

PCGK - Pressure Case Gamma

Company : Anadarko Petroleum									
Rig : Xtreme 22									
Well : Howard 6N-29HZ									
Field : Wattenberg									
Country : USA									
API Number : 05123378630000									
LOCATION					Other Services Mud Motor Directional Drilling				
Latitude : 40° 0' 29.29" North Longitude : 104° 55' 2.28" West		UTM Easting = 3,163,224.847 ft UTM Northing = 1,246,346.897 ft							
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WELL INFORMATION

MWD Run Number	100	200	300	400	
Date run completed	01-Sep-14	03-Sep-14	06-Sep-14	11-Sep-14	
Rig Bit Number	0100	0200	0300	0400	
Bit Size (in)	8.750	8.750		6.125	
Tool Nominal OD (in)	6.750	6.750	4.750	4.750	
Log Start Depth (MD, ft)	1,002.00	7,504.00	7,967.00	9,665.00	
Log End Depth (MD, ft)	7,505.00	7,967.00	9,665.00	13,310.00	
Drill or Wipe	Drill	Drill	Drill	Drill	
Drill/Wipe Start Date and Time	30-Aug-14 11:00	02-Sep-14 06:00	04-Sep-14 12:00	06-Sep-14 18:00	
Drill/Wipe End Date and Time	01-Sep-14 15:30	02-Sep-14 19:30	05-Sep-14 23:00	09-Sep-14 22:30	
Min Inc (deg) @ Depth (MD, ft)	0.43 @ 6,396.00	33.94 @ 7,509.00	89.66 @ 9,531.00	89.45 @ 11,751.00	
Max Inc (deg) @ Depth (MD, ft)	31.39 @ 7,466.00	87.04 @ 7,926.00	90.65 @ 9,616.00	91.73 @ 10,810.00	
Bit TFA(in2) / Bit Type	0.86 / PDC	1.49 / PDC	/ PDC	1.24 / PDC	
Flow Rate (gpm)	608.75	575.00	300.50	315.00	
Max AV (fpm) / CV (fpm) @ MWD	309.0 / 240.0	300.0 / 250.0	504.0 / 504.0	504.0 / 504.0	
Fluid Type	Native/Spud Mud	Native/Spud Mud	Native/Spud Mud	Native/Spud Mud	
Density (ppg) / Viscosity (spqt)	9.70 / 39.00	10.30 / 42.00	9.80 / 44.00	9.90 / 37.00	
Filtrate CL (ppm)	1,100.00	1,100.00	1,200.00	1,600.00	
pH / Fluid Loss (mptm)	9.20 / 5	9.50 / 4	9.70 / 5	8.60 / 6	
PV (cP) / YP (lbf2)	12 / 10.00	16 / 15.00	15 / 15.00	10 / 14.00	
% Solids / % Sand	2.90 / 0.20	3.90 / 0.20	5.60 / 0.20	4.20 / 0.20	
% Oil / Oil:Water Ratio	0.50 / N/A	1.50 / N/A	2.00 / N/A	1.00 / N/A	
Rm @ Measured Temp (degF)	N/A @ N/A	N/A @ N/A	N/A @ N/A	N/A @ N/A	
Rmf @ Measured Temp (degF)	N/A @ N/A	N/A @ N/A	N/A @ N/A	N/A @ N/A	
Rmc @ Measured Temp (degF)	N/A @ N/A	N/A @ N/A	N/A @ N/A	N/A @ N/A	
Min Tool Temp (deg F) / S	155.40 / RPM	200.05 / RPM	107.51 / RPM	211.00 / RPM	

Max Tool Temp (degF) / Source	175.40 / PCM	200.05 / PCM	197.51 / PCM	214.00 / PCM	
Rm @ Max Tool Temp (degF)	N/A @ 175.40	N/A @ 200.05	N/A @ 197.51	N/A @ 214.00	
Lead MWD Engineer	RL Kerrigan	RL Kerrigan	RL Kerrigan	RL Kerrigan	
Customer Representative	Scott Hancock	Scott Hancock	Scott Hancock	Scott Hancock	

SENSOR INFORMATION

Downhole Processor Information

Tool Type	PCM	PCM	PCM	PCM	
Software Version	5.93	5.93	5.93	5.93	
Sub Serial Number	11404286	11404286	1234	12310752	
Insert Serial Number	11680783	11620295	11680783	11620295	
Date and Time Initialized	28-Aug-14 17:04	01-Sep-14 19:34	03-Sep-14 20:06	06-Sep-14 02:18	
Date and Time Read	02-Sep-14 00:00	03-Sep-14 04:41	06-Sep-14 11:36	10-Sep-14 16:29	
ECMB SW Version	N/A	N/A	N/A	N/A	

Directional Sensor Information

Tool Type	PCDC	PCDC	PCDC	PCDC	
Distance From Bit (ft)	46.00	41.00	49.00	49.00	
Software Version	6.21	6.21	6.21	6.21	
Sub Serial Number	11404286	11404286	12310752	12310752	
Sonde Serial Number	11833212	11833264	11833212	11833264	
Sensor ID Number	N/A	N/A	N/A	N/A	
Toolface Offset (deg)	335.36	316.86	219.01	297.49	

Gamma Ray Sensor Information

Tool Type	PCG	PCG	PCG	PCG	
Distance From Bit (ft)	49.05	44.28	40.36	40.44	
Recorded Sample Period (sec)	10	10	10	10	
Software Version	8.15	8.15	8.15	8.15	
Sub Serial Number	11404286	11404286	12310752	12310752	
Insert/Sonde Serial Number	11681007	11579777	11681007	11579777	

REMARKS

1. All depths are true vertical depths, referenced to the Driller's pipe tally and are measured from the Drill Floor, unless otherwise specified.

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 "Bingham Plastic" model for oil and synthetic based fluids.

4. The following smoothing parameters have been applied to the data:

PGRC (Corrected Gamma Ray):
Interval Resolution: 0.5 ft
Interval Distance: 0.6 ft
Gap Fill: 3.0 ft

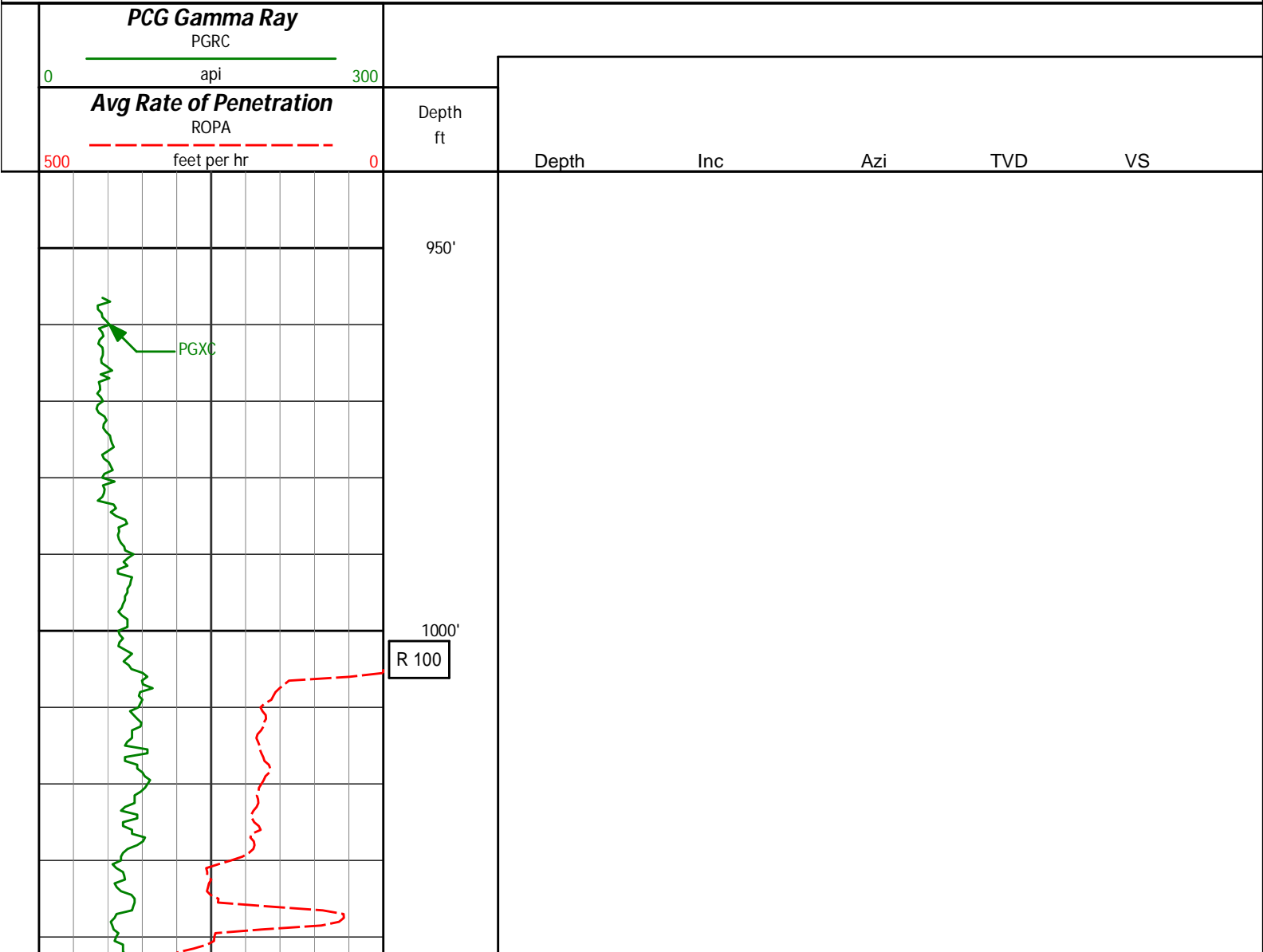
ROPA (Average Rate Of Penetration):
Interval Resolution: 0.5 ft
Interval Distance: 1.2 ft
Gap Fill: 3.0 ft
Insite version: 8.0.20 Build 04

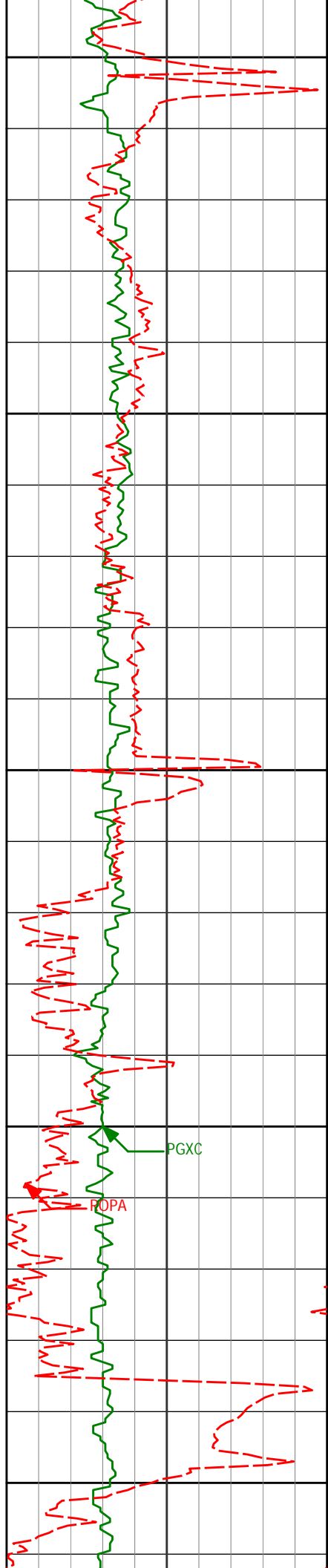
WARRANTY

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HALLIBURTON
Sperry Drilling Services
MD Detail Log 1:240

Andarko Petroleum Corp.
Howard 6N-29HZ
Xtreme 22
Sec 32-T1N-R67W





1050'

1100'

1150'

1200'

1250'

1107'

0.64°

349.18°

1106.96'

7.65'

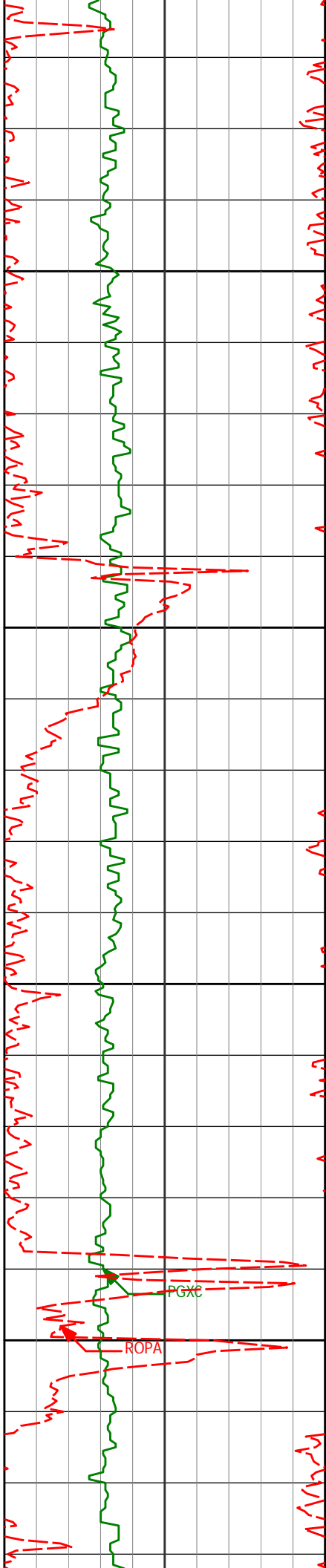
1202'

0.50°

342.63°

1201.95'

8.57'



1300'

1350'

1400'

1450'

1297'

1.00°

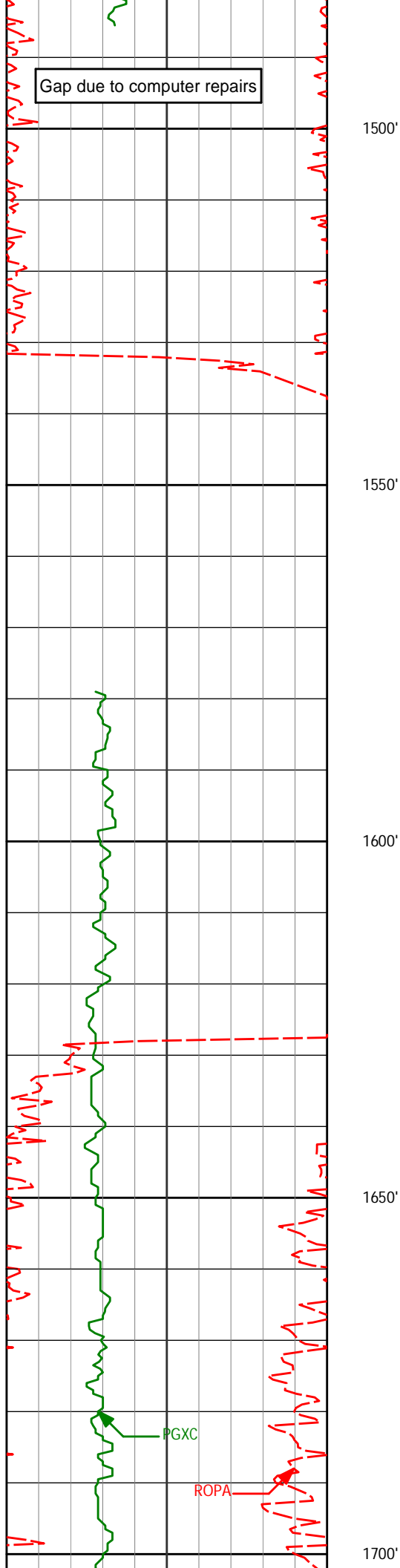
257.90°

1296.95'

8.81'

PGXC

ROPA



1487'

1.35°

282.34°

1486.91'

9.03'

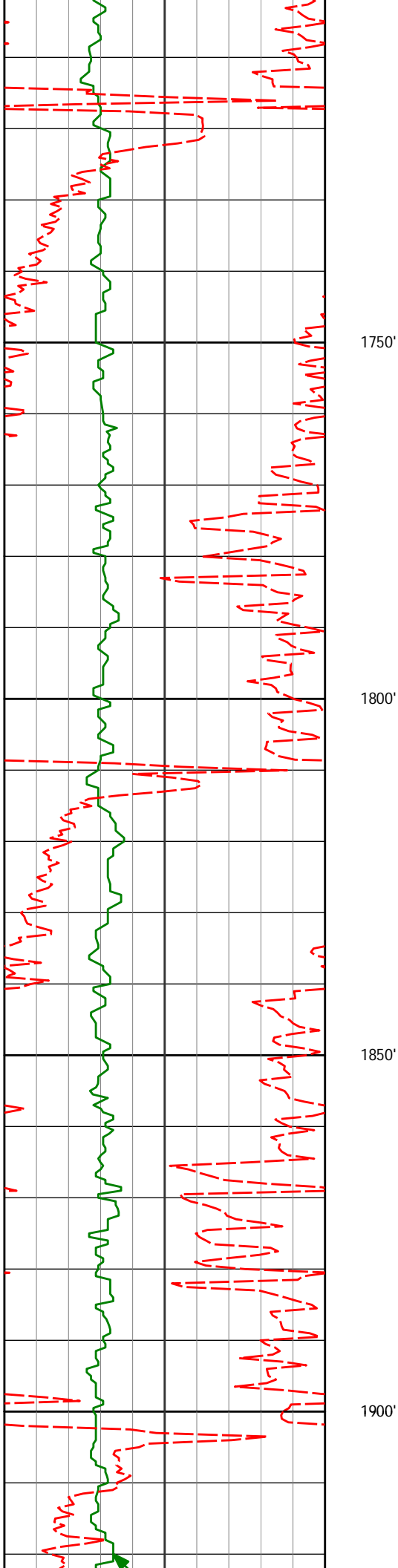
1673'

