

**Gamma Ray
Rate Of Penetration**



Halliburton|Sperry Drilling

1 : 600

County	: Reno Co.		
Field	: Wildcat		
Location	: Lat: 38° 8' 44.06" North Long: 98° 7' 32.54" West		
Well	: Siegrist 2207 #7-1H		
Company	: Shell Explortation & Production		
Rig	: Nabors 180		
LOCATION	Latitude	: 38° 8' 44.06" North	
	Longitude	: 98° 7' 32.54" West	
	UTM Easting =	2,107,641.023 ft	
	UTM Northing =	538,710.986 ft	
Company	: Shell Explortation & Production		
Rig	: Nabors 180		
Well	: Siegrist 2207 #7-1H		
Field	: Wildcat		
County	: Reno Co.		
API Number	: 15155216240100		
Elevation	: 1602.00 ft		
Permanant Datum	: Ground Level		
Log Measured From	: Drill Floor	23.00 ft	Above Permanant Datum
Drilling Measured From	: Drill Floor		
MD LOG			
Depth Logged	: 3,891.00 ft	To	8,015.00 ft
Date Logged	: 01-Apr-13	To	06-Apr-13
Total Depth MD	: 8,015.00 ft	TVD	: 3,566.21 ft
Spud Date	: 25-Mar-13		
Unit No.	: PP #17	Job No.	: OK-XX-0900033716
Plot Type	: Final		
Plot Date	: 10-Apr-13		
Run No.	1	Size	6.125 in
		From	3,891.00 ft
		To	8,015.00 ft
		Run No.	
		Size	
		From	
		To	
		Size	9.625 in
		Weight	34.90 lbpf
		From	7.000 in
		To	12.70 lbpf
		From	SURFACE
		To	3,891.00 ft

WELL INFORMATION

MWD Run Number	100
Date run completed	06-Apr-13
Rig Bit Number	1
Bit Size (in)	6.125
Tool Nominal OD (in)	4.750
Log Start Depth (MD, ft)	3,891.00
Log End Depth (MD, ft)	8,015.00
Drill or Wipe	Drill
Drill/Wipe Start Date and Time	02-Apr-13 11:30
Drill/Wipe End Date and Time	06-Apr-13 06:00
Min Inc (deg) @ Depth (MD, ft)	80.36 @ 3,939.00
Max Inc (deg) @ Depth (MD, ft)	94.56 @ 4,413.00
Bit TFA(in2) / Bit Type	.29 / PDC
Flow Rate (gpm)	285.00
Max AV (fpm) / CV (fpm) @ MWD	483.5 / 488.1
Fluid Type	Fresh Water Gel
Density (ppg) / Viscosity (spqt)	8.45 / 29.00
Filtrate CL (ppm)	2,700.00
pH / Fluid Loss (mptm)	7.60 / N/A
PV (cP) / YP (Ihf2)	1 / 2.00
% Solids / % Sand	1.0 / 1.0
% Oil / Oil:Water Ratio	N/A / N/A
Rm @ Measured Temp (degF)	N/A @ N/A

Rmf @ Measured Temp (degF)	N/A @ N/A				
Rmc @ Measured Temp (degF)	N/A @ N/A				
Max Tool Temp (degF) / Source	124.60 / PCG-R				
Rm @ Max Tool Temp (degF)	N/A @ N/A				
Lead MWD Engineer	Fred Burger				
Customer Representative	Jack Everette				

SENSOR INFORMATION

Directional Sensor Information

Tool Type	PCD				
Distance From Bit (ft)	47.13				
Software Version	3.32				
Sub Serial Number	11595287				
Sonde Serial Number	10993563				
Sensor ID Number	N/A				
Toolface Offset (deg)	112.98				

Gamma Ray Sensor Information

Tool Type	PCG				
Distance From Bit (ft)	52.63				
Recorded Sample Period (sec)	15				
Software Version	8.15				
Sub Serial Number	10993563				
Insert/Sonde Serial Number	10986798				

