

Company: Nighthawk Production LLC

Well: Blackcomb 5-14

Field: Arikaree Creek

County: Lincoln Country: USA

Platform Express Field Print

Triple Combo

Induction & Nuclear

County: Lincoln
Field: Arikaree Creek
Location: SWNW Sec. 14, T6S, R54W
Well: Blackcomb 5-14
Company: Nighthawk Production LLC

Location:		Elev.:	
SWNW Sec. 14, T6S, R54W		K.B.	5197.00 ft
SHL: 1996' FNL & 1097' FWL		G.L.	5182.00 ft
Lat:39.530340/Long:39.530340		D.F.	5196.00 ft
Permanent Datum:	Ground Level	Elev.:	5182.00 f
Log Measured From:	Kelly Bushing	15.00 ft	above Perm.Datum
Drilling Measured From:	Kelly Bushing		
API Serial No.	Section:	Township:	Range:
05-073-06601-0000	14	6S	54W

Logging Date 12-Sep-2014

Run Number ONE

Depth Driller 8365.00 ft

Schlumberger Depth 8372.00 ft

Bottom Log Interval 8372.00 ft

Top Log Interval 366.00 ft

Casing Driller Size @ Depth 8.625 in @ 366.00 ft

Casing Schlumberger 366 ft

Bit Size 7.875 in

Type Fluid In Hole WBM

Density Viscosity 9.5 lbm/gal 71 s

Fluid Loss PH 9 cm3 9.1

Source of Sample Active Tank

RM @ Meas Temp 0.78 ohm.m @ 73.58 degF

RMF @ Meas Temp 0.57 ohm.m @ 75 degF

RMC @ Meas Temp 1.15 ohm.m @ 75 degF

Source RMF RMC Calculated

RM @ BHT RMF @ BHT 0.3 @ 200 0.23 @ 200

Max Recorded Temperatures 200 degF

Circulation Stopped 12-Sep-2014 05:00:00

Logger on Bottom 12-Sep-2014 19:15:00

Unit Number Location: 3022 Fort Morgan

Recorded By Nolan Welsh

Witnessed By Jim Weir

Disclaimer

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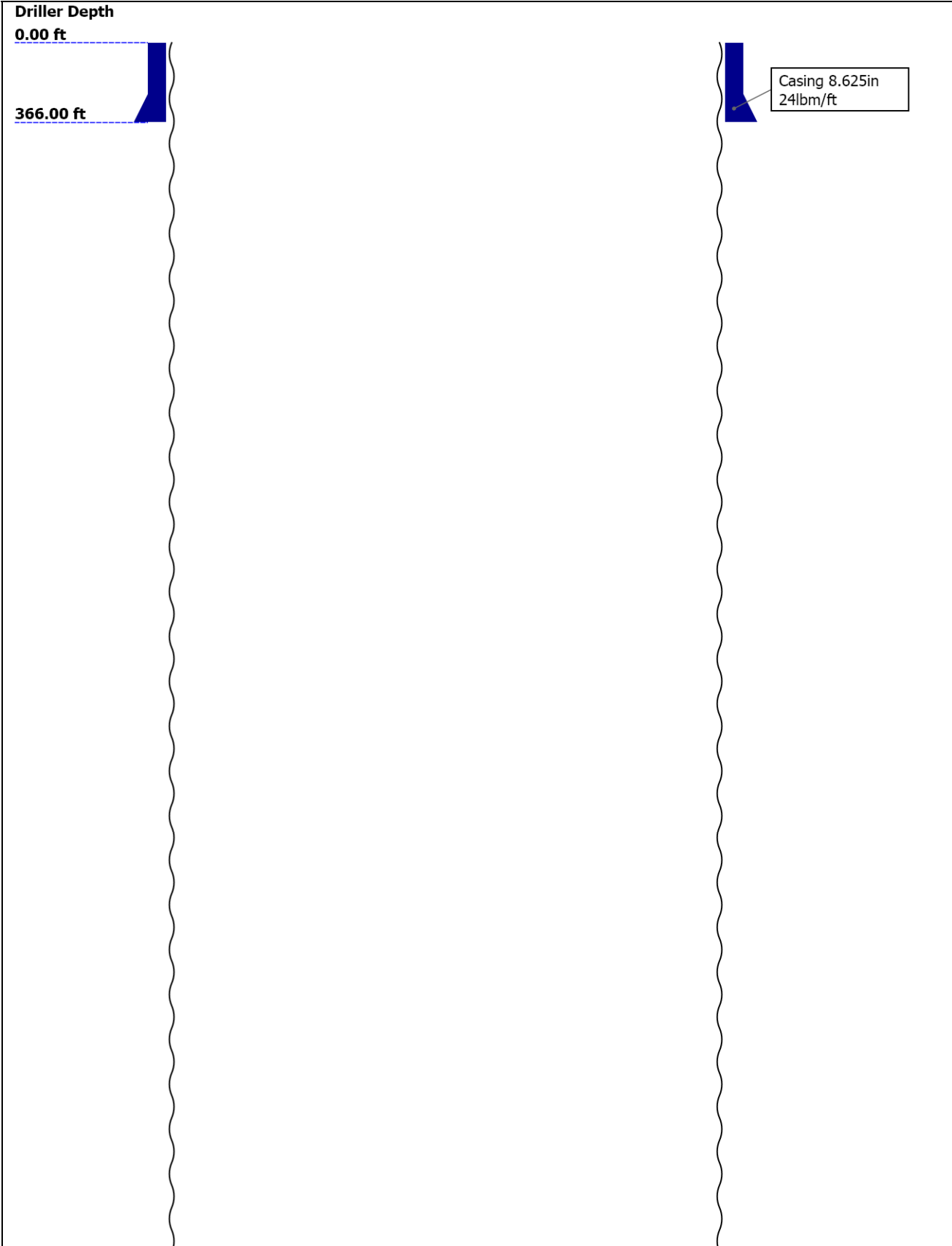
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Well Sketch





Borehole Size/Casing/Tubing Record						
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Bit						
Bit Size (in)	7.875					
Top Driller (ft)	0					
Top Logger (ft)	0					
Bottom Driller (ft)	8365					
Bottom Logger (ft)	8372					
Casing						
Size (in)	8.625					
Weight (lbm/ft)	24					
Inner Diameter (in)	8.097					
Grade	N80					
Top Driller (ft)	0					
Top Logger (ft)	0					
Bottom Driller (ft)	366					
Bottom Logger (ft)	366					


Operational Run Summary						
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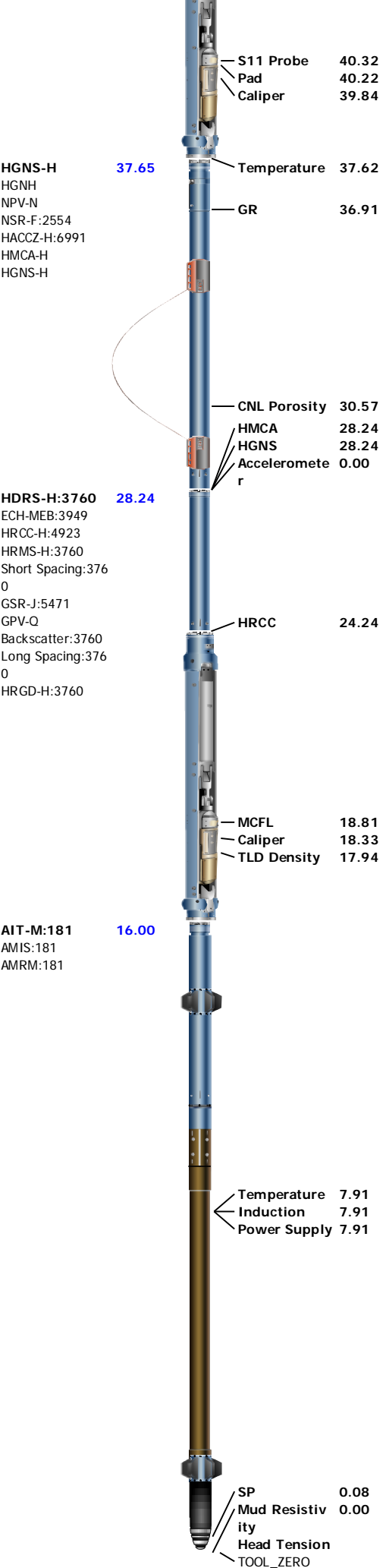
Parameter (unit)	ONE					
Date Log Started	12-Sep-2014					
Time Log Started	17:28:30					
Date Log Finished	12-Sep-2014					
Time Log Finished	23:03:16					
Top Log Interval (ft)	366.00					
Bottom Log Interval (ft)	8372.00					
Total Depth (ft)	8372.00					
Max Hole Deviation (deg)	5.80					
Azimuth of Max Deviation (deg)	324.70					
Bit Size (in)	7.875					
Logging Unit Number	3022					
Logging Unit Location	Fort Morgan					
Recorded By	Nolan Welsh					
Witnessed By	Jim Weir					
Service Order Number	CRXR-00035					

Borehole Fluids

Parameter(unit)	ONE					
Fluid Type	Water					
Fluid Name	WBM					
Max Recorded Temperatures (degF)	200					
Source of Sample	Active Tank					
Salinity (ppm)	1500					
Density (lbm/gal)	9.5					
Funnel Viscosity (s)	71					
Fluid Loss (cm3)	9					
PH	9.1					
Date/Time Circulation Stopped	12-Sep-2014 05:00:00					
Date Logger on Bottom	12-Sep-2014					
Time Logger on Bottom	19:15:00					
Source RMF	Calculated					
RMC	Calculated					
RM @ Meas Temp (ohm.m@degF)	0.78 @ 73.58					
RMF @ Meas Temp (ohm.m@degF)	0.57 @ 75					
RMC @ Meas Temp (ohm.m@degF)	1.15 @ 75					
RM @ BHT (ohm.m@degF)	0.3 @ 200					
RMF @ BHT (ohm.m@degF)	0.23 @ 200					
RMC @ BHT (ohm.m@degF)	0.45 @ 200					
Total Solid (%)						
High Gravity Solids (%)						

Remarks and Equipment Summary

ONE: Toolstring				ONE: Remarks
Equip name LEH-QT:2109 LEH-QT:2109	Length 58.6	MP name	Offset	Toolstring run as per tool sketch. This is the first run in the hole. Matrix: Limestone MDEN: 2.71 g/cc Tool response affected by borehole rugosity. Logging interval from TD to Casing, with GR to surface Rig: Extreme #11 Crew: Derrick Hunter, David Marquez.
EDTC-B:8625 EDTH-B:8625 EDTG-A EDTC-B:8625	55.68		52.18 0.00 0.00 50.31 49.18	
ADT-C:729 HECH-KDB ADC-C:783 ADS-C:729 ADP-C:727	49.18			

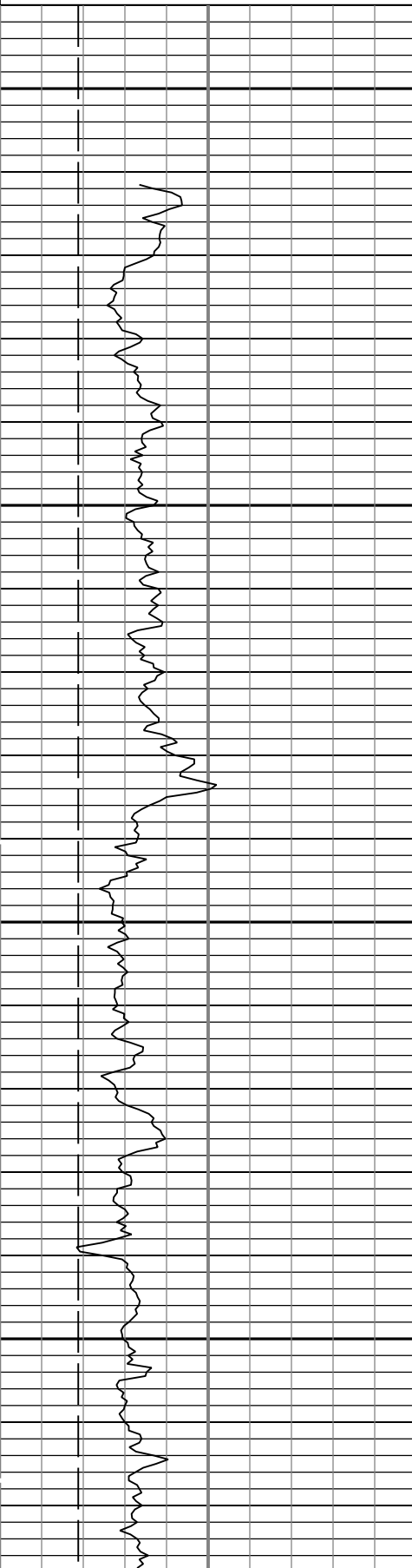
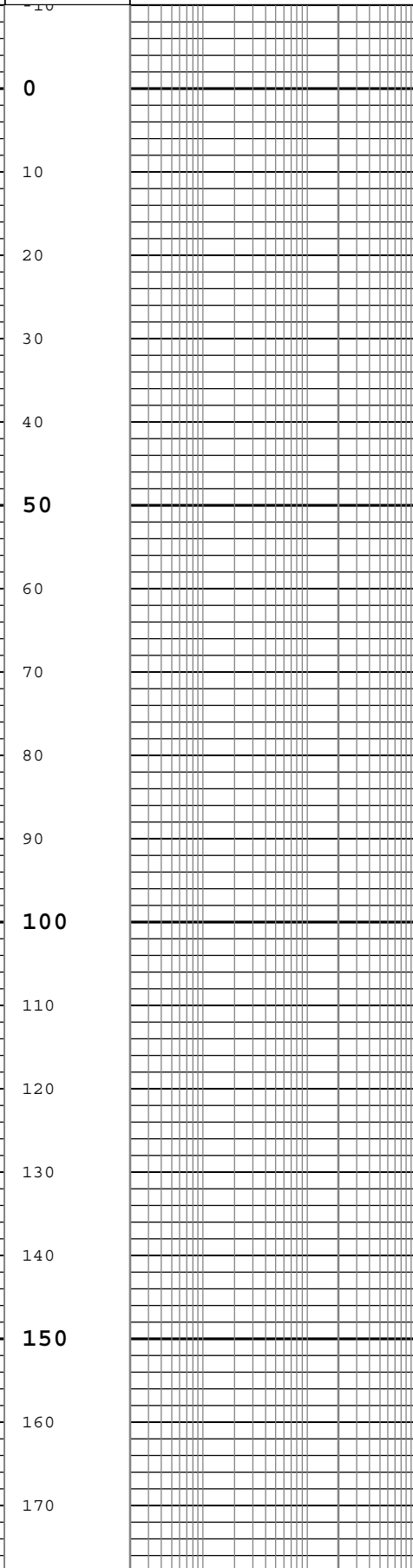
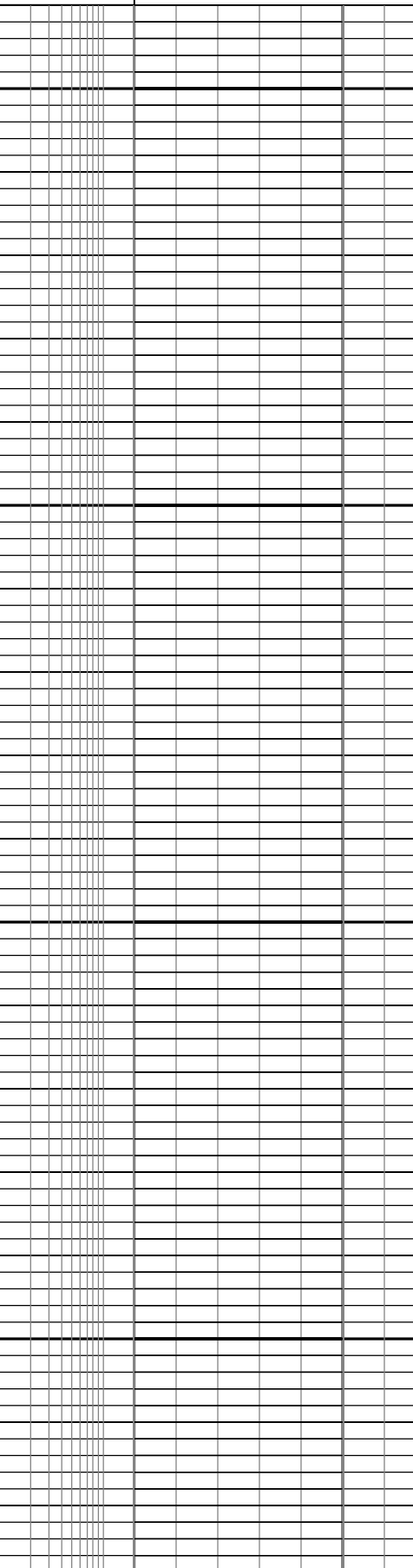
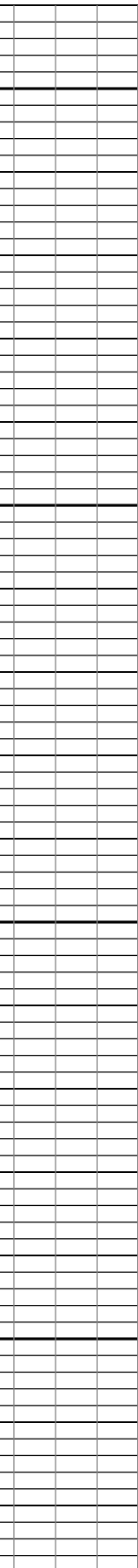


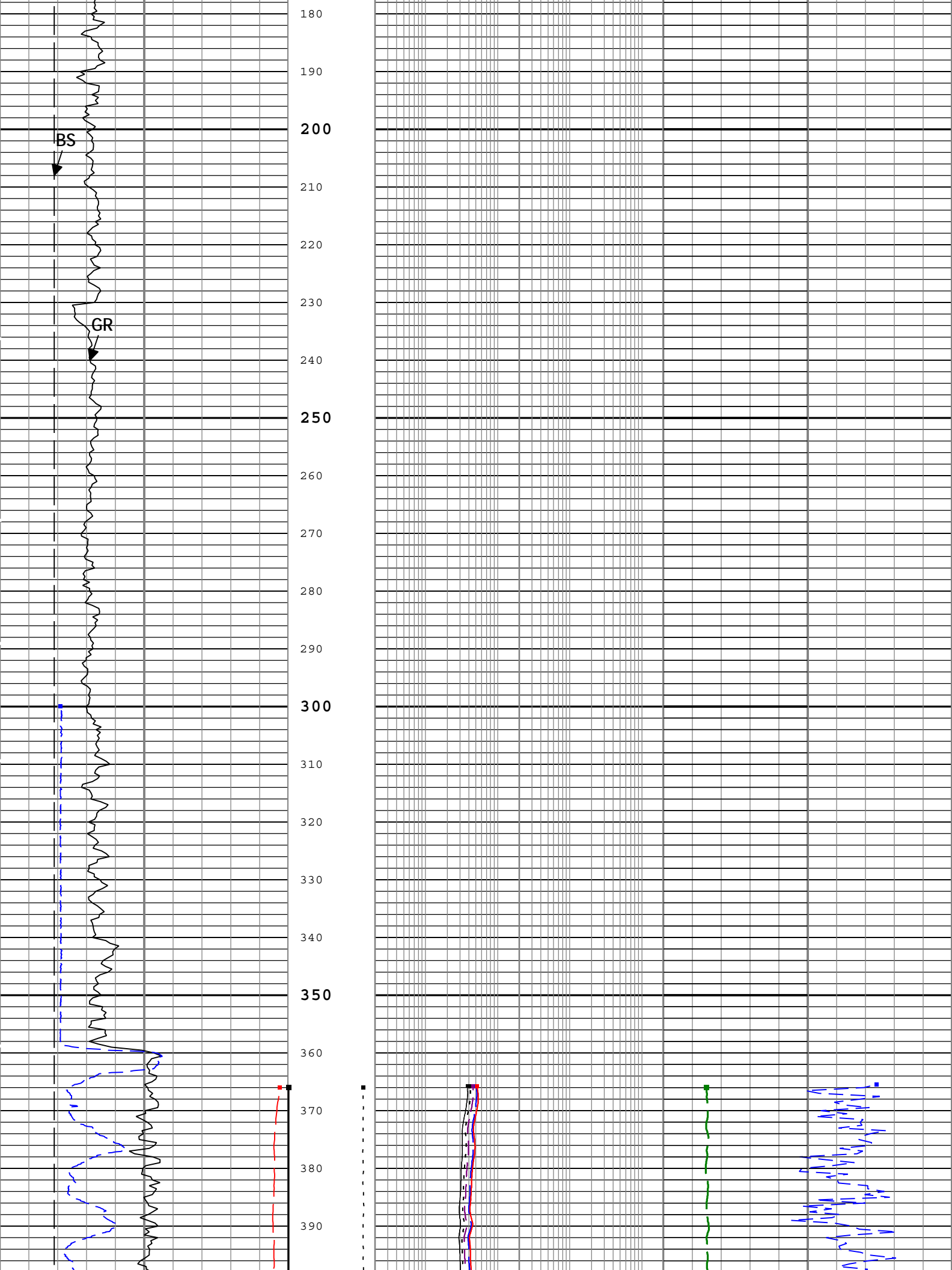
S11 Probe	40.32
Pad	40.22
Caliper	39.84
HGNS-H	37.65
HGNH	
NPV-N	
NSR-F:2554	
HACCZ-H:6991	
HMCA-H	
HGNS-H	
Temperature	37.62
GR	36.91
CNL Porosity	30.57
HMCA	28.24
HGNS	28.24
Accelerometer	0.00
HDRS-H:3760	28.24
ECH-MEB:3949	
HRCC-H:4923	
HRMS-H:3760	
Short Spacing:3760	
GSR-J:5471	
GPV-Q	
Backscatter:3760	
Long Spacing:3760	
HRGD-H:3760	
HRCC	24.24
MCFL	18.81
Caliper	18.33
TLD Density	17.94
AIT-M:181	16.00
AMIS:181	
AMRM:181	
Temperature	7.91
Induction	7.91
Power Supply	7.91
SP	0.08
Mud Resistivity	0.00
Head Tension	
TOOL_ZERO	

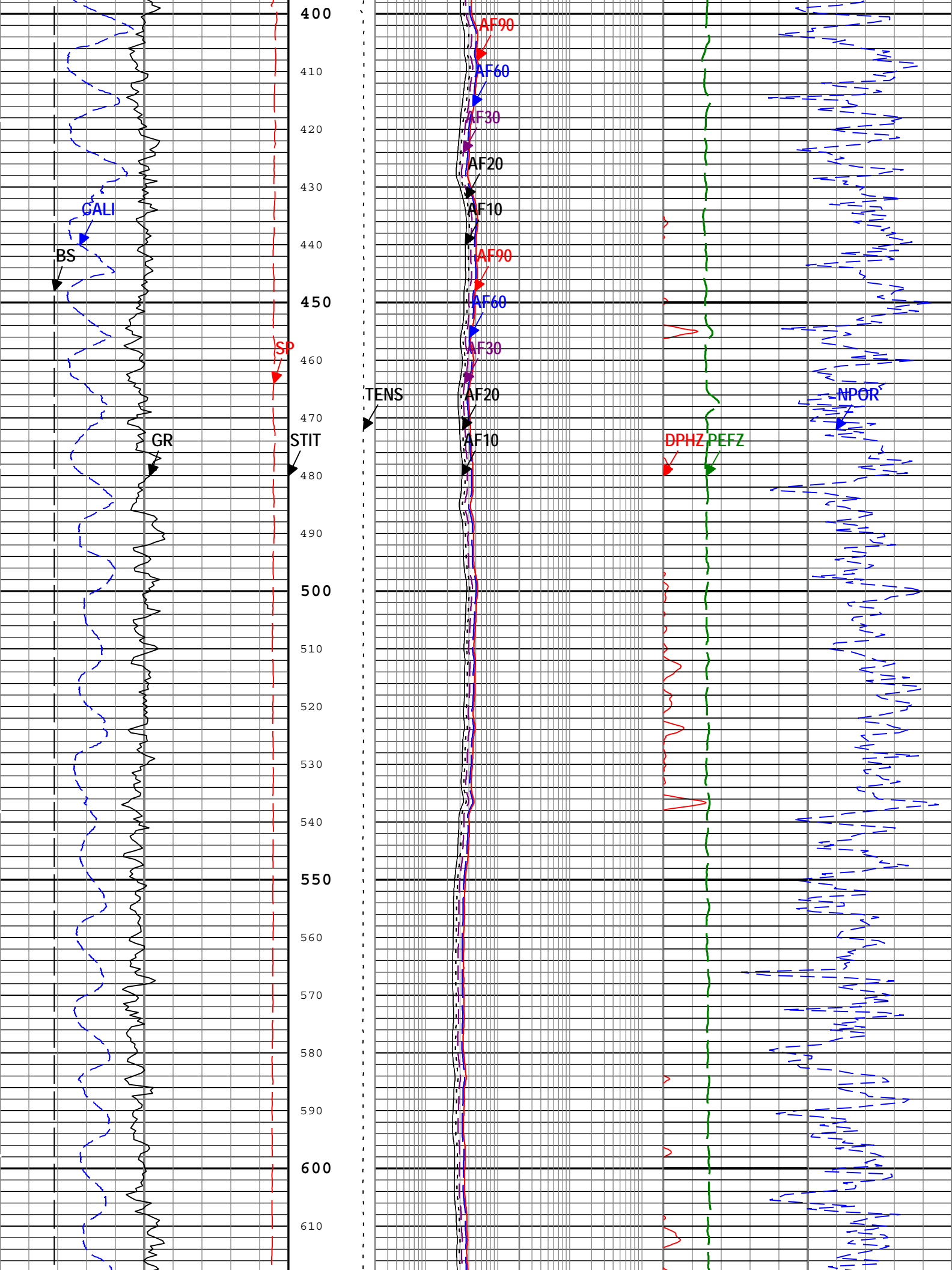
Lengths are in ft
Maximum Outer Diameter = 6.000 in

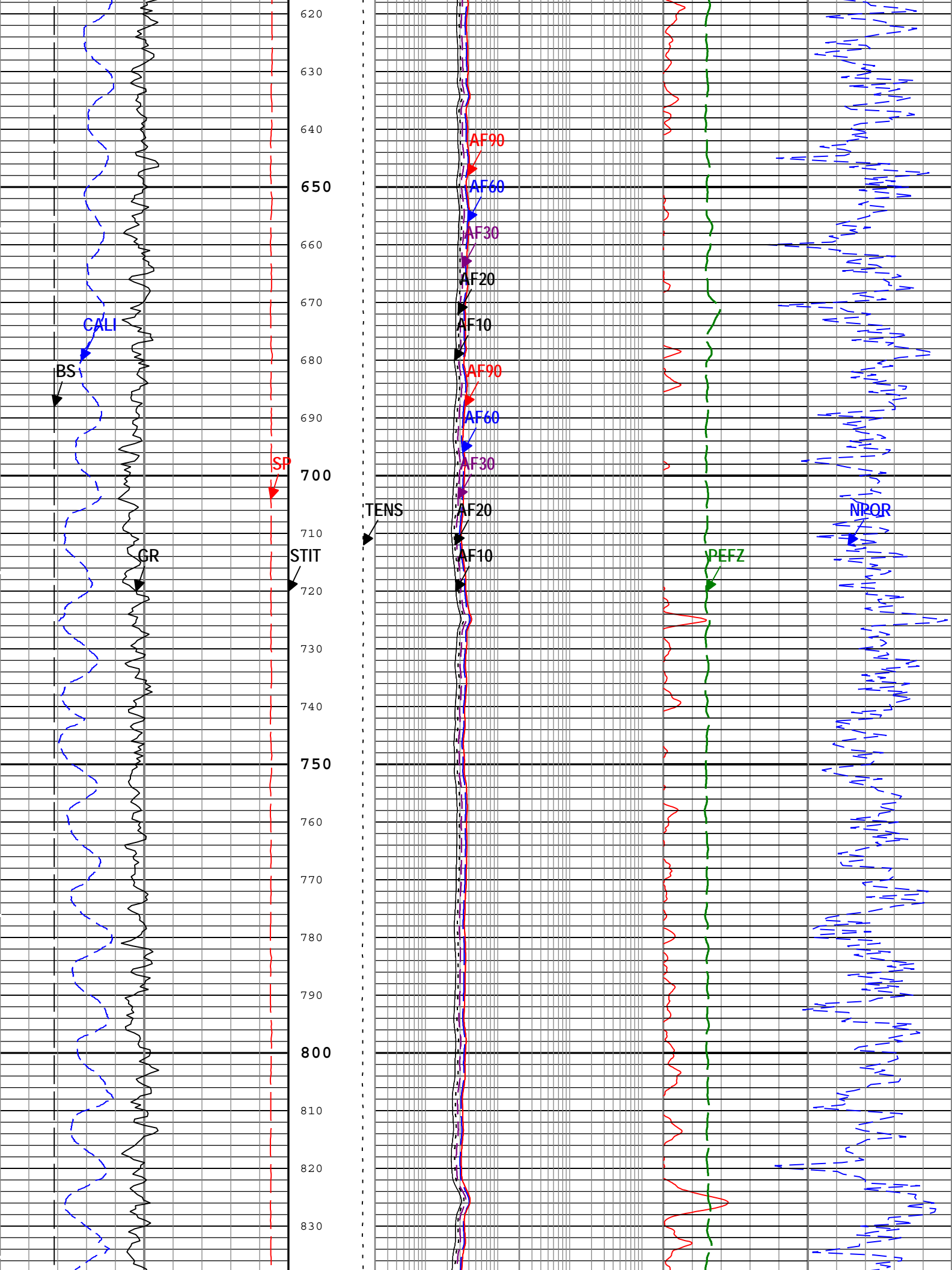
Line: Sensor Location, Value: Gating Offset All measurements are relative to TOOL_ZERO															
Depth Summary															
				ONE											
Depth Measuring Device															
Type				IDW-B											
Serial Number				5896											
Calibration Date				13-Aug-2014											
Calibrator Serial Number															
Calibration Cable Type				7-39PLXS											
Wheel Correction 1				-3											
Wheel Correction 2				-2											
Tension Device															
Type				CMTD-B/A											
Serial Number				11091919											
Calibration Date				11-Sep-2014											
Calibrator Serial Number				78135A											
Number of Calibration Points				10											
Calibration Root Mean Square Error				10											
Calibration Peak Error				18											
Logging Cable															
Type				7-39P-LXS											
Serial Number															
Length				11800.00 ft											
Conveyance Type				Wireline											
Rig Type				Land											
ONE:Depth Control Parameters								Depth Control Remarks							
Log Sequence				First Log In the Well				All Schlumberger depth procedures followed. IDW used as primary depth control. Z-Chart used as secondary depth control.							
Rig Up Length At Surface															
Rig Up Length At Bottom															
Rig Up Length Correction															
Stretch Correction															
Tool Zero Check At Surface															
ONE															
5" Triple Combo															
Software Version															
Acquisition System								Version							
MaxWell								4.0.9163.3000							
Application Patch								Patch-SP-10767_13393-4.0.9163.3001							
Computation			Description									Version			
Borehole			Borehole Ensemble provides common Borehole Parameters and Channels									4.0.9213.3000			
HENVIR			Computation Ensemble for the HGNS Neutron environmental corrections									4.0.9033.3000			
DepthCorrection			DepthCorrection									4.0.9213.3000			
Tool Elements			Description					Software Version				Firmware Version			
HRCC-H			HILT High-Resolution Control Cartridge, 150 degC					4.0.9231.3000				2.0			
HGNS-H			HILT Gamma-Ray and Neutron Sonde, 150 degC					4.0.9231.3000				2.0			
HRGD-H			HILT Resistivity Gamma-Ray Density Device, 150 degC					4.0.9231.3000				11.12			
AMIS			Array Induction Sonde - M					4.0.9247.3000				1			
Pass Summary															
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data						

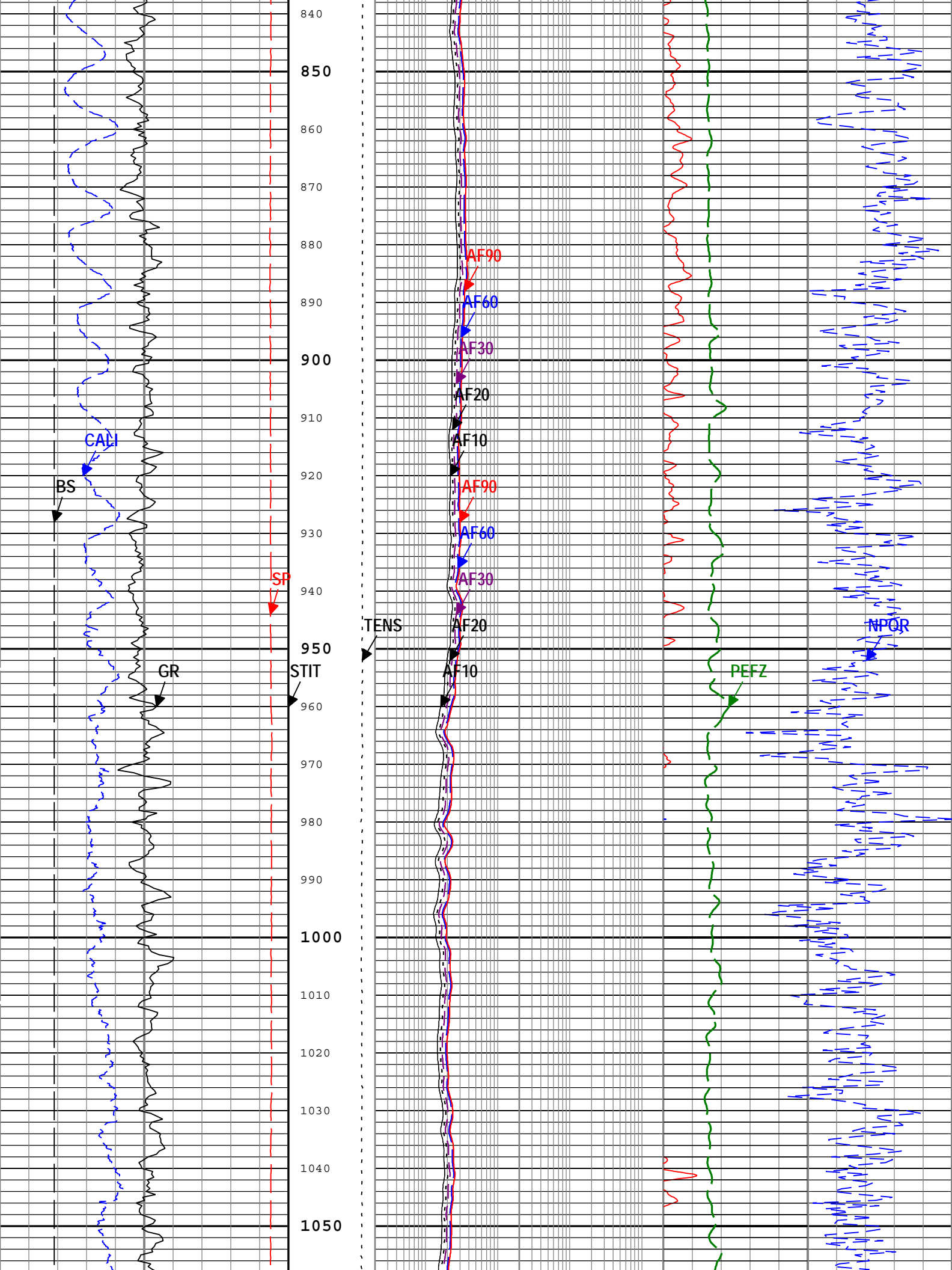
ONE	Main[5]:Up	Up	48.11 ft	8390.18 ft	12-Sep-2014 7:56:40 PM	12-Sep-2014 11:03:07 PM	ON	13.89 ft	No
All depths are referenced to toolstring zero									
Log	Company:Nighthawk Production LLC Well:Blackcomb 5-14 ONE: Main[5]:Up:S011								
Description: HGNS standard resolution porosities for Platform Express Format: Log (EMD 5in Triple Combo Linear) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 13-Sep-2014 00:07:23									
Channel	Source	Sampling							
AF10	AIT-M:AMIS:AMIS	3in							
AF20	AIT-M:AMIS:AMIS	3in							
AF30	AIT-M:AMIS:AMIS	3in							
AF60	AIT-M:AMIS:AMIS	3in							
AF90	AIT-M:AMIS:AMIS	3in							
BS	Borehole	6in							
CALI	HDRS-H:HRCC-H:HRCC-H	1in							
DPHZ	HDRS-H:HRMS-H:HRGD-H	2in							
GR	HGNS-H:HGNS-H:HGNS-H	6in							
NPOR	HGNS-H:HGNS-H:HGNS-H	6in							
PEFZ	HDRS-H:HRMS-H:HRGD-H	2in							
SP	AIT-M:AMIS:AMIS	6in							
STIT	DepthCorrection	6in							
TENS	WLWorkflow	6in							
TIME_1900	WLWorkflow	0.1in							
TIME_1900 - Time Marked every 60.00 (s)									
			Array Induction Four Foot Resistivity A10 (AF10) AIT-M						
			0.2	ohm.m	2000				
			Array Induction Four Foot Resistivity A20 (AF20) AIT-M						
			0.2	ohm.m	2000				
			Array Induction Four Foot Resistivity A30 (AF30) AIT-M						
			0.2	ohm.m	2000				
			Array Induction Four Foot Resistivity A60 (AF60) AIT-M						
			0.2	ohm.m	2000				
			Array Induction Four Foot Resistivity A90 (AF90) AIT-M						
			0.2	ohm.m	2000				
			Array Induction Four Foot Resistivity A10 (AF10) AIT-M						
			0.2	ohm.m	2000				
			Array Induction Four Foot Resistivity A20 (AF20) AIT-M						
			0.2	ohm.m	2000				
			Array Induction Four Foot Resistivity A30 (AF30) AIT-M						
			0.2	ohm.m	2000				
Gamma Ray Back up							Standard Resolution Formation Photoelectric Factor (PEFZ) HDRS-H 0 10		
Gamma Ray (GR) HGNS-H									
0	nAPI	200					Gas Effect		
Stuck Tool Indicator			0.2	ohm.m	2000				
							NPOR Backup		

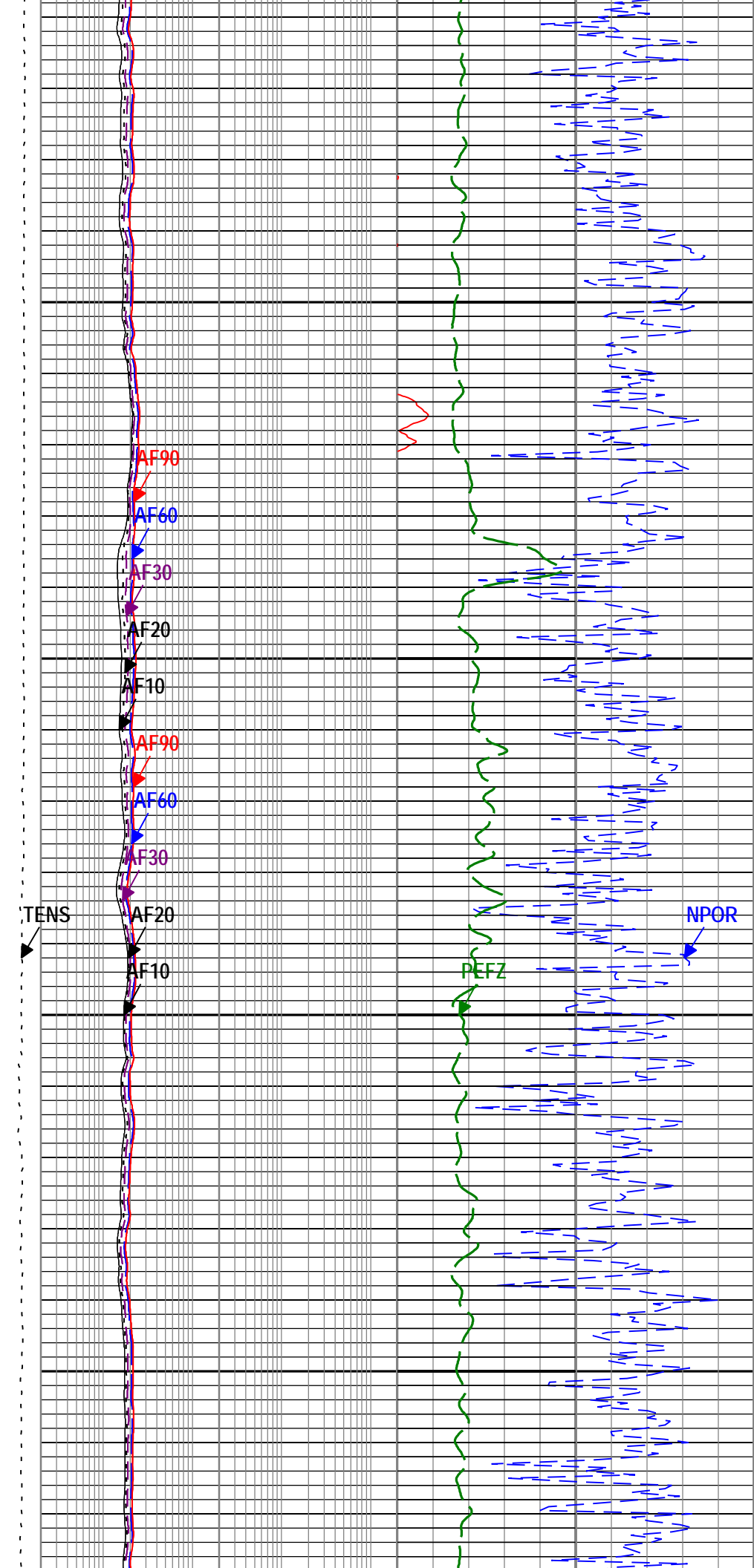
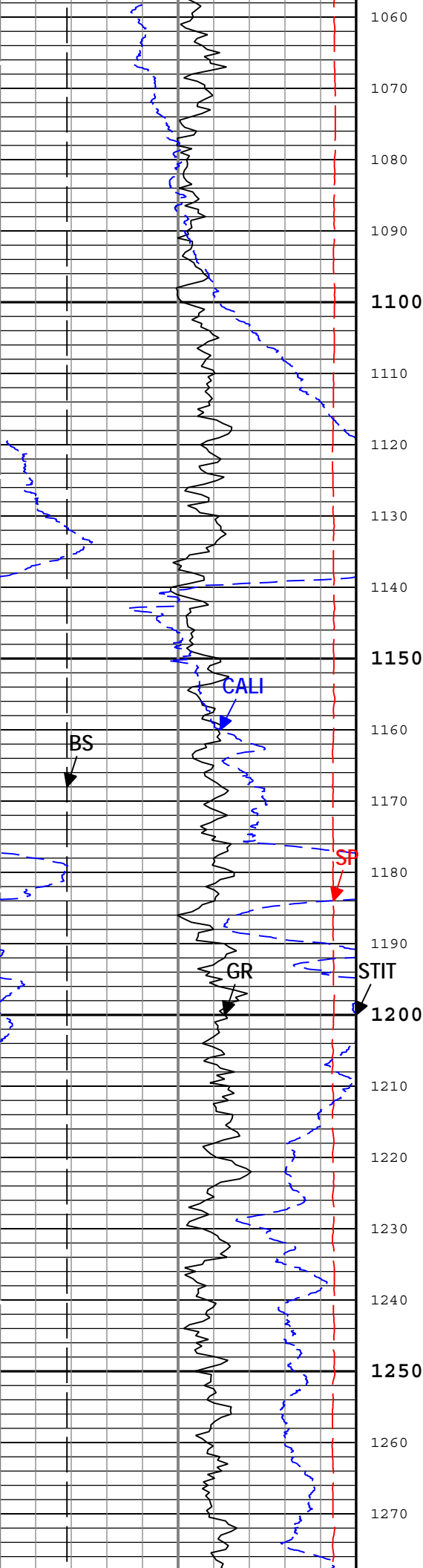
Spontaneous Potential (SP) AIT-M			Total (STIT)			Array Induction Four Foot Resistivity A60 (AF60) AIT-M			Standard Resolution Density Porosity (DPHZ) HDRS-H		
-100 mV 200			0 ft 50			0.2 ohm.m 2000			0.3 ft3/ft3 -0.1		
Bit Size (BS)			Cable Tension (TENS)			Array Induction Four Foot Resistivity A90 (AF90) AIT-M			Enhanced Thermal Neutron Porosity in Selected Lithology (NPOR) HGNS-H		
6 in 16			10000 lbf 0			0.2 ohm.m 2000			0.3 m3/m3 -0.1		
Caliper (CALI) HDRS-H											
6 in 16											
											

