Country : USA
Field : Wattenberg
Location : Lat: 40° 42' 56.20" North
Long: 103° 56' 29.22" West
Well : Kevin LC26-728
Company : Noble Energy
Rig : H&P 321

HALLIBURTON | Sperry Drilling

PCDC- Pressure Case Directional
PCGK - Pressure Case Gamma

Powered by INSITE™

1 : 600 / 1 : 240

Company : **Noble Energy**
Rig : **H&P 321**
Well : **Kevin LC26-728**
Field : **Wattenberg**
Country : **USA**
API Number : **05-123-40682**

LOCATION
Latitude : **40° 42' 56.20" North**
Longitude : **103° 56' 29.22" West**
UTM Easting = **3,432,029.180 ft**
UTM Northing = **1,507,337.440 ft**

Other Services
Directional Drilling

Permanent Datum : **Ground Level** Elevation : **4851.00 ft**
Log Measured From : **Drill Floor** **30.00 ft** Above Permanent Datum
Drilling Measured From : **Drill Floor**

MD LOG

Elev. KB **N/A**
DF **4881.00 ft**
GL **4851.00 ft**
WD **N/A**

Depth Logged : **682.00 ft** To **10,777.00 ft**
Date Logged : **08-Apr-15** To **15-Apr-15**
Total Depth MD : **10,777.00 ft** TVD : **5,982.81 ft**
Spud Date : **08-Apr-15**

Unit No. : **11210424** Job No. :**CA-XX-0902240508**
Plot Type : **Final**
Plot Date : **15-Apr-15**

Run No.	Borehole Record (MD)			Casing Record (MD)			
	Size	From	To	Size	Weight	From	To
100	8.750 in	682.00 ft	6,490.00 ft	9.625 in	34.90 lbpf	SURFACE	672.00 ft
200	6.125 in	6,490.00 ft	10,777.00 ft	7.000 in	25.70 lbpf	SURFACE	6,480.00 ft

WELL INFORMATION

MWD Run Number	100	200			
Date run completed	11-Apr-15	15-Apr-15			
Rig Bit Number	2	3			
Bit Size (in)	8.750	6.125			
Tool Nominal OD (in)	6.750	4.750			
Log Start Depth (MD, ft)	682.00	6,490.00			
Log End Depth (MD, ft)	6,490.00	10,777.00			
Drill or Wipe	Drill	Drill			
Drill/Wipe Start Date and Time	09-Apr-15 23:18	12-Apr-15 13:47			
Drill/Wipe End Date and Time	11-Apr-15 07:40	14-Apr-15 13:47			
Min Inc (deg) @ Depth (MD, ft)	0.11 @ 731.00	87.10 @ 6,521.00			
Max Inc (deg) @ Depth (MD, ft)	84.42 @ 6,433.00	92.37 @ 8,307.00			
Bit TFA(in2) / Bit Type	1.53 / PDC	0.75 /			
Flow Rate (gpm)	585.76	312.58			
Max AV (fpm) / CV (fpm) @ MWD	504.4 / 400.0	/			
Fluid Type	Native/Spud Mud	Native/Spud Mud			
Density (ppg) / Viscosity (spqt)	9.60 / 32.00	9.60 / 36.00			
Filtrate CL (ppm)	1,300.00	1,300.00			
pH / Fluid Loss (mptm)	10.20 / 20	9.70 / 9			
PV (cP) / YP (lhf2)	3 / 3.00	7 / 8.00			
% Solids / % Sand	1.50 / 0.05	6.20 / 0.10			
% Oil / Oil:Water Ratio	N/A / N/A	N/A / N/A			
Rm @ Measured Temp (degF)	N/A @ N/A	N/A @ N/A			
Rmf @ Measured Temp (degF)	N/A @ N/A	N/A @ N/A			
Rmc @ Measured Temp (degF)	N/A @ N/A	N/A @ N/A			

Max Tool Temp (degF) / Source	162.80 / PCM	212.92 / PCM			
Rm @ Max Tool Temp (degF)	N/A @ N/A	N/A @ N/A			
Lead MWD Engineer	Robert Barnes	Robert Barnes			
Customer Representative	Jeremy Stolz	Jeremy Stolz			

SENSOR INFORMATION

Downhole Processor Information

Tool Type	PCM	PCM			
Software Version	5.93	5.93			
Sub Serial Number	11342274	12310755			
Insert Serial Number	10997267	11680742			
Date and Time Initialized	08-Apr-15 20:45	11-Apr-15 15:41			
Date and Time Read	11-Apr-15 13:11	15-Apr-15 05:07			
ECMB SW Version	N/A	N/A			

Directional Sensor Information

Tool Type	PCDC	PCDC			
Distance From Bit (ft)	57.00	68.00			
Software Version	6.21	6.21			
Sub Serial Number	11342274	12310755			
Sonde Serial Number	11638501	11297516			
Sensor ID Number	N/A	N/A			
Toolface Offset (deg)	35.90	185.00			

Gamma Ray Sensor Information

Tool Type	PCG	PCG			
Distance From Bit (ft)	49.87	70.79			
Recorded Sample Period (sec)	10	10			
Software Version	8.15	8.15			
Sub Serial Number	11342274	12310755			
Insert/Sonde Serial Number	11681051	11293345			

REMARKS

1. All depths are calibrated to driller's pipe tally and are measured depth's 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" modelforwater based fluids and the "Brigham Plastic"model for oil and synthetic based fluids.

4. All data presented is recorded data unless otherwice 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 Distance: 1.2 ft

6. Insite Version V8.1.10

WARRANTY

HALLIBURTON WILL USE ITS BEST EFFORTS TO FURNISH CUSTOMERS WITH ACCURATE INFORMATION AND INTERPRETATIONS THAT ARE PART OF, AND INCIDENT TO, THE SERVICES PROVIDED. HOWEVER, HALLIBURTON CANNOT AND DOES NOT WARRANT THE ACCURACY OR CORRECTNESS OF SUCH INFORMATION AND INTERPRETATIONS. UNDER NO CIRCUMSTANCES SHOULD ANY SUCH INFORMATION OR INTERPRETATION BE RELIED UPON AS THE SOLE BASIS FOR ANY DRILLING, COMPLETION, PRODUCTION, OR FINANCIAL DECISION OR ANY PROCEDURE INVOLVING ANY RISK TO THE SAFETY OF ANY DRILLING VENTURE, DRILLING RIG OR ITS CREW OR ANY OTHER THIRD PARTY. THE CUSTOMER HAS FULL RESPONSIBILITY FOR ALL DRILLING, COMPLETION AND PRODUCTION OPERATION. HALLIBURTON MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WITH RESPECT TO THE SERVICES RENDERED. IN NO EVENT WILL HALLIBURTON BE LIABLE FOR FAILURE TO OBTAIN ANY PARTICULAR RESULTS OR FOR ANY DAMAGES, INCLUDING, BUT NOT LIMITED TO, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES, RESULTING FROM THE USE OF ANY INFORMATION OR INTERPRETATION PROVIDED BY HALLIBURTON.

MD Detail 1:600 Scale

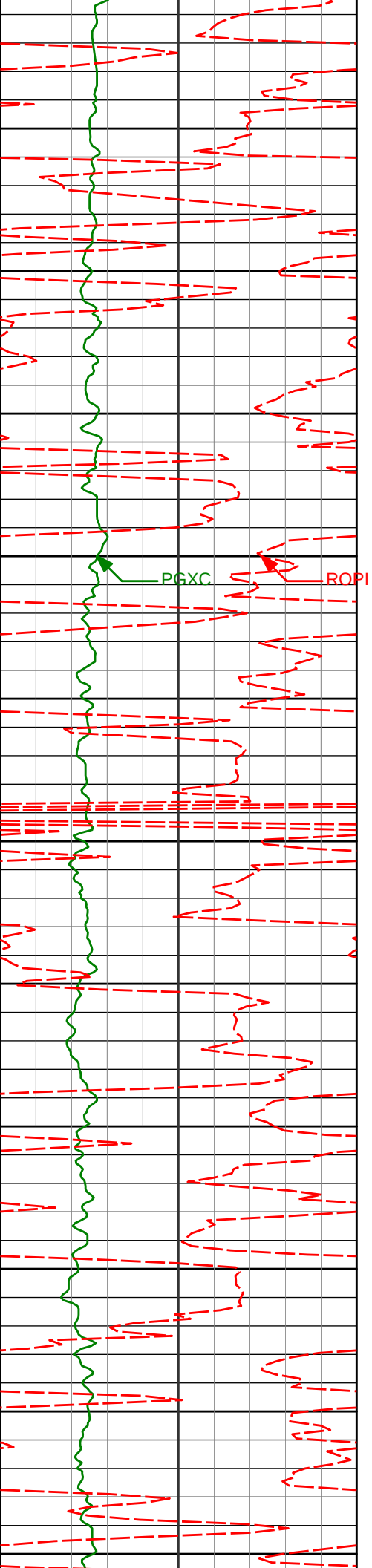
PCG GR XHi-Range RT BCor
PGXRC-T
0 api 300

Inst Rate of Penetration
ROPI
1K feet per hr 0

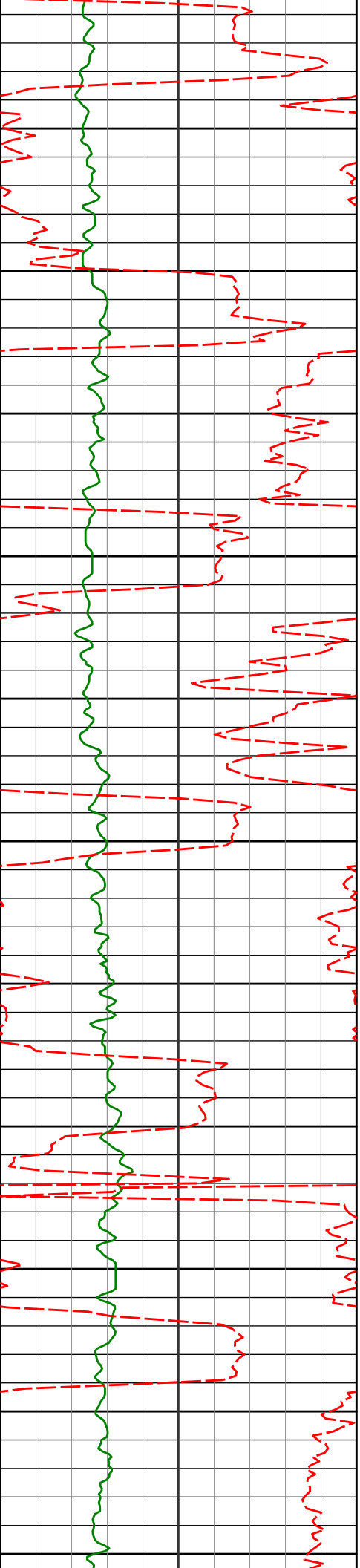
Depth
TVD
ft

Depth	Inc	Azi	TVD	V.S.	Temp
					58.28°F
					58.28°F
					58.28°F
731'	0.11°	226.39°	730.92'	2.14'	
					62.17°F

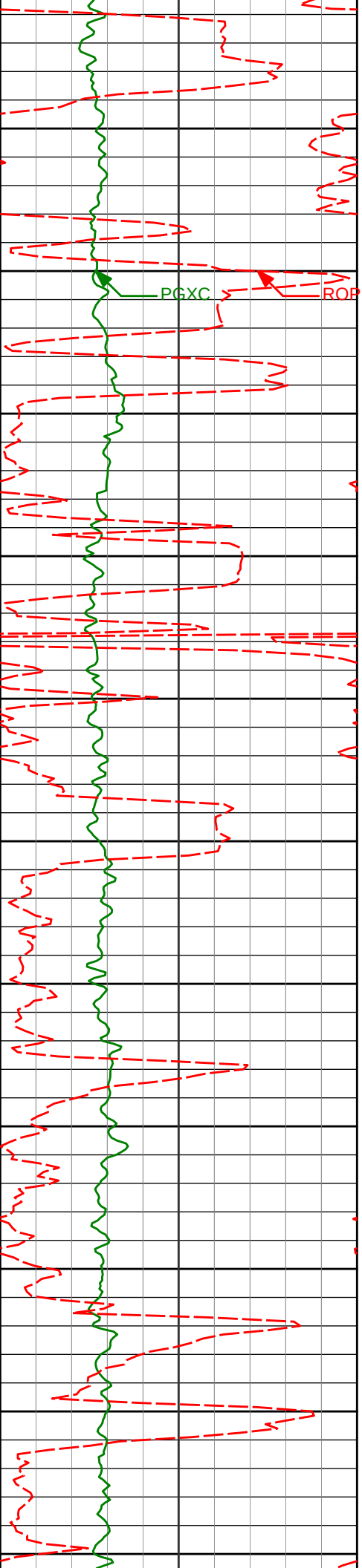
650
Run 100
700
750
800



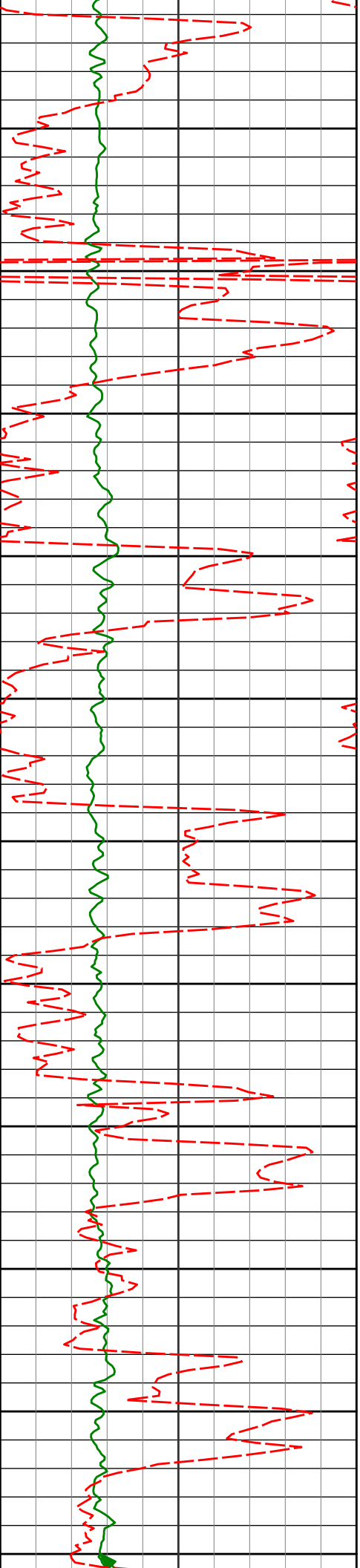
					62.17°F
824'	0.31°	266.73°	823.92'	2.04'	
					62.17°F
850					
					62.17°F
900					62.17°F
916'	0.33°	242.84°	915.92'	1.87'	
					64.11°F
950					
					64.11°F
					66.07°F
1000					
1008'	0.42°	236.12°	1007.92'	1.53'	
					66.07°F
1050					64.11°F
					65.45°F
1100	1100'	0.68°	234.95°	1099.92'	0.98'
					66.07°F
					67.34°F
1150					
					68.04°F
1191'	1.56°	187.11°	1190.90'	-0.60'	
1200					69.66°F
					68.23°F
1250					
					69.33°F
					69.78°F
1300	1302'	1.91°	184.44°	1301.85'	-3.96'
					68.04°F
1350					
					70.02°F



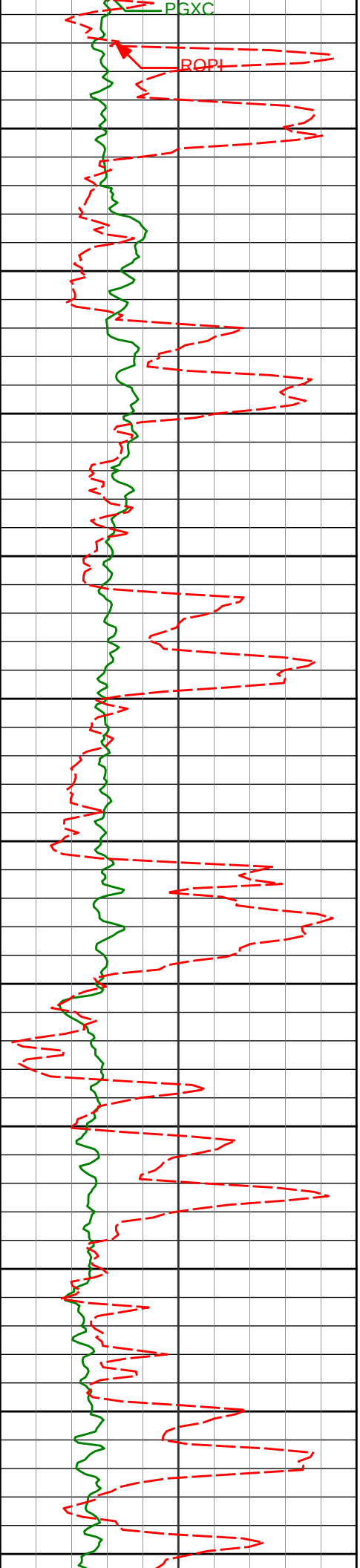
					70.02°F
1394'	2.22°	163.13°	1393.79'	-7.15'	
					70.02°F
					70.02°F
					72.00°F
1486'	2.51°	134.25°	1485.71'	-10.12'	
					72.00°F
					72.00°F
					72.00°F
1579'	2.43°	134.82°	1578.63'	-12.72'	
					72.00°F
					72.00°F
1670'	2.47°	139.65°	1669.55'	-15.38'	
					73.98°F
					73.98°F
1763'	2.33°	138.18°	1762.46'	-18.12'	
					75.97°F
					75.97°F
1854'	2.48°	137.68°	1853.38'	-20.77'	
					75.97°F
					75.97°F



1950					77.99°F
	1946'	2.19°	108.06°	1945.31'	-22.56'
					77.99°F
2000					77.99°F
					77.99°F
	2038'	1.40°	71.24°	2037.27'	-22.55'
2050					
					80.01°F
2100					**80.01°F**
	2129'	1.25°	43.30°	2128.24'	-21.35'
2150					
					80.01°F
					80.01°F
2200					
	2222'	1.39°	42.30°	2221.22'	-19.68'
2250					82.02°F
					82.02°F
2300					
	2314'	1.46°	49.86°	2313.19'	-17.98'
					84.06°F
2350					84.06°F
					84.06°F
2400					
	2405'	1.79°	22.29°	2404.16'	-15.82'
					86.09°F
2450					

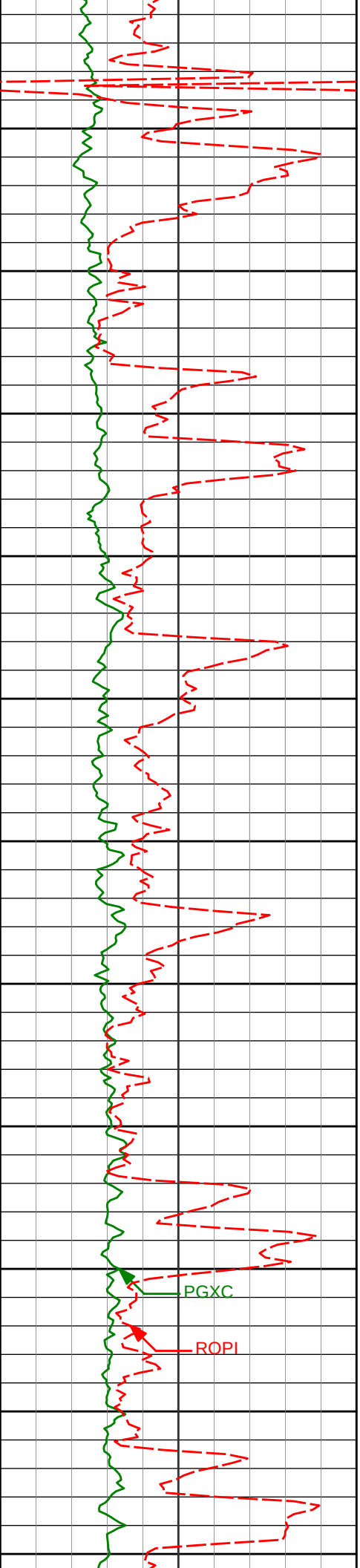


					86.09°F
					86.09°F
2498'	1.83°	21.30°	2497.11'	-13.02'	
					86.09°F
					86.09°F
					86.39°F
2590'	0.90°	6.39°	2589.08'	-10.90'	
					87.87°F
					88.14°F
2683'	0.85°	292.44°	2682.07'	-9.95'	
					90.19°F
					90.19°F
					90.19°F
2778'	0.99°	189.25°	2777.07'	-10.55'	
					91.59°F
					92.26°F
					92.26°F
2872'	3.40°	179.22°	2870.99'	-14.13'	
					93.18°F
					94.33°F
					94.33°F
2967'	5.89°	165.83°	2965.67'	-21.56'	
					96.42°F
					96.42°F

