

Company: Noble Energy Inc

Well: Greyson LD28-753

Field: Wattenberg

County: Weld State: Colorado

County: Weld		Field: Wattenberg		Location: SESW Sec 28 T9N R58W		Well: Greyson LD28-753		Company: Noble Energy Inc	
Platform Express Triple Combo		Location:		SESW Sec 28 T9N R58W		Elev.: K.B. 4877.00 ft			
				SHL: 660' FSL & 2418' FWL		G.L. 4853.00 ft			
				Lat/Long: 40.71648/-103.87231		D.F. 4877.00 ft			
		Permanent Datum:		Ground Level		Elev.: 4853.00 f			
		Log Measured From:		Kelly Bushing		24.00 ft		above Perm.Datum	
		Drilling Measured From:		Kelly Bushing					
		API Serial No.		Section: 28		Township: 9N		Range: 58W	
		05-123-41586							
Logging Date				11-Sep-2015					
Run Number				ONE					
Depth Driller				10625.00 ft					
Schlumberger Depth				10625.00 ft					
Bottom Log Interval				5900.00 ft					
Top Log Interval				60.00 ft					
Casing Fluid Type				Salt Brine					
Salinity									
Density				8.4 lbm/gal					
Fluid Level				8.00 ft					
BIT/CASING/TUBING STRING									
Bit Size				8.50 in					
From				0.00 ft					
To				10625.00 ft					
Casing/Tubing Size				7 in					
Weight				26 lbm/ft					
Grade				N/A					
From				0.00 ft					
To				6277.00 ft					
Max Recorded Temperatures				198 degF					
Logger on Bottom		Time							
Unit Number		Location:		2135		Fort Morgan, CO			
Recorded By				Evan Meadows					
Witnessed By									

Disclaimer

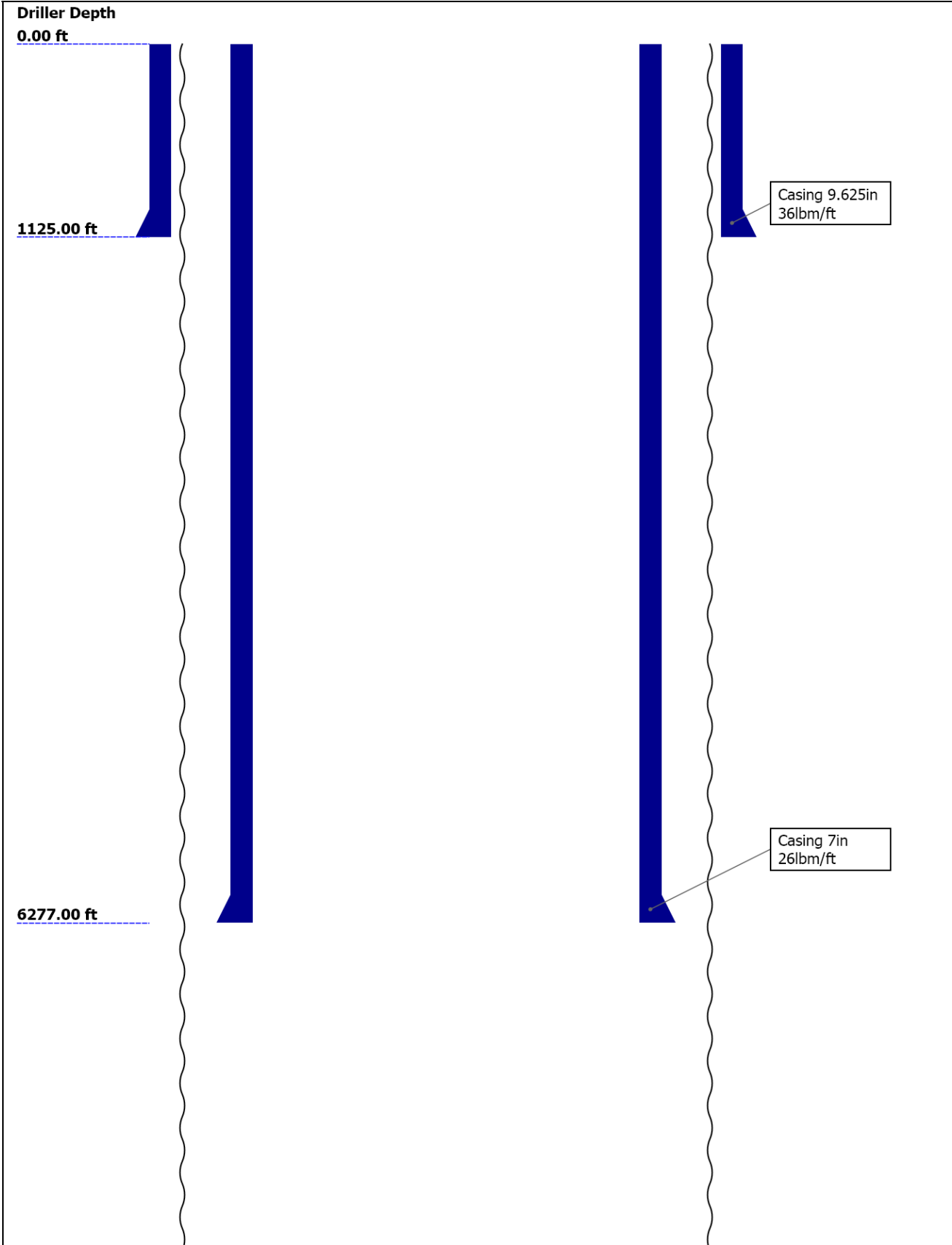
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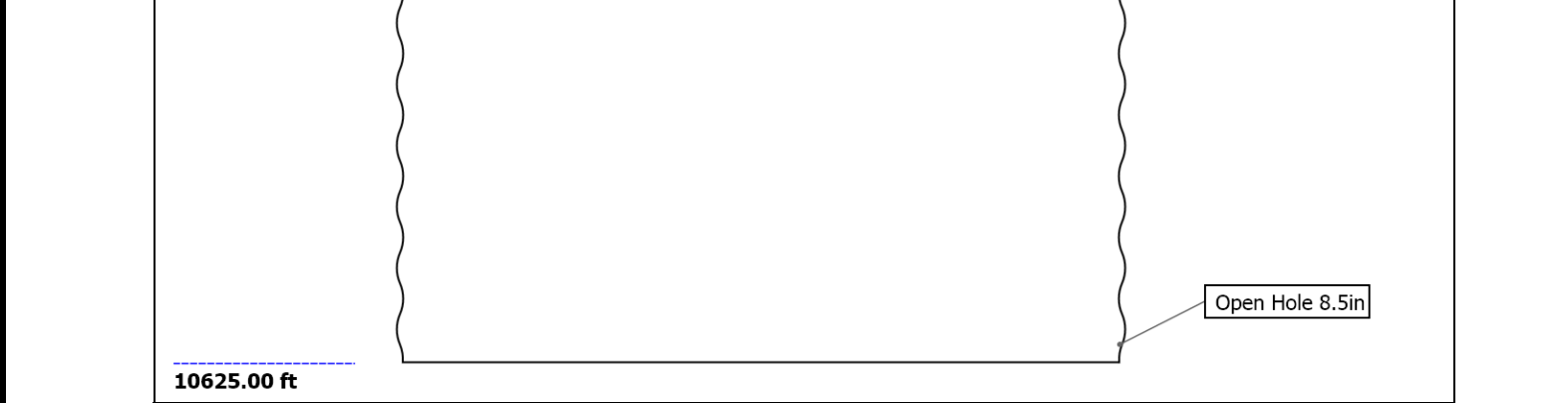
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Well Sketch





Borehole Size/Casing/Tubing Record

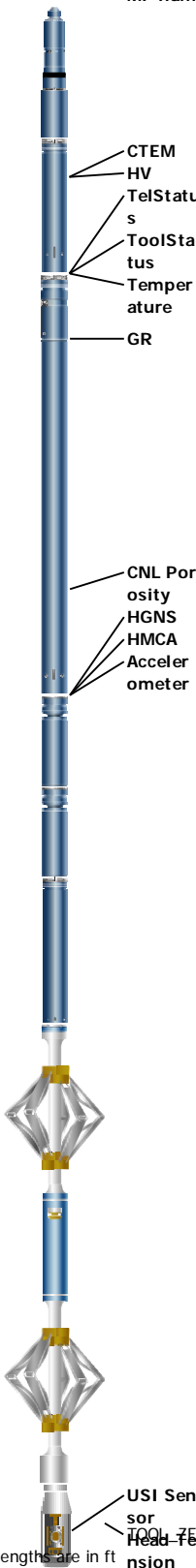
Bit						
Bit Size (in)	8.5					
Top Driller (ft)	0					
Top Logger (ft)	0					
Bottom Driller (ft)	10625					
Bottom Logger (ft)	10625					
Casing						
Size (in)	9.625	7				
Weight (lbm/ft)	36	26				
Inner Diameter (in)	8.921	6.276				
Grade	N/A	N/A				
Top Driller (ft)	0	0				
Top Logger (ft)	0	0				
Bottom Driller (ft)	1125	6277				
Bottom Logger (ft)	1125	6277				

Operational Run Summary

Parameter (unit)	ONE					
Date Log Started	11-Sep-2015					
Time Log Started	16:27:03					
Date Log Finished	11-Sep-2015					
Time Log Finished	19:13:20					
Top Log Interval (ft)	60.00					
Bottom Log Interval (ft)	5900.00					
Total Depth (ft)						
Max Hole Deviation (deg)	0.00					
Azimuth of Max Deviation (deg)	0.00					
Bit Size (in)	8.500					
Logging Unit Number	2135					
Logging Unit Location	Fort Morgan, CO					
Recorded By	Evan Meadows					

Witnessed By						
Service Order Number	D62I-00053					

Remarks and Equipment Summary

ONE: Toolstring				ONE: Remarks	
Equip name	Length		MP name	Offset	1. TOOLS RAN AS PER TOOL SKETCH.
LEH-QT	34.87				2. REPEAT PASS RAN AT 0 PSI MAIN PASS RAN AT 2500 PSI
LEH-QT					3. BHT: 198 DEG F
DTC-H	31.95		CTEM	31.05	4. ESTIMATED TOC: 1145'
ECH-KC			HV	0.00	
DTC-H			TelStatus	28.95	
			ToolStatus	28.95	
HGNS-H	28.95		Temperature	28.93	
HGNH			GR	28.21	
NSR-F:5215					
NPV-N					
HMCA-H					
HGNS-H					
HACCZ-H:5955					
			CNL Porosity	21.88	
			HGNS	19.55	
			HMCA	19.55	
			Accelerometer	0.00	
AH-184[2]	19.54				
AH-184[1]	17.54				
USIT-E	15.54				
ECH-MFA					
USAC-A					
USIS-A					
USSC-B					
USRS-B					
USI-SENSOR					
OR					
			USI Sensor	0.38	
			TOOL_ZERO Head-Fe		
			nsion		
Lengths are in ft					
Maximum Outer Diameter = 4.645 in					
Line: Sensor Location, Value: Gating Offset					
All measurements are relative to TOOL_ZERO					

Depth Summary

	ONE		
Depth Measuring Device			
Type	IDW-B		

Serial Number									
Calibration Date									
Calibrator Serial Number									
Calibration Cable Type									
Wheel Correction 1	0								
Wheel Correction 2	0								
Tension Device									
Type	CMTD-B/A								
Serial Number									
Calibration Date									
Calibrator Serial Number									
Number of Calibration Points	0								
Logging Cable									
Type	7-46NT-XS								
Serial Number									
Length	24000.00 ft								
Conveyance Type	Wireline								
Rig Type	Crane								
ONE:Depth Control Parameters		Depth Control Remarks							
Log Sequence	First Log In the Well	1. ALL SCHLUMBERGER DEPTH CONTROL PROCEDURES FOLLOWED DURING LOGGING OPERATIONS. 2. IDW USED AS PRIMARY DEPTH CONTROL MEASURE 3. Z CHART USED AS SECONDARY DEPTH CONTROL MEASURE 4. TD: 5900'							
Rig Up Length At Surface									
Rig Up Length At Bottom									
Rig Up Length Correction									
Stretch Correction									
Tool Zero Check At Surface									
Composite 1									
Integration Summary									
Output Channel(s)	Output Description	Input Parameter	Output Value	Unit					
ICV	Integrated Cement Volume	GCSE_UP_PASS, GCSE_DOWN_PASS:ONE, FCD	0	ft3					
IHV	Integrated Hole Volume	GCSE_UP_PASS, GCSE_DOWN_PASS:ONE	0	ft3					
Software Version									
Acquisition System			Version						
Maxwell 2014 SP3			5.3.47551.3100						
Composite Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Main[3]:Up	Up	395.95 ft	5908.30 ft	11-Sep-2015 5:01:26 PM	11-Sep-2015 6:37:51 PM	ON	8.09 ft	No
ONE	Log[4]:Up	Up	58.48 ft	708.97 ft	11-Sep-2015 6:43:43 PM	11-Sep-2015 6:55:17 PM	ON	7.94 ft	No
All depths are referenced to toolstring zero									
Log	Company:Noble Energy Inc			Well:Greyson LD28-753			Composite 1:S004		
Description: AIT Basic Log Two Format: Log (Noble Nuclear) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 11-Sep-2015 19:15:18									
Channel	Source		Sampling						
CCLU	USIT-E[1]:USRS[1]:USI-SENSOR[1]		3in						
GR	HGNS[1]:HGNS-H[1]:HGNS-H[1]		6in						
ICV	Borehole		6in						

TIME_1900 - Time Marked every 60.00 (s)

GR Backup

Gamma Ray (ECGR) HGNS[1]

0 gAPI 150

Casing Collar Locator Ultrasonic (CCLU) USIT-E[1]

-19 in 1

ICV - Integrated Cement Volume every 10.00 (ft3)

ICV - Integrated Cement Volume every 100.00 (ft3)

IHV - Integrated Hole Volume every 10.00 (ft3)

IHV - Integrated Hole Volume every 100.00 (ft3)

Cable Tension (TENS)

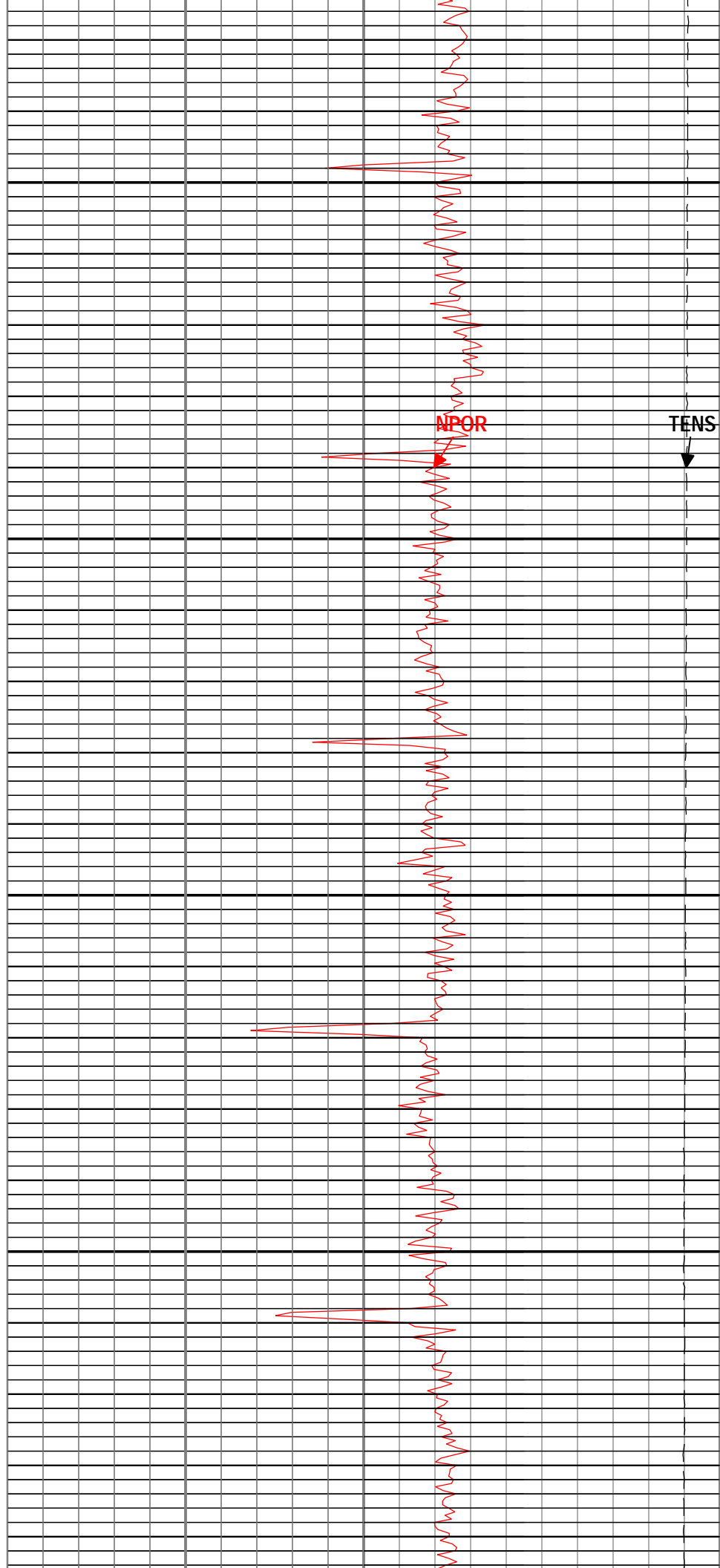
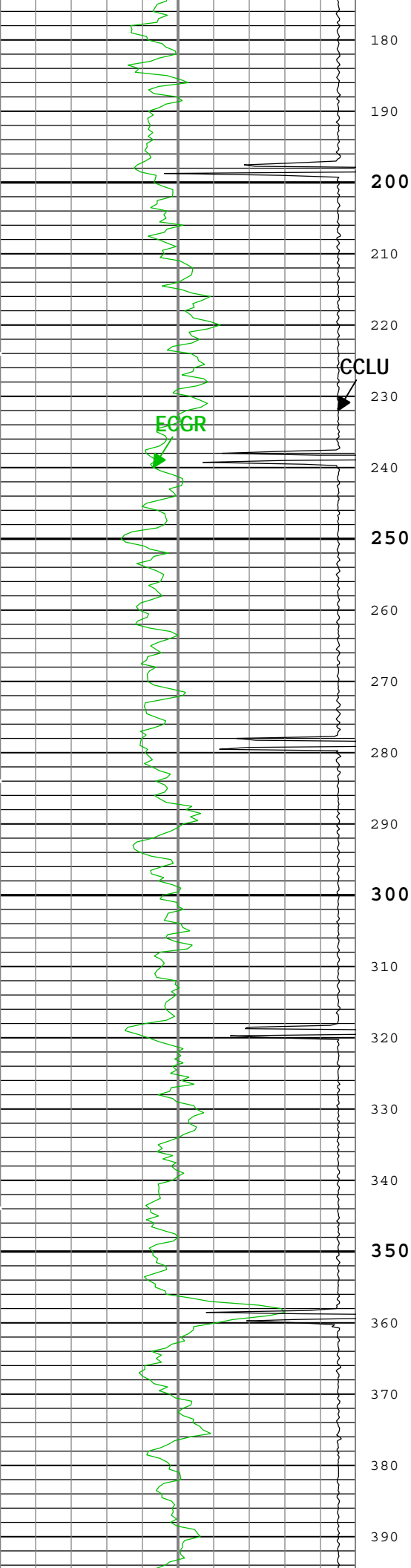
5000 lbf 0

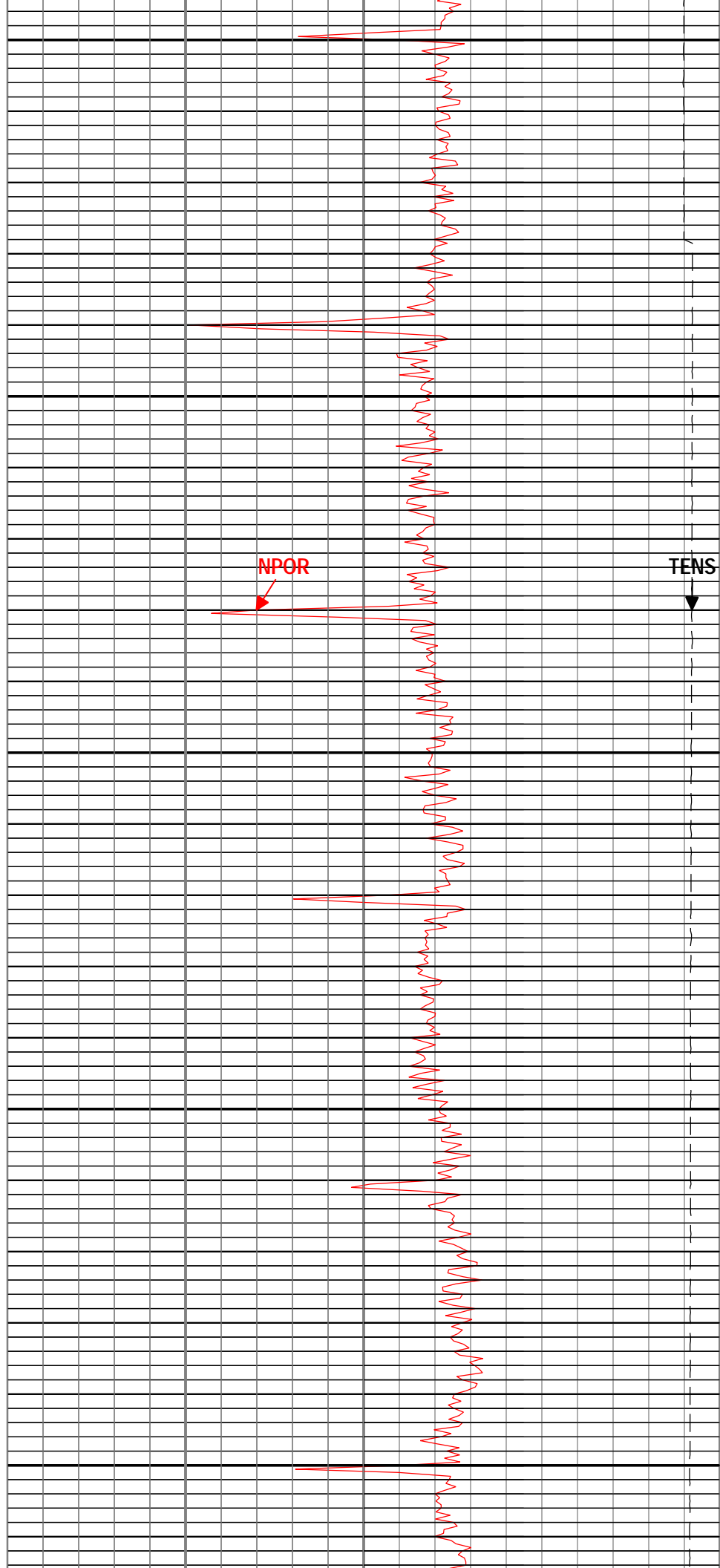
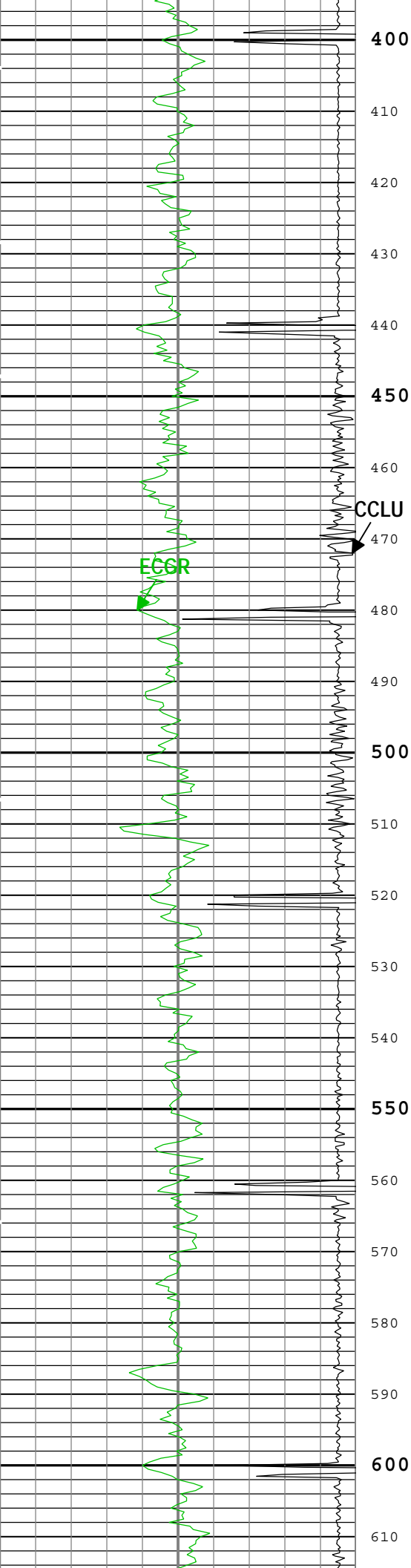
NPOR Backup

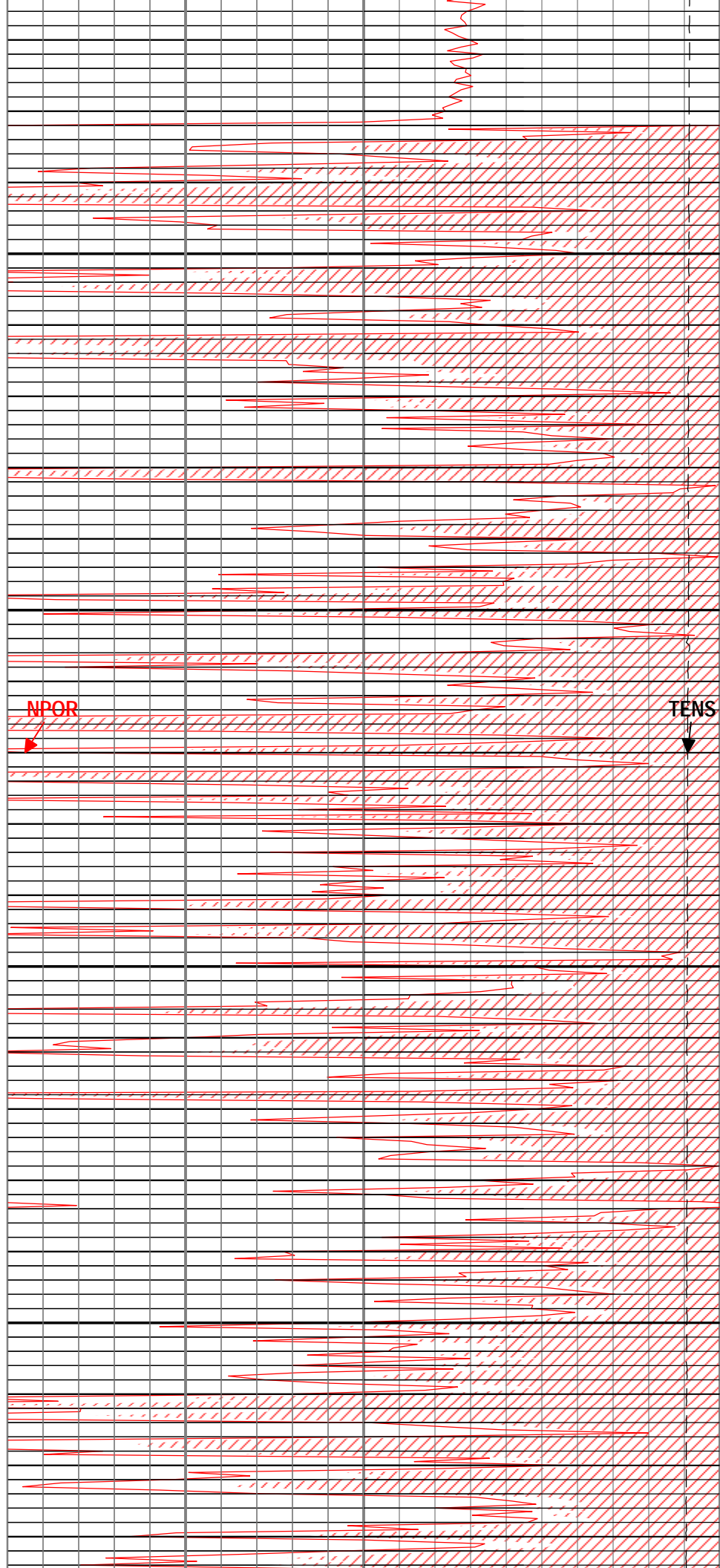
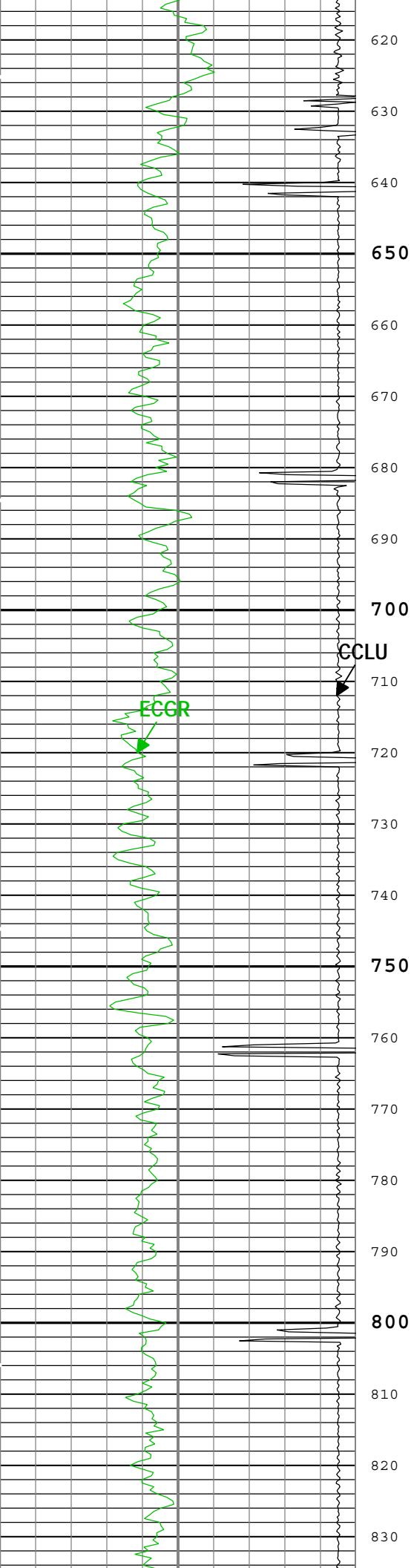
Enhanced Thermal Neutron Porosity in Selected Lithology (NPOR) HGNS[1]

