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INDUCED POLARIZATION SURVEY
GLOVE MINE PEDIMENT AREA
SANTA CRUZ COUNTY, ARIZONA

FOR

CF & I STEEL CORPORATION

MARCH 1972

by

Heinrichs Geoexploration Company

P.O. Box 5964, Tucson, Arizona 85703

Tel: 623-0578

GEOEX Job #690
CF & I P.O. #13956

TABLE OF CONTENTS

INTRODUCTION

At the request of Mr. James Brooks of CF & I Steel Corporation, Heinrichs GEOEXploration Company completed a reconnaissance induced polarization (I. P.) survey over portions of the pediment area northwest of the Glove Mine, Santa Cruz County, Arizona. This field work was done in the interim February 22 to March 6, 1972.

The coverage consists of four lines all oriented N35°E and centered roughly on the N55°W projection of the Glove Mine mineralization trend. The lines are separated one mile apart and run with 1000 foot dipoles which likely gave resolvable penetration in the zone from about 300 to 1200, or so, feet below surface. The total surface coverage amounts to 10.8 line miles of which 6.7 line miles are "subsurface" plotted data.

The dual frequency I. P. technique was used with sending frequencies of 0.1 and 1.0 hz. The collinear dipole-dipole array was the electrode configuration utilized with the "n" interval ranging from 1 through 6. A GEOEX Mark 4 I. P. system was employed to obtain the data.

The data are presented on "pseudo-sectional" data plot sheets, one for each line, with the I. P. and resistivity information in "sectional" form and the self potential (S. P.) in profile form. A plan overlay showing the line locations is also included.

GEOEX personnel involved were W. Freeman, Geophysicist-Crew Chief with overall supervision, report and interpretation by C. Ludwig, Senior Geophysicist.

CONCLUSIONS, RECOMMENDATIONS AND INTERPRETATION

No anomalous I. P. effects suggestive of significant sulfide concentrations were noted on the survey. Anomalism was encountered, particularly on Lines 2 and 3, but is obviously the effect of a well grounded metal water pipe line which runs through the area. Otherwise, the I. P. (and resistivity) values are within the typical background response range for the geologic materials involved, i.e., Tertiary and Quaternary volcanics and alluvial gravels, Cretaceous volcanics and sediments and Paleozoic limestones. The S. P. effects also show only minor background variations along the four lines.

Deep alluvium (or Tertiary volcanics) as implied by very low resistivity material, likely thicker than 1000 feet, is noted SW of 5SW on Line 1, SW of 10 SW on Line 2, SW of 45NE on Line 3 and probably on all of Line 4. Northeast of this very low resistivity material on Lines 1, 2 and 3, is intermediate resistivity material, outcropping or very shallow alluvial covered (less than 300 feet) likely Cretaceous volcanics and sediments.

Line 1 shows high resistivity material NE of 45NE correlating very well with the exposed block of Paleozoic limestones in that area.

Based on the lack of encouraging I. P. results, no further electrical work appears justified at this time in the immediate vicinity of the existing coverage. However, the general Glove Mine area is considered to be a prime prospecting district with good potential for large scale economic sulfide mineralization and additional geophysical reconnaissance is certainly warranted elsewhere in the district.

Respectfully submitted,
Heinrichs GEOExploration Company

Chris S. Ludwig

Chris S. Ludwig
Senior Geophysicist

INDUCED POLARIZATION LOCATION AND INTERPRETATION PLAN

of

GLOVE MINE PEDIMENT
SANTA CRUZ COUNTY, ARIZONA

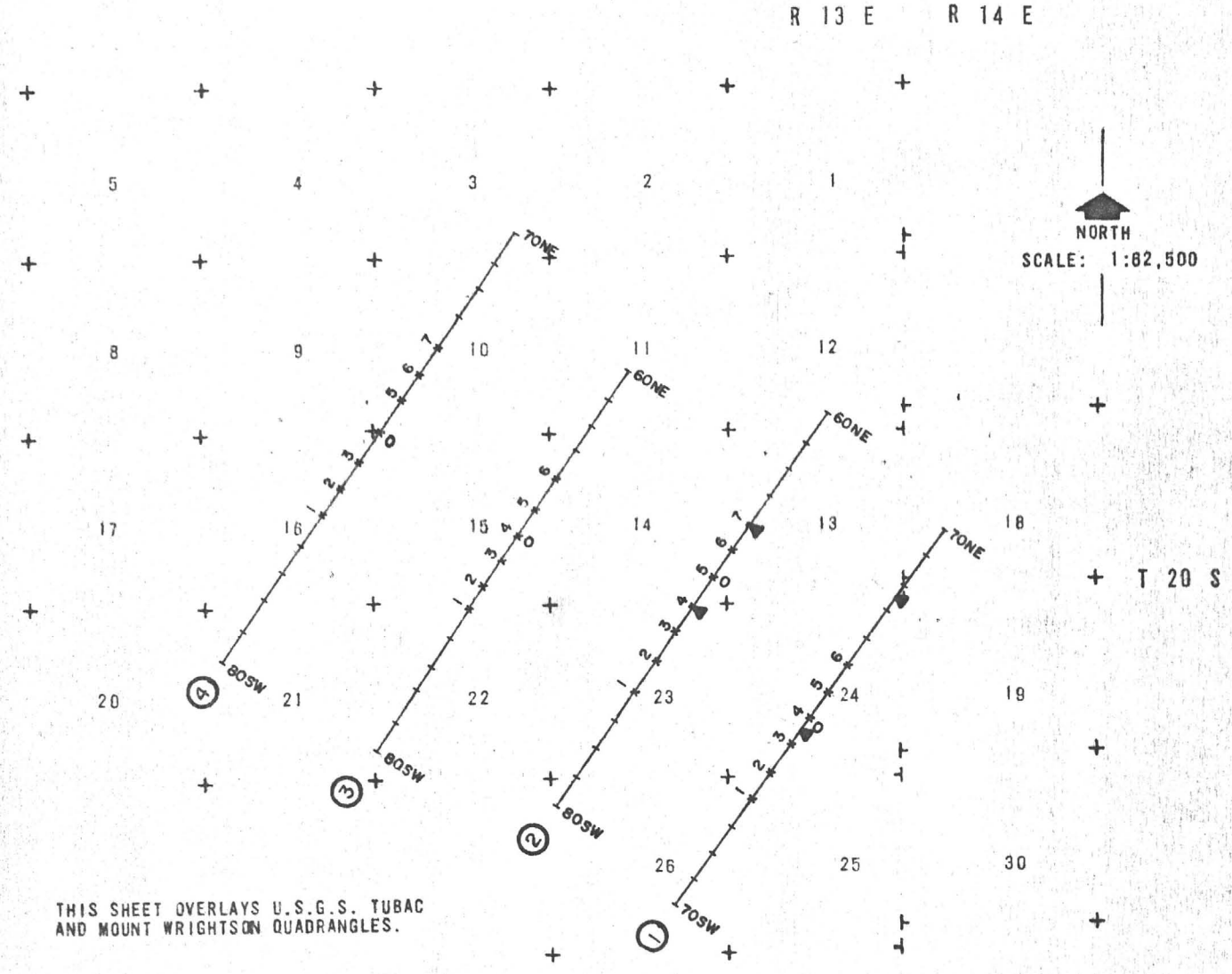
for

C F & I STEEL CORPORATION

by

HEINRICHS GEOEXPLORATION COMPANY
Job number 690-72 March 1972

▲ INDICATES INTERFACE



THIS SHEET OVERLAYS U.S.G.S. TUBAC AND MOUNT WRIGHTSON QUADRANGLES.

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GEOPHYSICAL ENGINEERS

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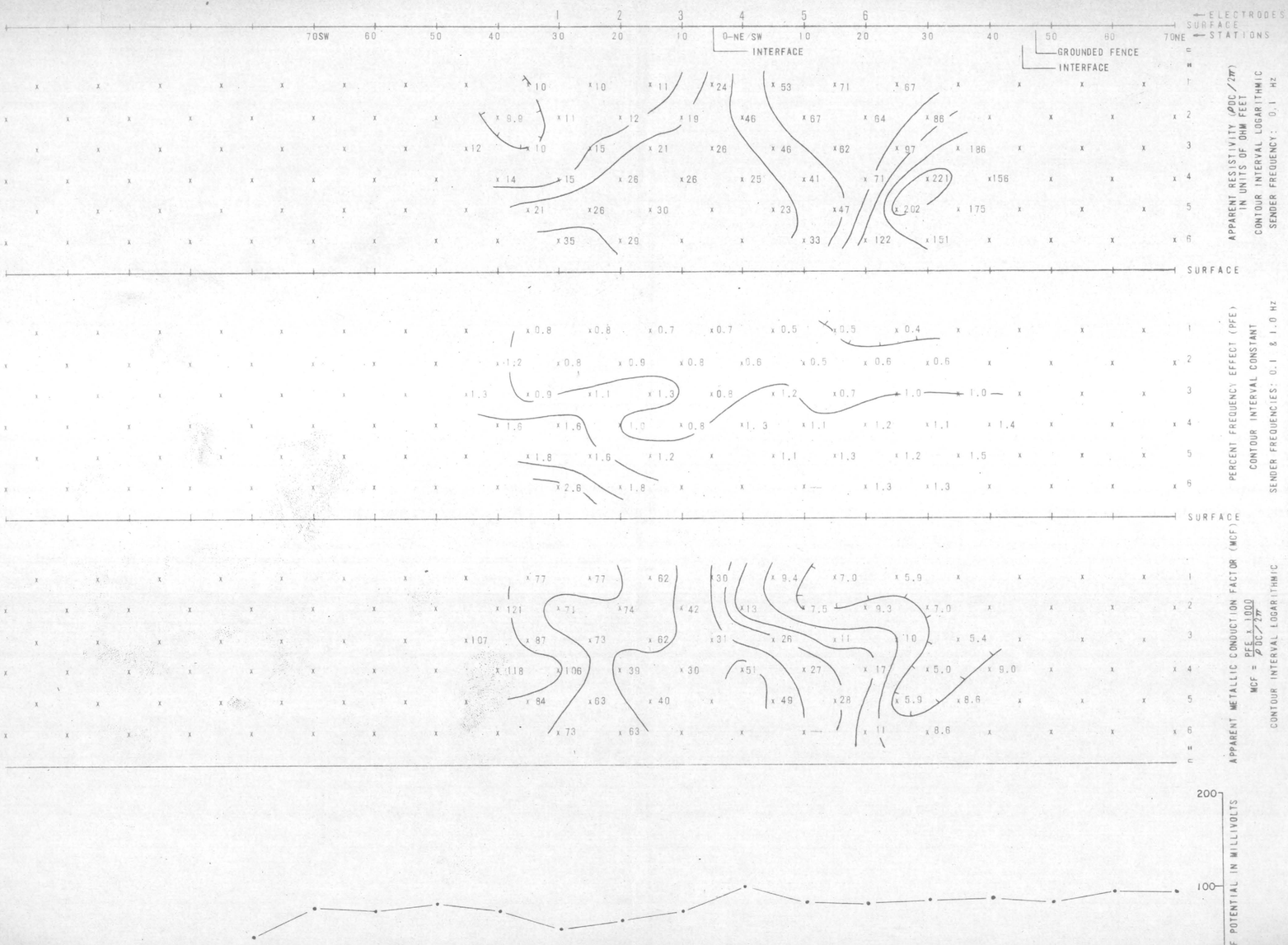


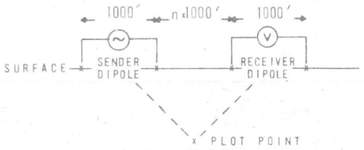
LINE NO.
1
SPREAD(S)
1

INDUCED POLARIZATION TRAVERSE SECTIONAL DATA SHEET for C F & I STEEL CORPORATION

RELATIVE ANOMALY STRENGTH

VERY WEAK — WEAK — MODERATE — STRONG

DIPOLE DIPOLE ELECTRODE ARRAY



AREA
GLOVE MINE PEDIMENT
LOOKING
N 55° W
DATE
FEB 1972

File

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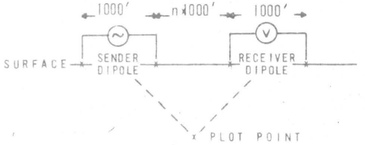
698-72

LINE NO.
2
SPREAD(S)
1

INDUCED POLARIZATION TRAVERSE SECTIONAL DATA SHEET for C F & I STEEL CORPORATION

RELATIVE ANOMALY STRENGTH

DIPOLE DIPOLE ELECTRODE ARRAY



AREA
GLOVE MINE PEDIMENT
LOOKING
N 55° W
DATE
MAR 1972

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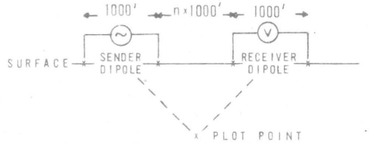
890-72

LINE NO.
3
SPREAD(S)
1

INDUCED POLARIZATION TRAVERSE SECTIONAL DATA SHEET for C F & I STEEL CORPORATION

RELATIVE ANOMALY STRENGTH

DIPOLE DIPOLE ELECTRODE ARRAY



AREA
GLOVE MINE PEDIMENT
LOOKING
N 55° W
DATE
FEB 1972

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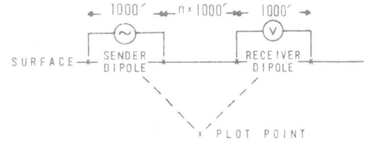
LINE NO.
4
SPREAD(S)
I