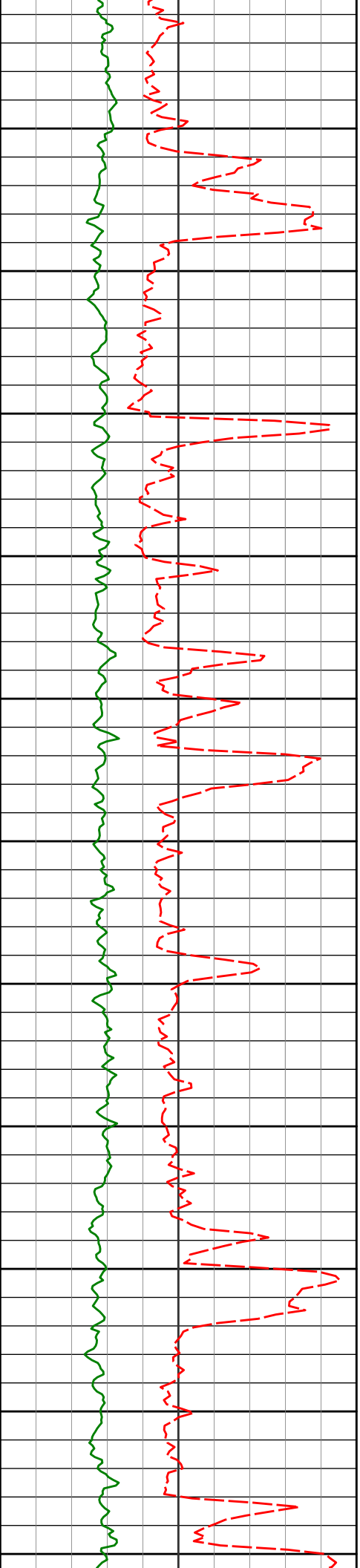


3050					
	3062'	7.65°	157.89°	3060.01'	-31.87'
3100					
3150	3157'	8.85°	149.37°	3154.03'	-43.54'
3200					
3250	3251'	9.82°	141.12°	3246.79'	-55.35'
3300					
3350	3346'	11.41°	138.30°	3340.16'	-67.83'
3400					
3450	3441'	12.89°	137.78°	3433.03'	-81.70'
3500					
3550	3535'	12.73°	137.64°	3524.69'	-96.08'

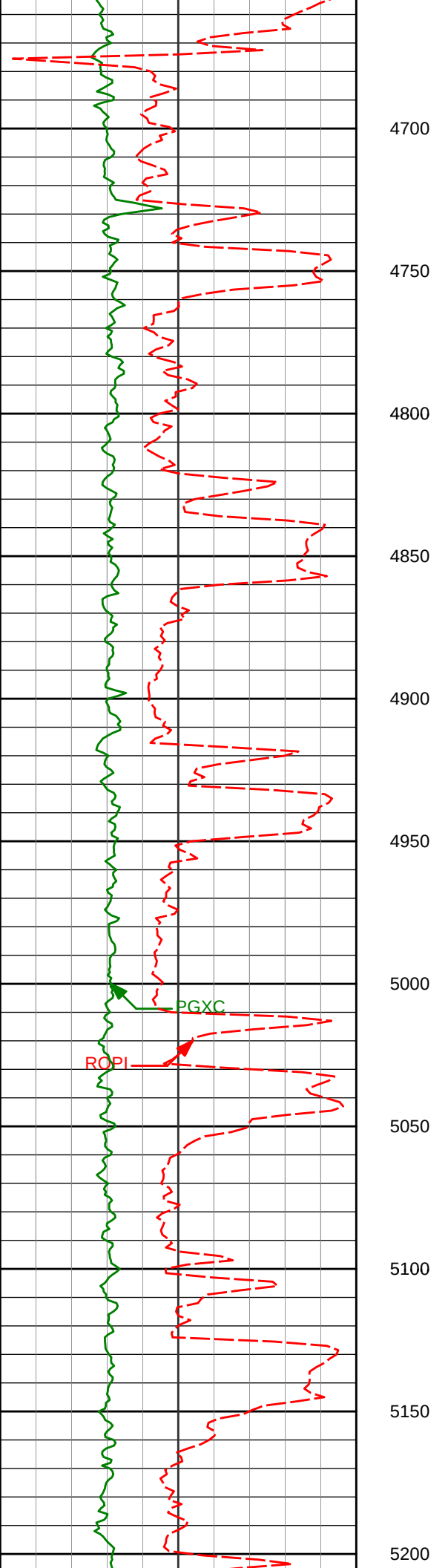
96.42°F
96.72°F
98.51°F
98.51°F
98.51°F
98.51°F
98.51°F
100.62°F
100.62°F
100.62°F
100.62°F
102.72°F
102.72°F
102.72°F
104.35°F
104.83°F
104.83°F
106.97°F



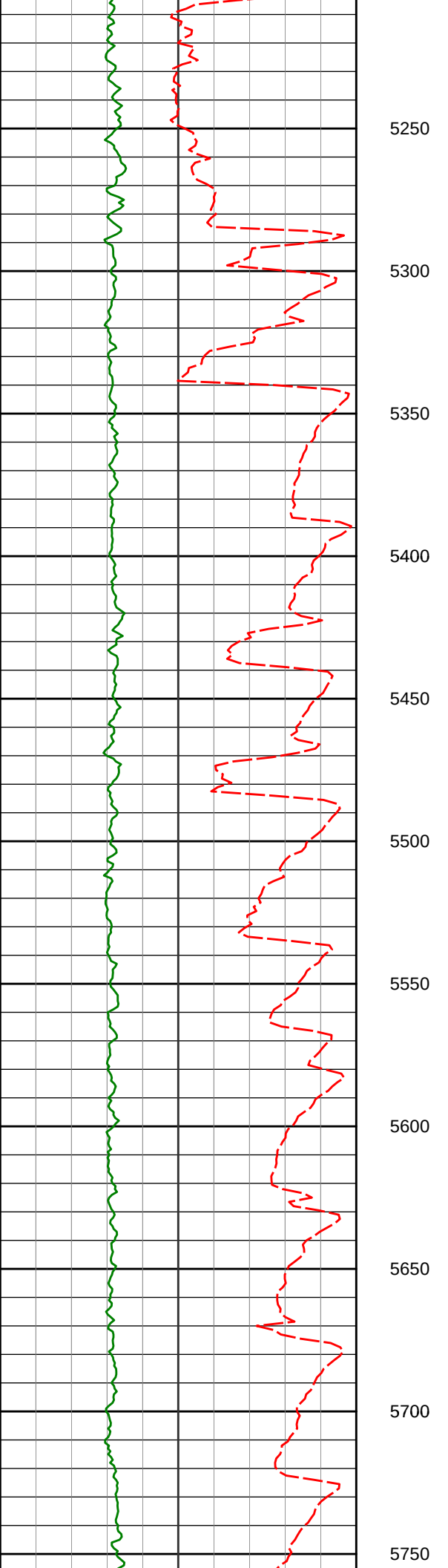
					106.97°F
					106.97°F
3630'	11.94°	136.26°	3617.49'	-109.88'	109.09°F
					109.09°F
					109.09°F
3724'	11.51°	142.76°	3709.53'	-123.45'	109.09°F
					111.24°F
					111.24°F
3819'	11.34°	143.92°	3802.65'	-137.70'	111.24°F
					112.78°F
					113.40°F
3914'	10.72°	143.51°	3895.90'	-151.54'	113.40°F
					113.40°F
					113.40°F
					113.40°F
4008'	10.54°	146.89°	3988.28'	-165.03'	115.09°F
					114.33°F
					115.56°F
4103'	11.78°	142.39°	4081.49'	-179.19'	



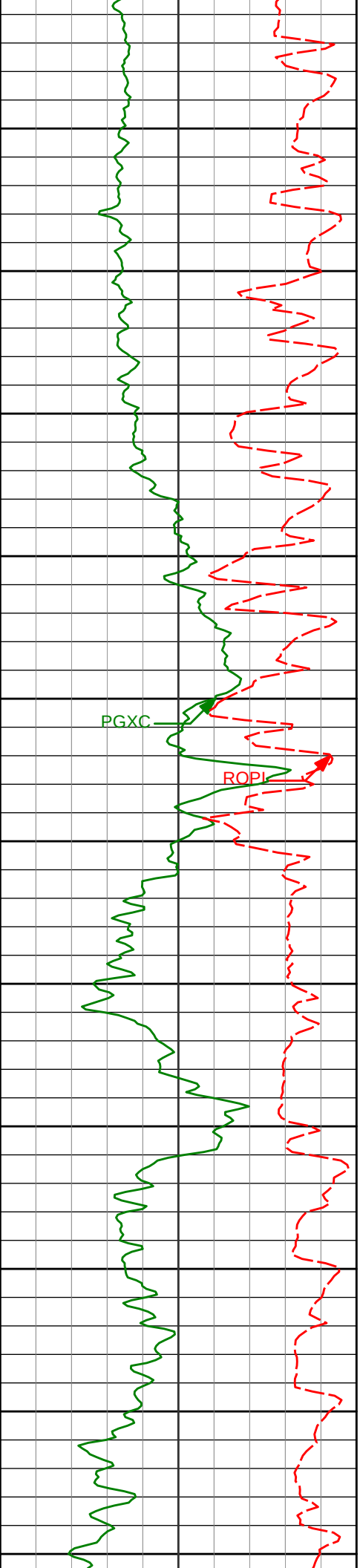
					115.56°F
					115.56°F
					115.56°F
4198'	12.98°	142.29°	4174.28'	-194.38'	
					117.73°F
					117.73°F
4292'	13.03°	140.64°	4265.86'	-209.94'	118.19°F
					118.35°F
					117.73°F
4387'	11.76°	143.85°	4358.65'	-225.10'	117.73°F
					119.91°F
					120.34°F
4482'	10.62°	140.88°	4451.84'	-238.87'	121.97°F
					120.60°F
					119.91°F
4577'	10.91°	141.73°	4545.17'	-251.89'	120.09°F
					120.95°F
					119.91°F
					121.24°F



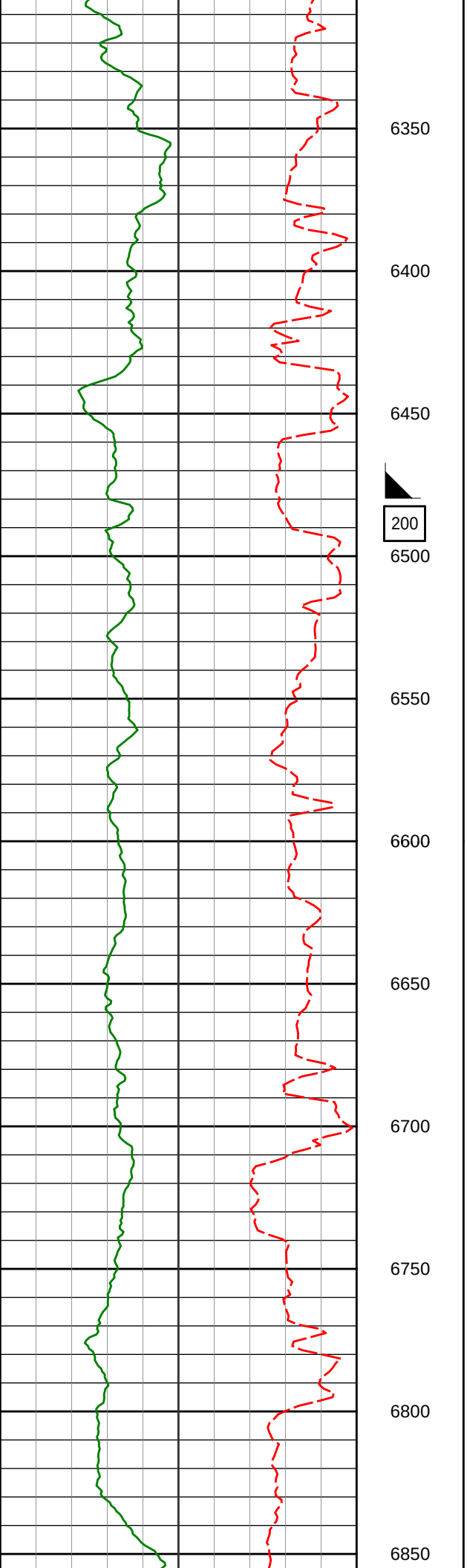
4671'	10.80°	152.91°	4637.50'	-266.00'	122.11°F
					122.11°F
					122.11°F
4766'	10.71°	156.39°	4730.83'	-281.43'	123.74°F
					122.68°F
					122.11°F
4861'	12.07°	158.02°	4823.96'	-298.16'	124.99°F
					126.44°F
					128.73°F
4956'	12.25°	152.62°	4916.83'	-315.67'	128.73°F
					128.73°F
					129.10°F
5051'	12.34°	152.56°	5009.65'	-332.91'	130.96°F
					130.96°F
					130.96°F
5145'	12.96°	143.85°	5101.38'	-349.52'	130.96°F
					132.54°F
					134.04°F



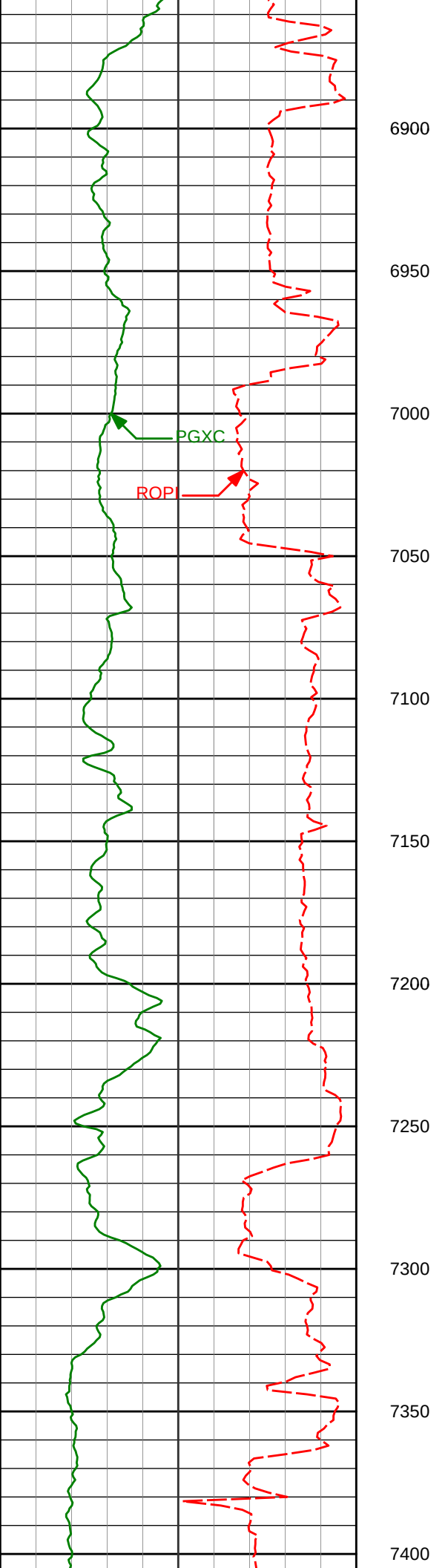
					136.05°F
5240'	11.25°	145.28°	5194.26'	-364.86'	
					137.24°F
					136.56°F
					136.34°F
5335'	11.48°	137.19°	5287.41'	-378.54'	
					137.82°F
					139.84°F
5383'	15.85°	118.79°	5334.06'	-384.54'	
					140.17°F
5430'	19.84°	111.72°	5378.79'	-389.64'	142.16°F
					142.43°F
5478'	22.88°	102.86°	5423.50'	-393.52'	
					143.51°F
5524'	25.74°	86.92°	5465.47'	-393.63'	142.32°F
					142.25°F
5572'	28.70°	71.43°	5508.20'	-387.88'	
					142.25°F
					142.14°F
5619'	31.29°	57.99°	5548.95'	-376.31'	
					141.90°F
5667'	34.40°	44.05°	5589.33'	-358.54'	
					142.25°F
					142.25°F
5713'	37.14°	31.75°	5626.69'	-336.24'	
					142.25°F



5761'	39.93°	18.89°	5664.30'	-308.46'	143.24°F
5808'	41.18°	10.71°	5700.03'	-278.48'	146.00°F
5856'	43.66°	7.03°	5735.47'	-246.22'	146.84°F
5903'	46.71°	4.63°	5768.59'	-212.91'	148.03°F
5951'	50.37°	2.10°	5800.37'	-176.95'	149.14°F
5998'	53.66°	359.00°	5829.30'	-139.99'	150.99°F
6046'	55.53°	356.46°	5857.10'	-101.12'	151.47°F
6093'	55.50°	355.38°	5883.71'	-62.77'	151.47°F
6141'	56.29°	355.39°	5910.63'	-23.48'	152.23°F
6187'	57.89°	357.07°	5935.62'	14.77'	153.79°F
6235'	61.13°	0.17°	5959.97'	55.93'	153.79°F
6282'	67.39°	1.42°	5980.38'	98.17'	153.96°F
					154.48°F
					155.88°F
					156.38°F
					156.97°F
					158.23°F
					158.47°F

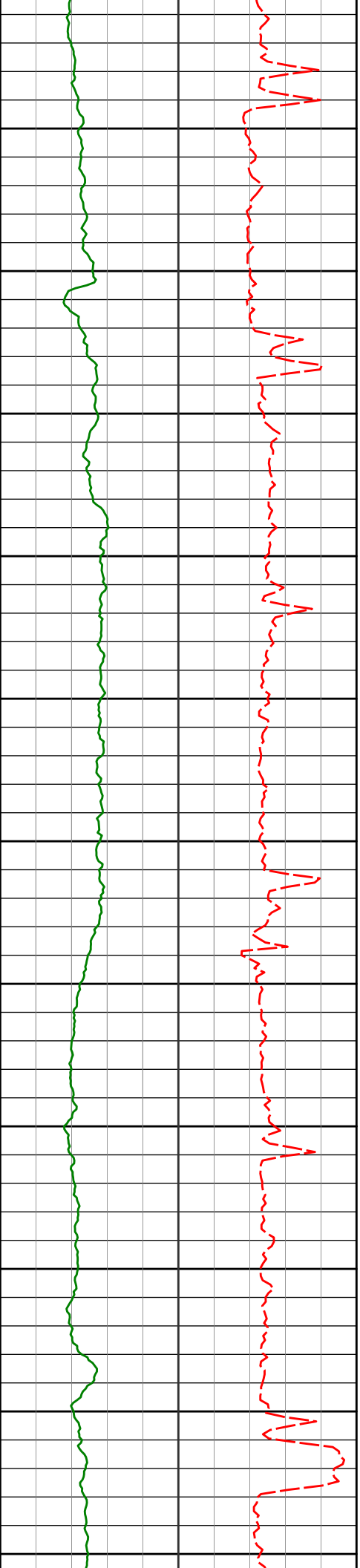


6330'	71.27°	1.12°	5997.32'	143.02'	158.47°F
					160.19°F
6377'	78.28°	359.19°	6009.66'	188.23'	
					160.83°F
					159.51°F
6433'	84.42°	357.22°	6018.08'	243.27'	
					151.94°F
					150.37°F
					151.54°F
6521'	87.10°	356.83°	6024.58'	330.35'	
					153.44°F
					153.79°F
					155.08°F
6613'	87.32°	355.95°	6029.06'	421.41'	
					154.41°F
					154.85°F
					158.14°F
6704'	87.72°	356.76°	6033.00'	511.49'	
					157.14°F
					158.59°F
					160.83°F
6797'	87.26°	358.10°	6037.08'	603.77'	
					159.55°F
					160.26°F

