

1 : 240

WELL INFORMATION					
MWD Run Number	100	200			
Date run completed	03-Jul-14	05-Jul-14			
Rig Bit Number	2	3			
Bit Size (in)	8.750	8.750			
Tool Nominal OD (in)	6.750	6.750			
Log Start Depth (MD, ft)	854.00	6,082.00			
Log End Depth (MD, ft)	6,082.00	7,068.00			
Drill or Wipe	Drill	Drill			
Drill/Wipe Start Date and Time	02-Jul-14 17:00	04-Jul-14 17:30			
Drill/Wipe End Date and Time	03-Jul-14 11:35	05-Jul-14 06:35			
Min Inc (deg) @ Depth (MD, ft)	0.20 @ 300.00	0.41 @ 6,113.00			
Max Inc (deg) @ Depth (MD, ft)	10.05 @ 2,895.00	79.21 @ 7,010.00			
Bit TFA(in2) / Bit Type	0.74 / PDC	0.98 / PDC			
Flow Rate (gpm)	569.00	533.00			
Max AV (fpm) / CV (fpm) @ MWD	427.3 / 427.3	415.0 / 415.0			
Fluid Type	Fresh Water Gel	Fresh Water Gel			
Density (ppg) / Viscosity (spqt)	9.20 / 40.00	10.60 / 41.00			
Filtrate CL (ppm)	2,200.00	2,000.00			
pH / Fluid Loss (mptm)	10.00 / N/A	9.50 / N/A			
PV (cP) / YP (Ihf2)	12 / 12.00	14 / 16.00			
% Solids / % Sand	4.8 / .1	10.9 / 0.2			
% 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 (deg F) / C	125.50 / 52.0	125.50 / 52.0			

Max Tool Temp (degF) / Source	165.58 / PCM	165.58 / PCM			
Rm @ Max Tool Temp (degF)	N/A @ N/A	N/A @ N/A			
Lead MWD Engineer	Garry Igunbor	Garry Igunbor			
Customer Representative	Charles Collver	Charles Collver			

SENSOR INFORMATION

Downhole Processor Information

Tool Type	PCM	PCM			
Software Version	5.84	5.84			
Sub Serial Number	244108	244108			
Insert Serial Number	11619971	11619971			
Date and Time Initialized	02-Jul-14 01:19	02-Jul-14 01:19			
Date and Time Read	05-Jul-14 11:43	05-Jul-14 11:38			
ECMB SW Version	N/A	N/A			

Directional Sensor Information

Tool Type	PCDC	PCDC			
Distance From Bit (ft)	59.00	58.00			
Software Version	6.21	6.21			
Sub Serial Number	244108	244108			
Sonde Serial Number	11478073	11478073			
Sensor ID Number	N/A	N/A			
Toolface Offset (deg)	330.96	73.48			

Gamma Ray Sensor Information

Tool Type	PCG	PCG			
Distance From Bit (ft)	51.62	51.32			
Recorded Sample Period (sec)	10	10			
Software Version	8.15	8.15			
Sub Serial Number	244108	244108			
Insert/Sonde Serial Number	11579778	11579778			

REMARKS

1. All depths are true vertical depths and are calibrated to the driller' pipe tally and are measured from the drill floor.
2. No depth corrections have been made for pipe stretch or compression.
3. All data presented is recorded (memory data) unless otherwise stated.
4. The Following smoothing parameters have been applied to the data"

PGXR (Gamma Ray):

Interval Resolution: 0.5 feet

Coercion Distance: 0.6 feet

Gap Fill: 3.0 feet

ROPA (Rate of Penetration):