1.07°

254.58°

1672.87'

9.12'



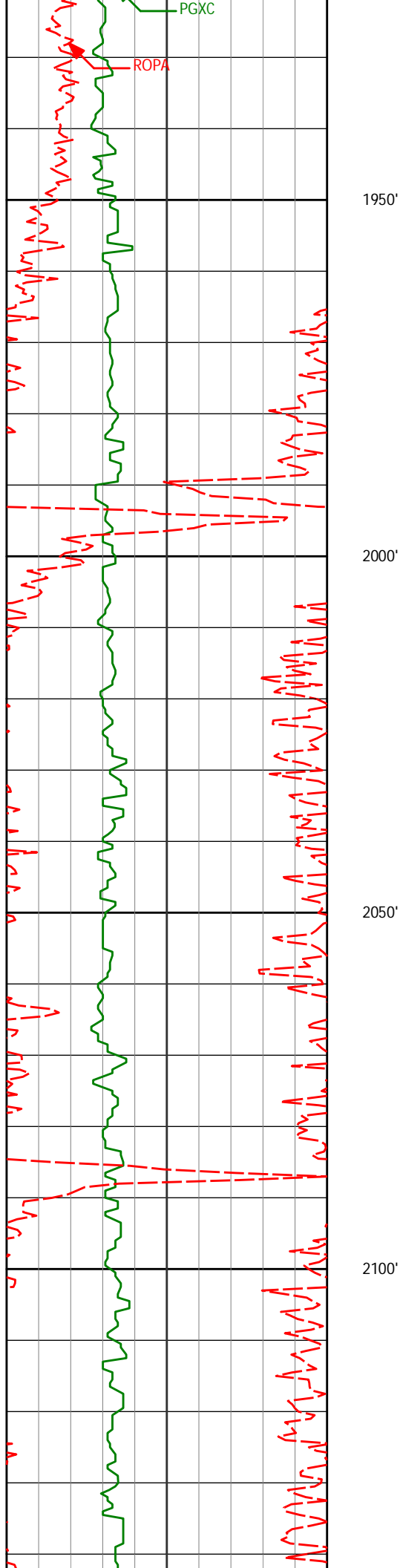
1856'

0.88°

286.12°

1855.84'

9.12'



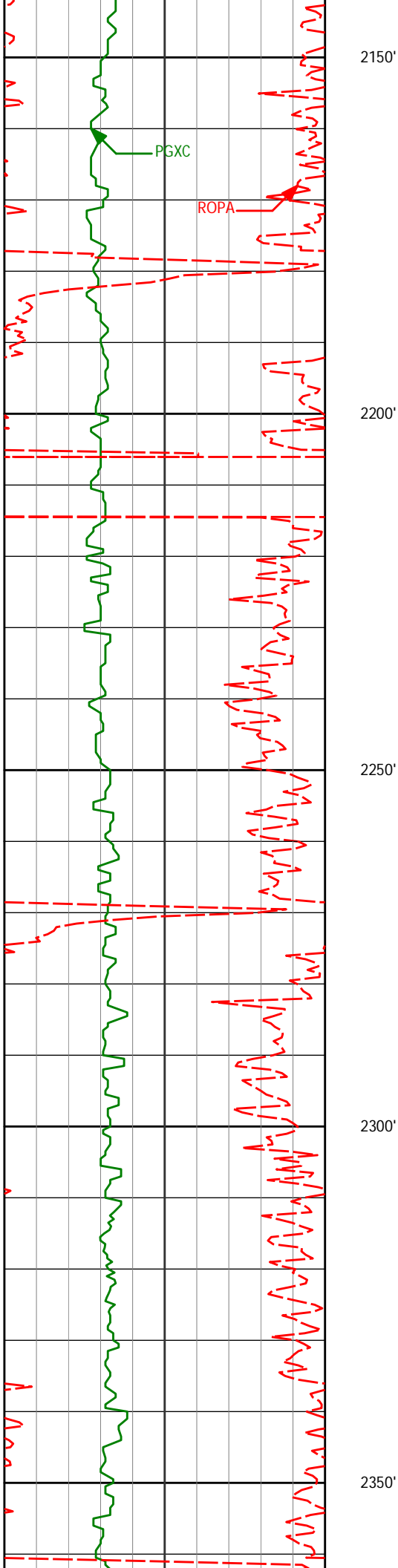
2039'

1.22°

285.94°

2038.81'

10.12'



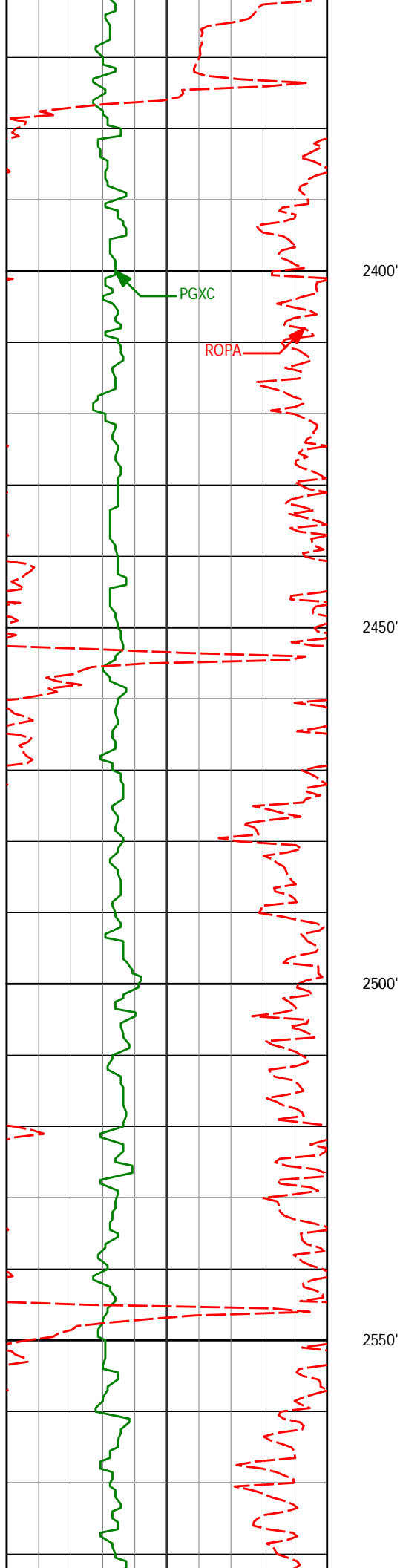
2222'

1.33°

263.65°

2221.77'

10.51'



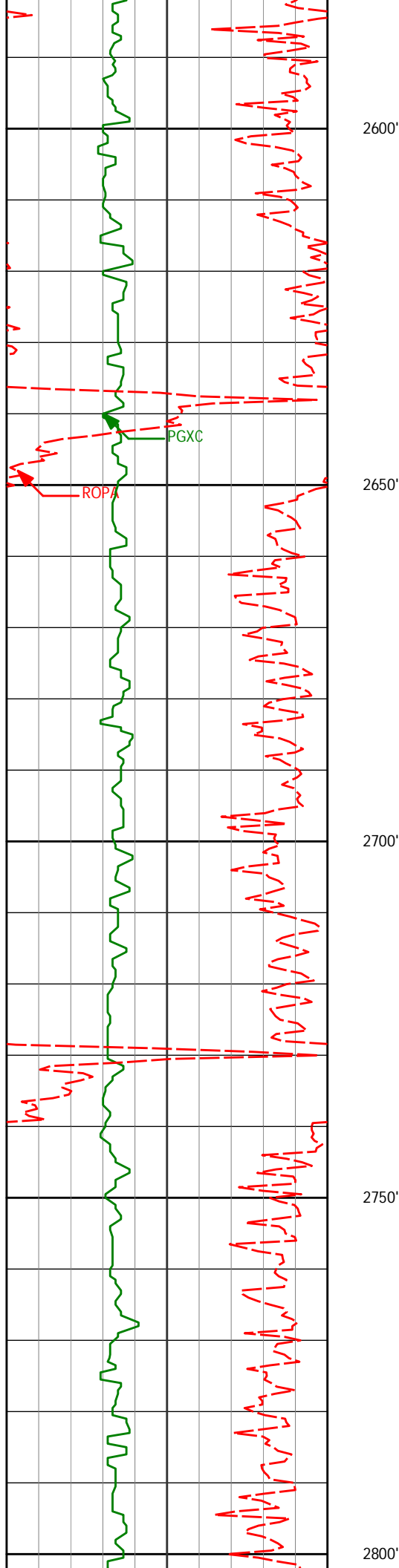
2405'

0.89°

187.60°

2404.74'

8.91'



2588'

1.18°

166.63°

2587.71'

5.67'

2600'

2650'

2700'

2750'

2800'

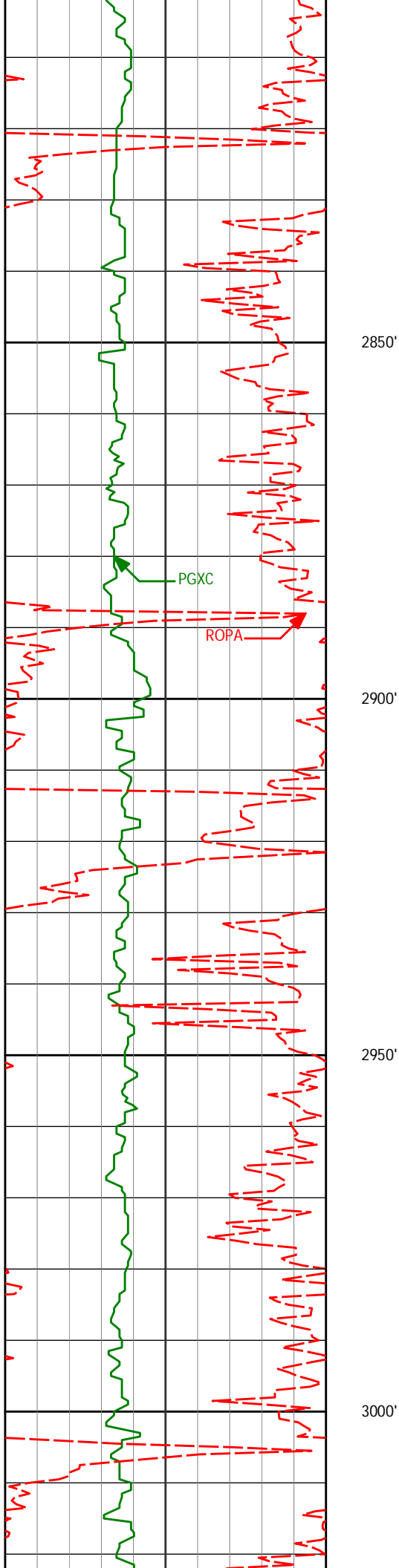
2772'

1.49°

185.95°

2771.66'

1.44'



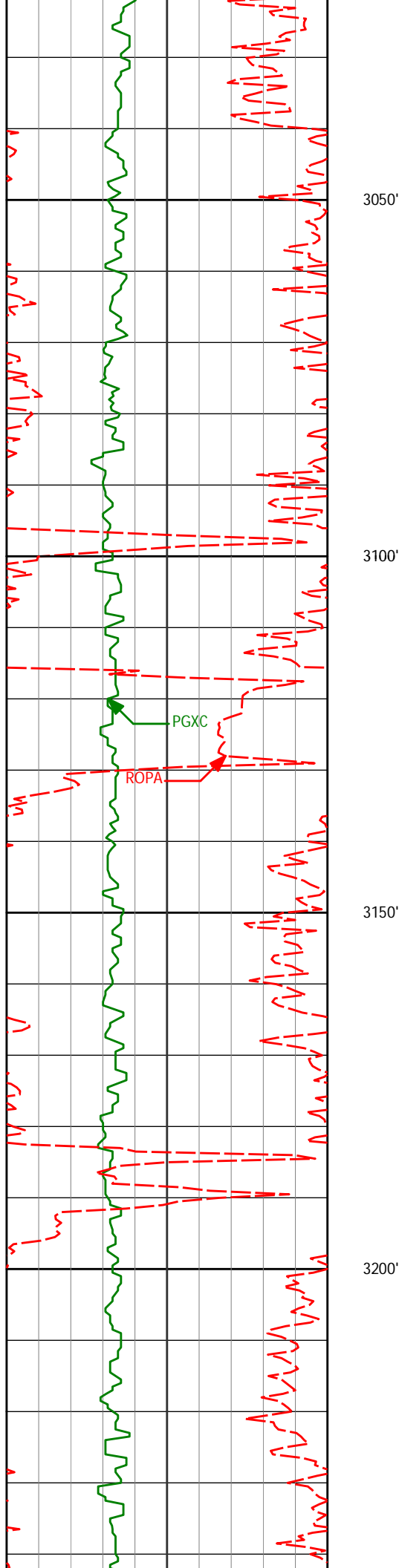
2955'

2.26°

215.60°

2954.57'

-3.81'



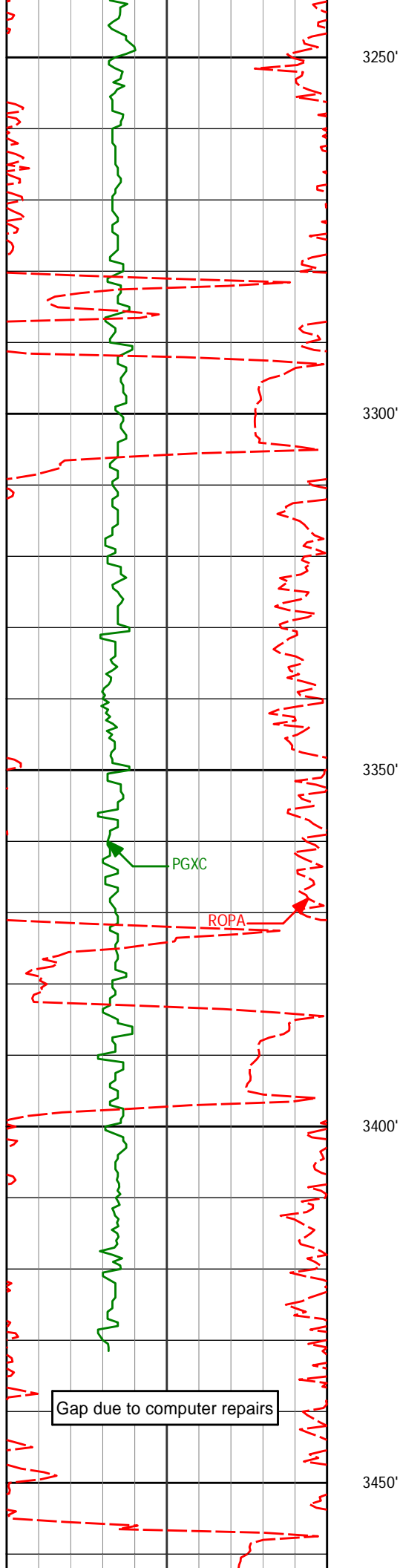
3138'

3.26°

250.45°

3137.37'

-8.32'



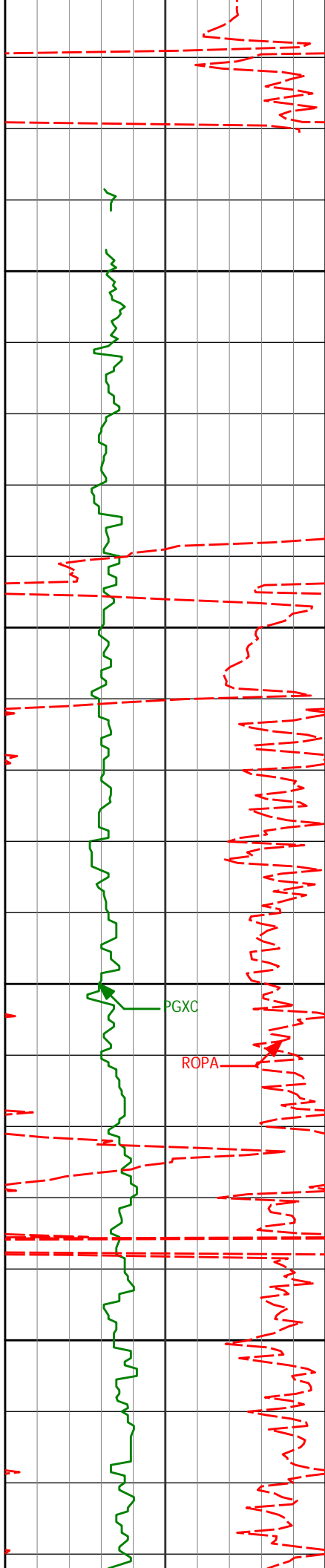
3321'

5.72°

240.00°

3319.79'

-14.34'



3500'

3550'

3600'

3650'

3491'

8.78°

246.21°

3488.42'

-23.38'

