

PCGK: Pressure Case Gamma
PCDC: Pressure Case Directional

[illegible]

WELL INFORMATION

MWD Run Number	200	300			
Date run completed	20-Jun-14	21-Jun-14			
Rig Bit Number	2	3			
Bit Size (in)	8.750	8.750			
Tool Nominal OD (in)	6.750	6.750			
Log Start Depth (TVD, ft)	632.00	5,444.04			
Log End Depth (TVD, ft)	5,444.04	6,121.46			
Drill or Wipe	Drill	Drill			
Drill/Wipe Start Date and Time	19-Jun-14 02:50	20-Jun-14 14:10			
Drill/Wipe End Date and Time	19-Jun-14 22:45	21-Jun-14 05:40			
Min Inc (deg) @ Depth (TVD, ft)	1.01 @ 4,440.33	2.86 @ 5,480.00			
Max Inc (deg) @ Depth (TVD, ft)	13.41 @ 3,689.27	84.05 @ 6,117.71			
Bit TFA(in2) / Bit Type	0.74 / PDC	0.86 / PDC			
Flow Rate (gpm)	565.24	520.88			
Max AV (fpm) / CV (fpm) @ MWD	N/A / N/A	N/A / N/A			
Fluid Type	Fresh Water Gel	Lignosulfanate			
Density (ppg) / Viscosity (spqt)	8.40 / 27.00	10.50 / 40.00			
Filtrate CL (ppm)	200.00	200.00			
pH / Fluid Loss (mptm)	9.00 / 22	9.50 / 7			
PV (cP) / YP (lbf2)	13 / 6.00	15 / 9.00			
% Solids / % Sand	0.50 / 0.1	9.90 / 0.20			
% 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) @ Depth	151.00 / PDC	127.00 / PDC			

Max Tool Temp (degF) / Source	154.30 / PCM	167.00 / PCM			
Rm @ Max Tool Temp (degF)	N/A @ N/A	N/A @ N/A			
Lead MWD Engineer	Juan Pablo Centeno	Juan Pablo Centeno			
Customer Representative	Dave Nielsen	Dave Nielsen			

SENSOR INFORMATION

Downhole Processor Information

Tool Type	PCM	PCM			
Software Version	5.93	5.93			
Sub Serial Number	233811	233811			
Insert Serial Number	11620315	11620315			
Date and Time Initialized	18-Jun-14 17:25	18-Jun-14 17:25			
Date and Time Read	22-Jun-14 03:15	22-Jun-14 03:21			
ECMB SW Version	N/A	N/A			

Directional Sensor Information

Tool Type	PCDC	PCDC			
Distance From Bit (ft)	53.76	51.70			
Software Version	6.21	6.21			
Sub Serial Number	233811	233811			
Sonde Serial Number	11638628	11638628			
Sensor ID Number	N/A	N/A			
Toolface Offset (deg)	333.23	336.47			

Gamma Ray Sensor Information

Tool Type	PCG	PCG			
Distance From Bit (ft)	48.66	46.60			
Recorded Sample Period (sec)	10	10			
Software Version	8.15	8.15			
Sub Serial Number	233811	233811			
Insert/Sonde Serial Number	11579806	11579806			

REMARKS

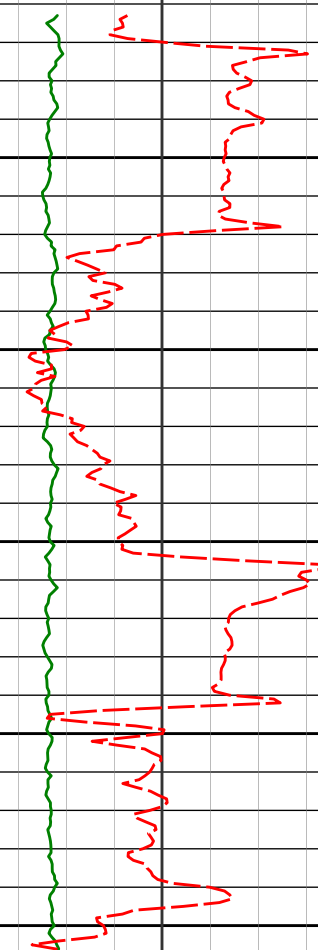
1. All depths are calibrated to the driller's pipe tally and are measured from the Rig drill floor.
2. No depth corrections have been made for pipe stretch or compression.
3. All data presented is recorded (memory data) unless otherwise stated.
 - ROPA: Average Rate of Penetration is real time data.
 - PGRC: Smooth Pressure Case Gamma Ray Borehole corrected is recorded data.
4. The following smoothing parameters have been applied to the data:
 - 2" (1:600) log - 1 ft. interval, 3 ft. coercion distance, 5 ft. gap fill.
 - 5" (1:240) log for ROP - 0.5 ft. interval, 1.2 ft. coercion distance, 3 ft. gap fill.
 - 5" (1:240) log for Gamma Ray - 0.5 ft. interval, 0.6 ft. coercion distance, 3 ft. gap fill.
5. INSITE version 8.0.20.

