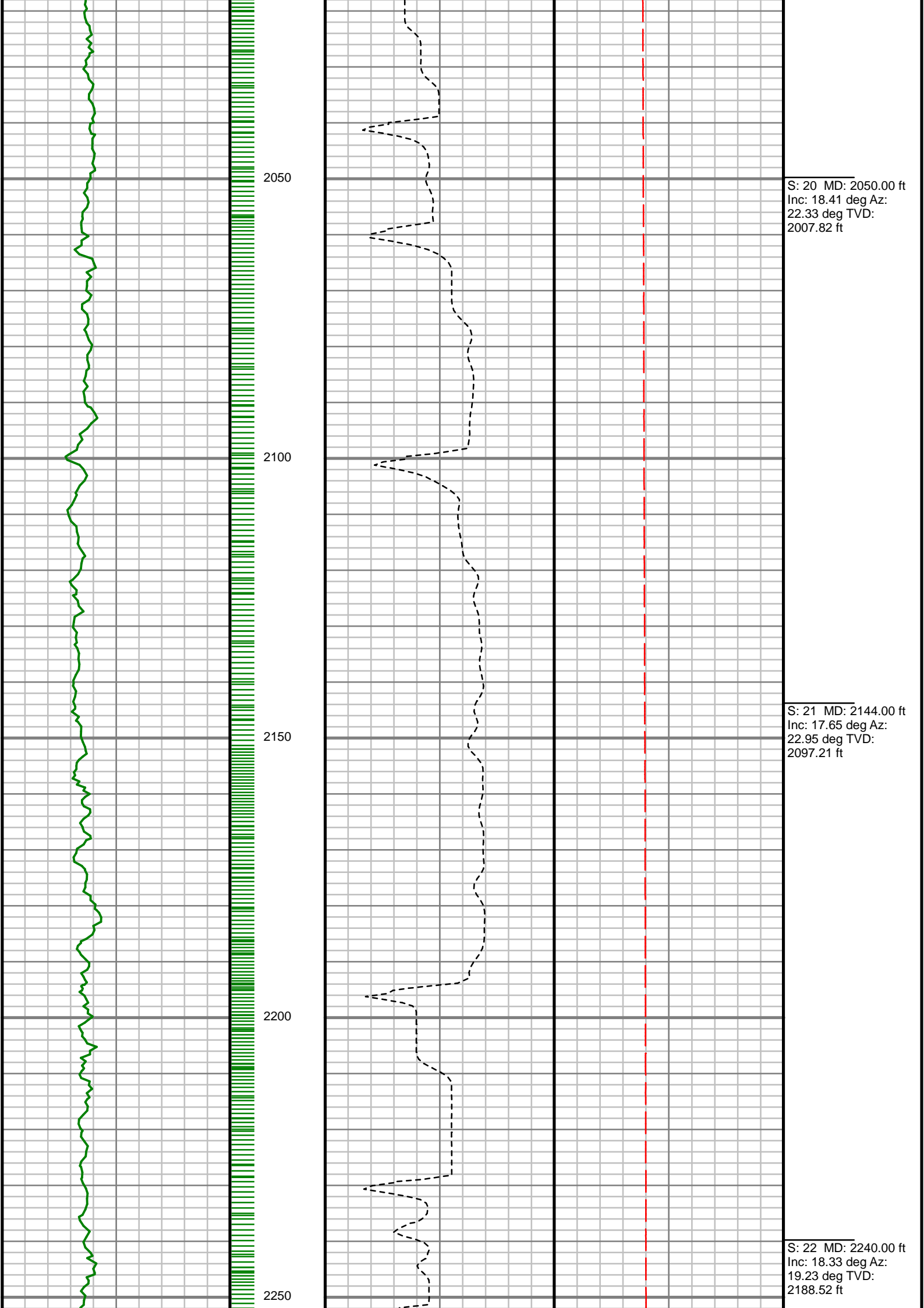
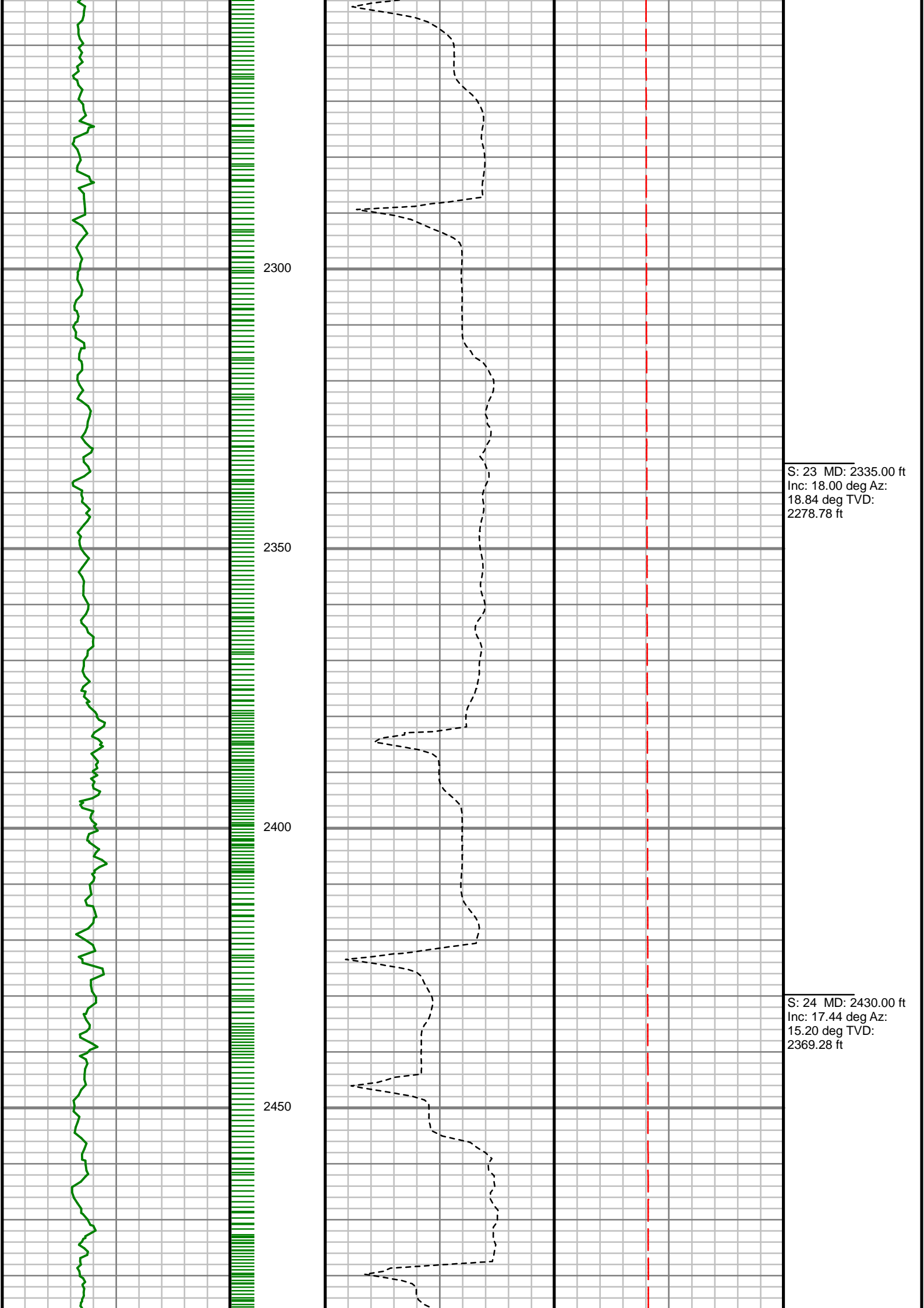


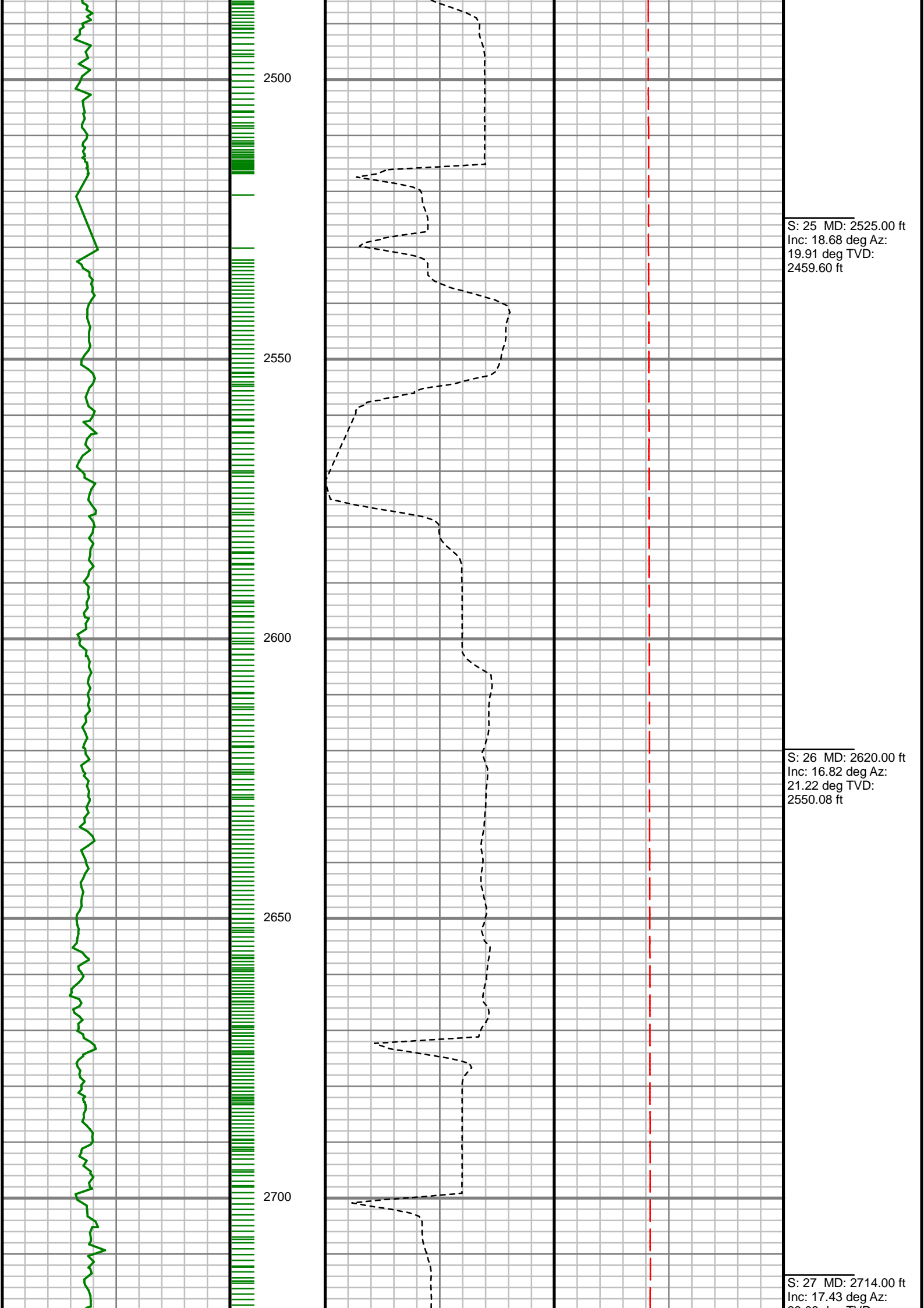
[illegible]

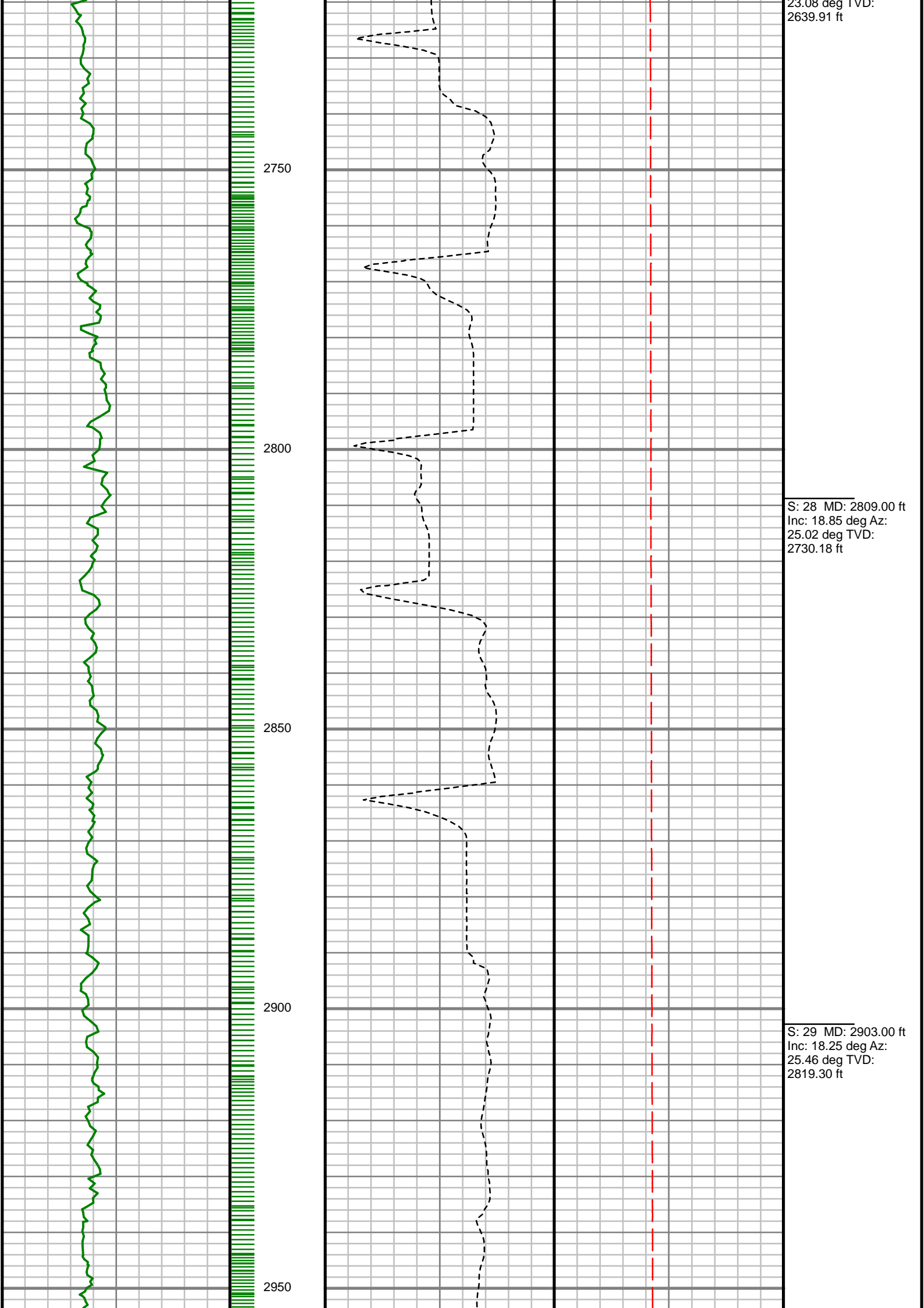
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, 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.

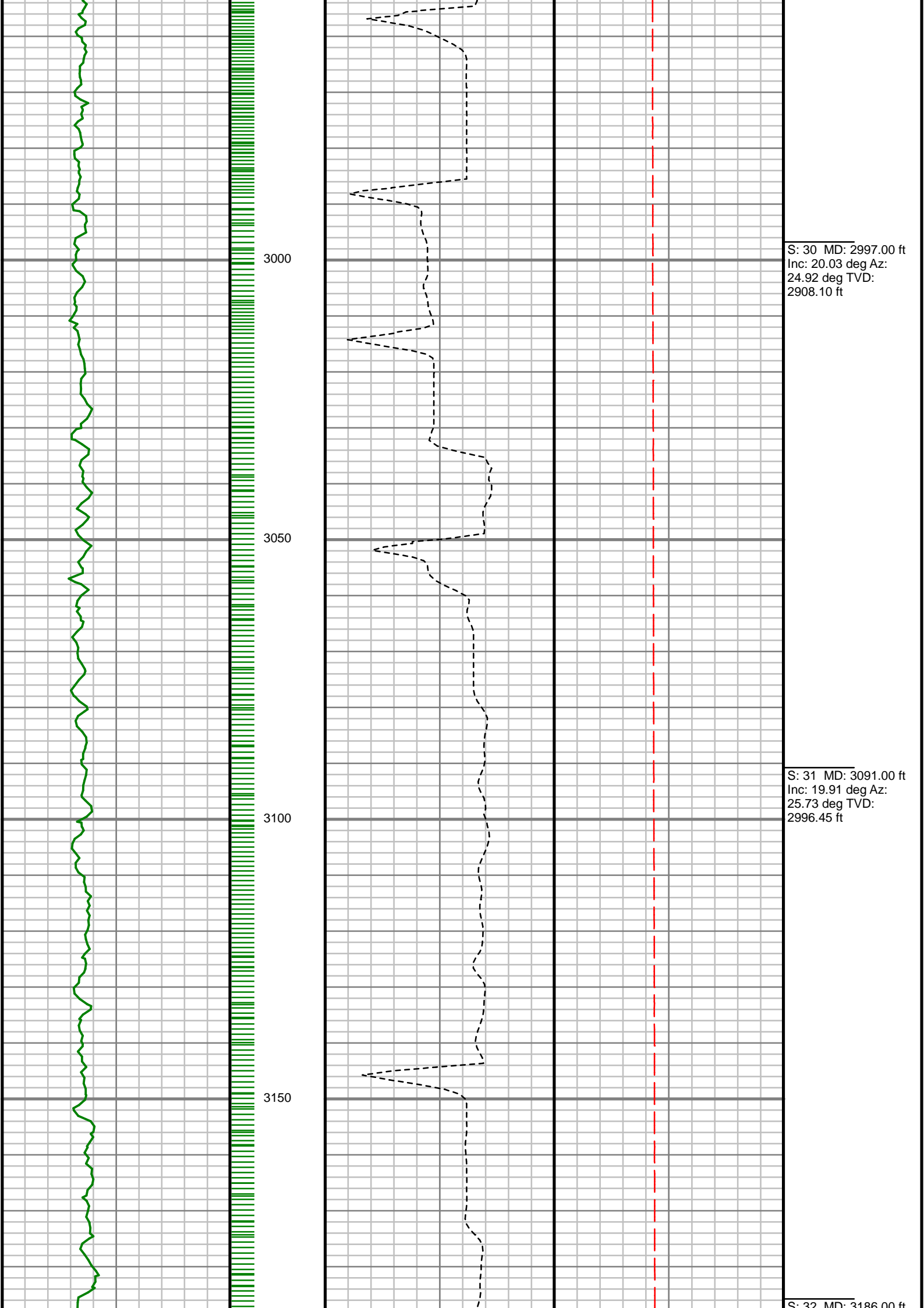
ANADARKO E&P ONSHORE LLC. LAND FED 14N-32HZ WATTENBERG FIELD WELD COUNTY, COLORADO 05123423890000				
Gamma Ray (GR) 0 Unit = aapi 300	MEASURED DEPTH 1:240 (ft)	Rate of Penetration (ROP) 0 Unit = ft/hr 1000	Tool Temperature (T-TEMP) 0 Unit = °F 300	Comments
				S: 19 MD: 1956.00 ft Inc: 18.03 deg Az: 19.55 deg TVD: 1918.53 ft

