

DGR Dual Gamma Ray

1 : 240

[illegible]

WELL INFORMATION

MWD Run Number	100	200	300		
Date run completed	28-Apr-13	30-Apr-13	05-May-13		
Rig Bit Number	0100	0200	0300		
Bit Size (in)	8.750	8.750	6.125		
Tool Nominal OD (in)	6.750	6.750	4.750		
Log Start Depth (MD, ft)	967.00	6,560.00	7,610.00		
Log End Depth (MD, ft)	6,560.00	7,610.00	11,607.00		
Drill or Wipe	Drill	Drill	Drill		
Drill/Wipe Start Date and Time	26-Apr-13 01:00	28-Apr-13 21:00	02-May-13 16:42		
Drill/Wipe End Date and Time	28-Apr-13 12:45	30-Apr-13 06:07	04-May-13 19:40		
Min Inc (deg) @ Depth (MD, ft)	.03 @ 6,257.00	2.52 @ 6,580.00	88.89 @ 9,823.00		
Max Inc (deg) @ Depth (MD, ft)	11.42 @ 4,715.00	89.40 @ 7,610.00	93.33 @ 9,309.00		
Bit TFA(in2) / Bit Type	1.86 / PDC	1.20 / PDC	.98 / PDC		
Flow Rate (gpm)	553.43	547.31	296.76		
Max AV (fpm) / CV (fpm) @ MWD	379.4 / 269.2	379.3 / 312.9	399.6 / 302.4		
Fluid Type	Fresh Water Gel	Fresh Water Gel	Fresh Water Gel		
Density (ppg) / Viscosity (spqt)	9.28 / 38.00	10.00 / 38.00	9.35 / 9.00		
Filtrate CL (ppm)	1,300.00	1,800.00	1,800.00		
pH / Fluid Loss (mptm)	8.00 / 8	9.00 / 7	10.00 / 6		
PV (cP) / YP (lbf2)	10 / 8.00	9 / 10.00	9 / 5.00		
% Solids / % Sand	7.00 / 0.25	8.5 / 0.25	6.50 / 0.10		
% Oil / Oil:Water Ratio	N/A / N/A	N/A / N/A	N/A / N/A		
Rm @ Measured Temp (degF)	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		
Rmc @ Measured Temp (degF)	N/A @ N/A	N/A @ N/A	N/A @ N/A		
Max Tool Temp (degF) / Source	160.83 / PCM	172.78 / PCM	233.18 / HCIM		
Rm @ Max Tool Temp (degF)	N/A @ N/A	N/A @ N/A	N/A @ N/A		
Lead MWD Engineer	Clay Wass	Matt Busche	Matt Busche		
Customer Representative	Will Pettijohn	Will Pettijohn	Will Pettijohn		

SENSOR INFORMATION

Downhole Processor Information

Tool Type	PCM	PCM	HCIM		
Software Version	5.76	5.76	88.47		
Sub Serial Number	11344330	11344330	90359217		
Insert Serial Number	10809550	11680744	11494299		
Date and Time Initialized	25-Apr-13 18:18	27-Apr-13 22:28	02-May-13 07:15		
Date and Time Read	28-Apr-13 21:37	30-Apr-13 15:30	05-May-13 14:58		
ECMB SW Version	N/A	N/A	N/A		

Directional Sensor Information

Tool Type	PCDC	PCDC	PCDC		
Distance From Bit (ft)	55.87	49.00	43.78		
Software Version	6.21	6.21	6.21		
Sub Serial Number	11344330	11344330	11991621		
Sonde Serial Number	10859922	11478094	10859922		
Sensor ID Number	N/A	N/A	N/A		
Toolface Offset (deg)	153.21	102.63	270.36		

Gamma Ray Sensor Information

Tool Type		PCG	DGR		
Distance From Bit (ft)		51.50	65.76		
Recorded Sample Period (sec)		10	8		
Software Version		8.15	N/A		
Sub Serial Number		11344330	90359217		
Insert/Sonde Serial Number		11293394	228097		

REMARKS

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

2. No depth corrections have been made for pipe stretch or compression.

3. All data presented is recorded data unless otherwise specified.

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

PGRC (Corrected Gamma Ray):

Interval Resolution: 0.5 ft

Interval Distance: 0.6 ft

Gap Fill: 3.0 ft

DGRC (Corrected Gamma Ray):

Interval Resolution: 0.5 ft

Interval Distance: 0.6 ft

Gap Fill: 3.0 ft

ROPA (Average Rate Of Penetration):

Interval Resolution: 0.5 ft

Interval Distance: 1.2 ft

Gap Fill: 3.0 ft

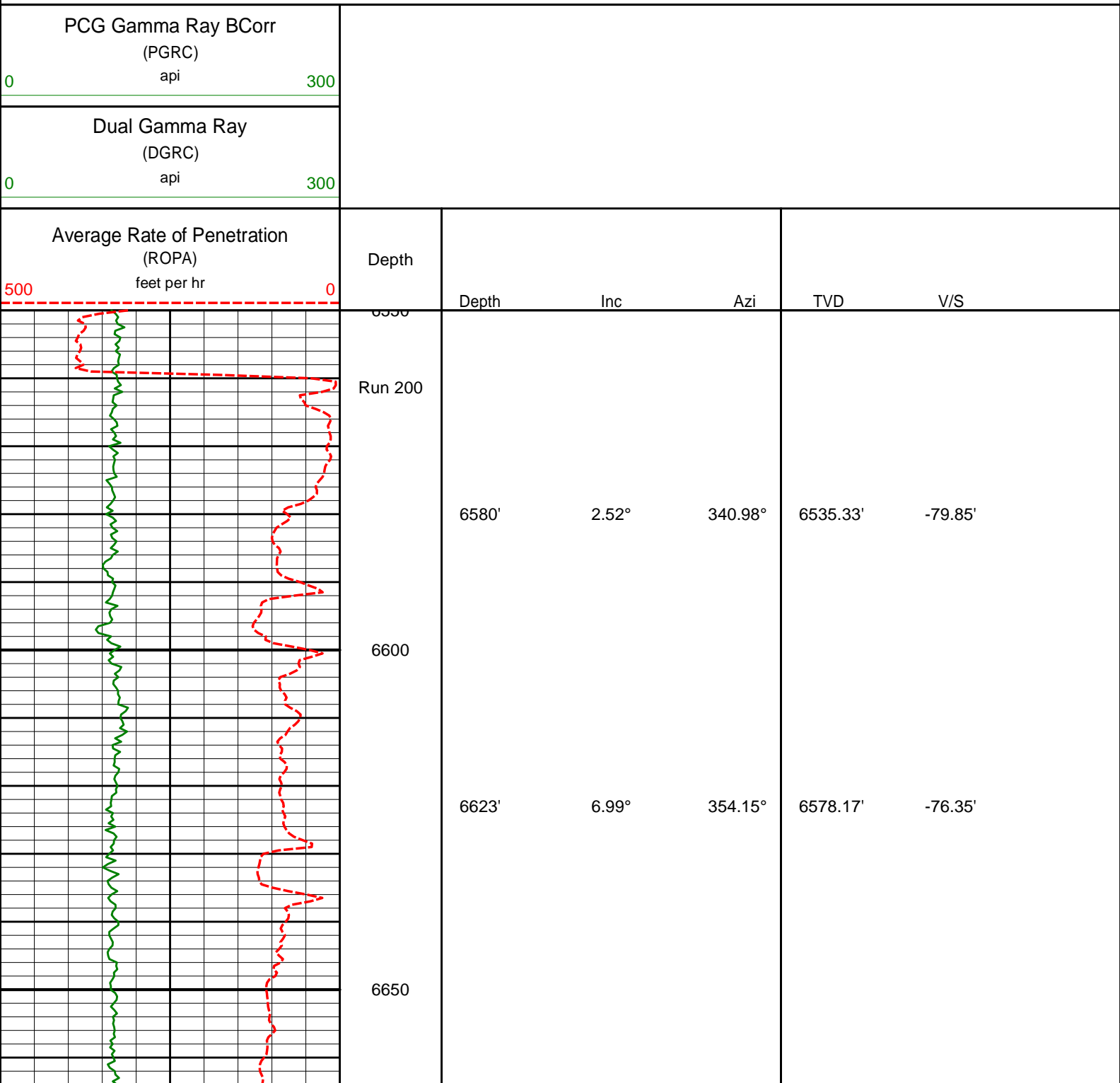
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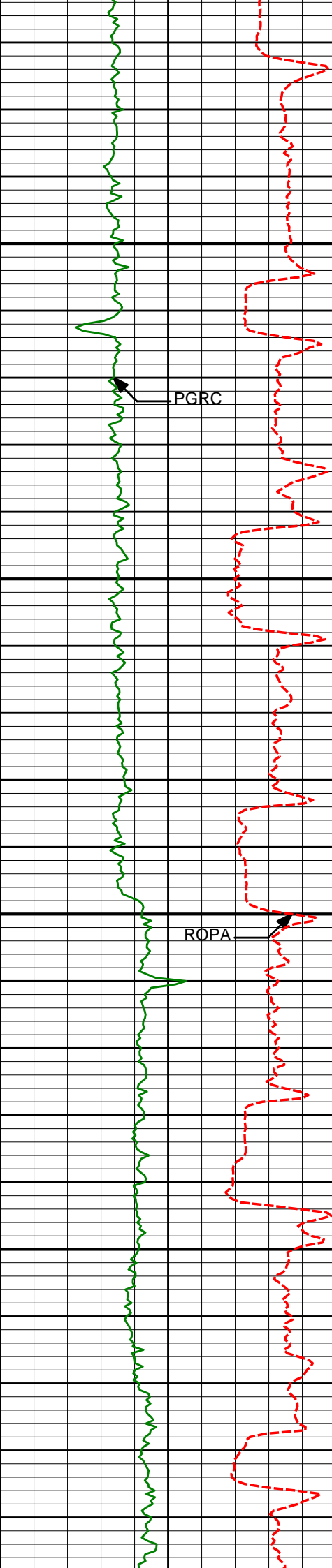
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MD Main Log 1:240