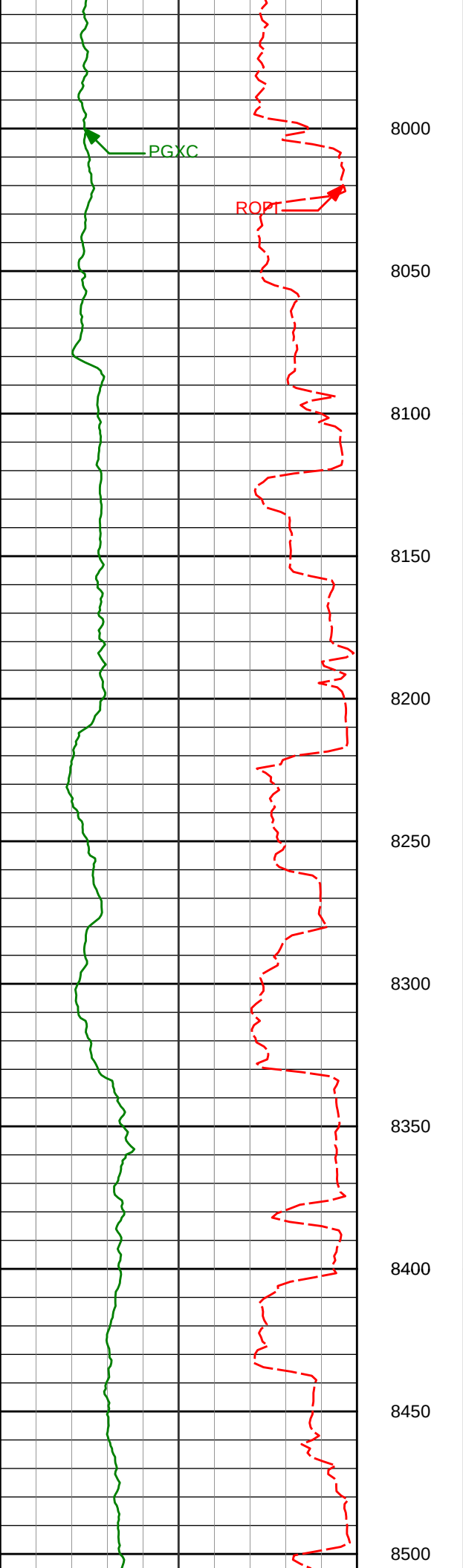


6889'	88.37°	358.16°	6040.59'	695.20'	162.68°F
					163.98°F
					163.54°F
					166.00°F
6982'	89.78°	358.87°	6042.09'	787.74'	166.53°F
					167.21°F
					170.25°F
7076'	91.45°	0.09°	6041.08'	881.42'	171.99°F
					172.93°F
					174.43°F
7171'	92.31°	359.83°	6037.96'	976.12'	171.26°F
					169.66°F
					171.66°F
7266'	90.80°	358.60°	6035.38'	1070.73'	173.72°F
					172.92°F
					172.78°F
7360'	89.01°	357.89°	6035.53'	1164.24'	175.07°F
					175.40°F

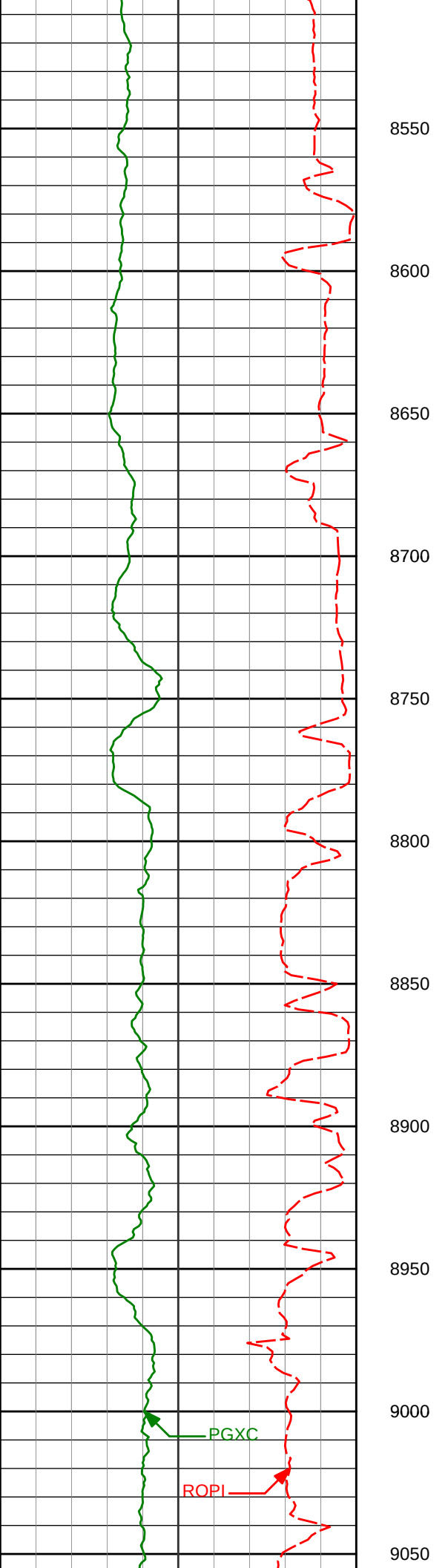
6900
6950
7000
7050
7100
7150
7200
7250
7300
7350
7400



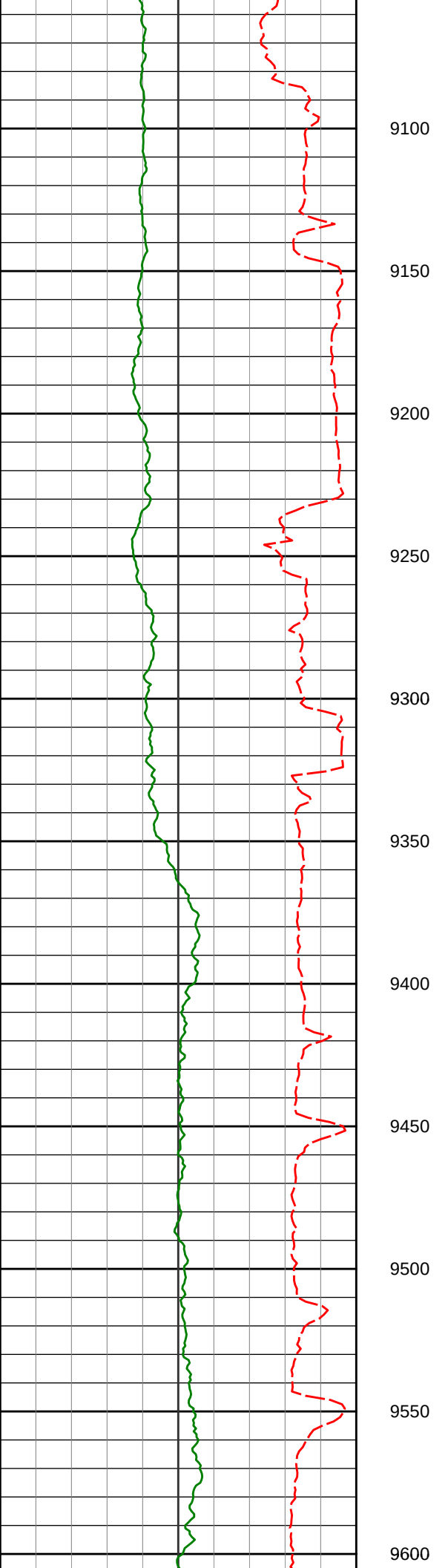
					177.64°F
					179.08°F
7455'	89.51°	358.15°	6036.76'	1258.69'	
					176.46°F
					179.62°F
					180.09°F
7549'	89.60°	359.32°	6037.49'	1352.28'	
					180.27°F
					182.36°F
					182.55°F
7644'	90.55°	1.01°	6037.37'	1447.05'	
					182.55°F
					182.76°F
					185.55°F
7739'	90.92°	1.33°	6036.14'	1541.91'	
					186.24°F
					186.82°F
					187.48°F
7834'	91.23°	1.31°	6034.35'	1636.78'	
					186.27°F
					182.88°F
					182.55°F
7929'	90.77°	359.96°	6032.69'	1731.59'	
					184.76°F
					182.23°F



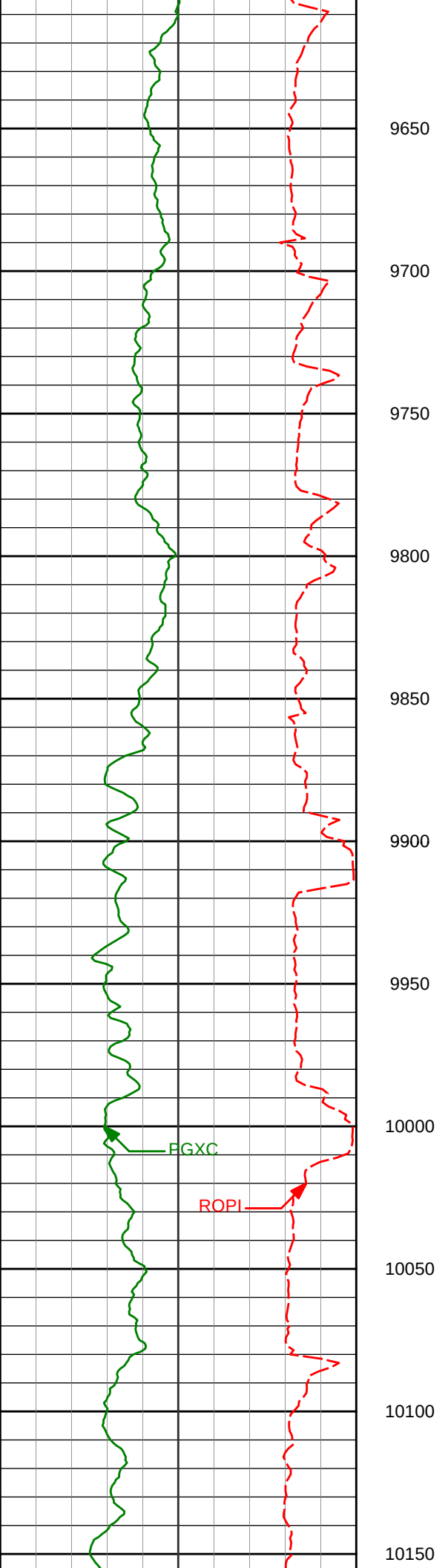
					184.12°F
					189.17°F
8023'	89.26°	358.31°	6032.67'	1825.23'	
					187.73°F
					190.14°F
					186.22°F
8118'	89.88°	357.56°	6033.38'	1919.68'	
					182.37°F
					180.35°F
					184.09°F
8213'	91.88°	355.61°	6031.92'	2013.84'	
					185.19°F
					189.08°F
					189.99°F
8307'	92.37°	355.11°	6028.44'	2106.68'	
					189.24°F
					186.87°F
					188.29°F
8402'	91.48°	356.01°	6025.24'	2200.57'	
					187.62°F
					183.87°F
					186.29°F
8497'	91.20°	357.27°	6023.02'	2294.73'	
					186.21°F



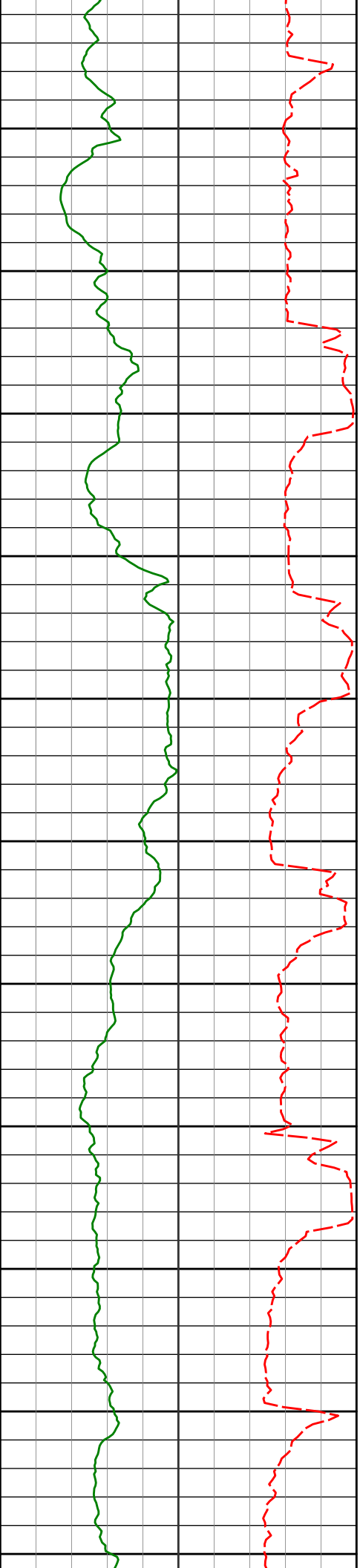
					182.68°F
					184.50°F
8591'	91.63°	358.46°	6020.69'	2388.15'	186.99°F
					187.92°F
					189.67°F
8686'	91.91°	358.96°	6017.76'	2482.68'	191.84°F
					188.10°F
					188.19°F
					189.70°F
8781'	91.45°	358.98°	6014.97'	2577.25'	188.05°F
					189.29°F
					191.03°F
8876'	90.06°	358.85°	6013.72'	2671.85'	190.44°F
					191.95°F
					193.97°F
8971'	90.25°	358.51°	6013.46'	2766.43'	194.99°F
					196.37°F
					197.61°F



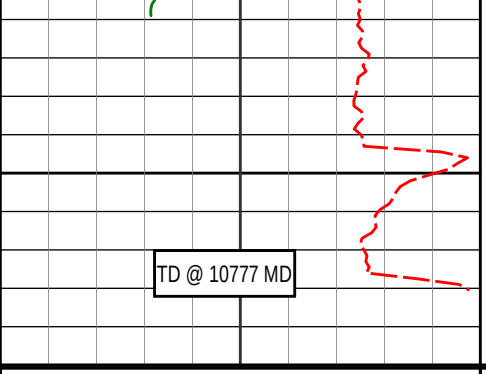
9065'	90.18°	358.76°	6013.11'	2860.00'	198.78°F
					199.63°F
					200.53°F
9160'	90.15°	358.42°	6012.83'	2954.56'	201.79°F
					202.21°F
					202.60°F
9255'	90.80°	358.82°	6012.04'	3049.12'	202.60°F
					202.60°F
					202.95°F
9350'	90.89°	358.75°	6010.63'	3143.70'	205.06°F
					205.16°F
					205.16°F
					205.69°F
9445'	90.83°	358.79°	6009.20'	3238.27'	205.73°F
					206.30°F
					206.52°F
9539'	90.92°	358.35°	6007.76'	3331.82'	206.02°F
					205.60°F
					207.73°F



9634'	91.20°	358.32°	6006.00'	3426.32'	207.73°F
					207.73°F
					207.73°F
9729'	91.33°	357.69°	6003.90'	3520.76'	205.83°F
					204.61°F
					205.90°F
					204.52°F
9824'	91.88°	357.69°	6001.25'	3615.13'	
					199.44°F
					199.93°F
					199.74°F
9919'	91.36°	358.00°	5998.56'	3709.52'	
					197.86°F
					199.40°F
					201.44°F
10014'	91.05°	358.51°	5996.57'	3804.01'	
					202.75°F
					205.82°F
					207.73°F
10109'	91.05°	358.52°	5994.83'	3898.54'	207.73°F
					208.09°F



					210.20°F
10203'	92.34°	358.05°	5992.05'	3992.01'	205.42°F
					201.87°F
					203.13°F
10298'	91.48°	359.34°	5988.89'	4086.53'	204.89°F
					202.91°F
					204.74°F
10393'	90.34°	0.17°	5987.38'	4181.24'	206.90°F
					205.87°F
					207.44°F
10488'	90.92°	359.78°	5986.33'	4275.99'	209.53°F
					207.42°F
					206.78°F
10582'	89.69°	0.70°	5985.82'	4369.77'	209.57°F
					210.31°F
					210.58°F
10677'	90.96°	0.60°	5985.29'	4464.59'	210.82°F
					210.62°F



Depth	Inc	Azi	TVD	V.S.	Temp
10709'	91.51°	0.44°	5984.60'	4496.52'	
10777'	91.51°	0.44°	5982.81'	4564.36'	

Inst Rate of Penetration
ROPI
1K feet per hr 0

Depth
TVD
ft

10750

10800

PCG GR XHi-Range RT BCor
PGXRC-T
0 api 300

MD Detail 1:240 Scale

PCG GR XHi-Range RT BCor
PGXRC-T
0 api 300

Inst Rate of Penetration
ROPI
1K feet per hr 0

Depth
TVD
ft

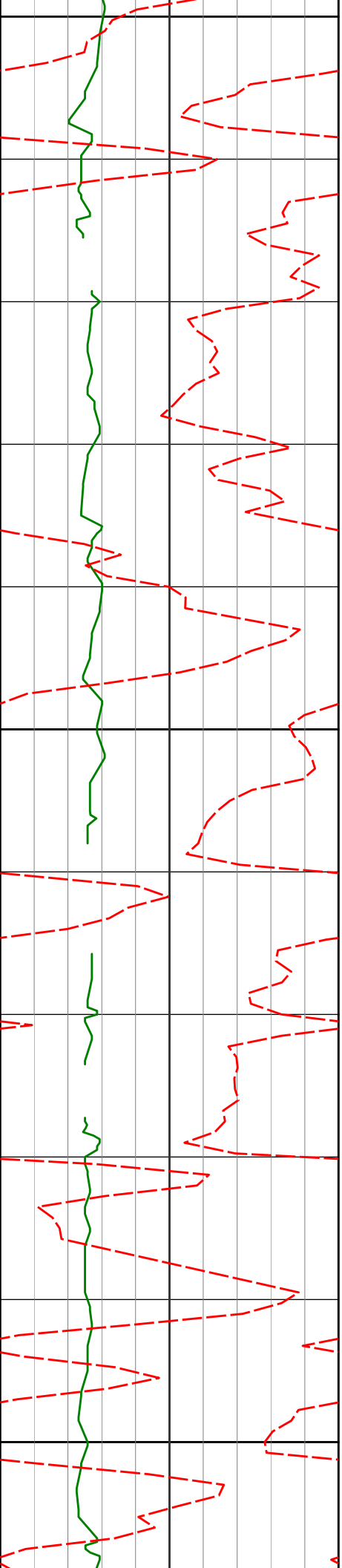
Depth	Inc	Azi	TVD	V.S.	Temp

600

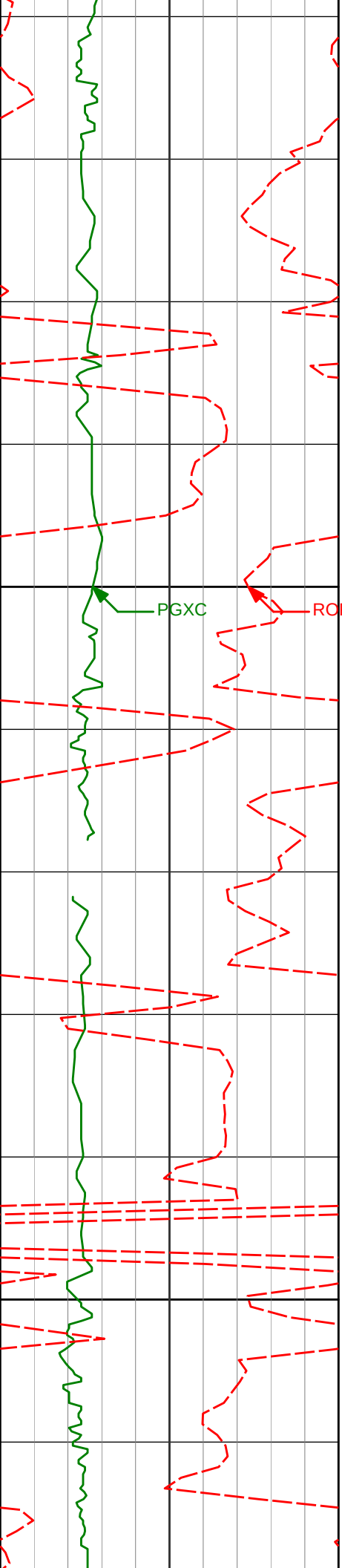
58.28°F

Run 100

58.28°F



					58.28°F
731'	0.11°	226.39°	730.92'	2.14'	
					62.17°F
					62.17°F
824'	0.31°	266.73°	823.92'	2.04'	
					62.17°F
					62.17°F
					62.17°F
916'	0.33°	242.84°	915.92'	1.87'	



64.11°F

64.11°F

66.07°F

1000	1008'	0.42°	236.12°	1007.92'	1.53'

