

Company: Noble Energy Inc

Well: Colt A13-655

Field: Wattenberg

County: Weld State: Colorado

## Platform Express

## Triple Combo

County: Weld  
Field: Wattenberg  
Location: SWNW Sec. 17, T6N, R63W  
Well: Colt A13-655  
Company: Noble Energy Inc

Location:	SWNW Sec. 17, T6N, R63W SHL: 2157' FNL & 424' FWL Lat/Long: 40.487820/-104.468810	Elev.: K.B. 4685.00 ft G.L. 4661.00 ft D.F. 4684.00 ft
	Permanent Datum: Log Measured From: Drilling Measured From:	Ground Level Kelly Bushing Kelly Bushing Elev.: 24.00 ft above Perm.Datum
API Serial No.	Section:	Township:
05-123-40908-0000	17	6N
		Range: 63W

Logging Date 01-May-2015

Run Number Run 1

Depth Driller 7081.00 ft

Schlumberger Depth 6905.00 ft

Bottom Log Interval 6905.00 ft

Top Log Interval 50.00 ft

Casing Fluid Type Water

Salinity

Density 8.7 lbm/gal

Fluid Level 8.00 ft

BIT/CASING/TUBING STRING

Bit Size 8.75 in

From 926.00 ft

To 6905.00 ft

Casing/Tubing Size 7 in

Weight 26 lbm/ft

Grade P110

From 24.10 ft

To 7071.10 ft

Max Recorded Temperatures 226.59 degF

Logger on Bottom 01-May-2015 09:47:00

Unit Number 3022 Location: Fort Morgan, CO

Recorded By Kerl Ondrus

Witnessed By

## 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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11.2 Import of Noble Nuclear RA

12. Run 1

12.1 Integration Summary

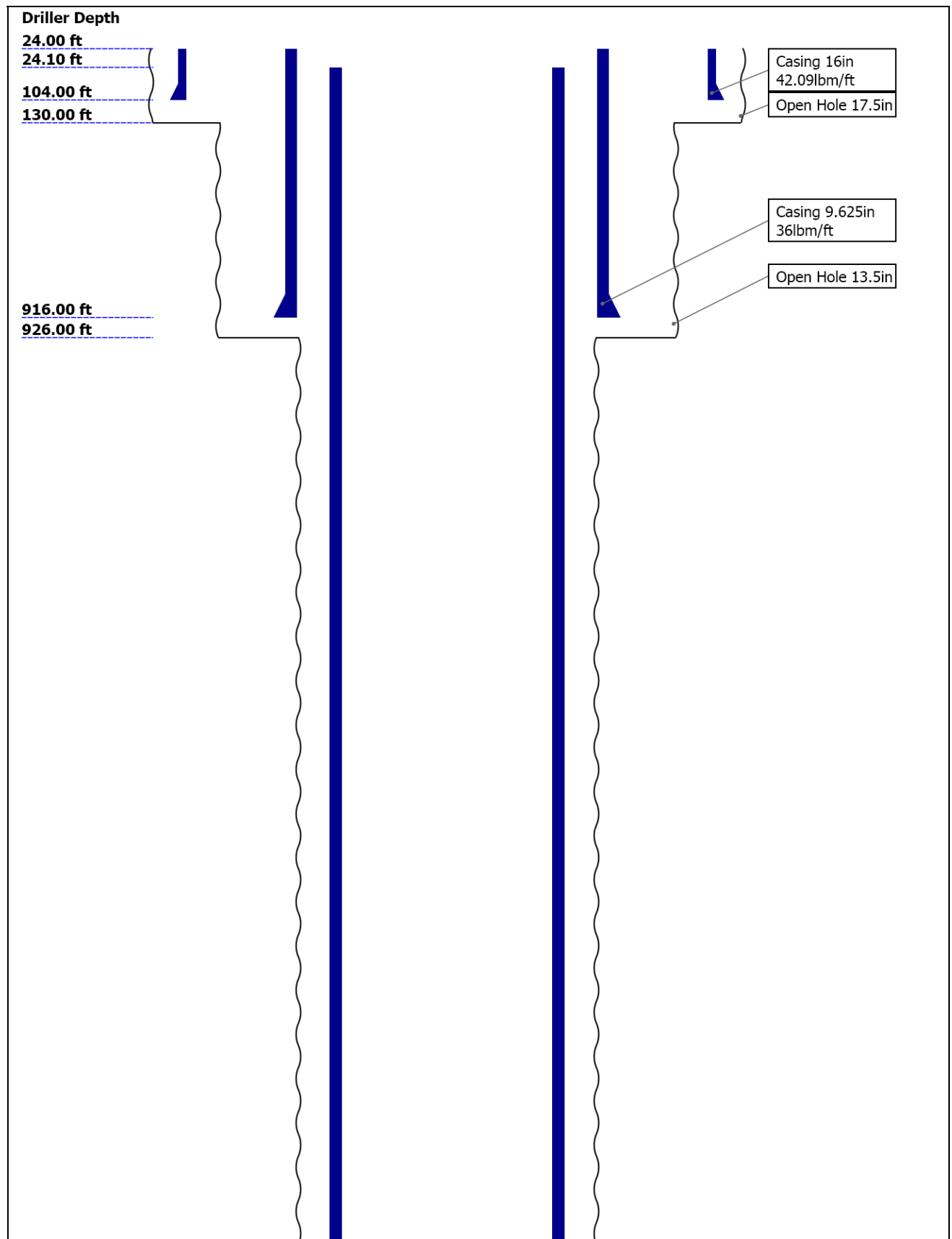
12.2 Software Version

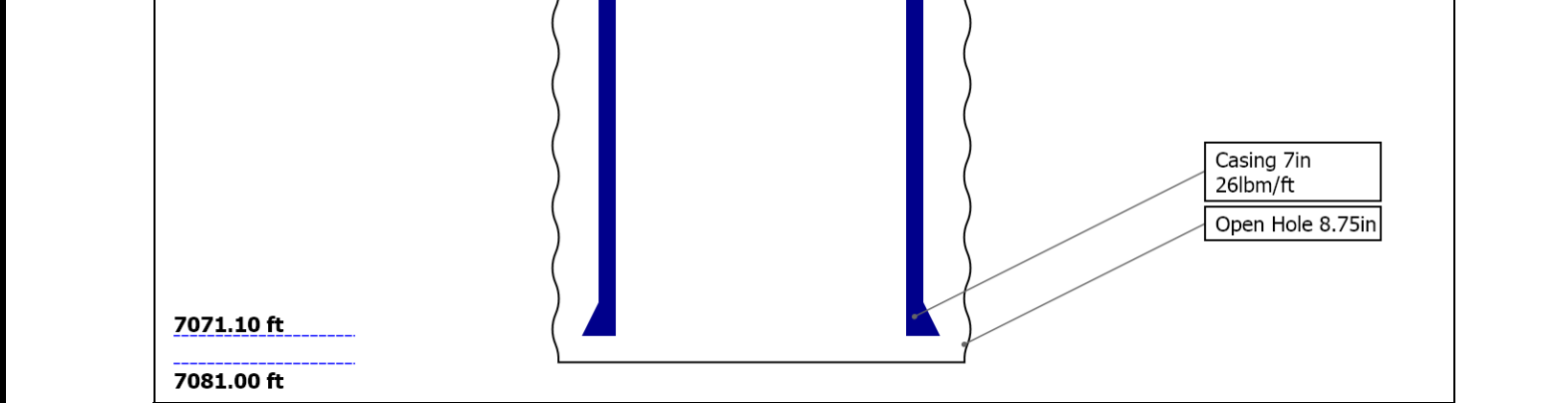
12.3 Composite Summary

12.4 Log ( Import of PEX LQC HGNS )

12.5 Parameter Listing

## Well Sketch





## Borehole Size/Casing/Tubing Record

Bit						
Bit Size ( in )	17.5	13.5	8.75			
Top Driller ( ft )	24	130	926			
Top Logger ( ft )	24	130	926			
Bottom Driller ( ft )	130	926	7081			
Bottom Logger ( ft )	130	926	6905			
Casing						
Size ( in )	16	9.625	7			
Weight ( lbm/ft )	42.09	36	26			
Inner Diameter ( in )	15.511	8.921	6.276			
Grade	N/A	J55	P110			
Top Driller ( ft )	24	24	24.1			
Top Logger ( ft )	24	24	24.1			
Bottom Driller ( ft )	104	916	7071.1			
Bottom Logger ( ft )	104	916	7071.1			

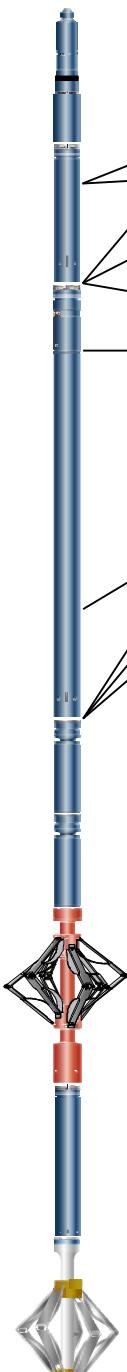
## Operational Run Summary

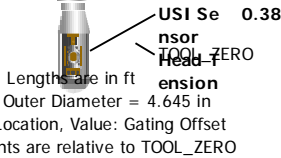
Parameter ( unit )	Run 1					
Date Log Started	01-May-2015					
Time Log Started	08:47:43					
Date Log Finished	01-May-2015					
Time Log Finished	11:43:47					
Top Log Interval ( ft )	50.00					
Bottom Log Interval ( ft )	6905.00					
Total Depth ( ft )	6905.00					
Max Hole Deviation ( deg )	0.00					
Azimuth of Max Deviation ( deg )	0.00					
Bit Size ( in )	8.750					
Logging Unit Number	3022					
Logging Unit Location	Fort Morgan, CO					
Recorded By	Keri Ondrus					

## Borehole Fluids

Parameter( unit )	Run 1					
Fluid Type	Water					
Max Recorded Temperatures ( degF )	226.59					
Salinity ( ppm )	0					
Density ( lbm/gal )	8.7					
Date Logger on Bottom	01-May-2015					
Time Logger on Bottom	09:47:00					
Total Solid ( % )						
High Gravity Solids ( % )						

## Remarks and Equipment Summary

Run 1: Toolstring			Run 1: Remarks																			
<div><div><div>Equip nameLength</div><div>LEH-OT: 38.66</div><div>2110</div><div>LEH-OT:</div><div>2110</div><div>DTC-H:8 35.74</div><div>980</div><div>ECH-KC:</div><div>10053</div><div>DTC-H:8</div><div>980</div><div>HGNS-H 32.74</div><div>:4810</div><div>HGNH:39</div><div>12</div><div>NSR-F:52</div><div>15</div><div>NPV-N</div><div>HMCA-H</div><div>HACCZ-H</div><div>:5955</div><div>HGNS-H:</div><div>4810</div><div>AH-184 23.34</div><div>[2]</div><div>AH-184 21.34</div><div>[1]</div><div>CME-AF 19.34</div><div>USIT-E:9 15.54</div><div>92</div><div>ECH-MFA</div><div>:1964</div><div>USAC-A:</div><div>992</div><div>USIS-A:9</div><div>99</div><div>USSC-B:</div><div>1794</div><div>USRS-B:7</div><div>79</div><div>USI-SEN</div></div><div></div><div><div>MP nameOffset</div><div>CTEM 34.85</div><div>HV 0.00</div><div>TelStatus 32.74</div><div>ToolStatus 32.74</div><div>Temperature 32.72</div><div>GR 32.00</div><div>CNL Porosity 25.67</div><div>HGNS 23.34</div><div>HMCA 23.34</div><div>Accelerometer 0.00</div></div></div> <tr><td colspan="2">This is the first run in hole.</td></tr> <tr><td colspan="2">Toolstring run as per toolsketch.</td></tr> <tr><td colspan="2">Log objective: Cement Evaluation</td></tr> <tr><td colspan="2">0 PSI repeat pass and 2500 PSI main pass.</td></tr> <tr><td colspan="2">Estimated TOC @ 430'. Expected TOC @ 24'.</td></tr> <tr><td colspan="2">4.5" liner top at 6912.9'.</td></tr> <tr><td colspan="2">Bottom log interval at 6905' to maintain distance from top of liner.</td></tr> <tr><td colspan="2">Bottom hole temperature was 226.59 degF.</td></tr> <tr><td colspan="2">Thank you for choosing Schlumberger Wireline!</td></tr> <tr><td colspan="2">SLB crew: Ian Derry, Jake Jump, and Keri Ondrus.</td></tr>			This is the first run in hole.		Toolstring run as per toolsketch.		Log objective: Cement Evaluation		0 PSI repeat pass and 2500 PSI main pass.		Estimated TOC @ 430'. Expected TOC @ 24'.		4.5" liner top at 6912.9'.		Bottom log interval at 6905' to maintain distance from top of liner.		Bottom hole temperature was 226.59 degF.		Thank you for choosing Schlumberger Wireline!		SLB crew: Ian Derry, Jake Jump, and Keri Ondrus.	
			This is the first run in hole.																			
			Toolstring run as per toolsketch.																			
			Log objective: Cement Evaluation																			
			0 PSI repeat pass and 2500 PSI main pass.																			
			Estimated TOC @ 430'. Expected TOC @ 24'.																			
			4.5" liner top at 6912.9'.																			
			Bottom log interval at 6905' to maintain distance from top of liner.																			
			Bottom hole temperature was 226.59 degF.																			
			Thank you for choosing Schlumberger Wireline!																			
SLB crew: Ian Derry, Jake Jump, and Keri Ondrus.																						



## Depth Summary

	Run 1		
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## Depth Measuring Device

Type	IDW-B		
Serial Number	7234		
Calibration Date	13-Feb-2015		
Calibrator Serial Number			
Calibration Cable Type	7-39PLXS		
Wheel Correction 1	-4		
Wheel Correction 2	-2		

## Tension Device

Type	CMTD-B/A		
Serial Number	1109		
Calibration Date	23-Apr-2015		
Calibrator Serial Number	78135A		
Number of Calibration Points	10		
Calibration Root Mean Square Error	6		
Calibration Peak Error	11		

Logging Cable
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Type	7-39P-LXS		
Serial Number	U711136		
Length	17000.00 ft		
Conveyance Type	Wireline		
Rig Type	Crane		

Run 1:Depth Control Parameters	Depth Control Remarks
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Log Sequence	First Log In the Well	All Schlumberger depth control procedures followed.
Rig Up Length At Surface		IDW used as primary depth control device.
Rig Up Length At Bottom		Z-chart used as secondary depth control device.
Rig Up Length Correction		
Stretch Correction	5.49 ft	
Tool Zero Check At Surface		

## Run 1

Integration Summary	
<p><b>Integration Summary</b></p> <p>The integration of the three models (Cognitive-Behavioral, Psychodynamic, and Humanistic) provides a comprehensive framework for understanding and treating mental health issues. This summary outlines the key components and their interrelationships.</p> <p><b>Key Components:</b></p> <ul style="list-style-type: none"> <li><b>Cognitive-Behavioral Model:</b> Focuses on the relationship between thoughts, feelings, and behaviors. It emphasizes the role of cognitive distortions and learned behaviors in the development of psychological disorders.</li> <li><b>Psychodynamic Model:</b> Emphasizes the influence of unconscious processes and early childhood experiences on current behavior. It explores the role of internal conflicts and defense mechanisms.</li> <li><b>Humanistic Model:</b> Focuses on the individual's subjective experience and the potential for personal growth and self-actualization. It emphasizes the importance of a supportive therapeutic environment.</li> </ul> <p><b>Integration:</b></p> <p>The integration of these models allows for a more holistic understanding of the client. For example, a client's current behavior (Cognitive-Behavioral) can be understood in the context of their unconscious conflicts (Psychodynamic) and their need for self-actualization (Humanistic). This integrated approach informs the selection of appropriate interventions, such as cognitive-behavioral therapy, psychodynamic therapy, and humanistic therapy, which can be tailored to the client's specific needs and goals.</p>	

Output Channel(s)	Output Description	Input Parameter	Output Value	Unit
ICV	Integrated Cement Volume	GCSE_UP_PASS, FCD	0	ft3
IHV	Integrated Hole Volume	GCSE_UP_PASS	0	ft3

Software Version	
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Acquisition System	Version
Maxwell	5.2.40990.3100

## Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
Run 1	Main[3]:Up	Up	65.21 ft	6905.73 ft	01-May-2015 9:39:06 AM	01-May-2015 11:42:09 AM	ON	5.49 ft	Yes

All depths are referenced to toolstring zero

## Log

Company:Noble Energy Inc      Well:Colt A13-655

Run 1: Main[3]:Up:S005

Description: AIT Basic Log Two    Format: Log ( Import of Noble Nuclear )    Index Scale: 5 in per 100 ft    Index Unit: ft    Index Type: Measured Depth    Creation Date: 01-May-2015 15:02:32

Channel	Source	Sampling
CCLU	USIT-E:USRS:USI-SENSOR	3in
GR	HGNS-H:HGNS-H:HGNS-H	6in
ICV	Borehole	6in
IHV	Borehole	6in
NPOR	HGNS-H:HGNS-H:HGNS-H	6in
TENS	WLWorkflow	6in
TIME_1900	WLWorkflow	0.1in

TIME\_1900 - Time Marked every 60.00 (s)

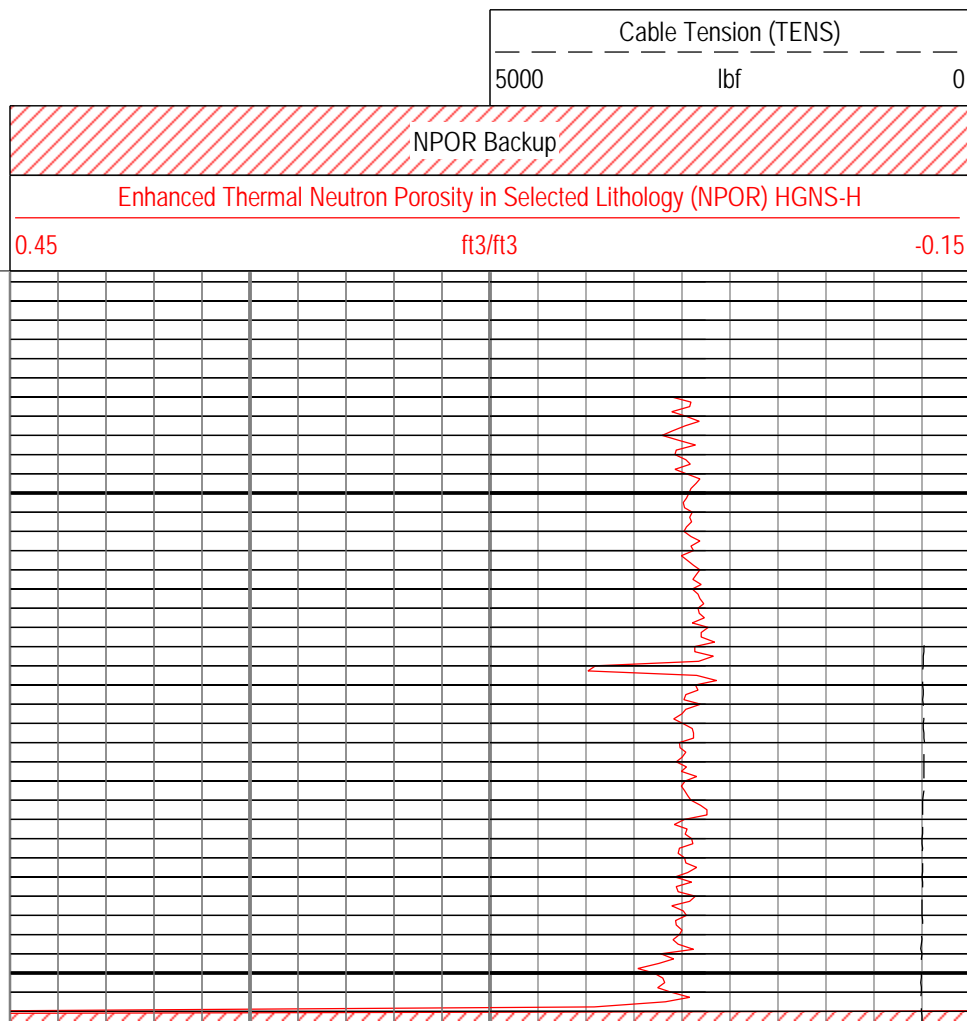
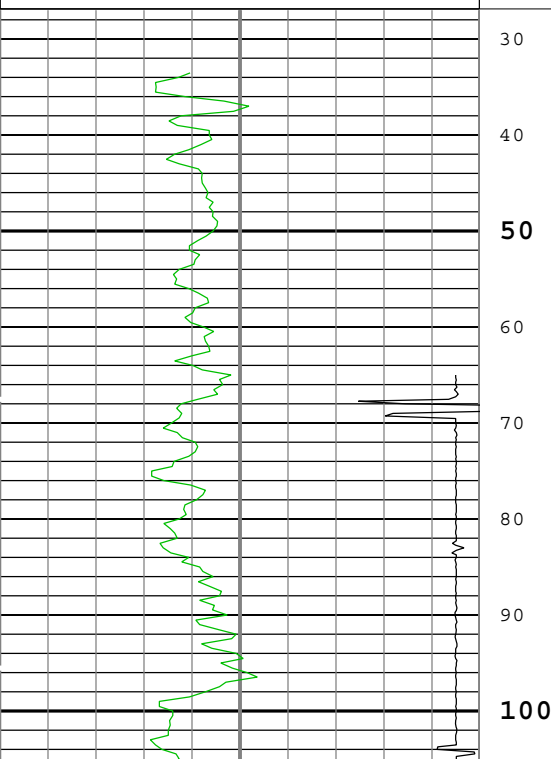
—IHV - Integrated Hole Volume every 10.00 (ft3)

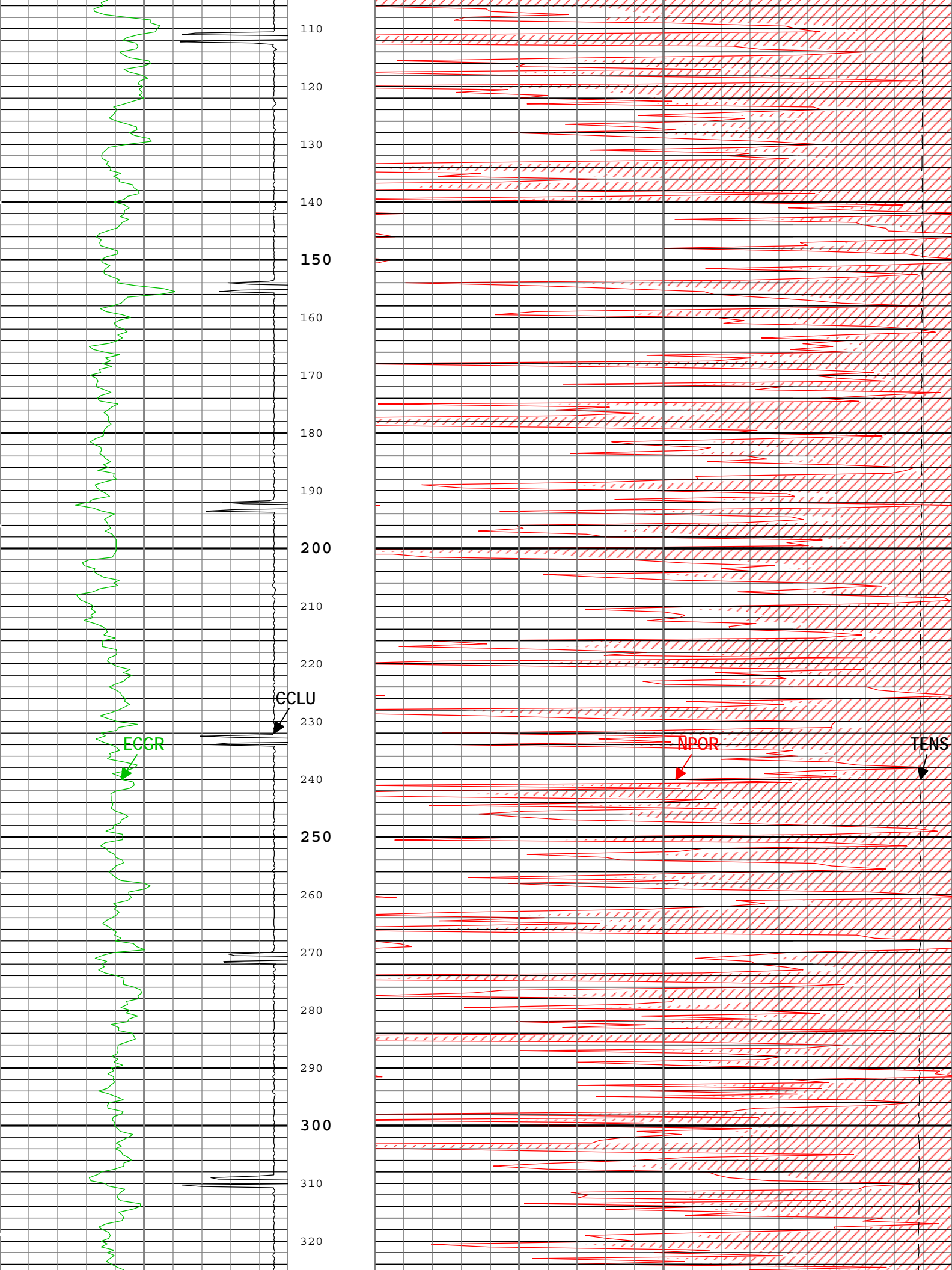
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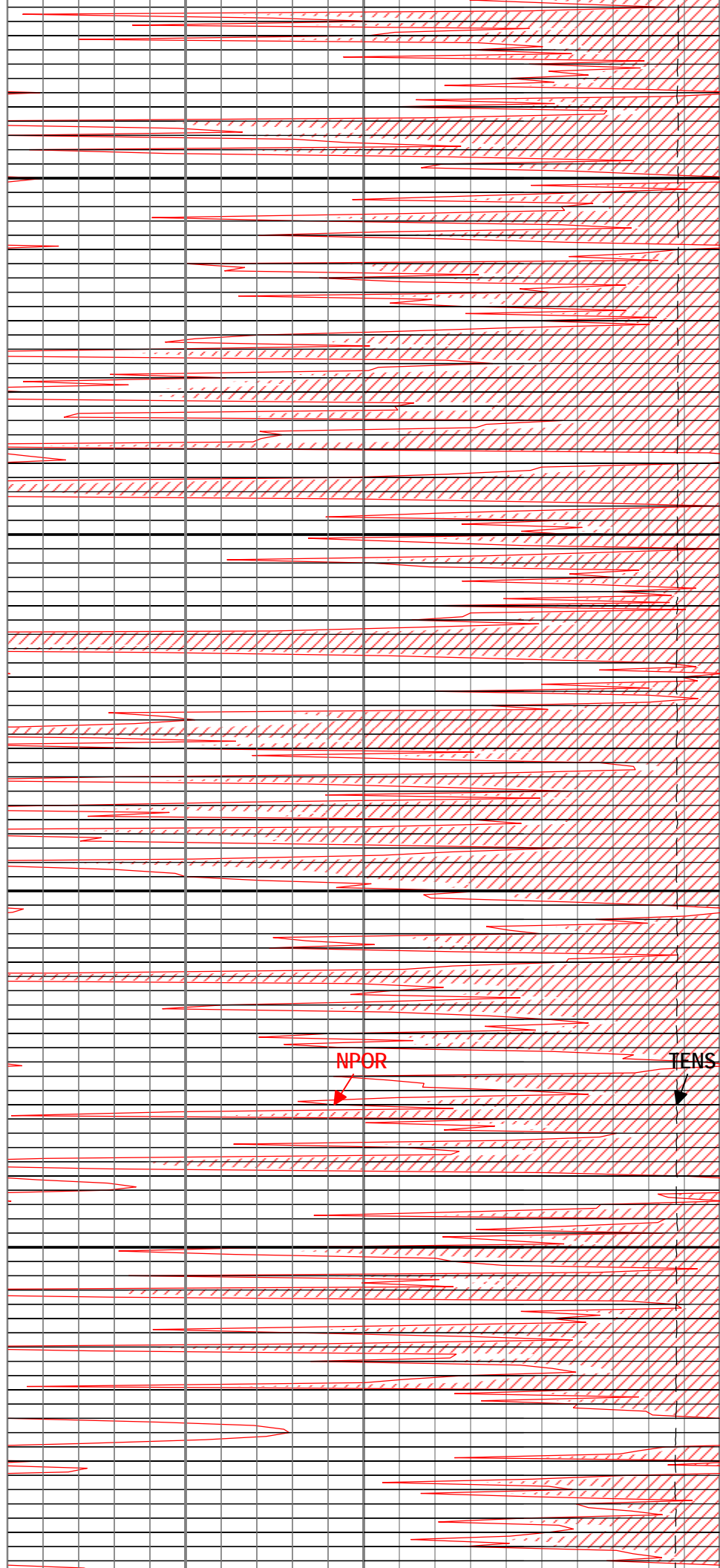
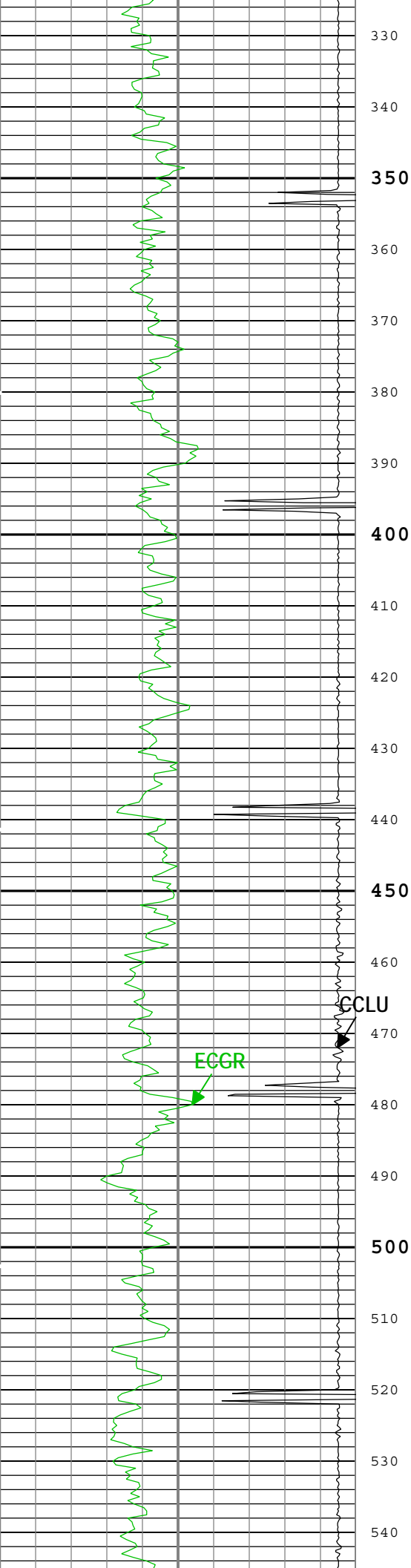
└ ICV - Integrated Cement Volume every 10.00 (ft3)

— ICV - Integrated Cement Volume every 100.00 (ft3)

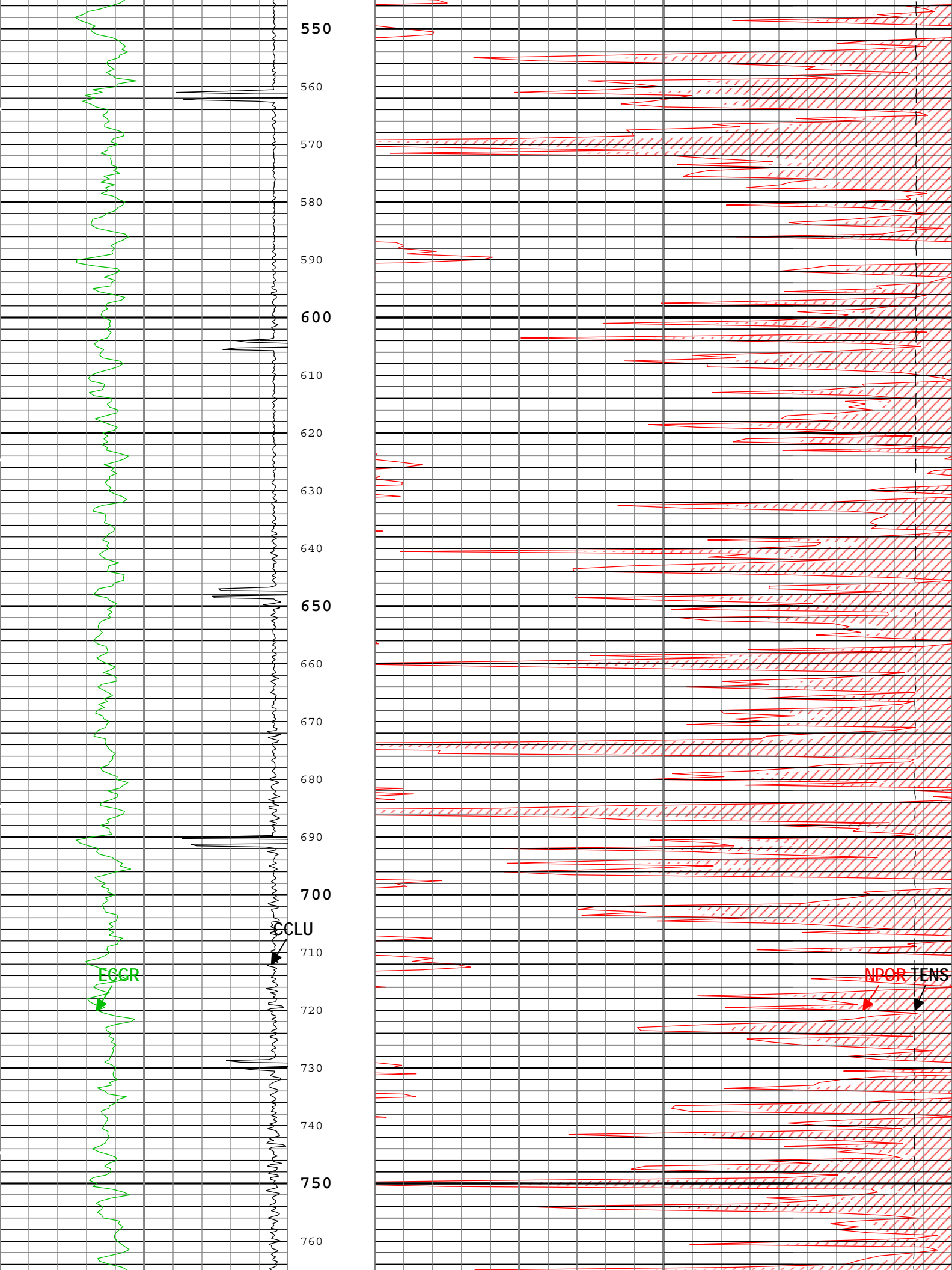
GR Backup		
Gamma Ray (ECGR) HGNS-H		
0	gAPI	150
Casing Collar Locator Ultrasonic (CCLU) USIT-E		
-19	in	1

