

Company: CRESTONE PEAK RESOURCES OPERATING LLC

Well: HINGLEY 1F-18H-A167

Field: WATTENBERG

County: WELD State: COLORADO

Pulsed Neutron eXtreme

Gamma Ray Log

** FIELD PRINT **

County:	WELD	Location:	SEC. 18. T1N R67W	Elev.:	K.B.	5080.00 ft
Field:	WATTENBERG		NENE 514 FNL 567 FEL		G.L.	5057.00 ft
Location:	SEC. 18. T1N R67W		Latitud: 40.057007 / Longitude: -104.925994		D.F.	5080.00 ft
Well:	HINGLEY 1F-18H-A167	Permanent Datum:	Ground Level	Elev.:	5057.00 f	
Company:	CRESTONE PEAK RESOURCES OPERATING LLC	Log Measured From:	Kelly Bushing	23.00 ft	above Perm.Datum	
		Drilling Measured From:	Kelly Bushing			
		API Serial No.	Section:	Township:	Range:	
		05-123-47171-0000	18	1N	67W	

Logging Date	13-Nov-2019
Run Number	ONE
Depth Driller	12619.00 ft
Schlumberger Depth	7394.00 ft
Bottom Log Interval	7394.00 ft
Top Log Interval	200.00 ft
Casing Fluid Type	Water
Salinity	
Density	9.5 lbm/gal
Fluid Level	8.00 ft
BIT/CASING/TUBING STRING	
Bit Size	8.75 in
From	2573.00 ft
To	12619.00 ft
Casing/Tubing Size	5.5 in
Weight	20 lbm/ft
Grade	P110
From	0.00 ft
To	12605.00 ft
Max Recorded Temperatures	228.5 degF
Logger on Bottom	13-Nov-2019
Unit Number	2216
Recorded By	Beatriz Guaita
Witnessed By	Garet Wood

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.

Contents

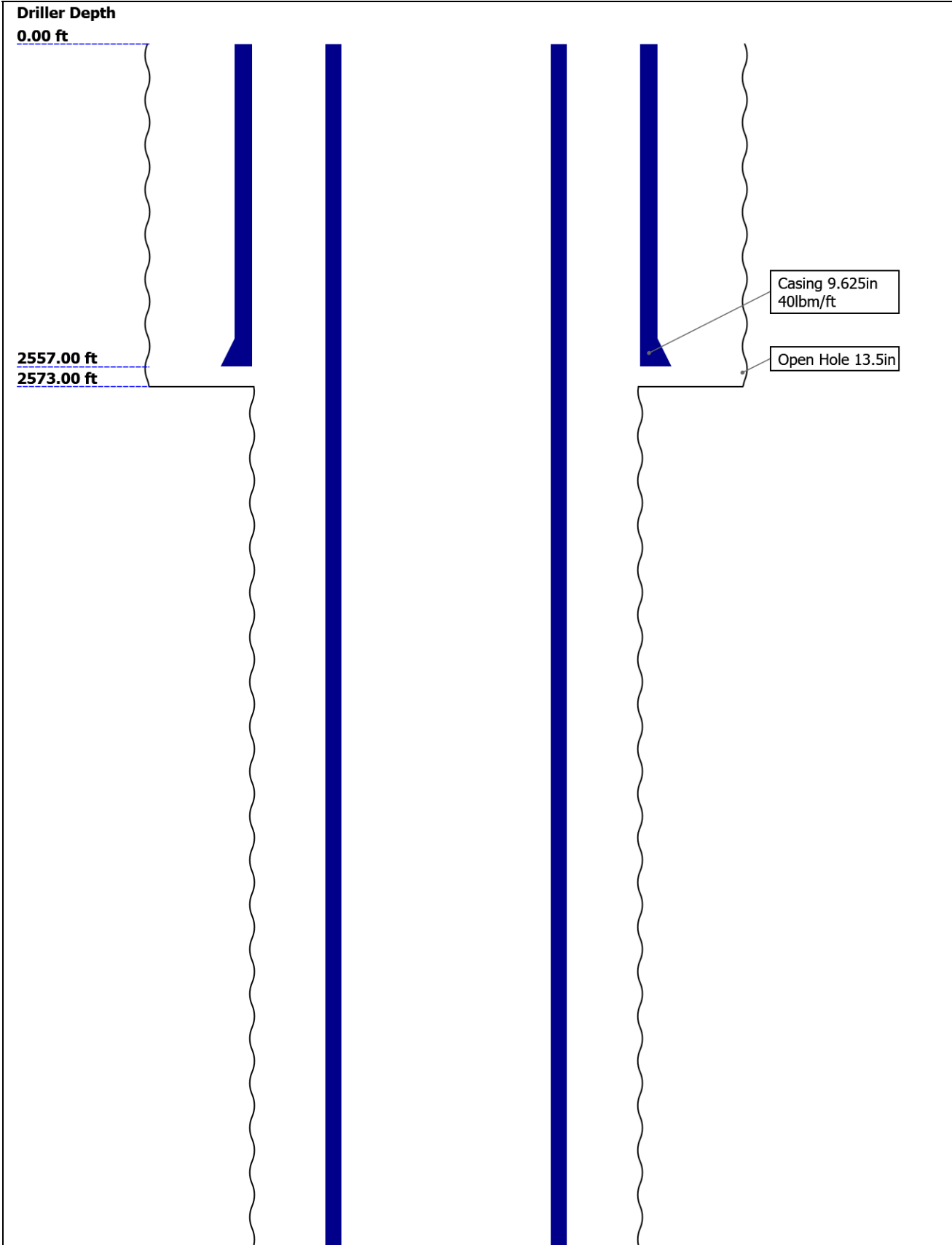
- 1. Header
- 2. Disclaimer
- 3. Contents
- 4. Well Sketch
- 5. Borehole Size/Casing/Tubing Record
- 6. Remarks and Equipment Summary
- 7. Depth Summary
- 8. ONE Sigma Main Pass
 - 8.1 Integration Summary
 - 8.2 Software Version
 - 8.3 Composite Summary
 - 8.4 Log (Pulsar (PNX) Sigma)
 - 8.5 Parameter Listing
- 9. ONE GR-WPRE-WTEP
 - 9.1 Integration Summary
 - 9.2 Software Version
 - 9.3 Composite Summary

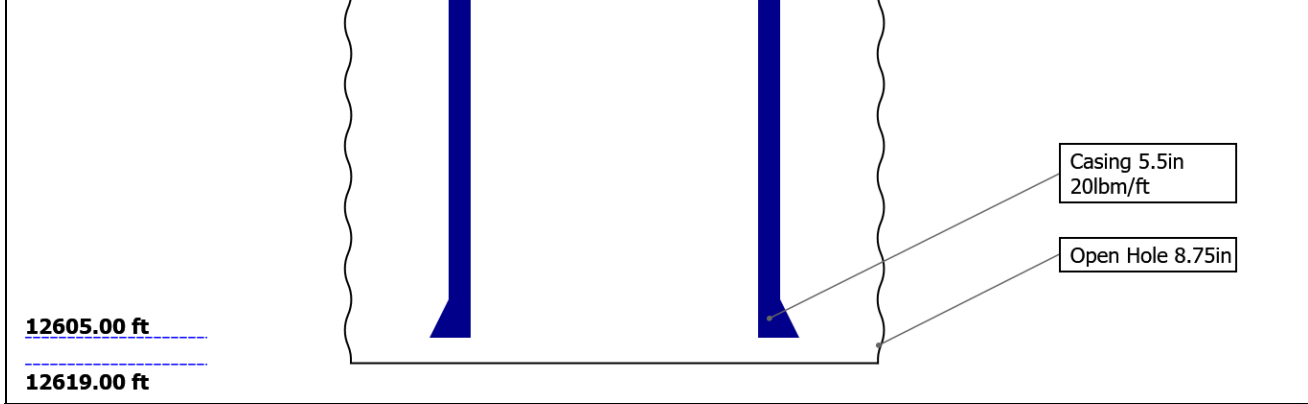
9.4 Log (GR-CCL-WPRE-WTEP)

9.5 Parameter Listing

10. Tail

Well Sketch



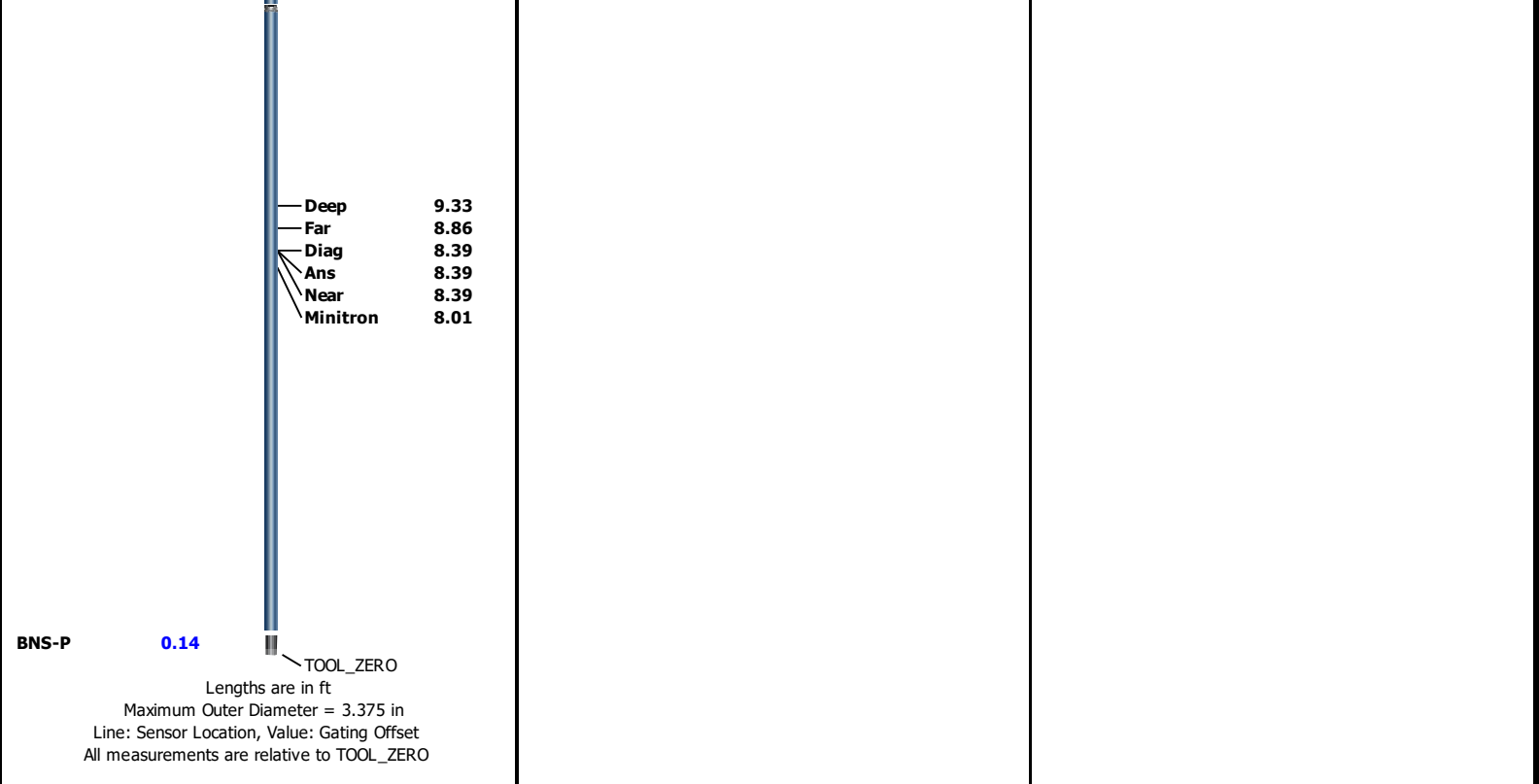


Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	13.5	8.75				
Top Driller (ft)	0	2573				
Top Logger (ft)	0	2573				
Bottom Driller (ft)	2573	12619				
Bottom Logger (ft)	2573	12619				
Casing						
Size (in)	9.625	5.5				
Weight (lbm/ft)	40	20				
Inner Diameter (in)	8.835	4.778				
Grade	J55	P110				
Top Driller (ft)	0	0				
Top Logger (ft)	0	0				
Bottom Driller (ft)	2557	12605				
Bottom Logger (ft)	2557	12605				

Remarks and Equipment Summary

ONE: Toolstring				ONE: Remarks		
Equip name	Length	MP name	Offset	Thank you for choosing Schlumberger!		
LEH-QT	31.49			Tool string run as per tool sketch and client logging program.		
LEH-QT				All passes run under 0 PSI.		
AH-63	28.00			GSH-Commercial mode used.		
AH-79	27.68			PNX ran on one well of Pad.		
PSTP-A:1922	26.85					
PSC-A		GR	23.14			
PSTC-A:1922		PSTC	22.85			
PBMS-A:1922		PSTC Tool S	0.00			
Sapphire 10kPS		tring Bottom				
I		Temperatur	20.06			
		e				
		Sapphire Pr	19.95			
		essure				
		CCL	19.33			
		PBMS	18.58			
PNX-A:23	18.58					
PNCH-A:17						
PNCE-A:23						
PNSH-A:26						
PNG-H:3071-51						
199						
PNSE-A:23						



Depth Summary			
		ONE	
Depth Measuring Device			
Type	IDW-B		
Serial Number	1234		
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	07-nov-2019		
Calibrator Serial Number			
Number of Calibration Points	10		
Calibration Root Mean Square Error	13		
Calibration Peak Error	26		
Logging Cable			
Type	7-39AI-XXS		
Serial Number			
Length	20000.00 ft		
Conveyance Type	Wireline		
Rig Type	Crane USA		
ONE:Depth Control Parameters		Depth Control Remarks	
Log Sequence	First Log In the Well	All Schlumberger depth control procedures followed.	
Rig Up Length At Surface		IDW used as primay depth control.	

Rig Up Length At Bottom	Z Chart used as secondary depth control.
Rig Up Length Correction	Log Correlated to Down Log.
Stretch Correction	
Tool Zero Check At Surface	

ONE

Sigma Main Pass

Software Version

Acquisition System	Version
Maxwell 2019.2	9.2.113335.3100

Pass Summary

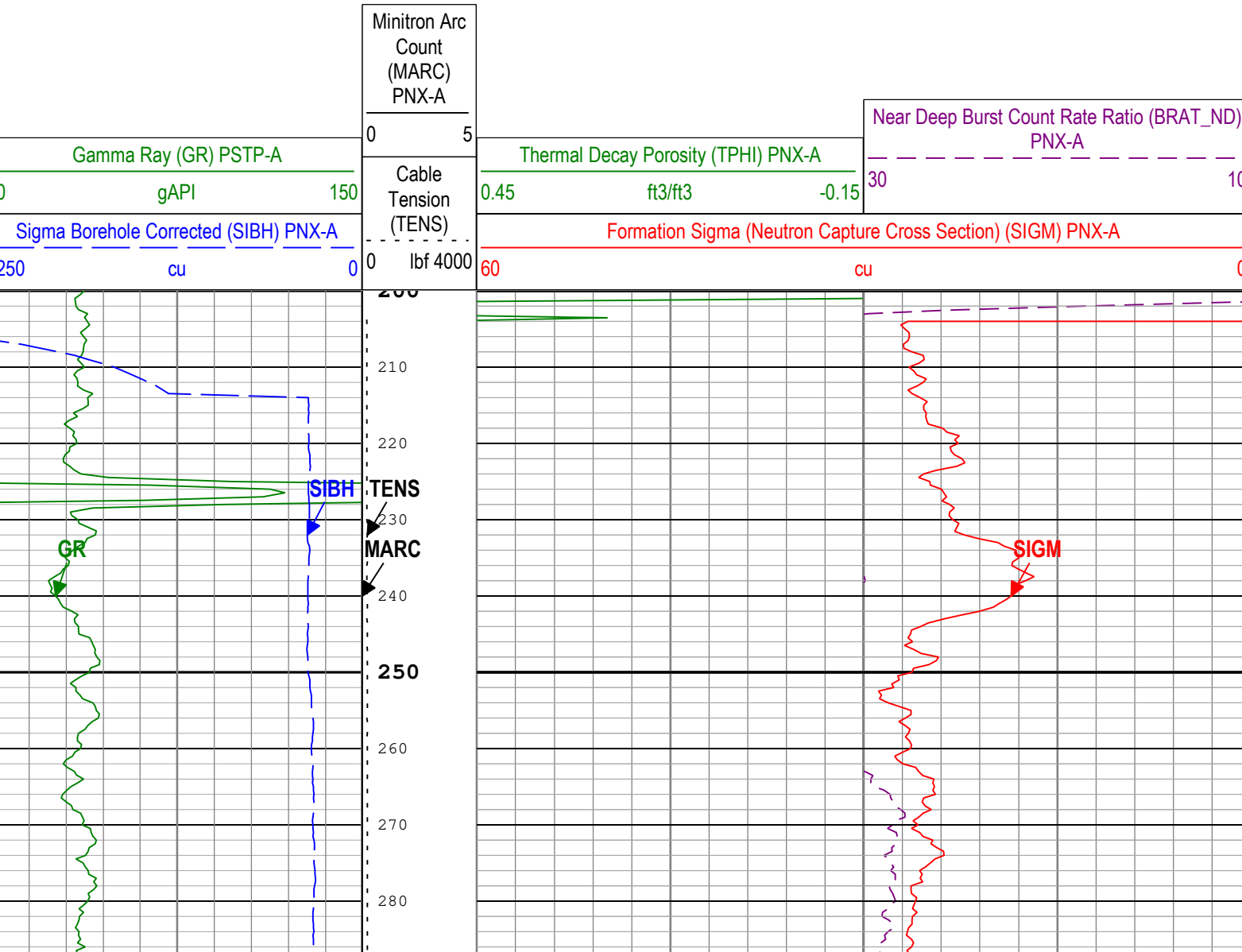
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[6]:Up	Up	203.31 ft	7403.84 ft	13-Nov-2019 11:07:37 AM	13-Nov-2019 3:11:18 PM	ON	3.35 ft	No

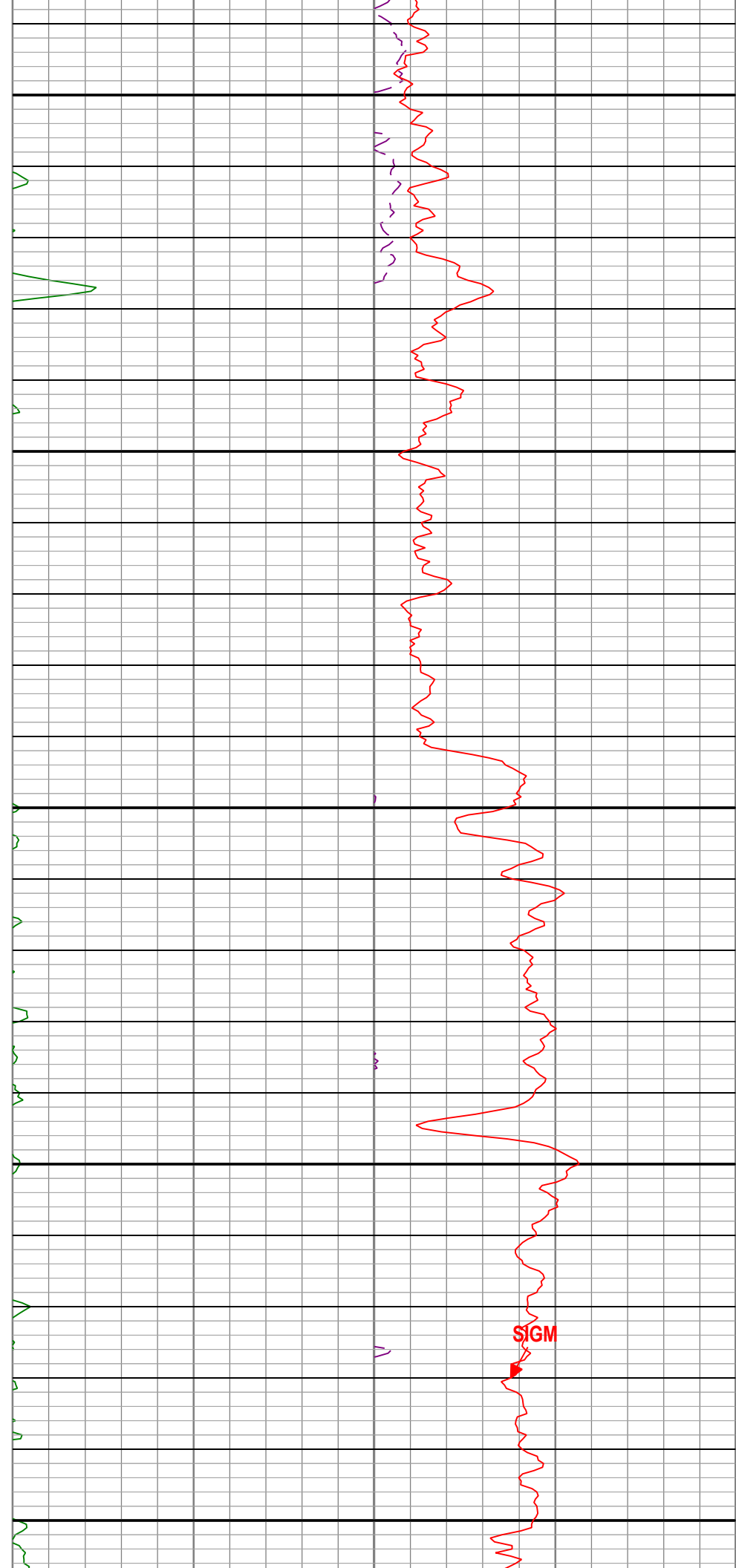
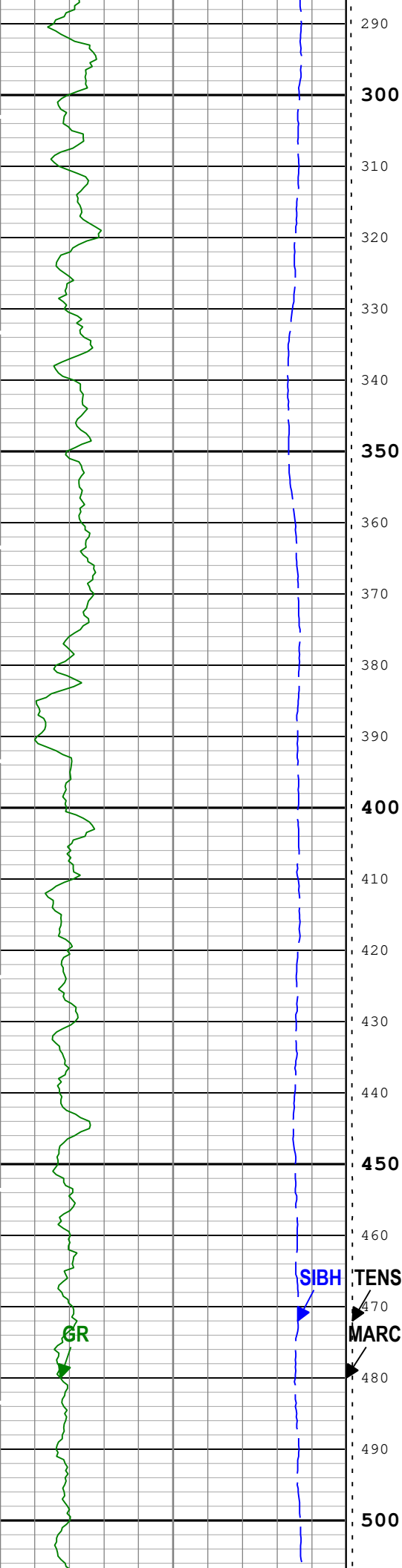
All depths are referenced to toolstring zero

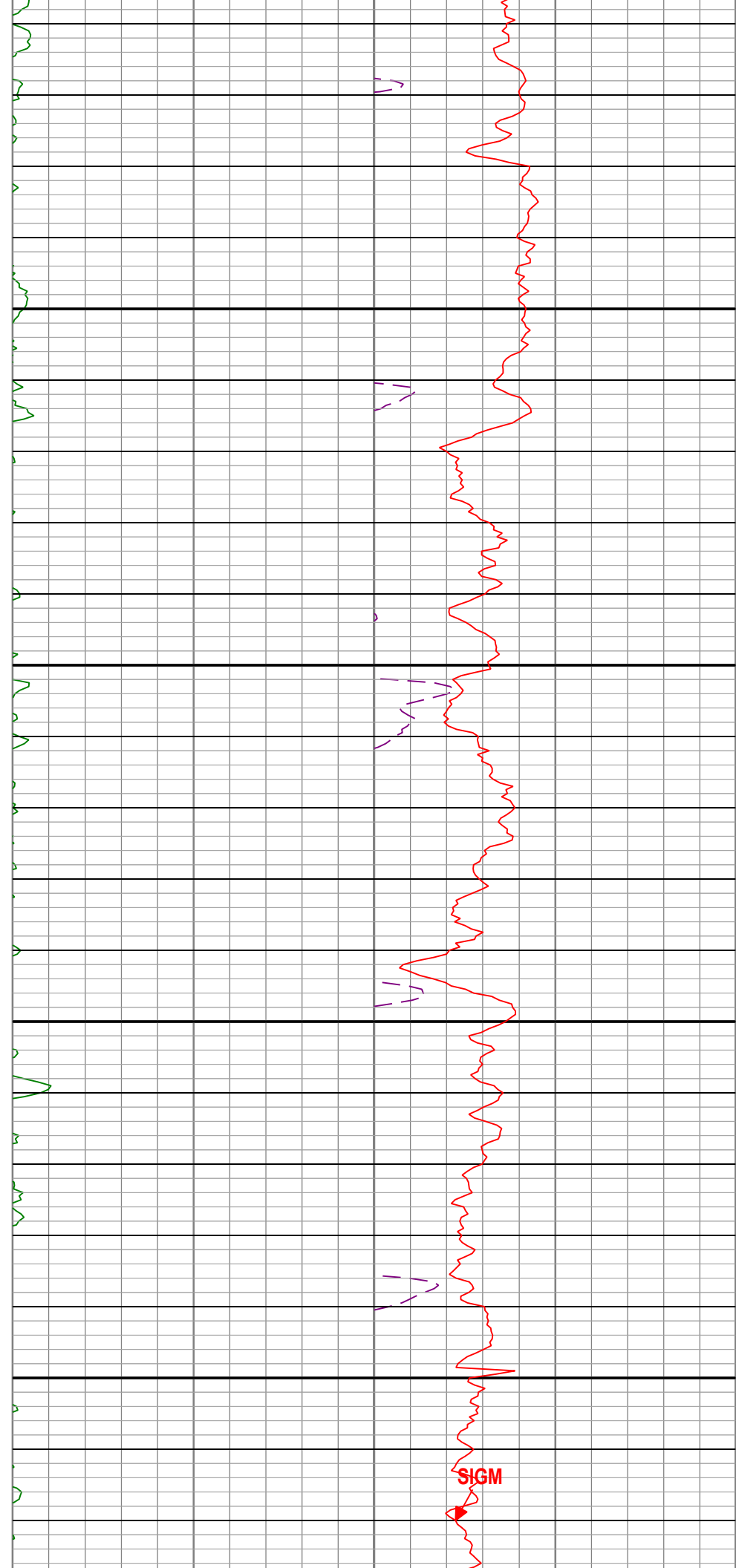
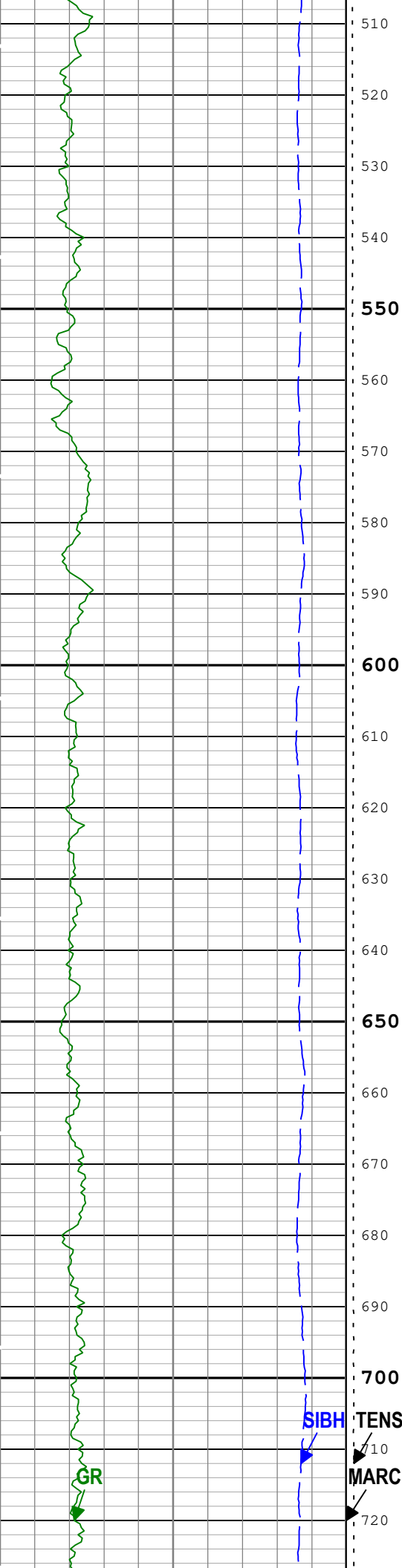
Log	Company:CRESTONE PEAK RESOURCES OPERATING LLC	Well:HINGLEY 1F-18H-A167
		ONE: Log[6]:Up:S005

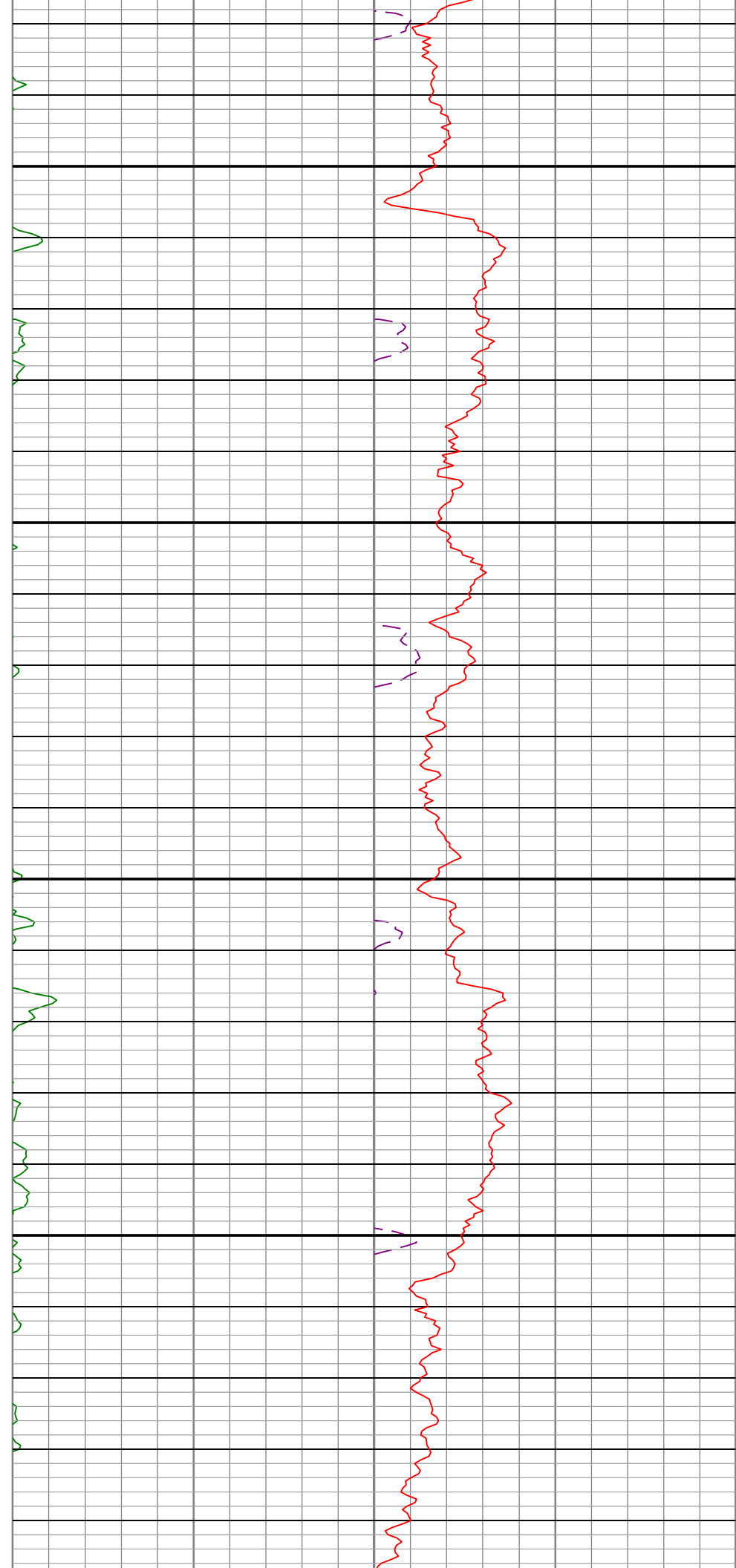
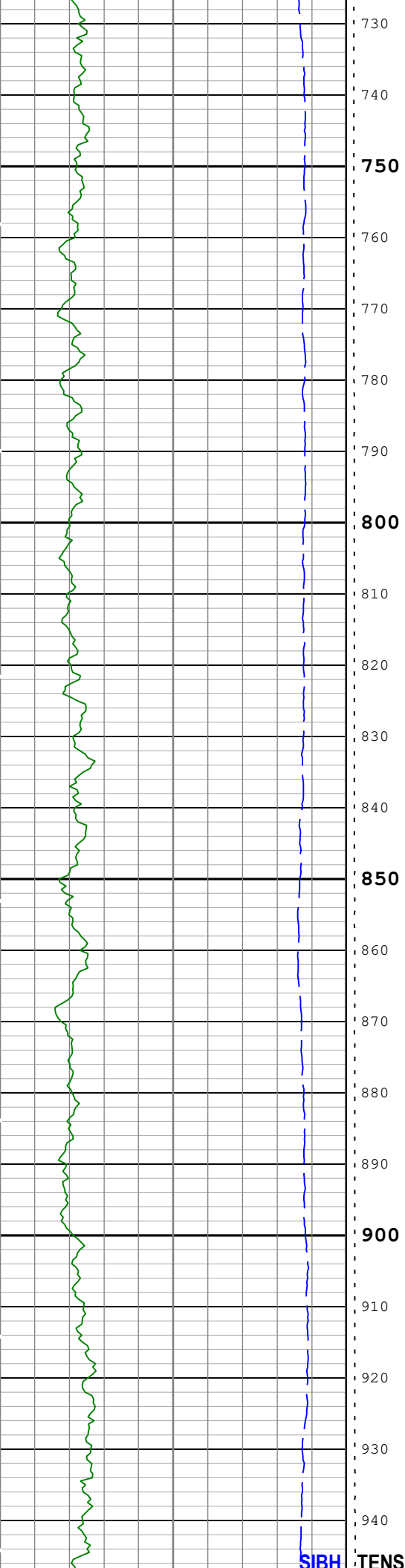
Description: Pulsar (PNX) Sigma Format: Log (Pulsar (PNX) Sigma) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 13-Nov-2019 15:49:33

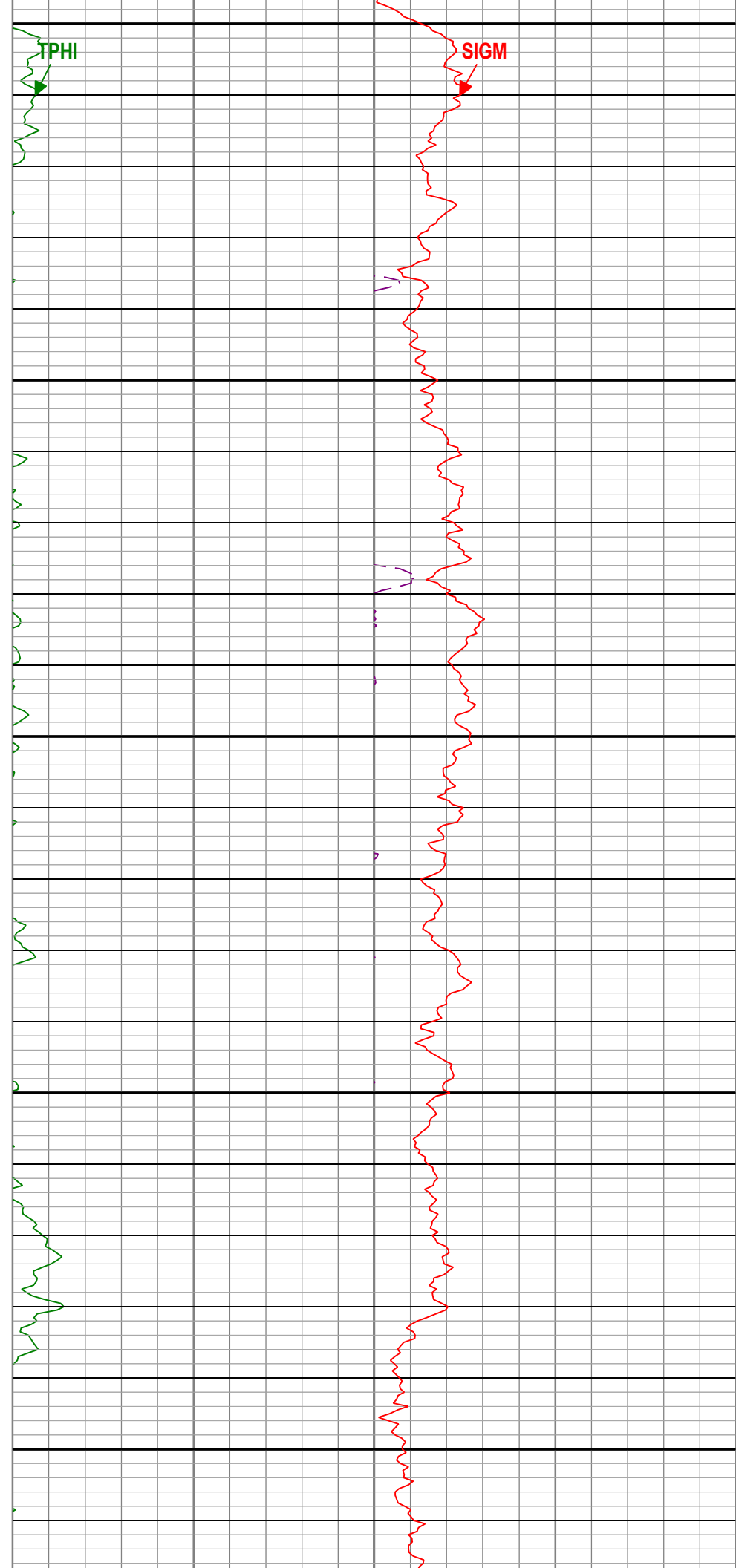
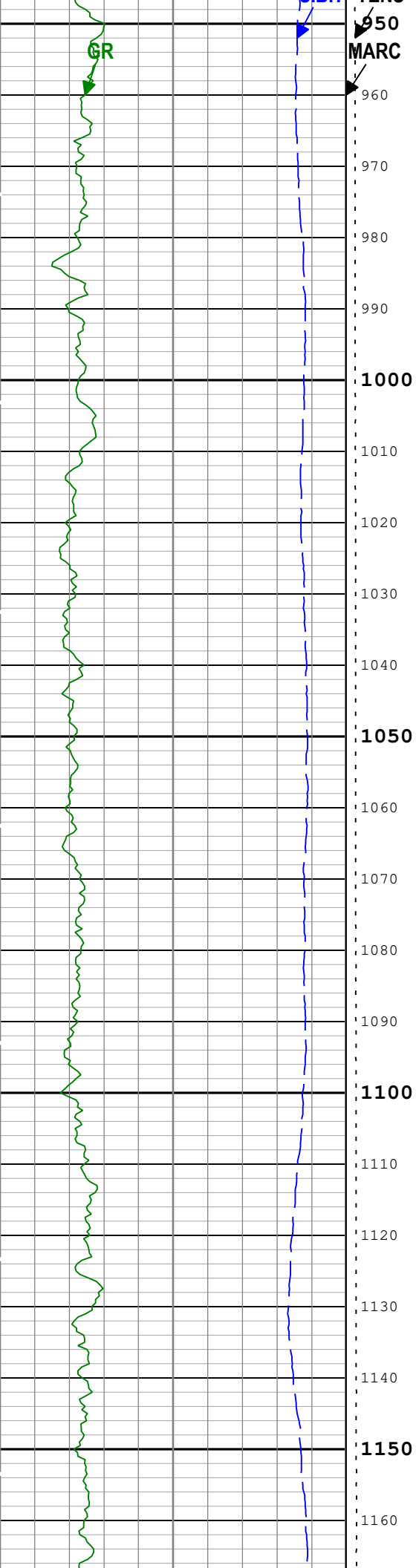
TIME_1900 - Time Marked every 60.00 (s)

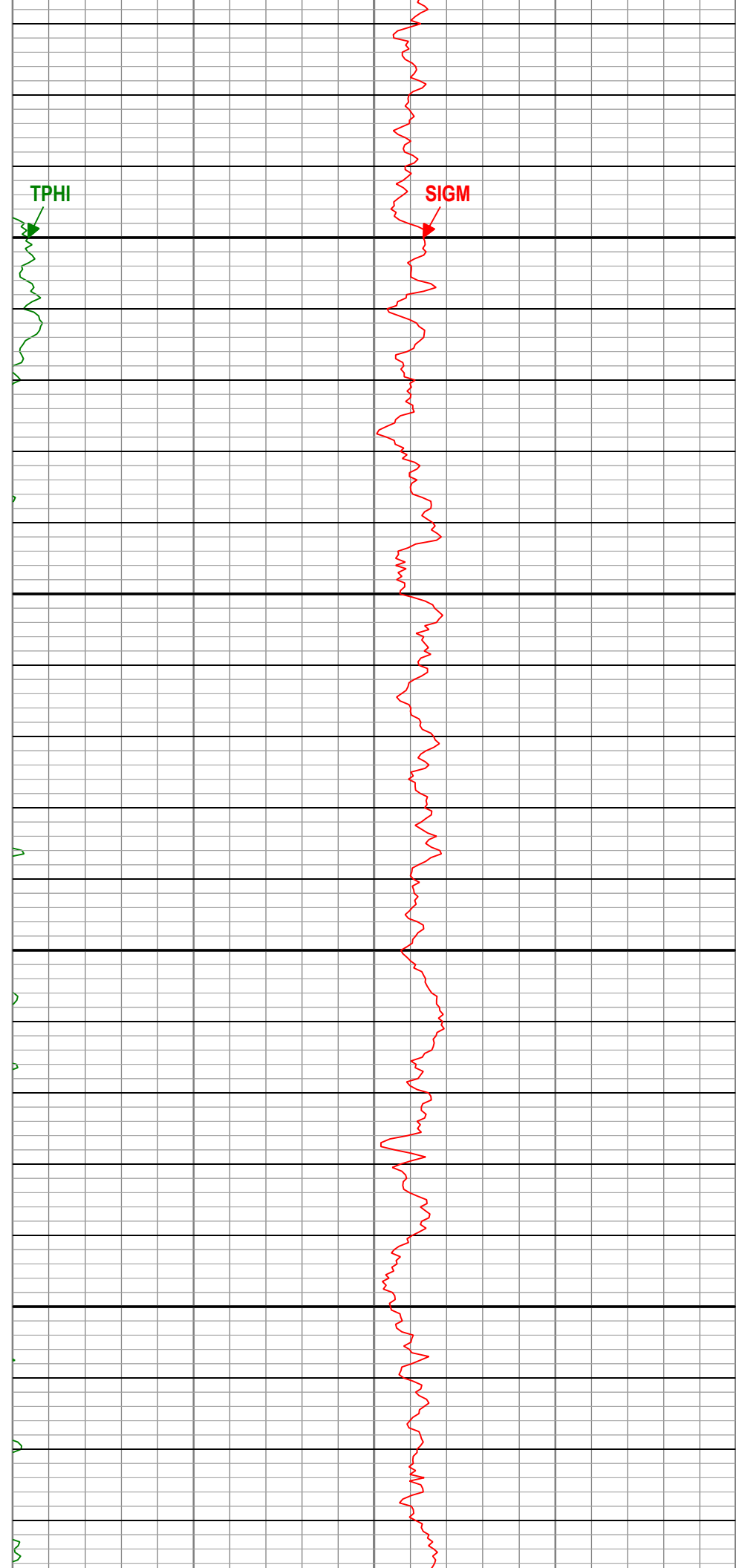
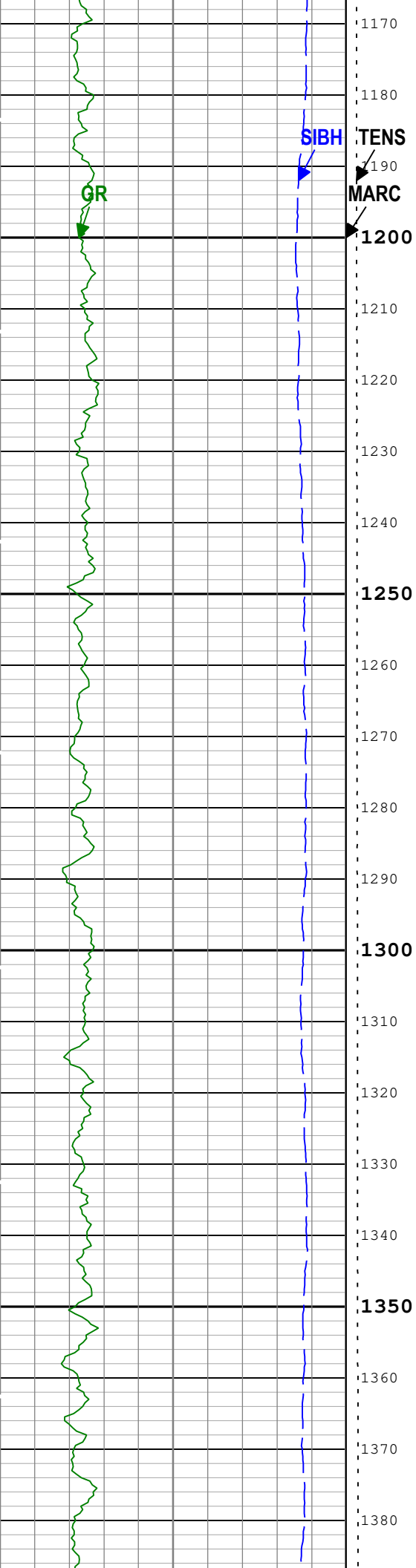


