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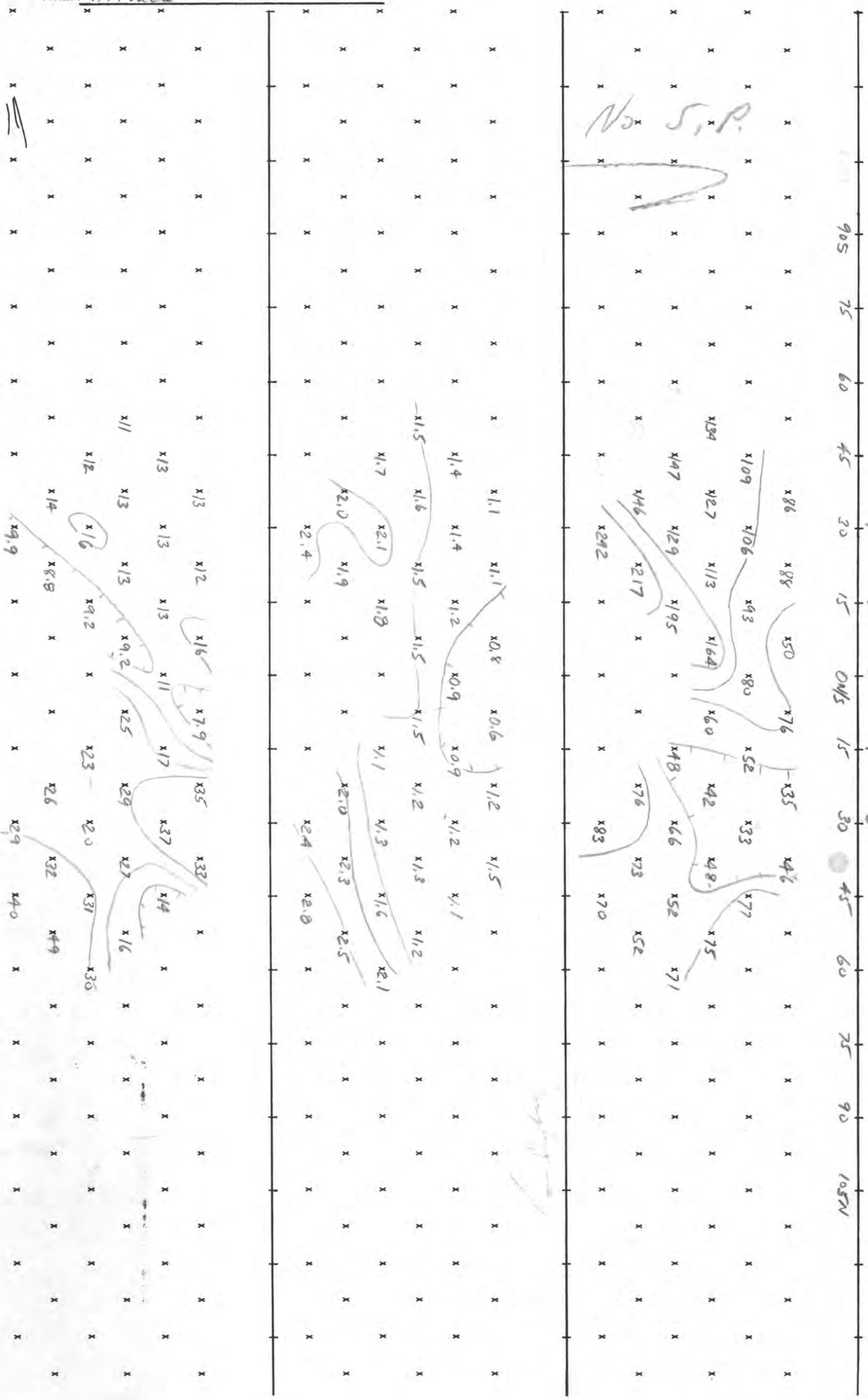
JOB# 668 LINE# 1 SP 1 a = 1500' LOOKING W

CLIENT Bell Western Corp. DATE Oct, 1971 FREQUENCIES 0.1 & 1.0 Hz

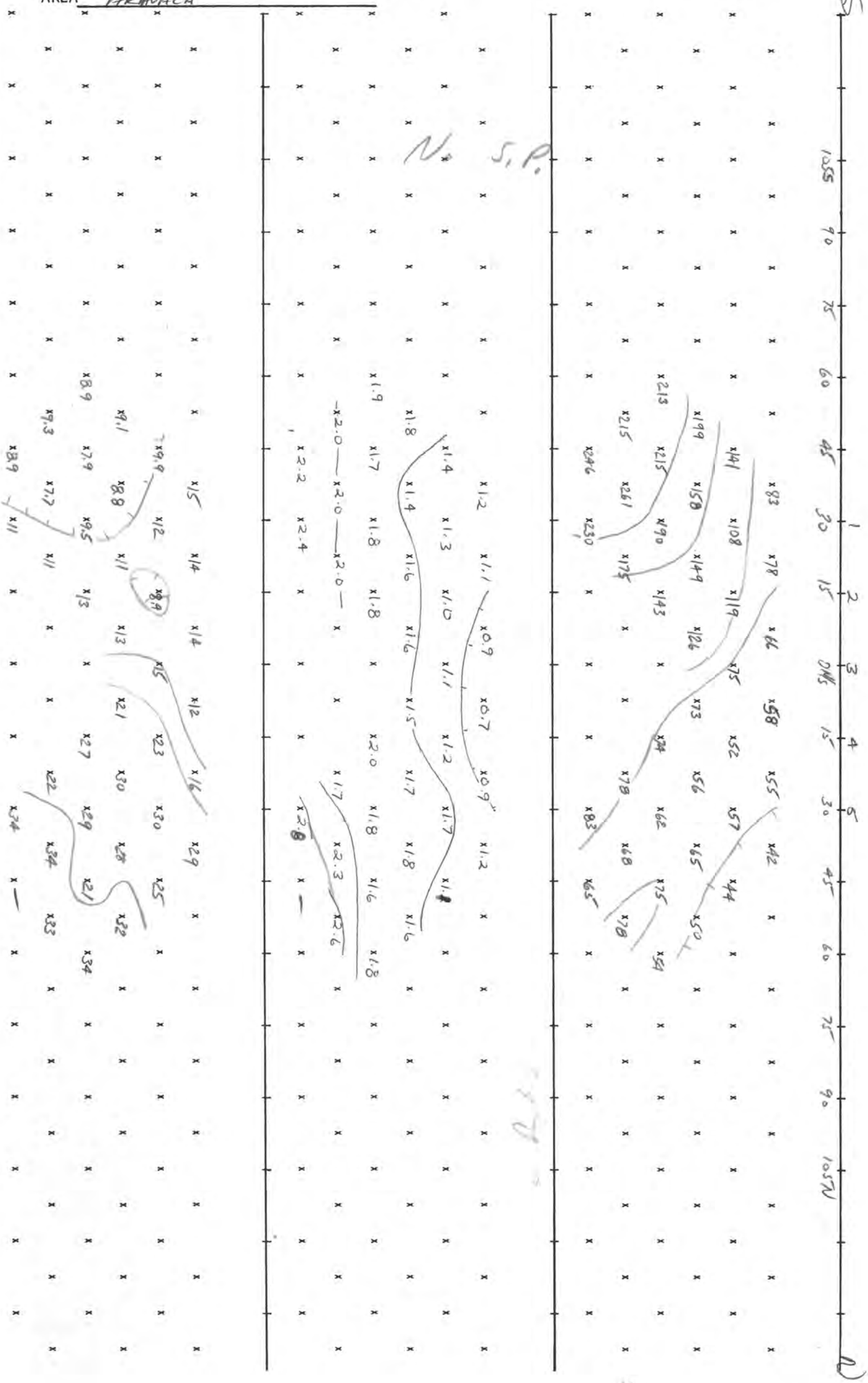
AREA Arivaca



JOB# 668 LINE# 2 SP 1 a = 1500' LOOKING ~~E~~ W

CLIENT BELL WESTERN CORP. DATE 10-22 FREQUENCIES 1.0 & 0.1 Hz

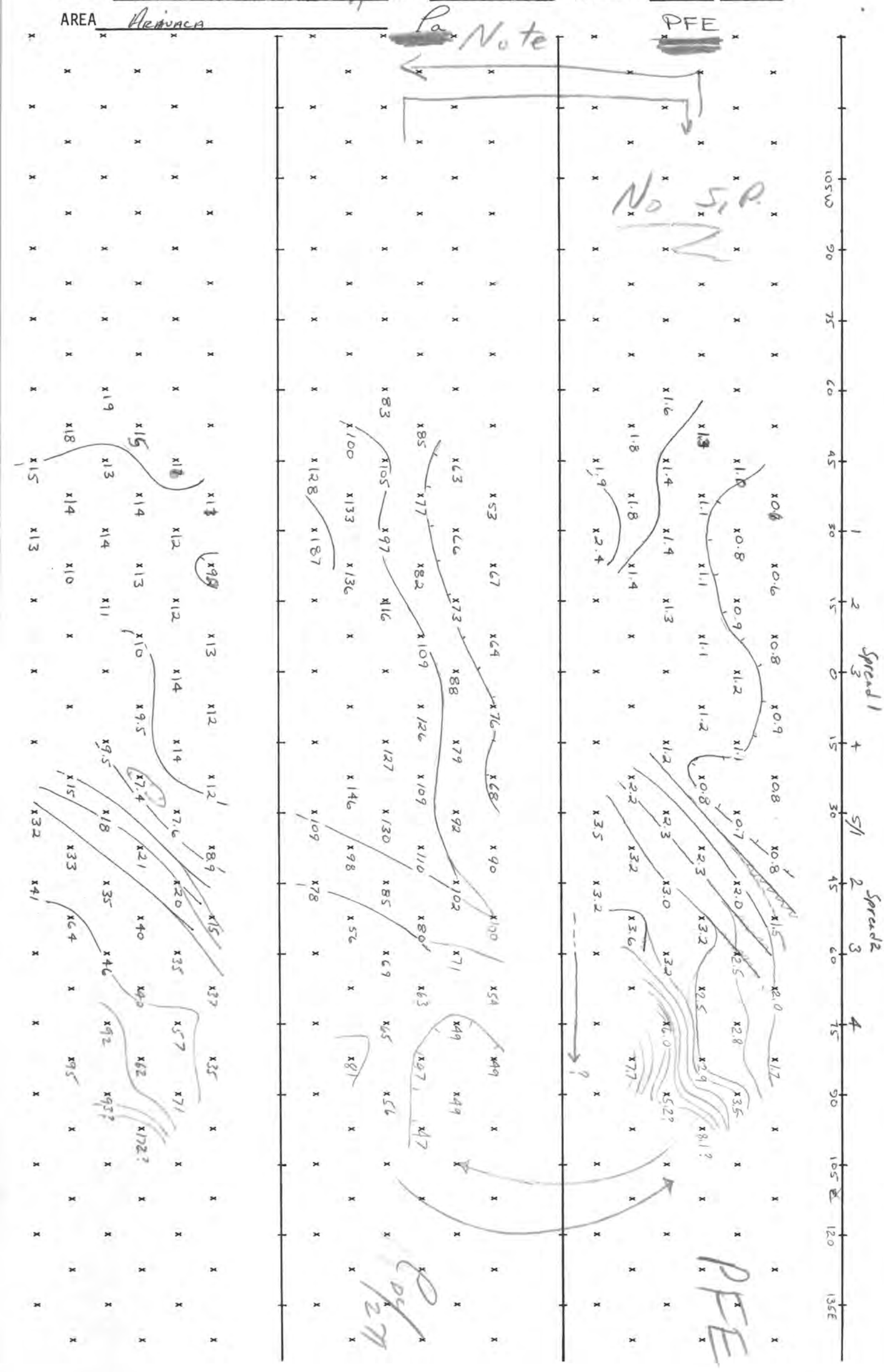
AREA ARAVACA



JOB# 668 LINE# 3 SP 182 a = 1500' LOOKING N

CLIENT BELL WESTERN Corp DATE 10-22 FREQUENCIES 1.0 & 0.1 Hz

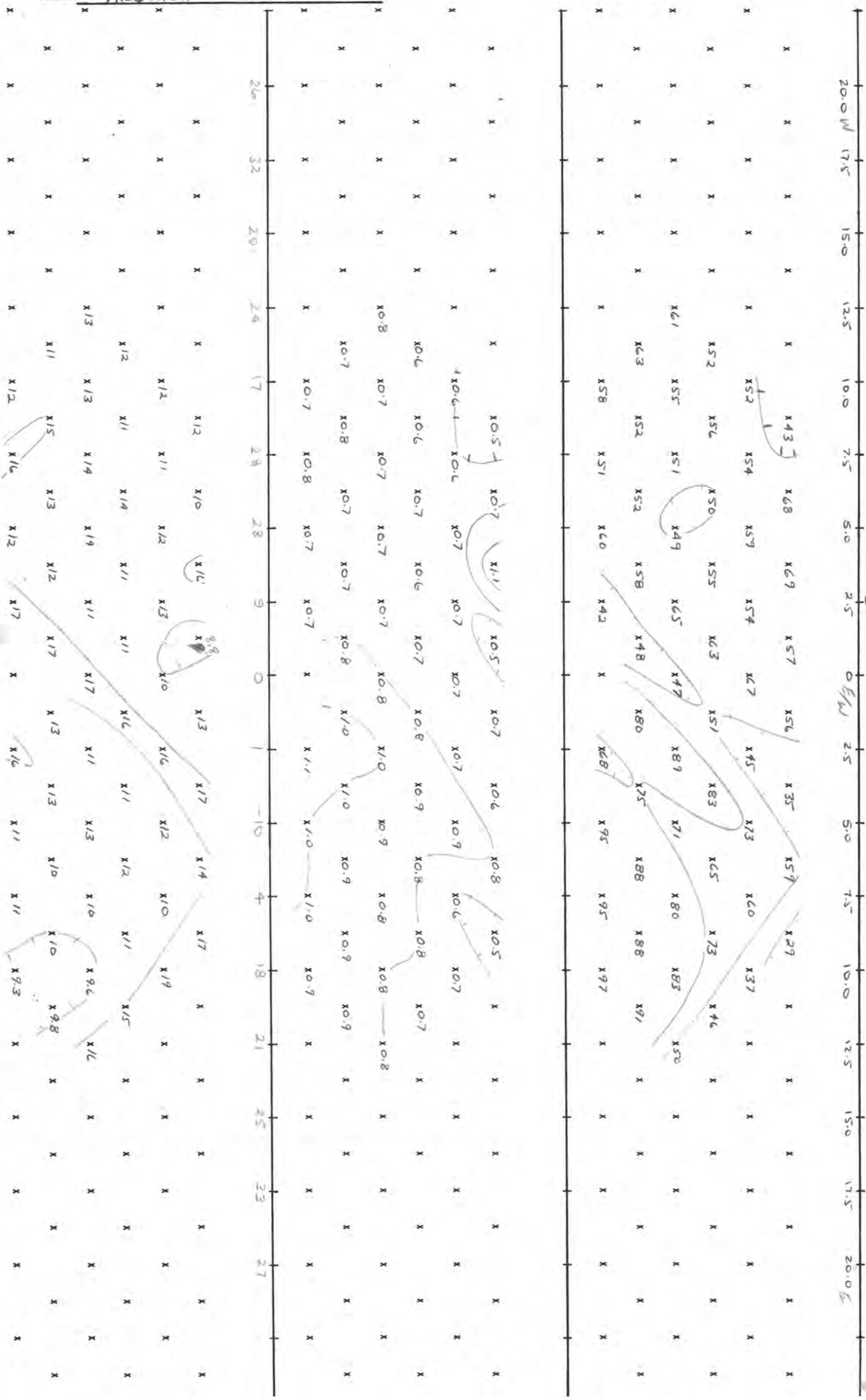
AREA Arizona



JOB# 668-71 LINE# 3A SP 1 a = 250' LOOKING N

CLIENT BELL WESTERN CORP. DATE 10-25-71 FREQUENCIES ~~10~~ 3.0 & ~~0.1~~ 2.9 Hz

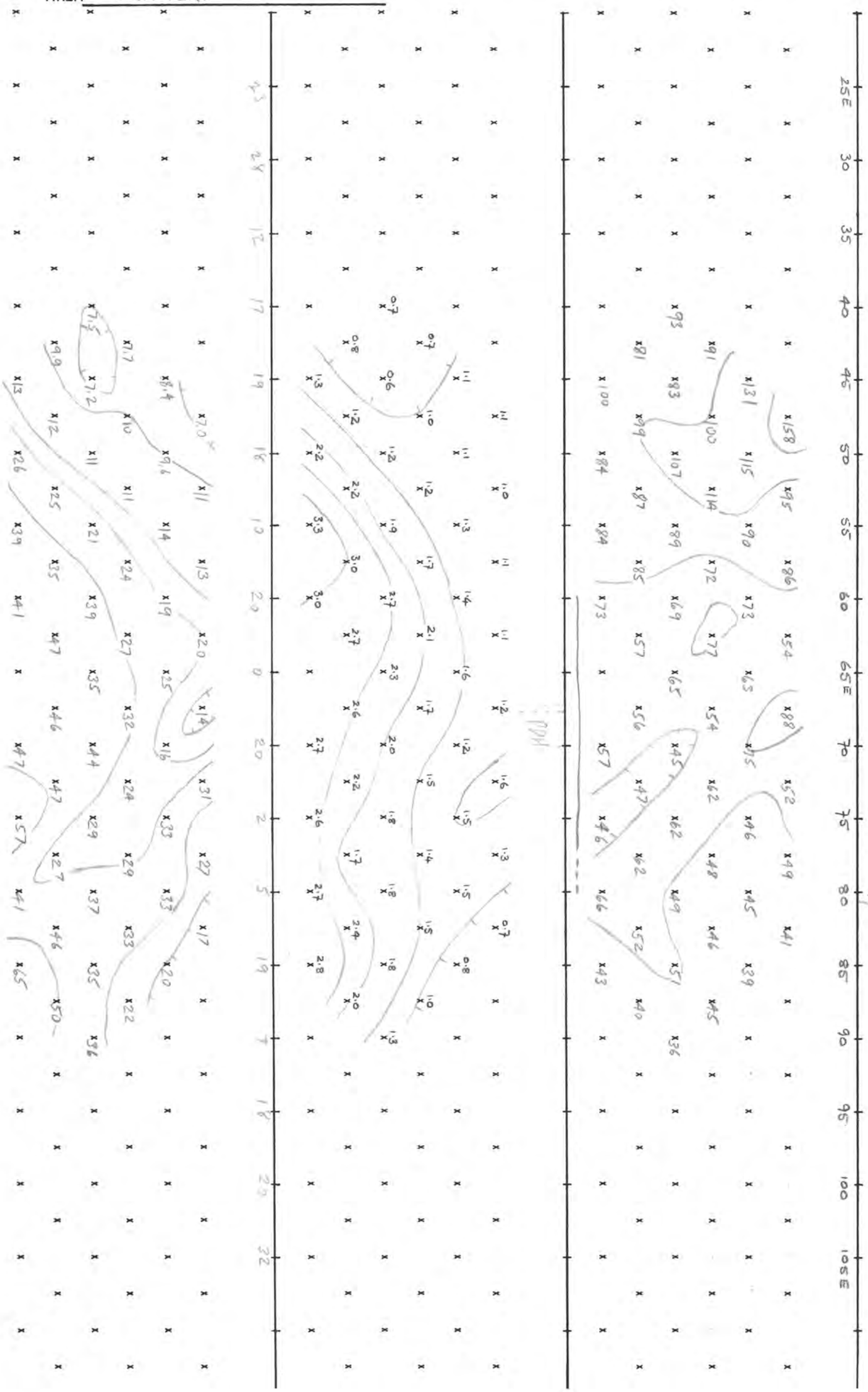
AREA ARIVACA



JOB# 668-71 LINE# 3 SP 3 a = 500' LOOKING N.

CLIENT BELL WESTERN CORP DATE 10-29-71 FREQUENCIES 3.0 & 0.3 Hz

AREA ARIVACA.

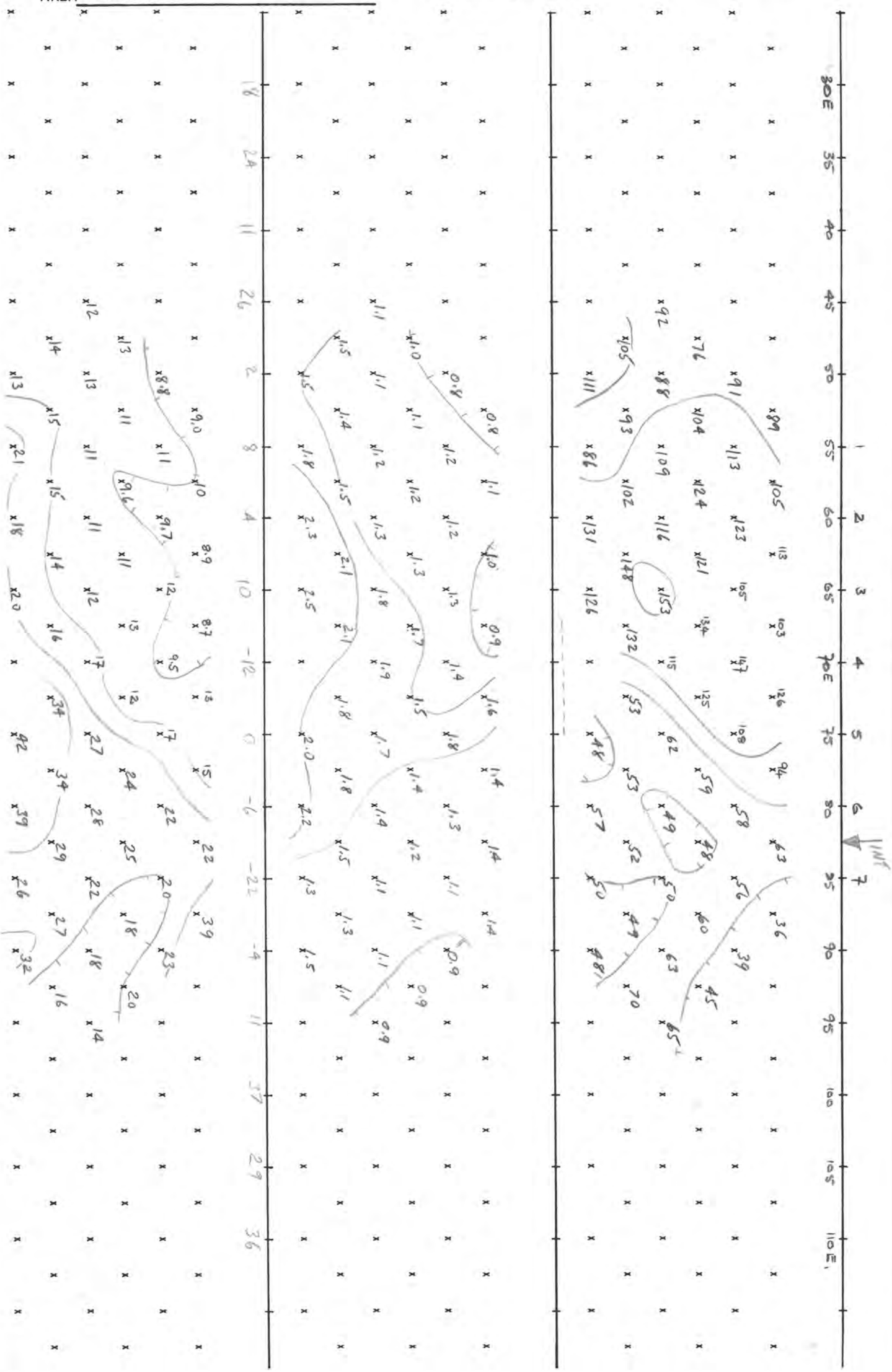


JOB# 668 LINE# 4 SP 1 a = 500' LOOKING NORTH.

CLIENT BELL WESTERN DATE 1st Nov: 1971 FREQUENCIES 3.0 & 0.3 Hz

2nd Nov: 1971.

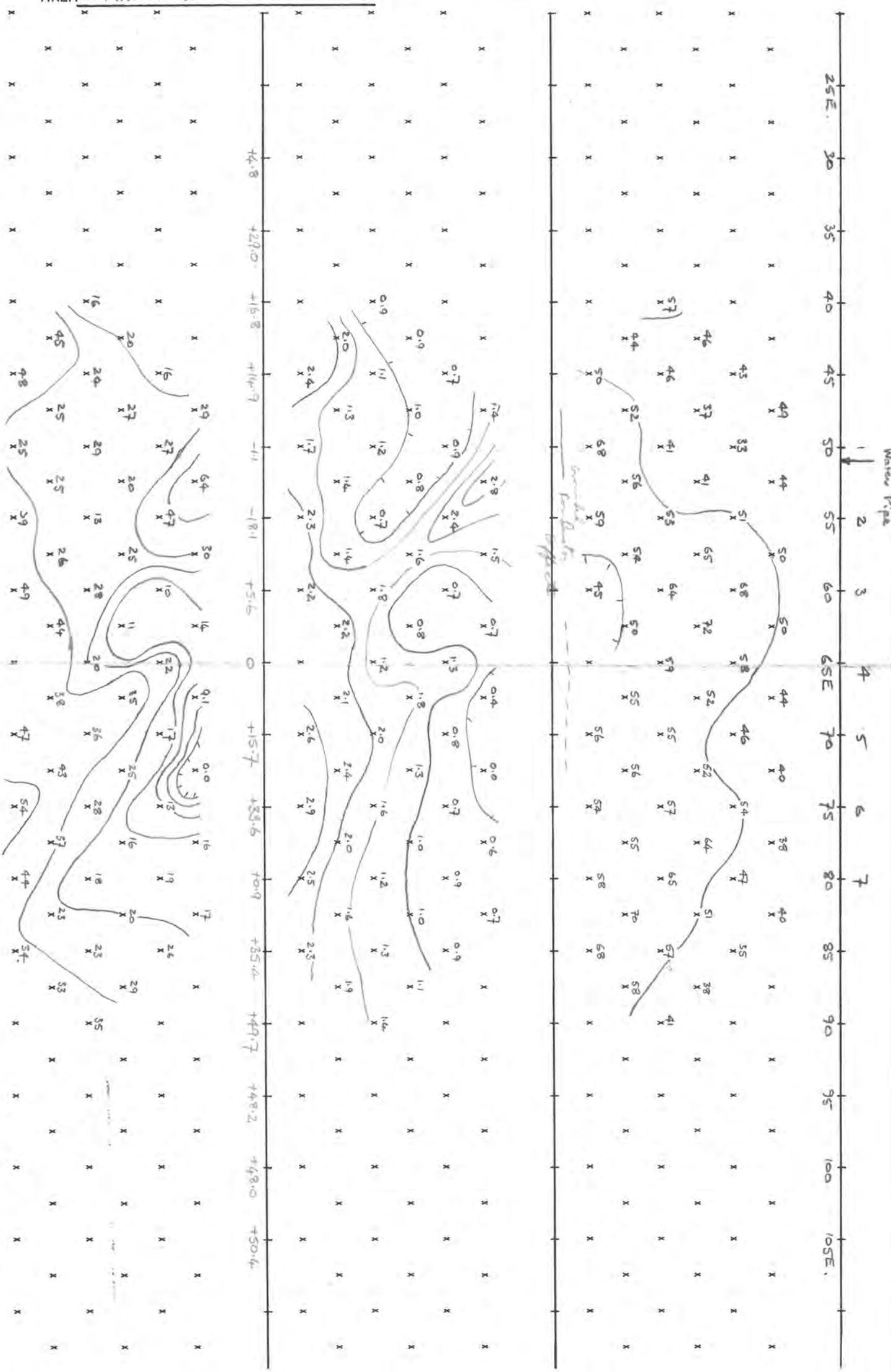
AREA ARIVACA.



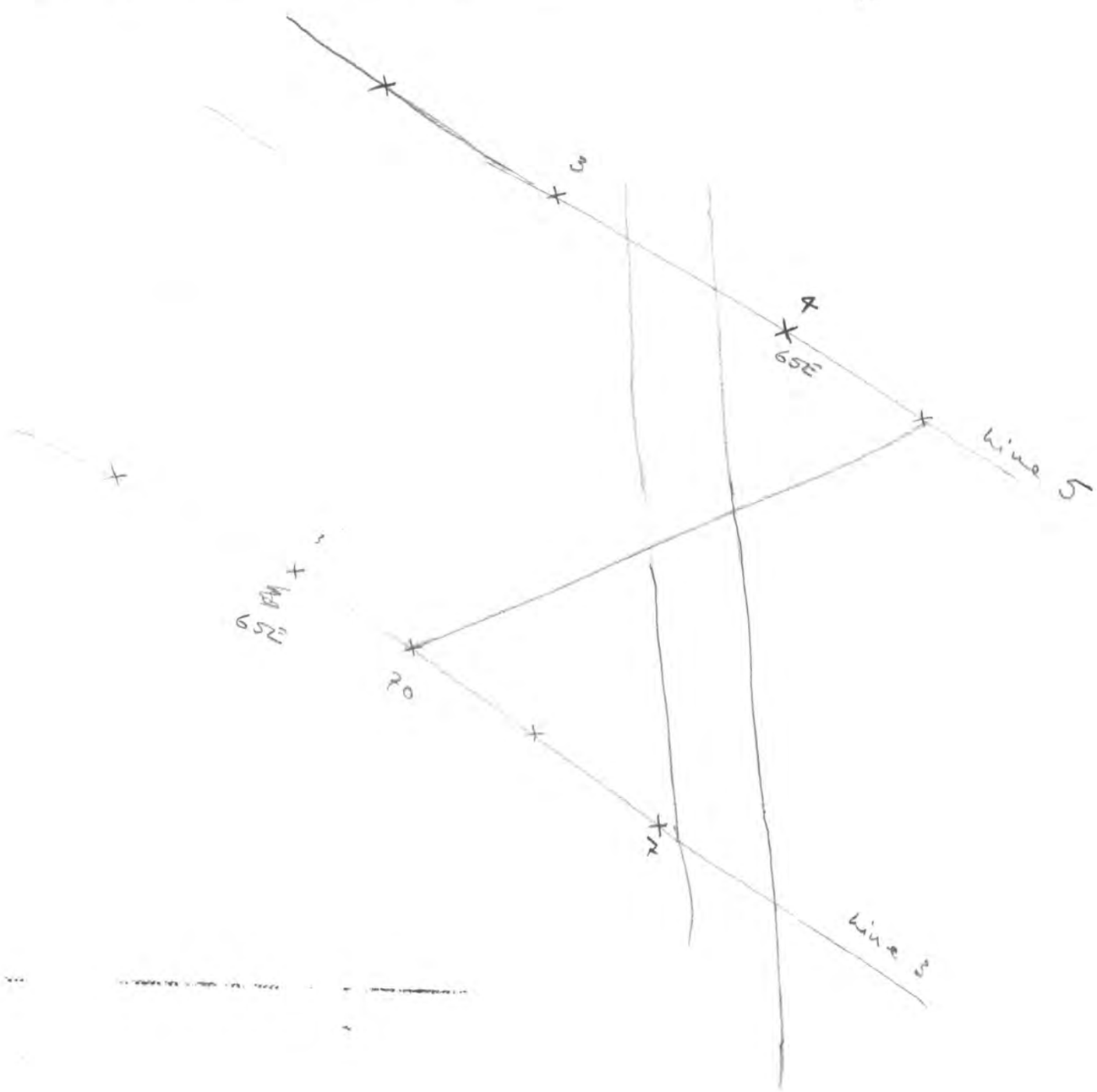
JOB# 668-71 LINE# 5 SP 1 a = 500 feet LOOKING NORTH

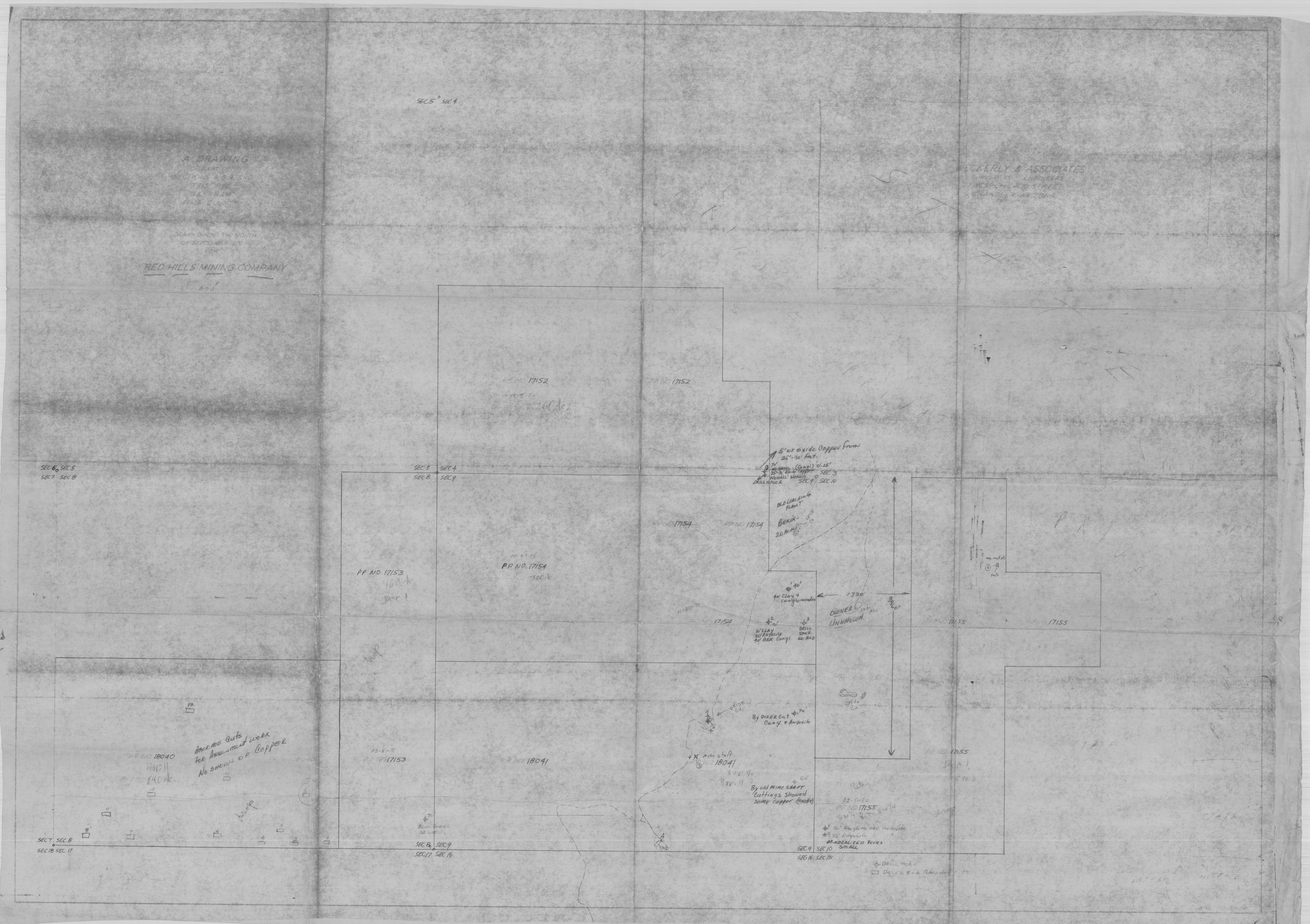
CLIENT BELL WESTERN DATE 3rd & 4th Nov 1971 FREQUENCIES 3.0 & 0.3 Hz

AREA ARIVACA.