6700

6750

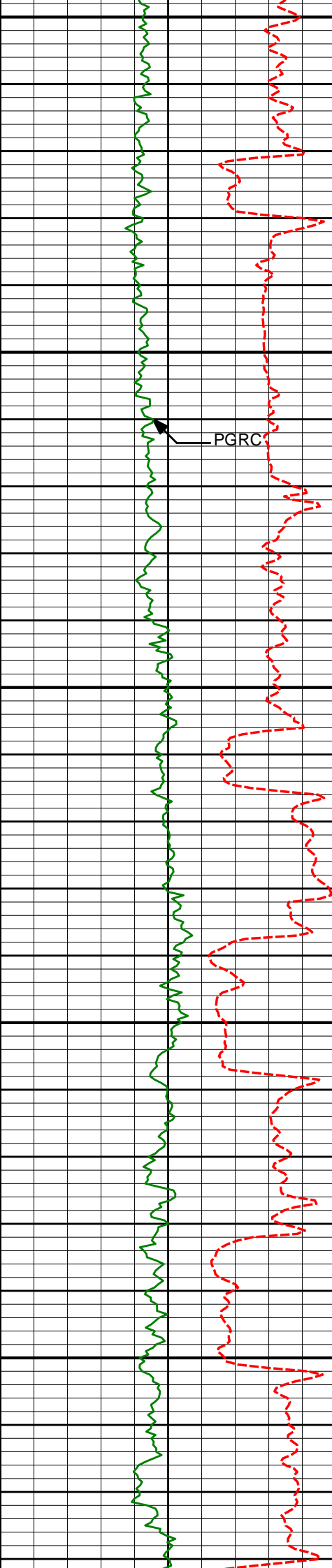
6800

6850

PGRC

ROPA

6665'	11.77°	0.25°	6619.59'	-69.52'
6708'	16.43°	2.93°	6661.29'	-59.05'
6751'	19.42°	3.42°	6702.20'	-45.84'
6794'	22.64°	4.30°	6742.33'	-30.45'
6837'	25.40°	3.91°	6781.60'	-12.99'
6880'	28.28°	0.87°	6819.96'	6.40'



6900

6922'

32.34°

0.75°

6856.22'

27.59'

6950

6965'

38.47°

3.39°

6891.25'

52.47'

7000

7008'

43.96°

3.87°

6923.58'

80.74'

7050

7051'

46.83°

4.14°

6953.77'

111.28'

7100

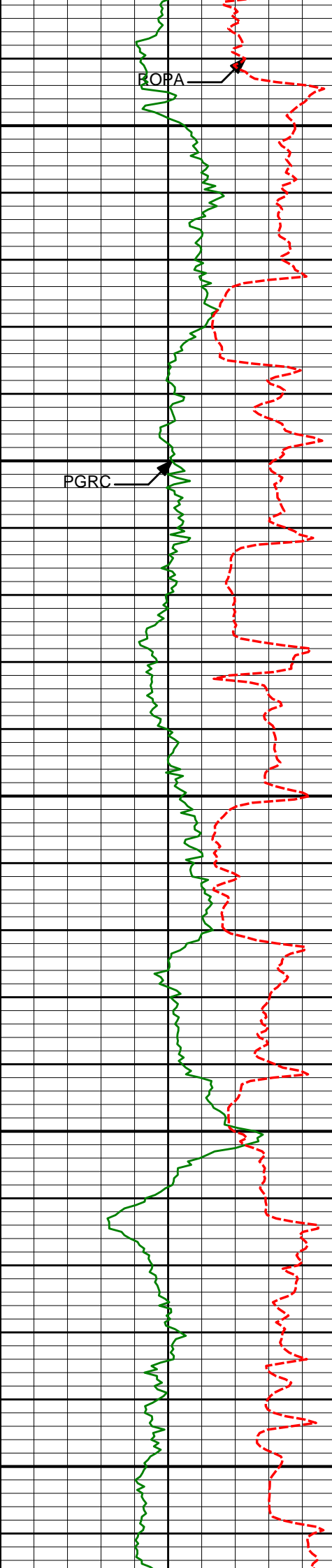
7094'

49.55°

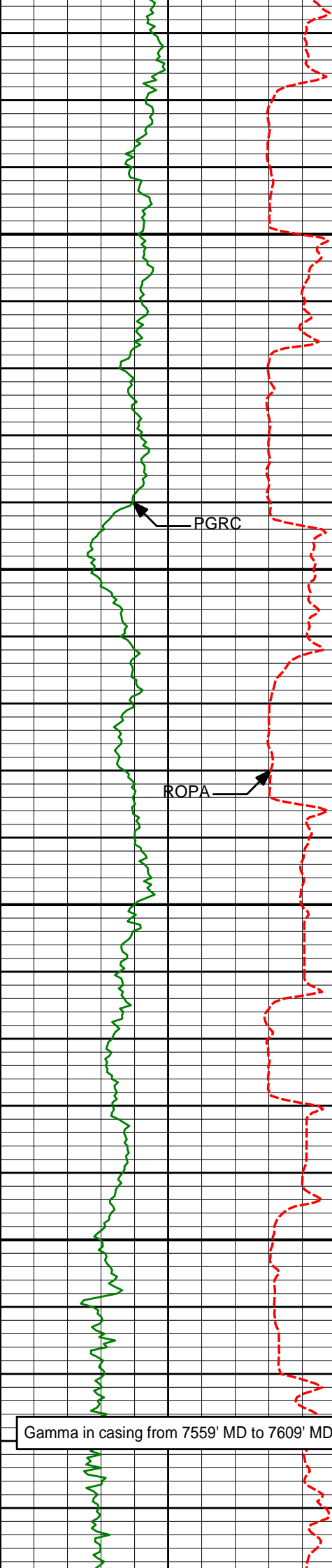
3.79°

6982.44'