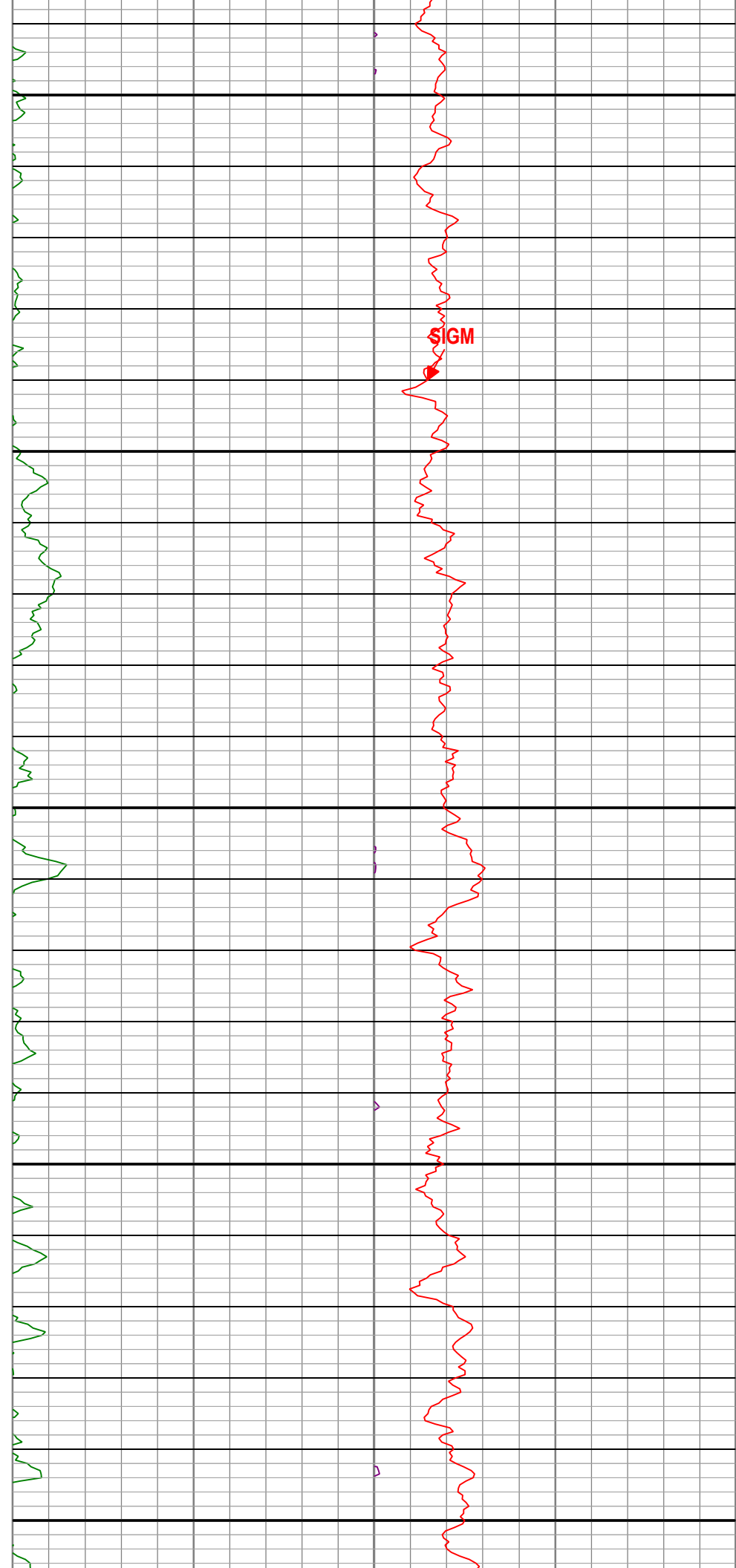
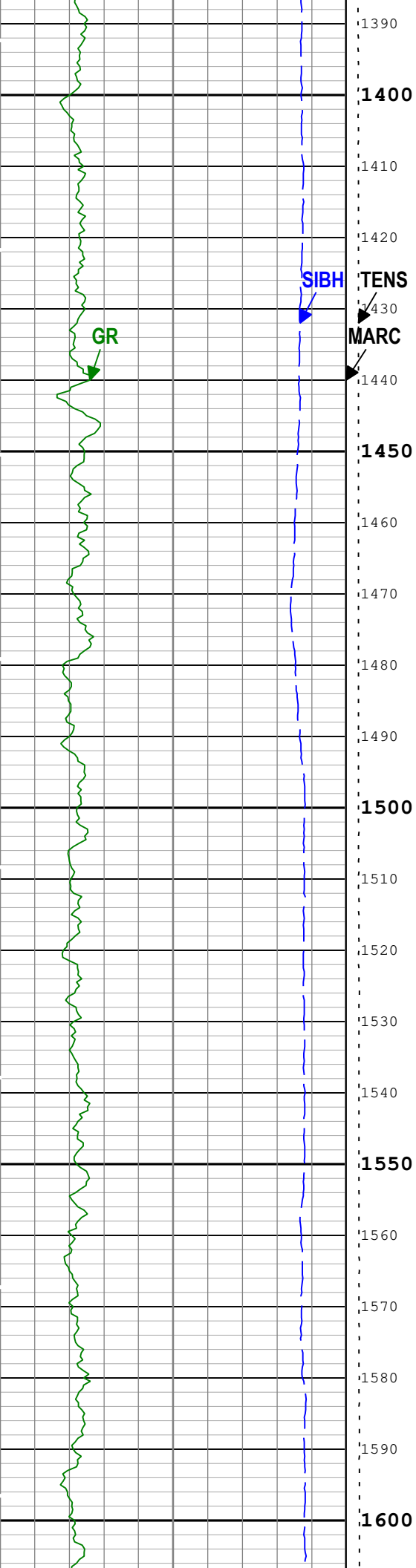


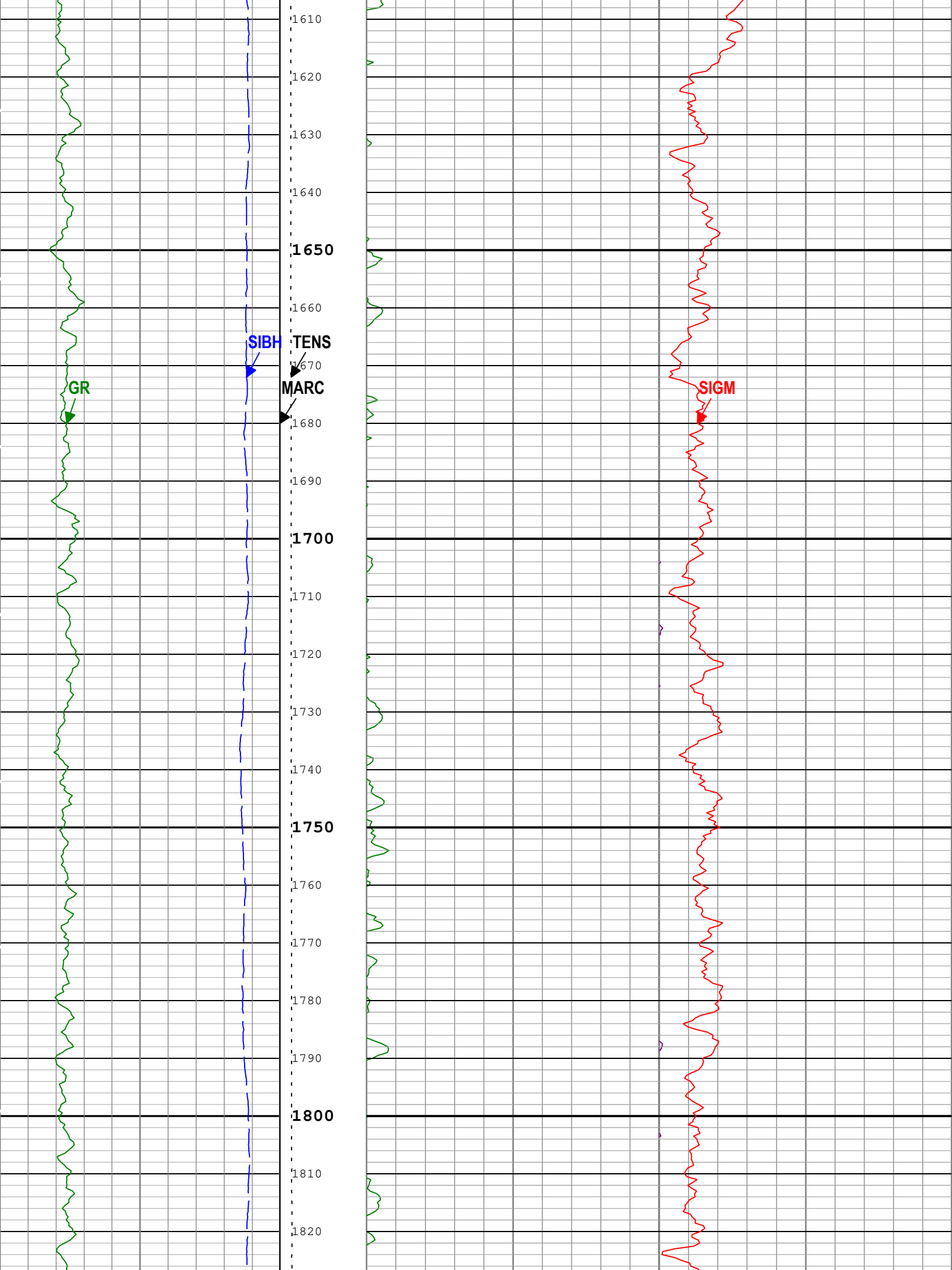


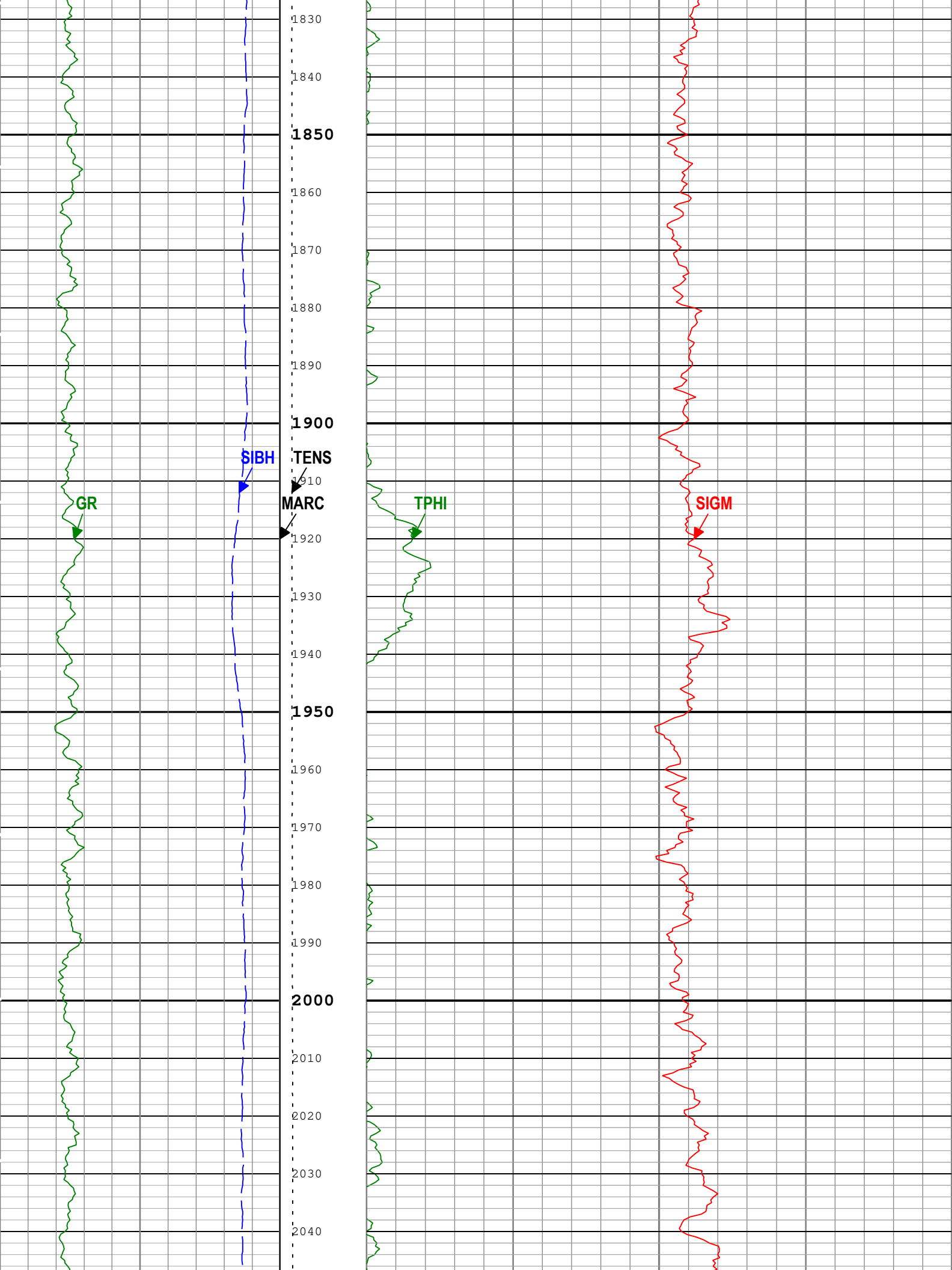


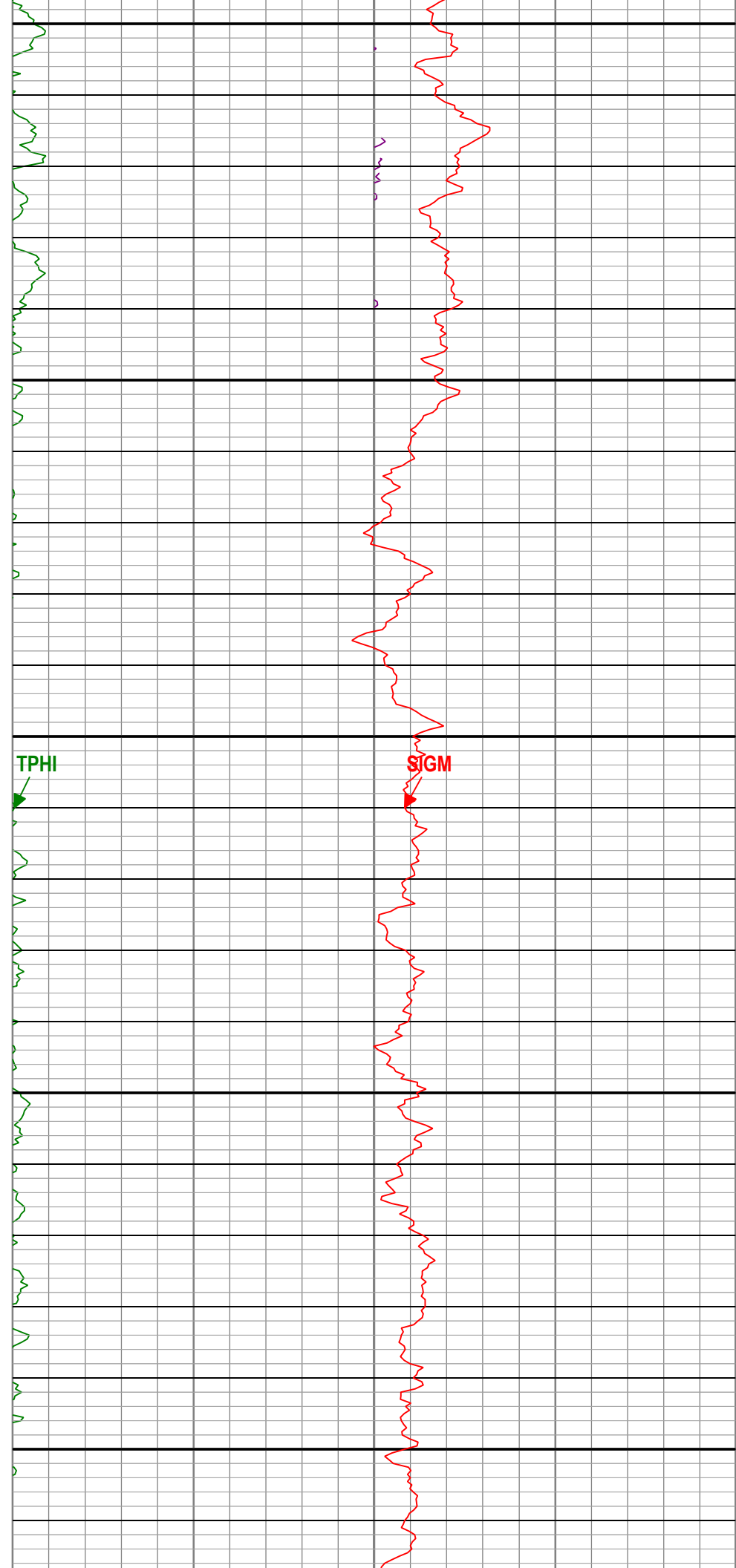
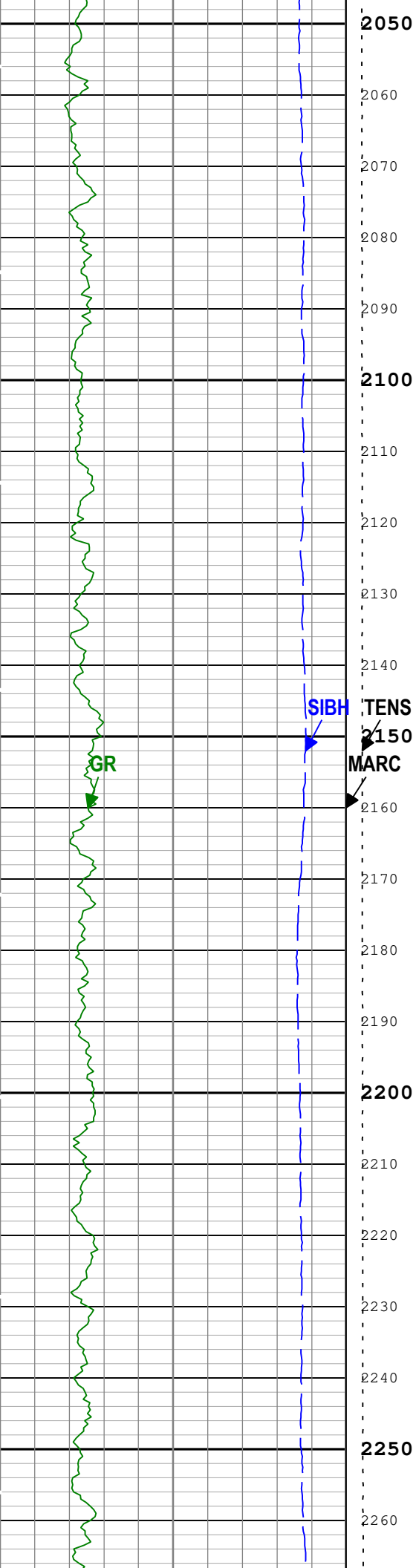


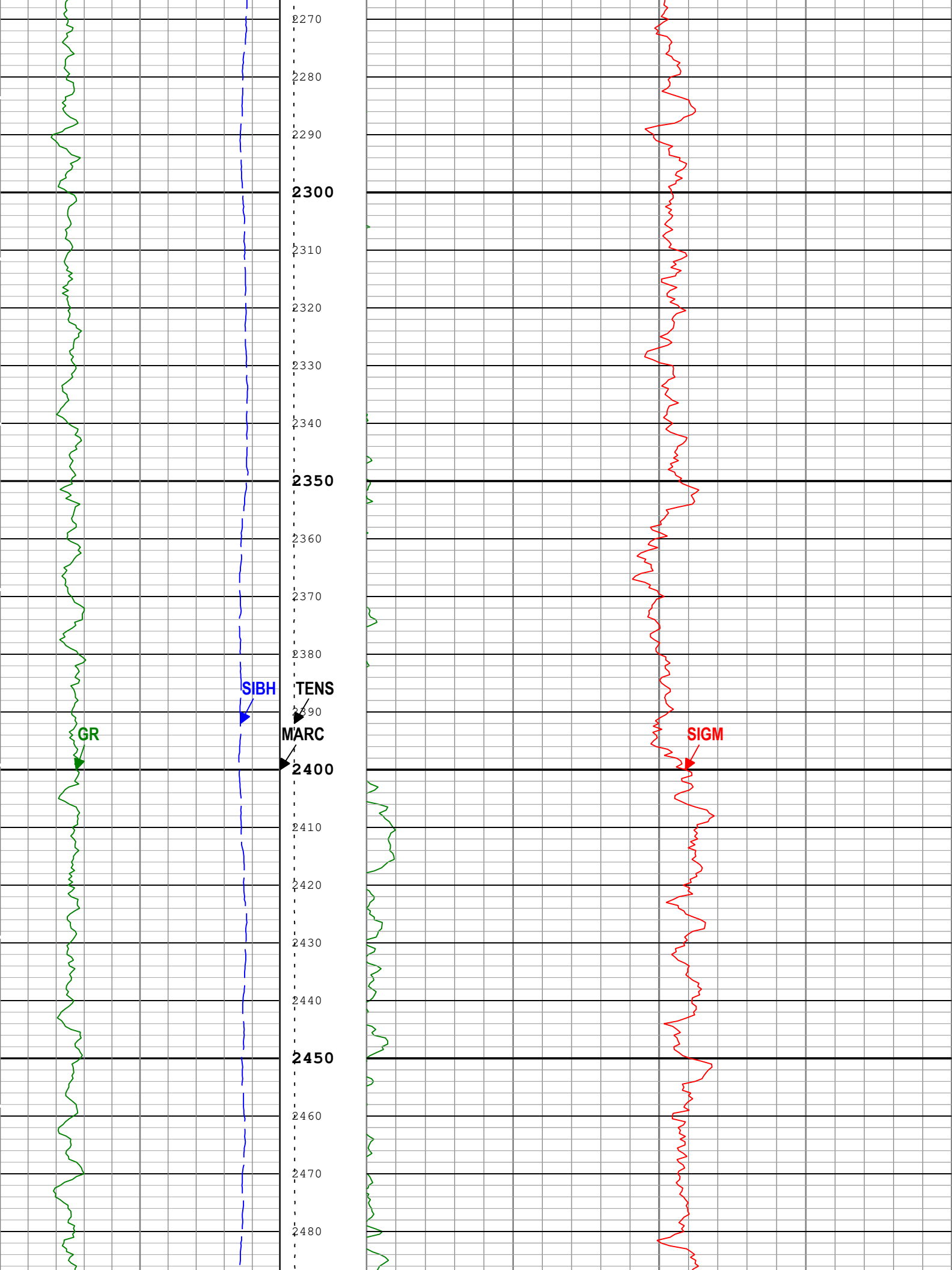


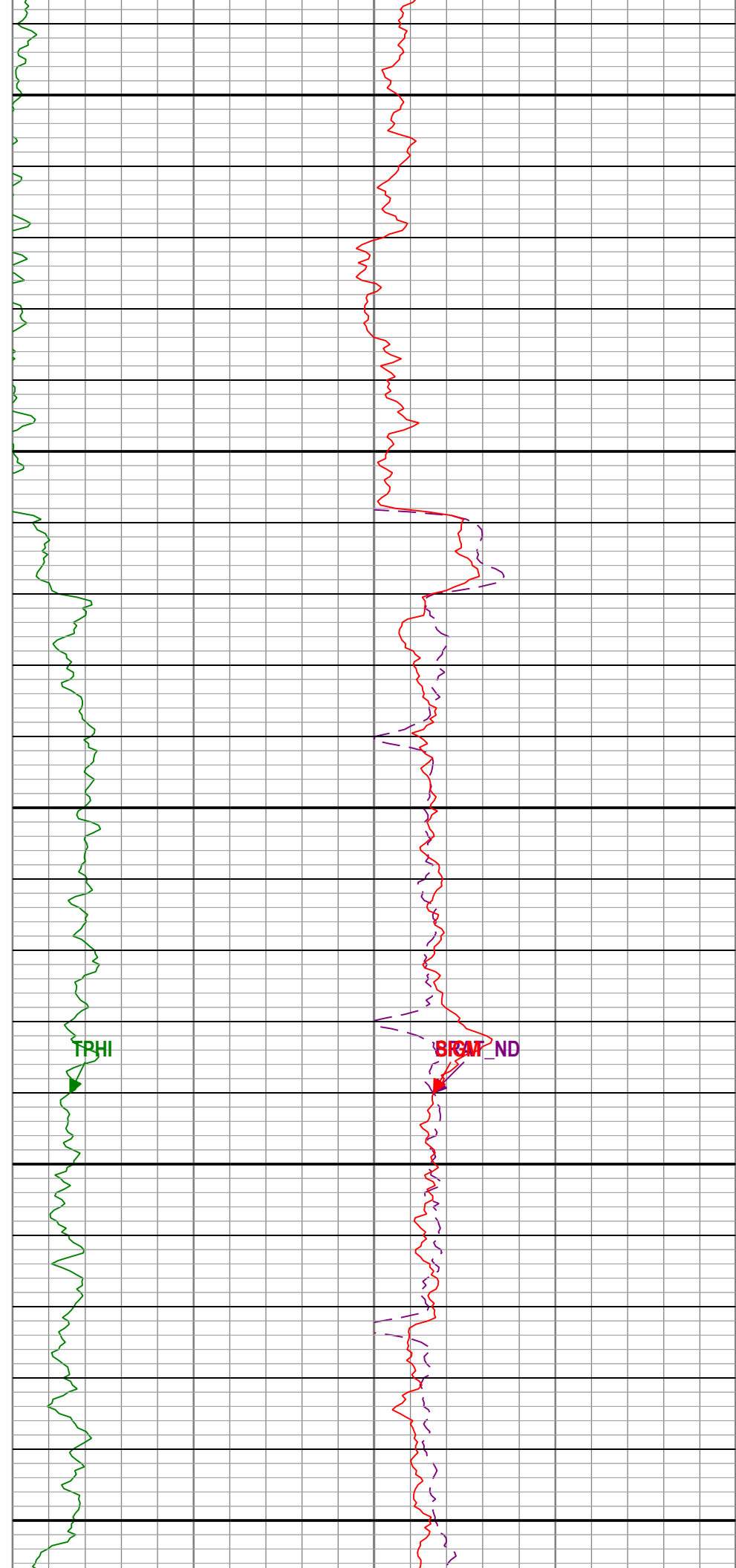
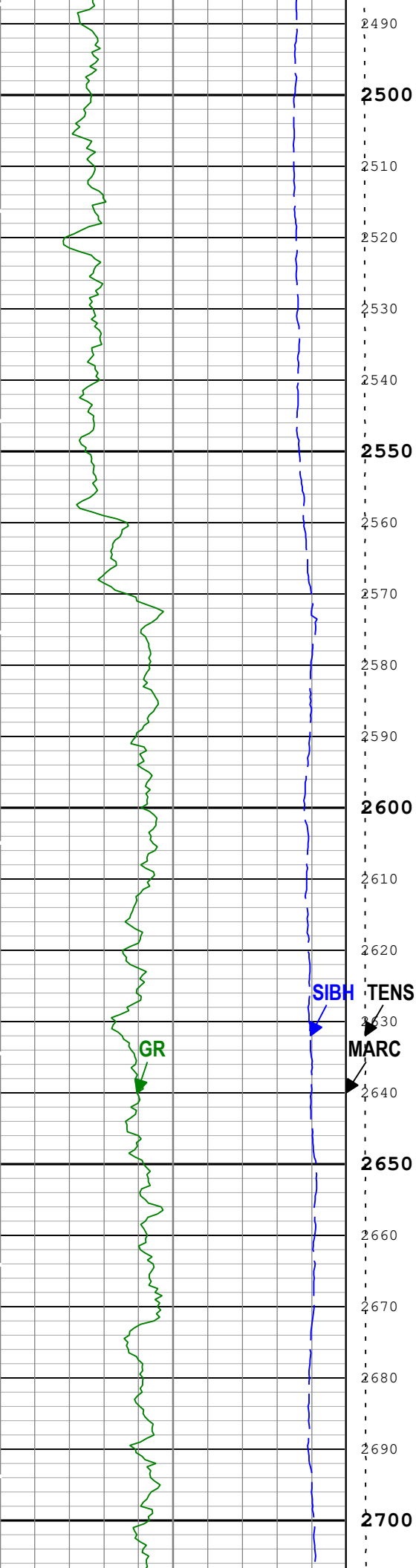


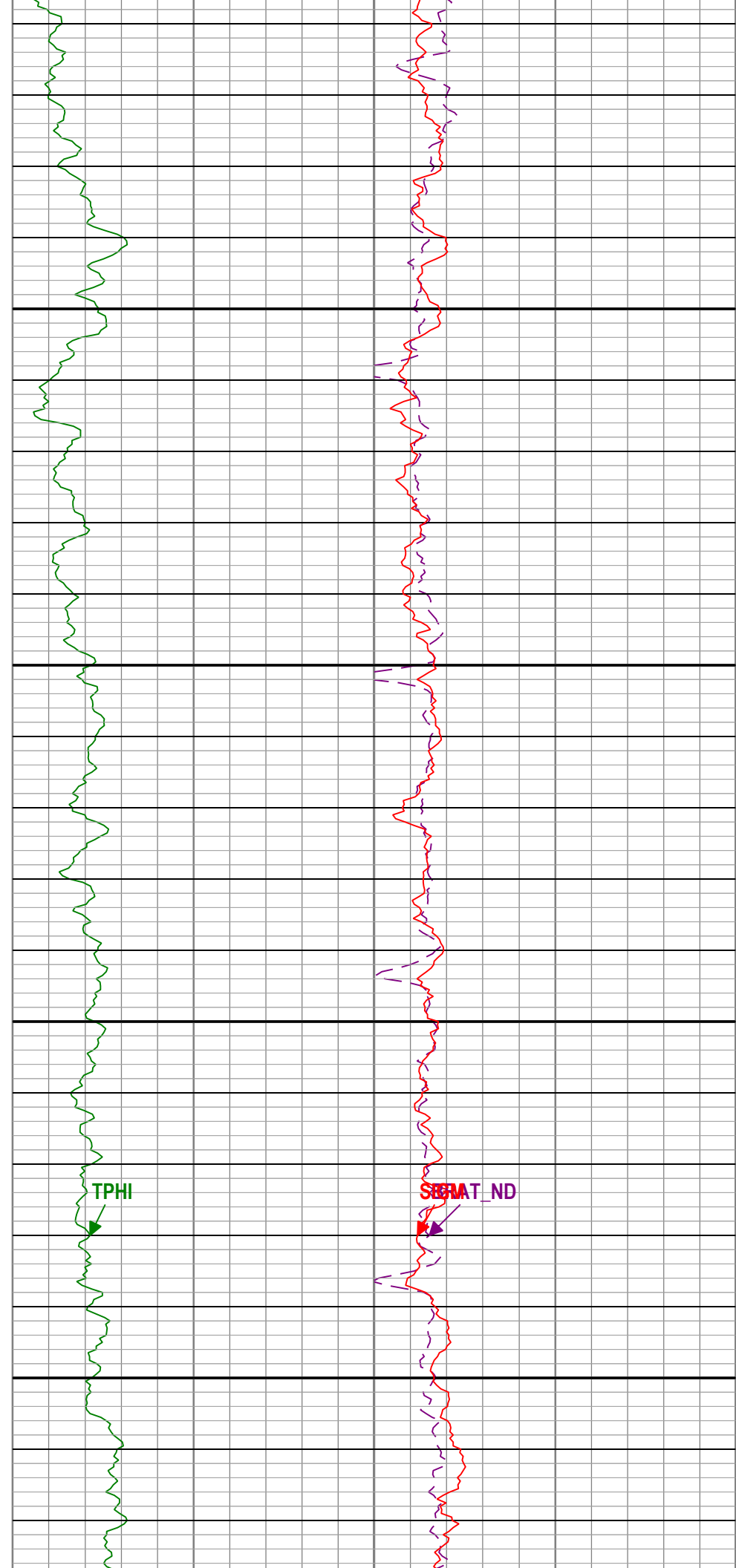
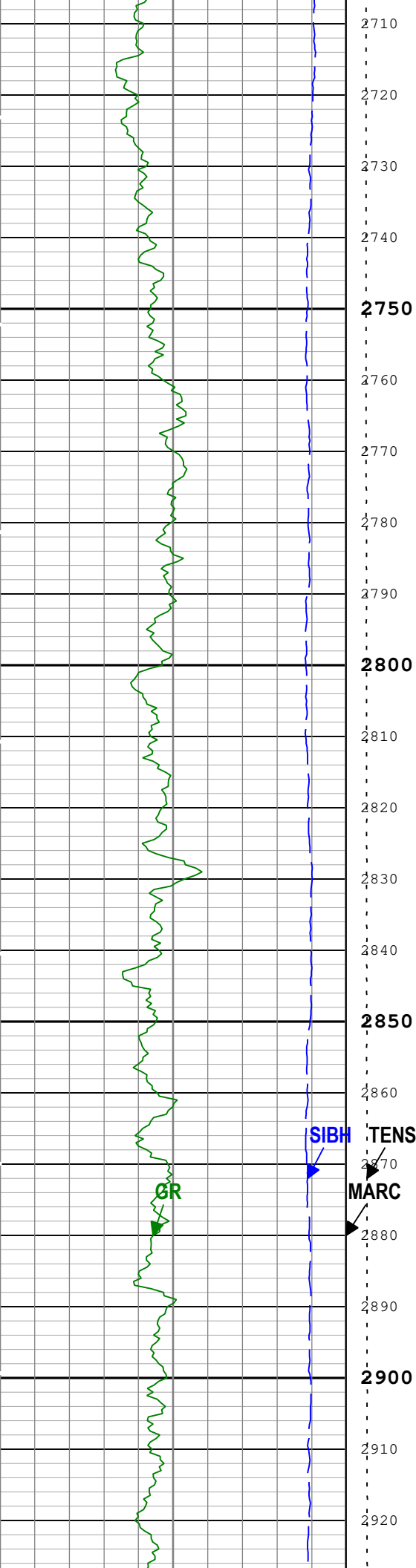


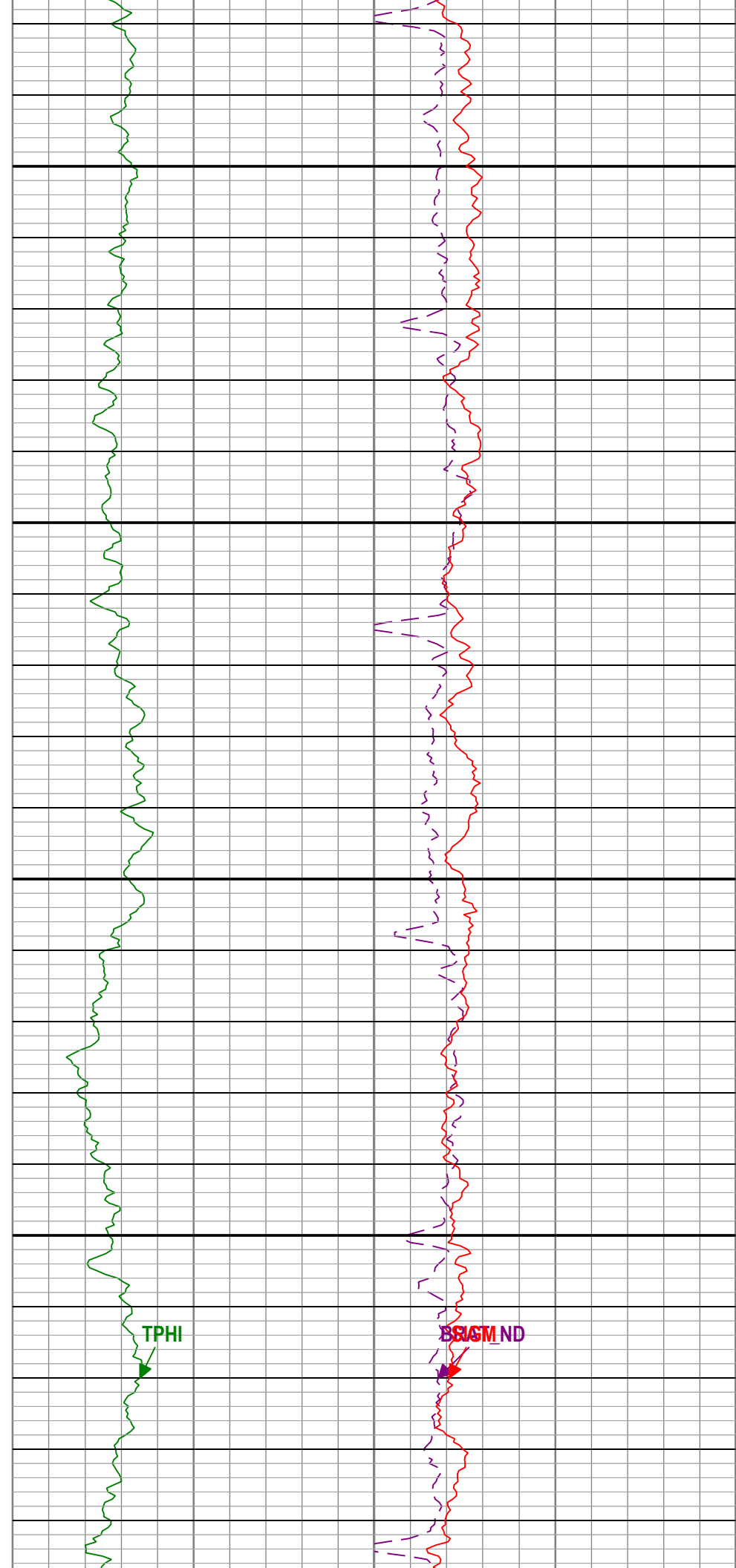
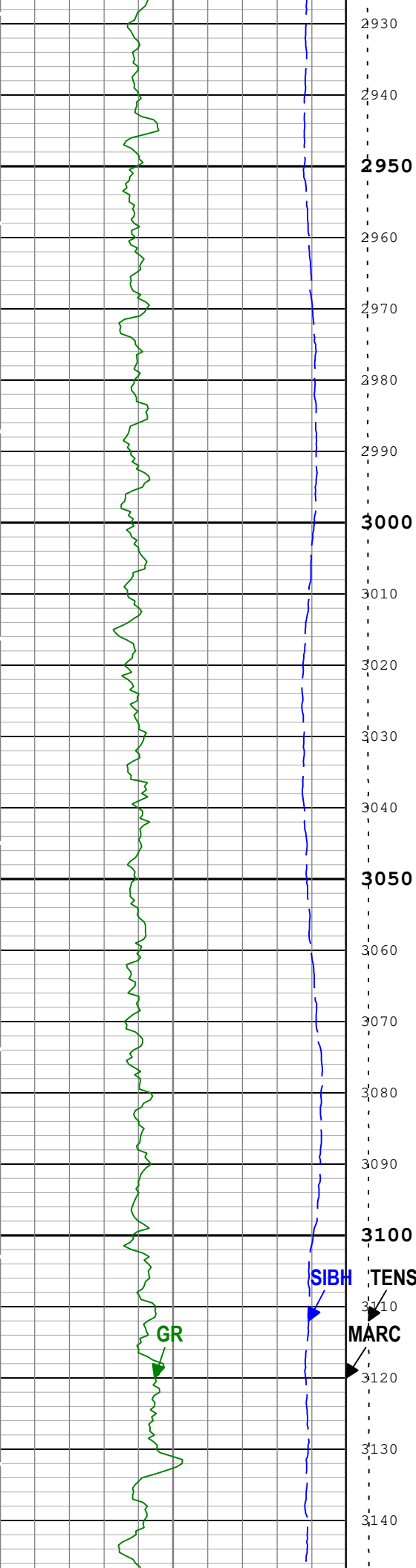


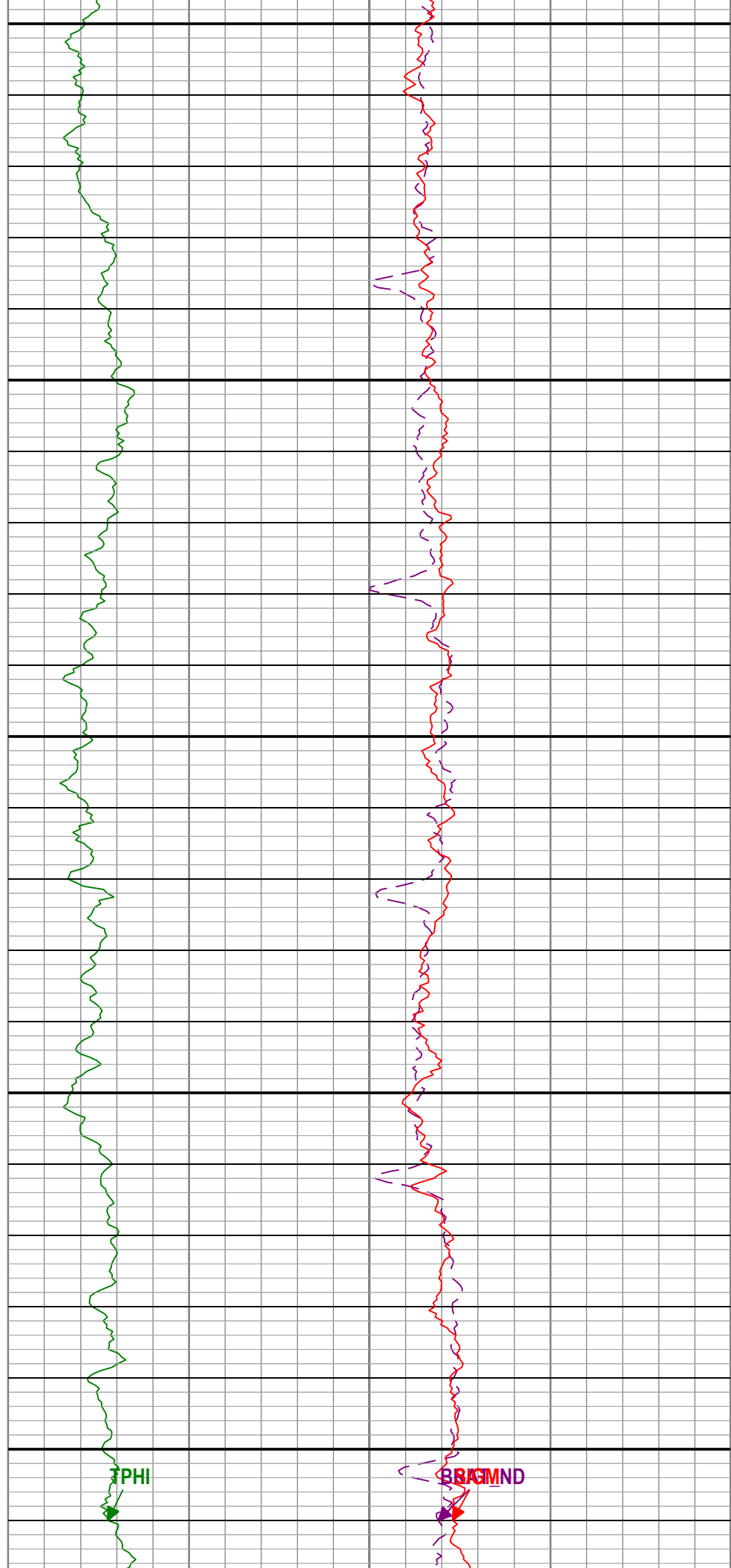
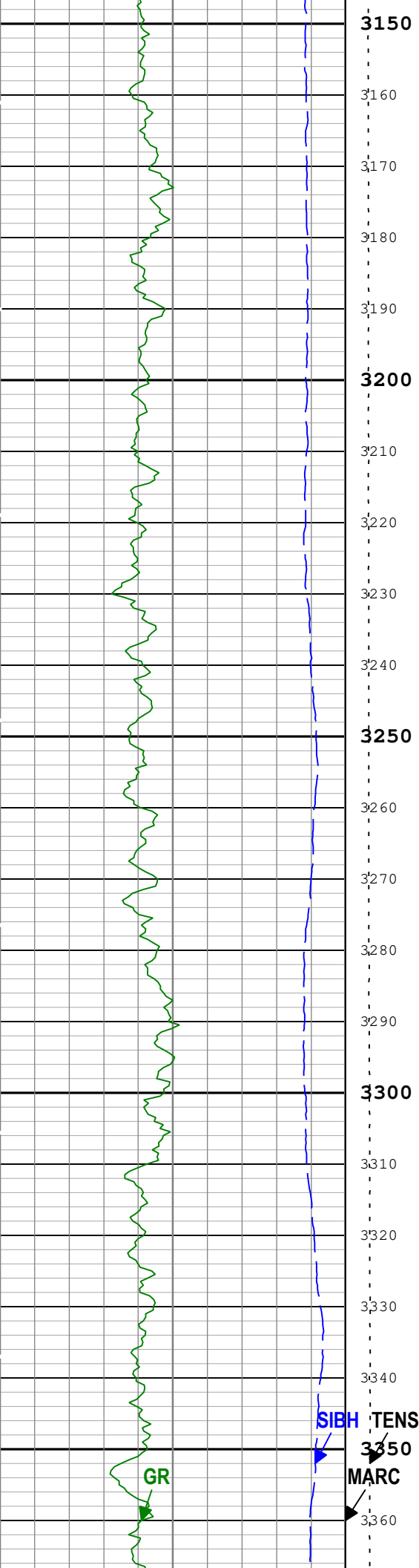


