



5" = 100' FEET MD

COMPANY : ABADARKO E&P ONSHORE LLC  
WELL : GOODIN 16N-B6HZ  
FIELD : WATTENBERG  
COUNTY : WELD  
STATE : COLORADO  
COUNTRY : U.S.A.  
UWI : 05-123-40750

COMPANY : ABADARKO E&P ONSHORE LLC

WELL : GOODIN 16N-B6HZ

FIELD : WATTENBERG

COUNTY : WELD

STATE : COLORADO

COUNTRY : U.S.A.

UWI : 05-123-40750

WELL LOCATION

LAT:40°3'35.442"N LONG:104°42'8.287"W  
N:1265651.16 ft E:3223278.86 ft

SEC:07

TWP:1N

RANGE: 65W

OTHER SERVICES

DIRECTIONAL  
ROP

DEPTH REF. : RKB

REF. HEIGHT : 25.000 ft

RKB to Ground Level

GROUND LEVEL : 5004.000 ft

G.L. to MEAN SEA LEVEL

## BOREHOLE RECORD

## DEVIATION RECORD

HOLE SIZE in	FROM ft	TO ft	INCLINATION deg	FROM ft	TO ft
12.25	0	1616	0 - 21	0	XXXX
8.75	1616	7752	21 - 0		
6	7752	XXXX			

## CASING RECORD

CASING SIZE	in	FROM	ft	TO	ft			
9.625		0		1610				
7		0		XXXX		DRILLING CO. : H&P RIG : 307 LWD UNIT NO. : C11-EM#70 /DISTRICT: CASPER SPUD DATE : 11/08/2015 LWD START DATE : 02/08/2015      DEPTH : 1616 ft LWD END DATE :      DEPTH : TOTAL DEPTH :		

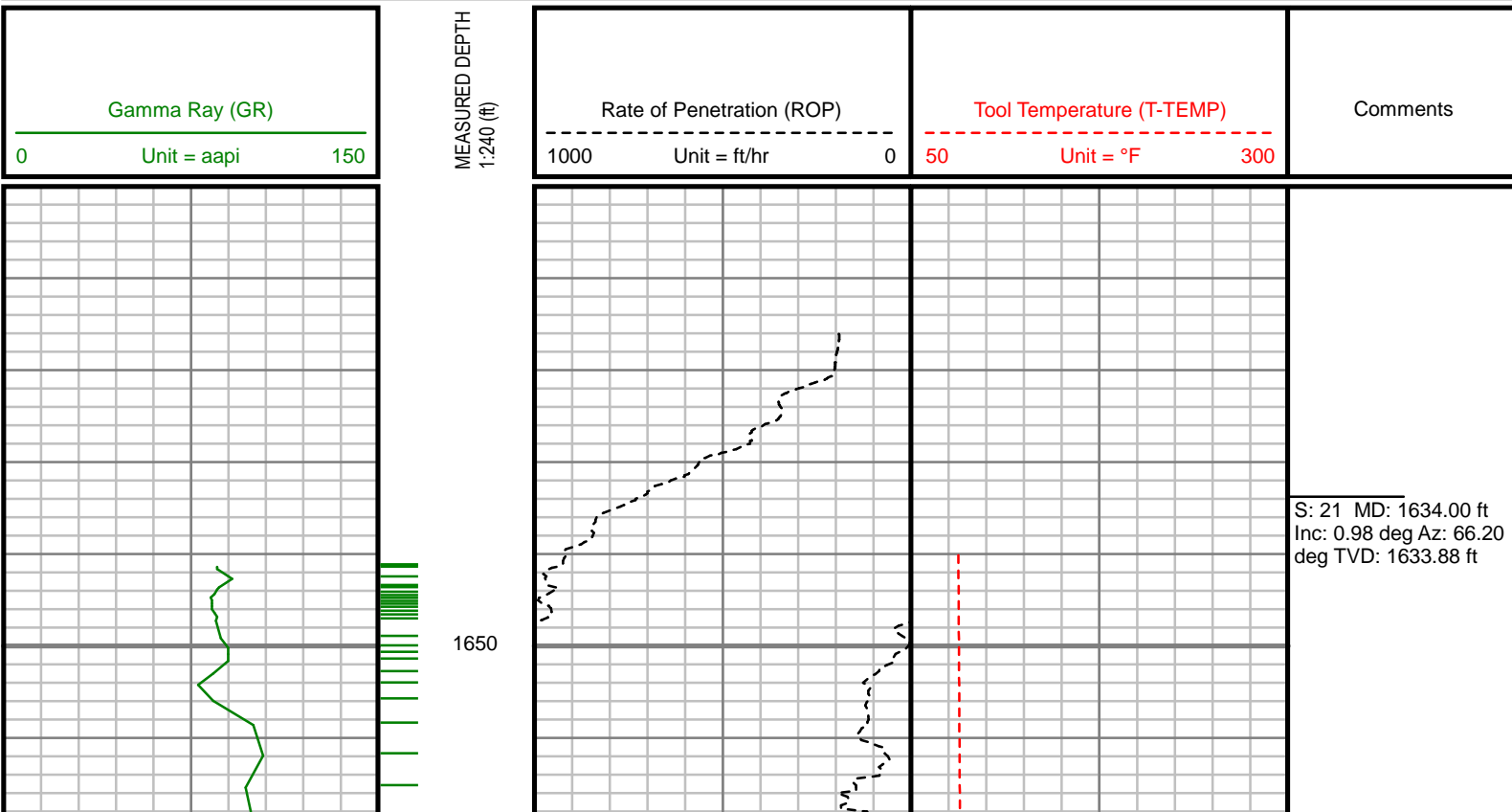
Run Data

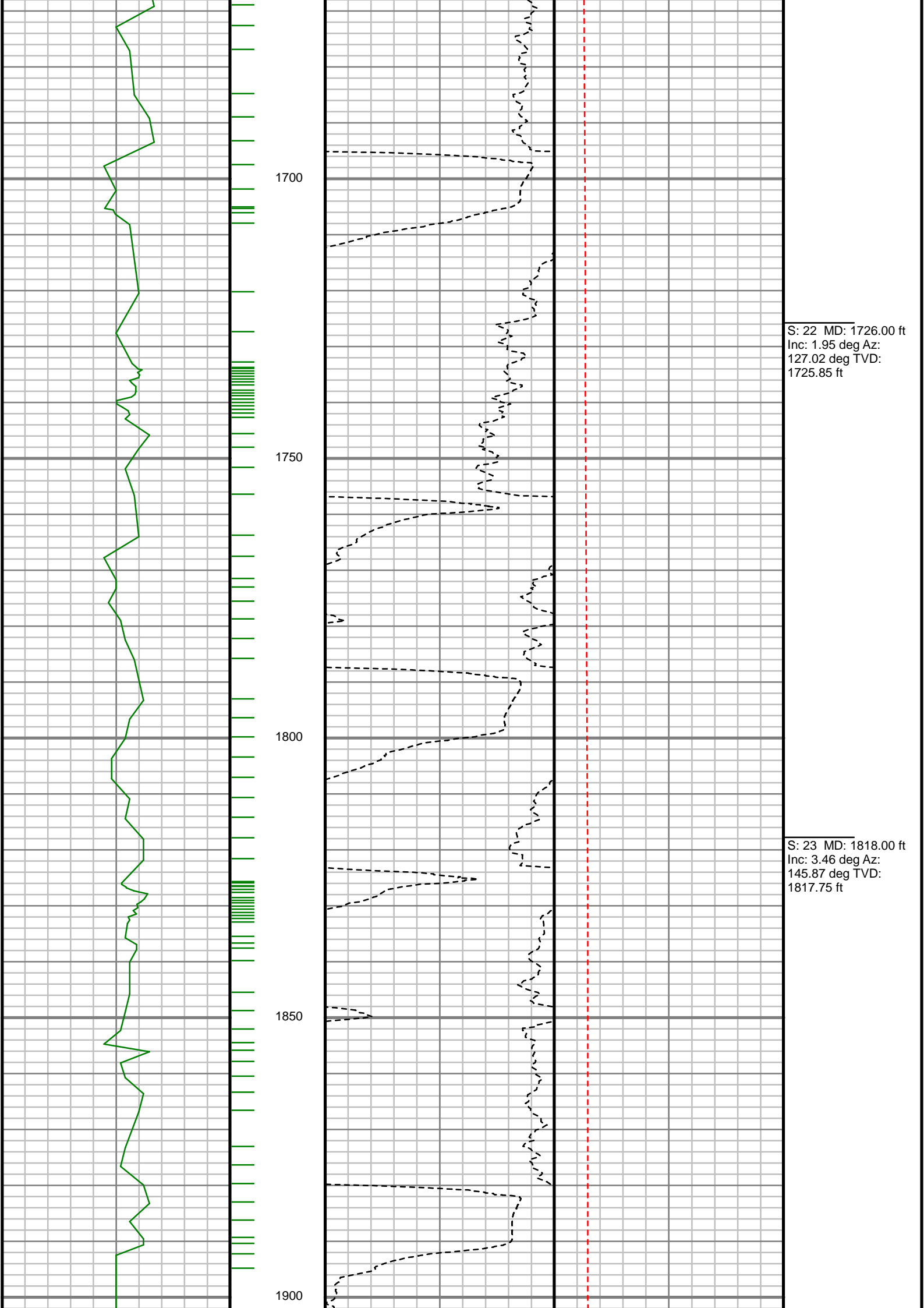
Run Data					
RUN NUMBER	1	2			
START DATE	02/08/2015	02/11/2015			
START TIME	0100	0430			
END DATE	02/10/2015				
END TIME	0200				
DEPTH IN (ft)	1616	7752			
DEPTH OUT (ft)	7752				
LOG TOP (ft)	1610	7700			
LOG BOTTOM (ft)	7700				
HOLE SIZE (in)	8.75				
MUD DATA @ (ft)	7752				
MUD TYPE	WATER-BASED				
DENSITY (lb / gal)	10.2				
VISCOSITY (s / qt)	45				
pH	9.8				
FLUID LOSS (cm <sup>3</sup> / 30)	3.8				
SALINITY (ppm)	-				
Rm (ohmm @ deg F)	-				
Rmf (ohmm @ deg F)	-				
MAX TEMP (deg F)	173				
Rm @ MAX TEMP (ohmm)	-				
LWD ENGINEER #1	S. WAXLER				
LWD ENGINEER #2	C. COLLINS				
LWD ENGINEER #3	-				
LOG WITNESS #1	-				
LOG WITNESS #2	-				

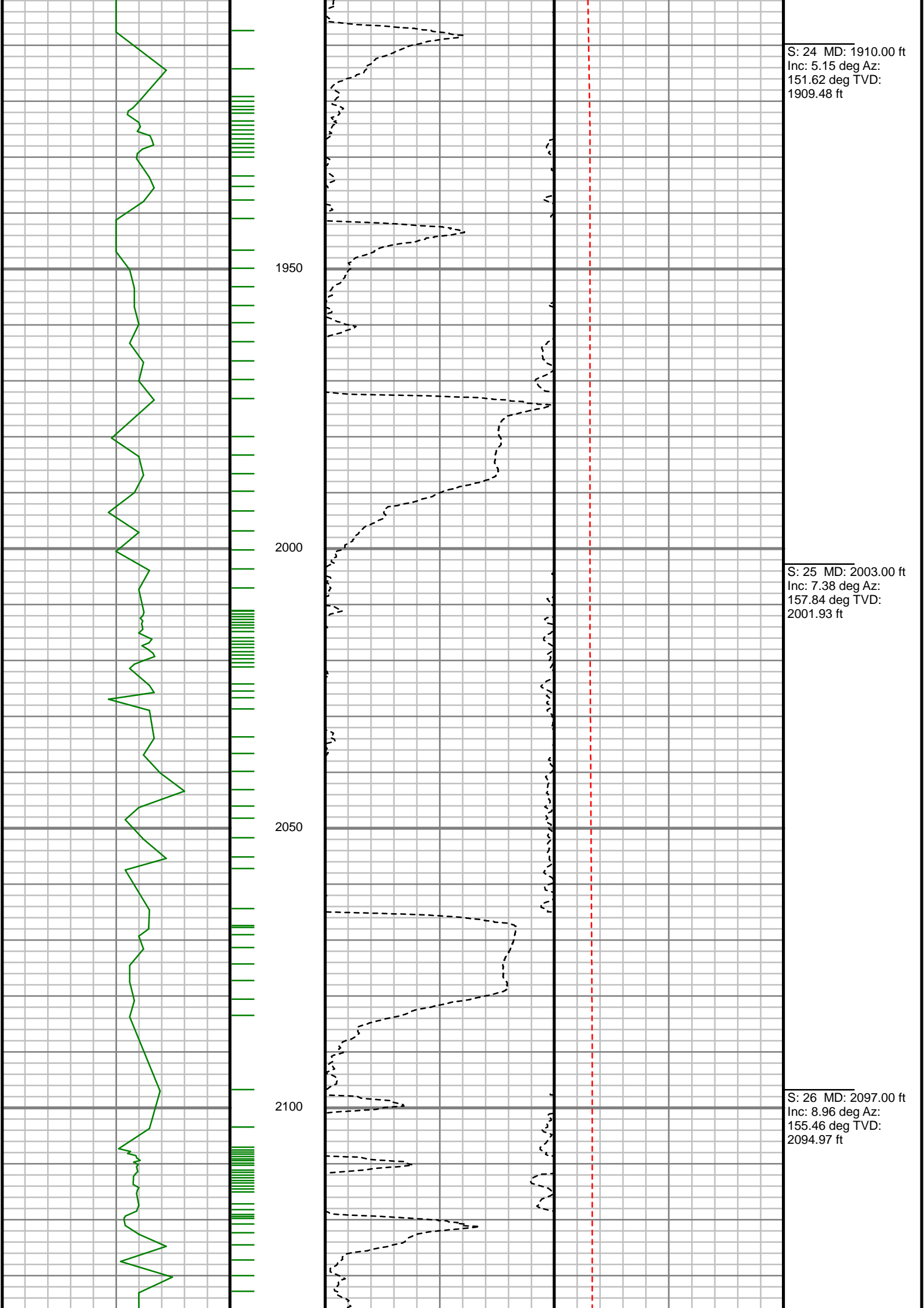
Remarks
ABADARKO E&P ONSHORE LLC PRODUCTION AFE# 2097448
SCIENTIFIC DRILLING INTERNATIONAL JOB# 253781
ALL REFERENCES IN THE DEPTH TRACK ARE AT BIT DEPTH.
ALL DATA IS MEMORY DATA UNLESS STATED OTHERWISE.
FLAT AVERAGE FILTER OF 1.00 FT APPLIED TO GAMMA RAY CURVE
FLAT AVERAGE FILTER OF 1.00 FT APPLIED TO RATE OF PENETRATION CURVE
RUN #1: MWD / GAMMA RAY LOGGING RUN
SENSORS S/N: PULSER = 128-062 / CONT = 932 / MWD EYE = 0522 / GAMMA RAY = 1439
BIT TO SENSOR OFFSETS: SURVEY = 61.66 FT. / GAMMA RAY = 52.40 FT.
RUN #2: MWD / GAMMA RAY LOGGING RUN
SENSORS S/N: PULSER = 78-201 / CONT = 381 / MWD EYE = 1167 / GAMMA RAY = 1344
BIT TO SENSOR OFFSETS: SURVEY = 58.15 FT. / GAMMA RAY = 49.50 FT.
REMARK # : GAMMA RAY FROM 7700 FT. TO 7741 FT. WAS LOGGED BEHIND CASING.
MNEMONICS LIST:
GR = GAMMA RAY
ROP = RATE OF PENETRATION
T-TEMP = TOOL TEMPERATURE

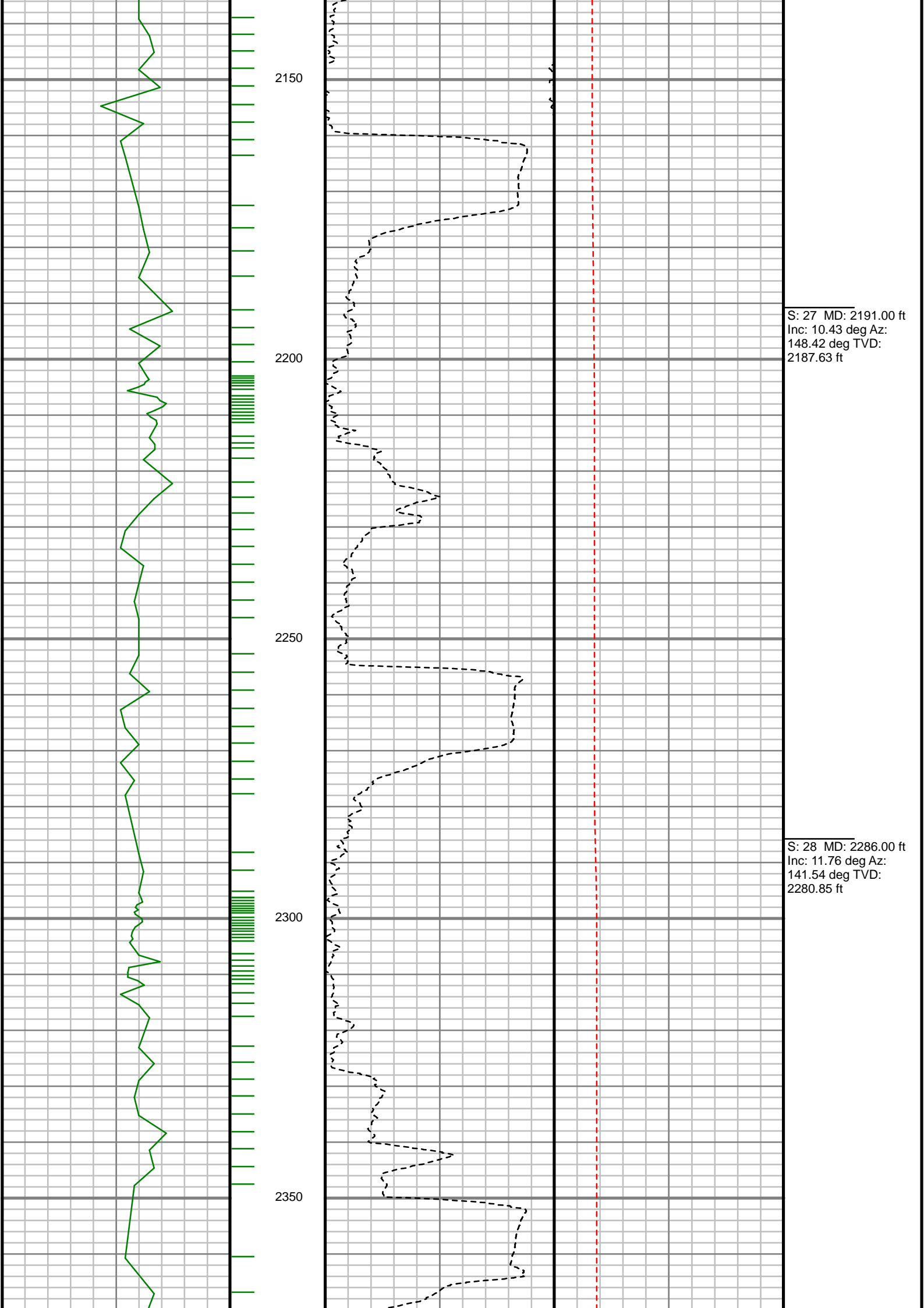
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs,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

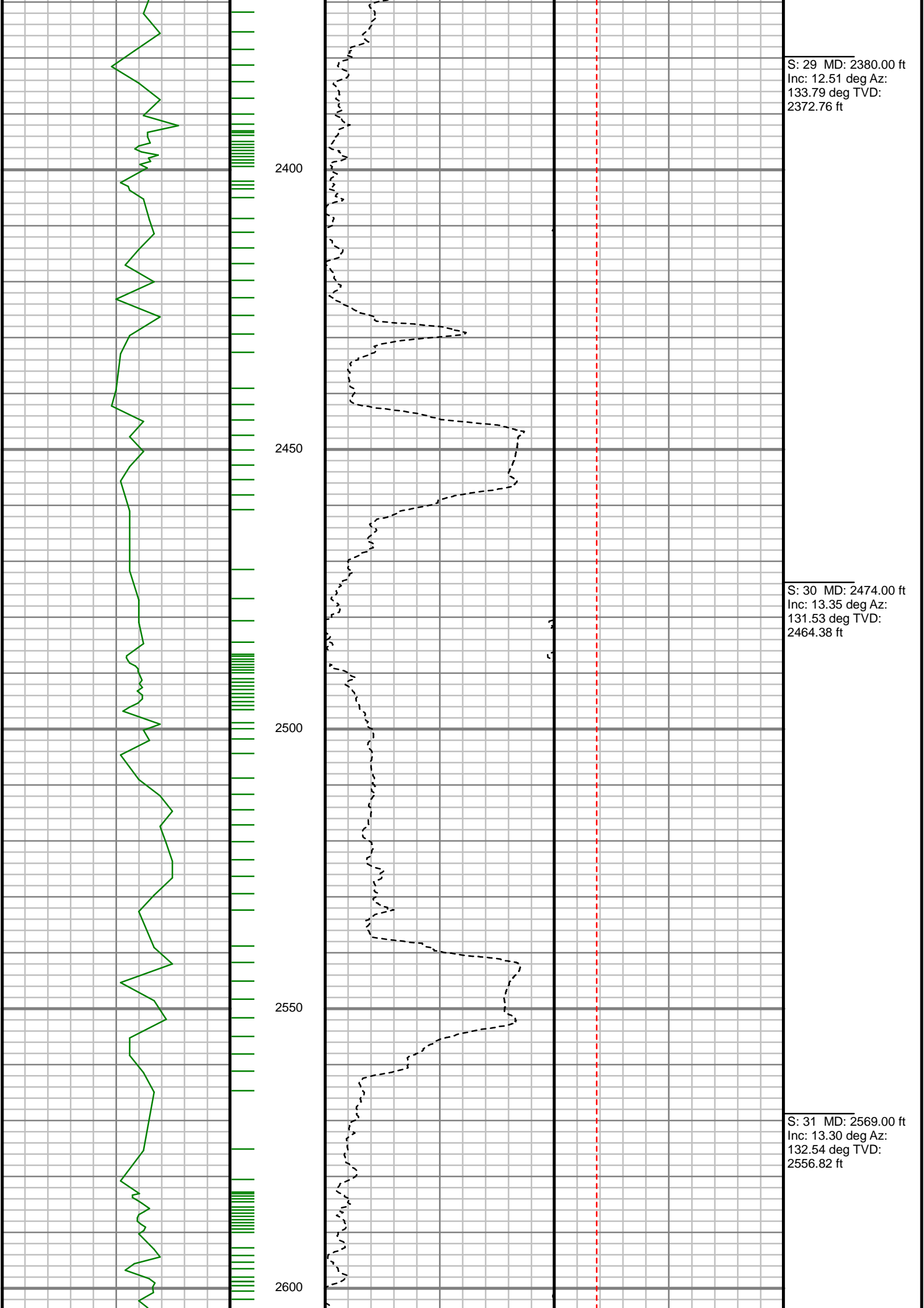
ANADARKO E&P ONSHORE LLC GOODIN 16N-B6HZ WATTENBERG FIELD WELD COUNTY, COLORADO 05-123-40750
--

