



WELL INFORMATION					
MWD Run Number	100	200	300	400	
Date run completed	12-Mar-15	13-Mar-15	15-Mar-15	18-Mar-15	
Rig Bit Number	100	200	300	0400	
Bit Size (in)	8.750	8.750	6.125	6.125	
Tool Nominal OD (in)	6.750	6.500	4.750	4.750	
Log Start Depth (MD, ft)	948.00	5,976.00	7,152.00	10,854.00	
Log End Depth (MD, ft)	5,976.00	7,152.00	10,854.00	16,292.00	
Drill or Wipe	Drill	Drill	Drill	Drill	
Drill/Wipe Start Date and Time	11-Mar-15 11:30	12-Mar-15 11:15	14-Mar-15 05:08	15-Mar-15 20:10	
Drill/Wipe End Date and Time	12-Mar-15 03:00	13-Mar-15 01:30	15-Mar-15 08:40	17-Mar-15 09:50	
Min Inc (deg) @ Depth (MD, ft)	0.19 @ 990.00	1.43 @ 6,006.00	87.81 @ 10,040.00	87.78 @ 11,344.00	
Max Inc (deg) @ Depth (MD, ft)	13.15 @ 3,916.00	84.00 @ 7,089.00	92.71 @ 9,566.00	91.73 @ 13,034.00	
Bit TFA(in2) / Bit Type	1.21 / PDC	1.24 / PDC	0.98 / PDC	0.98 / PDC	
Flow Rate (gpm)	597.96	600.00	313.92	315.00	
Max AV (fpm) / CV (fpm) @ MWD	419.3 / 400	419.3 / 400	456.0 / 400	456 / 400	
Fluid Type	Native/Spud Mud	Native/Spud Mud	Polymer	Polymer	
Density (ppg) / Viscosity (spqt)	8.70 / 39.00	10.60 / 37.50	9.55 / 32.00	9.60 / 36.00	
Filtrate CL (ppm)	2,500.00	2,750.00	2,700.00	3,900.00	
pH / Fluid Loss (mptm)	11.10 / 9	11.20 / 11	10.30 / 10	8.30 / 0	
PV (cP) / YP (lbf/2)	13 / 13.00	11 / 11.00	7 / 5.00	9 / 14.00	
% Solids / % Sand	3.4 / 0.25	5.5 / .2	5.70 / 0.15	6.6 / .50	
% Oil / Oil:Water Ratio	0.80 / 0	.8 / 0	1 / N/A	0 / 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	
Max Tool Temp (in F) / S	177.04 / PDM	177.04 / PDM	200.11 / PDM	200.07 / PDM	

Max Tool Temp (degF) / Source	177.64 / PCM	177.64 / PCM	223.41 / PCM	253.35 / PCM	
Rm @ Max Tool Temp (degF)	N/A @ 177.64	N/A @ 177.64	N/A @ 223.41	@ 253.35	
Lead MWD Engineer	Kyle Regan	Kyle Regan	Cody Wurdeman	Cody Wurdeman	
Customer Representative	JW Irvin	JW Irvin	JW Irvin	JW Irvin	

## SENSOR INFORMATION

### Downhole Processor Information

Tool Type	PCM	PCM	PCM	PCM	
Software Version	5.93	5.93	5.93	5.93	
Sub Serial Number	11404285	11404285	12365892	12365892	
Insert Serial Number	11680801	11680801	11680773	11680801	
Date and Time Initialized	11-Mar-15 01:24	01-Jan-70 00:00	13-Mar-15 20:16	15-Mar-15 11:49	
Date and Time Read	13-Mar-15 07:42	13-Mar-15 07:49	15-Mar-15 15:36	18-Mar-15 04:51	
ECMB SW Version	N/A	N/A	N/A	N/A	

### Directional Sensor Information

Tool Type	PCDC	PCDC	PCDC	PCDC	
Distance From Bit (ft)	65.00	63.00	68.00	68.00	
Software Version	6.33	6.33	6.21	6.33	
Sub Serial Number	11404285	11404285	12365892	12365892	
Sonde Serial Number	11297623	11297623	10919505	11297623	
Sensor ID Number	N/A	N/A	N/A	N/A	
Toolface Offset (deg)	329.16	306.21	153.36	250.99	

### Gamma Ray Sensor Information

Tool Type	PCG	PCG	PCG	PCG	
Distance From Bit (ft)	58.69	56.25	61.25	61.25	
Recorded Sample Period (sec)	10	10	10	10	
Software Version	8.15	8.15	8.15	8.15	
Sub Serial Number	11404285	11404285	12365892	12365892	
Insert/Sonde Serial Number	11579843	11579843	11293388	11579843	

## REMARKS

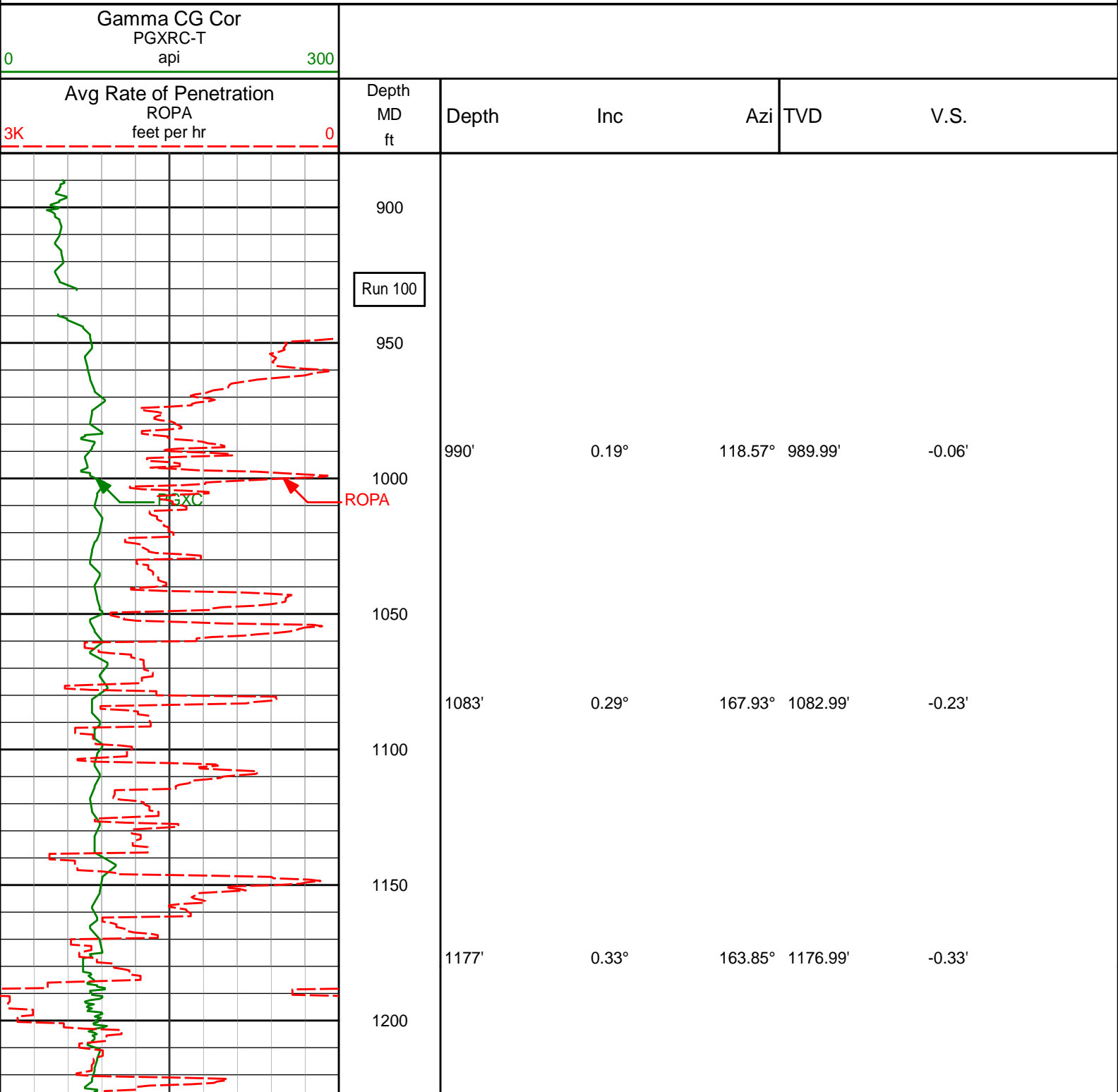
1. All depths are calibrated to driller's pipe tally and are total vertical depth from the drill floor.
2. No depth corrections have been made for pipe stretch or compression.
3. All data presented is recorded (memory data) unless otherwise stated.
4. Environmental parameters used in gamma and resistance processing:  
Hole Size: 6.125"  
Mud Density: 9.9-10.3
5. The following smoothing parameters have been applied to the data:  
Interval: 0.5 ft  
Coercion Distance: 1.2 ft (ROPA)  
Interval: 0.5 ft  
Coercion Distance: 0.6 ft (Gamma Ray)

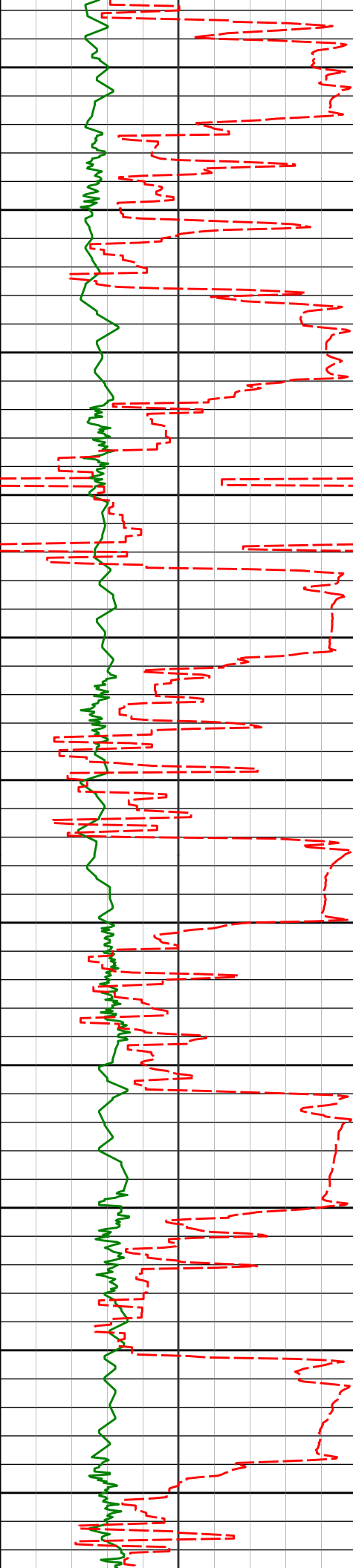
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# MD Detail 1:600 Scale





1250

1269'

1.03°

227.17°

1268.98'

0.24'

1300

1350

1362'

2.14°

240.80°

1361.94'

2.44'

1400

1450

1453'

3.24°

237.70°

1452.84'

6.21'

1500

1550

1546'

4.83°

234.53°

1545.61'

11.80'

1600

1650

1639'

6.82°

234.66°

1638.12'

19.77'

1700

1750

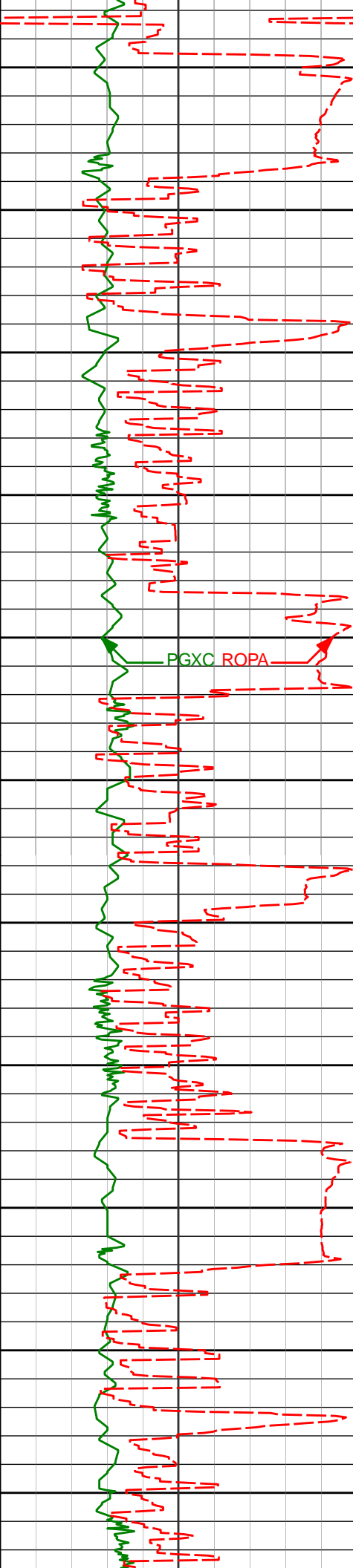
1731'

7.99°

235.51°

1729.36'

29.83'



1800

1824'

9.75°

237.70°

1821.24'

42.21'

1850

1900

1920'

8.88°

238.71°

1915.97'

55.82'

1950

2000

2015'

9.19°

244.33°

2009.80'

69.27'

2050

2100

2110'

8.30°

243.98°

2103.69'

82.58'

2150

2200

2206'

9.73°

244.05°

2198.50'

96.42'

2250

2300

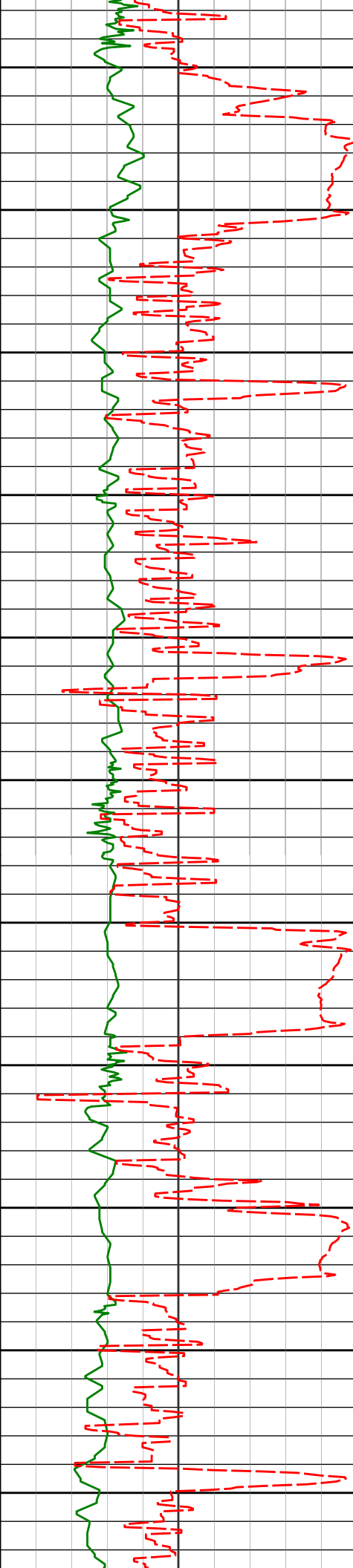
2301'

8.94°

243.48°

2292.24'

110.58'



2350

2400

2450

2500

2550

2600

2650

2700

2750

2800

2850

2396'

10.44°

238.25° 2385.89'

124.89'

2491'

9.50°

234.89° 2479.45'

139.07'

2586'

8.47°

234.68° 2573.29'

151.62'

2681'

9.27°

232.13° 2667.15'

163.80'

2776'

9.69°

235.88° 2760.85'

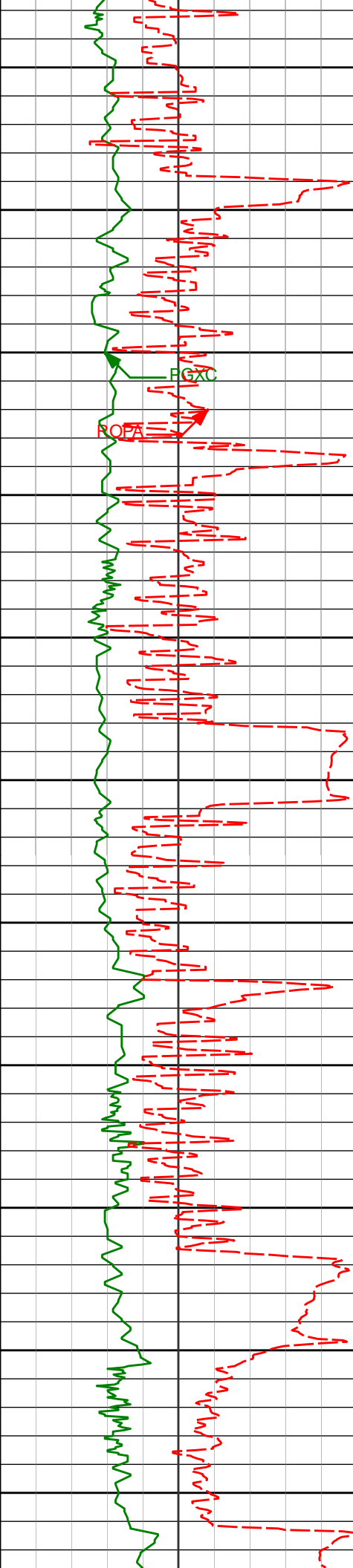
176.92'

2872'

10.09°

235.34° 2855.43'

190.99'



2900

2950

2966'

9.38°

234.40° 2948.07'

204.44'

3000

EGXC

ROPA

3050

3061'

8.63°

233.76° 3041.90'

216.92'

3100

3150

3156'

9.08°

235.63° 3135.77'

229.28'

3200

3250

3251'

7.41°

230.92° 3229.78'

240.62'

3300

3350

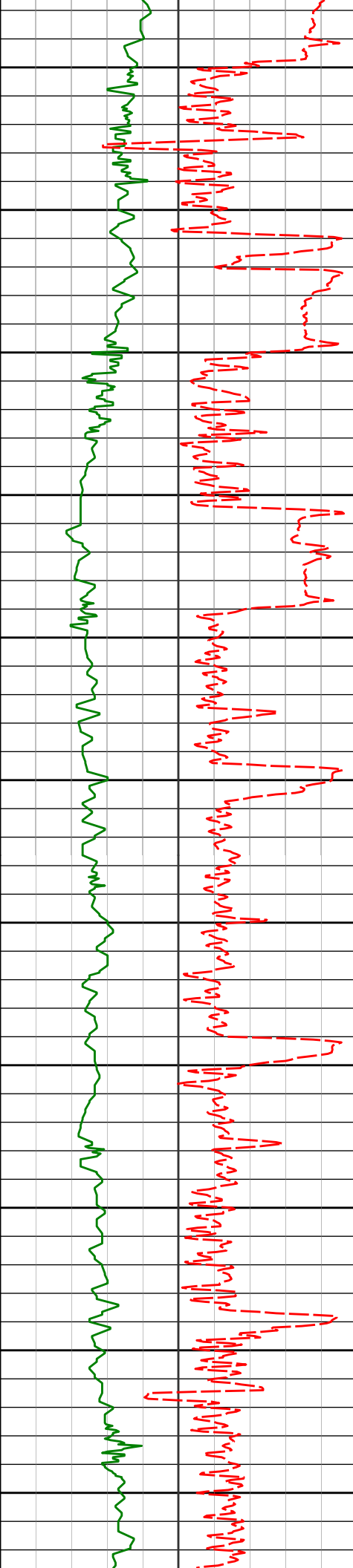
3346'

7.58°

234.37° 3323.97'

250.85'

3400



3450

3500

3550

3600

3650

3700

3750

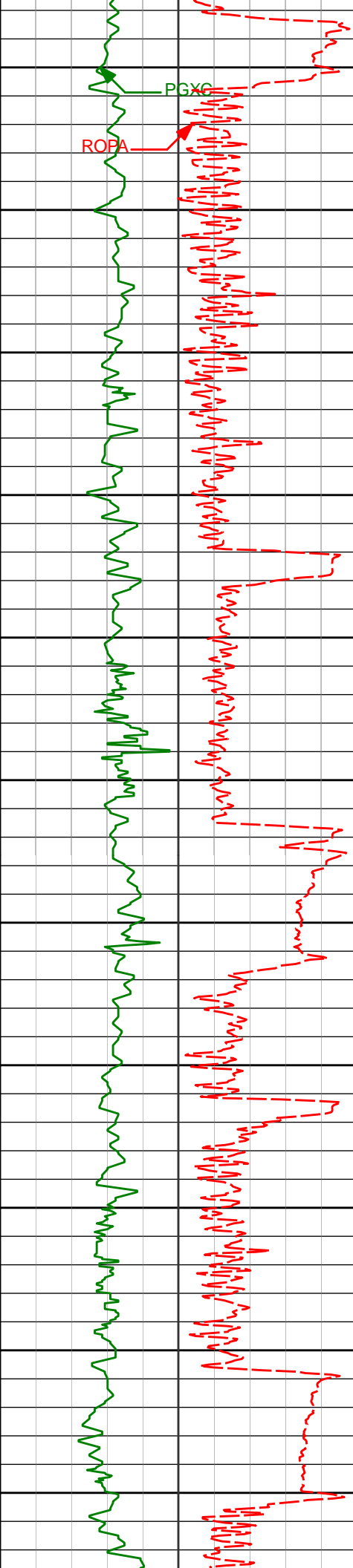
3800

3850

3900

3950

3441'	8.16°	241.86°	3418.08'	262.22'
3536'	8.49°	240.56°	3512.08'	274.60'
3631'	10.32°	238.42°	3605.80'	288.35'
3726'	11.59°	237.43°	3699.06'	304.12'
3821'	12.46°	237.32°	3791.98'	321.31'
3916'	13.15°	237.41°	3884.62'	339.61'



4000

4010'

11.62°

236.90° 3976.43'

357.09'

4050

4100

4105'

10.49°

236.07° 4069.66'

372.78'

4150

4200

4200'

8.76°

234.06° 4163.32'

386.26'

4250

4300

4295'

8.57°

228.54° 4257.24'

397.87'

4350

4400

4390'

7.71°

226.26° 4351.28'

408.24'

4450

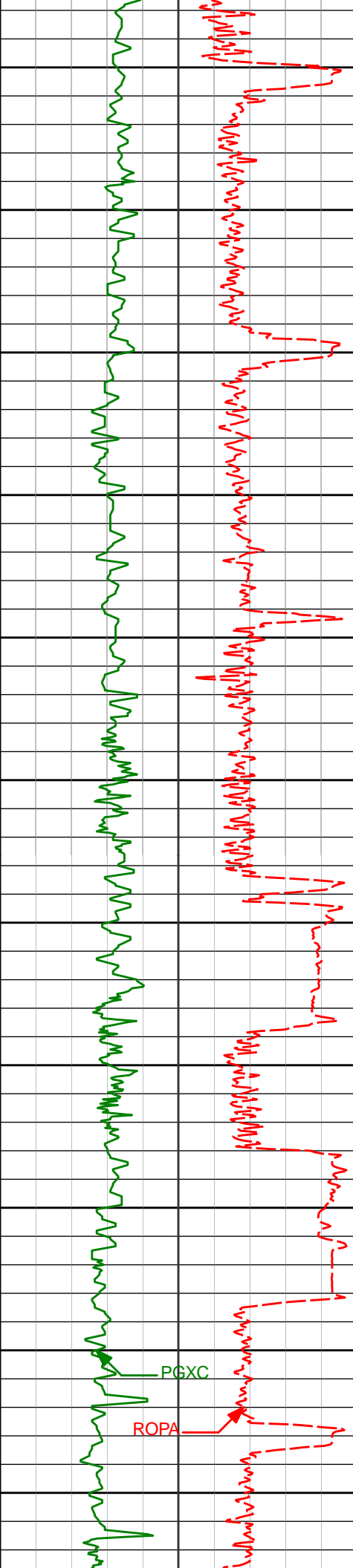
4500

4486'

8.78°

224.63° 4446.29'

418.52'



4550

4581'

7.51°

217.04°

4540.33'

427.87'

4600

4650

4676'

6.14°

202.85°

4634.66'

434.07'

4700

4750

4771'

5.23°

195.46°

4729.19'

437.65'

4800

4850

4866'

5.26°

200.08°

4823.80'

440.72'

4900

4950

4961'

6.12°

212.05°

4918.33'

445.33'

5000

5050

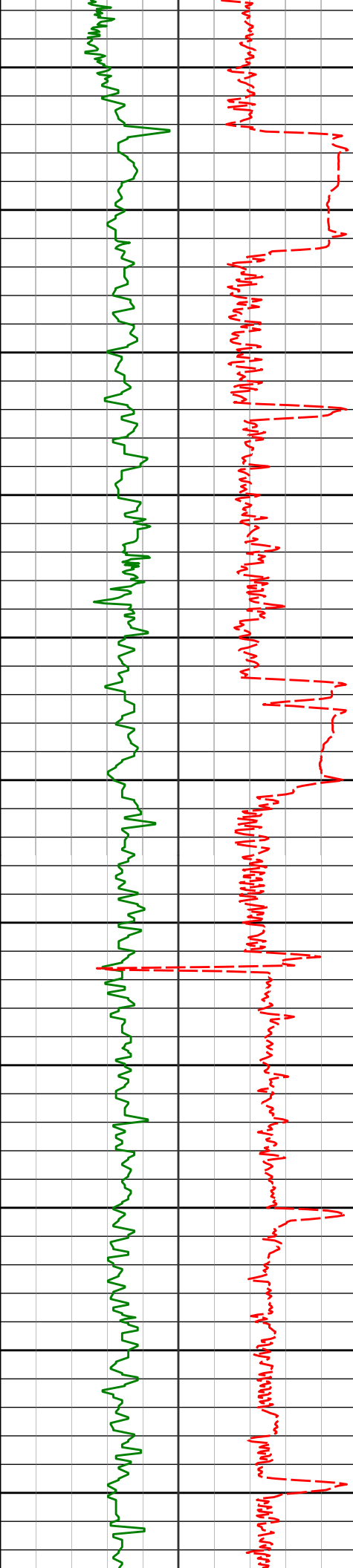
5056'

5.88°

216.82°

5012.81'

451.35'



5100

5150

5200

5250

5300

5350

5400

5450

5500

5550

5600

5151'

5.16°

232.76° 5107.38'

458.00'

5246'

4.43°

235.74° 5202.04'

464.66'

5341'

3.16°

245.08° 5296.83'

470.23'

5436'

2.61°

248.81° 5391.71'

474.71'

5531'

2.08°

251.09° 5486.63'

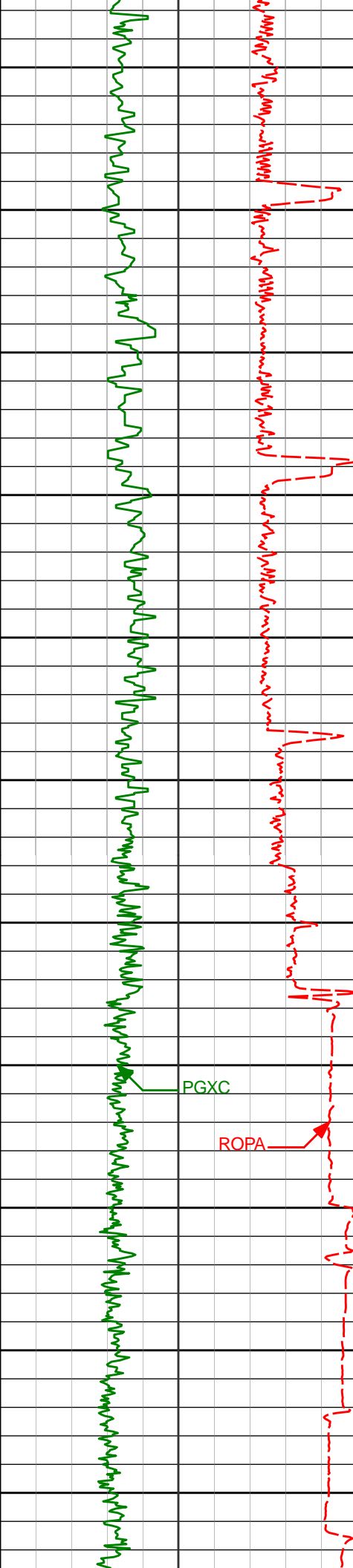
478.42'

5626'

1.57°

253.22° 5581.58'

481.34'



Run 200

5650

5700

5750

5800

5850

5900

5950

6000

6050

6100

6150

5721'

1.89°

254.85°

5676.54'

484.14'

5816'

1.55°

247.38°

5771.50'

486.88'

5911'

1.35°

257.94°

5866.47'

489.19'

6006'

