

COMPANY : ANADARKO E&P ONSHORE LLC  
WELL : MARS 28N-10HZ  
FIELD : WATTENBERG  
COUNTY : WELD  
STATE : COLORADO  
COUNTRY : U.S.A.  
UWI : 512343270

UWI : 512343270

SEC:22 TWP:1N RANGE:67W

DIRECTIONAL  
ROP  
CONDUCTIVITY  
FETR

G.L. to MEAN SEA LEVEL

## DEVIATION RECORD

CASING RECORD					
CASING SIZE in	FROM ft	TO ft			
9.625	0	1878			
			DRILLING CO. : XTREME		
			RIG : 24		
			LWD UNIT NO. : KIT MUD PUDISTRICT : CASPER		
			SPUD DATE : 02/22/2018		
			LWD START DATE : 03/02/2018	DEPTH : 1886 ft	
			LWD END DATE : 03/07/2018	DEPTH : 15601 ft	
			TOTAL DEPTH : 15663 ft		

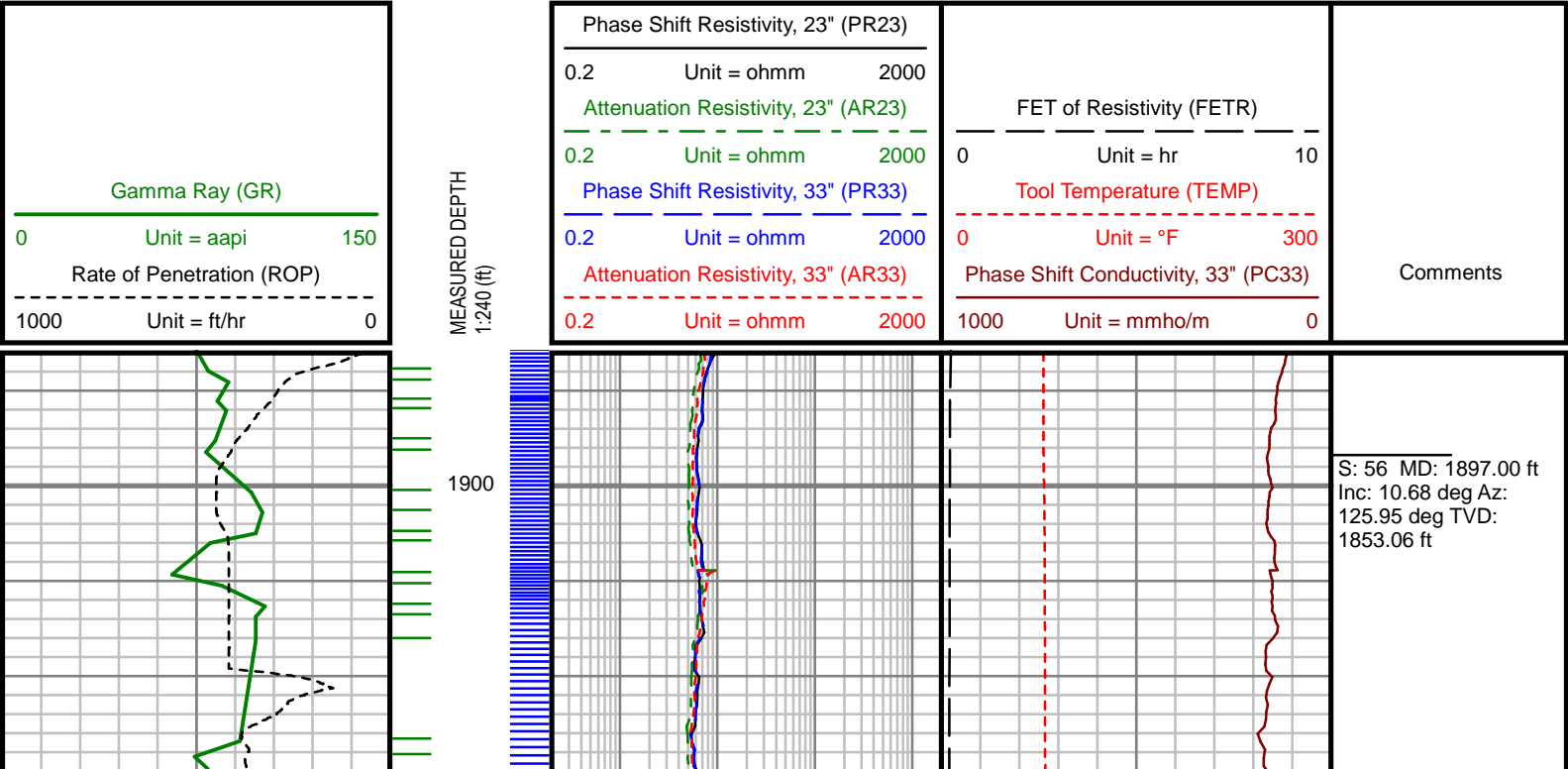
## Run Data

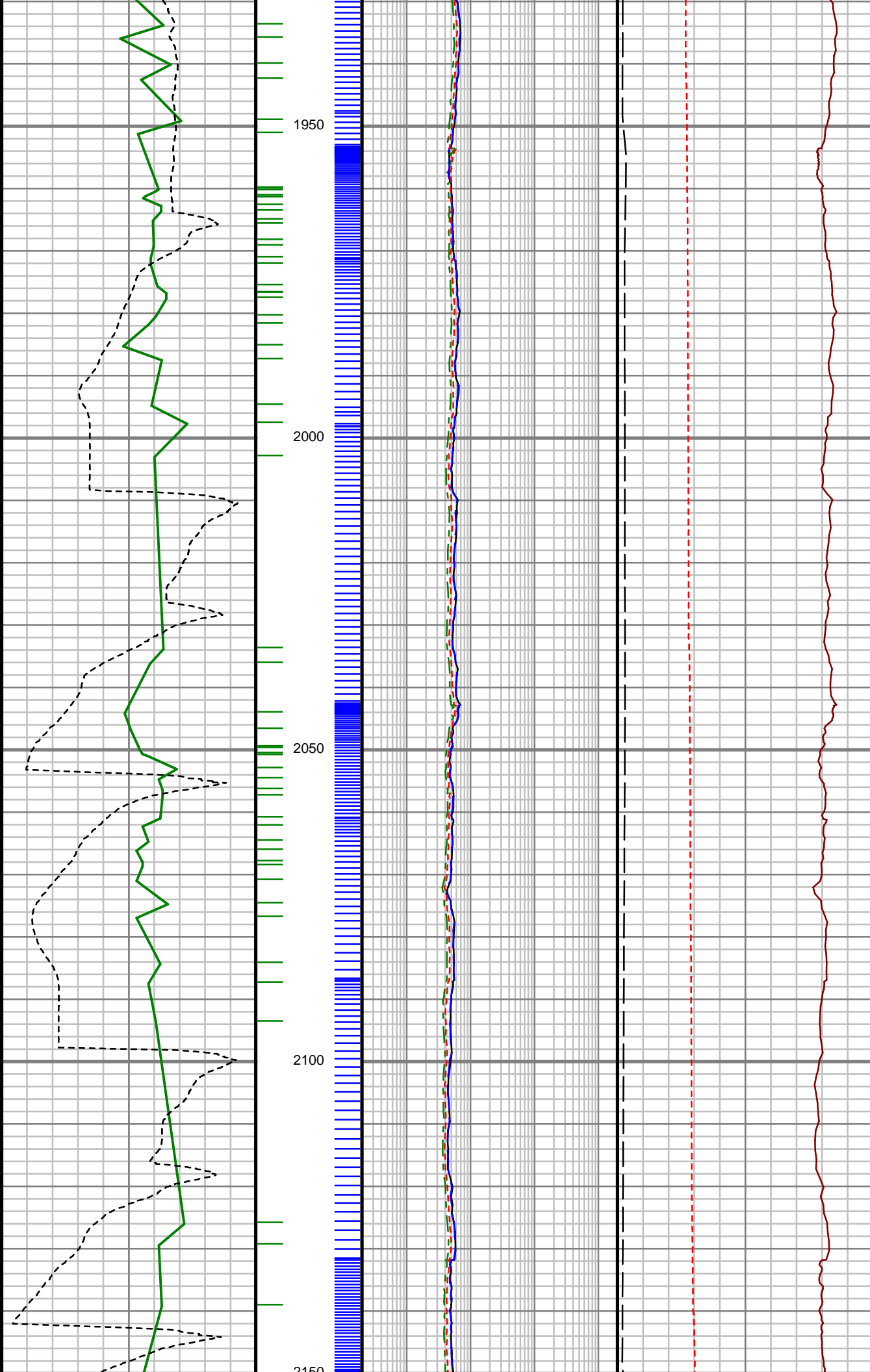
Run Data						
Run Number	1	2				
Start Date	03/02/2018	03/04/2018				
Start Time	21:00	15:00				
End Date	03/04/2018	03/07/2018				
End Time	15:00	06:00				
Depth In (ft)	1886	7630				
Depth Out (ft)	7630	15663				
Log Top (ft)	1983	7581				
Log Bottom (ft)	7581	15601				
Hole Size (in)	8.5	8.5				
Mud Data @ (ft)	7362	10998				
Mud Type	OIL-BASED	OIL-BASED				
Density (lb / gal)	8.8	8.85				
Viscosity (s / qt)	60	18				
pH	-	-				
Fluid Loss (cm3 / 30)	-	-				
Salinity (mg/L)	32400	40000				
Rm (ohmm @ deg F)	-	-				
Rmf (ohmm @ deg F)	-	-				
Max Temp (deg F)	160	235				
Rm @ Max Temp (ohmm)	-	-				
LWD Engineer #1	M. POTTER	J. MEYERS				
LWD Engineer #2	J. MEYERS	M. BAILY				
LWD Engineer #3	M. BAILY	-				
Log Witness #1	-	-				
Log Witness #2	-	-				

Remarks	
ANADARKO E&P ONSHORE LLC AFE# 2111898	
SCIENTIFIC DRILLING INTERNATIONAL JOB# OP.008556	
ALL REFERENCES IN THE DEPTH TRACK ARE AT BIT DEPTH.	
ALL DATA IS MEMORY DATA UNLESS STATED OTHERWISE.	
FLAT AVERAGE FILTER OF 1.00 FT APPLIED TO GAMMA RAY CURVE	
FLAT AVERAGE FILTER OF 1.00 FT APPLIED TO RATE OF PENETRATION CURVE	
FLAT AVERAGE FILTER OF 1.00 FT APPLIED TO TOOL TEMPERATURE CURVE	
RUN #1: MWD / RESISTIVITY / GAMMA RAY LOGGING RUN	
SENSORS S/N: PULSER=128-232 / CONTROLLER=139 / MWD EYE=1664 / GAMMA RAY=1537 / PRT=326	
BIT TO SENSOR OFFSETS: MWD EYE=65.59 FT. / GAMMA RAY=48.49 FT. / PRT=55.89 FT.	
MNEMONICS LIST:	
GR = GAMMA RAY	AR33 = ATTENUATION RESISTIVITY, 33"
ROP = RATE OF PENETRATION	FETR = FET OF RESISTIVITY
PR23 = PHASE SHIFT RESISTIVITY, 23"	TEMP = TOOL TEMPERATURE
AR23 = ATTENUATION RESISTIVITY, 23"	PC33 = PHASE SHIFT CONDUCTIVITY, 33"
PR33 = PHASE SHIFT RESISTIVITY, 33"	

All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions as set out in our current price schedule.

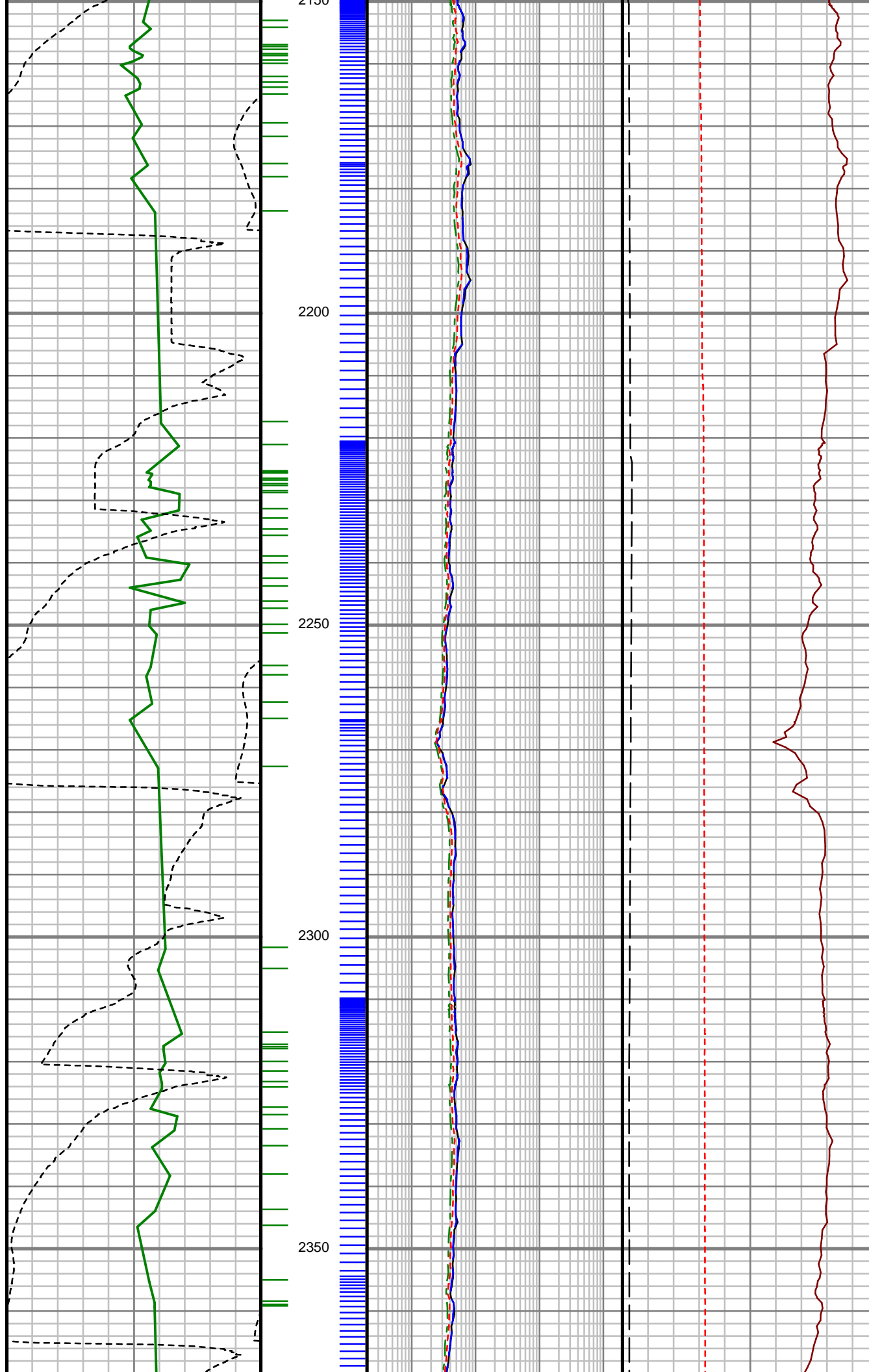
ANADARKO E&P ONSHORE LLC  
MARRS 28N-10HZ  
WATTENBERG FIELD  
WELD COUNTY, COLORADO  
API # 05123432700000