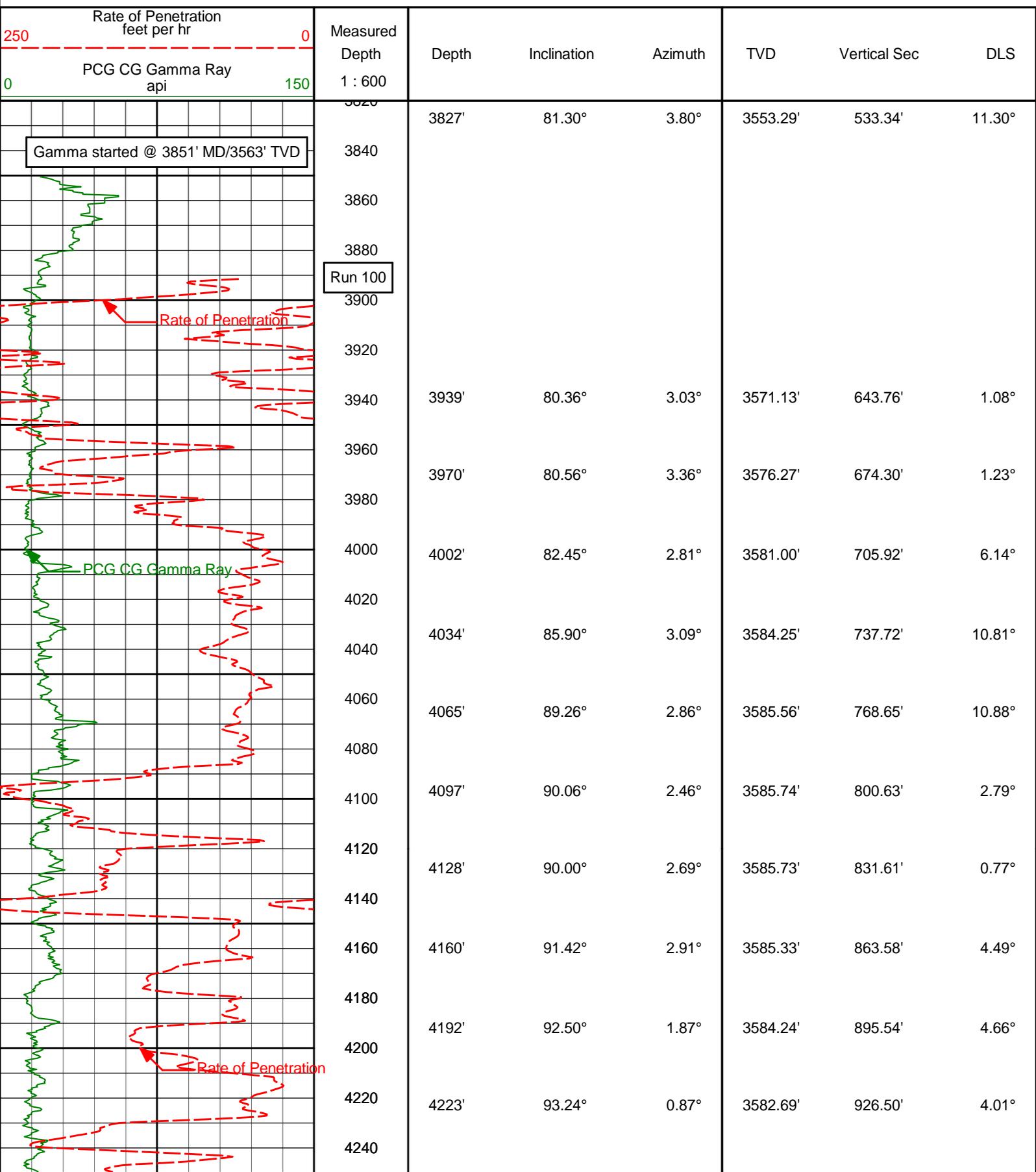
REMARKS

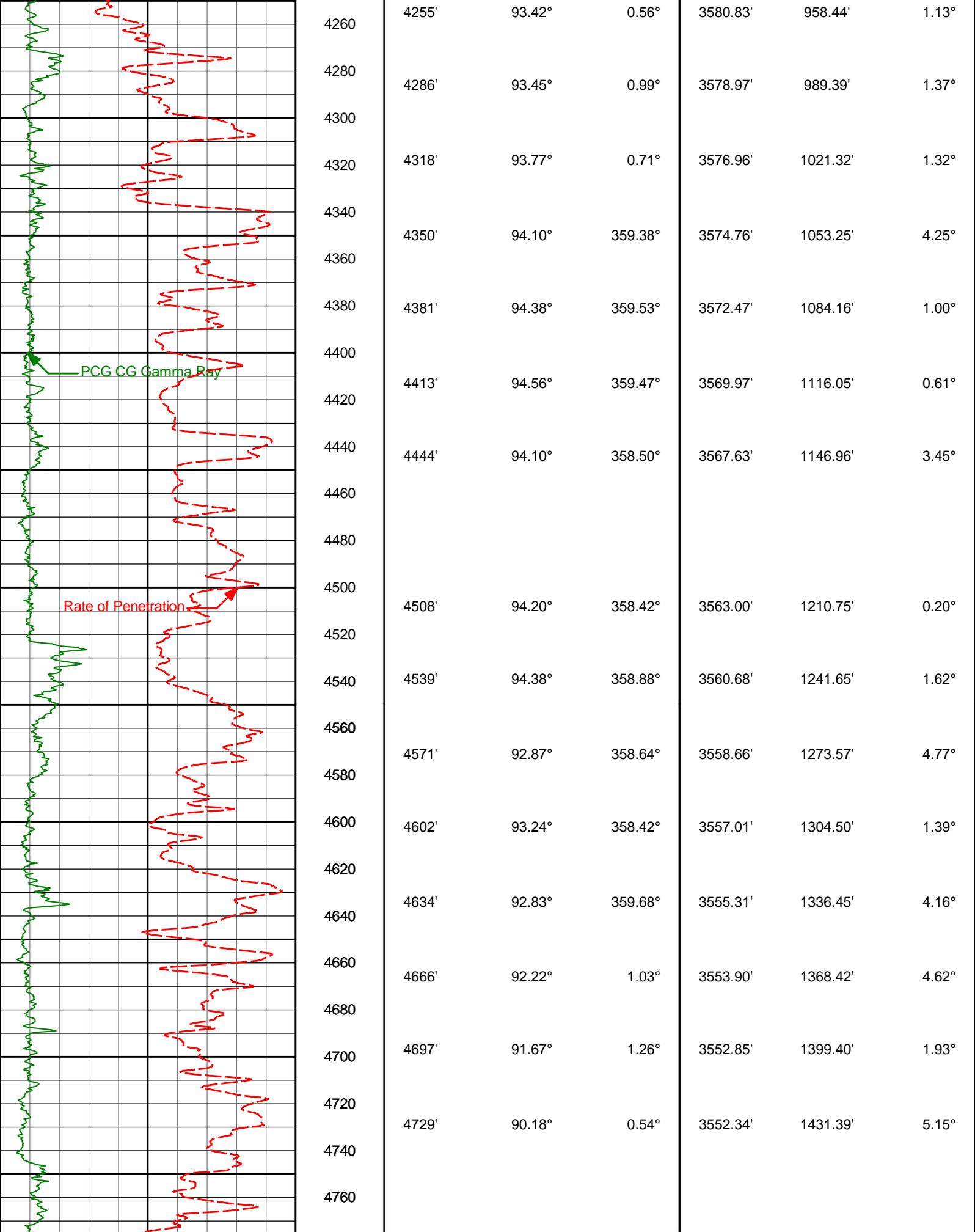
1. All depths are calibrated to the driller's pipe tally, and measured from the drill floor.
 2. No depth correction has been made for pipe stretch or compression.
 3. All data presented is recorded (memory data) unless otherwise stated.
 4. The following smoothing parameters have been applied to data:
 - ROP: 1.0' interval, 3.0' coercion distance
 - All other curves: 0.5' interval, 0.6' distance
- Started all data in lateral section at depth of 3891' MD/3563' TVD