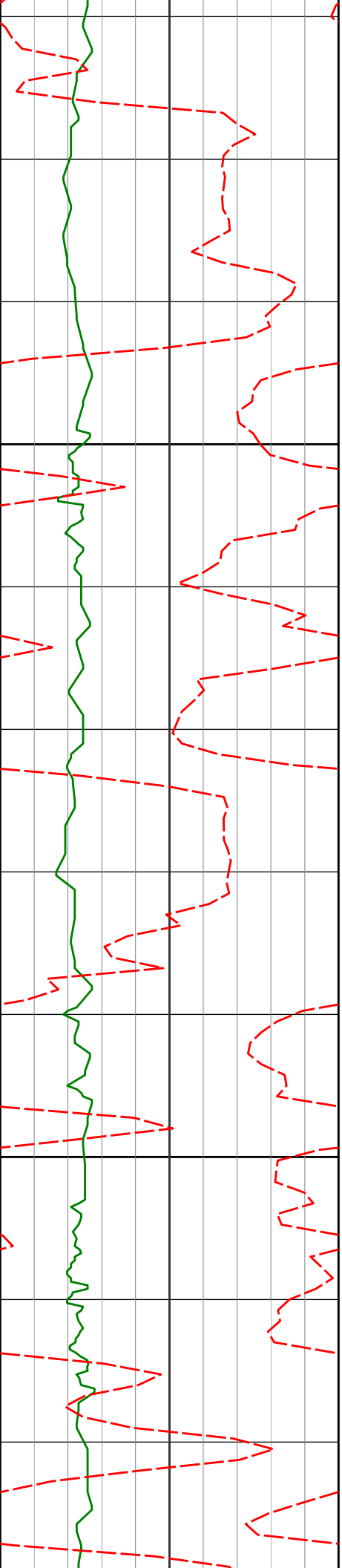
66.07°F

64.11°F

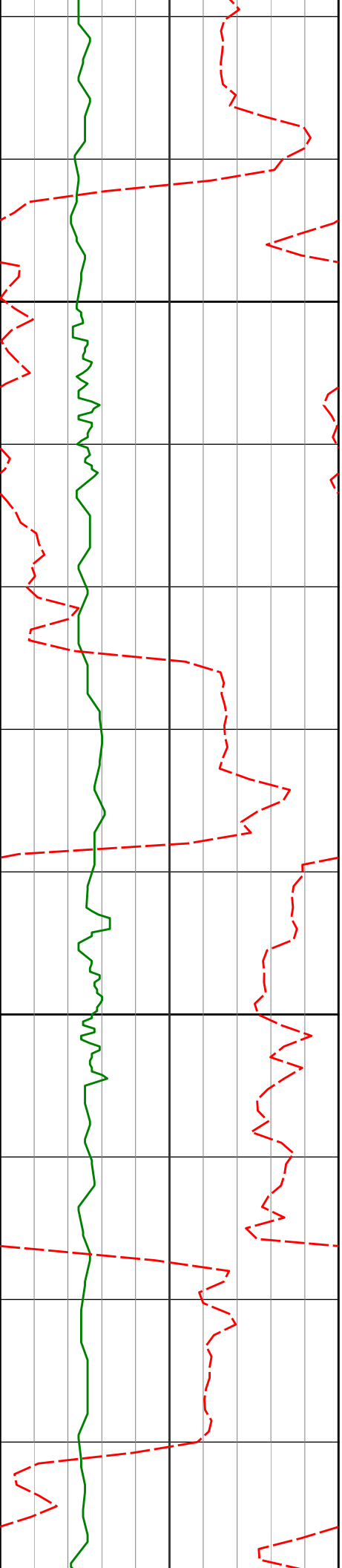
65.45°F

1100	1100'	0.68°	234.95°	1099.92'	0.98'

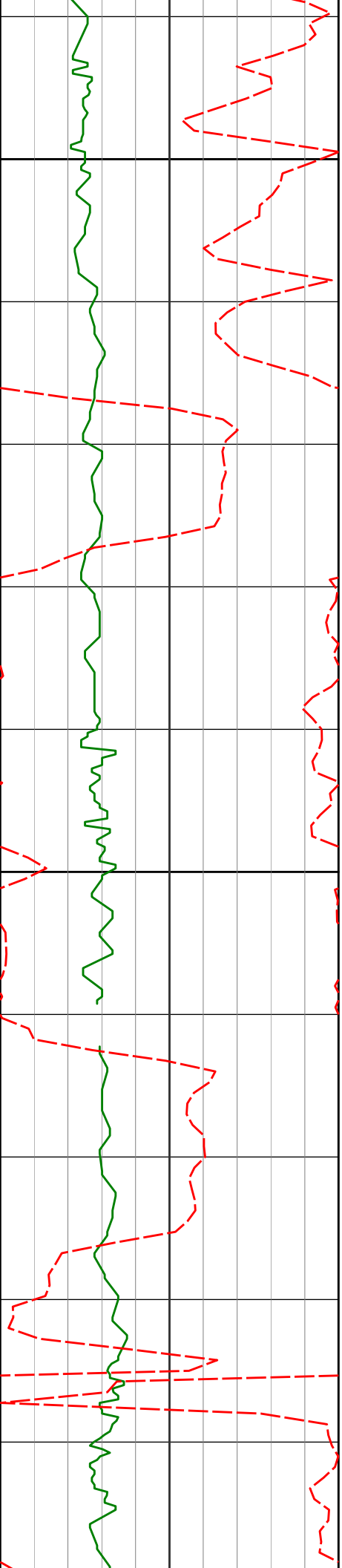
66.07°F



					67.34°F
					68.04°F
1191'	1.56°	187.11°	1190.90'	-0.60'	
1200					69.66°F
					68.23°F
					69.33°F
					69.78°F
1300					
1302'	1.91°	184.44°	1301.85'	-3.96'	
					68.04°F
					70.02°F



1394'	2.22°	163.13°	1393.79'	-7.15'	
1400					70.02°F
					70.02°F
					70.02°F
					72.00°F
1486'	2.51°	134.25°	1485.71'	-10.12'	
1500					72.00°F
					72.00°F
					72.00°F



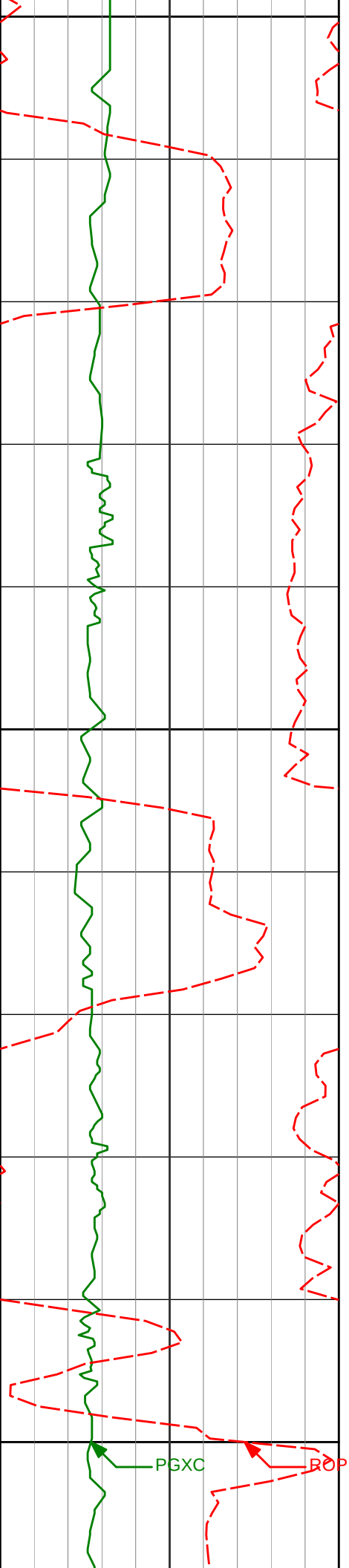
1579'	2.43°	134.82°	1578.63'	-12.72'
1670'	2.47°	139.65°	1669.55'	-15.38'
1763'	2.33°	138.18°	1762.46'	-18.12'

72.00°F

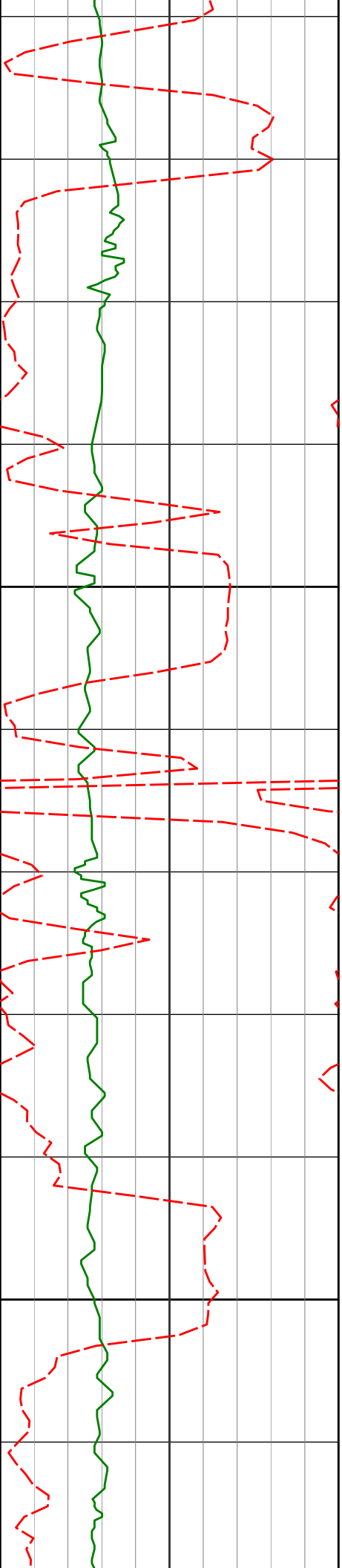
72.00°F

73.98°F

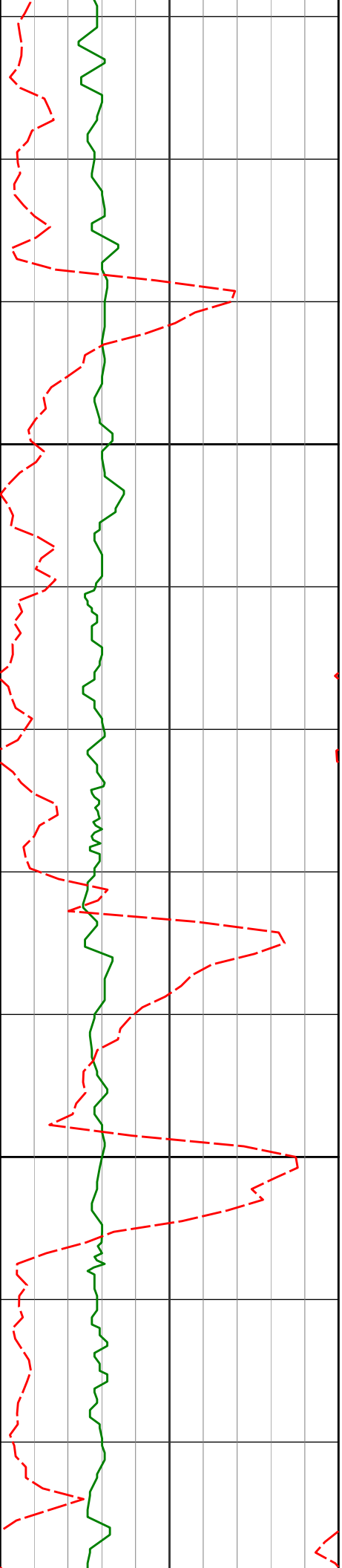
73.98°F



					75.97°F
					75.97°F
1854'	2.48°	137.68°	1853.38'	-20.77'	
					75.97°F
					75.97°F
					77.99°F
1946'	2.19°	108.06°	1945.31'	-22.56'	
					77.99°F
					77.99°F
					77.99°F



2038'	1.40°	71.24°	2037.27'	-22.55'	
					80.01°F
					80.01°F
2129'	1.25°	43.30°	2128.24'	-21.35'	
					80.01°F
					80.01°F
2222'	1.39°	42.30°	2221.22'	-19.68'	



82.02°F

82.02°F

2300

84.06°F

2314'	1.46°	49.86°	2313.19'	-17.98'

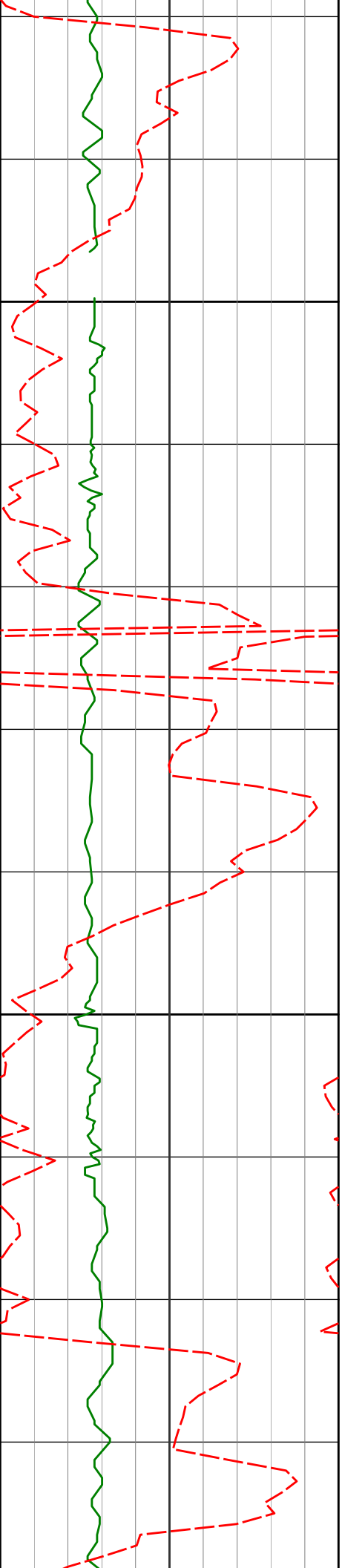
84.06°F

84.06°F

2400

2405'	1.79°	22.29°	2404.16'	-15.82'

86.09°F



2500	2498'	1.83°	21.30°	2497.11'	-13.02'
2600	2590'	0.90°	6.39°	2589.08'	-10.90'

86.09°F

86.09°F

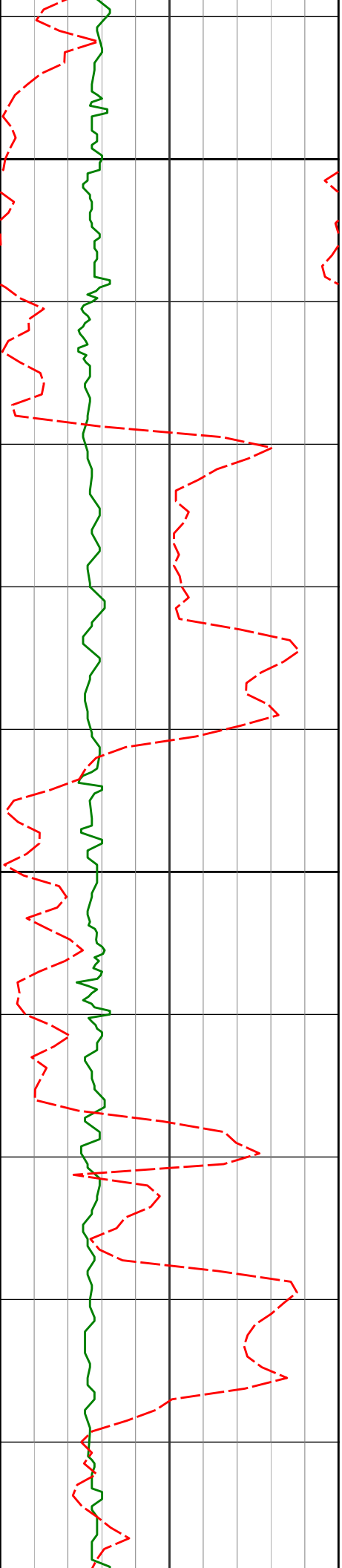
86.09°F

86.09°F

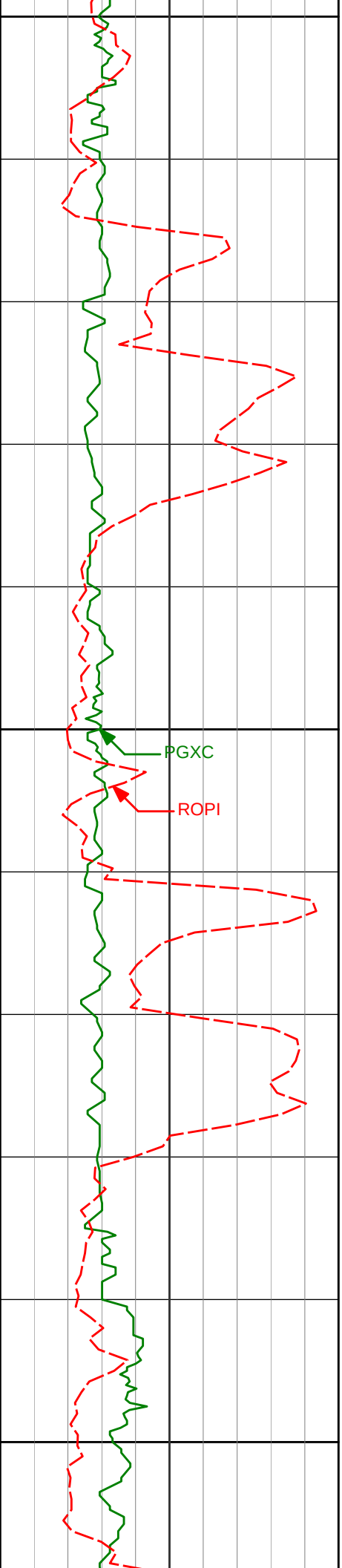
86.39°F

87.87°F

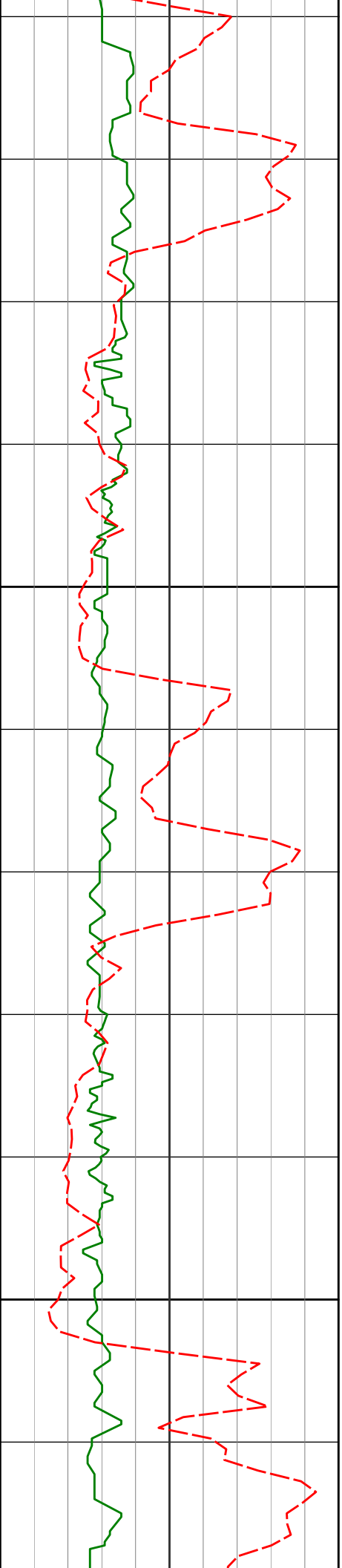
88.14°F



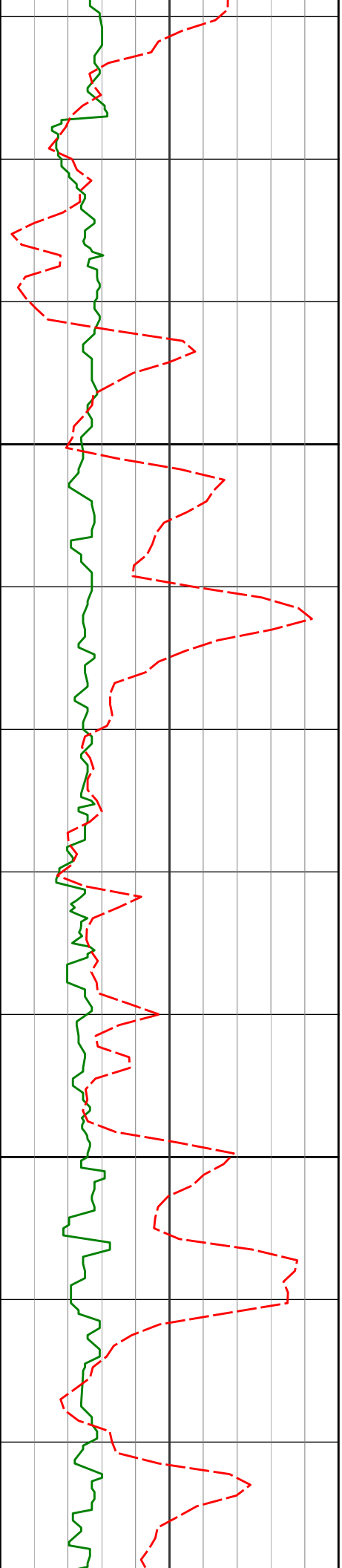
2683'	0.85°	292.44°	2682.07'	-9.95'	
					90.19°F
					90.19°F
					90.19°F
2778'	0.99°	189.25°	2777.07'	-10.55'	
					91.59°F
					92.26°F
					92.26°F
2872'	3.40°	179.22°	2870.99'	-14.13'	
					93.18°F