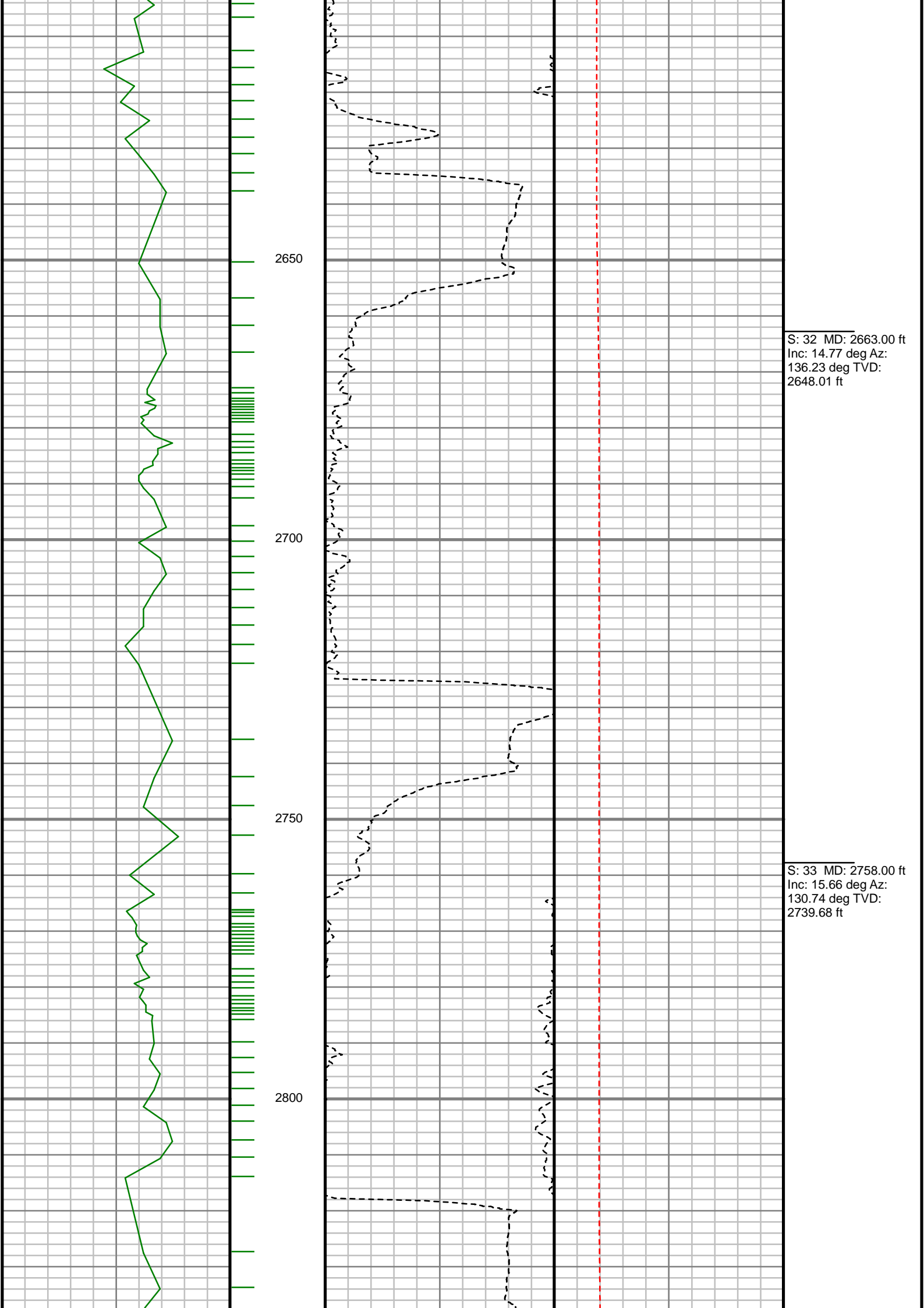


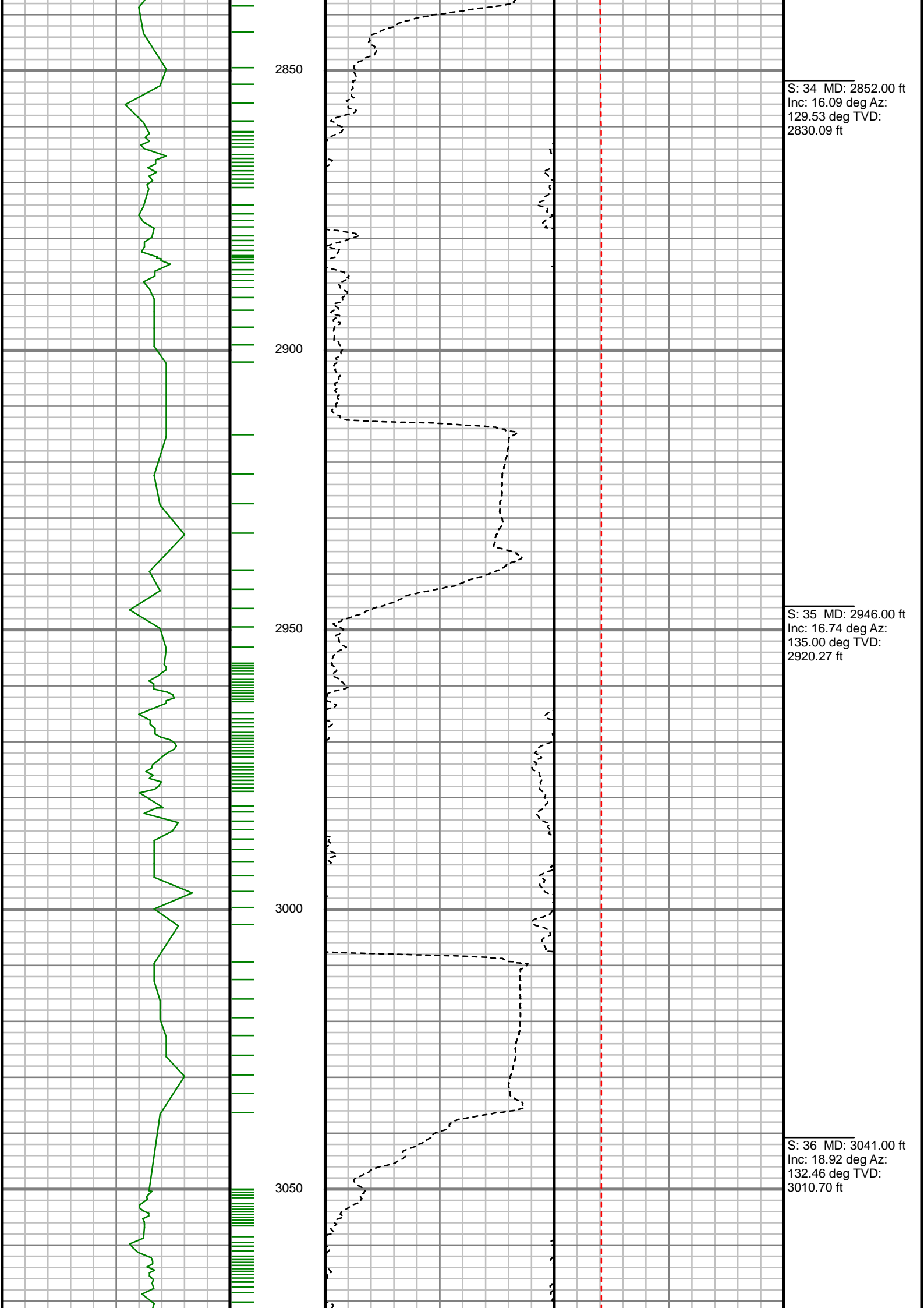




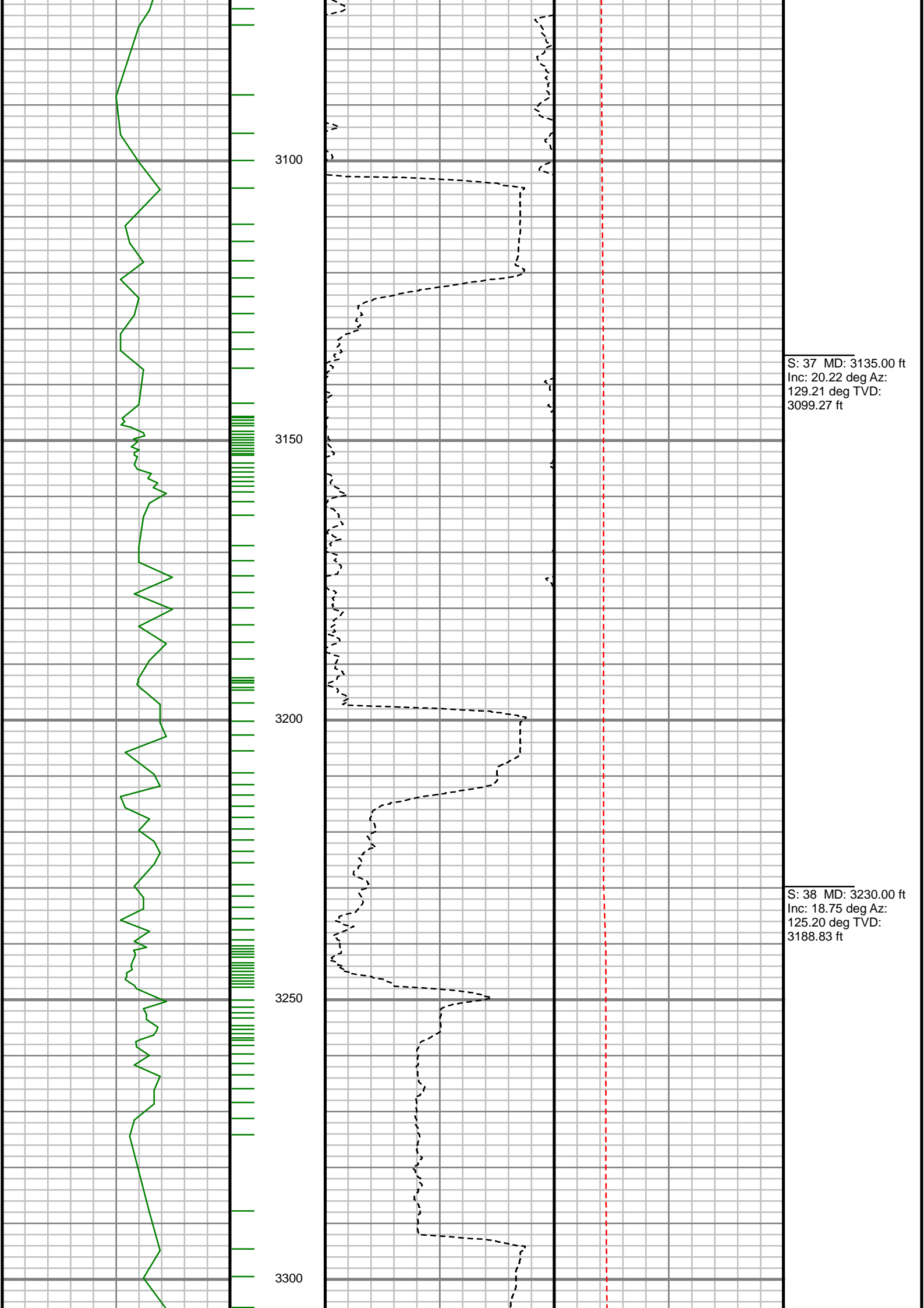


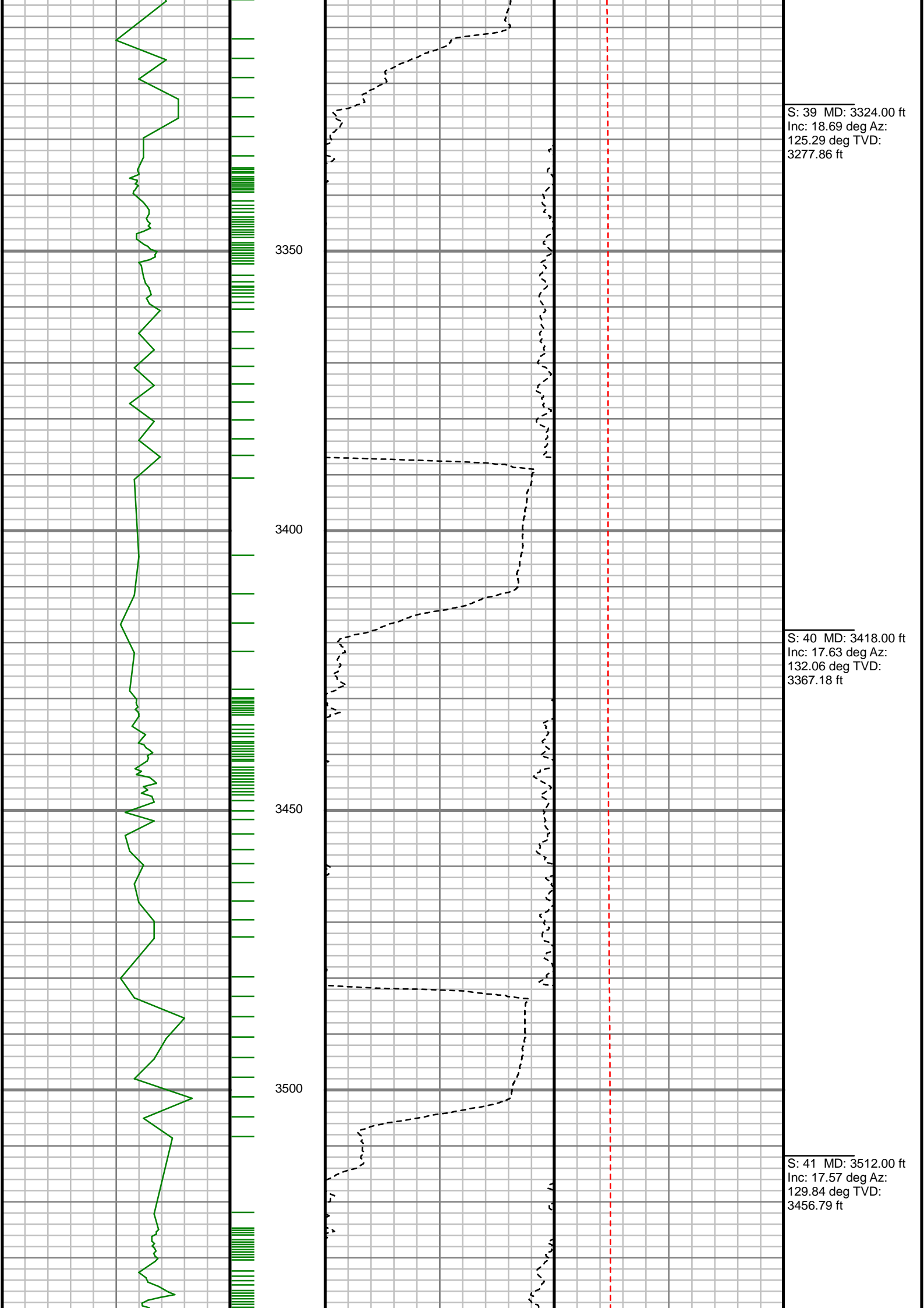


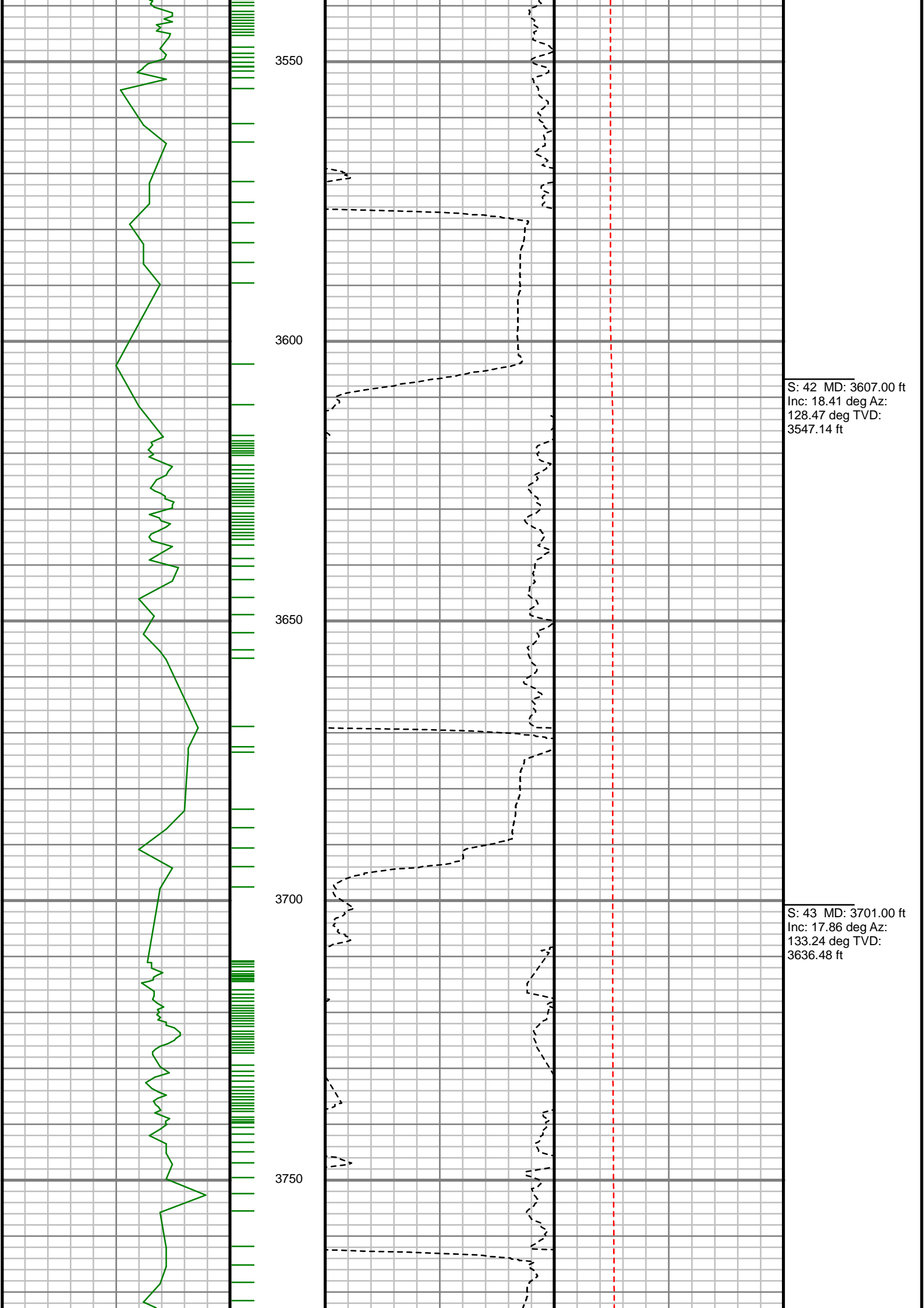


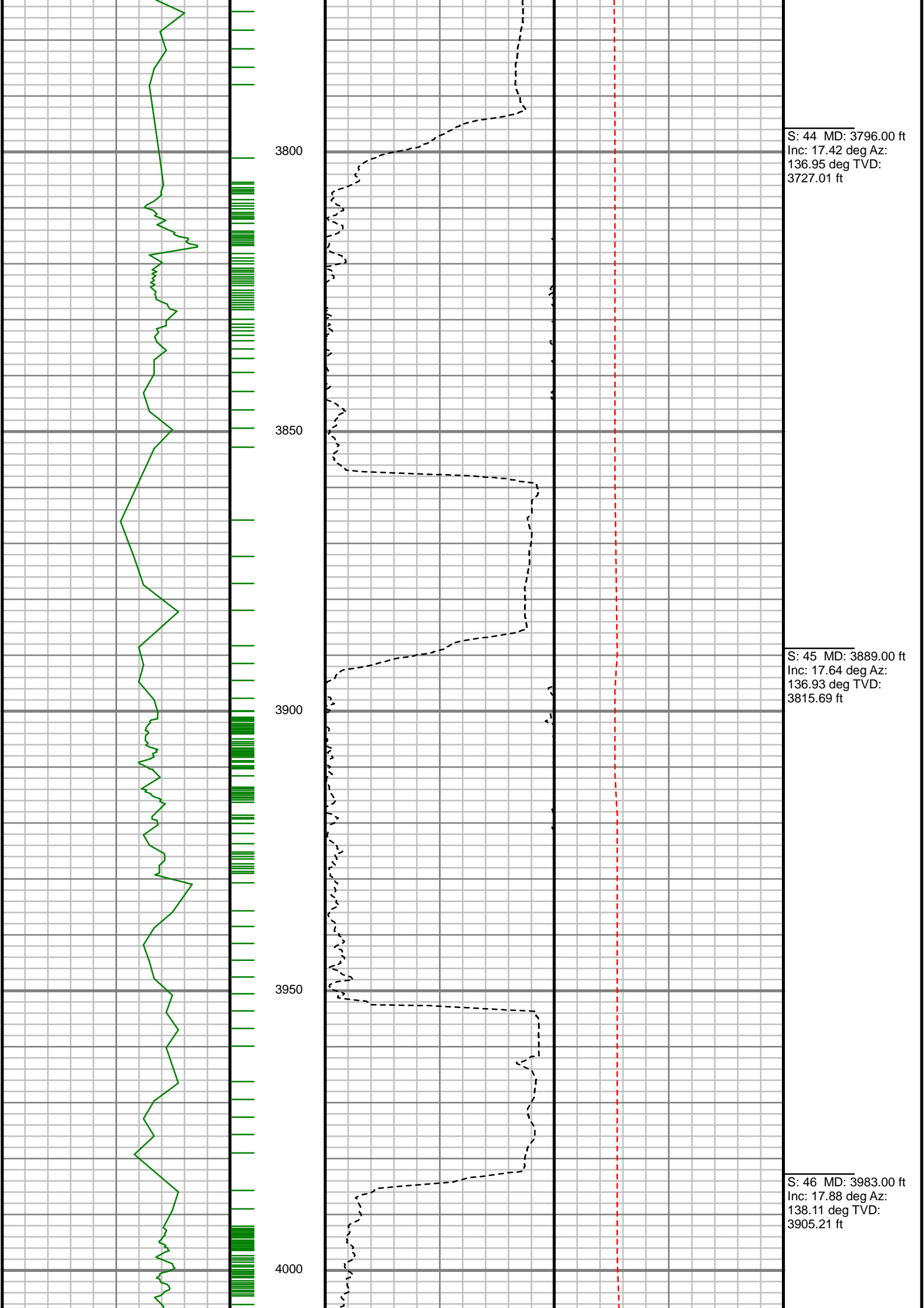


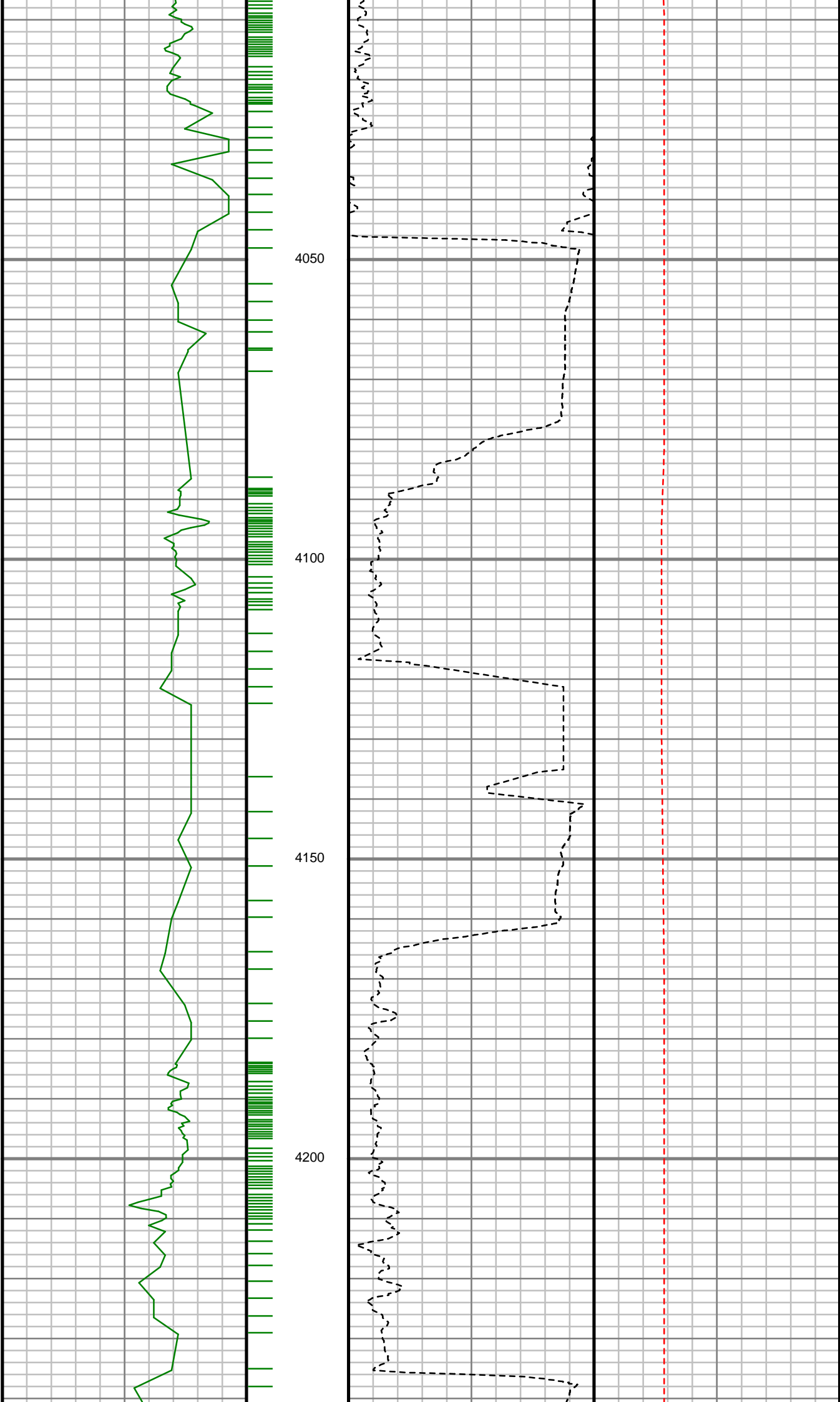






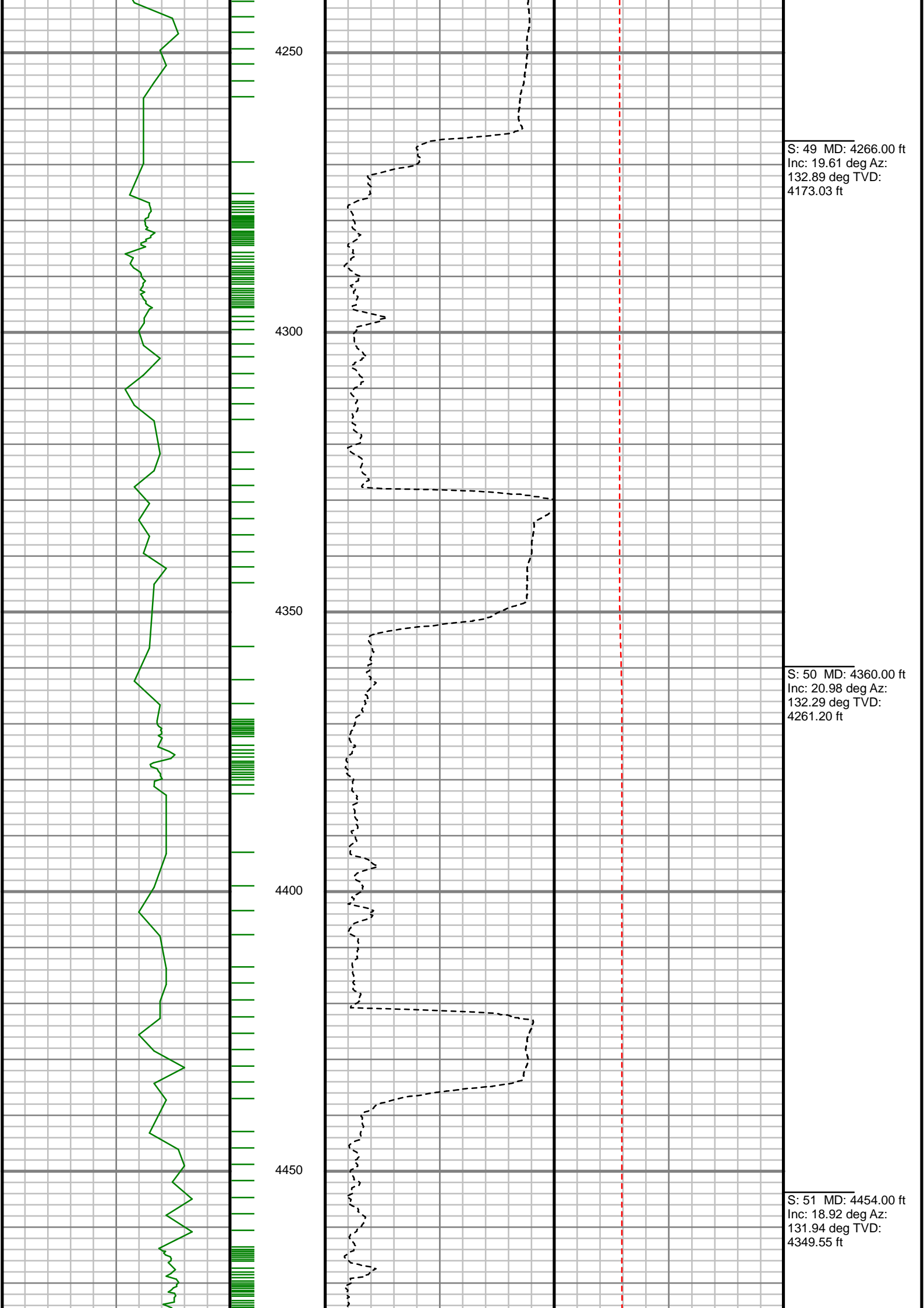


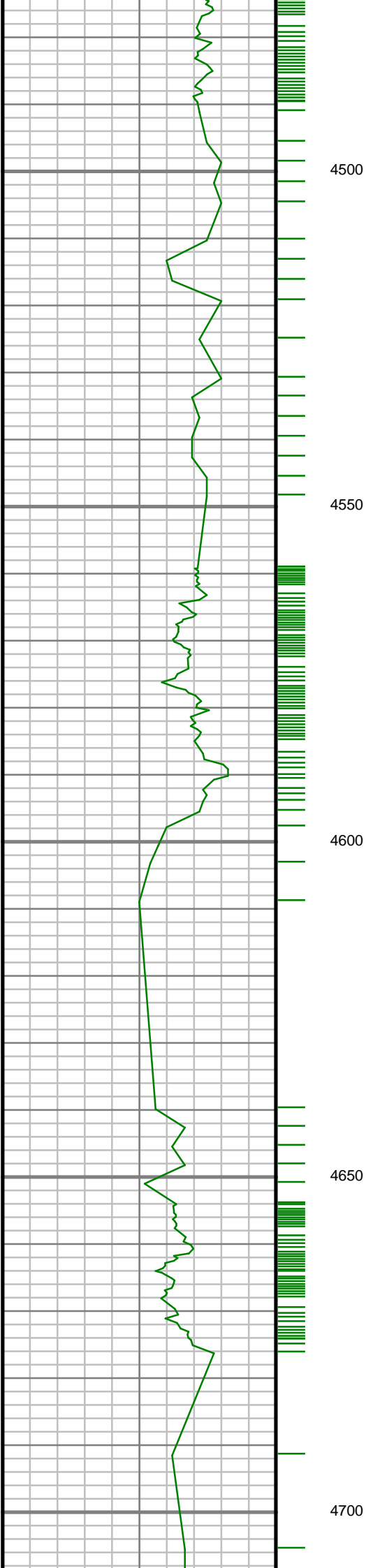




S: 47 MD: 4078.00 ft  
Inc: 19.24 deg Az:  
136.11 deg TVD:  
3995.27 ft

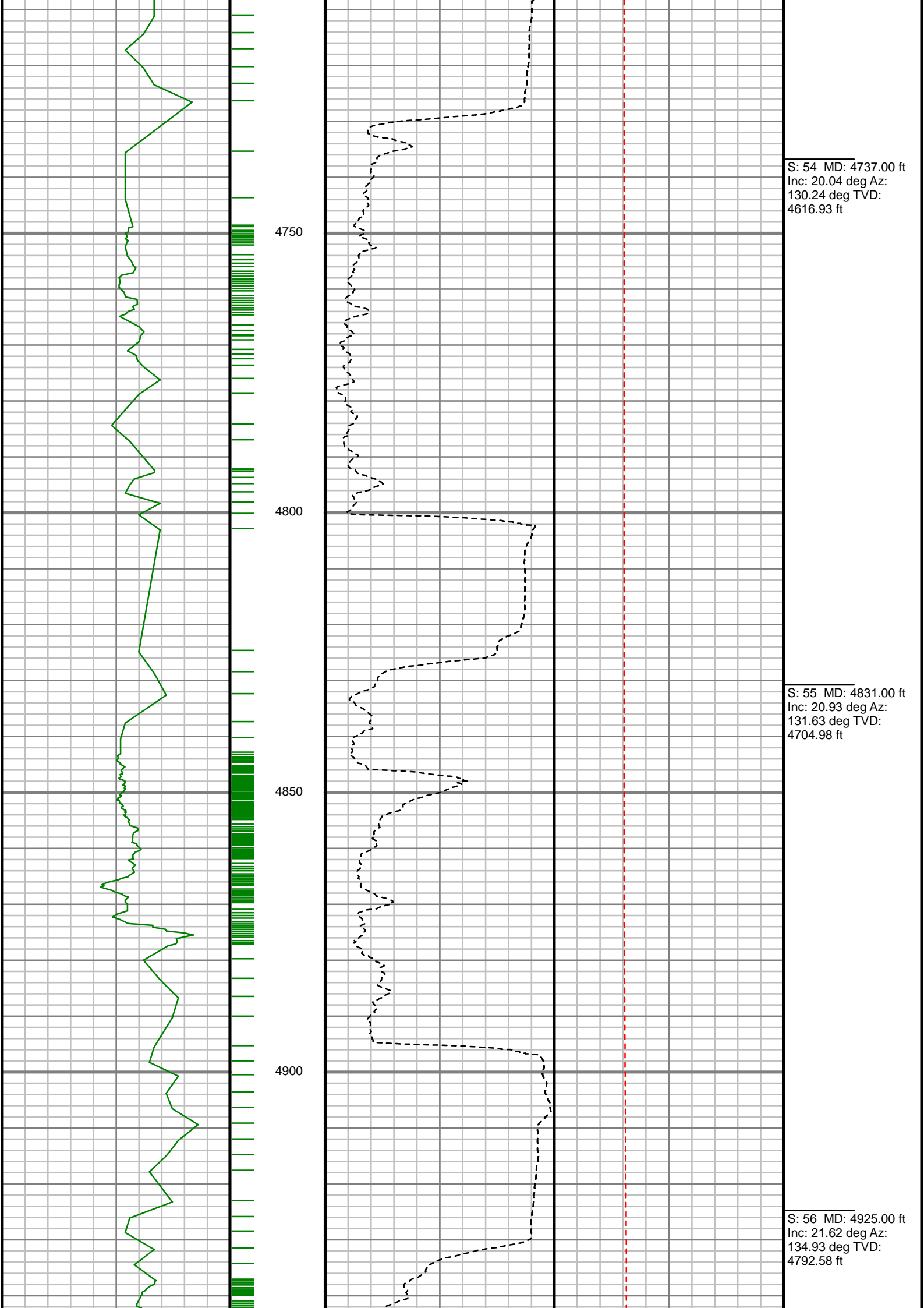
S: 48 MD: 4172.00 ft  
Inc: 18.56 deg Az:  