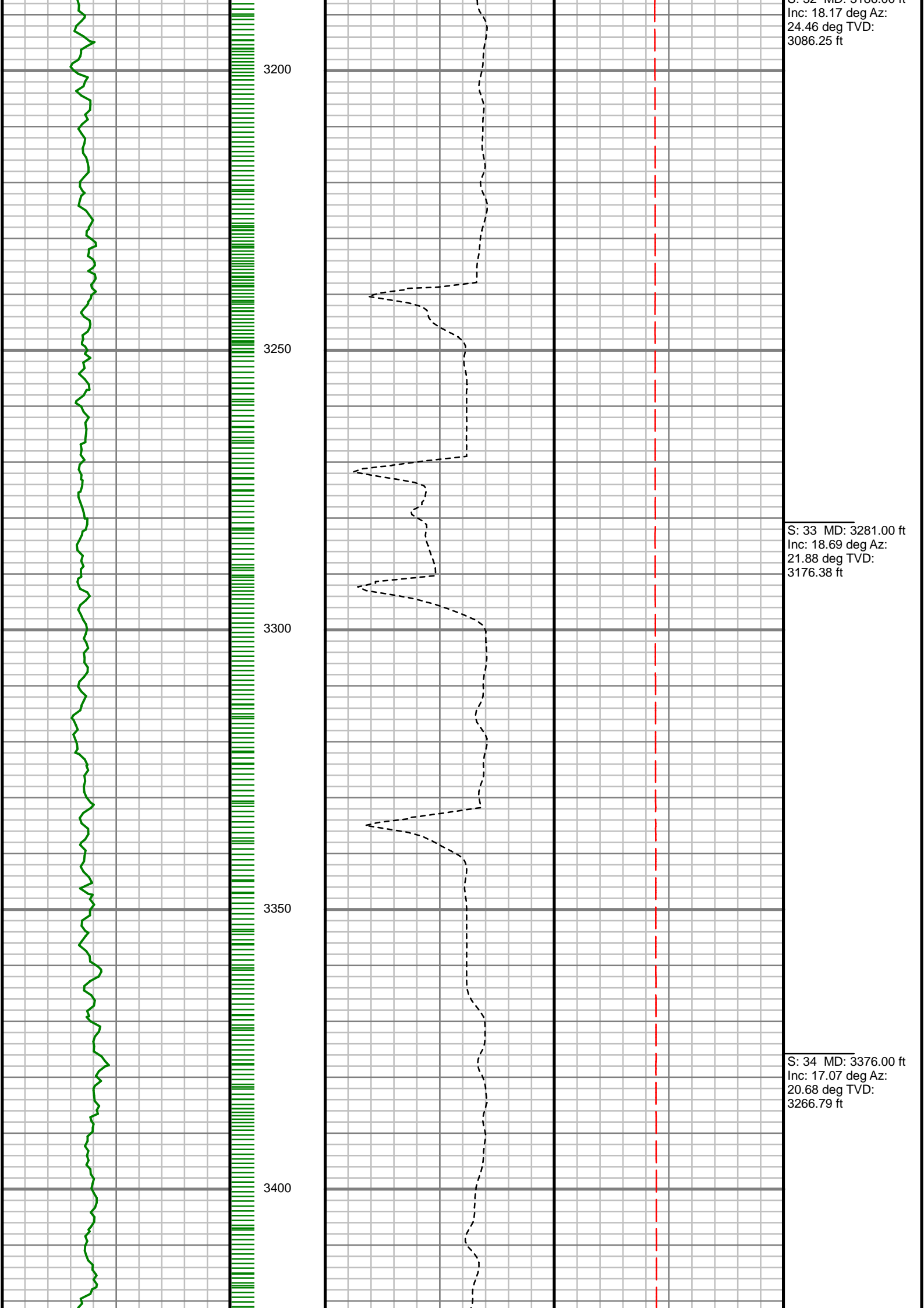








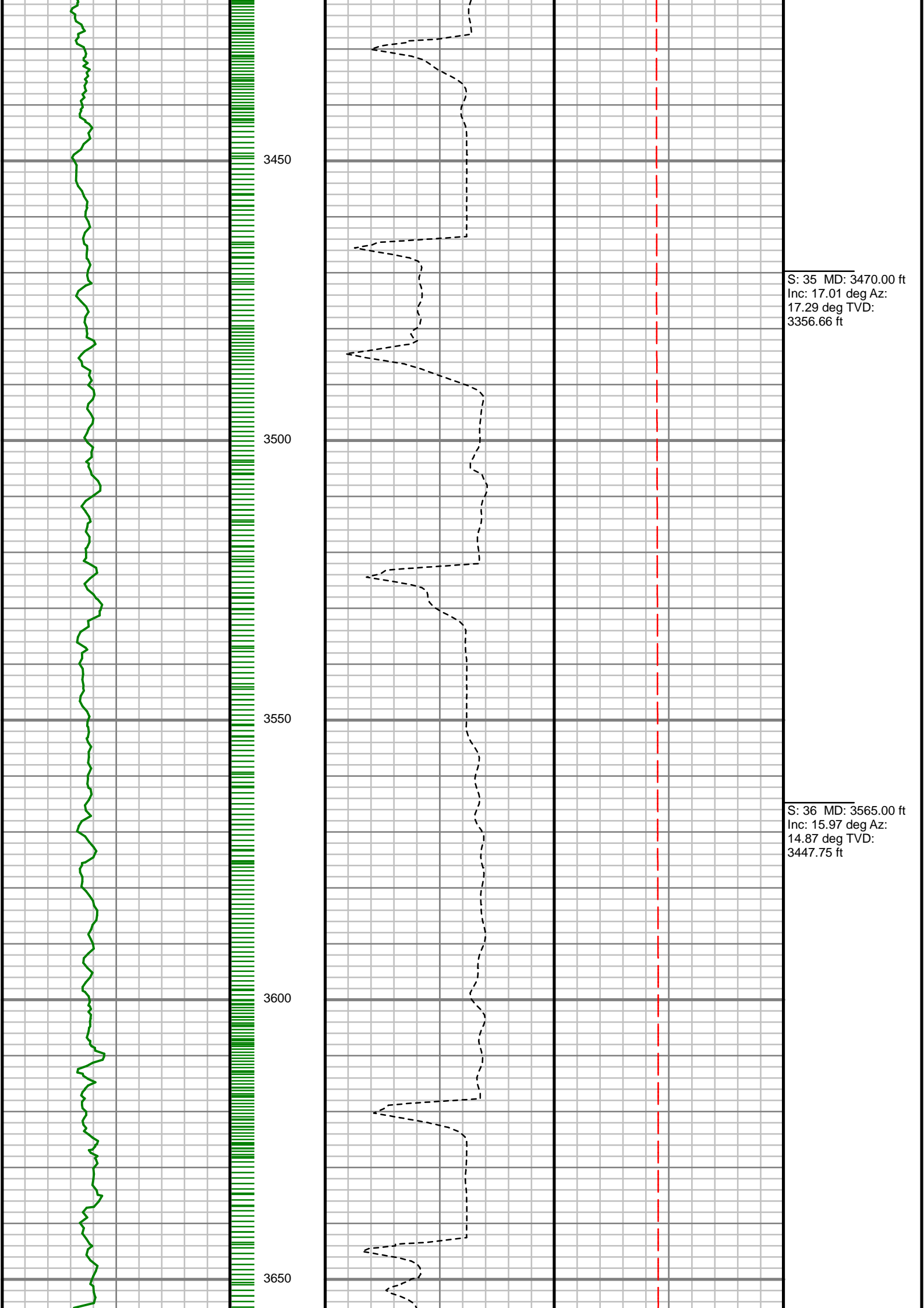


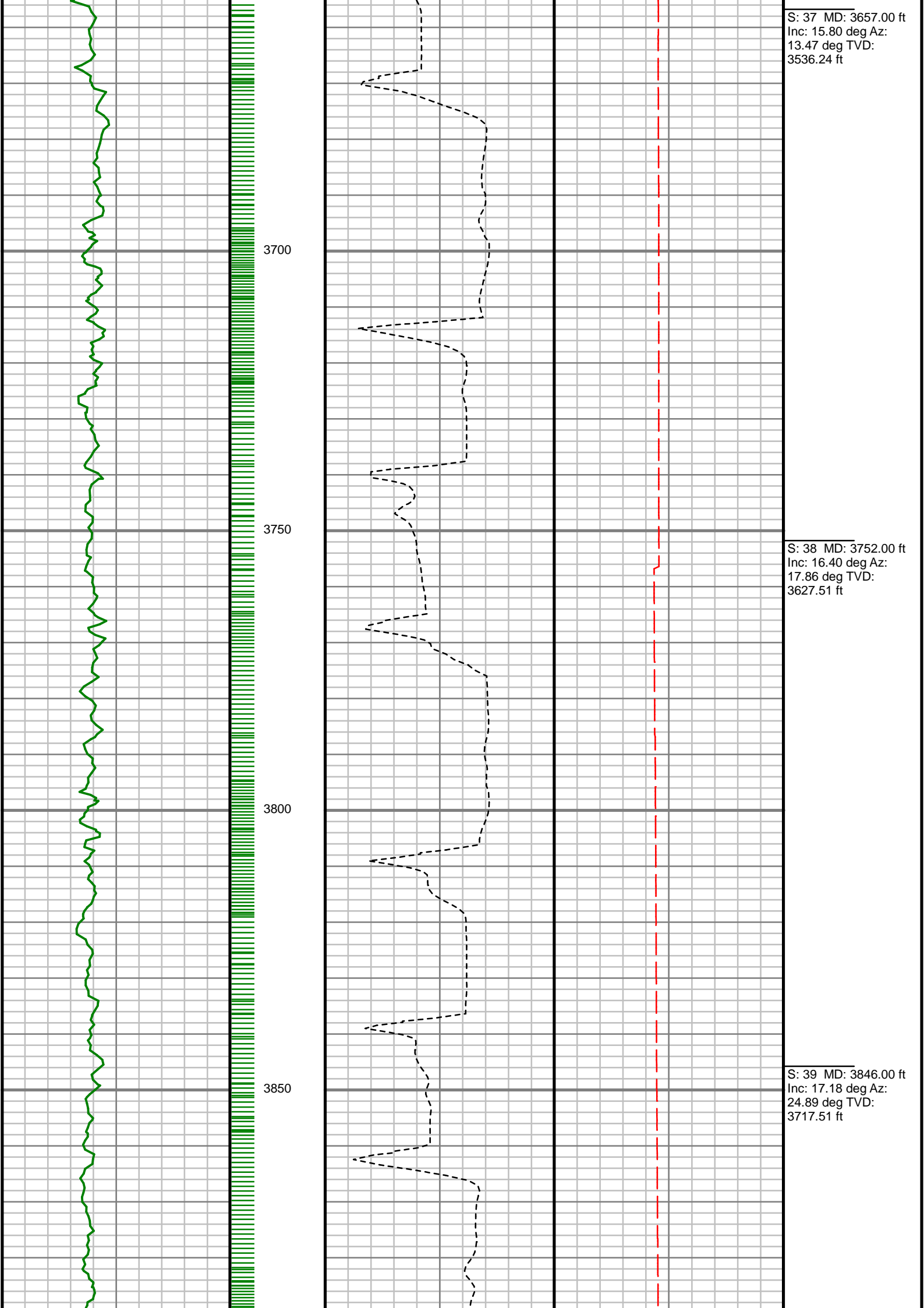


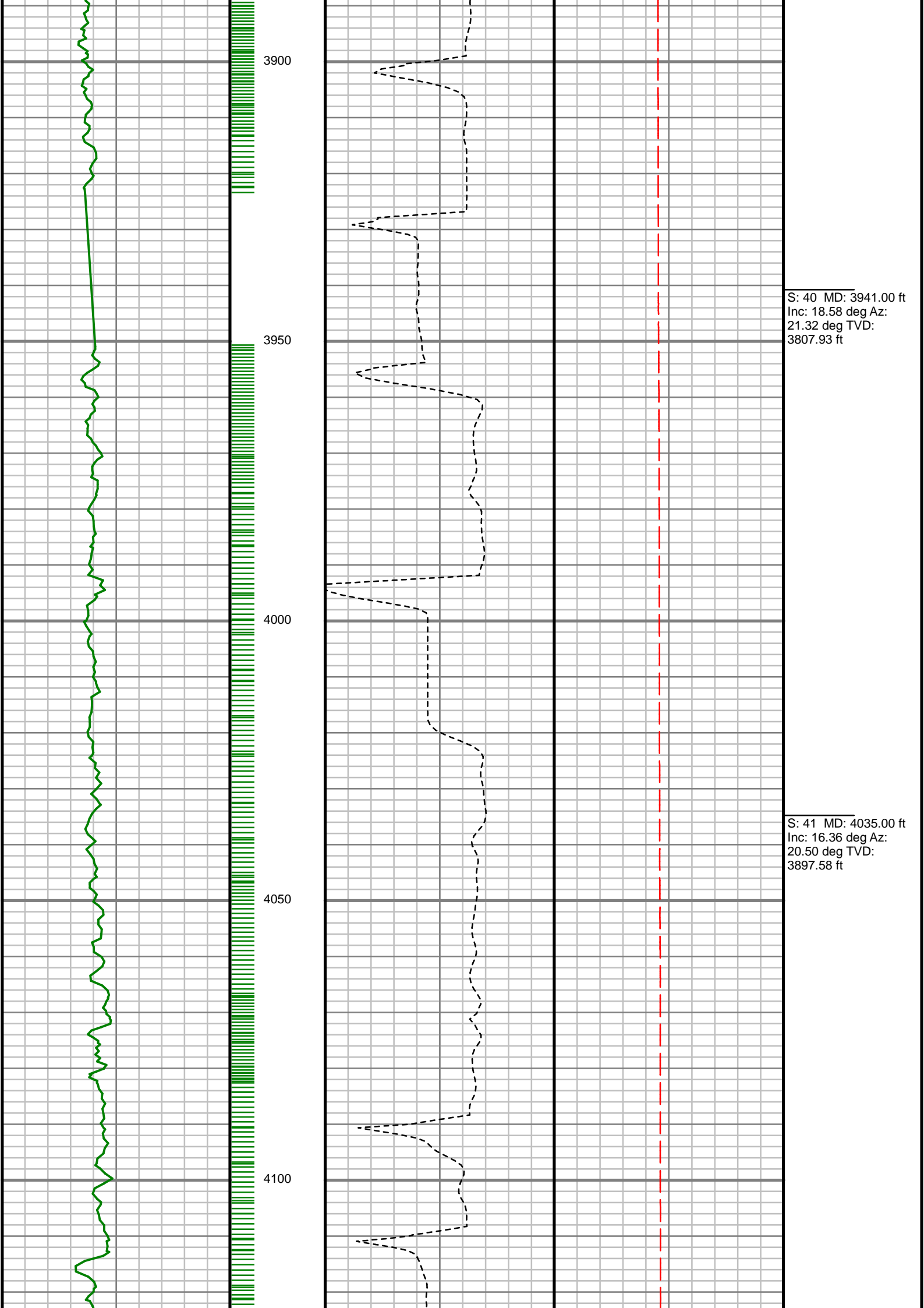
S: 32 MD: 3166.00 ft
Inc: 18.17 deg Az:
24.46 deg TVD:
3086.25 ft

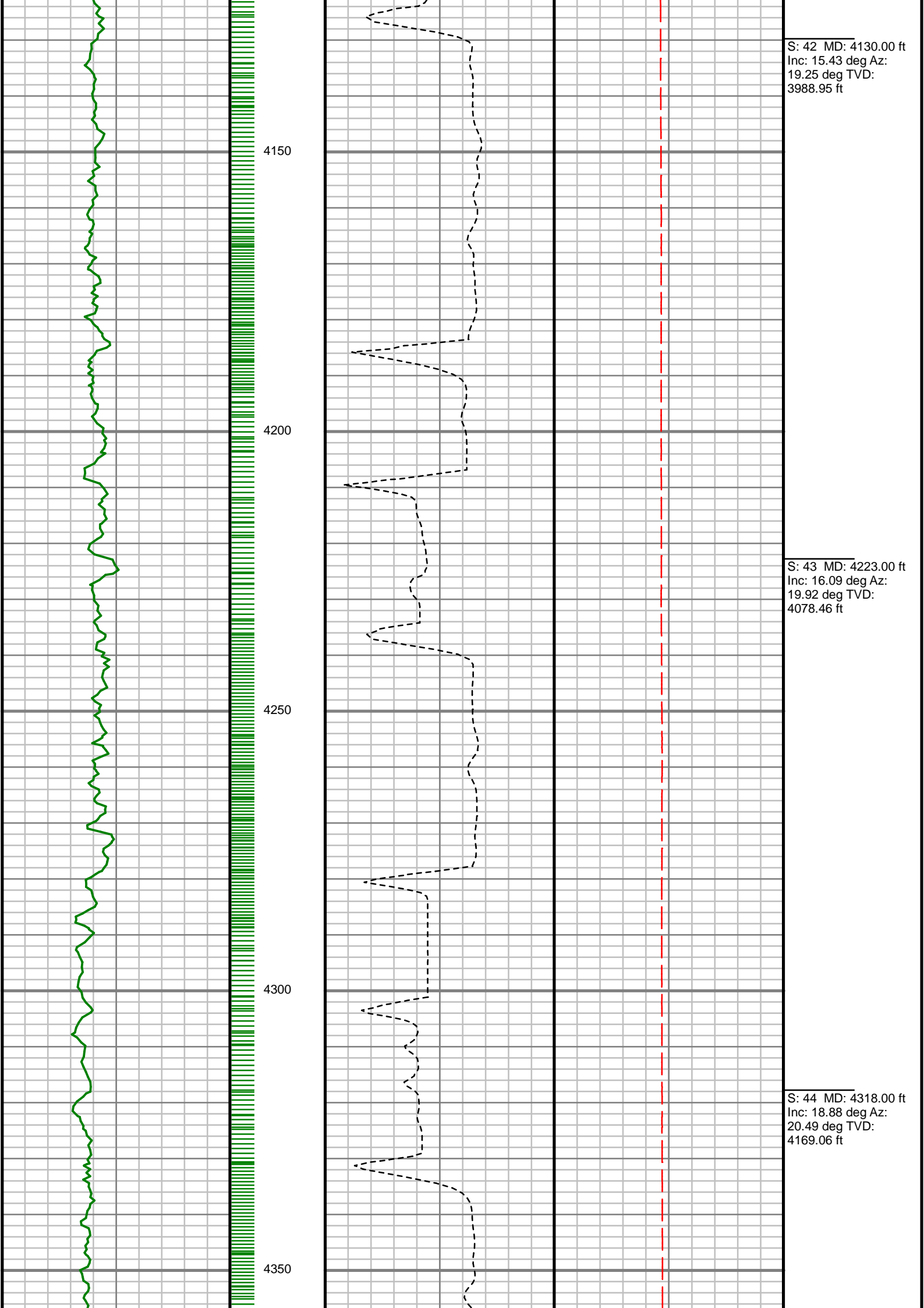
S: 33 MD: 3281.00 ft
Inc: 18.69 deg Az:
21.88 deg TVD:
3176.38 ft