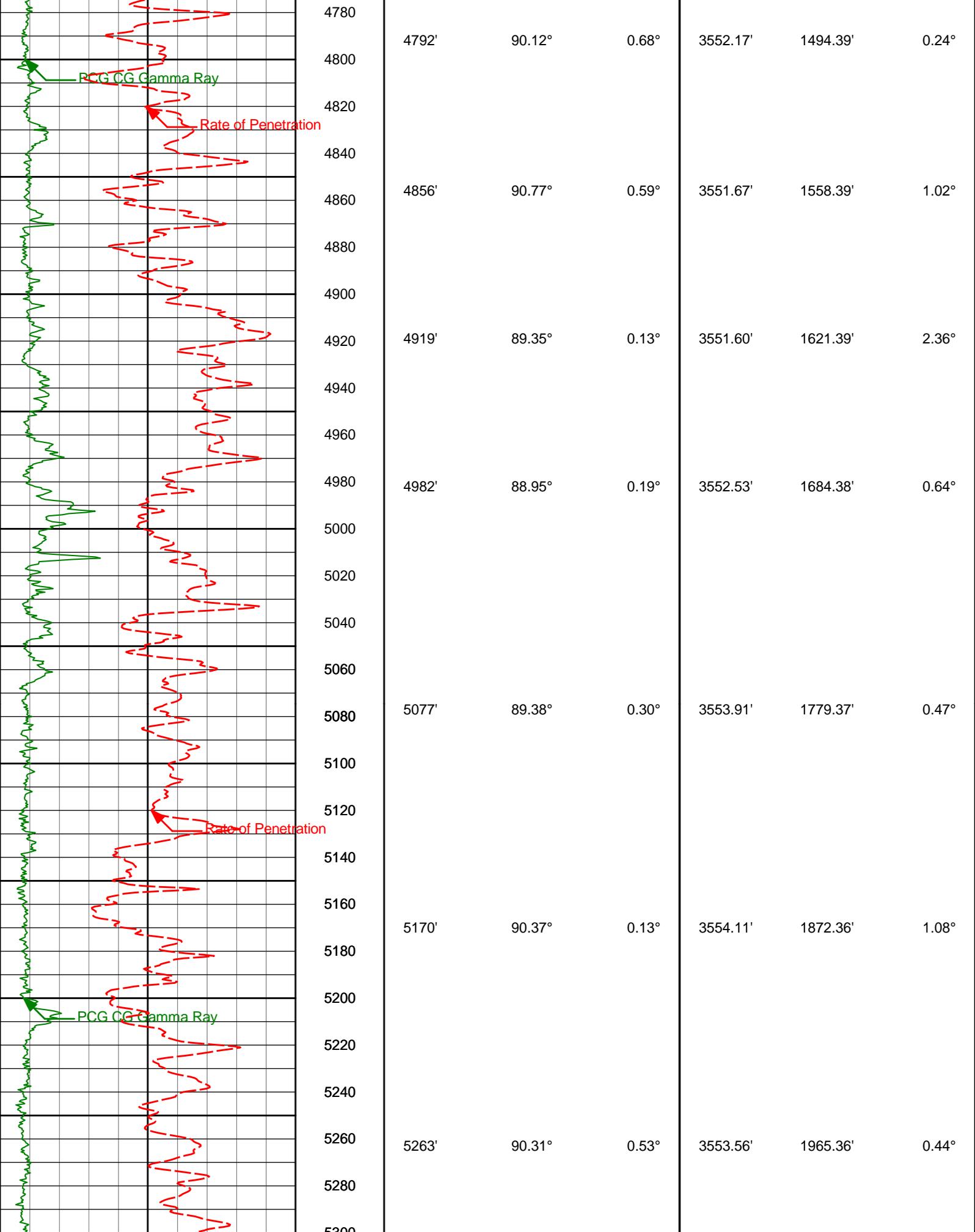
WARRANTY

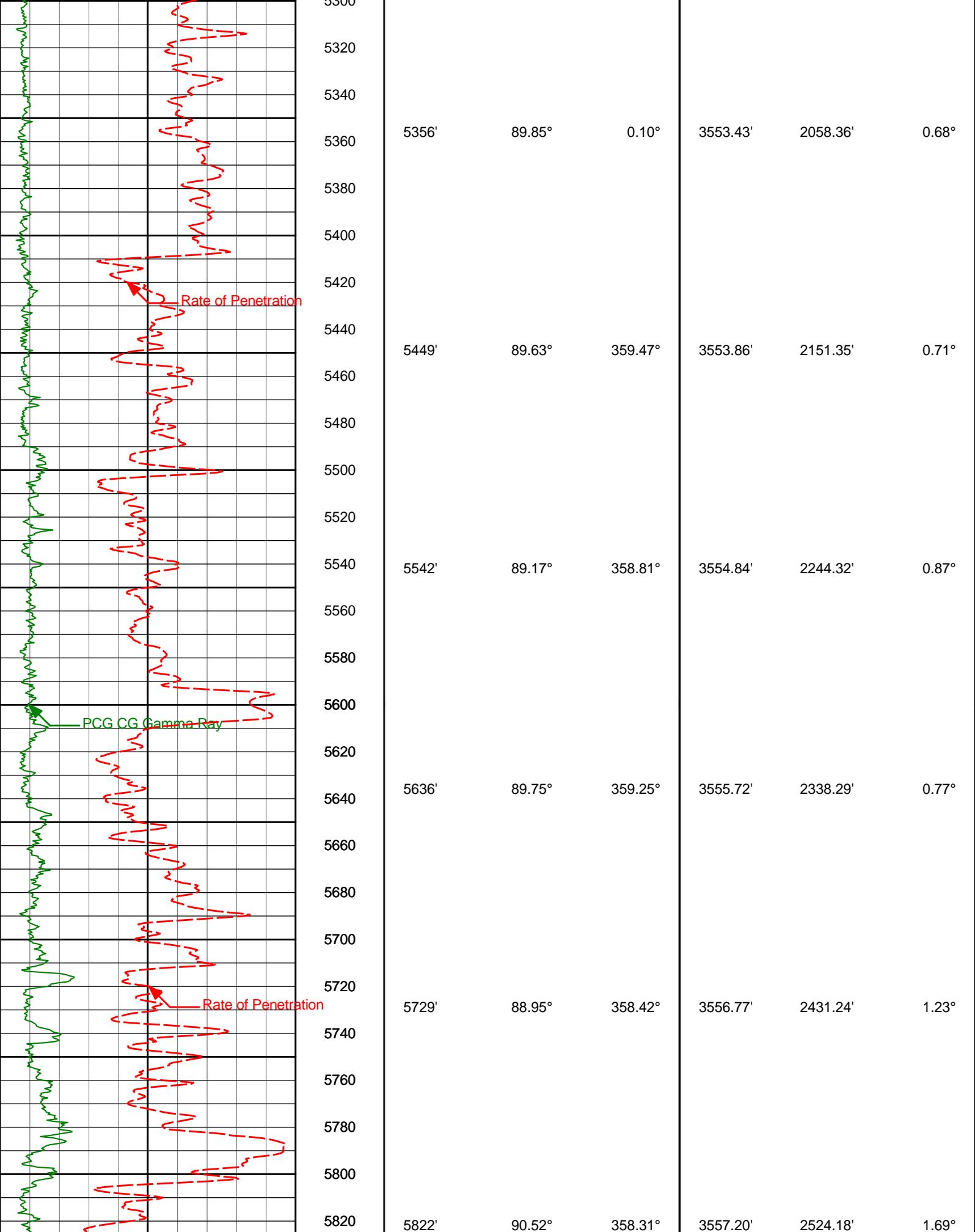
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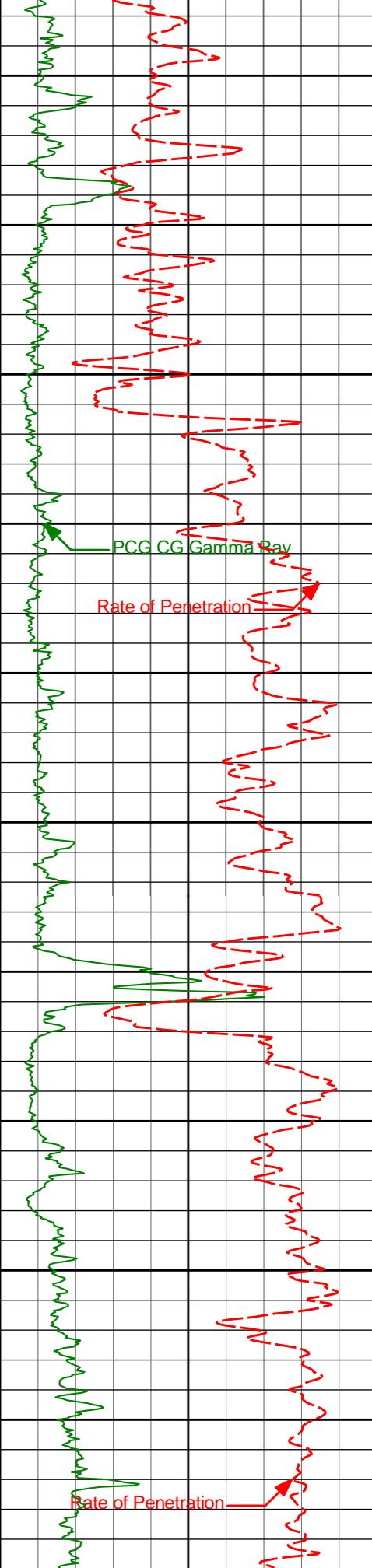
