

[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 29N-29HZ
WATTENBURG FIELD
WELD COUNTY, COLORADO
05123423990000

Gamma Ray (GR)

0 Unit = aapi 150

MEASURED DEPTH
1:240 (ft)

6550

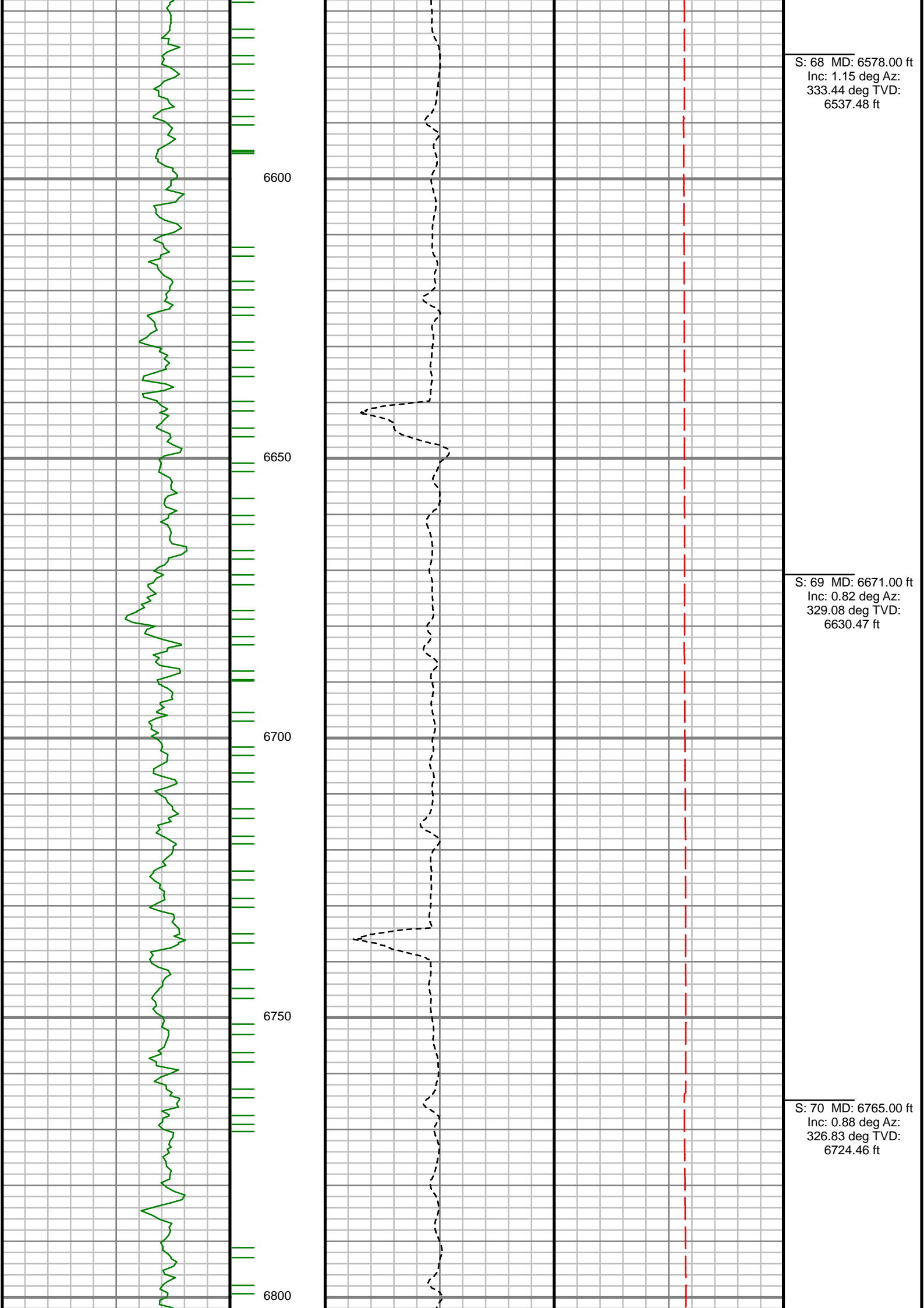
Rate of Penetration (ROP)

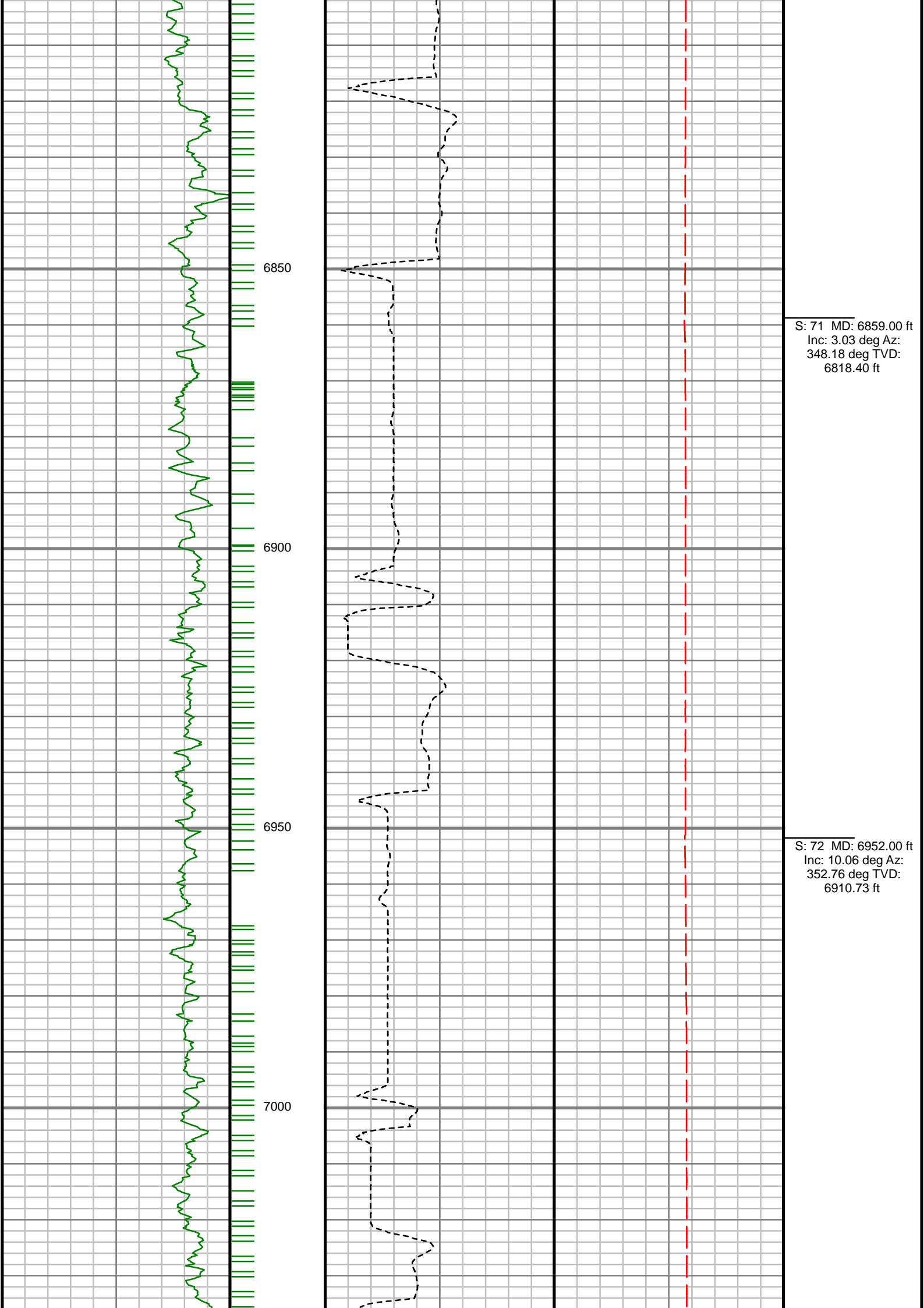
0 Unit = ft/hr 1000

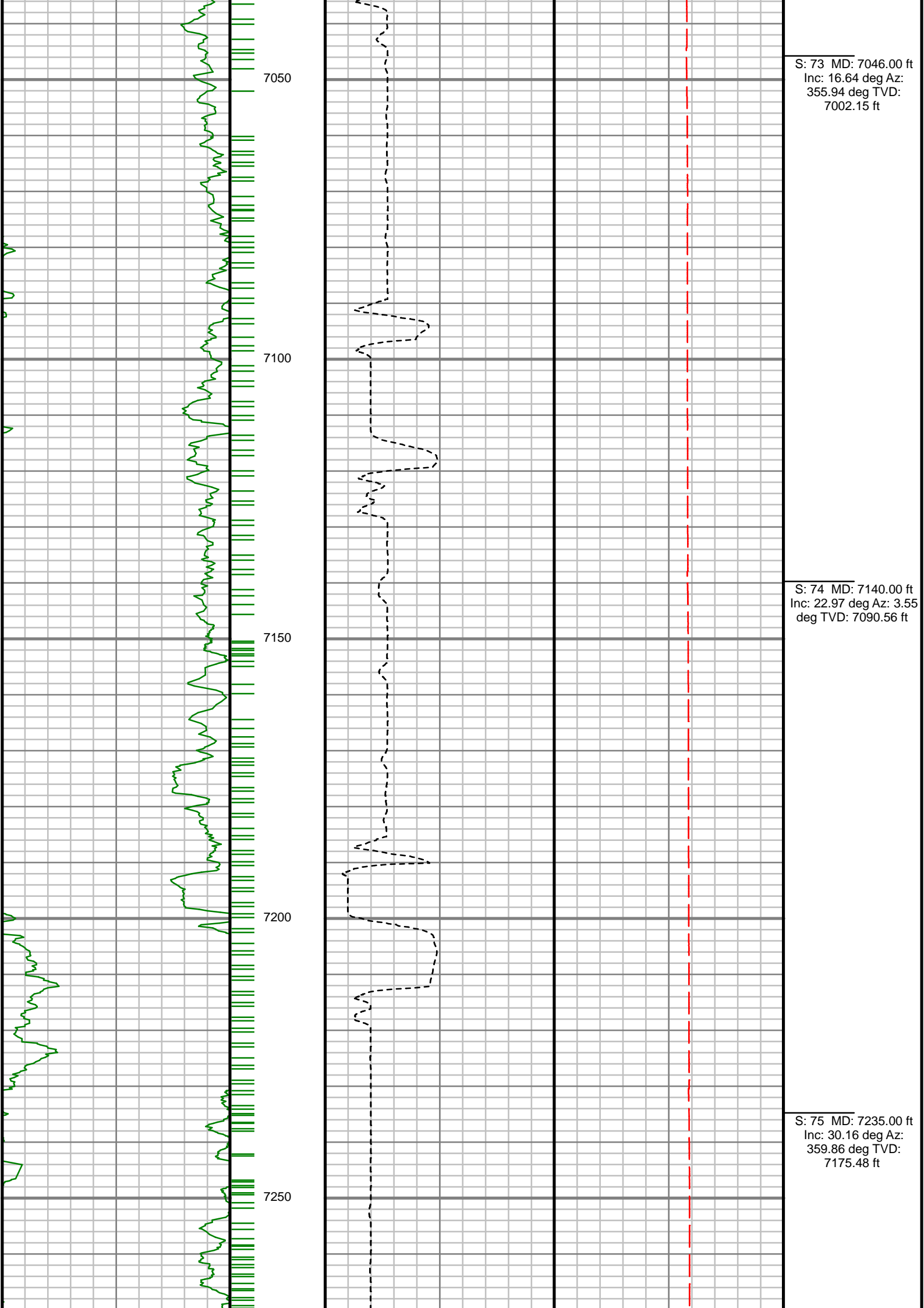
Tool Temperature (T-TEMP)

