



**REPORT
of
SUB-SURFACE
DIRECTIONAL
SURVEY**

GEOTHERMAL RESOURCES INC.
COMPANY

PRATI STATE #1

WELL NAME

SANTA ROSA, CALIF.
LOCATION

JOB NUMBER
P0581-D0662

TYPE OF SURVEY
SINGLE-SHOT

DATE
6-22-81

SURVEY BY
STRINGFELLOW

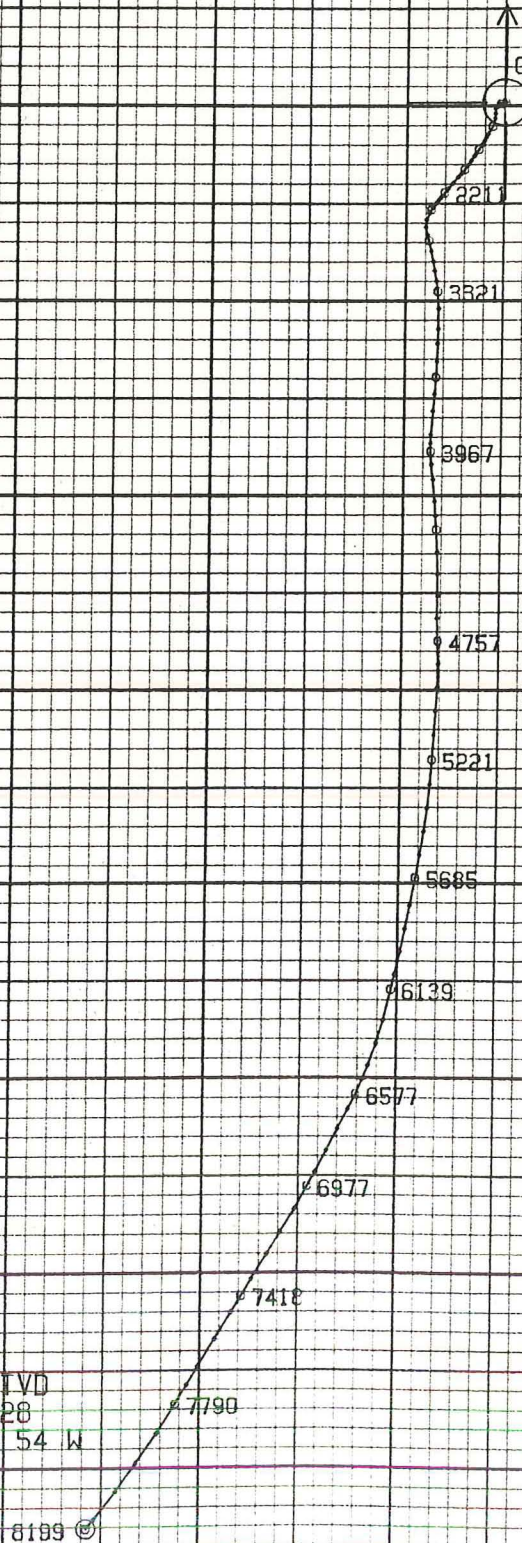
OFFICE
SANTA ROSA

GEOHERMAL RESOURCES, INC.
WELL: PRATI STATE 1
LOCATION: SANTA ROSA, CALIF.

HORIZONTAL PROJECTION

SCALE 1 IN. = 200 FEET
DEPTH INDICATOR: NO

EASTMAN WHIPSTOCK, INC.