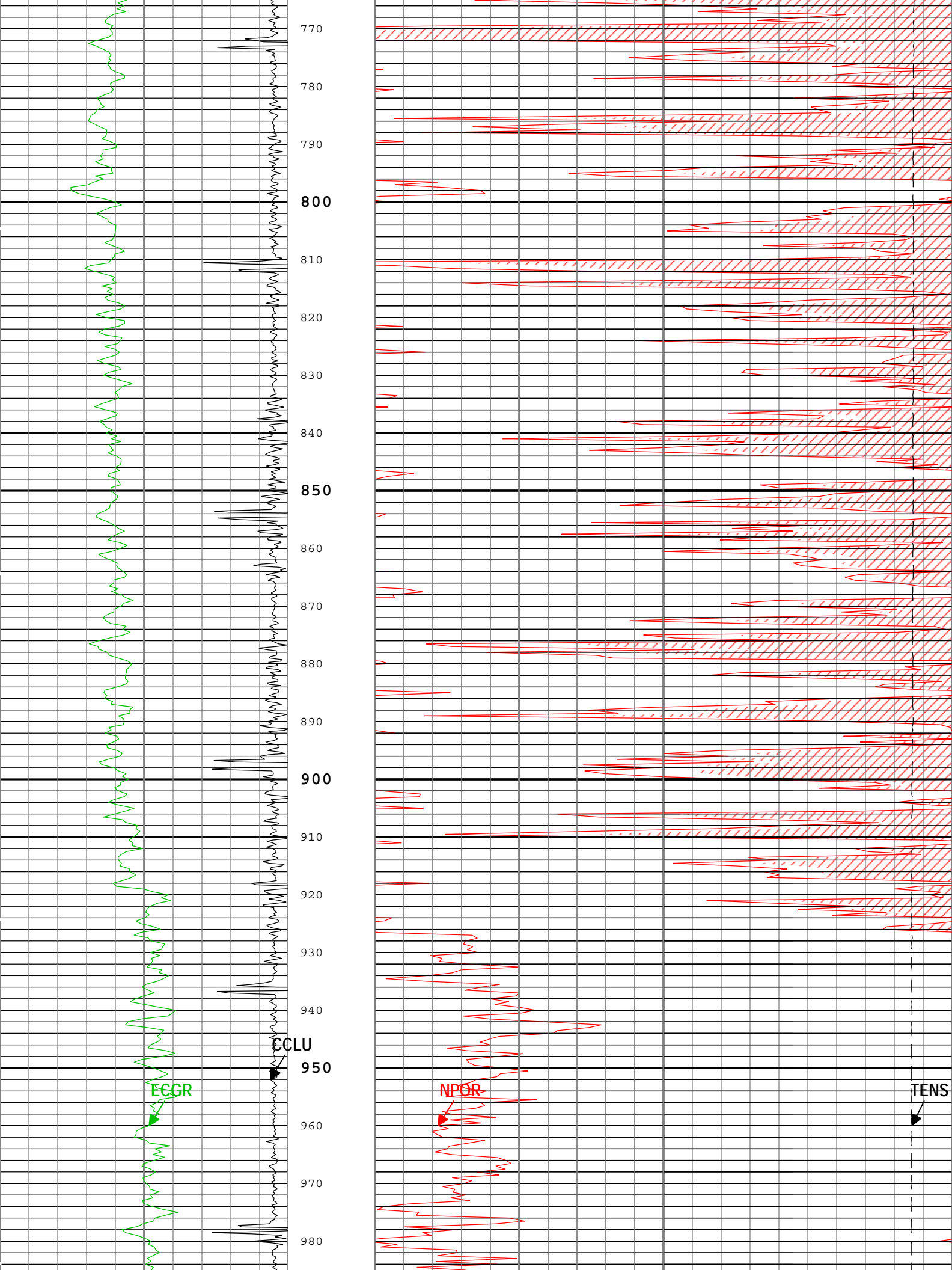


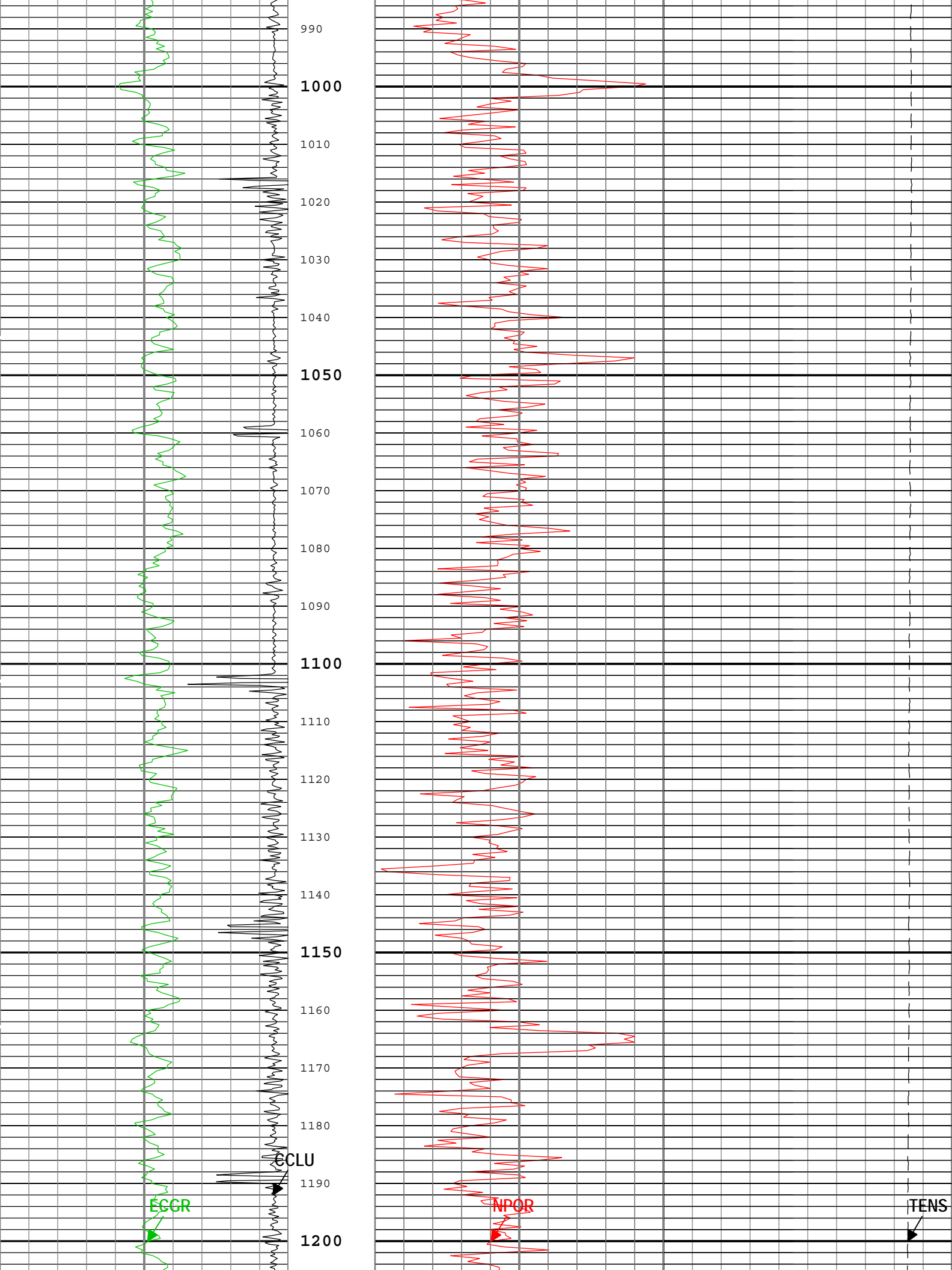


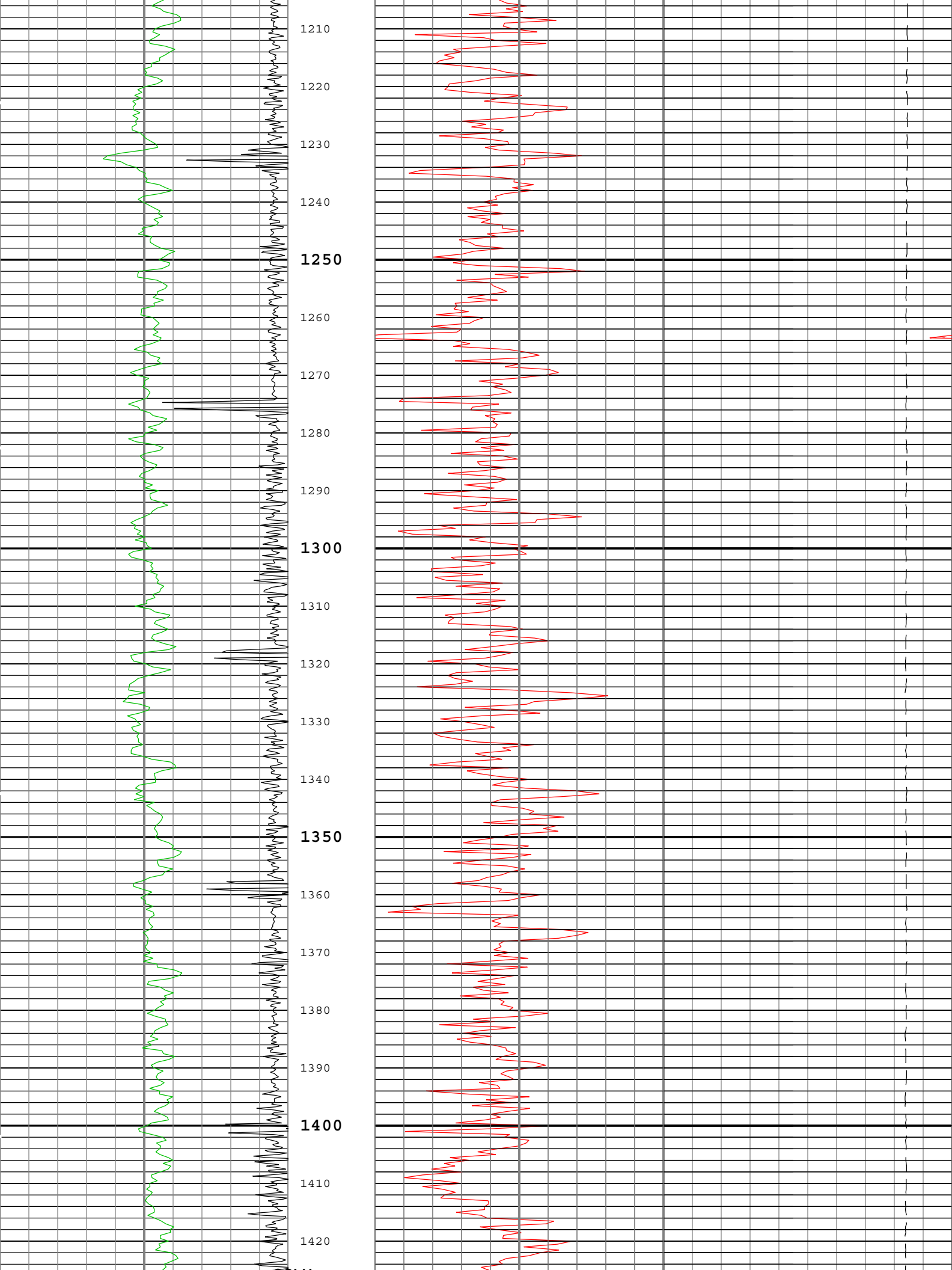




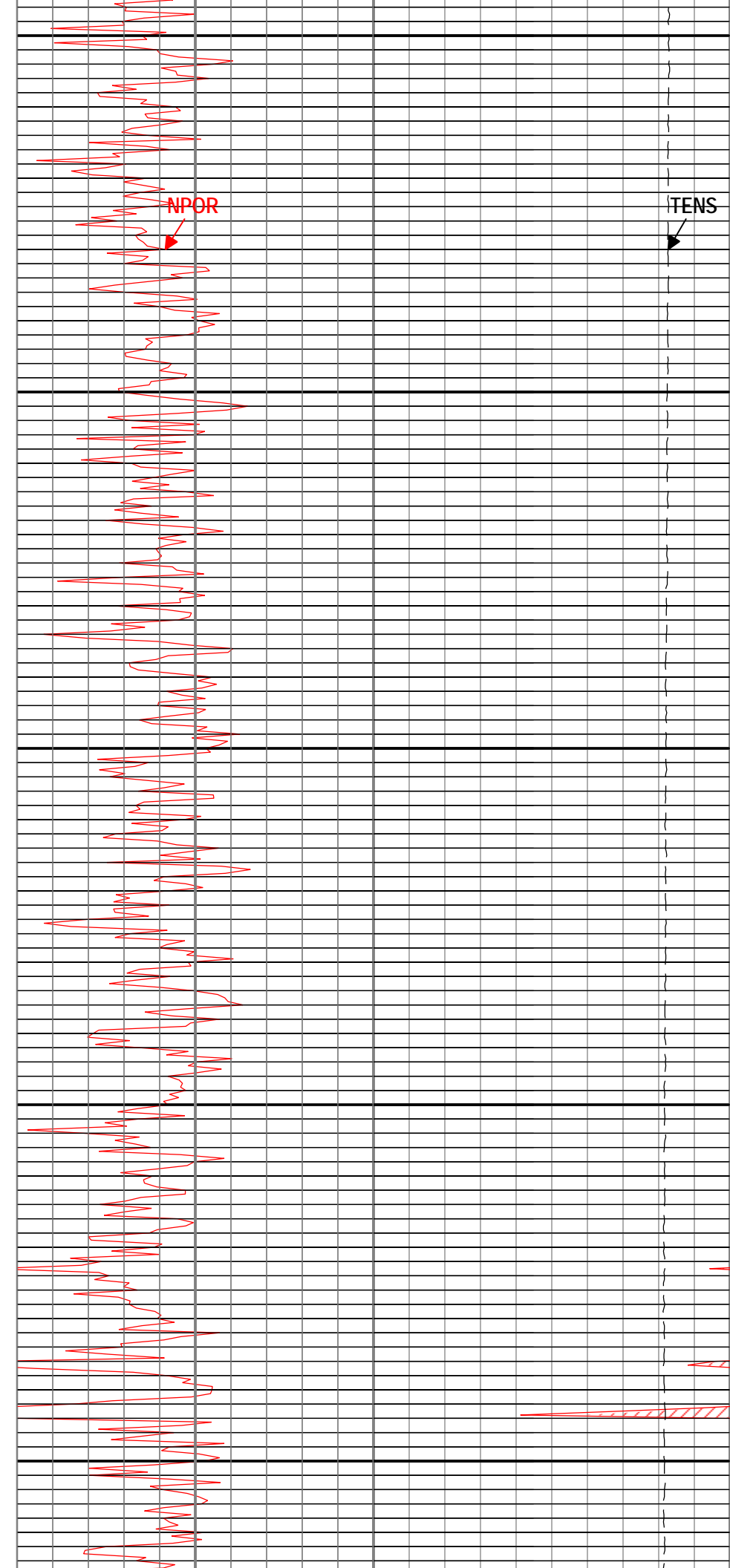
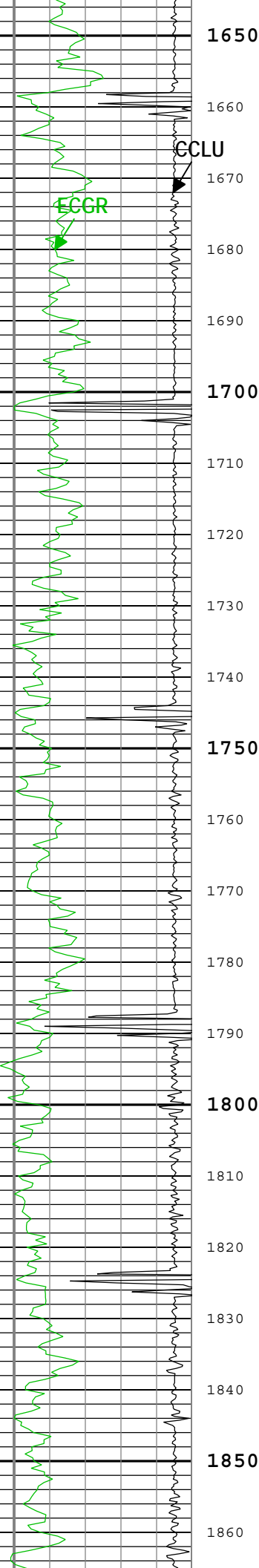


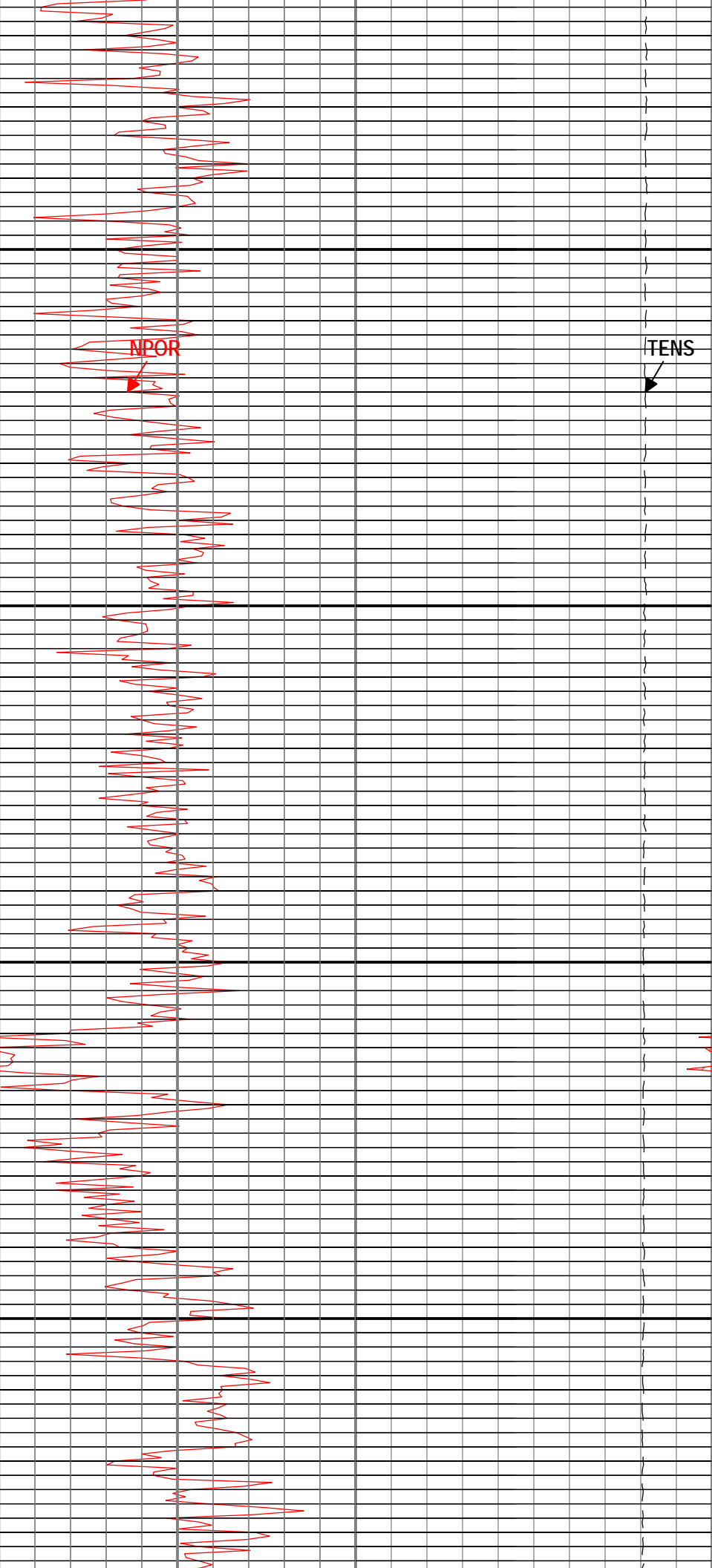
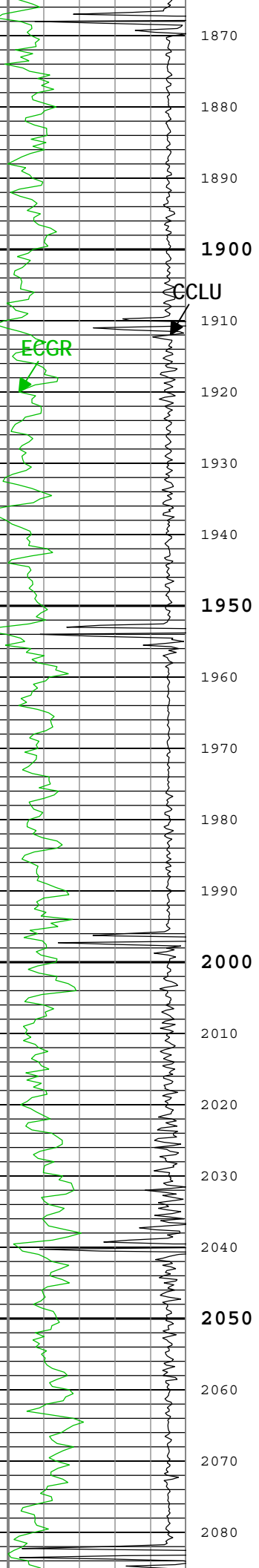


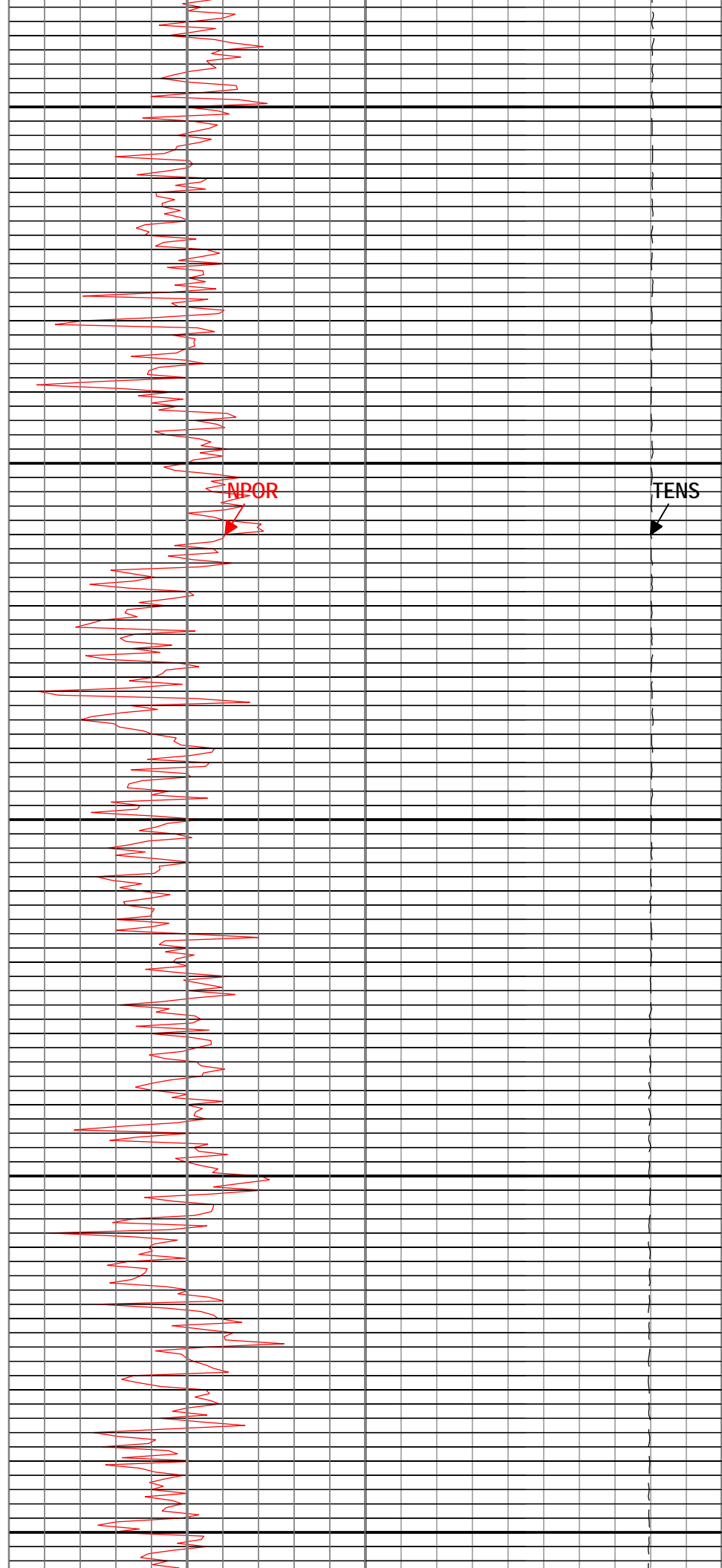
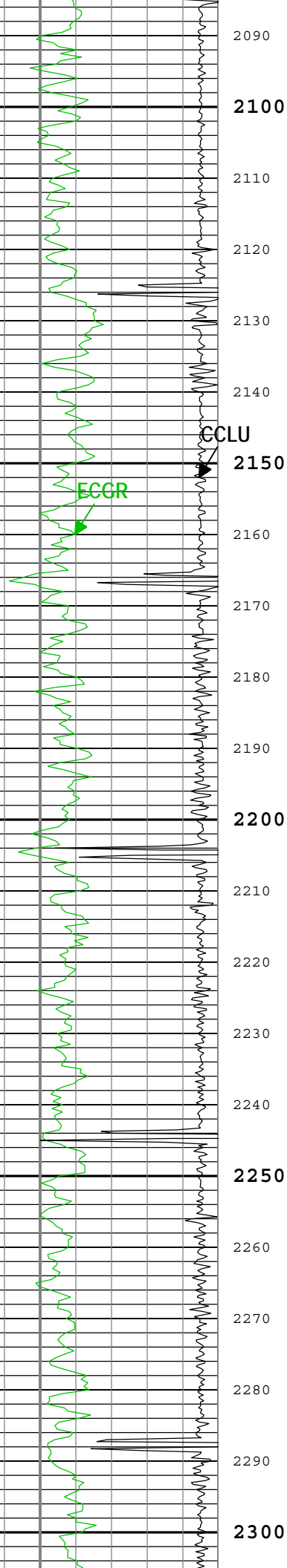




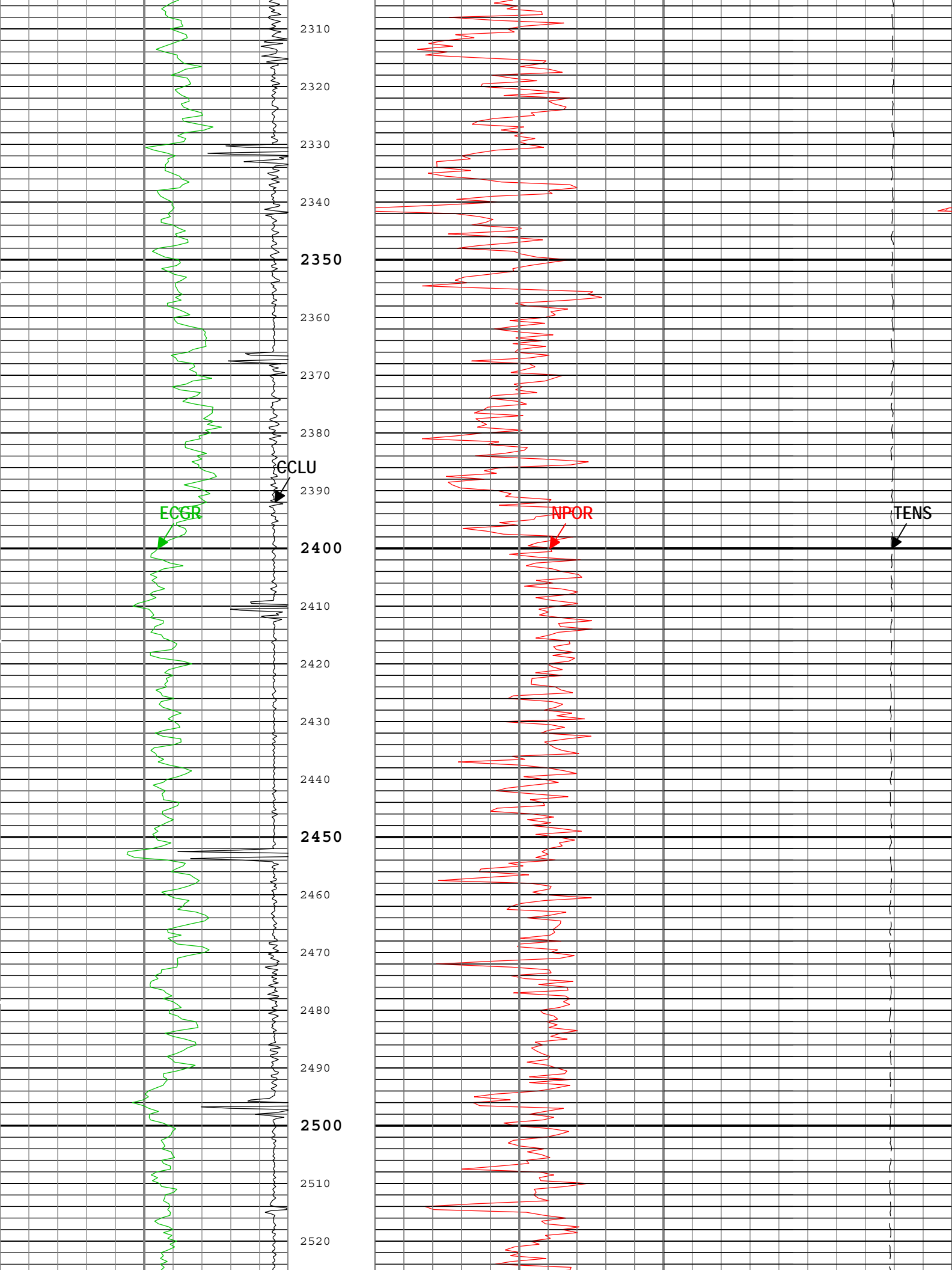


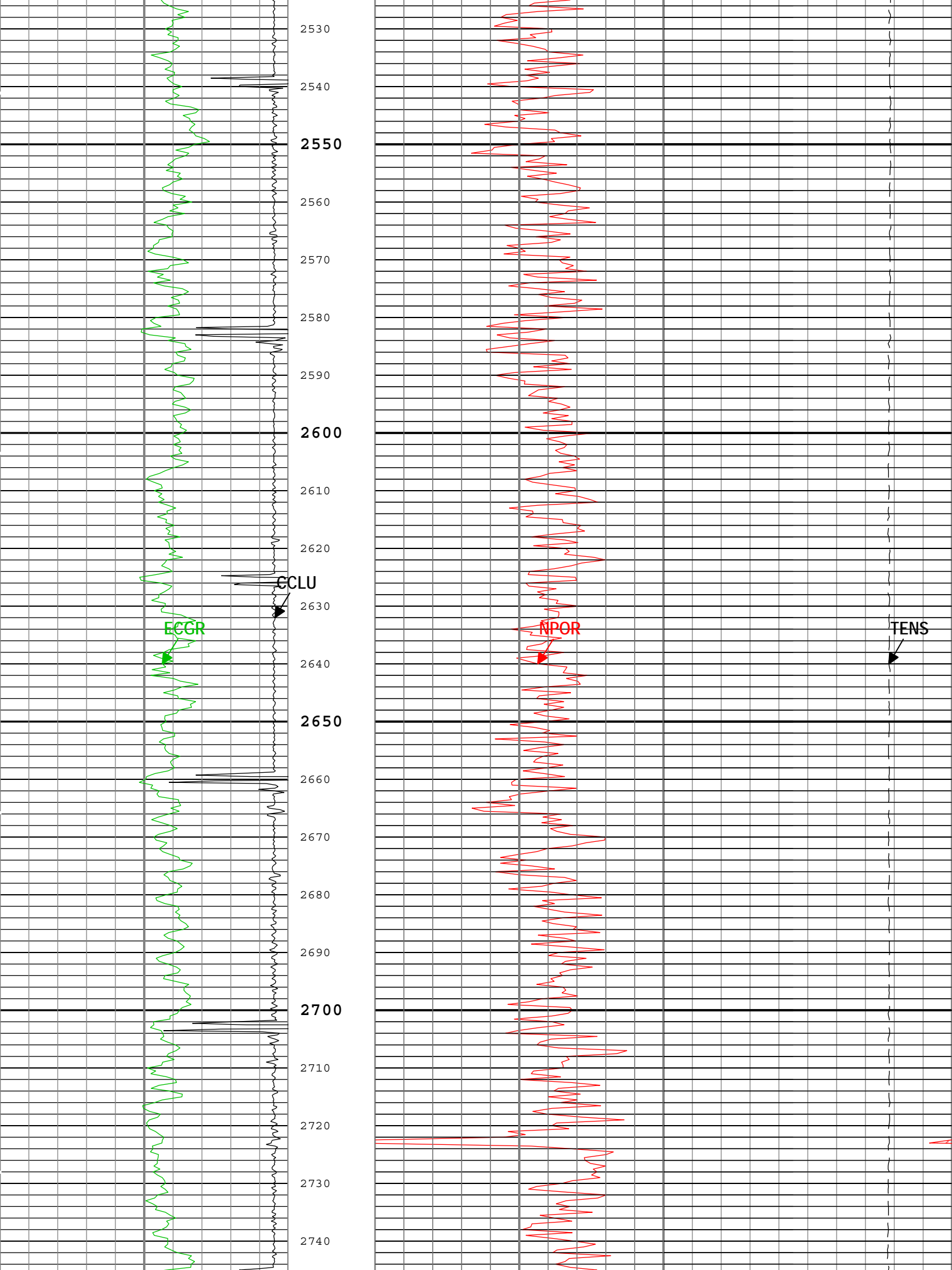


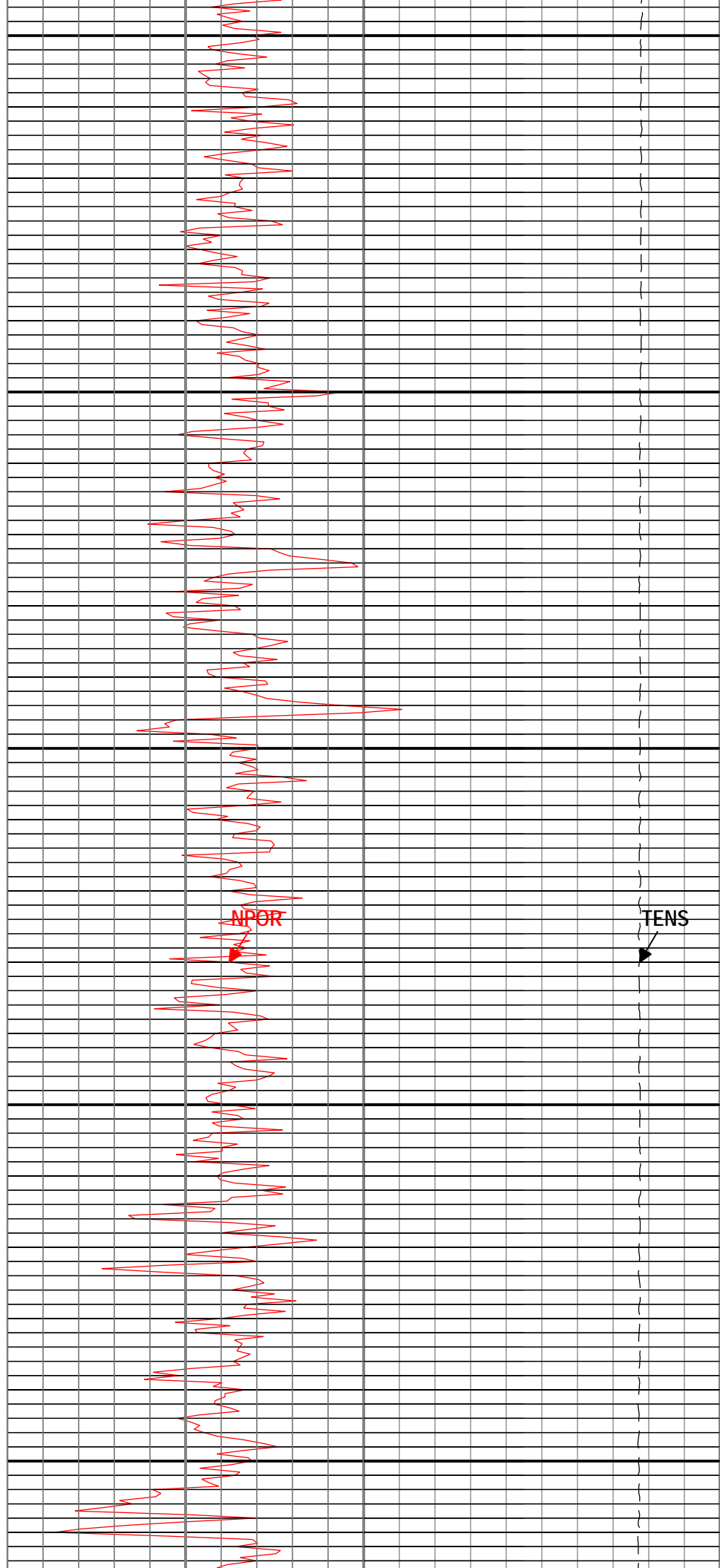
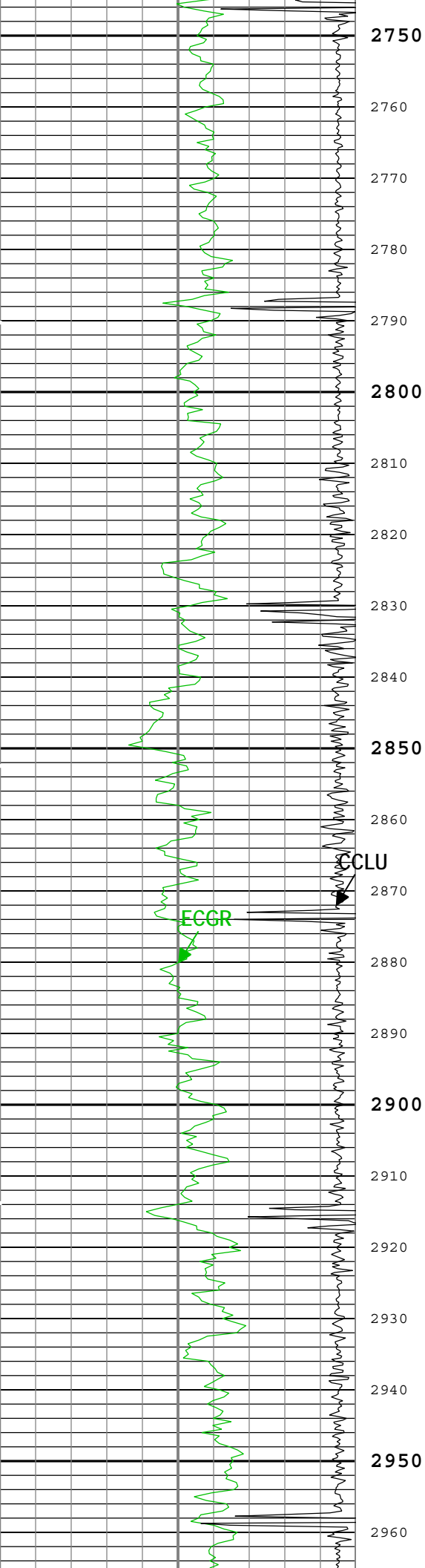


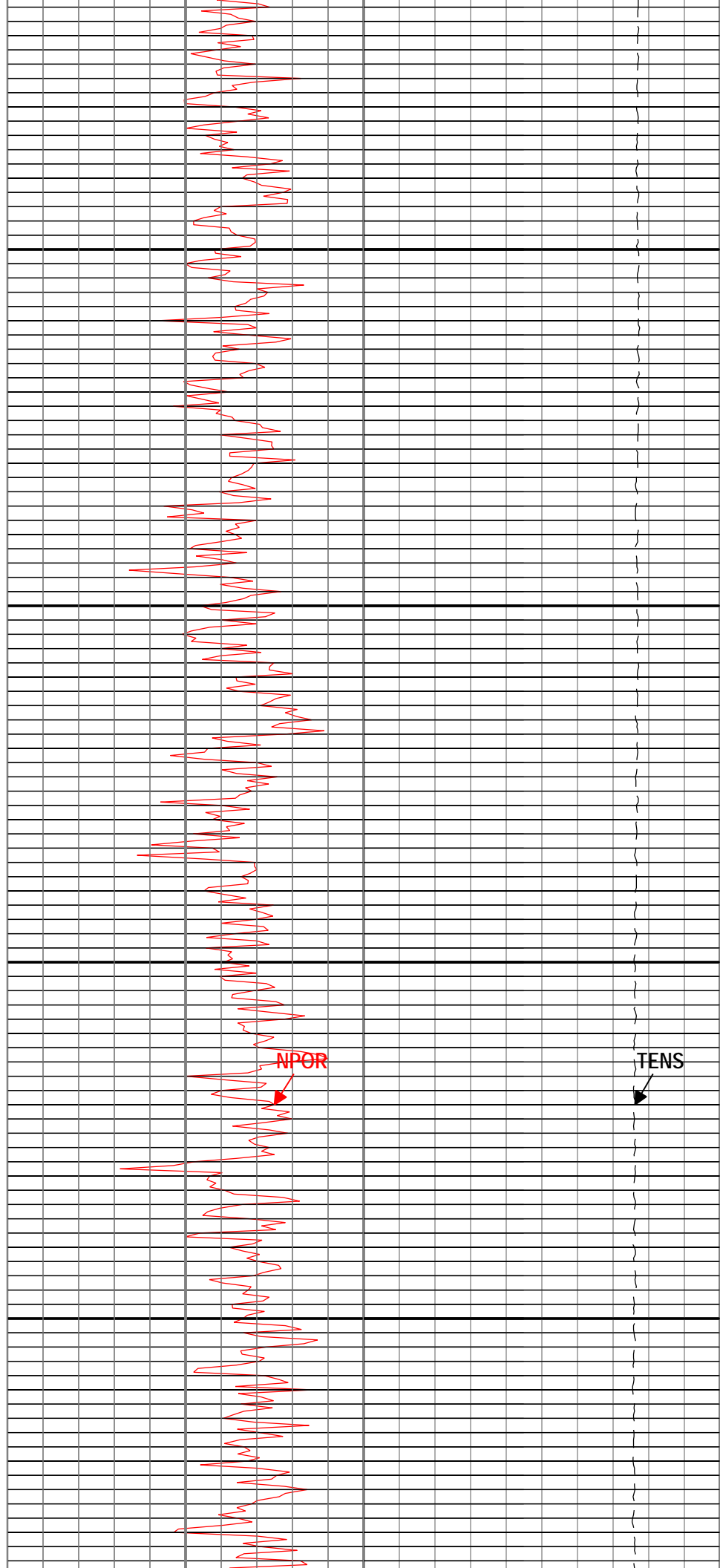
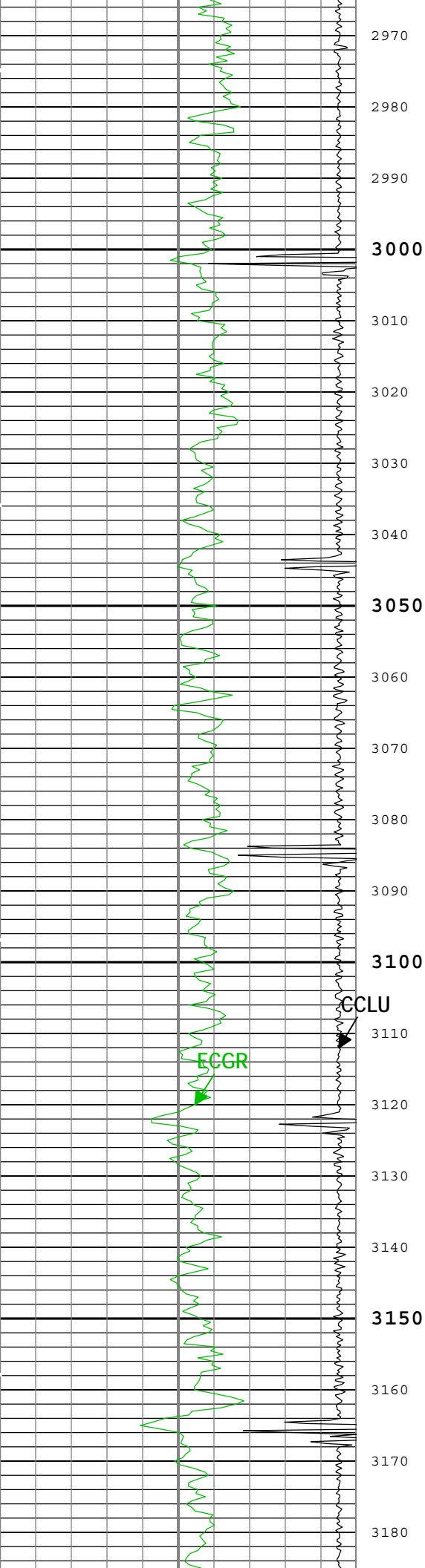