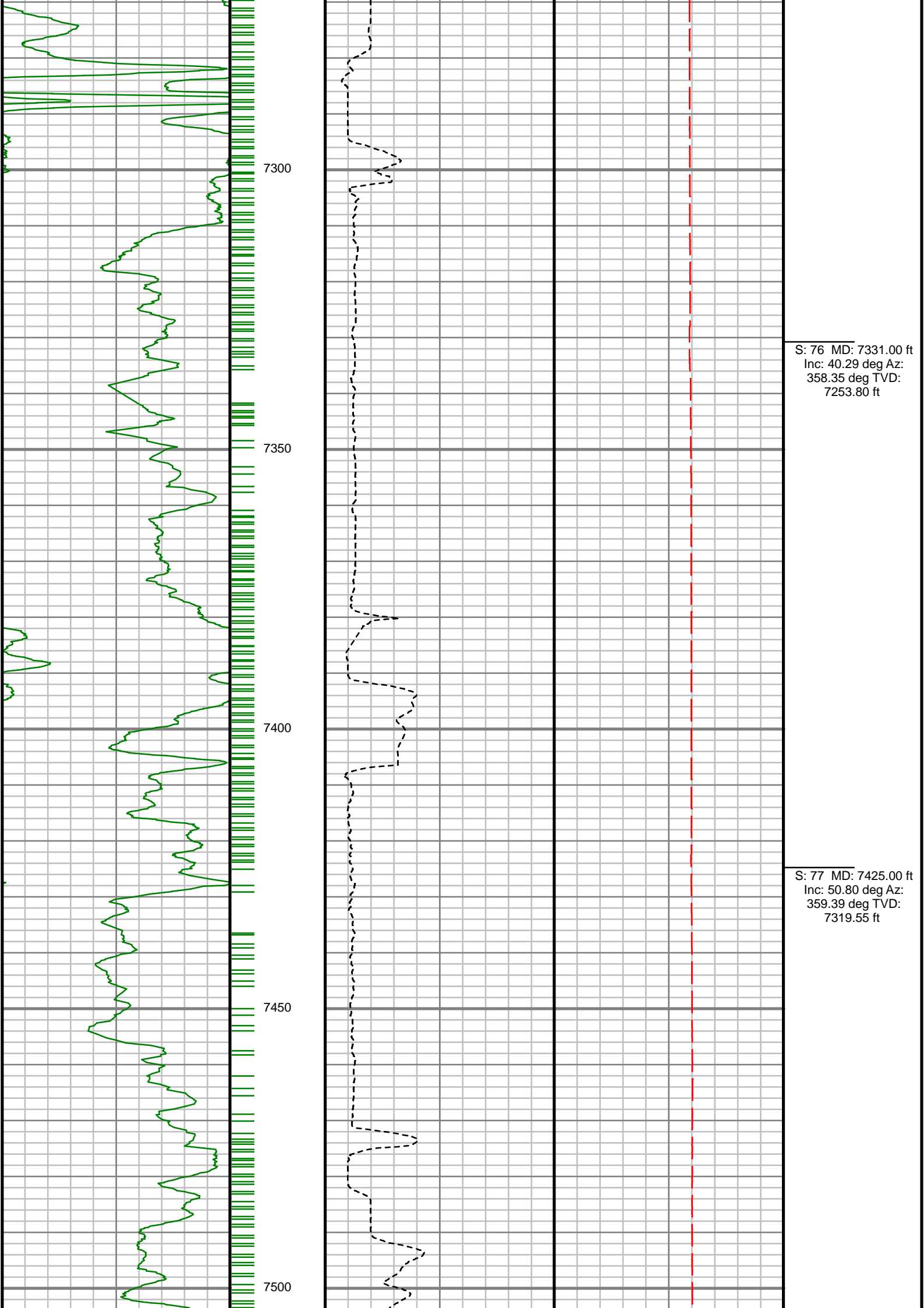
0 Unit = °F 300

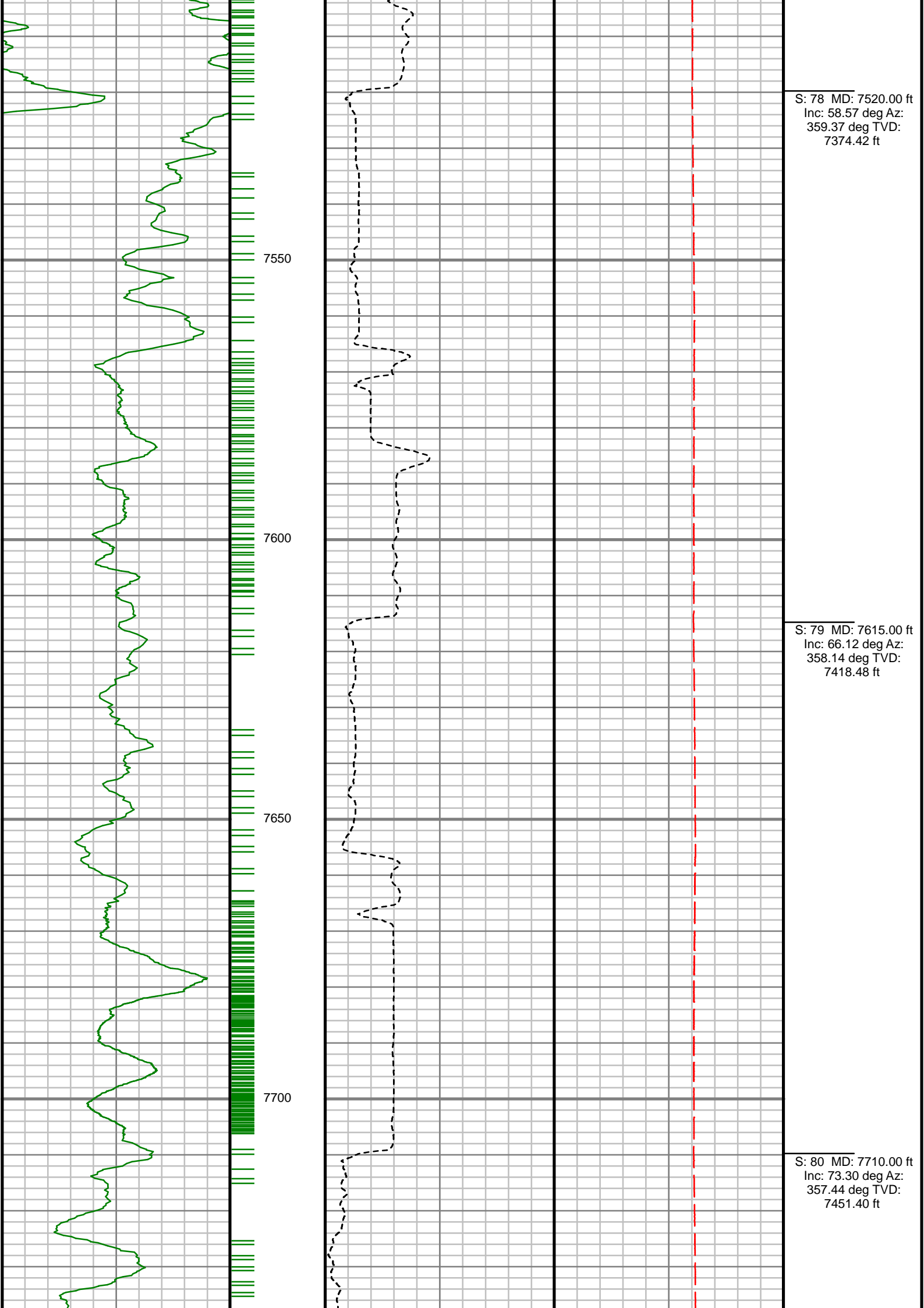
Comments

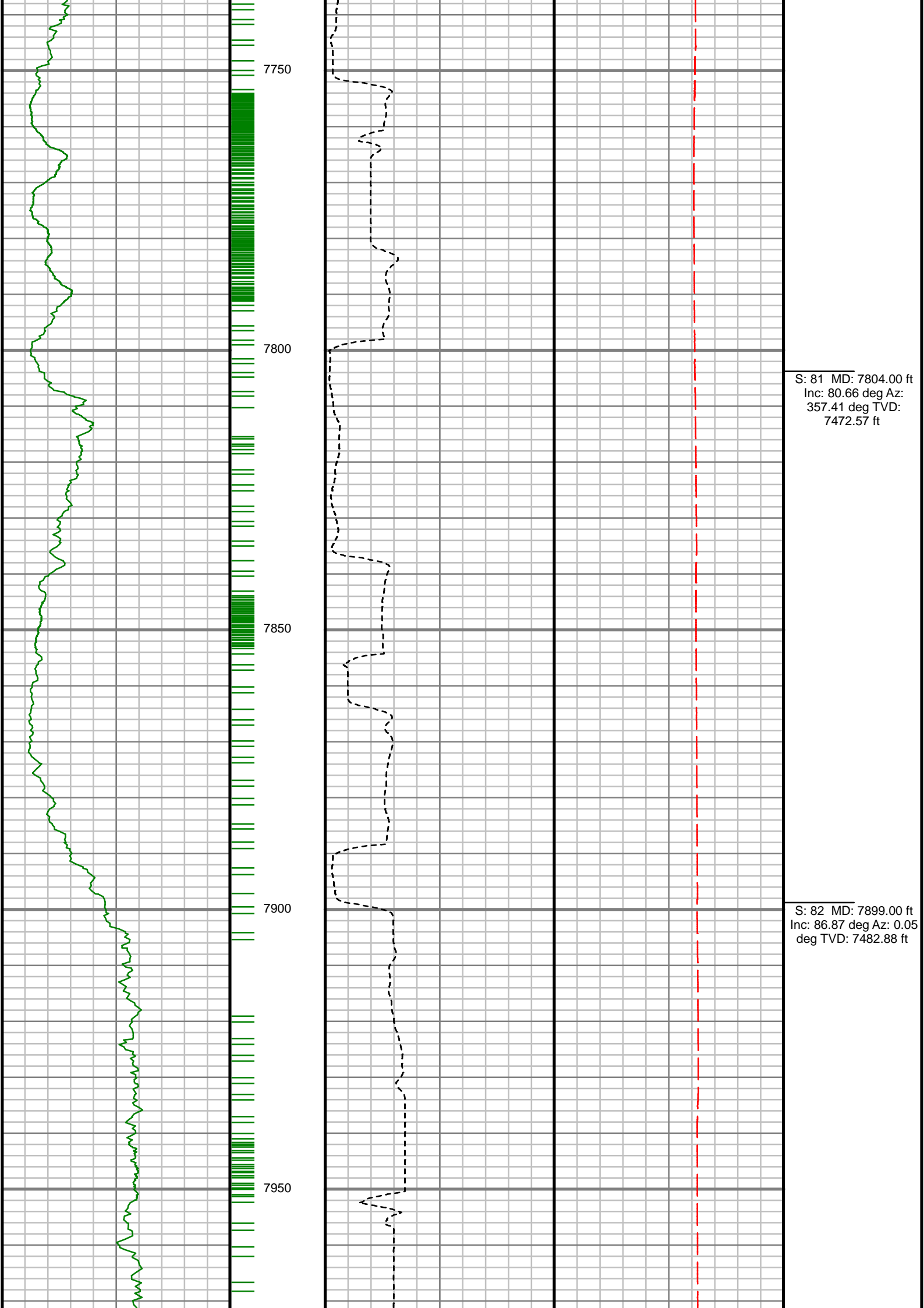


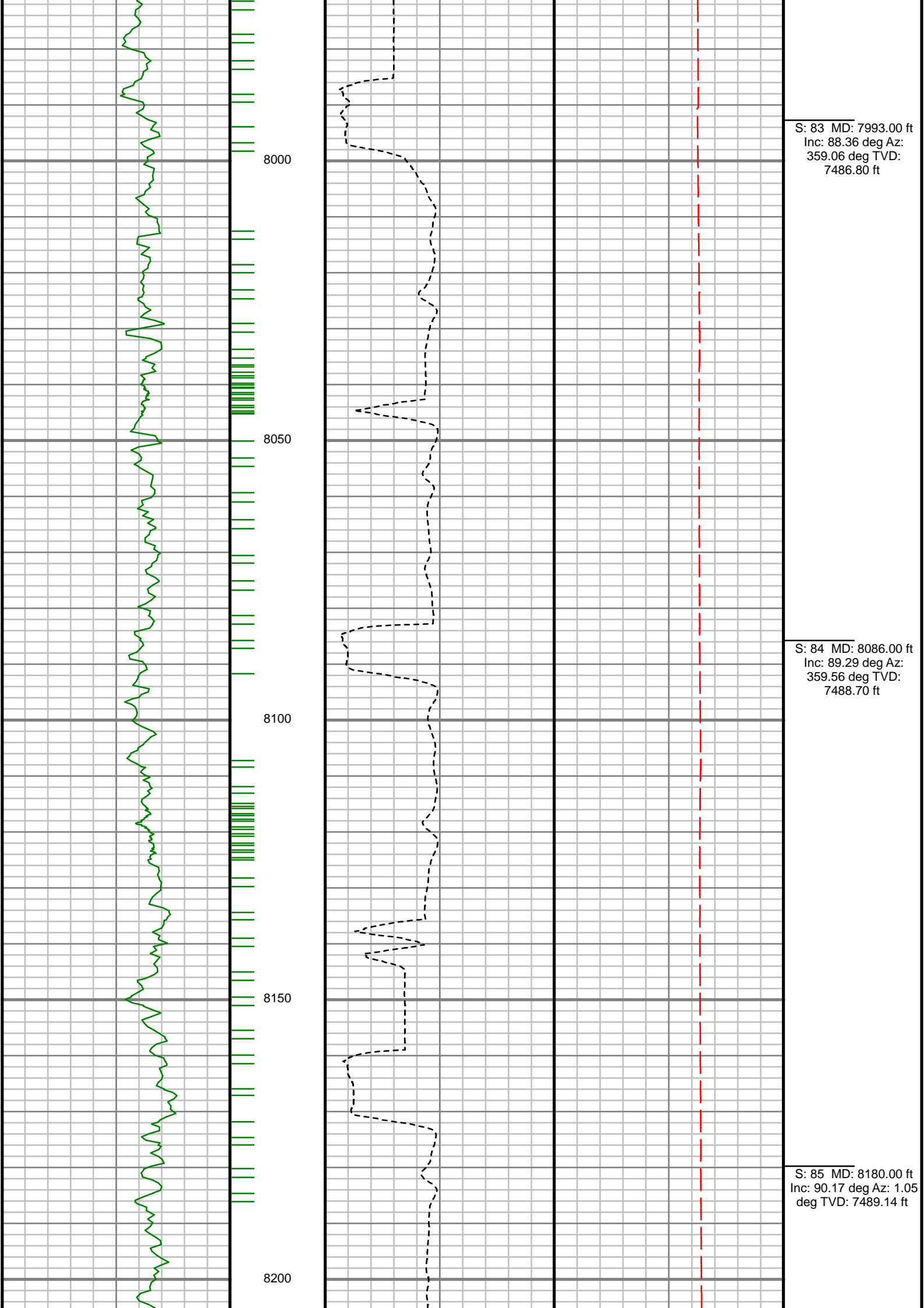