1.43°

270.51°

5961.44'

491.48'

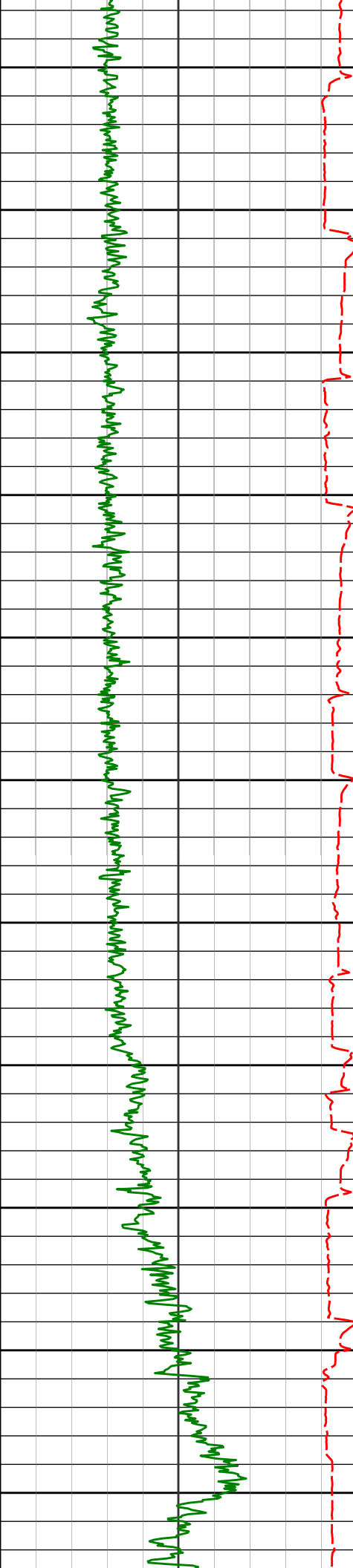
6100'

9.17°

276.51°

6054.97'

500.05'



6200

6250

6300

6350

6400

6450

6500

6550

6600

6650

6700

6195'

15.76°

267.23° 6147.69'

520.45'

6290'

19.73°

266.24° 6238.15'

549.39'

6385'

24.71°

272.29° 6326.08'

585.23'

6480'

36.19°

272.05° 6407.84'

633.10'

6575'

45.76°

269.81° 6479.48'

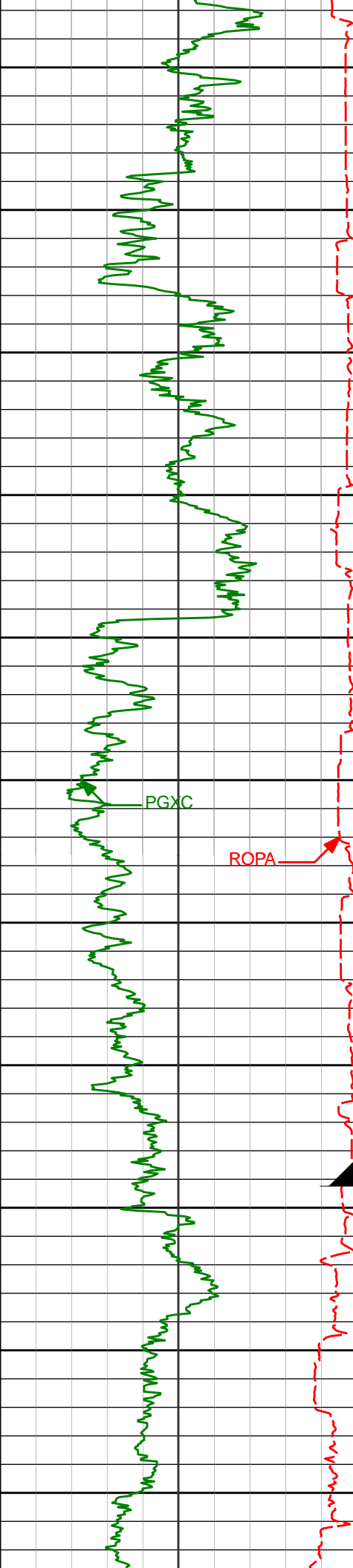
695.18'

6670'

48.33°

269.04° 6544.21'

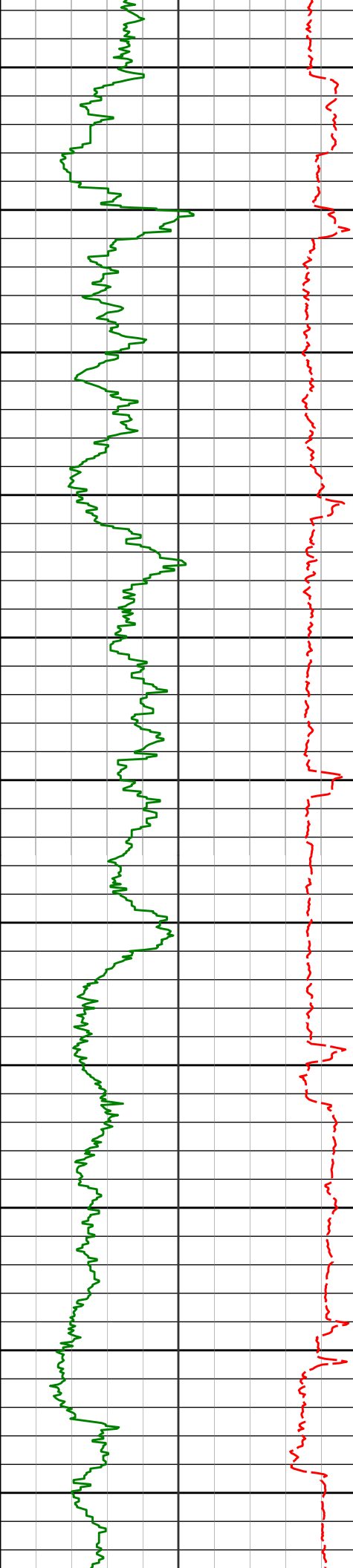
764.64'



Run 300

CSG

6750				
6766'	52.44°	269.21°	6605.41'	838.53'
6800				
6850				
6861'	64.09°	268.10°	6655.30'	919.15'
6900				
6950				
6956'	74.69°	268.46°	6688.69'	1007.92'
7000				
7050				
7051'	80.00°	269.14°	6709.49'	1100.54'
Casing Shoe @ 7068' MD				
7089'	84.00°	269.28°	6714.78'	1138.14'
7100				
7150				
7192'	89.11°	271.43°	6720.97'	1240.74'
7200				
7250				



7300

7350

7400

7450

7500

7550

7600

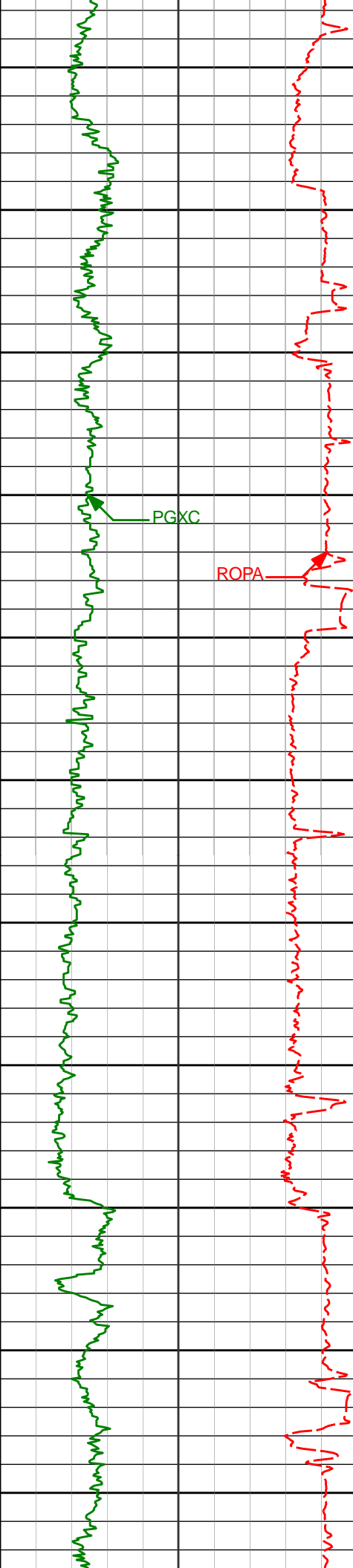
7650

7700

7750

7800

7287'	89.66°	270.06°	6721.99'	1335.53'
7382'	89.35°	269.79°	6722.81'	1430.41'
7477'	89.23°	269.46°	6723.99'	1525.30'
7572'	89.75°	269.45°	6724.83'	1620.21'
7667'	89.69°	269.04°	6725.30'	1715.14'
7762'	90.28°	268.57°	6725.32'	1810.10'



7850

7857'

90.40°

268.22° 6724.76'

1905.07'

7900

7950

7953'

90.62°

267.56° 6723.90'

2001.05'

8000

PGXC

ROPA

8050

8048'

89.94°

268.57° 6723.44'

2096.03'

8100

8150

8143'

90.59°

268.97° 6723.00'

2190.99'

8200

8250

8238'

91.11°

269.21° 6721.59'

2285.92'

8300

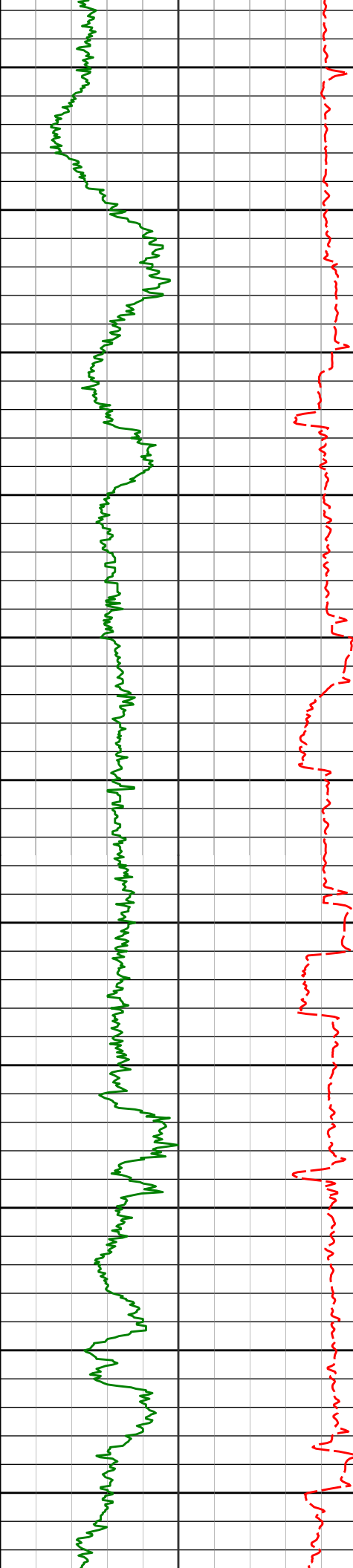
8350

8333'

89.75°

268.65° 6720.88'

2380.86'



8400

8429'

90.37°

268.50° 6720.78'

2476.83'

8450

8500

8524'

89.88°

267.58° 6720.57'

2571.81'

8550

8600

8618'

88.92°

268.72° 6721.55'

2665.78'

8650

8700

8713'

90.68°

270.05° 6721.89'

2760.70'

8750

8800

8808'

91.23°

270.04° 6720.30'

2855.55'

8850

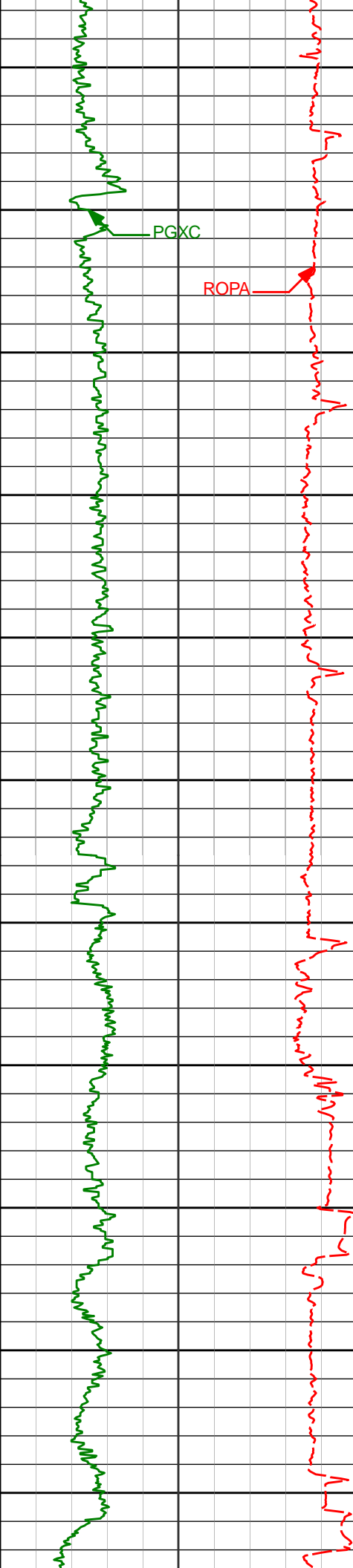
8900

8902'

90.46°

271.16° 6718.92'

2949.36'



8950

9000

9050

9100

9150

9200

9250

9300

9350

9400

9450

8997'

90.28°

269.62° 6718.30'

3044.19'

9092'

90.09°

268.99° 6718.00'

3139.12'

9186'

89.75°

267.18° 6718.13'

3233.10'

9281'

89.07°

265.90° 6719.11'

3328.09'

9376'

90.80°

266.91° 6719.21'

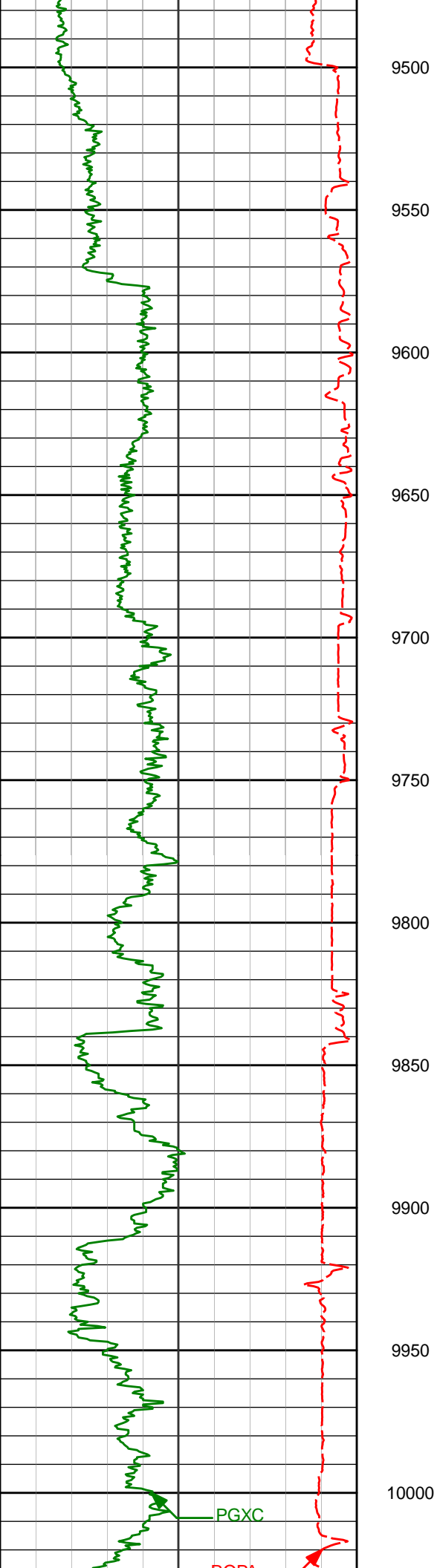
3423.08'

9471'

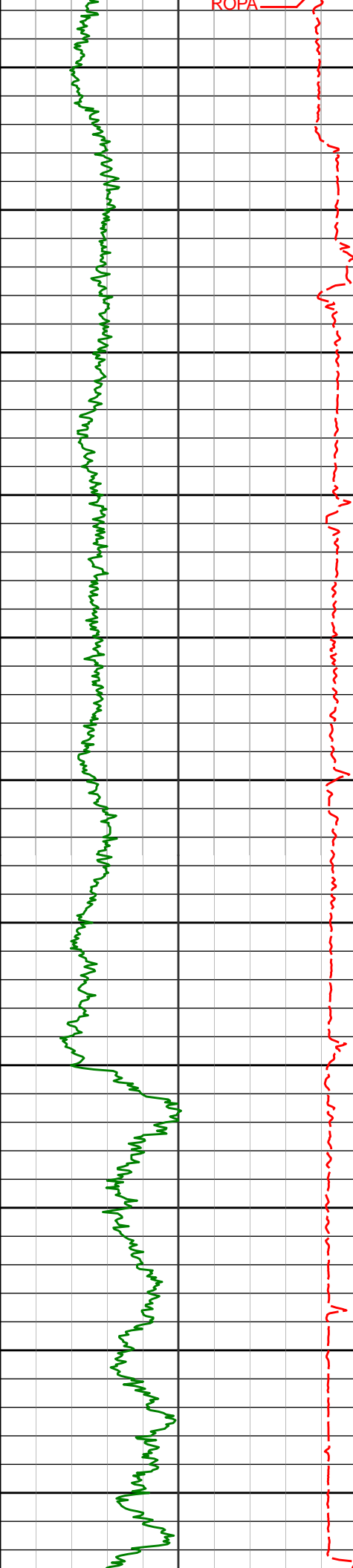
91.08°

268.06° 6717.65'

3518.06'

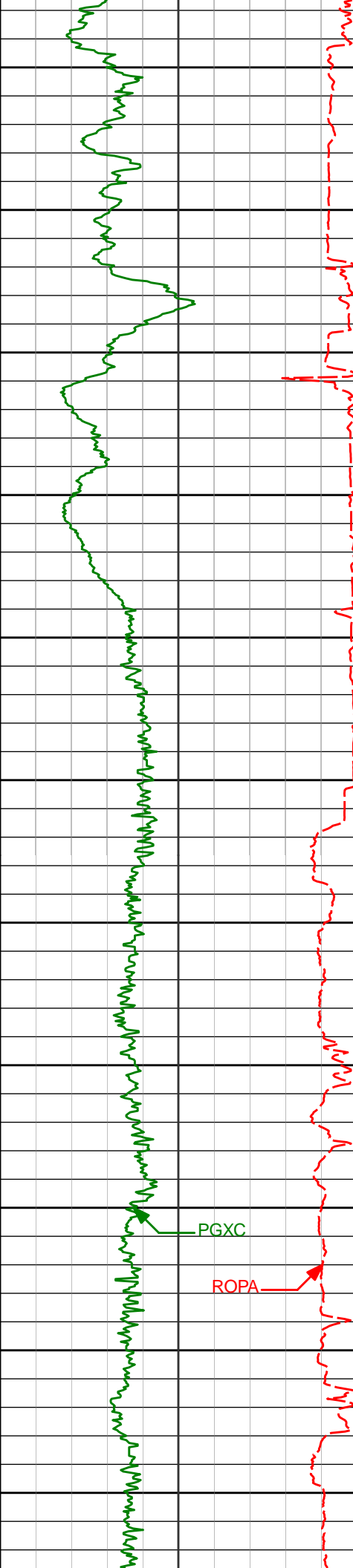


9566'	92.71°	268.20°	6714.51'	3612.99'
9661'	92.68°	269.76°	6710.05'	3707.82'
9755'	90.86°	269.88°	6707.14'	3801.66'
9850'	89.35°	269.66°	6706.97'	3896.55'
9945'	88.27°	268.78°	6708.94'	3991.46'



10040'  
10050  
10100  
10135'  
10150  
10200  
10230'  
10250  
10300  
10323'  
10350  
10400  
10415'  
10450  
10500  
10507'  
10550

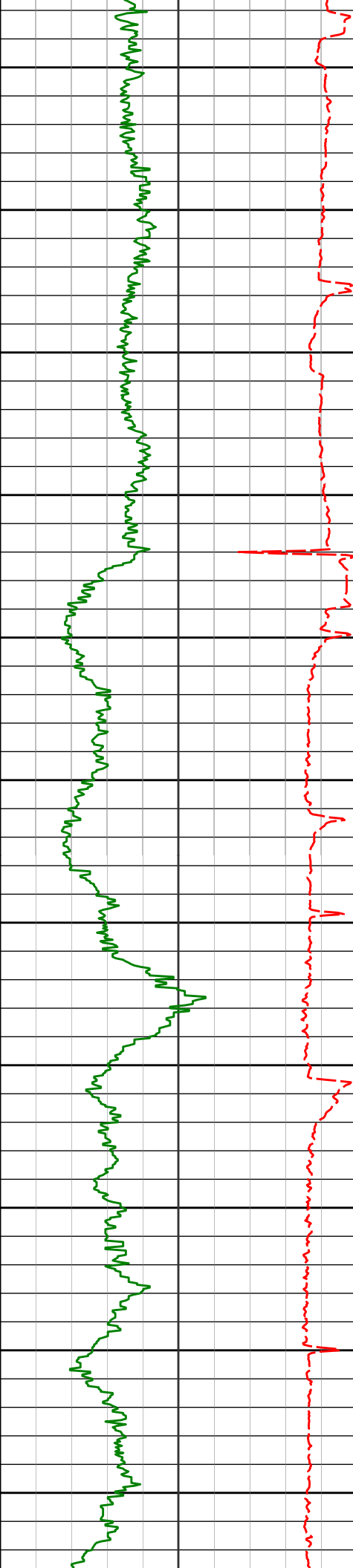
10040'	87.81°	268.47°	6712.19'	4086.37'
10135'	89.60°	267.94°	6714.34'	4181.32'
10230'	90.15°	267.82°	6714.55'	4276.31'
10323'	90.71°	268.08°	6713.85'	4369.30'
10415'	91.08°	268.08°	6712.41'	4461.27'
10507'	92.04°	268.00°	6709.91'	4553.22'



10600	10600'	92.47°	269.06°	6706.25'	4646.12'
10650					
10700	10693'	91.39°	269.42°	6703.11'	4738.99'
10750					
10800	10786'	90.28°	269.73°	6701.76'	4831.89'
10850					
10900	10878'	88.77°	269.23°	6702.52'	4923.80'
10950					
11000	10971'	90.00°	269.95°	6703.52'	5016.70'
11050	11064'	90.55°	270.28°	6703.07'	5109.57'
11100					

PGXC

ROPA



11150  
11200  
11250  
11300  
11350  
11400  
11450  
11500  
11550  
11600  
11650

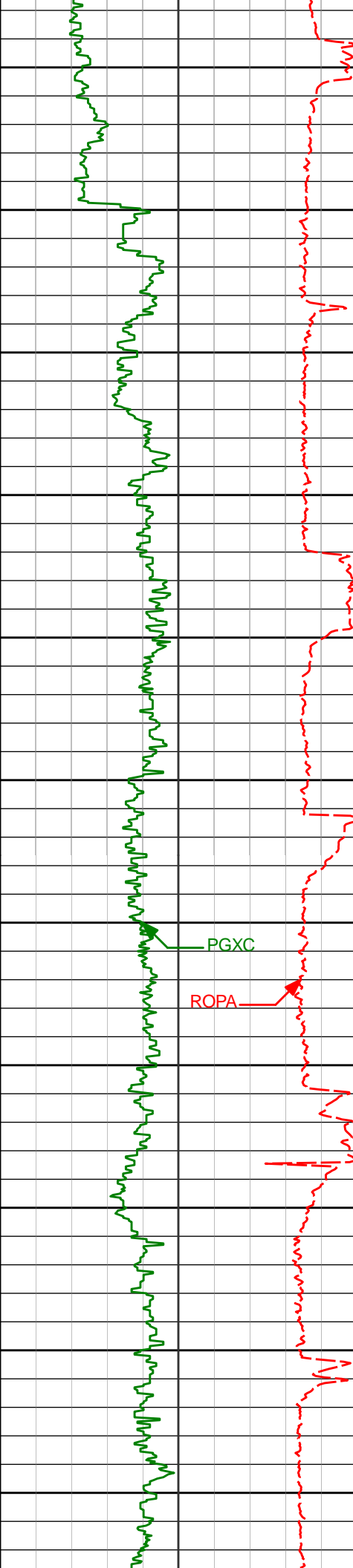
11157'  
11250'  
11344'  
11436'  
11529'  
11620'

89.35°  
89.82°  
87.78°  
88.09°  
87.88°  
87.78°

269.84°  
269.41°  
268.98°  
269.07°  
268.45°  
268.45°

6703.16'  
6703.83'  
6705.80'  
6709.11'  
6712.38'  
6715.83'

5202.43'  
5295.34'  
5389.24'  
5481.13'  
5574.03'  
5664.94'



11700

11750

11800

11850

11900

11950

12000

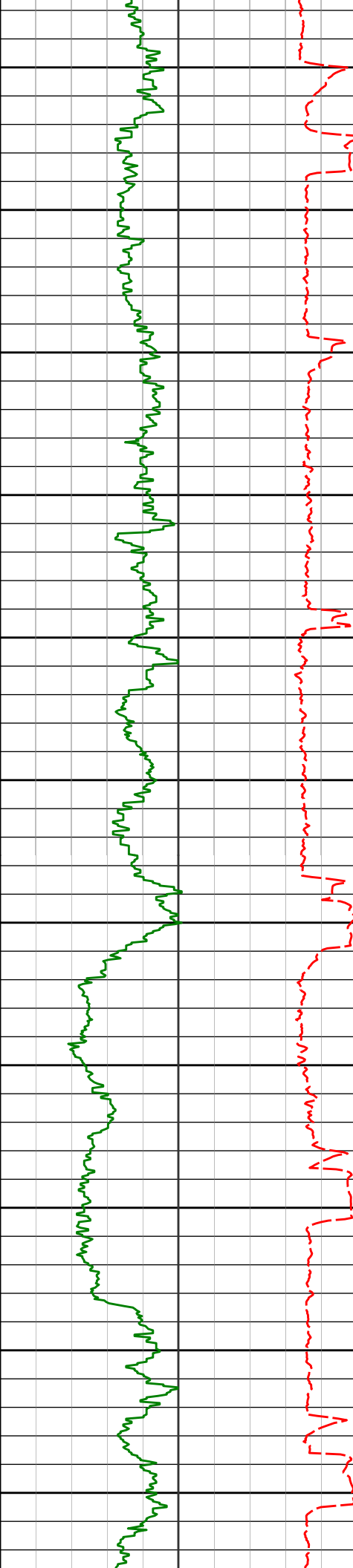
12050

12100

12150

12200

11713'	89.78°	267.94°	6717.81'	5757.89'
11806'	90.86°	267.86°	6717.29'	5850.88'
11898'	89.69°	269.35°	6716.85'	5942.84'
11992'	90.59°	268.97°	6716.62'	6036.77'
12086'	89.17°	268.77°	6716.81'	6130.72'
12181'	90.18°	267.82°	6717.35'	6225.70'



12250

12276'	90.03°	268.14°	6717.18'	6320.68'
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12300

12350

12370'	89.45°	267.54°	6717.61'	6414.67'
--------	--------	---------	----------	----------

12400

12450

12465'	89.23°	266.95°	6718.70'	6509.66'
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12500

12550

12560'	88.06°	267.14°	6720.95'	6604.64'
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12600

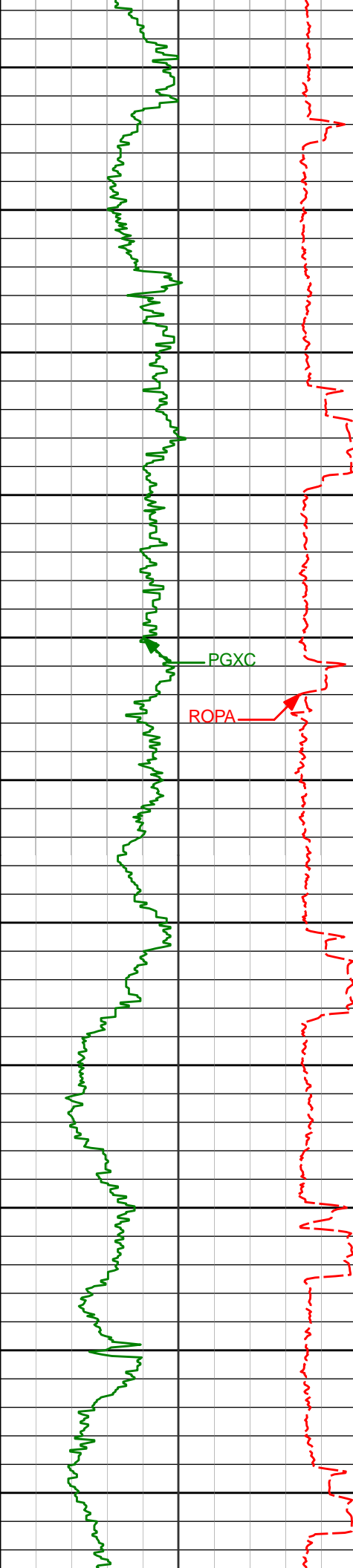
12650

12655'	89.35°	267.89°	6723.09'	6699.61'
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12700