FINAL STATION:
DEPTH 8199 ND. 7990.91 TVD
SOUTH 1463.14 WEST 416.28
CLOSURE 1521.21 S 15 52 54 W

8199 ©

CLEAR
2001
DEPT
E11481

ERPLIN

LOCU
MELL
25011

LOCATION: SANTA ROSA, CALIF.
FILE: B2-113
DATE: 5-11-81
ELEV:
DECL:
TYPE: SINGLE-SHOT
SEC. BEARING: DUE SOUTH
JOB: P0581-D0662
VENDOR: EASTMAN WHIPSTOCK
SURVEYOR: JOHN STRINGFELLOW

VERTICAL SECTION CALCULATED IN PLANE OF PROPOSAL
DIRECTION: S 0 DEG. 0 MIN. E

RECORD OF SURVEY

ANGLE AVERAGING METHOD

MEASURED DEPTH FEET	DRIFT ANGLE		DRIFT DIRECTION		COURSE LENGTH FEET	TRUE	VERTICAL SECTION FEET	RECTANGULAR		CLOSURE		DO SEV DG
	D	M	D	M		VERTICAL DEPTH FEET		COORDINATES	FEET	DISTANCE FEET	DIRECTION D M	
0.	0	0	0	0	0.	0.00	0.00	0.00	0.00	0.00	0 0	0
156.	0	0	0	0	156.	156.00	0.00	0.00	0.00	0.00	0 0	0
289.	0	0	0	0	133.	289.00	0.00	0.00	0.00	0.00	0 0	0
424.	1	0	S 72	0 W	135.	423.99	0.36	0.36 S	1.12 W	1.18	S 72 0 W	0
517.	1	15	S 71	0 W	93.	516.98	0.94	0.94 S	2.85 W	3.00	S 71 42 W	0
609.	1	30	S 77	0 W	92.	608.95	1.55	1.55 S	4.97 W	5.21	S 72 40 W	0
703.	1	15	S 77	0 W	94.	702.92	2.06	2.06 S	7.17 W	7.46	S 73 59 W	0
850.	3	0	S 2	0 W	147.	849.82	6.27	6.27 S	10.64 W	12.35	S 59 30 W	0
945.	3	0	S 2	0 W	95.	944.69	11.23	11.23 S	10.81 W	15.59	S 43 54 W	0
1040.	3	0	S 2	0 W	95.	1039.56	16.20	16.20 S	10.99 W	19.58	S 34 8 W	0
1194.	3	45	S 32	0 W	154.	1193.29	24.87	24.87 S	13.64 W	28.37	S 28 44 W	1
1317.	4	30	S 28	0 W	123.	1315.98	32.54	32.54 S	18.06 W	37.21	S 29 2 W	0
1379.	3	30	S 26	0 W	62.	1377.83	36.39	36.39 S	20.02 W	41.53	S 28 49 W	1
1442.	3	45	S 33	0 W	63.	1440.70	39.86	39.86 S	21.99 W	45.52	S 28 53 W	0
1505.	4	45	S 31	0 W	63.	1503.53	43.82	43.82 S	24.46 W	50.18	S 29 10 W	1
1567.	5	15	S 35	0 W	62.	1565.29	48.35	48.35 S	27.40 W	55.57	S 29 33 W	0
1631.	5	15	S 33	0 W	64.	1629.02	53.20	53.20 S	30.68 W	61.41	S 29 58 W	0
1652.	5	15	S 34	0 W	21.	1649.93	54.80	54.80 S	31.74 W	63.33	S 30 5 W	0
1718.	5	15	S 33	0 W	66.	1715.66	59.84	59.84 S	35.07 W	69.36	S 30 22 W	0
1780.	5	15	S 34	0 W	62.	1777.40	64.57	64.57 S	38.20 W	75.03	S 30 37 W	0
1841.	5	0	S 41	0 W	61.	1838.15	68.89	68.89 S	41.52 W	80.44	S 31 5 W	1
1898.	5	0	S 41	0 W	57.	1894.94	72.64	72.64 S	44.78 W	85.34	S 31 39 W	0
1960.	5	0	S 40	0 W	62.	1956.70	76.75	76.75 S	48.29 W	90.68	S 32 11 W	0
2055.	5	0	S 41	0 W	95.	2051.34	83.05	83.05 S	53.67 W	98.88	S 32 52 W	0
2148.	4	45	S 41	0 W	93.	2144.00	89.01	89.01 S	58.85 W	106.71	S 33 28 W	0
2211.	5	0	S 39	0 W	63.	2206.77	93.11	93.11 S	62.29 W	112.03	S 33 47 W	0
2272.	4	30	S 38	0 W	61.	2267.56	97.07	97.07 S	65.44 W	117.06	S 33 59 W	0
2334.	4	15	S 40	0 W	62.	2329.38	100.74	100.74 S	68.41 W	121.78	S 34 11 W	0
2396.	4	15	S 41	0 W	62.	2391.21	104.24	104.24 S	71.40 W	126.34	S 34 25 W	0
2466.	3	0	S 35	0 W	70.	2461.07	107.72	107.72 S	74.12 W	130.76	S 34 32 W	1

