



WELL INFORMATION					
MWD Run Number	100				
Date run completed	18-Apr-15				
Rig Bit Number	200				
Bit Size (in)	8.750				
Tool Nominal OD (in)	6.890				
Log Start Depth (MD, ft)	668.00				
Log End Depth (MD, ft)	6,309.00				
Drill or Wipe	Drill				
Drill/Wipe Start Date and Time	16-Apr-15 21:00				
Drill/Wipe End Date and Time	18-Apr-15 01:34				
Min Inc (deg) @ Depth (MD, ft)	0.22 @ 1,487.00				
Max Inc (deg) @ Depth (MD, ft)	87.83 @ 6,309.00				
Bit TFA(in2) / Bit Type	1.24 / PDC				
Flow Rate (gpm)	595.08				
Max AV (fpm) / CV (fpm) @ MWD	N/A / N/A				
Fluid Type	Native/Spud Mud				
Density (ppg) / Viscosity (spqt)	8.80 / 33.00				
Filtrate CL (ppm)	1,500.00				
pH / Fluid Loss (mptm)	9.70 / N/A				
PV (cP) / YP (lhf2)	9 / 7.00				
% Solids / % Sand	3.2 / 0.3				
% Oil / Oil:Water Ratio	N/A / N/A				
Rm @ Measured Temp (degF)	N/A @ N/A				
Rmf @ Measured Temp (degF)	N/A @ N/A				
Rmc @ Measured Temp (degF)	N/A @ N/A				
Max Tool Temp (degF) @ Depth (MD, ft)	458.45 / 6,309.00				

Max Tool Temp (degF) / Source	158.47 / PCM				
Rm @ Max Tool Temp (degF)	N/A @ 158.47				
Lead MWD Engineer	Robert Barnes				
Customer Representative	Jeremy Stolz				

SENSOR INFORMATION

Downhole Processor Information

Tool Type	PCM				
Software Version	5.93				
Sub Serial Number	11404298				
Insert Serial Number	10997267				
Date and Time Initialized	16-Apr-15 07:19				
Date and Time Read	18-Apr-15 06:17				
ECMB SW Version	N/A				

Directional Sensor Information

Tool Type	PCDC				
Distance From Bit (ft)	56.00				
Software Version	6.21				
Sub Serial Number	11404298				
Sonde Serial Number	11638501				
Sensor ID Number	N/A				
Toolface Offset (deg)	195.00				

Gamma Ray Sensor Information

Tool Type	PCG				
Distance From Bit (ft)	49.67				
Recorded Sample Period (sec)	10				
Software Version	8.15				
Sub Serial Number	11404298				
Insert/Sonde Serial Number	11681051				

REMARKS

1. All depths are calibrated to driller's pipe tally and are true vertical depth from the Drill Floor.
2. No depth corrections have been made for pipe stretch or compression.
3. Critical annular velocities are calculated using the "Power Law" model for water based fluids and the "Brigham Plastic" model for oil and synthetic based fluids.
4. All data presented is recorded data unless otherwise specified.
5. The following smoothing parameters have been applied to the data:
 - 1:600 Log
PGRC (Gamma CG) and ROPA (Average Rate of Penetration)
Interval Resolution: 1.0 ft
Interval Distance: 3.0 ft
 - 1:240 Log
PGRC (Gamma CG):
Interval Resolution: 0.5 ft
Interval Distance: 0.6 ft
 - ROPA (Average Rate Of Penetration):
Interval Resolution: 0.5 ft

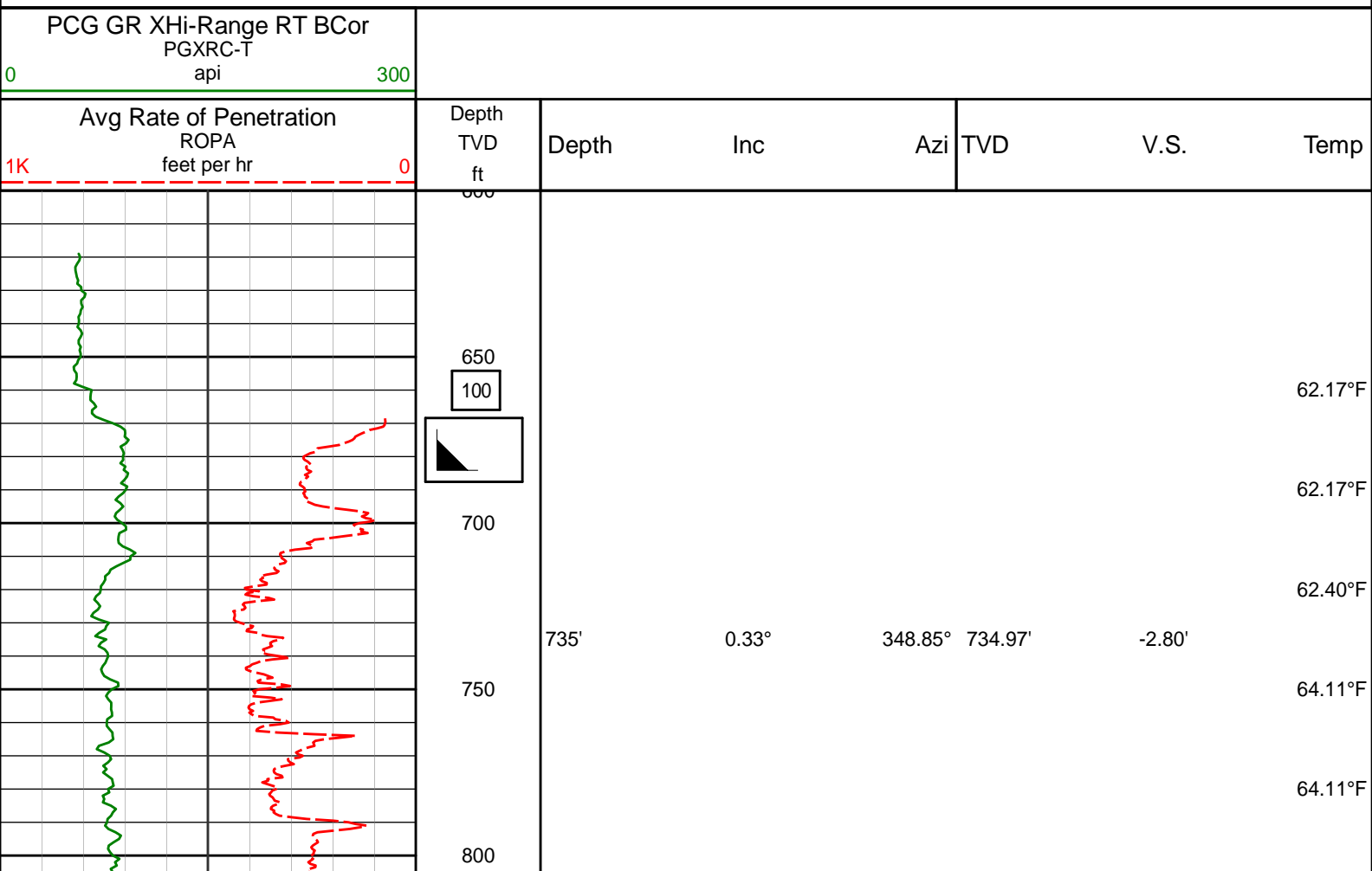
Interval Resolution: 0.5 ft
Interval Distance: 1.2 ft

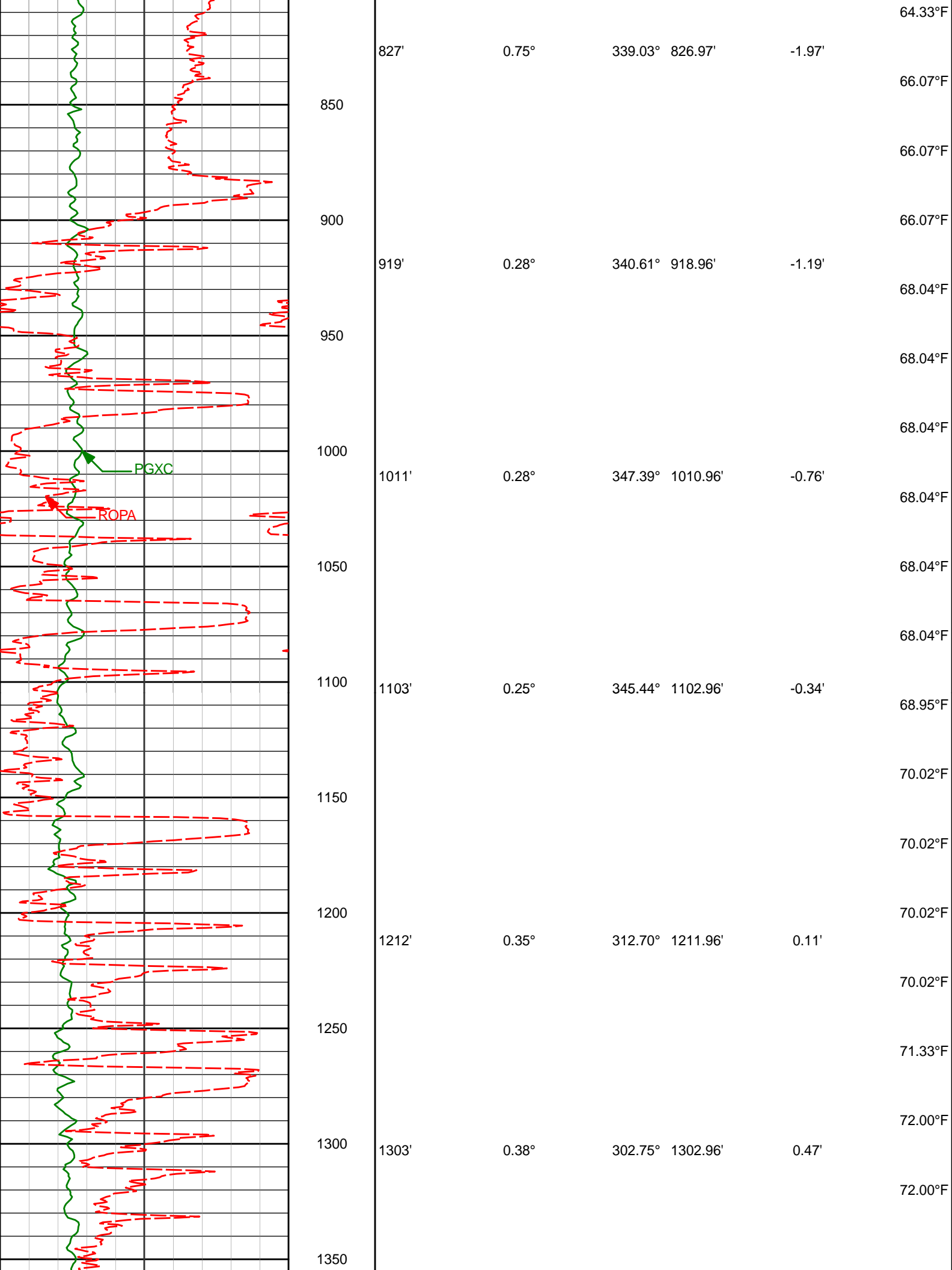
6. Insite Version V8.1.10

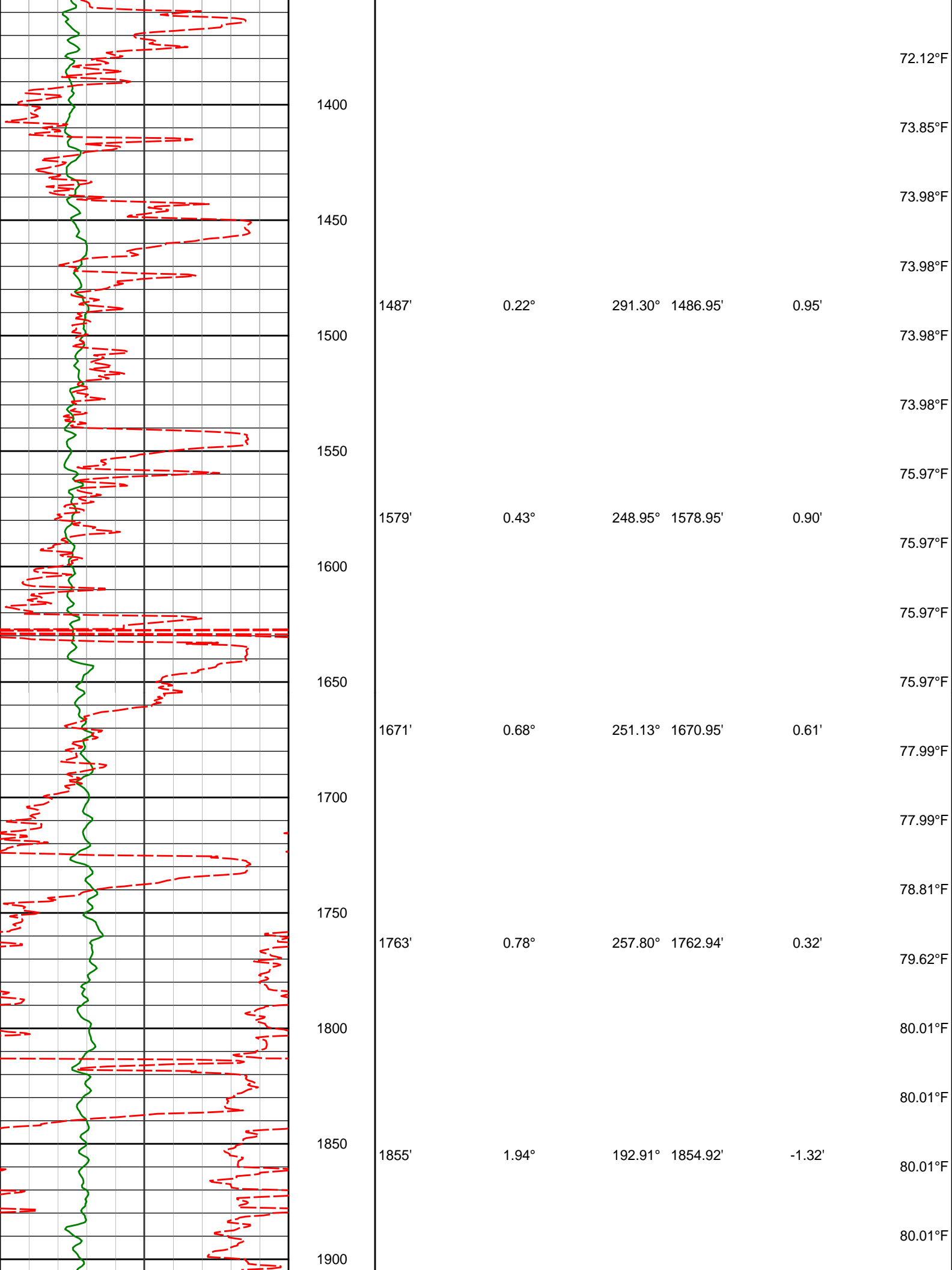
WARRANTY

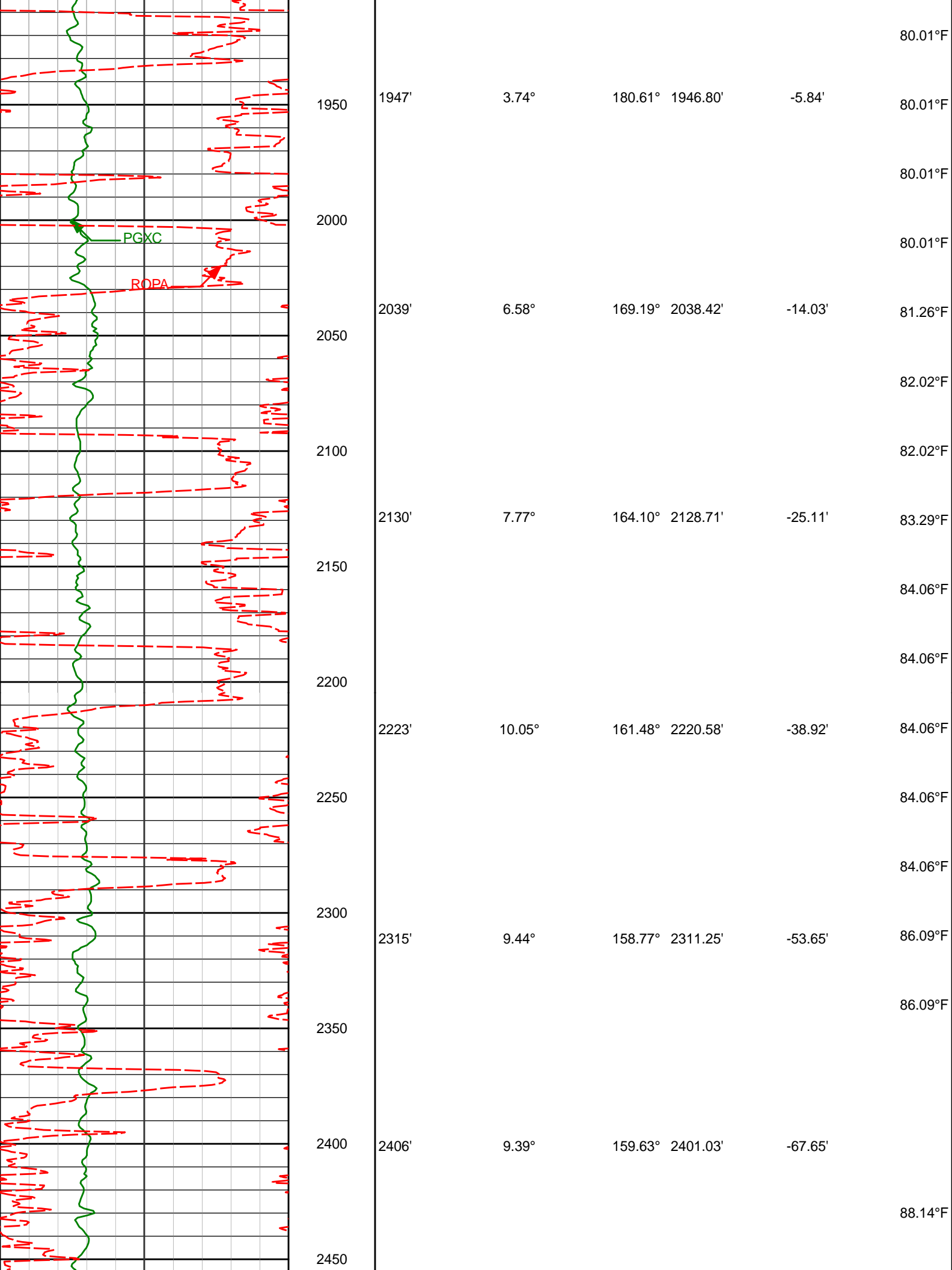
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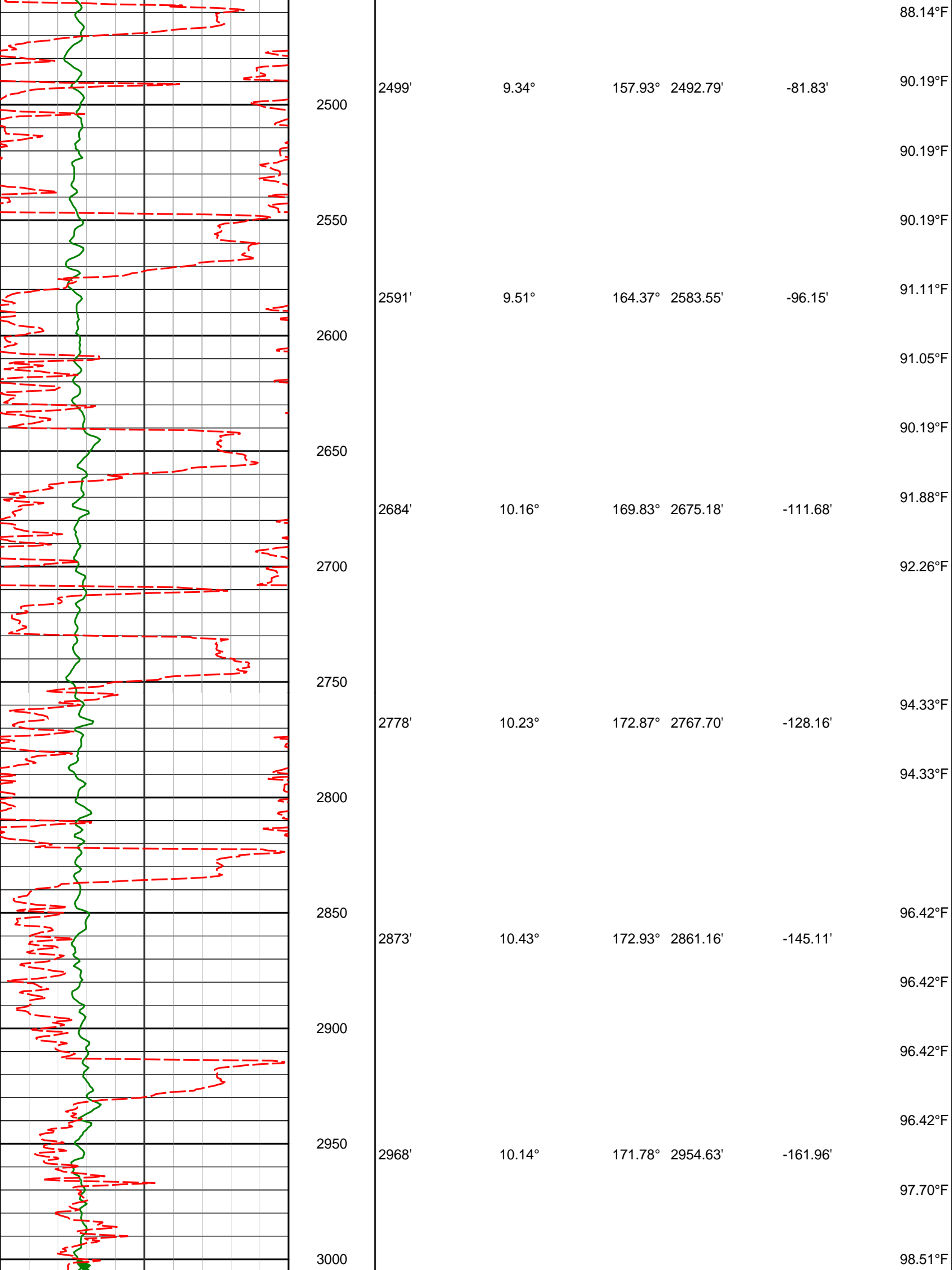
TVD Detail 1:600 Scale