INDUCED POLARIZATION TRAVERSE SECTIONAL DATA SHEET for C F & I STEEL CORPORATION

RELATIVE ANOMALY STRENGTH

VERY WEAK — WEAK — MODERATE — STRONG

DIPOLE DIPOLE ELECTRODE ARRAY



AREA
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LOOKING
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DATE
FEB 1972

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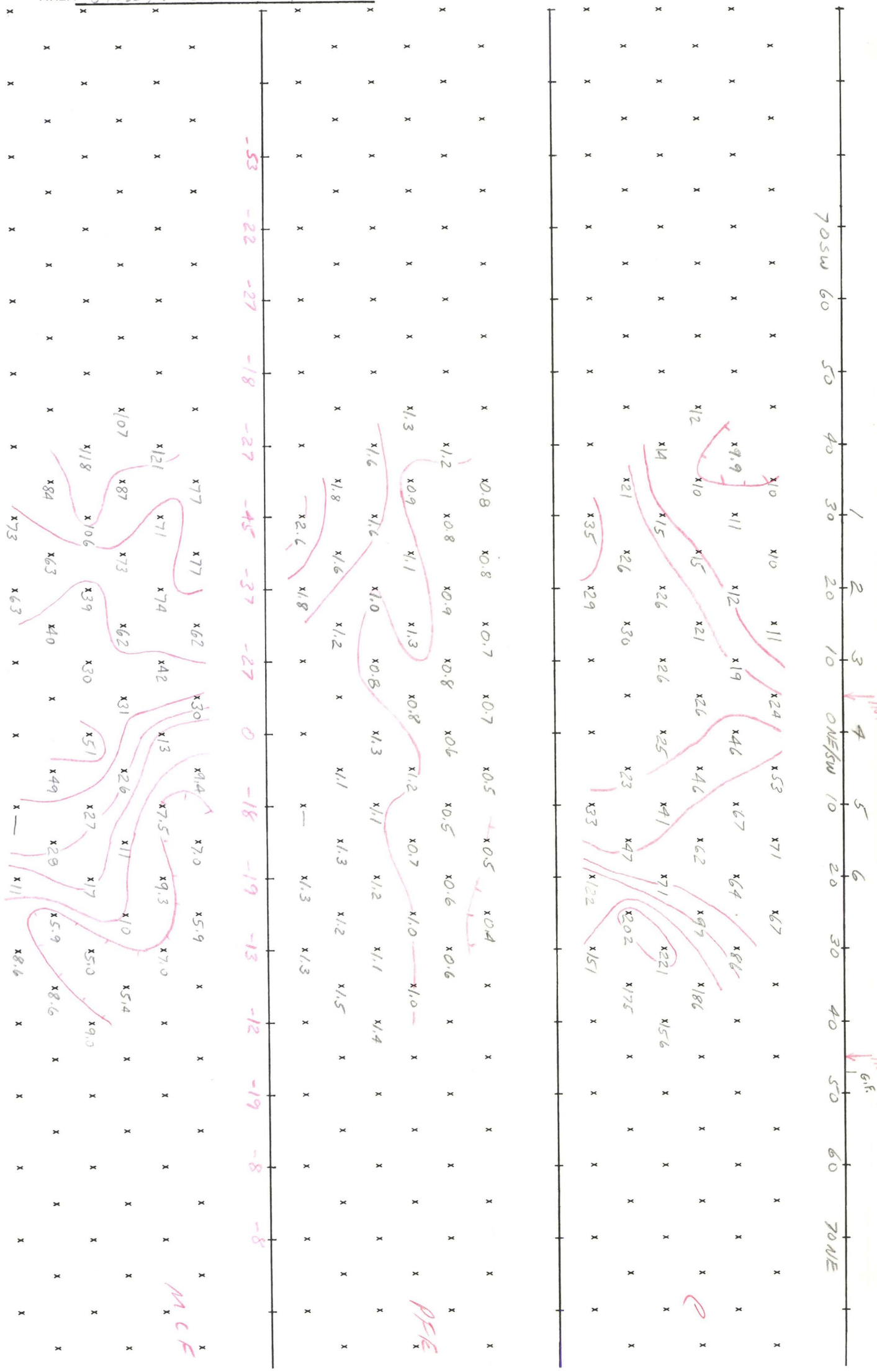
JOB# 690 LINE# 1 SP 1 a = 1000' LOOKING N55°W