MEASURED DEPTH FEET	DRIFT ANGLE D M	DRIFT DIRECTION D M		COURSE LENGTH FEET	TRUE	VERTICAL SECTION FEET	R E C T A N G U L A R		C L O S U R E		DO SEV DG/
					VERTICAL DEPTH FEET		C O O R D I N A T E S FEET		D I S T A N C E FEET	D I R E C T I O N D M	
2520.	3 30	S 27	0 W	54.	2514.99	110.35	110.35 S	75.70 W	133.82	S 34 27 W	1
2580.	3 30	S 27	0 W	60.	2574.87	113.61	113.61 S	77.36 W	137.45	S 34 15 W	0
2705.	3 30	S 21	0 W	125.	2699.64	120.58	120.58 S	80.47 W	144.97	S 33 43 W	0
2807.	4 45	S 14	0 E	102.	2801.38	127.91	127.91 S	80.91 W	151.35	S 32 19 W	2
2898.	5 30	S 12	0 E	91.	2892.01	135.83	135.83 S	79.08 W	157.17	S 30 13 W	0
2960.	6 15	S 13	0 E	62.	2953.69	142.02	142.02 S	77.71 W	161.89	S 28 41 W	1
3053.	7 15	S 14	0 E	93.	3046.04	152.65	152.65 S	75.16 W	170.15	S 26 13 W	1
3136.	8 0	S 10	0 E	83.	3128.31	163.42	163.42 S	72.87 W	178.93	S 24 2 W	1
3198.	9 30	S 11	0 E	62.	3189.59	172.70	172.70 S	71.15 W	186.78	S 22 23 W	2
3260.	10 0	S 9	0 E	62.	3250.69	183.04	183.04 S	69.33 W	195.73	S 20 45 W	0
3321.	11 0	S 6	0 E	61.	3310.67	194.06	194.06 S	67.88 W	205.59	S 19 17 W	1
3411.	12 0	S 1	0 E	90.	3398.86	211.97	211.97 S	66.78 W	222.24	S 17 29 W	1
3504.	13 30	S 2	0 W	93.	3489.57	232.49	232.49 S	66.96 W	241.94	S 16 4 W	1
3568.	14 15	S 2	0 W	64.	3551.70	247.83	247.83 S	67.50 W	256.86	S 15 14 W	1
3641.	15 0	S 2	0 W	73.	3622.34	266.25	266.25 S	68.14 W	274.83	S 14 21 W	1
3702.	15 30	S 4	0 W	61.	3681.19	282.28	282.28 S	68.98 W	290.58	S 13 44 W	1
3764.	16 45	S 4	0 W	62.	3740.75	299.45	299.45 S	70.18 W	307.57	S 13 11 W	2
3824.	17 30	S 6	0 W	60.	3798.09	317.05	317.05 S	71.72 W	325.06	S 12 45 W	1
3905.	17 0	S 3	0 W	81.	3875.45	341.00	341.00 S	73.60 W	348.85	S 12 11 W	1
3936.	16 15	S 0	0 E	31.	3905.15	349.87	349.87 S	73.84 W	357.57	S 11 55 W	3
3967.	15 45	S 2	0 E	31.	3934.95	358.41	358.41 S	73.69 W	365.91	S 11 37 W	2
4018.	14 30	S 7	0 E	51.	3984.18	371.68	371.68 S	72.64 W	378.71	S 11 4 W	3
4080.	14 30	S 7	0 E	62.	4044.21	387.08	387.08 S	70.75 W	393.50	S 10 22 W	0
4171.	14 0	S 4	0 E	91.	4132.41	409.38	409.38 S	68.60 W	415.09	S 9 31 W	0
4232.	14 0	S 4	0 E	61.	4191.60	424.10	424.10 S	67.57 W	429.45	S 9 3 W	0
4293.	13 45	S 3	0 E	61.	4250.82	438.70	438.70 S	66.68 W	443.74	S 8 39 W	0
4387.	14 30	S 3	0 E	94.	4341.98	461.61	461.61 S	65.48 W	466.23	S 8 4 W	0
4479.	14 15	S 1	0 E	92.	4431.10	484.44	484.44 S	64.68 W	488.74	S 7 36 W	0
4571.	14 0	S 0	0 E	92.	4520.31	506.89	506.89 S	64.49 W	510.97	S 7 15 W	0
4663.	14 15	S 1	0 W	92.	4609.53	529.34	529.34 S	64.68 W	533.28	S 6 58 W	0