143.25'



7150	7137'	53.94°	1.59°	7009.06'	176.97'
7200	7180'	57.91°	0.29°	7033.15'	212.58'
7250	7223'	62.10°	359.98°	7054.64'	249.81'
7300	7265'	65.45°	0.51°	7073.19'	287.48'
7350	7308'	68.71°	0.76°	7089.93'	327.08'
7400	7350'	71.73°	360.00°	7104.14'	366.60'



7393' 74.31° 357.50° 7116.70' 407.70'

7400

7436' 76.24° 356.89° 7127.63' 449.24'

7450

PGRC

7479' 79.77° 355.32° 7136.57' 491.19'

ROPA

7500

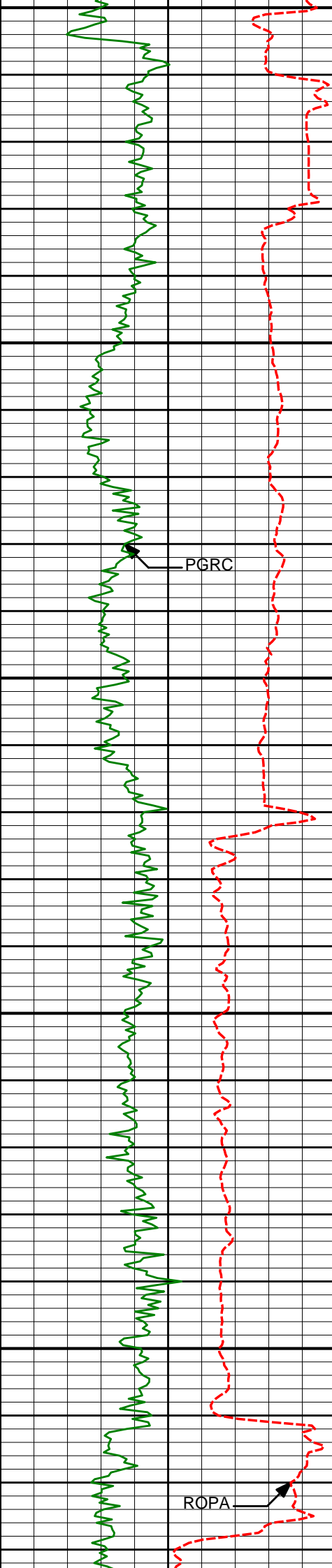
7522' 83.07° 355.60° 7142.98' 533.57'

7550

Gamma sensor change from PCG to DGR @ 7559' MD

7561' 85.09° 355.37° 7147.01' 572.23'

Gamma in casing from 7559' MD to 7609' MD



7600

7" Casing Shoe @ 7609' MD / 7150.16' TVD

Run 300

7650

7674'

90.43°

355.57°

7151.42'

684.74'

PGRC

7700

7750

7767'

91.60°

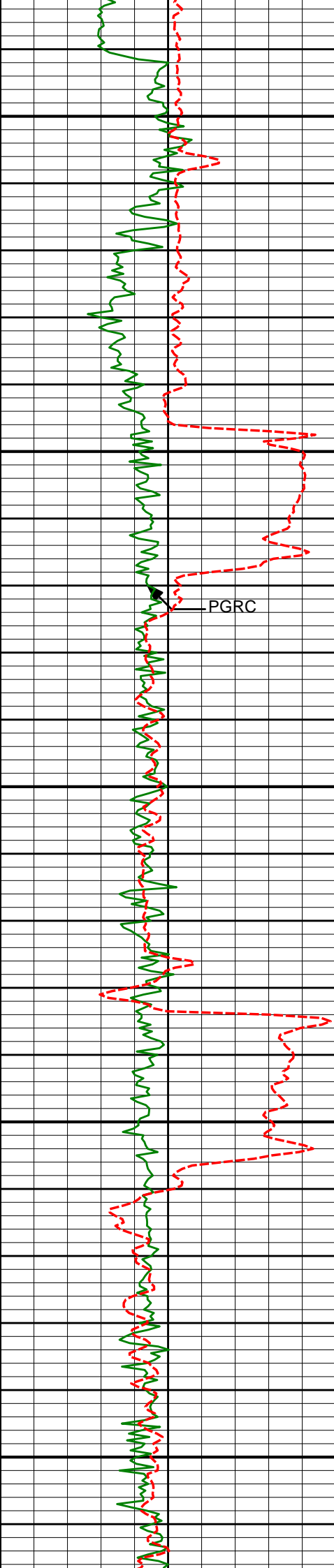
354.94°

7149.76'

777.40'

7800

ROPA



7850

7853'

91.79°

355.59°

7147.22'

863.06'

7900

PGRC

7950

7939'

91.11°

356.21°

7145.04'

948.81'

8000

8024'

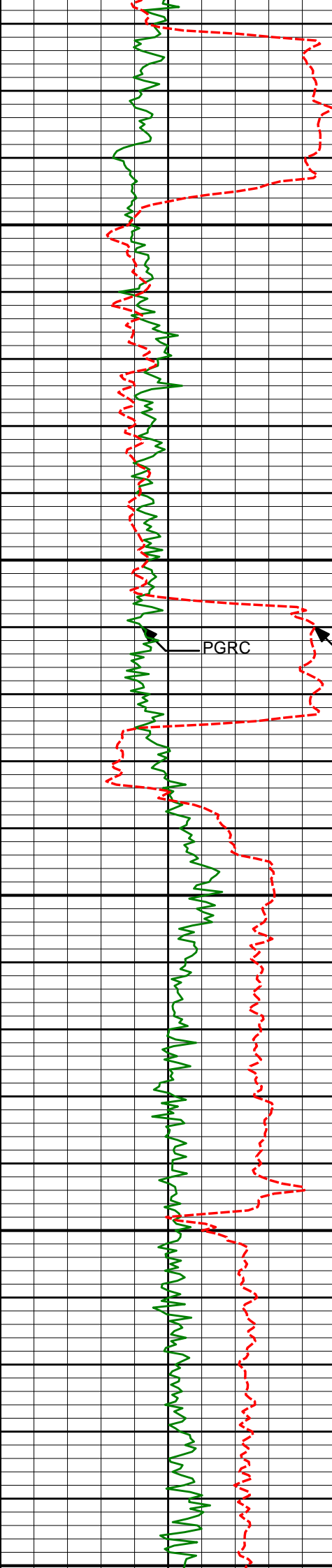
91.85°

356.90°

7142.84'

1033.62'

8050



8100

8110'

92.04°

357.66°

7139.92'

1119.47'

8150

PGRC

ROPA

8200

8196'

91.67°

358.35°

7137.14'

1205.36'

8250

8281'

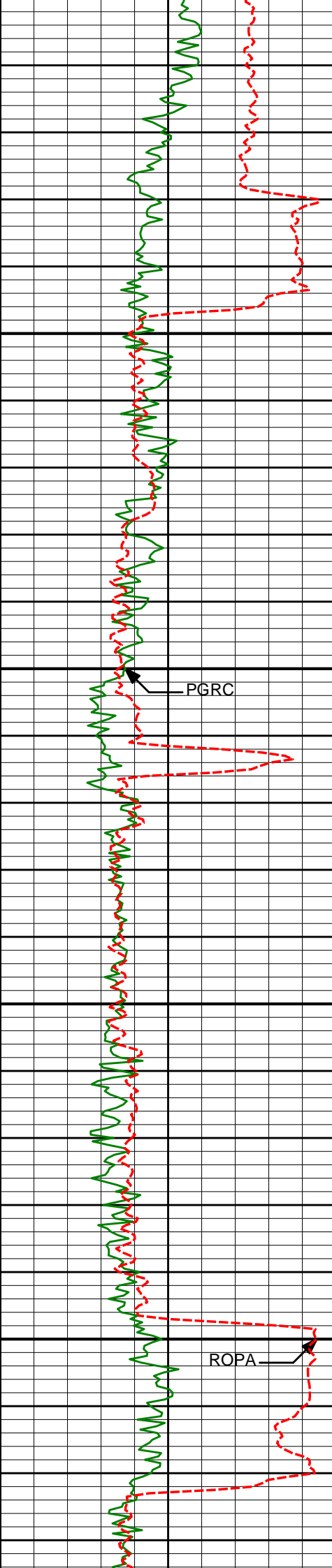
91.85°

358.06°

7134.52'