CLIENT CF&I Steel Corporation DATE February 1972 FREQUENCIES 0.1 & 1.0 Hz

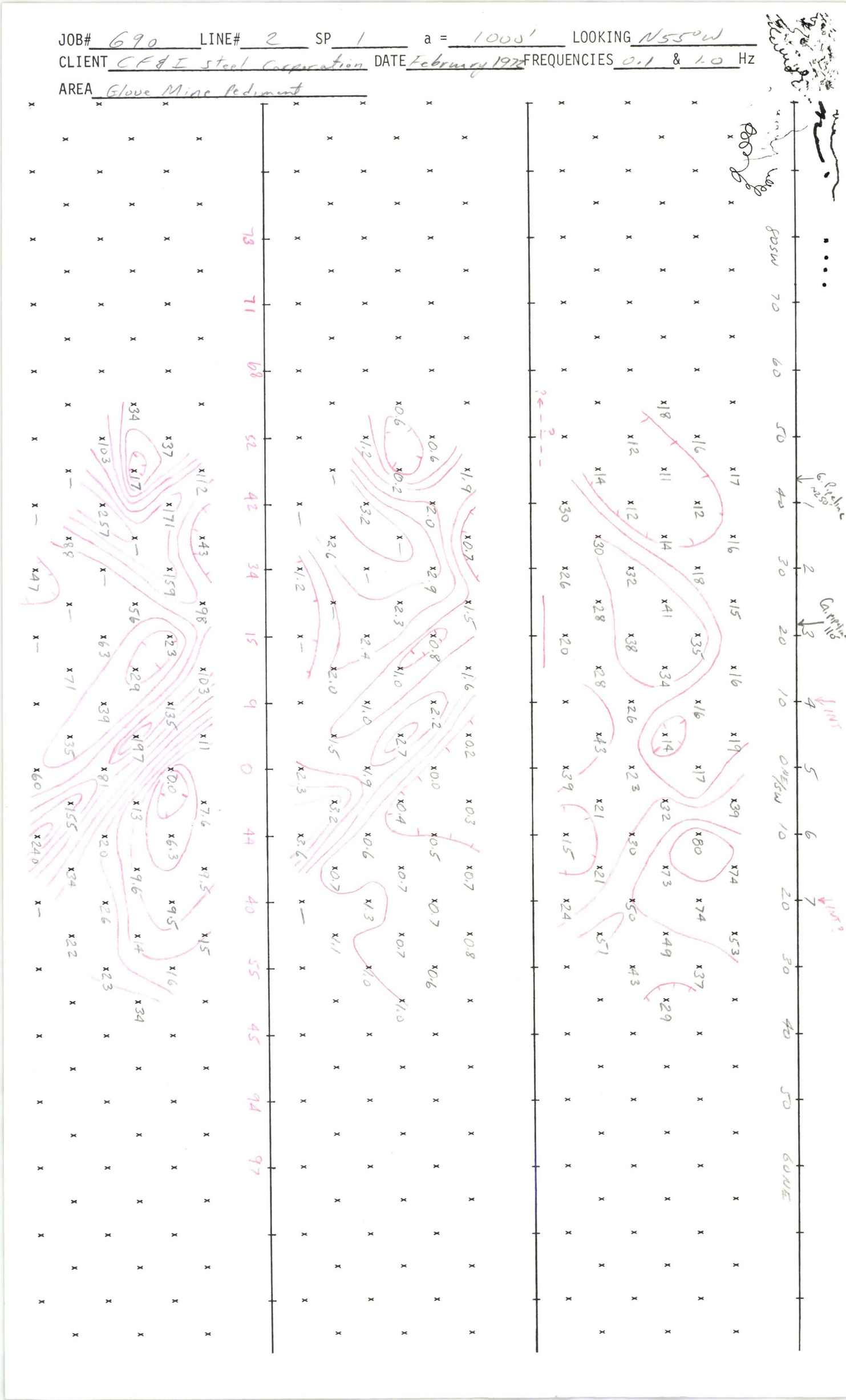
AREA Glove Mine Pediment



JOB# 690 LINE# 2 SP 1 a = 1000' LOOKING N55°W

CLIENT CF&I Steel Corporation DATE February 1972 FREQUENCIES 0.1 & 1.0 Hz

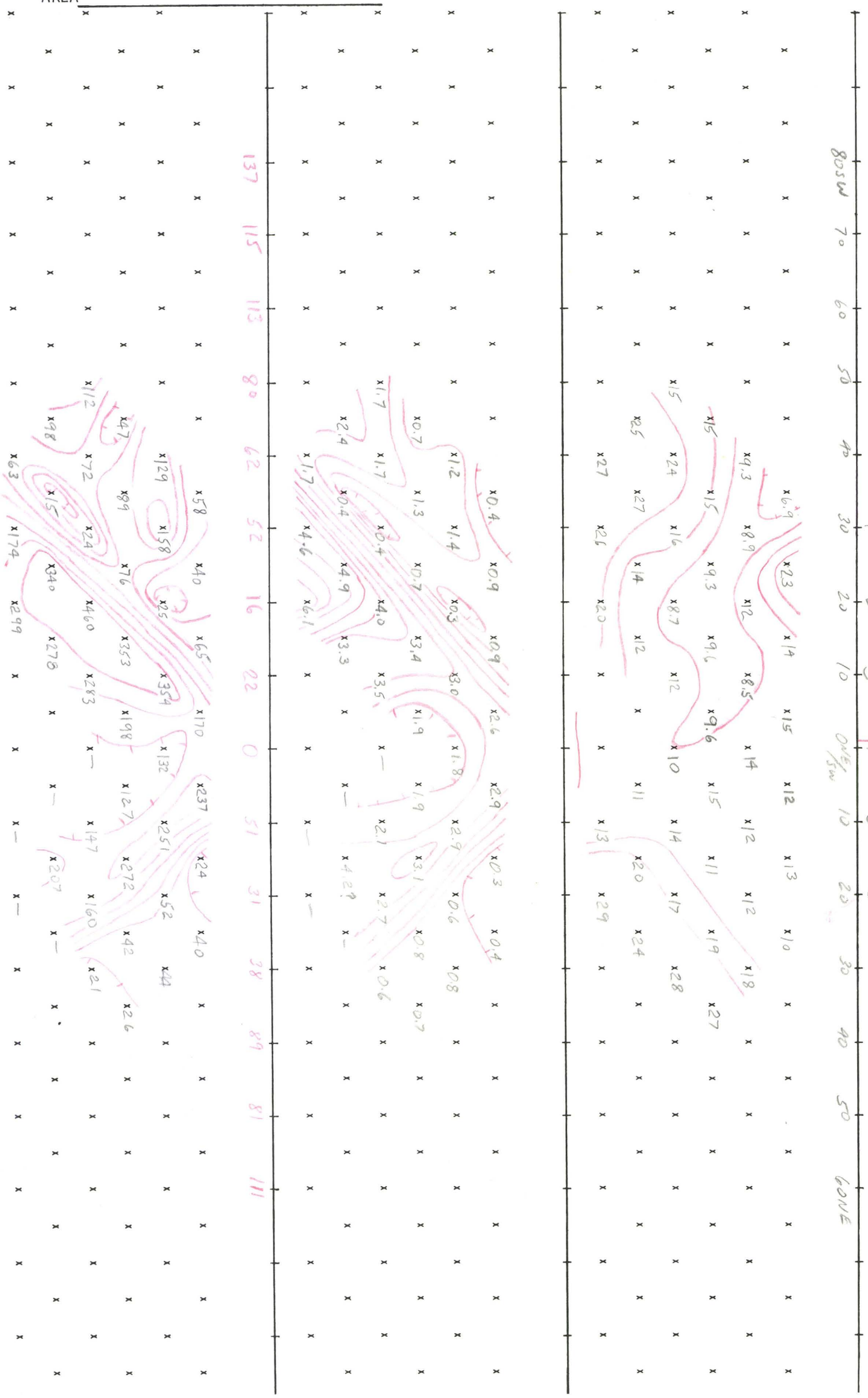
AREA Glove Mine Sediment



JOB# 690 LINE# 3 SP 1 a = 1000' LOOKING N55°W

CLIENT CF&I Steel Corporation DATE March 1972 FREQUENCIES 0.1 & 1.0 Hz

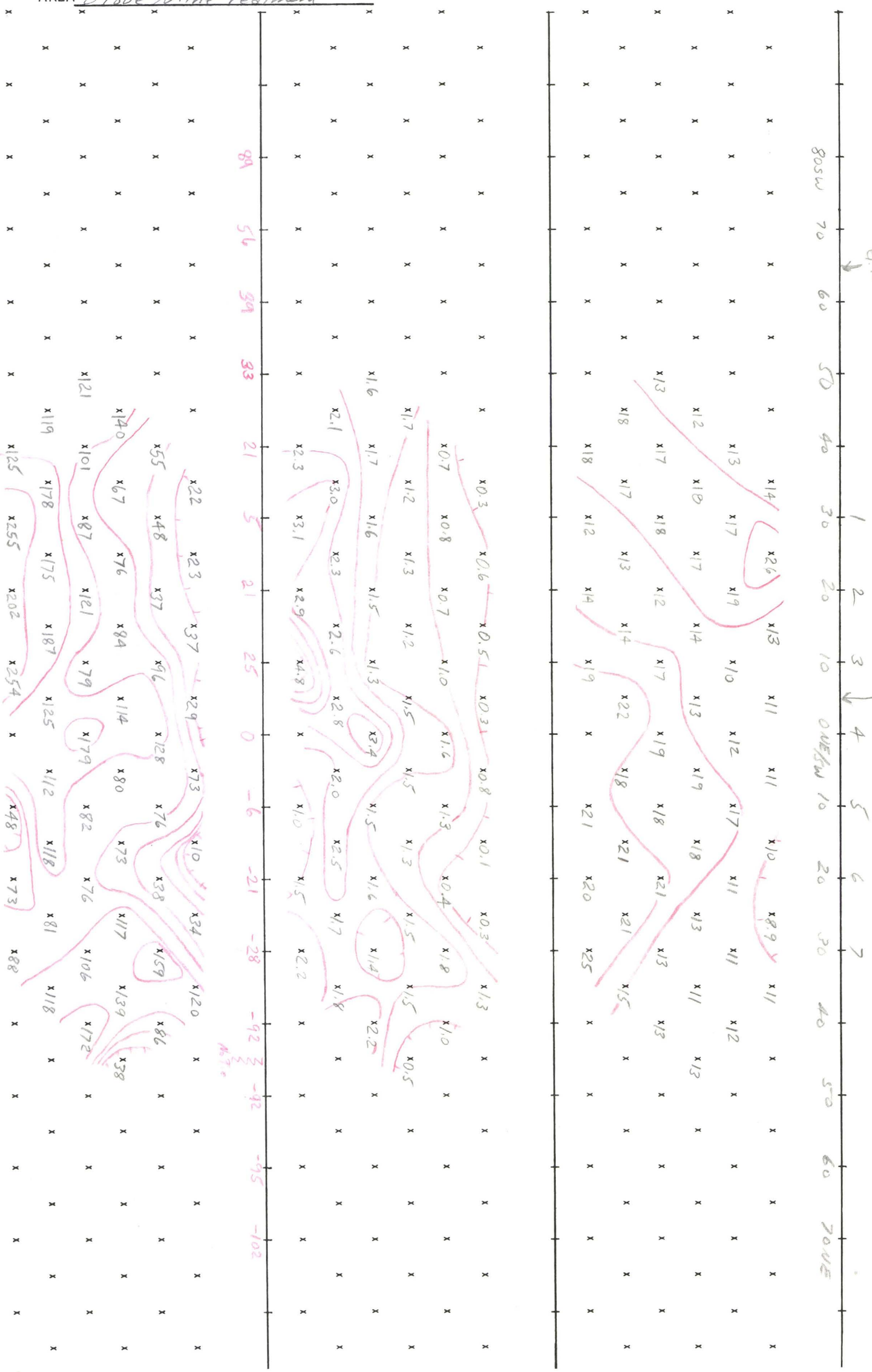
AREA



JOB# 690 LINE# 4 SP 1 a = 1000' LOOKING N55°W

CLIENT CF&I Steel Corporation DATE March 1972 FREQUENCIES 0.1 & 1.0 Hz

AREA Glove Mine Pediment



Job 699, Line 4, Spread 1, NE+SW½, 3/3/72 1000.

Elec #4 = 5 to 0

I.P. RECEIVER NOTES

HEINRICHS GEOEXPLORATION CO. PROJECT Glove 690

LINE 4 BEARING N35E HALF N SP. 1 DATE 3-3-72

SEND	3-4	4-5	5-6	6-7	4-5	5-6	6-7	5-6	6-7	6-7
RECEIVE	1-2	→	→	→	2-3	→	→	3-4	→	4-5
MULT.	1.0	0.1	0.1	0.1	1.0	0.1	0.1	1.0	0.1	1.0
PFE	0.5	1.0	1.5	3.4	0.3	1.6	1.5	0.8	1.3	0.1
			~~0-4~~	~~0-9~~						
3.0				~~1.2~~						
1.0				~~8.2~~						
0.3				~~10.5~~						
0.1				12.5						
Pw	6	5	4	4	5	4	4	4	4	4
#	1	2	3	4	5	6	7	8	9	10
n	1	2	3	4	1	2	3	1	2	1
PFE Avg.										
AC	26.3	4.23	1.70	1.20	17.1	4.01	2.42	14.2	5.49	13.0
DRIFT	—	—	—	—	—	—	—	—	—	—
S.P.										
AC NOISE										
POT RES.										

I.P. RECEIVER NOTES

PAGE 2

HEINRICHS GEOEXPLORATION CO. PROJECT Blue 690

LINE 4 BEARING NE 35° HALF NE SP. 1 DATE 3/3/72

SEND	CAL	S.P.	S.P.	S.P.	5-6	4-5	3-4	2-3	1-2	6-7
RECEIVE	4-5	0-10N	10-20N	20-30N	30-40N	→	→	→	→	40-50N
MULT.	10				1.0	0.1	0.1	0.1	.01	1.0
PFE	0.0				0.3	0.4	1.3	1.5	1.0 2.0	1.3
								0.7	0-10	
Cur	2				4	5	6	4	3	4
#	1				11	12	13	14	15	16
n					1	2	3	4	5	1
PFE Avg.										
AC	196.				11.6	4.33	3.4 4	1.18	.492	14.0
DRIFT	—				—	—	—	—	—	—
S.P.	1.0	-6.2	-15.2	-7.2	-63.9					
AC NOISE	0.1									
POT RES.		9K	1.5K	7K	5K					

I.P. RECEIVER NOTES

HEINRICHS GEOEXPLORATION CO. PROJECT Glove 690

LINE 4 BEARING N 35°E HALF N SP. 1 DATE 3-6-72

SEND	S-6	4-5	3-4	2-3	1-2	6-7	5-6	4-5	3-4	2-3
RECEIVE	40-50 N	→	→	→	→	50-60	N	→	→	→
MULT.	0.1	0.1	0.1	.01	.01	0.1	0.1	0.1	.01	.01
PFE	1.8	1.5	1.6	2.5	1.0	1.0	1.5	1.4	1.7	1.5
			~~0-2~~	~~0-7~~	~~0-10~~	0-2	~~0-3~~		~~0-2~~	~~0-3~~
cm	4	5	6	4	3	4	5	5	6	4
#	17	18	19	20	21	22	23	24	25	26
n	2	3	4	5	6	2	3	4	5	6
PFE Avg.										
AC	3.64	2.07	2.03	.769	.358	3.75	1.74	1.06	.275	.471
DRIFT	—	—	—	—	—	—	—	—	—	—
S.P.										
AC NOISE						-2.9				
POT RES.						8K				

I.P. RECEIVER NOTES

PAGE 4

HEINRICHS GEOEXPLORATION CO. PROJECT _____

LINE _____ BEARING _____ HALF ____ SP. ____ DATE ____

SEND	6-7	5-6	4-5	3-4						
RECEIVE	60-70N	→	→	→						
MULT.	0.1	0.1	.01	01						
PFE	0.5	2.2	1.8	2.2						
		~~0-7~~	~~0-6~~	~~0-4~~						
Pair	4	5	5	7						
#	27	28	29	30						
N	3	4	5	6						
PFE Avg.										
AC	1.72	1.02	.701	.996						
DRIFT	—	—	—	—						
S.P.										
AC NOISE	6.5									
POT RES.	4K									

G.F. @ .55 ∠ ~35° I.P. RECEIVER NOTES

PAGE 5

HEINRICHS GEOEXPLORATION CO. PROJECT Grove 690

LINE 4 BEARING 535°W HALF 5 SP. 1 DATE 3-6-72

SEND	CAL	S.P.	S.P.	S.P.	2-3	3-4	4-5	5-6	6-7	1-2
RECEIVE	3-4	0-10s	10-20s	20-30s	30-40	5 ———			→	40-50
MULT.	10				1.0	1.0	0.1	0.1	0.01	1.0
PFE	0.0				0.6	0.7	1.2	1.3	2.8	0.3
									~~5~~ 0.737	
									~~L~~ 10.7	
									~~OS~~ 13.1	
									~~OH~~ 14.0	
Cur					4	7	5	5	4	4
#					31	32	33	34	35	36
n					1	2	3	4	5	1
PFE Avg.										
AC	195.				33.3	10.9	2.31	1.33	0.813	18.1
DRIFT	—				—	—	—	—	—	—
S.P.		+25.1	-4.0	-16.3	+16.0					+11.8
AC NOISE										
POT RES.		10K	12K	8K	5K					10K

I.P. RECEIVER NOTES

HEINRICHS GEOEXPLORATION CO. PROJECT Glove 690

LINE 4 BEARING S35W HALF S SP. r DATE 3-6-72

SEND	2-3	3-4	4-5	5-6	6-7	1-2	2-3	3-4	4-5	5-6
RECEIVE	40-50	→	→	→	→	50-60	→	→	→	→
MULT.	0.1	0.1	0.01	0.01	0.01	0.1	0.1	0.1	0.01	0.01
PFE	0.8	1.3	1.5	2.6	4.8	0.7	1.2	1.6	2.3	2.9
					~~3~~ 0.370				~~3~~	0.358
					~~1~~ 15.0				~~1~~	14.0
					~~03~~ 18.0				~~03~~	17.8
					~~01~~ 18.5				~~01~~	18.4
Cm	4	7	5	5	4	4	4	7	5	5
#	37	38	39	40	41	42	43	44	45	46
n	2	3	4	5	6	2	3	4	5	6
PFE Avg.										
AC	5.46	3.84	0.998	0.632	0.421	4.13	2.32	2.06	0.601	0.408
DRIFT	—	—	—	—	—	—	—	—	—	—
S.P.	+2.0					+5.5				
AC NOISE										
POT RES.	2K					6K				

I.P. RECEIVER NOTES

PAGE 7

HEINRICHS GEOEXPLORATION CO. PROJECT Glove 690

LINE 4 BEARING 53SW HALF 5 SP. 1 DATE 3-6-72

SEND	1-2	2-3	3-4	4-5	1-2	2-3	3-4			
RECEIVE	60-70	→	→	→	70-80	→	→			
MULT.	0.1	0.1	0.1	0.01	0.01	0.01	0.01			
PFE	1.7	1.7	3.0	3.1	1.6	2.1	2.3			
	4	4	7	5	4	4	7			
#	47	48	49	50	51	52	53			
n	3	4	5	6	4	5	6			
PFE Avg.										
AC	1.56	1.08	1.07	0.344	0.848	0.646	0.734			
DRIFT	—	—	—	—	—	—	—			
S.P.	+17.0				+33.1					
AC NOISE										
POT RES.	4K				16K					

HEINRICHS GEOEXPLORATION CO.

I. P. SENDER NOTES

PROJECT Glove 690

LINE 4 HALF N SP. 1 DATE 3/3/72

SEND	3-4	4-5	5-6	6-7	4-5	5-6	6-7	5-6	6-7	6-7
RECEIVE	1-2			→	2-3		→	3-4	→	4-5
RANGE	200X30	166.6X30	133.3X30	133.3X30	30X166.6	30X133.3	30X133.3	30X133	30X133	
VOLTAGE	410	460	420	500	460	430	500	430	500	
CURRENT	6.0	5.0	4.0	4.0	5.0	4.0	4.0	4.0	4.0	
SEND	CAL	5-6	4-5	3-4	2-3	1-2	6-7	5-6	4-5	3-4
RECEIVE	3-4	30-40N	—	—	—	→	40-50	—	—	→
RANGE	10X200	30X133	30X166	30X200	30X133	30X100	30X133	30X133	30X166	30X200
VOLTAGE	130	430	460	410	580	440	500	430	450	410
CURRENT	2.0	4.0	5.0	6.0	4.0	3.0	4.0	4.0	5.0	6.0

FREQUENCIES 1 0.1

SENDER NO. 6644 S

OPERATOR W. FREEMAN

RECEIVER NO. 18691 R

OPERATOR B. Delgado

COMMENTS: LOST TIME ON ONAN - VERY HARD TO START (2 HRS)

ECEC # 4.0 = STA 0.0

HEINRICHS GEOEXPLORATION CO.

I. P. SENDER NOTES

PROJECT Glove #690 PAGE 2

LINE 4 HALF N SP. 1 DATE 3-3-72

SEND	2-3	1-2	6-7	5-6	4-5	3-4	2-3	6-7	5-6	4-5
RECEIVE	40-50	→	50-60	—	—	—	→	60-70	—	→
RANGE	30X133	30X100	30X133	30X166	30X166	30X200	30X100	30X133	30X166	30X166
VOLTAGE	580	440	500	520	420*	410*	550*	510	500	420
CURRENT	4.0	3.0	4.0	5.0	5.0	6.0	4.0	4.0	5.0	5.0
SEND	3-4									
RECEIVE	60-70									
RANGE	30X233									
VOLTAGE	450									
CURRENT	7.0									

FREQUENCIES 1 0.1

SENDER NO. 66445

OPERATOR FREEMAN

RECEIVER NO. 18691R

OPERATOR Delgado

COMMENTS: OVER VOLTAGE WITH REGULATOR AGAIN - VOLTAGE PEGS OUT - O.K. - LOOSE PLUG

* - Repeat ON 3-6-72

HEINRICHS GEOEXPLORATION CO.