12750

12749'	90.25°	268.48°	6723.42'	6793.59'
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12800

12850

12900

12950

13000

13050

13100

13150

13200

13250

13300

12844'      90.89°      268.78°    6722.48'      6888.54'

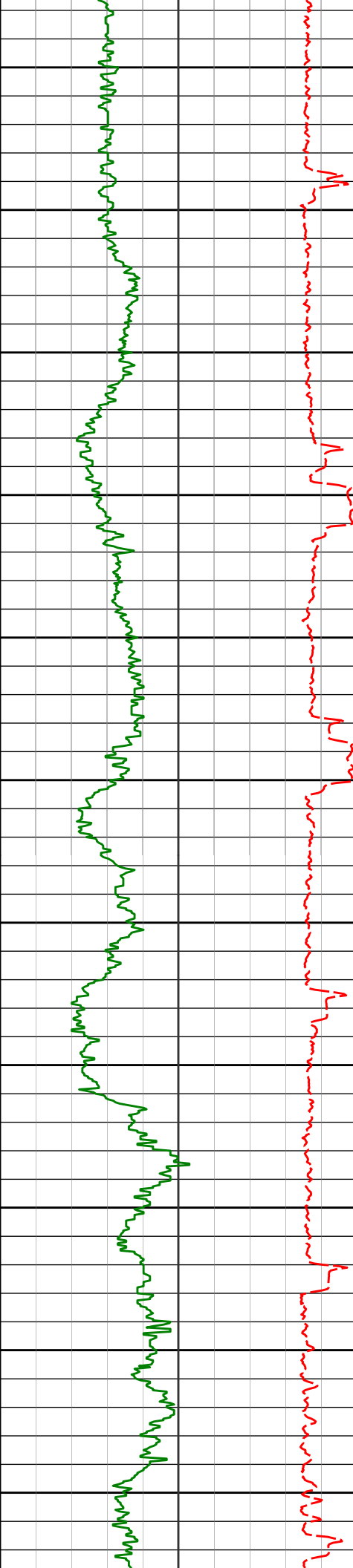
12939'      90.68°      269.29°    6721.18'      6983.48'

13034'      91.73°      269.72°    6719.18'      7078.37'

13128'      91.08°      271.28°    6716.87'      7172.16'

13224'      90.80°      271.72°    6715.30'      7267.86'

13319'      89.42°      271.16°    6715.12'      7362.58'



13350

13400

13450

13500

13550

13600

13650

13700

13750

13800

13850

13414'

13509'

13604'

13698'

13793'

90.77°

90.31°

88.15°

88.15°

88.06°

271.54° 6714.96'

271.95° 6714.06'

271.24° 6715.34'

270.97° 6718.37'

270.43° 6721.52'

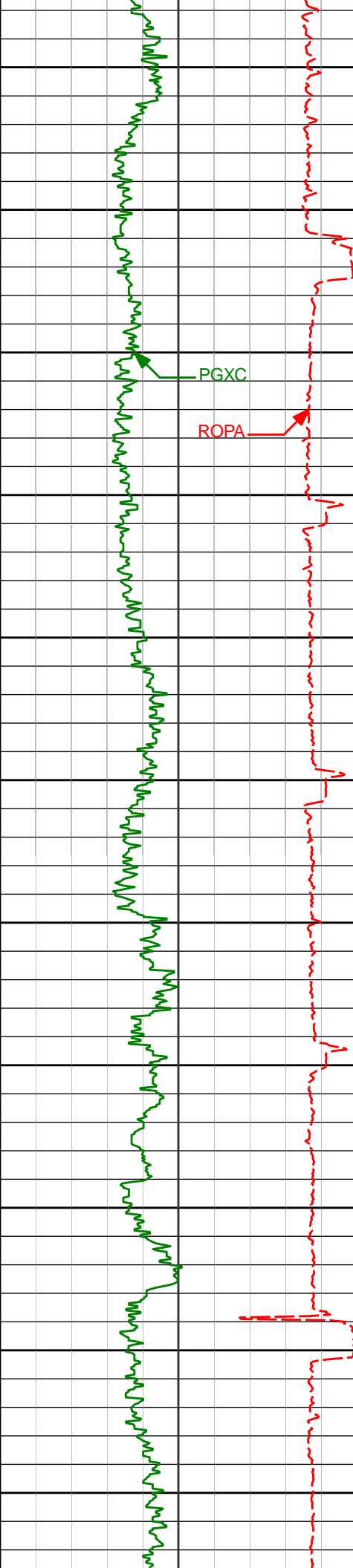
7457.31'

7551.98'

7646.67'

7740.38'

7835.13'



13888'

13900

13950

13983'

14000

14050

14078'

14100

14150

14173'

14200

14250

14268'

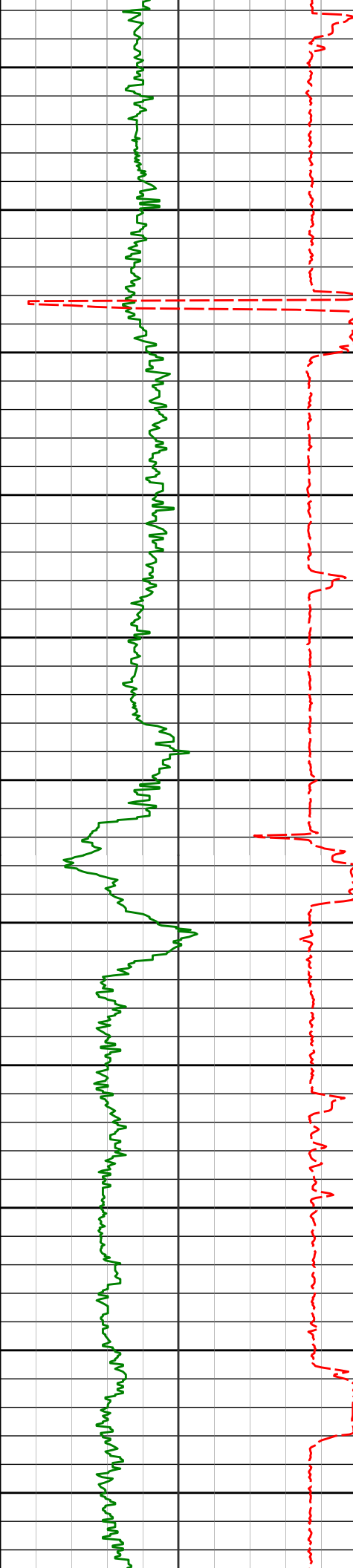
14300

14350

14363'

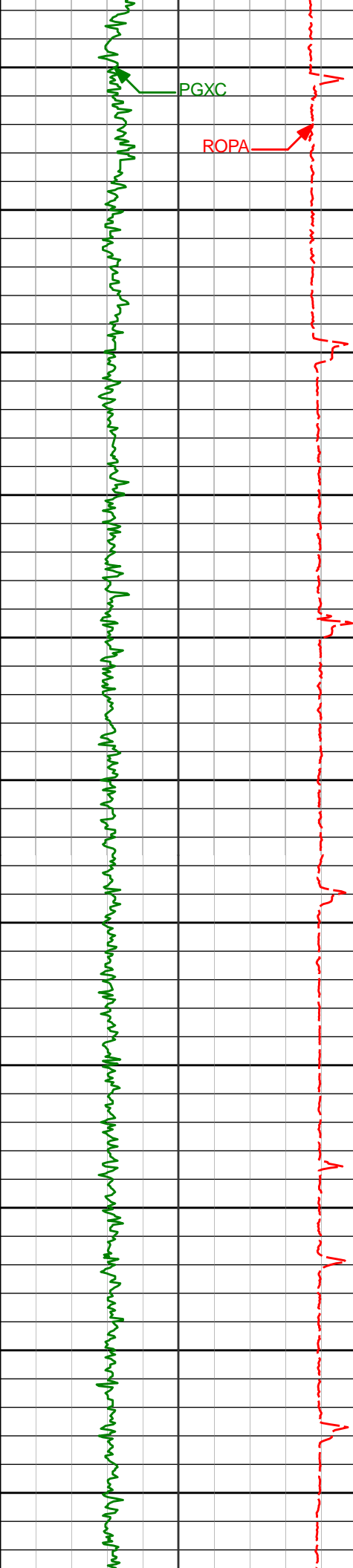
14400

13888'	87.87°	269.93°	6724.89'	7929.93'
13983'	89.32°	269.27°	6727.22'	8024.81'
14078'	90.15°	269.42°	6727.66'	8119.73'
14173'	90.77°	268.89°	6726.89'	8214.66'
14268'	91.69°	268.60°	6724.86'	8309.59'
14363'	89.66°	267.01°	6723.74'	8404.57'



14450  
14500  
14550  
14600  
14650  
14700  
14750  
14800  
14850  
14900  
14950

14458'	90.49°	268.50°	6723.61'	8499.56'
14553'	89.57°	269.77°	6723.56'	8594.49'
14649'	91.39°	272.21°	6722.76'	8690.25'
14743'	89.45°	270.74°	6722.07'	8783.96'
14838'	90.55°	270.29°	6722.07'	8878.78'
14933'	88.86°	269.41°	6722.56'	8973.66'



15000

15028'

90.09°

269.55° 6723.43'

9068.57'

15050

15100

15124'

89.29°

268.36° 6723.95'

9164.51'

15150

15200

15219'

89.48°

267.51° 6724.97'

9259.50'

15250

15300

15314'

89.51°

267.31° 6725.81'

9354.49'

15350

15400

15409'

89.35°

266.29° 6726.75'

9449.48'

15450

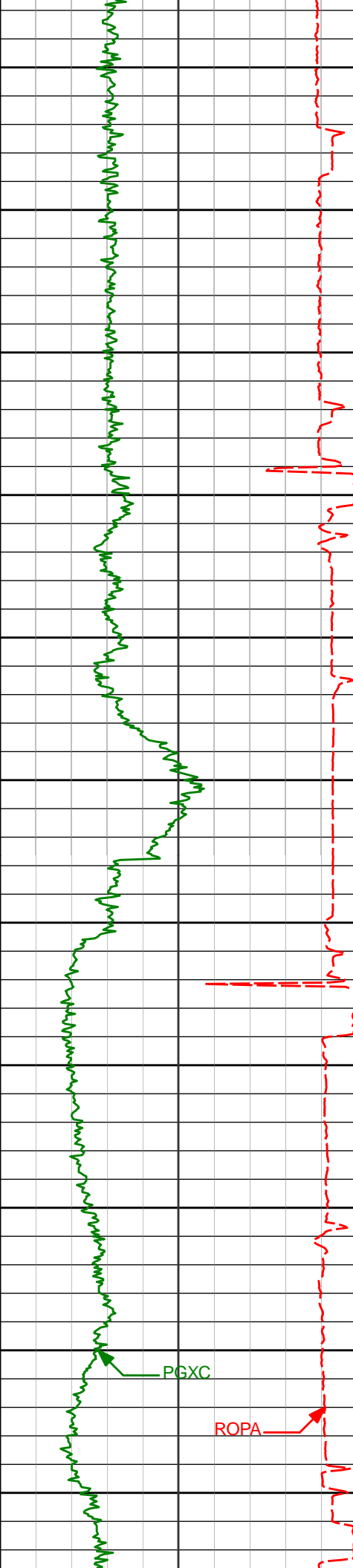
15500

15504'

89.32°

265.48° 6727.85'

9544.46'



15550

15600

15650

15700

15750

15800

15850

15900

15950

16000

16050

15599'

89.48°

264.98° 6728.85'

9639.40'

15694'

90.31°

264.80° 6729.02'

9734.33'

15789'

91.70°

264.94° 6727.36'

9829.25'

15884'

90.00°

264.87° 6725.95'

9924.17'

15979'

90.83°

264.48° 6725.26'

10019.08'

16075'

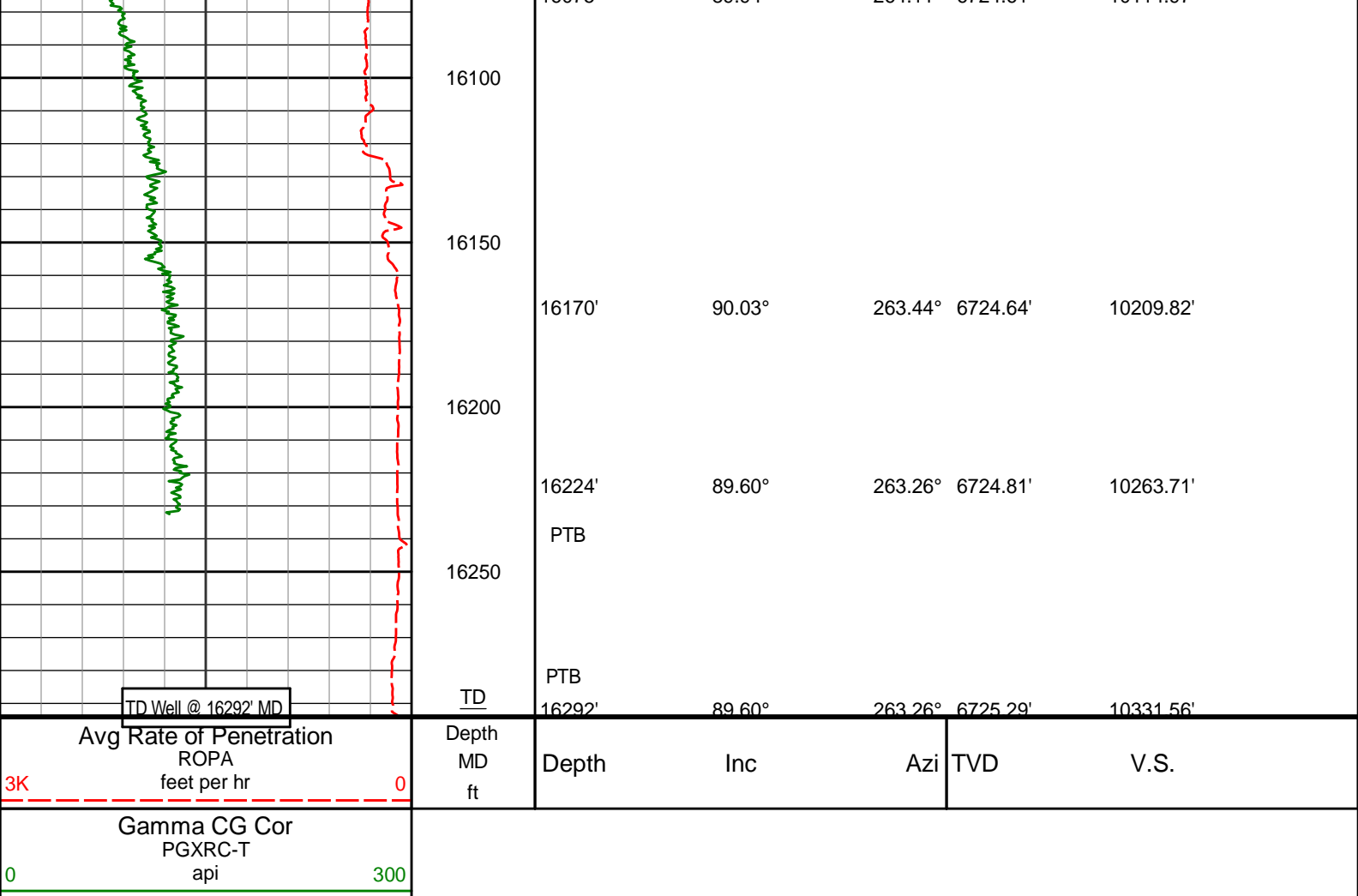
89.94°

264.11° 6724.61'

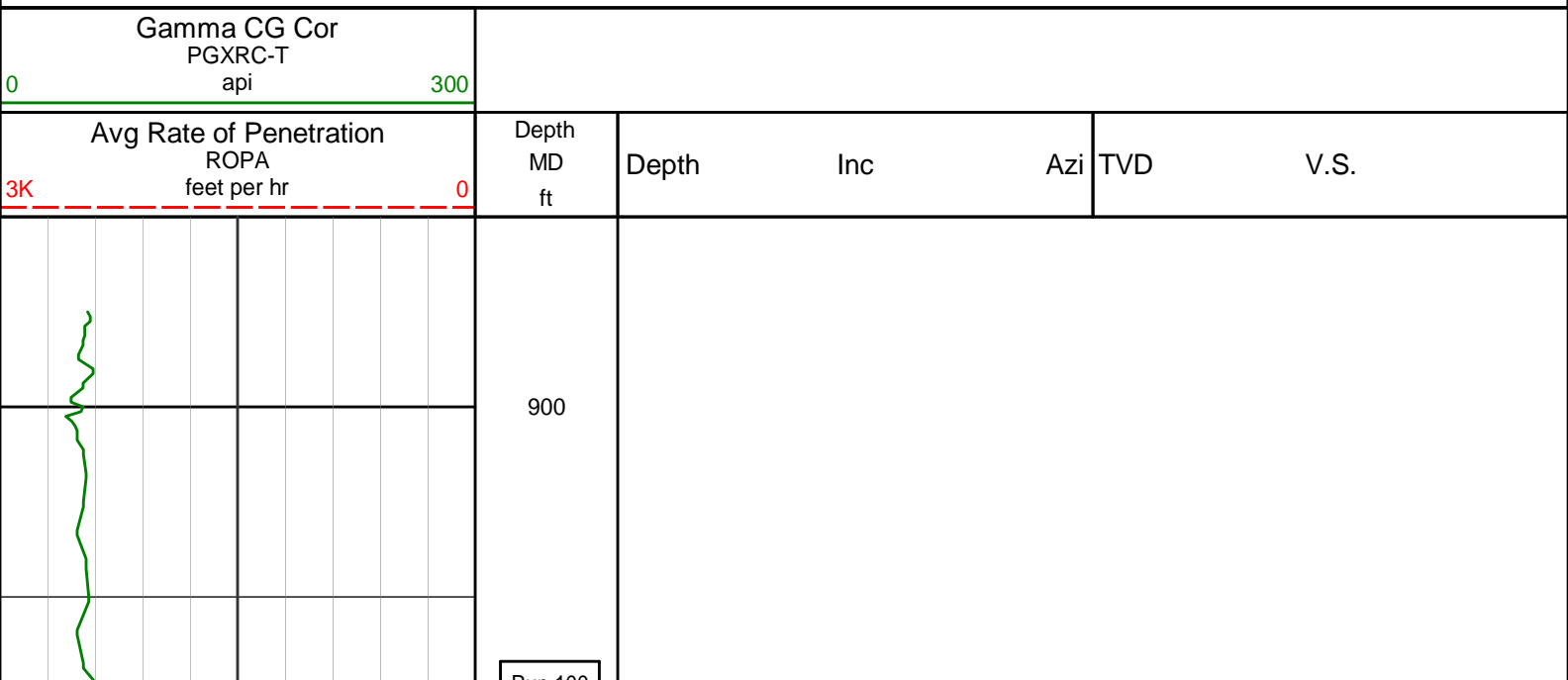
10114.97'

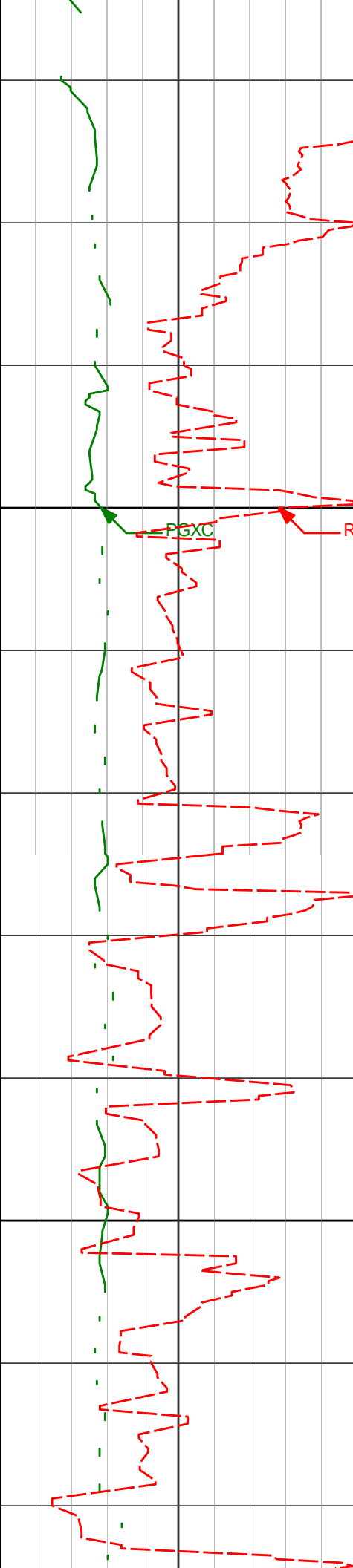
PGXC

ROPA



# MD Detail 1:240 Scale





990'

0.19°

118.57° 989.99'

-0.06'

1000

PGXC

ROPA

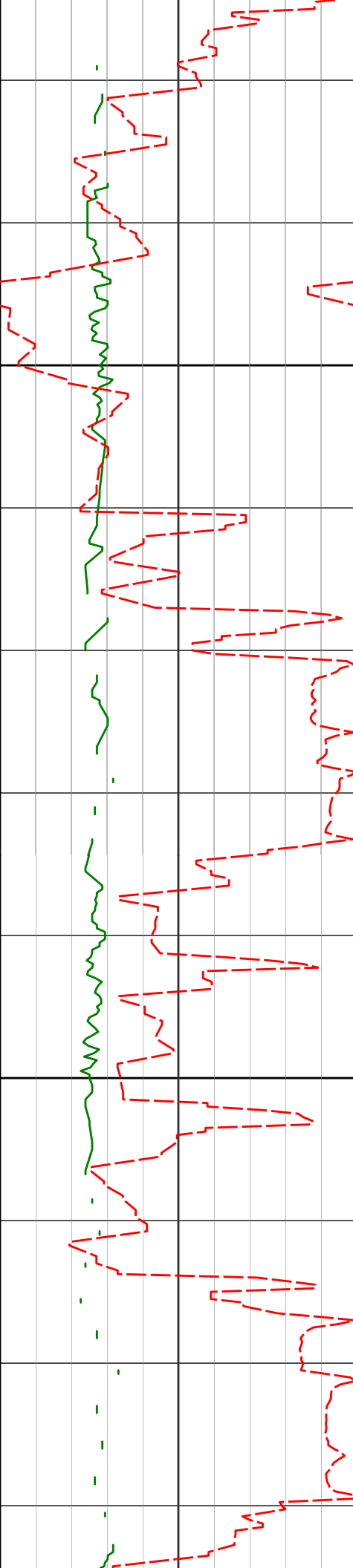
1083'

0.29°

167.93° 1082.99'

-0.23'

1100



1200

1300

1177'

0.33°

163.85° 1176.99'

-0.33'

1269'

1.03°

227.17° 1268.98'

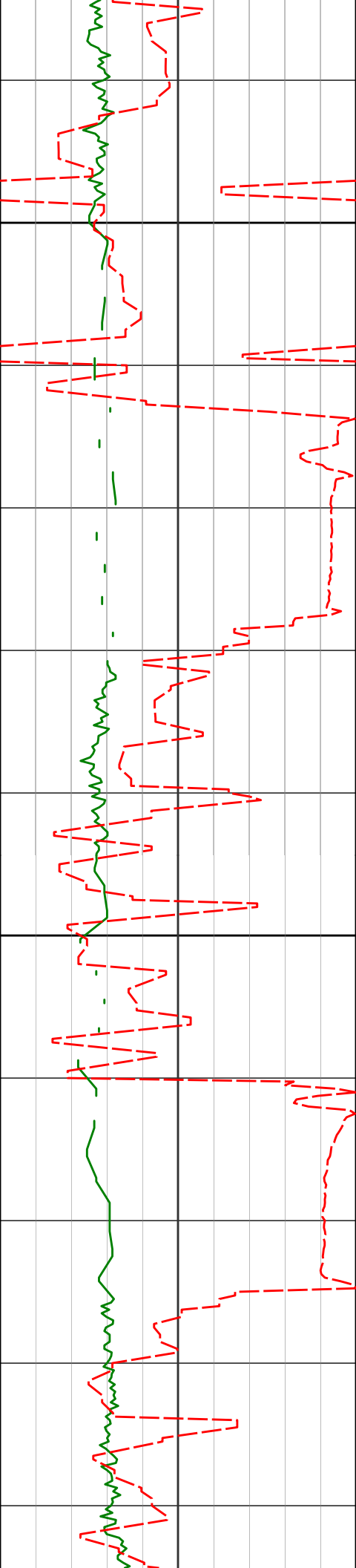
0.24'

1362'

2.14°

240.80° 1361.94'

2.44'



1400

1453'

3.24°

237.70° 1452.84'

6.21'

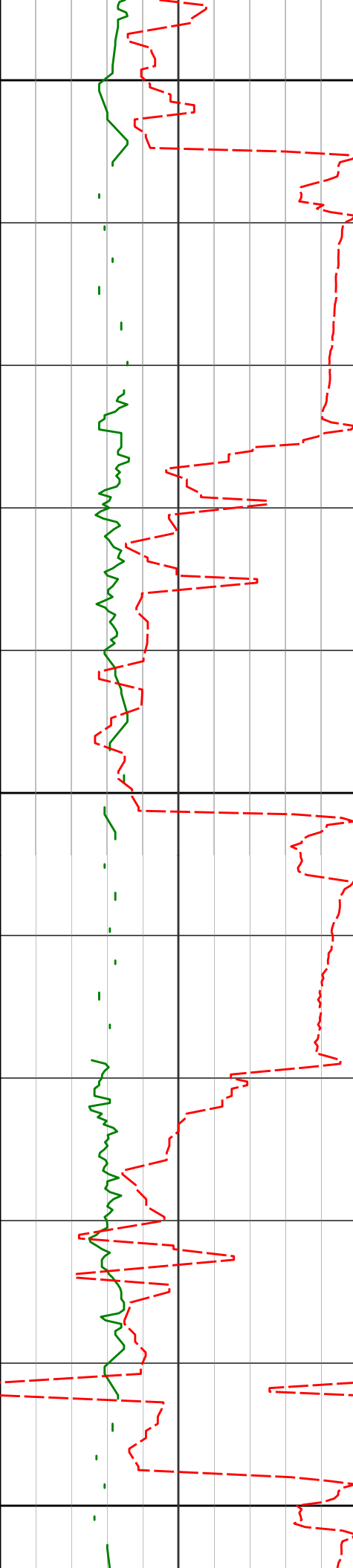
1500

1546'

4.83°

234.53° 1545.61'

11.80'



1600

1639'

6.82°

234.66° 1638.12'

19.77'

1700

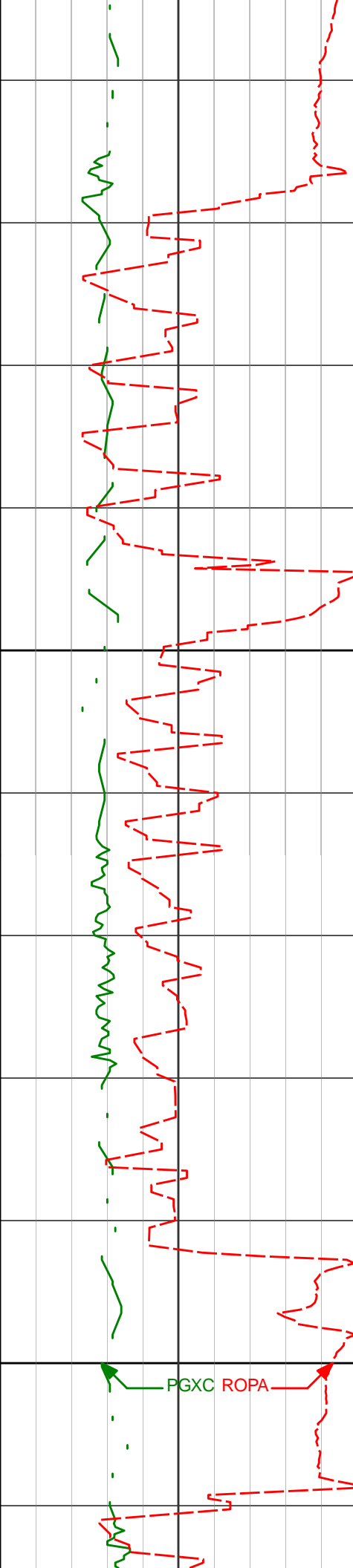
1731'