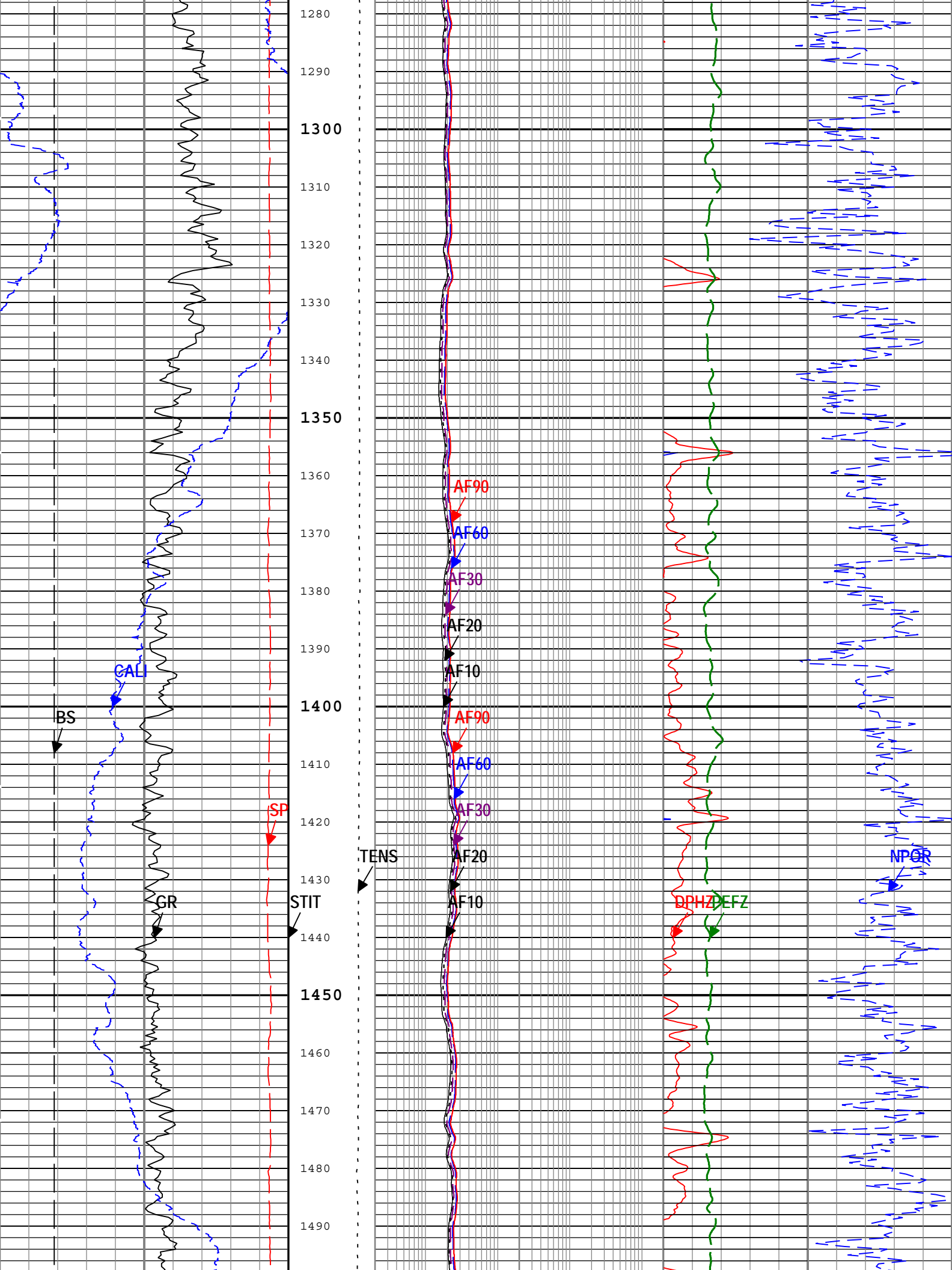


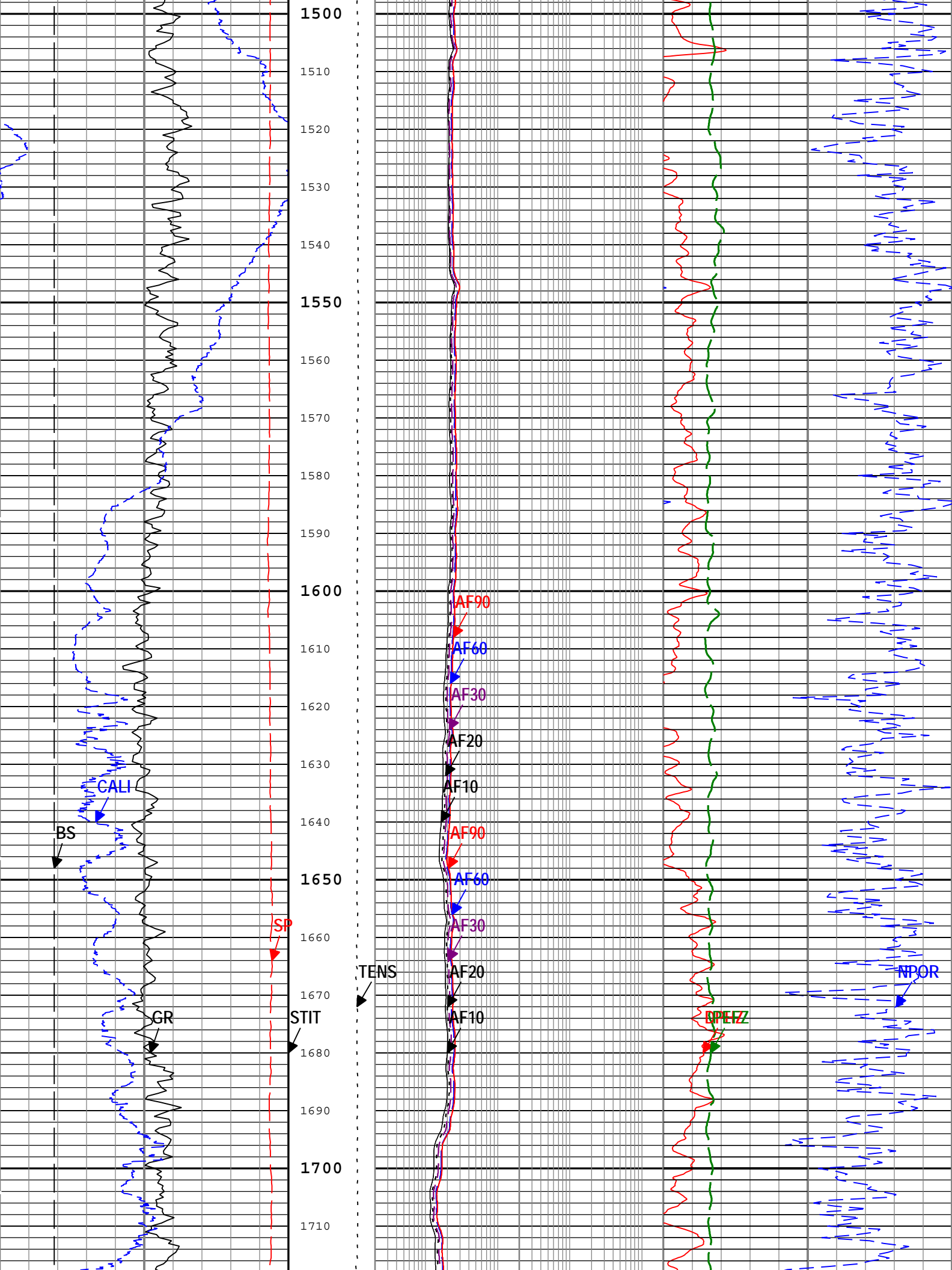


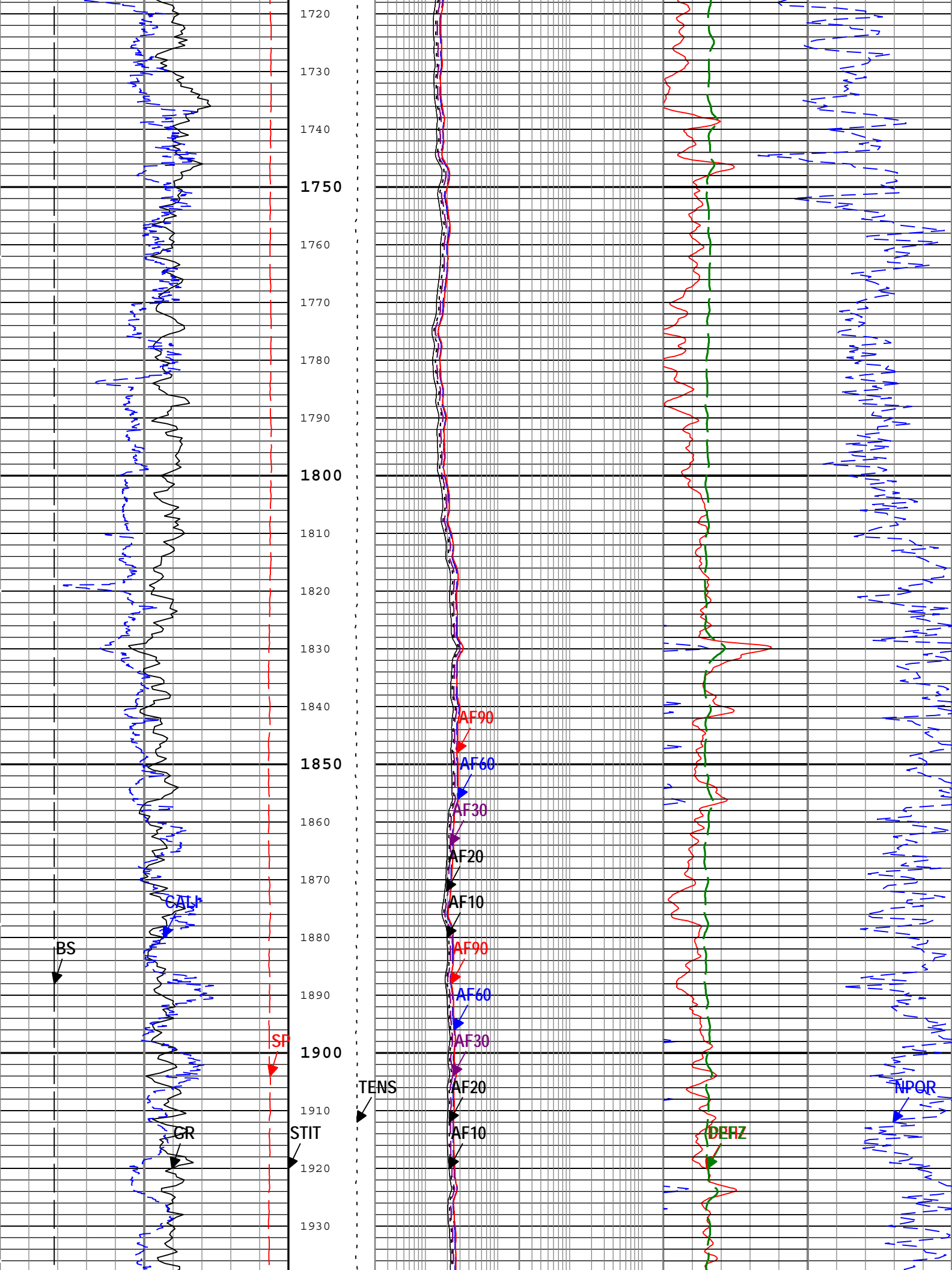


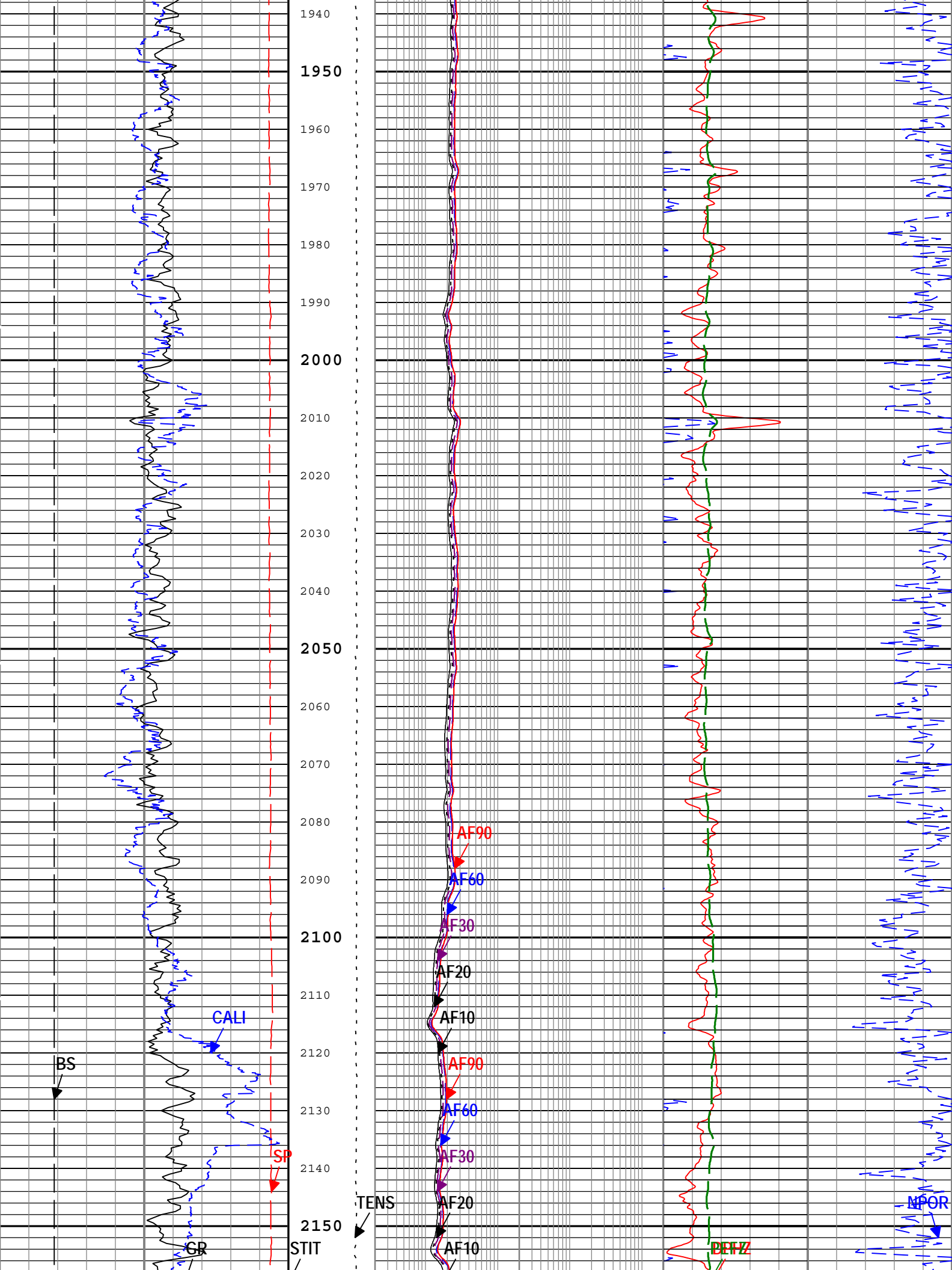


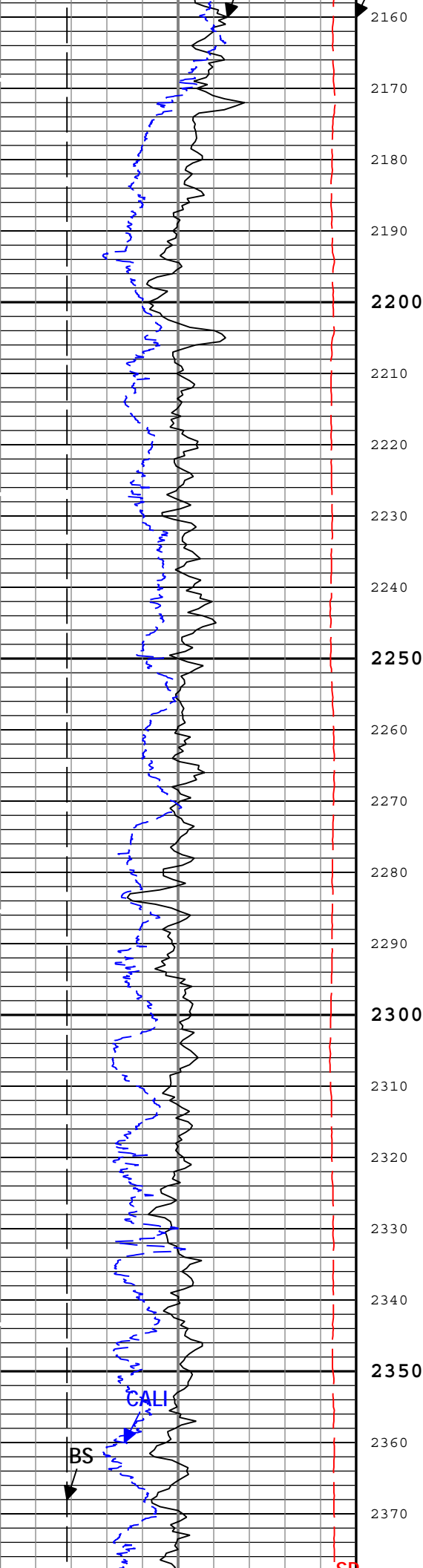




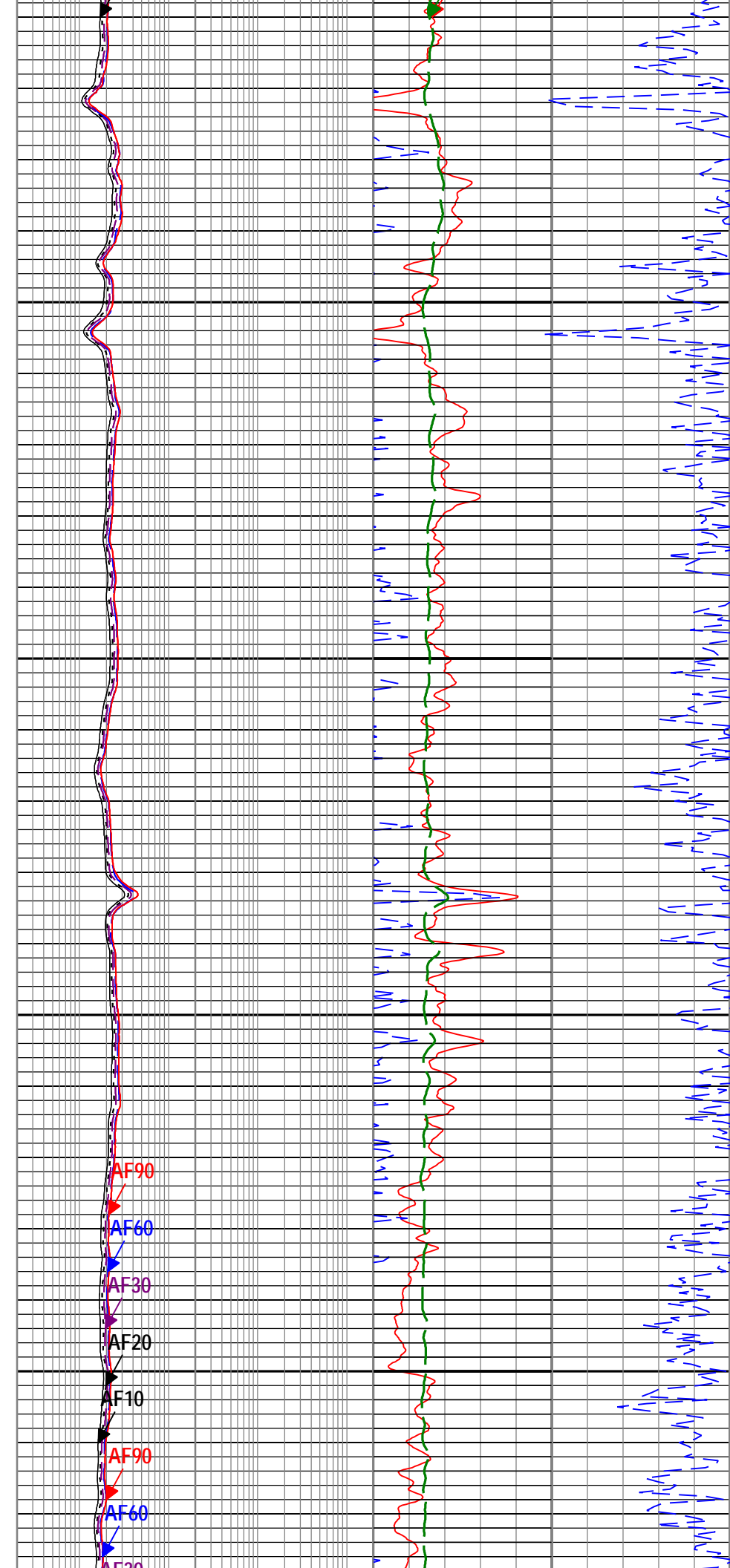


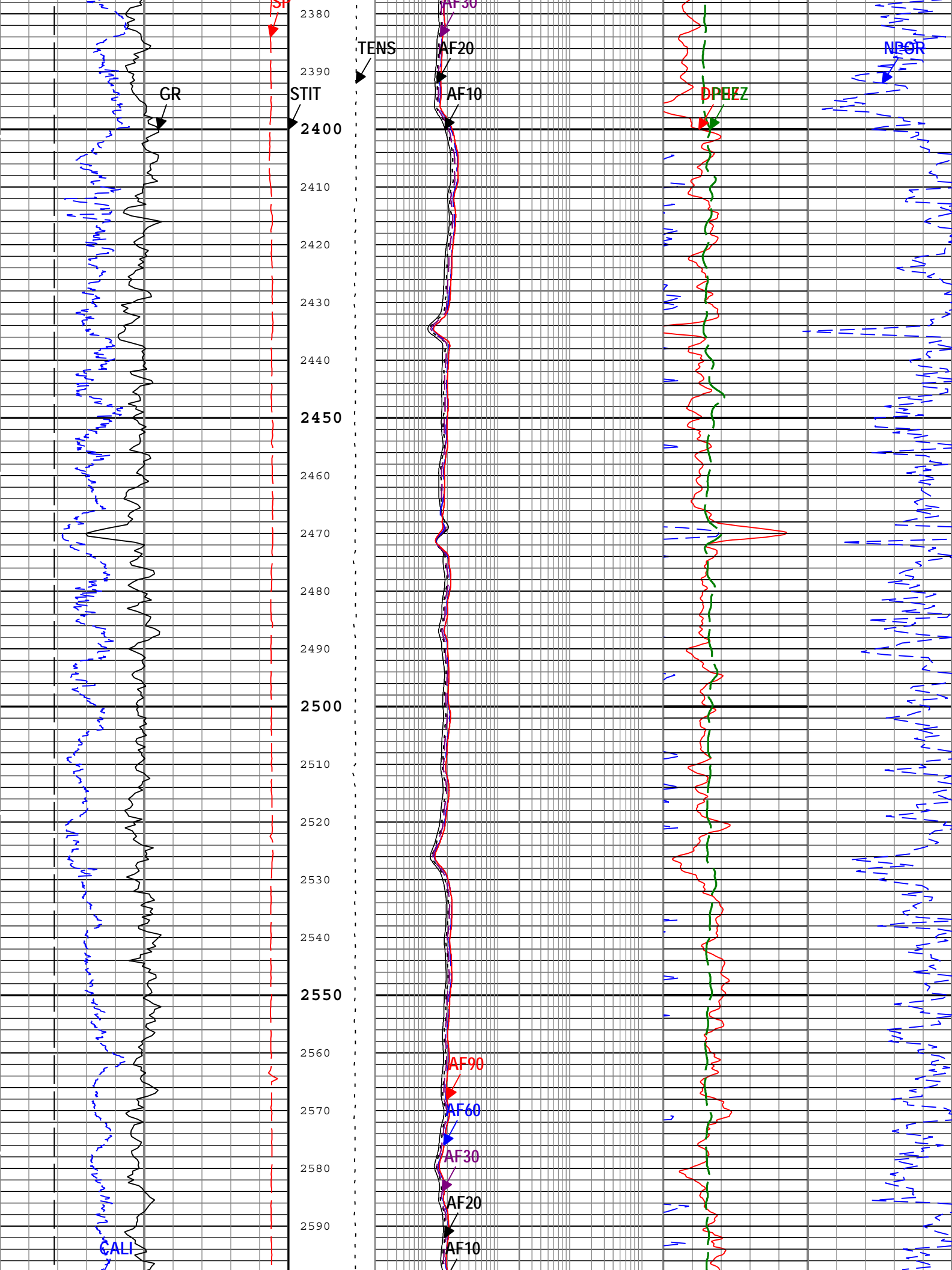


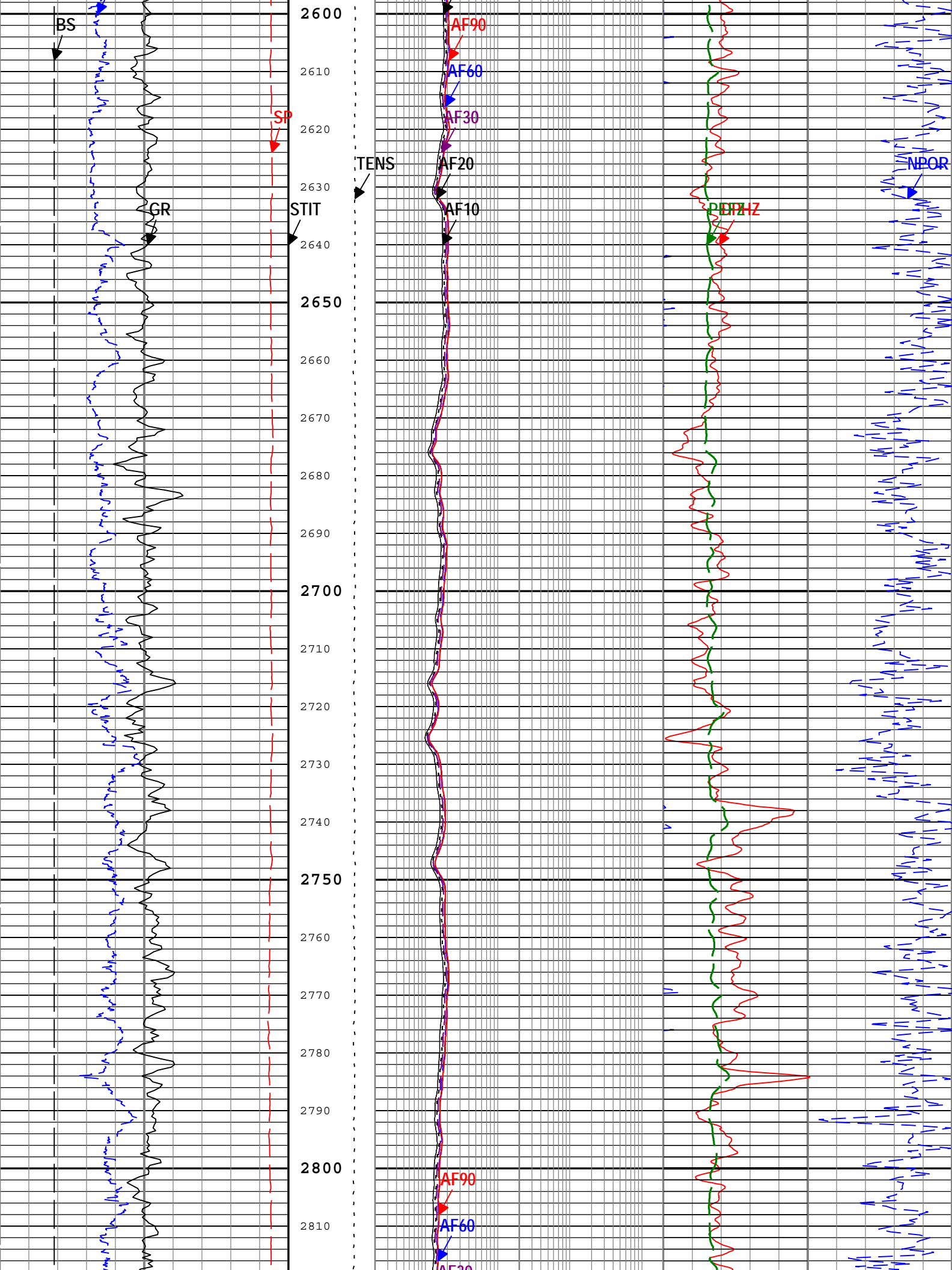


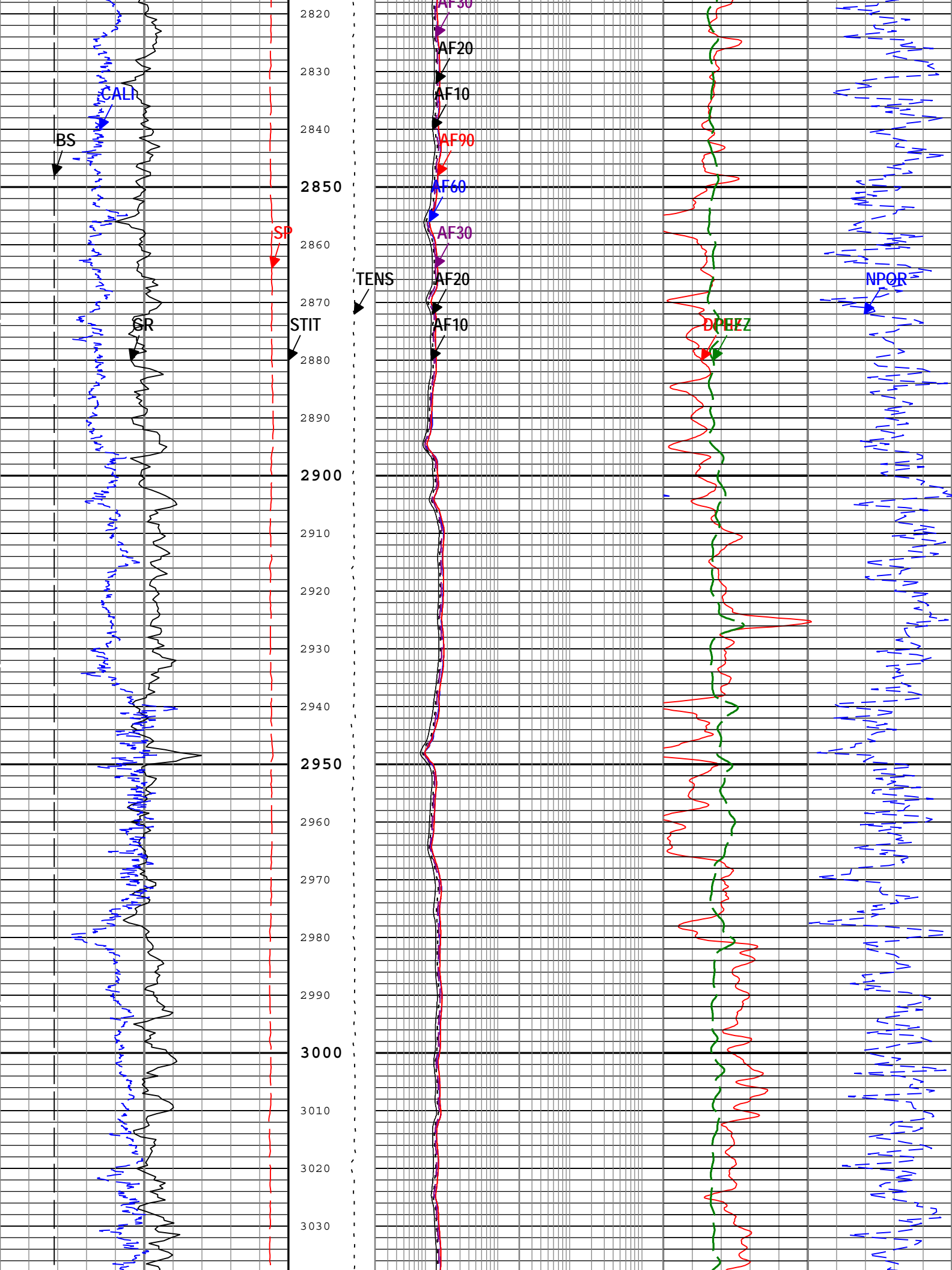


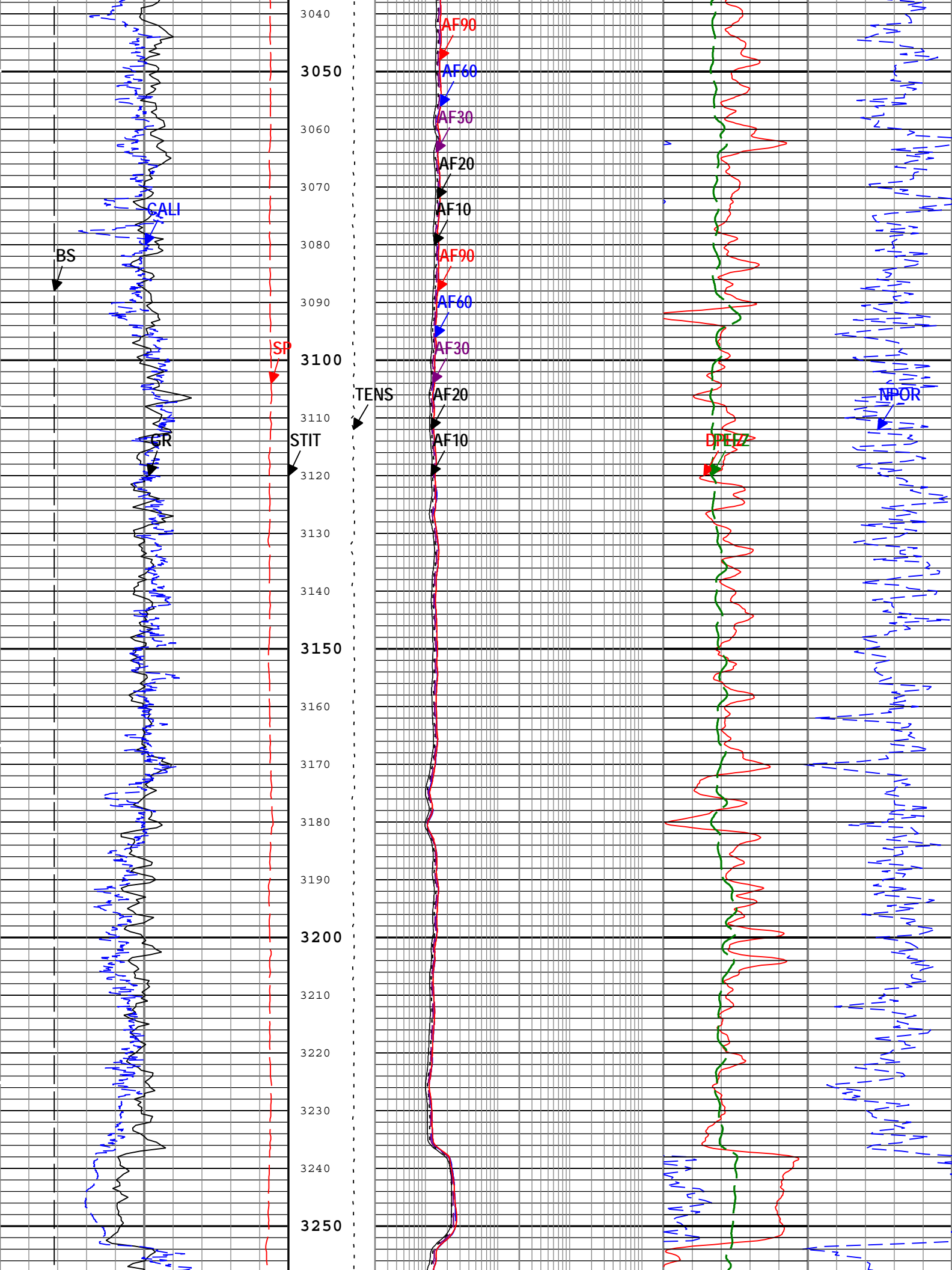
2160
2170
2180
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2200
2210
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2370

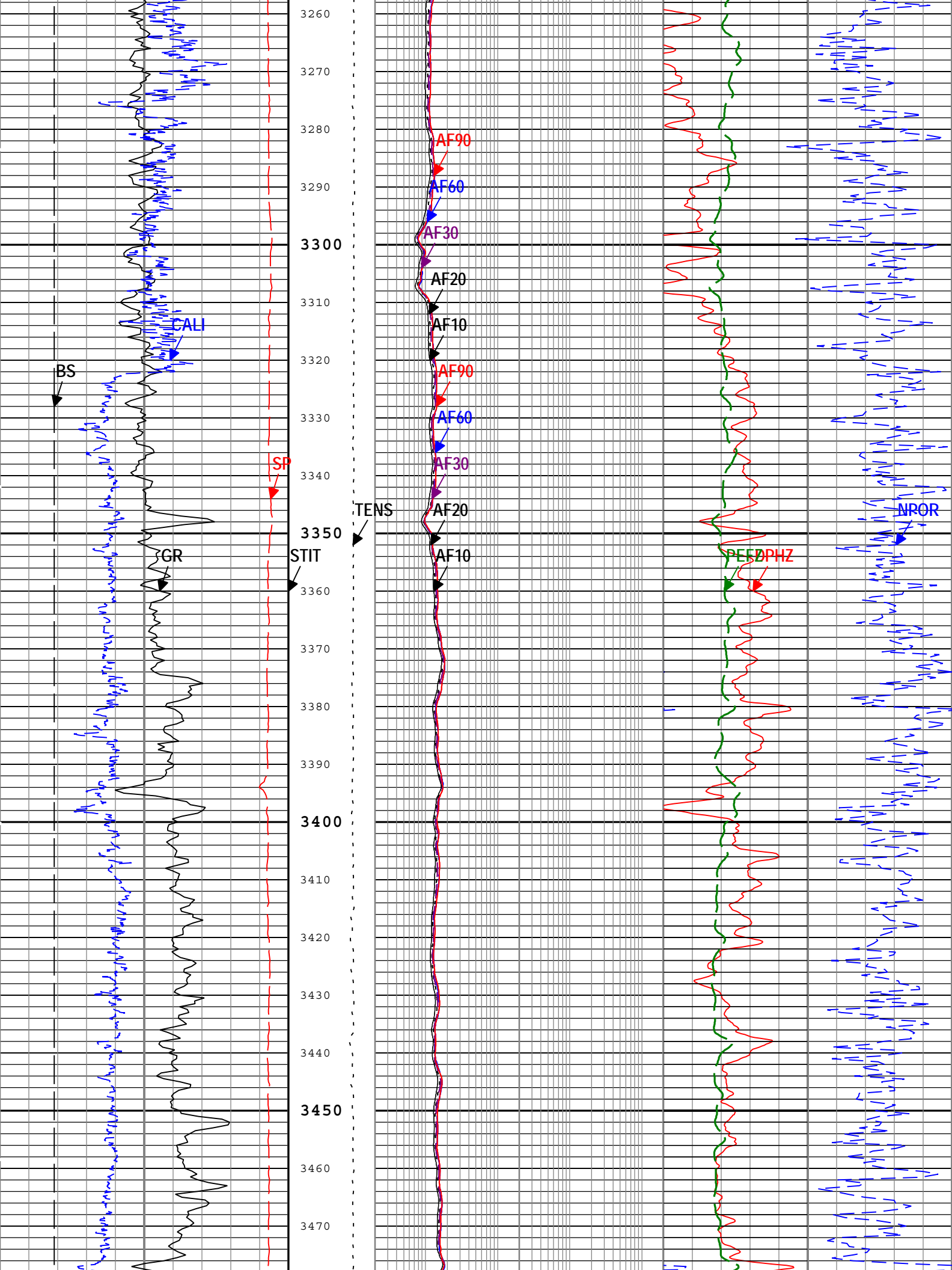


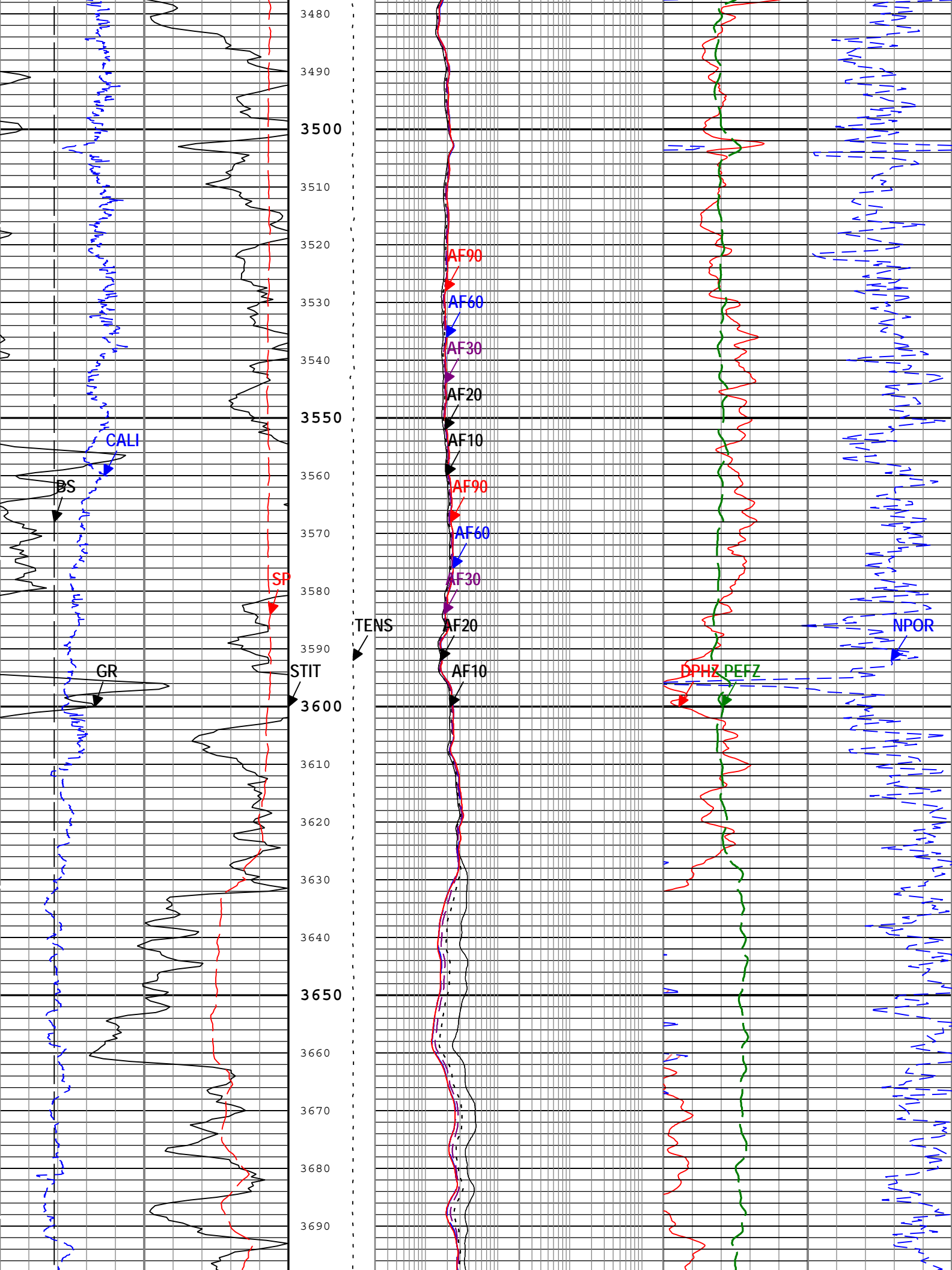


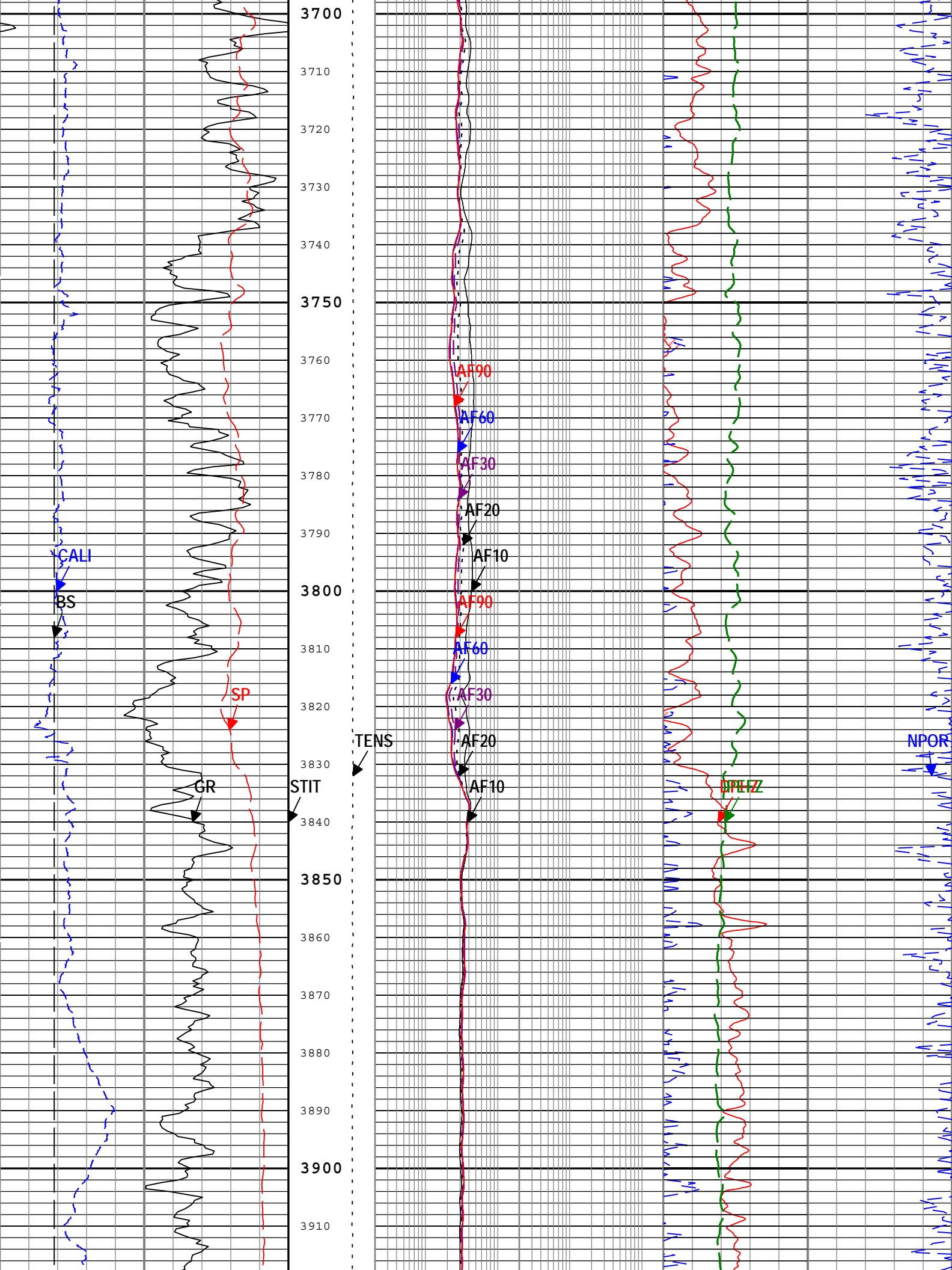


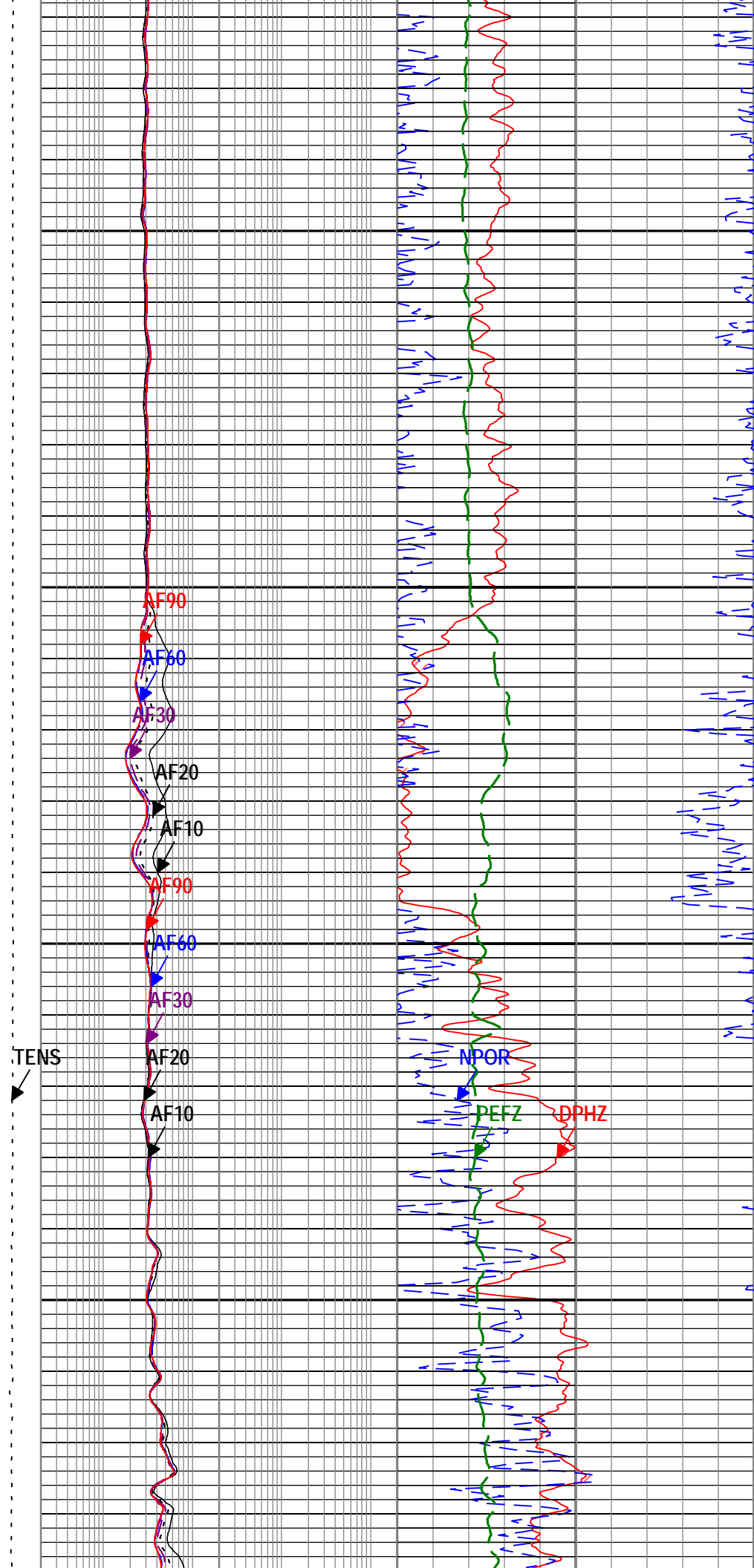
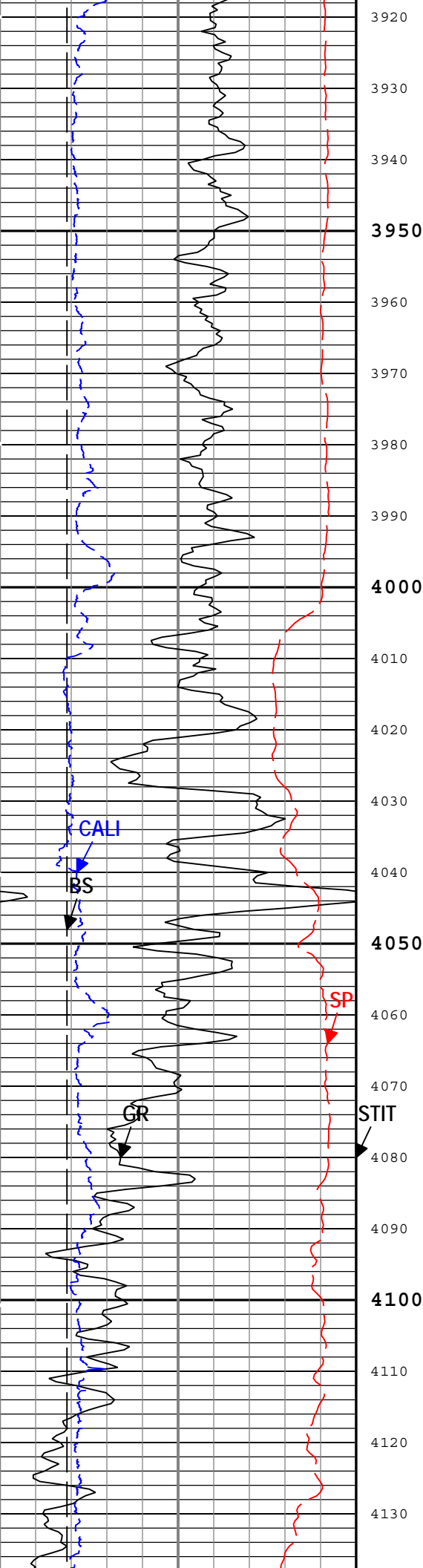


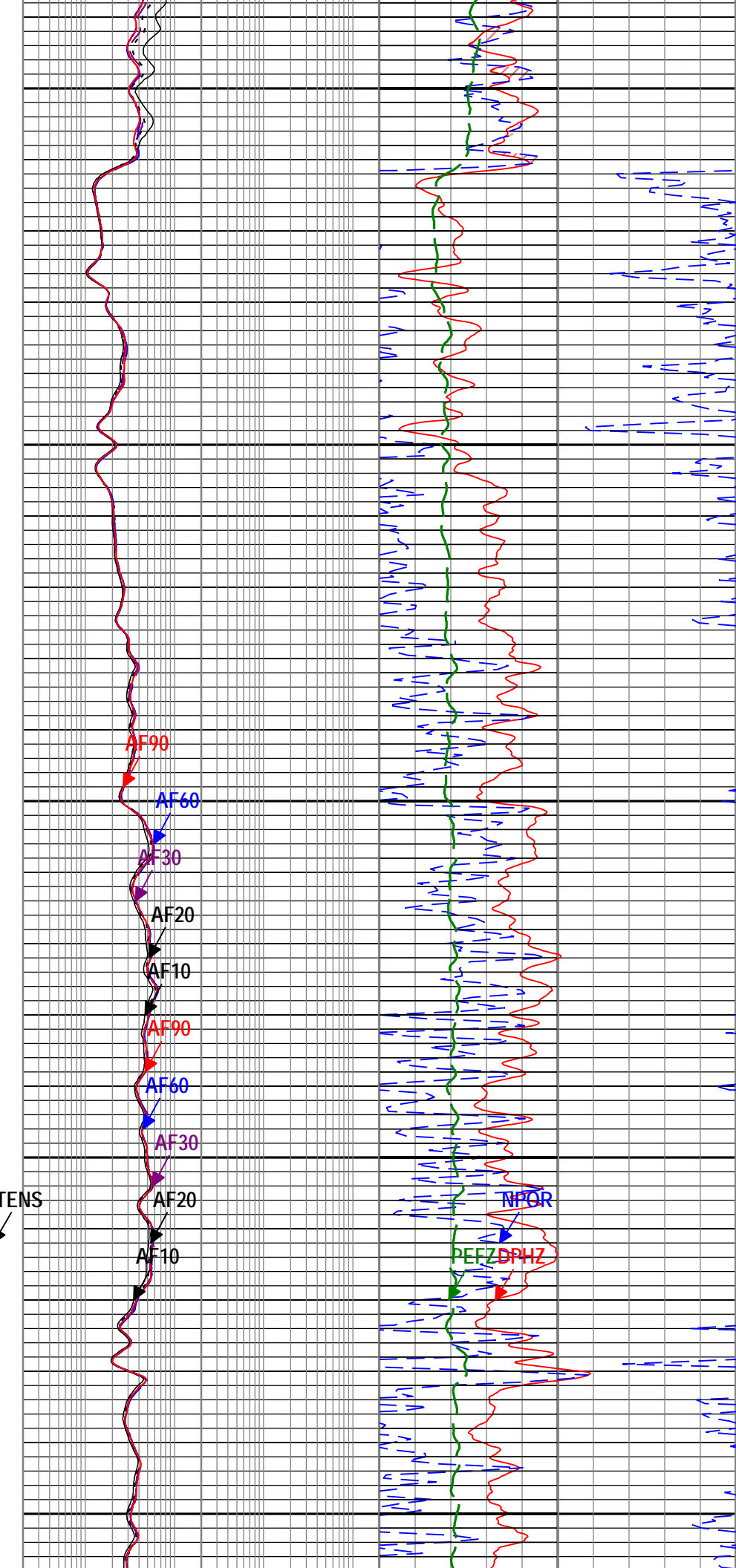
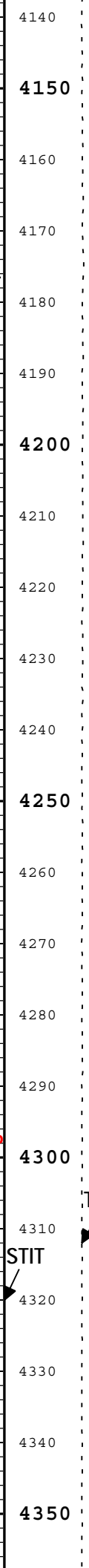
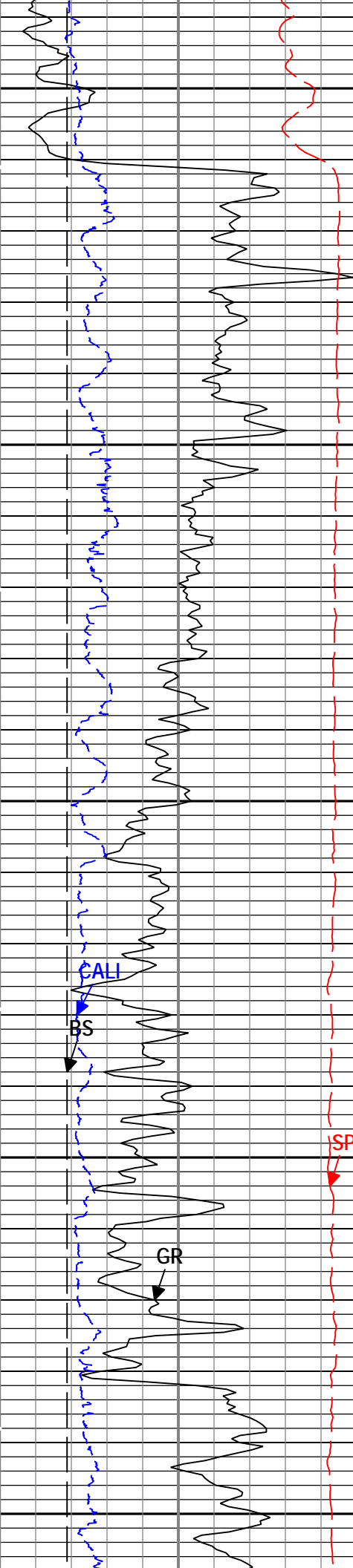