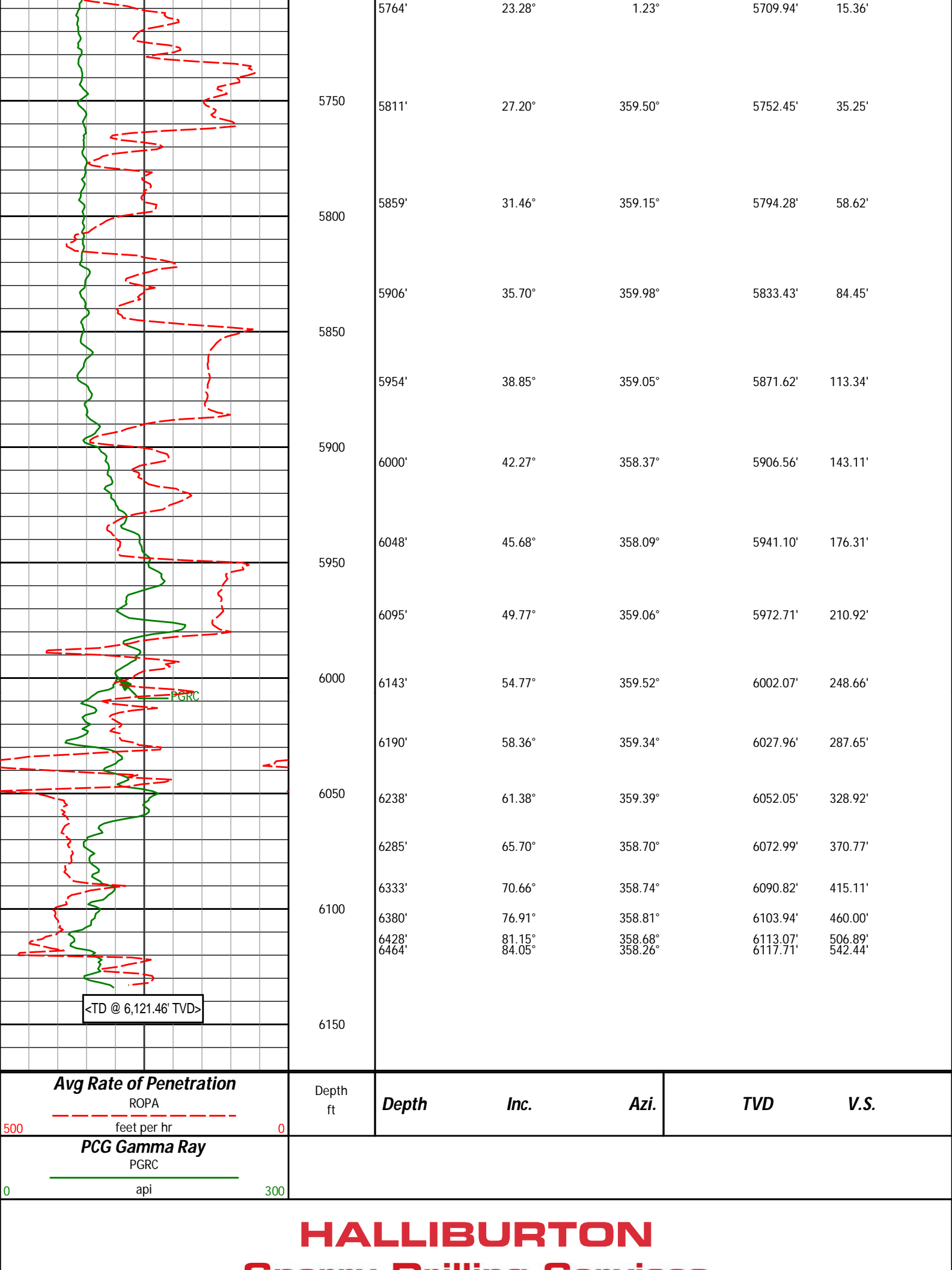
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Sperry Drilling Services
TVD Main Log 1:600