134.15 deg TVD:  
4084.20 ft



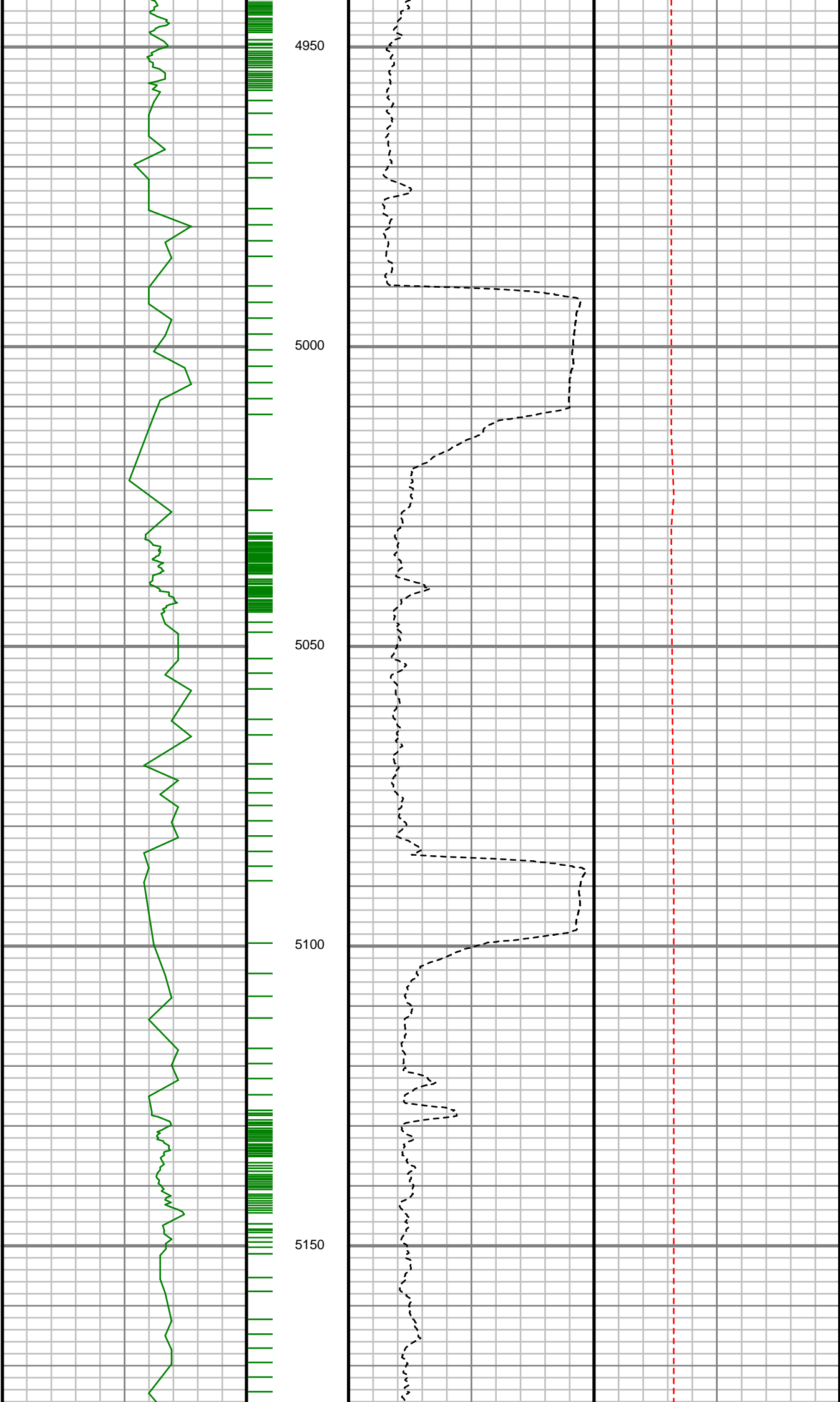


S: 52 MD: 4549.00 ft  
Inc: 18.36 deg Az:  
133.38 deg TVD:  
4439.57 ft

S: 53 MD: 4643.00 ft  
Inc: 19.53 deg Az:  
131.53 deg TVD:  
4528.48 ft

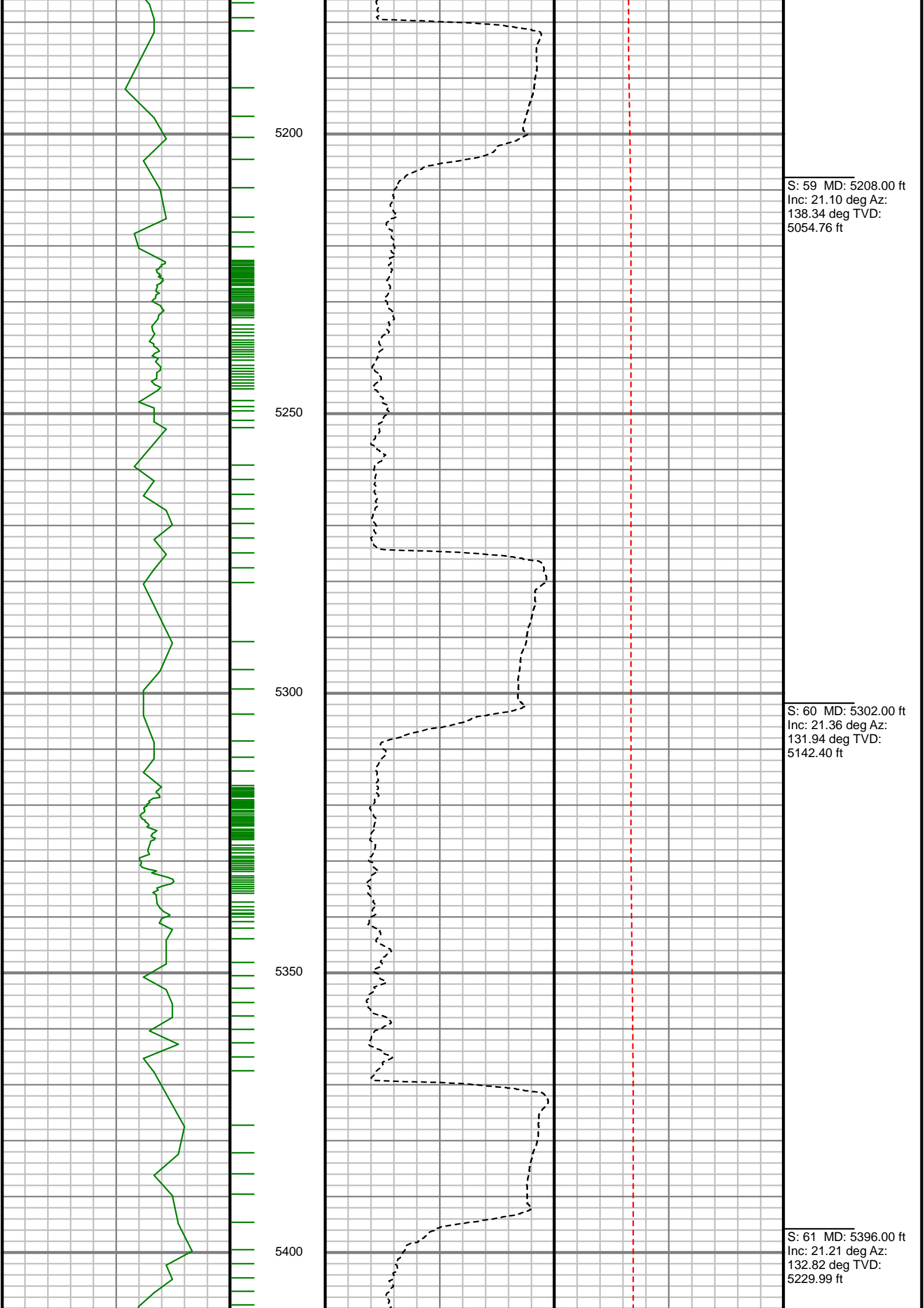


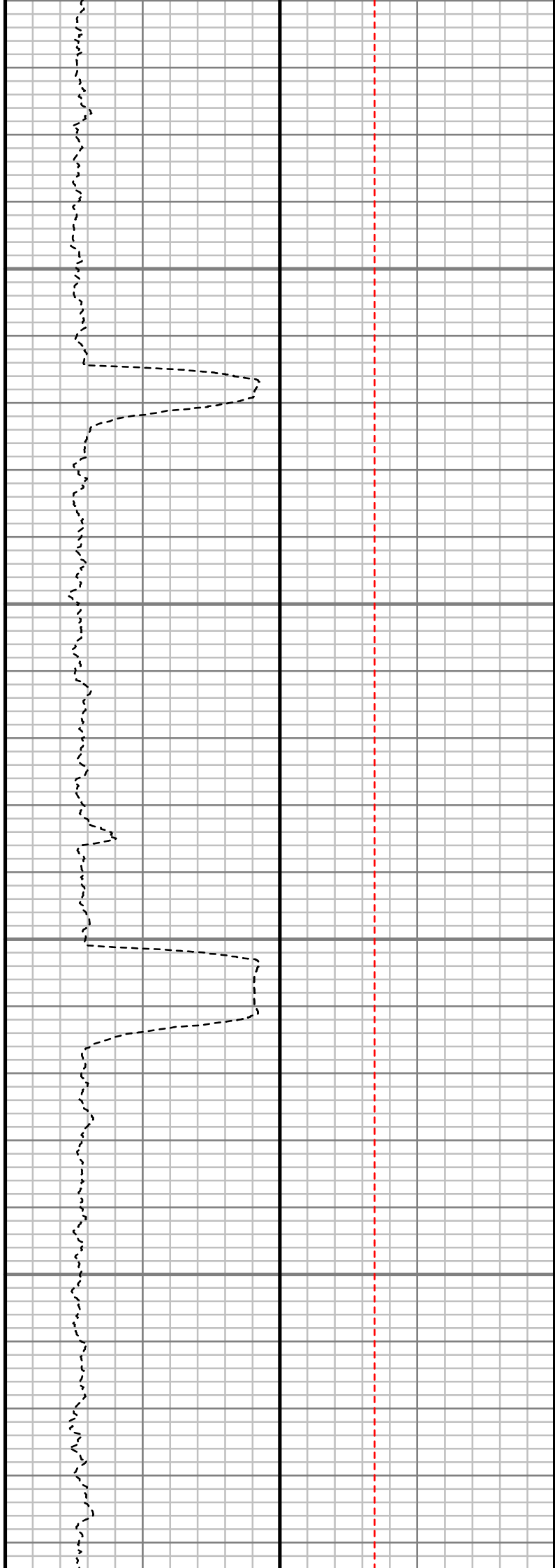
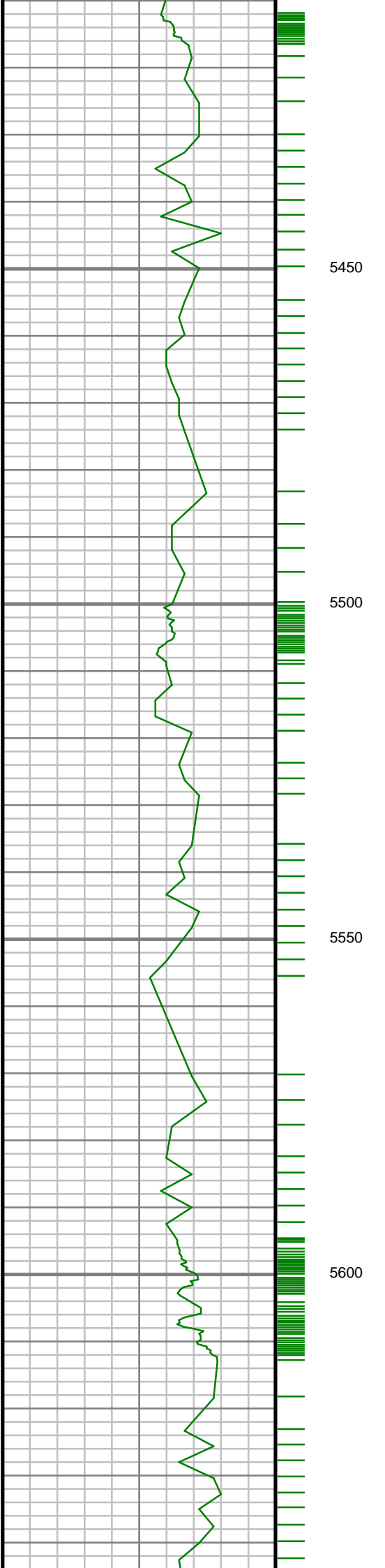




S: 57 MD: 5019.00 ft  
Inc: 23.35 deg Az:  
137.96 deg TVD:  
4879.43 ft

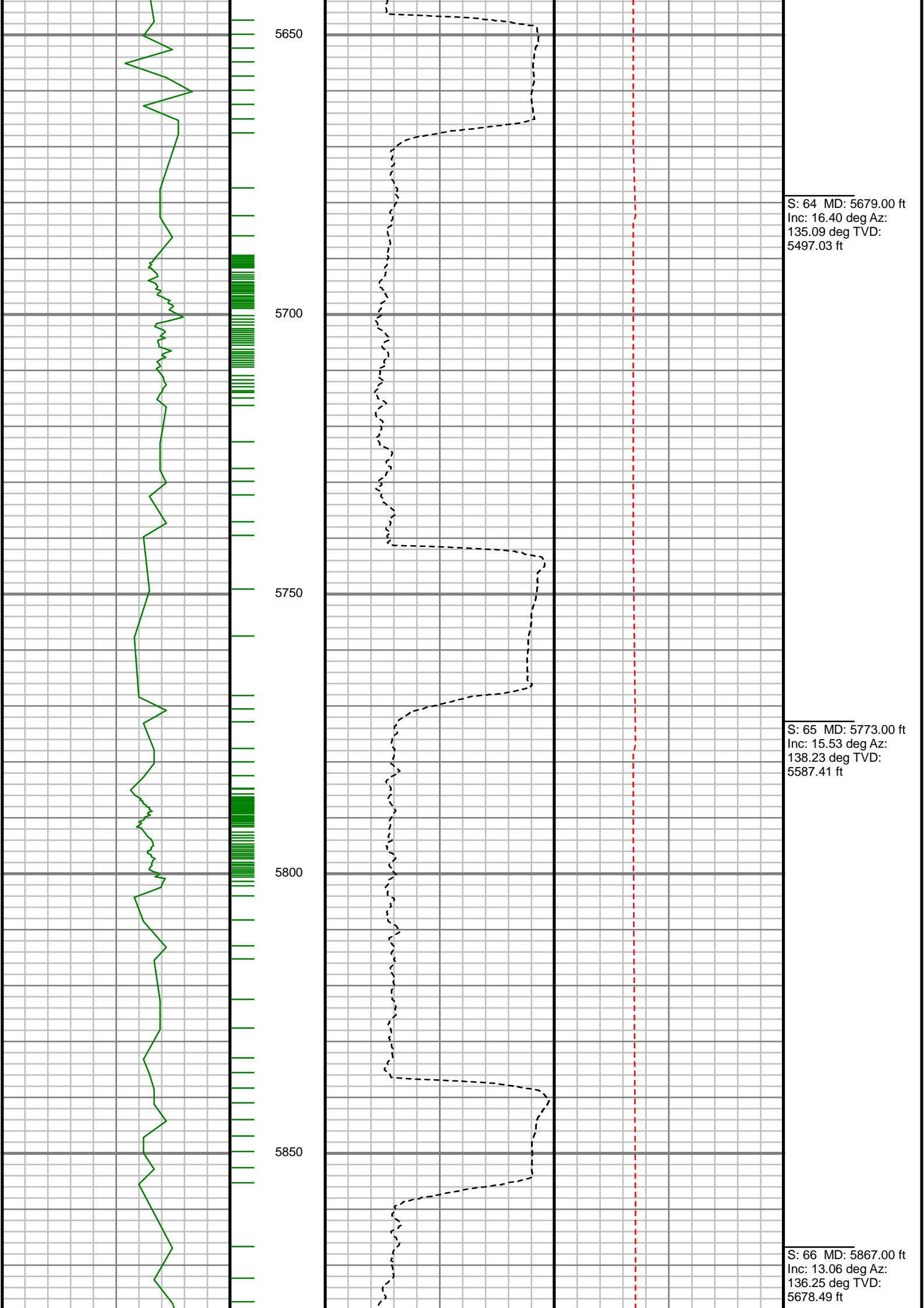
S: 58 MD: 5113.00 ft  
Inc: 21.61 deg Az:  
138.77 deg TVD:  
4966.29 ft