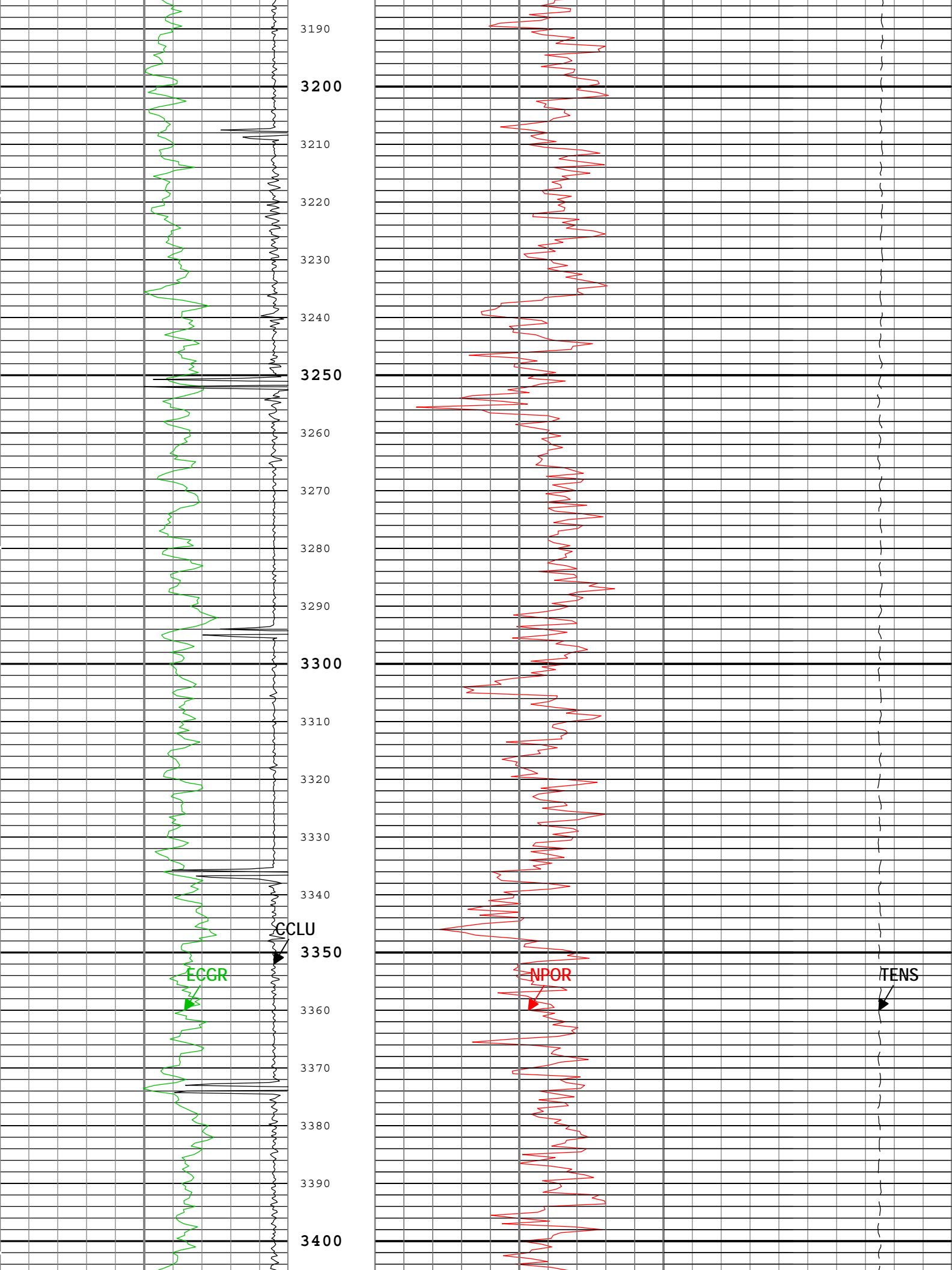


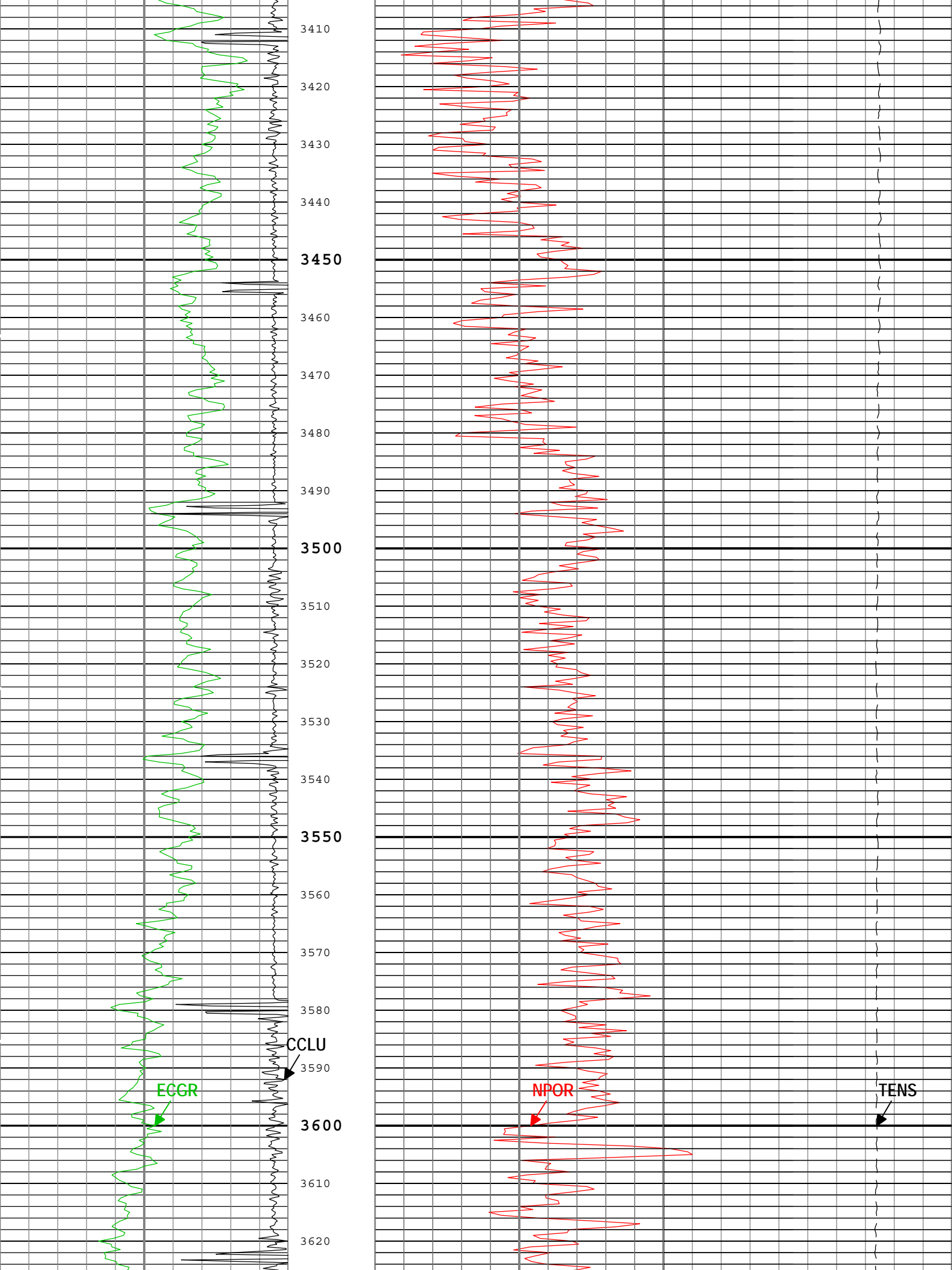


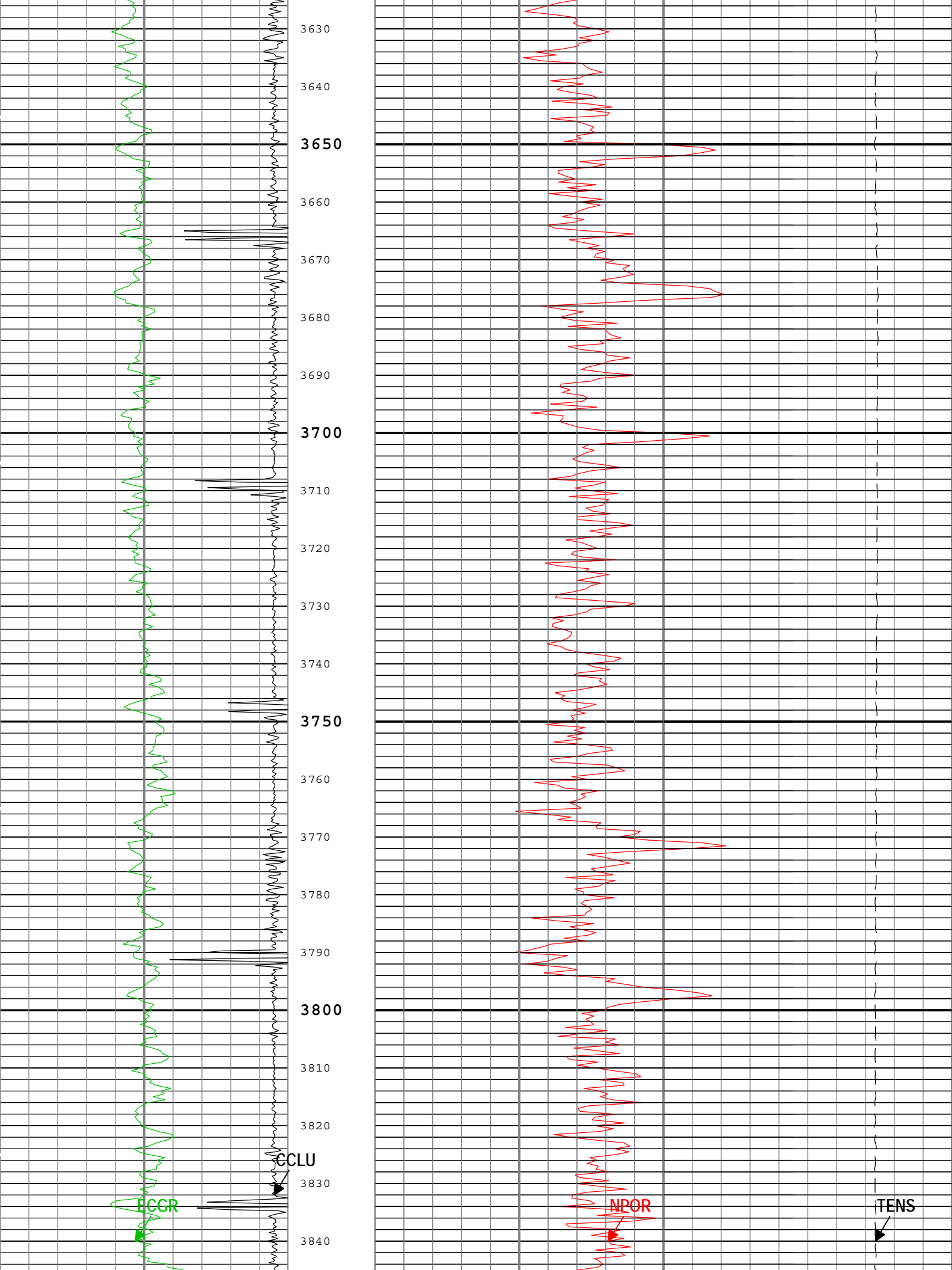


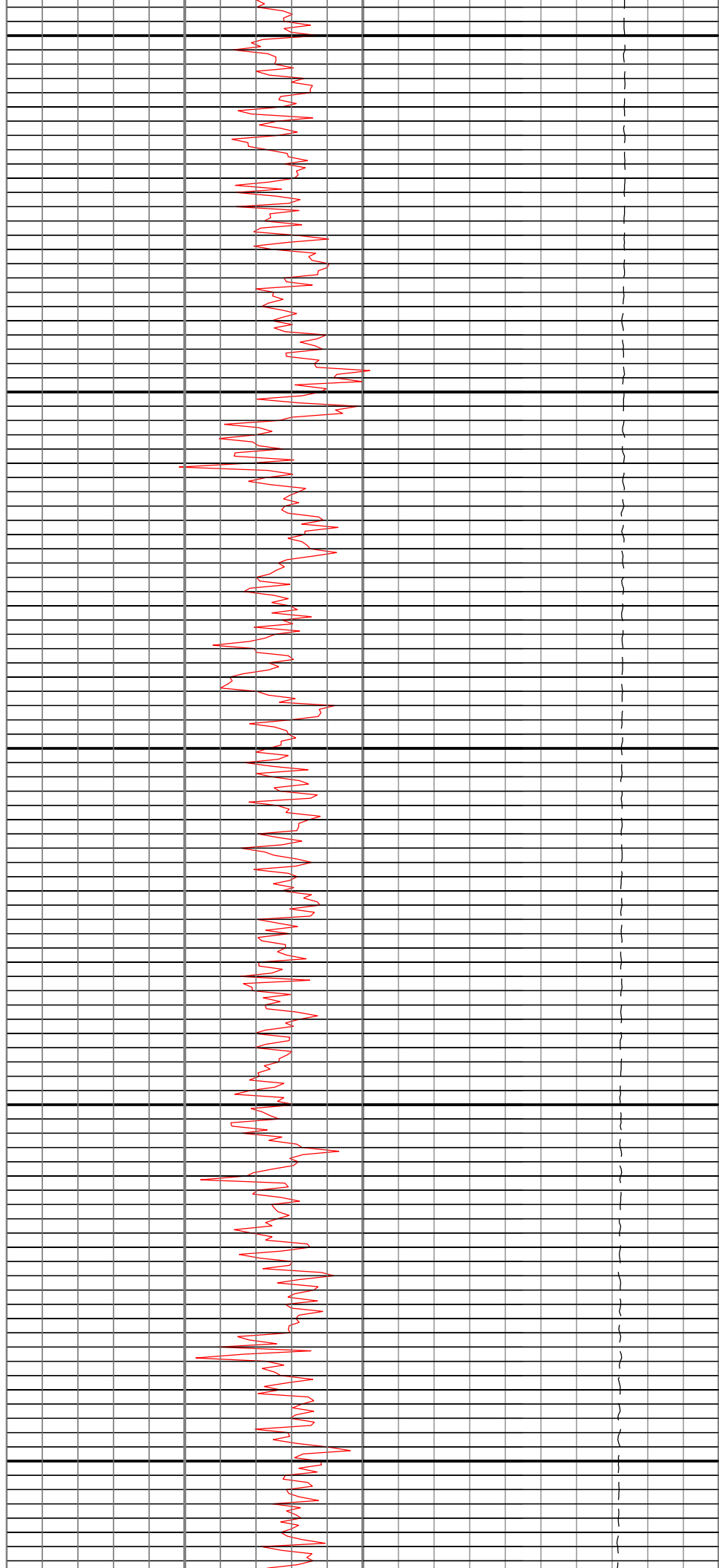
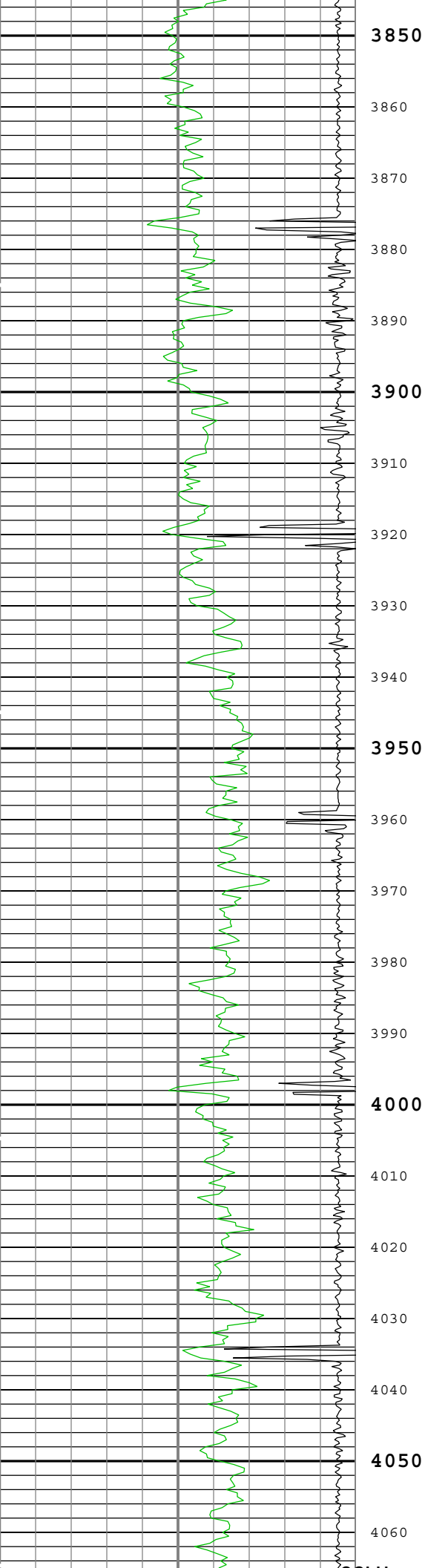




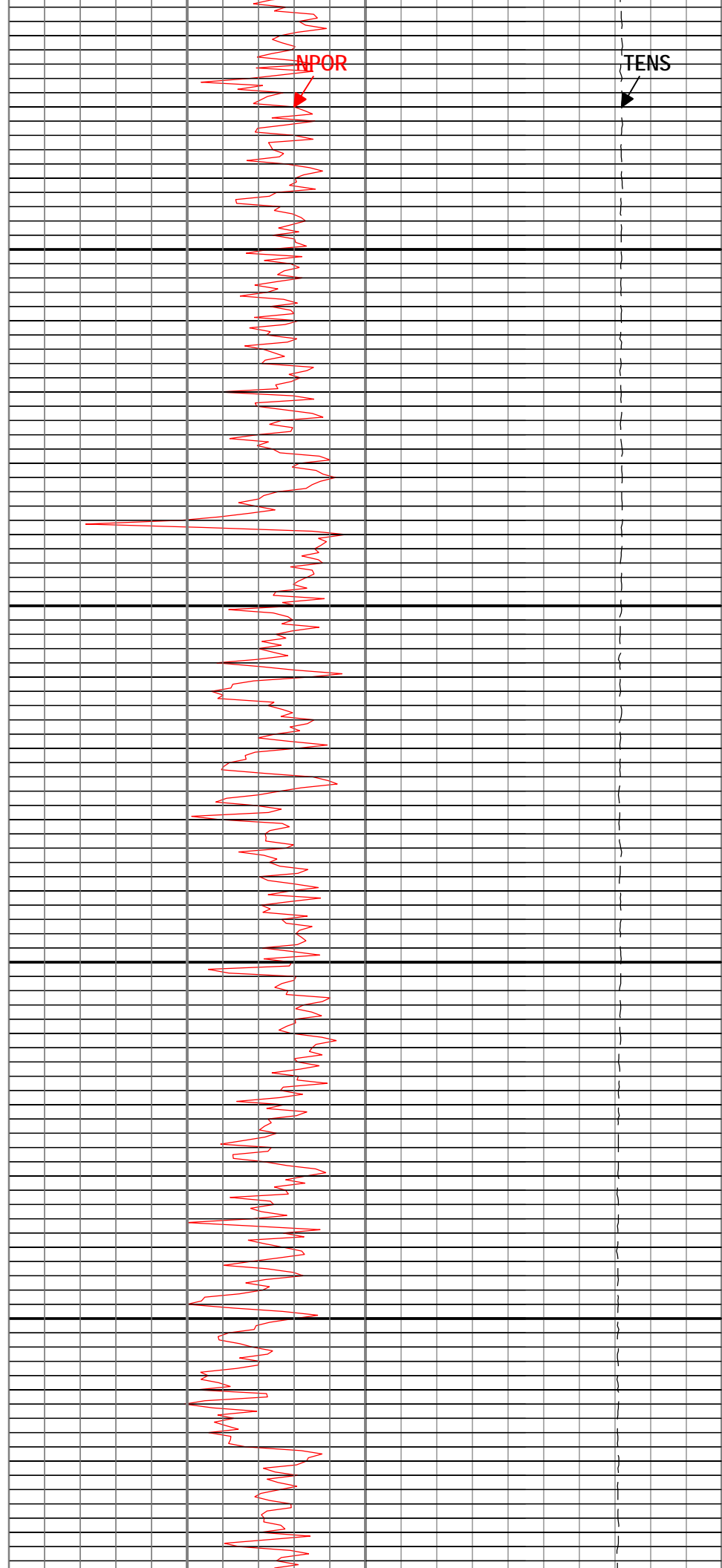
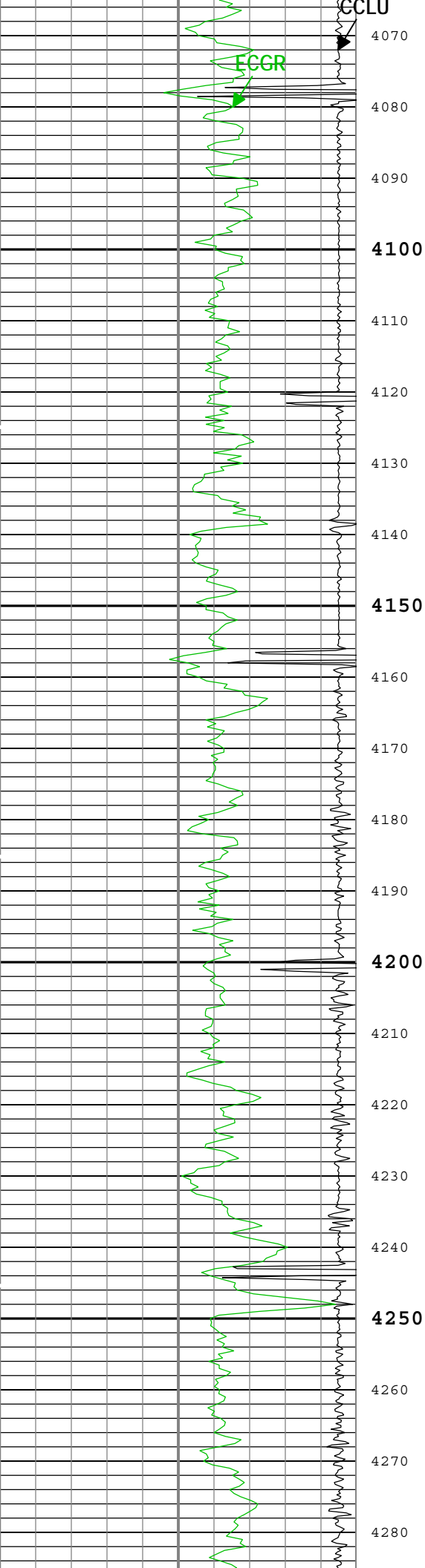


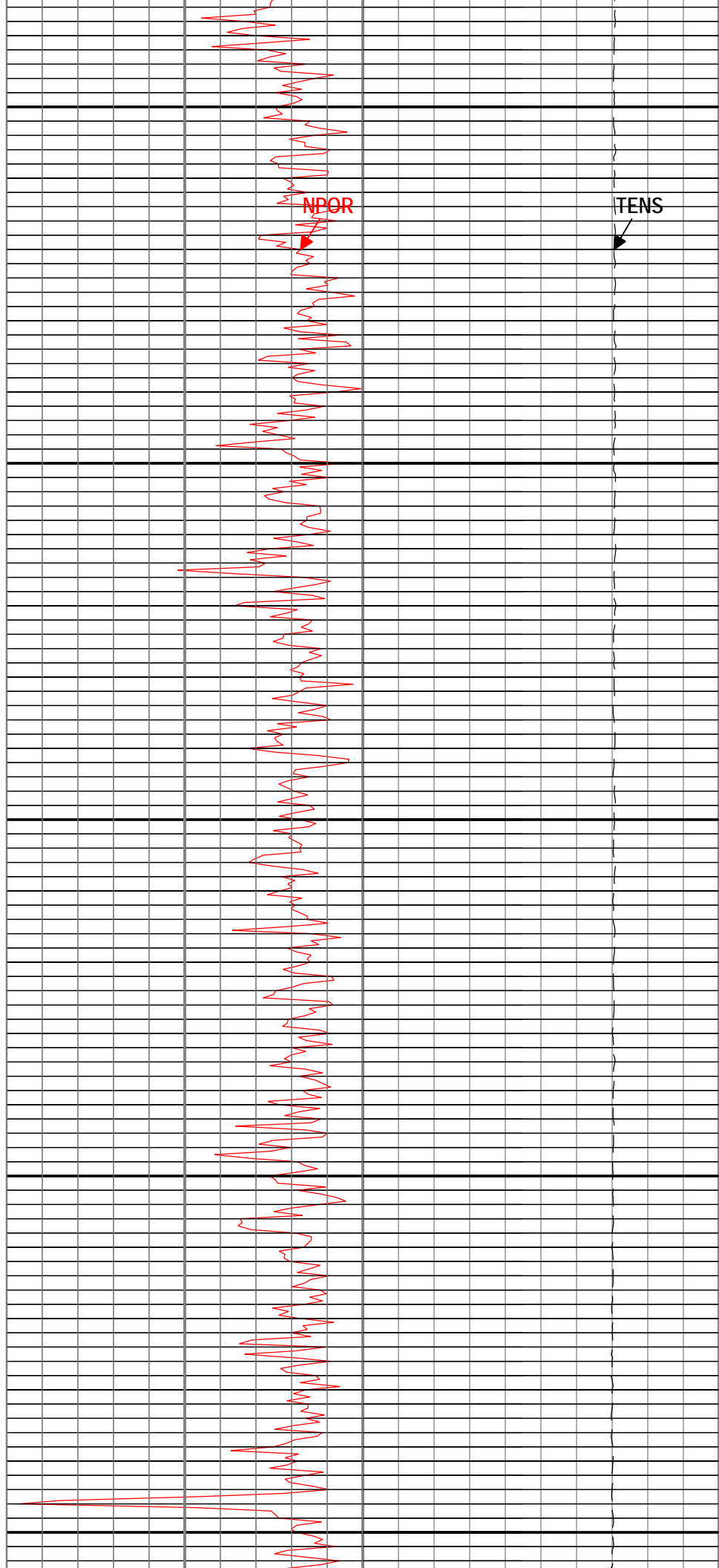
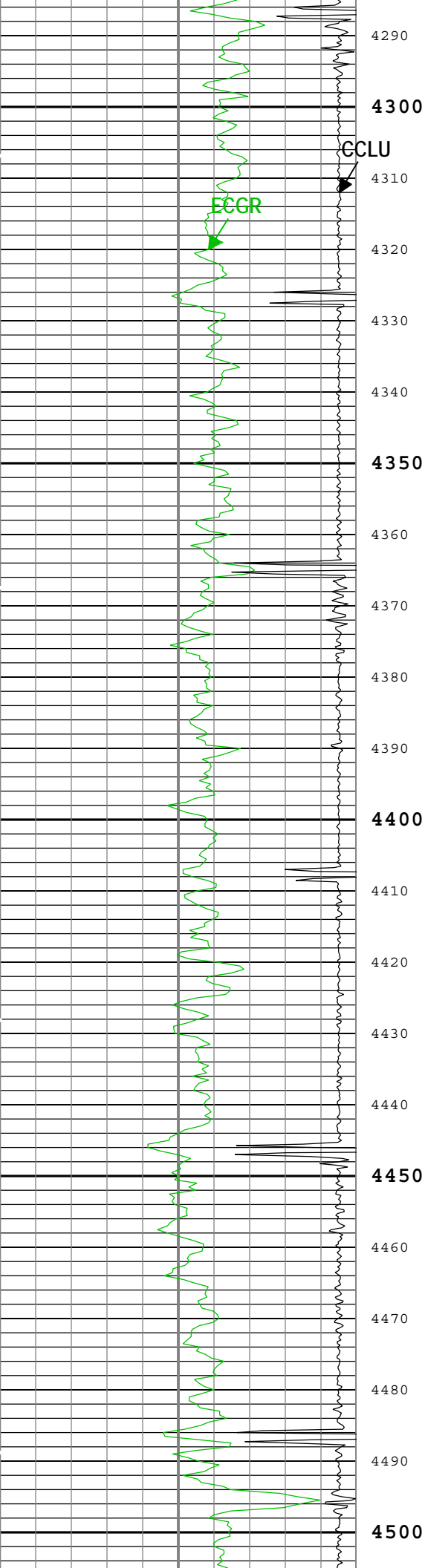


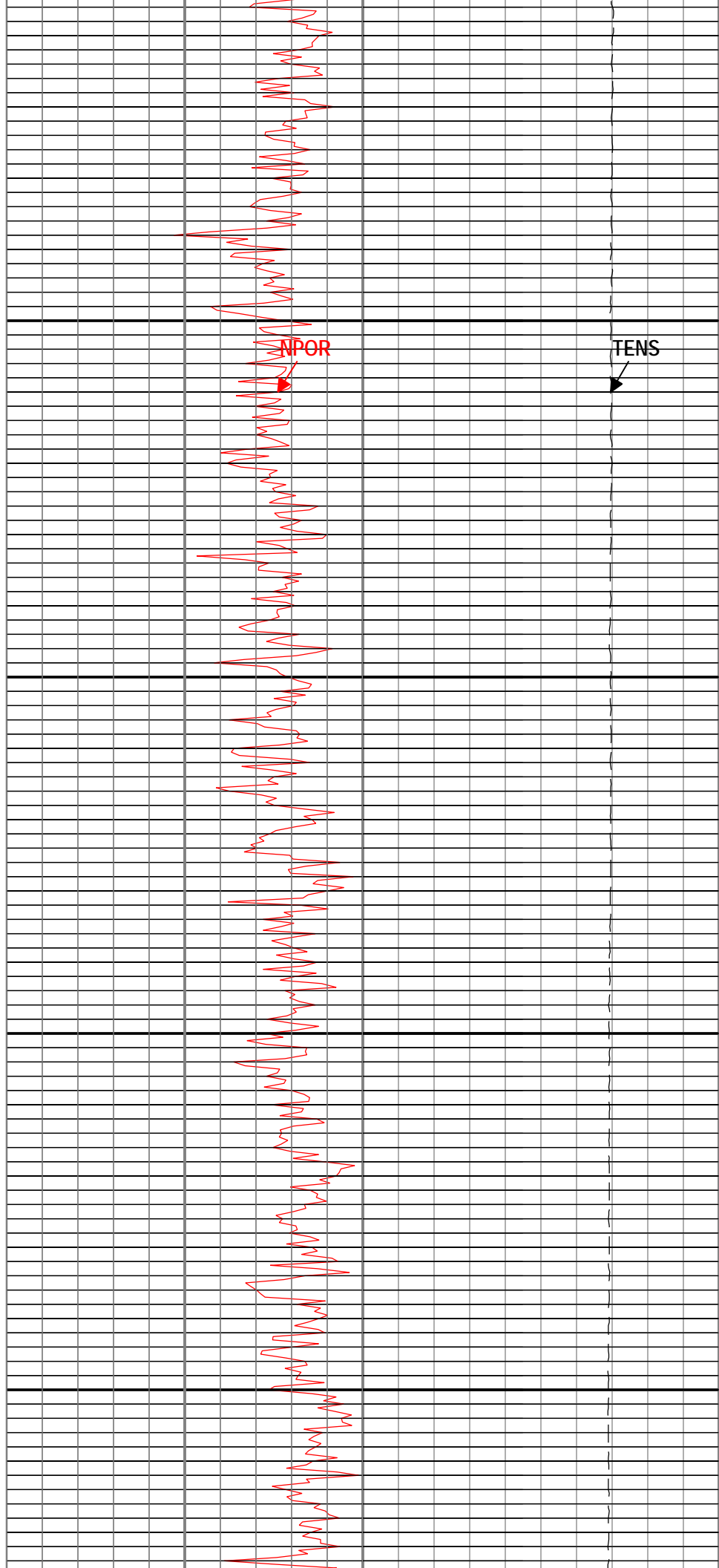
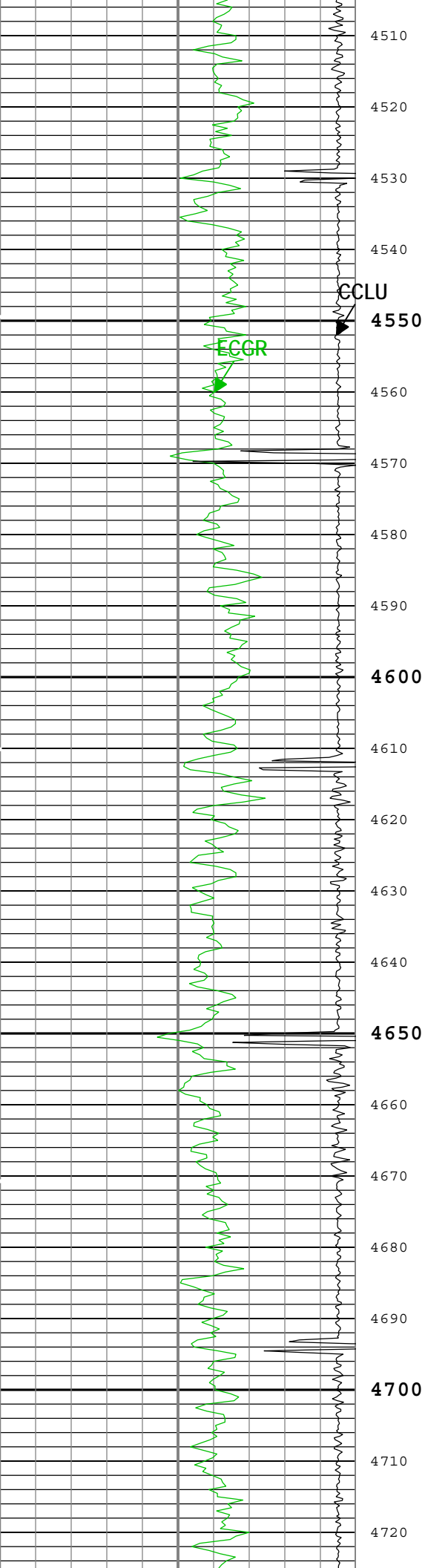


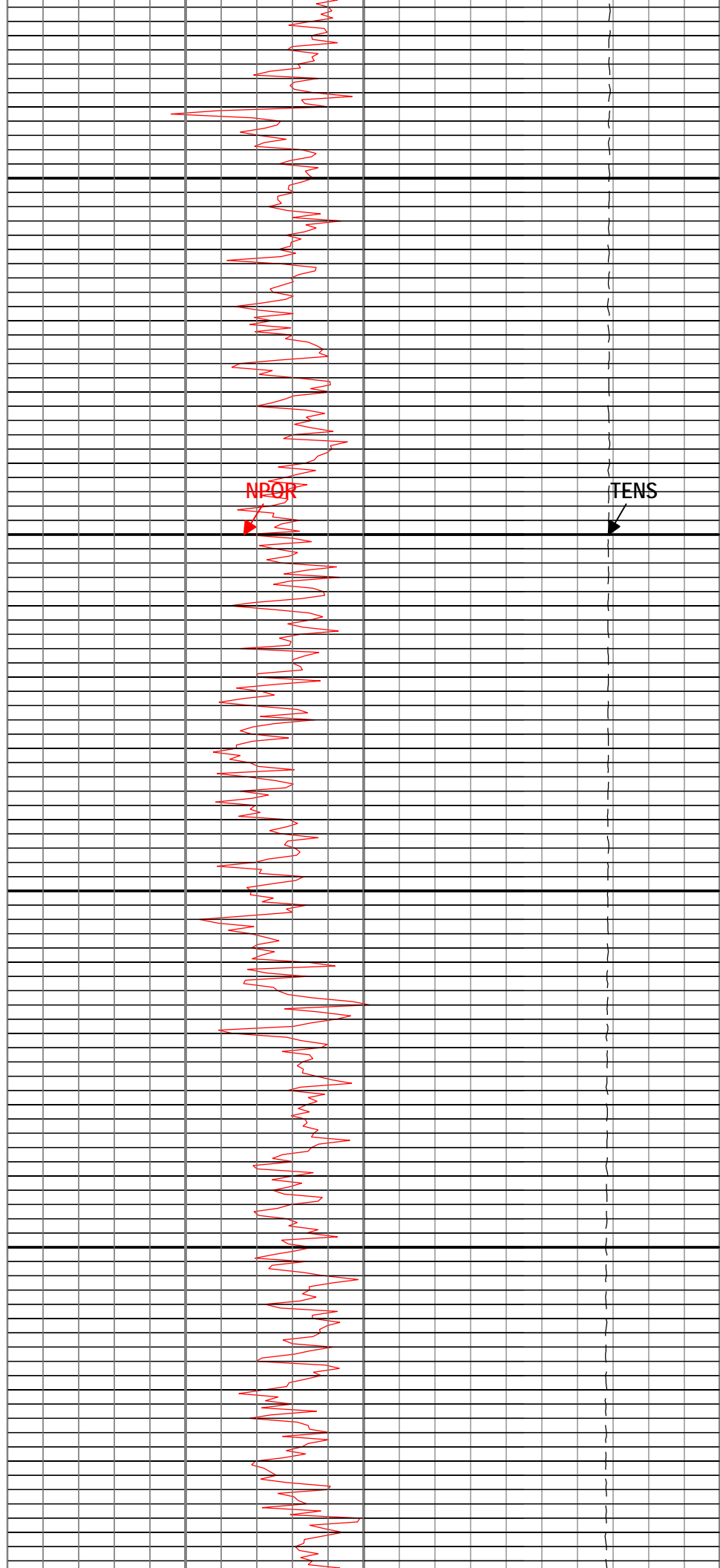
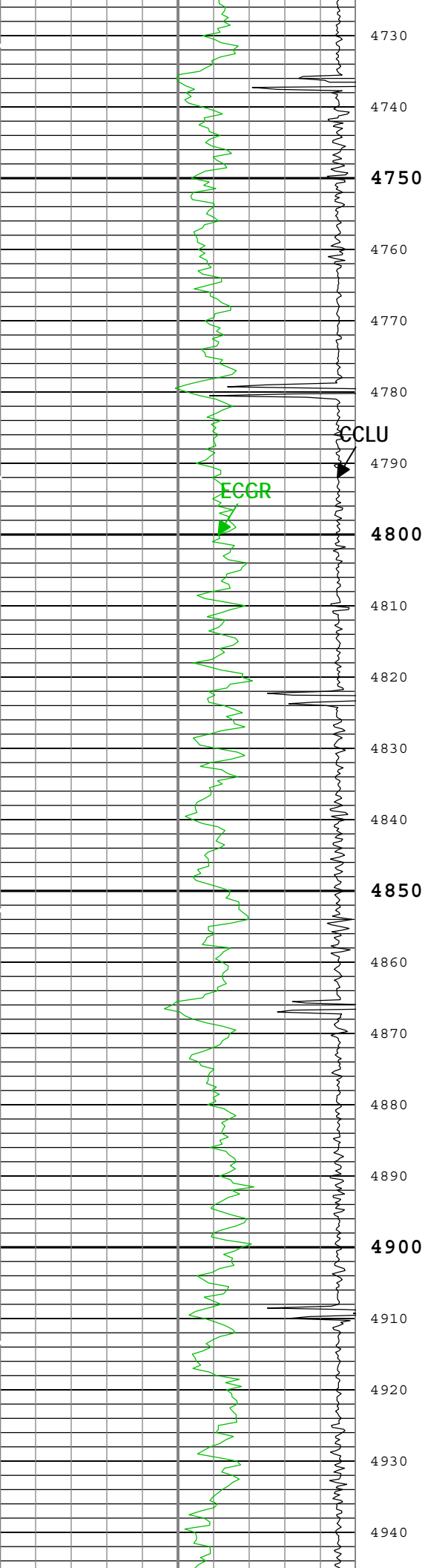