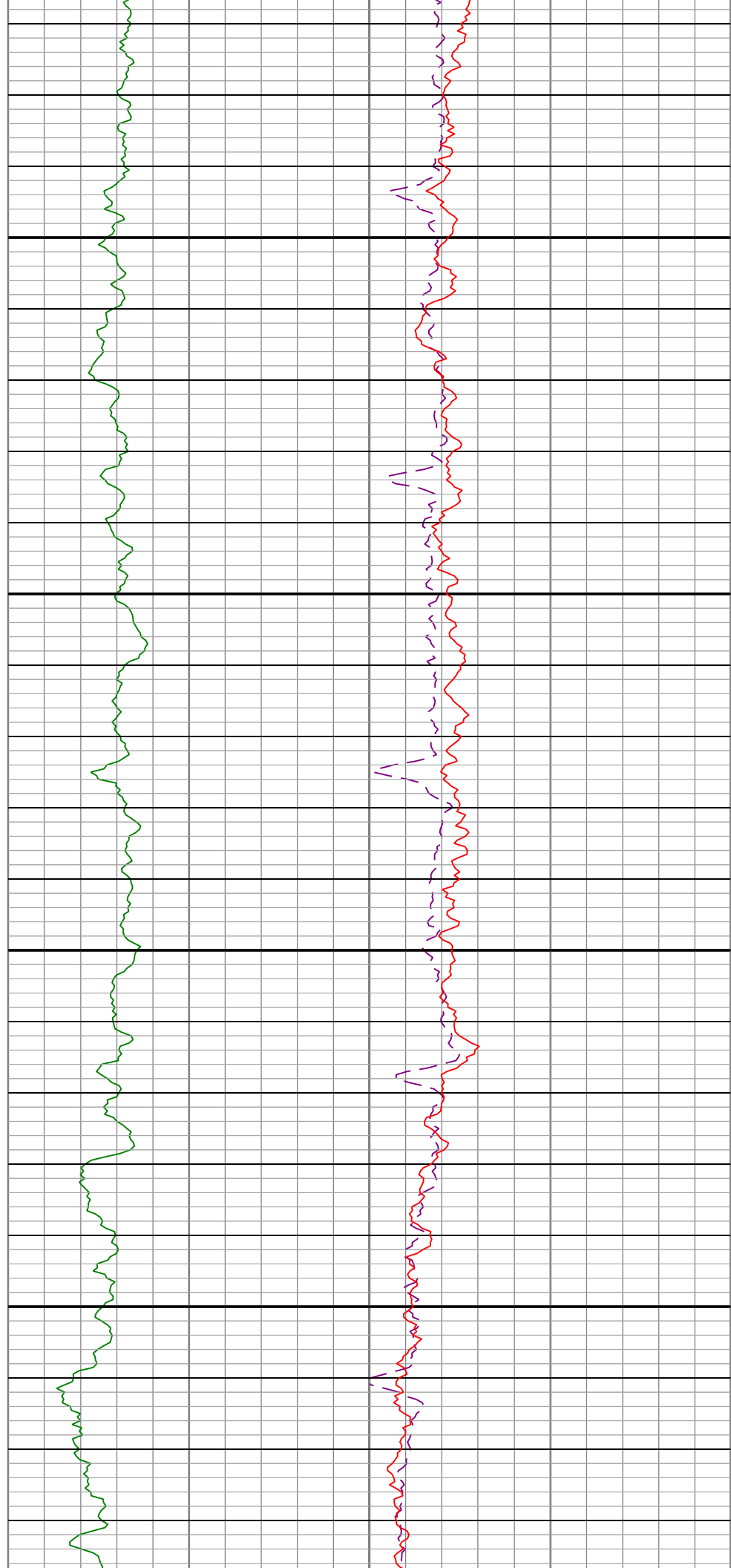
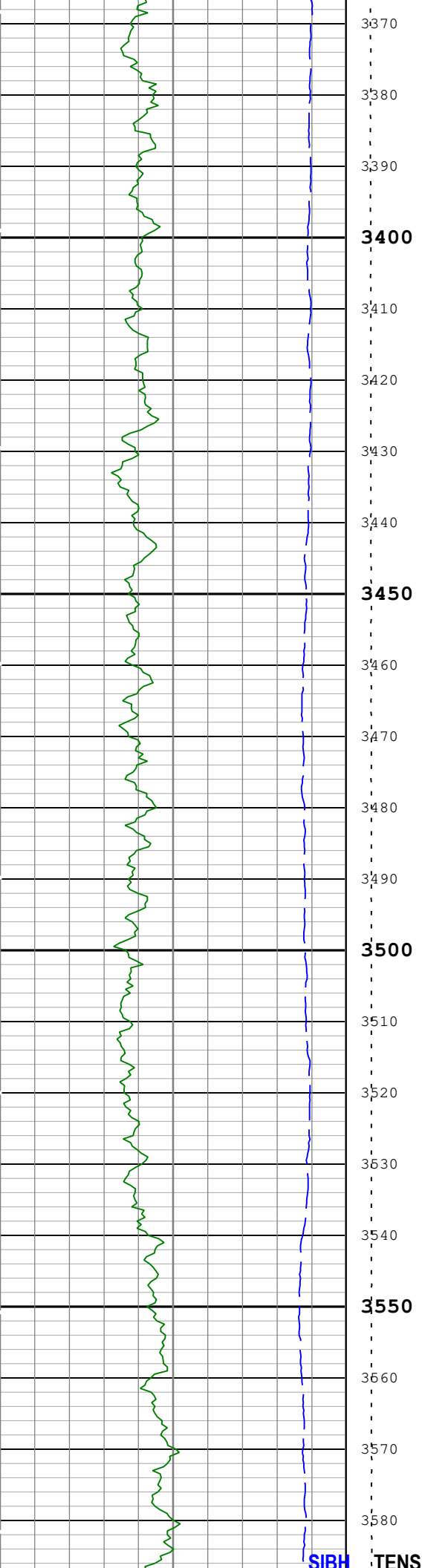


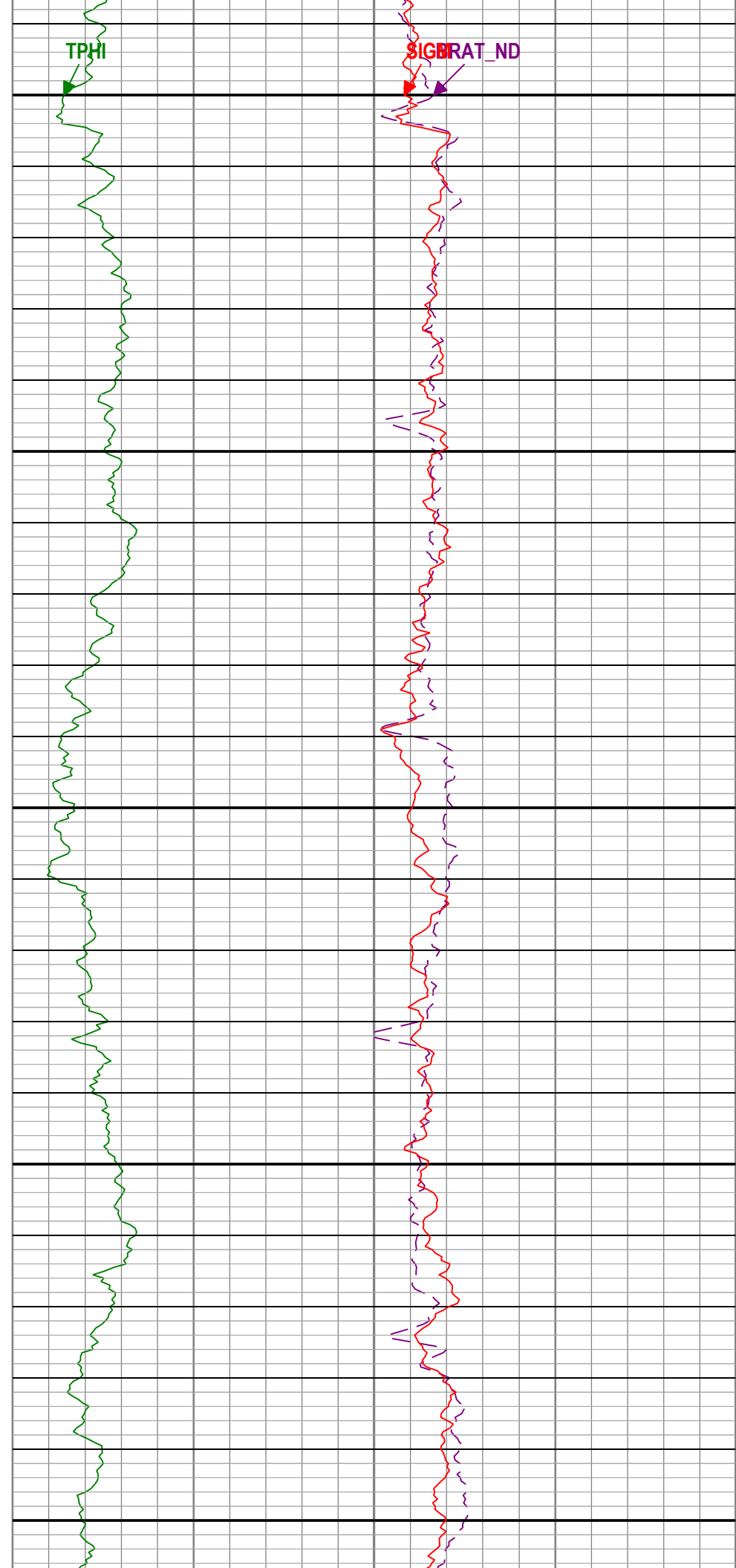
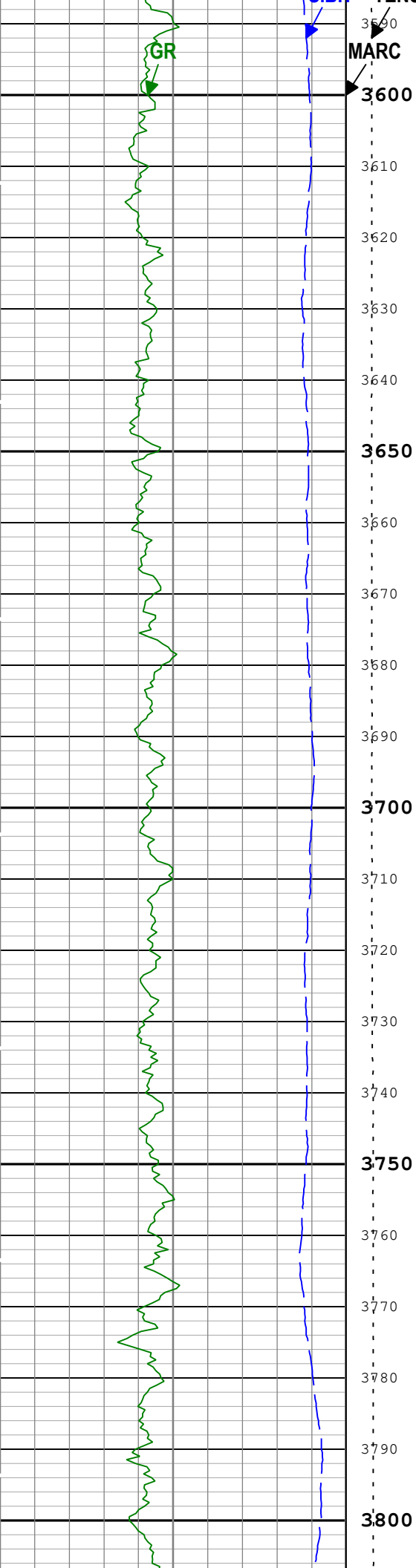


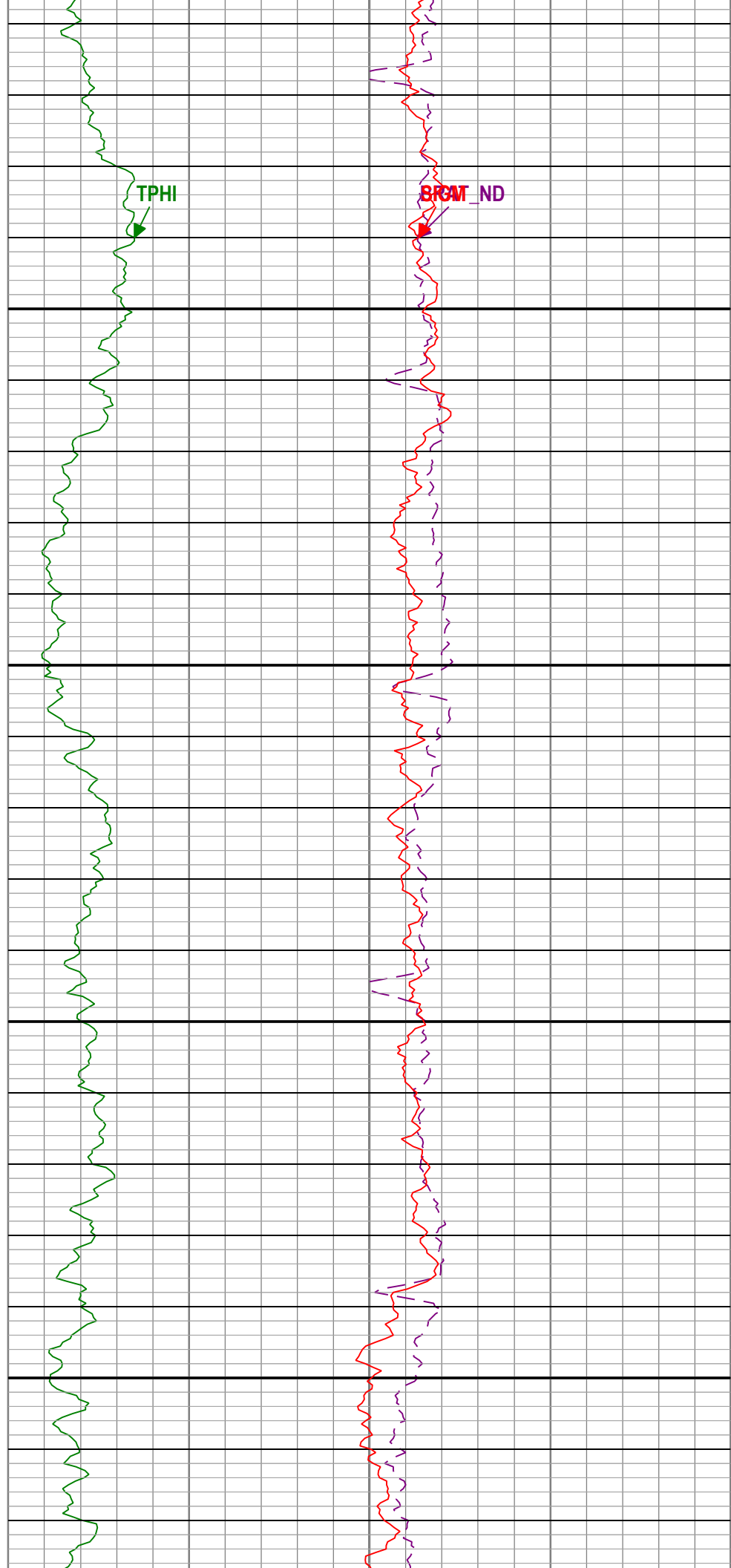
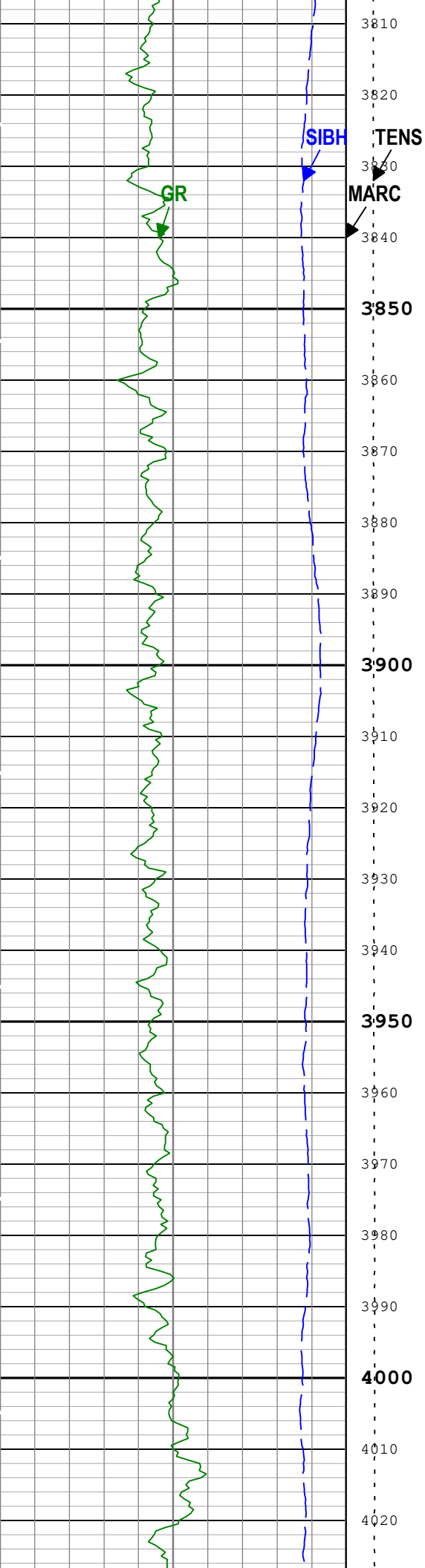


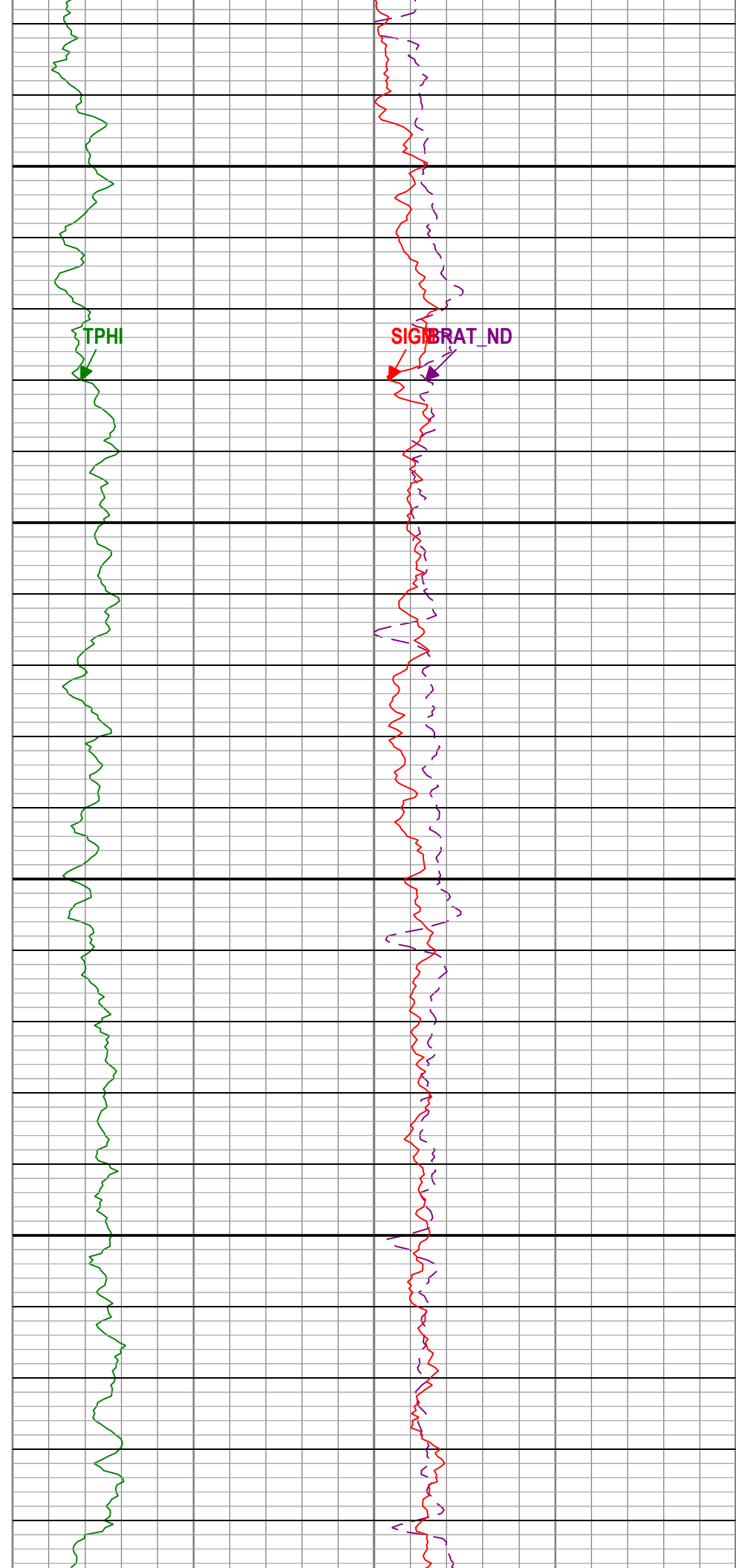
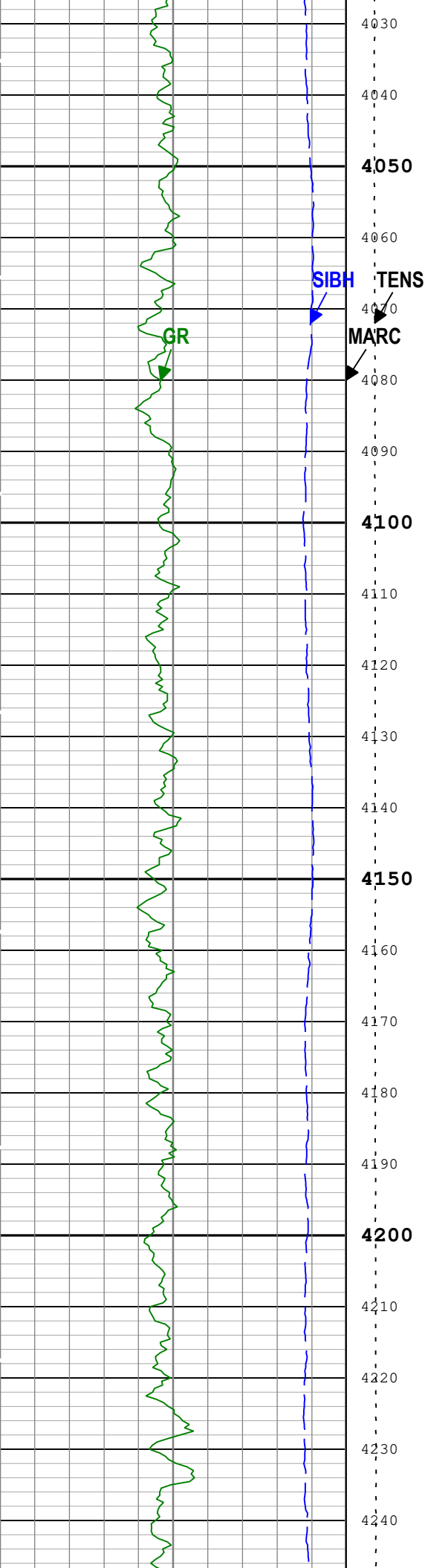


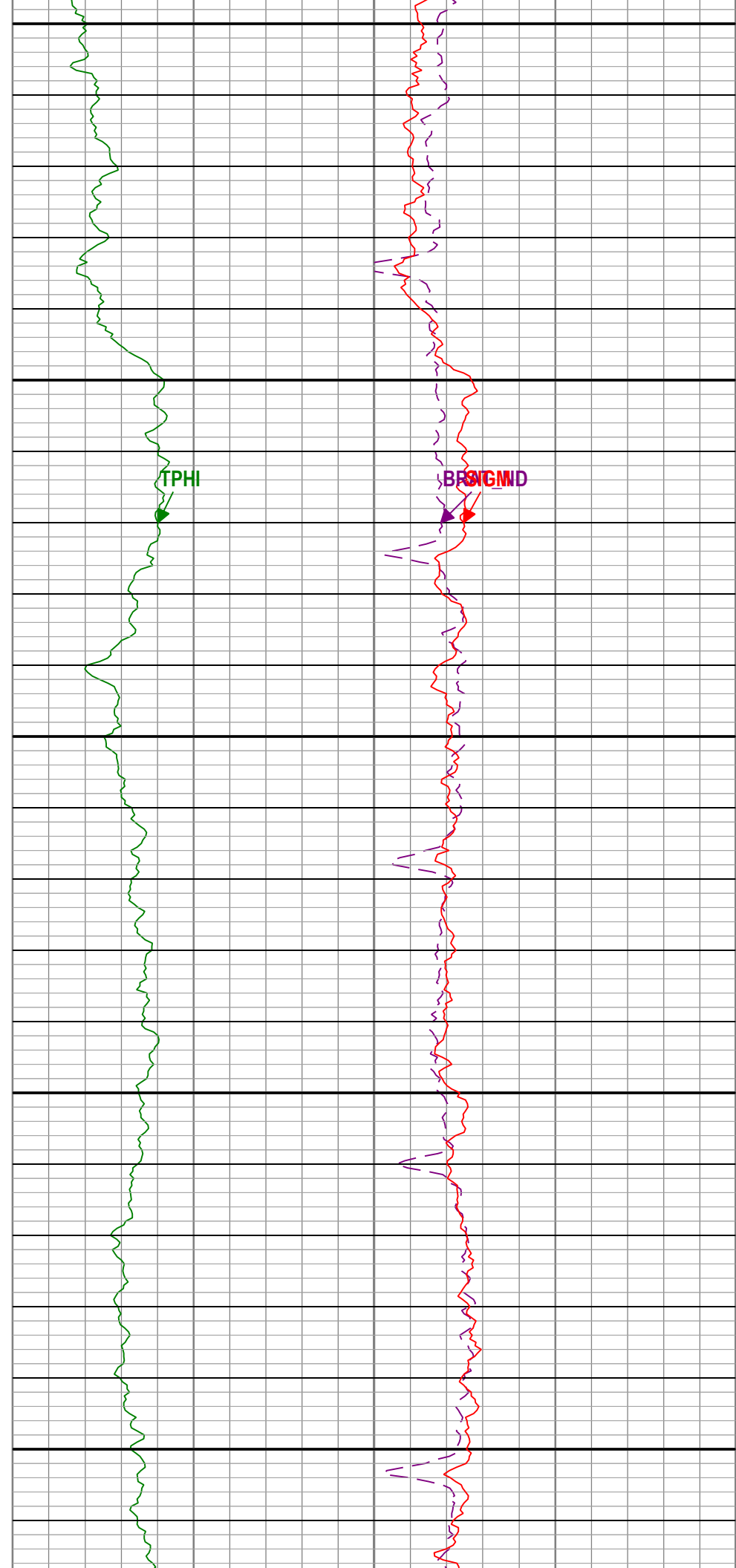
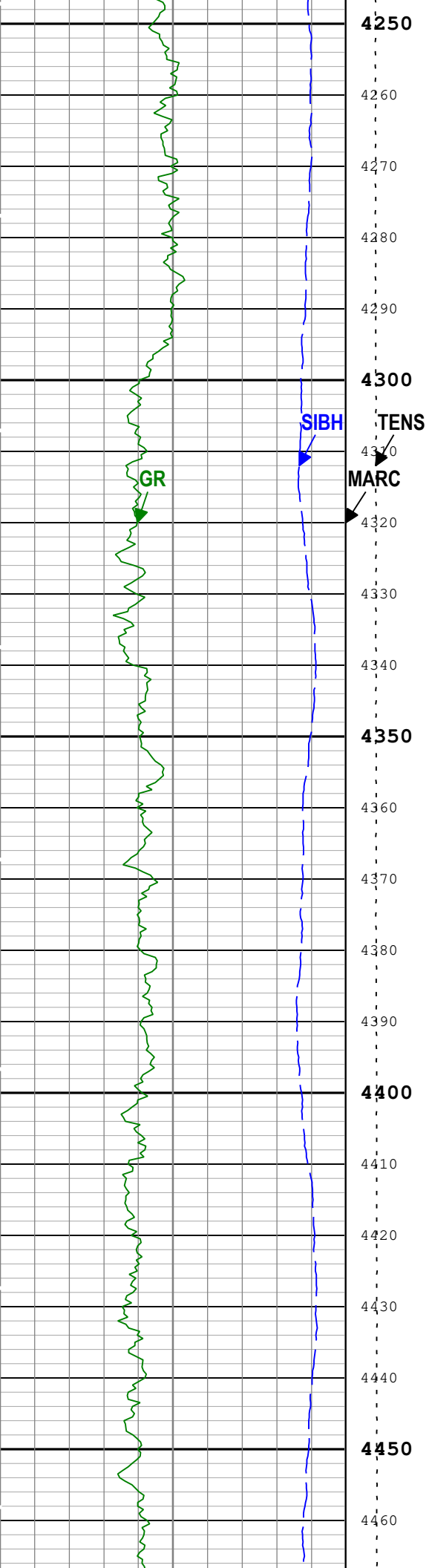


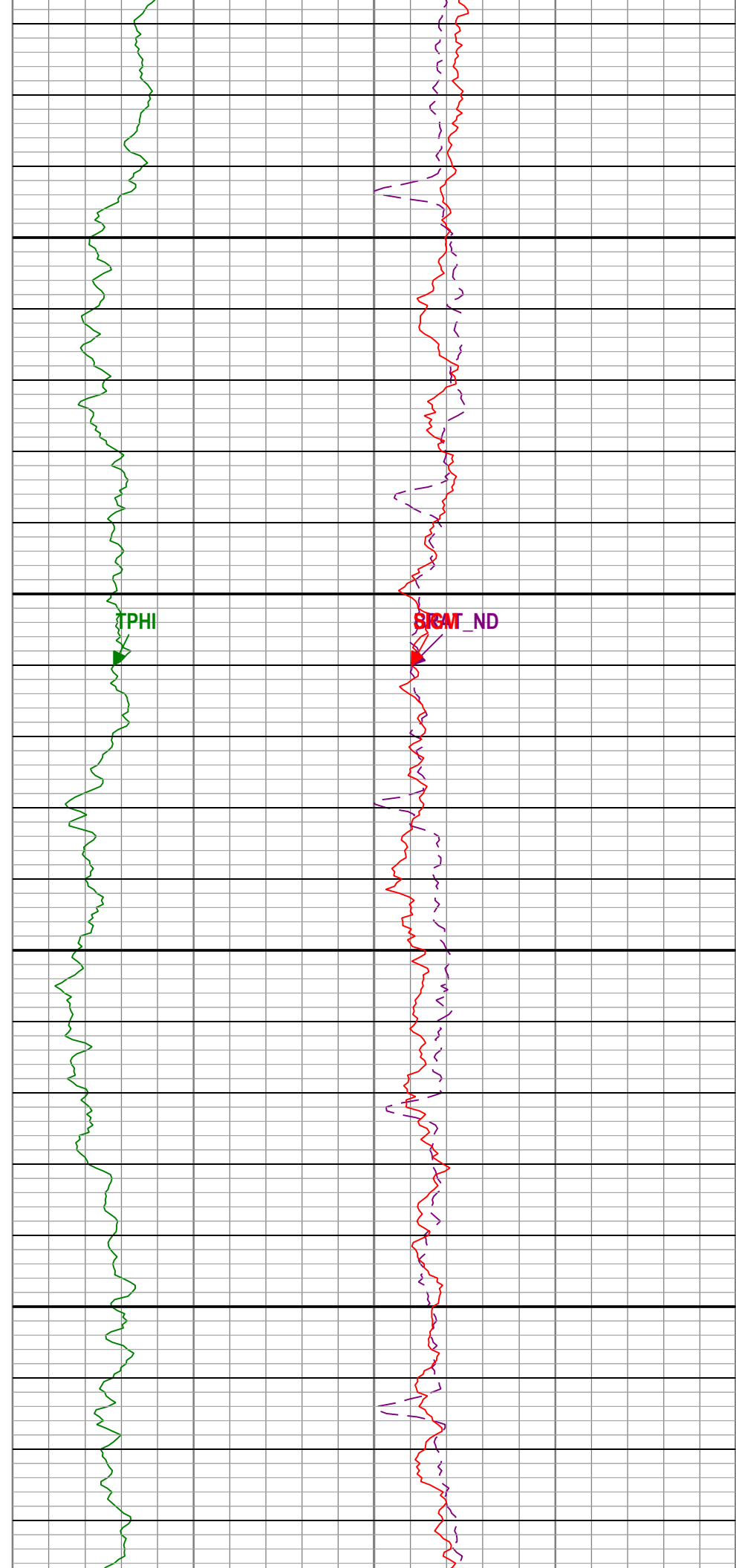
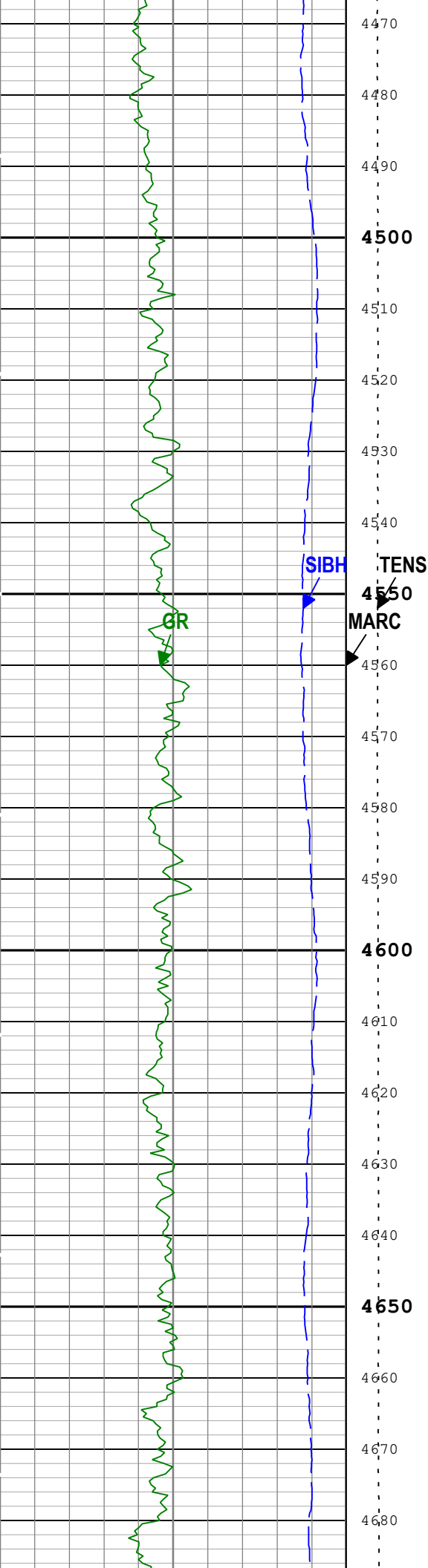


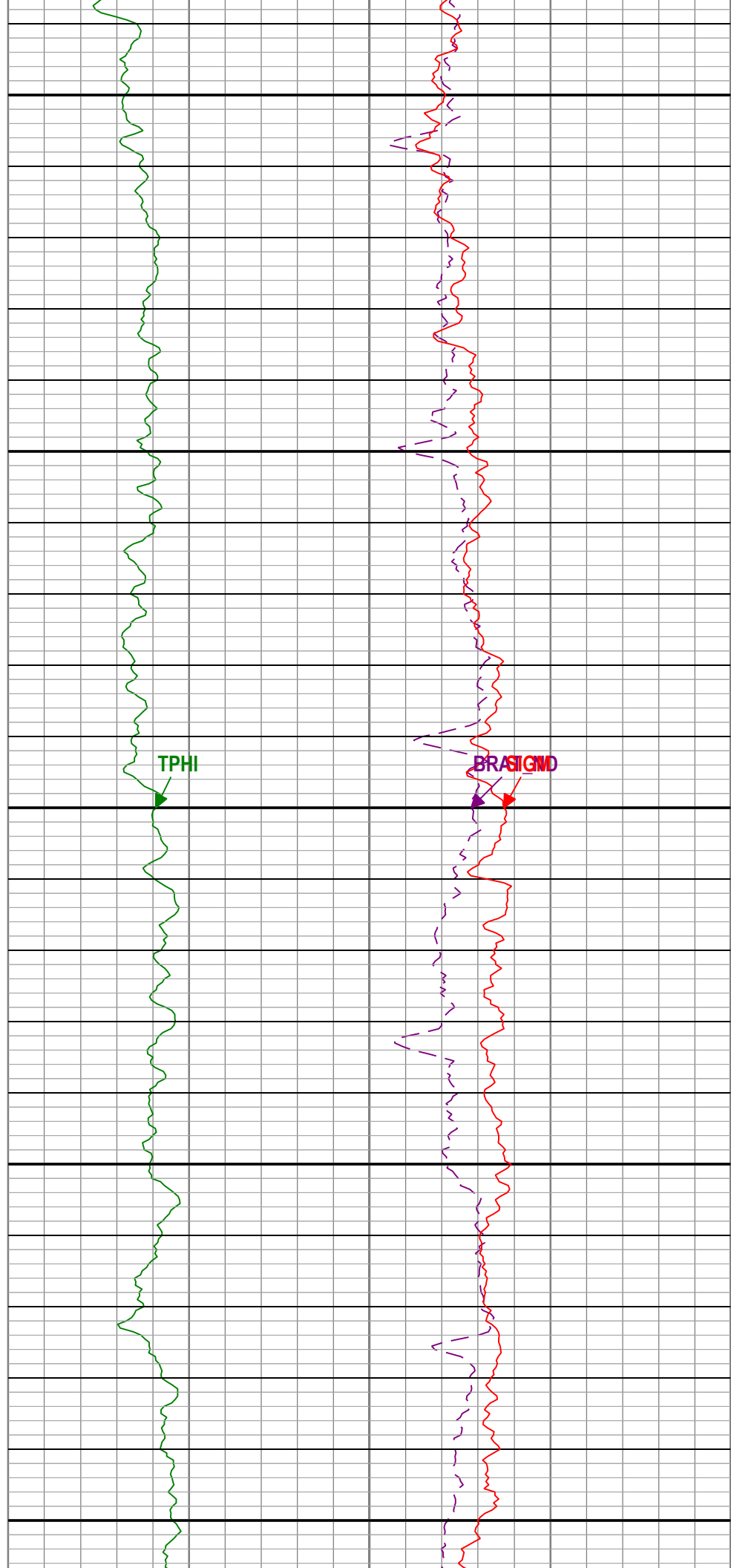
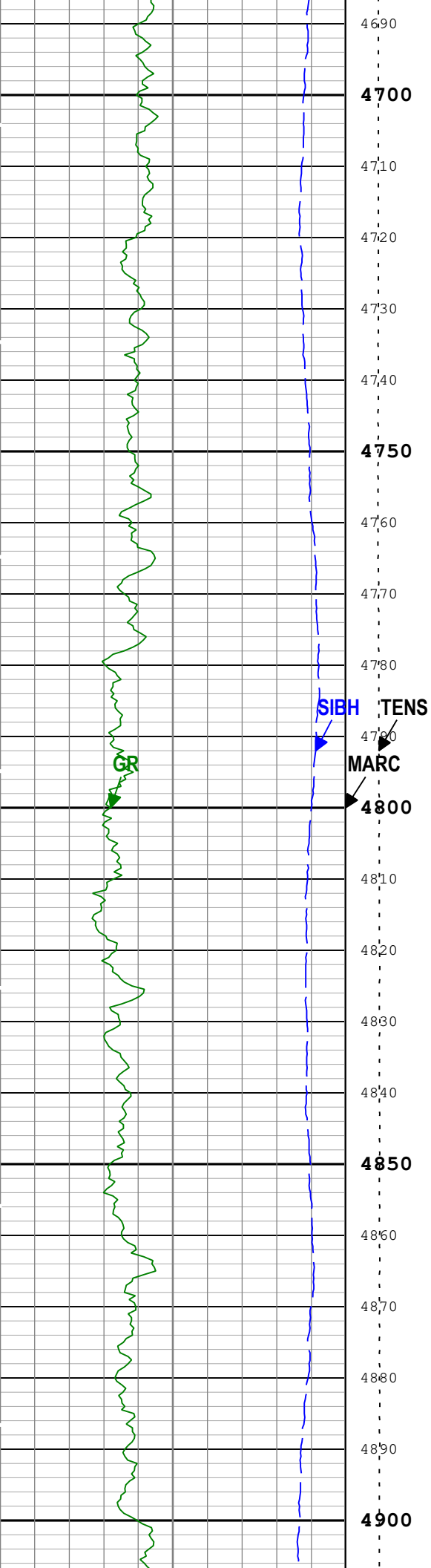


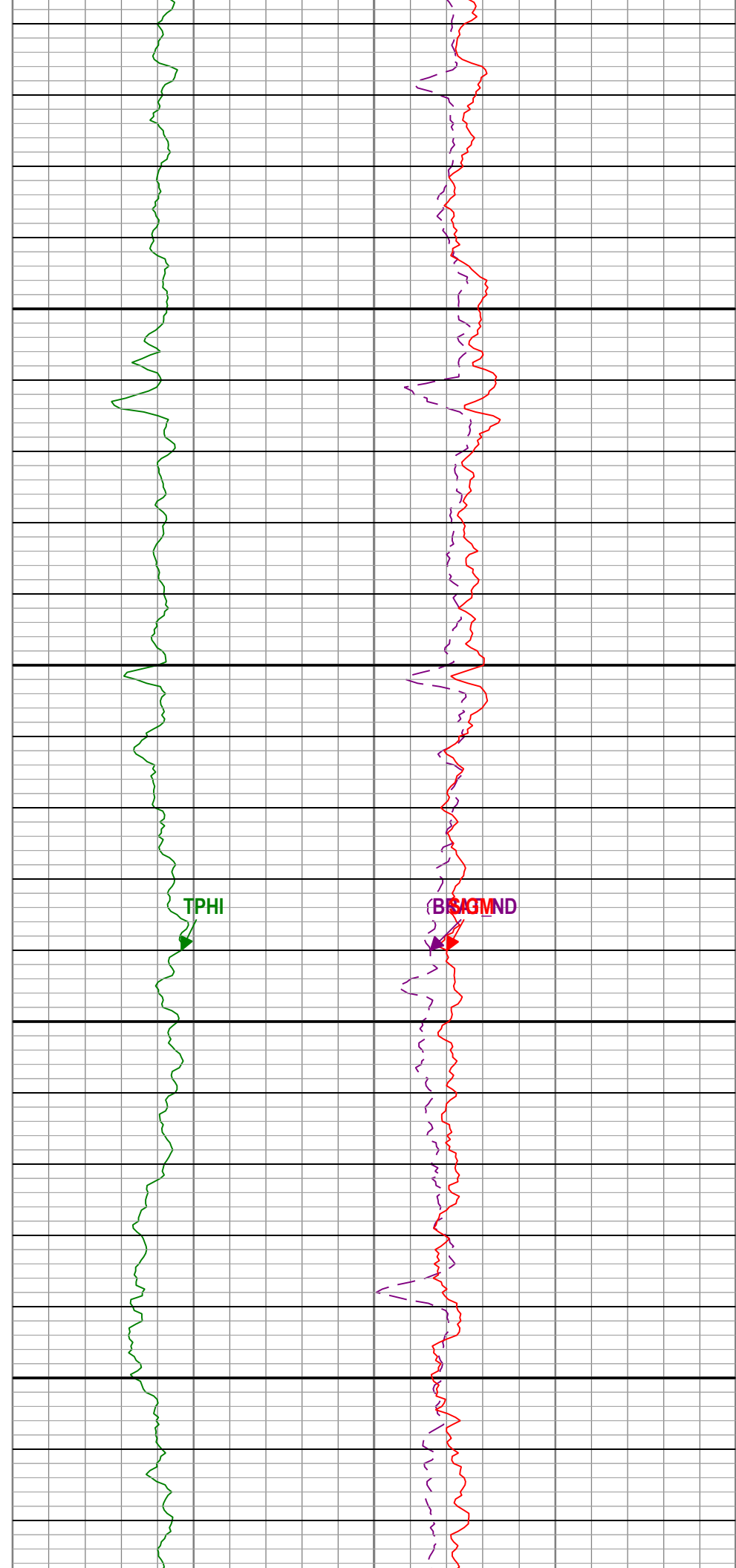
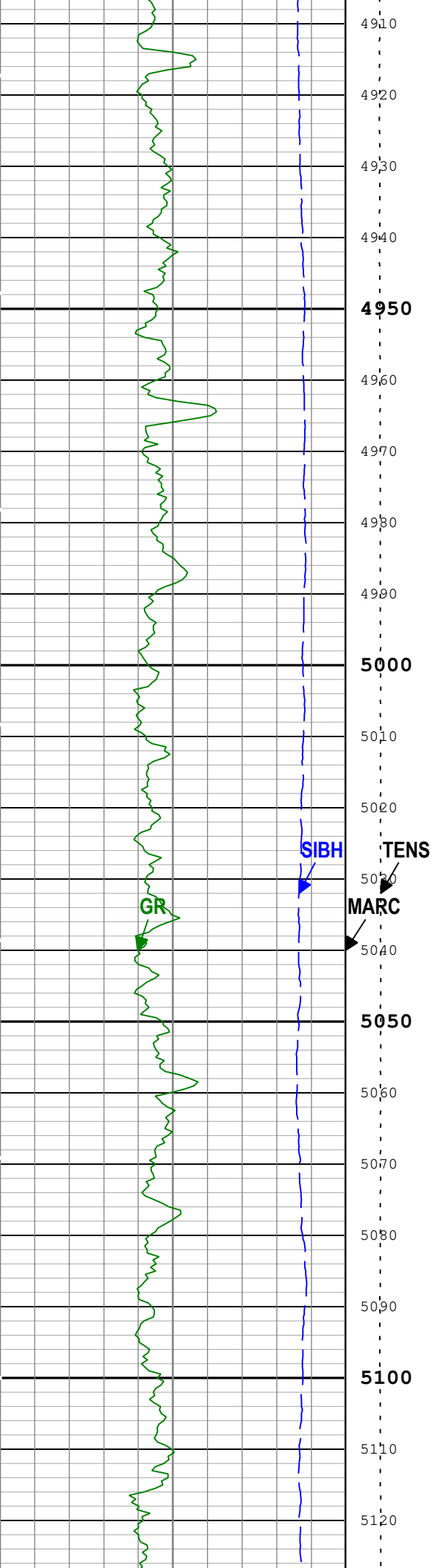