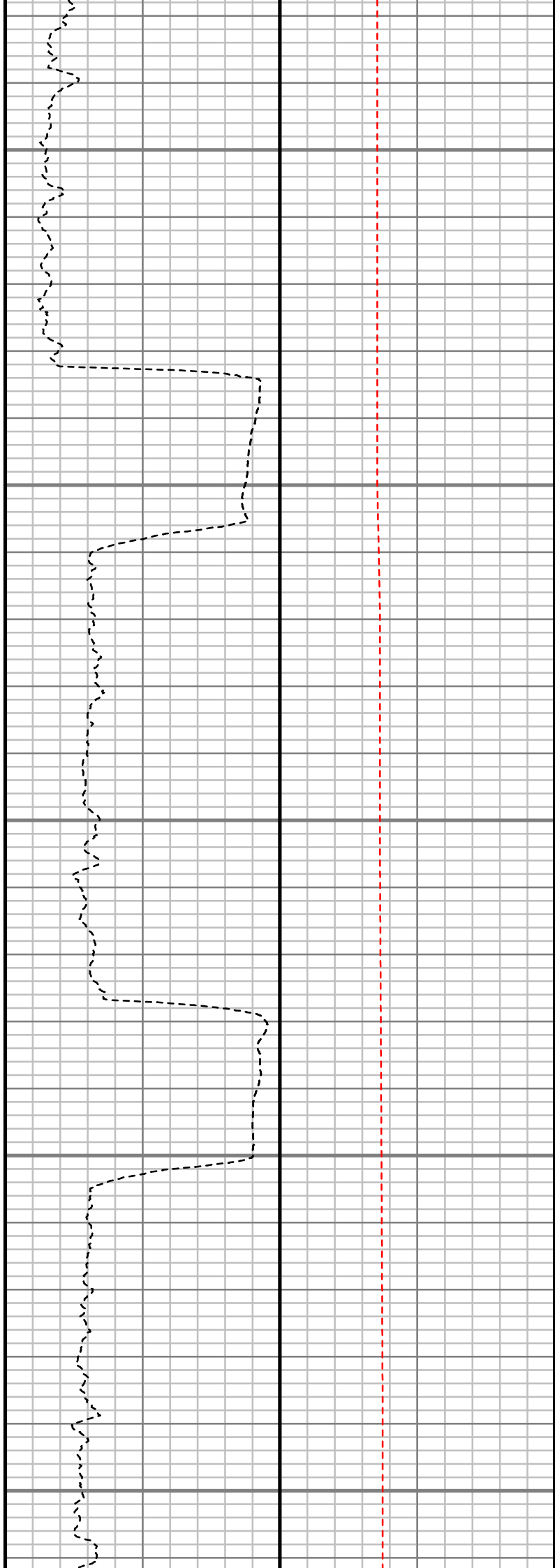
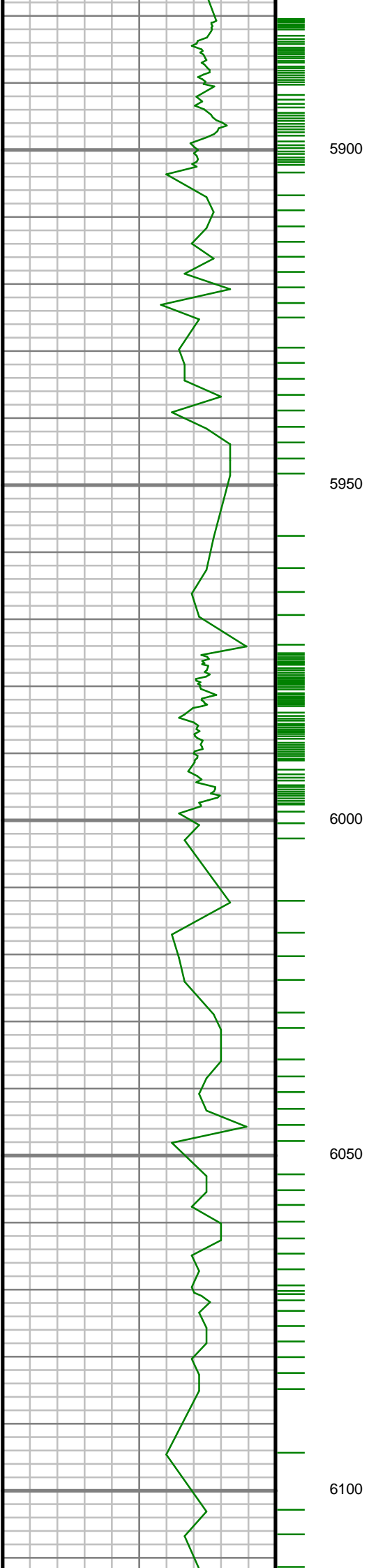




S: 62 MD: 5491.00 ft  
Inc: 20.79 deg Az:  
133.41 deg TVD:  
5318.68 ft

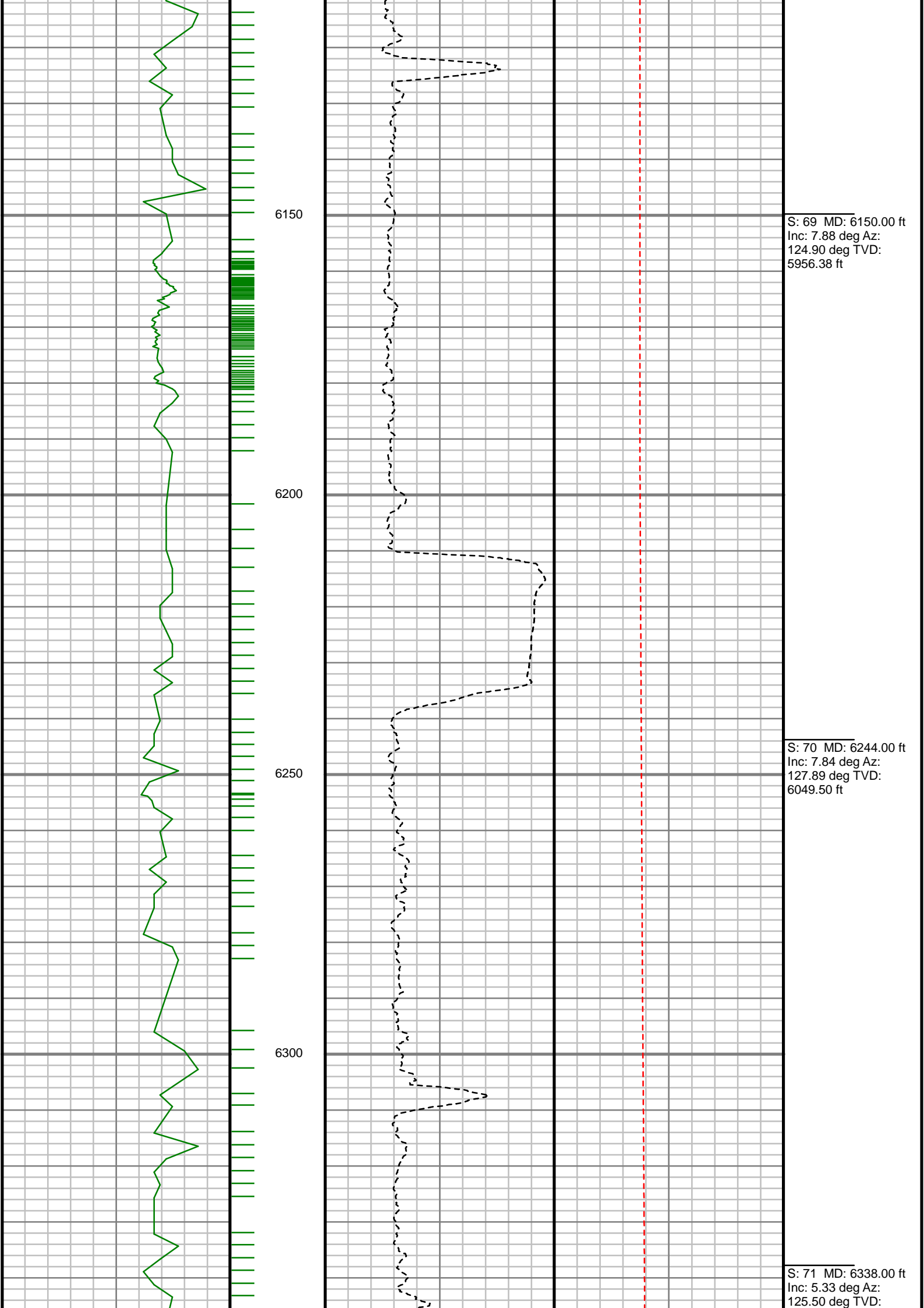
S: 63 MD: 5585.00 ft  
Inc: 18.20 deg Az:  
135.39 deg TVD:  
5407.29 ft

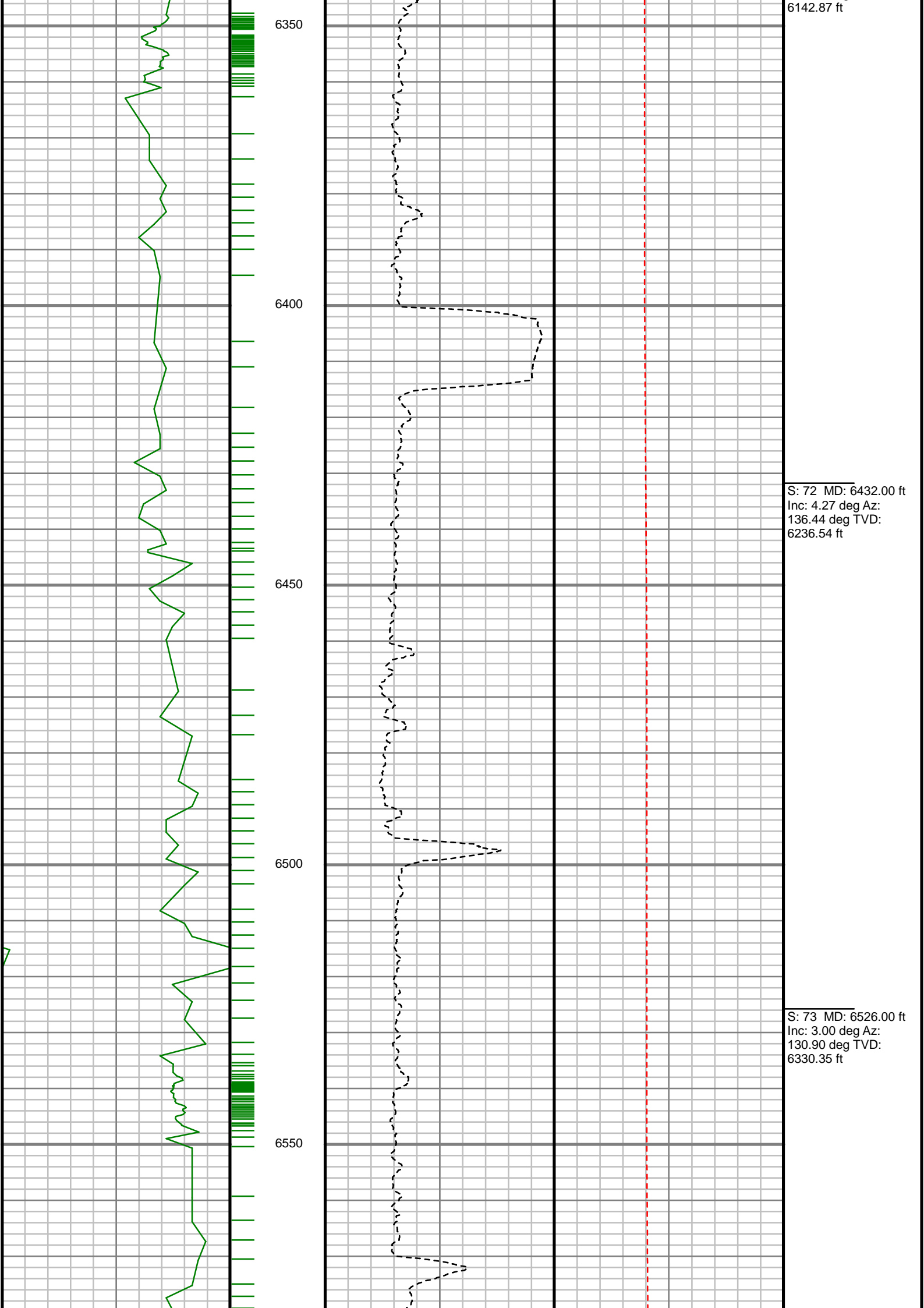


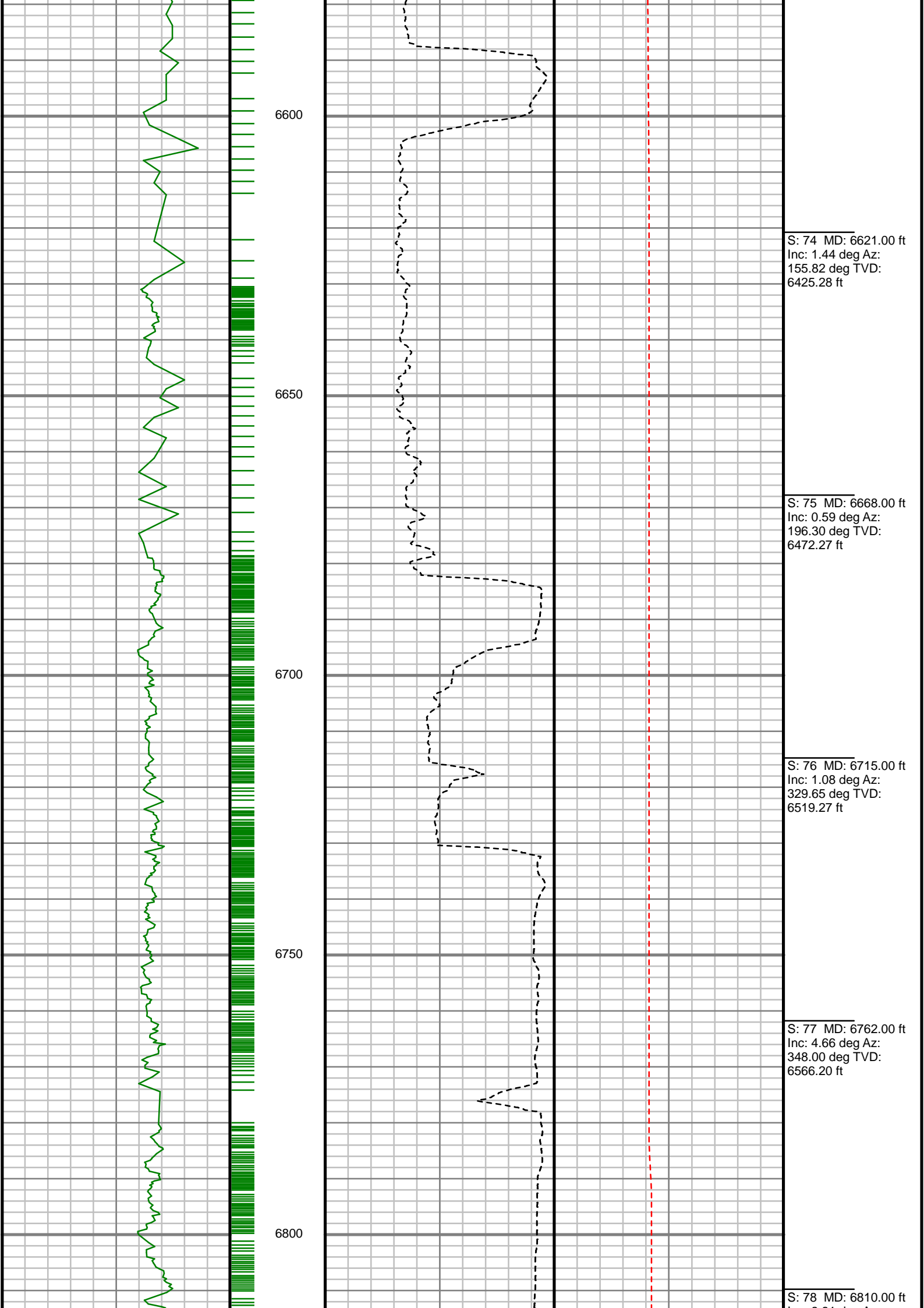


S: 67 MD: 5961.00 ft  
Inc: 11.43 deg Az:  
135.52 deg TVD:  
5770.35 ft

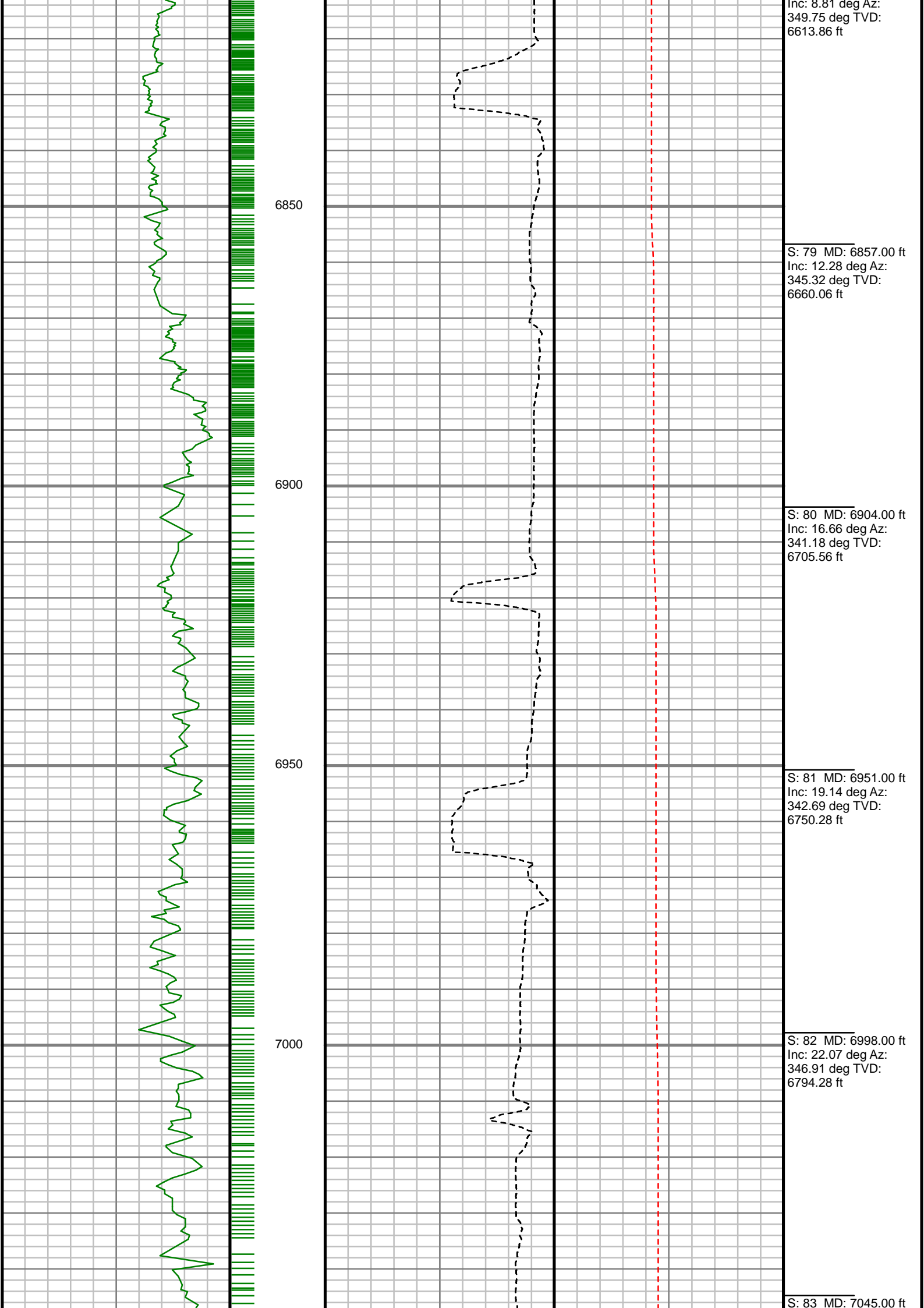
S: 68 MD: 6055.00 ft  
Inc: 10.58 deg Az:  
133.15 deg TVD:  
5862.62 ft