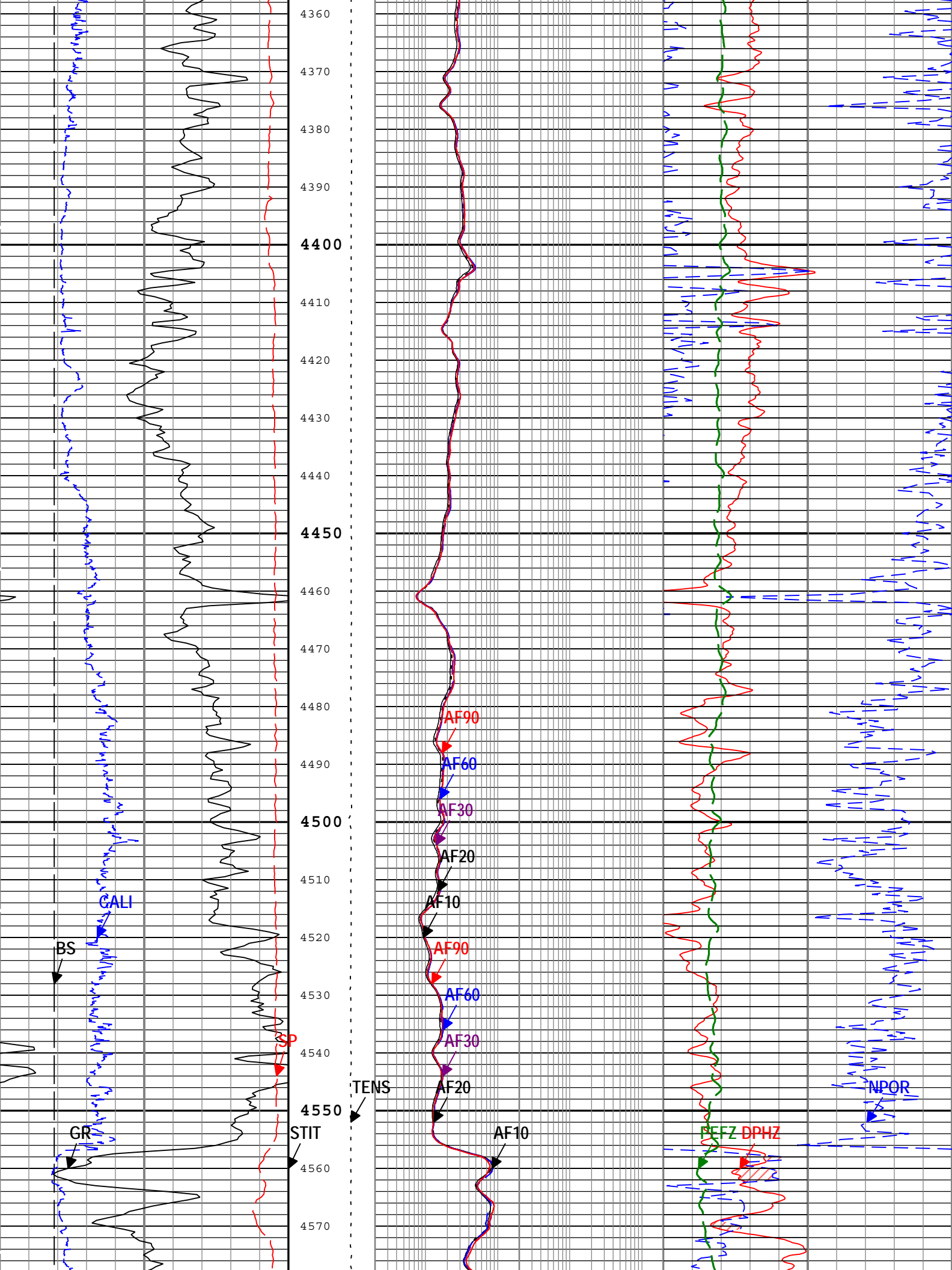


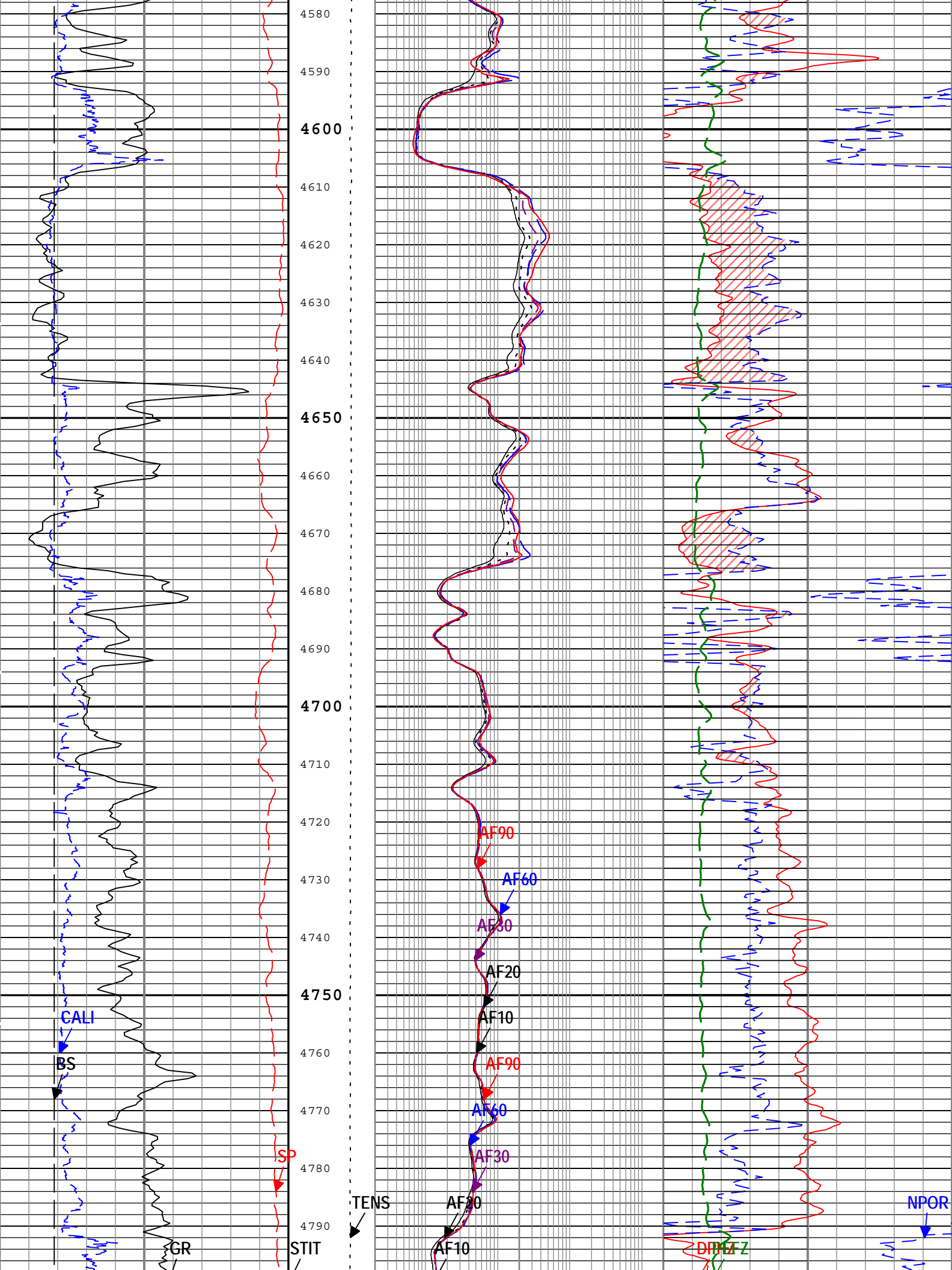


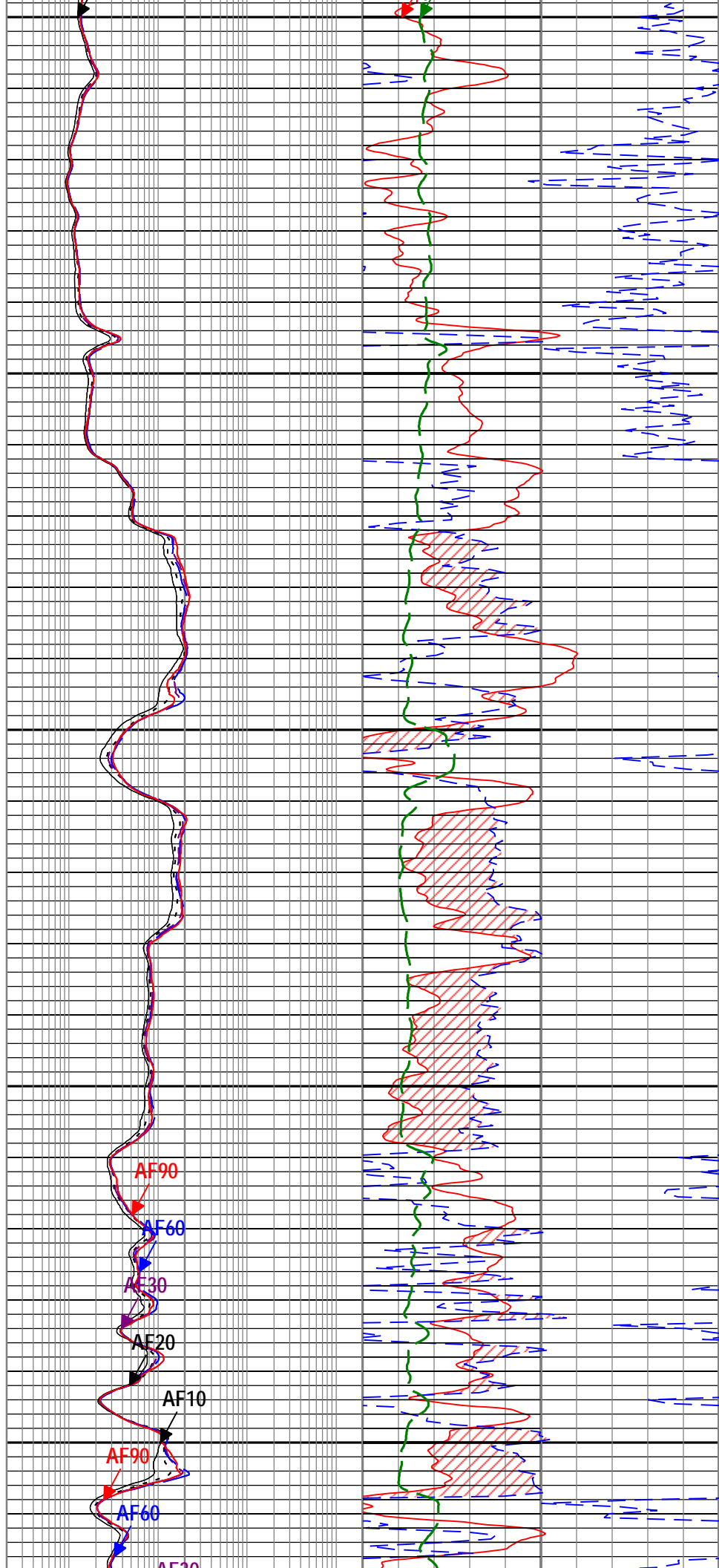
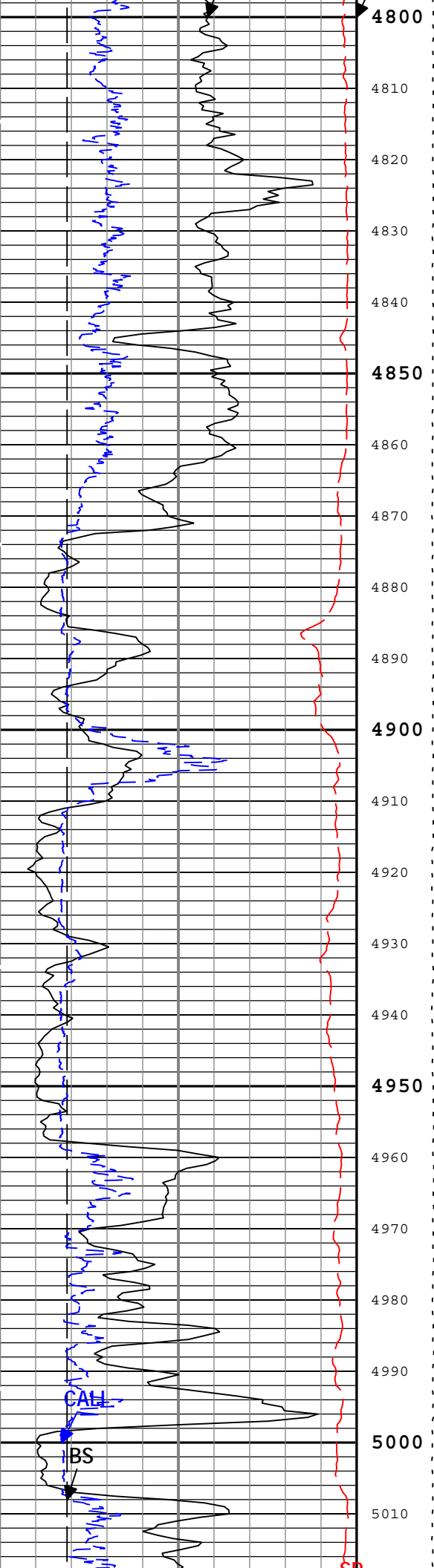


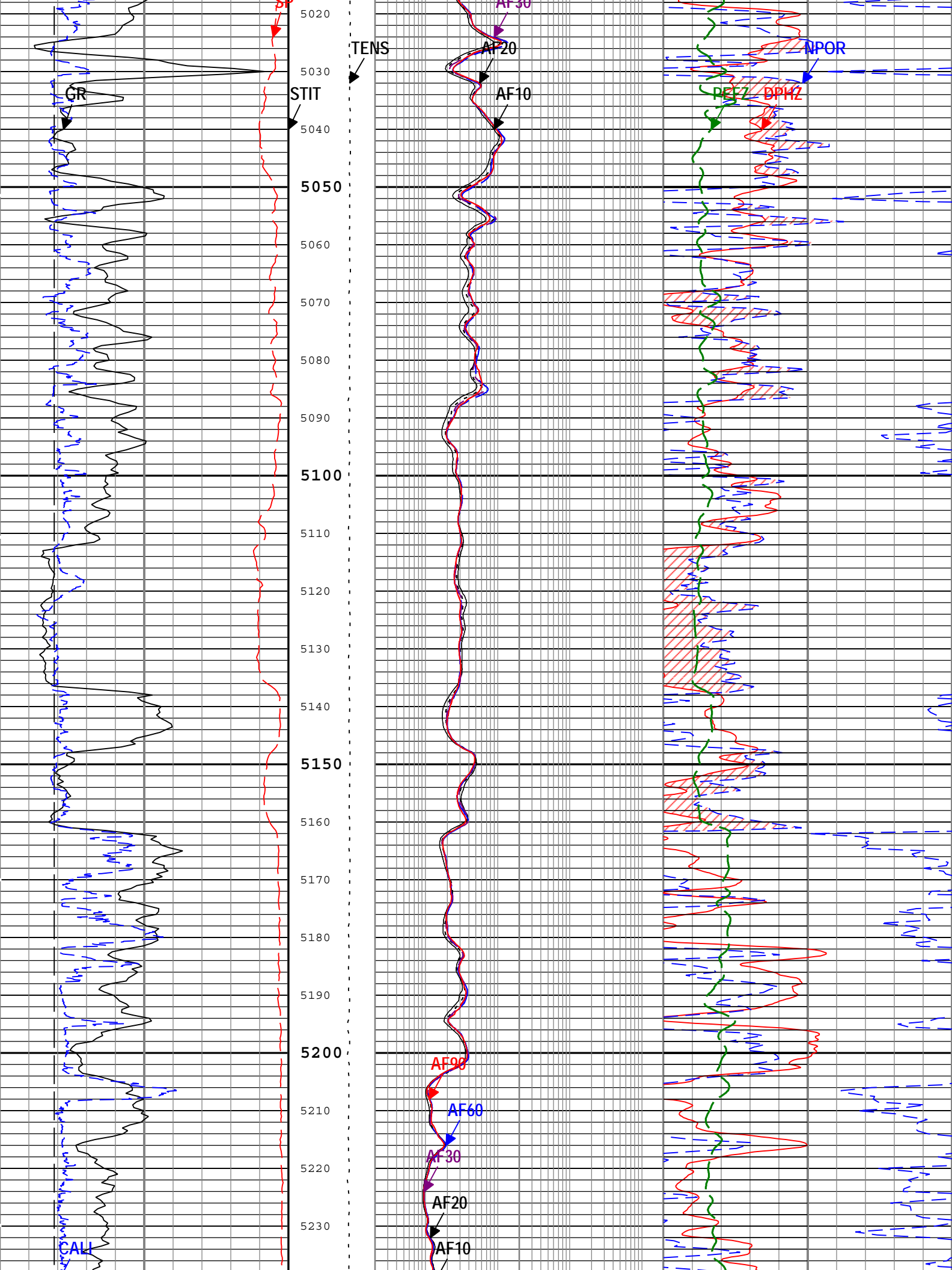


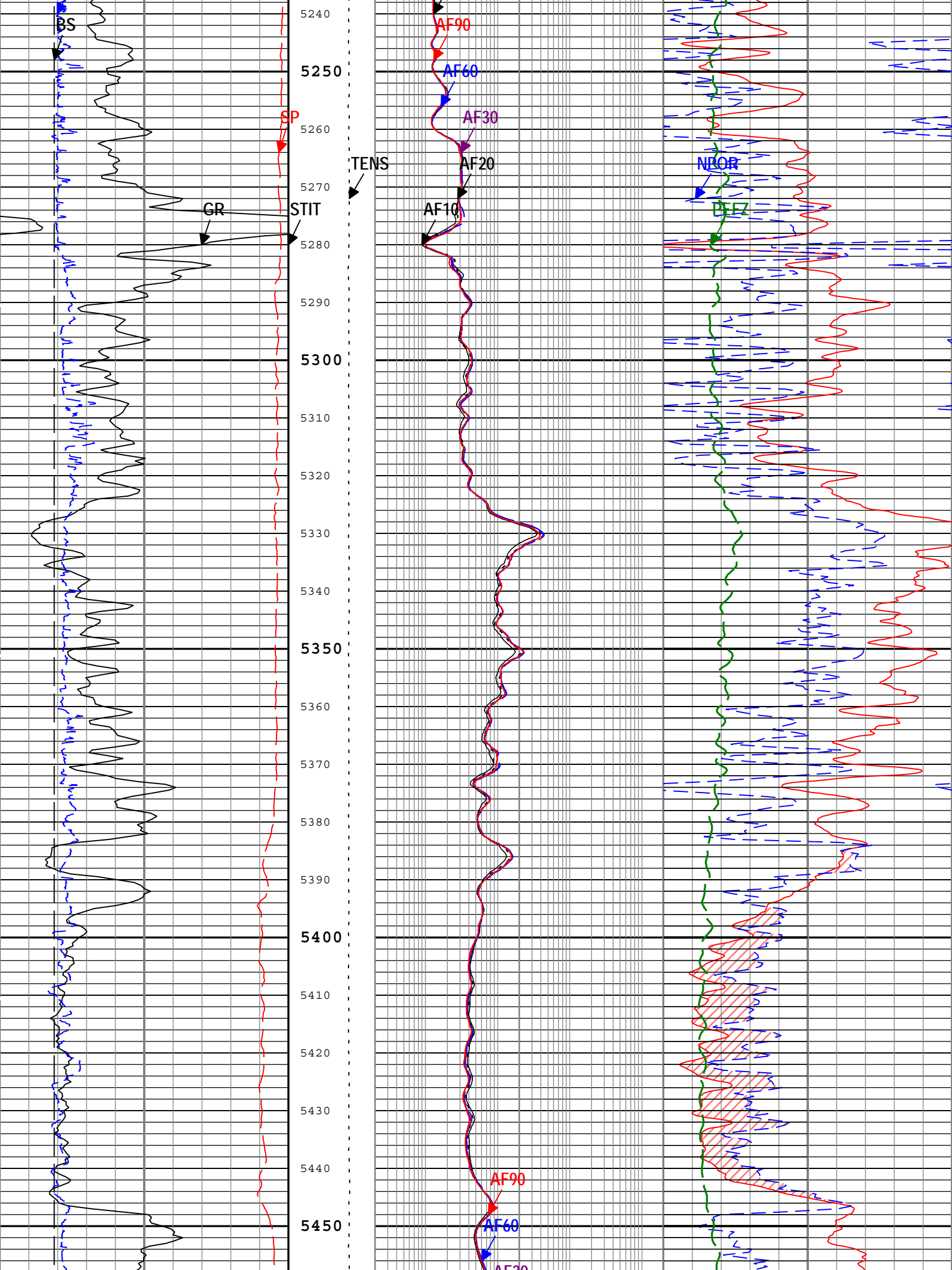


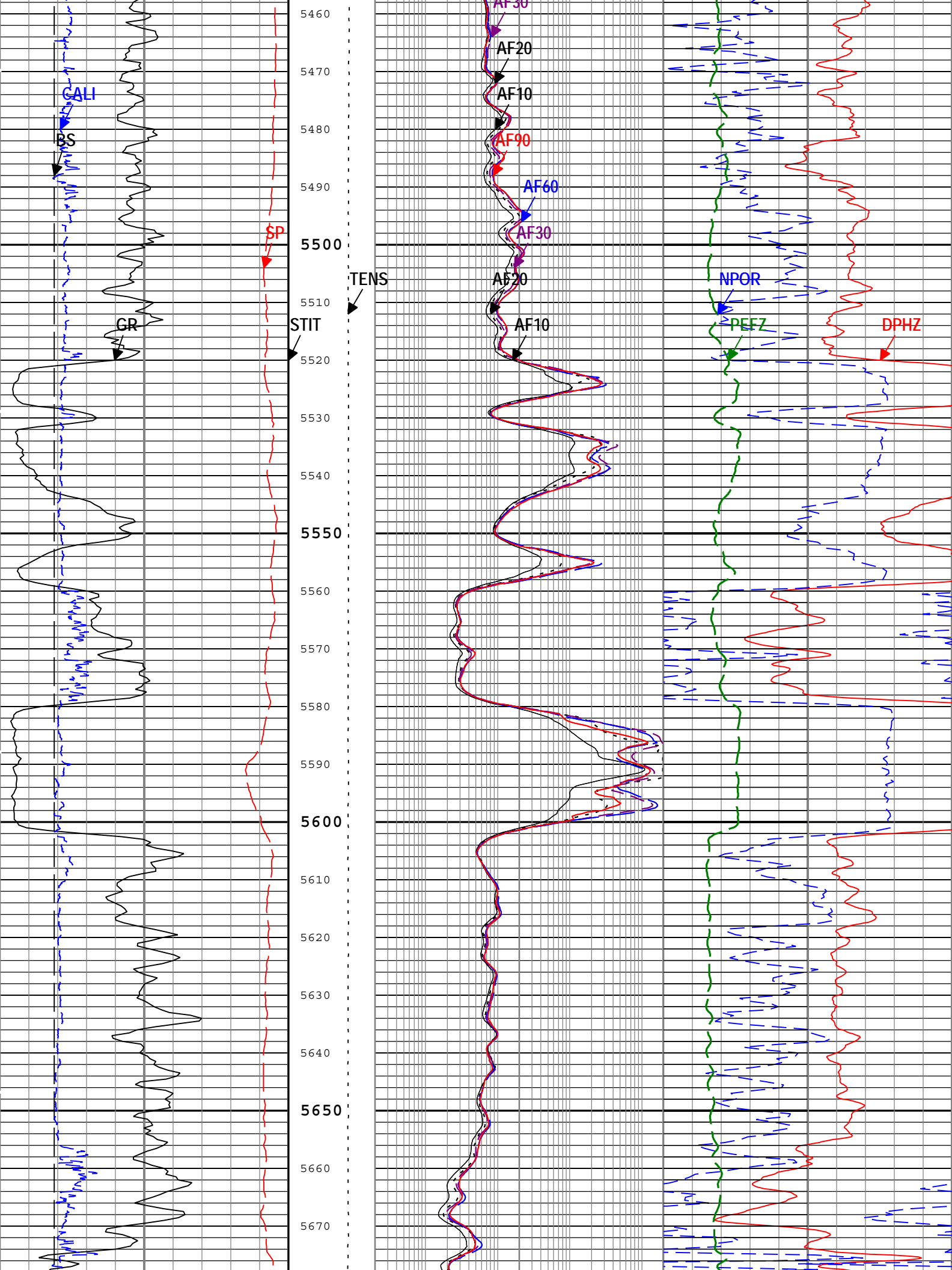


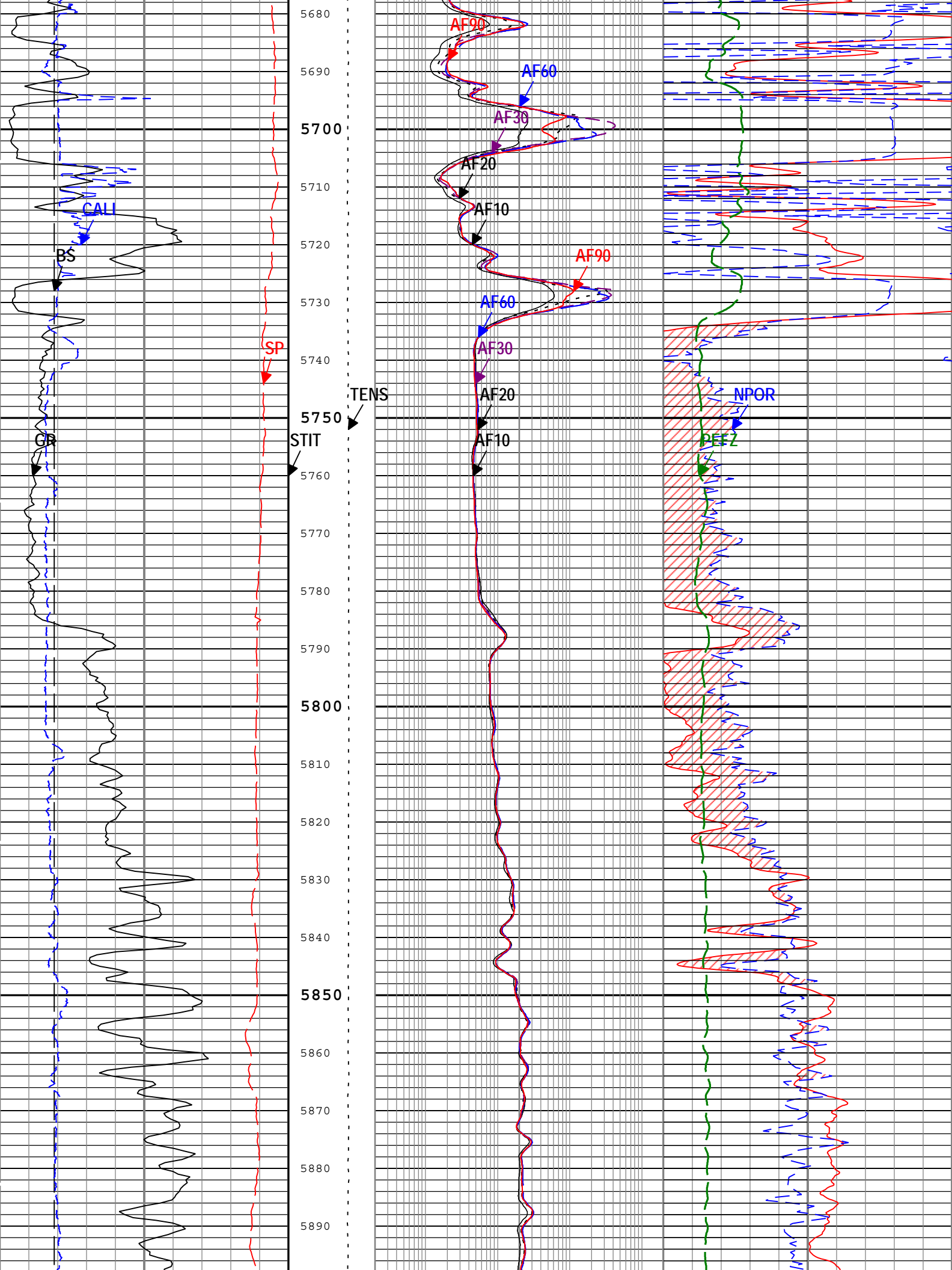


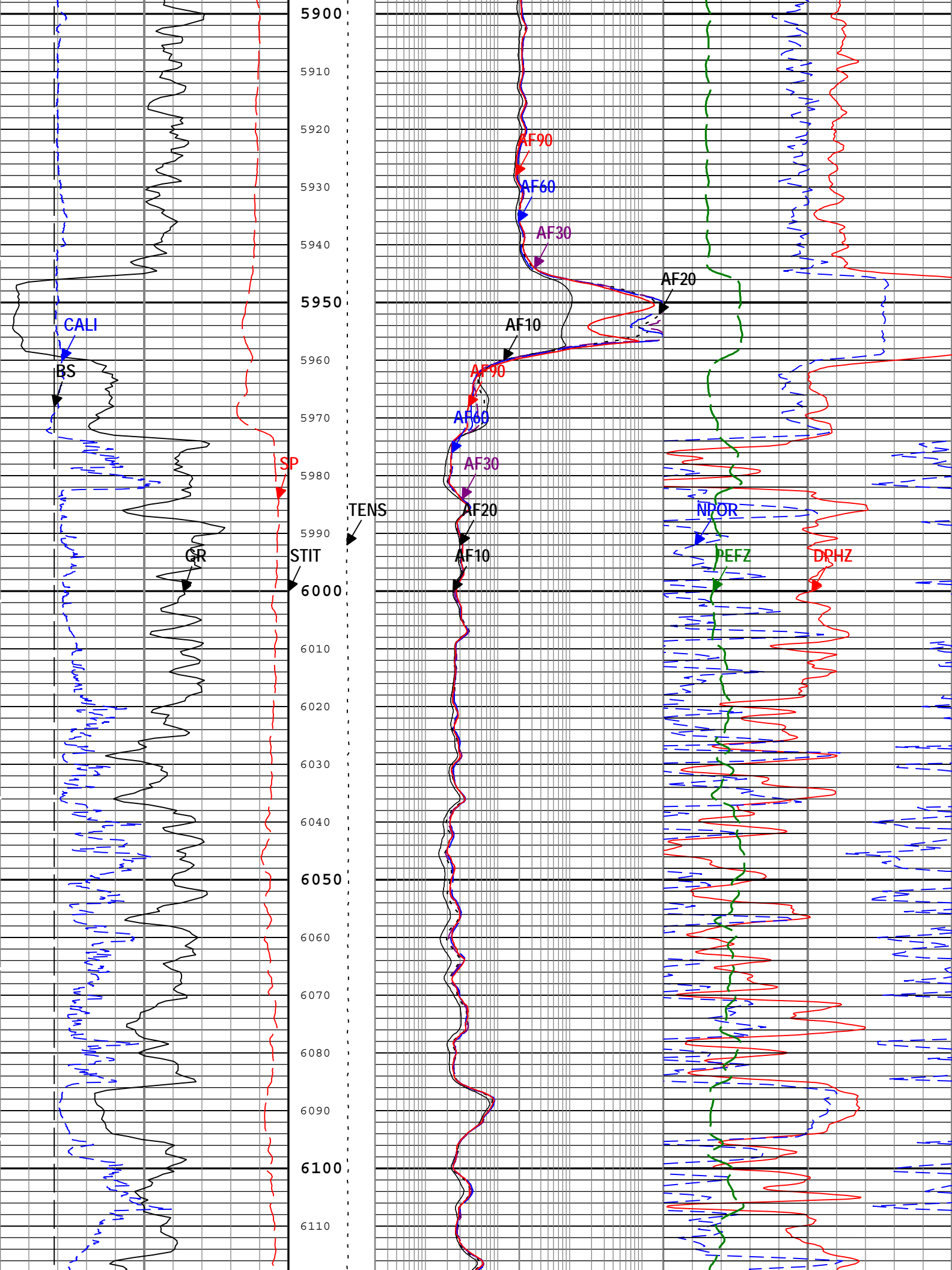


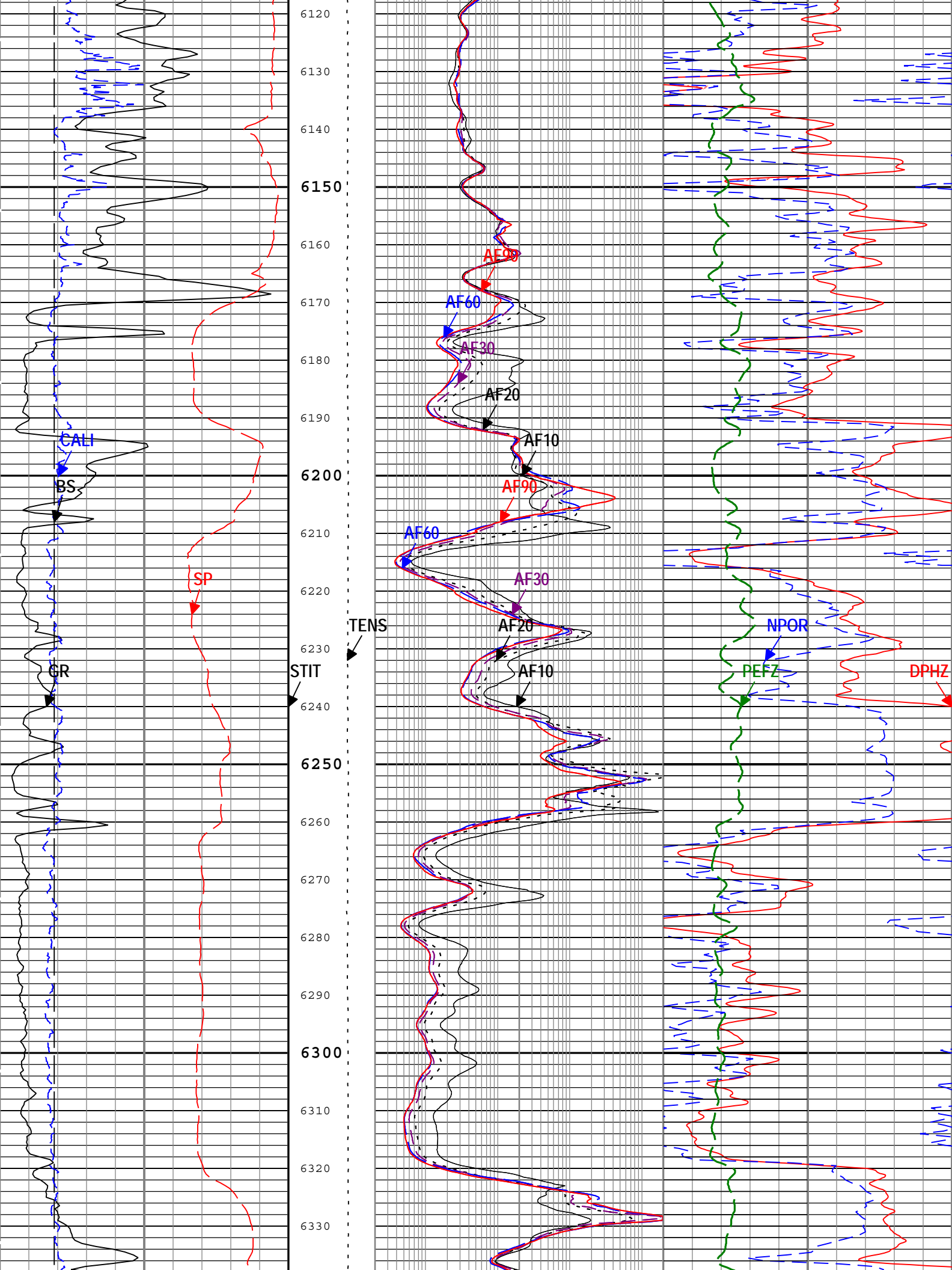


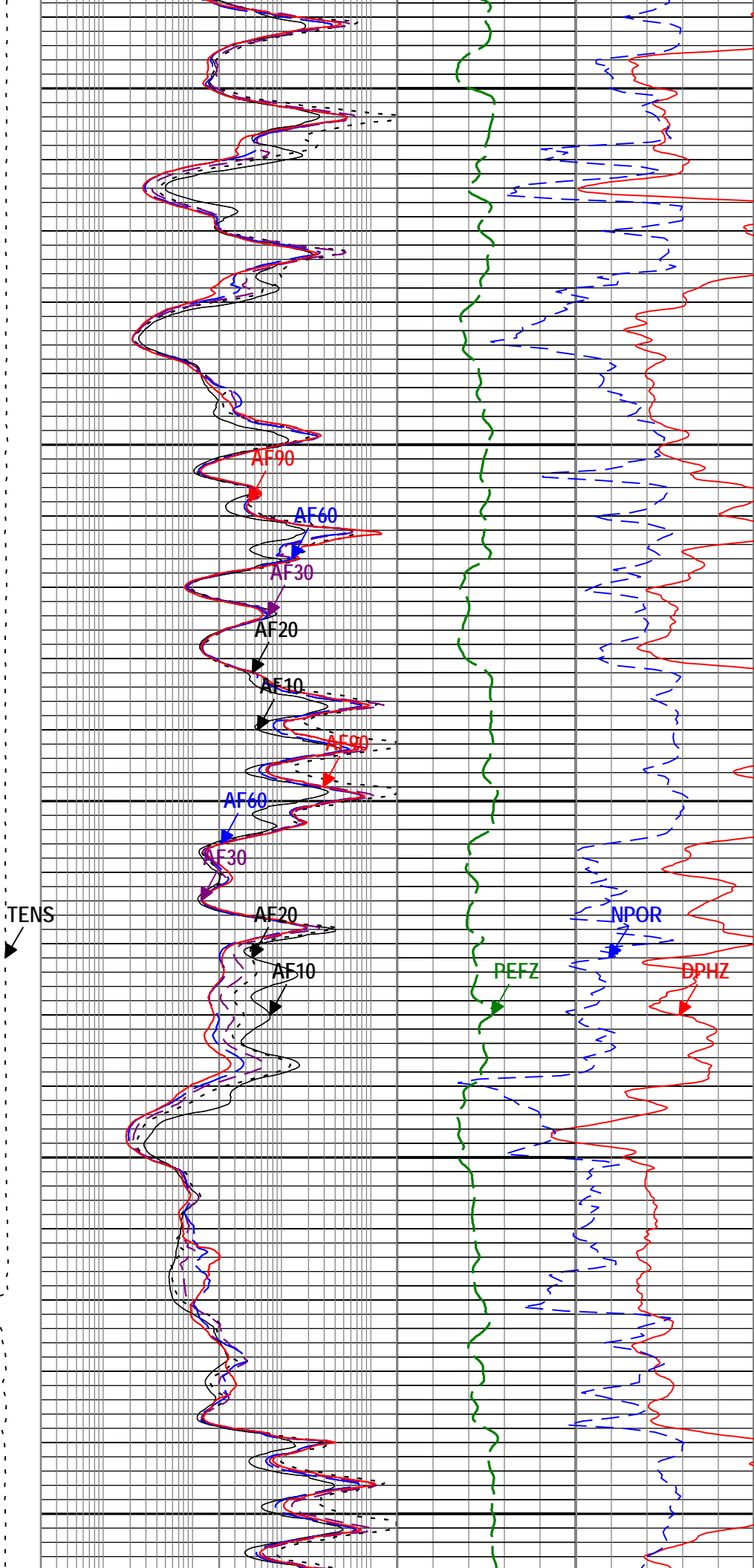
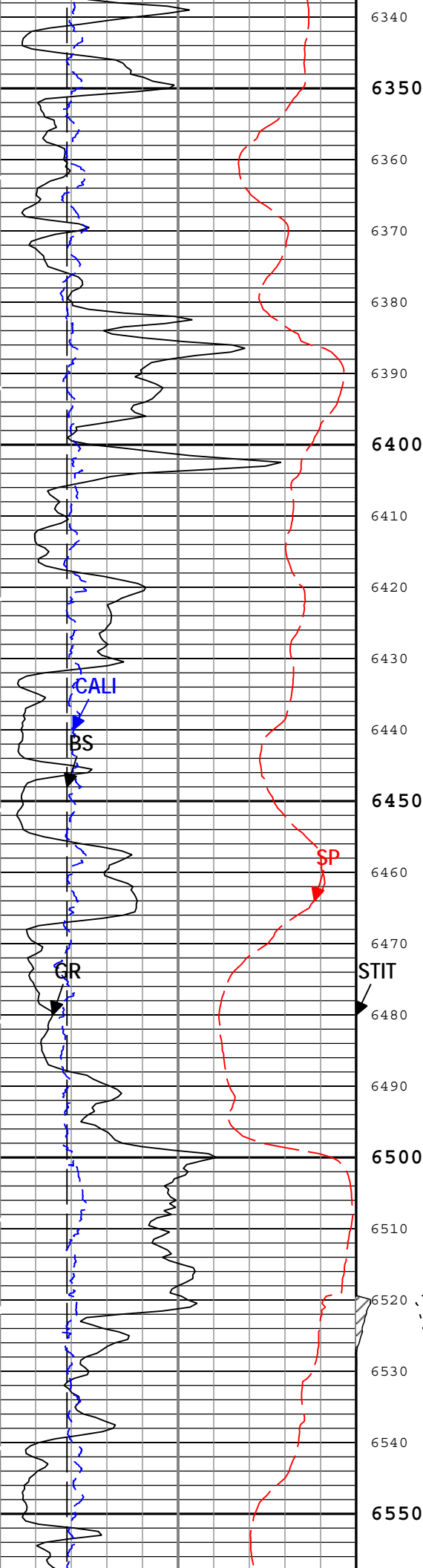