1290.28'

8300



8350

8367'

90.86°

358.38°

7132.48'

1376.21'

8400

PGRC

8450

8453'

91.73°

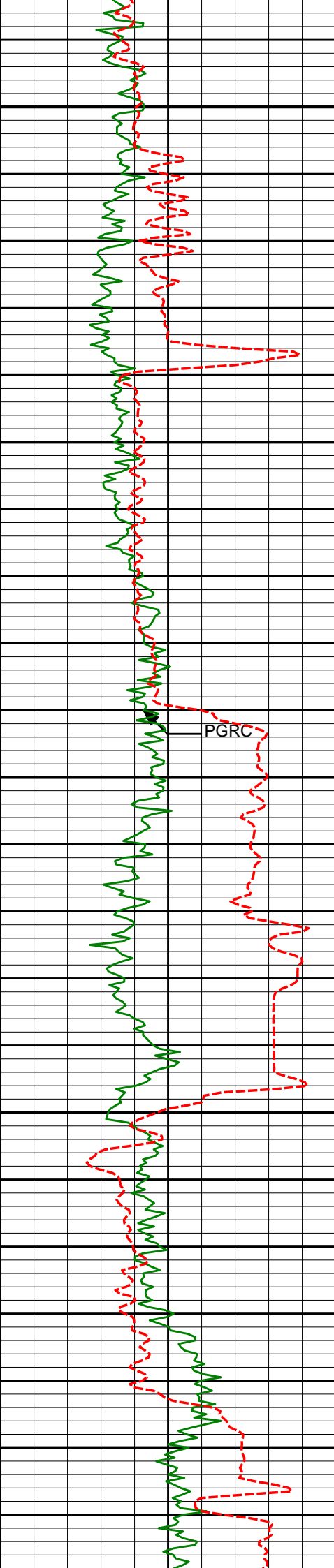
358.50°

7130.54'

1462.15'

8500

ROPA



8550

8600

8650

8700

8750

PGRC

8539'

91.30°

0.12°

7128.27'

1548.11'

8624'

90.80°

359.09°

7126.71'

1633.09'

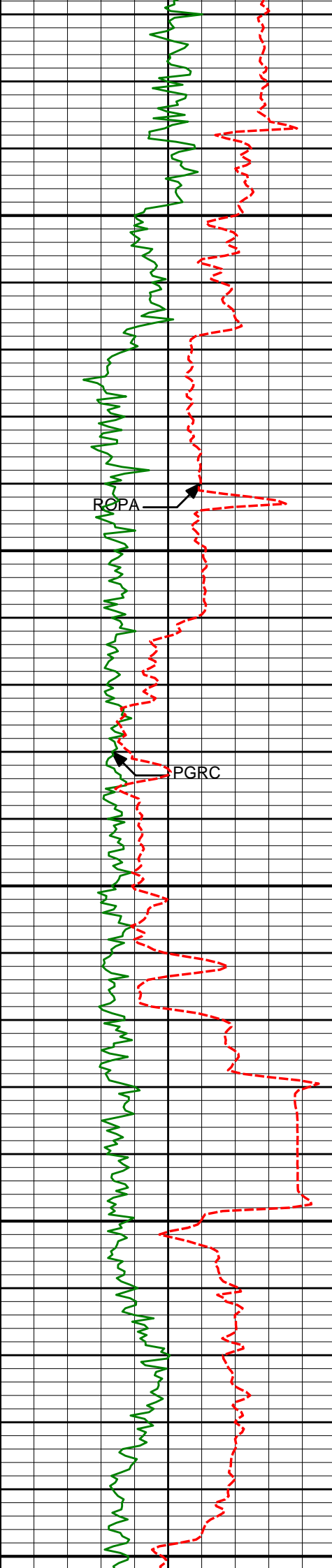
8710'

91.05°

1.10°

7125.32'

1719.08'



8800

8850

8900

8950

9000

8796'

90.80°

1.05°

7123.93'

1805.05'

8881'

90.86°

0.55°

7122.69'

1890.04'

8967'

91.36°

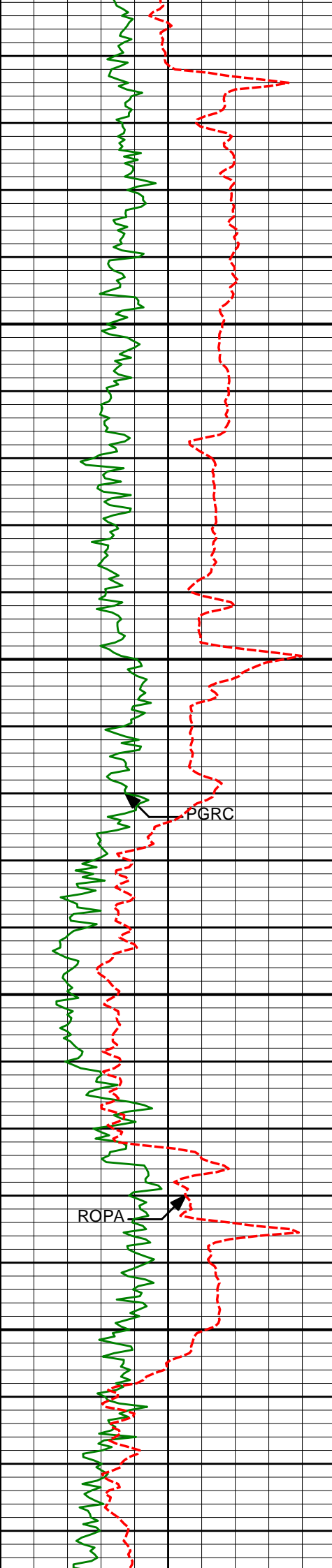
2.30°

7121.02'

1975.99'

RCPA

PGRC



9050

9053'

91.23°

2.07°

7119.08'

2061.91'

9100

PGRC

9139'

91.61°

1.85°

7116.95'

2147.84'

9150

ROPA

9200

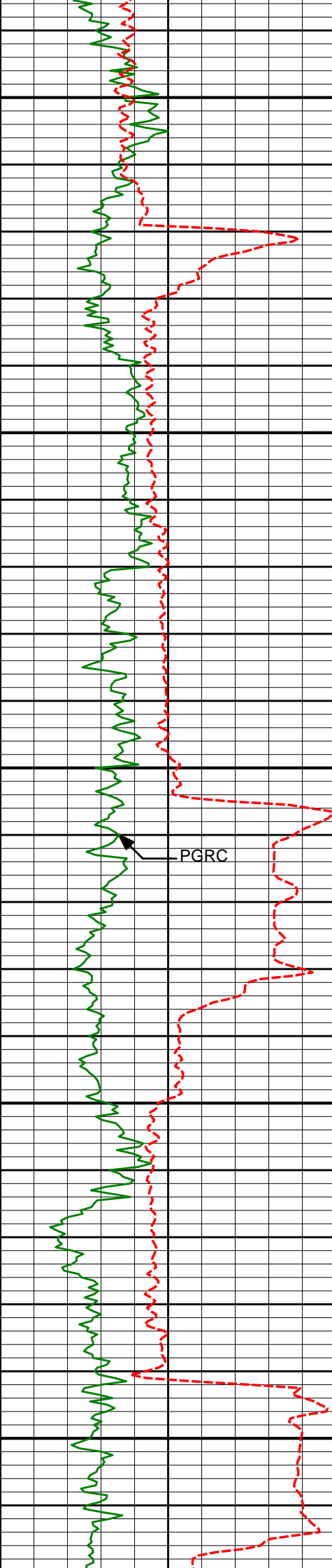
9224'