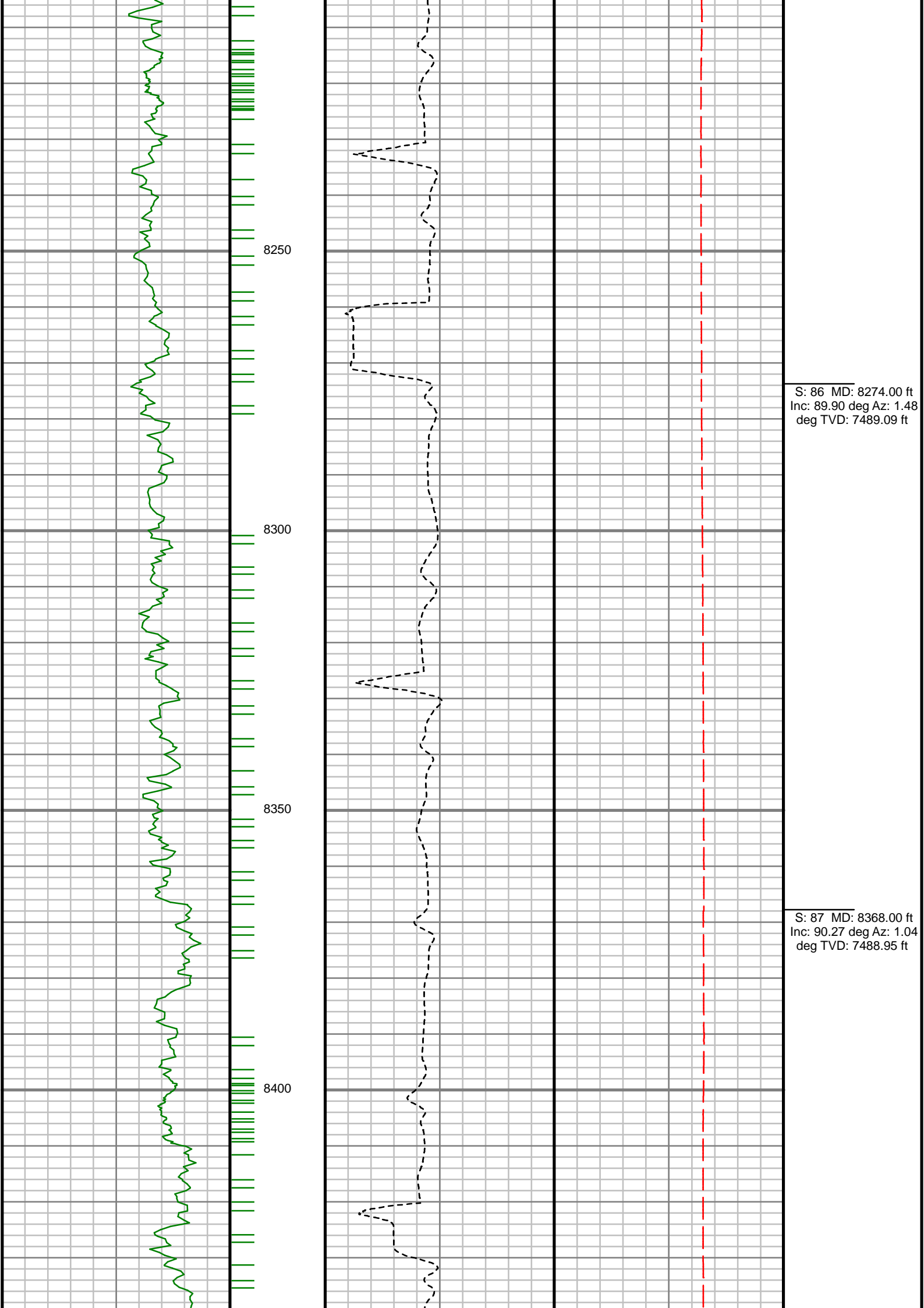


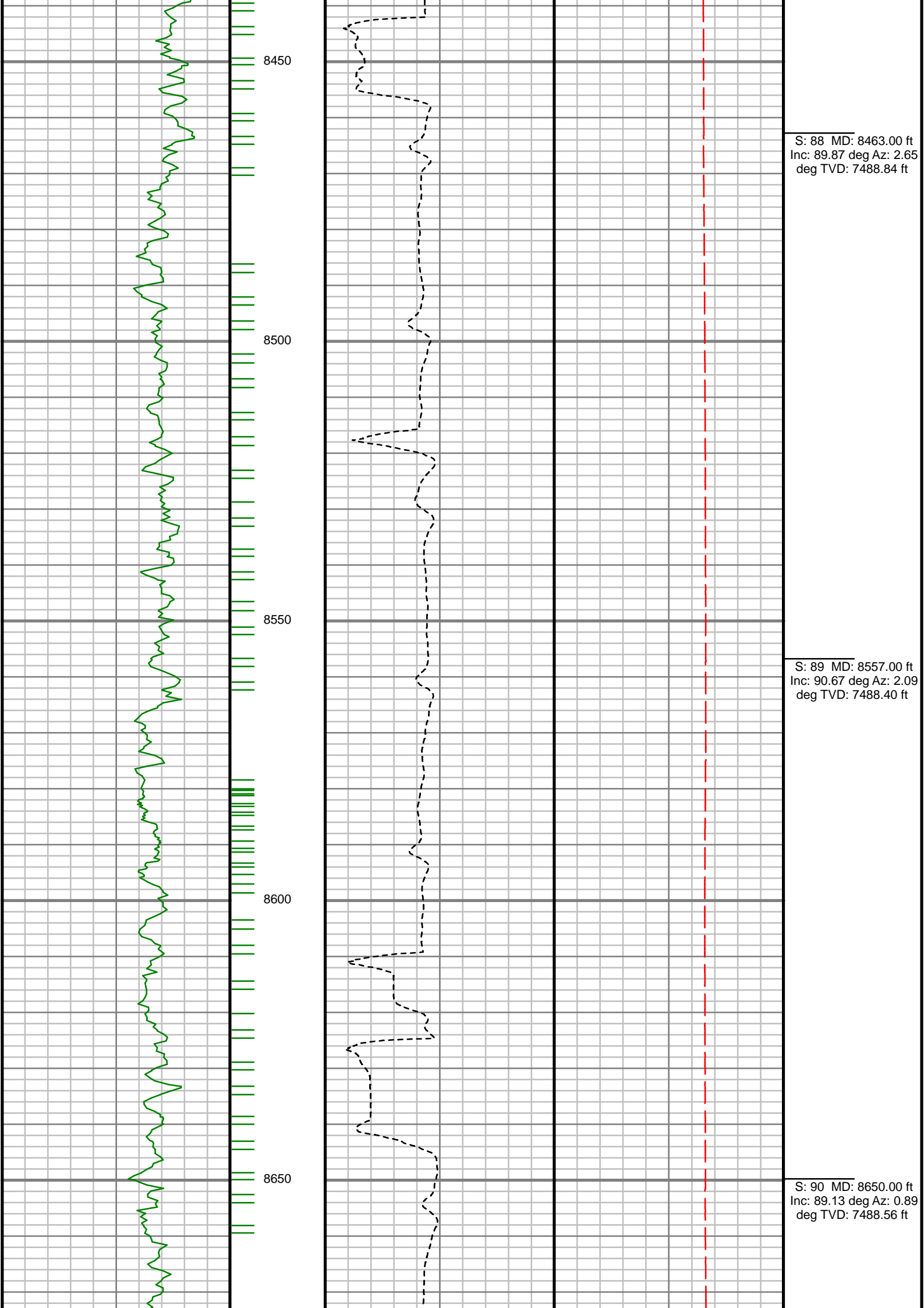


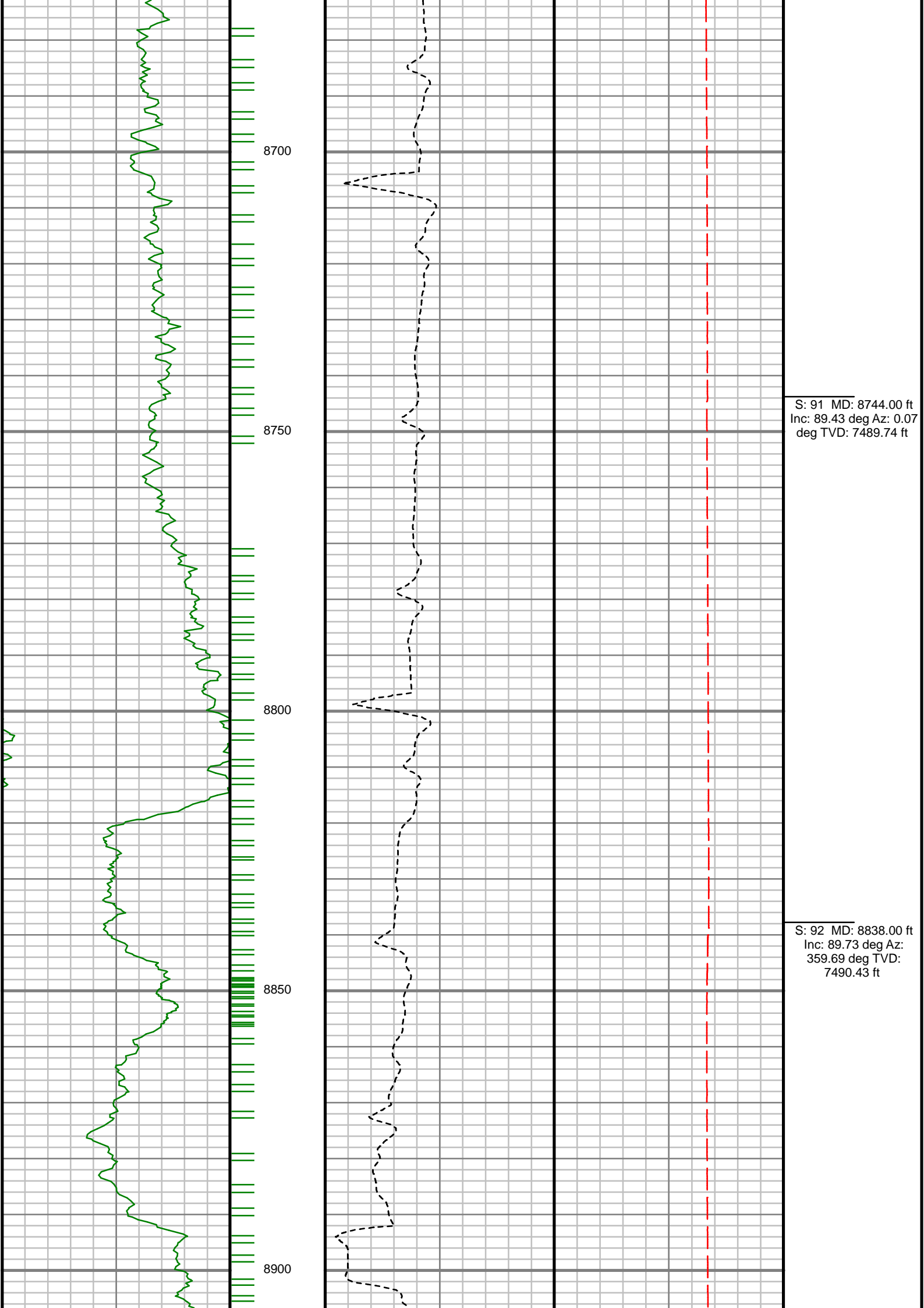


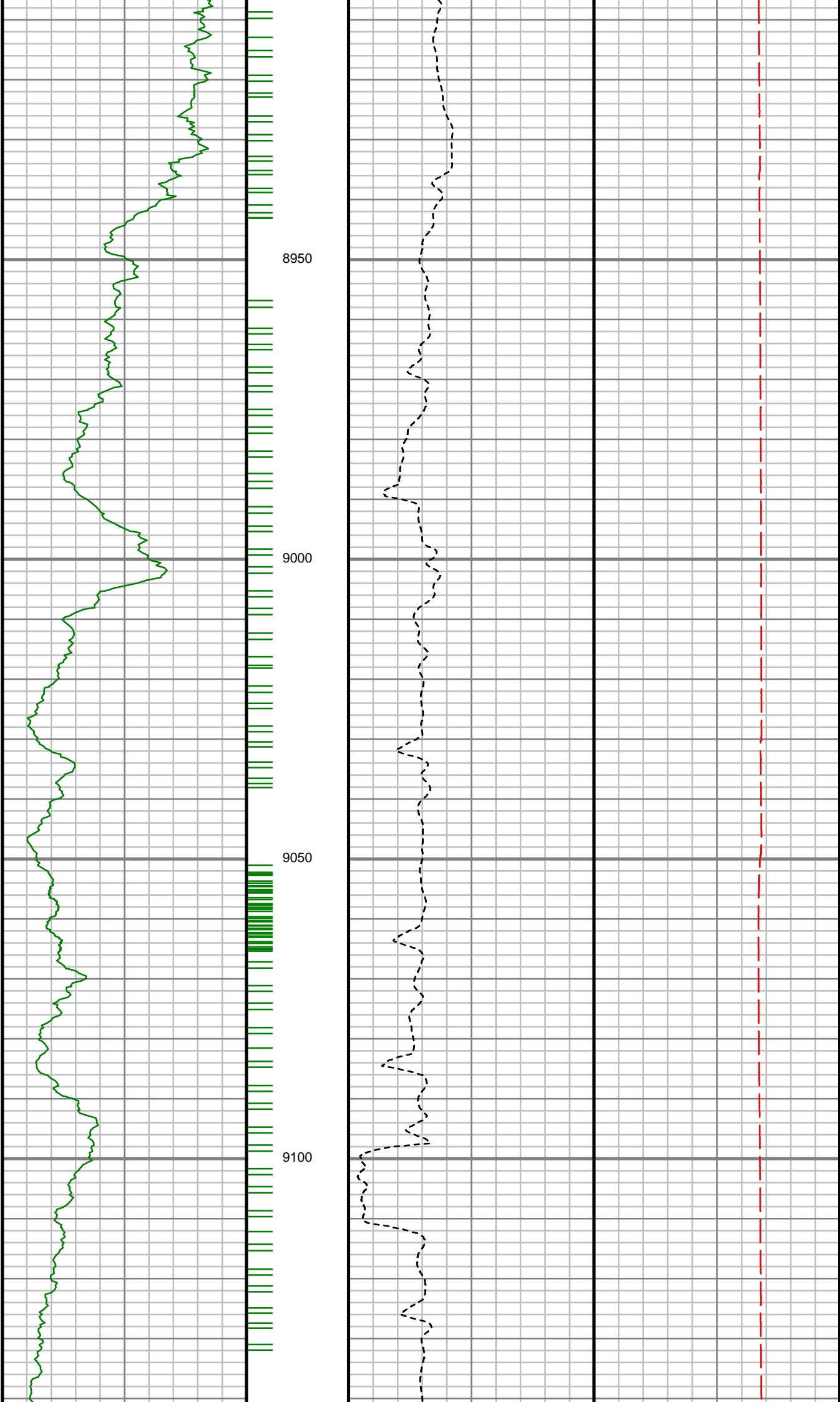