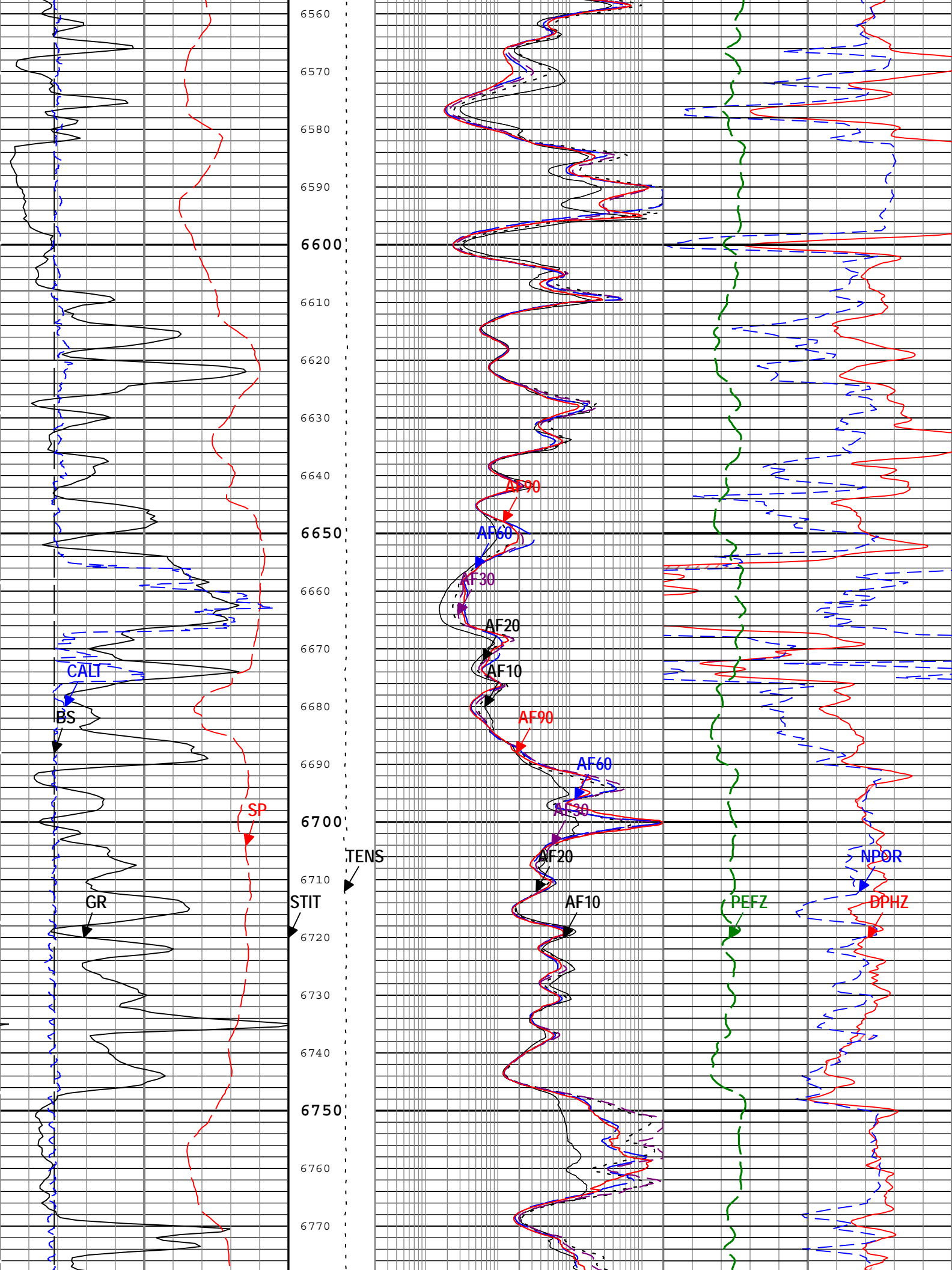


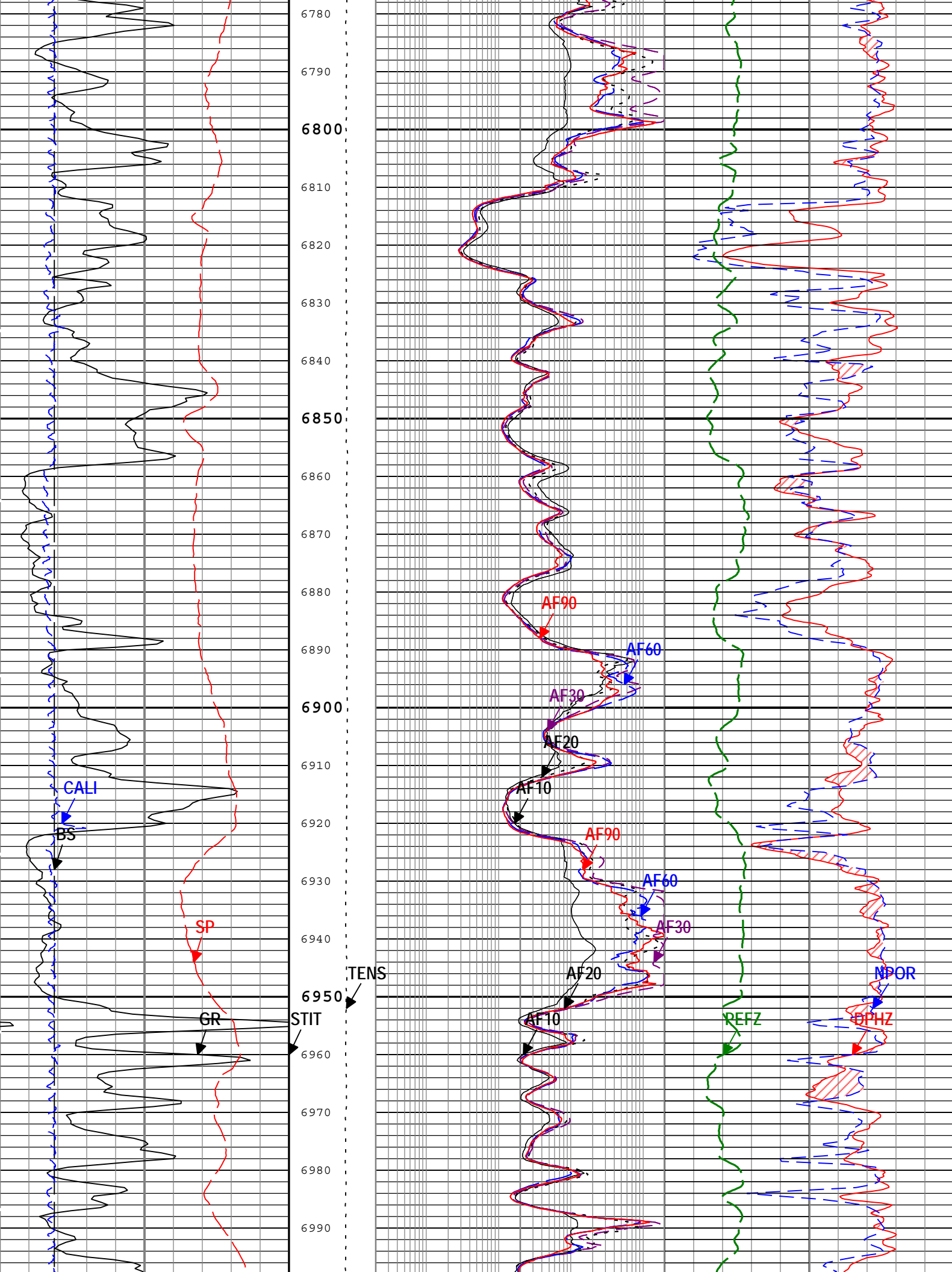


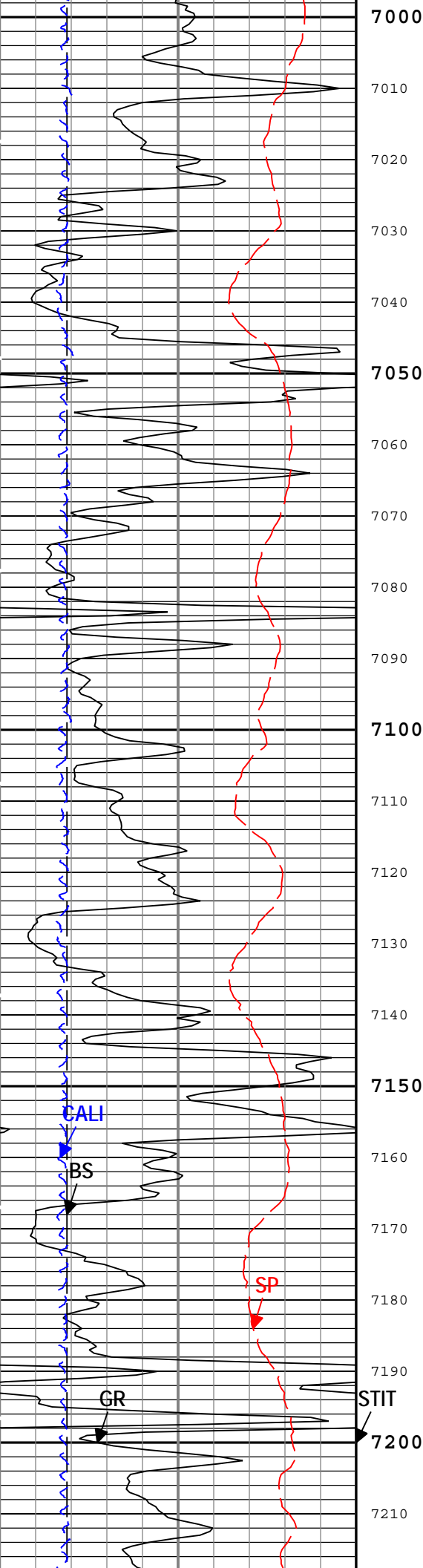




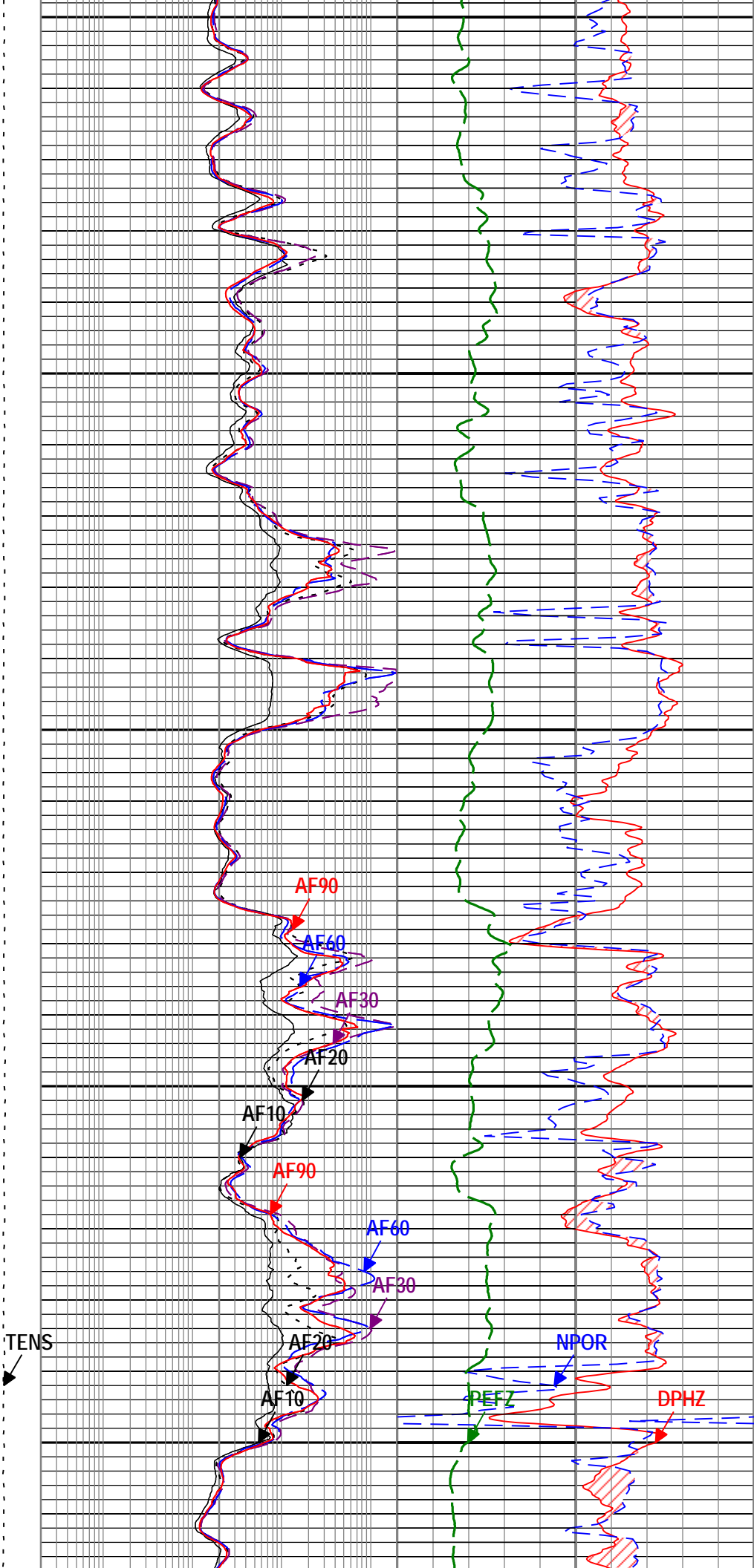


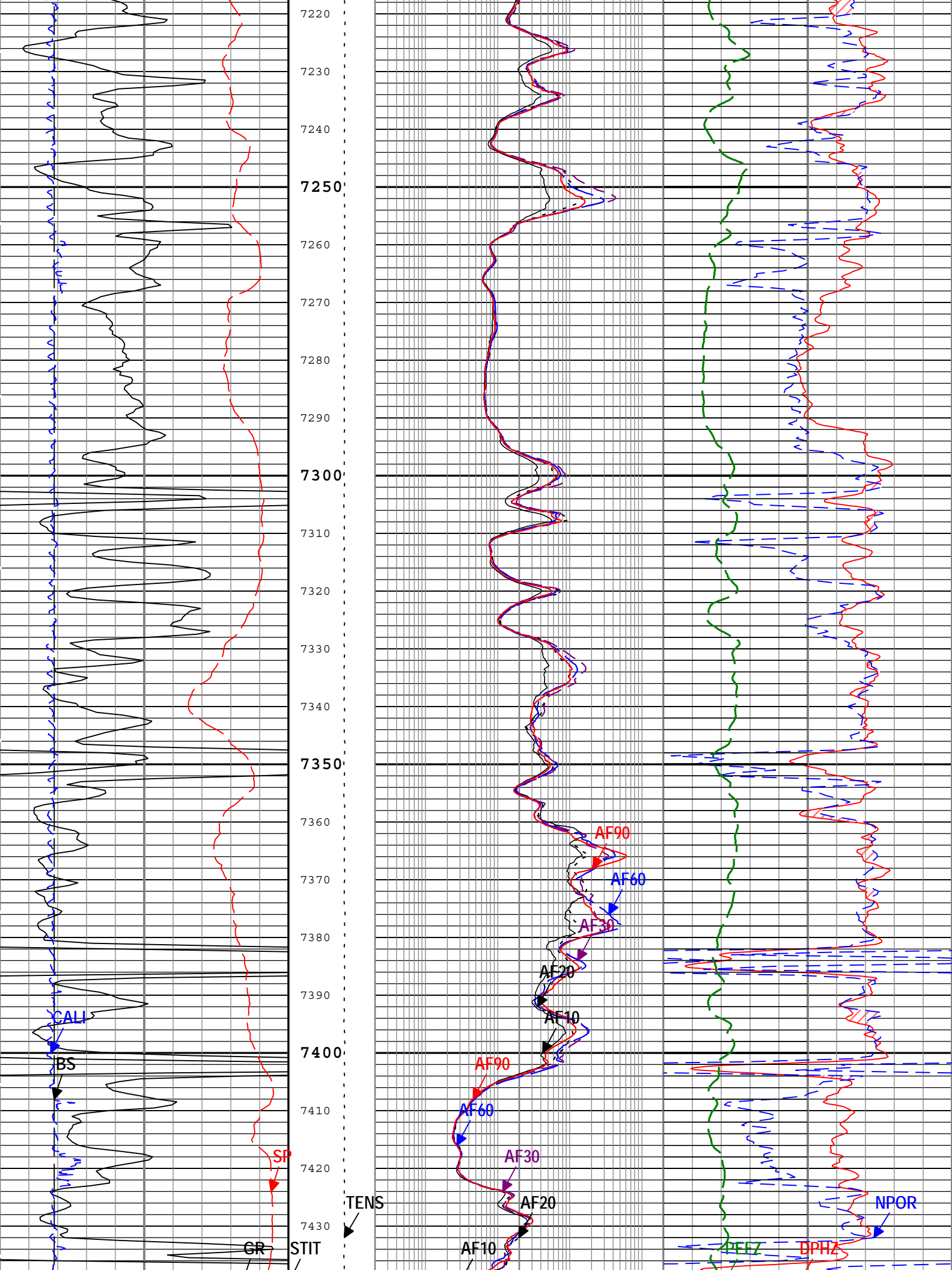


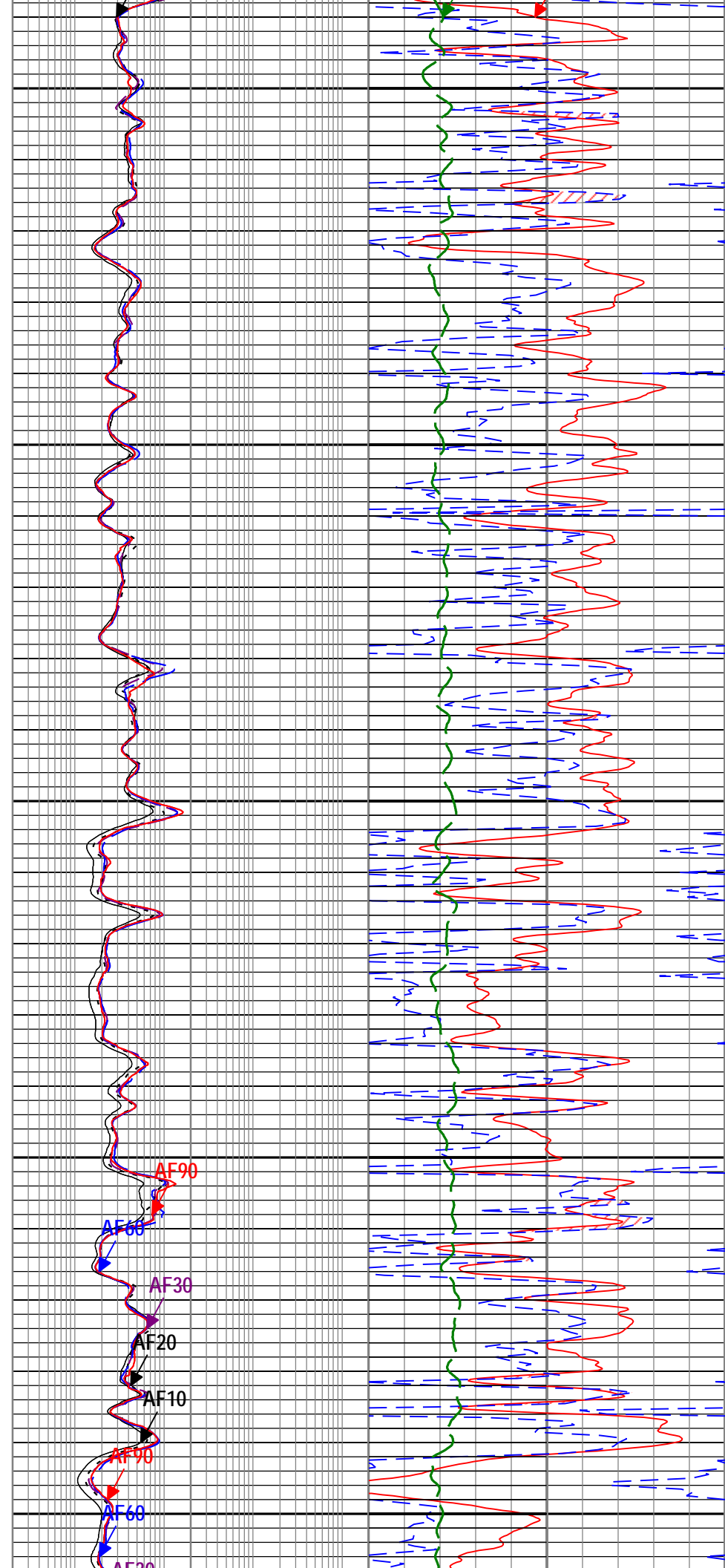
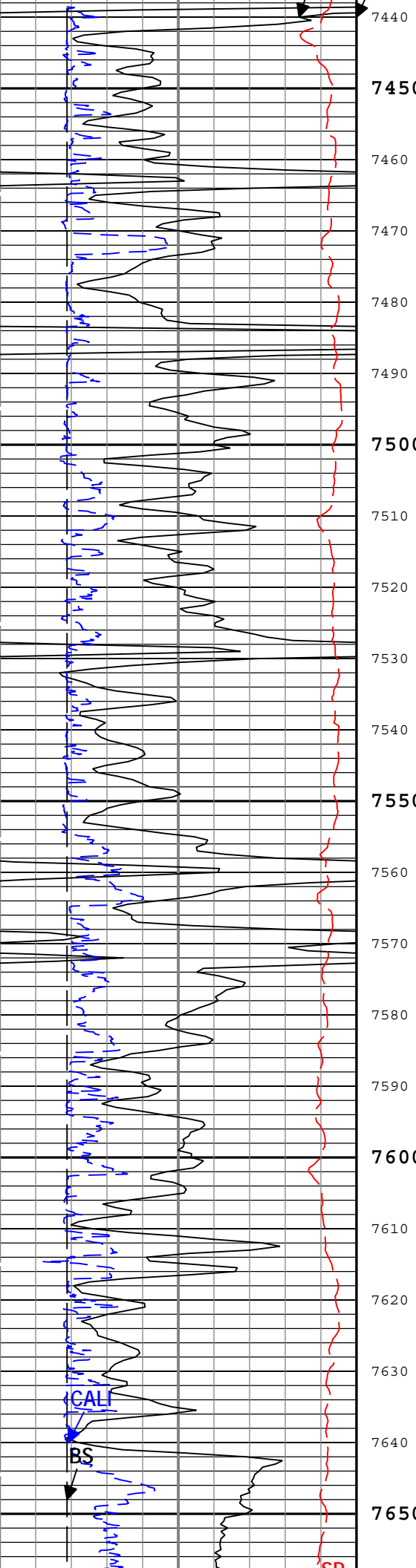


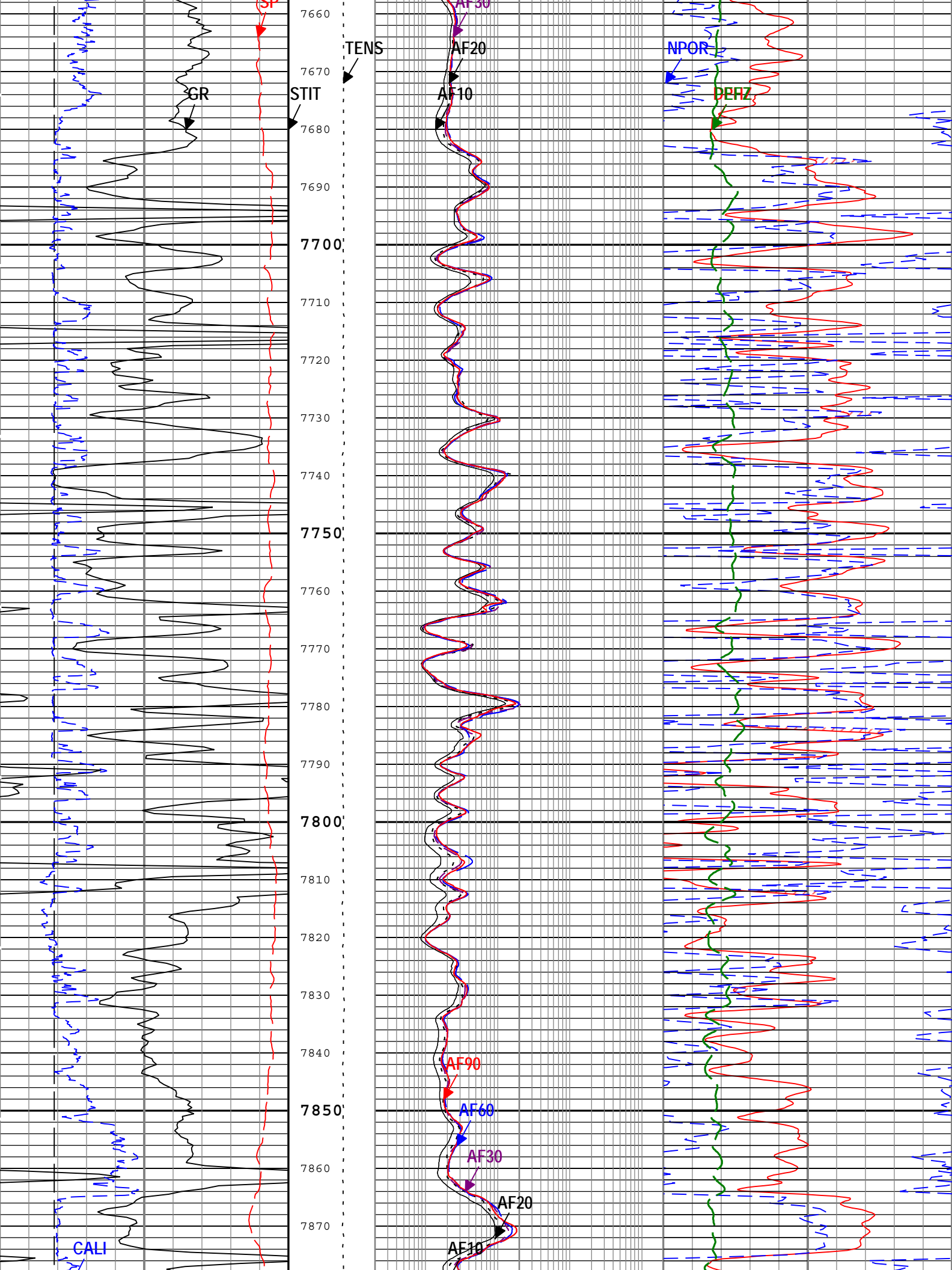


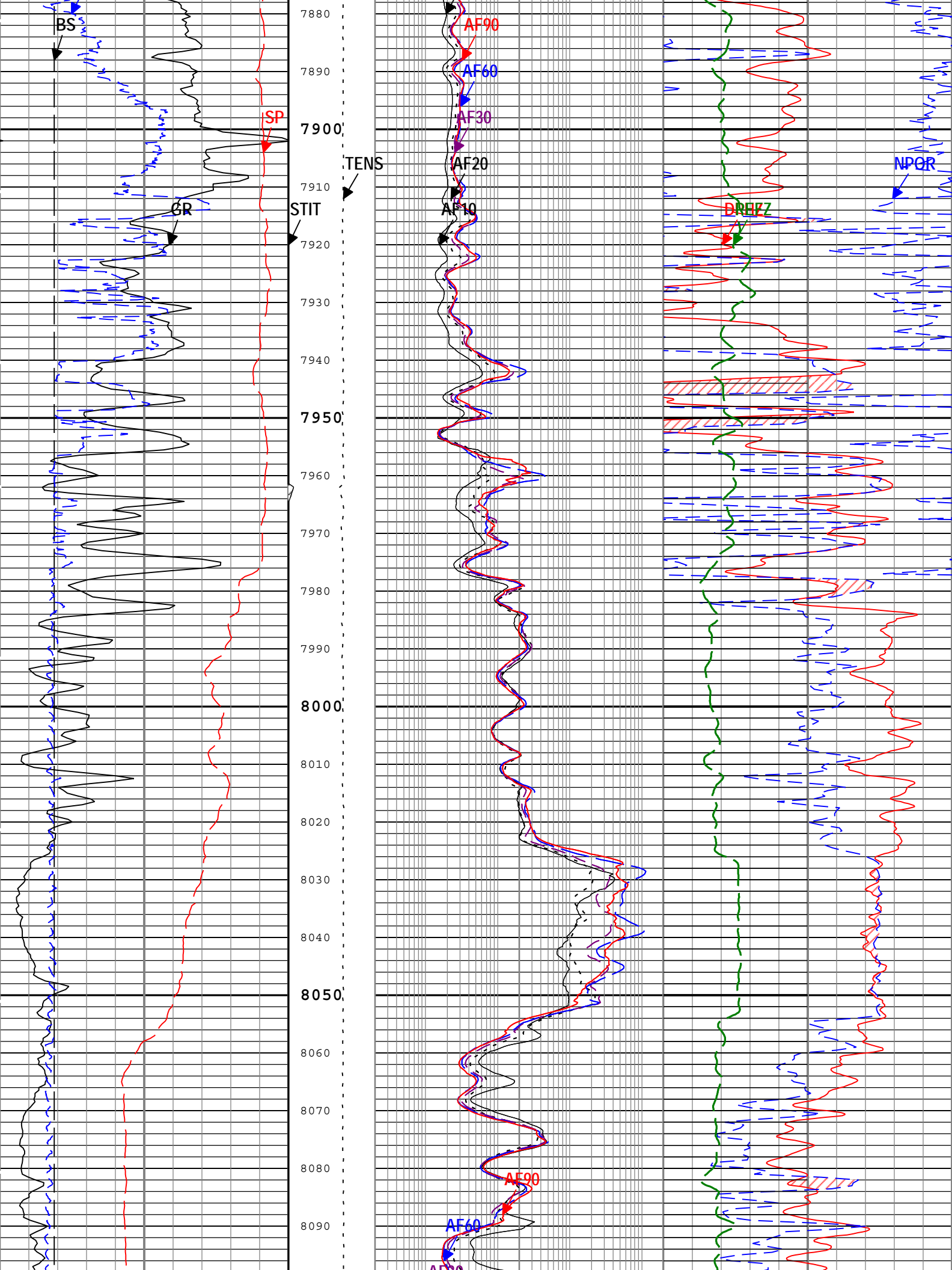
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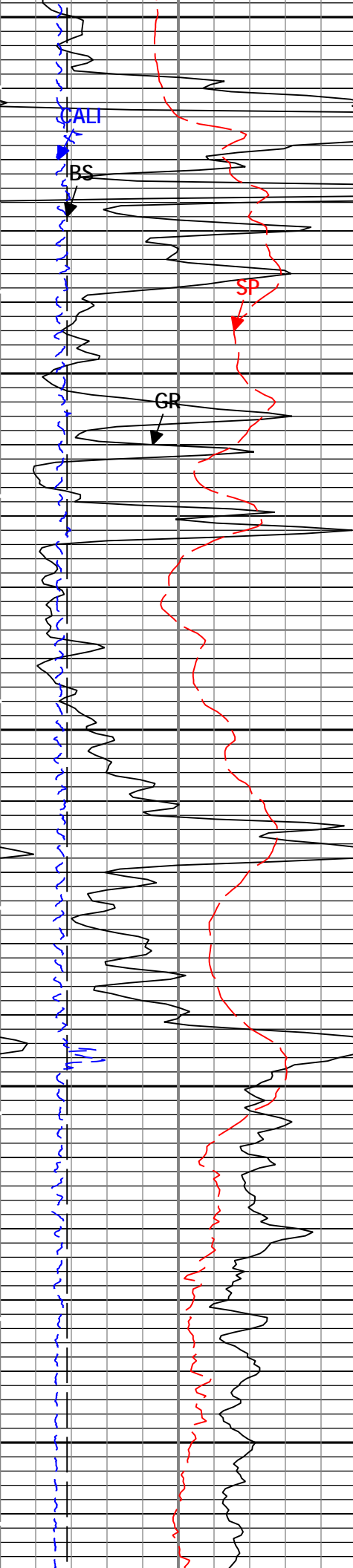




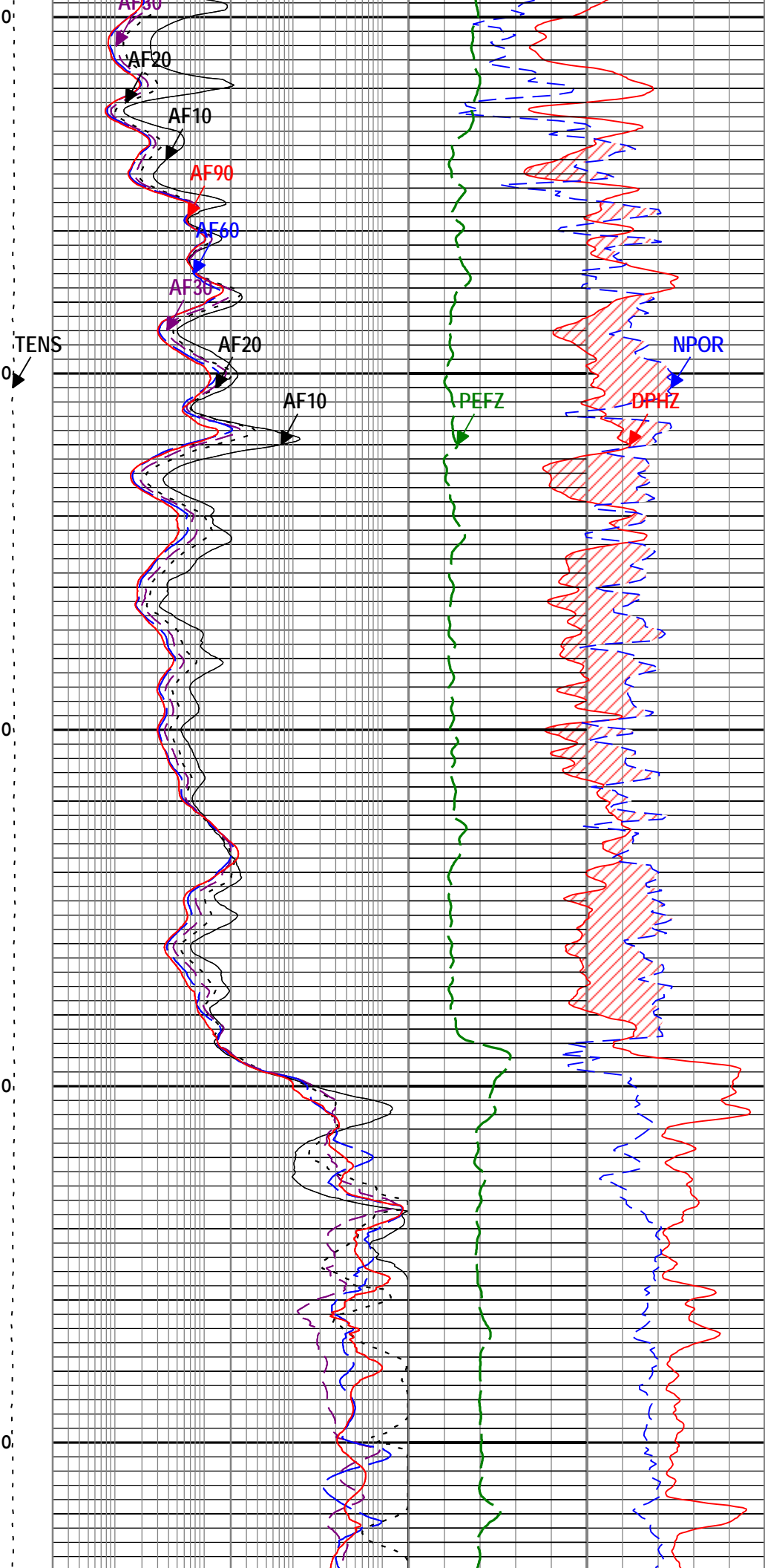


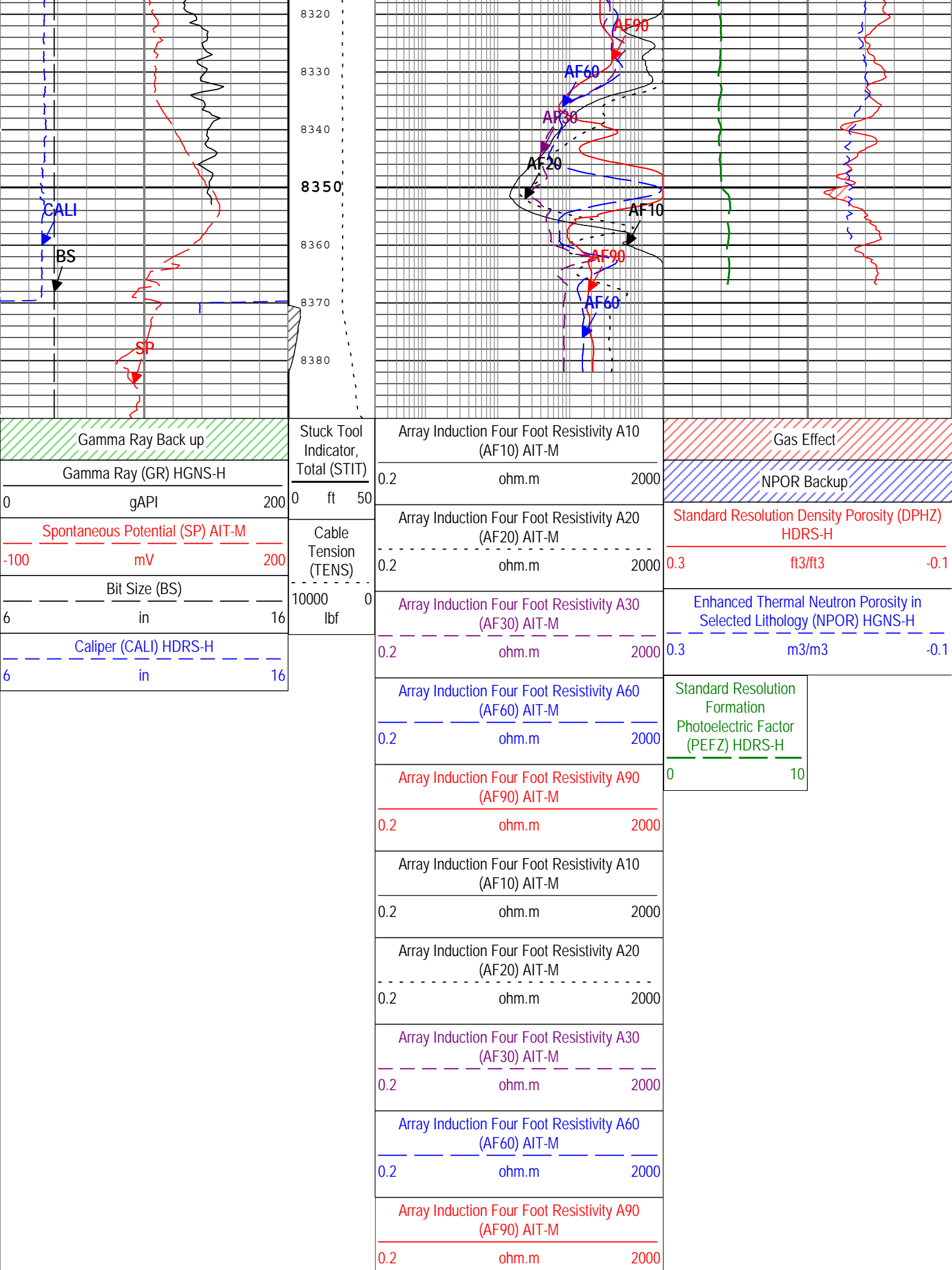






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TIME_1900 - Time Marked every 60.00 (s)

Description: HGNS standard resolution porosities for Platform Express Format: Log (EMD 5in Triple Combo Linear) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 13-Sep-2014 00:07:23

Channel Processing Parameters				
Parameter	Description	Tool	Value	Unit
ABHM	Array Induction Borehole Correction Mode	AIT-M	Compute Standoff	
ACDE	Array Induction Casing Detection Enable	AIT-M	Yes	
ASTA	Array Induction Tool Standoff	AIT-M	1.25	in
BARI	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BHT	Bottom Hole Temperature	Borehole	200	degF
BS	Bit Size	WLSESSION	7.875	in
BSAL	Borehole Salinity	Borehole	1500	ppm
CALI_SHIFT	CALI Supplementary Offset	HDRS-H	-0.642	in
CBLO	Casing Bottom (Logger)	WLSESSION	366	ft
CDEN	Cement Density	HGNS-H	2	g/cm3
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	9.5	lbm/gal
DFT	Drilling Fluid Type	Borehole	Water	
DFT_WATER	Drilling Fluid Water Type	Borehole	WBM	
DHC	Density Hole Correction	HDRS-H	Bit Size	
FD	Fluid Density	Borehole	1	g/cm3
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	CALI	
GRSE	Generalized Mud Resistivity Selection, from Measured or Computed Mud Resistivity	Borehole	AMF	
GTSE	Generalized Temperature Selection, from Measured or Computed Temperature	Borehole	CTEM	
HSCO	Hole Size Correction Option	HGNS-H	Yes	
MATR	Rock Matrix for Neutron Porosity Corrections	Borehole	LIMESTONE	
MDEN	Matrix Density for Density Porosity	Borehole	2.71	g/cm3
MFST	Mud Filtrate Sample Temperature	Borehole	75	degF
RMFS	Resistivity of Mud Filtrate Sample	Borehole	0.57	ohm.m
SPDR	SP Drift Per Foot	AIT-M	0	mV/ft
TD	Total Measured Depth	Borehole	8372	ft

Tool Control Parameters				
Parameter	Description	Tool	Value	Unit
HMCA_BRD_TYPE	HMCA Board Type	HGNS-H	1	
HRGD_BRD_TYPE	HRGD Board Type	HDRS-H	WITH_HET	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	1800	ft/h

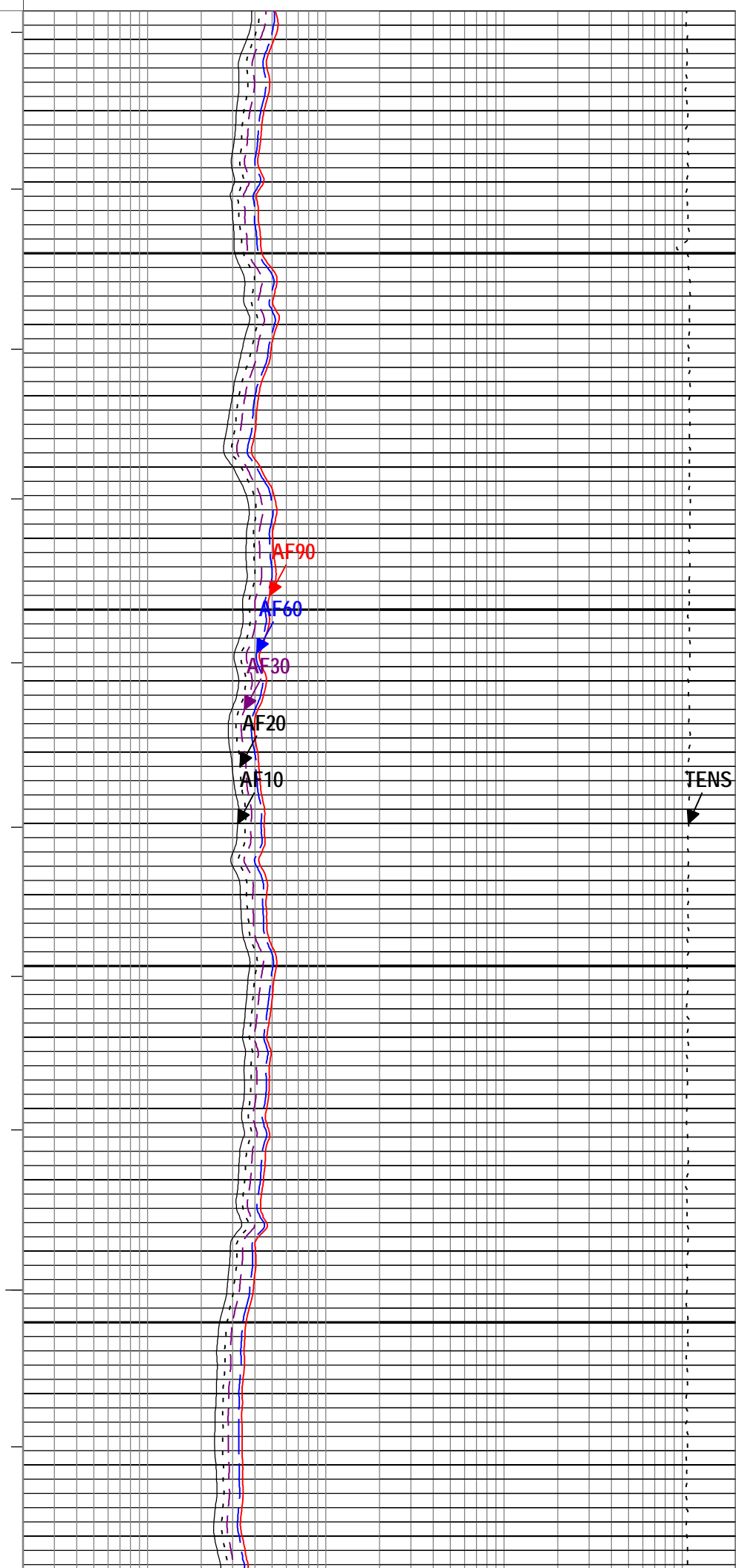
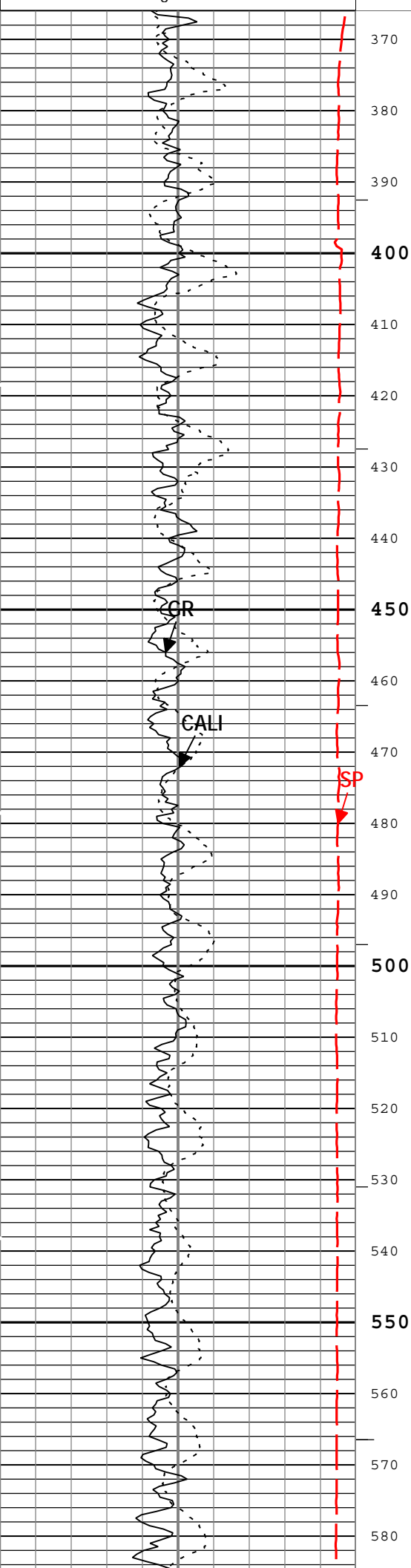
ONE

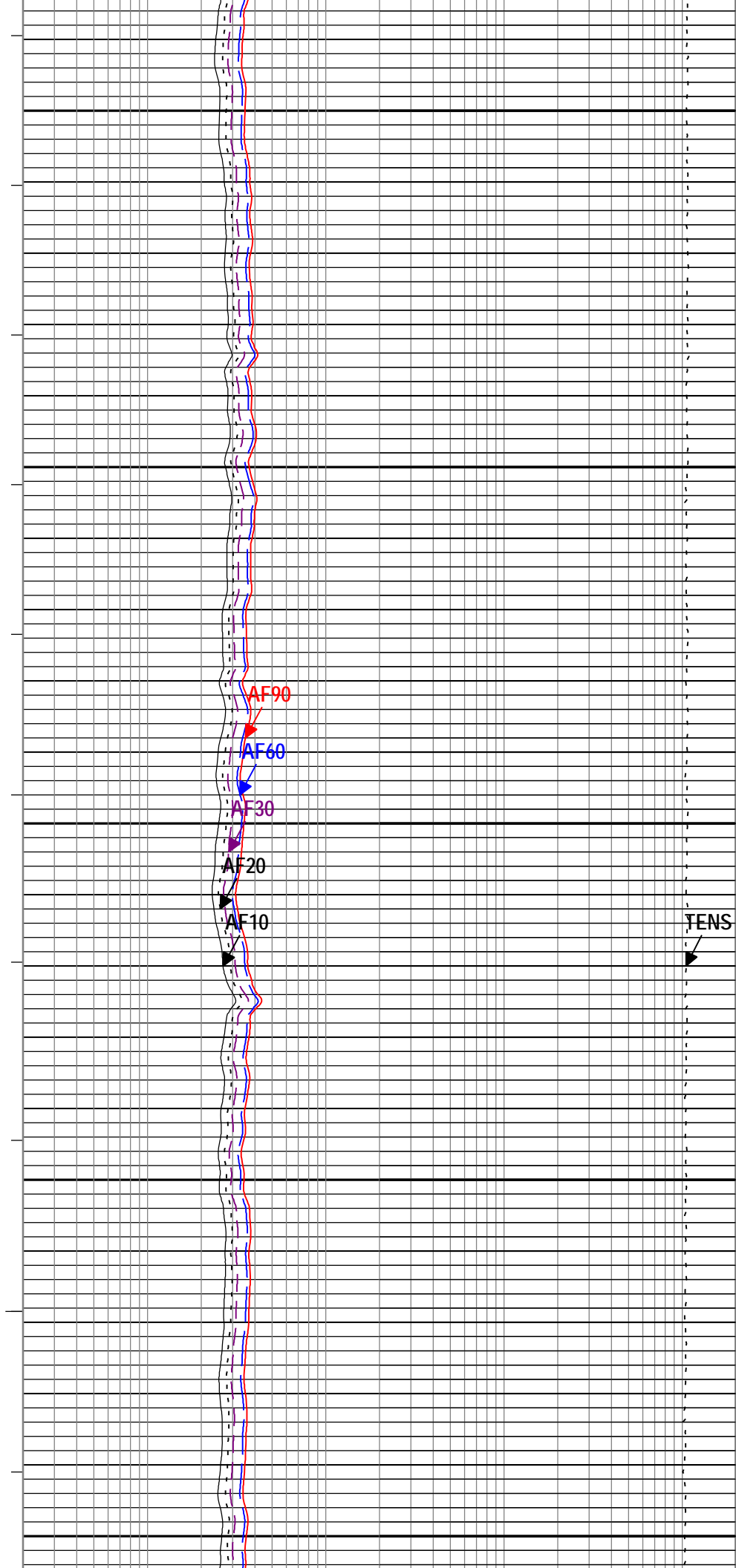
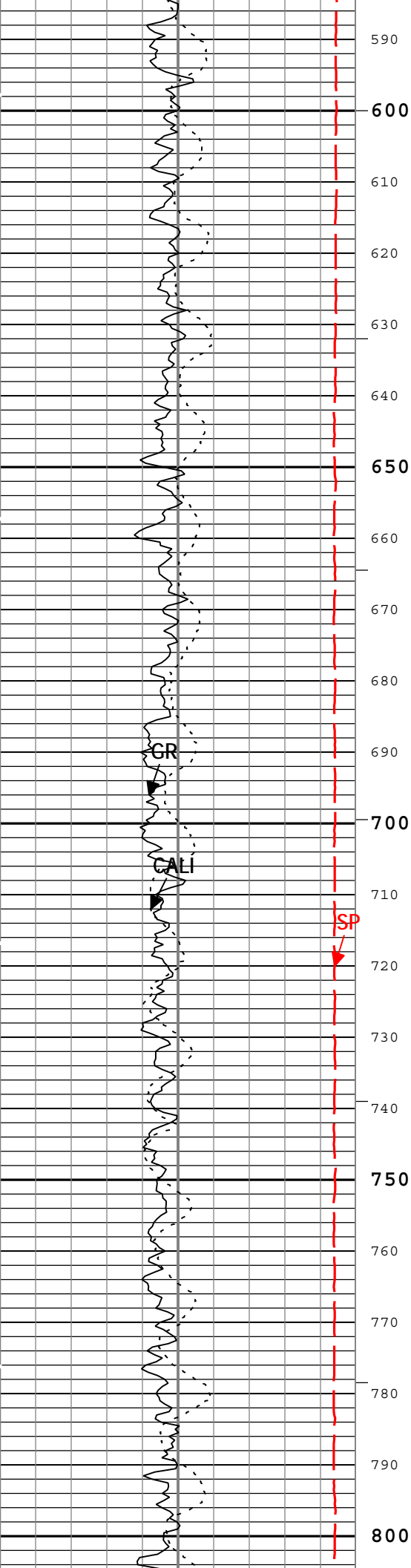
5" Induction

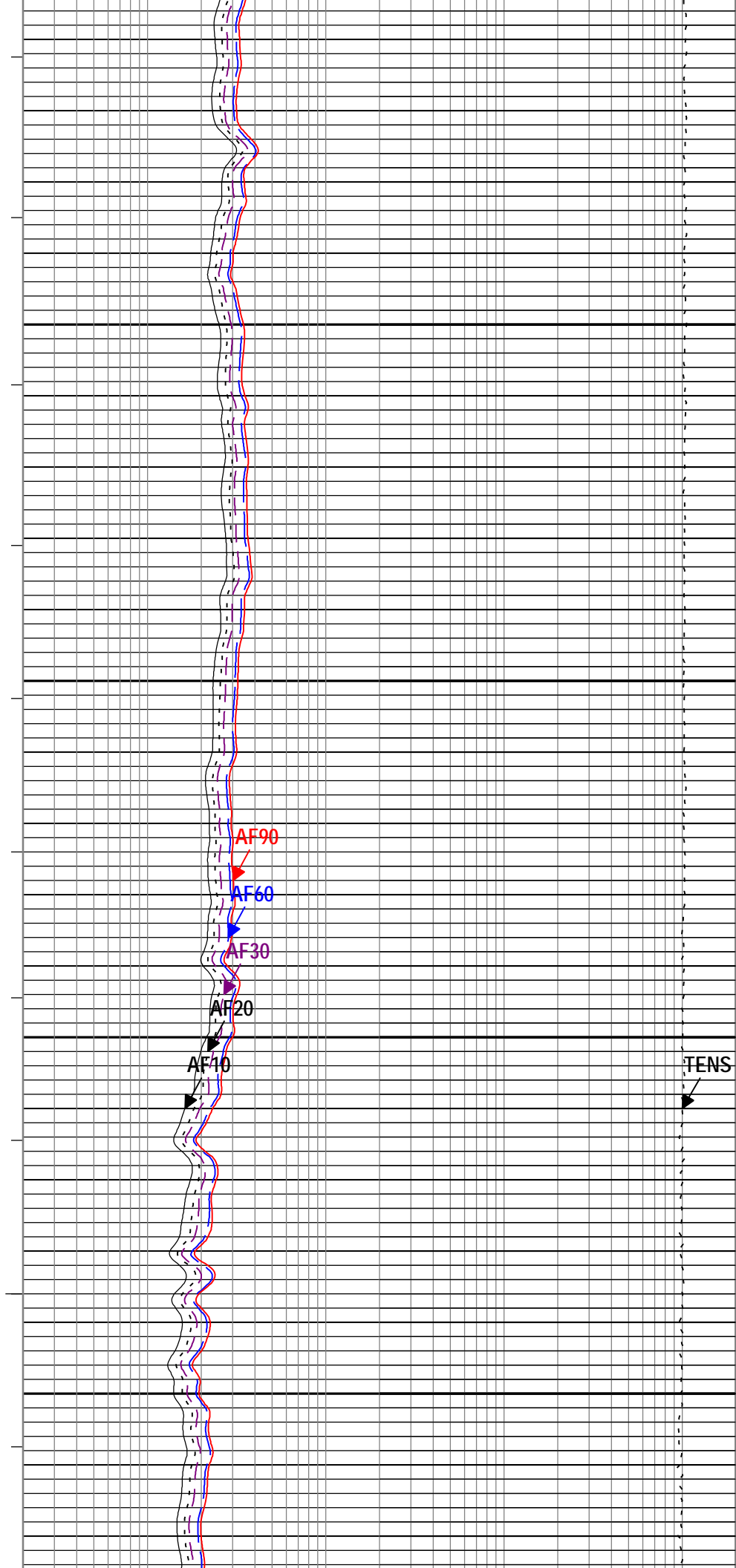
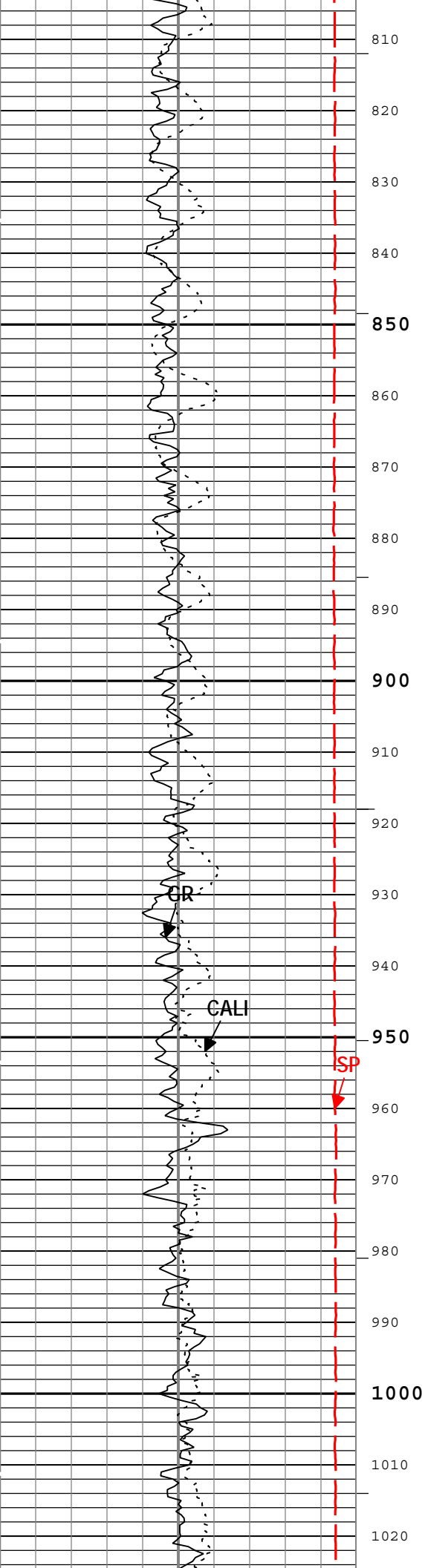
Integration Summary				
Output Channel(s)	Output Description	Input Parameter	Output Value	Unit
ICV	Integrated Cement Volume	GCSE_UP_PASS, FCD	2457.47	ft3
IHV	Integrated Hole Volume	GCSE_UP_PASS	3781.09	ft3