7.99°

235.51° 1729.36'

29.83'

1800



1900

2000

1824'

9.75°

237.70° 1821.24'

42.21'

1920'

8.88°

238.71° 1915.97'

55.82'

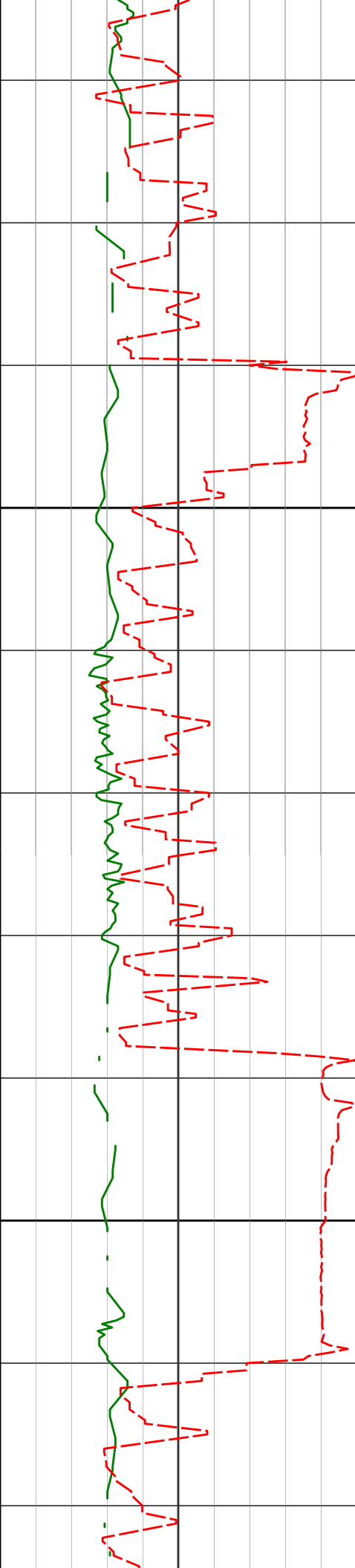
2015'

9.19°

244.33° 2009.80'

69.27'

PGXC ROPA



2100

2110'

8.30°

243.98° 2103.69'

82.58'

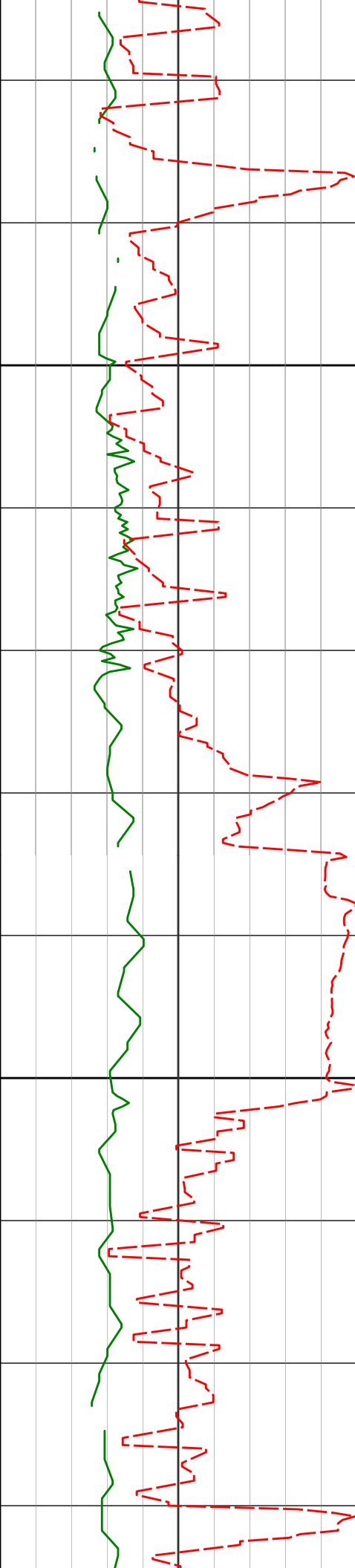
2200

2206'

9.73°

244.05° 2198.50'

96.42'



2300

2301'

8.94°

243.48° 2292.24'

110.58'

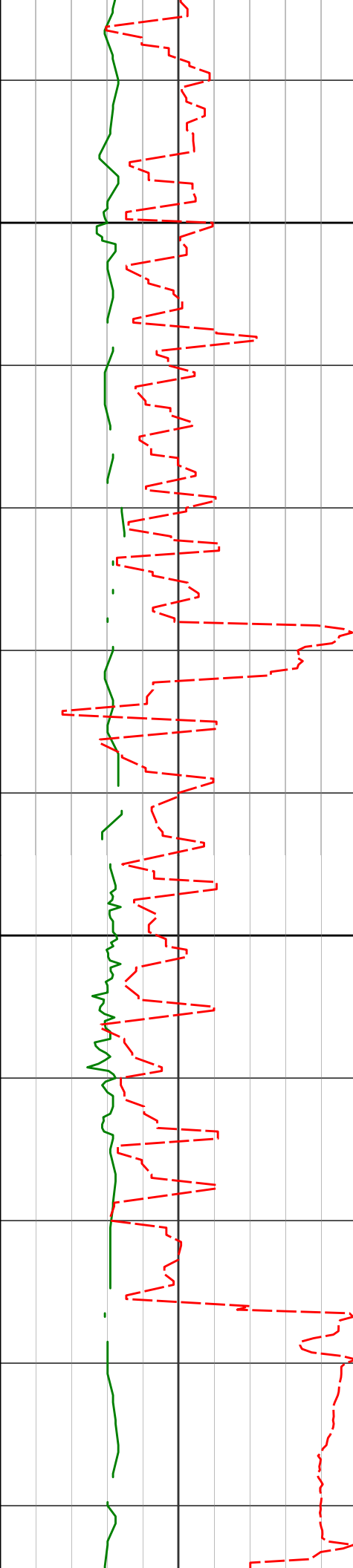
2400

2396'

10.44°

238.25° 2385.89'

124.89'



2500

2600

2491'

9.50°

234.89° 2479.45'

139.07'

2586'

8.47°

234.68° 2573.29'

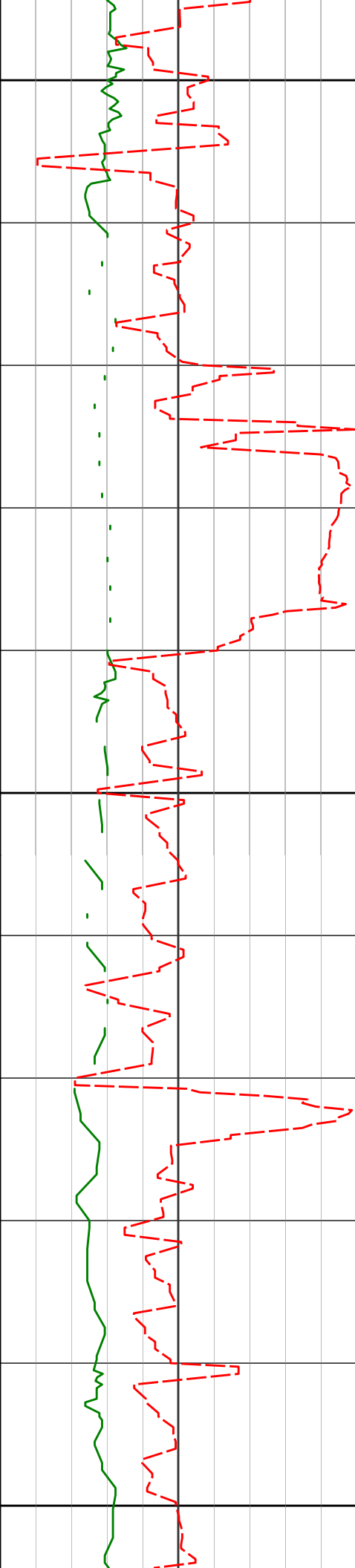
151.62'

2681'

9.27°

232.13° 2667.15'

163.80'



2700

2776'

9.69°

235.88° 2760.85'

176.92'

2800

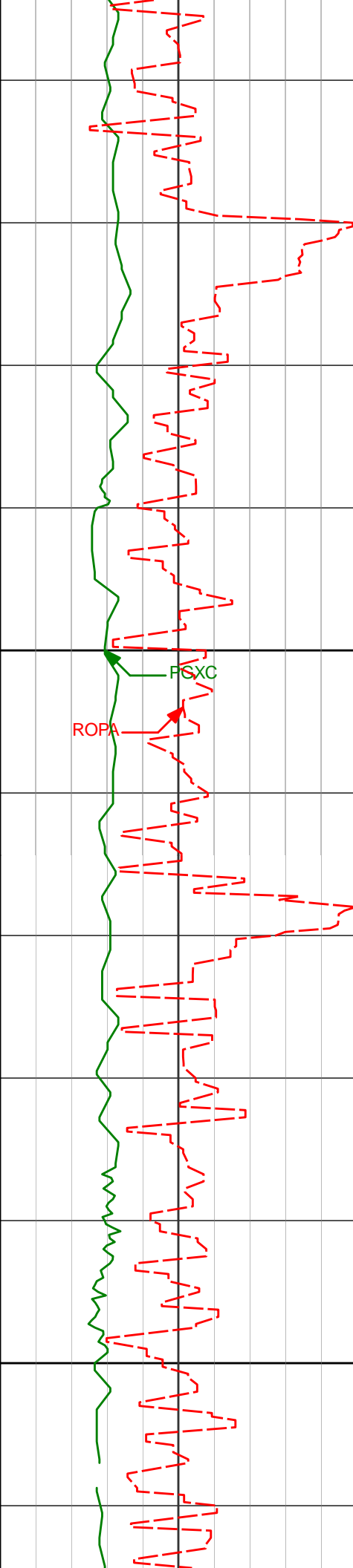
2872'

10.09°

235.34° 2855.43'

190.99'

2900

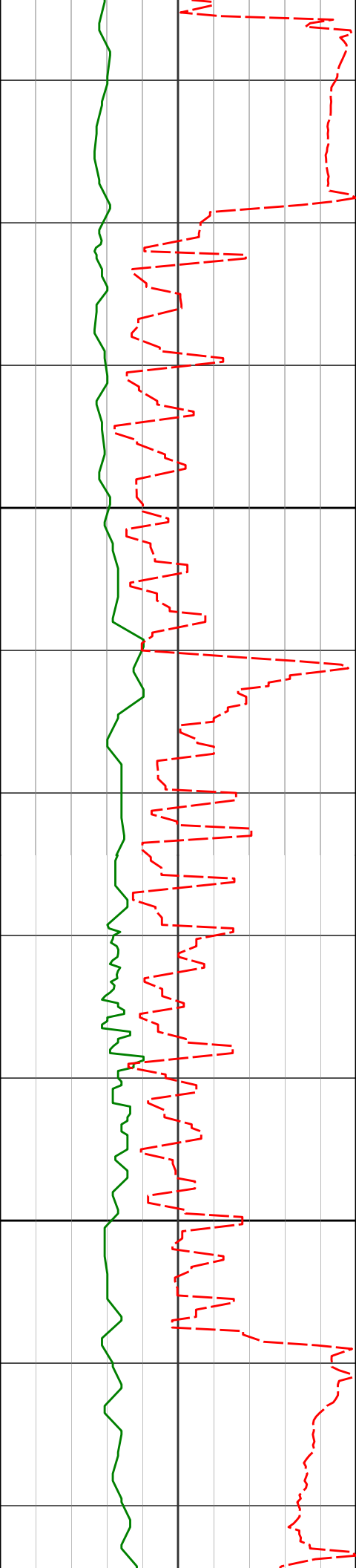


3000

2966'      9.38°      234.40°    2948.07'      204.44'

3100

3061'      8.63°      233.76°    3041.90'      216.92'



3156'

9.08°

235.63° 3135.77'

229.28'

3200

3251'

7.41°

230.92° 3229.78'

240.62'

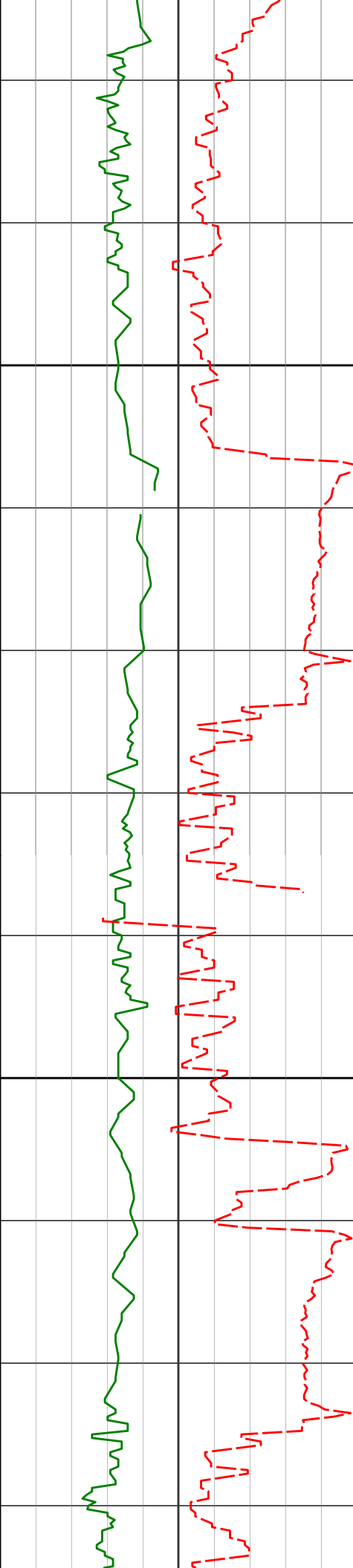
3300

3346'

7.58°

234.37° 3323.97'

250.85'



3400

3441'

8.16°

241.86° 3418.08'

262.22'

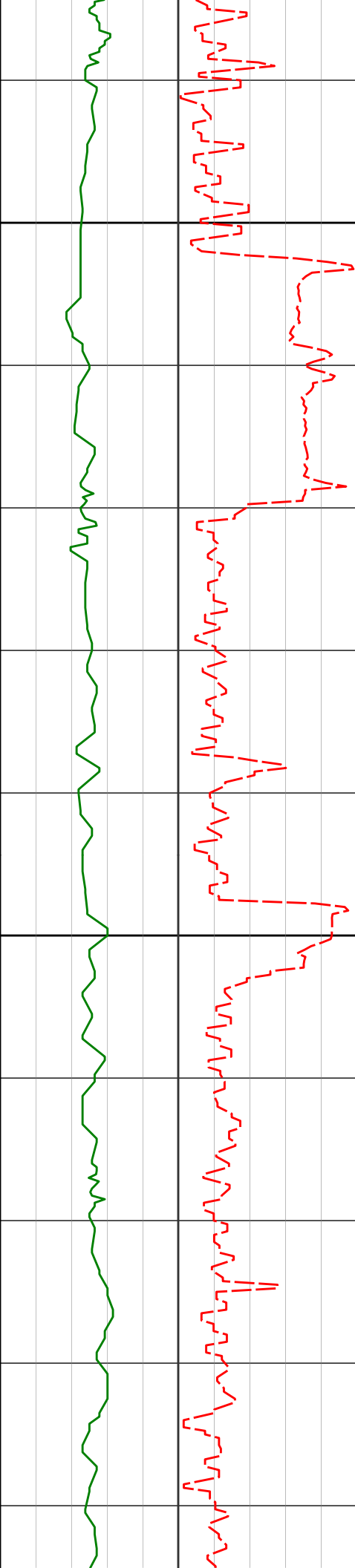
3500

3536'

8.49°

240.56° 3512.08'

274.60'



3600

3631'

10.32°

238.42° 3605.80'

288.35'

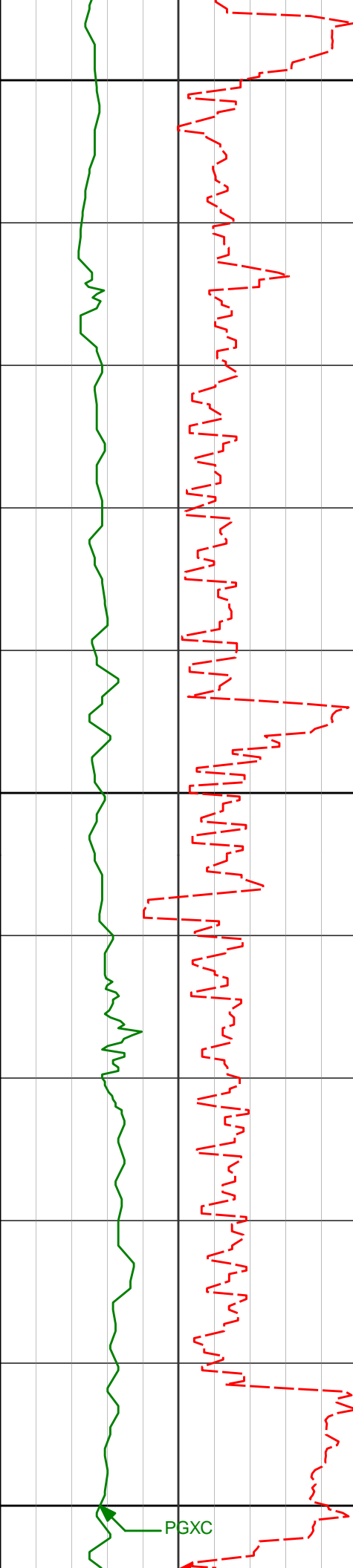
3700

3726'

11.59°

237.43° 3699.06'

304.12'



3800

3821'

12.46°

237.32° 3791.98'

321.31'

3900

3916'

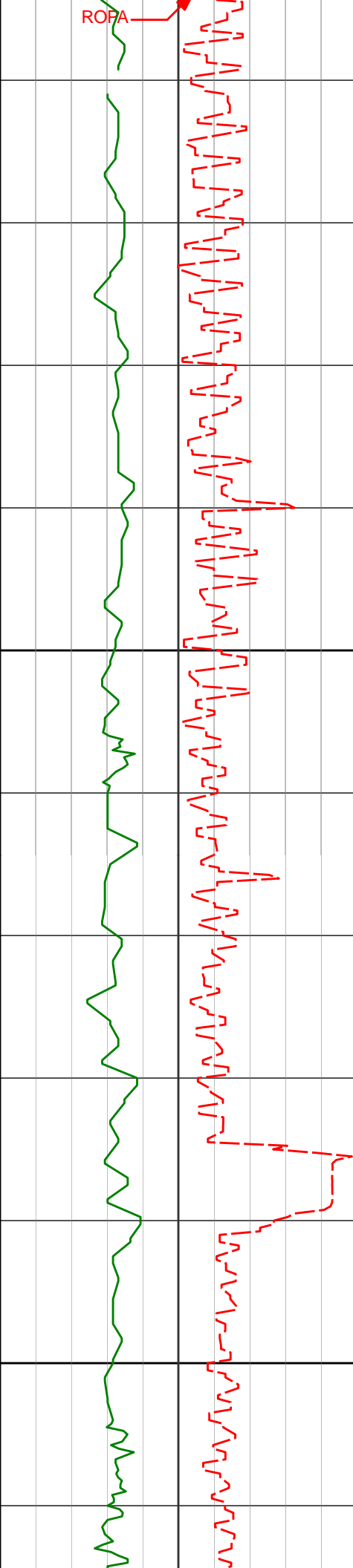
13.15°

237.41° 3884.62'

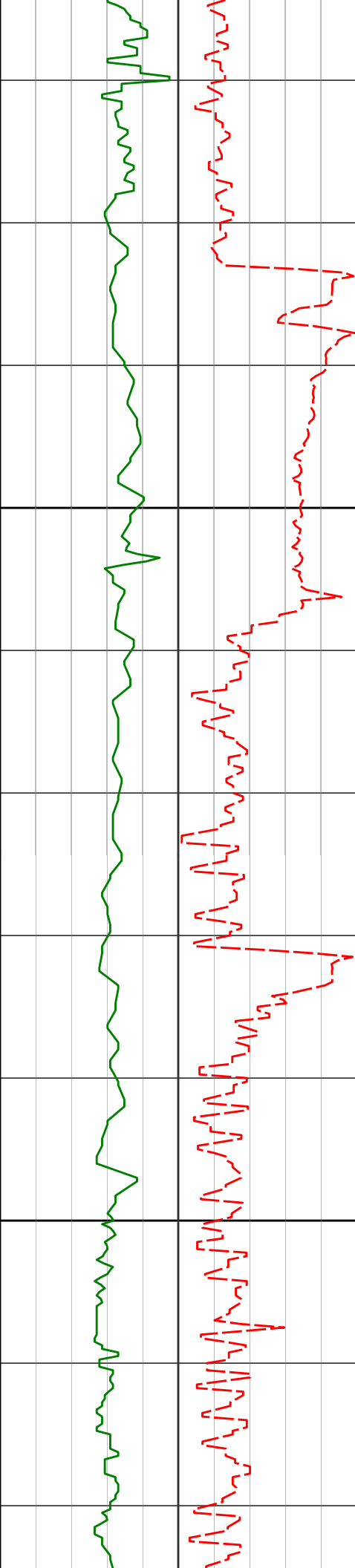
339.61'

4000

PGXC



	4010'	11.62°	236.90°	3976.43'	357.09'
4100					
	4105'	10.49°	236.07°	4069.66'	372.78'
4200	4200'	8.76°	234.06°	4163.32'	386.26'



4300

4295'

8.57°

228.54° 4257.24'

397.87'

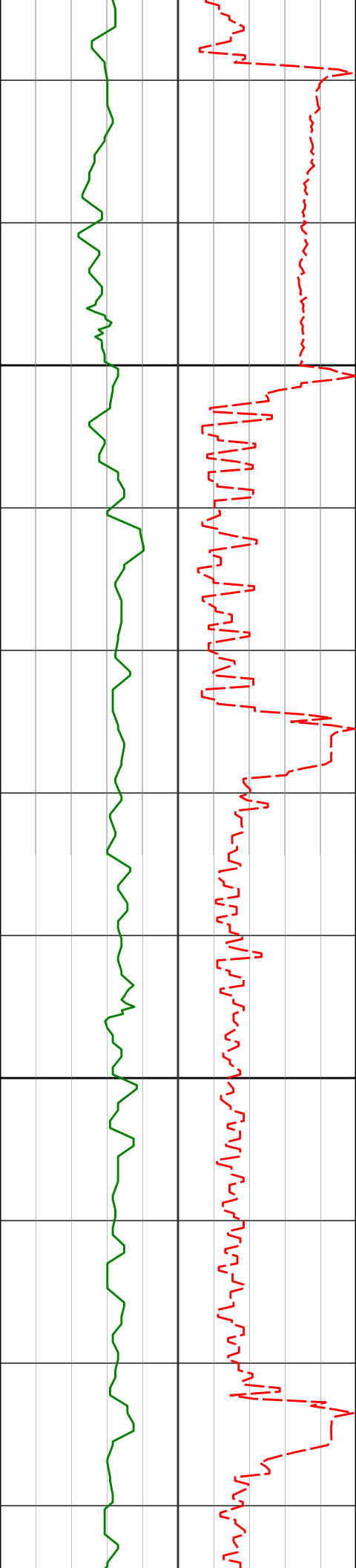
4400

4390'

7.71°

226.26° 4351.28'

408.24'



4500

4600

4486'

8.78°

224.63° 4446.29'

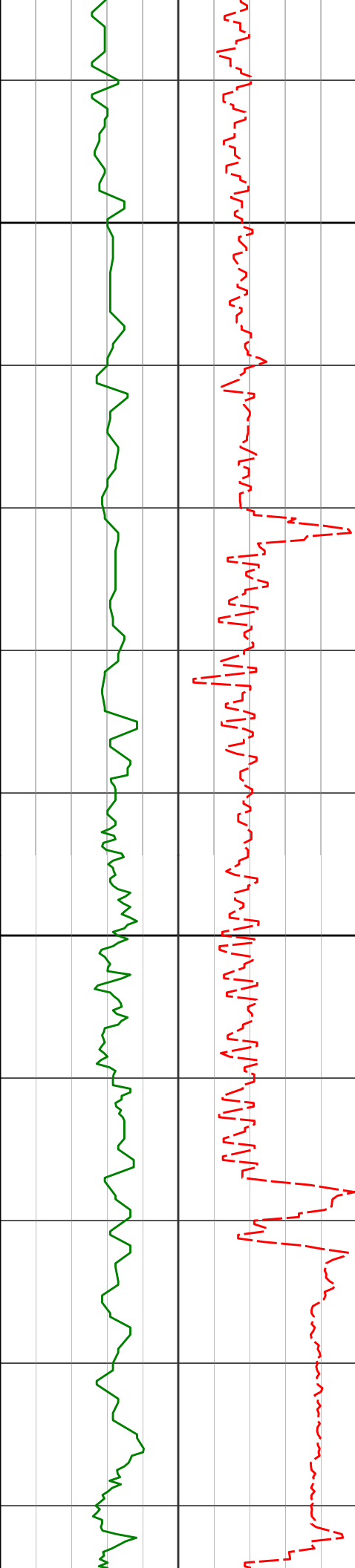
418.52'

4581'

7.51°

217.04° 4540.33'

427.87'



4700

4800

4676'

6.14°

202.85° 4634.66'

434.07'

4771'

5.23°

195.46° 4729.19'

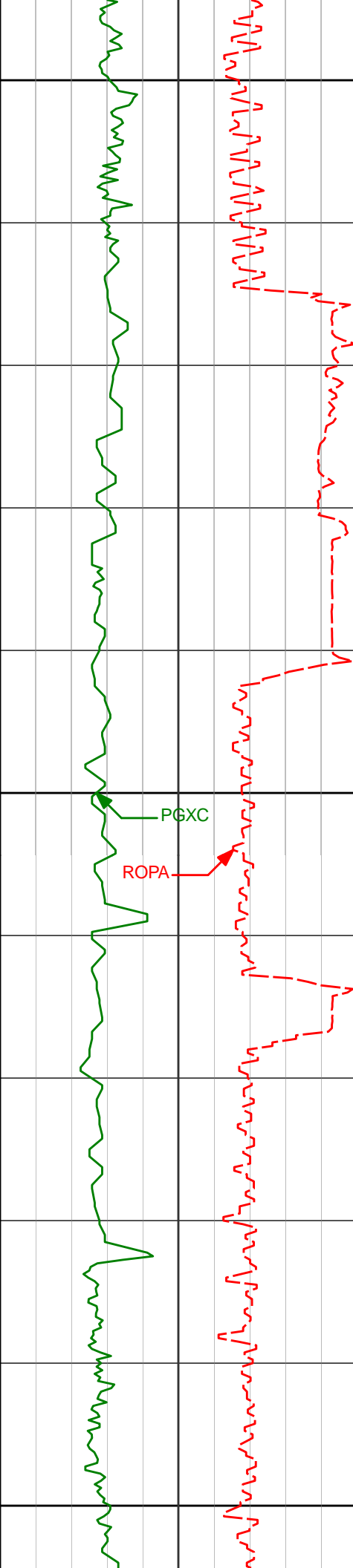
437.65'

4866'

5.26°

200.08° 4823.80'

440.72'



4900

4961'

6.12°

212.05° 4918.33'

445.33'

5000

PGXC

ROPA

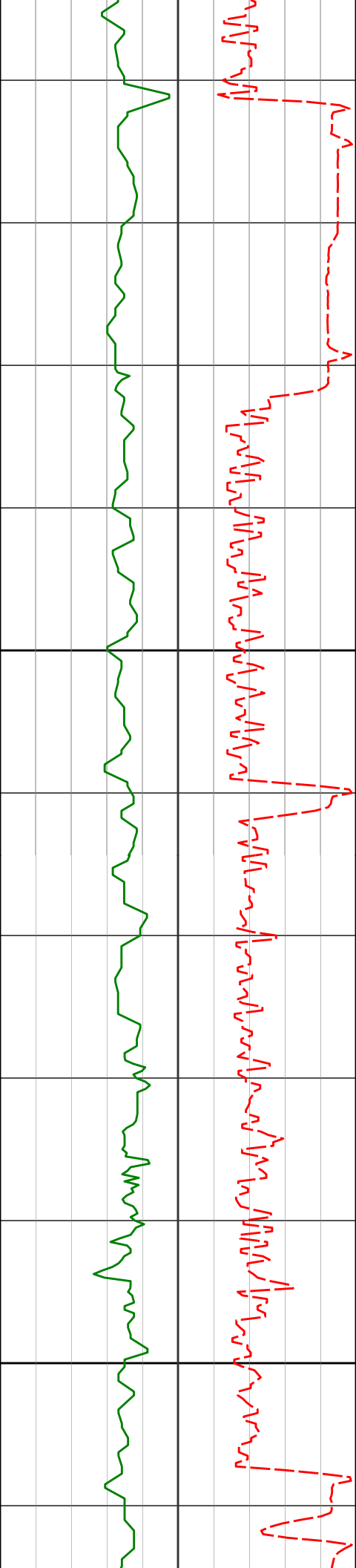
5056'