MEASURED DEPTH FEET	DRIFT ANGLE D M	DRIFT DIRECTION		COURSE LENGTH FEET	TRUE VERTICAL DEPTH FEET	VERTICAL SECTION FEET	R E C T A N G U L A R C O O R D I N A T E S		C L O S U R E		DOO SEV DG/
		D	M				FEET	FEET	DISTANCE FEET	DIRECTION D M	
4757.	14 30	S	5 0 E	94.	4700.59	552.66	552.66 S	63.87 W	556.34	S 6 36 W	1
4849.	15 0	S	0 0 E	92.	4789.56	576.06	576.06 S	62.85 W	579.48	S 6 14 W	1
4942.	15 15	S	4 0 W	93.	4879.34	600.31	600.31 S	63.69 W	603.68	S 6 3 W	1
5034.	15 30	S	4 0 W	92.	4968.04	624.65	624.65 S	65.40 W	628.06	S 5 59 W	0
5126.	15 30	S	3 0 W	92.	5056.70	649.19	649.19 S	66.90 W	652.62	S 5 53 W	0
5221.	15 45	S	4 0 W	95.	5148.19	674.73	674.73 S	68.46 W	678.19	S 5 48 W	0
5315.	15 30	S	5 0 W	94.	5238.71	699.97	699.97 S	70.45 W	703.50	S 5 45 W	0
5407.	15 15	S	7 0 W	92.	5327.42	724.22	724.22 S	73.00 W	727.89	S 5 45 W	0
5499.	15 15	S	8 0 W	92.	5416.18	748.22	748.22 S	76.15 W	752.08	S 5 49 W	0
5592.	15 0	S	10 0 W	93.	5505.96	772.18	772.18 S	79.95 W	776.31	S 5 55 W	0
5685.	15 0	S	10 0 W	93.	5595.79	795.89	795.89 S	84.13 W	800.32	S 6 2 W	0
5796.	15 15	S	12 0 W	111.	5702.94	824.32	824.32 S	89.66 W	829.18	S 6 12 W	0
5891.	15 0	S	11 0 W	95.	5794.65	848.61	848.61 S	94.60 W	853.87	S 6 22 W	0
5983.	15 0	S	12 0 W	92.	5883.52	871.94	871.94 S	99.35 W	877.58	S 6 30 W	0
6077.	14 45	S	13 0 W	94.	5974.37	895.50	895.50 S	104.57 W	901.59	S 6 40 W	0
6139.	14 45	S	13 0 W	62.	6034.33	910.88	910.88 S	108.12 W	917.28	S 6 46 W	0
6265.	15 0	S	15 0 W	126.	6156.10	942.27	942.27 S	115.94 W	949.37	S 7 1 W	0
6359.	15 0	S	17 0 W	94.	6246.90	965.65	965.65 S	122.65 W	973.41	S 7 14 W	0
6453.	15 0	S	22 0 W	94.	6337.70	988.59	988.59 S	130.77 W	997.20	S 7 32 W	1
6514.	15 0	S	22 0 W	61.	6396.62	1003.23	1003.23 S	136.69 W	1012.49	S 7 46 W	0
6577.	15 30	S	26 0 W	63.	6457.40	1018.36	1018.36 S	143.43 W	1028.41	S 8 1 W	1
6640.	15 30	S	26 0 W	63.	6518.11	1033.50	1033.50 S	150.81 W	1044.44	S 8 18 W	0
6726.	15 30	S	28 0 W	86.	6600.98	1053.97	1053.97 S	161.24 W	1066.24	S 8 42 W	0
6821.	15 0	S	27 0 W	95.	6692.64	1076.14	1076.14 S	172.78 W	1089.92	S 9 7 W	0
6915.	16 0	S	28 0 W	94.	6783.22	1098.42	1098.42 S	184.38 W	1113.79	S 9 32 W	1
6977.	16 0	S	28 0 W	62.	6842.81	1113.51	1113.51 S	192.40 W	1130.01	S 9 48 W	0
7070.	17 0	S	30 0 W	93.	6931.98	1136.61	1136.61 S	205.21 W	1154.99	S 10 14 W	1
7165.	16 30	S	32 0 W	95.	7022.95	1160.08	1160.08 S	219.31 W	1180.63	S 10 42 W	0
7259.	17 0	S	32 0 W	94.	7112.97	1183.05	1183.05 S	233.66 W	1205.91	S 11 10 W	0
7355.	18 30	S	31 0 W	96.	7204.40	1208.01	1208.01 S	248.95 W	1233.39	S 11 39 W	1