S: 34 MD: 3376.00 ft
Inc: 17.07 deg Az:
20.68 deg TVD:
3266.79 ft





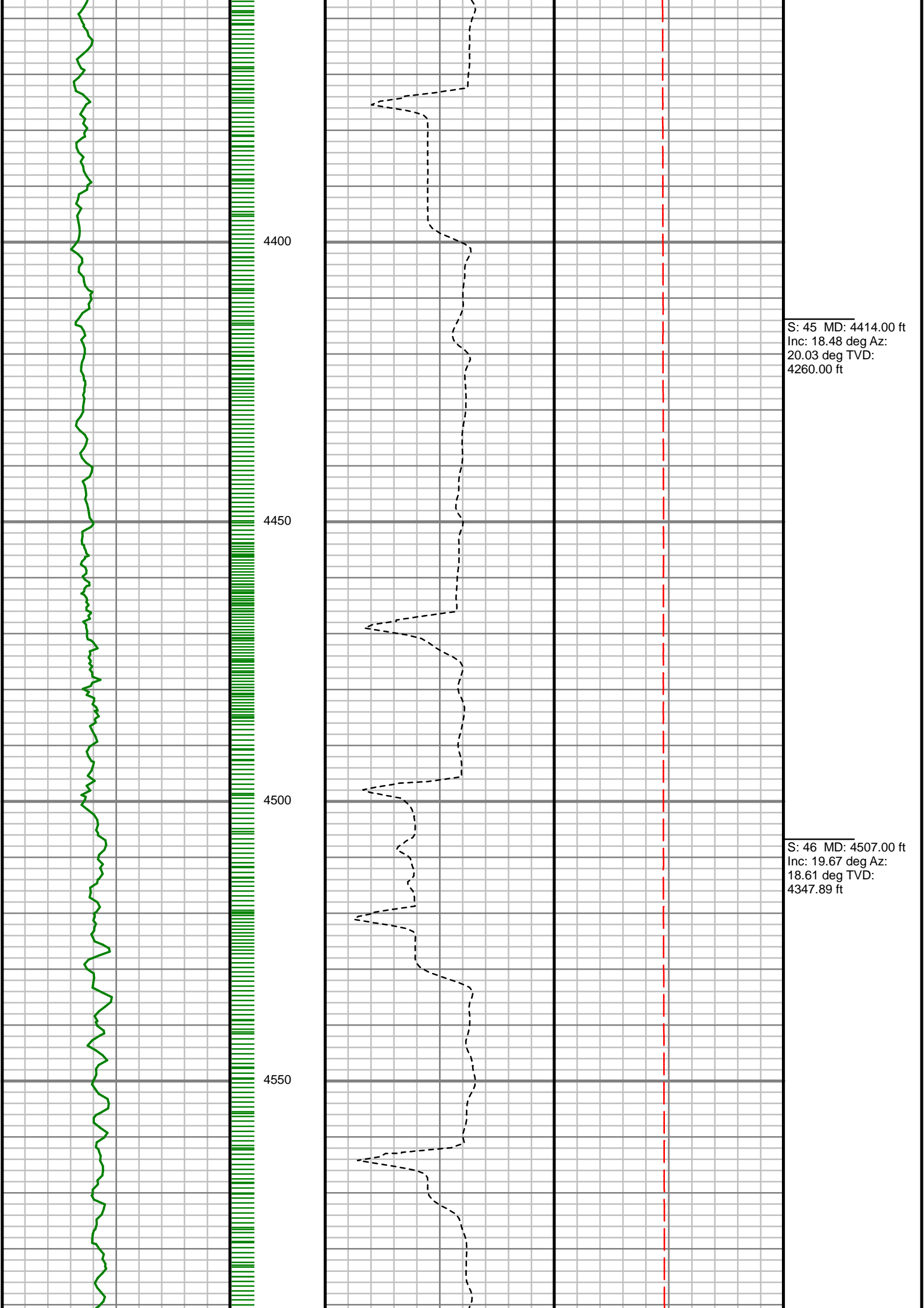


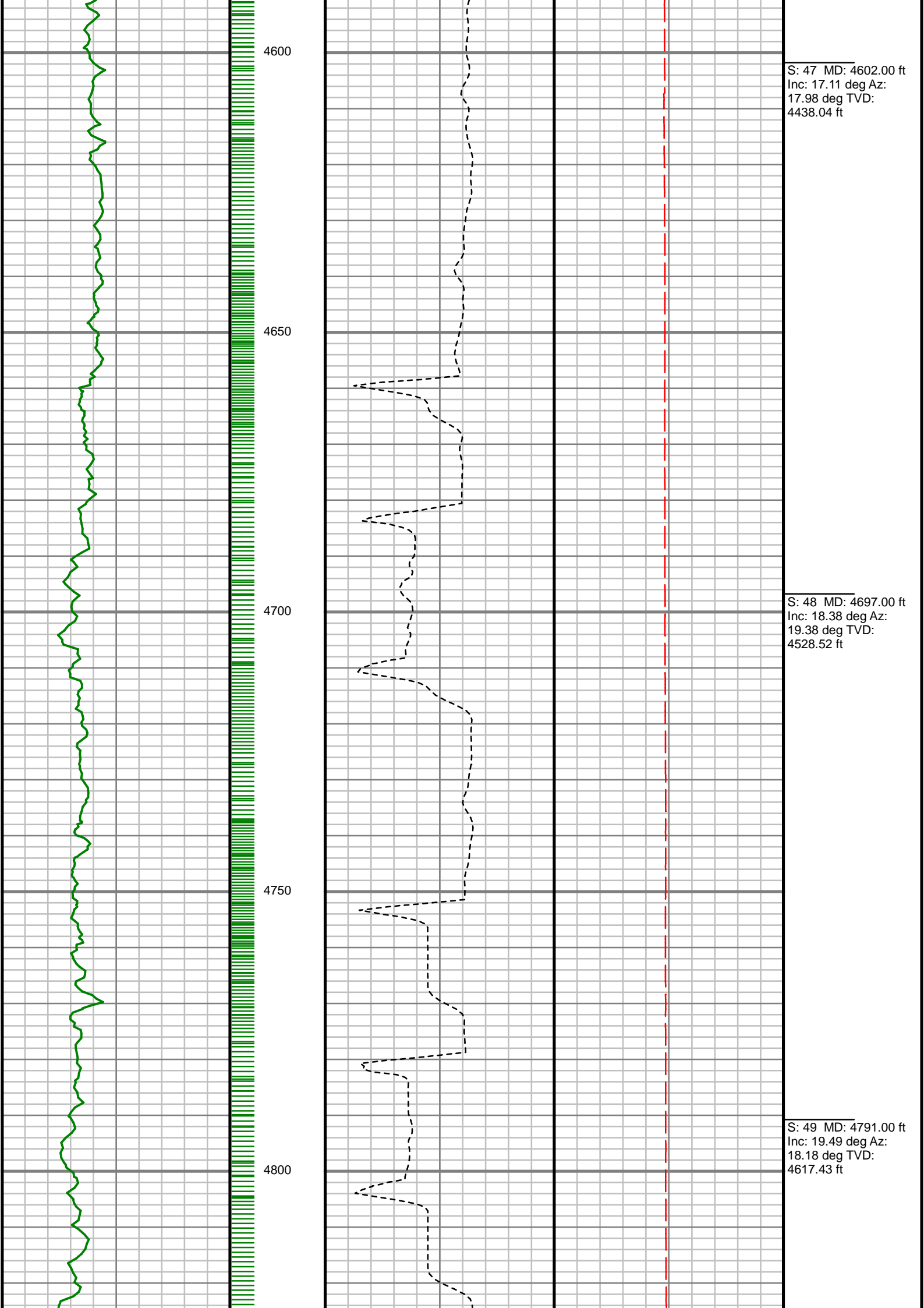


S: 42 MD: 4130.00 ft
Inc: 15.43 deg Az:
19.25 deg TVD:
3988.95 ft

S: 43 MD: 4223.00 ft
Inc: 16.09 deg Az:
19.92 deg TVD:
4078.46 ft

S: 44 MD: 4318.00 ft
Inc: 18.88 deg Az:
20.49 deg TVD:
4169.06 ft

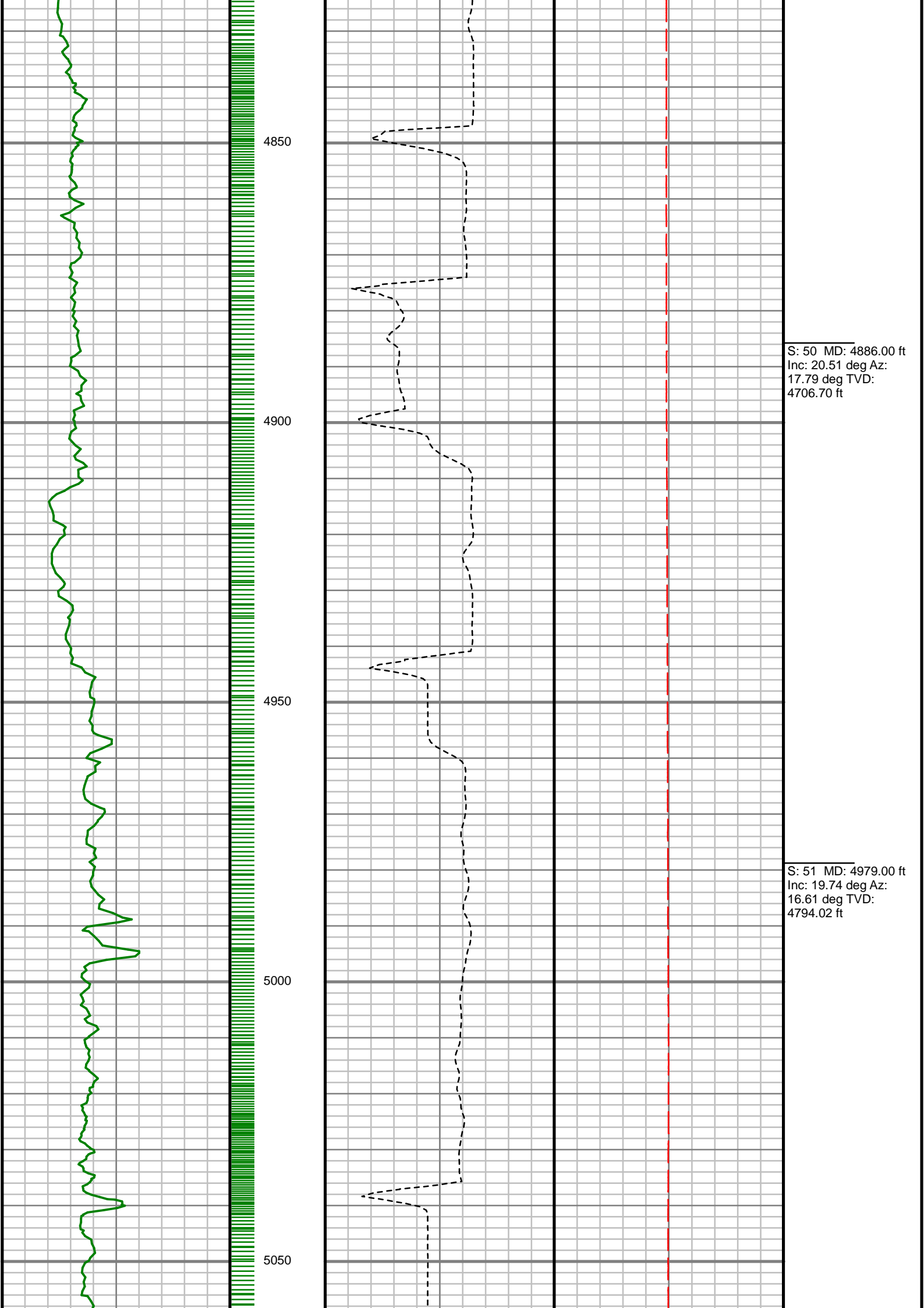




S: 47 MD: 4602.00 ft
Inc: 17.11 deg Az:
17.98 deg TVD:
4438.04 ft

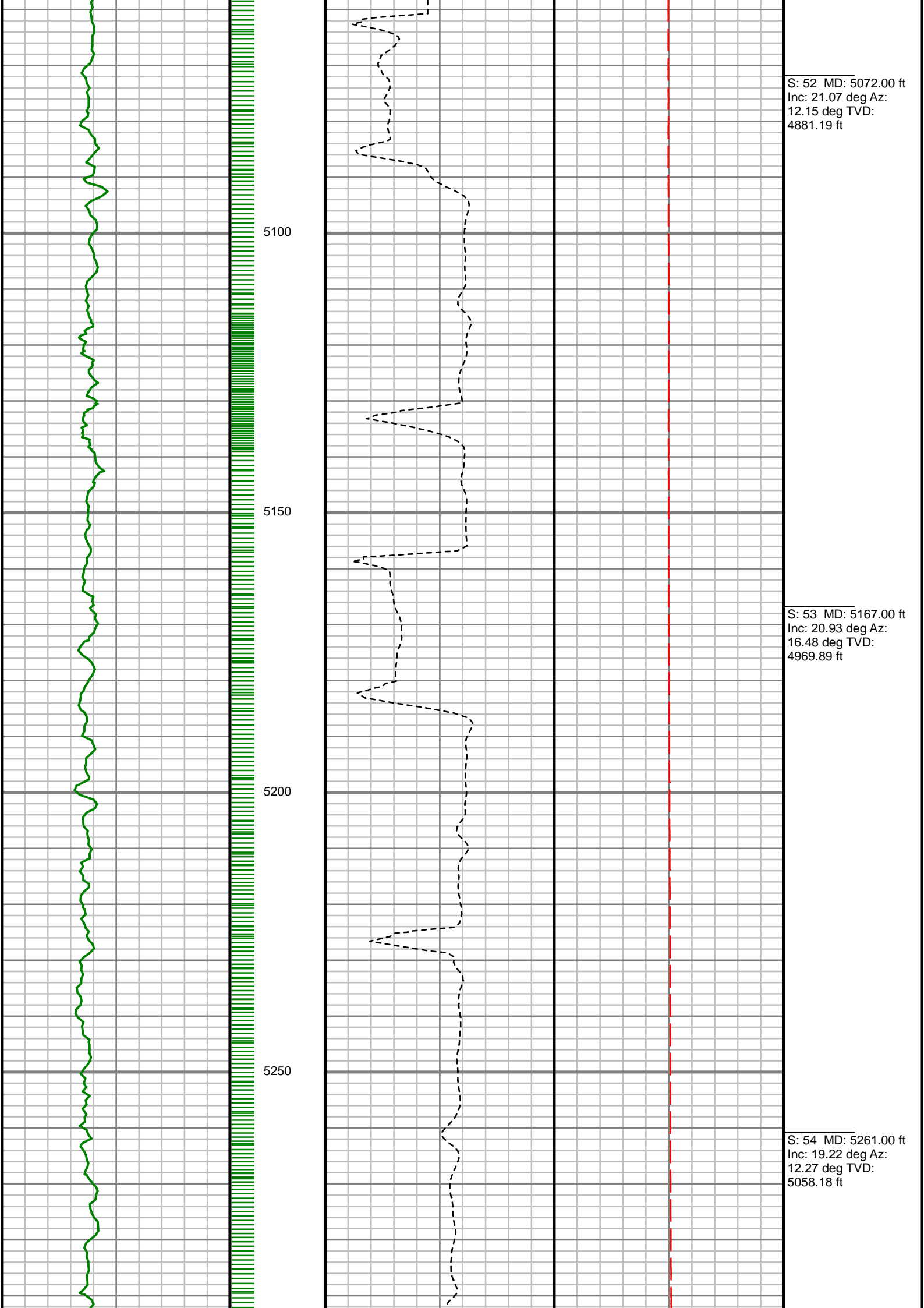
S: 48 MD: 4697.00 ft
Inc: 18.38 deg Az:
19.38 deg TVD:
4528.52 ft

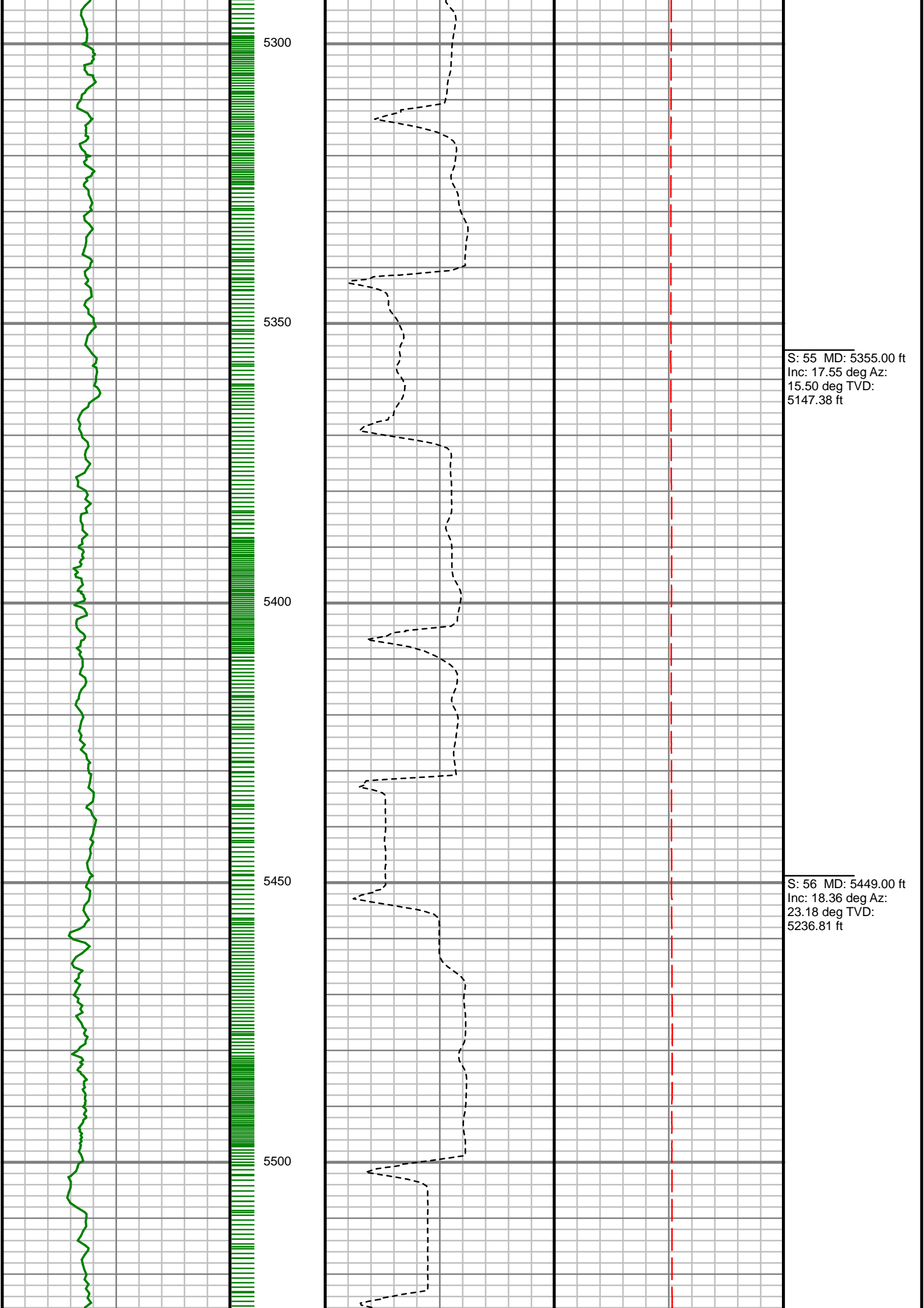
S: 49 MD: 4791.00 ft
Inc: 19.49 deg Az:
18.18 deg TVD:
4617.43 ft

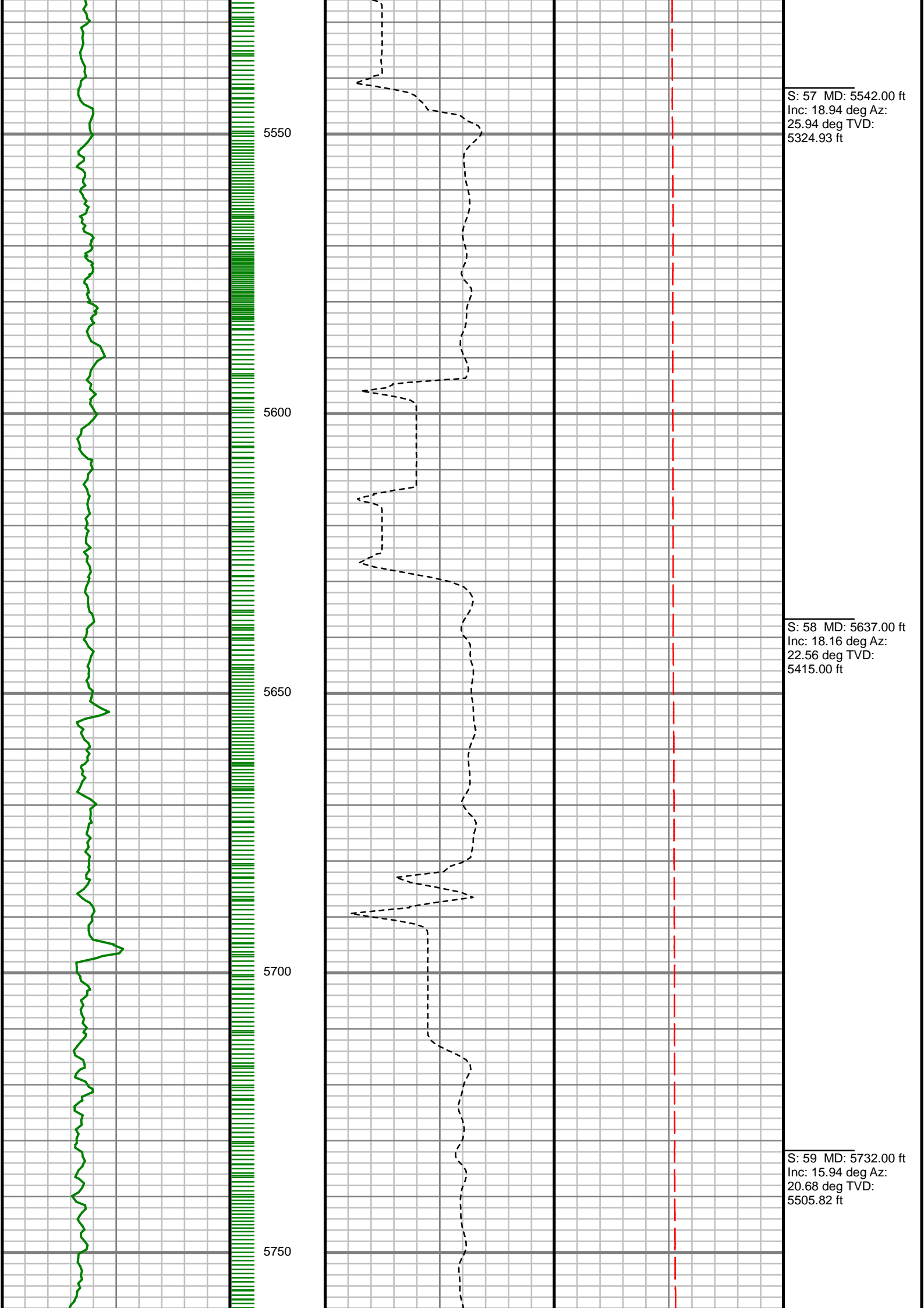


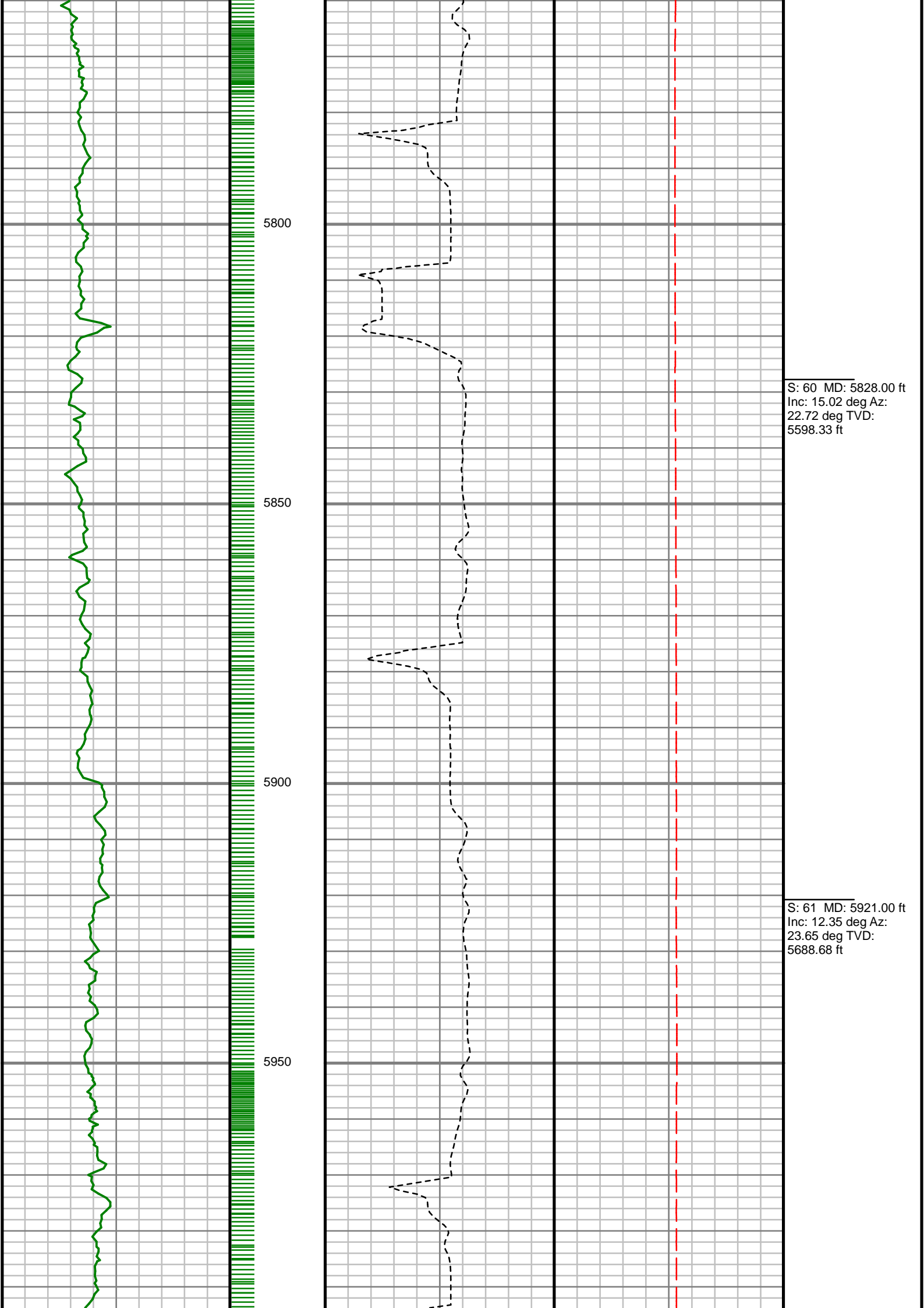
S: 50 MD: 4886.00 ft
Inc: 20.51 deg Az:
17.79 deg TVD:
4706.70 ft

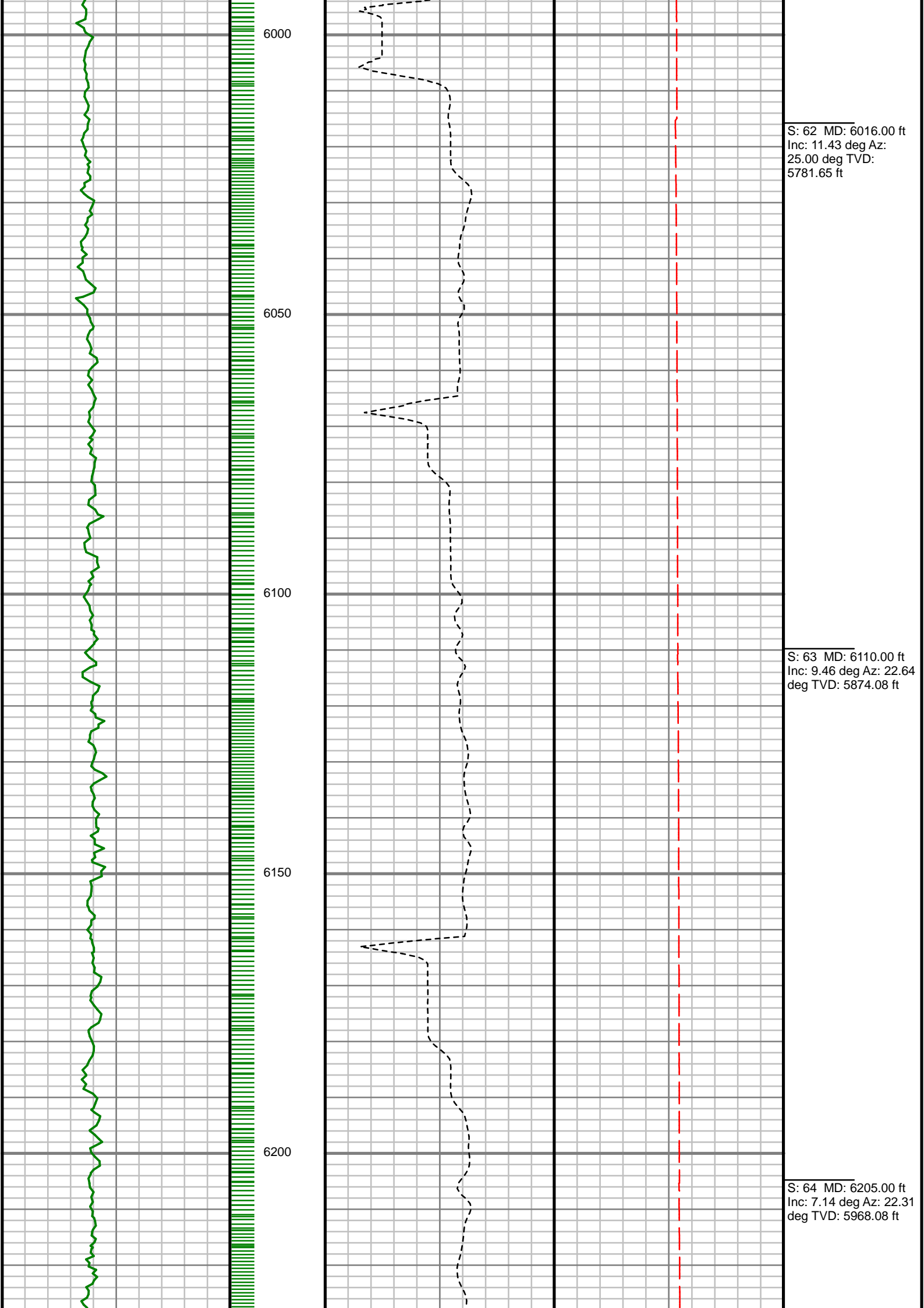
S: 51 MD: 4979.00 ft
Inc: 19.74 deg Az:
16.61 deg TVD:
4794.02 ft