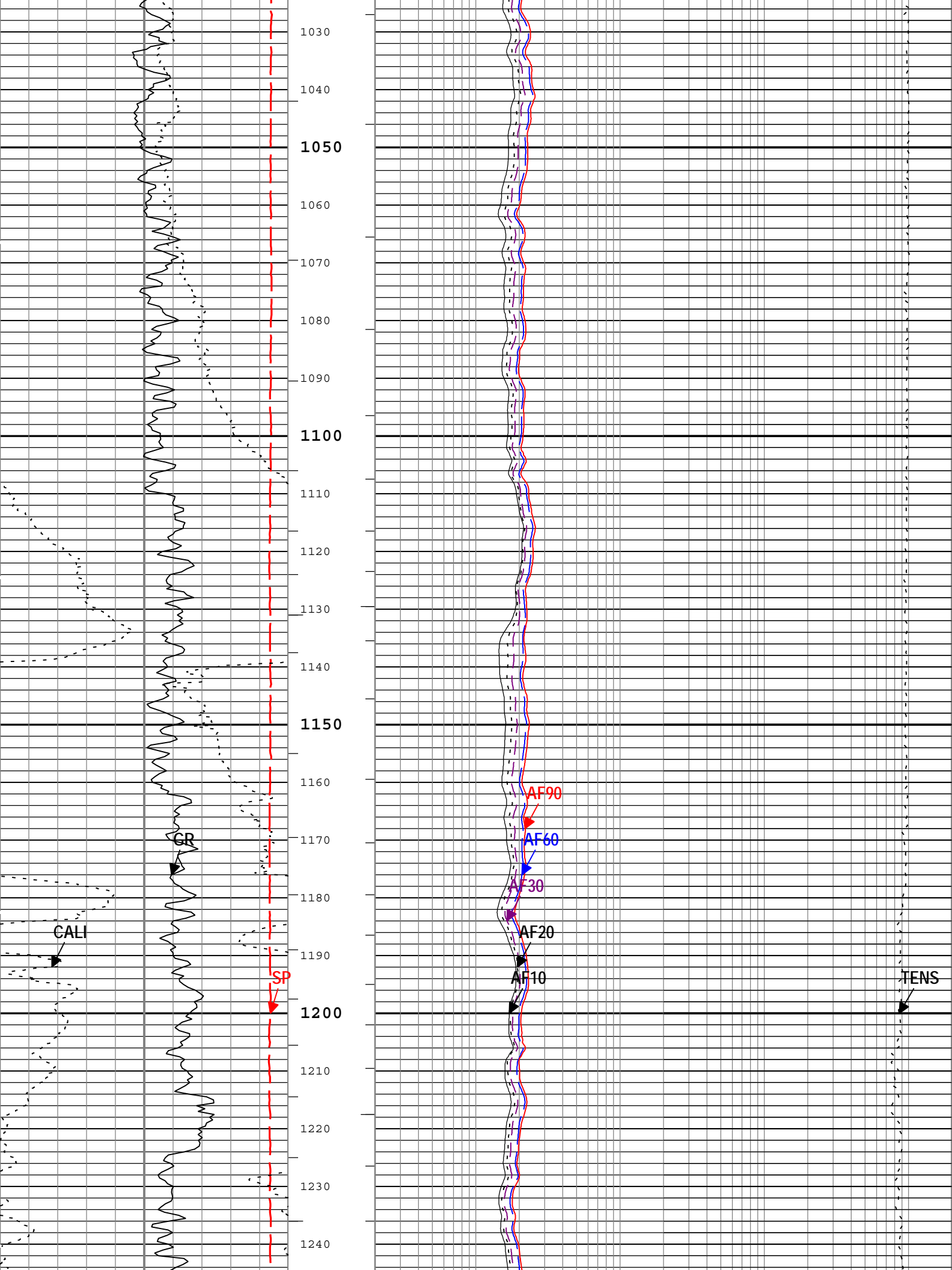
Software Version

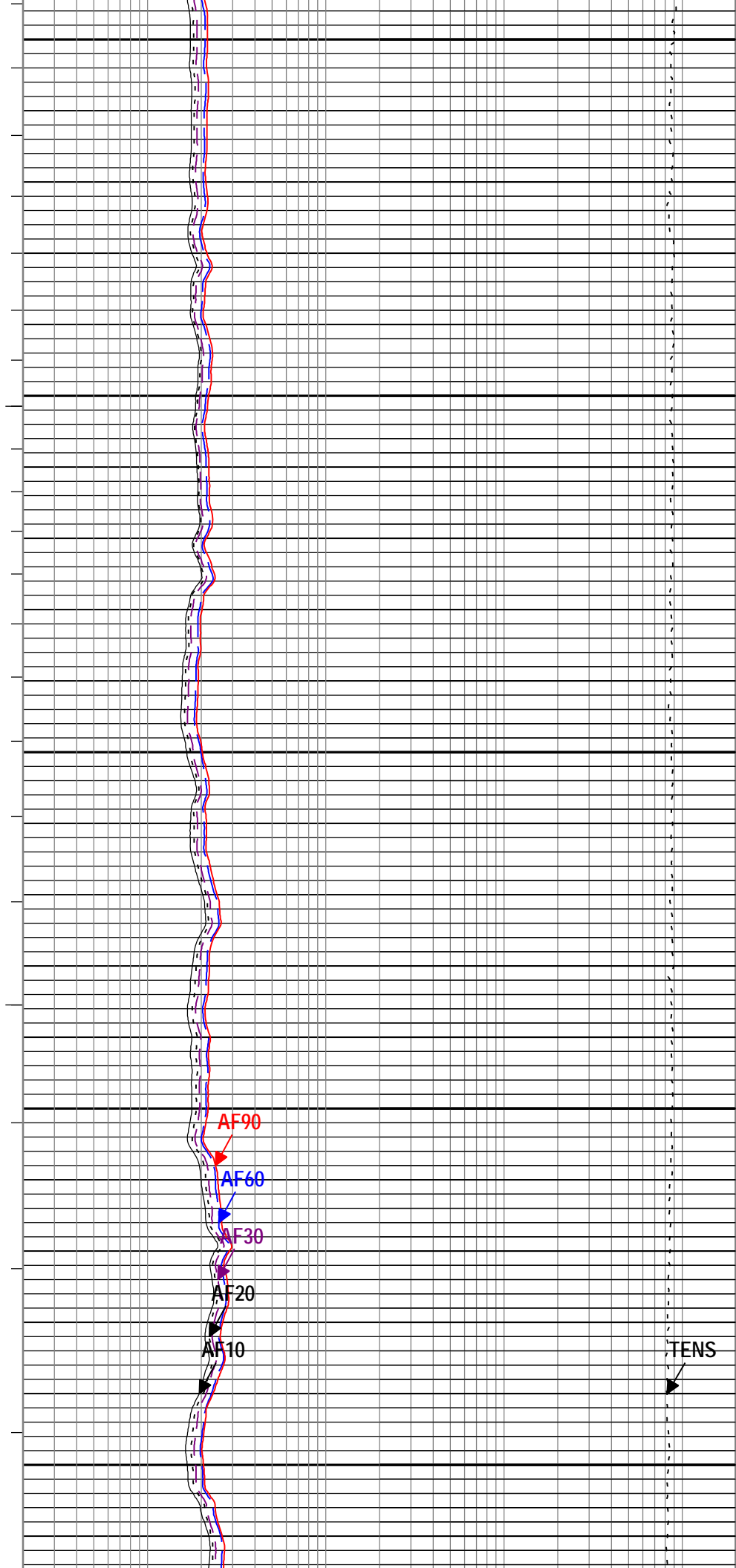
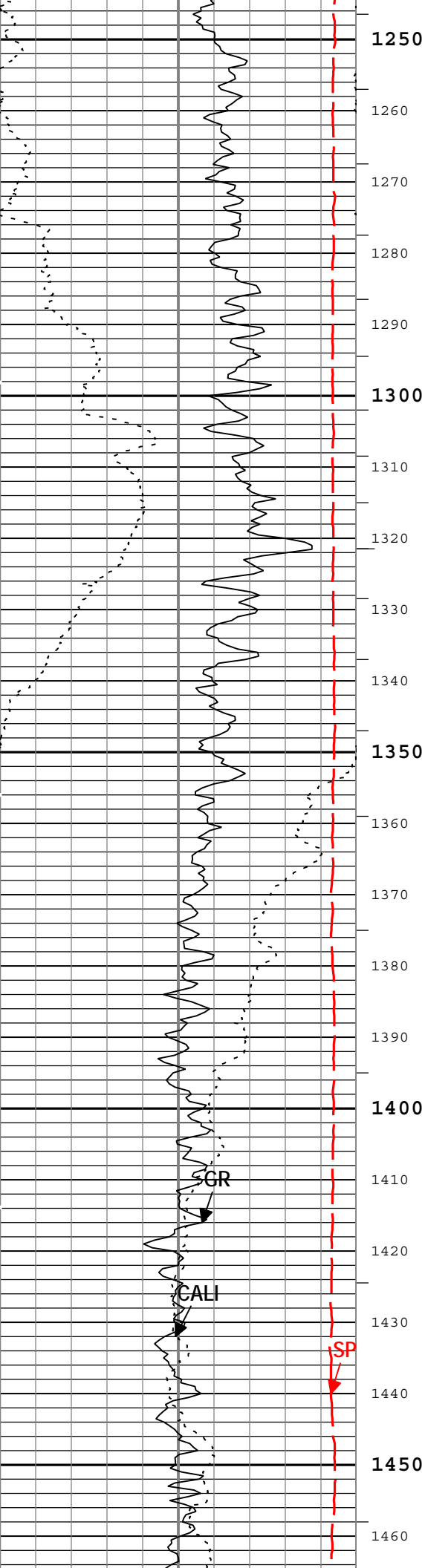
Acquisition System							Version		
MaxWell							4.0.9163.3000		
Application Patch							Patch-SP-10767_13393-4.0.9163.3001		
Computation		Description					Version		
Borehole		Borehole Ensemble provides common Borehole Parameters and Channels					4.0.9213.3000		
Tool Elements		Description			Software Version		Firmware Version		
HRCC-H		HILT High-Resolution Control Cartridge, 150 degC			4.0.9231.3000		2.0		
AMIS		Array Induction Sonde - M			4.0.9247.3000		1		
EDTC-B		Enhanced Digital Telemetry Cartridge - B			4.0.9119.3000				
Pass Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Main[5]:Up	Up	48.11 ft	8390.18 ft	12-Sep-2014 7:56:40 PM	12-Sep-2014 11:03:07 PM	ON	13.89 ft	No
All depths are referenced to toolstring zero									
Log	Company:Nighthawk Production LLC						Well:Blackcomb 5-14		
							ONE: Main[5]:Up:S011		
Description: AIT Basic Log Two Format: Log (EMD 5in Induction) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 13-Sep-2014 00:07:26									
Channel	Source		Sampling						
AF10	AIT-M:AMIS:AMIS		3in						
AF20	AIT-M:AMIS:AMIS		3in						
AF30	AIT-M:AMIS:AMIS		3in						
AF60	AIT-M:AMIS:AMIS		3in						
AF90	AIT-M:AMIS:AMIS		3in						
CALI	HDRS-H:HRCC-H:HRCC-H		1in						
GR	EDTC-B:EDTC-B:EDTC-B		6in						
ICV	Borehole		6in						
IHV	Borehole		6in						
SP	AIT-M:AMIS:AMIS		6in						
TENS	WLWorkflow		6in						
TIME_1900	WLWorkflow		0.1in						
— 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)									
TIME_1900 - Time Marked every 60.00 (s)									
							Cable Tension (TENS)		
							10000	lbf	0
Array Induction Four Foot Resistivity A10 (AF10) AIT-M									
0.2		ohm.m						2000	
Array Induction Four Foot Resistivity A20 (AF20) AIT-M									
0.2		ohm.m						2000	
Array Induction Four Foot Resistivity A30 (AF30) AIT-M									
0.2		ohm.m						2000	
Array Induction Four Foot Resistivity A60 (AF60) AIT-M									
0.2		ohm.m						2000	
Array Induction Four Foot Resistivity A90 (AF90) AIT-M									
0.2		ohm.m						2000	
Gamma Ray Backup									
Spontaneous Potential (SP) AIT-M									
-100		mV						200	
Caliper (CALI) HDRS-H									
4		in						14	
Gamma Ray (GR) EDTC-B									
0		gAPI						200	

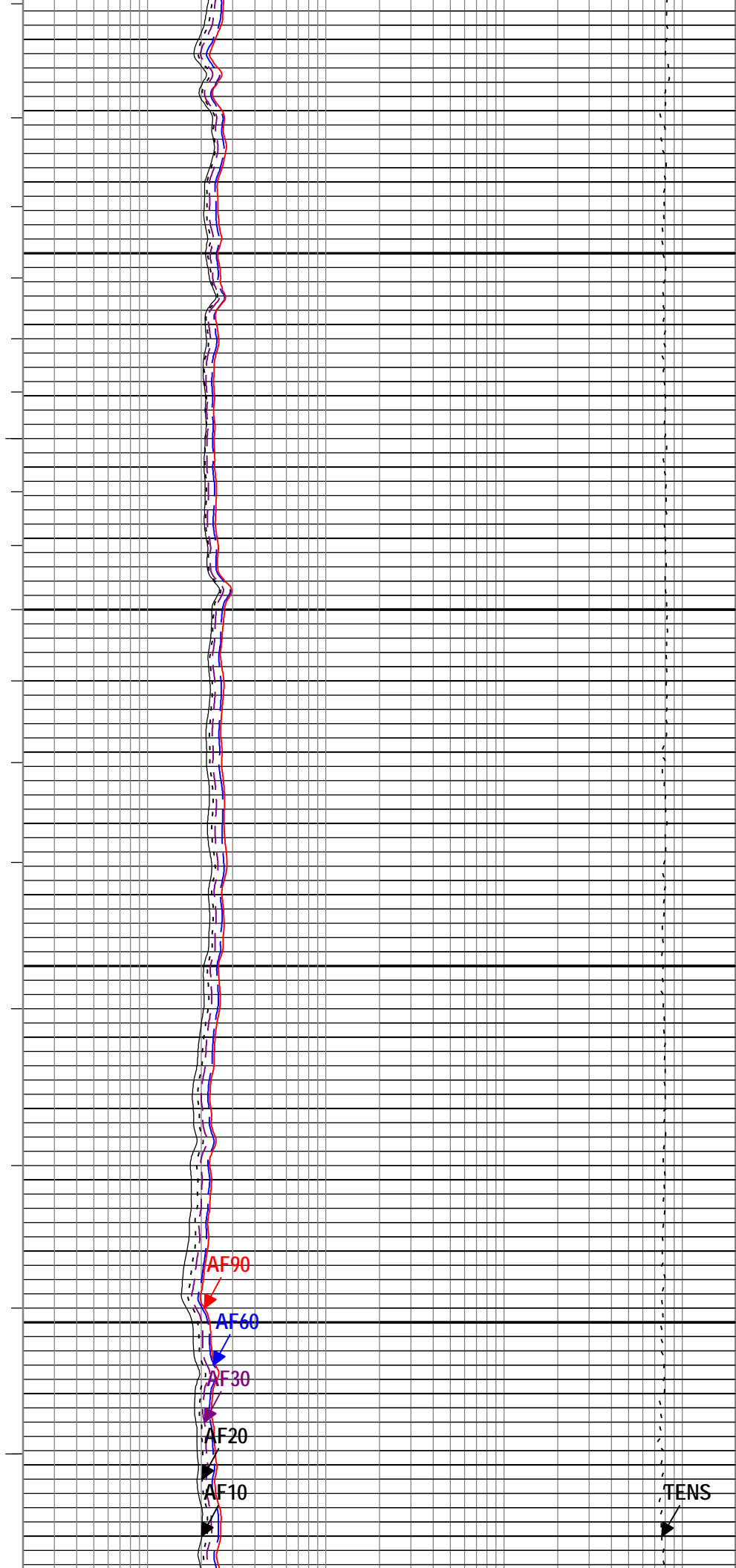
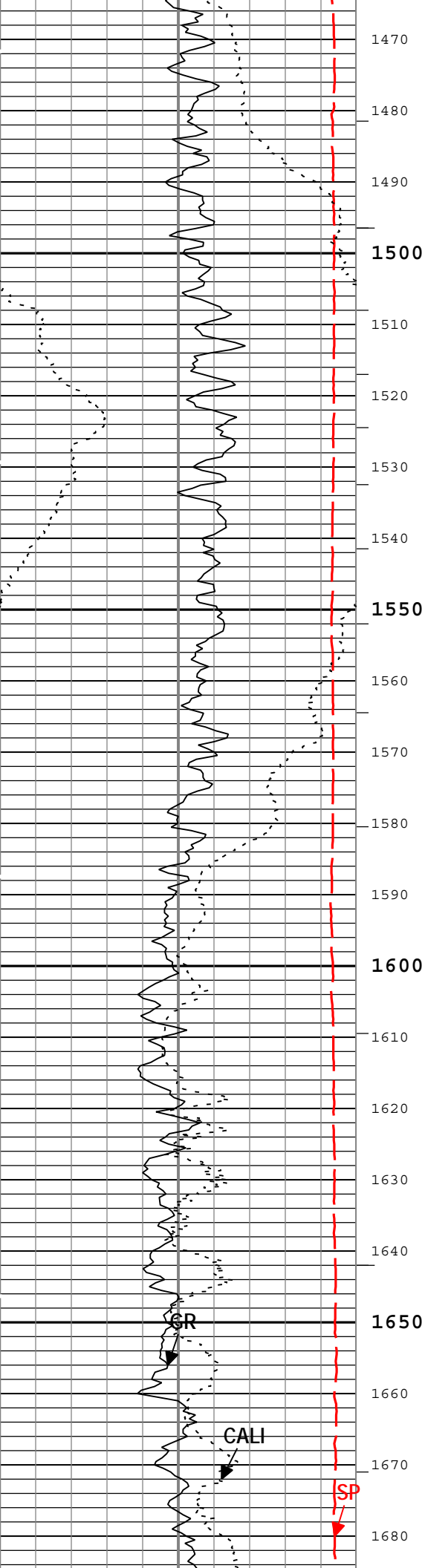


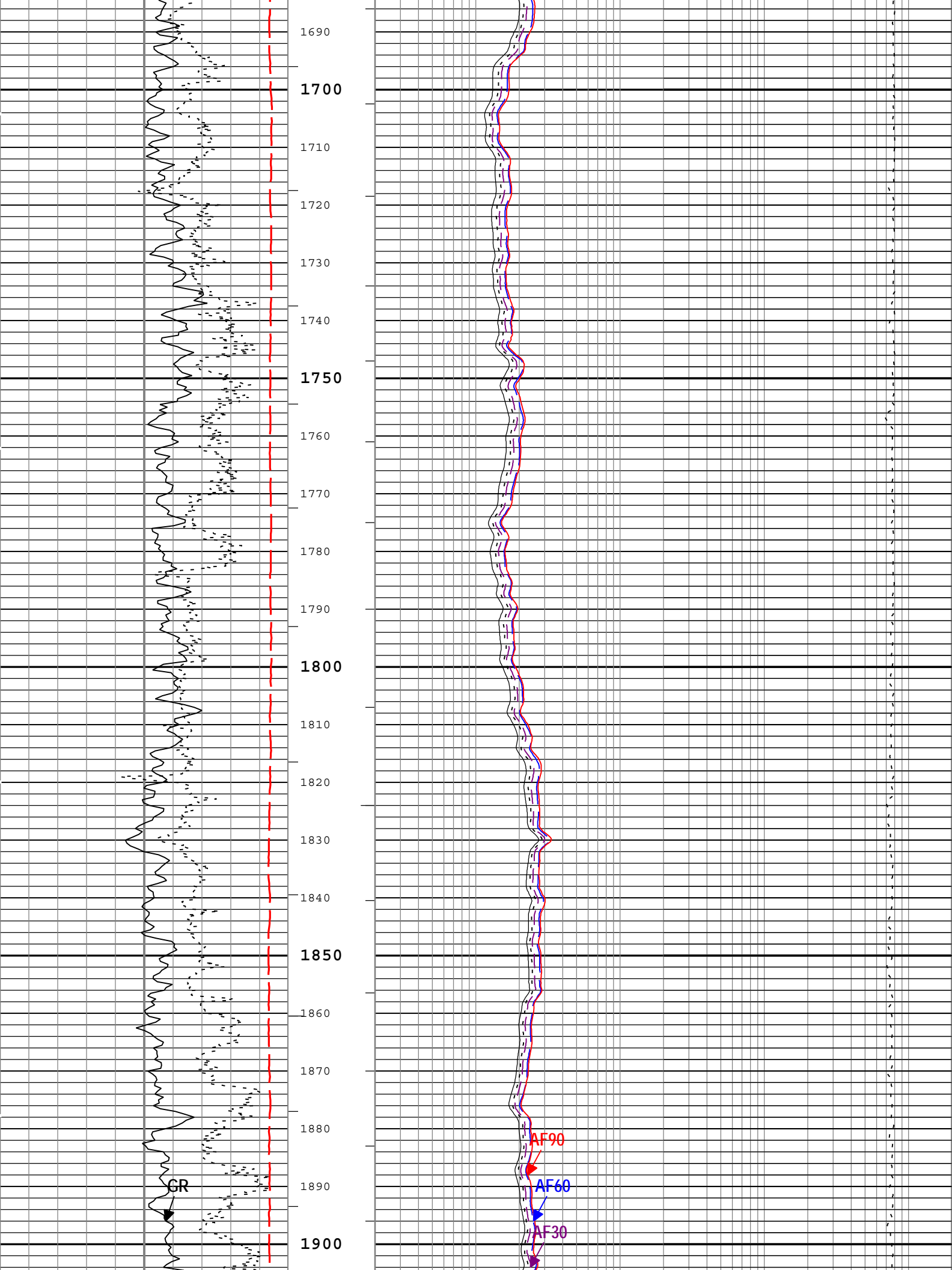


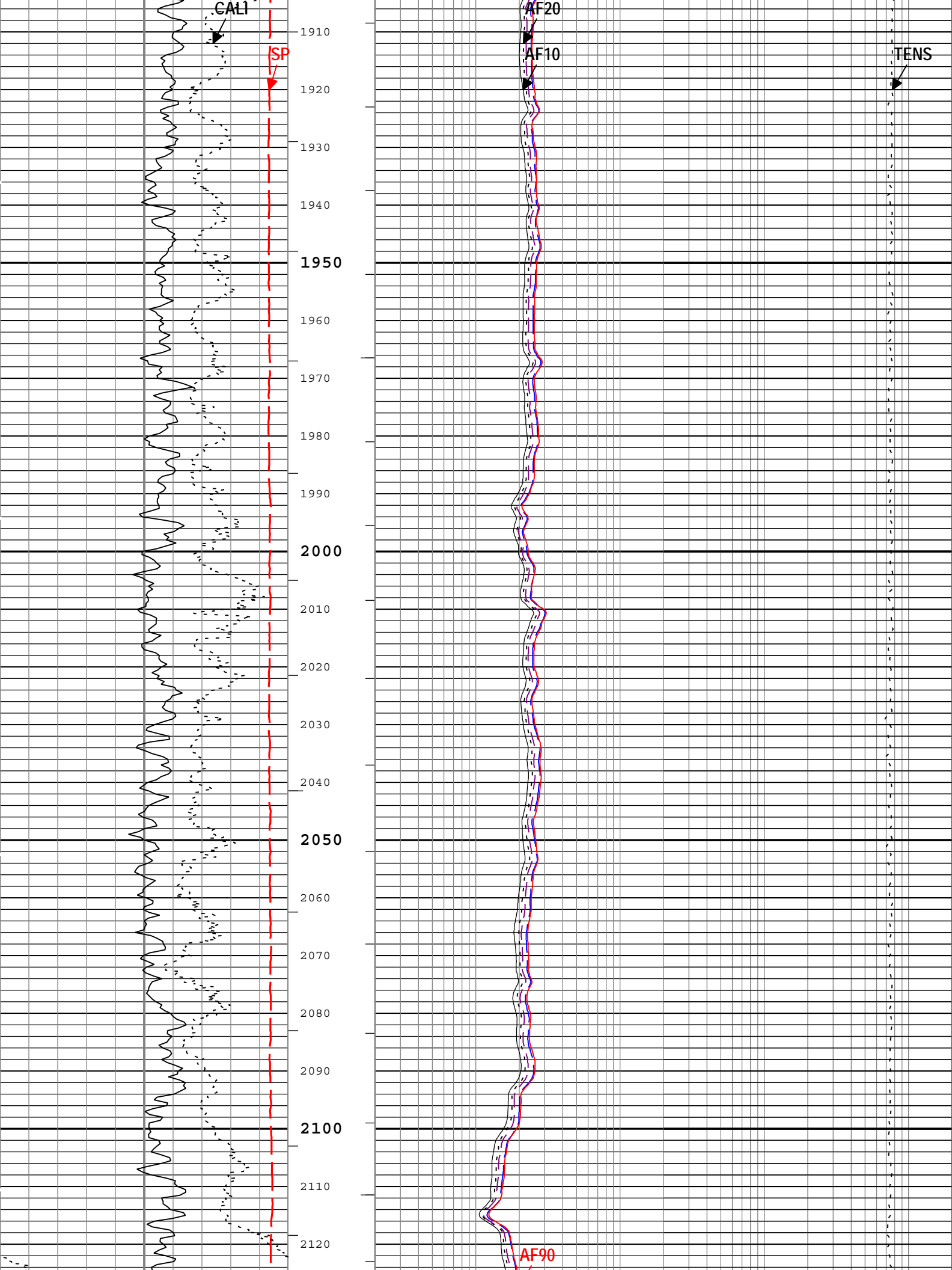


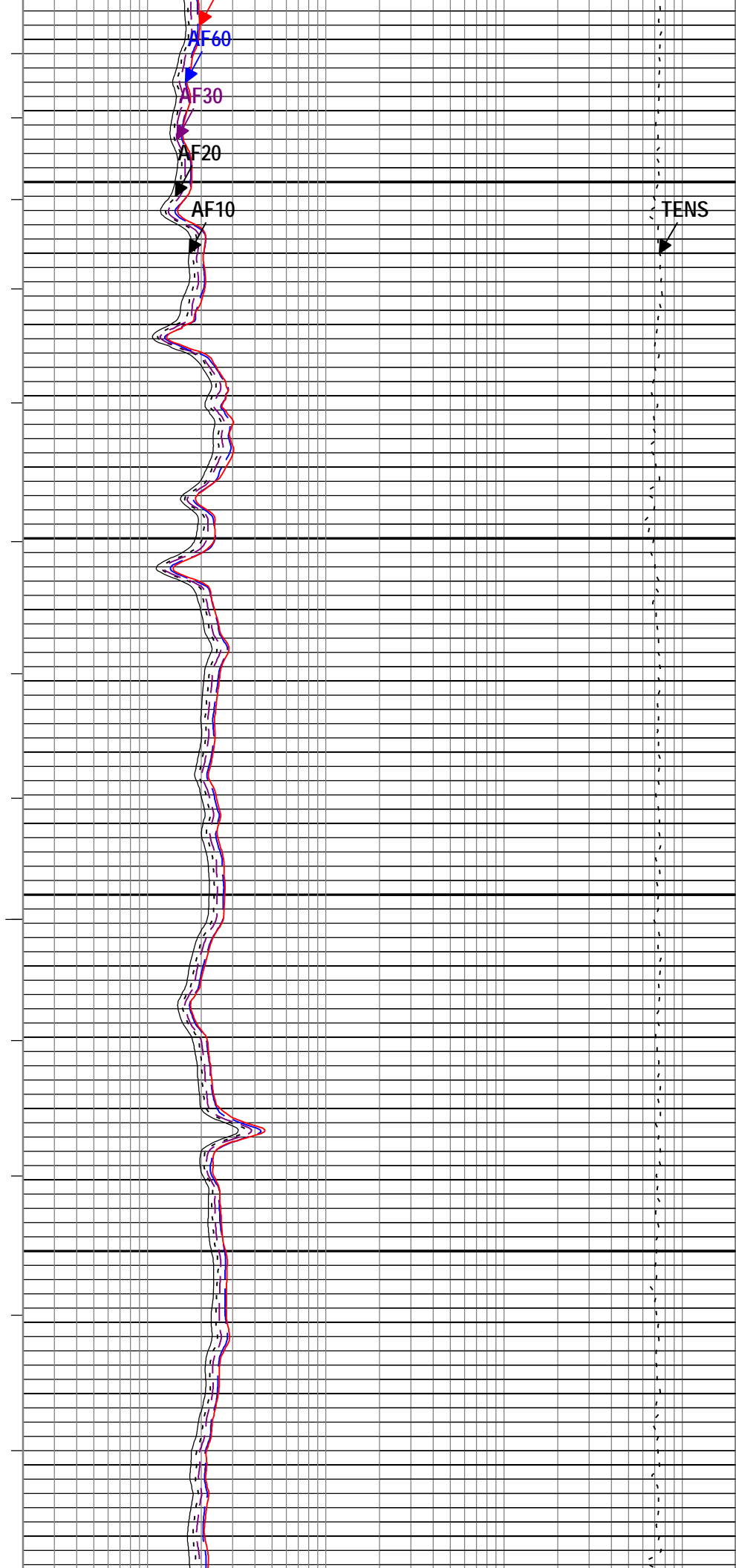
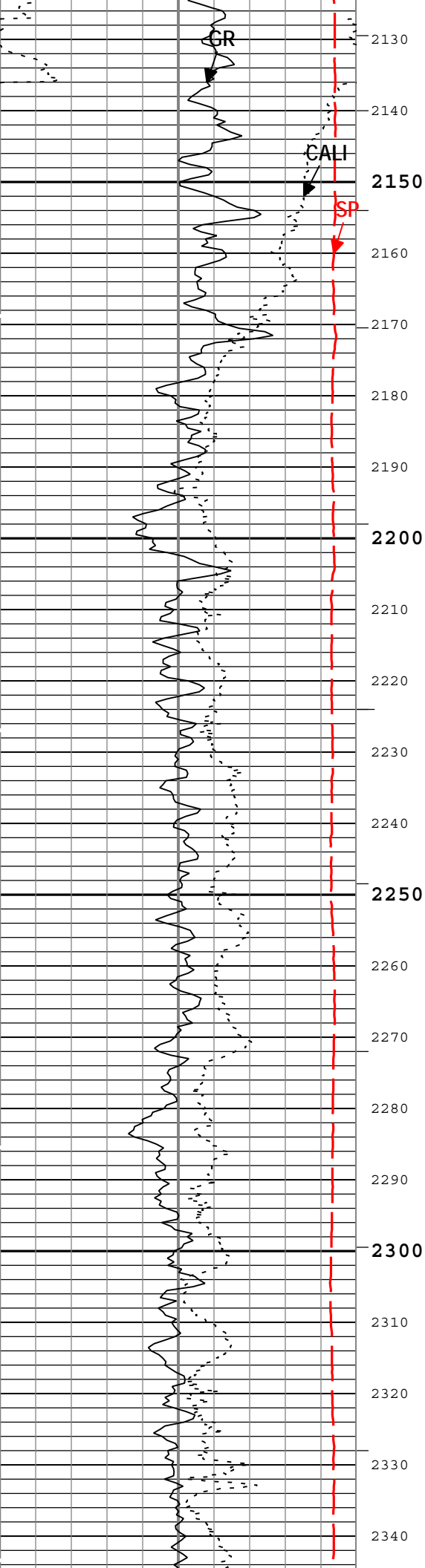


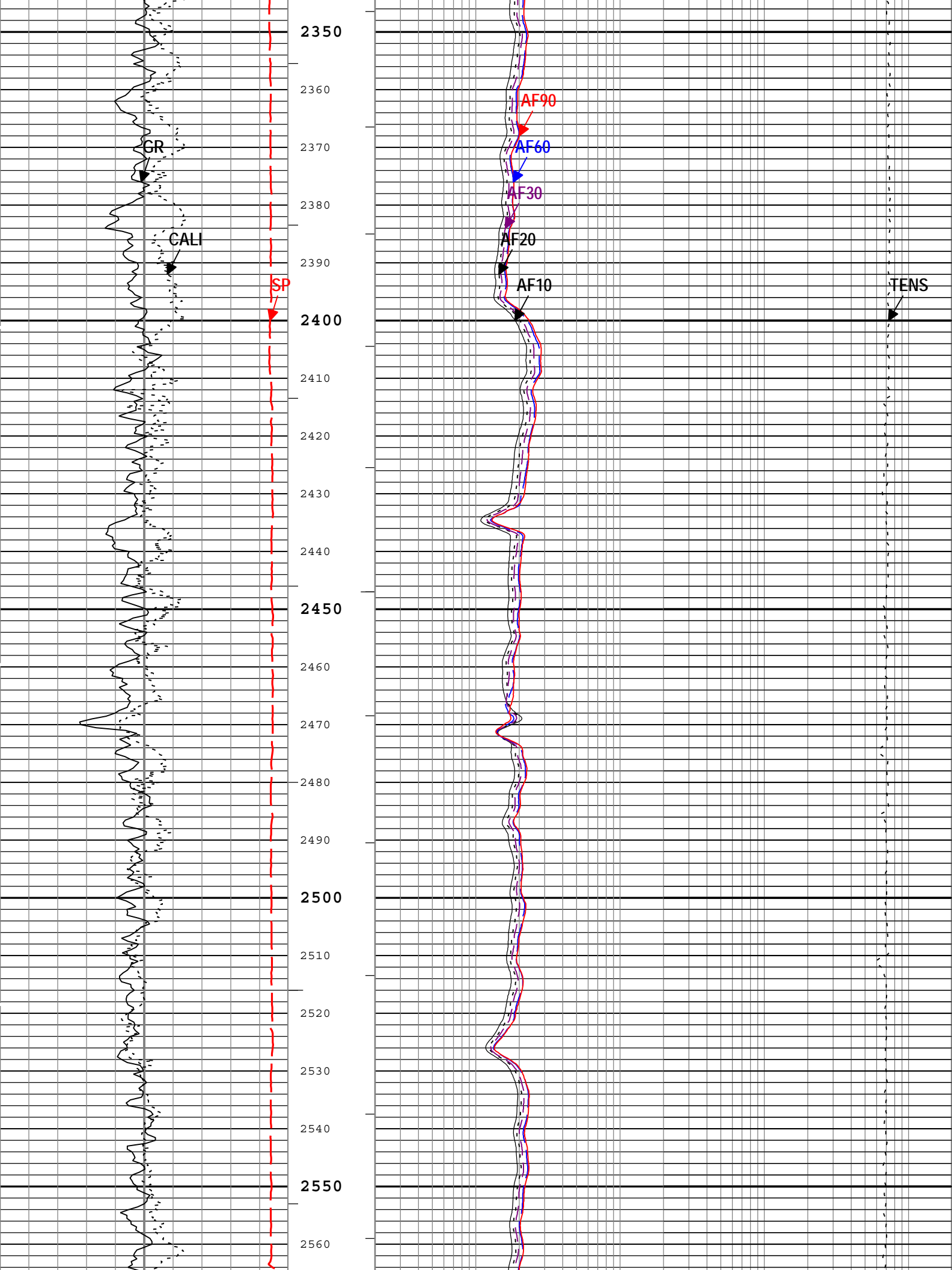


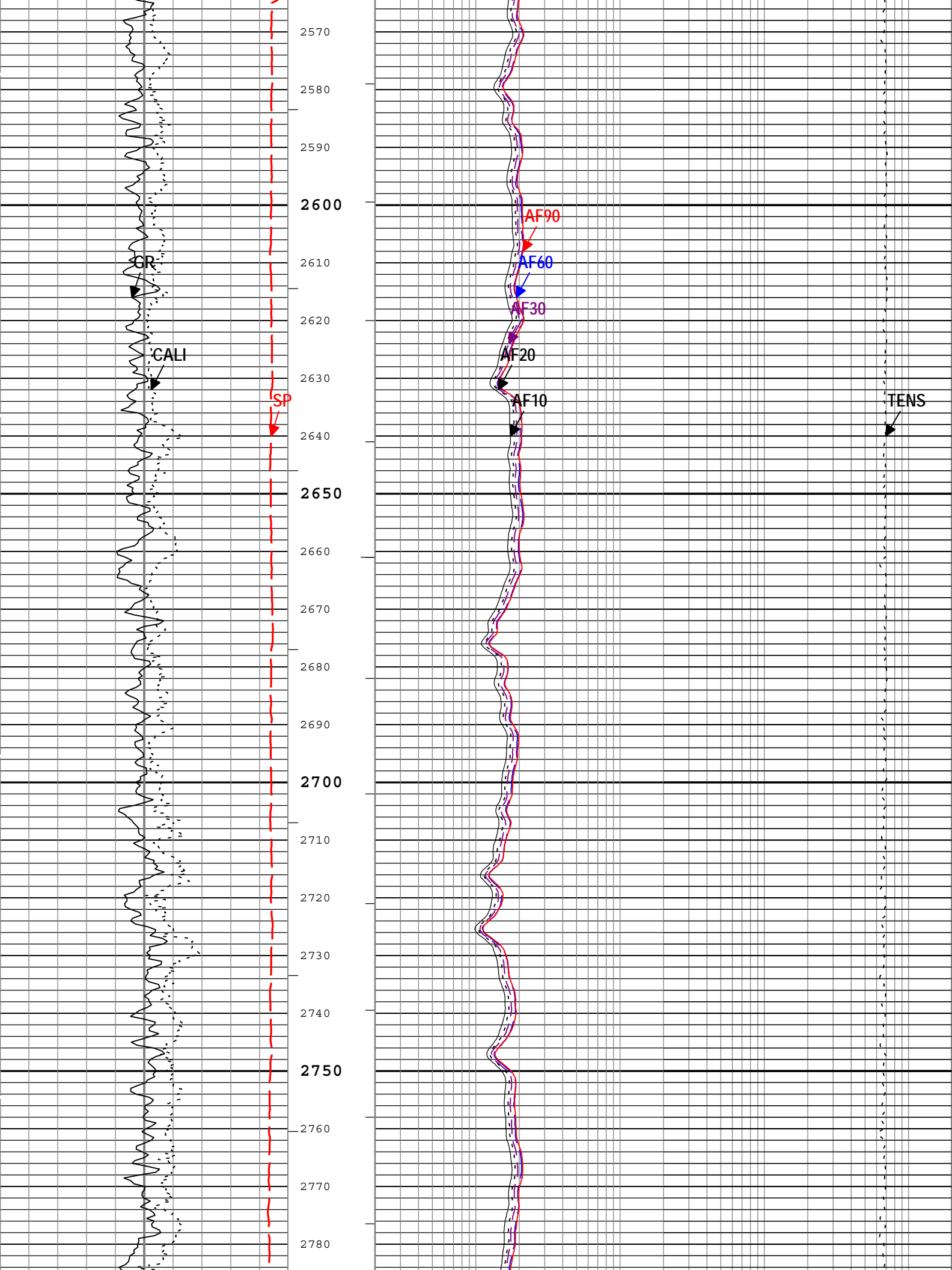


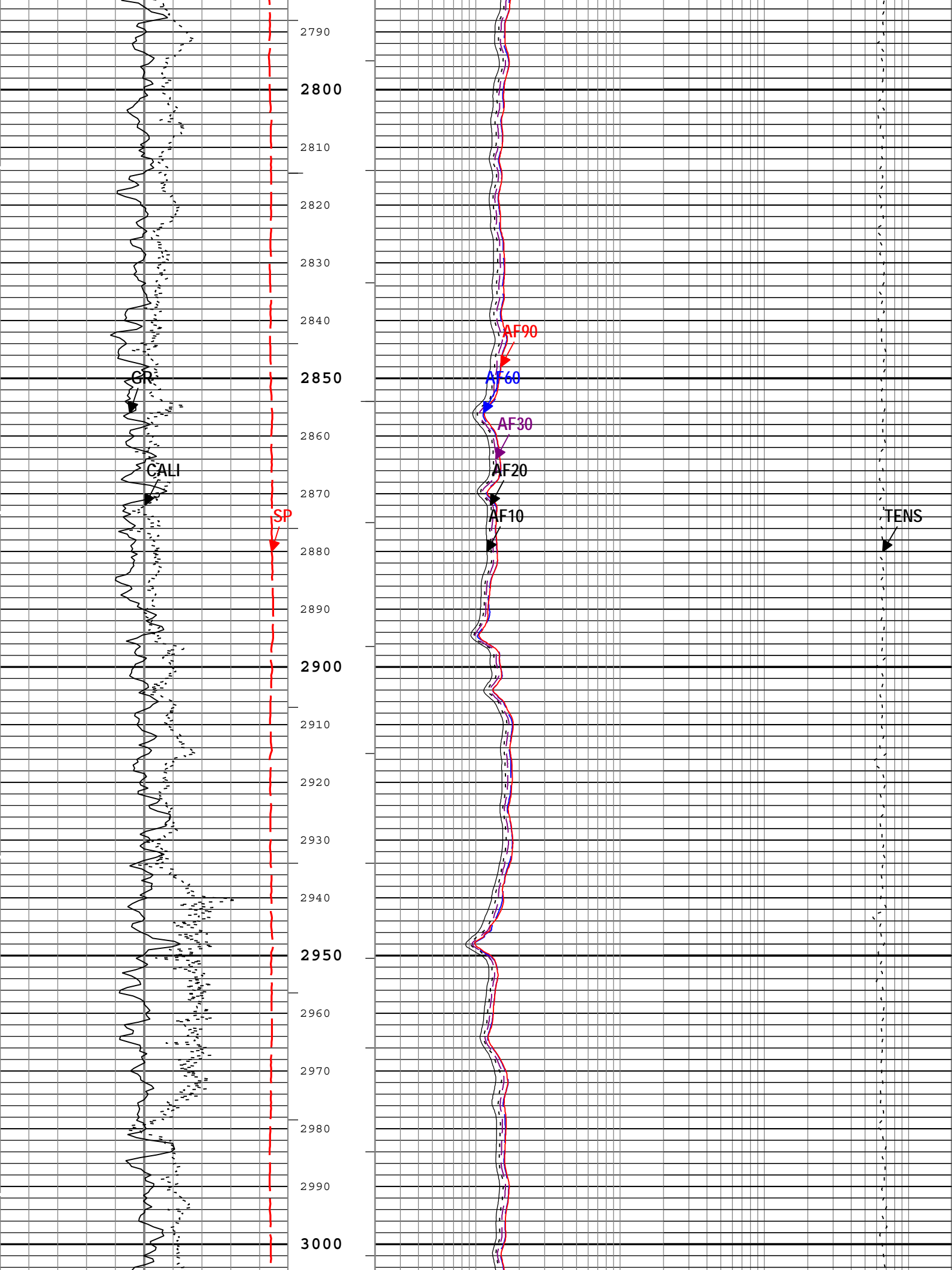


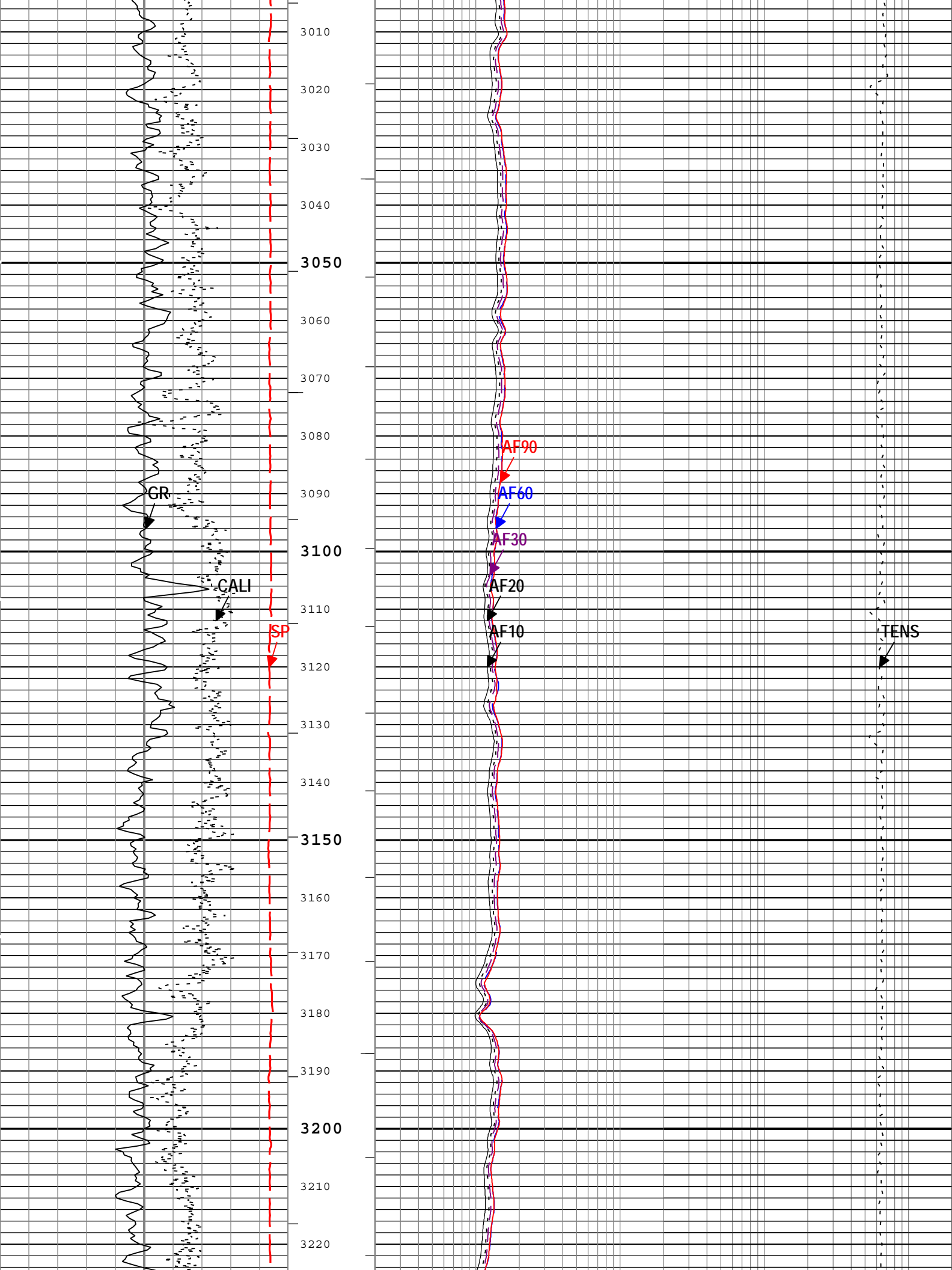


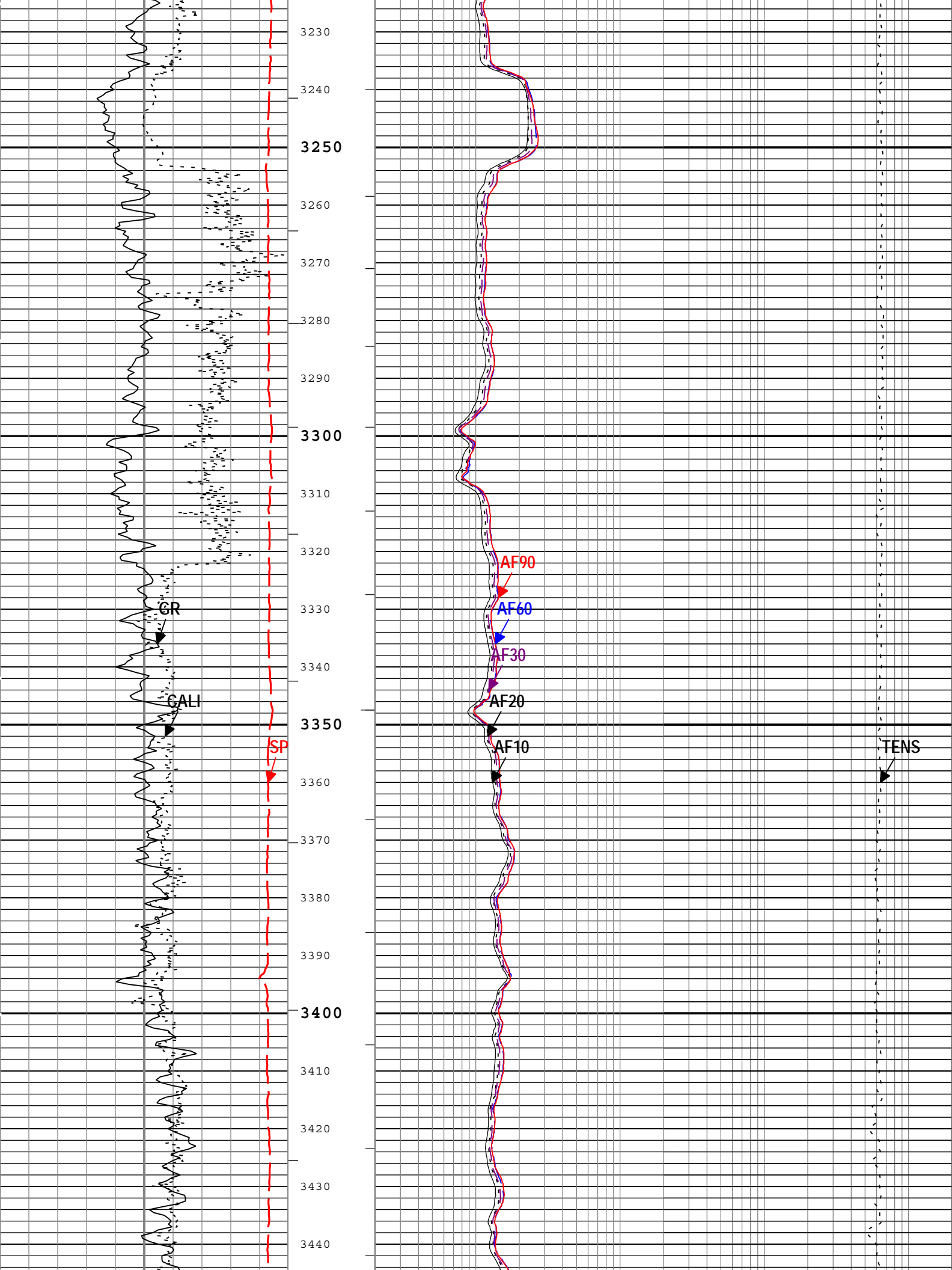


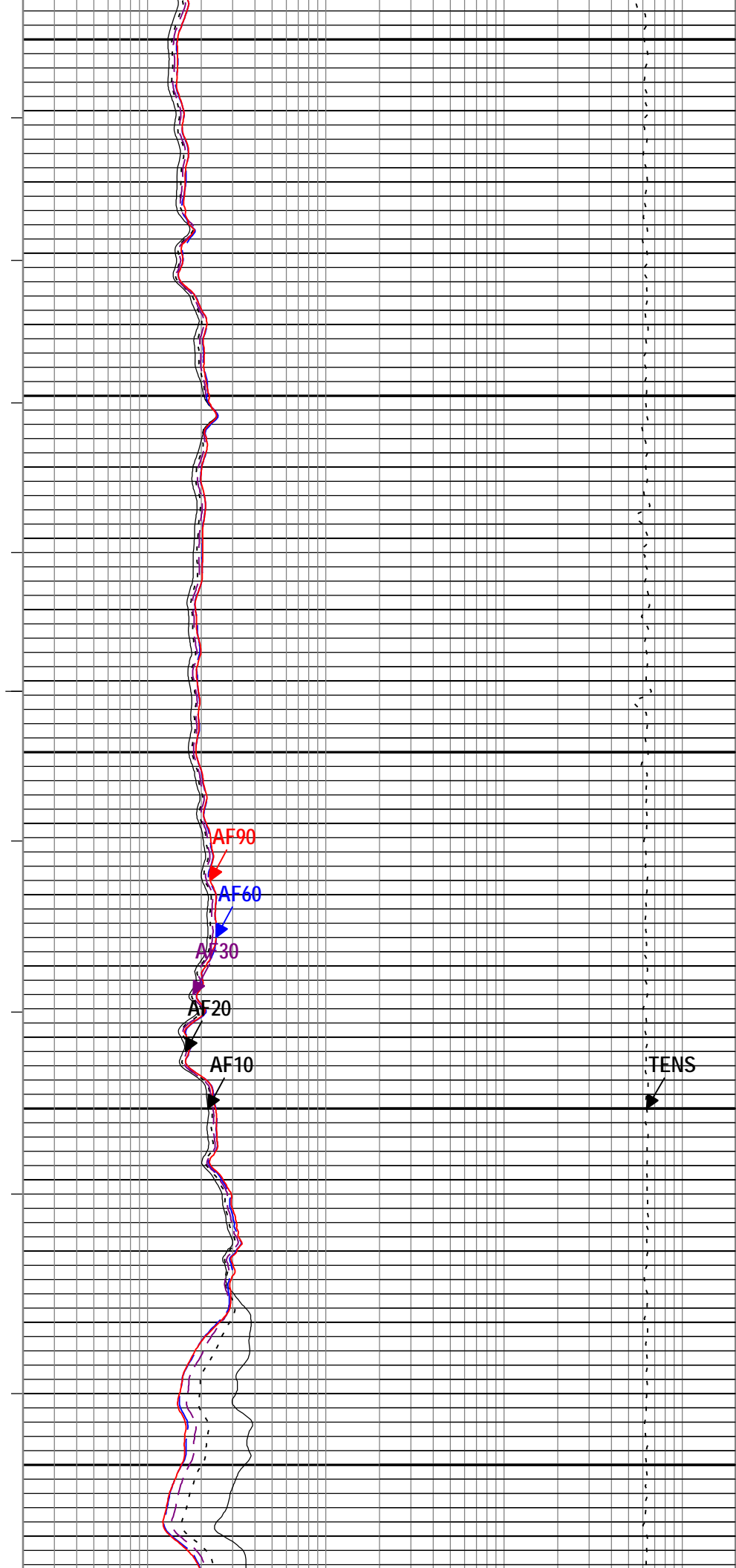
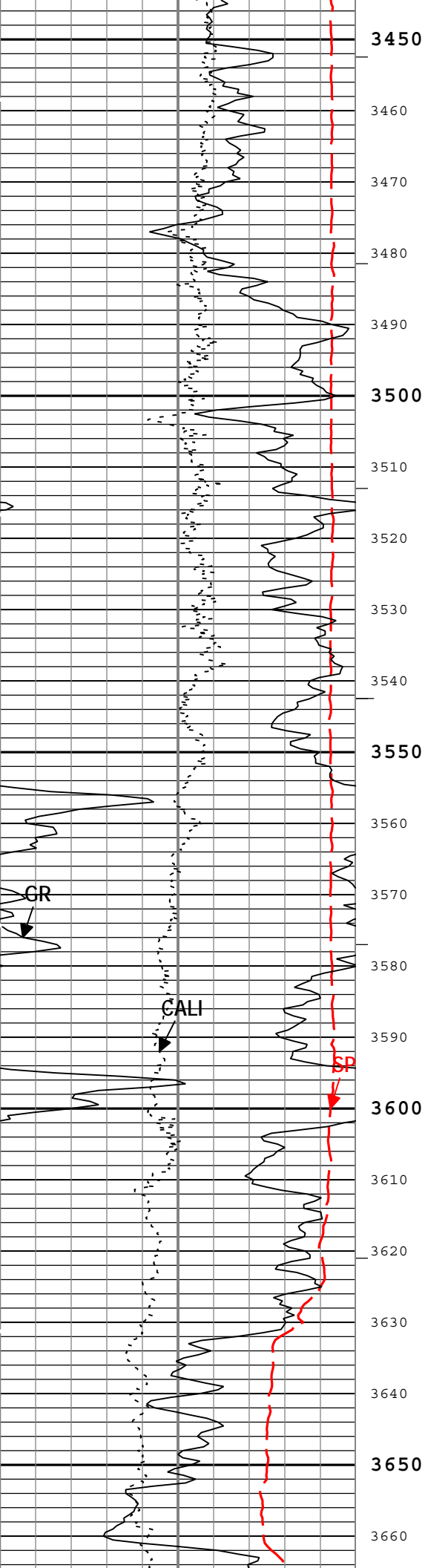