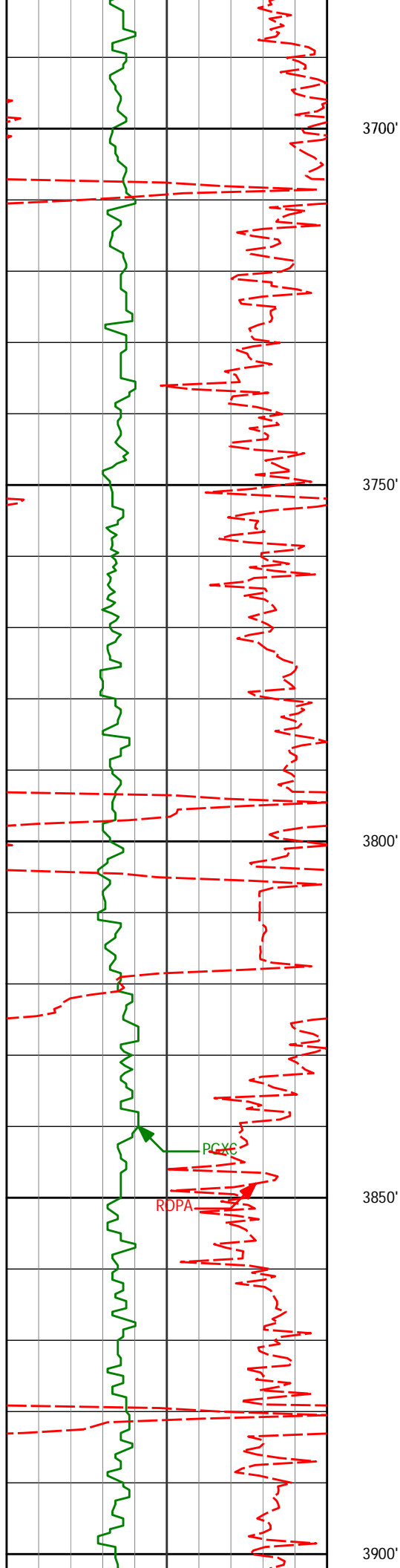
3661'

9.29°

236.55°

3656.32'

-35.66'



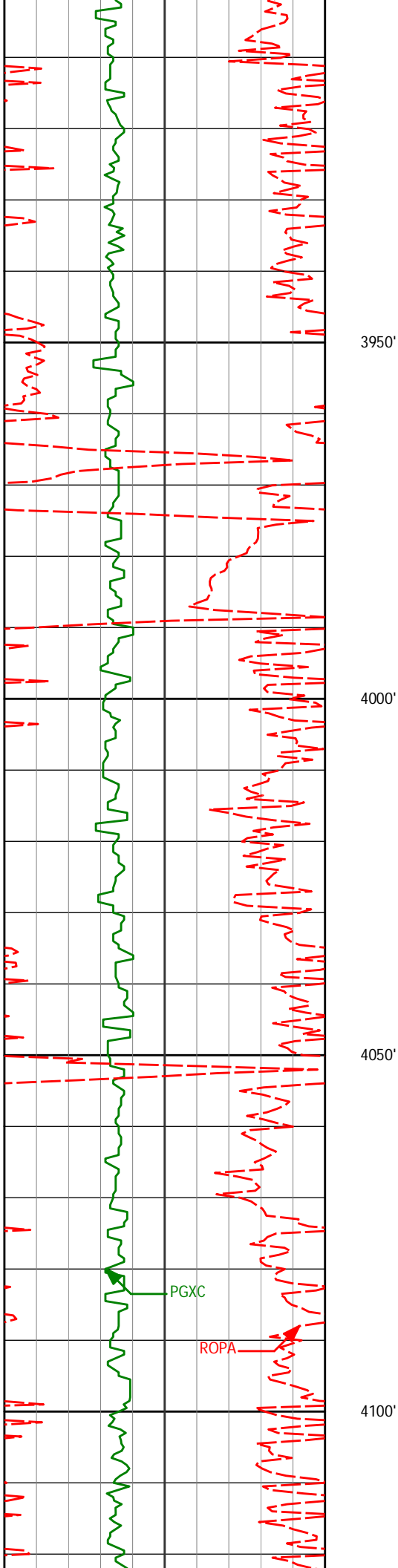
3832'

9.59°

232.43°

3825.00'

-51.45'



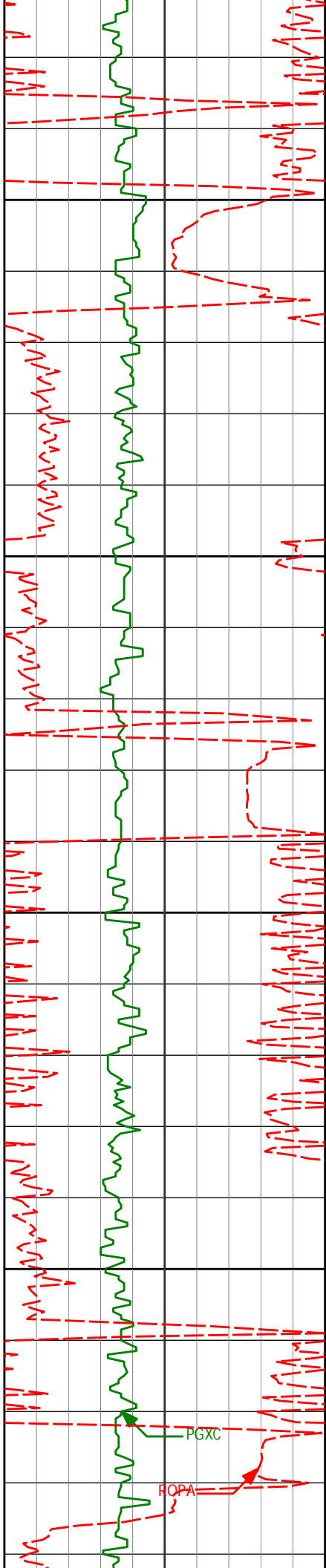
4003'

9.41°

242.39°

3993.67'

-66.08'



4150'

4173'

9.13°

239.14°

4161.45'

-78.91'

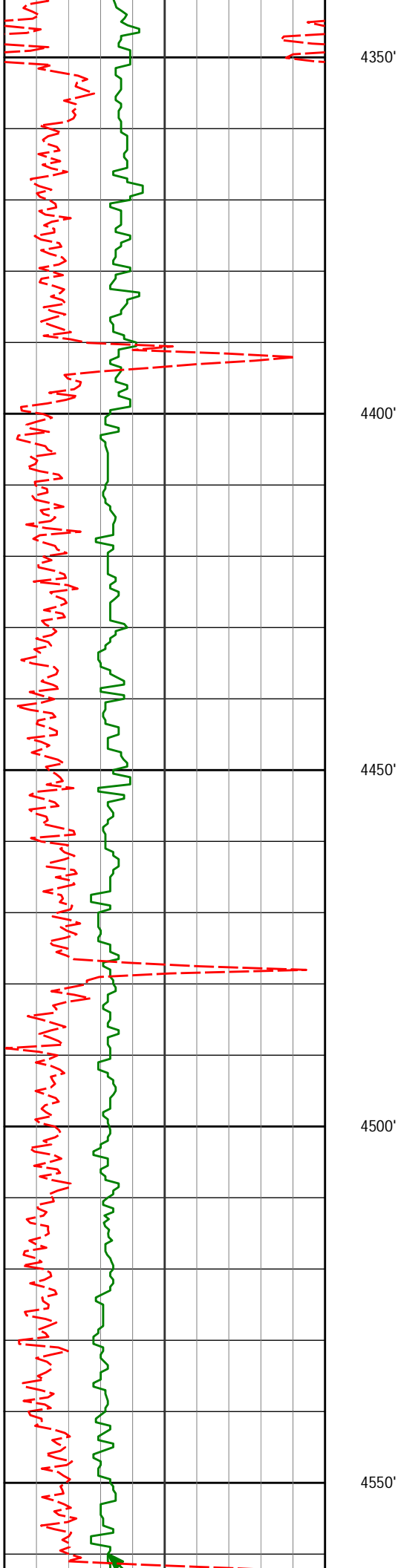
4200'

4250'

4300'

PGXC

ROPA



4345'

10.64°

251.43°

4330.91'

-90.37'

4350'

4400'

4450'

4500'

4550'

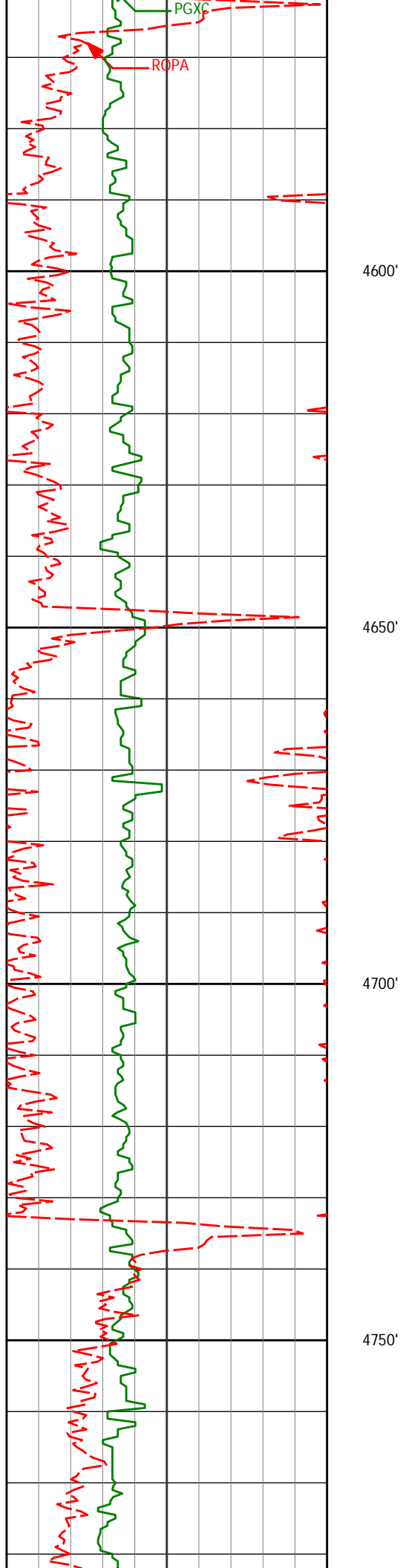
4516'

10.14°

247.70°

4499.11'

-100.47'



4600'

4650'

4700'

4750'

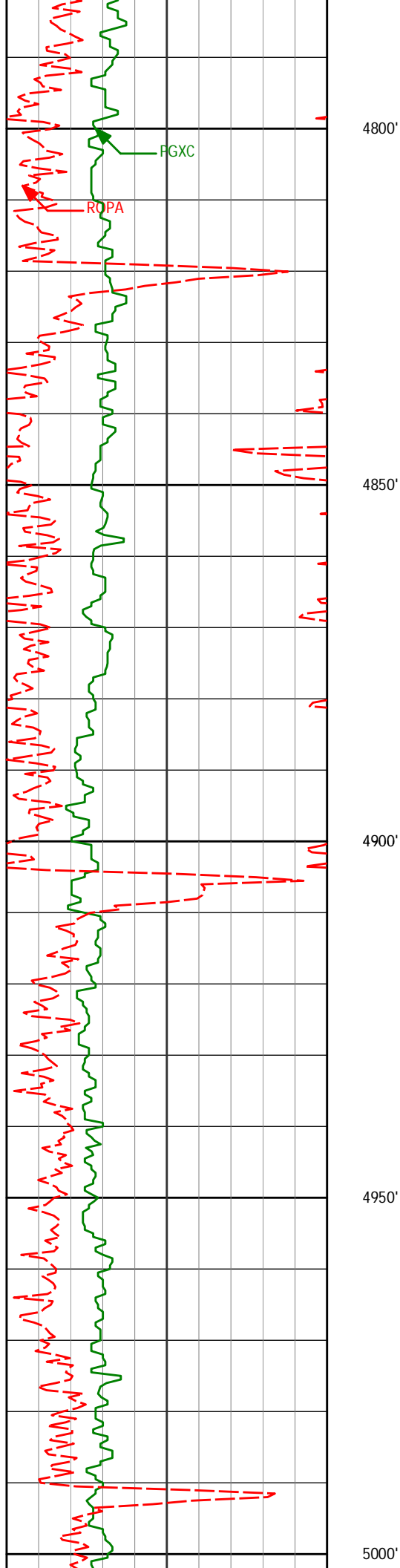
4687'

8.97°

241.44°

4667.74'

-111.98'



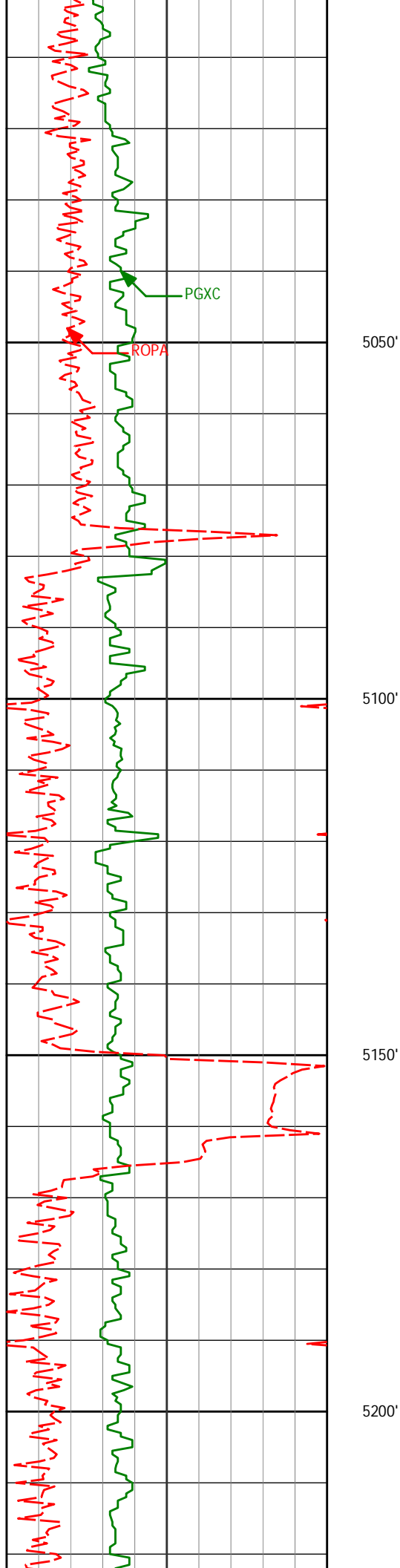
4859'

8.13°

239.22°

4837.82'

-124.12'



5030'

8.04°

237.62°

5007.13'

-136.26'

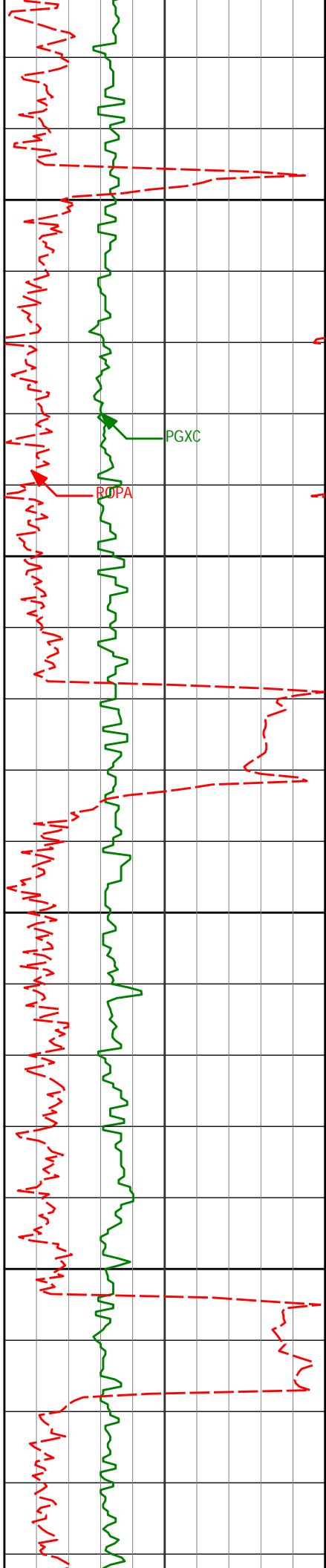
5199'

6.87°

242.74°

5174.70'

-146.79'



5250'

5300'

5350'

5400'

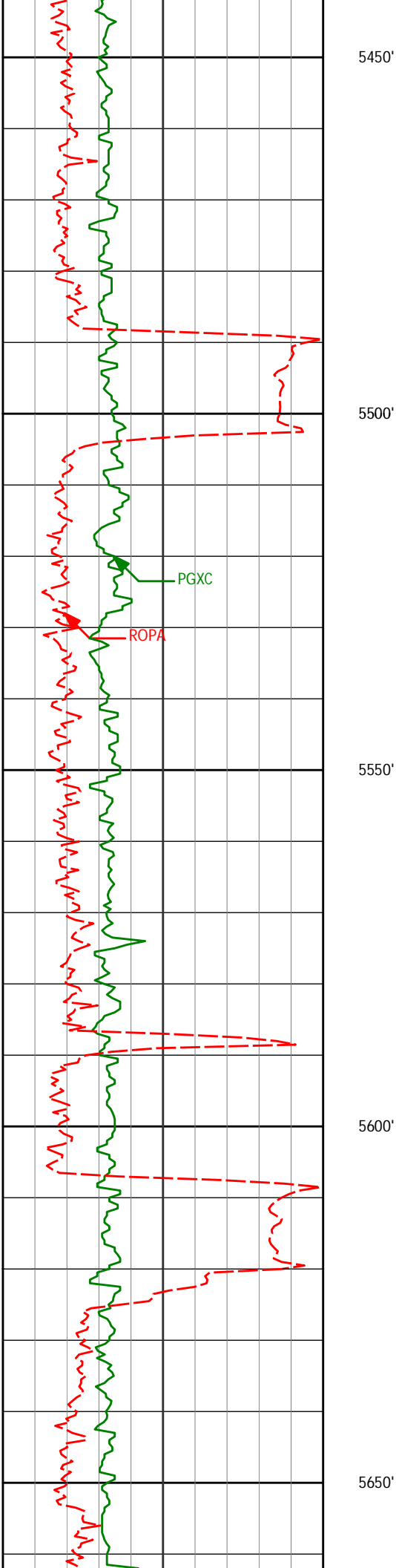
5370'