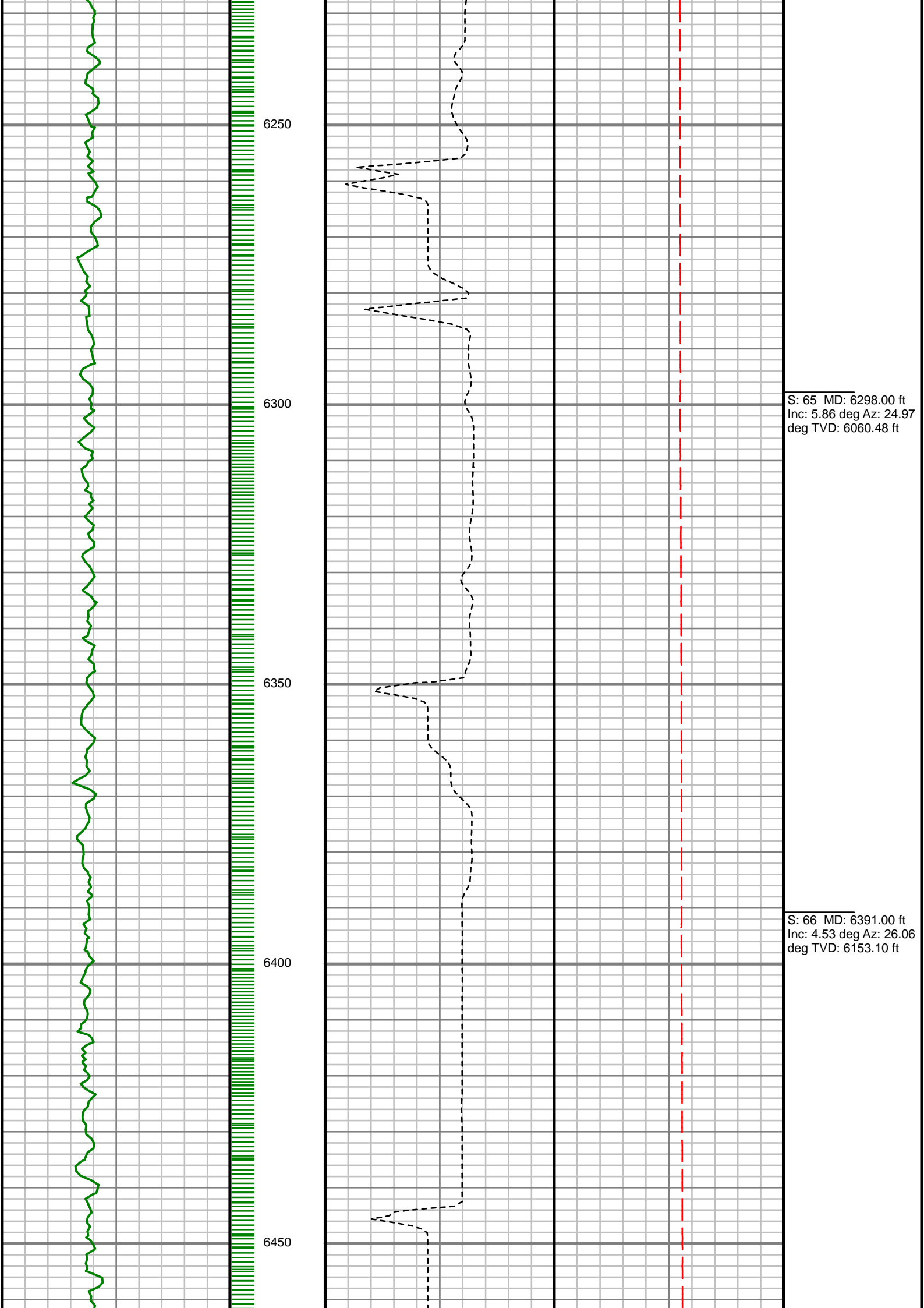


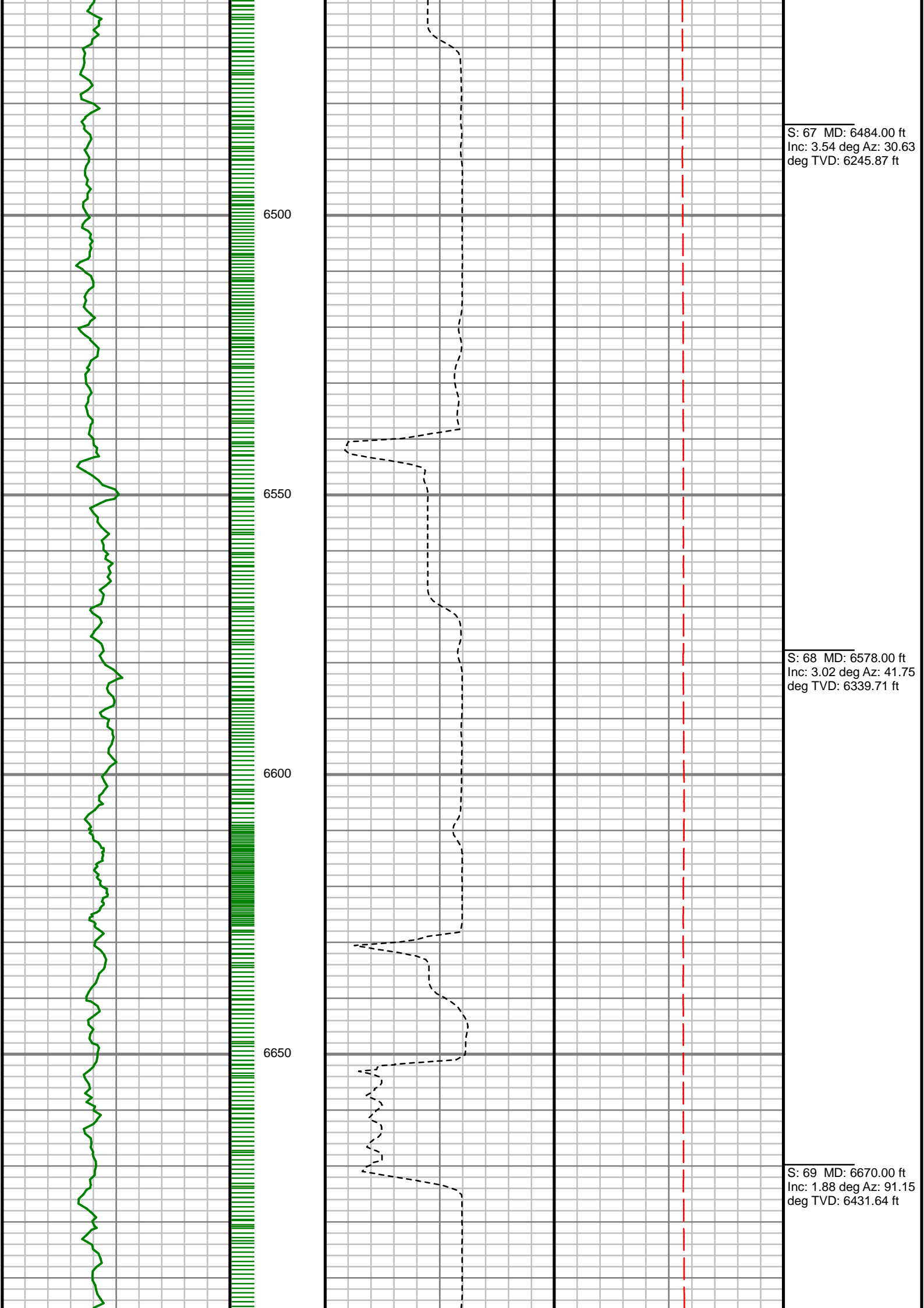


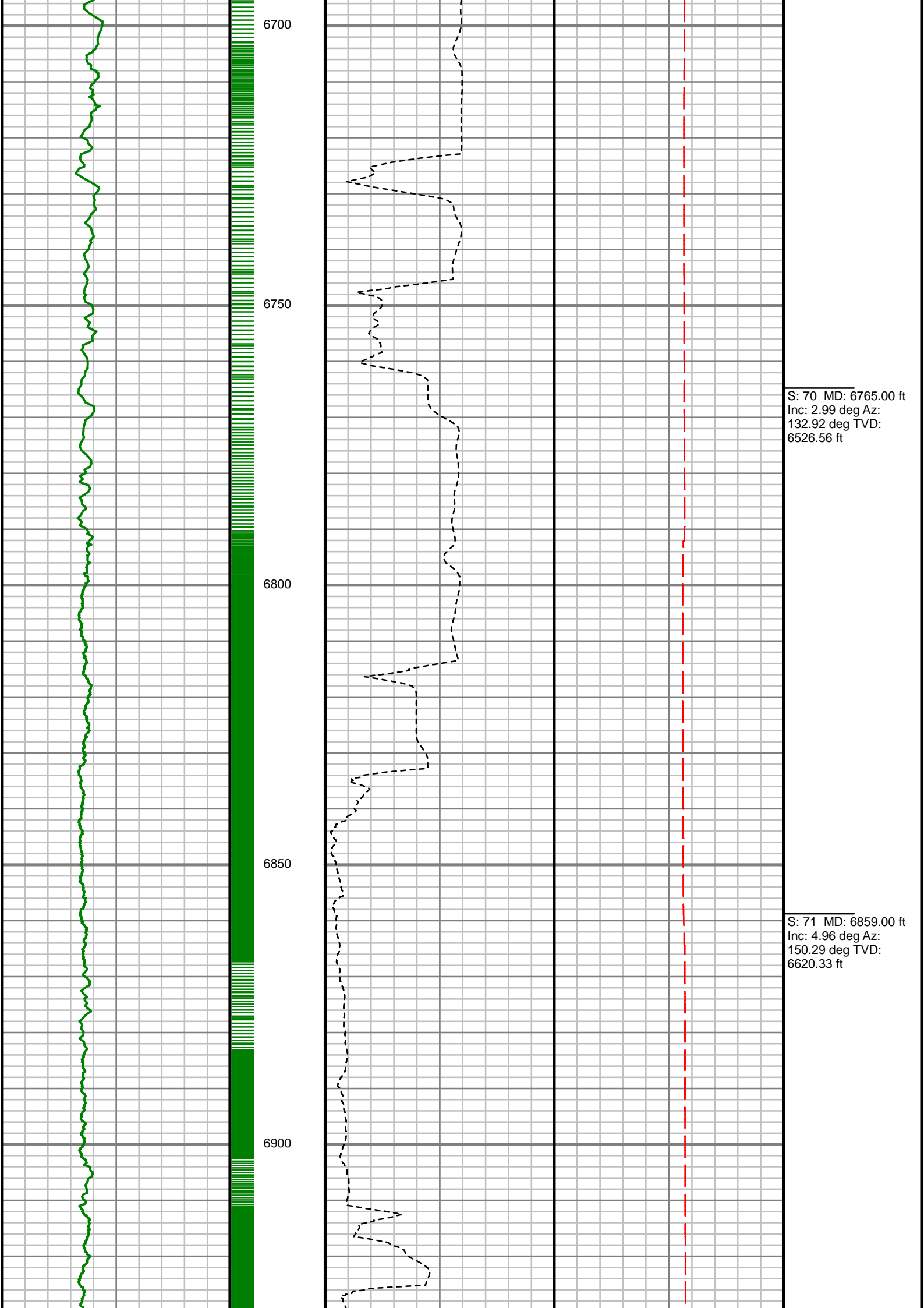


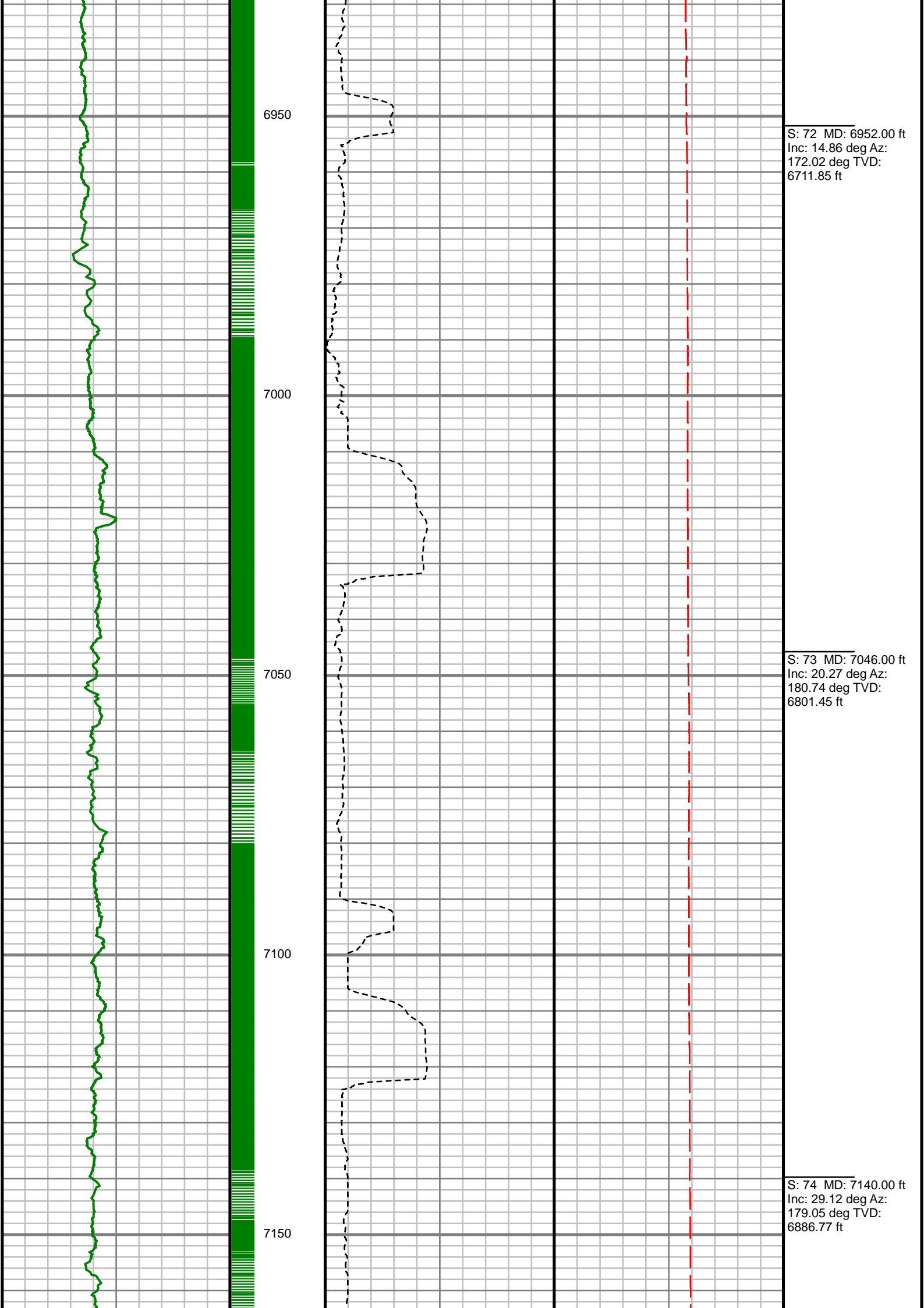


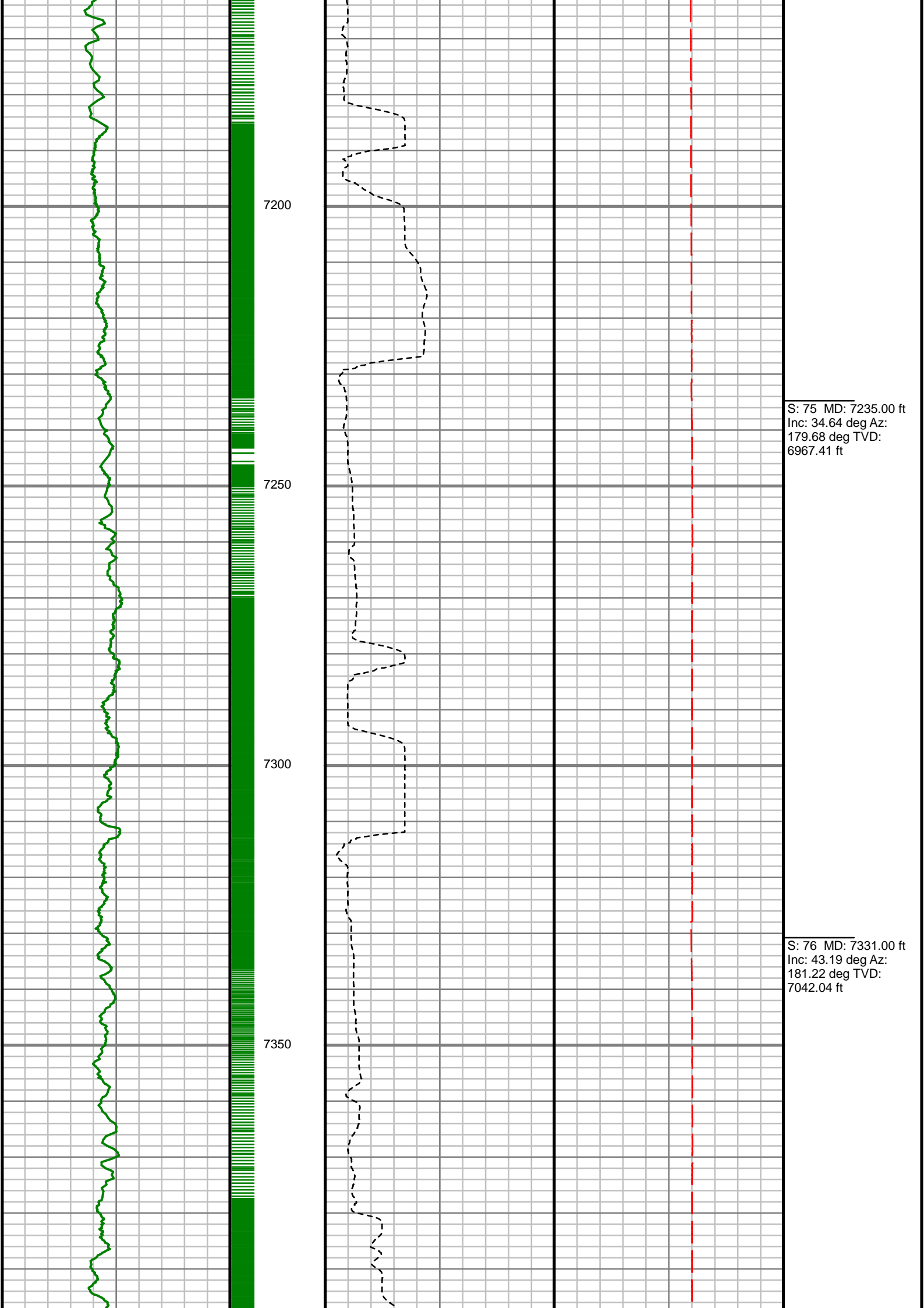






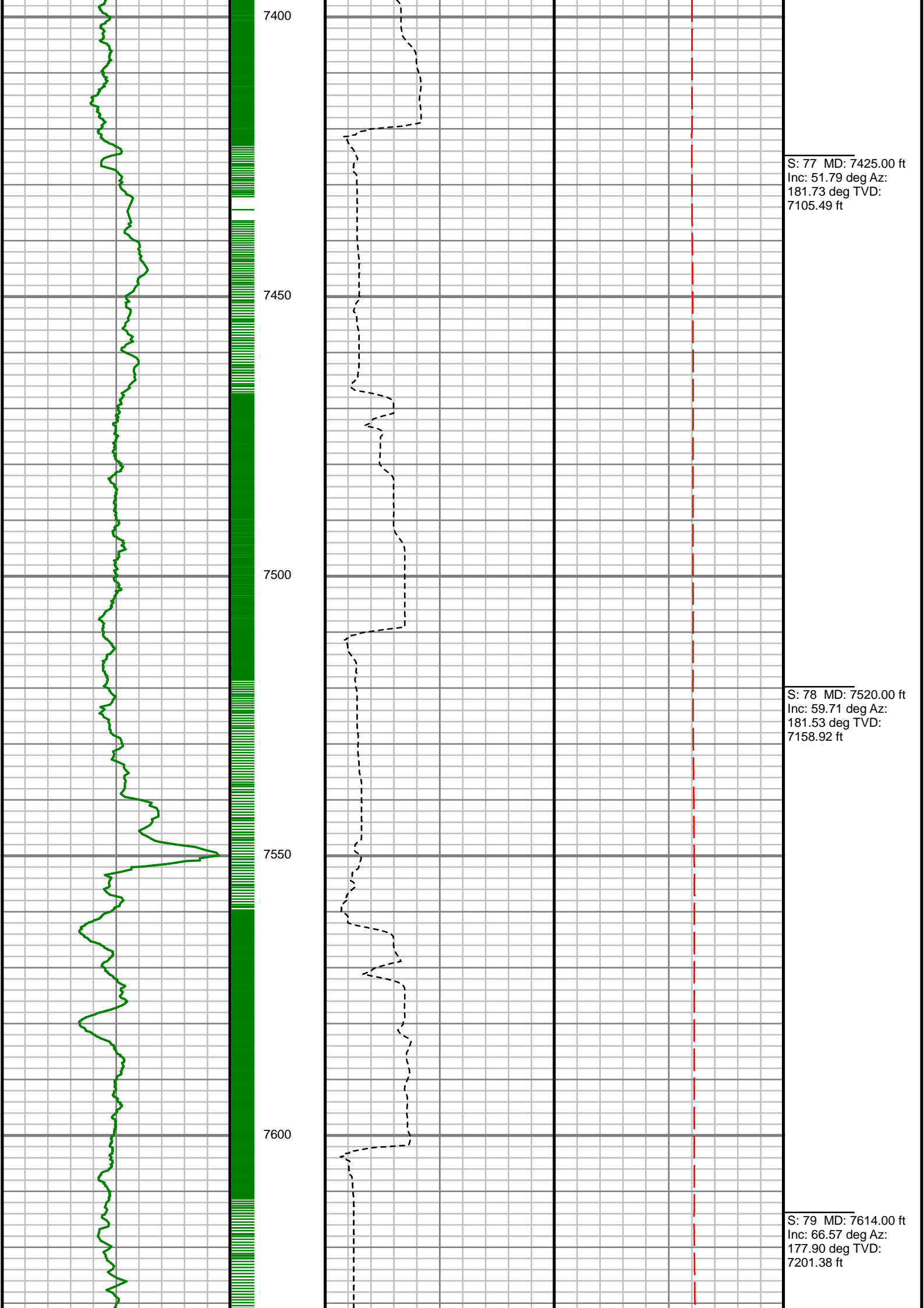


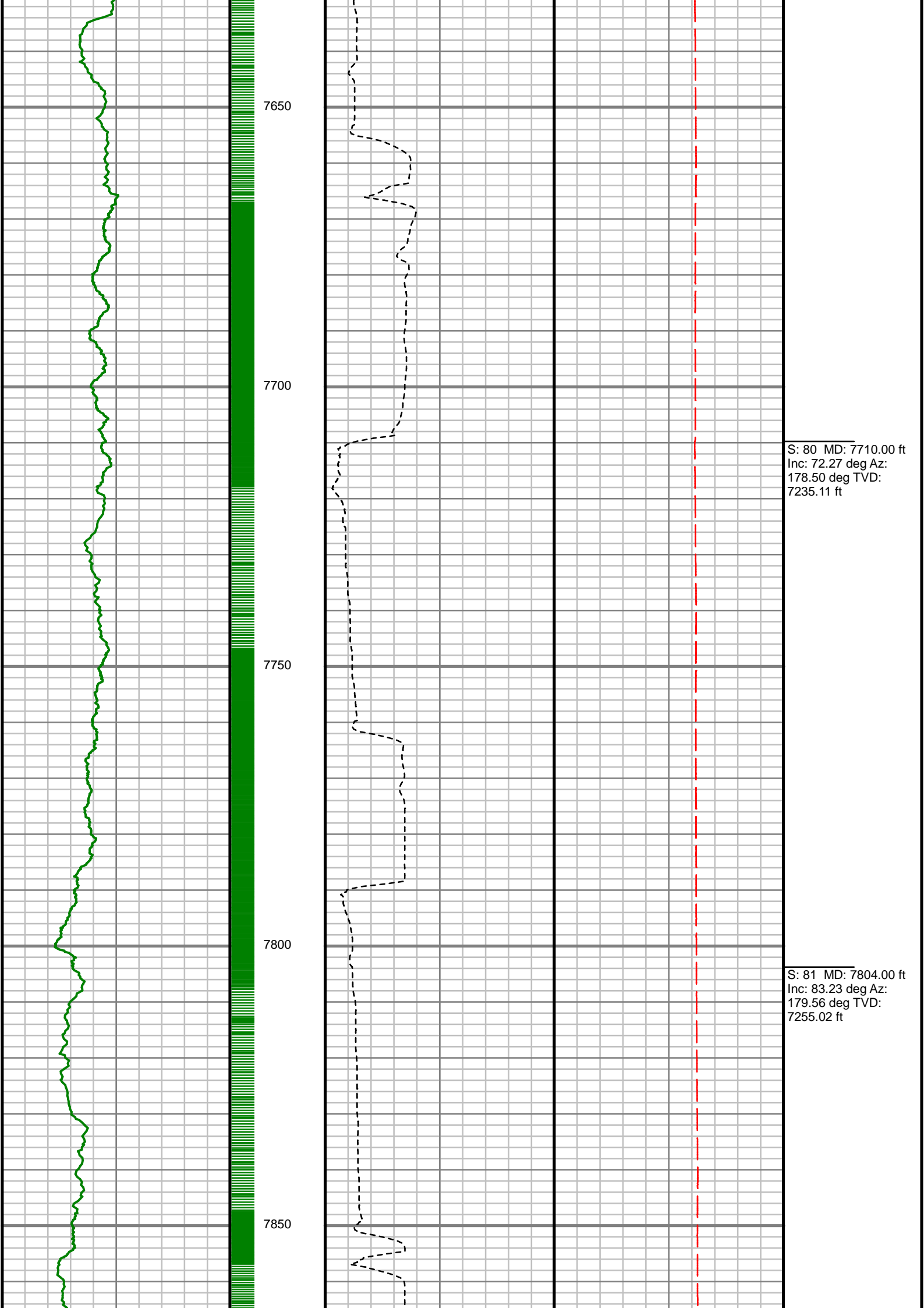




S: 75 MD: 7235.00 ft
Inc: 34.64 deg Az:
179.68 deg TVD:
6967.41 ft

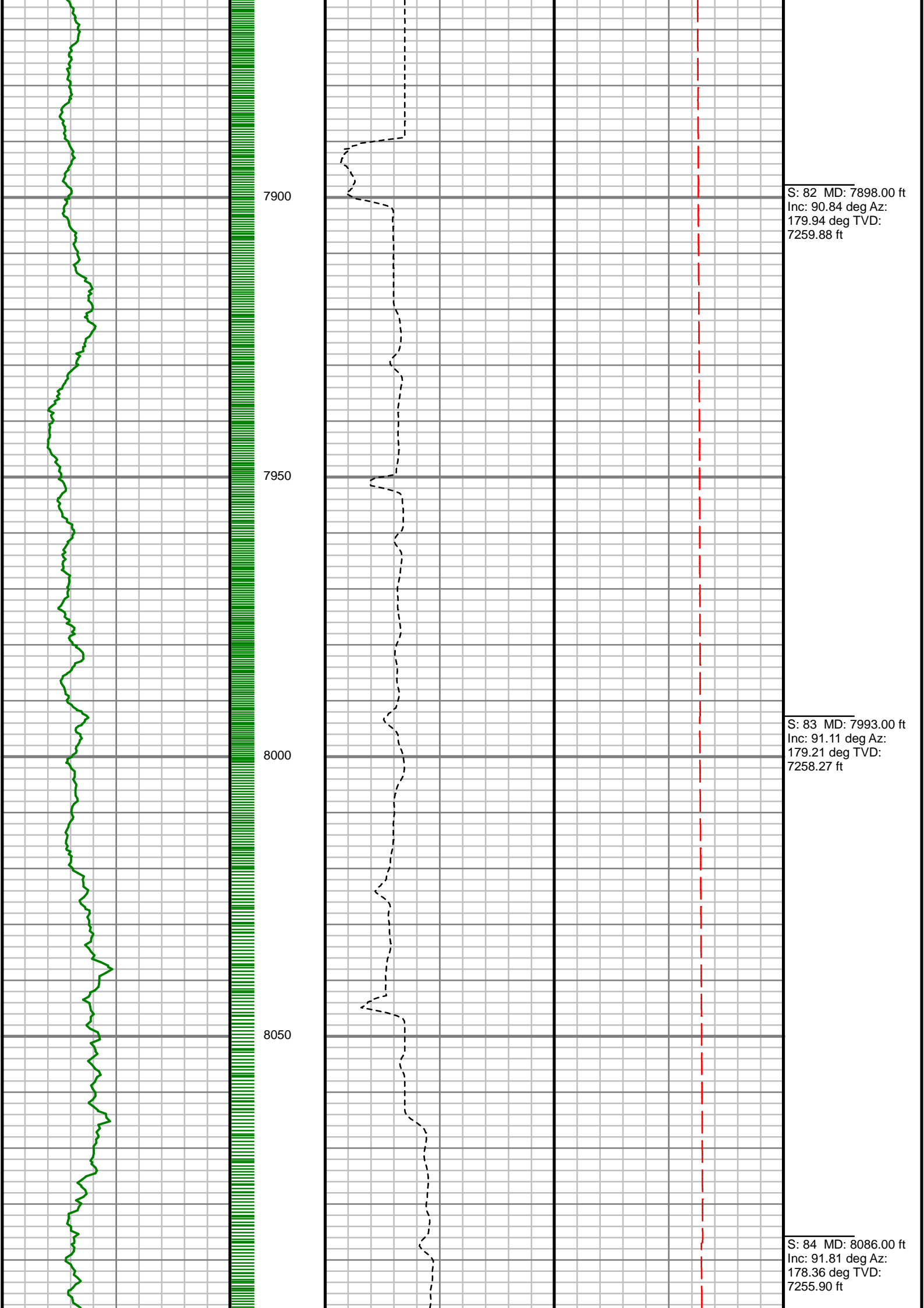
S: 76 MD: 7331.00 ft
Inc: 43.19 deg Az:
181.22 deg TVD:
7042.04 ft