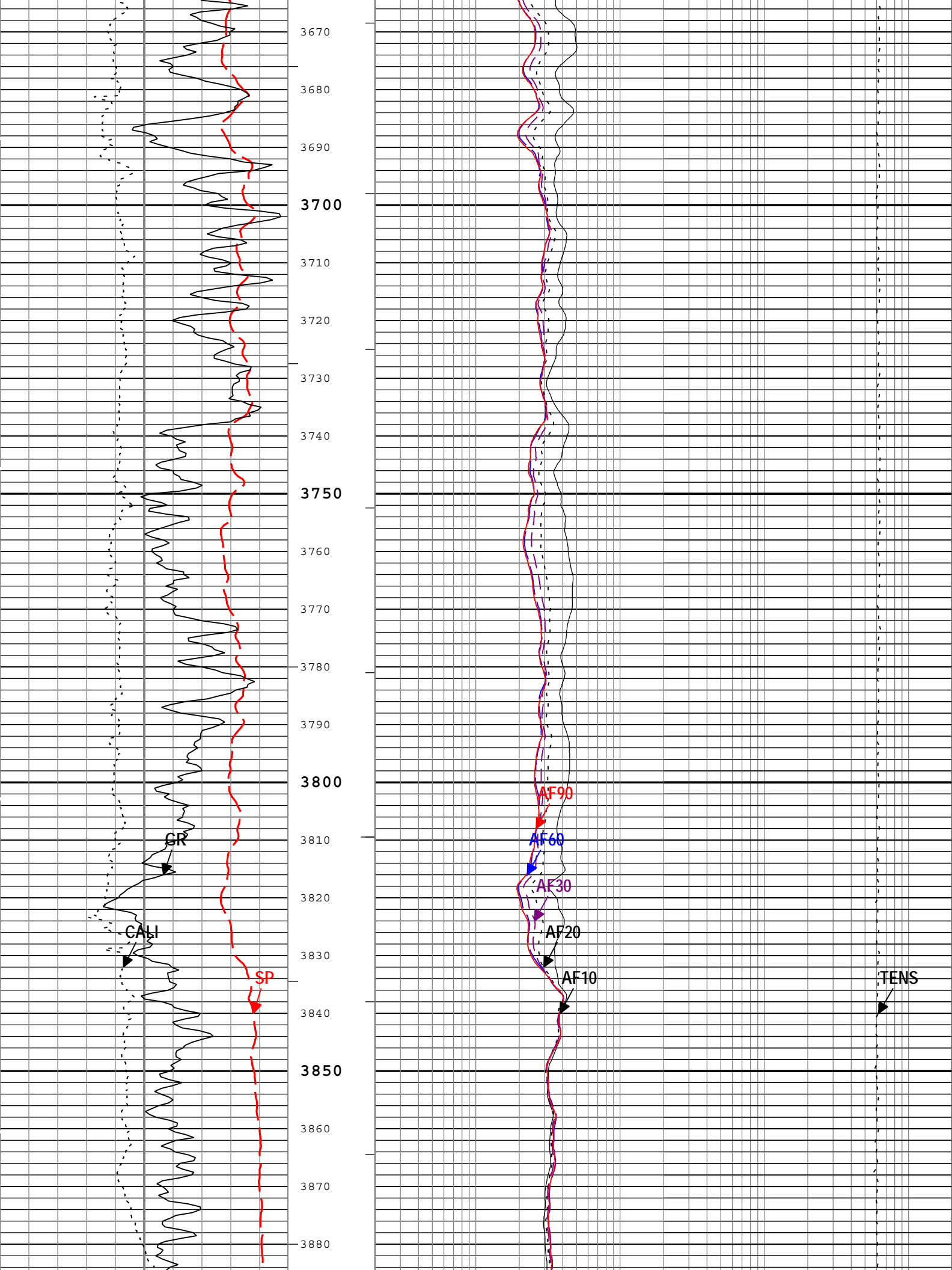


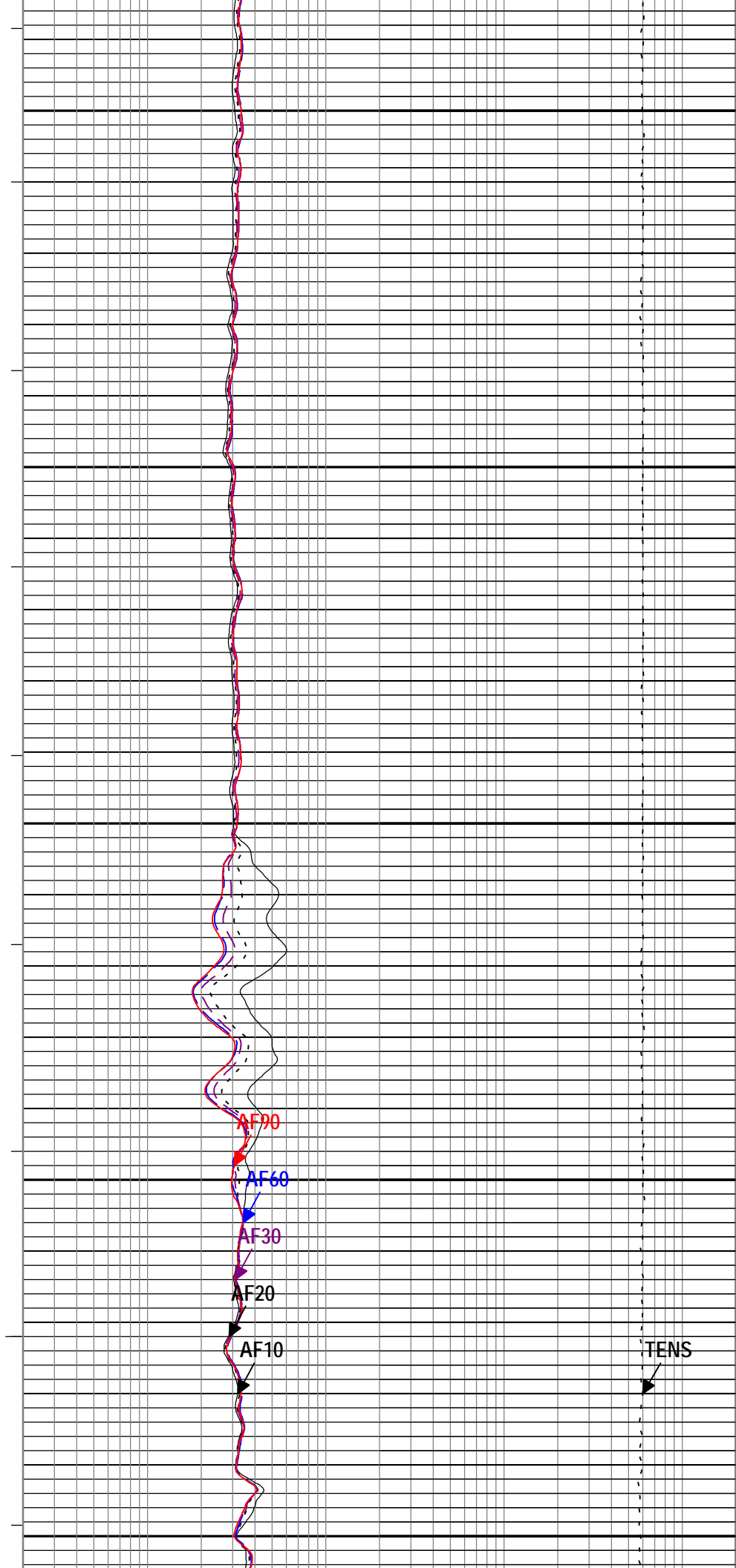
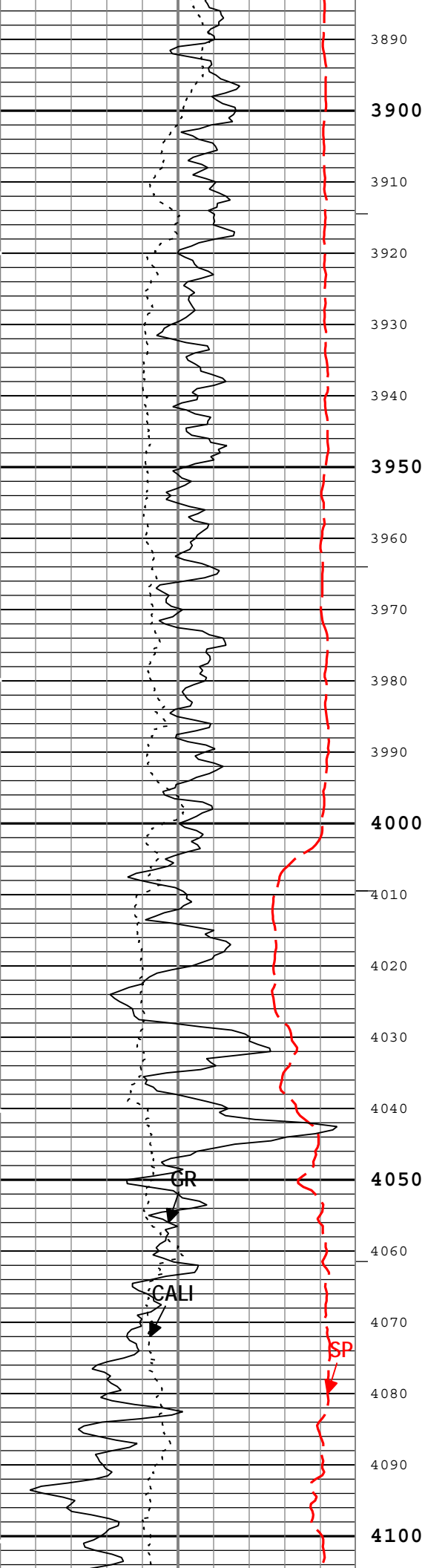


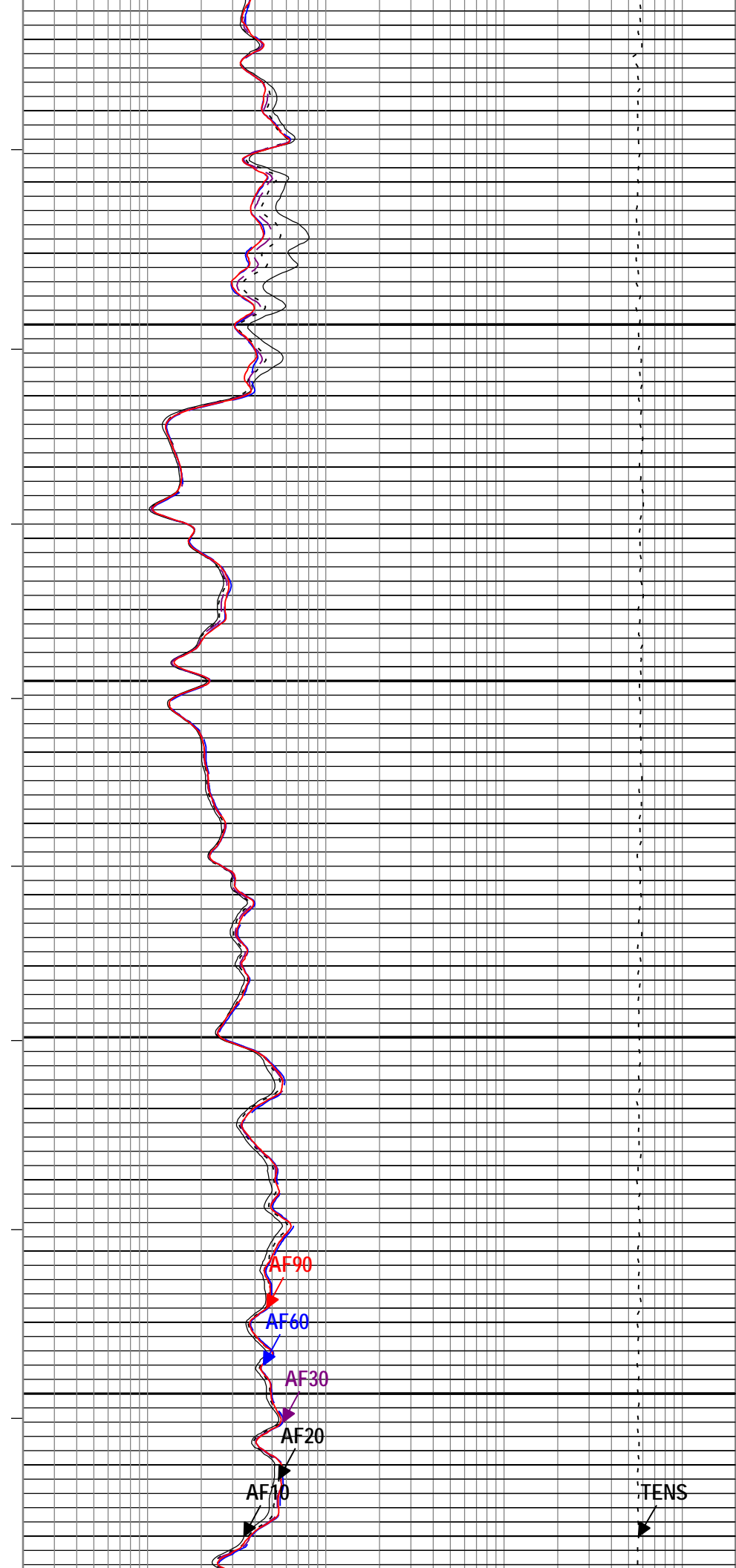
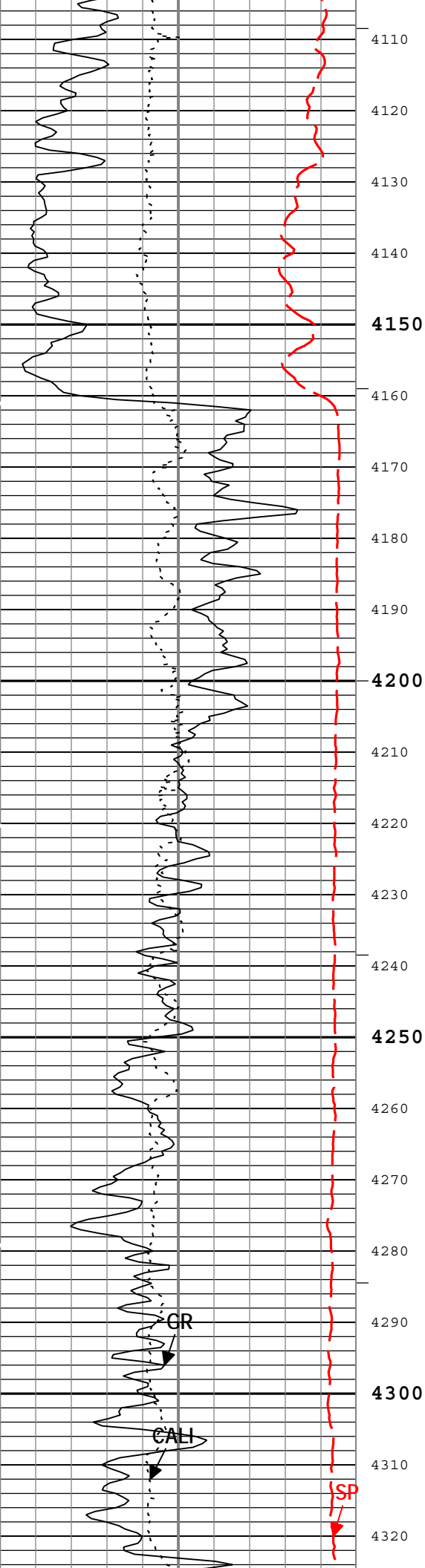


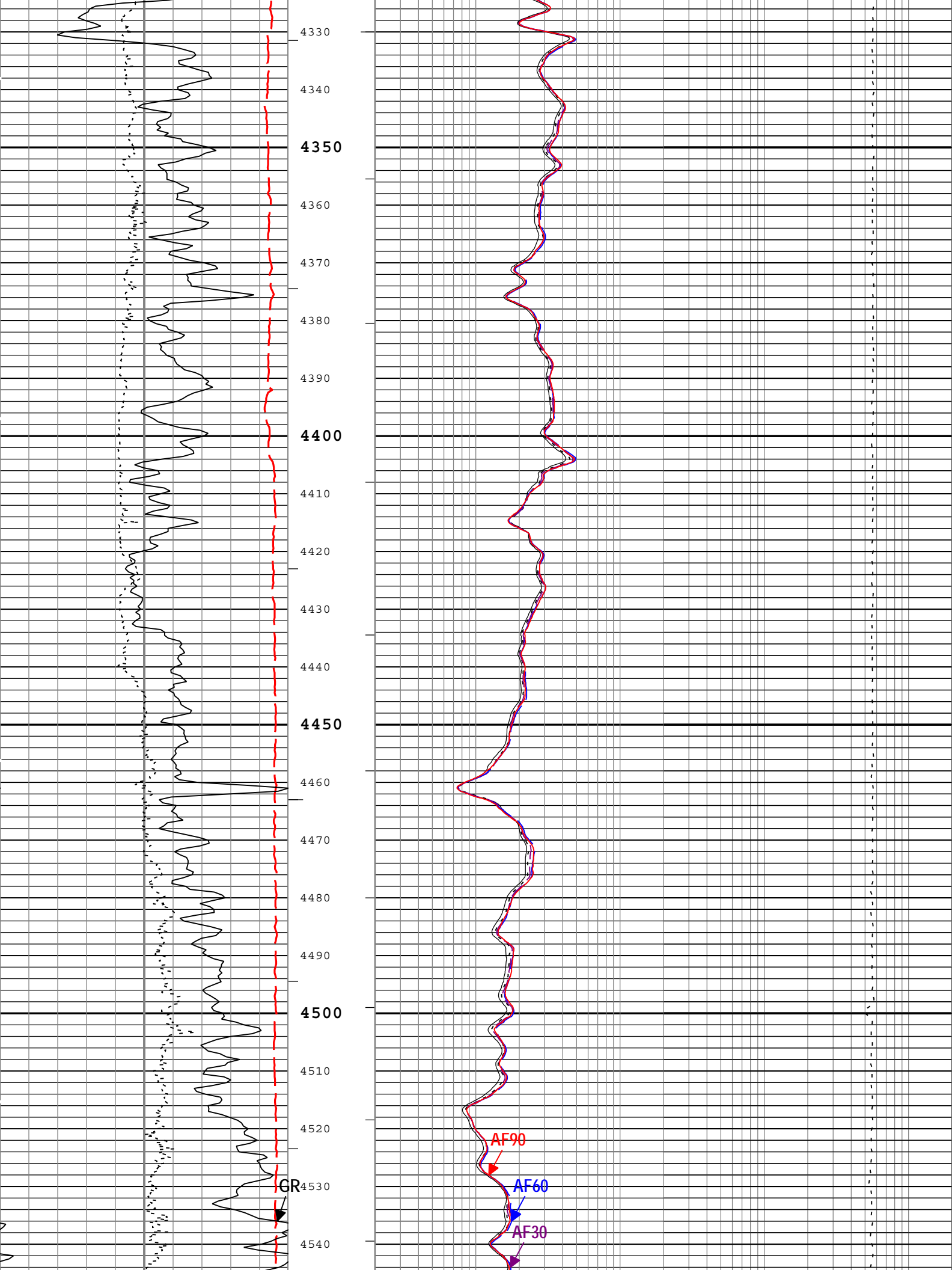


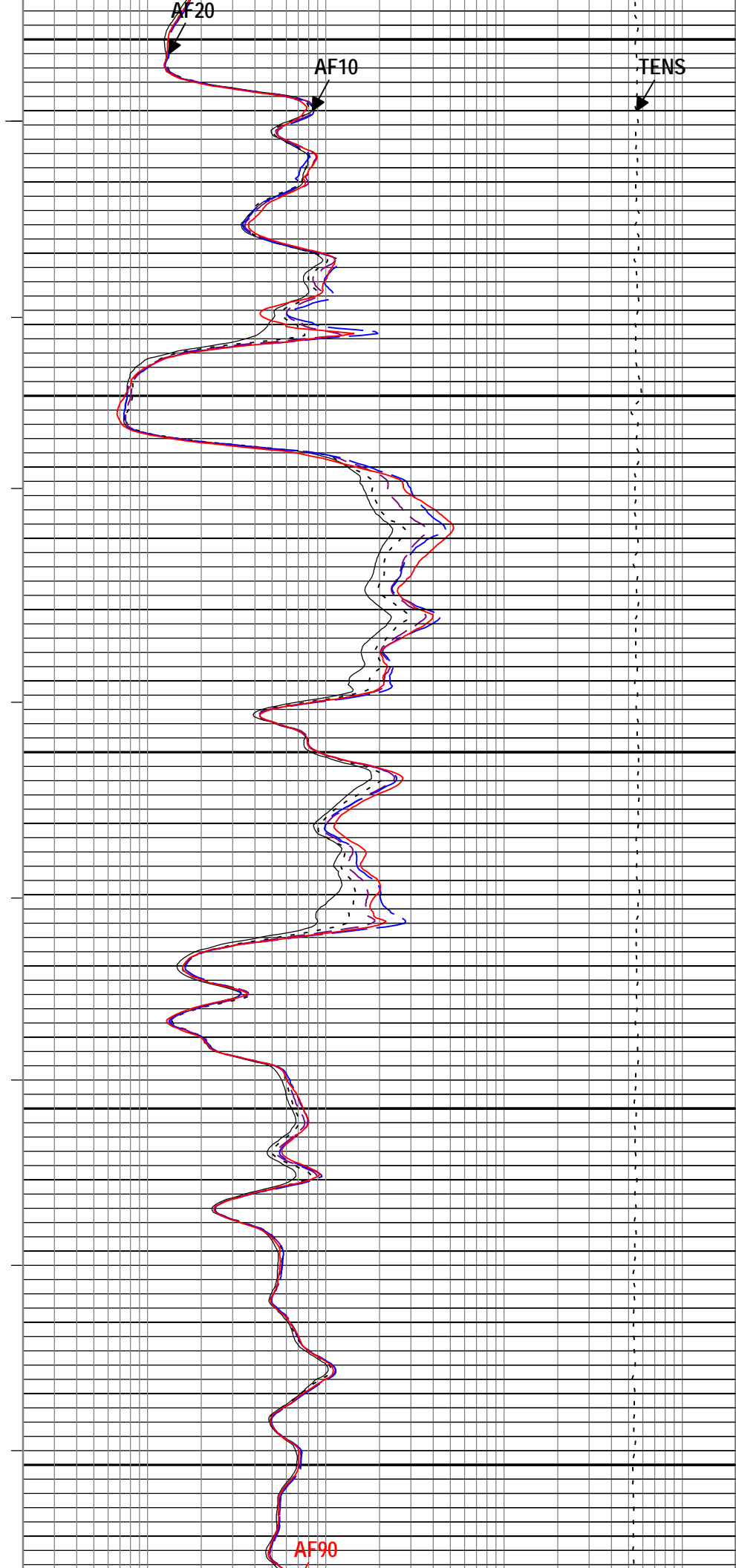
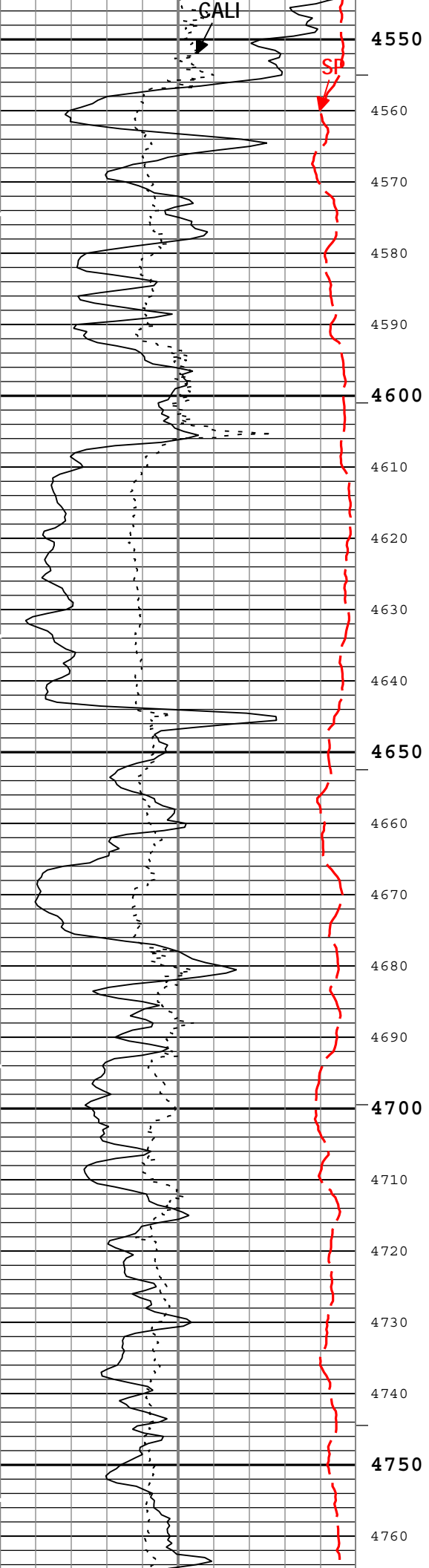


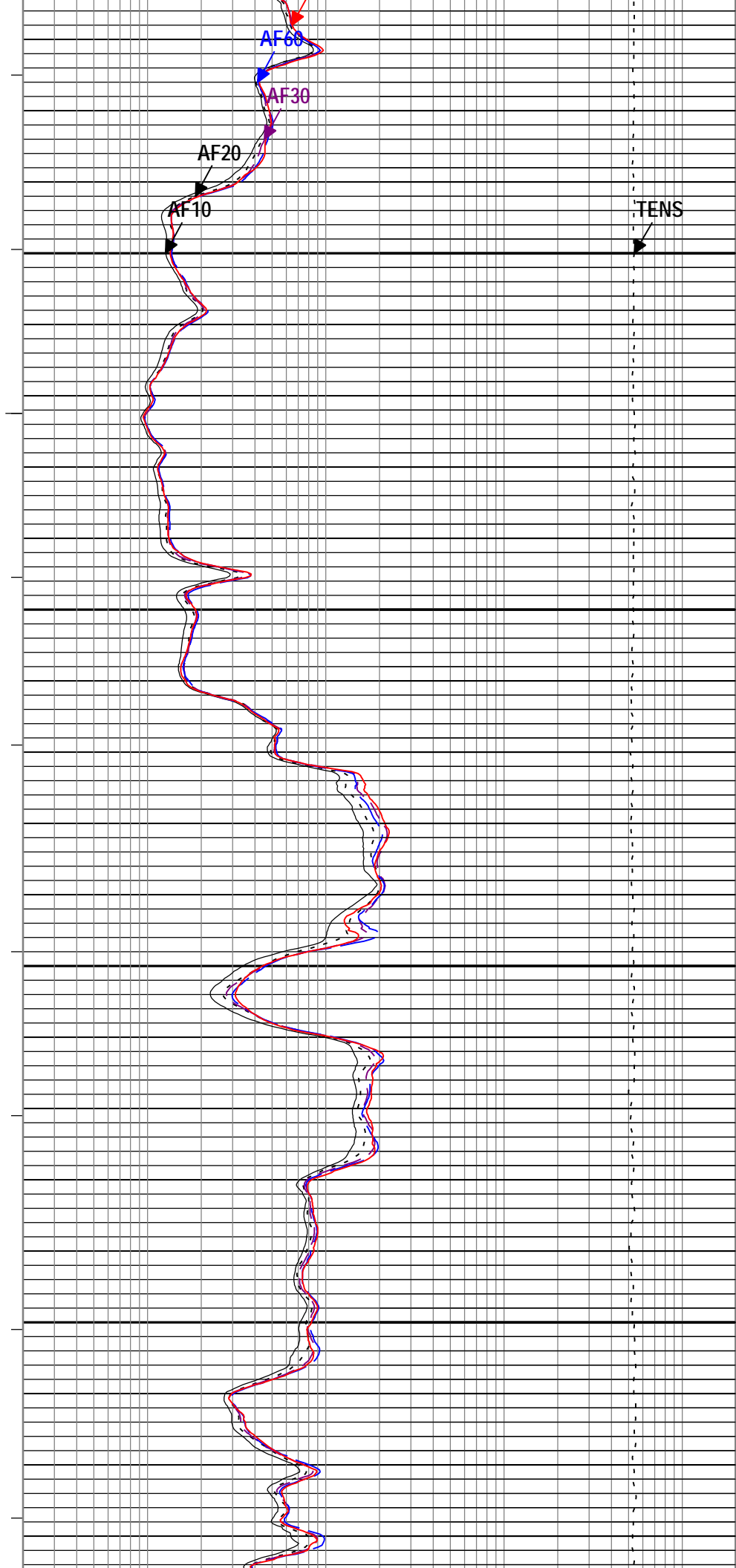
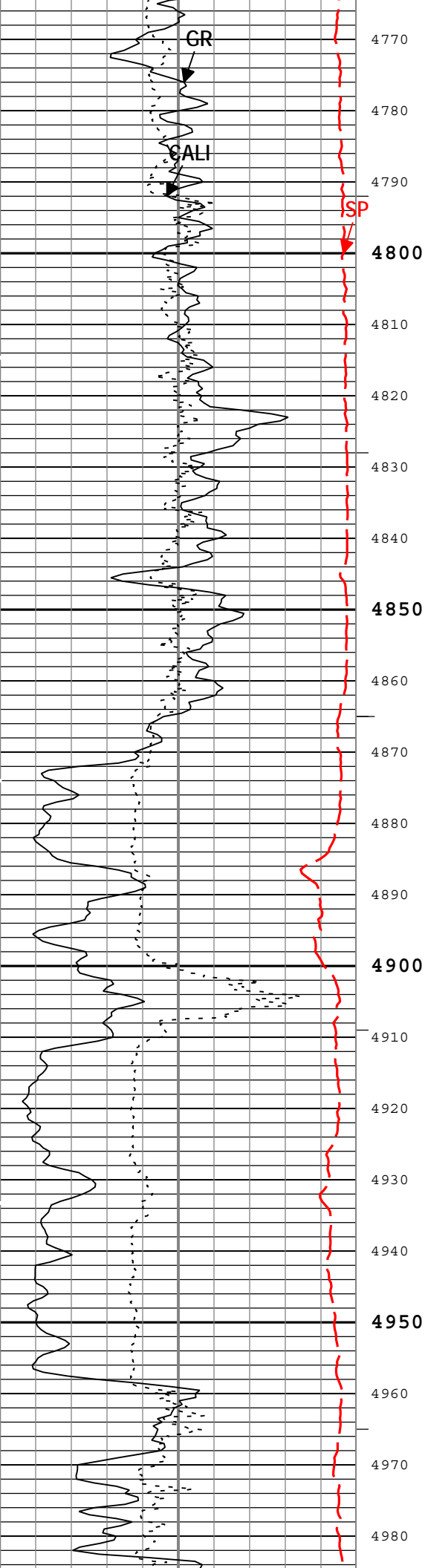


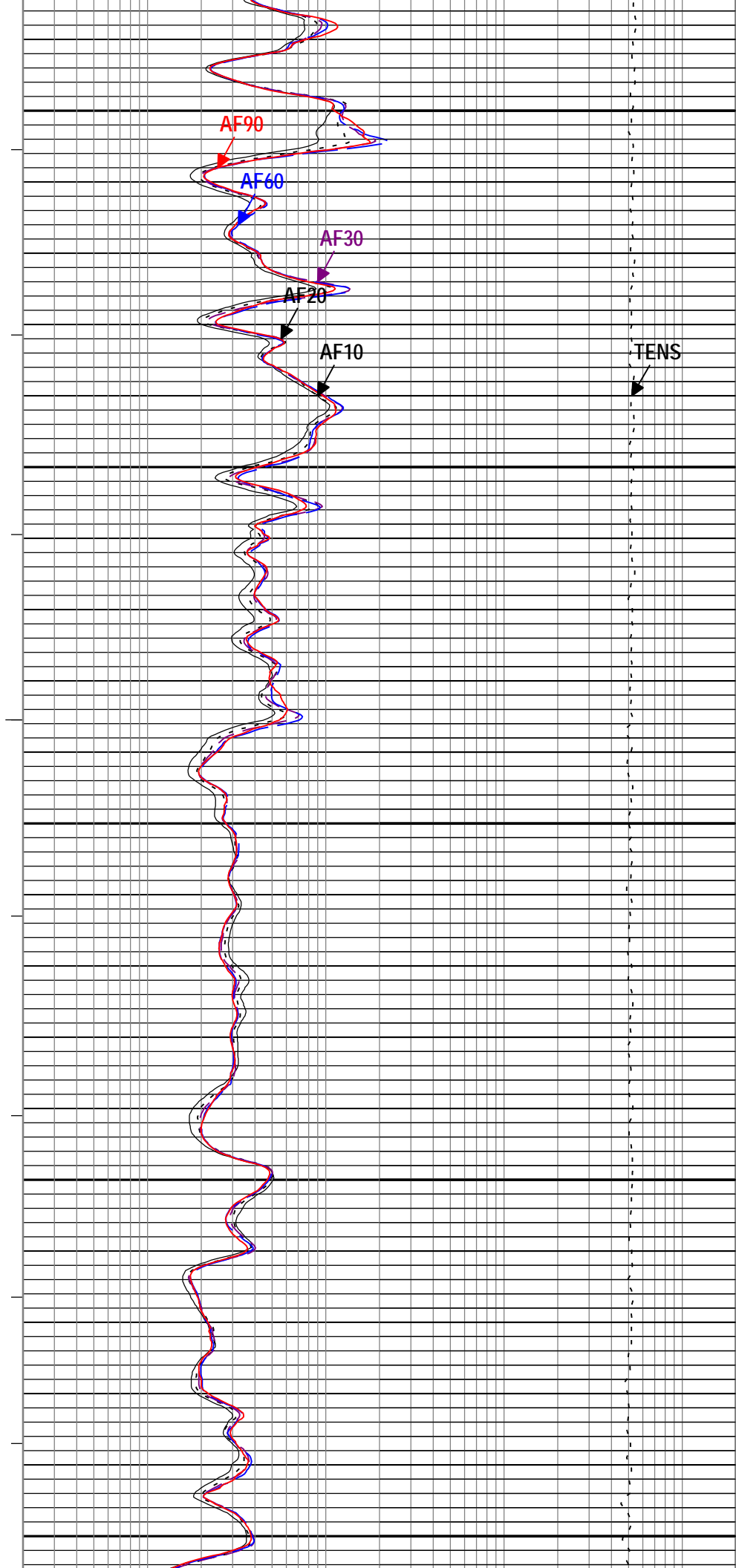
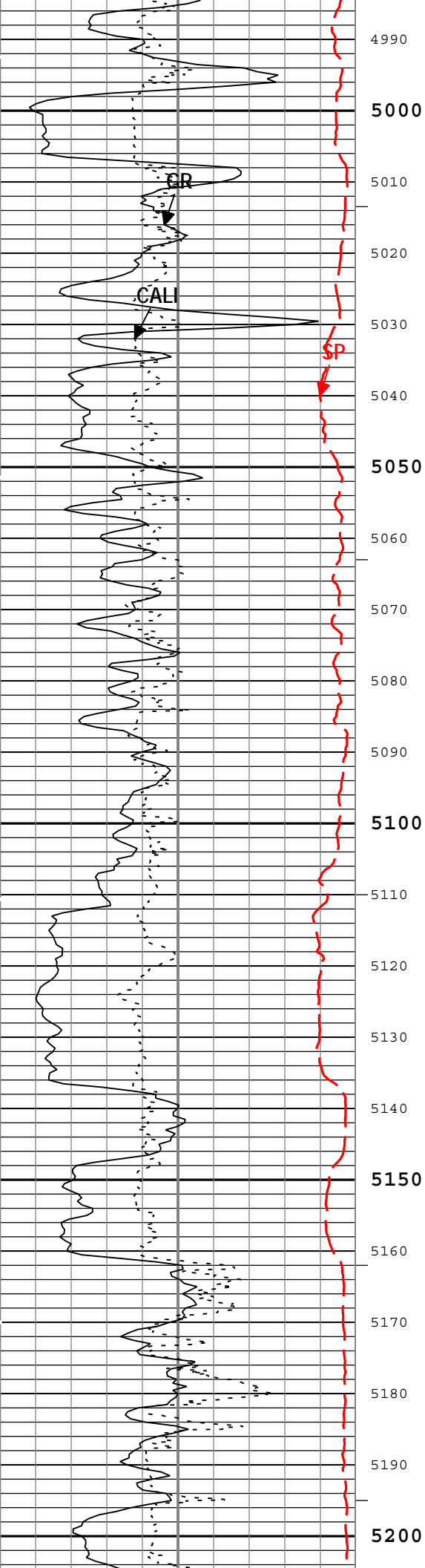


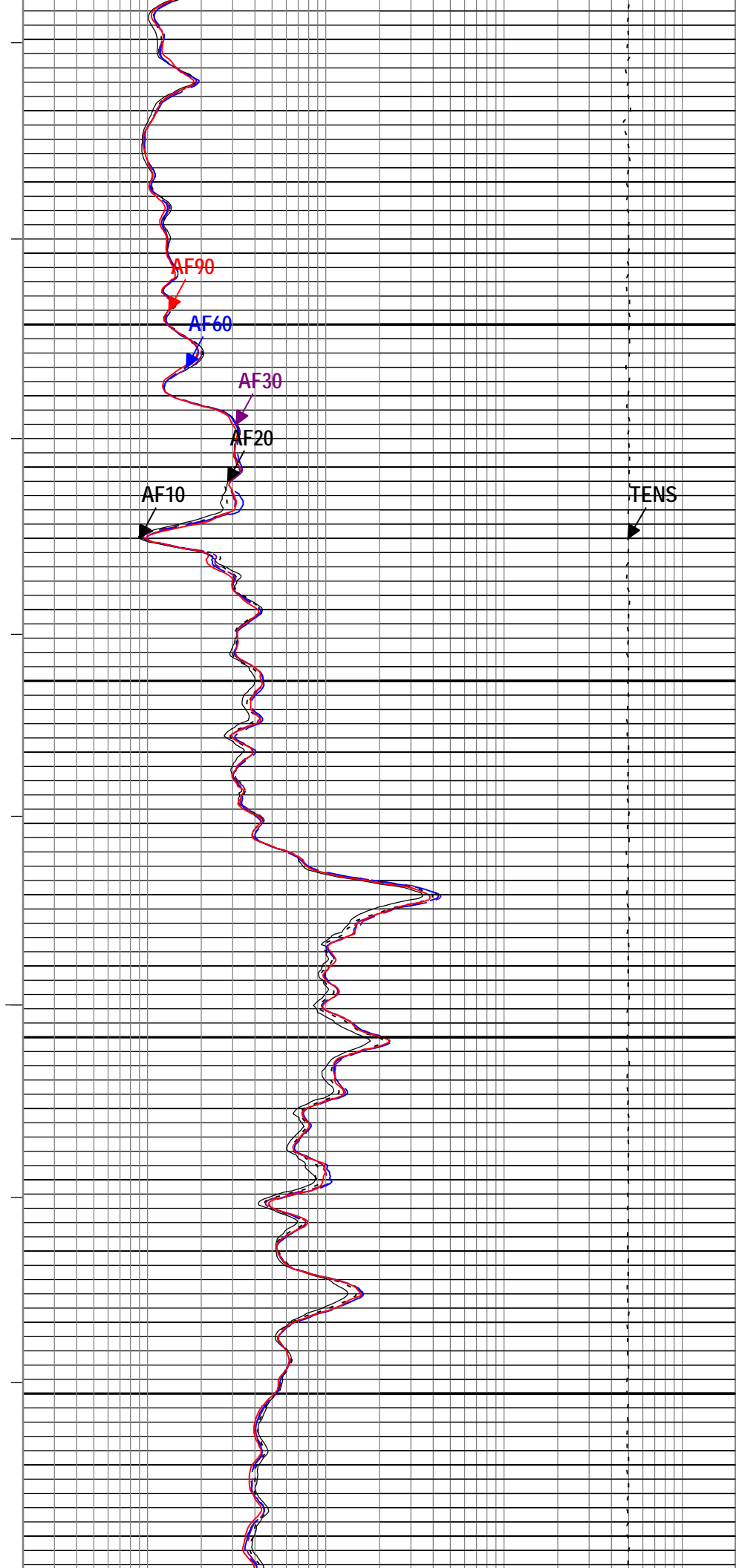
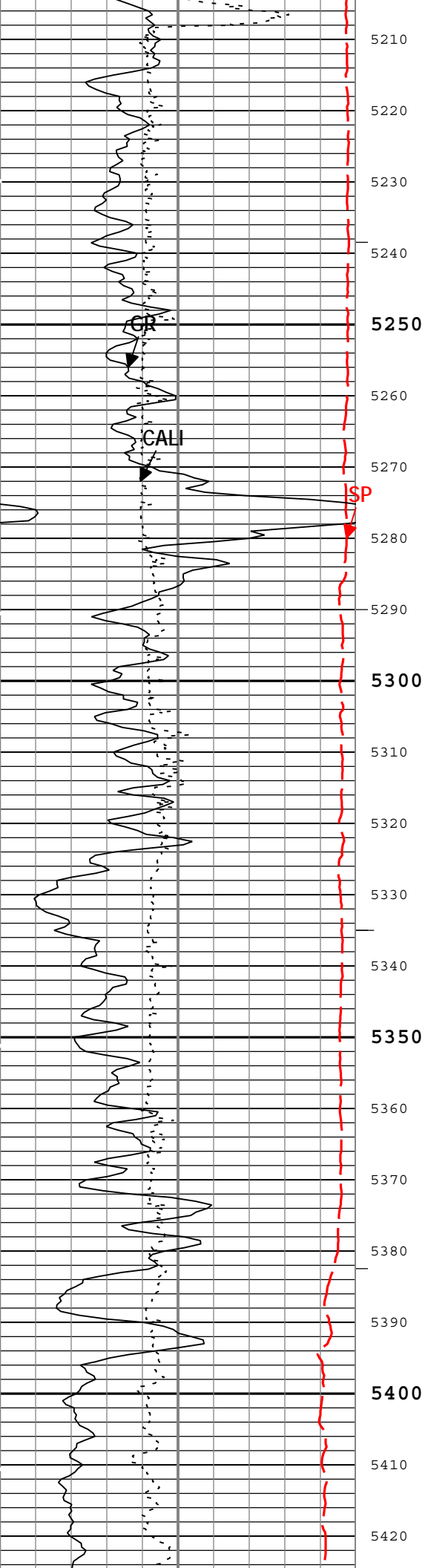


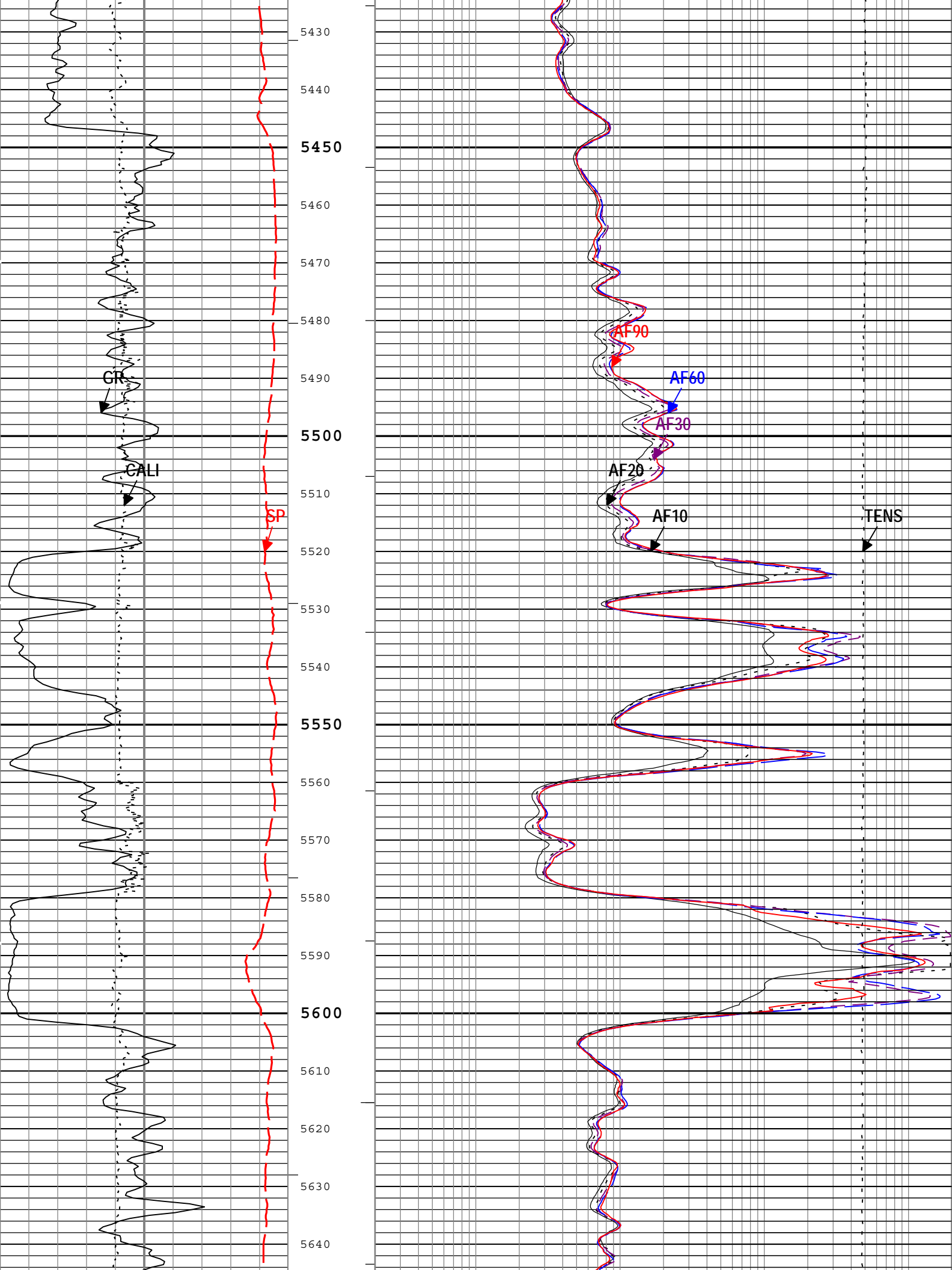


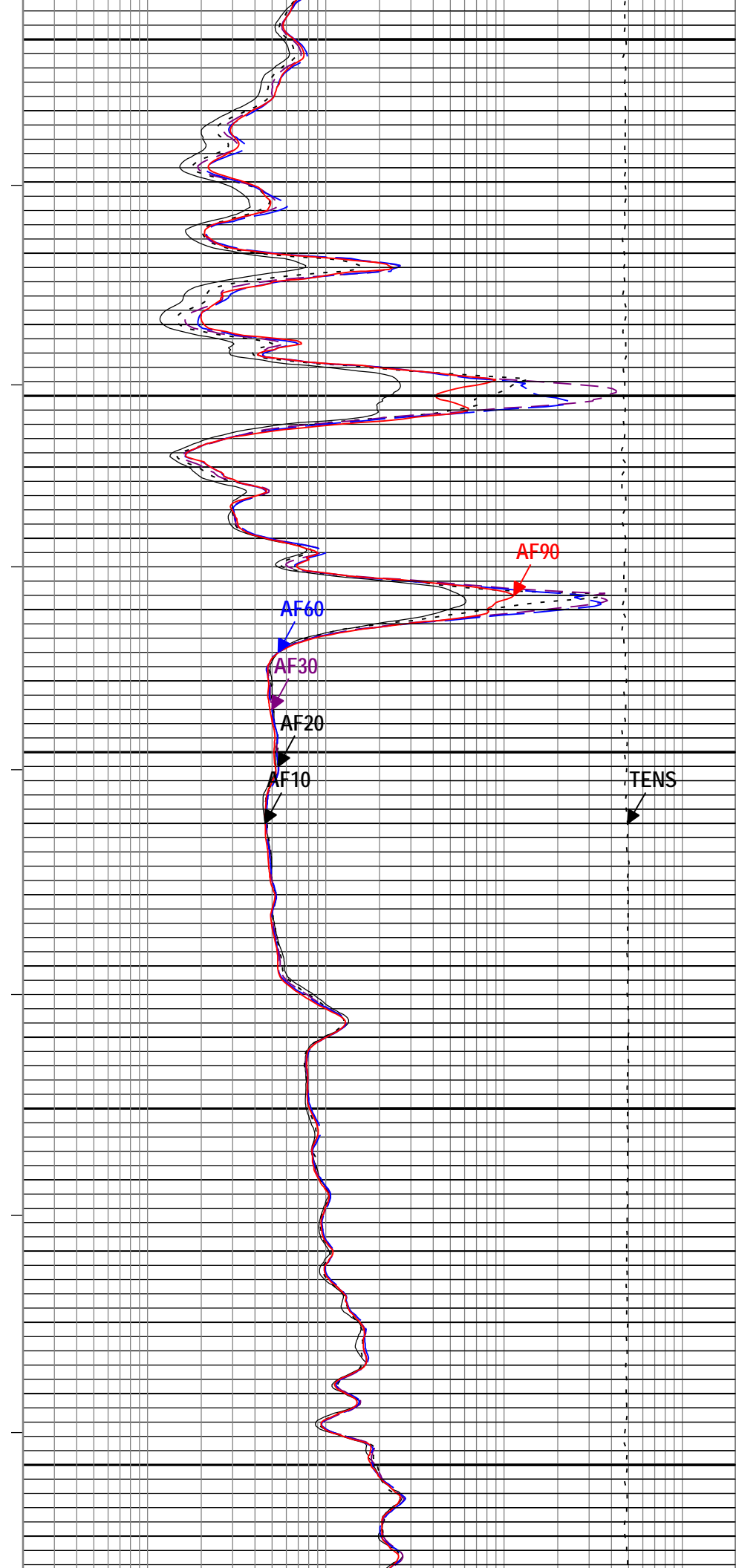
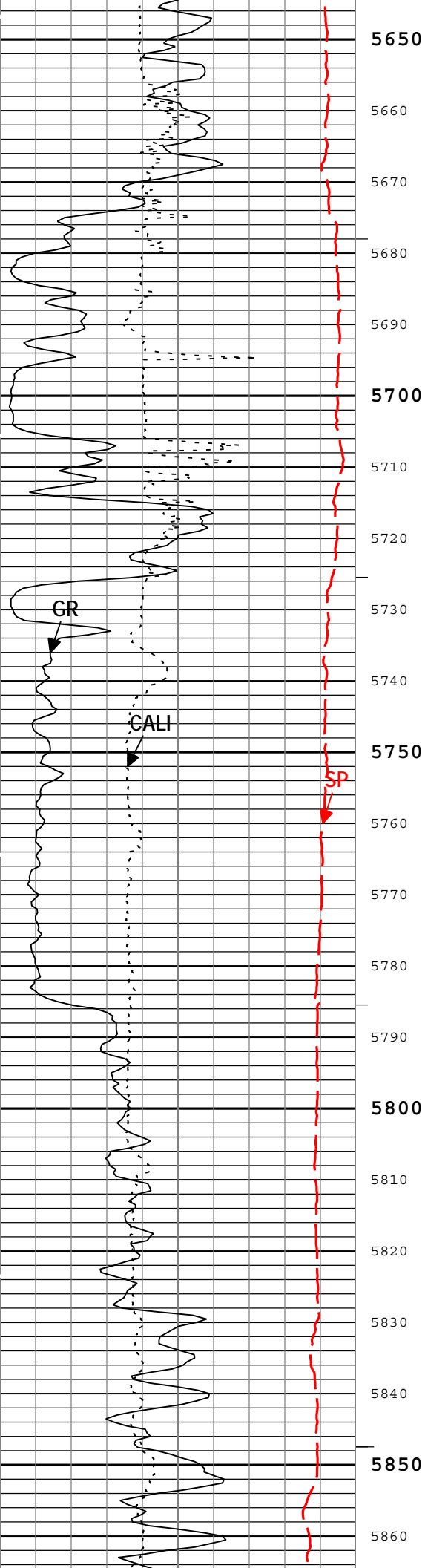


