
RECEIVE	0-20		20-40			22-42	24-44	30-50	40-60	
RANGE										
VOLTAGE	760	740	480	660	640	620	620	620	610	480
CURRENT	5.7	5.7	5.7	5.0	5.0	5.0	5.0	5.0	5.0	5.9
SEND	5-6	6-7	2-3	3-4	4-5	5-6	6-7	1-2	1-2	2-3
RECEIVE			60-80					80-100	80-100	
RANGE										
VOLTAGE	640	640	830	600	480	640	640	190	760	820
CURRENT	5.0	5.0	4.5	5.0	5.9	5.0	5.0	1.0	5.0	4.5

FREQUENCIES 1-.3-.1-3-1

SENDER No. 6644-5 POWER UNIT ID

OPERATOR MAY

RECEIVER No. 20693 HOURS RUN

OPERATOR FISHER

COMMENTS:

I. P. SENDER NOTES

JOB No. 1171 AREA BUCKEYE

LINE 2, HALF N, SP. 2,000, DATE MAY 10, '77

HEINRICHS GEOEX

SEND	3-4	4-5	5-6	6-7	1-2	2-3	3-4	4-5	5-6	1-2
RECEIVE	80-100				100-120					120-140
RANGE										
VOLTAGE	600	480	620	640	760	820	600	470	620	750
CURRENT	5.0	5.9	5.0	5.0	5.0	4.5	5.0	5.9	5.0	5.0
SEND	2-3	3-4	4-5	1-2	2-3	3-4				
RECEIVE				140-160						
RANGE										
VOLTAGE	820	600	460	750	810	580				
CURRENT	4.5	5.0	5.9	5.0	4.5	5.0				

FREQUENCIES 1-.3-1-3

SENDER No. 6644-5 POWER UNIT ID

OPERATOR MAY

RECEIVER No. 20691 HOURS RUN

OPERATOR FISHER

COMMENTS:

I. P. SENDER NOTES

JOB No. 1171 AREA BUCKEYE

LINE 2, HALF 5, SP 2,000, DATE MAY 10, '77

PAGE 3

HEINRICHS GEOEX

SEND	4-5	4-5	4-5	4-5	3-4	2-3	1-2	5-6	4-5	3-4
RECEIVE	22425	24416	30505	40605				60-805		
RANGE										
VOLTAGE	460	460	450	450	580	800	740	600	440	580
CURRENT	5.7	5.9	5.9	5.7	5.0	4.5	5.0	5.0	5.7	5.0
SEND	2-3	1-2	6-7	5-6	4-5	3-4	2-3	1-2	6-7	5-6
RECEIVE			80 MAS						100-120	
RANGE										
VOLTAGE	800	740	630	600	430	670	790	730	630	600
CURRENT	4.5	5.0	5.0	5.0	5.7	5.0	4.5	5.0	5.0	5.0

FREQUENCIES 1-.3-.1-3

SENDER No. 6644-S — POWER UNIT ID

OPERATOR MAY

RECEIVER No. 20691 — HOURS RUN

OPERATOR FISHER

COMMENTS:

I. P. SENDER NOTES

JOB No. 1171 AREA BUCKEYE

LINE 2, HALF S, SP 2,000, DATE MAY 10, '77 MAY 11, '77

PAGE 4

HEINRICHS GEOEX

SEND	4-5	3-4	2-3	6-7	5-6	4-5	3-4	6-7	5-6	4-5
RECEIVE	100-120			120-140				140-160		
RANGE										
VOLTAGE	450	570	790	670	660	485	600	670	640	480
CURRENT	5.9	5.0	4.5	5.0	5.0	5.9	5.0	5.0	5.0	5.9
SEND										
RECEIVE										
RANGE										
VOLTAGE										
CURRENT										

FREQUENCIES 1-, 3-, 1-3

SENDER No. 6644-S

OPERATOR MAY

RECEIVER No. 20691

OPERATOR FISHER

POWER UNIT ID

HOURS RUN

COMMENTS:

I. P. RECEIVER NOTES, JOB No. 1171, AREA RUCUS PT

LINE 3, HALF NW, SR. 1, a = 2000', BEARING N 30° W

SENDER STA. 0 = ELECTRODE No. 4, DATE 5-12-77

HEINRICHS GEOEX

SEND		5-6	6-7	4-5	5-6	6-7	3-4	3-4	3-4	3-4	4-5
RECEIVE		0-20N		20-40N			22-42N	24-44N	30-50N	40-60N	
MULTIPLIER		1	1	1	0.1	0.1	10	10	1	0.1	0.1
PFE		1.8	1.9	1.2	1.8	1.5	1.1	0.7	1.2	1.1	25
CUR. (AMPS)		6.0	5.0	5	6	5	5	5	5	5	5
POINT No.											
SEP. (n)		11.5	46.0	11.5	46.0	115	.442	1.011	3.59	11.5	46.0
H.F. MV		51	156	28	61	152	26	25	25	18	29
DRIFT		35	12	43	30	9.9	43	28	49	60	87
1.0 PFE	K_n/1000	-1.5	-1.9	-1.6	-2.7	-2.3	0.0	-0.2	-0.2	-2.6	-5.1
0.3 PFE	P_{CAL}	1.1	1.1	1.0	1.1	0.9	0.6	0.4	0.7	0.8	1.6
0.1 PFE	PFE_c	1.6	1.7	1.1	1.6	1.3	0.9	0.5	1.1	0.9	2.3
3.0 MV	$P/2\pi$	27.0	17.1	12.1	7.97	6.65	293.5	123	34.5	8.04	3.15
DRIFT	MCF	0.0	0.0	+0.2	+0.1	0.0	0.0	0.0	+0.2	0.0	0.0
S. P.											
NOISE											
POT RES.											
CULT & CMTS											

I. P. RECEIVER NOTES, JOB NO. 1171, AREA BUCKEYE

LINE 3, HALF NW, SR. 1, a = 2000', BEARING N 30°W

SENDER STA. 0 = ELECTRODE NO. 4, DATE 5-12-77

HEINRICHS GEOEX

SEND	5-6	6-7	2-3	3-4	4-5	5-6	6-7	1-2	2-3	3-4
RECEIVE			60-80N					80-100N		
MULTIPLIER	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1	0.1	0.1
PFE	2.8	3.5	1.2	3.0	3.5	4.0	3.9	1.8	2.6	3.6
CUR. (AMPS)	6	5	4.5	5	5	6	5	4.5	5.7	5.4
POINT NO.										
SEP. (n)	115	230	11.5	46	115	230	402	11.5	46	115
H.F. MV	57	125	21	23	37	70	144	55	24	29
DRIFT	49	28	58	128	95	57	27	33	107	133
1.0 PFE K_n/1000	-5.8	-2.7	-1.9	-5.8	-7.8	-7.6	-2.8	-2.0	-4.6	-9.5
0.3 PFE ρ_{CAL}	2.0	2.8 2.5/3.0	0.8	2.5	2.9	3.0 2.8/3.1	3.1	1.1	1.5 1.2/1.8	3.8
0.1 PFE PFE_C	2.6	3.3	1.0	2.9	3.3	3.8 3.3/3.9	3.8	1.6	2.4	3.6
3.0 MV $\rho/2\pi$	3.01	2.74	8.13	2.56	1.62	1.83	1.80	21.6	3.03	1.35
DRIFT MCF	0.0	0.0	0.0	+0.3	0.0±0.2	0.0±0.3	+0.2	-0.1	0.0	0.0
S. P.										
NOISE										
POT RES.										
CULT & CMTS										

I. P. RECEIVER NOTES, JOB NO. 1171, AREA BUCKEYE

LINE 3, HALF NW, SR. 1, a = 2000', BEARING

SENDER STA. 0 = ELECTRODE NO. 4, DATE 5-12-77

HEINRICHS GEOEX

SEND		4-5	5-6	6-7	1-2	2-3	3-4	4-5	5-6	CAL	
RECEIVE					100-120N					1-2	
MULTIPLIER		.01	0.1	0.1	0.1	.01	.01	.01	.01	1	
PFE		5.8	4.2	2.9	3.7	3.7	8.0	5.2	4.2		
CUR. (AMPS)		5.7	6	5	4.5	5.4	5.4	5	6		
POINT NO.											
SEP. (n)		230	402	643	46	115	230	402	643		
H. F. MV		41	77	161	46	20	23	35	65		
DRIFT		140	55	18	80	189	344	147	64		
1.0 PFE	K_n/1000	-10.1	-9.1	-1.6	-3.6	-8.5	-11.5	-15.2	NR	+0.3	
0.3 PFE	P_{CAL}	4.8 $^{4.1}_{5.3}$	3.2 $^{3.0}_{3.4}$	2.5 $^{2.0}_{3.1}$	2.4 $^{2.2}_{2.7}$	3.2 $^{2.1}_{4.0}$	NR $^{2.2}_{6.4}$	NR $^{4.0}_{7.6}$	NR	0.0	
0.1 PFE	PFE_c	5.6	4.0	2.7	3.5	3.5	7.8 Lp	4.8 Lp	4.0 Lp	-0.2	
3.0 MV	$\rho/2\pi$	.979	1.15	1.26	4.53	.926	.5495	.444	.614	100.7	
DRIFT	MCF	0.0 ±0.4	0.0±0.3	-0.2 $^{+0.5}_{-0.3}$	+0.1	+0.1 $^{+0.8}_{-0.7}$	+0.3	-0.4 $^{+2.0}_{-1.6}$	—	0.0	
S. P.											
NOISE											
POT RES.											
CULT & CMTS						STORM APPROACHING					

I. P. RECEIVER NOTES, JOB No. 1171, AREA BULLSEYE

LINE 3, HALF NW/SE, SP. 1, a = 2000', BEARING N 30° W

SENDER STA. 0 = ELECTRODE No. 4, DATE 5-12-77

HEINRICHS GEOEX

SEND		1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5	4-5	4-5
RECEIVE		120-140N				140-160N			22-42S	24-44S	30-50S
MULTIPLIER		0.1	.01	.01	.01	.01	.01	.01	10	10	10
PFE		3.7	7.0			4.4	6.0		1.2	1.6	1.6
CUR. (AMPS)		4.5	5	5	5	4.5	5	5	5	5	5
POINT NO.											
SEP. (n)		115	230	402	643	230	402	643	.442	1.011	3.59
H. F. MV		49	19	26	14	37	17	21	41	5	93
DRIFT		76	36			118	361		29	29	17
1.0 PFE	K_n/1000	-8.3	-13.2	-18.5 (-18 -23)	NR	-12.5	-15	ND	-0.5	-0.4	-0.9
0.3 PFE	P_{CAL}	2.4 (2.1 2.8)	5.0 (4.2 5.8)	NR (5.9 8.1)	NR	4.0 (3.9 5.0)	NR (1.1 6.2)	NR	0.7	0.9	0.9
0.1 PFE	PFE_C	3.5 (3.3 3.8)	6.8 (6.0 7.6)	NR (6.6 12.7)	NR	4.1 (3.6 4.5)	5.7 (4.5 5.4)	NR	1.1	1.5	1.5
3.0 MV	P/2π	1.93	.425	Hp 320	Hp.110	.734	.208	.161	471	276.5	130
DRIFT	MCF	0.0 ± 0.4	Hp0.0 ± 2.0	Hp0.0 ± 2.0	—	-0.2 (-0.6 +0.2)	-0.3 (-1.3 +0.3)	—	0.0	0.0	0.0
S. P.											
NOISE											
POT RES.											
CULT & CMTS											