I. P. SENDER NOTES

PROJECT Glove #690

LINE 4 HALF SW SP. 1 DATE 3/6/72

SEND	2-3	3-4	4-5	5-6	6-7	1-2	2-3	3-4	4-5	5-6
RECEIVE	30-40 SW				→	40-50 SW				→
RANGE	133.3 X30	233.3 X30	166.6X30	166.6X30	133.3 X30	133.3X30	133.3 X30	233.3 X30	166.6 X30	166.6X30
VOLTAGE	560	460	430	505	520	580	560	460	430	505
CURRENT	4.0	7.0	5.0	5.0	4.0	4.0	4.0	7.0	5.0	5.0
SEND	6-7	1-2	2-3	3-4	4-5	5-6	1-2	2-3	3-4	4-5
RECEIVE	40-50	50-60 SW				→	60-70 SW			→
RANGE	133.3X30	133.3 X30	133.3 X30	233.3 X40	166.6X30	166.6X30	133.3X30	133.3X30	233.3X30	166.6X30
VOLTAGE	520	580	560	460	430	505	580	560	460	430
CURRENT	4.0	4.0	4.0	7.0	5.0	5.0	4.0	4.0	7.0	5.0

FREQUENCIES 1 0.1

SENDER NO. 6644-S

OPERATOR Delgado

RECEIVER NO. 18691-R

OPERATOR FREEMAN

COMMENTS: SEEMS to be A SHORT IN input plug to REGULATOR box VOLTAGE - pegs out while SENDING.

HEINRICHS GEOEXPLORATION CO.

I. P. SENDER NOTES

PROJECT Hove #690

LINE 4 HALF SW SP. 1 DATE 4/6/72

SEND	1-2	2-3	3-4							
RECEIVE	70-80SW	→	→							
RANGE	133.3X30	133.3X30	233.3X30							
VOLTAGE	480	460	460							
CURRENT	4.0	4.0	7.0							
SEND										
RECEIVE										
RANGE										
VOLTAGE										
CURRENT										

FREQUENCIES 1 0.1

SENDER NO. 6644-S

OPERATOR DELGADO

RECEIVER NO. 1869I-R

OPERATOR FREEMAN W.J

COMMENTS:

Elec #4 - Center Sta 0

I.P. RECEIVER NOTES

HEINRICHS GEOEXPLORATION CO. PROJECT Glove 690

LINE 4 BEARING N35E HALF N SP. 1 DATE 3-2-72

SEND	3-4	4-5	5-6	6-7	4-5	5-6	6-7	5-6	6-7	6-7
RECEIVE	1-2	→	→	→	2-3	→	→	3-4	→	4-5
MULT.	1.0	0.1	0.1	0.1						
PFE	0.2	1.1	1.5	3.3						
3				1.11						
1				7.6						
0.3				10.0						
0.1				10.5						
PFE Avg.										
AC	26.1	4.23	1.70	1.21						
DRIFT	—	—	—	—						
S.P.										
AC NOISE										
POT RES.										

HEINRICHS GEOEXPLORATION CO.
POST OFFICE BOX 5964
TUCSON, ARIZONA (85703)
PHONE 623-0578

JOB 690, LINE 4, SPREAD 1, NE + SW 1/2, 3/3/72 1000 FEET=DIPOLE LENGTH
CAL GROUP NO. 1

CAL CUR	PFE	AC1	AC2	AC FREQ	DC FREQ	PFE CAL	RHO CAL
2.000	0.00	196.000	0.00	1.00	.10	0.0000	1.0204

		COMPUTED DATA							FIELD DATA					
POINT NO.	N	RHO	PFE	MCF	CCPFE	CCMCF	CPFE		PFE	CUR	PT.	N	AC1	AC2
1	1	13.49	.50	37.1	.24	17.5	.26	**	.50	6.00	1	1	26.300	0.00
2	2	10.46	1.00	95.6	-.31	-29.2	1.31	**	1.00	5.00	2	2	4.230	0.00
3	3	13.21	1.50	113.6	-.64	-48.4	2.14	**	1.50	4.00	3	3	1.700	0.00
4	4	18.99	3.40	179.0	.97	51.0	2.43	**	3.40	4.00	4	4	1.200	0.00
5	1	10.50	.30	28.6	-.07	-7.0	.37	**	.30	5.00	5	1	17.100	0.00
6	2	12.47	1.60	128.3	.56	45.2	1.04	**	1.60	4.00	6	2	4.010	0.00
7	3	18.80	1.50	79.8	.15	7.8	1.35	**	1.50	4.00	7	3	2.420	0.00
8	1	10.95	.80	73.0	.45	40.9	.35	**	.80	4.00	8	1	14.200	0.00
9	2	17.02	1.30	76.4	.62	36.2	.68	**	1.30	4.00	9	2	5.490	0.00
10	1	9.96	.10	10.0	-.30	-30.3	.40	**	.10	4.00	10	1	13.000	0.00
11	1	8.90	.30	33.7	-.17	-18.8	.47	**	.30	4.00	11	1	11.600	0.00
12	2	10.65	.40	37.6	-.88	-82.3	1.28	**	.40	5.00	12	2	4.330	0.00
13	3	17.78	1.30	73.1	-.16	-8.7	1.46	**	1.30	6.00	13	3	3.440	0.00
14	4	18.33	1.50	81.8	-1.04	-57.0	2.54	**	1.50	4.00	14	4	1.180	0.00
15	5	17.92	2.00	111.6	-2.19	-122.5	4.19	**	2.00	3.00	15	5	.492	0.00
16	1	10.85	1.30	119.8	.94	86.9	.36	**	1.30	4.00	16	1	14.000	0.00
17	2	11.34	1.80	158.7	.63	55.2	1.17	**	1.80	4.00	17	2	3.640	0.00
18	3	12.86	1.50	116.6	-.71	-55.4	2.21	**	1.50	5.00	18	3	2.070	0.00
19	4	21.05	1.60	76.0	-.53	-25.3	2.13	**	1.60	6.00	19	4	2.030	0.00
20	5	21.11	2.50	118.4	-.92	-43.4	3.42	**	2.50	4.00	20	5	.769	0.00
21	6	20.66	1.00	48.4	-4.19	-202.8	5.19	**	1.00	3.00	21	6	.358	0.00
22	2	11.59	1.00	86.2	-.14	-12.1	1.14	**	1.00	4.00	22	2	3.750	0.00
23	3	10.81	1.50	138.7	-1.26	-116.6	2.76	**	1.50	5.00	23	3	1.740	0.00
24	4	13.16	1.40	106.4	-2.47	-187.4	3.87	**	1.40	5.00	24	4	1.060	0.00
25	5	~~4.99~~	~~1.70~~	~~340.4~~	-17.89	-3581.5	19.59	**	1.70	6.00	25	5	~~.275~~	0.00
26	6	20.49	1.50	73.2	-3.75	-182.8	5.25	**	1.50	4.00	26	6	.471	0.00
27	3	13.23	.50	37.8	-1.63	-123.5	2.13	**	.50	4.00	27	3	1.720	0.00
28	4	12.76	2.20	172.4	-1.82	-142.4	4.02	**	2.20	5.00	28	4	1.020	0.00
29	5	15.29	1.80	117.7	-3.31	-216.3	5.11	**	1.80	5.00	29	5	.701	0.00
30	6	24.93	2.20	88.3	-1.91	-76.7	4.11	**	2.20	7.00	30	6	.996	0.00

31	1	25.64	.60	23.4	.49	19.2	.11	**	.60	4.00	31	1	33.300 0.00
32	2	19.20	.70	36.5	.12	6.2	.58	**	.70	7.00	32	2	10.900 0.00
33	3	14.31	1.20	83.8	-.73	-50.9	1.93	**	1.20	5.00	33	3	2.310 0.00
34	4	16.50	1.30	78.8	-1.61	-97.6	2.91	**	1.30	5.00	34	4	1.330 0.00
35	5	22.39	2.80	125.1	-.37	-16.7	3.17	**	2.80	4.00	35	5	.813 0.00
36	1	13.89	.30	21.6	.05	3.3	.25	**	.30	4.00	36	1	18.100 0.00
37	2	16.85	.80	47.5	.11	6.3	.69	**	.80	4.00	37	2	5.460 0.00
38	3	17.01	1.30	76.4	-.24	-14.2	1.54	**	1.30	7.00	38	3	3.840 0.00
39	4	12.40	1.50	120.9	-2.66	-214.7	4.16	**	1.50	5.00	39	4	.998 0.00
40	5	13.89	2.60	187.1	-3.15	-226.5	5.75	**	2.60	5.00	40	5	.632 0.00
41	6	18.91	4.80	253.8	-.99	-52.4	5.79	**	4.80	4.00	41	6	.421 0.00
42	2	12.73	.70	55.0	-.31	-24.2	1.01	**	.70	4.00	42	2	4.130 0.00
43	3	17.97	1.20	66.8	-.24	-13.1	1.44	**	1.20	4.00	43	3	2.320 0.00
44	4	18.31	1.60	87.4	-.95	-51.8	2.55	**	1.60	7.00	44	4	2.060 0.00
45	5	13.17	2.30	174.6	-3.84	-291.1	6.14	**	2.30	5.00	45	5	.601 0.00
46	6	14.39	2.90	201.5	-5.18	-359.5	8.08	**	2.90	5.00	46	6	.408 0.00
47	3	12.14	1.70	140.0	-.68	-56.2	2.38	**	1.70	4.00	47	3	1.560 0.00
48	4	16.81	1.70	101.1	-1.14	-67.8	2.84	**	1.70	4.00	48	4	1.080 0.00
49	5	16.87	3.00	177.8	-1.52	-90.3	4.52	**	3.00	7.00	49	5	1.070 0.00
50	6	12.16	3.10	254.9	-6.80	-558.9	9.90	**	3.10	5.00	50	6	.344 0.00
51	4	13.19	1.60	121.3	-2.26	-171.2	3.86	**	1.60	4.00	51	4	.848 0.00
52	5	17.67	2.10	118.9	-2.17	-122.9	4.27	**	2.10	4.00	52	5	.646 0.00
53	6	18.39	2.30	125.1	-3.69	-200.8	5.99	**	2.30	7.00	53	6	.734 0.00

Job 690, Line 3, Spread 1, SW½, 3/1/72 1000.

ONAN Generator QUIT I.P. RECEIVER NOTES Poor RADIO COMM. PAGE 2

Very HARD To START!!

HEINRICHS GEOEXPLORATION CO. PROJECT Glove 690

LINE 3 BEARING S35W HALF S SP. 1 DATE 3-1-72

SEND	2-3	3-4	4-5	5-6	1-2	2-3	3-4	4-5	5-6	1-2
RECEIVE	30-40S	→	→	→	40-50	→	→	→	→	50-60
MULT.	1.0	0.1	0.1	0.1	0.1	0.1	0.1	0.01	0.01	0.1
PFE	0.8	0.2	3.3	3.4	0.3	1.3	0.6	3.9	3.2	1.1
3Hz			1.97	1.11				0.842		
1Hz			7.7	7.6				13.3		
0.3			10.6	10.2				16.8		
0.1			12.3	10.4				18.6		
Cur	5	6	7	8	4	5	6	7	6	4
#	1	2	3	4	5	6	7	8	9	10
n	1	2	3	4	1	2	3	4	5	2
PFE Avg.										
AC	36.5	5.80	2.13	1.17	8.99	3.58	1.80	0.956	0.643	3.00
DRIFT	—	—	—	—	—	→	—	—	—	—
S.P.	+10.2				+18.2					+32
AC NOISE										
POT RES.	4K				3K					5K

Poor Radio Comm! I.P. RECEIVER NOTES VERY NOISY!!

No Spectral data

PAGE 3

HEINRICHS GEOEXPLORATION CO. PROJECT Glove 690

LINE 3 BEARING S35W HALF 5 SP. 1 DATE 3-1-72

SEND	2-3	3-4	4-5	5-6	1-2	2-3	3-4	4-5	1-2	2-3
RECEIVE	50-60	→	→	→	60-70	→	→	→	70-80	→
MULT.	0.1	0.1	0.01	0.01	0.1	0.1	0.1	0.1	0.01	0.1
PFE	1.2	0.3	4.8	6.0	0.6	1.6	0.3	4.5	1.6	2.3
								~~0.886~~		
								~~16.7~~		
								~~20.8~~		
								~~22.5~~		
Corr #	5	6	7	6	4	5	6	→	4	5
	11	12	13	14	15	16	17	18	19	20
n	3	4	5	6	3	4	5	6	4	5
PFE Avg.										
AC	2.36	1.61	0.898	0.673	1.94	1.91	1.49	1.03	0.973	1.12
DRIFT	—	—	—	—	—	—	—	—	—	—
S.P.					+1.6				+22.2	
AC NOISE										
POT RES.					4K				3K	

I.P. RECEIVER NOTES

PAGE 4

HEINRICHS GEOEXPLORATION CO. PROJECT Glove 690

LINE 3 BEARING S35W HALF S SP. 1 DATE 3-1-72

SEND	3-4		CAL							
RECEIVE	70-80		3-4							
MULT.	0.01		10							
PFE	1.6		-0.1							
Cur	6		2							
#	21		1							
n	6									
PFE Avg.										
AC	0.930		196.							
DRIFT	—		—							
S.P.			1.0							
AC NOISE			0.1							
POT RES.										

