

# SlimPulse - Gamma Ray

1 in / 100 ft & 5 in / 100 ft True Vertical Depth

## Recorded Mode, Composite Log



Company: Noble Energy

Well: Oscar Y10-73-1HN

Field: Wattenberg

County: Weld

State: Colorado

Country: USA

Section: 10 APIN: 0512337941

Township: 2N Rig Name: H&P 277

Range: 64W Rig Type: Top Drive

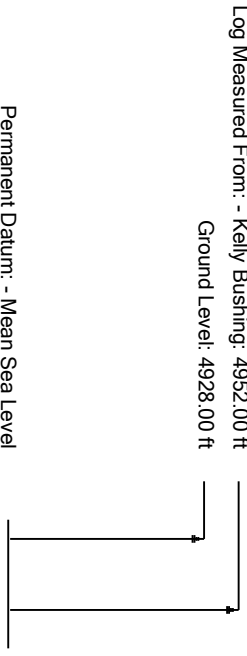
FL: NAD83 Colorado State Plane, Northern Zone, US Feet

FL1: Latitude: N 40° 9' 7.99" Northing: 1299776.44 ftUS

FL2: Longitude: W 104° 31' 52.25" Easting: 3270807.19 ftUS

Log Measured From: - Kelly Bushing: 4952.00 ft

Ground Level: 4928.00 ft



Permanent Datum: - Mean Sea Level

Acquisition Dates: 29-Oct-2014 -- 06-Nov-2014

Other Services:

Log Interval: 1160(ft)TVD to 6930(ft)TVD

Directional Drilling

Index Types: True Vertical Depth

Surveys / Continuous D&I

Index Scales: 1:1200 1" / 100', 1:240 5" / 100'

Downhole Temperature

Depth Source: Driller's Depth

Downhole Shocks

Depth Sensor: PASON

Print Type: Final

Spud Date: 10-Oct-2014



## Disclaimer

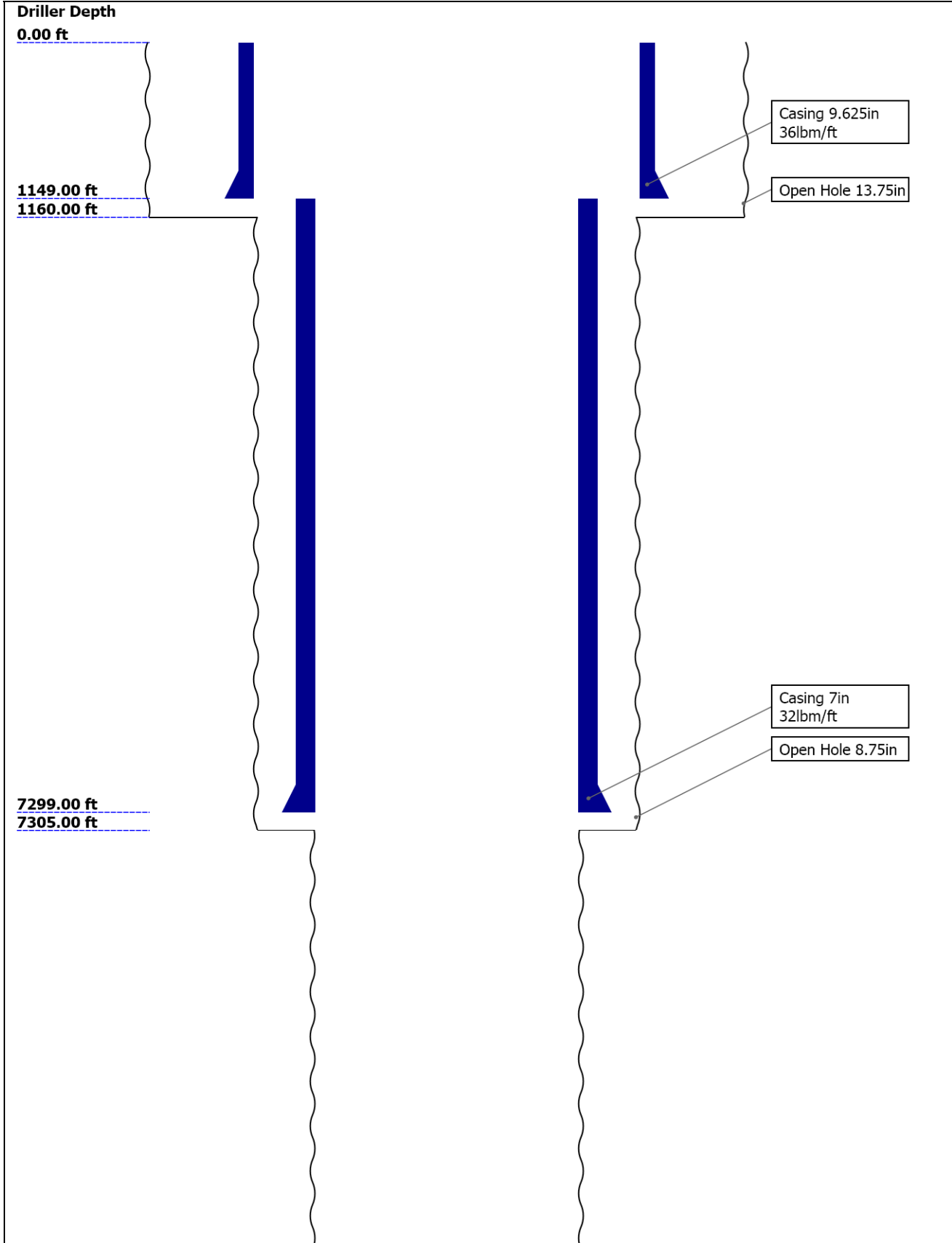
THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

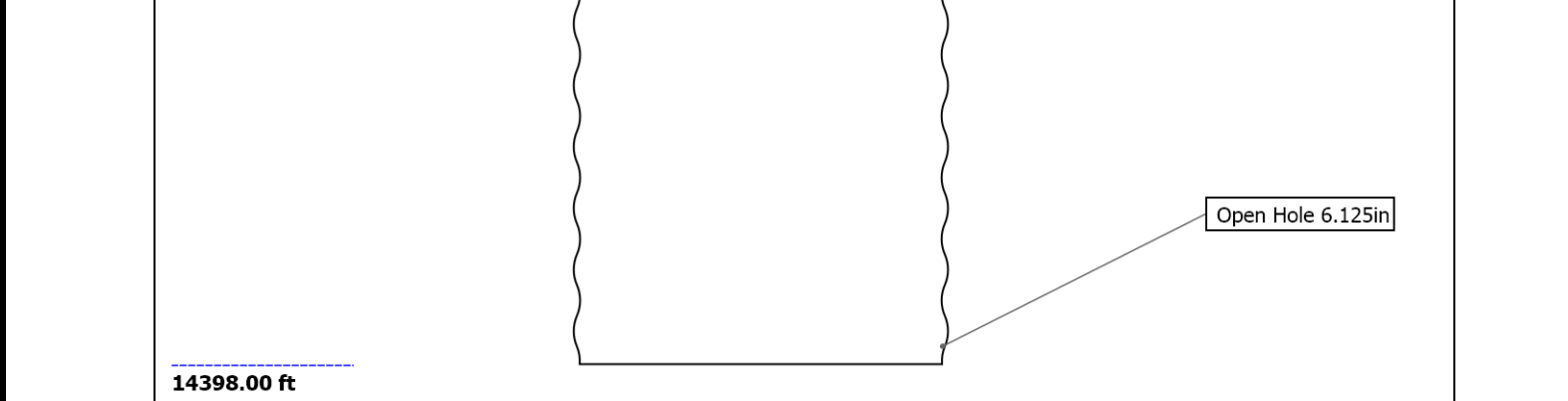
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Well Sketch





## Borehole Size/Casing Record

Bit						
Bit Size ( in )	13.75	8.75	6.125			
Top Driller ( ft )	0	1160	7305			
Bottom Driller ( ft )	1160	7305	14398			
Casing						
Size ( in )	9.625	7				
Weight ( lbm/ft )	36	32				
Inner Diameter ( in )	8.921	6.094				
Grade	J55	P110				
Top Driller ( ft )	0	1149				
Bottom Driller ( ft )	1149	7299				

## Operational Run Summary

Parameter ( unit )	Run001	Run002				
Date Log Started	29-Oct-2014	03-Nov-2014				
Time Log Started	17:26:02	06:46:55				
Date Log Finished	01-Nov-2014	06-Nov-2014				
Time Log Finished	17:49:44	10:52:00				
Bit Size ( in )	8.750	6.125				
Bit Start Depth ( ft )	1160.00	7305.00				
Bit Stop Depth ( ft )	7305.00	14398.00				
Top Log Interval ( ft )	1160.00	7242.00				
Bottom Log Interval ( ft )	7242.00	14353.00				
Max Hole Deviation ( deg )	81.48	91.89				
Azimuth of Max Deviation ( deg )	1.11	358.27				
Logging Unit Number	Command Center	Command Center				
Logging Unit Location	Zone 2	Zone 2				
Recorded By	C. Welty	C. Welty				
Witnessed By	K. Campbell	K. Campbell				
Service Order Number	14CCO0656	14CCO0656				

## Borehole Fluids

Parameter( unit )	Run001	Run002				
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Fluid Type	Oil	Oil				
Fluid Name	Diesel	Diesel				
Max Recorded Temperatures ( degF )	185.9	264.2				
Source of Sample	Active Tank	Active Tank				
Salinity ( ppm )	60000	50000				
Density ( lbm/gal )	Zoned	Zoned				
Funnel Viscosity ( s )	46	48				
Fluid Loss ( cm3 )						
PH						
Source RMF						
RMC	Pressed	Pressed				
RM @ Meas Temp ( ohm.m@degF )	N/A	N/A				
RMF @ Meas Temp ( ohm.m@degF )	N/A	N/A				
RMC @ Meas Temp ( ohm.m@degF )	N/A	N/A				
RM @ BHT ( ohm.m@degF )	N/A	N/A				
RMF @ BHT ( ohm.m@degF )	N/A	N/A				
RMC @ BHT ( ohm.m@degF )	N/A	N/A				
Electricity Stability ( V )	405	366				
Oil/Water	67/33 (2.06)	68/32 (2.12)				
Total Solid ( % )	7.3	9.9				
High Gravity Solids ( % )	0.3	2.7				

Zoned Borehole Fluids

Run001

Parameter	Value	Start
Density	9.1	10/29/2014 5:26:02 PM
Density	8.85	10/31/2014 2:30:00 PM
Density	9.1	11/1/2014 2:30:00 AM
Density	10.6	11/1/2014 2:00:00 PM

Run002

Parameter	Value	Start
Density	9.05	11/3/2014 6:46:55 AM
Density	9.65	11/3/2014 1:45:00 PM
Density	9.8	11/4/2014 2:00:00 AM
Density	9.7	11/4/2014 1:30:00 PM

Remarks and Equipment Summary

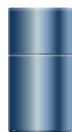
Data presented is from tool memory and acquired while drilling from 1160 ft to 14398 ft.	
Depth Reference: Driller's Depth	
Environmental Corrections: Gamma Ray is corrected for bit size, mud weight, and tool collar thickness. Barite and Potassium in the mud affect Gamma Ray readings.	
Run001: Remarks	Run002: Remarks
Run Objective: Drill vertical and curve to landing point.	Run Objective: Drill lateral to well TD.
Bit to Gamma Ray: 62.66 ft Bit to D&I: 59.63 ft	Bit to Gamma Ray: 44.17 ft Bit to D&I: 41.14 ft
Drilled from: 1160 ft to 7305 ft Logged from: 1160 ft to 7242 ft	Drilled from: 7305 ft to 14398 ft Logged from: 7242 ft to 14353 ft
SlimPulse Software: 110C01 SlimPulse D&I calibrated on: Mar 25, 2014	SlimPulse Software: 110C01 SlimPulse D&I calibrated on: Feb 24, 2014

SlimPulse GR calibrated on: Aug 5, 2014	SlimPulse GR calibrated on: Oct 14, 2014
PathFinder a Schlumberger Co. Personnel: DD: Jordan Timbs & Mike Hicks MWD: Chad Welty & Eric Wahlquist	PathFinder a Schlumberger Co. Personnel: DD: Jordan Timbs & Mike Hicks MWD: Chad Welty & Eric Wahlquist
Reason for POOH: Landing point of curve reached	Reason for POOH: Well TD

## Run001: Toolstring

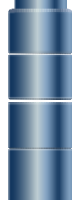
Equip name Length  
Flex DC: 6 3 139.24  
/4"[2]:DR1  
8671

MP name Offset  
NMFC



Flex DC: 6 3 108.18  
/4"[1]:DR2  
0317

NMFC



## Run002: Toolstring

Equip name Length  
NMDC: 4 3/4 134.55  
":DR28100

MP name Offset  
NMDC





SPULSE-GE 77.08  
N:DR8945  
FLOWSUB:DR  
22497  
SPCOLLAR:D  
R8945  
SPMA:318  
SPEC:904  
SPBA:Q02200  
UBHO:675U2  
91

NM Stab: 4 3 103.44  
/4"[2]:DR972  
8

Motor:081 98.48

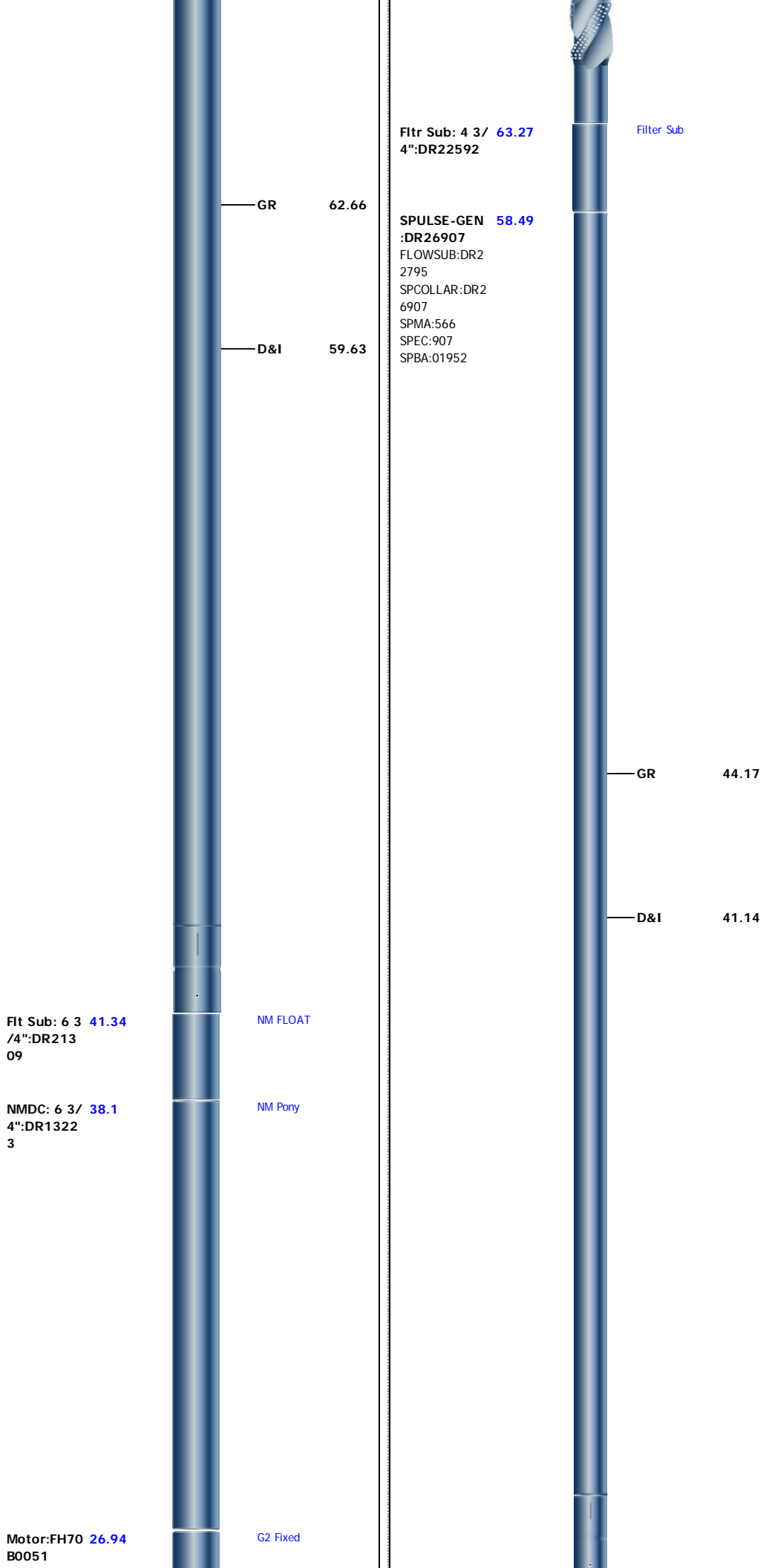


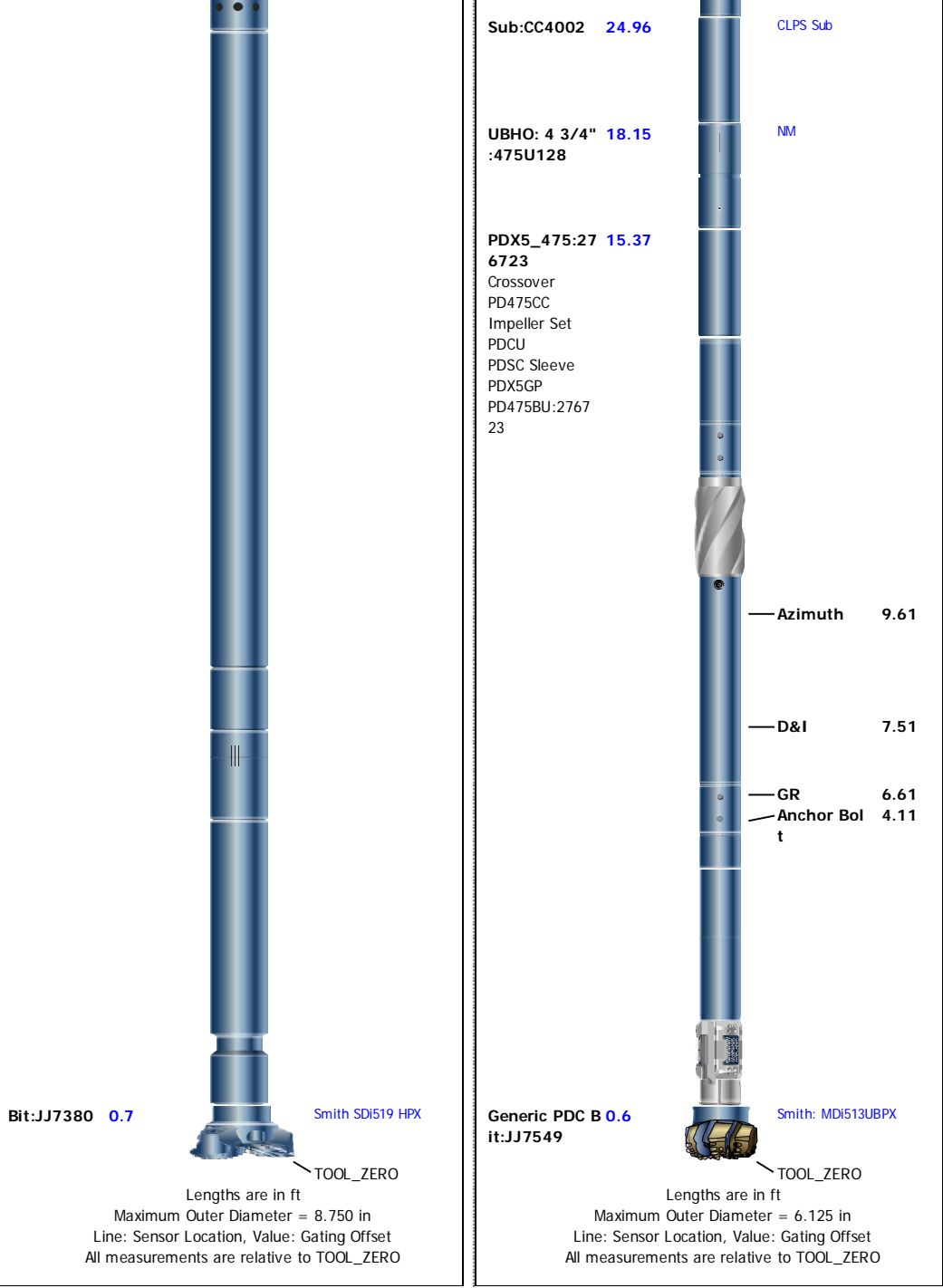
NM Spiral Sub

Straight Slick Motor

NM Stab: 4 3 68.05  
/4"[1]:DR222  
9

NM Spiral Stab





Well Composite

Software Version

Acquisition System		Version	
MaxWell		4.0.9163.3000	
Application Patch		Patch-SP-10767_26570-4.0.9163.3001	
		Patch-Hotfix_MRT_SP4-27464-4.0.9575.3002	
Tool Elements	Description	Software Version	Firmware Version
DRILLING_SURFACE	DRILLING_SURFACE	4.0.9469.3000	
SPEC	SlimPulse Electronics Cartridge	4.0.9469.3000	

Composite Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	Include Parallel Data
Run001	Drilling	Down	1159.17 ft	7306.50 ft	29-Oct-2014 5:26:02 PM	01-Nov-2014 5:49:44 PM	No
Run002	Drilling	Down	7304.00 ft	14397.92 ft	03-Nov-2014	06-Nov-2014	No