70E on line 3. Centre for N/S 500 ft. 'a' spacing





A DRAWING
OF PART OF
SECTIONS 4, 8, 9, & 10
T21S R9E
G&S R&M
PIMA COUNTY
ARIZONA
DRAWN DURING THE MONTH
OF SEPTEMBER 1970
FOR
RED HILLS MINING COMPANY
1" = 400'
WECKERLY & ASSOCIATES
SURVEYORS ENGINEERS
77 WEST CHICAGO STREET
CHANDLER, ARIZONA
SEC 5 SEC 4
PP NO 17152
12-5-70
260 Ac
PP NO 17152
5' of oxide Copper from
25'-30' feet.
70' No shows (Congl) 0'-25'
25'-30' oxide copper
Nodule shows
DRILL STUCK
SEC 3
SEC 9 SEC 10
OLD LEACHING PLANT
BEKINS
20 Acres
OXIDE Cu
PP NO 17154
PP NO 17154
PP NO 17153
160 Ac
Dec 1
PP NO. 17154
-300 Ac
40' Clay & Conglomerates
1320'
OWNERS
UNKNOWN
3/4 of 6'
10' CLAY
20' RHYOLITE
40' BRK Congl.
DRILL STUCK
NO HOLE
PP NO 17155
PP NO 17155
OXIDE Cu
By DOZER Cut
Congl & Andesite
OXIDE Cu
mini shaft
PP NO 18041
320 Ac
Mar. 11
By old MINE SHAFT
Cuttings Showed
Some Copper (Oxide)
PP NO 17155
12-5-70
PP NO 17155
50' Rhyolite and Andesite
50' Rhyolite
MINERALIZED VEINS
SMALL
DRILL HOLE
DOZER & CR. BACKHOE CUTS
PP NO 18040
Mar. 11
240 Ac
BACKHOE Cuts
for Assessment work
No shows of Copper
PP NO 17153
PP NO 18041
SEC 7 SEC 8
SEC 18 SEC 17
SEC 8 SEC 9
SEC 17 SEC 16
SEC 9 SEC 10
SEC 16 SEC 15

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT 668-71
LINE 3 HALF E SP. 3 DATE 10-29

PAGE 1

SEND	3-4	4-5	5-6	6-7	4-5	5-6	6-7	5-6	6-7	CAL
RECEIVE	1-2	→	→	→	2-3	→	→	3-4	→	4-5
RANGE	10.	1.0	1.0	0.1	1.0	1.0	1.0	10.	1.0	10.
DC 1										
DC 2	1.1	1.4	2.1	2.3	1.1	1.6	1.7	1.2	1.2	0.0
DC 3										
DC 4 I	3	3	6	4	3	6	4	6	4	2
DC 5 Kn	1.5	6.0	15.0	30	1.5	6.0	15.0	1.5	6.0	
DC 6 θ/2π	86	73	77	65	54	63	54	88	75	
DC 7 mcf	13	19	27	35	20	25	32	14	16	
DC 8										
DC AVG.										
AC 1	169.	36.0	30.1	8.53	107.4	62.0	14.1	349.	49.5	200
AC 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AC AVG.										
S.P.										
AC NOISE										
POT RES.										

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT 668-71
LINE 3 HALF E SP. 3 DATE 10-29

PAGE 2

SEND	6-7	5-P	5-P	5-P	5-6	4-5	3-4	2-3	1-2	
RECEIVE	4-5	65-70	70-75	75-80	80-85	→	→	→	→	
RANGE	10.				10.	1.0	1.0	0.1	0.1	
DC 1										
DC 2	1.7				1.3	1.5	1.6	2.0	2.6	
DC 3	1.6						1.5			
DC 4 I	4				4	3	3	6	6	
DC 5 K_M	1.5				1.5	6.0	15.0	30.0	52.5	
DC 6 ρ_{ER}	52				49	46	62	45	56	
DC 7 MCF	31				27	33	24	44	46	
DC 8										
DC AVG.										
AC 1	137.				128	22.8	12.3	8.87	6.19	
AC 2	+0.2				0.0	0.0	+0.2	0.0	0.0	
AC AVG.										
S.P.		+20.4	-17.6	+2.5	+13.7					
AC NOISE										
POT RES.										

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT 668-71
LINE 3 HALF E SP. 3 DATE 10-29

PAGE 3

SEND	6-7	5-6	4-5	3-4	2-3	1-2	6-7	5-6	4-5	3-4
RECEIVE	85-90E						90-96			
RANGE	1.0	1.0	0.1	0.1	0.1	0.1	1.0	1.0	0.1	0.1
DC 1										
DC 2	0.8	1.5	1.4	1.8	2.2	2.8	0.9	1.5	1.8	1.7
DC 3	0.7					2.7	0.8			
DC 4 I	4	4	3	3	6	6	4	4	3	3
DC 5 K_n	1.5	6.0	15.0	30.0	52.5	84.0	6.0	15.0	30.0	52.5
DC 6 $\rho_a/2\pi$	41	45	48	62	47	57	39	46	49	62.
DC 7 MCF	17	33	29	29	47	47	20	33	37	27
DC 8										
DC AVG.										
AC 1	109.5	29.8	9.45	6.10	5.20	3.94	25.6	12.2	4.79	3.46
AC 2	+0.2	0.0	0.0	0.0	0.0	+0.2	+0.2	0.0	0.0	0.0
AC AVG.										
S.P.	-11.8						+10.5			
AC NOISE										
POT RES.										

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT 668-71
LINE 3 HALF E SP. 3 DATE 10-29

PAGE 4

SEND	2-3	6-7	5-6	4-5	3-4	6-7	5-6	4-5		
RECEIVE	90-95	95-100	→	→	→	100-105	→	→		
RANGE	0.1	1.0	0.1	0.1	0.1	0.1	0.1	0.1		
DC 1										
DC 2	2.7	1.0	1.8	2.4	2.7	1.4	2.0	2.8		
DC 3	2.6					1.3				
DC 4 I	6	4	4	3	3	4	4	3		
DC 5 Km	84.0	15.0	30.0	52.5	84.0	30.0	52.5	84.0.		
DC 6 ρ/2π	46	45	51	52	66	36	40	43.		
DC 7 MCH	57	22	35	46	41	36	50	65		
DC 8										
DC AVG.										
AC 1	3.23	11.9	6.73	2.93	2.28	4.70	3.02	1.49		
AC 2	+0.2	0.0	0.0	0.0	0.0	+0.2	0.0	0.0		
AC AVG.										
S.P.		+1.9				+11.5				
AC NOISE										
POT RES.										

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT 668-71
LINE 3 HALF W SP. III DATE 29-10-1971

PAGE 5

SEND	2-3	3-4	4-5	5-6	6-7	1-2		1-2	2-3	3-4
RECEIVE	50E				45E.	CAL.		30E		25E.
RANGE	10.	1.0	1.0	0.1	0.1			1.0	0.1	0.1
DC 1										
DC 2	1.1 1.0	1.3	1.7	2.7	2.7			0.7	0.8	1.3
DC 3										
DC 4 I	6	3	3	4	4			6	6	3
DC 5 K_m	1.5	6.0	15.0	30.0	52.5			30.0	52.5	84.0.
DC 6 ρ_a	95	90	72	69	57			93	81	100
DC 7 MCF	11	14	24	39	47			7.5	9.9	13
DC 8										
DC AVG.										
AC 1	377.	44.5	14.1	8.95	4.26			18.4	9.21	3.53
AC 2	+0.2	0.0	0.0	0.0	0.0			0.0	0.0	0.0
AC AVG.										
S.P.	+1.0							-4.9		
AC NOISE										
POT RES.										

HEINRICHS GEOEXPLORATION CO.

I.P. RECEIVER NOTES

PROJECT 668-71

LINE 3 HALF W SP. III DATE 29-10 1971

PAGE 6

SEND	1-2	2-3	3-4	4-5	5-6	6-7		S-P	S-P	S-P
RECEIVE	45E					→ 40E		65-60	60-55	55-50
RANGE	10.	10.	1.0	0.1	0.1	0.1				
DC 1										
DC 2	1.2	1.1	1.2	1.9	3.0	3.0				
DC 3	1.1									
DC 4 I	6	6	3	3	6	4				
DC 5 K_u	1.5	6.0	15.0	30.0	52.5	84.0.				
DC 6 ρ/ex	158	115	114	89	85	73.				
DC 7 MCF	7.0	9.6	11	21	35	41				
DC 8										
DC AVG.										
AC 1	626.	114.	22.5	8.75	9.47	3.37				
AC 2	+0.2	0.0	0.0	0.0	0.0	0.0				
AC AVG.										
S.P.	-2.3							+19.5	-9.7	+8.3
AC NOISE										
POT RES.										

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT 668-71
LINE 3 HALF W SP. III DATE 29-10 1971

C PAGE 7

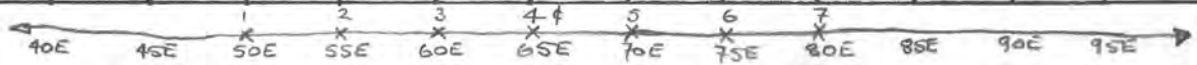
SEND	1-2	2-3	3-4	4-5	5-6	1-2	2-3	3-4	4-5	
RECEIVE	40E →				→ 35E	35E →			→ 30E.	PLEASE.
RANGE	10.	1.0	0.1	0.1	0.1	1.0	1.0	0.1	0.1	SEE
DC 1										PAGE
DC 2	1.2	1.0	1.2	2.2	3.3	0.8	+0.6	1.2	2.2	"5"
DC 3	.01					.07				
DC 4 I	6	6	3	3	6	6	6	3	3	
DC 5 K_n	6.0	15.0	30.0	52.5	84.0	15.0	30.0	52.5	84.0.	
DC 6 $\rho/2\pi$	131	100	107	87	84	91	83	99	84	
DC 7 M.G.F.	8.4	10	11	25	39	7.7	7.2	12	2.6	
DC 8										
DC AVG.										
AC 1	130.	39.7	10.58	4.87	5.83	36.3	16.5	5.61	2.95	
AC 2	+0.2	0.0	0.0	0.0	0.0	+0.2	0.0	0.0	0.0	
AC AVG.										
S.P.	-5.4					+16.2				
AC NOISE										
POT RES.	4K									

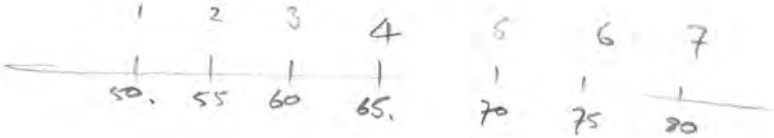
Centre: 65E. Freq: 3.0 & 0.3.

INDUCED POLARIZATION. SENDER NOTES

Project: 668 Line: 3. Spr. III (E½) Date: 29-10-71.

Send	4-5	3-4	4-5	5-6	6-7	4-5	5-6	6-7	5-6	6-7	6-7
Receive	CAN.	50E →			55E	55E →		60E	60E →	65E	65E → 70E
Time	10.200	10.300	10.300	20.300	10.400	10.300	20.300	10.400	20.300	10.400	10.400
VOLTAGE		500	500	440	460	500	430	450	440	450	450
Range	L.	H	H	H	H	H	H	H	H	H	H
Current	2A.	3A	3A.	6A	4A	3A	6A	4A	6A	4A	4A
Send	5-6	4-5	3-4	2-3	1-2	6-7	5-6	4-5	3-4	2-3	1-2
Receive	80E →				85E	85E →					90E
Time	20.200	10.300	10.300	20.300	20.300	10.400	20.200	10.300	10.300	20.300	20.300
VOLTAGE	310	500	500	400	360	450	310	500	500	400	340+
Range	H	H	H	H	H	H	H	H	H	H	H
Current	4A	3A	3A	6A	6A	4A	4A	3A	3A	6A	6A




1
2
3
4
5
6
7
50.
55
60
65.
70
75
80

INDUCED POLARIZATION SENDER NOTES

Project: 668 Line: 3. Spr III (E½ & W½) Date: 29-10-71.

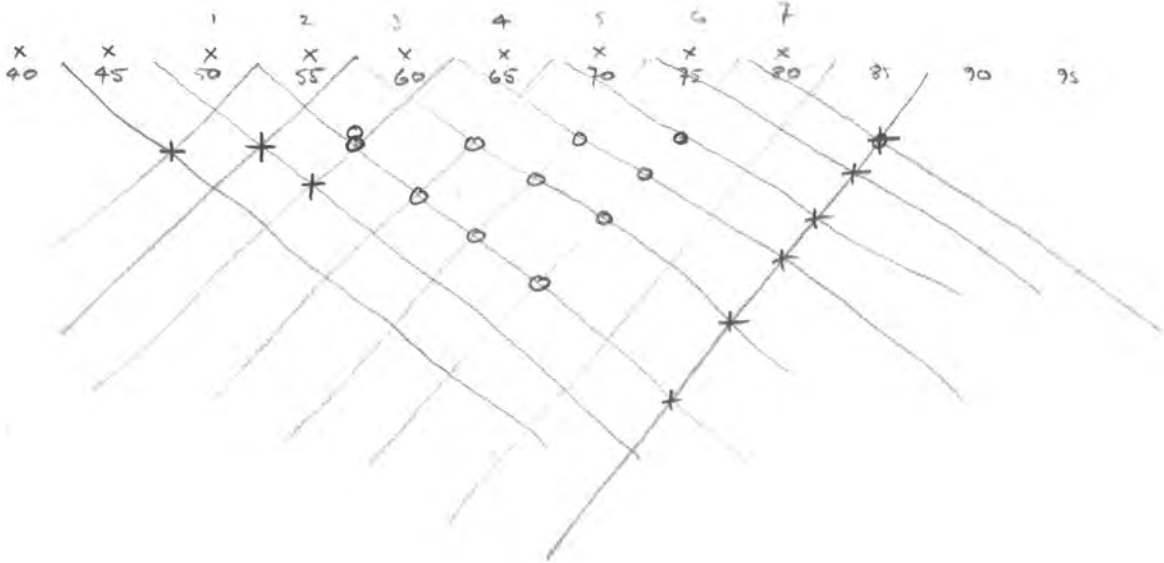
Send	6-7	5-6	4-5	3-4	2-3	6-7	5-6	4-5	3-4	6-7	5-6	4-5
Receive	90E →				→ 95E	95E →			→ 100E	100E →		→ 105E.
Time	10.400	10.400	10.300	10.300	20.300	10.400	10.400	10.300	10.300	10.400	10.400	10.300
Voltage	450	250	500	500	400	450	250	500	500	450	310	500
Range	H	H	H	H	H	H	H	H	H	H	H	H
Current	4A 4	4A 4	3A 3	3A 3	6A 6	4A	4A	3A	3A	4A	4A	3A
Send [W½.]	2-3	3-4	4-5	5-6	6-7	1-2	2-3	3-4	4-5	5-6	6-7	
Receive	50E →				→ 45E	45E →					→ 40E.	
Time	20.300	10.300	10.300	10.400	10.400	20.300	20.300	10.300	10.300	20.300	20.200	
Voltage	410	500	500	310	450	370	410	500	500	440	450	
Range	H	H	H	H	H	H	H	H	H	H	H	
Current	6A	3A	3A	4A	4A	6A	6A	3A	3A	6A	4A	

INDUCED POLARIZATION SENDER NOTES

Project: 668 Line: 3 Spr III (W½) Date: 29-10-71

Send	1-2	2-3	3-4	4-5	5-6	1-2	2-3	3-4	4-5	1-2	2-3	3-4
Receive	40E →				→ 35E	35E →			→ 30E.	30E →		→ 25E.
Time	20.300	20.300	10.300	10.300	20.300	20.300	20.300	10.300	10.300	20.300	20.300	10.300
VOLTAGE	370	410	500	500	440	370	410	500	500	370	260	500
Range	H	H	H	H	H	H	H	H	H	H	H	H
Current	6A 6	6A 6	3A 3	3A 3	6A 6	6A	6A	3A	3A	6A	6A	3A
Send											Changed to	
Receive										410 for 2nd	A.C	
Time											reading.	
Range												
Current												

Note. Output voltage meter setting a value and then for no obvious reason changing to another setting e.g. dipoles 5-6 & 2-3


1 2 3 4 5 6 7
40 45 50 55 60 65 70 75 80 85 90 95

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT 668-71
LINE 4-3A HALF E SP. 1 DATE 10-25

PAGE 1

SEND	1-2	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2
RECEIVE	3-4	4-5 →		5-6 →			6-7 →			
RANGE	10.	10.	10.	10.	10.	10	10.	10.	10	10
DC 1										
DC 2	1.0	0.4	0.6	0.6	0.6	0.6	0.5	0.6	0.7	0.7
DC 3 CAL	.9502									
DC 4 kn	.75	.75	3	.75	3	7.5	.75	3	7.5	15
DC 5 I	7									
DC 6										
DC 7 Pa	69	57	54	56	67	63	35	45	51	47
DC 8 PFE	1.1	0.5	0.7	0.7	0.7	0.7	0.6	0.7	0.8	0.8
DC AVG.	16	9	13	13	10	11	17	16	16	17
AC 1	641.	534.	125.	521.	156.	59.0	327	105.	47.1	21.9
AC 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AC AVG.										
S.P.	+0.9	-10.8		+13.9						
AC NOISE										
POT RES.										

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT 668-71
LINE 4 HALF E SP. 1 DATE 10-25

SEND	5-6	4-5	3-4	2-3	1-2	6-7	5-6	4-5	3-4	2-3
RECEIVE	7.5-10	→			→	10-12.5	→			→
RANGE	10.	10.	1.0	1.0	1.0	10.	10.	1.0	1.0	1.0
DC 1										
DC 2	0.8	0.8	0.8	0.9	0.9	0.5	0.5	0.7	0.8	0.9
DC 3 CAL										
DC 4 Km	.75	3	7.5	15	26.25	.75	3	7.5	15	26.25
DC 5 I	9									
DC 6										
DC 7 Pa	59	73	83	89	80	29	60	65	71	75
DC 8 PFE	0.8	0.9	0.9	1.0	1.0	0.5	0.6	0.8	0.9	1.0
DC AVG. MCF	14	12	11	11	13	17	10	12	13	13
AC 1	547.	17.0	77.3	41.2	21.2	271.	140.	60.7	32.8	19.8
AC 2	+0.2	0.0	0.0	0.0	0.0	+0.2	0.0	0.0	0.0	0.0
AC AVG.										
S.P.	+13.8					+3.5				
AC NOISE						<2K				
POT RES.										

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT 668-71
LINE 4 HALF E SP. 1 DATE 10-25

PAGE 3

SEND	1-2	6-7	5-6	4-5	3-4	2-3	6-7	5-6	4-5	3-4
RECEIVE	→	12.5-15				→	15-17.5			→
RANGE	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
DC 1										
DC 2	1.0	0.7	0.7	0.7	0.8	0.9	0.7	0.7	0.8	0.9
DC 3 CHL										
DC 4 kn	42	3	7.5	15	26.25	42	7.5	15	26.25	42
DC 5 I	7									
DC 6										
DC 7 ρa	68	37	73	80	88	95	46	83	88	95
DC 8 PFE	1.1	0.7	0.8	0.8	0.9	1.0	0.7	0.8	0.9	1.0
DC AVG. MCF	16	19	11	10	10	11	15	9.6	10	11
AC 1	11.2	85.9	67.5	37.2	23.5	15.7	43.2	38.6	23.4	15.7
AC 2	0.0	+0.2	0.0	0.0	0.0	0.0	+0.2	0.0	0.0	0.0
AC AVG.										
S.P.		+3.7					+8.4			
AC NOISE										
POT RES.										

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT 668-71
LINE 4 HALF E SP. 1 DATE 10-25

PAGE 4

SEND	6-7	5-6	4-5							CAL
RECEIVE	17.5-20	→	→							1-2
RANGE	1.0	1.0	1.0							10.
DC 1										
DC 2	0.8	0.8	0.8							0.0
DC 3 CAL										
DC 4 Ma	15	26.25	42							
DC 5 I	7	→	→							
DC 6										
DC 7 P_a	50	91	97							
DC 8 PEF	0.8	0.9	0.9							
DC AVG F	16	9.8	9.3							
AC 1	23.3	24.1	16.1							201,
AC 2	+0.2	0.0	0.0							+0.2
AC AVG.										
S.P.	-6.3									
AC NOISE										
POT RES.										

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT 668
LINE 4 HALF W SP. 1 DATE 10-25-71

PAGE 1

SEND	2-3	3-4	4-5	5-6	6-7	1-2	2-3	3-4	4-5	5-6
RECEIVE	7.5-10				→	10-12.5				→
RANGE	10	10	1.0	1.0	1.0	10	10	1.0	1.0	1.0
DC 1										
DC 2	0.6	0.6	0.5	0.6	~~0.6~~ 0.7	0.4	0.5	0.6	0.6	0.6
DC 3 CAL										
DC 4 K_n	.75	3	7.5	15	26.25	.75	3	7.5	15	26.25
DC 5 I	7									→
DC 6										
DC 7 ρ_a	68	59	55	65	48	43	54	50	49	58
DC 8 PEF	0.7	0.7	0.6	0.7	0.8	0.5	0.6	0.7	0.7	0.7
DC AVG CF	10	12	11	11	17	12	11	14	14	12
AC 1	629	138	51.2	30.5	12.7	401	125	46.2	22.9	15.5
AC 2	—	—	—	—	—	—	—	—	—	—
AC AVG.										
S.P.	-16.5				→	+6.8				
AC NOISE										
POT RES.						2K				

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT 668
LINE 4 HALF W SP. 1 DATE 10-25-71

PAGE 2

SEND	6-7	1-2	2-3	3-4	4-5	5-6	1-2	2-3	3-4	4-5
RECEIVE	→	12.5-15	→	→	→	→	15-17.5	→	→	→
RANGE	0.1	10	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.1
DC 1										
DC 2	0.6	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.7	0.7
DC 3 mv										
DC 4 ka	42	3	7.5	15/6	26.25	42	7.5	15	26.25	42
DC 5 I	7	→	→	0.2	→	→	→	→	→	→
DC 6				0.6						
DC 7 ρa	42	52	56	51	52	60	52	55	52	51
DC 8 PFE	0.7	0.6	0.6	0.7	0.7	0.7	0.6	0.7	0.8	0.8
DC AVG. VLCF	17	12	11	14	13	12	12	13	15	16
AC 1	6.92	122	51.9	24.0	13.8	10.0	48.7	25.5	13.7	8.52
AC 2	—	—	—	—	—	—	+0.2	—	—	—
AC AVG.										
S.P.		+5.4	→	→	→	→	+2.4	→	→	→
AC NOISE										
POT RES.		3K	→	→	→	→				

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT 668
LINE 4 HALF W SP. 1 DATE 10-25

SEND	1-2	2-3	3-4		S-P	S-P	S-P			
RECEIVE	17.5-20	→	→		0-2.5W	2.5-5.	5.0-7.5W			
RANGE	1.0	1.0	0.1							
DC 1										
DC 2	0.7	0.6	0.6							
DC 3 Zm										
DC 4 Rn	15	26.25	42							
DC 5 I	7	→	→							
DC 6										
DC 7 ρa	61	63	58							
DC 8 PFE	0.8	0.7	0.7							
DC AVG. CF	13	11	12							
AC 1	28.5	~~28.5~~ 16.7	9.68							
AC 2	—	—	—							
AC AVG.										
S.P.	-5.7	→	→		+9.0	+18.5	0			
AC NOISE										
POT RES.	3K	→	→							

INDUCED POLARIZATION E ½ SENDER NOTES (1)

Project: 68 Line: 4 Date: 10-25-71

Send	1-2	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2	5-6	4-5
Receive	3-4	4-5 →		5-6	→		6-7	→			7.5-10	→
Time	480	480	480	450	490	470	440	450	490	470	440	440
Range	350×20 HI	350×20	350×20	350×20	350×20	350×20	350×20					
Current	7	7	7	7	7	7	7	7	7	7	7	7

Send	3-4	2-3	1-2	6-7	5-6	4-5	3-4	2-3	1-2	6-7	5-6	4-5
Receive	→	→	→	10-12.5	→	→	→	→	→	12.5-	15	→
Time	440	490	470	360	440	430	440	490	460	360	440	430
Range	350×20 HI											
Current	7	7	7	7	7	7	7	7	7	7	7	7

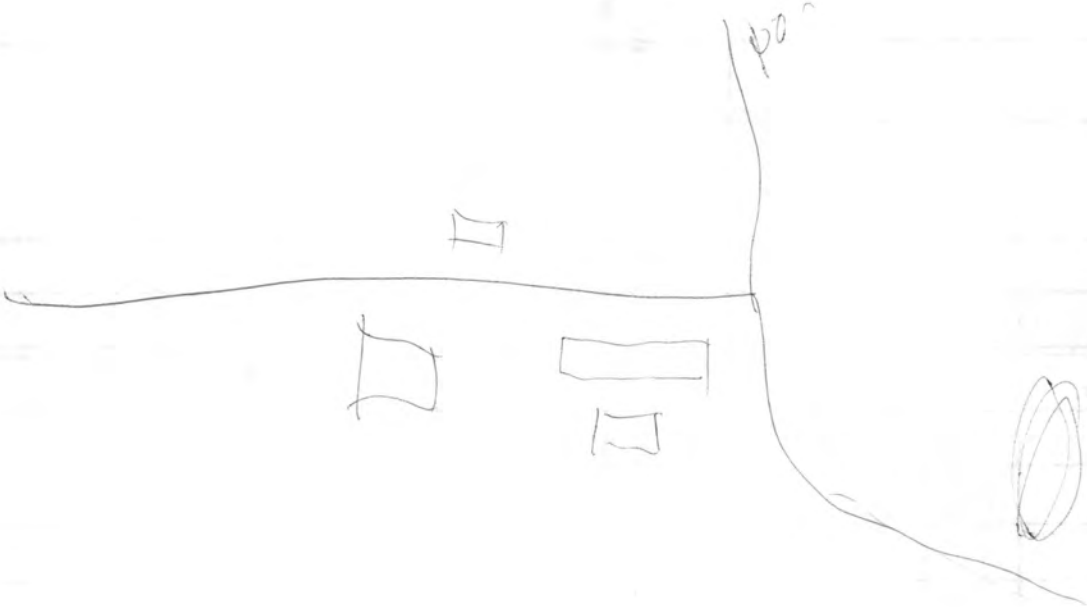
1-2	2-3	3-4	4-5	5-6	6-7
7	7	7	7	7	7

INDUCED POLARIZATION E/2 SENDER NOTES

②

Project: 68 Line: 4 Date: 10-25-71

Send	3-4	2-3	6-7	5-6	4-5	3-4	6-7	5-6	4-5		CHL	
Receive	→	→	15-17.5	→	→	→	17.5 –	20 →	→		1-2	
Time	440	490	360	440	430	440	360	440	430		180	
Range	350×20 HI										200×16	
Current	7	7	7	7	7	7	7	7	7		2	
Send												
Receive												
Time												
Range												
Current												



INDUCED POLARIZATION ω½ SENDER NOTES

③

Project: 668 Line: 4 Date: 10-25-71

Send	2-3	3-4	4-5	5-6	6-7	1-2	2-3	3-4	4-5	5-6	6-7	1-2
Receive	7.5-10	→	→	→	→	10-12.5	→	→	→	→	→	12.5-15
Time	350 X 20	350 X 26	→	→	→	350 X 20	→	→	→	→	→	350 X 20
Range	480	430	420	440	360	460	480	430	420	440	360	460
Current	7.0	7.0	—	—	→	7.0	→	→	→	→	→	7.0

Send	2-3	3-4	4-5	5-6	1-2	2-3	3-4	4-5	1-2	2-3	3-4	
Receive	→	→	→	→	15-17.5	→	→	→	17.5-20	→	→	
Time	350 X 20	→	→	→	350 X 20	→	→	→	→	→	→	
Range	480	430	420	440	460	480	430	420	460	480	430	
Current	7.0	→	→	→	7.0	→	→	→	7.0	→	→	

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT 668-71
LINE 4 HALF W SP. 1 DATE 11-1

PAGE 1

SEND	CAL	6-7	5-6	6-7	4-5	5-6	6-7	3-4	4-5	5-6
RECEIVE	5-6	4-5	3-4	—7	2-3	—	—	1-2	—	—
RANGE	10.	10.	10.	10.	10.	10.	1.0	10.	10.	1.0
DC 1										
DC 2	0.0	1.3	1.5	1.7	0.8	1.3	1.4	0.9	1.2	1.6
DC 3										
DC 4 P.F.E	-0.1	1.4	1.6	1.8	0.9	1.4	1.5	1.0	1.3	1.7
DC 5										
DC 6 K_a		1.5	1.5	6.0	1.5	6.0	15.0	1.5	6.0	15.0
DC 7 I	2	6	6	6	6	6	6	6	6	6
DC 8 ρ_a		94	126	108	103	147	125	113	105	134
DC AVG. MCF		15	13	17	8.7	9.5	12.	8.9	12	13
AC 1	200.	369.	498.	106.	410.	145.	49.4	447.	104.	52.8
AC 2	+0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AC AVG.										
S.P.										
AC NOISE										
POT RES.										

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT 668-71
LINE 4 HALF W SP. 1 DATE 11-2

SEND	6-7	S-P	S-P	S-P	S-P	2-3	3-4	4-5	5-6	6-7
RECEIVE	1-2	75-70	70-65	65-60	60-55	55-50				
RANGE	1.0					10.	10.	1.0	1.0	1.0
DC 1										
DC 2	1.8					1.0	1.1	1.2	1.7	2.0
DC 3										
DC 4 P.F.E.	1.9					1.1	1.2	1.3	1.8	2.1
DC 5					Kn/1000	1.5	6.0	15.0	30.0	52.5
DC 6 Kn	30.0				I	6	6	8	8	6
DC 7 I	6									
DC 8 %	115					105	123	121	153	132
DC AVG. MEF.	17					10	9.7	11	12	16
AC 1	22.6					417	122.	63.5	40.0	14.8
AC 2	0.0					0.0	0.0	0.0	0.0	0.0
AC AVG.										
S.P.		⊖ 11.9	+21.5	-5.8	+4.2	-6.2				
AC NOISE										
POT RES.						1K				

HEINRICHS GEOEXPLORATION CO.

I.P. RECEIVER NOTES

PROJECT 668-71

LINE 4 HALF W SP. 1 DATE 1-2

PAGE 3

SEND	1-2	2-3	3-4	4-5	5-6	6-7	1-2	2-3	3-4	4-5
RECEIVE	50-45					→	45-40			
RANGE	10.	10.	1.0	1.0	1.0	0.1	1.0	1.0	1.0	1.0
DC 1										
DC 2	0.7	1.1	1.1	1.2	2.0	2.4	0.8	1.0	1.1	1.4
DC 3										
DC 4 REF.	0.8	1.2	1.2	1.3	2.1	2.5	0.8	1.1	1.2	1.5
DC 5 Kω/100	1.5	6.0	15.0	30.0	52.5	84.0	6.0	15.0	30.0	52.5
DC 6 I	4	6	6	8	8	6	4	6	6	8
DC 7										
DC 8 Ch.4	89	113	124	116	148	126	91	104	109	102
DC AVG.	9.0	11	9.6	11	14	20	8.8	11	11	15
AC 1	236.	112.	49.2	30.6	22.1	8.78	60.0	41.1	21.6	15.3
AC 2	0.0	0.0	0.0	0.0	0.0	0.0	+0.2	0.0	0.0	0.0
AC AVG.										
S.P.	+24.3						-15.0			
AC NOISE										
POT RES.										