Noble Energy
Trisha LC29-75HNB
H&P 273
T9N, R59W

PCG Gamma Ray PGRC 0300 api						
Avg Rate of Penetration ROPA 5000 feet per hr		Depth ft	Depth	Inc.	Azi.	TVDV.S.
		5450 <Run 200>				
			5526'	2.86°	4.79°	5480.00' -42.12'
		<KOP> 5500				
			5574'	10.14°	1.40°	5527.66' -36.76'
		5550				
			5621'	13.39°	356.20°	5573.67' -27.22'
		5600				
			5669'	15.26°	354.75°	5620.17' -15.35'
		5650				
			5716'	18.63°	357.68°	5665.13' -1.68'
		5700				



Avg Rate of Penetration

ROPA

feet per hr

PCG Gamma Ray

PGRC

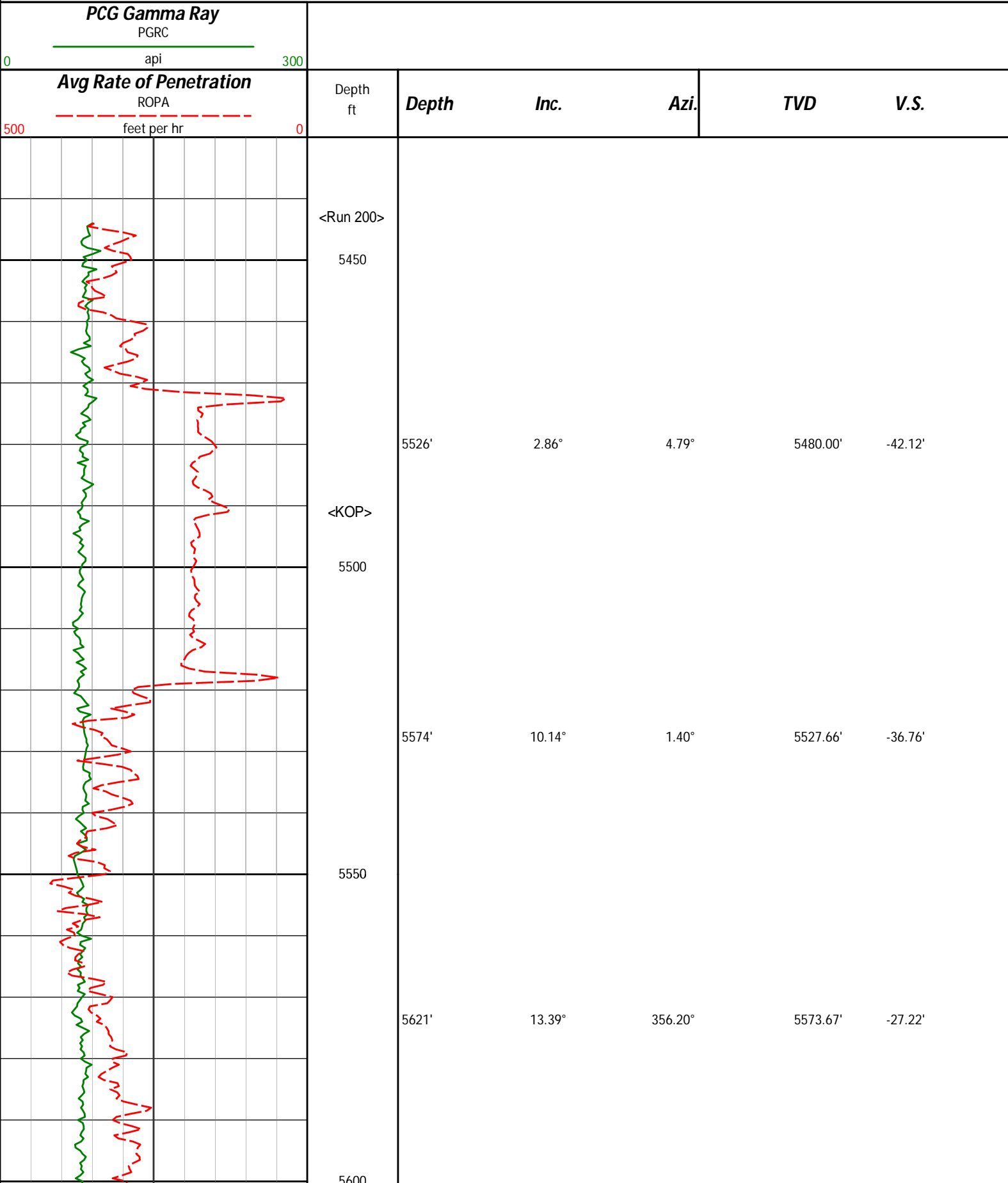
api

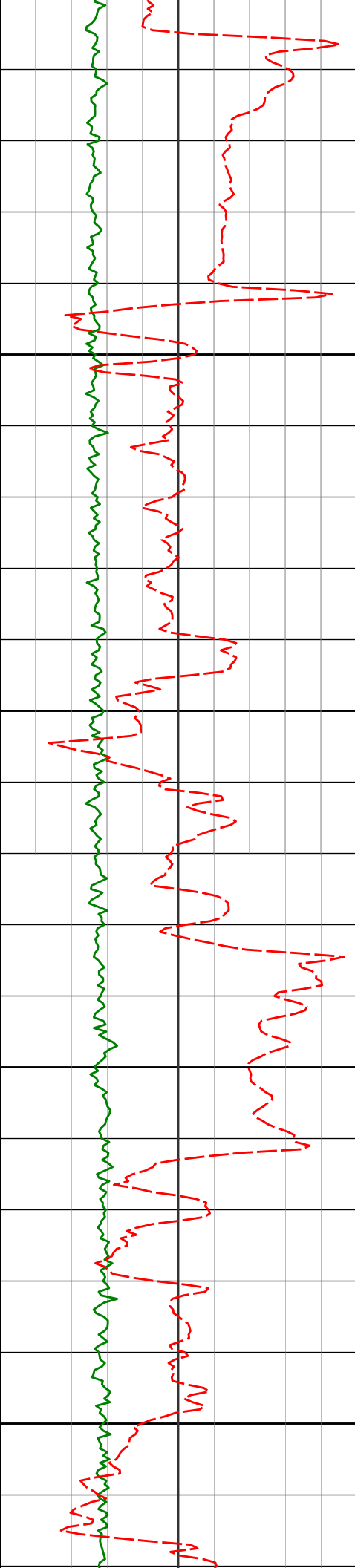
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Energy Drilling Services

TVD Detail Log 1:240

Noble Energy
Trisha LC29-75HNB
H&P 273
T9N, R59W





5800

5669'

15.26°

354.75°

5620.17'

-15.35'

5650

5716'

18.63°

357.68°

5665.13'

-1.68'

5700

5764'

23.28°

1.23°

5709.94'

15.36'

5750

5811'

27.20°

359.50°

5752.45'

35.25'