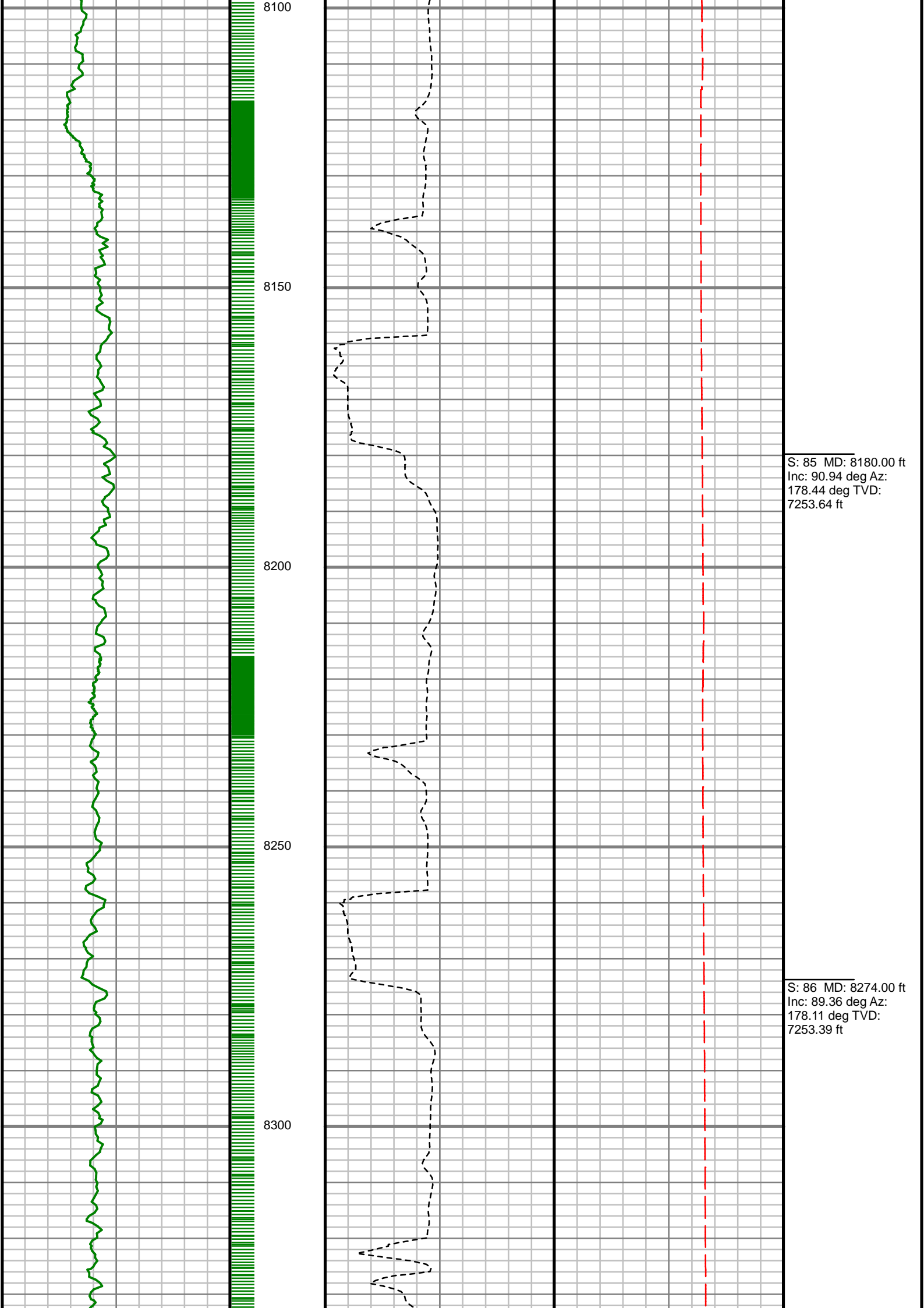


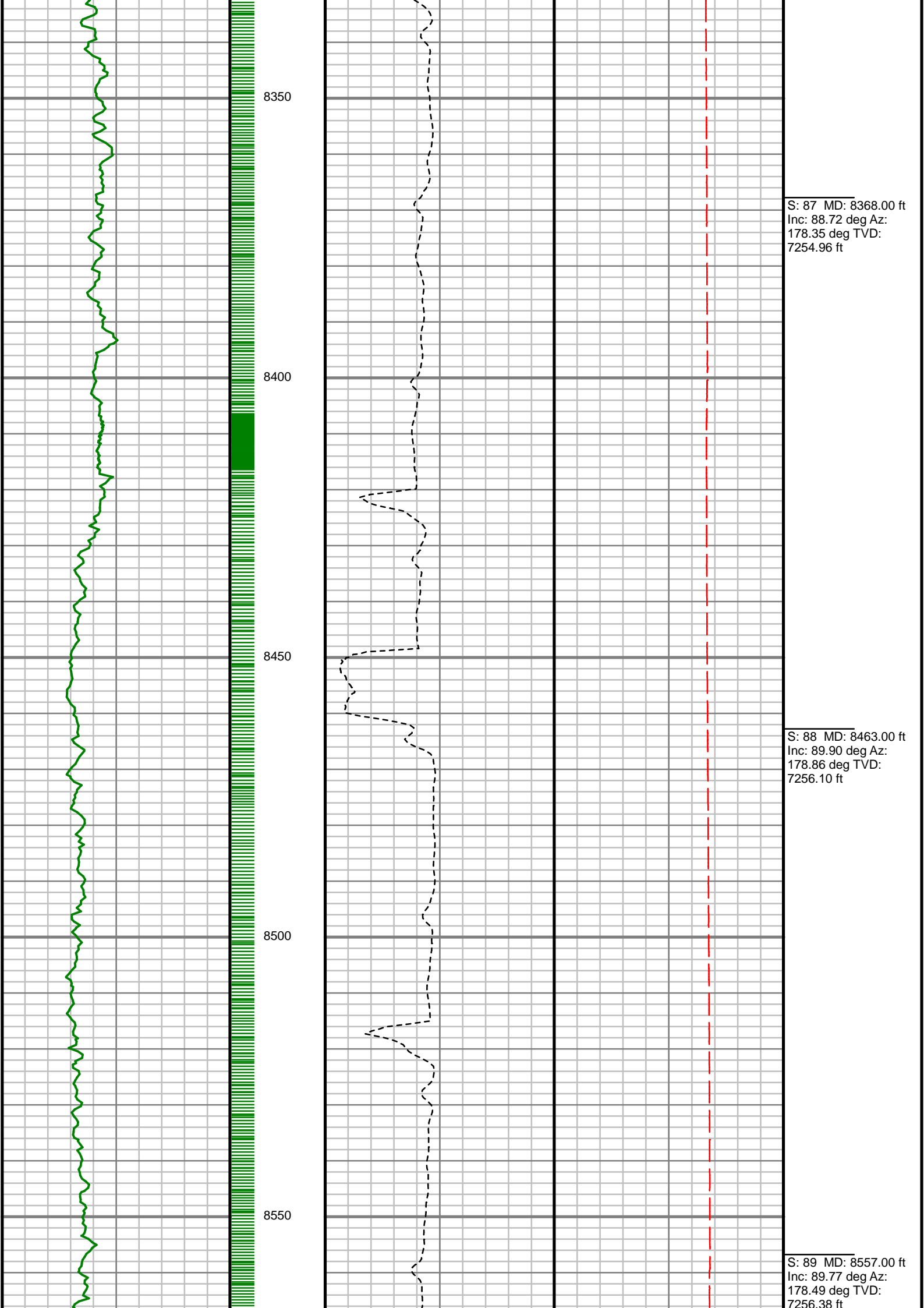


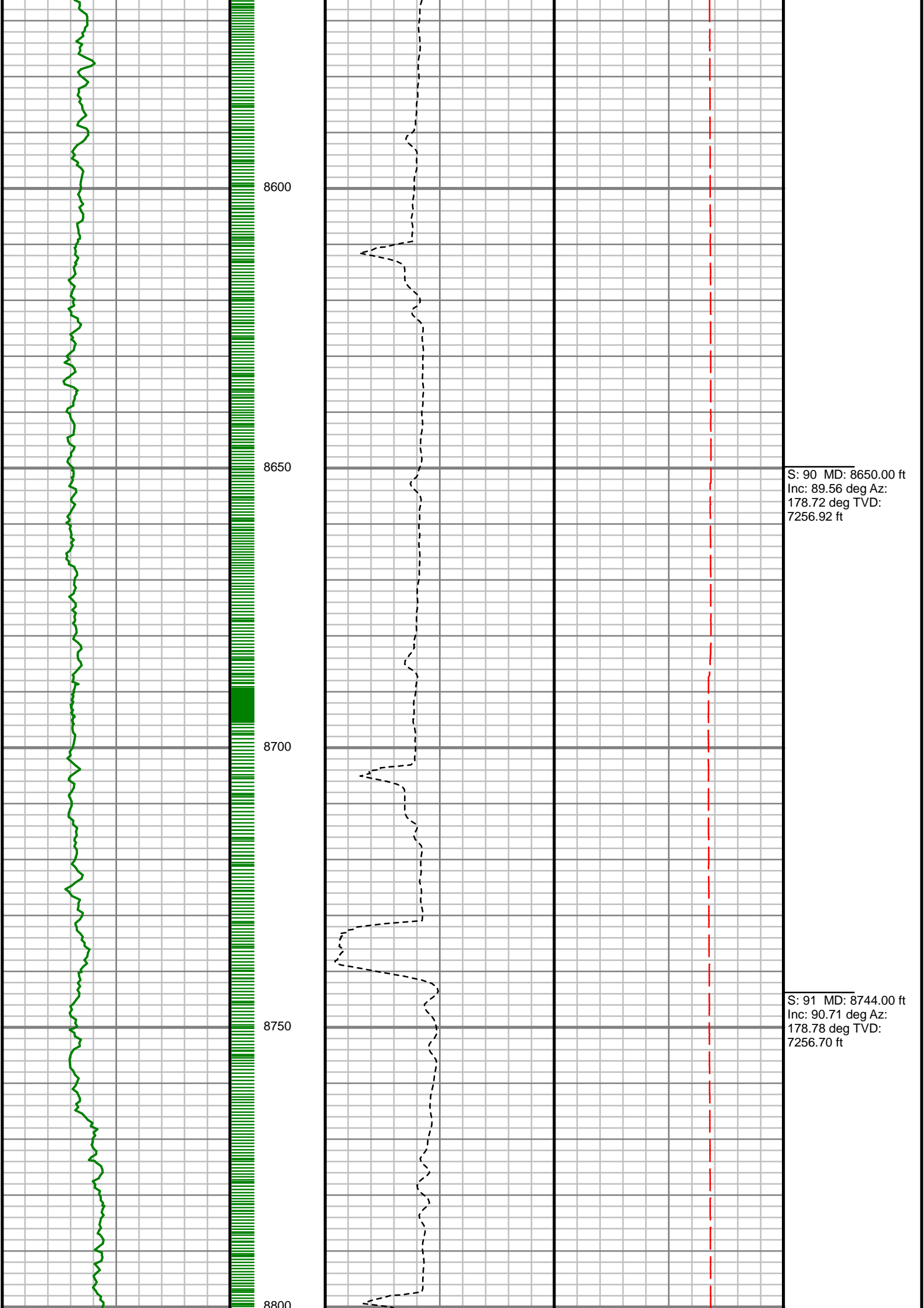
S: 80 MD: 7710.00 ft
Inc: 72.27 deg Az:
178.50 deg TVD:
7235.11 ft

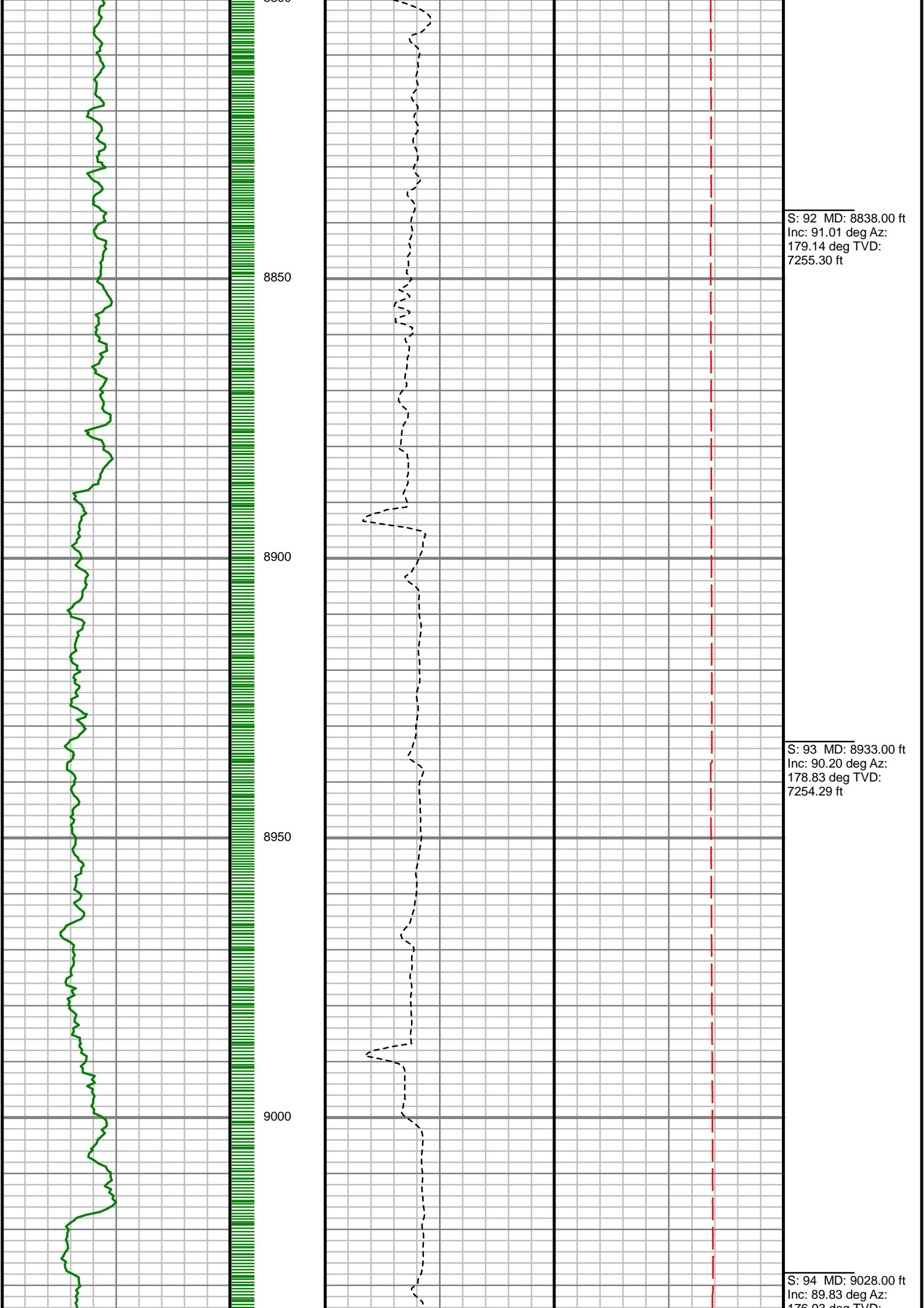
S: 81 MD: 7804.00 ft
Inc: 83.23 deg Az:
179.56 deg TVD:
7255.02 ft