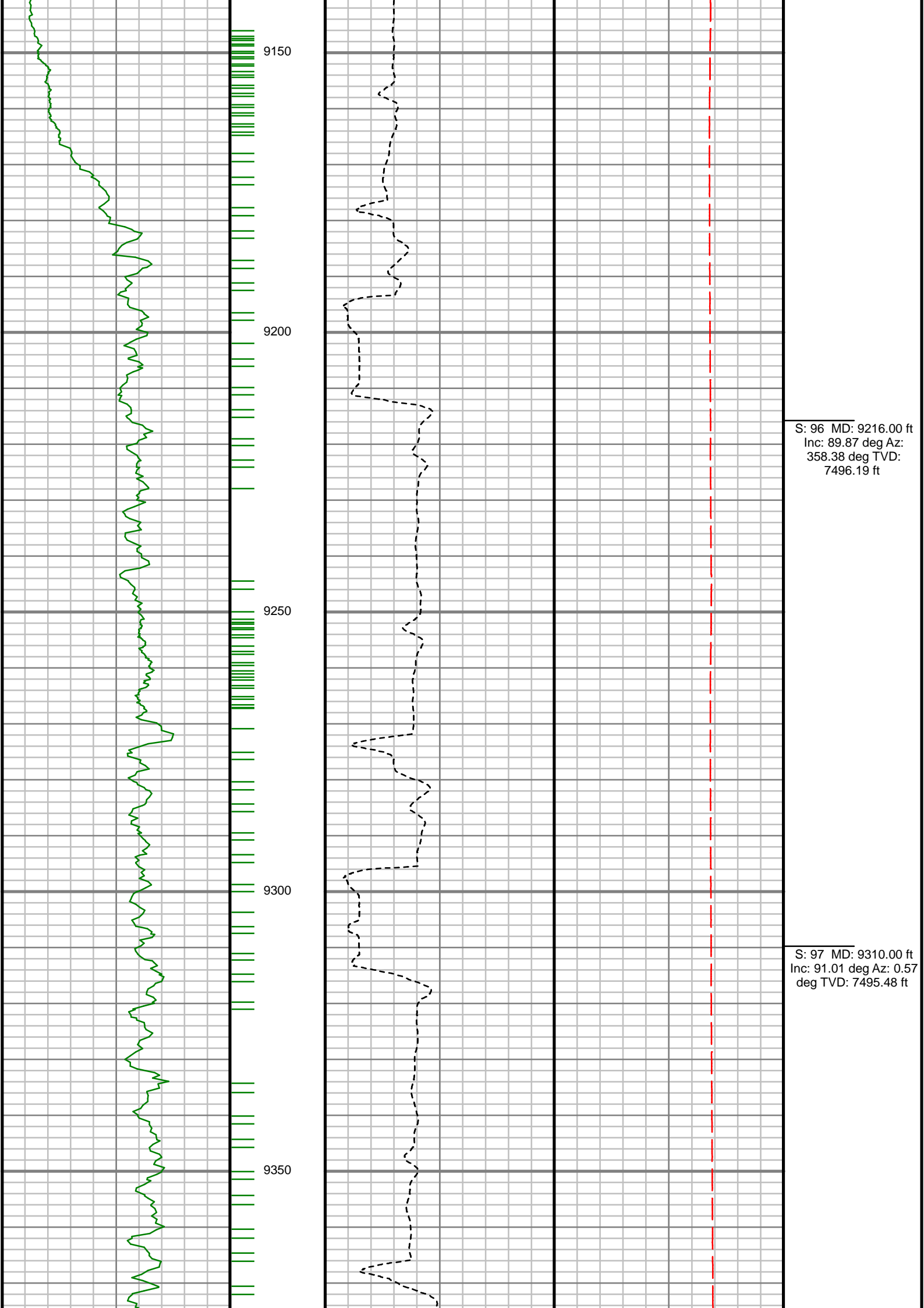


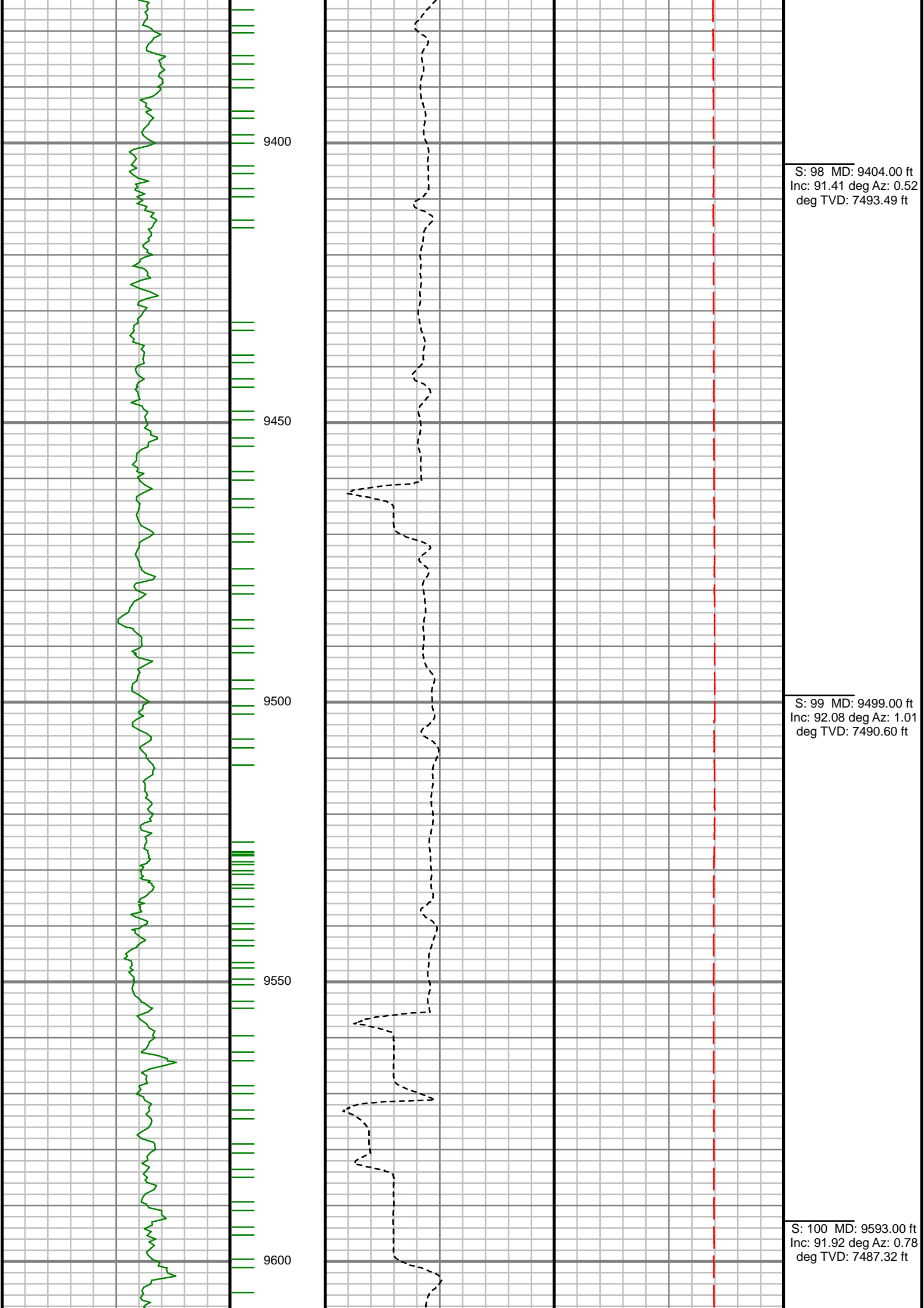


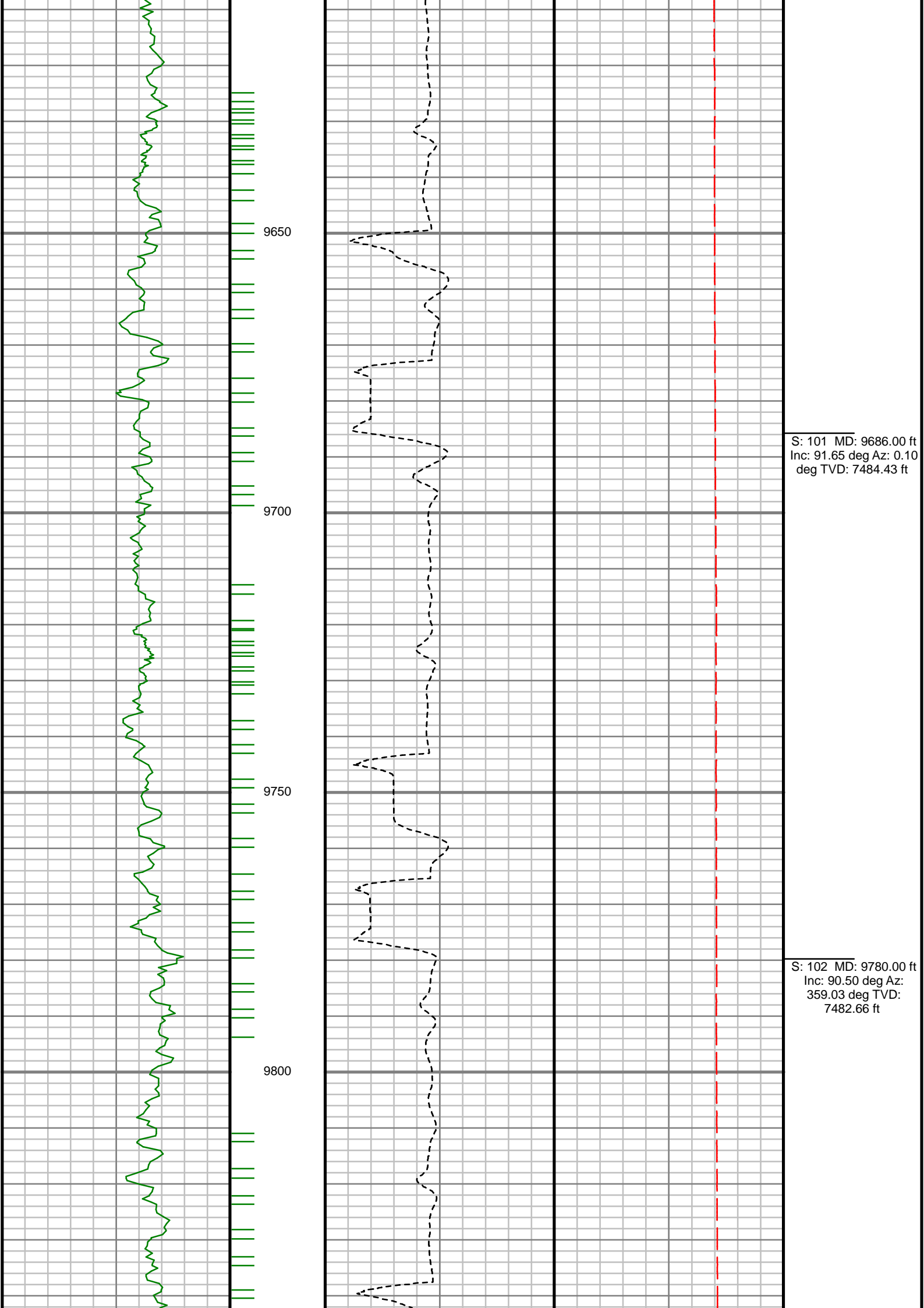
S: 93 MD: 8933.00 ft
Inc: 88.42 deg Az:
359.70 deg TVD:
7491.96 ft