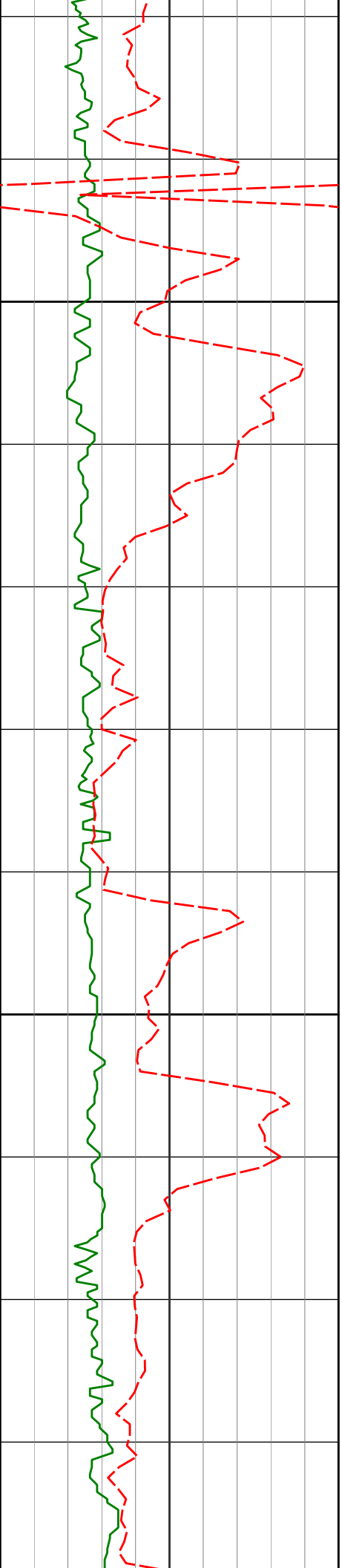
2900						94.33°F
						94.33°F
	2967'	5.89°	165.83°	2965.67'	-21.56'	96.42°F
3000						96.42°F
						96.42°F
	3062'	7.65°	157.89°	3060.01'	-31.87'	96.72°F
						98.51°F
3100						



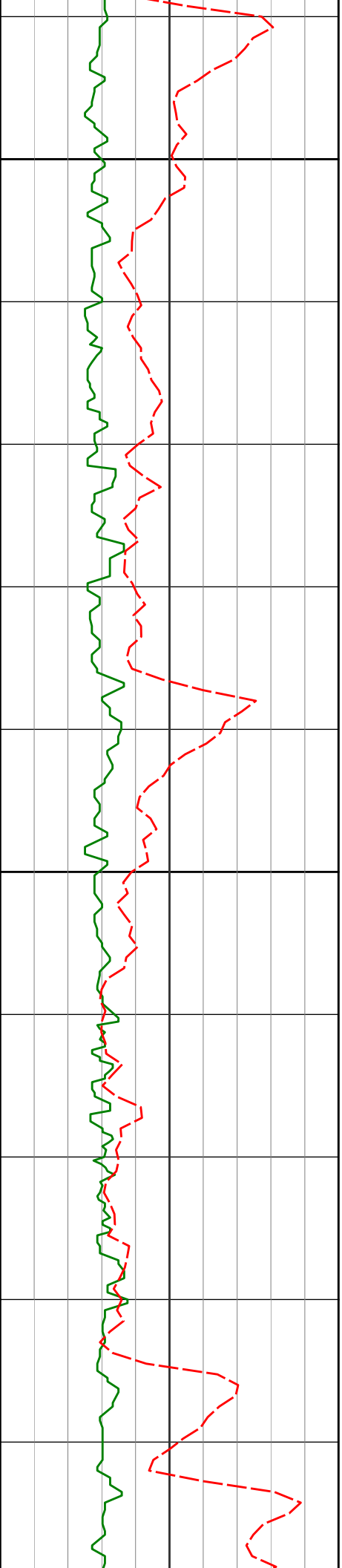
					98.51°F
					98.51°F
3157'	8.85°	149.37°	3154.03'	-43.54'	
					98.51°F
3200					
					98.51°F
					100.62°F
3251'	9.82°	141.12°	3246.79'	-55.35'	
					100.62°F
3300					
					100.62°F
					100.62°F



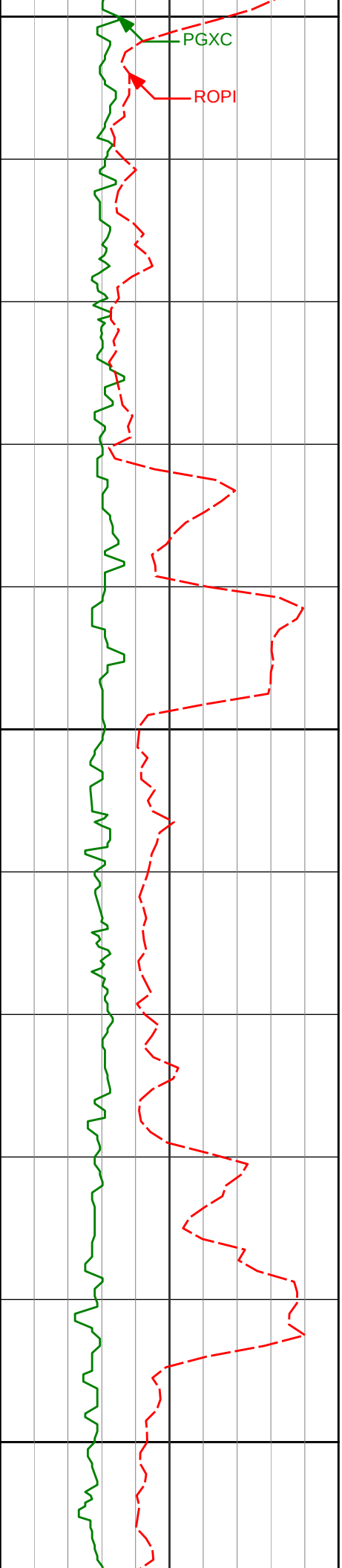
3346'	11.41°	138.30°	3340.16'	-67.83'	
					102.72°F
					102.72°F
					102.72°F
3441'	12.89°	137.78°	3433.03'	-81.70'	
					104.35°F
					104.83°F
					104.83°F
3535'	12.73°	137.64°	3524.69'	-96.08'	
					106.97°F



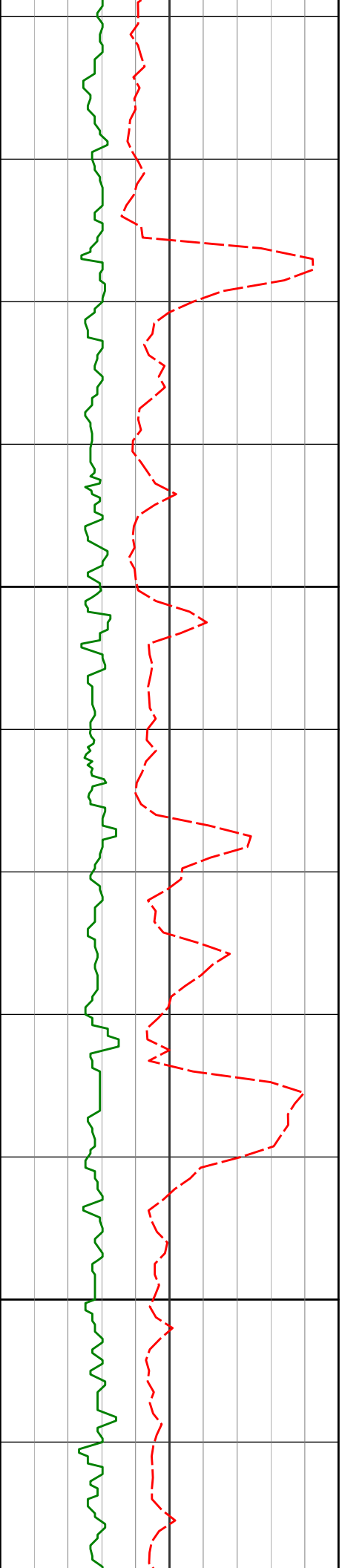
						106.97°F
3600						106.97°F
	3630'	11.94°	136.26°	3617.49'	-109.88'	109.09°F
						109.09°F
						109.09°F
3700						
	3724'	11.51°	142.76°	3709.53'	-123.45'	109.09°F
						111.24°F



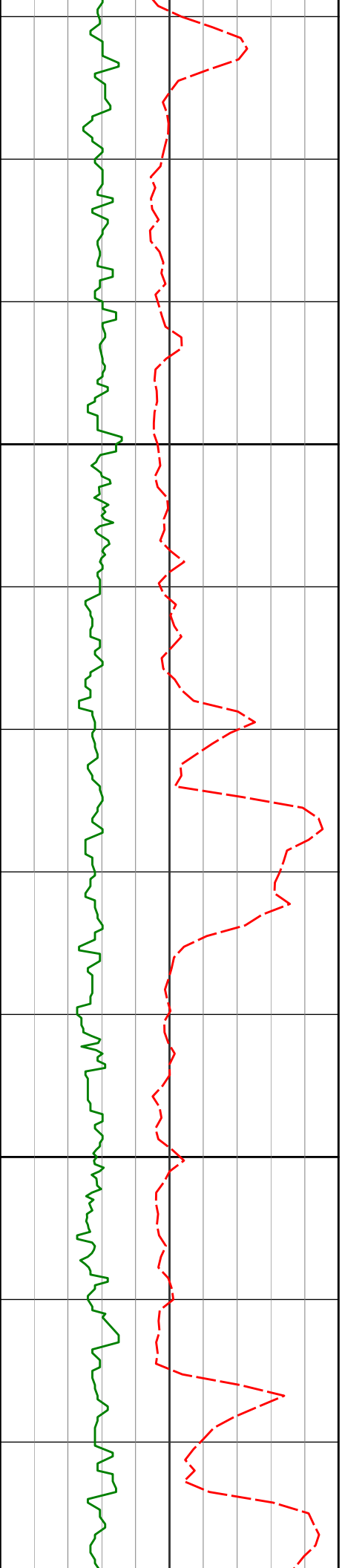
3800					111.24°F
	3819'	11.34°	143.92°	3802.65'	-137.70'
					111.24°F
					112.78°F
					113.40°F
3900					113.40°F
	3914'	10.72°	143.51°	3895.90'	-151.54'
					113.40°F
					113.40°F
					113.40°F



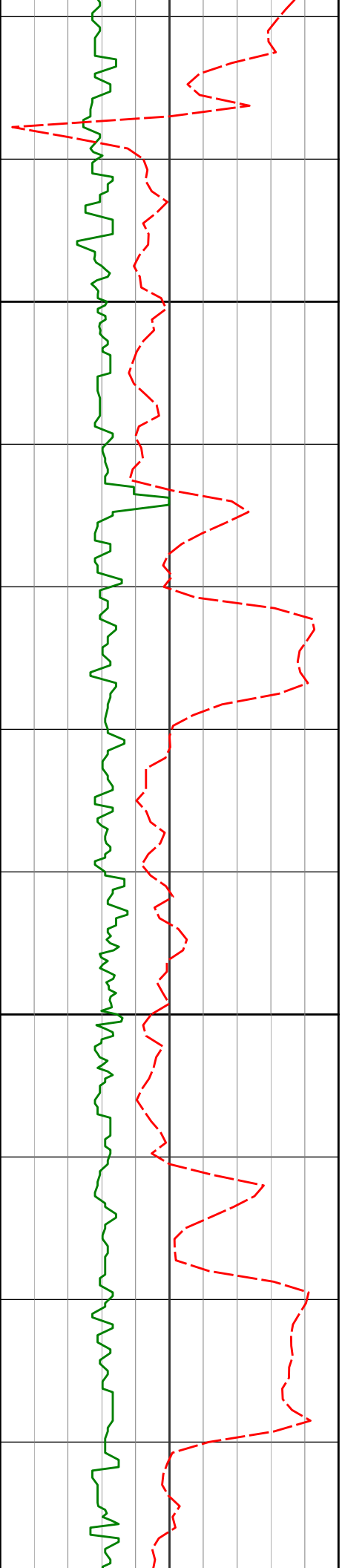
4000						
	4008'	10.54°	146.89°	3988.28'	-165.03'	
						115.09°F
						114.33°F
						115.56°F
4100						
	4103'	11.78°	142.39°	4081.49'	-179.19'	
						115.56°F
						115.56°F
						115.56°F
4200						
	4198'	12.98°	142.29°	4174.28'	-194.38'	



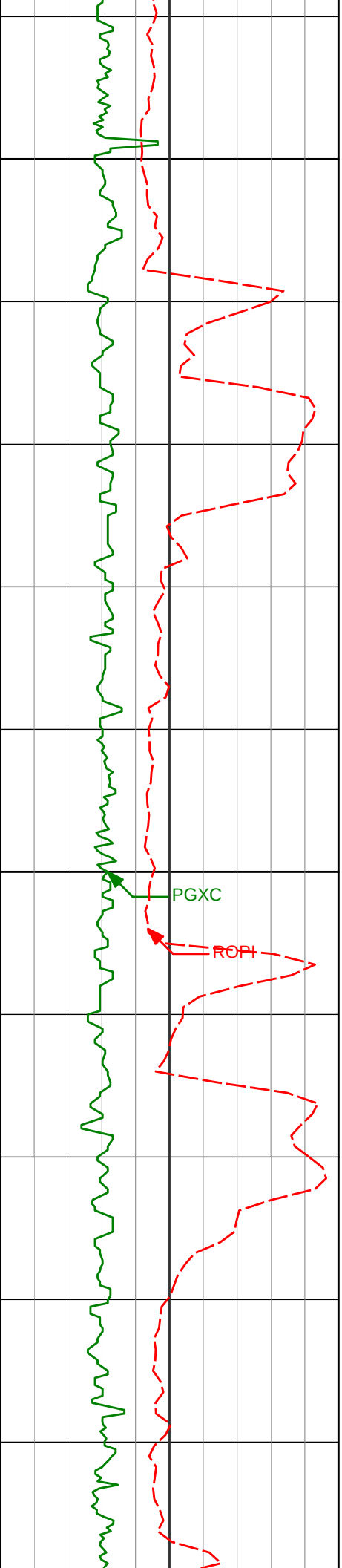
					117.73°F
					117.73°F
4292'	13.03°	140.64°	4265.86'	-209.94'	118.19°F
4300					
					118.35°F
					117.73°F
4387'	11.76°	143.85°	4358.65'	-225.10'	117.73°F
4400					
					119.91°F



					120.34°F
					121.97°F
4482'	10.62°	140.88°	4451.84'	-238.87'	
4500					120.60°F
					119.91°F
					120.09°F
4577'	10.91°	141.73°	4545.17'	-251.89'	
					120.95°F
4600					
					119.91°F
					121.24°F



4671'	10.80°	152.91°	4637.50'	-266.00'	
					122.11°F
4700					
					122.11°F
					122.11°F
4766'	10.71°	156.39°	4730.83'	-281.43'	
					123.74°F
4800					
					122.68°F
					122.11°F
4861'	12.07°	158.02°	4823.96'	-298.16'	
					124.99°F



126.44°F

128.73°F

128.73°F

4956'	12.25°	152.62°	4916.83'	-315.67'

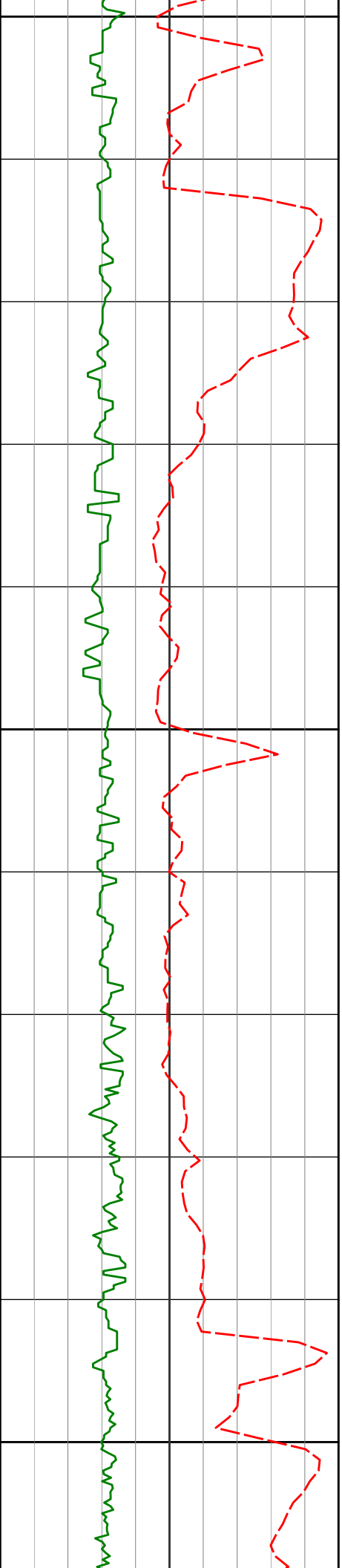
128.73°F

129.10°F

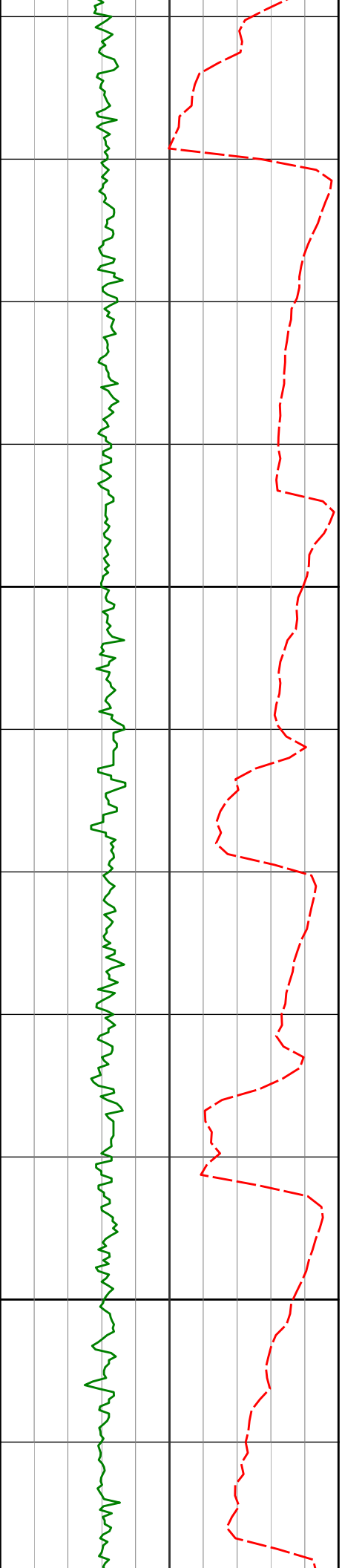
130.96°F

5051'	12.34°	152.56°	5009.65'	-332.91'

130.96°F



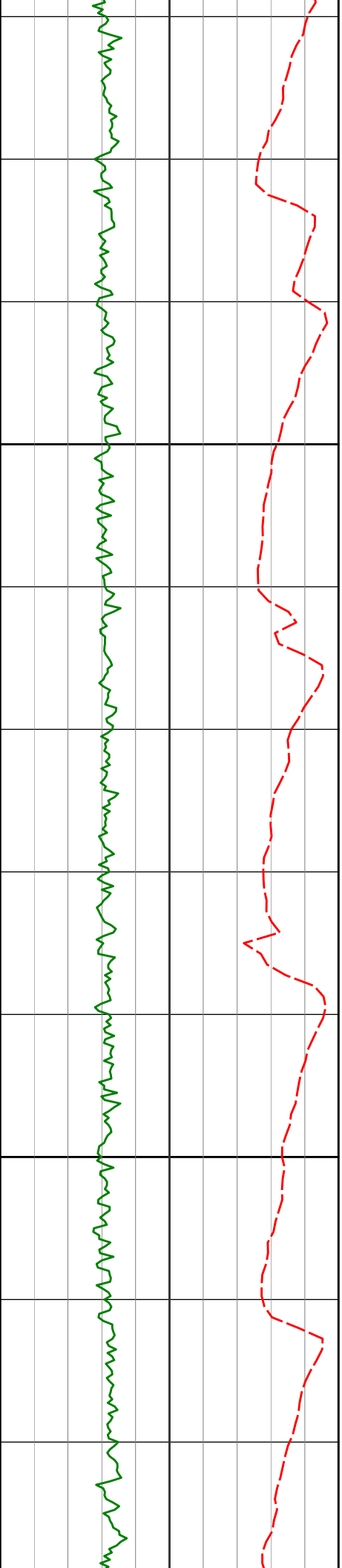
					130.96°F
					130.96°F
5145'	12.96°	143.85°	5101.38'	-349.52'	
					132.54°F
					134.04°F
					136.05°F
5240'	11.25°	145.28°	5194.26'	-364.86'	
					137.24°F
					136.56°F
					136.34°F