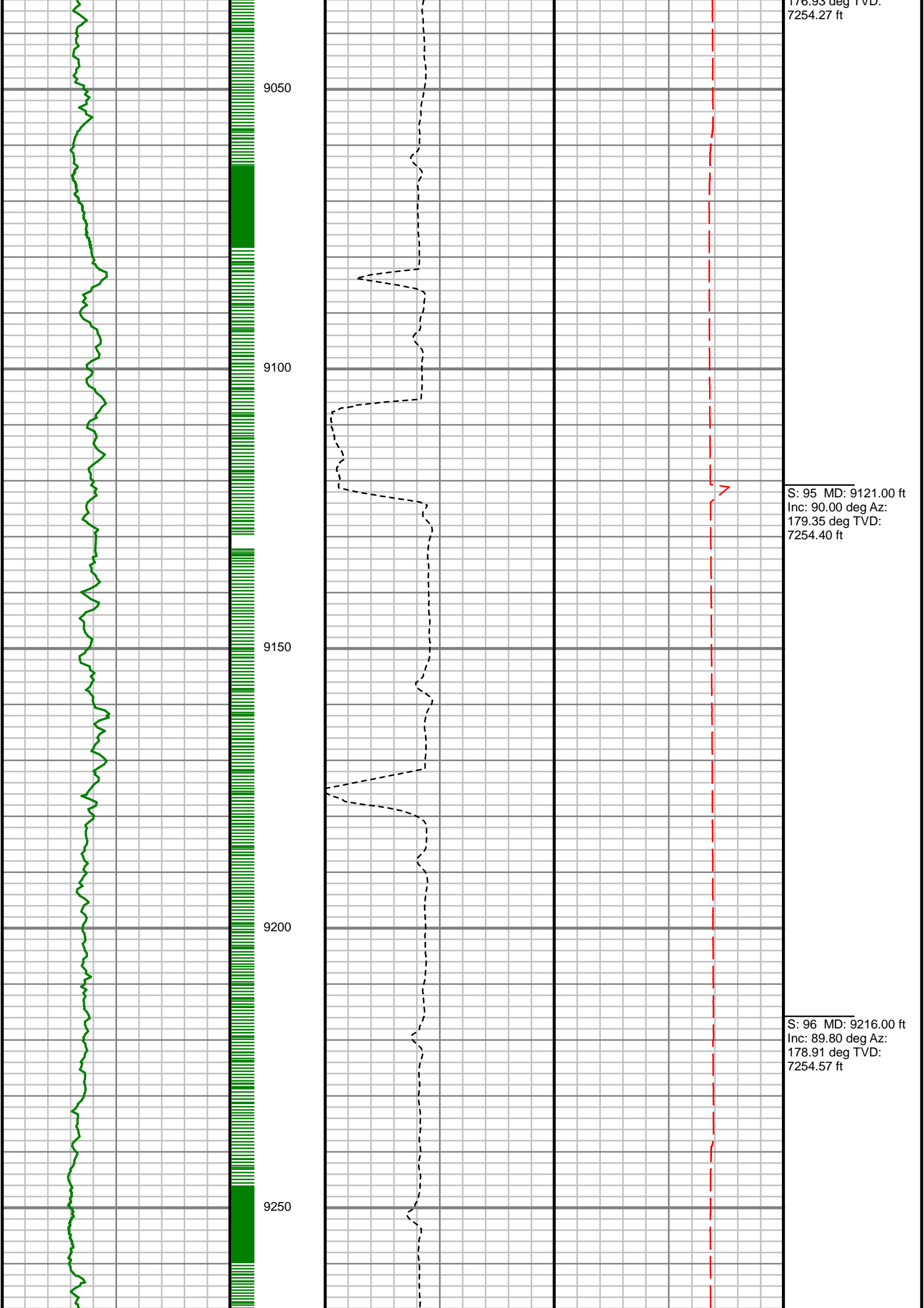


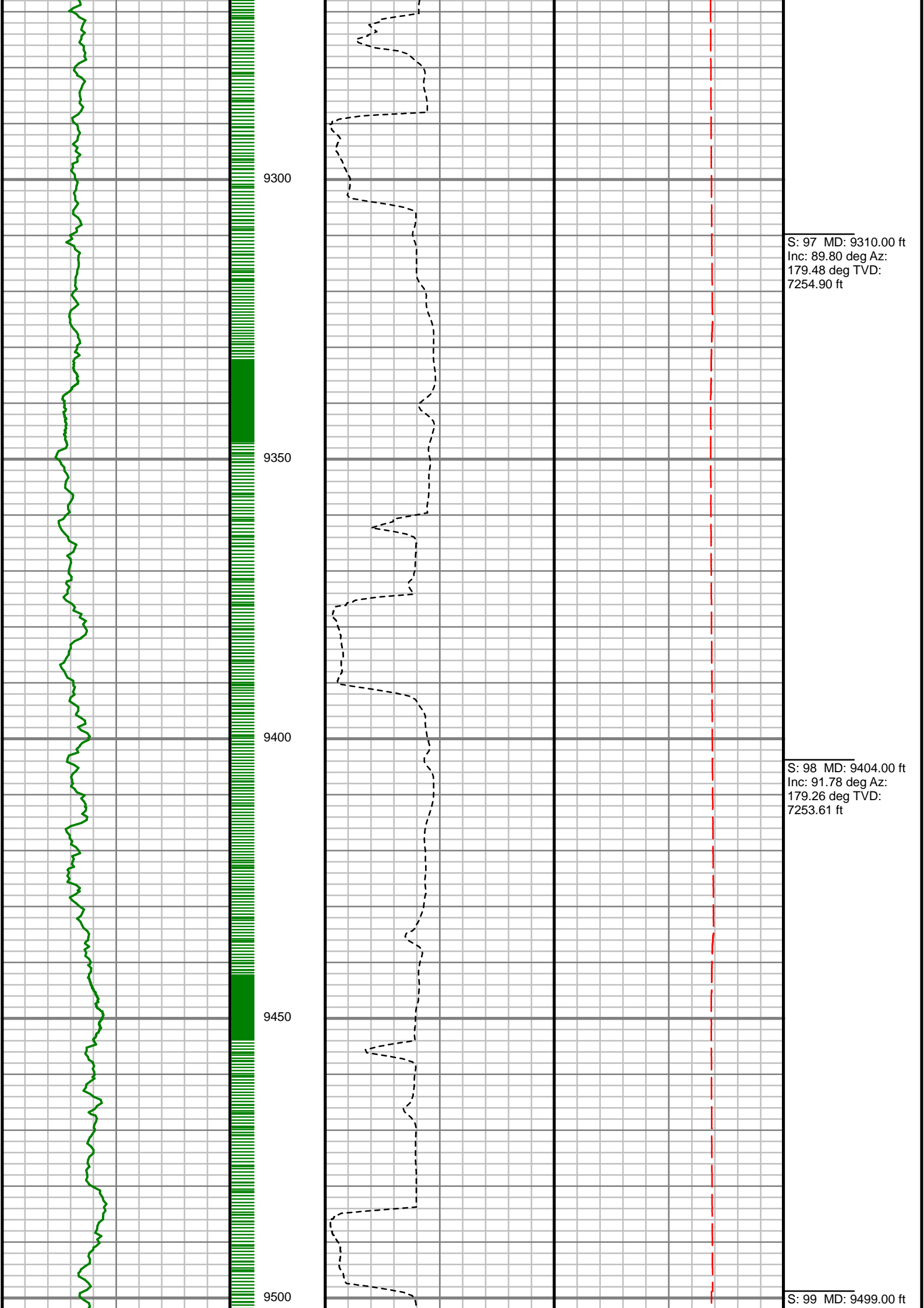


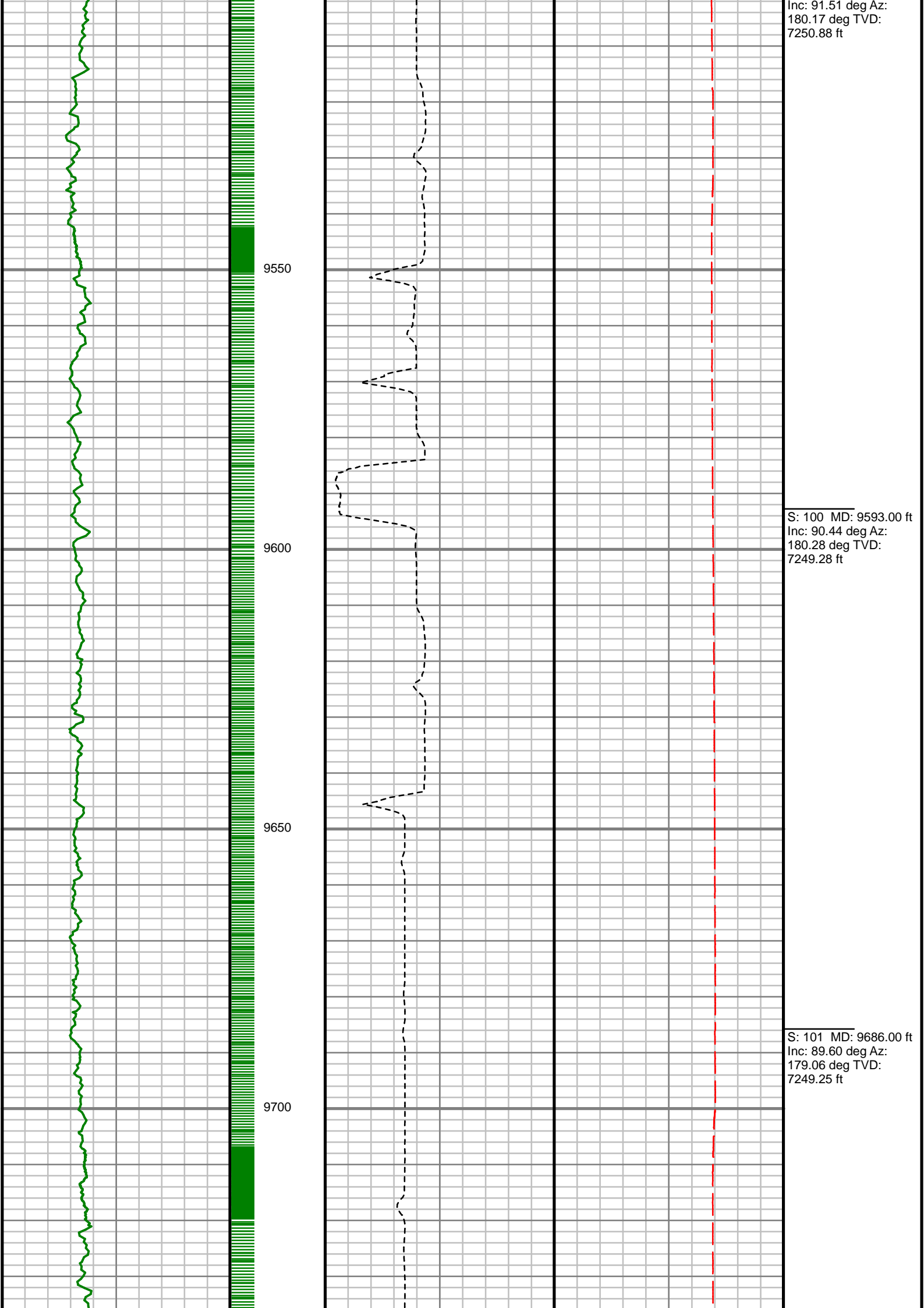


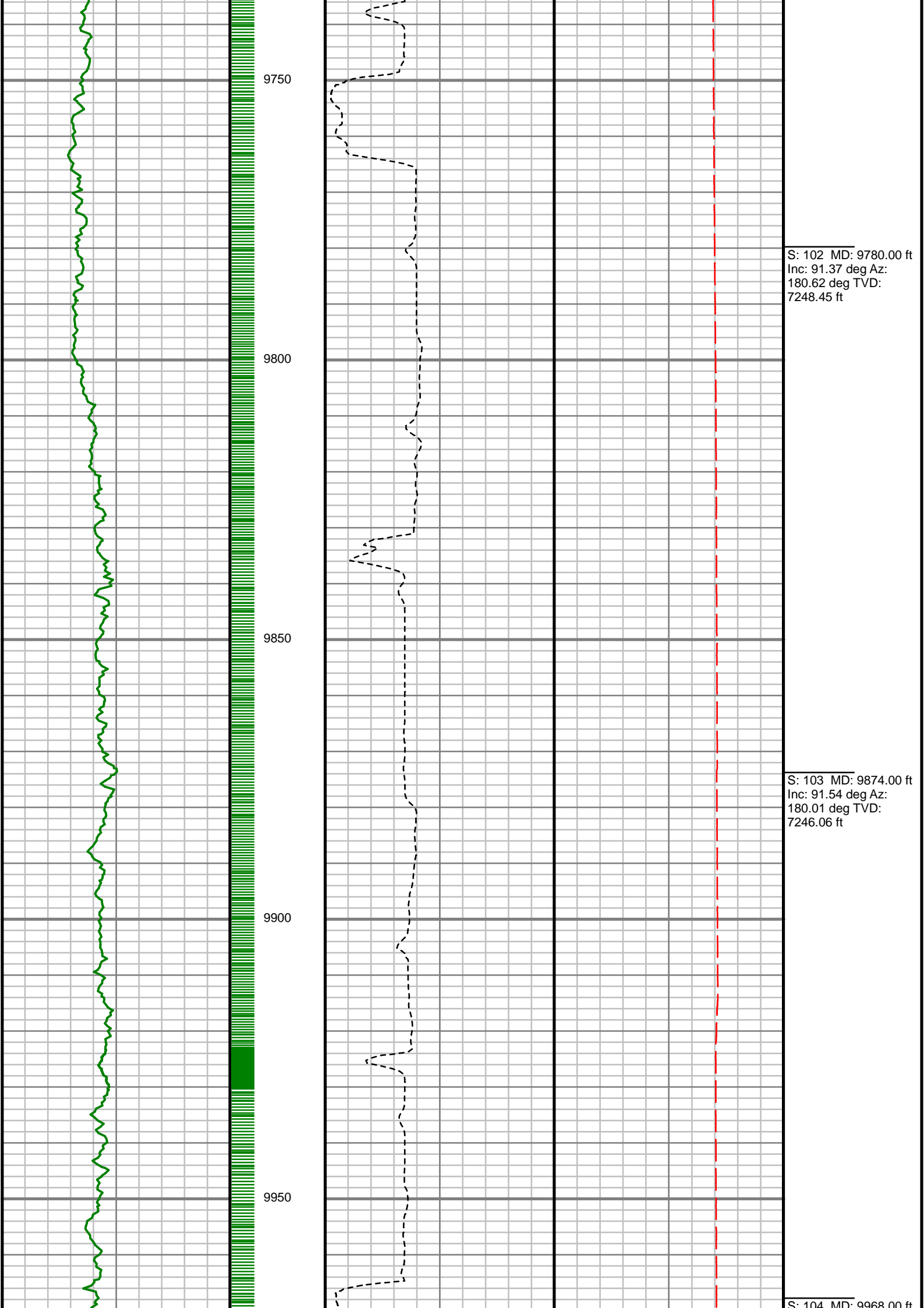


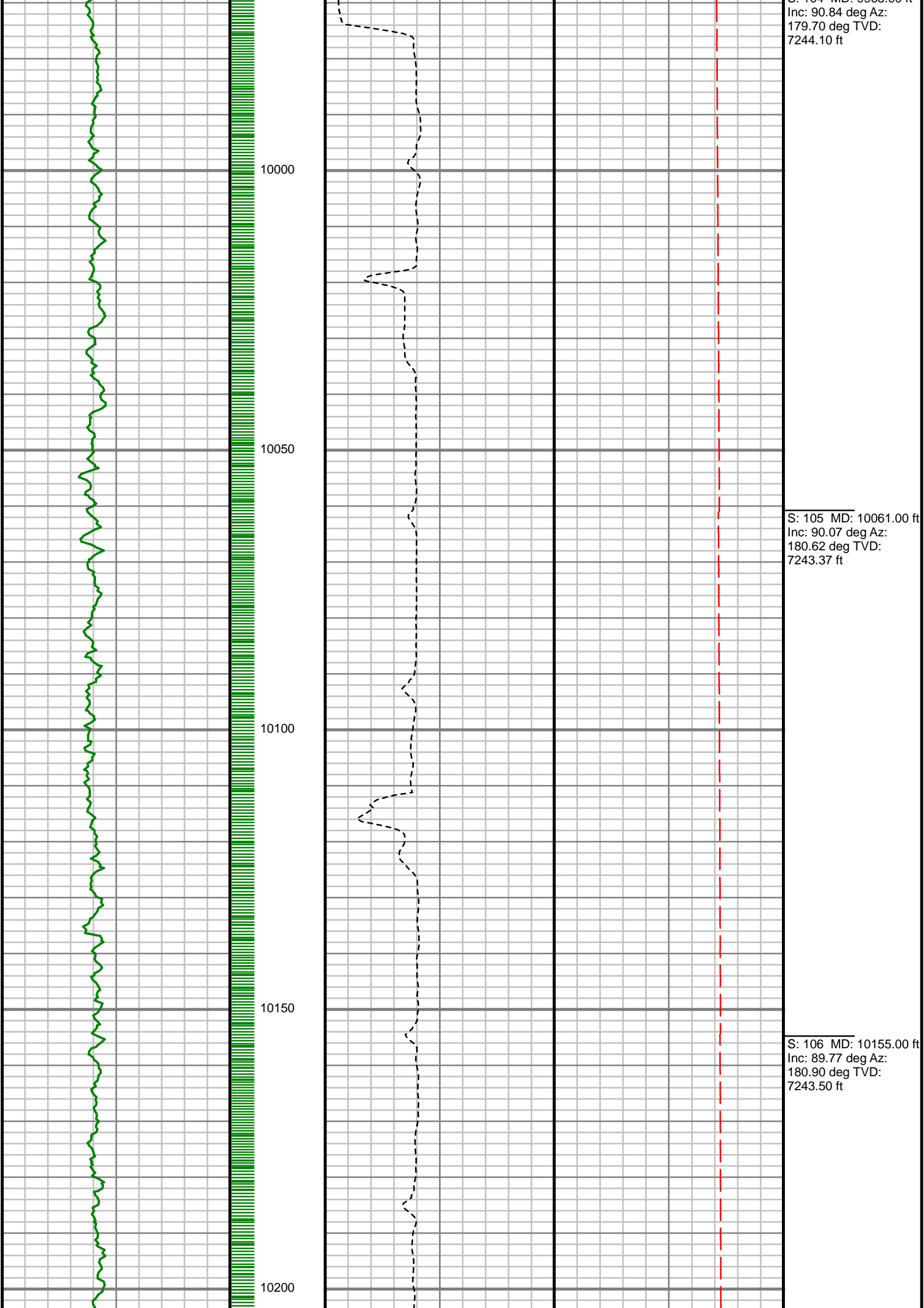


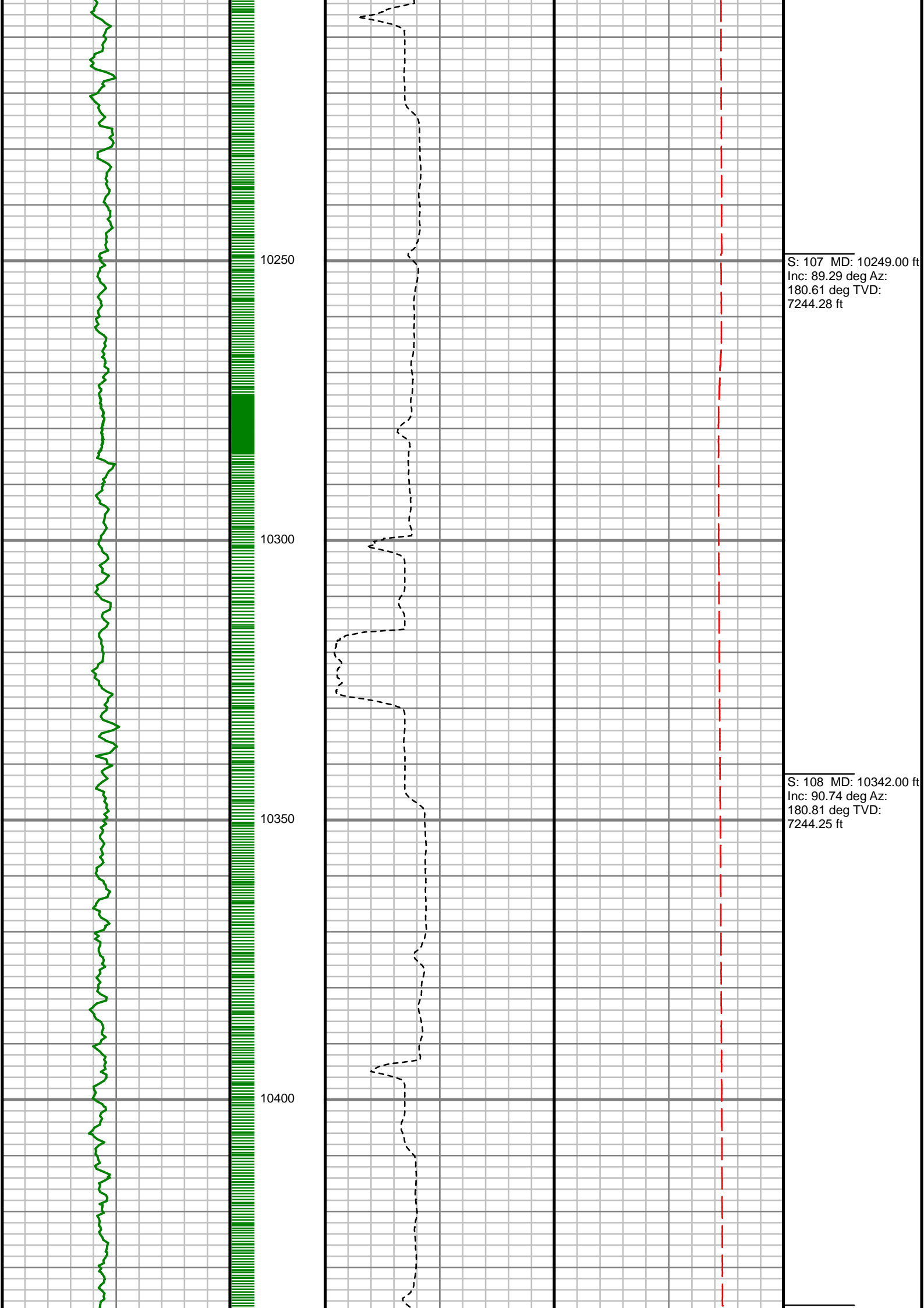


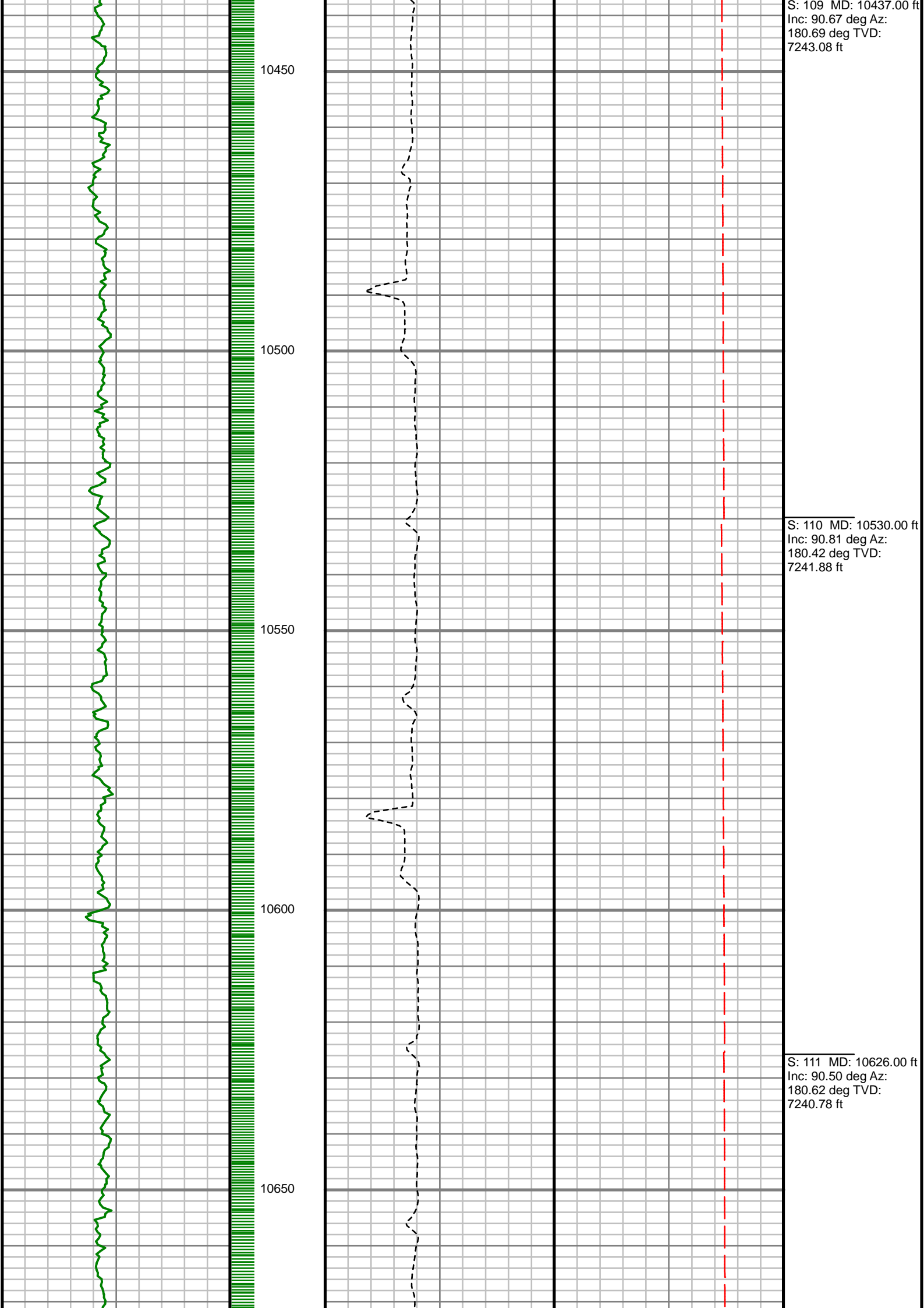


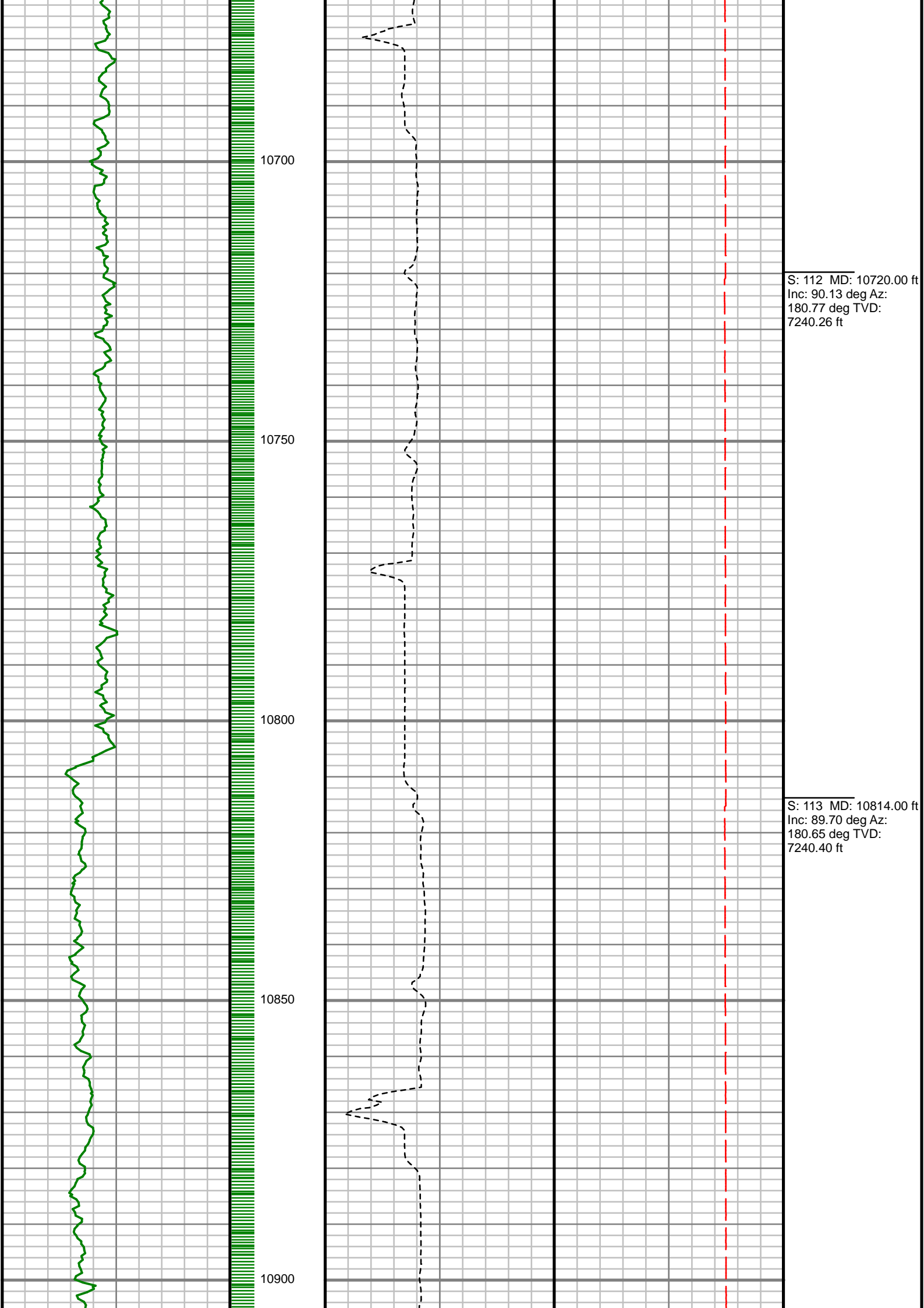


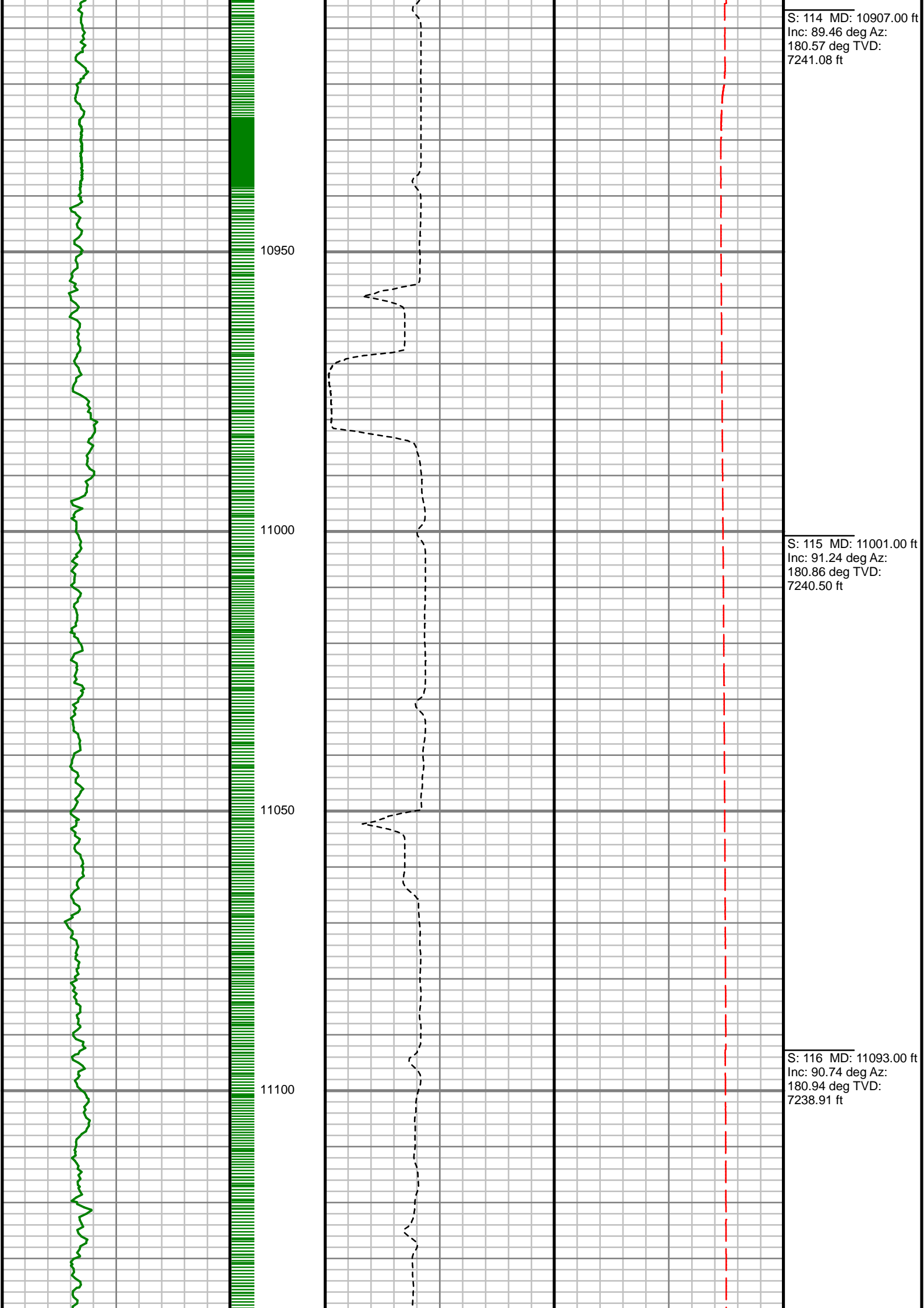


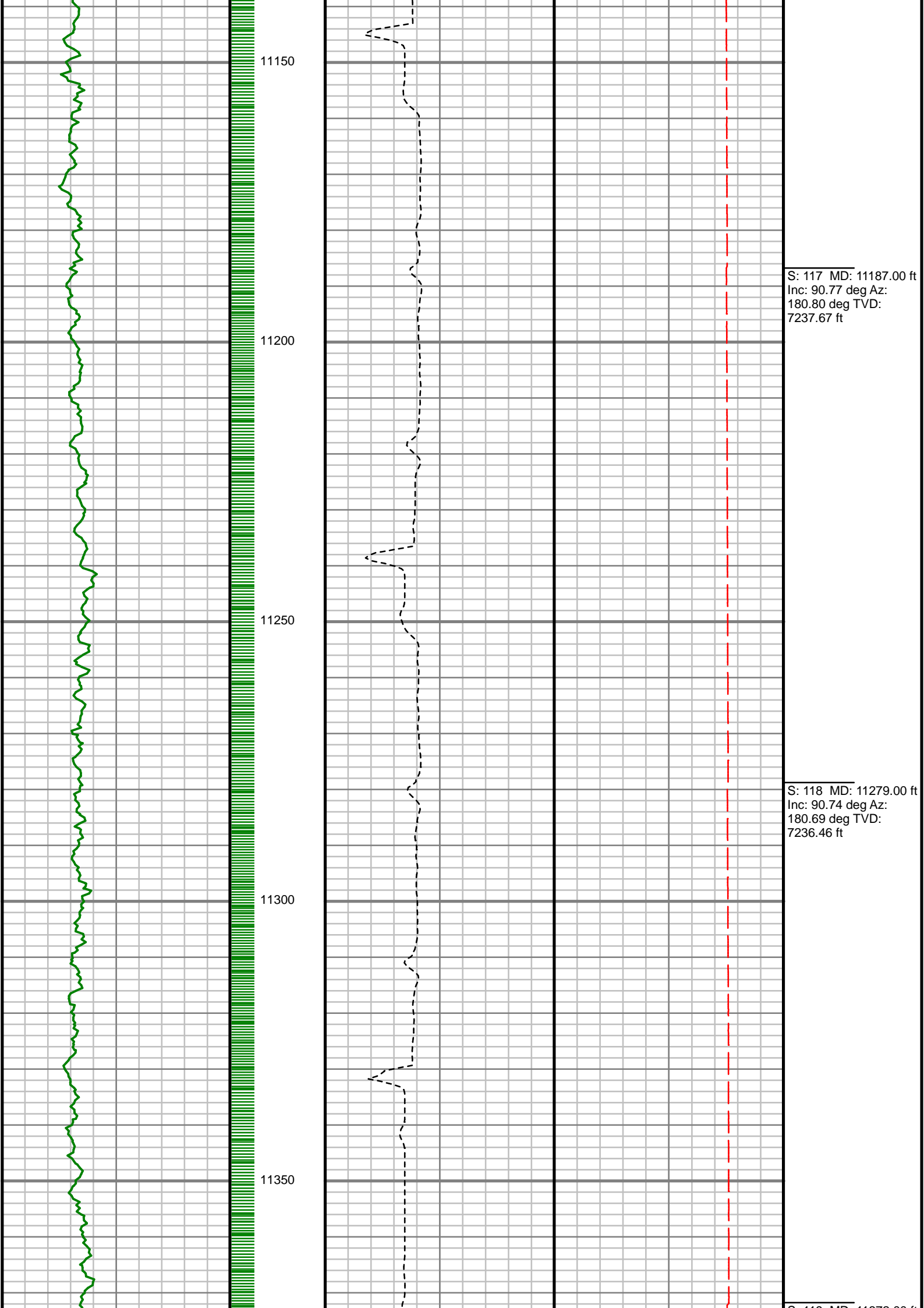


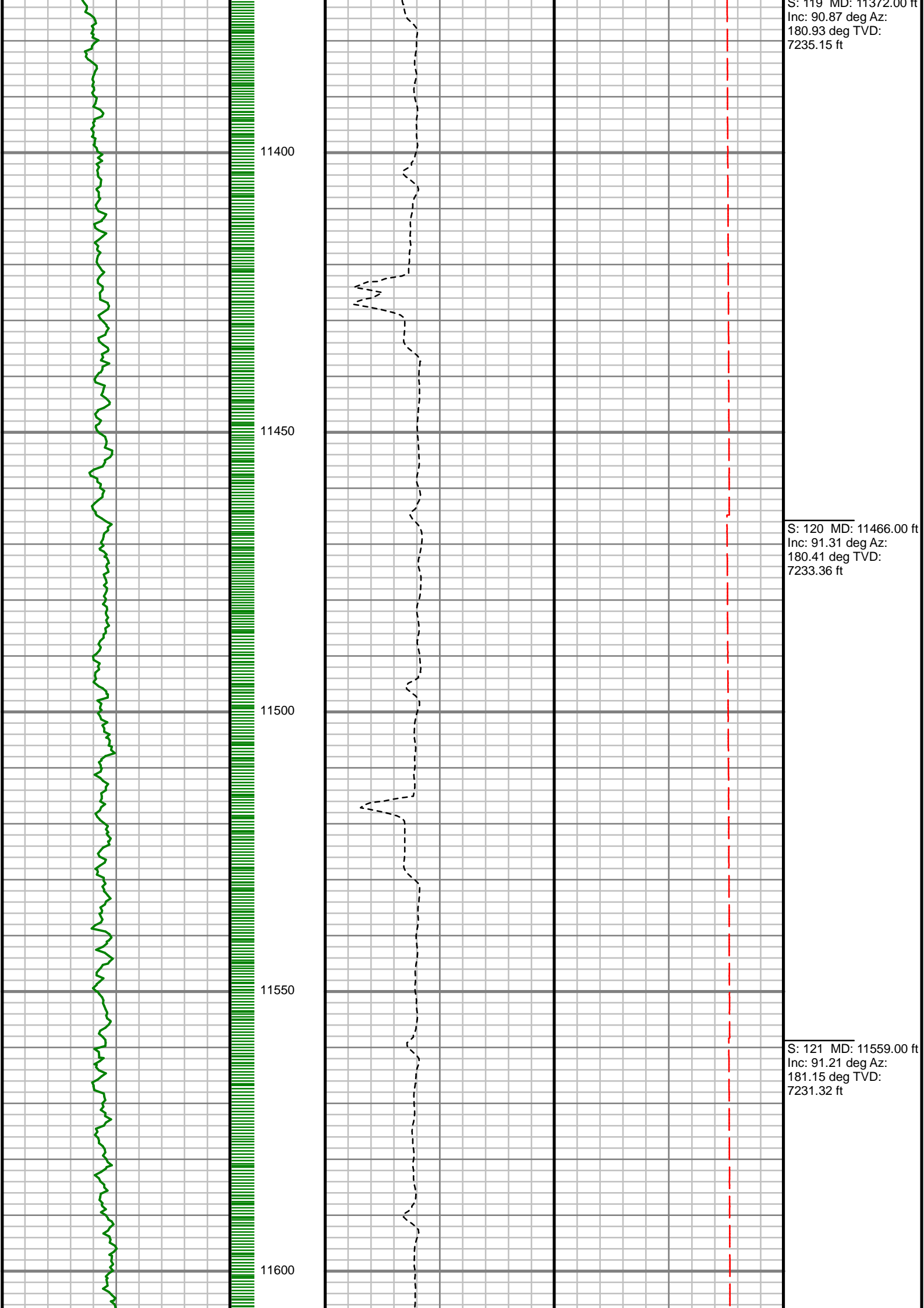


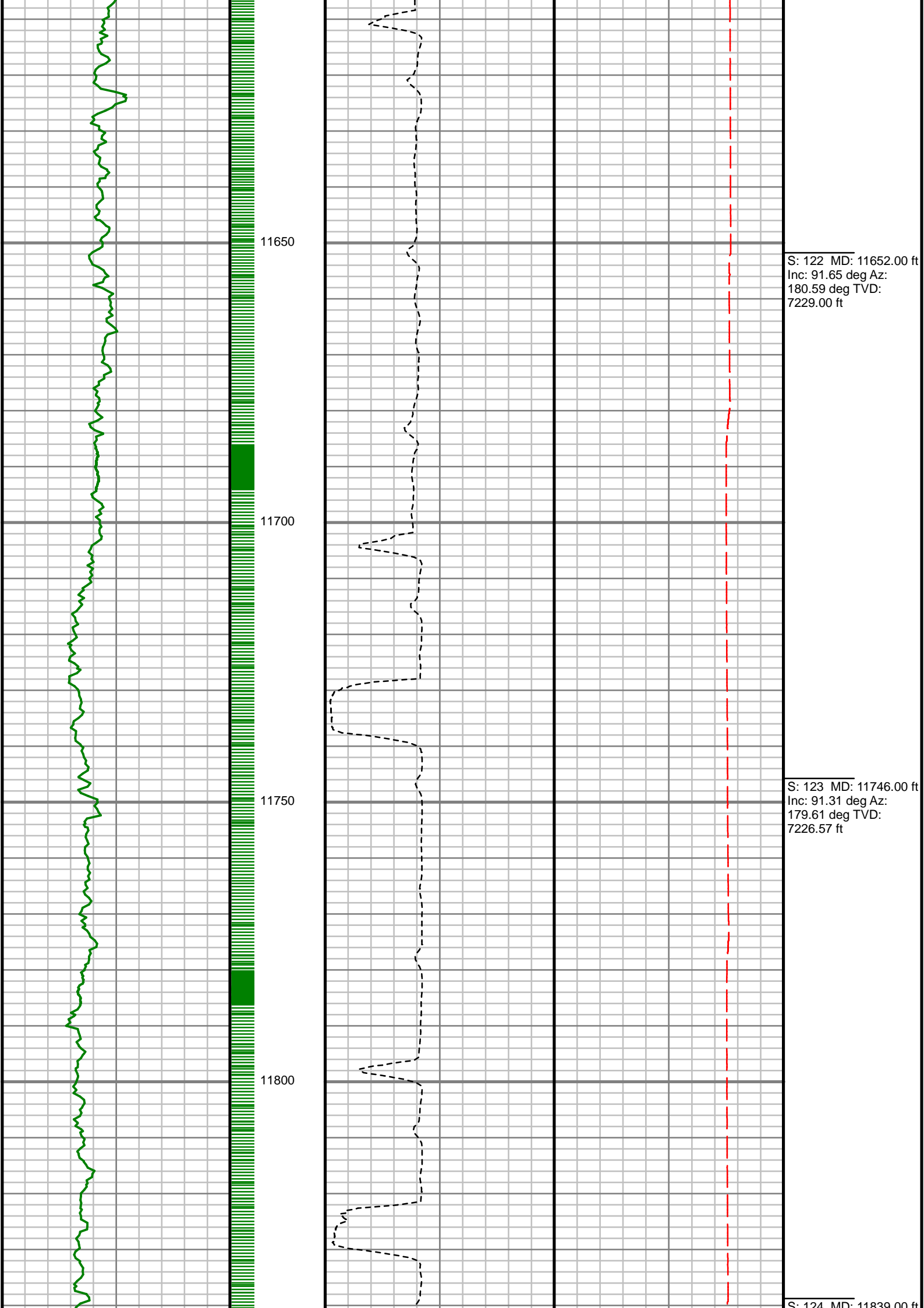


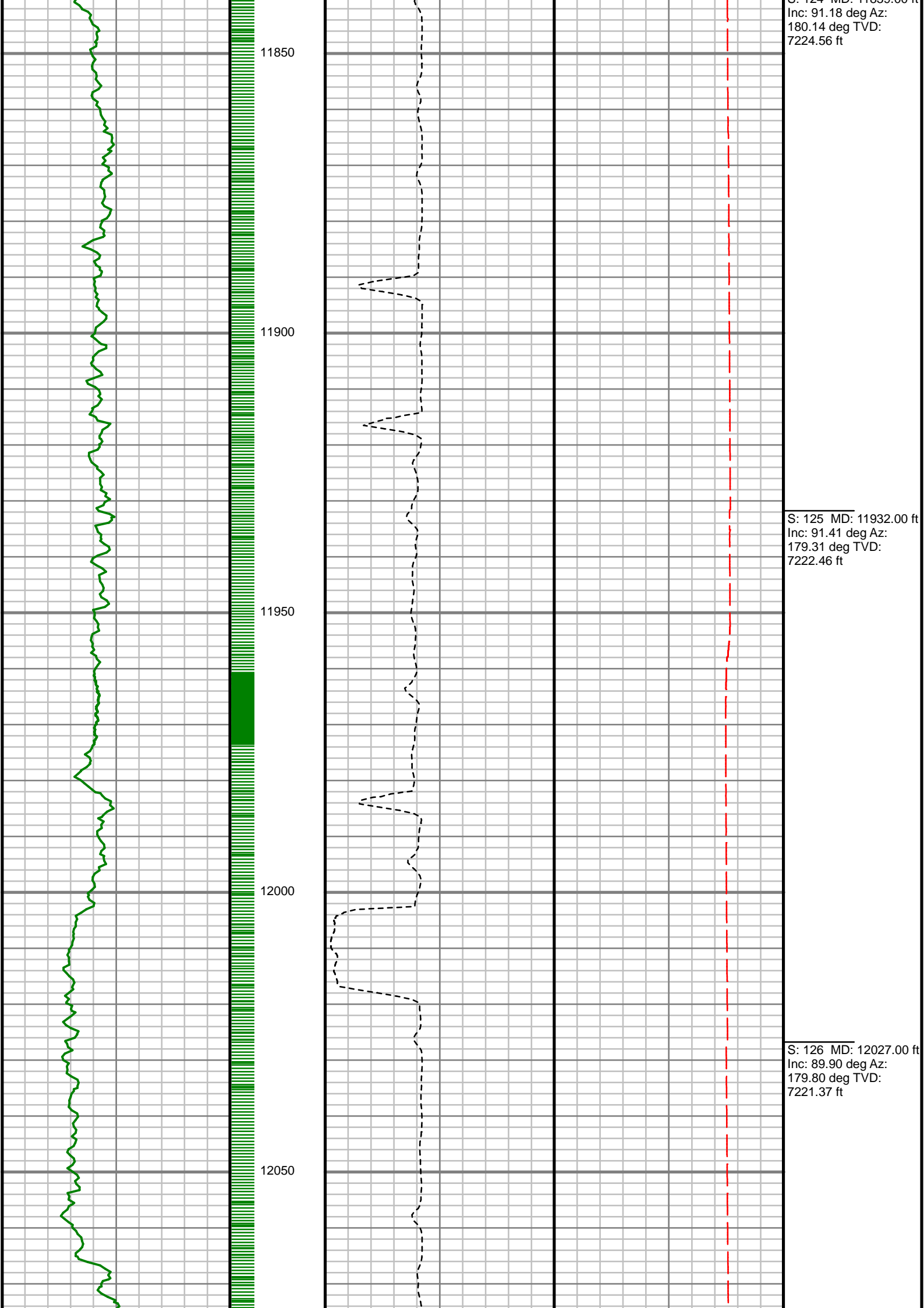


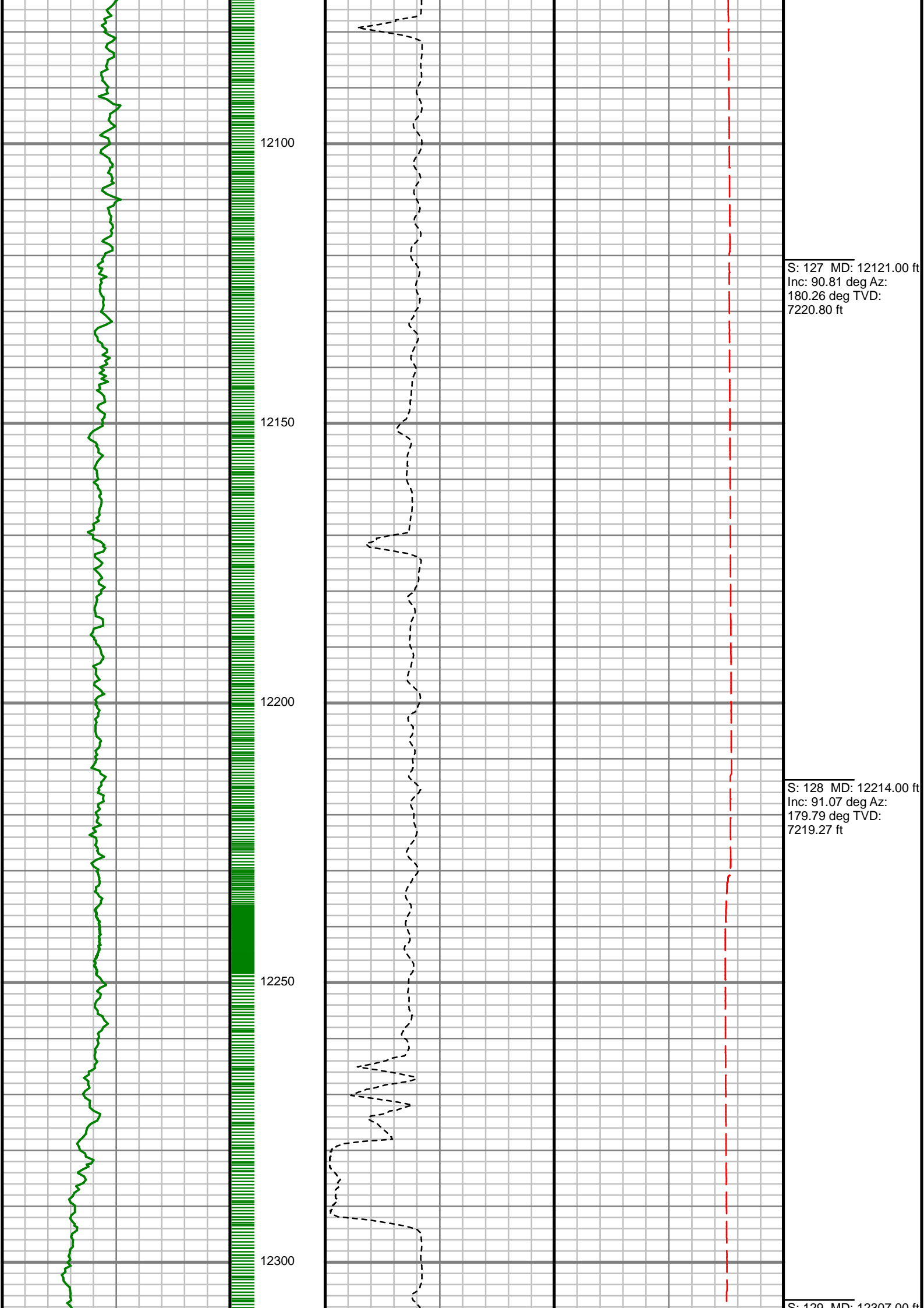


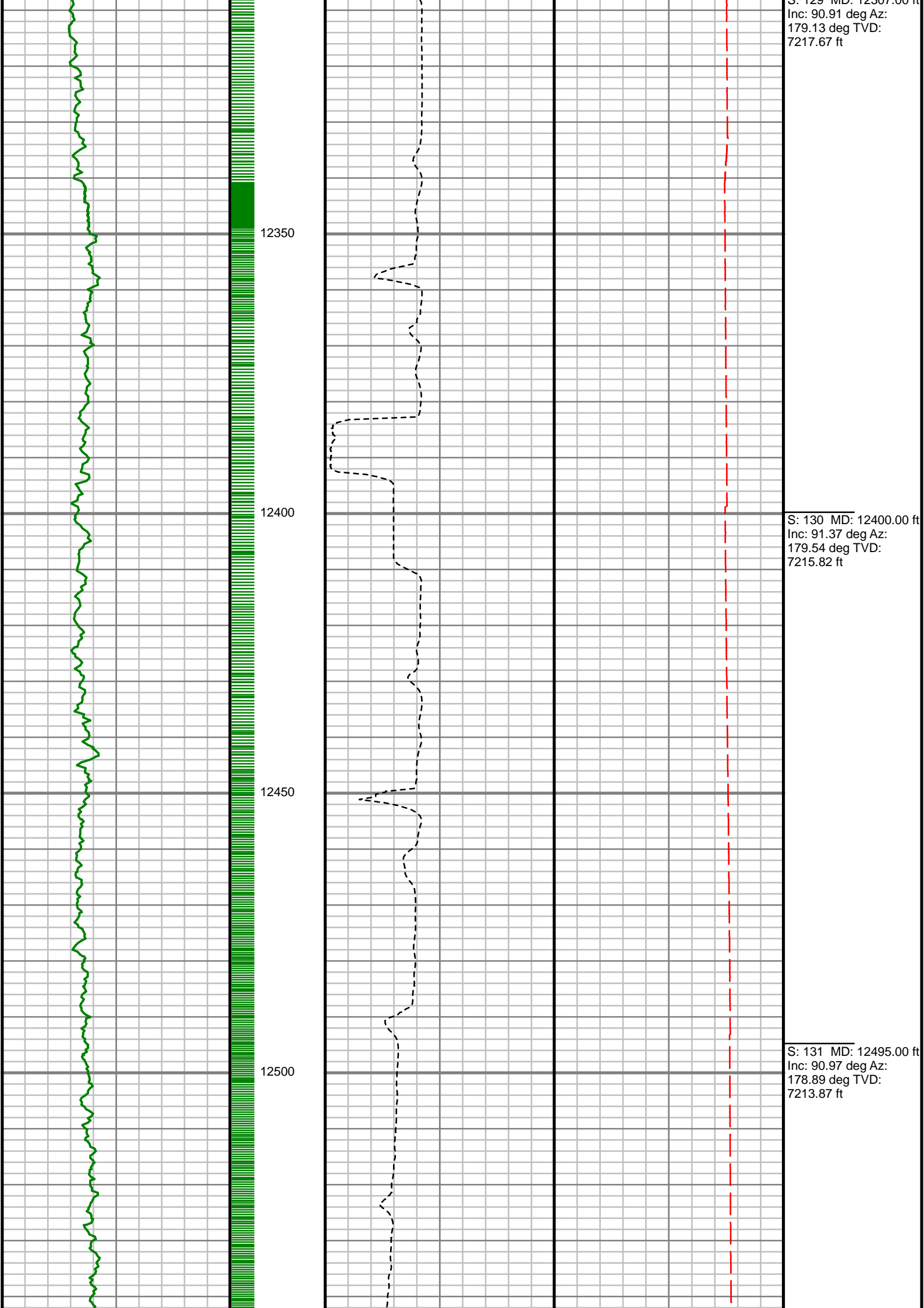


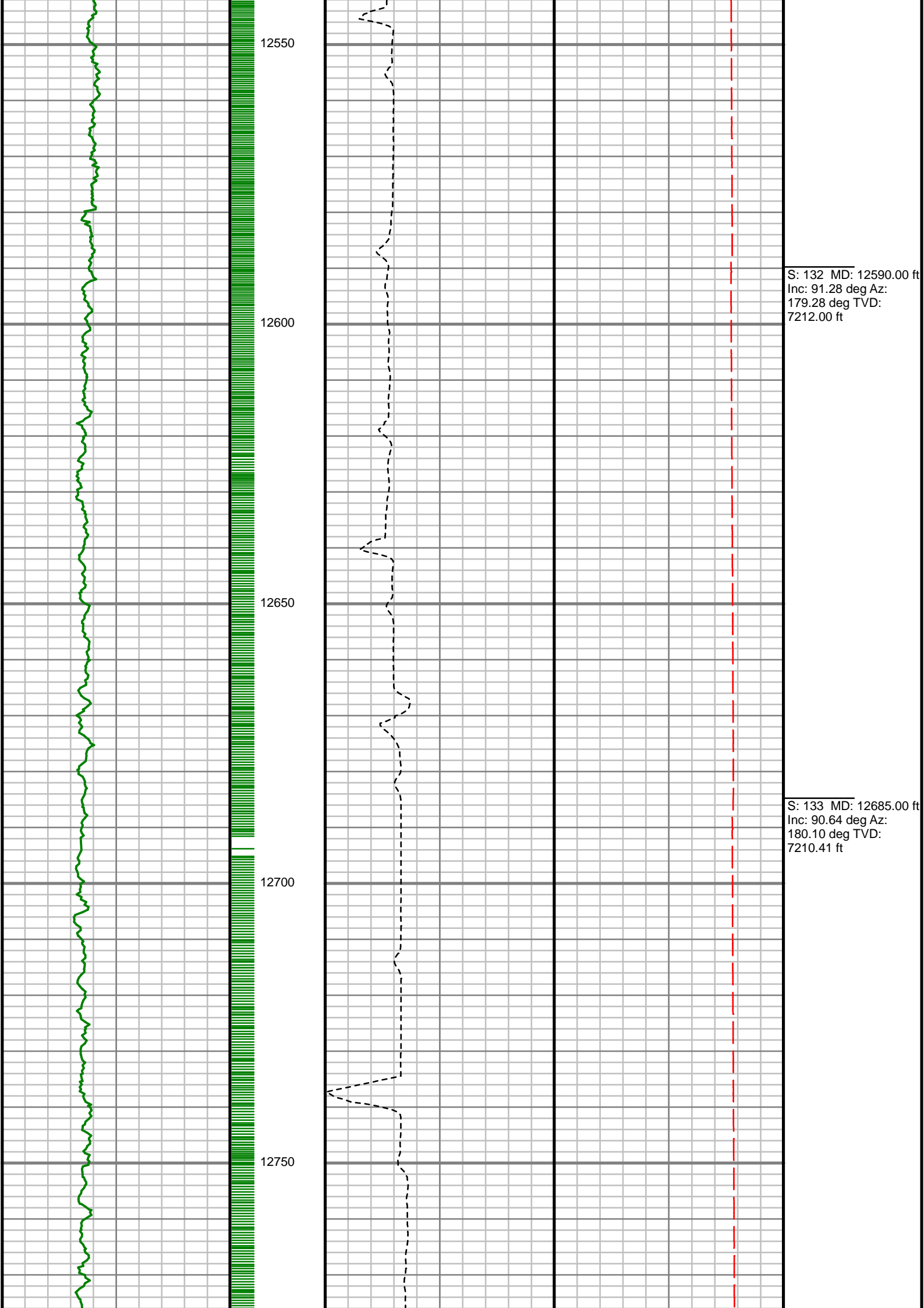


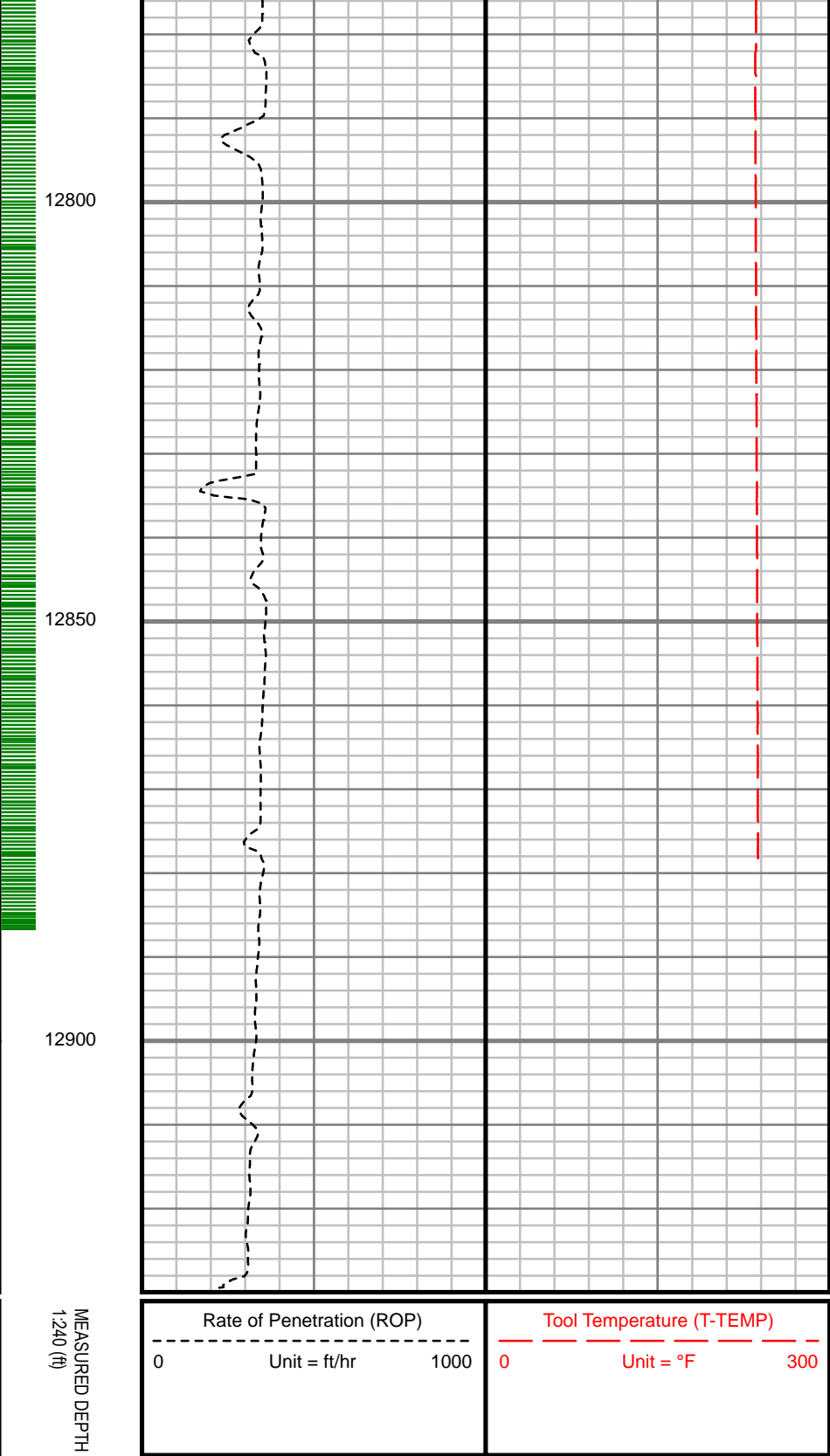
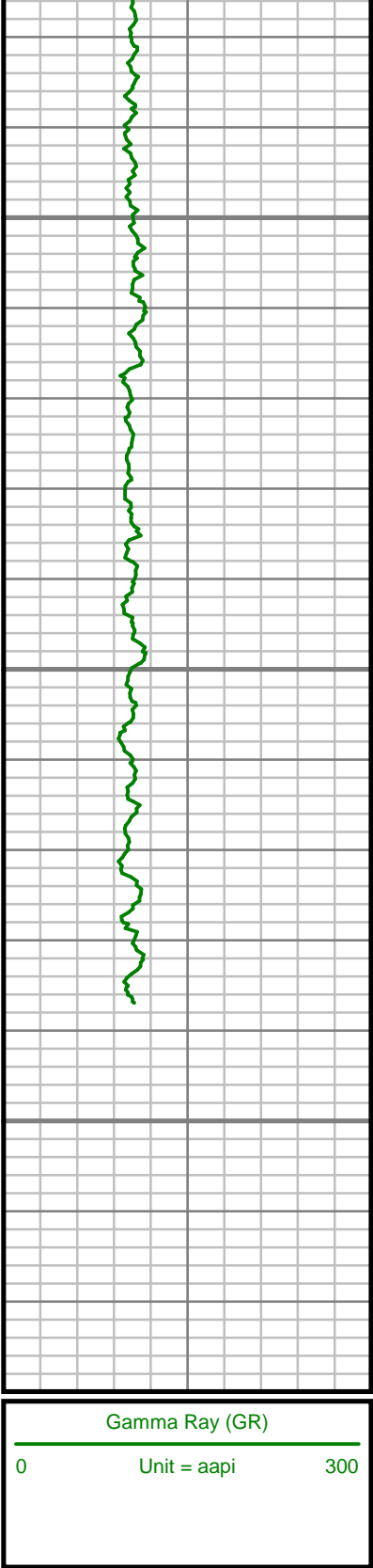












S: 134 MD: 12779.00 ft
Inc: 90.10 deg Az:
179.81 deg TVD:
7209.81 ft

S: 135 MD: 12873.00 ft
Inc: 89.53 deg Az:
179.57 deg TVD:
7210.11 ft

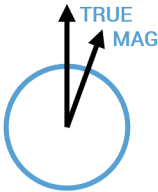
Comments

CUSTOMER ANADARKO E&P ONSHORE LLC.
PROJECT LAND FED
FIELD WATTENBERG

WELL INFORMATION
Lat/Long 40.099027° N, 104.80552° W
Northing 14,562,882.09 ft
Easting 1,694,805.62 ft
UWI 05123423890000

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

VERTICAL SECTION REFERENCE
+N/-S 0 ft
+E/-W 0 ft
Proposal Direction 179.78°
Calculation Method Minimum Curvature



GEOMAGNETIC REFERENCE INFORMATION Local Gravity: 999.046 mG [computed]

MD	MODEL	DATE	DECLINATION	MAG TO TRUE
0-3941 ft	ANADARKO MAGVAR	10 Jul 2016	8.34°	add 8.34°
3941-5921 ft	ANADARKO MAGVAR	10 Jul 2016	8.35°	add 8.35°
5921-9121 ft	ANADARKO MAGVAR	10 Jul 2016	8.36°	add 8.36°
9121-12873 ft	ANADARKO MAGVAR	10 Jul 2016	8.34°	add 8.34°

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid
152.00	2.13	324.89	151.96	-2.32	2.31	-1.62	1.40
213.00	3.34	349.66	212.90	-5.00	4.99	-2.60	2.73
307.00	4.99	10.41	306.65	-11.71	11.70	-2.35	2.35
401.00	5.09	13.98	400.29	-19.77	19.77	-0.60	0.35
495.00	5.87	12.91	493.86	-28.50	28.50	1.48	0.84
589.00	5.94	22.73	587.36	-37.66	37.67	4.43	1.08
683.00	7.35	24.00	680.73	-47.62	47.65	8.76	1.51
871.00	10.40	33.83	866.46	-72.65	72.74	23.10	1.81
965.00	11.20	30.68	958.80	-87.52	87.64	32.48	1.06
1059.00	11.87	25.81	1050.90	-104.04	104.20	41.35	1.26
1153.00	12.03	27.11	1142.87	-121.43	121.62	50.02	0.33
1247.00	11.32	28.07	1234.92	-138.25	138.48	58.83	0.78
1341.00	11.58	22.42	1327.05	-155.08	155.34	66.77	1.22
1434.00	13.77	19.27	1417.78	-174.14	174.42	73.98	2.47
1528.00	14.99	19.25	1508.83	-196.14	196.46	81.68	1.30
1624.00	16.67	19.98	1601.19	-220.77	221.12	90.48	1.76
1719.00	17.29	19.75	1692.05	-246.83	247.21	99.91	0.66
1807.00	16.50	19.26	1776.25	-270.90	271.32	108.45	0.91
1956.00	18.03	19.55	1918.53	-312.55	313.02	123.14	1.03

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
2050.00	18.41	22.33	2007.82	-339.94	340.46	133.65	1.01
2144.00	17.65	22.95	2097.21	-366.76	367.32	144.84	0.84
2240.00	18.33	19.23	2188.52	-394.37	394.97	155.49	1.39
2335.00	18.00	18.84	2278.78	-422.32	422.96	165.15	0.37
2430.00	17.44	15.20	2369.28	-449.92	450.59	173.62	1.31
2525.00	18.68	19.91	2459.60	-477.93	478.63	182.53	2.02
2620.00	16.82	21.22	2550.08	-505.01	505.75	192.69	2.00
2714.00	17.43	23.08	2639.91	-530.60	531.39	203.13	0.87