HEINRICHS GEOEXPLORATION CO.

I.P. RECEIVER NOTES

PROJECT 668-71

LINE 4 HALF W SP. 1 DATE 11-2

PAGE 4

SEND	5-6	1-2	2-3	3-4	4-5	1-2	2-3	3-4		CHC
RECEIVE	45-40	40-35	→	→	→	35-30	→	→		1-2
RANGE	1.0	1.0	1.0	1.0	0.1	1.0	1.0	0.1		10.
DC 1										
DC 2	2.2	1.0	1.0	1.3	1.7	1.0	1.4	1.4		0.0
DC 3										
DC 4 P.F.E.	2.3	1.0	1.1	1.4	1.8	1.1	1.5	1.5		-0.1
DC 5 Ko/1000	84.0	15.0	30.0	52.5	84.0	30.0	52.5	84.0		
DC 6 I	8	4	6	6	8	4	6	6		2
DC 7										
DC 8 ρ/2π	131	76	88	93	86	92	105	111		
DC AVG	18	13	13	15	21	12	14	13		
AC 1	12.2	20.1	17.4	10.5	8.01	12.1	11.8	7.82		200.
AC 2	0.0	+0.2	0.0	0.0	0.0	0.0	0.0	0.0		+0.2
AC AVG.										
S.P.		+13.3				-6.4				
AC NOISE										
POT RES.										

HEINRICHS GEOEXPLORATION CO.

I.P. RECEIVER NOTES

PROJECT 668-71

LINE 4 HALF E SP. I DATE 2 Nov. 1971

PAGE a 5

SEND	S.P.	S.P.	5-6	4-5	3-4	2-3	1-2			
RECEIVE	75E→80E	80E→85E	85E				→ 90E.			
RANGE			10.	1.0	1.0	1.0	0.1			
DC 1										
DC 2			1.4	1.2	1.3	1.6	1.7			
DC 3 Gm	PFE		1.4	1.3	1.4	1.7	1.8			
DC 4 KN			1.5	6	15	30	52.5			
DC 5 I			8	8	6	6	4			
DC 6										
DC 7 %FD			63	58	59	62	53			
DC 8 MCF			22	22	24	27	34			
DC AVG.										
AC 1			330.	76.2	23.2	12.2	3.94			
AC 2			+0.2	0.0	0.0	0.0	0.0			
AC AVG.										
S.P.	-5.8	-16.6	+18.1							
AC NOISE										
POT RES.	<2K									

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT 668
LINE 4 HALF E SP. I DATE 2 Nov. 1971

PAGE 6

SEND	6-7	5-6	4-5	3-4	2-3	1-2		6-7	5-6	4-5
RECEIVE	90E					95E.		105E		110E
RANGE	10.	1.0	1.0	0.1	0.1	0.1		1.0	0.1	0.1
DC 1										
DC 2	1.4	1.0	1.1	1.3	1.7	1.9		0.8	1.0	1.4
DC 3	1.4	1.1	1.2	1.4	1.8	2.0		0.9	1.1	1.5
DC 4	1.5	6	15	30	52.5	84		30	52.5	84
DC 5	6	8	8	6	6	4		6	8	8
DC 6										
DC 7	36	56	48	49	53	48		65	70	48
DC 8	39	20	25	28	34	42		14	16	32
DC AVG.										
AC 1	141.	73.3	25.2	9.72	5.95	2.22		12.9	1055	4.46
AC 2	+0.2	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
AC AVG.										
S.P.	+14.9							+6.4		
AC NOISE										
POT RES.										

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT 668
LINE 4 HALF E SP. I DATE 2 NOV. 1971

C PAGE 7

SEND	6-7	5-6	4-5	3-4	2-3	6-7	5-6	4-5	3-4	
RECEIVE	95E				100E	100E			105E.	
RANGE	1.0	1.0	1.0	0.1	0.1	1.0	1.0	0.1	0.1	
DC 1										PLEASE
DC 2	0.9	1.0	1.0	1.4	2.1	0.9	1.0	1.2	1.2	SEE
DC 3	0.9	1.1	1.1	1.5	2.2	0.9	1.1	1.3	1.3	PAGE:
DC 4	6	15	30	52.5	84	15	30	52.5	84	"6"
DC 5	6	8	8	6	6	6	8	8	6	
DC 6										
DC 7	39	60	50	52	57	45	63	49	50	
DC 8	23	18	22	29	39	20	18	27	26	
DC AVG.										
AC 1	38.8	31.5	13.2	5.89	3.98	18.0	16.5	7.31	3.55	
AC 2	+0.2	0.0	0.0	0.0	0.0	+0.2	0.0	0.0	0.0	
AC AVG.										
S.P.	+26.3					-7.7				
AC NOISE										
POT RES.										

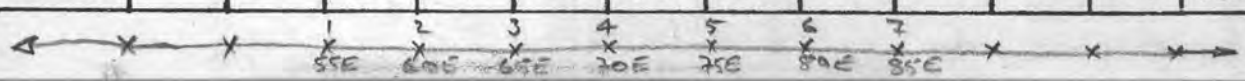
1.1 4 at 65E. 70E C.P. at electrode 5. 3.0/8 0.3. Page 1.

INDUCED POLARIZATION SENDER NOTES

Project: 668 Line: 4 SPR I (W½.) Date: 1st Nov 1971.

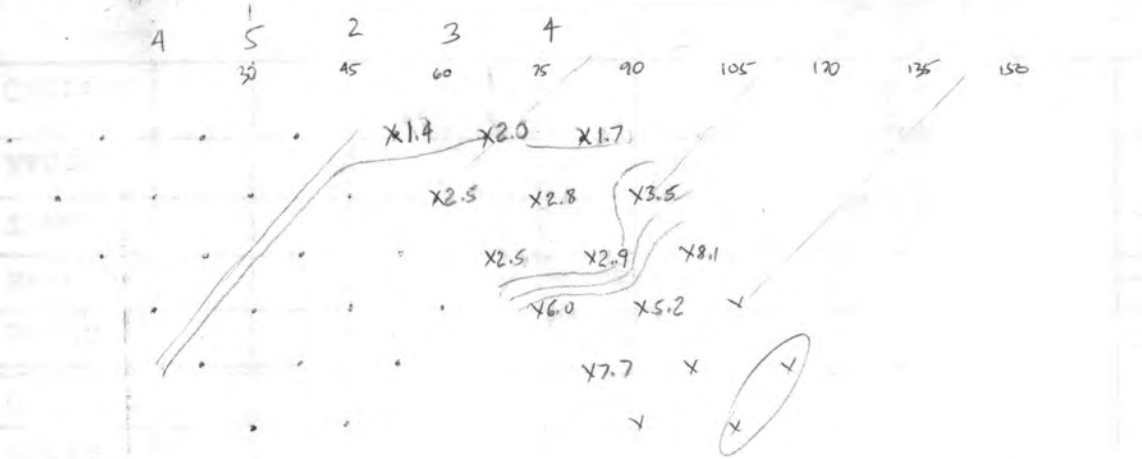
Send	5-6	6-7	5-6	6-7	4-5	5-6	6-7	3-4	4-5	5-6	6-7	
Receive	CAL	4-5. 75 70	3-4 → 70 →	65E	2-3 → 65E →		60E	1-2 → 60E →			55E.	
Time Volts.	10.200 160	20.300 410	20.300 400	20.300 410	20.300 330	20.300 400	20.300 410	20.300 440	20.300 330	20.300 400	20.300 410	
Range	H	H	H	H	H	H	H	H	H	H	H	
Current	2A.	6A	6A	6A	6A	6A	6A	6A	6A	6A	6A	

Send	2-3	3-4	4-5	5-6	6-7	1-2	2-3	3-4	4-5	5-6	6-7	1-2
Receive	55E →				50E	50E →					45E	CAL.
Time VOLTAGE	20.300 500 +	20.300 450	20.400 440	20.400 500+	20.300 460	20.200 465	20.300 500+	20.300 450	20.400 440	20.400 500 +	20.300 460	10.200 340
Range	H.	H	H	H	H	H	H	H	H	H	H	L
Current	6A	6A	8A	8A	6A	4A	6A	6A	8A	8A	6A	2A



1 2 3 4 5 6 7

55E 60E 65E 70E 75E 80E 85E


4 5 2 3 4
30 45 60 75 90 105 120 135 150
X1.4 X2.0 X1.7
X2.5 X2.8 X3.5
X2.5 X2.9 X8.1
X6.0 X5.2
X7.7

INDUCED POLARIZATION SENDER NOTES

Project: 668 Line: 4. SPR I (W½) Date: 2nd Nov. 1971.

Send	1-2	2-3	3-4	4-5	5-6	1-2	2-3	3-4	4-5	1-2	2-3	3-4
Receive	45E				40E	40E			35E	35E		30E
Time	20.200	20.300	20.300	20.400	20.400	20.200	20.300	20.300	20.400	20.200	20.300	20.300
Voltage	465	500+	450	440	500+	460	500+	450	440	460	500+	450
Range	H	H	H	H	H	H	H	H	H	H	H	H
Current	4A 4	6A 6	6A 6	8A 8	8A 8	4A	6A	6A	8A	4A	6A	6A

Send E½.	5-6	4-5	3-4	2-3	1-2	6-7	5-6	4-5	3-4	2-3	1-2
Receive	85E				90E	90E					95E
Time	20.400	20.400	20.300	20.300	20.200	20.300	20.400	20.400	20.300	20.300	20.200
Voltage	490	430	440	500	455	440	490	430	440	500+	455
Range	H	H	H	H	H	H.	H	H	H	H	H
Current	8A	8A	6A	6A	4A	6A	8A	8A	6A	6A	4A

INDUCED POLARIZATION SENDER NOTES

Project: 668 Line: 4 . SPR I (E½.) Date: 2nd Nov: 1971

Send	6-7	5-6	4-5	3-4	2-3	6-7	5-6	4-5	3-4	6-7	5-6	4-5
Receive	95E				100E	100E			105E	105E		110E.
Time	20.300	20.400	20.400	20.300	20.300	20.300	20.400	20.400	20.300	20.300	20.400	20.400
Voltage	440	490	430	440	500+	440	490	425	440	440	490	420
Range	H	H	H	H	H	H	H	H	H	H	H	H
Current	6A 6	8A 8	8A 8	6A 6	6A 6	6A	8A	8A	6A	6A	8A	8A
Send												
Receive												
Time												
Range												
Current												

HEINRICHS GEOEXPLORATION CO.

I.P. RECEIVER NOTES

PROJECT 668-71

LINE 5 HALF W SP. I DATE 3 Nov 1971.

PAGE 1

SEND	3-4		6-7	5-6	6-7	4-5	5-6	6-7		
RECEIVE	CAlm		70E 65E	65E →	60E	60E →		55E.		
RANGE	10.0		10.0	10.0	1.0	10.0	1.0	1.0		
DC 1	0.4		0.4	0.8	1.2	1.1	1.7	2.2		
DC 2 PFE.			0.0	0.4	0.8	0.7	1.3	1.8		
DC 3 kn/100			1.5	1.5	6.0	1.5	6.0	15.0		
DC 4 I.	2.0		5.0	7.0	5.0	7.0	7.0	5.0		
DC 5 $\rho/2\pi$			40	44	46	50	58	52.		
DC 6 MCF.			0.0	9.1	17	14	22	35		
DC 7										
DC 8										
DC AVG.										
AC 1	201.5		132.5	204.0	37.75	231.0	66.85	17.1		
AC 2	0.0		0.0	0.0	0.0	0.0	0.0	0.0		
AC AVG.										
S.P.										
AC NOISE										
POT RES.										

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT 668-71
LINE 5 HALF W SP. I DATE 3 Nov 1971

PAGE 2

SEND	3-4	4-5	5-6	6-7	2-3	3-4	4-5	5-6	6-7	
RECEIVE	55E →			50E.	50E →				45E.	
RANGE	10.0	1.0	1.0	0.1	10.	1.0	1.0	1.0	0.1	
DC 1	1.9	1.0	1.2	1.6	3.2	2.8	2.0	2.2	2.6	
DC 2 PFE	1.5	0.7 *	0.8	1.2	2.8	2.4	1.6	1.8	2.2	
DC 3 Ku/100	1.5	6.0	15.0	30.0	1.5	6.0	15.0	30.0	52.5	
DC 4 I	7.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0	5.0	
DC 5 φ/2π	50	68	72	59	44	51	65	64	50	
DC 6 MCF	30	10	11	20	64	47	25	28	44	
DC 7										
DC 8										
DC AVG.										
AC 1	229.5	79.25	33.55	9.68	199.	58.1	29.9	14.6	4.62	
AC 2	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
AC AVG.					Possible buried 2½" water pipe ≈ 51 E					
S.P.					+16.0	system broken & dry				
AC NOISE										
POT RES.					5K					

HEINRICHS GEOEXPLORATION CO.

I.P. RECEIVER NOTES

PROJECT 668-7
LINE 5 HALF W SP. 1 DATE 11-3

SEND	1-2	2-3	3-4	4-5	5-6	6-7	1-2	2-3	3-4	4-5
RECEIVE	45-40	E →					40-35			
RANGE	10.	1.0	1.0	1.0	0.1	0.1	1.0	1.0	0.1	0.1
DC 1										
DC 2	1.5	1.3	1.2	1.1	1.8	2.6	1.2	1.4	1.6	1.8
DC 3 PFE	1.4	0.9	0.8	0.7	1.4	2.2	0.7	1.0	1.2	1.4
DC 4 K/1000	1.5	6.0	15.0	30.0	52.5	84.0	6.0	15.0	30.0	52.5
DC 5 I.	7.0	7.0	7.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0
DC 6 $\sigma/2\pi$	49	33	41	53	54	45	43	37	41	56
DC 7 MCF	29	27	20	13	26	49	16	27	29	25
DC 8										
DC AVG.										
AC 1	224.	44.0	19.1	12.3	7.10	2.61	49.8	17.1	9.48	7.36
AC 2	0.0	0.0	0.0	0.0	0.0	0.0	+0.2	0.0	0.0	0.0
AC AVG.										
S.P.	+1.9						+12.2			
AC NOISE										
POT RES.							4K			

HEINRICHS GEOEXPLORATION CO.

I.P. RECEIVER NOTES

PROJECT 668-71

LINE 5 HALF W SP. 1 DATE 11-3

PAGE 4

SEND	5-6	1-2	2-3	3-4	4-5	1-2	2-3	3-4		
RECEIVE	40-35	35-30	→	→	→	30-25	→	→		
RANGE	0.1	1.0	1.0	0.1	0.1	1.0	0.1	0.1		
DC 1										
DC 2	2.7	1.3	1.5	1.8	2.1	1.3	2.4	2.8		
DC 3 DFE	2.3	0.9	1.1	1.3	1.7	0.9	2.0	2.4		
DC 4 Ku/000	84.0	15.0	30.0	52.5	84.0	30.0	52.5	84.0		
DC 5 I.	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		
DC 6 θ/2π.	59	46	46	52.	68	57	44	50		
DC 7 MCF	39	20	24	25	25	16	45	48.		
DC 8										
DC AVG.										
AC 1	4.83	21.1	10.8	6.79	5.55	13.1	5.78	4.04		
AC 2	0.0	0.0	0.0	+0.2	0.0	0.0	0.0	0.0		
AC AVG.										
S.P.		-24.2								
AC NOISE										
POT RES.										

HEINRICHS GEOEXPLORATION CO.

I.P. RECEIVER NOTES

PROJECT 668-71

LINE 5 HALF W SP. 1 DATE 11-3

PAGE 5

SEND	S-P	S-P	S-P							
RECEIVE	65-60	60-55	55-50							
RANGE										
DC 1										
DC 2										
DC 3										
DC 4										
DC 5										
DC 6										
DC 7										
DC 8										
DC AVG.										
AC 1										
AC 2										
AC AVG.										
S.P.	+5.6	-23.7	+17.0							
AC NOISE										
POT RES.										

HEINRICHS GEOEXPLORATION CO.

I.P. RECEIVER NOTES

PROJECT 668-71

LINE 5 HALF E SP. I DATE 1 Nov 1971

SEND	S.P.	S.P.	S.P.	5-6	4-5	3-4	2-3	1-2		6-7
RECEIVE	65E 70E	70E 75E	75E 80E	80E				85E.		CAL.
RANGE				10.0	1.0	1.0	1.0	0.1	10.0	10.0
DC 1				0.7	0.8	1.4	2.1	2.2	0.4	0.2
DC 2 PFE				0.6	0.7	1.3	2.0	2.1		
DC 3 Kn/1000				1.5	6.0	15.0	30.0	52.5	FOR	
DC 4 I				7.0	7.0	7.0	7.0	7.0	"CAL"	
DC 5 ρ/2π				38	54	52	55	55	SEE	
DC 6 MCF				16	13	25	36	38.	OVER	
DC 7										
DC 8										
DC AVG.										
AC 1				179.5	63.3	24.6	12.85	7.37	200.0	200.0
AC 2				0.0	0.0	0.0	0.0	0.0	+0.6	+0.4
AC AVG.										
S.P.	+15.7.	+17.9.	-32.7.	+34.5						
AC NOISE										
POT RES.	4K	5K	5K	8K						

10.0
0.1
10.0
0.1
102.0
0.1
102.0
0.0

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT 668-71
LINE 5 HALF E SP. 1 DATE 4 Nov 1971

SEND	6-7	5-6	4-5	3-4	2-3	1-2		6-7	5-6	4-5
RECEIVE	85E					90E		100E		105E
RANGE	10.0	1.0	1.0	1.0	0.1	0.1		0.1	0.1	0.1
DC 1	0.9	1.0	1.1	1.7	2.5	2.6		1.6	2.0	2.4
DC 2 PFE	0.7	0.9	1.0	1.6	2.4	2.6		1.4	1.9	2.3
DC 3 Kω/1000	1.5	6.0	15.0	30.0	52.5	84.0		30.0	52.5	84.0
DC 4 I	5.0	7.0	8.0	8.0	8.0	7.0		5.0	7.0	8.0
DC 5 ρ/2π	40	47	64	57	56	56		41	58	68
DC 6 MCF	17	19	16	28	43	47		35	33	34
DC 7										
DC 8										
DC AVG.										
AC 1	136.0	55.3	34.4	15.3	8.51	4.625		6.805	7.745	6.46
AC 2	0.2	0.0	0.0	0.0	0.0	−0.2		0.2	0.0	0.0
AC AVG.										
S.P.	+14.3							+2.4		
AC NOISE										
POT RES.	4K							4K		

60 sec.

0.9

$\frac{100}{\text{cm}^2}$.

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT 668-71
LINE 5 HALF E SP. 1 DATE 1971 4 Nov

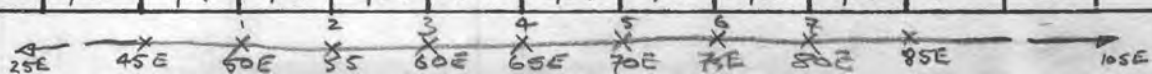
SEND	6-7	5-6	4-5	3-4	2-3	6-7	5-6	4-5	3-4	
RECEIVE	90E				95E	95E			100E.	
RANGE	1.0	1.0	1.0	0.1	0.1	1.0	1.0	1.0	0.1	PLEASE
DC 1	1.0	1.1	1.3	2.1	3.0	1.2	1.4	1.7	2.6	SEE
DC 2	0.9	1.0	1.2	2.0	2.9	1.1	1.3	1.6	2.5.	PAGE
DC 3 Ky/1000	6.0	15.0	30.0	52.5	84.0	15.0	30.0	52.5	84.0.	7
DC 4 I	5.0	7.0	7.0	8.0	8.0	5.0	7.0	8.0	8.0	
DC 5 Ep/Et	35	51	65	55	54	38	57	70	58	
DC 6 MCF	26	20	18	37	54	29	23	23	44	
DC 7										
DC 8										
DC AVG.										
AC 1	29.45	23.9	15.35	8.325	5.115	12.9	13.4	10.7	5.45	
AC 2	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	
AC AVG.										
S.P.	-1.5					-0.2				
AC NOISE										
POT RES.	3K					5K				

C.P. 65E Frequency 3.0 ± 0.3 Hz.

INDUCED POLARIZATION - SENDER NOTES

Project: 668 Line: 5. SPR I (W½) Date: 3rd Nov 1971

Send	6-7	5-6	6-7	4-5	5-6	6-7	3-4	4-5	5-6	6-7		3-4
Receive	70E 65E	65E →	60E	60E →		55E	55E →			50E		CAL.
Time												10.200
VOLTAGE	500	500	500	410	500	500	320	410	500	500		
Range	20X250 H	20X350 H	20X250 H	20X250 H	20X350 H	20X250 H	20X350 H	20X350 H	20X350 H	20X250 H		
Current	5.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	7.0	5.0		2A.
Send	2-3	3-4	4-5	5-6	6-7	1-2	2-3	3-4	4-5	5-6	6-7	
Receive	50-45E →					45-40E →						
Time	20.350	20.350	20.350	20.350	20.250	20.350	20.350	20.350	20.350	20.350.	20.250	
VOLTAGE	420	315	400	500	490	465	420	310	400	500	490	
Range	H	H	H	H	H	H.	H	H	H	H	H	
Current	7A	7A	7A	7A	5A	7A	7A	7A	7A	7A	5A	



$a = 1000!$

n	$K_n/1000$
1	3
2	12
3	30
4	60
5	105
6	168.

$$\frac{K_n}{1000} = \frac{na(n+1)(n+2)}{2.1000}$$

$a = 1000'$

n	$K_n/1000$
1	

1.5
6
15
30
52.5
84

$$\frac{\cancel{4.500}^{2}\cancel{.5}.7}{\cancel{1000}_{2}}$$

$$\frac{\cancel{500}.\cancel{2}\,3}{\cancel{2}.\cancel{1000}} \quad 15$$

$$\frac{\cancel{4.500}^{2}.\cancel{5}^{1}.6}{\cancel{1000}_{2}}$$

$$\frac{4.500.5.6}{2.1000}$$

INDUCED POLARIZATION - SENDER NOTES

Project: 668 Line: 5. SPR I (W½ & E½.) Date: 3rd Nov. 1971

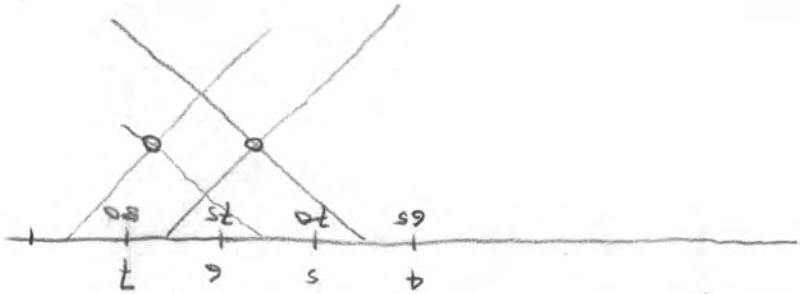
Send	1-2	2-3	3-4	4-5	5-6	1-2	2-3	3-4	4-5	1-2	2-3	3-4
Receive	40E				35E	35E			30E	30E		25E.
Time	20.350	20.350	20.350	20.350	20.350	20.350	20.350	20.350	20.350.	20.350	20.350	20.350
VOLTAGE	460	420	315	400	500	460	420	320	400	460	420	310
Range	H	H	H.	H	H	H	H	H	H	H	H	H
Current	7A	7A	7A	7A	7A	7A	7A	7A	7A	7A	7A	7A
Send E½	5-6	4-5	3-4	2-3	1-2	6-7	5-6	4-5	3-4	2-3	1-2	6-7
Receive	80E				85E	85E					90E.	CAL.
Time	H	H.	H									H
VOLTAGE	20X350	20X350	350X20	20X350	20X350	20X250	20X350	20X400	20X400	20X400	20X350	10X100
Range	500	420	330			500	500	450	360	470	480	150
Current	7.0	7.0	7.0	7.0	7.0	5.0	7.0	8.0	8.0	8.0	7.0	1.0

MR. EARL OSBORNE

% Buenos Aires Ranch

Contact Mr. Warnock L.L.D

% V.N.B.



INDUCED POLARIZATION SENDER NOTES

Project: 668-71 Line: 5. SPR I (E½) Date: 11-4-71

Send	6-7	5-6	4-5	3-4	2-3	6-7	5-6	4-5	3-4	6-7	5-6	4-5
Receive	90E				95E	95E			100E	100E		105E
Time	H					H				H		
Range VOLTAGE	20X250	20X350	20X350	20X400	20X400	20X250	20X350	20X400	20X400	20X250	20X350	20X400
	500	560	410	360	460	500	500	460	360	500	500	460
Current	5.0	7.0	7.0	8.0	8.0	5.0	7.0	8.0	8.0	5.0	7.0	8.0
Send												
Receive												
Time												
Range												
Current												

HEINRICHS GEOEXPLORATION COMPANY
Box 5964, Tucson, Az. 85703

PROJECT: ARIVACA, ARIZONA

DATE	SAMPLE NO.	TYPE	ANALYSIS	MAP REF.	SEC.-TWSP-RANGE	DESCRIPTION
OCT 29, 1971	M-1-668	COMPOSITE ROCK CHIP OVER 15'	Cu Ag Au Mo	ARIVACA 15'	SEC 9, T21S, R9E	GRAY CONGLOMERATE IN DOZER TRENCH EXPOSURE. CHRYSOCOLA PRESENT ALONG FRACTURES. LIGHT Fe-STAINING, MINOR AMOUNTS OF EPIDOTE ALONG FRACTURES
	M-2-	"	Cu Ag Au Mo	"	" "	SAME AS M-1-668, ON S. SIDE OF TRENCH, INCLUDES SOME FAULT? GOUGE Cu RANDOMLY ORIENTED ALONG FRACTURES DRILL HOLE 40' NW
	M-3-	COMPOSITE ROCK CHIP OVER 10'	Cu Ag Au Mo	"	" "	SILICEOUS CONGLOMERATE IN "SHAFT" ABOUT 10' DEEP JUST EAST OF ROAD Cu (CHRYSOCOLA) PRESENT PRIMARILY ALONG MAJOR FRACTURE — N80W 24°SW MINOR SERICITIC ALT OF FELDSPARS IN CONGLOM.
	M-4-	COMPOSITE ROCK CHIP OVER 15'	Cu Ag Au Mo	"	" "	GRAY FELDSPATHIC CONGLOMERATE IN 15'X50' DOZER CUT W SIDE OF ROAD (+ PARTIALLY ON E. SIDE) Cu (CHRYS.) PRIMARILY FOLLOWS FAULT TYPE FEATURE (6" GOUGE) TRENDING N 76E ~80°S ROCK SILICEOUS w/ MUCH EPIDOTE
	M-5-	"	Cu Ag Au Mo	"	" "	SAME AS M-4-668, ON S SIDE OF DOZER CUT - SAMPLE DOES NOT CROSS FAULT AS M-4 DOES.
	M-6	COMPOSITE ROCK CHIP OVER 6'	Cu Ag Au Mo	"	SEC 10, T21S, R9E	CONGLOMERATE IN ADIT TO INCLINED SHAFT ~80' DEEP SAMPLED ACROSS FAULT N20E 21°SE WHICH SHAFT FOLLOWS FAIR Fe-STAINING + CLAYEY ALT PRODUCTS — NO EVIDENCE OF MIN — POSSIBLY Ag PROSPECT

ALLAN V. MORAN

JOB # 668

ARIVACA ARIZONA

OCT 28, 1971

SPENT DAY ON PROPERTY BECOMING FAMILIAR WITH ROADS, OUTCROPS, ETC IN PREPERATION FOR SAMPLING

Location Arivaca 15'

topo T21 S R9E

Oct 29 1971

M-1-668
composite rock chip
sample over 15'
conglomerate in trench
exposure.
fine-coare, sub ∡ to sub Round.
gray conglomerate
light Fe staining minor
epidote on fractures (occasionally)
Cu min predom Chrysocola
present in fractures
in rk.

M-2-668

same - on opposite side of cut - including some fault? gouge.

both samples ~ 5 lbs.

Location (1 & 2) A on map near drill hole, 90' SW - C4 not located in respect to any one dir of fracturing or jointing - random

SW¼ of SE¼ of sec 9

M-3-668

silic conglomerate.

in "shaft" about 10' deep

along side of road
Cu min (chrysocola) along
major joint surface diping
24° to S10W
sample from in shaft -
around sides - comp over 10'
some minor evidence of
sericitic alt of feldspars in
congl. NE¼ of SE¼ SEC 9

M-4 & M-5
NE¼ of SE¼ SEC. 9
Located in dozer
cut 15' x 50'
4 - north side of cut
5 - south " "

comp chip sample over 15'
highly fractured gray
feldspathic SX - SRound
conglomerate as before
Cu (chrysocolla) primarily
follows a fault type
fracture trending
N76E ~80S with
about 6" of gouge y
material - rk on
both sides is silic w/
much epidote
Cu on both sides of
major fault in irregular
patches. - mostly frac-filling
some impregnation

Sample 4 crosses fault:

M 9+5 cont

570E 70W

S65W 48S

N10E 73W w/chrysocolla

M-6-668 NE¼, NW¼ SEC 10
Cong.
in adit to inclined
shaft ~80' deep - shaft
follows fault down dip
N20E 21SE clayey
fault gouge about 10'
thick Fair amount
of Fe-oxide staining
+ sericitic alt. in gouge

+ country rk.
assay for Ag, Au +
possibly other besides. Cu
much qtz float present
no evidence of min
comp chip sample over 6'

samples 1-5 — 18041 pp *

sample 6 — 17155

11-1-71
LINE 4 Geochem
soil samples
Started @ a point 3/8
mile east of sec corner

Line 4 sample 80-100 &
101-30 ind.

located along sec
line between sec 10 &
sec 15 — traverse
run 5000' due North
from sta 0.00
sampling every 100' by
pacing — flagging
every 200'

11-2-71

START GEOCHEM
LINE 5 E-W
thru sec 8, 9, & W ½ of 10
T21S R9E —

LINE 5 samples 801 - 850
+ 901 thru 915

- Passing thru a point 250' N of BM 3558
Soil sampling every 400' on alluvium, 100' on outcrop.
Flagging every 400' station + every other 100' station

MILEAGE

35048
35210 } 162 Mon.

35210
35362 } 152 Tues

BE @ office

@ 7:00

investigate western P. Permit areas first

~~20 S 20 W~~

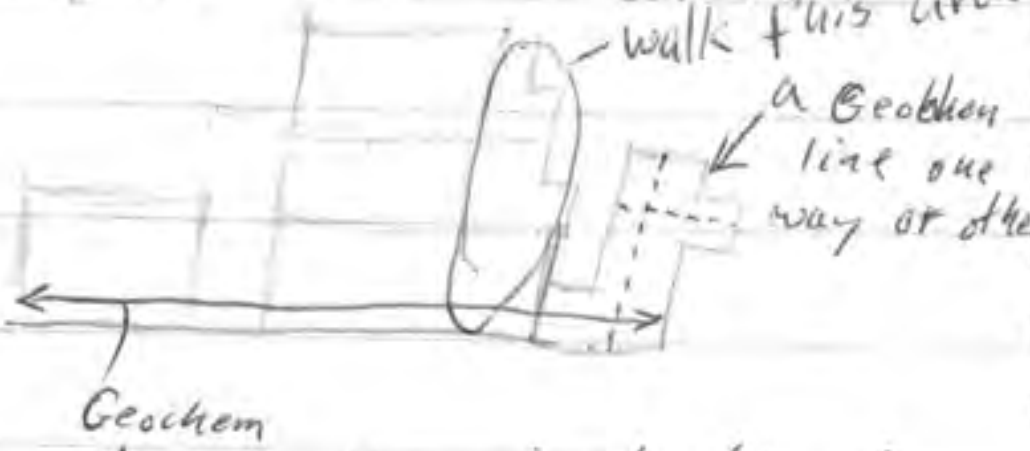
35 paces = 100' on level

1 pace ≈ 2.8'

Geochem lines

100' on outcrop

400' on alluvium



+ further investigation of outcrops.

			Week Ending	
I.P.	1	Fri	16	@ 275/day
	5	Mon → Fri	23	
	3	Mon, Thurs, Fri	30	
Gerchem	2	Tues, Wed	30	@ 150/day 300
CSL Trips	2	Fri	23	@ 150/day
		Thurs	30	+ 200/day 350

79 Gerchem samples of

Cu, Mo @ $2.50/sample = $197.50

1.75 + 50

2.25
79

177.75 + 10%
195.53

15
15
12

79

84
118

Job 668, Line 3, Spread 1, W+E ½, 10/21/71 1500.

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT 668
LINE 3 HALF W SP. ____ DATE ____

PAGE 1

SEND	CAL									
RECEIVE	3-4									
RANGE	10									
DC 1										
DC 2	0.9	1.3	1.2	1.6	1.0	1.3	1.5	1.1	1.2	1.5
DC 3										
DC 4 Gen	2	7	9	7	9	9	7	7	9	9
DC 5 #	1	1	2	3	4	5	6	7	8	9
DC 6 "		1	1	2	1	2	3	1	2	3
DC 7										
DC 8										
DC AVG.										
AC 1	200.	117.	125.	33.9	133.	36.3	16.7	81.8	32.8	16.2
AC 2	—	—	—	—	—	—	—	0.2	—	—
AC AVG.	1.0									
S.P.	0.1									
AC NOISE										
POT RES.										