S: 94 MD: 9028.00 ft
Inc: 87.95 deg Az:
358.97 deg TVD:
7494.97 ft

S: 95 MD: 9121.00 ft
Inc: 90.34 deg Az:
357.42 deg TVD:
7496.36 ft

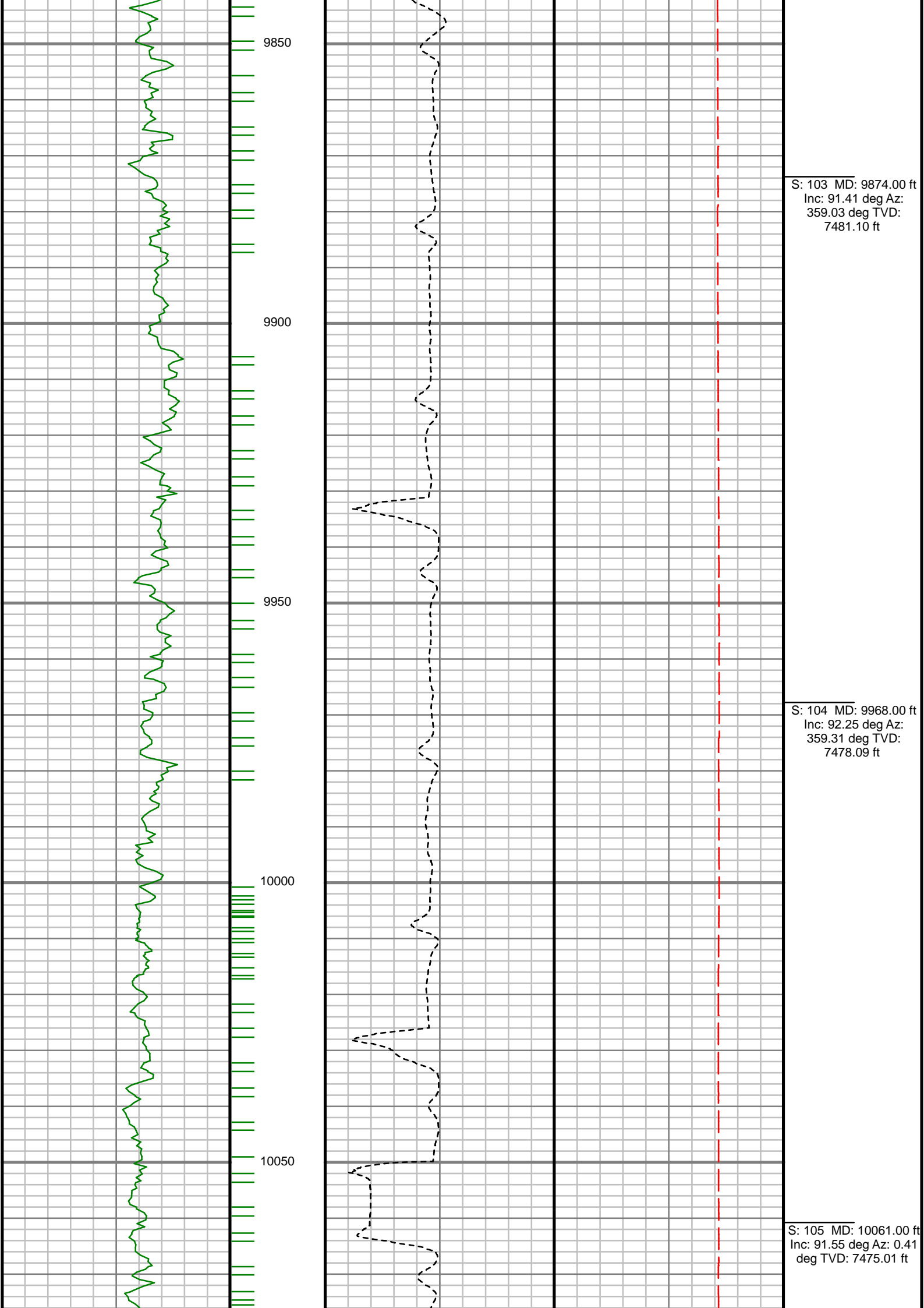


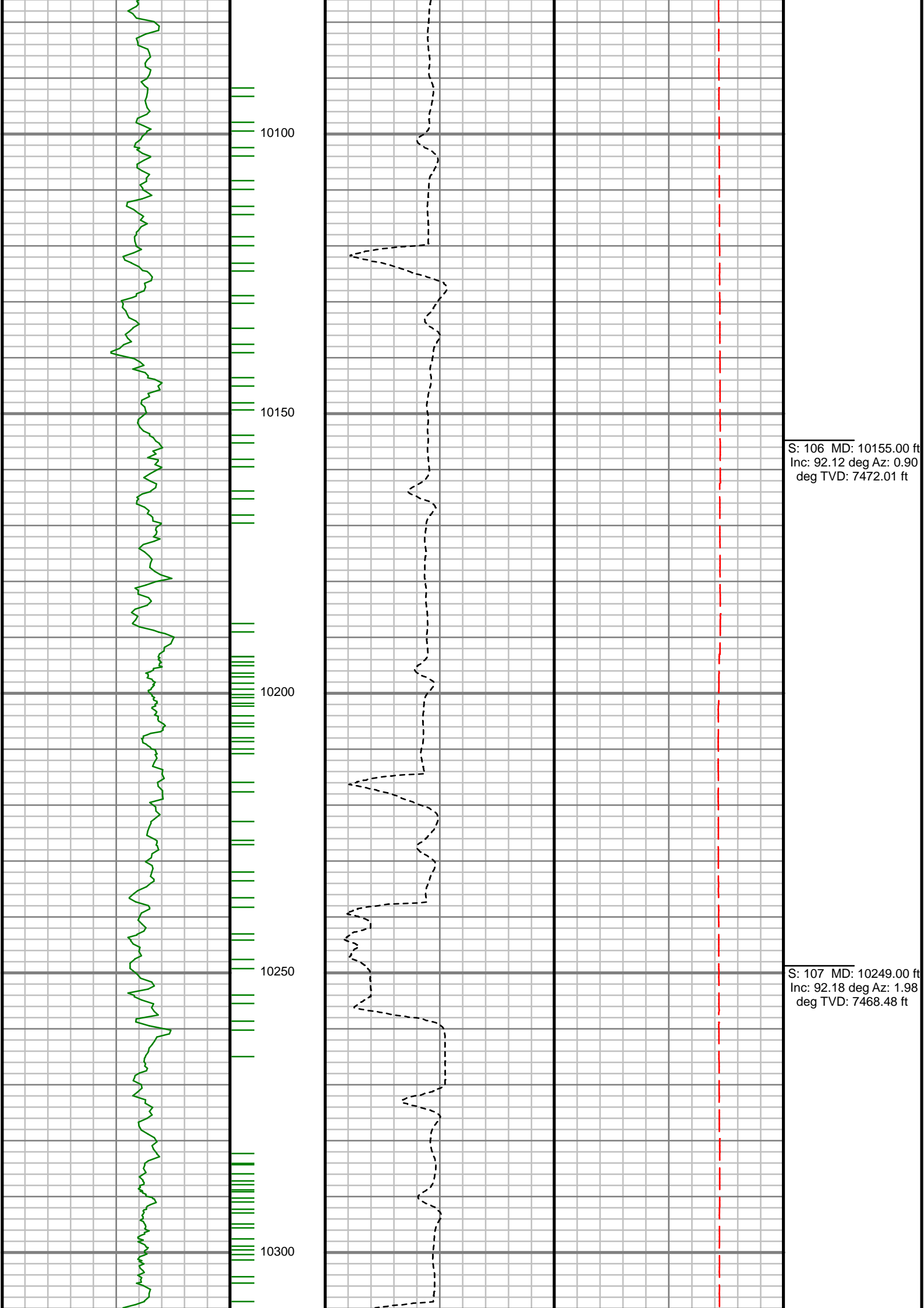


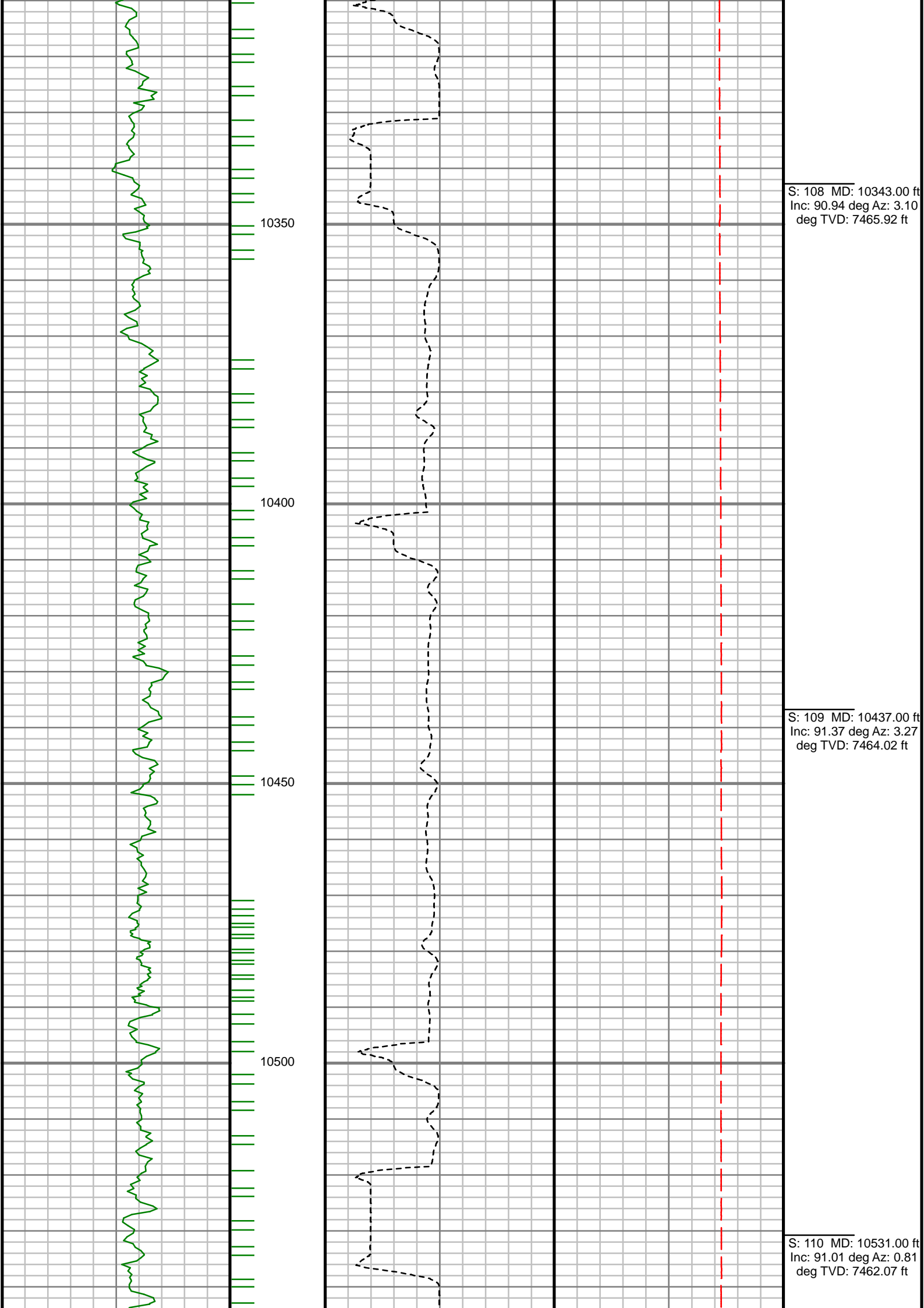


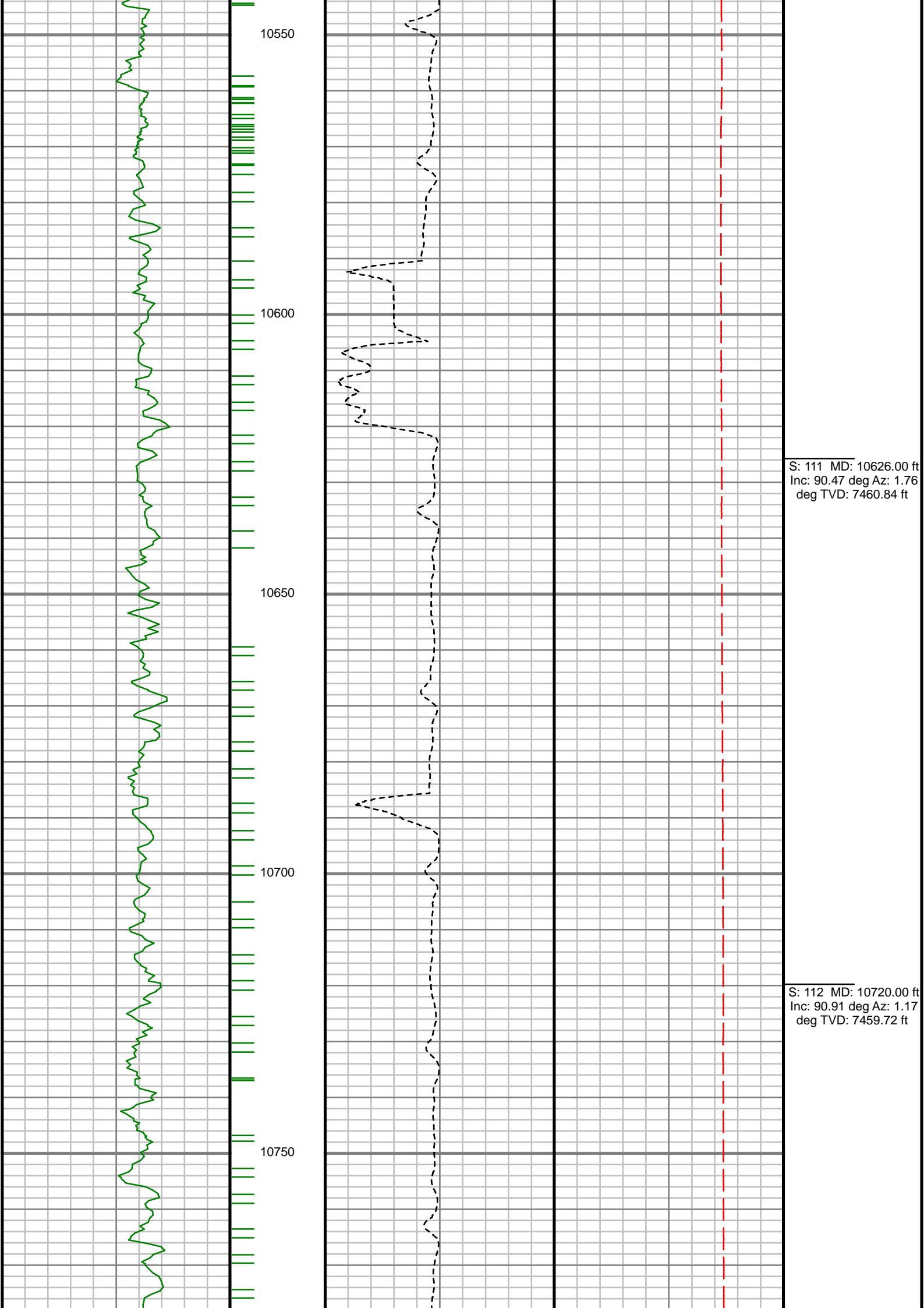
S: 101 MD: 9686.00 ft
Inc: 91.65 deg Az: 0.10
deg TVD: 7484.43 ft

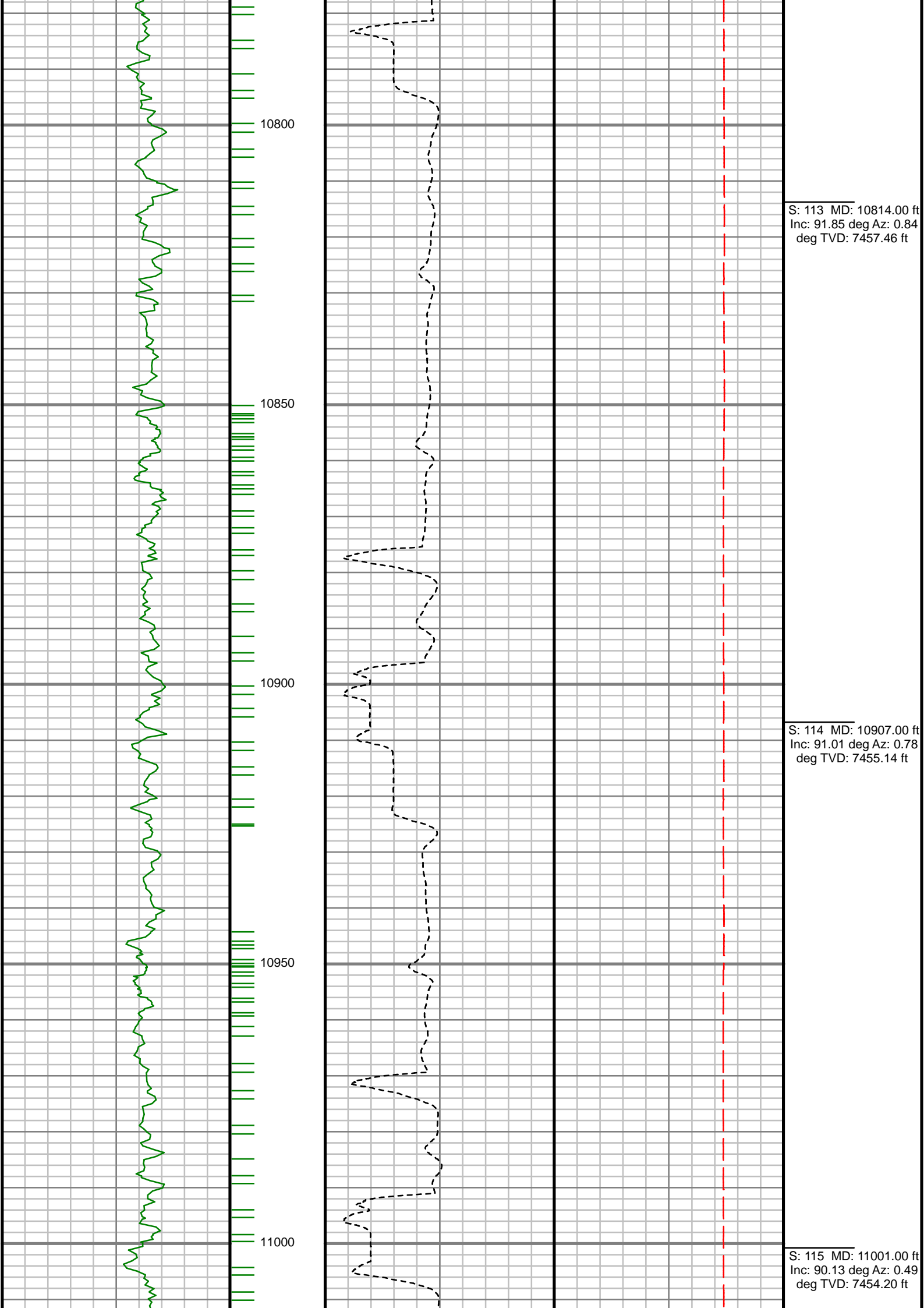
S: 102 MD: 9780.00 ft
Inc: 90.50 deg Az:
359.03 deg TVD:
7482.66 ft