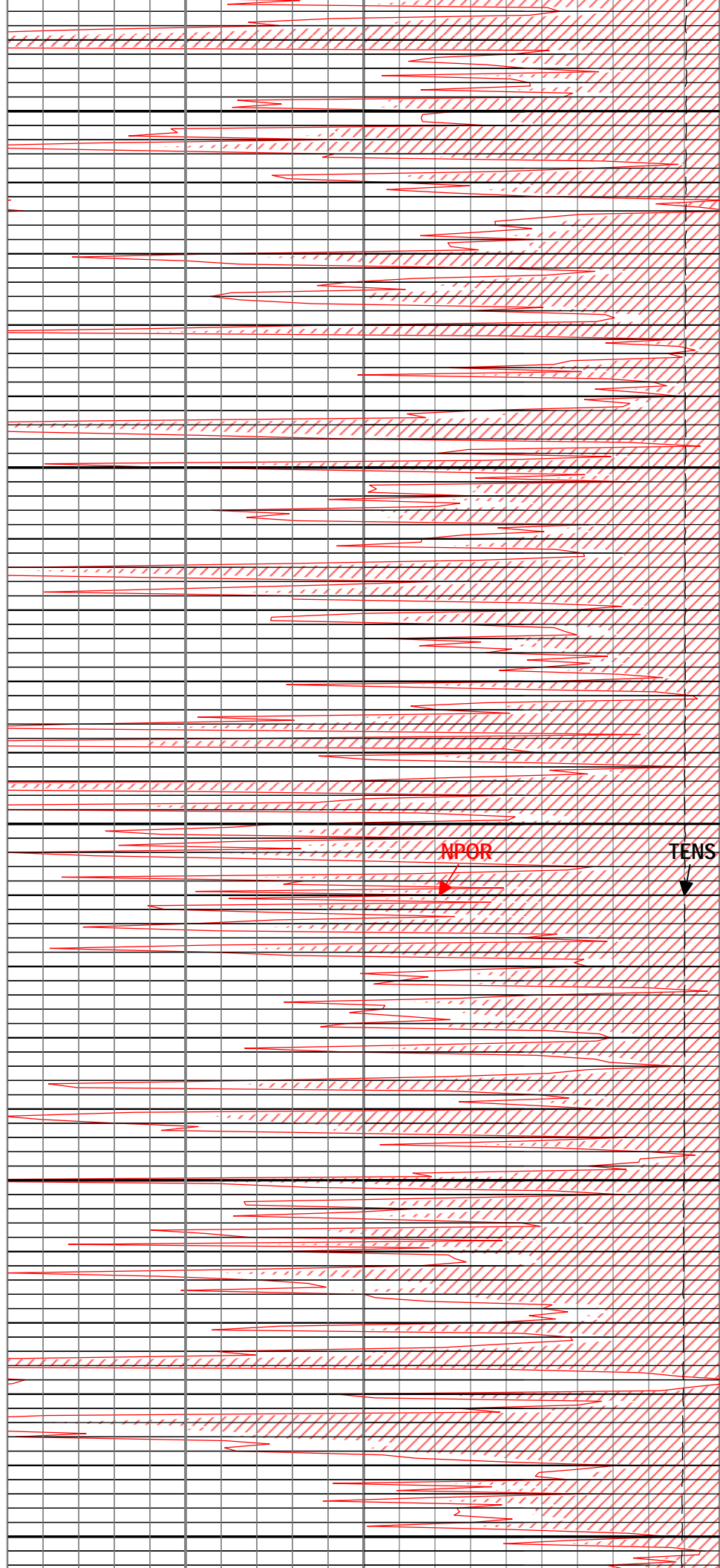
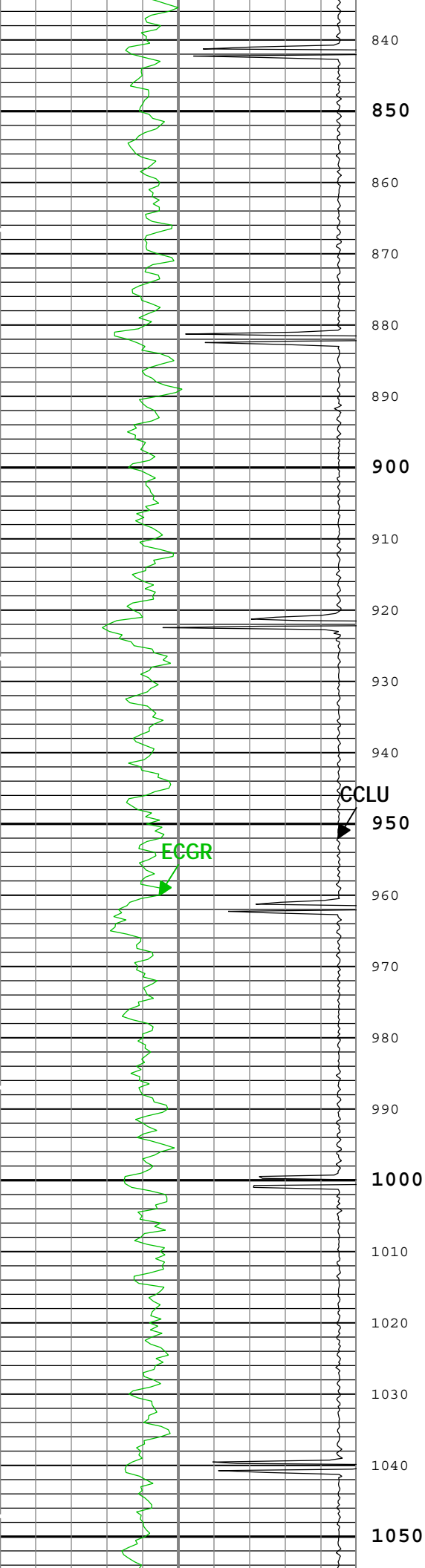
0.45 ft3/ft3 -0.15

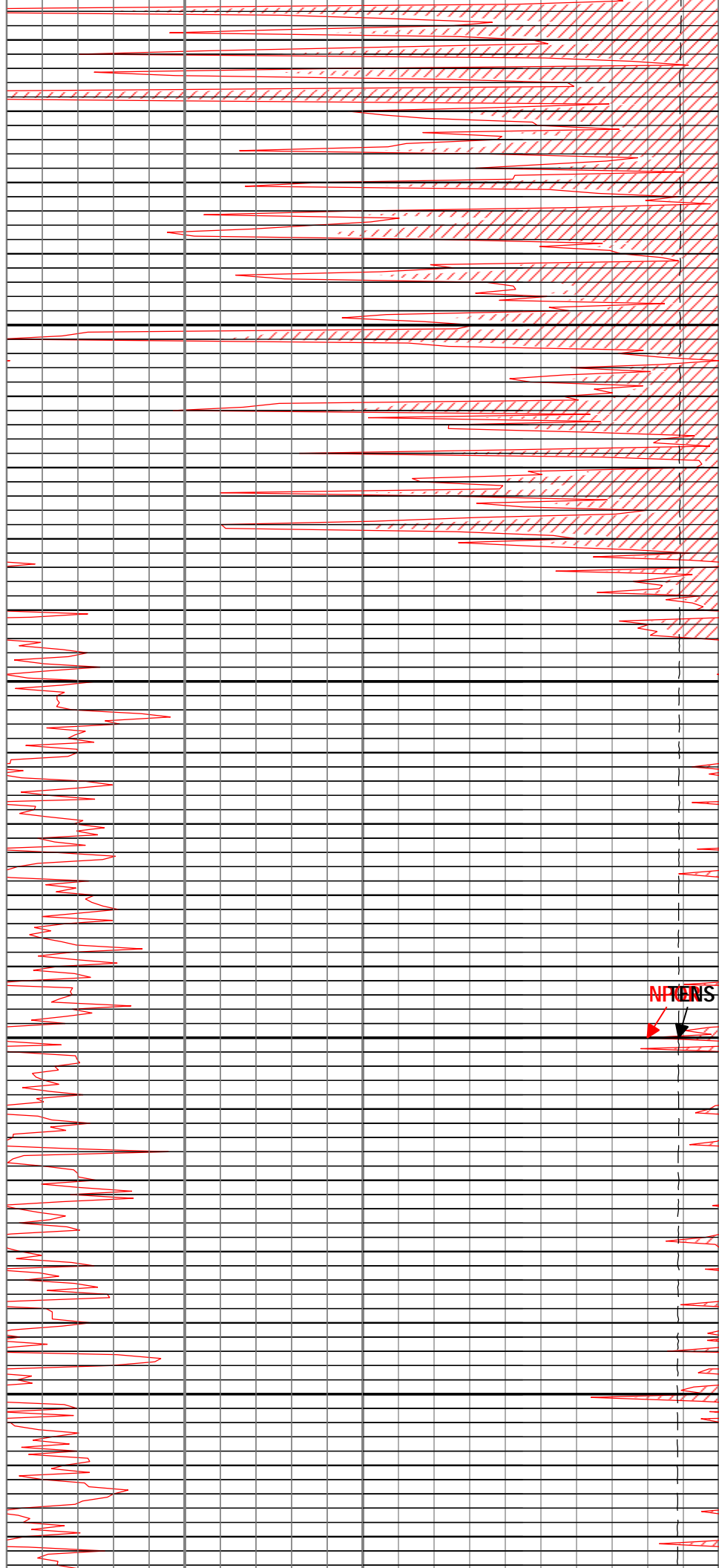
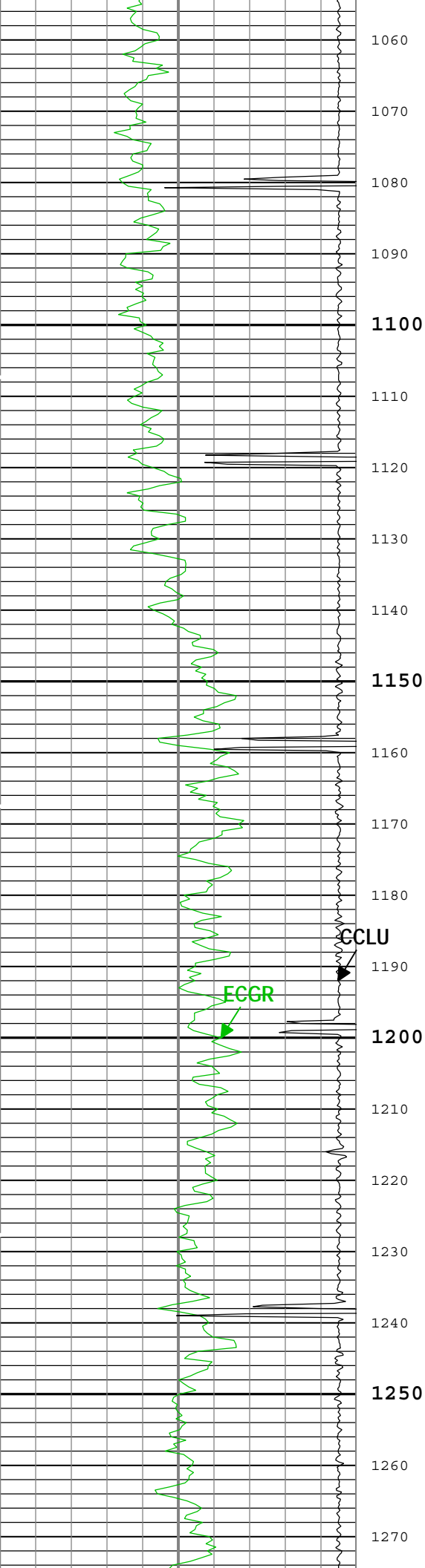
The figure displays a well log plot with multiple data tracks. The vertical axis represents depth in feet, ranging from 0 to 170. The horizontal axis at the top represents Cable Tension (TENS) in lbf, ranging from 5000 to 0. The plot includes several data tracks: Gamma Ray (ECGR) HGNS[1] (green line), Casing Collar Locator Ultrasonic (CCLU) USIT-E[1] (black line), Enhanced Thermal Neutron Porosity in Selected Lithology (NPOR) HGNS[1] (red line), and Integrated Hole Volume (IHV) and Integrated Cement Volume (ICV) data (black lines). The plot also includes a GR Backup track (green dotted area) and an NPOR Backup track (red hatched area). The Gamma Ray data shows a general trend of increasing values with depth, with a notable peak around 150 feet. The CCLU data shows a series of sharp, vertical spikes, indicating casing collar locations. The NPOR data shows a series of sharp, vertical spikes, indicating enhanced thermal neutron porosity. The IHV and ICV data show a series of sharp, vertical spikes, indicating integrated hole volume and integrated cement volume.