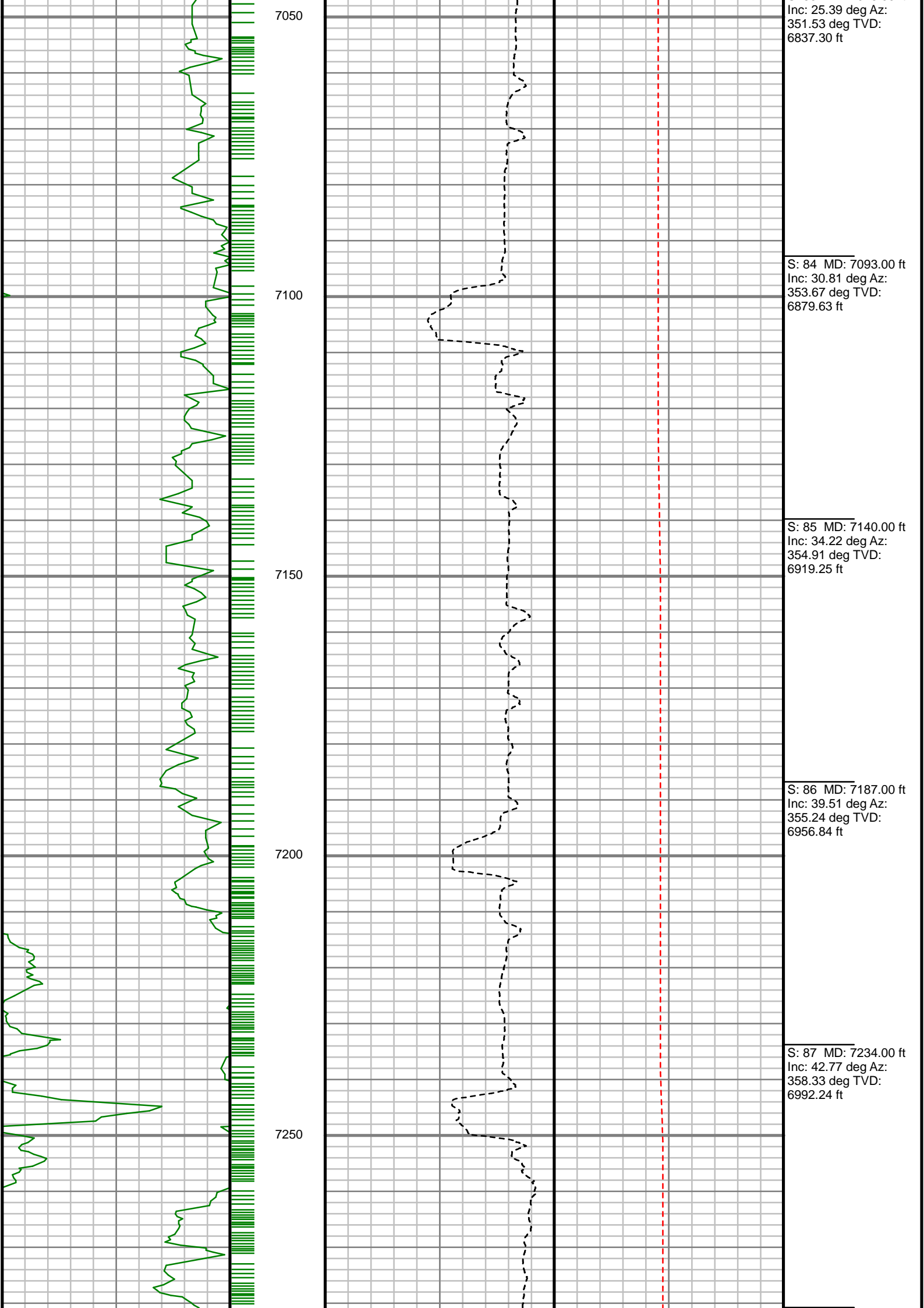


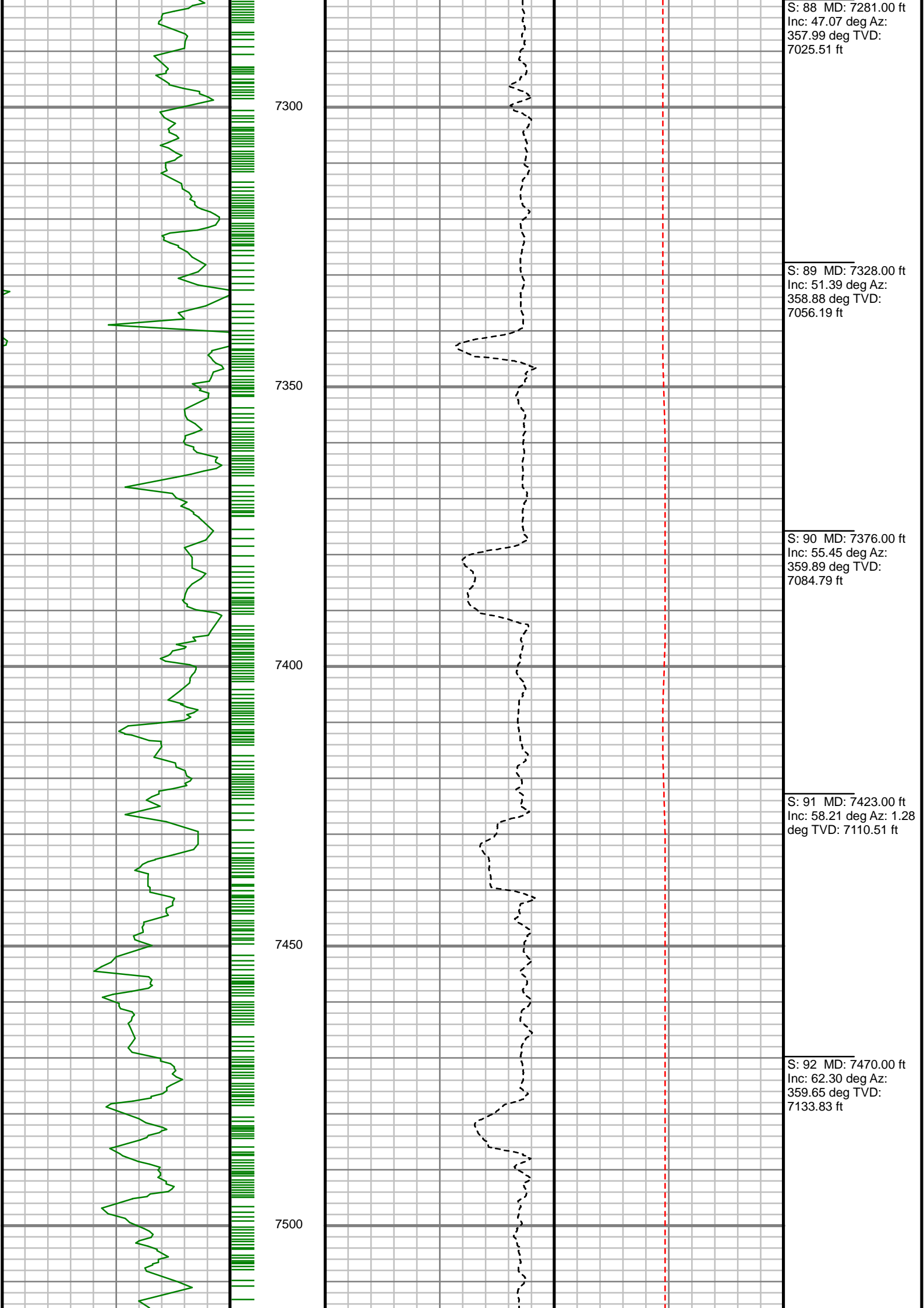


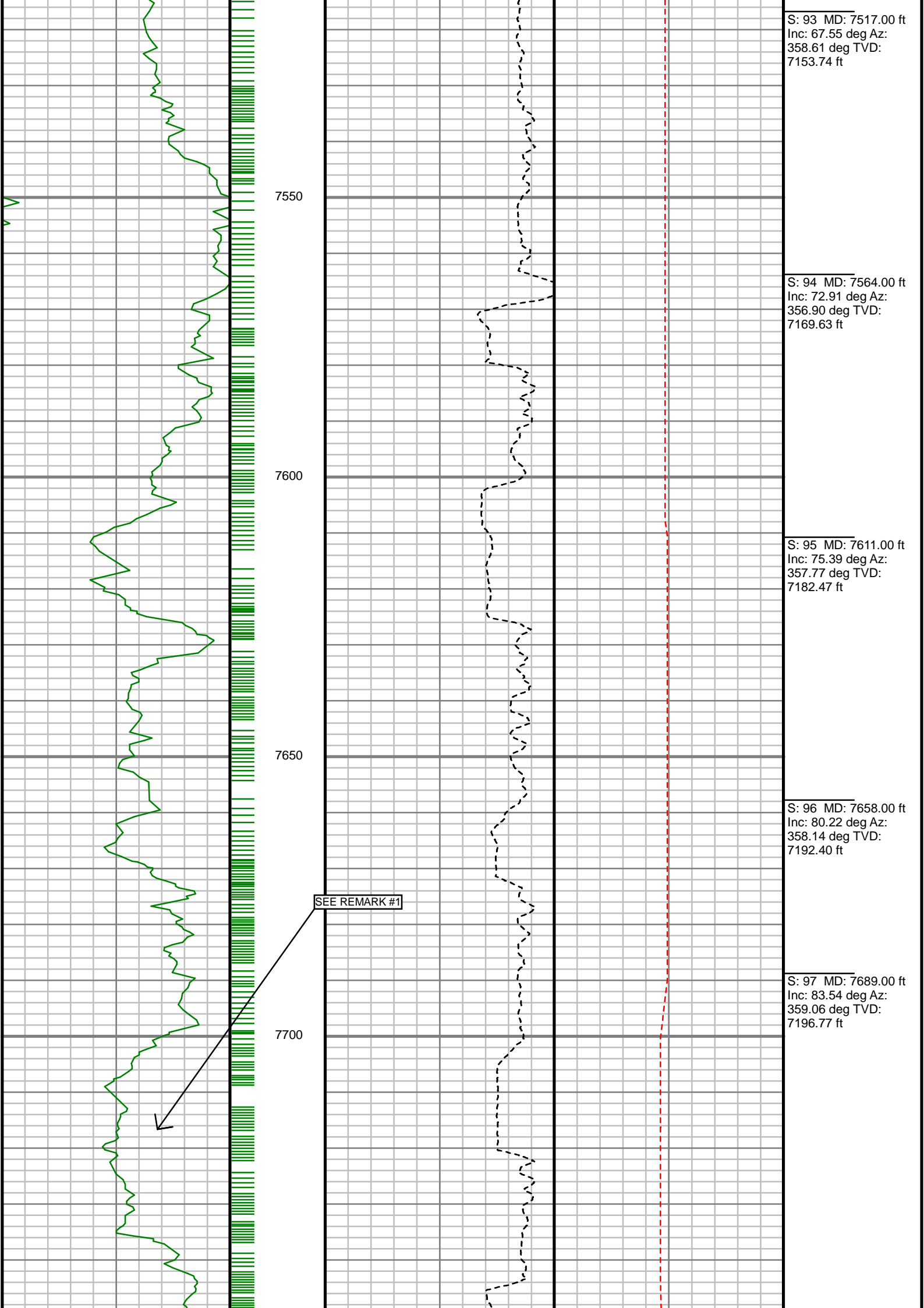












S: 93 MD: 7517.00 ft  
Inc: 67.55 deg Az:  
358.61 deg TVD:  
7153.74 ft

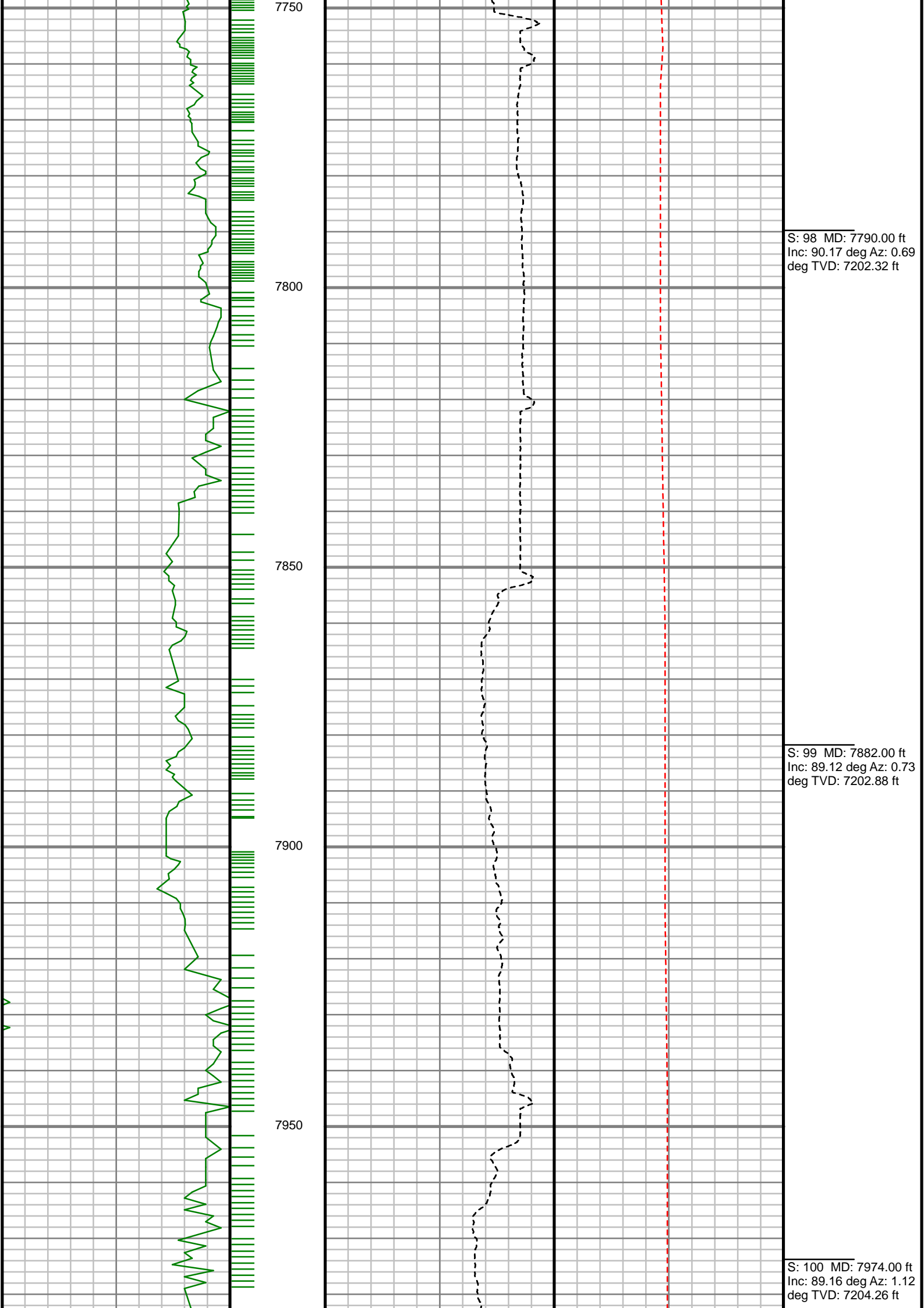
S: 94 MD: 7564.00 ft  
Inc: 72.91 deg Az:  
356.90 deg TVD:  
7169.63 ft

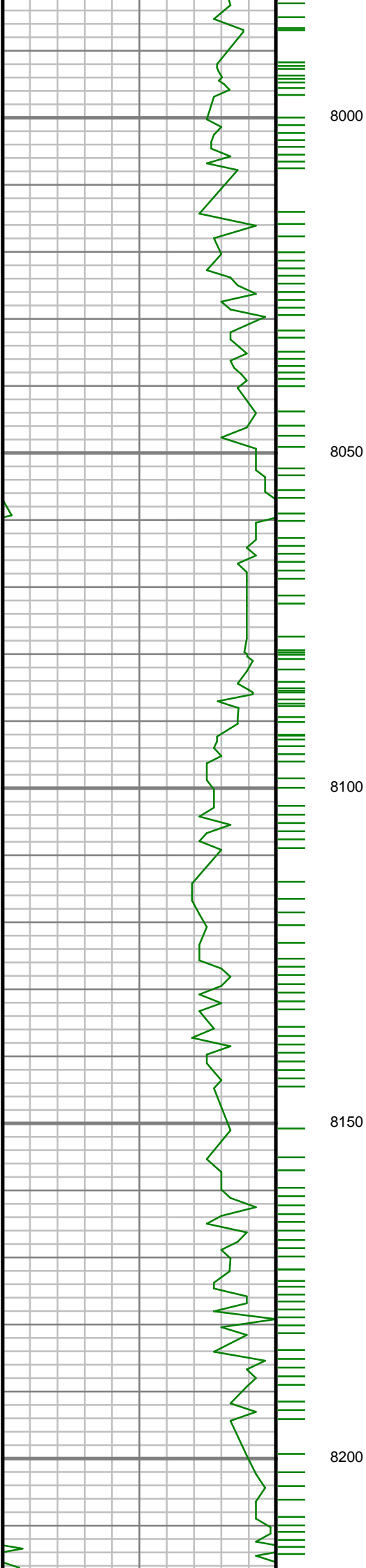
S: 95 MD: 7611.00 ft  
Inc: 75.39 deg Az:  
357.77 deg TVD:  
7182.47 ft

S: 96 MD: 7658.00 ft  
Inc: 80.22 deg Az:  
358.14 deg TVD:  
7192.40 ft

S: 97 MD: 7689.00 ft  
Inc: 83.54 deg Az:  
359.06 deg TVD:  
7196.77 ft

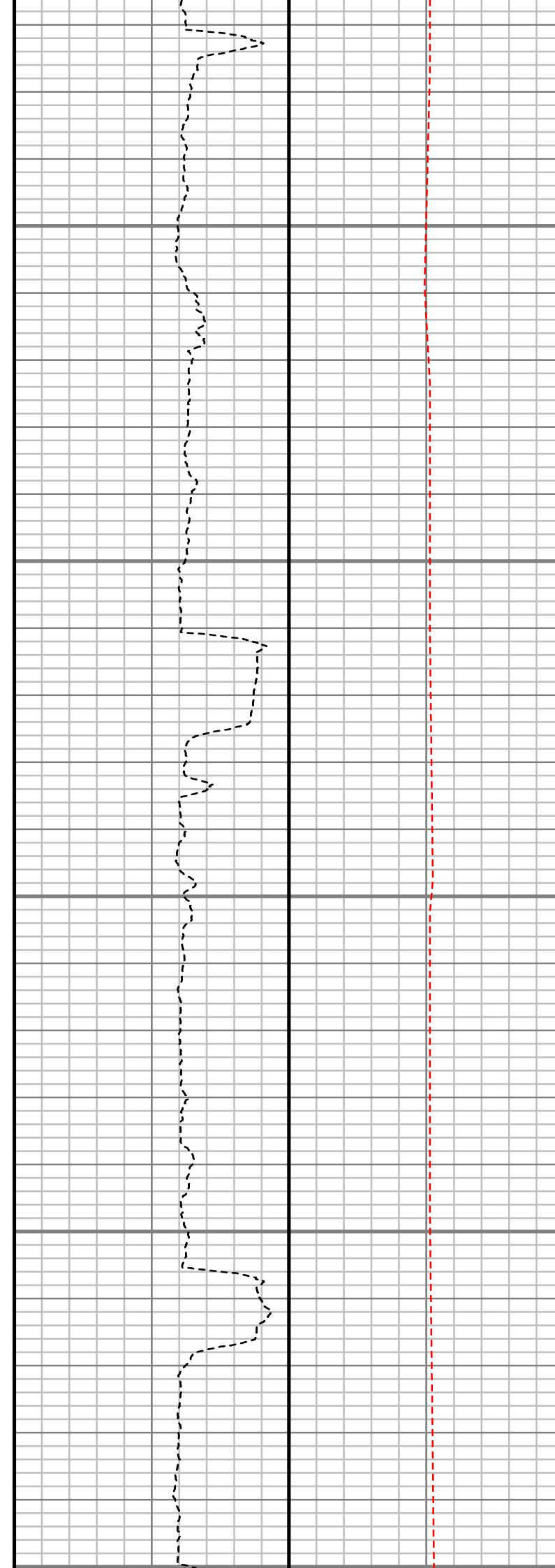
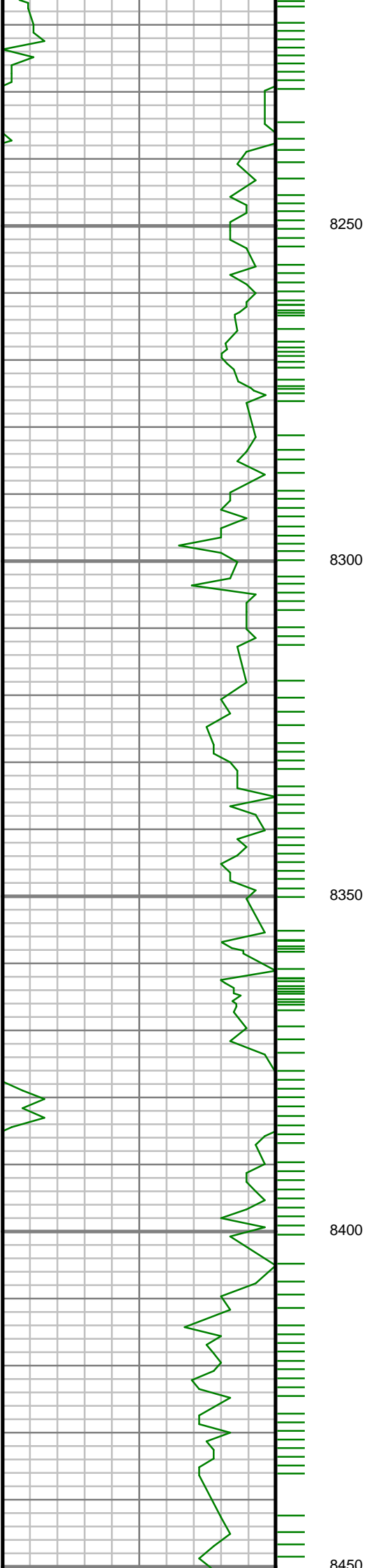
SEE REMARK #1





S: 101 MD: 8066.00 ft  
Inc: 90.30 deg Az: 1.75  
deg TVD: 7204.69 ft

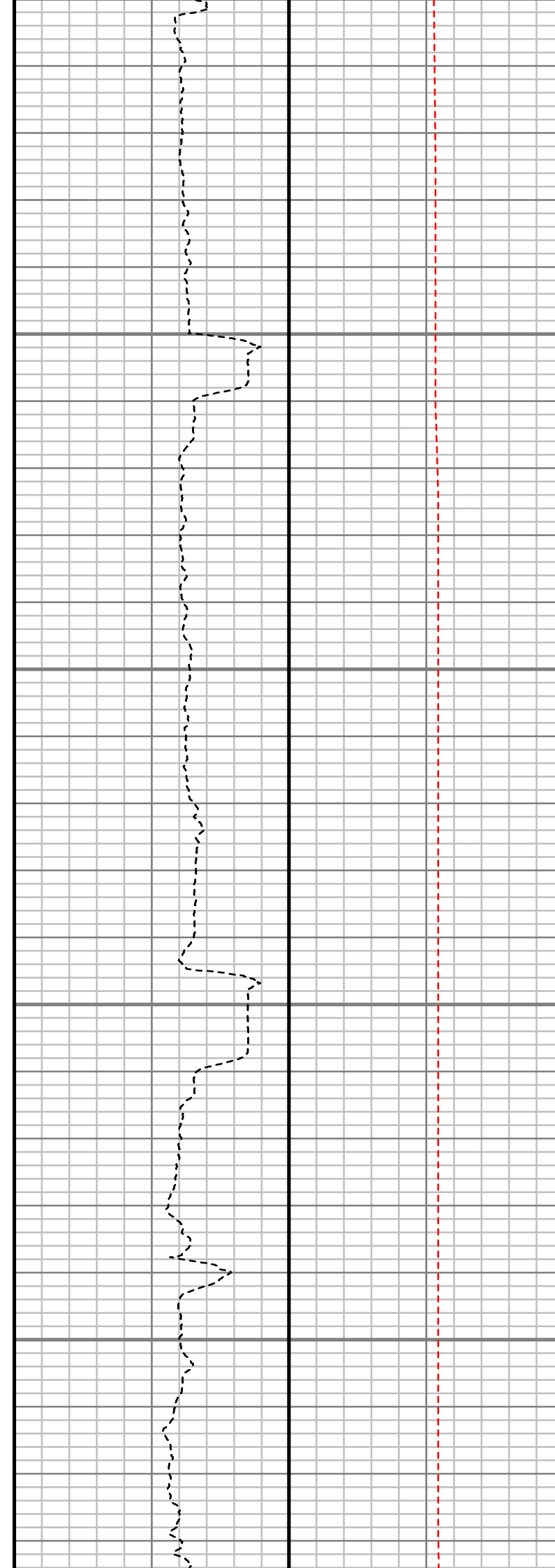
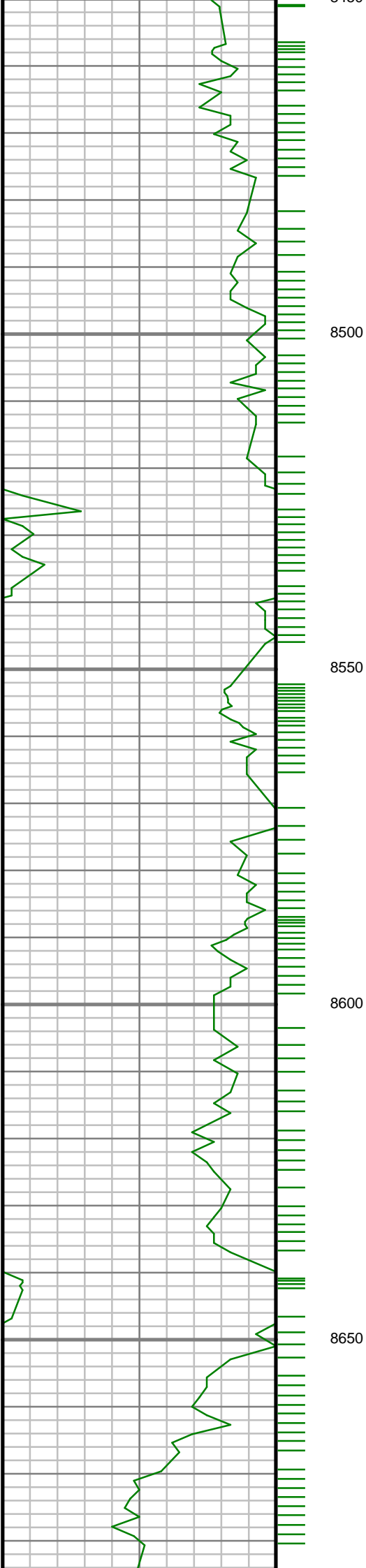
S: 102 MD: 8159.00 ft  
Inc: 89.60 deg Az: 1.09  
deg TVD: 7204.78 ft



S: 103 MD: 8253.00 ft  
Inc: 90.37 deg Az: 0.76  
deg TVD: 7204.80 ft

S: 104 MD: 8348.00 ft  
Inc: 87.61 deg Az: 0.29  
deg TVD: 7206.48 ft

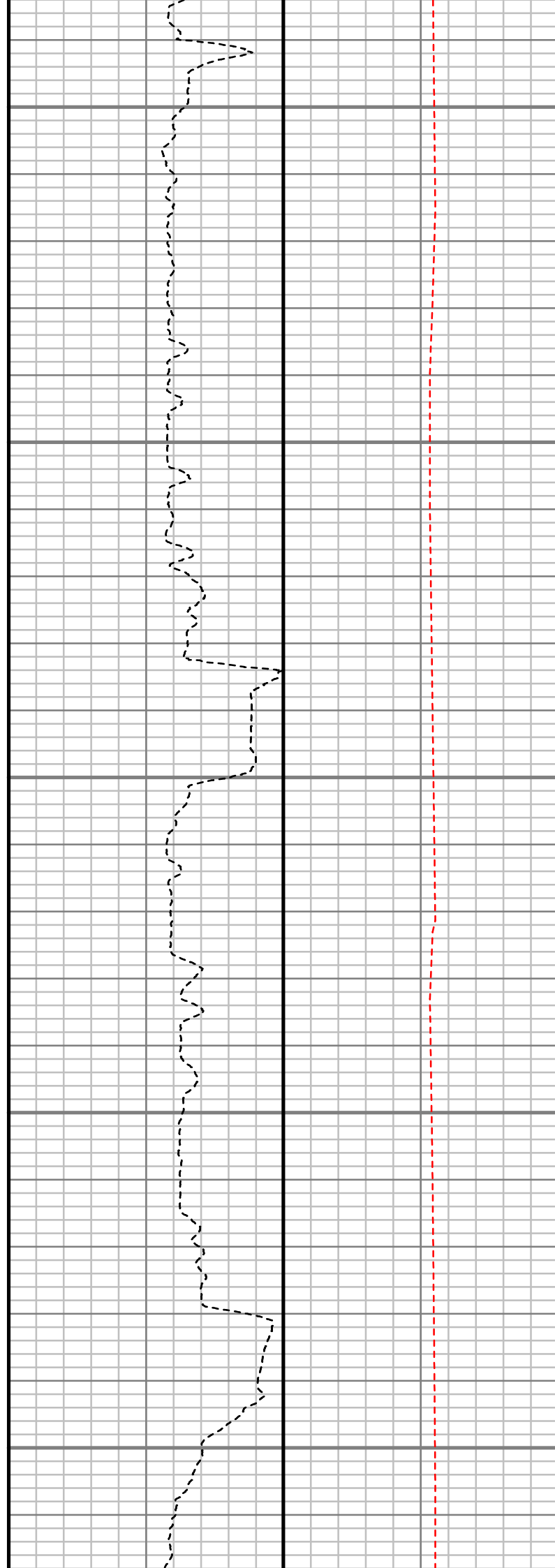
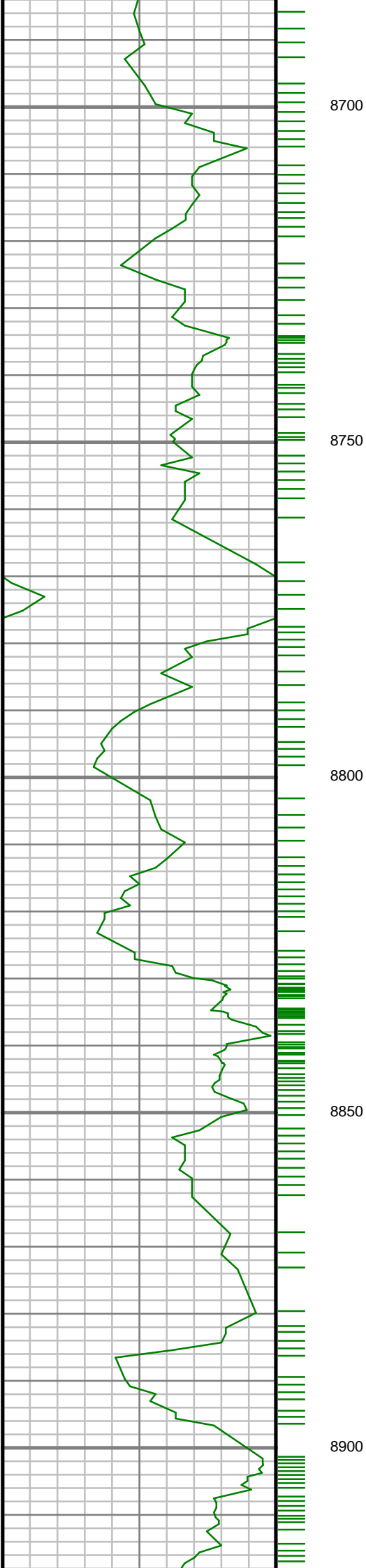
S: 105 MD: 8442.00 ft  
Inc: 89.03 deg Az: 0.81  
deg TVD: 7209.24 ft