5800

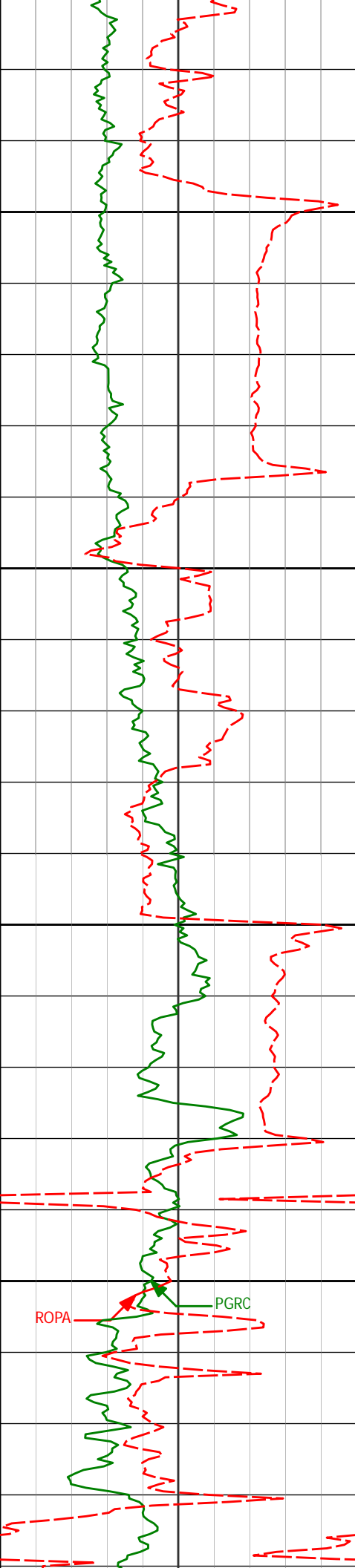
5859'