5.38°

240.54°

5344.71'

-155.06'



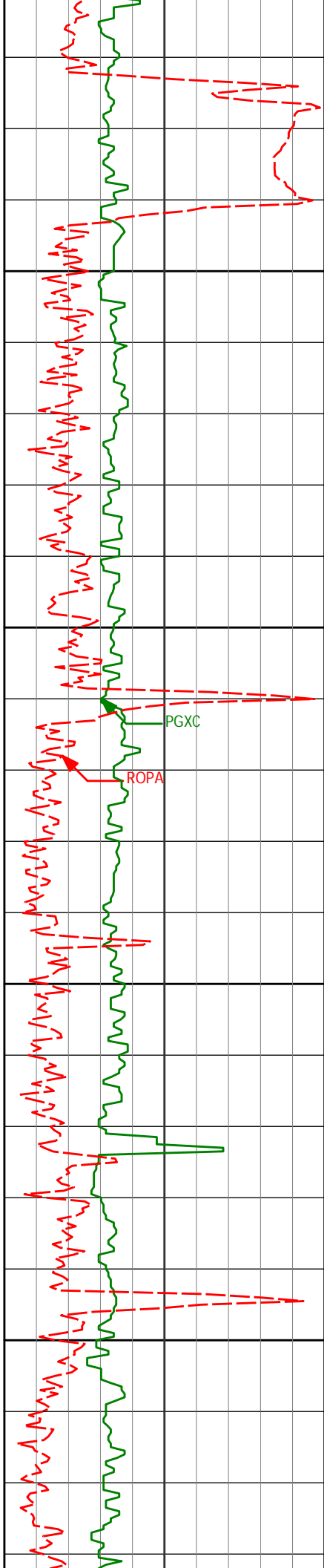
5541'

2.37°

275.36°

5515.32'

-158.44'



5700'

5712'

0.90°

344.00°

5686.26'

-156.73'

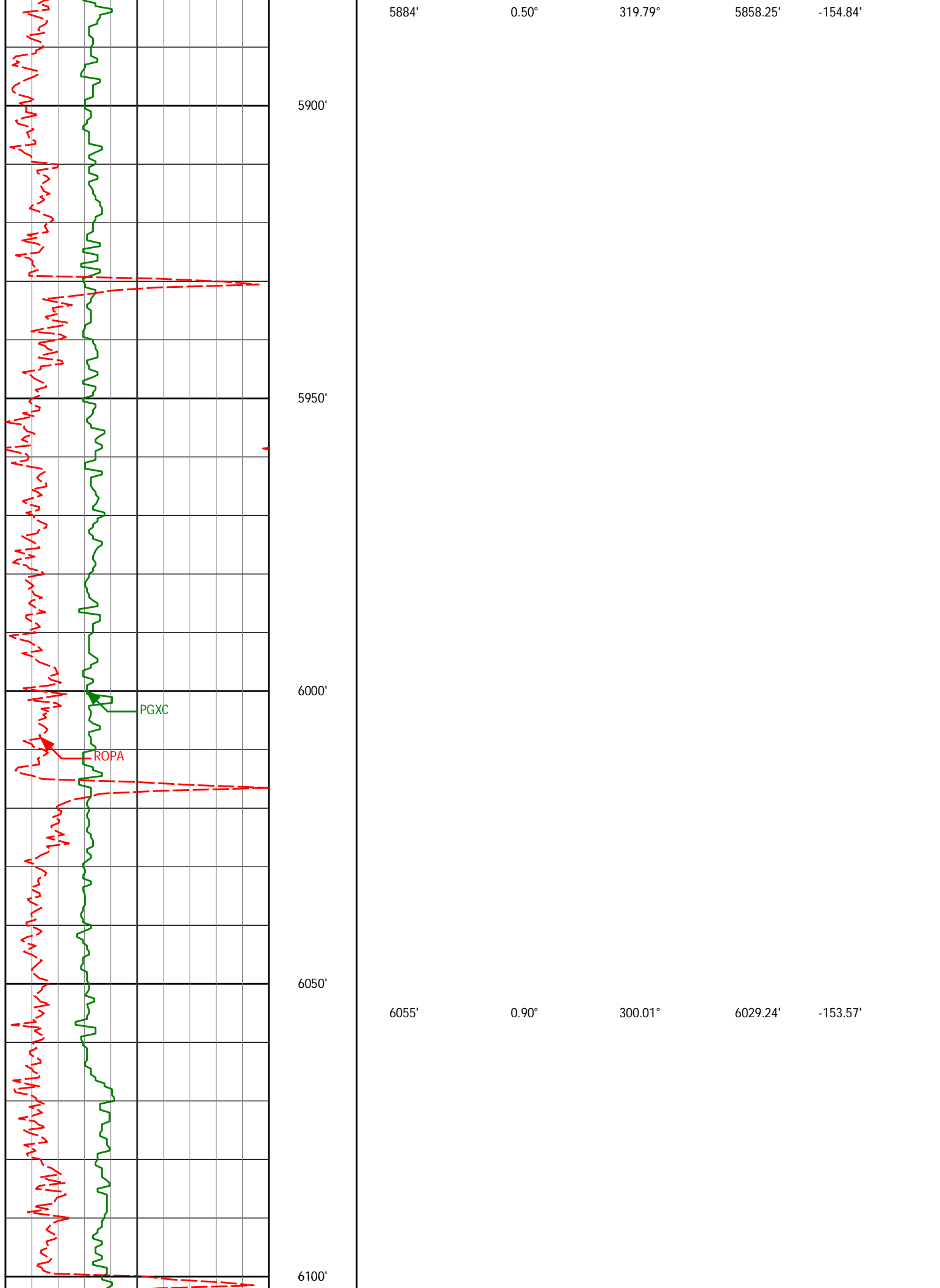
5750'

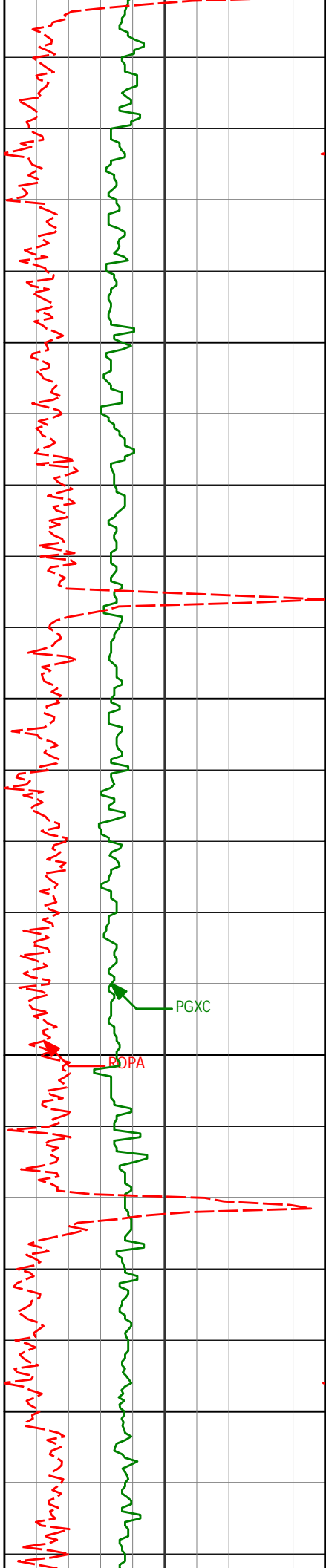
PGXC

ROPA

5800'

5850'





6150'

6200'

6225'

0.99°

312.49°

6199.21'

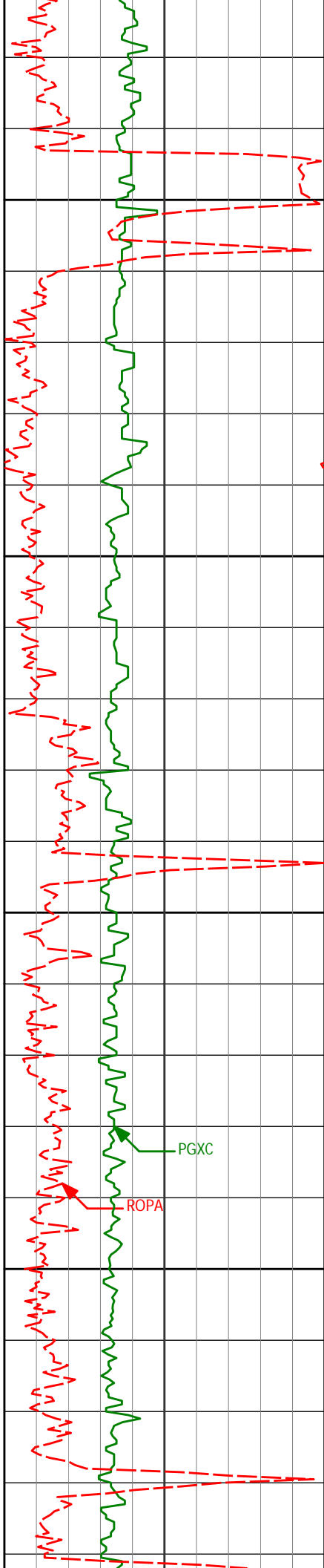
-151.86'

PGXC

BOPA

6250'

6300'



6350'

6396'

0.43°

331.67°

6370.20'

-150.26'

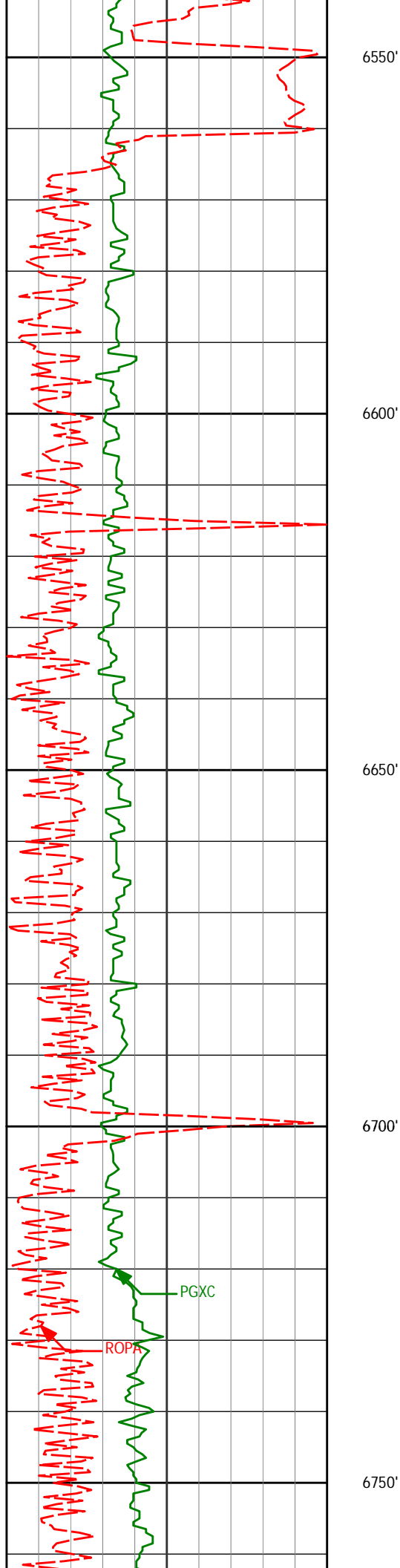
6400'

6450'

6500'

PGXC

ROPA



6567'

0.99°

359.67°

6541.19'

-148.22'

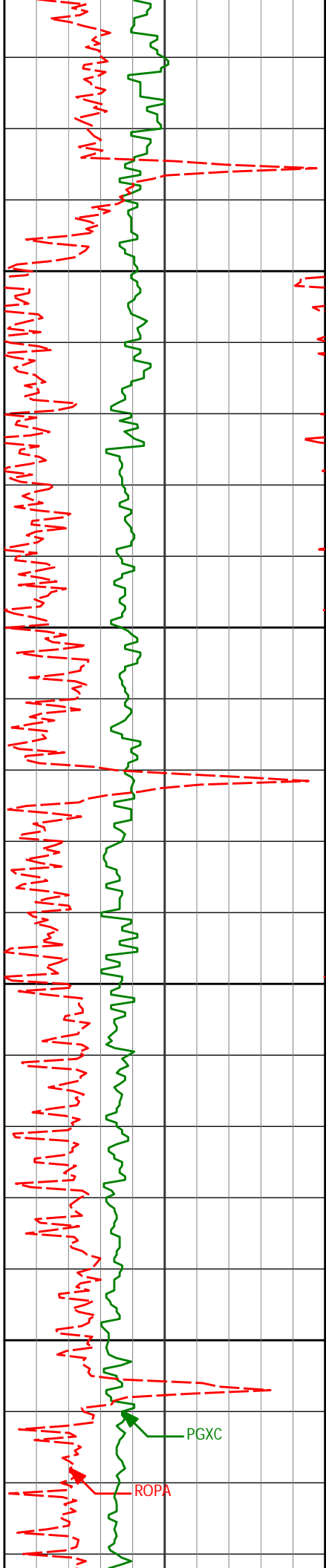
6739'

0.79°

12.96°

6713.17'

-145.58'



6800'

6850'

6900'

6910'

1.00°

33.53°

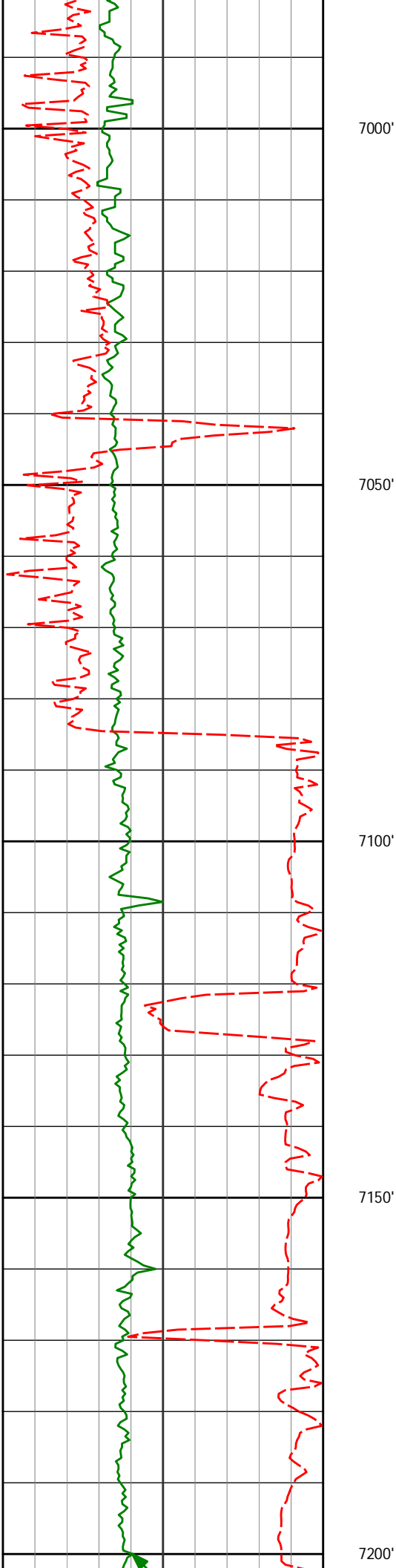
6884.14'

-143.21'

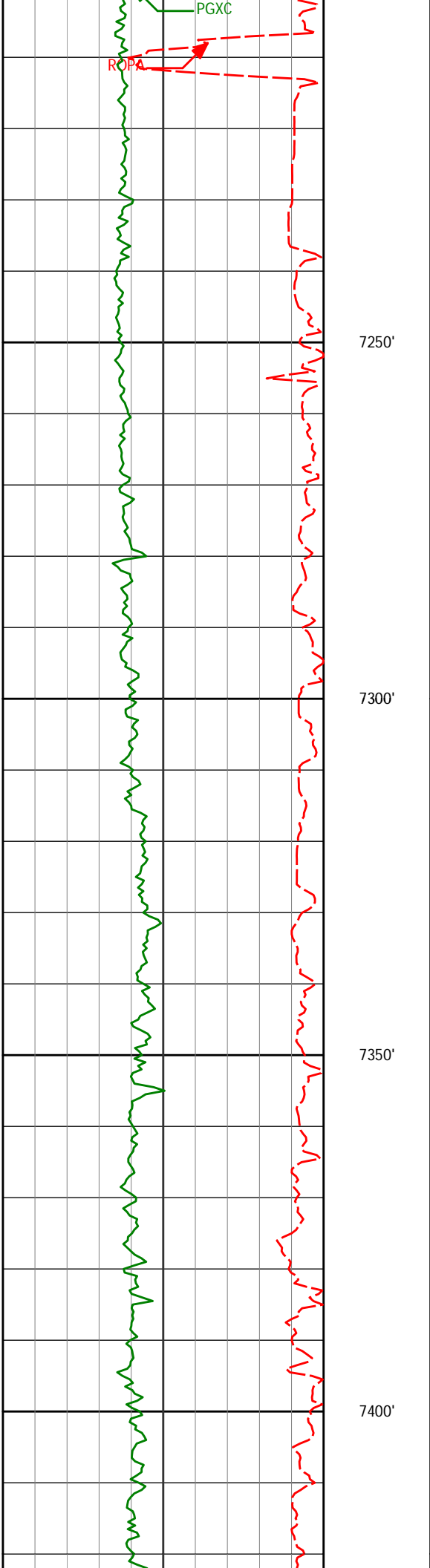
6950'