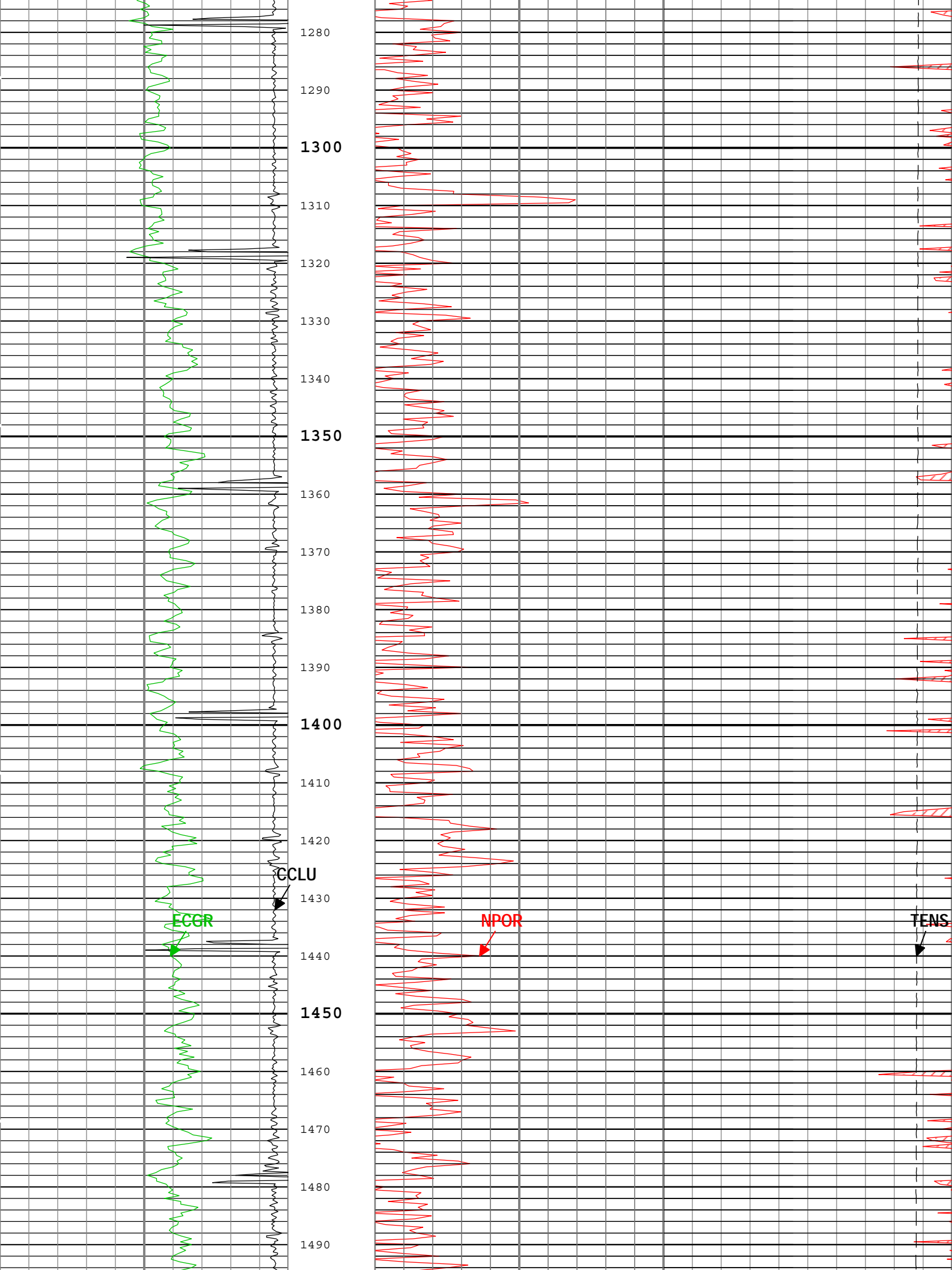


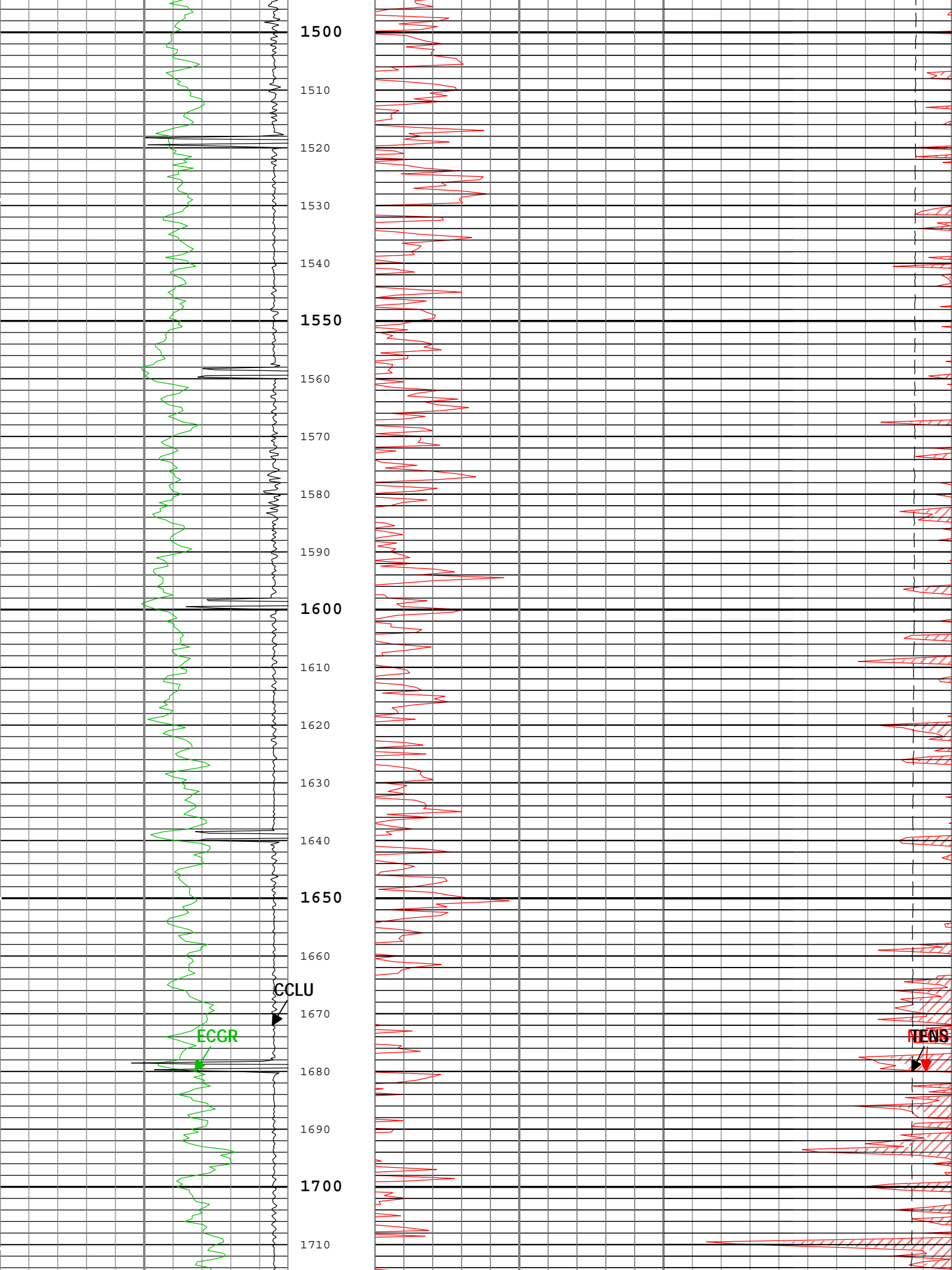


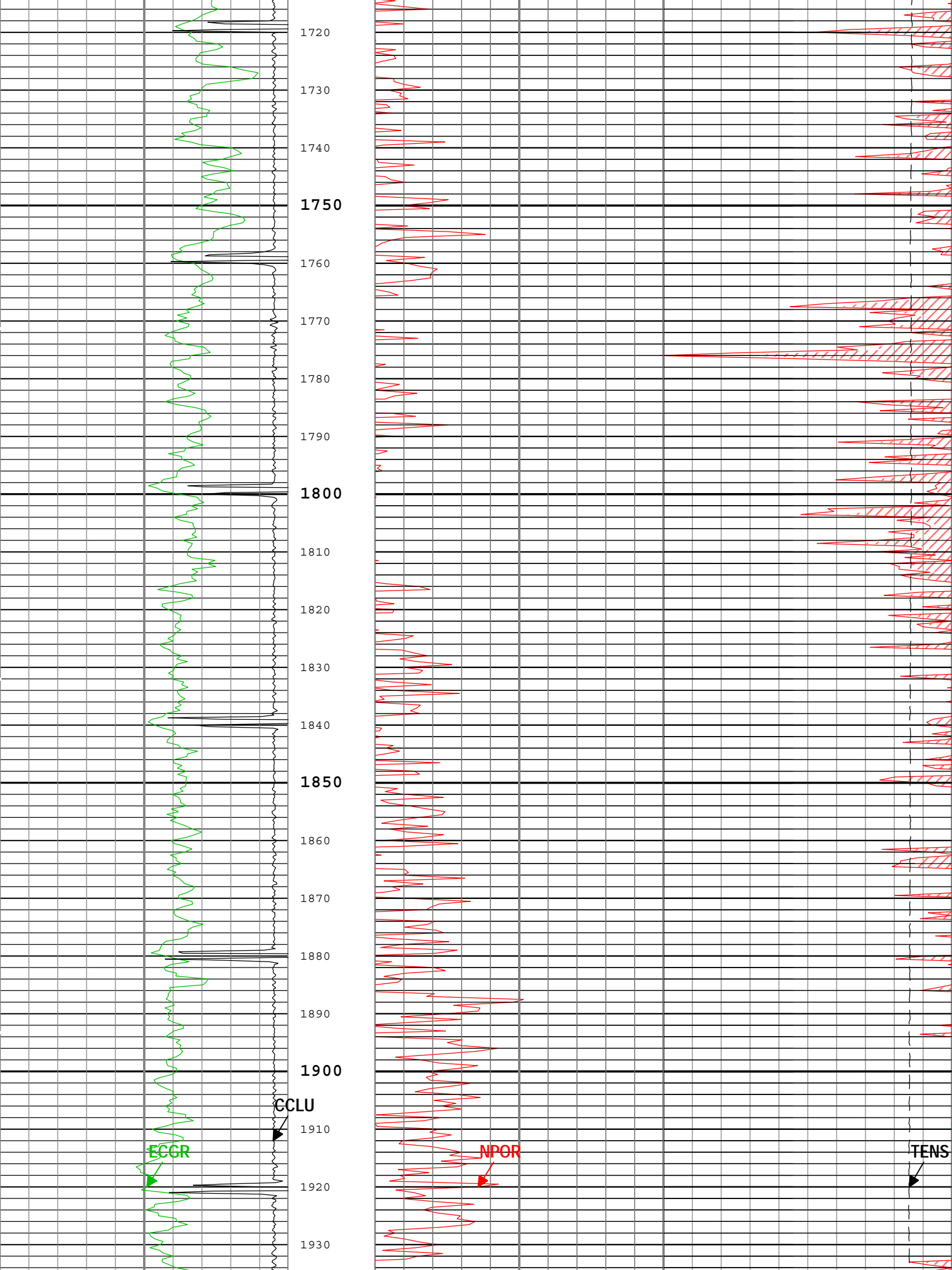


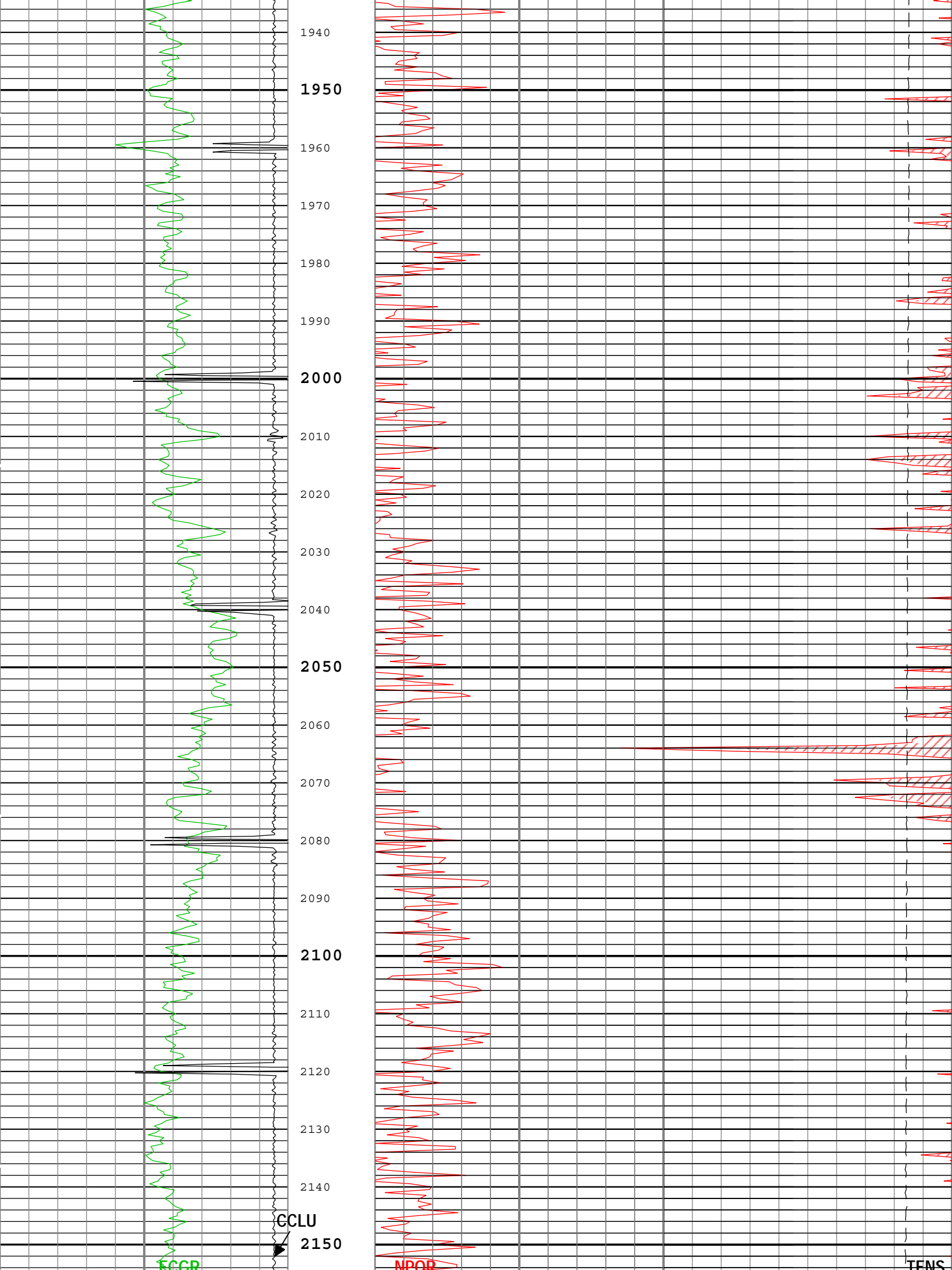


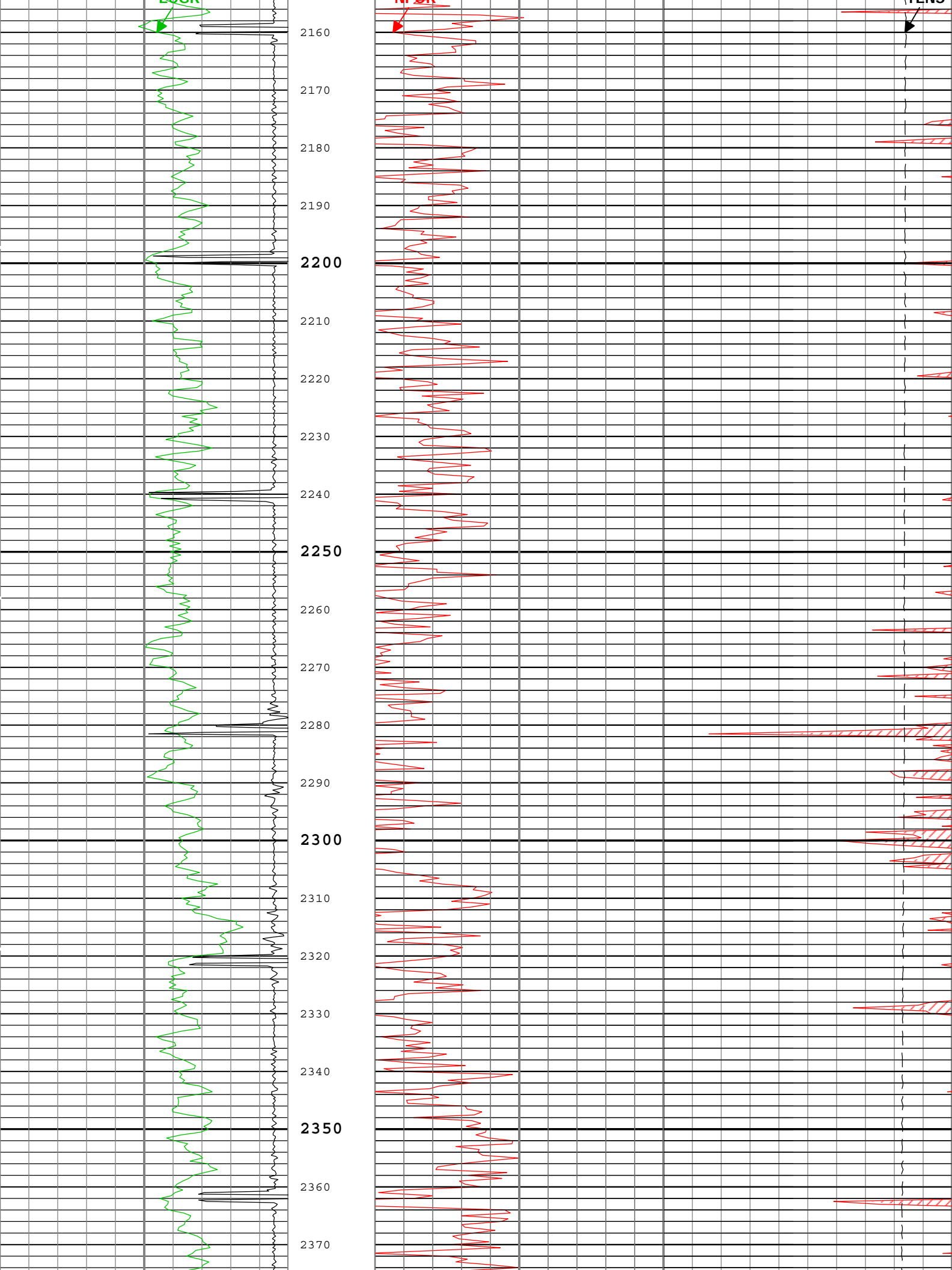


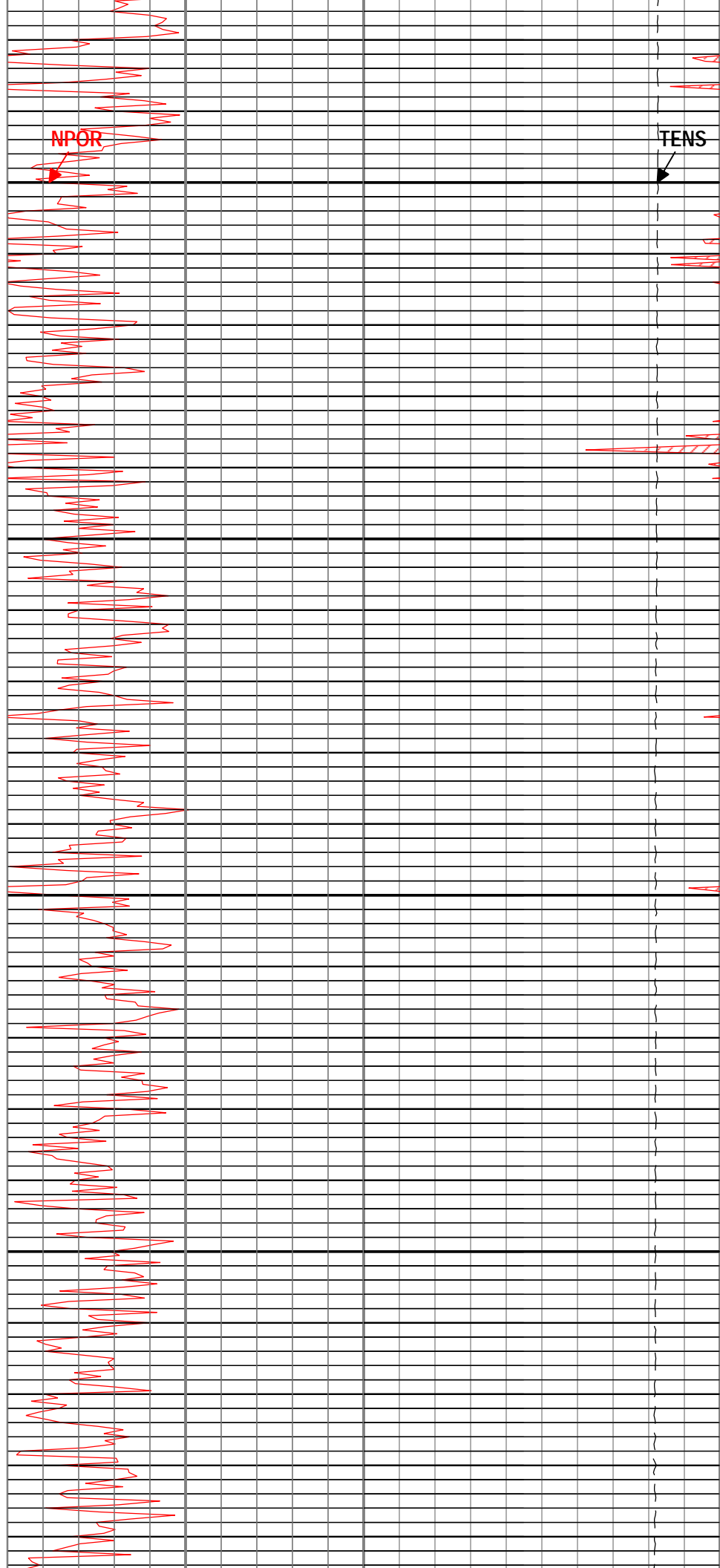
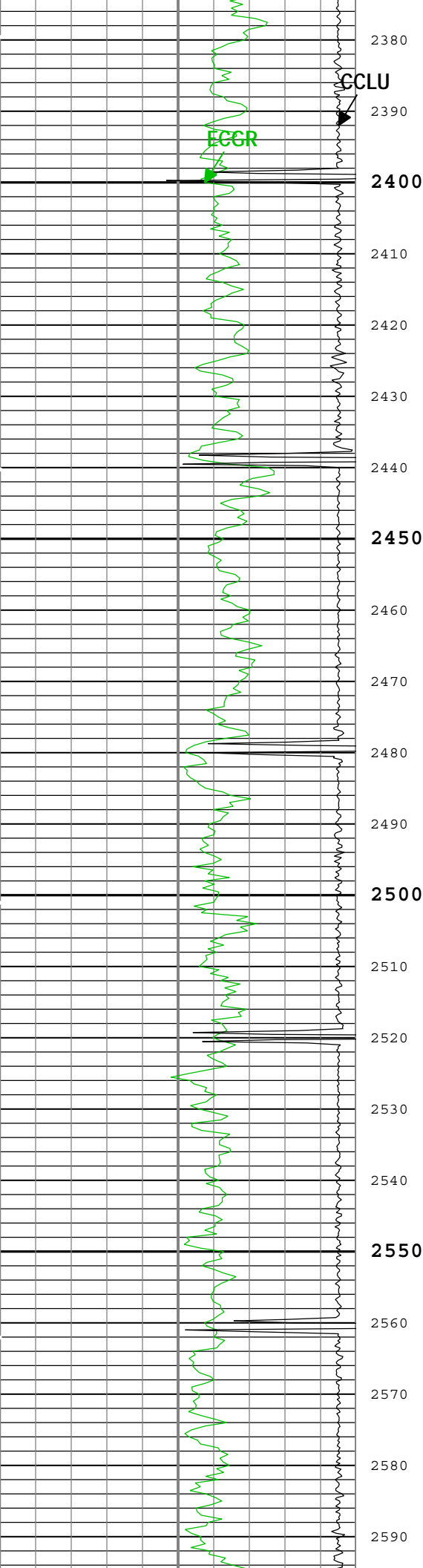


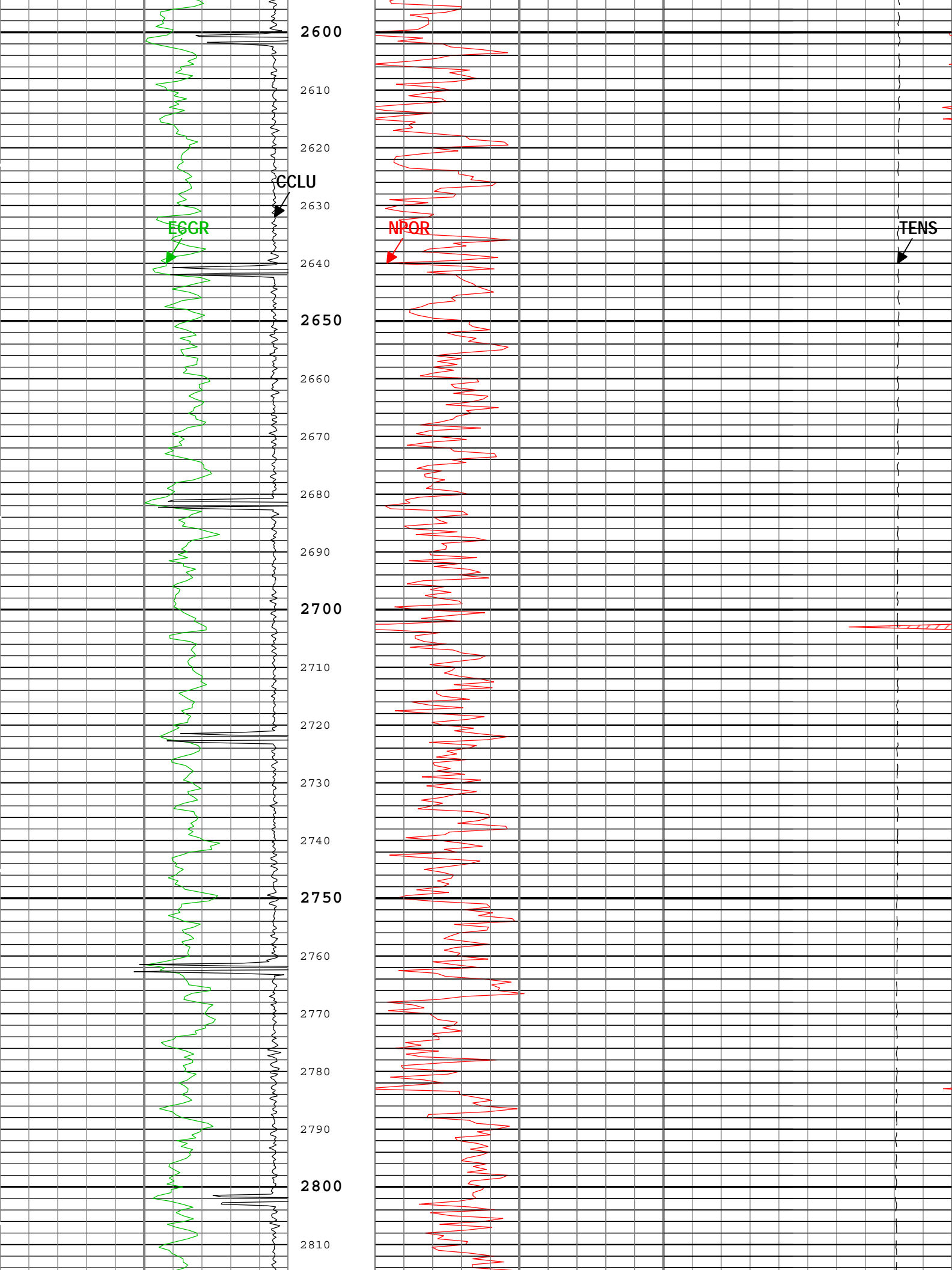


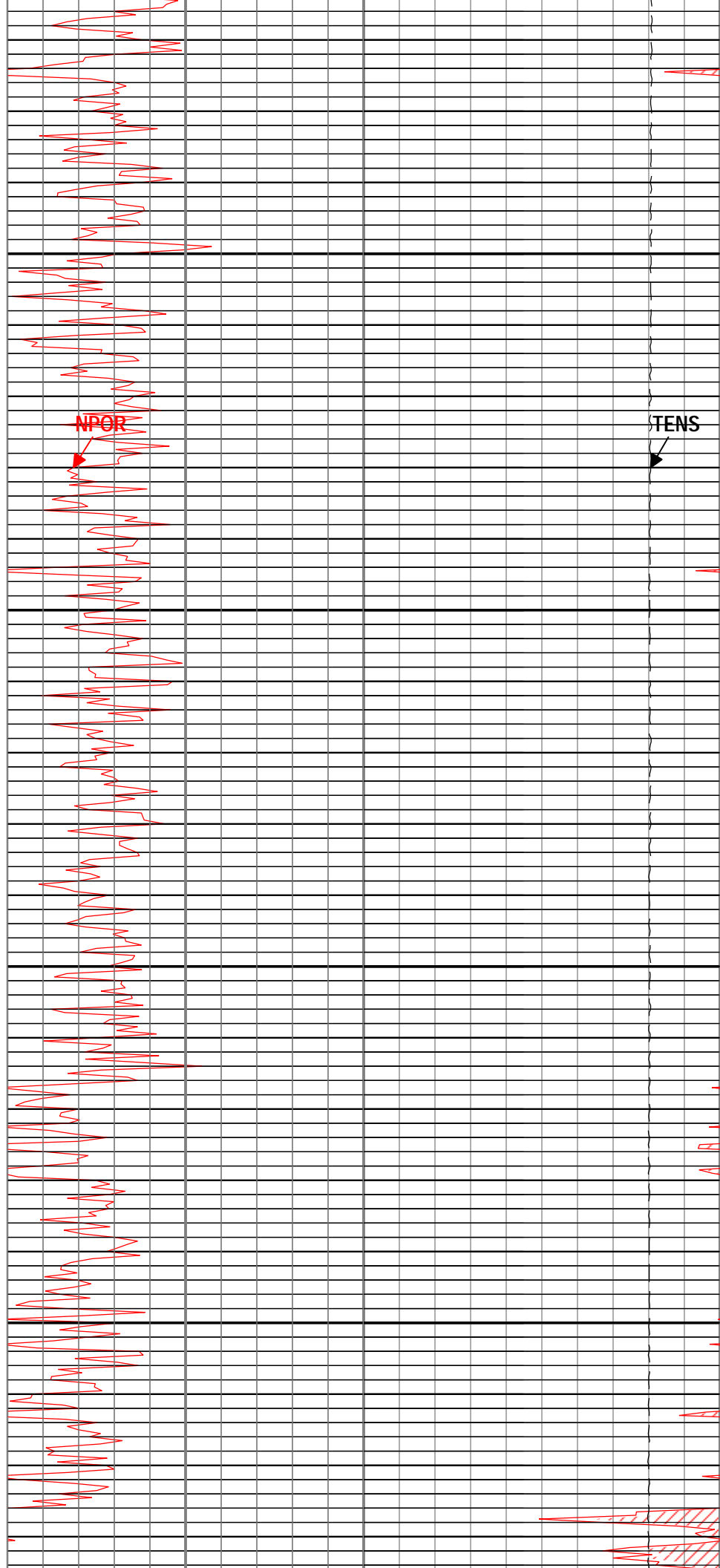
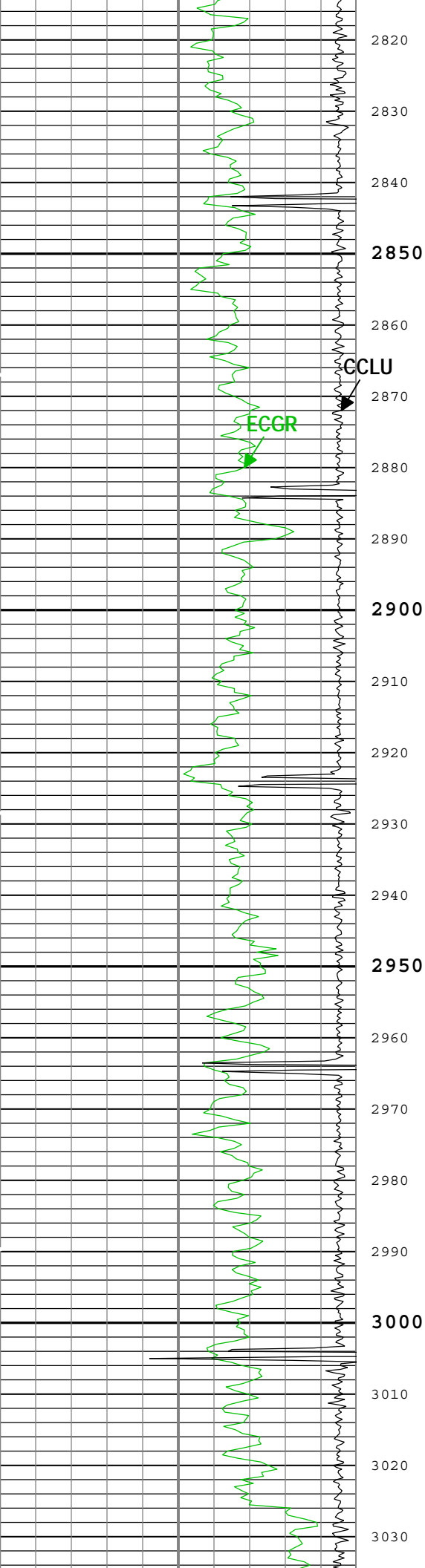


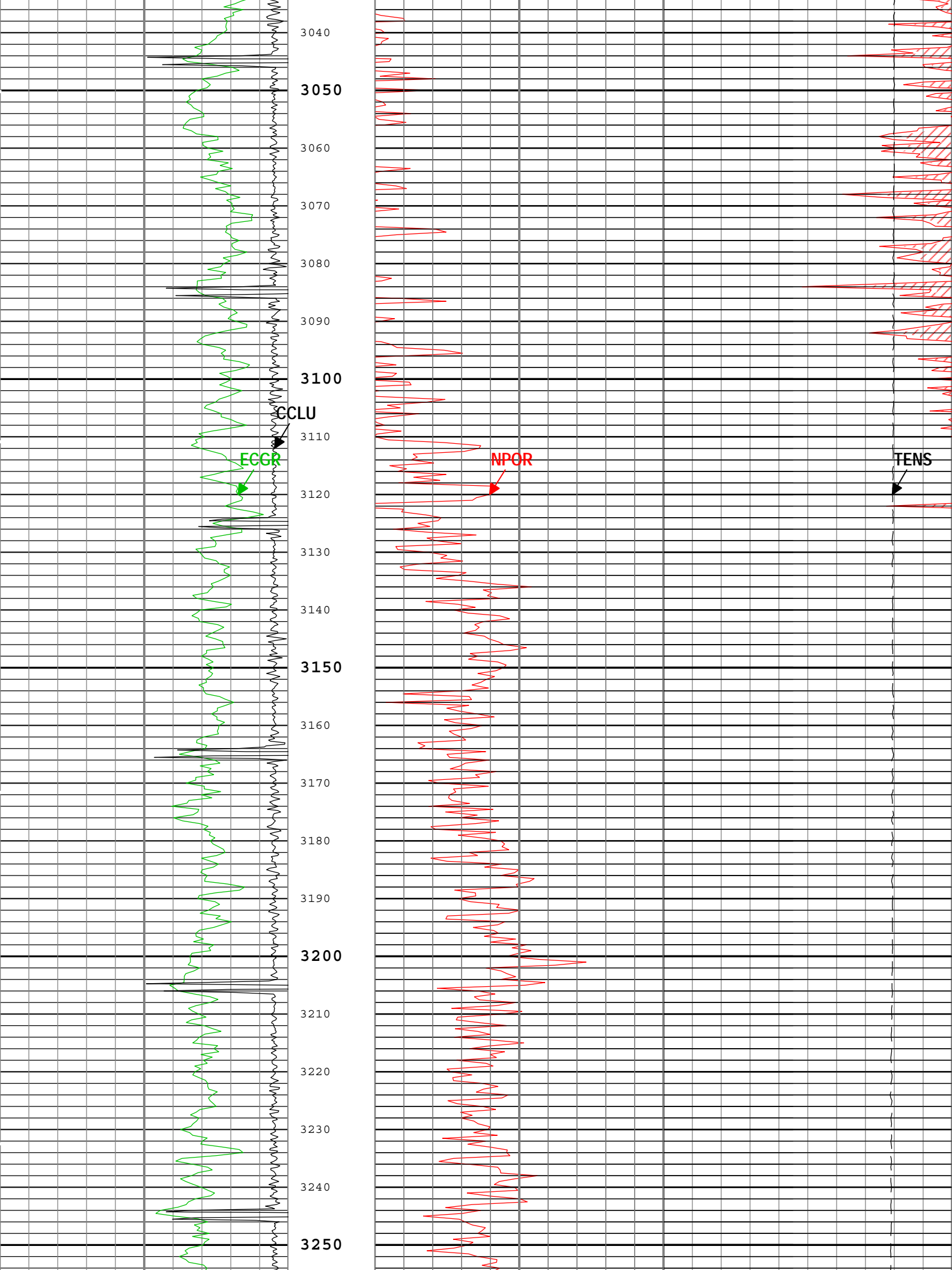


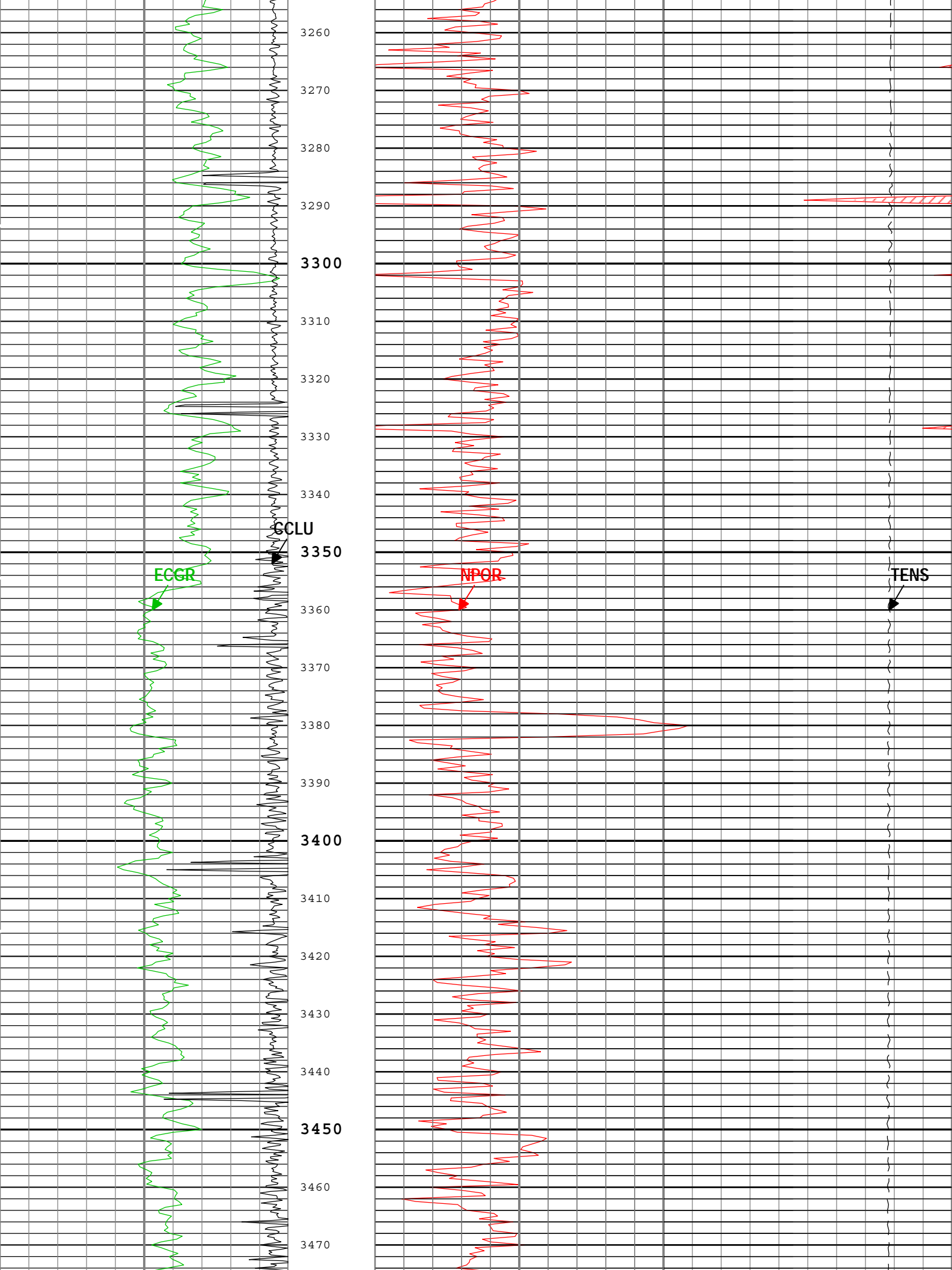


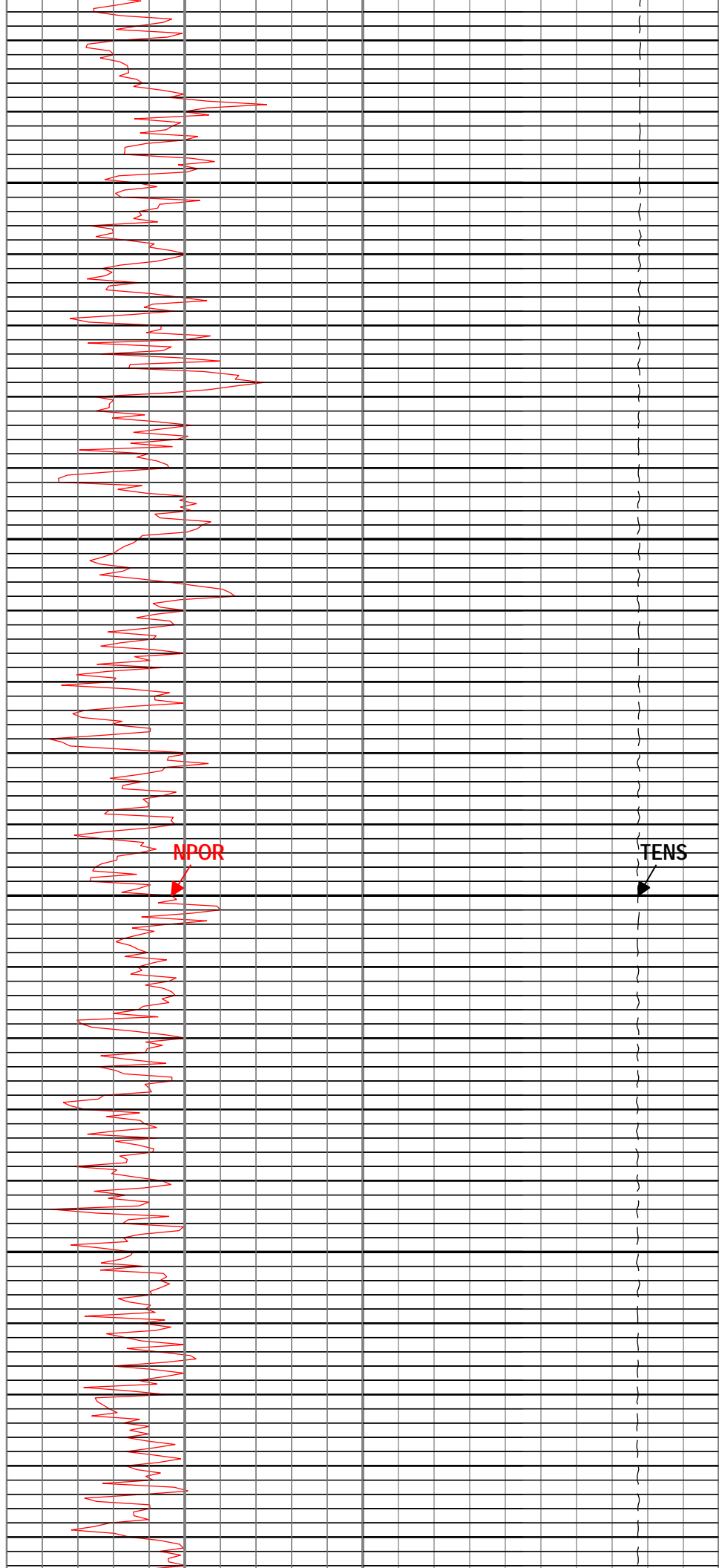
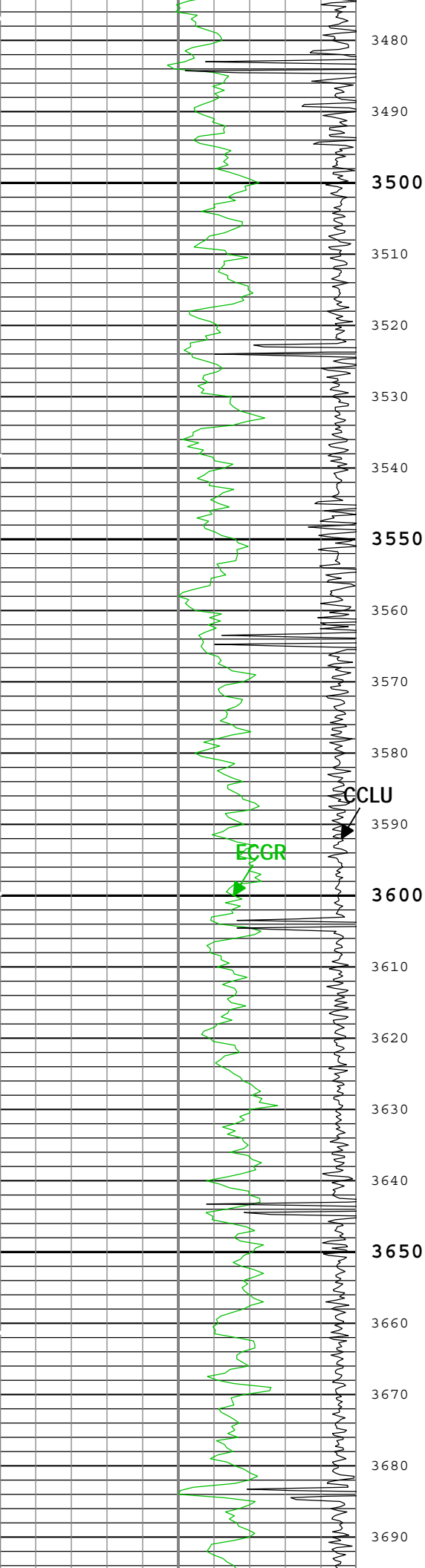