S: 106 MD: 8536.00 ft  
Inc: 89.26 deg Az:  
359.96 deg TVD:  
7210.64 ft

S: 107 MD: 8631.00 ft  
Inc: 90.20 deg Az:  
359.99 deg TVD:  
7211.09 ft

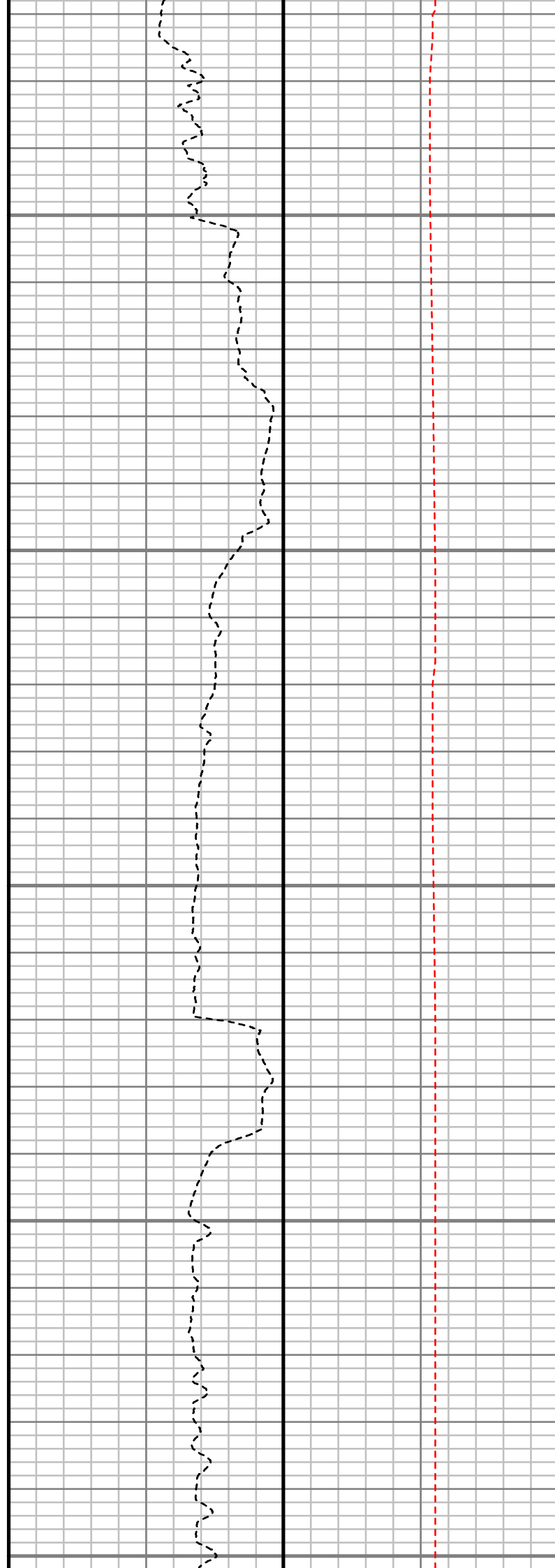
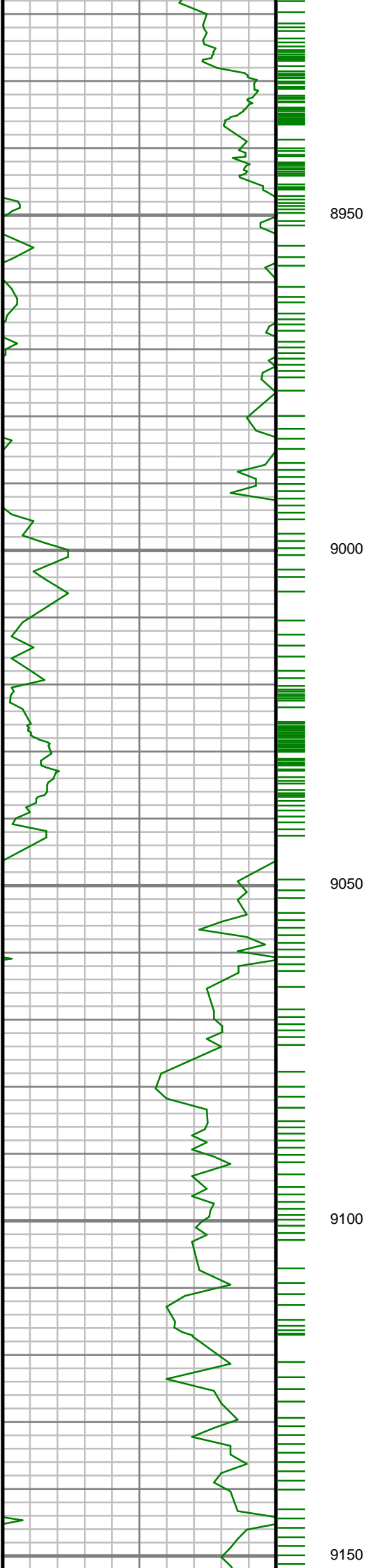




S: 108 MD: 8725.00 ft  
Inc: 90.84 deg Az:  
358.77 deg TVD:  
7210.24 ft

S: 109 MD: 8820.00 ft  
Inc: 90.94 deg Az:  
359.86 deg TVD:  
7208.76 ft

S: 110 MD: 8915.00 ft



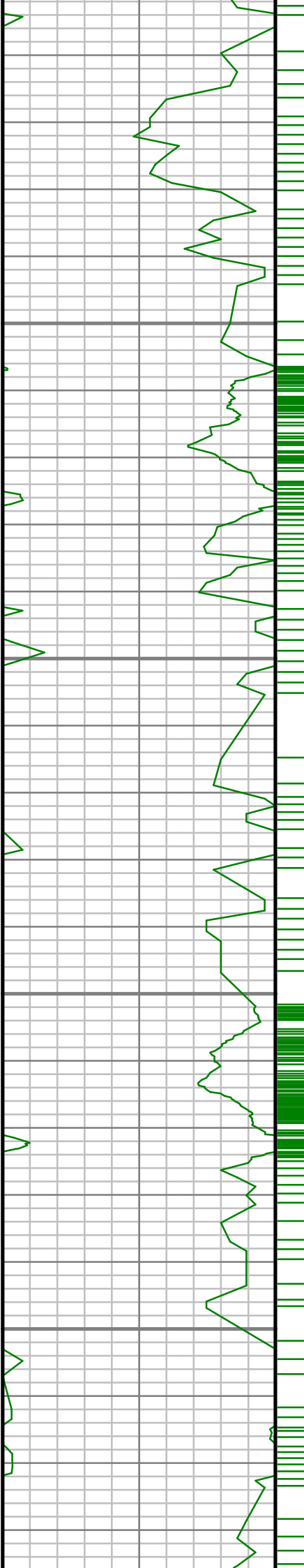
Inc: 90.91 deg Az:  
359.51 deg TVD:  
7207.23 ft

---

S: 111 MD: 9009.00 ft  
Inc: 89.60 deg Az:  
359.74 deg TVD:  
7206.82 ft

---

S: 112 MD: 9104.00 ft  
Inc: 89.67 deg Az:  
359.84 deg TVD:  
7207.43 ft

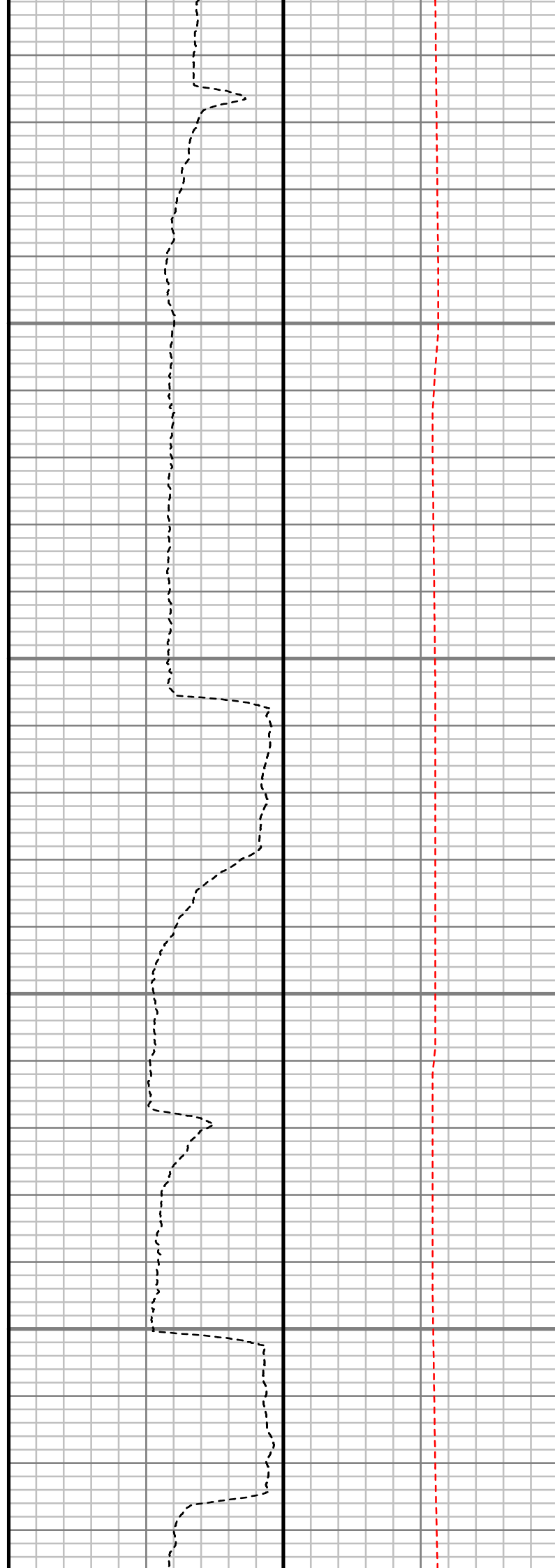


9200

9250

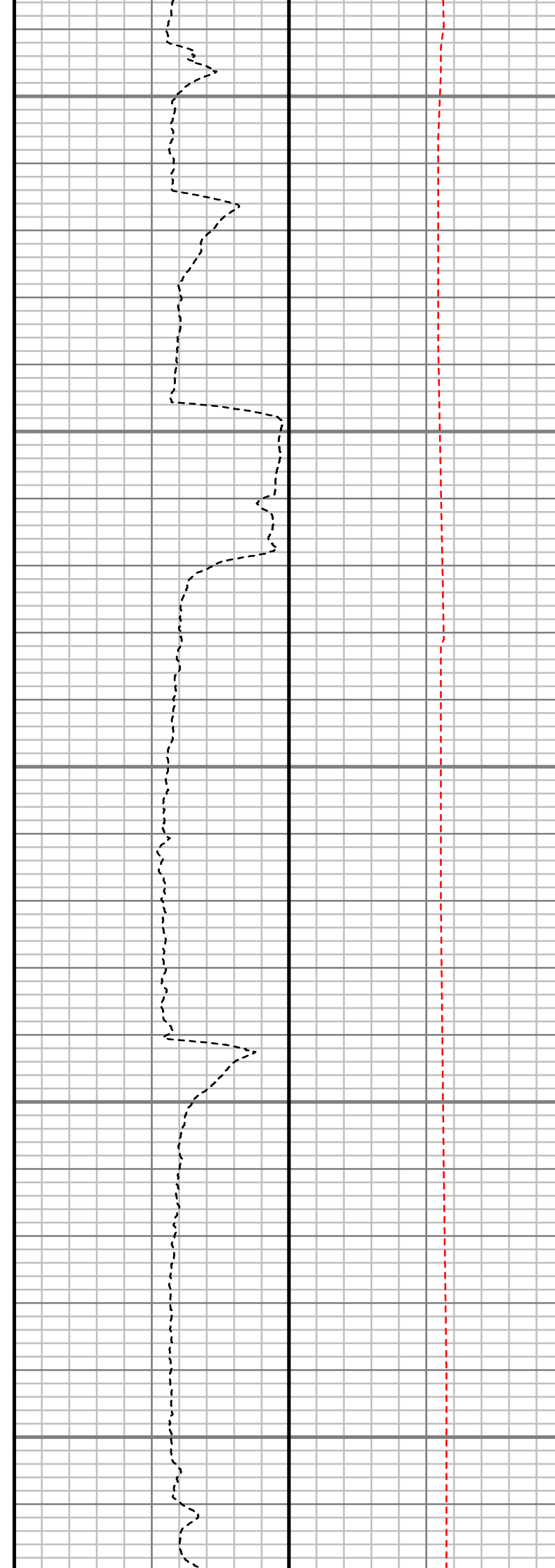
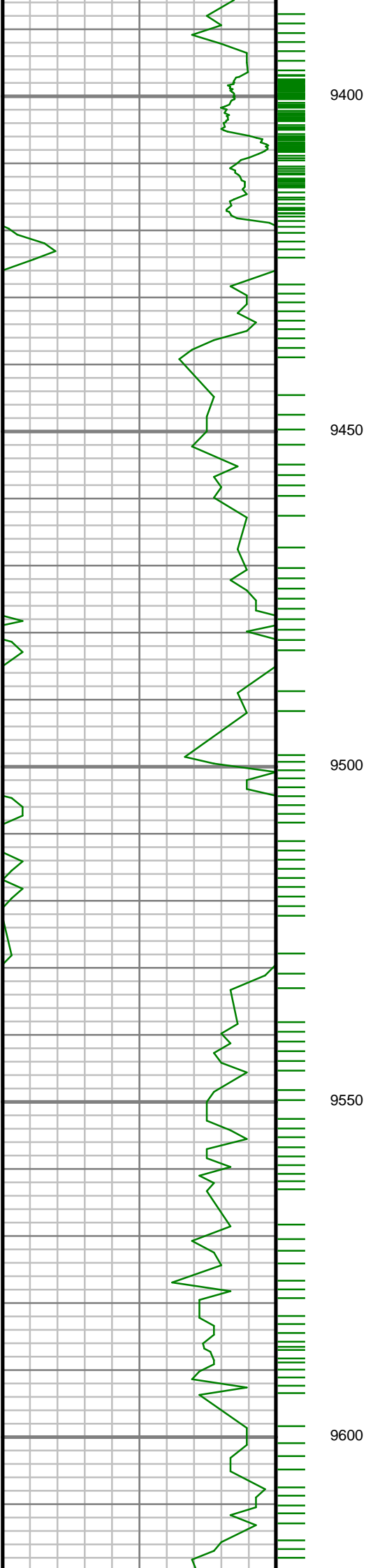
9300

9350



S: 113 MD: 9198.00 ft  
Inc: 90.57 deg Az: 0.50  
deg TVD: 7207.24 ft

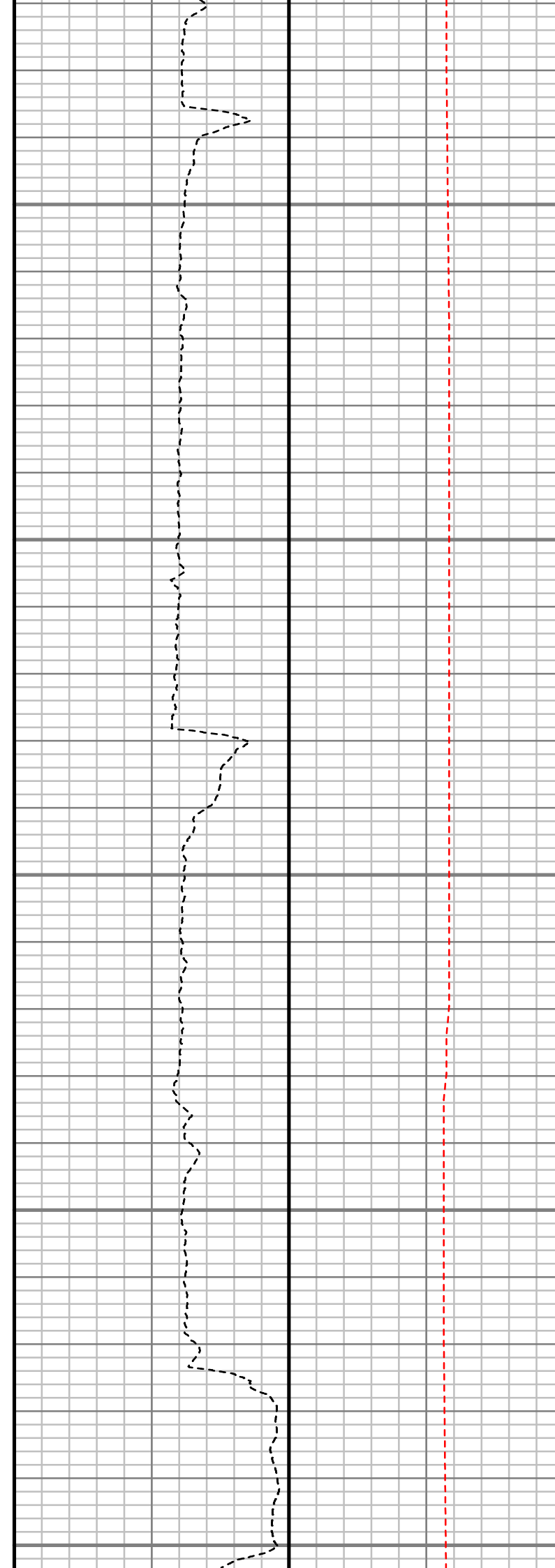
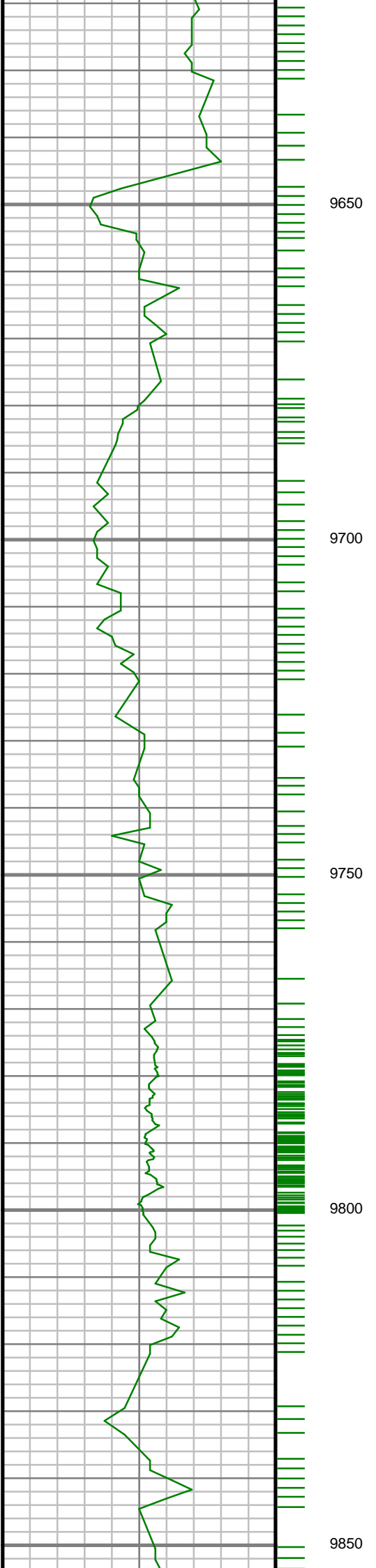
S: 114 MD: 9293.00 ft  
Inc: 90.07 deg Az:  
359.82 deg TVD:  
7206.71 ft



S: 115 MD: 9388.00 ft  
Inc: 89.87 deg Az:  
359.65 deg TVD:  
7206.76 ft

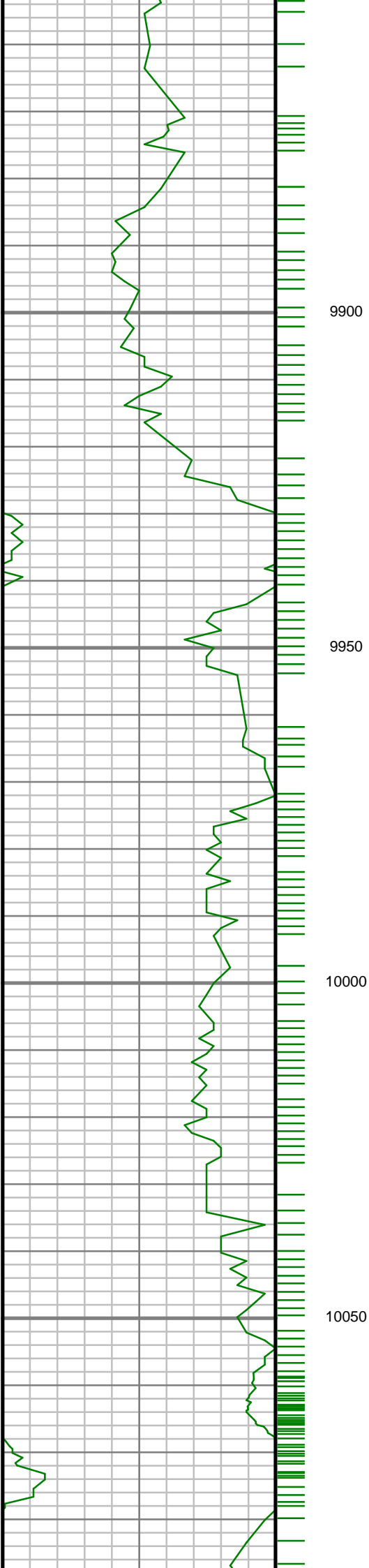
S: 116 MD: 9482.00 ft  
Inc: 87.85 deg Az: 0.47  
deg TVD: 7208.64 ft

S: 117 MD: 9577.00 ft  
Inc: 88.18 deg Az:  
359.77 deg TVD:  
7211.93 ft



S: 118 MD: 9671.00 ft  
Inc: 89.40 deg Az: 0.26  
deg TVD: 7213.91 ft

S: 119 MD: 9766.00 ft  
Inc: 90.24 deg Az: 0.24  
deg TVD: 7214.22 ft



9900

9950

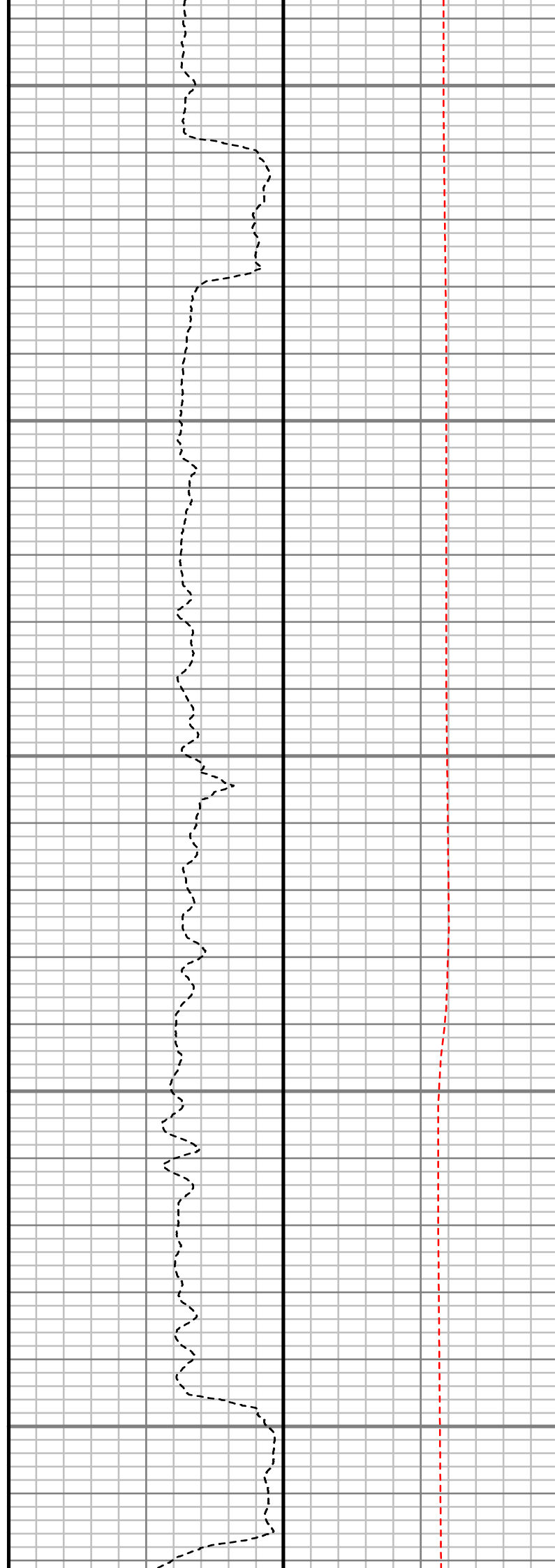
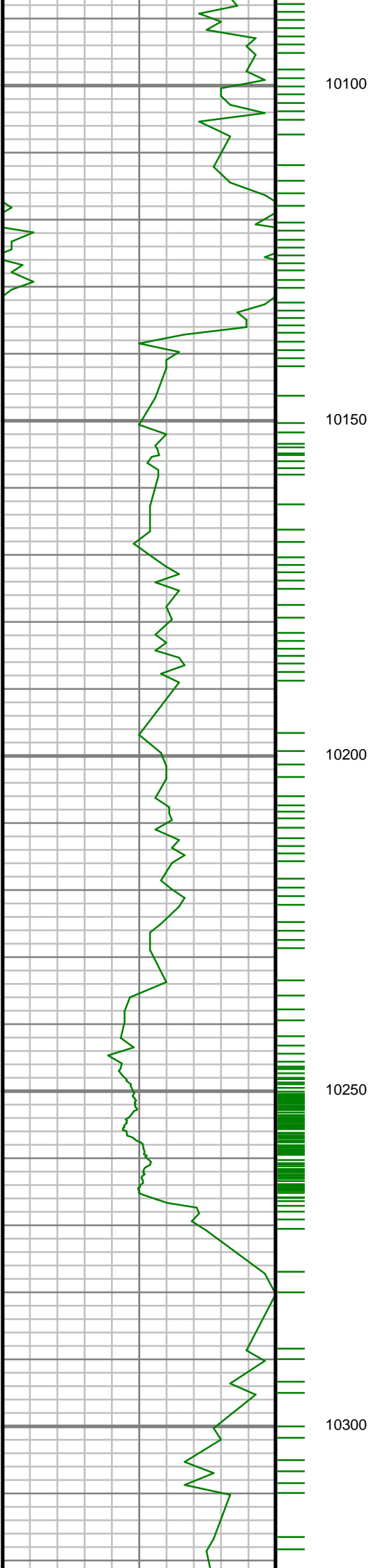
10000