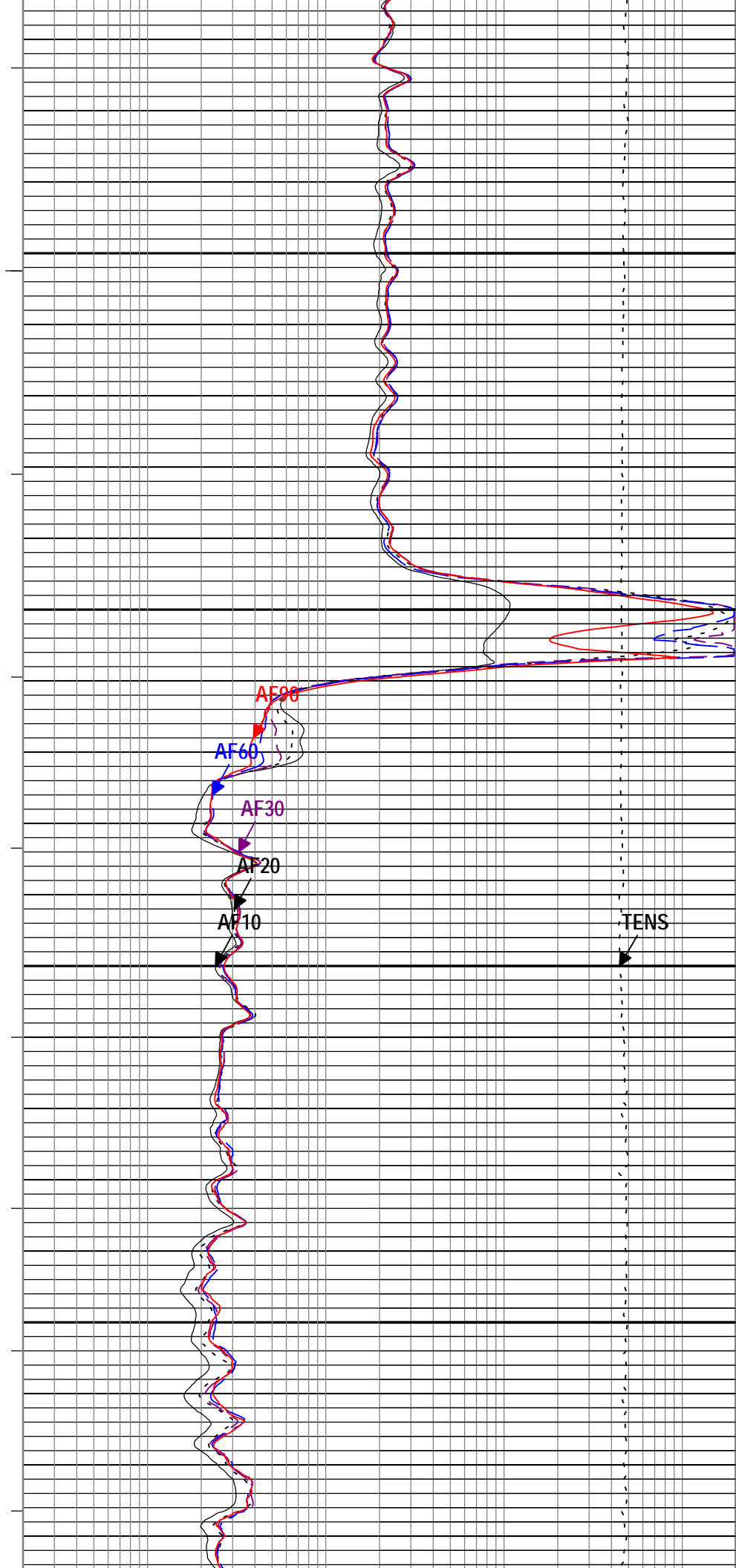
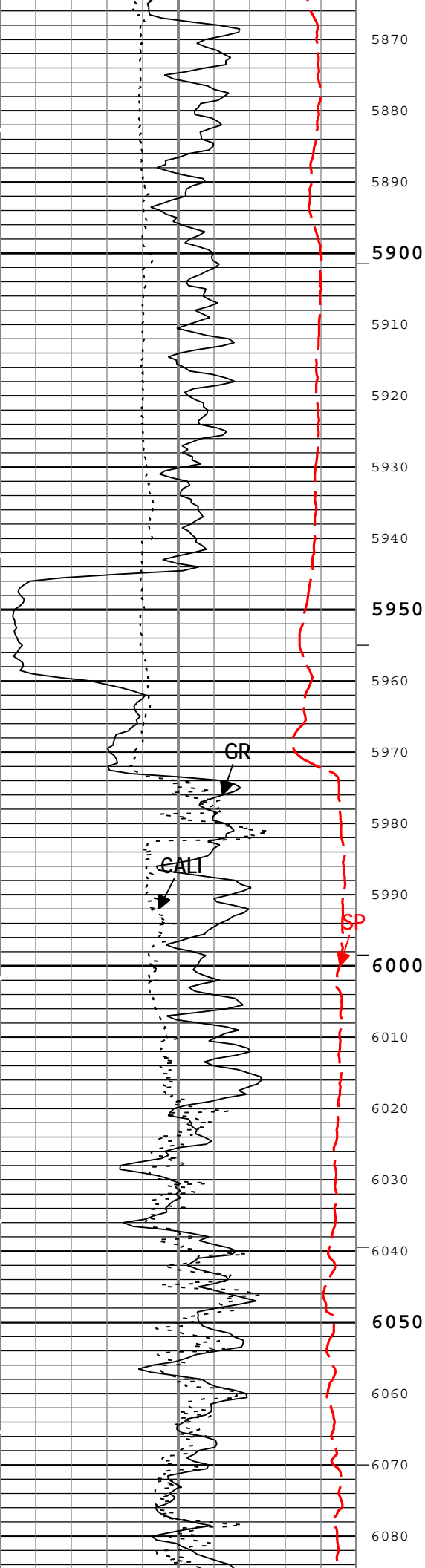


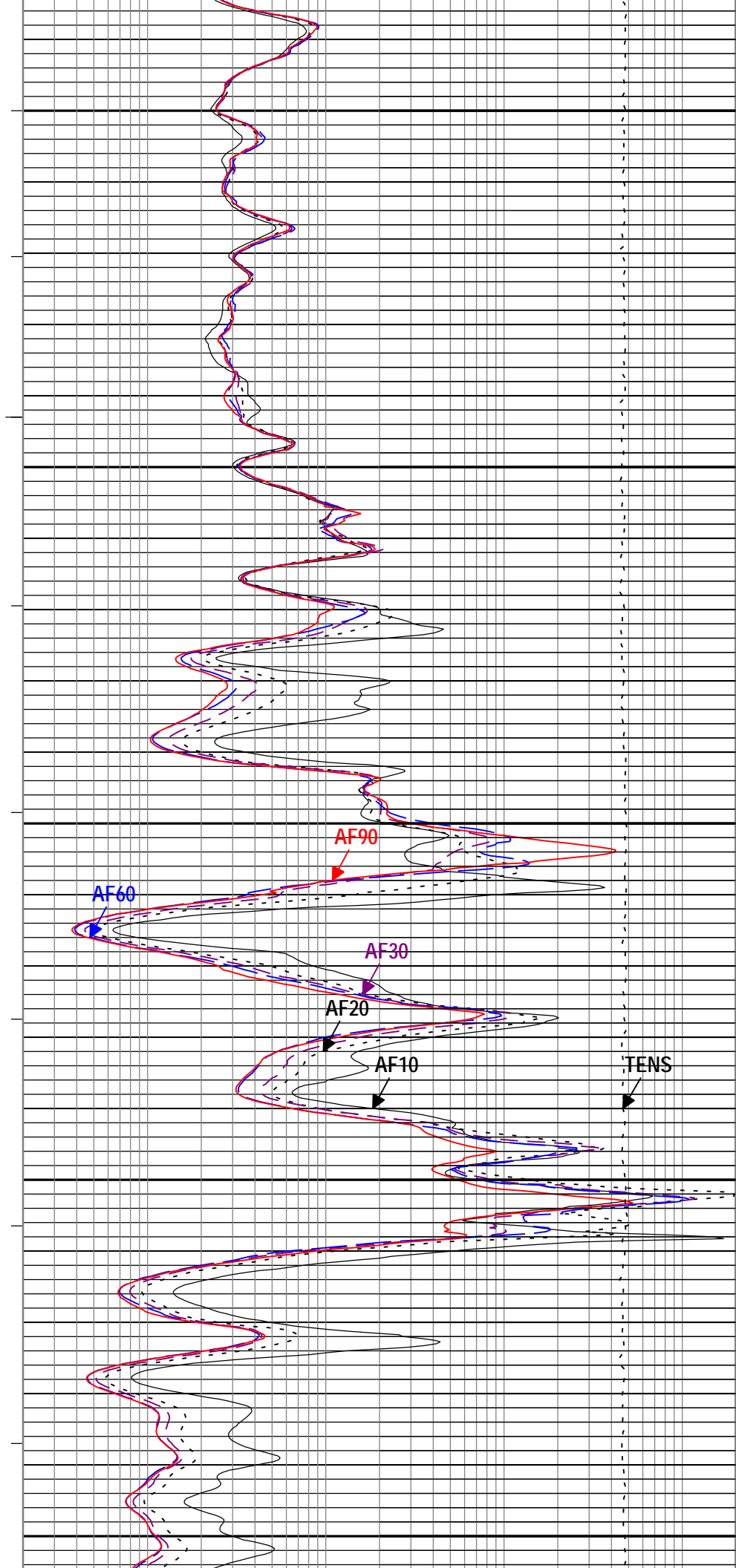
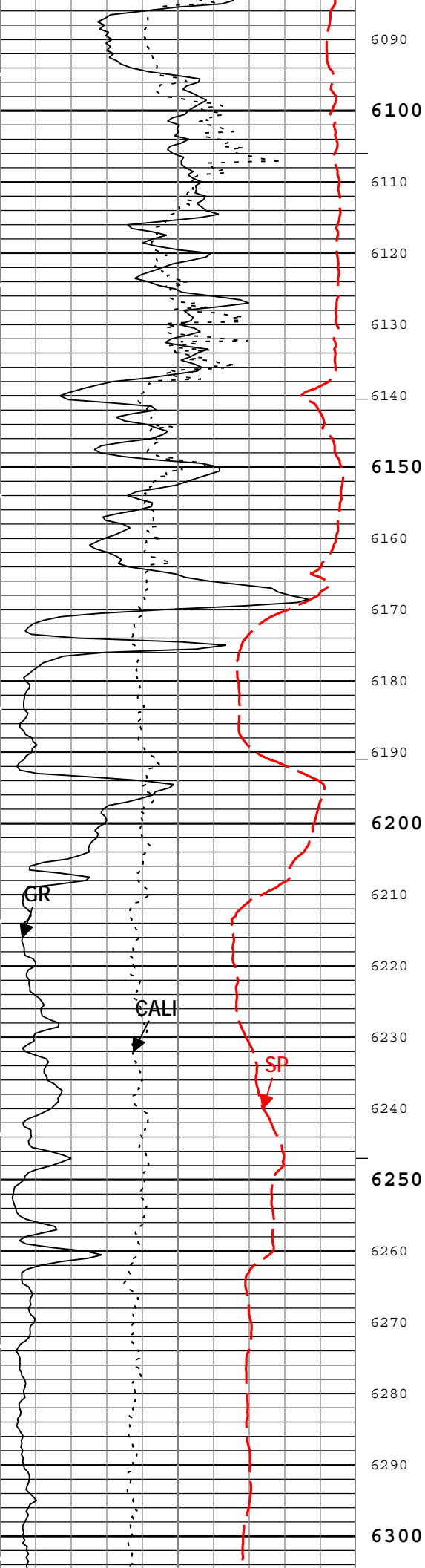


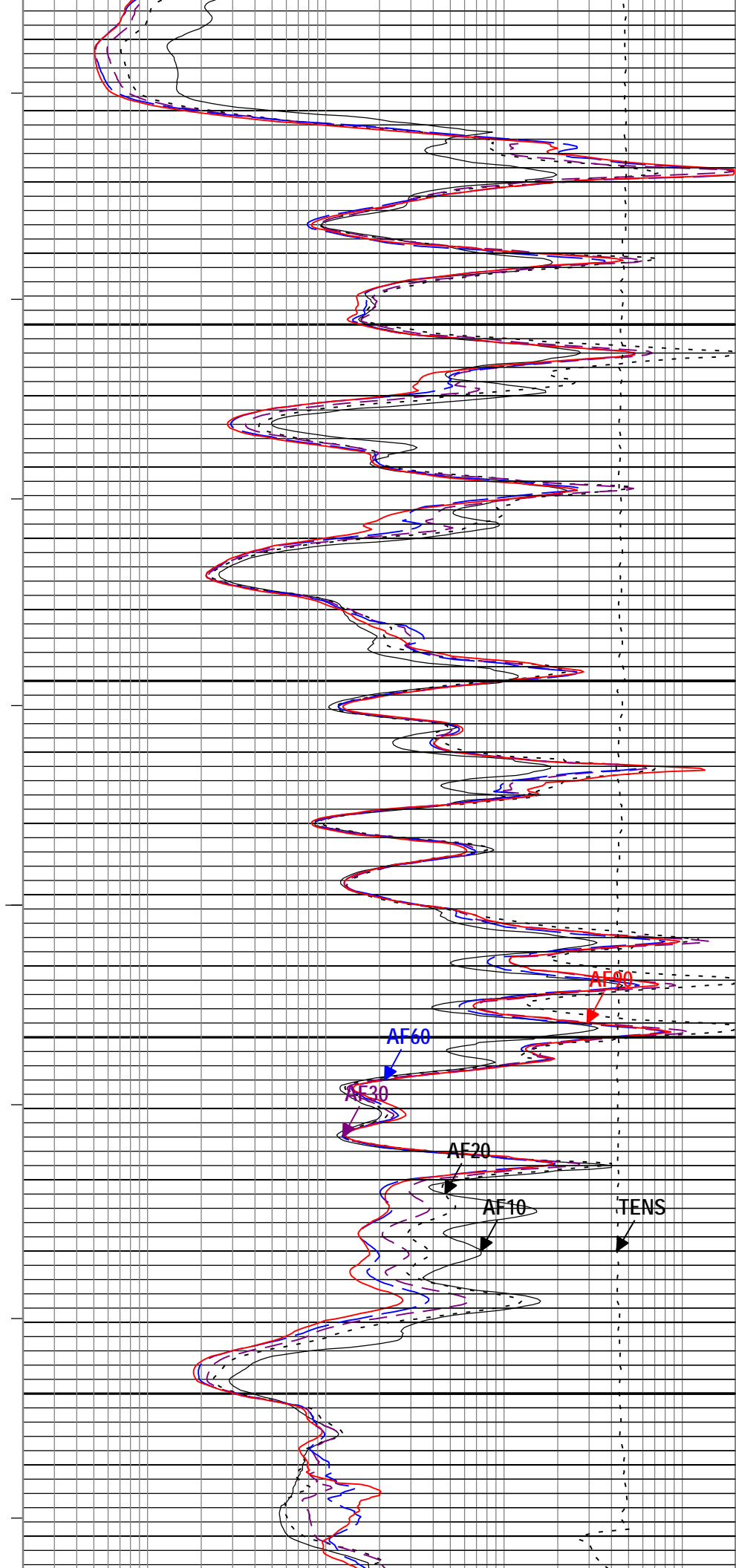
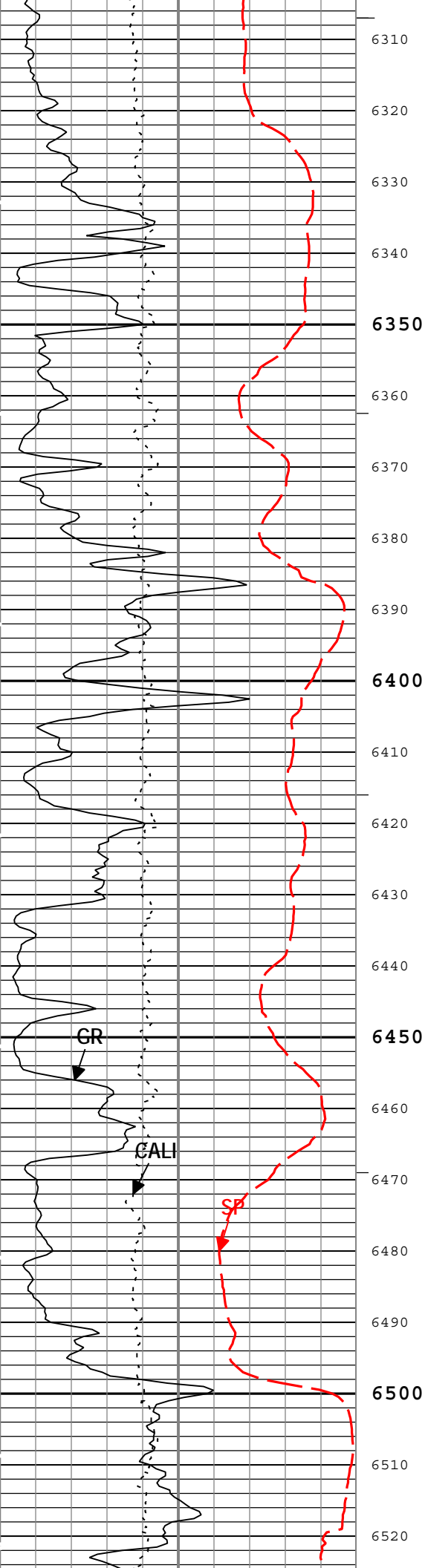


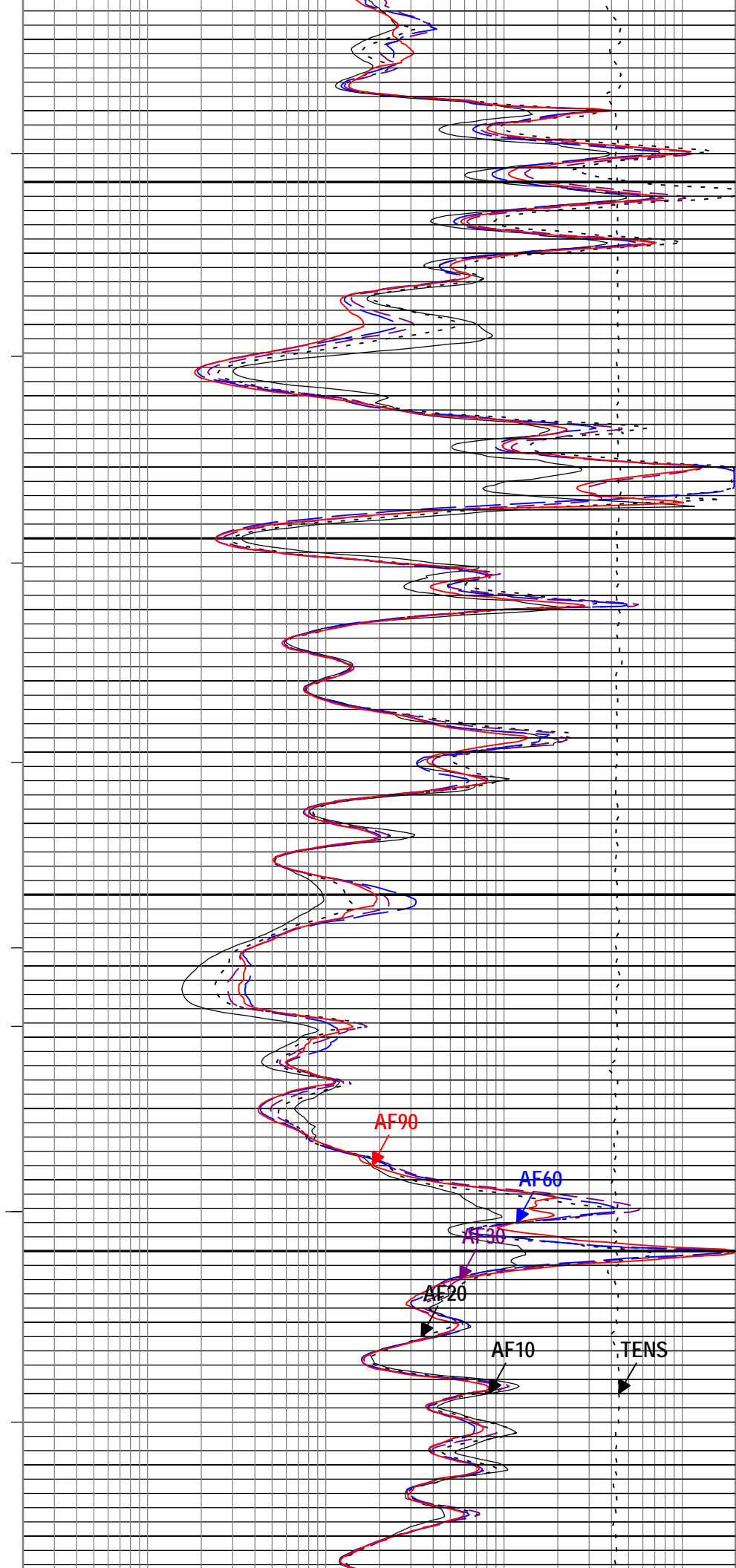
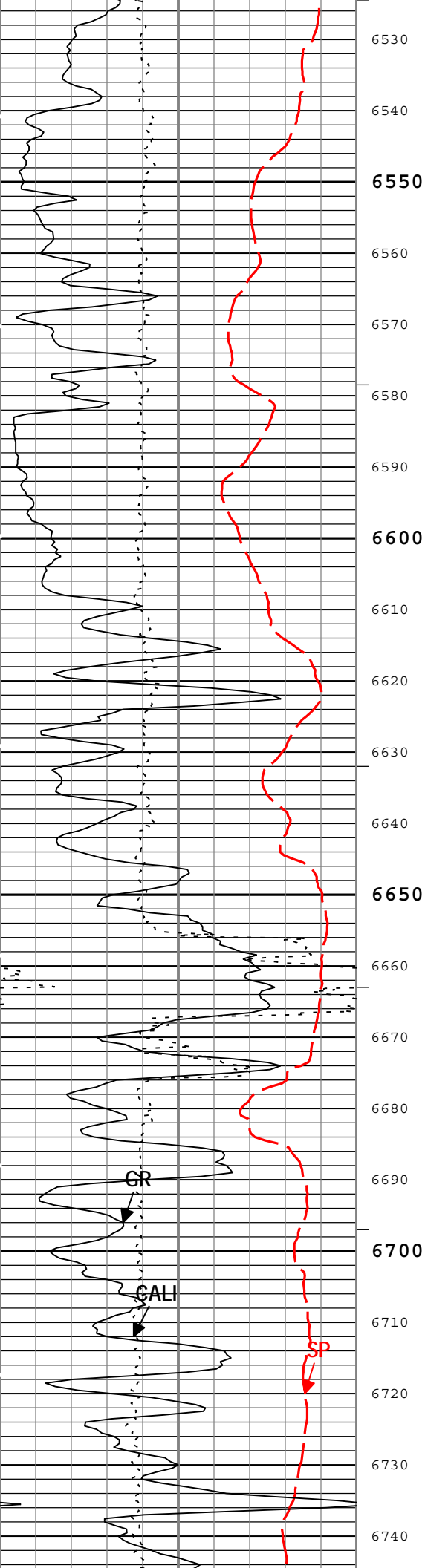


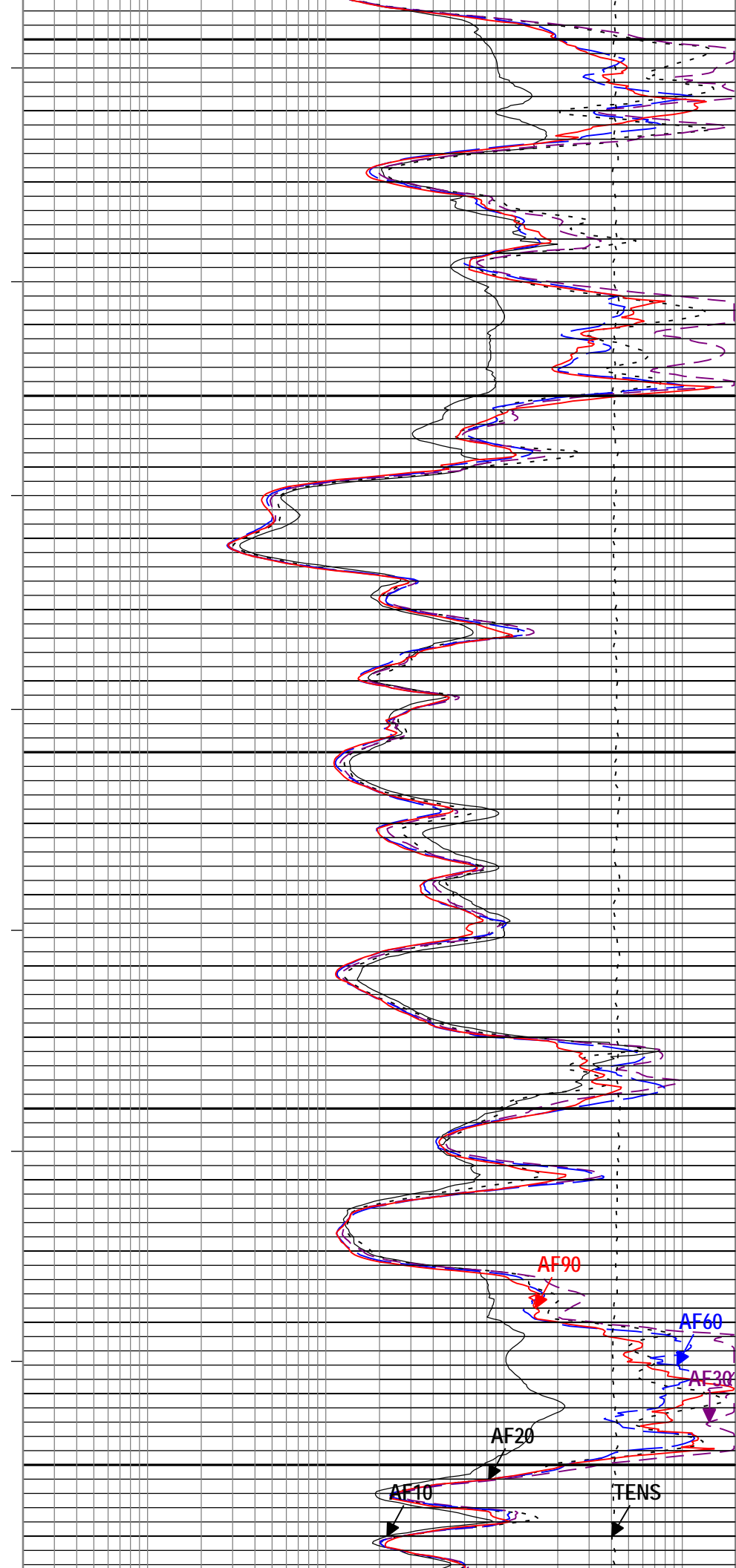
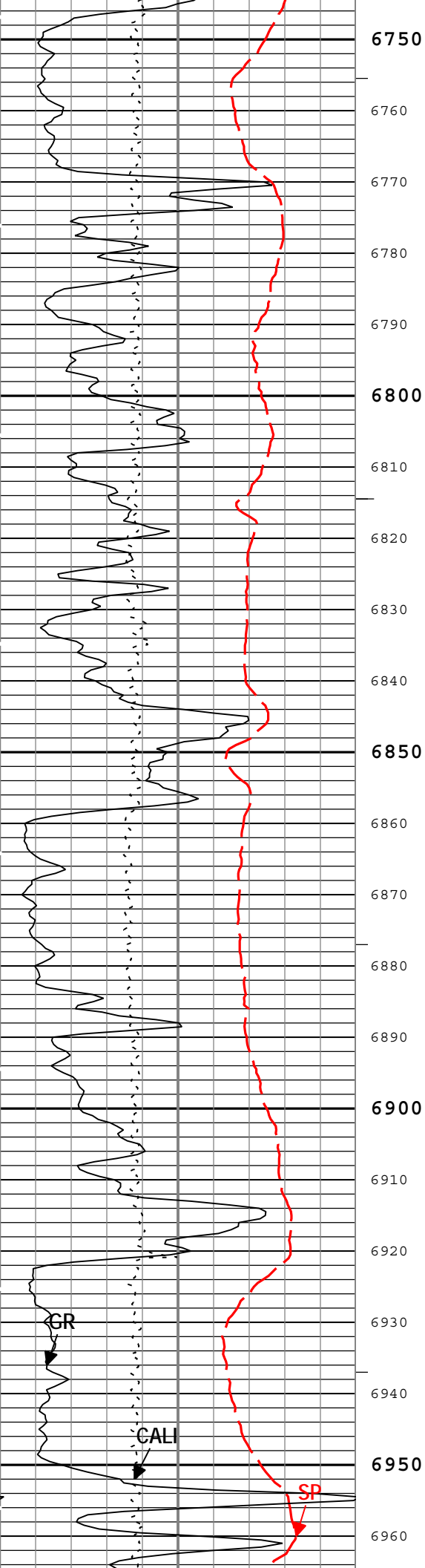


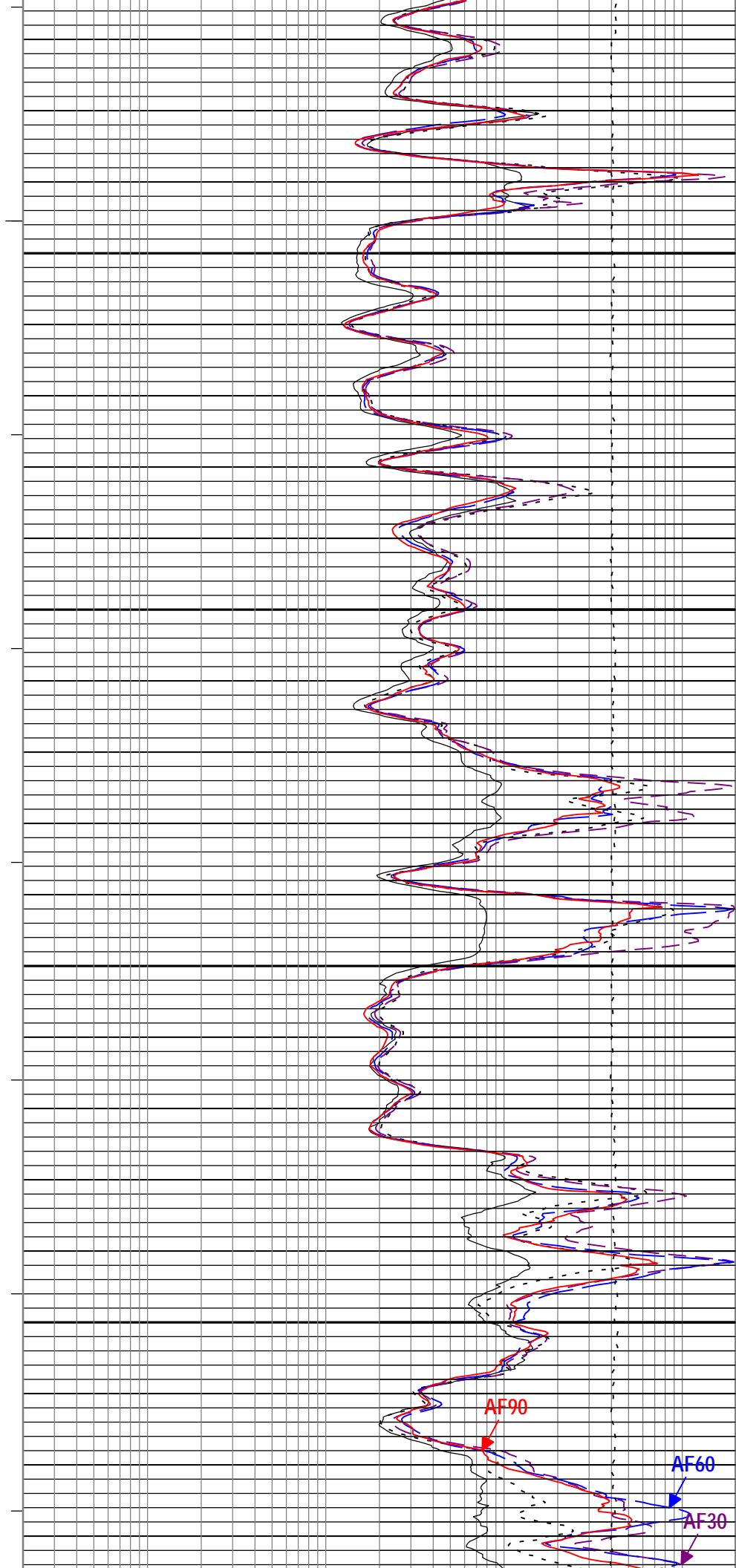
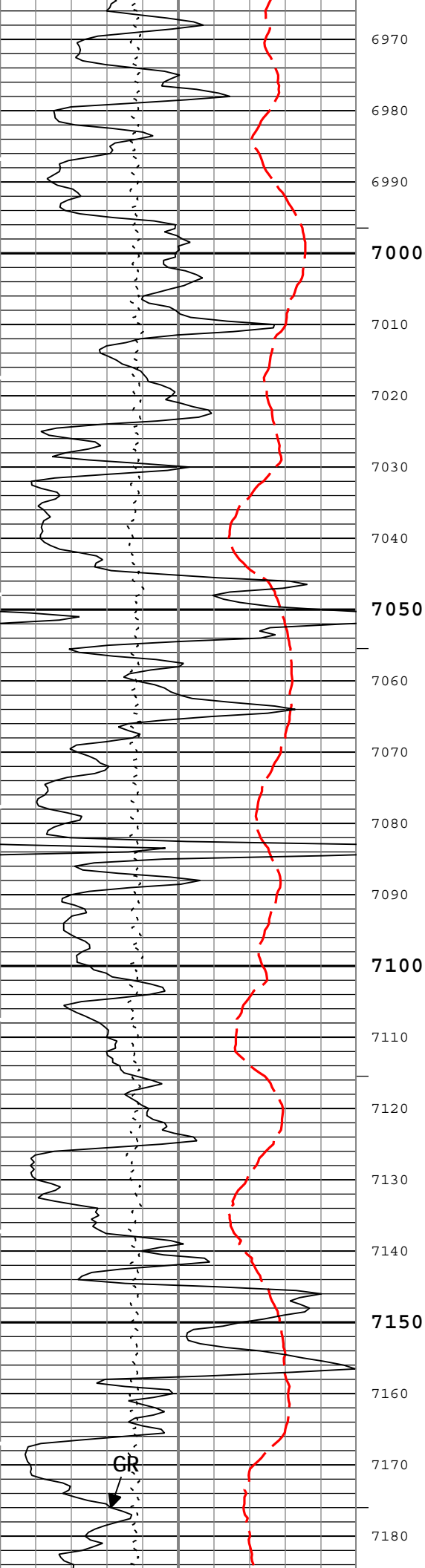


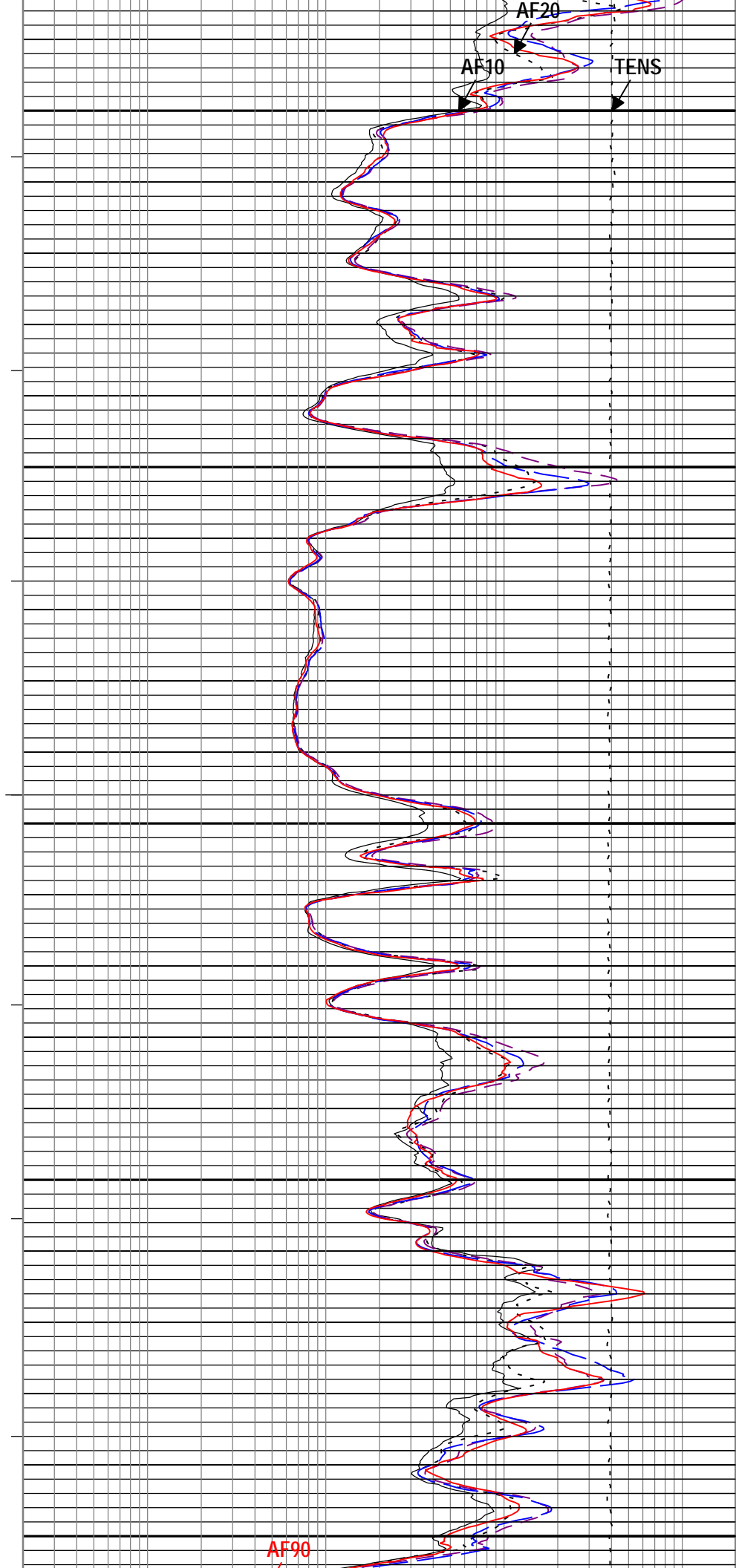
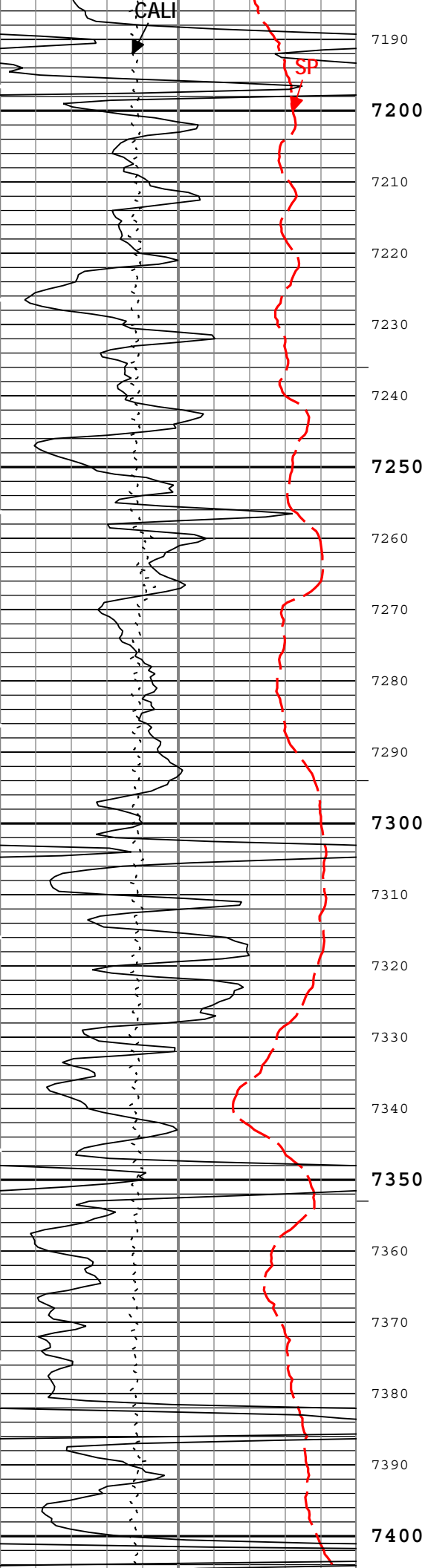


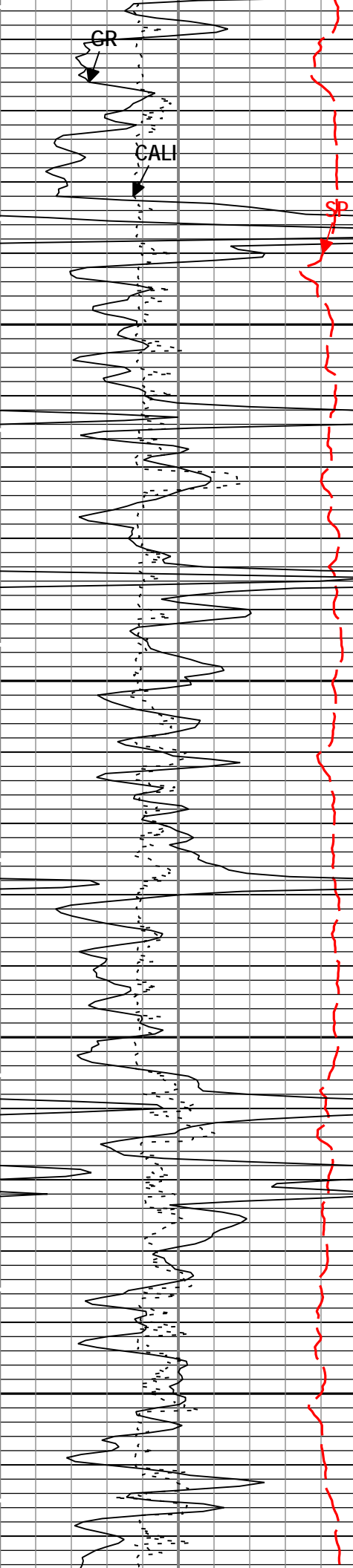




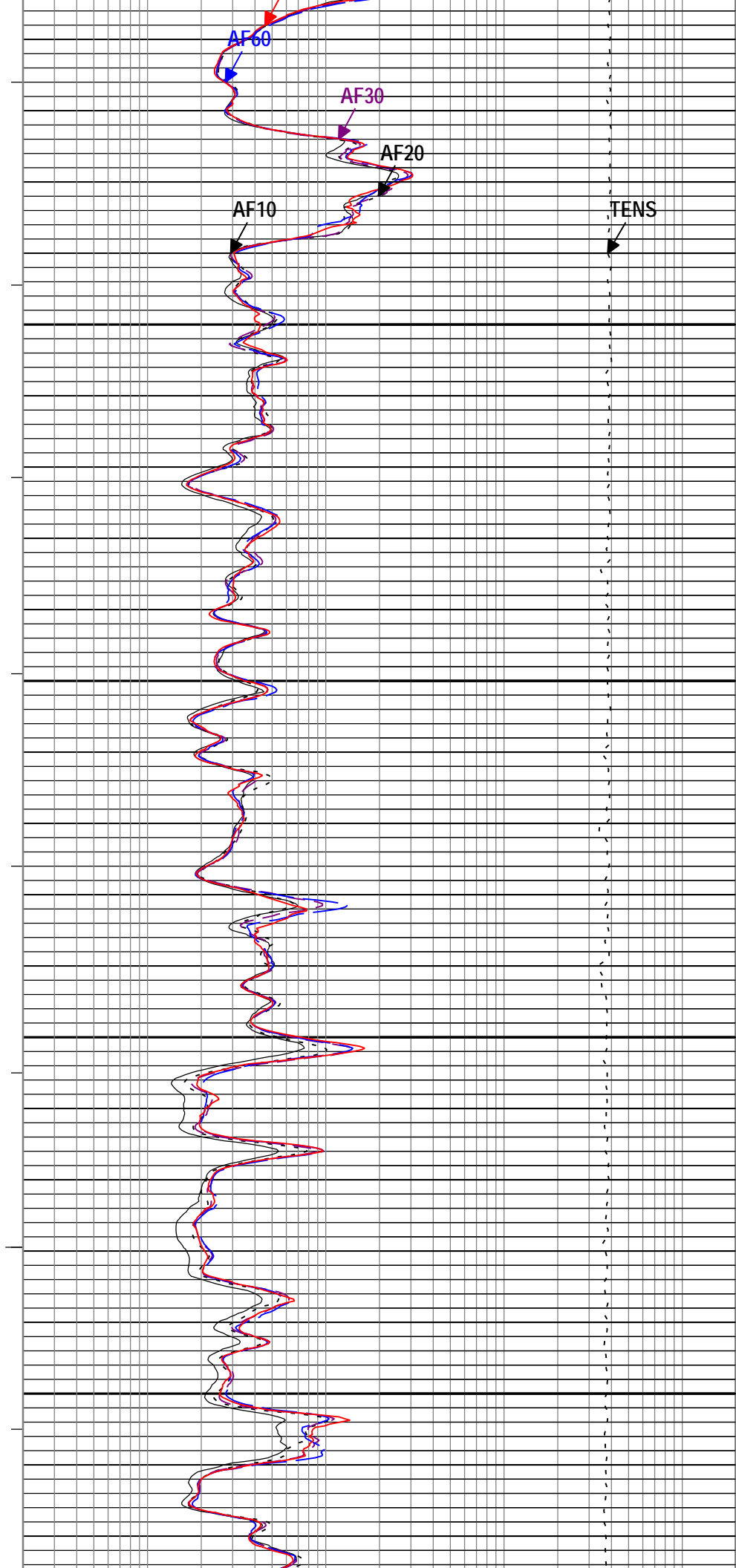


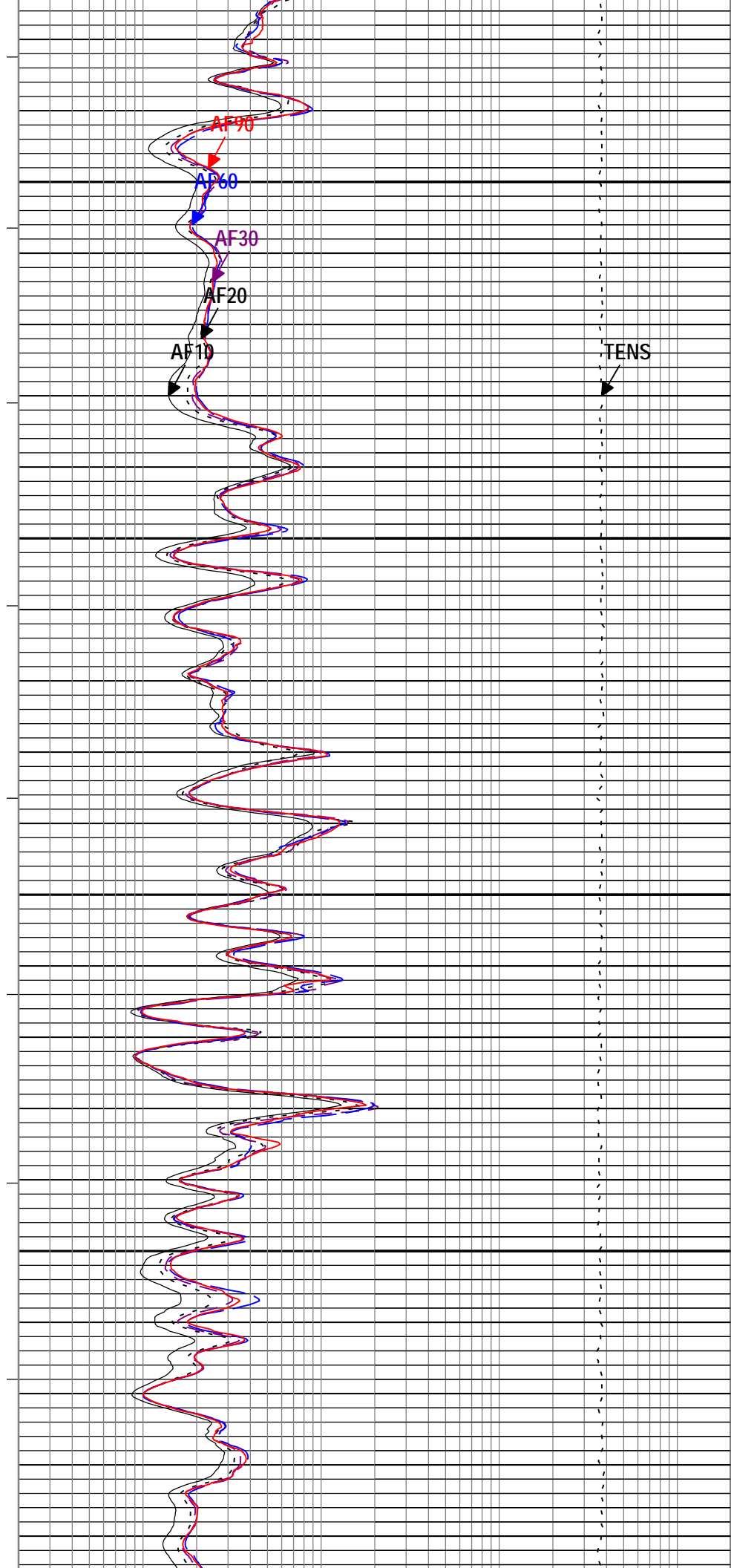
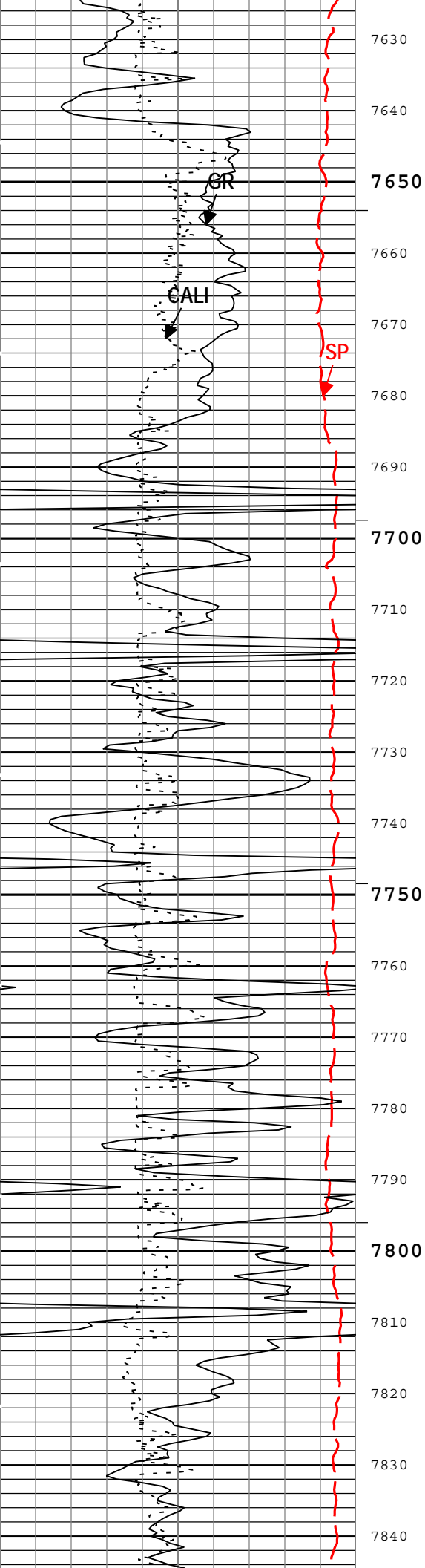