6:46:55 AM

10:52:00 AM

All depths are referenced to toolstring zero

Log

Company:Noble Energy

Well:Oscar Y10-73-1HN

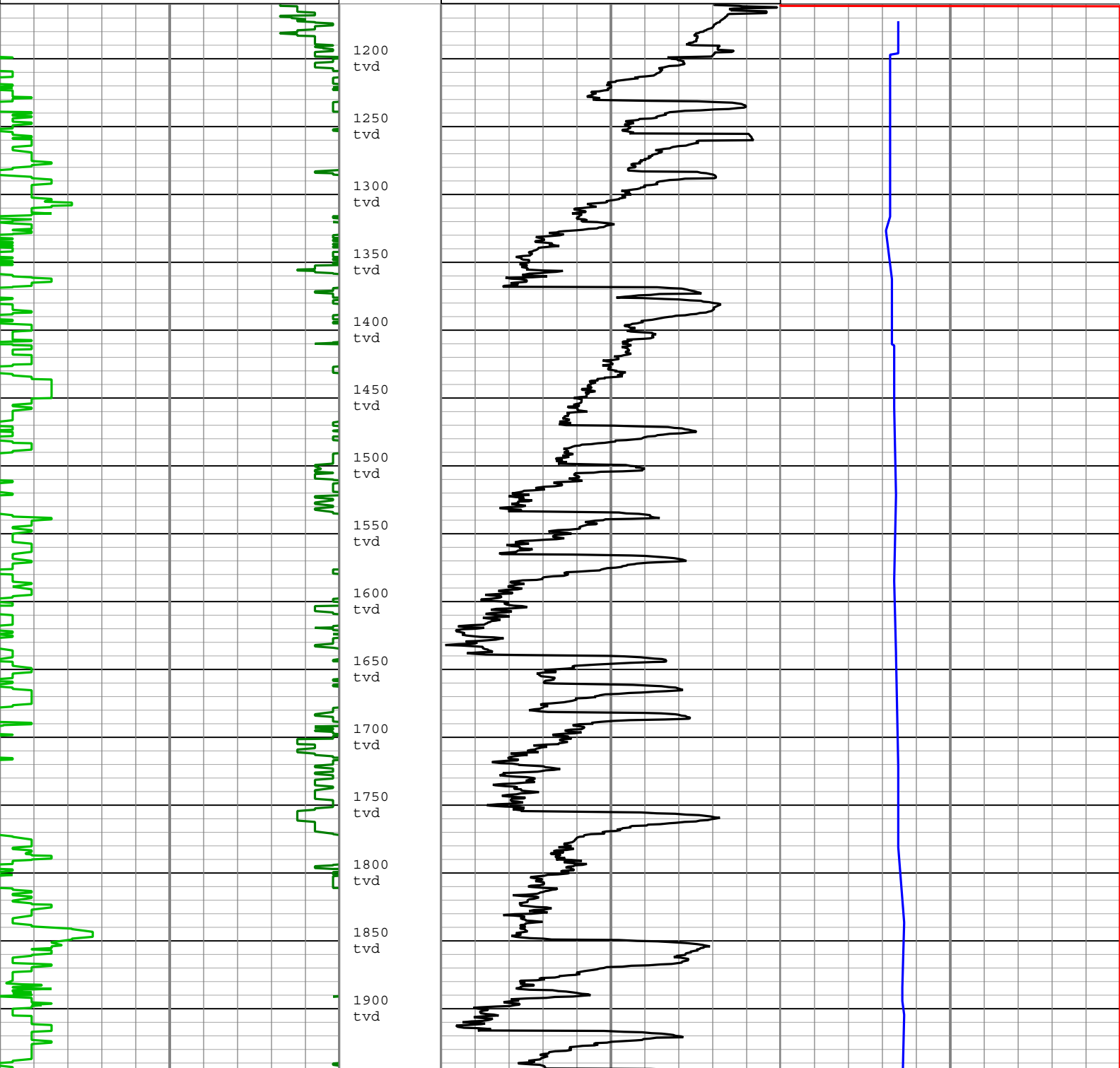
Well Composite:S307

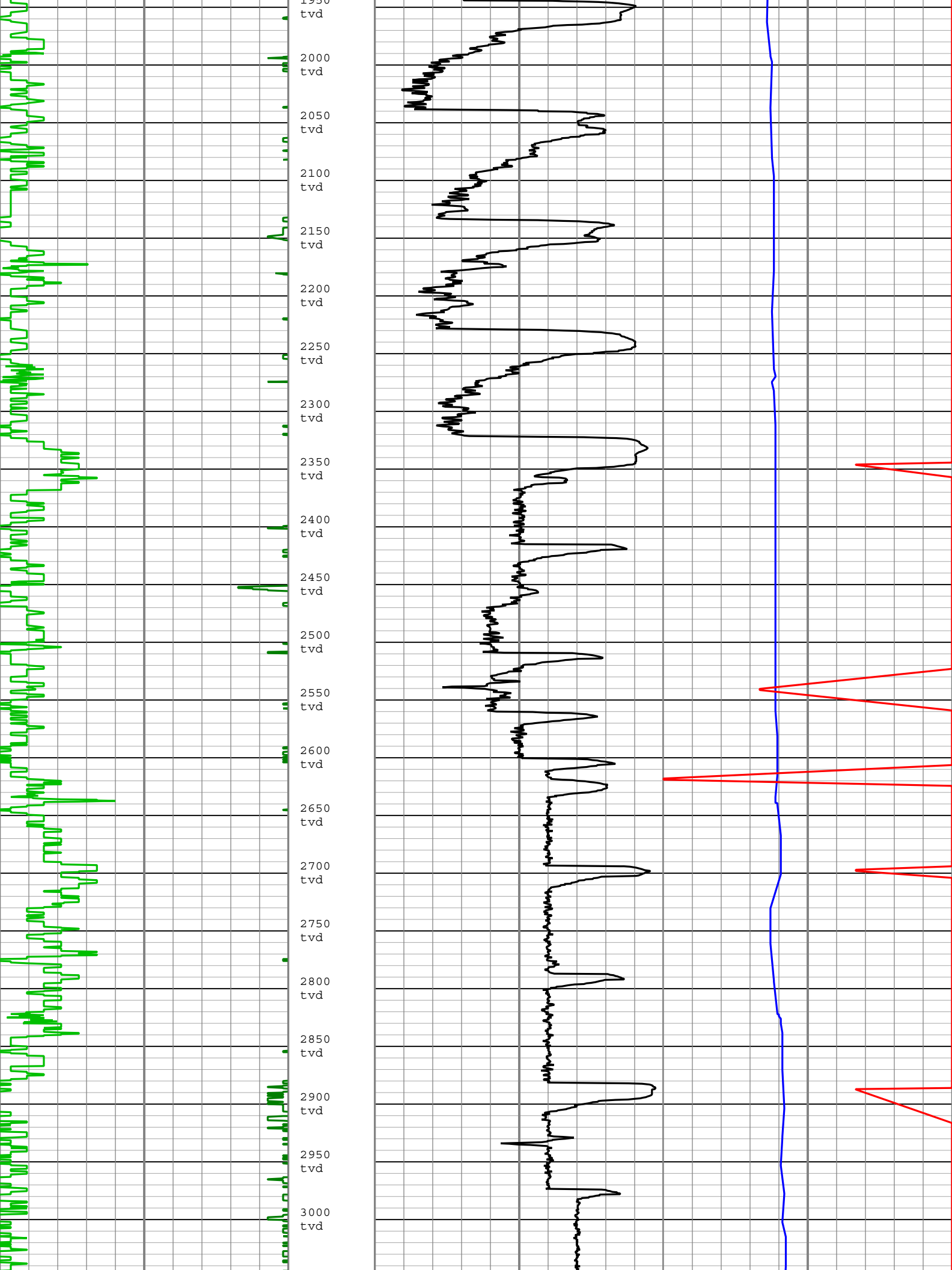
Description: SlimPulse Gamma Ray 1    Format: Log ( Final TVD Log )    Index Scale: 1 in per 100 ft    Index Unit: ft    Index Type: TVD    Creation Date: 06-Nov-2014 21:26:34

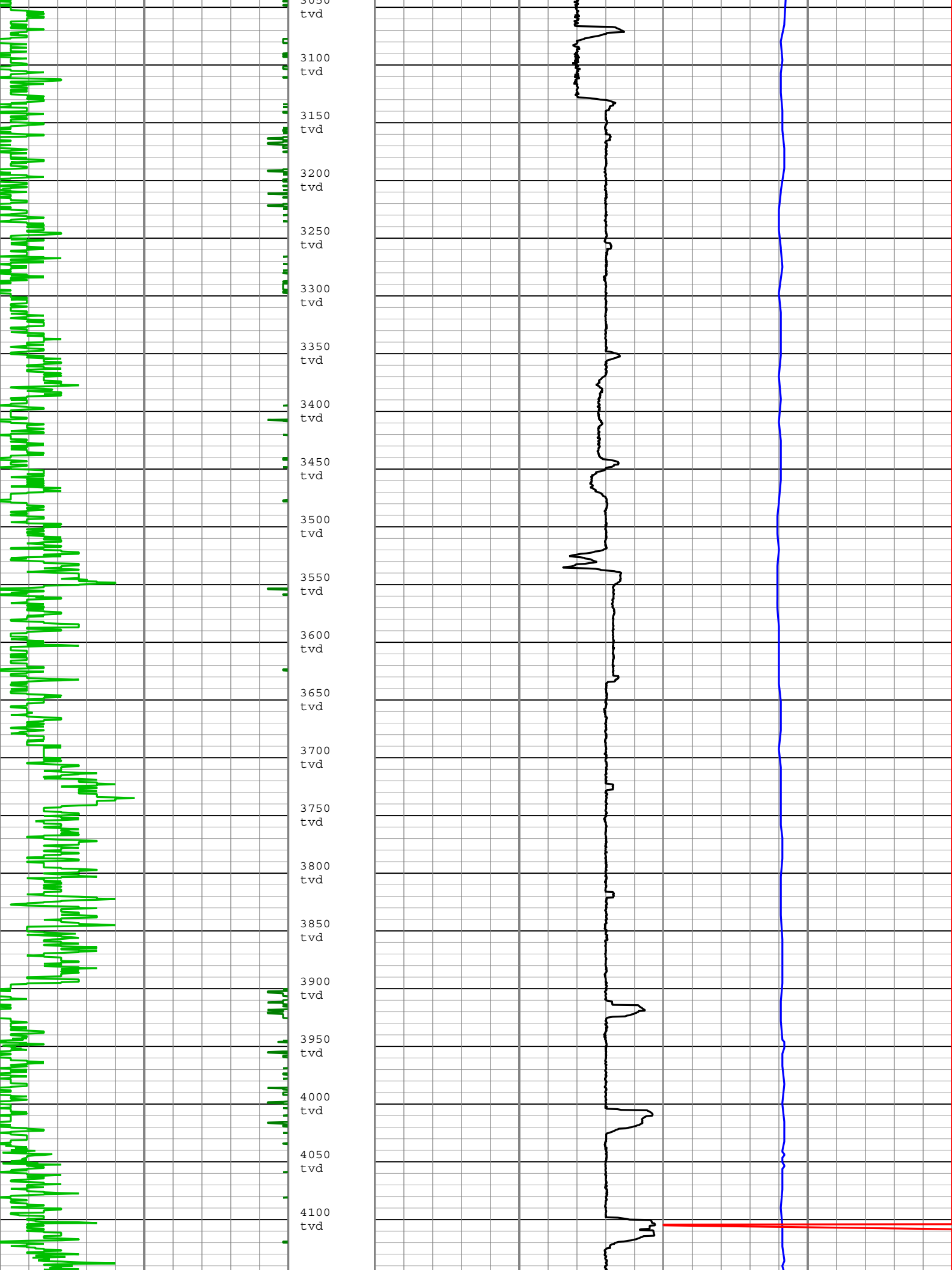
Gamma Ray (GR) SlimPulse[1] RM		
0	gAPI	100
Gamma Ray (GR) SlimPulse[1] RM		
100	gAPI	200
Gamma Ray (GR) SlimPulse[1] RM		
200	gAPI	300
Gamma Ray (GR) SlimPulse[1] RM		
300	gAPI	400

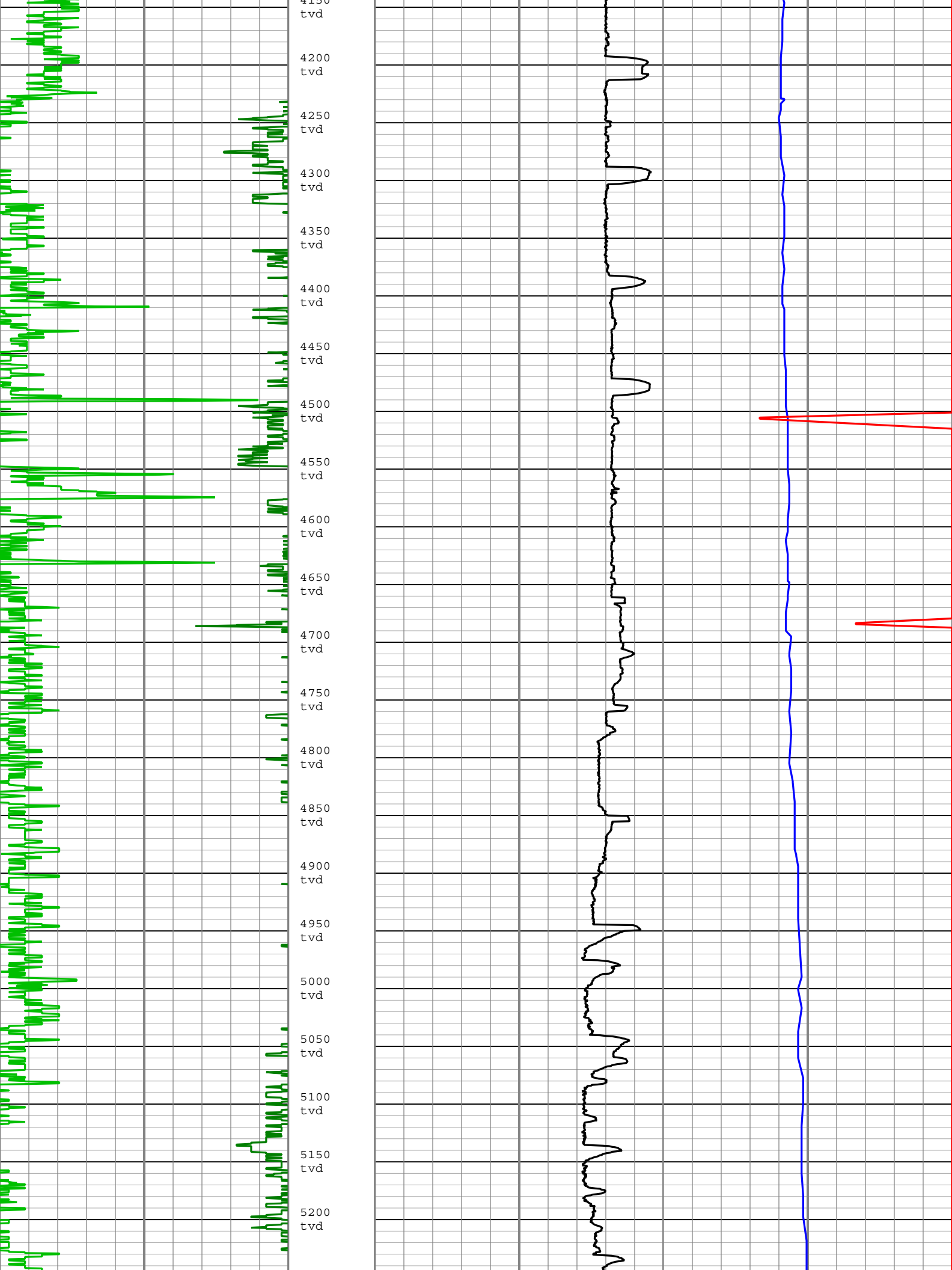
Rate of penetration averaged over the last 5 ft (1.5 m) (ROP5) RT		
1000	ft/h	0

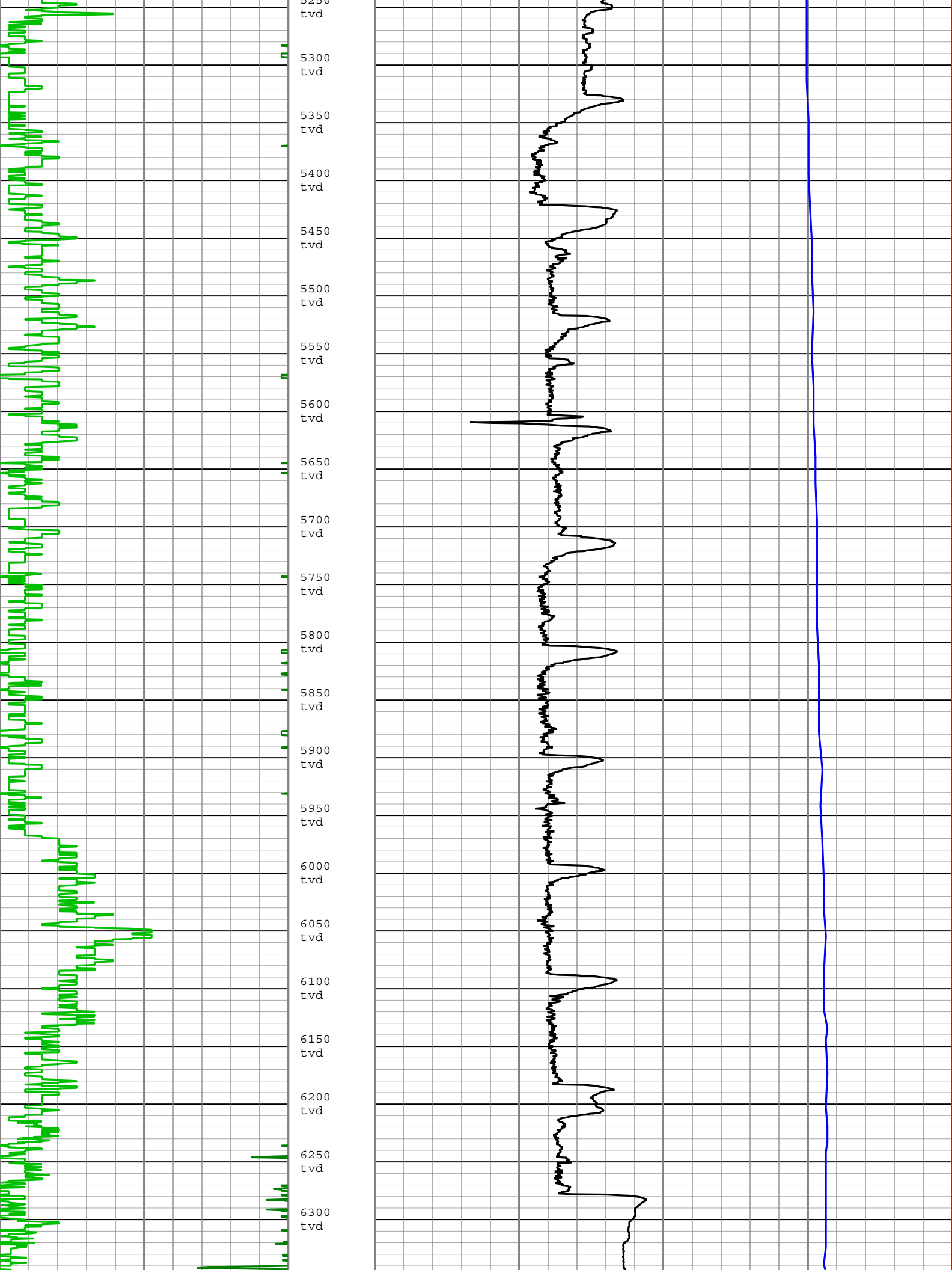
Tool Temperature (TTEM) SlimPulse[1] RM		
0	degF	300
Shock Risk (SHKRSK) SlimPulse[1] RT		
3		0

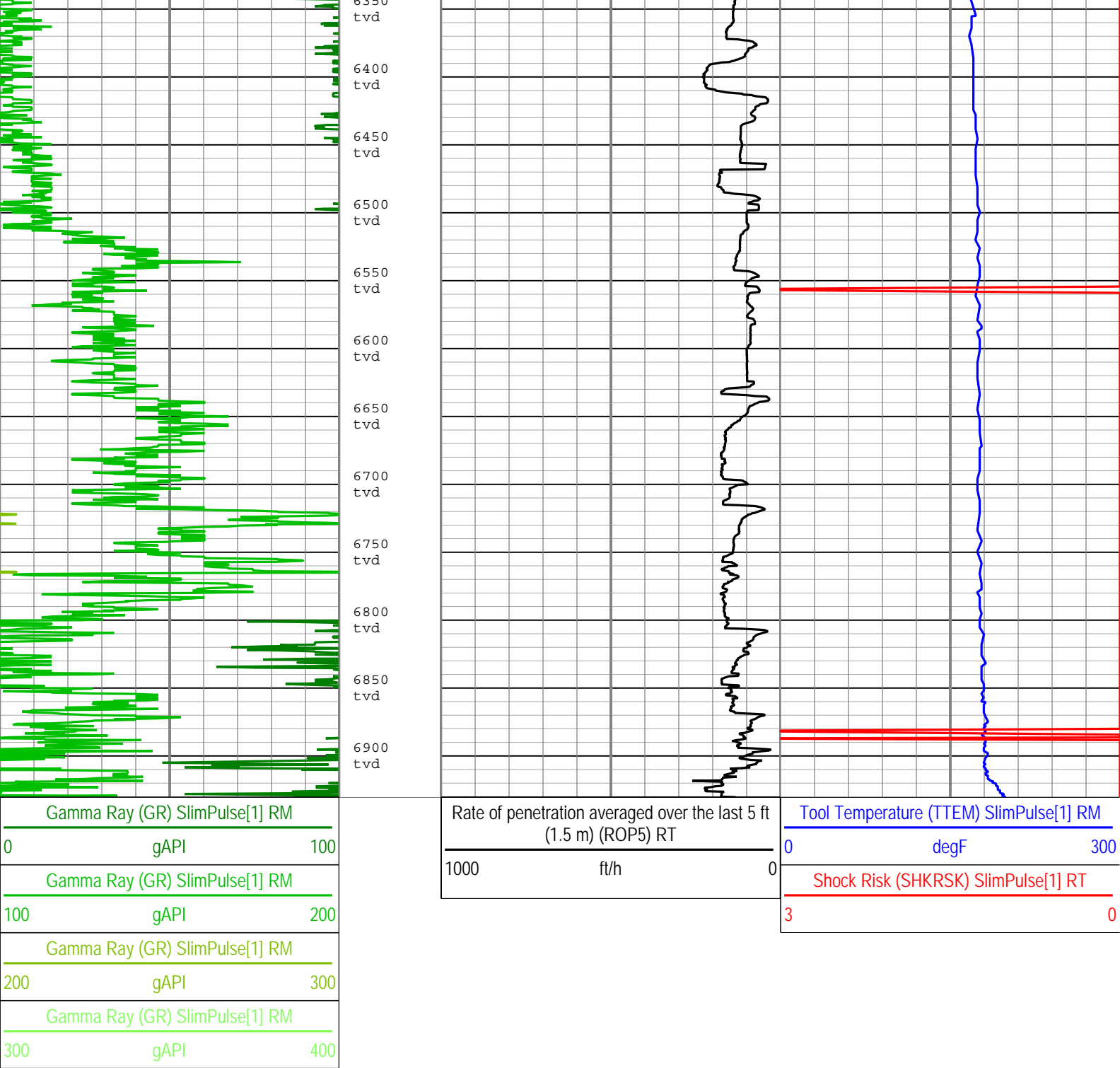












Description: SlimPulse Gamma Ray 1    Format: Log ( Final TVD Log )    Index Scale: 1 in per 100 ft    Index Unit: ft    Index Type: TVD    Creation Date: 06-Nov-2014 21:26:34

## Channel Processing Parameters

### Run001: Parameters

Parameter	Description	Tool	Value	Unit
BS	Bit Size	DNMSESSION	8.75	in
DFD	Drilling Fluid Density	Borehole	Time Zoned	lbm/gal
GR_SRC	GR Source Selection	SPULSE-GEN	GAMMA_EXT	

### Run001Time Zoned Parameters

#### Pass Drilling

Parameter	Value	Start Time	Stop Time	Start Depth ( ft )	Stop Depth ( ft )
DFD	9.1	29-Oct-2014 17:26:02	31-Oct-2014 14:30:00	1159.17	4751.58
DFD	8.85	31-Oct-2014 14:30:00	01-Nov-2014 02:30:00	4751.58	6409.08

DFD	9.1	01-Nov-2014 02:30:00	01-Nov-2014 14:00:00	6409.08	7203.33
DFD	10.6	01-Nov-2014 14:00:00	01-Nov-2014 17:49:44	7203.33	7306.5

All depth are at tool zero.

## Run002: Parameters

Parameter	Description	Tool	Value	Unit
BS	Bit Size	DNMSESSION	Depth Zoned	in
DFD	Drilling Fluid Density	Borehole	Time Zoned	lbm/gal
GR_SRC	GR Source Selection	SPULSE-GEN	GAMMA_EXT	

## Run002Depth Zoned Parameters

Parameter	Value	Start ( ft )	Stop ( ft )
BS	8.75	6885.58	6910.12
BS	6.125	6910.12	6930.9

All depth are actual.

## Run002Time Zoned Parameters

## Pass Drilling

Parameter	Value	Start Time	Stop Time	Start Depth ( ft )	Stop Depth ( ft )
DFD	9.05	03-Nov-2014 06:46:55	03-Nov-2014 13:45:00	7304	7741.83
DFD	9.65	03-Nov-2014 13:45:00	04-Nov-2014 02:00:00	7741.83	9556.92
DFD	9.8	04-Nov-2014 02:00:00	04-Nov-2014 13:30:00	9556.92	10401.67
DFD	9.7	04-Nov-2014 13:30:00	06-Nov-2014 10:52:00	10401.67	14397.92

All depth are at tool zero.