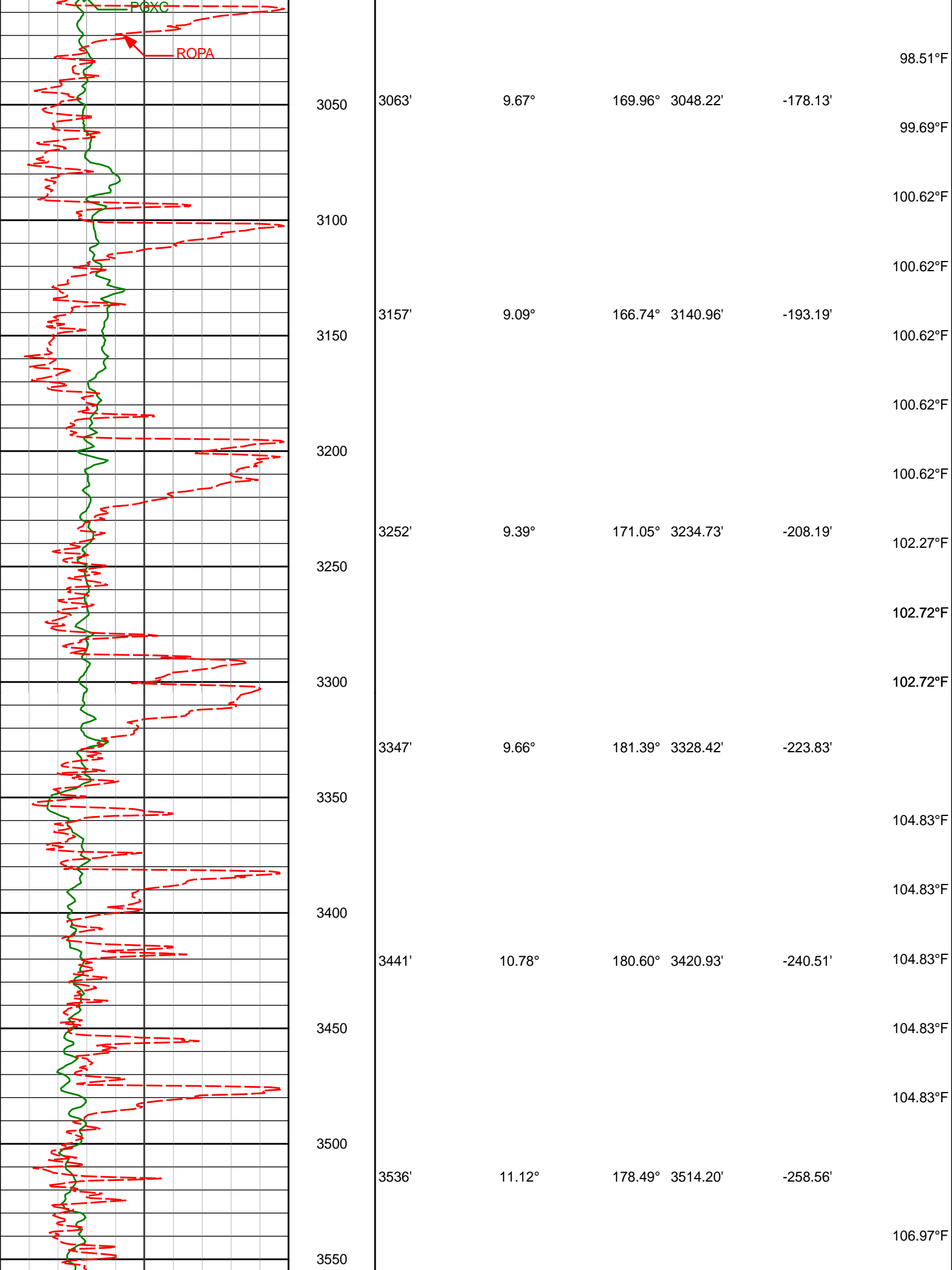


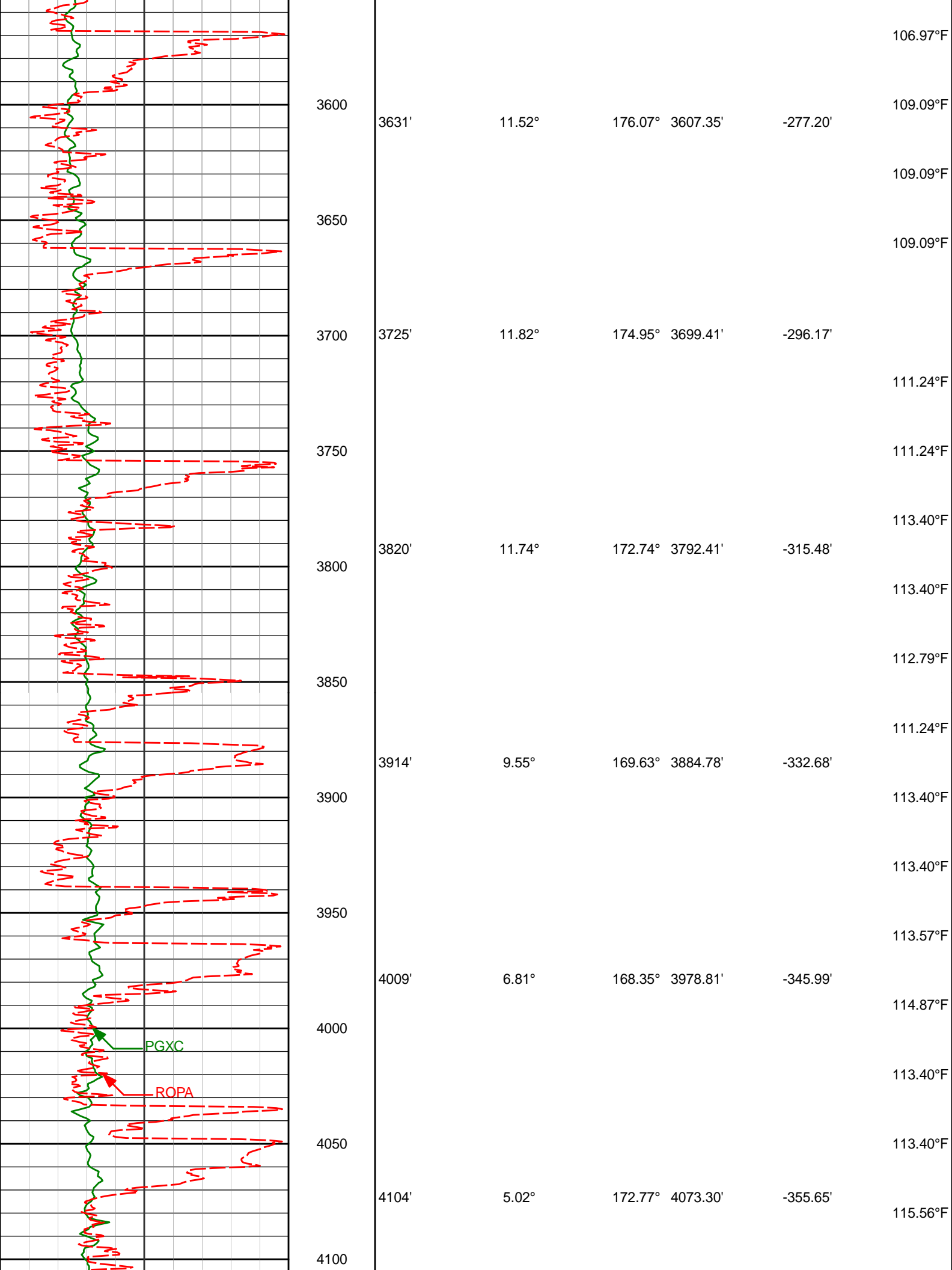


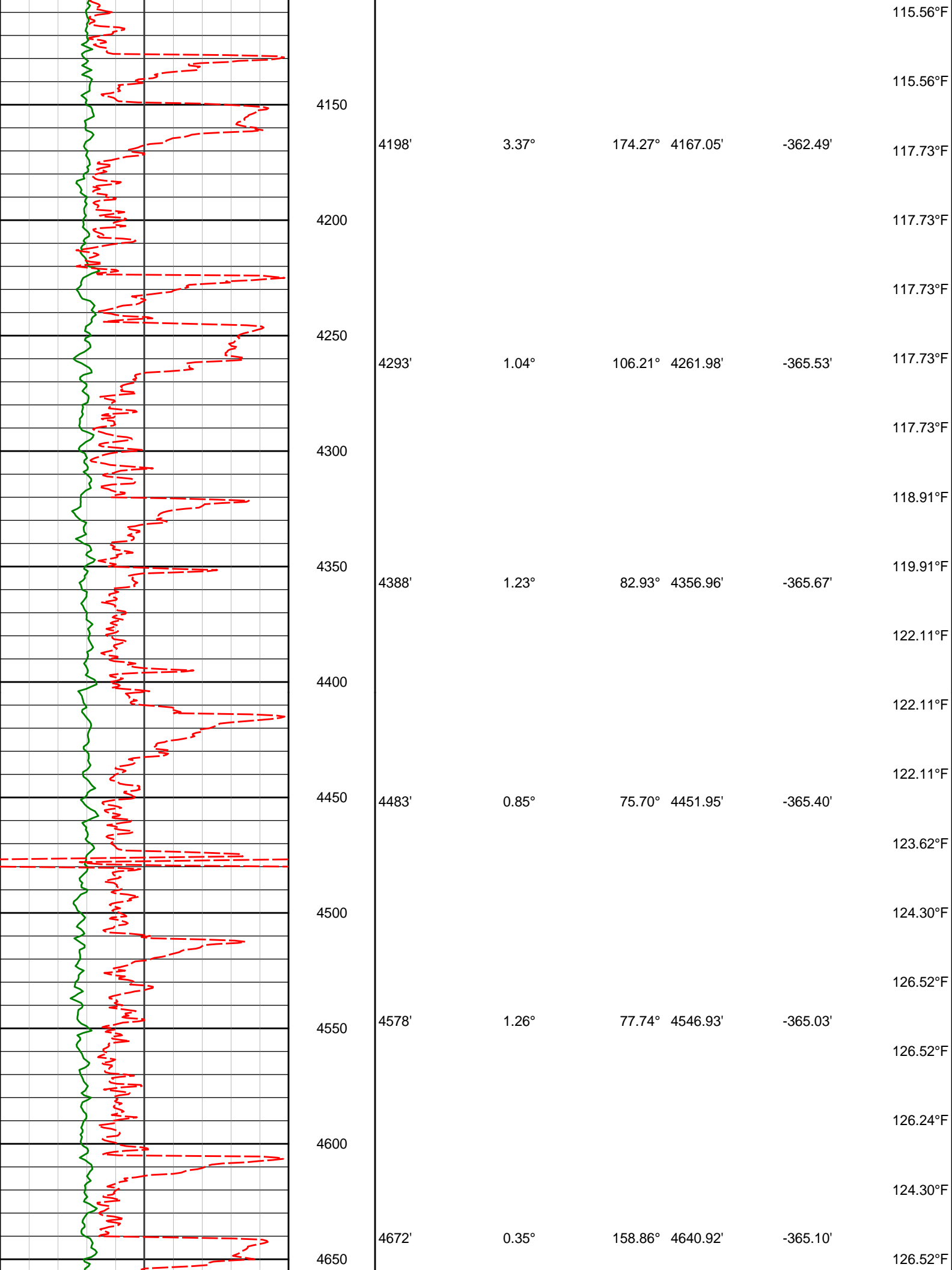


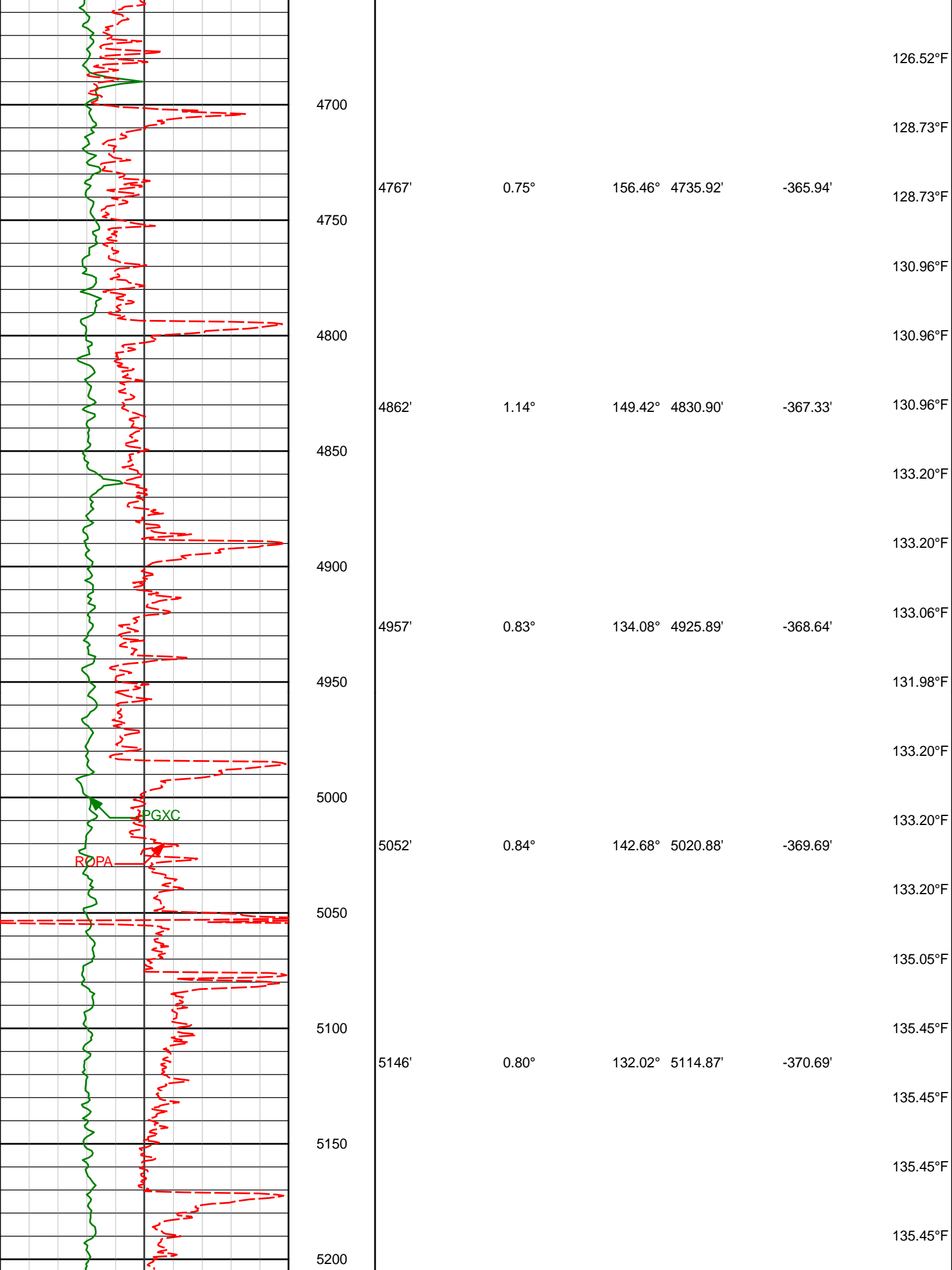


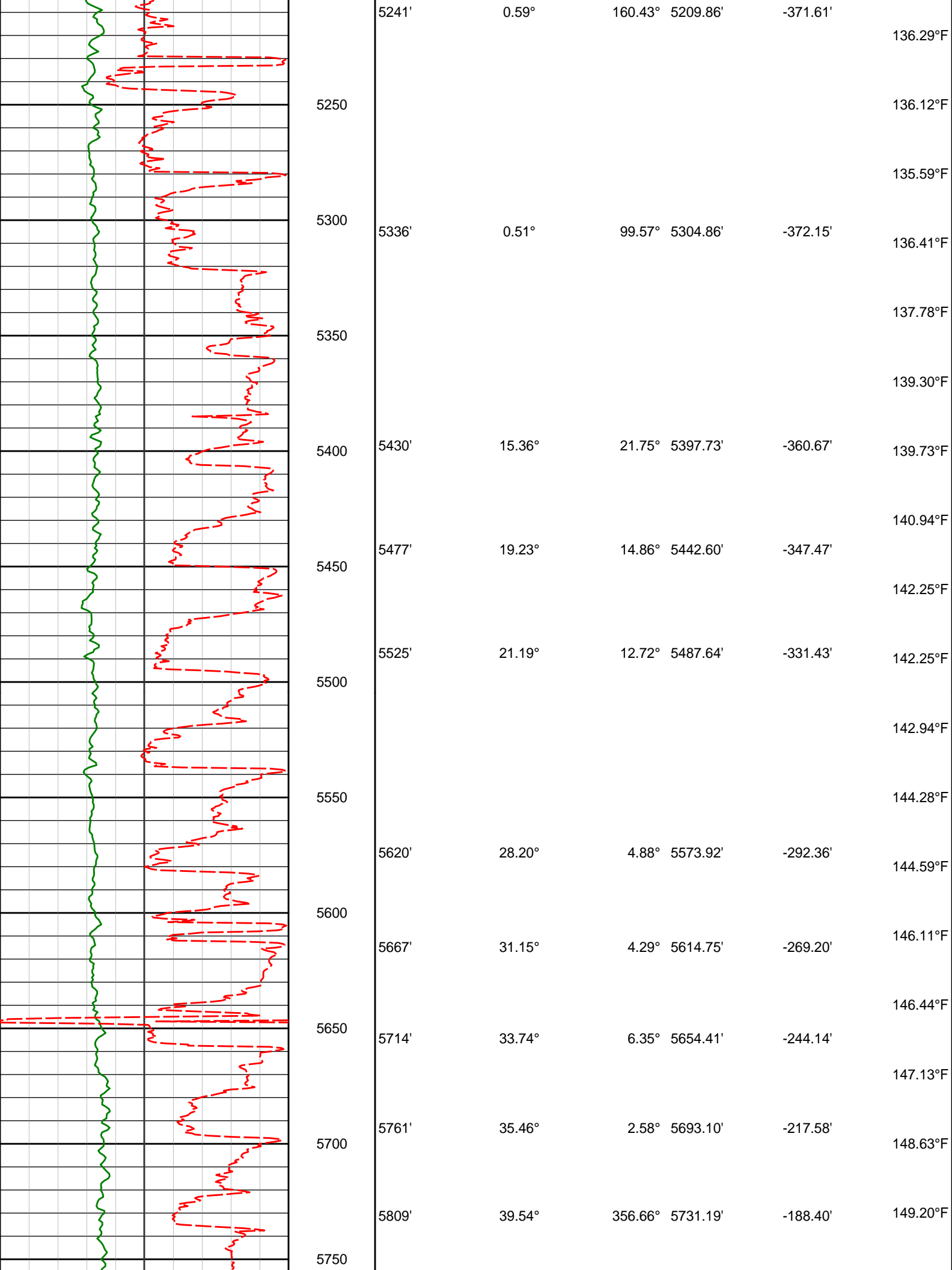


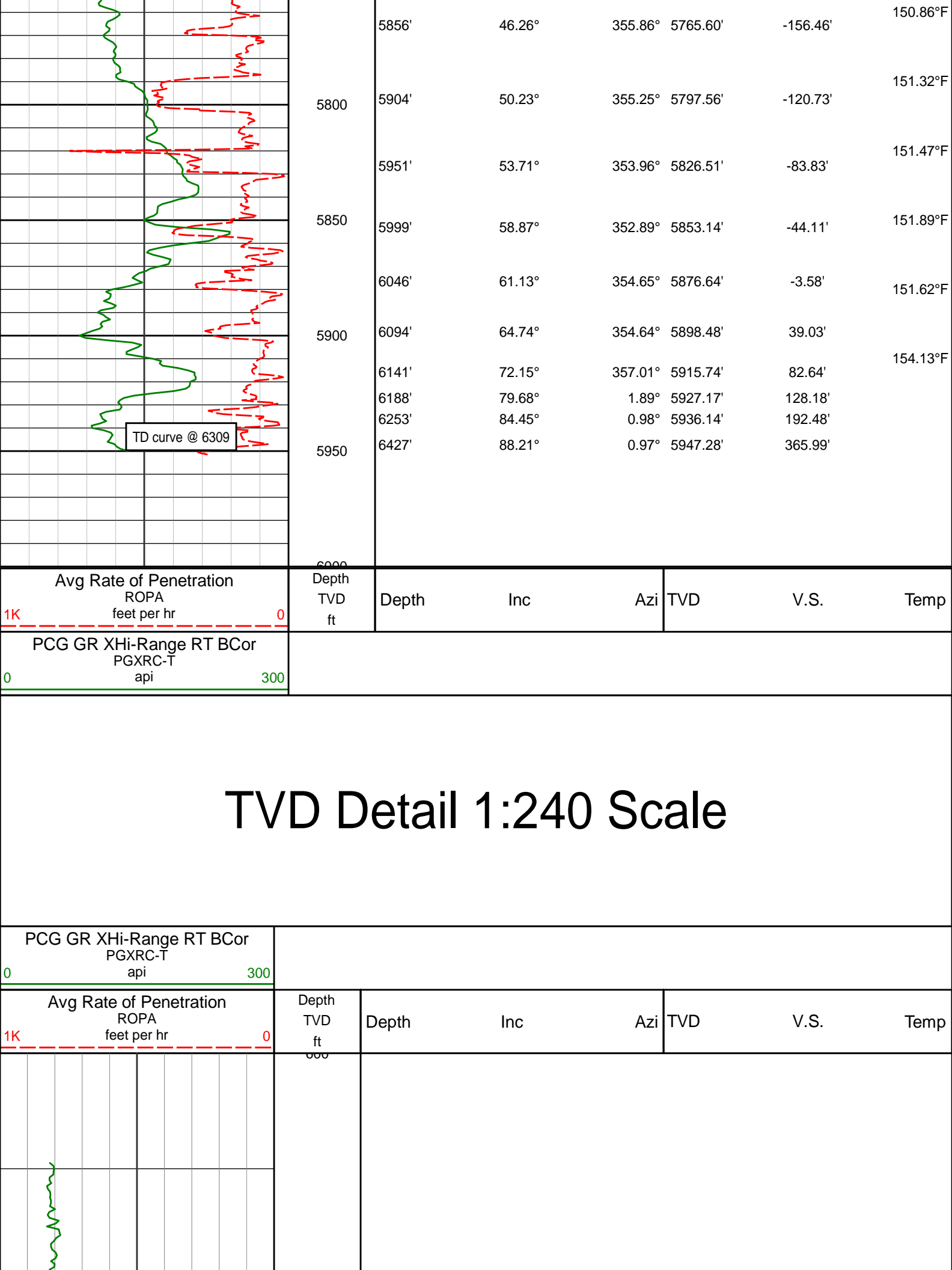


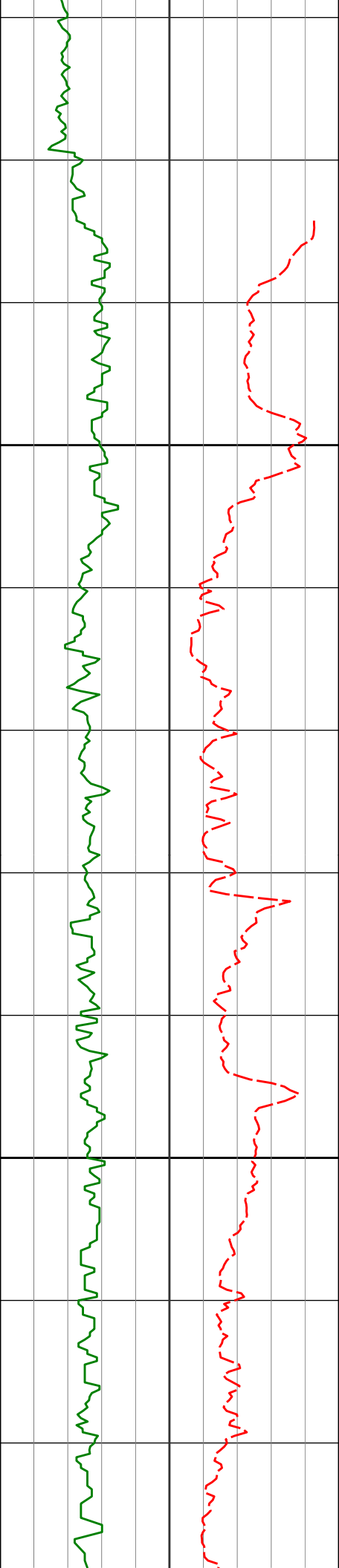












Run 100



700

800

735'

827'

0.33°

0.75°

348.85° 734.97'

339.03° 826.97'

-2.80'

-1.97'