I. P. RECEIVER NOTES, JOB NO. 1171, AREA BUCKSKIN

LINE 3, HALF SE, SP. 1, a = 2000', BEARING N 30° W

SENDER STA. 0 = ELECTRODE NO. 4, DATE 5-12-77

HEINRICHS GEOEX

SEND		4-5	3-4	2-3	1-2	5-6	4-5	3-4	2-3	1-2	CAL
RECEIVE		40-60s				60-80s					6-7
MULTIPLIER		1	1	0.1	0.1	10	1	0.1	0.1	0.1	1
PFE		1.6	1.4	1.0	3.8	2.0	1.8	1.3	0.6	3.7	
CUR. (AMPS)		5	5	5	4.5	6	5	5	5	4.5	1
POINT NO.											
SEP. (n)		11.5	46	115	230	11.5	46	115	230	402	
H. F. MV		168	155	156	122	300	206	159	145	102	
DRIFT		9.5	9.0	6.4	31	6.7	8.7	8.2	4.1	36	
1.0 PFE	K_n/1000	-1.3	-1.9	-2.0	-3.0	-1.1	-2.0	-2.0	-2.5	-2.0	+0.3
0.3 PFE	ρ_{CAL}	1.0	1.1	1.2	2.2	1.3	1.4	1.0	-0.7	NR	+0.1
0.1 PFE	PFE_c	1.5	1.3	0.9	3.7	2.0	1.7	1.2	0.3	3.6	-0.1
3.0 MV	$\rho/2\pi$	73.6	17.0	6.85	2.41	158	22.6	6.97	3.18	1.15	100.9
DRIFT	MCF	0.0	0.0	0.0±0.4	0.0	+0.2	0.0	0.0±0.1	-0.4	0.0±2.0	0.0
S. P.											
NOISE											
POT RES.											
CULT & CMTS											

I. P. RECEIVER NOTES, JOB NO. 1171, AREA BUCKEYE

LINE 3, HALF SE, SR. 1, a = 2000', BEARING N 30° W

SENDER STA. 0 = ELECTRODE NO. 4, DATE 5-18-77

HEINRICHS GEOEX

SEND		6-7	5-6	4-5	3-4	2-3	1-2	6-7	5-6	4-5	3-4
RECEIVE		80-100s						100-120s			
MULTIPLIER		1	1	0.1	.01	.01	.01	1	0.1	0.1	.01
PFE		1.8	2.3	1.8	3.4	3.1	3.8	2.6	3.0	2.2	3.8
CUR. (AMPS)		5	6.6	5	5	5	4.5	5	6.6	5	5
POINT NO.											
SEP. (n)		11.5	46	115	230	402	643	46	115	230	402
H. F. MV		165	111	64	44	39	33	133	86	50	30
DRIFT		11	21	28	78	80	114	20	35	44	125
1.0 PFE	K_n/1000	-1.4	-2.8	-4.7	-6.0	-7.6	-13.1	-3.8	-5.4	-8.3	-10.1
0.3 PFE	ρ_{CAL}	1.1	1.5	1.2	2.3 $\frac{1.8}{2.9}$	2.4 $\frac{1.7}{3.3}$	2.0 $\frac{0.4}{4.2}$	1.8	2.2 $\frac{2.0}{3.7}$	2.0	4.6 $\frac{3.8}{5.6}$
0.1 PFE	PFE_C	1.7	2.2	1.9	3.3 $\frac{2.8}{3.8}$	3.0 $\frac{2.3}{3.7}$	3.7 $\frac{3.4}{4.0}$	2.5	29	2.1 3.1	3.7 $\frac{3.4}{4.0}$
3.0 MV	$\rho/2\pi$	72.6	16.0	2.82	.958	.484	.235	14.6	4.98	1.10	.381
DRIFT	MCF	0.0	0.0	$-0.2^{+0.4}_{-0.4}$	$+0.1^{+0.3}_{-0.2}$	0.0 ± 0.6	0.0 ± 0.4	0.0	0.0	0.0 ± 0.3	0.0 ± 0.3
S. P. 1104		1.8	2.3	2.1	3.4	3.1	3.8?	2.6	3.0	2.2 3.2	3.8?
NOISE 1103		1.2	1.6	1.3	2.4	2.5	2.1	1.9	2.3	2.1	4.7?
POT. RES.		1.3	1.5	1.7	2.1	1.3	3.6	1.5	1.5	0.2 2.3	
CULT & CMTS				THERE	IS A	STORM	ABOUT	US.			

I. P. RECEIVER NOTES, JOB No. 1171, AREA RUCKS 1E

LINE 3, HALF SE, SP. 1, a = 2000', BEARING N 30° W

SENDER STA. 0 = ELECTRODE No. 4, DATE 5-13-77

HEINRICHS GEOEX

SEND		2-3	6-1	5-6	4-5	3-4	6-7	5-6	4-5		6-7
RECEIVE			120-140S				140-160S				CAL
MULTIPLIER		.01	01	0.1	0.1	.01	0.1	0.1	.01		1
PFE		3.7	3.1	3.9	3.6	3.5	3.2	2.9	2.9		1
CUR. (AMPS)		5	5	6.6	5	5	5	6.75	4.7		
POINT NO.											
SEP. (n)		643	115	230	402	643	230	402	643		—
H. F. MV		28	269	156	85	49	397	213	109		
DRIFT		13-4	12	25	42	72	8.1	14	27		
1.0 PFE	K_n/1000	-13 $^{11}_{15}$	-5.1	-6.6	-8.8	-13.3	-5.9	-8.1	-11.6		+0.2
0.3 PFE	PCAL	3.2 $^{3.4}_{3.4}$	2.1	2.7	2.5 $^{2.2}_{2.9}$	2.5 $^{2.0}_{3.0}$	2.3	2.0	2.1 $^{2.3}_{2.3}$		-0.1
0.1 PFE	PFE_C	3.5 $^{2.5}_{4.3}$	3.0	3.8 $^{3.6}_{4.0}$	3.5 $^{3.1}_{3.8}$	3.4 $^{1.6}_{5.8}$	3.1	2.7	2.8 $^{2.4}_{3.2}$		-0.1
3.0 MV	P/2π	.216	11.8	4.51	1.07	.382	8.70	3.61	.805		100.8
DRIFT	MCF	-0.3 $^{-1.1}_{+0.6}$	0.0	0.0	-0.1 $^{-0.2}_{+0.1}$	+0.1 $^{-0.4}_{+0.4}$	0.0	-0.2 $^{-0.3}_{+0.1}$	0.0 $^{-0.4}_{+0.4}$		0.0
S. P.		3.7	3.1	3.9	3.6	3.5	3.2	2.9	2.9		
NOISE		3.3?	2.2	2.8	2.6	2.6	2.4	2.1	2.2		
POT RES.		0.8?	1.9	2.3	2.1	1.9	1.7	1.7	1.5		
CULT & CMTS											

I. P. SENDER NOTES

JOB No. 1171 AREA BUCKEYE

LINE 3, HALF N, SP. 2,000, DATE MAY 12, '77

PAGE 1

HEINRICHS GEOEX

SEND	5-6	6-7	4-5	5-6	6-7	3-4	3-4	3-4	3-4	4-5
RECEIVE	0-20N	20-40				22-42	2444	30-56	40-60	
RANGE										
VOLTAGE	440	660	630	440	660	710	700	690	660	560
CURRENT	6.0	5.0	5.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0
SEND	5-6	6-7	2-3	3-4	4-5	5-6	6-7	1-2	1-2	2-3
RECEIVE			60-80					80-100	80-100	
RANGE										
VOLTAGE	440	660	530	640	530	440	660	220	800	660
CURRENT	6.0	5.0	4.5	5.0	5.0	6.0	5.0	1.0	4.5	5.7

FREQUENCIES 1-, 3-, 1-3

SENDER No. 6644-5 POWER UNIT ID

OPERATOR MAY

RECEIVER No. 20691 HOURS RUN

OPERATOR

COMMENTS:

I. P. SENDER NOTES

JOB No. 1171 AREA BUCKEYE

LINE 3, HALF N, SP. 2,000 DATE MAY 12, '77

HEINRICHS GEOEX

SEND	3-4	4-5	5-6	6-7	1-2	2-3	3-4	4-5	5-6	1-2
RECEIVE	80-100				100-120					120-140
RANGE										
VOLTAGE	660	650	430	650	800	620	620	480	420	780
CURRENT	5.4	5.4	6.0	5.0	4.5	5.4	5.4	5.0	6.0	4.5
SEND	2-3	3-4	4-5	1-2	2-3	3-4				
RECEIVE				140-160						
RANGE										
VOLTAGE	560	540	450	780	540	530				
CURRENT	5.0	5.0	5.0	4.5	5.0	5.0				

FREQUENCIES 1-.3-.1-3

SENDER No. 6644-S POWER UNIT ID

OPERATOR MAY

RECEIVER No. 20691 HOURS RUN

OPERATOR FISHER

COMMENTS:

I. P. SENDER NOTES

JOB No. 1171 AREA BUCKEYE

LINE 3, HALF S, SP 2.000, DATE MAY 13, '77

HEINRICHS GEOEX

SEND	4-5	4-5	4-5	4-5	3-4	2-3	1-2	5-6	4-5	3-4
RECEIVE	22-42	42-44	3050	40-60				60-80		
RANGE										
VOLTAGE	460	460	460	460	540	560	760	400	460	530
CURRENT	5.0	5.0	5.0	5.0	5.0	5.0	4.5	6.0	5.0	5.0
SEND	2-3	1-2	6-7	6-7	5-6	4-5	3-4	2-3	1-2	6-7
RECEIVE			80-100	80-100						100-120
RANGE										
VOLTAGE	540	760	140	640	450	470	510	530	740	650
CURRENT	5.0	4.5	1.0	5.0	6.6	5.0	5.0	5.0	4.5	5.0

FREQUENCIES 1-.3-.1-3

SENDER No. 6644-S | POWER UNIT ID

OPERATOR MAY

RECEIVER No. 20693 | HOURS RUN

OPERATOR FISHER

COMMENTS: MAY 14, '77 80-100 3-4 ETC.

I. P. SENDER NOTES

JOB No. 1171 AREA BUCKEYE

LINE 3, HALF 5, SP. 2,000, DATE MAY 14, '77

HEINRICHS GEOEX

SEND	5-6	4-5	3-4	2-3	6-7	5-6	4-5	3-4	6-7	5-6
RECEIVE	100-120				120-140				140-160	
RANGE										
VOLTAGE	450	440	500	520	650	450	430	500	650	460
CURRENT	6.6	5.0	5.0	5.0	5.0	6.6	5.0	5.0	5.0	6.75
SEND	4-5	6-7								
RECEIVE		CAL								
RANGE										
VOLTAGE	400	230								
CURRENT	4.7	1.0								

FREQUENCIES 1.3.1.3

SENDER No. 6644-5 POWER UNIT ID

OPERATOR MAY

RECEIVER No. 20693 HOURS RUN

OPERATOR FISHER

COMMENTS: VOLTAGE RULE FROM 410 TO 510 ON 5-4

I. P. RECEIVER NOTES, JOB NO. 1171, AREA BUCKEYE

LINE 4, HALF NW, SR. 1, a = 2000', BEARING N 30 W

SENDER STA. 0 = ELECTRODE NO. 4, DATE 5-14-77

HEINRICHS GEOEX

SEND	5-6	6-7	4-5	5-6	6-7	3-4	3-4	3-4	3-4	4-5
RECEIVE	0-20N		20-40N			22-42N	24-44N	30-50N	40-60N	
MULTIPLIER	1	0.1	0.1	0.1	0.1	10	1	1	0.1	0.1
PFE	1.7	1.7	1.4	2.2	1.6	0.8	1.0	1.4	1.6	1.9
CUR. (AMPS)	4.2	5	4.2	4.2	5	5.4	5.4	5	5	4.2
POINT NO.										
SEP. (n)	11.5	46	11.5	46	115	.442	1.011	3.59	11.5	46
H. F. MV	70	89	23	84	97	18	18	17	21	29
DRIFT	24	19	61	26	16	43	55	83	77	66
1.0 PFE K_n/1000	-1.9	-2.1	-3.0	-3.6	-2.5	-0.4	-0.8	-1.7	-3.5	-6.7
0.3 PFE P_{CAL}	1.1	1.1	0.9	1.4	1.1	0.5	0.7	0.9	1.1	1.4
0.1 PFE PFE_C	1.6	1.6	1.3	2.1	1.5	0.7	0.9	1.3	1.5	1.8
3.0 MV $P/2\pi$	25.9	9.79	8.46	7.71	4.25	227	97.8	23.6	9.08	2.64
DRIFT MCF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ±0.3
S. P. 1	1.7	1.7	1.4	2.2	1.6	0.8	1.0	1.4	1.6	1.9
NOISE 1	1.0	1.0	0.8	1.3	1.0	0.4	0.6	0.8	1.0	1.3
POT. RES. 1	(1.5)	1.5	1.3	(1.9)	1.3	0.8	0.8	1.3	1.3	1.3
CULT & CMTS										

