



Directional Survey Report

Well ID: Prati 38 Redrill

Field: Geysers

Calpine Corp

Well Name: Prati 38 Redrill

Sect: 35 Town: 12N Rng: 9W County: Sonoma State: CA

Survey Type	Meas. Depth	Inc.	Azimuth	TVD	Coordinates		Closure	Vertical Section	Dog Leg Severity
					N-S	E-W			
Well Bore: Original Well Bore				Plane of Vertical Section: 180					
MSS	192.0	0.30	154	192.0	-0.5	0.2	0.5	0.5	0.156
MSS	250.0	0.45	165	250.0	-0.8	0.3	0.9	0.8	0.286
MSS	403.0	0.45	178	403.0	-2.0	0.5	2.1	2.0	0.067
MSS	555.0	0.15	303	555.0	-2.5	0.4	2.5	2.5	0.362
MSS	710.0	0.45	276	710.0	-2.3	-0.4	2.3	2.3	0.209
MSS	863.0	0.30	183	863.0	-2.6	-1.0	2.8	2.6	0.362
MSS	1,020.0	0.45	323	1,020.0	-2.6	-1.4	2.9	2.6	0.450
MSS	1,173.0	0.45	321	1,173.0	-1.6	-2.1	2.7	1.6	0.010
MSS	1,329.0	0.45	321	1,329.0	-0.7	-2.9	3.0	0.7	0.000
MSS	1,485.0	1.00	326	1,485.0	0.9	-4.1	4.2	-0.9	0.355
MSS	1,640.0	1.00	327	1,639.9	3.2	-5.6	6.4	-3.2	0.011
MSS	1,794.0	1.00	270	1,793.9	4.3	-7.6	8.8	-4.3	0.620
MSS	1,952.0	1.30	275	1,951.9	4.5	-10.8	11.7	-4.5	0.200
MSS	2,107.0	1.45	268	2,106.8	4.6	-14.5	15.2	-4.6	0.145
MSS	2,264.0	1.30	246	2,263.8	3.8	-18.1	18.5	-3.8	0.347
MSS	2,426.0	2.00	246	2,425.7	1.9	-22.4	22.5	-1.9	0.432
MSS	2,574.0	2.45	244	2,573.6	-0.6	-27.6	27.6	0.6	0.309
MSS	2,729.0	3.15	247	2,728.4	-3.7	-34.5	34.7	3.7	0.461
MSS	2,882.0	3.30	252	2,881.2	-6.7	-42.5	43.1	6.7	0.208
MSS	3,036.0	4.00	263	3,034.9	-8.7	-52.1	52.8	8.7	0.641
MSS	3,161.0	4.15	256	3,159.6	-10.3	-60.8	61.7	10.3	0.415
MSS	3,226.0	4.15	240	3,224.4	-12.1	-65.1	66.2	12.1	1.776
MSS	3,258.0	4.15	225	3,256.3	-13.5	-66.9	68.3	13.5	3.383
MSS	3,289.0	4.00	210	3,287.2	-15.2	-68.3	70.0	15.2	3.462
MSS	3,321.0	4.45	197	3,319.1	-17.4	-69.2	71.3	17.4	3.297
MSS	3,351.0	4.45	188	3,349.1	-19.6	-69.7	72.4	19.6	2.325
MSS	3,383.0	4.45	174	3,381.0	-22.1	-69.7	73.2	22.1	3.386
MSS	3,414.0	5.00	160	3,411.9	-24.5	-69.2	73.4	24.5	4.108
MSS	3,445.0	5.30	151	3,442.7	-27.1	-68.0	73.2	27.1	2.776
MSS	3,522.0	5.45	134	3,519.4	-32.7	-63.6	71.6	32.7	2.070
MSS	3,616.0	7.00	132	3,612.8	-39.7	-56.2	68.8	39.7	1.665
MSS	3,710.0	7.30	132	3,706.1	-47.5	-47.5	67.2	47.5	0.319
MSS	3,773.0	8.00	128	3,768.6	-52.9	-41.1	66.9	52.9	1.395
MSS	3,834.0	8.15	129	3,828.9	-58.2	-34.4	67.6	58.2	0.337
MSS	3,907.0	8.45	127	3,901.2	-64.7	-26.0	69.7	64.7	0.570
MSS	4,036.0	8.00	129	4,028.9	-76.0	-11.5	76.9	76.0	0.413
MSS	4,160.0	7.45	132	4,151.7	-86.8	1.2	86.9	86.8	0.550
MSS	4,254.0	7.45	134	4,244.9	-95.2	10.1	95.7	95.2	0.276
MSS	4,382.0	7.45	135	4,371.9	-106.8	21.9	109.0	106.8	0.101
MSS	4,476.0	7.00	137	4,465.1	-115.3	30.1	119.2	115.3	0.548
MSS	4,587.0	7.45	139	4,575.2	-125.7	39.5	131.7	125.7	0.464
MSS	4,650.0	8.15	143	4,637.6	-132.3	44.8	139.7	132.3	1.405
MSS	4,757.0	8.30	145	4,743.5	-144.7	53.8	154.4	144.7	0.302
MSS	4,833.0	8.15	151	4,818.8	-153.9	59.6	165.0	153.9	1.146