Interval Resolution: 0.5 feet

Coercion Distance: 1.2 feet

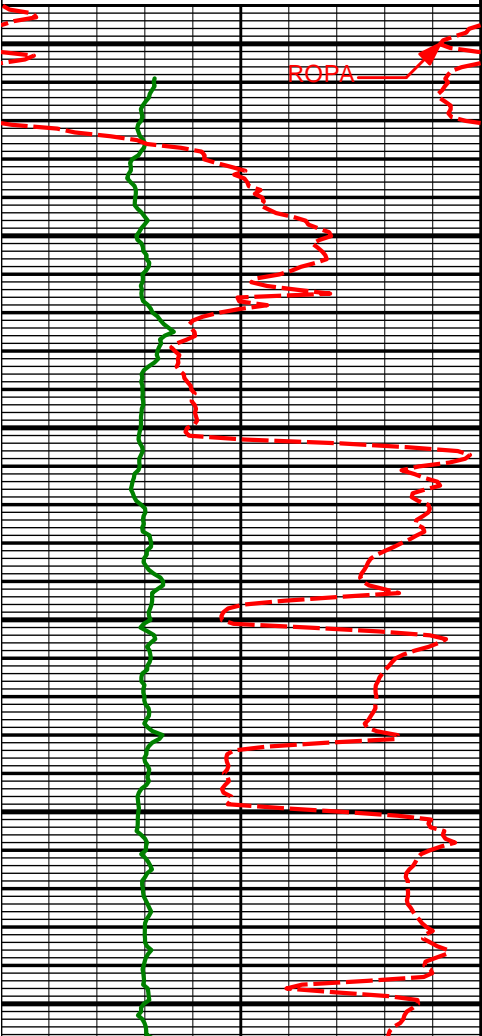
WARRANTY

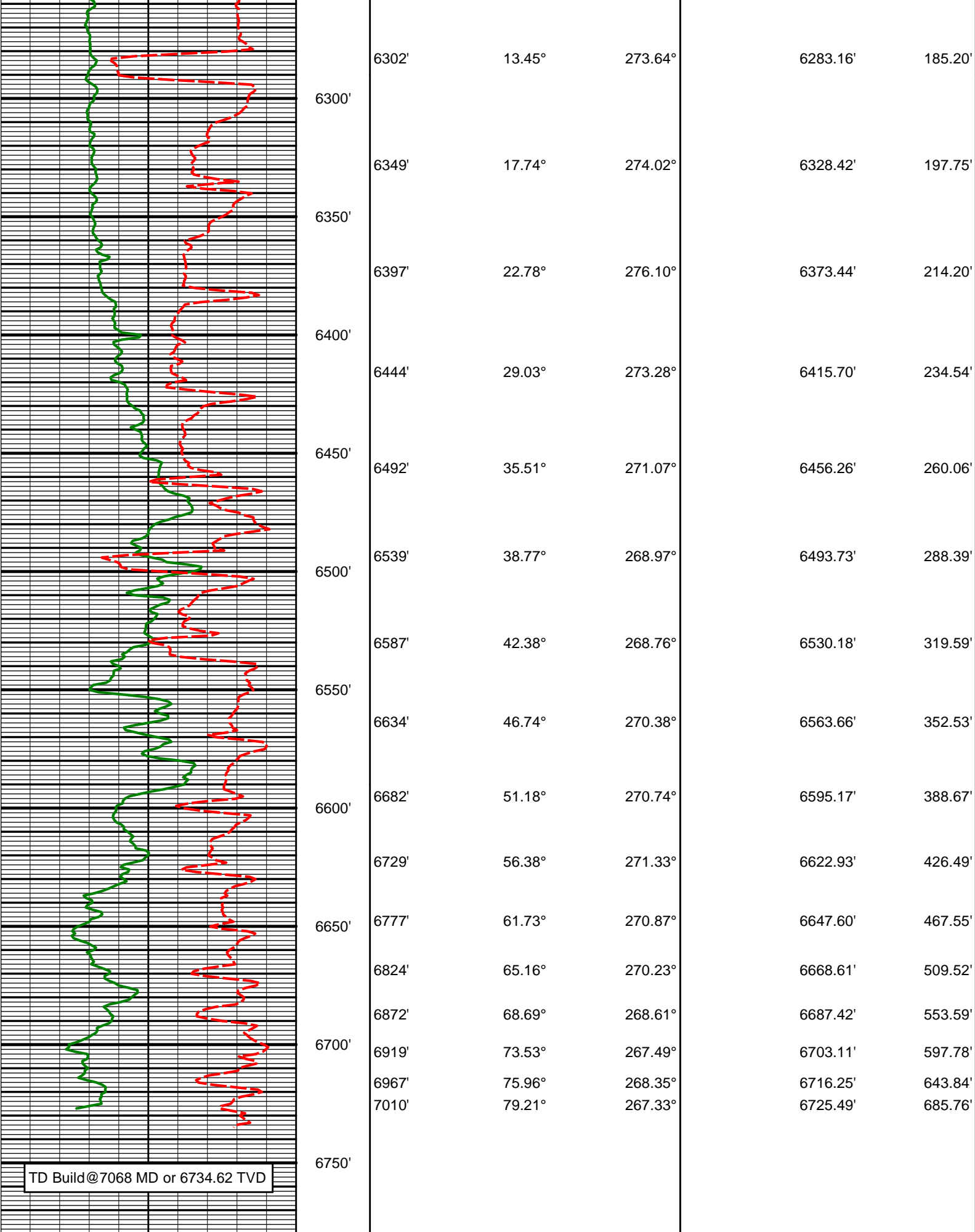
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