## Tool Control Parameters

## Well Composite

## Software Version

Acquisition System		Version	
MaxWell		4.0.9163.3000	
Application Patch		Patch-SP-10767_26570-4.0.9163.3001	
		Patch-Hotfix_MRT_SP4-27464-4.0.9575.3002	
Tool Elements	Description	Software Version	Firmware Version
DRILLING_SURFACE	DRILLING_SURFACE	4.0.9469.3000	
SPEC	SlimPulse Electronics Cartridge	4.0.9469.3000	

## Composite Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	Include Parallel Data
Run001	Drilling	Down	1159.17 ft	7306.50 ft	29-Oct-2014 5:26:02 PM	01-Nov-2014 5:49:44 PM	No
Run002	Drilling	Down	7304.00 ft	14397.92 ft	03-Nov-2014 6:46:55 AM	06-Nov-2014 10:52:00 AM	No

All depths are referenced to toolstring zero

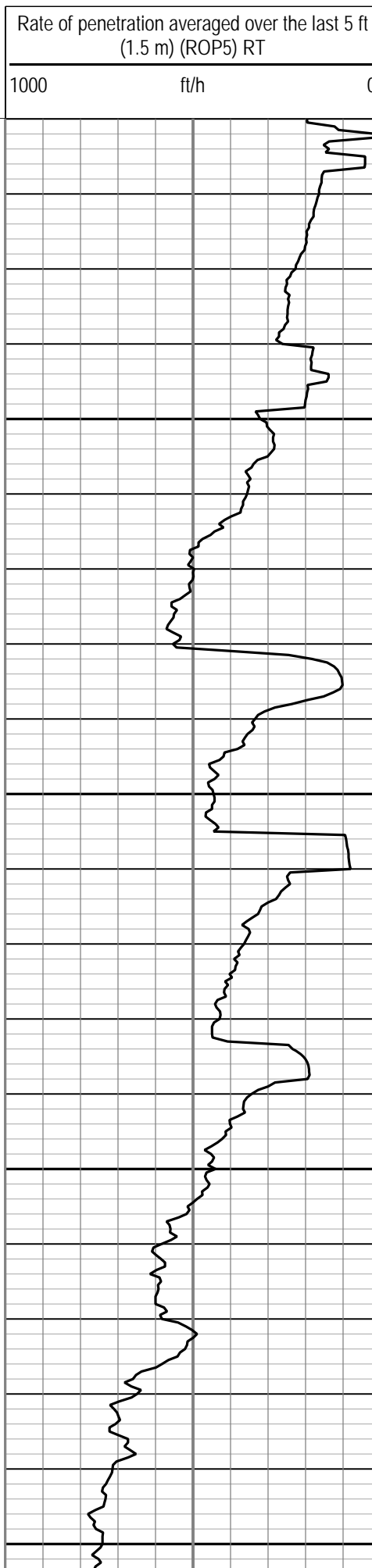
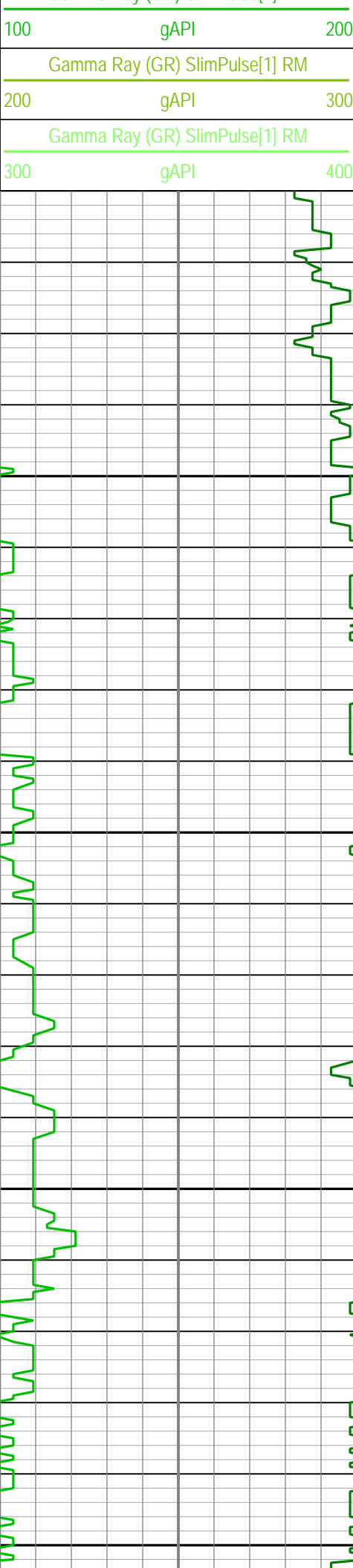
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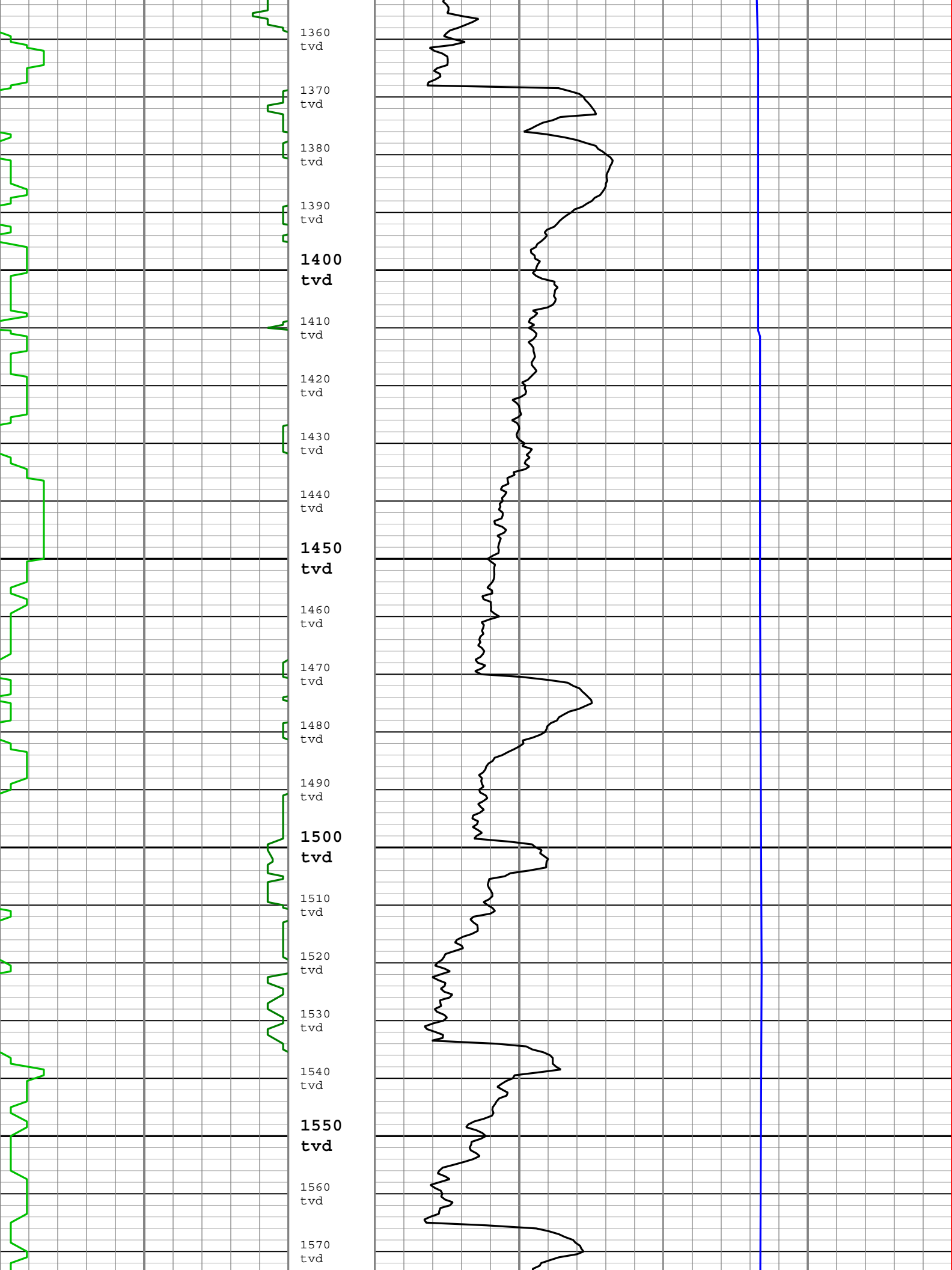
Company:Noble Energy      Well:Oscar Y10-73-1HN

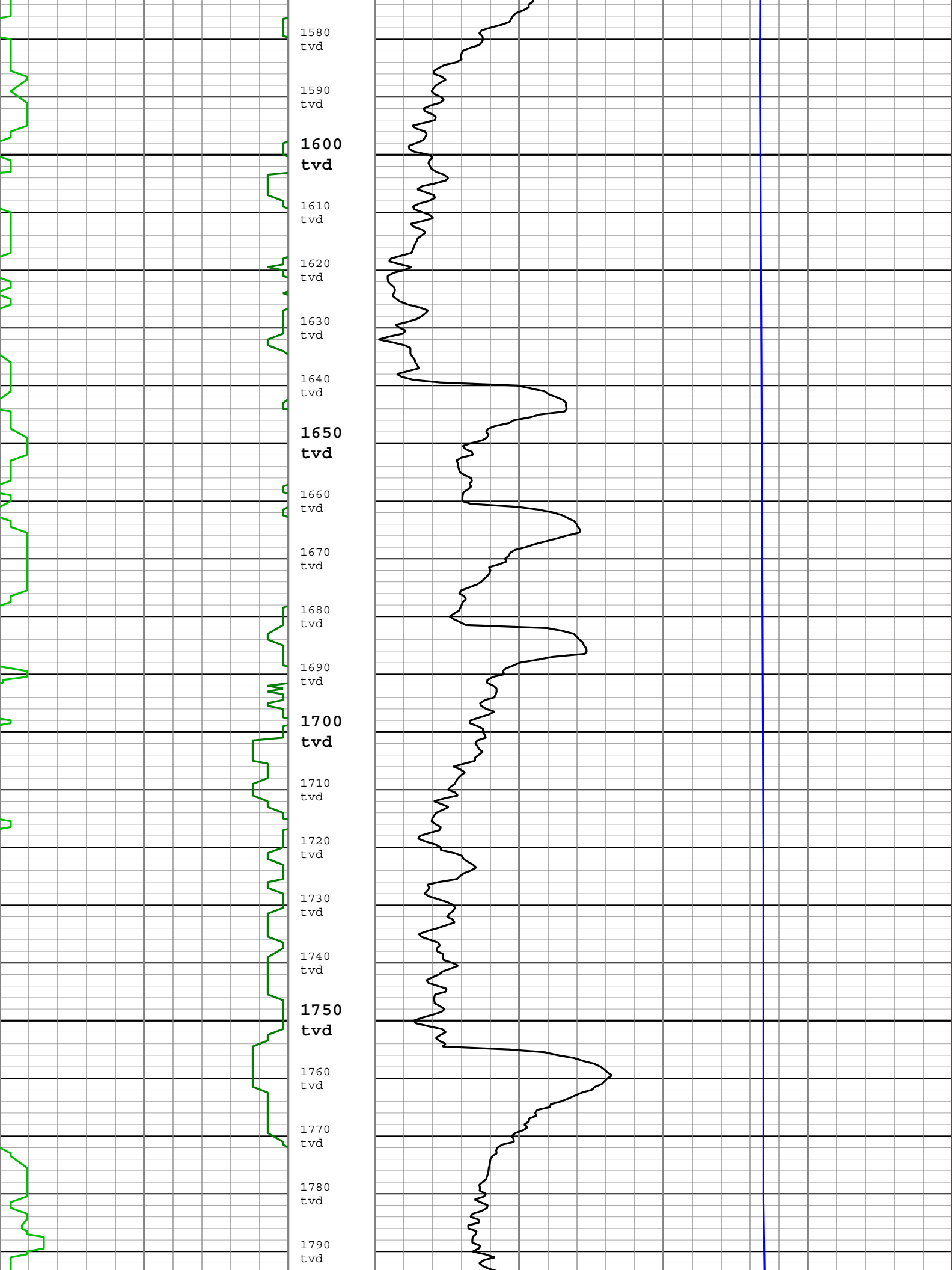
Well Composite:S307

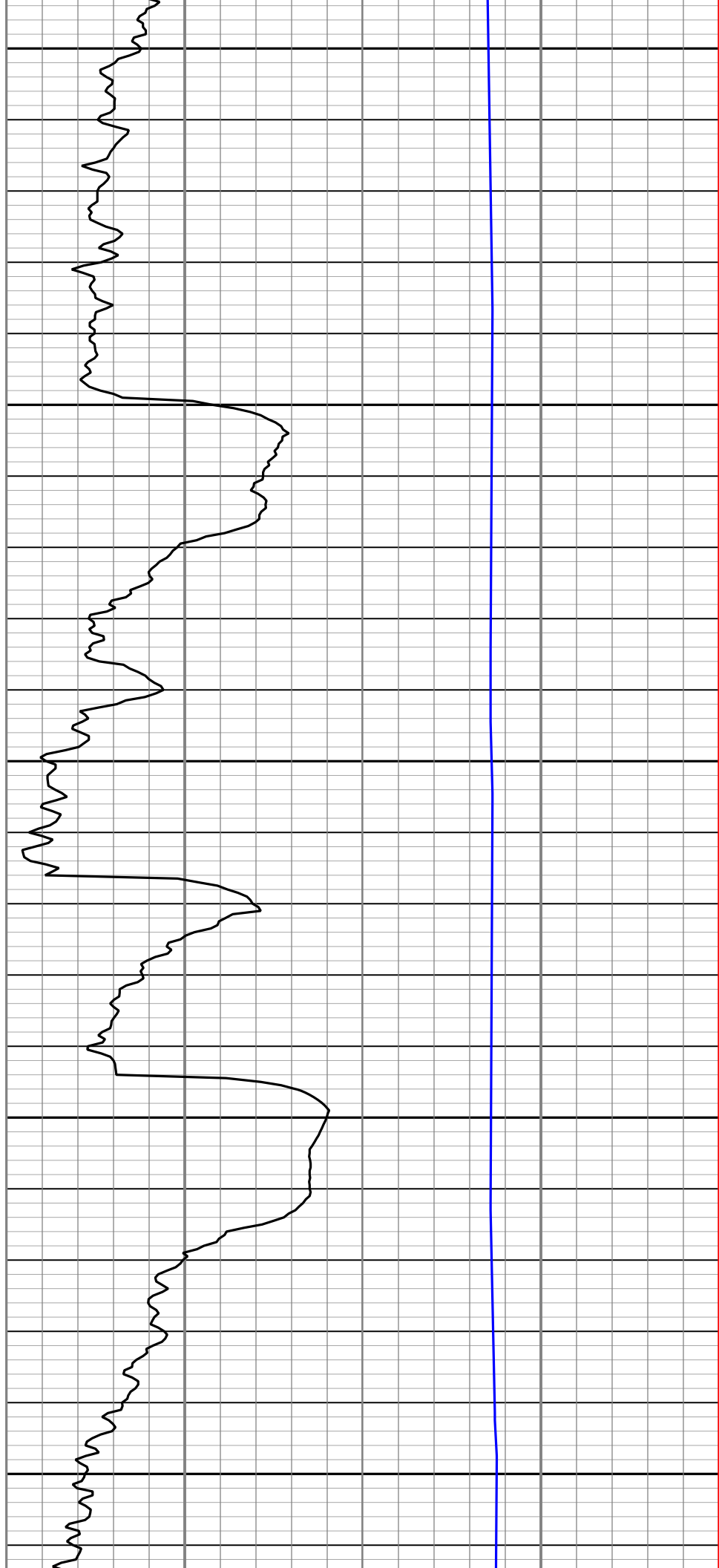
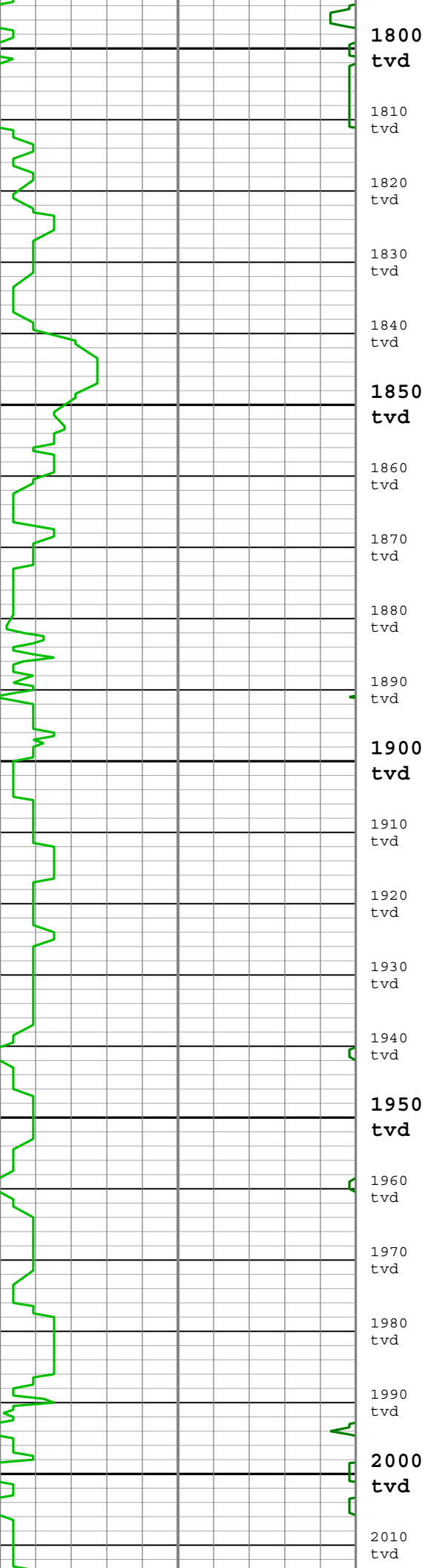
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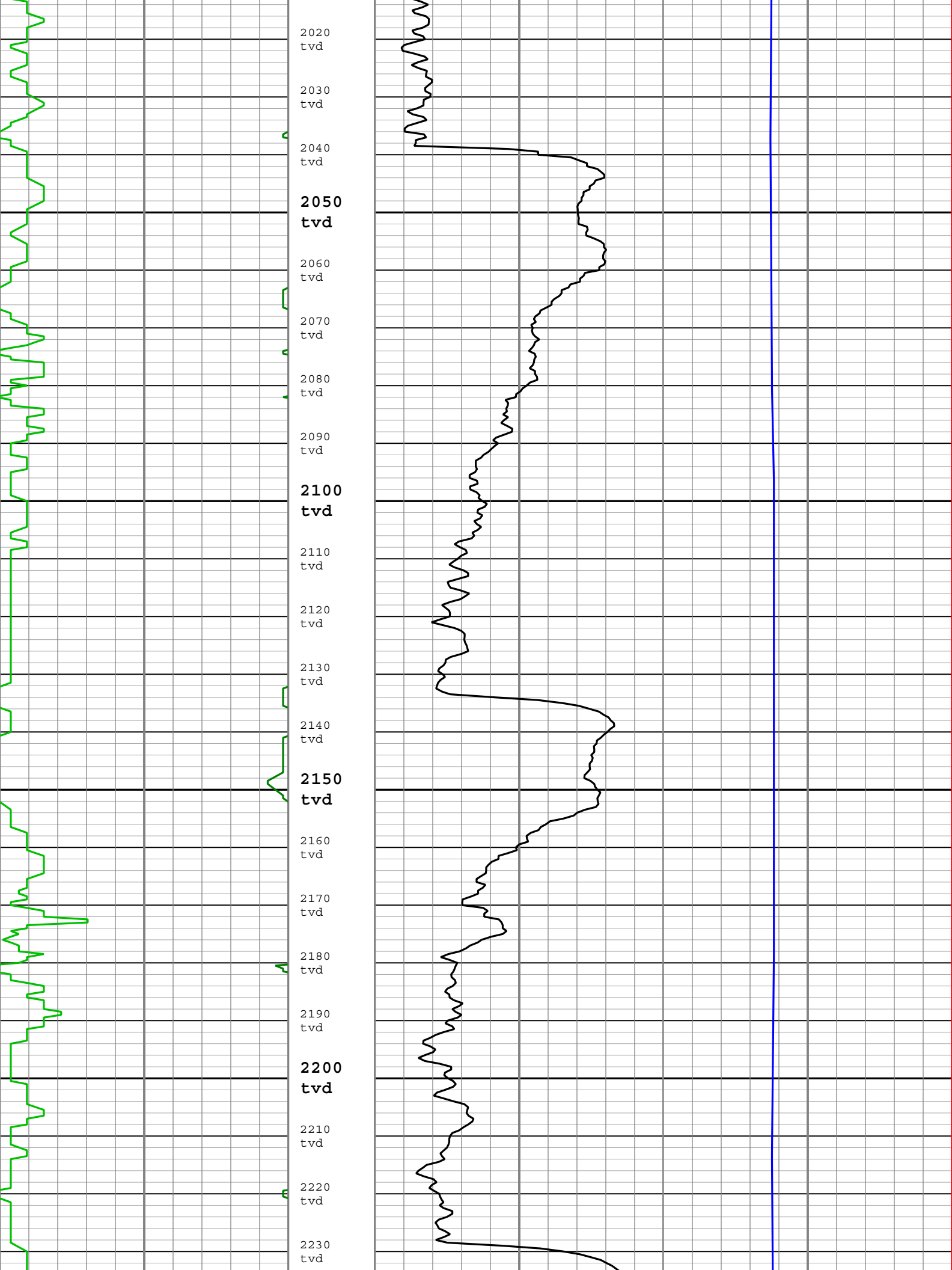
Gamma Ray (GR) SlimPulse[1] RM		
0	gAPI	100
Gamma Ray (GR) SlimPulse[1] RM		