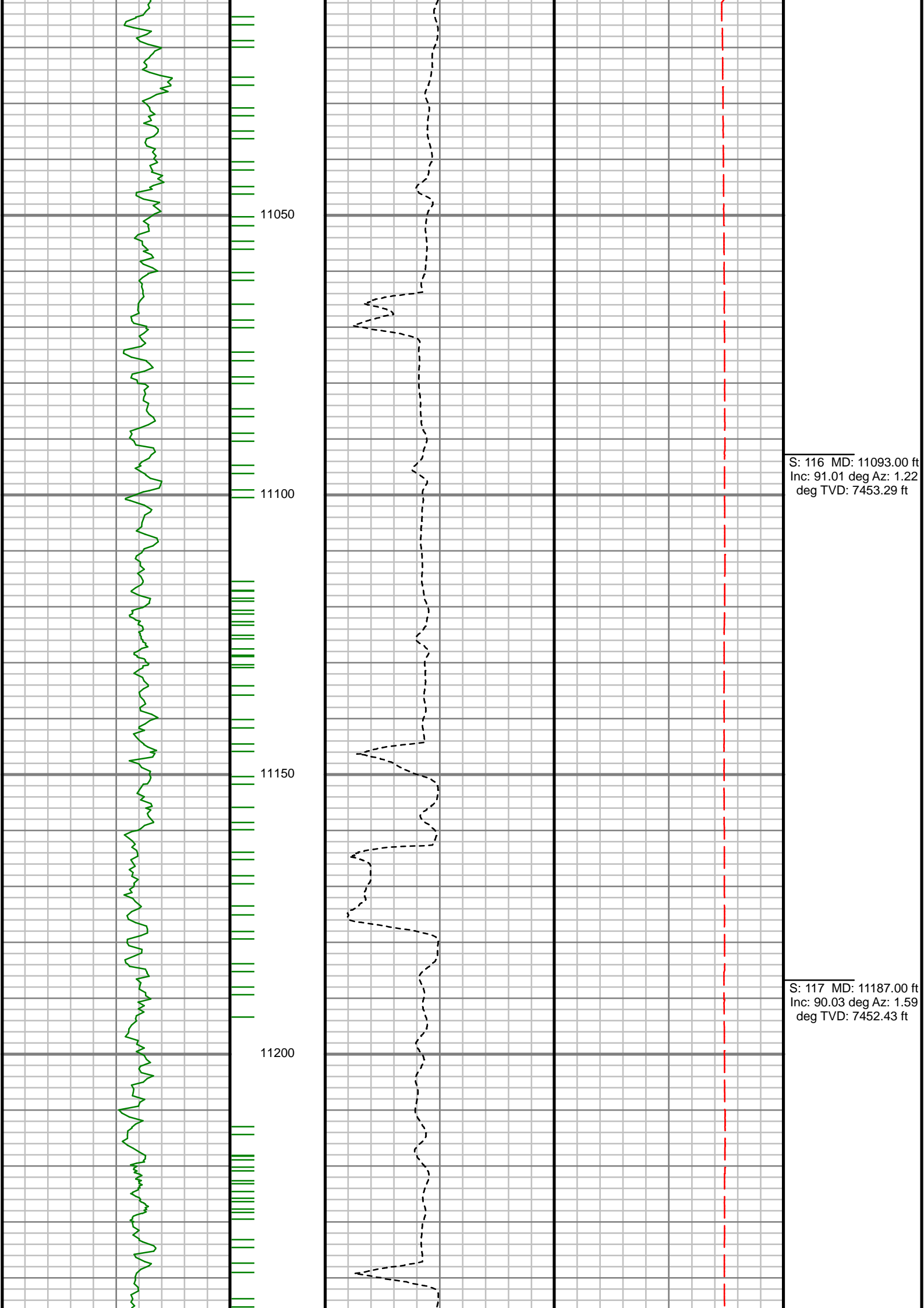


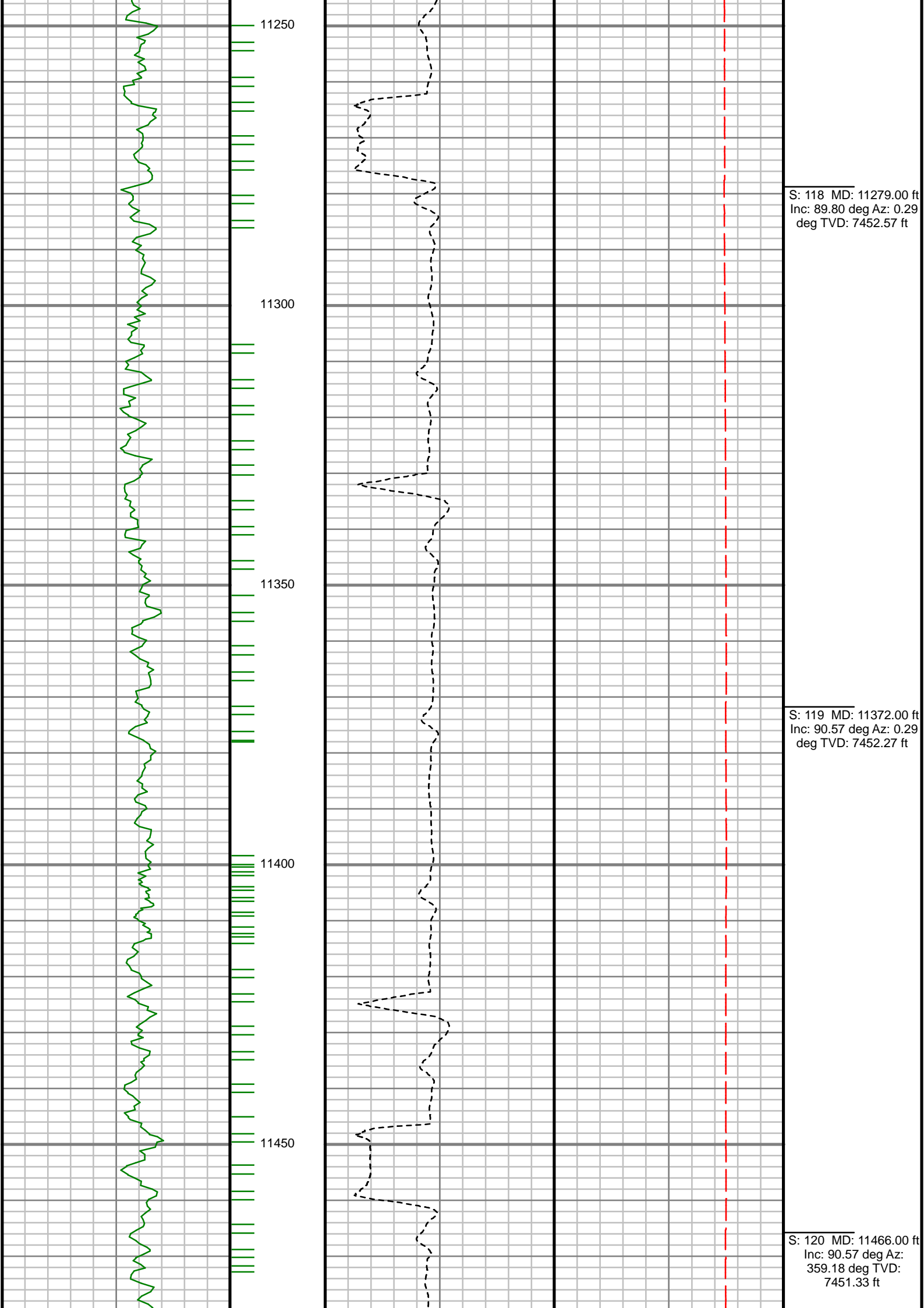


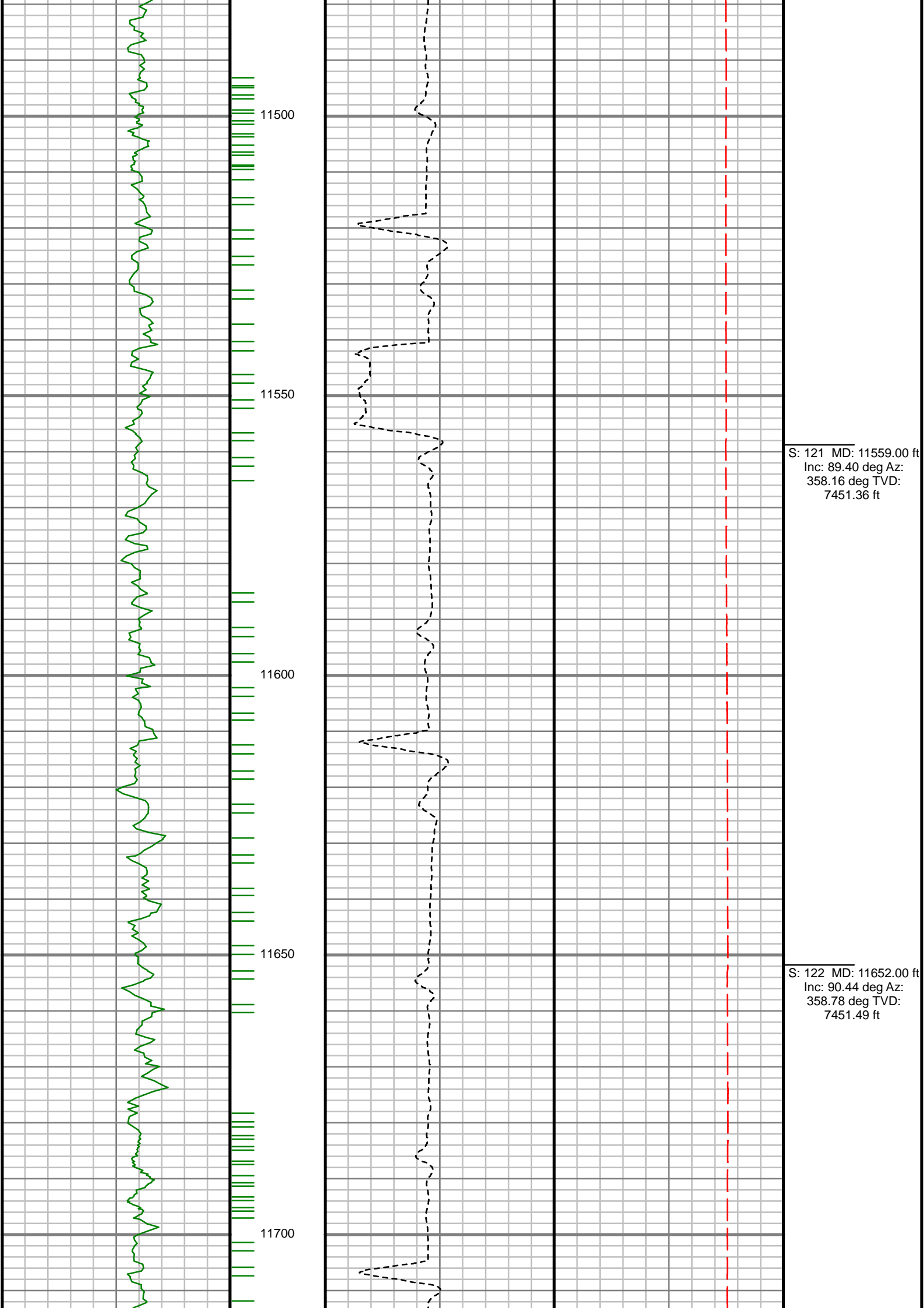


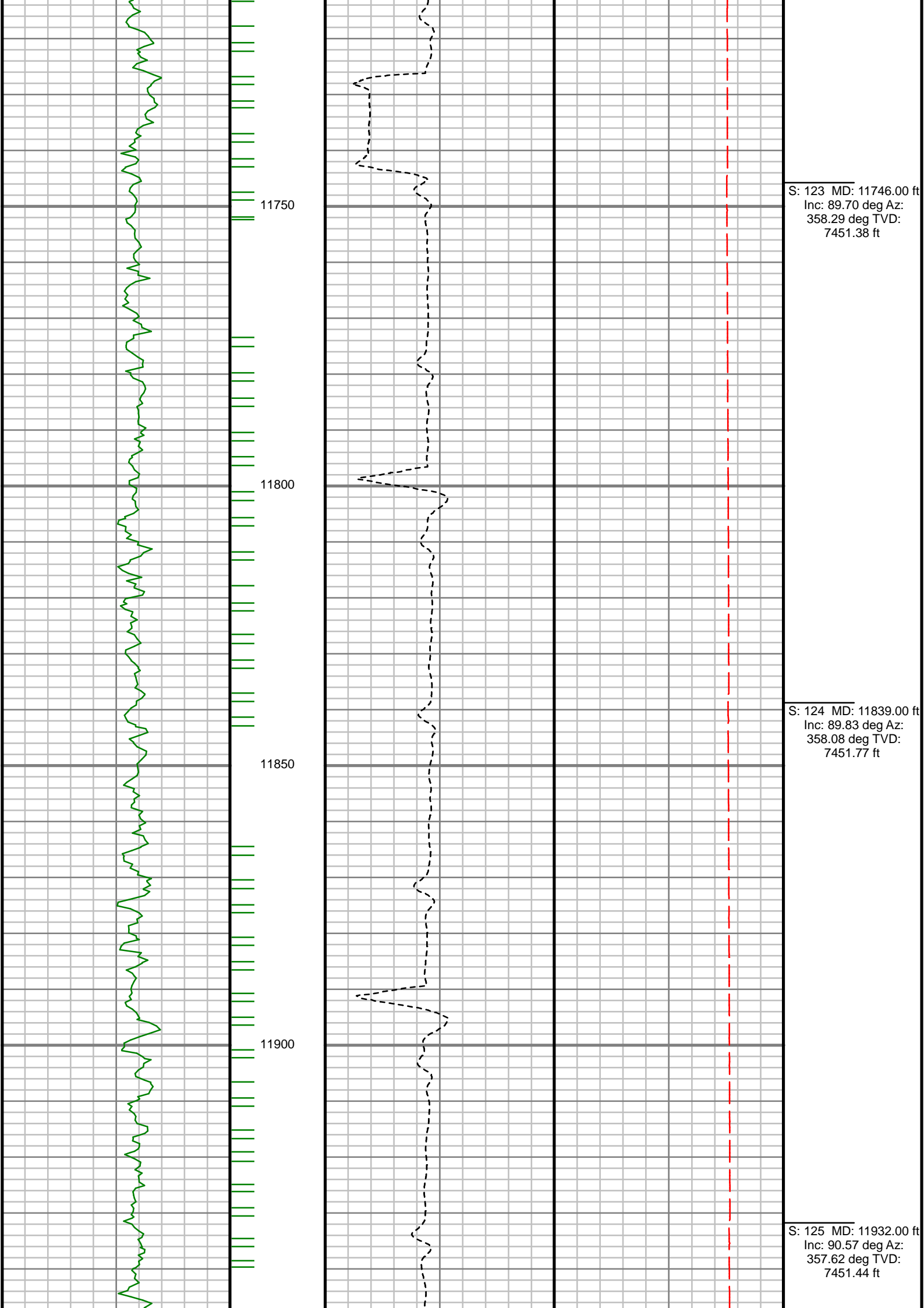


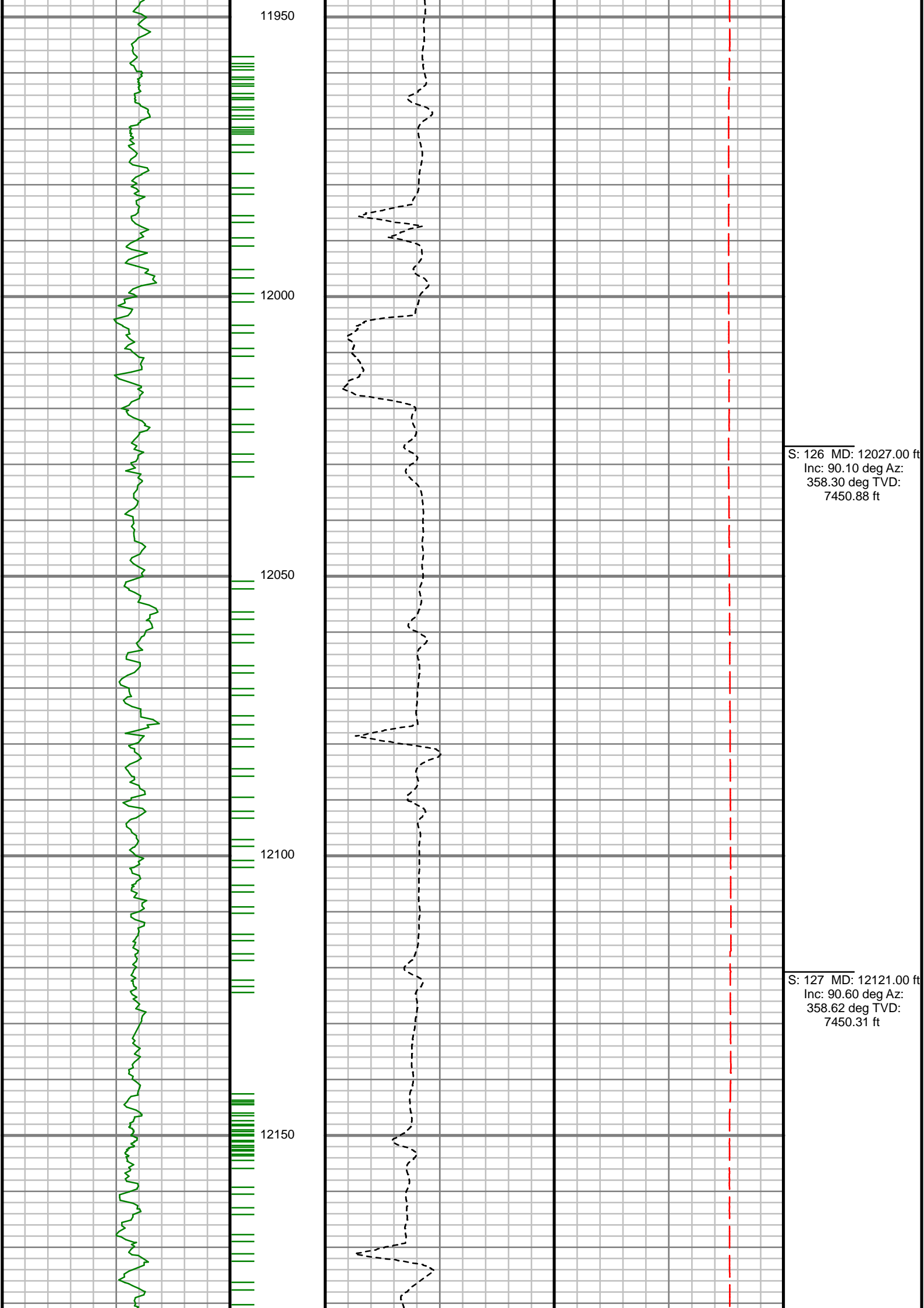


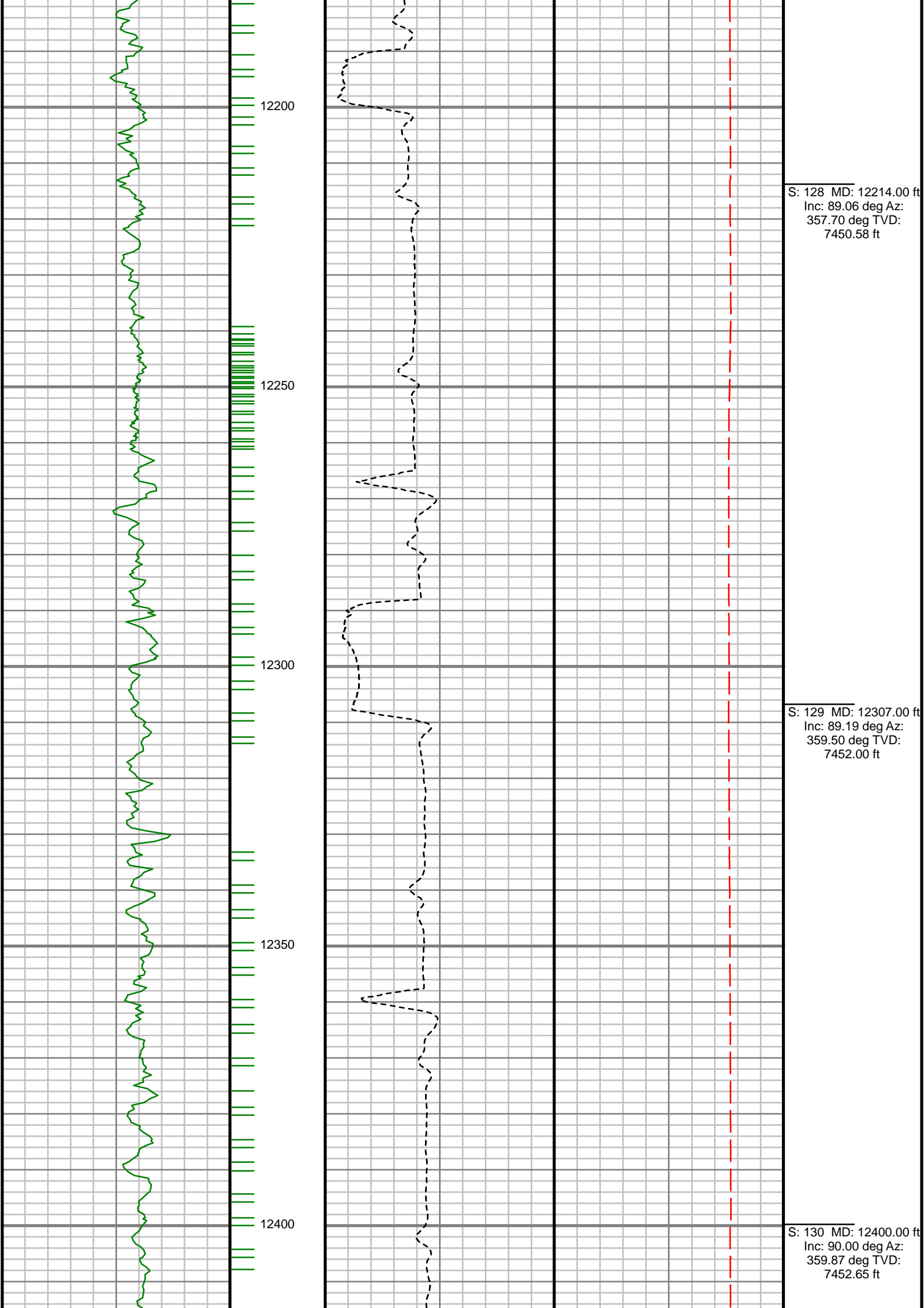


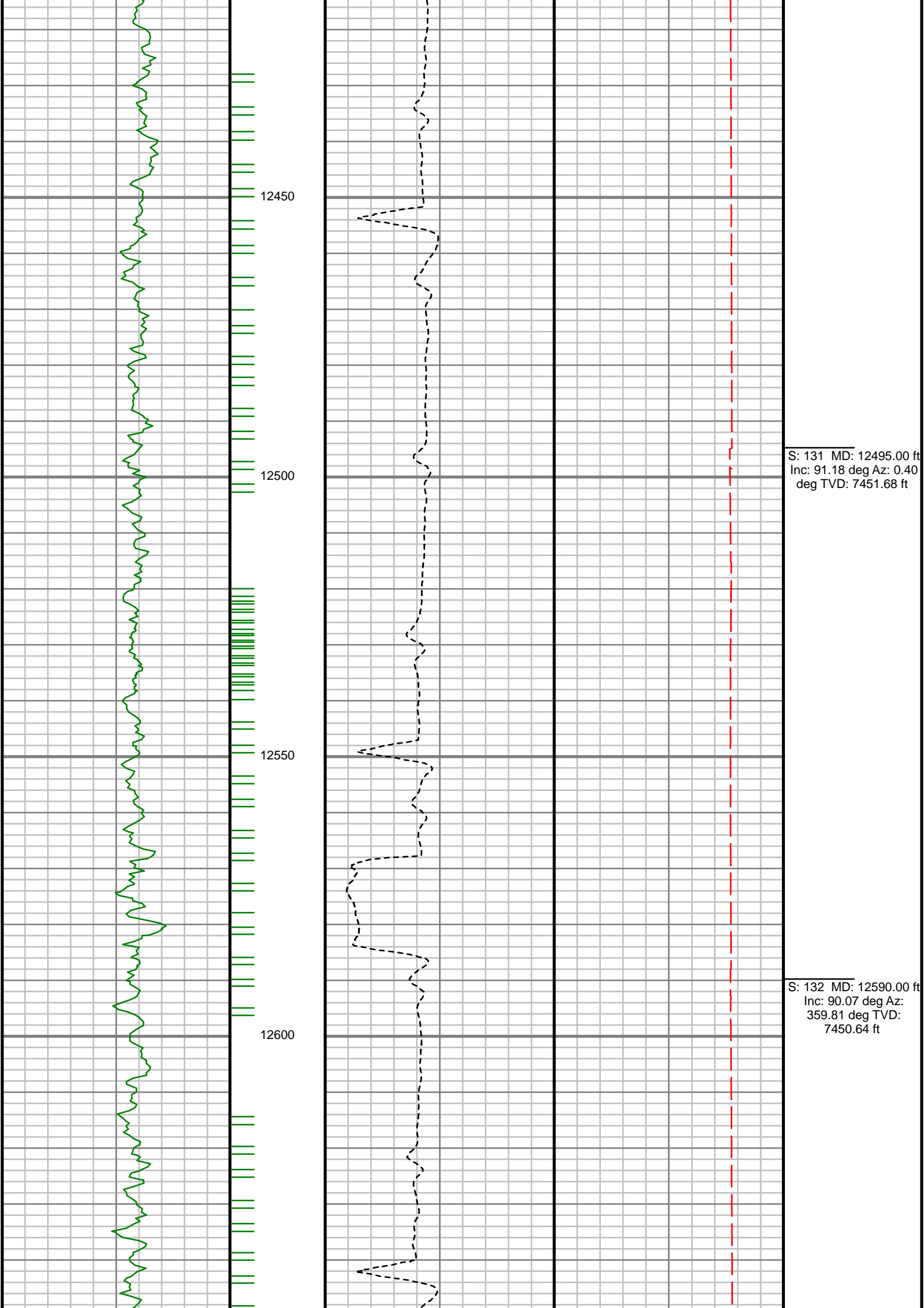