I. P. RECEIVER NOTES, JOB No. 1171, AREA BUCKEYE

LINE 4, HALF NW, SR. 1, a = 2000', BEARING N 30 W

SENDER STA. 0 = ELECTRODE No. 4, DATE 5-14-77

HEINRICHS GEOEX

SEND		5-6	6-7	2-3	3-4	4-5	5-6	6-7	1-2	1-2	2-3
RECEIVE				60-80N					CAL	80-100N	
MULTIPLIER		0.1	0.1	0.1	0.1	.01	0.1	.01	1	0.1	0.1
PFE		5	0.2	1.6	2.6	4.8	6.1	7.2		1.2	3.2
CUR. (AMPS)		4.2	5	4.5	5	4.2	4.2	5	1	5	4.5
POINT NO.											
SEP. (n)		115	230	115	46	115	230	402		115	46
H. F. MV		115	110	14	19	24	81	62		24	17
DRIFT		13	1.8	117	136	197	78	116		50	193
1.0 PFE	K_n/1000	-5.0	-3.6	-3.9	-9.0	-13.2	-9.9	-6.4	+0.3	-2.1	-9.7
0.3 PFE	P_{CAL}	1.0	0.1	1.3	2.0	3.4	4.8	4.9	+0.1	0.8	2.5
0.1 PFE	PFE_C	1.4	0.0	1.5	2.4	4.7	6.0	7.1	-0.1	1.1	3.1
3.0 MV	$P/2\pi$	4.22	2.42	5.40	2.10	.896	1.49	.775	100.75	10.54	1.63
DRIFT	MCF	0.0	-0.3	0.0	-0.2	0.0	0.0	0.0	0.0	-0.2	0.0
S.P.		1.5	0.3	1.6	2.6	4.8	6.1	7.2	—	1.3	3.2
NOISE		0.9	0.0	1.2	1.9	3.3	4.7	4.8		0.7	2.4
POT RES.		(1.3)	0.6	0.8	1.5	3.2	(2.9)	5.0		1.3	1.7
CULT & CMTS											

I.P. RECEIVER NOTES, JOB NO. 1171, AREA BUCKEYE

LINE 4, HALF N, SR. 1, a = 2000', BEARING N 30° W

SENDER STA. 0 = ELECTRODE NO. 4, DATE 5-14-77

HEINRICHS GEOEX

SEND	3-4	4-5	5-6	6-7	1-2	2-3	3-4	4-5	5-6	
RECEIVE					100-120N					
MULTIPLIER	.01	.01	.01	.01	0.1	.01	.01	.01	.01	
PFE	5.1	6.5	5.1	3.8	2.5	6.3	7.0	9.7	3.9	
CUR. (AMPS)	5	4.2	4.2	5	5	4.5	5	4.2	4.2	
POINT NO.										
SEP. (n)	115	230	402	643	46	115	230	402	643	
H. F. MV	22	28	101	78	27	18	23	27	413 113	
DRIFT	233	234	50	49	92	358	310	355	84	
1.0 PFE K_n/1000	-14.1	-16.7	-8.7	-5.2	-4.6	-16.6	-21.8	-23.5	-10.3	
0.3 PFE ρ_{CAL}	4.7	4.5 $^{4.2}_{4.9}$	4.0 $^{3.8}_{4.3}$	2.6 $^{2.5}_{2.8}$	1.6	5.4 $^{5.2}_{5.6}$	5.7 $^{5.2}_{6.1}$	6.7 $^{6.4}_{7.0}$	2.7 $^{2.6}_{3.2}$	
0.1 PFE PFE_c	5.0 $^{4.8}_{5.2}$	6.4 $^{6.2}_{6.6}$	5.0 $^{4.9}_{5.2}$	3.7 $^{3.6}_{4.0}$	2.4 $^{0.8}_{3.3}$	6.2 $^{5.9}_{6.6}$	6.8 $^{5.4}_{8.3}$	4.95 $^{0.6}_{15.4}$	3.8 $^{3.5}_{4.2}$	
3.0 MV $\rho/2\pi$	.958	.510	1.067	.612	2.99	.6945	.495	.288	.744	
DRIFT MCF	0.0	0.0	-0.1 $^{-0.3}_{0.3}$	0.0 $\pm$ 0.3	0.0	0.0 $\pm$ 0.3	-0.2 $^{-0.7}_{0.5}$	-0.3 $^{+0.9}_{-0.7}$	0.0 $\pm$ 0.7	
S. P.	5.1	6.5	5.1	3.8	2.5	6.3	7.0	9.7	3.9	
NOISE	4.6	4.4	3.9	2.5	1.5	5.3	5.6	6.6	2.6	
POT RES.	1.1	4.4	(2.5)	2.7	2.1	2.1	2.9	6.5	2.7	
CULT & CMTS										

I.P. RECEIVER NOTES, JOB NO. 1171, AREA BUCKEYE

LINE 4, HALF N/~~S~~E SR. 1, a = 2000', BEARING N 30°W

SENDER STA. 0 = ELECTRODE NO. 4, DATE 5-1-77

HEINRICHS GEOEX

SEND		1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5	4-5	4-5
RECEIVE		120-140N				140-160N			22-42S	24-44S	30-50S
MULTIPLIER		0.1	.01	.01	.01	.01	.01	.01	10	10	1
PFE		3.9	12.1	5.5	11.6	3.2	15.1	9.3	1.1	1.1	1.2
CUR. (AMPS)		5	4.5	5	4.2	5	4.5	5	4.2	4.2	4.2
POINT NO.											
SEP. (n)		115	230	402	643	230	402	643	.442	1.011	3.59
H. F. MV		28	19	24	29	26	21	28	31	35	65
DRIFT		140	645	1800 2334	402	124	231	1334	35	31	18
1.0 PFE	K_n/1000	-8.4	-23.4	Ap-34	Ap-37	-14.1	-33.5	-30.5	0.1	-0.3	-0.6
0.3 PFE	P_{CAL}	2.4 8.0	9.3	9.9 8.2 10.3	Ap 10.0 7.5 11.5	2.1 1.6 2.4	Ap 11.5 8.8 13.8	Ap 8.6 6.6 12	0.7	0.7	0.7
0.1 PFE	PFE_c	3.7 3.0 4.2	12.8 9.3 16.0	15.4 13.0 18.3	M 11.5 10.5 12.7	3.1 2.6 3.8	Ap 15.0 13.3 16.8	Ap 12 10.0 14.3	1.2	1.0	1.1
3.0 MV	$P/2\pi$	1.22	.370	.297	Ap 190	.566	Ap .233	Ap .218	297	148	76.7
DRIFT	MCF	-0.2 +1.0 -1.0	0.0±0.4	+0.4 +1.3 -0.3	-0.1 +1.3 -1.3	0.0±1	0.0±1.5	0.0±1.0	+0.4	0.0	0.0
S. P.		3.9	12.1	15.3	11.6	3.2	15.1	9.3	1.1	1.1	1.2
NOISE		2.3	9.2	9.8	9.9	2.0	10.4	8.5	0.6	0.6	0.6
POT RES.		3.4	6.1	11.6	3.6	2.5	9.9	1.7	1.1	1.1	1.3
CULT & CMTS											

I.P. RECEIVER NOTES, JOB NO. 1171, AREA ROCHESTER

LINE 4, HALF SE, SP. 1, a = 2100', BEARING N 30°W

SENDER STA. 0 = ELECTRODE NO. 4, DATE 5-14-77

HEINRICHS GEOEX

SEND	4-5	3-4	2-3	1-2	5-6	4-5	3-4	2-3	1-2	6-7
RECEIVE	40-60s				60-80s					80-100s
MULTIPLIER	1	0.1	0.1	0.1	10	1	0.1	0.1	0.1	10
PFE	1.3	2.1	1.5	0.6	2.3	1.7	2.1	1.4		2.0
CUR. (AMPS)	4.2	5	5	5	4.5	4.5	5	5	5	5
POINT NO.										
SEP. (n)	115	46	115	230	115	46	115	230	402	115
H. F. MV	87	86	94	107	356	143	134	129	137	384
DRIFT	15	24	16	5.6	6.6	12	16	11		5.2
I.O PFE K_n/1000	-0.6	-2.1	$-25^{-3.3}_{-3.0}$	$^{-3.0}_{-3.2}$	-0.8	-1.8	-3.4	$+43^{5.8}_{4.8}$	$-5.4^{5.8}_{5.1}$	$-1.1^{-0.8}_{-1.4}$
0.3 PFE P_{CAL}	0.8	1.4	$1.3^{0.1}_{2.6}$	$0.2^{-1.2}_{1.2}$	1.3	0.8	$1.4^{1.0}_{1.8}$	$1.2^{0.5}_{1.6}$	$1.6^{2.8}_{0.8}$	$1.2^{1.9}_{1.6}$
0.1 PFE PFE_C	1.2	$2.0^{2.0}_{4.0}$	$1.5^{1.1}_{5.4}$	$0.4^{-2.2}_{1.5}$	2.2	1.6	$2.0^{1.6}_{2.4}$	$1.3^{2.6}_{2.8}$	NR $^{-8}_{+10}$	$1.9^{1.8}_{2.4}$
3.0 MV $P/2\pi$	32.0	9.42	4.09	2.32	140	14.1	5.84	2.82	1.72	168
DRIFT MCF	0.0	$0.0^{-0.7}_{+0.7}$	$+0.2^{+1.3}_{-1.1}$	$-0.2^{-1.8}_{+1.6}$	0.0	0.0	0.0 ± 0.3	$-0.1^{-0.9}_{+0.8}$	0.0 ± 1.5	0.0 ± 0.5
S. P.	1.3	2.1	1.5	0.6?	2.3	1.7	2.1	1.4	—	2.0
NOISE	0.7	1.2 VERY NOISEY		0.1	1.2	0.7	1.3	1.1	1.5	1.1
POT RES.	1.3	1.7	0.6	1.1	2.3	2.1	1.7	0.6	—	1.9
CULT & CMTS							DATA IS EST.			