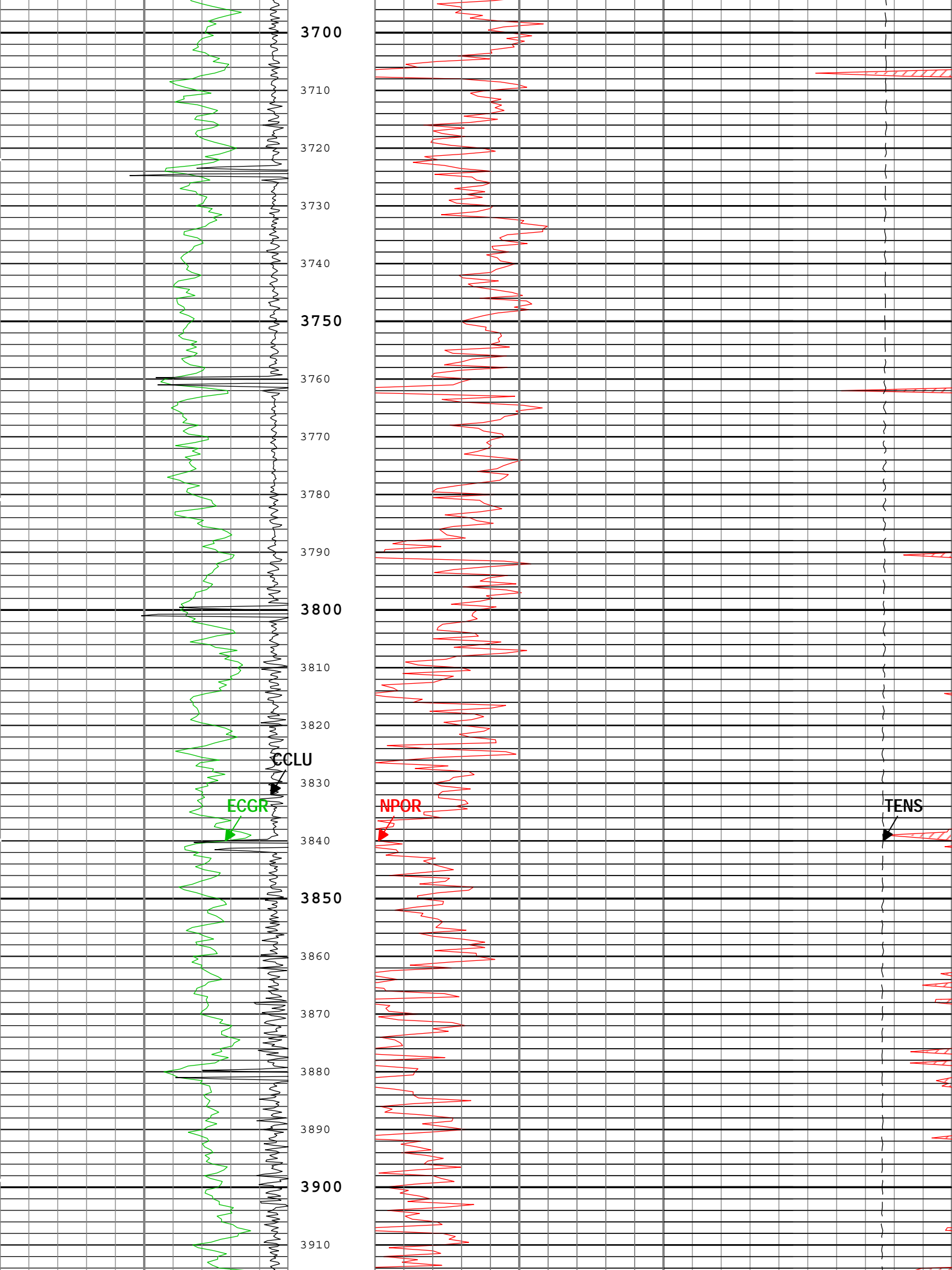


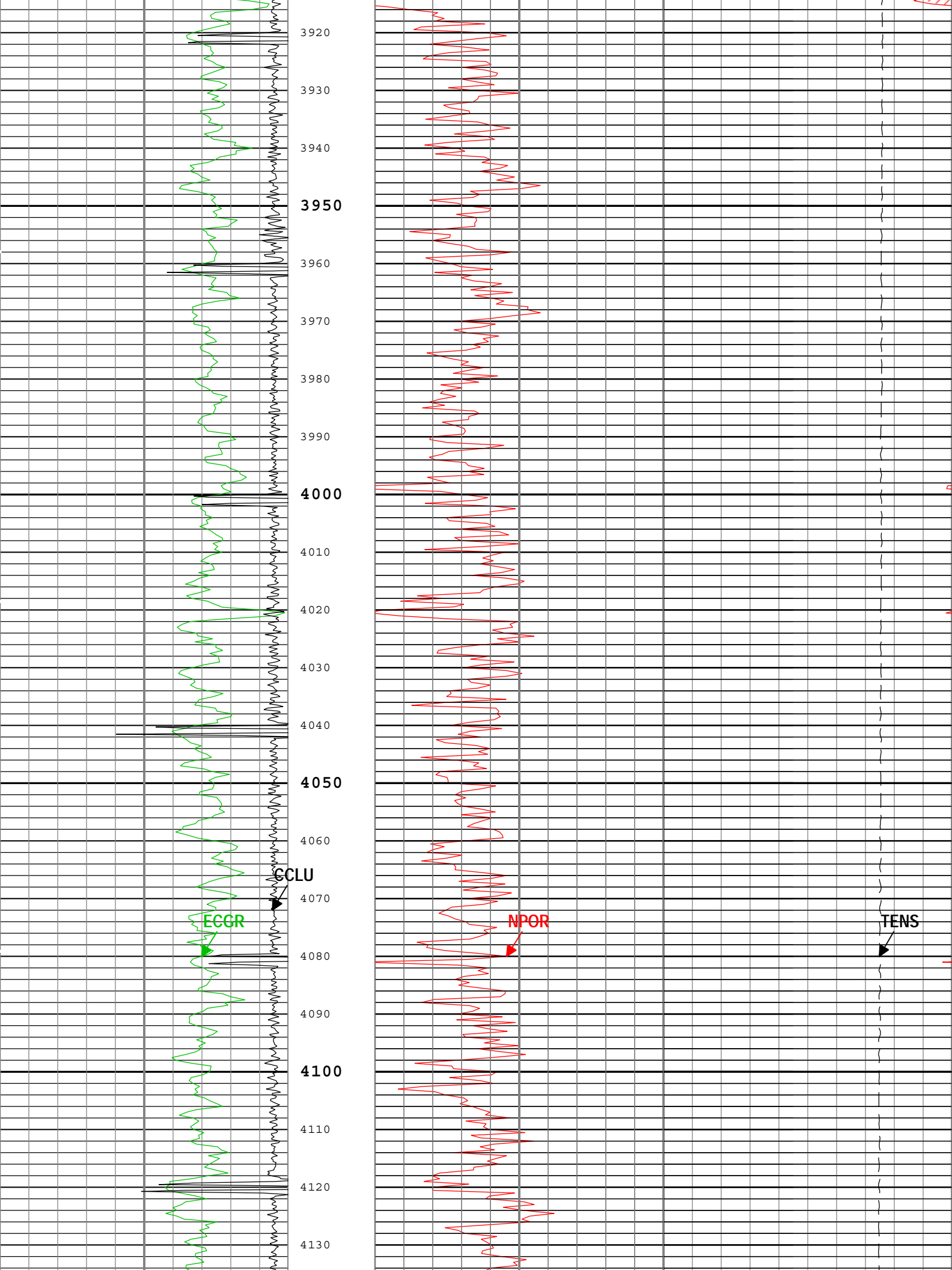


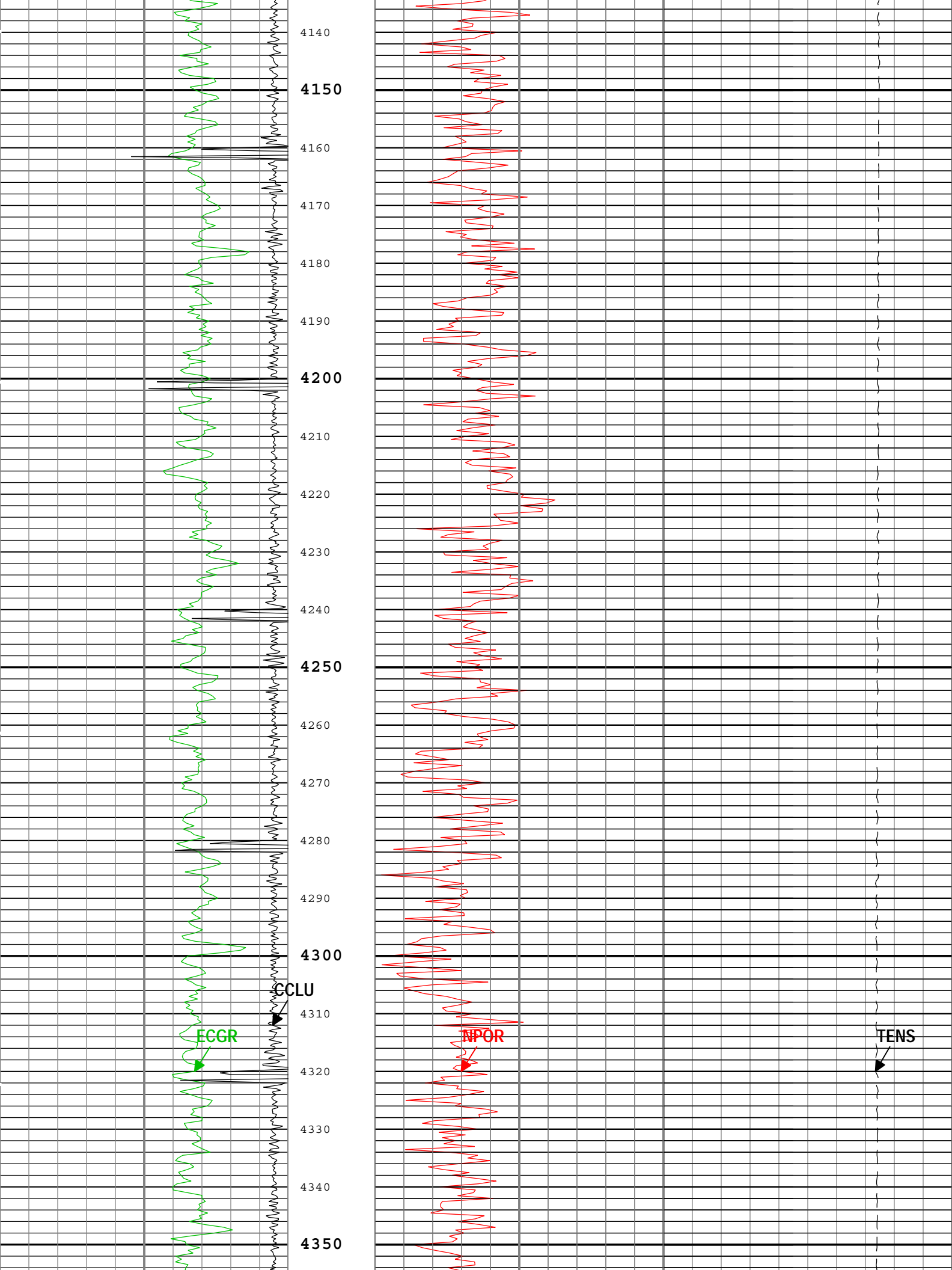


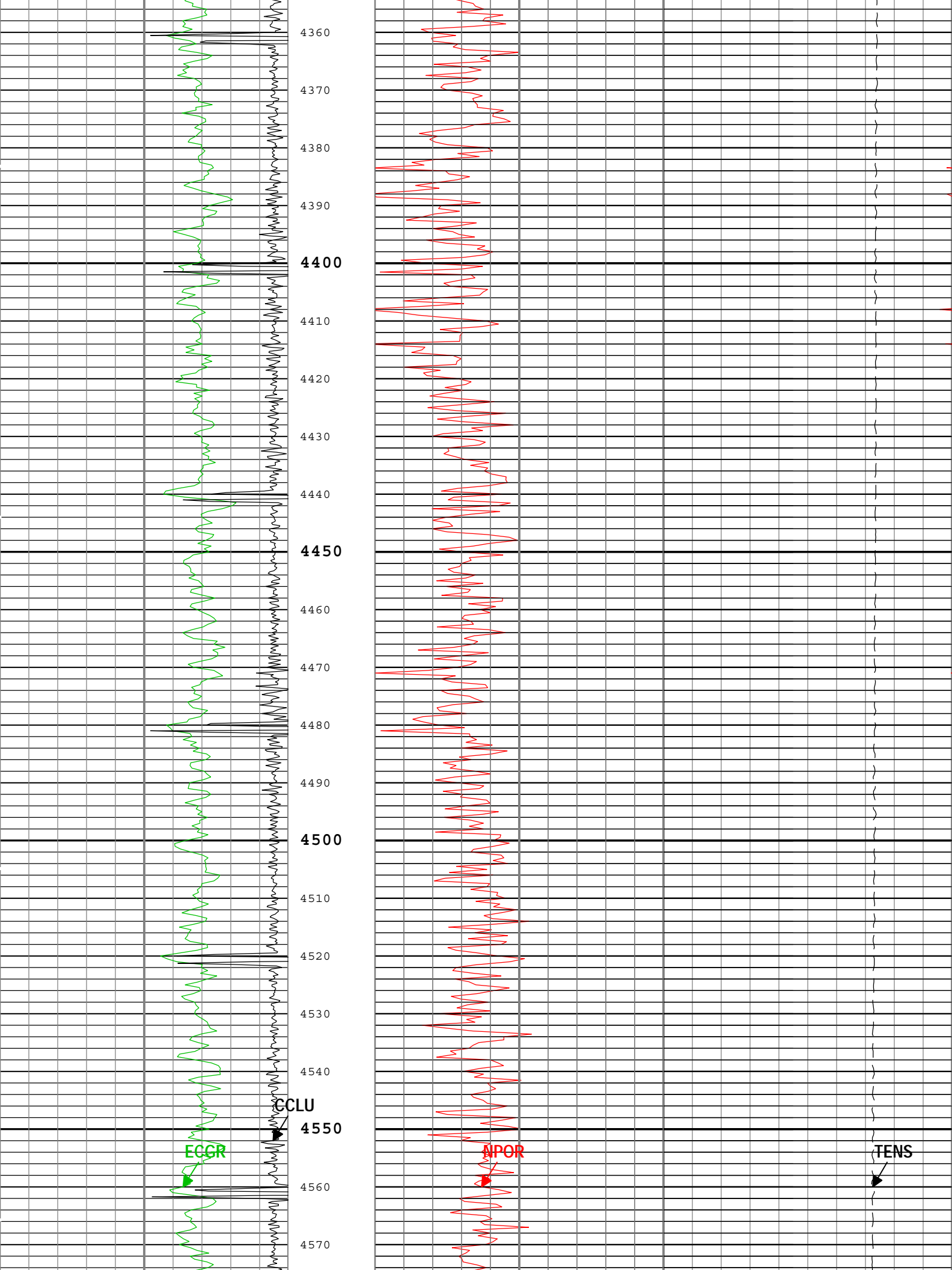


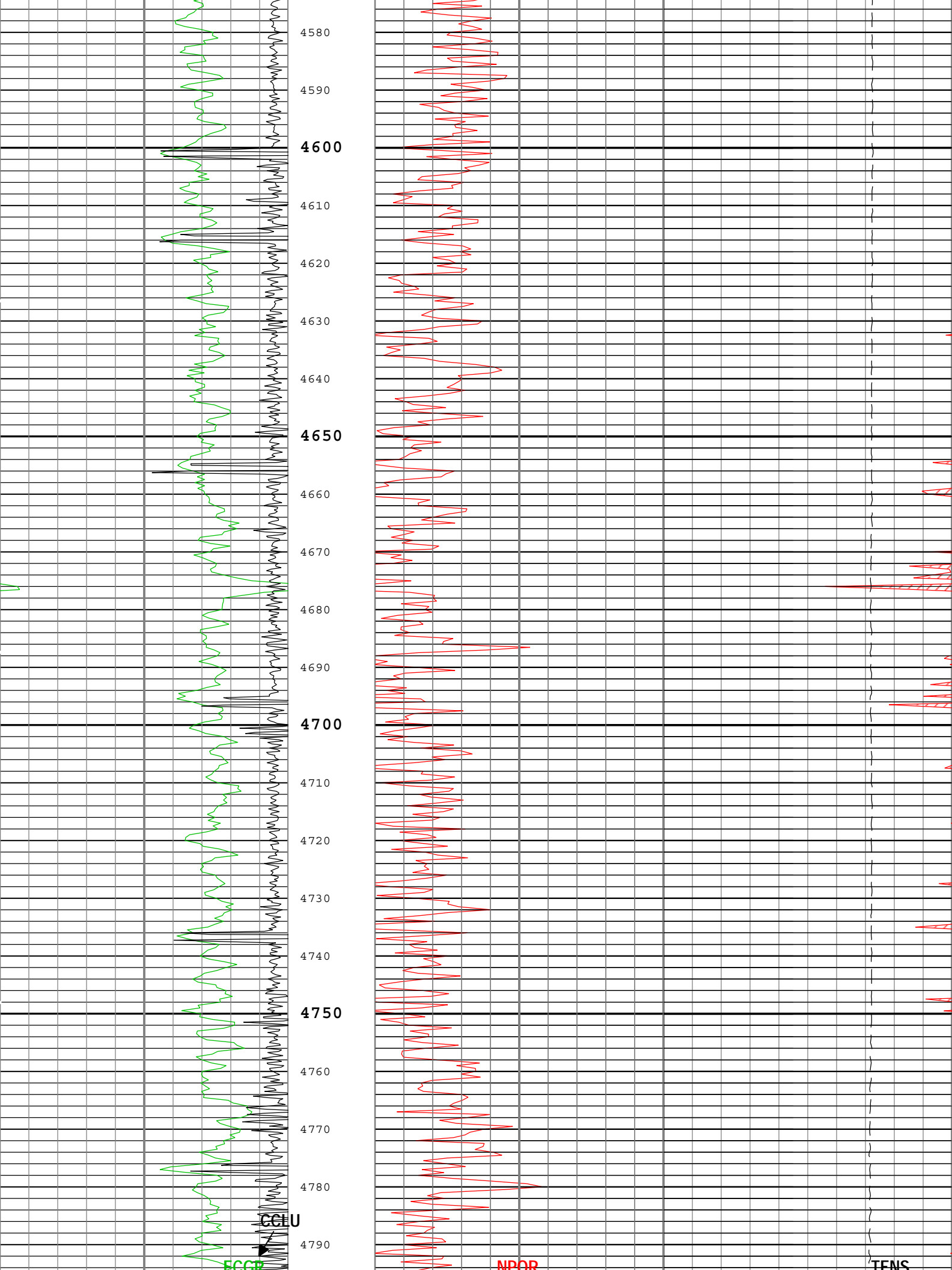


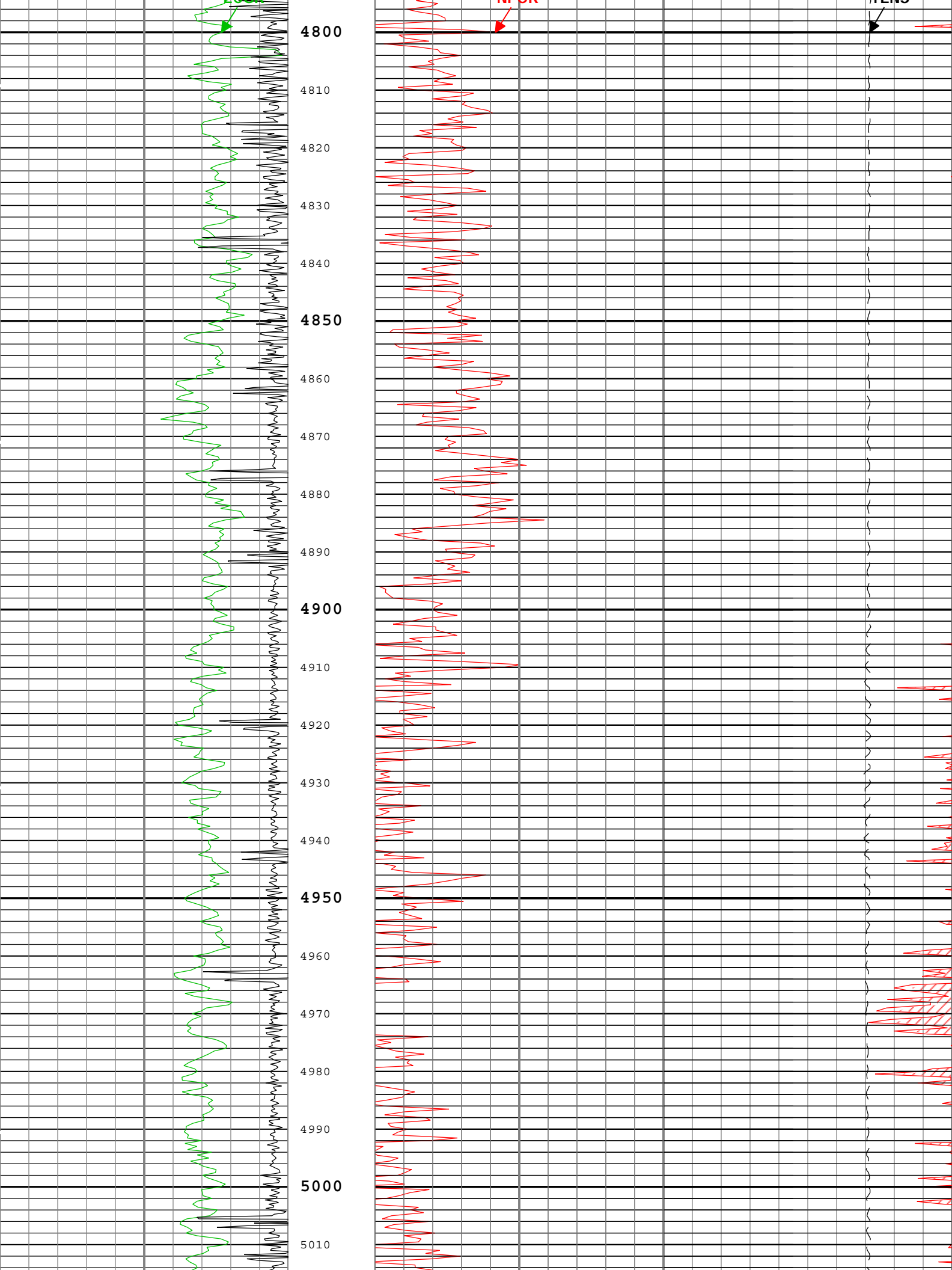


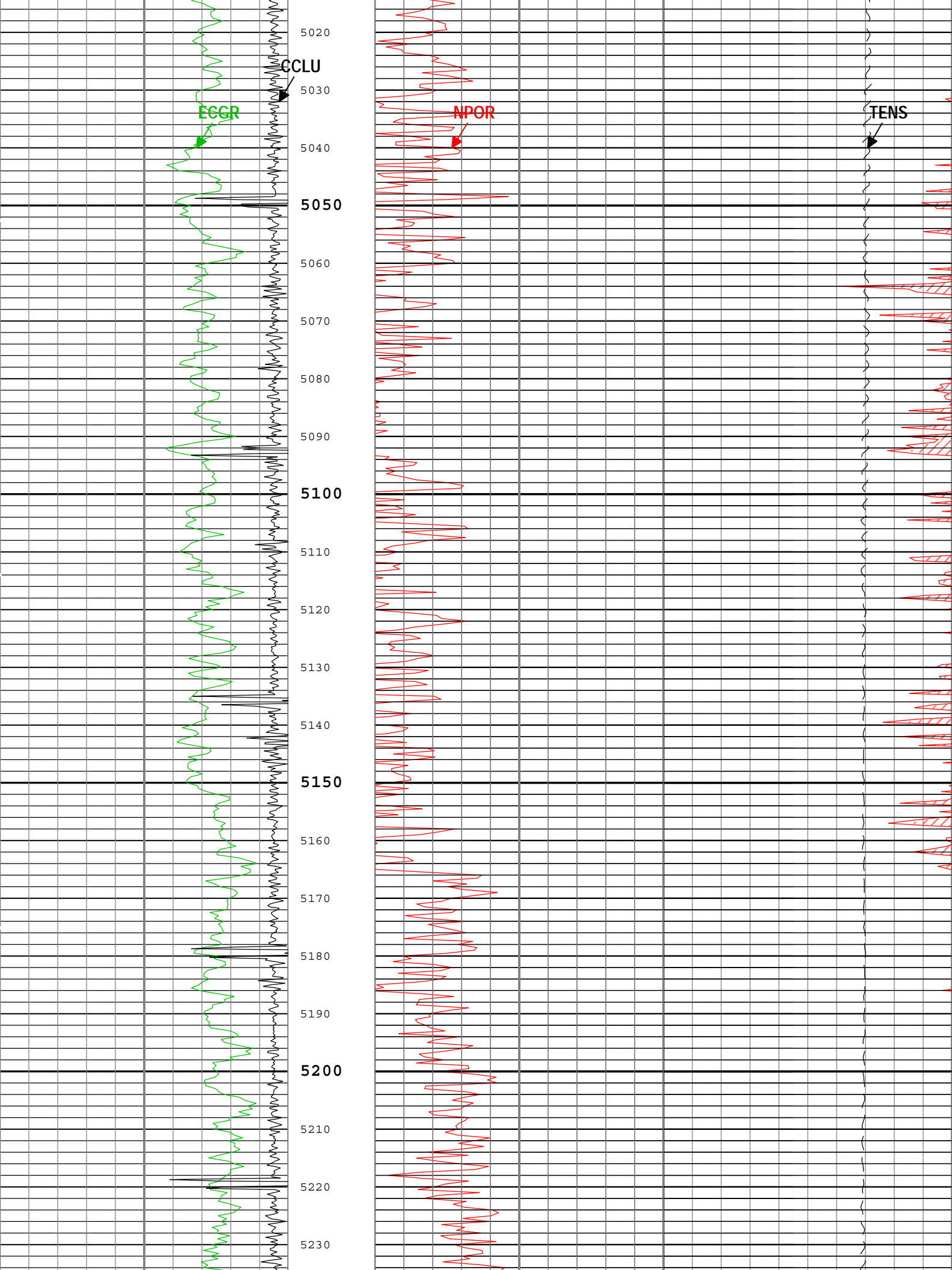


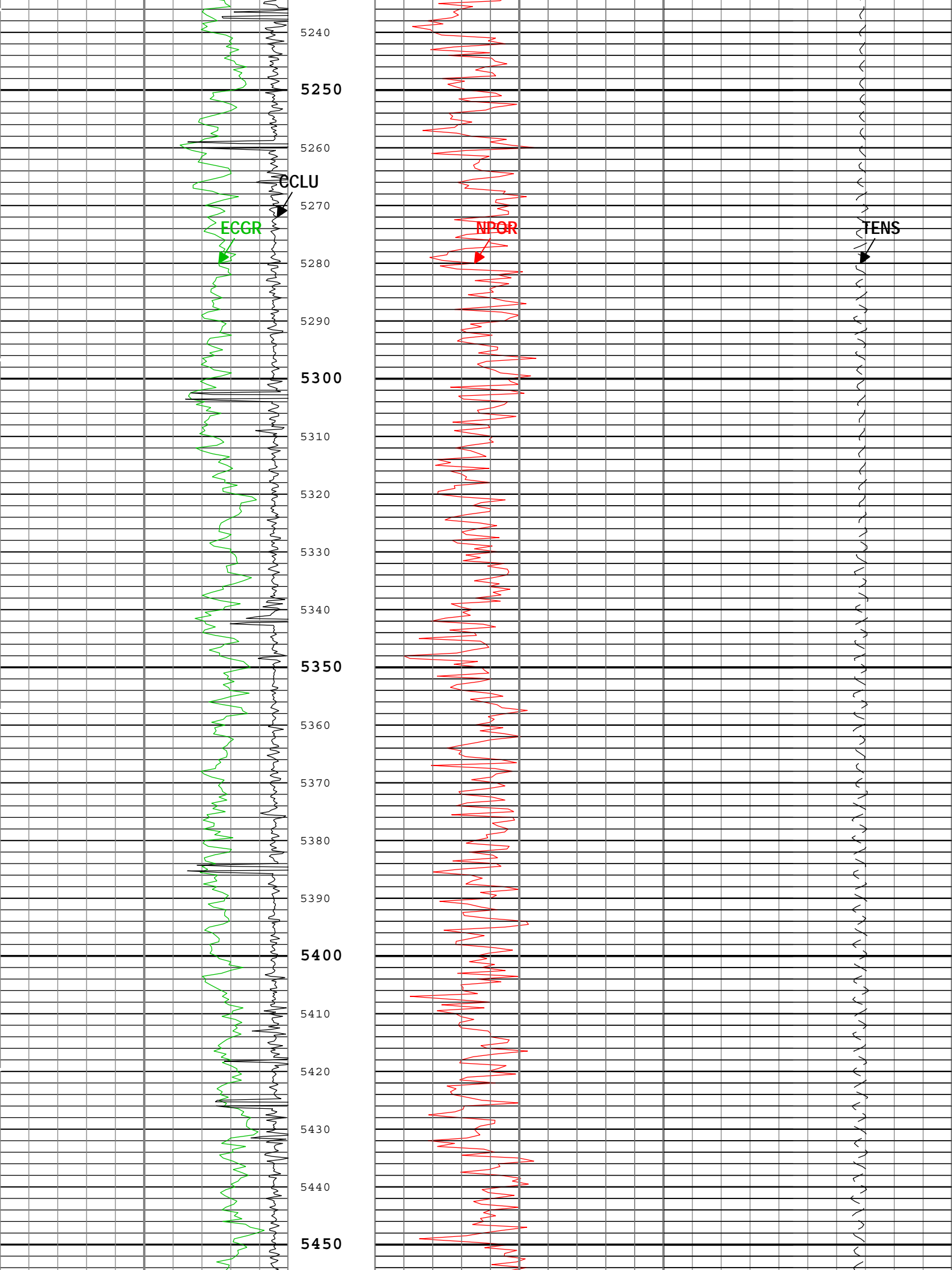


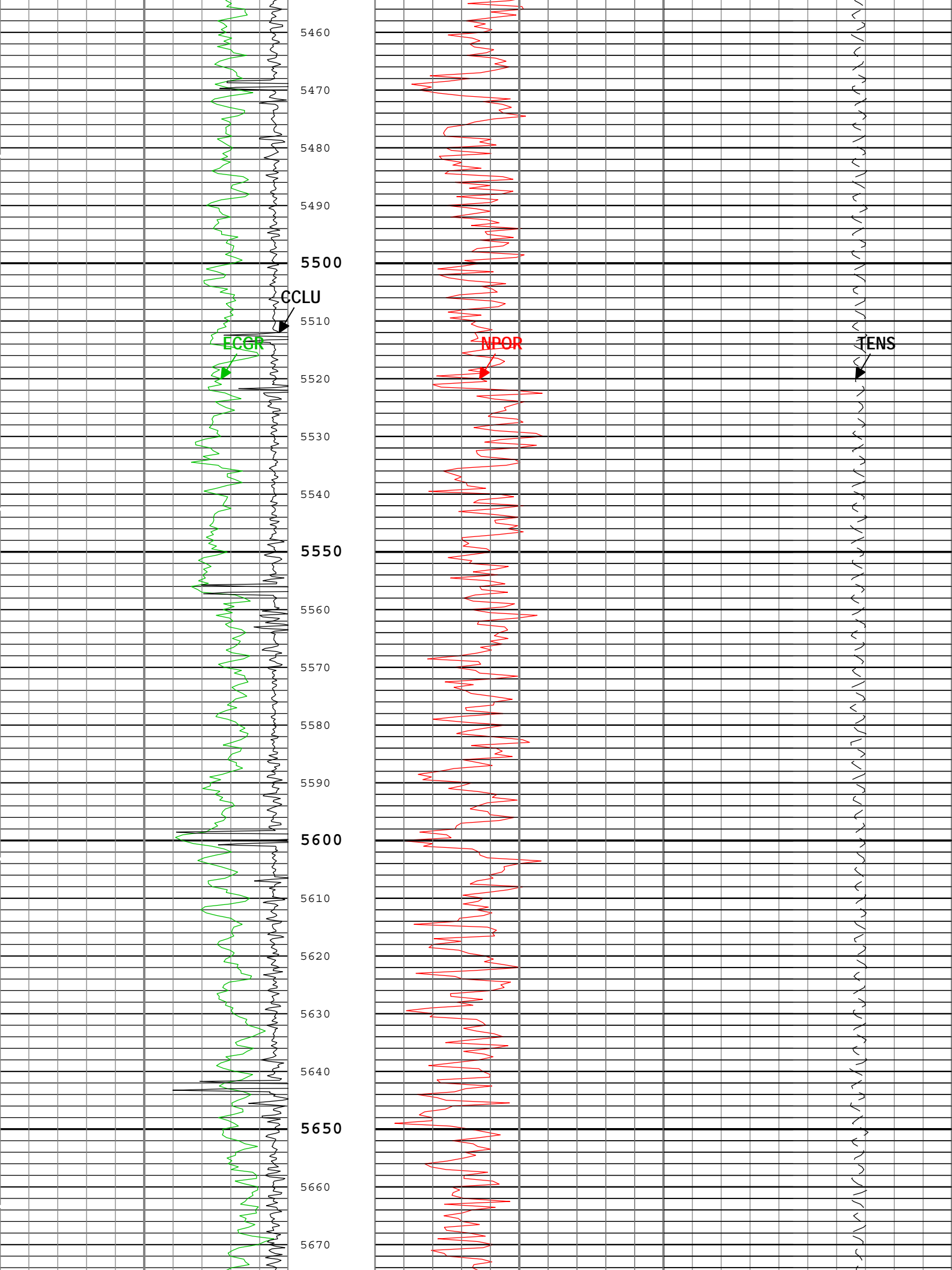


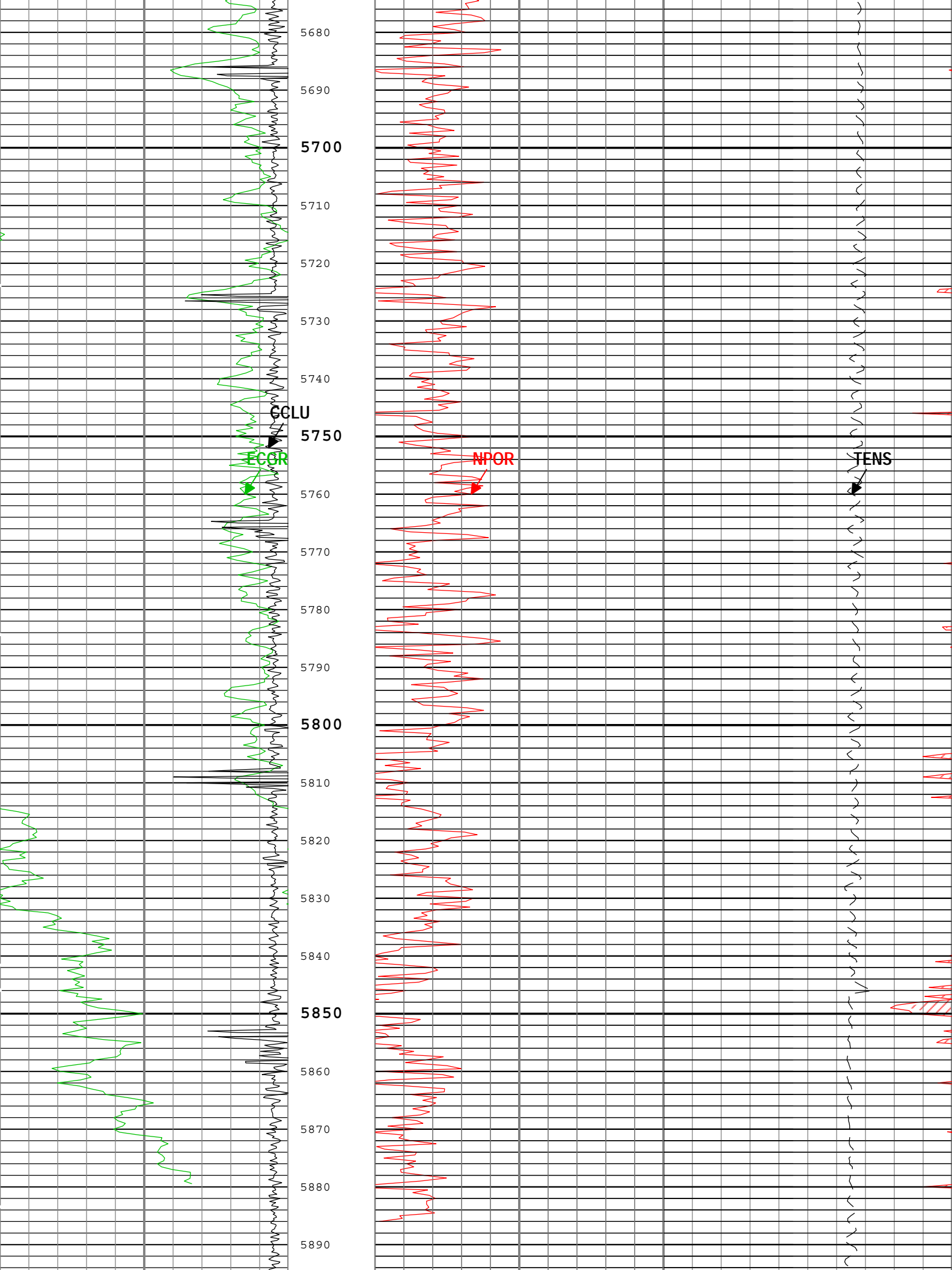












GR Backup

Gamma Ray (ECGR) HGNS[1]