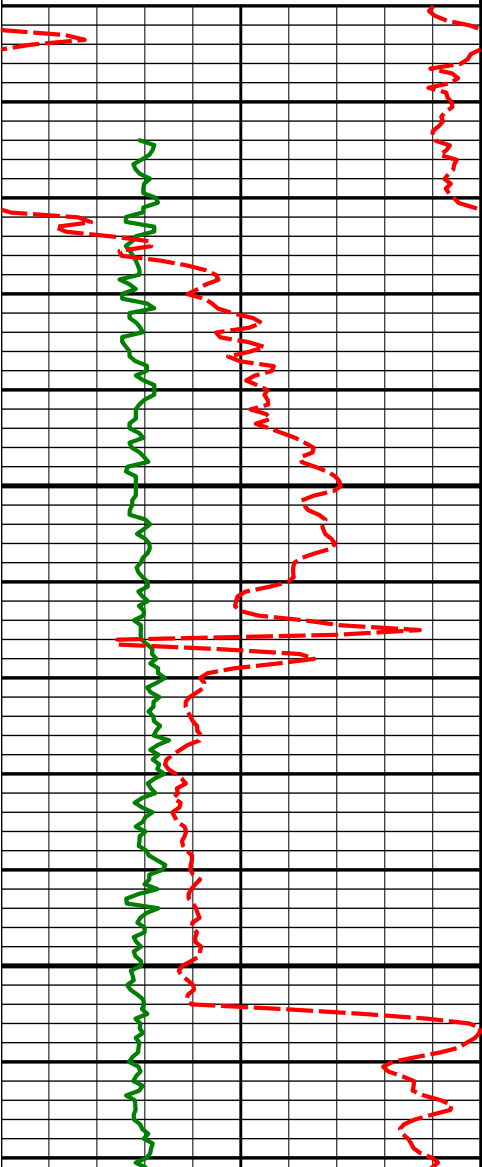
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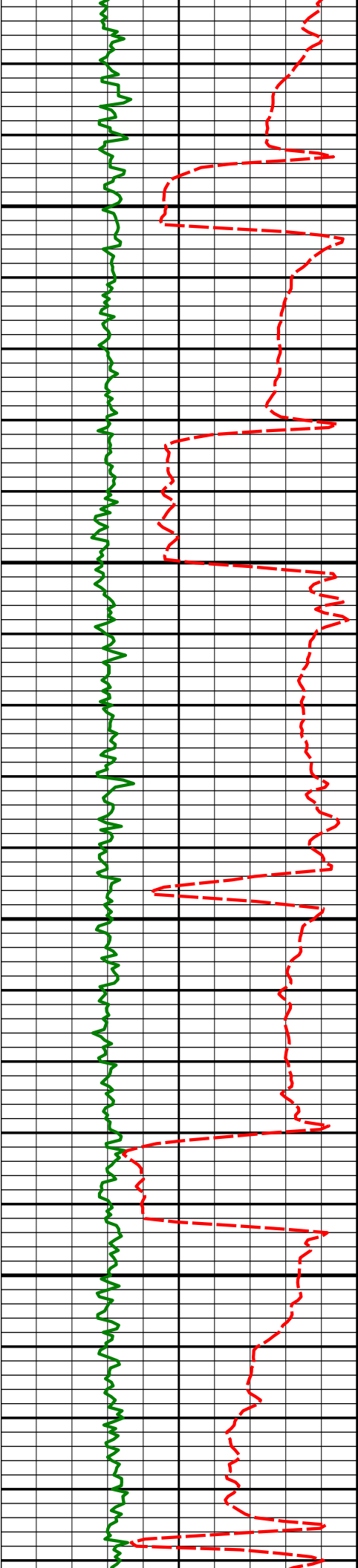
TVD Detail Log 1:600