92.22°

1.66°

7114.10'

2232.75'



9250

9300

9350

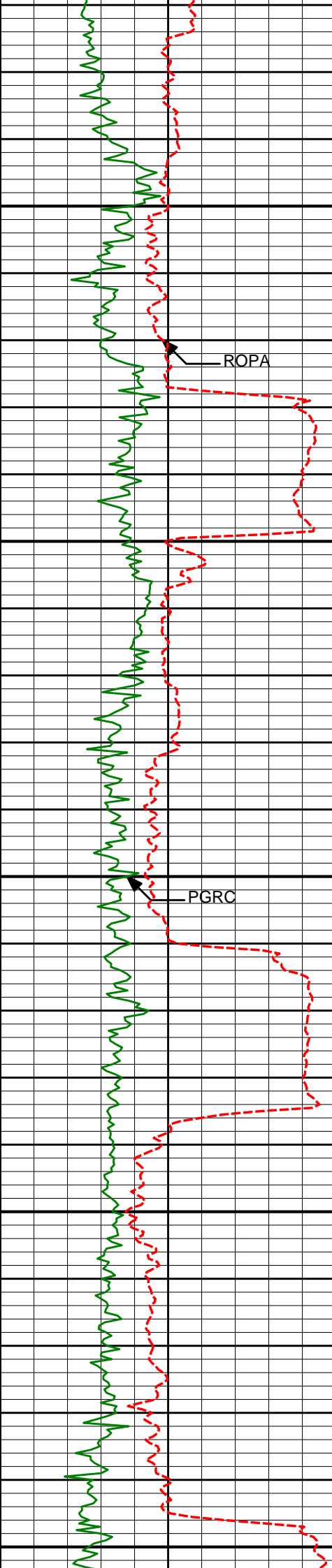
9400

9450

PGRC

9309'	93.33°	1.81°	7109.98'	2317.61'
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9395'	92.16°	1.50°	7105.86'	2403.48'
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9500

9550

9600

9650

9700

ROPA

PGRC

9481'

92.04°

2.12°

7102.71'

2489.38'

9566'

91.36°

2.30°

7100.19'

2574.29'

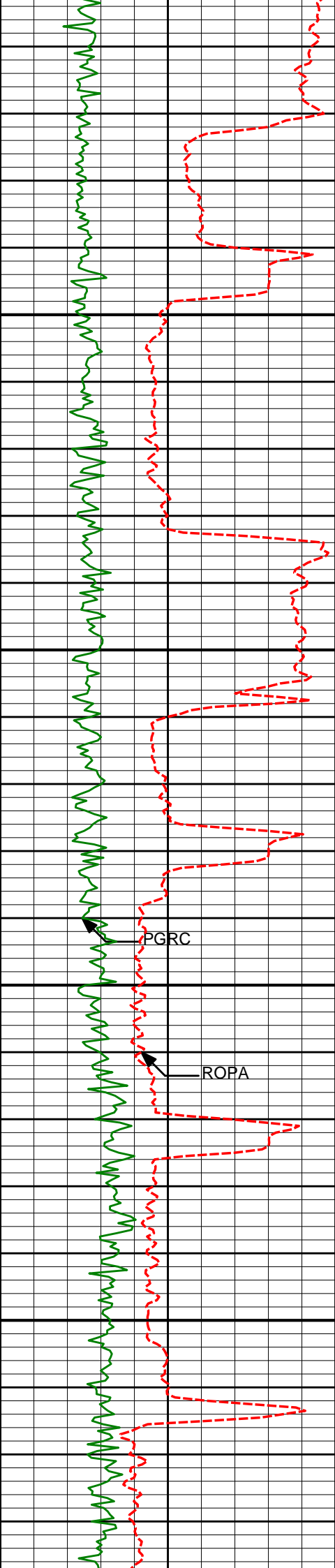
9652'

90.80°

3.16°

7098.56'

2660.18'



9738'

89.75°

3.18°

7098.15'

2746.05'

9750

9800

9823'

88.89°

1.98°

7099.15'

2830.96'

9850

PGRC

ROPA

9900

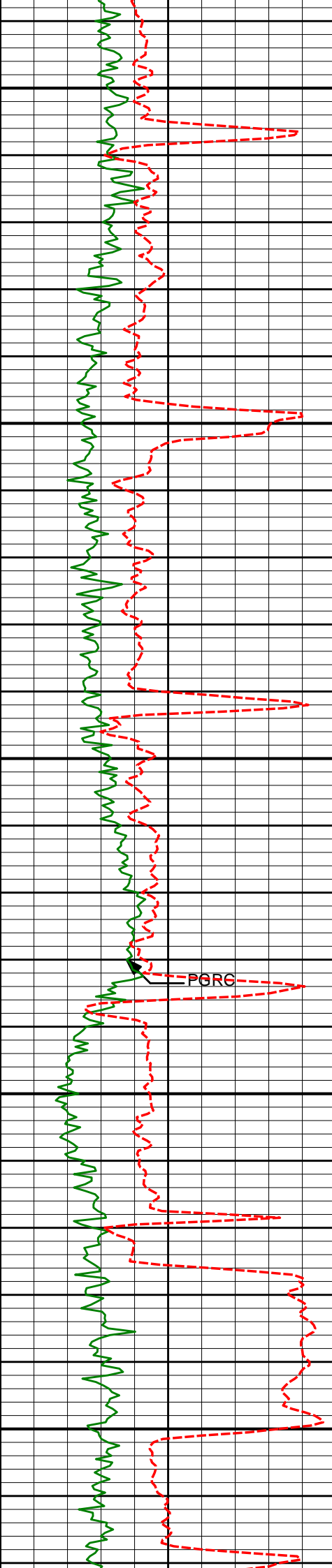
9909'

89.44°

1.97°

7100.40'

2916.90'



9950

9994'

90.00°

1.70°

7100.82'

3001.86'

10000

10050

10079'

91.17°

1.74°

7099.95'

3086.81'

10100

10150

10165'

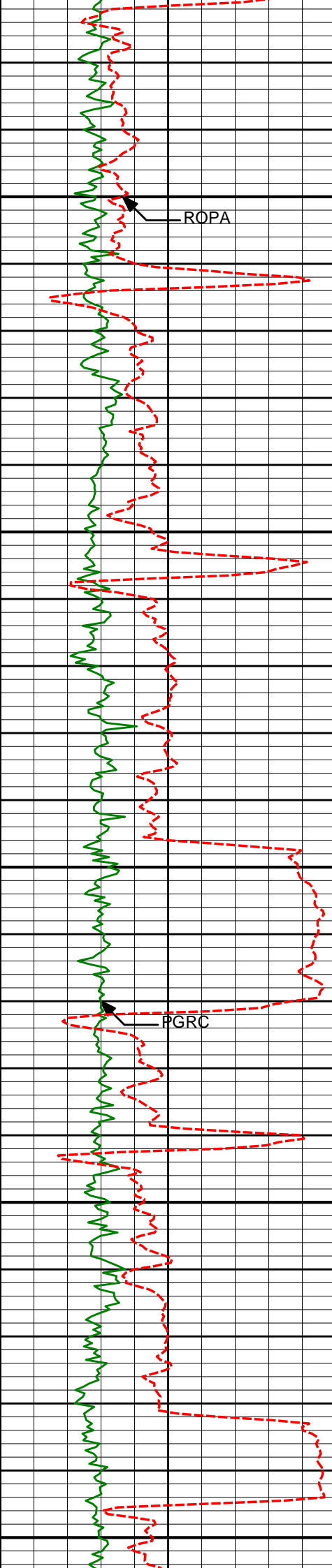
89.57°

1.48°

7099.39'