0	gAPI	150
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Casing Collar Locator Ultrasonic (CCLU)
USIT-E[1]

-19	in	1
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└ ICV - Integrated Cement Volume every 10.00 (ft3)

—IHV - Integrated Hole Volume every 10.00 (ft3)

Channel Processing Parameters	
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ONE: 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	198	degF
BS	Bit Size	WLSESSION	8.5	in
BSAL	Borehole Salinity	Borehole	0	ppm
CBLO	Casing Bottom (Logger)	WLSESSION	6277	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	8.4	lbm/gal
DFT	Drilling Fluid Type	Borehole	Water	
DFT_WATER	Drilling Fluid Water Type	Borehole	Salt Brine	
DTMD	Borehole Fluid Slowness	Borehole	190	us/ft
FD	Fluid Density	USIT-E	1.01	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	
GRSE	Generalized Mud Resistivity Selection, from Measured or Computed Mud Resistivity	Borehole	REMS	
GTSE	Generalized Temperature Selection, from Measured or Computed Temperature	Borehole	CTEM	
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	SANDSTONE	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	22.5	us

MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	22.5	us
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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	1.13	
PTCO	Pressure Temperature Correction Option	HGNS-H	Yes	
RMFS	Resistivity of Mud Filtrate Sample	Borehole	0.15	ohm.m
RMS	Resistivity of Mud Sample	Borehole	0.2	ohm.m
HISC	Tool Position: Centered or Eccentered	HGNS-H	Centered	
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	Depth Zoned	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.2	Mrayl

<div> <div>ONE</div> <div>Depth Zoned Parameters</div> </div>			
Parameter	Value	Start (ft)	Stop (ft)
ZMUD	1.65	30.5	400
ZMUD	1.66	400	700
ZMUD	1.68	700	1000
ZMUD	1.7	1000	1500
ZMUD	1.72	1500	2000
ZMUD	1.74	2000	2500
ZMUD	1.76	2500	3000
ZMUD	1.77	3000	4000
ZMUD	1.78	4000	5908
All depth are actual.			

<div> <div>Tool Control Parameters</div> </div>	
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<div> <div>ONE: Parameters</div> </div>				
Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	36	dB
U-USIT_DDT5	USIC Downhole Decimation for T5 only	USIT-E	0_NONE	
EMXV	EMEX Voltage	USIT-E	50	V
HMCA_BOARD_TYPE	HMCA Board Type	HGNS-H	1	
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	Time Zoned	ft
VRES	Vertical Resolution	USIT-E	3.0 in	
WINB	Window Begin Time	USIT-E	33.86	us
WINE	Window End Time	USIT-E	Time Zoned	us

ONETime Zoned Parameters

Pass Main[3]:Up

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
WINE	73.87	11-Sep-2015 17:01:26	11-Sep-2015 18:33:51	5907.88	633.92
WINE	217	11-Sep-2015 18:33:51	11-Sep-2015 18:33:55	633.92	630.05
WINE	109.48	11-Sep-2015 18:33:55	11-Sep-2015 18:34:15	630.05	610.07
WINE	91.83	11-Sep-2015 18:34:15	11-Sep-2015 18:35:00	610.07	565.59
WINE	78.02	11-Sep-2015 18:35:00	11-Sep-2015 18:37:00	565.59	447.16
WINE	74.95	11-Sep-2015 18:37:00	11-Sep-2015 18:37:51	447.16	428.42

Pass Log[4]:Up

WINE	73.87	11-Sep-2015 18:44:24	11-Sep-2015 18:55:17	679.46	58.63
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All depth are at tool zero.

Composite 1

Software Version

Acquisition System	Version
Maxwell 2014 SP3	5.3.47551.3100

Composite Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Repeat[2]:Up	Up	5589.63 ft	5907.32 ft	11-Sep-2015 4:52:53 PM	11-Sep-2015 4:59:05 PM	ON	6.77 ft	No
ONE	Main[3]:Up	Up	395.95 ft	5908.30 ft	11-Sep-2015 5:01:26 PM	11-Sep-2015 6:37:51 PM	ON	8.09 ft	No
ONE	Log[4]:Up	Up	58.48 ft	708.97 ft	11-Sep-2015 6:43:43 PM	11-Sep-2015 6:55:17 PM	ON	7.94 ft	No

All depths are referenced to toolstring zero

Log

Company:Noble Energy Inc Well:Greyson LD28-753
Composite 1:S004

Description: AIT Basic Log Two Format: Noble Nuclear RA Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 11-Sep-2015 19:15:22

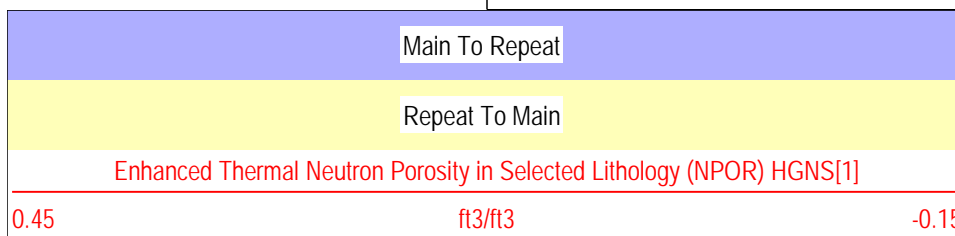
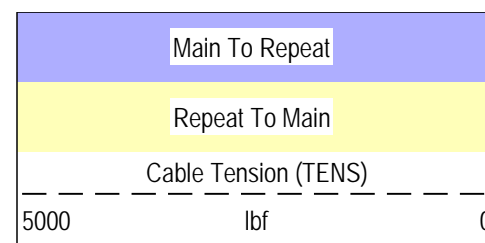
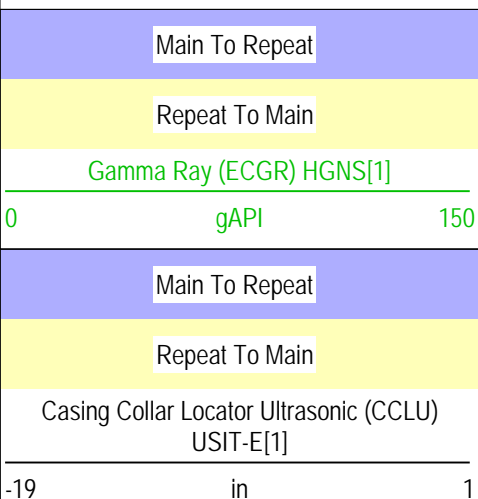
TIME_1900 - Time Marked every 60.00 (s)

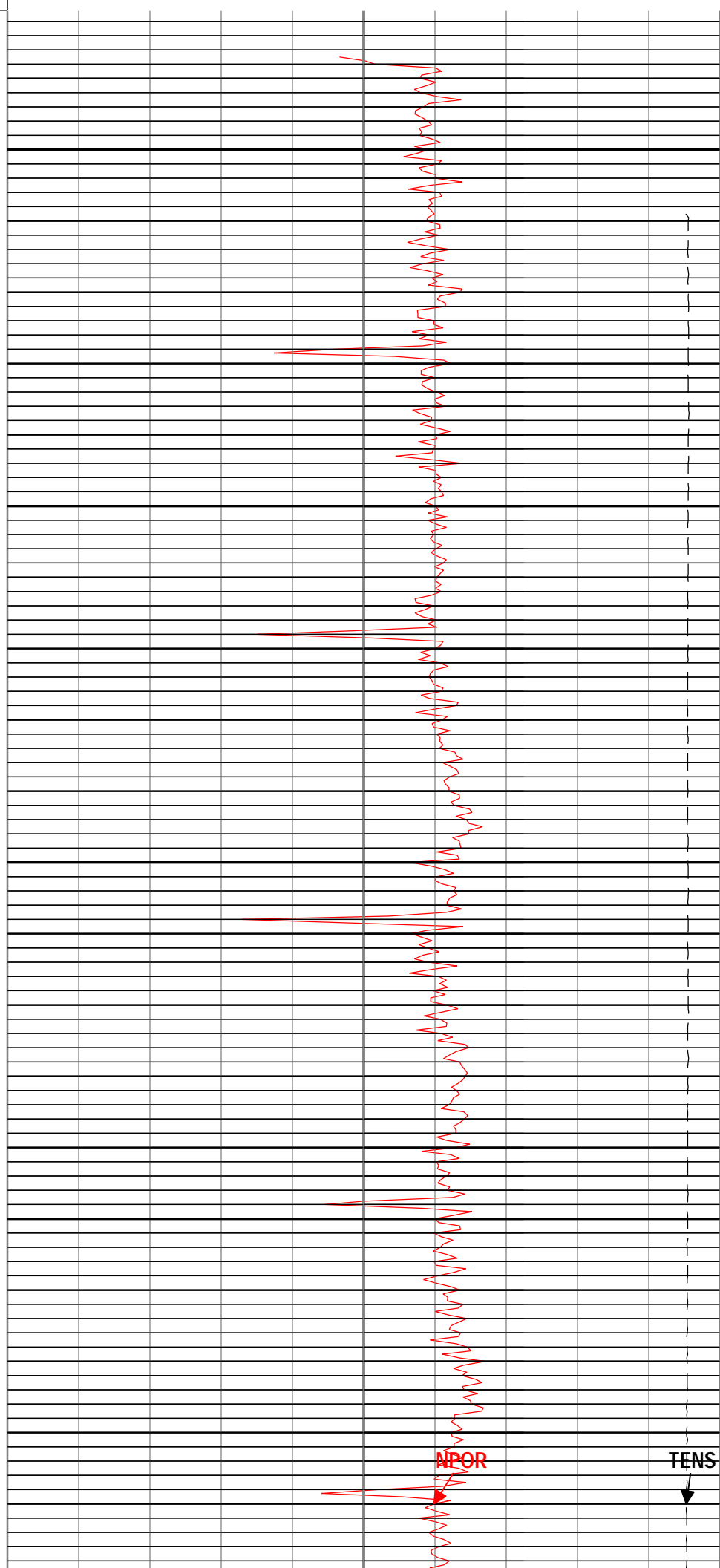
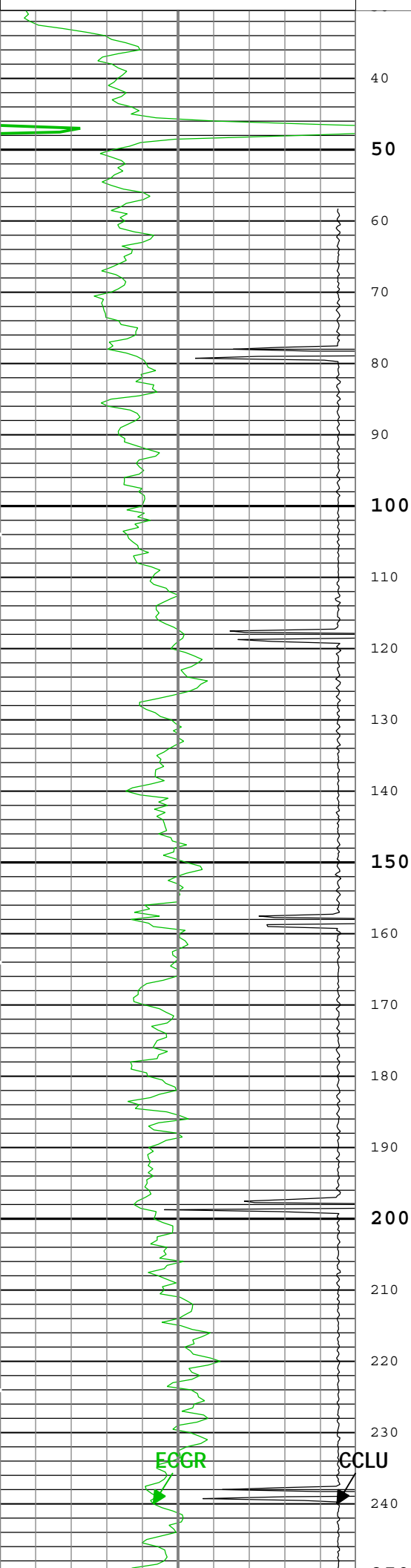
—IHV - Integrated Hole Volume every 10.00 (ft3)

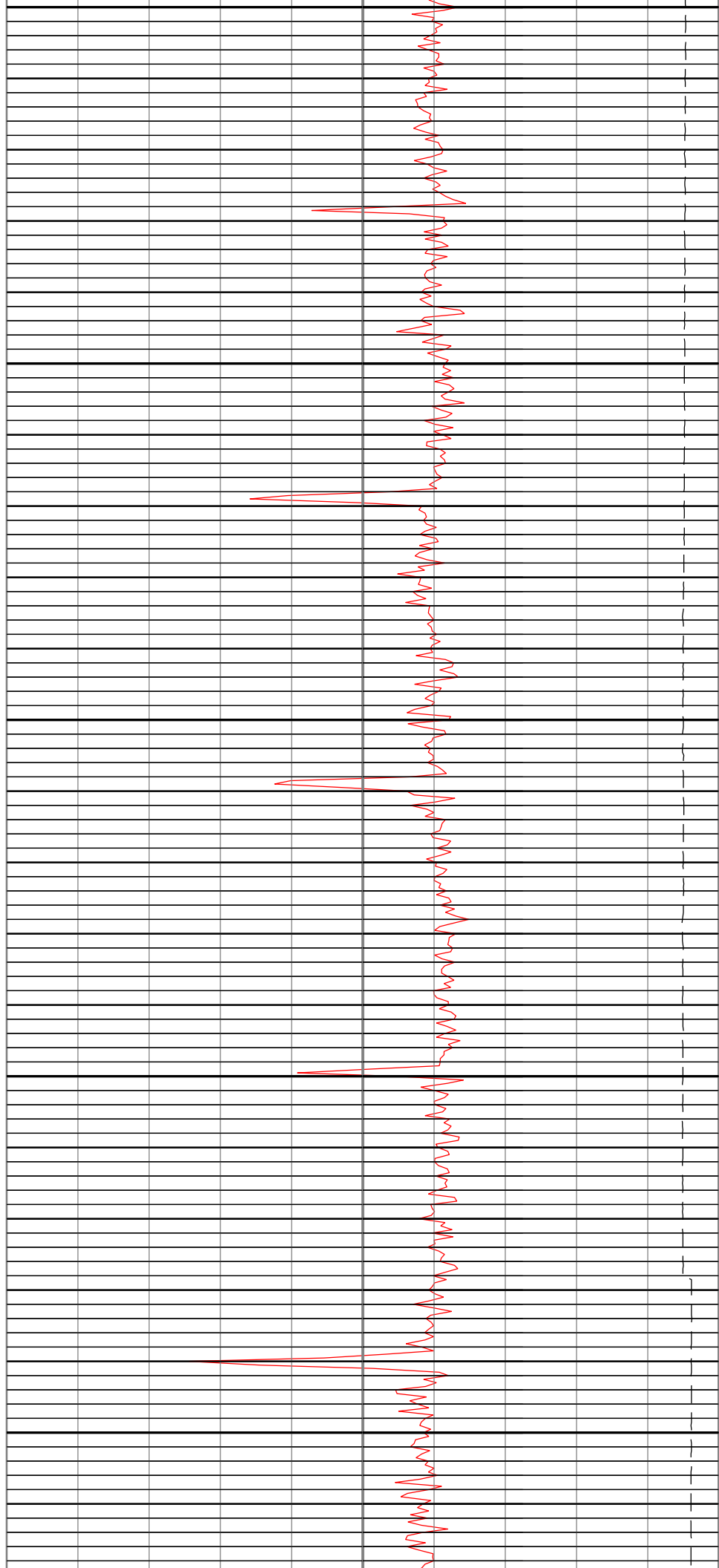
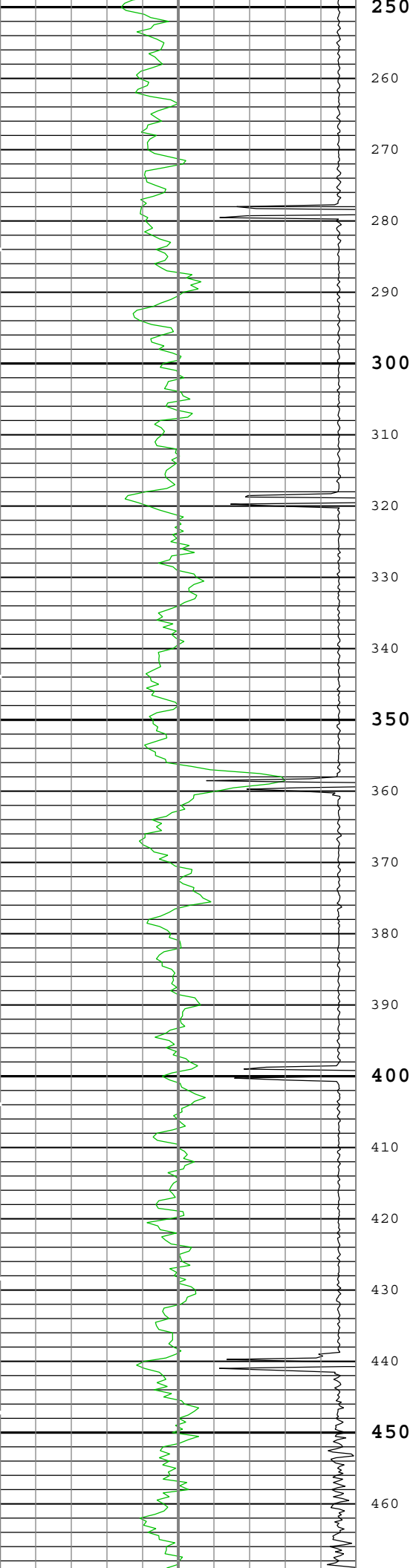
—IHV - Integrated Hole Volume every 100.00 (ft3)

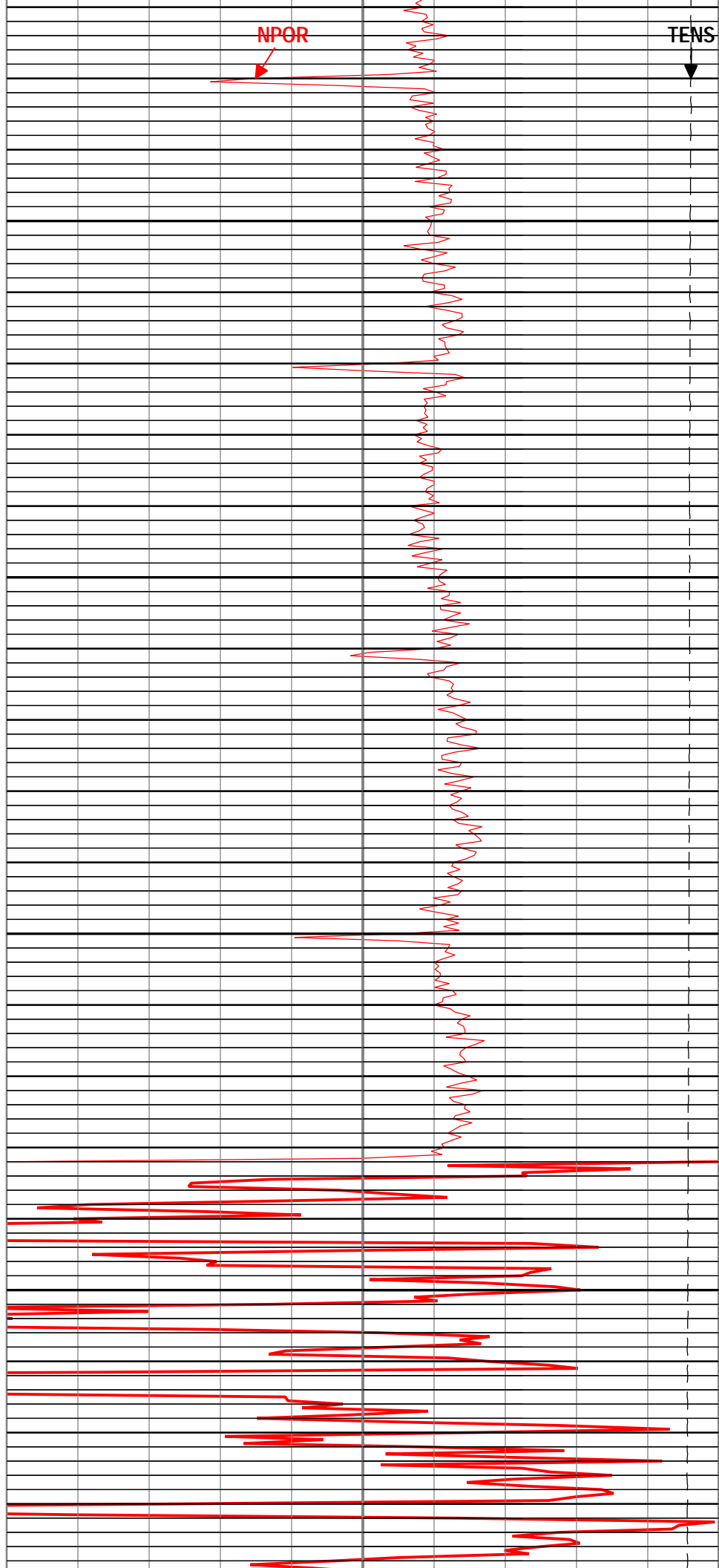
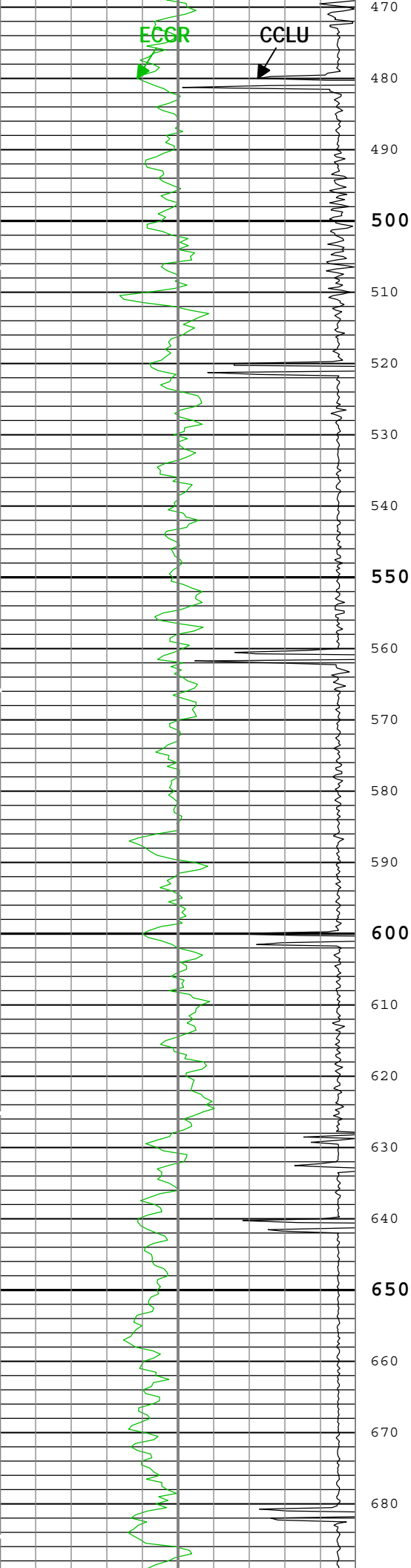
—ICV - Integrated Cement Volume every 10.00 (ft3)

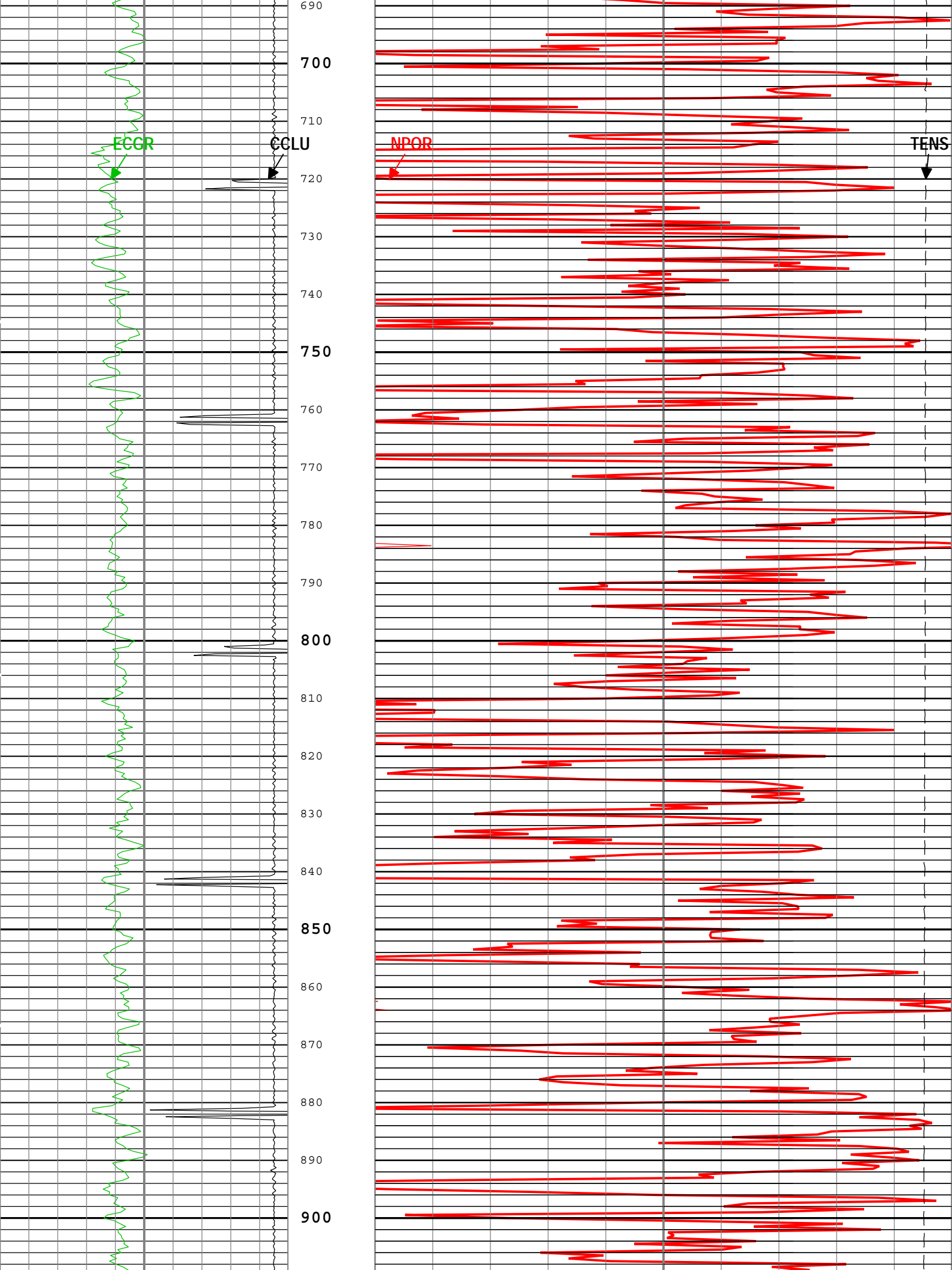
—ICV - Integrated Cement Volume every 100.00 (ft3)