62.17°F

62.17°F

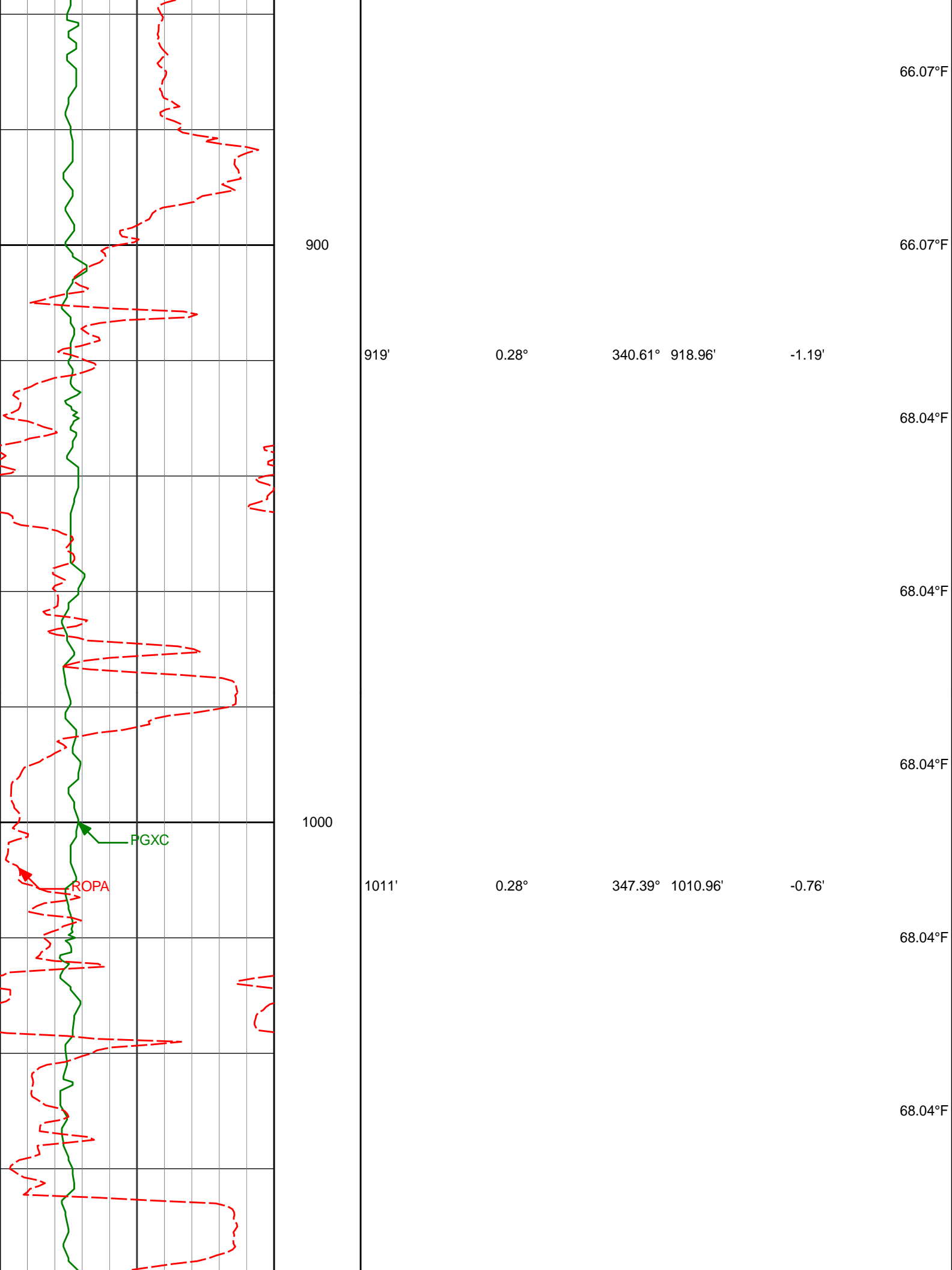
62.40°F

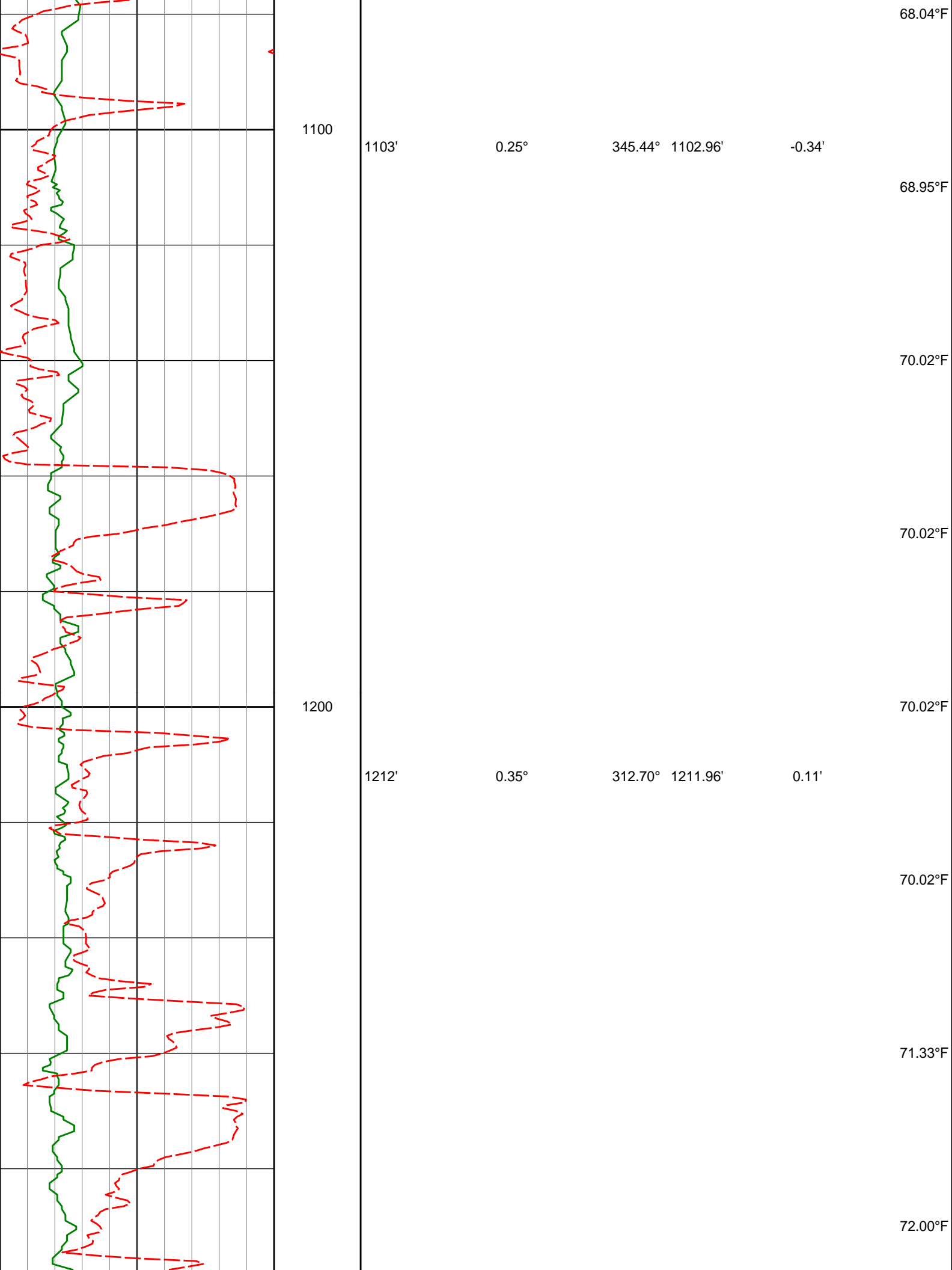
64.11°F

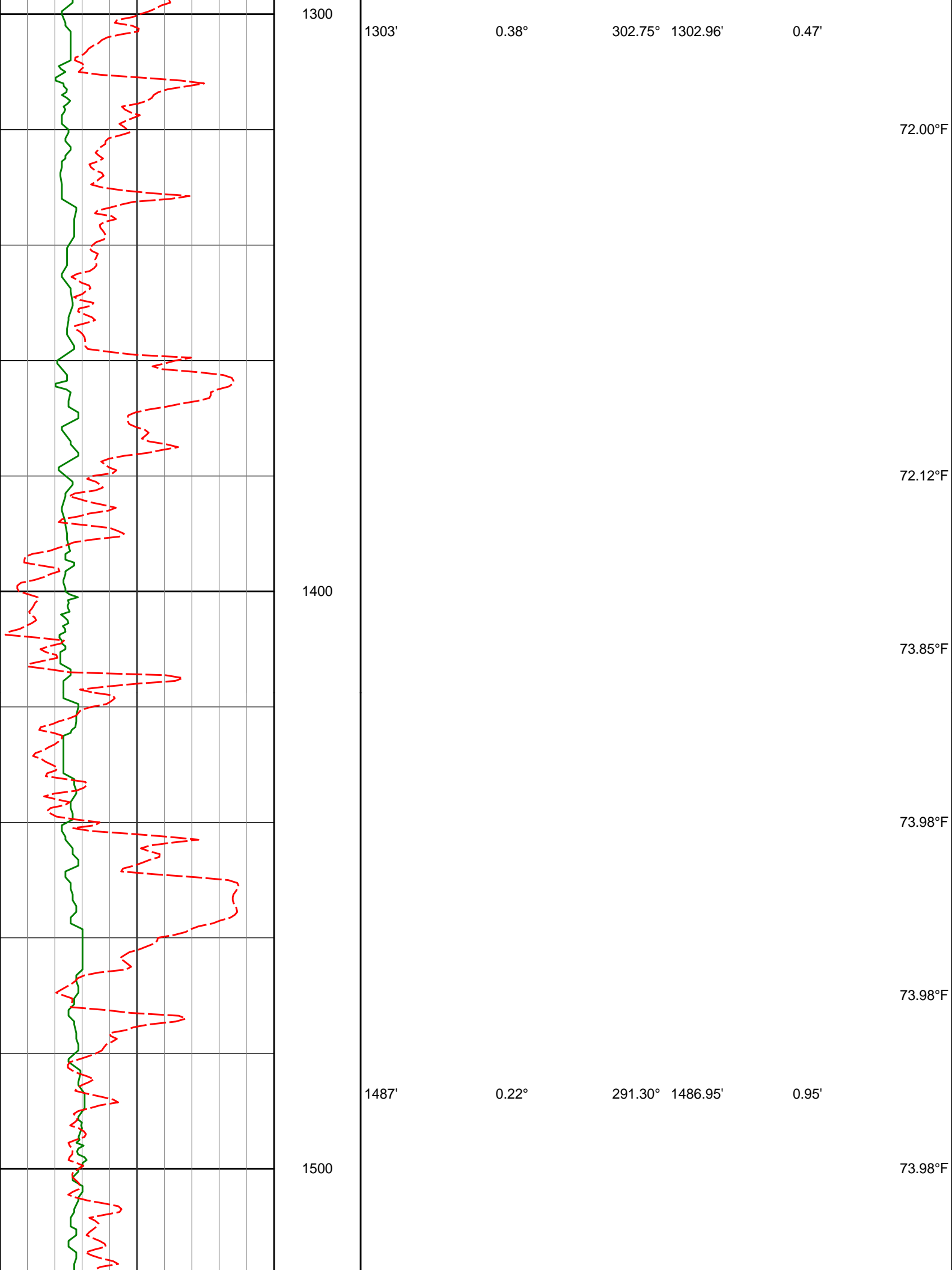
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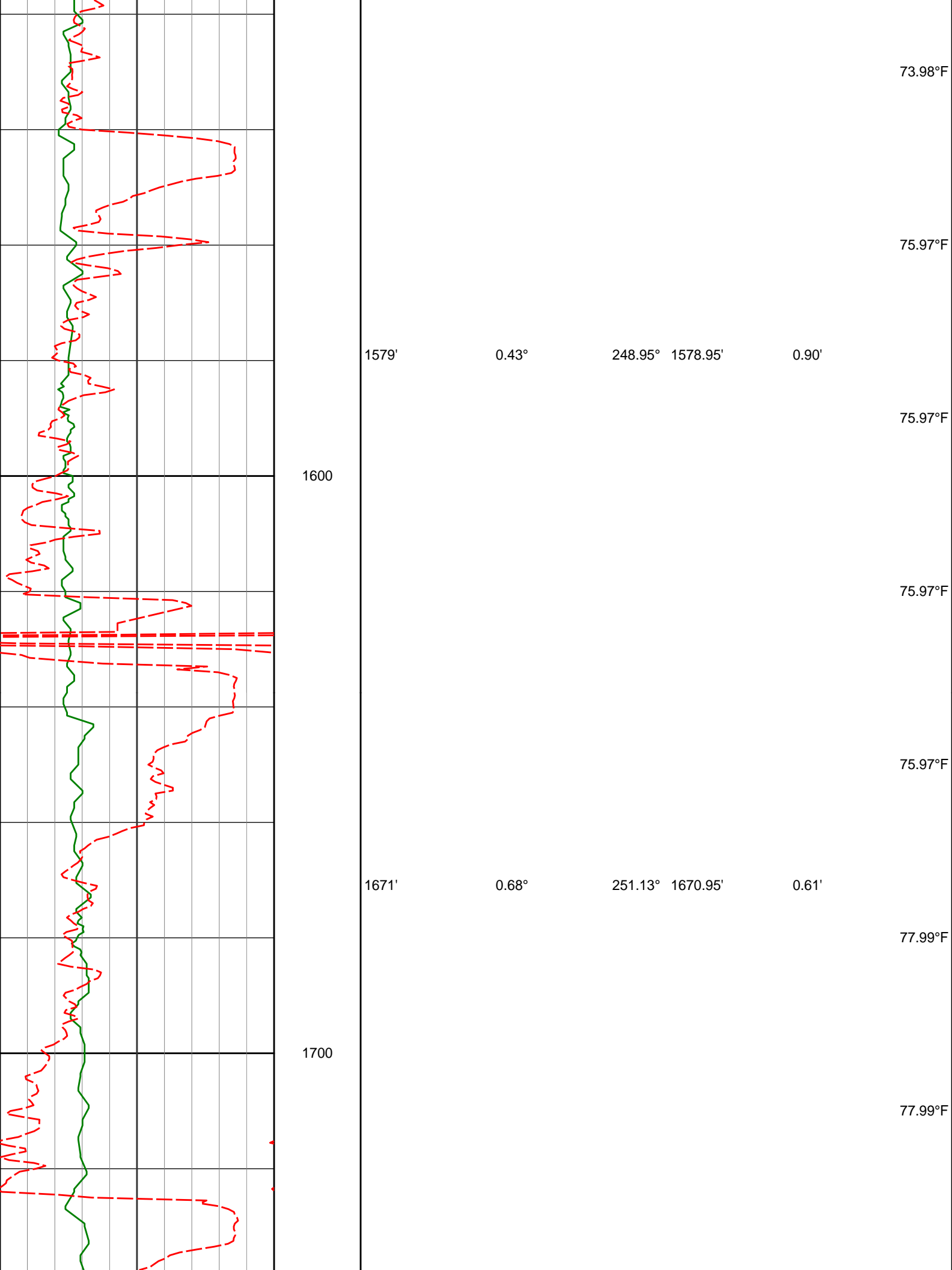
64.33°F