3172.78'

PGRC



10200

ROPA

10250

10300

PGRC

10350

10400

10250'

90.68°

1.55°

7099.21'

3257.75'

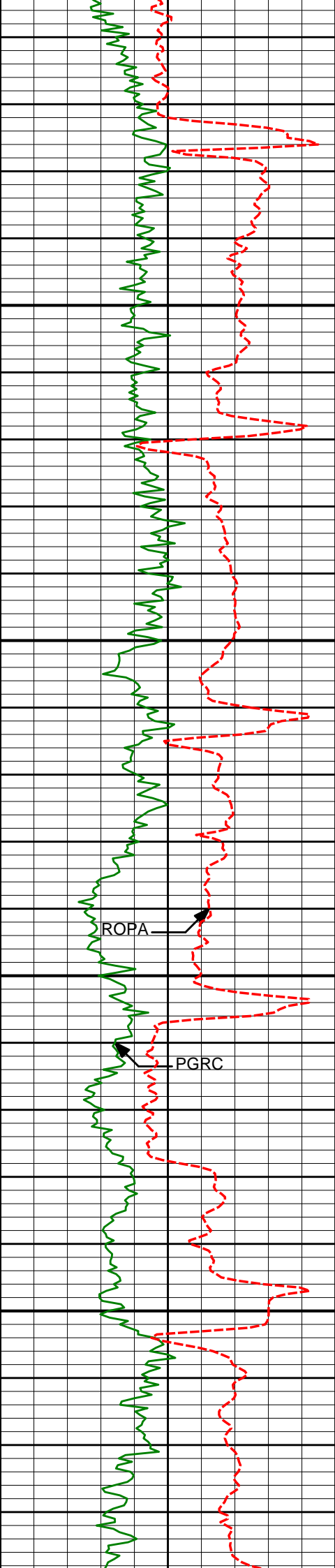
10336'

89.81°

0.83°

7098.84'

3343.73'



10421'

89.88°

0.87°

7099.07'

3428.72'

10450

10500

10506'

89.51°

0.10°

7099.52'

3513.72'

ROPA

10550

PGRC

10592'

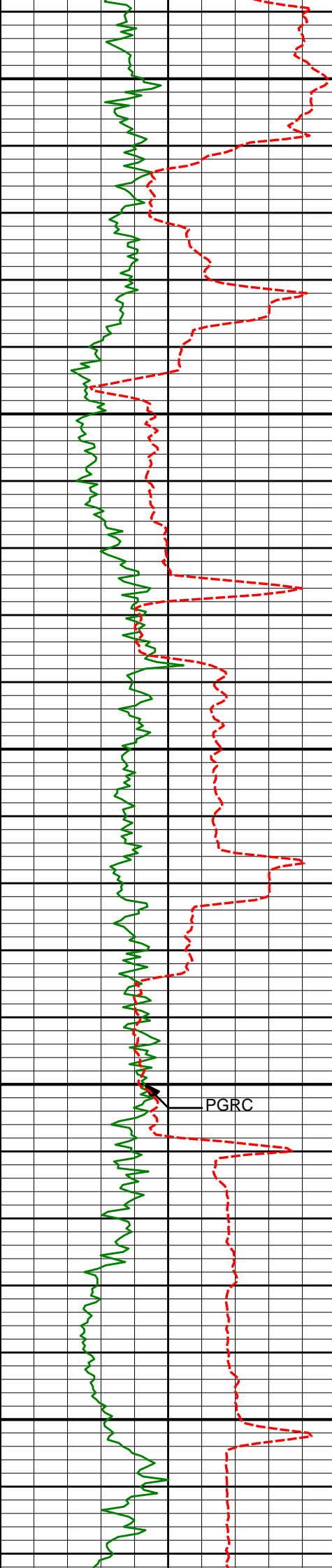
90.12°

0.39°

7099.80'

3599.72'

10600



10650

10678'

89.32°

0.03°

7100.22'

3685.71'

10700

10750

10763'

90.00°

359.64°

7100.72'

3770.71'

10800

PGRC

10850

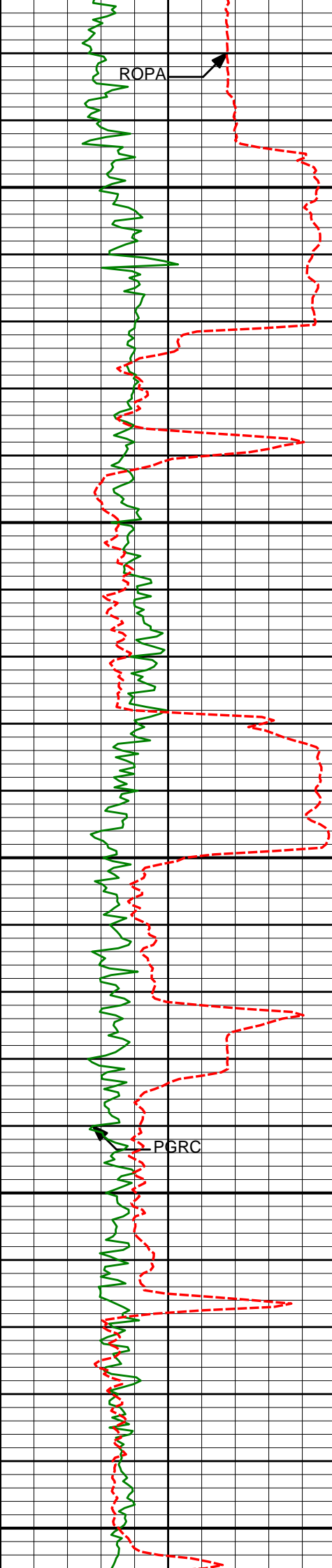
10848'

90.74°

359.72°

7100.17'

3855.71'



10900

10950

11000

11050

11100

10934'

90.19°

359.91°

7099.48'

3941.70'

11020'

89.14°

0.16°

7099.99'

4027.70'

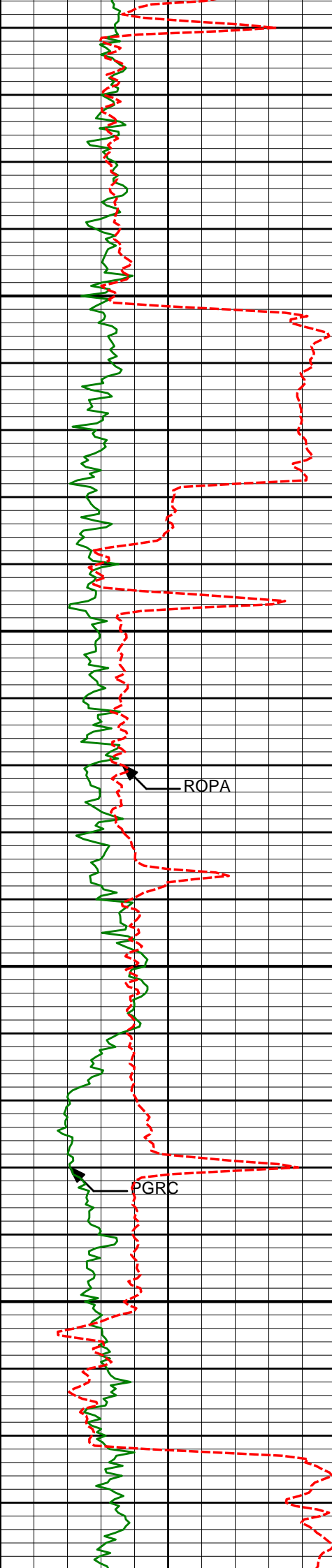
11105'

90.49°

359.93°

7100.26'

4112.70'