5.88°

216.82° 5012.81'

451.35'

5100



5151'

5.16°

232.76° 5107.38'

458.00'

5200

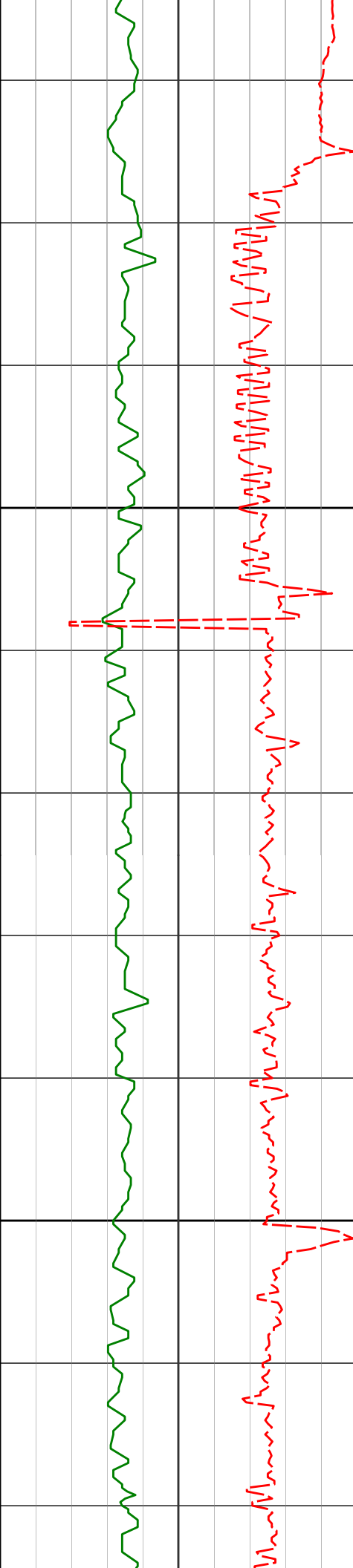
5246'

4.43°

235.74° 5202.04'

464.66'

5300



5400

5341'

3.16°

245.08° 5296.83'

470.23'

5436'

2.61°

248.81° 5391.71'

474.71'

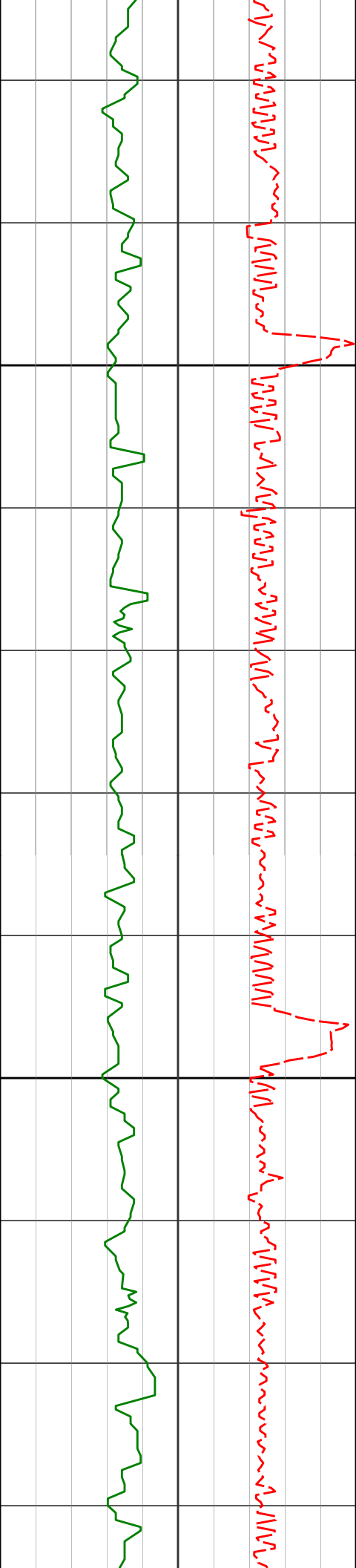
5500

5531'

2.08°

251.09° 5486.63'

478.42'



5600

5626'

1.57°

253.22° 5581.58'

481.34'

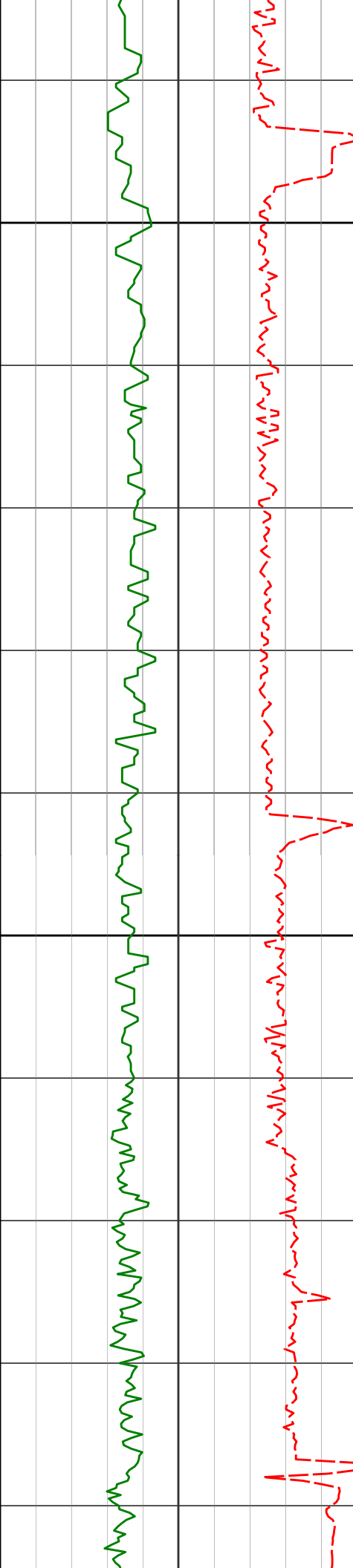
5700

5721'

1.89°

254.85° 5676.54'

484.14'



5800

5816'

1.55°

247.38° 5771.50'

486.88'

5900

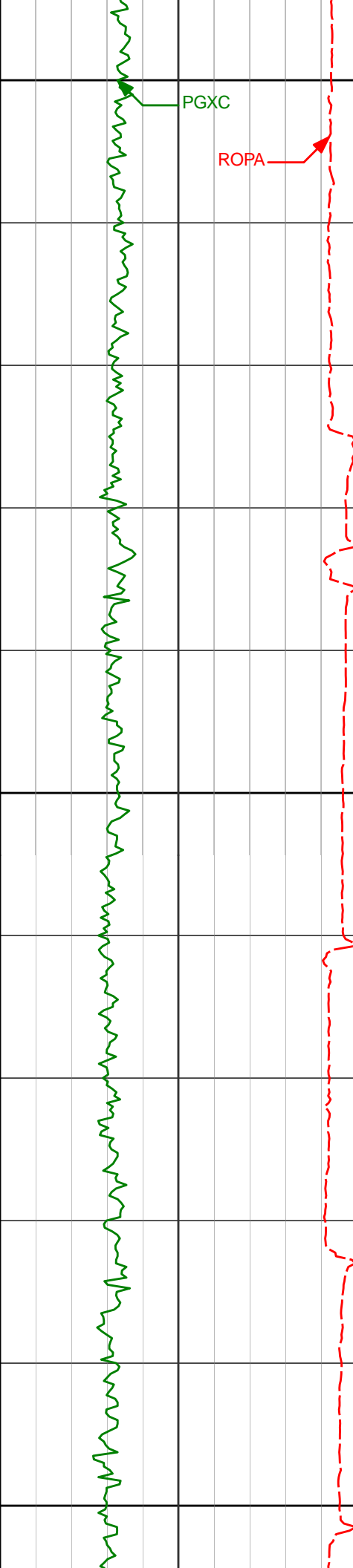
5911'

1.35°

257.94° 5866.47'

489.19'

Run 200



6000

6006'

1.43°

270.51° 5961.44'

491.48'

PGXC

ROPA

6100

6100'

9.17°

276.51° 6054.97'

500.05'

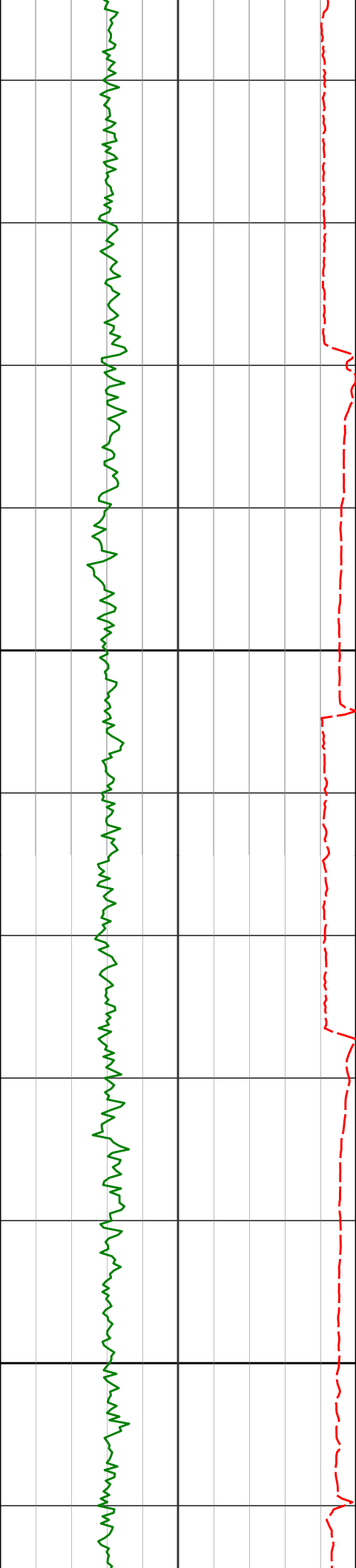
6200

6195'

15.76°

267.23° 6147.69'

520.45'

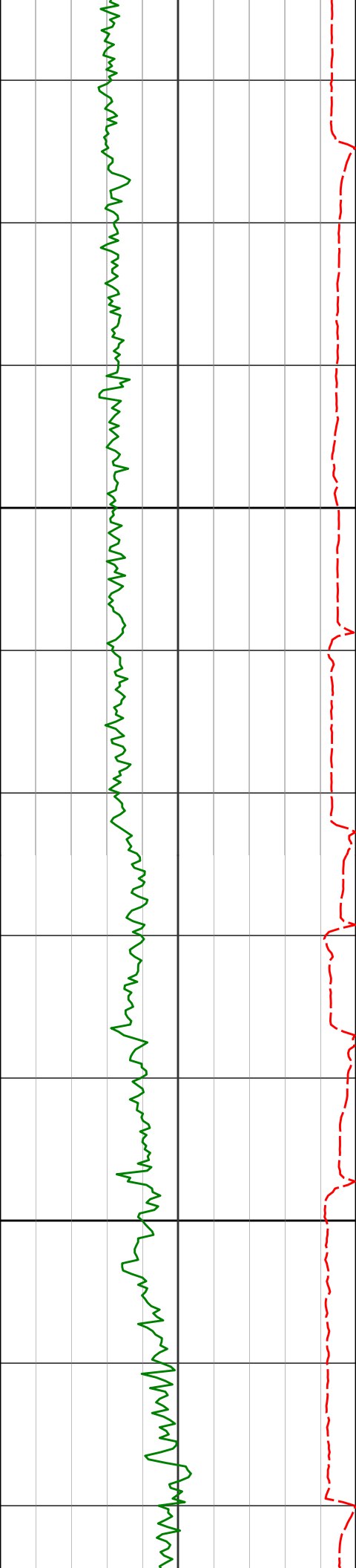


6300

6290'	19.73°	266.24°	6238.15'	549.39'
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6400

6385'	24.71°	272.29°	6326.08'	585.23'
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6500

6600

6480'

36.19°

272.05° 6407.84'

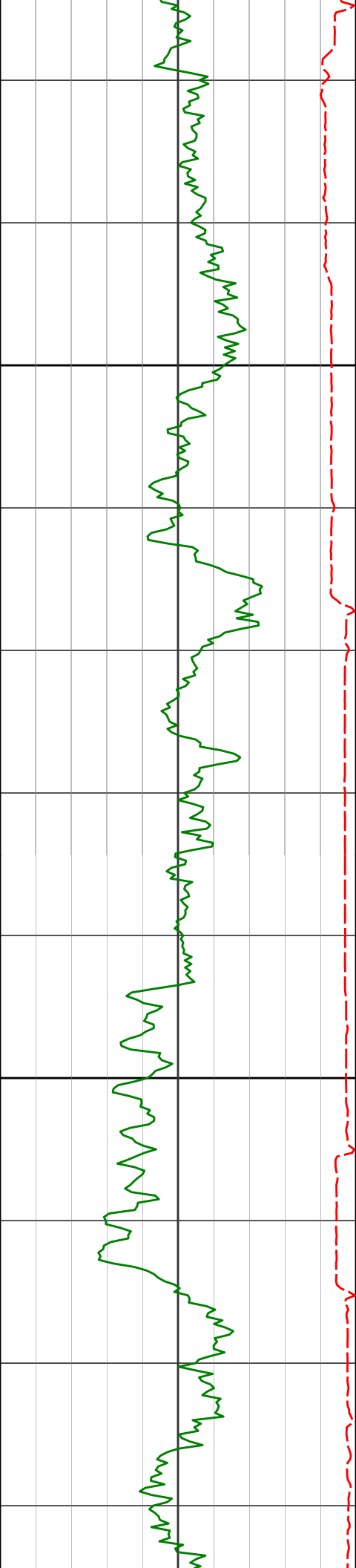
633.10'

6575'

45.76°

269.81° 6479.48'

695.18'



6670'

48.33°

269.04° 6544.21'

764.64'

6700

6766'

52.44°

269.21° 6605.41'

838.53'

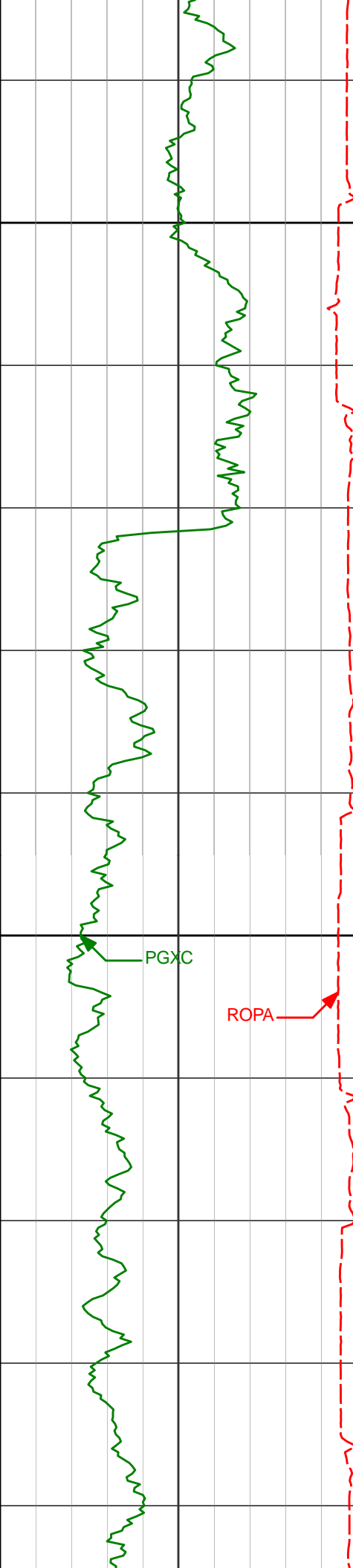
6800

6861'

64.09°

268.10° 6655.30'

919.15'



6900

6956'

74.69°

268.46° 6688.69'

1007.92'

7000

PGXC

ROPA

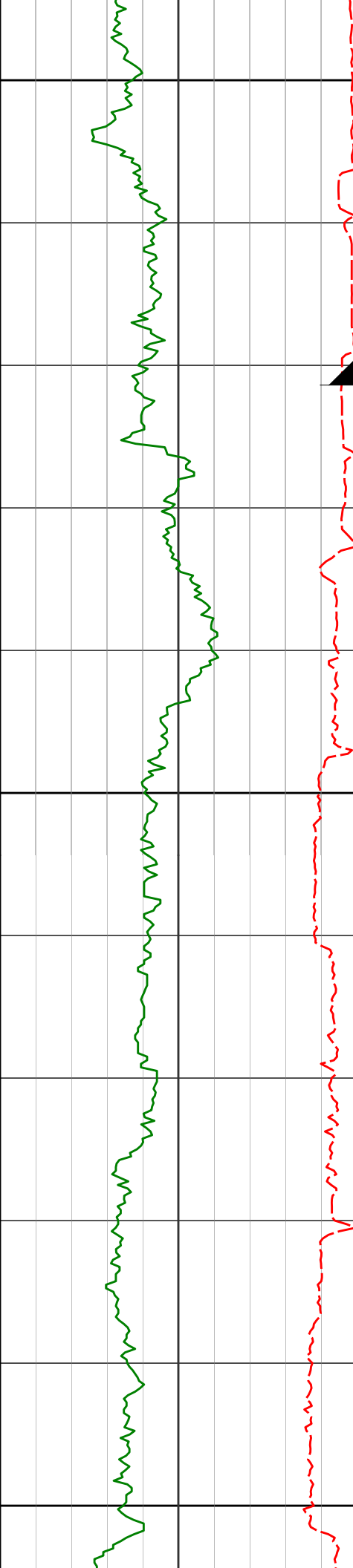
7051'

80.00°

269.14° 6709.49'

1100.54'

Run 300



7100

Casing Shoe @ 7143'

CSG

7200

7300

7192'

89.11°

271.43° 6720.97'

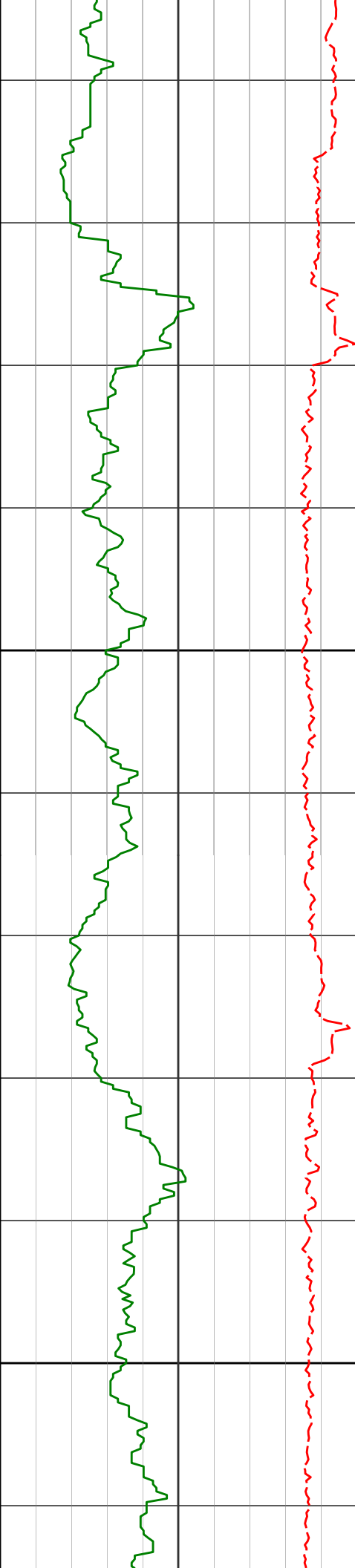
1240.74'

7287'

89.66°

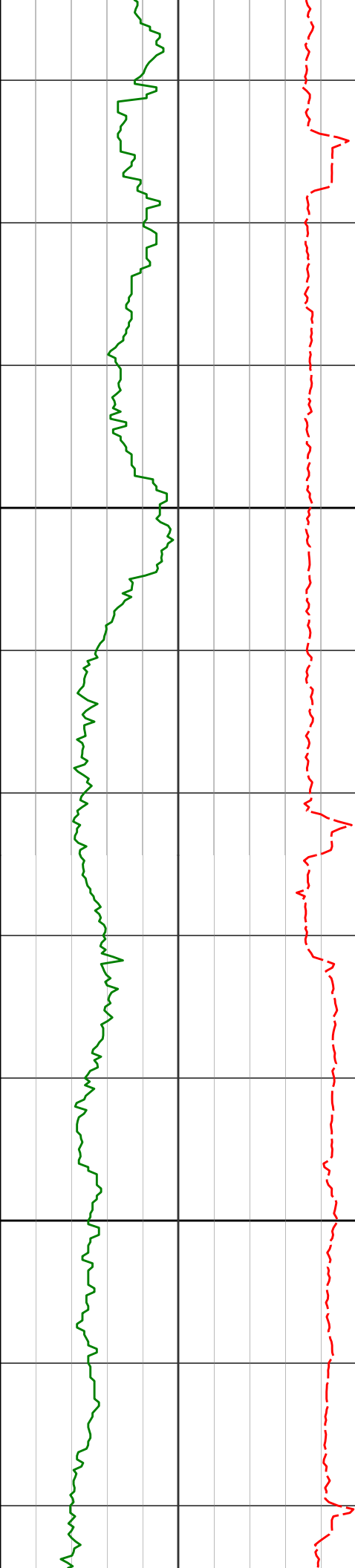
270.06° 6721.99'

1335.53'



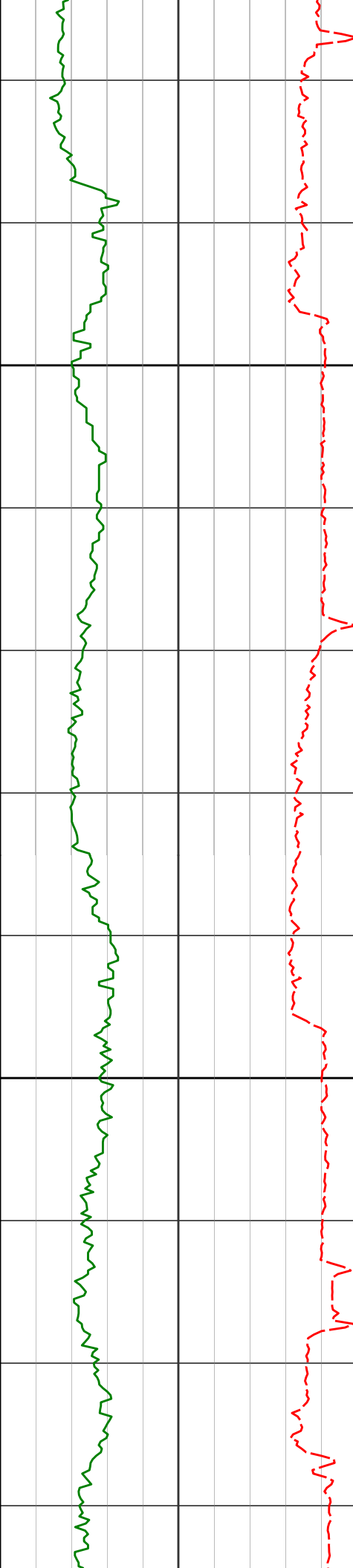
The figure displays a 3D plot with two data points. The vertical axis (Z-axis) has labels 7400 and 7500. The horizontal axis (X-axis) has labels 7382' and 7477'. The depth axis (Y-axis) has labels 1430.41' and 1525.30'. The data points are labeled with their coordinates: (7382', 89.35°, 269.79°) and (7477', 89.23°, 269.46°).

Point	X (ft)	Y (ft)	Z (ft)
1	7382'	1430.41'	7400
2	7477'	1525.30'	7500



7600

7700



7800

7900

7762'

90.28°

268.57° 6725.32'

1810.10'

7857'

90.40°

268.22° 6724.76'

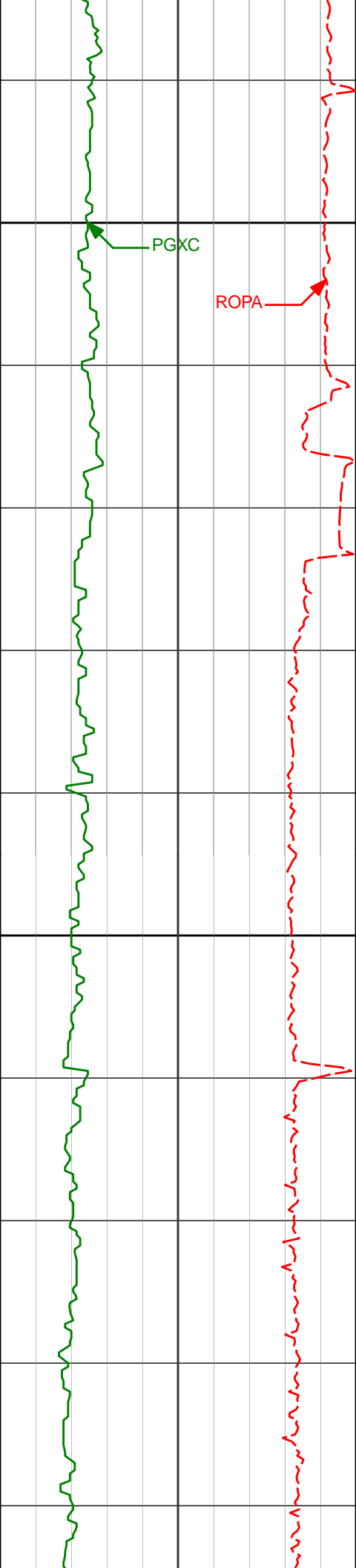
1905.07'

7953'

90.62°

267.56° 6723.90'

2001.05'



8000

PGXC

ROPA

8048'

89.94°

268.57° 6723.44'

2096.03'

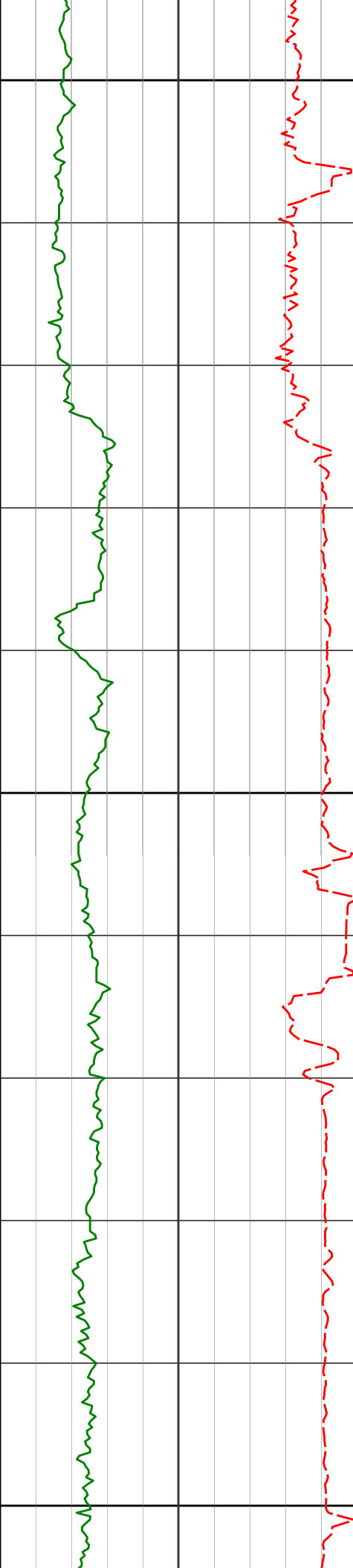
8100

8143'

90.59°

268.97° 6723.00'

2190.99'



8200

8238'

91.11°

269.21° 6721.59'

2285.92'