Gamma Ray (PGXC) (Api)						
0300						
Avg Rate of Penetration feet per hr	Feet					
6000	0	Depth	Inc	Azm	TVD	Vsec
	6000'	6023'	0.58°	173.44°	6005.75'	165.80'
	6050'					
	6100'	6113'	0.41°	115.27°	6095.74'	165.48'
	6150'	6160'	2.38°	291.66°	6142.73'	166.22'
	6200'	6208'	6.00°	285.38°	6190.60'	169.51'
	6250'	6255'	9.88°	277.77°	6237.14'	175.80'

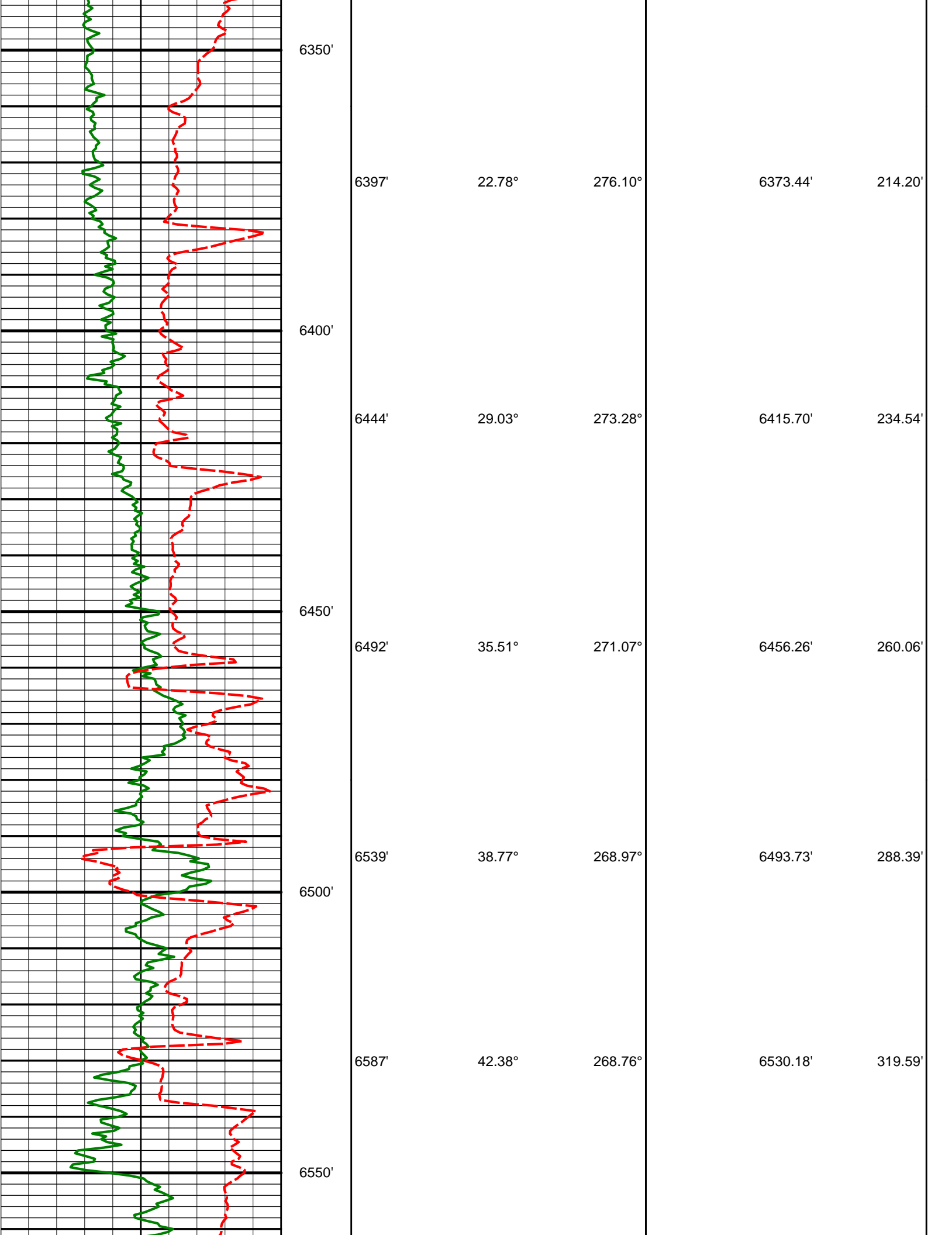


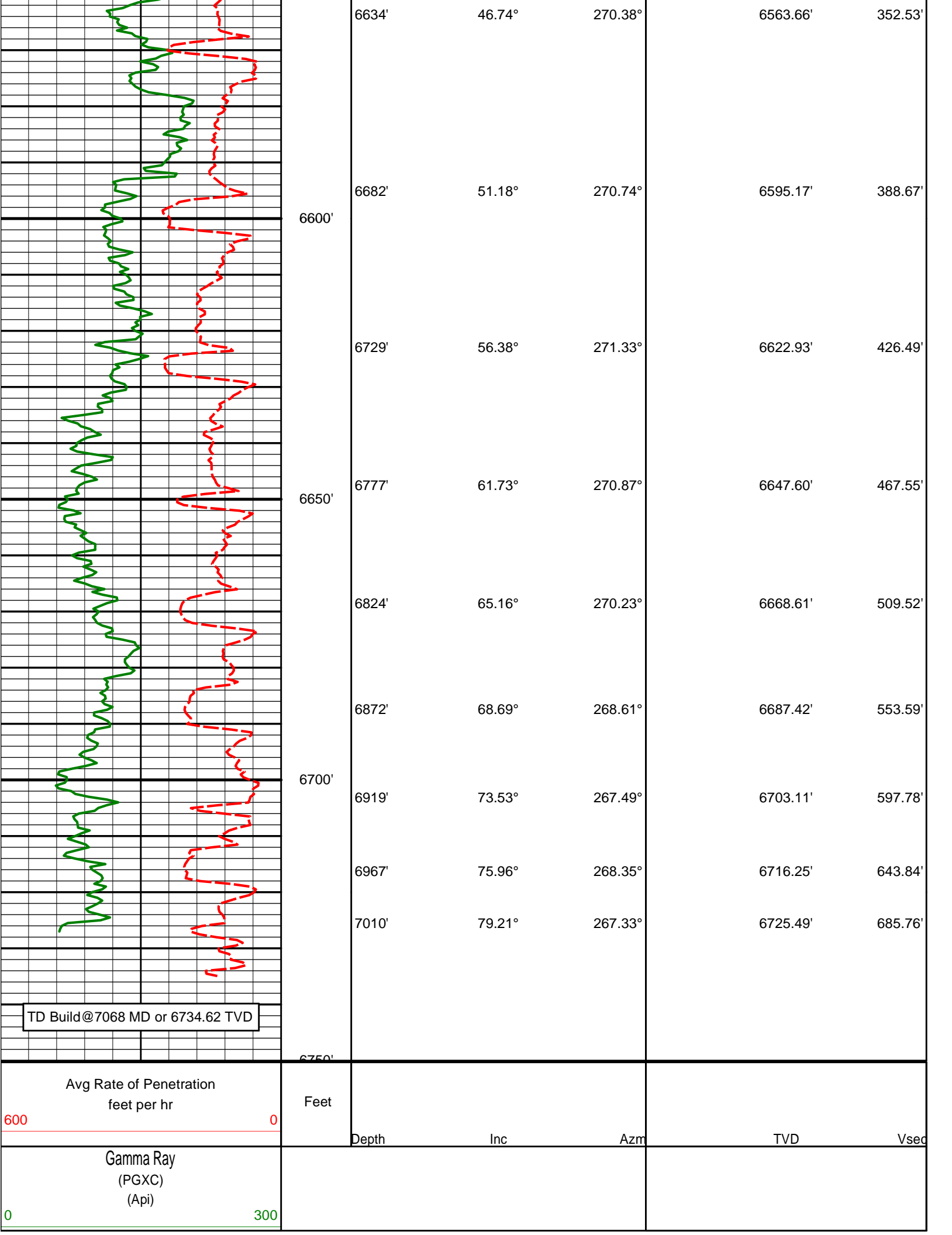
Avg Rate of Penetration feet per hr		Feet		
600	0			