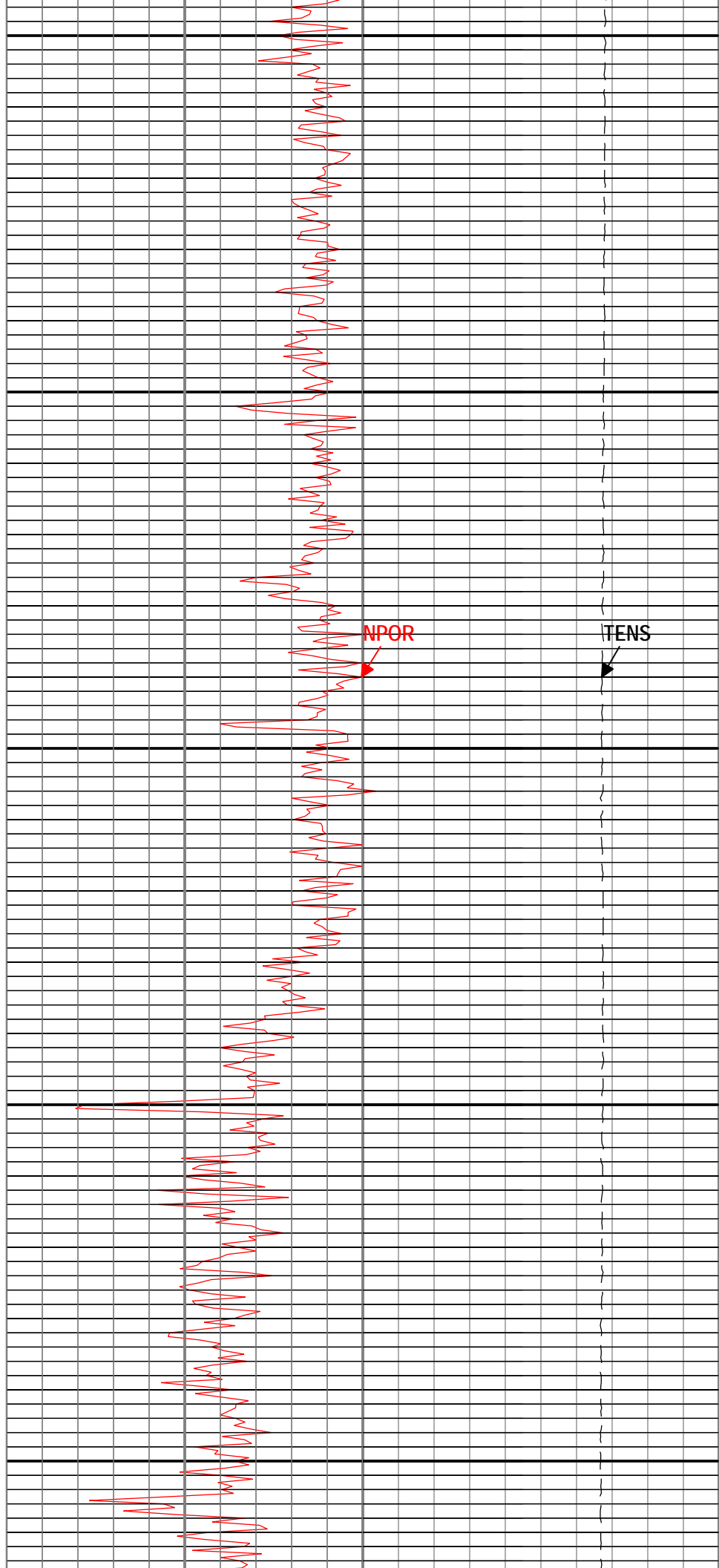
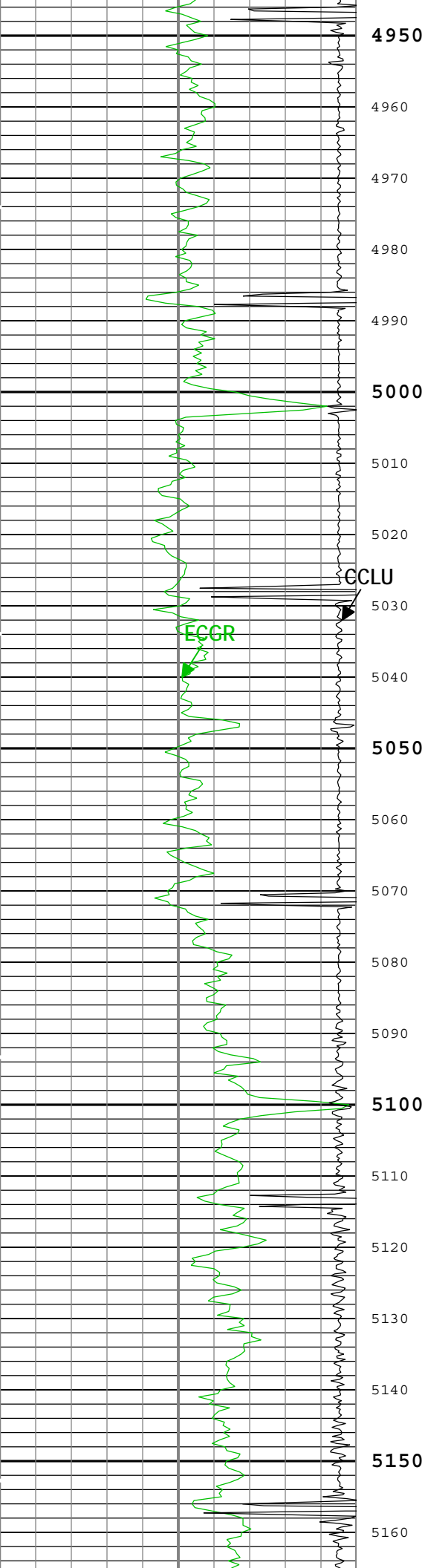


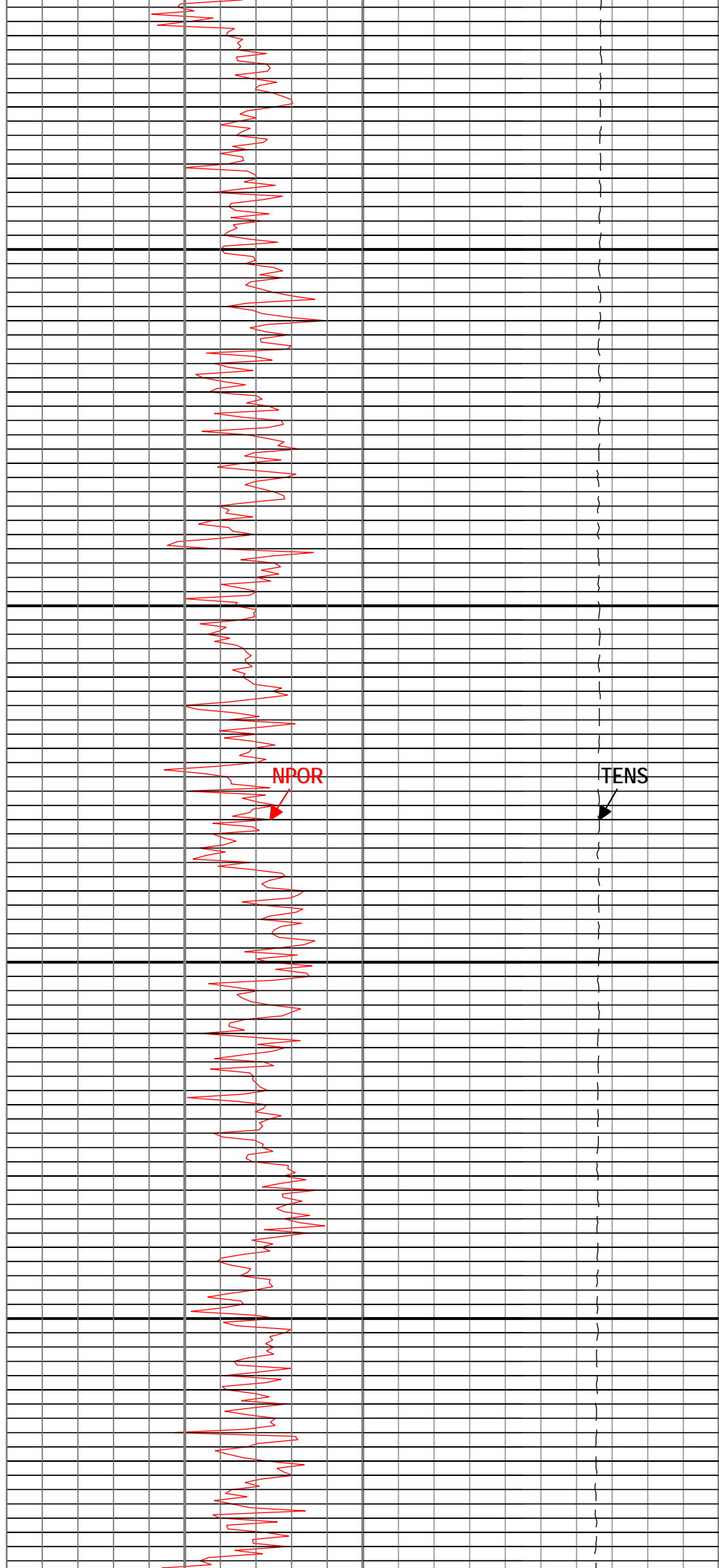
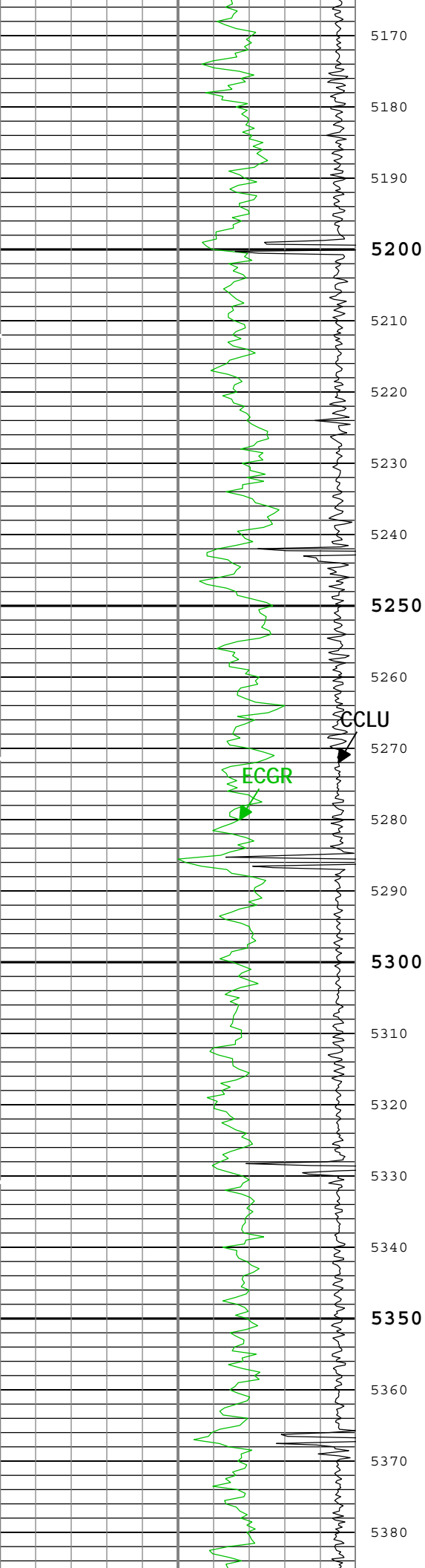


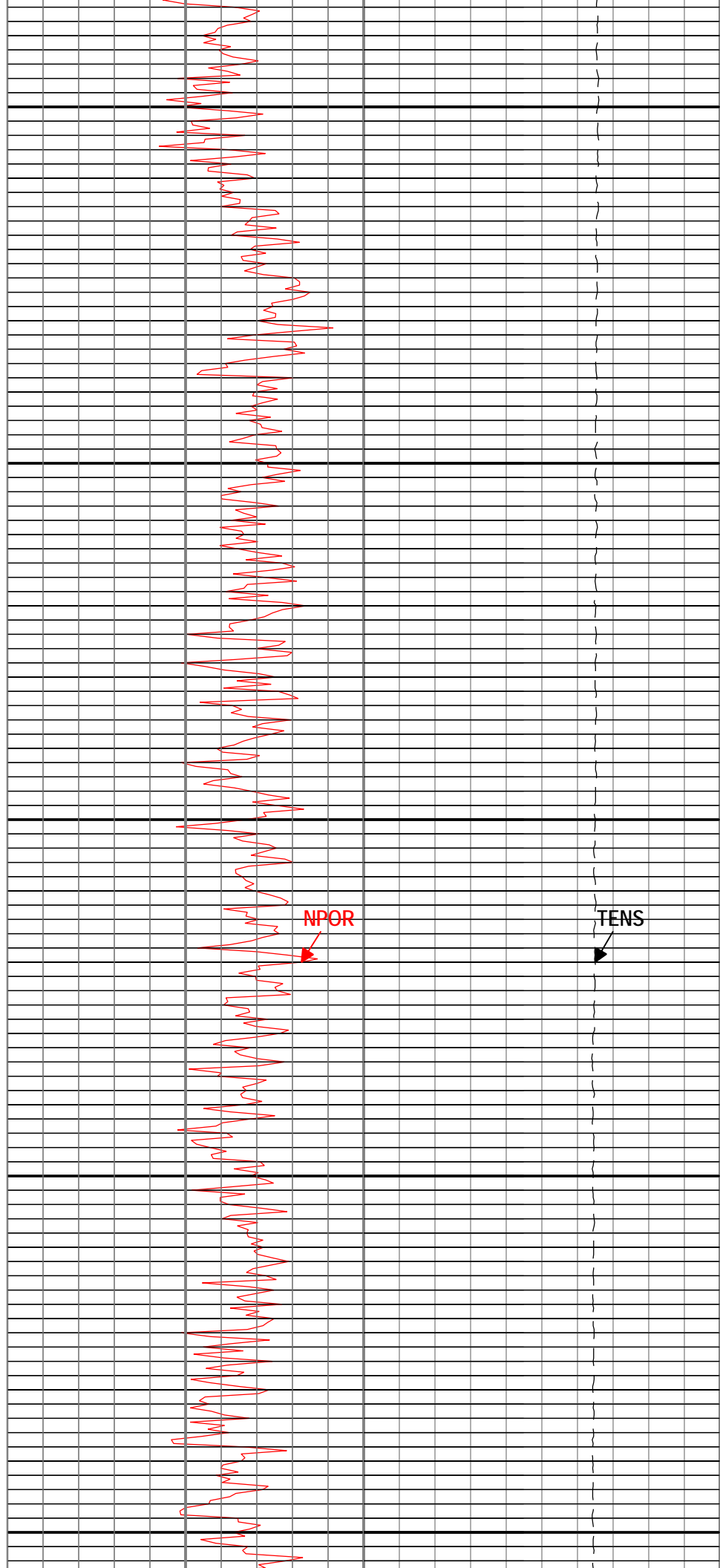
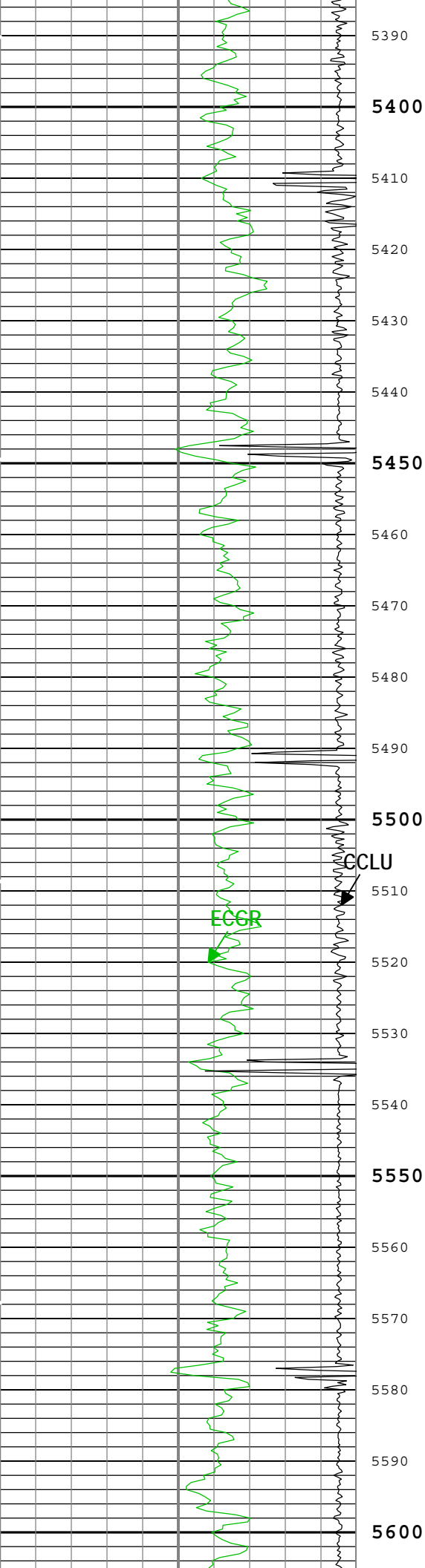


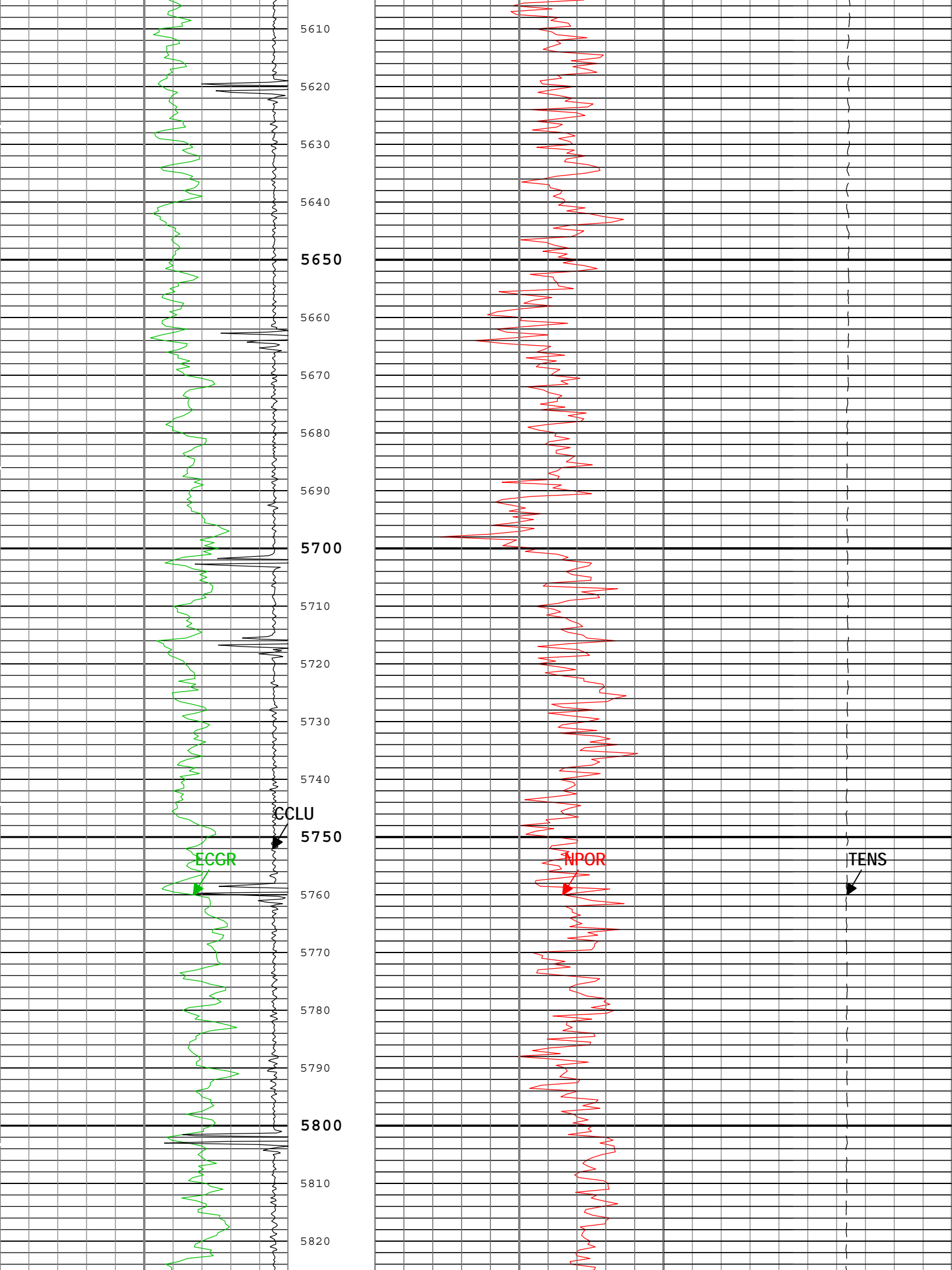




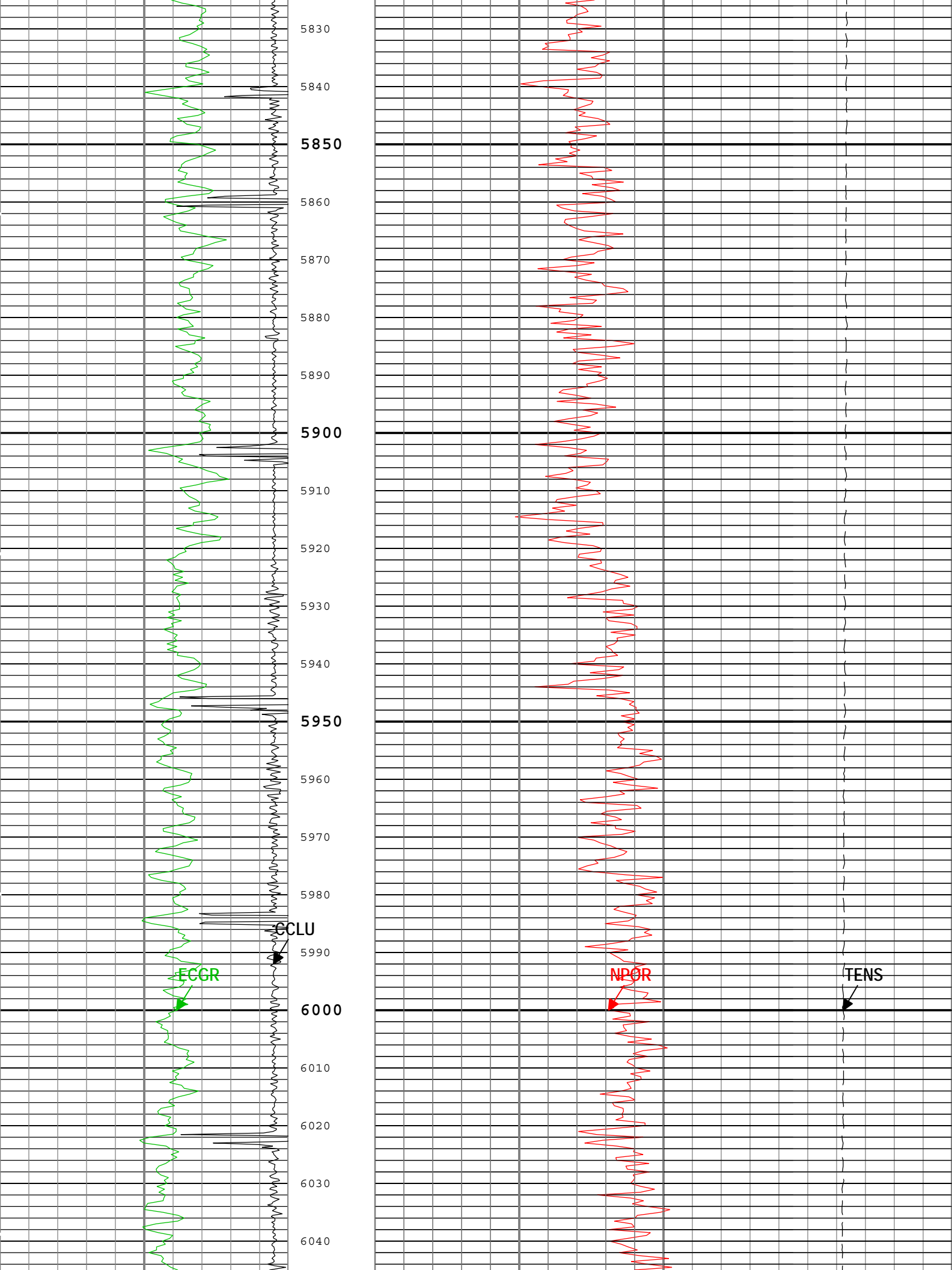


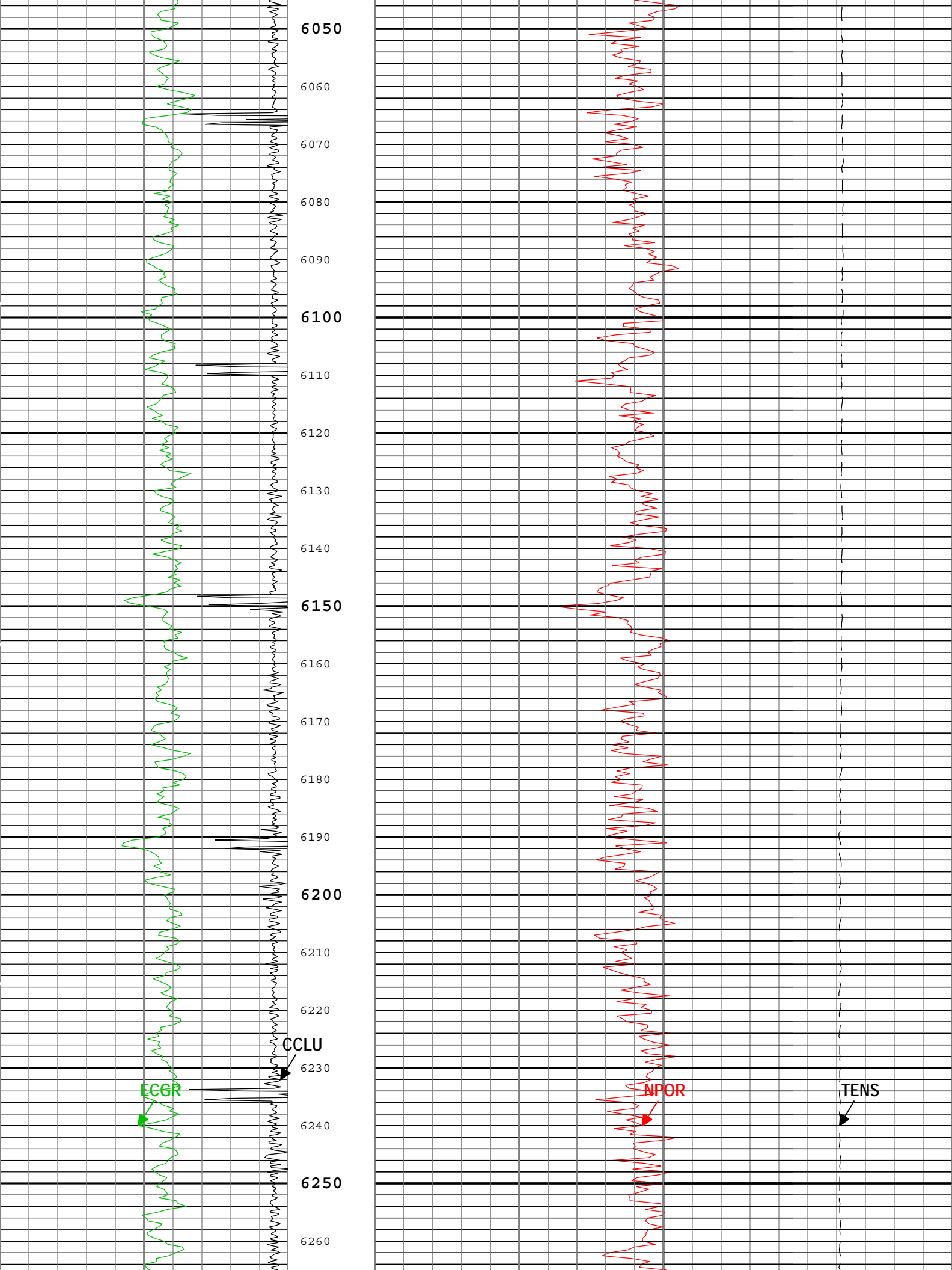


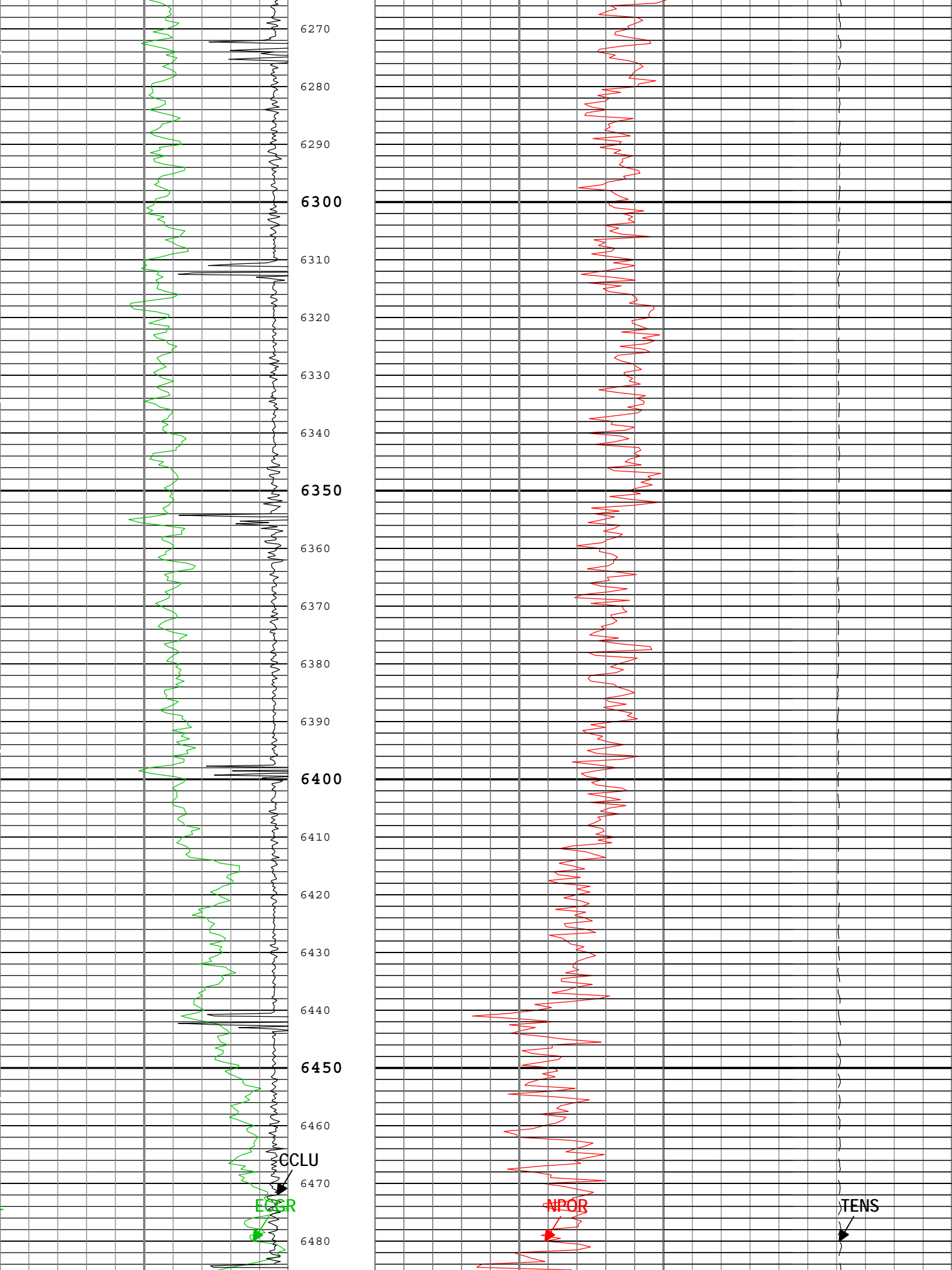


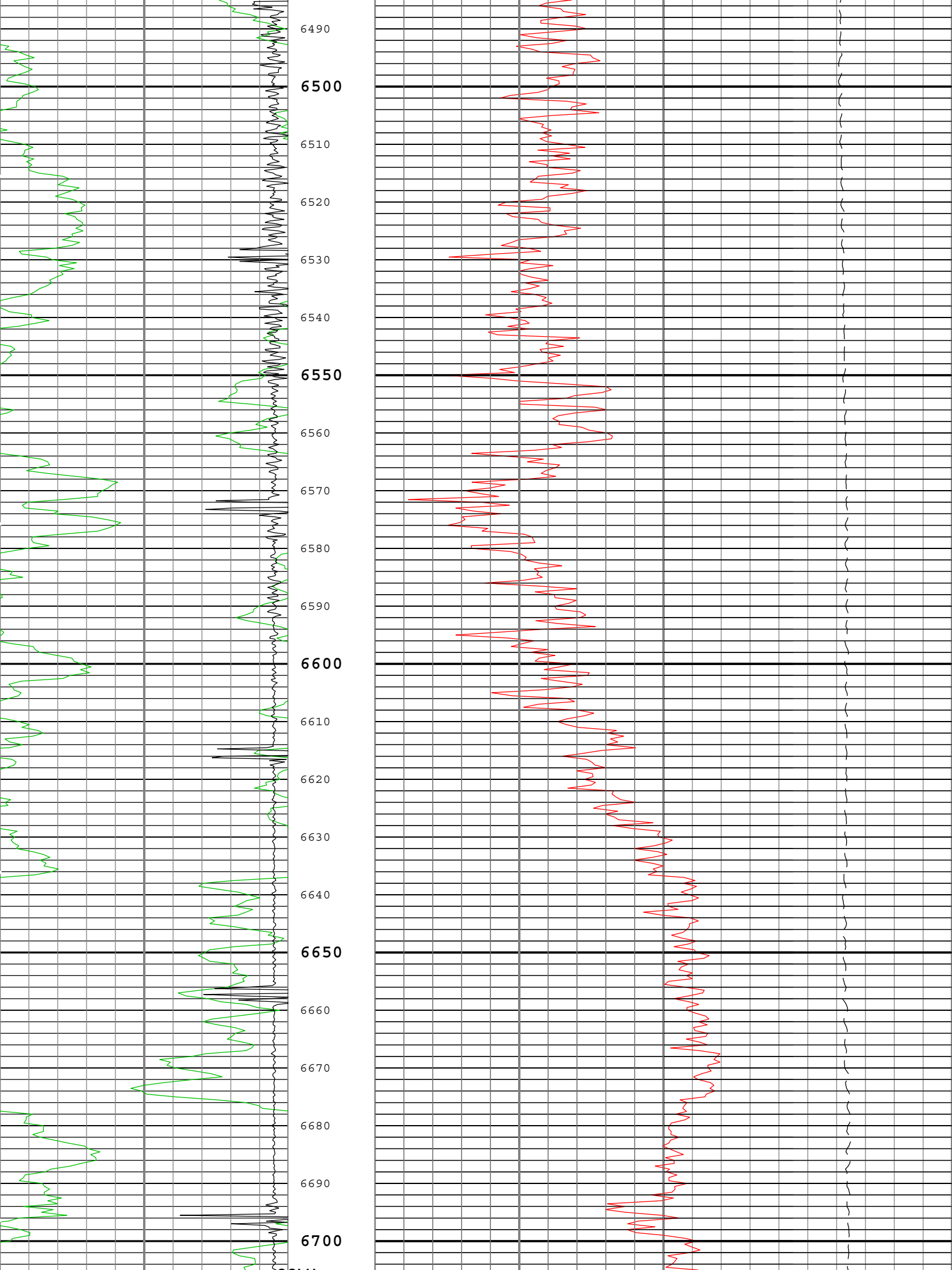


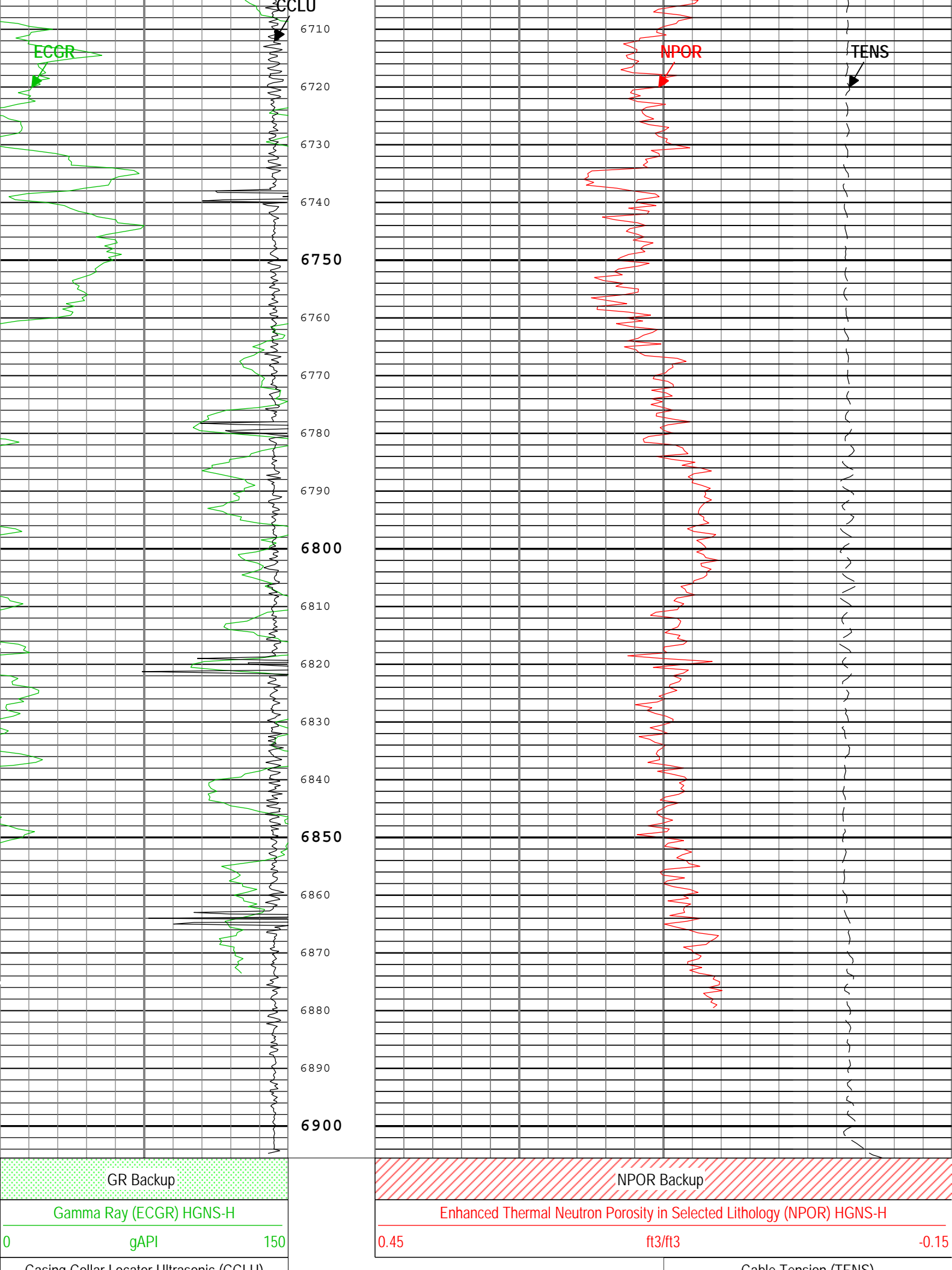












—IHV - Integrated Hole Volume every 10.00 (ft3)

TIME\_1900 - Time Marked every 60.00 (s)

Description: AIT Basic Log Two	Format: Log ( Import of Noble Nuclear )	Index Scale: 5 in per 100 ft	Index Unit: ft	Index Type: Measured Depth	Creation
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Date: 01-May-2015 15:02:32

## Channel Processing Parameters

## Run 1: Parameters

Parameter	Description	Tool	Value	Unit
ISSBAR	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BHT	Bottom Hole Temperature	Borehole	226.59	degF
BS	Bit Size	WLSESSION	Depth Zoned	in
BSAL	Borehole Salinity	Borehole	0	ppm
CBLO	Casing Bottom (Logger)	WLSESSION	7071.1	ft
CDEN	Cement Density	HGNS-H	2	g/cm3
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Light Cement	
CSODDRL	Casing Outer Diameter - Zoned along driller depths	WLSESSION	7	in
THNO	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.362	in
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	8.7	lbm/gal
DFT	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
EDF	Elevation of Derrick Floor Above Permanent Datum	WLSESSION	23	ft
EPD	Elevation of Permanent Datum (PDAT) above Mean Sea Level	WLSESSION	4661	ft
FD	Fluid Density	USIT-E	1.2	g/cm3
FDII	FPM Data Interpolation Interval	USIT-E	0	ft
FSAL	Formation Salinity	Borehole	0	ppm
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS	
GGRD	Geothermal Gradient	Borehole	1	0.01 degF/ft
GRSE	Generalized Mud Resistivity Selection, from Measured or Computed Mud Resistivity	Borehole	REMS	
GTSE	Generalized Temperature Selection, from Measured or Computed Temperature	Borehole	GTEM_LINEST	
HEMA	Hematite Presence Flag	Borehole	No	
HSCO	Hole Size Correction Option	HGNS-H	Yes	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	Off	
MATR	Rock Matrix for Neutron Porosity Corrections	Borehole	LIMESTONE	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	22.5	us
MFST	Mud Filtrate Sample Temperature	Borehole	68	degF
MST	Mud Sample Temperature	Borehole	68	degF
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.07	
PDAT	Permanent Datum	WLSESSION	GL	
RMFS	Resistivity of Mud Filtrate Sample	Borehole	0.15	ohm.m
RMFS	Resistivity of Mud Filtrate Sample	Borehole	0.15	ohm.m

RMS	Resistivity of Mud Sample	Borehole	0.2	ohm.m
SHT	Surface Hole Temperature	Borehole	68	degF
TD	Total Measured Depth	Borehole	6905	ft
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	0.1	Mrayl
UFGDE	Fiberglass Density	USIT-E	1.95	g/cm3
UFGPS	Fiberglass Processing Selection	USIT-E	No	
UFGVL	Fiberglass Velocity	USIT-E	9678.48	ft/s
USI_FSOD	USIT USI Fluid Slowness Fits Casing Outer Diameter	USIT-E	0_OFF	
USI_FVEL_SEL	USI Fluid Velocity Selection	USIT-E	Automatic	
USI_ZMUD_SEL	USI Mud Impedance Selection	USIT-E	FreePipe Norm.	
ZMUD	Acoustic Impedance of Mud	Borehole	1.48	Mrayl

## Depth Zone Parameters

Parameter	Value	Start ( ft )	Stop ( ft )
BS	17.5	27	130
BS	13.5	130	926
BS	8.75	926	6905

All depth are actual.