8300

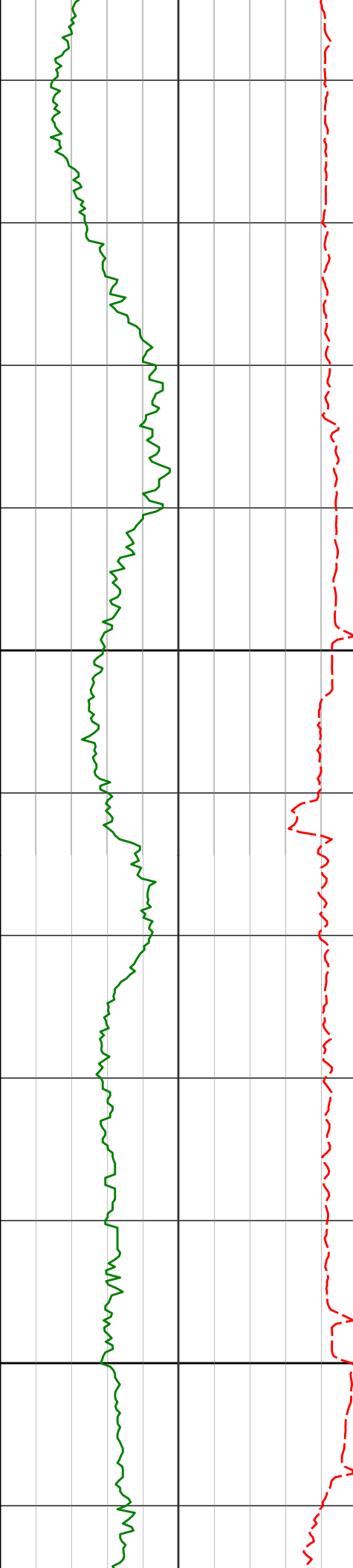
8333'

89.75°

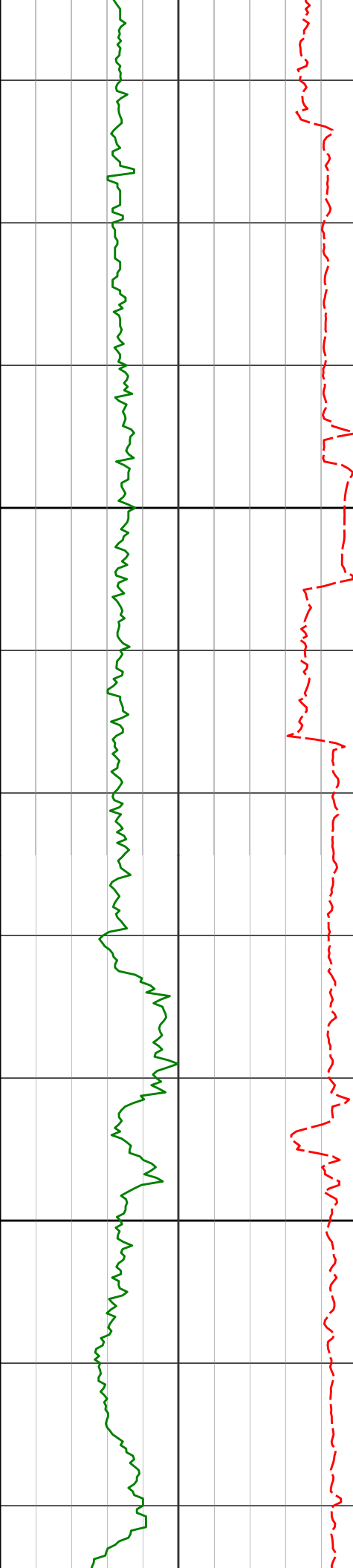
268.65° 6720.88'

2380.86'

8400



Point	Value 1	Value 2	Value 3	Value 4	Value 5
Top	8429'	90.37°	268.50°	6720.78'	2476.83'
Middle	8524'	89.88°	267.58°	6720.57'	2571.81'
Bottom	8618'	88.92°	268.72°	6721.55'	2665.78'



8700

8713'

90.68°

270.05° 6721.89'

2760.70'

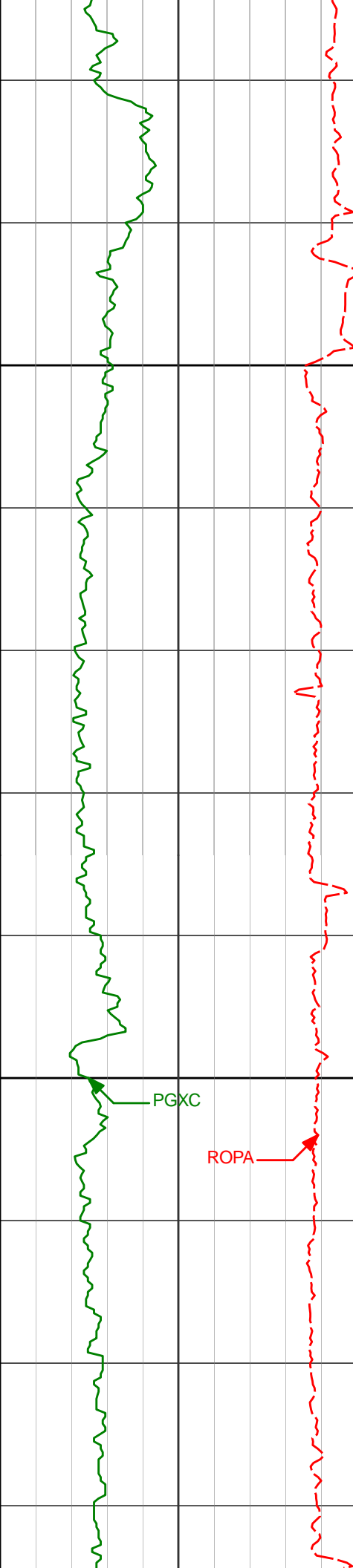
8800

8808'

91.23°

270.04° 6720.30'

2855.55'



8900

8902'

90.46°

271.16° 6718.92'

2949.36'

9000

8997'

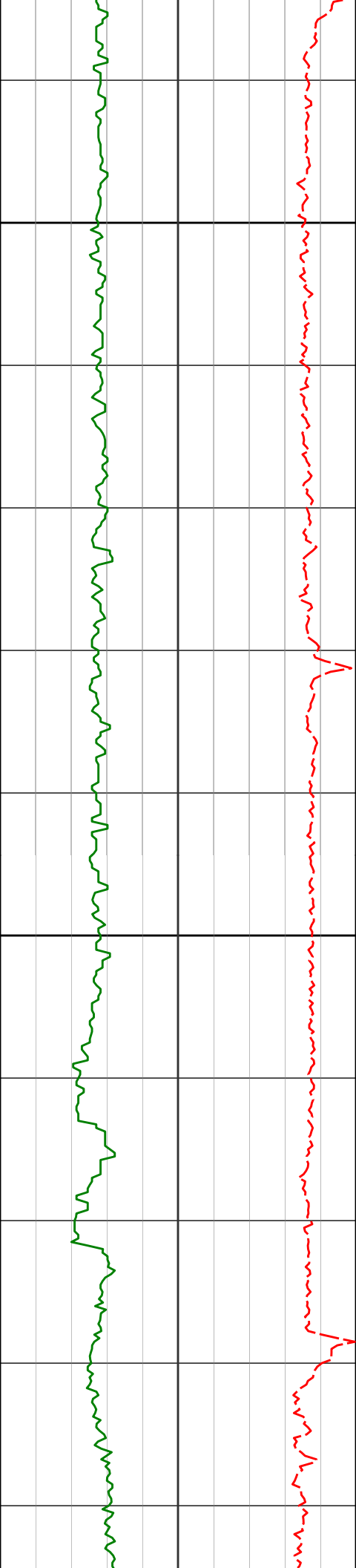
90.28°

269.62° 6718.30'

3044.19'

PGXC

ROPA



9100

9092'

90.09°

268.99° 6718.00'

3139.12'

9200

9186'

89.75°

267.18° 6718.13'

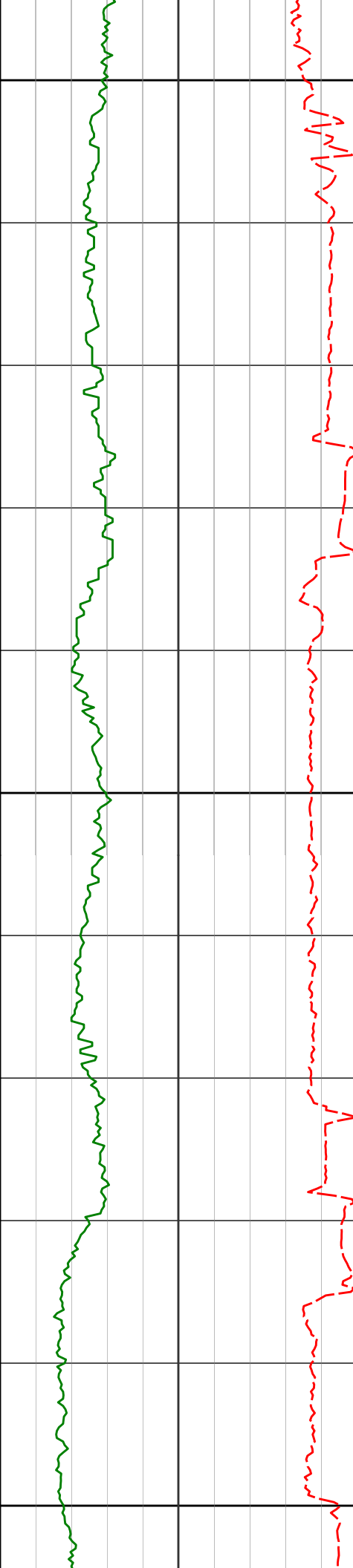
3233.10'

9281'

89.07°

265.90° 6719.11'

3328.09'



9300

9376'

90.80°

266.91° 6719.21'

3423.08'

9400

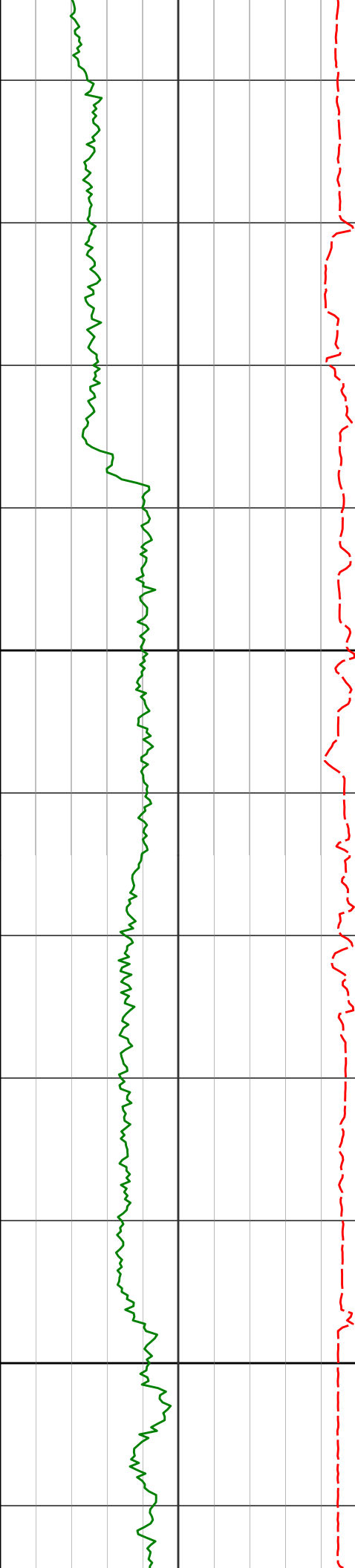
9471'

91.08°

268.06° 6717.65'

3518.06'

9500



9566'

92.71°

268.20° 6714.51'

3612.99'

9600

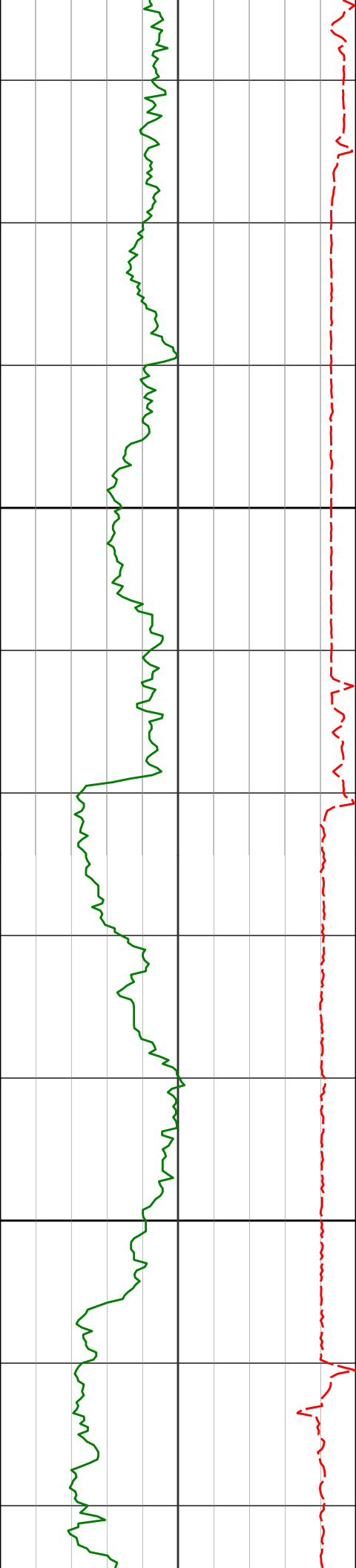
9661'

92.68°

269.76° 6710.05'

3707.82'

9700



9755'

90.86°

269.88° 6707.14'

3801.66'

9800

9850'

89.35°

269.66° 6706.97'

3896.55'

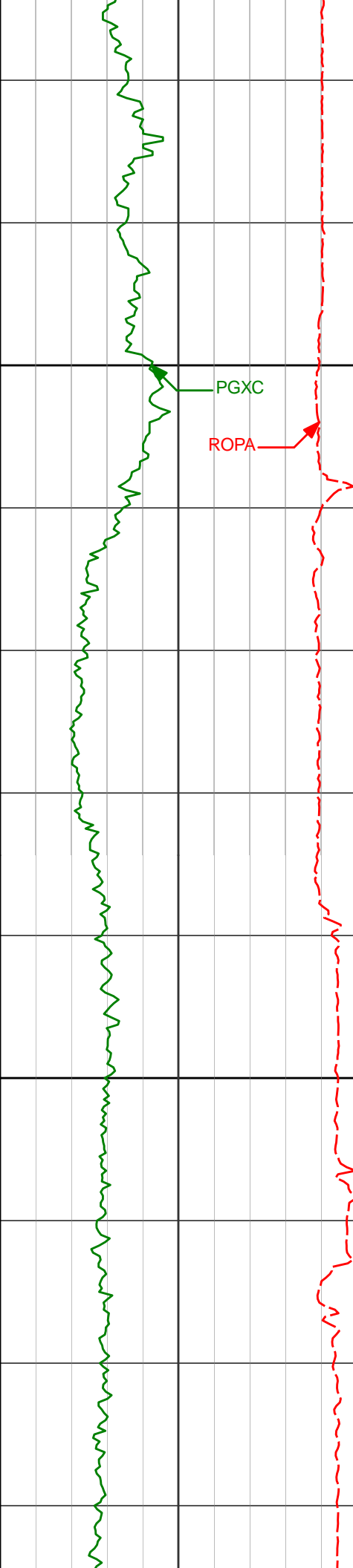
9900

9945'

88.27°

268.78° 6708.94'

3991.46'



10000

PGXC

ROPA

10040'

87.81°

268.47° 6712.19'

4086.37'

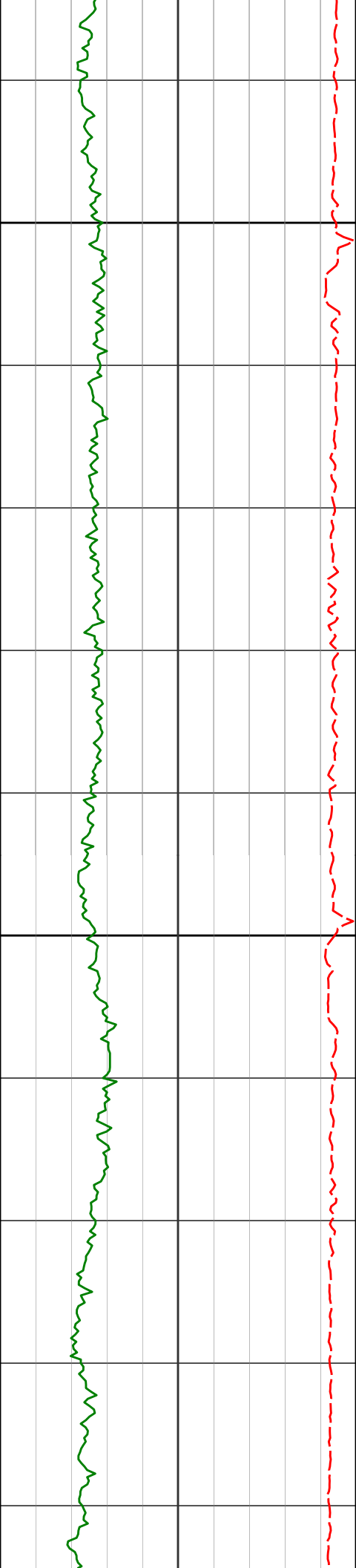
10100

10135'

89.60°

267.94° 6714.34'

4181.32'

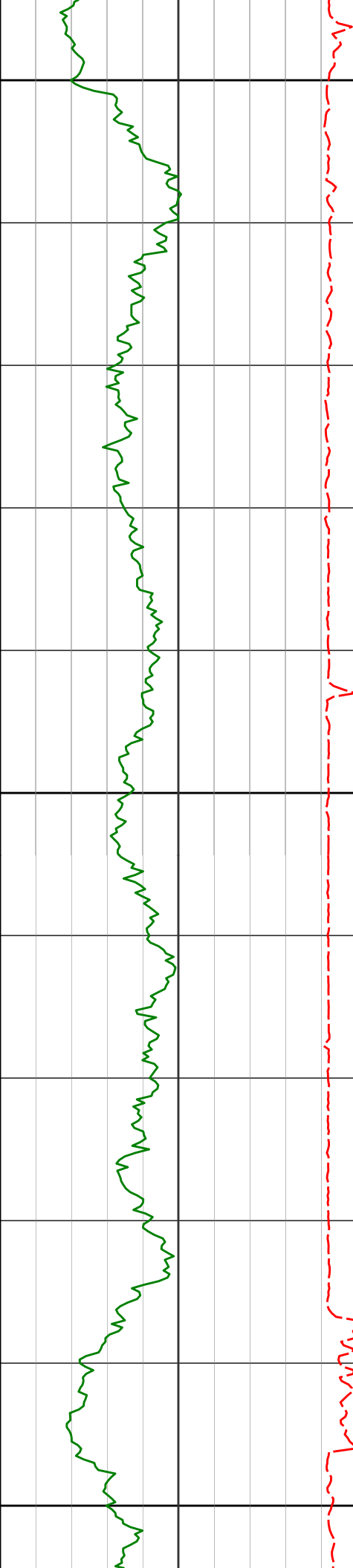


10200

10230' 90.15° 267.82° 6714.55' 4276.31'

10300

10323' 90.71° 268.08° 6713.85' 4369.30'



10400

10415'

91.08°

268.08° 6712.41'

4461.27'

10500

10507'

92.04°

268.00° 6709.91'

4553.22'

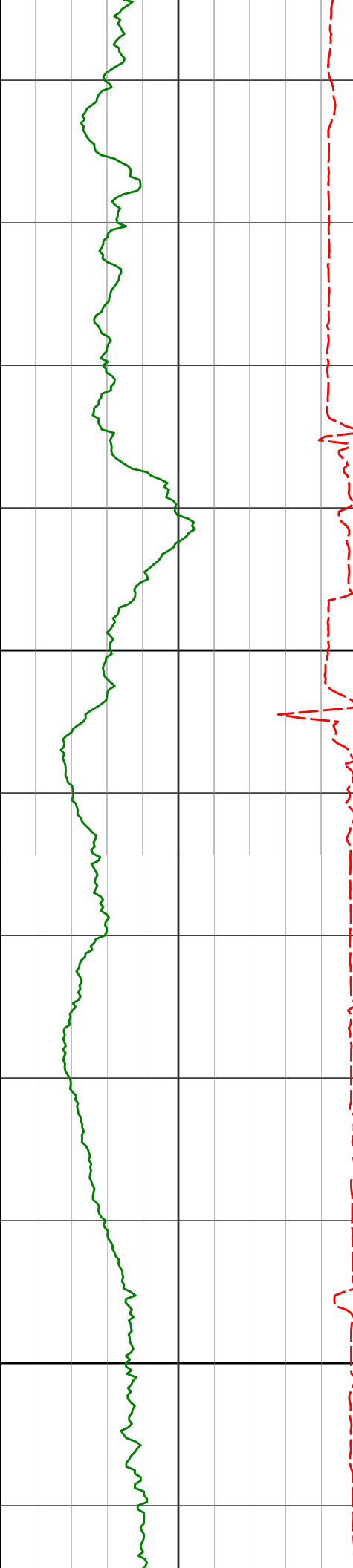
10600

10600'

92.47°

269.06° 6706.25'

4646.12'



10700

10693'

91.39°

269.42° 6703.11'

4738.99'

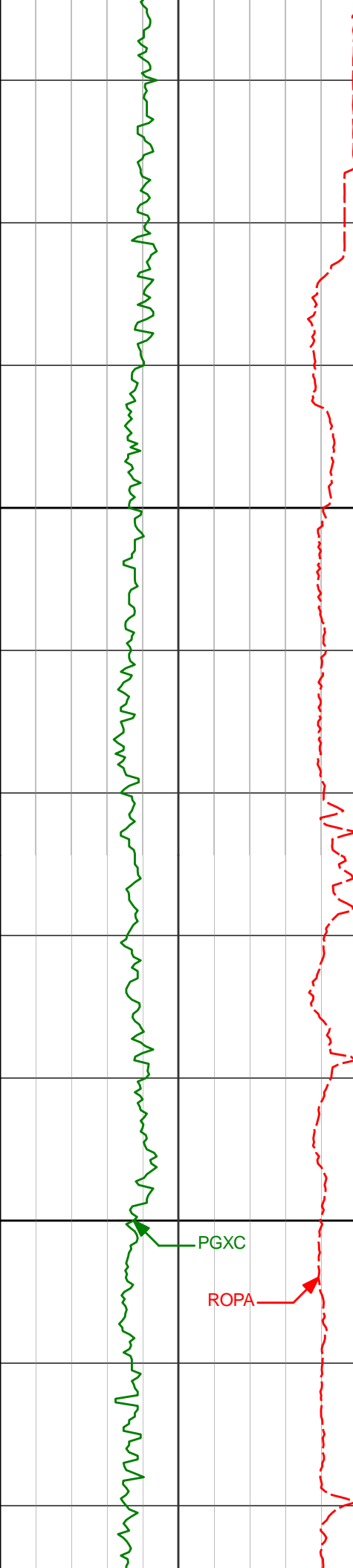
10800

10786'

90.28°

269.73° 6701.76'

4831.89'



10878'

88.77°

269.23° 6702.52'

4923.80'

10900

10971'

90.00°

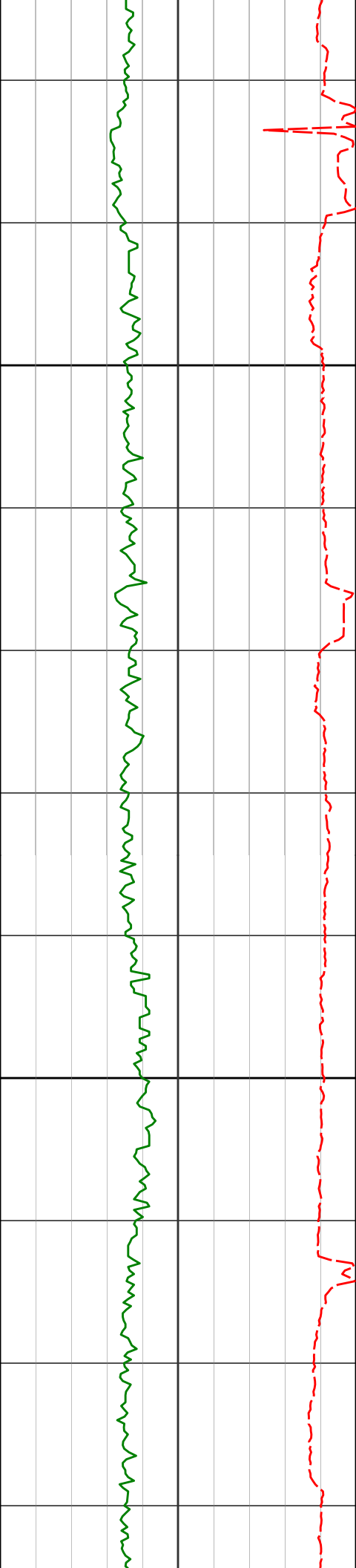
269.95° 6703.52'

5016.70'

11000

PGXC

ROPA



11064'

90.55°

270.28° 6703.07'

5109.57'

11100

11157'

89.35°

269.84° 6703.16'

5202.43'

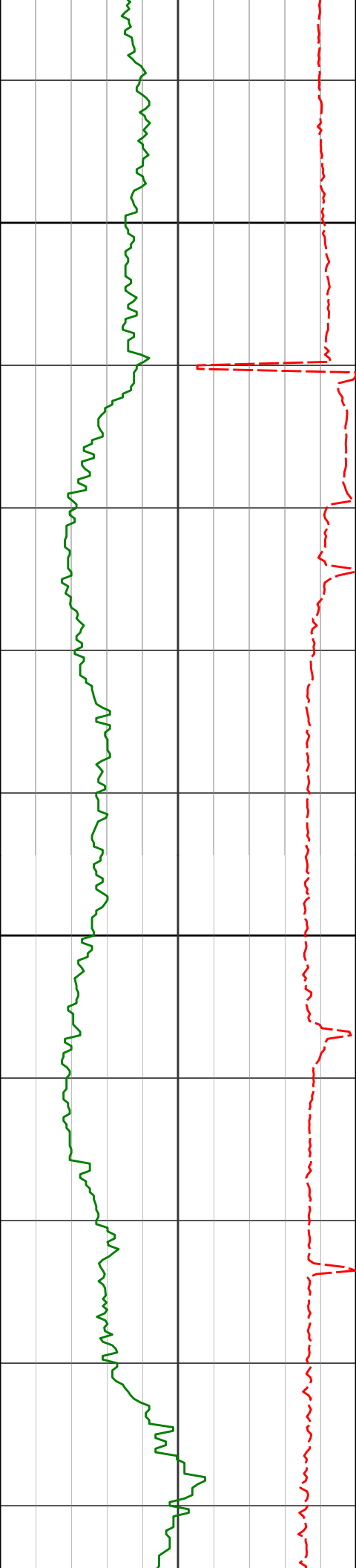
11200

11250'

89.82°

269.41° 6703.83'

5295.34'



11300

11344'

87.78°

268.98° 6705.80'

5389.24'

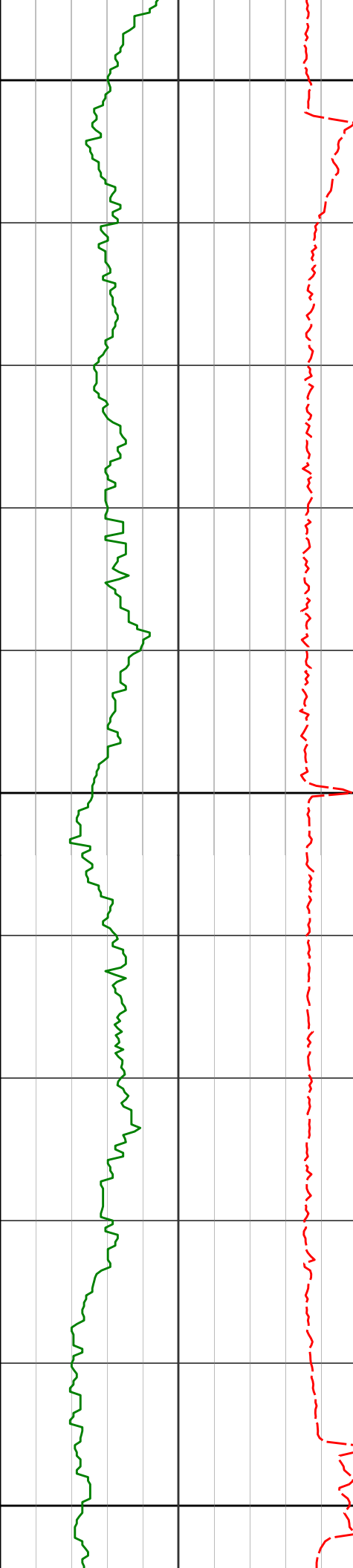
11400

11436'

88.09°

269.07° 6709.11'

5481.13'



11500

11529'

87.88°

268.45° 6712.38'

5574.03'