HEINRICHS GEOEXPLORATION CO.

I. P. SENDER NOTES

PROJECT Glove

LINE 3 HALF SW SP. 1 DATE 3/1/72

SEND	3-4	4-5	5-6	4-5	5-6	5-6	CAL	2-3	3-4	4-5
RECEIVE	1-2	→	→	2-3	→	3-4	3-4	30-40	SW	→
RANGE	200x30	233.3x30	200x30	233.3x30	200x30	200x30	200x10	166.6x30	200x30	233.3x30
VOLTAGE	440	440	420	440	410	410	140	470	440	440
CURRENT	6.0	7.0	6.0	7.0	6.0	6.0	2.0	5.0	6.0	7.0
SEND	5-6	1-2	2-3	3-4	4-5	5-6	1-2	2-3	3-4	4-5
RECEIVE	30-40	40-50	SW	→	→	→	50-60	SW	→	→
RANGE	200x30	133.3x30	166.6x30	200x30	233.3x30	200x30	133.3x30	166.6x30	200x30	233.3x30
VOLTAGE	410	430	470	440	440	410	430	470	440	440
CURRENT	6.0	4.0	5.0	6.0	7.0	6.0	4.0	5.0	6.0	7.0

FREQUENCIES 1 0.1

SENDER NO. 66445

OPERATOR Delgado Bob

RECEIVER NO. 18691-R

OPERATOR FREEMAN W.J.

COMMENTS:

HEINRICHS GEOEXPLORATION CO.

I. P. SENDER NOTES

PROJECT Glove

LINE 3 HALF SW SP. 1 DATE 3/1/72

SEND	5-6	1-2	2-3	3-4	4-5	1-2	2-3	3-4		
RECEIVE	50-60	60-70	SW →			70-80	SW →			
RANGE	200x30	133.3x30	166.6x30	200x30	233.3x30	133.3x30	166.6x30	200x30		
VOLTAGE	410	430	470	430	440	430	470	430		
CURRENT	6.0	4.0	5.0	6.0	7.0	4.0	5.0	6.0		
SEND										
RECEIVE										
RANGE										
VOLTAGE										
CURRENT										

FREQUENCIES 1 0.1

SENDER NO. 66445

OPERATOR DELGADO

RECEIVER NO. 18691-R

OPERATOR FREEMAN W.J

COMMENTS:

G. Pipeline - (WATER) @ 100' South of electrode #4

I.P. RECEIVER NOTES

HEINRICHS GEOEXPLORATION CO. PROJECT Glove 690

LINE 3 BEARING S35W HALF S SP. 1 DATE 3-1-72

SEND	3-4	4-5	5-6	4-5	5-6	5-6	CAL	S.P.	S.P.	S.P.
RECEIVE	1-2	→	→	2-3	→	3-4	3-4	0-10s	10-20s	20-30s
MULT.	1.0	0.1	0.1	1.0	0.1	1.0	10			
PFE	0.8	2.9	1.8	2.5	1.7	2.8	-0.1			
I	6	7	6	7	6	6	2			
n	1	2	3	1	2	1				
ky	3	12	30	3	12	3				
eCal	1.02	→	→	→	→	→	1.02			
PFE$_c$	0.9	3.0	1.9	2.6	1.8	2.9				
%$_f$	14	8.5	9.6	15	14	12				
MCF	65	354	198	170	132	237				
PFE Avg.										
AC	27.0	4.70	1.85	34.0	6.56	23.3	196.			
DRIFT	—	—	—	—	—	—	—			
S.P.								+21.8	-6.2	+35.6
AC NOISE										
POT RES.								9K	10K	8K

HEINRICHS GEOEXPLORATION CO.
POST OFFICE BOX 5964
TUCSON, ARIZONA (85703)
PHONE 623-0578

JOB 690 LINE 3 SPREAD 1 SW 1/2 3/1/72 1000 FEET=DIPOLE LENGTH
CAL GROUP NO. 1

CAL CUR	PFE	AC1	AC2	AC FREQ	DC FREQ	PFE CAL	RHO CAL
2.000	-.10	196.000	0.00	1.00	.10	-.1000	1.0204

		COMPUTED DATA							FIELD DATA					
POINT NO.	N	RHO	PFE	MCF	CCPFE	CCMCF	CPFE		PFE	CUR	PT.	N	AC1	AC2
1	1	22.55	.90	39.9	.77	34.2	.13	**	.80	5.00	1	1	36.500	0.00
2	2	11.87	.30	25.3	-.81	-67.8	1.11	**	.20	6.00	2	2	5.800	0.00
3	3	9.63	3.40	353.0	.20	21.1	3.20	**	3.30	7.00	3	3	2.130	0.00
4	4	12.36	3.50	283.2	-.68	-55.3	4.18	**	3.40	6.00	4	4	1.170	0.00
5	1	6.91	.40	57.9	-.26	-37.4	.66	**	.30	4.00	5	1	8.990	0.00
6	2	8.89	1.40	157.5	-.21	-24.1	1.61	**	1.30	5.00	6	2	3.580	0.00
7	3	9.25	.70	75.7	-2.66	-288.1	3.36	**	.60	6.00	7	3	1.800	0.00
8	4	8.70	4.00	460.0	-2.45	-281.9	6.45	**	3.90	7.00	8	4	.956	0.00
9	5	11.86	3.30	278.2	-3.68	-309.9	6.98	**	3.20	6.00	9	5	.643	0.00
10	2	9.29	1.20	129.1	-.32	-34.8	1.52	**	1.10	4.00	10	2	3.000	0.00
11	3	14.64	1.30	88.8	-.57	-39.2	1.87	**	1.20	5.00	11	3	2.360	0.00
12	4	16.49	.40	24.3	-2.51	-152.2	2.91	**	.30	6.00	12	4	1.610	0.00
13	5	14.42	4.90	339.8	-.59	-41.1	5.49	**	4.80	7.00	13	5	.898	0.00
14	6	20.40	6.10	299.0	.83	40.5	5.27	**	6.00	6.00	14	6	.673	0.00
15	3	14.95	.70	46.8	-1.12	-75.1	1.82	**	.60	4.00	15	3	1.940	0.00
16	4	23.79	1.70	71.5	-.12	-5.1	1.82	**	1.60	5.00	16	4	1.910	0.00
17	5	26.71	.40	15.0	-2.14	-79.9	2.54	**	.30	6.00	17	5	1.490	0.00
18	6	26.38	4.60	174.3	.77	29.2	3.83	**	4.50	7.00	18	6	1.030	0.00
19	4	15.15	1.70	112.2	-1.54	-101.8	3.24	**	1.60	4.00	19	4	.973	0.00
20	5	24.58	2.40	97.7	-.42	-17.1	2.82	**	2.30	5.00	20	5	1.120	0.00
21	6	27.02	1.70	62.9	-2.02	-74.6	3.72	**	1.60	6.00	21	6	.930	0.00

Job 690, Line 3, Spread 1, NE ½, 2/29/72 1000.

I.P. RECEIVER NOTES

PAGE 1

HEINRICHS GEOEXPLORATION CO. PROJECT Glove 690

LINE 3 BEARING N35E HALF N SP. 1 DATE 2-29-72

SEND	3-4	4-5	5-6	4-5	5-6	5-6	CAL	S.P.	S.P	
RECEIVE	1-2	→	→	2-3	→	3-4	3-4	0-10N	10-20N	
MULT.	1.0	0.1	0.1	1.0	0.1	1.0	10			
PFE	0.7	3.1	2.1	2.8	1.6	2.8	0.0			
Cur	4	4	5	4	5	5	2			
#	1	2	3	4	5	6	1			
n	1	2	3	1	2	1				
PFE Avg.										
AC	18.4	3.94	1.56	23.5	5.50	19.4	193.			
DRIFT	—	—	—	—	—	—	—			
S.P.							1.0	+51.4	-19.9	
AC NOISE							0.1			
POT RES.								12K	8K	

ROAD @ 21 N

I.P. RECEIVER NOTES

HEINRICHS GEOEXPLORATION CO. PROJECT GLOVE 690

LINE 3 BEARING N35E HALF N SP. 1 DATE 2-29-72

SEND	4-5	3-4	2-3	1-2	5-6	4-5	3-4	2-3	1-2	5-6
RECEIVE	20-30N	→	→	→	30-40	→	→	→	→	40-50
MULT.	1.0	0.1	0.1	0.01	1.0	0.1	0.1	0.01	0.01	0.1
PFE	0.3	2.9	1.9	—0.0	0.4	0.6	3.1	2.1	~~1000.0~~	0.8
				TOO NOISY					NOISY	
Cur #	4 7	4 8	3 9	3 10	4 11	3 12	4 13	3 14	3 15	4 16
n	1	2	3	4	1	2	3	4	5	2
PFE Avg.				APPROX.					APPROX.	
AC	16.1	3.61	1.42	0.500	12.9	2.76	1.42	0.676	0.294	5.80
DRIFT	—	—	—	—	—	—	—	—	—	—
S.P.	+7.3				+50.8					-7.7
AC NOISE										
POT RES.	3k				3K					3k

I.P. RECEIVER NOTES

PAGE 3

HEINRICHS GEOEXPLORATION CO. PROJECT Glove 690

LINE 3 BEARING N35E HALF N SP. 1 DATE 2-29-12

SEND	4-5	3-4	2-3	1-2	5-6	4-5	3-4	2-3	5-6	4-5
RECEIVE	40-50	→	→	→	50-60	→	→	→	60-70	
MULT.	0.1	0.1	0.01	0.01	0.1	0.1	0.01	0.01		
PFE	0.8	2.7	4.2	0.900	0.7	0.6	0.0	-0.0		
		Noisy		Noisy			Very Noisy	Too Noisy		
						Noisy	Noisy	Noisy		
Rem.	3	4	3	3	5	5	4	4		
#	17	18	19	20	21	22	23	24		
n	3	4	5	6	3	4	5	6		
PFE Avg.										
AC	1.81	1.06	0.536	0.224	4.38	2.25	0.879	0.669		
DRIFT	—	—	—	—	—	—	—	—		
S.P.					430.1					
AC NOISE										
POT RES.					3K					

HEINRICHS GEOEXPLORATION CO.

I. P. SENDER NOTES

PROJECT GLOVE

LINE 3 HALF NE SP. 1 DATE 2/29/72

SEND	3-4	4-5	5-6	4-5	5-6	5-6	CAL	4-5	3-4	2-3
RECEIVE	1-2	→	→	2-3	→	3-4	3-4	20-30	NE	→
RANGE	30X133.3	30X133.3	30X166.6	133.3X30	166.6X30	166.6X30	200X10	30X133.3	30X133.3	30X100
VOLTAGE	510	490	460	490	460	460	250	360	490	440
CURRENT	4.0	4.0	5.0	4.0	5.0	5.0	2.0	4.0	4.0	3.0
SEND	1-2	5-6	4-5	3-4	2-3	1-2	5-6	4-5	3-4	2-3
RECEIVE	20-30	30-40 NE	→	→	→	→	40-50	NE	→	→
RANGE	100X30	133.3X30	100X30	133.3X30	100X30	100X30	133.3X30	100X30	133.3X30	100X30
VOLTAGE	440	360	260	490	440	440	360	260	480	430
CURRENT	3.0	4.0	3.0	4.0	3.0	3.0	4.0	3.0	4.0	3.0

FREQUENCIES 1 0.1

SENDER NO. 660445

OPERATOR DELGADO

RECEIVER NO. 19692R-DD

OPERATOR FREEMAN BILL

COMMENTS:

HEINRICHS GEOEXPLORATION CO.