2809.00	18.85	25.02	2730.18	-557.56	558.39	215.21	1.62
2903.00	18.25	25.46	2819.30	-584.56	585.44	227.95	0.66
2997.00	20.03	24.92	2908.10	-612.40	613.33	241.06	1.90
3091.00	19.91	25.73	2996.45	-641.36	642.34	254.79	0.32
3186.00	18.17	24.46	3086.25	-669.37	670.40	267.95	1.89
3281.00	18.69	21.88	3176.38	-696.93	698.01	279.75	1.02
3376.00	17.07	20.68	3266.79	-724.06	725.18	290.35	1.74
3470.00	17.01	17.29	3356.66	-750.07	751.22	299.31	1.06
3565.00	15.97	14.87	3447.75	-775.94	777.13	306.80	1.31
3657.00	15.80	13.47	3536.24	-800.34	801.55	312.97	0.46
3752.00	16.40	17.86	3627.51	-825.66	826.89	320.09	1.43
3846.00	17.18	24.89	3717.51	-850.85	852.12	330.01	2.31

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
3941.00	18.58	21.32	3807.93	-877.63	878.95	341.42	1.87
4035.00	16.36	20.50	3897.58	-903.95	905.30	351.50	2.38
4130.00	15.43	19.25	3988.95	-928.37	929.76	360.35	1.04
4223.00	16.09	19.92	4078.46	-952.14	953.56	368.82	0.74
4318.00	18.88	20.49	4169.06	-978.88	980.34	378.69	2.94
4414.00	18.48	20.03	4260.00	-1007.68	1009.19	389.34	0.45
4507.00	19.67	18.61	4347.89	-1036.32	1037.87	399.38	1.37
4602.00	17.11	17.98	4438.04	-1064.73	1066.31	408.79	2.70
4697.00	18.38	19.38	4528.52	-1092.11	1093.73	418.08	1.41
4791.00	19.49	18.18	4617.43	-1120.96	1122.61	427.89	1.26
4886.00	20.51	17.79	4706.70	-1151.82	1153.51	437.91	1.07
4979.00	19.74	16.61	4794.02	-1182.35	1184.07	447.38	0.93
5072.00	21.07	12.15	4881.19	-1213.71	1215.47	455.39	2.20
5167.00	20.93	16.48	4969.89	-1246.65	1248.44	463.80	1.64
5261.00	19.22	12.27	5058.18	-1277.84	1279.66	471.85	2.38
5355.00	17.55	15.50	5147.38	-1306.59	1308.44	478.93	2.09
5449.00	18.36	23.18	5236.81	-1333.83	1335.71	488.54	2.66
5542.00	18.94	25.94	5324.93	-1360.81	1362.75	500.91	1.13
5637.00	18.16	22.56	5415.00	-1388.30	1390.28	513.33	1.40
5732.00	15.94	20.68	5505.82	-1414.14	1416.16	523.62	2.40

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
5828.00	15.02	22.72	5598.33	-1437.91	1439.97	533.08	1.12
5921.00	12.35	23.65	5688.68	-1458.11	1460.20	541.73	2.88
6016.00	11.43	25.00	5781.65	-1475.91	1478.04	549.78	1.01
6110.00	9.46	22.64	5874.08	-1491.46	1493.61	556.69	2.14
6205.00	7.14	22.31	5968.08	-1504.12	1506.28	561.94	2.45
6298.00	5.86	24.97	6060.48	-1513.75	1515.93	566.14	1.42
6391.00	4.53	26.06	6153.10	-1521.34	1523.54	569.76	1.43
6484.00	3.54	30.63	6245.87	-1527.10	1529.31	572.83	1.12
6578.00	3.02	41.75	6339.71	-1531.43	1533.65	575.96	0.87
6670.00	1.88	91.15	6431.64	-1533.19	1535.43	579.08	2.49
6765.00	2.99	132.92	6526.56	-1531.46	1533.71	582.45	2.13
6859.00	4.96	150.29	6620.33	-1526.25	1528.51	586.26	2.43
6952.00	14.86	172.02	6711.85	-1510.89	1513.17	589.92	11.20
7046.00	20.27	180.74	6801.45	-1482.64	1484.92	591.38	6.39
7140.00	29.12	179.05	6886.77	-1443.41	1445.69	591.55	9.44
7235.00	34.64	179.68	6967.41	-1393.26	1395.54	592.09	5.82
7331.00	43.19	181.22	7042.04	-1333.02	1335.30	591.54	8.97
7425.00	51.79	181.73	7105.49	-1263.82	1266.09	589.74	9.16
7520.00	59.71	181.53	7158.92	-1185.40	1187.66	587.52	8.34
7614.00	66.57	177.90	7201.38	-1101.61	1103.88	588.01	8.07

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
7710.00	72.27	178.50	7235.11	-1011.81	1014.08	590.82	5.97
7804.00	83.23	179.56	7255.02	-920.10	922.38	592.36	11.71