10050

S: 120 MD: 9860.00 ft  
Inc: 88.93 deg Az:  
359.14 deg TVD:  
7214.90 ft

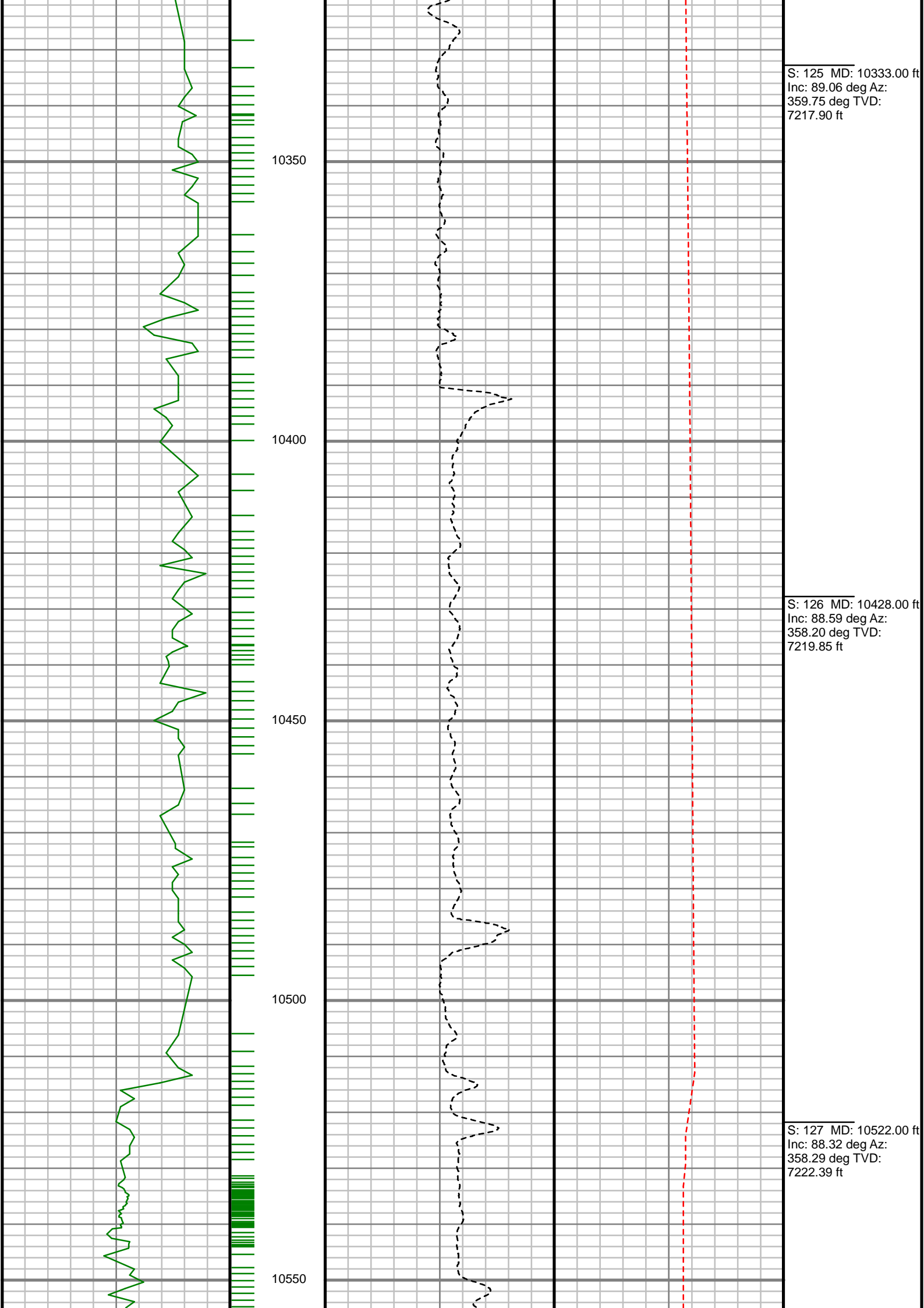
S: 121 MD: 9955.00 ft  
Inc: 89.63 deg Az:  
359.14 deg TVD:  
7216.10 ft

S: 122 MD: 10049.00 ft  
Inc: 90.03 deg Az:  
359.60 deg TVD:  
7216.38 ft

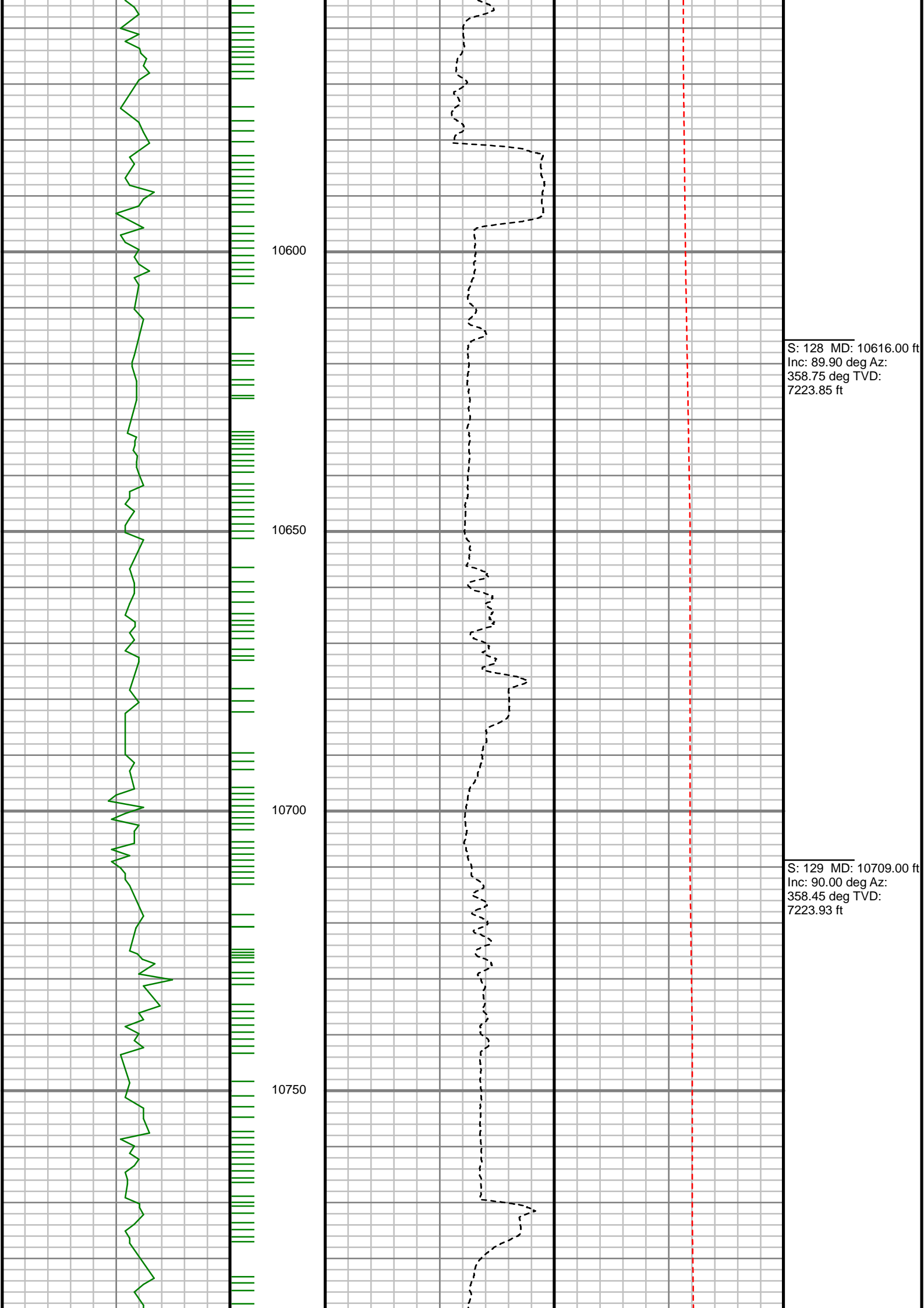


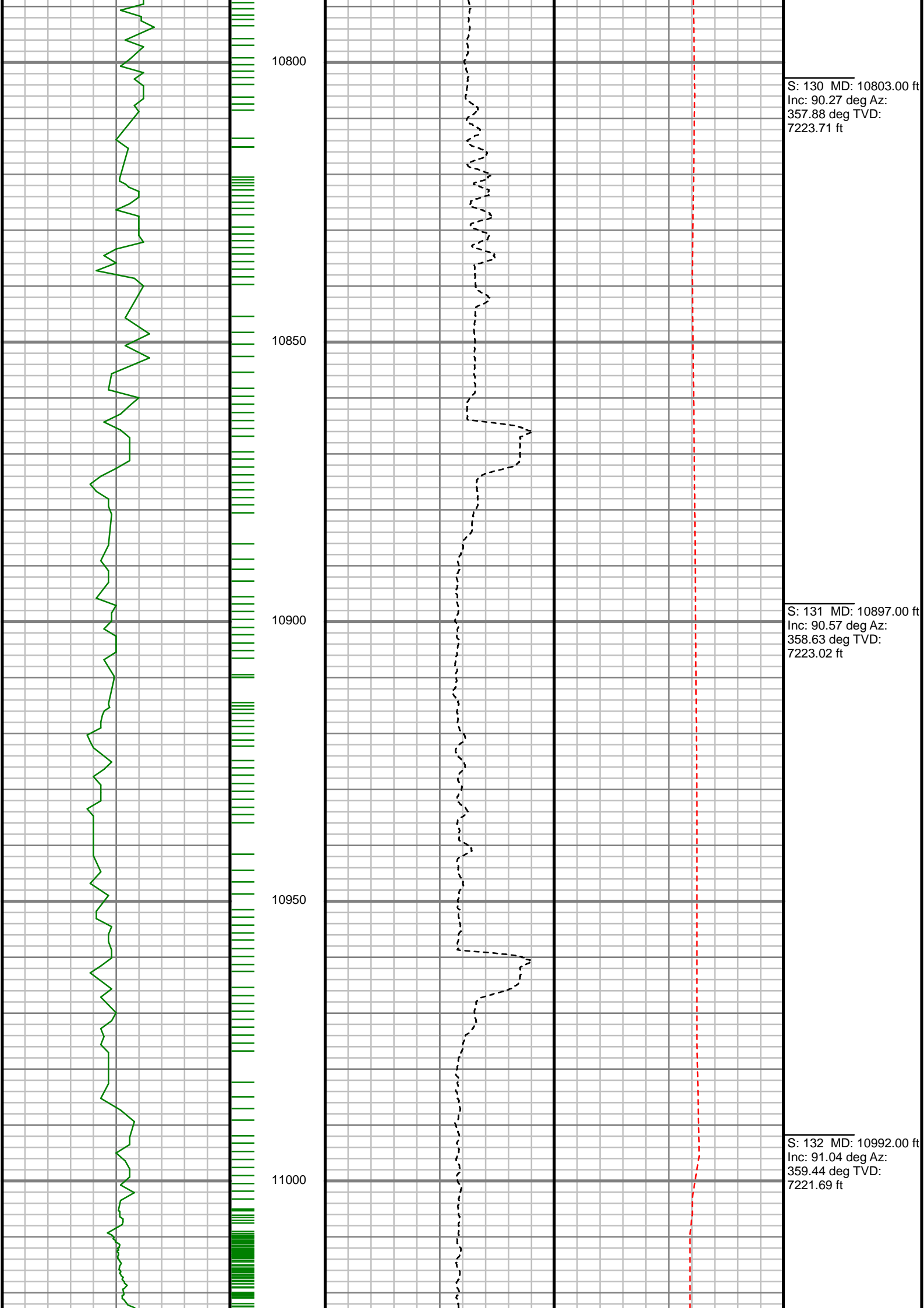
S: 123 MD: 10144.00 ft  
Inc: 89.29 deg Az:  
359.28 deg TVD:  
7216.93 ft

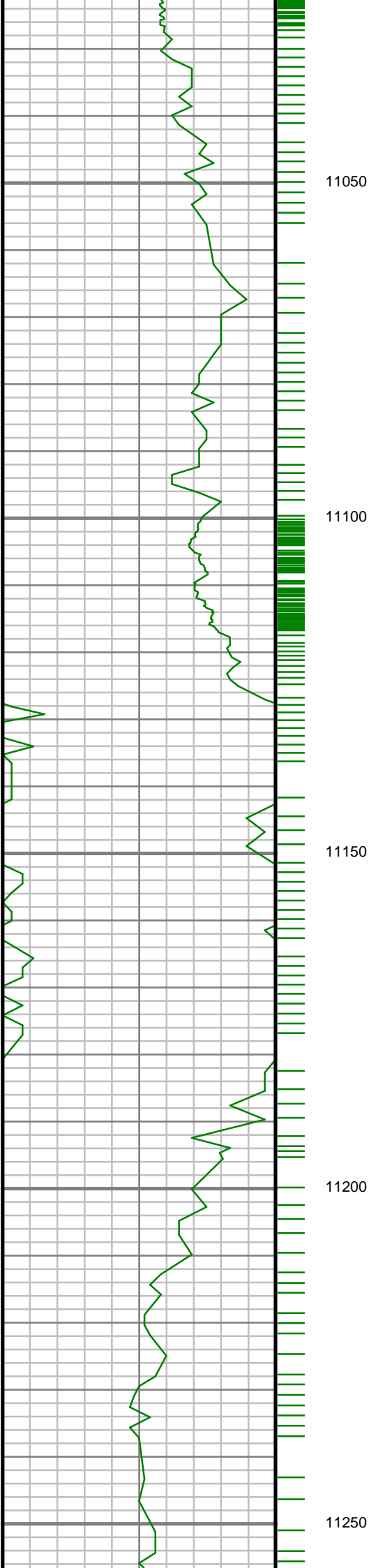
S: 124 MD: 10238.00 ft  
Inc: 90.23 deg Az:  
358.92 deg TVD:  
7217.32 ft





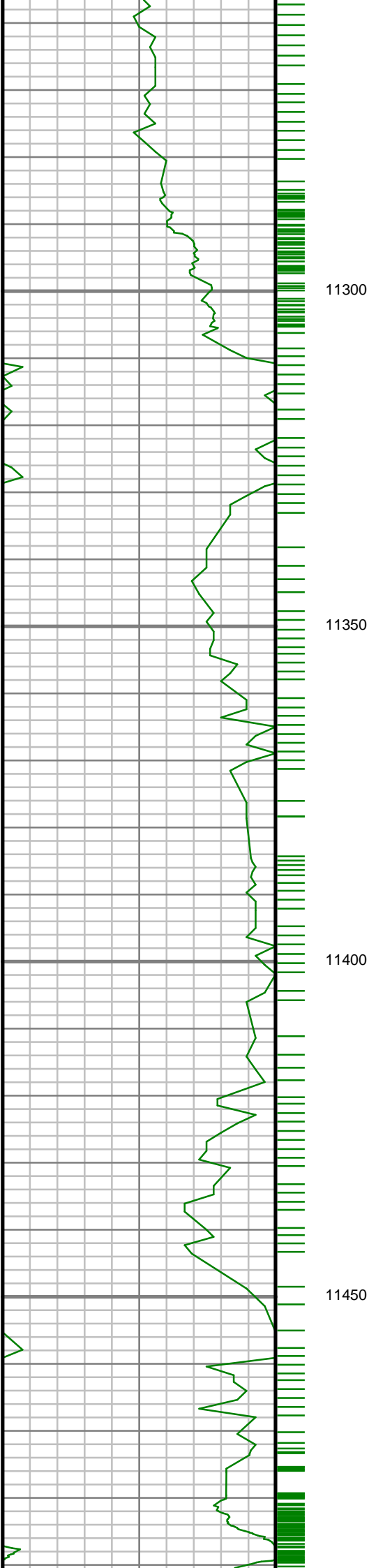






S: 133 MD: 11086.00 ft  
Inc: 90.27 deg Az: 0.17  
deg TVD: 7220.62 ft

S: 134 MD: 11180.00 ft  
Inc: 89.43 deg Az: 0.37  
deg TVD: 7220.86 ft

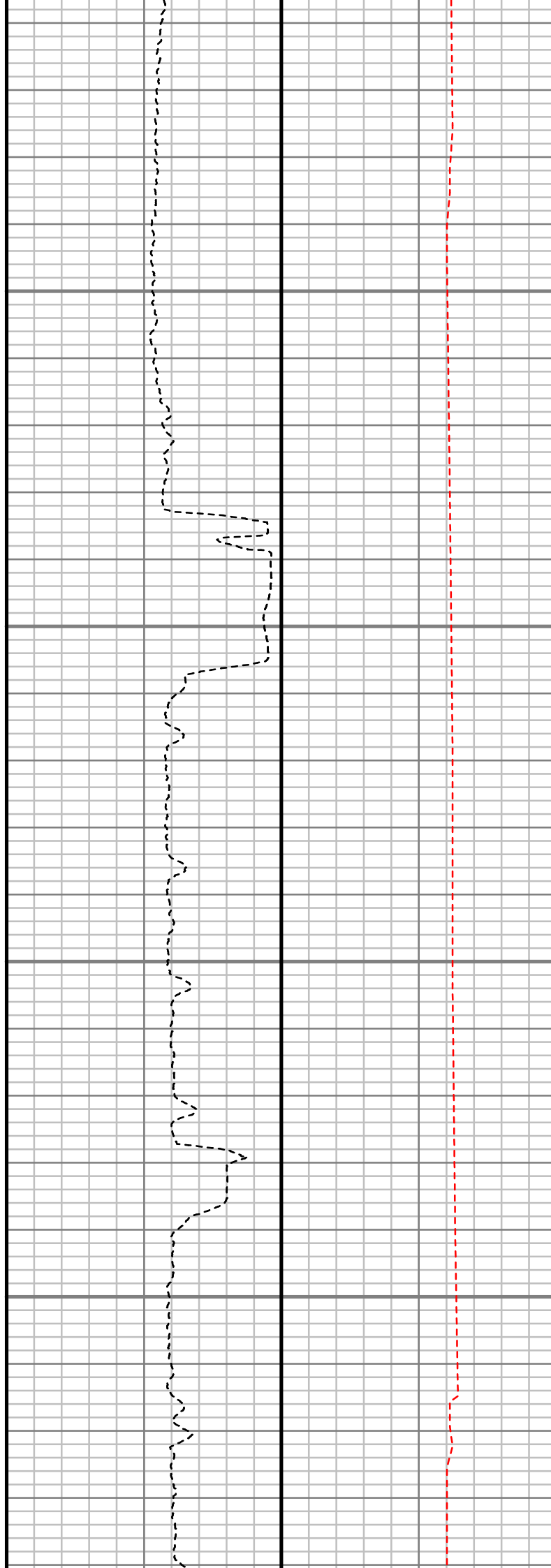


11300

11350

11400

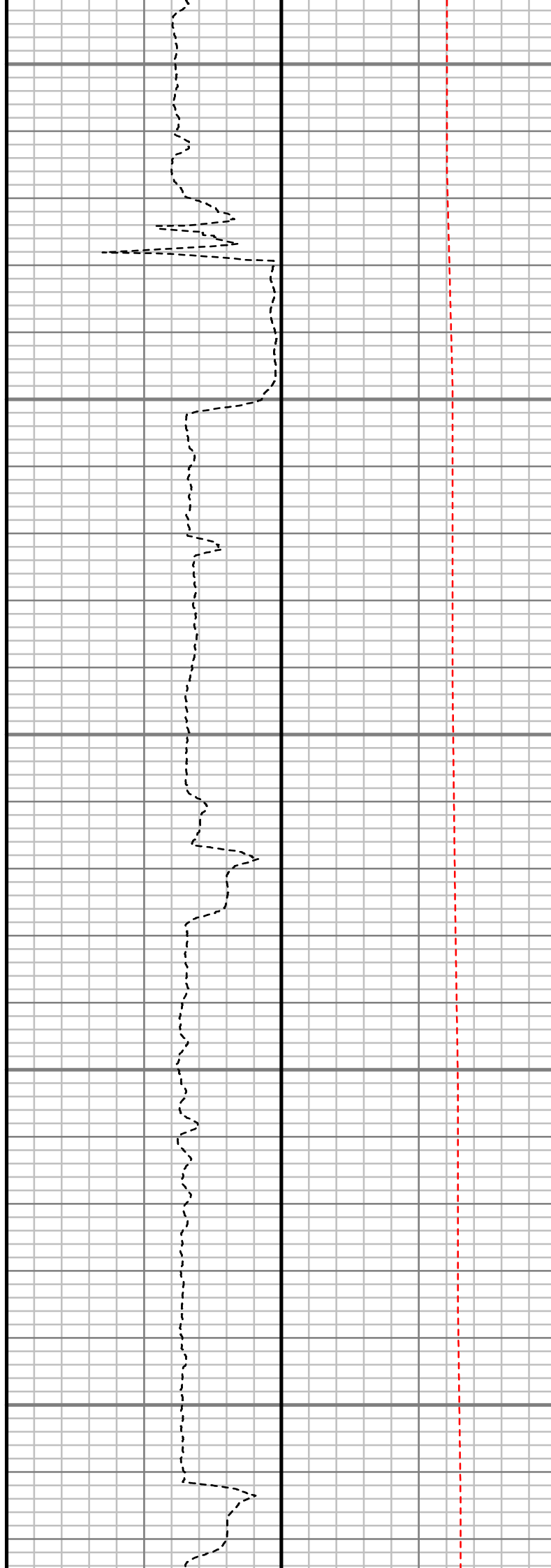
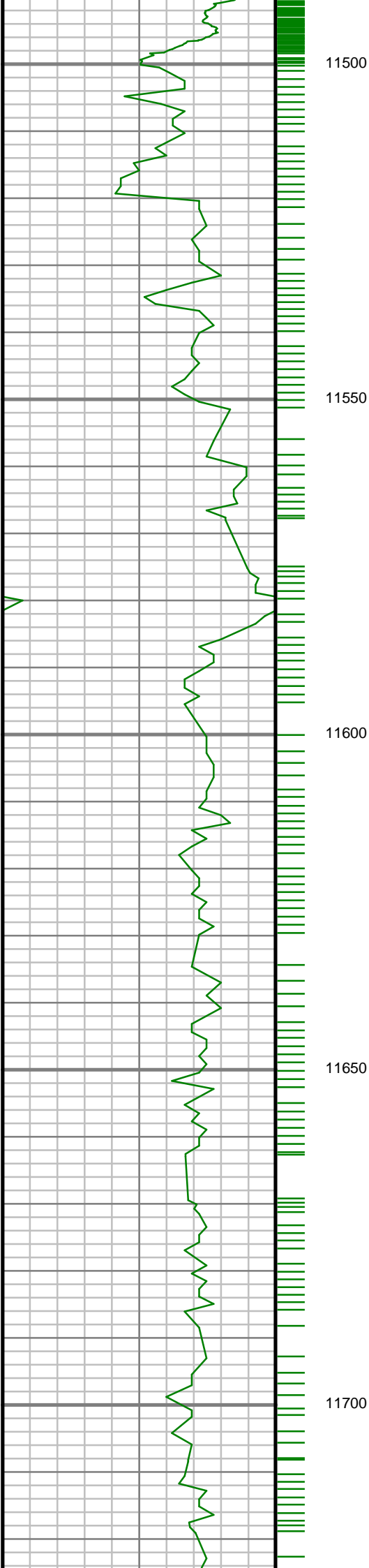
11450



S: 135 MD: 11274.00 ft  
Inc: 90.47 deg Az:  
359.57 deg TVD:  
7220.95 ft

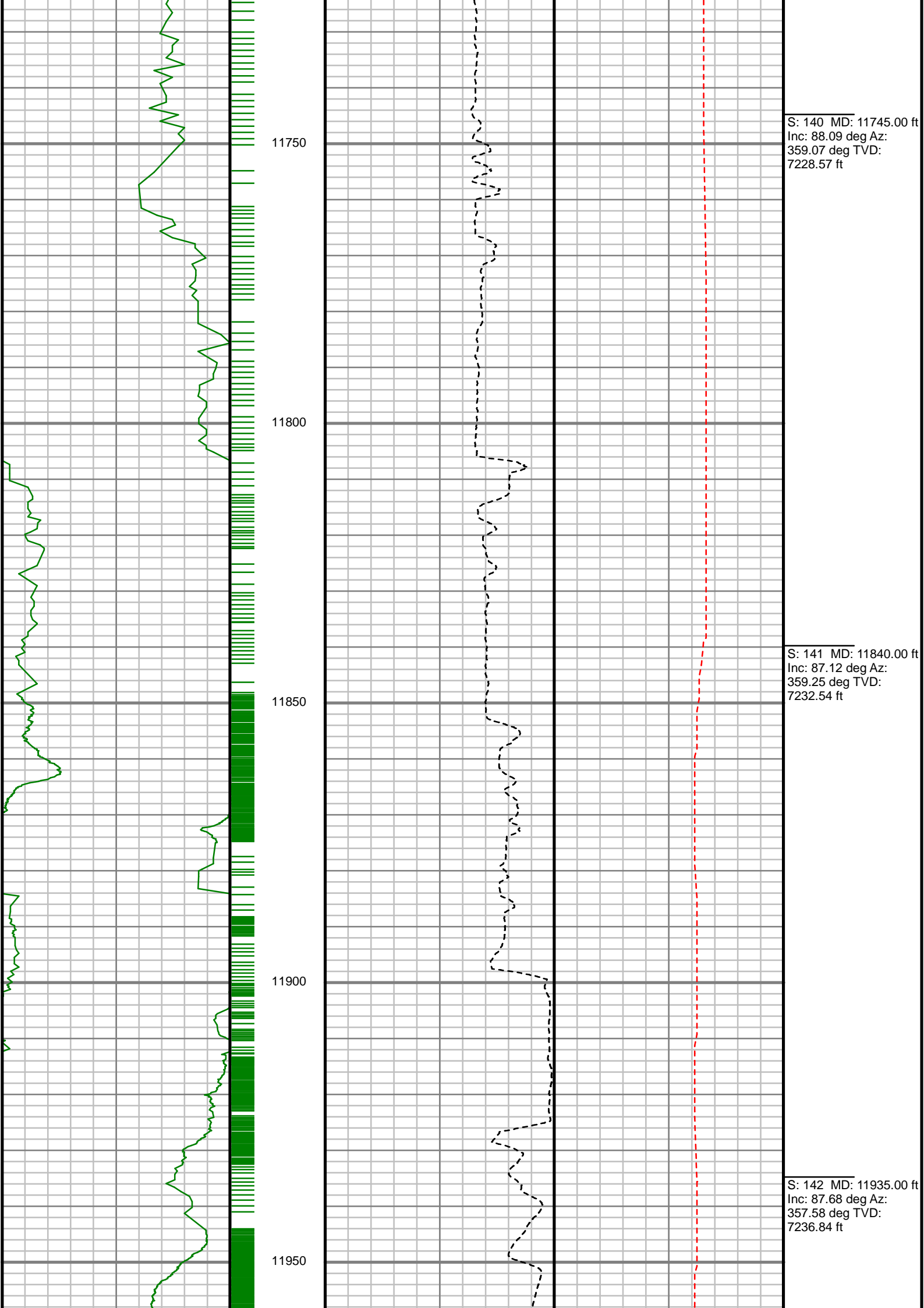
S: 136 MD: 11369.00 ft  
Inc: 89.46 deg Az: 0.67  
deg TVD: 7221.00 ft