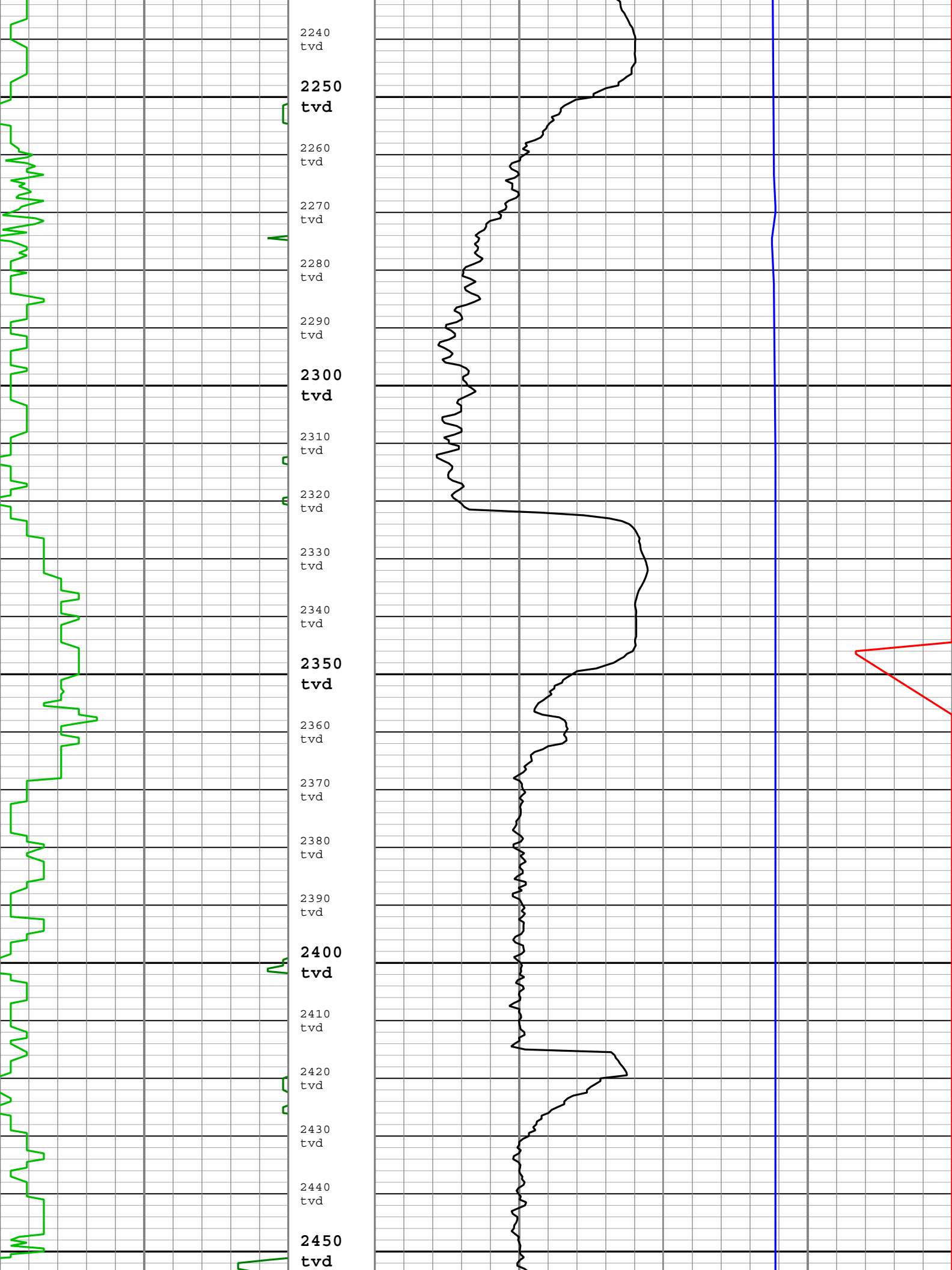


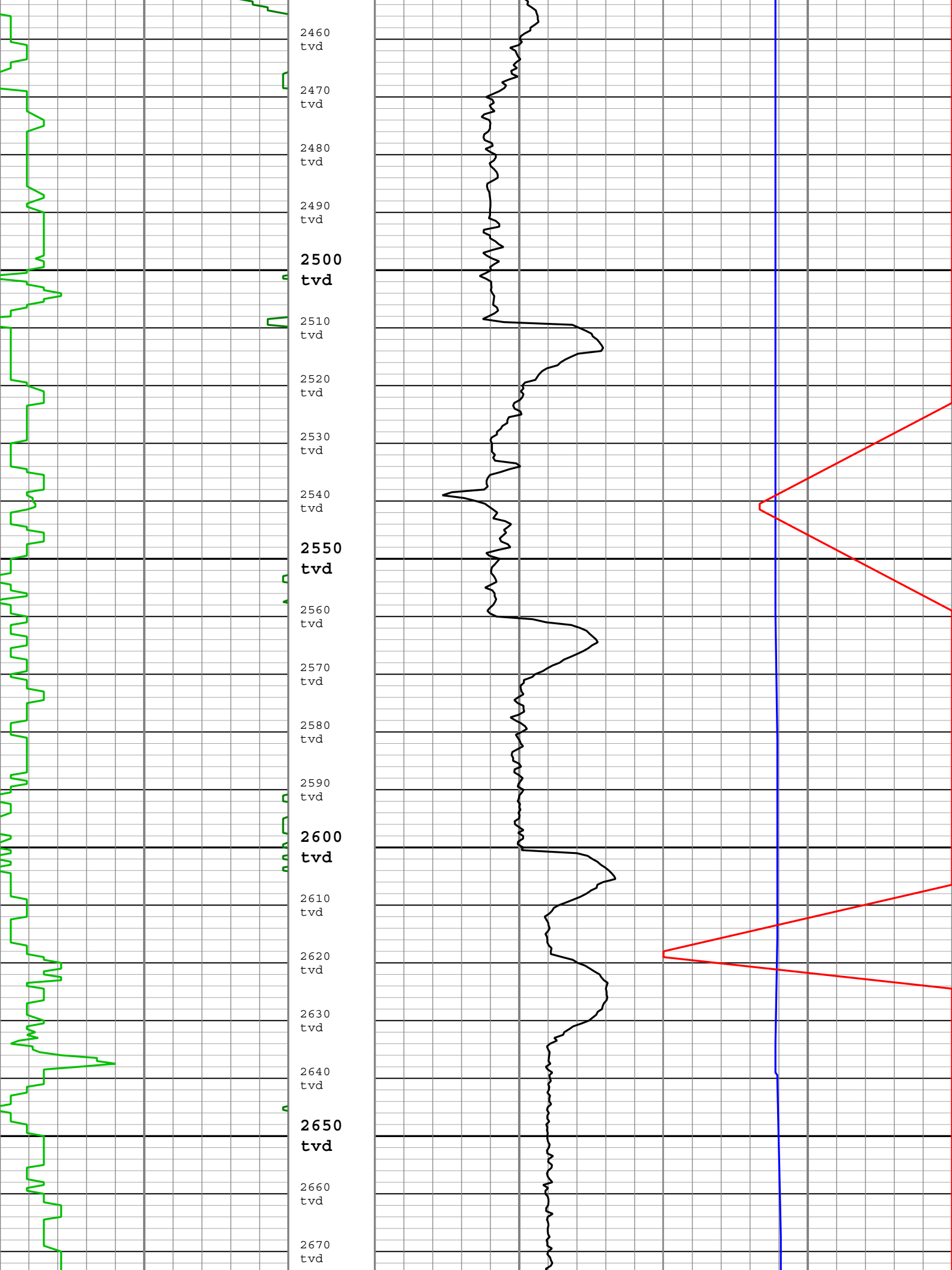


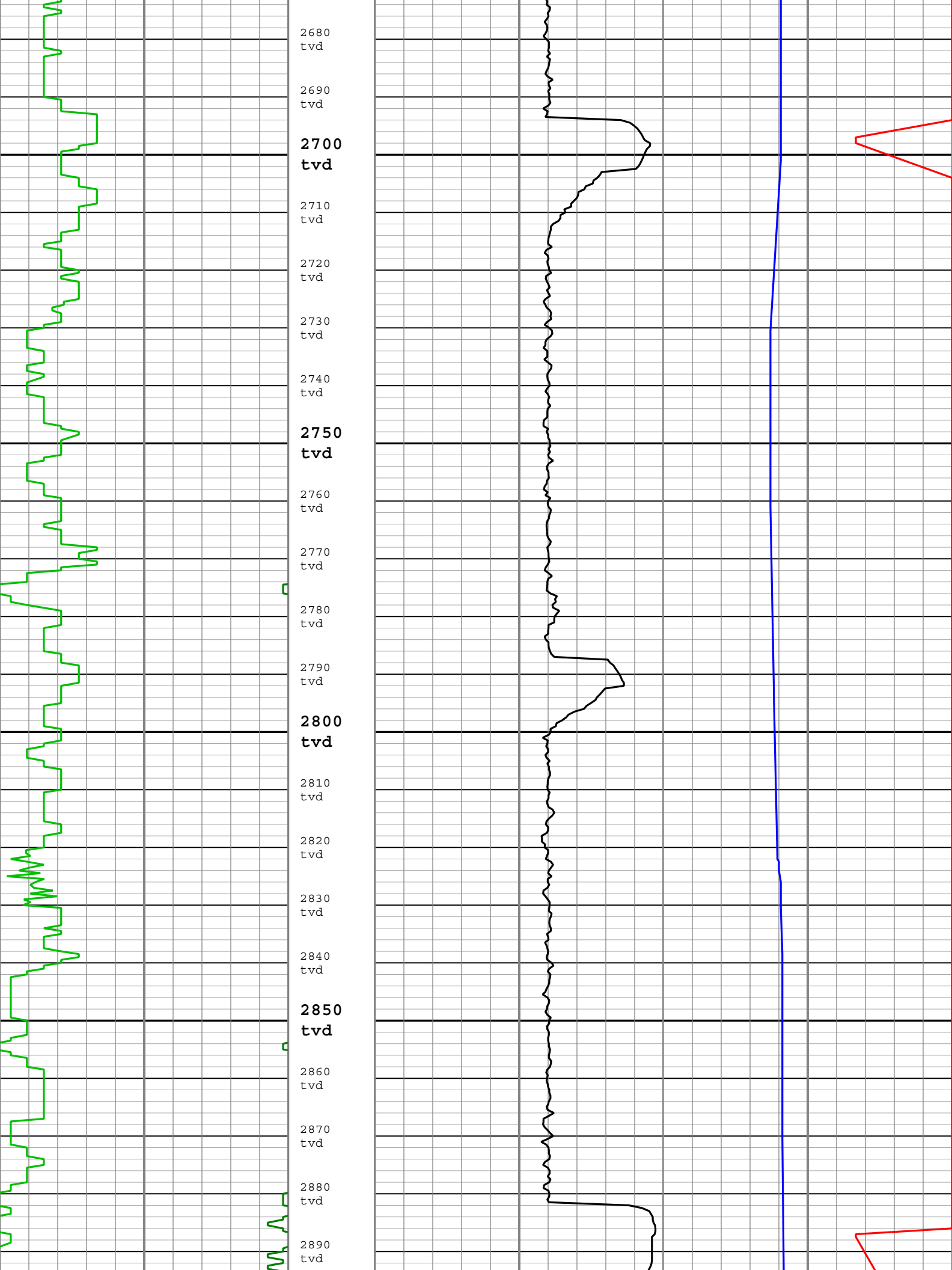


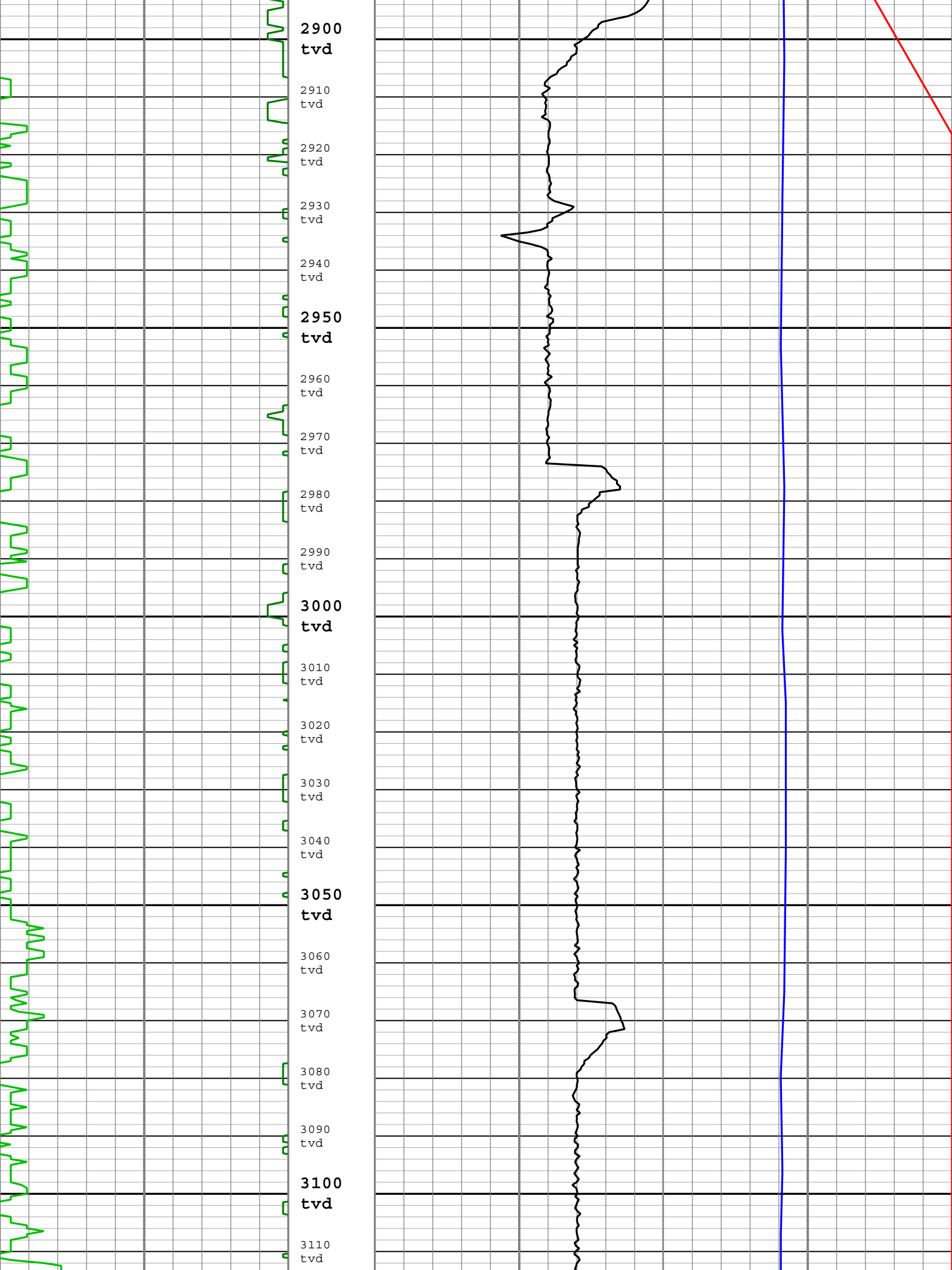


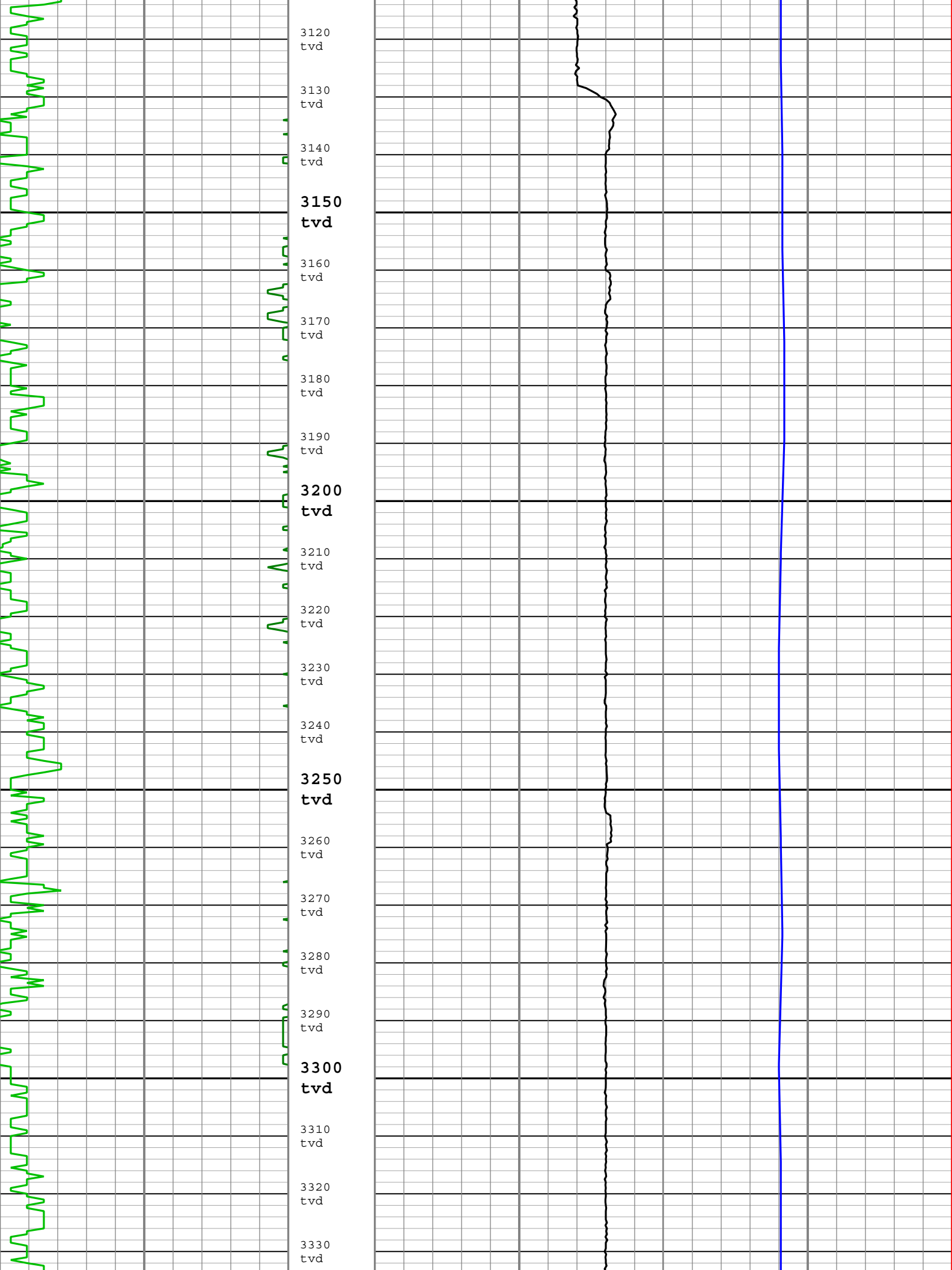


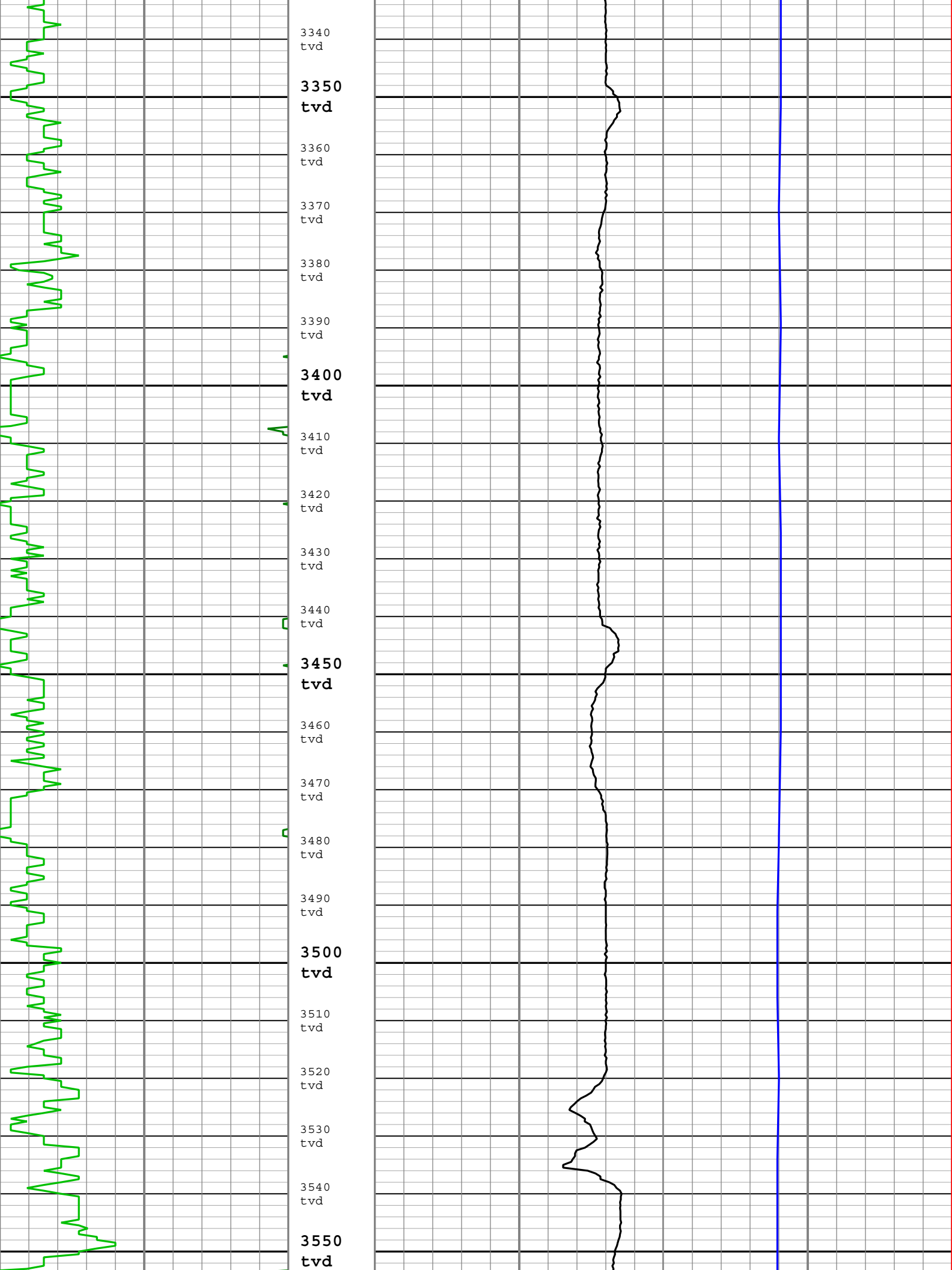