Tool Control Parameters

## Run 1: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	dB
U-USIT_DDT5	USIC Downhole Decimation for T5 only	USIT-E	0_NONE	
EMXV	EMEX Voltage	USIT-E	Time Zoned	V
HRES	Horizontal Resolution	USIT-E	10 deg	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	3600	ft/h
TMUC	Type of Mud	USIT-E	BRI	
ULOG	Logging Objective	USIT-E	MEASUREMENT	
UMFR	Modulation Frequency	USIT-E	333333	Hz
USFR	Ultrasonic Sampling Frequency	USIT-E	500000	Hz
UPAT	USIT Emission Pattern	USIT-E	Pattern 375 KHz	
UWKM	USIT Working Mode	USIT-E	Uncompressed 10 deg at 3.0 in LF	
USIT_DEPTHLOG	Starting Depth Log for Ultrasonics	USIT-E	6900	ft
VRES	Vertical Resolution	USIT-E	3.0 in	
WINB	Window Begin Time	USIT-E	Time Zoned	us
WINE	Window End Time	USIT-E	86.79	us

## Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth ( ft )	Stop Depth ( ft )
EMXV	72	01-May-2015 09:39:06	01-May-2015 10:08:05	6905.72	5680.99
EMXV	70	01-May-2015 10:08:05	01-May-2015 10:11:20	5680.99	5488.16
EMXV	65	01-May-2015 10:11:20	01-May-2015 10:25:53	5488.16	4616.92
EMXV	62	01-May-2015 10:25:53	01-May-2015 10:41:00	4616.92	3705.14
EMXV	61	01-May-2015 10:41:00	01-May-2015 11:42:09	3705.14	65.21
WINB	28	01-May-2015 09:39:06	01-May-2015 09:53:50	6905.72	6525.08
WINB	26.2	01-May-2015 09:53:50	01-May-2015 09:53:52	6525.08	6522.72
WINB	23.2	01-May-2015 09:53:52	01-May-2015 11:42:09	6522.72	65.21

All depth are at tool zero.

Software Version

Acquisition System

Maxwell

Version

5.2.40990.3100

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
Run 1	Repeat[2]:Up	Up	6400.31 ft	6903.87 ft	01-May-2015 9:23:44 AM	01-May-2015 9:32:44 AM	ON	3.66 ft	Yes
Run 1	Main[3]:Up	Up	65.21 ft	6905.73 ft	01-May-2015 9:39:06 AM	01-May-2015 11:42:09 AM	ON	5.49 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Noble Energy Inc Well:Colt A13-655

Run 1: Main[3]:Up:S005

Description: AIT Basic Log Two Format: Import of Noble Nuclear RA Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 01-May-2015 15:02:35

TIME\_1900 - Time Marked every 60.00 (s)

—IHV - Integrated Hole Volume every 10.00 (ft3)

—IHV - Integrated Hole Volume every 100.00 (ft3)

—ICV - Integrated Cement Volume every 10.00 (ft3)

—ICV - Integrated Cement Volume every 100.00 (ft3)

Main To Repeat

Repeat To Main

Gamma Ray (ECGR) HGNS-H

gAPI

Main To Repeat

Repeat To Main

Casing Collar Locator Ultrasonic (CCLU)  
USIT-E

in

Main To Repeat

Repeat To Main

Cable Tension (TENS)

lbf

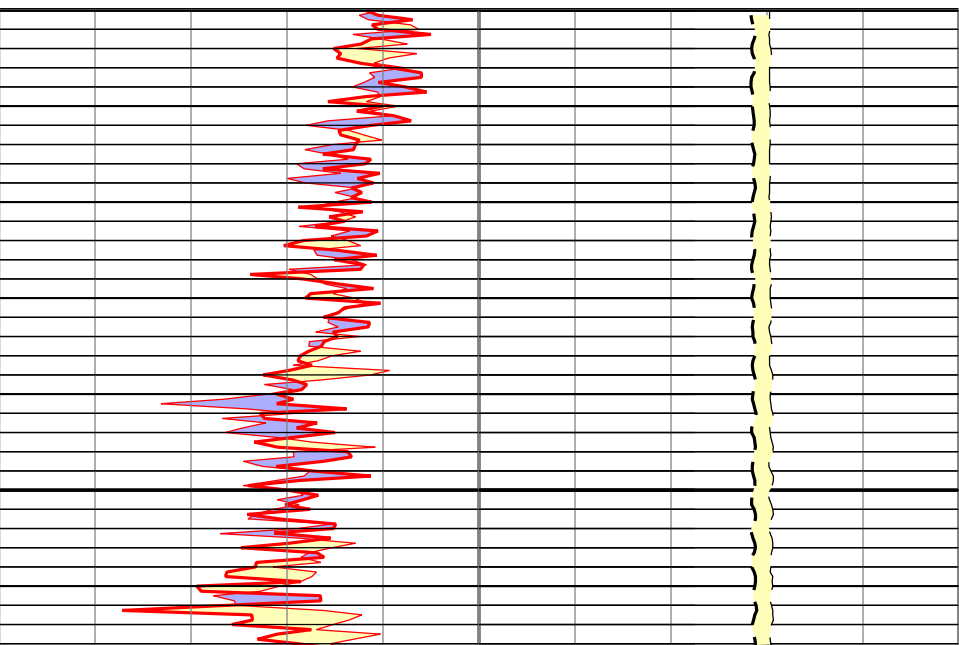
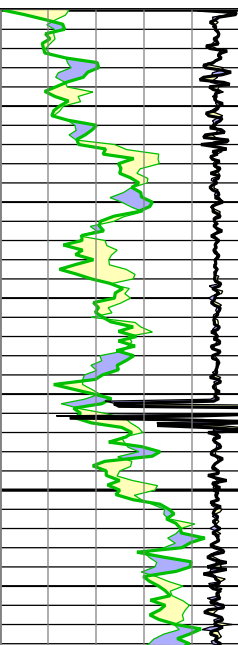
Main To Repeat

Repeat To Main

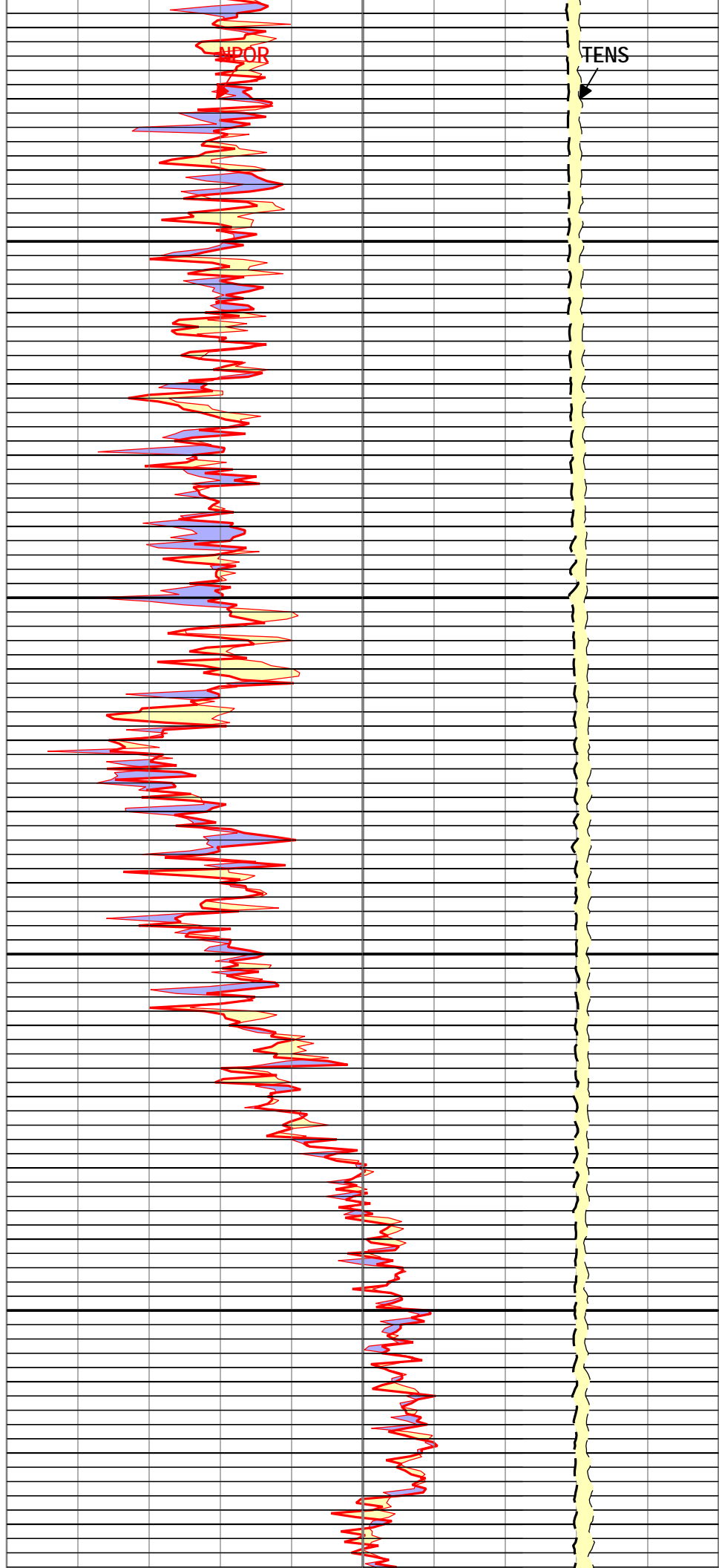
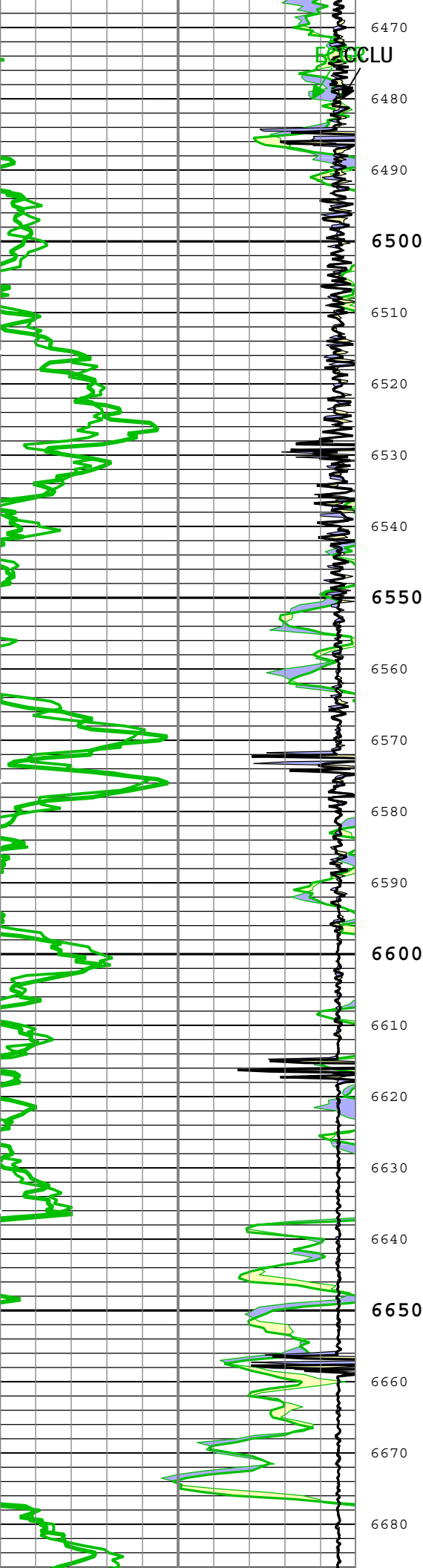
Enhanced Thermal Neutron Porosity in Selected Lithology (NPOR) HGNS-H

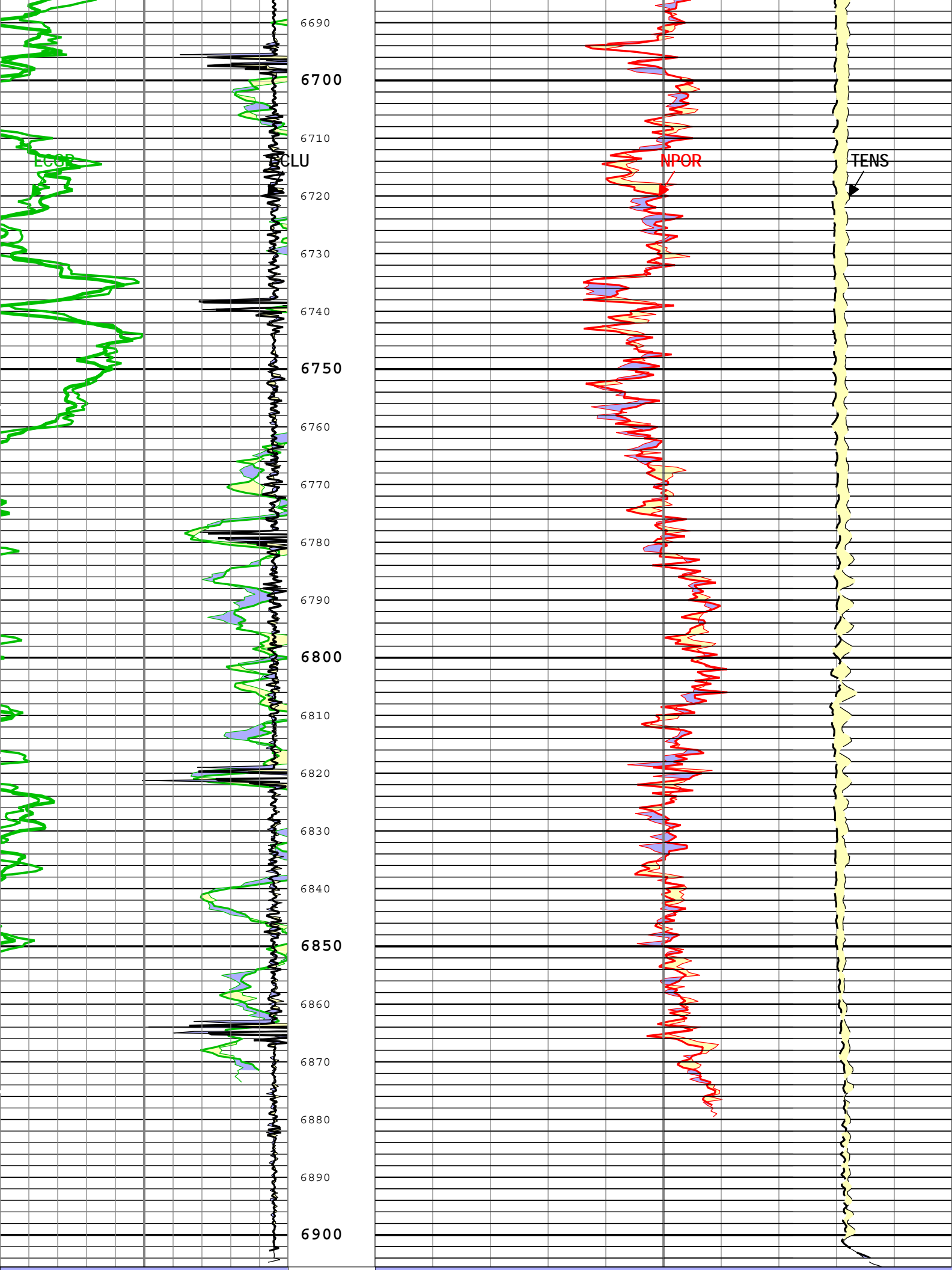
ft3/ft3

6400  
6410  
6420  
6430  
6440  
6450  
6460









Main To Repeat			Main To Repeat		
Repeat To Main			Repeat To Main		
Gamma Ray (ECGR) HGNS-H			Enhanced Thermal Neutron Porosity in Selected Lithology (NPOR) HGNS-H		
0	gAPI	150	0.45	ft3/ft3	-0.15
Main To Repeat			Main To Repeat		
Repeat To Main			Repeat To Main		
Casing Collar Locator Ultrasonic (CCLU) USIT-E			Cable Tension (TENS)		
-19	in	1	5000	lbf	0
<div> <div>ICV - Integrated Cement Volume every 100.00 (ft3)</div> <div>ICV - Integrated Cement Volume every 10.00 (ft3)</div> <div>IHV - Integrated Hole Volume every 100.00 (ft3)</div> <div>IHV - Integrated Hole Volume every 10.00 (ft3)</div> </div>					
TIME_1900 - Time Marked every 60.00 (s)					
Description: AIT Basic Log Two    Format: Import of Noble Nuclear RA    Index Scale: 5 in per 100 ft    Index Unit: ft    Index Type: Measured Depth    Creation Date: 01-May-2015 15:02:35					

Channel Processing Parameters				
Run 1: Parameters				
Parameter	Description	Tool	Value	Unit
ISSBAR	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BHT	Bottom Hole Temperature	Borehole	226.59	degF
BS	Bit Size	WLSESSION	8.75	in
BSAL	Borehole Salinity	Borehole	0	ppm
CBLO	Casing Bottom (Logger)	WLSESSION	7071.1	ft
CDEN	Cement Density	HGNS-H	2	g/cm3
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Light Cement	
CSODDRL	Casing Outer Diameter - Zoned along driller depths	WLSESSION	7	in
THNO	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.362	in
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	8.7	lbm/gal
DFT	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
EDF	Elevation of Derrick Floor Above Permanent Datum	WLSESSION	23	ft
EPD	Elevation of Permanent Datum (PDAT) above Mean Sea Level	WLSESSION	4661	ft
FD	Fluid Density	USIT-E	1.2	g/cm3
FDII	FPM Data Interpolation Interval	USIT-E	0	ft
FSAL	Formation Salinity	Borehole	0	ppm
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS	
GGRD	Geothermal Gradient	Borehole	1	0.01 degF/ft
GRSE	Generalized Mud Resistivity Selection, from Measured or Computed Mud Resistivity	Borehole	REMS	
GTSE	Generalized Temperature Selection, from Measured or Computed Temperature	Borehole	GTEM_LINEST	
HEMA	Hematite Presence Flag	Borehole	No	
HSCO	Hole Size Correction Option	HGNS-H	Yes	
ICE_PROCESS	ICE Processing	USIT-E	Yes	

CE_PROCESS	CE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	Off	
MATR	Rock Matrix for Neutron Porosity Corrections	Borehole	LIMESTONE	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	22.5	us
MFST	Mud Filtrate Sample Temperature	Borehole	68	degF
MST	Mud Sample Temperature	Borehole	68	degF
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.07	
PDAT	Permanent Datum	WLSESSION	GL	
RMFS	Resistivity of Mud Filtrate Sample	Borehole	0.15	ohm.m
RMS	Resistivity of Mud Sample	Borehole	0.2	ohm.m
SHT	Surface Hole Temperature	Borehole	68	degF
TD	Total Measured Depth	Borehole	6905	ft
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	0.1	Mrayl
UFGDE	Fiberglass Density	USIT-E	1.95	g/cm3
UFGPS	Fiberglass Processing Selection	USIT-E	No	
UFGVL	Fiberglass Velocity	USIT-E	9678.48	ft/s
USI_FSOD	USIT USI Fluid Slowness Fits Casing Outer Diameter	USIT-E	0_OFF	
USI_FVEL_SEL	USI Fluid Velocity Selection	USIT-E	Automatic	
USI_ZMUD_SEL	USI Mud Impedance Selection	USIT-E	FreePipe Norm.	
ZMUD	Acoustic Impedance of Mud	Borehole	1.48	Mrayl

## Tool Control Parameters

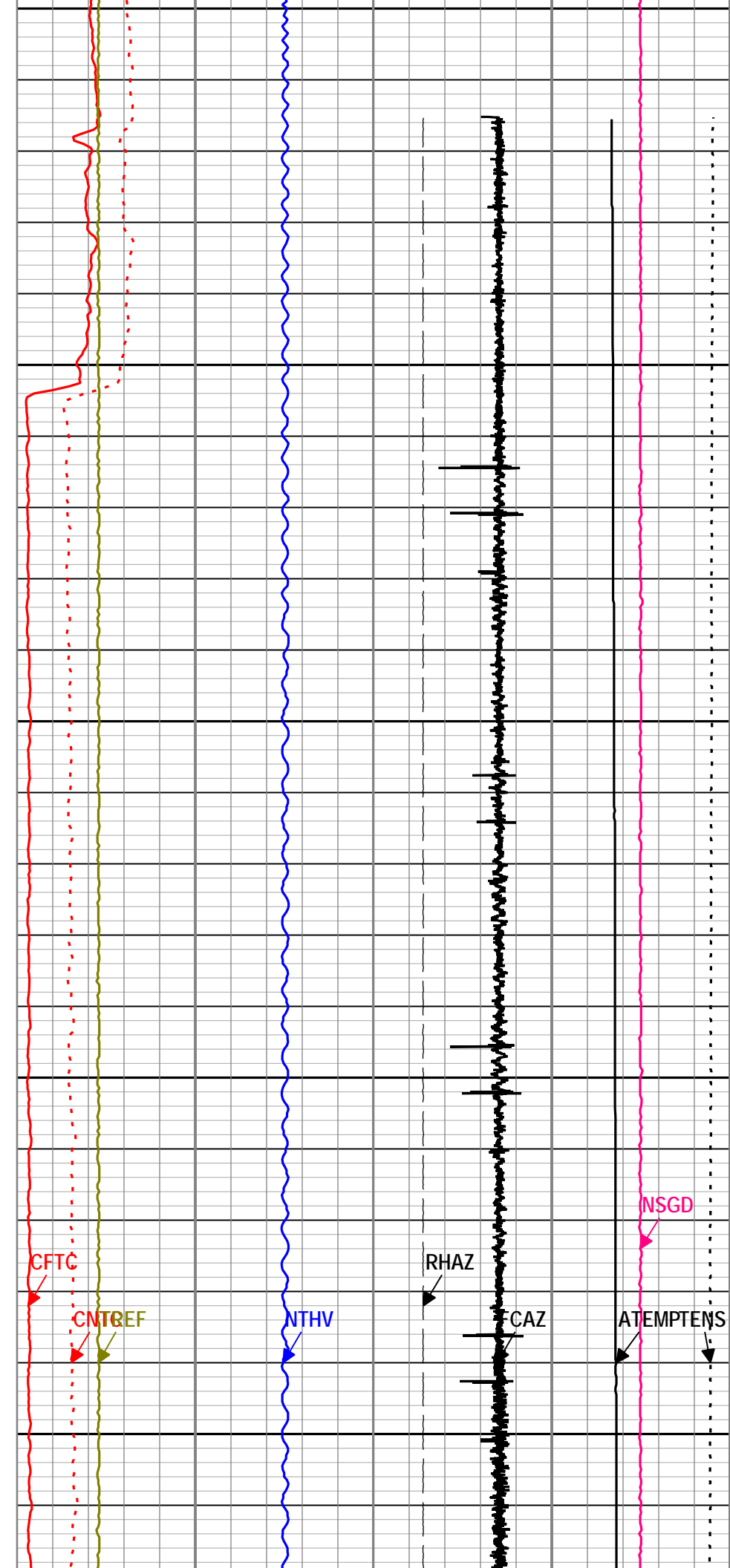
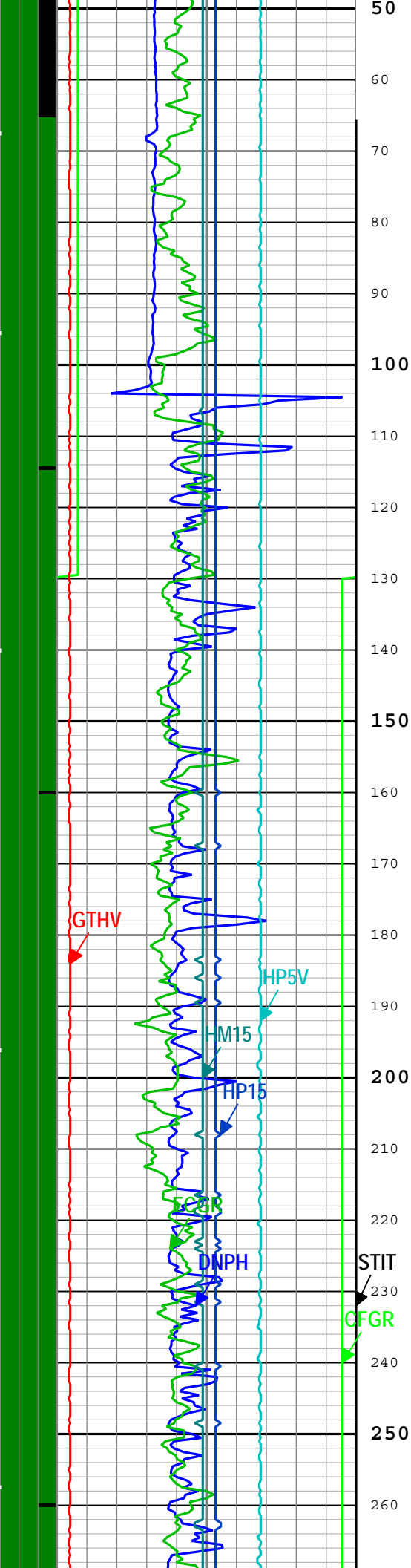
### Run 1: Parameters

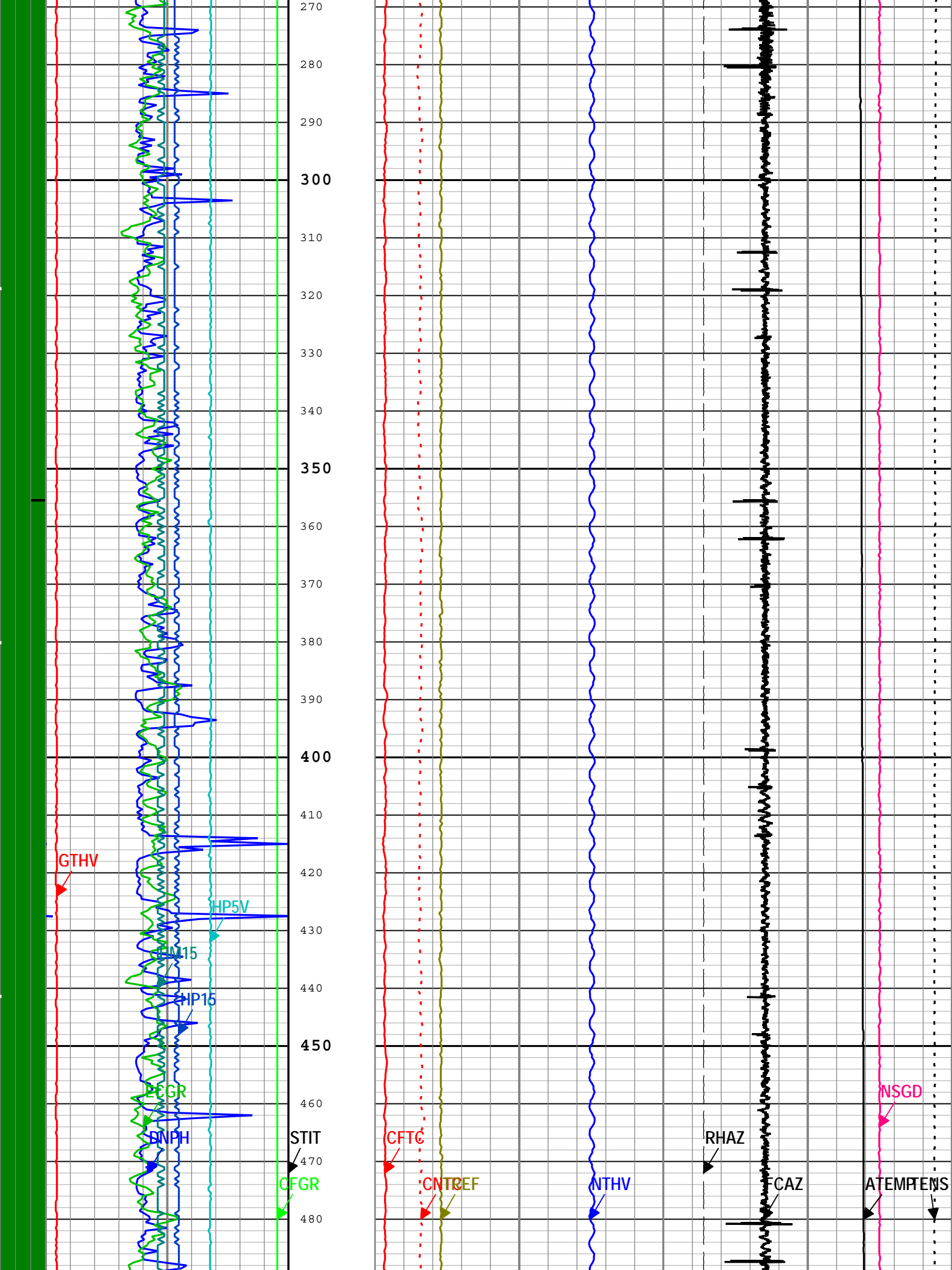
Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	dB
U-USIT_DDT5	USIC Downhole Decimation for T5 only	USIT-E	0_NONE	
EMXV	EMEX Voltage	USIT-E	Time Zoned	V
HRES	Horizontal Resolution	USIT-E	10 deg	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	3600	ft/h
TMUC	Type of Mud	USIT-E	BRI	
ULOG	Logging Objective	USIT-E	MEASUREMENT	
UMFR	Modulation Frequency	USIT-E	333333	Hz
USFR	Ultrasonic Sampling Frequency	USIT-E	500000	Hz
UPAT	USIT Emission Pattern	USIT-E	Pattern 375 KHz	
UWKM	USIT Working Mode	USIT-E	Uncompressed 10 deg at 3.0 in LF	
USIT_DEPTHLOG	Starting Depth Log for Ultrasonics	USIT-E	6900	ft
VRES	Vertical Resolution	USIT-E	3.0 in	
WINB	Window Begin Time	USIT-E	Time Zoned	us
WINE	Window End Time	USIT-E	86.79	us

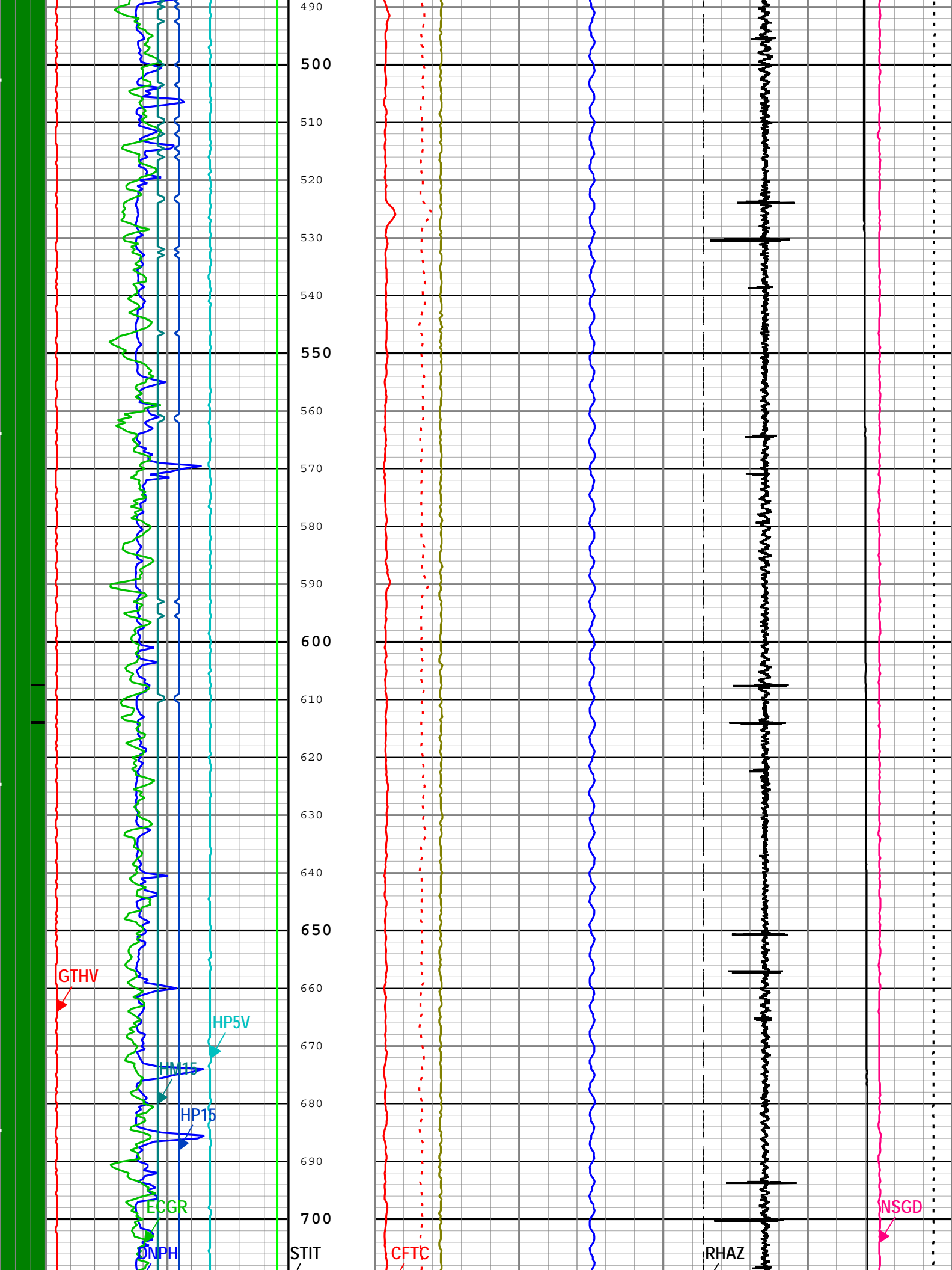
### Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth ( ft )	Stop Depth ( ft )
EMXV	72	01-May-2015 09:39:06	01-May-2015 10:08:05	6905.72	5680.99
EMXV	70	01-May-2015 10:08:05	01-May-2015 10:11:20	5680.99	5488.16
EMXV	65	01-May-2015 10:11:20	01-May-2015 10:25:53	5488.16	4616.92
EMXV	62	01-May-2015 10:25:53	01-May-2015 10:41:00	4616.92	3705.14
EMXV	61	01-May-2015 10:41:00	01-May-2015 11:42:09	3705.14	65.21
WINB	28	01-May-2015 09:39:06	01-May-2015 09:53:50	6905.72	6525.08
WINB	26.2	01-May-2015 09:53:50	01-May-2015 09:53:52	6525.08	6522.72