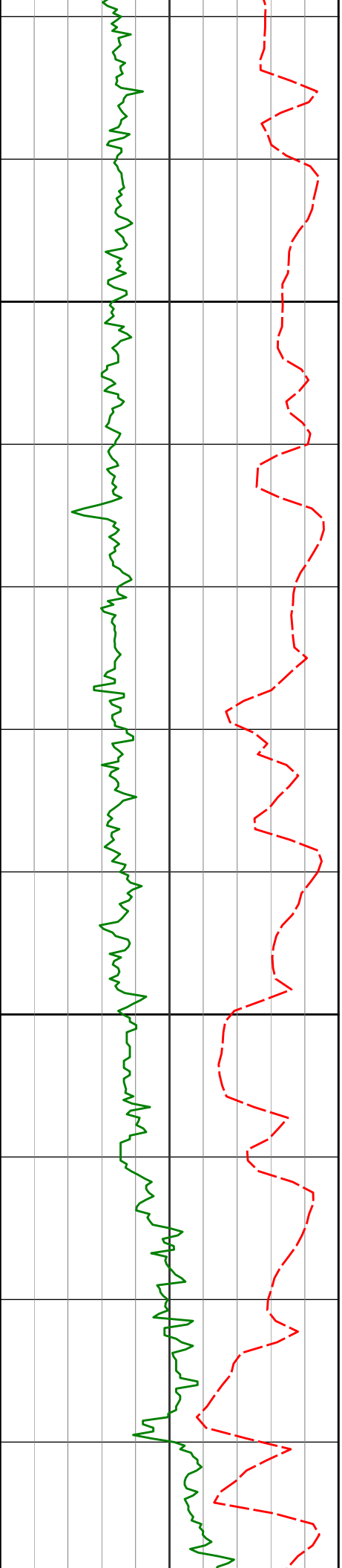
5335'	11.48°	137.19°	5287.41'	-378.54'	137.82°F
					139.84°F
5383'	15.85°	118.79°	5334.06'	-384.54'	
					140.17°F
5430'	19.84°	111.72°	5378.79'	-389.64'	142.16°F
					142.43°F
5478'	22.88°	102.86°	5423.50'	-393.52'	
					143.51°F
5524'	25.74°	86.92°	5465.47'	-393.63'	142.32°F

5400

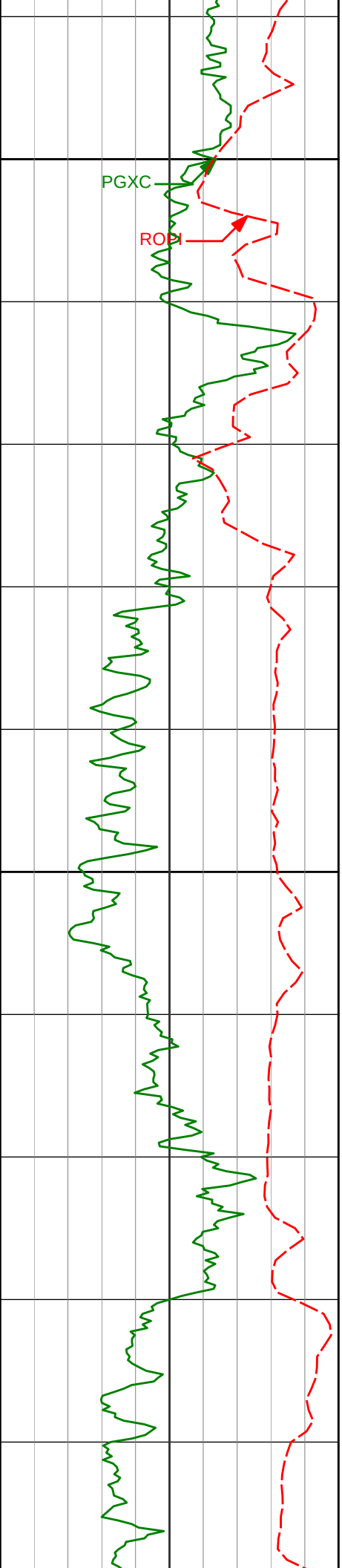
5500



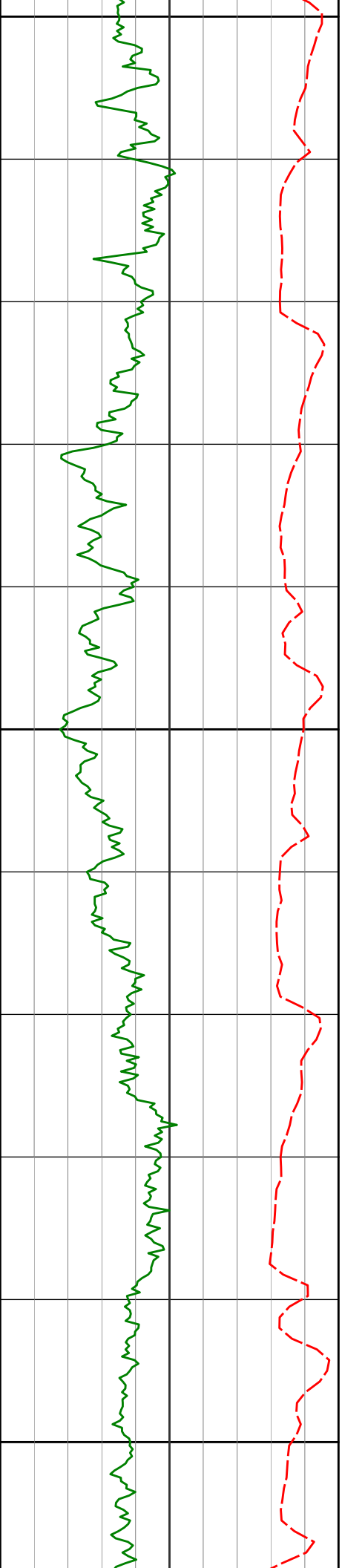
					142.25°F
5572'	28.70°	71.43°	5508.20'	-387.88'	
					142.25°F
5600					
					142.14°F
5619'	31.29°	57.99°	5548.95'	-376.31'	
					141.90°F
5667'	34.40°	44.05°	5589.33'	-358.54'	
					142.25°F
5700					
					142.25°F
5713'	37.14°	31.75°	5626.69'	-336.24'	
					142.25°F



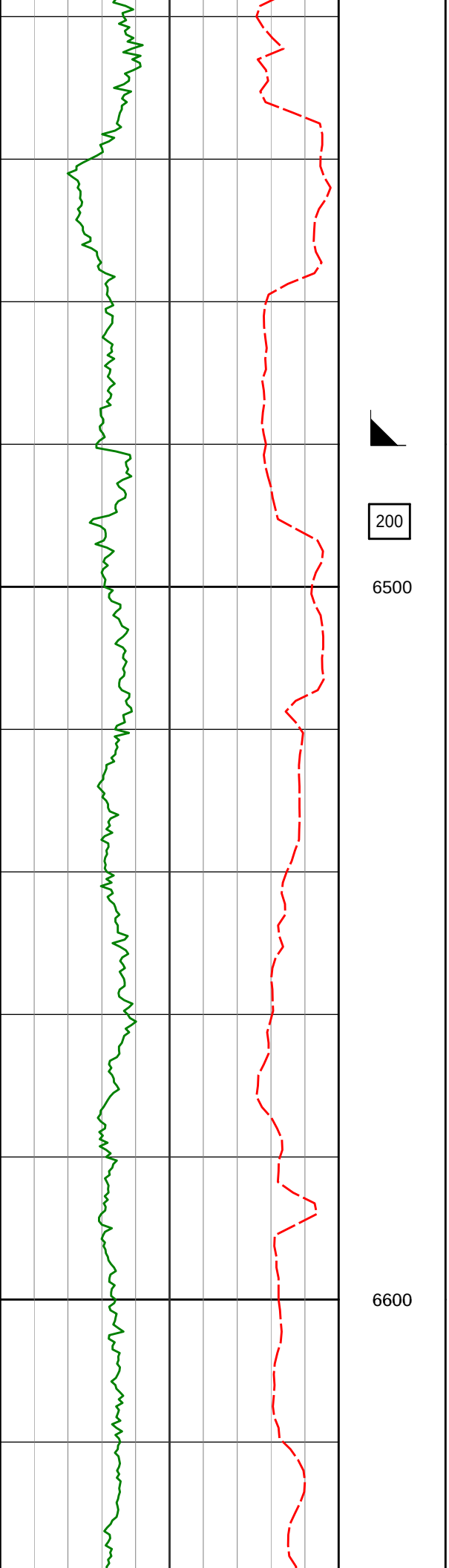
5761'	39.93°	18.89°	5664.30'	-308.46'	143.24°F
					146.00°F
5808'	41.18°	10.71°	5700.03'	-278.48'	
					146.84°F
					148.03°F
5856'	43.66°	7.03°	5735.47'	-246.22'	
					149.14°F
5903'	46.71°	4.63°	5768.59'	-212.91'	
					149.91°F
					150.99°F
5951'	50.37°	2.10°	5800.37'	-176.95'	
					151.47°F



6000	5998'	53.66°	359.00°	5829.30'	-139.99'	151.47°F
						152.23°F
	6046'	55.53°	356.46°	5857.10'	-101.12'	
						153.79°F
	6093'	55.50°	355.38°	5883.71'	-62.77'	153.79°F
6100						
						153.96°F
	6141'	56.29°	355.39°	5910.63'	-23.48'	
						154.48°F
						155.88°F
	6187'	57.89°	357.07°	5935.62'	14.77'	

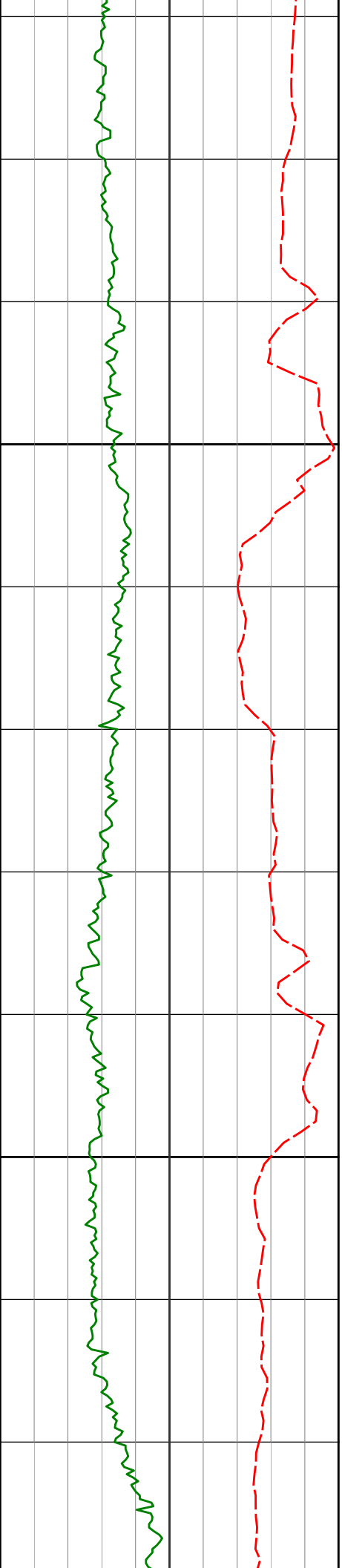


6200					
					156.38°F
6235'	61.13°	0.17°	5959.97'	55.93'	
					156.97°F
					158.23°F
6282'	67.39°	1.42°	5980.38'	98.17'	
6300					158.47°F
6330'	71.27°	1.12°	5997.32'	143.02'	158.47°F
					160.19°F
6377'	78.28°	359.19°	6009.66'	188.23'	
					160.83°F
6400					



					159.51°F
6433'	84.42°	357.22°	6018.08'	243.27'	
					151.94°F
					150.37°F
6500					
					151.54°F
6521'	87.10°	356.83°	6024.58'	330.35'	
					153.44°F
					153.79°F
6600					
					155.08°F
6613'	87.32°	355.95°	6029.06'	421.41'	
					154.41°F

200



154.85°F

158.14°F

6700

6704'	87.72°	356.76°	6033.00'	511.49'

157.14°F

158.59°F

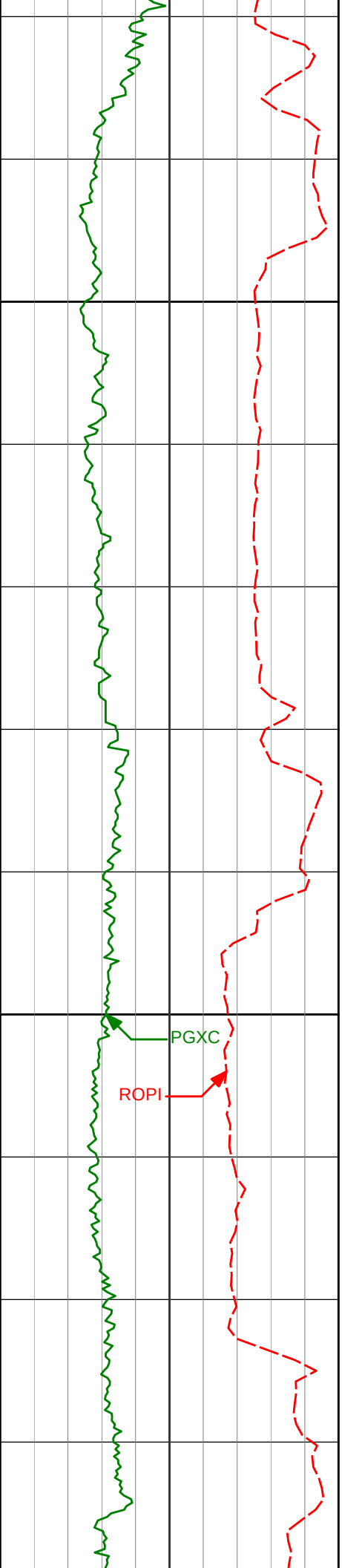
160.83°F

6797'	87.26°	358.10°	6037.08'	603.77'

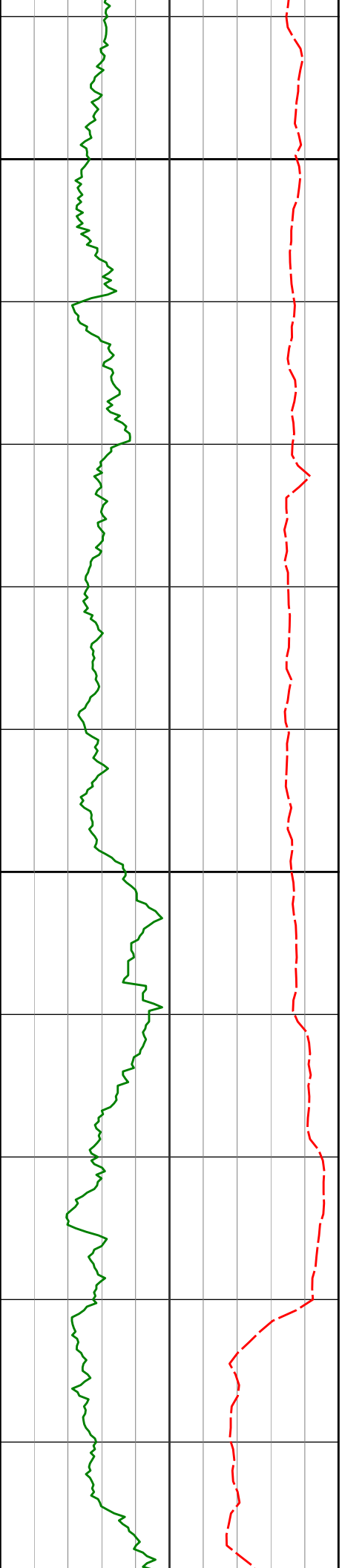
6800

159.55°F

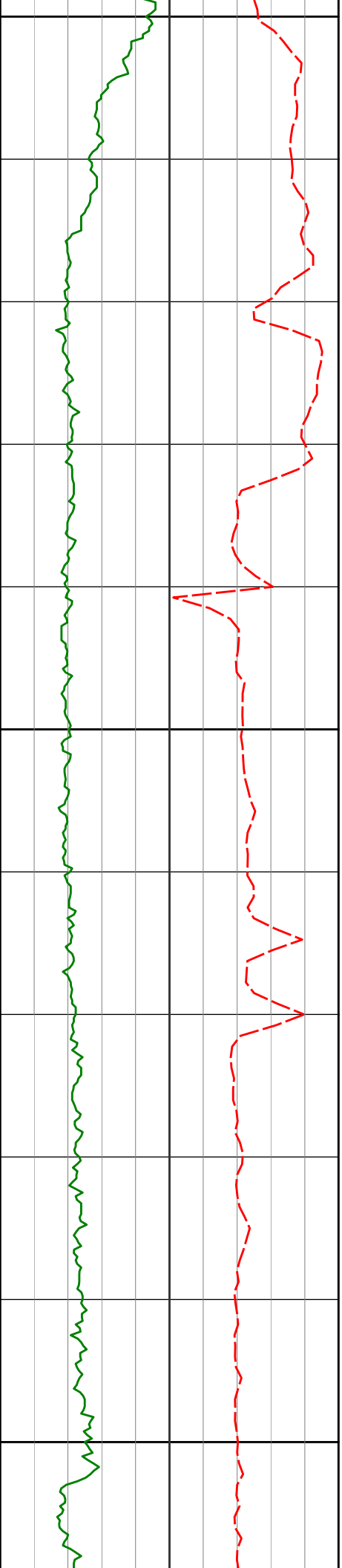
160.26°F



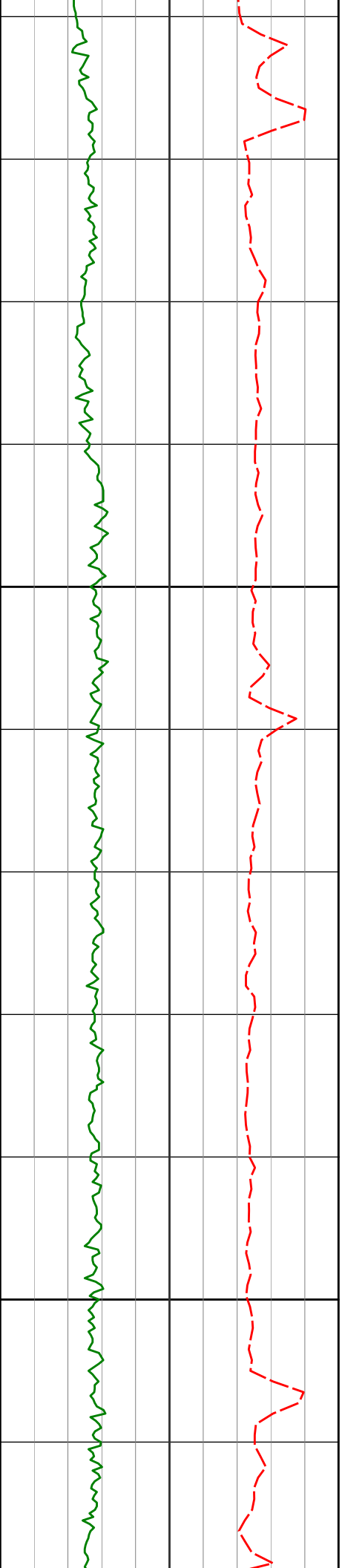
					162.68°F
6889'	88.37°	358.16°	6040.59'	695.20'	
					163.98°F
					163.54°F
					166.00°F
6982'	89.78°	358.87°	6042.09'	787.74'	
					166.53°F
					167.21°F
					170.25°F
7076'	91.45°	0.09°	6041.08'	881.42'	