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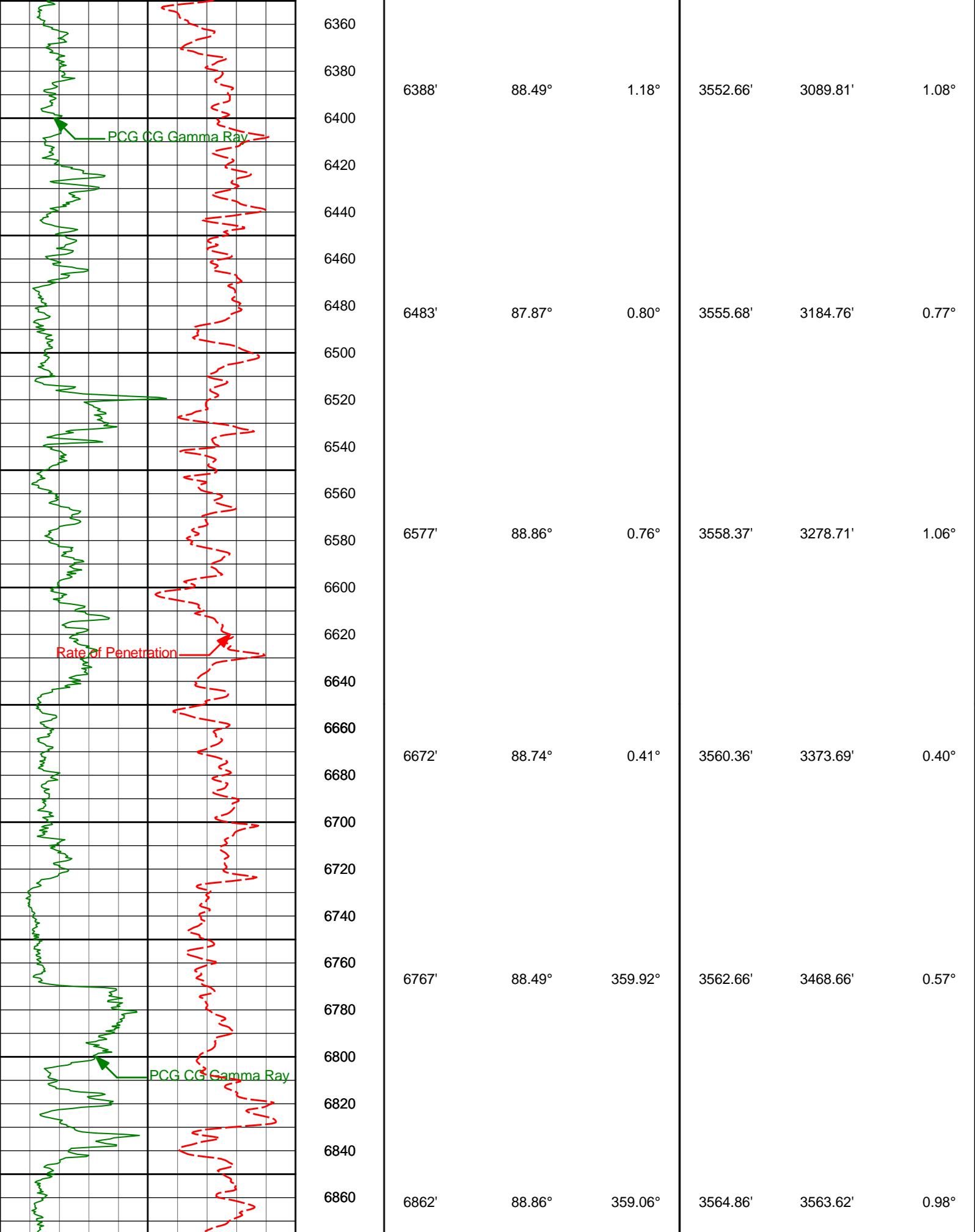
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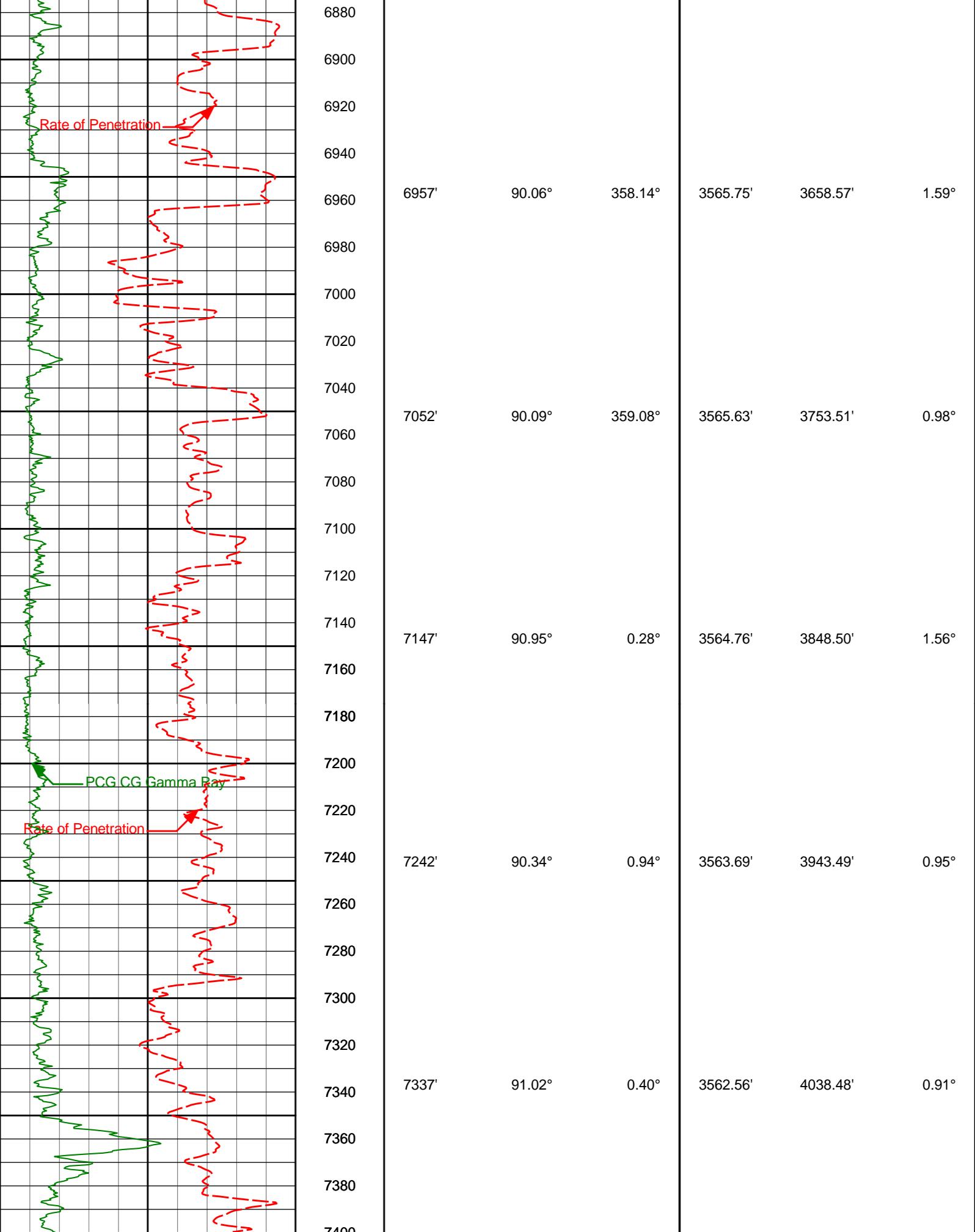
5915'	92.00°	359.04°	3555.15'	2617.11'	1.77°
6009'	92.56°	359.42°	3551.41'	2711.01'	0.72°
6104'	91.85°	359.67°	3547.75'	2805.92'	0.79°
6198'	89.32°	0.43°	3546.79'	2899.91'	2.81°
6293'	87.56°	0.76°	3549.38'	2994.87'	1.89°