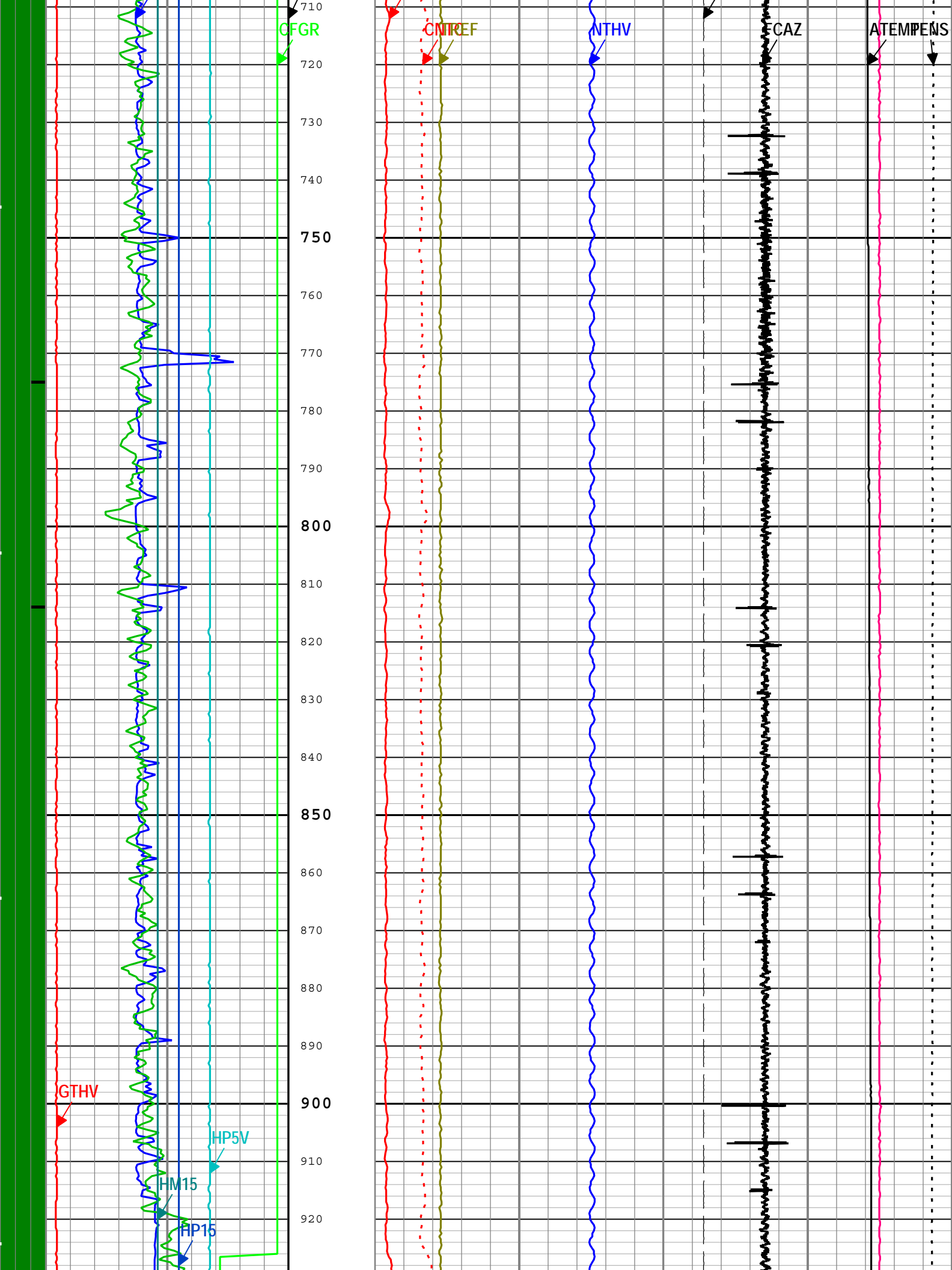
WINB	23.2	01-May-2015 09:53:52	01-May-2015 11:42:09	6522.72	65.21				
All depth are at tool zero.									
Run 1									
Software Version									
Acquisition System			Version						
Maxwell			5.2.40990.3100						
Pass Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
Run 1	Main[3]:Up	Up	65.21 ft	6905.73 ft	01-May-2015 9:39:06 AM	01-May-2015 11:42:09 AM	ON	5.49 ft	Yes
All depths are referenced to toolstring zero									
Log	Company:Noble Energy Inc    Well:Colt A13-655					Run 1: Main[3]:Up:S005			
Description: HGNS LQC for Platform Express    Format: Log ( Import of PEX LQC HGNS )    Index Scale: 5 in per 100 ft    Index Unit: ft    Index Type: Measured									
Depth    Creation Date: 01-May-2015 15:02:37									
Hardware Flag Image (HHQFI)									
1 - HGNS H/W Flag - : <div></div> HGNS hardware valid <div></div> HGNS hardware error									
2 - Porosity Flag - : <div></div> Porosity valid <div></div> Porosity error									
3 - Accelerometer Flag - : <div></div> Accelerometer valid <div></div> Accelerometer error									
TIME_1900 - Time Marked every 60.00 (s)									
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HGNS-H</div><div>01/s7500</div><div>Corrected Far Thermal Count Rate (CFTC) HGNS-H</div><div>01/s7500</div></div><div><div>Acceleration Z-Axis (FCAZ) HGNS-H</div><div>25ft/s235</div><div>Accelerometer Temperature (ATEMP) HGNS-H</div><div>20degF220</div></div><div><div>Raw Acceleration Voltage (RHAZ) HGNS-H</div><div>-10V10</div><div>External ADC Ground (NSGD) HGNS-H</div><div>-0.5V0.5</div></div><div><div>Cable Tension (TENS)</div><div>10000lbf0</div></div></div> <div><div>Hardw are Flag Image (HHQ FI)</div><div>13</div><div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></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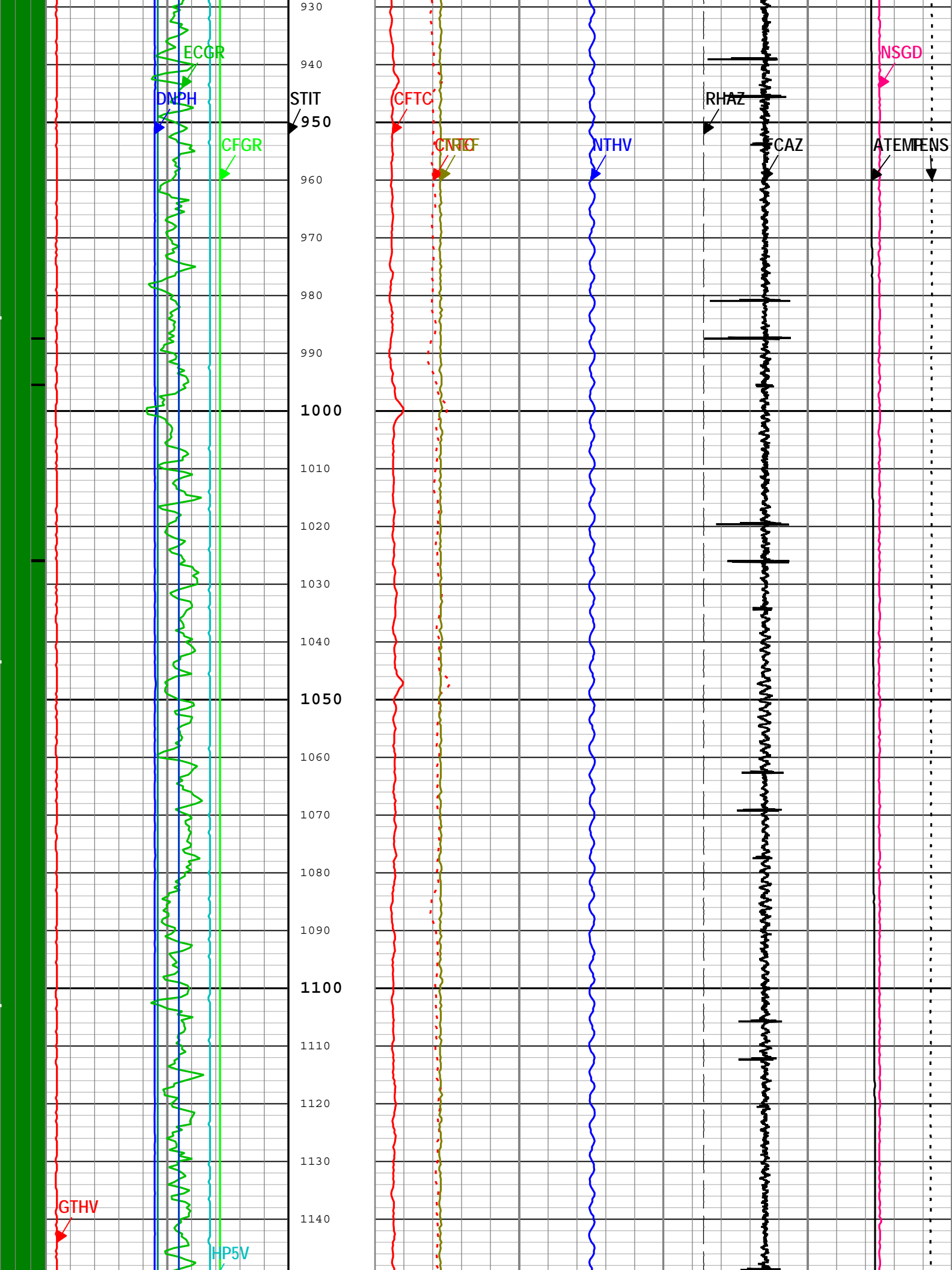