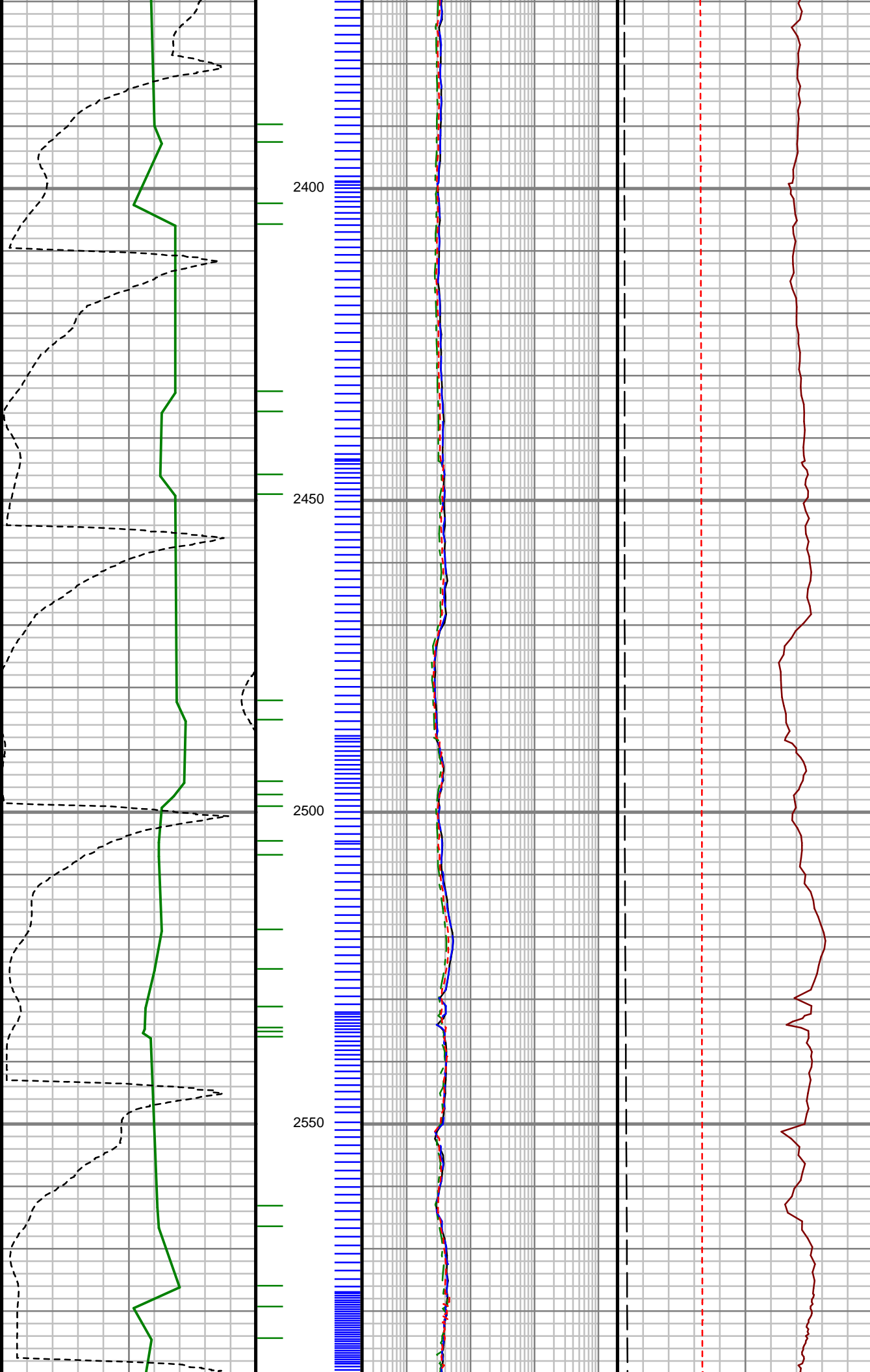
S: 57 MD: 1986.00 ft  
Inc: 10.50 deg Az:  
125.63 deg TVD:  
1940.55 ft

S: 58 MD: 2074.00 ft  
Inc: 10.32 deg Az:  
141.53 deg TVD:  
2027.12 ft



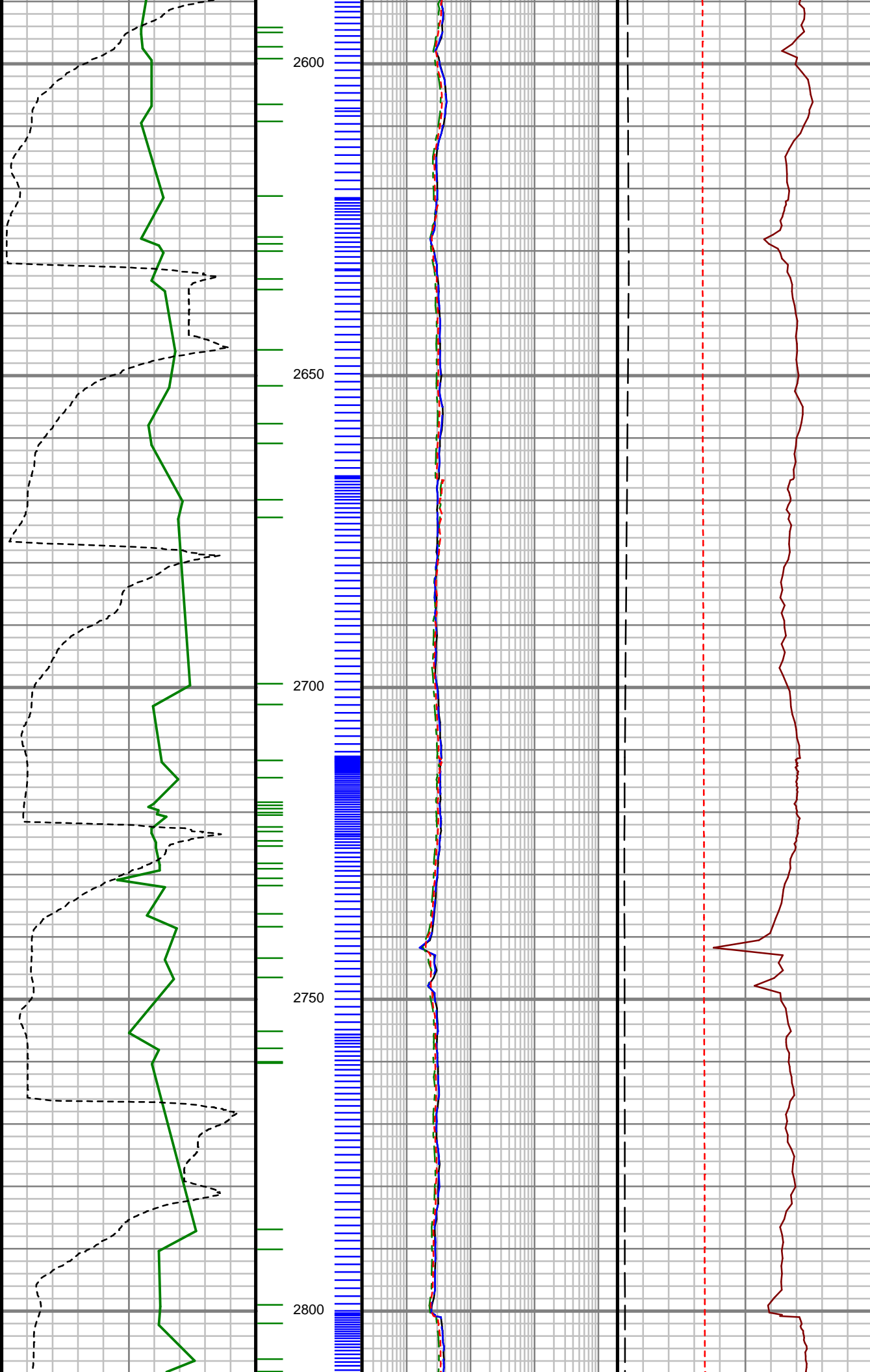
S: 59 MD: 2163.00 ft  
Inc: 11.26 deg Az:  
155.41 deg TVD:  
2114.56 ft

S: 60 MD: 2297.00 ft  
Inc: 10.98 deg Az:  
171.30 deg TVD:  
2246.07 ft



S: 61 MD: 2385.00 ft  
Inc: 11.43 deg Az:  
182.19 deg TVD:  
2332.40 ft

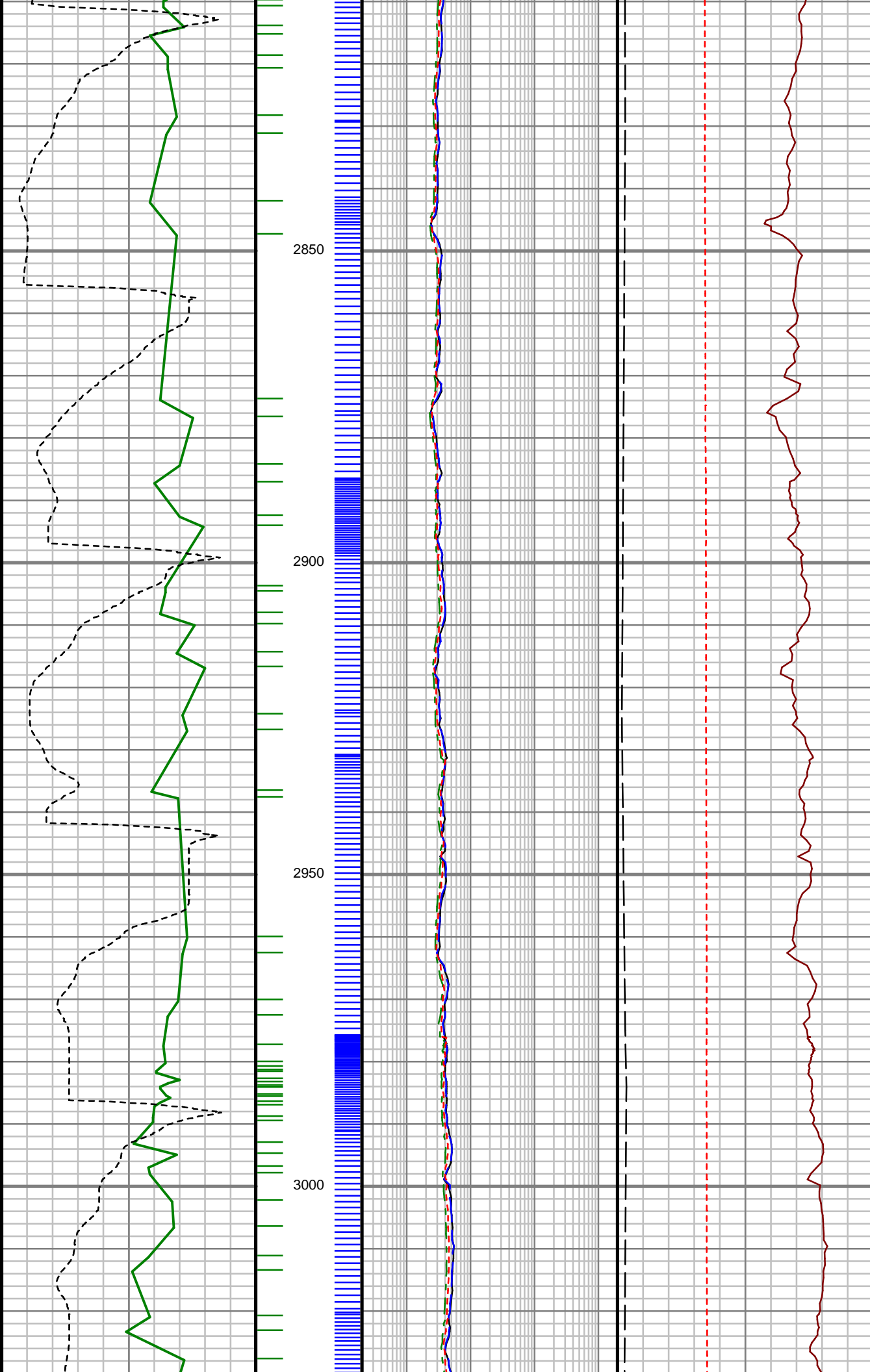
S: 62 MD: 2474.00 ft  
Inc: 11.22 deg Az:  
181.84 deg TVD:  
2419.67 ft



S: 63 MD: 2607.00 ft  
Inc: 10.95 deg Az:  
180.17 deg TVD:  
2550.19 ft

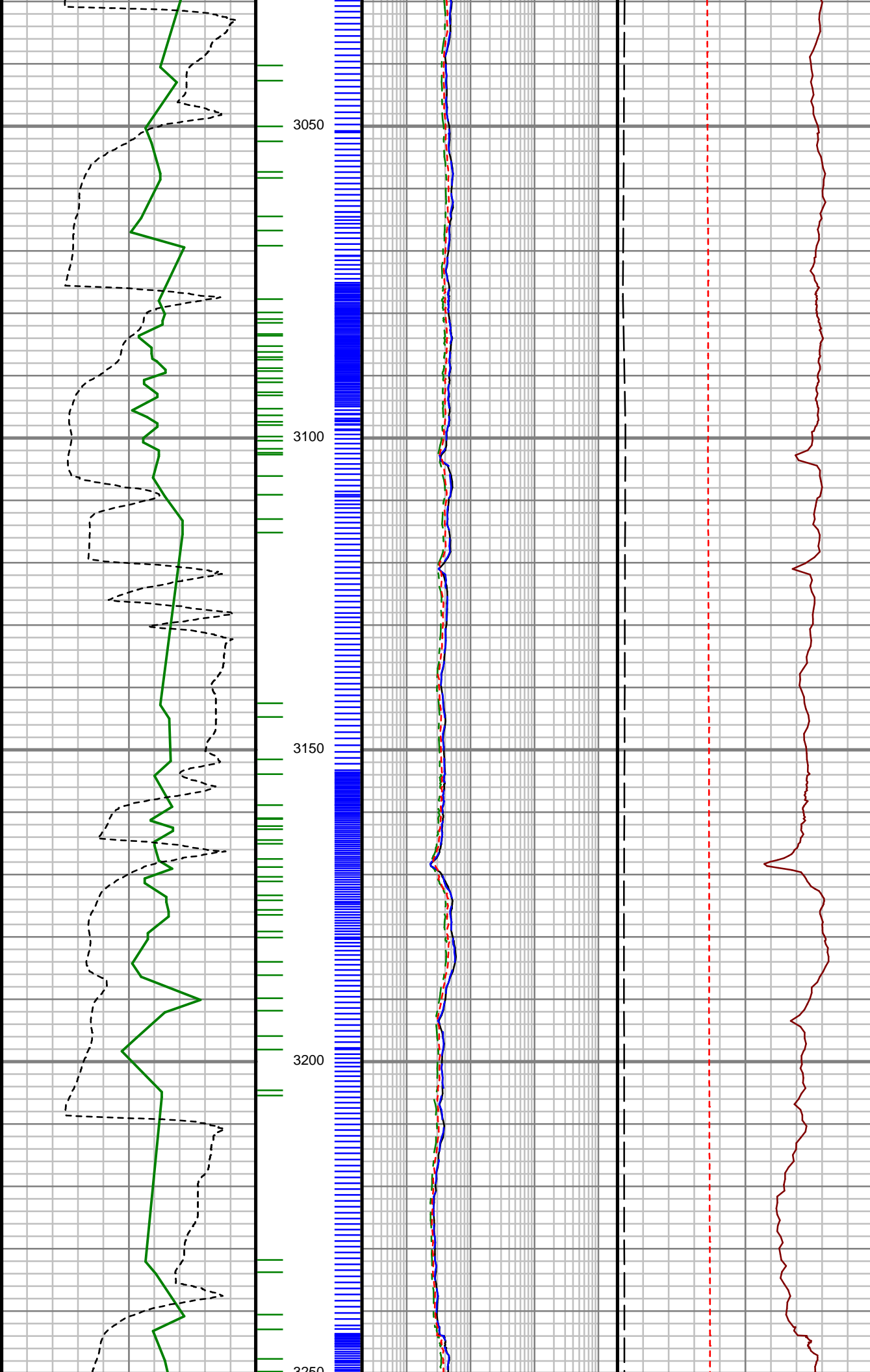
S: 64 MD: 2696.00 ft  
Inc: 10.47 deg Az:  
178.97 deg TVD:  
2637.64 ft