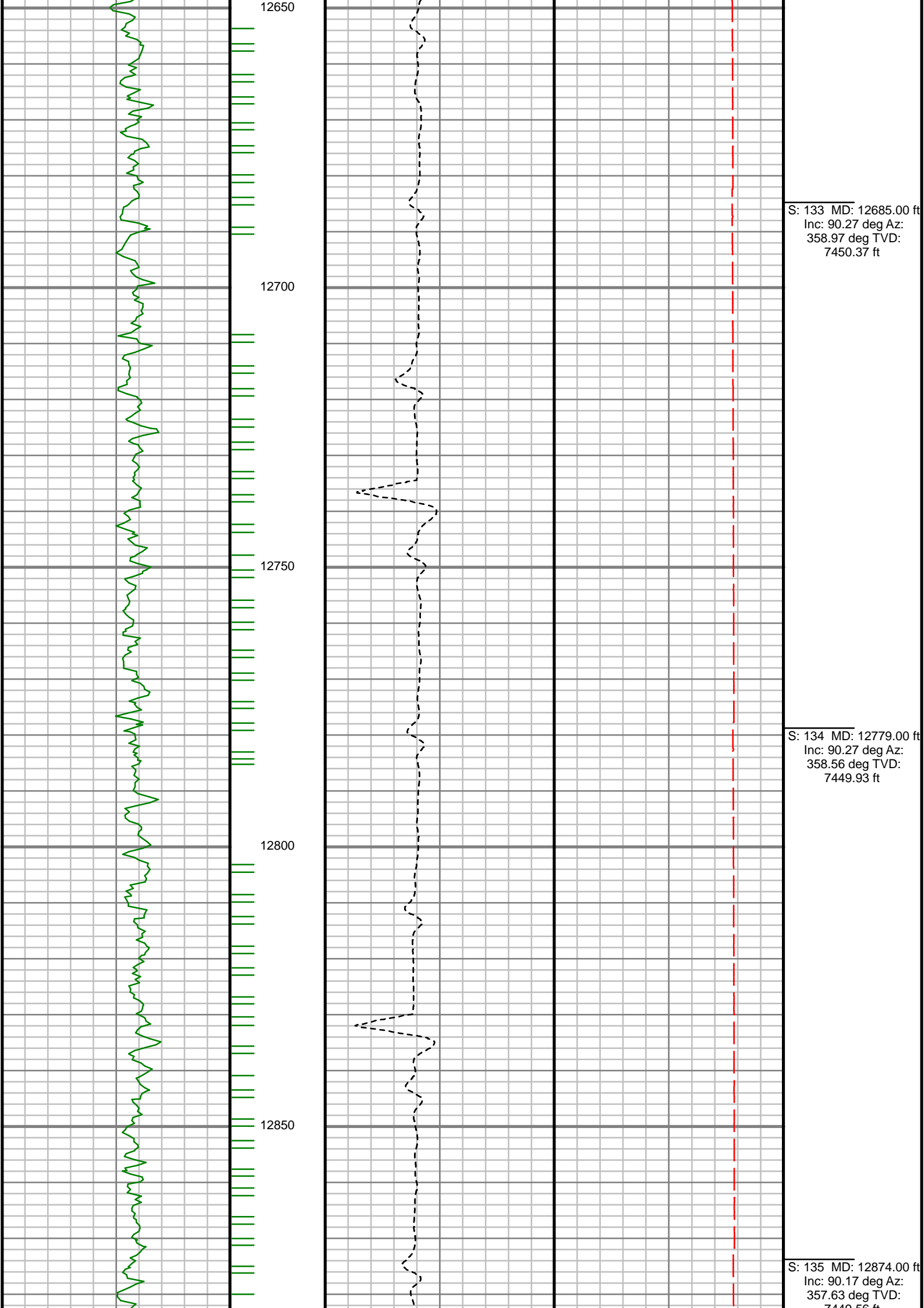


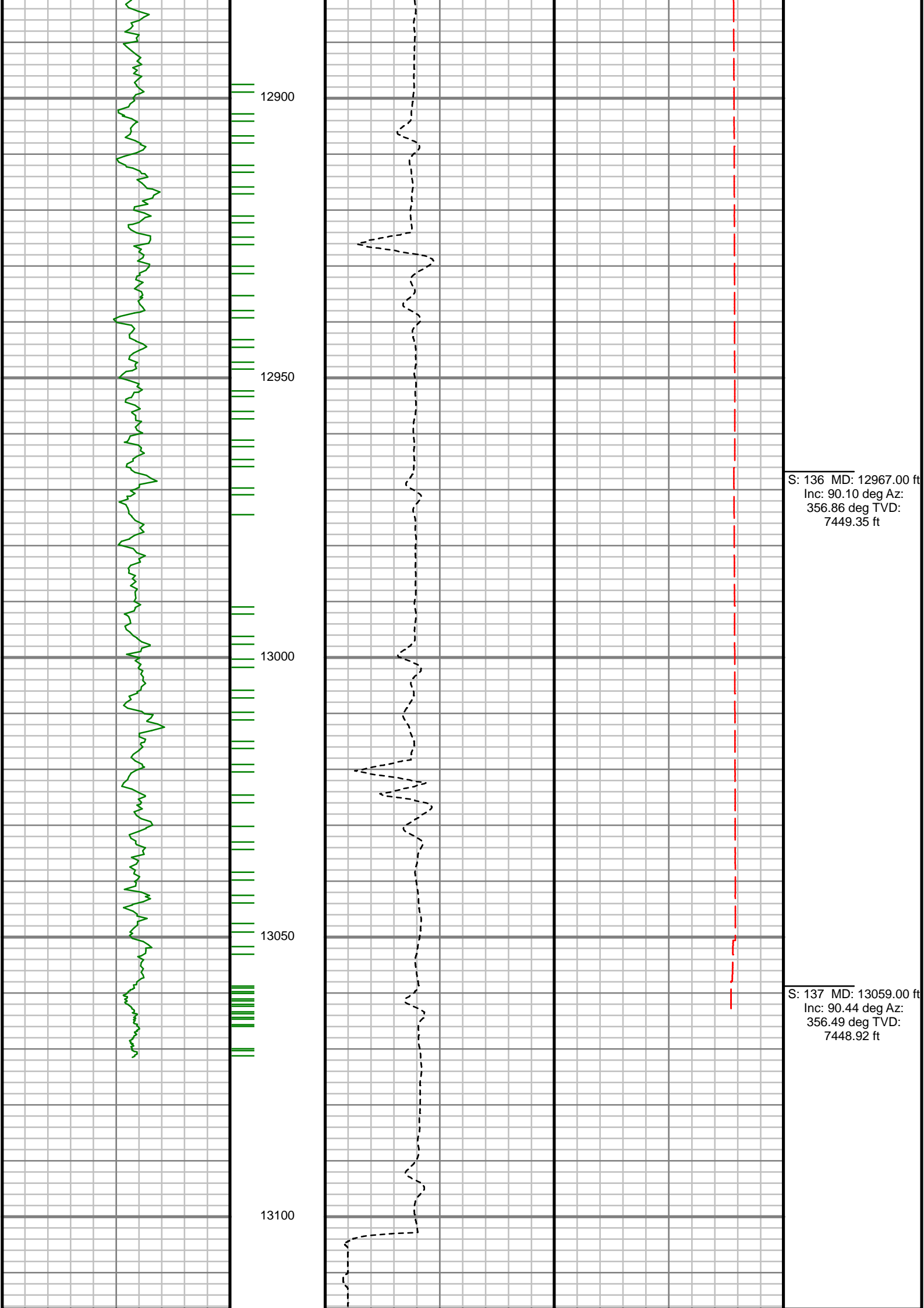




S: 131 MD: 12495.00 ft
Inc: 91.18 deg Az: 0.40
deg TVD: 7451.68 ft

S: 132 MD: 12590.00 ft
Inc: 90.07 deg Az:
359.81 deg TVD:
7450.64 ft





Gamma Ray (GR)		
0	Unit = aapi	150

MEASURED DEPTH

1:240 (ft)