PGXC

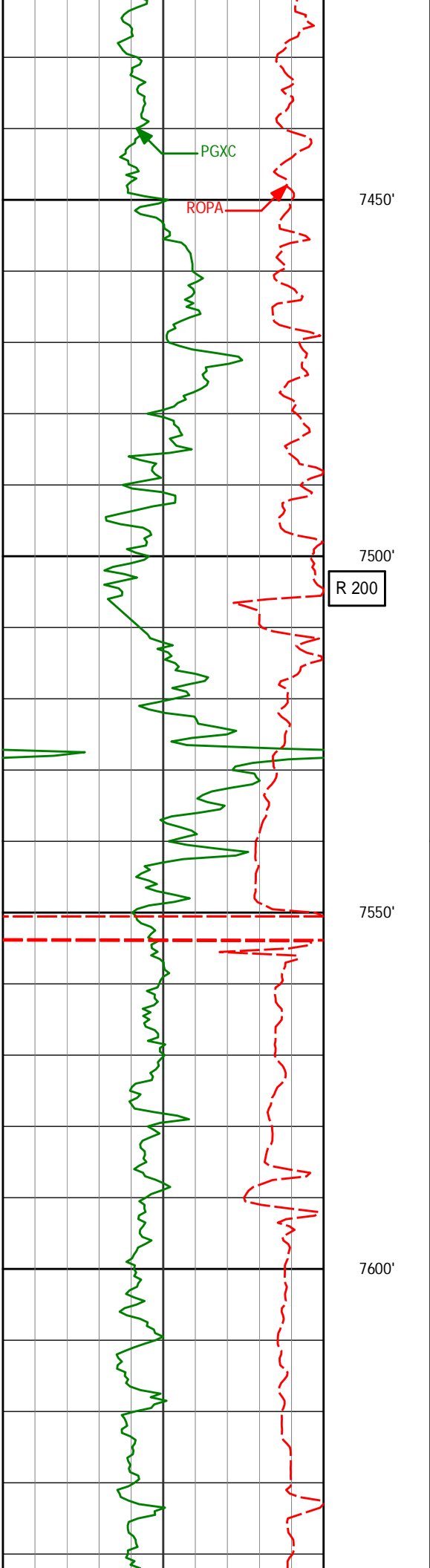
ROPA



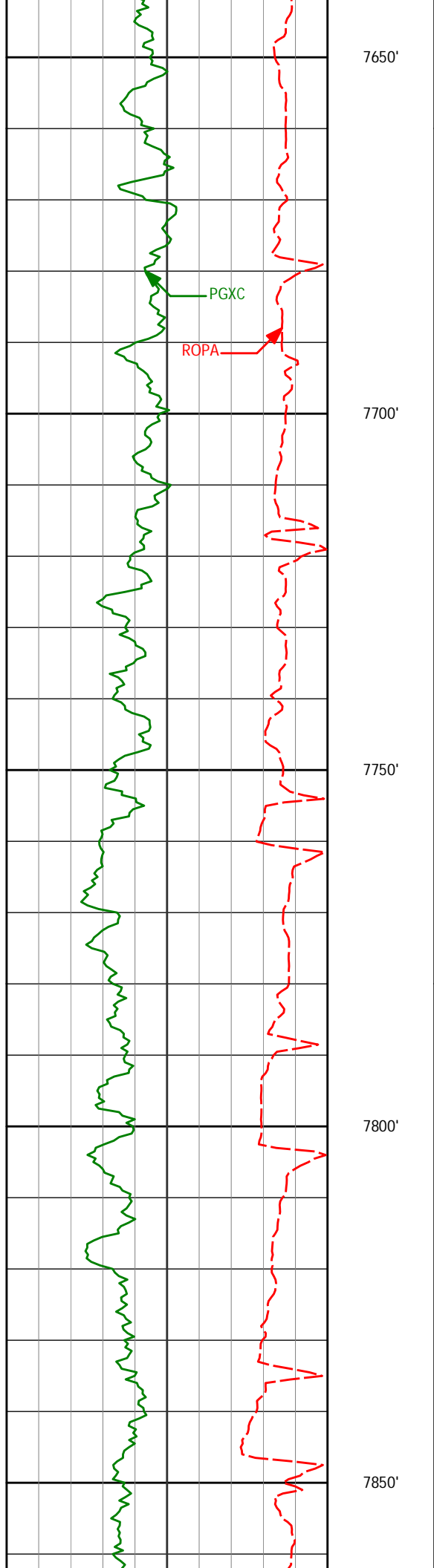
7038'	1.81°	48.96°	7012.11'	-141.00'
7081'	2.26°	39.33°	7055.08'	-139.92'
7124'	3.89°	8.76°	7098.02'	-137.84'
7167'	7.66°	354.20°	7140.79'	-133.55'



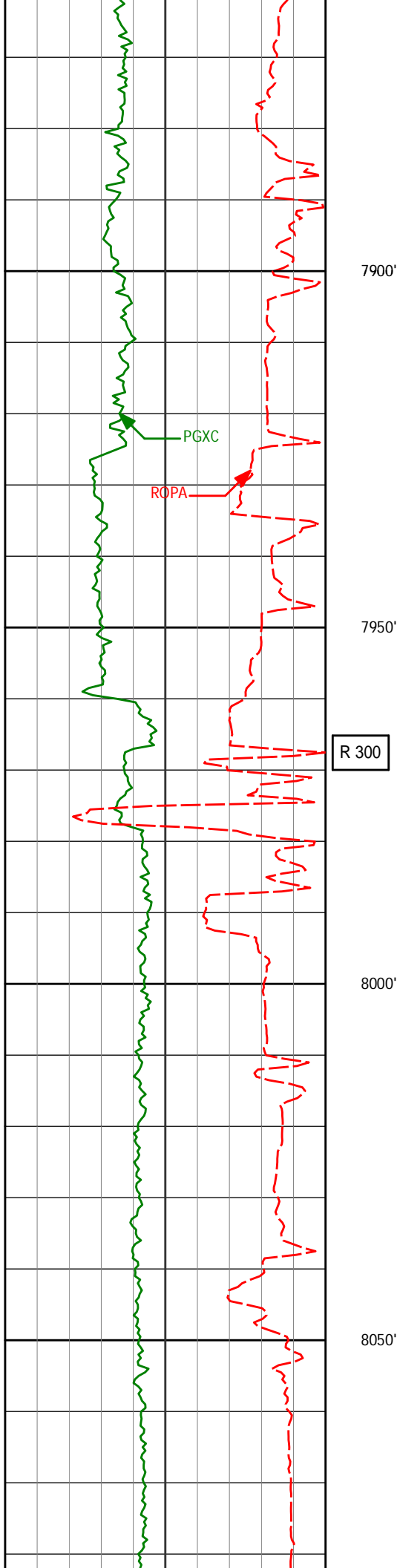
7210'	10.53°	356.10°	7183.25'	-126.77'
7252'	14.15°	358.84°	7224.27'	-117.79'
7338'	21.73°	0.47°	7306.03'	-91.33'



7423'	26.98°	1.47°	7383.44'	-56.32'
7450'	30.09°	1.63°	7407.16'	-43.44'
7466'	31.39°	2.06°	7420.91'	-35.27'
7509'	33.94°	2.88°	7457.11'	-12.12'
7551'	38.81°	359.23°	7490.92'	12.76'
7593'	43.55°	357.62°	7522.52'	40.40'
7636'	49.47°	358.03°	7552.10'	71.58'



7650'				
7679'	55.60°	356.81°	7578.24'	105.68'
7700'				
7750'				
7764'	67.08°	358.35°	7618.94'	180.13'
7800'				
7850'	78.34°	359.58°	7644.46'	262.10'



7926'

87.04°

359.67°

7654.12'

337.40'

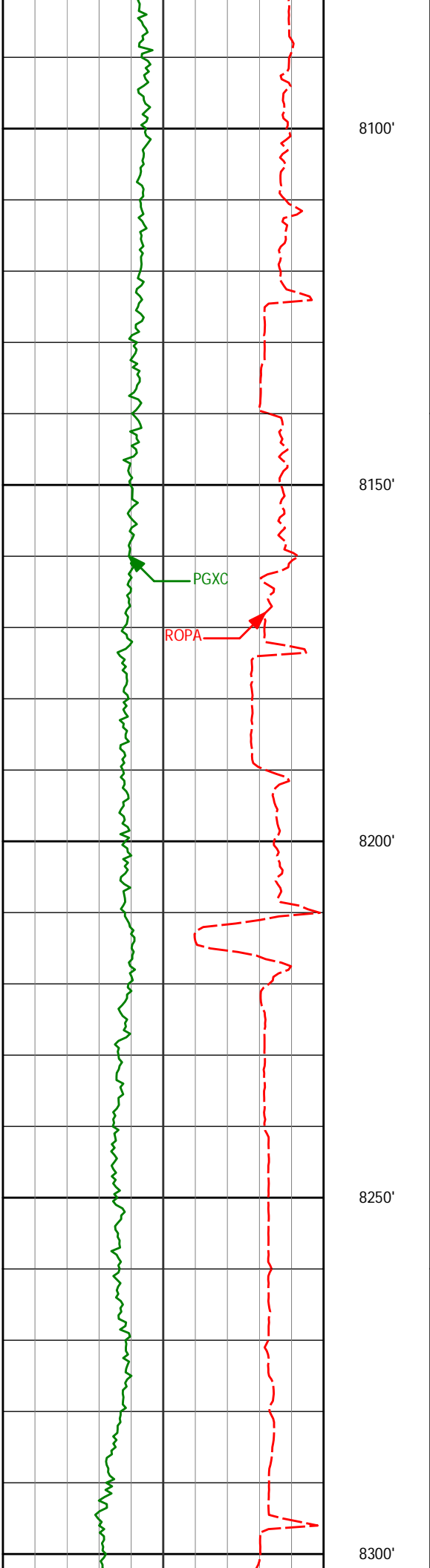
7989'

89.75°

359.65°

7655.20'

400.38'



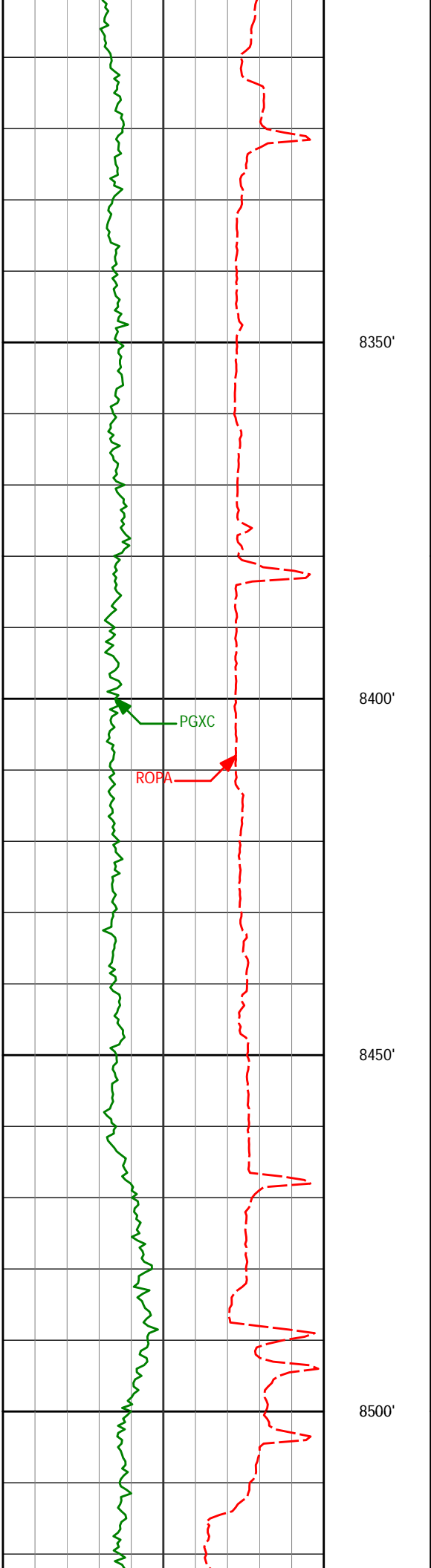
8160'

89.72°

358.87°

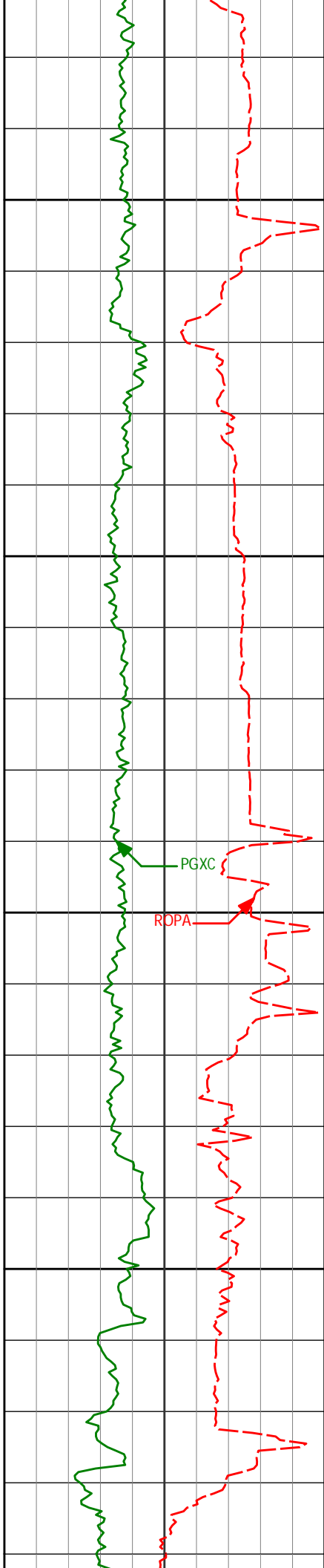
7655.99'

571.37'



8332'	90.22°	358.41°	7656.08'	743.37'
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8504'	90.18°	358.90°	7655.48'	915.37'
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8550'

8600'

8650'

8700'

PGXC

ROPA

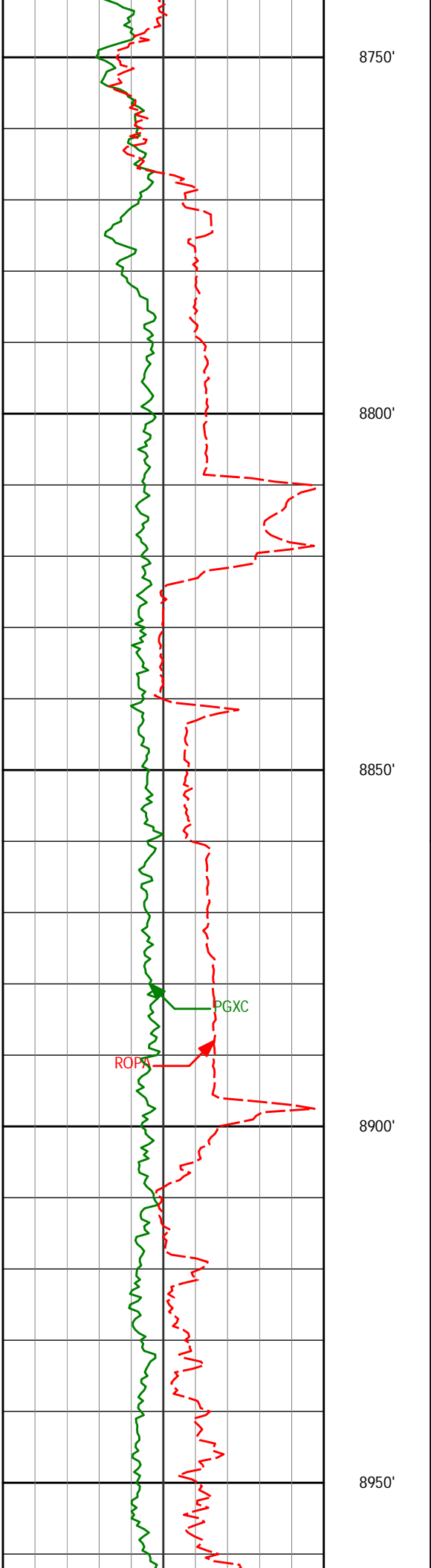
8675'

90.31°

359.42°

7654.75'

1086.36'



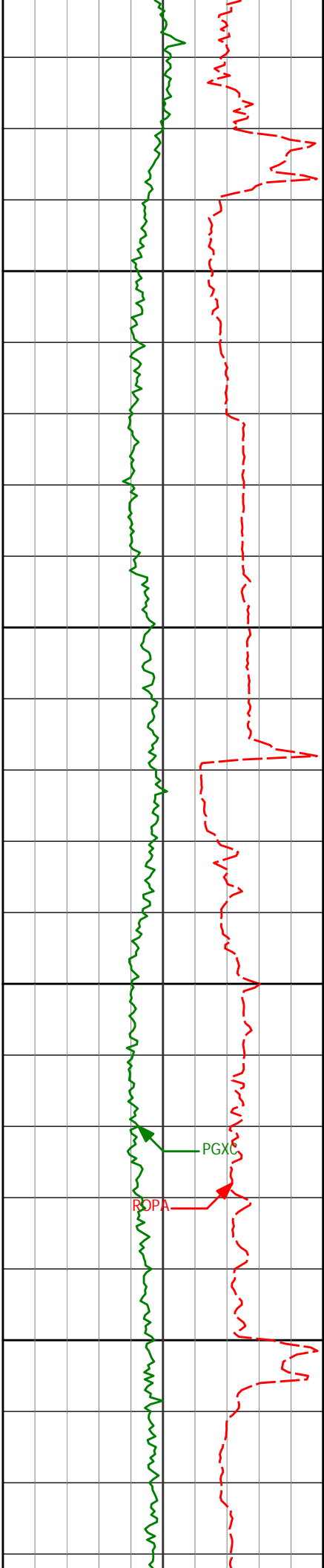
8846'