11150

11200

11250

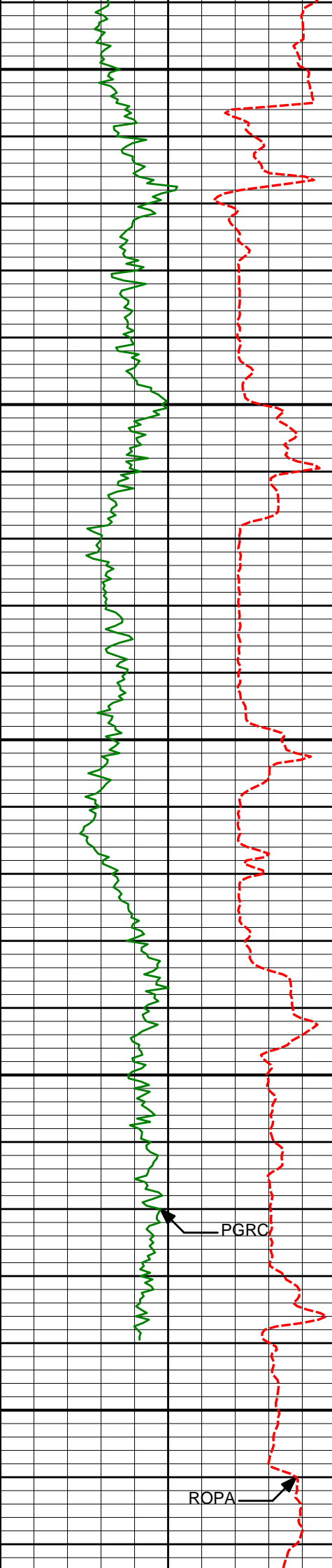
11300

ROPA

PGRC

11191'	90.19°	0.60°	7099.75'	4198.70'
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11277'	91.48°	0.88°	7098.50'	4284.68'
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11350

11362'

90.37°

1.17°

7097.13'

4369.65'

11400

11447'

90.99°

1.00°

7096.12'

4454.63'

11450

11500

PGRC

11533'

91.55°

0.74°

7094.22'

4540.60'

11550

ROPA

11561'

91.61°

0.47°

7093.45'

4568.59'

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HALLIBURTON

DIRECTIONAL SURVEY REPORT

Anadarko PC
Melbon 19N-E8HZ
Wattenburg
Weld Colorado
USA
CA-XX-0900217525

Measured Depth (feet)	Inclination (degrees)	Direction (degrees)	Vertical Depth (feet)	Latitude (feet)	Departure (feet)	Vertical Section (feet)	Dogleg (deg/100ft)
976.00	0.91	325.63	975.91	6.13 N	11.23 W	6.12	TIE-IN
1345.00	0.68	356.05	1344.88	10.73 N	13.03 W	10.72	0.13
1619.00	0.84	328.78	1618.85	14.07 N	14.19 W	14.05	0.14
1745.00	0.71	105.07	1744.85	14.65 N	13.91 W	14.64	1.14
1802.00	2.08	114.06	1801.83	14.14 N	12.63 W	14.13	2.43
1894.00	5.01	110.08	1893.64	12.08 N	7.32 W	12.07	3.19
1986.00	4.95	112.72	1985.30	9.16 N	0.11 E	9.17	0.26
2077.00	6.47	111.16	2075.84	5.80 N	8.52 E	5.80	1.68
2169.00	7.36	113.17	2167.17	1.60 N	18.78 E	1.62	1.00
2261.00	8.86	108.81	2258.25	3.00 S	30.90 E	-2.97	1.75
2352.00	9.98	106.04	2348.02	7.44 S	45.11 E	-7.39	1.33
2444.00	10.20	99.73	2438.60	11.02 S	60.80 E	-10.95	1.22
2535.00	8.90	99.94	2528.34	13.59 S	75.67 E	-13.51	1.43
2627.00	9.27	95.70	2619.19	15.56 S	90.04 E	-15.46	0.83
2718.00	9.42	100.93	2708.98	17.70 S	104.65 E	-17.59	0.95
2810.00	11.17	101.93	2799.50	20.97 S	120.76 E	-20.84	1.91
2902.00	10.00	104.64	2889.93	24.83 S	137.21 E	-24.69	1.38
2993.00	11.34	102.87	2979.35	28.82 S	153.58 E	-28.66	1.51
3086.00	10.10	103.88	3070.73	32.81 S	170.41 E	-32.63	1.34
3172.00	10.60	98.18	3155.33	35.75 S	185.56 E	-35.55	1.32
3258.00	9.82	96.49	3239.97	37.70 S	200.68 E	-37.49	0.97
3343.00	10.73	99.61	3323.61	39.84 S	215.68 E	-39.62	1.25
3429.00	9.59	97.60	3408.26	42.13 S	230.67 E	-41.88	1.38
3515.00	10.29	98.21	3492.97	44.17 S	245.37 E	-43.91	0.82
3601.00	10.39	98.88	3577.57	46.47 S	260.64 E	-46.19	0.18
3686.00	8.67	99.63	3661.39	48.72 S	274.53 E	-48.43	2.02
3772.00	9.09	106.52	3746.37	51.74 S	287.43 E	-51.43	1.33
3858.00	7.62	105.94	3831.45	55.23 S	299.43 E	-54.92	1.71
3943.00	8.90	106.58	3915.57	58.66 S	311.15 E	-58.33	1.50