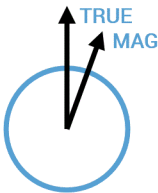
Rate of Penetration (ROP)		Tool Temperature (T-TEMP)	Comments
0	Unit = ft/hr	1000	
0		Unit = °F	300

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

WELL INFORMATION
Lat/Long 40° 5' 56.494" N, 104° 48' 19.681" W
Northing 14,562,852.63 ft
Easting 1,694,817.06 ft
UWI 05123423990000

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 359.84°
Calculation Method Minimum Curvature



GEOMAGNETIC REFERENCE INFORMATION Local Gravity: 999.046 mG [computed]

MD	MODEL	DATE	DECLINATION	MAG TO TRUE
0-3655 ft	ANADARKO MAGVAR	22 Jun 2016	8.34°	add 8.34°
3655-6016 ft	ANADARKO MAGVAR	22 Jun 2016	8.36°	add 8.36°
6016-13059 ft	ANADARKO MAGVAR	22 Jun 2016	8.38°	add 8.38°

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
77.50	0.47	70.76	77.50	0.10	0.10	0.30	0.61
171.50	0.23	90.35	171.50	0.23	0.23	0.85	0.28
265.50	0.24	292.09	265.50	0.30	0.30	0.86	0.49
359.50	0.63	260.72	359.49	0.29	0.29	0.17	0.47
453.50	0.67	264.37	453.49	0.16	0.16	-0.89	0.06
547.50	0.68	256.36	547.48	-0.02	-0.03	-1.98	0.10
641.50	0.98	256.22	641.47	-0.34	-0.35	-3.30	0.32
735.50	1.17	281.22	735.46	-0.34	-0.36	-5.02	0.53
829.50	2.00	329.62	829.42	1.26	1.25	-6.80	1.60
923.50	3.82	352.10	923.30	5.79	5.76	-8.06	2.25
1017.50	6.22	354.25	1016.93	13.96	13.93	-9.00	2.56
1111.50	8.12	356.25	1110.19	25.65	25.62	-9.94	2.04
1205.50	8.54	353.97	1203.20	39.22	39.19	-11.11	0.57
1298.50	9.87	351.79	1295.00	53.98	53.95	-12.97	1.48
1392.50	11.09	351.68	1387.43	70.91	70.87	-15.43	1.30
1488.50	12.60	343.46	1481.39	90.10	90.04	-19.75	2.35
1583.50	13.73	337.97	1573.90	110.50	110.43	-26.93	1.77
1677.50	13.42	337.70	1665.27	130.96	130.86	-35.25	0.34
1956.00	10.31	335.72	1937.79	183.66	183.50	-57.77	1.12

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
2050.00	11.46	325.66	2030.10	199.07	198.89	-66.50	2.36
2144.00	11.44	328.92	2122.23	214.79	214.58	-76.58	0.69
2240.00	11.91	333.37	2216.25	231.82	231.58	-85.93	1.06
2335.00	10.41	331.45	2309.45	248.14	247.88	-94.43	1.63
2430.00	10.68	336.63	2402.85	263.78	263.50	-102.02	1.04
2525.00	11.03	334.22	2496.15	280.06	279.75	-109.46	0.60
2620.00	10.71	331.25	2589.45	296.00	295.68	-117.66	0.68
2714.00	8.34	331.61	2682.15	309.68	309.34	-125.10	2.52
2809.00	8.62	334.80	2776.11	322.21	321.84	-131.41	0.57
2903.00	9.03	336.93	2868.99	335.38	335.00	-137.30	0.56
2997.00	9.75	324.33	2961.74	348.65	348.25	-144.83	2.31
3091.00	9.38	320.89	3054.44	361.09	360.66	-154.30	0.72
3186.00	8.02	318.47	3148.34	372.09	371.63	-163.58	1.48
3281.00	6.53	315.87	3242.58	380.95	380.47	-171.74	1.61
3376.00	5.38	316.05	3337.06	388.05	387.56	-178.59	1.21
3470.00	5.18	333.27	3430.67	395.03	394.51	-183.56	1.69
3565.00	4.31	329.92	3525.34	401.95	401.43	-187.27	0.96
3657.00	3.96	2.78	3617.12	408.11	407.59	-188.85	2.56
3752.00	2.95	20.55	3711.95	413.67	413.15	-187.83	1.54
3846.00	2.25	22.89	3805.85	417.63	417.11	-186.27	0.74

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
3941.00	1.44	13.69	3900.80	420.51	419.99	-185.26	0.91
4035.00	0.92	14.79	3994.78	422.39	421.87	-184.78	0.55
4130.00	0.77	28.82	4089.77	423.69	423.17	-184.28	0.27
4223.00	1.31	35.47	4182.75	425.10	424.59	-183.36	0.59
4319.00	1.52	31.74	4278.72	427.07	426.56	-182.06	0.24
4414.00	0.44	47.31	4373.71	428.38	427.88	-181.13	1.16
4507.00	0.67	72.62	4466.70	428.78	428.28	-180.35	0.35
4602.00	0.72	65.41	4561.70	429.19	428.69	-179.29	0.11
4697.00	0.43	46.74	4656.69	429.68	429.18	-178.49	0.36
4791.00	0.62	39.58	4750.69	430.30	429.81	-177.91	0.21
4886.00	0.30	50.28	4845.69	430.86	430.37	-177.39	0.34
4979.00	0.41	321.57	4938.68	431.28	430.78	-177.41	0.54
5072.00	0.77	275.39	5031.68	431.60	431.10	-178.24	0.62
5167.00	1.43	271.40	5126.66	431.69	431.19	-180.06	0.70
5261.00	1.46	221.01	5220.64	430.82	430.32	-182.02	1.31
5355.00	1.22	208.63	5314.61	429.05	428.54	-183.28	0.39
5449.00	1.43	230.12	5408.59	427.42	426.91	-184.66	0.57
5542.00	0.81	186.54	5501.57	426.03	425.52	-185.62	1.08
5637.00	1.56	125.56	5596.55	424.61	424.10	-184.65	1.44
5732.00	0.91	133.07	5691.53	423.34	422.83	-183.04	0.70

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
5828.00	0.39	127.80	5787.52	422.61	422.10	-182.22	0.55
5921.00	0.17	334.79	5880.52	422.54	422.03	-182.03	0.59
6016.00	0.36	282.85	5975.52	422.73	422.23	-182.38	0.31
6111.00	0.36	241.78	6070.52	422.66	422.15	-182.94	0.27
6205.00	0.37	332.00	6164.52	422.79	422.28	-183.35	0.55
6298.00	0.55	328.15	6257.51	423.44	422.93	-183.73	0.20
6391.00	0.88	340.18	6350.51	424.50	423.98	-184.20	0.38
6484.00	0.86	323.41	6443.50	425.73	425.21	-184.86	0.27
6578.00	1.15	333.44	6537.48	427.14	426.62	-185.70	0.36
6671.00	0.82	329.08	6630.47	428.54	428.02	-186.46	0.36
6765.00	0.88	326.83	6724.46	429.73	429.21	-187.20	0.07
6859.00	3.03	348.18	6818.40	432.77	432.25	-188.11	2.37
6952.00	10.06	352.76	6910.73	443.25	442.72	-189.64	7.57
7046.00	16.64	355.94	7002.15	464.84	464.31	-191.63	7.04
7140.00	22.97	3.55	7090.56	496.61	496.07	-191.45	7.26
7235.00	30.16	359.86	7175.48	539.02	538.50	-190.35	7.76
7331.00	40.29	358.35	7253.80	594.31	593.78	-191.31	10.59
7425.00	50.80	359.39	7319.55	661.30	660.77	-192.57	11.21
7520.00	58.57	359.37	7374.42	738.76	738.22	-193.41	8.18
7615.00	66.12	358.14	7418.48	822.83	822.29	-195.26	8.03

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
7710.00	73.30	357.44	7451.40	911.82	911.27	-198.70	7.59
7804.00	80.66	357.41	7472.57	1003.26	1002.69	-202.81	7.83
7899.00	86.87	0.05	7482.88	1097.62	1097.05	-204.88	7.10
7993.00	88.36	359.06	7486.80	1191.54	1190.97	-205.61	1.90
8086.00	89.29	359.56	7488.70	1284.51	1283.94	-206.73	1.14
8180.00	90.17	1.05	7489.14	1378.50	1377.93	-206.23	1.84
8274.00	89.90	1.48	7489.09	1472.47	1471.91	-204.16	0.54
8368.00	90.27	1.04	7488.95	1566.45	1565.89	-202.09	0.61
8463.00	89.87	2.65	7488.84	1661.38	1660.83	-199.04	1.75
8557.00	90.67	2.09	7488.40	1755.29	1754.75	-195.15	1.04
8650.00	89.13	0.89	7488.56	1848.25	1847.72	-192.73	2.11
8744.00	89.43	0.07	7489.74	1942.23	1941.70	-191.94	0.92
8838.00	89.73	359.69	7490.43	2036.23	2035.70	-192.14	0.52
8933.00	88.42	359.70	7491.96	2131.22	2130.69	-192.64	1.38
9028.00	87.95	358.97	7494.97	2226.16	2225.63	-193.74	0.91
9121.00	90.34	357.42	7496.36	2319.10	2318.56	-196.66	3.06
9216.00	89.87	358.38	7496.19	2414.05	2413.50	-200.15	1.13
9310.00	91.01	0.57	7495.48	2508.04	2507.49	-201.01	2.63
9404.00	91.41	0.52	7493.49	2602.01	2601.46	-200.12	0.43
9499.00	92.08	1.01	7490.60	2696.95	2696.41	-198.84	0.88

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
9593.00	91.92	0.78	7487.32	2790.88	2790.34	-197.38	0.31
9686.00	91.65	0.10	7484.43	2883.83	2883.29	-196.67	0.78
9780.00	90.50	359.03	7482.66	2977.81	2977.27	-197.38	1.67
9874.00	91.41	359.03	7481.10	3071.78	3071.24	-198.96	0.96
9968.00	92.25	359.31	7478.09	3165.73	3165.18	-200.33	0.94
10061.00	91.55	0.41	7475.01	3258.67	3258.13	-200.56	1.40
10155.00	92.12	0.90	7472.01	3352.62	3352.07	-199.48	0.80
10249.00	92.18	1.98	7468.48	3446.51	3445.98	-197.12	1.15
10343.00	90.94	3.10	7465.92	3540.37	3539.84	-192.95	1.78
10437.00	91.37	3.27	7464.02	3634.19	3633.68	-187.73	0.50
10531.00	91.01	0.81	7462.07	3728.09	3727.59	-184.38	2.65
10626.00	90.47	1.76	7460.84	3823.05	3822.56	-182.26	1.14
10720.00	90.91	1.17	7459.72	3917.01	3916.52	-179.86	0.77
10814.00	91.85	0.84	7457.46	4010.96	4010.48	-178.21	1.06
10907.00	91.01	0.78	7455.14	4103.92	4103.44	-176.89	0.91
11001.00	90.13	0.49	7454.20	4197.90	4197.43	-175.85	0.98
11093.00	91.01	1.22	7453.29	4289.88	4289.41	-174.48	1.23
11187.00	90.03	1.59	7452.43	4383.84	4383.38	-172.18	1.11
11279.00	89.80	0.29	7452.57	4475.82	4475.36	-170.67	1.44
11372.00	90.57	0.29	7452.27	4568.82	4568.36	-170.20	0.83

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
11466.00	90.57	359.18	7451.33	4662.81	4662.35	-170.64	1.18
11559.00	89.40	358.16	7451.36	4755.79	4755.33	-172.80	1.67
11652.00	90.44	358.78	7451.49	4848.76	4848.29	-175.29	1.30
11746.00	89.70	358.29	7451.38	4942.74	4942.26	-177.70	0.94
11839.00	89.83	358.08	7451.77	5035.70	5035.21	-180.64	0.27
11932.00	90.57	357.62	7451.44	5128.64	5128.15	-184.14	0.93
12027.00	90.10	358.30	7450.88	5223.59	5223.08	-187.51	0.87
12121.00	90.60	358.62	7450.31	5317.56	5317.05	-190.04	0.63
12214.00	89.06	357.70	7450.58	5410.51	5409.99	-193.02	1.93
12307.00	89.19	359.50	7452.00	5503.48	5502.95	-195.29	1.93
12400.00	90.00	359.87	7452.65	5596.47	5595.95	-195.81	0.95
12495.00	91.18	0.40	7451.68	5691.46	5690.94	-195.59	1.36
12590.00	90.07	359.81	7450.64	5786.46	5785.93	-195.41	1.32
12685.00	90.27	358.97	7450.37	5881.45	5880.93	-196.42	0.91
12779.00	90.27	358.56	7449.93	5975.43	5974.90	-198.44	0.44
12874.00	90.17	357.63	7449.56	6070.39	6069.85	-201.60	0.98
12967.00	90.10	356.86	7449.35	6163.29	6162.74	-206.07	0.83
13059.00	90.44	356.49	7448.92	6255.15	6254.58	-211.40	0.55

5" = 100' FEET MD