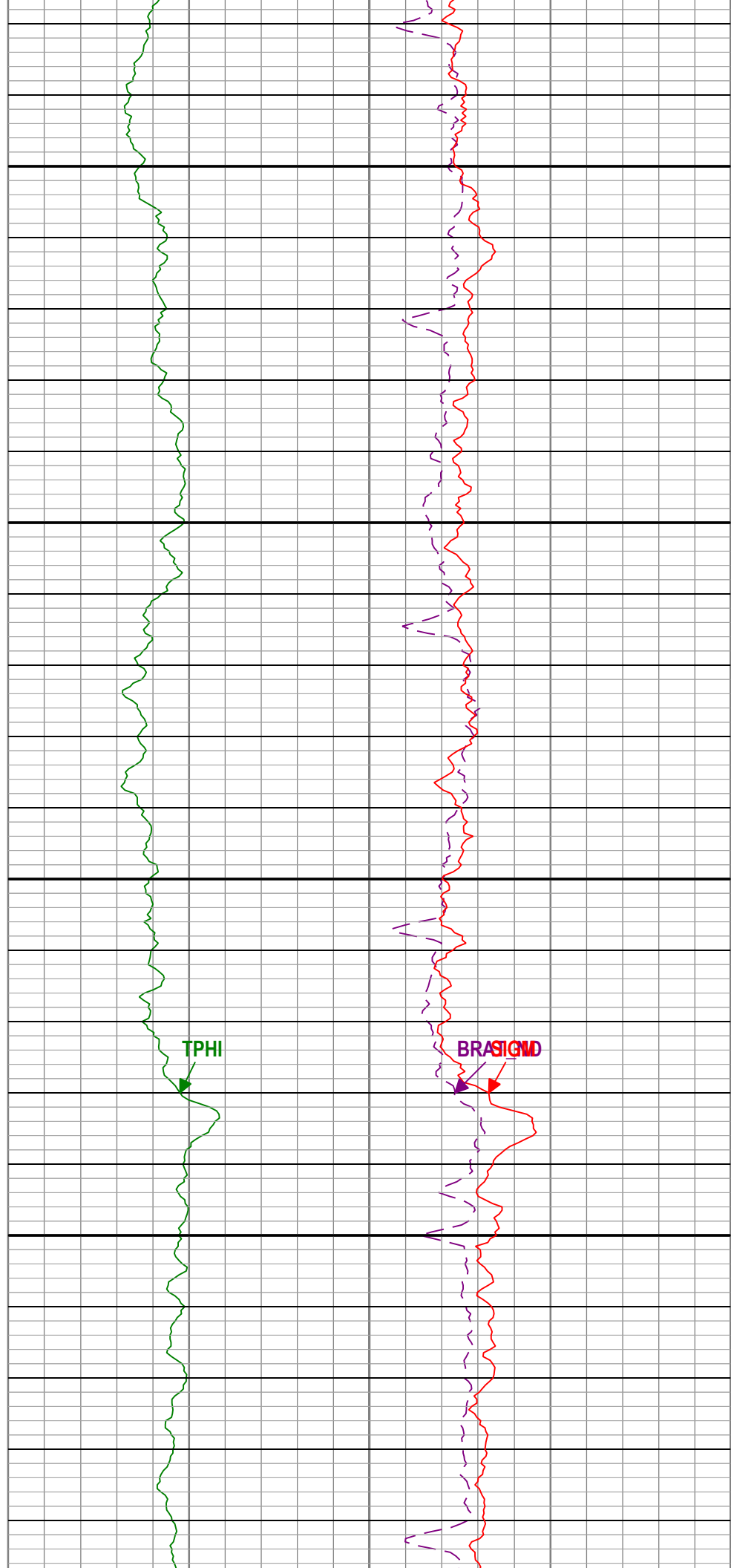
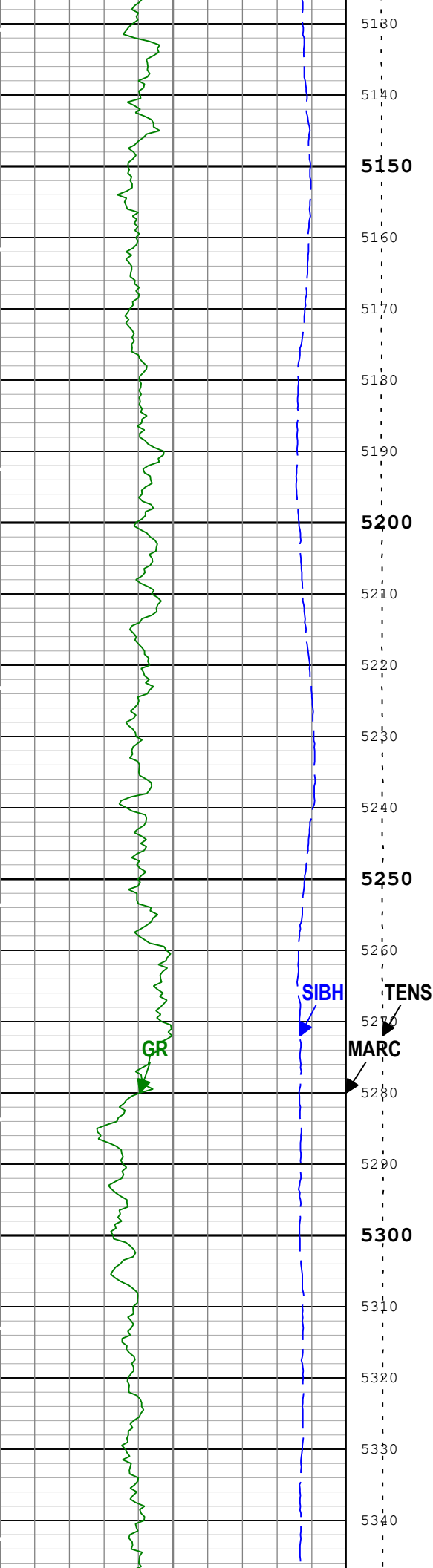


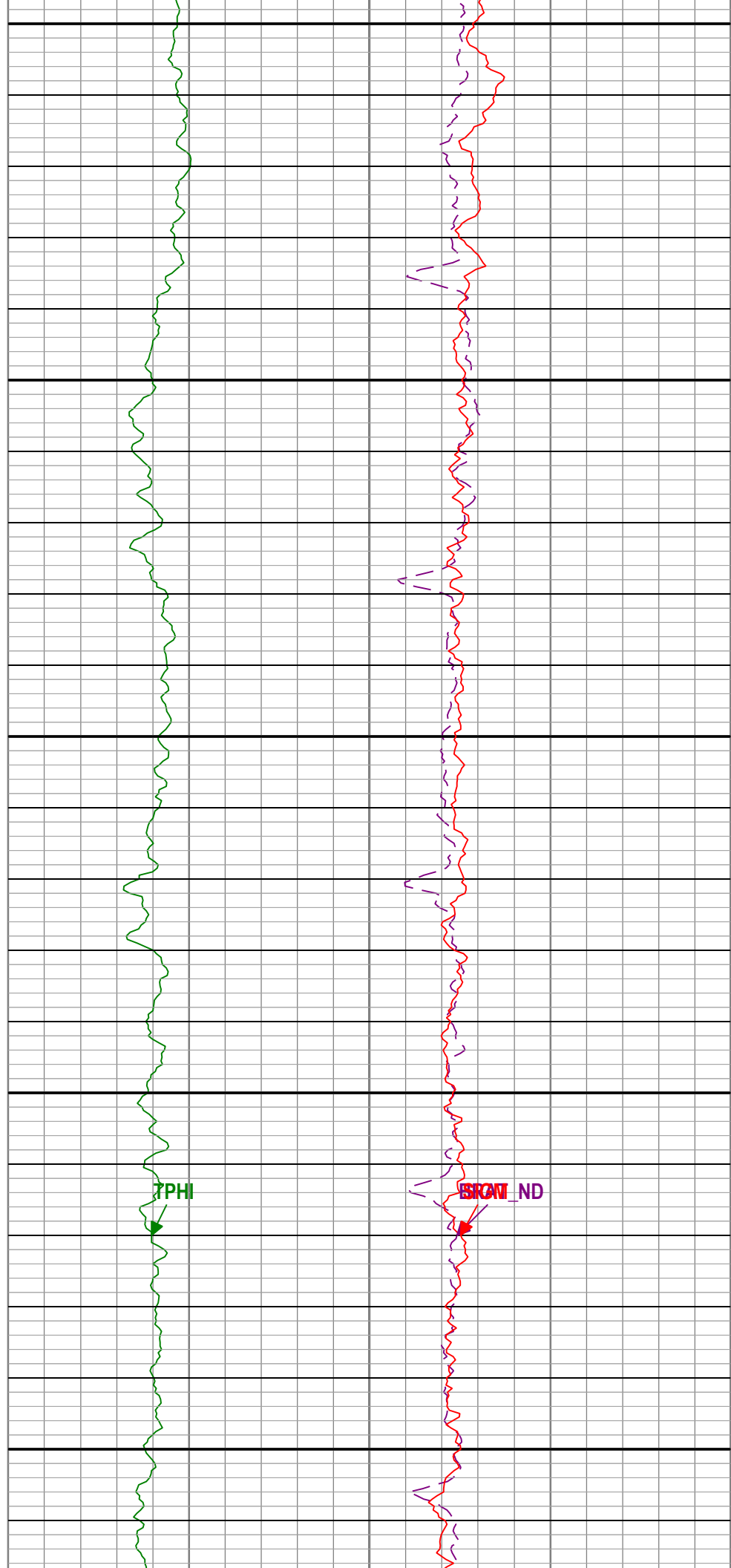
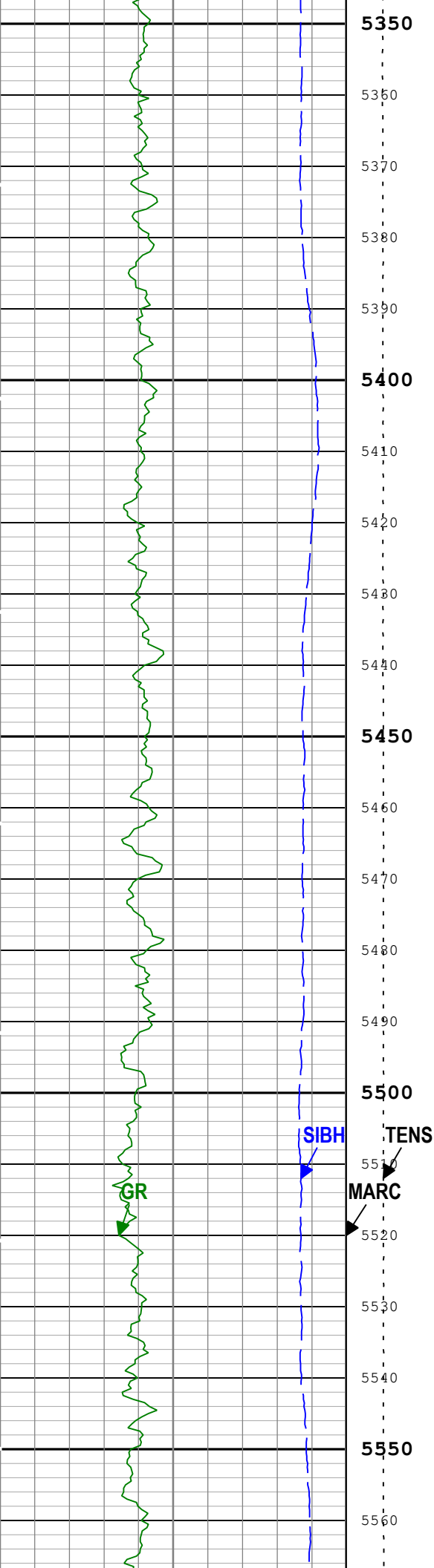


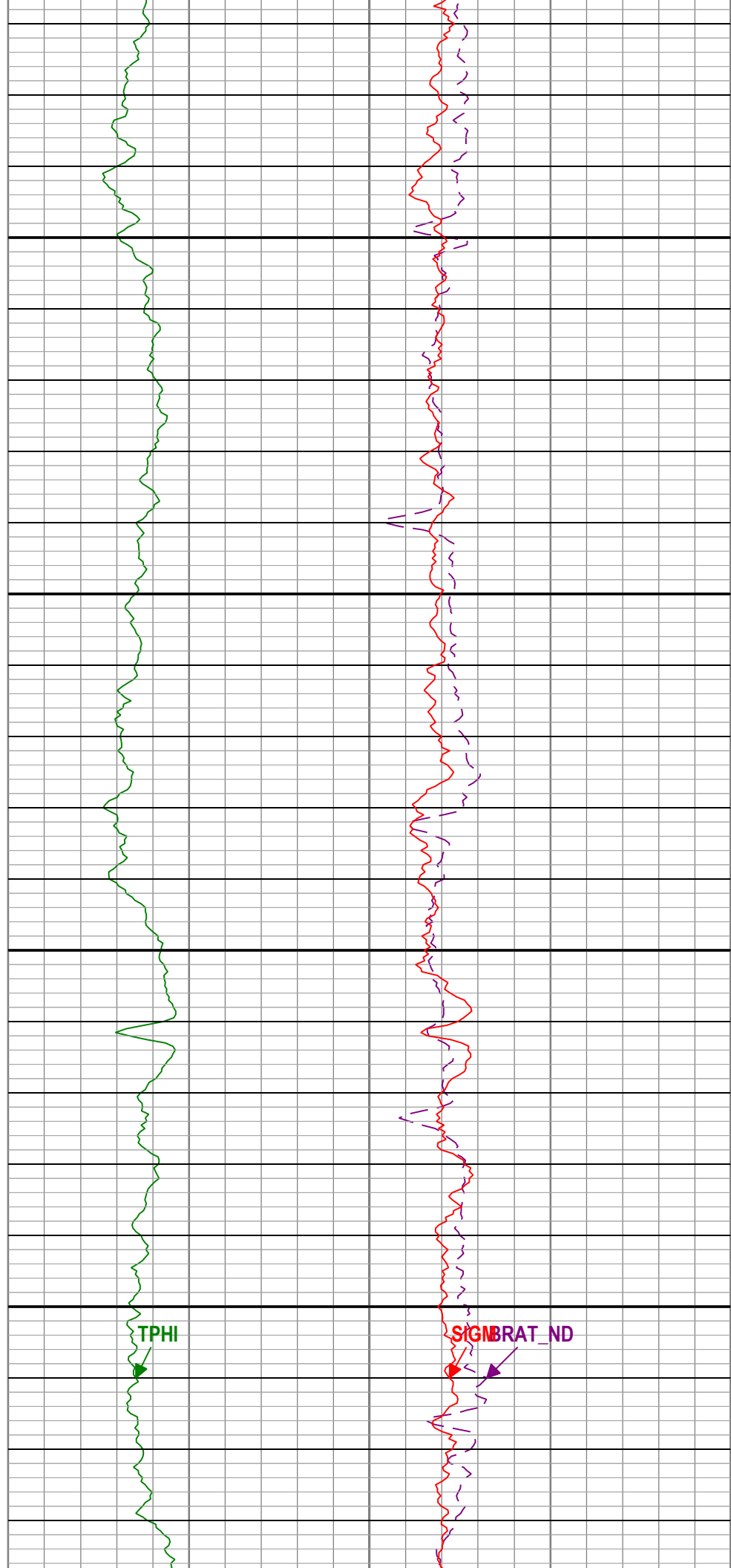
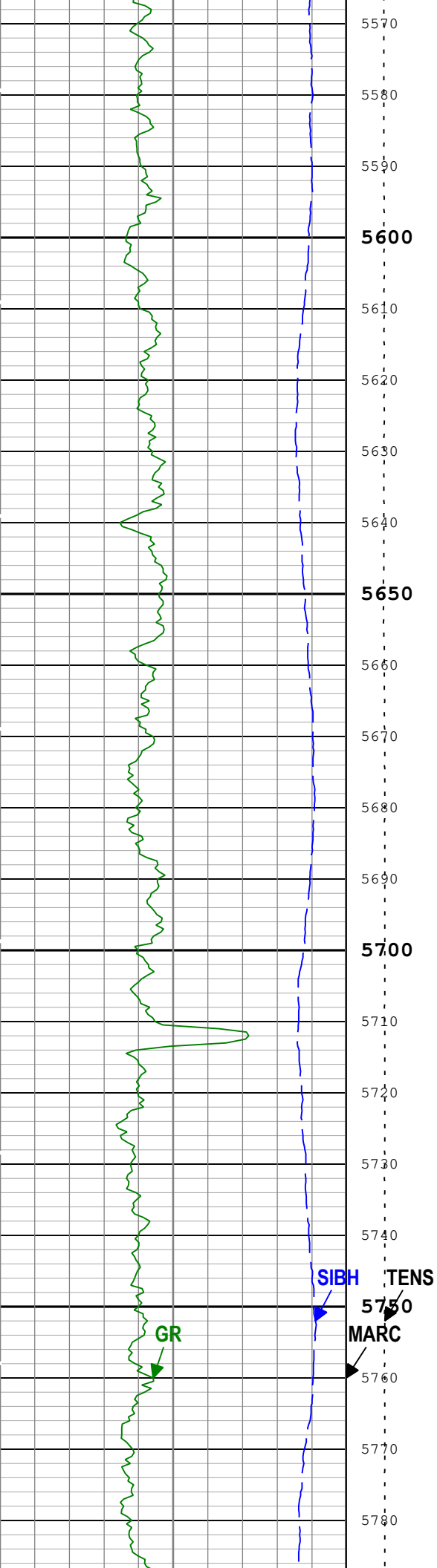


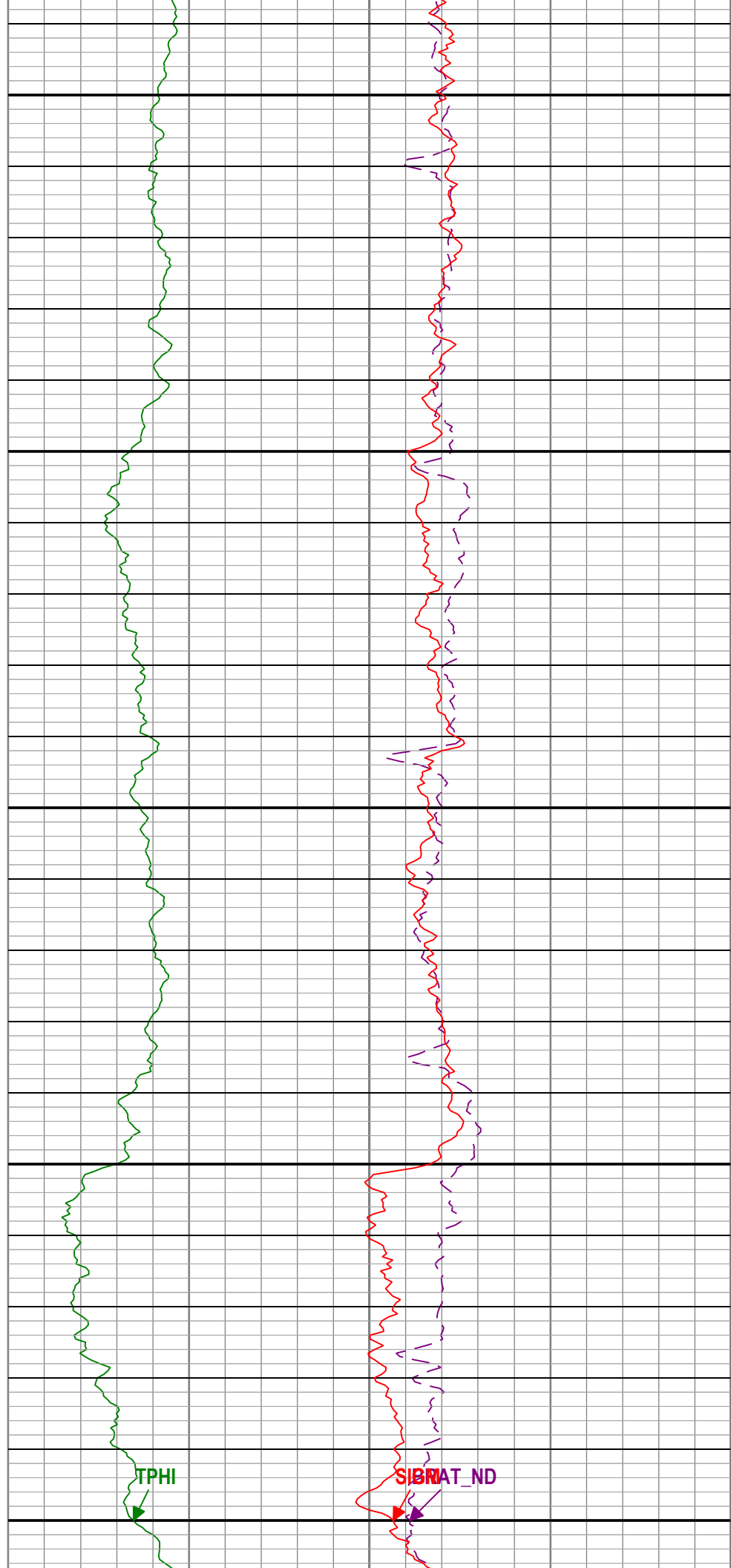
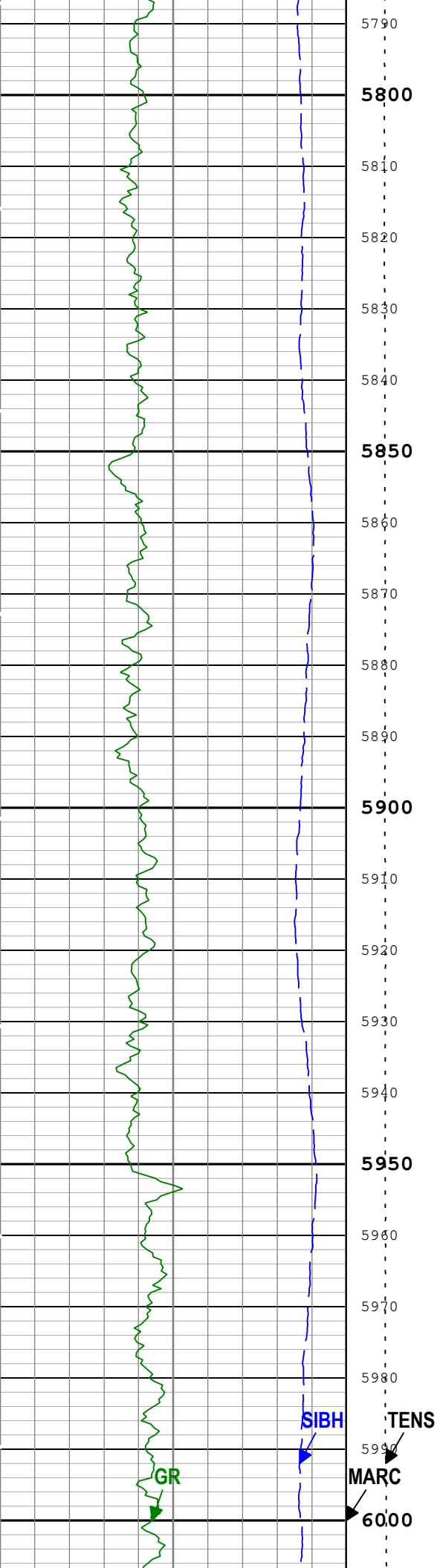


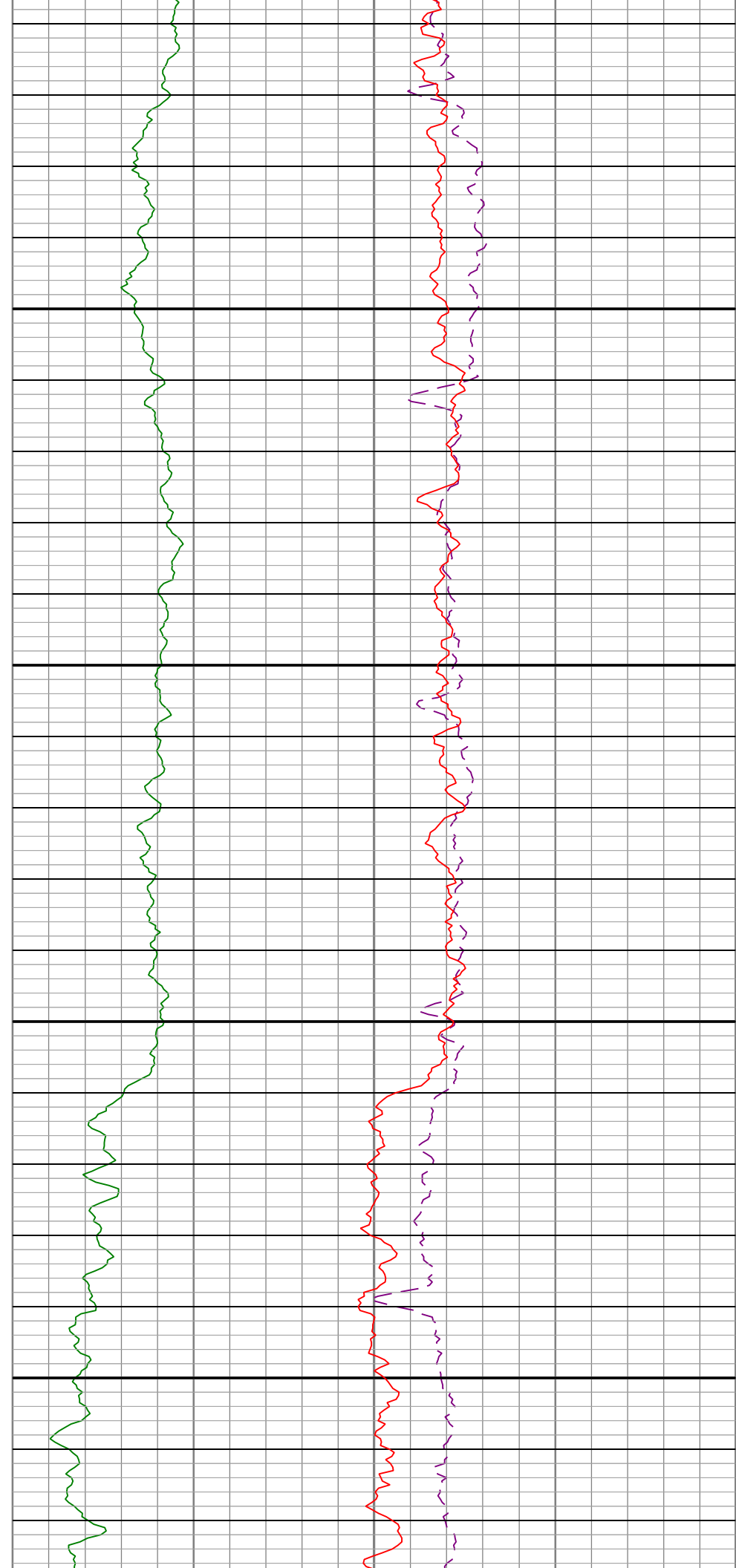
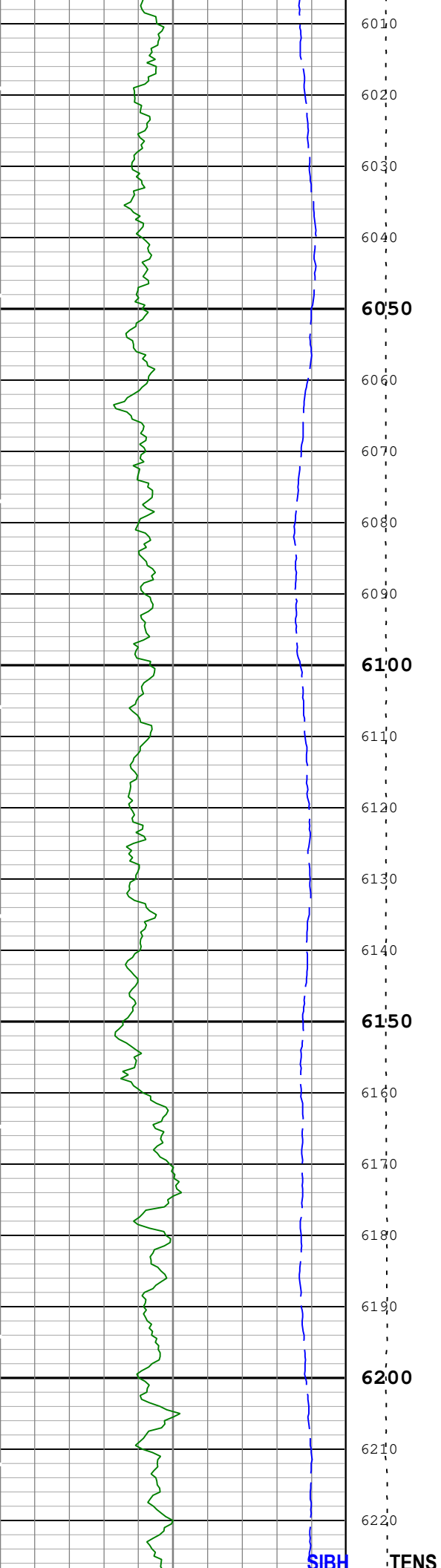


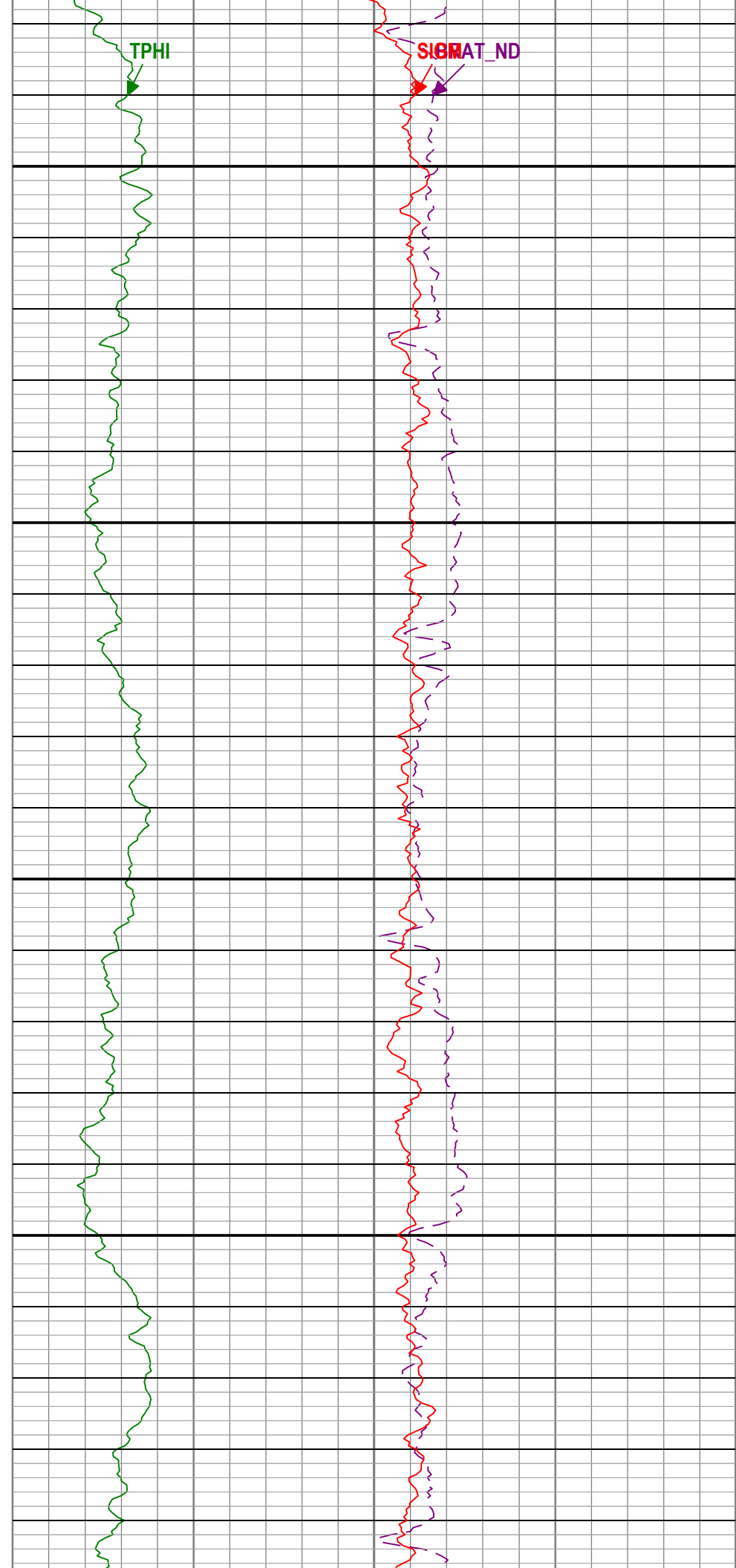
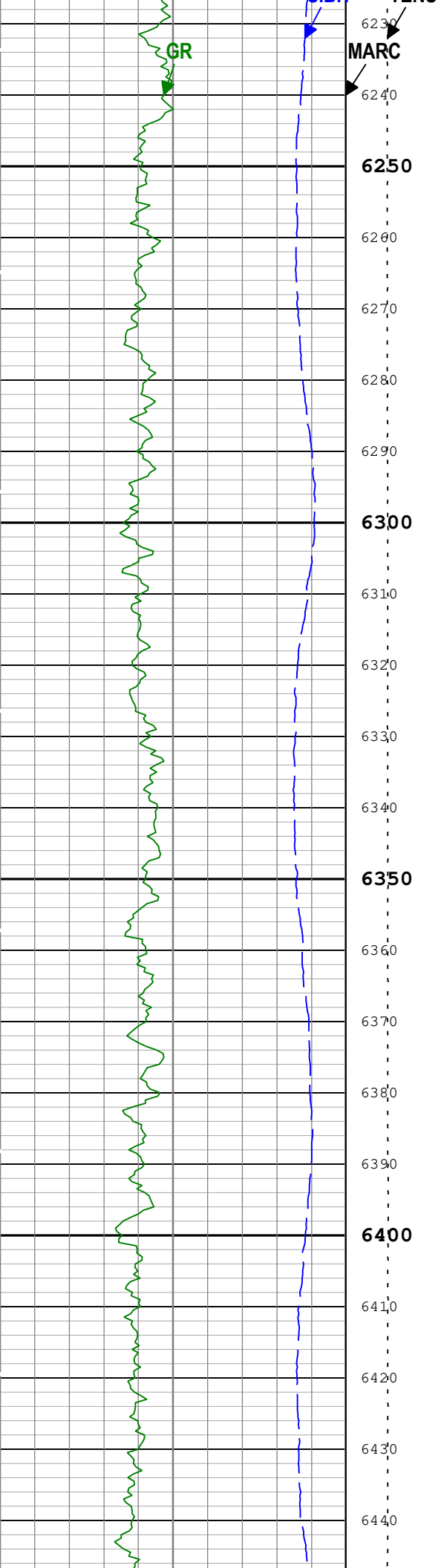


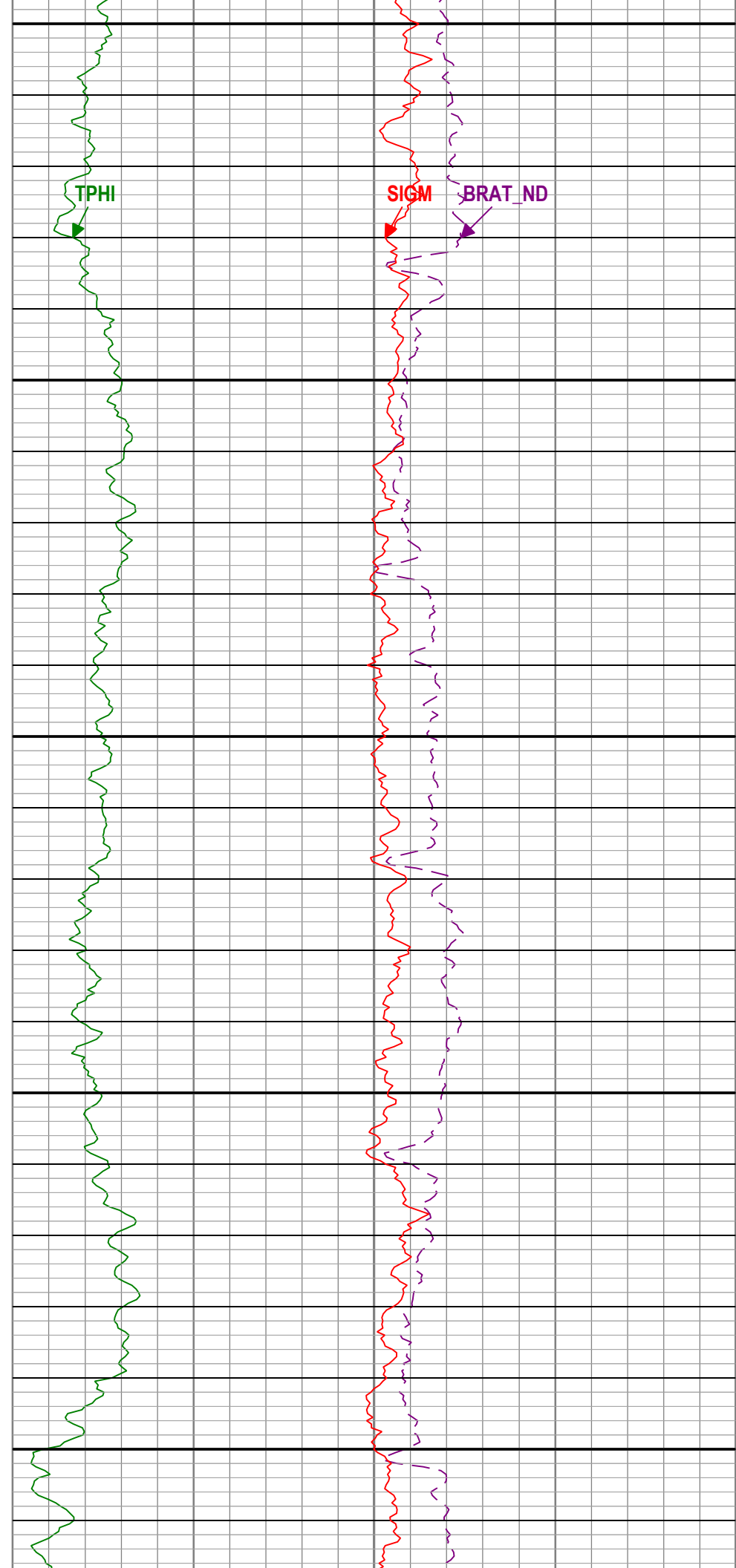
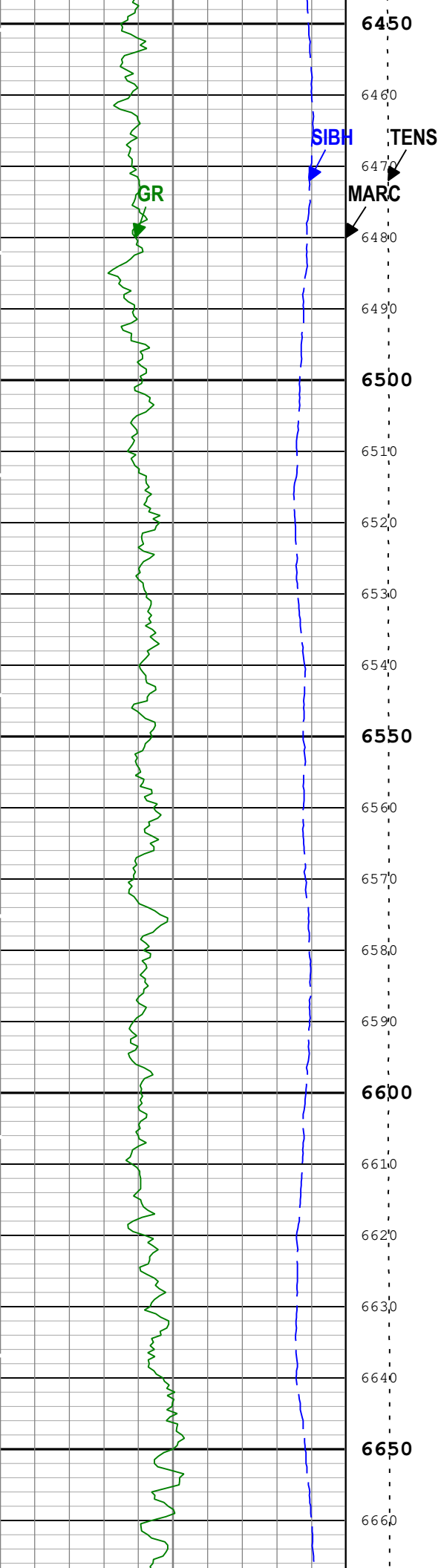


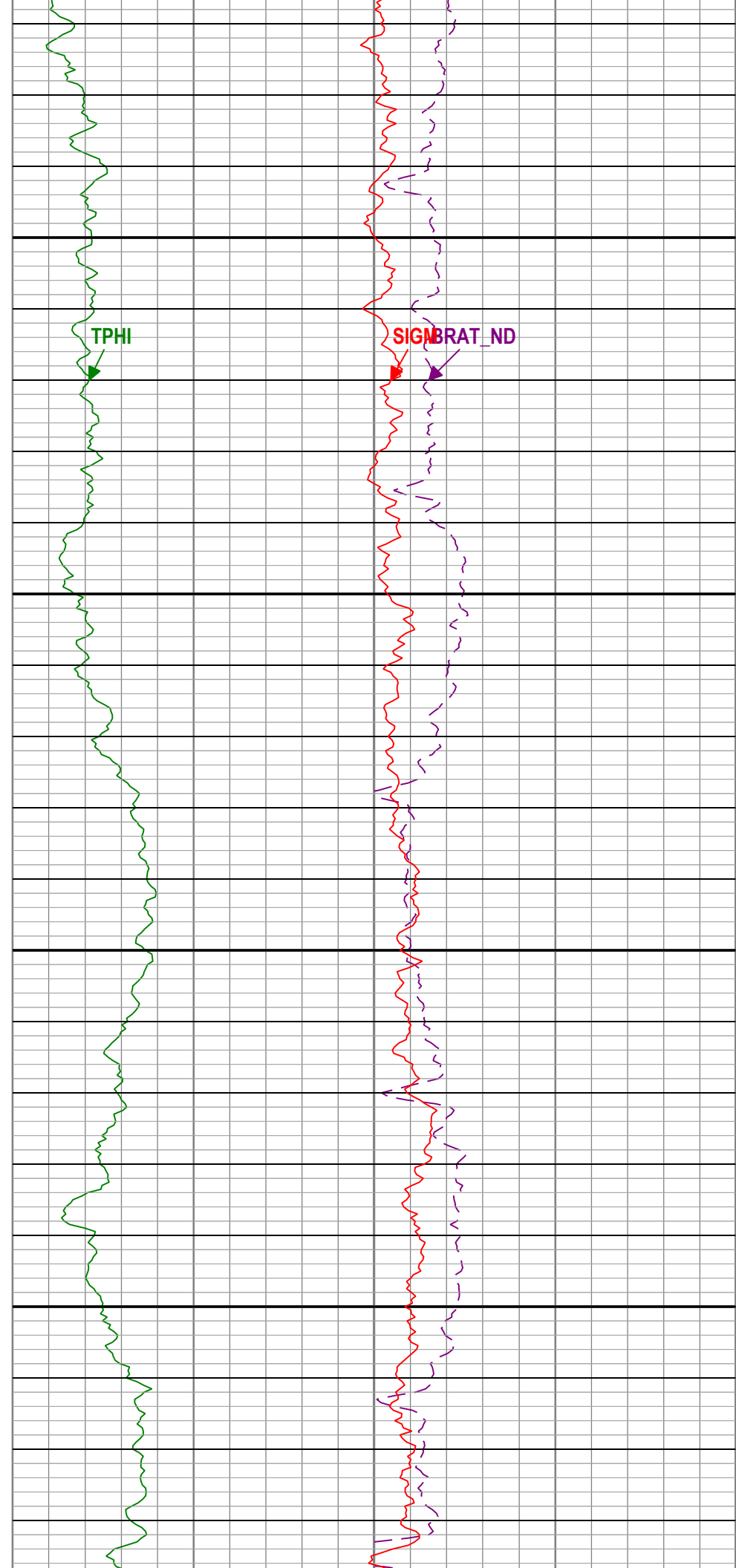
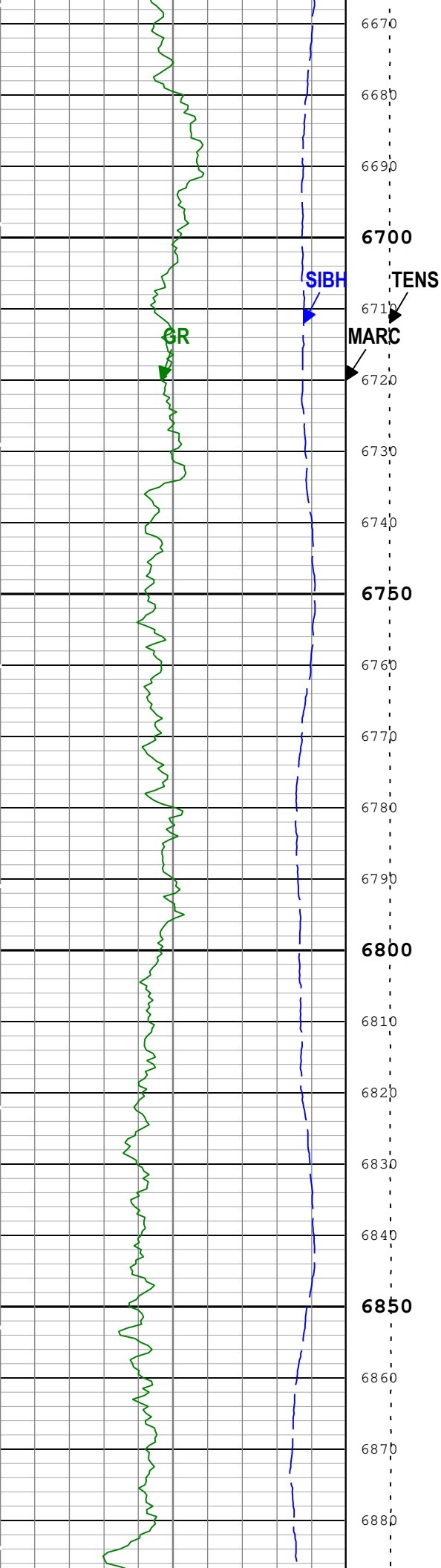