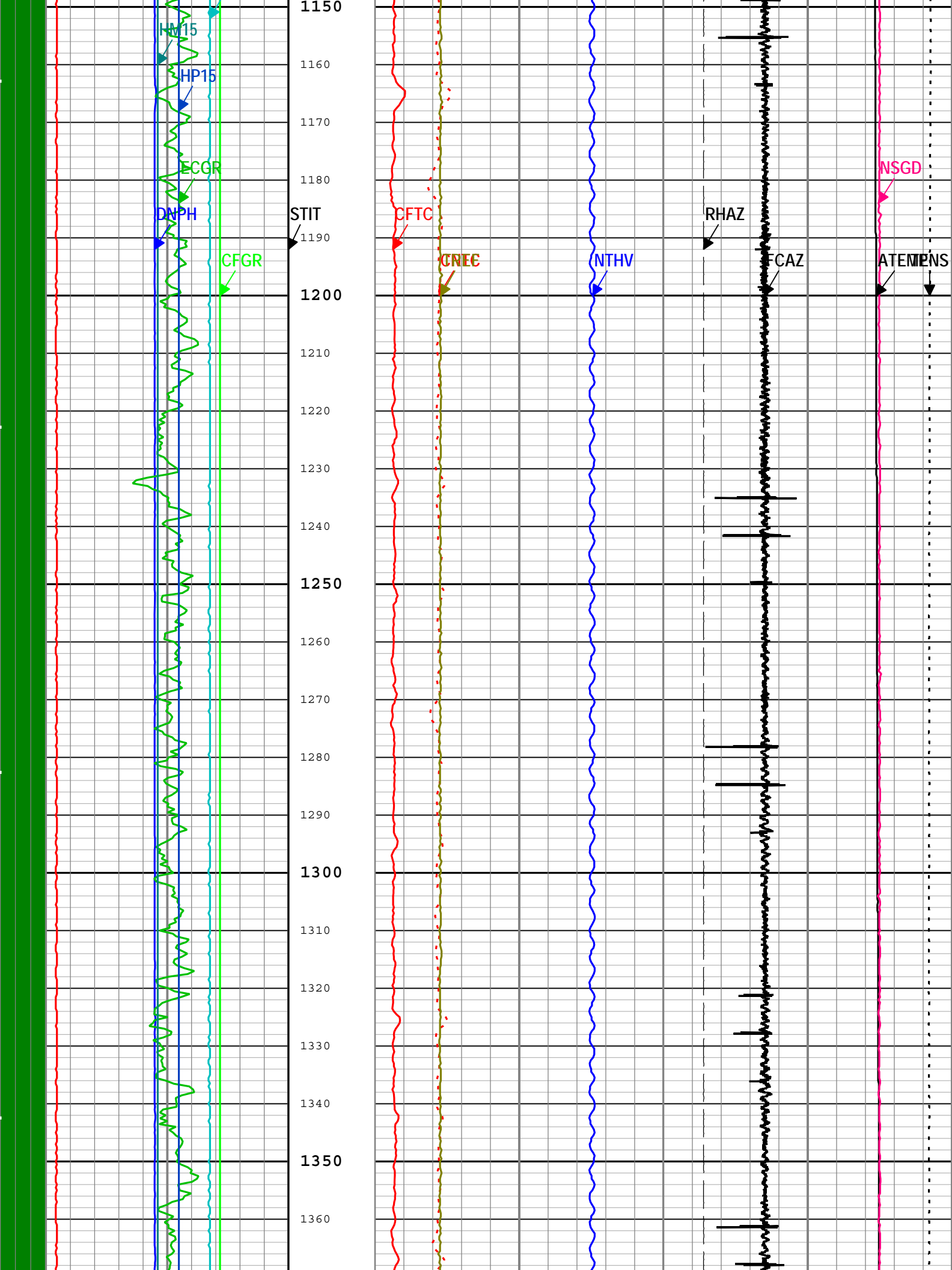


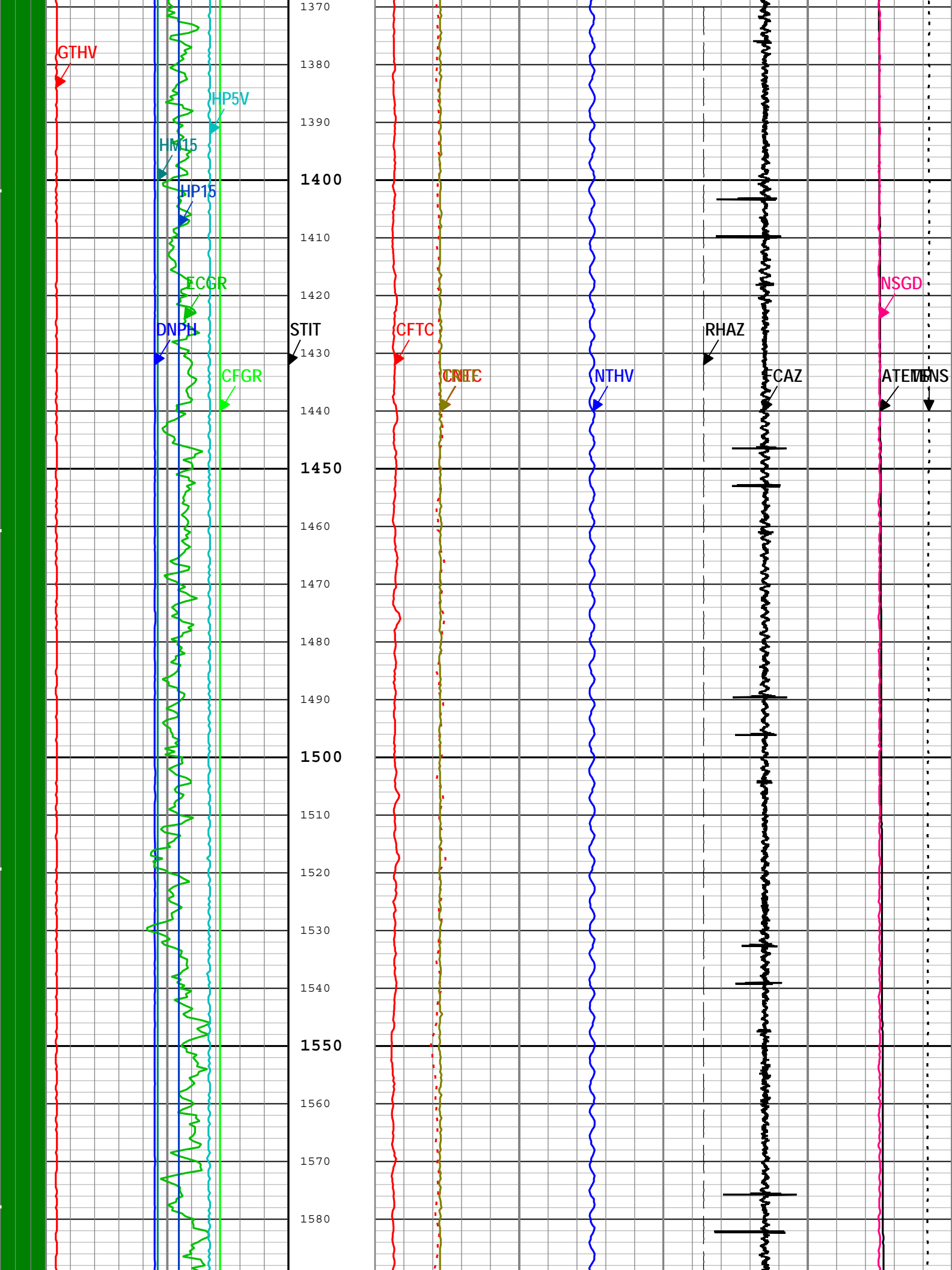


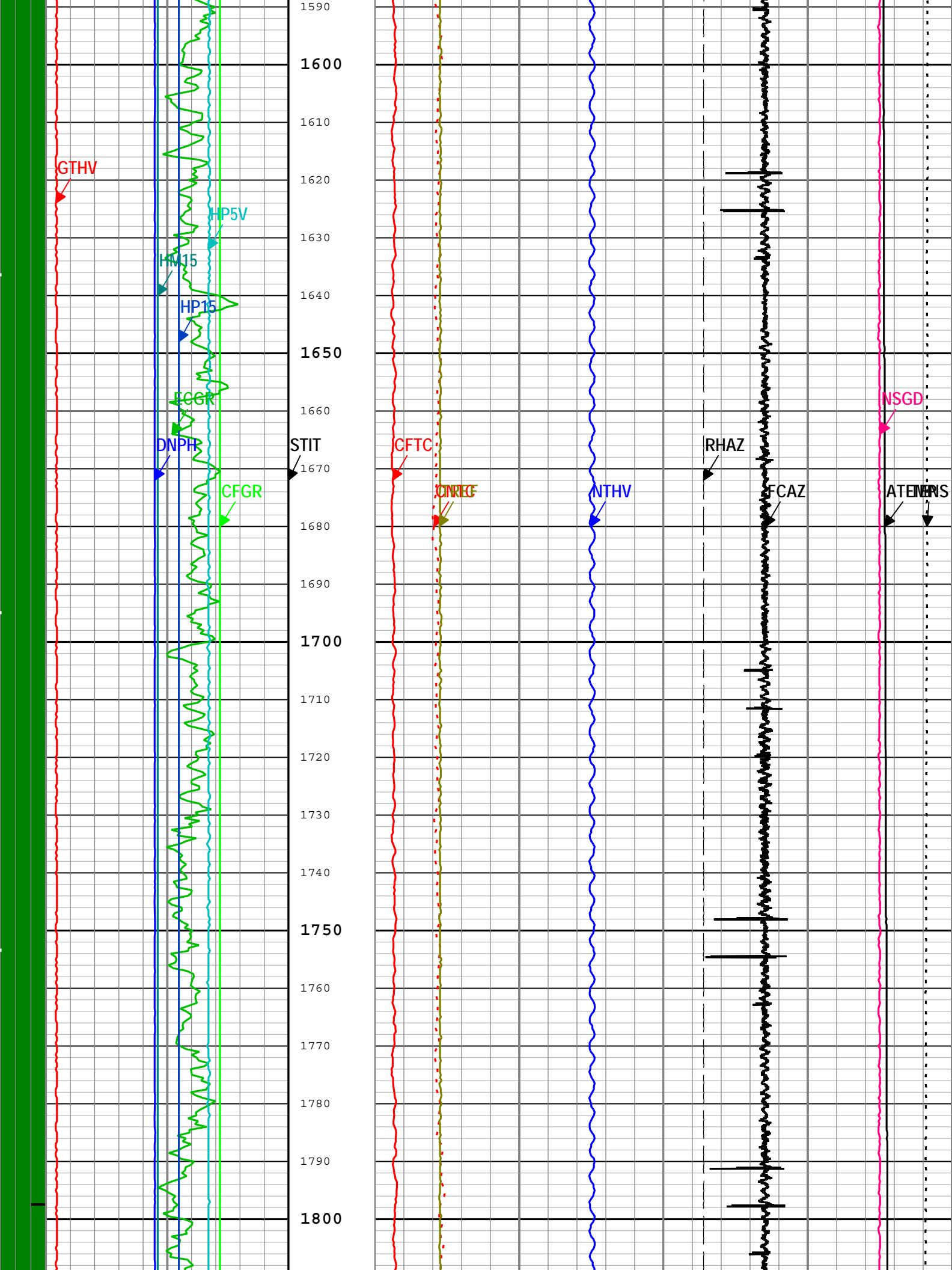


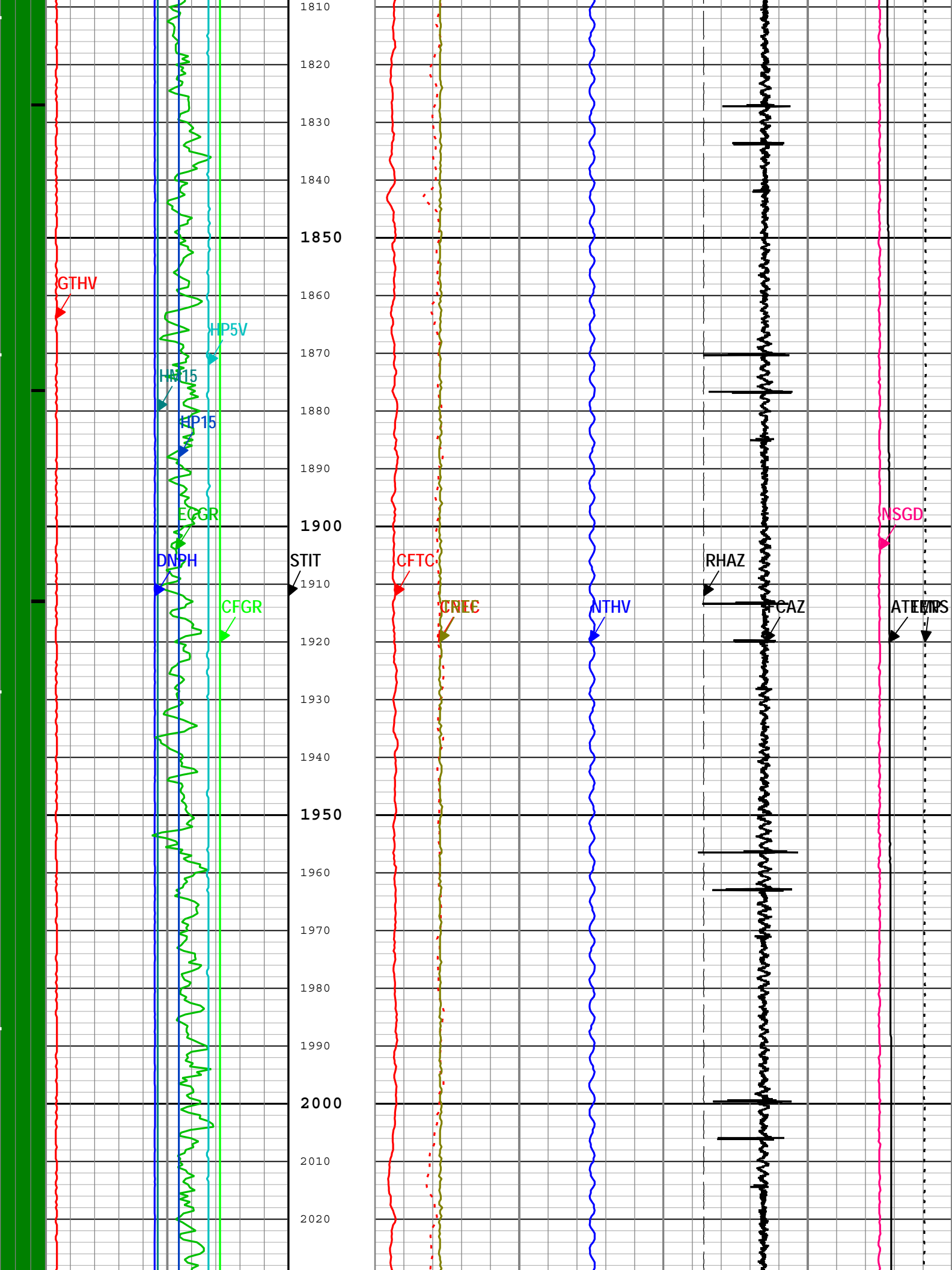


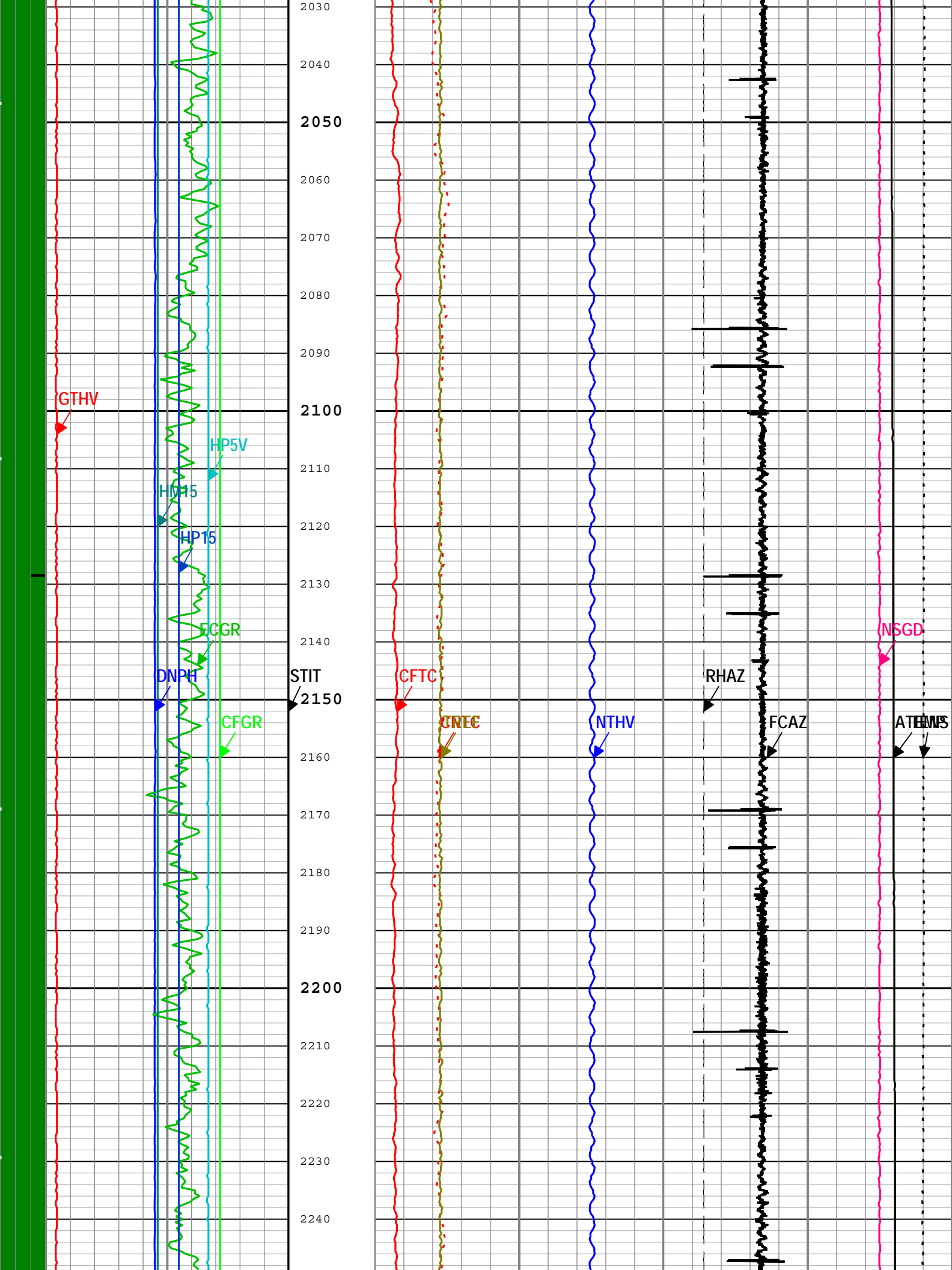


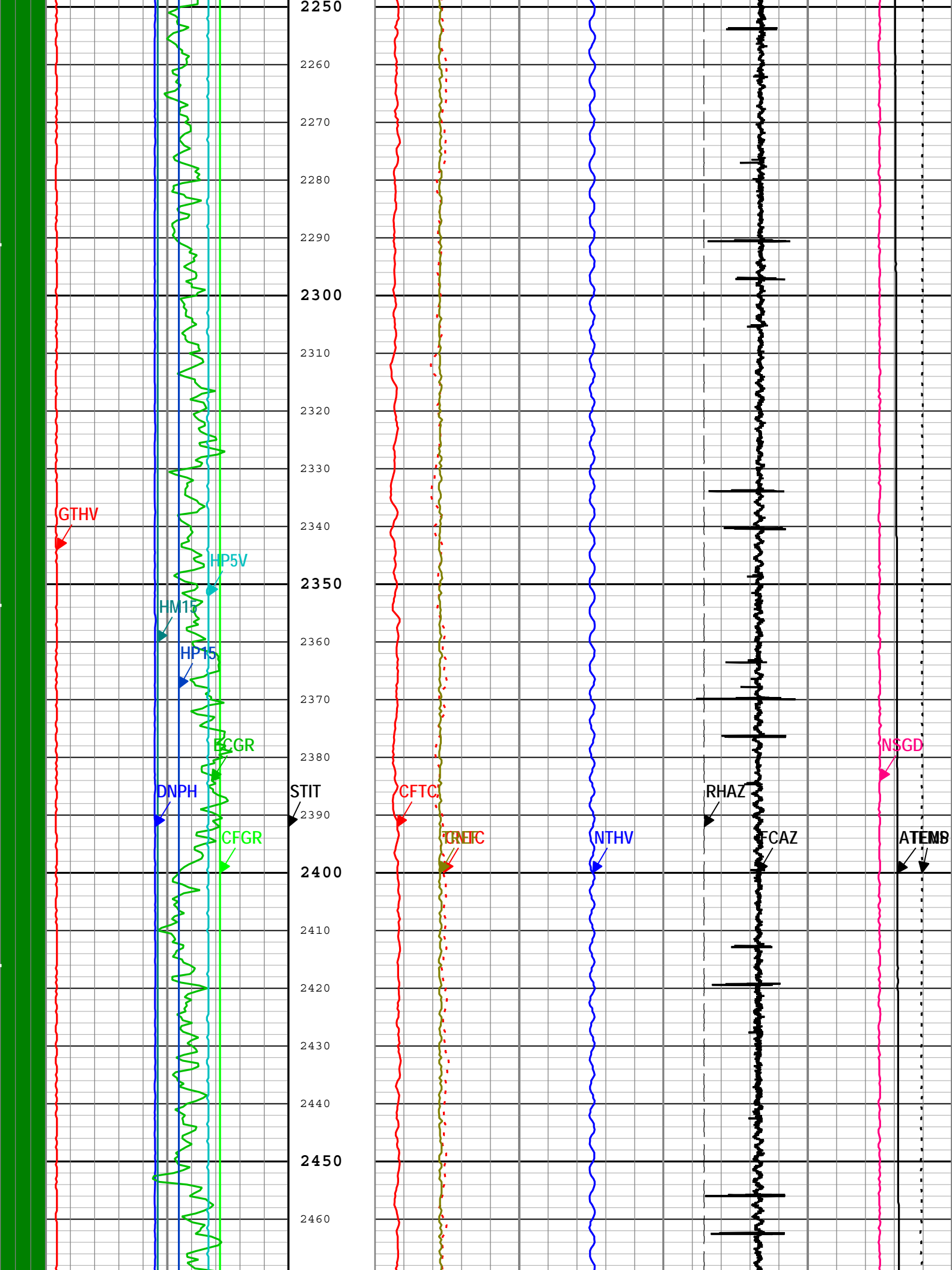




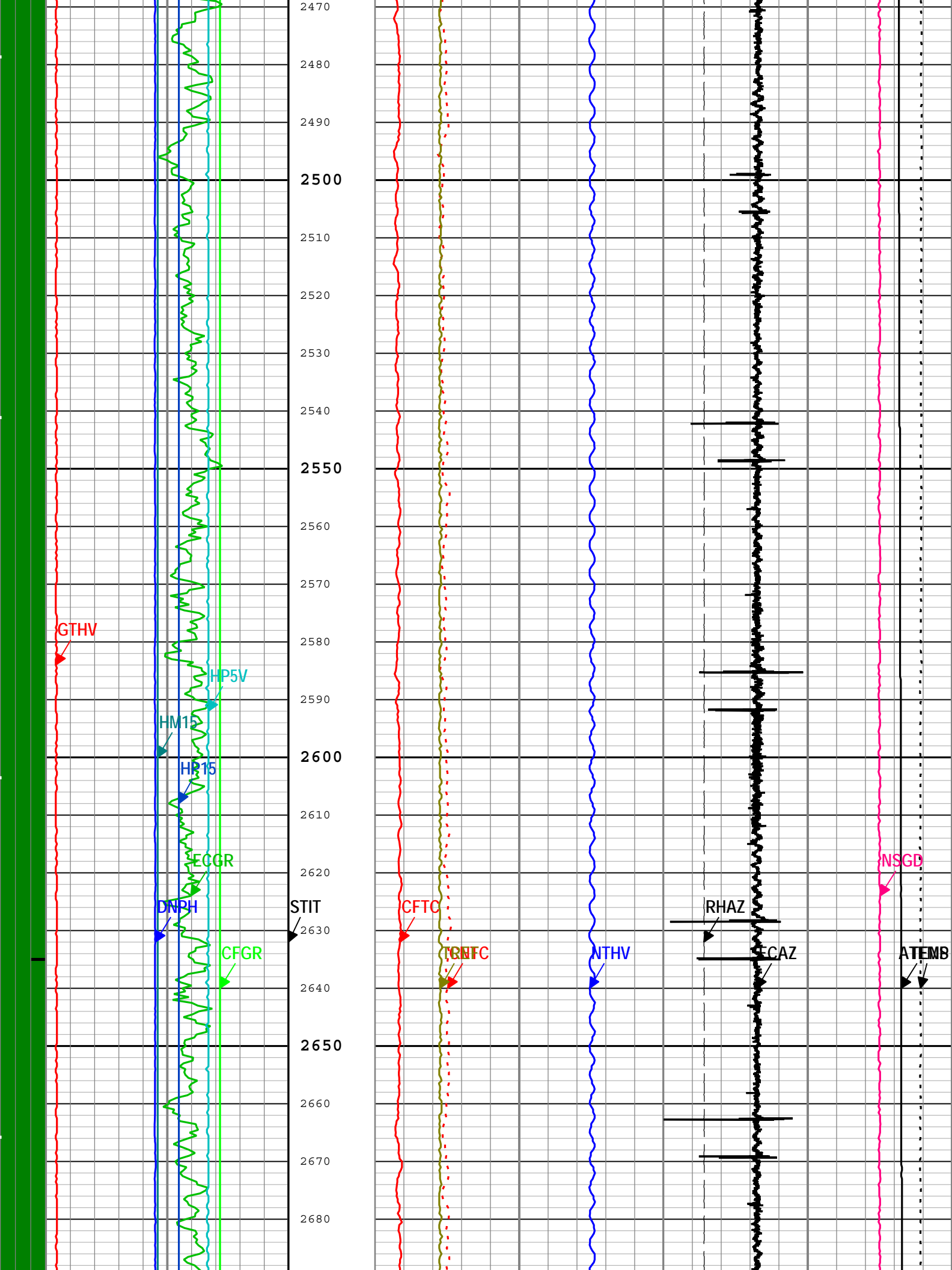


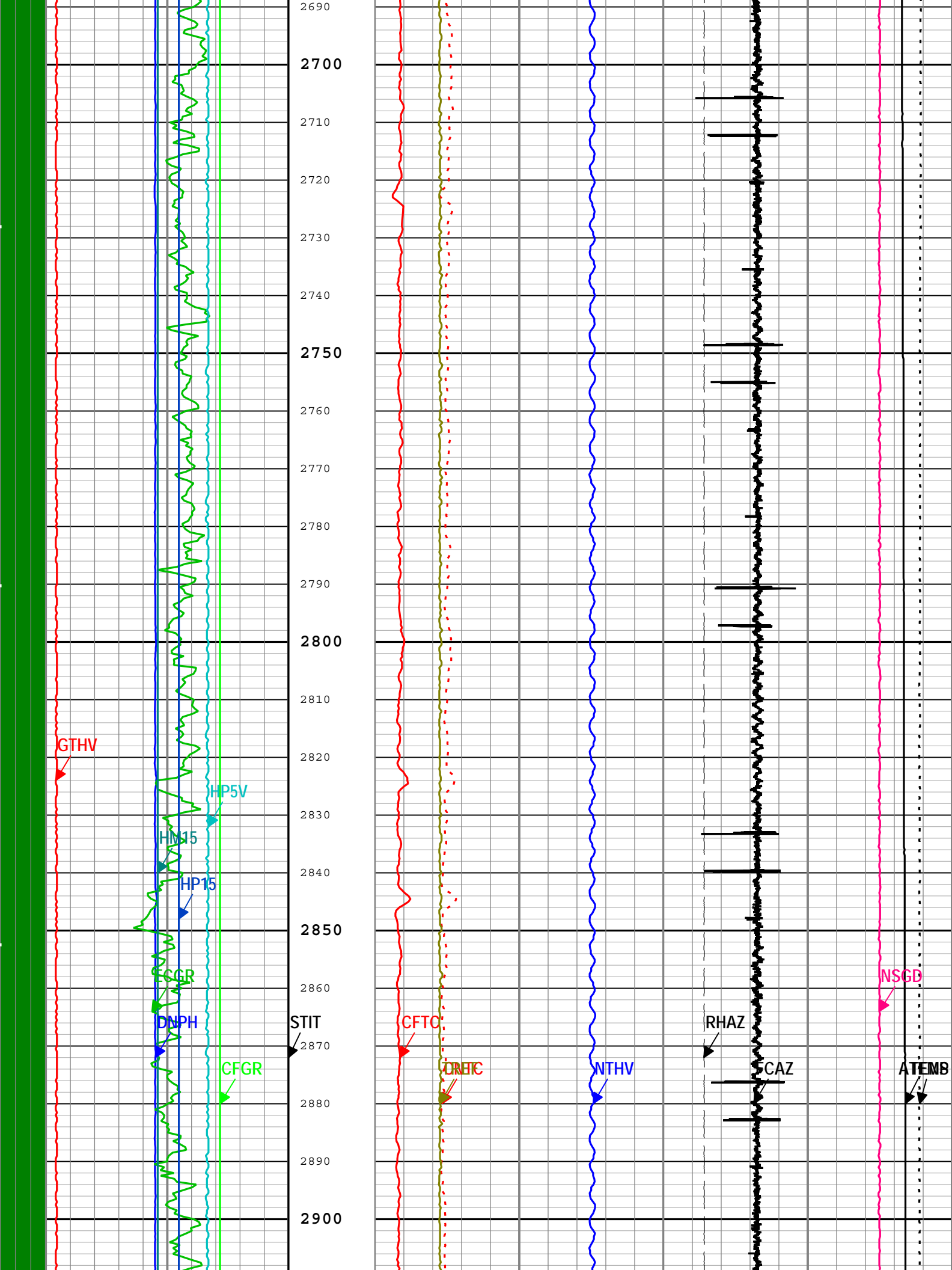


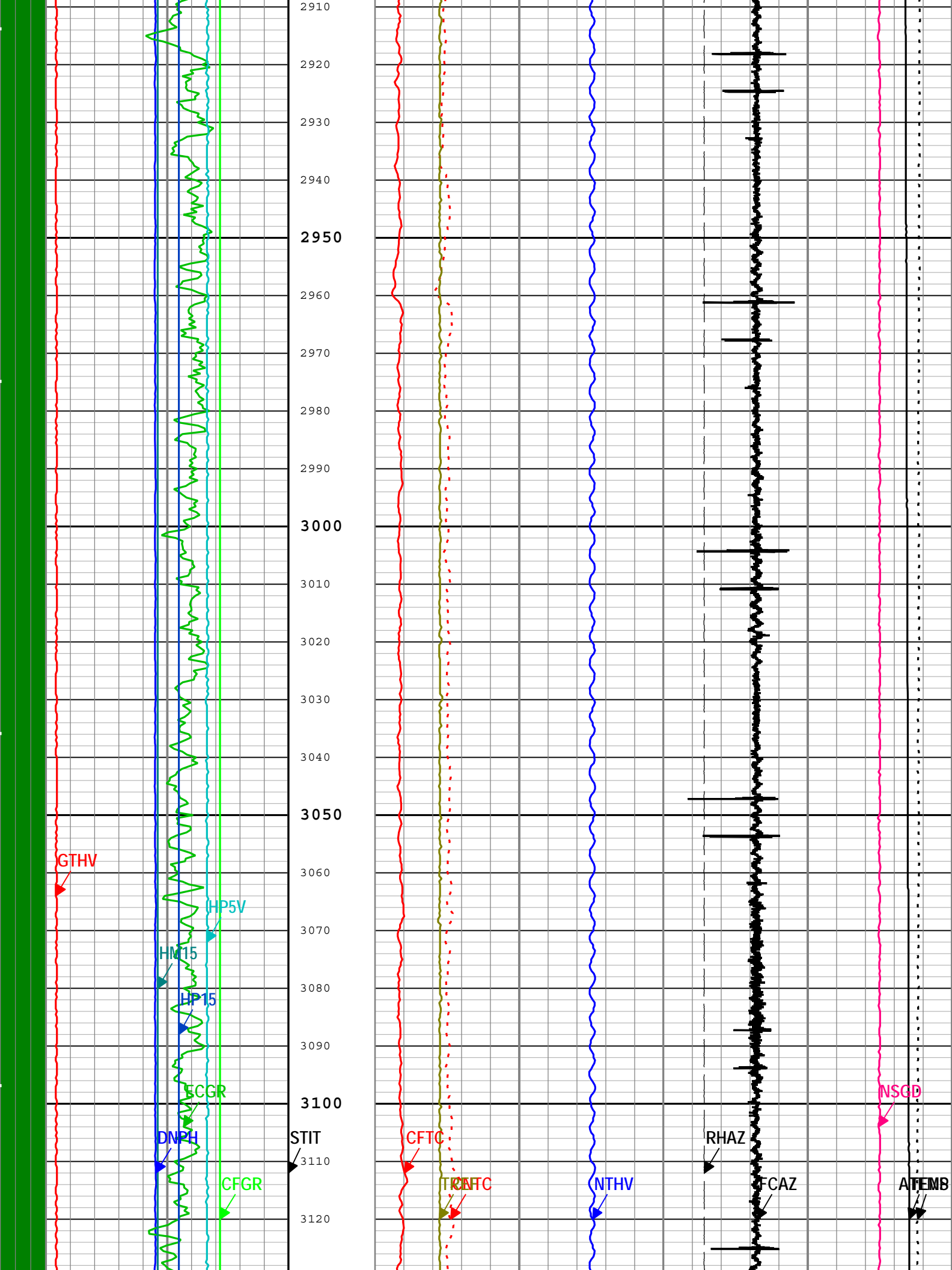


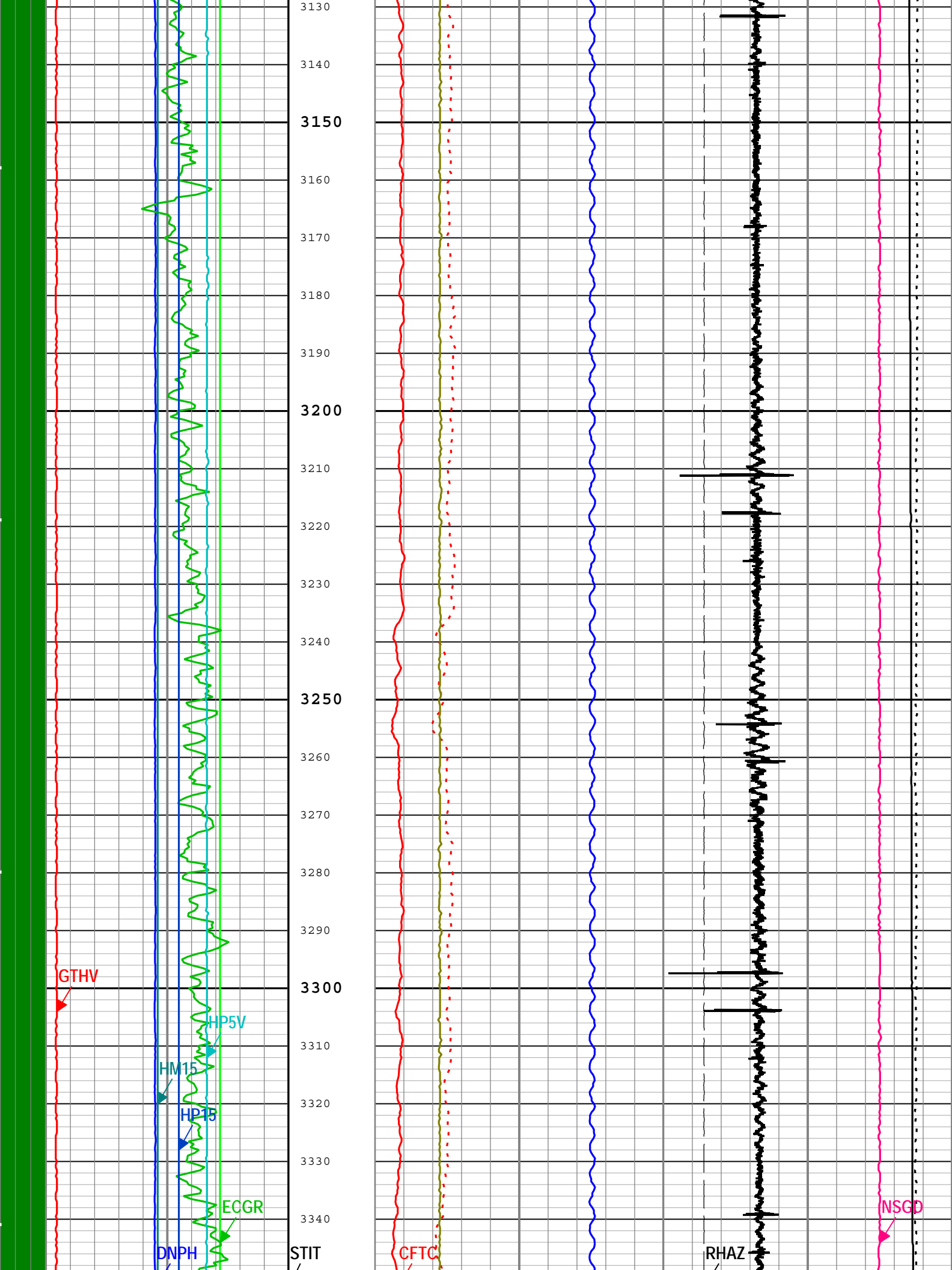


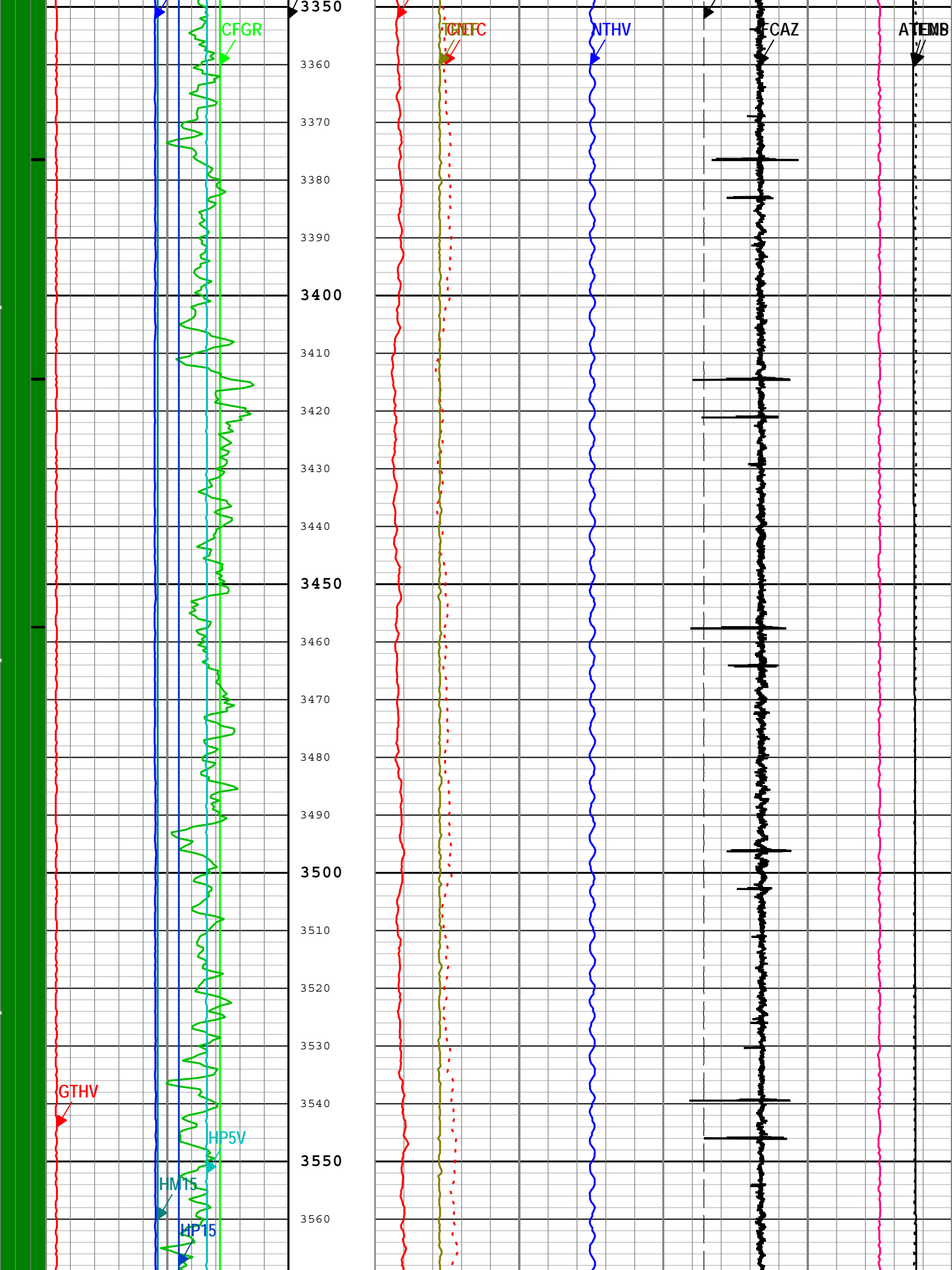


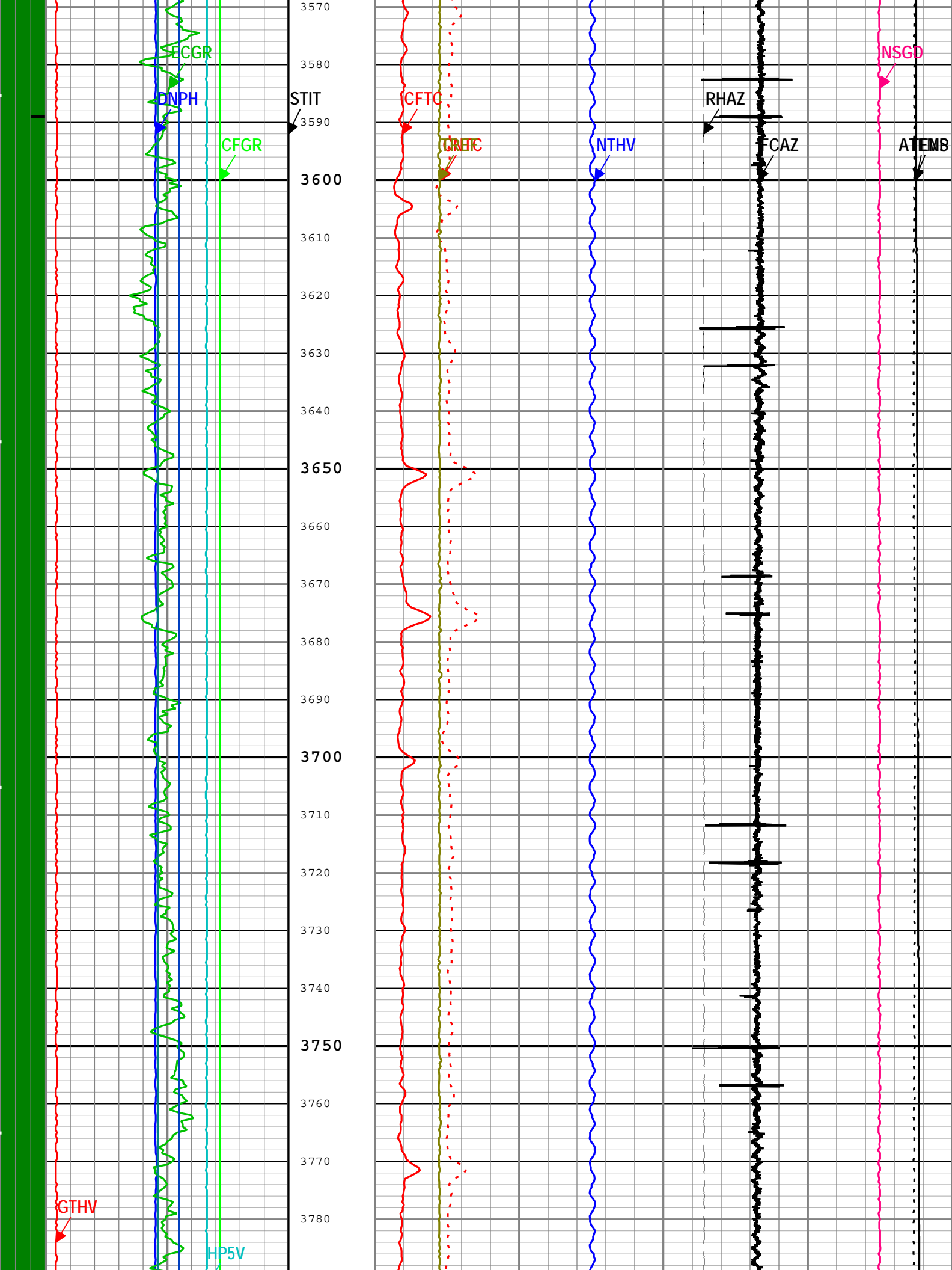


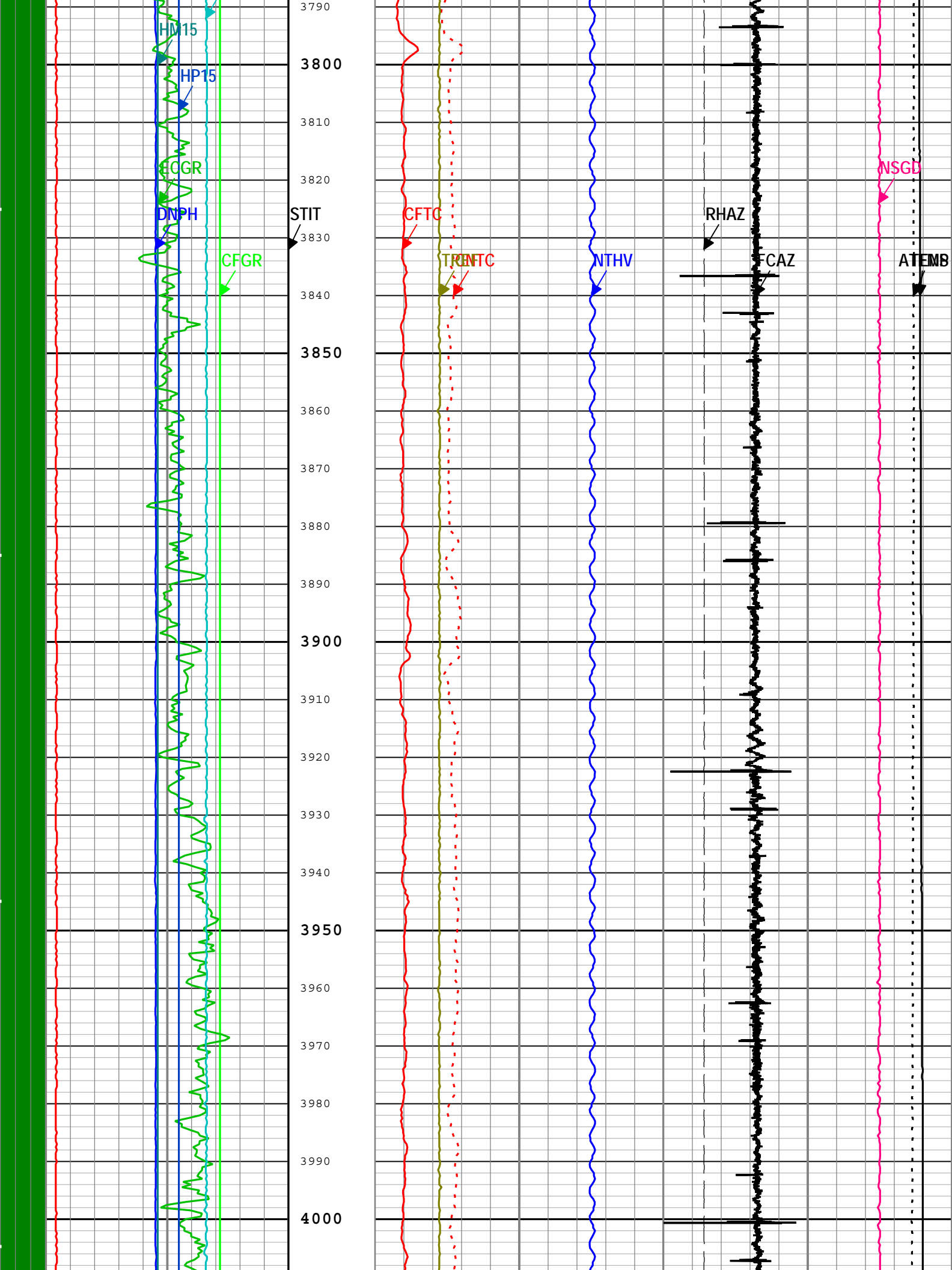


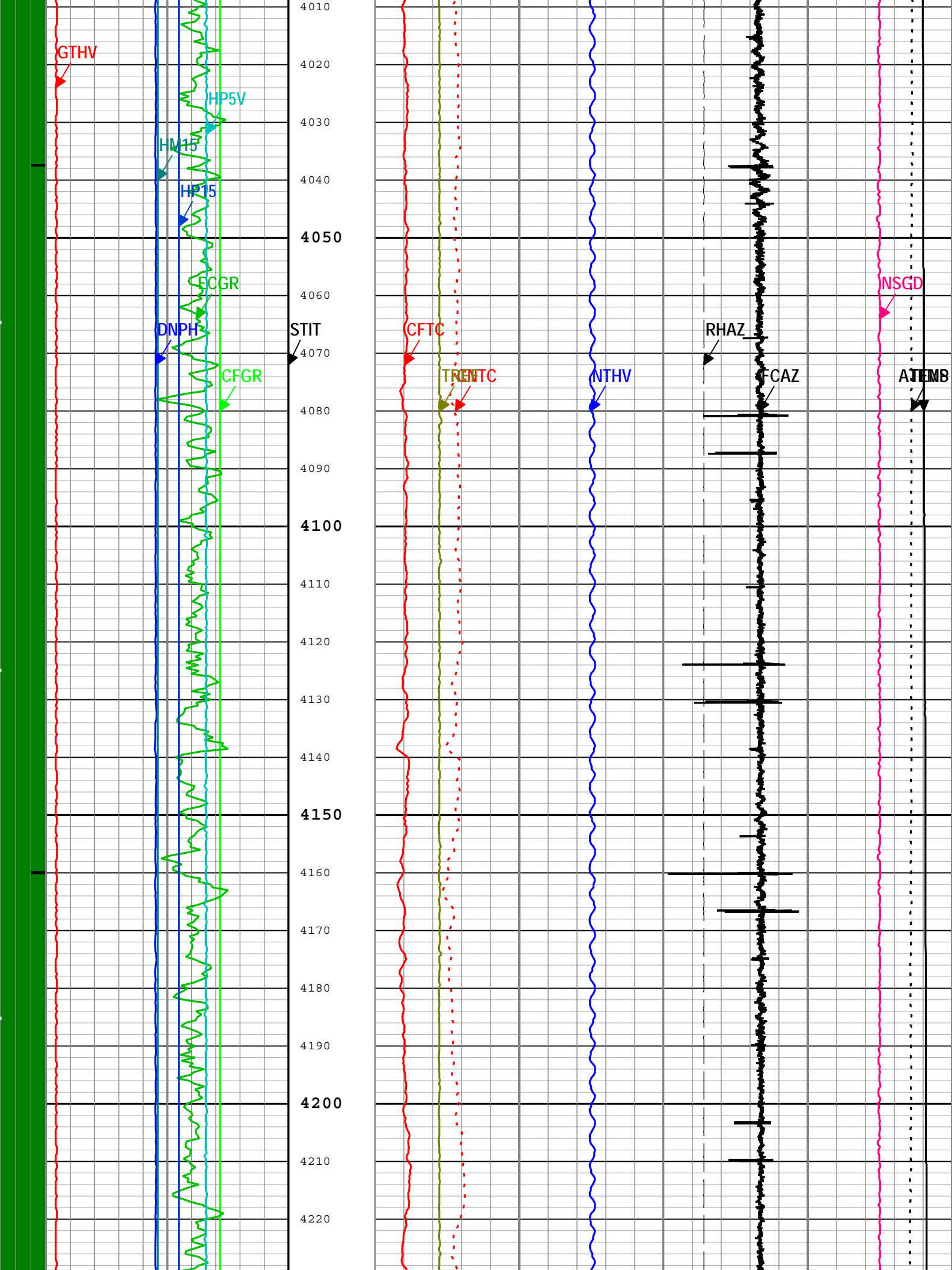




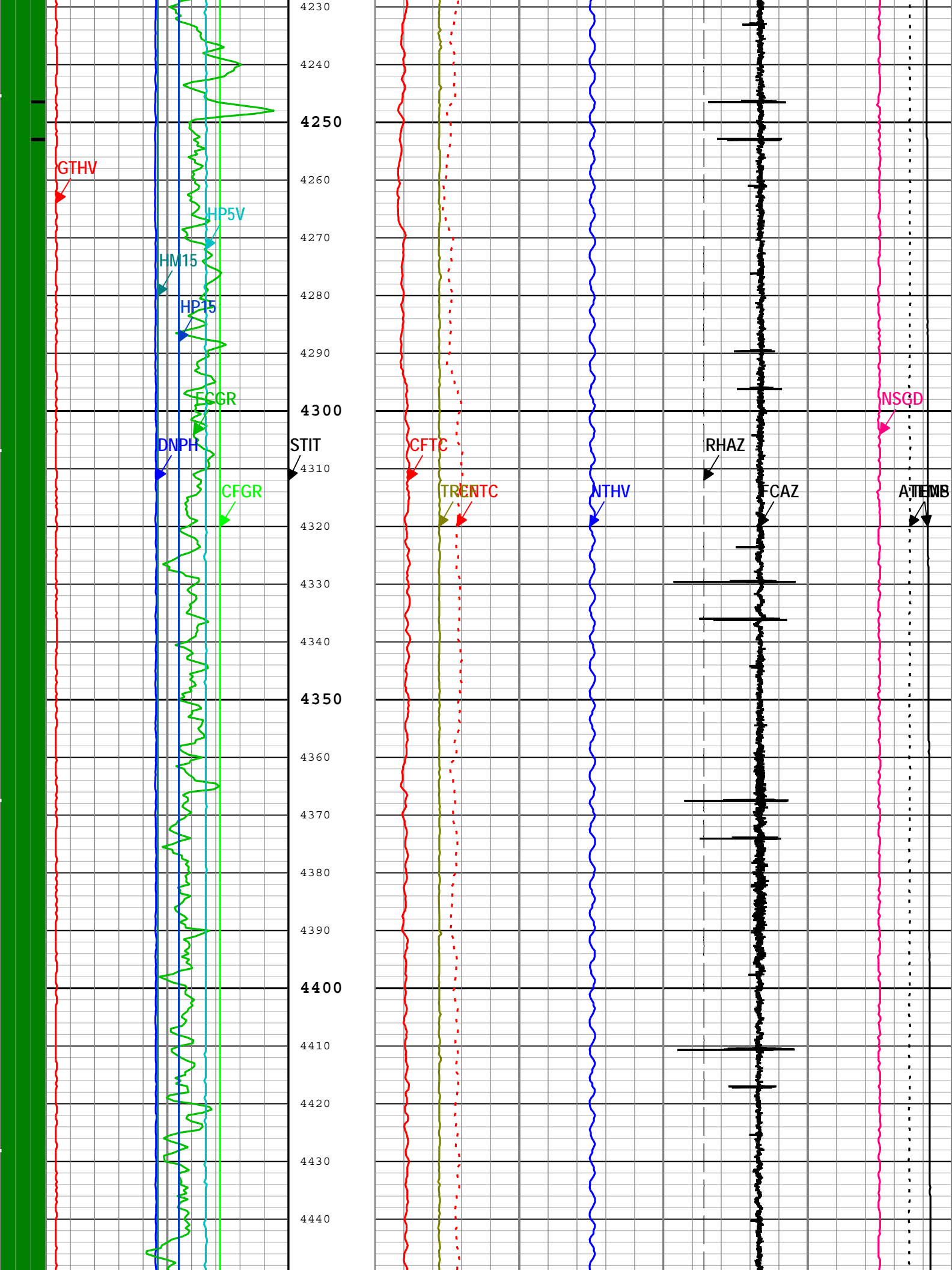


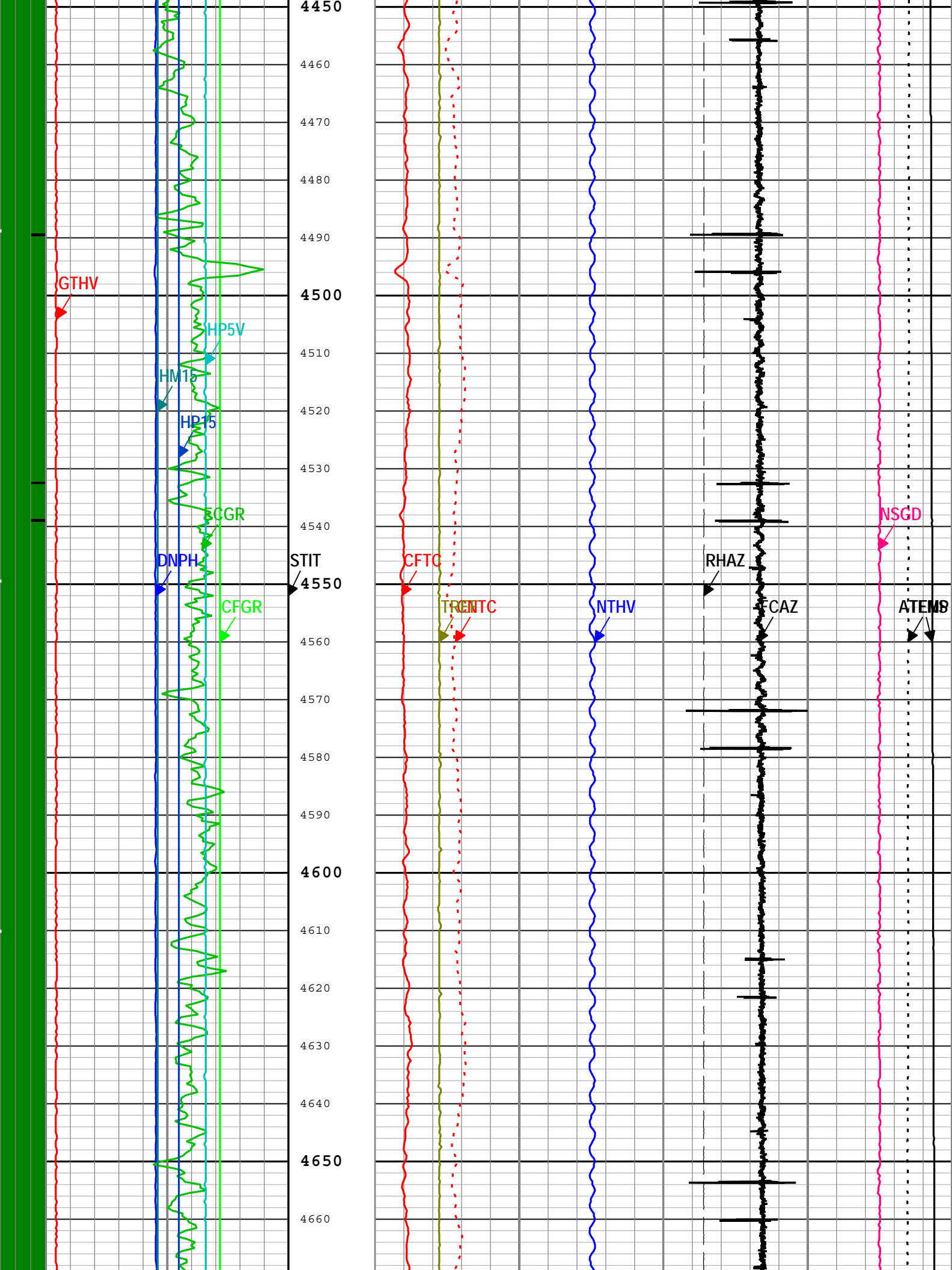


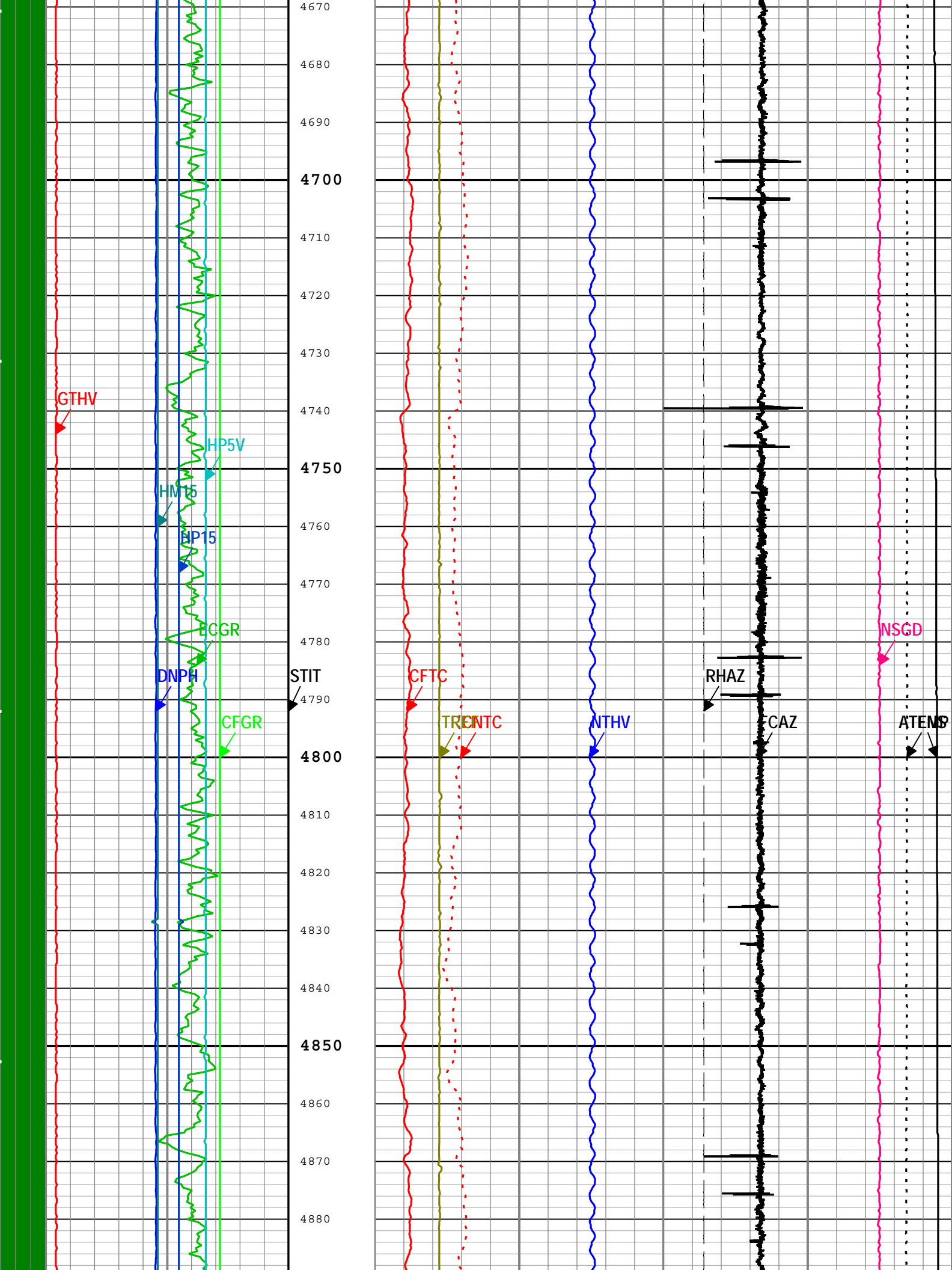


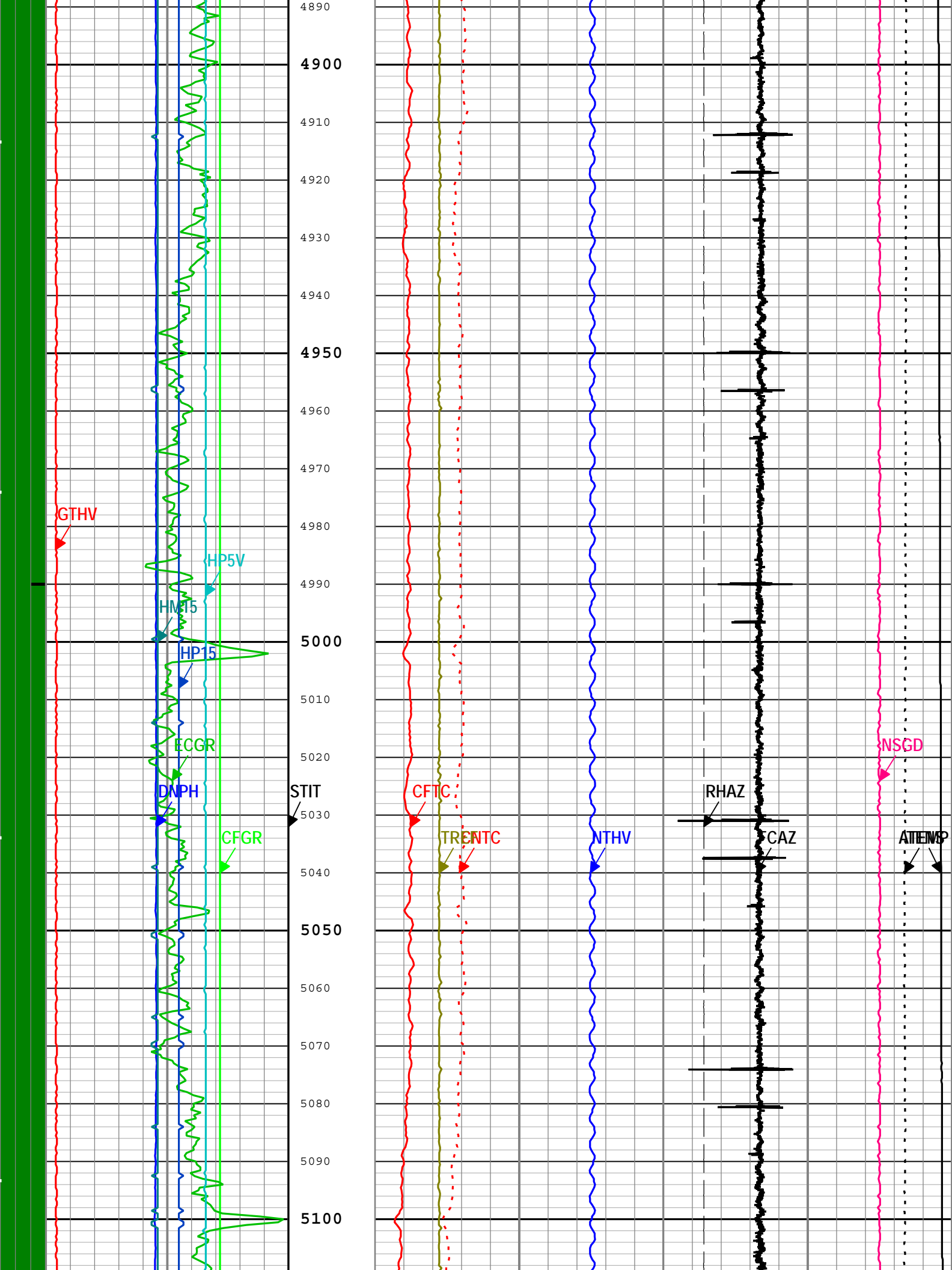


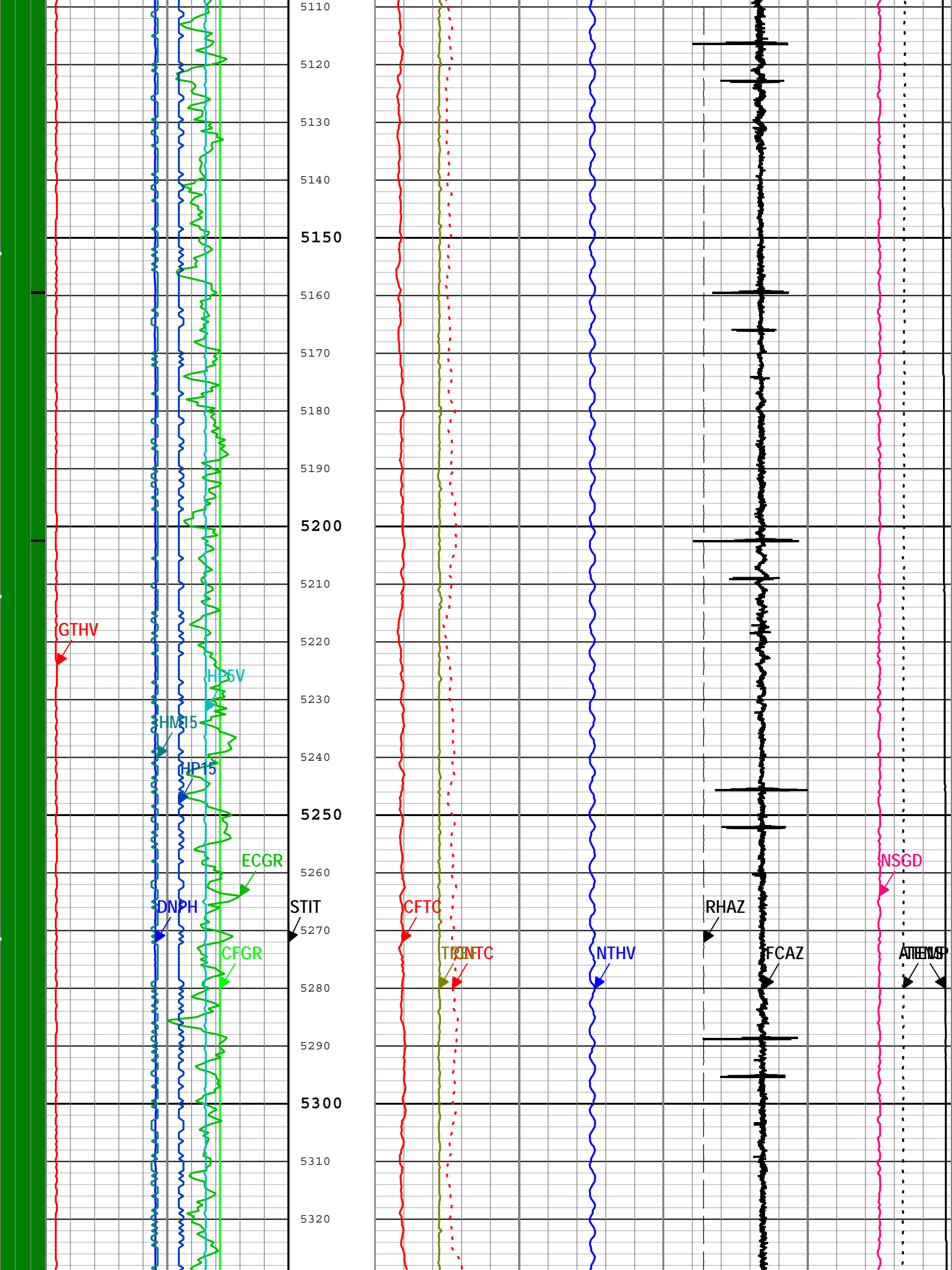


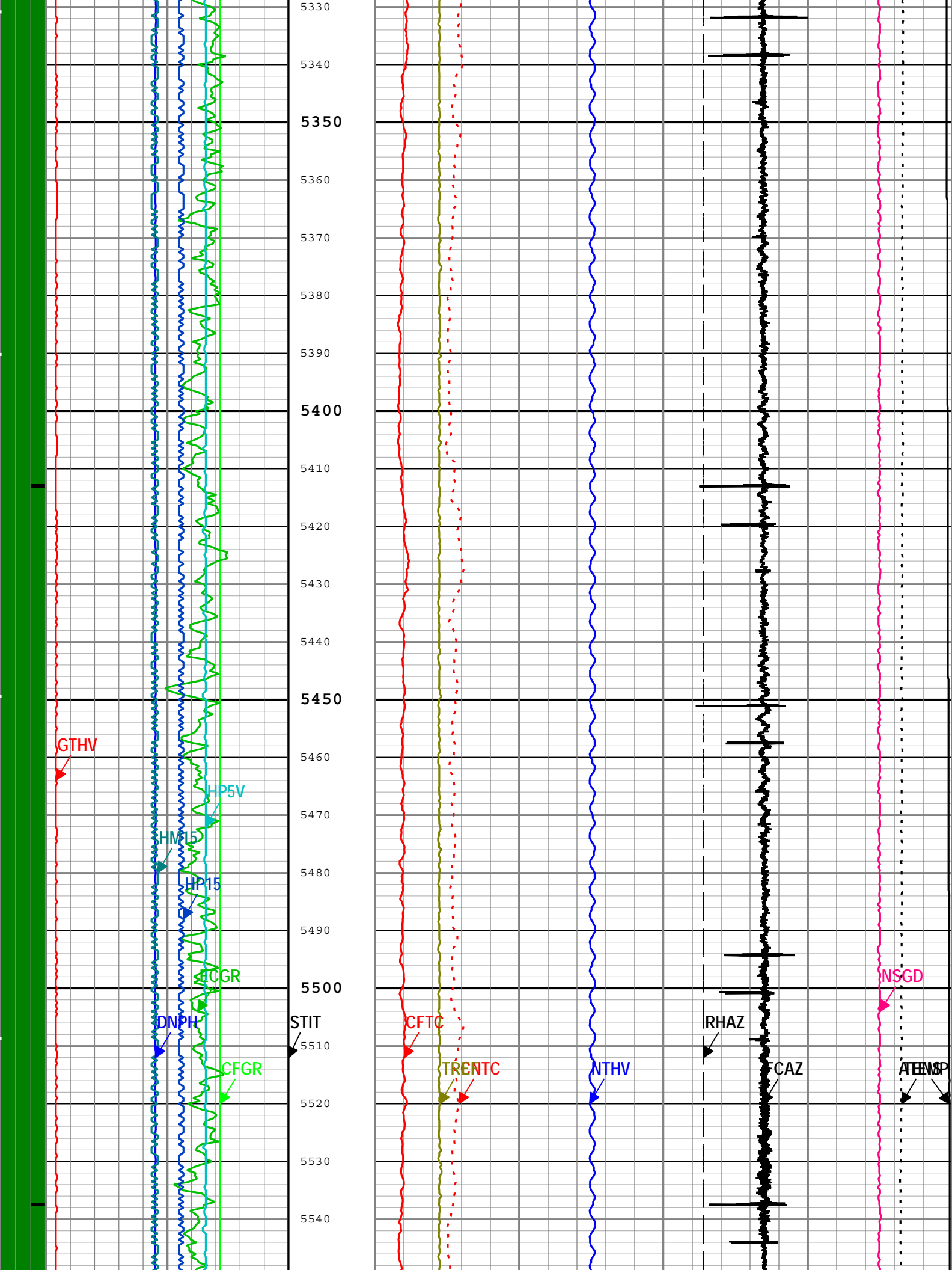


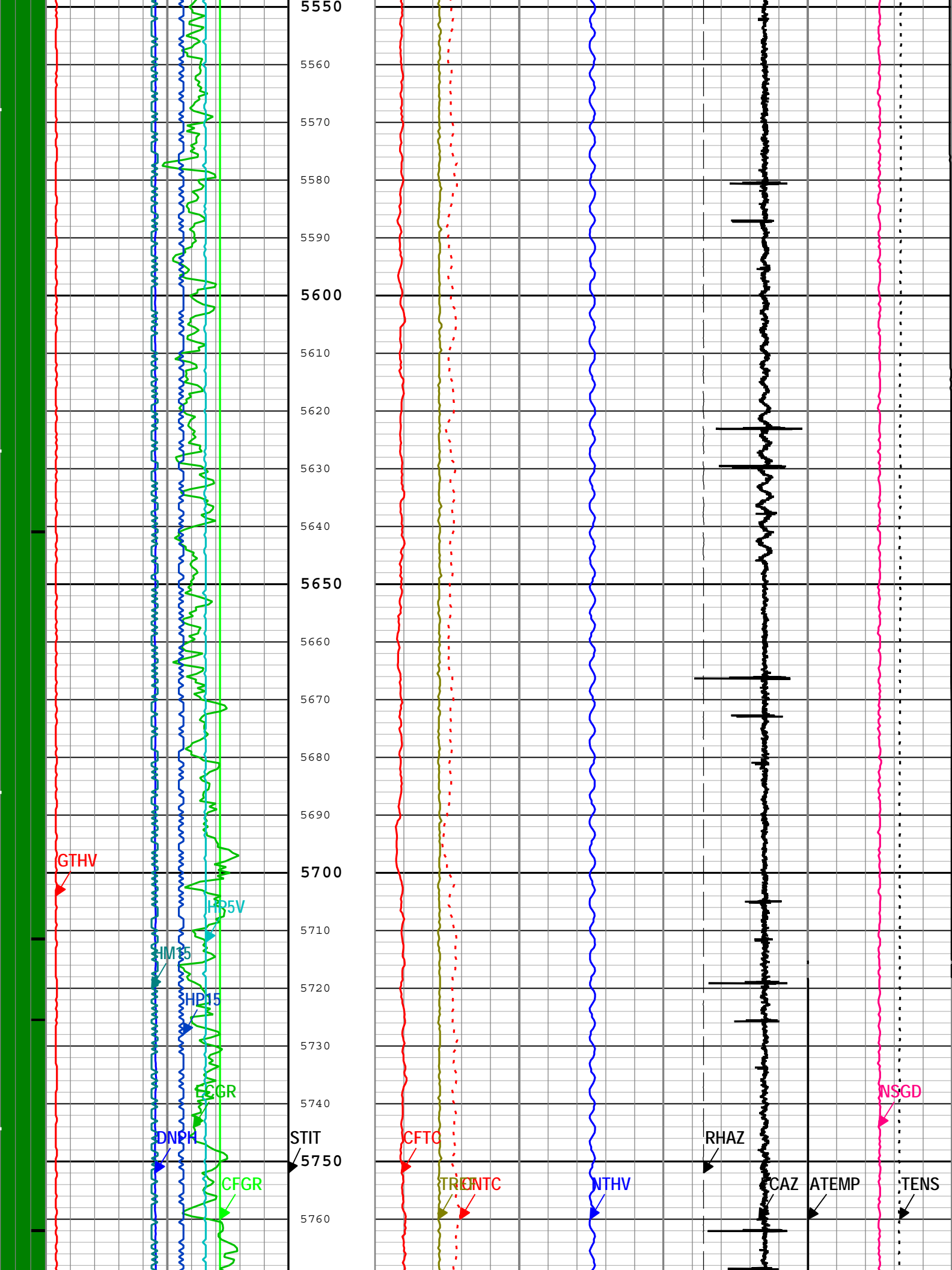


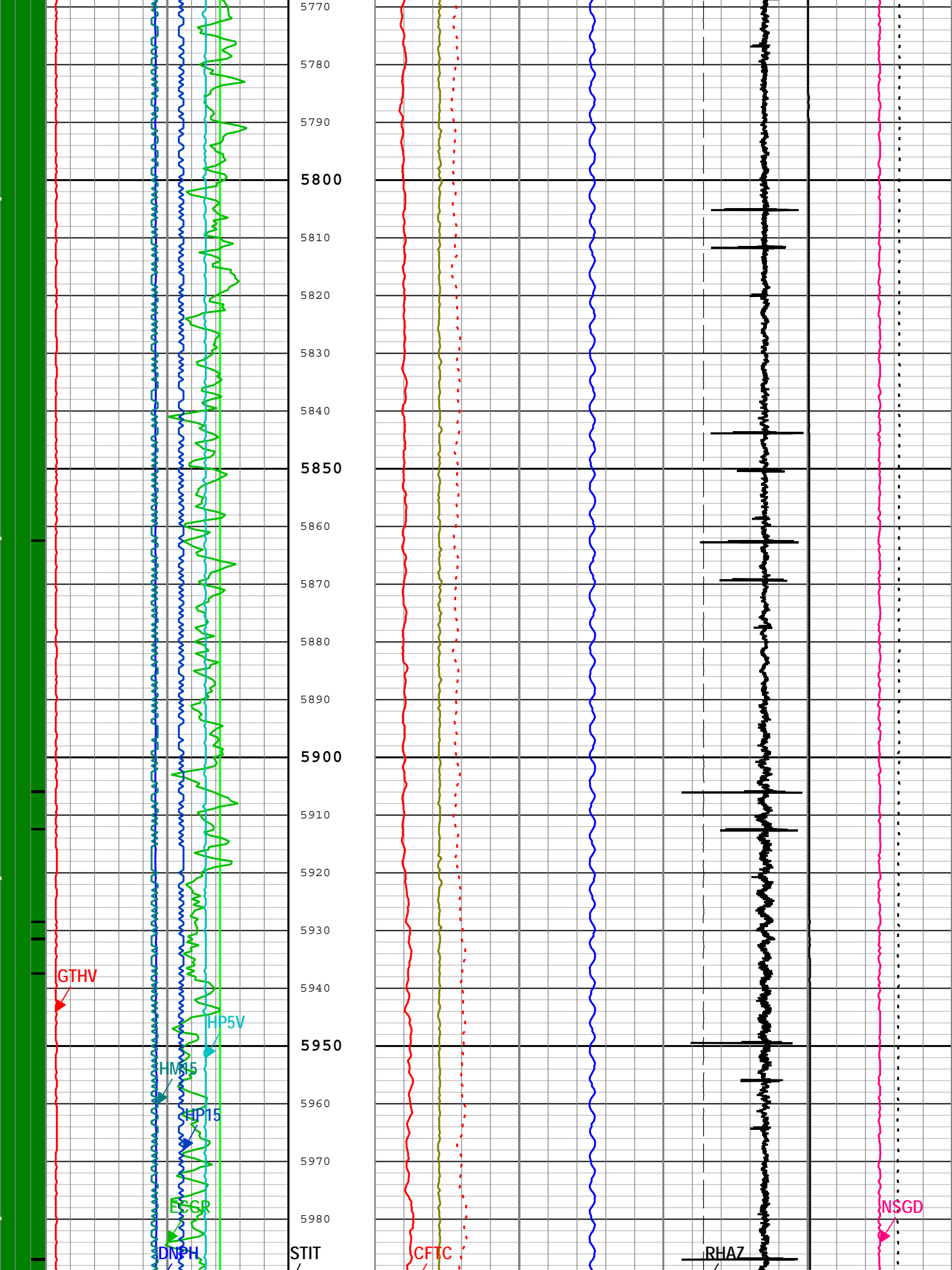




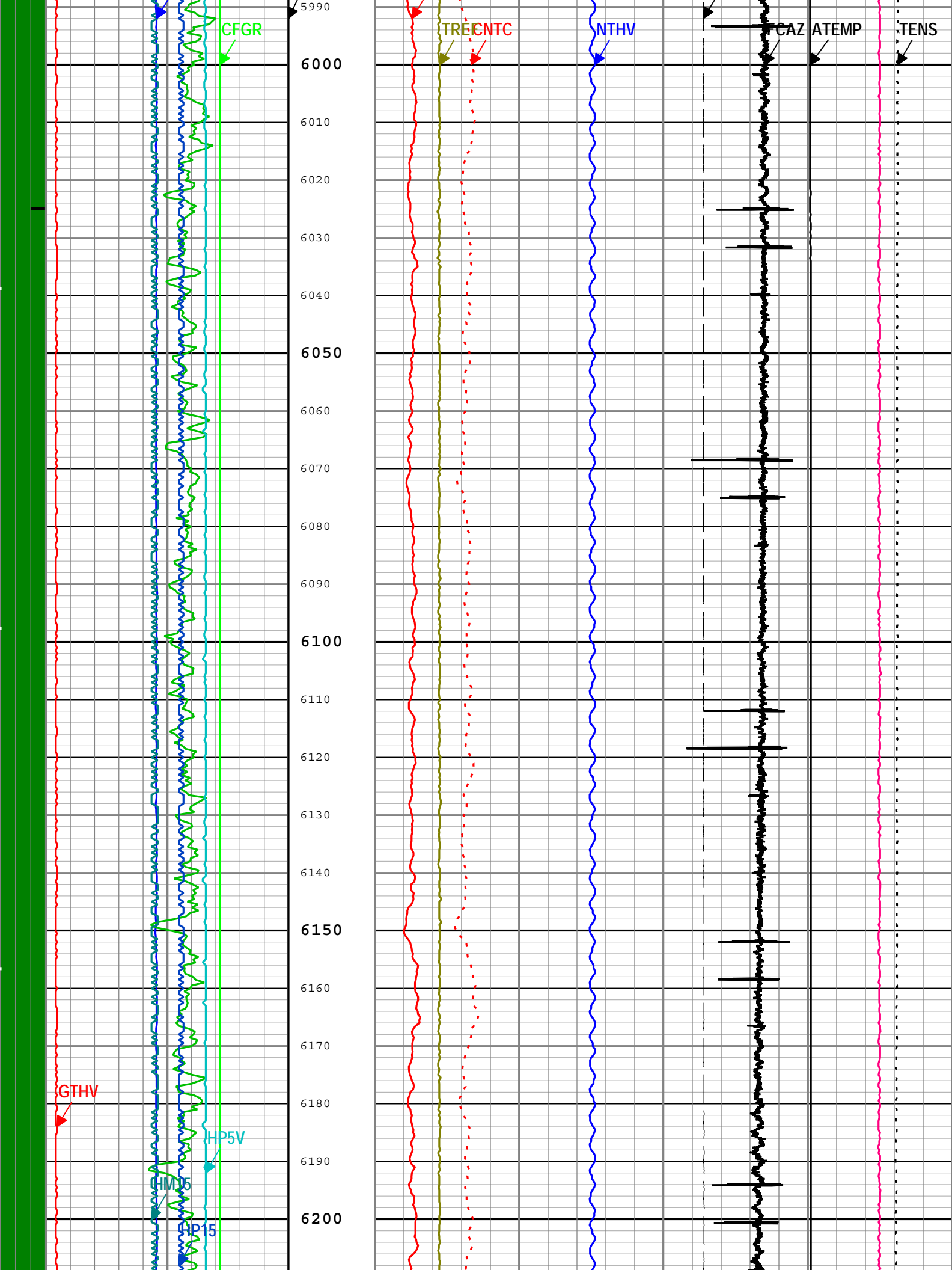


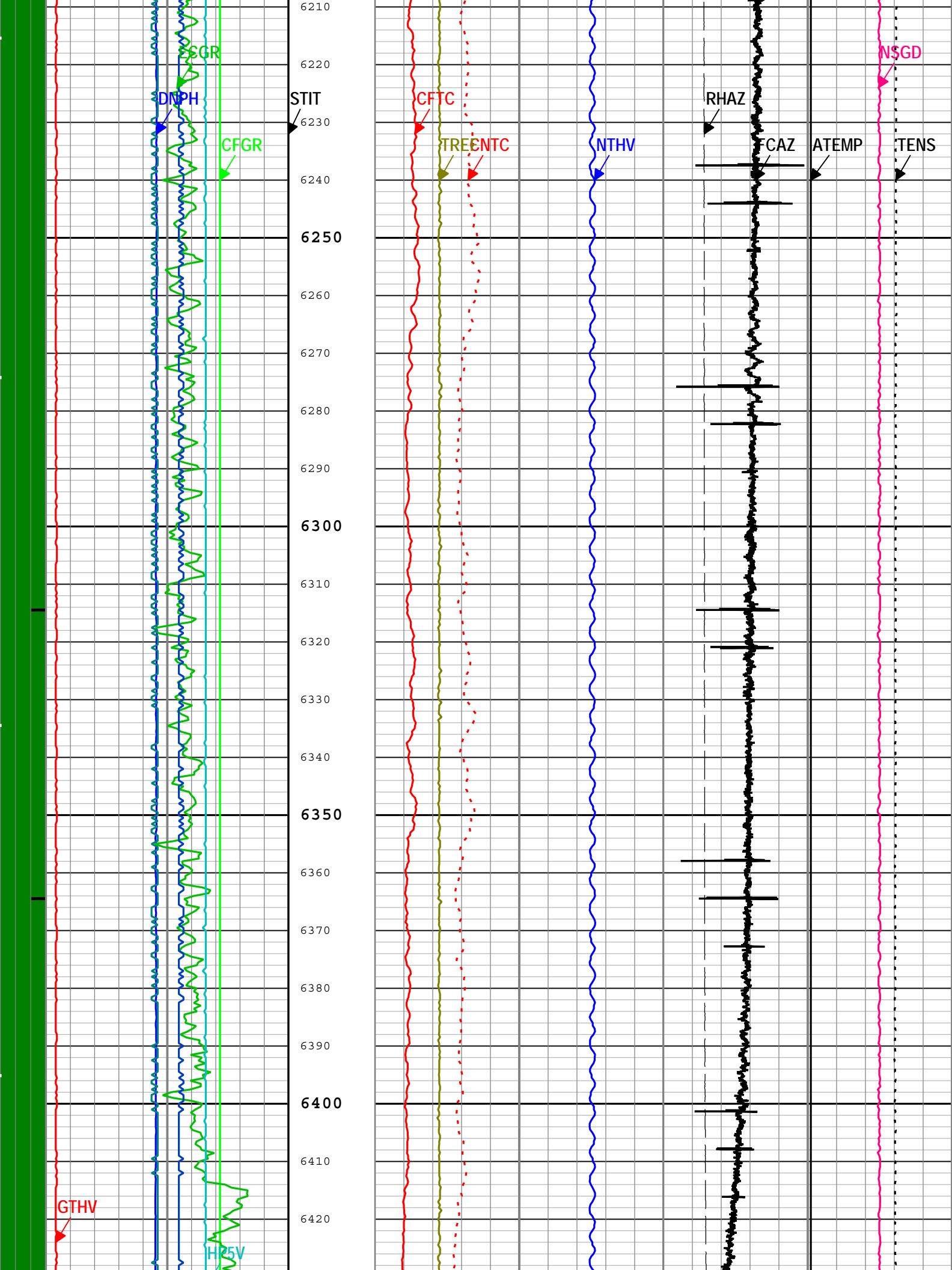


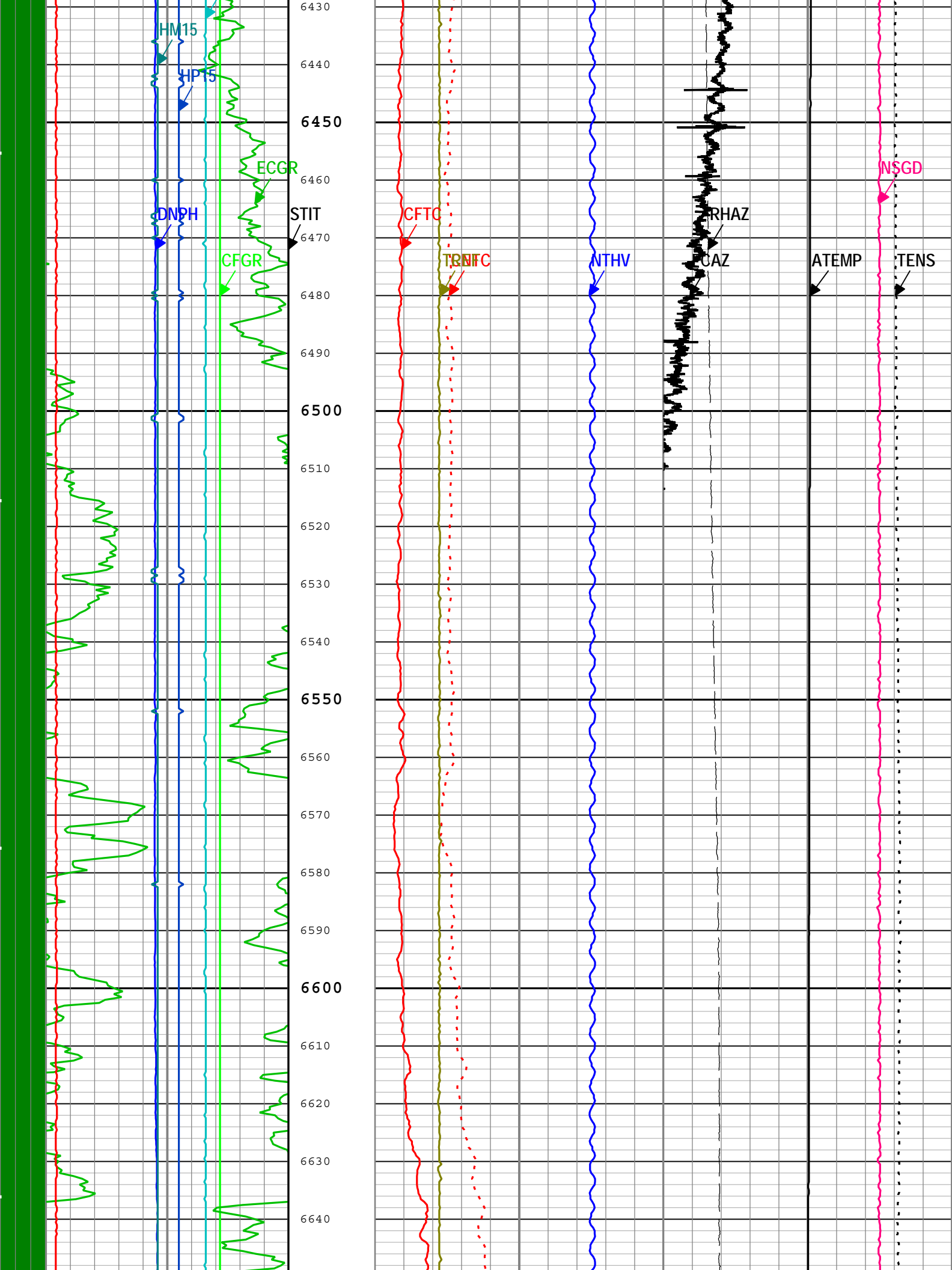


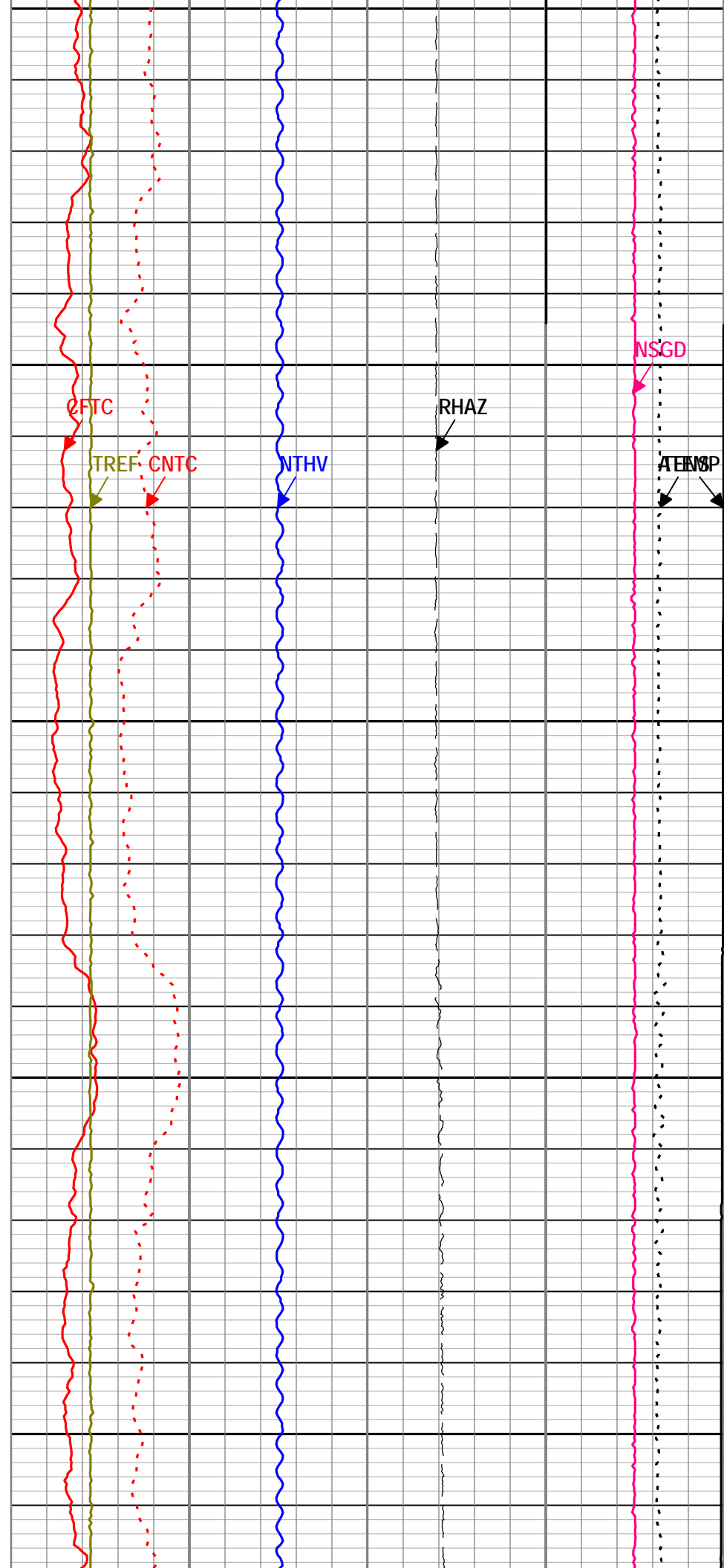
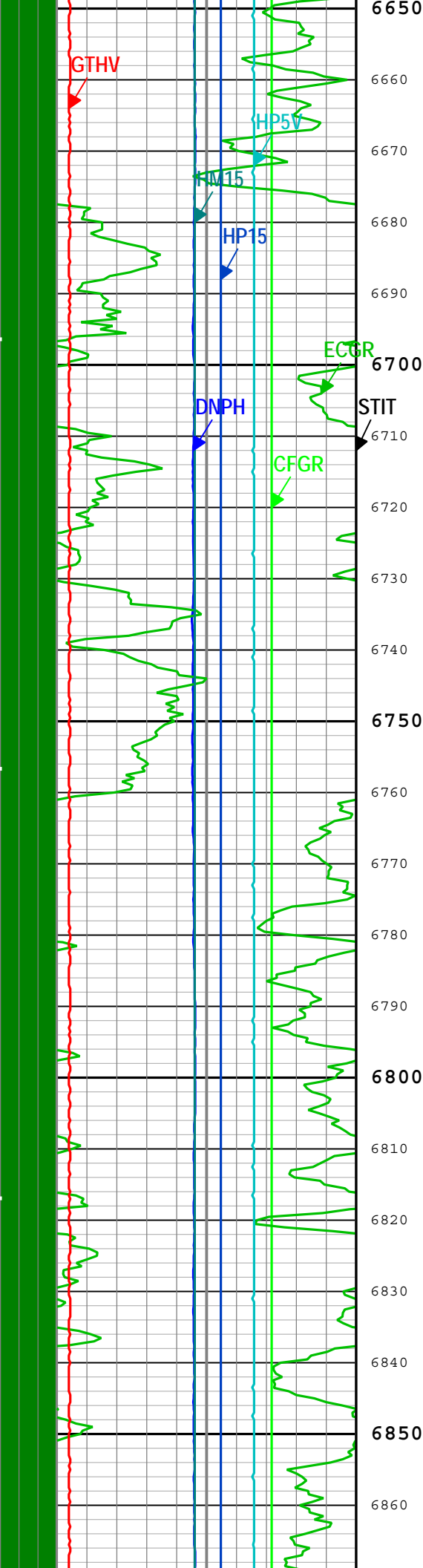


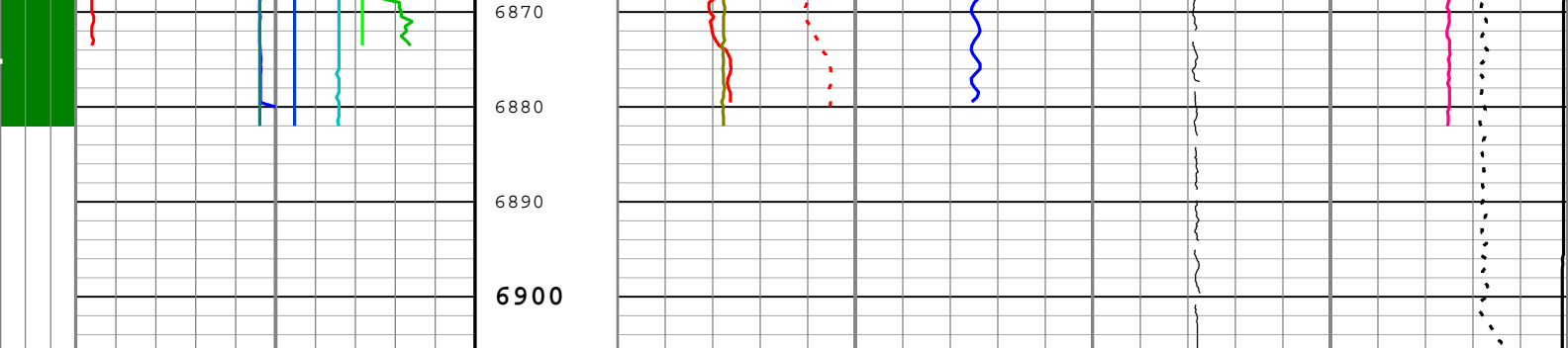












Hardware are Flag Image (HHQ FI)  1 3	Gamma Ray Correction Coefficient (CFGR) HGNS-H			Stuck Tool Indicator, Total (STIT)	Corrected Near Thermal Count Rate (CNTC) HGNS-H			Cable Tension (TENS)			
	0.5		1.5		0 1/s 7500			10000 lbf 0			
	Difference between Corrected Thermal Neutron Porosity and Uncorrected (DNPH) HGNS-H			ToolDrag	Corrected Far Thermal Count Rate (CFTC) HGNS-H			Acceleration Z-Axis (FCAZ) HGNS-H		Accelerometer Temperature (ATEMP) HGNS-H	
	-0.1	m3/m3	0.1		0 1/s 7500			25 ft/s2 35		20 degF 220	
	Gamma Ray (ECGR) HGNS-H			External ADC Reference (TREF) HGNS-H	Neutron Test High Voltage (NTHV) HGNS-H		Raw Acceleration Voltage (RHAZ) HGNS-H		External ADC Ground (NSGD) HGNS-H		
	0	gAPI	150		4.5 V 5.5		-10 V 10		-0.5 V 0.5		
	Sonde Deviation (GDEV) HGNS-H										
	-10	deg	90								
	+15 V Supply (HP15) HGNS-H										
	14.5	V	15.5								
-15 V Supply (HM15) HGNS-H											
-15.5	V	-14.5									
5V Logic Power Supply (HP5V) HGNS-H											
4.5	V	5.5									
Gamma Ray Test High Voltage (GTHV) HGNS-H											
2000	V	3000									

DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	8.7	lbm/gal
DFT	Drilling Fluid Type	Borehole	Water	
EDF	Elevation of Derrick Floor Above Permanent Datum	WLSESSION	23	ft
EPD	Elevation of Permanent Datum (PDAT) above Mean Sea Level	WLSESSION	4661	ft
FSAL	Formation Salinity	Borehole	0	ppm
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS	
GGRD	Geothermal Gradient	Borehole	1	0.01 degF/ft
GRSE	Generalized Mud Resistivity Selection, from Measured or Computed Mud Resistivity	Borehole	REMS	
GTSE	Generalized Temperature Selection, from Measured or Computed Temperature	Borehole	GTEM_LINEST	
HSCO	Hole Size Correction Option	HGNS-H	Yes	
IMAR	Image Rotation	USIT-E	Off	
MATR	Rock Matrix for Neutron Porosity Corrections	Borehole	LIMESTONE	
MFST	Mud Filtrate Sample Temperature	Borehole	68	degF
MST	Mud Sample Temperature	Borehole	68	degF
PDAT	Permanent Datum	WLSESSION	GL	
RMFS	Resistivity of Mud Filtrate Sample	Borehole	0.15	ohm.m
RMS	Resistivity of Mud Sample	Borehole	0.2	ohm.m
SHT	Surface Hole Temperature	Borehole	68	degF
TD	Total Measured Depth	Borehole	6905	ft
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	0.1	Mrayl
UFGDE	Fiberglass Density	USIT-E	1.95	g/cm3
UFGPS	Fiberglass Processing Selection	USIT-E	No	
UFGVL	Fiberglass Velocity	USIT-E	9678.48	ft/s
USI_FSOD	USIT USI Fluid Slowness Fits Casing Outer Diameter	USIT-E	0_OFF	