89.94°

359.26°

7654.38'

1257.35'



9000'

9017'

89.72°

358.93°

7654.88'

1428.34'

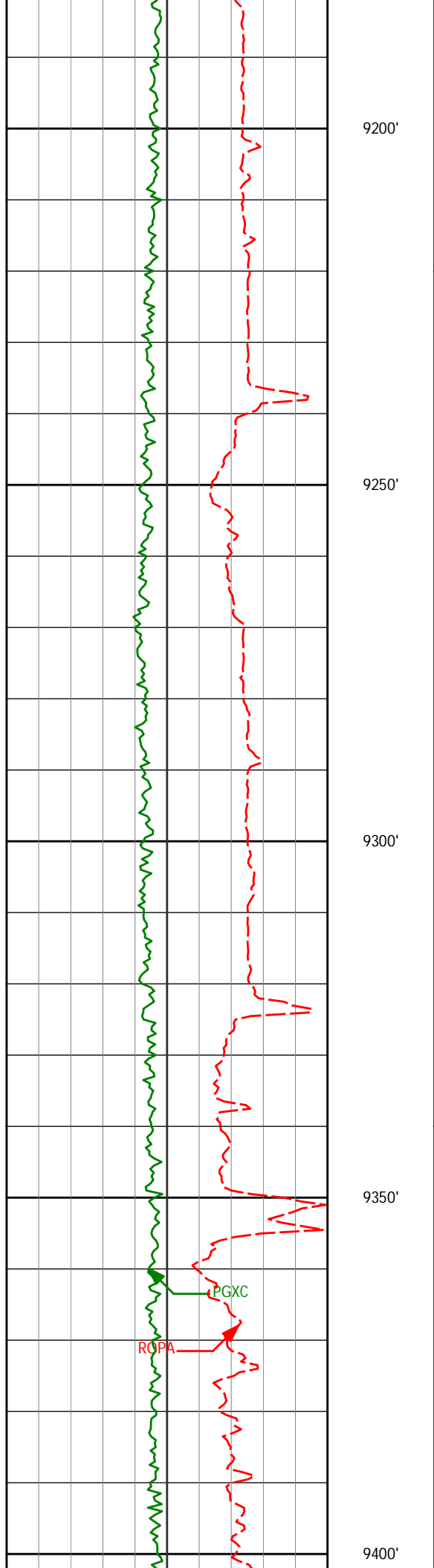
9050'

9100'

9150'

PGXC

BOPA



9188'

89.72°

358.72°

7655.72'

1599.34'

9200'

9250'

9300'

9350'

9359'

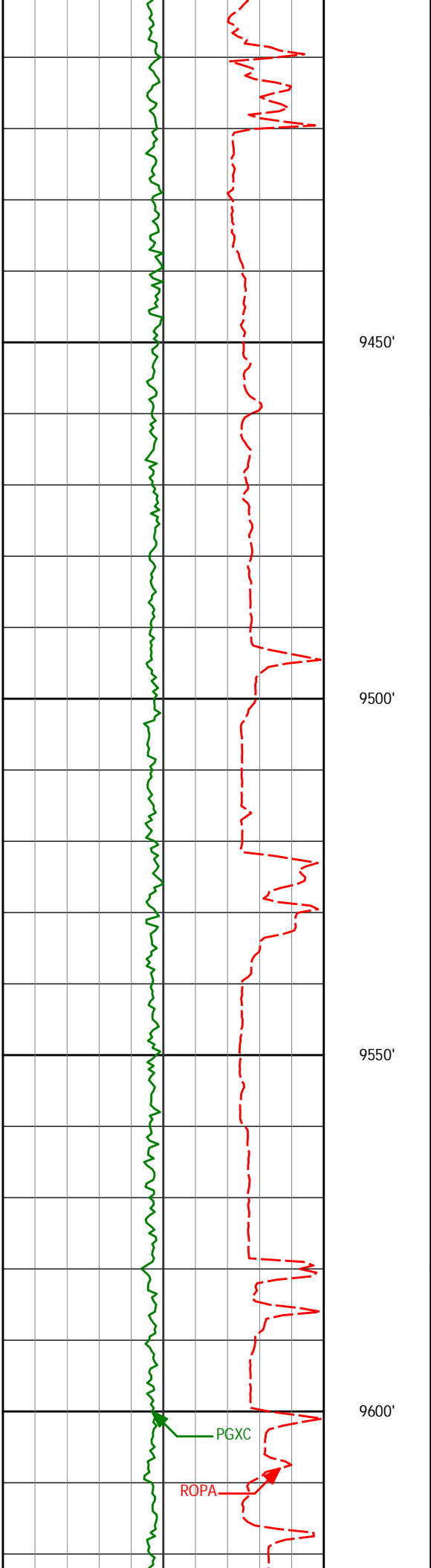
90.03°

357.87°

7656.09'

1770.33'

9400'



9450'

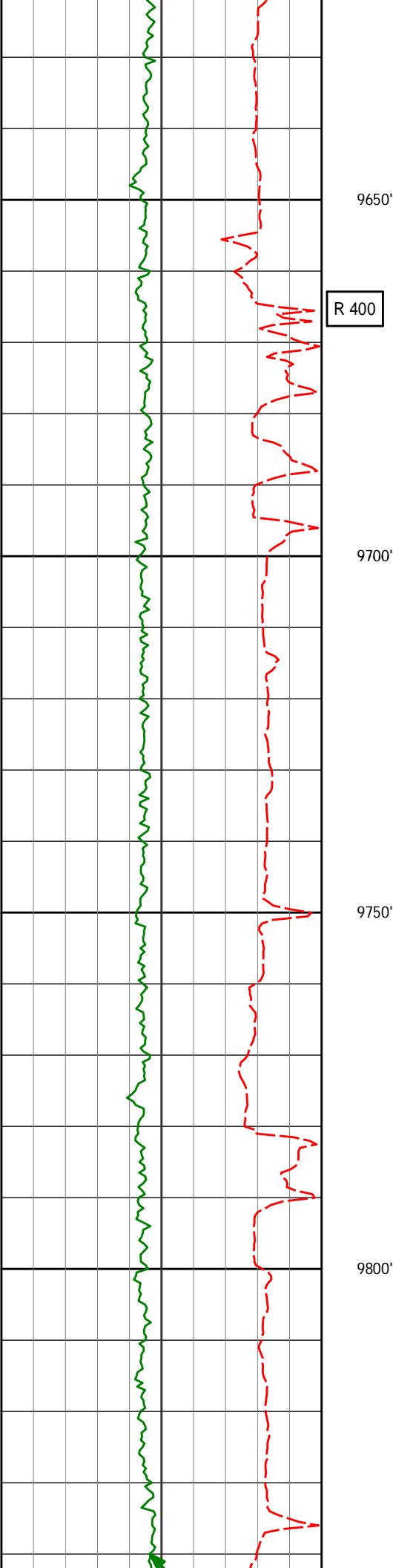
9500'

9550'

9600'

9531' 89.66° 358.47° 7656.56' 1942.32'

9616' 90.65° 359.38° 7656.33' 2027.32'



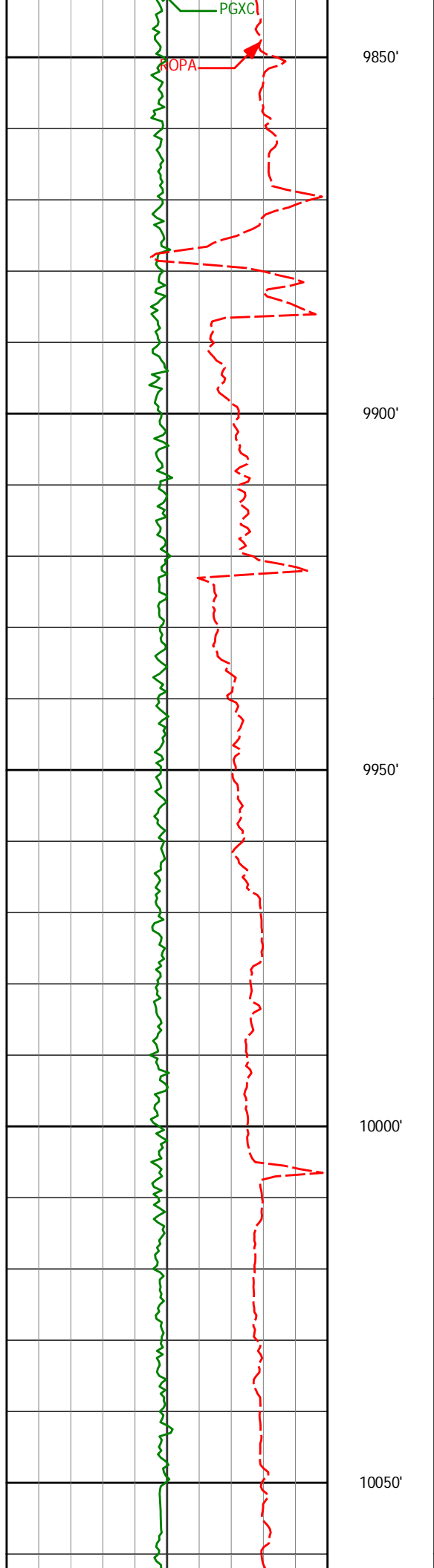
9787'

90.99°

359.89°

7653.88'

2198.28'



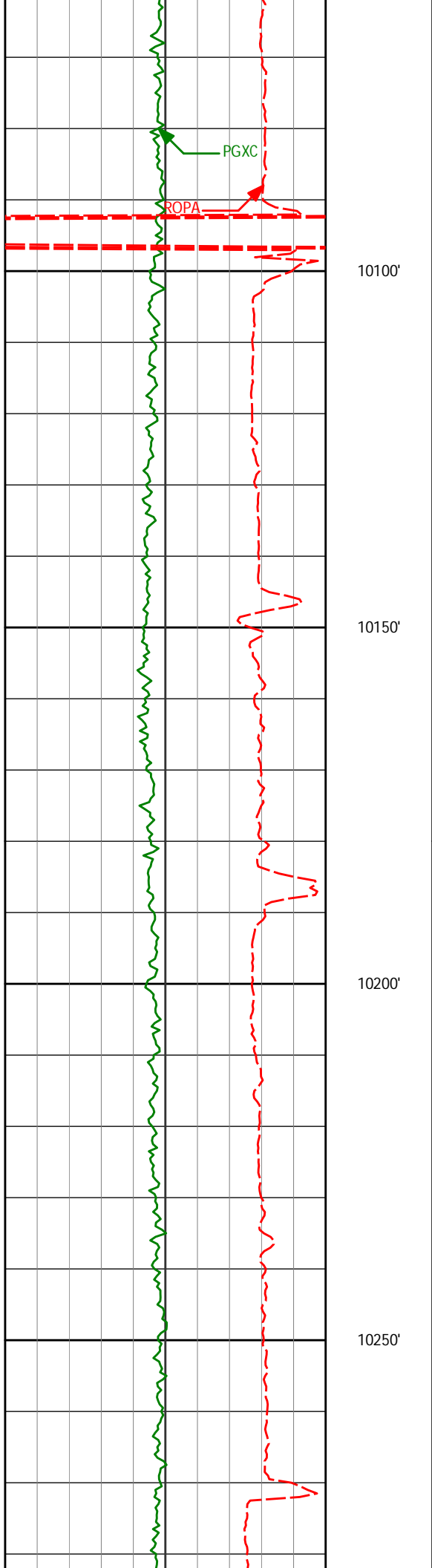
9957'

91.36°

359.70°

7650.39'

2368.22'



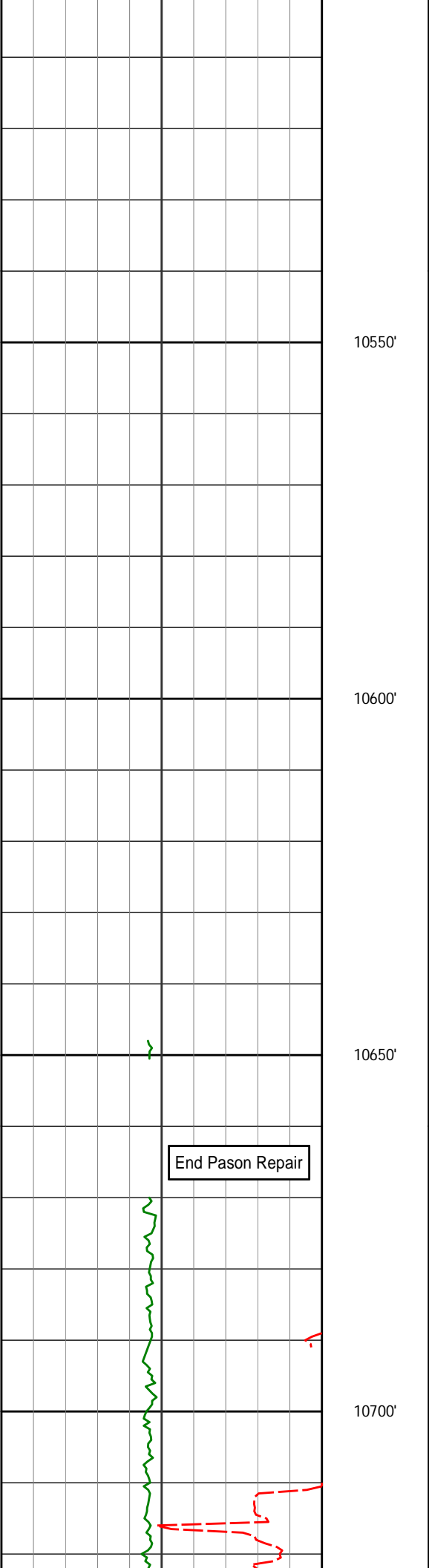
10128'

91.64°

358.83°

7645.92'

2539.15'



10550'

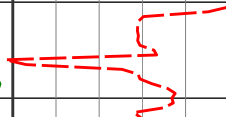
10600'

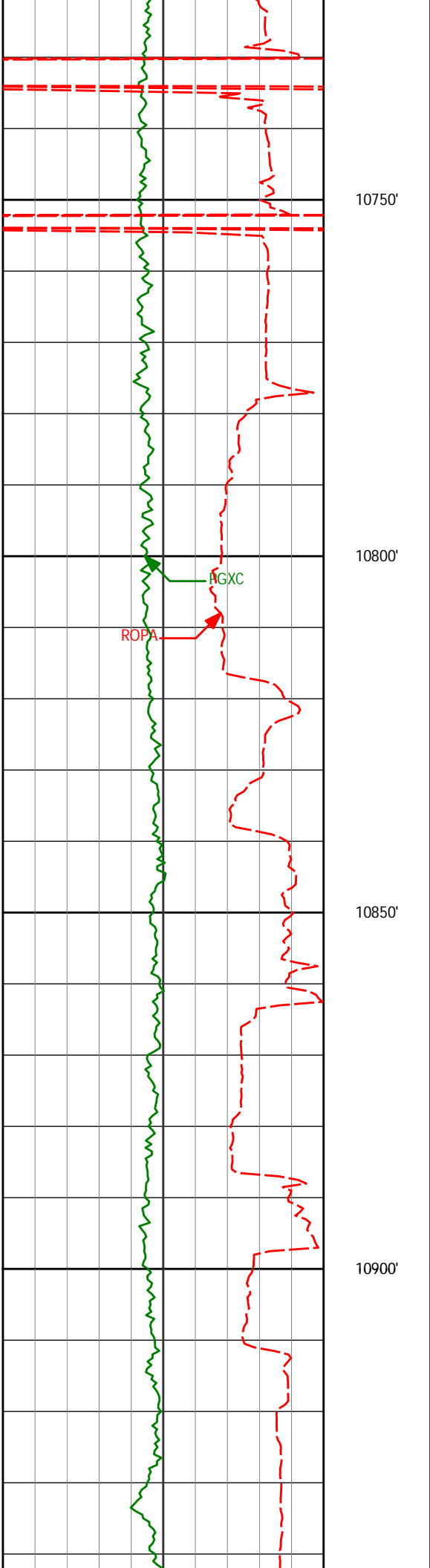
10650'

10700'

10639' 91.20° 358.96° 7633.91' 3050.00'

End Pason Repair





10810'

91.73°

358.96°

7629.53'

3220.94'