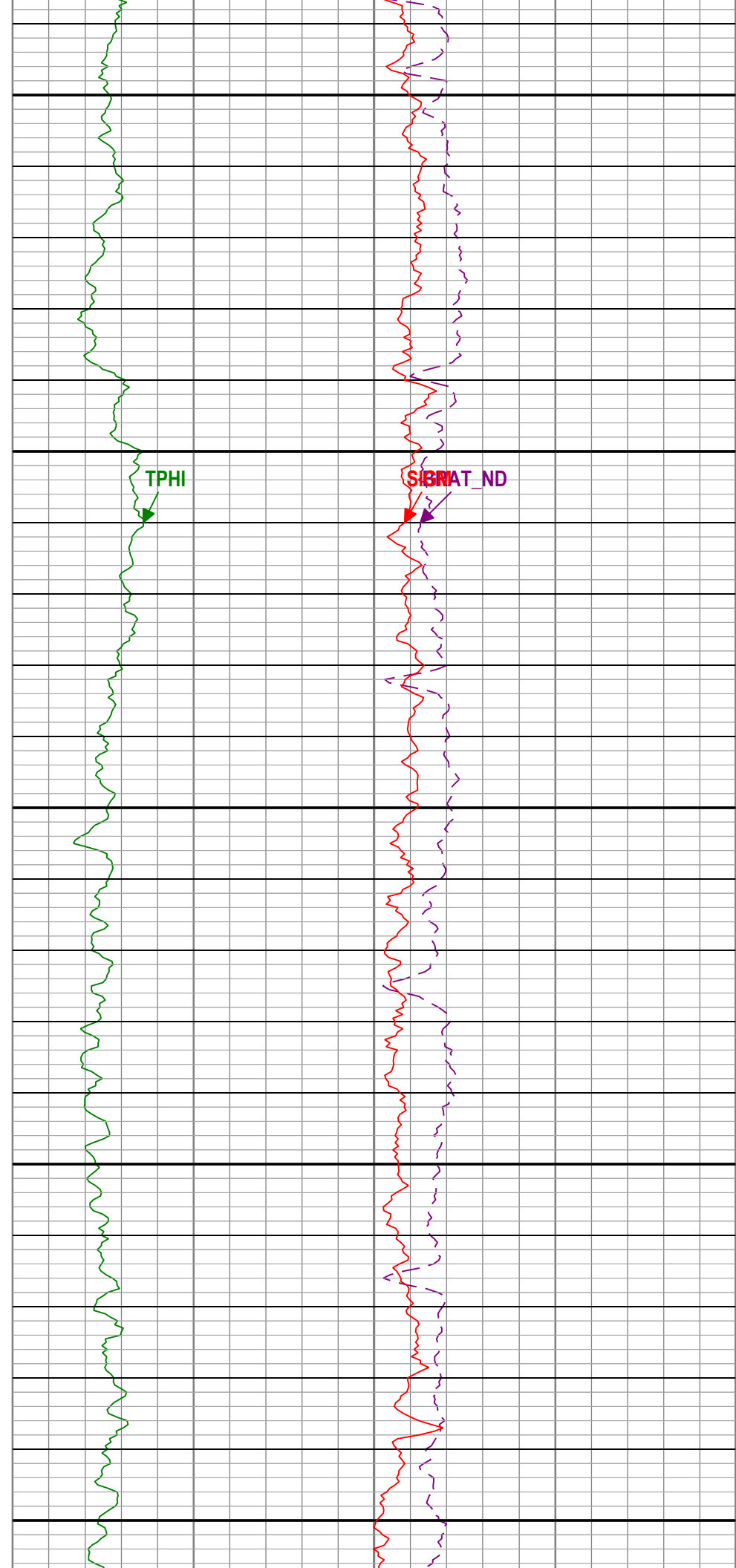
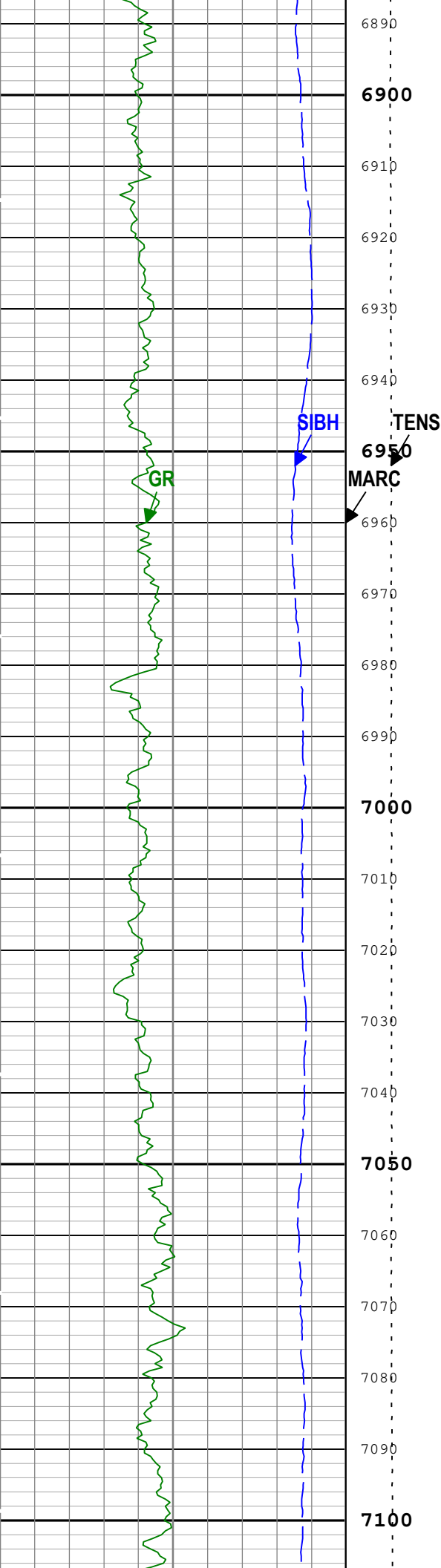


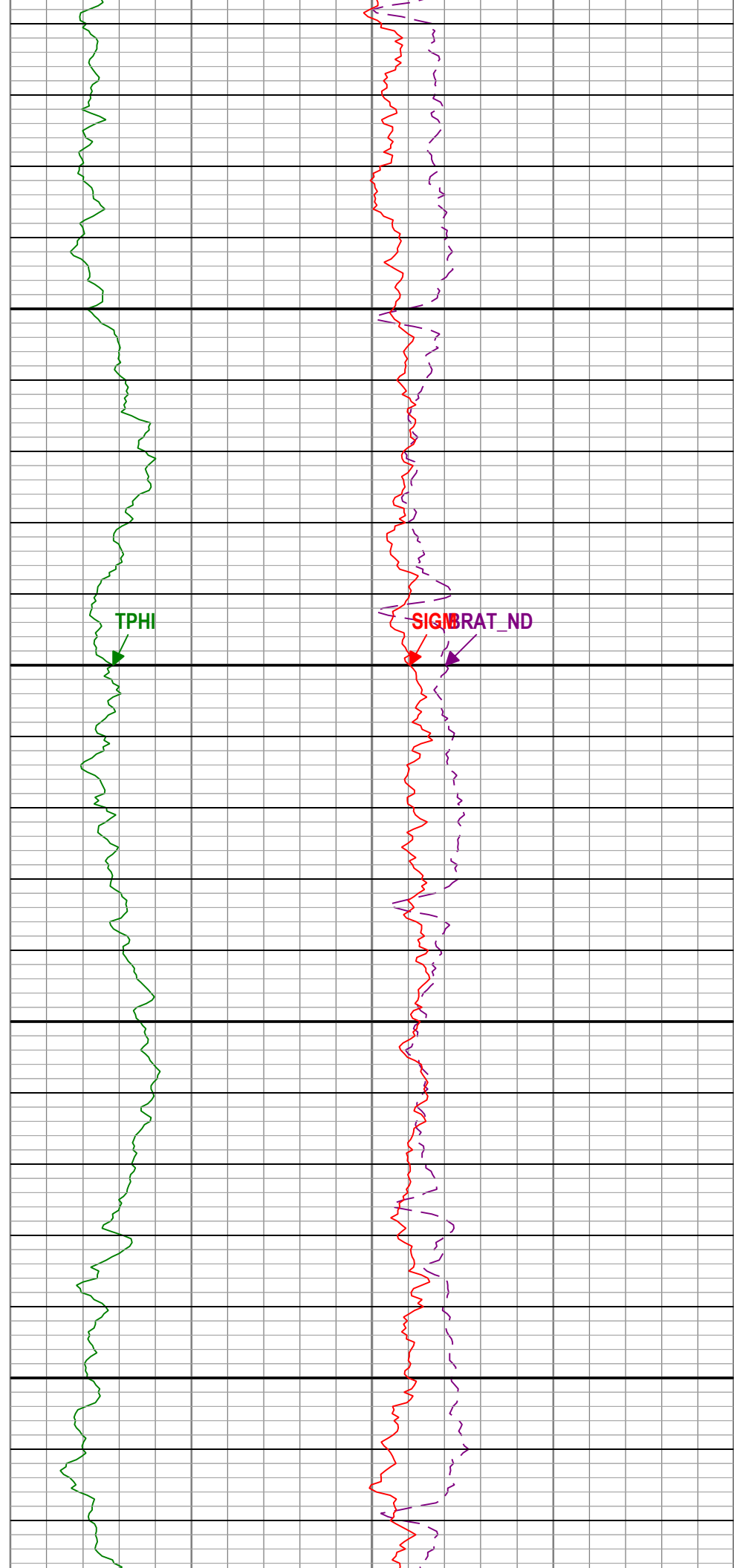
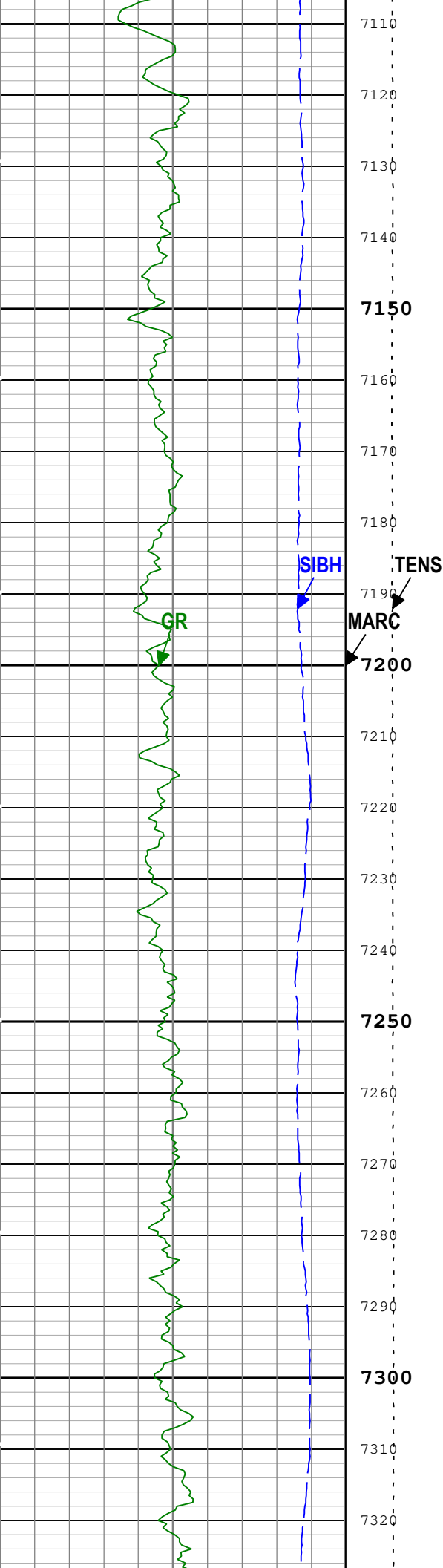


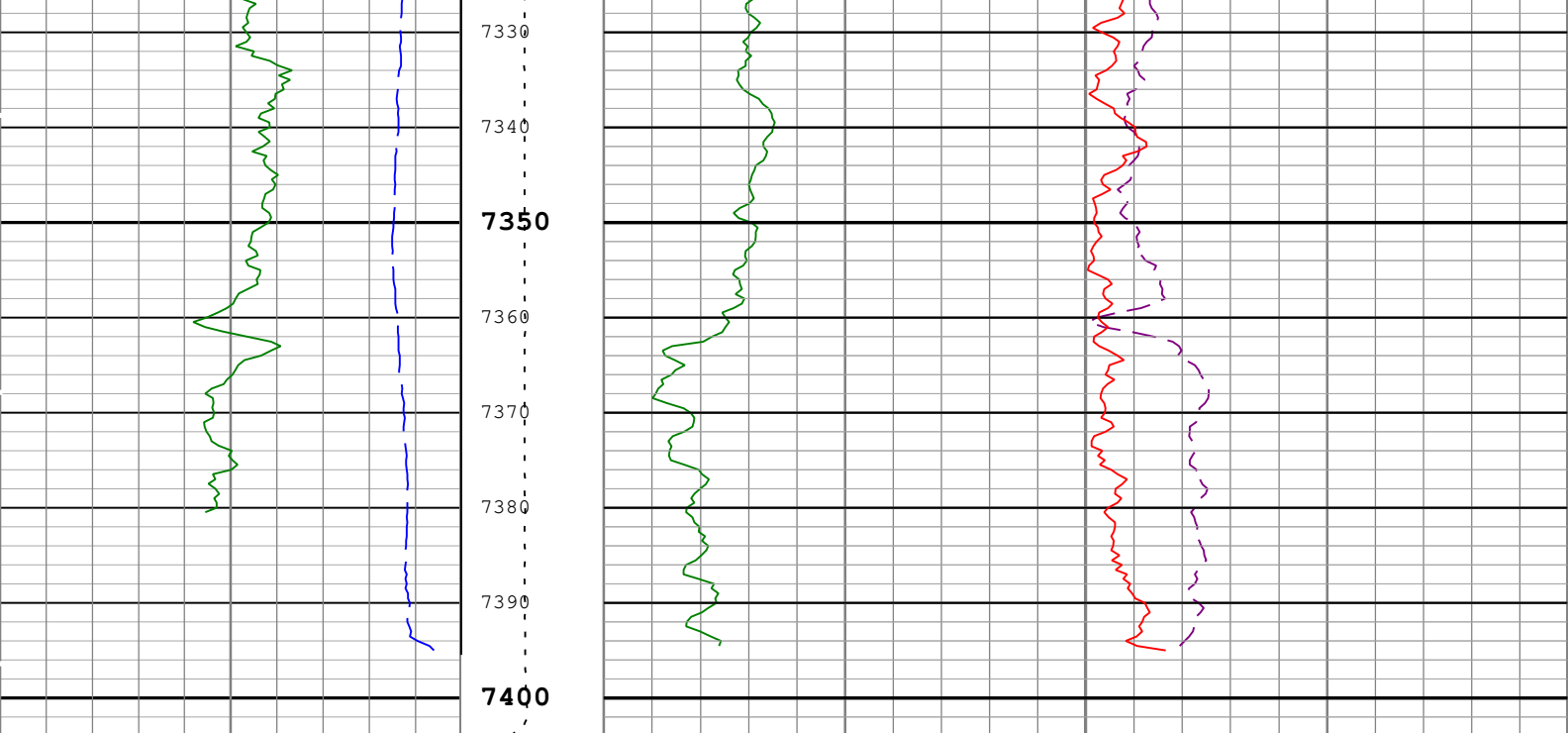












Gamma Ray (GR) PSTP-A		Minitron Arc Count (MARC) PNX-A	Formation Sigma (Neutron Capture Cross Section) (SIGM) PNX-A	
0	gAPI 150		60	cu 0
Sigma Borehole Corrected (SIBH) PNX-A		Cable Tension (TENS)	Thermal Decay Porosity (TPHI) PNX-A	Near Deep Burst Count Rate Ratio (BRAT_ND) PNX-A
250	cu 0		0.45 ft3/ft3 -0.15	30 10
		0 lbf 4000		

TIME_1900 - Time Marked every 60.00 (s)

Description: Pulsar (PNX) Sigma Format: Log (Pulsar (PNX) Sigma) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 13-Nov-2019 15:49:33

Channel Processing Parameters

ONE: Parameters

Parameter	Description	Tool	Value	Unit
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	Depth Zoned	in
GSHPV	GSH Processing Version	PNX-A	3.34A0_8	
MATR	Rock Matrix for Neutron Porosity Corrections	Borehole	LIMESTONE	

Depth Zone Parameters

Parameter	Value	Start (ft)	Stop (ft)
BS	13.5	200	2573
BS	8.75	2573	7404

All depth are actual.

Tool Control Parameters

ONE: Parameters

Parameter	Description	Tool	Value	Unit
GRAT_CAL	Gas Ratio Calibration Coefficient	PNX-A	1.29	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	3600	ft/h
MAX_TOOL_SPEED	Maximum service speed allowed for, or attained by, a logging tool.	PNX-A	3600	ft/h
PCCG	PSP Downhole CCL Gain	PSTP-A	Time Zoned	

Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
PCCG	0 dB	13-Nov-2019 11:07:37	13-Nov-2019 11:15:27	7403.84	7206.21
PCCG	12 dB	13-Nov-2019 11:15:27	13-Nov-2019 15:11:18	7206.21	203.31

All depth are at tool zero.

ONE

GR-WPRE-WTEP

Software Version

Acquisition System	Version
Maxwell 2019.2	9.2.113335.3100

Pass Summary

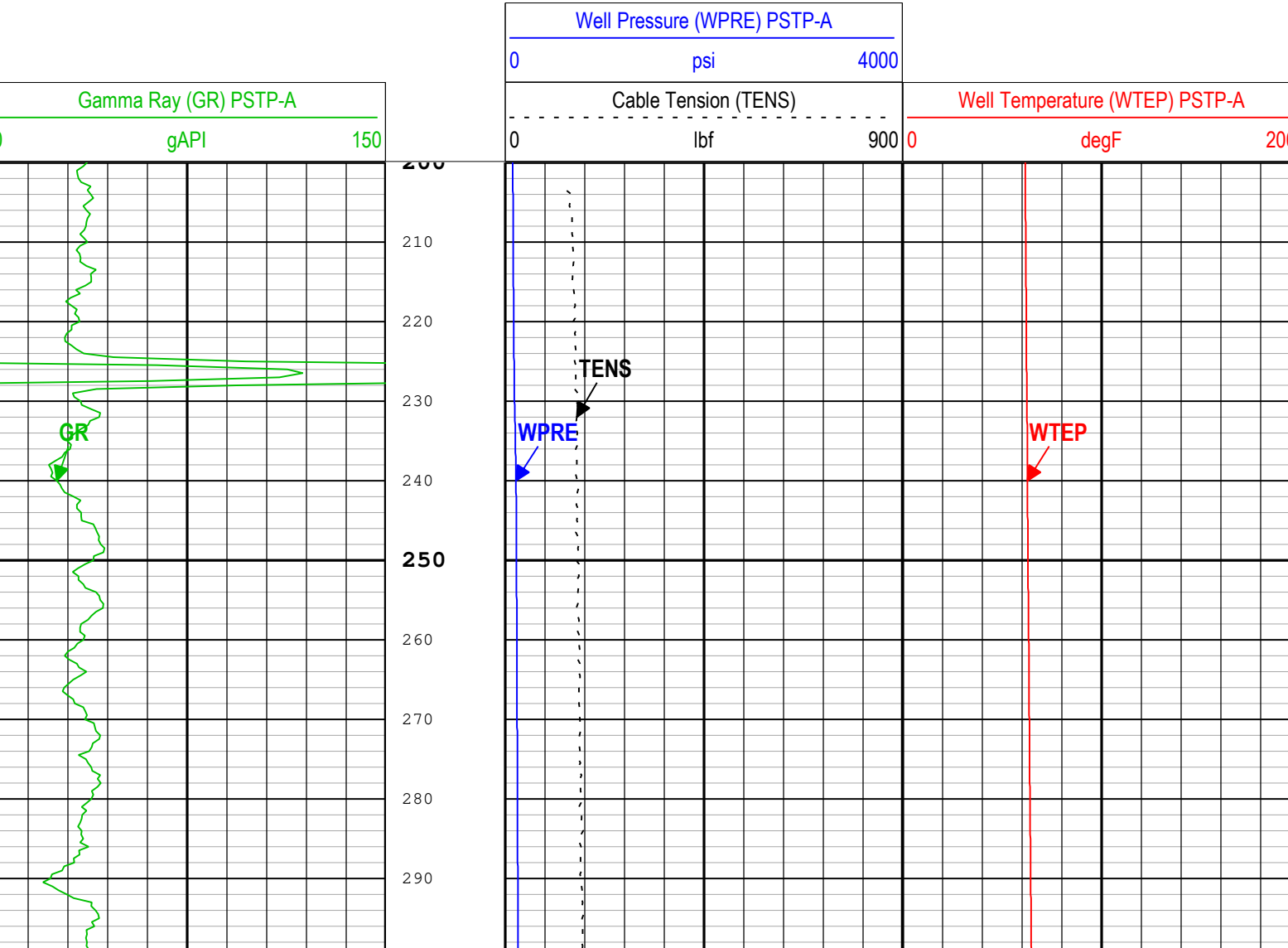
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[6]:Up	Up	203.31 ft	7403.84 ft	13-Nov-2019 11:07:37 AM	13-Nov-2019 3:11:18 PM	ON	3.35 ft	No

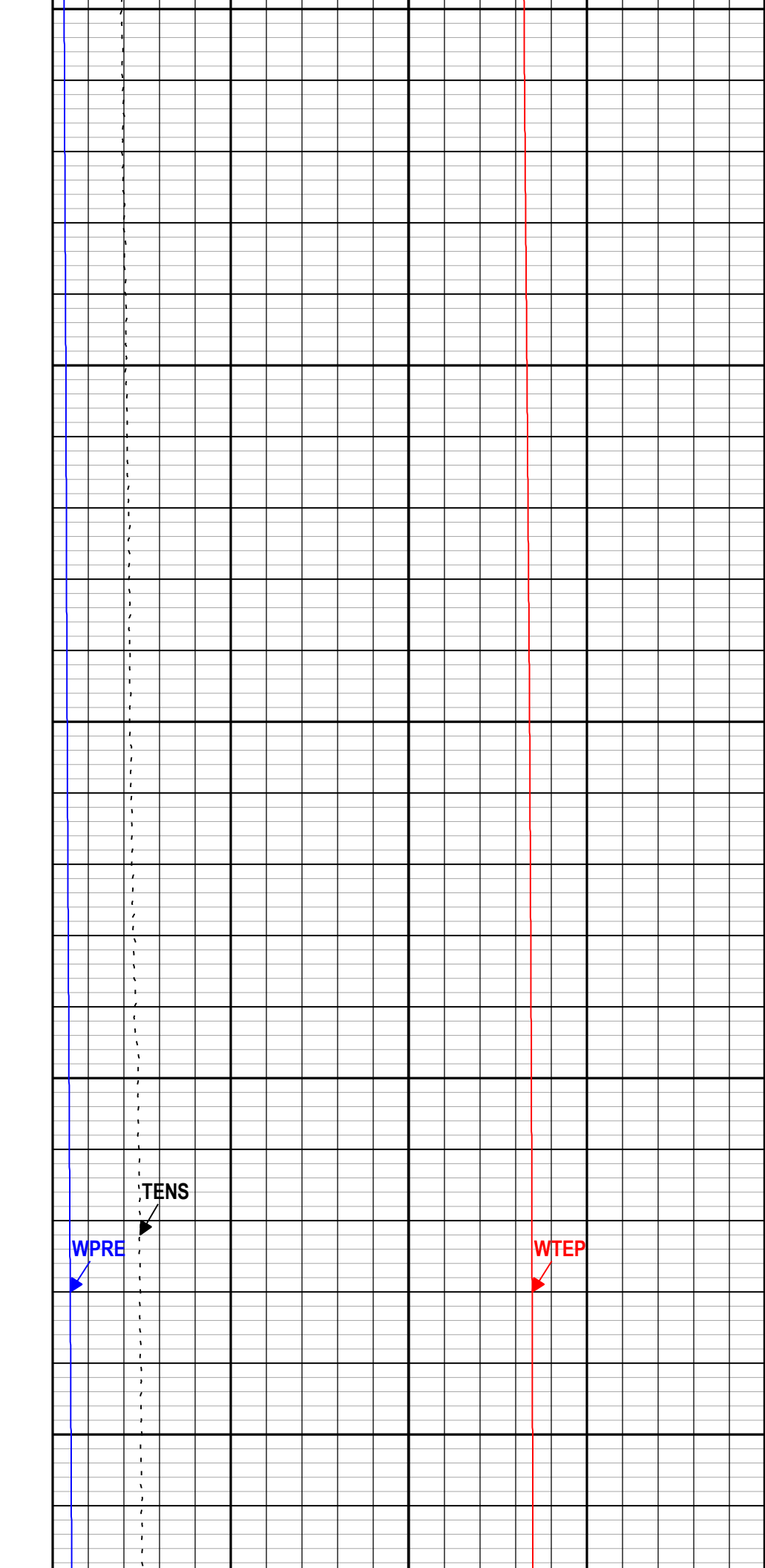
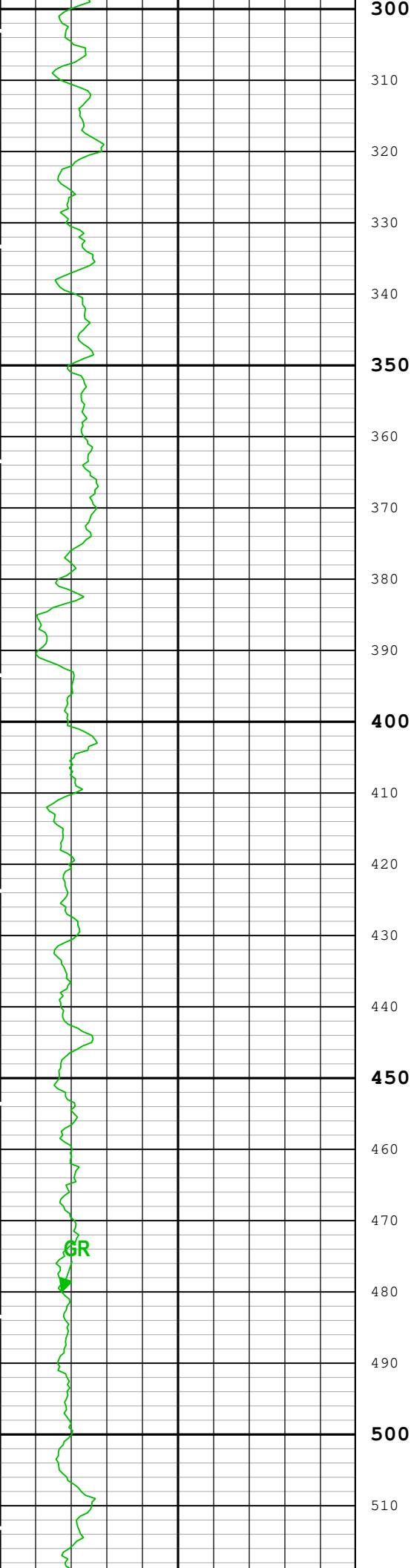
All depths are referenced to toolstring zero

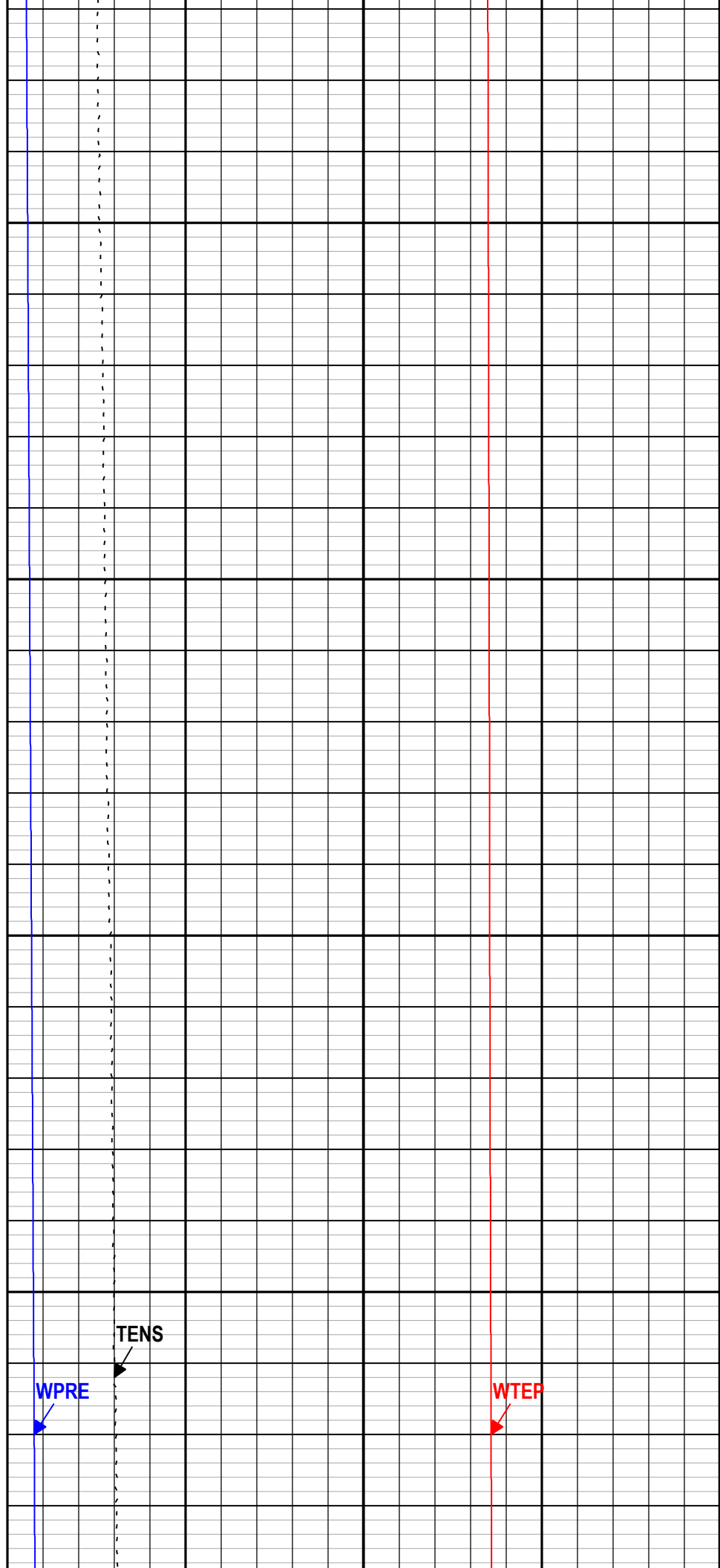
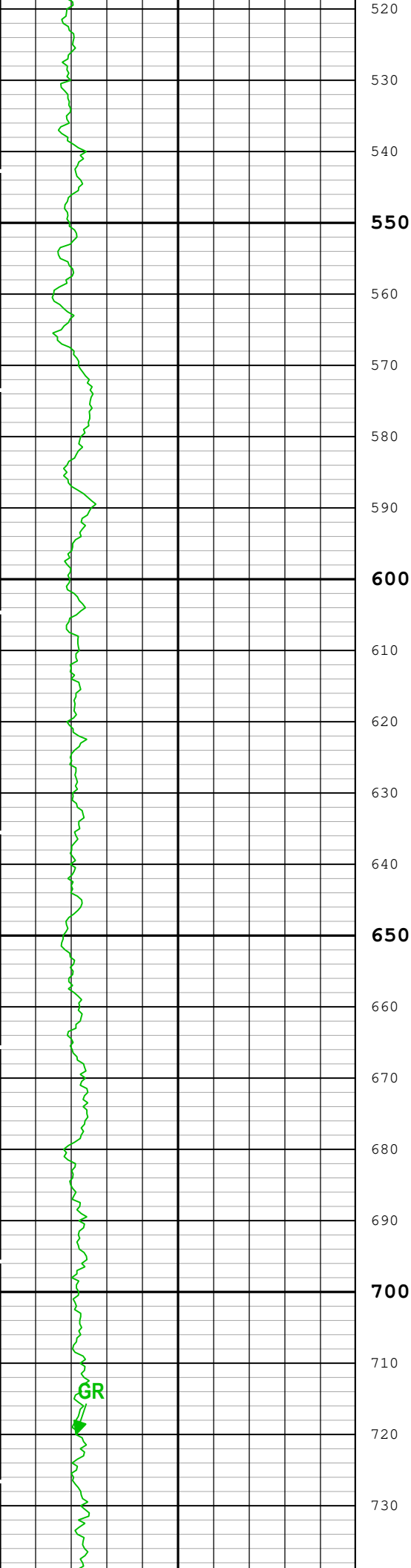
Log	Company:CRESTONE PEAK RESOURCES OPERATING LLC	Well:HINGLEY 1F-18H-A167
		ONE: Log[6]:Up:S005

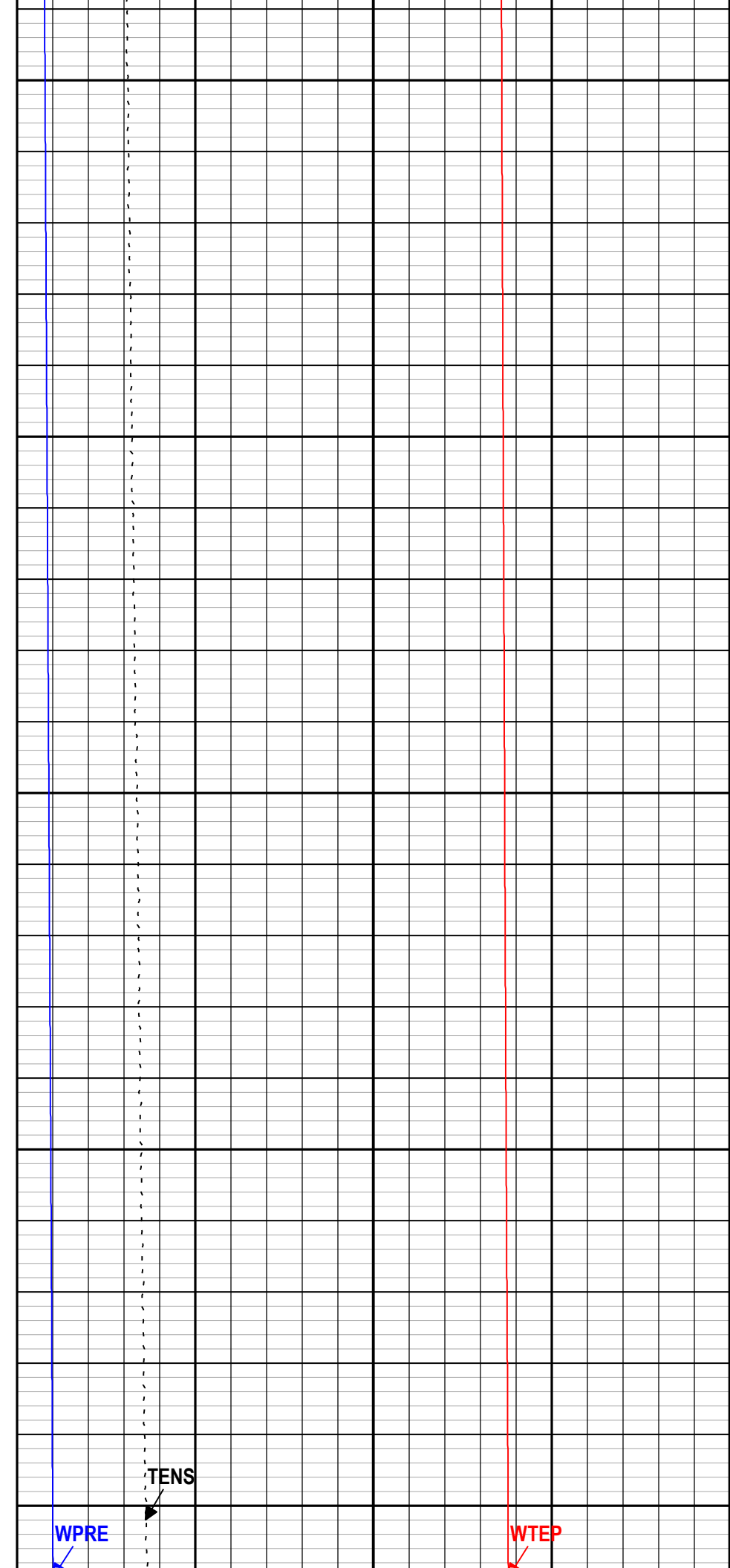
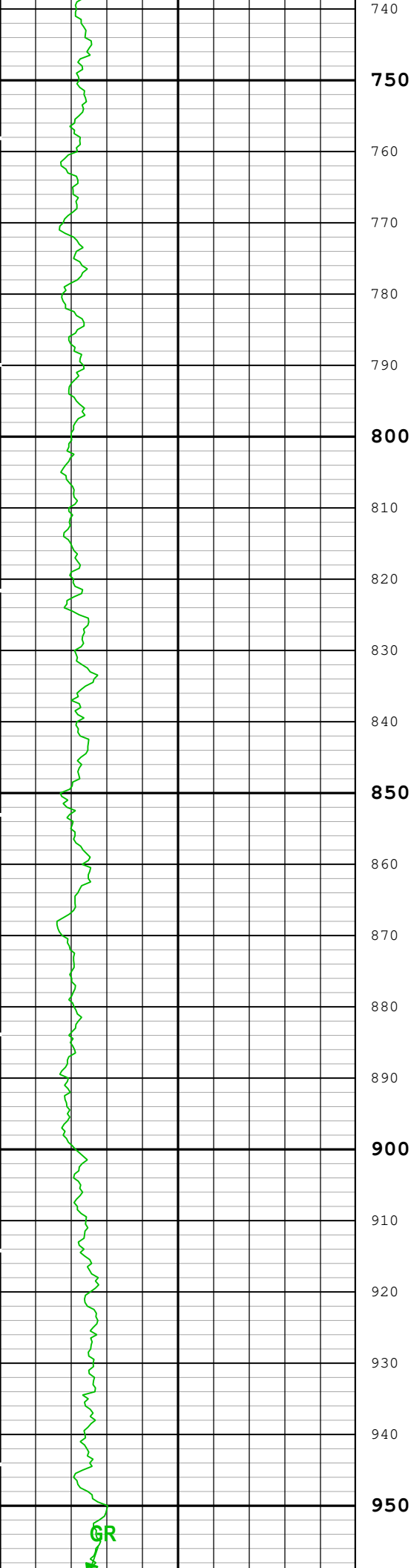
Description: Format: Log (GR-CCL-WPRE-WTEP) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 13-Nov-2019 15:49:39

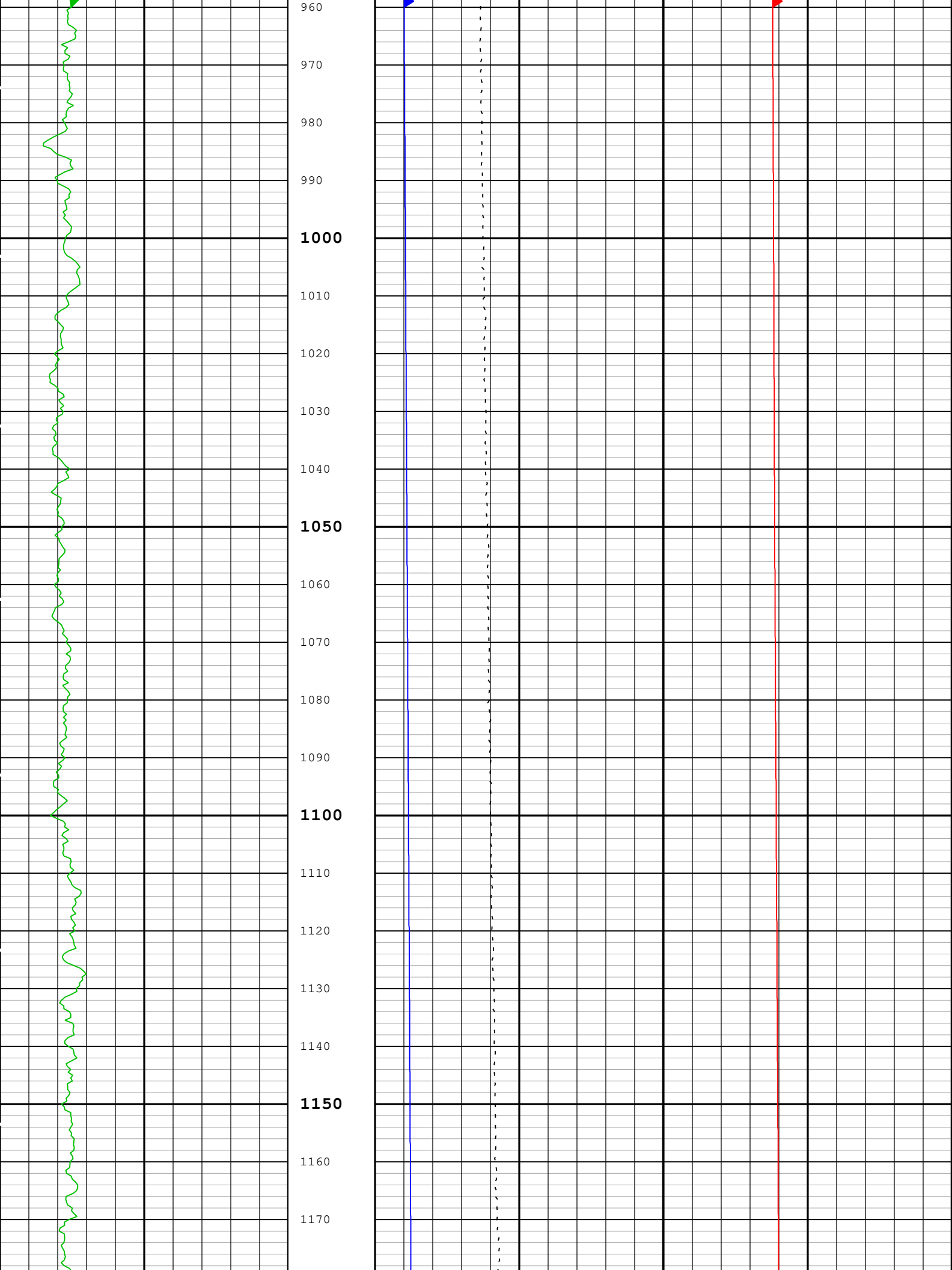
TIME_1900 - Time Marked every 60.00 (s)

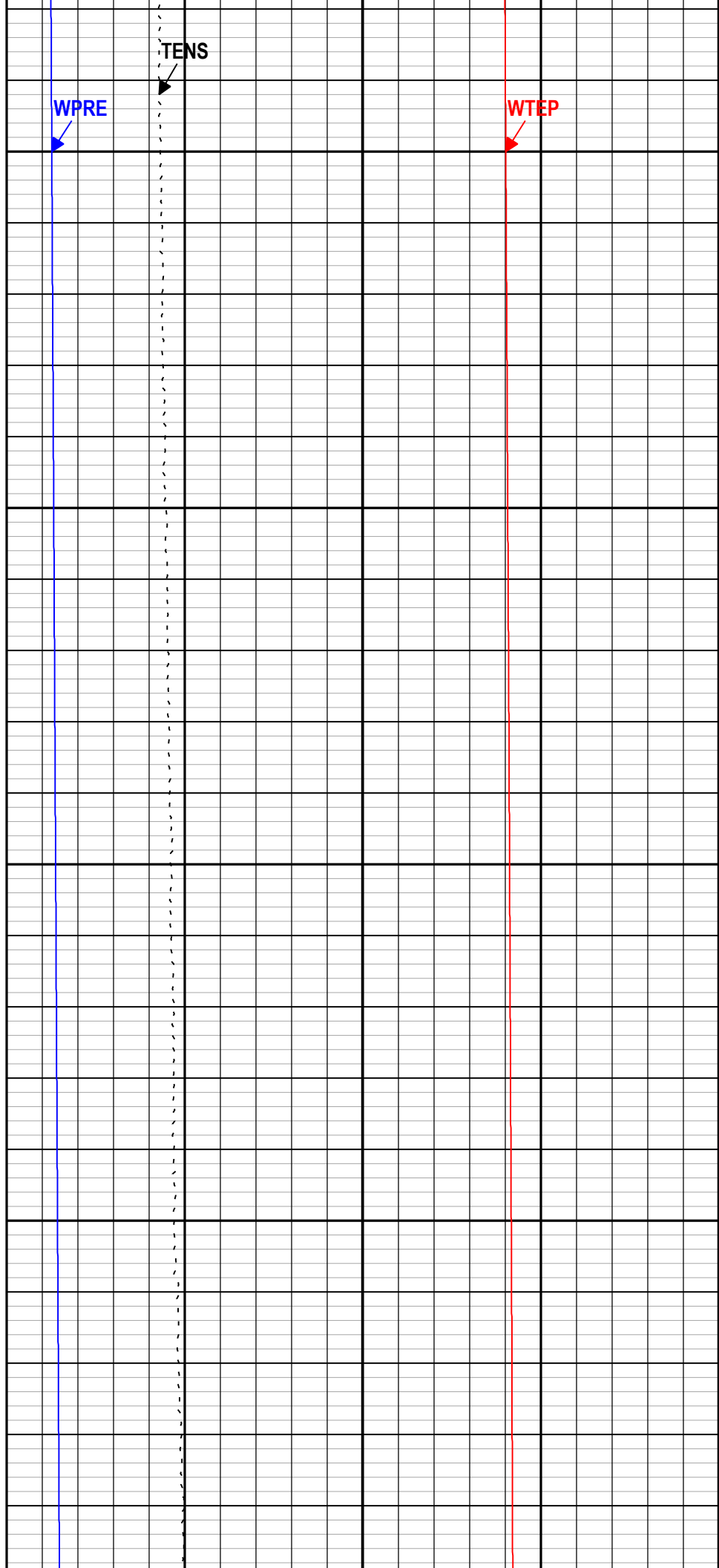
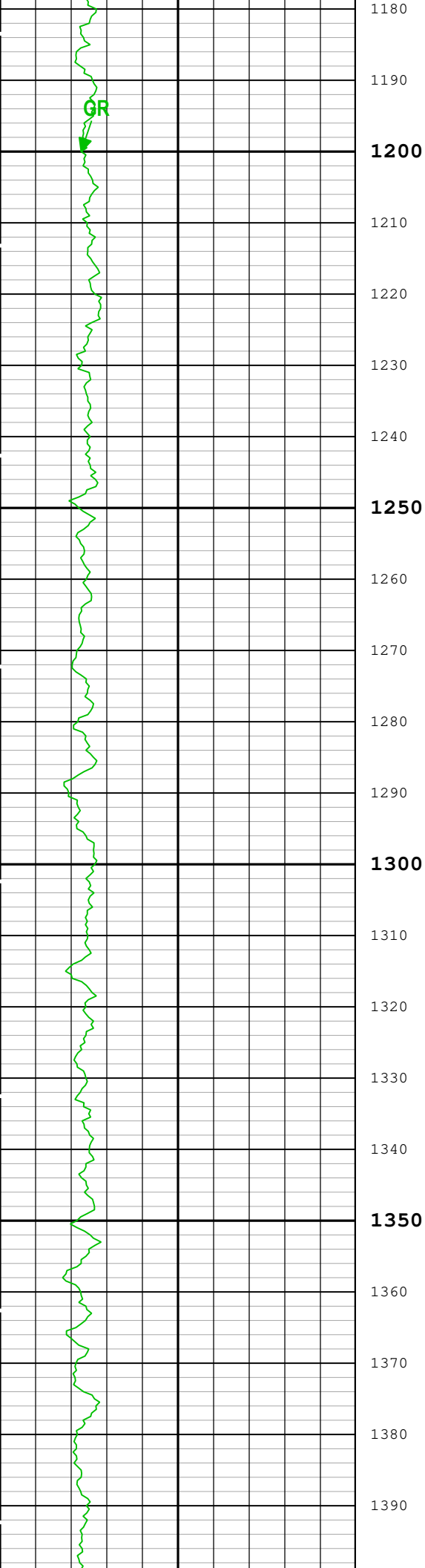