S: 65 MD: 2785.00 ft  
Inc: 10.84 deg Az:  
186.80 deg TVD:  
2725.11 ft



S: 66 MD: 2874.00 ft  
Inc: 10.39 deg Az:  
190.73 deg TVD:  
2812.59 ft

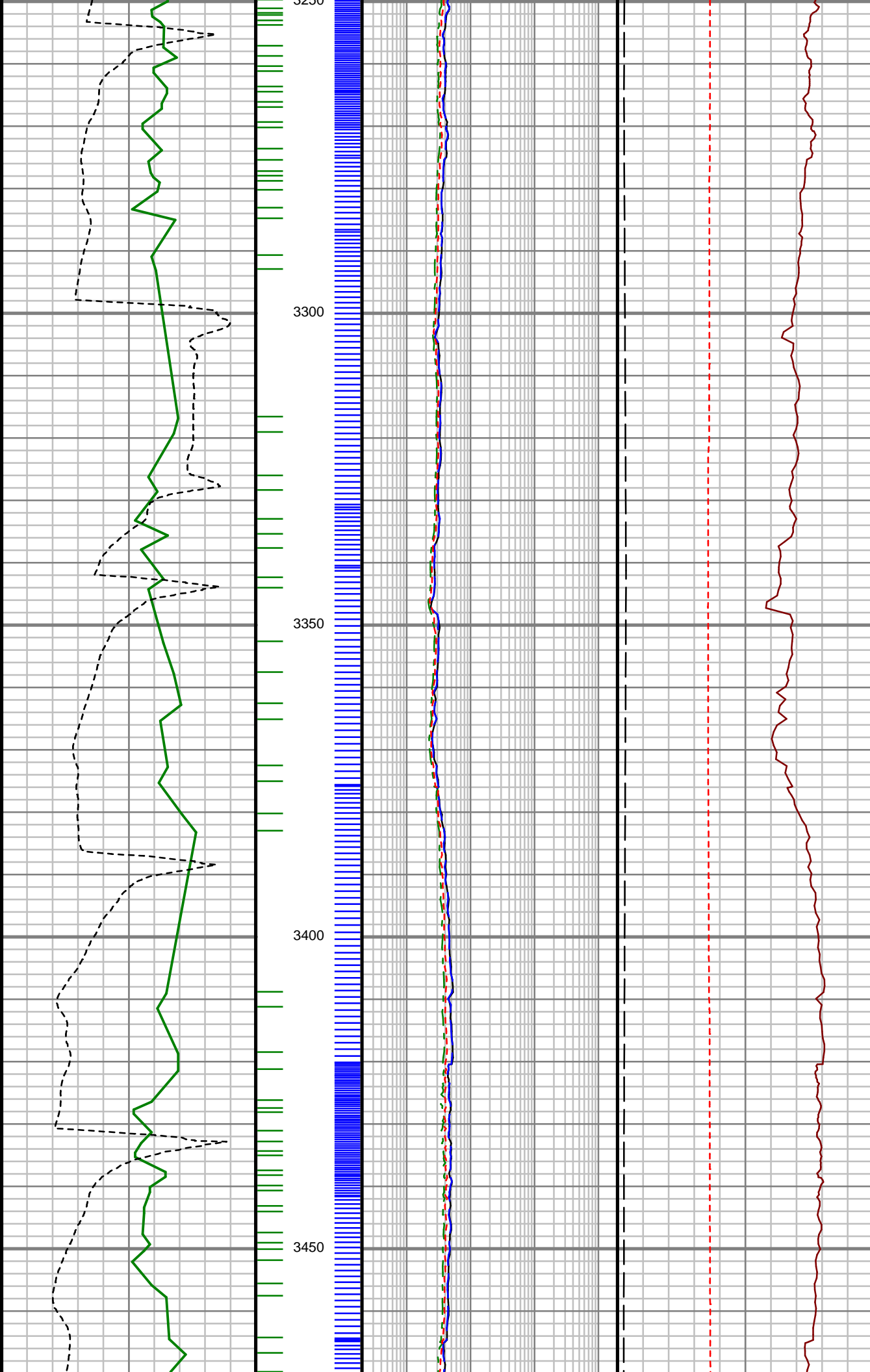
S: 67 MD: 2963.00 ft  
Inc: 9.89 deg Az:  
192.02 deg TVD:  
2900.20 ft



S: 68 MD: 3052.00 ft  
Inc: 8.38 deg Az:  
180.17 deg TVD:  
2988.07 ft

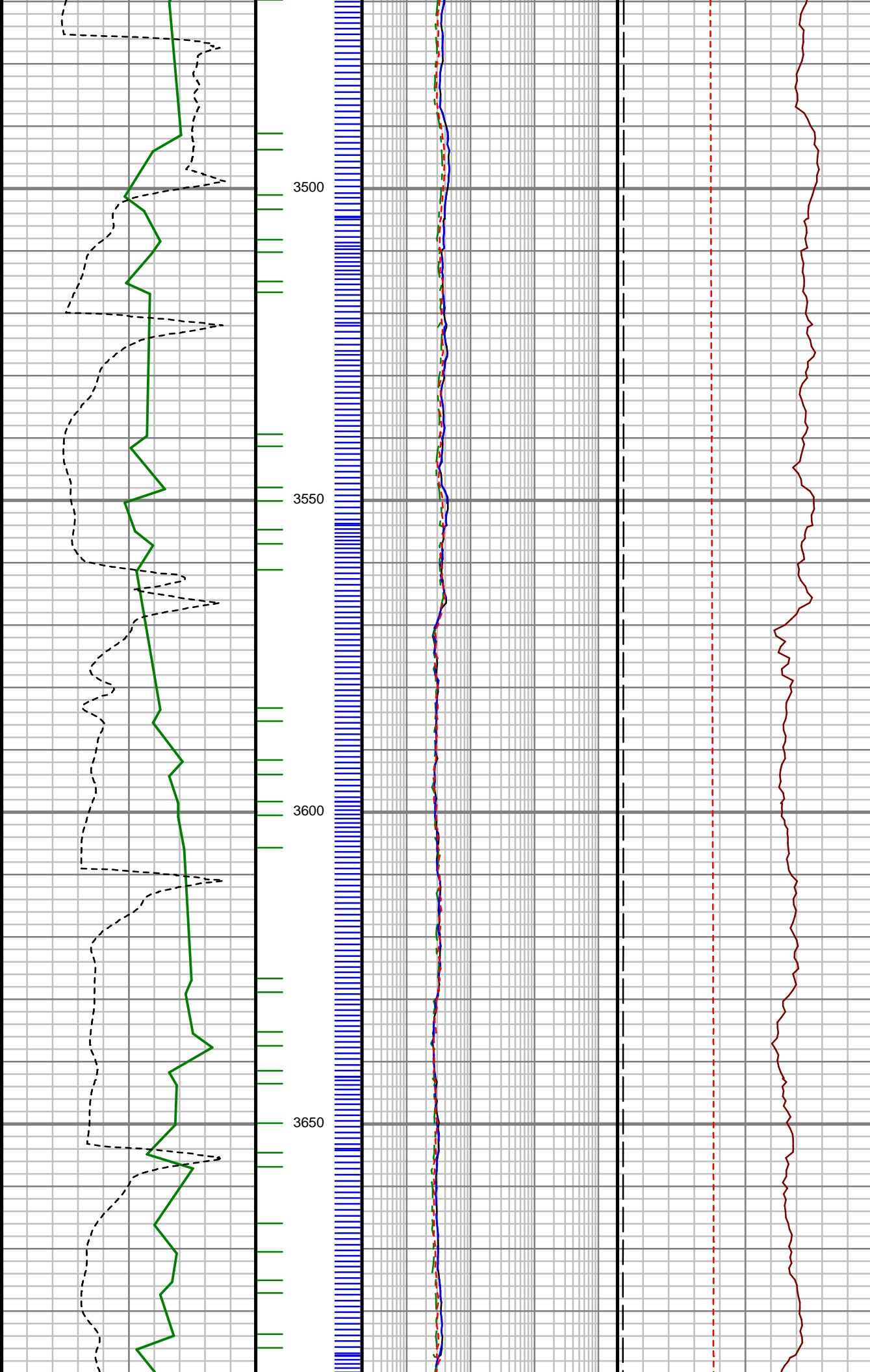
S: 69 MD: 3141.00 ft  
Inc: 6.32 deg Az:  
176.71 deg TVD:  
3076.34 ft

S: 70 MD: 3229.00 ft  
Inc: 3.37 deg Az:  
153.35 deg TVD:  
3164.02 ft



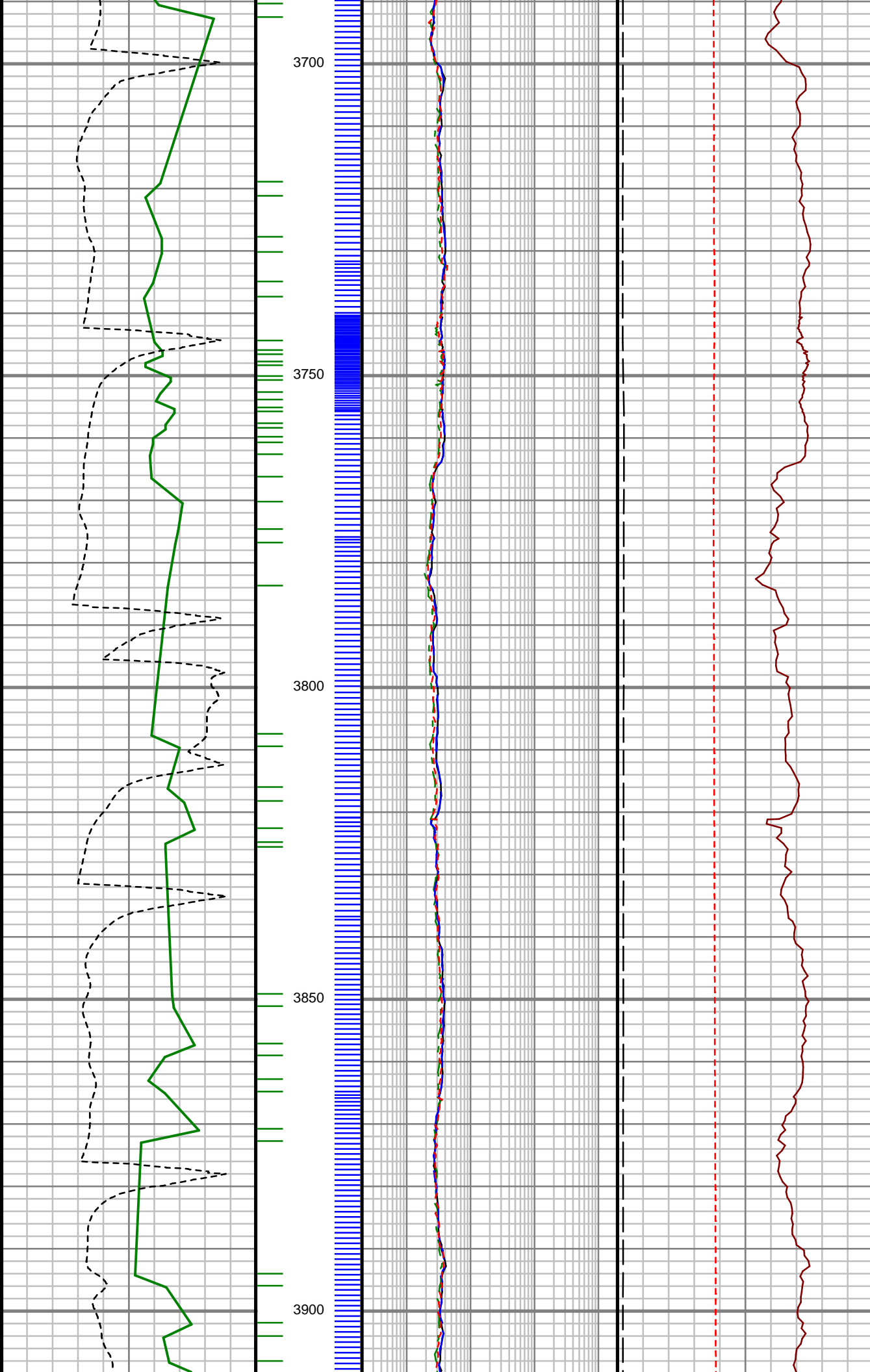
S: 71 MD: 3318.00 ft  
Inc: 0.63 deg Az: 23.39  
deg TVD: 3252.98 ft

S: 72 MD: 3407.00 ft  
Inc: 2.04 deg Az:  
350.89 deg TVD:  
3341.95 ft



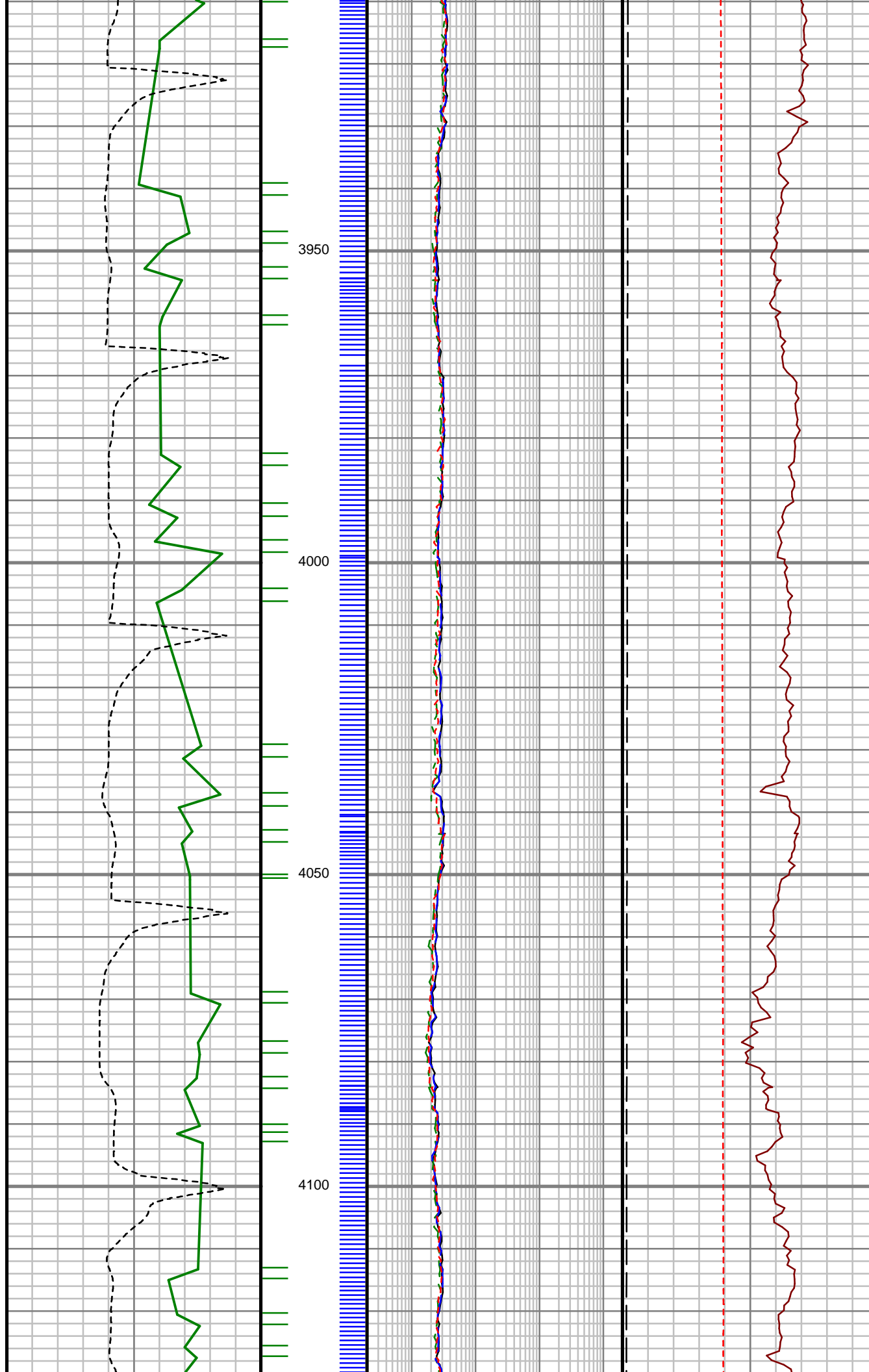
S: 73 MD: 3496.00 ft  
Inc: 0.77 deg Az: 10.81  
deg TVD: 3430.92 ft

S: 74 MD: 3629.00 ft  
Inc: 0.34 deg Az: 60.90  
deg TVD: 3563.92 ft



S: 75 MD: 3718.00 ft  
Inc: 0.35 deg Az: 19.28  
deg TVD: 3652.91 ft

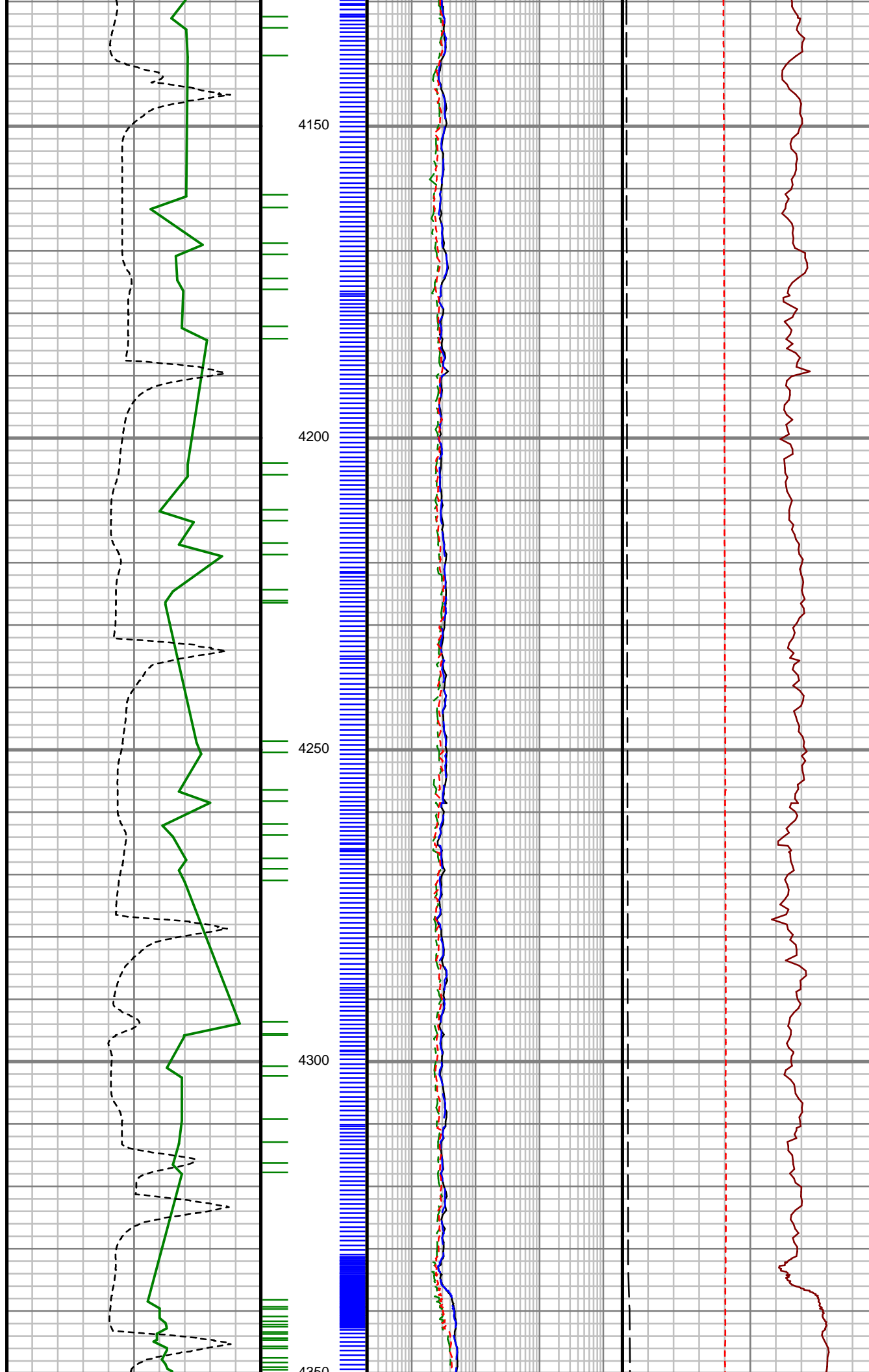
S: 76 MD: 3851.00 ft  
Inc: 1.39 deg Az:  
161.88 deg TVD:  
3785.90 ft