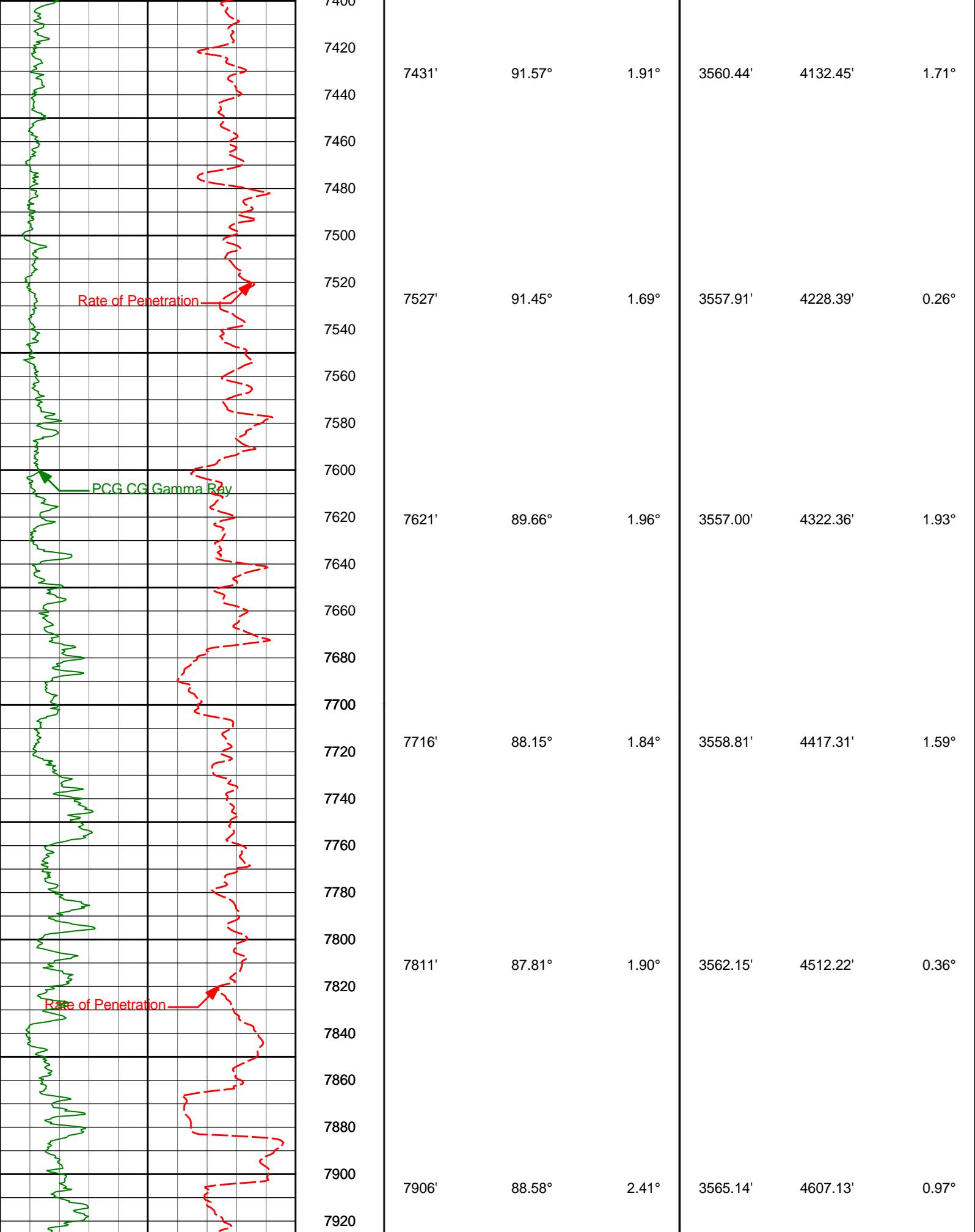
PCG CG Gamma Ray

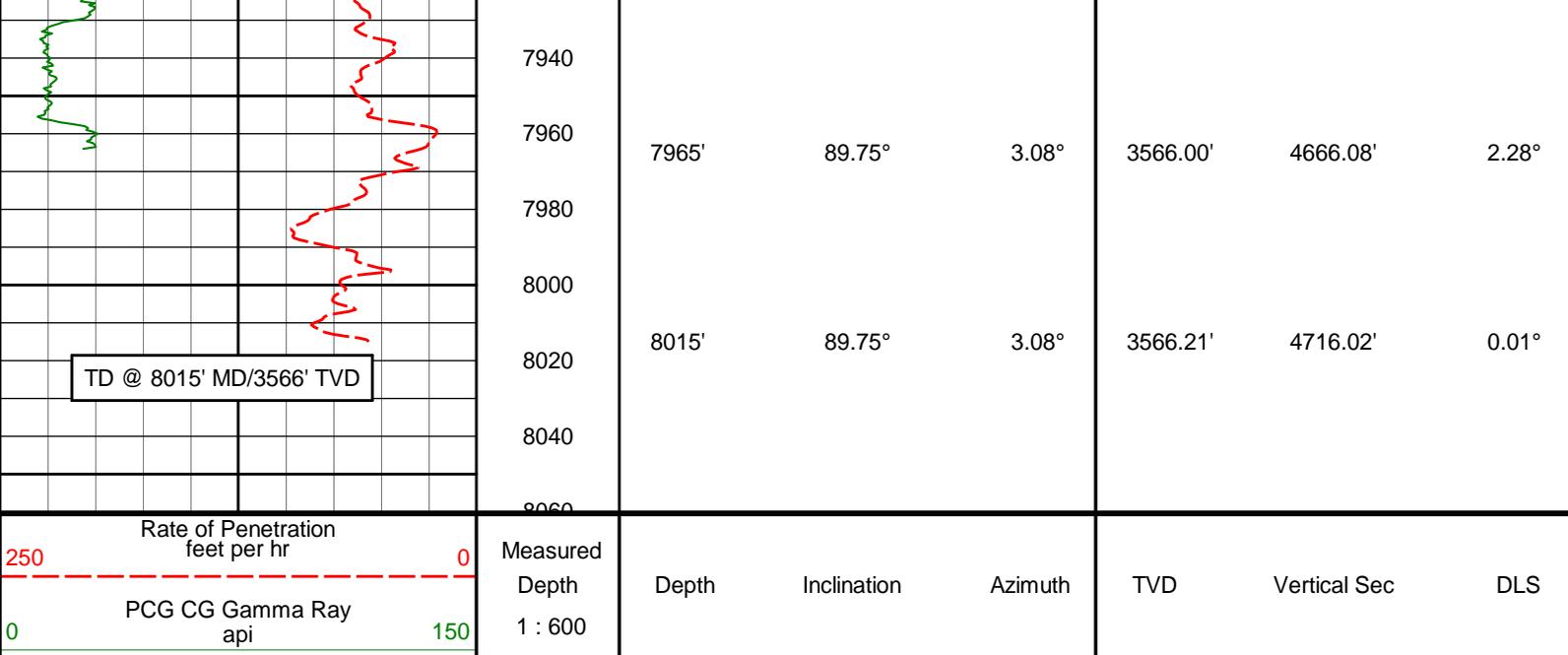
Rate of Penetration

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HALLIBURTON

DIRECTIONAL SURVEY REPORT

Shell Explortation _Production

Siegrist 2207 #7-1H

Wildcat

Reno Co. Kansas

USA

OK-XX-0900033716

Surveys from 82' to 3827' provided by MS Directional
 Sperry Drilling provided survey information from 3939' to 7965'
 Final Survey Projected to Bit at depth of 8015'