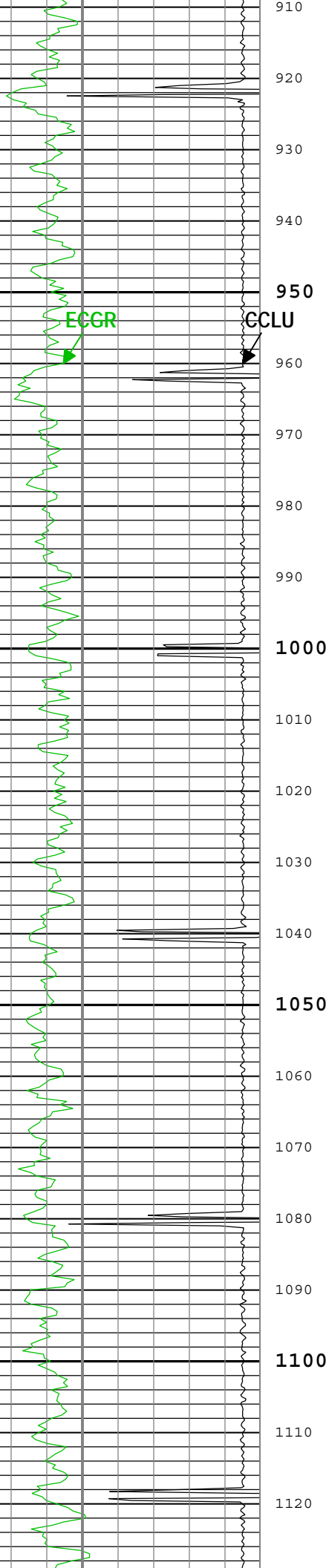




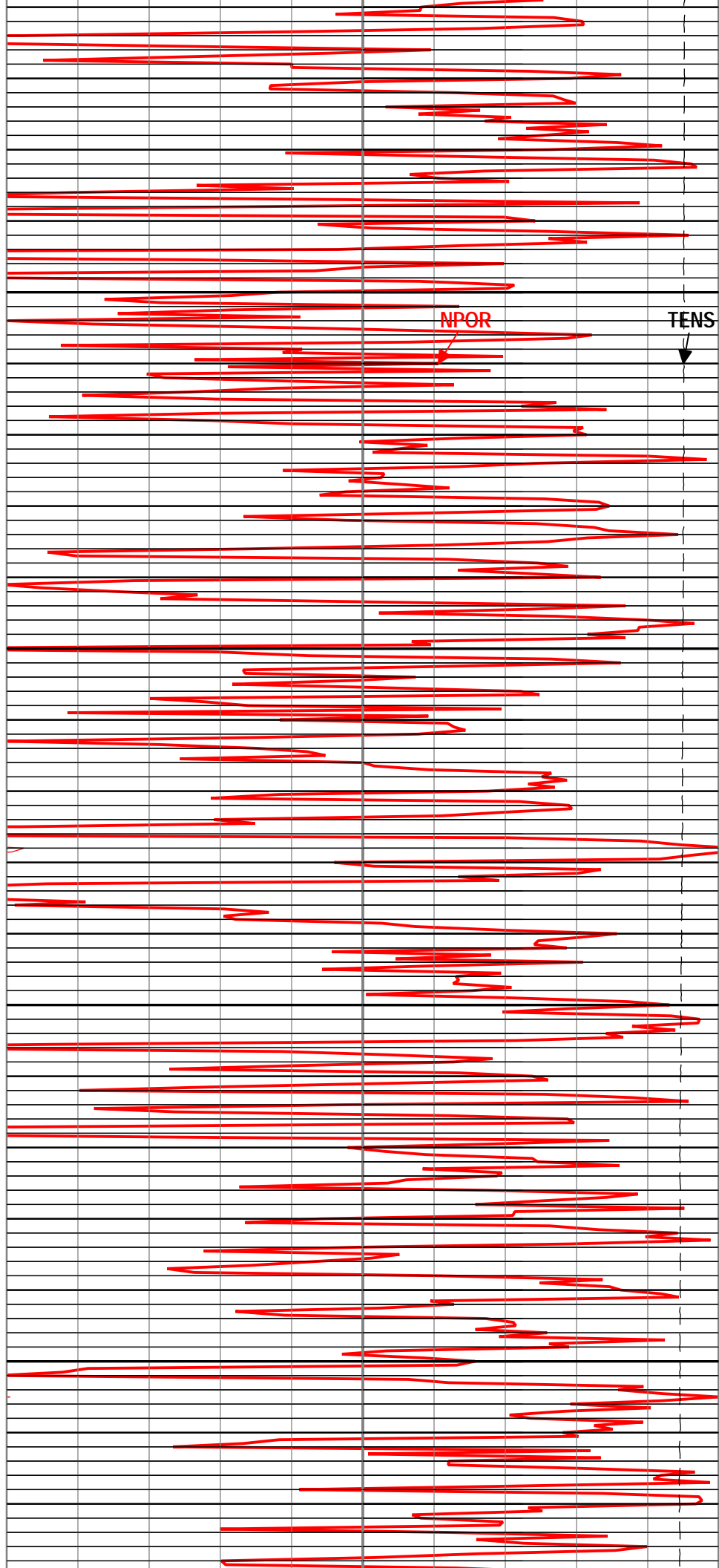


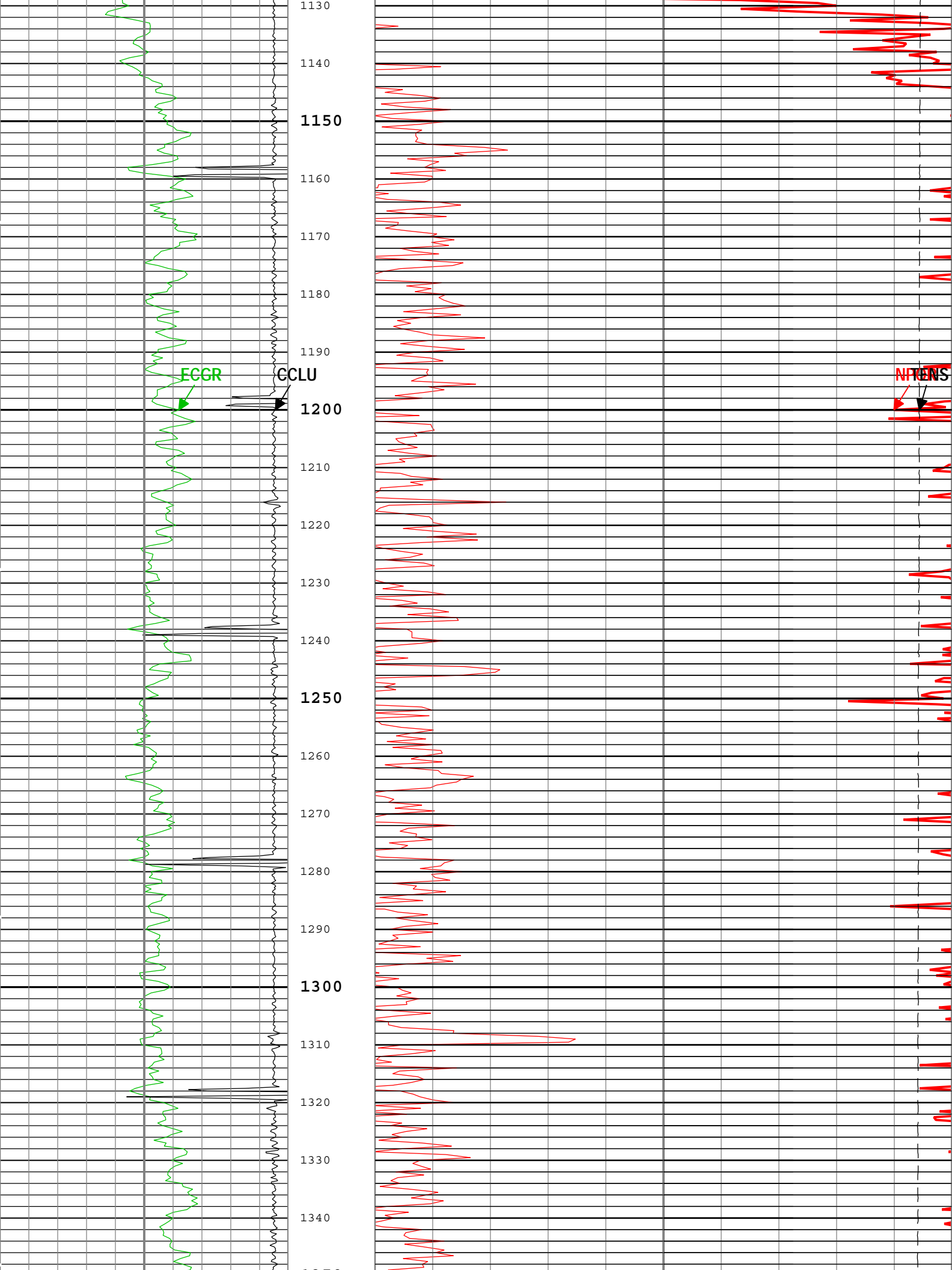


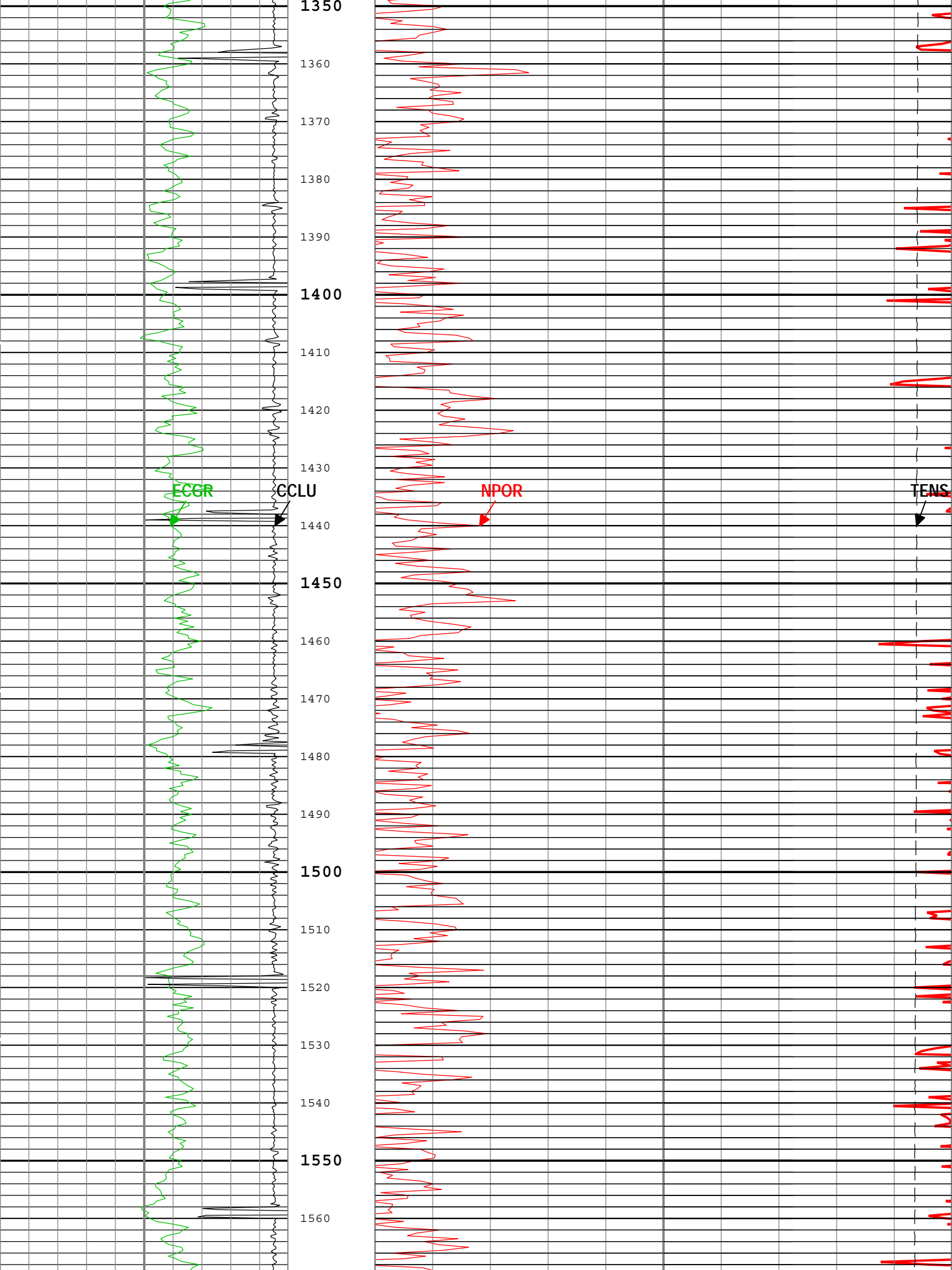


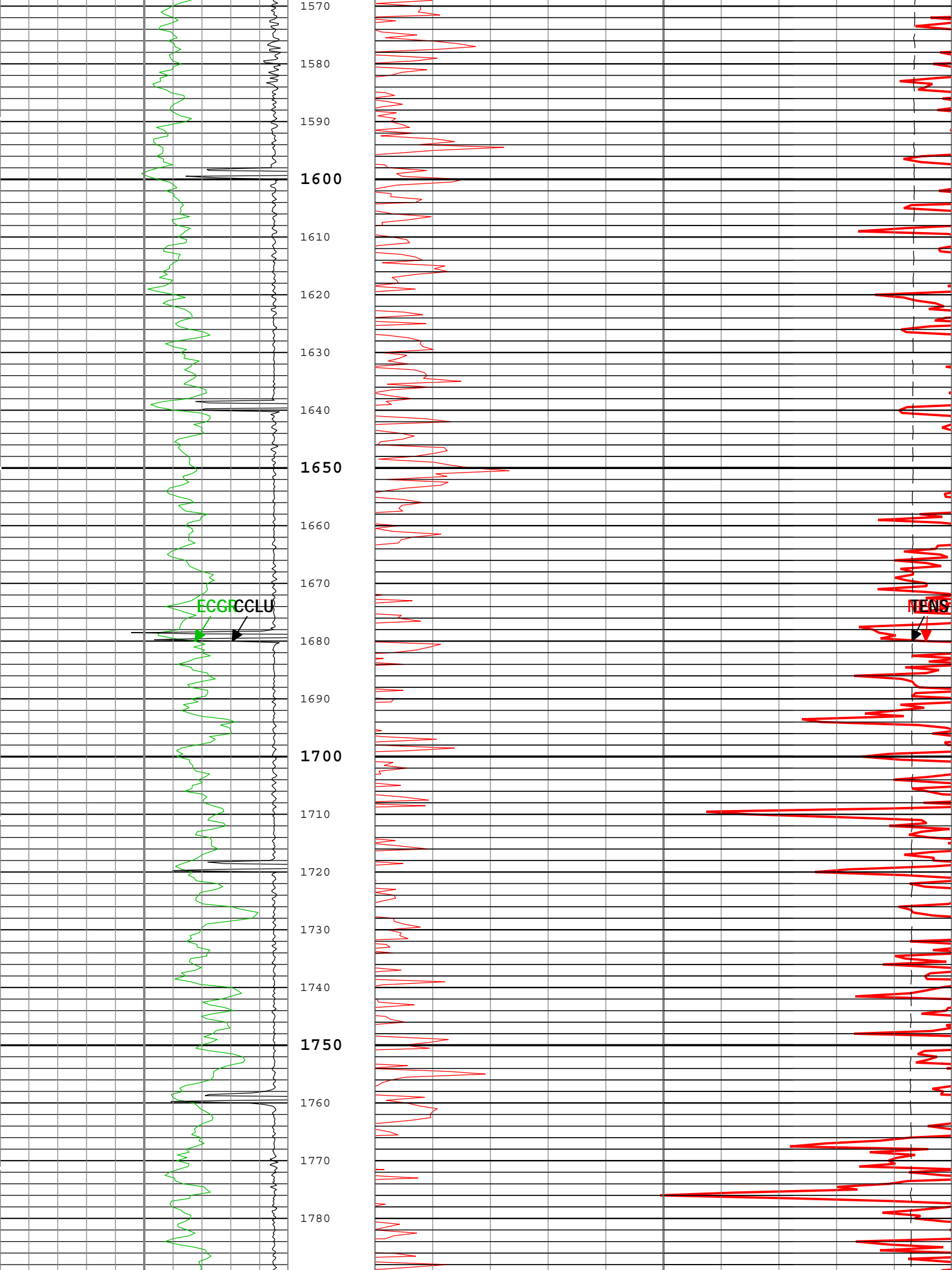


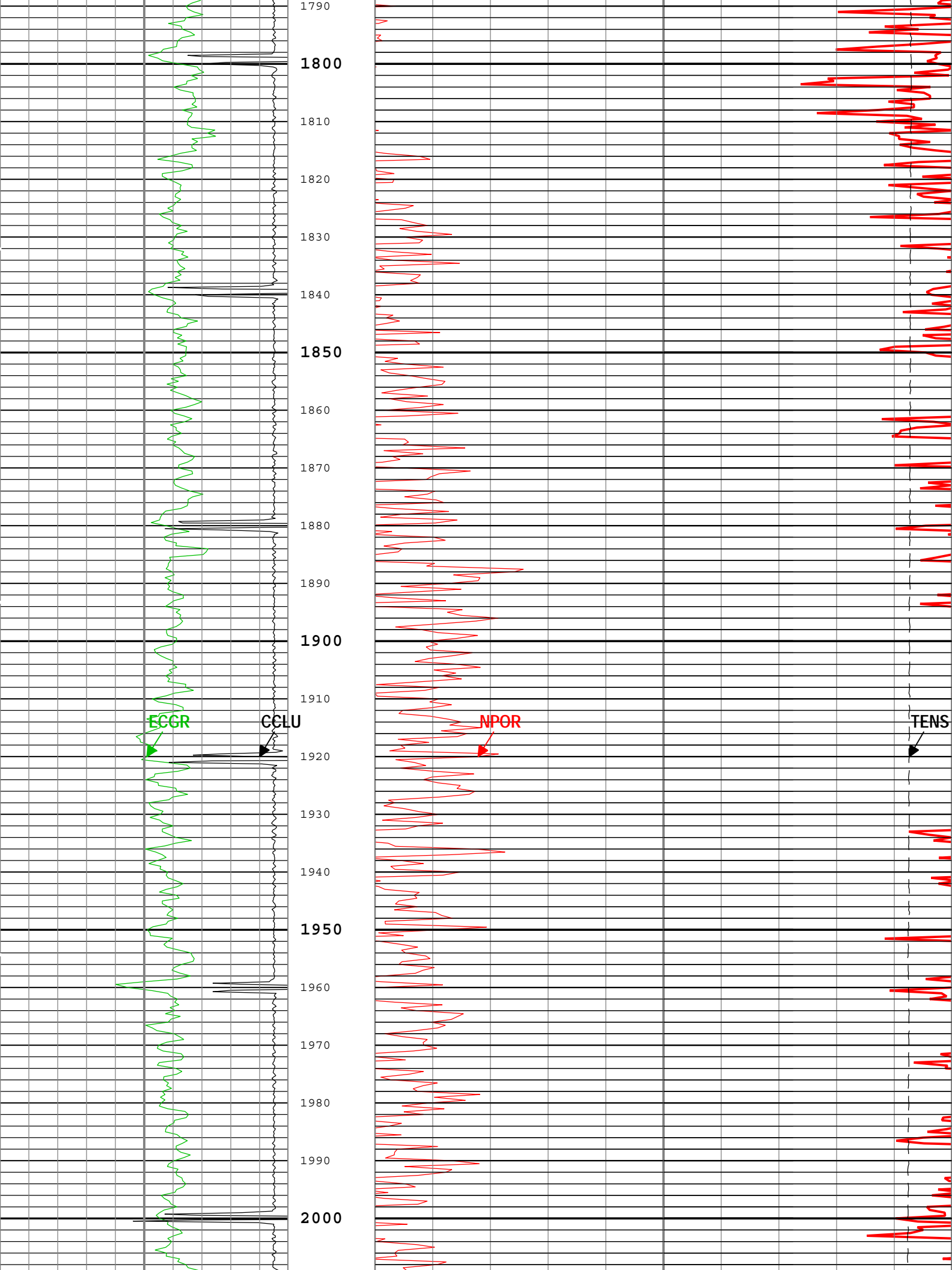
910
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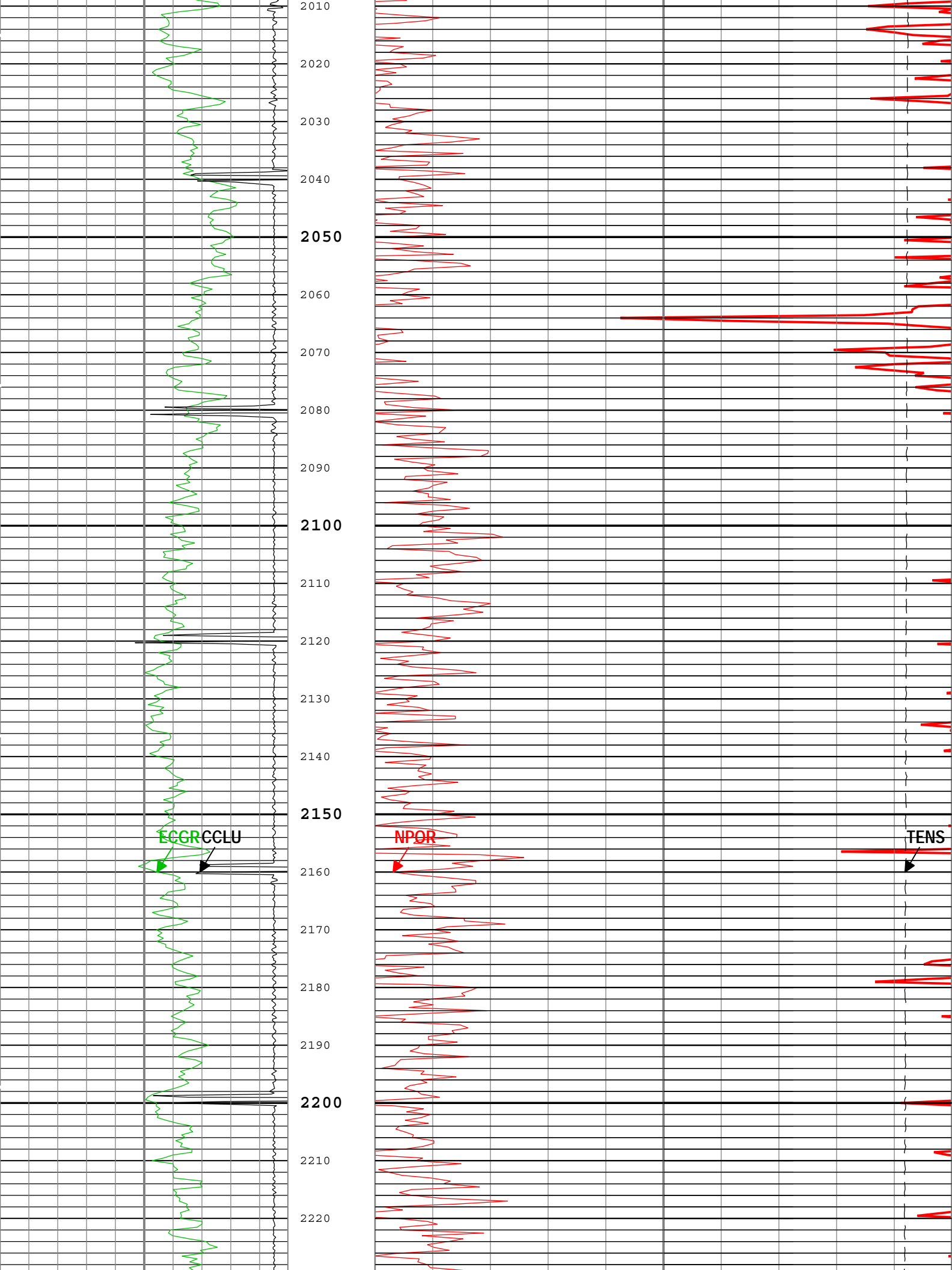