MEASURED DEPTH FEET	DRIFT ANGLE		DRIFT DIRECTION		COURSE LENGTH FEET	TRUE VERTICAL DEPTH FEET	VERTICAL SECTION FEET	RECTANGULAR COORDINATES		CLOSURE DISTANCE FEET	DIRECTION		NO. SERIAL NO.
	D	M	D	M				FEET	FEET		D	M	
7418.	19	0	S 30	0 W	63.	7264.05	1225.46	1225.46 S	259.23 W	1252.57	S 11	57 W	0
7480.	19	0	S 31	0 W	62.	7322.67	1242.85	1242.85 S	269.48 W	1271.73	S 12	14 W	0
7574.	20	0	S 31	0 W	94.	7411.28	1269.74	1269.74 S	285.64 W	1301.48	S 12	41 W	1
7668.	21	0	S 32	0 W	94.	7499.33	1297.81	1297.81 S	302.84 W	1332.68	S 13	8 W	1
7727.	21	30	S 30	0 W	59.	7554.32	1316.14	1316.14 S	313.85 W	1353.05	S 13	25 W	1
7790.	22	0	S 32	0 W	63.	7612.83	1336.15	1336.15 S	325.88 W	1375.32	S 13	42 W	1
7883.	22	0	S 33	0 W	93.	7699.06	1365.54	1365.54 S	344.59 W	1408.34	S 14	10 W	0
7982.	22	15	S 36	0 W	99.	7790.77	1396.26	1396.26 S	365.71 W	1443.36	S 14	41 W	1
8074.	22	45	S 36	0 W	92.	7875.77	1424.75	1424.75 S	386.41 W	1476.22	S 15	10 W	0
8167.	23	0	S 39	0 W	93.	7961.46	1453.43	1453.43 S	408.42 W	1509.72	S 15	42 W	1