Directional Survey Report

Calpine Corp

Well ID: Prati 38 Redrill

Well Name: Prati 38 Redrill

Field: Geysers

Sect: 35 Town: 12N Rng: 9W County: Sonoma State: CA

Survey Type	Meas. Depth	Inc.	Azimuth	TVD	Coordinates		Closure	Vertical Section	Dog Leg Severity
					N-S	E-W			
MSS	4,967.0	8.30	153	4,951.4	-170.8	68.6	184.1	170.8	0.241
MSS	5,091.0	9.30	156	5,073.9	-188.0	76.7	203.0	188.0	0.887
MSS	5,151.0	9.00	152	5,133.2	-196.5	80.9	212.5	196.5	1.172
MSS	5,217.0	7.45	150	5,198.5	-204.8	85.5	221.9	204.8	2.388
MSS	5,248.0	8.15	149	5,229.2	-208.4	87.6	226.1	208.4	2.300
MSS	5,328.0	8.45	144	5,308.4	-218.0	94.0	237.4	218.0	0.977
MSS	5,389.0	9.15	144	5,368.6	-225.6	99.5	246.5	225.6	1.148
MSS	5,452.0	10.00	144	5,430.8	-234.1	105.6	256.8	234.1	1.349
MSS	5,647.0	10.30	146	5,622.7	-262.2	125.3	290.6	262.2	0.237
MSS	5,805.0	10.15	151	5,778.2	-286.1	140.0	318.5	286.1	0.570
MSS	5,932.0	11.00	151	5,903.0	-306.5	151.3	341.8	306.5	0.669
MSS	6,048.0	11.00	153	6,016.9	-326.0	161.7	363.9	326.0	0.329
MSS	6,207.0	11.45	163	6,172.9	-354.6	173.2	394.7	354.6	1.255
MSS	6,363.0	12.45	168	6,325.5	-385.9	181.2	426.3	385.9	0.922
MSS	6,521.0	12.15	171	6,479.9	-419.0	187.3	458.9	419.0	0.447
MSS	6,646.0	13.15	176	6,601.9	-446.2	190.4	485.1	446.2	1.186
MSS	6,804.0	14.00	177	6,755.4	-483.2	192.6	520.2	483.2	0.558
MSS	6,962.0	14.00	194	6,908.8	-520.8	189.0	554.0	520.8	2.594
MSS	7,121.0	16.00	196	7,062.4	-560.5	178.3	588.2	560.5	1.299
MSS	7,248.0	18.00	201	7,183.8	-595.7	166.5	618.5	595.7	1.949
MSS	7,348.0	18.00	203	7,278.9	-624.3	154.9	643.3	624.3	0.618
MSS	7,411.0	17.45	200	7,339.0	-642.2	147.9	659.0	642.2	1.692
MSS	7,506.0	17.45	202	7,429.6	-668.8	137.6	682.8	668.8	0.631
MSS	7,631.0	19.15	205	7,548.3	-704.7	122.0	715.2	704.7	1.554
MSS	7,663.0	19.30	205	7,578.5	-714.3	117.5	723.9	714.3	0.469
MSS	7,770.0	20.30	207	7,679.1	-746.8	101.6	753.7	746.8	1.129
MSS	7,880.0	21.15	207	7,782.0	-781.5	83.9	786.0	781.5	0.773
MSS	8,004.0	22.00	208	7,897.3	-822.0	62.9	824.4	822.0	0.747
MSS	8,159.0	22.00	210	8,041.1	-872.7	34.7	873.4	872.7	0.483
MSS	8,317.0	20.00	212	8,188.6	-921.3	5.6	921.3	921.3	1.344
MSS	8,718.0	20.00	212	8,565.4	-1,037.6	-67.1	1,039.8	1,037.6	0.000
Well Bore: Side track 1					Plane of Vertical Section: 155				
** TiIn	5,311.0	8.64	145.01	5,290.6	-221.8	90.4		177.2	
MWD	5,465.0	11.36	179.81	5,442.3	-246.4	97.1	264.9	198.1	4.218
MWD	5,465.0	11.66	180.19	5,442.3	-246.4	97.1	264.9	198.1	0.000
MWD	5,497.0	11.90	183.29	5,473.7	-252.9	96.9	270.8	204.2	2.766
MWD	5,528.0	12.21	187.22	5,504.0	-259.3	96.3	276.6	210.5	2.830
MWD	5,560.0	12.59	188.71	5,535.2	-266.1	95.4	282.7	217.2	1.552
MWD	5,592.0	13.07	191.63	5,566.4	-273.1	94.1	288.9	224.2	2.521
MWD	5,624.0	13.21	193.46	5,597.6	-280.2	92.5	295.1	231.4	1.372
MWD	5,656.0	13.56	196.42	5,628.7	-287.4	90.6	301.3	238.8	2.404
MWD	5,688.0	13.79	198.46	5,659.8	-294.6	88.3	307.5	246.3	1.670
MWD	5,719.0	13.99	198.87	5,689.9	-301.6	86.0	313.6	253.8	0.719
MWD	5,750.0	14.44	199.2	5,720.0	-308.8	83.5	319.9	261.4	1.475
MWD	5,782.0	14.78	200.39	5,750.9	-316.4	80.7	326.6	269.5	1.417