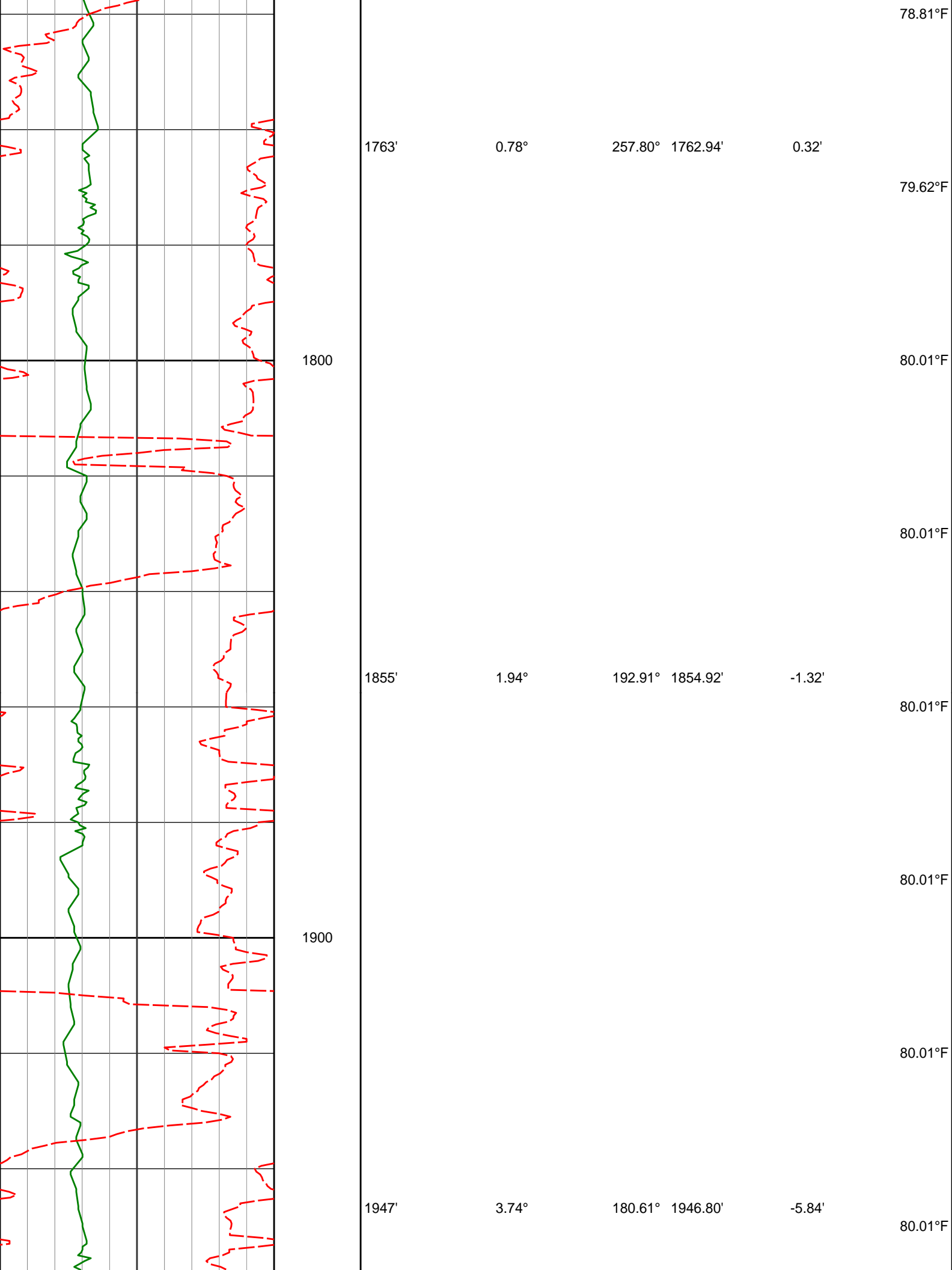
66.07°F

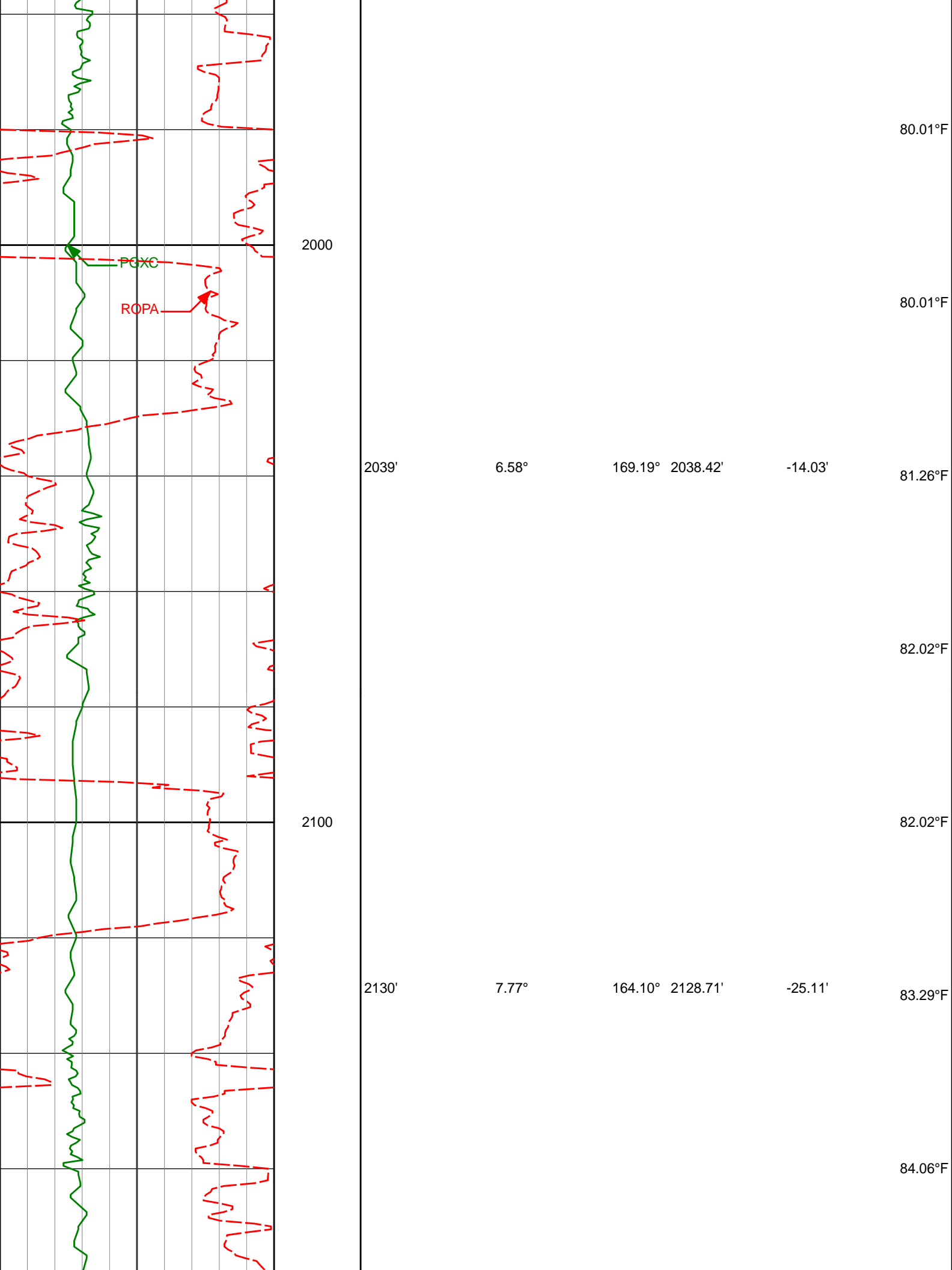


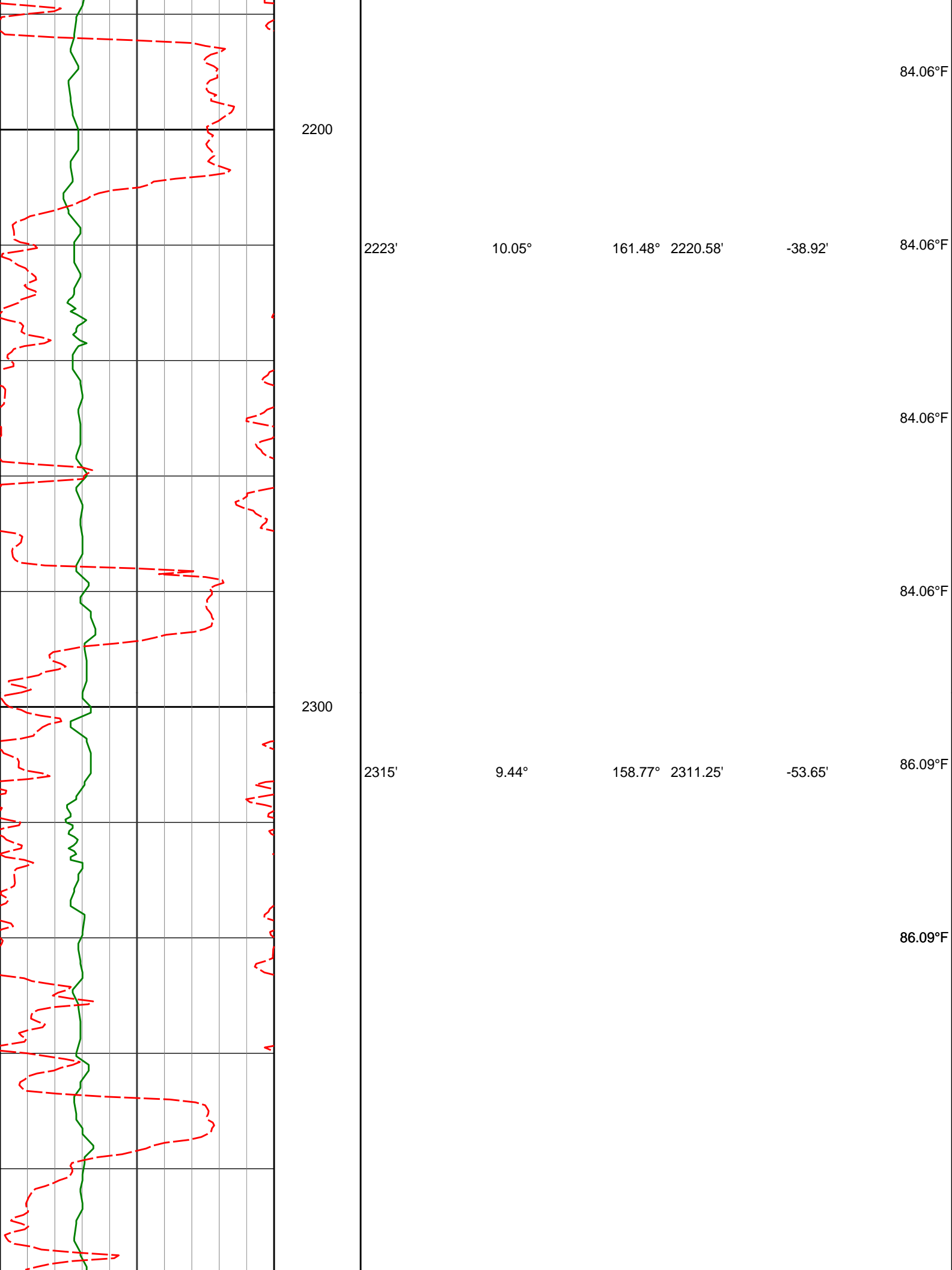


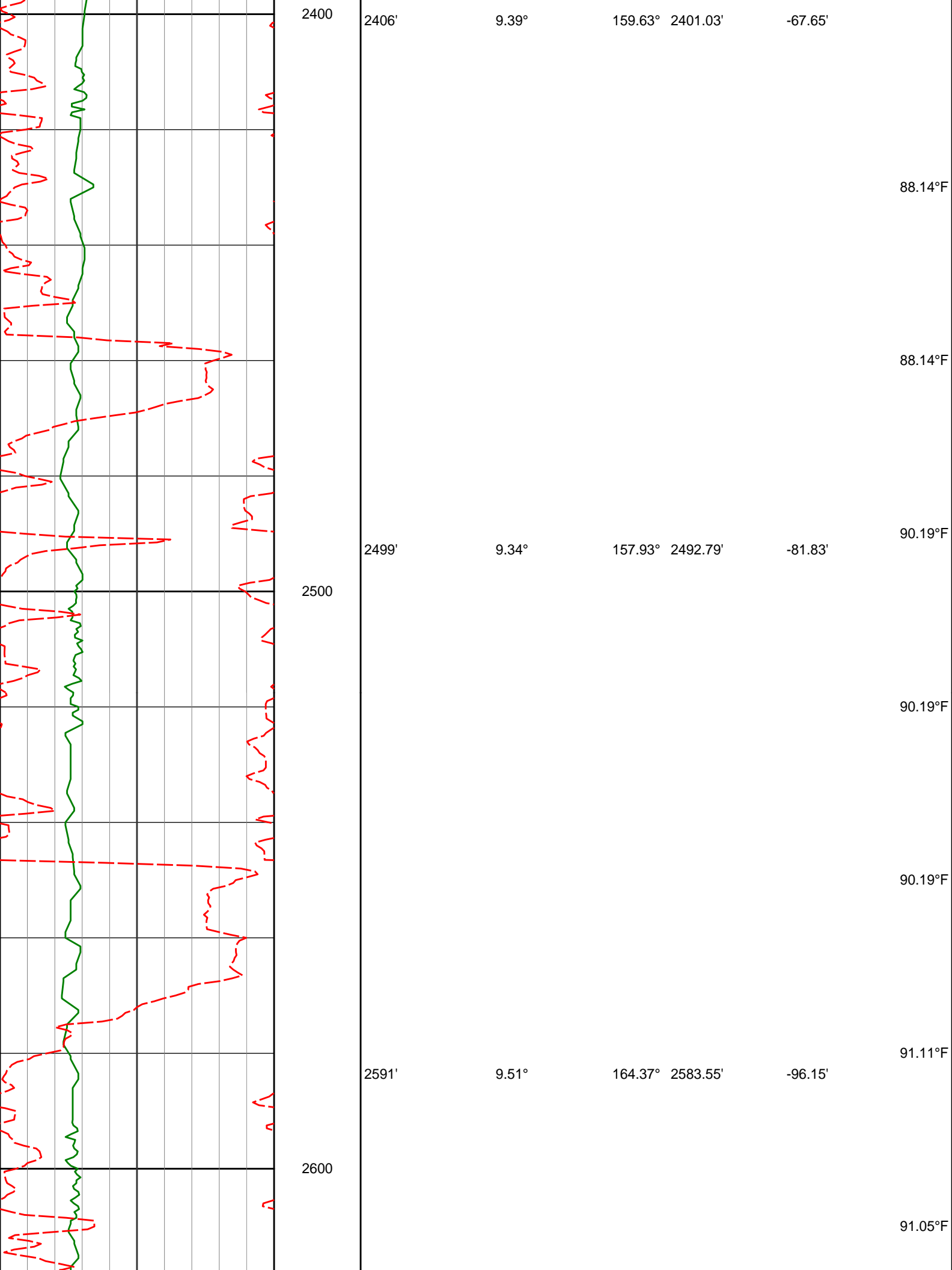


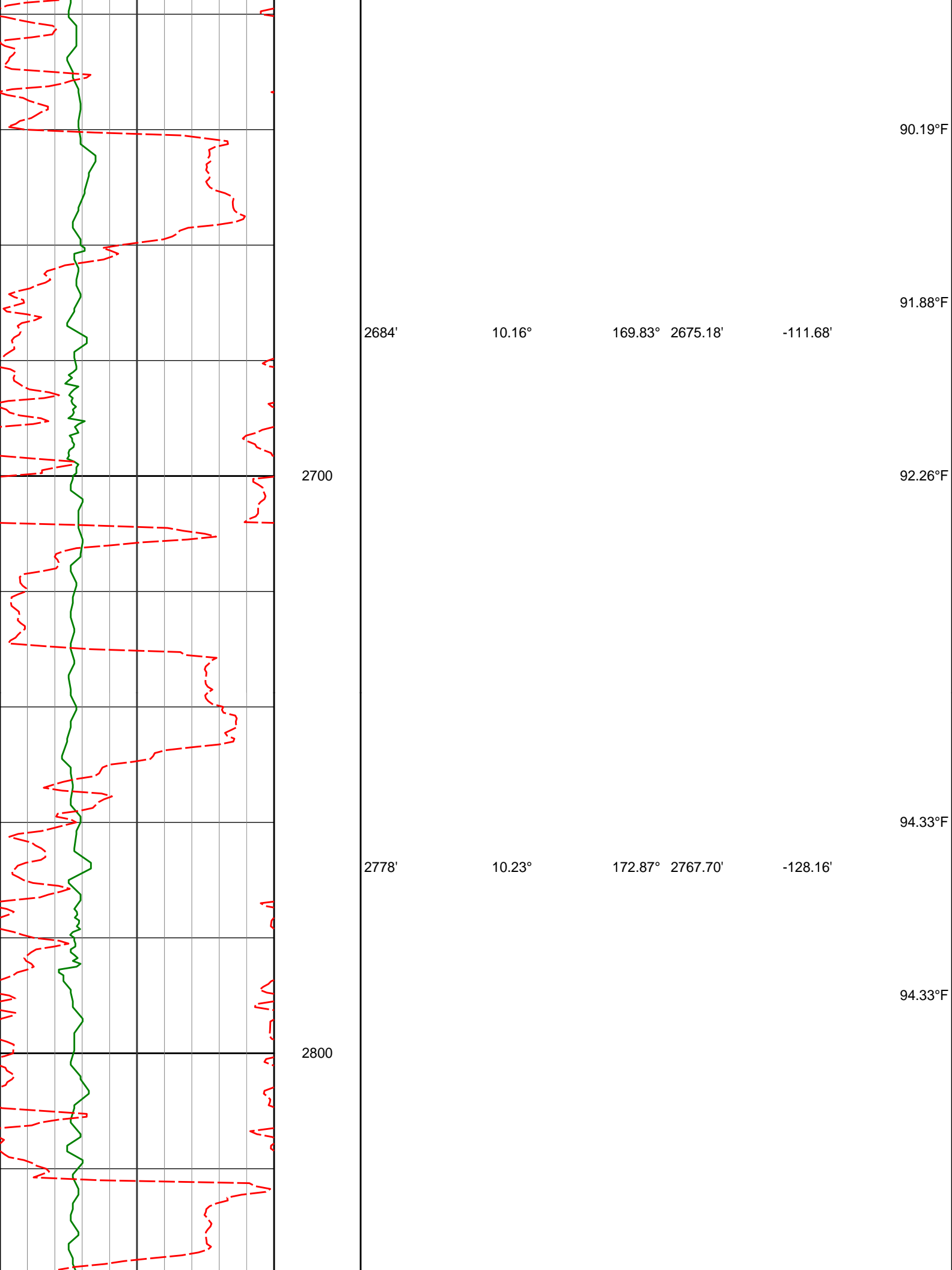


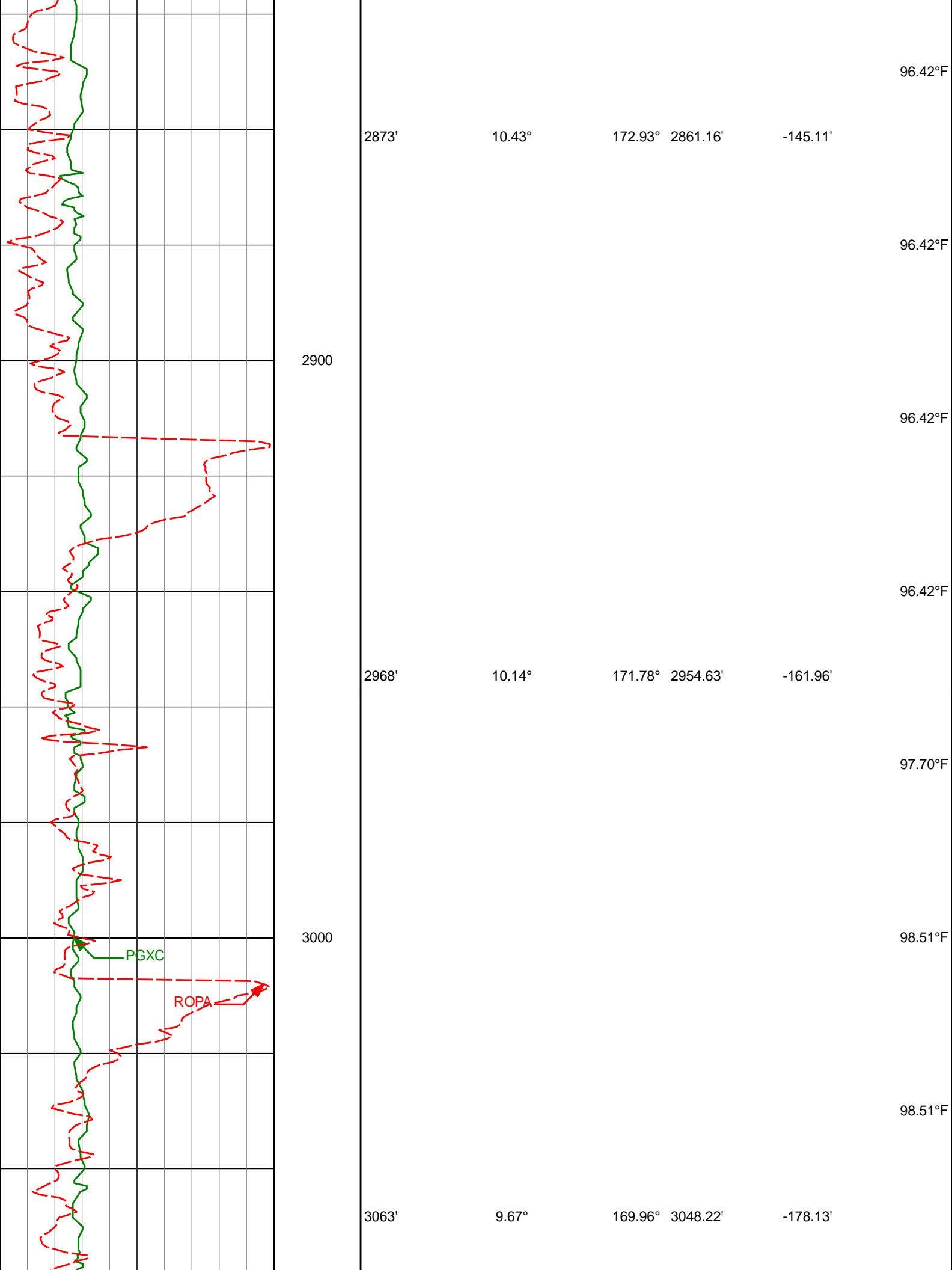


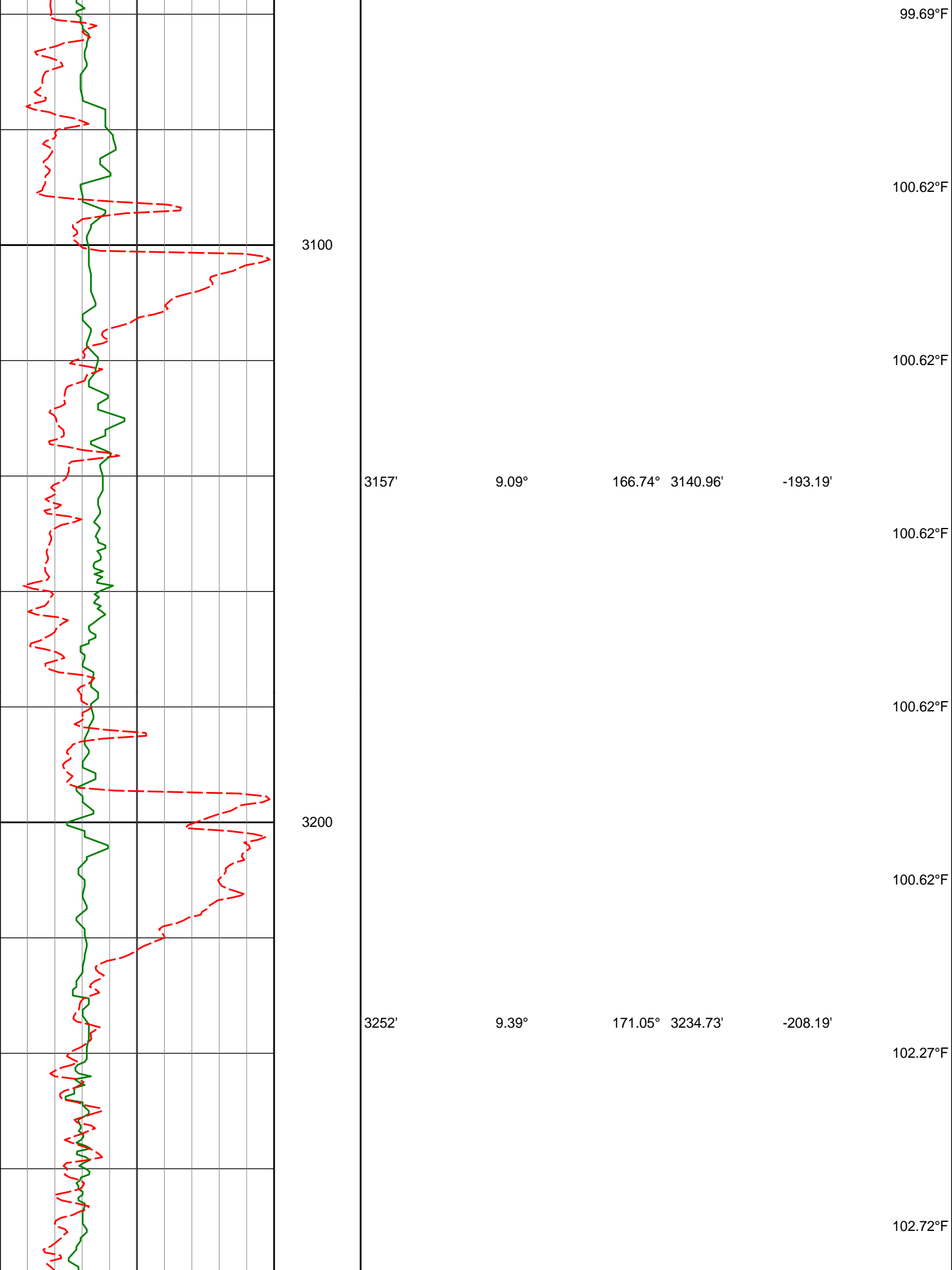


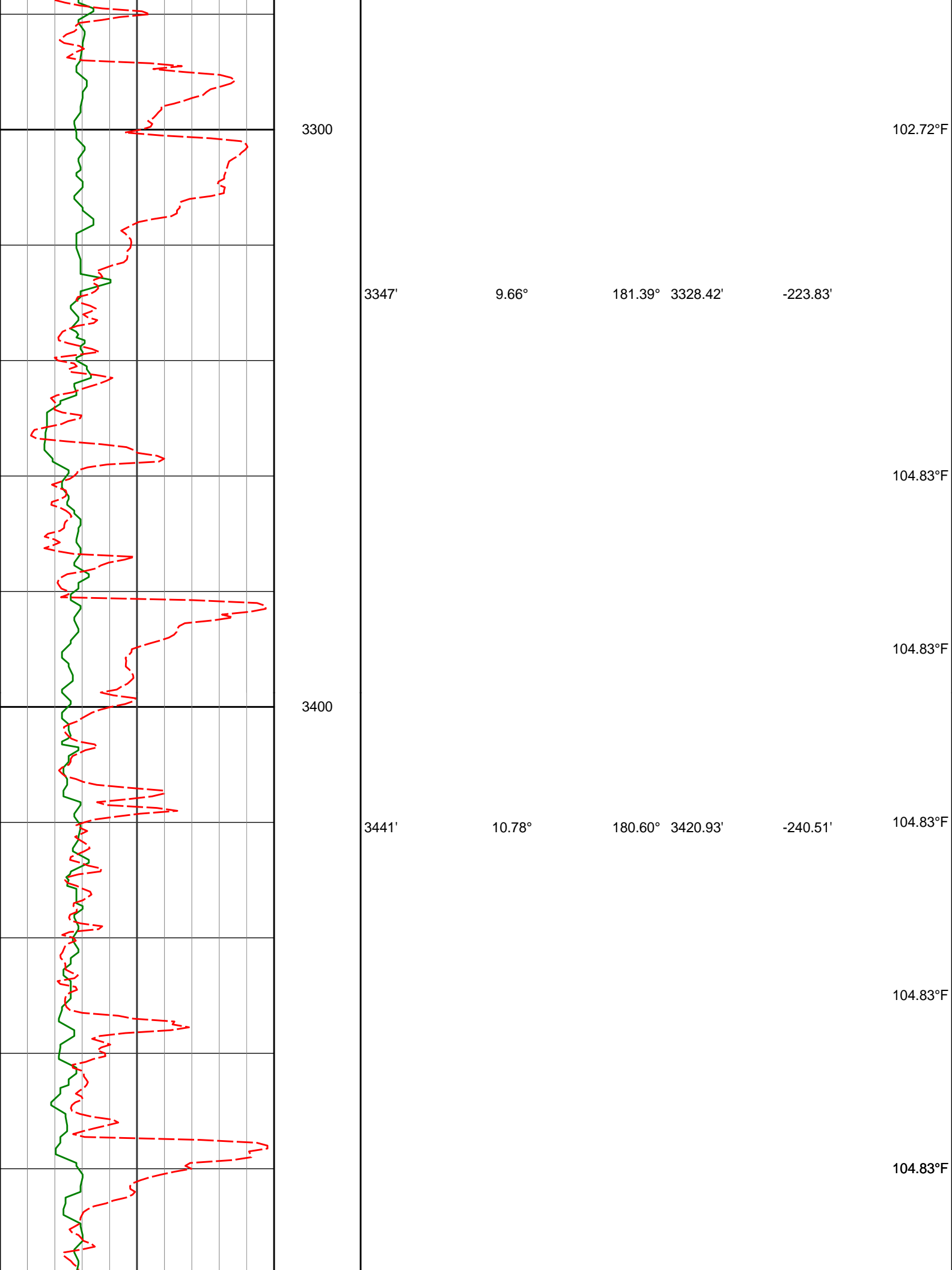


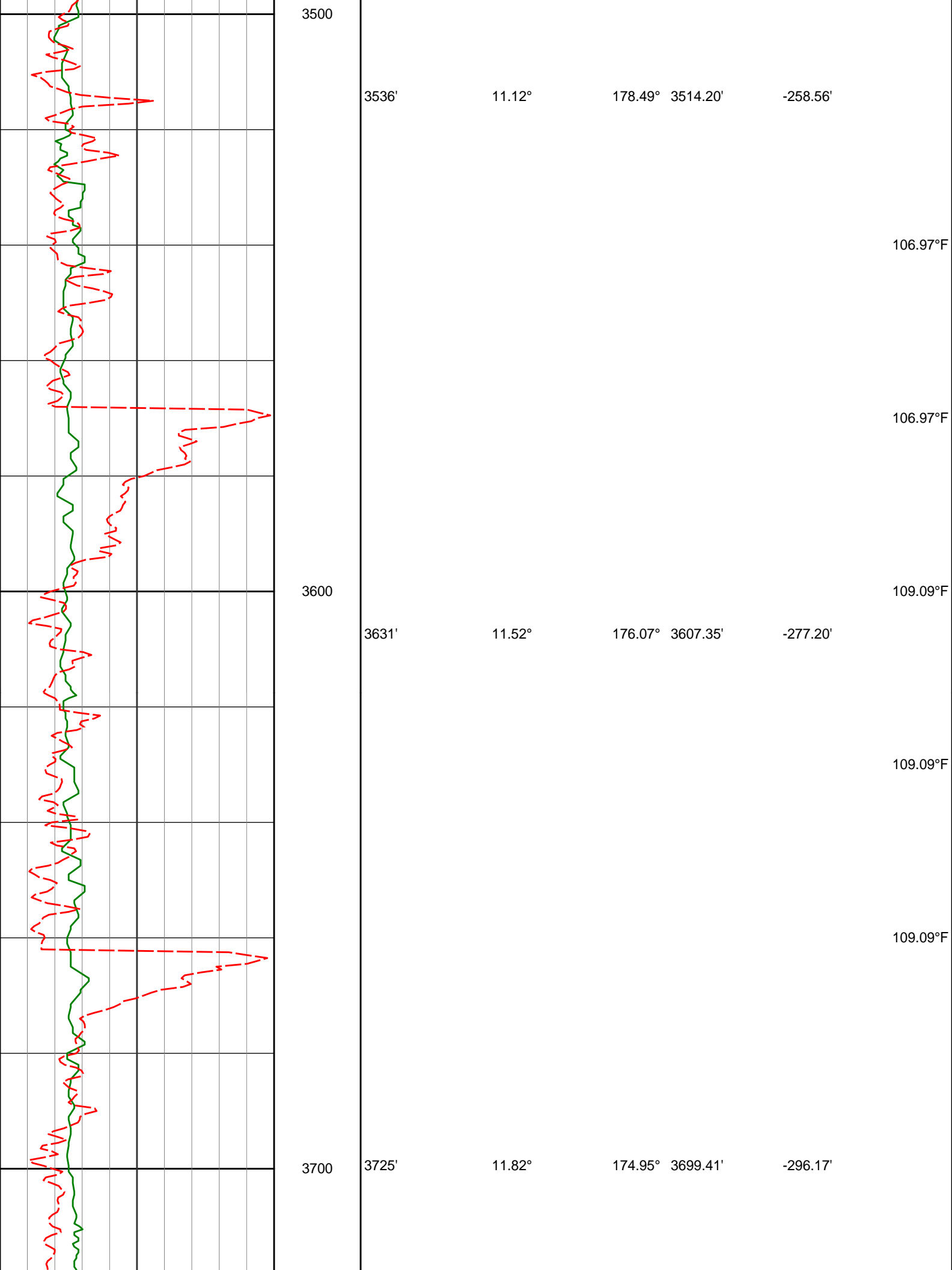


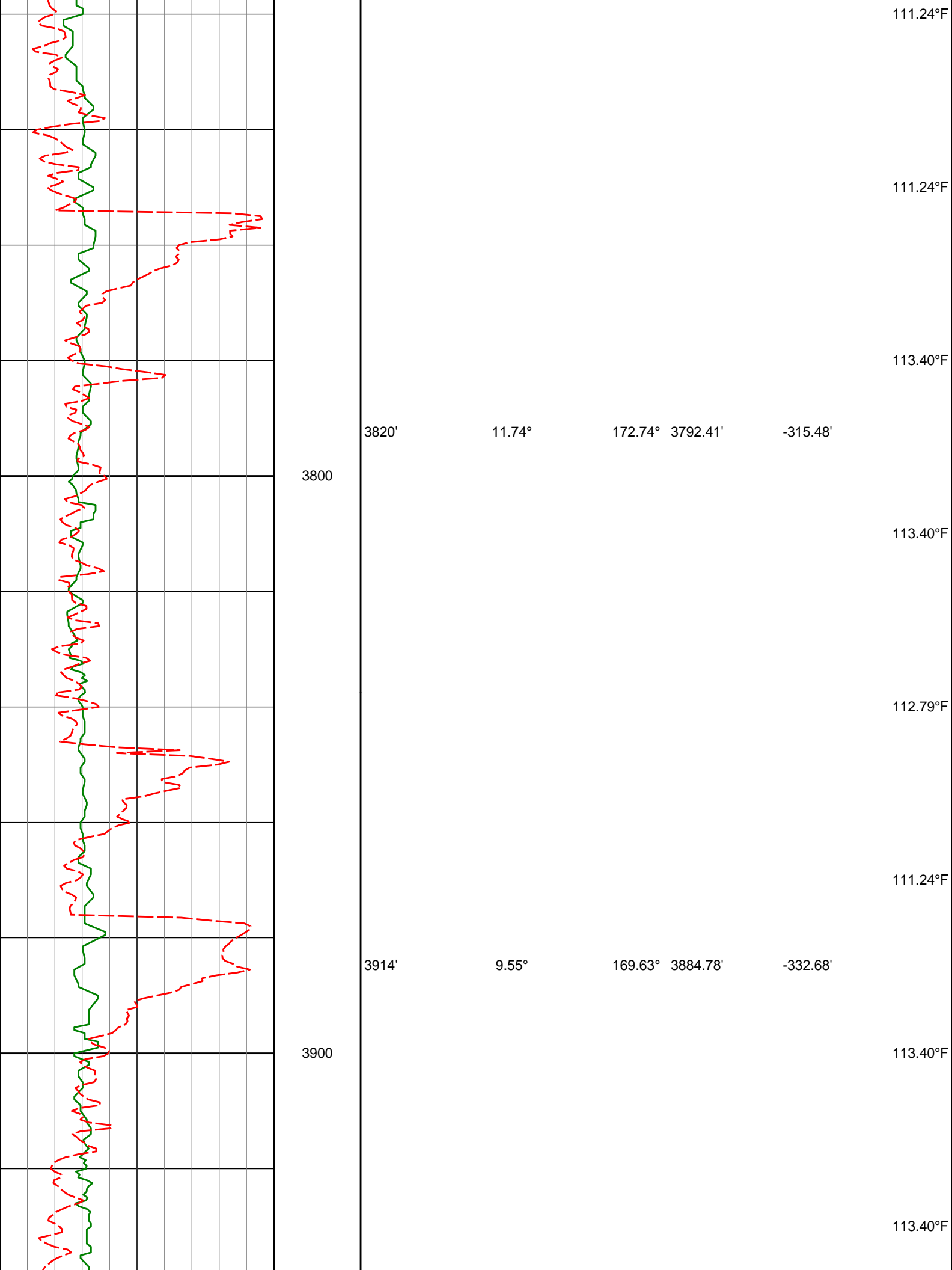


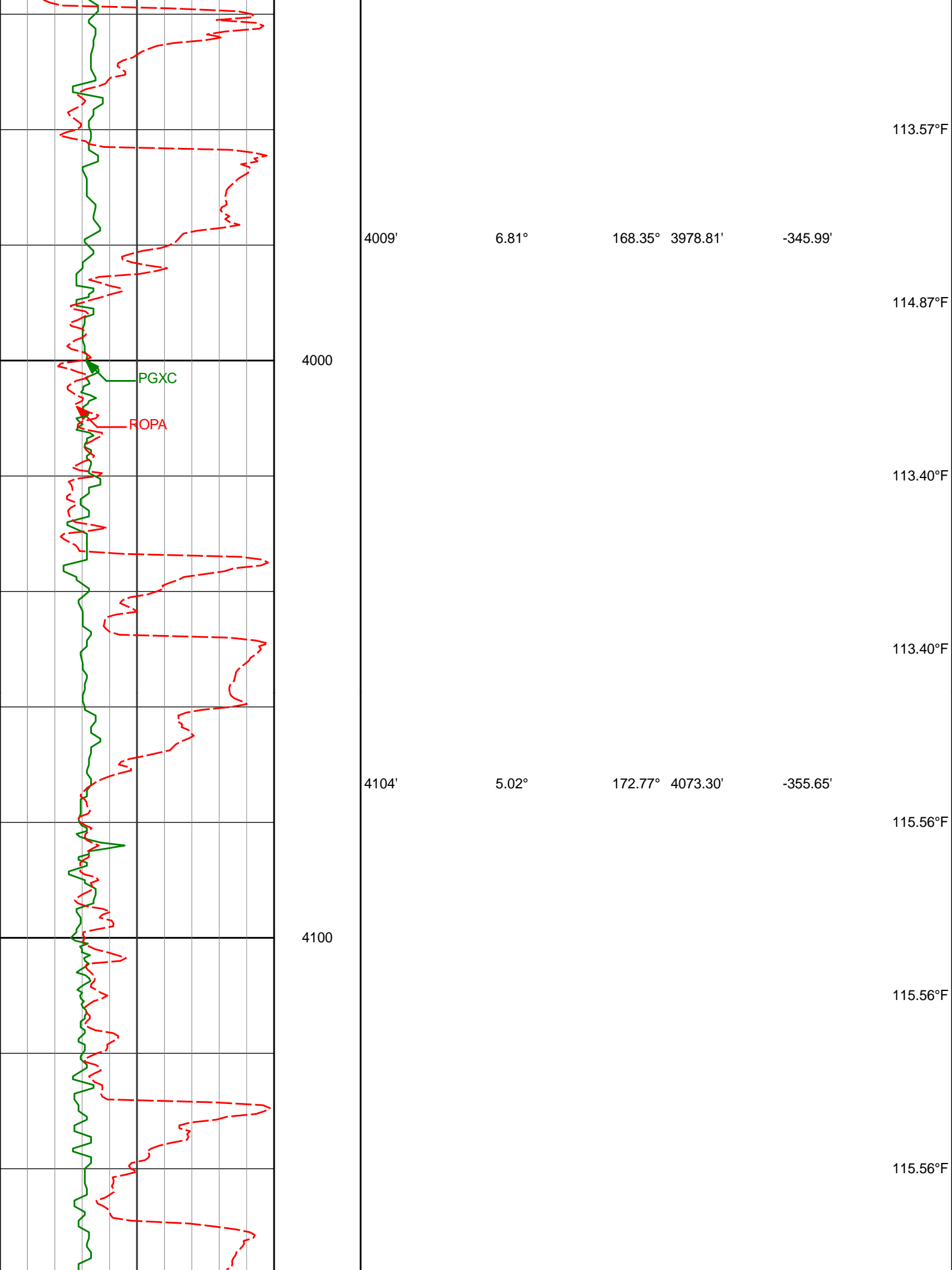


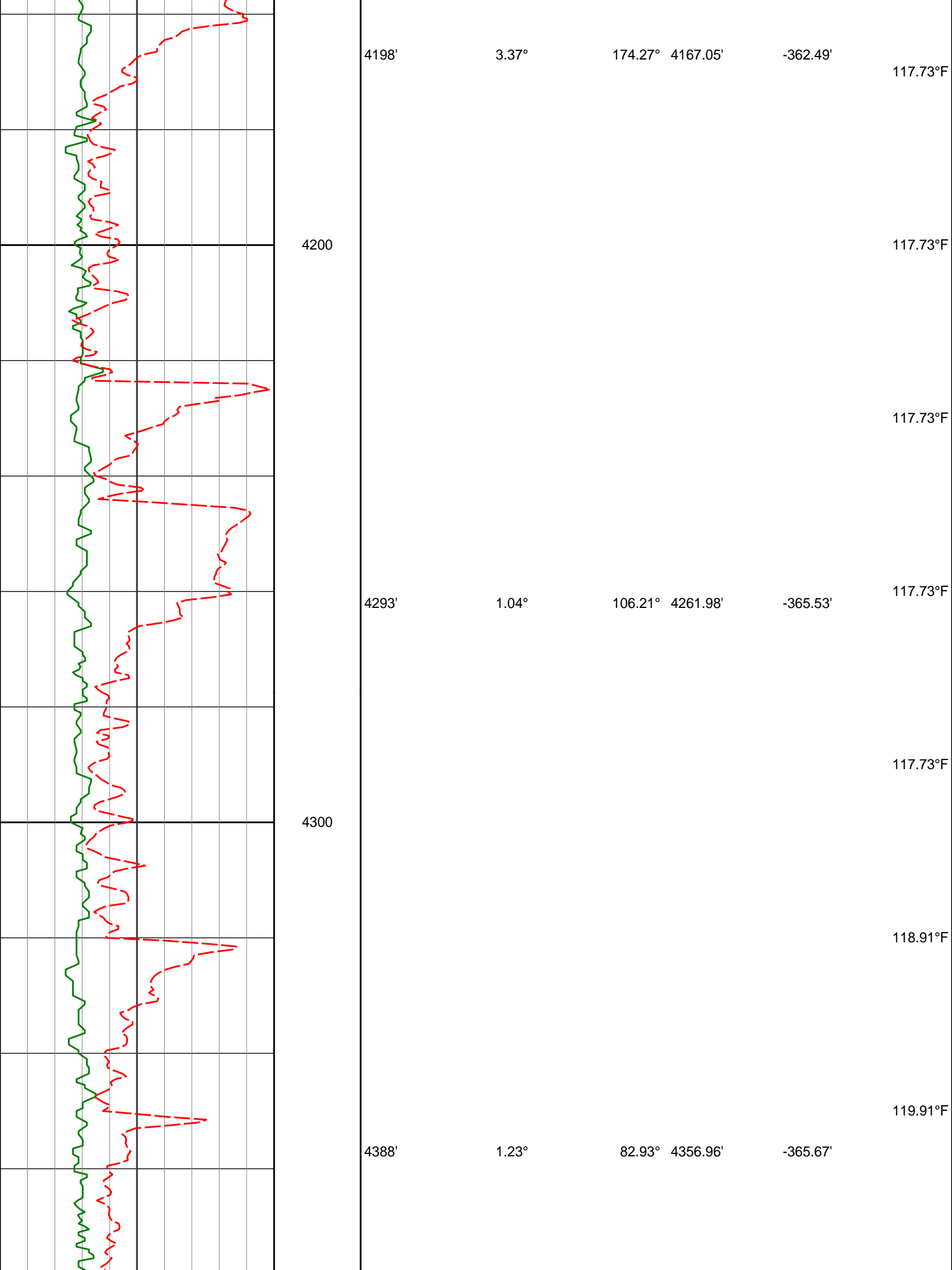


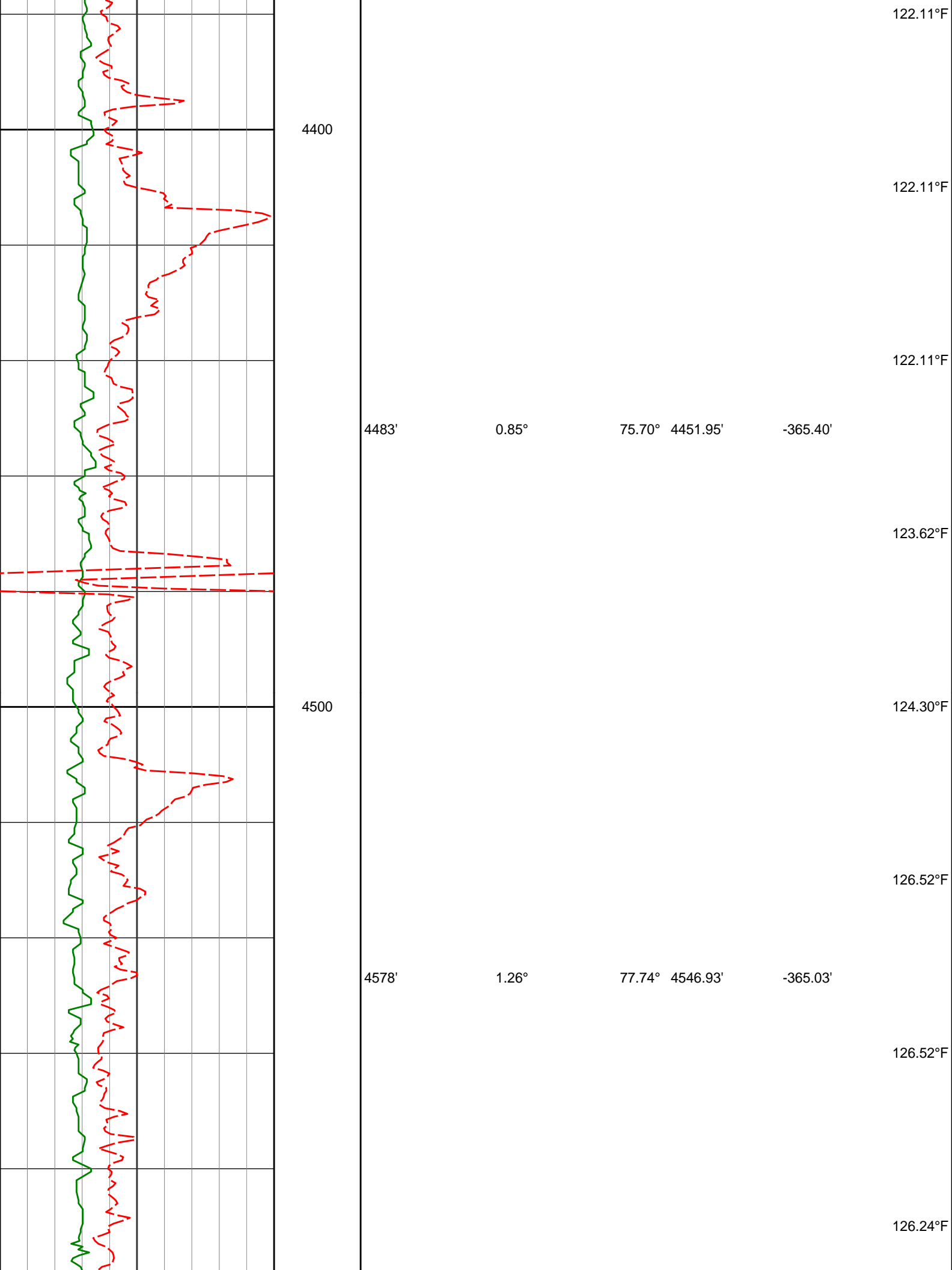


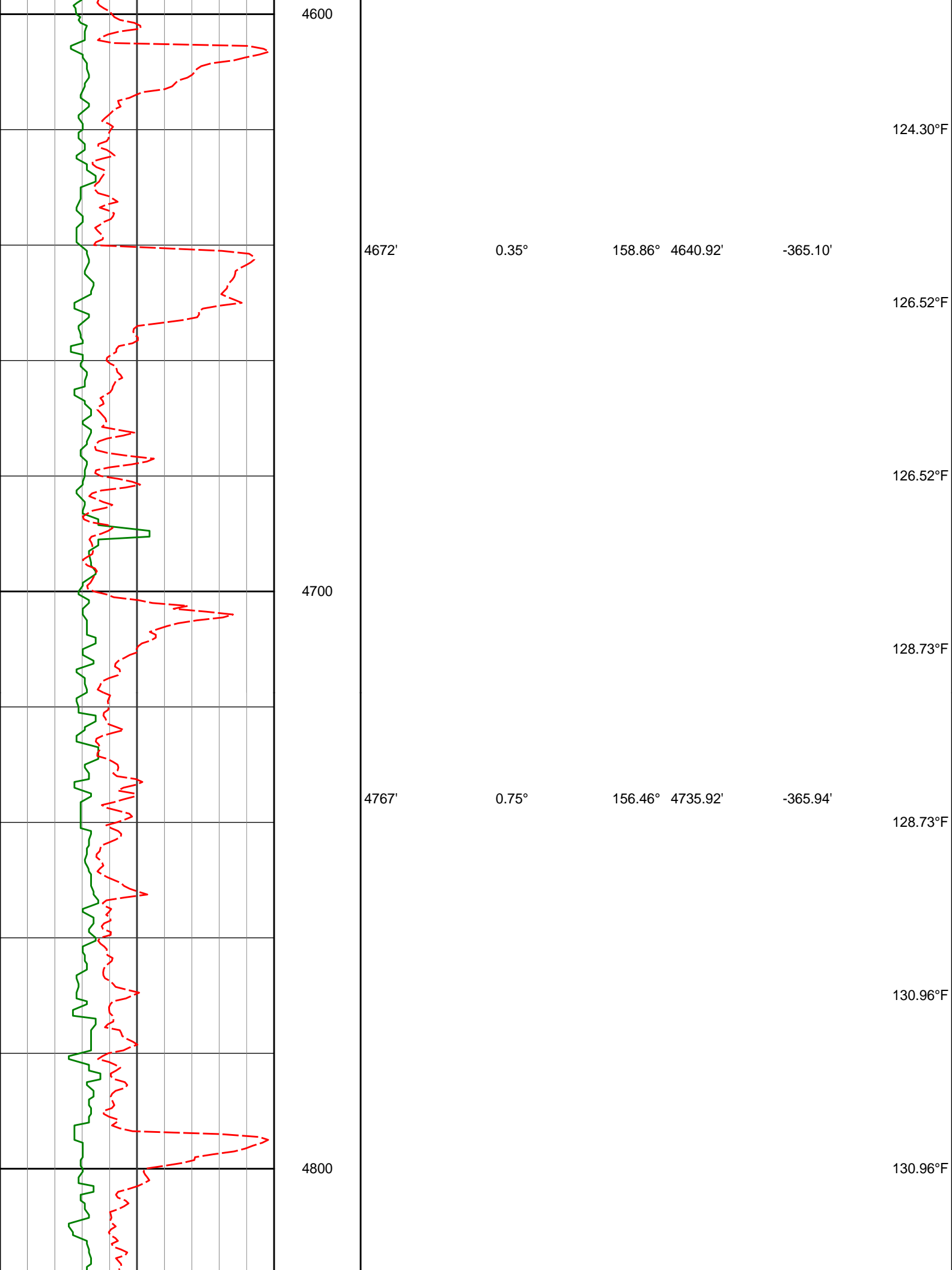


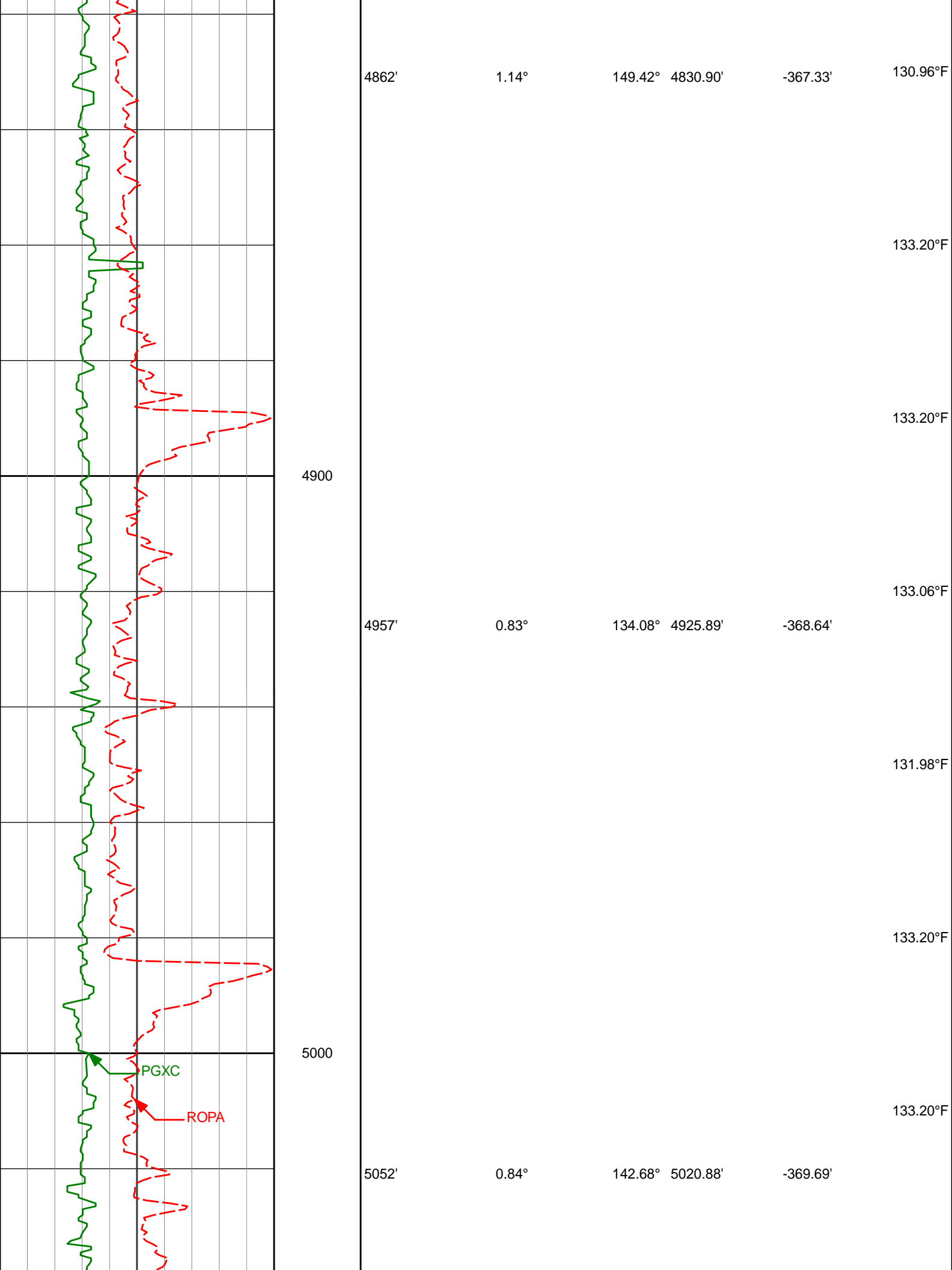


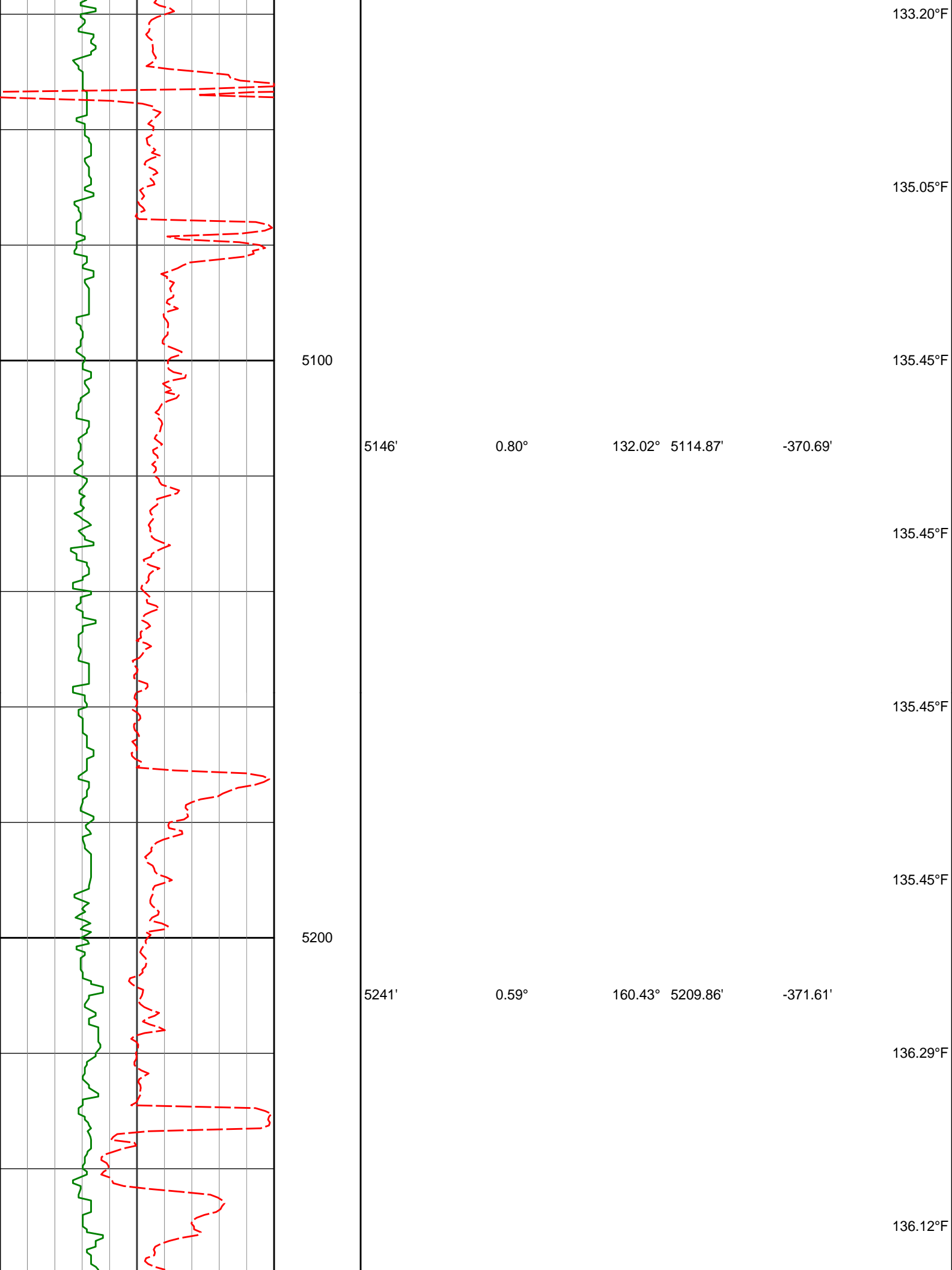


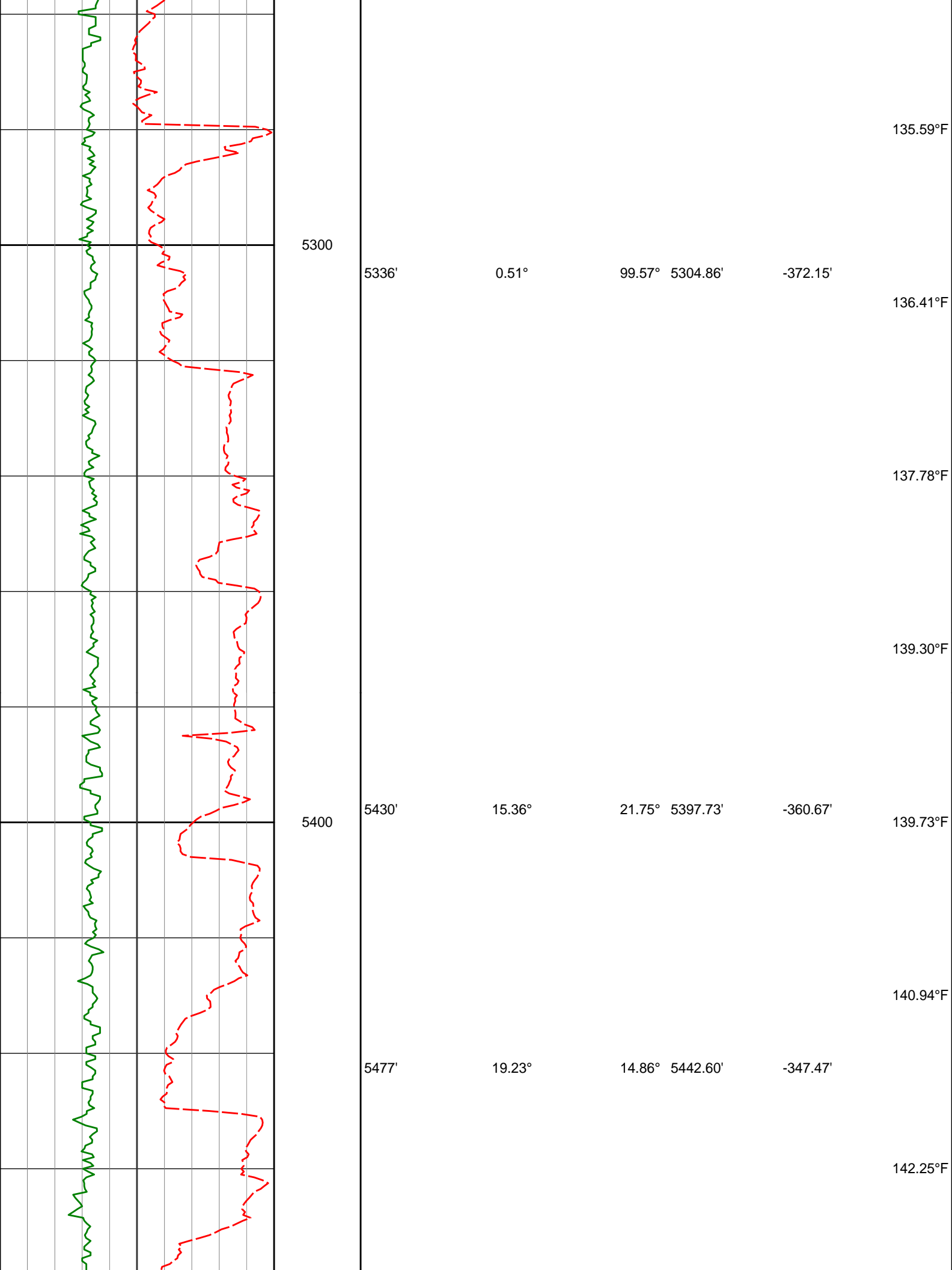


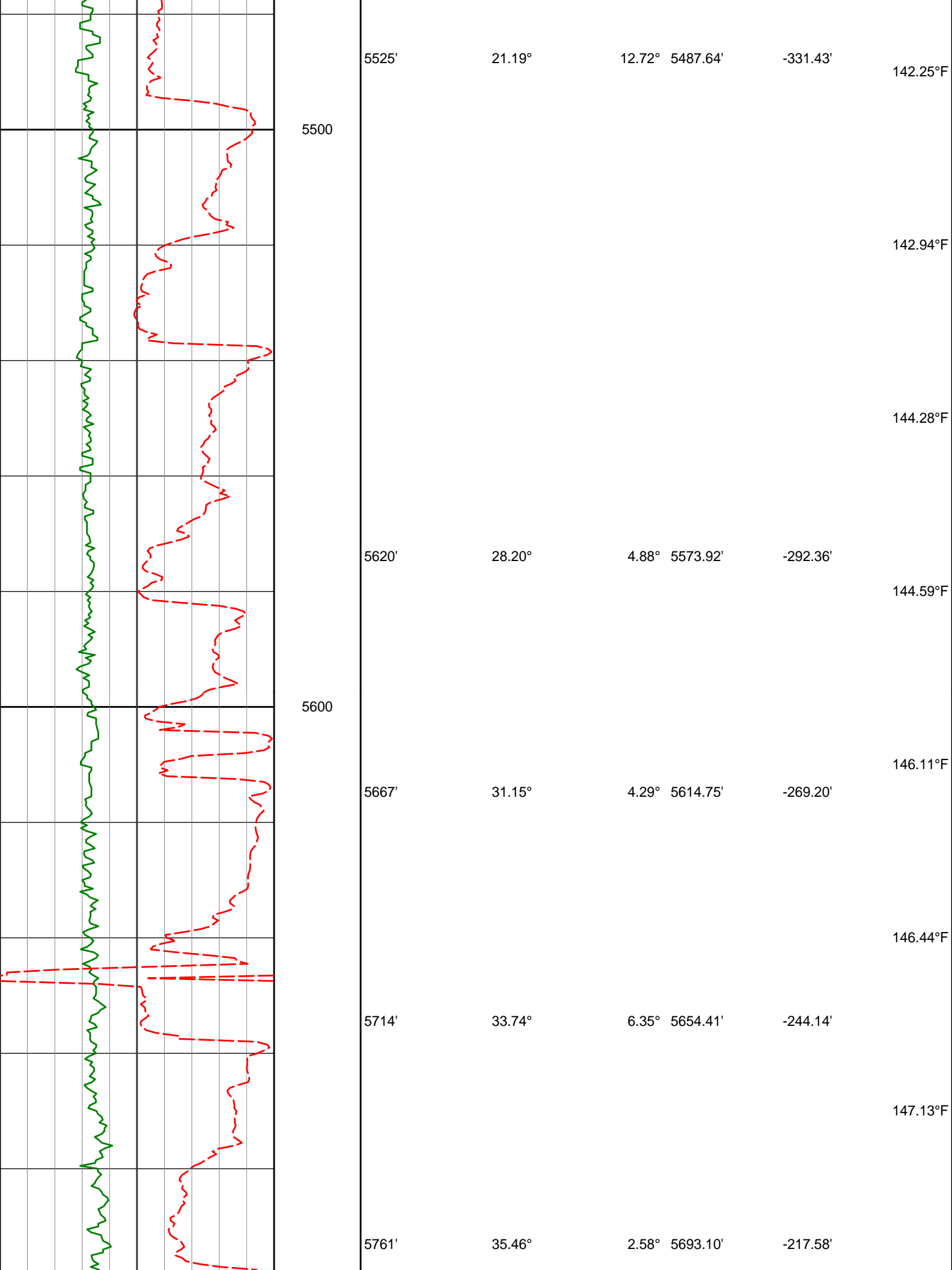


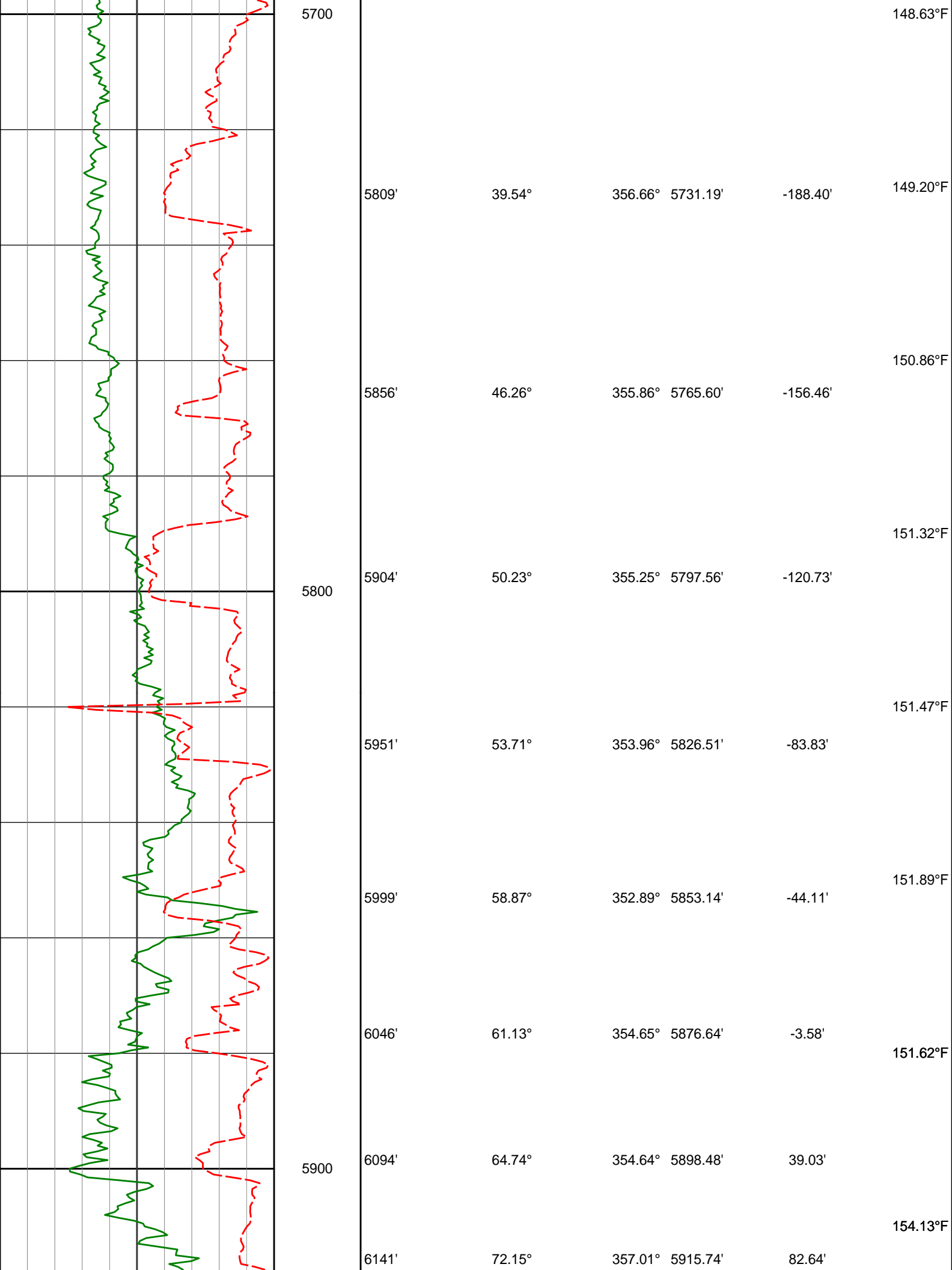


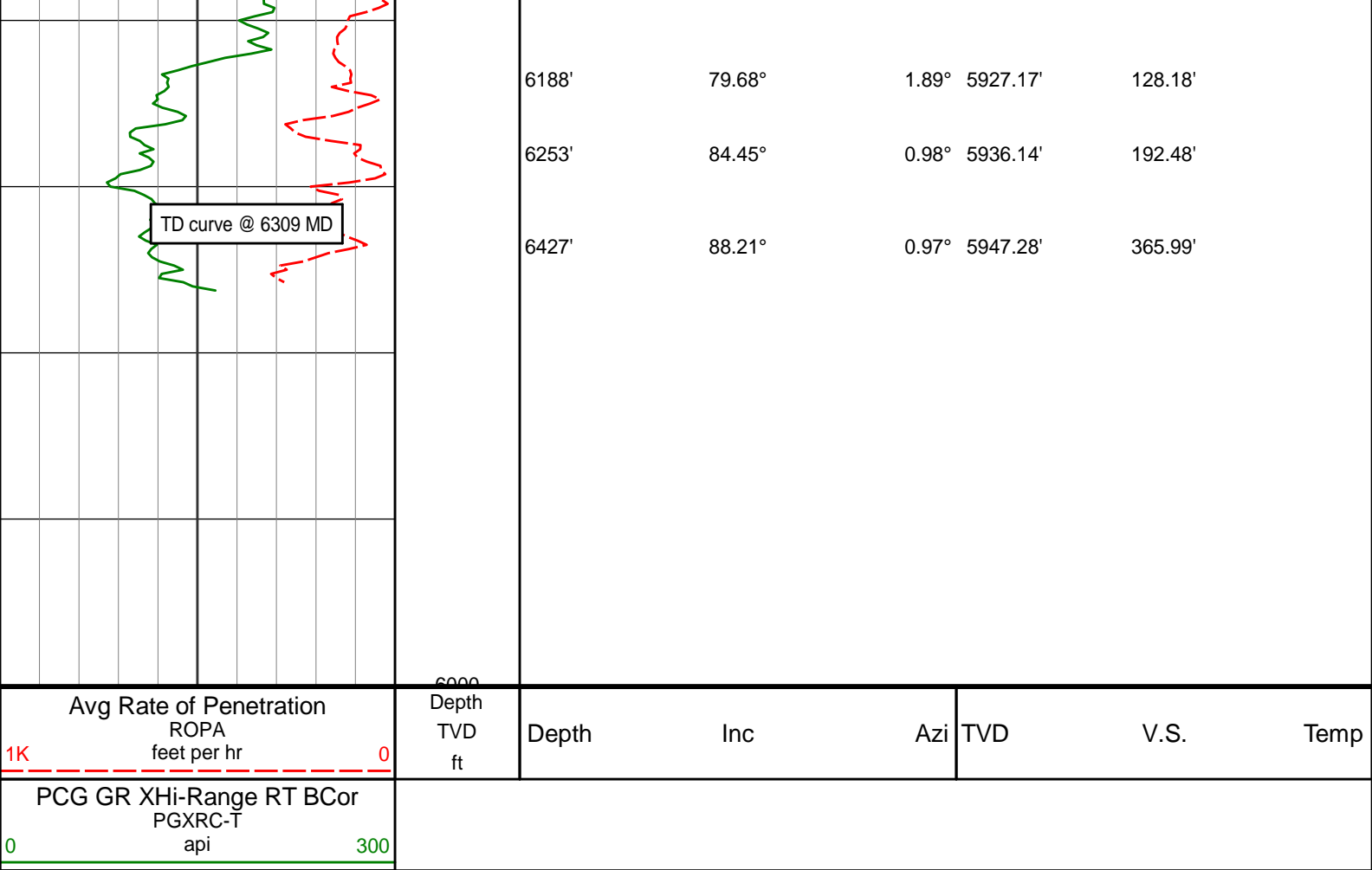












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DIRECTIONAL SURVEY REPORT

Noble Energy
Kevin LC26-735
Wattenberg
Weld Colorado
USA
CA-XX-0902241010
Tied in @ Surface
First two surveys from 3rd party.
Final survey projected to bit.

Measured Depth (feet)	Inclination (degrees)	Direction (degrees)	Vertical Depth (feet)	Latitude (feet)	Departure (feet)	Vertical Section (feet)	Dogleg (deg/100ft)
0.00	0.00	0.00	0.00	0.00 N	0.00 E	0.00	TIE-IN
249.00	0.60	285.42	249.00	0.35 N	1.26 W	0.37	0.24
493.00	1.00	185.22	492.98	1.43 S	2.68 W	-1.39	0.51
735.00	0.33	348.85	734.97	2.85 S	3.01 W	-2.80	0.55
827.00	0.75	339.03	826.97	2.03 S	3.28 W	-1.97	0.46
919.00	0.28	340.61	918.96	1.25 S	3.57 W	-1.19	0.51
1011.00	0.28	347.39	1010.96	0.82 S	3.69 W	-0.76	0.04
1103.00	0.25	345.44	1102.96	0.41 S	3.79 W	-0.34	0.03