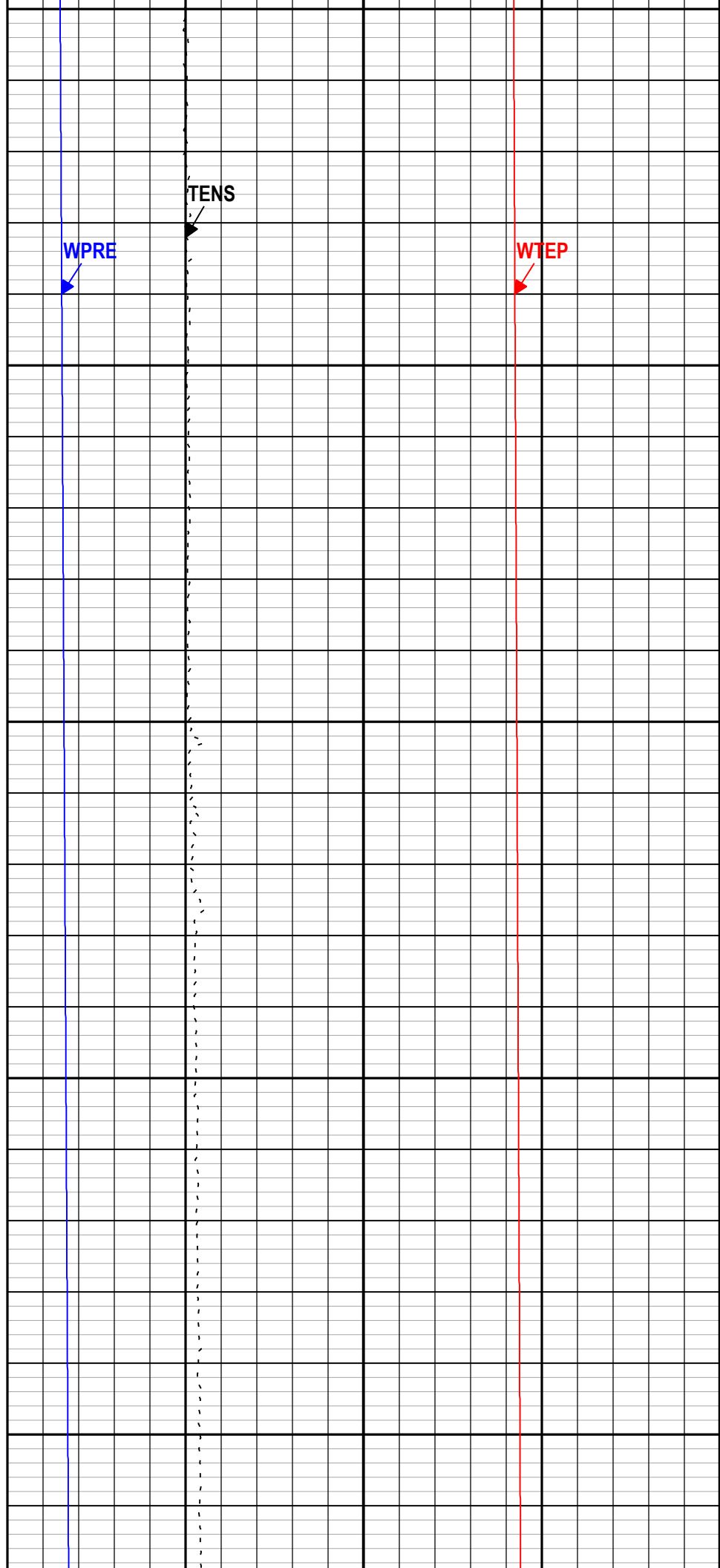
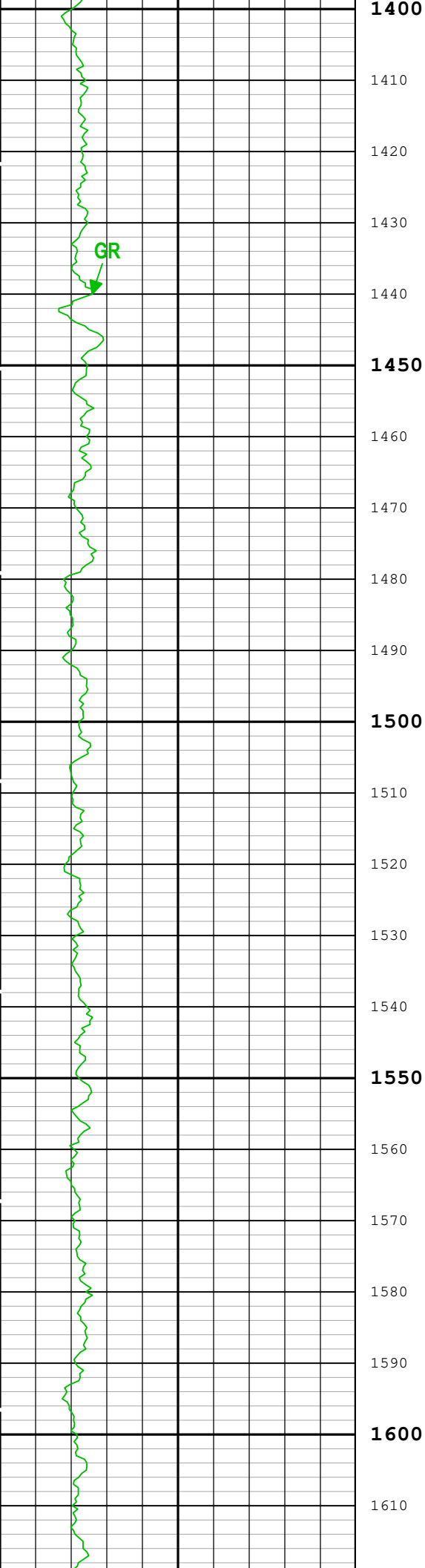


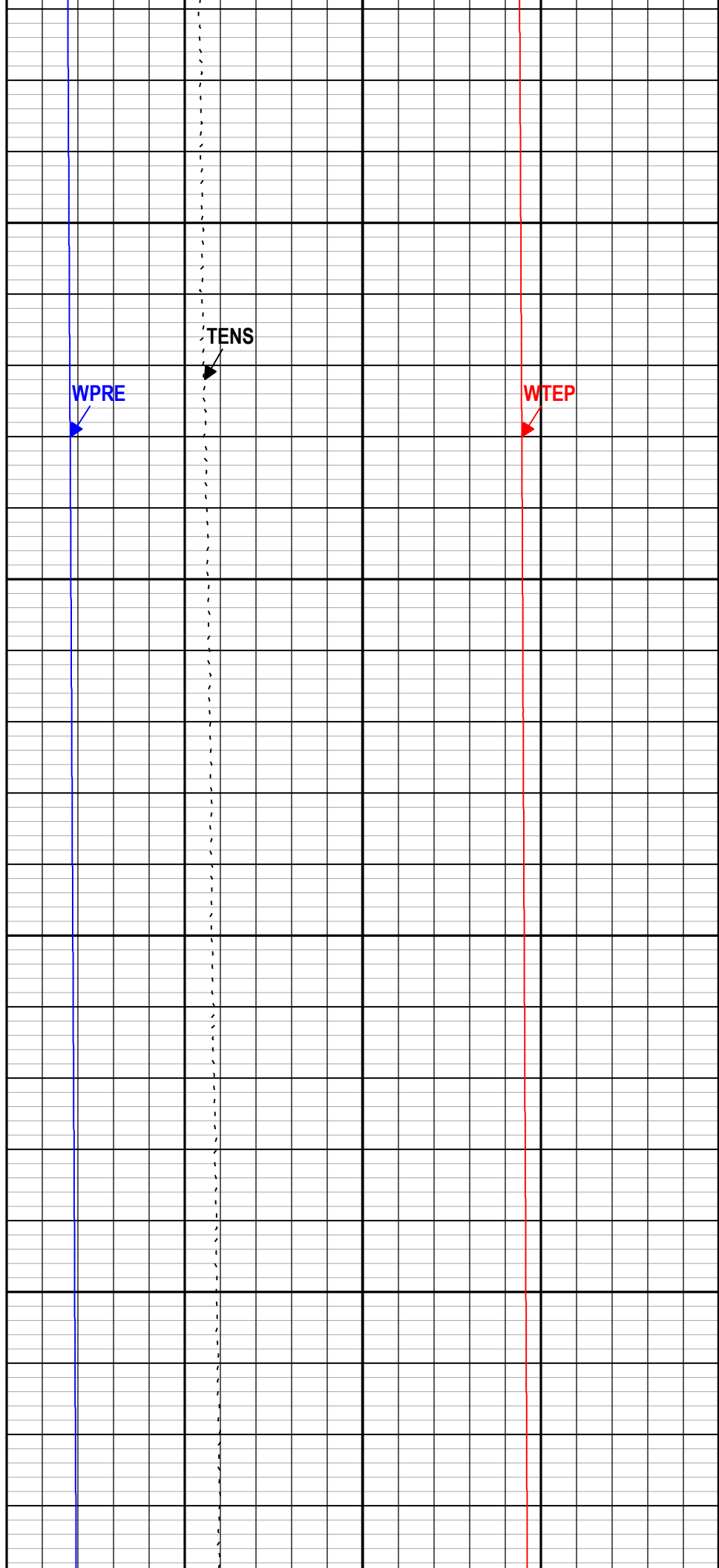
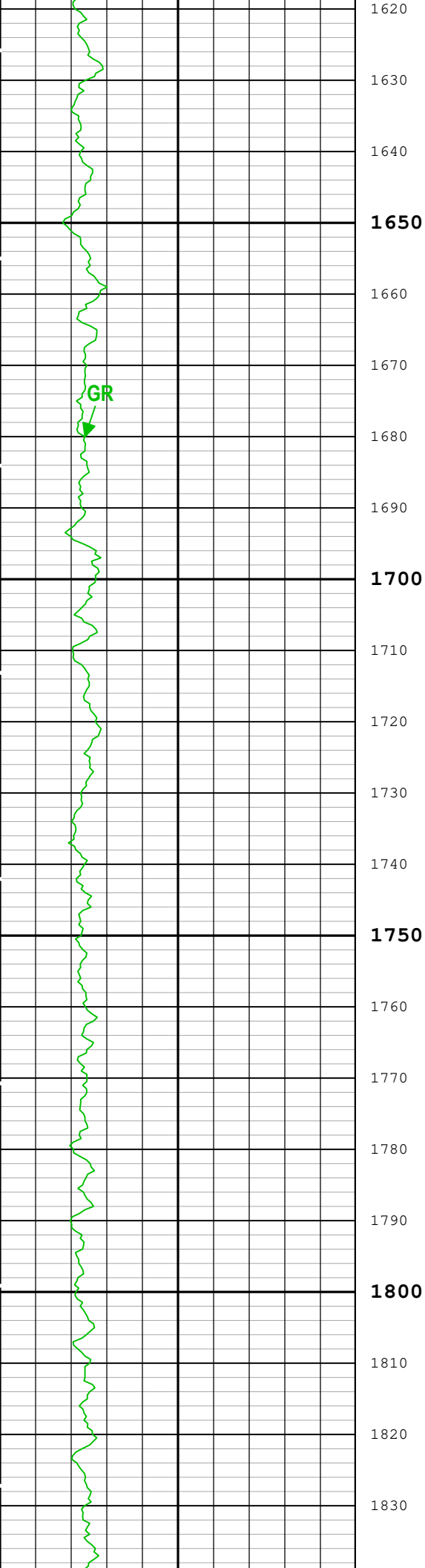


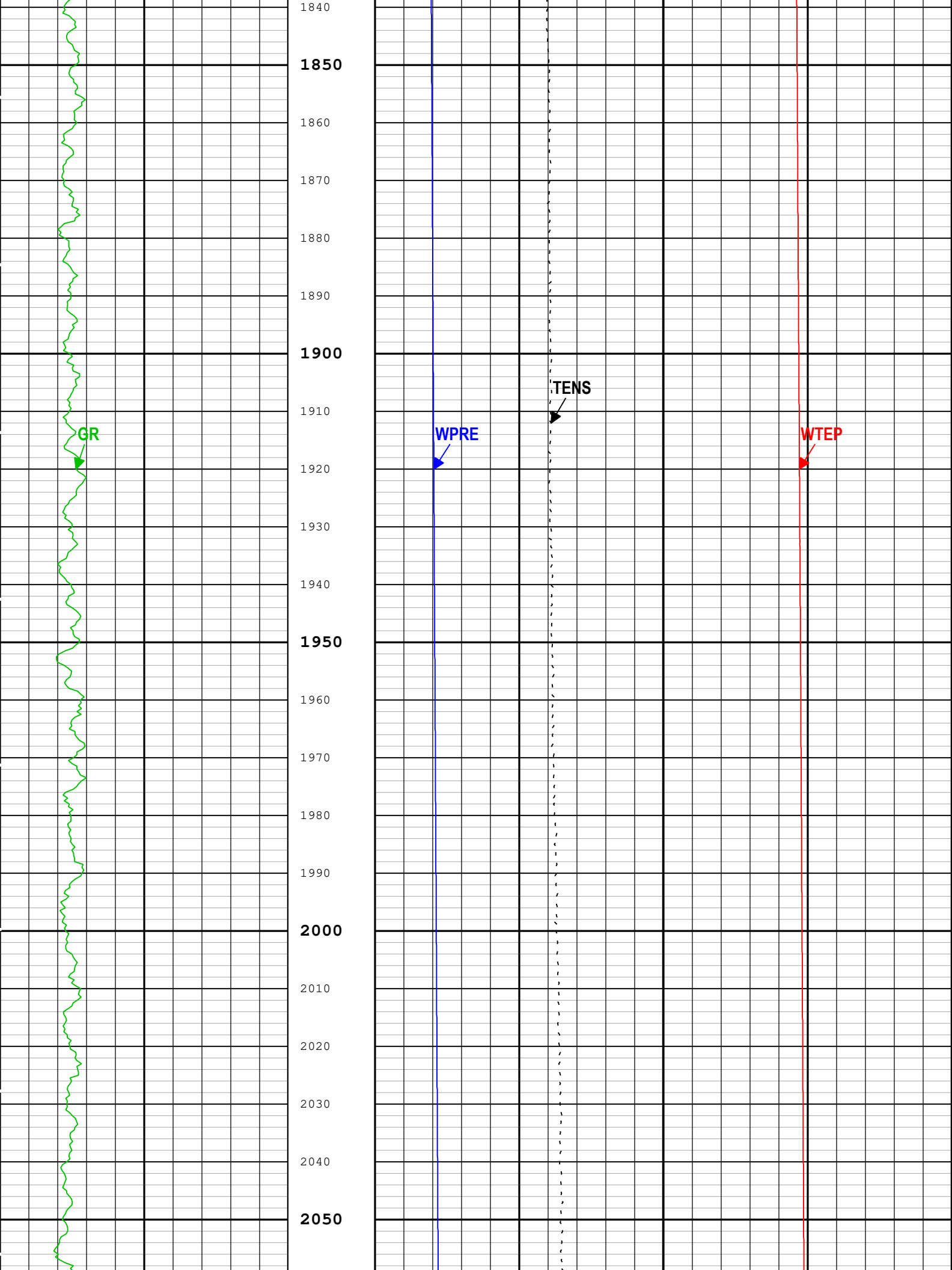


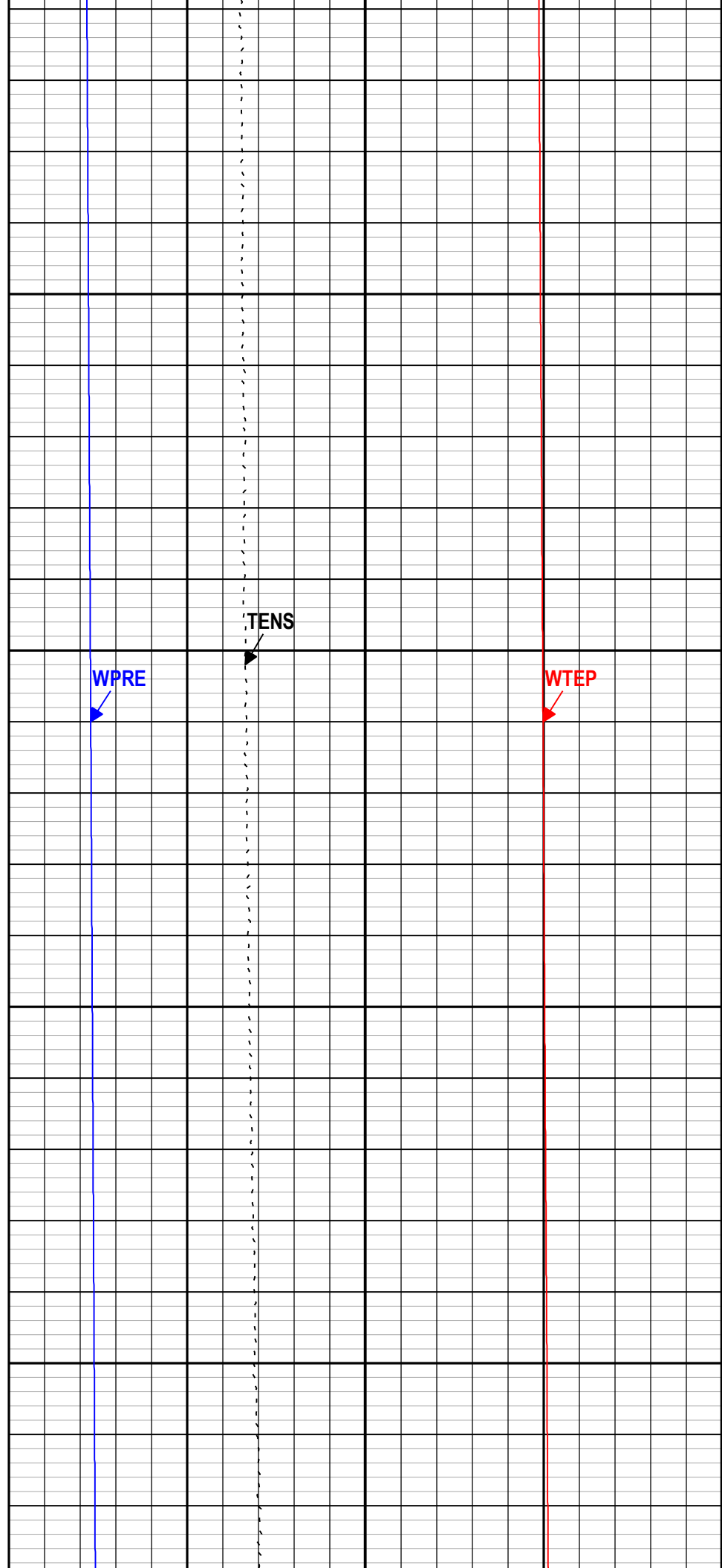
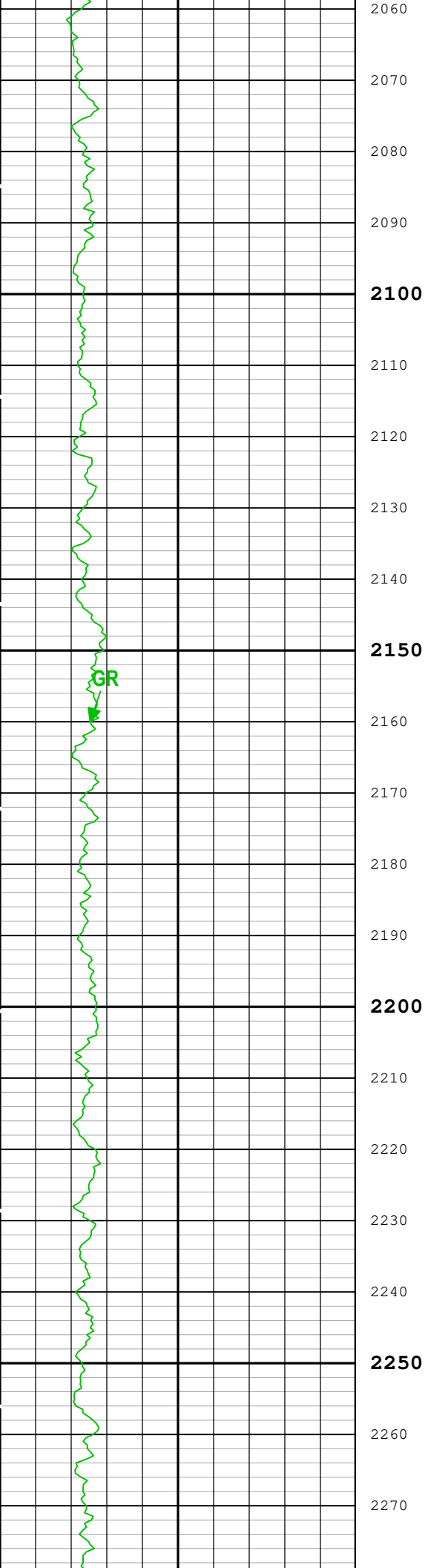


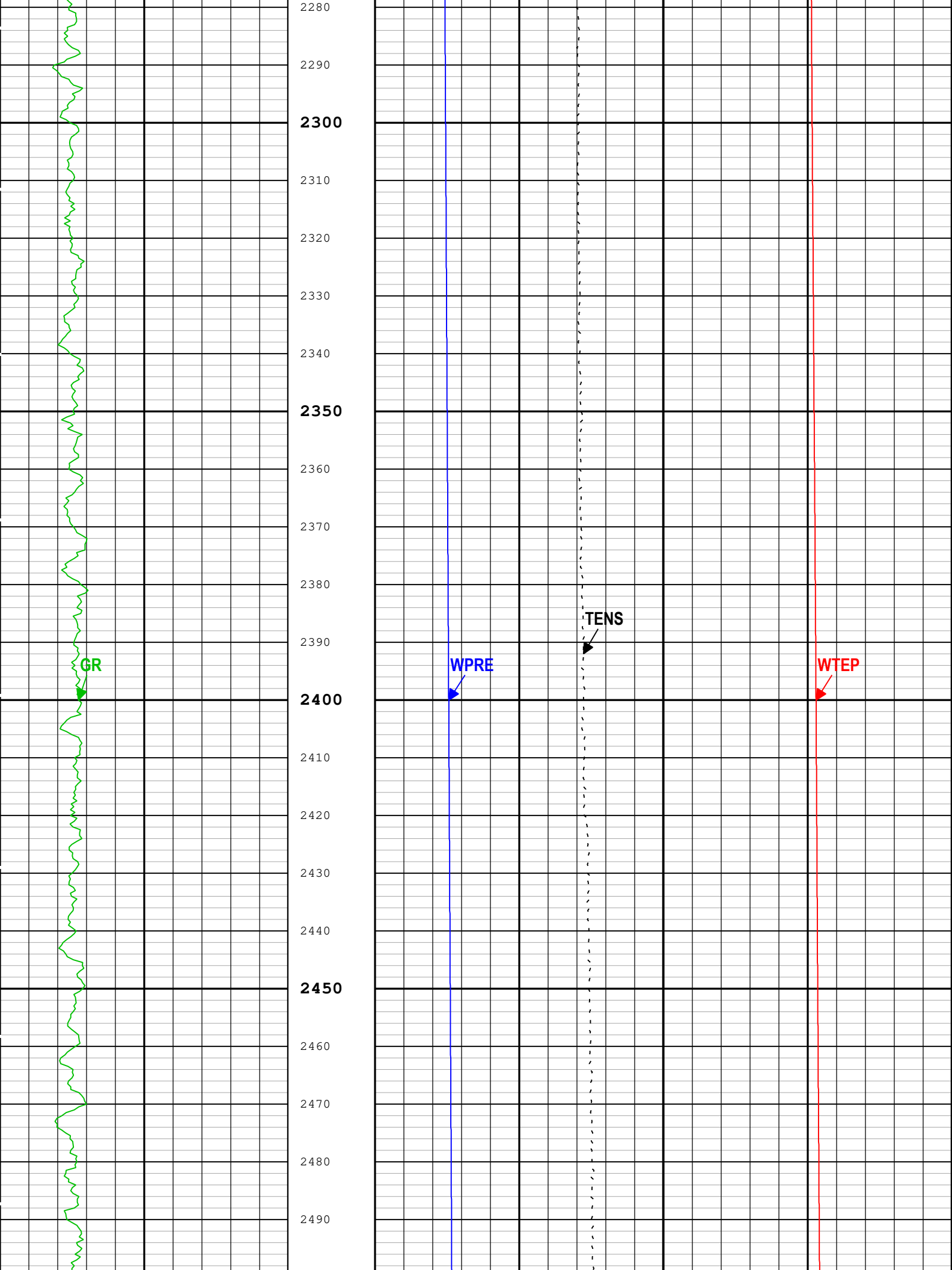


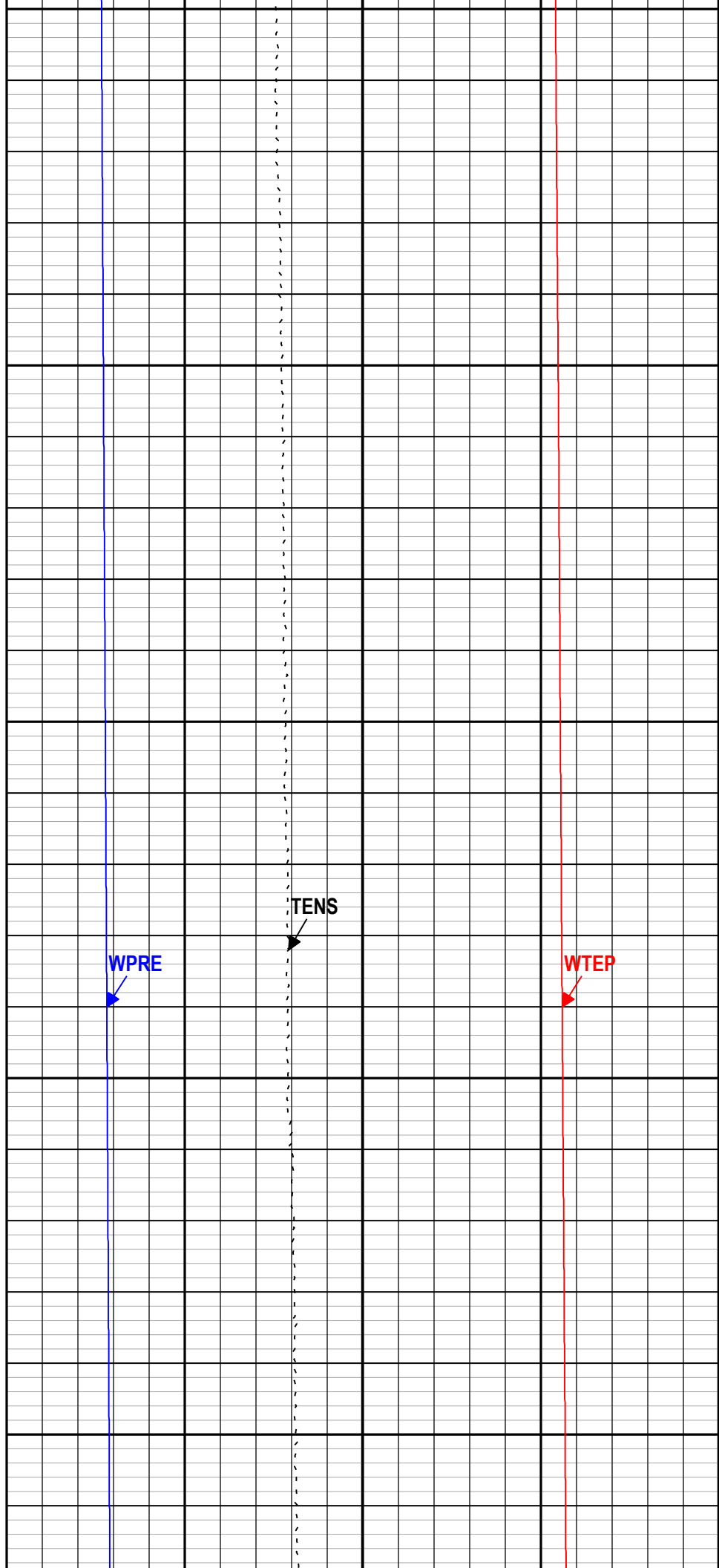
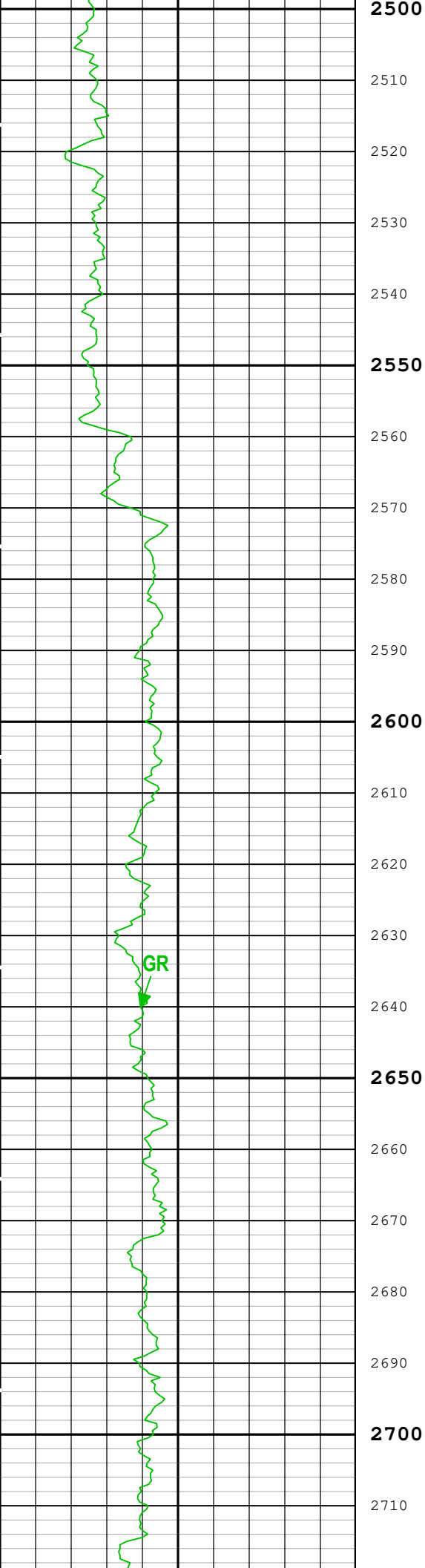


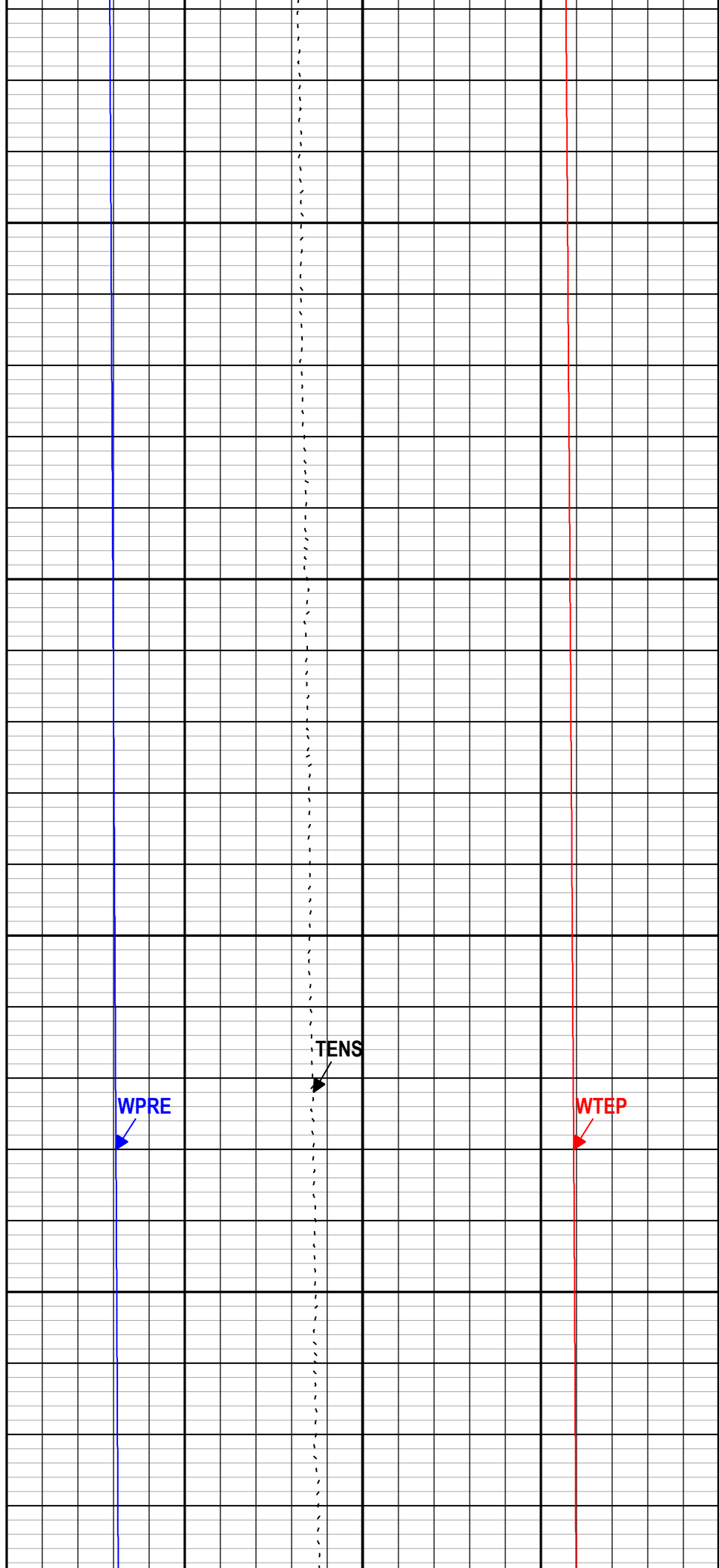
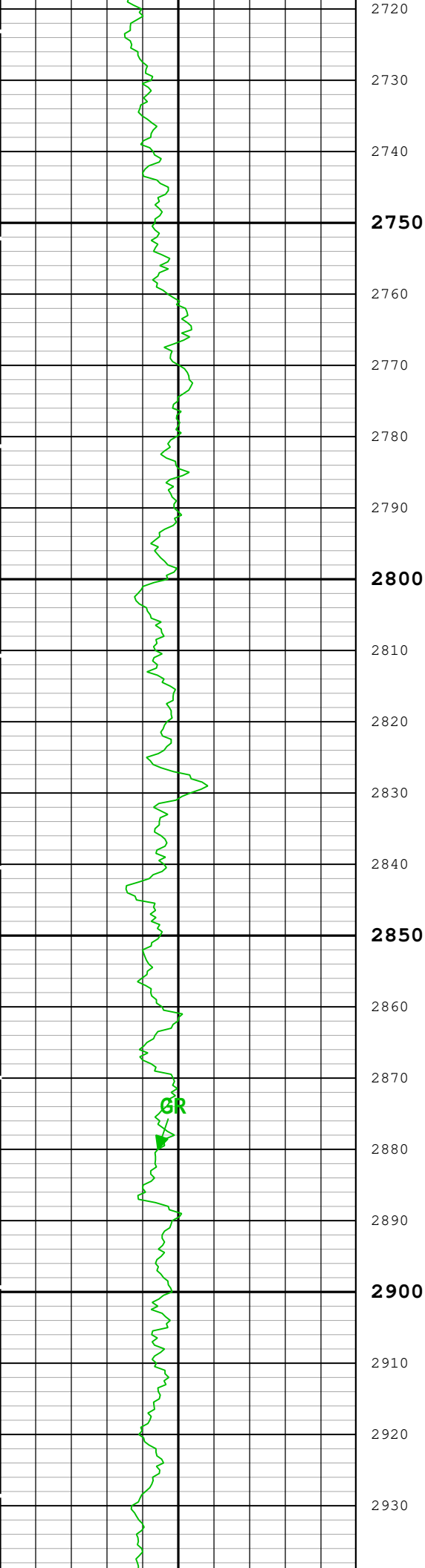