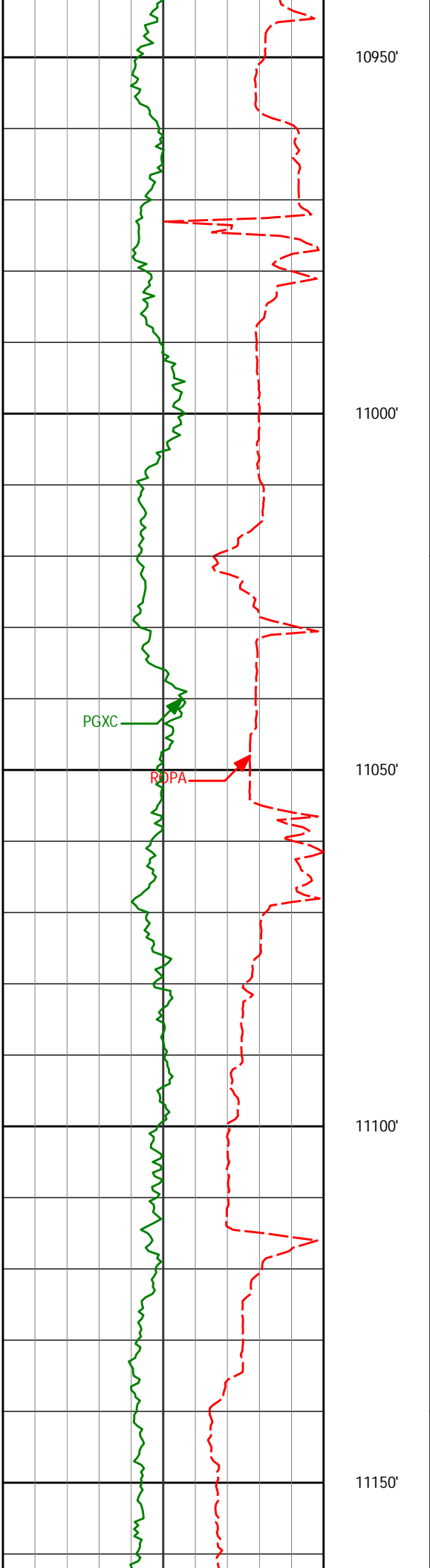
10896'

90.71°

358.31°

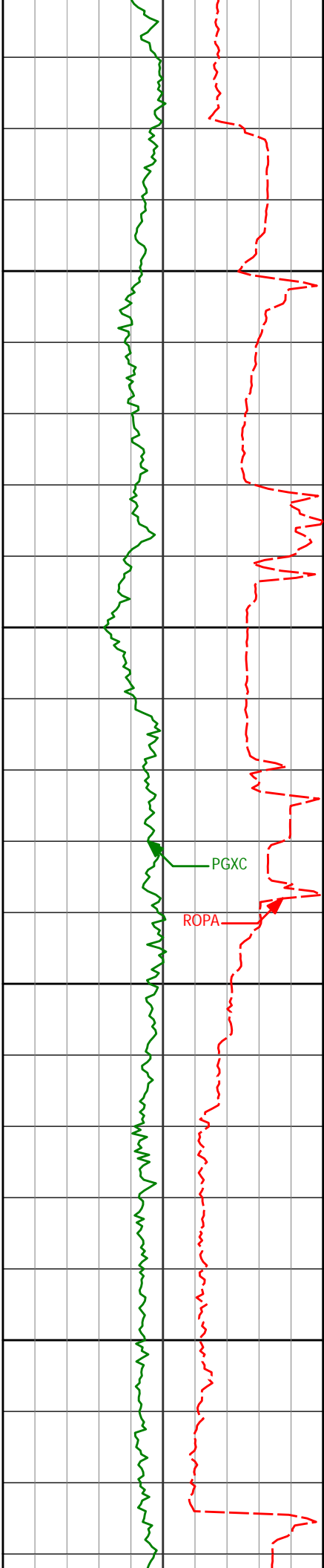
7627.70'

3306.92'



10981' 90.18° 357.62° 7627.04' 3391.91'

11067' 89.60° 358.86° 7627.21' 3477.90'



11200'

11238'

11250'

11300'

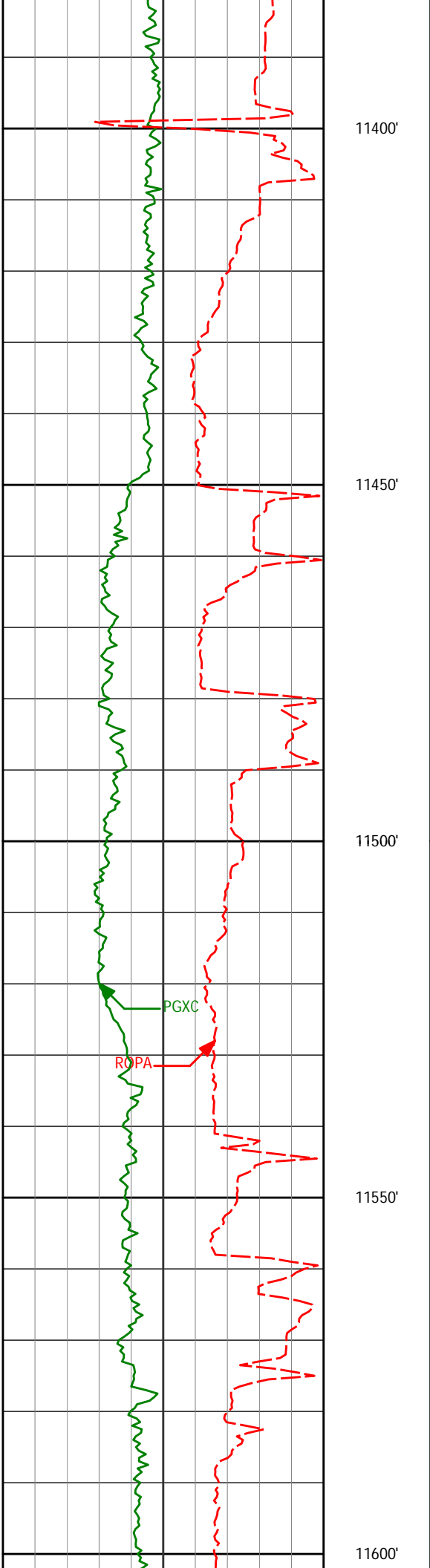
11350'

90.12°

357.73°

7627.63'

3648.90'



11400'

11410'

90.15°

357.19°

7627.22'

3820.85'

11450'

11500'

PGXC

ROPA

11550'

11580'

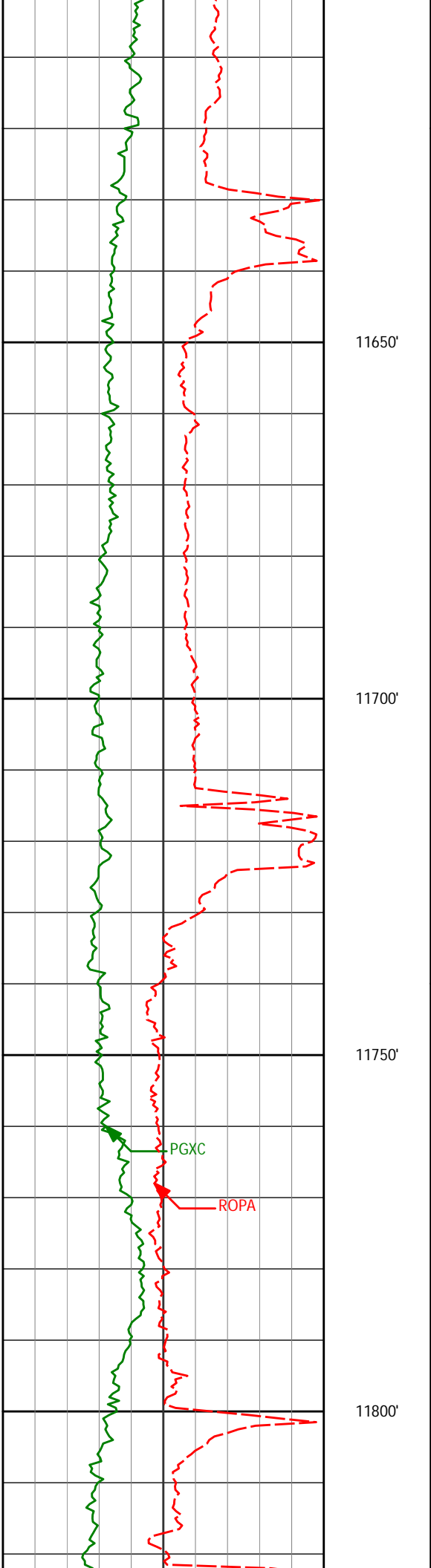
90.19°

358.55°

7626.72'

3990.83'

11600'

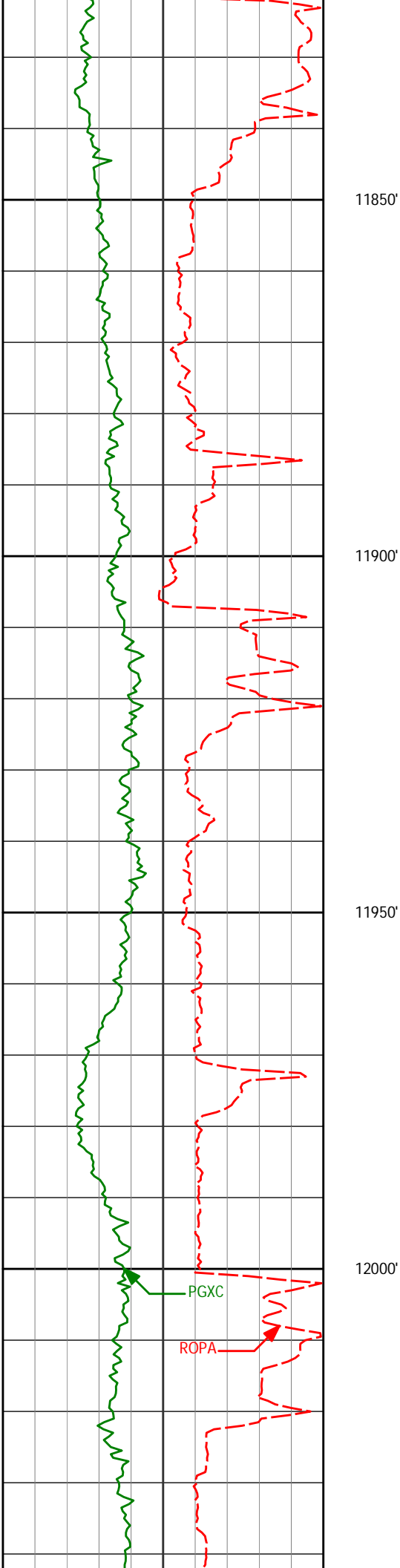


89.45°

358.44°

7627.25'

4161.83'



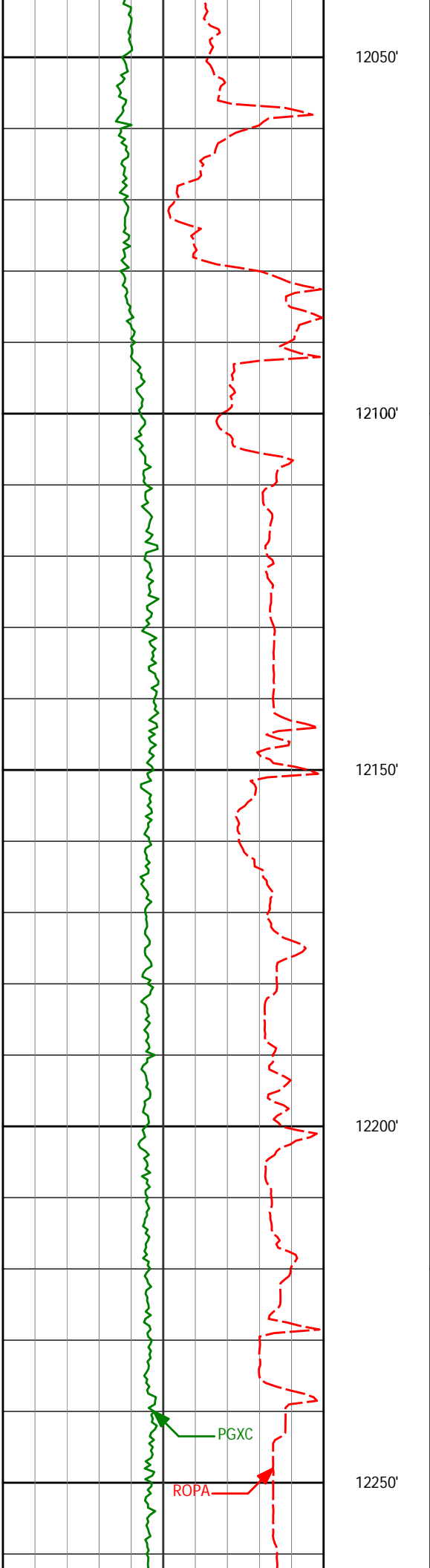
11922'

90.19°

359.38°

7627.79'

4332.82'



12050'

12094'

90.80°

358.86°

7626.30'

4504.81'

12100'

12150'

12179'

90.28°

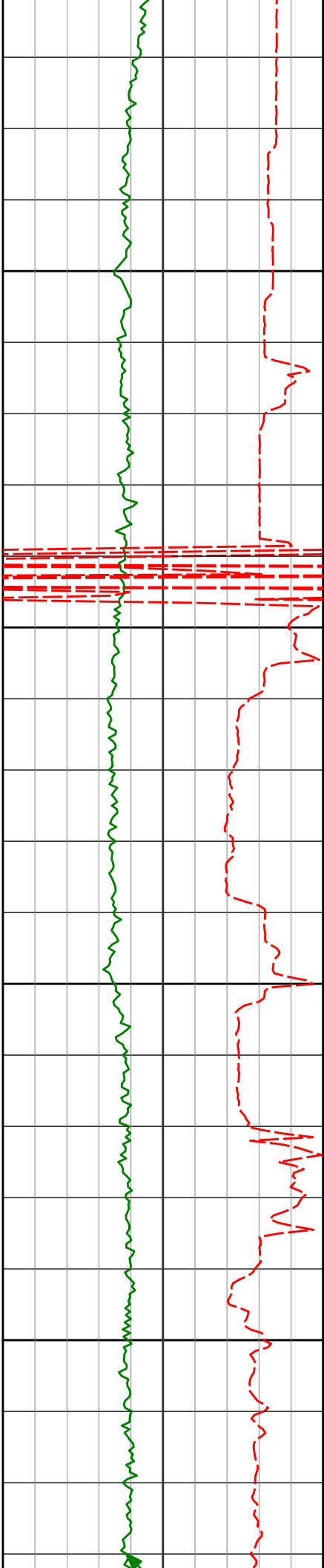
358.93°

7625.50'

4589.80'

12200'

12250'



12300'

12350'

12400'

12450'

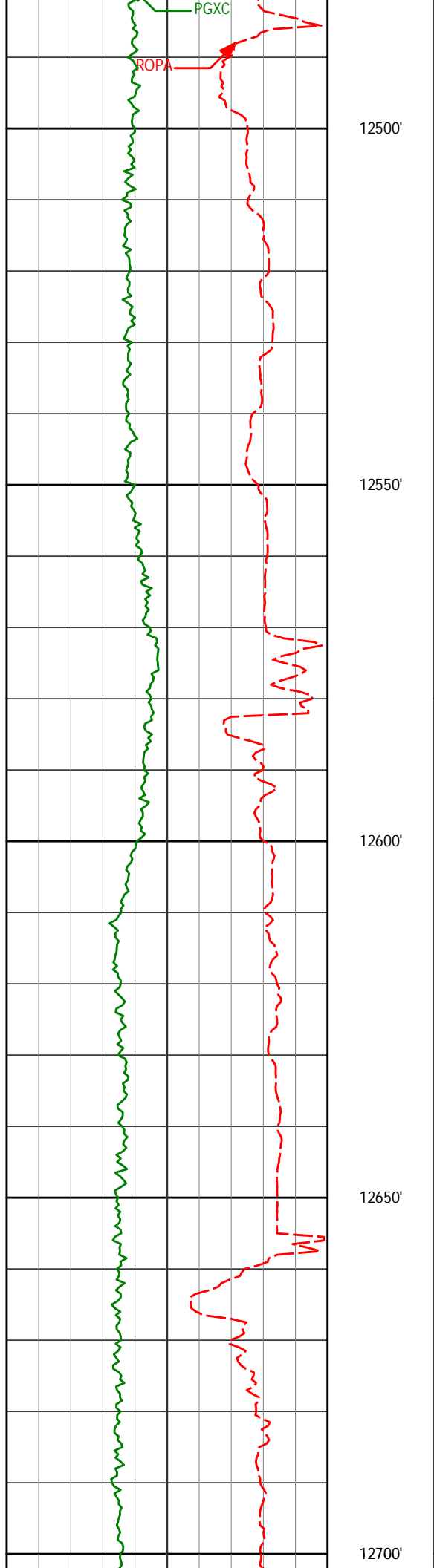
12350'

90.96°

359.98°

7623.65'

4760.78'



12521'

90.12°

358.99°

7622.04'

4931.75'