Gamma Ray (PGXC) (Api)		Depth		Inc		Azm		TVD		Vsec	
0300											
HALLIBURTON											
TVD Detail Log 1:240											
Gamma Ray (PGXC) (Api)											
0300											
Avg Rate of Penetration feet per hr		Feet									
6000											
		Depth		Inc		Azm		TVD		Vsec	
		6000'									
		6023'		0.58°		173.44°		6005.75'		165.80'	
		6050'									
		Run 200									
		6113'		0.41°		115.27°		6095.74'		165.48'	
		6100'									
		KOP									



6160'	2.38°	291.66°	6142.73'	166.22'
6150'				
6208'	6.00°	285.38°	6190.60'	169.51'
6200'				
6255'	9.88°	277.77°	6237.14'	175.80'
6250'				
6302'	13.45°	273.64°	6283.16'	185.20'
6300'				
6349'	17.74°	274.02°	6328.42'	197.75'





DIRECTIONAL SURVEY REPORT

Noble Energy
NCLP AA06-62-1AHNC
Wattenberg
Weld Colorado
USA
CA-XX-0901286147

<i>Measured Depth (feet)</i>	<i>Inclination (degrees)</i>	<i>Direction (degrees)</i>	<i>Vertical Depth (feet)</i>	<i>Latitude (feet)</i>	<i>Departure (feet)</i>	<i>Vertical Section (feet)</i>	<i>Dogleg (deg/100ft)</i>
0.00	0.00	0.00	0.00	0.00 N	0.00 E	0.00	TIE-IN
300.00	0.20	61.67	300.00	0.25 N	0.46 E	-0.47	0.07
600.00	0.30	77.27	600.00	0.67 N	1.69 E	-1.72	0.04
841.00	0.40	312.57	840.99	1.38 N	1.68 E	-1.75	0.26
917.00	0.26	275.03	916.99	1.57 N	1.32 E	-1.39	0.33
1103.00	0.59	257.57	1102.99	1.40 N	0.04 W	-0.03	0.19
1196.00	0.56	246.10	1195.98	1.12 N	0.92 W	0.87	0.13
1289.00	0.59	254.70	1288.98	0.81 N	1.80 W	1.76	0.10
1382.00	0.73	259.01	1381.97	0.57 N	2.84 W	2.81	0.16
1475.00	0.57	257.43	1474.97	0.35 N	3.88 W	3.85	0.17
1569.00	0.46	240.27	1568.96	0.06 N	4.66 W	4.65	0.20
1664.00	0.34	260.74	1663.96	0.17 S	5.27 W	5.27	0.19
1759.00	0.58	263.42	1758.96	0.27 S	6.03 W	6.03	0.25
1853.00	1.67	281.89	1852.94	0.04 S	7.84 W	7.83	1.21
1948.00	3.11	252.16	1947.86	0.55 S	11.65 W	11.66	1.95
2043.00	4.39	241.47	2042.65	3.07 S	17.29 W	17.43	1.53
2138.00	4.80	232.01	2137.35	7.26 S	23.62 W	23.95	0.91
2233.00	5.80	222.95	2231.94	13.22 S	30.02 W	30.65	1.37
2327.00	6.48	218.74	2325.40	20.83 S	36.58 W	37.57	0.87
2422.00	7.88	220.43	2419.66	29.97 S	44.16 W	45.60	1.49
2517.00	9.22	218.05	2513.60	40.92 S	53.07 W	55.05	1.46