1212.00	0.35	312.70	1211.96	0.05 N	4.09 W	0.11	0.18
1303.00	0.38	302.75	1302.96	0.40 N	4.55 W	0.47	0.08
1487.00	0.22	291.30	1486.95	0.86 N	5.40 W	0.95	0.09
1579.00	0.43	248.95	1578.95	0.80 N	5.89 W	0.90	0.33
1671.00	0.68	251.13	1670.95	0.50 N	6.72 W	0.61	0.27
1763.00	0.78	257.80	1762.94	0.19 N	7.85 W	0.32	0.14
1855.00	1.94	192.91	1854.92	1.46 S	8.81 W	-1.32	1.91
1947.00	3.74	180.61	1946.80	5.99 S	9.19 W	-5.84	2.05

1947.00	5.74	160.01	1940.00	5.99 S	9.19 W	-3.84	2.05
2039.00	6.58	169.19	2038.42	14.17 S	8.23 W	-14.03	3.26
2130.00	7.77	164.10	2128.71	25.20 S	5.57 W	-25.11	1.48
2223.00	10.05	161.48	2220.58	38.95 S	1.27 W	-38.92	2.50
2315.00	9.44	158.77	2311.25	53.59 S	4.01 E	-53.65	0.83
2406.00	9.39	159.63	2401.03	67.50 S	9.30 E	-67.65	0.17
2499.00	9.34	157.93	2492.79	81.60 S	14.77 E	-81.83	0.30
2591.00	9.51	164.37	2583.55	95.84 S	19.62 E	-96.15	1.16
2684.00	10.16	169.83	2675.18	111.31 S	23.14 E	-111.68	1.23
2778.00	10.23	172.87	2767.70	127.76 S	25.64 E	-128.16	0.58
2873.00	10.43	172.93	2861.16	144.67 S	27.75 E	-145.11	0.21
2968.00	10.14	171.78	2954.63	161.49 S	30.00 E	-161.96	0.38
3063.00	9.67	169.96	3048.22	177.62 S	32.59 E	-178.13	0.59
3157.00	9.09	166.74	3140.96	192.63 S	35.67 E	-193.19	0.84
3252.00	9.39	171.05	3234.73	207.59 S	38.60 E	-208.19	0.80
3347.00	9.66	181.39	3328.42	223.21 S	39.61 E	-223.83	1.82
3441.00	10.78	180.60	3420.93	239.90 S	39.32 E	-240.51	1.20
3536.00	11.12	178.49	3514.20	257.95 S	39.47 E	-258.56	0.55
3631.00	11.52	176.07	3607.35	276.57 S	40.37 E	-277.20	0.65
3725.00	11.82	174.95	3699.41	295.53 S	41.86 E	-296.17	0.40
3820.00	11.74	172.74	3792.41	314.80 S	43.93 E	-315.48	0.48
3914.00	9.55	169.63	3884.78	331.96 S	46.55 E	-332.68	2.41