USI_FVEL_SEL	USI Fluid Velocity Selection	USIT-E	Automatic	
USI_ZMUD_SEL	USI Mud Impedance Selection	USIT-E	FreePipe Norm.	

Depth Zone Parameters

Parameter	Value	Start ( ft )	Stop ( ft )
BS	17.5	33.5	130
BS	13.5	130	926
BS	8.75	926	6905

All depth are actual.

Tool Control Parameters

Run 1: Parameters

Parameter	Description	Tool	Value	Unit
HMCA_BOARD_TYPE	HMCA Board Type	HGNS-H	1	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	3600	ft/h
ULOG	Logging Objective	USIT-E	MEASUREMENT	
UMFR	Modulation Frequency	USIT-E	333333	Hz
UPAT	USIT Emission Pattern	USIT-E	Pattern 375 KHz	
UWKM	USIT Working Mode	USIT-E	Uncompressed 10 deg at 3.0 in LF	
USIT_DEPTHLOG	Starting Depth Log for Ultrasonics	USIT-E	6900	ft
VRES	Vertical Resolution	USIT-E	3.0 in	
WINB	Window Begin Time	USIT-E	Time Zoned	us
WINE	Window End Time	USIT-E	86.79	us

## HGNS-H (HILT Gamma-Ray and Neutron Sonde, 150 degC) Calibration - Run 1

## Primary Equipment :

HILT Gamma-Ray and Neutron Sonde, 150 degC

HGNS-H

4810

## Auxiliary Equipment :

HGNS Accelerometer, 150 degC

HACCZ-H

5955

AmBe Neutron Logging Source

NSR-F

5215

## Calibration Parameter :

Water Temperature

Housing Size

JIG-BKG (Jig minus background reference)

165

## HGNS Accelerometer Calibration - Accelerometer Accumulations

Before:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
AZ Vertical Measurement - 0	ft/s2	Before	----	----	----	----	

## HGNS Accelerometer EEPROM - Accelerometer EEPROM Read

Master (EEPROM): 00:00:00 15-Jan-2007

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Accelerometer Manufacturer		Master			QAT_160		
Accelerometer Reference Temperature	degF	Master		30.2	77.0	122.0	
Accelerometer Coefficients - 0		Master	----	----	1155.700	----	
Accelerometer Coefficients - 1		Master	----	----	26.890	----	
Accelerometer Coefficients - 2		Master	----	----	-0.008	----	
Accelerometer Coefficients - 3		Master	----	----	0.000	----	
Accelerometer Coefficients - 4		Master	----	----	2.748	----	
Accelerometer Coefficients - 5		Master	----	----	0.000	----	
Accelerometer Coefficients - 6		Master	----	----	0.000	----	
Accelerometer Coefficients - 7		Master	----	----	0.000	----	
Accelerometer Coefficients - 8		Master	----	----	298.600	----	
Accelerometer Coefficients - 9		Master	----	----	0.983	----	

## HGNS Neutron Calibration - HGNS Neutron Accumulations

Master (EEPROM): 13:54:00 05-Feb-2015 Before (Measured): 22:12:21 30-Apr-2015

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Near Zero Measurement	1/s	Master	0	5.0	24.2	40.0	
		Before	0	5.0	24.4	40.0	
		Before-Master	----	-3.6	0.2	3.6	
Far Zero Measurement	1/s	Master	0	5.0	28.1	40.0	
		Before	0	5.0	28.7	40.0	
		Before-Master	----	-4.2	0.6	4.2	
Near Plus Measurement	1/s	Master	6031.0	4700.0	5190.0	6900.0	
		Before	----	----	----	----	
		Before-Master	----	----	----	----	
Far Plus Measurement	1/s	Master	2793.0	1900.0	2159.0	2900.0	
		Before	----	----	----	----	
		Before-Master	----	----	----	----	
Near Corrected Plus Measurement	1/s	Master		4700.0	5328.0	6900.0	
		Before	----	----	----	----	
		Before-Master	----	----	----	----	
Far Corrected Plus Measurement	1/s	Master		1900.0	2235.0	2900.0	
		Before	----	----	----	----	
		Before-Master	----	----	----	----	

## HGNS Gamma-Ray Calibration - Gamma-Ray Accumulations

Before (Measured): 22:13:24 30-Apr-2015

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
RGR Zero Measurement	gAPI	Before	30.0	0	85.1	120.0	
RGR Plus Measurement	gAPI	Before	185.4	157.1	165.7	206.3	
GR Calibration Gain		Before	0.89	0.80	1.00	1.05	

Company:	Noble Energy Inc	Schlumberger
Well:	Colt A13-655	
Field:	Wattenberg	
County:	Weld	
State:	Colorado	
Platform Express		
Triple Combo		