Directional Survey Report

Well ID: Prati 38 Redrill

Field: Geysers

Calpine Corp

Well Name: Prati 38 Redrill

Sect: 35 Town: 12N Rng: 9W County: Sonoma State: CA

Survey Type	Meas. Depth	Inc.	Azimuth	TVD	Coordinates		Closure	Vertical Section	Dog Leg Severity
					N-S	E-W			
MWD	5,814.0	15.14	201.42	5,781.9	-324.1	77.8	333.3	277.7	1.399
MWD	5,846.0	15.30	201.44	5,812.7	-332.0	74.7	340.3	286.1	0.500
MWD	5,916.0	15.50	202	5,880.2	-349.2	67.8	355.8	304.7	0.356
MSS	6,010.0	16.30	195.5	5,970.6	-373.6	59.6	378.3	330.4	2.075
MSS	6,121.0	17.20	201.3	6,076.9	-403.9	49.5	406.9	362.4	1.709
MSS	6,378.0	16.90	196.5	6,322.6	-475.1	25.1	475.8	437.6	0.560
MSS	6,728.0	18.20	201.2	6,656.4	-574.9	-9.1	574.9	543.1	0.549
MSS	7,047.0	19.70	193.3	6,958.1	-673.7	-39.5	674.8	646.3	0.931
MSS	7,318.0	20.30	194.6	7,212.8	-763.6	-61.9	766.1	738.4	0.276
MSS	7,682.0	21.30	199.1	7,553.1	-887.2	-99.4	892.7	867.4	0.518
MSS	8,221.0	22.70	198.9	8,052.8	-1,078.1	-165.2	1,090.7	1,069.3	0.260
MSS	8,632.0	24.10	201.9	8,430.0	-1,231.0	-222.2	1,250.9	1,232.4	0.447
MSS	9,332.0	28.20	202.6	9,058.2	-1,516.4	-339.1	1,553.9	1,540.7	0.587
MSS	9,942.0	28.20	202	9,595.8	-1,782.7	-449.5	1,838.5	1,828.6	0.183

Calculations using Minimum Curvature Method