4345.00	8.35	108.38	5313.37	58.68 S	517.13 E	-58.33	1.36
4029.00	9.35	97.27	4000.48	61.44 S	324.45 E	-61.10	1.79
4115.00	11.21	100.02	4085.10	63.78 S	339.62 E	-63.42	2.24
4286.00	9.27	96.13	4253.37	68.14 S	369.69 E	-67.75	1.20
4372.00	9.56	101.28	4338.21	70.28 S	383.59 E	-69.88	1.04
4458.00	10.31	104.39	4422.92	73.59 S	398.04 E	-73.17	1.07
4543.00	11.39	98.11	4506.40	76.66 S	413.72 E	-76.23	1.88
4629.00	10.57	96.11	4590.83	78.70 S	429.97 E	-78.25	1.04
4715.00	11.42	101.42	4675.25	81.22 S	446.16 E	-80.76	1.53
4800.00	10.98	99.75	4758.63	84.26 S	462.38 E	-83.78	0.65
4886.00	7.66	90.67	4843.49	85.72 S	476.19 E	-85.22	4.20
4972.00	5.23	78.35	4928.94	84.99 S	485.77 E	-84.48	3.24
5057.00	4.15	65.06	5013.66	82.91 S	492.35 E	-82.40	1.80
5143.00	3.80	69.00	5099.45	80.58 S	497.83 E	-80.06	0.52
5229.00	3.38	69.92	5185.29	78.69 S	502.87 E	-78.16	0.49
5315.00	3.88	97.16	5271.12	78.18 S	508.14 E	-77.65	2.06
5400.00	4.14	93.24	5355.91	78.71 S	514.06 E	-78.17	0.44
5486.00	3.46	98.99	5441.72	79.29 S	519.72 E	-78.75	0.91
5572.00	3.21	91.67	5527.58	79.77 S	524.68 E	-79.22	0.57
5657.00	2.62	102.67	5612.47	80.26 S	528.95 E	-79.71	0.95
5743.00	1.79	107.97	5698.40	81.11 S	532.15 E	-80.55	0.98
5829.00	1.59	100.11	5784.37	81.73 S	534.61 E	-81.17	0.36
5914.00	0.84	76.11	5869.35	81.79 S	536.37 E	-81.23	1.05
6000.00	0.25	193.02	5955.34	81.82 S	536.94 E	-81.26	1.14
6086.00	0.17	69.80	6041.34	81.95 S	537.02 E	-81.39	0.43
6172.00	0.16	298.20	6127.34	81.85 S	537.04 E	-81.29	0.35
6257.00	0.03	203.22	6212.34	81.82 S	536.93 E	-81.26	0.19
6343.00	0.17	324.10	6298.34	81.74 S	536.85 E	-81.18	0.21
6429.00	0.33	325.37	6384.34	81.43 S	536.63 E	-80.87	0.19
6502.00	0.39	266.31	6457.34	81.27 S	536.26 E	-80.71	0.49
6537.00	0.31	263.47	6492.34	81.29 S	536.05 E	-80.73	0.24
6580.00	2.52	340.98	6535.33	80.41 S	535.63 E	-79.85	5.76
6623.00	6.99	354.15	6578.17	76.91 S	535.05 E	-76.35	10.64
6665.00	11.77	0.25	6619.59	70.08 S	534.81 E	-69.52	11.59
6708.00	16.43	2.93	6661.29	59.61 S	535.14 E	-59.05	10.96
6751.00	19.42	3.42	6702.20	46.40 S	535.88 E	-45.84	6.94
6794.00	22.64	4.30	6742.33	31.01 S	536.92 E	-30.45	7.53
6837.00	25.40	3.91	6781.60	13.55 S	538.17 E	-12.99	6.44
6880.00	28.28	0.87	6819.96	5.84 N	538.96 E	6.40	7.41
6922.00	32.34	0.75	6856.22	27.03 N	539.25 E	27.59	9.68
6965.00	38.47	3.39	6891.25	51.91 N	540.20 E	52.47	14.69
7008.00	43.96	3.87	6923.58	80.17 N	542.00 E	80.74	12.79
7051.00	46.83	4.14	6953.77	110.71 N	544.14 E	111.28	6.68
7094.00	49.55	3.79	6982.44	142.68 N	546.35 E	143.25	6.36
7137.00	53.94	1.59	7009.06	176.40 N	547.92 E	176.97	10.97
7180.00	57.91	0.29	7033.15	212.00 N	548.49 E	212.58	9.56
7223.00	62.10	359.98	7054.64	249.23 N	548.58 E	249.81	9.78
7265.00	65.45	0.51	7073.19	286.91 N	548.74 E	287.48	8.06
7308.00	68.71	0.76	7089.93	326.51 N	549.18 E	327.08	7.59
7350.00	71.73	360.00	7104.14	366.02 N	549.44 E	366.60	7.38
7393.00	74.31	357.50	7116.70	407.13 N	548.54 E	407.70	8.18
7436.00	76.24	356.89	7127.63	448.67 N	546.50 E	449.24	4.70
7479.00	79.77	355.32	7136.57	490.62 N	543.64 E	491.19	8.94
7522.00	83.07	355.60	7142.98	533.00 N	540.28 E	533.57	7.72
7561.00	85.09	355.37	7147.01	571.67 N	537.23 E	572.23	5.21
7674.00	90.43	355.57	7151.42	684.19 N	528.31 E	684.74	4.73
7767.00	91.60	354.94	7149.76	776.85 N	520.62 E	777.40	1.43
7853.00	91.79	355.59	7147.22	862.52 N	513.52 E	863.06	0.79
7939.00	91.11	356.21	7145.04	948.27 N	507.37 E	948.81	1.07
8024.00	91.85	356.90	7142.84	1033.09 N	502.27 E	1033.62	1.19
8110.00	92.04	357.66	7139.92	1118.94 N	498.19 E	1119.47	0.91
8196.00	91.67	358.35	7137.14	1204.85 N	495.20 E	1205.36	0.91
8281.00	91.85	358.06	7134.52	1289.76 N	492.53 E	1290.28	0.40
8367.00	90.86	358.38	7132.48	1375.70 N	489.86 E	1376.21	1.21
8453.00	91.73	358.50	7130.54	1461.64 N	487.52 E	1462.15	1.01
8539.00	91.30	0.12	7128.27	1547.60 N	486.49 E	1548.11	1.95
8624.00	90.80	359.09	7126.71	1632.59 N	485.90 E	1633.09	1.34
8710.00	91.05	1.10	7125.32	1718.57 N	486.04 E	1719.08	2.35
8796.00	90.80	1.05	7123.93	1804.54 N	487.66 E	1805.05	0.29
8881.00	90.86	0.55	7122.69	1889.53 N	488.84 E	1890.04	0.59
8967.00	91.36	2.30	7121.02	1975.48 N	490.98 E	1975.99	2.11
9053.00	91.23	2.07	7119.08	2061.40 N	494.26 E	2061.91	0.30
9139.00	91.61	1.85	7116.95	2147.32 N	497.20 E	2147.84	0.50
9224.00	92.22	1.66	7114.10	2232.23 N	499.80 E	2232.75	0.76
9309.00	93.33	1.81	7109.98	2317.09 N	502.37 E	2317.61	1.32
9395.00	92.16	1.50	7105.86	2402.95 N	504.85 E	2403.48	1.41

9481.00	92.04	2.12	7102.71	2488.85 N	507.57 E	2489.38	0.74
9566.00	91.36	2.30	7100.19	2573.75 N	510.84 E	2574.29	0.83
9652.00	90.80	3.16	7098.56	2659.64 N	514.94 E	2660.18	1.19
9738.00	89.75	3.18	7098.15	2745.50 N	519.70 E	2746.05	1.22
9823.00	88.89	1.98	7099.15	2830.41 N	523.52 E	2830.96	1.74
9909.00	89.44	1.97	7100.40	2916.35 N	526.49 E	2916.90	0.65
9994.00	90.00	1.70	7100.82	3001.30 N	529.21 E	3001.86	0.73
10079.00	91.17	1.74	7099.95	3086.26 N	531.76 E	3086.81	1.38
10165.00	89.57	1.48	7099.39	3172.22 N	534.17 E	3172.78	1.89
10250.00	90.68	1.55	7099.21	3257.19 N	536.42 E	3257.75	1.31
10336.00	89.81	0.83	7098.84	3343.17 N	538.21 E	3343.73	1.31
10421.00	89.88	0.87	7099.07	3428.16 N	539.47 E	3428.72	0.09
10506.00	89.51	0.10	7099.52	3513.15 N	540.19 E	3513.72	1.01
10592.00	90.12	0.39	7099.80	3599.15 N	540.56 E	3599.72	0.79
10678.00	89.32	0.03	7100.22	3685.15 N	540.87 E	3685.71	1.02
10763.00	90.00	359.64	7100.72	3770.15 N	540.63 E	3770.71	0.92
10848.00	90.74	359.72	7100.17	3855.14 N	540.15 E	3855.71	0.88
10934.00	90.19	359.91	7099.48	3941.14 N	539.87 E	3941.70	0.68
11020.00	89.14	0.16	7099.99	4027.14 N	539.93 E	4027.70	1.25
11105.00	90.49	359.93	7100.26	4112.13 N	539.99 E	4112.70	1.62
11191.00	90.19	0.60	7099.75	4198.13 N	540.39 E	4198.70	0.86
11277.00	91.48	0.88	7098.50	4284.11 N	541.50 E	4284.68	1.54
11362.00	90.37	1.17	7097.13	4369.09 N	543.02 E	4369.65	1.35
11447.00	90.99	1.00	7096.12	4454.07 N	544.63 E	4454.63	0.75
11533.00	91.55	0.74	7094.22	4540.03 N	545.94 E	4540.60	0.72
11561.00	91.61	0.47	7093.45	4568.02 N	546.23 E	4568.59	0.99
11607.00	91.61	0.47	7092.16	4614.00 N	546.61 E	4614.57	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 0.06 DEGREES (TRUE)
A TOTAL CORRECTION OF 8.61 DEG FROM MAGNETIC NORTH TO TRUE NORTH HAS BEEN APPLIED**

**HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD.
HORIZONTAL DISPLACEMENT(CLOSURE) AT 11607.00 FEET
IS 4646.27 FEET ALONG 6.76 DEGREES (TRUE)**

All directional surveys tied onto gyro survey at 976' MD. Final survey is a straight-line projection to the bit.