STATION AT 8199 IS A PROJECTED STATION

8199.	23	0	S 39	0 W	32.	7990.91	1463.14	1463.14 S	416.28 W	1521.21	S 15	53 W	0
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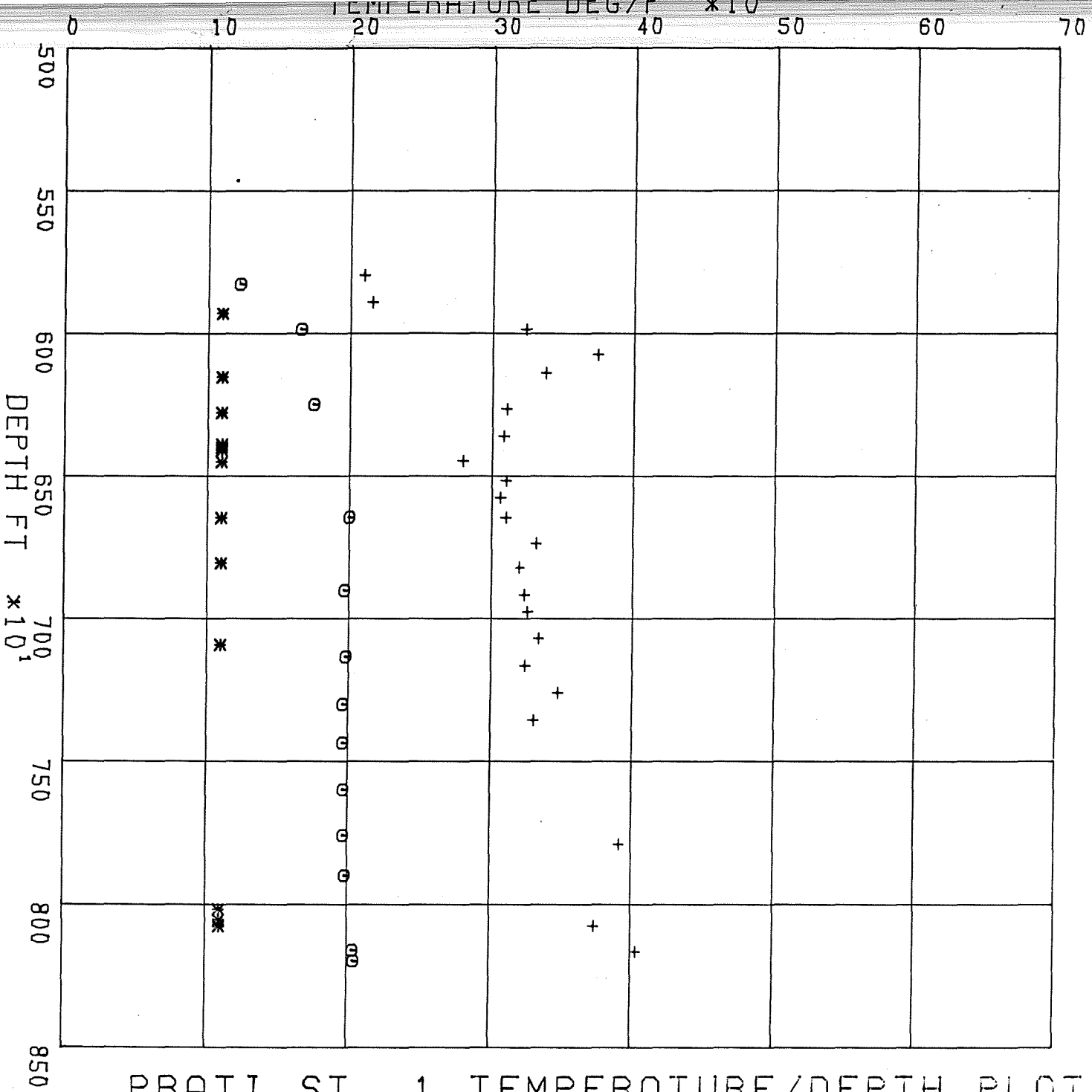
FINAL CLOSURE - DIRECTION: S 15 DEGS 53 MINS W
DISTANCE: 1521.21 FEET

FILE NUMBER: 113

GEOHERMAL RESOURCES, INC.
WELL: PRATI STATE 1
LOCATION: SANTA ROSA, CALIF.

S/S J.S.

CONVERSATIONAL SURVEY PROGRAM V02.11



PRATI ST. 1 TEMPERATURE/DEPTH PLOTS

- X - TEMPERATURE LOG
- + - BOTTOM HOLE THERMOMETER
- O - FLOW LINE TEMPERATURE OUT
- * - STEAM ENTRY FROM MUD LOG
- Y - STEAM ENTRY FROM ELECTRIC LOG
- Z - TOP OF HORNFELSIC GRAYWACKE