HEINRICHS GEOEXPLORATION CO.

I.P. RECEIVER NOTES

PROJECT 668

LINE 3 HALF W SP. ____ DATE ____

SEND										
RECEIVE										
RANGE										
DC 1										
DC 2	1.7	1.5	1.5	1.8	1.8	1.8	1.8	2.2	2.8	
DC 3										
DC 4 Gain	7	7	9	9	7	7	9	9	7	
DC 5 #	10	11	12	13	14	15	16	17	18	
DC 6 n	4	2	3	4	5	3	4	5	6	
DC 7										
DC 8										
DC AVG.										
AC 1	8.87	24.2	15.3	9.53	5.94	13.0	10.3	7.48	5.07	
AC 2	—	0.2	—	—	—	0.2	—	—	—	
AC AVG.										
S.P.										
AC NOISE										
POT RES.										

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT 668
LINE 3 HALF W SP. ____ DATE ____

PAGE 3

SEND										
RECEIVE										
RANGE										
DC 1										
DC 2	2.0	2.2	2.3							
DC 3										
DC 4 Cen	7	9	9							
DC 5 #	19	20	21							
DC 6 "	4	5	6							
DC 7										
DC 8										
DC AVG.										
AC 1	6.34	5.64	4.49							
AC 2	—	—	—							
AC AVG.										
S.P.										
AC NOISE										
POT RES.										

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT 664
LINE 3 HALF E SP. ____ DATE ____

PAGE 4

SEND										
RECEIVE										
RANGE										
DC 1										
DC 2	1.2	1.5	1.6	1.2	1.1	1.2	1.6	2.4	2.7	2.7
DC 3										
DC 4 Cu	9	9	7	7	9	9	7	7	9	9
DC 5 #	22	23	24	25	26	27	28	29	30	31
DC 6 n	1	2	3	1	2	3	4	2	3	4
DC 7										
DC 8										
DC AVG.										
AC 1	135.	39.0	19.3	138.	45.6	21.6	9.75	39.0	21.6	12.7
AC 2	—	—	—	—	—	—	—	—	—	—
AC AVG.										
S.P.										
AC NOISE										
POT RES.										

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT 668
LINE 3 HALF E SP. ____ DATE ____

PAGE 5

SEND										
RECEIVE										
RANGE										
DC 1										
DC 2	2.6	3.6	3.4	3.6	3.9	3.6	4.0	3.6		
DC 3										
DC 4 Run	7	7	9	9	7	7	7	9		
DC 5 "	32	33	34	35	36	37	38	39		
DC 6 "	5	3	4	5	6	4	5	6		
DC 7										
DC 8										
DC AVG.										
AC 1	6.35	12.1	8.24	5.40	2.92	5.21	3.06	2.69		
AC 2	—	—	—	—	—	—	—	—		
AC AVG.										
S.P.										
AC NOISE										
POT RES.										

HEINRICHS GEOEXPLORATION CO.

I. P. SENDER NOTES

PAGE 1

PROJECT 668 BELL WESTERN

LINE 3 HALF W SP. 1 DATE 10-21

SEND	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5
RECEIVE	3-2	2-1	→	30-45	→	→	45-60	→	→	→
RANGE	350x20 HI	450x20 HI	350x20 HI	450x20 HI	450x20 HI	350x20 HI	350x20 HI	450x20 HI	450x20 HI	350x20 HI
VOLTAGE	480	450	480	460	460	490	480	460	460	490
CURRENT	7	9	7	9	9	7	7	9	9	7
SEND	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5	1-2	2-3
RECEIVE	60-75	→	→	→	75-90	→	→	→	90-105	→
RANGE	350x20 HI	450x20 HI	450x20 HI	350x20 HI	350x20 HI	450x20 HI	450x20 HI	350x20 HI	350x20 HI	450x20 HI
VOLTAGE	480	460	460	490	480	460	460	490	480	480
CURRENT	7	9	9	7	7	9	9	7	7	9

FREQUENCIES 1.0 0.1

SENDER NO. 22705 5

OPERATOR JPM

RECEIVER NO.

OPERATOR GLA

COMMENTS: 1-2 7 350x20; 2-3 9 450x20; 3-4 9 450x20; 4-5 7 350x20

HEINRICHS GEOEXPLORATION CO.

I. P. SENDER NOTES

PROJECT 668

LINE 3 HALF W SP. 1 DATE 10-21

PAGE 2

SEND	4-5									CAL
RECEIVE	90-105									3-4
RANGE	450x20 HI									200x10
VOLTAGE	460									150
CURRENT	9									2
SEND										
RECEIVE										
RANGE										
VOLTAGE										
CURRENT										

FREQUENCIES _____ _____

SENDER NO.

OPERATOR

RECEIVER NO.

OPERATOR

COMMENTS:

HEINRICHS GEOEXPLORATION CO.

I. P. SENDER NOTES

PROJECT 668-71 LINE 3 HALF E SP. 1 DATE 10-22

SEND	3-4	2-3	1-2	4-5	3-4	2-3	1-2	4-5	3-4	2-3
RECEIVE	30-45E	→	→	45-60E	→	→	→	60-75E	→	→
RANGE	350x20	→	→	350x20	450x20	→	350x20	350x20	450x20	→
VOLTAGE	380		480	490	460	460	480	480	460	460
CURRENT	7.0	7.0	7.0	7.0	9.0	9.0	7.0	7.0	9.0	9.0
SEND	1-2	4-5	3-4	2-3	1-2	4-5	3-4	2-3		
RECEIVE	60-75E	75-90	→	→	→	90-105,E	→	→		
RANGE	350x20	350x20	450x20	→	350x20	350x20	350x20	450x20		
VOLTAGE	490	480	460	460	480	480	370	460		
CURRENT	7.0	7.0	9.0	9.0	7.0	7.0	7.0	9.0		

FREQUENCIES 1.0 0.1

SENDER NO. 22705

OPERATOR 64

RECEIVER NO.

OPERATOR 45

COMMENTS:

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT 668-71
LINE 3 HALF W SP. 1 DATE 10-22

PAGE 1

SEND	CAL	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4
RECEIVE	3-4	0-15W	15-30W →		30-45W →		→	45-60W →		→
RANGE	10.	10.	10.	1.0	10.	1.0	1.0	1.0	1.0	1.0
DC 1										
DC 2	0.4	1.3	1.2	1.6	1.0	1.3	1.5	1.1	1.2	1.5
DC 3 Cm	1.0									→
DC 4 km		4.5	4.5	18	4.5	18	45	4.5	18	45
DC 5 I	[illegible]	7	9	7	9	9	7	7	9	9
DC 6										
DC 7 ρa		[illegible] 76	[illegible] 64	88	67	73	109	53	66	82
DC 8 PFE		0.9	0.8	1.2	0.6	0.9	1.1	0.7	0.8	1.1
DC AVG.		12	13	14	9	12	10	13	12	13
AC 1	200.	117.	125.	33.9	133.	36.3	16.7	81.8	32.8	16.2
AC 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	+0.2	0.0	0.0
AC AVG.										
S.P.										
AC NOISE										
POT RES.										

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT 668-71
LINE 3 HALF W SP. 1 DATE 10-22

PAGE 2

SEND	4-5	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5	
RECEIVE	45-60	60-75 W	→	→	→	75-90 W	→	→	→	
RANGE	0.1	1.0	1.0	0.1	0.1	1.0	1.0	0.1	0.1	
DC 1										
DC 2	1.7	1.5	1.5	1.8	1.8	1.8	1.8	2.2	2.8?	
DC 3 CM	1.0	→	→	→	→	→	→	→	→	
DC 4 Kn	90	18	45	90	157.5	45	90	157.5	252	
DC 5 S	7	7	9	9	7	7	9	9	7	
DC 6										
DC 7 ρa	116	63	77	97	136	85	105	133	187	
DC 8 PFE	1.3	1.1	1.1	1.4	1.4	1.4	1.4	1.8	2.4	
DC AVG.F	11	17	14	14	10	16	13	14	13	
AC 1	8.87	24.2	15.3	9.53	5.94	13.0	10.3	7.48	5.07	
AC 2	0.0	+0.2	0.0	0.0	0.0	+0.2	0.0	0.0	0.0	
AC AVG.										
S.P.										
AC NOISE		<2K								
POT RES.										

HEINRICHS GEOEXPLORATION CO.

I.P. RECEIVER NOTES

PROJECT 668-71

LINE 3 HALF W SP. 1 DATE 10-22

SEND	1-2	2-3	3-4							
RECEIVE	90-105W →									
RANGE	0.1	0.1	0.1							
DC 1										
DC 2	2.0	2.2	2.3							
DC 3 CM	1.0 →									
DC 4 Kn	90	157.5	252							
DC 5 I	7	9	9							
DC 6										
DC 7 Ra	83	100	128							
DC 8 PEF	1.6	1.8	1.9							
DC AVGE.	19	18	15							
AC 1	6.34	5.64	4.49							
AC 2	0.0	0.0	0.0							
AC AVG.										
S.P.										
AC NOISE	20 Sec AC's									
POT RES.	High	Noise level, (occasional spikes)								

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT 668
LINE 3 HALF E SP. 1 DATE 10-22

SEND	3-4	2-3	1-2	4-5	3-4	2-3	1-2	4-5	3-4	2-3
RECEIVE	30-45E	→	→	45-60E	→	→	→	60-75E	→	→
RANGE	10	1.0	1.0	10	1.0	1.0	0.1	1.0	1.0	1.0
DC 1										
DC 2	~~1~~ 1.2	1.5	1.6	1.2	1.1	1.2	1.6	2.4	2.7	2.7
DC 3 CM2	1.0	→	→	→	→	→	→	→	→	→
DC 4 Kn	4.5	18	45	~~90~~ 4.5	18	45	90	18	45	90
DC 5 I	9	9	7	7	9	9	7	7	9	9
DC 6										
DC 7 ρ_a	68	79	126	90	92	109	127	102	110	130
DC 8 PFE	0.8	1.1	1.2	0.8	0.7	0.8	1.2	2.0	2.3	2.3
DC AMG F	12	14	9.5	8.9	7.6	7.4	9.5	20	21	18
AC 1	135	39.0	19.3	138	45.6	21.6	9.75	39.0	21.6	12.7
AC 2	—	—	—	—	—	—	—	—	—	—
AC AVG.										
S.P.	+6.9	→	→	-2.9	→	→	→	+7.7	→	→
AC NOISE										
POT RES.				1K	→	→	→			

HEINRICHS GEOEXPLORATION CO.

I.P. RECEIVER NOTES

PROJECT 668
LINE 3 HALF E SP. 1 DATE 10-22

SEND	1-2	4-5	3-4	2-3	1-2	4-5	3-4	2-3		
RECEIVE	60-75E	75-90E	→	→	→	90-105E	→	→		
RANGE	0.1	1.0	0.1	0.1	0.1	0.1	0.1	0.1		
DC 1										
DC 2	2.6	3.6	~~3.4~~ 3.4	3.6	3.9	3.6	4.0?	3.6??		
DC 3 CM	1.0	→	→	→	→	→	→	→		
DC 4 Kn	157.5	45	90	157.5	252	90	157.5	252		
DC 5 T	7	7	9	9	7	7	9	9		
DC 6										
DC 7 Pa	146	80	85	98	109	69	56	78		
DC 8 PFE	2.2	3.2	3.0	3.2	3.5	3.2	3.6	3.2		
DC A ~~MAF~~	15	40	35	33	32	46	64	41		
AC 1	6.35	12.1	8.24	5.40	2.92	5.21	3.06	2.69		
AC 2	—	—	—	—	—	—	—	—		
AC AVG.										
S.P.		—				+10.8				
AC NOISE										
POT RES.										

HEINRICHS GEOEXPLORATION CO.

I.P. RECEIVER NOTES

PROJECT 668-71

LINE 3 HALF E SP. 2 DATE 10-28

PAGE 1

SEND	1-2	2-3	1-2	3-4	2-3	1-2	3-4	2-3	1-2	CAL
RECEIVE	3-4	75-90E	→	90-105	→	→	105-120	→	→	1-2
RANGE	10.	1.0	1.0	1.0	1.0	0.1	1.0	0.1	0.1	10.
DC 1								120sec	dump	+0.4
DC 2	1.7	2.3	2.8	2.0	3.1	2.8	3.8	3.2	6.3	(0.3)
DC 3 PFE	1.5	2.0	2.5	1.7	2.8 noisy	~~2.5~~ →	noisy	~~2.9~~ →	6.0	
DC 4 I	5	→	→	→	→	→	→	→	→	2
DC 5 Kn	4.5	4.5	18	4.5	18	45	18	45	90	
DC 6 Ca/2π	100	54	71	49	49	63	49	47	65	
DC 7 MCF	15	37	35	35	57	40	71	62	92	
DC 8										
DC AVG.										
AC 1	110.	59.2	19.2	53.6	13.3	6.90	13.1	5.13	3.42	20%
AC 2	-0.2	–	–	–	–	–	–	–	–	+0.2
AC AVG.										
S.P.		-5.0	→	+11.3	→	→	+5.7			
AC NOISE							ac noise	0.18		
POT RES.		3K					dc noise	0.2 - 0.3		

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT 668
LINE 3 HALF E SP. 2 DATE 1028

PAGE 2

SEND	3-4	2-3	1-2	3-4	2-3	1-2				
RECEIVE	120-135	→	→							
RANGE	0.1	0.1	0.1							
DC 1										
DC 2	8.4?	5.5?	8.0							
DC 3	noisy	5.0	7.7							
DC 4 I	5	→	→							
DC 5 K	45	90	157.5							
DC 6 Eafl	47	56	81							
DC 7 MCF	172?	93?	95							
DC 8										
DC AVG.										
AC 1	4.84	2.95	2.39							
AC 2	—	—								
AC AVG.										
S.P.	+5.7	→	→	-26.2	→	→				
AC NOISE										
POT. RES.										

CP at 60 E #3 electrode

INDUCED POLARIZATION SENDER NOTES

Project: ~~86~~ 688 Line: 3 Spd #2 Date: 10-28-71

Send	1-2	2-3	1-2	3-4	2-3	1-2	3-4	2-3	1-2	3-4	2-3	1-2
Receive	3-4	75-90	→	90-105	→	→	105-120	→	→	120-135	→	→
Time	250x20 LO	250x20	—	250x20	→	→	250x20	→	→	250.20 H	L	L
Range	800	820	800	400	800	800	420	820	790	410	800	780
Current	5	5	5	5.	5.	5.0	5.	5.0	5.0	5.0	5.0	5.0
Send	3-4	2-3	1-2									
Receive	135-150	→	→									
Time												
Range												
Current												

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

JOB 668 LINE 3 SPREAD 1 W + E 1/2 10/21/71 1500 FEET=DIPOLE LENGTH
CAL GROUP NO. 1

CAL CUR	PFE	AC1	AC2	AC FREQ	DC FREQ	PFE CAL	RHO CAL
2.000	.40	200.000	0.00	1.00	.10	.4000	1.0000

COMPUTED DATA									FIELD DATA					
POINT NO.	N	RHO	PFE	MCF	CCPFE	CCMCF	CPFE		PFE	CUR	PT.	N	AC1	AC2
1	1	75.89	.90	11.9	.83	10.9	.07	**	1.30	7.00	1	1	117.000	0.00
2	1	63.00	.80	12.7	.70	11.2	.10	**	1.20	9.00	2	1	125.000	0.00
3	2	88.22	1.20	13.6	.98	11.1	.22	**	1.60	7.00	3	2	33.900	0.00
4	1	66.90	.60	9.0	.51	7.7	.09	**	1.00	9.00	4	1	133.000	0.00
5	2	73.25	.90	12.3	.62	8.4	.28	**	1.30	9.00	5	2	36.300	0.00
6	3	108.54	1.10	10.1	.72	6.6	.38	**	1.50	7.00	6	3	16.700	0.00
7	1	52.95	.60	11.3	.48	9.0	.12	**	1.10	7.00	7	1	81.800	.20
8	2	66.12	.80	12.1	.47	7.2	.33	**	1.20	9.00	8	2	32.800	0.00
9	3	81.89	1.10	13.4	.54	6.6	.56	**	1.50	9.00	9	3	16.200	0.00
10	4	115.53	1.30	11.3	.64	5.6	.66	**	1.70	7.00	10	4	8.870	0.00
11	2	62.91	1.00	15.9	.65	10.4	.35	**	1.50	7.00	11	2	24.200	.20
12	3	77.34	1.10	14.2	.49	6.4	.61	**	1.50	9.00	12	3	15.300	0.00
13	4	96.63	1.40	14.5	.56	5.8	.84	**	1.80	9.00	13	4	9.530	0.00
14	5	135.52	1.40	10.3	.52	3.9	.88	**	1.80	7.00	14	5	5.940	0.00
15	3	84.74	1.30	15.3	.76	9.0	.54	**	1.80	7.00	15	3	13.000	.20
16	4	104.44	1.40	13.4	.65	6.2	.75	**	1.80	9.00	16	4	10.300	0.00
17	5	133.26	1.80	13.5	.90	6.8	.90	**	2.20	9.00	17	5	7.480	0.00
18	6	186.90	2.40	12.8	1.53	8.2	.87	**	2.80	7.00	18	6	5.070	0.00
19	4	82.82	1.60	19.3	.57	6.9	1.03	**	2.00	7.00	19	4	6.340	0.00
20	5	100.48	1.80	17.9	.50	4.9	1.30	**	2.20	9.00	20	5	5.640	0.00
~~20~~	~~5~~	~~100.48~~	~~1.80~~	~~17.9~~	~~.50~~	~~4.9~~	~~1.30~~	~~**~~	~~2.20~~	~~9.00~~	~~20~~	~~5~~	~~5.640~~	~~0.00~~
21	6	128.11	1.90	14.8	.47	3.7	1.43	**	2.30	9.00	21	6	4.490	0.00
22	1	87.48	.80	9.1	.80	9.1	0.00	**	1.20	7.00	22	1	135.000	0.00
23	2	101.39	1.10	10.8	.92	9.1	.18	**	1.50	7.00	23	2	39.000	0.00
24	3	125.56	1.20	9.6	.89	7.1	.31	**	1.60	7.00	24	3	19.300	0.00
25	1	89.42	.80	8.9	.80	8.9	0.00	**	1.20	7.00	25	1	138.000	0.00
26	2	91.84	.70	7.6	.49	5.4	.21	**	1.10	9.00	26	2	45.600	0.00
27	3	108.86	.80	7.3	.42	3.9	.38	**	1.20	9.00	27	3	21.600	0.00
28	4	126.86	1.20	9.5	.62	4.9	.58	**	1.60	7.00	28	4	9.750	0.00
29	2	102.29	2.00	19.6	1.82	17.8	.18	**	2.40	7.00	29	2	39.000	0.00
30	3	110.48	2.30	20.8	1.93	17.4	.37	**	2.70	9.00	30	3	21.600	0.00
31	4	129.92	2.30	17.7	1.74	13.4	.56	**	2.70	9.00	31	4	12.700	0.00
32	5	146.02	2.20	15.1	1.41	9.6	.79	**	2.60	7.00	32	5	6.350	0.00
33	3	80.27	3.20	39.9	2.62	32.7	.58	**	3.60	7.00	33	3	12.100	0.00
34	4	84.87	3.00	35.3	2.01	23.6	.99	**	3.40	9.00	34	4	8.240	0.00
35	5	97.52	3.20	32.8	1.84	18.9	1.36	**	3.60	9.00	35	5	5.400	0.00
36	6	108.80	3.50	32.2	1.73	15.9	1.77	**	3.90	7.00	36	6	2.920	0.00
37	4	69.13	3.20	46.3	1.90	27.4	1.30	**	3.60	7.00	37	4	5.210	0.00
38	5	71.33	3.60	50.5	1.56	21.9	2.04	**	4.00	7.00	38	5	3.060	0.00
39	6	77.73	3.20	41.2	.47	6.1	2.73	**	3.60	9.00	39	6	2.690	0.00

9.00.

Job 668, Line 2, Spread 1, S+N ½, 10/20/71 1500.

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT 668-71
LINE 2 HALF 5 SP. 1 DATE 10-20

SEND	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5
RECEIVE	2-3	1-2	→	30-45	S →		45-60	S →		
RANGE	1.0	1.0	1.0	10.	1.0	1.0	10.	1.0	1.0	0.1
DC 1										
DC 2	1.1	1.3	1.5	1.6	1.4	2.0	1.7	1.7	2.0	2.2
DC 3										
DC 4 Cm	5	5	5	7	5	5	7	7	5	5
DC 5 #	1	2	3	4	5	6	7	8	9	10
DC 6 n	1	1	2	1	2	3	1	2	3	4
DC 7										
DC 8										
DC AVG.										
AC 1	64.5	72.7	20.6	120.	33.0	13.8	128.	41.5	16.4	7.83
AC 2	0.0	0.0	0.0	+0.2	0.0	0.0	+0.2	0.0	0.0	0.0
AC AVG.										
S.P.										
AC NOISE										
POT RES.										

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT 668-71
LINE 2 HALF 5 SP. 1 DATE 10-20

SEND	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5		
RECEIVE	60-75	→			75-90	→				
RANGE	1.0	1.0	1.0	0.1	1.0	1.0	0.1	0.1		
DC 1										
DC 2	1.9	1.8	2.2	2.4	2.2	2.1	2.4	2.8		
DC 3										
DC 4 Cur	7	7	5	5	7	7	5	5		
DC 5 #	11	12	13	14	15	16	17	18		
DC 6 "	2	3	4	5	3	4	5	6		
DC 7										
DC 8										
DC AVG.										
AC 1	54.4	24.4	10.4	5.47	30.5	16.5	8.15	4.47		
AC 2	+0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
AC AVG.										
S.P.										
AC NOISE										
POT RES.										

HEINRICHS GEOEXPLORATION CO.

I.P. RECEIVER NOTES

PROJECT 668-71

LINE 2 HALF 5 SP. 1 DATE 10-20

PAGE 3

SEND	1-2	2-3	3-4							CAL.
RECEIVE	90-10	5.5 →								3-4
RANGE	1.0	0.1	0.1							10.
DC 1										
DC 2	2.4	2.4	2.6							0.4
DC 3										
DC 4 Cm	7	7	5							2
DC 5 #	19	20	21							1
DC 6 "	4	5	6							
DC 7										
DC 8										
DC AVG.										
AC 1	16.3	9.41	4.80							20.4
AC 2	+0.2	0.0	0.0							0.0
AC AVG.										
S.P.										1.0
AC NOISE										0.1
POT RES.										

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT 668 BELL WESTERN
LINE 2 HALF N SP. 1 DATE 10-21-71

SEND	3-4	2-3	1-2	4-5	3-4	2-3	1-2	4-5	3-4	2-3
RECEIVE	30-45	→	→	45-60	→	→	→	60-75	→	→
RANGE	1.0	1.0	1.0	1.0	1.0	0.1	0.1	1.0	0.1	0.1
DC 1										
DC 2	1.3	1.6	1.9	1.6	2.1	2.1	2.4	1.6	2.2	2.2
DC 3										
DC 4 Fan	5	7	7	5	5	7	7	5	5	7
DC 5 #	22	23	24	25	26	27	28	29	30	31
DC 6 "	1	2	3	1	2	3	4	2	3	4
DC 7										
DC 8										
DC AVG.										
AC 1	61.1	20.1	11.2	46.5	15.7	8.60	5.70	12.1	7.16	4.77
AC 2	—	—	—	—	—	—	—	+0.2	—	—
AC AVG.										
S.P.	-3.0			+31.3	→	→	→	+2.8	→	→
AC NOISE										
POT RES.				10K	→	→	→	4K	→	→

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT 668 BELL WESTERN
LINE 2 HALF N SP. 1 DATE 10-21-71

SEND	1-2	4-5	3-4	2-3	1-2	4-5	3-4	2-3		
RECEIVE	60-75	75-90	→	→	→	90-105	→	→		
RANGE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1		
DC 1					←Bad	noise	→	→		
DC 2	2.1	2.0	2.0	~~2.0~~ 2.7	~~3.35?~~	2.2?	3.0?	~~0.10?~~		
DC 3					3.2			0.0		
DC 4 Cm	7	5	5	7	7	5	5	7		
DC 5 #	32	33	34	35	36	37	38	39		
DC 6 n	5	3	4	5	6	4	5	6		
DC 7										
DC 8										
DC AVG.										
AC 1	3.42	5.50	4.12	2.98	2.25	2.95	2.42	1.82		
AC 2	—	—	—	—	—	—	—	—		
AC AVG.										
S.P.	—	+7.2	→	→	→	+16.7	→	→		
AC NOISE										
POT RES.	—	6K	→	→	→					

PAGE 1

HEINRICHS GEOEXPLORATION CO.

I. P. SENDER NOTES

PROJECT 668

LINE 2 HALF S SP. 1 DATE 10-19-71

SEND	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5
RECEIVE	2-3	1-2	→	30-45	→	→	45-60	→	→	→
RANGE	460	470	460	480	470	460	480	480	470	460
VOLTAGE	250×20 HI	250×20 HI	250×20 HI	350×20 HI	250×20 HI	250×20 HI	250×20 HI	350×20 HI	250×20 HI	250×20 HI
CURRENT	5	5	5	7	5	5	7	7	5	5
SEND	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5	1-2	2-3
RECEIVE	60-75	→	→	→	75-90	→	→	→	90-105	→
RANGE	480	480	470	480	480	470	470	480	480	470
VOLTAGE	350×20 HI	350×20 HI	250×20 HI	250×20 HI	350×20 HI	350×20 HI	250×20 HI	250×20 HI	350×20 HI	350×20 HI
CURRENT	7	7	5	5	7	7	5	5	7	7

FREQUENCIES 1.0 0.1

SENDER NO. 22705

OPERATOR JPH #45

RECEIVER NO.

OPERATOR GLH

COMMENTS:

1-2	2-3	3-4	4-5
7	7	5	5
350×20 HI	250×20 HI		

HEINRICHS GEOEXPLORATION CO.

I. P. SENDER NOTES

PROJECT 668

LINE 2 HALF S SP. 1 DATE 10-19-71

PAGE 2

SEND	3-4									CAL
RECEIVE	90-105									3-4
RANGE	460									
VOLTAGE	250/20 HI									200 x 10
CURRENT	5									2
SEND										
RECEIVE										
RANGE										
VOLTAGE										
CURRENT										

FREQUENCIES _____ _____

SENDER NO.

OPERATOR

RECEIVER NO.

OPERATOR

COMMENTS:

HEINRICHS GEOEXPLORATION CO.

I. P. SENDER NOTES

PROJECT 668-71

LINE 2 HALF N½ SP. 1 DATE 10-21

PAGE 3

SEND	3-4	2-3	1-2	4-5	3-4	2-3	1-2	4-5	3-4	2-3
RECEIVE	30-45N →			45-60N →				60-75N →		
RANGE	250 x 20	350x20	350x20	250x20	—	350x20	—	250x20	—	350x20
VOLTAGE	490	480	490	500	490	480	490	500	480	48
CURRENT	5.0	7.0	7.0	5.0	5.0	7.0	7.0	5.0	5.0	7.0

SEND	1-2	4-5	3-4	2-3	1-2	4-5	3-4	2-3		
RECEIVE	60-75	75-90N →				90-105N →				
RANGE	—	250x20	—	350x20	—	250x20	—	350x20		
VOLTAGE	480	500	480	480	490	500	480	480		
CURRENT	7.0	5.0	5.0	7.0	7.0	5.0	5.0	7.0		

FREQUENCIES 0.1 1.0

SENDER NO. 22705

OPERATOR 64

RECEIVER NO.

OPERATOR 45

COMMENTS:

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

JOB 668 LINE 2 SPREAD 1 S + N 1/2 10/20/71 1500 FEET=DIPOLE LENGTH
CAL GROUP NO. 1

CAL CUR	PFE	AC1	AC2	AC FREQ	DC FREQ	PFE CAL	RHO CAL
2.000	.40	201.000	0.00	1.00	.10	.4000	.9950

COMPUTED DATA									FIELD DATA					
POINT NO.	N	RHO	PFE	MCF	CCPFE	CCMCF	CPFE		PFE	CUR	PT.	N	AC1	AC2
1	1	58.17	.70	12.0	.59	10.2	.11	**	1.10	5.00	1	1	64.500	0.00
2	1	65.69	.90	13.7	.81	12.3	.09	**	1.30	5.00	2	1	72.700	0.00
3	2	74.60	1.10	14.7	.82	11.1	.28	**	1.50	5.00	3	2	20.600	0.00
4	1	77.68	1.10	14.2	1.03	13.3	.07	**	1.60	7.00	4	1	120.000	.20
5	2	119.39	1.00	8.4	.86	7.2	.14	**	1.40	5.00	5	2	33.000	0.00
6	3	125.56	1.60	12.7	1.29	10.3	.31	**	2.00	5.00	6	3	13.800	0.00
7	1	82.94	1.20	14.5	1.14	13.7	.06	**	1.70	7.00	7	1	128.000	.20
8	2	107.56	1.30	12.1	1.13	10.5	.17	**	1.70	7.00	8	2	41.500	0.00
9	3	149.22	1.60	10.7	1.35	9.1	.25	**	2.00	5.00	9	3	16.400	0.00
10	4	142.76	1.80	12.6	1.31	9.1	.49	**	2.20	5.00	10	4	7.830	0.00
11	2	141.28	1.40	9.9	1.29	9.1	.11	**	1.90	7.00	11	2	54.400	.20
12	3	158.26	1.40	8.8	1.17	7.4	.23	**	1.80	7.00	12	3	24.400	0.00
13	4	189.62	1.80	9.5	1.47	7.7	.33	**	2.20	5.00	13	4	10.400	0.00
14	5	174.88	2.00	11.4	1.38	7.9	.62	**	2.40	5.00	14	5	5.470	0.00
15	3	198.61	1.80	9.1	1.63	8.2	.17	**	2.20	7.00	15	3	30.500	0.00
16	4	214.68	1.70	7.9	1.42	6.6	.28	**	2.10	7.00	16	4	16.500	0.00
17	5	260.56	2.00	7.7	1.64	6.3	.36	**	2.40	5.00	17	5	8.150	0.00
18	6	229.55	2.40	10.5	1.74	7.6	.66	**	2.80	5.00	18	6	4.470	0.00
19	4	212.70	1.90	8.9	1.61	7.6	.29	**	2.40	7.00	19	4	16.300	.20
20	5	214.89	2.00	9.3	1.53	7.1	.47	**	2.40	7.00	20	5	9.410	0.00
21	6	246.01	2.20	8.9	1.60	6.5	.60	**	2.60	5.00	21	6	4.800	0.00
22	1	55.21	.90	16.3	.79	14.2	.11	**	1.30	5.00	22	1	61.100	0.00
23	2	52.05	1.20	23.1	.75	14.4	.45	**	1.60	7.00	23	2	20.100	0.00
24	3	72.72	1.50	20.6	.84	11.6	.66	**	1.90	7.00	24	3	11.200	0.00
25	1	42.14	1.20	28.5	1.03	24.5	.17	**	1.60	5.00	25	1	46.500	0.00
26	2	57.19	1.70	29.7	1.30	22.8	.40	**	2.10	5.00	26	2	15.700	0.00
27	3	55.95	1.70	30.4	.76	13.7	.94	**	2.10	7.00	27	3	8.600	0.00
28	4	74.38	2.00	26.9	.82	11.0	1.18	**	2.40	7.00	28	4	5.700	0.00

Moore Business Forms, Inc.

29	2	43.86	1.10	25.1	.53	12.1	.57	**	1.60	5.00	29	2	12.100	.20
30	3	65.27	1.80	27.6	1.04	15.9	.76	**	2.20	5.00	30	3	7.160	0.00
31	4	62.12	1.80	29.0	.30	4.8	1.50	**	2.20	7.00	31	4	4.770	0.00
32	5	77.87	1.70	21.8	-.12	-1.5	1.82	**	2.10	7.00	32	5	3.420	0.00
33	3	50.04	1.60	32.0	.52	10.3	1.08	**	2.00	5.00	33	3	5.500	0.00
34	4	74.97	1.60	21.3	.43	5.7	1.17	**	2.00	5.00	34	4	4.120	0.00
35	5	68.25	2.30	33.7	.15	2.1	2.15	**	2.70	7.00	35	5	2.980	0.00
36	6	82.85	2.80	33.8	.29	3.5	2.51	**	3.20	7.00	36	6	2.250	0.00
37	4	53.79	1.80	33.5	-.01	-.2	1.81	**	2.20	5.00	37	4	2.950	0.00
38	5	77.82	2.60	33.4	.78	10.0	1.82	**	3.00	5.00	38	5	2.420	0.00
39	6	64.93	~~-.40~~	~~-36.2~~	-3.82	-58.9	3.42	**	0.00	7.00	39	6	1.820	0.00

Job 668, Line 1, Spread 1, S+N½, 10/16/71 1500.