S: 77 MD: 3940.00 ft  
Inc: 1.11 deg Az:  
166.84 deg TVD:  
3874.88 ft

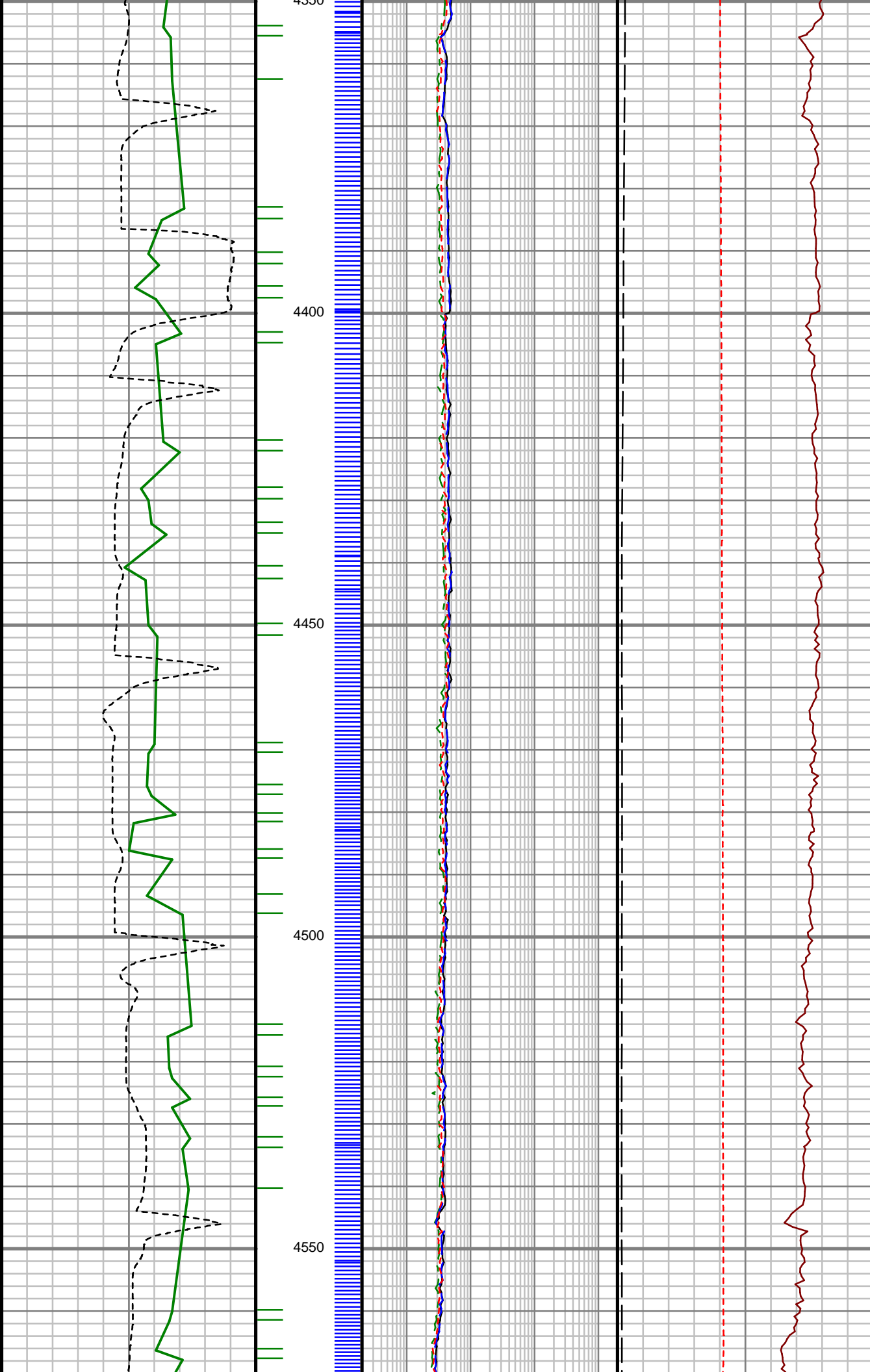
S: 78 MD: 4029.00 ft  
Inc: 1.10 deg Az:  
171.07 deg TVD:  
3963.87 ft

S: 79 MD: 4118.00 ft  
Inc: 1.07 deg Az:  
178.25 deg TVD:  
4052.85 ft



S: 80 MD: 4207.00 ft  
Inc: 1.05 deg Az:  
183.63 deg TVD:  
4141.83 ft

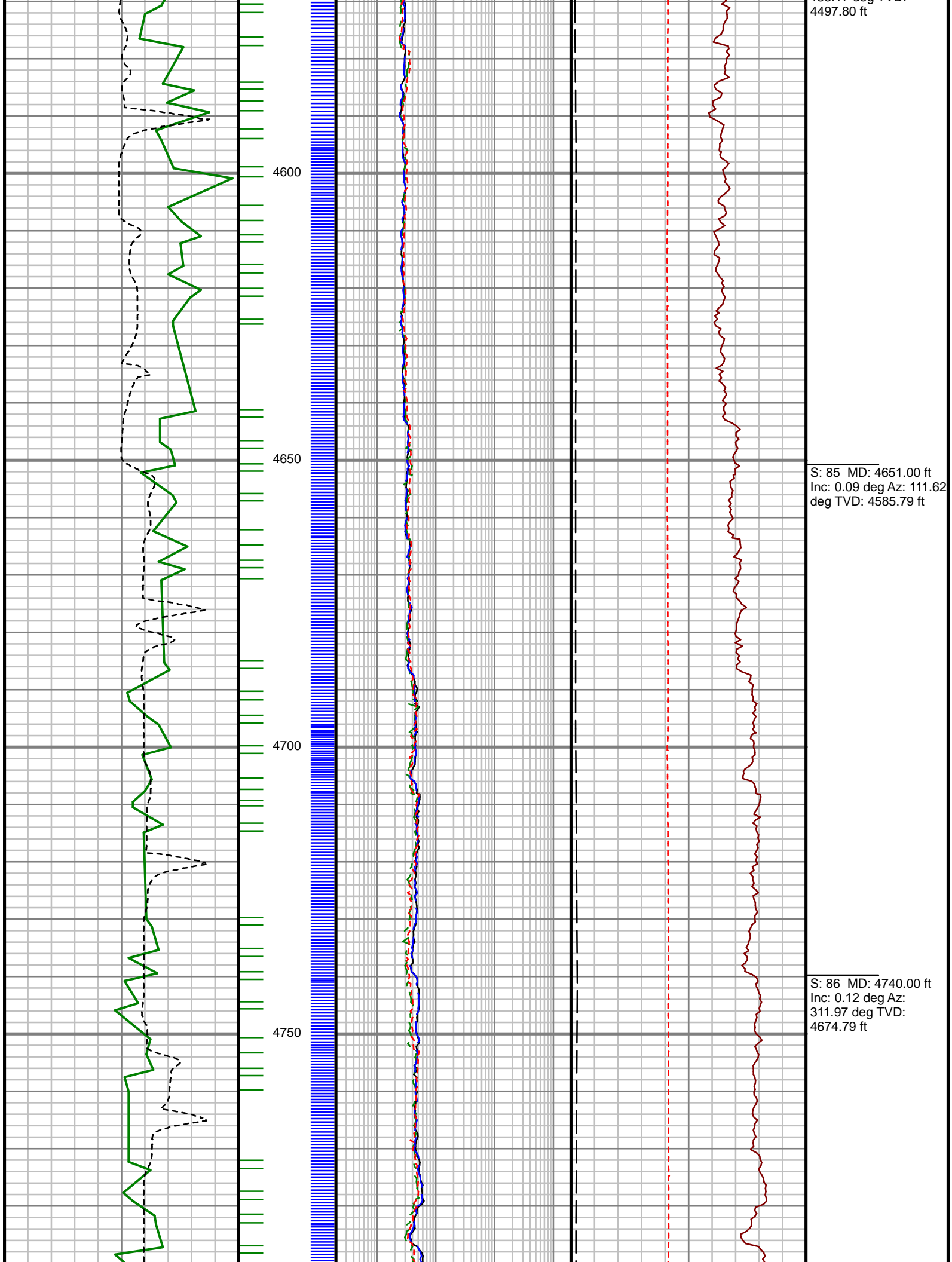
S: 81 MD: 4296.00 ft  
Inc: 0.96 deg Az:  
183.82 deg TVD:  
4230.82 ft

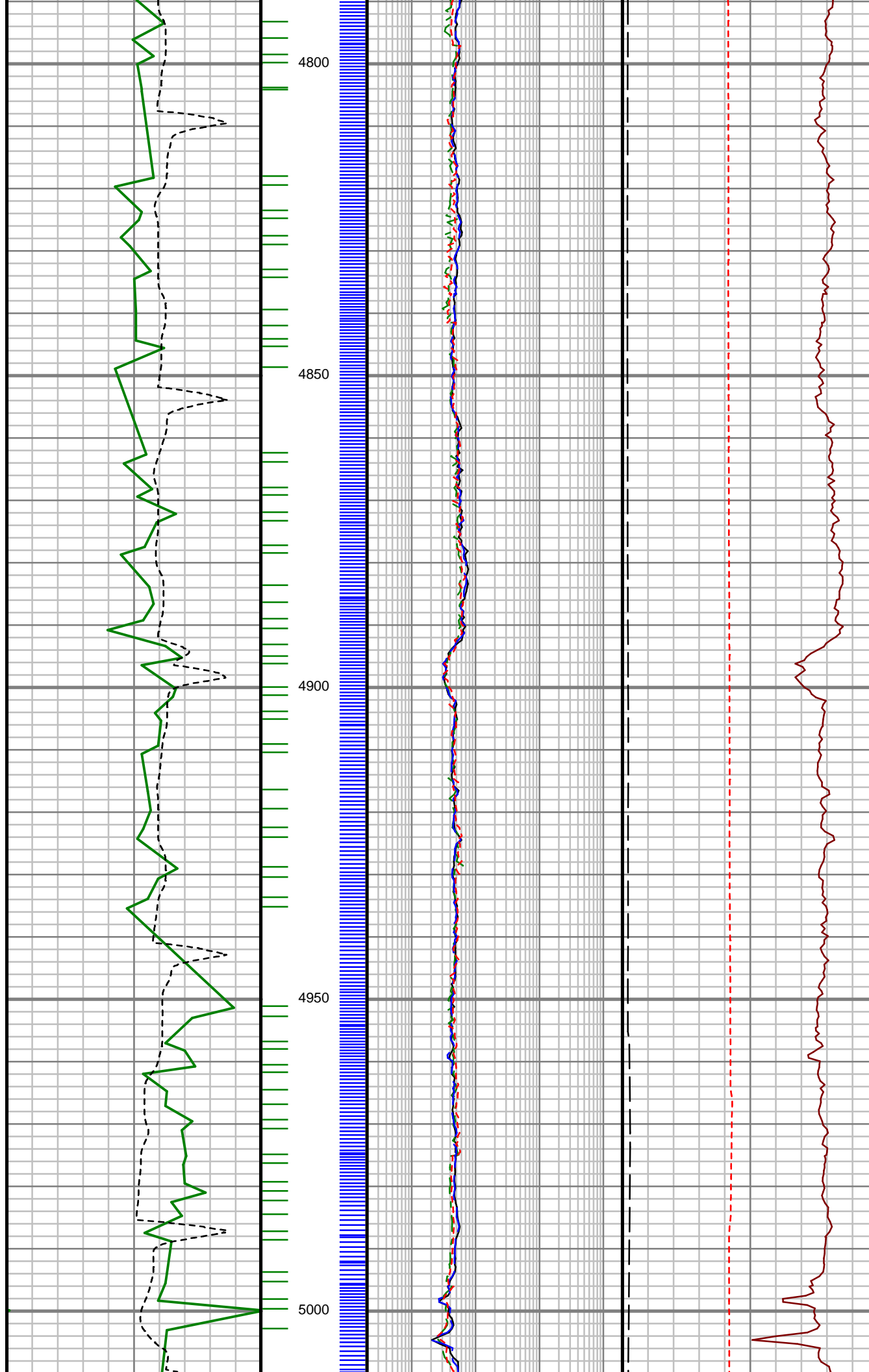


S: 82 MD: 4385.00 ft  
Inc: 0.72 deg Az:  
164.15 deg TVD:  
4319.81 ft

S: 83 MD: 4474.00 ft  
Inc: 0.90 deg Az:  
126.79 deg TVD:  
4408.80 ft

S: 84 MD: 4563.00 ft  
Inc: 0.47 deg Az:  
153.17 deg TVD:

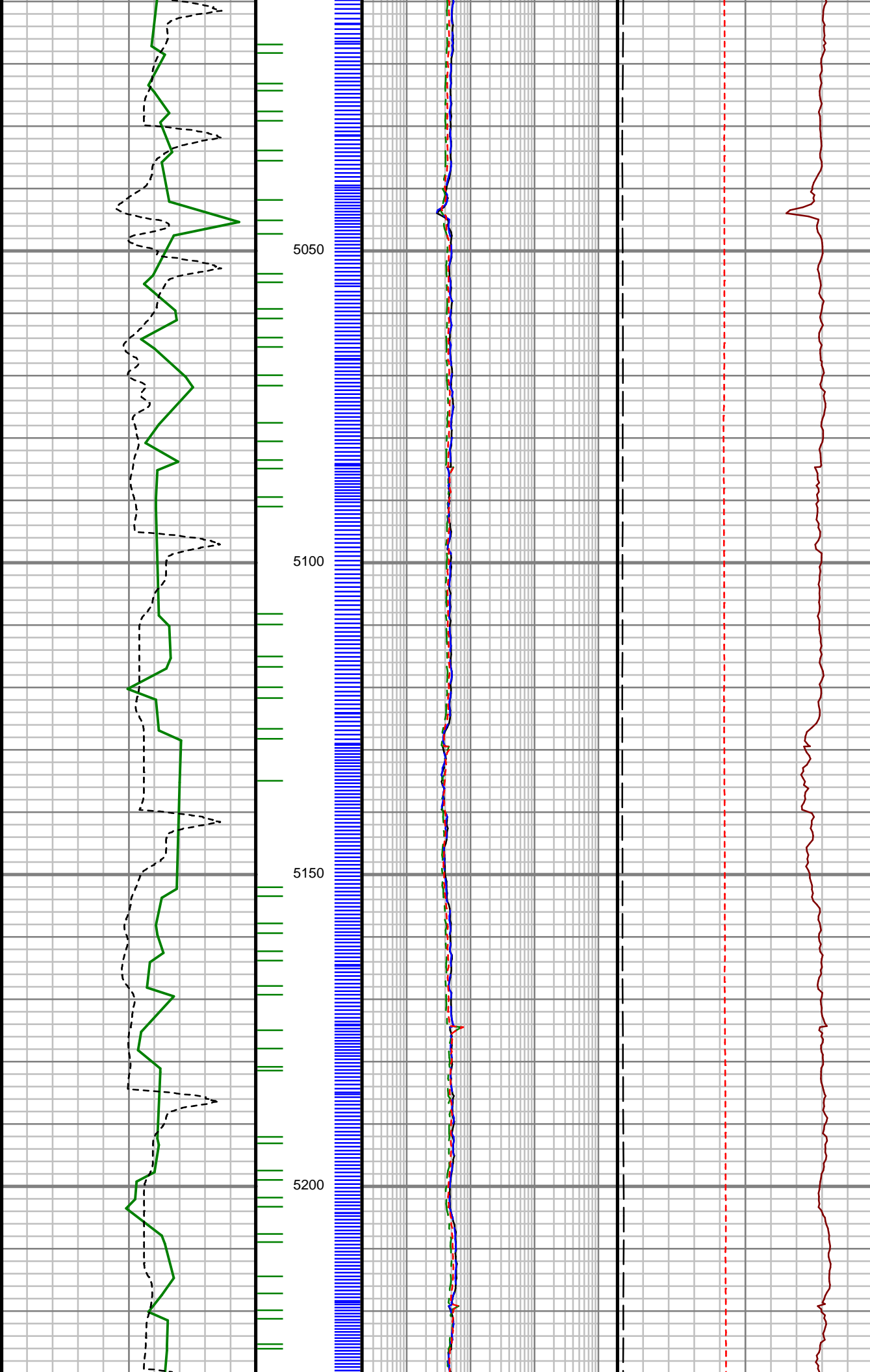




S: 87 MD: 4828.00 ft  
Inc: 0.33 deg Az:  
352.13 deg TVD:  
4762.79 ft

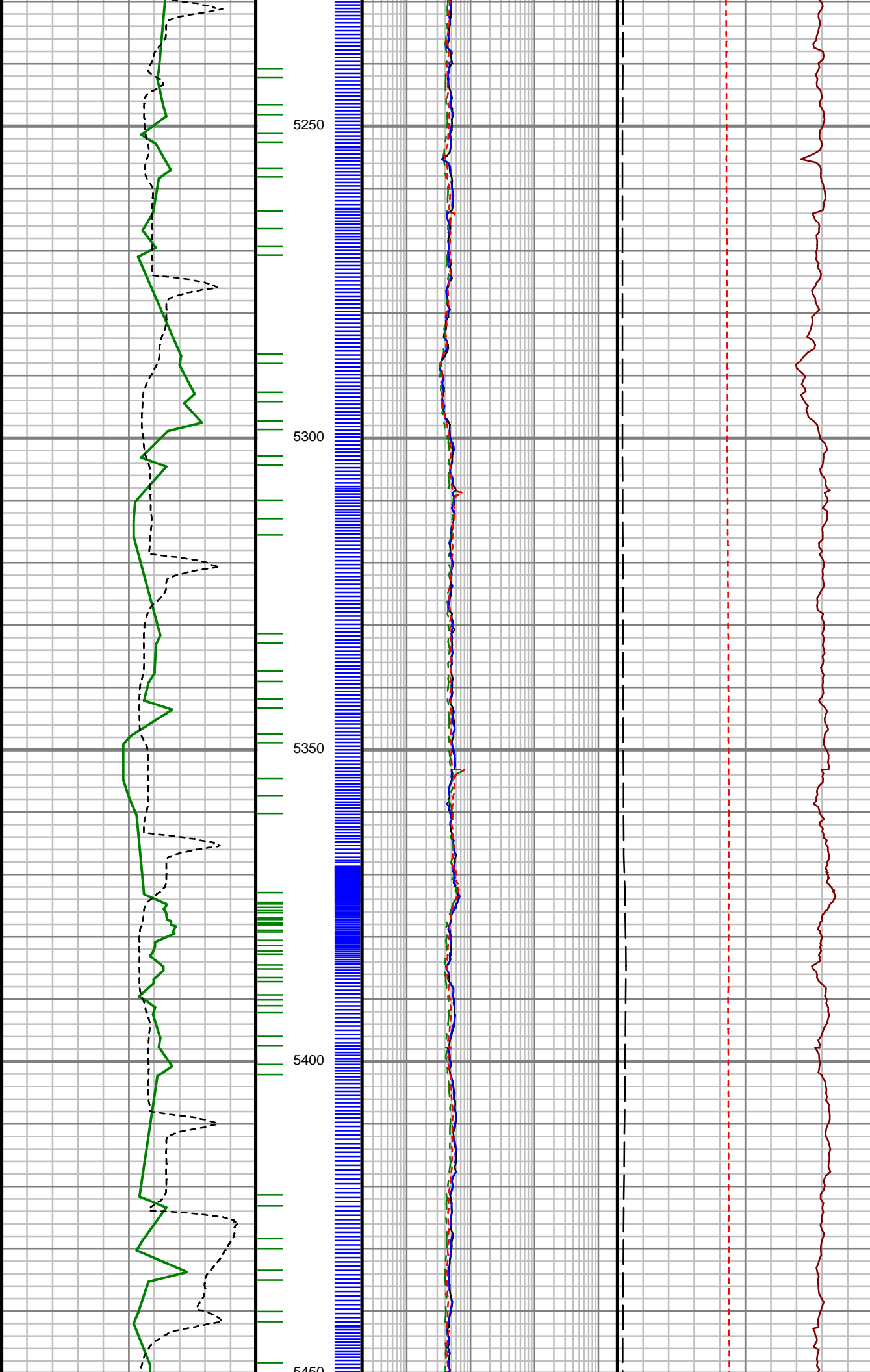
S: 88 MD: 4917.00 ft  
Inc: 0.47 deg Az:  
342.18 deg TVD:  
4851.79 ft

S: 89 MD: 4984.00 ft  
Inc: 0.66 deg Az:  
322.30 deg TVD:  
4918.79 ft



S: 90 MD: 5072.00 ft  
Inc: 0.76 deg Az:  
303.63 deg TVD:  
5006.78 ft

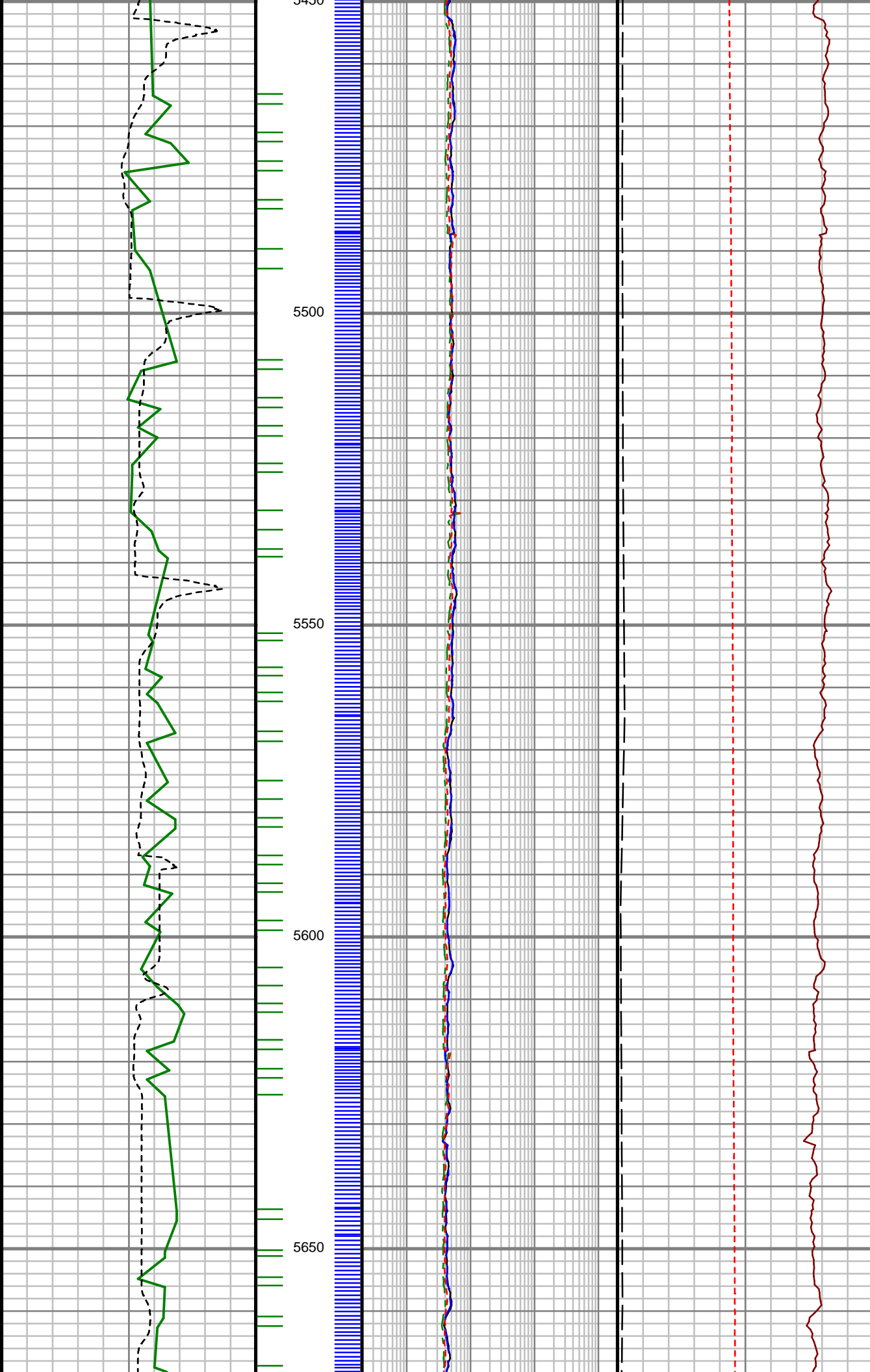
S: 91 MD: 5161.00 ft  
Inc: 0.95 deg Az:  
274.58 deg TVD:  
5095.77 ft



S: 92 MD: 5250.00 ft  
Inc: 1.03 deg Az:  
272.58 deg TVD:  
5184.76 ft

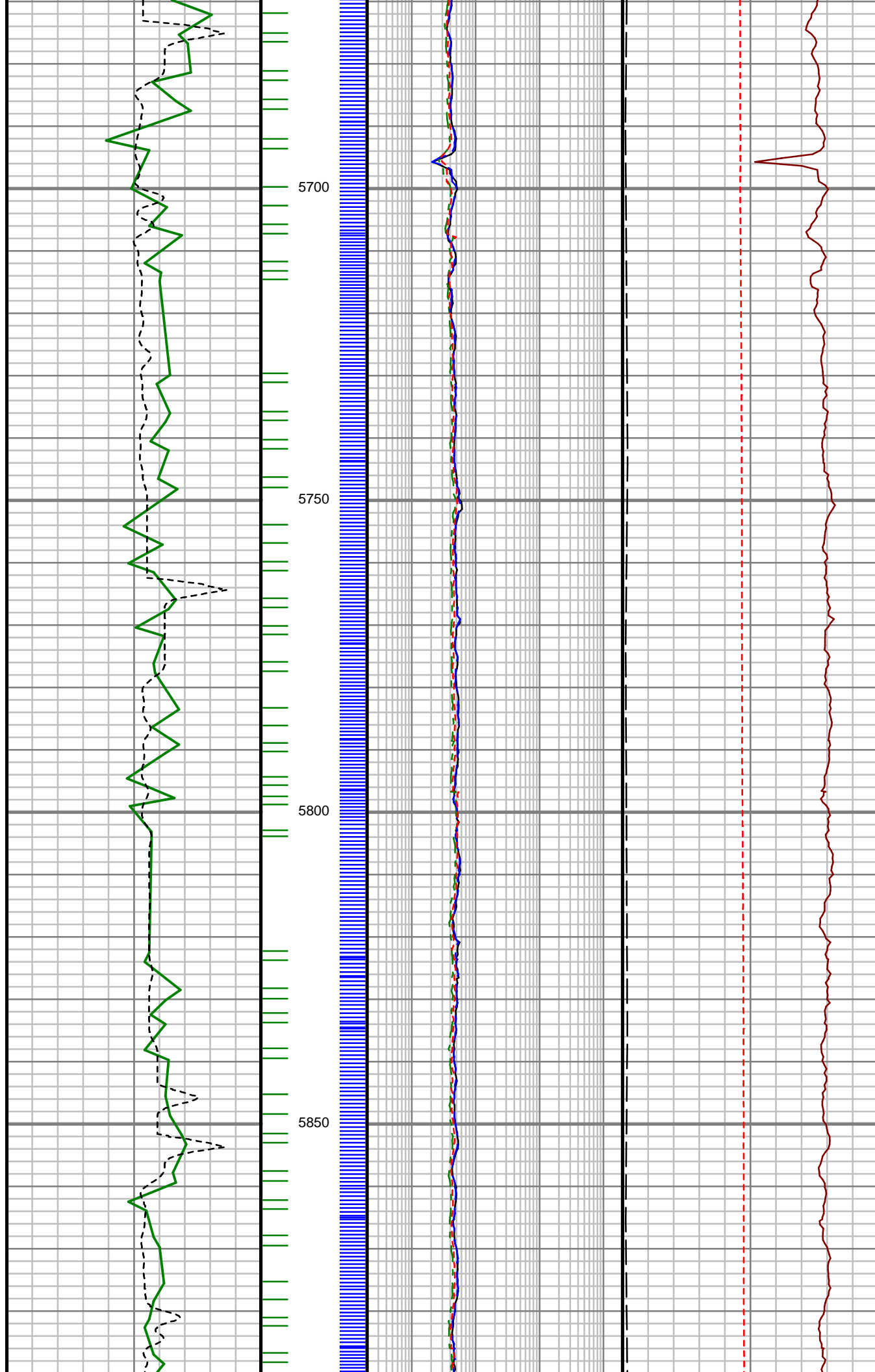
S: 93 MD: 5339.00 ft  
Inc: 1.29 deg Az:  
280.20 deg TVD:  
5273.74 ft

S: 94 MD: 5428.00 ft  
Inc: 0.48 deg Az:  
277.50 deg TVD:  
5362.73 ft



S: 95 MD: 5517.00 ft  
Inc: 0.60 deg Az: 69.62  
deg TVD: 5451.73 ft

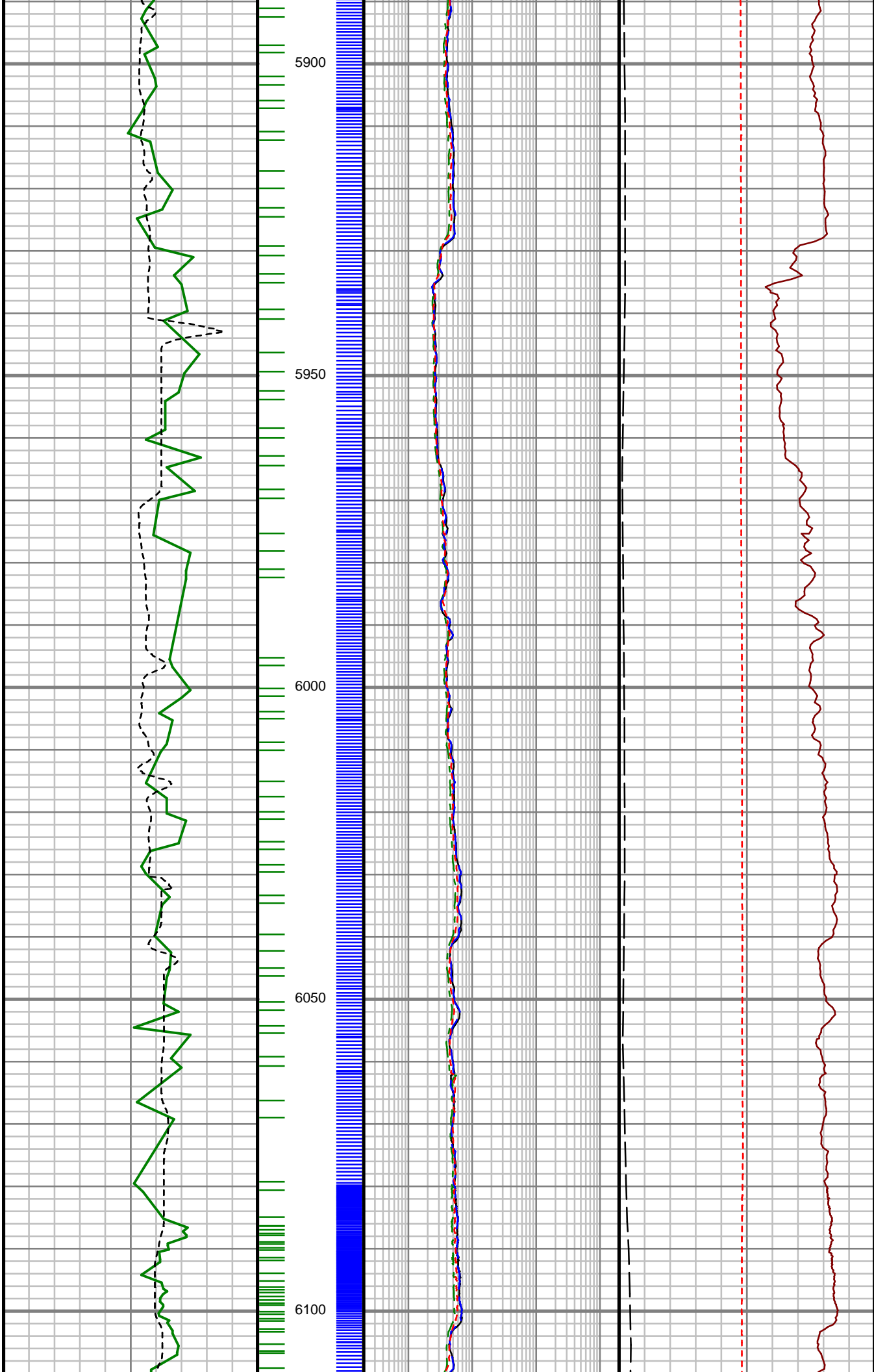
S: 96 MD: 5606.00 ft  
Inc: 0.36 deg Az: 30.39  
deg TVD: 5540.73 ft