11600

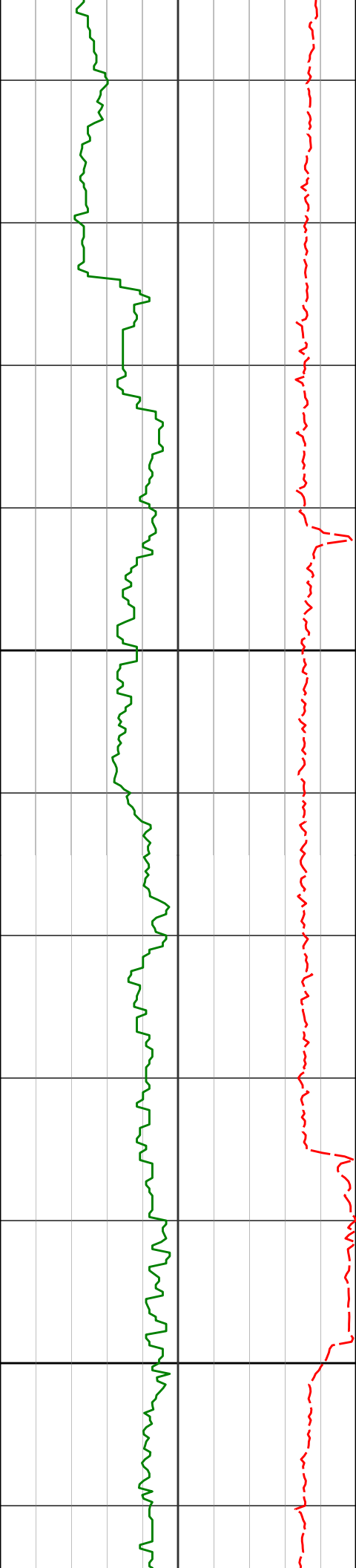
11620'

87.78°

268.45° 6715.83'

5664.94'

11700



11800

11900

11713'

11806'

11898'

89.78°

90.86°

89.69°

267.94° 6717.81'

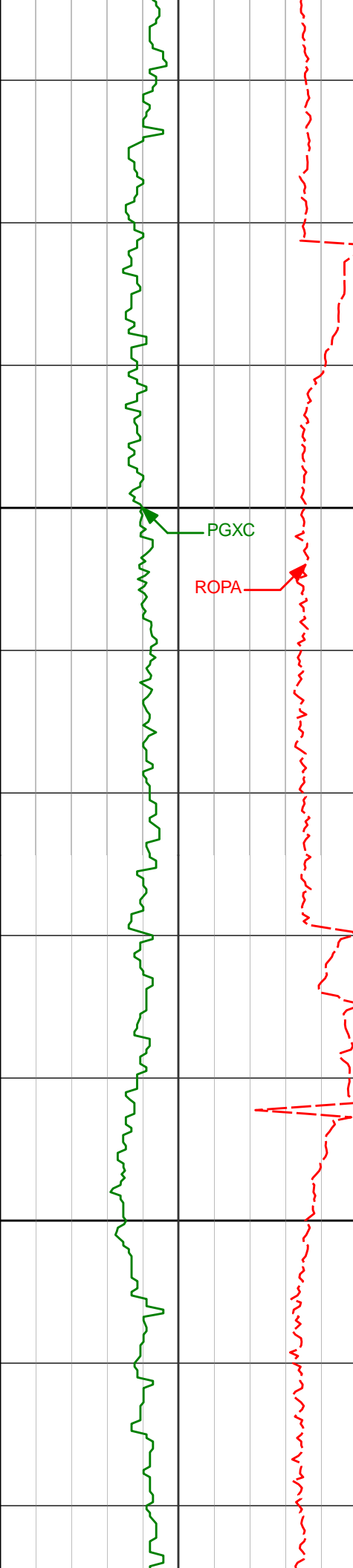
267.86° 6717.29'

269.35° 6716.85'

5757.89'

5850.88'

5942.84'



12000

12100

11992'

90.59°

268.97° 6716.62'

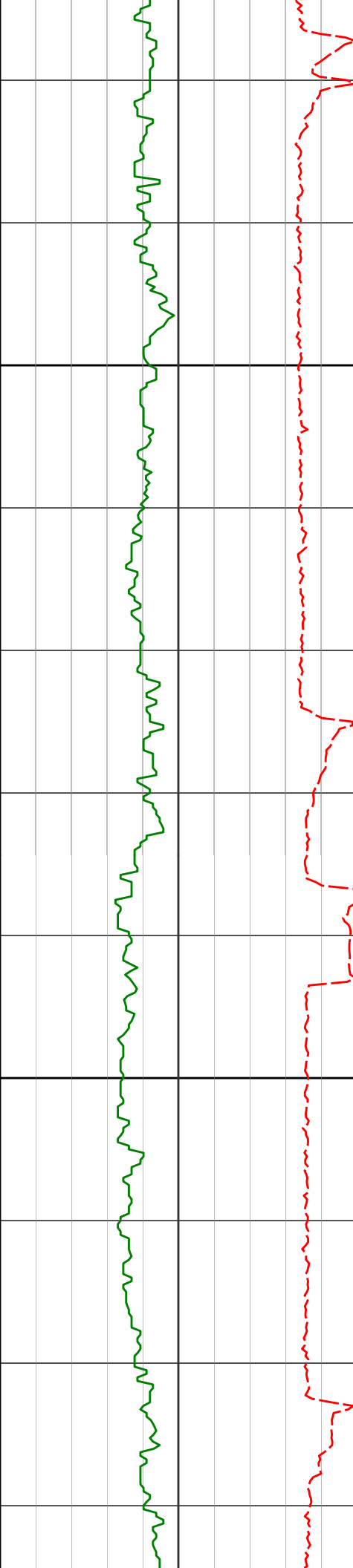
6036.77'

12086'

89.17°

268.77° 6716.81'

6130.72'

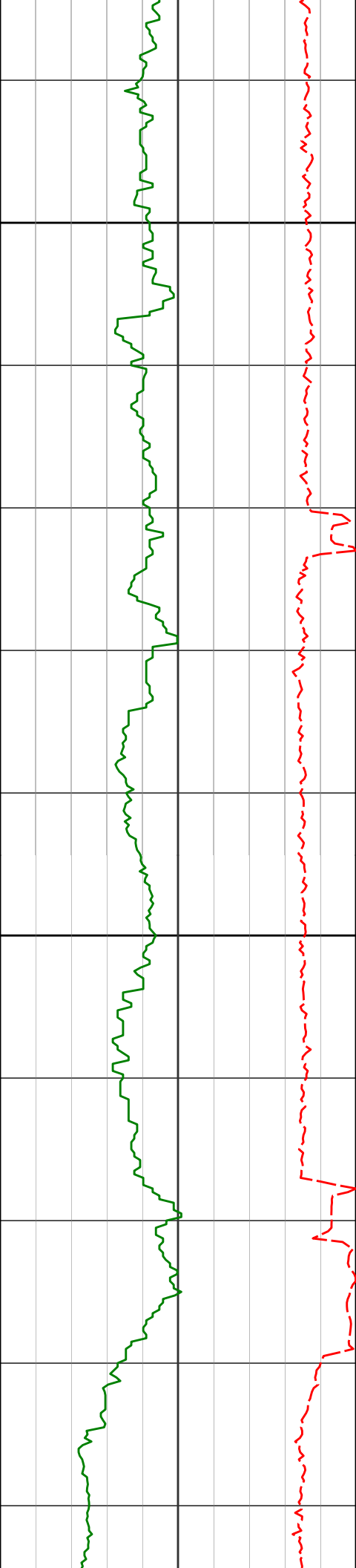


12200

12300

12181'	90.18°	267.82°	6717.35'	6225.70'
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12276'	90.03°	268.14°	6717.18'	6320.68'
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12400

12465'

12500

12560'

12370'

89.23°

89.45°

266.95° 6718.70'

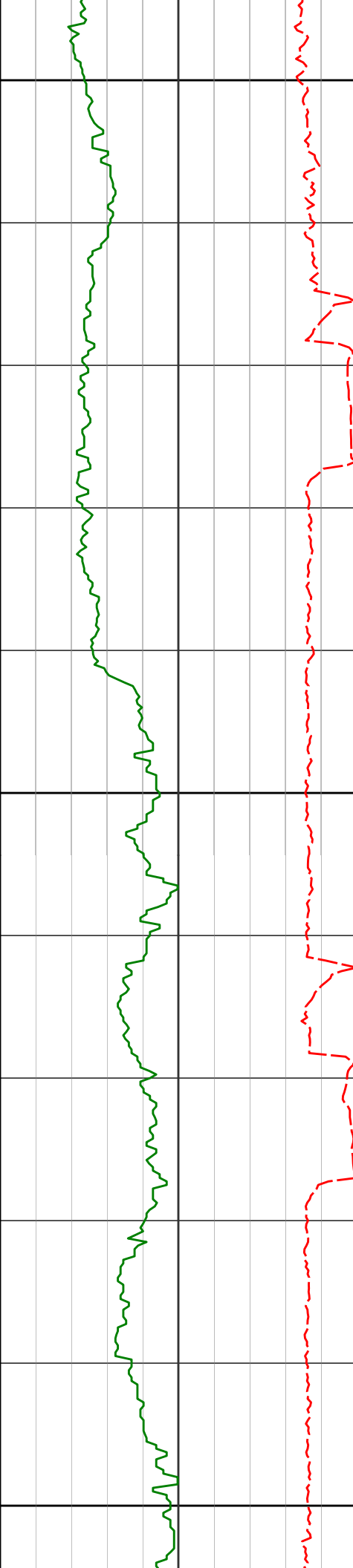
267.54° 6717.61'

6509.66'

6414.67'

267.14° 6720.95'

6604.64'



12600

12655'

89.35°

267.89° 6723.09'

6699.61'

12700

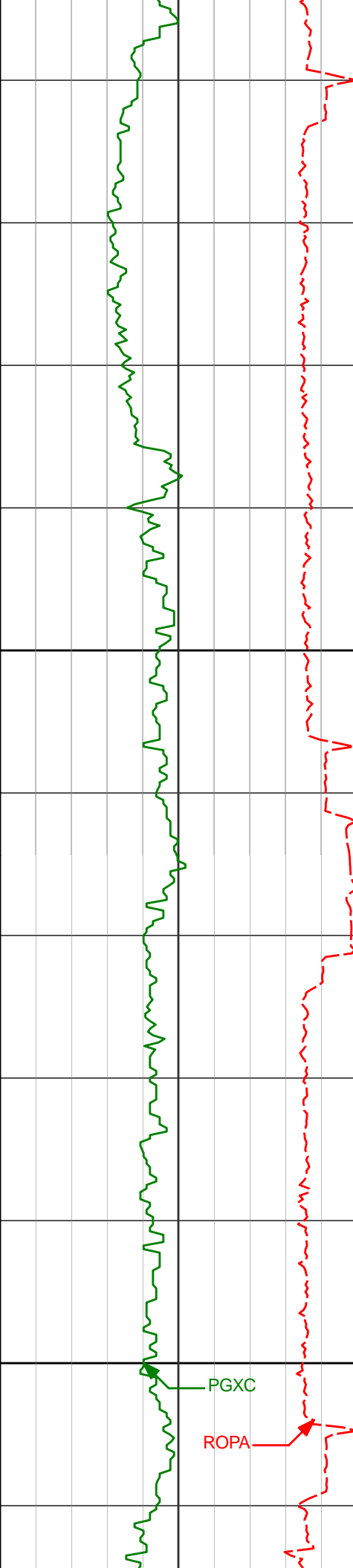
12749'

90.25°

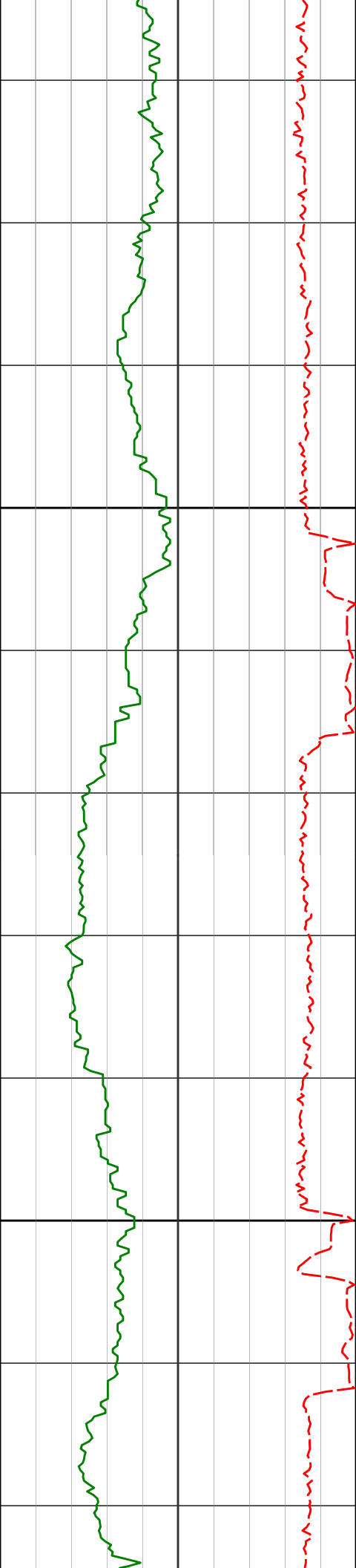
268.48° 6723.42'

6793.59'

12800



12844'	90.89°	268.78°	6722.48'	6888.54'
12900				
12939'	90.68°	269.29°	6721.18'	6983.48'
13000				



13100

13200

13034'

91.73°

269.72° 6719.18'

7078.37'

13128'

91.08°

271.28° 6716.87'

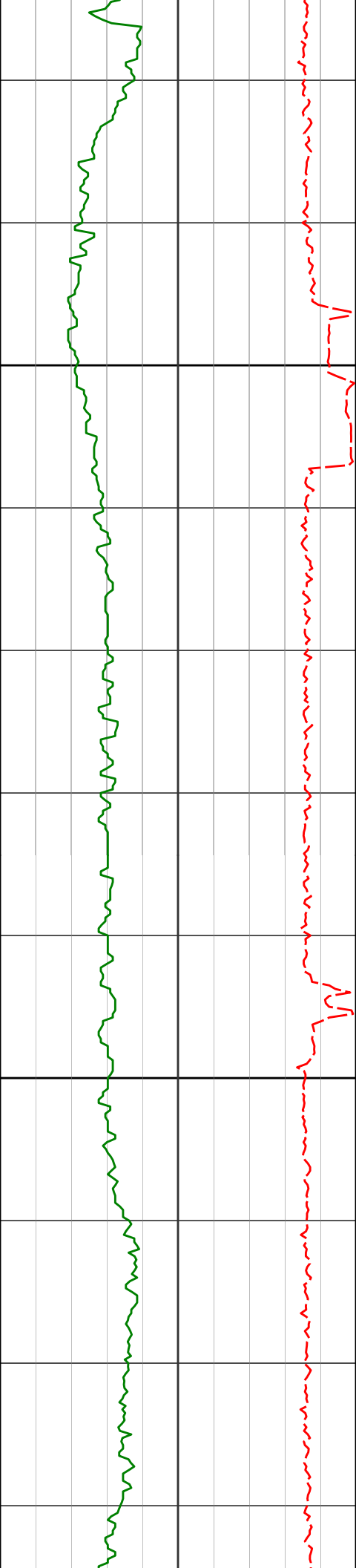
7172.16'

13224'

90.80°

271.72° 6715.30'

7267.86'



13300

13319'

89.42°

271.16° 6715.12'

7362.58'

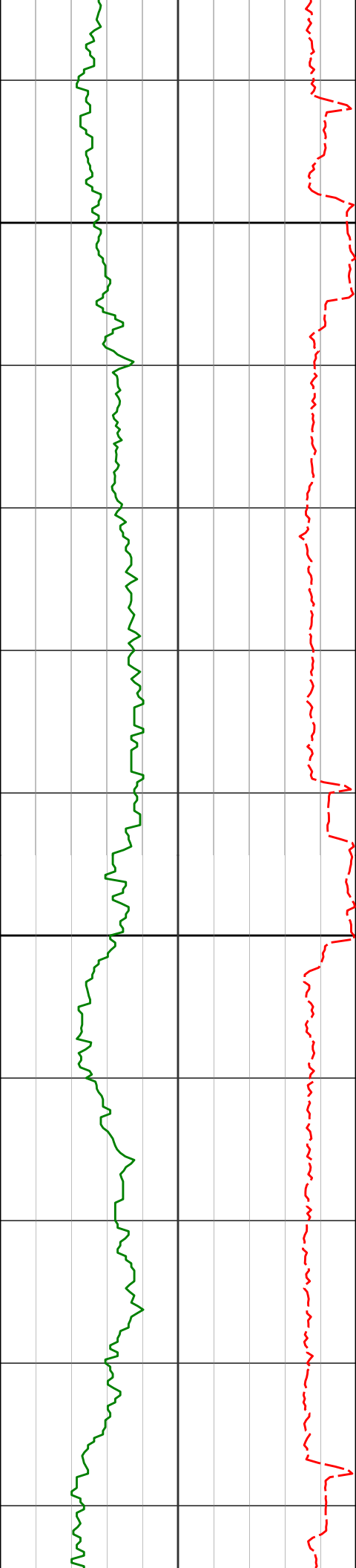
13400

13414'

90.77°

271.54° 6714.96'

7457.31'



13500

13509'

90.31°

271.95° 6714.06'

7551.98'

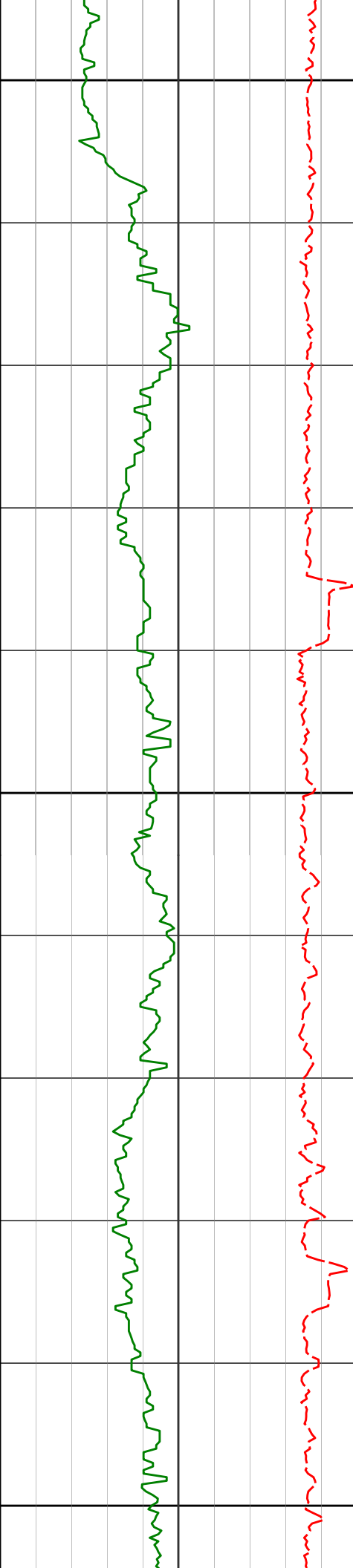
13600

13604'

88.15°

271.24° 6715.34'

7646.67'



13700

13698'

88.15°

270.97° 6718.37'

7740.38'

13800

13793'

88.06°

270.43° 6721.52'

7835.13'

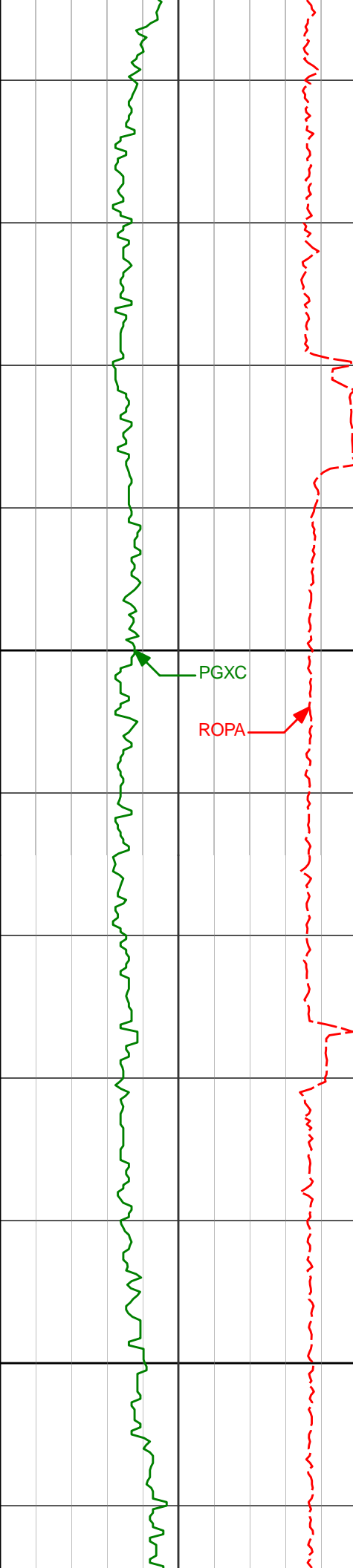
13900

13888'

87.87°

269.93° 6724.89'

7929.93'



14000

13983'

89.32°

269.27° 6727.22'

8024.81'

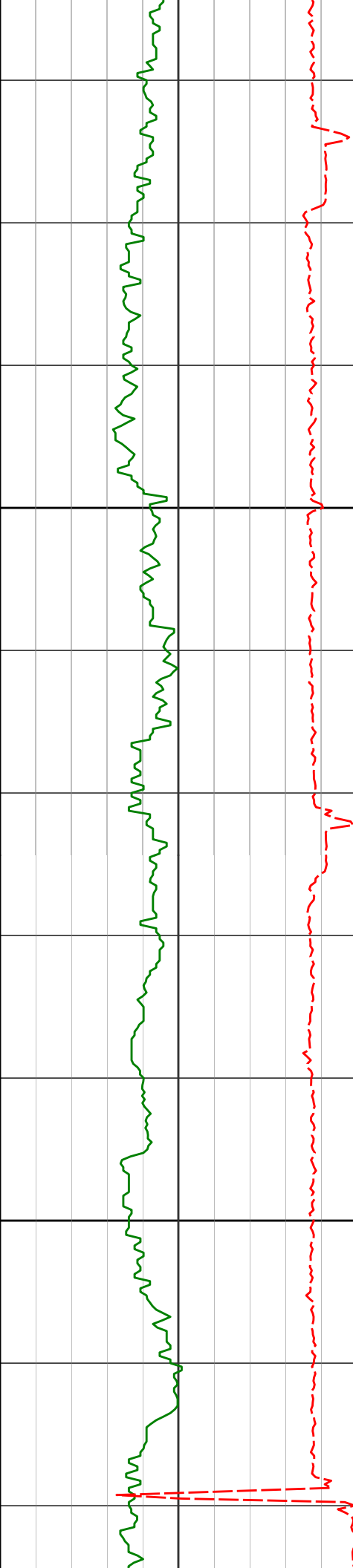
14078'

90.15°

269.42° 6727.66'

8119.73'

14100



14200

14300

14173'

90.77°

268.89° 6726.89'

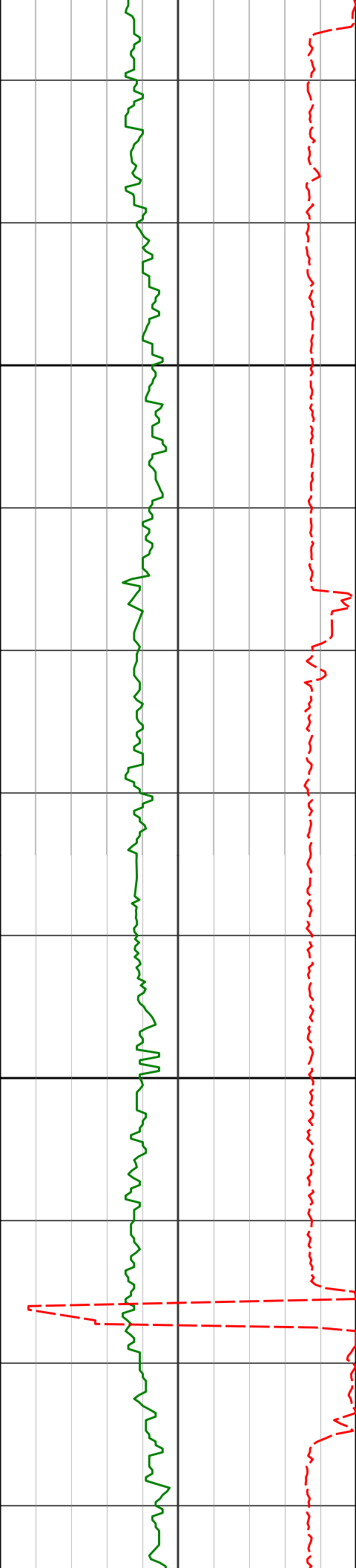
8214.66'

14268'

91.69°

268.60° 6724.86'

8309.59'



14400

14500

14363'

89.66°

267.01° 6723.74'

8404.57'

14458'

90.49°

268.50° 6723.61'

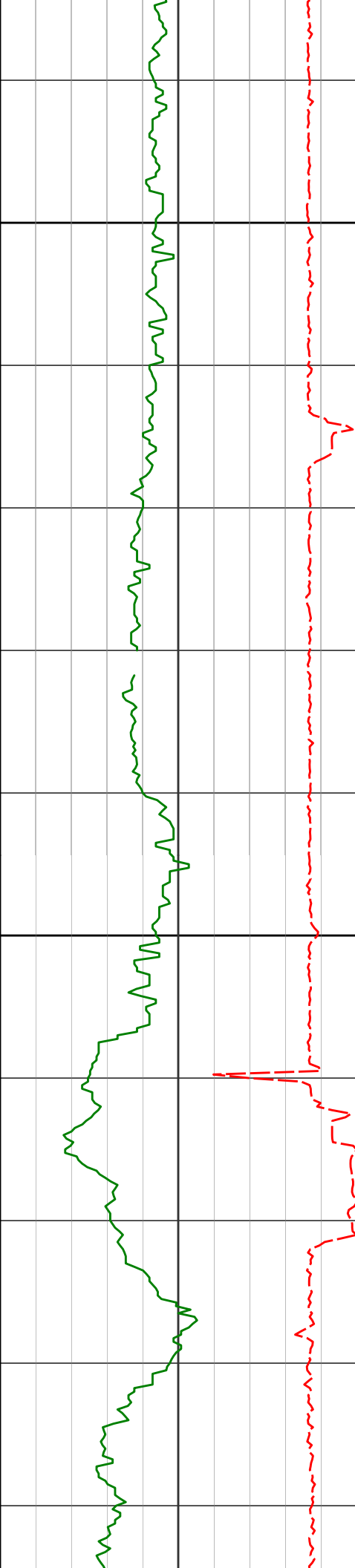
8499.56'

14553'

89.57°

269.77° 6723.56'

8594.49'



14600

14649'

91.39°

272.21° 6722.76'

8690.25'

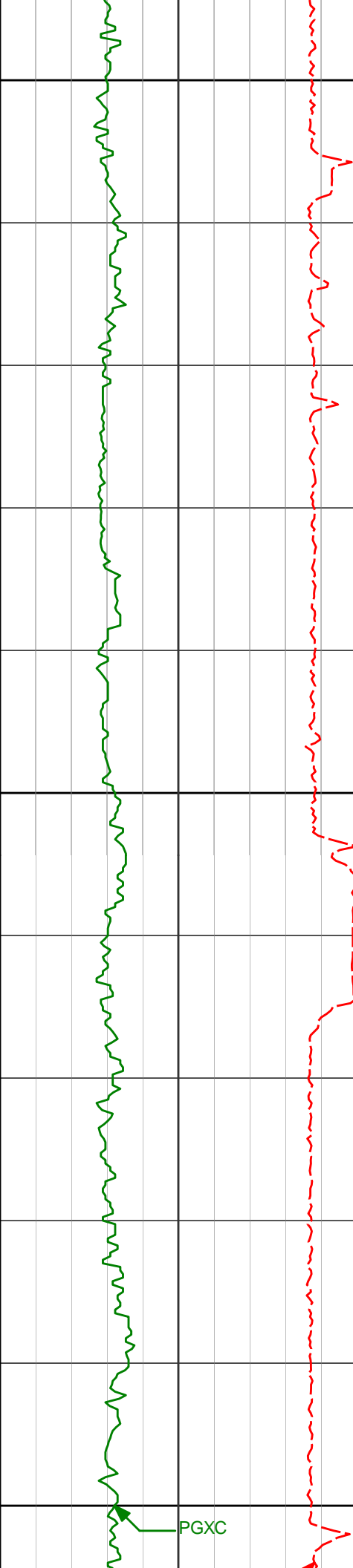
14700

14743'