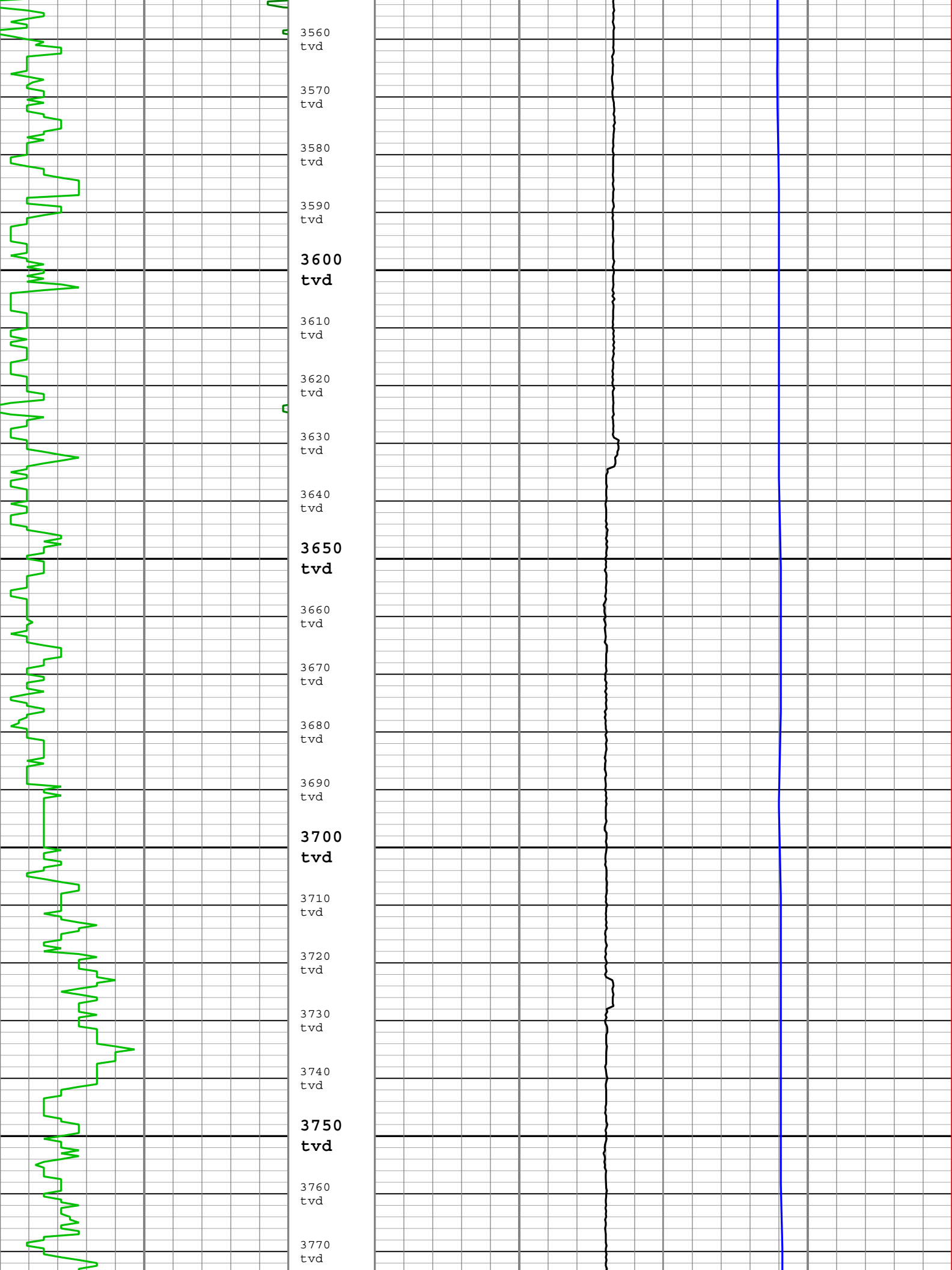


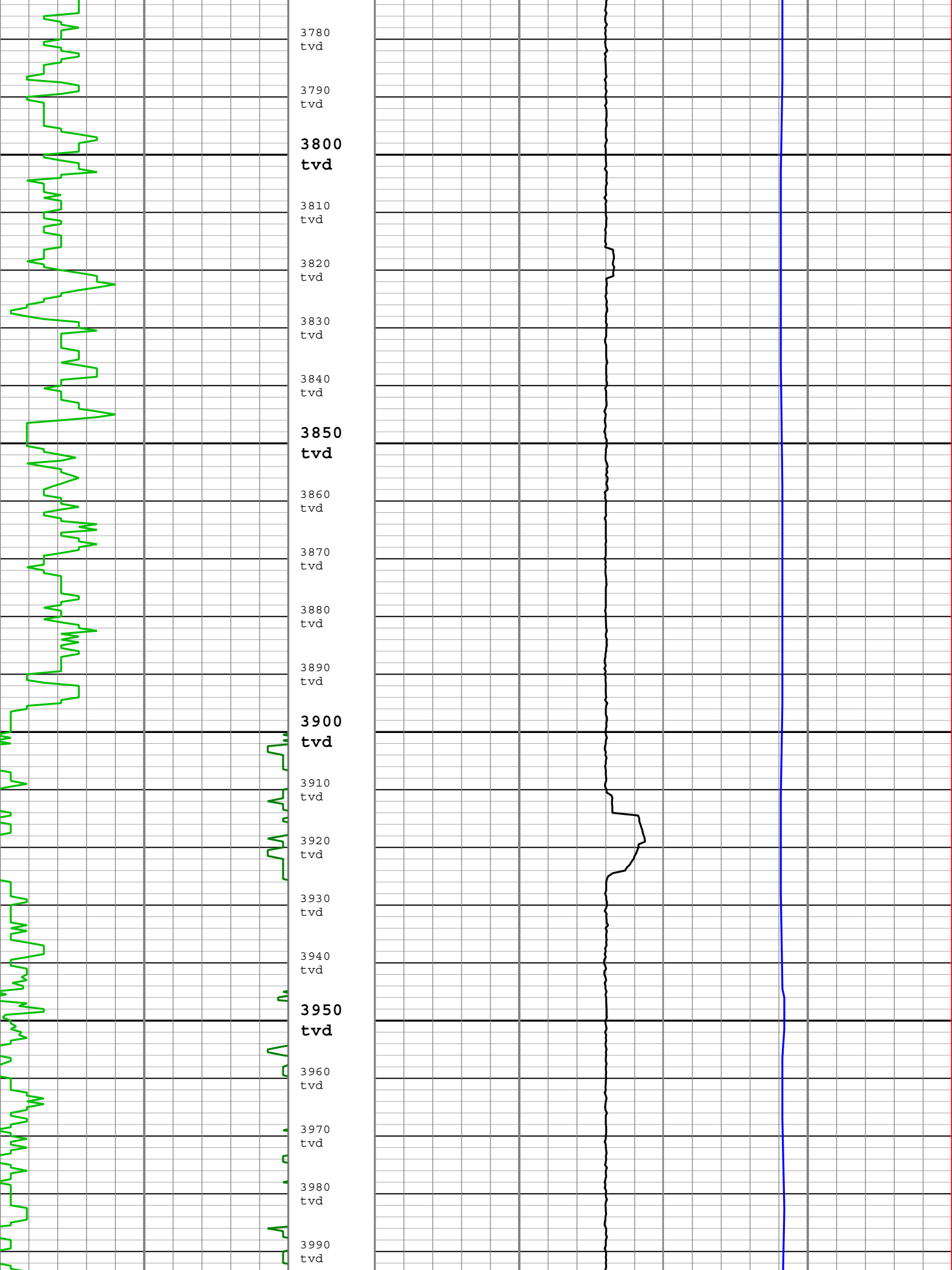


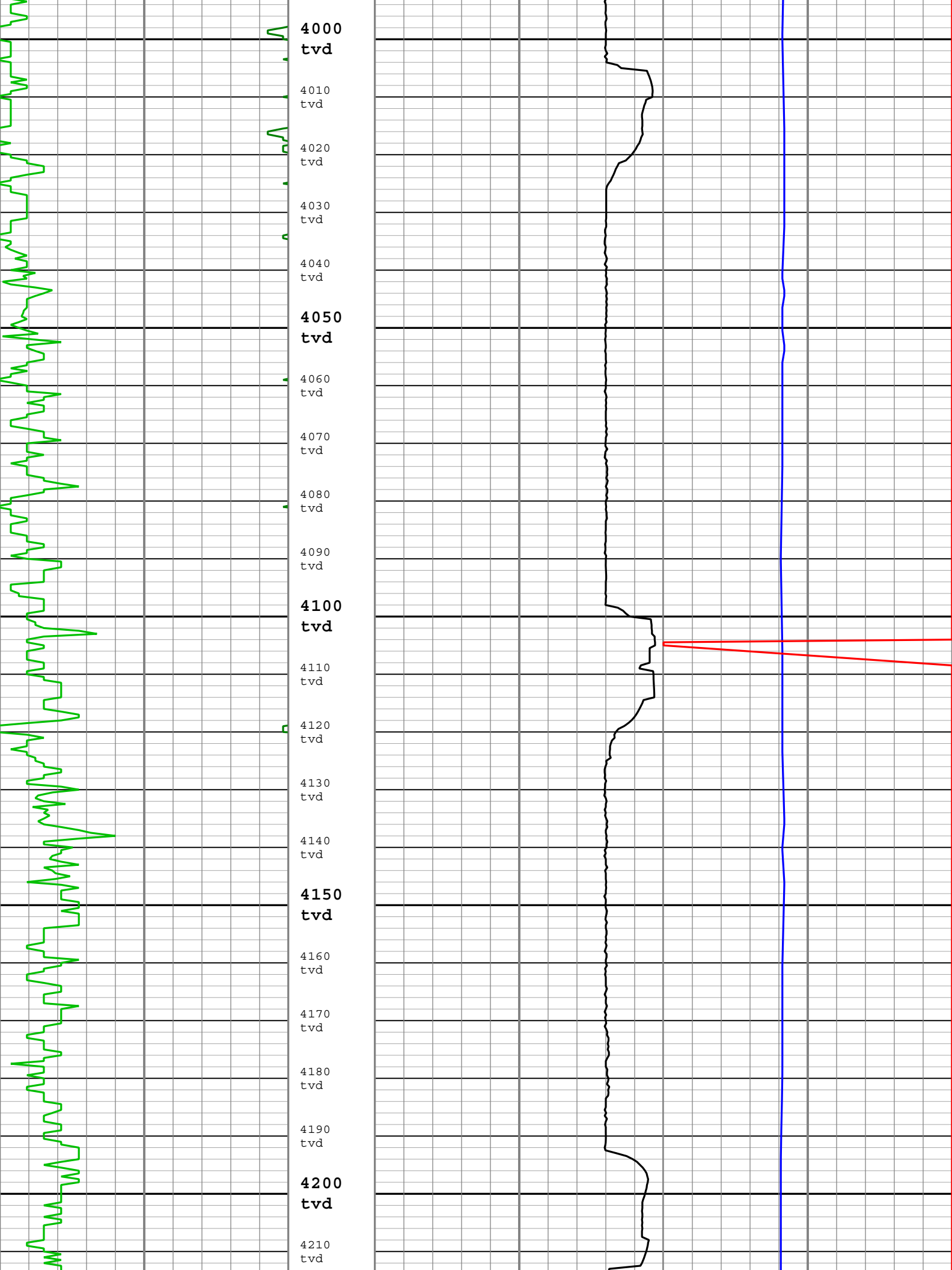


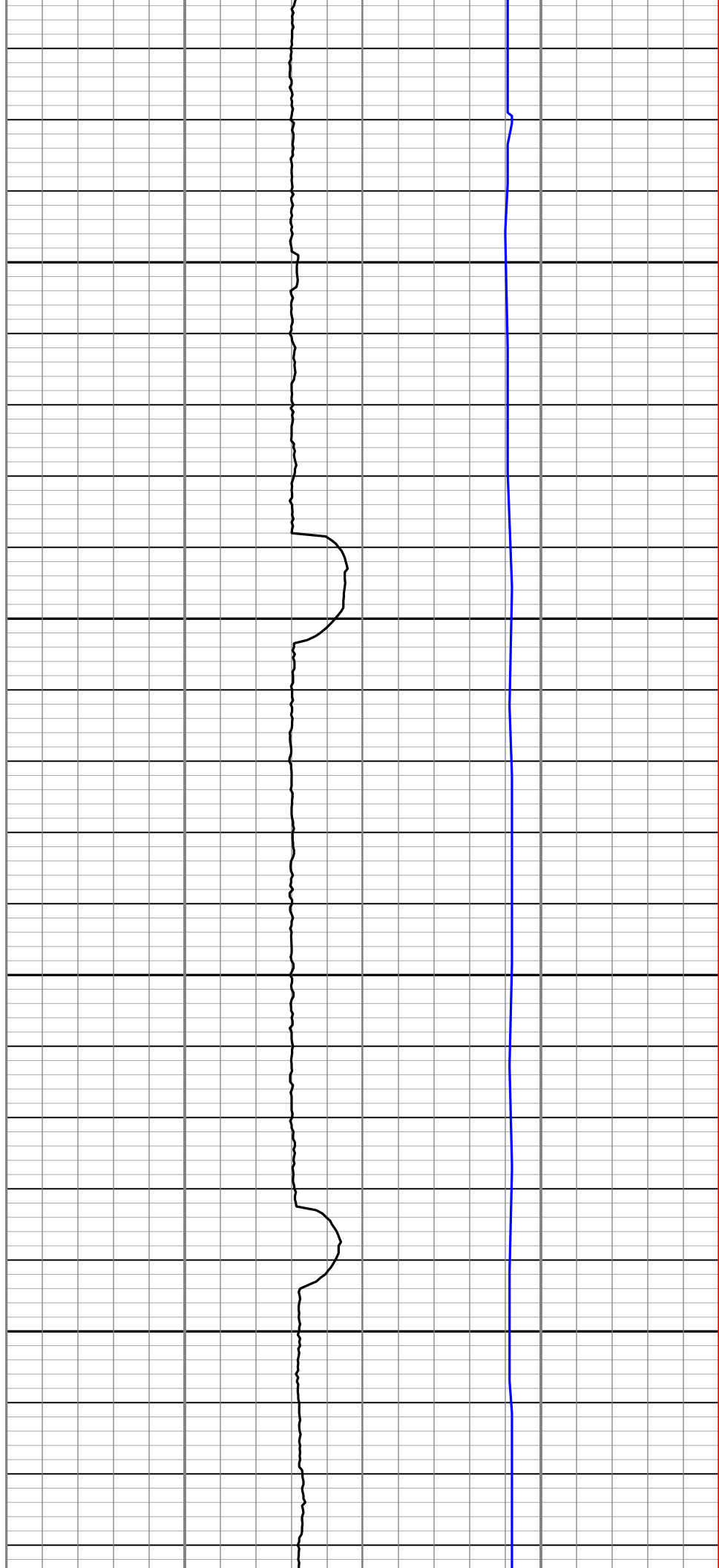
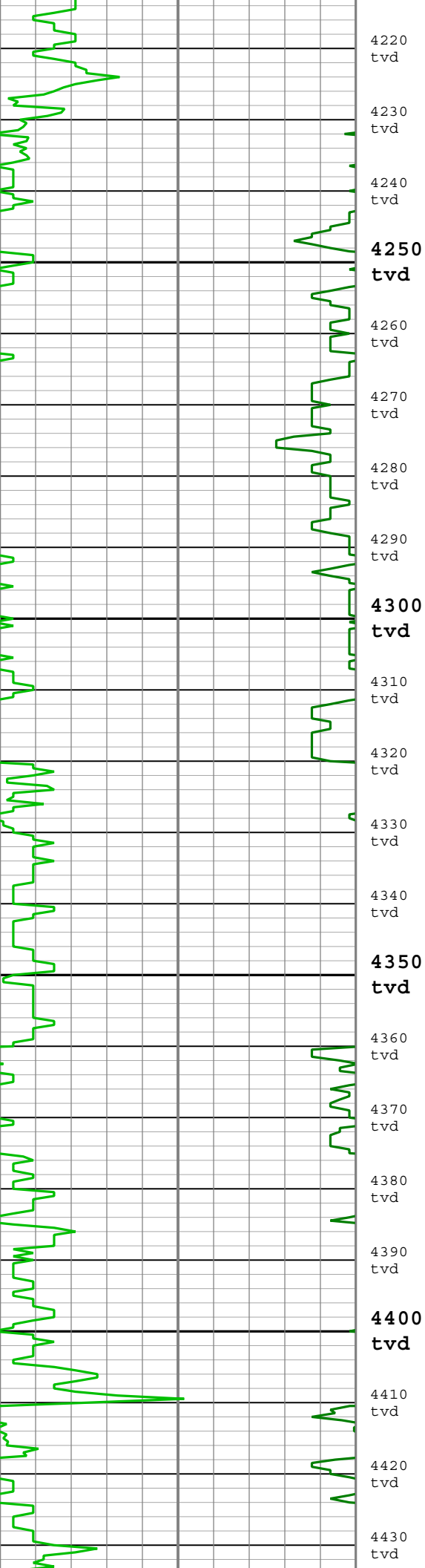


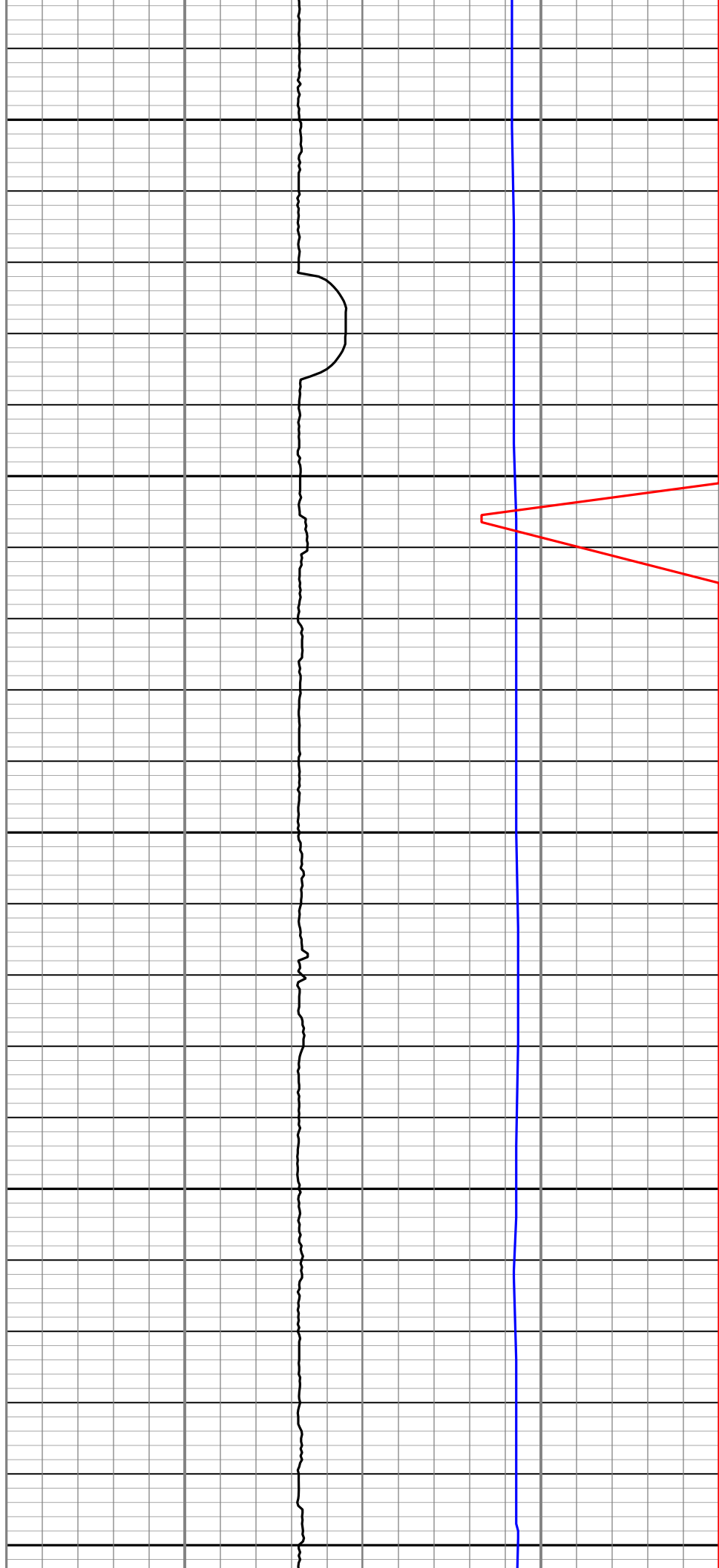
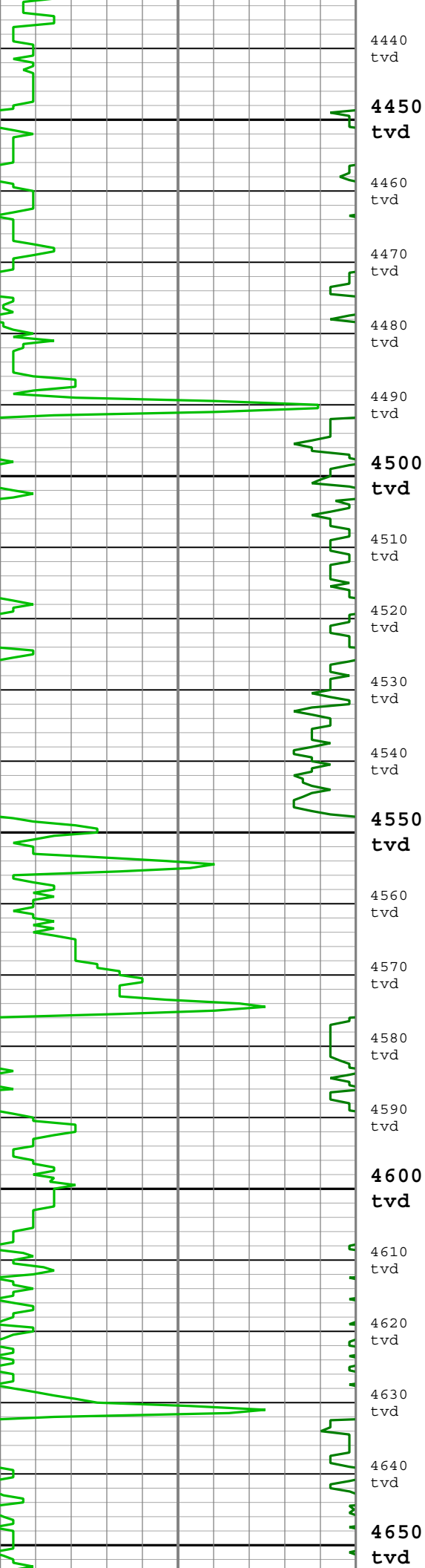