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT 668-71 ARAUACA
LINE 1 HALF 5 SP. 1 DATE 10-16

SEND	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5
RECEIVE	0-15	15-30	→	30-45	→	→	45-60	→	→	→
RANGE	1.0	1.0	1.0	10.	1.0	1.0	10.	1.0	1.0	1.0
DC 1										
DC 2	1.0	1.2	1.2	1.6	~~1.4~~	1.9	1.6	1.8	1.9	2.2
DC 3					1.6					
DC 4 Gun	5	5	5	6	5	5	8	6	5	5
DC 5 #	1	2	3	4	5	6	7	8	9	10
DC 6 n	1	1	2	1	2	3	1	2	3	4
DC 7										
DC 8										
DC AVG.										
AC 1	84.2	55.7	22.2	117.	~~98.1~~	18.0	152.	35.0	12.4	10.7
AC 2	0.0	0.0	-0.2	+0.2	~~0.0~~	0.0	+0.2	0.0	0.0	0.0
AC AVG.					25.6					
S.P.	-16.5	+17.0		+21.6	0.0		-25.0			
AC NOISE							2K			
POT RES.				* Possible core drill Pad ≈ 30.1 S						

HEINRICHS GEOEXPLORATION CO.

I.P. RECEIVER NOTES

PROJECT 668-71

LINE 1 HALF S SP. 1 DATE 10-16

PAGE 2

SEND	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5		CAL
RECEIVE	60-75	→	→	→	75-90	→	→	→		1-2
RANGE	1.0	1.0	0.1	0.1	1.0	0.1	0.1			10.
DC 1										
DC 2	1.8	2.0	2.5	2.3	1.9	2.1	2.4	2.8		+0.4
DC 3										
DC 4 Cur	8	6	5	5	8	6	5	5		2
DC 5 #	11	12	13	14	15	16	17	18		1
DC 6 n	2	3	4	5	3	4	5	6		
DC 7										
DC 8										
DC AVG.										
AC 1	47.9	16.7	7.05	6.78	23.6	9.69	4.57	4.71		20%
AC 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
AC AVG.										
S.P.	+32.0				+32.1	20 Sec	AC's			1.0
AC NOISE	* old core drill pad & cased hole ≈50.05									0.1
POT RES.	(2-3 Yrs)									

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT 668-71
LINE 1 HALF N SP. 1 DATE 10-19

SEND	S.P	S.P	3-4	2-3	1-2	4-5	3-4	2-3	1-2	
RECEIVE	0-15N	15-30N	30-45	→	→	45-60	→	→	→	
RANGE			1.0	1.0	1.0	1.0	0.1	0.1	0.1	
DC 1										
DC 2			1.7	1.3	1.9	1.9	1.6	1.6	1.5	
DC 3										
DC 4 Pair			5	6	8	5	5	6	8	
DC 5 #			19	20	21	22	23	24	25	
DC 6 "			1	2	3	1	2	3	4	
DC 7										
DC 8										
DC AVG.										
AC 1			38.3	17.4	10.6	50.2	9.03	5.49	4.23	
AC 2			+0.2	0.0	0.0	0.0	0.0	0.0	0.0	
AC AVG.										
S.P.	+21.6	+5.8	-17.9			+5.9				
AC NOISE	Buried steel water pipe along road					Stn. 45 N off Line To The West—				
POT RES.	near 30N - 3" pipe					crossed road at curve To NorNE				

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT 668-71
LINE 1 HALF N SP. 1 DATE 10-14

SEND	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2		
RECEIVE	60-75	→	→	→	75-90	→	→	→		
RANGE	1.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1		
DC 1										
DC 2	1.6	1.7	1.7	2.4	1.6	2.0	2.7	2.8		
DC 3										
DC 4 Cm	5	5	6	8	5	5	6	8		
DC 5 #	26	27	28	29	30	31	32	33		MORE
DC 6 n	2	3	4	5	3	4	5	6		
DC 7										
DC 8										
DC AVG.										
AC 1	21.3	5.30	4.39	3.80	8.22	2.88	2.73	2.57		
AC 2	+0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
AC AVG.										
S.P.	-5.8				+21.8					
AC NOISE					20 Sec AC's		Lot of Noise			
POT RES.					Sometimes off scale.					

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT 668-71
LINE 1 HALF U SP. 1 DATE 10-19

PAGE 5

SEND	4-5	3-4	2-3							
RECEIVE	90-105	→								
RANGE	0.1	0.1	0.1							
DC 1										
DC 2	2.5	3.1	3.2							
DC 3										
DC 4 tm	5	5	6							
DC 5 #	34	35	36							
DC 6 n	4	5	6							
DC 7										
DC 8										
DC AVG.										
AC 1	3.86	1.60	1.622							
AC 2	0.0	+0.4	0.0							
AC AVG.										
S.P.	-7.6									
AC NOISE	See AC's									
POT RES.	High AC Noise Level									

INDUCED POLARIZATION S½ SENDER NOTES

Project: 668 Line: 1 Date: 10-18-71

Send	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5	1-2	2-3
Receive												
Time												
Range	250x20 ~~HI~~ LO	250x20 ~~HI~~ LO	250x20 LO ~~HI~~	300x20 HI	250x20 LO	250x20 LO	400x20 HI	300x20 HI	250x20 LO	250x20 LO	400x20 HI	300x20 HI
Current	5	5	5	6	5	5	8	6	5	5	8	6

Send	3-4	4-5	1-2	2-3	3-4	4-5						CHL
Receive												1-2 ~~1-2~~
Time	~~250x20 LO~~											1-2
Range	250x20 LO	250x20 LO	400x20 HI	300x20 HI	250x20 LO	250x20 LO						10x200
Current	5	5	8	6	5	5						2

INDUCED POLARIZATION N½ SENDER NOTES

Project: 668 Line: 1 Date: 10-18-71

Send	3-4	2-3	1-2	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2	
Receive	30-45	→	→	45-60	→	→	→	60-75	→	→	→	
Time												
Range	250×20 LO	300×20 HI	400×20 HI	250×20 LO	250×20 LO	300×20 HI	400×20 HI	250×20 LO	250×20 LO	300×20 HI	400×20 HI	
Current	5	6	8	5	5	6	8	5	5	6	8	

Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3					
Receive	75-90	→	→	→	90-105	→	→					
Time												
Range	250×20 LO	250×20 LO	300×20 HI	400×20 HI	250×20 LO	250×20 LO	300×20 HI					
Current	5	5	6	8	5	5	6					

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

JOB 668 LINE 1 SPREAD 1 S + N 1/2 10/16/71 1500 FEET=DIPOLE LENGTH
CAL GROUP NO. 1

CAL CUR	PFE	AC1	AC2	AC FREQ	DC FREQ	PFE CAL	RHO CAL
2.000	.40	201.000	0.00	1.00	.10	.4000	.9950

COMPUTED DATA									FIELD DATA					
POINT NO.	N	RHO	PFE	MCF	CCPFE	CCMCF	CPFE		PFE	CUR	PT.	N	AC1	AC2
1	1	75.86	.60	7.9	.53	6.9	.07	**	1.00	5.00	1	1	84.200	0.00
2	1	50.28	.80	15.9	.67	13.3	.13	**	1.20	5.00	2	1	55.700	0.00
3	2	80.16	.90	11.2	.65	8.1	.25	**	1.20	5.00	3	2	22.200	-.20
4	1	88.36	1.10	12.4	1.10	12.4	0.00	**	1.60	6.00	4	1	117.000	.20
5	2	92.80	1.20	12.9	1.00	10.7	.20	**	1.60	5.00	5	2	25.600	0.00
6	3	163.61	1.50	9.2	1.28	7.8	.22	**	1.90	5.00	6	3	18.000	0.00
7	1	86.10	1.10	12.8	1.04	12.1	.06	**	1.60	8.00	7	1	152.000	.20
8	2	105.94	1.40	13.2	1.23	11.6	.17	**	1.80	6.00	8	2	35.000	0.00
9	3	112.71	1.50	13.3	1.14	10.1	.36	**	1.90	5.00	9	3	12.400	0.00
10	4	195.09	1.80	9.2	1.48	7.6	.32	**	2.20	5.00	10	4	10.700	0.00
11	2	108.74	1.40	12.9	1.24	11.4	.16	**	1.80	8.00	11	2	47.900	0.00
12	3	126.62	1.60	12.6	1.29	10.2	.31	**	2.00	6.00	12	3	16.700	0.00
13	4	128.92	2.10	16.3	1.53	11.9	.57	**	2.50	5.00	13	4	7.050	0.00
14	5	216.55	1.90	8.8	1.43	6.6	.47	**	2.30	5.00	14	5	6.780	0.00
15	3	134.07	1.50	11.2	1.21	9.1	.29	**	1.90	8.00	15	3	23.600	0.00
16	4	147.09	1.70	11.6	1.23	8.3	.47	**	2.10	6.00	16	4	9.690	0.00
17	5	146.10	2.00	13.7	1.21	8.3	.79	**	2.40	5.00	17	5	4.570	0.00
18	6	241.87	2.40	9.9	1.79	7.4	.61	**	2.80	5.00	18	6	4.710	0.00
19	1	34.74	1.20	34.5	.98	28.2	.22	**	1.70	5.00	19	1	38.300	.20
20	2	52.41	.90	17.2	.45	8.6	.45	**	1.30	6.00	20	2	17.400	0.00
21	3	60.22	1.50	24.9	.65	10.8	.85	**	1.90	8.00	21	3	10.600	0.00
22	1	45.63	1.50	32.9	1.35	29.6	.15	**	1.90	5.00	22	1	50.200	0.00
23	2	32.73	1.20	36.7	.36	10.9	.84	**	1.60	5.00	23	2	9.030	0.00
24	3	41.46	1.20	28.9	-.19	-4.5	1.39	**	1.60	6.00	24	3	5.490	0.00
25	4	47.87	1.10	23.0	-1.00	-20.9	2.10	**	1.50	8.00	25	4	4.230	0.00
26	2	77.21	1.10	14.2	.84	10.8	.26	**	1.60	5.00	26	2	21.300	.20
27	3	48.08	1.30	27.0	.16	3.3	1.14	**	1.70	5.00	27	3	5.300	0.00
28	4	66.37	1.30	19.6	-.08	-1.1	1.38	**	1.70	6.00	28	4	4.390	0.00
29	5	75.93	2.00	26.3	.12	1.6	1.88	**	2.40	8.00	29	5	3.800	0.00
30	3	74.50	1.20	16.1	.56	7.6	.64	**	1.60	5.00	30	3	8.220	0.00
31	4	52.41	1.60	30.5	-.27	-5.2	1.87	**	2.00	5.00	31	4	2.880	0.00
32	5	72.95	2.30	31.5	.32	4.4	1.98	**	2.70	6.00	32	5	2.730	0.00
33	6	82.49	2.40	29.1	-.13	-1.5	2.53	**	2.80	8.00	33	6	2.570	0.00
34	4	70.59	2.10	29.8	.83	11.8	1.27	**	2.50	5.00	34	4	3.860	0.00
35	5	51.51	2.50	48.5	-.59	-11.4	3.09	**	3.10	5.00	35	5	1.600	.40
36	6	69.60	2.80	40.2	-.34	-4.8	3.14	**	3.20	6.00	36	6	1.620	0.00

1435 SO. 10TH AVE.
P. O. BOX 1889

Jacobs Assay Office

Registered Assayers

PHONE
622-0813

Tucson, Arizona, 85702, Nov. 5th, 1971

Sample Submitted by Mr. Heinrichs Geo Exploration Co PO # 02913

Sample Marked	GOLD Ozs. per ton ore	GOLD Value per ton ore* $	SILVER Ozs. per ton ore	COPPER Per cent Wet Assay	~~LEAD Per cent Wet Assay~~	Mo Per Cent Wet Assay	~~Per Cent Wet Assay~~	~~Per Cent Wet Assay~~
Feb-66 #668.								
M-1	0.01	0.35	0.15	0.21		Trace		
2	Trace		0.10	0.03		0.002		
3	0.005	0.17	0.20	0.19		Trace		
4	0.01	0.35	0.15	0.21		Trace		
5	Trace		0.05	0.05		0.002		
6.	Trace		0.10	0.03		Trace		

REGISTERED ASSAYER
CERTIFICATE EXPIRES
1041
BENJAMIN P.
JACOBS
Dec. 31, 1971
Arizona U. S.

PAID NOV 19 1971

*Gold Figured $35.00 per oz. Troy

Charges $ 42.00

Billed

Very respectfully,

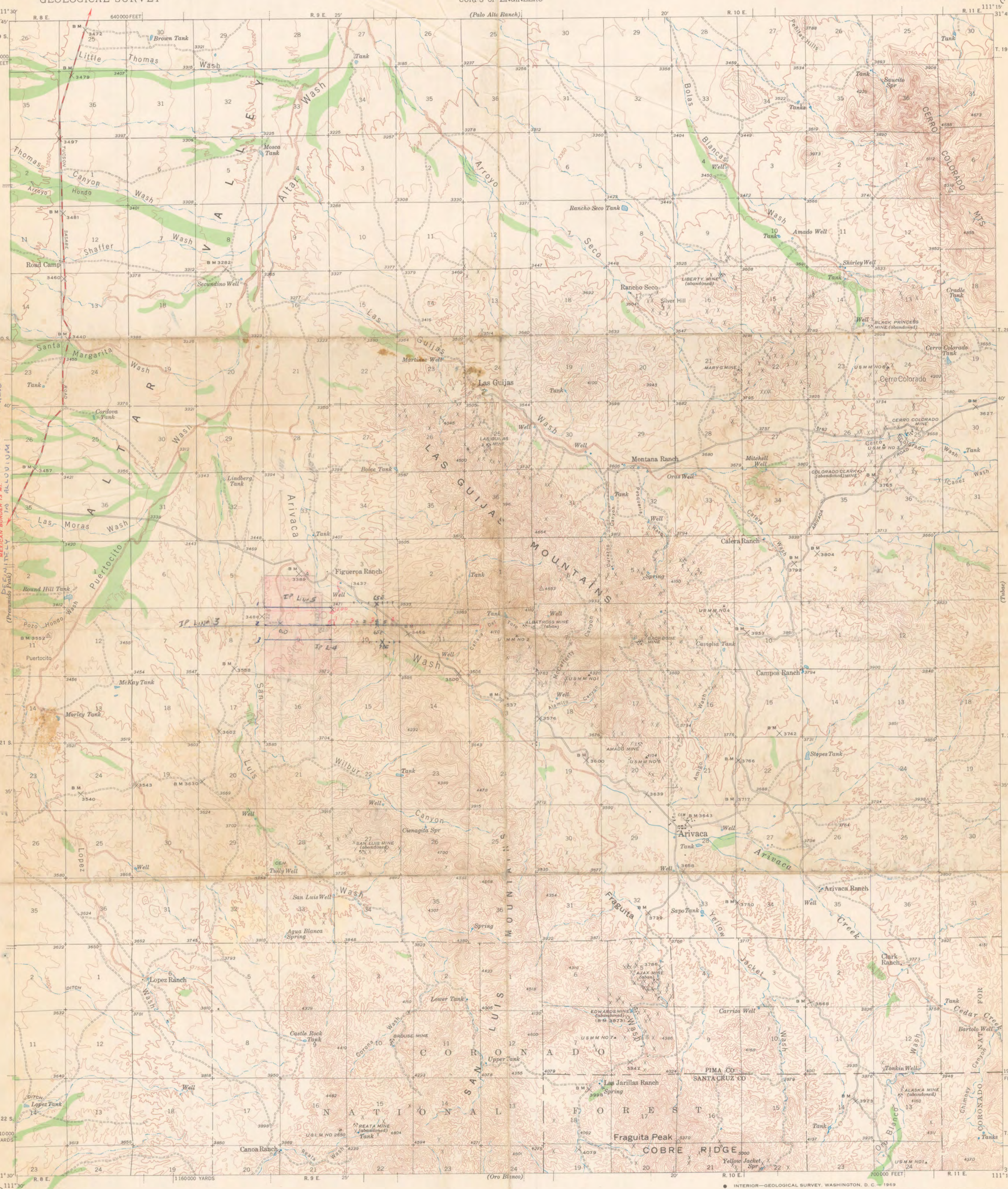
Ben P. Jacobs

TUCSON 50 MI.
ROBLES RANCH (JUNC. ARIZ. 86) 26 MI.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

UNITED STATES
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS

ARIZONA
ARIVACA QUADRANGLE
15-MINUTE SERIES



GEOCHEM 3 LINES
EAST-WEST ACROSS CENTER OF SECTION 9,
ALONG LINE 3, AND ALONG LINE BETWEEN
SECTION 4 & 9. OSE 100' STATIONS IN DOT CROP
AREA ARIVACA SONORA 15 MI. 400' STATIONS WHERE
MEXICAN BORDER 13 MI. IN ALLUVIUM
DEFINITELY

IP LINE 5
IP LINE 3
IP L4

L-3 S-2

Topography by S. C. Kain
Surveyed in 1940-41

APPROXIMATE MEAN DECLINATION, 1941
TRUE NORTH
MAGNETIC NORTH
14°

SCALE 1:62500

1 ½ 0 1 2 3 4 MILES

3000 0 3000 6000 9000 12000 15000 18000 21000 FEET

1 .5 0 1 2 3 4 5 KILOMETERS

Contour interval 50 feet
Datum is mean sea level

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D. C.—1969

Sections lines in T. 22 S., R. 11 E. are omitted because of insufficient data

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

ARIVACA, ARIZ.

N3130—W11115/15

1941

ROAD CLASSIFICATION

Heavy-duty — 4 LANE | 6 LANE
Medium-duty — 4 LANE | 6 LANE
Light-duty
Unimproved dirt
U. S. Route
State Route

FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225 OR WASHINGTON, D. C. 20242
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

Mr. Warnock LL.D.
90 UnB

EFCO LABORATORIES
North Freeway at Ruthrauf Road P. O. Box 5526
TUCSON, ARIZONA 85703
PHONE (602) 887-4241

Laboratory Analysis Report

Heinrichs Geoexploration Company
808 W. Grant Rd.
Tucson, Arizona 85705

Chris Ludwig
Job# 668-702

REPORT NO. 712537
DATE SUBMITTED 11-3-71
DATE REPORTED 11-10-71

Sample No.	PPM Copper	PPM Molybdenum
668-71-1	67	11
2	68	< 1
3*	+1000	23
4	54	3
5	42	1
6	95	6
7	65	9
8	57	4
9	37	13
10	33	1
11	32	11
12	38	3
13	34	3
14	28	7
15	29	3
16*	21	4

Sample No.	PPM Copper	PPM Molybdenum
668-71-17	40	< 1
18	29 *	16
19	130 *	3
20	24	3
21	42	6
22	52	< 1
23	52	9
24	25	1
25	61	1
26	50	6
27	63	< 1
28	50	3
29	43	7
30	62	3
31	60	3
32	43	6

* Rock Samples

Signed

Sample No.	PPM Copper	PPM Molybdenum
668-71-33	62	4
34	51	< 1
35	33	1
36	18	4
37	34	1
38	22	6
39	26	< 1
40	15	< 1
41	20	< 1
42	16	< 1
43	35	1
44 *	28	3
45	37	7
46	51	1
47	52	3
48 *	29	3
49	67	9
50	82	4
51	49	9
52	71	3
53	55	4
54	52	3
55	132	< 1

Sample No.	PPM Copper	PPM Molybdenum
668-71-56	94	3
57	200	3
58	114	7
59	100	3
60	103	4
61	50	< 1
62	39	1
63	97	1
64	119	3
65	69	6
66	57	1
67	90	3
68	49	3
69	46	13
70	55	3
71	41	1
72	42	< 1
73	43	3
74	52	3
75	53	3
76	50	< 1
77	40	1
78	40	3

Sample No.	PPM Copper	PPM Molybdenum
668-71-79	59	1
80	107	3
81	52	1
82	45	< 1
83	30	< 1
84	46	3
85	38	< 1
86	33	1
87	30	3
88	19	3
89	29	1
90	38	1
91	35	11
92	10	9
93	35	< 1
94	30	< 1
95	30	< 1
96	30	1
97	36	< 1
98	24	3
99	32	1
100	34	< 1
101	26	1

Sample No.	PPM Copper	PPM Molybdenum
668-71-102	42	14
103	40	3
104	42	< 1
105	56	7
106	22	6
107	24	< 1
108	10	1
109	33	< 1
110	18	< 1
111	26	9
112	28	< 1
113	27	< 1
114	40	4
115	24	< 1
116	25	< 1
117	27	< 1
118	29	< 1
119	25	< 1
120	17	< 1
121	29	< 1
122	42	< 1
123	31	< 1
124	34	< 1

Sample No.	PPM Copper	PPM Molybdenum
668-71-125	30	6
126	49	1
127	33	< 1
128	45	1
129	29	< 1
130	13	< 1
668-71-401	74	< 1
402	33	7
403	31	< 1
404	42	< 1
405	23	< 1
406	30	< 1
407	26	< 1
408	17	< 1
409	26	1
410	22	< 1
411	31	1
412	18	6
413	29	< 1
414	35	4
415	45	< 1
668-71-801	30	< 1
802	30	< 1

Sample No.	PPM Copper	PPM Molybdenum
668-71-803	30	4
804	31	< 1
805	35	< 1
806	37	< 1
807	25	< 1
808	39	4
809	51	< 1
810	36	< 1
811	23	6
812	46	< 1
813	50	< 1
814	Sample Missing	
815	22	6
816	25	< 1
817	25	9
818	24	< 1
819	26	< 1
820	21	3
821	30	6
822	29	< 1
823	36	6
824	39	3
825	57	< 1

Sample No.	PPM Copper	PPM Molybdenum
668-71-826	35	< 1
827	35	1
828	37	7
829	31	6
830	39	< 1
831	40	1
832	45	< 1
833	38	6
834	42	< 1
835	41	< 1
836	33	1
837	44	1
838	41	< 1
839	74	4
840	98	< 1
841	91	3
842	72	9
843	88	9
844	55	< 1
845	60	3
846	36	3
847	48	1
848	55	1

Sample No.	PPM Copper	PPM Molybdenum
668-71-849	73	3
850	50	3

GEOCHEMICAL ASSAY

Sample No.	% Copper
668-71-3	0.20

Nancy D. Richsworger
Signed

EFCO LABORATORIES
North Freeway at Ruthrauf Road P. O. Box 5526
TUCSON, ARIZONA 85703
PHONE (602) 887-4241

Laboratory Analysis Report

Heinrichs Geoexploration Company
808 W. Grant Rd.
Tucson, Arizona 85705

Chris Ludwig
Job# 668-702

REPORT NO. 712537
DATE SUBMITTED 11-3-71
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Sample No.	PPM Copper	PPM Molybdenum
668-71-1	67	11
2	68	< 1
3*	+1000	23
4	54	3
5	42	1
6	95	6
7	65	9
8	57	4
9	37	13
10	33	1
11	32	11
12	38	3
13	34	3
14	28	7
15	29	3
16*	21	4

Sample No.	PPM Copper	PPM Molybdenum
668-71-17	40	< 1
18	29*	16
19	130*	3
20	24	3
21	42	6
22	52	< 1
23	52	9
24	25	1
25	61	1
26	50	6
27	63	< 1
28	50	3
29	43	7
30	62	3
31	60	3
32	43	6

* Rock Samples

A Division of Arizona Feeds

Signed
XXXXX

Sample No.	PPM Copper	PPM Molybdenum
668-71-33	62	4
34	51	< 1
35	33	1
36	18	4
37	34	1
38	22	6
39	26	< 1
40	15	< 1
41	20	< 1
42	16	< 1
43	35	1
44 *	28	3
45	37	7
46	51	1
47	52	3
48 *	29	3
49	67	9
50	82	4
51	49	9
52	71	3
53	55	4
54	52	3
55	132	< 1

Sample No.	PPM Copper	PPM Molybdenum
668-71-56	94	3
57	200	3
58	114	7
59	100	3
60	103	4
61	50	< 1
62	39	1
63	97	1
64	119	3
65	69	6
66	57	1
67	90	3
68	49	3
69	46	13
70	55	3
71	41	1
72	42	< 1
73	43	3
74	52	3
75	53	3
76	50	< 1
77	40	1
78	40	3

Sample No.	PPM Copper	PPM Molybdenum
668-71-79	59	1
80	107	3
81	52	1
82	45	< 1
83	30	< 1
84	46	3
85	38	< 1
86	33	1
87	30	3
88	19	3
89	29	1
90	38	1
91	35	11
92	10	9
93	35	< 1
94	30	< 1
95	30	< 1
96	30	1
97	36	< 1
98	24	3
99	32	1
100	34	< 1
101	26	1

Sample No.	PPM Copper	PPM Molybdenum
668-71-102	42	14
103	40	3
104	42	< 1
105	56	7
106	22	6
107	24	< 1
108	10	1
109	33	< 1
110	18	< 1
111	26	9
112	28	< 1
113	27	< 1
114	40	4
115	24	< 1
116	25	< 1
117	27	< 1
118	29	< 1
119	25	< 1
120	17	< 1
121	29	< 1
122	42	< 1
123	31	< 1
124	34	< 1

Sample No.	PPM Copper	PPM Molybdenum
668-71-125	30	6
126	49	1
127	33	< 1
128	45	1
129	29	< 1
130	13	< 1
668-71-401	74	< 1
402	33	7
403	31	< 1
404	42	< 1
405	23	< 1
406	30	< 1
407	26	< 1
408	17	< 1
409	26	1
410	22	< 1
411	31	1
412	18	6
413	29	< 1
414	35	4
415	45	< 1
668-71-801	30	< 1
802	30	< 1

Sample No.	PPM Copper	PPM Molybdenum
668-71-803	30	4
804	31	< 1
805	35	< 1
806	37	< 1
807	25	< 1
808	39	4
809	51	< 1
810	36	< 1
811	23	6
812	46	< 1
813	50	< 1
814	Sample Missing	
815	22	6
816	25	< 1
817	25	9
818	24	< 1
819	26	< 1
820	21	3
821	30	6
822	29	< 1
823	36	6
824	39	3
825	57	< 1

Sample No.	PPM Copper	PPM Molybdenum
668-71-826	35	< 1
827	35	1
828	37	7
829	31	6
830	39	< 1
831	40	1
832	45	< 1
833	38	6
834	42	< 1
835	41	< 1
836	33	1
837	44	1
838	41	< 1
839	74	4
840	98	< 1
841	91	3
842	72	9
843	88	9
844	55	< 1
845	60	3
846	36	3
847	48	1
848	55	1

Sample No.	PPM Copper	PPM Molybdenum
668-71-849	73	3
850	50	3

GEOCHEMICAL ASSAY

Sample No.	% Copper
668-71-3	0.20

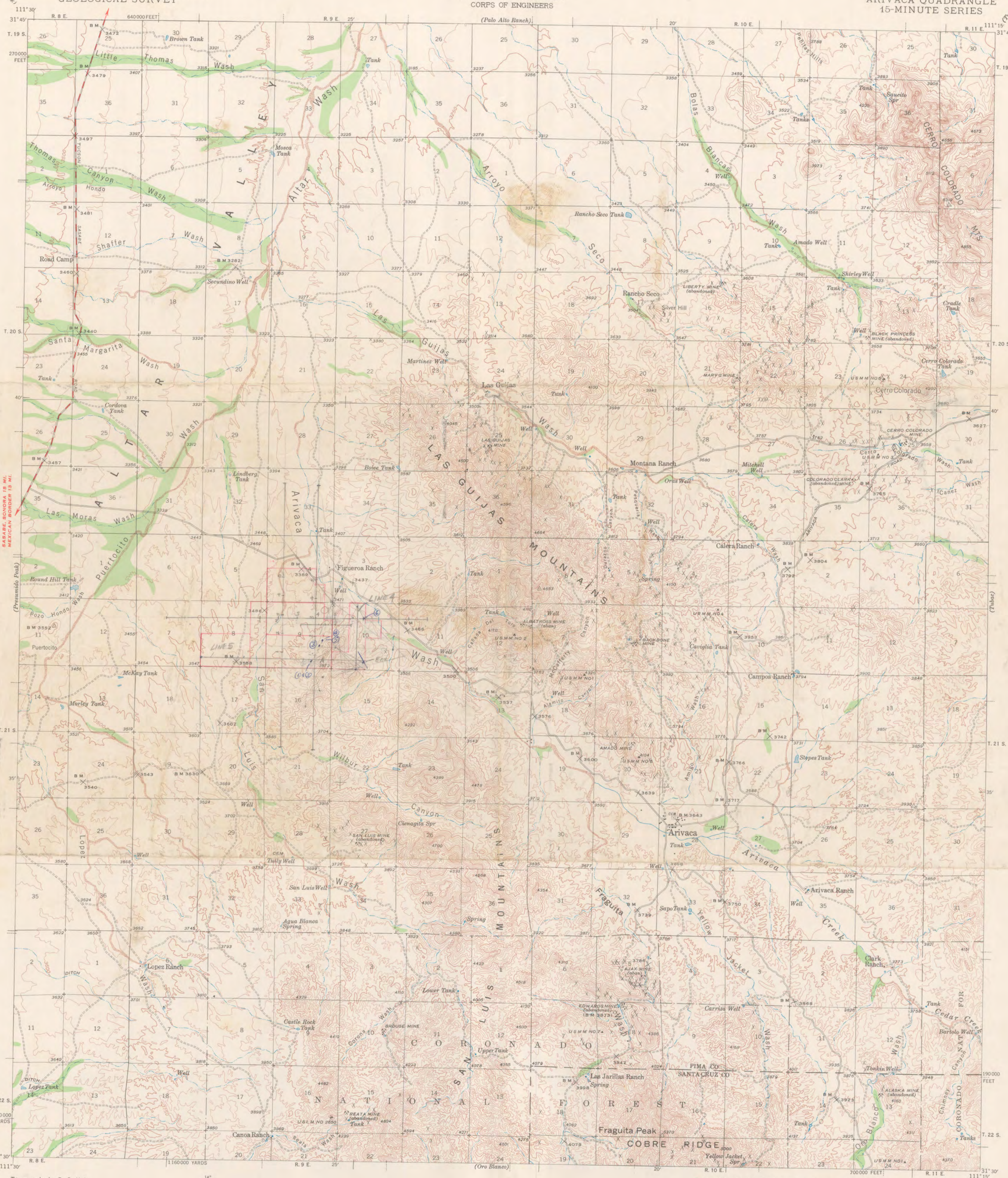
Nancy D. Nichowings

Signed

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

UNITED STATES
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS

ARIZONA
ARIVACA QUADRANGLE
15-MINUTE SERIES



Topography by S. C. Kain
Surveyed in 1940-41

TRUE NORTH
MAGNETIC NORTH
14°
APPROXIMATE MEAN DECLINATION, 1941

SCALE 1:62500

1 ½ 0 1 2 3 4 MILES

3000 0 3000 6000 9000 12000 15000 18000 21000 FEET

1 .5 0 1 2 3 4 5 KILOMETERS

Contour interval 50 feet
Datum is mean sea level

● INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D. C.—1969

Sections lines in T. 22 S., R. 11 E. are omitted because of insufficient data

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

ARIVACA, ARIZ.

N3130—W11115/15

1941

ROAD CLASSIFICATION

Heavy-duty — 4 LANE | 6 LANE
Medium-duty — 4 LANE | 6 LANE
Light-duty
Unimproved dirt
U. S. Route
State Route

FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225 OR WASHINGTON, D. C. 20242
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

A DRAWING
OF PART OF
SECTIONS 4, 8, 9, & 10
T21S R9E
G&S.R.B&M
PIMA COUNTY,
ARIZONA

DRAWN DURING THE MONTH
OF SEPTEMBER 1970
FOR:

RED HILLS MINING COMPANY

1" = 400'

WECKERLY & ASSOCIATES
SURVEYORS - ENGINEERS
77 WEST CHICAGO STREET
CHANDLER, ARIZONA
963-6481

REGISTERED LAND SURVEYOR
CERTIFICATE NO.
CARL D. WECKERLY
DEC. 31, 1970
STATE OF ARIZONA

Green = Cu — = > 80 PPM
Red = Mo — = > 8 PPM

SEC 5 SEC 4 SEC 4 SEC 3 T20S-R9E T21S-R9E

PRIVATE

P.P. NO. 17152
12-5-70
260 Ac.

P.P. NO. 17152

P.P. NO. 17152

5' of Oxide Copper from 25'-30' Feet.

70' No Shows (Gouge) 0'-25' 25'-70' Old Stoping Rehaul Stringers

Drill Stack

Old Leaching Plant

BERKINS 20 Acre

Road (Approximate)

P.P. NO. 17154

P.P. NO. 17154

P.P. NO. 17153
160 Ac.
Dec. 1

11-21-70
P.P. NO. 17154
300 Ac.

40' Clay & conglomerate

1320'

3/4 Mile

OWNERS UNKNOWN

11-21-70

P.P. NO. 17154

70' 10' Clay 50' Rhyolite 10' Brec. Gouge.

Drill Stack No Hole

P.P. NO. 17155

P.P. NO. 17155

Dump

By Dozer Cut. 70' Gouge & Andesite

P.P. NO. 18040
Mar. 11
240 Ac.

Backhoe Cuts for Assessment work No Shows of Copper

P.P. NO. 18040

12-5-70
P.P. NO. 17153

P.P. NO. 18041

P.P. NO. 18041
320 Ac.
Mar. 11

By old Mine Shaft Cuttings Showed Some Copper Oxides 60'

Rotary

12-5-70
P.P. NO. 17155
SW¼ Sec 3

P.P. NO. 17155
Dec. 1
240 Ac.

70' Brec. Gouge. No Shows

1 50' Rhyolite and Andesite
2 50' Rhyolite "
Mineralized Veins Small

Drill Hole
Dozer & or Backhoe Cuts.