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
82.00	0.14	225.57	82.00	0.07 S	0.07 W	-0.07	0.17
152.00	0.06	196.25	152.00	0.17 S	0.14 W	-0.17	0.13
222.00	0.26	214.93	222.00	0.33 S	0.24 W	-0.33	0.29
292.00	0.32	210.03	292.00	0.63 S	0.43 W	-0.63	0.09
362.00	0.36	218.84	362.00	0.97 S	0.67 W	-0.98	0.09
430.00	0.20	185.80	430.00	1.26 S	0.81 W	-1.26	0.33
525.00	0.30	170.50	525.00	1.67 S	0.79 W	-1.67	0.13
999.00	0.20	265.10	998.99	2.96 S	1.41 W	-2.97	0.08
1092.00	0.20	251.30	1091.99	3.03 S	1.73 W	-3.04	0.05
1185.00	0.20	237.60	1184.99	3.16 S	2.02 W	-3.18	0.05
1278.00	0.20	269.70	1277.99	3.25 S	2.32 W	-3.27	0.12
1371.00	0.10	216.70	1370.99	3.32 S	2.53 W	-3.34	0.17
1465.00	0.10	221.60	1464.99	3.45 S	2.63 W	-3.47	0.01
1558.00	0.00	282.00	1557.99	3.51 S	2.68 W	-3.53	0.11
1651.00	0.00	4.90	1650.99	3.51 S	2.68 W	-3.53	0.00
1745.00	0.10	184.40	1744.99	3.59 S	2.69 W	-3.61	0.11
1838.00	0.10	4.40	1837.99	3.59 S	2.69 W	-3.61	0.22
1932.00	0.00	73.40	1931.99	3.51 S	2.68 W	-3.53	0.11
2026.00	0.10	128.50	2025.99	3.56 S	2.62 W	-3.58	0.11
2121.00	0.10	212.00	2120.99	3.68 S	2.60 W	-3.70	0.14
2215.00	0.10	184.40	2214.99	3.83 S	2.65 W	-3.85	0.05
2310.00	0.10	274.90	2309.99	3.91 S	2.74 W	-3.93	0.15
2405.00	0.20	155.60	2404.99	4.05 S	2.75 W	-4.07	0.28
2500.00	0.30	196.80	2499.99	4.44 S	2.75 W	-4.46	0.21

2595.00	0.20	170.00	2594.99	4.84 S	2.80 W	-4.86	0.16
2690.00	0.00	118.10	2689.99	5.00 S	2.77 W	-5.03	0.21
2784.00	0.20	213.10	2783.99	5.14 S	2.86 W	-5.16	0.21
2879.00	0.80	16.60	2878.99	4.64 S	2.76 W	-4.67	1.05
2911.00	2.40	357.90	2910.97	3.76 S	2.72 W	-3.78	5.19
2942.00	3.90	357.70	2941.92	2.06 S	2.79 W	-2.08	4.84
2974.00	4.90	350.60	2973.83	0.38 N	3.05 W	0.35	3.55
3005.00	6.80	352.70	3004.67	3.50 N	3.50 W	3.47	6.17
3037.00	9.30	355.30	3036.35	7.96 N	3.96 W	7.93	7.89
3068.00	12.30	359.10	3066.80	13.76 N	4.21 W	13.72	9.94
3100.00	15.80	0.70	3097.83	21.53 N	4.21 W	21.49	11.00
3132.00	19.10	0.60	3128.36	31.12 N	4.10 W	31.09	10.31
3163.00	22.10	2.00	3157.37	42.02 N	3.85 W	41.99	9.81
3195.00	24.40	2.70	3186.77	54.64 N	3.33 W	54.61	7.24
3227.00	25.80	3.30	3215.75	68.20 N	2.61 W	68.17	4.45
3258.00	28.30	1.90	3243.36	82.28 N	1.98 W	82.26	8.32
3290.00	31.50	359.80	3271.09	98.23 N	1.76 W	98.21	10.52
3322.00	34.20	359.70	3297.97	115.58 N	1.84 W	115.56	8.44
3353.00	37.40	359.10	3323.11	133.71 N	2.03 W	133.69	10.38
3385.00	41.00	359.10	3347.91	153.93 N	2.35 W	153.91	11.25
3416.00	42.90	1.40	3370.96	174.65 N	2.25 W	174.63	7.88
3448.00	45.40	2.60	3393.92	196.92 N	1.47 W	196.90	8.24
3480.00	48.10	1.80	3415.85	220.21 N	0.58 W	220.20	8.63
3511.00	51.50	2.70	3435.85	243.87 N	0.36 E	243.86	11.19
3543.00	54.80	2.30	3455.04	269.44 N	1.47 E	269.45	10.36
3575.00	58.70	2.60	3472.58	296.18 N	2.62 E	296.19	12.21
3606.00	62.70	2.90	3487.75	323.17 N	3.92 E	323.20	12.93
3638.00	66.60	2.00	3501.45	352.06 N	5.15 E	352.09	12.45
3670.00	70.30	2.00	3513.20	381.80 N	6.19 E	381.84	11.56
3701.00	72.20	1.50	3523.17	411.14 N	7.08 E	411.18	6.32
3732.00	73.80	1.60	3532.23	440.77 N	7.89 E	440.82	5.17
3764.00	76.00	1.80	3540.57	471.65 N	8.80 E	471.71	6.90
3795.00	78.00	2.30	3547.54	501.84 N	9.88 E	501.90	6.64
3827.00	81.30	3.80	3553.29	533.27 N	11.56 E	533.34	11.30
3939.00	80.36	3.03	3571.13	643.64 N	18.14 E	643.76	1.08
3970.00	80.56	3.36	3576.27	674.16 N	19.85 E	674.30	1.23
4002.00	82.45	2.81	3581.00	705.76 N	21.55 E	705.92	6.14
4034.00	85.90	3.09	3584.25	737.55 N	23.18 E	737.72	10.81
4065.00	89.26	2.86	3585.56	768.48 N	24.79 E	768.65	10.88
4097.00	90.06	2.46	3585.74	800.44 N	26.28 E	800.63	2.79
4128.00	90.00	2.69	3585.73	831.41 N	27.67 E	831.61	0.77
4160.00	91.42	2.91	3585.33	863.37 N	29.24 E	863.58	4.49
4192.00	92.50	1.87	3584.24	895.32 N	30.57 E	895.54	4.66
4223.00	93.24	0.87	3582.69	926.27 N	31.31 E	926.50	4.01
4255.00	93.42	0.56	3580.83	958.22 N	31.71 E	958.44	1.13
4286.00	93.45	0.99	3578.97	989.16 N	32.13 E	989.39	1.37
4318.00	93.77	0.71	3576.96	1021.09 N	32.60 E	1021.32	1.32
4350.00	94.10	359.38	3574.76	1053.01 N	32.63 E	1053.25	4.25
4381.00	94.38	359.53	3572.47	1083.93 N	32.33 E	1084.16	1.00
4413.00	94.56	359.47	3569.97	1115.83 N	32.05 E	1116.05	0.61
4444.00	94.10	358.50	3567.63	1146.74 N	31.50 E	1146.96	3.45
4508.00	94.20	358.42	3563.00	1210.54 N	29.78 E	1210.75	0.20
4539.00	94.38	358.88	3560.68	1241.45 N	29.06 E	1241.65	1.62
4571.00	92.87	358.64	3558.66	1273.38 N	28.37 E	1273.57	4.77
4602.00	93.24	358.42	3557.01	1304.32 N	27.57 E	1304.50	1.39
4634.00	92.83	359.68	3555.31	1336.27 N	27.04 E	1336.45	4.16
4666.00	92.22	1.03	3553.90	1368.24 N	27.24 E	1368.42	4.62
4697.00	91.67	1.26	3552.85	1399.22 N	27.86 E	1399.40	1.93
4729.00	90.18	0.54	3552.34	1431.21 N	28.36 E	1431.39	5.15
4792.00	90.12	0.68	3552.17	1494.20 N	29.03 E	1494.39	0.24
4856.00	90.77	0.59	3551.67	1558.20 N	29.74 E	1558.39	1.02
4919.00	89.35	0.13	3551.60	1621.19 N	30.13 E	1621.39	2.36
4982.00	88.95	0.19	3552.53	1684.19 N	30.31 E	1684.38	0.64
5077.00	89.38	0.30	3553.91	1779.18 N	30.71 E	1779.37	0.47
5170.00	90.37	0.13	3554.11	1872.17 N	31.06 E	1872.36	1.08
5263.00	90.31	0.53	3553.56	1965.17 N	31.60 E	1965.36	0.44
5356.00	89.85	0.10	3553.43	2058.17 N	32.11 E	2058.36	0.68
5449.00	89.63	359.47	3553.86	2151.17 N	31.76 E	2151.35	0.71
5542.00	89.17	358.81	3554.84	2244.15 N	30.37 E	2244.32	0.87
5636.00	89.75	359.25	3555.72	2338.13 N	28.78 E	2338.29	0.77