I. P. SENDER NOTES

PROJECT Glove

LINE 3 HALF NE SP. 1 DATE 2/29/72

SEND	1-2	5-6	4-5	3-4	2-3	5-6	4-5	3-4		
RECEIVE	40-50	50-60	NE	←	→	60-70	NE	→		
RANGE	100x30	116.6x30	116.6x30	133.3x30	133.3x30					
VOLTAGE	430	460	440	460	580					
CURRENT	3.0	5.0	5.0	4.0	4.0					
SEND										
RECEIVE										
RANGE										
VOLTAGE										
CURRENT										

FREQUENCIES 1 0.1

SENDER NO. 66445

OPERATOR DELGADO

RECEIVER NO. 19692R-DD

OPERATOR FREEMAN

COMMENTS:

HEINRICHS GEOEXPLORATION CO.
POST OFFICE BOX 5964
TUCSON, ARIZONA (85703)
PHONE 623-0578

JOB 690 LINE 3 SPREAD 1 NE 1/2 2/29/72
CAL GROUP NO. 1

1000 FEET=DIPOLE LENGTH

CAL CUR	PFE	AC1	AC2	AC FREQ	DC FREQ	PFE CAL	RHO CAL
2.000	0.00	193.000	0.00	1.00	.10	0.0000	1.0363

		COMPUTED DATA							FIELD DATA					
POINT NO.	N	RHO	PFE	MCF	CCPFE	CCMCF	CPFE		PFE	CUR	PT.	N	AC1	AC2
1	1	14.40	.70	48.6	.46	31.8	.24	**	.70	4.00	1	1	18.400	0.00
2	2	12.63	3.10	245.5	2.08	164.8	1.02	**	3.10	4.00	2	2	3.940	0.00
3	3	9.90	2.10	212.1	-.99	-99.6	3.09	**	2.10	5.00	3	3	1.560	0.00
4	1	18.78	2.80	149.1	2.63	140.2	.17	**	2.80	4.00	4	1	23.500	0.00
5	2	13.90	1.60	115.1	.70	50.6	.90	**	1.60	5.00	5	2	5.500	0.00
6	1	12.40	2.80	225.8	2.50	201.8	.30	**	2.80	5.00	6	1	19.400	0.00
7	1	12.55	.30	23.9	.01	.6	.29	**	.30	4.00	7	1	16.100	0.00
8	2	11.55	2.90	251.1	1.75	151.8	1.15	**	2.90	4.00	8	2	3.610	0.00
9	3	14.99	1.90	126.7	.08	5.6	1.82	**	1.90	3.00	9	3	1.420	0.00
10	4	10.36	0.00	0.0	-5.20	-502.1	5.20	**	0.00	3.00	10	4	.500	0.00
11	1	10.07	.40	39.7	.00	.4	.40	**	.40	4.00	11	1	12.900	0.00
12	2	11.51	.60	52.1	-.55	-47.9	1.15	**	.60	3.00	12	2	2.740	0.00
13	3	11.38	3.10	272.4	.51	45.0	2.59	**	3.10	4.00	13	3	1.420	0.00
14	4	14.30	2.10	146.8	-1.38	-96.7	3.48	**	2.10	3.00	14	4	.676	0.00
15	5	10.66	0.00	0.0	-7.94	-744.4	7.94	**	0.00	3.00	15	5	.294	0.00
16	2	18.18	.80	44.0	.17	9.6	.63	**	.80	4.00	16	2	5.800	0.00
17	3	18.91	.80	42.3	-.54	-28.7	1.34	**	.80	3.00	17	3	1.810	0.00
18	4	16.92	2.70	159.6	-.12	-6.9	2.82	**	2.70	4.00	18	4	1.060	0.00
19	5	20.26	4.20	207.3	.60	29.7	3.60	**	4.20	3.00	19	5	.536	0.00
20	6	13.00	0.00	0.0	-9.13	-702.6	9.13	**	0.00	3.00	20	6	.224	0.00
21	3	27.42	.70	25.5	-.12	-4.4	.82	**	.70	5.00	21	3	4.380	0.00
22	4	28.15	.60	21.3	-.86	-30.6	1.46	**	.60	5.00	22	4	2.250	0.00
23	5	23.91	0.00	0.0	-2.92	-122.1	2.92	**	0.00	4.00	23	5	.879	0.00
24	6	29.12	0.00	0.0	-3.38	-116.2	3.38	**	0.00	4.00	24	6	.669	0.00

Job 690, Line 2, Spread 1, NE+SW$\frac{1}{2}$, 2/24/72 1000.

Center = elec. #5

PAGE 1

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT Glove 690
LINE 2 HALF ____ SP. 1 DATE 2-24-72

SEND	3-4	4-5	5-6	6-7	4-5	5-6	6-7	5-6	6-7	6-7
RECEIVE	1-2	—	—	→	2-3	—	→	3-4	→	4-5
RANGE	1.0	0.1	0.1	0.1	1.0	0.1	0.1	1.0	0.1	1.0
DC 1	1.5	0.8	1.0	1.0	1.6	2.2	2.7	0.2	0.0	0.3
DC 2				~~=2 to 4~~				~~0 to 2.0~~		
DC 3										
DC 4 Cur	3	3	7	7	3	7	7	7	7	7
DC 5 #	1	2	3	4	5	6	7	8	9	10
DC 6 n	1	2	3	4	1	2	3	1	2	1
DC 7										
DC 8										
DC AVG.										
AC 1	14.6	8.49	7.61	2.91	14.8	9.03	3.02	43.1	9.63	88.8
AC 2	—	—	—	—	—	—	—	—	—	—
AC AVG.										
S.P.										
AC NOISE										
POT RES.										

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT Glove 690
LINE 2 HALF NE SP. 1 DATE 2-25-72

SEND	CAL	S.P.	S.P.	5-6	4-5	3-4	2-3	1-2	6-7	5-6
RECEIVE	4-5	0-10N	10-20N	20-30N	→	→	→	→	30-40	→
RANGE	10			10	1.0	0.1	0.1	0.1	10	1.0
DC 1	0.0			0.7	0.5	0.4	1.9	1.5	0.8	0.7
DC 2							~~1 to 3~~	~~1 to 2~~		
DC 3										
DC 4 Rec	2			7	4	3	6	6	7	7
DC 5 #	1			11	12	13	14	15	16	17
DC 6 n				1	2	3	4	5	1	2
DC 7										
DC 8										
DC AVG.										
AC 1	194.			166.	25.7	3.10	2.23	2.37	119.	41.4
AC 2	—			—	—	—	—	—	—	—
AC AVG.	1.0									
S.P.	0.1	+43.7	-4.4	+14.6					-9.6	
AC NOISE										
POT RES.		2K	3K	3K					3K	

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT Glove 690
LINE 2 HALF NE SP. / DATE 2-25-1

SEND	4-5	3-4	2-3	1-2	6-7	5-6	4-5	3-4	2-3	6-7
RECEIVE	30-40				40-50					50-60
RANGE	0.1	0.1	0.1	0.1	1.0	1.0	0.1	0.01	0.01	0.1
DC 1	0.7	0.6	3.2	2.3	0.6	0.7	1.3	0.7	3.6	1.0
DC 2										
DC 3 3			1.05							
DC 4 1	4	4	5.96	6	7	7	4	4	6	7
DC 5 0.3	18	19	8.020	21	22	23	24	25	26	27
DC 6 0.1	3	4	8.85	6	2	3	4	5	6	3
DC 7										
DC 8										
DC AVG.										
AC 1	9.41	1.93	1.11	1.31	20.8	10.9	3.17	0.766	0.501	6.60
AC 2	—	—	—	—	—	—	—	—	—	—
AC AVG.										
S.P.					+48.7					+3.0
AC NOISE										
POT RES.					8K					3K

I.P. RECEIVER NOTES

PAGE 4

HEINRICHS GEOEXPLORATION CO. PROJECT GLOVE #690

LINE 2 BEARING N35°E HALF N6 SP. 1 DATE 2-25-72

SEND	5-6	4-5	3-4							
RECEIVE	50-60	→	→							
MULT.	0.1	0.1								
PFE	1.0	1.1	~~0.0~~							
Cm	7	4	4							
ft	28	29	30							
n	4	5	6							
PFE Avg.										
AC	4.81	1.86	0.566							
DRIFT	—	—	—							
S.P.										
AC NOISE										
POT RES.										

I.P. RECEIVER NOTES

HEINRICHS GEOEXPLORATION CO. PROJECT Glove 690

LINE 2 BEARING S35°W HALF SW SP. 1 DATE 2-25-72

SEND		S.P.	S.P.	S.P.	S.P.	2-3	3-4	4-5	5-6	6-7
RECEIVE		0-10s	10-20s	20-30s	30-40s	40-50s	→	→	→	→
MULT.						1.0	0.1	0.1	0.1	0.1
PFE						0.7	2.9	2.3	2.4	2.0
Cur						6	4	4	7	7
#						31	32	33	34	35
n						1	2	3	4	5
PFE Avg.						31.1	5.72	5.23	4.22	1.78
AC						—	—	—	—	—
DRIFT										
S.P.			+5.5	+19.0	+7.7	+10.0				
AC NOISE		+9.2								
POT RES.		3K	5K	18K	8K	5K				

I.P. RECEIVER NOTES

PAGE 6

HEINRICHS GEOEXPLORATION CO. PROJECT GLOVE # 690

LINE 2 BEARING S35°W HALF S SP. 1 DATE 2-25-72

SEND	1-2	2-3	3-4	4-5	5-6	6-7	1-2	2-3	3-4	4-5
RECEIVE	50-60	→	→	→	→	→	60-70	→	→	→
MULT.	1.0	0.1	0.1	0.1	0.1	0.01	0.1	0.1	0.01	0.01
PFE	1.9	~~10 2.4~~ 15	~~6 4.4~~ 18	~~20 6.4~~ 45	~~0.0~~	~~0.0~~	0.6	0.2	3.2	2.6
		~2.0 (?)	~1.8(?)	~ ?	—					
		Very							NOISY	NOISY
		NOISY			400 NOISY					
Cur.	6	4	3	3	6	5	6	5	3	3
#	36	37	38	39	40	41	42	43	44	45
n	1	2	3	4	5	6	2	3	4	5
PFE Avg.										
AC	32.2	3.71	1.33	1.53	1.57	0.568	7.77	1.85	0.586	0.798
DRIFT	—	—	—	—	—	—	—	—	—	—
S.P.	+20.4	→ +10.9	+16				+3.4			
AC NOISE		3 13	1.5							
POT RES.	18K	8K					7K			

I.P. RECEIVER NOTES

Poor RADIO COMM

HEINRICHS GEOEXPLORATION CO. PROJECT Glove 690

LINE 2 BEARING S35W HALF 5 SP. 1 DATE 2-28-n

PAGE 7

SEND	5-6	1-2	2-3	3-4	4-5					
RECEIVE	60-70	70-80	→	→	→					
MULT.	0.01	0.1	0.01	0.01	0.01					
PFE	1.2	0.6	1.2	~~-2 to 130~~ 0.9	0.6					
				~~TOO~~ NOISY						
Gen	6	6	5	3	3					
#	46	47	48	49	50					
n	6	3	4	5	6					
PFE Avg.										
AC	0.883	3.41	0.932	0.376	0.512					
DRIFT	—	—	—	—	—					
S.P.		+1.7								
AC NOISE										
POT RES.		3k								

HEINRICHS GEOEXPLORATION CO.

I. P. SENDER NOTES

PROJECT GLOVE 690

LINE 2 HALF ___ SP. 1 DATE 2-24-72

SEND	3-4	4-5	5-6	6-7	4-5	5-6	6-7	5-6	6-7	6-7
RECEIVE	1-2	→	→	→	2-3	→	→	3-4	→	4-5
RANGE	30X100	30x100	30X233.3	30x233.3	30X100	30x233.3	30X233.3	30X233.3	30X233.3	30X233.3
VOLTAGE	480	420	300	390	420	300	390	300	390	390
CURRENT	3.0	3.0	7.0	7.0	3.0	7.0	7.0	7.0	7.0	7.0
SEND	CAL	5-6	4-5	3-4	2-3	1-2	6-7	5-6	4-5	3-4
RECEIVE	4-5	20-30N	→	→	→	→	30-40N	→	→	→
RANGE	10X200	30X233.3	30X133.3	30X100	30X200	30X200	30X233.3	30X233.3	30X133.3	30X133.3
VOLTAGE	280	310	580	480	460	430	390	310	580	640
CURRENT	2.0	7.0	4.0	3.0	6.0	6.0	7.0	7.0	4.0	4.0

FREQUENCIES 1 0.1

SENDER NO. CC445 - Delgado

~~OPERATOR~~ / JG92-R O-O

RECEIVER NO. → FREEMAN

OPERATOR

COMMENTS:

HEINRICHS GEOEXPLORATION CO.

I. P. SENDER NOTES

PROJECT Glove

LINE 2 HALF NE SP. 1 DATE 2/25/7

SEND	2-3	1-2	6-7	5-6	4-5	3-4	2-3	6-7	5-6	4-5
RECEIVE	30-40 NE →		40-50 NE →					50-60 NE →		
RANGE	30X200	30X200	30X233.3	30X233.3	30X133.3	30X133.3	30X200	30X233.3	30X233.3	30X133.3
VOLTAGE	460	430	390	310	570	640	460	390	310	570
CURRENT	6.0	6.0	7.0	7.0	4.0	4.0	6.0	7.0	7.0	4.0
SEND	3-4	~~2-3~~	~~3-4~~	~~4-5~~	~~5-6~~					
RECEIVE	50X60N	~~40-50~~	~~SW~~							
RANGE	30X133.3	~~30X200~~								
VOLTAGE	640	~~460~~								
CURRENT	4.0	~~6.0~~								

FREQUENCIES 1

SENDER NO. 66445

OPERATOR DELGADO

RECEIVER NO. 19692-R DD

OPERATOR FREEMAN W.J.

COMMENTS:

HEINRICHS GEOEXPLORATION CO.