I.P. RECEIVER NOTES, JOB NO. 1171, AREA ROCHEZ

LINE 4, HALF SE, SP. 1, a = 2000', BEARING N 30°W

SENDER STA. 0 = ELECTRODE NO. 4, DATE 5-1-77

HEINRICHS GEOEX

SEND	5-6	4-5	3-4	2-3	1-2	6-7	5-6	4-5	3-4	2-3
RECEIVE						100-120s				
MULTIPLIER	1	0.1	0.1	0.1	0.1	1	1	0.1	0.1	.01
PFE	2.2	1.8				1.9	2.0	2.2		
CUR. (AMPS)	4.5	4.5	5	5	5	5	4.5	4.5	5	5
POINT NO.										
SEP. (n)	46	115	230	402	643	46	115	230	402	643
H. F. MV	441	165	154	138	160	505	441	151	131	118
DRIFT	5.0	11				3.8	4.5	15		
1.0 PFE K_n/1000	-0.5	-1.5 +2.0	-6.8 -7.5			-1.7	-2.4	-28 ±4	-6.5 -9.0	
0.3 PFE P_{CAL}	1.9 +1.8 2.4	3.3	-2.0 1.4	N.R	N.R	1.6	1.5 +1.7	2.4 +1.2 3.1	-3.0 2.6	N R
0.1 PFE PFE_c	2.2 +1.4 3.0	1.8 +1.0 2.4	0.0 10.2			1.8 +1.4 2.2	1.9 +1.4 2.7	2.0 +1.8 4.8	-0.2 6.2	
3.0 MV $P/2\pi$	43.4	6.51	3.36	1.73	1.25	55.2	17.35	2.98 ±σ	1.64	1925
DRIFT MCF	+0.3 +1.5 -1.2	+0.2 +1.2 -1.0	0.0			0.0 ±0.4	0.0 ±0.3	-0.2 -0.4 +0.4	0.0 ±1.2	
S. P.	2.2	1.8	—	—	—	1.9	2.0	2.2	—	—
NOISE	1.5	—	—	—	—	1.5	1.4	2.3	—	—
POT RES.	0.5	—	—	—	—	0.5	1.3	—	—	—
CULT & CMTS	DATA IS EST. IT IS EXTREMELY NOISY							80 sec damping on N-2		

I. P. RECEIVER NOTES, JOB No. 1171, AREA ROCKEYE

LINE 4, HALF S E, SP. 1, a = 2000', BEARING N 30° W

SENDER STA. 0 = ELECTRODE No. 4, DATE —

HEINRICHS GEOEX

SEND		6-7	5-6	4-5	3-4	6-7	5-6	4-5	6-7		
RECEIVE		120-140s				140-160s			CAL		
MULTIPLIER		1	0.1	.01		0.1	0.1	.01	1		
PFE		1.7	2.0	2.2		1.7	2.2				
CUR. (AMPS)		5	4.5	4.5	5	5	4.5	4.5	1		
POINT NO.											
SEP. (n)		115	230	402	643	230	402	643			
H. F. MV		338	260	88	73	159	118	36			
DRIFT		5.0	7.7			11	19				
1.0 PFE	K_n/1000	-3.6	-4.5	-7.7 -7.3 -8.3		-3.6 -3.5 -3.7	-6.6 -6.3 -6.3		10.4		
0.3 PFE	ρ_{CAL}	1.2 1.0 1.4	1.6 1.3 2.2	2.2 1.4 3.8	NR 0.2 0.1	1.3 1.0 1.6	1.2 0.9 1.8	NR 0.2 0.5	+0.1		
0.1 PFE	PFE_c	1.6 1.4 1.7	1.9 1.6 2.0	NR 1.5 4.6		1.6 1.2 1.9	2.1 1.9 2.3		-0.1		
3.0 MV	$\rho/2\pi$	14.8	5.11	.993	.570	3.47	1.33	.255	100.6		
DRIFT	MCF	0.0 ± 0.3	0.0 ± 0.6	0.0 ± 1.7		0.0 ± 0.2	0.0 ± 1.0		0.0		
S. P.		1.7	2.0	—		1.7	2.2	—			
NOISE		1.1	1.5	2.1		1.2	1.1	—			
POT RES.		1.3	1.1	—	—	1.1	2.3	—			
CULT & CMTS		CONSTANT NOISE + FSW DEAD SPOTS									

I. P. RECEIVER NOTES, JOB NO. _____, AREA 5-6 IS VALID

LINE _____, HALF _____, SR. _____, a = _____, BEARING _____

SENDER STA. _____ = ELECTRODE NO. _____, DATE _____

HEINRICHS GEOEX

SEND		5-6	G-7	5-6	6-7	5-6	6-7	5-6	6-7	5-6	6-7
RECEIVE		0-20N		20-40N		40-60N		60-80N		80-100N	
MULTIPLIER		1	0.1	0.1	0.1	0.1	0.1	.01			
PFE		1.3	3.2	1.9	0.9	1.5	0.1	3.6	7.9		
CUR. (AMPS)		4.5	4.5	4.5	5	4.5	5	4.5	5	4.5	5
POINT NO.											
SEP. (n)		1	2	2	3	3	4	4	5	5	6
H. F. MV		48	88	52	98	60	110	45	60	56	77
DRIFT		27	36	37	9.2	25	.91	79	.82		
I.0 PFE	K_n/1000	-2.5	-0.5	-4.4	-3.0	-6.3	-3.2	-13.5	-4.5		
0.3 PFE	ρ_{CAL}	1.0	2.7	1.4	0.8	1.6	0.4	3.7	7.0	9.9	
0.1 PFE	PFE_c	1.2	3.2	1.8	0.8	1.9	0.0	3.5	7.8	NR	
3.0 MV	$\rho/2\pi$	18.9	8.65	5.11	4.28	2.37	2.41	.892	.748	.626	.601
DRIFT	MCF	0.0	-0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
S. P.		1.3	3.1	1.9	0.9	1.5	0.1?	3.6	7.8	—	—
NOISE		0.9	2.6	1.3	0.6	0.9?	0.3	3.6	6.9	—	—
POT RES.		0.8	1.1	1.3	0.6	1.3	—	0.0!	1.9	—	—
CULT & CMTS											

I. P. SENDER NOTES

JOB No. 1171 AREA BUCKEYE

LINE 4, HALF N, SP. 2,000, DATE 5-15-77

PAGE 1

HEINRICHS GEOEX

SEND	5-6	6-7	4-5	5-6	6-7	3-4	3-4	3-4	3-4	4-5
RECEIVE	0-20N		20-40N			22-42N	24-44N	30-50N	40-60N	
RANGE										
VOLTAGE	920	780	850	810	780	730	730	670	660	880
CURRENT	4.2	5.0	4.2	4.2	5.0	5.4	5.4	5.0	5.0	4.2
SEND	5-6	6-7	2-3	3-4	4-5	5-6	6-7	1-2	1-2	2-3
RECEIVE			60-80N					80-100N	80-100N	
RANGE										
VOLTAGE	840	770	660	660	850	810	750	290	740	650
CURRENT	4.2	5.0	4.5	5.0	4.2	4.2	5.0	1.0	5.0	4.5

FREQUENCIES 1-, 3-, 1-3

SENDER No. 6644-S POWER UNIT ID

OPERATOR MAY

RECEIVER No. 20693 HOURS RUN

OPERATOR FISHER

COMMENTS:

I. P. SENDER NOTES

JOB No. 1171 AREA BUCKEYE

LINE 4, HALF N, SP 2,000, DATE MAY 15, '77

HEINRICHS GEOEX

SEND	3-4	4-5	5-6	6-7	1-2	2-3	3-4	4-5	5-6	1-2
RECEIVE	80-100N				100-120N					120-140N
RANGE										
VOLTAGE	640	800	770	740	730	640	630	760	740	720
CURRENT	5.0	4.2	4.2	5.0	5.0	4.5	5.0	4.2	4.2	5.0
SEND	2-3	3-4	4-5	1-2	2-3	3-4				
RECEIVE				140-160N						
RANGE										
VOLTAGE	620	600	720	700	600	600				
CURRENT	4.5	5.0	4.2	5.0	4.5	5.0				

FREQUENCIES 1-.3-.1-3

SENDER No. 6644-5 POWER UNIT ID

OPERATOR MAY

RECEIVER No. 20693 HOURS RUN

OPERATOR FISHER

COMMENTS:

I. P. SENDER NOTES

JOB No. 1171 AREA BUCKEYE

LINE 4, HALF S, SP. 2,000, DATE MAY 16, '77

HEINRICHS GEOEX

SEND	~~4-5~~	4-5	4-5	4-5	4-5	3-4	2-3	1-2	5-6	4-5
RECEIVE	~~10-40S~~	22-42S	24-44S	30-50S	40-60S				60-80S	
RANGE										
VOLTAGE		740	730	730	720	600	670	690	770	770
CURRENT		4.2	4.2	4.2	4.2	5.0	5.0	5.0	4.5	4.5
SEND	3-4	2-3	1-2	6-7	6-7	5-6	4-5	3-4	2-3	1-2
RECEIVE					80-100S					
RANGE										
VOLTAGE	600	660	680	120	670	800	750	580	650	680
CURRENT	5.0	5.0	5.0	1.0	5.0	4.5	4.5	5.0	5.0	5.0

FREQUENCIES 1-, 3-, 1-3

SENDER No. 6644-S POWER UNIT ID

OPERATOR MAY

RECEIVER No. 20693 HOURS RUN

OPERATOR FISHER

COMMENTS:

I. P. SENDER NOTES

JOB No. 1171 AREA BUCKEYE

LINE 4, HALF S, SP 2,000, DATE MAY 16, '77

PAGE 2

HEINRICHS GEOEX

SEND	6-7	5-6	4-5	3-4	2-3	6-7	5-6	4-5	3-4	6-7
RECEIVE	100-120S					120-140S				140-160S
RANGE										
VOLTAGE	660	680	730	570	650	650	750	710	560	640
CURRENT	5.0	4.5	4.5	5.0	5.0	5.0	4.5	4.5	5.0	5.0
SEND	5-6	4-5								
RECEIVE										
RANGE										
VOLTAGE	730	700								
CURRENT	4.5	4.5								

FREQUENCIES 1-.3-.1-3

SENDER No. 6644-S POWER UNIT ID

OPERATOR MAY

RECEIVER No. 20693 HOURS RUN

OPERATOR FISHER

COMMENTS:

I. P. SENDER NOTES

JOB No. 1171 AREA BUCKEYE

LINE 4, HALF N, SP. 2,000, DATE MAY 16, '77

HEINRICHS GEOEX

SEND	5-6	6-7	5-6	6-7	5-6	6-7	5-6	6-7	5-6	6-7
RECEIVE	0-20N		20-40N		40-60N		60-80N		80-100N	
RANGE										
VOLTAGE	730	550	720	620	720	620	710	610	700	600
CURRENT	4.5	4.5	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
SEND										
RECEIVE										
RANGE										
VOLTAGE										
CURRENT										

FREQUENCIES 1-, 3-, 1-3

SENDER No. 6644-S | POWER UNIT ID

OPERATOR MAY |

RECEIVER No. 20693 | HOURS RUN

OPERATOR FISHER |

COMMENTS:

I. P. RECEIVER NOTES, JOB NO. 1171, AREA BUCKEYE

LINE 1, HALF N, SR. 2, a = 1200', BEARING N 30° W

SENDER STA. 20SE = ELECTRODE NO. 4, DATE 5-21-77

PAGE 1

HEINRICHS GEOEX

SEND	5-6	6-7	4-5	5-6	6-7	3-4	4-5	5-6	6-7	2-3
RECEIVE	20S-8S		8S-4N			4-16N				16-28N
MULTIPLIER	1	1	1	1	1	1	0.1	0.1	0.1	1
PFE	1.3	1.7	1.1	1.6	2.0	1.5	1.1	1.8	2.4	1.5
CUR. (AMPS)	6.8	7.4	4.1	6.8	7.4	7.4	4.3	6.8	7.4	6.9
POINT NO.										
SEP. (n)	6.9	28	6.9	28	69	6.9	28	69	138	6.9
H. F. MV	57	130	35	65	142	66	57	90	193	107
DRIFT	23	13	31	25	14	23	19	20	12	14
3.0 PFE K_n/1000	-0.6	-1.4	-0.8	-1.3	-2.7	-0.8	-1.6	-2.3	-3.5	-0.8
0.3 PFE P_{CAL}^3	1.1	1.5	0.9	1.2	1.6	0.9	1.0	1.2	2.1	1.1
0.1 PFE PFE_C	1.3	1.7	1.1	1.6	2.0	1.5	1.1	1.8	2.4	1.5
3.0 MV $P/2\pi$	57.0	35.2	21.3	16.0	15.5	72.0	9.00	9.01	10.55	108.9
DRIFT MCF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	+0.1	0.0
S. P.										
NOISE	0.9	1.3	0.7	1.0	1.4	0.7	0.8	1.0	1.9	0.9
POT. RES.	0.8	0.8	0.8	1.3	1.3	1.7	0.6	1.7	1.1	1.3
CULT & CMTS	1.8	2.3	1.2	1.6	1.6	2	0.8	0.8	2.3	1.7
@ 0.3	0.5	0.3	0.7	1.0	0.8	1.8	0.3	1.6	0.2	1.1