4009.00	6.81	168.35	3978.81	345.23 S	49.11 E	-345.99	2.90
4104.00	5.02	172.77	4073.30	354.87 S	50.76 E	-355.65	1.94
4198.00	3.37	174.27	4167.05	361.69 S	51.56 E	-362.49	1.76
4293.00	1.04	106.21	4261.98	364.71 S	52.66 E	-365.53	3.30
4388.00	1.23	82.93	4356.96	364.83 S	54.50 E	-365.67	0.52
4483.00	0.85	75.70	4451.95	364.53 S	56.19 E	-365.40	0.42
4578.00	1.26	77.74	4546.93	364.13 S	57.90 E	-365.03	0.44
4672.00	0.35	158.86	4640.92	364.18 S	59.02 E	-365.10	1.34
4767.00	0.75	156.46	4735.92	365.02 S	59.37 E	-365.94	0.42
4862.00	1.14	149.42	4830.90	366.40 S	60.10 E	-367.33	0.43
4957.00	0.83	134.08	4925.89	367.69 S	61.07 E	-368.64	0.42
5052.00	0.84	142.68	5020.88	368.72 S	61.99 E	-369.69	0.13
5146.00	0.80	132.02	5114.87	369.71 S	62.89 E	-370.69	0.17
5241.00	0.59	160.43	5209.86	370.62 S	63.55 E	-371.61	0.42
5336.00	0.51	99.57	5304.86	371.15 S	64.13 E	-372.15	0.59
5430.00	15.36	21.75	5397.73	359.58 S	69.19 E	-360.67	16.24
5477.00	19.23	14.86	5442.60	346.31 S	73.48 E	-347.47	9.30
5525.00	21.19	12.72	5487.64	330.20 S	77.42 E	-331.43	4.36
5620.00	28.20	4.88	5573.92	291.03 S	83.12 E	-292.36	8.13
5667.00	31.15	4.29	5614.75	267.84 S	84.97 E	-269.20	6.32
5714.00	33.74	6.35	5654.41	242.74 S	87.33 E	-244.14	5.99
5761.00	35.46	2.58	5693.10	216.14 S	89.39 E	-217.58	5.83
5809.00	39.54	356.66	5731.19	186.96 S	89.12 E	-188.40	11.34
5856.00	46.26	355.86	5765.60	155.05 S	87.02 E	-156.46	14.35
5904.00	50.23	355.25	5797.56	119.36 S	84.25 E	-120.73	8.31
5951.00	53.71	353.96	5826.51	82.51 S	80.76 E	-83.83	7.71
5999.00	58.87	352.89	5853.14	42.86 S	76.18 E	-44.11	10.93
6046.00	61.13	354.65	5876.64	2.40 S	71.77 E	-3.58	5.79
6094.00	64.74	354.64	5898.48	40.14 N	67.78 E	39.03	7.52