I. P. SENDER NOTES

PROJECT Globe #690 DATE 2/28/72 2/25/72

LINE 2 HALF SW SP. 1

SEND	2-3	3-4	4-5	5-6	6-7	1-2	2-3	3-4	4-5	5-6
RECEIVE	40-50 SW				→	50-60	SW			→
RANGE	30X200	30X133.3	30X133.3	30X233.3	30X233.3	30X200	30X133.3	30X100	30X100	30X200
VOLTAGE	460	620	540	310	390	420	380	460	400	370
CURRENT	6.0	4.0	4.0	7.0	7.0	6.0	4.0	3.0	3.0	6.0
SEND	6-7	1-2	2-3	3-4	4-5	5-6	1-2	2-3	3-4	4-5
RECEIVE	50-60	60-70	SW			→	70-80	SW		→
RANGE	30X166.2	30X200	30X166.6	30X100	30X100	30X200	30X200	30X166.6	30X100	30X100
VOLTAGE	370	420	380	460	400	370	420	380	460	400
CURRENT	5.0	6.0	5.0	3.0	3.0	6.0	6.0	5.0	3.0	3.0

FREQUENCIES 1 0.1

SENDER NO. DELRADO

OPERATOR # 66445

RECEIVER NO. 1962-R DD

OPERATOR FREEMAN W.J

COMMENTS:

HEINRICHS GEOEXPLORATION CO.
POST OFFICE BOX 5964
TUCSON, ARIZONA (85703)
PHONE 623-0578

JOB 690 LINE 2 SPREAD 1 NE + SW 1/I 2/24/72 1000 FEET=DIPOLE LENGTH
CAL GROUP NO. 1

CAL CUR	PFE	AC1	AC2	AC FREQ	DC FREQ	PFE CAL	RHO CAL
2.000	0.00	194.000	0.00	1.00	.10	0.0000	1.0309

		COMPUTED DATA							FIELD DATA					
POINT NO.	N	RHO	PFE	MCF	CCPFE	CCMCF	CPFE		PFE	CUR	PT.	N	AC1	AC2
1	1	15.28	1.50	98.2	1.28	83.6	.22	**	1.50	3.00	1	1	14.600	0.00
2	2	35.29	.80	22.7	.55	15.5	.25	**	.80	3.00	2	2	8.400	0.00
3	3	33.96	1.00	29.4	.38	11.3	.62	**	1.00	7.00	3	3	7.610	0.00
4	4	25.97	1.00	38.5	-.62	-24.0	1.62	**	1.00	7.00	4	4	2.910	0.00
5	1	15.50	1.60	103.2	1.38	89.1	.22	**	1.60	3.00	5	1	14.800	0.00
6	2	16.31	2.20	134.9	1.48	90.5	.72	**	2.20	7.00	6	2	9.030	0.00
7	3	13.70	2.70	197.0	.66	48.2	2.04	**	2.70	7.00	7	3	3.050	0.00
8	1	19.08	.20	10.5	.04	1.9	.16	**	.20	7.00	8	1	43.100	0.00
9	2	17.02	0.00	0.0	-.68	-40.2	.68	**	0.00	7.00	9	2	9.630	0.00
10	1	39.35	.30	7.6	.30	7.6	0.00	**	.30	7.00	10	1	88.800	0.00
11	1	73.86	.70	9.5	.70	9.5	0.00	**	.70	7.00	11	1	166.000	0.00
12	2	79.88	.50	6.3	.42	5.3	.08	**	.50	4.00	12	2	25.700	0.00
13	3	32.09	.40	12.5	-.26	-8.2	.66	**	.40	3.00	13	3	3.100	0.00
14	4	23.43	1.90	81.1	.04	1.8	1.86	**	1.90	6.00	14	4	2.230	0.00
15	5	43.40	1.50	34.6	.15	3.4	1.35	**	1.50	6.00	15	5	2.370	0.00
16	1	53.00	.80	15.1	.80	15.1	0.00	**	.80	7.00	16	1	119.000	0.00
17	2	73.68	.70	9.5	.61	8.3	.09	**	.70	7.00	17	2	41.400	0.00
18	3	73.27	.70	9.6	.49	6.6	.21	**	.70	4.00	18	3	9.410	0.00
19	4	30.02	.60	20.0	-.74	-24.8	1.34	**	.60	4.00	19	4	1.930	0.00
20	5	20.67	3.20	154.8	-.31	-15.0	3.51	**	3.20	6.00	20	5	1.110	0.00
21	6	38.68	2.30	59.5	-.06	-1.5	2.36	**	2.30	6.00	21	6	1.310	0.00
22	2	36.98	.60	16.2	.36	9.8	.24	**	.60	7.00	22	2	20.800	0.00
23	3	48.50	.70	14.4	.32	6.6	.38	**	.70	7.00	23	3	10.900	0.00
24	4	49.66	1.30	26.2	.61	12.3	.69	**	1.30	4.00	24	4	3.170	0.00
25	5	20.87	.70	33.5	-2.77	-132.5	3.47	**	.70	4.00	25	5	.766	0.00
26	6	14.98	3.60	240.3	-4.09	-273.2	7.69	**	3.60	6.00	26	6	.501	0.00
27	3	29.45	1.00	34.0	.25	8.6	.75	**	1.00	7.00	27	3	6.600	0.00
28	4	42.93	1.00	23.3	.16	3.8	.84	**	1.00	7.00	28	4	4.810	0.00
29	5	50.89	1.10	21.6	.00	.1	1.10	**	1.10	4.00	29	5	1.860	0.00
30	6	24.25	0.00	0.0	-4.26	-175.5	4.26	**	0.00	4.00	30	6	.560	0.00

31	1	16.14	.70	43.4	.49	30.6	.21	**	.70	6.00	31	1	31.100 0.00
32	2	18.20	2.90	159.3	2.28	125.0	.62	**	2.90	4.00	32	2	5.720 0.00
33	3	41.37	2.30	55.6	1.83	44.2	.47	**	2.30	4.00	33	3	5.230 0.00
34	4	38.19	2.40	62.9	1.42	37.2	.98	**	2.40	7.00	34	4	4.220 0.00
35	5	28.08	2.00	71.2	-.38	-13.5	2.38	**	2.00	7.00	35	5	1.780 0.00
36	1	16.91	1.90	112.3	1.71	100.9	.19	**	1.90	6.00	36	1	32.200 0.00
37	2	11.70	2.00	170.9	.87	74.6	1.13	**	2.00	4.00	37	2	3.710 0.00
38	3	13.71	0.00	0.0	-2.04	-148.7	2.04	**	0.00	3.00	38	3	1.330 0.00
39	4	31.55	0.00	0.0	-1.26	-39.9	1.26	**	0.00	3.00	39	4	1.530 0.00
40	5	28.32	0.00	0.0	-2.35	-83.1	2.35	**	0.00	6.00	40	5	1.570 0.00
41	6	19.68	0.00	0.0	-5.51	-280.3	5.51	**	0.00	5.00	41	6	.568 0.00
42	2	16.12	.60	37.2	-.14	-8.4	.74	**	.60	6.00	42	2	7.770 0.00
43	3	11.47	.20	17.4	-2.36	-206.1	2.56	**	.20	5.00	43	3	1.850 0.00
44	4	12.47	3.20	256.6	-.94	-75.1	4.14	**	3.20	3.00	44	4	.586 0.00
45	5	29.54	2.60	88.0	.37	12.6	2.23	**	2.60	3.00	45	5	.798 0.00
46	6	25.79	1.20	46.5	-2.74	-106.2	3.94	**	1.20	6.00	46	6	.883 0.00
47	3	17.68	.60	33.9	-.87	-49.0	1.47	**	.60	6.00	47	3	3.410 0.00
48	4	11.67	1.20	102.8	-3.29	-282.2	4.49	**	1.20	5.00	48	4	.932 0.00
49	5	13.57	0.00	0.0	-5.92	-436.3	5.92	**	0.00	3.00	49	5	.376 0.00
50	6	29.56	0.00	0.0	-3.32	-112.3	3.32	**	0.00	3.00	50	6	.512 0.00

Job. 0 0, LINE 1, Spread 1, NE+SW ½, 2/22/72 1000.

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT Glove 690
LINE 1 HALF N SP. 1 DATE 2-22-72

PAGE 1

SEND	3-4	4-5	5-6	4-5	5-6	5-6	S.P.	S.P.		CAL
RECEIVE	1-2	→	→	2-3	→	3-4	0-10N	10-20N		3-4
RANGE	1.0	0.1	0.1	1.0	1.0	1.0				10
DC 1	0.7	0.8	0.8	0.7	0.6	0.5				0.0
DC 2										
DC 3										
DC 4 Grn	6	5	4	6	4	4				2
DC 5 R	1	2	3	4	5	6				1
DC 6 W	1	2	3	1	2	1				
DC 7										
DC 8										
DC AVG.										
AC 1	21.9	7.68	3.33	45.3	14.7	68.7				194.
AC 2	—	—	—	—	—	—				—
AC AVG.										1.2
S.P.							-17.7	-1.0		0.1
AC NOISE										
POT RES.							30 K	4K		

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT Globe 690
LINE 1 HALF N SP. 1 DATE 2-22-72

SEND	4-5	3-4	2-3	1-2	5-6	4-5	3-4	2-3	1-2	5-6
RECEIVE	20-30N	→	→	→	30-40	N	→	→	→	40-50N
RANGE	10	1.0	0.1	0.1	1.0	1.0	0.1	0.1	0.1	1.0
DC 1	0.5	0.5	1.2	1.3	0.4	0.6	0.7	1.1	1.1	0.6
DC 2										
DC 3										
DC 4	5	6	5	6	4	5	5	5	6	4
DC 5	7	8	9	10	11	12	13	14	15	16
DC 6	1	2	3	4	1	2	3	4	5	2
DC 7										
DC 8										
DC AVG.										~~23.7~~
AC 1	115.	32.1	7.39	2.44	86.8	25.8	9.93	3.28	1.24	27.7
AC 2	—	—	—	—	—	—	—	—	—	~~27.5~~
AC AVG.										~~28.1~~
S.P.	+5.9				+1.2					-6.5
AC NOISE										
POT RES.	3K				4K					3K

≠45° DRIFT IS VERY G.F@47N BAD FROM A.C. to A.C.

HEINRICHS GEOEXPLORATION CO. PROJECT Glove 690

I.P. RECEIVER NOTES LINE 1 HALF N SP. 1 DATE 2-22-72

SEND	4-5	3-4	2-3	1-2	5-6	4-5	3-4	2-3	5-6	4-5
RECEIVE	40-50	—	—	→	50-60	—	—	→	60-70	N →
RANGE	1.0	0.1	0.1	0.1	1.0	1.0	0.1	0.1	0.1	0.1
DC 1	1.0	1.2	1.3	0.0	1.0	1.1	1.2	1.3	1.4	1.5
DC 2										
DC 3				DRIFT						
DC 4	5	5	5	IS 6	4	5	5	5	4	5
DC 5	17	18	19	TO 20	21	22	23	24	25	26
DC 6	3	DRIFT	5	BAD 6	3	4	5	6	4	5
DC 7		IS		To						
DC 8		VERY		Read						
DC AVG.		BAD								
AC 1	15.6	5.69	2.15	1.15	23.8	17.7	9.24	3.48	9.92	7.97
AC 2	—	—	—	—	—	—	—	—	—	—
AC AVG.										
S.P.	-	Questionable	→	→	+11.4				-0.1	
AC NOISE		DATA	→	→						
POT RES.					3K				20K	

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT Glove 690
LINE 1 HALF N SP. 1 DATE 2-22-72

SEND	3-4										
RECEIVE	60-70N										
RANGE	0.1										
DC 1	1.3										
DC 2											
DC 3											
DC 4	5										
DC 5	27										
DC 6	6										
DC 7											
DC 8											
DC AVG.											
AC 1	4.29										
AC 2	—										
AC AVG.											
S.P.											
AC NOISE											
POT RES.											

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT Glove 690
LINE 1 HALF SW SP. 1 DATE 2-23-72

SEND	CAL	S.P.	S.P.	S.P.	2-3	3-4	4-5	5-6	1-2	2-3
RECEIVE	4-5	0-10s	10-20s	20-30s	30-40s	→	→	→	40-50s	→
RANGE	10.				1.0	0.1	0.1	0.1	1.0	0.1
DC 1	0.0				0.8	0.9	1.3	0.8	0.8	0.8
DC 2										
DC 3										
DC 4 sm					6	6	5	4	6	6
DC 5 #					28	29	30	31	32	33
DC 6 n					1	2	3	4	1	2
DC 7										
DC 8										
DC AVG.										
AC 1	194.				20.1	5.84	3.37	1.69	19.9	5.41
AC 2	—				—	—	—	—	—	—
AC AVG.										
S.P.		-26.9	-10.4	-7.8	+18.3				+8.7	
AC NOISE										
POT RES.		10K	4K	8K	6K				3K	

STA 50 in S. side of WASK

HEINRICHS GEOEXPLORATION CO.

I.P. RECEIVER NOTES

PROJECT Glove 690

LINE 1 HALF SW SP. 1 DATE 2-23-72

SEND	3-4	4-5	5-6	1-2	2-3	3-4	4-5	5-6	1-2	2-3
RECEIVE	40-50	5 →	→	50-60	→	→	→	→	60-70	→
RANGE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.01	0.1	0.1
DC 1	1.1	1.0	1.2	1.2	0.9	1.6	1.6	1.8	1.3	1.6
DC 2										
DC 3										
DC 4 Cm	6	5	4	6	6	6	5	4	6	6
DC 5 #	34	35	36	37	38	39	40	41	42	43
DC 6 m	3	4	5	2	3	4	5	6	3	4
DC 7										
DC 8										
DC AVG.										
AC 1	2.88	2.06	1.14	4.75	1.99	1.44	1.16	0.652	2.33	1.30
AC 2	—	—	—	—	—	—	—	—	—	—
AC AVG.										
S.P.				-9.4					+4.8	
AC NOISE										
POT RES.				8K					6K	

STA 80 ≅ 60' short of GROUNDED FENCE

PAGE 7

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT Glove 690
LINE 1 HALF SW SP. 1 DATE 2-23-72

SEND	3-4	4-5	1-2	2-3	3-4					
RECEIVE	60-70	S. →	70-80 S		→					
RANGE	0.1	0.01								
DC 1	1.8	2.6								
DC 2										
DC 3										
DC 4 Fin	6	5								
DC 5 #	44	45								
DC 6 M	5	6								
DC 7										
DC 8										
DC AVG.										
AC 1	1.17	0.997								
AC 2	—	—								
AC AVG.										
S.P.			-30.7							
AC NOISE										
POT RES.			31K							

HEINRICHS GEOEXPLORATION CO.