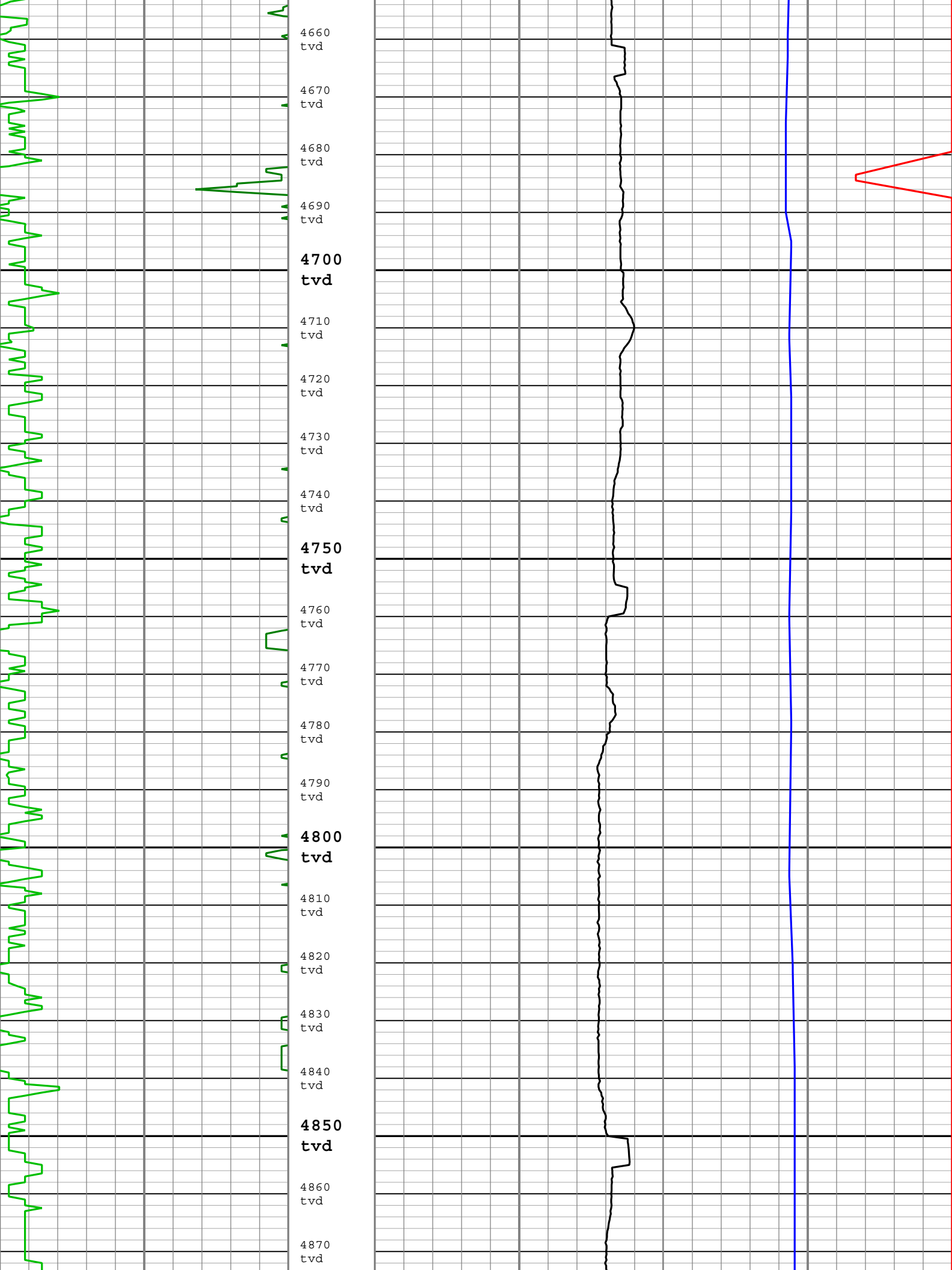


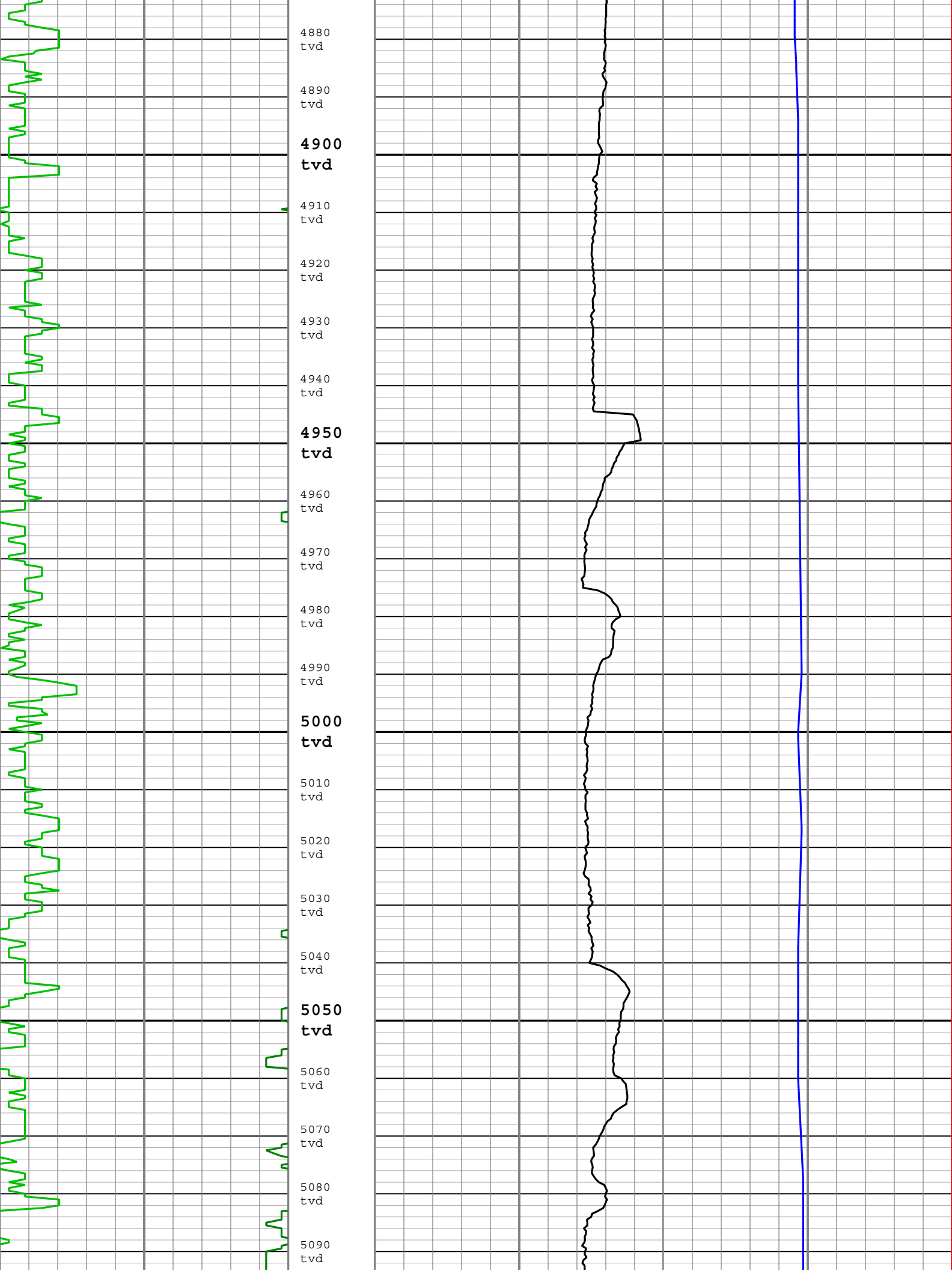


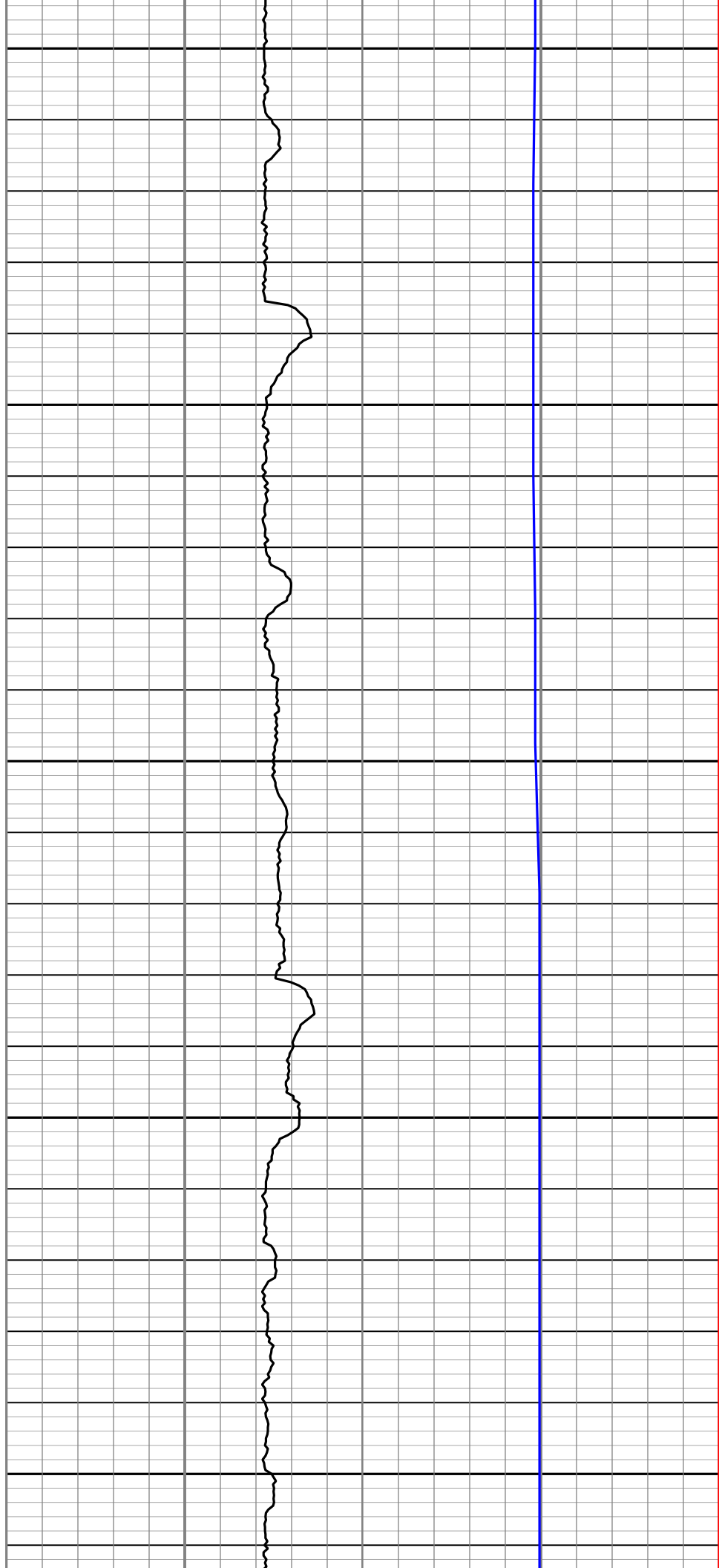
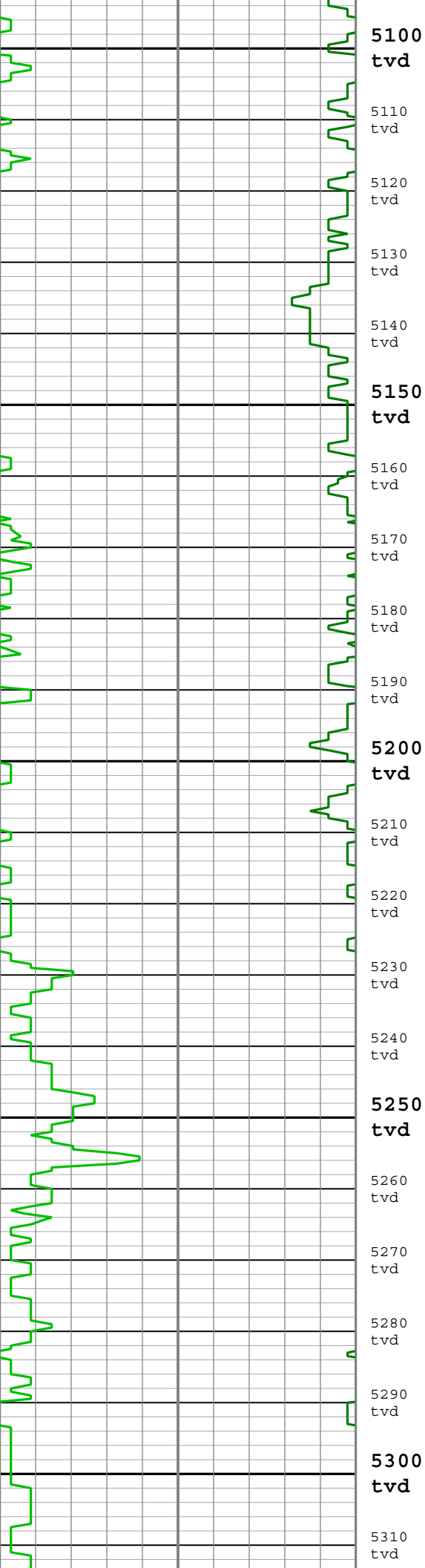


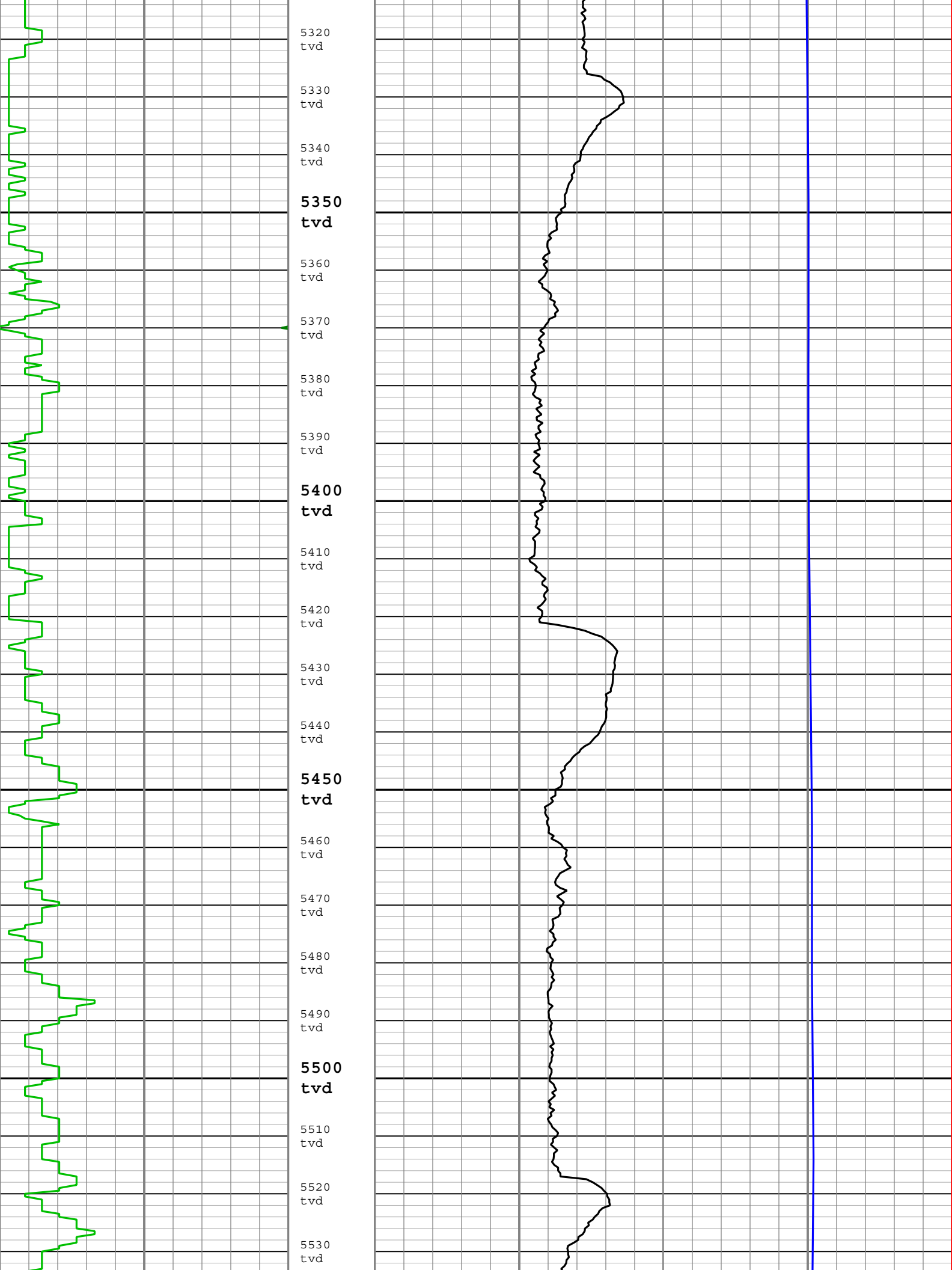


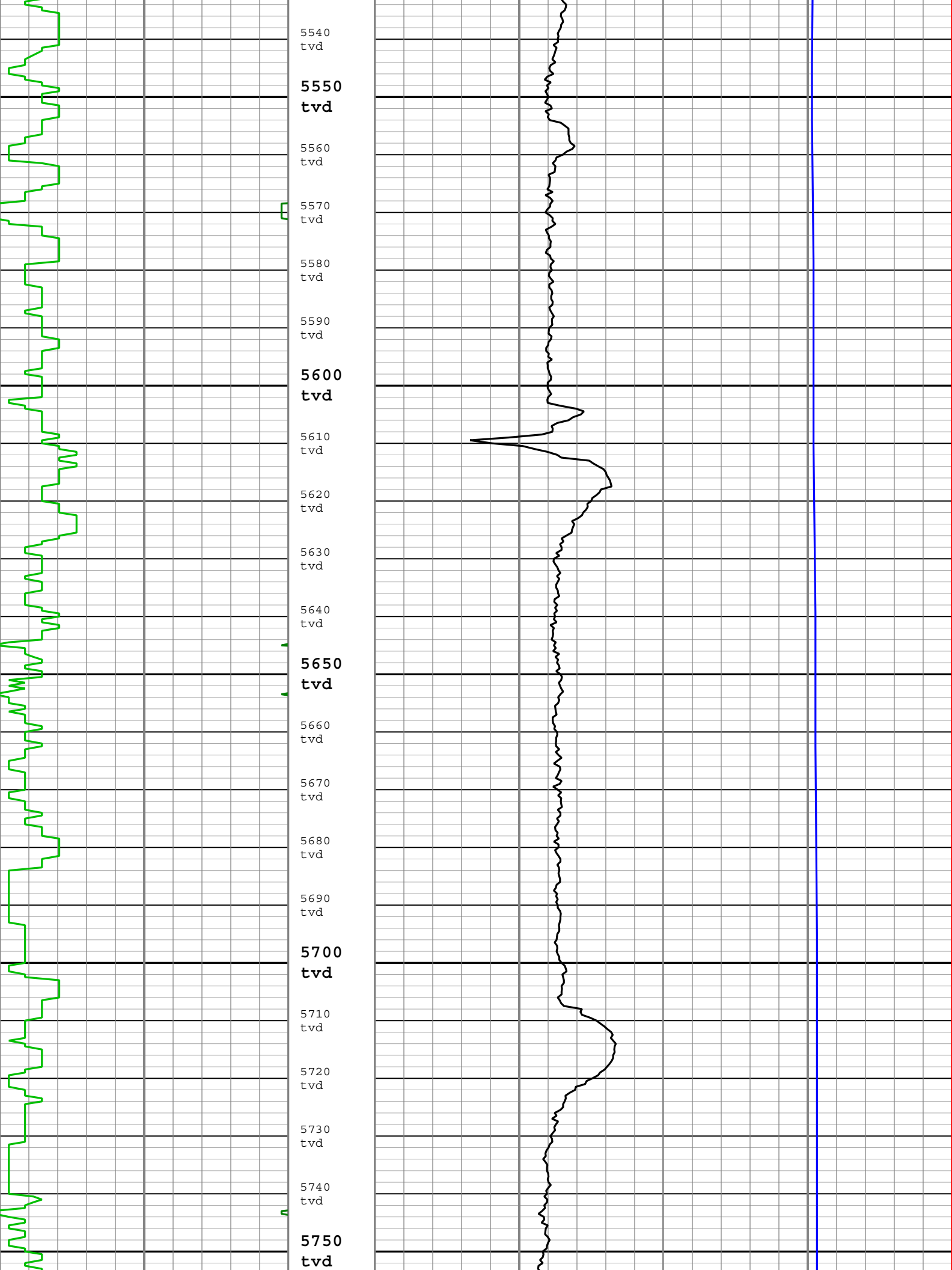


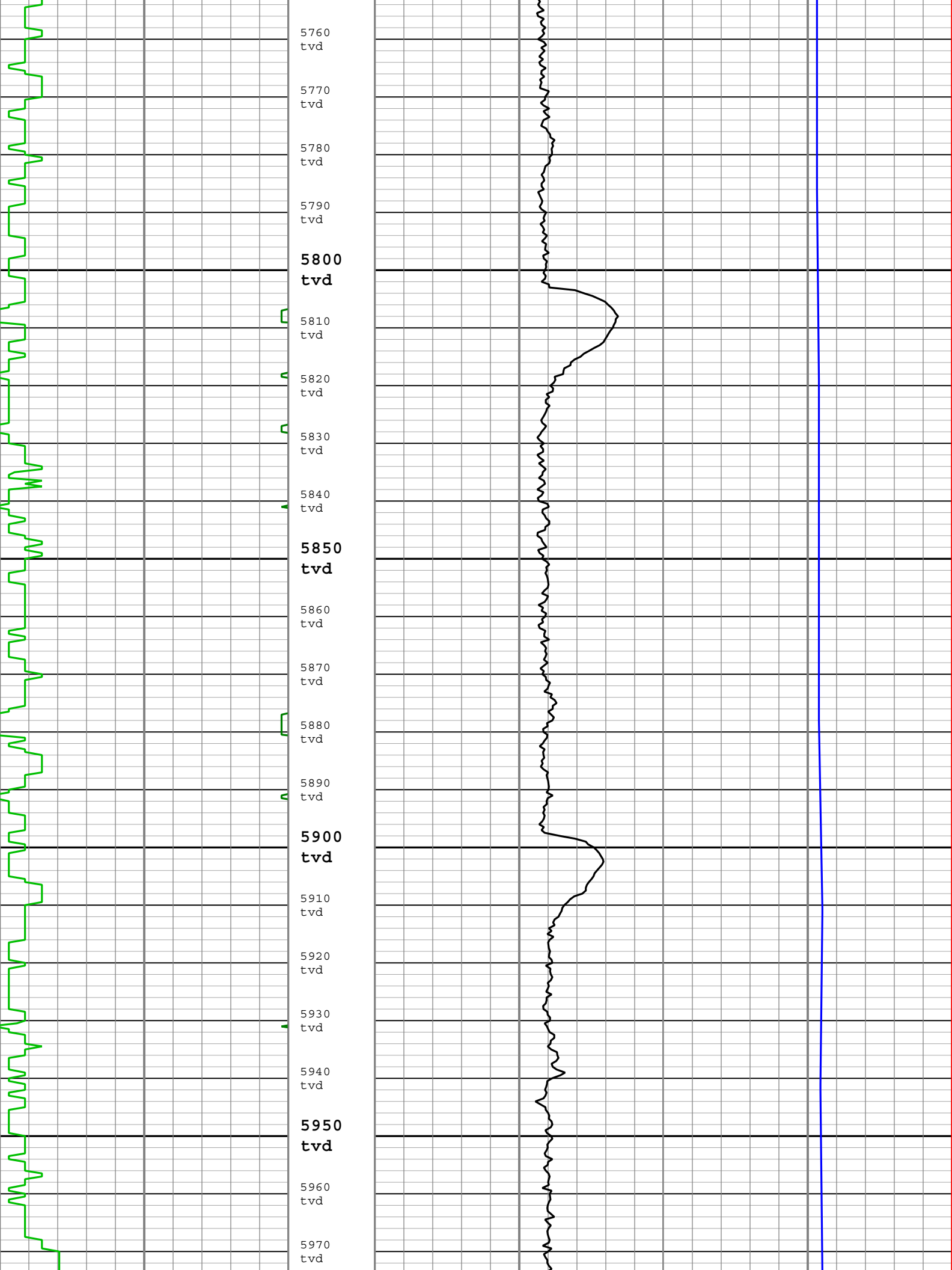


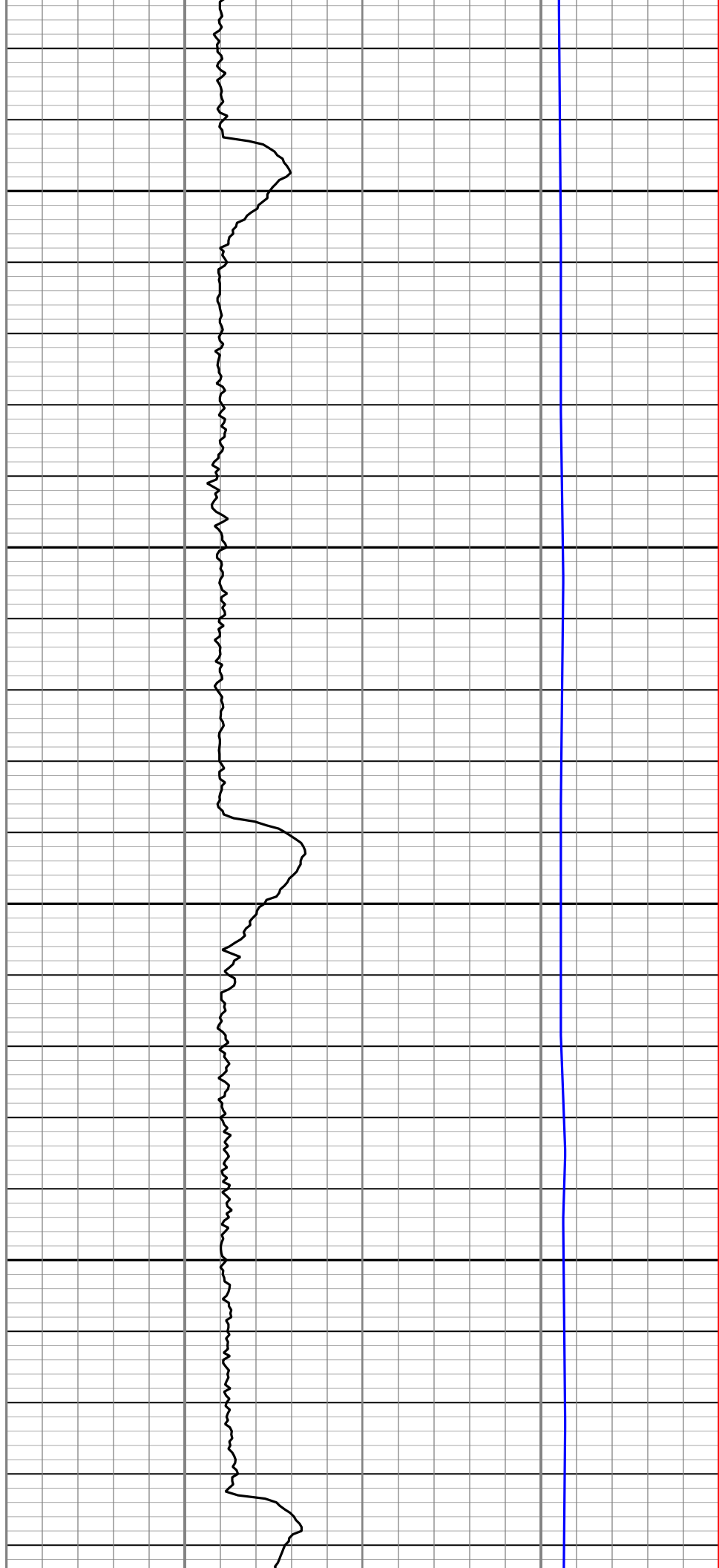
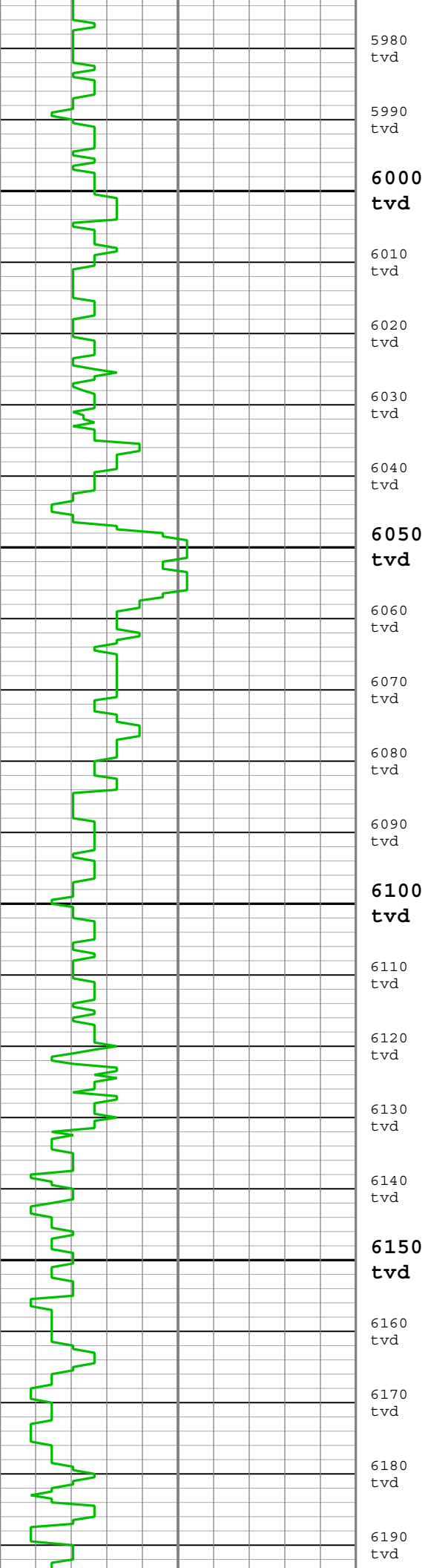