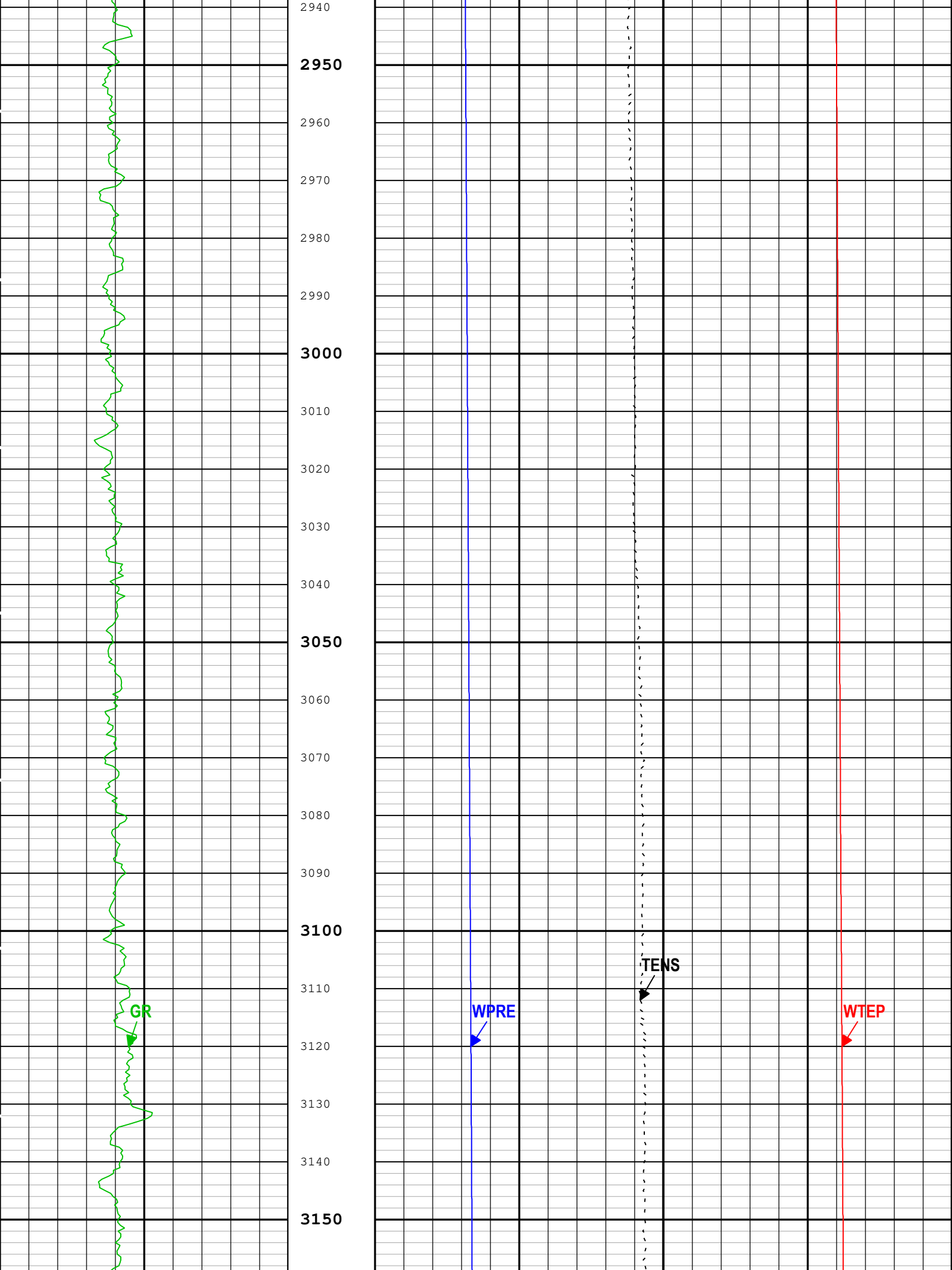


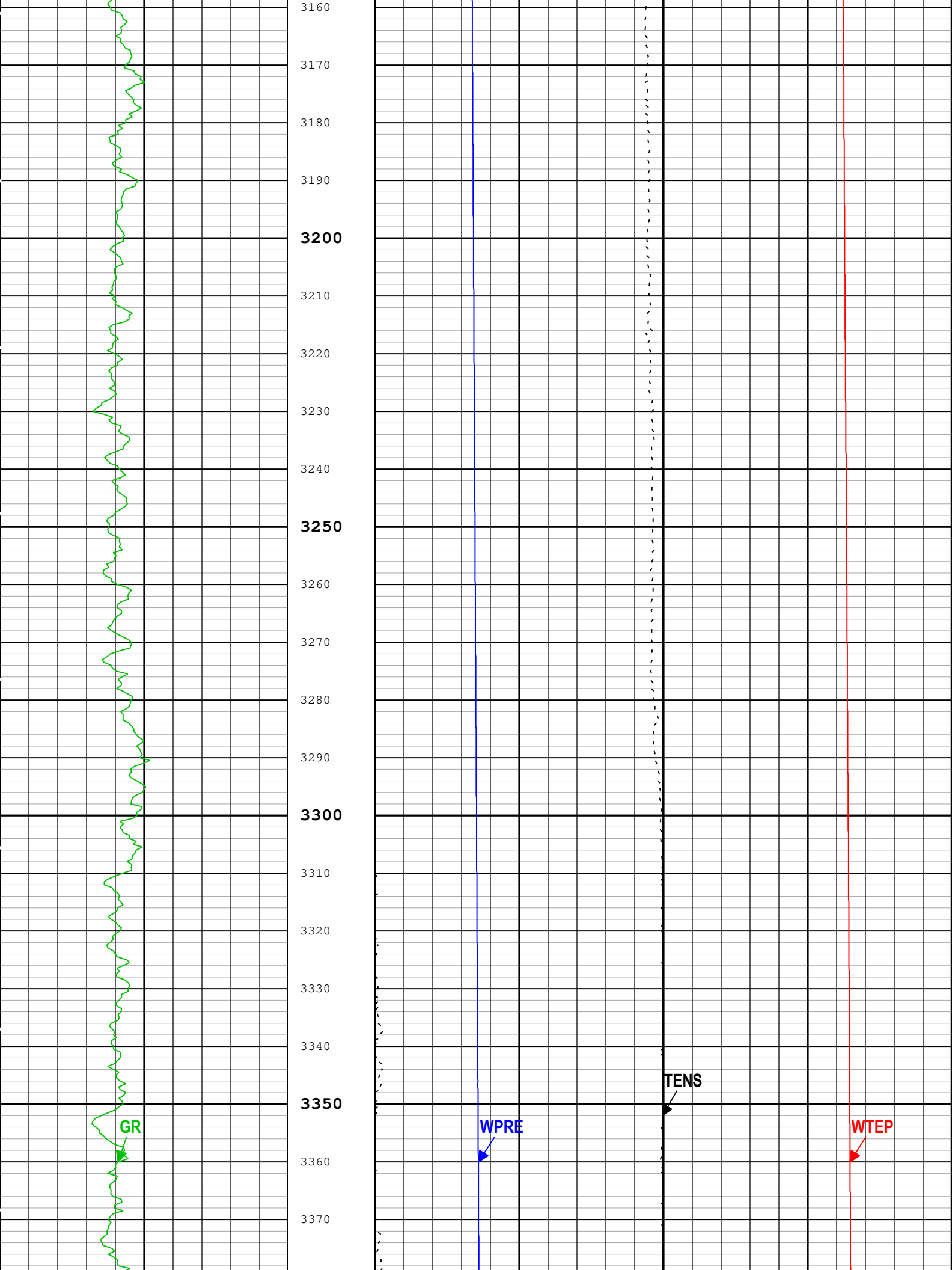


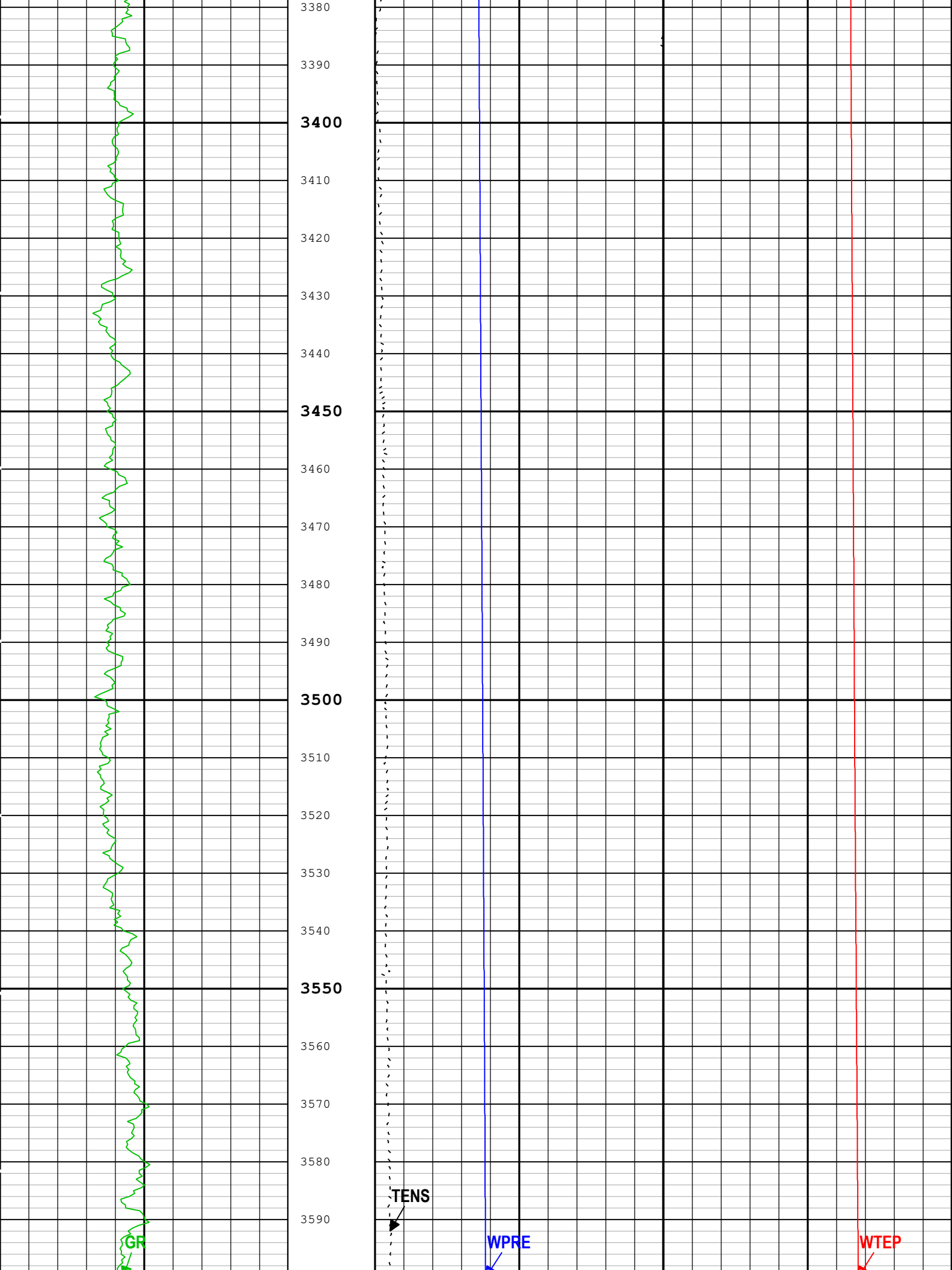


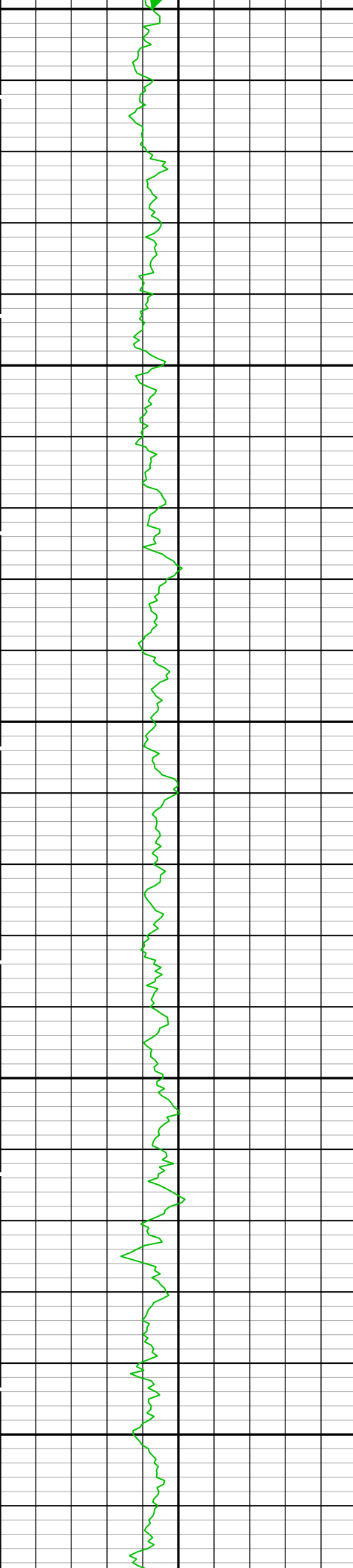




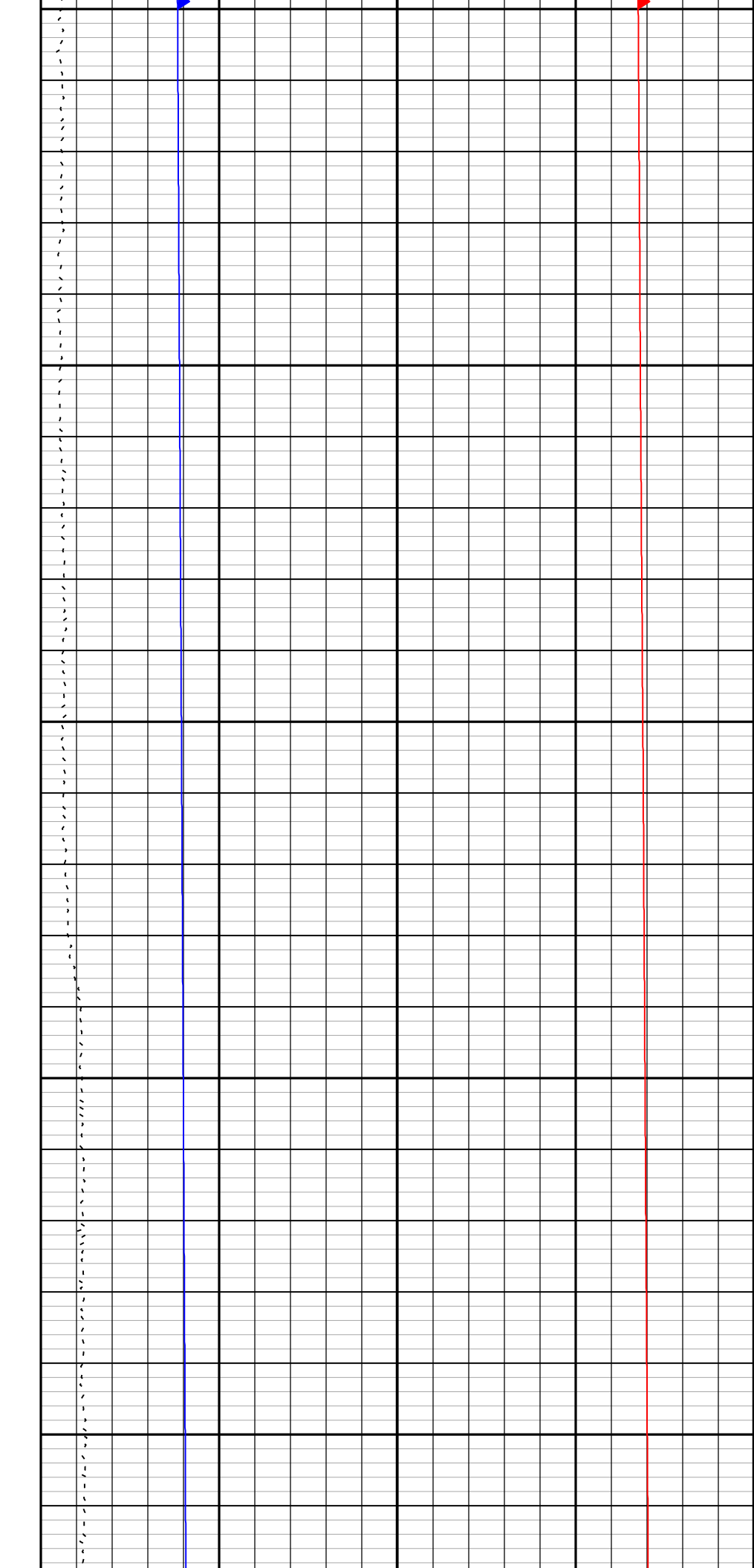


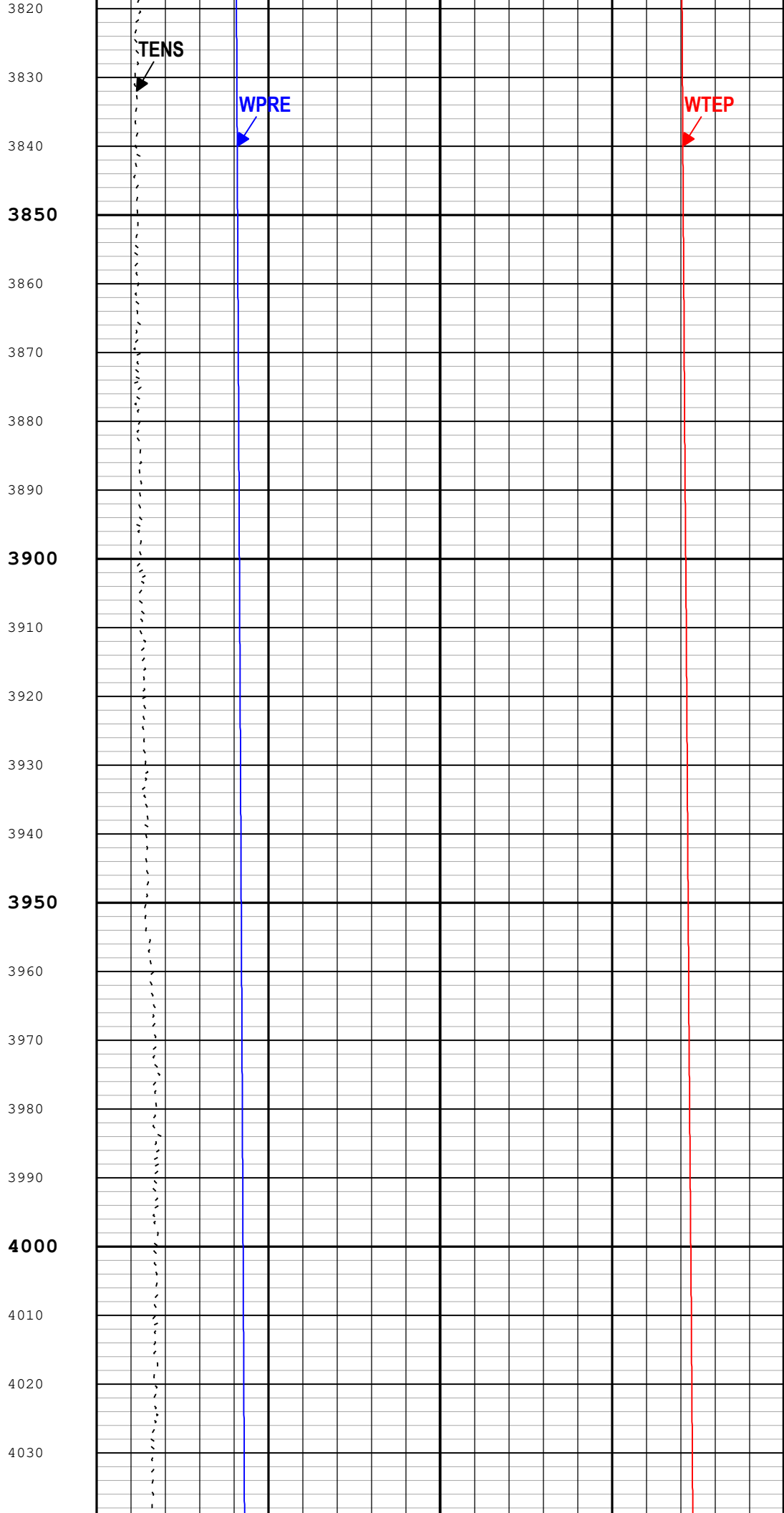
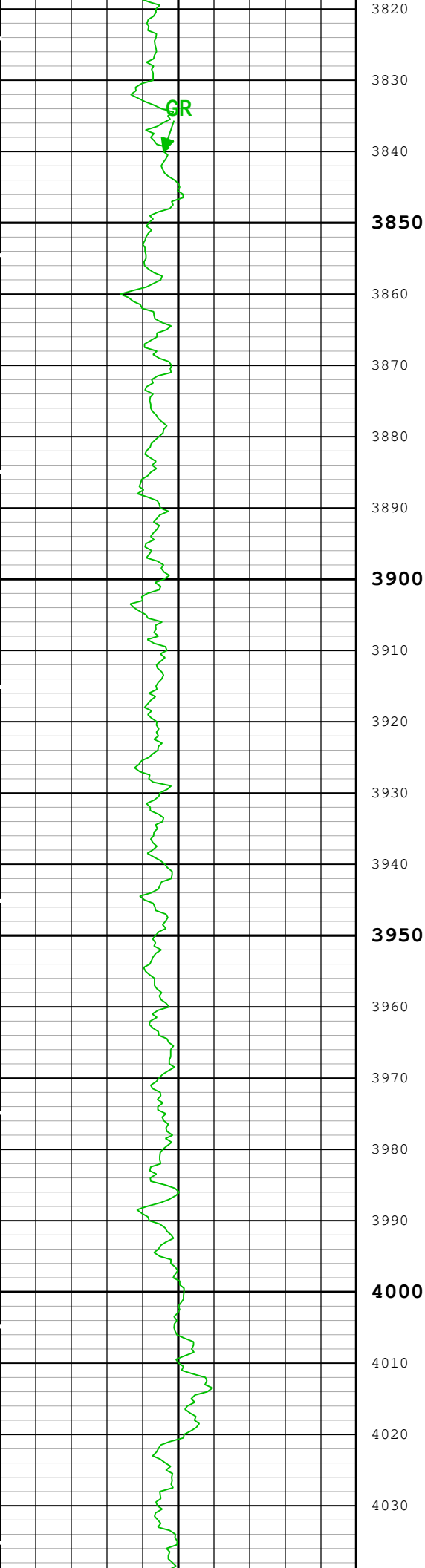


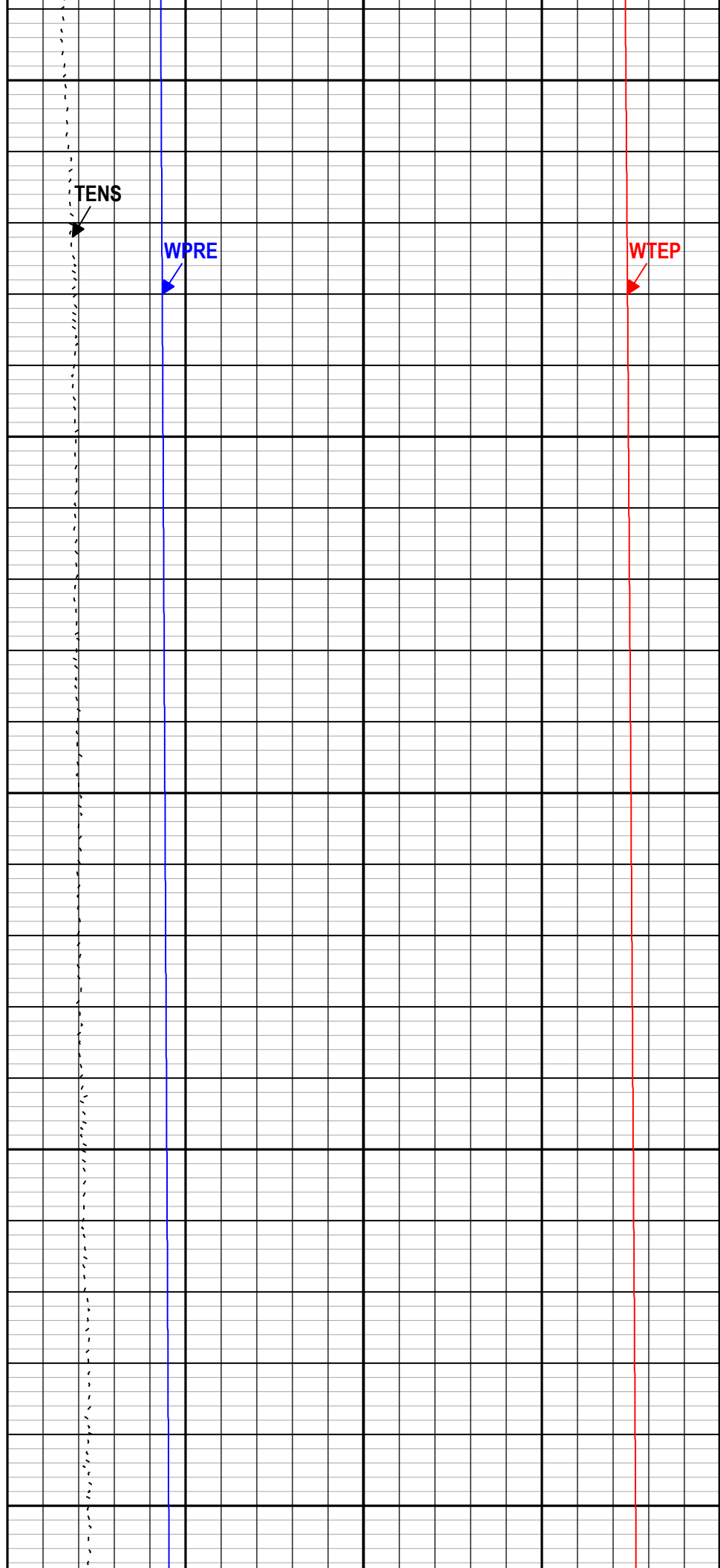
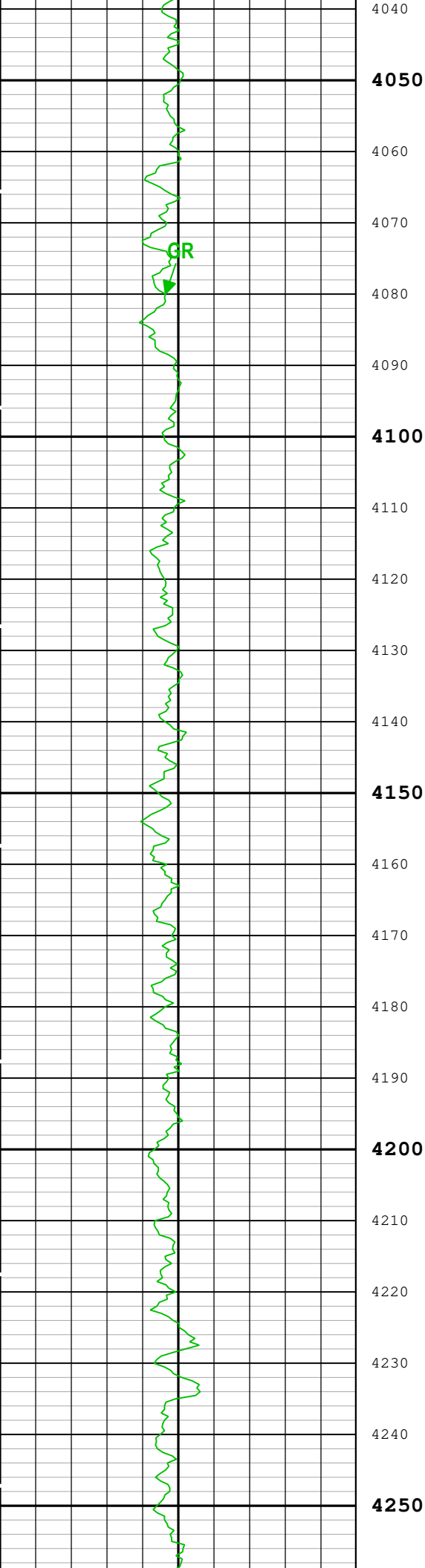


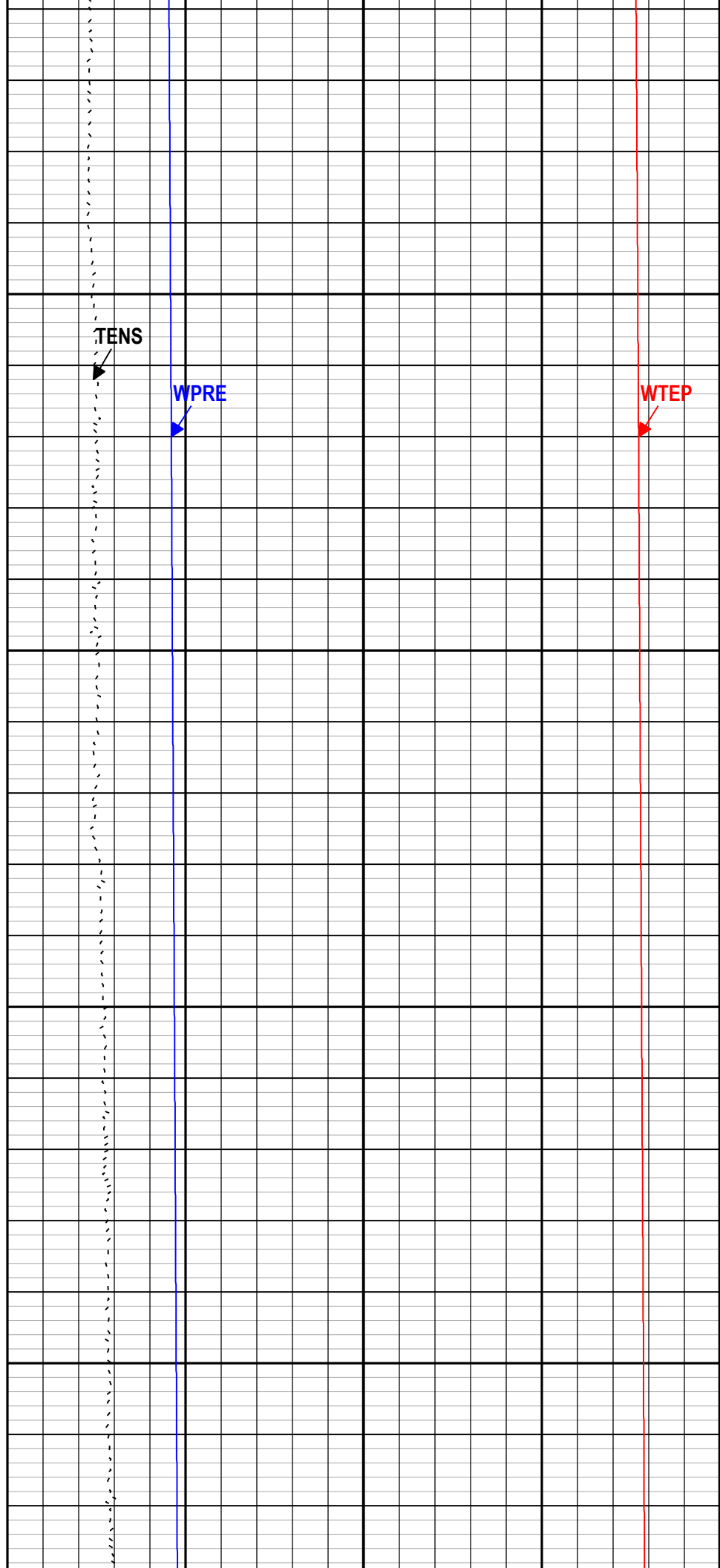
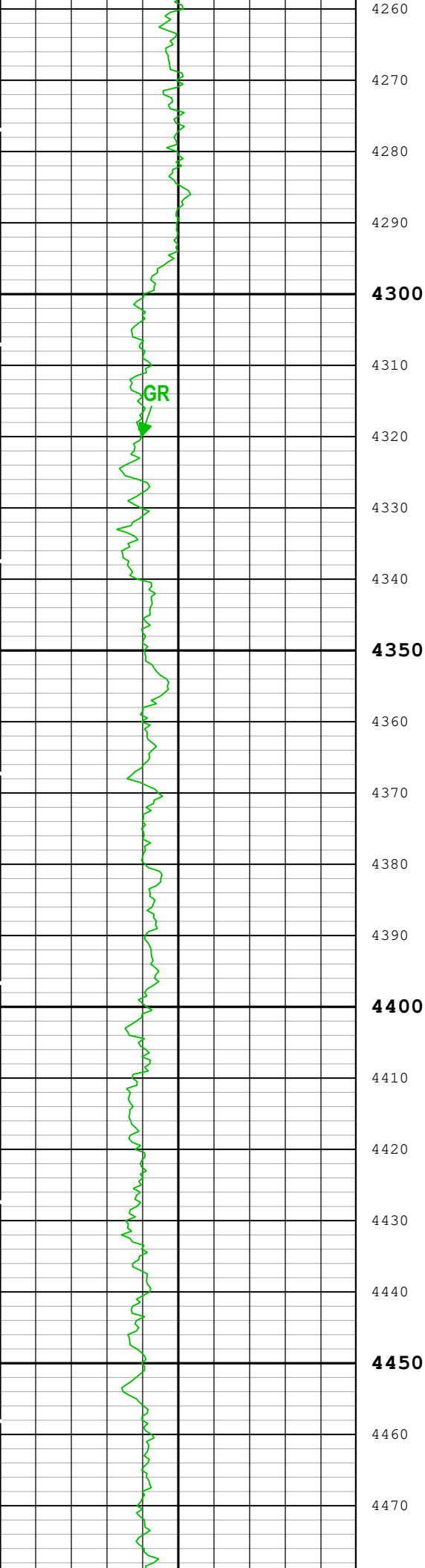


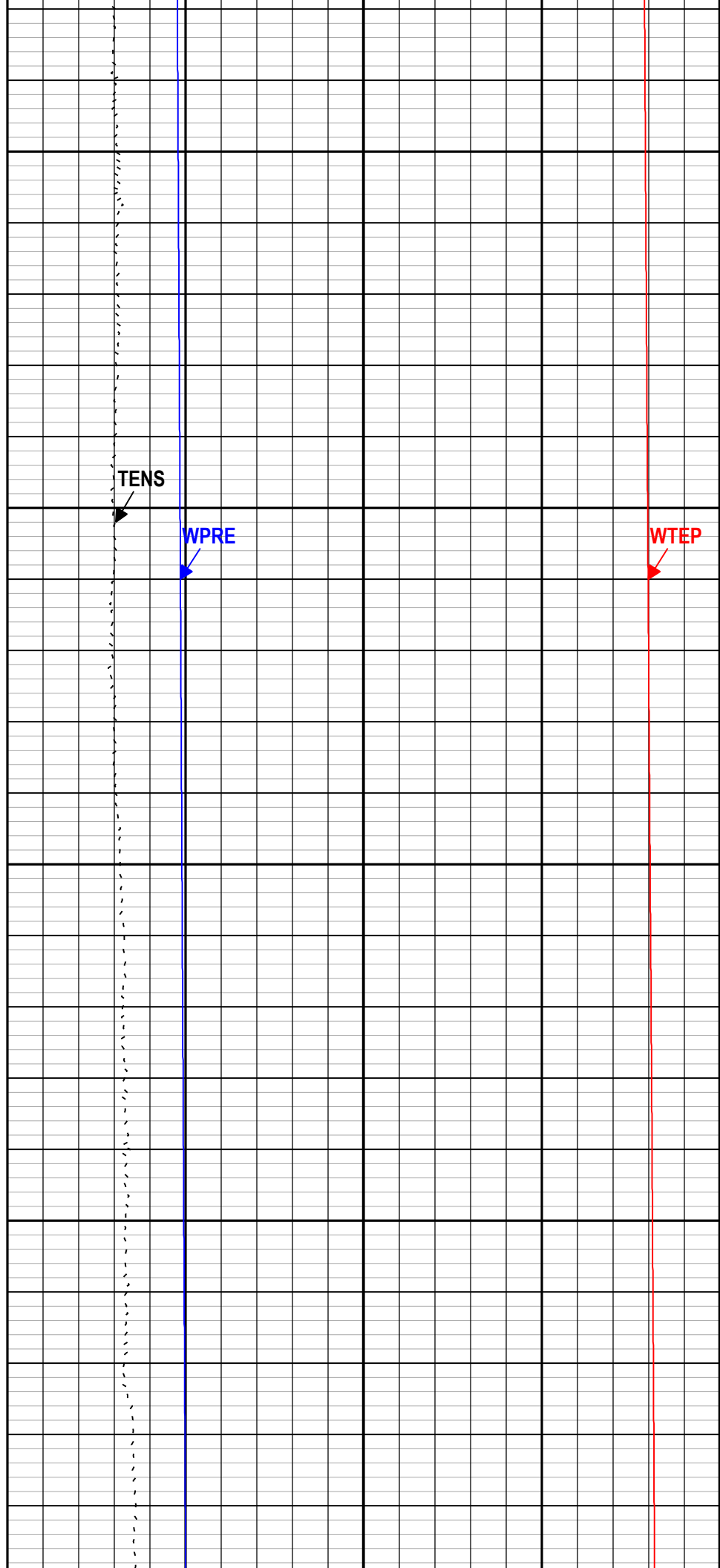
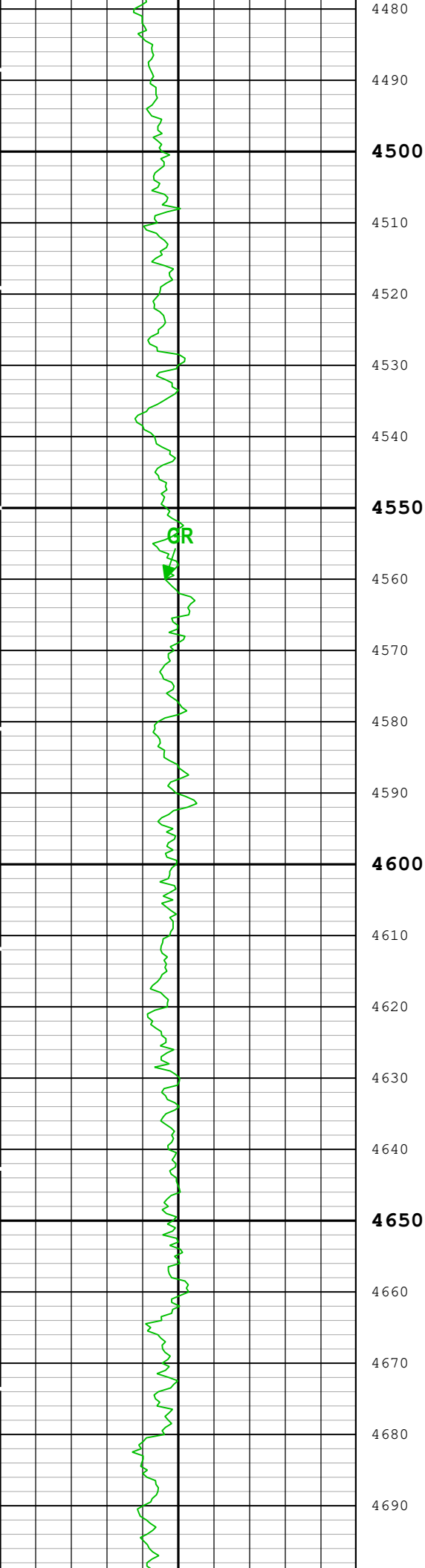
3600
3610
3620
3630
3640
3650
3660
3670
3680
3690
3700
3710
3720
3730
3740
3750
3760
3770
3780
3790
3800
3810

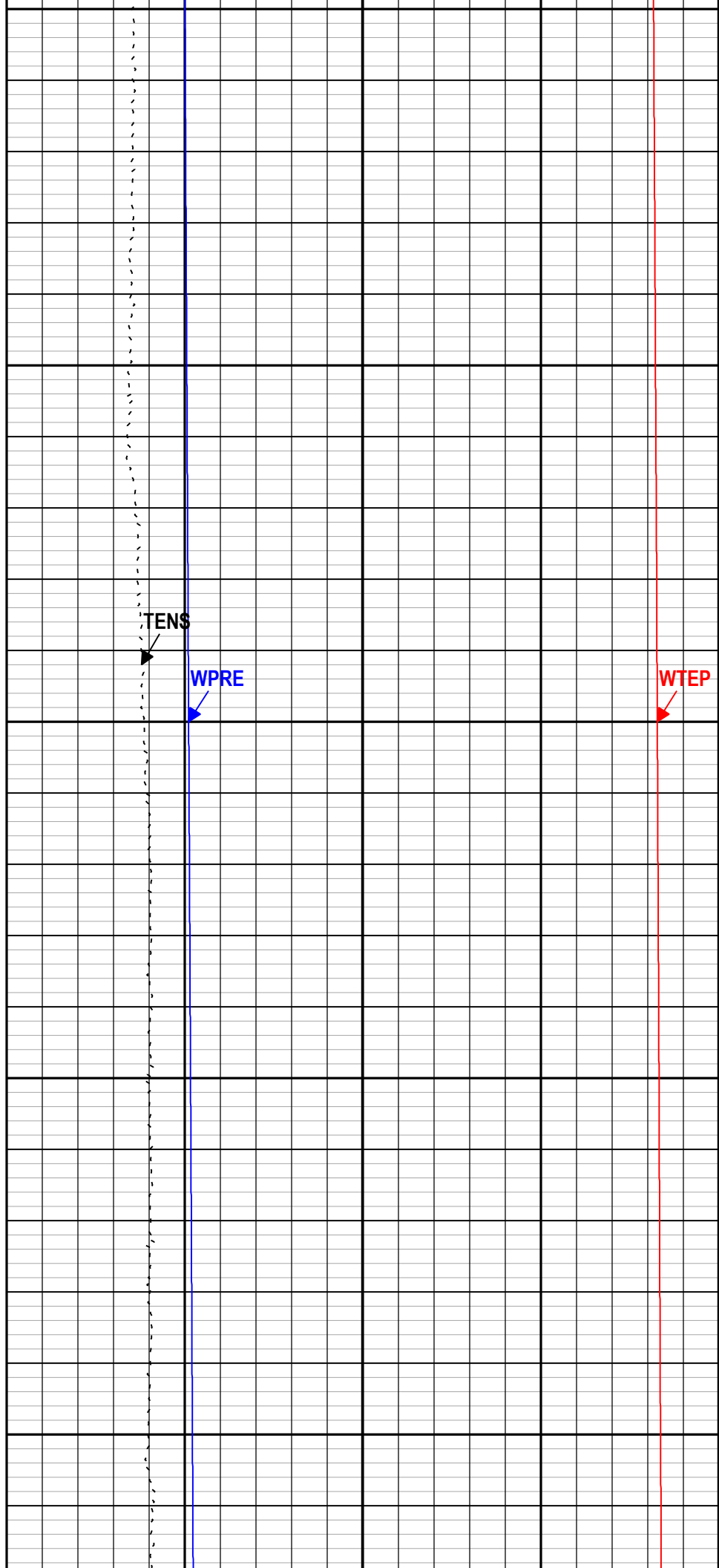
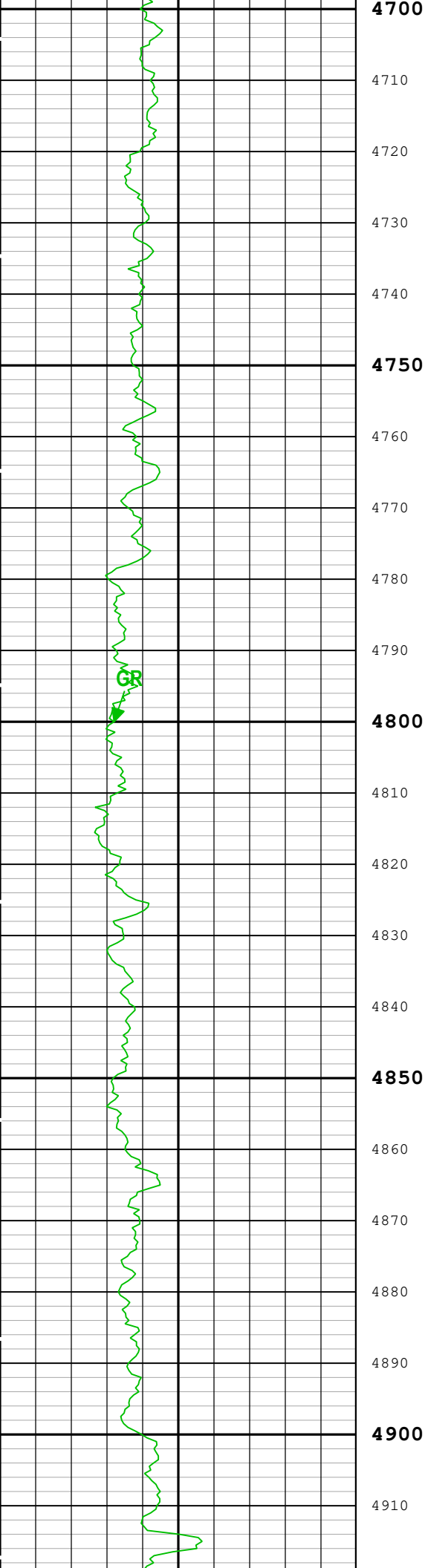


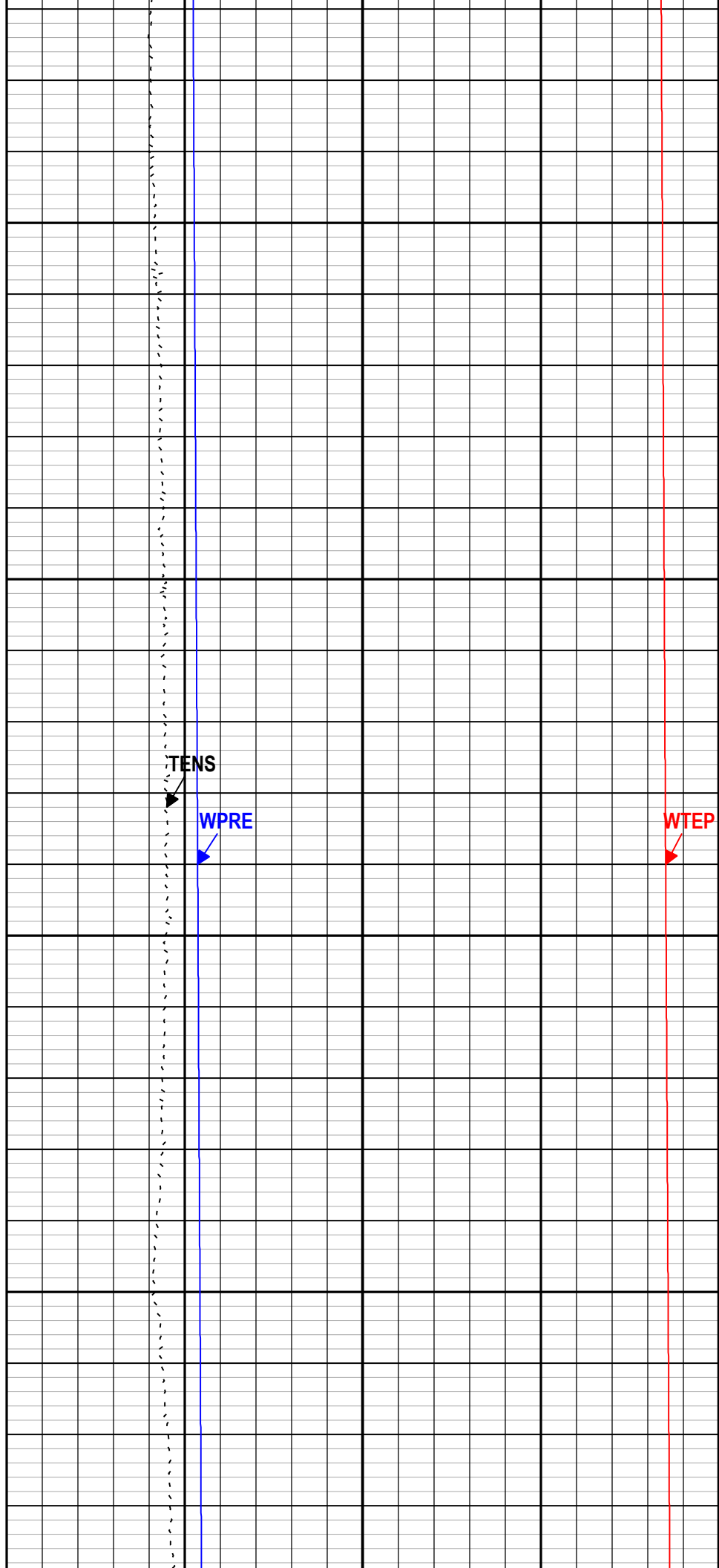
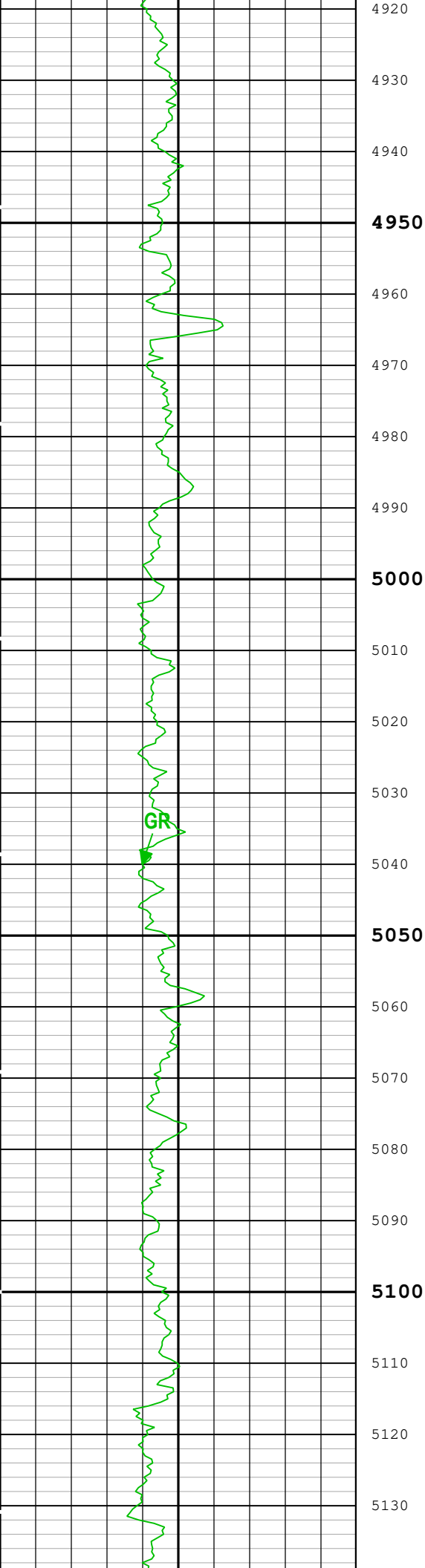