STATE

PRIVATE

ALL STATE SEC 2

SEC 6 SEC 5 SEC 7 SEC 8 SEC 18 SEC 17 SEC 8 SEC 9 SEC 17 SEC 16 SEC 9 SEC 10 SEC 16 SEC 15 SEC 3 SEC 2 SEC 10 SEC 11 SEC 15 SEC 14

ALL STATE ALL STATE

USA No. 7-009004

GEOLOGICAL, GEOPHYSICAL AND GEOCHEMICAL EVALUATION

of the

ARIVACA PROSPECT

PIMA COUNTY

ARIZONA

for

BELL WESTERN CORP.

November 1971

by

HEINRICHS GEOEXPLORATION COMPANY
P.O. Box 5964, Tucson, Arizona 85703

GEOEX Job # 668

GEOLOGICAL, GEOPHYSICAL AND GEOCHEMICAL EVALUATION

of the

ARIVACA PROSPECT

PIMA COUNTY

ARIZONA

for

BELL WESTERN CORP.

November 1971

by

HEINRICHS GEOEXPLORATION COMPANY
P.O. Box 5964, Tucson, Arizona 85703

GEOEX Job # 668

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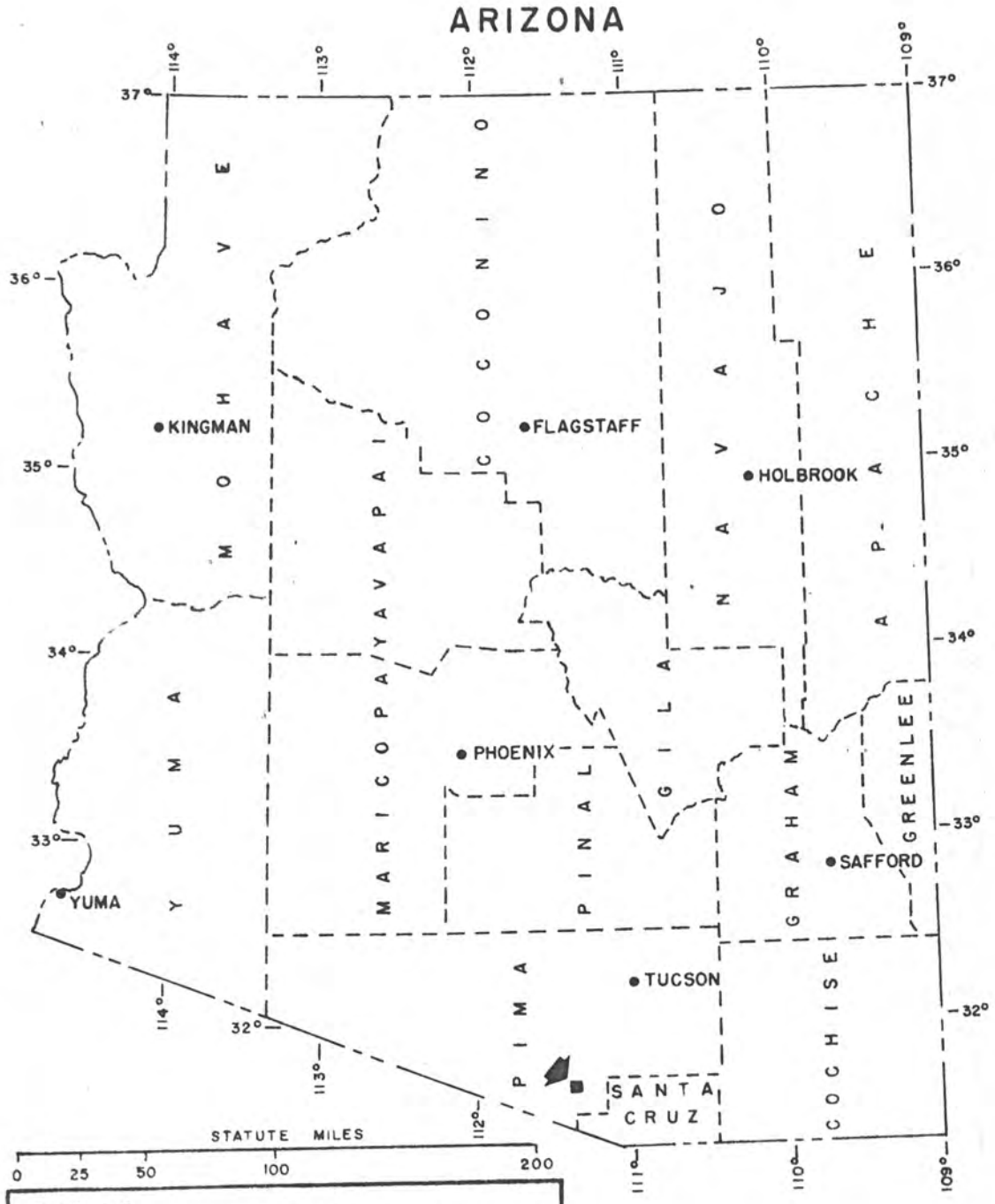
In Map Pocket
- Composite Location and Interpretation Plan

GENERAL LOCATION of ARIVACA AREA for BELL WESTERN CORP.



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Geological - Geochemical Investigation of the Arivaca Prospect Permits
for
Bell Western

A total of four days was spent on the property with the intent of sampling the mineralized outcrops, prospect pits, and dozer cuts. One day was spent in scanning the six prospect permits for mineralized areas to sample by a composite rock chip method. It became apparent that good outcrop exposures are present in an area including only the S.E. 1/3 of Section 9, and the S.W. 1/2 of Section 10. In sections 4,8, and most of 9, the bed rock is covered with a blanket of aluvium. Furthermore, those exposures that show mineralization are limited to just the few dozer cuts and prospect pits in sections 9, and 10; no mineralization was evident in natural outcrops. A combination of a minor amount of rock chip sampling with a major amount of soil sampling was employed to best cover the six prospect permit areas. A total of six composite rock chip samples from four different locations were taken.

Although th e mineralized exposures are aligned in a rough N-S to NNE direction, one of several major fracture directions, closer inspection of the exposures indicated in a couple of cases that the Cu mineralization follows major fractures or faults that trend roughly E-W. This indicates the Cu mineralization does not strictly follow any one structural direction, but is found in relation to several directions of fractuting and/or faulting

The Cu mineralization consists of chrysocolla with very minor amounts of malachite present almost entirely as fracture fillings and coatings.in random zones and patches. There is little evidence of primaary sulphides having been present, except for occaisional pyrite casts.

In section 10, there are a number of prospect pits that were dug along quartz veins within the conglomerate. Some of these pits show pyrite casts, and one location showed a very minor amount of galena within the quartz gangue. Possibly these were silver or gold prospects. They show no hint of Cu mineralization.

Minor alteration effects were noted in the Cu mineralized areas in the form of sericite replacing some of the arkosic material within the conglomerate host rock. Epidote is present in association with the mineralization and alteration as fracture coatings and irregular disseminations within the conglomerate.

Summary of Time Spent

Thursday	Oct. 28	Familiarization with propertylocation, access, outcrops, mineralized areas, etc.
Friday	Oct. 29	Composite rock-chip sampling (six samples), scouted area for rock outcrops and mineralized areas - decided to switch to soil sampling
Monday	Nov. 1	Ran N-S Geochem line in Sec 10. - 50 samples
Tuesday	Nov. 2	Ran E-W Geochem line in S. portion of Sec 8,9,& W.$\frac{1}{2}$ of 10. - 64 samples

A. Moran

INTRODUCTION

The general geologic situation in the Arivaca district is one of undifferentiated Cretaceous sediments and/or volcanic extrusives, possible Laramide or younger intrusives, and recent alluvial cover. District production has been small in modern terminology and primarily was in gold and silver, minor copper, some tungsten, and at one time there was fair lead-zinc-copper-silver production from the Montana Mine at the nearby town of Ruby. Scattered surface staining of blue and green copper minerals is quite prevalent at various places throughout the district, and this has led many to the thought of finding windows through the Cretaceous rocks, or thin spots associated with economic copper mineralization. Doubtless this sort of thinking was involved in prior work done at this and adjacent prospects. Aside from state prospecting permit obligations, GEOEX was assigned to try and arrive at a more quantitative or conclusive appraisal of the immediate economic potential and our approach was oriented toward this objective.

At the request of Mr. Frank P. Samples of Bell Western Corp., Heinrichs GEOEXploration Company conducted this combined geological-geophysical-geochemical appraisal of the prospect which is a group of six Arizona State Prospecting Permits in the vicinity of Arivaca, Pima County, Arizona. The field work on this project was accomplished during the interim from October 15, 1971 to November 4, 1971.

GEOEX personnel involved in the field work were G. Hix, Geophysical Crew Chief and A. Moran, Geologist with on site supervision by J. Matthews, Jr., Geophysicist and C. Ludwig, Senior Geophysicist. Interpretation and report by C. Ludwig assisted by the GEOEX staff.

PROCEDURES

A total of five geochemical soil sample lines were run, (See attached plan map); Lines G1, G2, G3 and G5 on an east-west orientation and Line G4 in a north-south direction. On or near outcrop, a sample interval of 100 feet was used and on the alluvial covered areas an interval of 400 feet was used giving a total coverage of 33,700 lineal feet. The 194 soil samples collected were analyzed for copper and molybdenum using standard geochemical techniques (atomic absorption spectroscopy for copper and a colorimetric organic extraction for molybdenum).

Four mineralized exposures were geologically sampled and six channel samples were cut and assayed for copper, molybdenum, gold and silver. The entire area was briefly inspected geologically in order to gain an idea of the extent of exposed mineralization and locate zones of interest.

The geophysical work consisted of induced polarization (I.P.) with directly associated resistivity and self potential (S.P.). I.P. Lines 1 and 2 were oriented north-south and Line 3 was run east-west, all three on a 1,500 foot dipole spacing for resolvable depth penetration down to roughly 2,000 feet. I.P. Line 3A was oriented east-west about 500 feet south of Line 3 and run with a 250 foot dipole spacing for detailed coverage across a portion of the copper oxide exposure. These first four I.P. lines (and geochemical traverses G1, G2 and G3) were all centered on Prospecting Permit (P.P.) 17154 in order to obtain coverage before the annual work requirement deadline of November 21, 1971 - the first of the six permits to expire. However, this initial I.P. coverage was on lines long enough to give at least a partial evaluation of the remainder of the property.

The only significant appearing I.P. response noted on this initial coverage was near the east end of Line 3 and, to gain further information on this anomaly, Line 3 was extended further east (Line 3, Spread 2). A 500 foot dipole spread (Line 3, Spread 3) was run on Line 3 for more resolution detail compared to the 1,500 foot dipole coverage. I.P. Lines 4 and 5 were, respectively, run parallel to and 1,500 feet south of and 1,500 feet north of I.P. Line 3, Spread 3; also with 500 foot dipoles for optimum compromise between depth penetration and resolution.

The total lineal I.P. coverage amounts to 92,500 feet of surface coverage of which 56,500 feet is "subsurface" plotted data. All stations are designated in hundreds of feet. The dual frequency I.P. technique was used with sending frequencies of 1.0 and 0.1 Hz on the 1,500 foot dipoles and 3.0 and 0.3 Hz on the 500 and 250 foot dipoles to optimise data acquisition speed with a tolerable level of adverse electromagnetic coupling interference. A GEOEX Mark 4-C receiver and a GEOEX Mark 4 sender were utilized to obtain the data.

The collinear dipole-dipole array was the electrode configuration used, which on a 1,500 foot dipole spacing and "n" intervals ranging from 1 through 6 should typically give resolvable penetration within the zone from roughly 400 feet to about 2,000 or 2,500 feet below surface. The shorter dipole spacings would give a proportional increase in resolution with a corresponding decrease in penetration compared to the 1,500 foot spacing.

The purpose of this survey was to help evaluate the economic potential of the property and determine the advisability

of retaining or discontinuing any or all of the six prospecting permits. The geological and geochemical work helped to determine the surface and near surface distribution of the copper oxide mineralization exposed in several places on the property. The I.P. was run to ascertain if any significant quantity of sulfide mineralization occurs on the property at depth, possibly related to the surface oxide showings.

The I.P. data are presented on sectional data sheets, one for each line and spacing, showing resistivity, percent frequency effect (PFE) and metallic conduction factor (MCF) contoured in "pseudo-section" and self potential (SP) in profile form. A composite plan at a scale of 1"=400' is also presented and shows the I.P. coverage and plan projected interpretation along with the geochemical sample locations, analytical results and interpretation. The geologic sample locations are also shown on the composite plan and the assay results are tabulated in the text. Appended to this report is the "Basis of the Induced Polarization Method" giving additional details as to theory, presentation and interpretation of the I.P. method.

CONCLUSIONS

GEOCHEMICAL: The copper and molybdenum soil sample results were generally weak, quite erratic and no well defined anomalous trends were delineated. One zone on Line G-3 does show an anomalous width of about 600 feet in copper, but it is only about two or three times background and has no correlating molybdenum anomalism and is therefore considered not particularly interesting. Copper values of more than 80 parts per million (PPM) and molybdenum over 8PPM were considered to be anomalous.

There is an ill-defined north-south trend evidenced by both anomalous copper and molybdenum values that roughly correlates with the mineralization noted near the east side line of Section 9 and incorporates the broad anomaly on Line G-3 mentioned above. Other than this north-south zone, only isolated one or two station highs are present in either element and these are probably not significant. The alluvial covered areas are uniformly low in both elements.

Therefore, based on the geochemical results, we conclude that no broad pervasive near-surface copper-molybdenum mineralization of current economic potential is present in the area surveyed. Only narrow vein-like zones are suggested and even these do not indicate particularly strong mineralization.

GEOLOGICAL: Sections 4 and 8 and the western two thirds of Section 9 appear to be mostly or entirely covered with alluvium and no outcrops were found. The eastern third of Section 9 and much of Section 10 is largely conglomerate and arkosic rocks probably of Cretaceous

age. Several zones of copper mineralization have been exposed in shallow cuts and prospect pits in Section 9 and a few weakly mineralized quartz veins were seen in Section 10.

Oxidized copper mineralization exposures in Section 9 are roughly aligned in a N-S direction, although the mineralization itself appears to follow several fault or fracture strike directions, often N-S, but sometimes more E-W. This N-S trend roughly correlates with the geochemical high trend previously discussed.

Copper mineralization consists mainly of chrysocolla with minor amounts of malachite, both present almost entirely as fracture fillings and coatings in random zones and patches. There is little evidence of primary sulfides having been present except for occasional pyrite casts.

Some alteration is present in the copper mineralized areas mainly as sericite replacing some of the arkosic material within the conglomerate host rock. Epidote is also present as fracture coatings and irregular disseminations within the conglomerate.

In Section 10, there are a number of prospects dug along quartz veins within the conglomerate. Some of the vein material shows pyrite casts and one site showed a very minor amount of galena in the quartz gangue. Probably these were silver-gold prospects. No signs of copper were noted.

Six samples were cut and assayed for gold, silver, copper and molybdenum, the results and descriptions are herewith tabulated:

Sample #	Gold (oz/ton)	Silver (oz/ton)	Copper (%)	Molybdenum (%)
1	0.01	0.15	0.21	trace
2	trace	0.10	0.03	0.002
3	0.005	0.20	0.19	trace
4	0.01	0.15	0.21	trace
5	trace	0.05	0.05	0.002
6	trace	0.10	0.03	trace

Samples #1 & 2: These samples were both composite rock chip channel samples 15 feet in length on opposite sides of a bulldozer trench near the south end of the property in Section 9. The rock is a gray conglomerate with some iron staining and occasional epidote on fractures. Copper mineralization is evident as chrysocolla on fractures of various orientation. Sample #2 is on the south side of the trench and includes some fault gouge.

Sample #3: This is from a 10 foot deep prospect "shaft" about 1,500 feet NNE of Samples #1 and 2 in a conglomerate showing chrysocolla along a major joint surface oriented about N80W dipping 24°S. There is some sericitic alteration of the feldspars present. The sample was a composite rock chip channel from the mineralized sides of the shaft and aggregates about 20 feet in length.

Samples #4 & 5: These samples are on opposite sides of a bulldozer cut about 500 feet NNE of Sample #3. Each sample is about a 15 foot long composite rock chip channel sample along the trench with #4 north of #5. The rock is a highly fractured feldspathic conglomerate high in quartz and showing considerable epidote alteration. There is chrysocolla present in irregular patches and impregnations primarily along a fracture zone trending N76E dipping 80°S which also shows about 6" of gouge-like material. Chrysocolla is also present on a fracture trending N10E dipping 73°W.

Sample #6: This sample is from the north central portion of Section 10 in an adit to an inclined shaft about 80 feet deep. This shaft follows a fault zone in conglomerate oriented N20E and dipping 21° SE. Clayey fault gouge about 10" thick with iron staining and sericitic alteration is present in this zone. No obvious base or precious metal mineralization is evident. The sample is a composite rock chip channel 6 feet in length taken across the fault zone at the adit.

These six assays are quite low and rather discouraging economically in all four elements and they support the geochemical data in that, only weak, narrow zones of copper are present near surface. Likewise, the reconnaissance geology indicates only minor narrow zones of rather weak oxidized copper mineralization being present. No obviously mineralized zones of copper were seen on the property except where Samples #1 through #5 were taken in existing trenches and a prospect pit.

GEOPHYSICAL: I.P. was run mainly in the hope that the minor surface oxide copper showings are leakages from a more significant sulfide zone at depth. No I.P. anomalism suggestive of sulfide mineralization was seen in Sections 4, 8 and 9, at least in the vicinity of I.P. Lines 1, 2 and 3 and within the depth zone from about 400 feet down to about 2,000 or 2,500 feet below the surface.

Line 3A, centered on the N-S general copper oxide trend near the east side line of Section 9, likewise shows no anomalism. This line was run on a 250 foot dipole spacing to more directly focus on and to test the mineralized trend much nearer surface (say down to about 300 to 350 feet in depth).

The only I.P. anomalism found of possible sulfide origin is in Section 10 and lies mostly outside the prospecting permit boundary, largely on private ground. This anomaly is weak to very weak in relative anomaly strength, although it is deep

enough that it is difficult to relate anomaly strength to absolute source strength. In other words, the source could be weakly to strongly mineralized, but is deep enough that the surface response is quite weak.

This anomaly is present on Lines 3, 4 and 5 and centered roughly at 68E on Line 3. The response is slightly stronger on Line 3 than on Lines 4 and 5 suggesting that the source is somewhat nearer surface or stronger, or both, below Line 3. The plan projected interpretation suggests a N-S elongation and, in fact, the feature may extend further north and south than schematically indicated. Additional coverage north and south of the existing grid would be necessary to investigate extensions.

Depth to the anomaly source could be as deep as 750 to 1,000 feet or even deeper. The source is too deep to define its other parameters, such as width and dip, and, it is possibly a projecting lobe of a more extensive body that is being sensed.

This anomaly, where crossed, is alluvial covered at the surface and the nearest outcrops to the south and west are largely barren appearing conglomerates. Portions of this conglomerate, however, are limonite stained and show evidence of having carried minor amounts of pyrite in the fractures and it is possible that similar fresh material at depth could be causing the anomalous I.P. response. It is also conceivable that economically interesting mineralization is causing this anomaly - a possibility only drilling could test.

The I.P. anomalism is weak enough that non-sulfide sources also have to be considered such as magnetite, manganese oxides, graphite or even certain clays.

The resistivities associated with the I.P. data are not particularly interesting. Lines 1, 2 and 3 show the probable effects of thickening alluvium to the north and west away from the outcrop. A possible rock type change (interface) is suggested near 82.5E on Line 4 with more conductive rocks to the east. The I.P. anomaly has no obviously correlating resistivity pattern. The self potentials show only typical background variations implying a lack of sizeable quantities of near surface oxidizing relatively massive sulfides.

RECOMMENDATIONS

In view of the rather negative results obtained in this evaluation, we recommend dropping all but P.P. #17155 which includes a portion of the I.P. anomaly. Some consideration should be given to drilling a 1,500 to 2,000 foot vertical hole to test this I.P. anomaly in case there is significant associated base or

precious metal mineralization. This anomaly is not very economically encouraging based on available data, but only drilling will prove it one way or another.

Ideally, more land protection should be obtained before any drilling were initiated. The minimum recommended protection would be the NE quarter of Section 10 of which only the SW quarter of the NE quarter is presently controlled; the other three sixteenths appear to be privately held. With this protection, the drill hole should be collared near 67.5E on Line 3 and programmed to go to 2,000 feet in total depth unless the causative source has obviously been intersected prior to that depth.

If no additional land protection is obtained and drilling is still contemplated, a collar site within P.P. #17155 as near to 67.5E on Line 3 as practical, is suggested. The existing work done this year on P.P. #17155 will satisfy the annual expenditure requirements for all 240 acres although only the northernmost 120 acres (or even the easternmost 40 acres) would have to be retained to protect the I.P. anomaly. If drilling or other work is not contemplated, then all six permits should be dropped.

Several magnetic traverses could prove useful across the I.P. anomaly to aid in better defining the structure and rock types involved. If an intrusive is present at depth related to (or causing) the I.P. anomaly, it may have a magnetic expression.

Based on the initial drilling results, additional geophysical work may be indicated to define and optimize subsequent drill sites. Close geological supervision of the drilling and geophysical correlation with the drilling results are essential and may be critical toward ultimate success. Therefore, we recommend that close liason be maintained with GEOEX at least during any initial drilling stages.

INTERPRETATION OF I.P. LINES

Line 1 (1,500' dipoles): No anomalous I.P. effects of significance are seen on this traverse. The minor increase in PFE noted with increased depth is likely due to minor electromagnetic (E.M.) coupling interference. Near surface resistivities are relatively low along the entire traverse likely due to conductive alluvial cover. At depth, the resistivities increase somewhat, particularly on the south half of the line likely due to bedrock response - probably conglomerate. A pronounced resistivity low centered near 30N may be caused by a relatively conductive alluvial zone or may possibly be the effect of a grounded pipeline crossing the line near 30N.

Line 2 (1,500' dipoles): As on the parallel Line 1, no significant appearing anomalous I.P. effects are noted. The resistivities again show the conductive overburden and a probable thickening to the north. The pronounced resistivity low noted near 30N on Line 1 does not seem

to have a correlating expression on this line.

Line 3, Spreads 1 & 2 (1,500' dipoles): West of about 52E only very low background I.P. response is evident on this traverse. East of 52E, a definite but weak anomaly in both PFE and MCF is present out to at least 82E. More coverage would be necessary to determine the complete extent of this anomaly to the east. The anomaly source appears to be buried by roughly 750 feet to 1,000 feet of relatively unresponsive material. Depth continuity of the anomalous source appears to be good and the source likely extends to at least 2,000 feet below surface. There is no resistivity feature obviously correlating with this anomaly although resistivities are generally lower in the anomaly area compared to those further west. It is possible a different rock type is involved with the anomaly than rocks outcropping to the west.

Line 3, Spread 3 (500' dipoles): This spread was surveyed to obtain more detail over the anomaly located with the 1,500 foot dipoles. This increased resolution shows the anomaly between stations 60E and 80E and supports the depth to top estimate of roughly 750 to 1,000 feet. The response of overlying material and material on the flanks of the anomaly is low background in level. The resistivities again show an increase to the west on outcropping conglomerate but with no obvious feature correlating with the I.P. Self potentials show only minor erratic background variations.

Line 4 (500' dipoles): This spread was run parallel to and 1,500 feet south of Line 3 to determine if the anomaly on Line 3 extends to the south and, if so, determine its strike. Very weak and deep appearing anomalous I.P. effects are noted between about 67E and 75E suggesting a general N-S strike when correlated with Line 3 but with decreased width or strength of causative source or greater depth of burial. A level change in resistivity is noted near 82.5E with higher resistivity material to the west and may be reflecting a rock type change. The self potentials are again somewhat erratic and show no significant appearing effect.

Line 5 (500' dipoles): To further prospect the Line 3 anomaly along the inferred N-S strike, Line 5 was run parallel to and 1,500 feet north of Line 3. Very weak and deep appearing I.P. response is noted between about 62.5E and 72.5E, further verifying the N-S trend and suggesting that Line 3 is over the strongest and nearest surface portion of the anomaly. The resistivity is quite uniform and the usual increase to the west is not present, perhaps due to the effect of deepening alluvium to the west. Again, the self potentials are not particularly interesting.

Line 3A (250' dipoles): This line is parallel to Line 3 and centered 500 feet south of 22.5E on Line 3 to cross the N-S trend of oxide copper mineralization. No I.P. anomalism is evident and the effects are quite low background in level. The resistivities are rather uniform except for a minor high zone centered near 6.2E. No self potential effects of significance are noted.

Respectfully submitted,
Heinrichs GEOEXploration Company

Chris S. Ludwig
Senior Geophysicist

Approved By: Walter E. Heinrichs, Jr.
Walter E. Heinrichs, Jr.
President

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COMMENTS ON DRILLING I.P. TARGETS

To maximize the probability that a recommended drill hole will intersect the source of an induced polarization anomaly, the following points should be considered:

1. The anomaly has been caused by some physical property, hopefully a polarizable body containing economically interesting metallic mineralization, and this property should be determined before abandoning the anomaly.

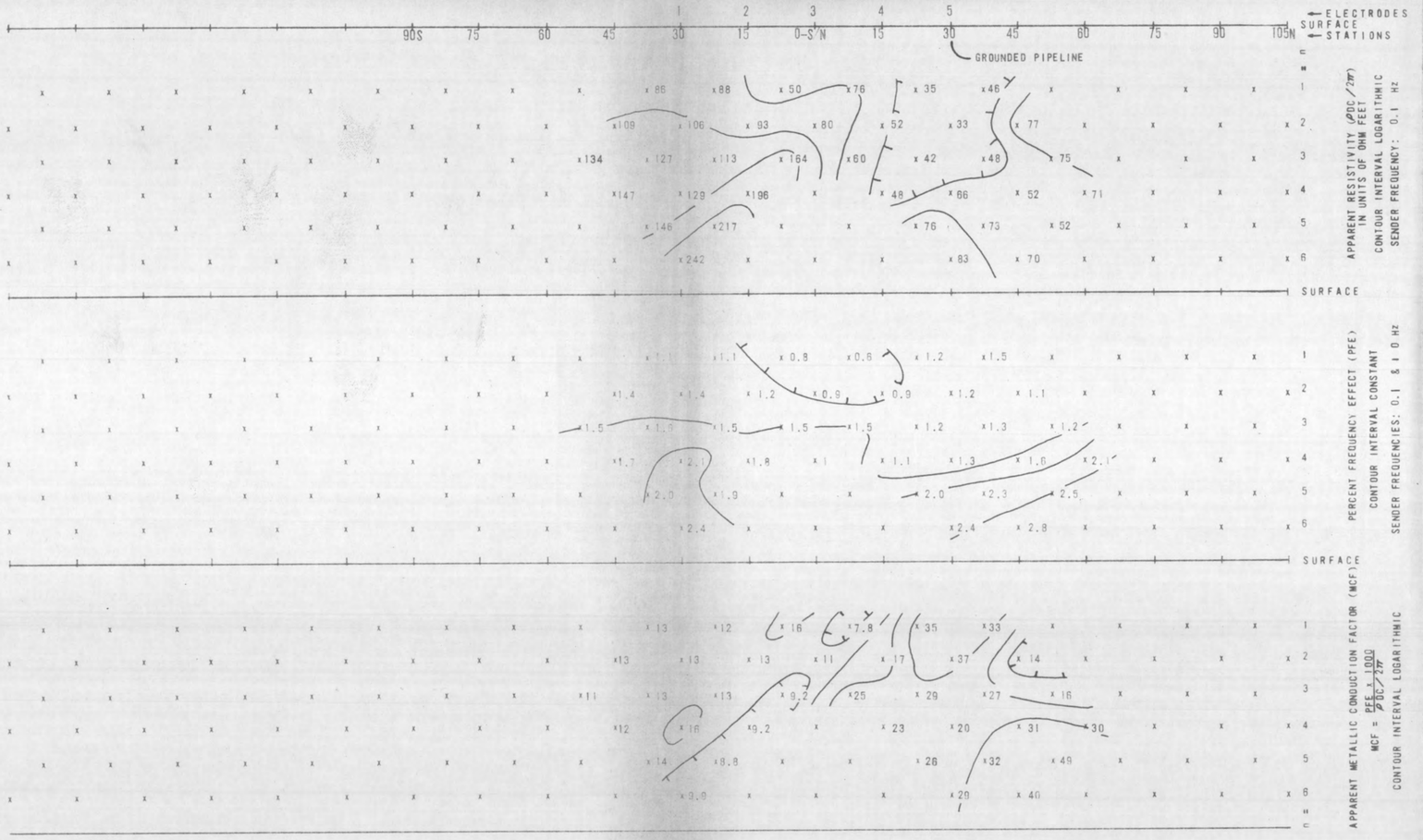
2. Location of drill holes should be made relative to the actual sending and receiving electrode positions as they exist on the ground.

3. Due to inherent limitations in the I.P. method, depth interpretations are only approximate and the determination of dip is severely limited, particularly for angles greater than 45°. Also, targets can generally be laterally resolved no finer than the station spacing (dipole length). Because of these limitations, targets less than one dipole spacing in width, particularly when steeply dipping or deeper than the dipole length, may be difficult to intersect. In these cases, several drill holes in a fence line should be considered. For the steeply dipping cases, angle drilling may also prove advantageous, mainly where the direction of dip can be geologically inferred and the drill hole oriented such that an optimum intersection of the zone of interest is obtained.

4. An observed anomaly can be the effect of a polarizable body laterally offset to the side of a line and therefore, if practical, drilling should be confined to those portions of the anomalous zones well defined by several lines. Also, it should be noted that a single line cannot define the strike direction of an elongate anomalous zone - another reason for utilizing several parallel lines.

5. Logging of the drill core must be done with special care to note the quantity of <u>all</u> possible polarizable material such as pyrite, graphite, magnetite, manganese oxides and clay minerals as well as the polarizable ore minerals. The anomalous source could conceivably be overlooked if the core is not carefully logged.

6. Typical sections of core representing the gross physical properties of material encountered in the drilling should be tested in the laboratory for their I.P. parameters, if there is some doubt about confirmation of the anomalous source.



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LINE NO. 1

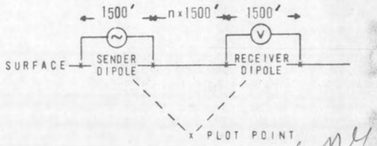
SPREAD(S) 1

INDUCED POLARIZATION TRAVERSE SECTIONAL DATA SHEET for BELL WESTERN CORP.

RELATIVE ANOMALY STRENGTH

VERY WEAK — WEAK — MODERATE — STRONG

DIPOLE DIPOLE ELECTRODE ARRAY



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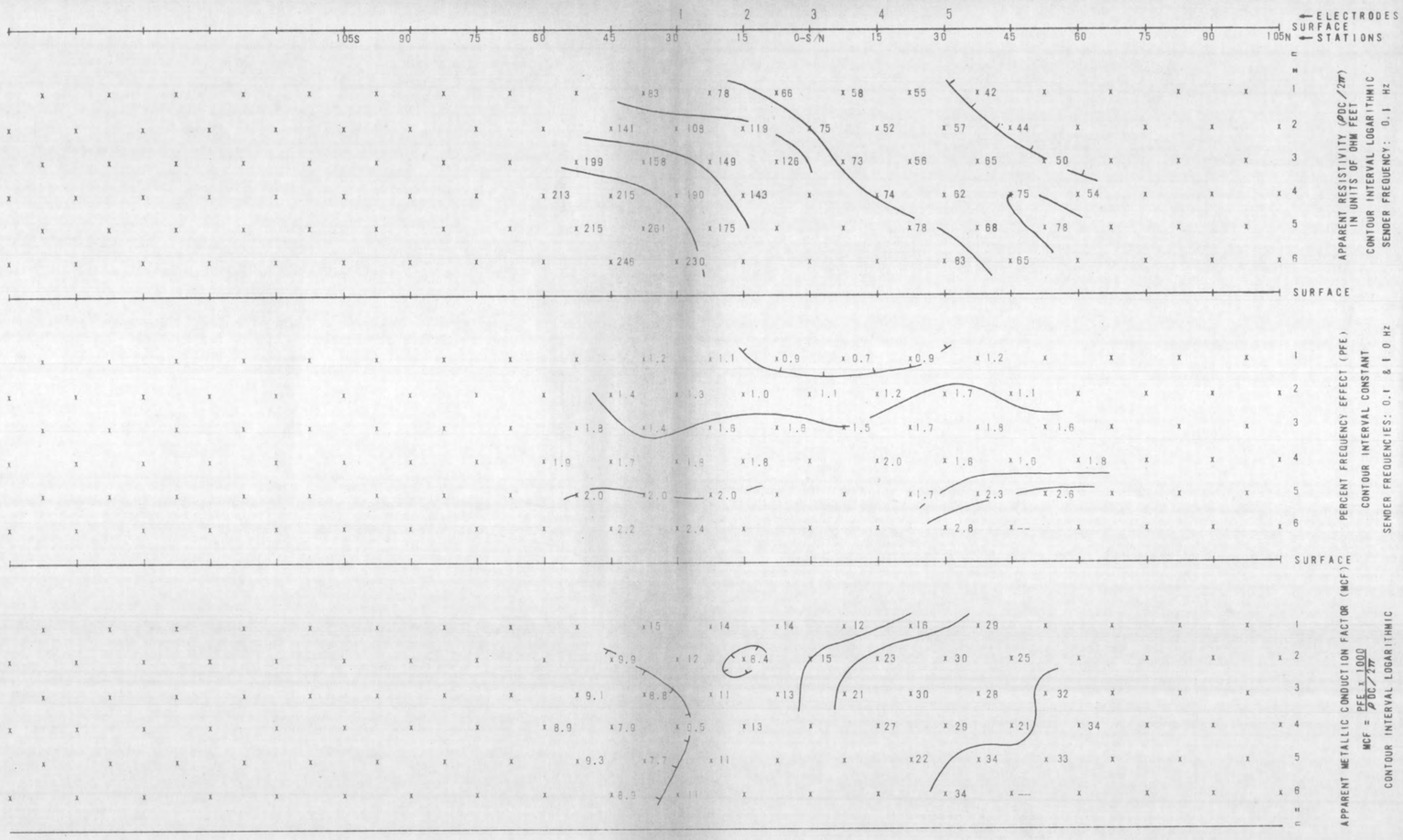

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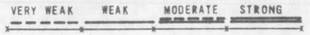
LINE NO.
2
SPREAD(S)
1

INDUCED POLARIZATION TRAVERSE SECTIONAL DATA SHEET for BELL WESTERN CORP.