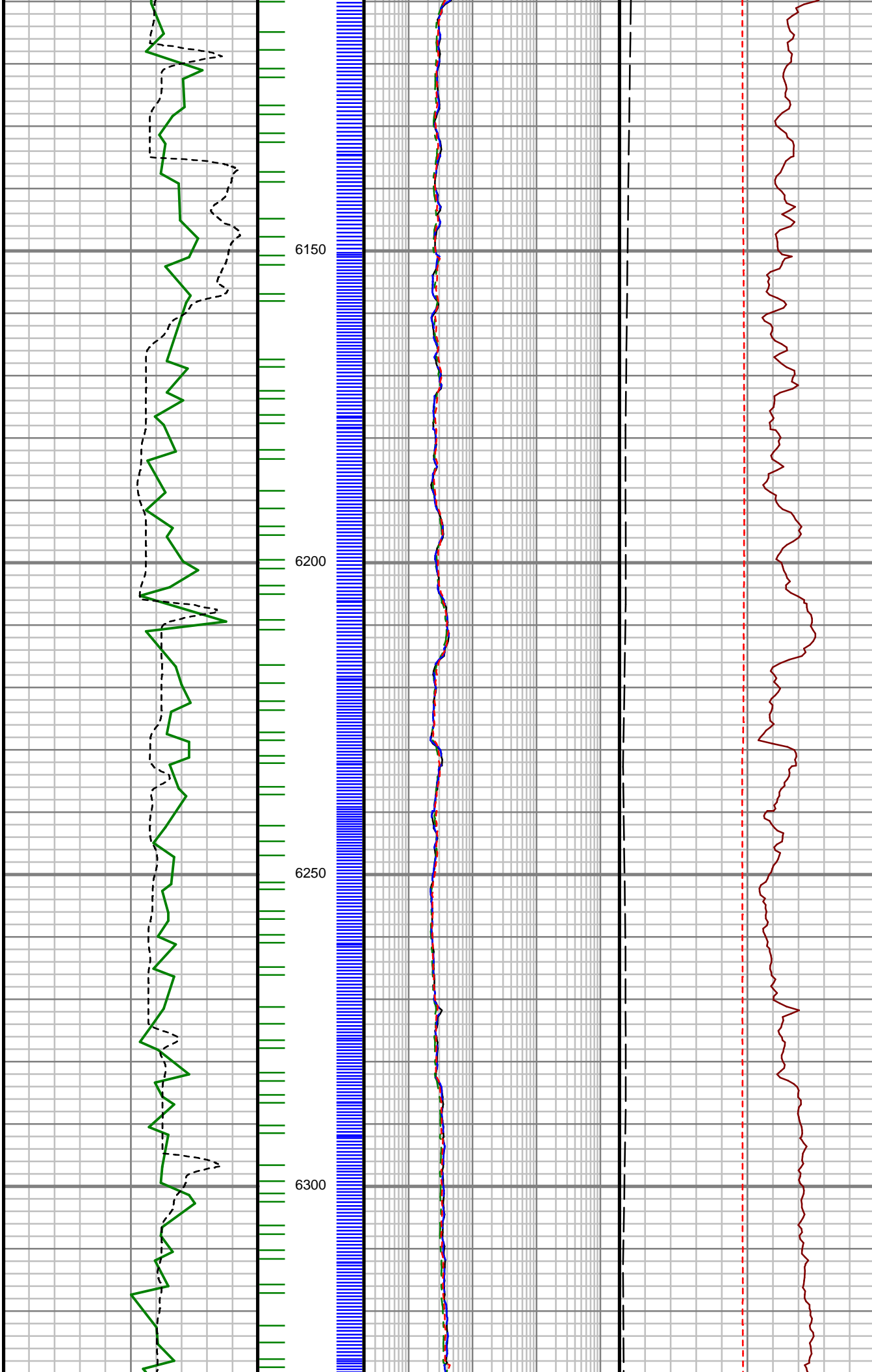


S: 97 MD: 5695.00 ft  
Inc: 0.26 deg Az:  
333.42 deg TVD:  
5629.72 ft

S: 98 MD: 5783.00 ft  
Inc: 0.60 deg Az:  
300.38 deg TVD:  
5717.72 ft

S: 99 MD: 5872.00 ft  
Inc: 0.82 deg Az:  
303.79 deg TVD:  
5806.71 ft

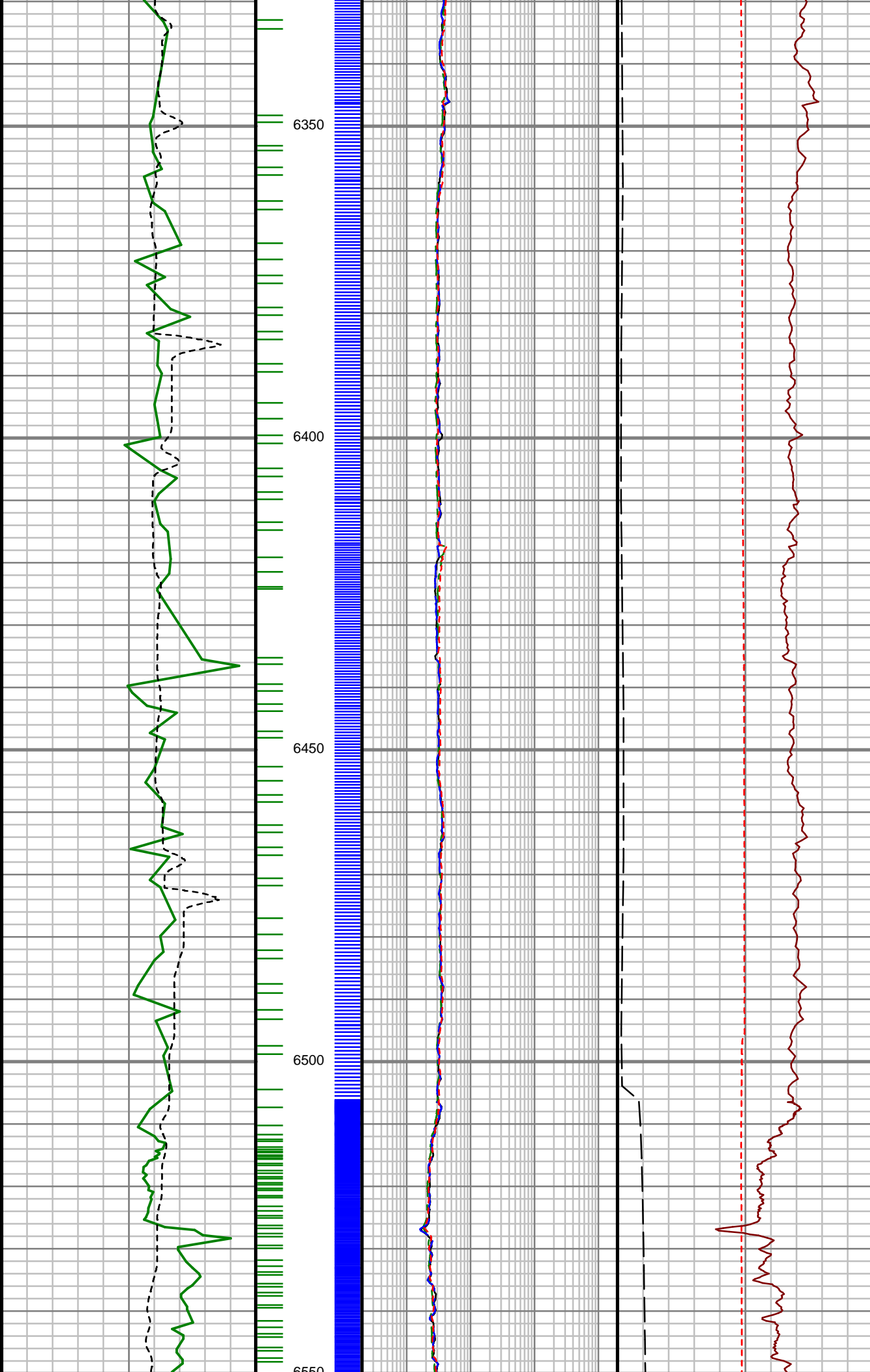




S: 101 MD: 6138.00 ft  
Inc: 0.55 deg Az: 330.31 deg TVD: 6072.68 ft

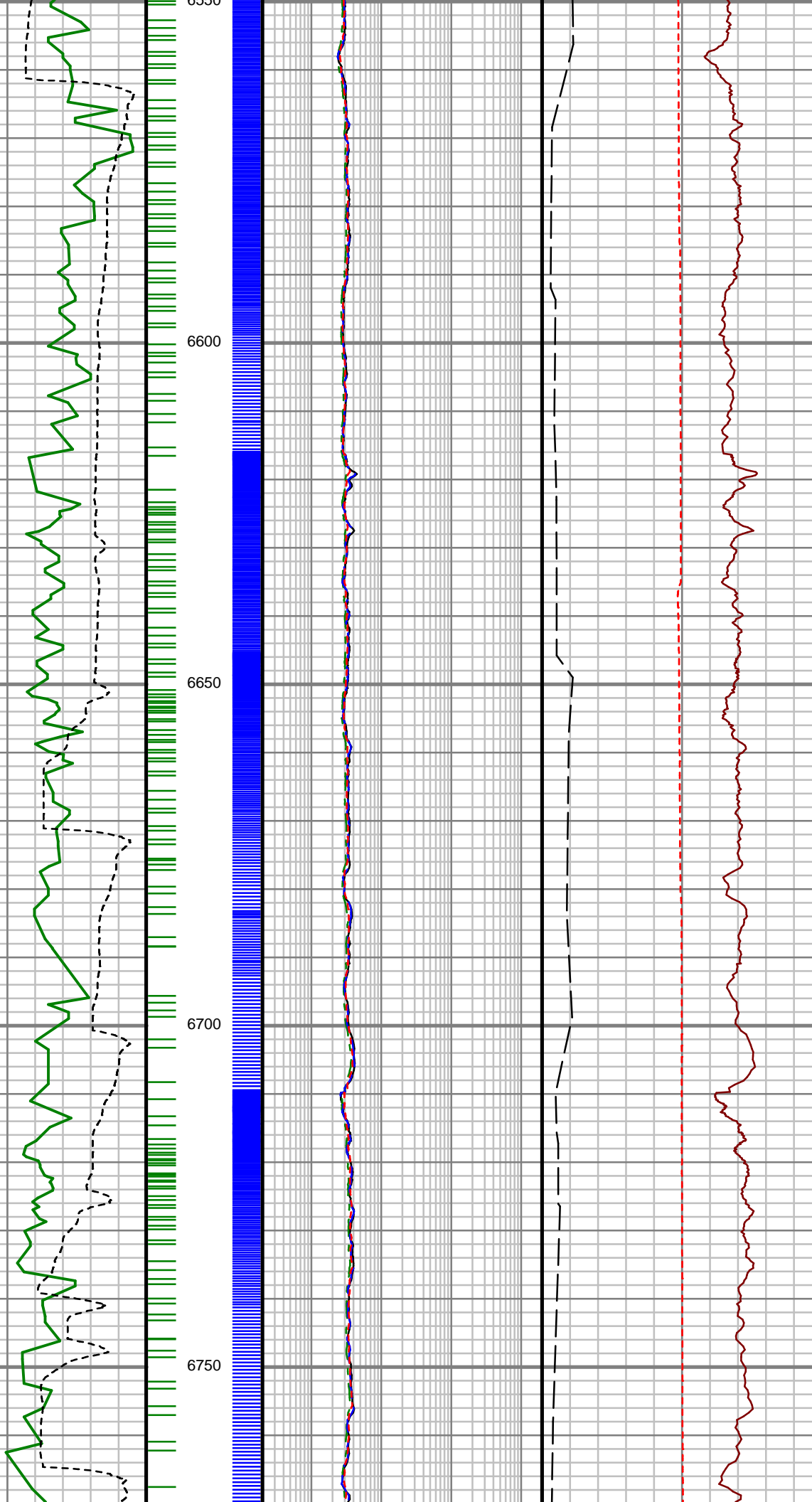
S: 102 MD: 6227.00 ft  
Inc: 0.29 deg Az: 88.29 deg TVD: 6161.68 ft

S: 103 MD: 6316.00 ft  
Inc: 0.60 deg Az: 9.80 deg TVD: 6250.68 ft



S: 104 MD: 6405.00 ft  
Inc: 0.94 deg Az:  
358.43 deg TVD:  
6339.67 ft

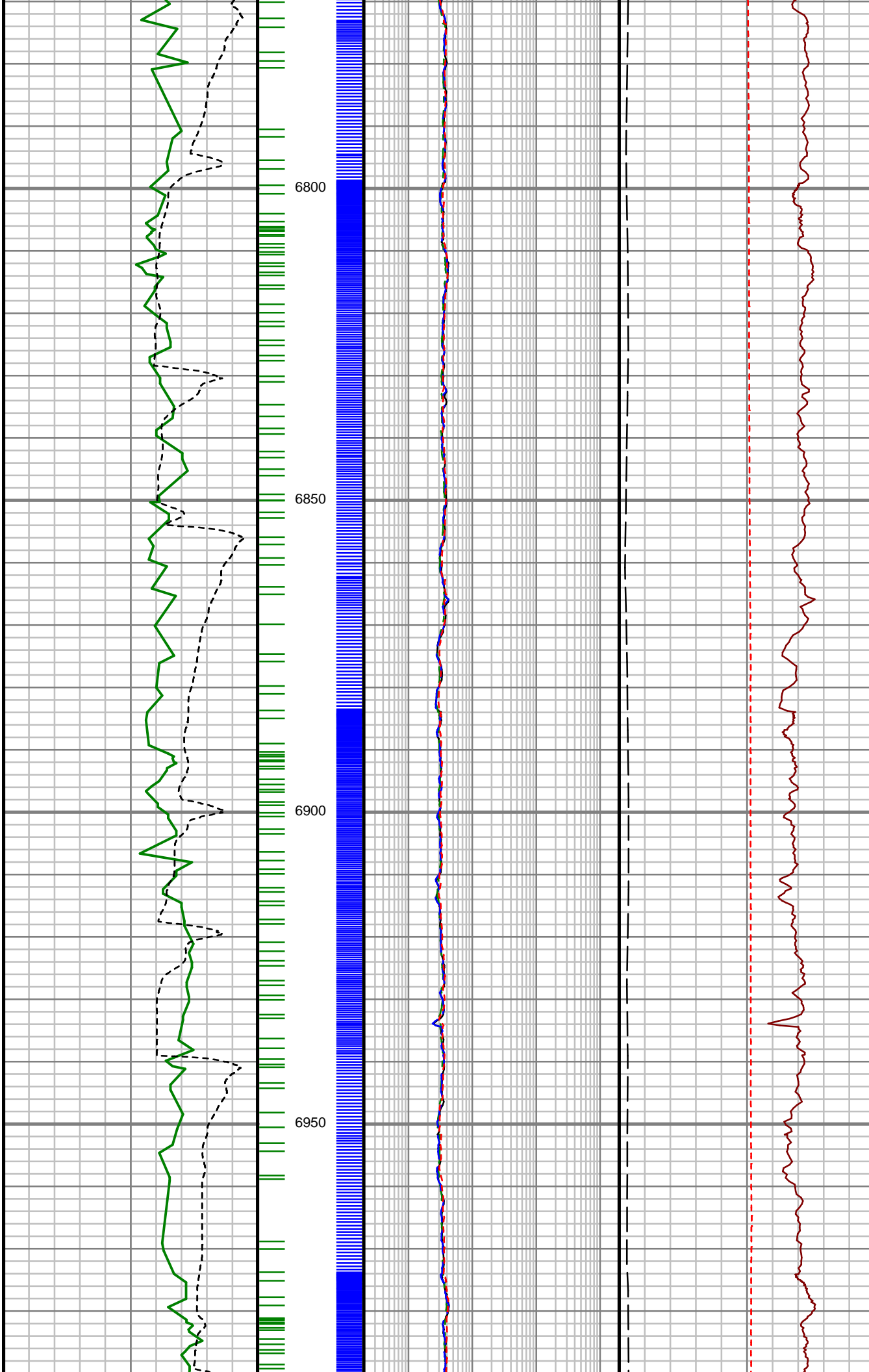
S: 105 MD: 6494.00 ft  
Inc: 0.97 deg Az:  
353.85 deg TVD:  
6428.65 ft