5729.00	88.95	358.42	3556.77	2431.10 N	26.89 E	2431.24	1.23
5822.00	90.52	358.31	3557.20	2524.06 N	24.24 E	2524.18	1.69
5915.00	92.00	359.04	3555.15	2617.01 N	22.09 E	2617.11	1.77
6009.00	92.56	359.42	3551.41	2710.93 N	20.83 E	2711.01	0.72
6104.00	91.85	359.67	3547.75	2805.85 N	20.07 E	2805.92	0.79
6198.00	89.32	0.43	3546.79	2899.84 N	20.16 E	2899.91	2.81
6293.00	87.56	0.76	3549.38	2994.80 N	21.15 E	2994.87	1.89
6388.00	88.49	1.18	3552.66	3089.73 N	22.76 E	3089.81	1.08
6483.00	87.87	0.80	3555.68	3184.66 N	24.40 E	3184.76	0.77
6577.00	88.86	0.76	3558.37	3278.61 N	25.69 E	3278.71	1.06
6672.00	88.74	0.41	3560.36	3373.59 N	26.65 E	3373.69	0.40
6767.00	88.49	359.92	3562.66	3468.56 N	26.92 E	3468.66	0.57
6862.00	88.86	359.06	3564.86	3563.53 N	26.07 E	3563.62	0.98
6957.00	90.06	358.14	3565.75	3658.49 N	23.75 E	3658.57	1.59
7052.00	90.09	359.08	3565.63	3753.46 N	21.44 E	3753.51	0.98
7147.00	90.95	0.28	3564.76	3848.46 N	20.91 E	3848.50	1.56
7242.00	90.34	0.94	3563.69	3943.44 N	21.93 E	3943.49	0.95
7337.00	91.02	0.40	3562.56	4038.43 N	23.04 E	4038.48	0.91
7431.00	91.57	1.91	3560.44	4132.38 N	24.93 E	4132.45	1.71
7527.00	91.45	1.69	3557.91	4228.30 N	27.94 E	4228.39	0.26
7621.00	89.66	1.96	3557.00	4322.25 N	30.93 E	4322.36	1.93
7716.00	88.15	1.84	3558.81	4417.18 N	34.08 E	4417.31	1.59
7811.00	87.81	1.90	3562.15	4512.07 N	37.18 E	4512.22	0.36
7906.00	88.58	2.41	3565.14	4606.95 N	40.75 E	4607.13	0.97
7965.00	89.75	3.08	3566.00	4665.88 N	43.57 E	4666.08	2.28
8015.00	89.75	3.08	3566.21	4715.80 N	46.26 E	4716.02	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 0.47 DEGREES (GRID)
A TOTAL CORRECTION OF 4.42 DEG FROM MAGNETIC NORTH TO GRID NORTH HAS BEEN APPLIED**

**HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD.
HORIZONTAL DISPLACEMENT(CLOSURE) AT 8015.00 FEET
IS 4716.03 FEET ALONG 0.56 DEGREES (GRID)**

Final Survey Projected to Bit at depth of 8015'