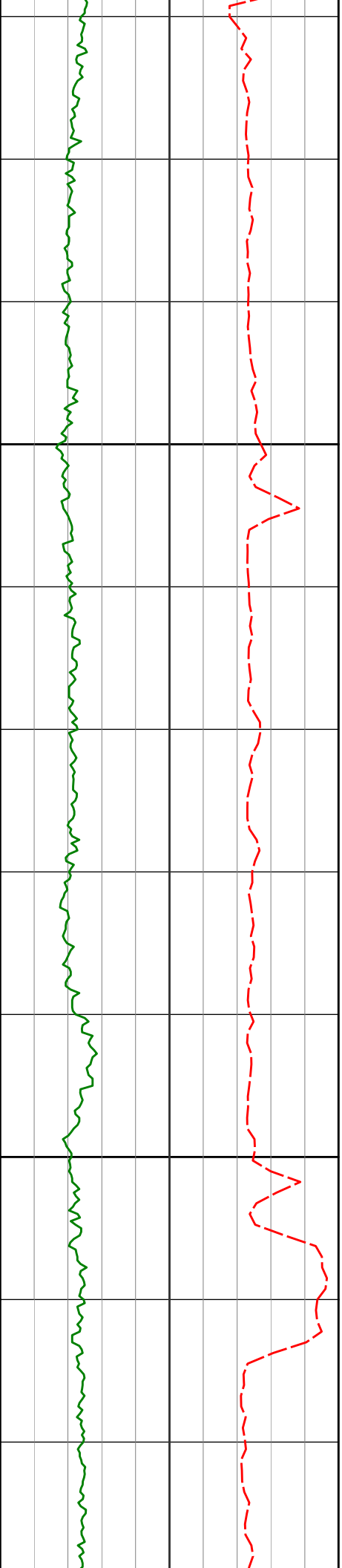
7100					171.99°F
					172.93°F
					174.43°F
	7171'	92.31°	359.83°	6037.96'	976.12'	171.26°F
7200					169.66°F
					171.66°F
	7266'	90.80°	358.60°	6035.38'	1070.73'	173.72°F
					172.92°F



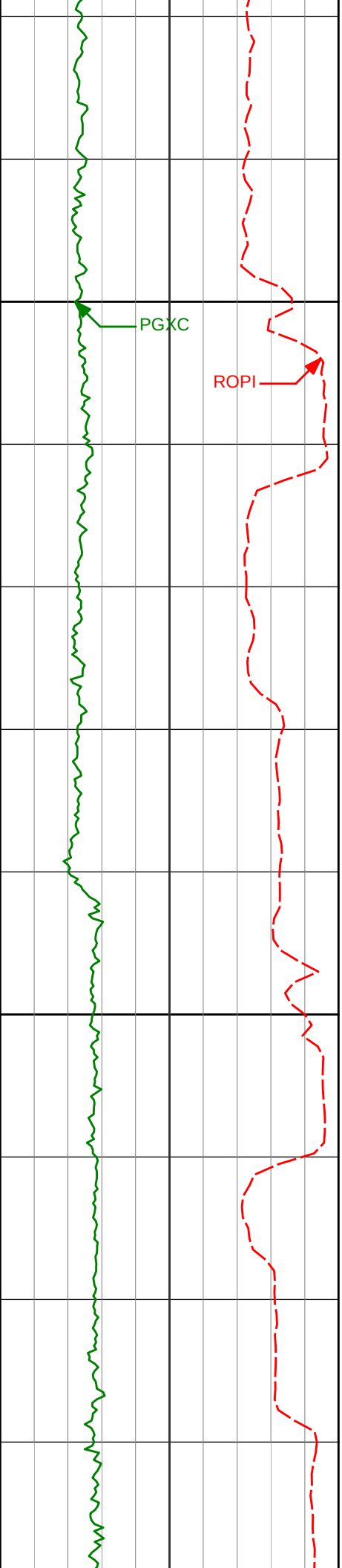
					172.78°F
					175.07°F
7360'	89.01°	357.89°	6035.53'	1164.24'	
					175.40°F
					177.64°F
					179.08°F
7455'	89.51°	358.15°	6036.76'	1258.69'	
					176.46°F
					179.62°F



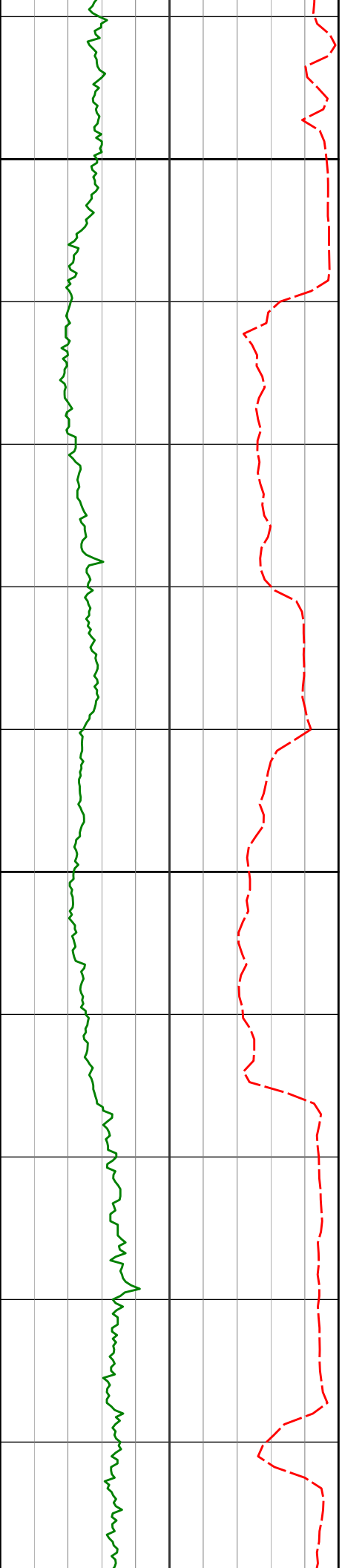
					180.09°F
7549'	89.60°	359.32°	6037.49'	1352.28'	
					180.27°F
					182.36°F
7600					
					182.55°F
7644'	90.55°	1.01°	6037.37'	1447.05'	
					182.55°F
					182.76°F
7700					
					185.55°F



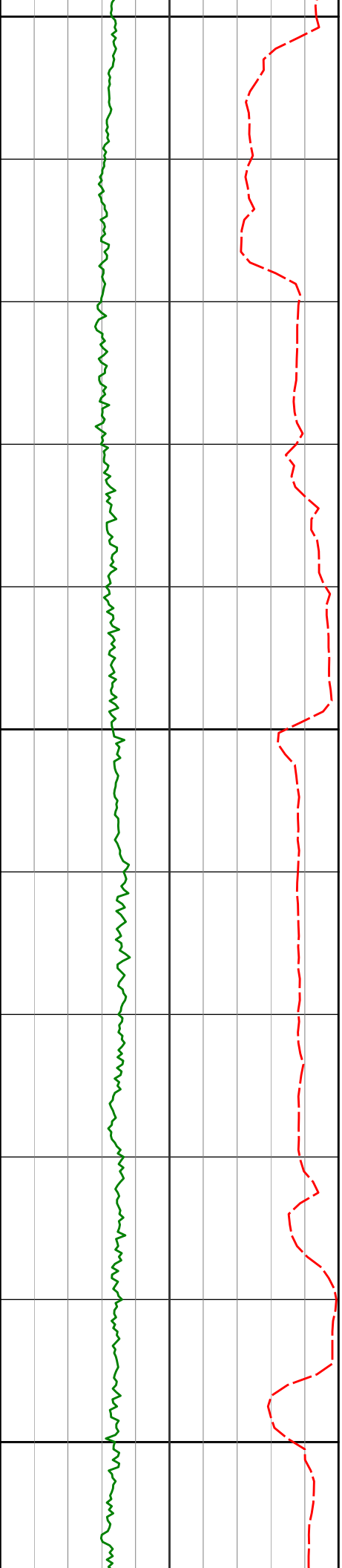
7739'	90.92°	1.33°	6036.14'	1541.91'	186.24°F
					186.82°F
7800					187.48°F
7834'	91.23°	1.31°	6034.35'	1636.78'	186.27°F
					182.88°F
					182.55°F
7900					
					184.76°F
7929'	90.77°	359.96°	6032.69'	1731.59'	
					182.23°F



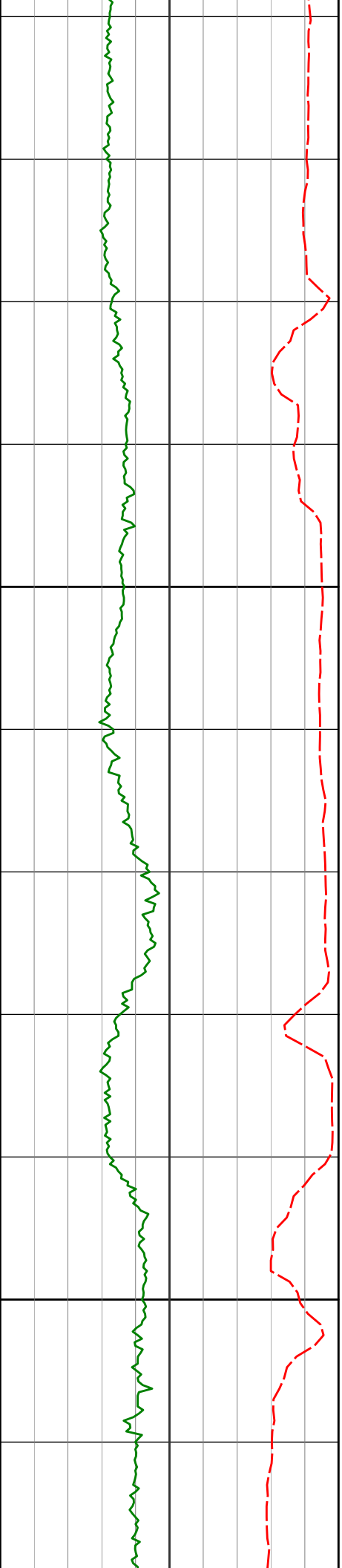
						184.12°F
8000						
						189.17°F
	8023'	89.26°	358.31°	6032.67'	1825.23'	
						187.73°F
						190.14°F
8100						
						186.22°F
	8118'	89.88°	357.56°	6033.38'	1919.68'	
						182.37°F
						180.35°F



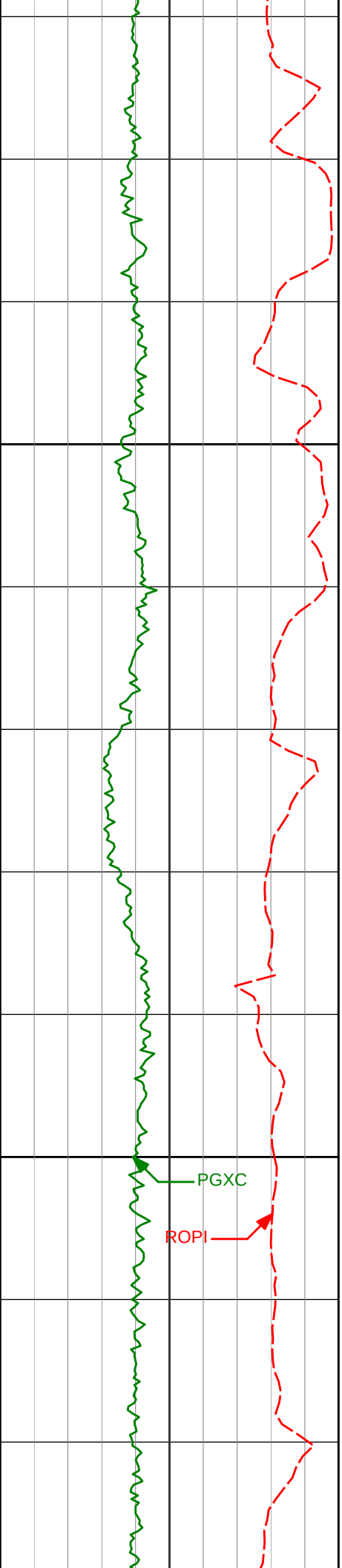
					184.09°F
8200					
	8213'	91.88°	355.61°	6031.92'	2013.84'
					185.19°F
					189.08°F
					189.99°F
8300					
	8307'	92.37°	355.11°	6028.44'	2106.68'
					189.24°F
					186.87°F
					188.29°F



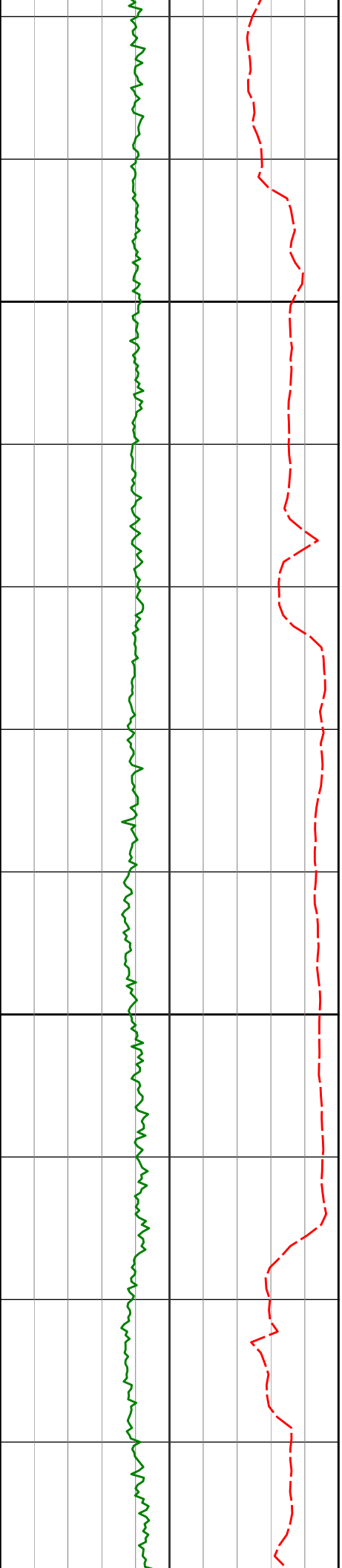
8402'	91.48°	356.01°	6025.24'	2200.57'	187.62°F
					183.87°F
					186.29°F
8497'	91.20°	357.27°	6023.02'	2294.73'	186.21°F
					182.68°F
					184.50°F
8591'	91.63°	358.46°	6020.69'	2388.15'	186.99°F
					187.92°F



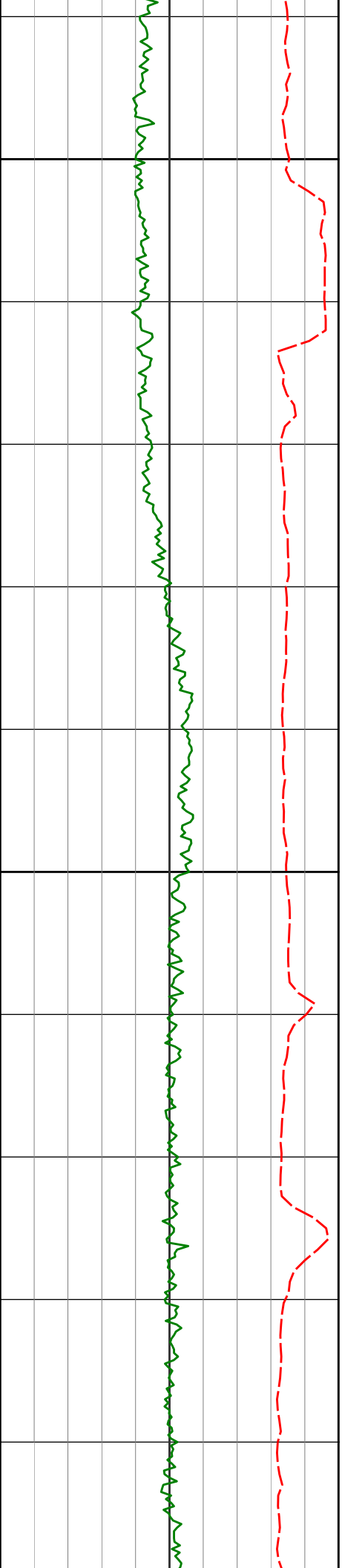
					189.67°F
					191.84°F
8686'	91.91°	358.96°	6017.76'	2482.68'	
8700					188.10°F
					188.19°F
					189.70°F
8781'	91.45°	358.98°	6014.97'	2577.25'	
					188.05°F
8800					
					189.29°F



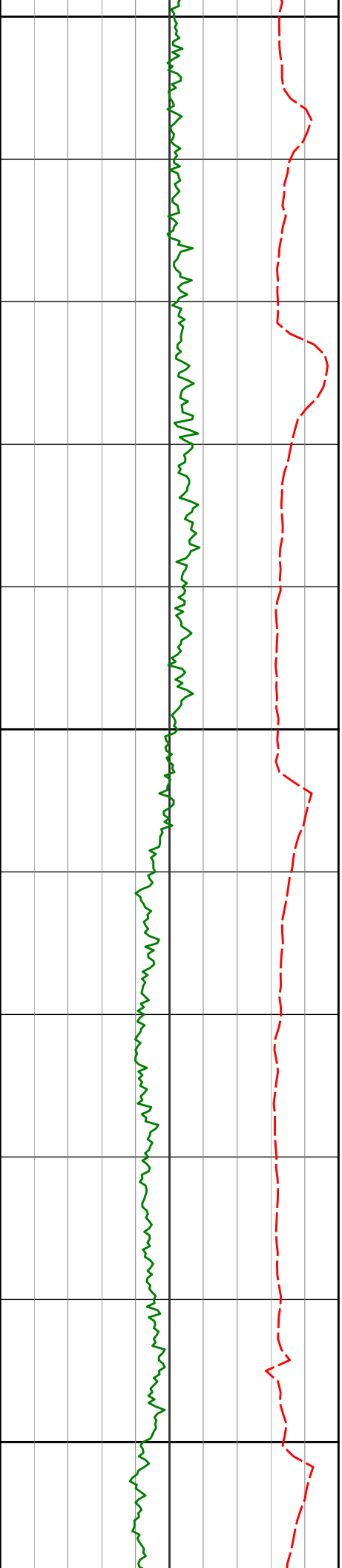
					191.03°F
8876'	90.06°	358.85°	6013.72'	2671.85'	190.44°F
					191.95°F
					193.97°F
8971'	90.25°	358.51°	6013.46'	2766.43'	194.99°F
					196.37°F
					197.61°F



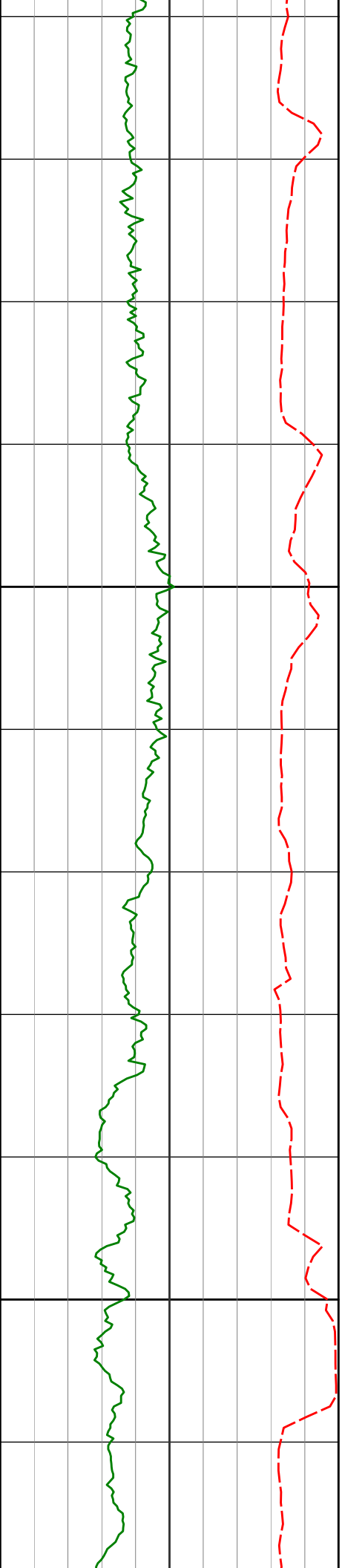
					198.78°F
9065'	90.18°	358.76°	6013.11'	2860.00'	
					199.63°F
					200.53°F
					201.79°F
9160'	90.15°	358.42°	6012.83'	2954.56'	
					202.21°F
					202.60°F
					202.60°F
9255'	90.80°	358.82°	6012.04'	3049.12'	
					202.60°F