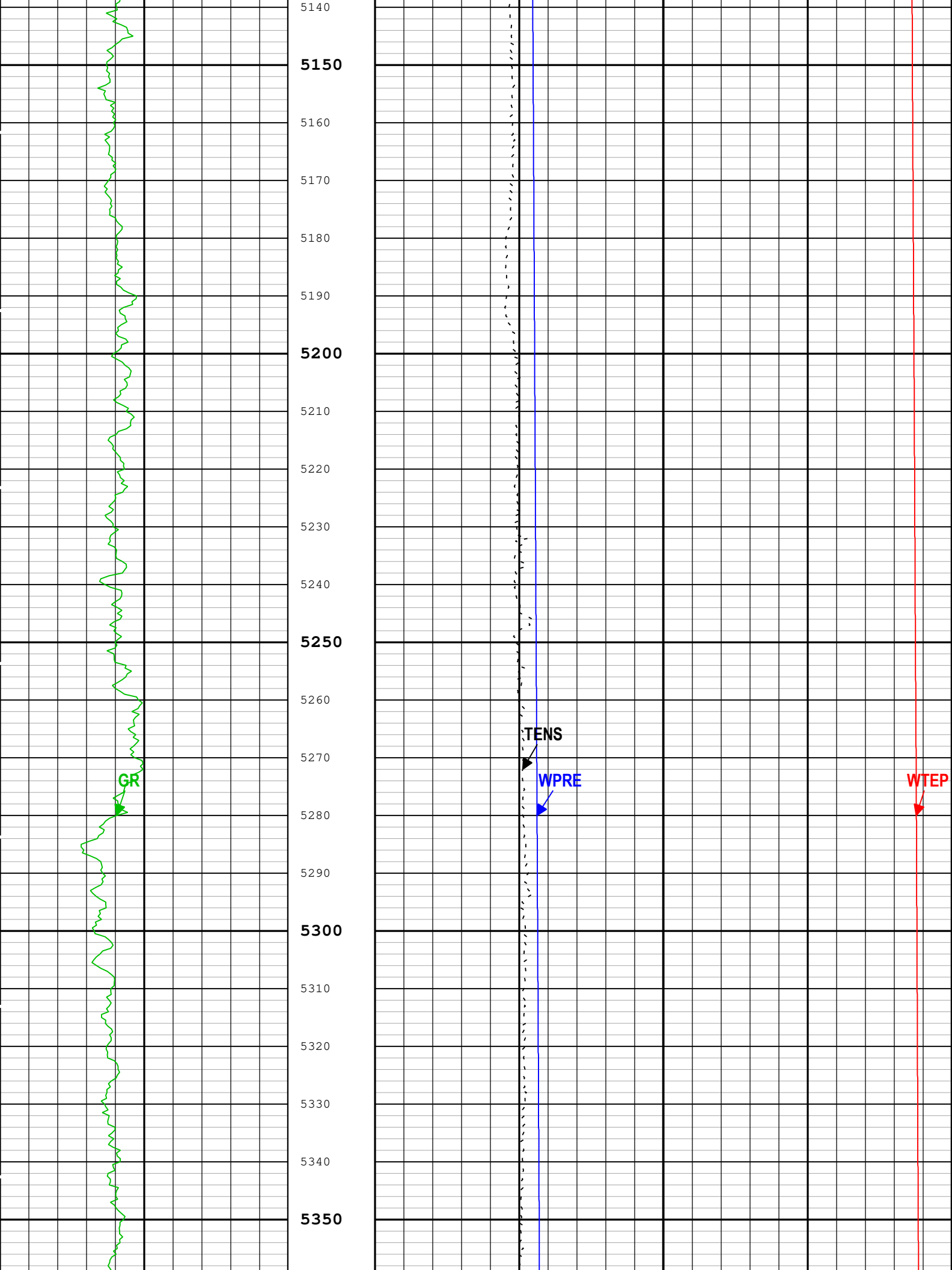


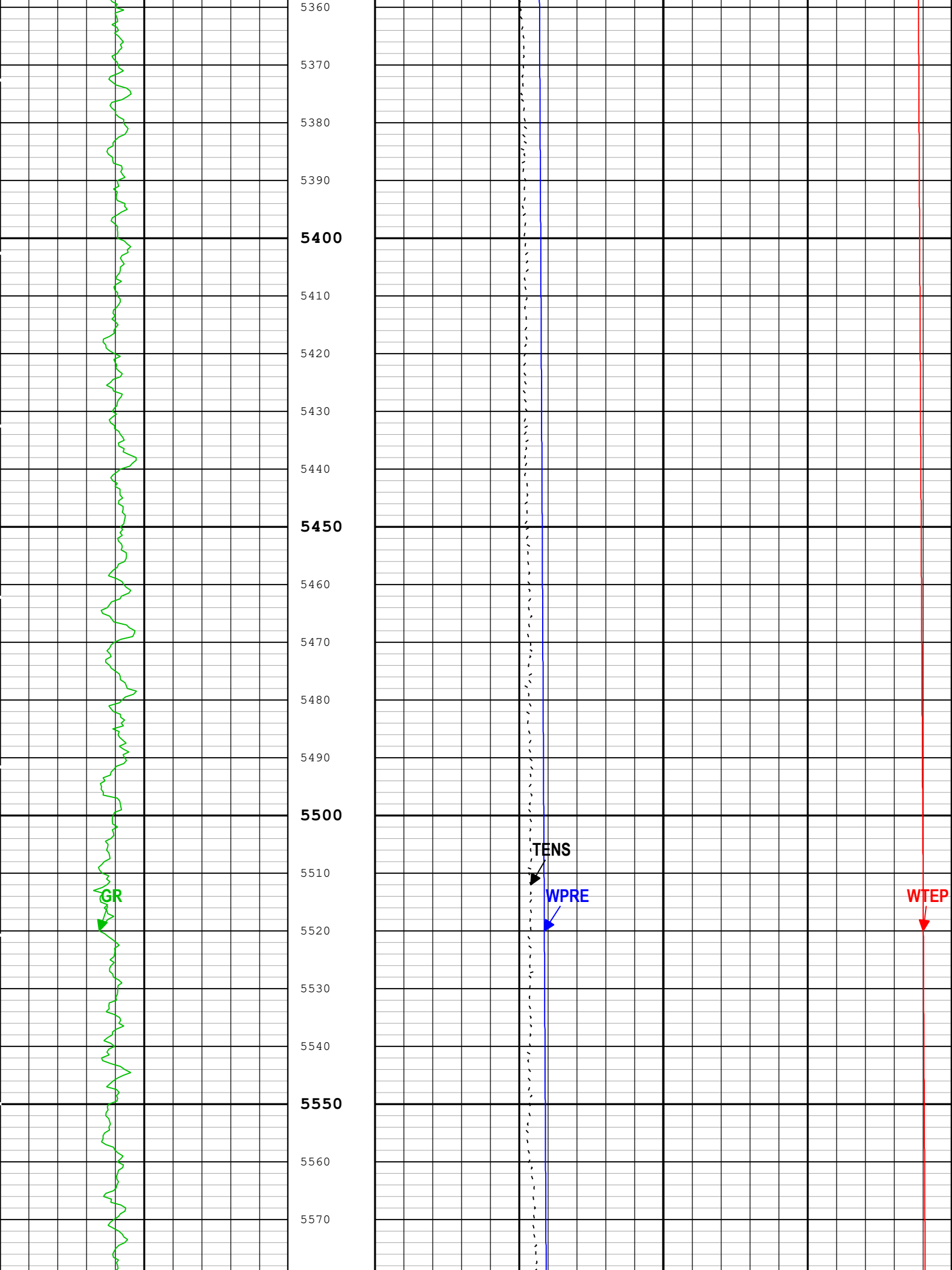


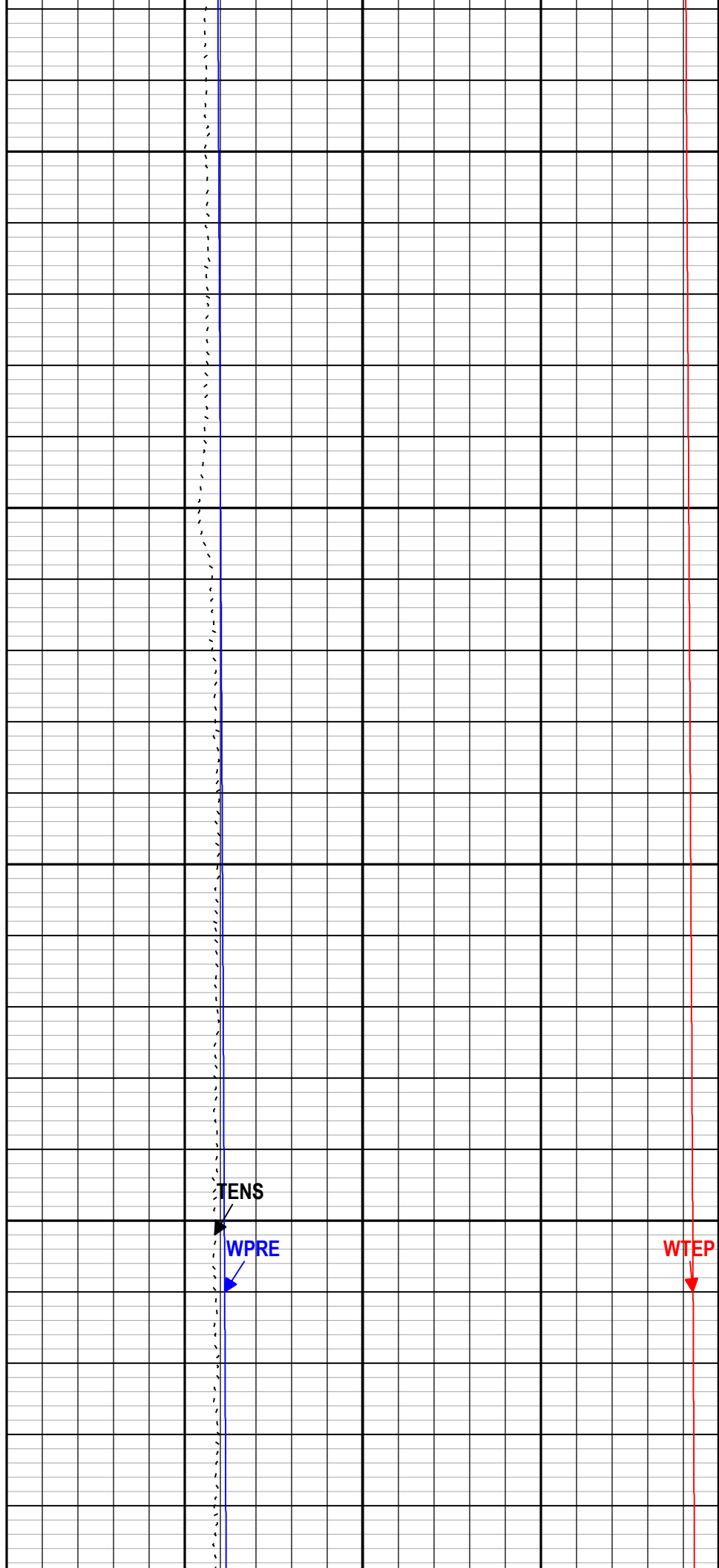
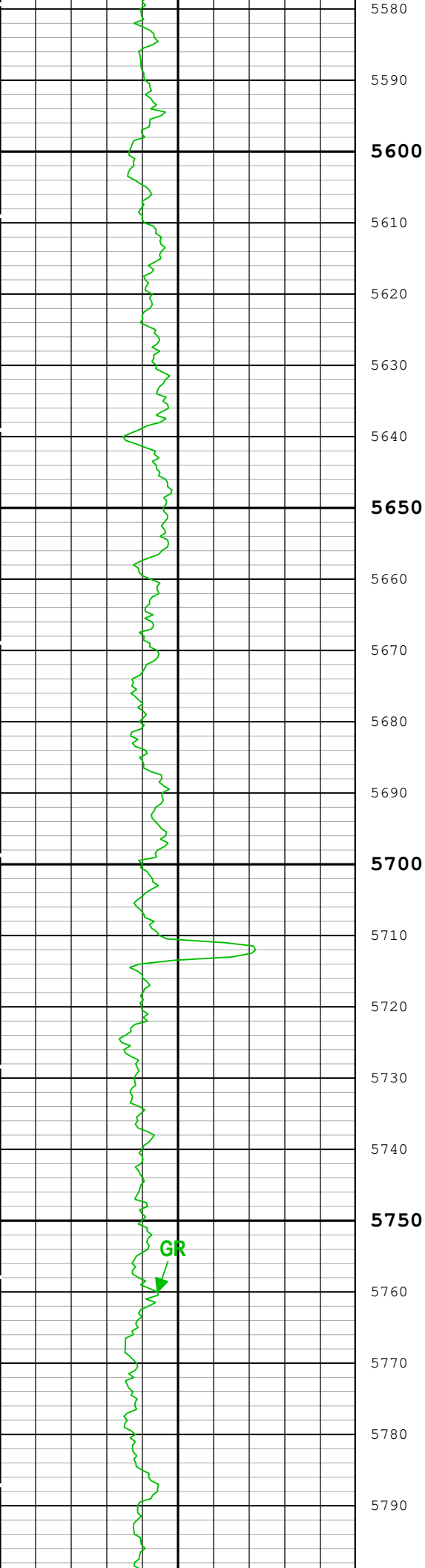


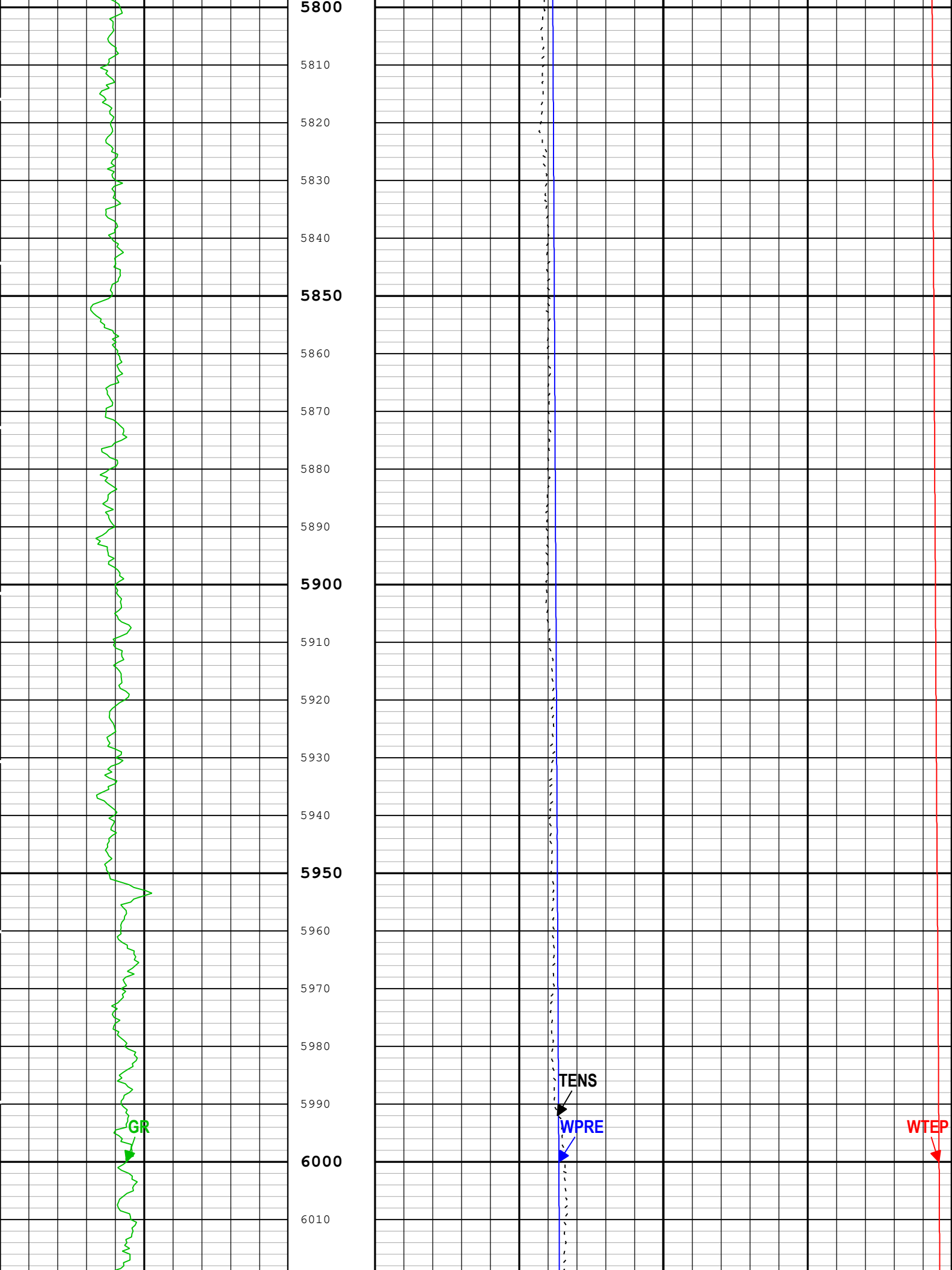


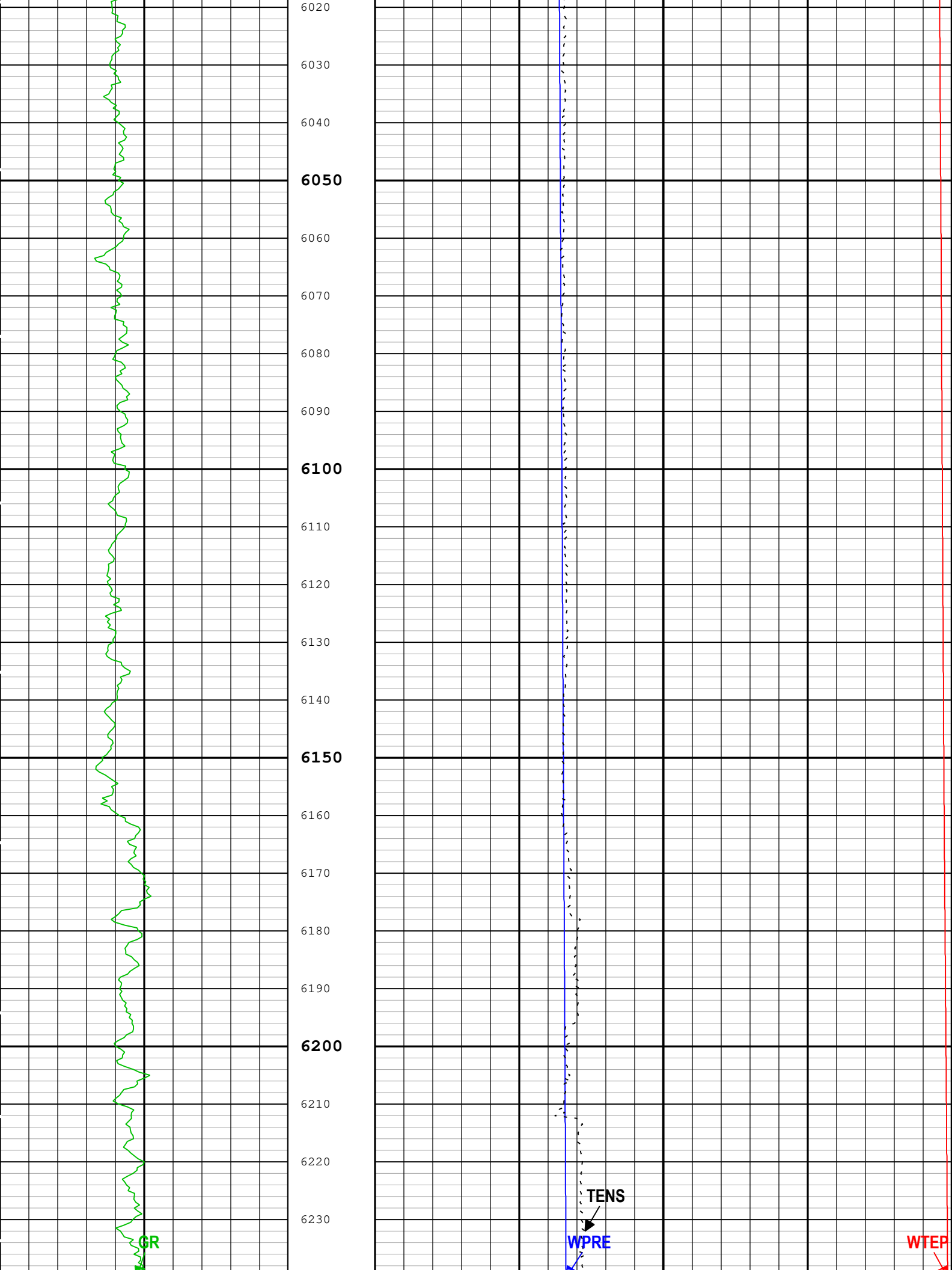


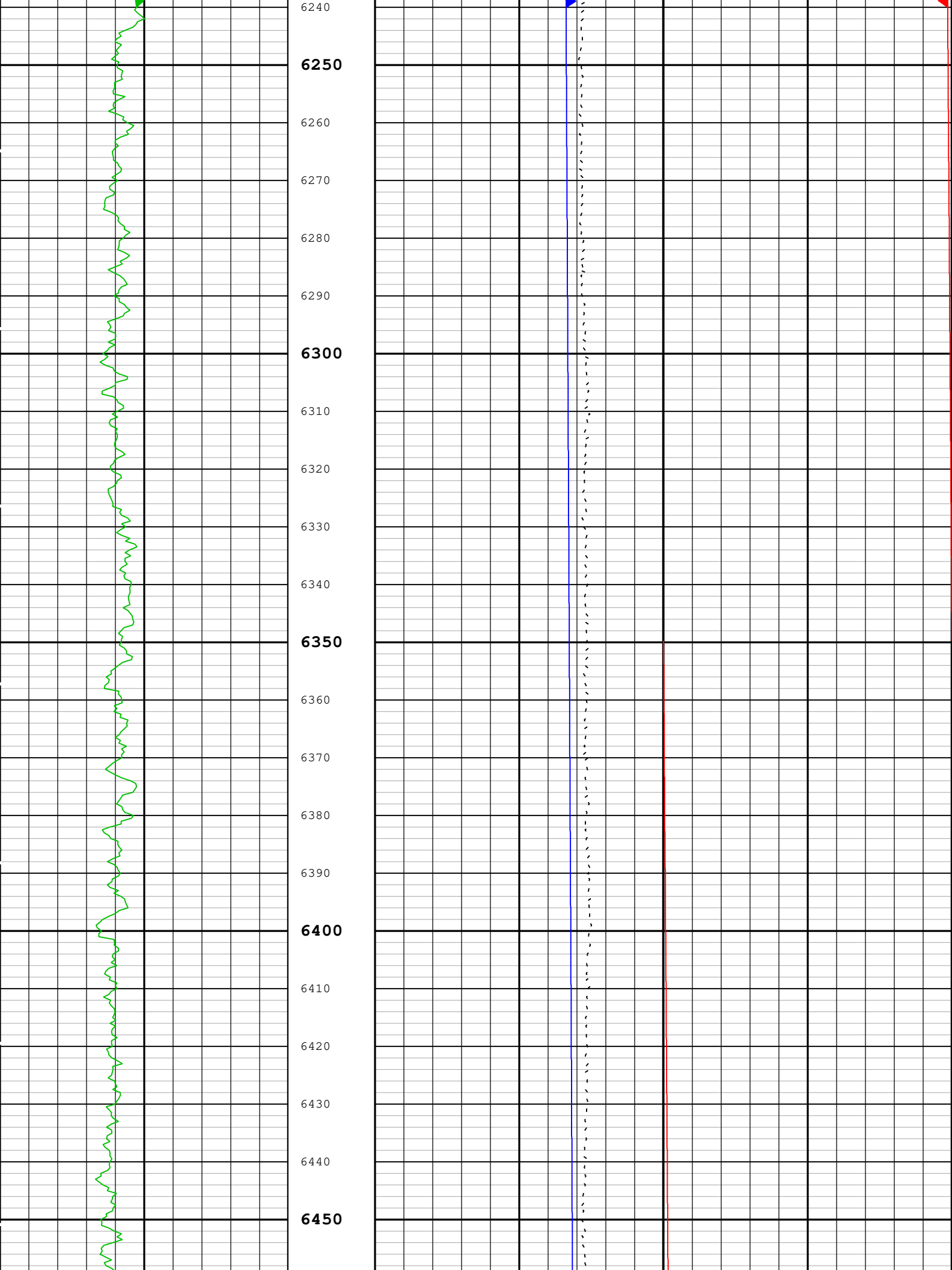


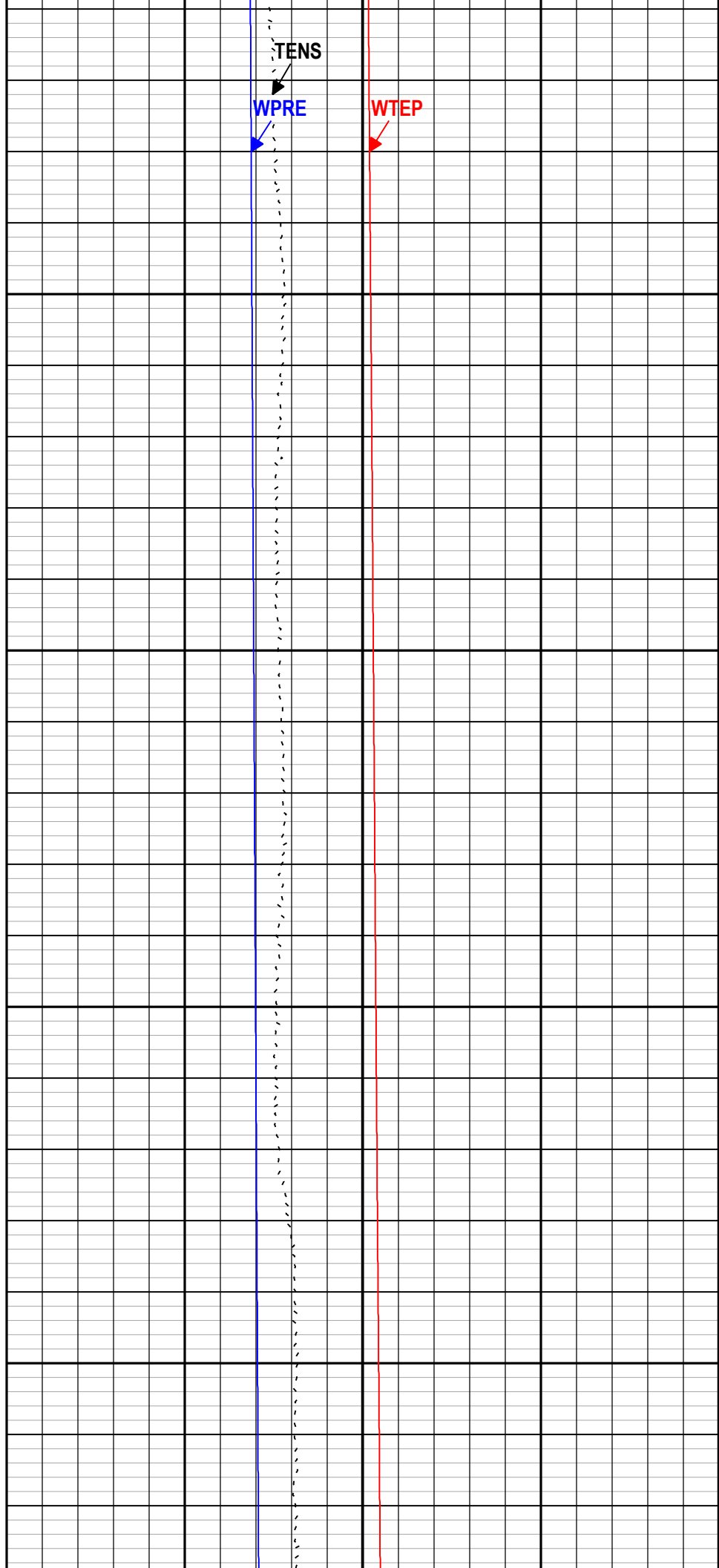
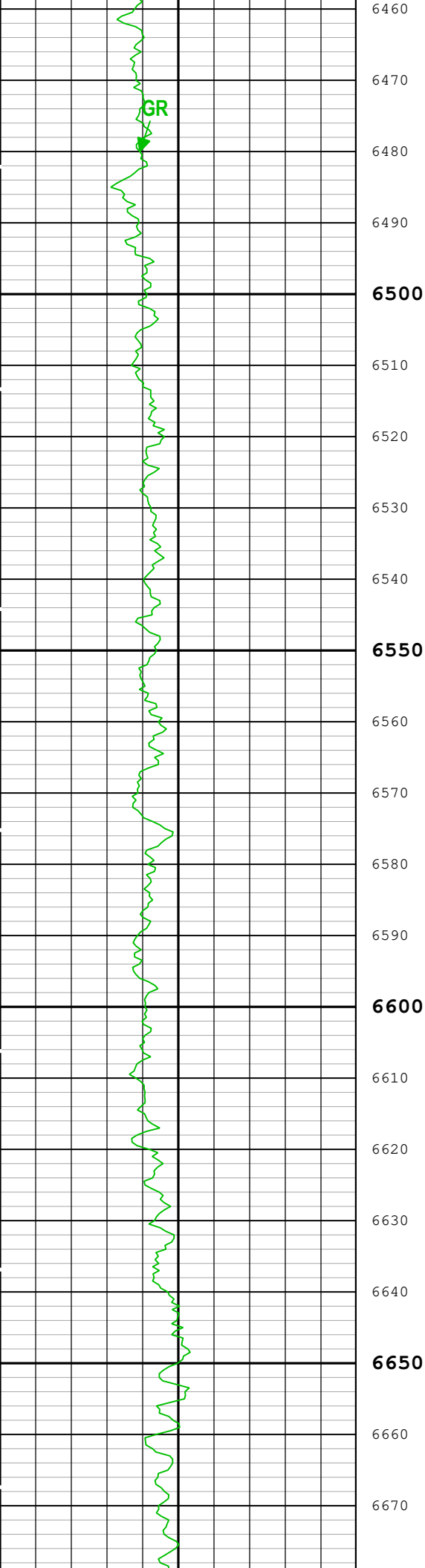


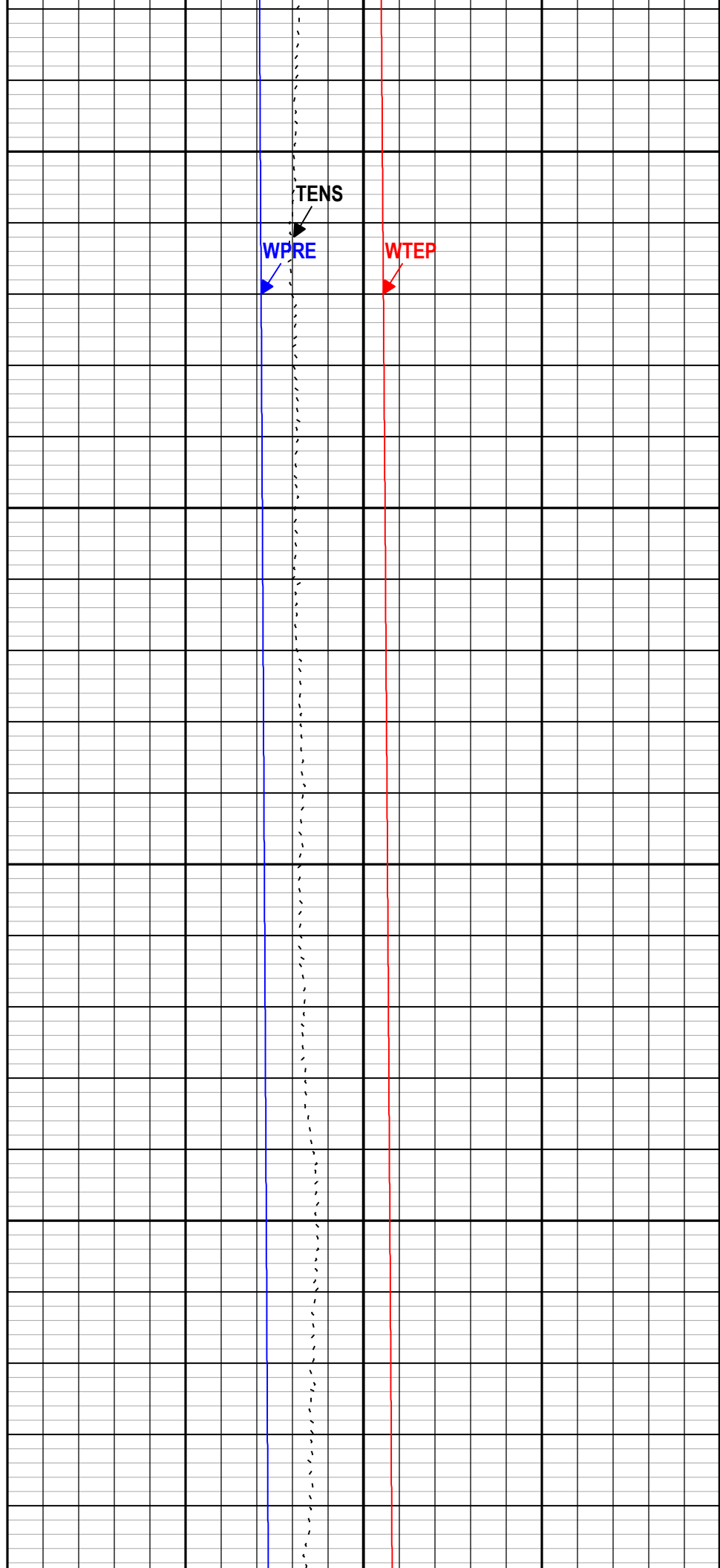
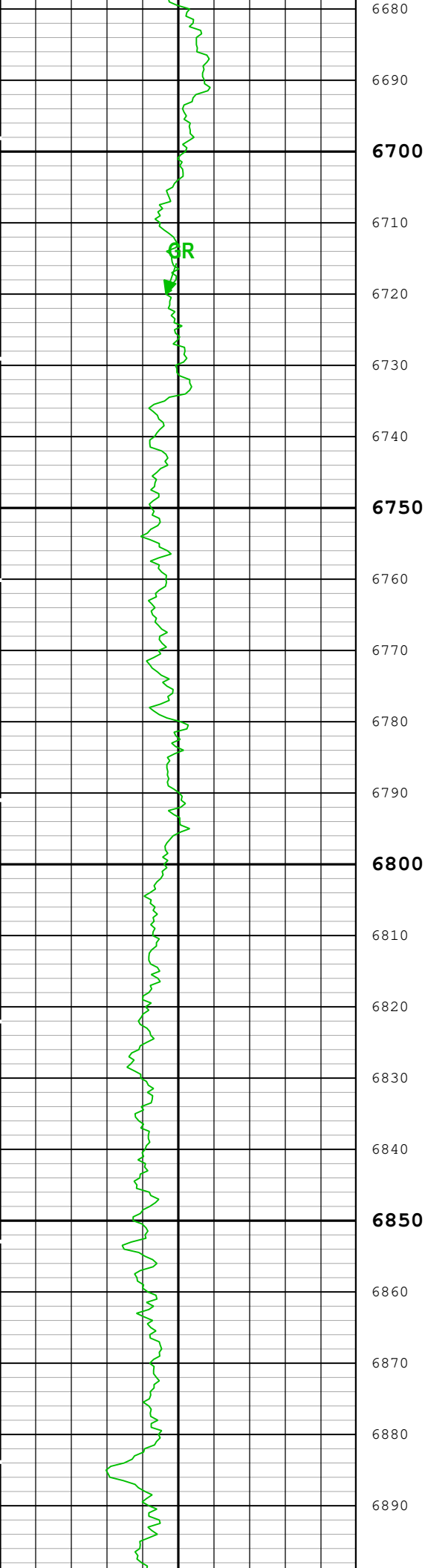


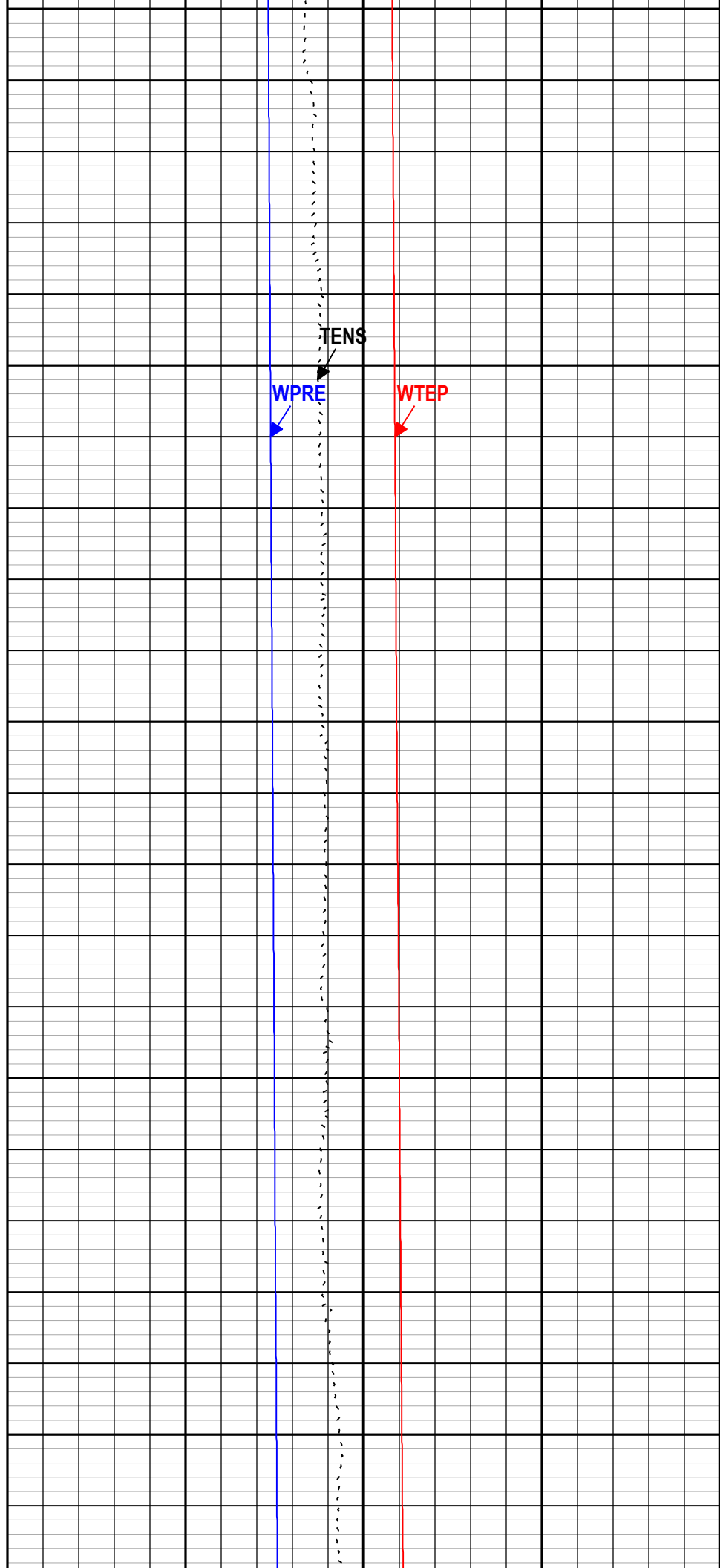
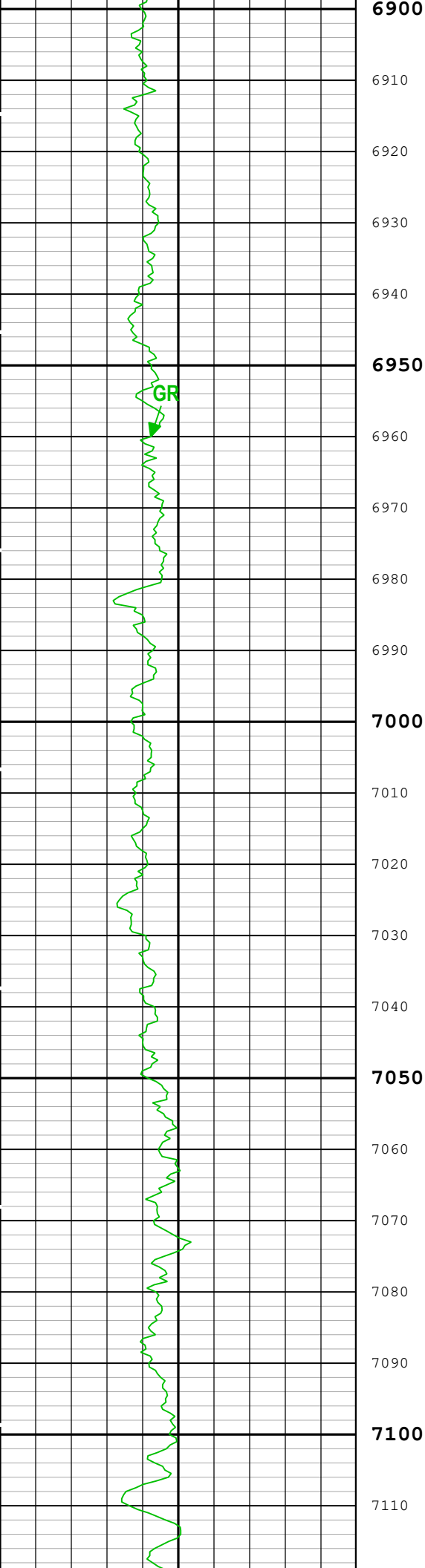


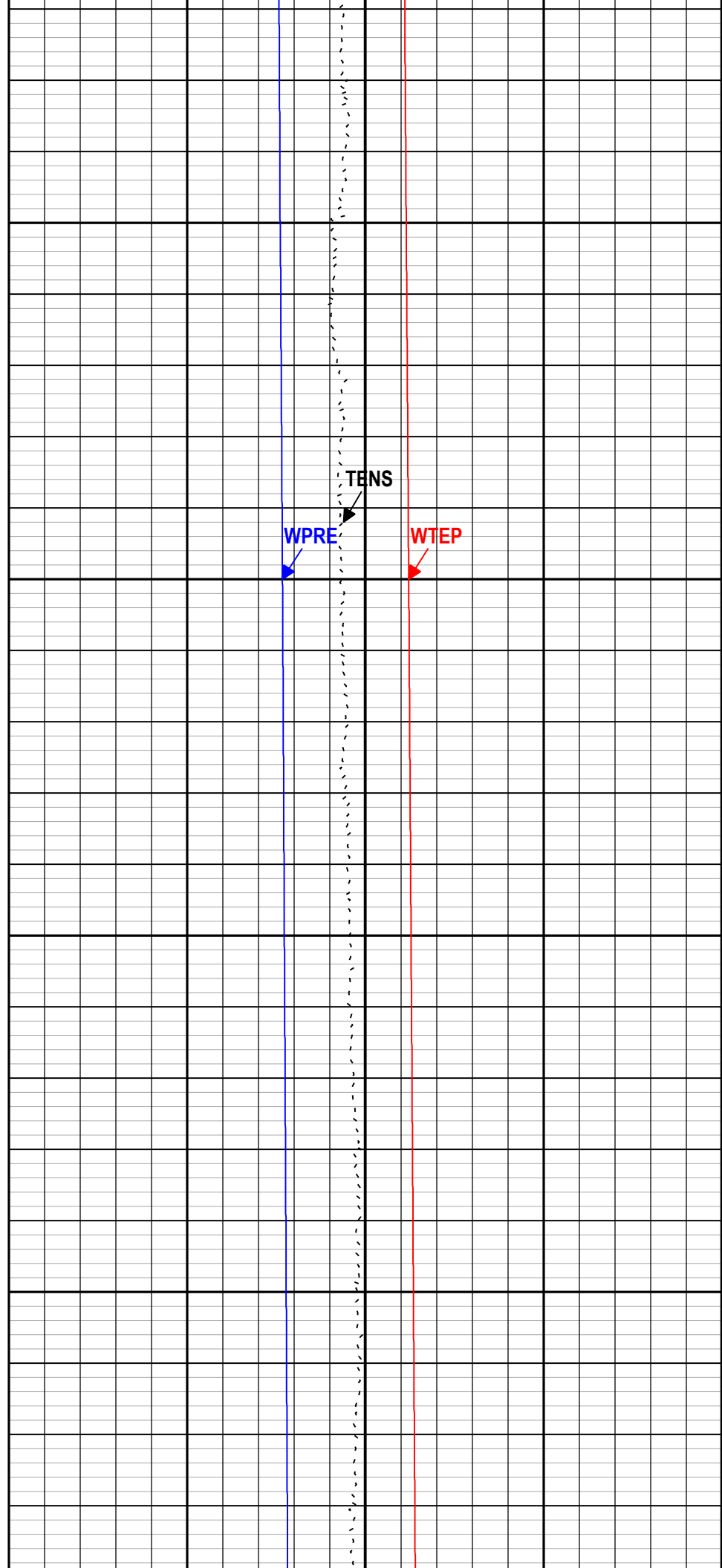
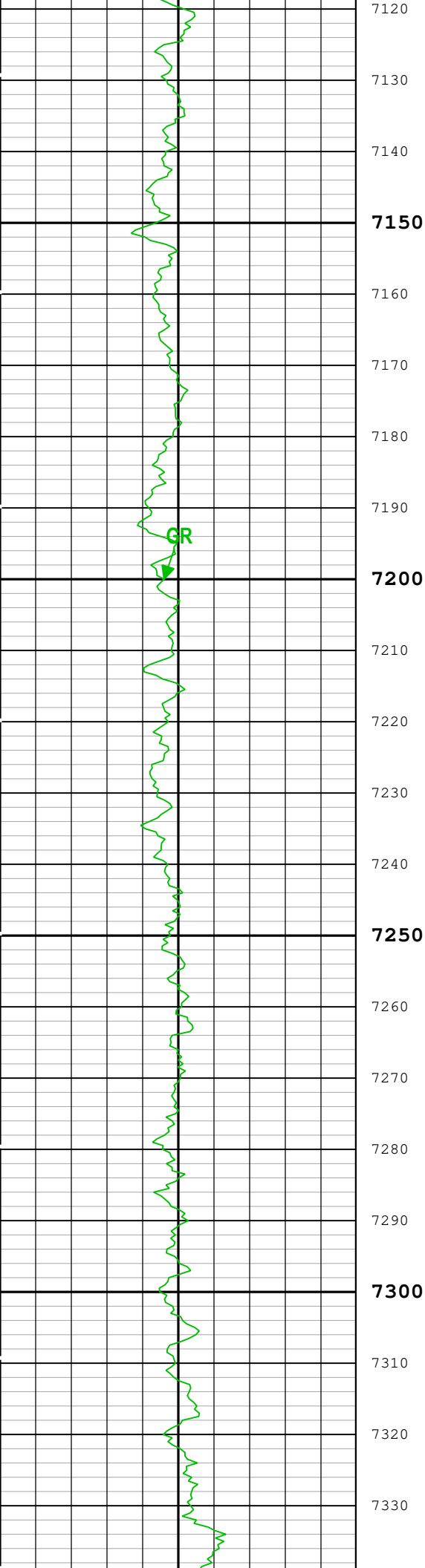


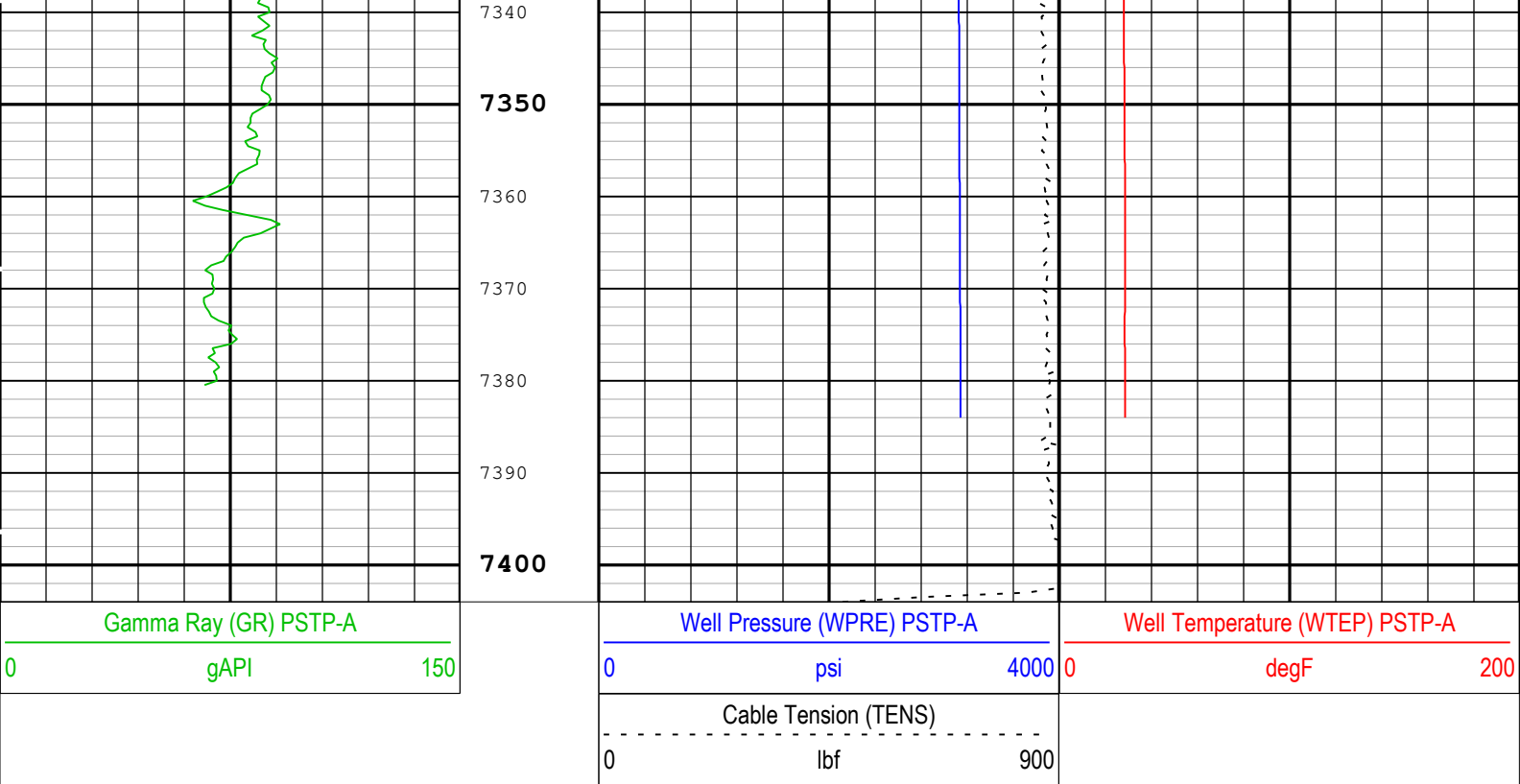












Channel Processing Parameters

ONE: Parameters

Parameter	Description	Tool	Value	Unit
GTSE	Generalized Temperature Selection, from Measured or Computed Temperature	Borehole	GTEM_LINEST(RT)	

Tool Control Parameters

ONE: Parameters

Parameter	Description	Tool	Value	Unit
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	3600	ft/h
PCCG	PSP Downhole CCL Gain	PSTP-A	Time Zoned	

Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
PCCG	0 dB	13-Nov-2019 11:07:37	13-Nov-2019 11:15:27	7403.84	7206.21
PCCG	12 dB	13-Nov-2019 11:15:27	13-Nov-2019 15:11:18	7206.21	203.31

All depth are at tool zero.

Company:	CRESTONE PEAK RESOURCES OPERATING LLC	Schlumberger
Well:	HINGLEY 1F-18H-A167	
Field:	WATTENBERG	
County:	WELD	
State:	COLORADO	
Pulsed Neutron eXtreme		
Gamma Ray Log		
** FIELD PRINT **		