2611.00	9.34	219.89	2606.37	52.70 S	62.61 W	65.16	0.34
2706.00	9.04	219.98	2700.15	64.34 S	72.35 W	75.47	0.32
2800.00	9.80	220.84	2792.88	76.05 S	82.32 W	86.01	0.82
2895.00	10.05	218.81	2886.46	88.62 S	92.80 W	97.11	0.45
2990.00	9.91	218.70	2980.02	101.46 S	103.11 W	108.04	0.15
3084.00	8.92	220.16	3072.75	113.35 S	112.87 W	118.38	1.08
3179.00	9.49	220.90	3166.53	124.89 S	122.75 W	128.82	0.61
3274.00	8.53	221.67	3260.36	136.08 S	132.56 W	139.18	1.02
3369.00	6.83	227.82	3354.50	145.13 S	141.43 W	148.49	1.99
3464.00	5.06	220.34	3448.99	152.12 S	148.33 W	155.73	2.03
3559.00	4.49	213.96	3543.66	158.40 S	153.12 W	160.83	0.82
3653.00	3.97	217.26	3637.40	164.04 S	157.14 W	165.13	0.61
3748.00	4.81	216.31	3732.12	169.87 S	161.49 W	169.77	0.89
3843.00	5.40	214.36	3826.75	176.77 S	166.37 W	174.99	0.65
3938.00	4.61	209.20	3921.38	183.79 S	170.76 W	179.72	0.96
4033.00	3.18	196.28	4016.16	189.65 S	173.36 W	182.61	1.76
4127.00	1.70	176.54	4110.08	193.55 S	174.01 W	183.45	1.79
4222.00	1.08	109.37	4205.06	195.25 S	173.08 W	182.60	1.71
4317.00	0.69	108.78	4300.04	195.73 S	171.69 W	181.24	0.41
4412.00	1.77	129.43	4395.02	196.85 S	170.02 W	179.63	1.21
4507.00	1.27	132.56	4489.99	198.49 S	168.11 W	177.80	0.53
4602.00	1.76	93.23	4584.96	199.29 S	165.88 W	175.61	1.18
4696.00	0.56	45.65	4678.94	199.05 S	164.11 W	173.83	1.53
4790.00	1.24	81.97	4772.92	198.58 S	162.77 W	172.48	0.91
4885.00	1.62	84.74	4867.90	198.32 S	160.42 W	170.11	0.41
4980.00	1.48	32.50	4962.86	197.16 S	158.42 W	168.06	1.44
5075.00	1.07	29.57	5057.84	195.35 S	157.32 W	166.87	0.44
5169.00	0.79	334.36	5151.83	194.00 S	157.17 W	166.65	0.95
5264.00	0.91	327.44	5246.82	192.78 S	157.86 W	167.28	0.17
5358.00	0.91	309.37	5340.81	191.68 S	158.84 W	168.20	0.30
5453.00	0.72	301.11	5435.80	190.89 S	159.93 W	169.26	0.23
5548.00	0.25	86.66	5530.80	190.57 S	160.24 W	169.54	0.99
5643.00	0.98	116.22	5625.79	190.91 S	159.30 W	168.63	0.81
5738.00	0.49	138.91	5720.78	191.58 S	158.30 W	167.67	0.59
5833.00	1.11	141.20	5815.77	192.60 S	157.46 W	166.87	0.65
5928.00	0.98	151.73	5910.76	194.04 S	156.50 W	165.99	0.24