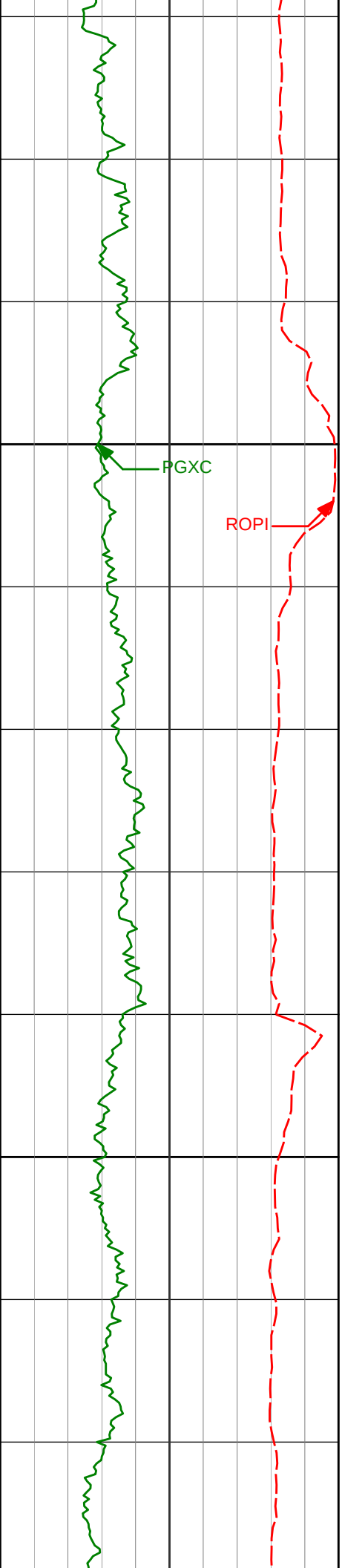
9300					202.95°F
					205.06°F
	9350'	90.89°	358.75°	6010.63'	3143.70'
					205.16°F
					205.16°F
9400					
					205.69°F
	9445'	90.83°	358.79°	6009.20'	3238.27'
					205.73°F
					206.30°F



					206.52°F
9539'	90.92°	358.35°	6007.76'	3331.82'	206.02°F
					205.60°F
					207.73°F
9634'	91.20°	358.32°	6006.00'	3426.32'	207.73°F
					207.73°F
					207.73°F



					205.83°F
9729'	91.33°	357.69°	6003.90'	3520.76'	
					204.61°F
					205.90°F
					204.52°F
9824'	91.88°	357.69°	6001.25'	3615.13'	
					199.44°F
					199.93°F
					199.74°F
9919'	91.36°	358.00°	5998.56'	3709.52'	
					197.86°F



199.40°F

201.44°F

10000

10014' 91.05° 358.51° 5996.57' 3804.01'

202.75°F

205.82°F

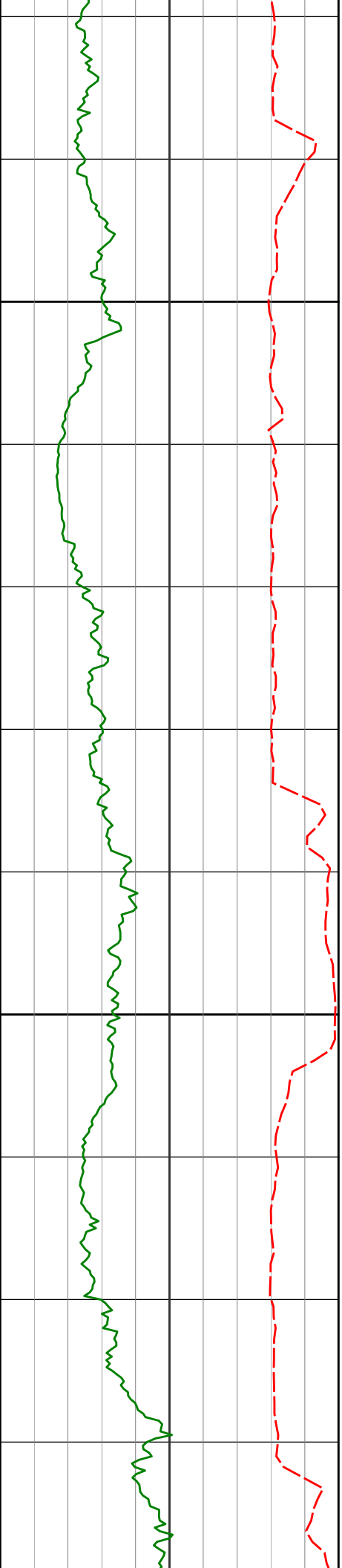
207.73°F

10100

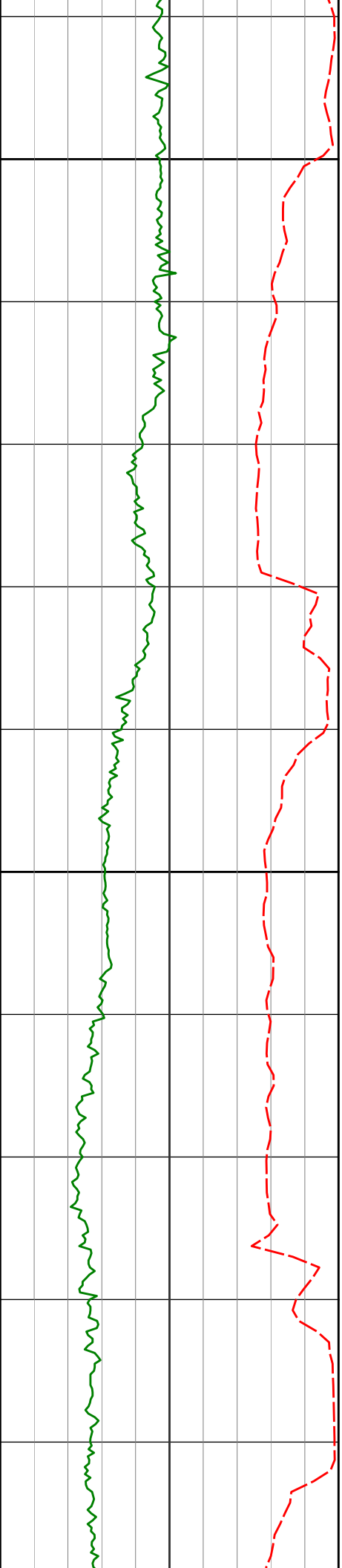
10109' 91.05° 358.52° 5994.83' 3898.54'

207.73°F

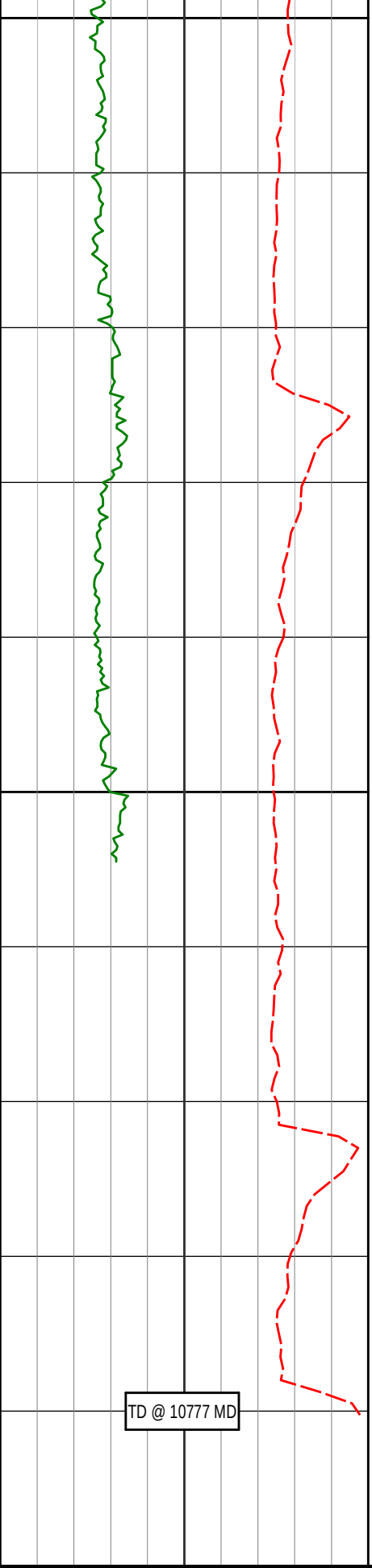
208.09°F



						210.20°F
10200	10203'	92.34°	358.05°	5992.05'	3992.01'	205.42°F
						201.87°F
						203.13°F
						204.89°F
10300	10298'	91.48°	359.34°	5988.89'	4086.53'	
						202.91°F
						204.74°F



					206.90°F
10393'	90.34°	0.17°	5987.38'	4181.24'	
					205.87°F
					207.44°F
					209.53°F
10488'	90.92°	359.78°	5986.33'	4275.99'	
					207.42°F
					206.78°F
					209.57°F
10582'	89.69°	0.70°	5985.82'	4369.77'	
					210.31°F



10600

10700

Depth	Inc	Azi	TVD	V.S.	Temp
10677'	90.96°	0.60°	5985.29'	4464.59'	210.62°F
10709'	91.51°	0.44°	5984.60'	4496.52'	
10777'	91.51°	0.44°	5982.81'	4564.36'	

210.58°F

210.82°F

Inst Rate of Penetration
ROPI
feet per hr
1K 0

Depth
TVD
ft

PCG GR XHi-Range RT BCor
PGXRC-T

0	api	300

HALLIBURTON

DIRECTIONAL SURVEY REPORT

Noble Energy
Kevin LC26-728
Wattenberg
Weld Colorado
USA
CA-XX-0902240508
Tied in @ Surface
First two Survey's from 3rd party source (Muilti Shot EMS)

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
252.00	1.40	259.92	251.97	0.54 S	3.03 W	-0.75	0.56
485.00	1.00	338.52	484.94	0.86 N	6.58 W	0.38	0.67
731.00	0.11	226.39	730.92	2.69 N	7.54 W	2.14	0.43
824.00	0.31	266.73	823.92	2.61 N	7.85 W	2.04	0.25
916.00	0.33	242.84	915.92	2.48 N	8.33 W	1.87	0.14
1008.00	0.42	236.12	1007.92	2.17 N	8.85 W	1.53	0.11
1100.00	0.68	234.95	1099.92	1.67 N	9.57 W	0.98	0.28
1191.00	1.56	187.11	1190.90	0.13 N	10.16 W	-0.60	1.34
1302.00	1.91	184.44	1301.85	3.21 S	10.50 W	-3.96	0.32
1394.00	2.22	163.13	1393.79	6.45 S	10.10 W	-7.15	0.90
1486.00	2.51	134.25	1485.71	9.56 S	8.14 W	-10.12	1.32
1579.00	2.43	134.82	1578.63	12.37 S	5.28 W	-12.72	0.09
1670.00	2.47	139.65	1669.55	15.23 S	2.64 W	-15.38	0.23
1763.00	2.33	138.18	1762.46	18.16 S	0.08 W	-18.12	0.16
1854.00	2.48	137.68	1853.38	21.00 S	2.48 E	-20.77	0.17
1946.00	2.19	108.06	1945.31	23.02 S	5.49 E	-22.56	1.33
2038.00	1.40	71.24	2037.27	23.20 S	8.23 E	-22.55	1.48
2129.00	1.25	43.30	2128.24	22.12 S	9.96 E	-21.35	0.72
2222.00	1.39	42.30	2221.22	20.55 S	11.41 E	-19.68	0.16
2314.00	1.46	49.86	2313.19	18.97 S	13.06 E	-17.98	0.22
2405.00	1.79	22.29	2404.16	16.90 S	14.49 E	-15.82	0.92
2498.00	1.83	21.30	2497.11	14.17 S	15.58 E	-13.02	0.05
2590.00	0.90	6.39	2589.08	12.09 S	16.19 E	-10.90	1.08
2683.00	0.85	292.44	2682.07	11.10 S	15.63 E	-9.95	1.13
2778.00	0.99	189.25	2777.07	11.64 S	14.85 E	-10.55	1.52
2872.00	3.40	179.22	2870.99	15.22 S	14.76 E	-14.13	2.59
2967.00	5.89	165.83	2965.67	22.77 S	15.99 E	-21.56	2.84
3062.00	7.65	157.89	3060.01	33.35 S	19.56 E	-31.87	2.09
3157.00	8.85	149.37	3154.03	45.50 S	25.67 E	-43.54	1.80
3251.00	9.82	141.12	3246.79	57.97 S	34.39 E	-55.35	1.76
3346.00	11.41	138.30	3340.16	71.30 S	45.73 E	-67.83	1.76
3441.00	12.89	137.78	3433.03	86.16 S	59.10 E	-81.70	1.56
3535.00	12.73	137.64	3524.69	101.58 S	73.13 E	-96.08	0.17
3630.00	11.94	136.26	3617.49	116.42 S	86.98 E	-109.88	0.89
3724.00	11.51	142.76	3709.53	130.91 S	99.37 E	-123.45	1.48
3819.00	11.34	143.92	3802.65	146.00 S	110.61 E	-137.70	0.30
3914.00	10.72	143.51	3895.90	160.65 S	121.37 E	-151.54	0.66
4008.00	10.54	146.89	3988.28	174.89 S	131.26 E	-165.03	0.69
4103.00	11.78	142.39	4081.49	189.85 S	141.93 E	-179.19	1.60
4198.00	12.98	142.29	4174.28	205.97 S	154.37 E	-194.38	1.26
4292.00	13.03	140.64	4265.86	222.52 S	167.55 E	-209.94	0.40
4387.00	11.76	143.85	4358.65	238.62 S	180.06 E	-225.10	1.53
4482.00	10.62	140.88	4451.84	253.23 S	191.29 E	-238.87	1.34
4577.00	10.91	141.73	4545.17	267.08 S	202.38 E	-251.89	0.35
4671.00	10.80	152.91	4637.50	281.91 S	211.91 E	-266.00	2.24
4766.00	10.71	156.39	4730.83	297.92 S	219.50 E	-281.43	0.69
4861.00	12.07	158.02	4823.96	315.22 S	226.75 E	-298.16	1.47

4956.00	12.25	152.62	4916.83	333.38 S	235.10 E	-315.67	1.21
5051.00	12.34	152.56	5009.65	351.33 S	244.41 E	-332.91	0.10
5145.00	12.96	143.85	5101.38	368.76 S	255.26 E	-349.52	2.13
5240.00	11.25	145.28	5194.26	384.98 S	266.82 E	-364.86	1.83
5335.00	11.48	137.19	5287.41	399.53 S	278.52 E	-378.54	1.69
5383.00	15.85	118.79	5334.06	406.19 S	287.52 E	-384.54	12.75
5430.00	19.84	111.72	5378.79	412.24 S	300.56 E	-389.64	9.64
5478.00	22.88	102.86	5423.50	417.33 S	317.23 E	-393.52	9.22
5524.00	25.74	86.92	5465.47	418.79 S	335.95 E	-393.63	15.51
5572.00	28.70	71.43	5508.20	414.55 S	357.31 E	-387.88	15.94
5619.00	31.29	57.99	5548.95	404.47 S	378.39 E	-376.31	15.29
5667.00	34.40	44.05	5589.33	388.09 S	398.42 E	-358.54	16.99
5713.00	37.14	31.75	5626.69	366.91 S	414.79 E	-336.24	16.71
5761.00	39.93	18.89	5664.30	339.97 S	427.43 E	-308.46	17.63
5808.00	41.18	10.71	5700.03	310.47 S	435.19 E	-278.48	11.63
5856.00	43.66	7.03	5735.47	278.49 S	440.16 E	-246.22	7.31
5903.00	46.71	4.63	5768.59	245.33 S	443.53 E	-212.91	7.42
5951.00	50.37	2.10	5800.37	209.43 S	445.62 E	-176.95	8.60
5998.00	53.66	359.00	5829.30	172.40 S	445.95 E	-139.99	8.72
6046.00	55.53	356.46	5857.10	133.31 S	444.39 E	-101.12	5.81
6093.00	55.50	355.38	5883.71	94.67 S	441.63 E	-62.77	1.90
6141.00	56.29	355.39	5910.63	55.05 S	438.44 E	-23.48	1.65
6187.00	57.89	357.07	5935.62	16.52 S	435.90 E	14.77	4.64
6235.00	61.13	0.17	5959.97	24.82 N	434.93 E	55.93	8.73
6282.00	67.39	1.42	5980.38	67.13 N	435.53 E	98.17	13.53
6330.00	71.27	1.12	5997.32	112.02 N	436.52 E	143.02	8.11
6377.00	78.28	359.19	6009.66	157.34 N	436.63 E	188.23	15.44
6433.00	84.42	357.22	6018.08	212.65 N	434.89 E	243.27	11.50
6521.00	87.10	356.83	6024.58	300.28 N	430.33 E	330.35	3.08
6613.00	87.32	355.95	6029.06	391.99 N	424.55 E	421.41	0.98
6704.00	87.72	356.76	6033.00	482.72 N	418.77 E	511.49	0.99
6797.00	87.26	358.10	6037.08	575.53 N	414.61 E	603.77	1.52
6889.00	88.37	358.16	6040.59	667.41 N	411.60 E	695.20	1.21
6982.00	89.78	358.87	6042.09	760.37 N	409.19 E	787.74	1.71
7076.00	91.45	0.09	6041.08	854.35 N	408.34 E	881.42	2.19
7171.00	92.31	359.83	6037.96	949.30 N	408.28 E	976.12	0.95
7266.00	90.80	358.60	6035.38	1044.25 N	406.97 E	1070.73	2.05
7360.00	89.01	357.89	6035.53	1138.20 N	404.09 E	1164.24	2.05
7455.00	89.51	358.15	6036.76	1233.14 N	400.82 E	1258.69	0.59
7549.00	89.60	359.32	6037.49	1327.11 N	398.74 E	1352.28	1.24
7644.00	90.55	1.01	6037.37	1422.11 N	399.01 E	1447.05	2.05
7739.00	90.92	1.33	6036.14	1517.08 N	400.95 E	1541.91	0.52
7834.00	91.23	1.31	6034.35	1612.04 N	403.14 E	1636.78	0.32
7929.00	90.77	359.96	6032.69	1707.01 N	404.19 E	1731.59	1.50
8023.00	89.26	358.31	6032.67	1801.00 N	402.77 E	1825.23	2.38
8118.00	89.88	357.56	6033.38	1895.93 N	399.35 E	1919.68	1.02
8213.00	91.88	355.61	6031.92	1990.74 N	393.69 E	2013.84	2.94
8307.00	92.37	355.11	6028.44	2084.37 N	386.09 E	2106.68	0.75
8402.00	91.48	356.01	6025.24	2179.03 N	378.74 E	2200.57	1.34
8497.00	91.20	357.27	6023.02	2273.84 N	373.17 E	2294.73	1.35
8591.00	91.63	358.46	6020.69	2367.74 N	369.66 E	2388.15	1.34
8686.00	91.91	358.96	6017.76	2462.67 N	367.52 E	2482.68	0.61
8781.00	91.45	358.98	6014.97	2557.61 N	365.82 E	2577.25	0.49
8876.00	90.06	358.85	6013.72	2652.59 N	364.02 E	2671.85	1.47
8971.00	90.25	358.51	6013.46	2747.56 N	361.83 E	2766.43	0.41
9065.00	90.18	358.76	6013.11	2841.53 N	359.59 E	2860.00	0.27
9160.00	90.15	358.42	6012.83	2936.50 N	357.25 E	2954.56	0.36
9255.00	90.80	358.82	6012.04	3031.47 N	354.96 E	3049.12	0.80
9350.00	90.89	358.75	6010.63	3126.44 N	352.94 E	3143.70	0.12
9445.00	90.83	358.79	6009.20	3221.41 N	350.90 E	3238.27	0.08
9539.00	90.92	358.35	6007.76	3315.37 N	348.56 E	3331.82	0.47
9634.00	91.20	358.32	6006.00	3410.31 N	345.80 E	3426.32	0.29
9729.00	91.33	357.69	6003.90	3505.23 N	342.50 E	3520.76	0.68
9824.00	91.88	357.69	6001.25	3600.11 N	338.66 E	3615.13	0.58
9919.00	91.36	358.00	5998.56	3695.01 N	335.09 E	3709.52	0.65
10014.00	91.05	358.51	5996.57	3789.94 N	332.20 E	3804.01	0.63
10109.00	91.05	358.52	5994.83	3884.90 N	329.75 E	3898.54	0.01
10203.00	92.34	358.05	5992.05	3978.81 N	326.93 E	3992.01	1.47
10298.00	91.48	359.34	5988.89	4073.73 N	324.77 E	4086.53	1.64
10393.00	90.34	0.17	5987.38	4168.71 N	324.36 E	4181.24	1.49
10488.00	90.92	359.78	5986.33	4263.71 N	324.32 E	4275.99	0.74

10582.00	89.69	0.70	5985.82	4357.70 N	324.72 E	4369.77	1.64
10677.00	90.96	0.60	5985.29	4452.69 N	325.80 E	4464.59	1.33
10709.00	91.51	0.44	5984.60	4484.68 N	326.09 E	4496.52	1.81
10777.00	91.51	0.44	5982.81	4552.66 N	326.61 E	4564.36	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 4.11 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 10777.00 FEET
IS 4564.36 FEET ALONG 4.10 DEGREES (GRID)

Date Printed:15 April 2015