I. P. RECEIVER NOTES, JOB NO. 1171, AREA BUCKEYE

LINE 1, HALF N, SR. 2, a = 1200', BEARING N 30° W

SENDER STA. 20S = ELECTRODE NO. 4, DATE 5-21-77

HEINRICHS GEOEX

SEND		3-4	4-5	5-6	6-7	CAL	1-2	2-3	3-4	4-5	5-6
RECEIVE						1-2	28-40M				
MULTIPLIER		1	0.1	0.1	0.1	1	1	1	1	0.1	0.1
PFE		1.8	1.9	2.3	2.8		1.5	2.0	2.1	2.1	2.7
CUR. (AMPS)		7.5	4.3	6.8	7.2	1	4.5	7.0	7.4	4.3	6.8
POINT NO.											
SEP. (n)		28	69	138	241		6.9	28	69	138	241
H. F. MV		117	95	146	336		74	110	155	111	167
DRIFT		15	20	16	8.6		20	18	16	19	16
1.0 PFE	K_n/1000	-1.6	-2.6	-3.6	-4.9	+0.1	-1.0	-1.6	-2.7	-3.8	-4.7
0.3 PFE	P_{CAL}	1.4	1.1	1.8	2.4	+0.2	1.1	1.3	1.8	1.9 1.6	2.2
0.1 PFE	PFE_C	1.8	1.9	2.3	2.8 3.6	0.0	1.5	2.0	2.1	2.2 2.8	2.7
3.0 MV	$\rho/2\pi$	32.1	6.04	7.37	9.94	102.1	49.0	28.1	14.8	3.53	4.82
DRIFT	MCF	0.0	0.0	0.0	0.0	0.0	0.0	+0.1	0.0	+0.2	+0.0
S. P.											
NOISE		1.2	0.9	1.6	2.2		0.9	1.1	1.6	1.7	2.0
POT RES.		1.3	2.1	1.5	1.3		1.3	1.9	1.1	1.1	1.5
CULT & CMTS		1.9	0.4	1.5	2.1		ROAD	33M			
		0.9	2.2	0.9	0.3		1.5/1.1	1.4/1.8	2.1/0.4	1.6/0.0	1.7/0.7

I. P. RECEIVER NOTES, JOB No. 1171, AREA Buckskin

LINE 1, HALF NW, SR. 2, a = 1200', BEARING N 30° W

SENDER STA. 20S = ELECTRODE No. 4, DATE 5-21-77

HEINRICHS GEOEX

SEND		6-7	1-2	2-3	3-4	4-5	5-6	1-2	2-3	3-4	4-5
RECEIVE			40-52N					52-64N			
MULTIPLIER		0.1	1	1	1	0.1	0.1	0.1	0.1	0.1	.01
PFE		3.4	1.5	1.9	2.0	2.5	3.2	1.7	1.9	1.6	
CUR. (AMPS)		7.4	4.5	6.9	7.5	4.3	6.8	4.5	6.9	7.5	4.3
POINT NO.											
SEP. (n)		386	28	69	138	241	386	69	138	241	386
H. F. MV		372	108	162	209	184	276	24	39	53	52
DRIFT		9.1	14	12	9.6	14	12	70	48	30	
I.0 PFE	K_n/1000	-6.2	-3.5	-4.8	-6.1	-T.0	-7.3	-3.1	-1.7	-1.6	-3.8 -5.6
0.3 PFE	P_{CAL}	2.7	1.6	1.5	2.2 2.9	1.8 1.4 2.4	2.8 3.9	1.3	1.7	1.5 1.2 2.0	NR 4.5
0.1 PFE	PFE_c	3.4	1.5	1.9	2.0	2.5 1.8 3.0	3.3	1.7	1.9	1.6 1.2 2.1	NR 1.0 7.0
3.0 MV	$P/2\pi$	7.28	17.7	16.5	11.6	3.36	4.965	1.61	2.00	1.68	Ap. 590
DRIFT	MCF	0.0	0.0	0.0	0.0	-0.1	+0.2	0.0	0.0 ±0.2	0.1 +0.8 -0.7	0.0 ±1.5
S. P.											
NOISE		2.5	1.4	1.3	2.0	1.6	2.6	1.1	1.5	1.3	—
POT RES.		1.9	0.2	1.3	0.0	1.9	1.5	1.3	DATA IS	0.8 NOISEY	0.6
CULT & CMTS		1.9	1.0	RR, PL, Road		51.5N	STATION 52N		IS UNDER	POWER	LINE
		0.9	-0.6	-0.2/0.9	0.7/1.2	-1.0/1.5	1.2/0.0	0.5/1.0	2.6/0.2	2.1/0.0	

I. P. RECEIVER NOTES, JOB NO. 1171, AREA RICHEYE

LINE 1, HALF NW/SE, SR. 2, a = 1200', BEARING N 30° W

SENDER STA. 205 = ELECTRODE NO. 4, DATE 5-21-77

HEINRICHS GEOEX

SEND	1-2	2-3	3-4	4-5	3-4	2-3	1-2	5-6	4-5	3-4
RECEIVE	64-765			44-565				56-685		
MULTIPLIER	0.1	0.1	0.1	1	1	1	0.1	10	1	1
PFE	1.8	2.0	2.2	0.9 1.3	1.9	2.2	2.4	1.4	1.5	2.1
CUR. (AMPS)	4.5	6.9	7.5	3.3	7.5	7.4	4.5	6.8	4.5	7.5
POINT NO.										
SEP. (n)	138	241	386	6.9	28	69	138	6.9	28	69
H. F. MV	105	131	155	86	123	134	184	168	129	173
DRIFT	17	15	14	10	15	16	13	7.1	12	12
1.0 PFE K_n/1000	0.8	0.7	0.2	-0.14	-1.2	-2.2	-3.6	-0.7	-1.3	-2.2
0.3 PFE P_{CAL}	1.1	1.6 2.1	1.8 2.1	1.1	1.1	1.8	1.8	1.1	1.0	1.6
0.1 PFE PFE_c	1.8 2.4	2.0	2.1	1.5	1.9	2.2	2.4	1.4	1.5	2.1
3.0 MV $P/2\pi$	3.50	3.82	3.08	42.1	33.6	14.7	6.11	199	21.1	19.25
DRIFT MCF	0.0±0.2	0.0±0.4	-0.2±0.6	+0.4	+0.2	0.0	0.0	0.0	0.0	0.0
S. P.										
NOISE	0.9	1.4	1.6	0.9	0.9	1.6	1.6	0.9	0.8	1.4
POT RES.	1.9	1.3	1.3	0.8	1.9	1.3	1.7	1.1	1.5	1.5
CULT & CMTS										

2.8/1.9 4.0/0.8 4.2/0.7 1.7/0.5 1.4/1.9 2.5/0.7 1.5/1.2 1.7/0.8 1.0/1.4 1.9/1.1

I. P. RECEIVER NOTES, JOB NO. 1171, AREA BUCKEYE

LINE 1, HALF [illegible], SR. 2, a = 1200', BEARING N 30°W

SENDER STA. 205 = ELECTRODE NO. 4, DATE 5-21-77

HEINRICHS GEOEX

SEND		2-3	1-2	6-7	5-6	4-5	3-4	2-3	1-2	6-7	5-6
RECEIVE				68-80s						80-92s	
MULTIPLIER		0.1	0.1	10	1	0.1	0.1	0.1	0.1	1	1
PFE		2.3	3.0	1.5	1.3	1.5	2.1	2.4	3.0	1.6	1.5
CUR. (AMPS)		7.0	5.0	7.2	6.4	5.0	7.5	7.0	5.0	6.9	6.9
POINT NO.											
SEP. (n)		138	241	69	28	69	138	241	386	28	69
H. F. MV		187	241	297	181	122	162	176	234	341	167
DRIFT		12	12	5.1	7.2	12	13	14	13	4.7	9.0
1.0 PFE	K_n/1000	-3.8	-4.5	-0.7	-1.0	-2.1	-3.7	-4.8	-5.7	-1.0	-1.2
0.3 PFE	ρ_{CAL}	1.9 1.93	2.0	1.1	1.0	1.0	1.7	2.0	2.3	1.3	1.4
0.1 PFE	PFE_c	2.2	3.0	1.5	1.3	1.5	2.1	2.4	3.0	1.6	1.5
3.0 MV	$\rho/2\pi$	9.685	5.10	316	42.3	9.04	9.01	5.22	3.09	85.7	17.1
DRIFT	MCF	-0.2	0.0	0.0	0.0	0.0	0.0	0.0±0.3	0.0	0.0	0.0
S. P.											
NOISE		1.7	1.8	0.9	0.8	0.8	1.5	1.8	2.1	1.1	1.2
POT RES.		1.9	2.5	1.3	1.1	1.5	1.3	1.3	1.9	1.1	0.6
CULT & CMTS		1.6	1.3	1.7	1.3	0.5	1.1	1.1	1.2	2.0	2.1
		0.6	2.2	1.1	0.9	1.4	0.7	0.5	1.2	0.7	0.1

I. P. RECEIVER NOTES, JOB No. 1171, AREA BUCKEYE

LINE 1, HALF SE, SP. 2, a = 1200', BEARING N30°W

SENDER STA. 20 S = ELECTRODE No. 4, DATE 5-21-77

HEINRICHS GEOEX

SEND		4-5	3-4	2-3	6-7	5-6	4-5	3-4	6-7	5-6	4-5
RECEIVE					92-104S				104-116S		
MULTIPLIER		0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.1	0.1
PFE		1.5	2.2	2.6	1.8	1.6	1.9	2.8	1.8	2.3	
CUR. (AMPS)		5.0	7.5	7.5	7.0	7.0	5.0	7.5	7.0	6.6	5.0
POINT NO.											
SEP. (n)		138	241	386	69	138	241	386	138	241	386
H. F. MV		111	141	151	340	135	102	131	253	111	76
DRIFT		14	16	17	5.8	12	19	21	21	21	
1.0 PFE	K_n/1000	-2.4	-4.0	-5.6	-1.4	-1.8	-2.8	-5.1	-1.9	-2.6	NR
0.3 PFE	P_{CAL}	1.2	1.8	2.4	1.3	1.2	1.2	2.0	1.4	1.5	NR-8
0.1 PFE	PFE_C	1.5	2.2	2.5	1.8	1.6	1.9	2.8	1.8	2.3	NR
3.0 MV	$P/2\pi$	4.10	4.49	3.00	35.2	8.03	2.17	2.60	13.1	3.10	1.005
DRIFT	MCF	0.0	0.0	-0.3	0.0	0.0	0.0	0.0	0.0	0.0	-
S. P.											
NOISE		1.0	1.6	2.2	1.1	1.0	1.0	1.8	1.2	1.3	—
POT RES.		1.1	1.3	1.3	1.5	1.3	1.9	2.1	1.3	2.1	—
CULT & CMTS		0.8	1.2	1.6	1.7	1.2	0.5	0.9	1.6	1.4	NO COMM.
		0.8	0.7	0.0	1.3	1.0	1.9	1.7	0.9	2.0	

I. P. SENDER NOTES

JOB No. 1171 AREA BUCKEYE

LINE 1, HALF N, SP. 2, DATE 5-21-77

HEINRICHS GEOEX

SEND	5-6	6-7	4-5	5-6	6-7	3-4	4-5	5-6	6-7	2-3
RECEIVE	20-8S		8S-4N			4-16N				16-28N
RANGE										
VOLTAGE	460	440	320	460	440	430	340	460	440	410
CURRENT	6.8	7.4	4.1	6.8	7.4	7.4	4.3	6.8	7.4	6.9
SEND	3-4	4-5	5-6	6-7	CAL	1-2	2-3	3-4	4-5	5-6
RECEIVE					1-2	28-40N				
RANGE										
VOLTAGE	440	340	460	440	180	640	420	440	340	460
CURRENT	7.5	4.3	6.8	7.2	1.0	4.5	7.0	7.4	4.3	6.8

FREQUENCIES 3 ± 0.3 1 ± 0.1

SENDER No. 26721-S — POWER UNIT ID

OPERATOR MAY

RECEIVER No. 20693 — HOURS RUN

OPERATOR FISHER

COMMENTS:

I. P. SENDER NOTES

JOB No. 1171 AREA BUCKEYE

LINE 1, HALF N, SP. 2, DATE 5/21/77

HEINRICHS GEOEX

SEND	6-7	1-2	2-3	3-4	4-5	5-6	1-2	2-3	3-4	4-5
RECEIVE		40-52N					52-64N			
RANGE										
VOLTAGE	440	630	420	440	340	460	640	420	420	340
CURRENT	7.4	4.5	6.9	7.5	4.3	6.8	4.5	6.9	7.5	4.3
SEND	1-2	2-3	3-4	4-5	3-4	2-3	1-2	5-6	4-5	3-4
RECEIVE	64-76N			44-56S				56-68S		
RANGE										
VOLTAGE	620	420	420	240	410	430	600	430	330	400
CURRENT	4.5	6.9	7.5	3.3	7.5	7.4	4.5	6.8	4.5	7.5

FREQUENCIES 1 - .3 - .1 - 3

SENDER No. 26721-S

OPERATOR May

RECEIVER No. 20693

OPERATOR FISHER

POWER UNIT ID

HOURS RUN

COMMENTS:

I. P. SENDER NOTES

JOB No. 1171 AREA BUCKEYE

LINE 1, HALF S, SP. 2, DATE 9-21-77

HEINRICHS GEOEX

SEND	2-3	1-2	6-7	5-6	4-5	3-4	2-3	1-2	6-7	5-6
RECEIVE			68-80s						80-92s	
RANGE										
VOLTAGE	400	660	420	410	380	400	400	660	400	430
CURRENT	7.0	5.0	7.2	6.4	5.0	7.5	7.0	5.0	6.9	6.9
SEND	4-5	3-4	2-3	6-7	5-6	4-5	3-4	6-7	5-6	4-5
RECEIVE				92-104s				104-116s		
RANGE										
VOLTAGE	360	400	420	400	440	360	400	400	410	360
CURRENT	5.0	7.5	7.5	7.0	7.0	5.0	7.5	7.0	6.6	5.0

FREQUENCIES 1-.3-.1-3

SENDER No. 26721-S | POWER UNIT ID

OPERATOR MAY |

RECEIVER No. 26693 | HOURS RUN

OPERATOR FISHER |

COMMENTS:

I. P. RECEIVER NOTES, JOB NO. 1171, AREA BUCKEYE

LINE 5, HALF N, SR. 1, a = 1200', BEARING N 30°W

SENDER STA. ONW/SE ELECTRODE NO. 4, DATE 5-22-77

HEINRICHS GEOEX

SEND		5-6	6-7	4-5	5-6	6-7	3-4	4-5	5-6	6-7	2-3
RECEIVE		0-12N		12-24N			24-36N				36-48N
MULTIPLIER		1	1	1	1	0.1	1	1	1	0.1	1
PFE		1.5	1.7	1.1	1.5	1.9	1.5	1.7	2.0	2.8	1.5
CUR. (AMPS)		5.6	5.2	5	5.6	5	5	5	6.5	5.5	6.5
POINT NO.											
SEP. (n)		6.9	28	6.9	28	69	6.9	28	69	138	6.9
H. F. MV		68	138	43	69	126	67	81	125	229	56
DRIFT		22	12	25	22	15	23	21	16	12	27
1.0 PFE	K_n/1000	0.8	-1.4	-0.8	-1.6	-2.5	-0.9	-1.5	-2.5	-4.3	-0.9
0.3 PFE	ρ_{CAL}	1.1	1.1	1.0	1.0	1.5	0.9	1.3	1.7	1.8	0.9
0.1 PFE	PFE_c	1.5	1.7	1.1	1.5	1.9	1.5	1.7	2.0	2.8	1.5
3.0 MV	$\rho/2\pi$	56.2	26.2	32.1	14.05	9.345	49.25	14.7	12.0	9.34	53.45
DRIFT	MCF	0.0	0.0	0.0	0.0	0.0	0.0	+0.1	0.0	0.0	0.0
S. P.											
NOISE		0.8	0.8	0.7	0.7	1.2	0.6	1.1	1.4	1.5	0.6
POT RES.		1.5	1.9	0.8	1.5	1.5	1.9	1.3	1.3	2.7	1.9
CULT & CMTS											

I. P. RECEIVER NOTES, JOB No. 1171, AREA BUCKEYE

LINE 5, HALF N, SR 1, a = 1200', BEARING N30°W

SENDER STA. 0 NW/SE = ELECTRODE No. 4, DATE 5-22-77

HEINRICHS GEOEX

SEND	3-4	4-5	5-6	6-7	CAL	1-2	2-3	3-4	4-5	5-6
RECEIVE					1-2 N	4860N				
MULTIPLIER	1	0.1	0.1	0.1	1	1	1	0.1	0.1	0.1
PFE	1.7	1.8	2.2	3.2		1.5	1.9	2.5	2.3	2.6
CUR. (AMPS)	5	5	6	5.5	1	5.5	6.5	5	5	6
POINT No.										
SEP. (n)	28	69	138	241		69	28	69	138	241
H. F. MV	96	97	139	258		102	66	97	95	132
DRIFT	18	19	16	12		15	29	24	24	20
1.0 PFE K_n/1000	-1.9	-3.1	-3.8	-5.2	+0.2	-1.0	-2.0	-3.2	-5.0	-5.9
0.3 PFE ρ_{CAL}	1.1	1.0	2.0	2.4	+0.3	1.1	1.5	2.0	1.6	2.1
0.1 PFE PFE_C	1.7	1.8	2.2	3.2	±0.0	1.5	1.9	2.5	2.3	2.6
3.0 MV $\rho/2\pi$	17.6	7.18	6.16	6.01	102.2	83.0	15.7	7.215	3.51	3.36
DRIFT MCF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0±0.2	+0.1
S. P.										
NOISE	0.8	0.7	1.7	2.1		0.4	1.2	1.7	1.3	1.8
POT RES.	1.9	2.3	1.1	2.3		1.5	1.5	1.7	2.1	1.7
CULT & CMTS										

I. P. RECEIVER NOTES, JOB No. 1171, AREA BUCKEYE

LINE 5, HALF N, SR. 1, a = 1200', BEARING N 30° W

SENDER STA. 0 = ELECTRODE No. 4, DATE 5-22-71

HEINRICHS GEOEX

SEND		6-7	1-2	2-3	3-4	4-5	5-6	1-2	2-3	3-4	4-5
RECEIVE			60-72N					72-84N			
MULTIPLIER		0.1	1	0.1	0.1	0.1	0.1	1	0.1	0.1	0.1
PFE		3.9	1.9	2.1	2.5	2.6 2.8	3.0	2.3	2.5	3.2	2.8
CUR. (AMPS)		5.5	5	6	5	5	6	5.5	6	5	5
POINT NO.											
SEP. (n)		386	28	69	138	241	386	69	138	241	386
H. F. MV		264	131	82	119	112	153	180	118	168	161
DRIFT		15	15	26	21	23	20	13	21	19	17
1.0 PFE	K_n/1000	-6.4	-1.8	-3.6	-4.8	-6.6	-7.1	-3.5	-4.9	-6.3	-7.2
0.3 PFE	P_{CAL}	2.8	1.5	1.8	1.6	2.8	2.0	1.8	1.8	2.4	2.7
0.1 PFE	PFE_C	3.9	1.9	2.1	2.5	2.7	3.0	2.3	2.5	3.2	2.8
3.0 MV	$P/2\pi$	3.85	23.9	7.31	4.40	2.38	2.43	14.7	5.23	3,555	2.13
DRIFT	MCF	0.0	0.0	0.0	0.0	-0.2	0.0	0.0	0.0	0.0	0.0
S. P.											
NOISE		2.5	1.2	1.5	1.3	2.5	1.7	1.5	1.5	2.1	2.4
POT RES.		2.9	1.5	1.3	2.5	0.6	2.7	1.7	2.1	2.3	0.8
CULT & CMTS											

I. P. Receiver Notes, Job No. 1171, Area Buckskin

Line 5, Half NW/SE, Sr. 1, a = 1200', Bearing N 30° W

Sender Sta. 0 = Electrode No. 4, Date 5-22-77

HEINRICHS GEOEX

Send		1-2	2-3	3-4	4-5	3-4	2-3	1-2	5-6	4-5	3-4
Receive		84.96N			24-36S				36-48S		
Multiplier		0.1	0.1	0.1	1	1	0.1	0.1	10	1	1
PFE		2.0	3.0	2.4	1.5	1.9	2.0	2.8	1.7	1.6	1.8
Cur. (amps)		5.5	6	5	5	5	6	5.5	6	5	5
Point No.											
Sep. (n)		1.38	241	386	6.9	28	69	1.38	6.9	28	69
H. F. Mv		135	87	122	99	136	124	224	159	112	157
Drift		15	34	20	15	14	16	13	11	14	11
1.0 PFE	K_n/1000	-1.8	-2.1	-1.6	-0.6	-1.2	-2.4	-4.0	-0.7	-1.4	-2.5
0.3 PFE	ρ_{CAL}	1.4	2.0	2.5	1.1	1.5	1.3	2.2	1.0	1.1	1.5
0.1 PFE	PFE_c	2.0	3.0	2.4	1.6	1.9	2.0	2.8	1.7	1.6	1.8
3.0 MV	$\rho/2\pi$	5.48	2.22	1.62	73.25	24.8	10.99	9.115	141	20.4	11.6
Drift	MCF	0.0±0.3	0.0±0.4	0.0±0.8	+0.2	0.0	0.0	0.0	0.0	0.0	0.0
S. P.											
Noise		1.1	1.7	2.2	0.8	1.2	1.0	1.9	0.7	0.8	1.2
Pot Res.		1.9	2.7	0.4	1.5	1.5	2.1	1.9	2.1	1.7	1.3
Cult & Cmts											

I. P. RECEIVER NOTES, JOB No. 1171, AREA BUCKEYE

LINE 5, HALF 5, SP. 1, a = 1200', BEARING N 30°W

SENDER STA. 0 = ELECTRODE No. 4, DATE 5-22-77

HEINRICHS GEOEX

SEND		2-3	1-2	6-7	6-7	5-6	4-5	3-4	2-3	1-2	6-7
RECEIVE				CAL	48-60s						60-72s
MULTIPLIER		0.1	0.1		10	1	0.1	0.1	0.1	0.1	1
PFE		2.5	3.1		1.5	1.4	1.3	1.2	2.6	3.3	1.5
CUR. (AMPS)		6	5.5		5	6	5	5	6	5	5
POINT NO.											
SEP. (n)		138	241		6.9	28	69	138	241	386	28
H. F. MV		147	285		335	147	92	127	120	241	159
DRIFT		17	11		4.5	9.6	14	9.4	22	14	9.4
1.0 PFE	K_n/1000	-3.9	-5.8		-0.6	-1.3	-2.6	-4.4	-5.1	-6.7	-0.8
0.3 PFE	ρ_{CAL}	2.3	2.7		1.0	1.2	1.0	1.5	2.1	2.7	1.3
0.1 PFE	PFE_c	2.5	3.1		1.5	1.4	1.2	1.2	2.6	3.3	1.5
3.0 MV	$\rho/2\pi$	6.52	6.65		248	32.1	6.82	4.72	5.06	3.19	29.1
DRIFT	MCF	-0.1	0.0		0.0	0.0	-0.3	0.0	0.0±0.3	0.0±0.4	0.0
S. P.											
NOISE		2.0	2.4		0.7	0.9	0.7	1.2	1.8	2.4	1.0
POT RES.					1.7	1.1	1.3	0.0	1.7	1.9	1.1
CULT & CMTS					WINDY						