31.46°

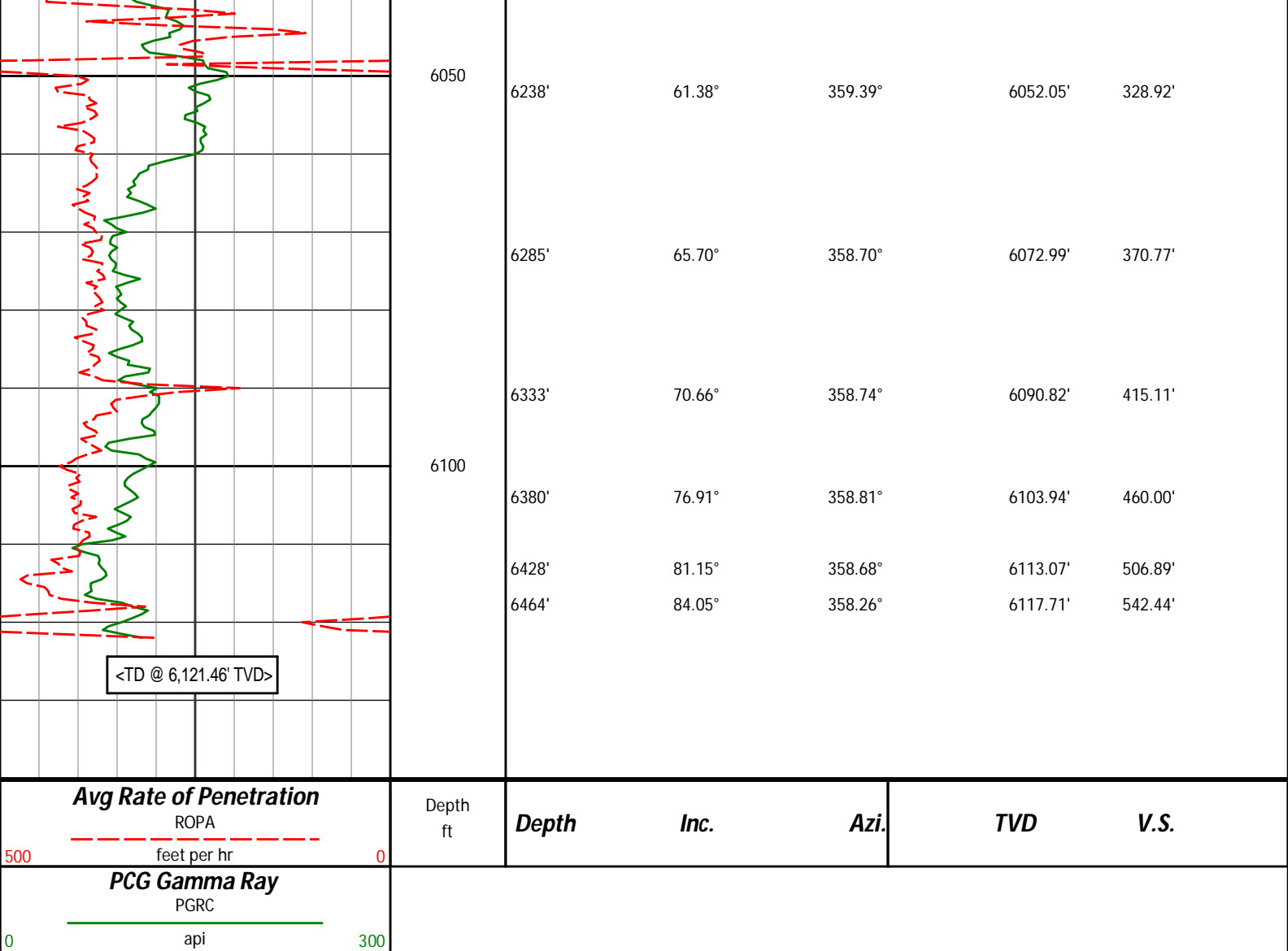
359.15°

5794.28'

58.62'



5906'	35.70°	359.98°	5833.43'	84.45'
5850				
5954'	38.85°	359.05°	5871.62'	113.34'
5900				
6000'	42.27°	358.37°	5906.56'	143.11'
6048'	45.68°	358.09°	5941.10'	176.31'
5950				
6095'	49.77°	359.06°	5972.71'	210.92'
6000				
6143'	54.77°	359.52°	6002.07'	248.66'
6190'	58.36°	359.34°	6027.96'	287.65'



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DIRECTIONAL SURVEY REPORT

Noble Energy
Trisha LC29-75HNB
Wattenberg
Weld Colorado
USA
CA-XX-0901285296

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
350.00	0.20	216.77	350.00	0.49 S	0.37 W	-0.44	0.06
592.00	0.50	9.37	592.00	0.21 N	0.45 W	0.27	0.28
809.00	1.27	88.05	808.97	1.23 N	2.11 E	0.97	0.59
995.00	1.23	88.69	994.93	1.35 N	6.17 E	0.61	0.02
1087.00	1.34	98.70	1086.91	1.21 N	8.22 E	0.22	0.27
1180.00	1.25	85.15	1179.88	1.13 N	10.31 E	-0.10	0.34
1459.00	1.29	81.24	1458.82	1.86 N	16.45 E	-0.10	0.03
1737.00	1.33	85.89	1736.74	2.57 N	22.76 E	-0.14	0.04
1831.00	1.29	276.05	1830.73	2.76 N	22.79 E	0.04	2.78
1926.00	3.52	276.19	1925.64	3.19 N	18.82 E	0.94	2.34
2021.00	5.35	273.40	2020.36	3.77 N	11.50 E	2.38	1.94
2115.00	6.96	262.69	2113.81	3.30 N	1.47 E	3.10	2.10
2210.00	8.91	263.03	2207.90	1.68 N	11.55 W	3.03	2.05
2305.00	11.20	254.67	2301.44	1.66 S	27.75 W	1.64	2.85