6141.00	72.15	357.01	5915.74	83.71 N	64.62 E	82.64	16.46
6188.00	79.68	1.89	5927.17	129.25 N	64.21 E	128.18	18.92
6253.00	84.45	0.98	5936.14	193.58 N	65.82 E	192.48	7.46
6427.00	88.21	0.97	5947.28	367.17 N	68.77 E	365.99	2.16
6520.00	89.69	359.11	5948.98	460.15 N	68.83 E	458.96	2.55
6611.00	90.15	357.09	5949.10	551.09 N	65.82 E	549.94	2.27
6703.00	89.66	356.32	5949.25	642.94 N	60.53 E	641.86	1.00
6796.00	89.78	357.00	5949.70	735.78 N	55.11 E	734.78	0.74
6888.00	90.22	356.96	5949.70	827.65 N	50.27 E	826.72	0.47
6980.00	90.95	357.14	5948.76	919.53 N	45.53 E	918.66	0.83
7075.00	89.94	356.89	5948.02	1014.39 N	40.59 E	1013.59	1.10
7170.00	89.20	355.69	5948.74	1109.19 N	34.45 E	1108.48	1.49
7264.00	88.58	354.85	5950.56	1202.85 N	26.70 E	1202.25	1.11
7454.00	90.80	356.23	5951.58	1392.26 N	11.91 E	1391.87	1.38
7548.00	89.63	357.33	5951.22	1486.10 N	6.63 E	1485.79	1.71
7643.00	89.14	357.40	5952.25	1581.00 N	2.26 E	1580.75	0.52
7738.00	90.86	357.59	5952.24	1675.90 N	1.89 W	1675.71	1.83
7833.00	89.32	356.55	5952.09	1770.77 N	6.75 W	1770.65	1.96
7927.00	89.57	356.43	5953.00	1864.59 N	12.51 W	1864.55	0.29
8022.00	90.37	356.03	5953.05	1959.39 N	18.75 W	1959.43	0.94
8117.00	90.49	359.09	5952.34	2054.29 N	22.80 W	2054.38	3.22
8211.00	90.25	358.11	5951.73	2148.25 N	25.09 W	2148.38	1.07
8306.00	90.86	357.72	5950.81	2243.19 N	28.55 W	2243.35	0.77
8401.00	91.79	357.66	5948.61	2338.08 N	32.38 W	2338.30	0.97

8495.00	90.71	357.30	5946.57	2431.97 N	36.51 W	2432.24	1.21
8590.00	89.82	356.81	5946.13	2526.84 N	41.39 W	2527.18	1.07
8685.00	89.97	356.88	5946.31	2621.70 N	46.62 W	2622.11	0.18
8780.00	90.46	357.06	5945.95	2716.56 N	51.64 W	2717.04	0.55
8875.00	91.63	357.34	5944.21	2811.43 N	56.28 W	2811.98	1.27