I. P. RECEIVER NOTES, JOB No. 1171, AREA ROCHESTER

LINE 5, HALF 5, SR. 1, a = 1200', BEARING N 30° W

SENDER STA. 0 = ELECTRODE No. 4, DATE 5-22-77

HEINRICHS GEOEX

SEND	5-6	4-5	3-4	2-3	6-7	5-6	4-5	3-4	6-7	5-6	4-5
RECEIVE					72-84s				84-96s		
MULTIPLIER	0.1	0.1	0.1	0.1	0.1	0.1	0.1	.01	0.1	0.1	.01
PFE	1.7	2.2	2.2	2.6	1.4	1.4	1.6	2.5	1.4	1.6	2.0
CUR. (AMPS)	6	5	5	6	5	6	5	5	5	6	5
POINT NO.											
SEP. (n)	69	138	241	386	69	138	241	386	138	241	386
H. F. MV	67	46	67	68	137	61	51	70	179	80	70
DRIFT	25	48	33	38	10	23	31	35	7.8	20	29
1.0 PFE K_n/1000	-1.6	-3.1	-5.6	-6.8	-1.5	-2.6	-3.5 Ap	-5.2	-2.4	-3.8	-6.6
0.3 PFE ρ_{CAL}	1.6	1.8	2.0	2.2	1.0	1.2	1.0 Ap	2.2 Ap	1.1	1.4	1.4
0.1 PFE PFE_C	1.7	2.3	2.2	2.6	1.4	1.4	1.6 Ap	2.5 Ap	1.2	1.6	2.0
3.0 MV $\rho/2\pi$	5.98	1.71	1.42	Ap 1.08	10.16	2.71	Ap 1.09	Ap 933	Ap 6.64	2.04	.924
DRIFT MCF	0.0	+0.2	0.0	0.0	0.0	0.0	0.0 ±1.5	0.0	-0.4	0.0 ±0.8	0.0 ±0.5
S. P.											
NOISE	1.3	1.5	1.7	1.9	0.7	0.9	STORM BUILDING				
POT RES.	0.8	1.7	1.1	1.5	1.5	1.1	0.7	1.9	0.8	1.3	1.7
CULT & CMTS							1.9	1.3	0.8	0.6	0.6

I. P. SENDER NOTES

JOB No. 1171 AREA BUCKEYE

LINE 2, HALF N, SP. 1, DATE MAY 22, '77

HEINRICHS GEOEX

SEND	5-6	6-7	4-5	5-6	6-7	3-4	4-5	5-6	6-7	2-3
RECEIVE	0-12N		12-24N			24-36N				36-48N
RANGE		420								
VOLTAGE	460	430	410	450	410					
CURRENT	5.6	5.2	5.0	5.6	5.0					
SEND	3-4	4-5								
RECEIVE										
RANGE										
VOLTAGE										
CURRENT										

FREQUENCIES 1-.3-.1-3

SENDER No. 26725 POWER UNIT ID

OPERATOR MAY

RECEIVER No. 20693 HOURS RUN

OPERATOR FISHER

COMMENTS: 1-7 DEPTH WOULD HOLD ONLY 2 AMPS .1 HZ. FOR 30 SECONDS OR SO. IT WOULD SURGE FIRST ON CURRENT, TREMENDOUSLY, THEN VOLTAGE, THEN DEFLATION, THEN IT WOULD CUT-OUT. 1,000.5 WAS THE MODE USED. THE PITS DID SEEM TO GET BETTER AS IT WOULD NOT CUT-OUT SO VIOLENTLY WITH MORE USAGE. POSSIBLY MORE WATER OR PITS AT ELECTRODE STA. WOULD HELP.

I. P. SENDER NOTES

JOB No. 1171 AREA BUCKEYE

LINE 2, HALF N, SP. 1, DATE MAY 23, '77

HEINRICHS GEOEX

SEND	3-4	4-5	5-6	6-7	2-3	3-4	4-5	5-6	6-7	4-A-b
RECEIVE	24-36N				48-60N					
RANGE										
VOLTAGE	290	400	500	440	420	300	400	460	440	100
CURRENT	5.0	5.0	6.5	5.5	6.5	5.0	5.0	6.0	5.5	1.0
SEND	1-2	2-3	3-4	4-5	5-6	6-7	1-2	2-3	3-4	4-5
RECEIVE	60-72N						72-84N			
RANGE										
VOLTAGE	510	420	300	400	460	440	460	400	300	400
CURRENT	5.5	6.5	5.0	5.0	6.0	5.5	5.0	6.0	5.0	5.0

FREQUENCIES 1-.3-.1-3

SENDER No. 2672-5 POWER UNIT ID

OPERATOR MAY

RECEIVER No. 20693 HOURS RUN

OPERATOR FISHER

COMMENTS:

I. P. SENDER NOTES

JOB No. 1171 AREA BUCKEYE

LINE 2, HALF N, SP. 1, DATE MAY-23-77

HEINRICHS GEOEX

									S HALF	
SEND	5-6	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5	3-4
RECEIVE	72-84N	84-96N				96-108N			24-36S	
RANGE										
VOLTAGE	460	520	400	290	390	520	400	290	390	280
CURRENT	6.0	5.5	6.0	5.0	5.0	5.5	6.0	5.0	5.0	5.0
SEND	2-3	1-2	5-6	4-5	3-4	2-3	1-2	6-7	5-6	4-5
RECEIVE			36-48S					48-60S		
RANGE										
VOLTAGE	420	530	450	380	280	420	540	480	440	380
CURRENT	6.0	5.5	6.0	5.0	5.0	6.0	5.5	5.0	6.0	5.0

FREQUENCIES 1-.3-.1-3

SENDER No. 26721-5 POWER UNIT ID

OPERATOR MAY

RECEIVER No. 20693 HOURS RUN

OPERATOR FISHER

COMMENTS:

I. P. SENDER NOTES

JOB No. 1171 AREA BUCKEYE

LINE 2, HALF 5, SP. 1, DATE MAY 23, '77

HEINRICHS GEOEX

SEND	3-4	2-3	1-2	6-7	5-6	4-5	3-4	2-3	6-7	5-6
RECEIVE	48-60s			60-72s					72-84s	
RANGE										
VOLTAGE	280	440	500	400	440	380	280	460	400	440
CURRENT	5.0	6.0	5.0	5.0	6.0	5.0	5.0	6.0	5.0	6.0
SEND	4-5	3-4	6-7	5-6	4-5					
RECEIVE			84-96s							
RANGE										
VOLTAGE	380	280	400	440	370					
CURRENT	5.0	5.0	5.0	6.0	5.0					

FREQUENCIES 1-.3-.1-3

SENDER No. 26721-5 POWER UNIT ID

OPERATOR MAY

RECEIVER No. 20693 HOURS RUN

OPERATOR FISHER

COMMENTS:

I. P. RECEIVER NOTES, JOB No. 1171, AREA BUCKEYE

LINE 6, HALF NW, SR. 1, a = 1200', BEARING N 30° W

SENDER STA. 0 = ELECTRODE No. 4, DATE 5-24-77

HEINRICHS GEOEX

SEND		5-6	6-7	4-5	5-6	6-7	3-4	4-5	5-6	6-7	2-3
RECEIVE		0-12N		12-24N			24-36N				36-48N
MULTIPLIER		1	1	1	1	0.1	1	1	0.1	0.1	1
PFE		1.4	1.7	1.0	1.4	1.9	1.3	1.2	1.8	2.2	1.4
CUR. (AMPS)		6	5	5	6	5	5	5	6	5	5.5
POINT NO.											
SEP. (n)		6.9	28	6.9	28	69	6.9	28	69	138	6.9
H. F. MV		68	114	54	81	129	57	61	93	152	57
DRIFT		21	15	19	17	15	23	20	19	14	25
1.0 PFE	K_n/1000	-0.7	-1.3	-0.5	-1.4	-2.0	-0.8	-1.4	-2.2	-3.0	-0.7
0.3 PFE	P_{CAL}	1.0	1.2	0.8	1.2	1.4	1.0	1.0	1.2	1.5	1.0
0.1 PFE	PFE_C	1.4	1.7	1.1	1.4	1.9	1.3	1.2	1.8	2.2	1.4
3.0 MV	$P/2\pi$	60.0	20.7	39.75	17.7	9.54	41.9	11.1	8.22	5.62	46.35
DRIFT	MCF	0.0	0.0	+0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S. P.											
NOISE		0.7	0.9	0.5	0.9	1.1	0.7	0.7	0.9	1.2	0.7
POT RES.		1.5	1.7	1.1	1.1	1.7	1.3	1.1	1.9	2.1	1.5
CULT & CMTS							ROAD	20N			

I. P. RECEIVER NOTES, JOB No. 1171, AREA BUCKEYE

LINE 6, HALF NW, SR 1, a = 1200', BEARING N30°W

SENDER STA. 0 = ELECTRODE No. 4, DATE 5-25-77

HEINRICHS GEOEX

SEND		3-4	4-5	5-6	6-7	CAL	1-2	2-3	3-4	4-5	5-6
RECEIVE						1-2	48-60N				
MULTIPLIER		1	0.1	0.1	0.1	1	1	1	1	0.1	0.1
P.F.E		1.6	1.5	2.2	2.3		1.4	1.7	2.1	2.1	2.5
CUR. (AMPS)		5.5	5	6.5	5		5	5.5	5.5	5	6
POINT NO.											
SEP. (n)		28	69	138	241		6.9	28	69	138	241
H. F. MV		94	96	146	234		92	105	151	155	229
DRIFT		17	16	15	9.8		15	16	14	14	11
1.0 PFE	K_n/1000	-1.4	-2.2	-3.3	-4.2	+0.2	-0.5	-1.5	-2.3	-3.3	-4.3
0.3 PFE	ρ_{CAL}	1.1	1.4	1.8	1.9	+0.3	1.2	1.2	1.5	1.5	2.3
0.1 PFE	PFE_c	1.6	1.5	2.1	2.2	0.0	1.5	1.7	2.1	2.1	2.5
3.0 MV	$\rho/2\pi$	18.8	7.07	7.00	4955	102.0	68.1	21.0	12.3	5.72	5.82
DRIFT	MCF	0.0	0.0	-0.2	-0.2	0.0	+0.2	0.0	0.0	+0.1	0.0
S. P.											
NOISE		0.8	1.1	1.5	1.6		0.9	0.9	1.2	1.2	2.0
POT RES.		1.7	0.8	1.5	1.5		1.1	1.7	1.9	1.9	1.1
CULT & CMTS											

I. P. RECEIVER NOTES, JOB No. 1171, AREA BUCKEYE

LINE 6, HALF NW, SR 1, a = 1200', BEARING N 30° W

SENDER STA. 0 = ELECTRODE No. 4, DATE 5-25-77

HEINRICHS GEOEX

SEND	6-7	1-2	2-3	3-4	4-5	5-6	1-2	2-3	3-4	4-5
RECEIVE		60-72N					72-84N			
MULTIPLIER	0.1	1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	.01
P.F.E	2.9	1.5	1.9	1.9	2.0	2.4	1.3	1.2	1.5	1.2 A
CUR. (AMPS)	5	5	5.5	5.5	5	6	5	5.5	5.5	5.0
POINT NO.										
SEP. (n)	386	28	69	138	241	386	69	138	241	386
H. F. MV	356	104	121	169	170	256	52	46	57	49
DRIFT	8.1	14	16	11	12	9.4	25	25	26	24
1.0 PFE K_n/1000	-5.0	-1.3	-2.4	-3.3	-4.3	-5.3	+3.0	+4.2	+6.0	+7.5
0.3 PFE ρ_{CAL}	2.6	1.0	1.4	1.6	1.5	1.9	0.6	0.4	0.3	0.6
0.1 PFE PFE_C	3.0	1.5	1.9	1.9	2.0	2.4	1.4	1.2	1.5	1.3
3.0 MV $\rho/2\pi$	4.71	18.9	9.81	6.86	3.59	4.055	3.82	1.97	1.32	Ap .654
DRIFT MCF	+0.2	0.0	0.0	0.0	0.0	0.0	+0.2	0.0 ±0.6	0.0 ±0.3	-0.2 ±1.0
S. P.										
NOISE	2.3	0.7	1.1	1.3	1.2	1.6	0.3	0.1	0.0	0.3
POT RES.	1.3	1.7	1.7	1.3	1.7	1.7	2.1	2.3	3.1	2.3
CULT & CMTS					RR	GBN				