7898.00	90.84	179.94	7259.88	-826.29	828.57	592.77	8.11
7993.00	91.11	179.21	7258.27	-731.31	733.59	593.48	0.82
8086.00	91.81	178.36	7255.90	-638.35	640.64	595.45	1.19
8180.00	90.94	178.44	7253.64	-544.41	546.71	598.08	0.93
8274.00	89.36	178.11	7253.39	-450.44	452.75	600.91	1.72
8368.00	88.72	178.35	7254.96	-356.49	358.81	603.81	0.72
8463.00	89.90	178.86	7256.10	-261.52	263.85	606.12	1.35
8557.00	89.77	178.49	7256.38	-167.54	169.88	608.29	0.43
8650.00	89.56	178.72	7256.92	-74.56	76.91	610.56	0.33
8744.00	90.71	178.78	7256.70	19.42	-17.07	612.62	1.22
8838.00	91.01	179.14	7255.30	113.40	-111.04	614.33	0.50
8933.00	90.20	178.83	7254.29	208.39	-206.02	616.01	0.91
9028.00	89.83	176.93	7254.27	303.33	-300.95	619.53	2.04
9121.00	90.00	179.35	7254.40	396.29	-393.90	622.55	2.61
9216.00	89.80	178.91	7254.57	491.28	-488.89	623.99	0.51
9310.00	89.80	179.48	7254.90	585.27	-582.88	625.32	0.61
9404.00	91.78	179.26	7253.61	679.26	-676.86	626.35	2.12
9499.00	91.51	180.17	7250.88	774.22	-771.81	626.83	1.00

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
9593.00	90.44	180.28	7249.28	868.20	-865.80	626.46	1.15
9686.00	89.60	179.06	7249.25	961.20	-958.80	626.99	1.59
9780.00	91.37	180.62	7248.45	1055.19	-1052.78	627.24	2.52
9874.00	91.54	180.01	7246.06	1149.15	-1146.75	626.72	0.67
9968.00	90.84	179.70	7244.10	1243.13	-1240.73	626.95	0.82
10061.00	90.07	180.62	7243.37	1336.12	-1333.73	626.69	1.29
10155.00	89.77	180.90	7243.50	1430.11	-1427.72	625.44	0.44
10249.00	89.29	180.61	7244.28	1524.09	-1521.71	624.20	0.59
10342.00	90.74	180.81	7244.25	1617.08	-1614.70	623.04	1.57
10437.00	90.67	180.69	7243.08	1712.06	-1709.68	621.80	0.15
10530.00	90.81	180.42	7241.88	1805.04	-1802.67	620.90	0.32
10626.00	90.50	180.62	7240.78	1901.02	-1898.66	620.03	0.38
10720.00	90.13	180.77	7240.26	1995.01	-1992.65	618.89	0.43
10814.00	89.70	180.65	7240.40	2089.00	-2086.64	617.72	0.48
10907.00	89.46	180.57	7241.08	2181.99	-2179.63	616.73	0.27
11001.00	91.24	180.86	7240.50	2275.97	-2273.62	615.56	1.92
11093.00	90.74	180.94	7238.91	2367.94	-2365.60	614.11	0.55
11187.00	90.77	180.80	7237.67	2461.91	-2459.58	612.68	0.15
11279.00	90.74	180.69	7236.46	2553.89	-2551.56	611.49	0.13
11372.00	90.87	180.93	7235.15	2646.87	-2644.54	610.17	0.30

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
11466.00	91.31	180.41	7233.36	2740.84	-2738.52	609.07	0.73
11559.00	91.21	181.15	7231.32	2833.80	-2831.49	607.81	0.80
11652.00	91.65	180.59	7229.00	2926.75	-2924.45	606.40	0.76
11746.00	91.31	179.61	7226.57	3020.72	-3018.41	606.24	1.10
11839.00	91.18	180.14	7224.56	3113.70	-3111.39	606.44	0.59
11932.00	91.41	179.31	7222.46	3206.67	-3204.37	606.89	0.94
12027.00	89.90	179.80	7221.37	3301.66	-3299.35	607.63	1.67
12121.00	90.81	180.26	7220.80	3395.66	-3393.35	607.58	1.08
12214.00	91.07	179.79	7219.27	3488.64	-3486.34	607.53	0.59
12307.00	90.91	179.13	7217.67	3581.63	-3579.32	608.41	0.73
12400.00	91.37	179.54	7215.82	3674.61	-3672.29	609.49	0.67
12495.00	90.97	178.89	7213.87	3769.58	-3767.26	610.78	0.81
12590.00	91.28	179.28	7212.00	3864.56	-3862.23	612.30	0.52
12685.00	90.64	180.10	7210.41	3959.54	-3957.22	612.81	1.09
12779.00	90.10	179.81	7209.81	4053.54	-4051.22	612.88	0.65
12873.00	89.53	179.57	7210.11	4147.54	-4145.21	613.39	0.66

5" = 100' FEET MD