S: 106 MD: 6583.00 ft  
Inc: 3.18 deg Az: 4.26  
deg TVD: 6517.59 ft

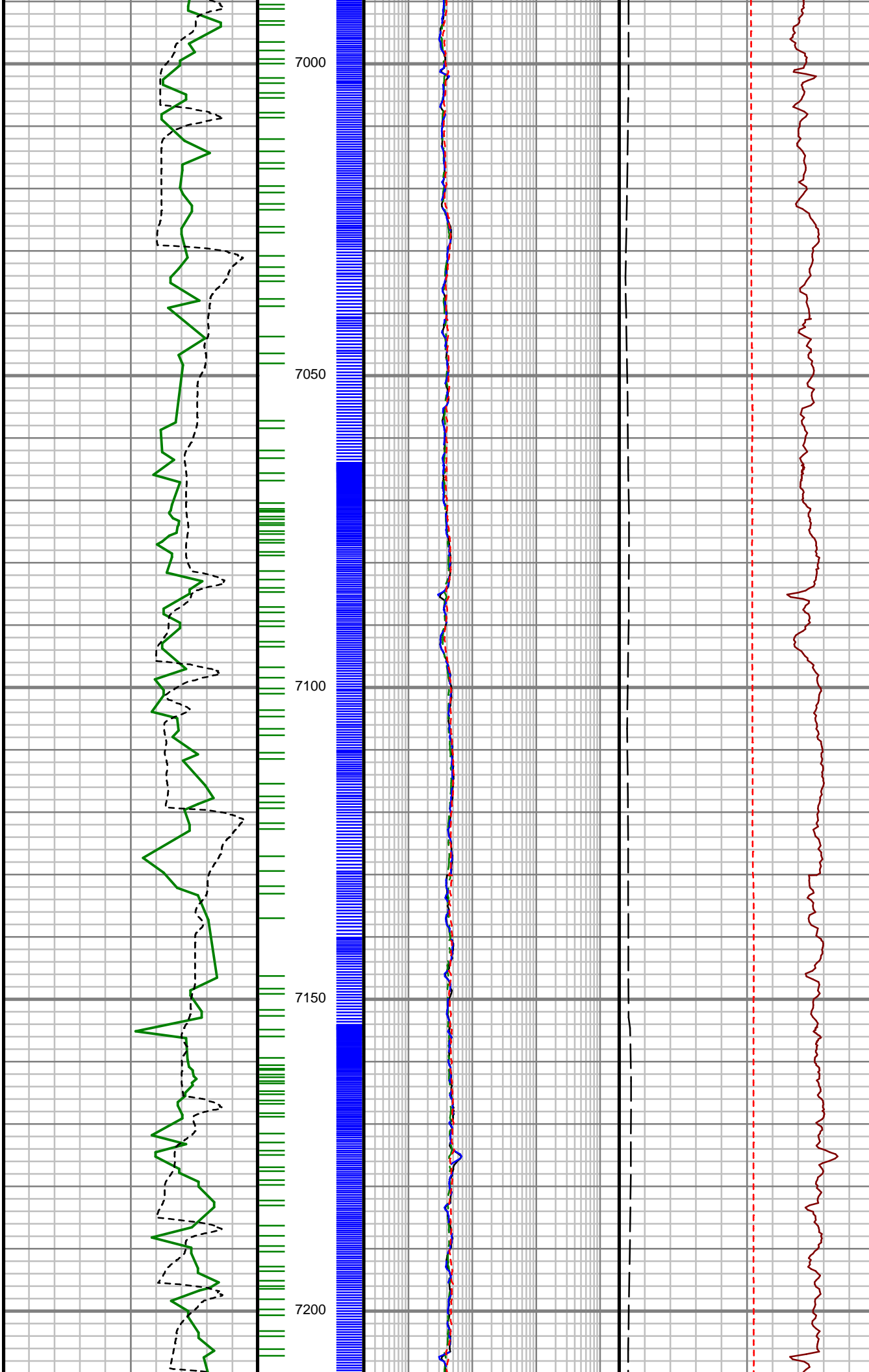
S: 107 MD: 6672.00 ft  
Inc: 12.76 deg Az: 8.73  
deg TVD: 6605.63 ft

S: 108 MD: 6761.00 ft  
Inc: 18.71 deg Az: 3.24  
deg TVD: 6691.26 ft



S: 109 MD: 6850.00 ft  
Inc: 20.30 deg Az: 6.20  
deg TVD: 6775.15 ft

S: 110 MD: 6938.00 ft  
Inc: 25.21 deg Az: 3.01  
deg TVD: 6856.28 ft

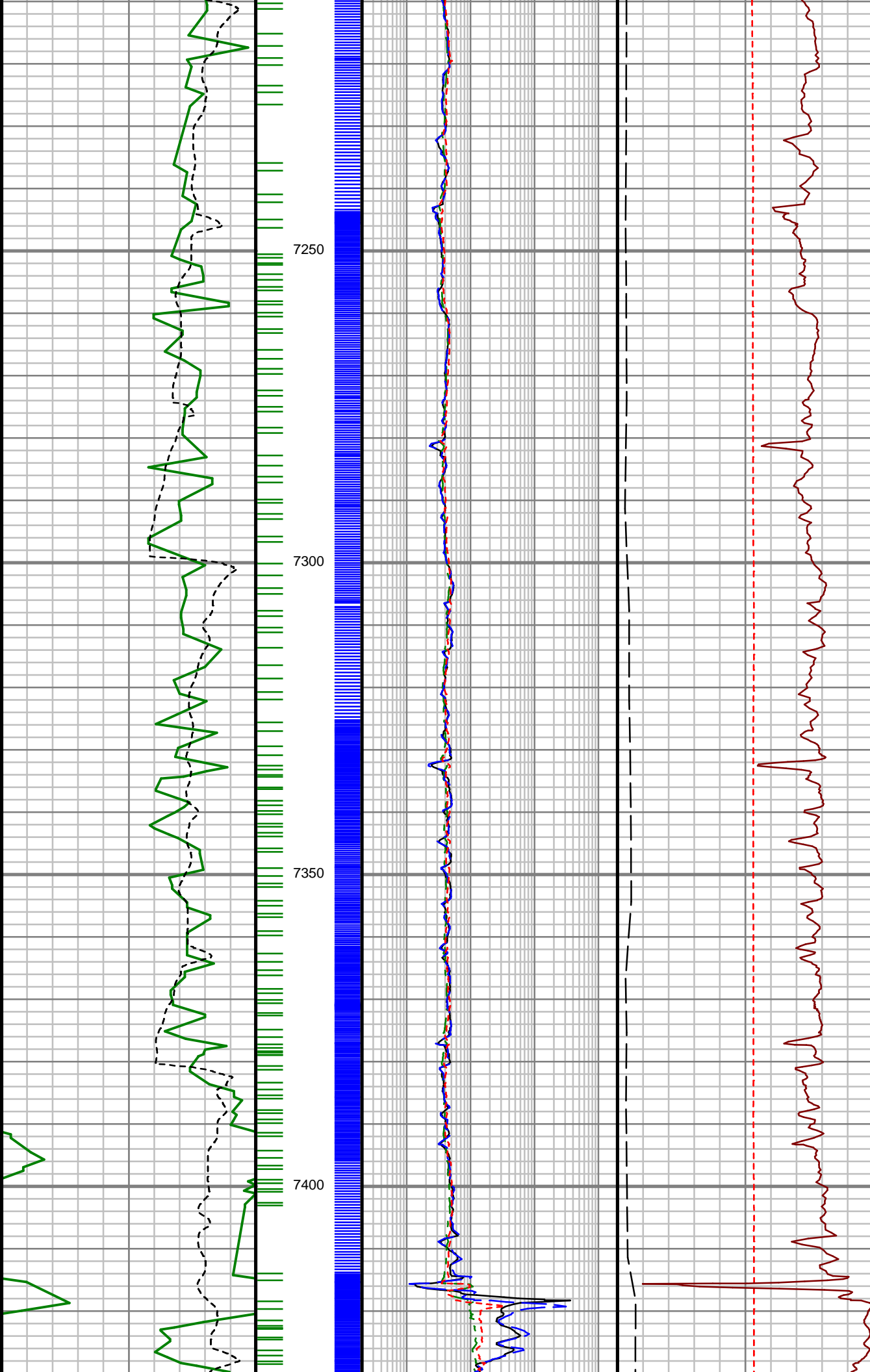


S: 111 MD: 7027.00 ft  
Inc: 30.77 deg Az: 4.97  
deg TVD: 6934.84 ft

S: 112 MD: 7116.00 ft  
Inc: 37.49 deg Az: 6.97  
deg TVD: 7008.47 ft

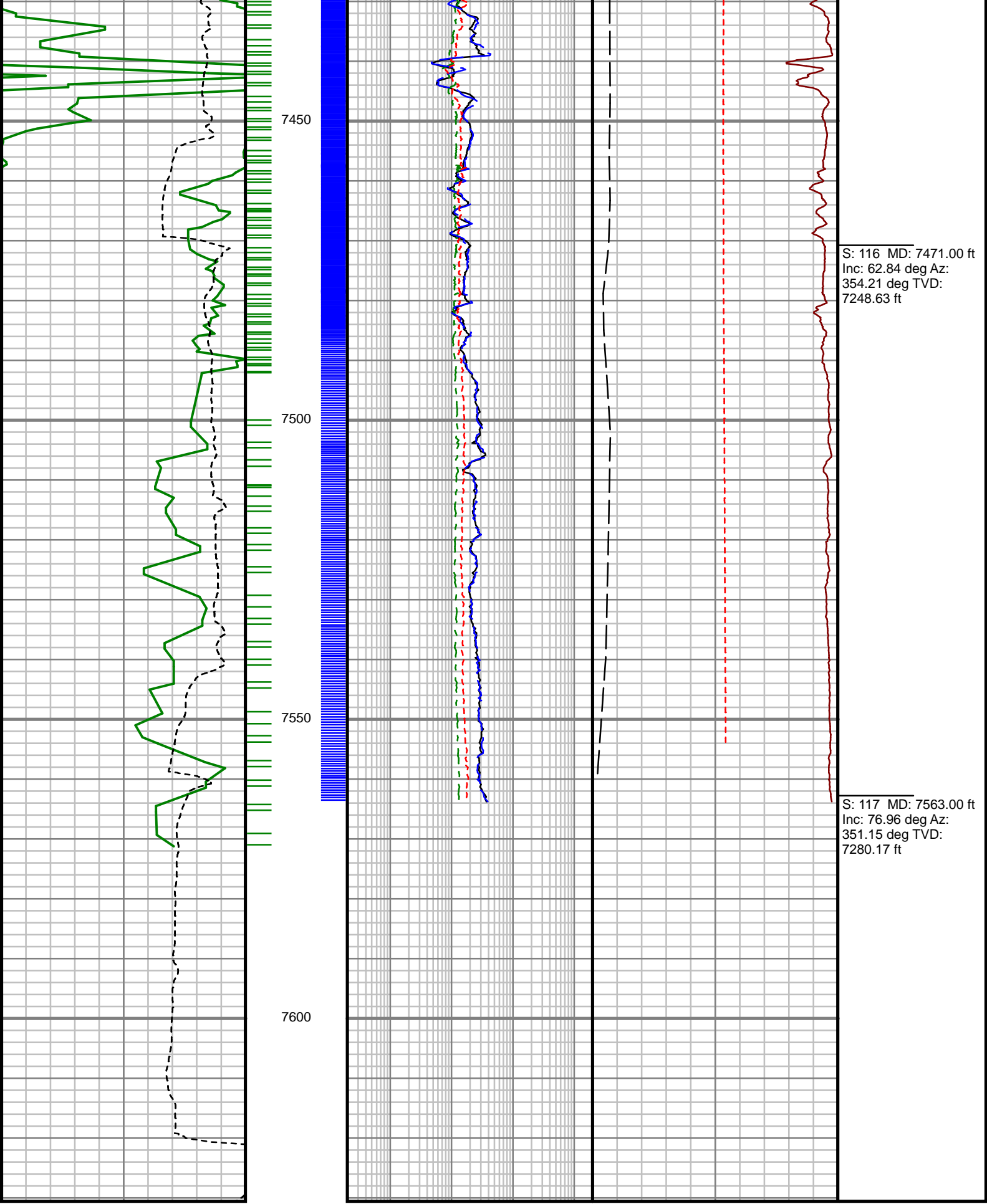
S: 113 MD: 7205.00 ft  
Inc: 41.37 deg Az: 5.88

deg TVD: 7077.20 ft



S: 114 MD: 7293.00 ft  
Inc: 45.01 deg Az: 1.64  
deg TVD: 7141.37 ft

S: 115 MD: 7382.00 ft  
Inc: 51.63 deg Az:  
357.89 deg TVD:  
7200.53 ft



S: 116 MD: 7471.00 ft  
Inc: 62.84 deg Az:  
354.21 deg TVD:  
7248.63 ft

S: 117 MD: 7563.00 ft  
Inc: 76.96 deg Az:  
351.15 deg TVD:  
7280.17 ft

Rate of Penetration (ROP)

1000      Unit = ft/hr      0

Gamma Ray (GR)

0      Unit = aapi      150

MEASURED DEPTH  
1:240 (ft)

Attenuation Resistivity, 33" (AR33)

0.2      Unit = ohmm      2000

Phase Shift Resistivity, 33" (PR33)

0.2      Unit = ohmm      2000

Phase Shift Conductivity, 33" (PC33)

1000      Unit = mmho/m      0

Tool Temperature (TEMP)

0      Unit = °F      300

Comments



Attenuation Resistivity, 23" (AR23)		
0.2	Unit = ohmm	2000
Phase Shift Resistivity, 23" (PR23)		
0.2	Unit = ohmm	2000

FET of Resistivity (FETR)		
0	Unit = hr	10



SURVEY REPORT

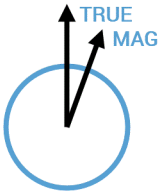
MARRS 28N-10HZ      MSA COMPUTED SURVEYS

CUSTOMER      ANADARKO E&P ONSHORE LLC  
PROJECT      MARRS 28N-10HZ  
FIELD      WATTENBERG

WELL INFORMATION  
Lat/Long      40.037946° N, 104.87903° W  
Northing      14,540,574.18 ft  
Easting      1,674,275.67 ft  
UWI      512343270

MAP INFORMATION  
North Reference      True North  
Grid Correction System      Universal Transverse Mercator (US Survey Feet)  
Datum      North American Datum 1983 (GRS 1980)  
Map Zone      Zone 13N (108 W to 102 W)

VERTICAL SECTION REFERENCE  
+N/-S      0 ft  
+E/-W      0 ft  
Proposal Direction      0.80°  
Calculation Method      Minimum Curvature



GEOMAGNETIC REFERENCE INFORMATION      Local Gravity: 999.033 mG [computed]

MD	MODEL	DATE	DECLINATION	MAG TO TRUE
0-15603 ft	ANADARKO MAGVAR	02 Mar 2018	8.10°	add 8.1°

WELL NOTES      OPERATORS

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	DLS
ft	deg	deg	ft	ft	ft	ft	°/100ft
0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid
126.00	1.23	349.90	125.99	1.33	1.33	-0.24	0.98
158.00	1.05	346.47	157.98	1.95	1.95	-0.37	0.60
190.00	0.35	337.68	189.98	2.32	2.33	-0.47	2.21
222.00	0.40	284.51	221.98	2.44	2.45	-0.62	1.06
253.00	0.31	181.50	252.98	2.38	2.39	-0.72	1.80
285.00	1.05	148.28	284.98	2.05	2.06	-0.57	2.53
316.00	1.58	143.53	315.97	1.47	1.47	-0.17	1.74
348.00	2.15	134.04	347.95	0.71	0.70	0.53	2.02
379.00	2.42	137.91	378.93	-0.17	-0.19	1.38	1.00
411.00	3.03	126.92	410.89	-1.17	-1.20	2.51	2.50
442.00	3.74	127.45	441.84	-2.25	-2.31	3.97	2.29
474.00	4.17	125.34	473.76	-3.53	-3.62	5.75	1.42
505.00	4.92	122.44	504.66	-4.87	-4.98	7.79	2.53
537.00	5.76	121.56	536.52	-6.41	-6.56	10.31	2.64
569.00	6.64	121.56	568.34	-8.18	-8.37	13.26	2.75
601.00	7.29	122.00	600.10	-10.18	-10.41	16.56	2.04
633.00	8.57	125.69	631.79	-12.59	-12.88	20.22	4.30
664.00	9.05	125.95	662.43	-15.32	-15.66	24.07	1.55
696.00	9.89	127.10	693.99	-18.39	-18.79	28.29	2.69