I. P. SENDER NOTES

PROJECT GLOVE 690

LINE 1 HALF NE SP. 1 DATE 2-22-72

PAGE 1

SEND	3-4	4-5	5-6	4-5	5-6	5-6	CAL	4-5	3-4	2-3
RECEIVE	1-2	—	2	2-3	→	3-4	3-4	20-30 NE	—	→
RANGE	30X200	30X166.6	30X133.3	30X200	30X133.3	30X133.3	10X200	30X166.6	30X200	30X166.6
VOLTAGE	350	500	420	350	420	420	110	500	340	400
CURRENT	6.0	5.0	4.0	6.0	4.0	4.0	2.0	5.0	6.0	5.0
SEND	1-2	5-6	4-5	3-4	2-3	1-2	5-6	4-5	3-4	2-3
RECEIVE	20-30	30-40 NE	—	—	—	→	40-50 NE	—	—	→
RANGE	30X200	30X133.3	30X166.6	30X166.6	30X166.6	30X200	30X133.3	30X166.6	30X166.6	30X166.6
VOLTAGE	450	440	500	280	400	450	420	500	280	400
CURRENT	6.0	4.0	5.0	5.0	5.0	6.0	4.0	5.0	5.0	5.0

FREQUENCIES 1 0.1

SENDER NO. 6644 5

OPERATOR Delgado

RECEIVER NO. 19692 R D-D

OPERATOR FREEMAN, W.J.

COMMENTS:

HEINRICHS GEOEXPLORATION CO.

I. P. SENDER NOTES

PROJECT Glove

LINE 1 HALF NE SP. 1 DATE 2/22/72

PAGE 2

SEND	1-2	5-6	4-5	3-4	2-3	5-6	4-5	3-4		
RECEIVE	40-50	50-60	NE →			60-70	NE →			
RANGE	30x200	30x133.3	30x166.6	30x166.6	30x166.6	30x133.3	30x166.6	30x166.6		
VOLTAGE	440	420	500	280	400	420	500	280		
CURRENT	6.0	4.0	5.0	5.0	5.0	4.0	5.0	5.0		
SEND										
RECEIVE										
RANGE										
VOLTAGE										
CURRENT										

FREQUENCIES 1 0.1

SENDER NO. 66445

OPERATOR DELGADO

RECEIVER NO. 19692-R 0-0

OPERATOR FREEMAN, W.J.

COMMENTS:

SENDER NO. 6644S - DELGADO RECIEVER NO 1969-R D-O- FREEMAN W.J.

INDUCED POLARIZATION SENDER NOTES pg3 1 + 0.1

project: GLOVE Line: 1 Sp1 SW Date: 2/23/72

Send	CAL	2-3	3-4	4-5	5-6	1-2	2-3	3-4	4-5	5-6	1-2	2-3
Receive	4-5	30-40	SW →	→	→	40-50	SW →	→	→	→	50-60	SW →
Time	10X200	30X200	30X200	30X166.6	30X133.3	30X200	30X200	30X200	30X166.6	30X133.3	30X200	30X200
Range	190	380	340	500	420	350	380	340	500	420	350	380
Current	2.0	6.0	6.0	5.0	4.0	6.0	6.0	6.0	5.0	4.0	6.0	6.0
Send	3-4	4-5	5-6	1-2	2-3	3-4	4-5	1-2	2-3	3-4		
Receive	50-60	SW →	→	60-70	SW →	→	→	70-80	SW →	→	70-80	SW →
Time	30X300	30X166.6	30X133.3	30X200	30X200	30X200	30X166.6	30X200	30X200	30X200	30X200	
Range	340	500	420	350	380	340	500	350	380	340	350	
Current	6.0	5.0	4.0	6.0	6.0	6.0	5.0	6.0	6.0	6.0	6.0	

JOB 690

P.O.# 13956

January 29, 1972

Mr. David Ellingwood
Chief Geologist
C. F. & I. Steel Corp.
P. O. Box 316
Pueblo, Colo 81002

Re: Proposed I. P. Survey
West of Glove Mine
Santa Cruz County, Arizona

Dear Mr. Ellingwood:

At the request of Mr. James Brooks on January 28, 1972, we herewith submit this proposal for an I. P. Survey west of the Glove Mine, Santa Cruz County, Arizona.

We understand that approximately five lines, each about three miles in length of dipole-dipole I. P. coverage on 1,000 foot dipole spacings are desired. This coverage would be on lines about one mile apart west of the Glove Mine to prospect along the mineralized trend as projected out onto the alluvial covered pediment.

A three man crew plus necessary equipment to obtain this I.P. coverage would be charged at $250.00 per work day plus expenses. Expenses include $15.00 per day plus $0.15 per mile per vehicle and one four wheel drive vehicle should suffice. The crew can commute from Tucson so no living expenses will be involved. Other direct job related expenses will be billed at our invoice cost plus 15%.

Our normal work schedule is based on a five day week and an eight hour work day. Travel time up to one hour per day each way to and from the job site will not be charged. Overtime in excess of this schedule will be charged at $37.50 per hour for the three man crew plus expenses as above.

Standby time due to inclement weather or client request will be charged at half the daily rate plus expenses as above.

Final data compilation, computation and drafting will be charged at $10.00 per hour. Final interpretation and report will be charged at $150.00 per day. Rough field plots and preliminary field interpretations will be available during the project as needed.

If the five lines are run, we estimate that about ten field days would be involved and the total project billing, including final report would be approximately $3,500.00 to $4,000.00. In any event, we would agree to confine our charges to $4,000.00 unless you requested additional detail, coverage or effort.

GEOEX will save C. F. & I. harmless from all Workmen's Compensation liability, public liability and property damage liability incurred by GEOEX employees. All property permits, brushing and trespass liability and related costs which are incurred on behalf of C. F. & I. will be chargeable to C. F. & I. at GEOEX cost plus 15%. All special insurance premiums, permits, bonds, fees, duties, licenses, taxes, trespass permits and related special fees, if any, will be billed to C. F. & I. at GEOEX cost plus 15%.

Payments are due on presentation. Billings may be submitted weekly with final payment due on presentation of final report.

Evidence of currently valid certificates of public liability and property damage insurance and Arizona State Workmen's Compensation insurance, your insurance department should have on file.

At this time we have a crew available immediately. Commonly, however, a week to ten days advance notice is required to schedule a properly staffed and equipped crew.

Your understanding and approval of the above may be indicated by signing as provided below on the attached copy of this letter and returning it to us or by submitting a purchase order.

Sincerely yours,
Heinrichs GEOEXploration Co.

Chris S. Ludwig
Senior Geophysicist

CSL:jh

Date:_____

Accepted by:_____

Title:_____

cc: Mr. James Brooks

HEINRICHS GEOEXPLORATION CO.
POST OFFICE BOX 5964
TUCSON, ARIZONA (85703)
PHONE 623-0578

JOB 690 LINE 1 SPREAD 1 NE + SW 1/2 2/22/72 1000 FEET=DIPOLE LENGTH
CAL GROUP NO. 1

CAL CUR	PFE	AC1	AC2	AC FREQ	DC FREQ	PFE CAL	RHO CAL
2.000	0.00	194.000	0.00	1.00	.10	0.0000	1.0309

		COMPUTED DATA							FIELD DATA					
POINT NO.	N	RHO	PFE	MCF	CCPFE	CCMCF	CPFE		PFE	CUR	PT.	N	AC1	AC2
1	1	11.37	.70	61.6	.37	32.1	.33	**	.70	6.00	1	1	21.900	0.00
2	2	19.15	.80	41.8	.22	11.3	.58	**	.80	5.00	2	2	7.680	0.00
3	3	25.95	.80	30.8	-.08	-3.2	.88	**	.80	4.00	3	3	3.330	0.00
4	1	23.51	.70	29.8	.58	24.6	.12	**	.70	6.00	4	1	45.300	0.00
5	2	45.74	.60	13.1	.42	9.3	.18	**	.60	4.00	5	2	14.700	0.00
6	1	53.38	.50	9.4	.50	9.4	0.00	**	.50	4.00	6	1	68.700	0.00
7	1	71.49	.50	7.0	.50	7.0	0.00	**	.50	5.00	7	1	115.000	0.00
8	2	66.52	.50	7.5	.40	6.0	.10	**	.50	6.00	8	2	32.100	0.00
9	3	46.26	1.20	25.9	.80	17.2	.40	**	1.20	5.00	9	3	7.390	0.00
10	4	25.48	1.30	51.0	-.36	-14.3	1.66	**	1.30	6.00	10	4	2.440	0.00
11	1	67.38	.40	5.9	.40	5.9	0.00	**	.40	4.00	11	1	86.800	0.00
12	2	64.22	.60	9.3	.49	7.6	.11	**	.60	5.00	12	2	25.800	0.00
13	3	61.85	.70	11.3	.43	6.9	.27	**	.70	5.00	13	3	9.930	0.00
14	4	41.02	1.10	26.8	.21	5.1	.89	**	1.10	5.00	14	4	3.280	0.00
15	5	22.62	1.10	48.6	-2.03	-89.9	3.13	**	1.10	6.00	15	5	1.240	0.00
16	2	86.18	.60	7.0	.53	6.1	.07	**	.60	4.00	16	2	27.700	0.00
17	3	97.46	1.00	10.3	.86	8.8	.14	**	1.00	5.00	17	3	15.600	0.00
18	4	71.24	1.20	16.8	.78	10.9	.42	**	1.20	5.00	18	4	5.690	0.00
19	5	47.15	1.30	27.6	.09	1.8	1.21	**	1.30	5.00	19	5	2.150	0.00
20	6	33.20	0.00	0.0	-2.87	-86.4	2.87	**	0.00	6.00	20	6	1.150	0.00
21	3	185.86	1.00	5.4	1.00	5.4	0.00	**	1.00	4.00	21	3	23.800	0.00
22	4	221.38	1.10	5.0	1.01	4.6	.09	**	1.10	5.00	22	4	17.700	0.00
23	5	202.44	1.20	5.9	1.03	5.1	.17	**	1.20	5.00	23	5	9.240	0.00
24	6	122.11	1.30	10.6	.78	6.4	.52	**	1.30	5.00	24	6	3.480	0.00
25	4	155.55	1.40	9.0	1.26	8.1	.14	**	1.40	4.00	25	4	9.920	0.00
26	5	175.13	1.50	8.6	1.30	7.4	.20	**	1.50	5.00	26	5	7.970	0.00
27	6	150.53	1.30	8.6	.91	6.1	.39	**	1.30	5.00	27	6	4.290	0.00
28	1	10.44	.80	76.6	.42	40.6	.38	**	.80	6.00	28	1	20.100	0.00
29	2	12.15	.90	74.1	-.17	-14.2	1.07	**	.90	6.00	29	2	5.840	0.00
30	3	21.12	1.30	61.6	.14	6.6	1.16	**	1.30	5.00	30	3	3.370	0.00
31	4	26.34	.80	30.4	-.79	-30.2	1.59	**	.80	4.00	31	4	1.690	0.00
32	1	10.34	.80	77.4	.42	40.5	.38	**	.80	6.00	32	1	19.900	0.00
33	2	11.24	.80	71.1	-.39	-34.5	1.19	**	.80	6.00	33	2	5.410	0.00
34	3	15.01	1.10	73.3	-.71	-47.6	1.81	**	1.10	6.00	34	3	2.880	0.00
35	4	25.74	1.00	38.9	-.64	-25.0	1.64	**	1.00	5.00	35	4	2.060	0.00
36	5	30.40	1.20	39.5	-.95	-31.2	2.15	**	1.20	4.00	36	5	1.110	0.00
37	2	9.91	1.20	121.1	-.20	-20.3	1.40	**	1.20	6.00	37	2	4.750	0.00
38	3	10.35	.90	87.0	-2.02	-195.0	2.92	**	.90	6.00	38	3	1.990	0.00
39	4	15.08	1.60	106.1	-1.66	-110.0	3.26	**	1.60	6.00	39	4	1.440	0.00
40	5	25.52	1.60	62.7	-1.09	-42.7	2.69	**	1.60	5.00	40	5	1.160	0.00
41	6	28.74	1.80	62.6	-1.64	-57.1	3.44	**	1.80	4.00	41	6	.652	0.00
42	3	12.17	1.30	106.9	-1.08	-88.4	2.38	**	1.30	6.00	42	3	2.330	0.00
43	4	13.62	1.60	117.5	-2.11	-154.6	3.71	**	1.60	6.00	43	4	1.300	0.00
44	5	21.49	1.80	83.8	-1.54	-71.7	3.34	**	1.80	6.00	44	5	1.170	0.00
45	6	35.43	2.60	73.4	-.04	-1.1	2.64	**	2.60	5.00	45	6	.997	0.00