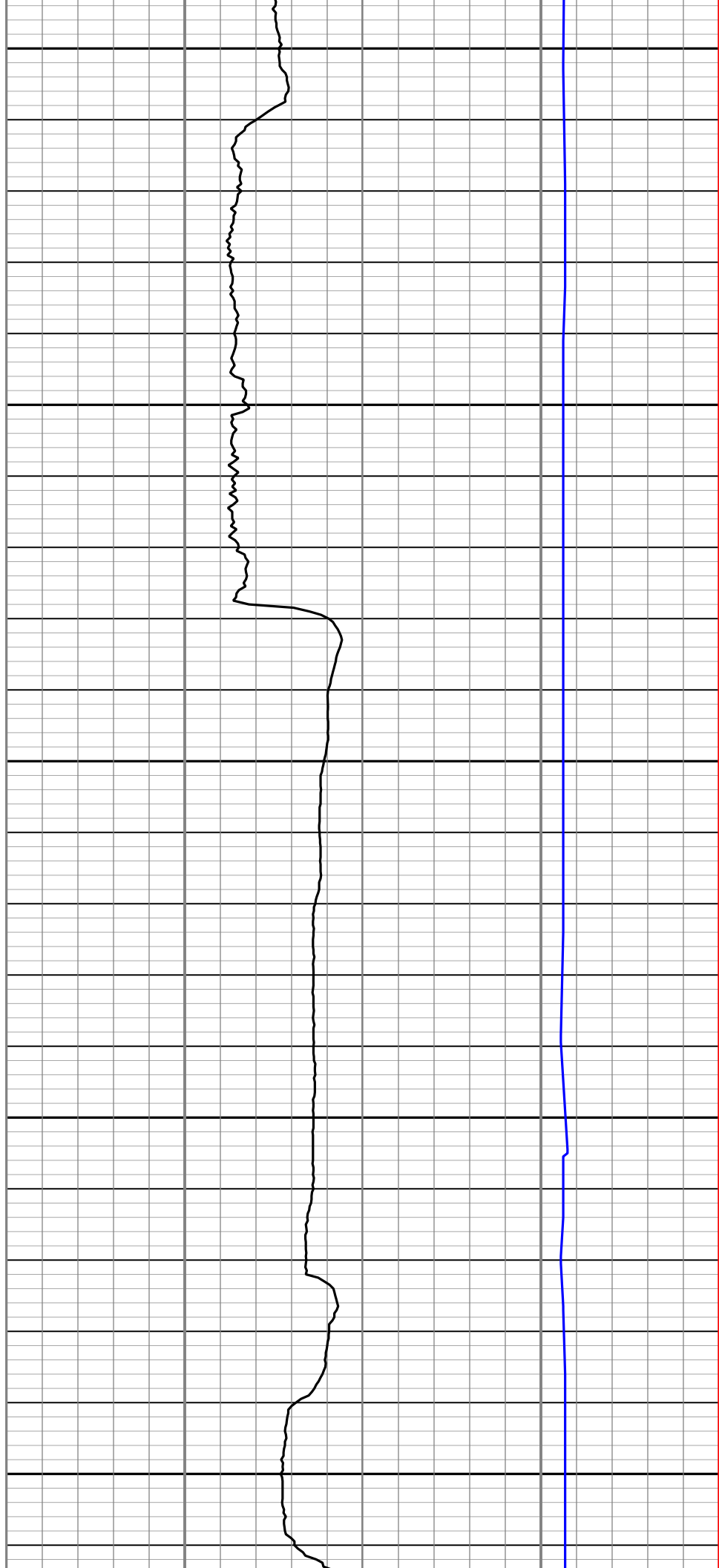
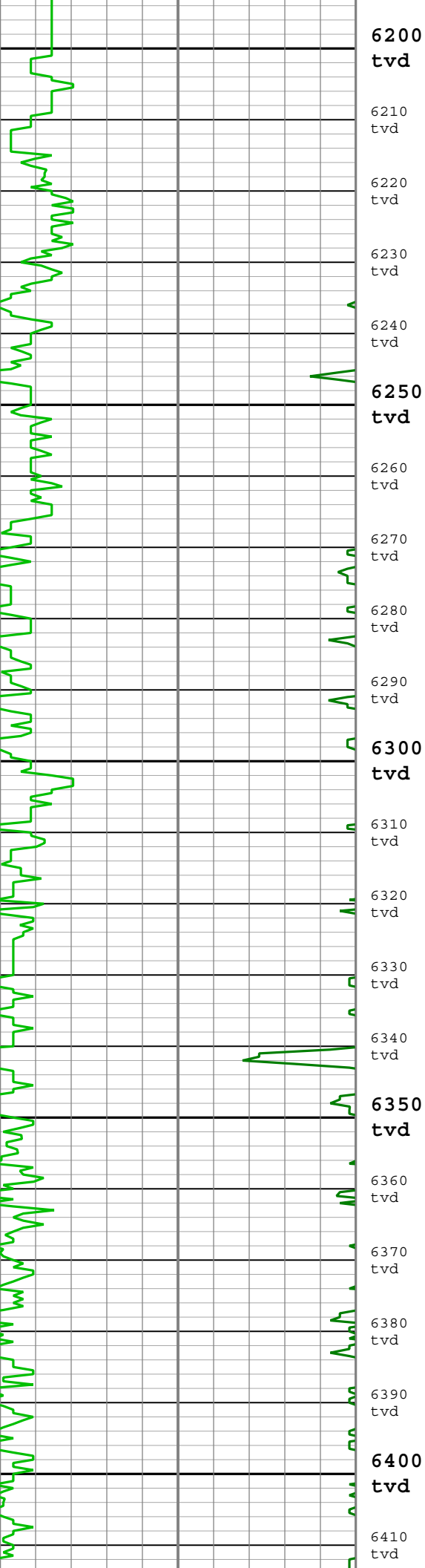


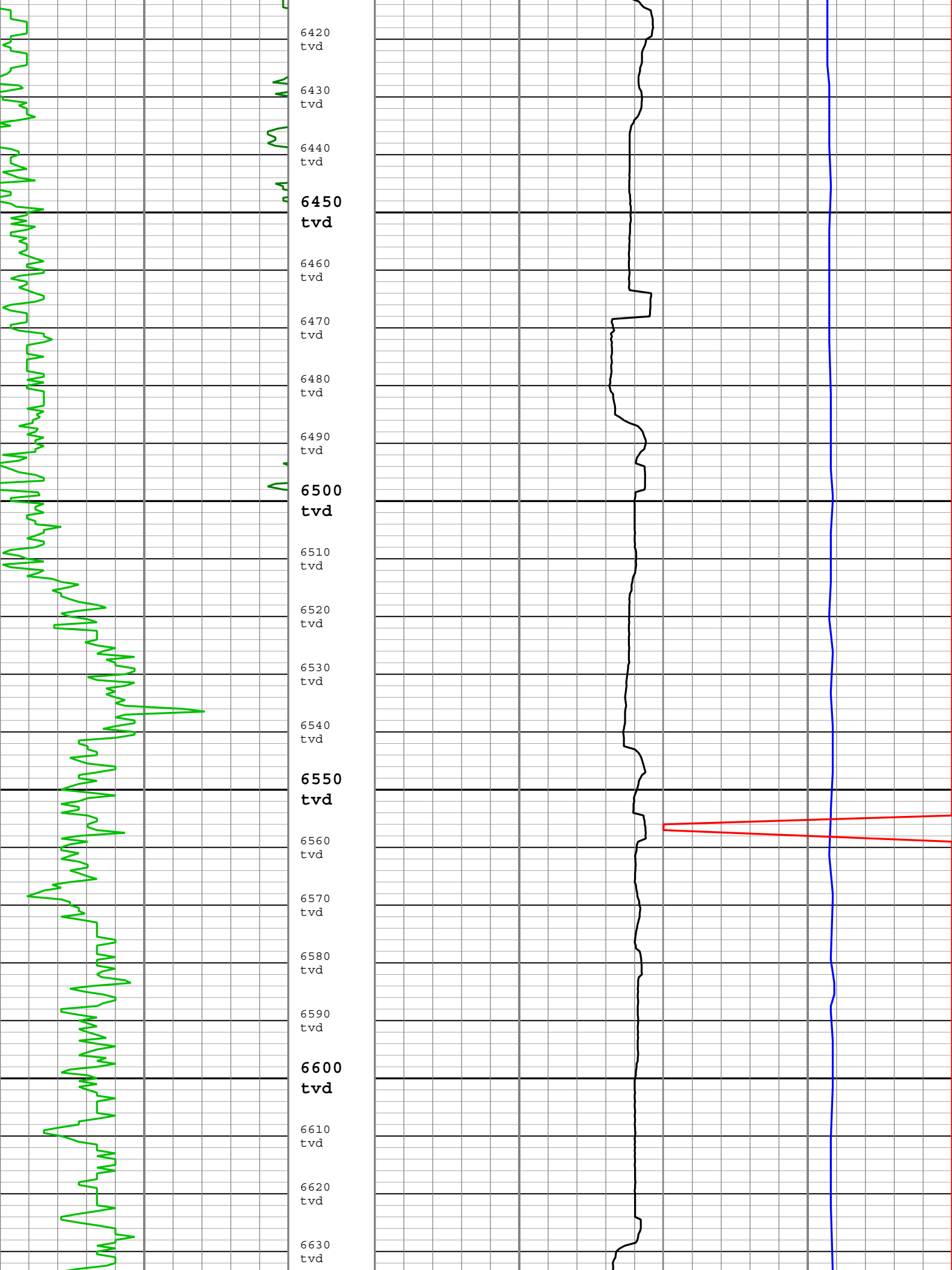


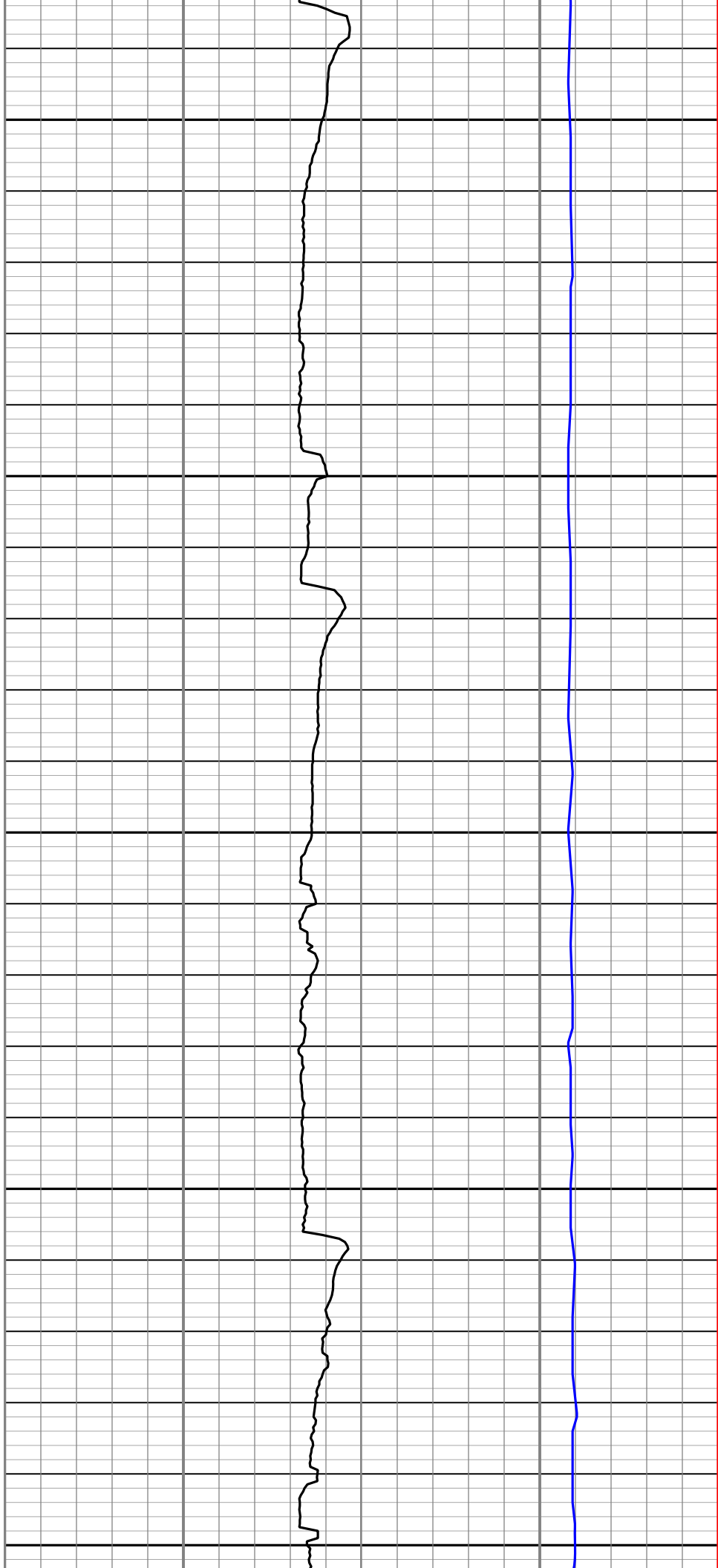
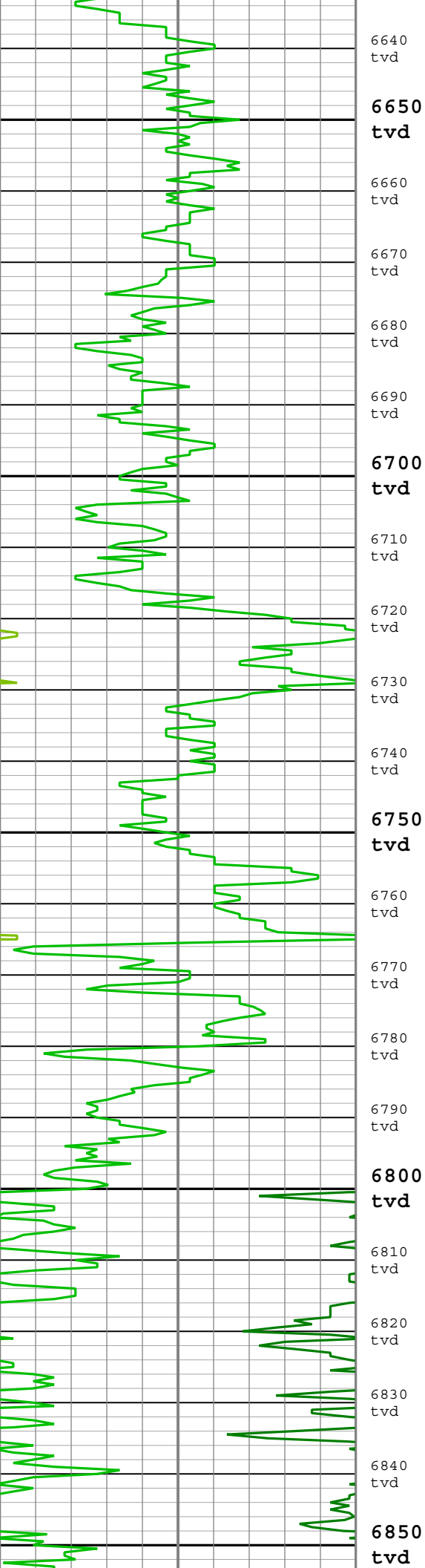


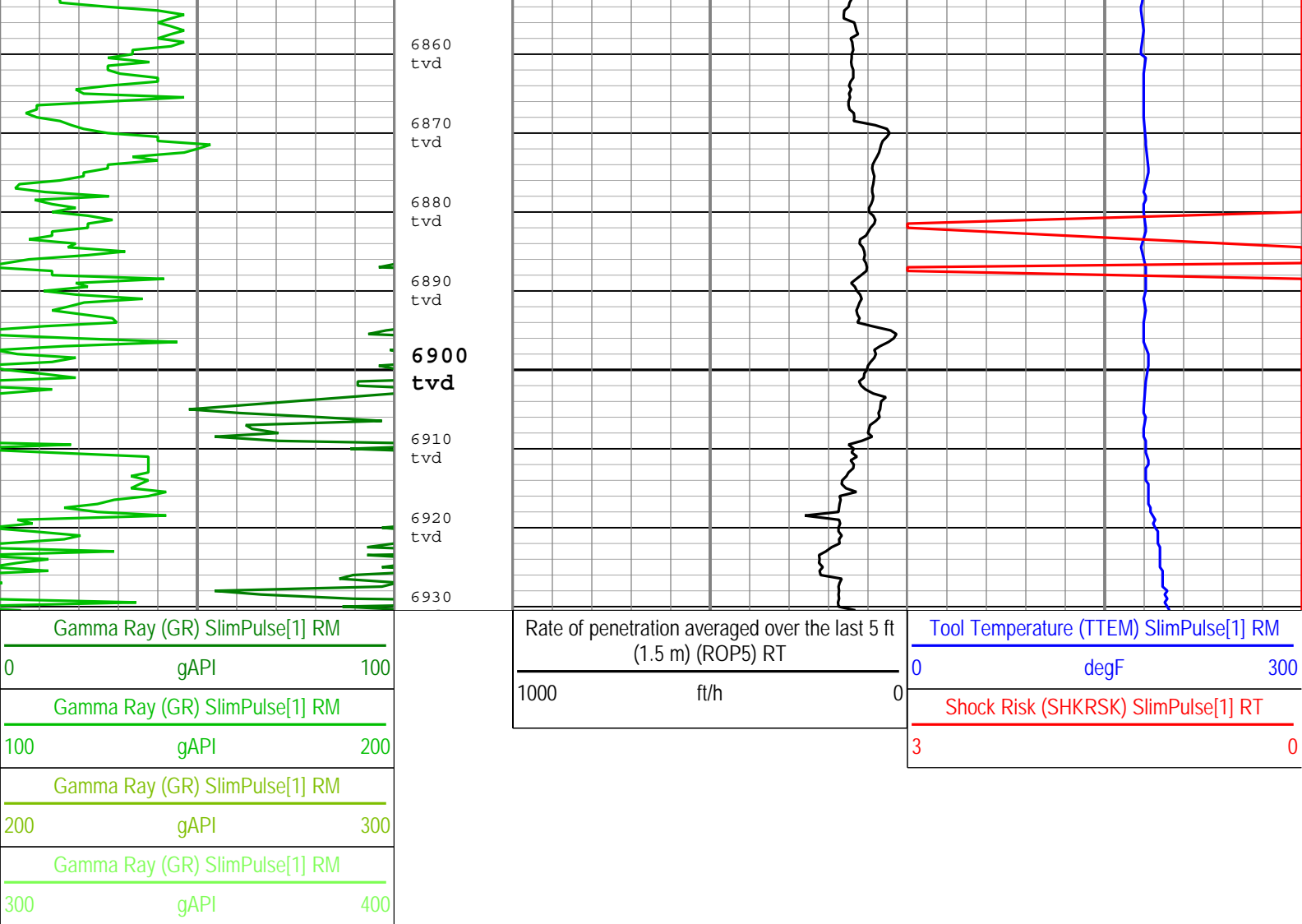












Description: SlimPulse Gamma Ray 1 Format: Log ( Final TVD Log ) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: TVD Creation Date: 06-Nov-2014 21:26:39

## Channel Processing Parameters

### Run001: Parameters

Parameter	Description	Tool	Value	Unit
BS	Bit Size	DNMSESSION	8.75	in
DFD	Drilling Fluid Density	Borehole	Time Zoned	lbm/gal
GR_SRC	GR Source Selection	SPULSE-GEN	GAMMA_EXT	

### Run001Time Zoned Parameters

#### Pass Drilling

Parameter	Value	Start Time	Stop Time	Start Depth ( ft )	Stop Depth ( ft )
DFD	9.1	29-Oct-2014 17:26:02	31-Oct-2014 14:30:00	1159.17	4751.58
DFD	8.85	31-Oct-2014 14:30:00	01-Nov-2014 02:30:00	4751.58	6409.08
DFD	9.1	01-Nov-2014 02:30:00	01-Nov-2014 14:00:00	6409.08	7203.33
DFD	10.6	01-Nov-2014 14:00:00	01-Nov-2014 17:49:44	7203.33	7306.5

All depth are at tool zero.

### Run002: Parameters

Parameter	Description	Tool	Value	Unit
BS	Bit Size	DNMSESSION	Depth Zoned	in
DFD	Drilling Fluid Density	Borehole	Time Zoned	lbm/gal
GR_SRC	GR Source Selection	SPULSE-GEN	GAMMA_EXT	

Run002Depth Zoned Parameters

Parameter	Value	Start ( ft )	Stop ( ft )
BS	8.75	6885.58	6910.12
BS	6.125	6910.12	6930.9

All depth are actual.

Run002Time Zoned Parameters

Pass Drilling

Parameter	Value	Start Time	Stop Time	Start Depth ( ft )	Stop Depth ( ft )
DFD	9.05	03-Nov-2014 06:46:55	03-Nov-2014 13:45:00	7304	7741.83
DFD	9.65	03-Nov-2014 13:45:00	04-Nov-2014 02:00:00	7741.83	9556.92
DFD	9.8	04-Nov-2014 02:00:00	04-Nov-2014 13:30:00	9556.92	10401.67
DFD	9.7	04-Nov-2014 13:30:00	06-Nov-2014 10:52:00	10401.67	14397.92

All depth are at tool zero.