8969.00	92.03	358.77	5941.21	2905.33 N	59.47 W	2905.91	1.58
9064.00	92.68	357.96	5937.30	3000.21 N	62.18 W	3000.82	1.09
9159.00	91.33	358.36	5933.98	3095.10 N	65.22 W	3095.75	1.49
9254.00	91.11	0.14	5931.96	3190.06 N	66.47 W	3190.72	1.88
9349.00	91.63	359.77	5929.68	3285.04 N	66.54 W	3285.69	0.67
9443.00	91.85	359.10	5926.83	3378.99 N	67.47 W	3379.64	0.75
9538.00	89.51	358.80	5925.70	3473.96 N	69.22 W	3474.63	2.48
9633.00	88.92	357.82	5927.01	3568.91 N	72.01 W	3569.61	1.20
9728.00	88.43	358.50	5929.20	3663.83 N	75.06 W	3664.57	0.88
9823.00	90.09	0.60	5930.43	3758.81 N	75.80 W	3759.55	2.83
9918.00	90.77	0.06	5929.71	3853.81 N	75.25 W	3854.52	0.92
10012.00	90.71	359.51	5928.50	3947.80 N	75.60 W	3948.51	0.59
10107.00	91.29	359.39	5926.84	4042.78 N	76.51 W	4043.49	0.63
10202.00	91.29	358.94	5924.69	4137.74 N	77.89 W	4138.46	0.47
10297.00	90.83	358.24	5922.93	4232.70 N	80.22 W	4233.44	0.88
10391.00	91.51	358.80	5921.01	4326.65 N	82.65 W	4327.42	0.93
10486.00	90.43	357.72	5919.40	4421.59 N	85.53 W	4422.39	1.61
10541.00	89.82	357.19	5919.28	4476.53 N	87.98 W	4477.37	1.47
10610.00	89.82	357.19	5919.50	4545.45 N	91.36 W	4546.33	0.01

CALCULATION BASED ON MINIMUM CURVATURE METHOD

**SURVEY COORDINATES RELATIVE TO WELL SYSTEM REFERENCE POINT
TVD VALUES GIVEN RELATIVE TO DRILLING MEASUREMENT POINT**

**VERTICAL SECTION RELATIVE TO WELL HEAD
VERTICAL SECTION IS COMPUTED ALONG A DIRECTION OF 359.06 DEGREES (GRID)
A TOTAL CORRECTION OF 7.02 DEG FROM MAGNETIC NORTH TO GRID NORTH HAS BEEN APPLIED**

**HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD.
HORIZONTAL DISPLACEMENT(CLOSURE) AT 10610.00 FEET
IS 4546.37 FEET ALONG 358.85 DEGREES (GRID)**