89.45°

270.74° 6722.07'

8783.96'



14800

14838'

90.55°

270.29° 6722.07'

8878.78'

14900

14933'

88.86°

269.41° 6722.56'

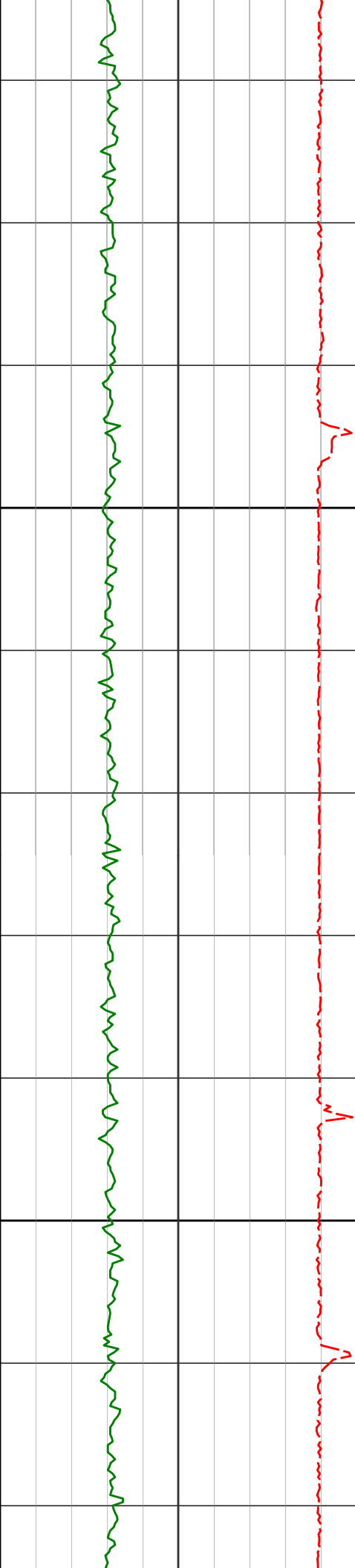
8973.66'

15000

PGXC



15028'	90.09°	269.55°	6723.43'	9068.57'
15124'	89.29°	268.36°	6723.95'	9164.51'
15219'	89.48°	267.51°	6724.97'	9259.50'



15300

15314'

89.51°

267.31° 6725.81'

9354.49'

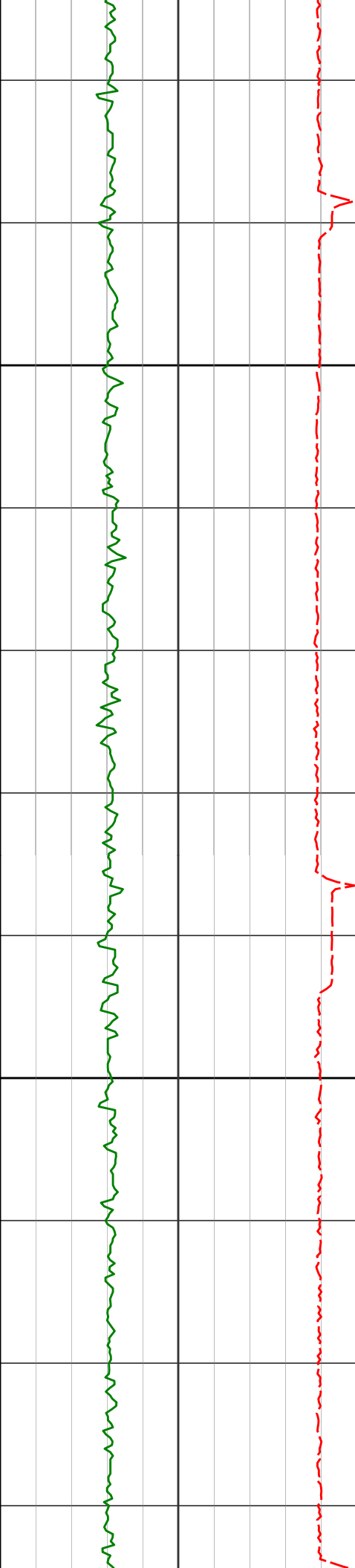
15400

15409'

89.35°

266.29° 6726.75'

9449.48'



15500

15504'

89.32°

265.48° 6727.85'

9544.46'

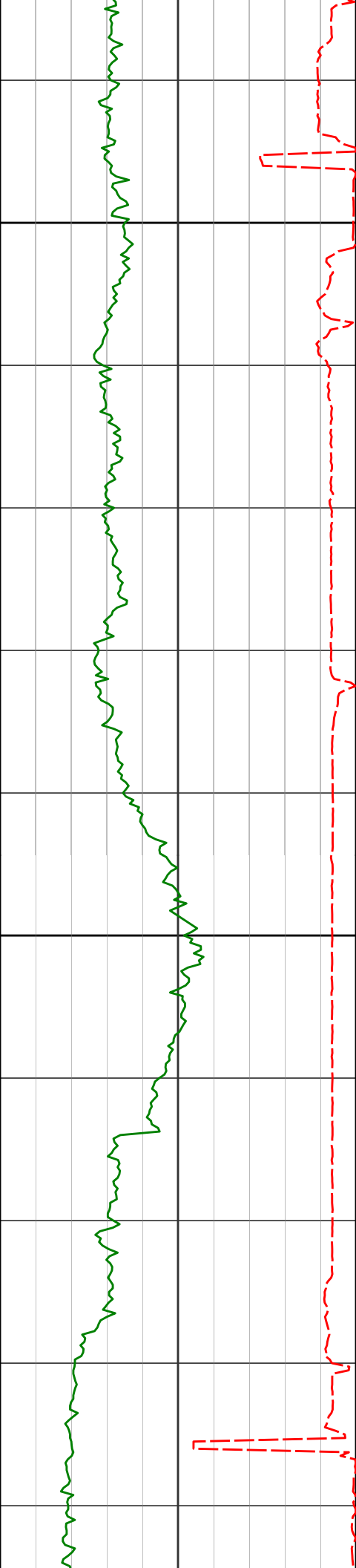
15600

15599'

89.48°

264.98° 6728.85'

9639.40'



15700

15694'

90.31°

264.80° 6729.02'

9734.33'

15800

15789

91.70°

264.94° 6727.36'

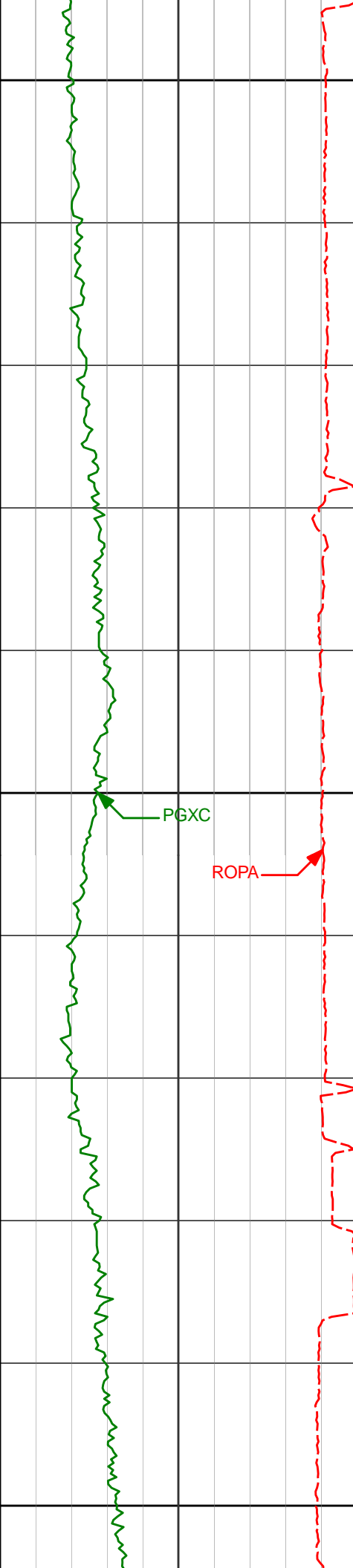
9829.25'

15884'

90.00°

264.87° 6725.95'

9924.17'



15900

15979'

90.83°

264.48° 6725.26'

10019.08'

16000

PGXC

ROPA

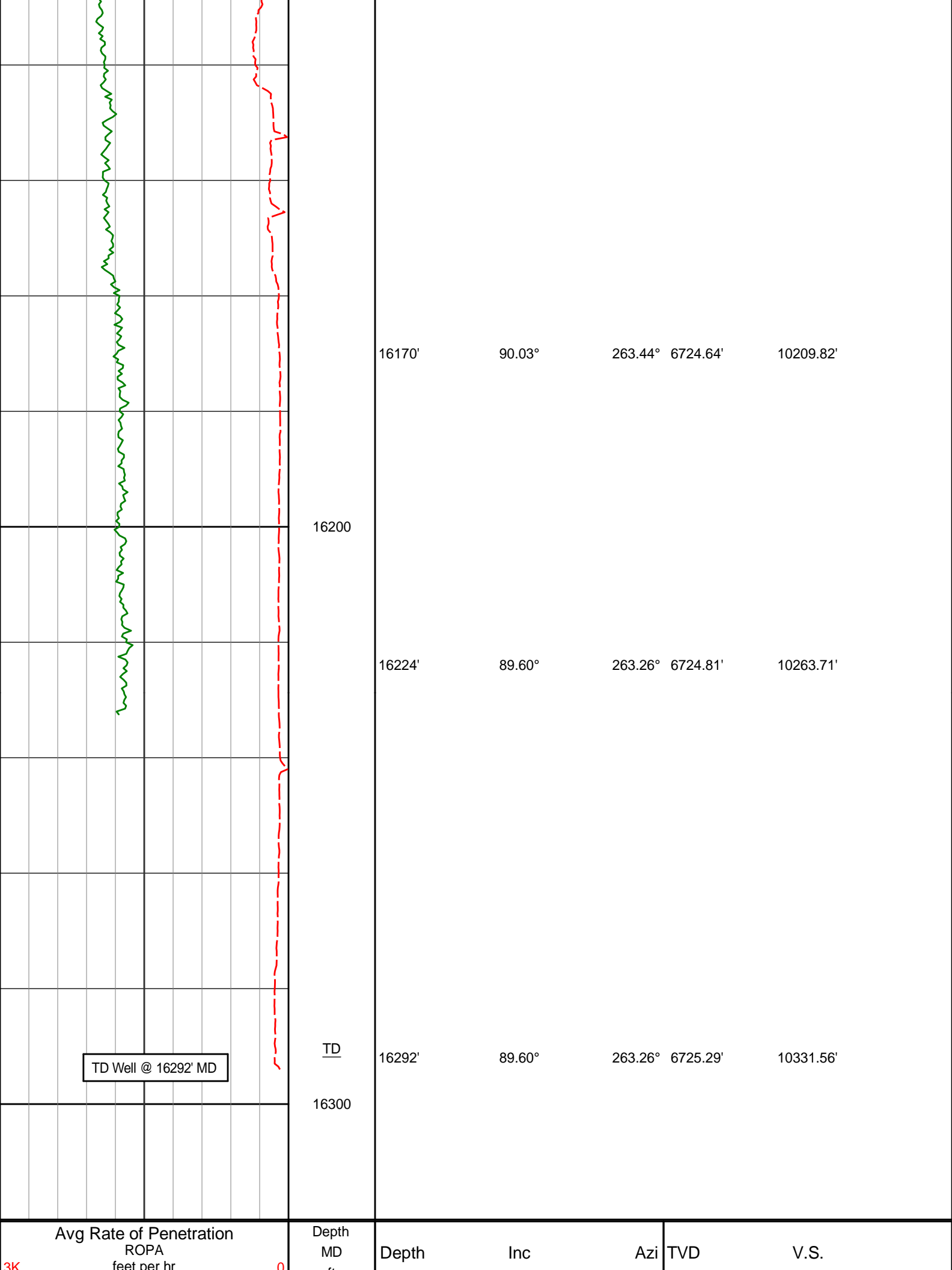
16075'

89.94°

264.11° 6724.61'

10114.97'

16100



TD Well @ 16292' MD

Avg Rate of Penetration ROPA feet per hr		Depth MD ft	Depth	Inc	Azi	TVD	V.S.
3K	0						

ft	
Gamma CG Cor PGXRC-T api	300

HALLIBURTON

DIRECTIONAL SURVEY REPORT

Noble Energy  
Colt A13-611  
Wattenburg  
Weld Colorado  
USA  
CA-XX-0902084378  
First two surveys were provided by HP.

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
377.00	0.10	235.66	377.00	0.19 S	0.27 W	0.28	0.03
651.00	0.60	358.24	651.00	1.11 N	0.51 W	0.45	0.24
990.00	0.19	118.57	989.99	2.62 N	0.07 W	-0.06	0.21
1083.00	0.29	167.93	1082.99	2.31 N	0.11 E	-0.23	0.24
1177.00	0.33	163.85	1176.99	1.82 N	0.24 E	-0.33	0.05
1269.00	1.03	227.17	1268.98	1.01 N	0.30 W	0.24	1.01
1362.00	2.14	240.80	1361.94	0.41 S	2.43 W	2.44	1.25
1453.00	3.24	237.70	1452.84	2.61 S	6.08 W	6.21	1.22
1546.00	4.83	234.53	1545.61	6.29 S	11.49 W	11.80	1.73
1639.00	6.82	234.66	1638.12	11.76 S	19.19 W	19.77	2.14
1731.00	7.99	235.51	1729.36	18.54 S	28.91 W	29.83	1.28
1824.00	9.75	237.70	1821.24	26.41 S	40.90 W	42.21	1.93
1920.00	8.88	238.71	1915.97	34.60 S	54.10 W	55.82	0.92
2015.00	9.19	244.33	2009.80	41.69 S	67.20 W	69.27	0.98
2110.00	8.30	243.98	2103.69	47.99 S	80.20 W	82.58	0.94
2206.00	9.73	244.05	2198.50	54.58 S	93.73 W	96.42	1.49
2301.00	8.94	243.48	2292.24	61.38 S	107.55 W	110.58	0.84
2396.00	10.44	238.25	2385.89	69.21 S	121.47 W	124.89	1.83
2491.00	9.50	234.89	2479.45	78.25 S	135.21 W	139.07	1.16
2586.00	8.47	234.68	2573.29	86.80 S	147.33 W	151.62	1.08
2681.00	9.27	232.13	2667.15	95.55 S	159.08 W	163.80	0.94
2776.00	9.69	235.88	2760.85	104.73 S	171.74 W	176.92	0.79
2872.00	10.09	235.34	2855.43	114.04 S	185.34 W	190.99	0.43
2966.00	9.38	234.40	2948.07	123.18 S	198.35 W	204.44	0.77
3061.00	8.63	233.76	3041.90	131.90 S	210.39 W	216.92	0.80
3156.00	9.08	235.63	3135.77	140.35 S	222.32 W	229.28	0.56
3251.00	7.41	230.92	3229.78	148.44 S	233.27 W	240.62	1.89
3346.00	7.58	234.37	3323.97	155.96 S	243.12 W	250.85	0.51
3441.00	8.16	241.86	3418.08	162.79 S	254.15 W	262.22	1.24
3536.00	8.49	240.56	3512.08	169.41 S	266.21 W	274.60	0.40
3631.00	10.32	238.42	3605.80	177.32 S	279.56 W	288.35	1.96
3726.00	11.59	237.43	3699.06	186.91 S	294.86 W	304.12	1.35
3821.00	12.46	237.32	3791.98	197.58 S	311.53 W	321.31	0.92
3916.00	13.15	237.41	3884.62	208.94 S	329.26 W	339.61	0.73
4010.00	11.62	236.90	3976.43	219.87 S	346.20 W	357.09	1.63
4105.00	10.49	236.07	4069.66	229.92 S	361.39 W	372.78	1.20
4200.00	8.76	234.06	4163.32	238.99 S	374.42 W	386.26	1.85
4295.00	8.57	228.54	4257.24	247.92 S	385.58 W	397.87	0.90
4390.00	7.71	226.26	4351.28	257.02 S	395.49 W	408.24	0.97
4486.00	8.78	224.63	4446.29	266.68 S	405.29 W	418.52	1.14
4581.00	7.51	217.04	4540.33	276.80 S	414.13 W	427.87	1.75
4676.00	6.14	202.85	4634.66	286.44 S	419.84 W	434.07	2.28
4771.00	5.23	195.46	4729.19	295.29 S	422.97 W	437.65	1.23
4866.00	5.26	200.08	4823.80	303.56 S	425.62 W	440.72	0.45
4961.00	6.12	212.05	4918.33	311.94 S	429.80 W	445.33	1.54
5056.00	5.88	216.82	5012.81	320.13 S	435.40 W	451.35	0.58
5151.00	5.16	232.76	5107.38	326.61 S	441.72 W	458.00	1.78
5246.00	4.43	235.74	5202.04	331.26 S	448.15 W	464.66	0.81
5341.00	3.16	245.08	5296.83	334.43 S	453.56 W	470.23	1.48

5436.00	2.61	248.81	5391.71	336.31 S	457.95 W	474.71	0.61
5531.00	2.08	251.09	5486.63	337.65 S	461.60 W	478.42	0.57
5626.00	1.57	253.22	5581.58	338.59 S	464.48 W	481.34	0.54
5721.00	1.89	254.85	5676.54	339.37 S	467.23 W	484.14	0.34
5816.00	1.55	247.38	5771.50	340.28 S	469.93 W	486.88	0.43
5911.00	1.35	257.94	5866.47	341.00 S	472.21 W	489.19	0.35
6006.00	1.43	270.51	5961.44	341.23 S	474.49 W	491.48	0.33
6100.00	9.17	276.51	6054.97	340.37 S	483.12 W	500.05	8.24
6195.00	15.76	267.23	6147.69	340.13 S	503.55 W	520.45	7.23
6290.00	19.73	266.24	6238.15	341.81 S	532.45 W	549.39	4.19
6385.00	24.71	272.29	6326.08	342.07 S	568.32 W	585.23	5.76
6480.00	36.19	272.05	6407.84	340.26 S	616.35 W	633.10	12.08
6575.00	45.76	269.81	6479.48	339.37 S	678.56 W	695.18	10.19
6670.00	48.33	269.04	6544.21	340.08 S	748.08 W	764.64	2.77
6766.00	52.44	269.21	6605.41	341.20 S	822.01 W	838.53	4.28
6861.00	64.09	268.10	6655.30	343.15 S	902.64 W	919.15	12.30
6956.00	74.69	268.46	6688.69	345.80 S	991.39 W	1007.92	11.16
7051.00	80.00	269.14	6709.49	347.74 S	1084.03 W	1100.54	5.63
7089.00	84.00	269.28	6714.78	348.26 S	1121.65 W	1138.14	10.53
7192.00	89.11	271.43	6720.97	347.61 S	1224.42 W	1240.74	5.38
7287.00	89.66	270.06	6721.99	346.38 S	1319.40 W	1335.53	1.55
7382.00	89.35	269.79	6722.81	346.50 S	1414.40 W	1430.41	0.43
7477.00	89.23	269.46	6723.99	347.13 S	1509.39 W	1525.30	0.37
7572.00	89.75	269.45	6724.83	348.03 S	1604.38 W	1620.21	0.55
7667.00	89.69	269.04	6725.30	349.28 S	1699.37 W	1715.14	0.44
7762.00	90.28	268.57	6725.32	351.26 S	1794.35 W	1810.10	0.79
7857.00	90.40	268.22	6724.76	353.92 S	1889.31 W	1905.07	0.39
7953.00	90.62	267.56	6723.90	357.46 S	1985.24 W	2001.05	0.72
8048.00	89.94	268.57	6723.44	360.66 S	2080.19 W	2096.03	1.28
8143.00	90.59	268.97	6723.00	362.70 S	2175.16 W	2190.99	0.80
8238.00	91.11	269.21	6721.59	364.21 S	2270.14 W	2285.92	0.60
8333.00	89.75	268.65	6720.88	365.99 S	2365.12 W	2380.86	1.55
8429.00	90.37	268.50	6720.78	368.37 S	2461.09 W	2476.83	0.66
8524.00	89.88	267.58	6720.57	371.62 S	2556.03 W	2571.81	1.10
8618.00	88.92	268.72	6721.55	374.66 S	2649.97 W	2665.78	1.59
8713.00	90.68	270.05	6721.89	375.68 S	2744.96 W	2760.70	2.32
8808.00	91.23	270.04	6720.30	375.60 S	2839.95 W	2855.55	0.58
8902.00	90.46	271.16	6718.92	374.62 S	2933.93 W	2949.36	1.45
8997.00	90.28	269.62	6718.30	373.97 S	3028.92 W	3044.19	1.63
9092.00	90.09	268.99	6718.00	375.12 S	3123.91 W	3139.12	0.69
9186.00	89.75	267.18	6718.13	378.27 S	3217.86 W	3233.10	1.96
9281.00	89.07	265.90	6719.11	384.00 S	3312.68 W	3328.09	1.53
9376.00	90.80	266.91	6719.21	389.96 S	3407.49 W	3423.08	2.11
9471.00	91.08	268.06	6717.65	394.12 S	3502.38 W	3518.06	1.25
9566.00	92.71	268.20	6714.51	397.22 S	3597.27 W	3612.99	1.72
9661.00	92.68	269.76	6710.05	398.91 S	3692.15 W	3707.82	1.64
9755.00	90.86	269.88	6707.14	399.21 S	3786.10 W	3801.66	1.94
9850.00	89.35	269.66	6706.97	399.59 S	3881.10 W	3896.55	1.61
9945.00	88.27	268.78	6708.94	400.88 S	3976.07 W	3991.46	1.47
10040.00	87.81	268.47	6712.19	403.16 S	4070.98 W	4086.37	0.58
10135.00	89.60	267.94	6714.34	406.13 S	4165.91 W	4181.32	1.97
10230.00	90.15	267.82	6714.55	409.65 S	4260.84 W	4276.31	0.59
10323.00	90.71	268.08	6713.85	412.97 S	4353.78 W	4369.30	0.66
10415.00	91.08	268.08	6712.41	416.06 S	4445.72 W	4461.27	0.40
10507.00	92.04	268.00	6709.91	419.20 S	4537.63 W	4553.22	1.05
10600.00	92.47	269.06	6706.25	421.59 S	4630.52 W	4646.12	1.23
10693.00	91.39	269.42	6703.11	422.82 S	4723.46 W	4738.99	1.22
10786.00	90.28	269.73	6701.76	423.51 S	4816.45 W	4831.89	1.24
10878.00	88.77	269.23	6702.52	424.34 S	4908.44 W	4923.80	1.73
10971.00	90.00	269.95	6703.52	425.01 S	5001.43 W	5016.70	1.53
11064.00	90.55	270.28	6703.07	424.82 S	5094.42 W	5109.57	0.69
11157.00	89.35	269.84	6703.16	424.73 S	5187.42 W	5202.43	1.37
11250.00	89.82	269.41	6703.83	425.33 S	5280.42 W	5295.34	0.68
11344.00	87.78	268.98	6705.80	426.65 S	5374.38 W	5389.24	2.22
11436.00	88.09	269.07	6709.11	428.22 S	5466.31 W	5481.13	0.35
11529.00	87.88	268.45	6712.38	430.23 S	5559.23 W	5574.03	0.70
11620.00	87.78	268.45	6715.83	432.69 S	5650.13 W	5664.94	0.11
11713.00	89.78	267.94	6717.81	435.62 S	5743.06 W	5757.89	2.22
11806.00	90.86	267.86	6717.29	439.03 S	5835.99 W	5850.88	1.16
11898.00	89.69	269.35	6716.85	441.27 S	5927.96 W	5942.84	2.06
11992.00	90.59	268.97	6716.62	442.64 S	6021.95 W	6036.77	1.04
12086.00	89.17	268.77	6716.81	444.50 S	6115.93 W	6130.72	1.53
12181.00	90.18	267.82	6717.35	447.32 S	6210.88 W	6225.70	1.46
12276.00	90.03	268.14	6717.18	450.67 S	6305.82 W	6320.68	0.37
12370.00	89.45	267.54	6717.61	454.22 S	6399.75 W	6414.67	0.89

12465.00	89.23	266.95	6718.70	458.78 S	6494.64 W	6509.66	0.66
12560.00	88.06	267.14	6720.95	463.68 S	6589.48 W	6604.64	1.25
12655.00	89.35	267.89	6723.09	467.80 S	6684.37 W	6699.61	1.57
12749.00	90.25	268.48	6723.42	470.77 S	6778.32 W	6793.59	1.14
12844.00	90.89	268.78	6722.48	473.04 S	6873.29 W	6888.54	0.74
12939.00	90.68	269.29	6721.18	474.64 S	6968.26 W	6983.48	0.58
13034.00	91.73	269.72	6719.18	475.46 S	7063.24 W	7078.37	1.19
13128.00	91.08	271.28	6716.87	474.64 S	7157.20 W	7172.16	1.80
13224.00	90.80	271.72	6715.30	472.13 S	7253.16 W	7267.86	0.54
13319.00	89.42	271.16	6715.12	469.74 S	7348.12 W	7362.58	1.57
13414.00	90.77	271.54	6714.96	467.51 S	7443.09 W	7457.31	1.48
13509.00	90.31	271.95	6714.06	464.61 S	7538.05 W	7551.98	0.65
13604.00	88.15	271.24	6715.34	461.97 S	7632.99 W	7646.67	2.39
13698.00	88.15	270.97	6718.37	460.16 S	7726.93 W	7740.38	0.29
13793.00	88.06	270.43	6721.52	459.00 S	7821.87 W	7835.13	0.58
13888.00	87.87	269.93	6724.89	458.70 S	7916.81 W	7929.93	0.56
13983.00	89.32	269.27	6727.22	459.36 S	8011.77 W	8024.81	1.68
14078.00	90.15	269.42	6727.66	460.45 S	8106.76 W	8119.73	0.89
14173.00	90.77	268.89	6726.89	461.85 S	8201.75 W	8214.66	0.86
14268.00	91.69	268.60	6724.86	463.93 S	8296.70 W	8309.59	1.02
14363.00	89.66	267.01	6723.74	467.57 S	8391.62 W	8404.57	2.71
14458.00	90.49	268.50	6723.61	471.29 S	8486.54 W	8499.56	1.80
14553.00	89.57	269.77	6723.56	472.72 S	8581.53 W	8594.49	1.65
14649.00	91.39	272.21	6722.76	471.07 S	8677.50 W	8690.25	3.17
14743.00	89.45	270.74	6722.07	468.65 S	8771.46 W	8783.96	2.59
14838.00	90.55	270.29	6722.07	467.79 S	8866.46 W	8878.78	1.25
14933.00	88.86	269.41	6722.56	468.04 S	8961.45 W	8973.66	2.01
15028.00	90.09	269.55	6723.43	468.90 S	9056.44 W	9068.57	1.30
15124.00	89.29	268.36	6723.95	470.65 S	9152.42 W	9164.51	1.49
15219.00	89.48	267.51	6724.97	474.08 S	9247.35 W	9259.50	0.92
15314.00	89.51	267.31	6725.81	478.37 S	9342.25 W	9354.49	0.21
15409.00	89.35	266.29	6726.75	483.67 S	9437.10 W	9449.48	1.09
15504.00	89.32	265.48	6727.85	490.49 S	9531.84 W	9544.46	0.85
15599.00	89.48	264.98	6728.85	498.39 S	9626.51 W	9639.40	0.55
15694.00	90.31	264.80	6729.02	506.85 S	9721.13 W	9734.33	0.89
15789.00	91.70	264.94	6727.36	515.34 S	9815.73 W	9829.25	1.47
15884.00	90.00	264.87	6725.95	523.78 S	9910.34 W	9924.17	1.79
15979.00	90.83	264.48	6725.26	532.60 S	10004.93 W	10019.08	0.97
16075.00	89.94	264.11	6724.61	542.14 S	10100.45 W	10114.97	1.00
16170.00	90.03	263.44	6724.64	552.44 S	10194.89 W	10209.82	0.71
16224.00	89.60	263.26	6724.81	558.69 S	10248.53 W	10263.71	0.86
16292.00	89.60	263.26	6725.29	566.67 S	10316.06 W	10331.56	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 267.04 DEGREES (GRID)  
A TOTAL CORRECTION OF 7.44 DEG FROM MAGNETIC NORTH TO GRID NORTH HAS BEEN APPLIED

HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD.  
HORIZONTAL DISPLACEMENT(CLOSURE) AT 16292.00 FEET  
IS 10331.61 FEET ALONG 266.86 DEGREES (GRID)

Final survey is a straight line projection to TD.