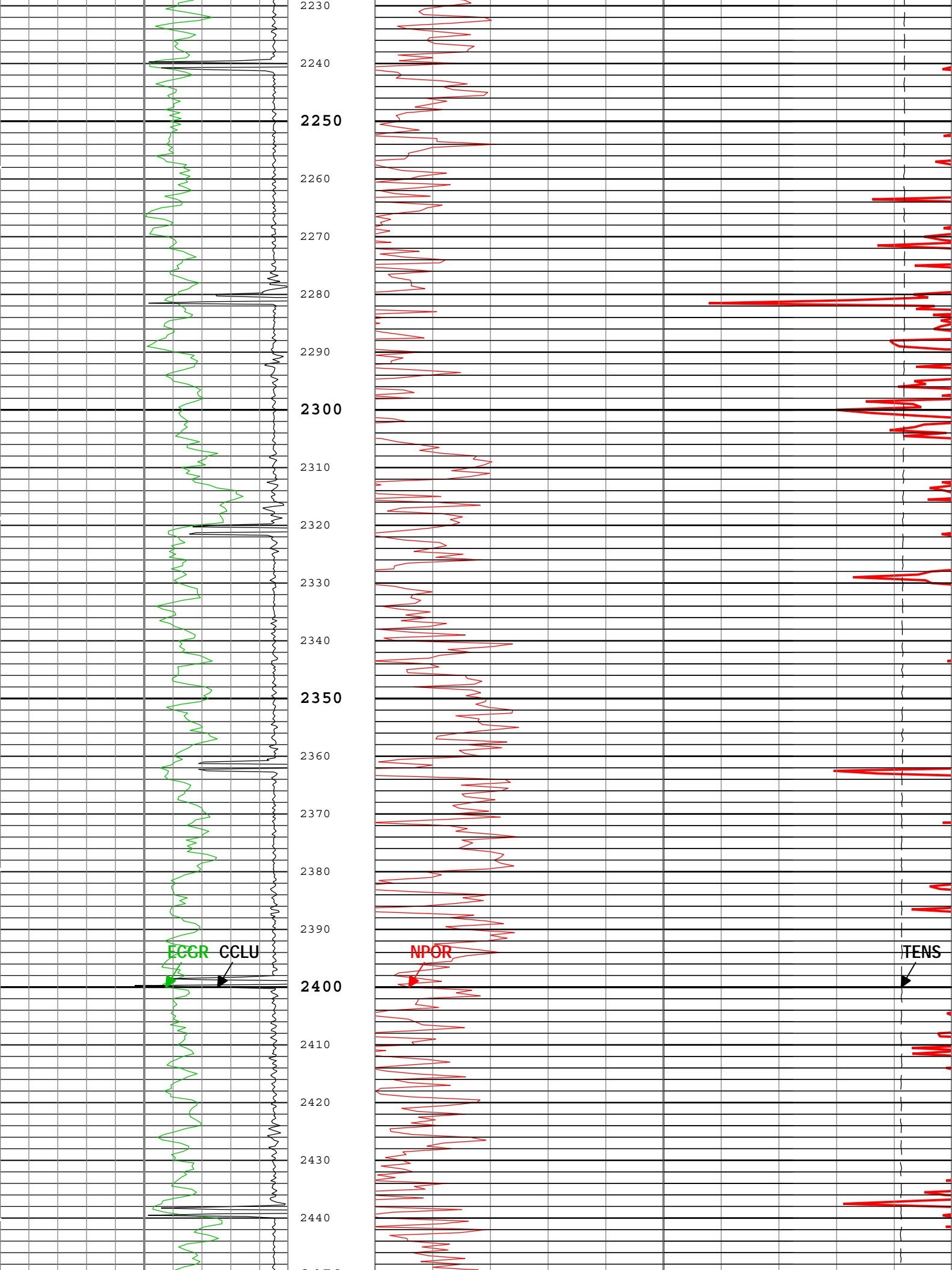


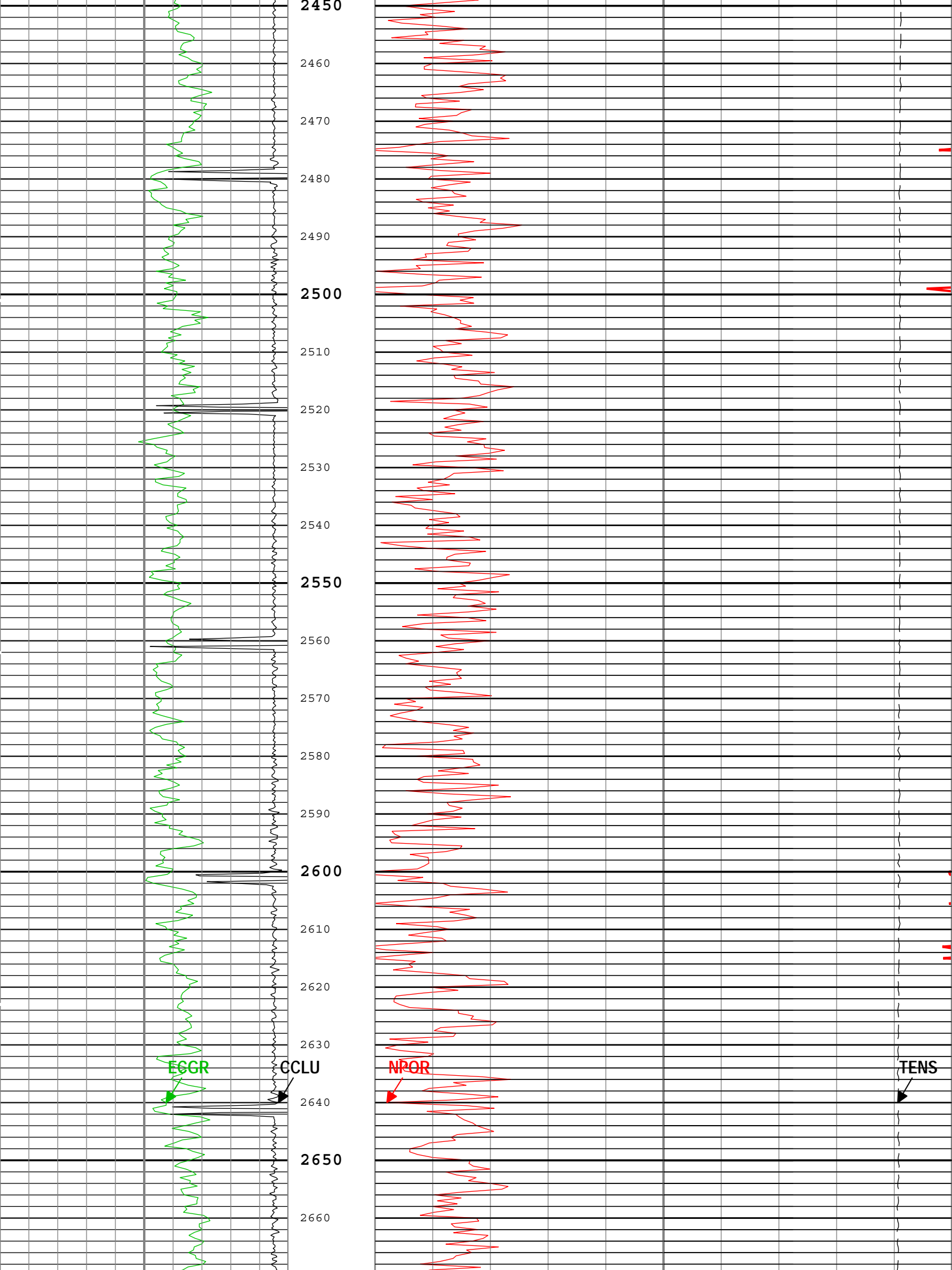


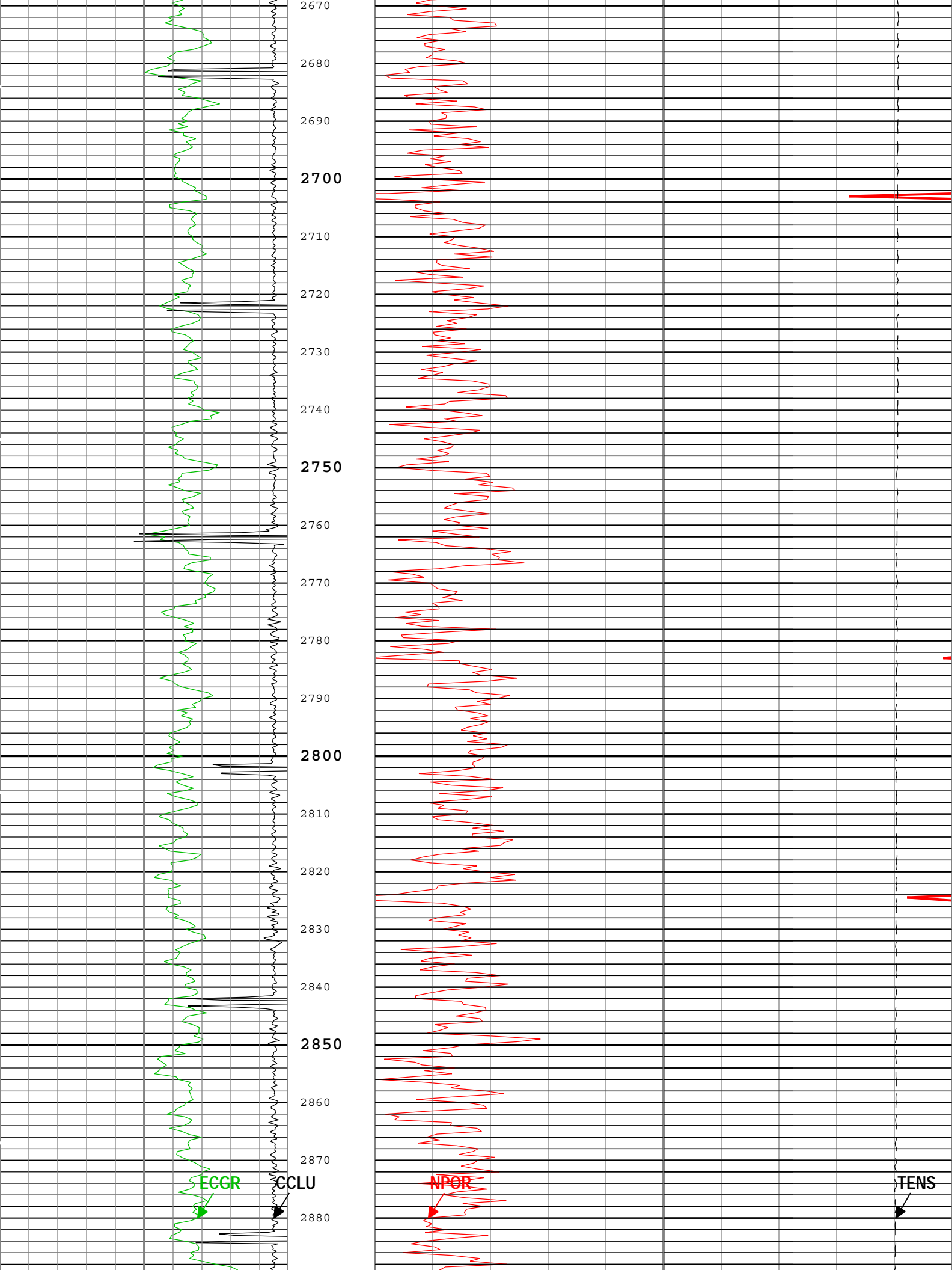


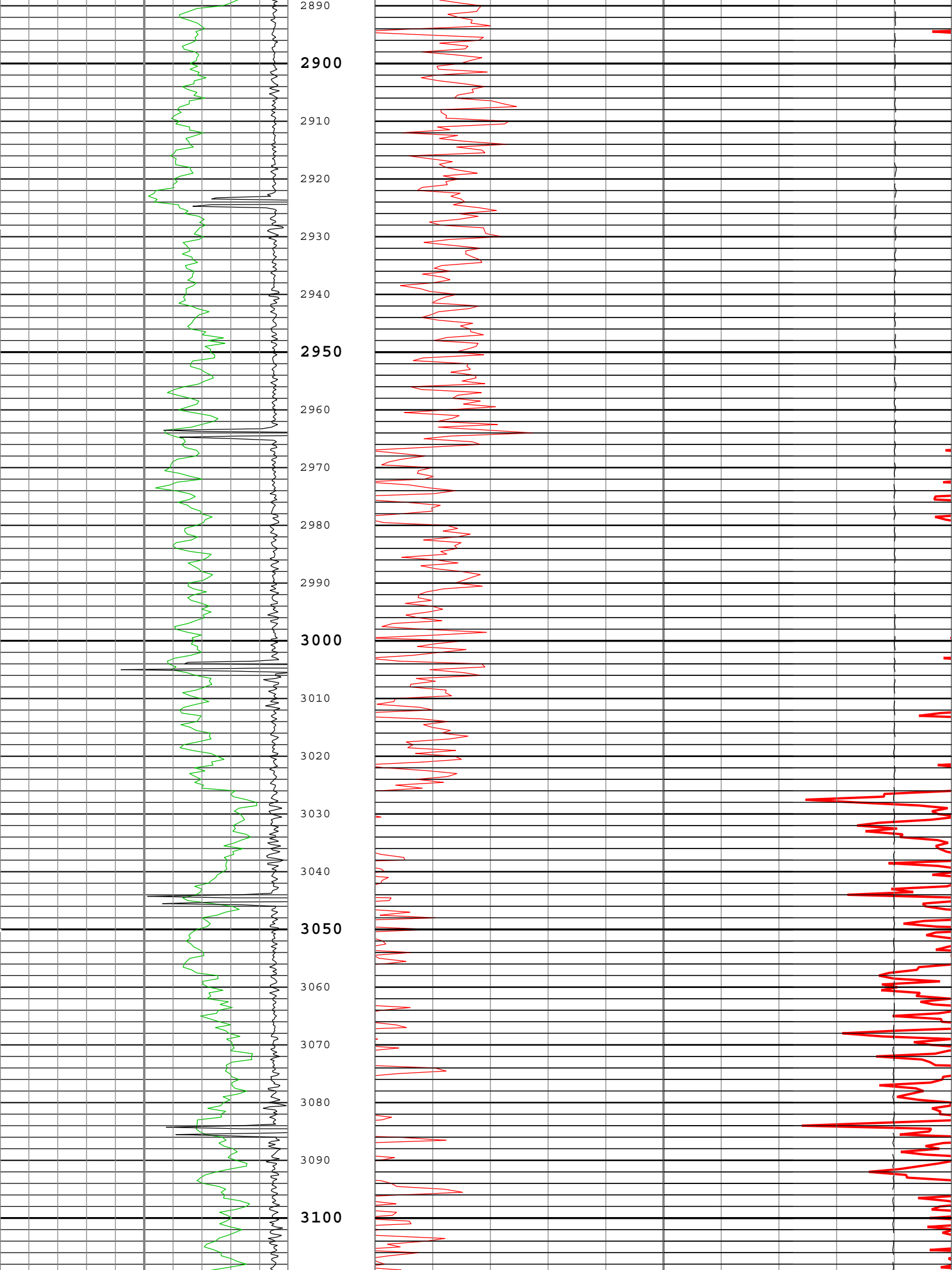


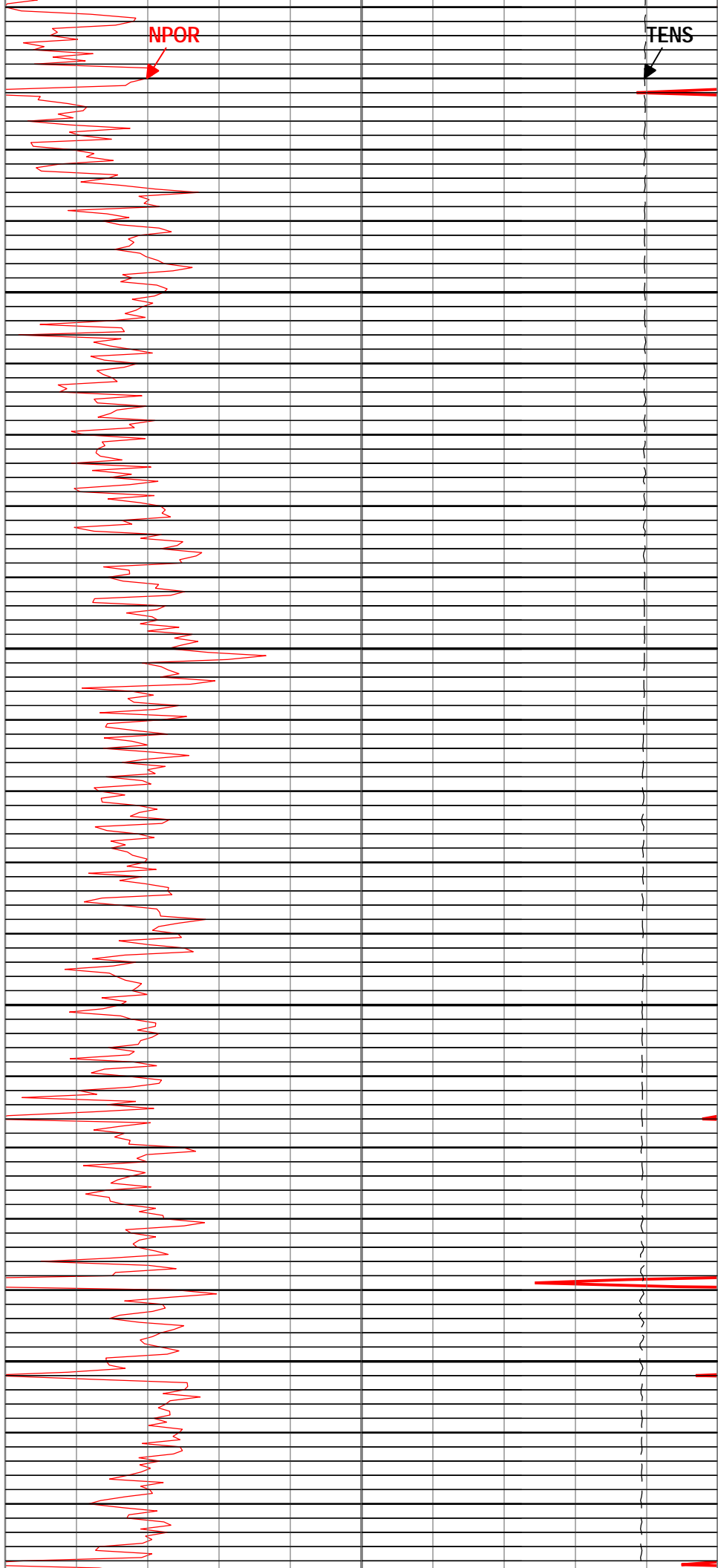
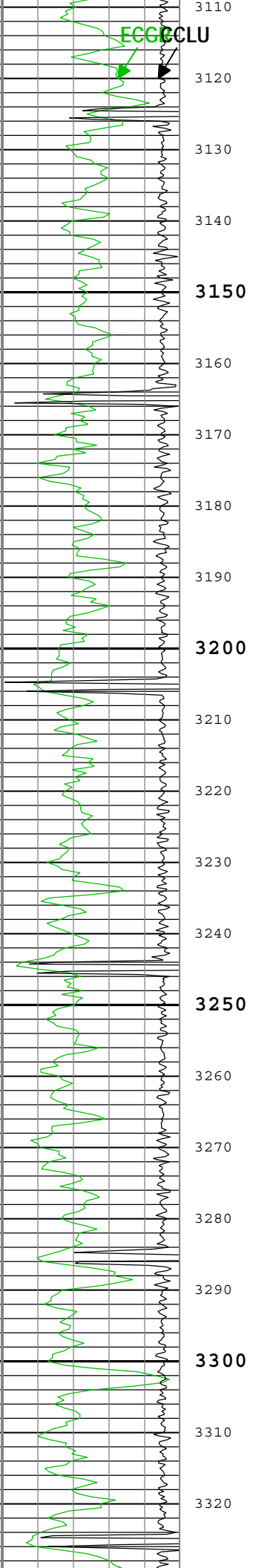