RELATIVE ANOMALY STRENGTH



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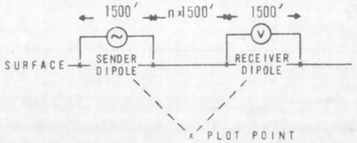

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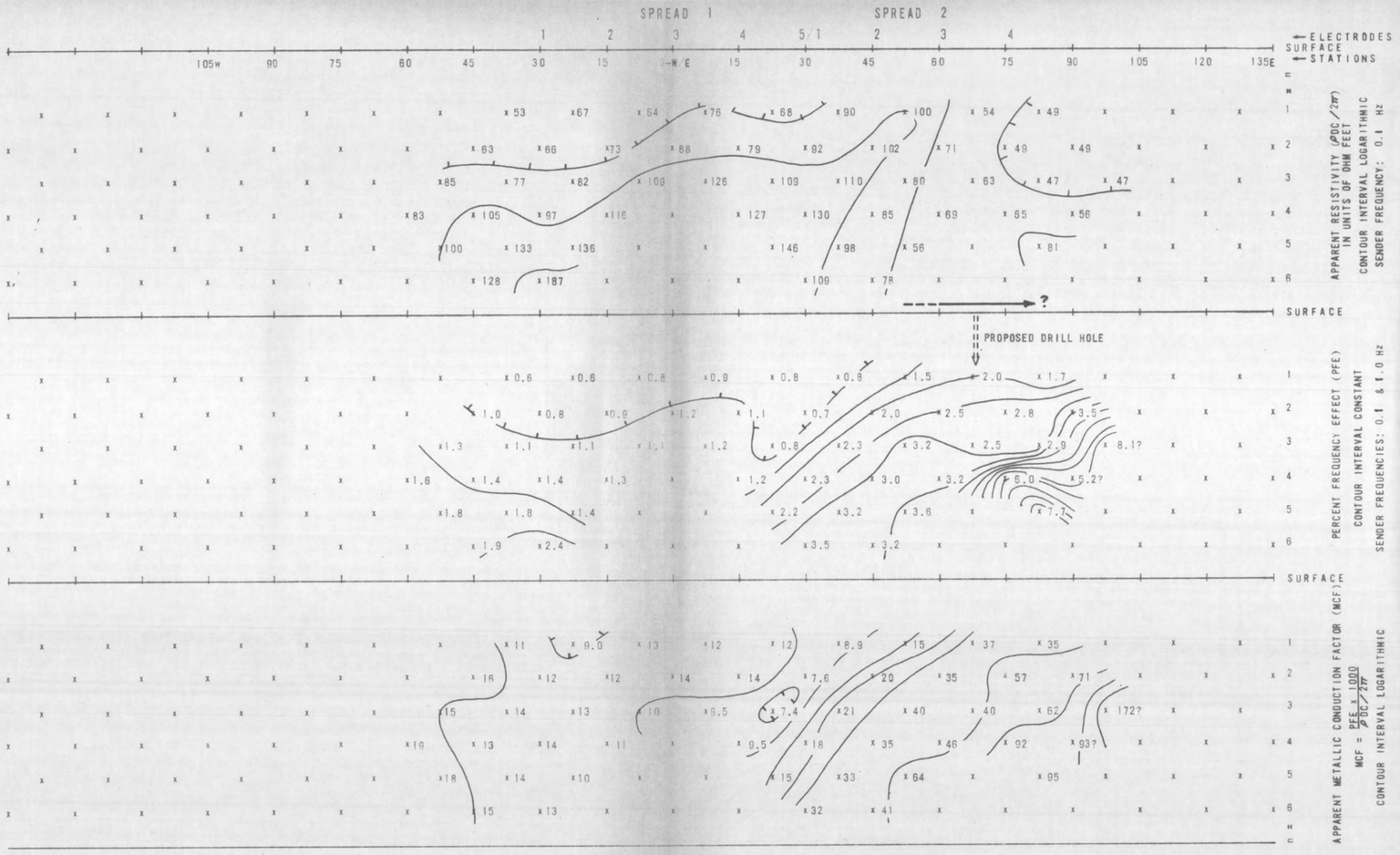
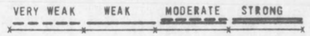


668-71

LINE NO. 3
SPREAD(S) 1 & 2

INDUCED POLARIZATION TRAVERSE SECTIONAL DATA SHEET for BELL WESTERN CORP.

RELATIVE ANOMALY STRENGTH



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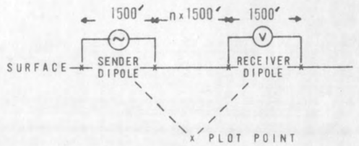

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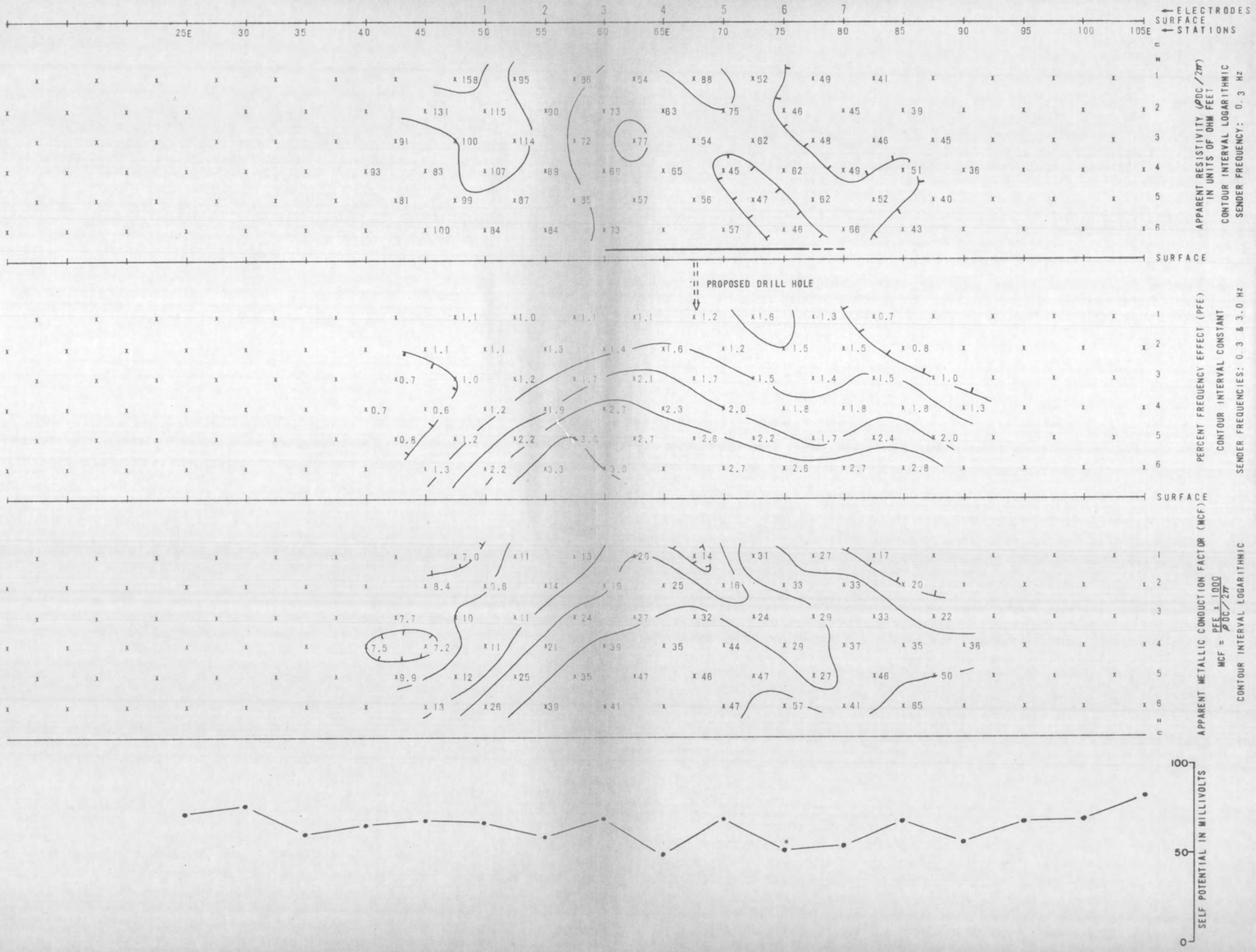
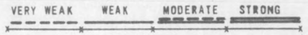
LINE NO. 3
SPREAD(S) 3

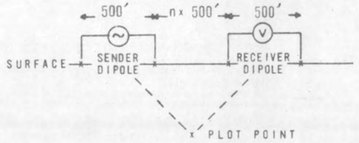
INDUCED POLARIZATION TRAVERSE SECTIONAL DATA SHEET for BELL WESTERN CORP.



RELATIVE ANOMALY STRENGTH



DIPOLE DIPOLE ELECTRODE ARRAY



AREA
ARIVACA
LOOKING
NORTH

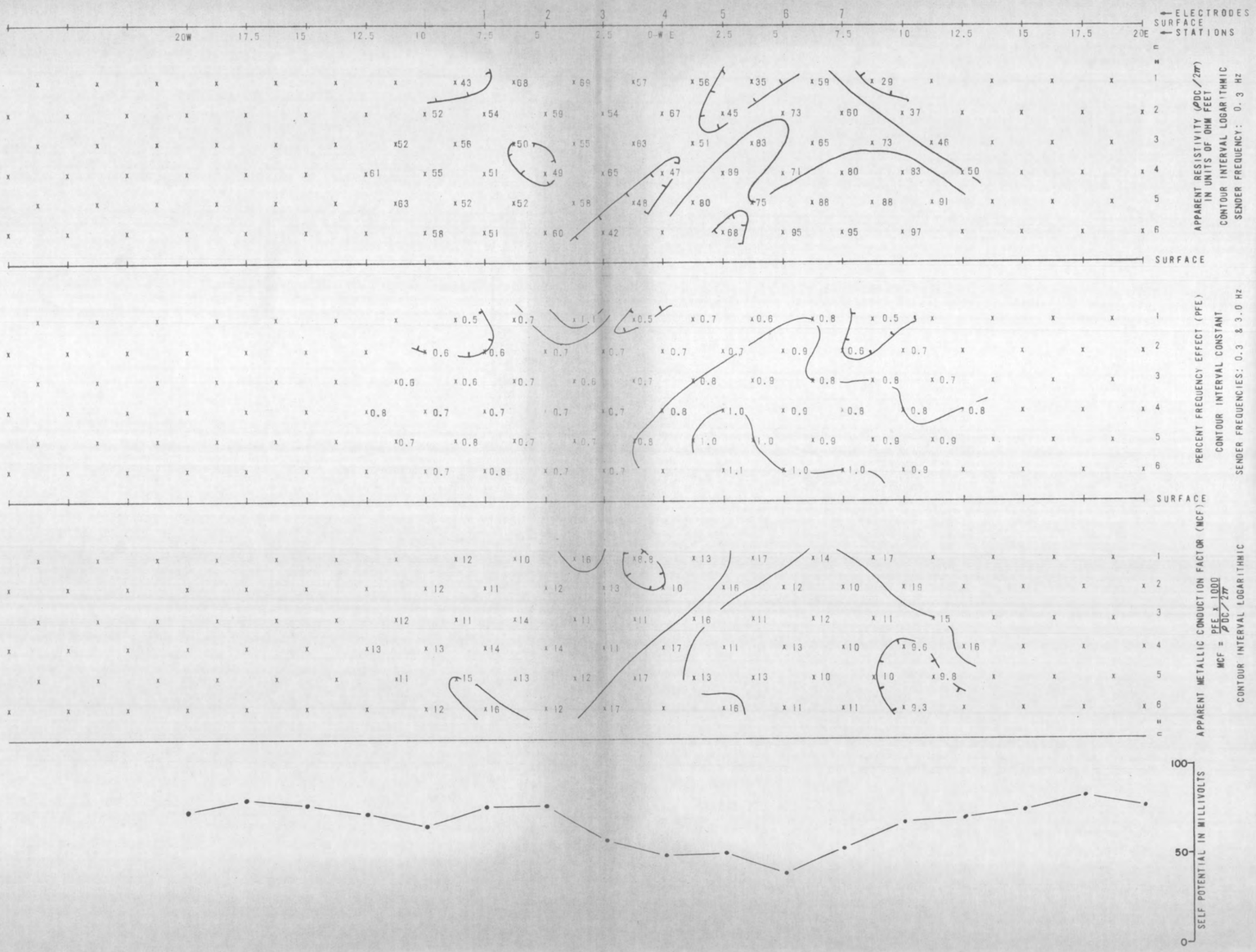
File Copy

DATE
OCT 1971

HEINRICHS
GEOEXPLORATION COMPANY
GEOPHYSICAL ENGINEERS

AUSTRALIA
(SYDNEY)
39 Hume Street
Crows Nest, NSW
Phone: 439-1793

U.S.A.
Post Office Box 5964
Tucson, Arizona 85703
Phone: (602) 623-0578
Cable: GEOEX, Tucson



668-71

LINE NO.
3A
SPREAD(S)
1

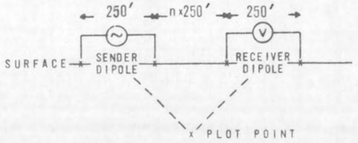
INDUCED POLARIZATION TRAVERSE SECTIONAL DATA SHEET for

BELL WESTERN CORP.

RELATIVE ANOMALY STRENGTH

VERY WEAK — WEAK — MODERATE — STRONG

DIPOLE DIPOLE ELECTRODE ARRAY



AREA
ARIVACA
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DATE
OCT 1971

HEINRICHS
GEOEXPLORATION COMPANY
GEOPHYSICAL ENGINEERS
AUSTRALIA
(SYDNEY)
39 Hume Street
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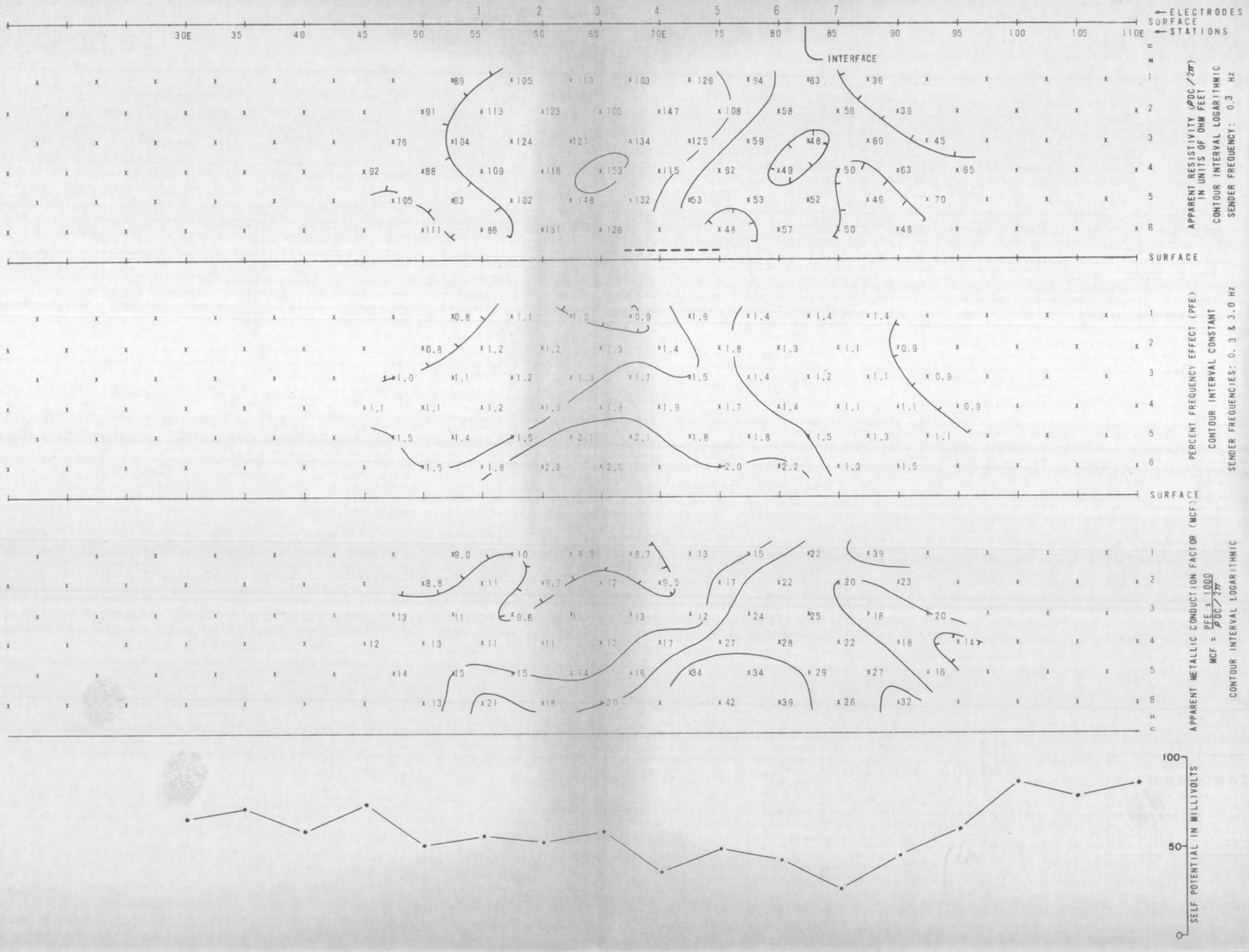


668-71

LINE NO. 4
SPREAD(S) 1

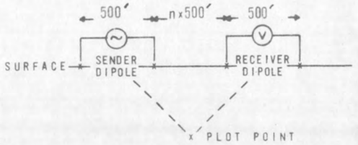
INDUCED POLARIZATION TRAVERSE SECTIONAL DATA SHEET for

BELL WESTERN CORP.

RELATIVE ANOMALY STRENGTH

VERY WEAK — WEAK — MODERATE — STRONG

DIPOLE DIPOLE ELECTRODE ARRAY

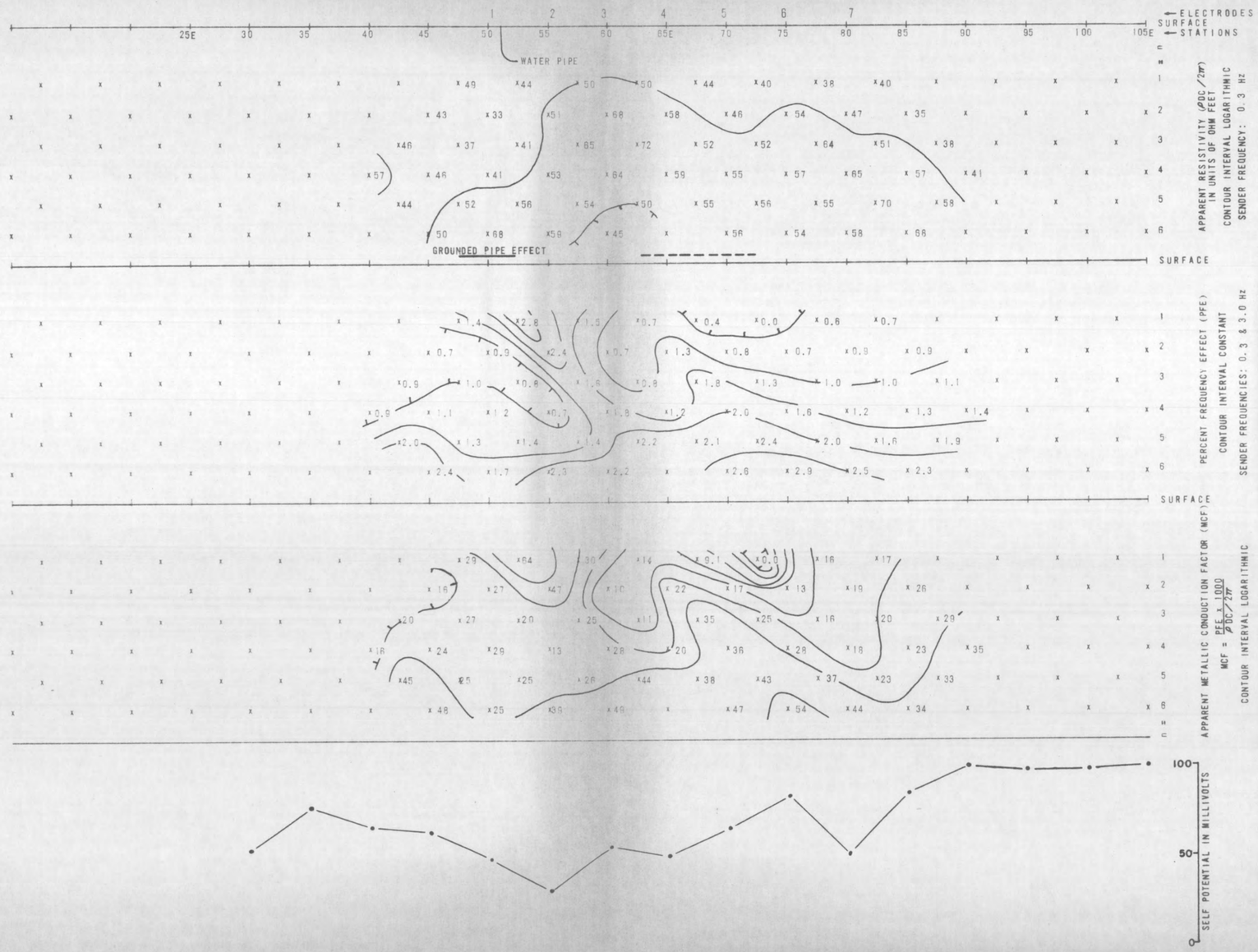


AREA
ARIVACA
LOOKING
NORTH
DATE
OCT 1971

HEINRICHS
GEOEXPLORATION COMPANY
GEOPHYSICAL ENGINEERS

AUSTRALIA
(SYDNEY)
39 Hume Street
Crows Nest, NSW
Phone: 439-1793

U.S.A.
Post Office Box 5964
Tucson, Arizona 85703
Phone: (602) 623-0578
Cable: GEOEX, Tucson



668-71

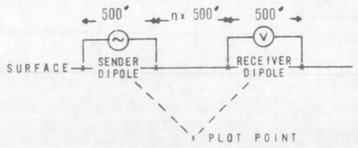
LINE NO.
5
SPREAD(S)
1

INDUCED POLARIZATION TRAVERSE SECTIONAL DATA SHEET for BELL WESTERN CORP.

RELATIVE ANOMALY STRENGTH

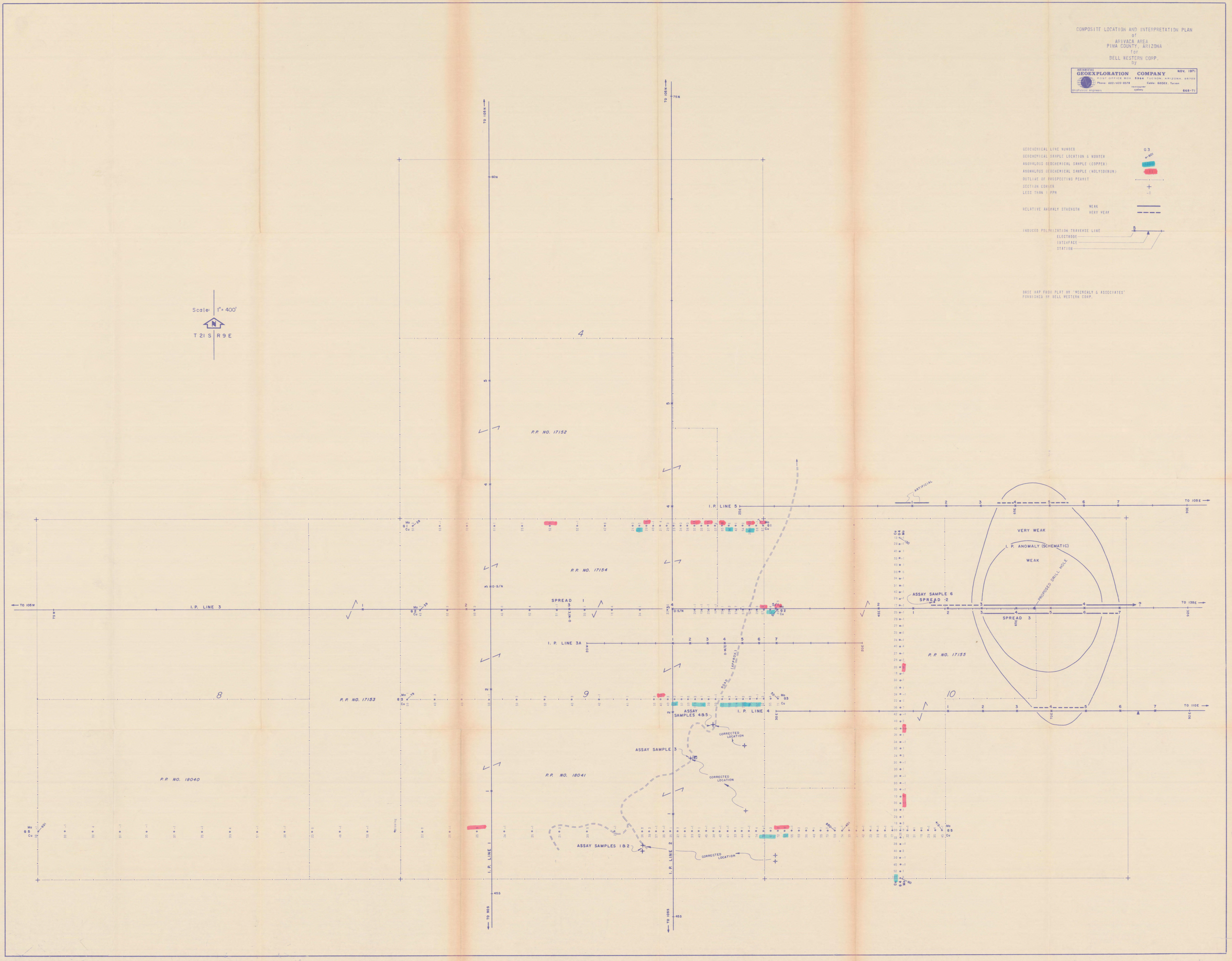
VERY WEAK — WEAK — MODERATE — STRONG

DIPOLE DIPOLE ELECTRODE ARRAY



AREA
ARIVACA
LOOKING
NORTH
DATE
NOV 1971

HEINRICHS
GEOEXPLORATION COMPANY
GEOPHYSICAL ENGINEERS
AUSTRALIA (SYDNEY) 39 Hume Street Crows Nest, NSW Phone: 439-1793
U.S.A. Post Office Box 5964 Tucson, Arizona 85703 Phone: (602) 623-0578 Cable: GEOEX, Tucson


COMPOSITE LOCATION AND INTERPRETATION PLAN
of
ARIVACA AREA
PIMA COUNTY, ARIZONA
for
BELL WESTERN CORP.
by
HEINRICHS GEOEXPLORATION COMPANY
NOV. 1971
POST OFFICE BOX 5964 TUCSON, ARIZONA, 85703
Phone: 602/623-0578 Cable: GEOEX, Tucson
vancouver sydney
geophysical engineers
668-71
GEOCHEMICAL LINE NUMBER G3
GEOCHEMICAL SAMPLE LOCATION & NUMBER
ANOMALOUS GEOCHEMICAL SAMPLE (COPPER)
ANOMALOUS GEOCHEMICAL SAMPLE (MOLYBDENUM)
OUTLINE OF PROSPECTING PERMIT
SECTION CORNER
LESS THAN 1 PPM
RELATIVE ANOMALY STRENGTH
WEAK
VERY WEAK
INDUCED POLARIZATION TRAVERSE LINE
ELECTRODE
INTERFACE
STATION
BASE MAP FROM PLAT BY 'WECKERLY & ASSOCIATES' FURNISHED BY BELL WESTERN CORP.
Scale: 1" = 400'
T 21 S R 9 E
TO 105 N
TO 105 W
TO 105 E
TO 135 E
TO 110 E
TO 90 S
TO 105 S
P.P. NO. 17152
P.P. NO. 17154
P.P. NO. 17153
P.P. NO. 17155
P.P. NO. 18040
P.P. NO. 18041
I. P. LINE 1
I. P. LINE 2
I. P. LINE 3
I. P. LINE 3A
I. P. LINE 4
I. P. LINE 5
SPREAD 1
SPREAD 2
SPREAD 3
ASSAY SAMPLES 4&5
ASSAY SAMPLE 3
ASSAY SAMPLES 1&2
ASSAY SAMPLE 6
CORRECTED LOCATION
ROAD (APPROX.)
ARTIFICIAL
VERY WEAK
I. P. ANOMALY (SCHEMATIC)
WEAK
PROPOSED DRILL HOLE

Bell Western Corp.

1972

Suite 1018, Houston Citizens Bank Building • Houston, Texas 77002 • (713) 225-1408

BOX 5964 · TUCSON, ARIZONA 85703

Phone: (602) 623-0578

January 6, 1972

Heinrichs Geoexploration Company
P. O. Box 5964
Tucson, Arizona 85703

Gentlemen:

The matter of your billing for exploration and evaluation work on the prospecting claims our corporation formerly held near Arivaca, Arizona, was brought to the attention of Mr. Glasscock and of our Board of Directors.

To relate the facts, Bell Western Corp. contacted your firm to do some exploration and evaluation work on our prospecting Permit 17154 which expired on November 20, 1971. On October 12, 1971, a confirmation of our telephone call was sent by your office which set forth that the costs involved for the I.P. survey would be $3,000.00 plus about $800.00 to $1,000.00 for assay work. This was agreed to by Bell Western Corp. on October 20, 1971, and approved by the Board of Directors on November 3, 1971.

A billing for $3,891.05 was dated November 1, 1971, and this was correctly in line with the agreement. The billing dated November 15, 1971, for $2,180.98 when received by our office brought a prompt telephone call protesting this charge and with our advice that no further expenditures were requested. The billing dated December 3, 1971, for $789.20 arrived December 7, 1971, the day after the report arrived at 2:00 P.M. These additional statements prompted my letter to you of December 7, 1971.

The Board of Directors has concluded not to honor your statements for $2,180.98 and for $789.20. The report for which $789.20 was charged, has no value to this office. It was not received in time to assist us in any way.

We stand ready and willing to pay the correct invoice of $3,891.05 which we feel is rightfully due your firm.

Sincerely yours,

BELL WESTERN CORP.

Frank P. Samples

FPS:bb

Bell Western Corp.

Suite 1018, Houston Citizens Bank Building • Houston, Texas 77002 • (713) 225-1408

December 7, 1971

HEINRICHS GEOEX
Cable: GEOEX

Heinrichs Geoexploration Company
P. O. Box 5964
Tucson, Arizona 85703

REC'D DEC 9 1971 REC'D

BOX 5964 TUCSON, ARIZONA 85703
Phone: (AREA 602) 623-0578

Gentlemen:

Apparently there is some misunderstanding on the exploration and evaluation work on our prospecting permit near Arivaca, Arizona.

We had agreed for certain I. P. work which was to cost $3,000.00. It was also agreed that assay samples would be taken which would cost about $800.00 to $1,000.00.

In a telephone conversation with Mr. Ludwig he advised that permit 17154 was worthless and he desired authorization to abandon 17154 and concentrate East of that parcel. This was agreeable because his professional opinion was all that we had to rely upon.

Everyone knew that work affidavits were required by November 20, 1971 for some permits and December 1, 1971 for others. Conversations revealed that, in his opinion, at least 17155 should be retained. It was agreed that "Statements of work performed will be supplied to us for submittal to the State Land Department". The dates these were due were no secret to anyone concerned.

Subsequent telephone calls revealed one time from Mr. Ludwig that "the money has about run out". No further mention was made of additional work or additional expenses. All calls that I initiated were relative to obtaining some information about the reports to be filed with the State of Arizona.

A billing arrived which was correctly in line with our agreement. It should have been paid and was awaiting Mr. Glasscock's signature. A subsequent statement for $2,180.98 arrived and I immediately called Mr. Ludwig to determine that no further work was being done and none was requested.

On December 6, 1971, at 2:00 P.M. we received your report. This was subsequent to the December 4, 1971, requirement of permits 17155, 17153 and 17152 and of the November 20, deadline for permit 17154.

A statement arrived today for $789.20. It is not my decision to make, but I wish to assure you that I never at any time authorized any additional work in excess of the $3,800.00 to $4,000.00. I will bring this to the attention of Mr. Glasscock when he returns to the office.

Sincerely yours,

BELL WESTERN CORP.