Tool Control Parameters

Survey Record

Survey Calculation

Method :	Minimum Radius of Curvature	DLS Method :	Lubinski
North Reference :	Grid North	Total Correction Formula :	Magnetic Dec - Grid Convergence
Grid Convergence :	0.63 deg		

Rig Location

Latitude :	40° 9' 7.99" N	Longitude :	104° 31' 52.25" W
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Tie In Point

Measured Depth:	0.00 ft	Inclination:	0.00 deg	Azimuth:	0.00 deg
True Vertical Depth:	0.00 ft	North Displacement:	0.00 ft	East Displacement:	0.00 ft
N/-S VSec Origin:	0.00 ft	E/-W VSec Origin:	0.00 ft	Vertical Section Azimuth:	358.27 deg

D&I Inits Computed and Values Used - Run001

Geomagnetic Model :	BGGM 2014	Geomagnetic Date :	23-Oct-2014
Computed Location B :	52561.28 nT +/- 300.00nT	Used Location B :	52598.00 nT +/- 300.00nT
Computed Location G :	999.52 mgn +/- 2.50mgn	Used Location G :	999.52 mgn +/- 2.50mgn
Computed Magnetic Dip :	66.77 deg +/- 0.45deg	Used Magnetic Dip :	66.73 deg +/- 0.45deg
Computed Magnetic Dec :	8.36 deg	Used Magnetic Dec :	8.34 deg
Computed Total Correction :	7.73 deg	Used Total Correction :	7.71 deg

D&I Inits Computed and Values Used - Run002

Geomagnetic Model :	BGGM 2014	Geomagnetic Date :	02-Nov-2014
Computed Location B :	52557.59 nT +/- 300.00nT	Used Location B :	52598.00 nT +/- 300.00nT
Computed Location G :	999.52 mgn +/- 2.50mgn	Used Location G :	999.52 mgn +/- 2.50mgn
Computed Magnetic Dip :	66.76 deg +/- 0.45deg	Used Magnetic Dip :	66.73 deg +/- 0.45deg
Computed Magnetic Dec :	8.36 deg	Used Magnetic Dec :	8.34 deg
Computed Total Correction :	7.73 deg	Used Total Correction :	7.71 deg

Survey Quality Index

2 : Long Survey failed mag criteria	9 : Manual	28 : Tie-In Point
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Survey Correction Index

0 : No correction

Survey Description Index

0 : Not Flagged Survey	7 : Projection to Bit	13 : Inclination Only Survey
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Seq	MD (ft)	Incl (deg)	Azim (deg)	Course (ft)	TVD (ft)	V Sec (ft)	N/ -S (ft)	E/ -W (ft)	Closure (ft)	at Azim (deg)	DLS deg/100ft	Tool Type	QI	CI	DI
1	0.00	0.00	0.00	- - - -	0.00	0.00	0.00	0.00	0.00	90.00	0.00	TIP	28	0	0
2	289.00	0.60	24.81	289.00	288.99	1.35	1.37	0.63	1.51	24.81	0.21	Other	9	0	0
3	602.00	0.20	62.11	313.00	601.99	3.06	3.12	1.81	3.61	30.08	0.15	Other	9	0	0
4	885.00	0.10	123.41	283.00	884.99	3.14	3.21	2.45	4.04	37.32	0.06	Other	9	0	0
5	1191.00	0.79	141.19	306.00	1190.97	1.29	1.41	4.00	4.23	70.55	0.23	SlimPulse	2	0	13

	1317.00	0.76	133.25	126.00	1316.96	0.01	0.16	5.15	5.15	88.20	0.09	SlimPulse	2	0	0
7	1412.00	0.79	127.02	95.00	1411.95	-0.84	-0.66	6.13	6.17	96.14	0.09	SlimPulse	2	0	0
8	1506.00	0.82	129.42	94.00	1505.95	-1.69	-1.48	7.16	7.32	101.63	0.05	SlimPulse	2	0	0
9	1600.00	0.73	125.34	94.00	1599.94	-2.49	-2.25	8.17	8.46	105.38	0.11	SlimPulse	2	0	0
10	1694.00	0.76	122.64	94.00	1693.93	-3.20	-2.93	9.18	9.65	107.69	0.05	SlimPulse	2	0	0
11	1789.00	0.70	114.31	95.00	1788.92	-3.81	-3.50	10.24	10.83	108.90	0.13	SlimPulse	2	0	0
12	1884.00	1.69	49.08	95.00	1883.90	-3.18	-2.83	11.82	12.14	103.45	1.61	SlimPulse	2	0	0
13	1978.00	2.96	356.67	94.00	1977.83	0.12	0.50	12.72	12.73	87.73	2.50	SlimPulse	2	0	0
14	2072.00	4.57	349.69	94.00	2071.63	6.25	6.61	11.91	13.62	60.98	1.77	SlimPulse	2	0	0
15	2166.00	6.29	343.89	94.00	2165.20	14.93	15.24	9.82	18.11	32.79	1.92	SlimPulse	2	0	0
16	2262.00	6.86	326.10	96.00	2260.58	24.88	25.05	5.16	25.56	11.64	2.19	SlimPulse	2	0	0
17	2356.00	9.41	329.56	94.00	2353.63	36.37	36.33	-1.86	36.38	357.06	2.76	SlimPulse	2	0	0
18	2450.00	9.57	328.90	94.00	2446.34	49.92	49.65	-9.79	50.59	348.84	0.21	SlimPulse	2	0	0
19	2543.00	9.53	329.59	93.00	2538.05	63.42	62.91	-17.69	65.35	344.30	0.13	SlimPulse	2	0	0
20	2638.00	9.38	329.91	95.00	2631.76	77.13	76.40	-25.55	80.54	341.51	0.17	SlimPulse	2	0	0
21	2827.00	9.55	329.97	189.00	2818.19	104.49	103.29	-41.12	111.19	338.29	0.09	SlimPulse	2	0	0
22	3017.00	10.71	333.50	190.00	3005.23	134.39	132.73	-56.88	144.42	336.80	0.69	SlimPulse	2	0	0
23	3207.00	10.65	332.16	190.00	3191.94	166.18	164.06	-72.95	179.56	336.03	0.13	SlimPulse	2	0	0
24	3301.00	10.51	332.41	94.00	3284.34	181.70	179.34	-80.98	196.78	335.70	0.16	SlimPulse	2	0	0
25	3396.00	10.52	332.02	95.00	3377.74	197.27	194.67	-89.06	214.07	335.42	0.07	SlimPulse	2	0	0
26	3585.00	9.91	331.66	189.00	3563.75	227.28	224.22	-104.88	247.54	334.93	0.32	SlimPulse	2	0	0
27	3680.00	9.93	331.56	95.00	3657.33	241.90	238.61	-112.66	263.88	334.73	0.03	SlimPulse	2	0	0
28	3775.00	9.67	331.29	95.00	3750.94	256.33	252.81	-120.39	280.02	334.54	0.28	SlimPulse	2	0	0
29	3870.00	9.52	330.09	95.00	3844.61	270.37	266.62	-128.14	295.80	334.33	0.26	SlimPulse	2	0	0
30	3964.00	9.50	328.47	94.00	3937.32	283.95	279.97	-136.07	311.29	334.08	0.29	SlimPulse	2	0	0
31	4059.00	8.35	332.72	95.00	4031.17	296.98	292.79	-143.34	325.98	333.92	1.40	SlimPulse	2	0	0
32	4154.00	6.43	327.59	95.00	4125.38	307.78	303.41	-149.35	338.19	333.79	2.13	SlimPulse	2	0	0
33	4249.00	4.52	335.15	95.00	4219.94	315.80	311.30	-153.78	347.21	333.71	2.15	SlimPulse	2	0	0
34	4343.00	3.40	338.52	94.00	4313.71	321.83	317.26	-156.36	353.71	333.76	1.22	SlimPulse	2	0	0
35	4438.00	1.84	340.75	95.00	4408.61	325.94	321.32	-157.89	358.01	333.83	1.64	SlimPulse	2	0	0
36	4533.00	0.57	21.93	95.00	4503.59	327.83	323.20	-158.22	359.84	333.92	1.54	SlimPulse	2	0	0
37	4627.00	0.65	39.70	94.00	4597.59	328.65	324.04	-157.70	360.37	334.05	0.22	SlimPulse	2	0	0
38	4816.00	0.69	24.36	189.00	4786.57	330.48	325.90	-156.55	361.55	334.34	0.10	SlimPulse	2	0	0
39	4911.00	0.70	39.86	95.00	4881.57	331.42	326.86	-155.94	362.17	334.49	0.20	SlimPulse	2	0	0
40	5006.00	0.74	42.69	95.00	4976.56	332.30	327.76	-155.16	362.63	334.67	0.06	SlimPulse	2	0	0
41	5100.00	0.85	53.29	94.00	5070.55	333.13	328.63	-154.18	362.99	334.87	0.20	SlimPulse	2	0	0
42	5195.00	0.77	46.91	95.00	5165.54	333.96	329.49	-153.15	363.35	335.07	0.13	SlimPulse	2	0	0
43	5290.00	1.00	54.36	95.00	5260.53	334.84	330.40	-152.01	363.68	335.29	0.27	SlimPulse	2	0	0
44	5384.00	0.76	53.02	94.00	5354.52	335.66	331.26	-150.84	363.98	335.52	0.26	SlimPulse	2	0	0
45	5479.00	0.47	29.52	95.00	5449.51	336.35	331.97	-150.15	364.34	335.66	0.40	SlimPulse	2	0	0
46	5574.00	0.61	354.03	95.00	5544.51	337.19	332.82	-150.01	365.06	335.74	0.38	SlimPulse	2	0	0
47	5669.00	0.91	358.38	95.00	5639.50	338.45	334.08	-150.09	366.24	335.81	0.31	SlimPulse	2	0	0
48	5764.00	1.01	345.92	95.00	5734.49	340.03	335.64	-150.31	367.75	335.88	0.24	SlimPulse	2	0	0
49	5858.00	0.88	351.73	94.00	5828.47	341.55	337.16	-150.62	369.26	335.93	0.17	SlimPulse	2	0	0
50	5953.00	0.82	349.64	95.00	5923.46	342.95	338.55	-150.85	370.64	335.98	0.07	SlimPulse	2	0	0
51	6047.00	0.80	336.85	94.00	6017.45	344.23	339.82	-151.23	371.95	336.01	0.19	SlimPulse	2	0	0
52	6142.00	0.71	326.18	95.00	6112.45	345.35	340.92	-151.81	373.20	336.00	0.18	SlimPulse	2	0	0
53	6237.00	0.59	339.90	95.00	6207.44	346.31	341.87	-152.31	374.28	335.99	0.20	SlimPulse	2	0	0
54	6332.00	5.87	344.60	95.00	6302.25	351.50	347.02	-153.77	379.56	336.10	5.56	SlimPulse	2	0	0
55	6426.00	14.42	5.63	94.00	6394.72	367.82	363.34	-153.90	394.59	337.04	9.76	SlimPulse	2	0	0
56	6521.00	19.82	8.13	95.00	6485.48	395.44	391.08	-150.46	419.03	338.96	5.74	SlimPulse	2	0	0
57	6616.00	29.02	2.58	95.00	6571.90	434.38	430.13	-147.14	454.59	341.12	9.97	SlimPulse	2	0	0
58	6710.00	39.03	355.24	94.00	6649.74	486.83	482.56	-148.57	504.92	342.89	11.50	SlimPulse	2	0	0
59	6805.00	49.43	356.14	95.00	6717.72	552.94	548.55	-153.50	569.62	344.37	10.96	SlimPulse	2	0	0
60	6899.00	57.29	358.86	94.00	6773.71	628.22	623.89	-156.79	642.27	345.99	8.79	SlimPulse	2	0	0

	6899.00	57.39	358.86	94.00	6773.71	628.33	623.89	-156.70	643.27	345.90	8.79	SlimPulse	2	0	0
61	6994.00	63.30	358.01	95.00	6820.70	710.85	706.37	-158.97	724.05	347.32	6.27	SlimPulse	2	0	0
62	7089.00	68.79	357.28	95.00	6859.25	797.63	793.08	-162.55	809.58	348.42	5.82	SlimPulse	2	0	0
63	7184.00	73.79	358.09	95.00	6889.72	887.57	882.96	-166.17	898.46	349.34	5.33	SlimPulse	2	0	0
64	7243.00	81.48	1.11	59.00	6902.34	945.14	940.54	-166.55	955.18	349.96	13.95	SlimPulse	2	0	0
65	7384.00	87.49	0.53	141.00	6915.89	1085.28	1080.81	-164.54	1093.27	351.34	4.28	SlimPulse	9	0	0
66	7573.00	87.42	0.21	189.00	6924.28	1273.97	1269.62	-163.33	1280.09	352.67	0.17	SlimPulse	9	0	0
67	7668.00	87.97	359.38	95.00	6928.10	1368.86	1364.54	-163.67	1374.31	353.16	1.05	SlimPulse	9	0	0
68	7763.00	89.45	359.29	95.00	6930.24	1463.82	1459.51	-164.77	1468.77	353.56	1.56	SlimPulse	9	0	0
69	7857.00	89.86	358.64	94.00	6930.81	1557.81	1553.49	-166.47	1562.37	353.88	0.82	SlimPulse	9	0	0
70	7952.00	90.03	358.89	95.00	6930.90	1652.80	1648.47	-168.51	1657.05	354.16	0.32	SlimPulse	9	0	0
71	8142.00	90.69	0.41	190.00	6929.70	1842.74	1838.45	-169.67	1846.26	354.73	0.87	SlimPulse	9	0	0
72	8236.00	90.58	359.49	94.00	6928.66	1936.69	1932.45	-169.76	1939.90	354.98	0.99	SlimPulse	9	0	0
73	8330.00	90.82	1.16	94.00	6927.51	2030.62	2026.43	-169.22	2033.50	355.23	1.79	SlimPulse	9	0	0
74	8425.00	89.86	1.75	95.00	6926.95	2125.47	2121.40	-166.81	2127.95	355.50	1.19	SlimPulse	9	0	0
75	8519.00	89.59	359.19	94.00	6927.40	2219.39	2215.39	-166.04	2221.59	355.71	2.74	SlimPulse	9	0	0
76	8613.00	90.76	359.36	94.00	6927.11	2313.37	2309.38	-167.23	2315.42	355.86	1.26	SlimPulse	9	0	0
77	8707.00	90.24	357.45	94.00	6926.29	2407.37	2403.33	-169.85	2409.32	355.96	2.11	SlimPulse	9	0	0
78	8802.00	90.69	0.81	95.00	6925.52	2502.34	2498.31	-171.29	2504.17	356.08	3.57	SlimPulse	9	0	0
79	8992.00	90.21	358.00	190.00	6924.03	2692.28	2688.27	-173.26	2693.83	356.31	1.50	SlimPulse	9	0	0
80	9086.00	89.69	356.54	94.00	6924.11	2786.26	2782.16	-177.74	2787.83	356.34	1.65	SlimPulse	9	0	0
81	9179.00	90.45	359.24	93.00	6924.00	2879.25	2875.09	-181.16	2880.77	356.39	3.02	SlimPulse	9	0	0
82	9274.00	89.83	358.65	95.00	6923.77	2974.24	2970.07	-182.91	2975.69	356.48	0.90	SlimPulse	9	0	0
83	9463.00	89.66	350.99	189.00	6924.61	3162.75	3158.16	-199.96	3164.47	356.38	4.05	SlimPulse	9	0	0
84	9651.00	90.34	347.51	188.00	6924.61	3348.40	3342.83	-235.02	3351.08	355.98	1.89	SlimPulse	9	0	0
85	9746.00	90.17	351.51	95.00	6924.18	3442.27	3436.22	-252.31	3445.47	355.80	4.21	SlimPulse	9	0	0
86	9840.00	91.31	356.03	94.00	6922.97	3535.95	3529.63	-262.51	3539.37	355.75	4.96	SlimPulse	9	0	0
87	9935.00	91.89	358.27	95.00	6920.32	3630.89	3624.47	-267.23	3634.32	355.78	2.43	SlimPulse	9	0	0
88	10029.00	90.93	2.05	94.00	6918.00	3724.79	3718.42	-266.97	3727.99	355.89	4.15	SlimPulse	9	0	0
89	10219.00	90.17	3.80	190.00	6916.18	3914.14	3908.16	-257.28	3916.60	356.23	1.00	SlimPulse	9	0	0
90	10313.00	89.90	2.40	94.00	6916.12	4007.81	4002.02	-252.19	4009.94	356.39	1.52	SlimPulse	9	0	0
91	10408.00	89.55	2.52	95.00	6916.58	4102.55	4096.93	-248.12	4104.43	356.53	0.39	SlimPulse	9	0	0
92	10502.00	89.59	3.43	94.00	6917.28	4196.23	4190.80	-243.24	4197.87	356.68	0.97	SlimPulse	9	0	0
93	10597.00	89.59	4.11	95.00	6917.96	4290.79	4285.59	-236.99	4292.13	356.83	0.72	SlimPulse	9	0	0
94	10692.00	89.52	3.19	95.00	6918.70	4385.37	4380.39	-230.94	4386.48	356.98	0.97	SlimPulse	9	0	0
95	10786.00	89.18	3.70	94.00	6919.77	4478.98	4474.22	-225.29	4479.89	357.12	0.65	SlimPulse	9	0	0
96	10881.00	89.62	3.74	95.00	6920.76	4573.54	4569.01	-219.13	4574.28	357.25	0.47	SlimPulse	9	0	0
97	10975.00	89.52	359.43	94.00	6921.47	4667.36	4662.95	-216.53	4667.98	357.34	4.59	SlimPulse	9	0	0
98	11070.00	90.03	356.58	95.00	6921.84	4762.35	4757.88	-219.84	4762.96	357.35	3.05	SlimPulse	9	0	0
99	11165.00	90.21	358.78	95.00	6921.64	4857.34	4852.80	-223.68	4857.94	357.36	2.32	SlimPulse	9	0	0
100	11259.00	89.93	0.67	94.00	6921.53	4951.31	4946.79	-224.14	4951.87	357.41	2.03	SlimPulse	9	0	0
101	11354.00	89.86	1.24	95.00	6921.70	5046.20	5041.78	-222.55	5046.69	357.47	0.60	SlimPulse	9	0	0
102	11543.00	89.14	359.66	189.00	6923.35	5235.05	5230.76	-221.07	5235.43	357.58	0.92	SlimPulse	9	0	0
103	11638.00	89.73	359.12	95.00	6924.29	5330.03	5325.75	-222.08	5330.38	357.61	0.84	SlimPulse	9	0	0
104	11733.00	89.76	359.96	95.00	6924.71	5425.00	5420.74	-222.84	5425.33	357.65	0.88	SlimPulse	9	0	0
105	11922.00	89.55	0.36	189.00	6925.85	5613.89	5609.74	-222.31	5614.14	357.73	0.24	SlimPulse	9	0	0
106	12017.00	89.38	0.80	95.00	6926.74	5708.81	5704.73	-221.35	5709.02	357.78	0.50	SlimPulse	9	0	0
107	12112.00	89.66	1.50	95.00	6927.53	5803.69	5799.71	-219.45	5803.87	357.83	0.79	SlimPulse	9	0	0
108	12206.00	89.97	1.96	94.00	6927.84	5897.52	5893.66	-216.61	5897.64	357.90	0.59	SlimPulse	9	0	0
109	12301.00	89.86	1.80	95.00	6927.98	5992.33	5988.61	-213.49	5992.42	357.96	0.20	SlimPulse	9	0	0
110	12490.00	89.90	359.80	189.00	6928.37	6181.13	6177.58	-210.85	6181.17	358.05	1.06	SlimPulse	9	0	0
111	12585.00	90.41	359.15	95.00	6928.11	6276.11	6272.58	-211.72	6276.15	358.07	0.87	SlimPulse	9	0	0
112	12680.00	90.45	359.48	95.00	6927.40	6371.09	6367.57	-212.86	6371.13	358.09	0.35	SlimPulse	9	0	0
113	12775.00	90.58	359.77	95.00	6926.55	6466.06	6462.56	-213.48	6466.08	358.11	0.33	SlimPulse	9	0	0
114	12869.00	89.55	359.57	94.00	6925.55	6560.95	6557.52	-214.22	6560.94	358.12	0.33	SlimPulse	9	0	0

114	12869.00	90.55	359.97	94.00	6925.62	6560.02	6556.56	-213.69	6560.04	358.13	0.22	SlimPulse	9	0	0
115	12964.00	90.52	359.56	95.00	6924.73	6654.98	6651.55	-214.08	6654.99	358.16	0.43	SlimPulse	9	0	0
116	13059.00	91.10	0.97	95.00	6923.39	6749.91	6746.54	-213.64	6749.93	358.19	1.60	SlimPulse	9	0	0
117	13248.00	89.93	359.29	189.00	6921.69	6938.80	6935.52	-213.22	6938.81	358.24	1.08	SlimPulse	9	0	0
118	13342.00	89.93	0.37	94.00	6921.81	7032.76	7029.52	-213.49	7032.78	358.26	1.15	SlimPulse	9	0	0
119	13437.00	89.83	358.59	95.00	6922.01	7127.74	7124.51	-214.36	7127.72	358.28	1.88	SlimPulse	9	0	0
120	13532.00	89.38	357.43	95.00	6922.66	7222.73	7219.45	-217.66	7222.74	358.27	1.31	SlimPulse	9	0	0
121	13626.00	90.00	358.55	94.00	6923.17	7316.73	7313.39	-220.95	7316.73	358.27	1.36	SlimPulse	9	0	0
122	13721.00	90.17	358.95	95.00	6923.03	7411.72	7408.37	-223.02	7411.71	358.28	0.46	SlimPulse	9	0	0
123	13816.00	89.76	357.04	95.00	6923.09	7506.72	7503.30	-226.35	7506.73	358.27	2.06	SlimPulse	9	0	0
124	13911.00	90.00	358.16	95.00	6923.29	7601.71	7598.22	-230.33	7601.71	358.26	1.21	SlimPulse	9	0	0
125	14006.00	89.86	357.00	95.00	6923.40	7696.70	7693.13	-234.34	7696.69	358.26	1.23	SlimPulse	9	0	0
126	14100.00	89.73	357.01	94.00	6923.74	7790.68	7787.00	-239.25	7790.68	358.24	0.14	SlimPulse	9	0	0
127	14290.00	89.62	356.49	190.00	6924.82	7980.61	7976.69	-250.02	7980.61	358.20	0.28	SlimPulse	9	0	0
128	14355.00	89.59	356.82	65.00	6925.26	8045.58	8041.58	-253.81	8045.57	358.19	0.51	SlimPulse	9	0	0
129	14398.00	89.59	356.82	43.00	6925.57	8088.56	8084.51	-256.20	8088.58	358.18	0.00	Other	9	0	7

Calibration Report

SPULSE-GEN (SlimPulse with Generic Collar) Calibration - Run Run001									
Primary Equipment :									
Elec. cartridge, 150C max with GR				SPEC			904		
GRGain - Gamma Ray: Blanket									
Master (Time Frame File):		12:00:00 05-Aug-2014							
Measurement		Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div></div>	
Gamma Ray Calibration Gain			Master	1.0000	0.9000	1.0830	1.1000	<div></div>	

SPULSE-GEN (SlimPulse with Generic Collar) Calibration - Run Run002									
Primary Equipment :									
Elec. cartridge, 150C max with GR				SPEC			907		
GRGain - Gamma Ray: Blanket									
Master (Time Frame File):		12:00:00 14-Oct-2014							
Measurement		Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div></div>	
Gamma Ray Calibration Gain			Master	1.0000	0.9000	1.0141	1.1000	<div></div>	

**Company:** Noble Energy

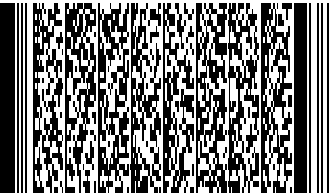
**Well:** Oscar Y10-73-1HN

**Field:** Wattenberg

**County:** Weld

**State:** Colorado

**Country:** USA



**SlimPulse - Gamma Ray**

1 in / 100 ft & 5 in / 100 ft True Vertical Depth

**Recorded Mode, Composite Log**