2399.00	13.30	253.64	2393.29	7.12 S	46.93 W	-1.51	2.25
2494.00	13.09	255.43	2485.78	12.90 S	67.84 W	-4.78	0.48
2589.00	13.35	256.43	2578.27	18.18 S	88.91 W	-7.53	0.36
2684.00	13.36	256.48	2670.70	23.32 S	110.25 W	-10.10	0.01
2779.00	12.87	256.49	2763.22	28.36 S	131.20 W	-12.62	0.51
2873.00	12.71	257.83	2854.89	32.98 S	151.49 W	-14.81	0.36
3063.00	11.85	257.77	3040.54	41.52 S	190.98 W	-18.61	0.45
3158.00	11.45	259.77	3133.58	45.26 S	209.79 W	-20.10	0.60
3253.00	10.72	260.42	3226.81	48.40 S	227.79 W	-21.09	0.78
3347.00	12.62	256.61	3318.86	52.23 S	246.40 W	-22.69	2.18
3442.00	12.76	255.86	3411.54	57.20 S	266.67 W	-25.22	0.23
3537.00	12.86	255.40	3504.18	62.43 S	287.07 W	-28.00	0.15
3632.00	12.97	253.77	3596.78	68.07 S	307.53 W	-31.18	0.40
3727.00	13.41	253.64	3689.27	74.15 S	328.35 W	-34.75	0.46
3822.00	12.41	255.03	3781.87	79.89 S	348.78 W	-38.03	1.11
3917.00	11.22	255.18	3874.85	84.89 S	367.58 W	-40.77	1.24
4011.00	9.35	249.92	3967.34	89.86 S	383.60 W	-43.81	2.22
4106.00	6.96	257.72	4061.37	93.73 S	396.47 W	-46.13	2.78
4201.00	4.72	255.27	4155.88	95.95 S	405.88 W	-47.22	2.36
4296.00	4.39	253.64	4250.57	97.97 S	413.15 W	-48.36	0.38
4391.00	3.03	217.97	4345.39	100.97 S	418.18 W	-50.75	2.75
4486.00	1.01	172.87	4440.33	103.78 S	419.62 W	-53.36	2.55
4581.00	1.24	169.23	4535.31	105.62 S	419.33 W	-55.23	0.26
4676.00	1.48	192.45	4630.28	107.83 S	419.40 W	-57.41	0.63
4770.00	1.14	192.85	4724.26	109.93 S	419.87 W	-59.44	0.36
4865.00	1.71	28.76	4819.25	109.61 S	419.40 W	-59.18	2.97
4960.00	1.71	14.48	4914.20	107.00 S	418.36 W	-56.71	0.45
5055.00	1.45	7.68	5009.17	104.43 S	417.85 W	-54.22	0.33
5245.00	1.33	359.17	5199.11	99.84 S	417.56 W	-49.69	0.13
5339.00	1.37	1.63	5293.09	97.63 S	417.54 W	-47.50	0.07
5434.00	1.23	355.56	5388.06	95.47 S	417.59 W	-45.36	0.20
5526.00	2.86	4.79	5480.00	92.20 S	417.47 W	-42.12	1.79
5574.00	10.14	1.40	5527.66	86.77 S	417.27 W	-36.76	15.20
5621.00	13.39	356.20	5573.67	77.20 S	417.53 W	-27.22	7.26
5669.00	15.26	354.75	5620.17	65.36 S	418.48 W	-15.35	3.97
5716.00	18.63	357.68	5665.13	51.70 S	419.35 W	-1.68	7.38
5764.00	23.28	1.23	5709.94	34.55 S	419.46 W	15.36	10.04
5811.00	27.20	359.50	5752.45	14.51 S	419.35 W	35.25	8.50
5859.00	31.46	359.15	5794.28	9.00 N	419.64 W	58.62	8.88
5906.00	35.70	359.98	5833.43	34.99 N	419.82 W	84.45	9.08
5954.00	38.85	359.05	5871.62	64.06 N	420.08 W	113.34	6.66
6000.00	42.27	358.37	5906.56	93.96 N	420.76 W	143.11	7.50
6048.00	45.68	358.09	5941.10	127.26 N	421.80 W	176.31	7.11
6095.00	49.77	359.06	5972.71	162.02 N	422.65 W	210.92	8.85
6143.00	54.77	359.52	6002.07	199.97 N	423.12 W	248.66	10.44
6190.00	58.36	359.34	6027.96	239.18 N	423.51 W	287.65	7.64
6238.00	61.38	359.39	6052.05	280.69 N	423.97 W	328.92	6.30
6285.00	65.70	358.70	6072.99	322.75 N	424.67 W	370.77	9.28
6333.00	70.66	358.74	6090.82	367.29 N	425.67 W	415.11	10.32
6380.00	76.91	358.81	6103.94	412.39 N	426.63 W	460.00	13.31
6428.00	81.15	358.68	6113.07	459.49 N	427.66 W	506.89	8.84
6464.00	84.05	358.26	6117.71	495.17 N	428.62 W	542.44	8.12
6518.00	88.00	358.26	6121.46	549.00 N	430.26 W	596.09	7.32

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 353.20 DEGREES (GRID)
A TOTAL CORRECTION OF 7.17 DEG FROM MAGNETIC NORTH TO GRID NORTH HAS BEEN APPLIED**

**HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD.
HORIZONTAL DISPLACEMENT(CLOSURE) AT 6518.00 FEET
IS 697.52 FEET ALONG 321.91 DEGREES (GRID)**

Surface surveys at 350 ft and 592 ft have had azimuth corrected to grid north, but were not taken by Halliburton.

Last survey is a projection from 6464 ft MD to TD at 6518 ft MD.