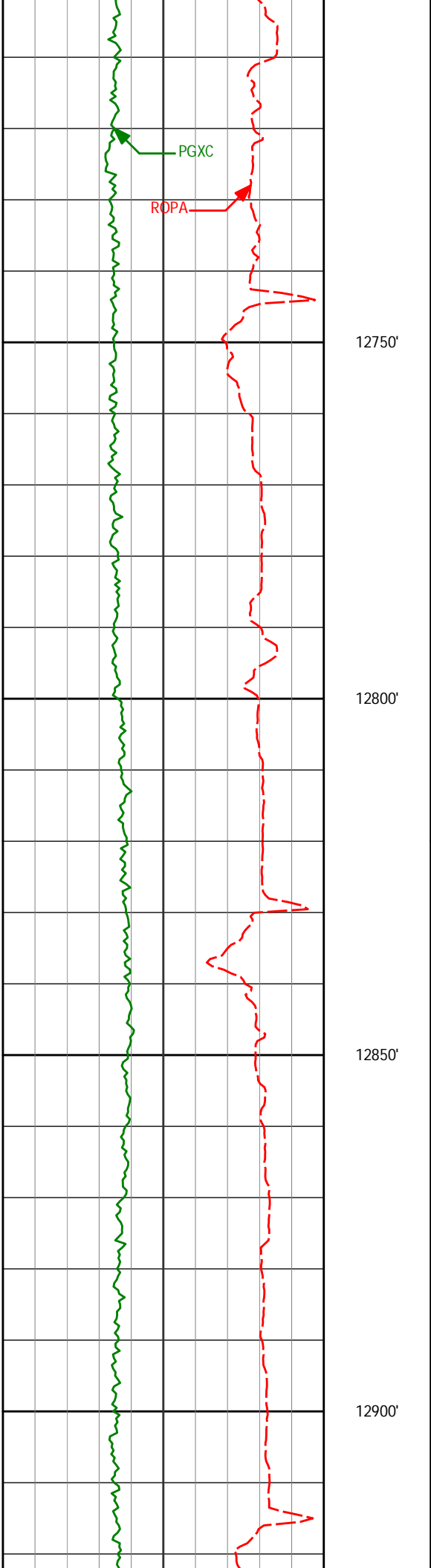
12692'

89.94°

359.79°

7621.95'

5102.74'



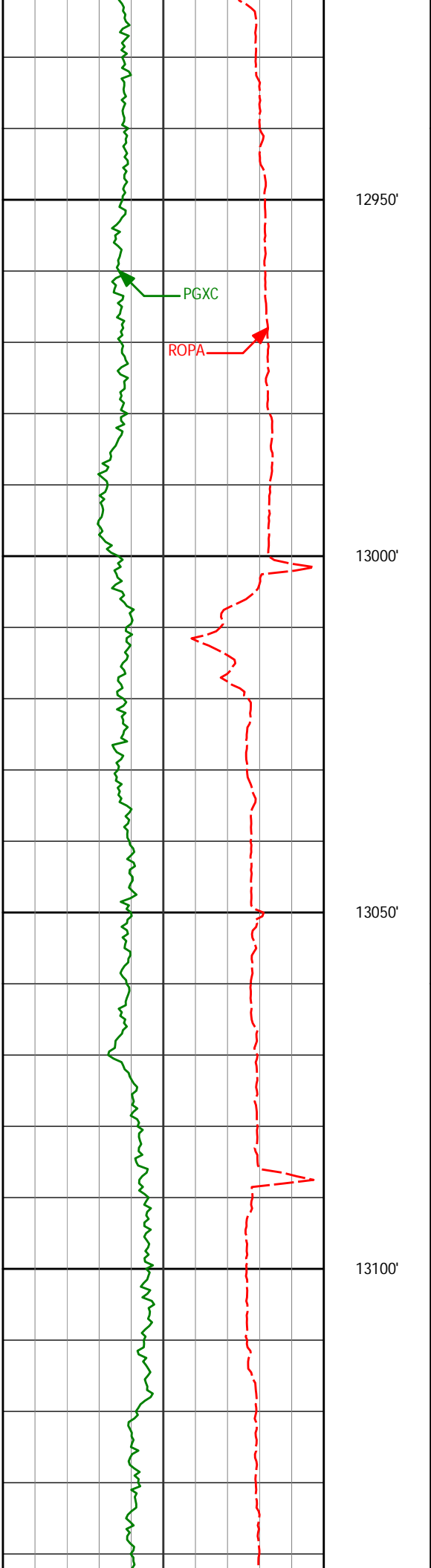
12863'

90.28°

359.91°

7621.62'

5273.70'



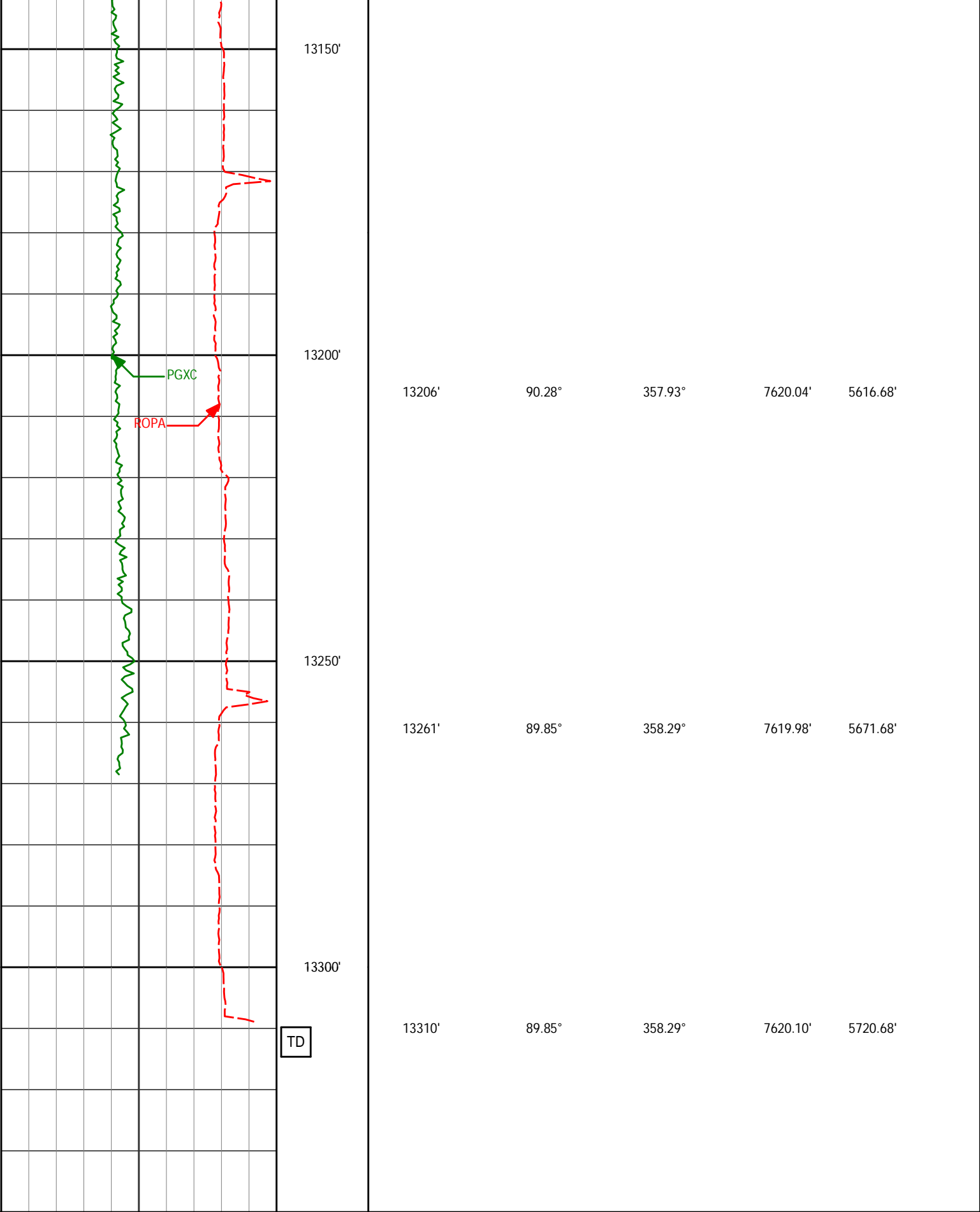
13034'

90.25°

358.99°

7620.83'

5444.69'



13206' 90.28° 357.93° 7620.04' 5616.68'

13261' 89.85° 358.29° 7619.98' 5671.68'

13310' 89.85° 358.29° 7620.10' 5720.68'

<div><div>Avg Rate of Penetration</div><div>ROPA</div><div>5000feet per hr</div></div>		Depth ft					
<div><div>PCG Gamma Ray</div><div>PGRC</div><div>0300api</div></div>			Depth	Inc	Azi	TVD	VS

HALLIBURTON

DIRECTIONAL SURVEY REPORT

Anadarko Petroleum
Howard 6N-29HZ
Wattenberg
Weld Colorado
USA
CA-XX-0901446323

Measured Depth (feet)	Inclination (degrees)	Direction (degrees)	Vertical Depth (feet)	Latitude (feet)	Departure (feet)	Vertical Section (feet)	Dogleg (deg/100ft)
878.00	0.48	1.61	877.97	5.49 N	2.64 E	5.43	TIE-IN
1107.00	0.64	349.18	1106.96	7.71 N	2.43 E	7.65	0.09
1202.00	0.50	342.63	1201.95	8.62 N	2.20 E	8.57	0.16
1297.00	1.00	257.90	1296.95	8.84 N	1.27 E	8.81	1.13
1487.00	1.35	282.34	1486.91	8.97 N	2.54 W	9.03	0.32
1673.00	1.07	254.58	1672.87	8.98 N	6.35 W	9.12	0.34
1856.00	0.88	286.12	1855.84	8.92 N	9.35 W	9.12	0.31
2039.00	1.22	285.94	2038.81	9.84 N	12.57 W	10.12	0.19
2222.00	1.33	263.65	2221.77	10.14 N	16.56 W	10.51	0.28
2405.00	0.89	187.60	2404.74	8.50 N	18.86 W	8.91	0.77
2588.00	1.18	166.63	2587.71	5.26 N	18.61 W	5.67	0.26
2772.00	1.49	185.95	2771.66	1.03 N	18.42 W	1.44	0.29
2955.00	2.26	215.60	2954.57	4.27 S	20.77 W	-3.81	0.66
3138.00	3.26	250.45	3137.37	8.94 S	27.77 W	-8.32	1.04
3321.00	5.72	240.00	3319.79	15.24 S	40.57 W	-14.34	1.41
3491.00	8.78	246.21	3488.42	24.72 S	59.79 W	-23.38	1.86
3661.00	9.29	236.55	3656.32	37.51 S	83.11 W	-35.66	0.94
3832.00	9.59	232.43	3825.00	53.81 S	105.92 W	-51.45	0.43
4003.00	9.41	242.39	3993.67	68.97 S	129.59 W	-66.08	0.97
4173.00	9.13	239.14	4161.45	82.33 S	153.49 W	-78.91	0.35
4345.00	10.64	251.43	4330.91	94.39 S	180.26 W	-90.37	1.50
4516.00	10.14	247.70	4499.11	105.13 S	209.15 W	-100.47	0.49
4687.00	8.97	241.44	4667.74	117.22 S	234.79 W	-111.98	0.91
4859.00	8.13	239.22	4837.82	129.85 S	257.01 W	-124.12	0.52
5030.00	8.04	237.62	5007.13	142.44 S	277.50 W	-136.26	0.14
5199.00	6.87	242.74	5174.70	153.40 S	296.47 W	-146.79	0.80
5370.00	5.38	240.54	5344.71	162.03 S	312.54 W	-155.06	0.88
5541.00	2.37	275.36	5515.32	165.64 S	323.04 W	-158.44	2.16
5712.00	0.90	344.00	5686.26	164.02 S	326.94 W	-156.73	1.29
5884.00	0.50	319.79	5858.25	162.15 S	327.79 W	-154.84	0.28
6055.00	0.90	300.01	6029.24	160.91 S	329.44 W	-153.57	0.27
6225.00	0.99	312.49	6199.21	159.25 S	331.68 W	-151.86	0.13
6396.00	0.43	331.67	6370.20	157.69 S	333.07 W	-150.26	0.35
6567.00	0.99	359.67	6541.19	155.64 S	333.38 W	-148.22	0.38
6739.00	0.79	12.96	6713.17	153.00 S	333.13 W	-145.58	0.17
6910.00	1.00	33.53	6884.14	150.61 S	332.04 W	-143.21	0.22
7038.00	1.81	48.96	7012.11	148.35 S	329.89 W	-141.00	0.69
7081.00	2.26	39.33	7055.08	147.25 S	328.85 W	-139.92	1.31
7124.00	3.89	8.76	7098.02	145.15 S	328.09 W	-137.84	5.25
7167.00	7.66	354.20	7140.79	140.86 S	328.15 W	-133.55	9.34
7210.00	10.53	356.10	7183.25	134.08 S	328.71 W	-126.77	6.71
7252.00	14.15	358.84	7224.27	125.12 S	329.08 W	-117.79	8.73
7338.00	21.73	0.47	7306.03	98.65 S	329.16 W	-91.33	8.83
7423.00	26.98	1.47	7383.44	63.62 S	328.53 W	-56.32	6.20
7450.00	30.09	1.63	7407.16	50.73 S	328.18 W	-43.44	11.52
7466.00	31.39	2.06	7420.91	42.55 S	327.92 W	-35.27	8.24
7509.00	33.94	2.88	7457.11	19.37 S	326.91 W	-12.12	6.02
7551.00	38.81	359.23	7490.92	5.52 N	326.50 W	12.76	12.68
7593.00	43.55	357.62	7522.52	33.15 N	327.28 W	40.40	11.56
7636.00	49.47	358.03	7552.10	64.31 N	328.46 W	71.58	13.78
7679.00	55.60	356.81	7578.24	98.39 N	330.01 W	105.68	14.43
7764.00	67.08	358.35	7618.94	172.78 N	333.10 W	180.13	13.60
7850.00	78.34	359.58	7644.46	254.75 N	334.55 W	262.10	13.16
7926.00	87.04	359.67	7654.12	330.06 N	335.04 W	337.40	11.45

7967.00	90.06	359.67	7655.16	371.04 N	335.28 W	378.38	7.37
7989.00	89.75	359.65	7655.20	393.04 N	335.41 W	400.38	1.41
8160.00	89.72	358.87	7655.99	564.02 N	337.62 W	571.37	0.46
8332.00	90.22	358.41	7656.08	735.97 N	341.70 W	743.37	0.40
8504.00	90.18	358.90	7655.48	907.93 N	345.74 W	915.37	0.29
8675.00	90.31	359.42	7654.75	1078.90 N	348.25 W	1086.36	0.31
8846.00	89.94	359.26	7654.38	1249.89 N	350.22 W	1257.35	0.24
9017.00	89.72	358.93	7654.88	1420.87 N	352.92 W	1428.34	0.23
9188.00	89.72	358.72	7655.72	1591.83 N	356.42 W	1599.34	0.12
9359.00	90.03	357.87	7656.09	1762.75 N	361.51 W	1770.33	0.53
9531.00	89.66	358.47	7656.56	1934.66 N	367.00 W	1942.32	0.41
9616.00	90.65	359.38	7656.33	2019.65 N	368.60 W	2027.32	1.58
9787.00	90.99	359.89	7653.88	2190.63 N	369.69 W	2198.28	0.36
9957.00	91.36	359.70	7650.39	2360.59 N	370.30 W	2368.22	0.24
10128.00	91.64	358.83	7645.92	2531.51 N	372.49 W	2539.15	0.53
10299.00	91.33	358.66	7641.49	2702.42 N	376.23 W	2710.09	0.21
10469.00	91.29	359.24	7637.60	2872.34 N	379.35 W	2880.04	0.34
10639.00	91.20	358.96	7633.91	3042.28 N	382.02 W	3050.00	0.17
10810.00	91.73	358.96	7629.53	3213.20 N	385.12 W	3220.94	0.31
10896.00	90.71	358.31	7627.70	3299.15 N	387.17 W	3306.92	1.41
10981.00	90.18	357.62	7627.04	3384.09 N	390.19 W	3391.91	1.02
11067.00	89.60	358.86	7627.21	3470.05 N	392.83 W	3477.90	1.59
11238.00	90.12	357.73	7627.63	3640.97 N	397.92 W	3648.90	0.73
11410.00	90.15	357.19	7627.22	3812.80 N	405.54 W	3820.85	0.31
11580.00	90.19	358.55	7626.72	3982.68 N	411.86 W	3990.83	0.80
11751.00	89.45	358.44	7627.25	4153.62 N	416.35 W	4161.83	0.44
11922.00	90.19	359.38	7627.79	4324.58 N	419.60 W	4332.82	0.70
12094.00	90.80	358.86	7626.30	4496.55 N	422.24 W	4504.81	0.47
12179.00	90.28	358.93	7625.50	4581.53 N	423.88 W	4589.80	0.62
12350.00	90.96	359.98	7623.65	4752.51 N	425.51 W	4760.78	0.73
12521.00	90.12	358.99	7622.04	4923.50 N	427.05 W	4931.75	0.76
12692.00	89.94	359.79	7621.95	5094.48 N	428.87 W	5102.74	0.48
12863.00	90.28	359.91	7621.62	5265.48 N	429.31 W	5273.70	0.21
13034.00	90.25	358.99	7620.83	5436.47 N	430.96 W	5444.69	0.54
13206.00	90.28	357.93	7620.04	5608.40 N	435.58 W	5616.68	0.62
13261.00	89.85	358.29	7619.98	5663.37 N	437.39 W	5671.68	1.02
13310.00	89.85	358.29	7620.10	5712.35 N	438.86 W	5720.68	0.00

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 358.73 DEGREES (TRUE)
A TOTAL CORRECTION OF 8.45 DEG FROM MAGNETIC NORTH TO TRUE NORTH HAS BEEN APPLIED**

**HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD.
HORIZONTAL DISPLACEMENT(CLOSURE) AT 13310.00 FEET
IS 5729.19 FEET ALONG 355.61 DEGREES (TRUE)**

Surveys tied onto Gyro's @ 878'MD. Final Survey is projected to bit.