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
728.00	10.41	128.15	725.49	-21.78	-22.23	32.76	1.72
760.00	10.94	129.56	756.94	-25.43	-25.95	37.37	1.85
791.00	11.65	128.77	787.34	-29.20	-29.79	42.08	2.34
823.00	12.30	130.70	818.64	-33.37	-34.03	47.19	2.39
855.00	13.36	130.44	849.84	-37.92	-38.65	52.58	3.32
887.00	13.80	130.70	880.95	-42.72	-43.54	58.29	1.39
918.00	14.59	131.31	911.00	-47.63	-48.53	64.03	2.59
950.00	15.07	132.11	941.93	-53.00	-53.98	70.14	1.63
982.00	15.64	132.11	972.79	-58.59	-59.66	76.43	1.78
1014.00	15.73	129.73	1003.60	-64.16	-65.33	82.96	2.03
1045.00	16.04	128.06	1033.42	-69.40	-70.65	89.57	1.78
1077.00	16.61	127.80	1064.13	-74.83	-76.18	96.66	1.80
1109.00	16.57	127.97	1094.79	-80.33	-81.79	103.87	0.20
1140.00	16.13	127.27	1124.54	-85.57	-87.12	110.78	1.56
1172.00	15.78	128.06	1155.31	-90.84	-92.49	117.75	1.29
1204.00	15.95	127.18	1186.09	-96.08	-97.83	124.68	0.92
1236.00	16.26	127.27	1216.83	-101.35	-103.20	131.74	0.97
1268.00	16.70	126.92	1247.52	-106.73	-108.68	138.99	1.41
1299.00	17.23	127.36	1277.17	-112.09	-114.14	146.20	1.76
1331.00	17.84	127.71	1307.68	-117.86	-120.01	153.84	1.93

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
1363.00	17.31	127.71	1338.19	-123.66	-125.92	161.49	1.66
1394.00	17.31	127.71	1367.78	-129.20	-131.57	168.78	0.00
1426.00	17.93	128.06	1398.28	-135.04	-137.52	176.43	1.97
1458.00	18.68	128.41	1428.66	-141.15	-143.74	184.32	2.37
1490.00	17.97	127.97	1459.04	-147.26	-149.96	192.23	2.26
1521.00	17.53	128.06	1488.56	-152.97	-155.78	199.67	1.42
1553.00	16.70	129.12	1519.15	-158.74	-161.65	207.04	2.77
1584.00	15.50	130.35	1548.93	-164.14	-167.14	213.65	4.02
1616.00	15.34	128.94	1579.78	-169.48	-172.57	220.20	1.27
1648.00	15.34	127.54	1610.64	-174.63	-177.81	226.85	1.16
1680.00	15.25	126.57	1641.51	-179.62	-182.90	233.58	0.85
1711.00	14.68	127.54	1671.45	-184.35	-187.72	239.97	2.01
1743.00	13.97	127.18	1702.46	-189.07	-192.52	246.27	2.24
1775.00	13.45	126.22	1733.55	-193.51	-197.06	252.35	1.77
1807.00	11.95	127.18	1764.76	-197.64	-201.26	257.99	4.73
1836.00	11.21	126.92	1793.17	-201.08	-204.77	262.63	2.56
1897.00	10.68	125.95	1853.06	-207.83	-211.65	271.95	0.92
1986.00	10.50	125.63	1940.55	-217.21	-221.21	285.22	0.21
2074.00	10.32	141.53	2027.12	-227.89	-232.06	296.64	3.26
2163.00	11.26	155.41	2114.56	-241.92	-246.20	305.22	3.10

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
2297.00	10.98	171.30	2246.07	-266.33	-270.72	312.59	2.29
2385.00	11.43	182.19	2332.40	-283.31	-287.72	313.53	2.45
2474.00	11.22	181.84	2419.67	-300.79	-305.18	312.91	0.25
2607.00	10.95	180.17	2550.19	-326.35	-330.75	312.46	0.32
2696.00	10.47	178.97	2637.64	-342.89	-347.29	312.58	0.59
2785.00	10.84	186.80	2725.11	-359.30	-363.68	311.73	1.68
2874.00	10.39	190.73	2812.59	-375.52	-379.88	309.25	0.96
2963.00	9.89	192.02	2900.20	-390.93	-395.24	306.16	0.62
3052.00	8.38	180.17	2988.07	-404.91	-409.20	304.55	2.70
3141.00	6.32	176.71	3076.34	-416.28	-420.58	304.81	2.37
3229.00	3.37	153.35	3164.02	-423.41	-427.73	306.25	3.97
3318.00	0.63	23.39	3252.98	-425.28	-429.62	307.62	4.28
3407.00	2.04	350.89	3341.95	-423.27	-427.61	307.56	1.74
3496.00	0.77	10.81	3430.92	-421.12	-425.45	307.43	1.51
3629.00	0.34	60.90	3563.92	-420.04	-424.38	307.94	0.46
3718.00	0.35	19.28	3652.91	-419.65	-424.00	308.26	0.28
3851.00	1.39	161.88	3785.90	-420.79	-425.15	308.89	1.26
3940.00	1.11	166.84	3874.88	-422.65	-427.01	309.43	0.34
4029.00	1.10	171.07	3963.87	-424.33	-428.70	309.76	0.09
4118.00	1.07	178.25	4052.85	-426.00	-430.37	309.91	0.16

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
4207.00	1.05	183.63	4141.83	-427.65	-432.02	309.89	0.11
4296.00	0.96	183.82	4230.82	-429.21	-433.57	309.79	0.10
4385.00	0.72	164.15	4319.81	-430.49	-434.86	309.89	0.42
4474.00	0.90	126.79	4408.80	-431.43	-435.81	310.60	0.61
4563.00	0.47	153.17	4497.80	-432.17	-436.56	311.33	0.59
4651.00	0.09	111.62	4585.79	-432.51	-436.90	311.55	0.46
4740.00	0.12	311.97	4674.79	-432.48	-436.87	311.55	0.23
4828.00	0.33	352.13	4762.79	-432.16	-436.56	311.45	0.28
4917.00	0.47	342.18	4851.79	-431.57	-435.95	311.30	0.18
4984.00	0.66	322.30	4918.79	-431.00	-435.39	310.98	0.40
5072.00	0.76	303.63	5006.78	-430.29	-434.66	310.18	0.28
5161.00	0.95	274.58	5095.77	-429.92	-434.28	308.96	0.52
5250.00	1.03	272.58	5184.76	-429.85	-434.18	307.42	0.10
5339.00	1.29	280.20	5273.74	-429.66	-433.97	305.64	0.34
5428.00	0.48	277.50	5362.73	-429.45	-433.74	304.28	0.91
5517.00	0.60	69.62	5451.73	-429.24	-433.53	304.35	1.18
5606.00	0.36	30.39	5540.73	-428.83	-433.13	304.93	0.44
5695.00	0.26	333.42	5629.72	-428.41	-432.71	304.98	0.35
5783.00	0.60	300.38	5717.72	-428.00	-432.29	304.49	0.46
5872.00	0.82	303.79	5806.71	-427.42	-431.71	303.56	0.25

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
6049.00	1.14	310.00	5983.69	-425.62	-429.87	301.16	0.19
6138.00	0.55	330.31	6072.68	-424.69	-428.93	300.27	0.73
6227.00	0.29	88.29	6161.68	-424.32	-428.55	300.28	0.82
6316.00	0.60	9.80	6250.68	-423.85	-428.08	300.59	0.69
6405.00	0.94	358.43	6339.67	-422.66	-426.90	300.64	0.42
6494.00	0.97	353.85	6428.65	-421.18	-425.42	300.54	0.09
6583.00	3.18	4.26	6517.59	-417.97	-422.21	300.65	2.51
6672.00	12.76	8.73	6605.63	-405.74	-410.00	302.33	10.78
6761.00	18.71	3.24	6691.26	-381.72	-386.01	304.63	6.88
6850.00	20.30	6.20	6775.15	-352.09	-356.41	307.10	2.10
6938.00	25.21	3.01	6856.28	-318.14	-322.50	309.74	5.75
7027.00	30.77	4.97	6934.84	-276.46	-280.85	312.71	6.33
7116.00	37.49	6.97	7008.47	-226.77	-231.23	317.97	7.65
7205.00	41.37	5.88	7077.20	-170.52	-175.07	324.27	4.43
7293.00	45.01	1.64	7141.37	-110.41	-115.00	328.14	5.29
7382.00	51.63	357.89	7200.53	-44.01	-48.59	327.76	8.07
7471.00	62.84	354.21	7248.63	30.42	25.92	322.46	13.06
7563.00	76.96	351.15	7280.17	115.71	111.37	311.38	15.66
7652.00	80.14	354.70	7297.84	202.09	197.91	300.66	5.30
7741.00	82.83	1.57	7311.04	289.95	285.82	297.81	8.21

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
7830.00	84.58	5.07	7320.80	378.31	374.12	302.94	4.38
7918.00	85.19	1.85	7328.64	465.85	461.59	308.23	3.71
8007.00	85.23	0.63	7336.08	554.54	550.26	310.15	1.37
8096.00	85.36	0.15	7343.38	643.24	638.96	310.75	0.56
8185.00	85.36	0.13	7350.58	731.94	727.67	310.97	0.02
8274.00	85.50	358.95	7357.67	820.63	816.38	310.25	1.33
8363.00	87.85	0.99	7362.83	909.46	905.22	310.21	3.49
8452.00	89.03	1.50	7365.25	998.42	994.16	312.14	1.44
8540.00	89.33	0.92	7366.51	1086.41	1082.13	314.00	0.74
8629.00	90.84	359.99	7366.38	1175.41	1171.13	314.71	1.99
8718.00	89.36	2.16	7366.23	1264.40	1260.10	316.38	2.95
8807.00	89.70	2.82	7366.96	1353.36	1349.02	320.24	0.83
8895.00	88.02	2.28	7368.71	1441.29	1436.91	324.16	2.01
8984.00	88.22	2.12	7371.63	1530.22	1525.79	327.57	0.29
9073.00	88.56	1.50	7374.13	1619.17	1614.71	330.38	0.79
9162.00	88.83	1.14	7376.15	1708.14	1703.67	332.43	0.51
9251.00	89.06	1.19	7377.79	1797.13	1792.63	334.24	0.26
9339.00	89.93	0.83	7378.57	1885.12	1880.62	335.79	1.07
9428.00	89.43	0.89	7379.06	1974.12	1969.60	337.13	0.57
9517.00	88.69	0.91	7380.52	2063.11	2058.58	338.53	0.83

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
9606.00	88.69	0.81	7382.56	2152.08	2147.55	339.86	0.11
9695.00	88.82	0.41	7384.49	2241.06	2236.52	340.81	0.47
9783.00	89.06	0.36	7386.12	2329.04	2324.50	341.40	0.28
9872.00	89.50	0.22	7387.24	2418.03	2413.50	341.85	0.52
9960.00	89.26	359.72	7388.19	2506.02	2501.49	341.80	0.63
10049.00	89.56	359.75	7389.11	2595.00	2590.48	341.39	0.34
10137.00	90.47	1.48	7389.09	2682.99	2678.48	342.34	2.22
10227.00	91.01	2.09	7387.92	2772.97	2768.42	345.14	0.91
10315.00	90.57	2.49	7386.71	2860.93	2856.34	348.66	0.68
10404.00	89.66	3.00	7386.53	2949.88	2945.24	352.92	1.17
10493.00	89.97	2.63	7386.82	3038.83	3034.13	357.29	0.54
10582.00	90.54	2.91	7386.42	3127.77	3123.03	361.59	0.71
10671.00	90.81	2.35	7385.37	3216.72	3211.93	365.67	0.70
10760.00	90.10	1.91	7384.67	3305.69	3300.86	368.98	0.94
10848.00	90.67	2.86	7384.08	3393.66	3388.78	372.64	1.26
10937.00	89.26	1.38	7384.13	3482.63	3477.72	375.94	2.30
11026.00	88.69	0.79	7385.72	3571.61	3566.69	377.62	0.92
11115.00	88.76	359.89	7387.70	3660.58	3655.66	378.15	1.01
11204.00	88.99	359.43	7389.45	3749.55	3744.64	377.62	0.58
11292.00	88.83	359.10	7391.12	3837.50	3832.62	376.49	0.42

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
11381.00	89.90	359.26	7392.11	3926.46	3921.60	375.22	1.22
11470.00	89.87	358.68	7392.29	4015.41	4010.59	373.62	0.65
11559.00	90.17	358.11	7392.26	4104.33	4099.55	371.13	0.72
11648.00	90.17	1.53	7391.99	4193.31	4188.54	370.85	3.84
11737.00	89.83	0.98	7391.99	4282.30	4277.52	372.80	0.73
11826.00	90.20	0.24	7391.97	4371.30	4366.51	373.74	0.93
11915.00	90.27	359.79	7391.61	4460.29	4455.51	373.77	0.51
12003.00	88.96	1.02	7392.20	4548.29	4543.50	374.39	2.04
12092.00	88.56	0.48	7394.12	4637.27	4632.47	375.55	0.75
12181.00	88.72	359.86	7396.24	4726.23	4721.45	375.82	0.72
12270.00	89.87	0.70	7397.33	4815.22	4810.44	376.25	1.60
12358.00	90.84	2.97	7396.78	4903.20	4898.38	379.07	2.81
12447.00	89.60	2.04	7396.44	4992.16	4987.30	382.96	1.74
12536.00	88.56	1.57	7397.87	5081.13	5076.24	385.76	1.28
12625.00	88.79	1.03	7399.93	5170.10	5165.19	387.78	0.66
12714.00	89.60	0.59	7401.18	5259.09	5254.17	389.04	1.04
12803.00	89.36	0.76	7401.99	5348.09	5343.16	390.09	0.33
12892.00	89.06	0.79	7403.22	5437.08	5432.15	391.29	0.34
12980.00	89.36	0.14	7404.43	5525.07	5520.13	392.00	0.81
13069.00	88.99	359.67	7405.71	5614.05	5609.12	391.86	0.67

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
13158.00	88.79	358.76	7407.43	5703.00	5698.10	390.64	1.05
13247.00	89.03	357.94	7409.13	5791.90	5787.04	388.08	0.96
13336.00	88.69	0.02	7410.90	5880.83	5876.01	386.49	2.37
13425.00	88.25	1.10	7413.27	5969.80	5964.97	387.36	1.31
13513.00	88.25	1.22	7415.96	6057.75	6052.91	389.14	0.14
13602.00	90.40	2.51	7417.01	6146.73	6141.85	392.04	2.82
13691.00	91.34	4.52	7415.66	6235.61	6230.67	397.49	2.49
13780.00	91.85	2.67	7413.18	6324.47	6319.45	403.07	2.16
13869.00	91.31	1.00	7410.73	6413.41	6408.37	405.92	1.97
13958.00	89.16	0.53	7410.36	6502.41	6497.36	407.11	2.47
14046.00	87.58	0.59	7412.87	6590.37	6585.31	407.97	1.80
14135.00	88.62	0.65	7415.82	6679.32	6674.26	408.93	1.17
14224.00	89.46	359.83	7417.31	6768.30	6763.24	409.30	1.32
14313.00	89.80	358.76	7417.88	6857.27	6852.23	408.21	1.26
14402.00	90.77	358.73	7417.44	6946.21	6941.21	406.26	1.09
14491.00	90.77	2.80	7416.24	7035.18	7030.18	407.45	4.57
14580.00	91.28	2.55	7414.65	7124.12	7119.06	411.60	0.64
14668.00	90.27	2.32	7413.46	7212.07	7206.98	415.34	1.18
14757.00	89.66	1.75	7413.51	7301.05	7295.92	418.50	0.94
14846.00	90.23	1.12	7413.60	7390.04	7384.89	420.73	0.95

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
14935.00	91.18	0.82	7412.51	7479.04	7473.87	422.23	1.12
15024.00	89.56	1.68	7411.93	7568.03	7562.84	424.18	2.06
15113.00	89.09	1.90	7412.98	7657.01	7651.79	426.96	0.58
15202.00	89.36	1.54	7414.18	7745.99	7740.74	429.63	0.51
15291.00	90.47	0.63	7414.31	7834.98	7829.73	431.31	1.61
15379.00	91.11	0.18	7413.10	7922.97	7917.71	431.93	0.89
15468.00	92.01	359.87	7410.68	8011.93	8006.68	431.97	1.07
15557.00	92.42	359.37	7407.24	8100.85	8095.61	431.38	0.73
15603.00	93.12	358.95	7405.02	8146.77	8141.55	430.71	1.77

5" = 100' MD