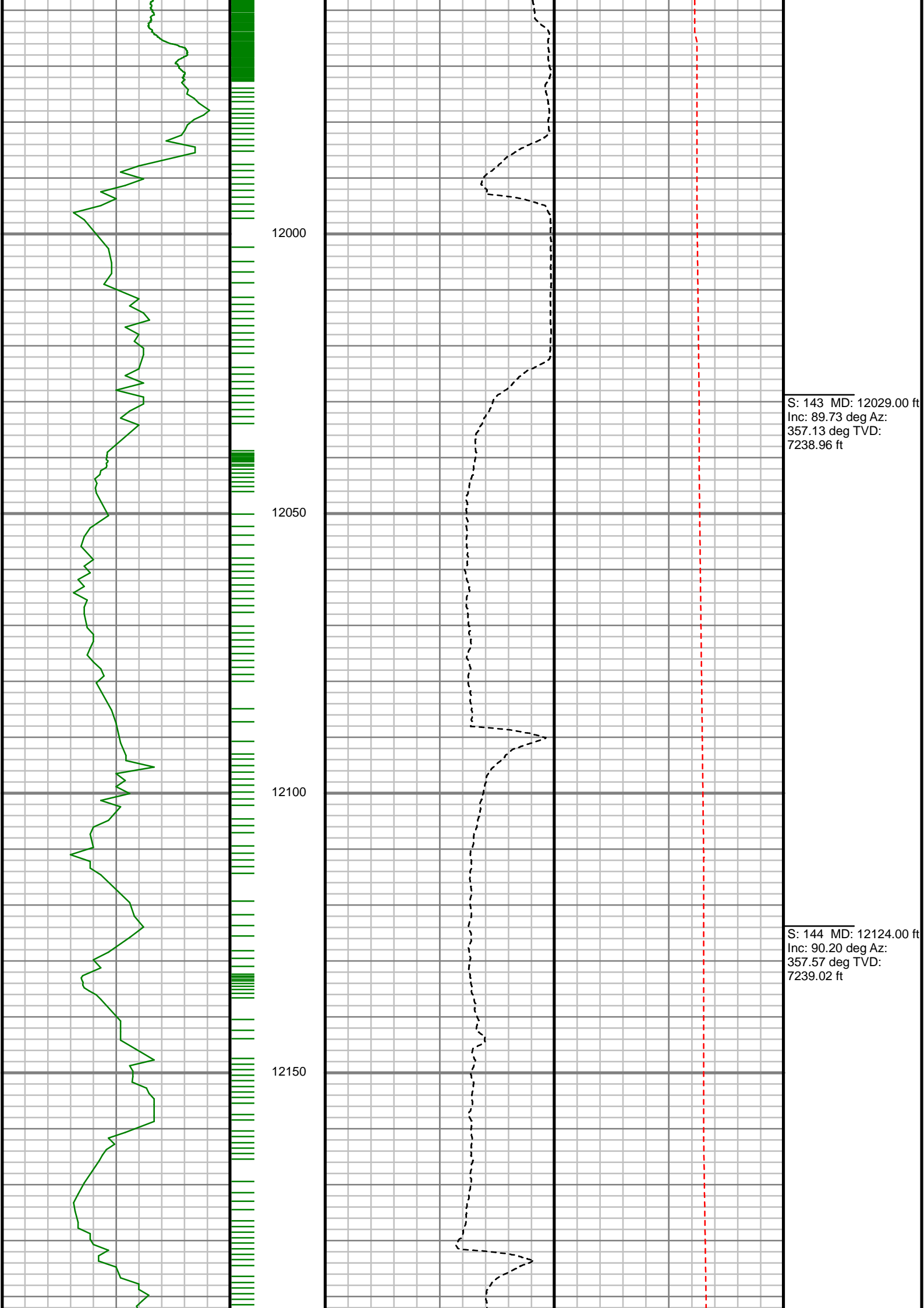
S: 137 MD: 11463.00 ft  
Inc: 90.34 deg Az: 1.67  
deg TVD: 7221.17 ft

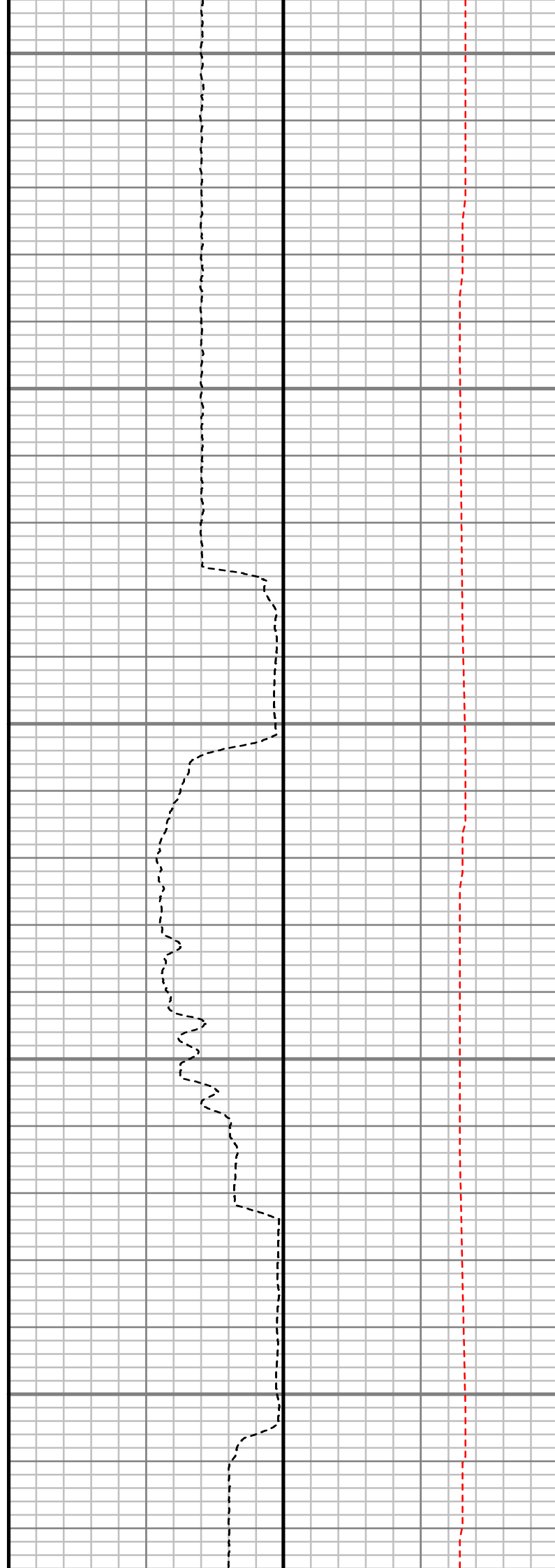
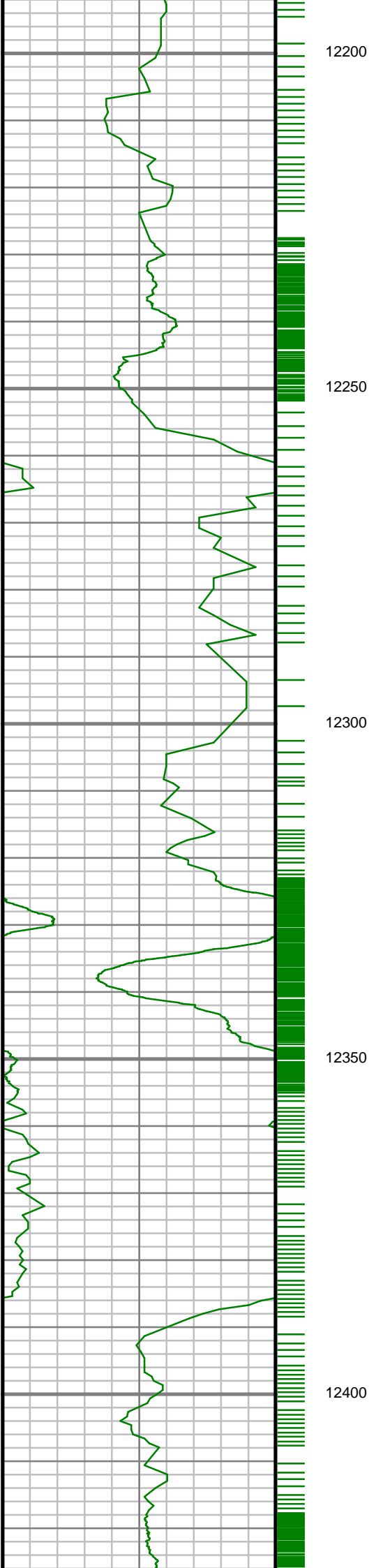


S: 138 MD: 11557.00 ft  
Inc: 88.19 deg Az: 0.76  
deg TVD: 7222.38 ft

S: 139 MD: 11651.00 ft  
Inc: 88.09 deg Az: 0.06  
deg TVD: 7225.43 ft





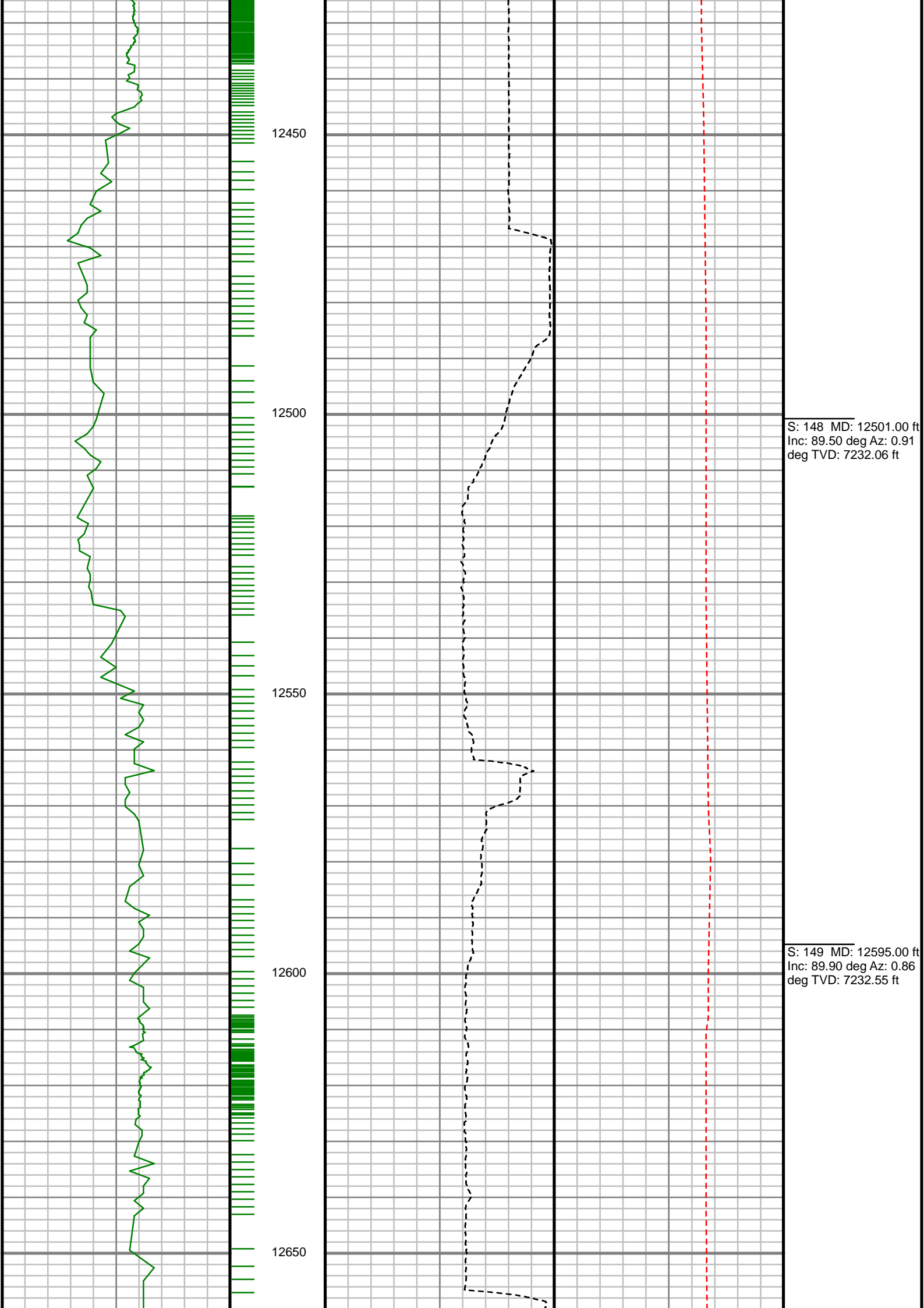


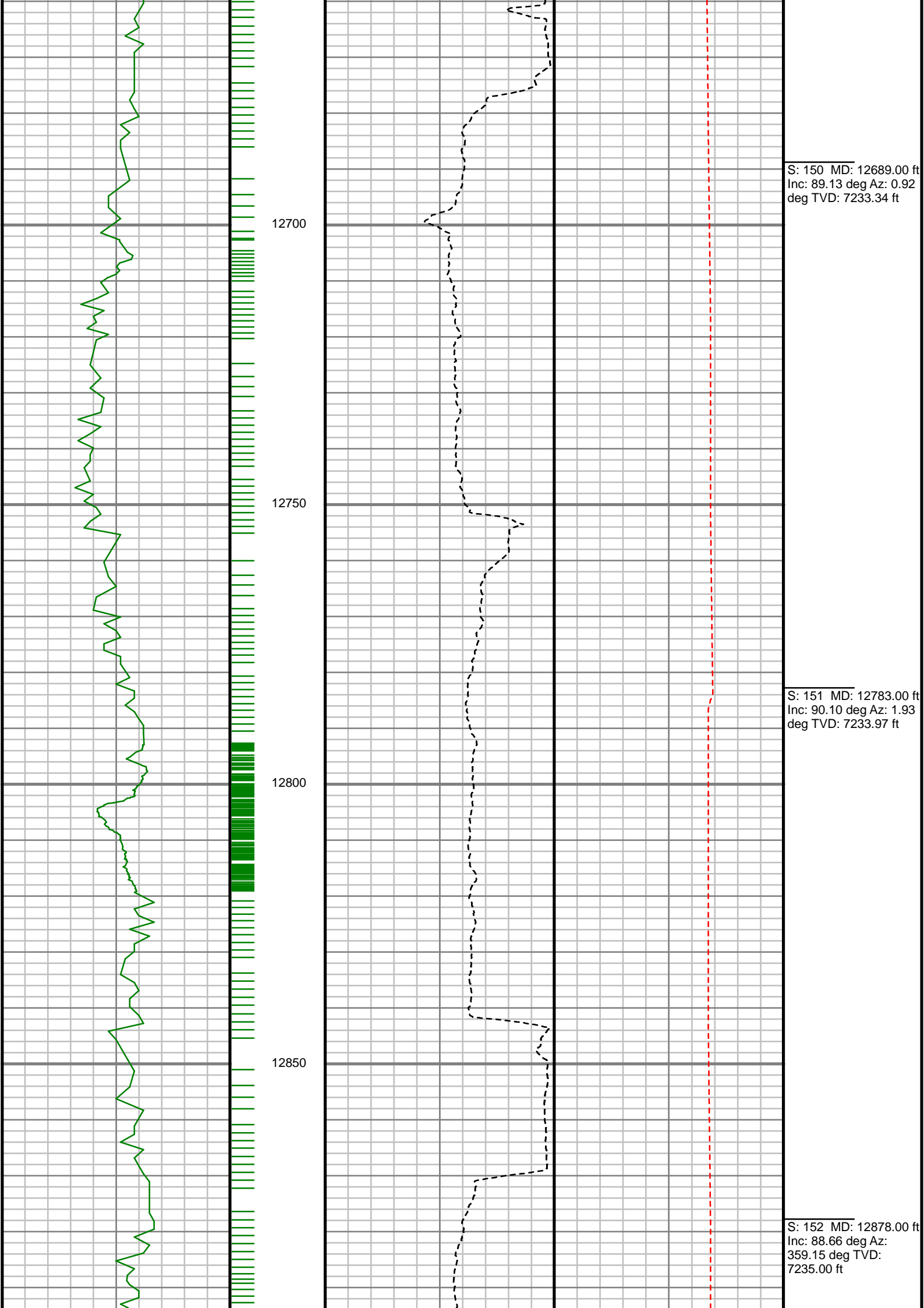
S: 145 MD: 12218.00 ft  
Inc: 91.37 deg Az:  
357.67 deg TVD:  
7237.73 ft

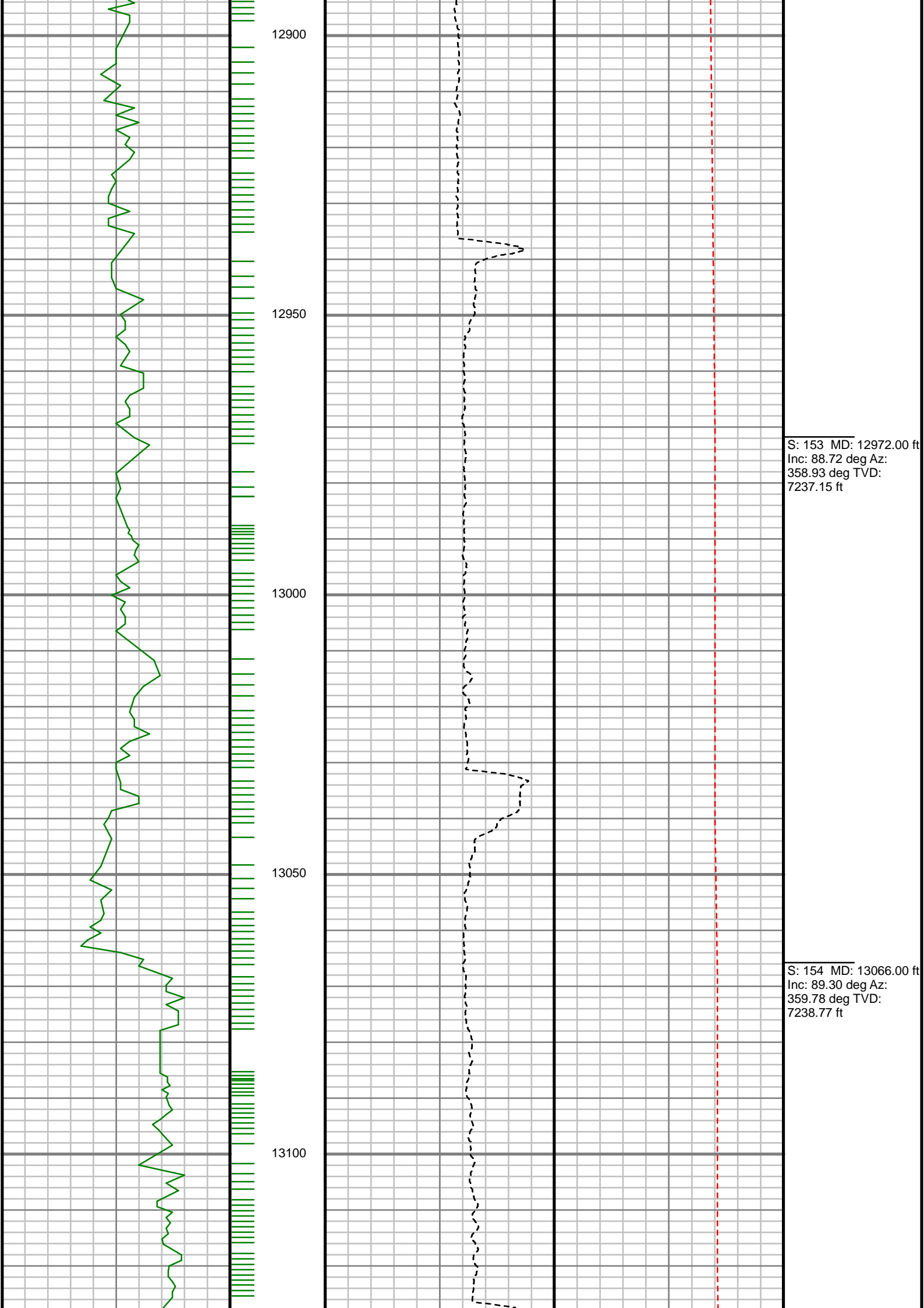
S: 146 MD: 12312.00 ft  
Inc: 92.25 deg Az:  
359.94 deg TVD:  
7234.76 ft

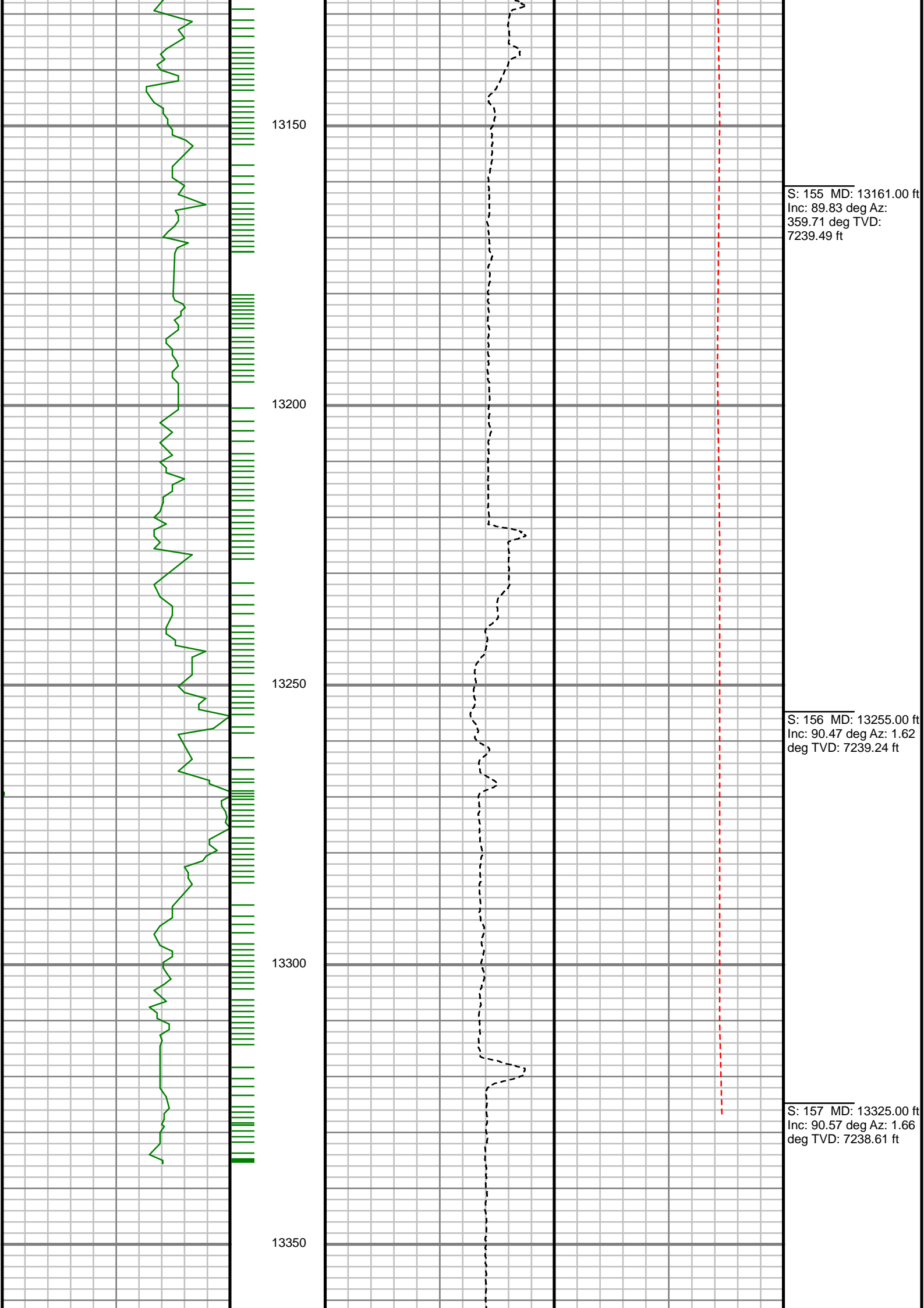
S: 147 MD: 12406.00 ft  
Inc: 90.77 deg Az: 0.54  
deg TVD: 7232.28 ft

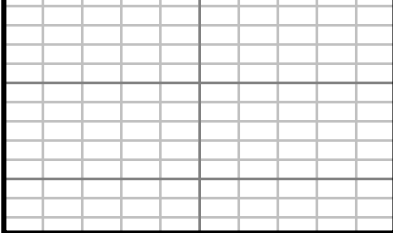




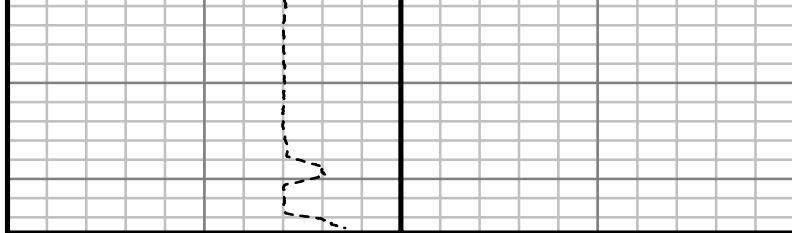








Gamma Ray (GR)		
0	Unit = aapi	150



Rate of Penetration (ROP)		Tool Temperature (T-TEMP)	
1000	Unit = ft/hr	50	Unit = °F
0		300	

Comments
----------

MEASURED DEPTH  
1:240 (ft)

GAMMA RAY



5" = 100' FEET MD