6023.00	0.58	173.44	6005.75	195.23 S	156.06 W	165.61	0.52
6113.00	0.41	115.27	6095.75	195.82 S	155.72 W	165.29	0.56
6160.00	2.38	291.66	6142.73	195.53 S	156.47 W	166.03	5.93
6208.00	6.00	285.38	6190.60	194.50 S	159.82 W	169.32	7.59
6255.00	9.88	277.77	6237.14	193.30 S	166.18 W	175.62	8.54
6302.00	13.45	273.64	6283.16	192.41 S	175.64 W	185.02	7.80
6349.00	17.74	274.02	6328.42	191.56 S	188.24 W	197.56	9.13
6397.00	22.78	276.10	6373.44	190.06 S	204.79 W	214.01	10.61
6444.00	29.03	273.28	6415.70	188.44 S	225.24 W	234.36	13.55
6492.00	35.51	271.07	6456.26	187.51 S	250.83 W	259.88	13.72
6539.00	38.77	268.97	6493.72	187.52 S	279.20 W	288.21	7.44
6587.00	42.38	268.76	6530.18	188.14 S	310.41 W	319.41	7.53
6634.00	46.74	270.38	6563.66	188.37 S	343.38 W	352.35	9.59
6682.00	51.18	270.74	6595.17	188.01 S	379.57 W	388.48	9.27
6729.00	56.38	271.33	6622.93	187.32 S	417.47 W	426.30	11.11
6777.00	61.73	270.87	6647.60	186.53 S	458.62 W	467.35	11.18
6824.00	65.16	270.23	6668.61	186.13 S	500.65 W	509.31	7.40
6872.00	68.69	268.61	6687.42	186.59 S	544.80 W	553.43	7.98
6919.00	73.53	267.49	6702.63	188.11 S	589.23 W	597.88	10.54
6967.00	75.96	268.35	6715.26	189.79 S	635.50 W	644.18	5.35
7010.00	79.21	267.33	6724.51	191.37 S	677.46 W	686.16	7.91

CALCULATION BASED ON MINIMUM CURVATURE METHOD

**SURVEY COORDINATES RELATIVE TO WELL SYSTEM REFERENCE POINT
TVD VALUES GIVEN RELATIVE TO DRILLING MEASUREMENT POINT**

**VERTICAL SECTION RELATIVE TO WELL HEAD
VERTICAL SECTION IS COMPUTED ALONG A DIRECTION OF 267.14 DEGREES (GRID)
A TOTAL CORRECTION OF 7.47 DEG FROM MAGNETIC NORTH TO GRID NORTH HAS BEEN APPLIED**

**HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD.
HORIZONTAL DISPLACEMENT(CLOSURE) AT 7010.00 FEET
IS 703.97 FEET ALONG 254.23 DEGREES (GRID)**

Tie-In @ Surface

Surveys at 300 ft, 600 ft and 841 ft were taken and provided by HP 322 while they were drilling the surface hole and have been converted from magnetic north to grid north.