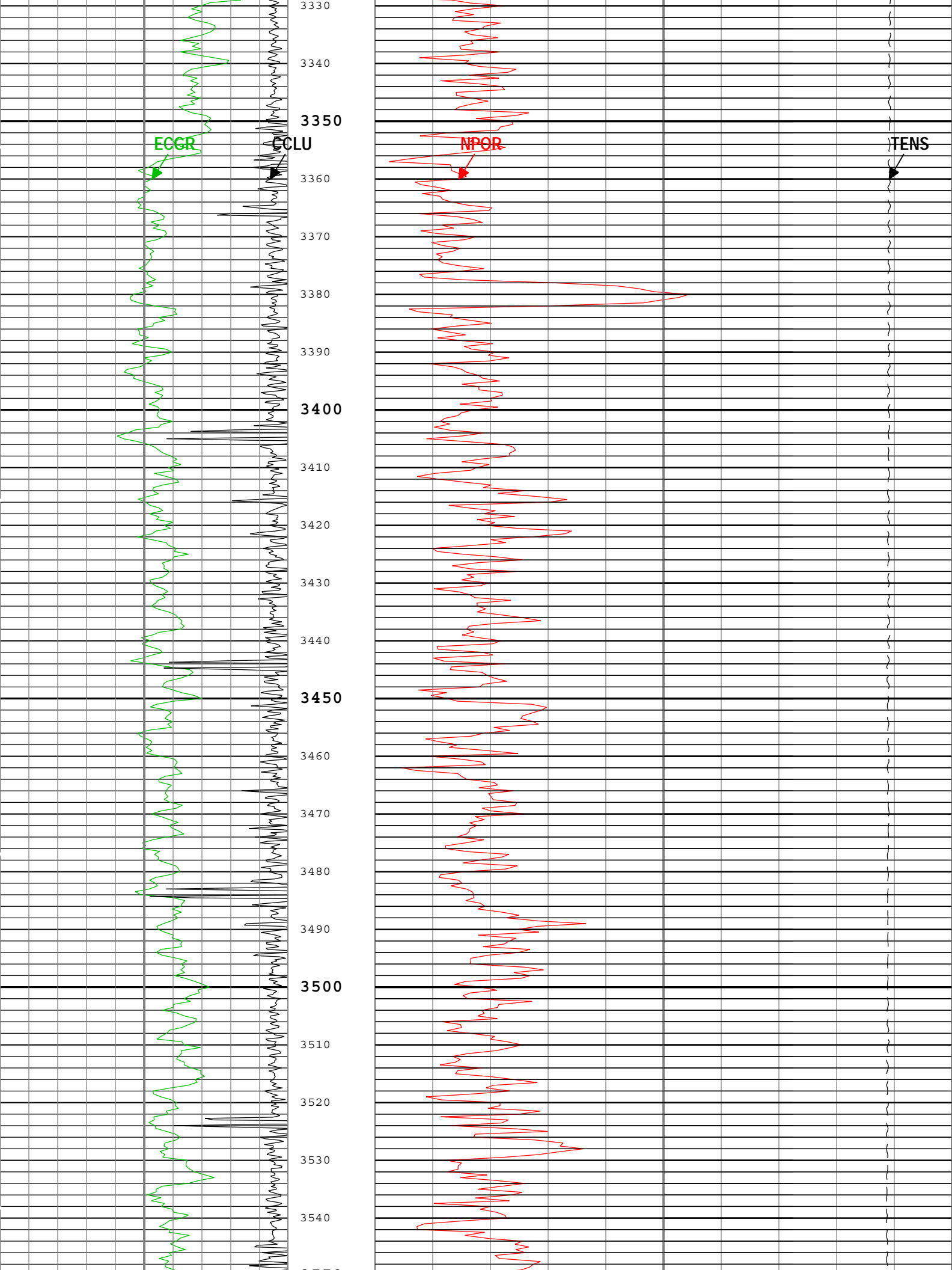


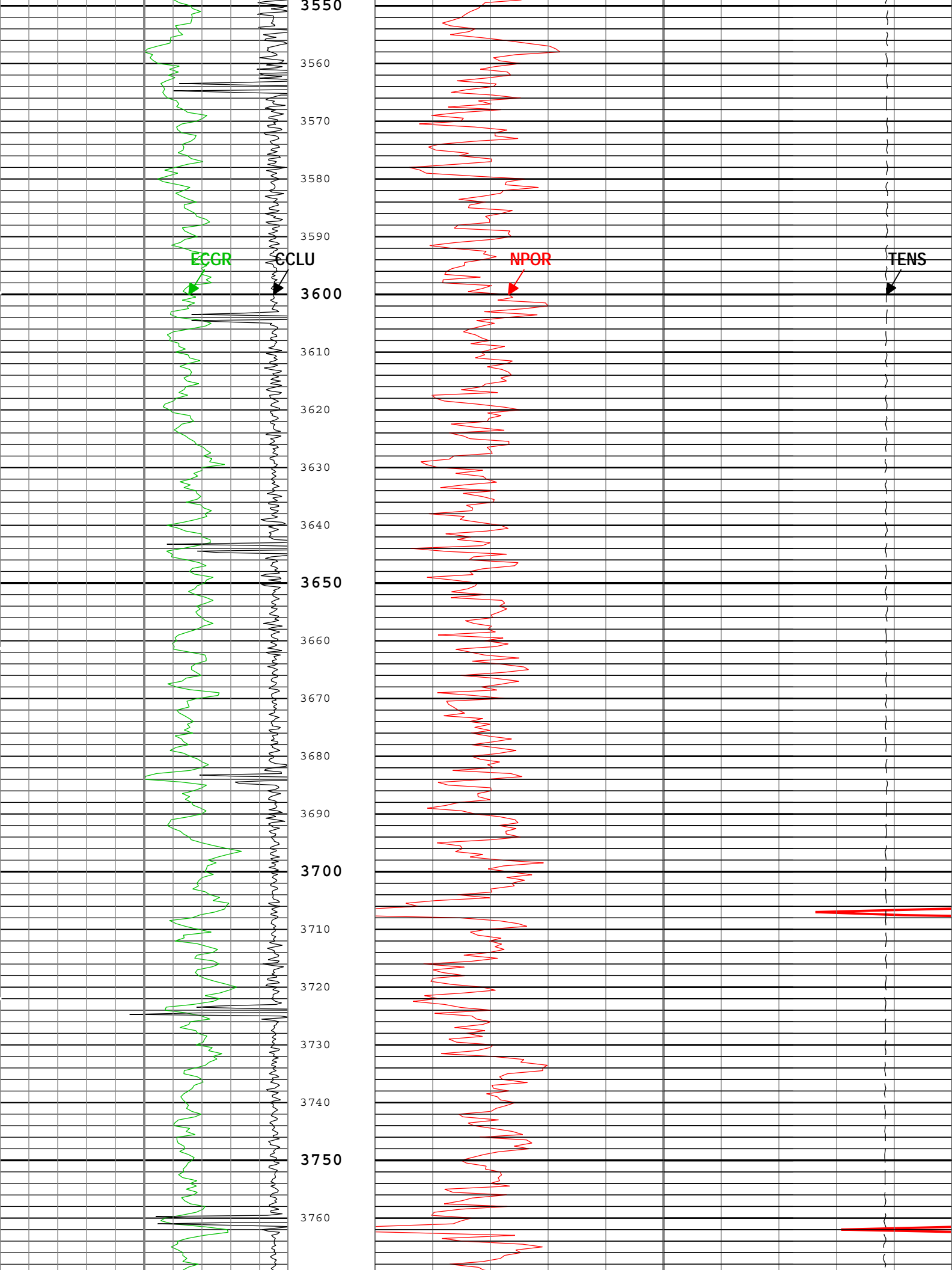


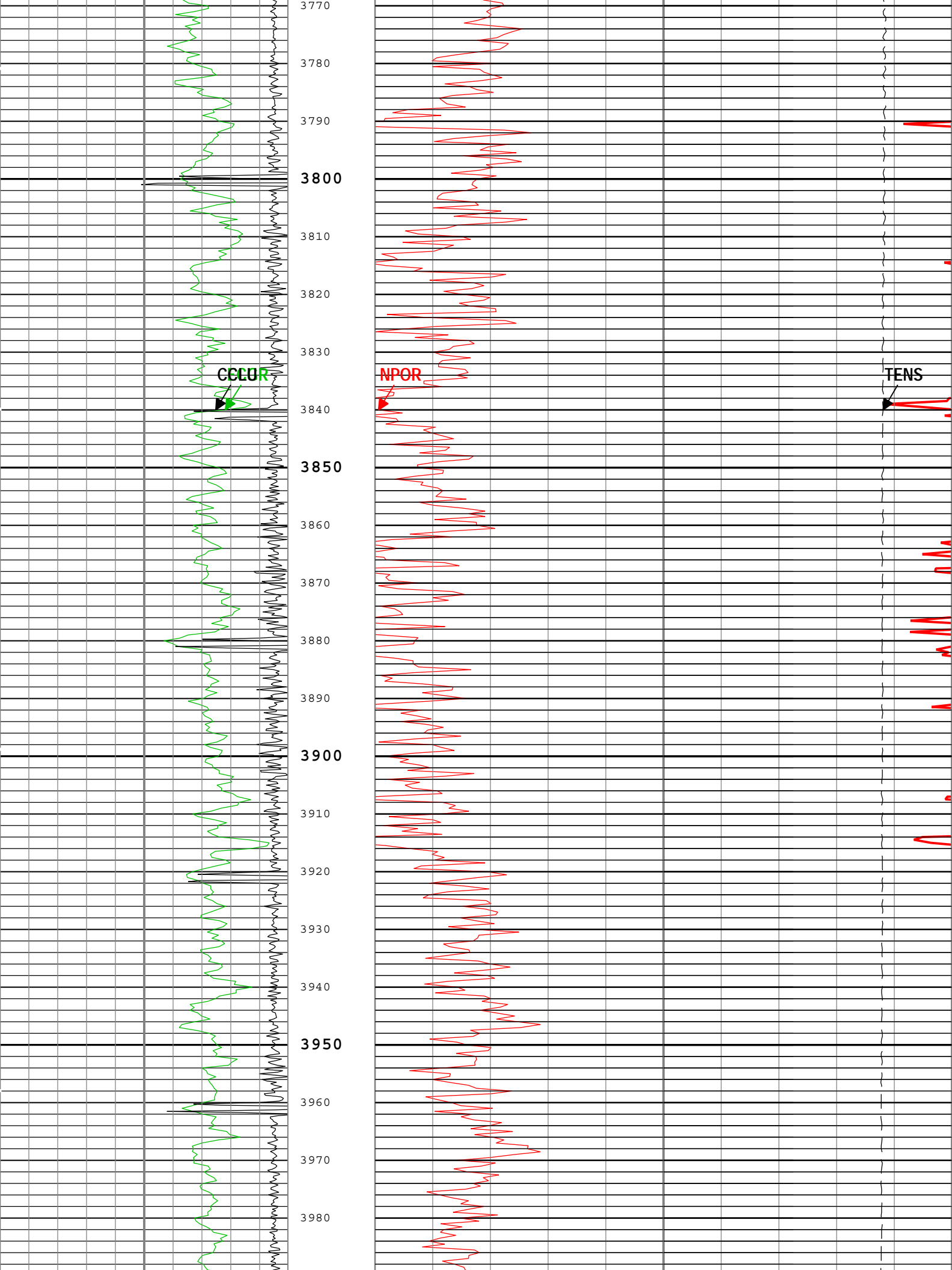


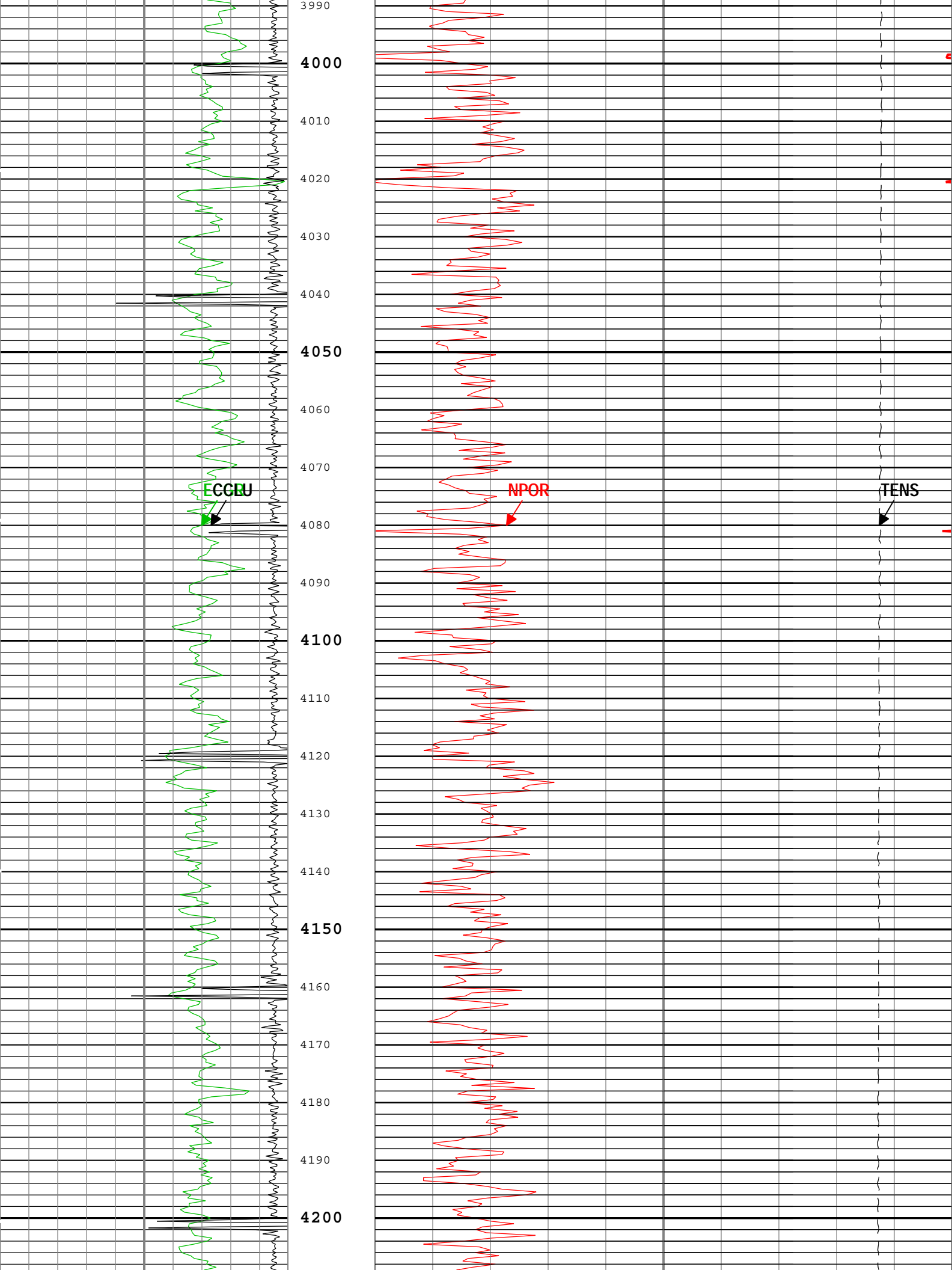


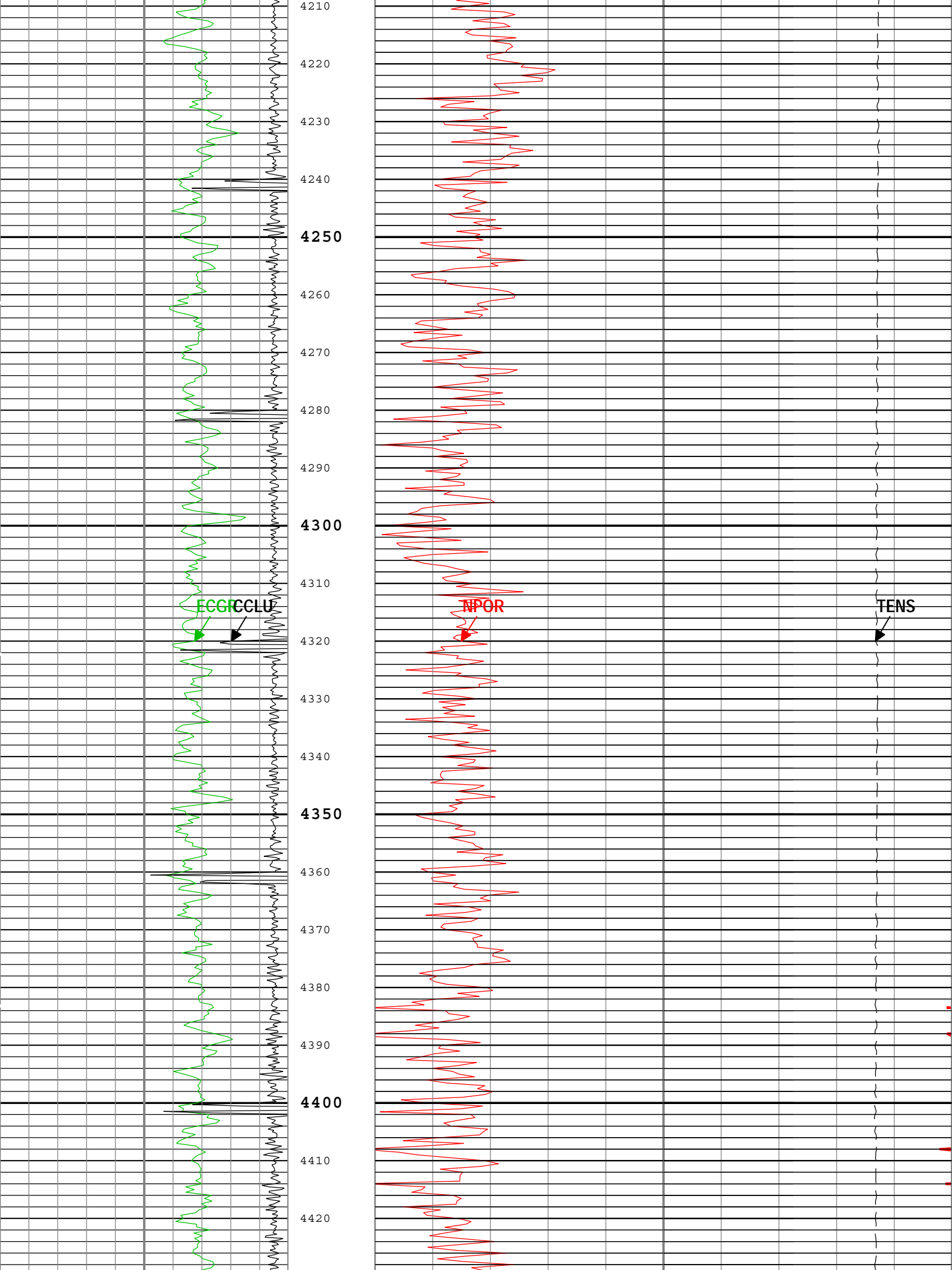


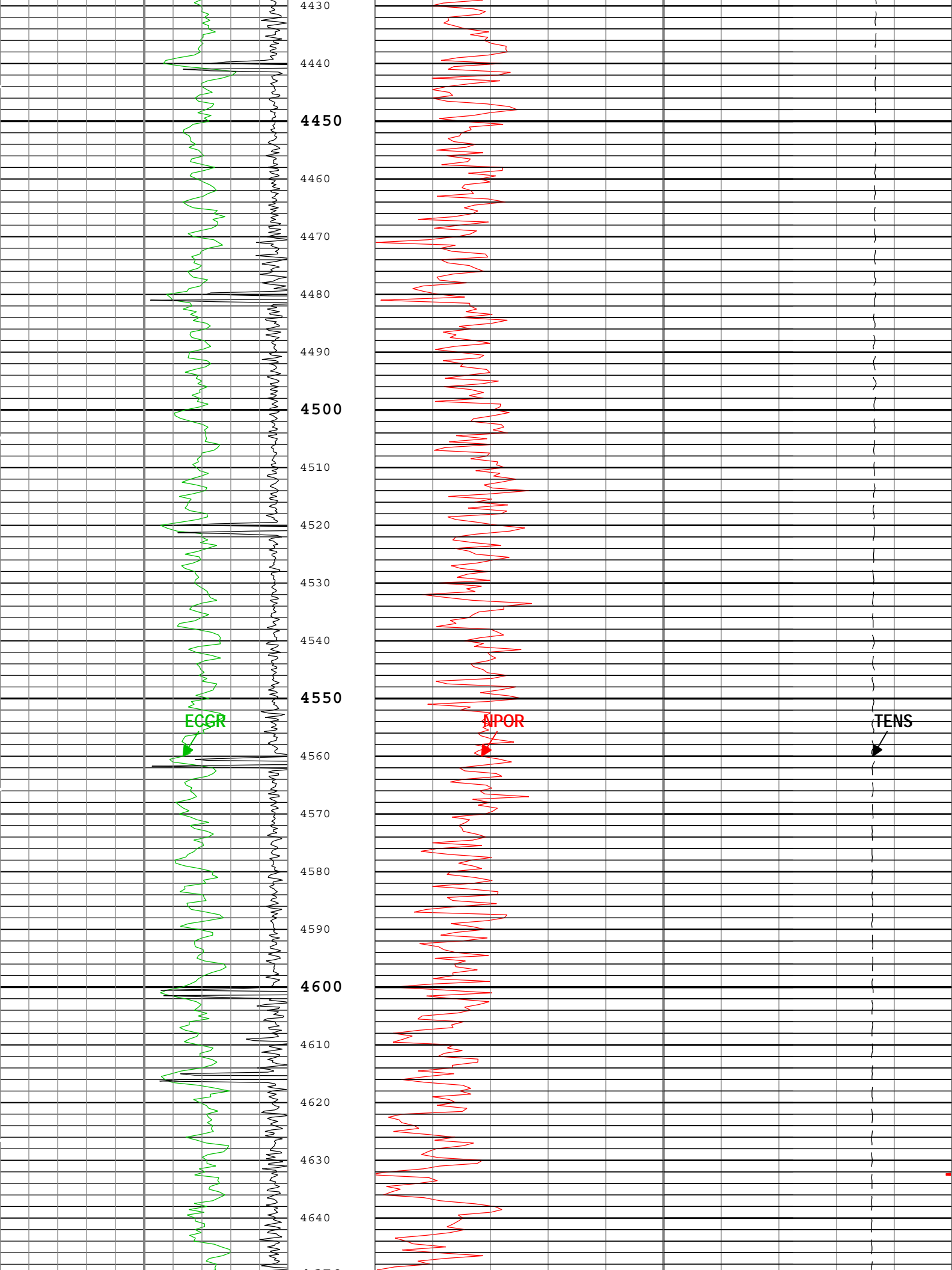


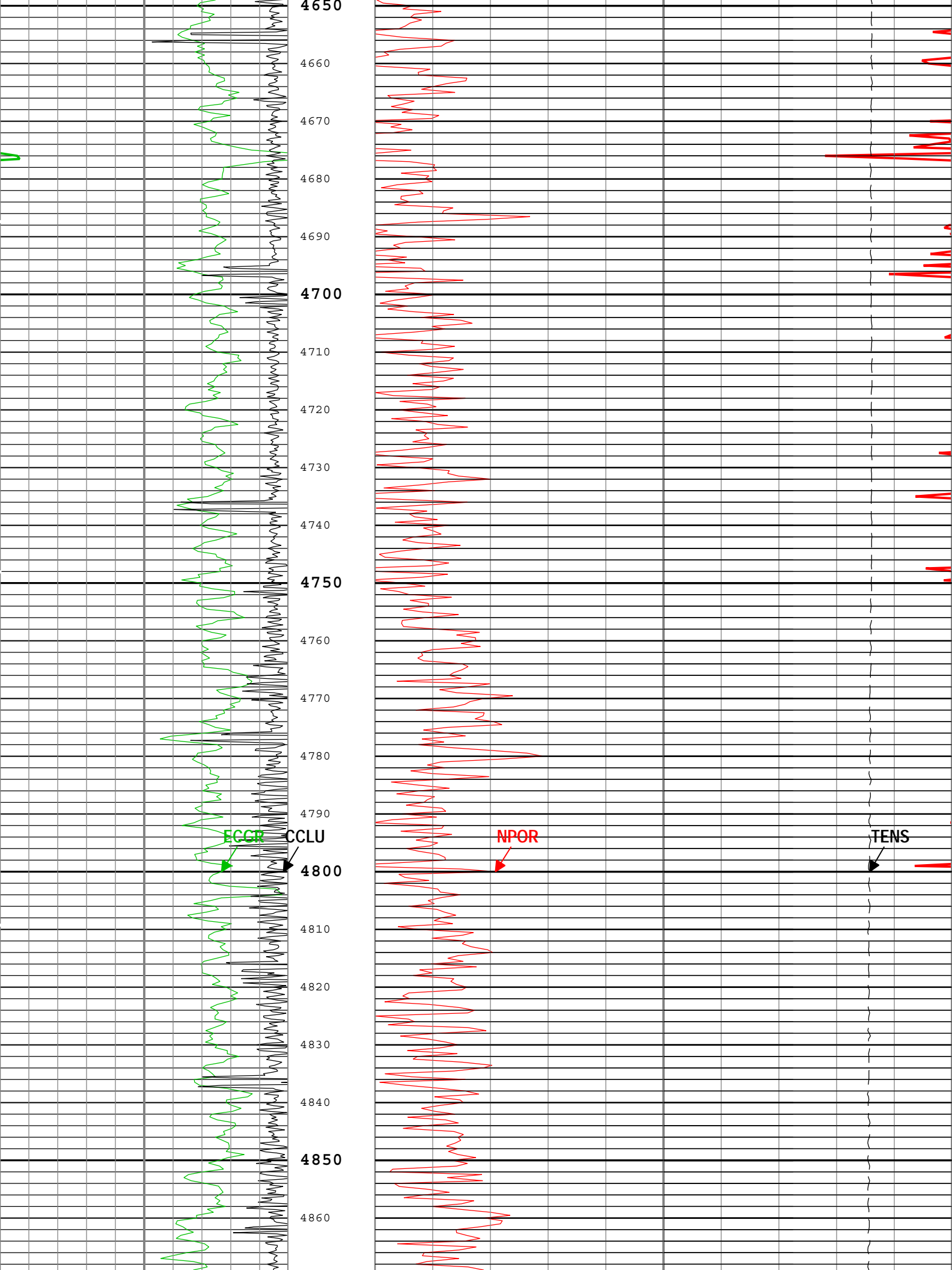


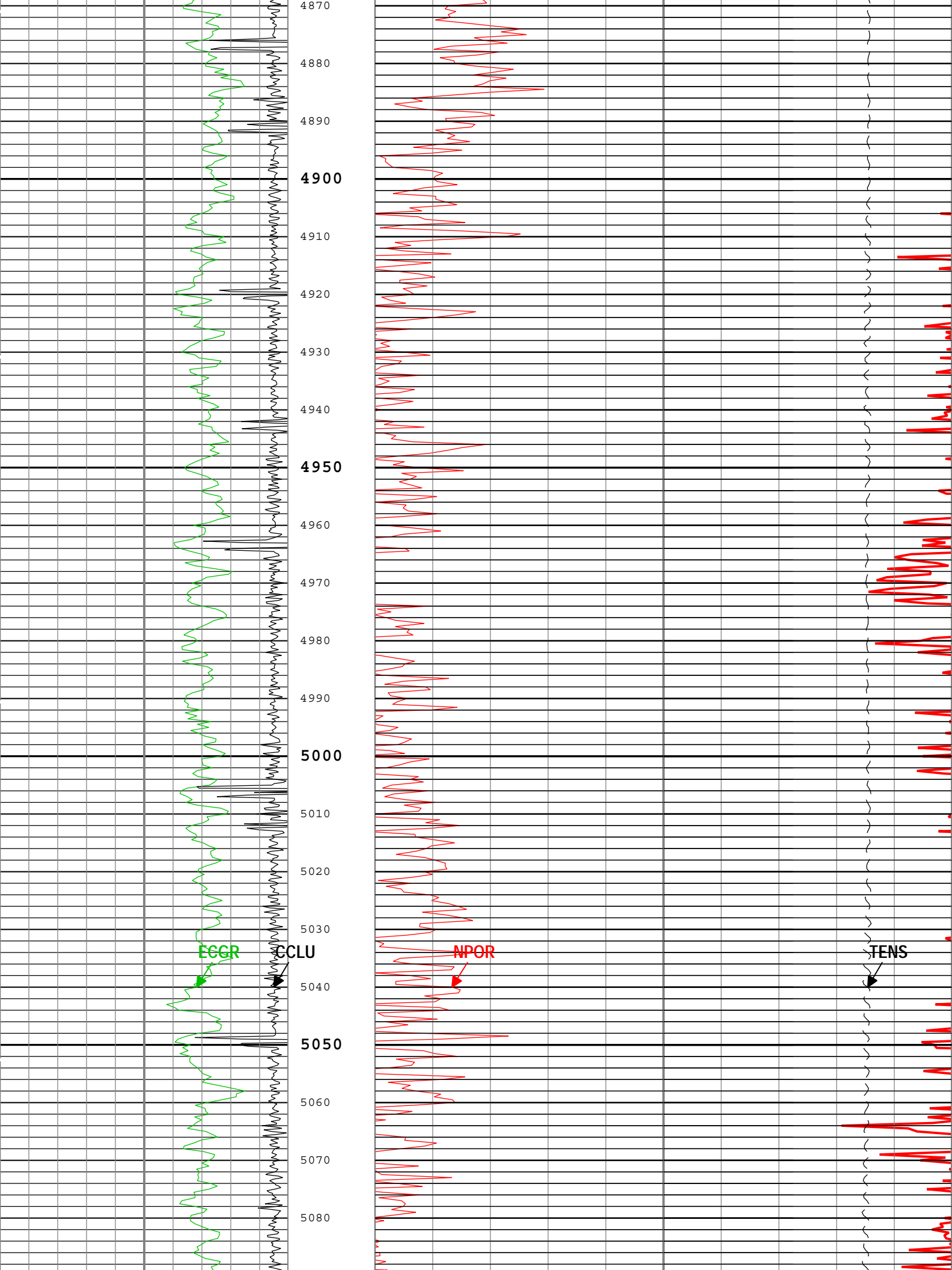


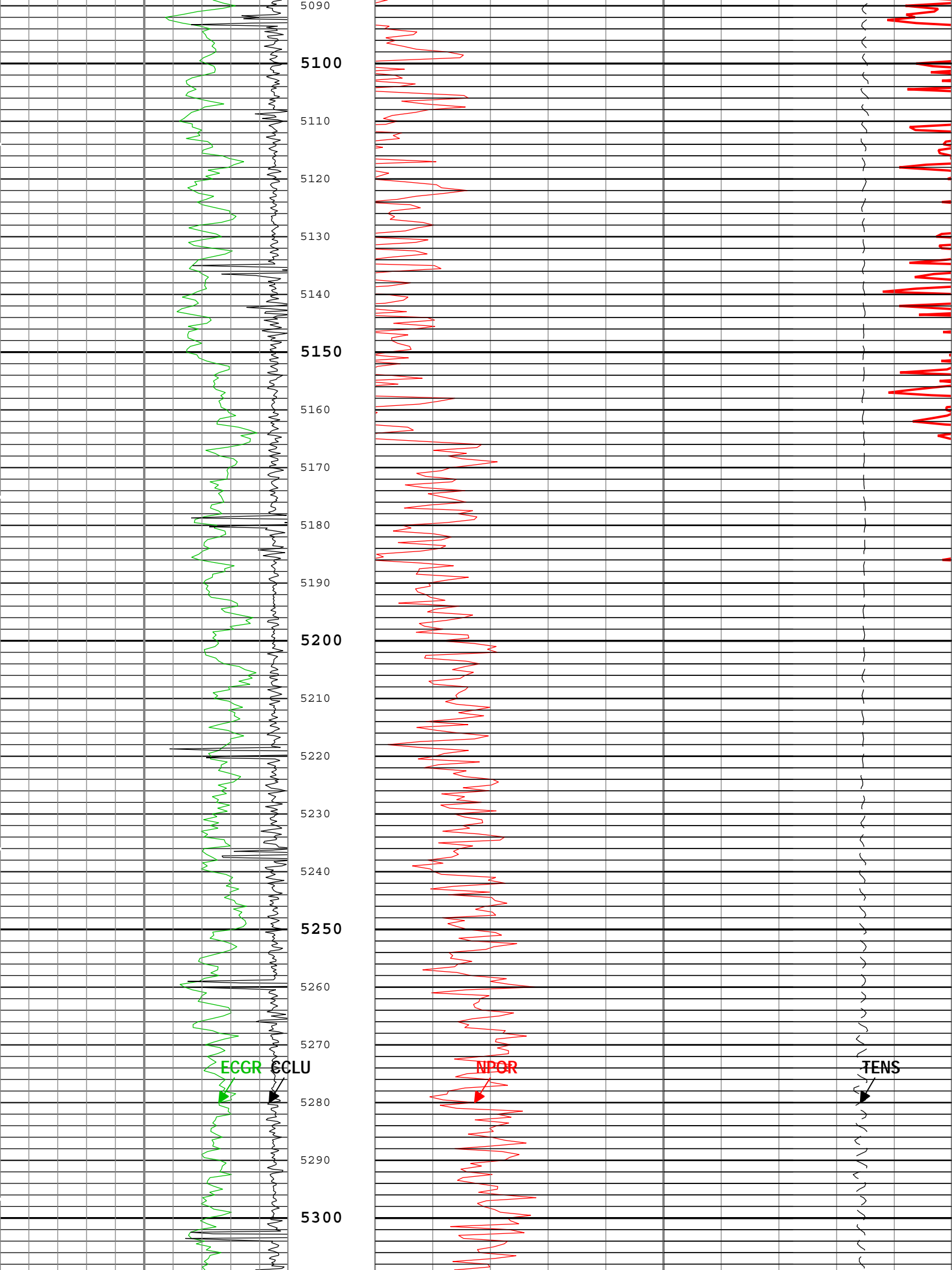


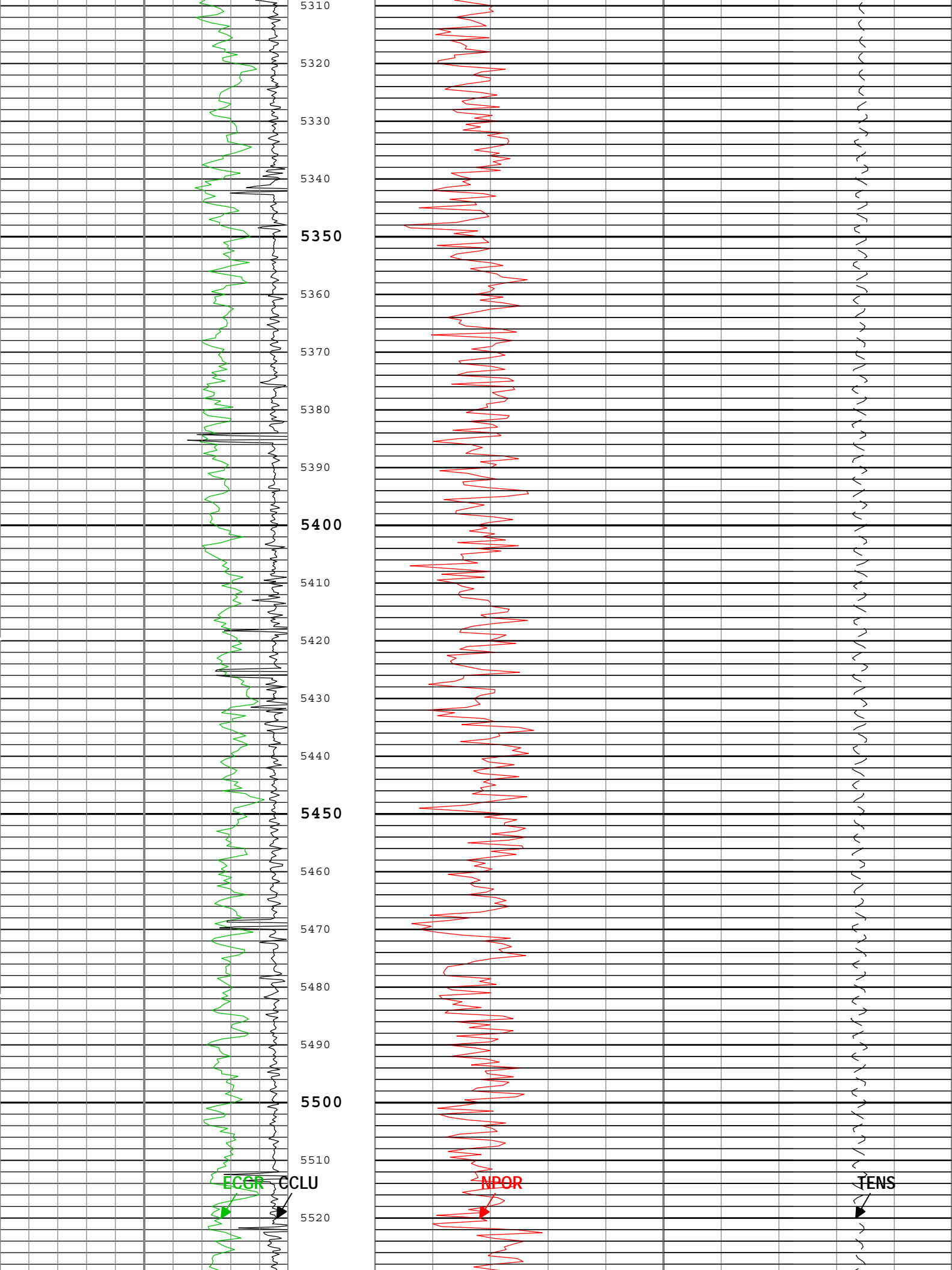


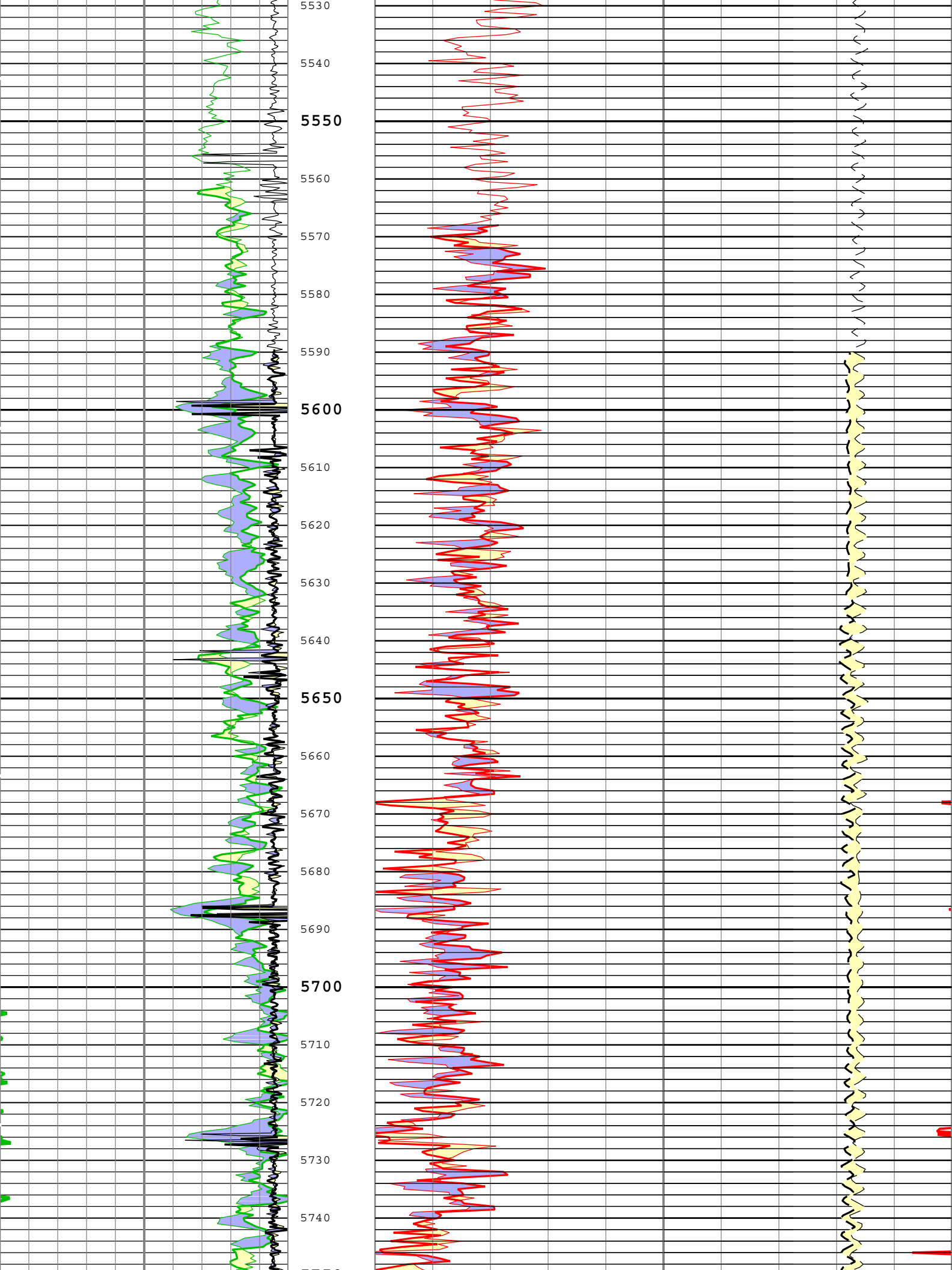


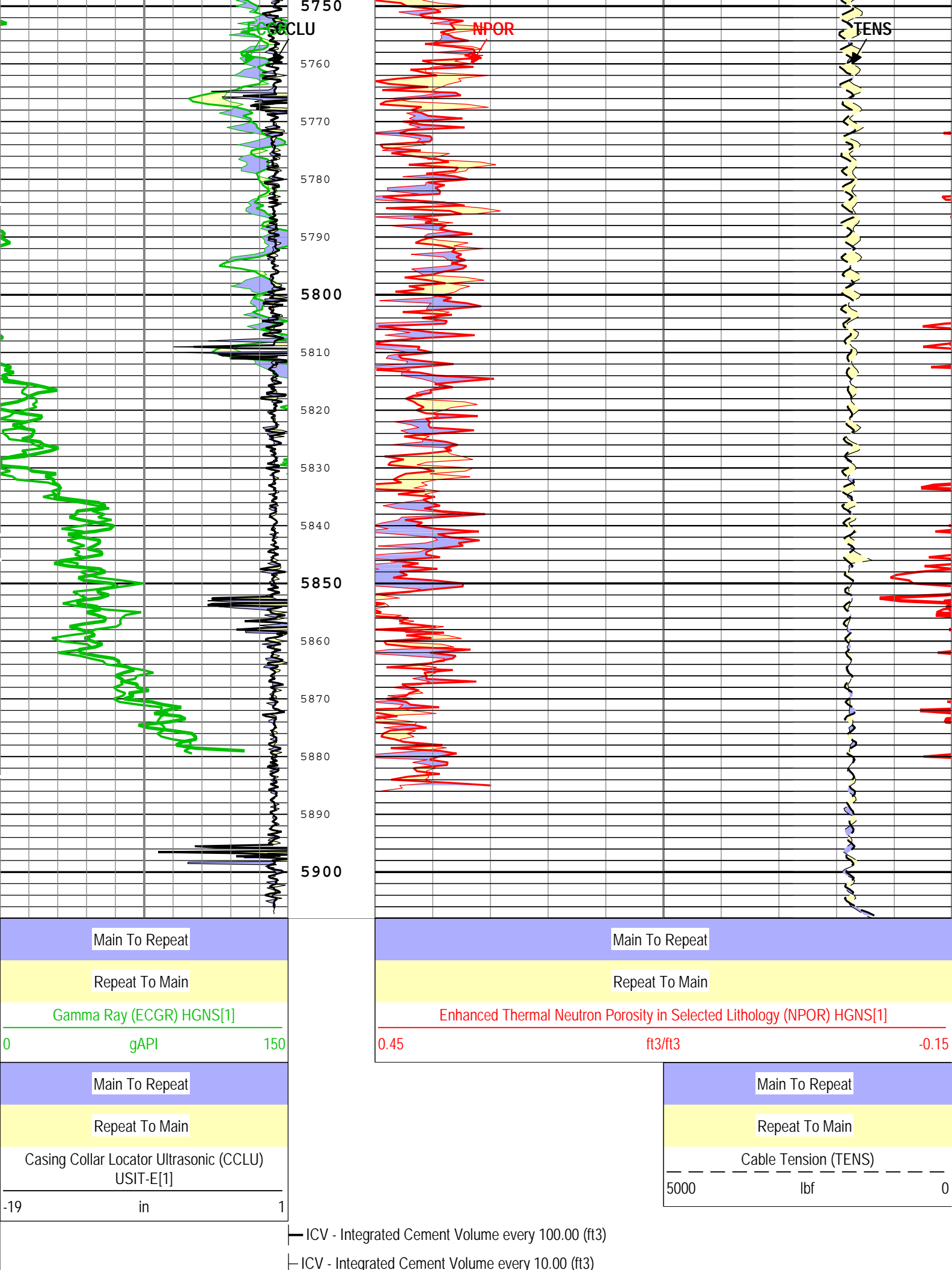












—IHV - Integrated Hole Volume every 100.00 (ft3)				
—IHV - Integrated Hole Volume every 10.00 (ft3)				
TIME_1900 - Time Marked every 60.00 (s)				
Description: AIT Basic Log Two Format: Noble Nuclear RA Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 11-Sep-2015 19:15:22				
Channel Processing Parameters				
ONE: 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	198	degF
BS	Bit Size	WLSESSION	8.5	in
BSAL	Borehole Salinity	Borehole	0	ppm
CBLO	Casing Bottom (Logger)	WLSESSION	6277	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	8.4	lbm/gal
DFT	Drilling Fluid Type	Borehole	Water	
DFT_WATER	Drilling Fluid Water Type	Borehole	Salt Brine	
DTMD	Borehole Fluid Slowness	Borehole	190	us/ft
FD	Fluid Density	USIT-E	1.01	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	
GRSE	Generalized Mud Resistivity Selection, from Measured or Computed Mud Resistivity	Borehole	REMS	
GTSE	Generalized Temperature Selection, from Measured or Computed Temperature	Borehole	CTEM	
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	SANDSTONE	
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	1.13	
PTCO	Pressure Temperature Correction Option	HGNS-H	Yes	
RMFS	Resistivity of Mud Filtrate Sample	Borehole	0.15	ohm.m
RMS	Resistivity of Mud Sample	Borehole	0.2	ohm.m
HISC	Tool Position: Centered or Eccentered	HGNS-H	Centered	
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_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	Depth Zoned	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.2	Mrayl

ONEDepth Zoned Parameters			
Parameter	Value	Start (ft)	Stop (ft)
ZMUD	1.65	30.5	400
ZMUD	1.66	400	700
ZMUD	1.68	700	1000
ZMUD	1.7	1000	1500
ZMUD	1.72	1500	2000
ZMUD	1.74	2000	2500
ZMUD	1.76	2500	3000
ZMUD	1.77	3000	4000
ZMUD	1.78	4000	5908
All depth are actual.			

Tool Control Parameters	
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ONE: Parameters				
Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	36	dB
U-USIT_DDT5	USIC Downhole Decimation for T5 only	USIT-E	0_NONE	
EMXV	EMEX Voltage	USIT-E	50	V
HMCA_BOARD_TYPE	HMCA Board Type	HGNS-H	1	
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	Time Zoned	ft
VRES	Vertical Resolution	USIT-E	3.0 in	
WINB	Window Begin Time	USIT-E	33.86	us
WINE	Window End Time	USIT-E	Time Zoned	us

ONETime Zoned Parameters

Pass Main[3]:Up					
Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
WINE	73.87	11-Sep-2015 17:01:26	11-Sep-2015 18:33:51	5907.88	633.92
WINE	217	11-Sep-2015 18:33:51	11-Sep-2015 18:33:55	633.92	630.05
WINE	109.48	11-Sep-2015 18:33:55	11-Sep-2015 18:34:15	630.05	610.07
WINE	91.83	11-Sep-2015 18:34:15	11-Sep-2015 18:35:00	610.07	565.59
WINE	78.02	11-Sep-2015 18:35:00	11-Sep-2015 18:37:00	565.59	447.16
WINE	74.95	11-Sep-2015 18:37:00	11-Sep-2015 18:37:51	447.16	428.42

Pass Log[4]:Up					
WINE	73.87	11-Sep-2015 18:44:24	11-Sep-2015 18:55:17	679.46	58.63

All depth are at tool zero.

Calibration Report

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

Primary Equipment :

HILT Gamma-Ray and Neutron Sonde, 150 degC HGNS-H

Auxiliary Equipment :

HGNS Accelerometer, 150 degC HACCZ-H 5955
AmBe Neutron Logging Source NSR-F 5215

Calibration Parameter :

Water Temperature (Calibration Tank Water Temperature) 77.1
Housing Size (Thermal Housing Size) 3.38
JIG-BKG

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): 16:19:56 15-Jul-2015

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Near Zero Measurement	1/s	Master	0	5.0	24.7	40.0	
Far Zero Measurement	1/s	Master	0	5.0	29.0	40.0	
Near Plus Measurement	1/s	Master	6031.0	4700.0	5335.0	6900.0	
Far Plus Measurement	1/s	Master	2793.0	1900.0	2239.0	2900.0	
Near Corrected Plus Measurement	1/s	Master		4700.0	5299.0	6900.0	
Far Corrected Plus Measurement	1/s	Master		1900.0	2202.0	2900.0	

Company:	Noble Energy Inc	Schlumberger
Well:	Greyson LD28-753	
Field:	Wattenberg	
County:	Weld	
State:	Colorado	
Platform Express		
Triple Combo		