I. P. RECEIVER NOTES, JOB No. 1171, AREA RICHETE

LINE 6, HALF NW/SE, SP. 1, a = 1200', BEARING N 30°W

SENDER STA. 0 = ELECTRODE No. 4, DATE 5-25-77

HEINRICHS GEOEX

SEND	1-2	2-3	3-4	4-5	3-4	2-3	1-2	5-6	4-5	3-4
RECEIVE	84-96N			24-36S				36-48S		
MULTIPLIER	0.1	0.1	0.1	1	1	1	0.1	10	1	1
P.F.E	1.5	1.8	2.4	1.3	1.6	1.9	2.1	0.9	1.3	1.5
CUR. (AMPS)	5	5.5	5.5	5	5.5	5.5	5	6	5	5
POINT NO.										
SEP. (n)	138	241	386	6.9	28	69	138	6.9	28	69
H. F. MV	128	140	179	84	114	132	154	186	181	210
DRIFT	12	13	15	15	14	14	14	6.6	7.2	7.2
1.0 PFE K_n/1000	0.0	-0.5	-0.4	-0.5	-1.4	-1.9	-3.1	-0.7	-0.9	-1.7
0.3 PFE P_{CAL}	1.0	1.3	2.8	1.2	1.2	1.4	1.5	0.7	1.0	1.3
0.1 PFE PFE_C	1.5	1.8	2.6	1.3	1.6	1.9	2.1	0.9	1.3	1.5
3.0 MV $P/2\pi$	4.73	3.26	2.595	62.2	22.75	10.7	5.70	121	32.9	15.5
DRIFT MCF	0.0±0.2	0.0	+0.4	0.0	0.0	0.0	0.0	-0.1	0.0	0.0
S. P.										
NOISE	0.7	1.0	1.9	0.9	0.9	1.1	1.7	0.4	0.7	1.0
POT RES.	1.7	1.7	1.1	0.8	1.5	1.5	1.9	1.1	1.3	1.1
CULT & CMTS				ROAD	125					

I. P. RECEIVER NOTES, JOB NO. 1171, AREA BUCKEYE

LINE 6, HALF SE, SR. 1, a = 1200', BEARING N.30° W

SENDER STA. 0 = ELECTRODE NO. 4, DATE 5-26-77

HEINRICHS GEOEX

SEND		2-3	1-2	CAL	6-7	5-6	4-5	3-4	2-3	1-2	6-7
RECEIVE				6-7	48-60s						60-72s
MULTIPLIER		0.1	0.1	1	1	1	1	0.1	0.1	0.1	1
P.F.E		2.1	2.0		1.1	1.3	1.4	1.8	2.1	2.1	1.3
CUR. (AMPS)		5.5	5		5	6	5	5	5.5	5	5
POINT NO.											
SEP. (n)		138	241		6.9	28	69	138	241	386	28
H. F. MV		224	245		129	183	188	208	215	226	204
DRIFT		9.4	8.2		8.5	7.1	7.4	8.7	9.8	9.3	6.4
1.0 PFE	K_n/1000	-2.5	-3.6		-0.4	-0.9	-1.4	-2.4	-3.2	-4.7	-0.8
0.3 PFE	ρ_{CAL}	1.6	1.8		0.7	1.3	1.1	1.4	1.5	1.7	1.0
0.1 PFE	PFE_C	2.1	2.0		1.1	1.3	1.4	1.8	2.1	2.0	1.3
3.0 MV	$\rho/2\pi$	9.12	5.19		95.7	40.0	13.9	7.67	5.00	2.99	37.1
DRIFT	MCF	0.0	0.0		0.0	0.0	0.0	0.0	0.0	-0.2	0.0
S. P.											
NOISE		1.3	1.5		0.4	1.0	0.8	1.1	1.2	1.4	0.7
POT RES.		1.7	1.1		1.5	0.6	1.3	1.5	1.9	1.5	1.3
CULT & CMTS											

I. P. RECEIVER NOTES, JOB NO. 1171, AREA BUCKEYE

LINE 6, HALF SE, SR. 1, a = 1200', BEARING N 30° W

SENDER STA. 0 = ELECTRODE NO. 4, DATE 5-26-77

HEINRICHS GEOEX

SEND		5-6	4-5	3-4	2-3	6-7	5-6	4-5	3-4	6-7	5-6	4-5
RECEIVE						72-84s				84-96s		
MULTIPLIER		1	0.1	0.1	0.1	1	0.1	0.1	0.1	0.1	0.1	0.1
P.F.E		1.6	1.5	2.0	2.4	1.4	1.9	1.5	2.4	1.4	1.9	2.2
CUR. (AMPS)		6	5	5	5.5	5	6	5	5	5	5.5	5
POINT NO.												
SEP. (n)		69	138	241	386	69	138	241	386	138	241	386
H. F. MV		230	213	280	231	219	227	200	214	152	168	142
DRIFT		7.0	7.1	8.7	10	6.4	8.4	7.5	11	9.2	11	16
1.0 PFE	K_n/1000	-1.2	-1.8	-2.8	-3.7	-1.5	-1.7	-2.8	-3.6	-2.0	-2.0	-2.9
0.3 PFE	P_{CAL}	1.5	1.2	1.4	2.0	1.0	1.5	1.2	2.2	1.1	1.5	2.0
0.1 PFE	PFE_C	1.6	1.5	2.0	2.4	1.4	1.9	1.5	2.4	1.4	1.9	2.2
3.0 MV	$P/2\pi$	20.4	7.86	4.86.9	3.36	16.2	10.08	4.235	2.83	5.63	3.90	1.87
DRIFT	MCF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S. P.												
NOISE		1.2	0.9	1.1	1.7	0.7	1.2	0.9	1.9	0.8	1.2	1.7
POT RES.		0.8	1.3	1.9	1.5	1.5	1.5	1.3	1.1	1.3	1.5	1.1
CULT & CMTS												

I. P. SENDER NOTES

JOB No. 1171 AREA BUCKEYE

LINE 6, HALF N, SP. 1, DATE MAY 24, '77

PAGE 1

HEINRICHS GEOEX

MAY 25, '77

SEND	5-6	6-7	4-5	5-6	6-7	3-4	4-5	5-6	6-7	2-3
RECEIVE	0-12N		12-24N			24-36N				36-48N
RANGE										3802
VOLTAGE	400	260	360	400	260	240	360	400	260	280
CURRENT	6.0	5.0	5.0	6.0	5.0	5.0	5.0	6.0	5.0	5.5
SEND	3-4	4-5	5-6	6-7	CAL 1-2	1-2	2-3	3-4	4-5	5-6
RECEIVE						48-60N				
RANGE										
VOLTAGE	360	350	420	260	60	240	380	360	350	400
CURRENT	5.5	5.0	6.5	5.0	1.0	5.0	5.5	5.5	5.0	6.0

FREQUENCIES 1-.1-.3-3

SENDER No. 26721-5 POWER UNIT ID

OPERATOR MAT McGUIRE

RECEIVER No. 20693 HOURS RUN

OPERATOR FISHER

COMMENTS:

T. P. SENDER NOTES

JOB No. 1171 AREA BUCKEYE

LINE 6, HALF N, SP. 1, DATE MAY 24-77

HEINRICHS GEOEX

SEND	6-7	1-2	2-3	3-4	4-5	5-6	1-2	2-3	3-4	4-5
RECEIVE	48-60N	60-72N					72-84N			
RANGE										
VOLTAGE	260	250	380	360	350	380	250	380	360	350
CURRENT	5.0	5.0	5.5	5.5	6.0	6.0	5.0	5.5	5.5	5.0
SEND	1-2	2-3	3-4							
RECEIVE	84-96N									
RANGE										
VOLTAGE	250	380	360							
CURRENT	5.0	5.5	5.5							

FREQUENCIES

SENDER No. 26721-S — POWER UNIT ID

OPERATOR MAYNARD

RECEIVER No. 20693 — HOURS RUN

OPERATOR FISHER

COMMENTS:

T. P. SENDER NOTES

JOB No. 1171 AREA BUCKEYE

LINE 6, HALF S, SP. 1, DATE MAY 25,

HEINRICHS GEOEX

SEND	4-5	3-4	2-3	1-2	5-6	4-5	3-4	2-3	1-2	6-7
RECEIVE	24-36S				36-48S					48-60S
RANGE										
VOLTAGE	340	360	400	250	390	350	330	370	260	270
CURRENT	5.0	5.5	5.5	5.0	6.0	5.0	5.0	5.5	5.0	5.0
SEND	5-6	4-5	3-4	2-3	1-2	6-7	5-6	4-5	3-4	2-3
RECEIVE						60-72S				
RANGE										
VOLTAGE	390	350	320	370	250	260	380	340	320	370
CURRENT	6.0	5.0	5.0	5.5	5.0	5.0	6.0	5.0	5.0	5.5

FREQUENCIES 1-, 3-3-.1

SENDER No. 26721-5 | POWER UNIT ID

OPERATOR MAY + J.C. |

RECEIVER No. 20693 | HOURS RUN

OPERATOR FISHER |

COMMENTS:

I. P. SENDER NOTES

JOB No. 1171 AREA BUCKEYE

LINE 6, HALF S, SP. 1, DATE 5-25-77

HEINRICHS GEOEX

SEND	6-7	5-6	4-5	3-4	6-7	5-6	4-5			
RECEIVE	72-84S				84-96S					
RANGE										
VOLTAGE	260	380	340	320	260	340	330			
CURRENT	5.0	6.0	5.0	5.0	5.0	5.5	5.0			
SEND										
RECEIVE										
RANGE										
VOLTAGE										
CURRENT										

FREQUENCIES 1-.3-.1-3

SENDER No. 26721-S | POWER UNIT ID

OPERATOR MAY + J. C.

RECEIVER No. 20693 | HOURS RUN

OPERATOR FISHER

COMMENTS:

GEOEX
Cable: GEOEX
APR 29 1977
BOX 5964 TUCSON, ARIZONA 85703
PHONE: (AREA 602) 623-0578

HEINRICHS GEOEXPLORATION COMPANY

P.O. BOX 5964, TUCSON, ARIZONA 85703, 806 WEST GRANT ROAD, PHONE: (602) 623-0578

April 27, 1977

Mr. Jack Langton, Manager
The Superior Oil Company
Minerals Division
P.O. Box 12487
Tucson, AZ 85732

Re: Proposed I.P. Survey
Gila Bend - Buckeye,
Arizona Vicinity
GEOEX #1171

Dear Jack:

This will confirm Bill Josey's phone conversation today with our Chris Ludwig.

Starting on or about Monday, 2 May 1977, GEOEX will furnish a four man crew, two vehicles and customary I.P. equipment, and will run four collinear 2000 foot dipole-dipole lines consisting of one seven sending electrode spread for each line, and giving approximately 20,000 lineal feet of data per line with a maximum interpretable depth objective of 3000' deep.

Charges for this work, except for standby at your request or owing to access permission delays after mobilization on the job, will be at the rate of $45.00 per crew field work hour including customary supervision, plus expenses. Expenses will include vehicles at $17.50 per vehicle per day and $0.21 per mile per vehicle, living expenses and other directly incidental job expenses such as expendable supplies, communications, etc., will be billed at 115% of GEOEX cost.

Overtime field work will be charged at the same rate as regular time, i.e. $45.00 per crew field work hour. Mobilization and demobilization expenses, but no demobilization and mobilization fees will be charged. ? mileage

Production estimate for the field work is roughly 2 1/2 work days per line, or $400.00 per lineal mile of plotted data, or about $6,000 total. Standby time would be charged at $25.00 per crew hour. Down time and days off or holidays, will be made up, or not charged.

Charges for any program extensions with a few days' notice and minor interruption from the original assignment would be at the same rates with the same complement of crew members and equipment.

Final data compilation and drafting will be charged at $12.50 per man hour and interpretation and report at $20.00 per man hour, plus directly incidental expenses such as reproductions, supplies, etc., at GEOEX cost plus 115%.

If agreeable, for convenience, your approval may be indicated by executing the enclosed copy of this letter as provided below and returning it to us.

Faithfully,

Heinrichs GEOEXploration Co.

Walter E. Heinrichs, Jr.
President & General Manager

WEH:mt
Enclosure: Extra CC

Accepted by: J. M. Langton

Title: Manager, Minerals Division

Date: 4/28/77