Frank P. Samples

FPS:bb

RALPH W. BILBY
B. G. THOMPSON
T. K. SHOENHAIR
HAROLD C. WARNOCK
WILLIAM A. SCANLAND
W. E. DOLPH
DAVID W. RICHTER
B. G. THOMPSON, JR.
RICHARD M. BILBY
MICHAEL A. LACAGNINA
MARVIN S. COHEN
CLAGUE A. VAN SLYKE
THOMAS E. WILSON
T. SCOTT HIGGINS
MAX C. RICHARDS
EUGENE C. GIESELER

LAW OFFICES
BILBY, THOMPSON, SHOENHAIR & WARNOCK, P.C.
NINTH FLOOR VALLEY NATIONAL BUILDING
TUCSON, ARIZONA 85701
TELEPHONE [602] 792-4800

KNAPP, BOYLE, BILBY & THOMPSON
1946-1954
BOYLE, BILBY, THOMPSON & SHOENHAIR
1954-1968

November 4, 1971

OUR FILE NO.

NOV 8 1971
BOX 5004 TUCSON, ARIZONA

Heinrichs Geoexploration Company
808 West Grant Road
Tucson, Arizona 85705

Attention: Mr. Walter Heinrichs

Gentlemen:

We represent Buenos Aires Ranch. We are informed by the ranch foreman that you are conducting some kind of exploration activities in Township 21 South, Range 9 East.

Our client owns patented lands in Sections 3, 4, 9, 10, 11, 12, 13, 20, 27, 28, 29, 30, and 33 in this township and range. None of this land is open to mineral exploration, there being no reservation of minerals in the patents from the United States.

You are requested not to enter upon these lands.

With regard to Buenos Aires State grazing leases in the area, you are requested to notify Mr. Earle Dean Osborne, the ranch foreman, at the Buenos Aires Headquarters when you intend to enter them, so that proper arrangements can be made to care for the cattle and improvements on the State lands.

Very truly yours,

BILBY, THOMPSON, SHOENHAIR & WARNOCK

By /s/ H. C. Warnock

HCW/rl

Bell Western Corp.

Suite 1018, Houston Gulf Bank Building • Houston, Texas 77002 • (713) 225-1408

Cable: GEOEX

Let #663

REC'D OCT 22 1971 REC'D

BOX 5964 TUCSON, ARIZONA 85703

Phone: (AREA 602) 623-0578

October 20, 1971

Heinrichs Geoexploration Company
P. O. Box 5964
Tucson, Arizona 85703

Gentlemen:

This is to confirm your telephone discussion regarding exploration and evaluation work on prospecting claims near Arivaca, Pima County, Arizona.

You are to initiate deep induced polarization work to determine if any significant sulfide zones exist at depth in the general area of interest. This work will be centered on P.P. #17154 and will cost $3,000.00. This will help us in deciding which parcels to retain and which to drop.

In this same regard, a half dozen or so geologic assay samples will be taken in the surface copper showings, cuts and prospects on each of the six permits to further aid in evaluating this property. Including the assays, you estimate this phase will cost about $800.00 to $1,000.00.

You will inform us of the results of this preliminary work as soon as possible. If the results are encouraging enough, we may wish to proceed with work on the other five permits, or some portion thereof.

This additional work would likely be a multi-technique combined geological, geophysical and geochemical investigation and should go a long ways towards deciding the viability of this project one way or another.

You will charge your standard competitive rates and related expenses for this work and will submit itemized billings on a weekly or bi-weekly basis, payable upon receipt.

Statements of work performed will be supplied to us for submittal to the State Land Department on those permits retained.

All property permits and trespass liability and related costs which are incurred on the client's behalf will be chargeable to

us. GEOEX will save us harmless from all Workmen's Compensation, public liability and property damage liability incurred by GEOEX employees.

Very truly yours,
BELL WESTERN CORP.

By
C. G. Glasscock, Jr.
President

CGG:nm

RED HILLS MINING CORP.

P. O. BOX 611
FLORENCE, ARIZONA 85232
868-4567 AC 602

March 1, 1971

WORK PERFORMED OR CAUSED TO BE PERFORMED BY BELL WESTERN CORPORATION OF DENVER, COLORADO ON STATE PROSPECTING PERMIT 18041

April 27, 28, & 29, 1970
Geological investigation in an attempt to determine length and scope of exposed copper veins in the area, and at the same time run a scintillometer survey.

Survey authorized by A. K. McMillan, Fort Worth, Texas

Total Cost $ 613.85

Survey made by McCary, Otell & Associates
1210 Americana Building
Houston, Texas

August 4, 1970
Bell Western farmed-out State Prospecting Permit 18041 to A. K. McMillan 3700 West Biddison St., Fort Worth, Texas. Mr. McMillan assigned this agreement to Red Hills Mining Corporation.

Work performed by Red Hills Mining Corporation as per agreement dated August 4, 1970, between A. K. McMillan and Bell Western Corp.

November 6, 1970
Moved men and equipment into area

PERSONNEL

Mr. O. L. Hill, Supervisor @ $100.00 per deim and expenses
Mr. Chas E. Willey, Jr. Geologist & Surveyor $75.00 per deim & expenses
Mr. Donald Vick, Driller, $5.90 per hour & expenses
Mr. Bobbie J. Pehl, Driller Helper, $3.90 per hour & expenses
Mr. Dan Kelly, Sample man & Survey Helper, $4.90 per hour & expenses

EQUIPMENT

1 1600 Gardner Denver Trac Air Drill w/600 Gardner Denver Compressor
1 14 Ton Ford Truck (Dump) for hauling compressor
1 3/4 Ton Didge Pickup and 6 wheel trailer for hauling air drill and fuel supply
1 Hertz Rent Car for Supervisor

Expenditure brought forward $ 613.85

November 16, 1970
Moved men and equipment on to lease

Drilled Hole #1 (see map) to a total depth of 70' by dozer cut made by previous persons showing narrow vein of oxide ore.

Total hole cutting appeared to be conglomerate and andesite with no shows of oxide copper.

Drilled Hole #2 (see map) 60' deep by old mine shaft approximately 8 feet that showed some oxide copper ore.

Cuttings were assayed and showed small amounts of copper and silver.

EXPENDITURES

Geological investigation and surveying in drill sites	285.00
Clearing locations and moving in	324.00
Supervisor O. L. Hill	240.00
Fuel truck 2 days @ $25.00 per day	50.00
Drill cost 130 feet @ $10.00 per foot	1,300.00
Administrative & Clerical	125.00
Trailer truck standby time 48 hrs. @ $6.00 per hr.	288.00
Total Expenditures	$3,225.85

CONCLUSIONS

This permit appears to contain good mineralization and needs additional exploration. An IP Survey is highly recommended.

RED HILLS MINING CORPORATION

By: Roger McCarey

RED HILLS MINING CORP.

P. O. BOX 611
FLORENCE, ARIZONA 85232
868-4567 AC 602

November 16, 1970

WORK PERFORMED OR CAUSED TO BE PERFORMED BY BELL WESTERN CORPORATION OF DENVER, COLORADO.

April 14, 15th 1970

Geological investigation in an attempt to determine length and scope of exposed copper veins in the area, and at the same time run a scintillometer survey.
Survey authorized by A. K. McMillan, Fort Worth, Texas
Total cost $ 580.00

Survey made by McCary, Otell & Associates
1210 Americana Building
Houston, Texas

August 4, 1970

Bell Western assigned State Prospecting Permit #17154 to A. K. McMillan 3700 W Biddison St. Fort Worth, Texas. Mr. McMillan then assigned the permit to Red Hills Mining Corporation.

Work performed by Red Hills Mining Corporation as per agreement dated August 4, 1970 between A. K. McMillan and Bell Western Corp. of Denver, Colorado.

November 6, 1970

Moved equipment and men onto site of State Prospecting Permit #17154.

1 1600 Gardner Denver Trac Air Drill W/ 600 Gardner Denver Compressor.
1 14 ton Ford Dump Truck for hauling Compressor
1 3/4 ton Dodge pickup and 6 wheel trailer for hauling air drill and supplying fuel.
1 Hertz rent car for supervisor

Personnel

Mr. O. L. Hill, Supervisor rate $100.00 p/d plus expenses
Mr. Chas E. Willey, Jr. Geologist & Surveyor $75.00 per diem & expenses
Mr. Donald Vick, Driller $5.90 per hour plus expenses
Mr. Bobbie J. Pehl, Driller helper, $3.90 per hour plus Expenses
Mr. Don Kelly, Sample man & Survey helper, $4.90 & expenses

Expenditures brought forward $ 580.00

November 6, 1970 continued

Moving time 12 hours (5 men)

November 7, 1970 (Saturday)
Geological work and surveying necessary for making three locations for drill sites

November 8, 1970
Cleared locations for drill sites and moved drill to Hole #1 location

November 9, 1970
Started drilling No. 1 hole (see map) south of "Bekins Mineral Claims" reached a depth of 40 feet in clay and conglomerates before drill started sticking. No shows of copper oxide. Moved drill southwest 300 feet to # 2 hole.

Hole #2 (see map) drilled to a depth of 70 feet in broken formation(0 to 10 feet clay & sand 10 to 20 feet conglomerate 20 to 30 feet rhyolite & welded tuffs 30 to 70 feet brecciated conglomerate) hole started caving badly stuck drill steel attempting to get out of hole.

November 10, 1970
Finally got out of hole with drill steel,had no shows of copper ore or other mineralization and moved east 300 feet to hole No. 3
Hole No. 3 (see map) was drilled to a depth of 35 feet in a loose formation of conglomerates and brecciated tuffs. no indication of copper ore or other minerals .

EXPENDITURES

Moving Drill and Equipment to Permit #17154	$ 350.00
Clearing three locations and moving in	425.00
Geological work and surveying in selected drill sites	190.00
Supervisor (four days) plus expenses	485.00
Mapping & Blue printing (Weckerly & Assoc.)	63.00
Fuel truck for drill $25.00 per day	200.00
Drill cost 145 feet at 10.00 per foot	1,450.00
Administrative & Clercial	125.00
Standby truck & trailer 72 hrs. at $6.00	432.00
Expenditures	$4,300.00

Conclusion:
The spotty shows of oxide & carbonate copper ore, such as azurite, chrysocolla and malachite are encouraging, but to develop this permit a significant amount of drilling will be necessary. It appears that drilling with and air drill will not be feasible due to the fractured nature of the near surface rocks.
Drill samples are available upon request.

RED HILLS MINING CORPORATION
By: Roger McCarty
President

RED HILLS MINING CORP.

P. O. BOX 611
FLORENCE, ARIZONA 85232
868-4567 AC 602

December 2, 1970

WORK PERFORMED OR CAUSED TO BE PERFORMED BY BELL WESTERN CORPORATION OF DENVER, COLORADO ON STATE PROSPECTING PERMIT 17152

April 16, 17th 1970
Geological investigation in an attempt to determine length and scope of exposed copper veins in the area, and at the same time run a scintillometer survey.
Survey authorized by A. K. McMillan, Fort Worth, Texas

Total cost $ 580.00

Survey made by McCary, Otell & Associates
1210 Americana Building
Houston, Texas

August 4, 1970
Bell Western farmed-out State Prospecting Permit 17152 to A. K. McMillan 3700 W. Biddison St. Fort Worth, Texas. Mr. McMillan assigned this agreement to Red Hills Mining Corporation.

Work performed by Red Hills Mining Corporation as per agreement dated August 4, 1970, between A. K. McMillan and Bell Western Corp.

November 6, 1970
Moved men & equipment into area

PERSONNEL

Mr. O. L. Hill, Supervisor @ $100.00 per deim and expenses
Mr. Chas E. Willey, Jr. Geologist & Surveyor $75.00 per deim & expenses
Mr. Donald Vick, Driller, $5.90 per hour & expenses
Mr. Bobbie J. Pehl, driller helper, $3.90 per hour & expenses
Mr. Don Kelly, Sample man & survey helper, $4.90 per hour & expenses

EQUIPMENT

1 1600 Gardner Denver Trac Air Drill w/ 600 Gardner Denver Compressor
1 14 Ton Ford Truck (Dump) for hauling compressor
1 3/4 ton Dodge pickup and 6 wheel trailer for hauling air drill and fuel supply
1 Hertz rent car for supervisor

Expenditure brought forward $ 580.00

November 11, 1970
Moved men and equipment on to lease

November 12, 1970
Drilled Hole #1 (see map) to a total depth of 50 feet
0 to 20 feet conglomerate
20 to 25 feet low grade oxide ore
25 to 50 feet brownish grey sandy shale
Moved to Hole #2 (see map) and drilled to a depth of 50 feet attempting to follow wein in #1 hole.
0 to 25 feet conglomerate
25 to 50 feet brownish to grey sandy shale with no shows.

EXPENDITURES:

Geological investigation and surveying in drill sites	$ 285.00
Clearing locations and moving in	324.00
Supervisor O. L. Hill	240.00
Fuel truck 2 days @ $25.00	50.00
Drill cost 100 feet @ $10.00 per foot	1,000.00
Administrative & clercial	125.00
Trailer truck standby time 48 hrs @ $6.00	288.00
Total expenditures	$2,892.00

Conclusions:
Encountering the 5 feet of low grade copper ore along with tracing the various veins from the "Bekins Mineral Claims" indicate that this permit has merit and additional drilling should be done. An IP survey would be helpful for the location of the possibly deeper sulphides. Well samples are available.

RED HILLS MINING CORPORATION

By:_____

RED HILLS MINING CORP.

P. O. BOX 611
FLORENCE, ARIZONA 85232
868-4567 AC 602

December 2, 1970

WORK PERFORMED OR CAUSED TO BE PERFORMED BY BELL WESTERN CORPORATION OF DENVER, COLORADO, ON STATE PROSPECTING PERMIT 17153

April 23 & 24 1970
Geological investigation in an attempt to determine length and scope of exposed copper veins in the area, and at the same time run a scintillometer survey.
Survey authorized by A. K. McMillan, Fort Worth, Texas.

Total cost $ 324.00

Survey made by McCary, Otell & Associates
1210 Americana Building
Houston, Texas

August 4, 1970

Bell Western farmed-out State Prospecting Permit 17153 to A. K. McMillan 3700 W. Biddison St. Fort Worth, Texas. Mr. McMillan assigned this agreement to Red Hills Mining Corporation.

Work performed by Red Hills Mining Corporation as per agreement dated August 4, 1970 between A. K. McMillan and Bell Western Corp.

November 6, 1970

Moved men & equipment into area.

PERSONNEL

Mr. O. L. Hill, Supervisor @ $100.00 per deim & expenses
Mr. Chas E. Willey, Jr. Geologist & Surveyor $75.00 per deim & expenses
Mr. Donald Vick, Driller, $5.90 per hour & expenses
Mr. Bobbie J. Pehl, driller helper, $3.90 per hour & expenses
Mr. Don Kelly, Sample man & survey helper, $4.90 per hour & expenses

EQUIPMENT

1 1600 Gardner Denver Trac Air Drill w/ 600 Gardner Denver Compressor
1 14 Ton Ford Dump Truck for hauling compressor
1 3/4 ton Dodge pickup and 6 wheel trailer for hauling air drill and fuel supply
1 Hertz rent car for supervisor

Expenditure brought forward $ 324.00

November 13, 1970

Drilled hole #1 (see map)
Total depth 70 feet
o to 2 feet clay
2 to 10 feet conglomerate
10 to 70 feet brecciated conglomerate. Drilled into cavity, very loose formation stuck drill.
No shows of copper ore or other mineralization.

EXPENDITURES

Geological investigation and surveying in drill site	$ 125.00
Clearing location and moving in	150.00
Supervision O. L. Hill	240.00
Fuel truck 1 day @ $25.00	25.00
Trailer truck standby time 24 hrs @ $6.00	144.00
Drill cost 70 feet @ $10.00 per hour	700.00
Administrative & clercial	125.00
One-half cost of moving drill and personnel back to Florence, Ariz.	170.00
Total Expenditures	2,003.00

Conclusions:
The lack of mineralized shows on this prospect indicated that future exploration should be planned on considerable more expenditure as deep drilling will be necessary.

RED HILLS MINING CORPORATION

By: _____

RED HILLS MINING CORP.

P. O. BOX 611
FLORENCE, ARIZONA 85232
868-4567 AC 602

December 2, 1970

WORK PERFORMED OR CAUSED TO BE PERFORMED BY BELL WESTERN CORPORATION OF DENVER COLORADO ON STATE PROSPECTING PERMIT 17155.

April 20,21 &22, 1970
Geological investigation in an attempt to determine length and scope of copper veins exposed in the area, and at the same time run a scintillometer survey. Survey authorized by A. K. McMillan, Fort Worth, Texas.
Work performed by McCary, Otell & Associates, 1210 Americana Bldg. Houston, Texas

Total cost $ 613.00

August 4, 1970

Bell Western farmed-out State Prospecting Permit 17155 to A. K. McMillan 3700 W. Biddison St. Forth Worth, Texas. Mr. McMillan assigned this agreement to Red Hills Mining Corporation.

Work performed by Red Hills Mining Corporation as per agreement dated August 4, 1970 between A. K. McMillan and Bell Western Corp. of Denver, Colorado.

November 6, 1970

Moved men and equipment into area.

PERSONNEL

Mr. O. L. Hill, Supervisor @ $100.00 per deim & expenses
Mr. Chas E. Willey, Jr. Geologist & Surveyor $75.00 per deim & Expenses
Mr. Donald Vick, Driller $5.90 per hour & expenses
Mr. Bobbie J. Pehl, driller helper, $3.90 per hour & expenses
Mr. Don Kelly, Sample man & Survey helper, $4.90 per hour & expenses

EQUIPMENT

1 1600 Gardner Denver Trac Air Drill w/ 600 Gardner Denver Compressor
1 14 Ton Ford Dump Truck for hauling compressor
1 3/4 ton Dodge pickup and 6 wheel trailer for hauling air drill and fuel supply
1 Hertz rent car for supervisor

Expenditures brought forward $ 613.00

November 14, 1970

Drilled Hole No. 1 to a depth of 50 feet Rhyolite and Andesite
Moved 100 feet southeast and drilled Hole #2 to a depth of 50 feet.
Rhyolite & Andesite predominant.
These two holes were drilled on cross veins of oxide copper showings to determine if they were disseminated sufficiently in length and depth to justify commercial exploitation. No dissemination was found.

EXPENDITURES

Geological investigation and surveying in drill sites	$ 190.00
Clearing locations and moving in	224.00
Supervision O. L. Hill	120.00
Fuel truck 1 day @ $25.00	25.00
Truck Trailer standby 24 hrs. @ $6.00	144.00
Drill cost 100 feet @ $10.00 per foot	1.000.00
One-half cost of moving equipment and personnel back to Florence, Arizona	170.00
Administrative & clercial	100.00
Total Expenditures	$ 2,581.00

Conclusions:
The numerous mineralized veins appear to be very limited. Extensive drilling along with dozer work will be neccessary to determine the extent of mineralization.

RED HILLS MINING CORPORATION

By: _____

RED HILLS MINING CORP.

P. O. BOX 611
FLORENCE, ARIZONA 85232
868-4567 AC 602

WORK PERFORMED OR CAUSED TO BE PERFORMED BY BELL WESTERN CORPORATION OF DENVER, COLORADO ON STATE PROSPECTING PERMIT 18040

May 4, 5, 6, & 7, 1970
Geological investigation in an attempt to determine existence of copper veins in the area, and at the same time run a scintillometer survey.

Survey authorized by A. K. McMillan, Fort Worth, Texas

Total Cost $ 523.70

Survey made by McCary, Otell & Associates
1210 Americana Building
Houston, Texas 77002

March 6, 1971
Surveyed Prospecting Permit 18040, selected 5 spots for cuts on east side of permit.

Cut two 4' x 5' cuts shown as 1 & 2 on map - no shows of mineralization.

March 7, 1971
Selected 4 more spots for exploration and made 4 additional 4' x 5' cuts, Numbers 3, 4, 5, and 6 as shown on map. Slight copper oxide show in cut #5.

March 8, 1971
Made 4 more cuts 4' x 5' as shown on map by numbers 7, 8, 9, and 10. No shows of mineralization.

March 9, 1971
Made 2 cuts 4' x 5' as shown on map by numbers 11 and 12. Loaded gear and equipment and returned to Florence.

PERSONNEL

Mr. O. L. Hill, Supervisor @ $100.00 per deim and expenses
Mr. Donald Vick, Driller, $5.90 per hour and expenses

EQUIPMENT

1 Dodge Polara
1 3/4 Ton Dodge Pick-up
1 310 Case Backhoe
1 20' 6 wheel trailer

Expenditure brought forward $ 523.70

EXPENDITURES

Supervisor, O. L. Hill	460.00
Backhoe Operator - Salary and expenses	282.40
Backhoe @ $16.00 per hour (32 hours)	512.00
Truck and Trailer use and Standby time (Fuel and hauling) 96 hrs @ $6.00	576.00
Administrative and clerical	102.00
Car mileage - 415 miles @ 15 cents	62.25
Total Expenditures	$2,518.35

CONCLUSIONS

This prospecting permit does not appear to have significant mineralization on the surface and should be explored by an I. P. Survey if funds are available.

RED HILLS MINING CORPORATION

By Royce McCary

Bell Western Corp.

Suite 1018, Houston Citizens Bank Building • Houston, Texas 77002 • (713) 225-1408

October 1, 1971

Mr. Walter Heinrichs, Jr.
President
Heinrichs Geoexploration Co.
P. O. Box 5671
Tucson, Arizona 85703

HEINRICHS GEOEX
Cable: GEOEX
REC'D OCT 4 1971 REC'D
BOX 5964 TUCSON, ARIZONA 85703
Phone: (AREA 602) 623-0578

Dear Mr. Heinrichs

You are aware that Bell Western holds six prospecting permits in Pima County, Arizona. We are interested in renewing three of these permits and 40 acres of another permit. We desire to drop permit #17153 and 18040. We desire to retain the Southwest 40 acres of 17155 and all of 17152, 17154 and 18041.

Exploration work must be done on this property before November 4, 1971, on permit 17154 and on other tracts in November and December.

We need your suggestions and recommendations on this work as well as your estimate. Please let us hear from you os soon as possible.

Very truly yours,

Frank P. Samples

FPS:nm

Copied from our 1970
Bell Western File

ARIVACA AREA

PROSPECTING PERMIT REQUIREMENTS

Bell Western Corp. recently acquired from the State of Arizona Prospecting Permits covering certain lands in the Arivaca Area in Pima County, Arizona. This note is written to point out the requirements and deadline dates set out in the permits.

The permits shall terminate automatically at the end of any annual period from and after the date of issuance unless the permitee (Bell Western Corp.) shall have expended in exploration the prescribed amount per acre, file an application for renewal, and submit proof of the amount expended. The amount to be expended during each of the first two annual periods shall be not less than $10.00 for each acre covered by the permit. No rental is due for the first annual period for which the permit is renewed. We paid $2.00 per acre at the time the permits were issued.

The following is a breakdown of each permit:

	P.P. NO.	ACRES	AMOUNT TO BE EXPENDED	DEADLINE DATE	DESCRIPTION T-21-S, R-9-E
Return all	17152	260	$2600.00	12/5/70	SW¼: W½ SE¼; W½ SE¼ SE¼ Section 4
	~~17153~~	~~160~~	~~$1600.00~~	~~12/5/70~~	~~E½ E½ Section 8~~
Return all	17154	300	$3000.00	11/21/70	S½ NE¼; NW¼ NE¼ W½ NE¼ NE¼; NW¼ Section 9
Return 160 acres	17155	~~240~~ 40	~~$2400.00~~ $400.00	12/5/70	~~E½ W½~~; SW¼ SW¼; ~~SW¼ NE¼~~ Return 40 acres Section 10
	~~18040~~	~~240~~	~~$2400.00~~	~~3/18/71~~	~~SW¼; W½ SE¼ Section 8~~
Return all	18041	320	$3200.00	3/18/71	S½ Section 9

~~1520~~ 920 ACRES $9200.00

20 ACRES PER CLAIM

~~76~~ 46 CLAIMS

1970
B.W. File

1435 S. 10th AVE.
P. O. BOX 1889
DUPLICATE

Jacobs Assay Office
Registered Assayers

PHONE 622-0813

Certificate No. 58623

TUCSON, ARIZONA 85702 Mar 17" 1970

Sample Submitted by Mr. Bell Western Denver Colo

SAMPLE MARKED	GOLD Ozs. per ton ore	GOLD Value per ton ore *	SILVER Ozs. per ton ore	COPPER Per cent Wet Assay	LEAD Per cent Wet Assay	Zinc Per cent Wet Assay	Mo Per cent Wet Assay
ARIVACA		$					
#7152							
53				3.11			
54				0.05			
7156				1.90			
57				1.82 ✓			
58	0.05	1.75	40.4	26.76	0.1	0.1	Trace
59				11.50			
60				10.00			
61				2.31			
				5.08			

JACOBS 70

* Gold Figured $35.00 per oz. Troy

Charges $ 27.25

Very respectfully,

Ben P. Jacobs

SAMPLES

#7152
PIT GRAB SPL.

#7153
MIXED DRILL HOLE CUTTINGS
(DEPTH UNKNOWN)

#7154
OUTCROP IN STREAM BED

#7155
NO ASSAY MADE

#7156
DOZER CUT GRAB SPL

#7157
PIT OR POSSIBLY A FILLED SHAFT

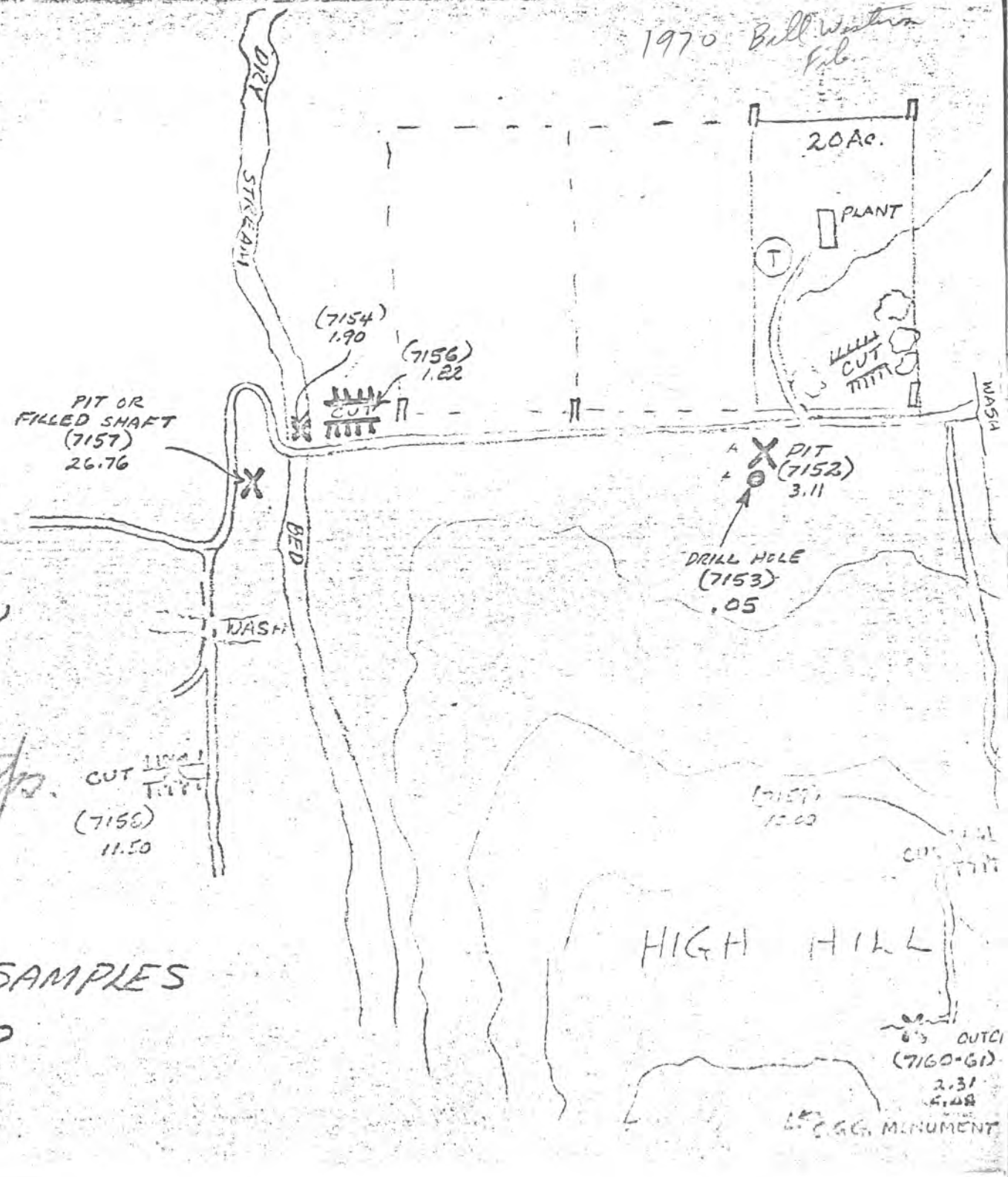
7158
SMALL PIT

#7159
DOZER CUT FLANK OF HILL

#7160 } GRAB SPLS OUTCROP VEINS
#7161 } HIGH HILL AREA

ALL VEINS IN AREA
APPEAR TO ALLIGN IN E-W
DIRECTION

E-W oriented outcrops.



ARIVACA GRAB SAMPLES

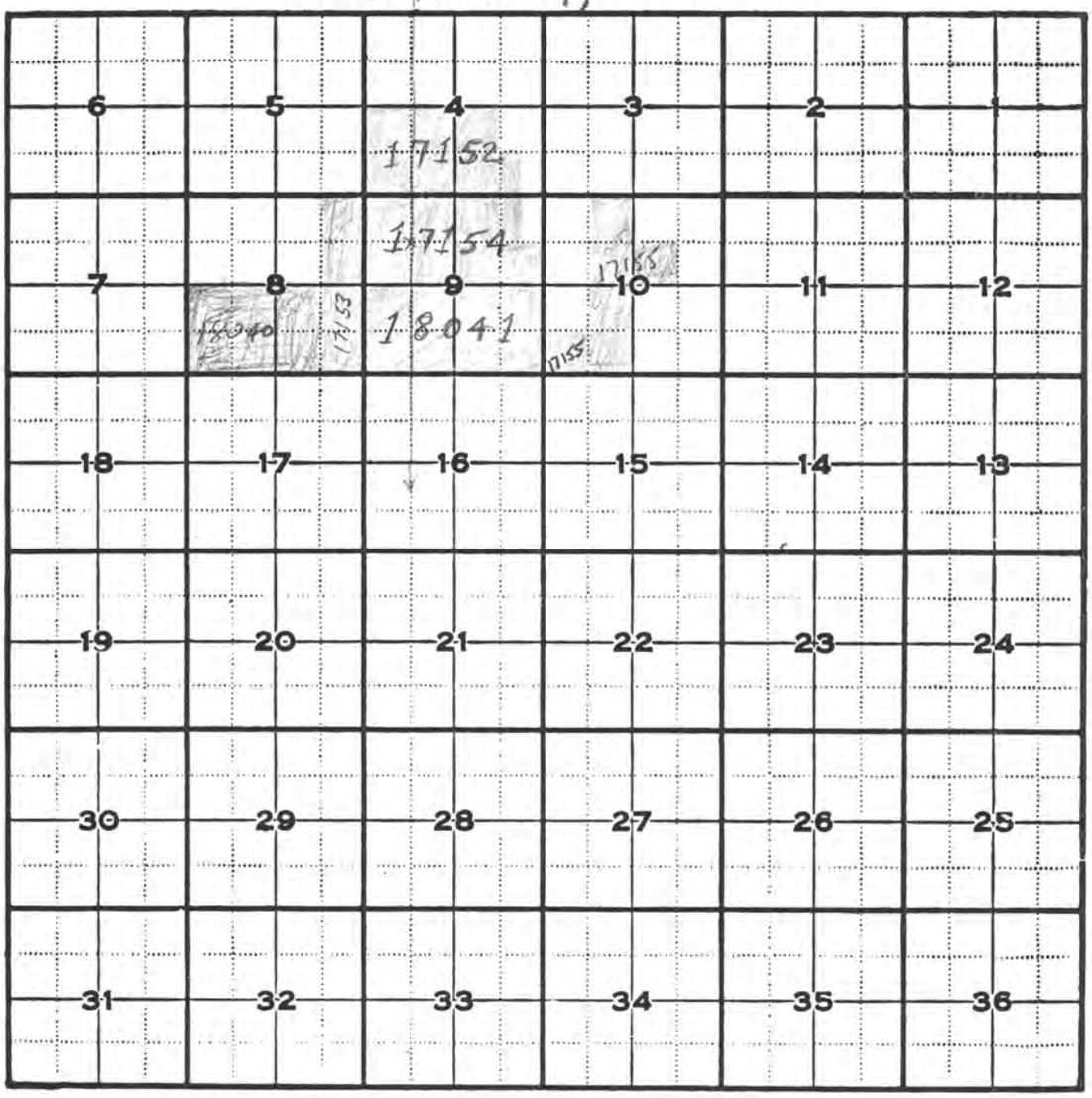
LOCATION MAP

3/15/70

STATE LAND DEPARTMENT
STATE OF ARIZONA

Township No. 21 S Range No. 9 E

Pima County, Ariz



OCT 6 1971 HEINRICHS GEOEXPLORATION COMPANY

B FORM 990