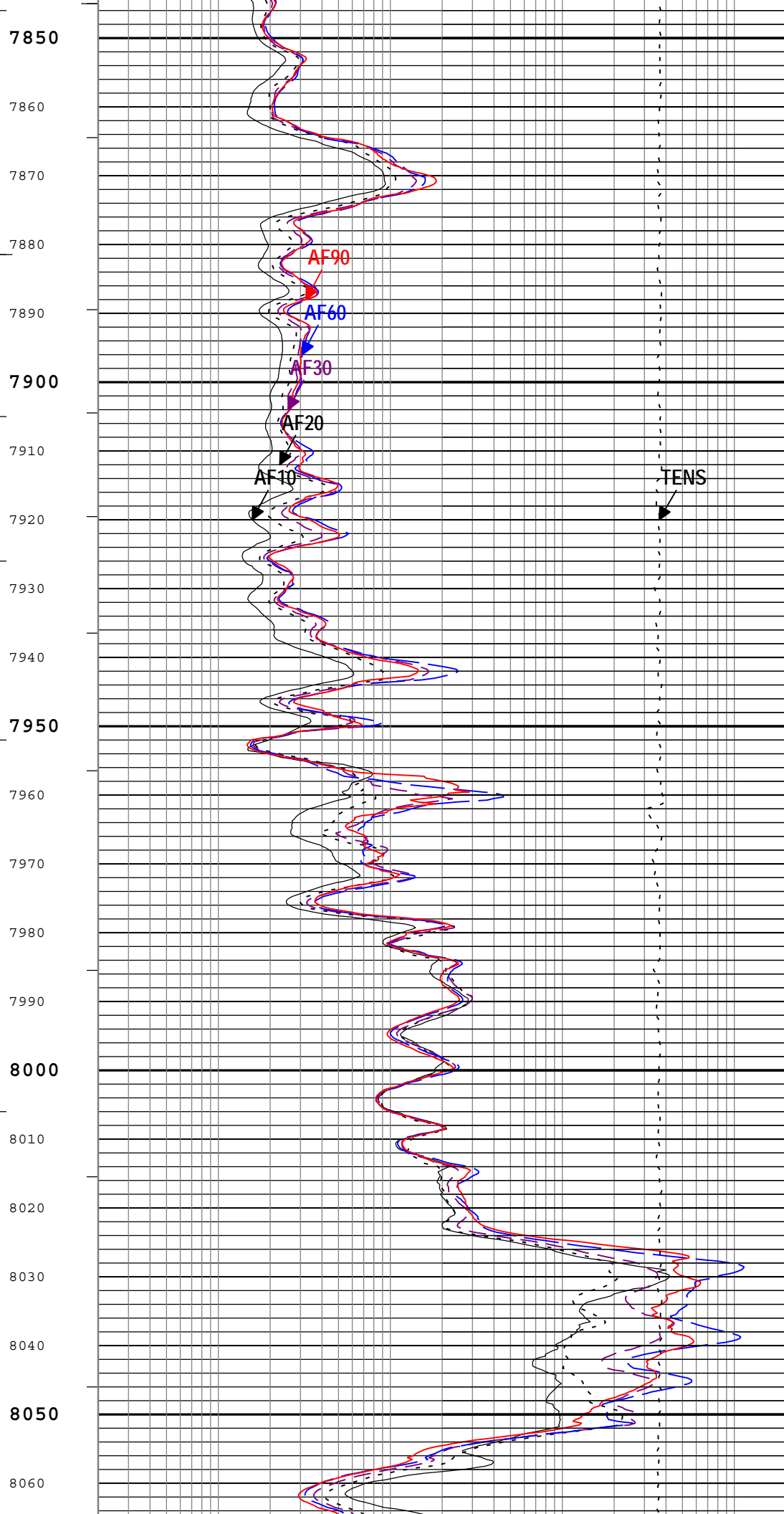
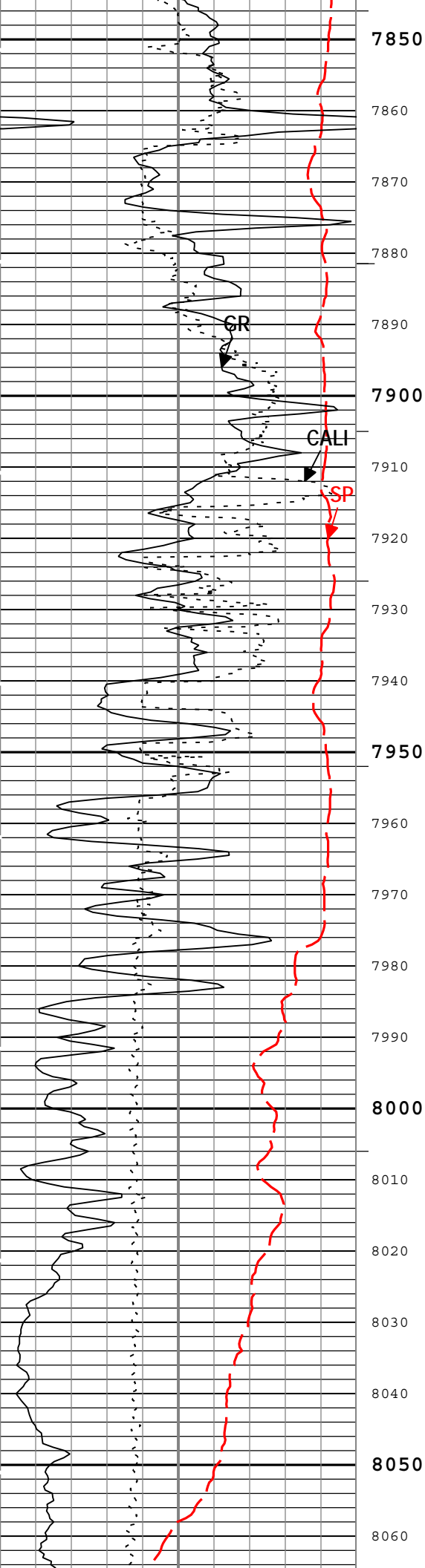


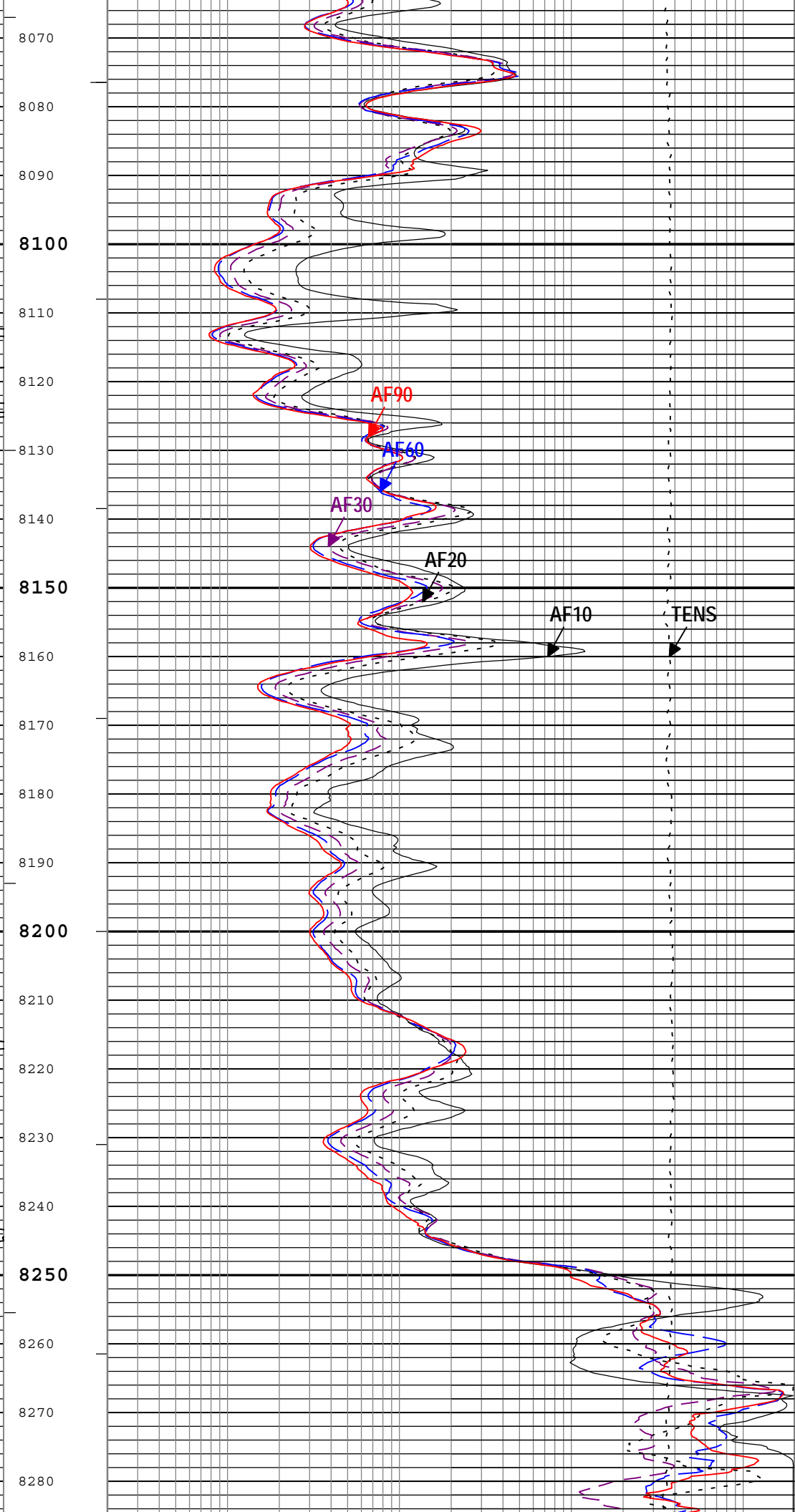
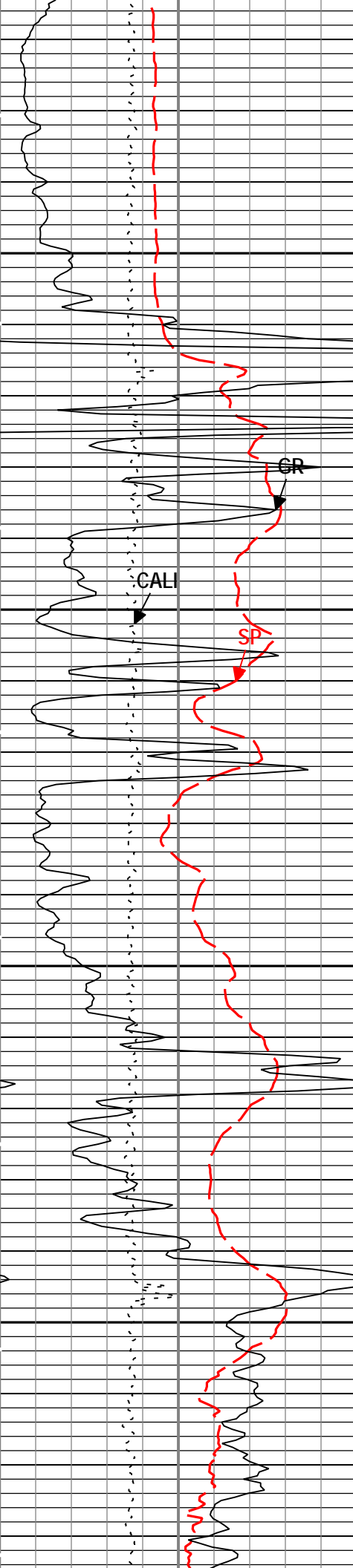


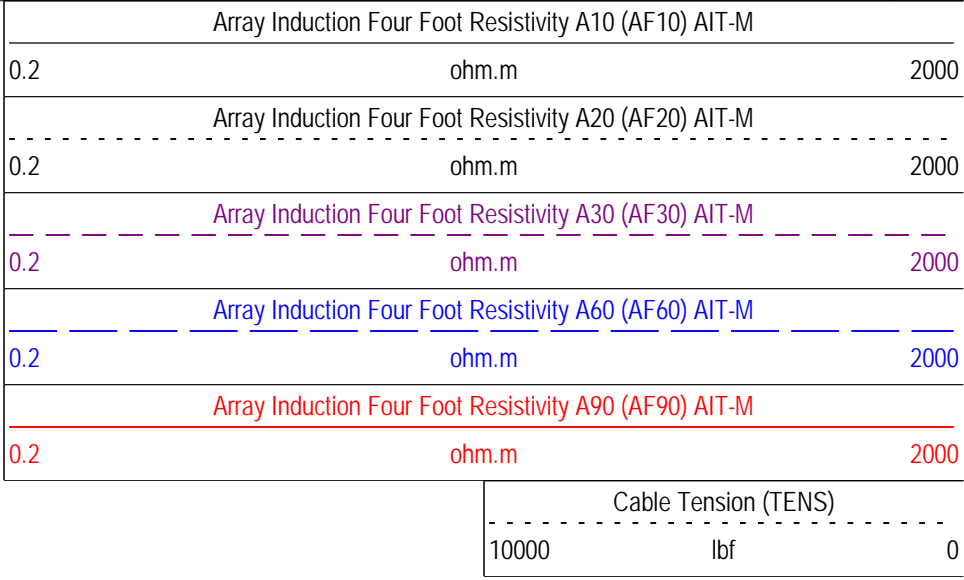
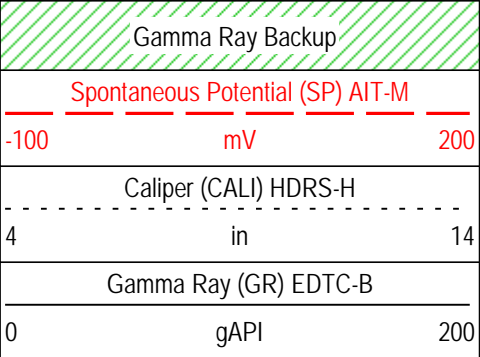
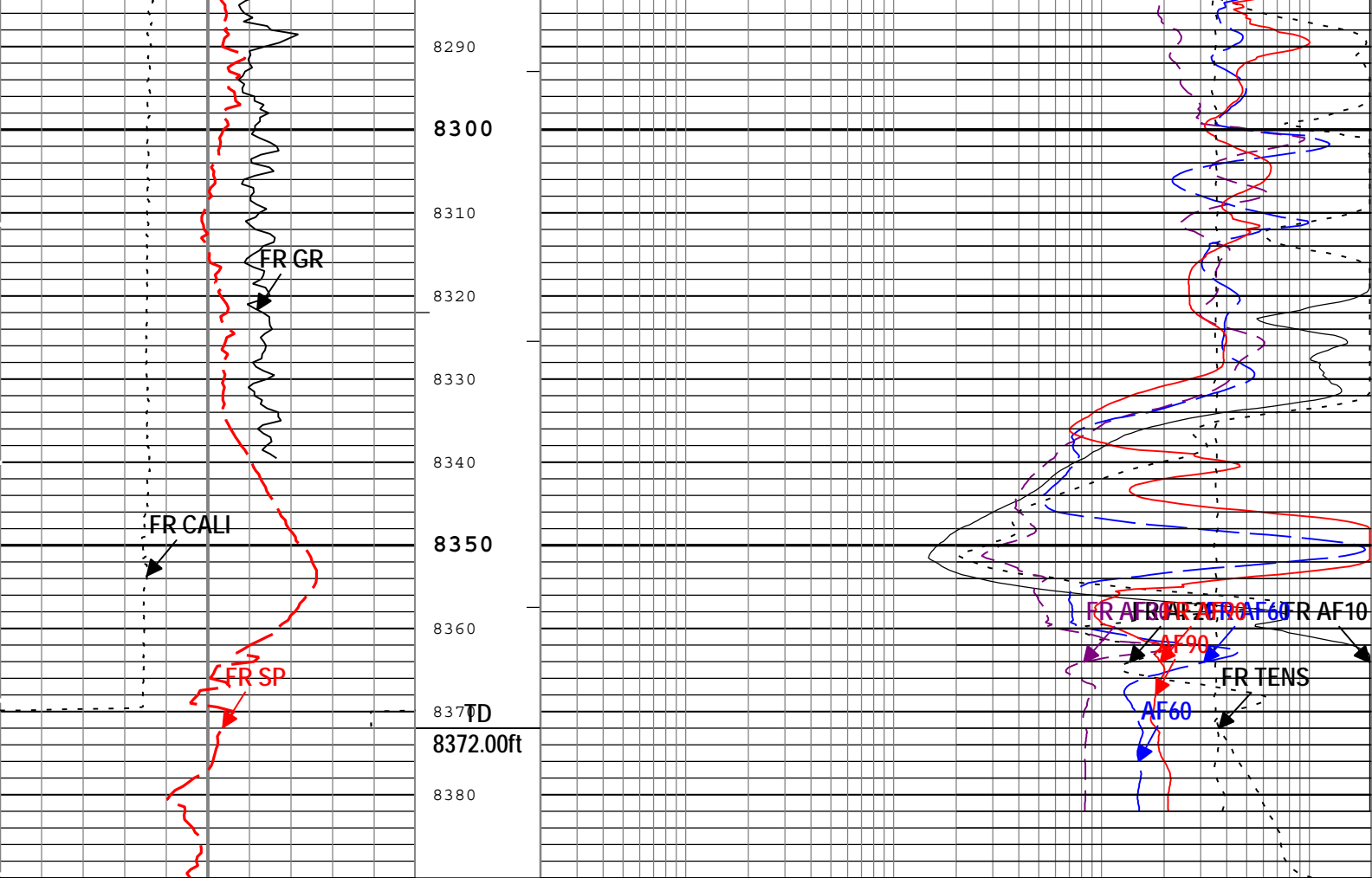
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TIME_1900 - Time Marked every 60.00 (s)

- ICV - Integrated Cement Volume every 100.00 (ft3)
- ICV - Integrated Cement Volume every 10.00 (ft3)
- IHV - Integrated Hole Volume every 100.00 (ft3)
- IHV - Integrated Hole Volume every 10.00 (ft3)

Description: AIT Basic Log Two Format: Log (EMD 5in Induction) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 13-Sep-2014 00:07:26

Channel Processing Parameters				
Parameter	Description	Tool	Value	Unit
ABHM	Array Induction Borehole Correction Mode	AIT-M	Compute Standoff	
ACDE	Array Induction Casing Detection Enable	AIT-M	Yes	
ASTA	Array Induction Tool Standoff	AIT-M	1.25	in

BARI	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BS	Bit Size	WLSESSION	7.875	in
CALI_SHIFT	CALI Supplementary Offset	HDRS-H	-0.642	in
CBLO	Casing Bottom (Logger)	WLSESSION	366	ft
CDEN	Cement Density	EDTC-B	2	g/cm3
CSODDRL	Casing Outer Diameter - Zoned along driller depths	WLSESSION	8.625	in
DFD	Drilling Fluid Density	Borehole	9.5	lbm/gal
FCD	Future Casing (Outer) Diameter	WLSESSION	5.5	in
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	CALI	
GRSE	Generalized Mud Resistivity Selection, from Measured or Computed Mud Resistivity	Borehole	AMF	
SPDR	SP Drift Per Foot	AIT-M	0	mV/ft

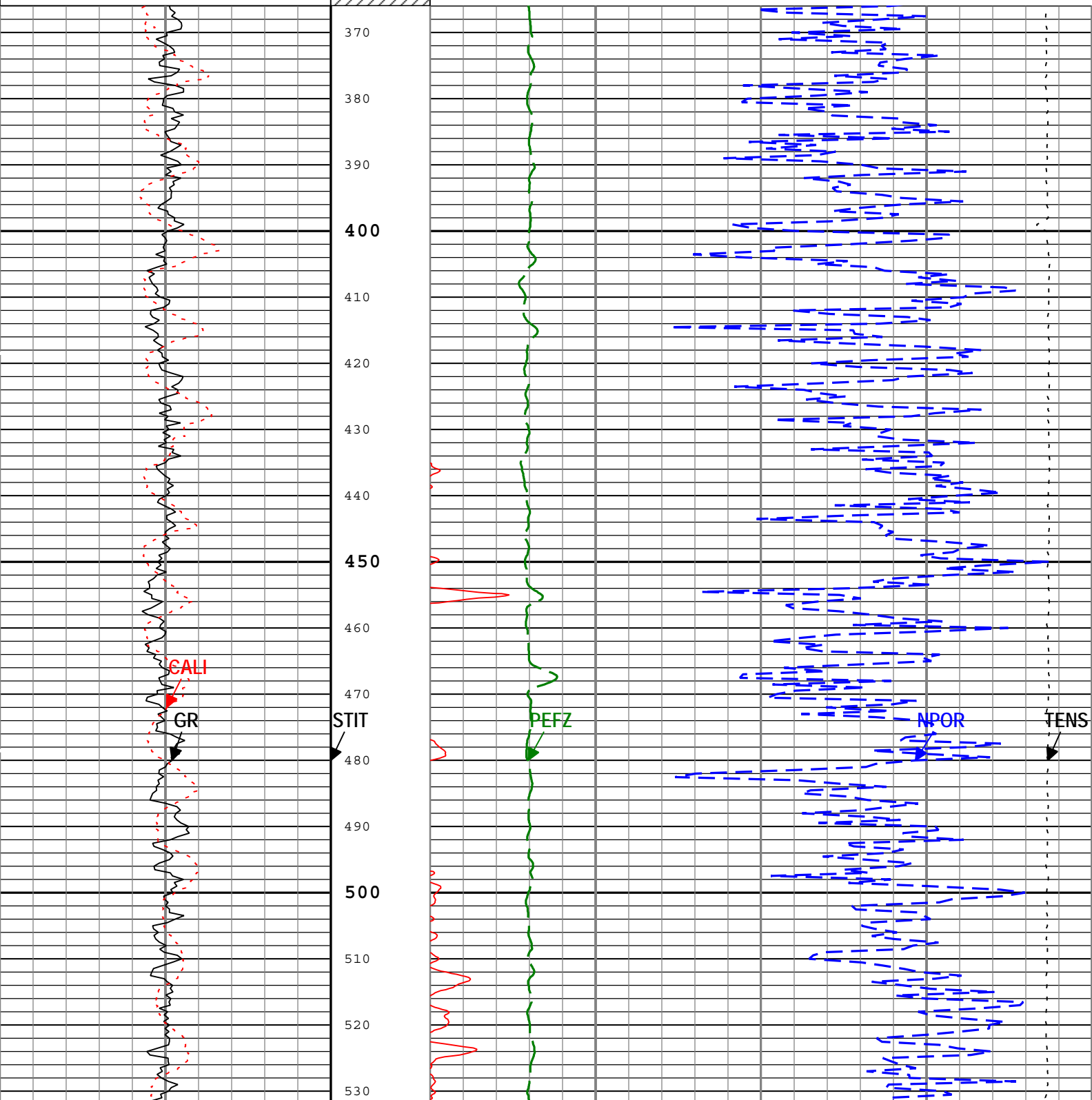
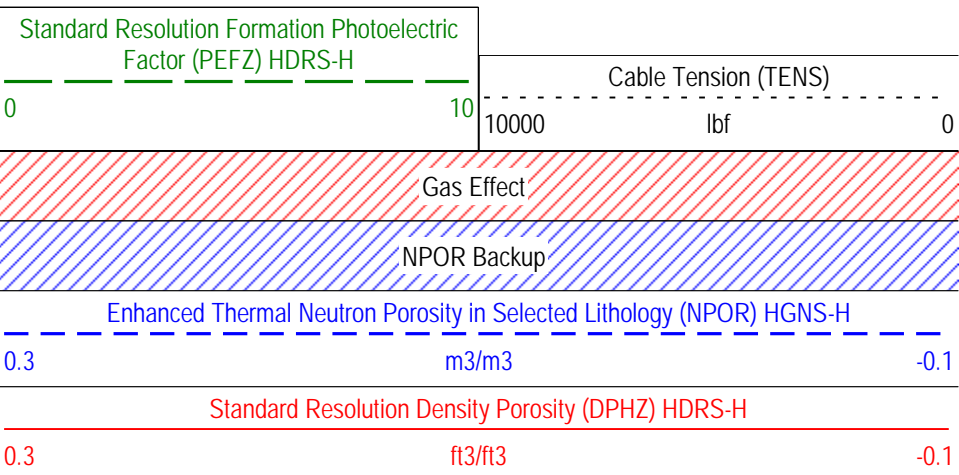
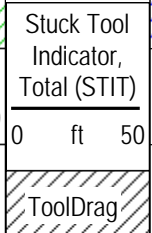
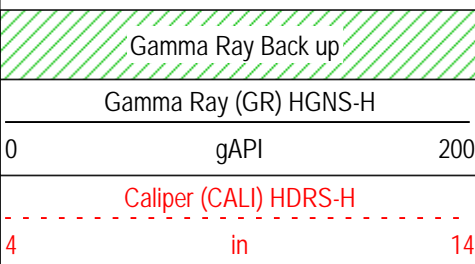
Tool Control Parameters				
Parameter	Description	Tool	Value	Unit
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	1800	ft/h
ONE				
5" Porosity				

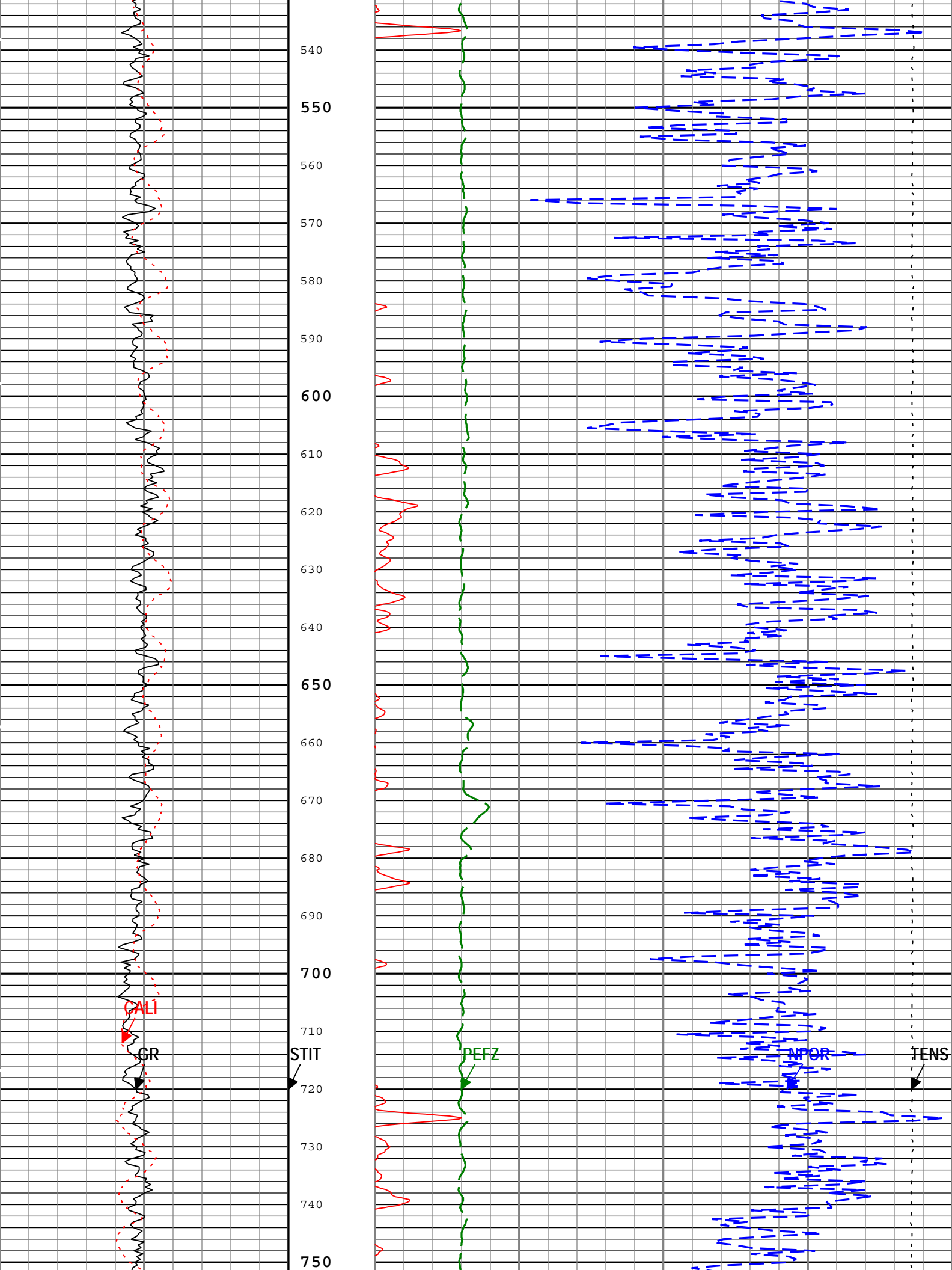
Software Version				
Acquisition System			Version	
MaxWell			4.0.9163.3000	
Application Patch			Patch-SP-10767_13393-4.0.9163.3001	
Computation	Description			Version
HENVIR	Computation Ensemble for the HGNS Neutron environmental corrections			4.0.9033.3000
DepthCorrection	DepthCorrection			4.0.9213.3000
Tool Elements	Description		Software Version	Firmware Version
HRCC-H	HILT High-Resolution Control Cartridge, 150 degC		4.0.9231.3000	2.0
HGNS-H	HILT Gamma-Ray and Neutron Sonde, 150 degC		4.0.9231.3000	2.0
HRGD-H	HILT Resistivity Gamma-Ray Density Device, 150 degC		4.0.9231.3000	11.12

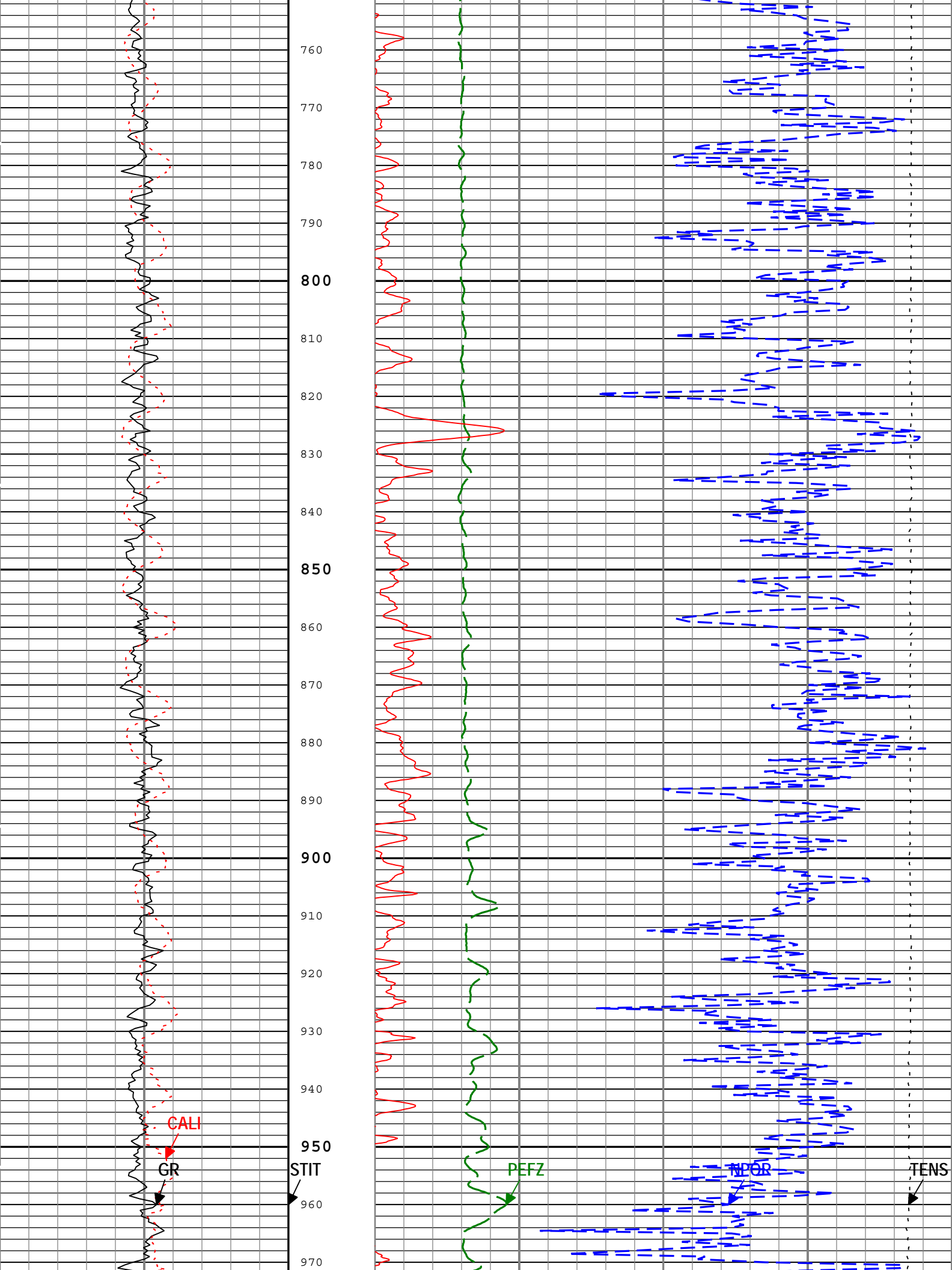
Pass Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Main[5]:Up	Up	48.11 ft	8390.18 ft	12-Sep-2014 7:56:40 PM	12-Sep-2014 11:03:07 PM	ON	13.89 ft	No
All depths are referenced to toolstring zero									
Log	<div> <div>Company:Nighthawk Production LLC</div> <div>Well:Blackcomb 5-14</div> <div>ONE: Main[5]:Up:S011</div> </div>								

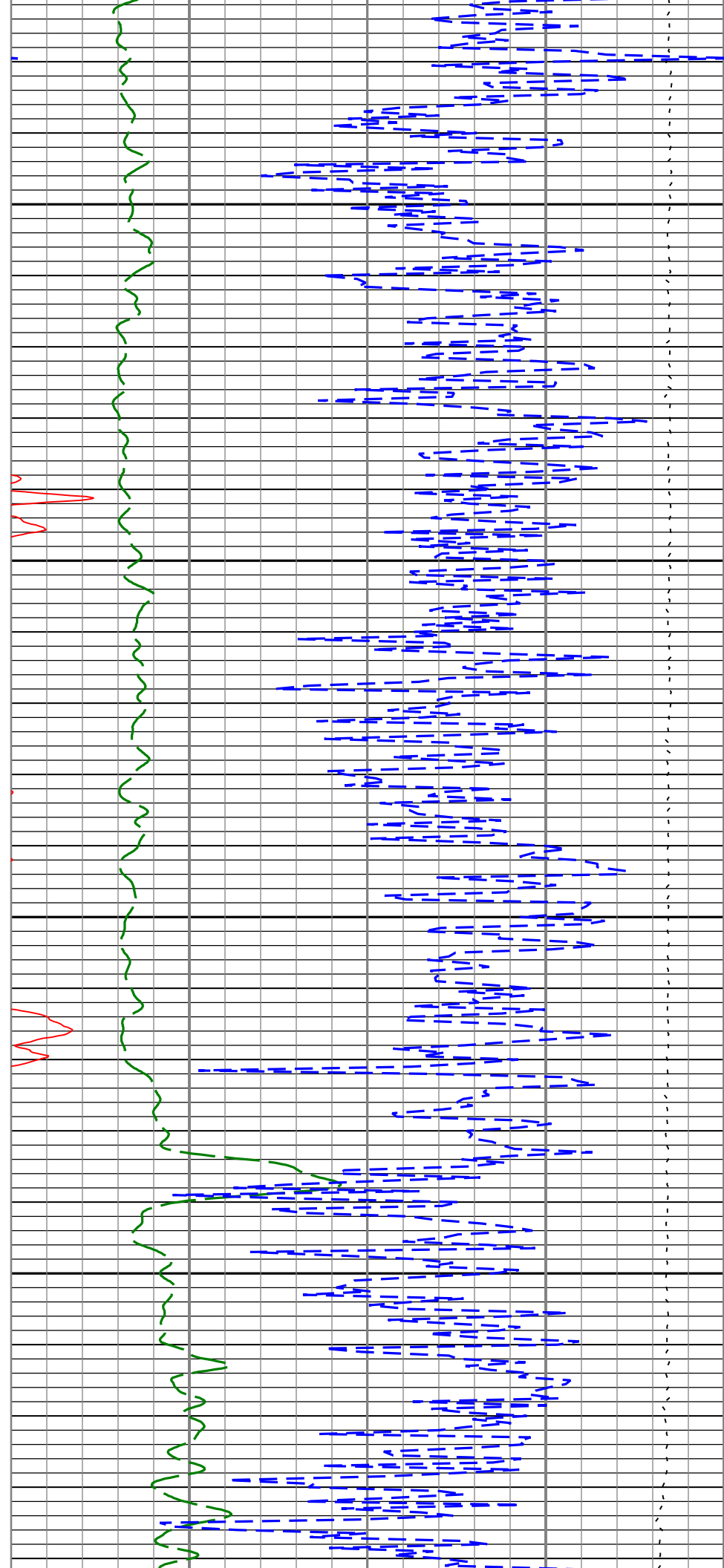
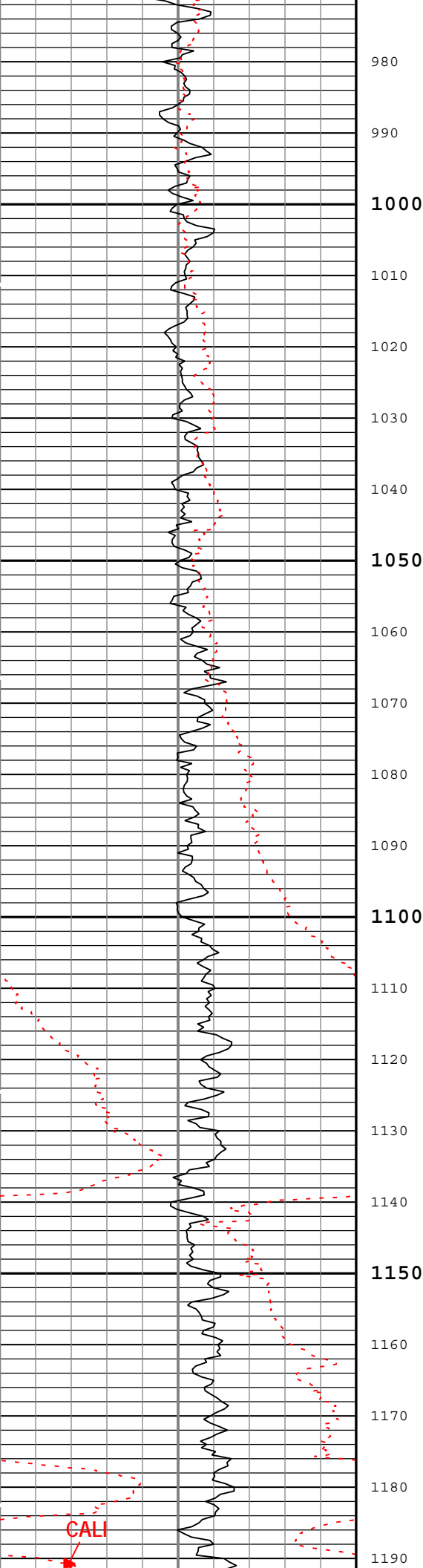
Description: HGNS standard resolution porosities for Platform Express
 Format: Log (EMD 5in Porosity)
 Index Scale: 5 in per 100 ft
 Index Unit: ft
 Index Type: Measured Depth
 Creation Date: 13-Sep-2014 00:07:30

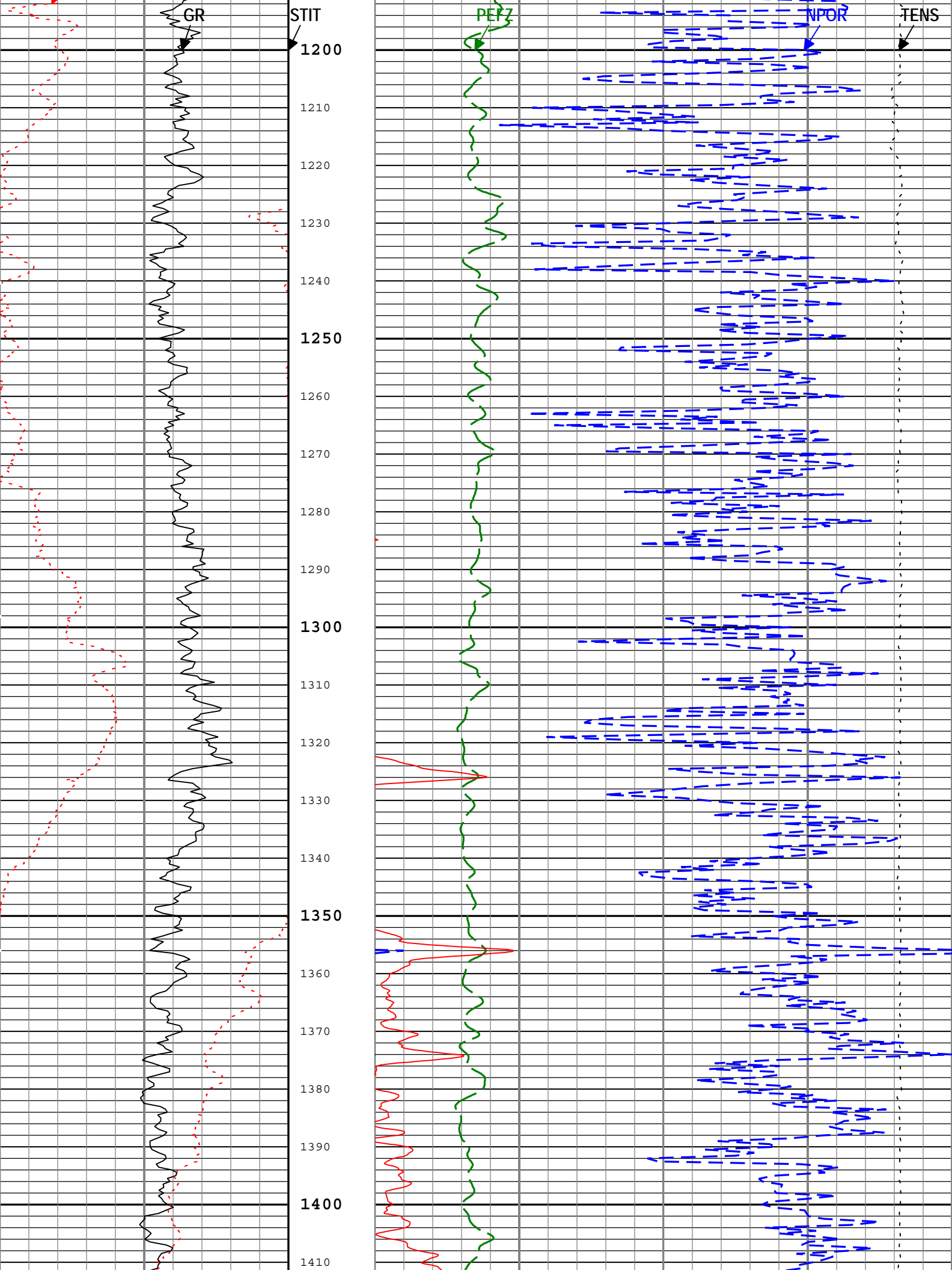
Channel	Source	Sampling
CALI	HDRS-H:HRCC-H:HRCC-H	1in
DPHZ	HDRS-H:HRMS-H:HRGD-H	2in
GR	HGNS-H:HGNS-H:HGNS-H	6in
NPOR	HGNS-H:HGNS-H:HGNS-H	6in
PEFZ	HDRS-H:HRMS-H:HRGD-H	2in
STIT	DepthCorrection	6in
TENS	WLWorkflow	6in
TIME_1900	WLWorkflow	0.1in

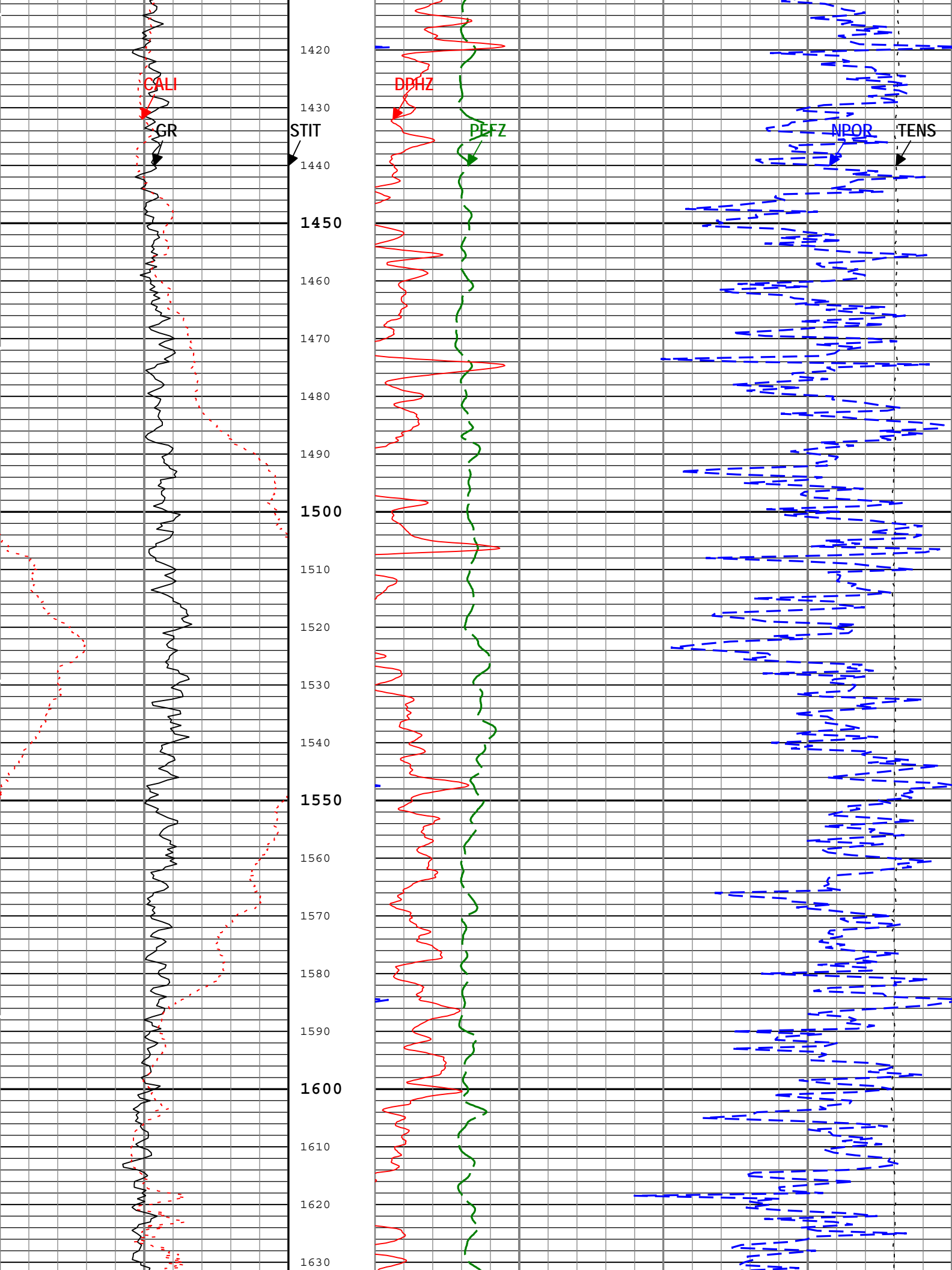


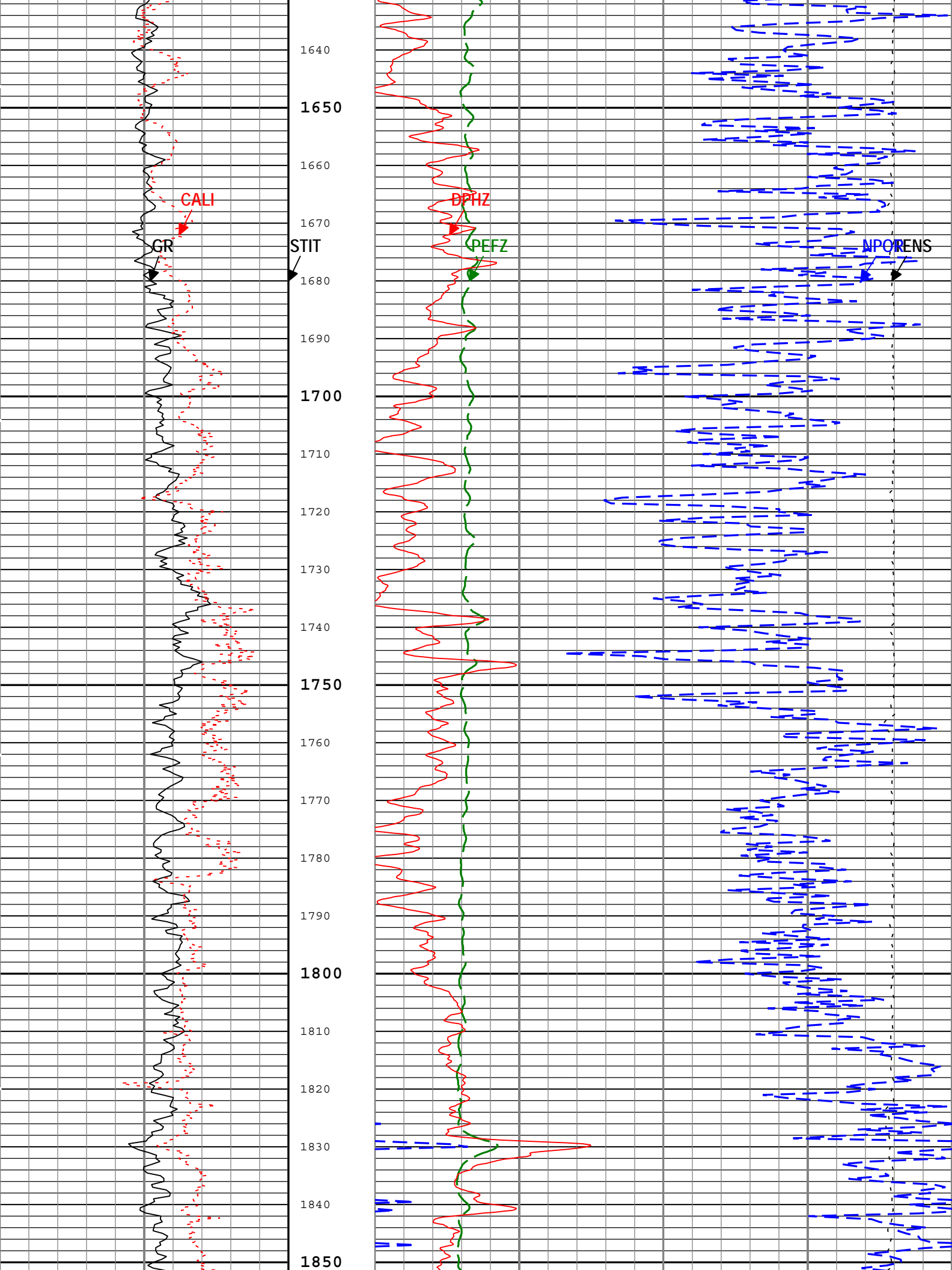


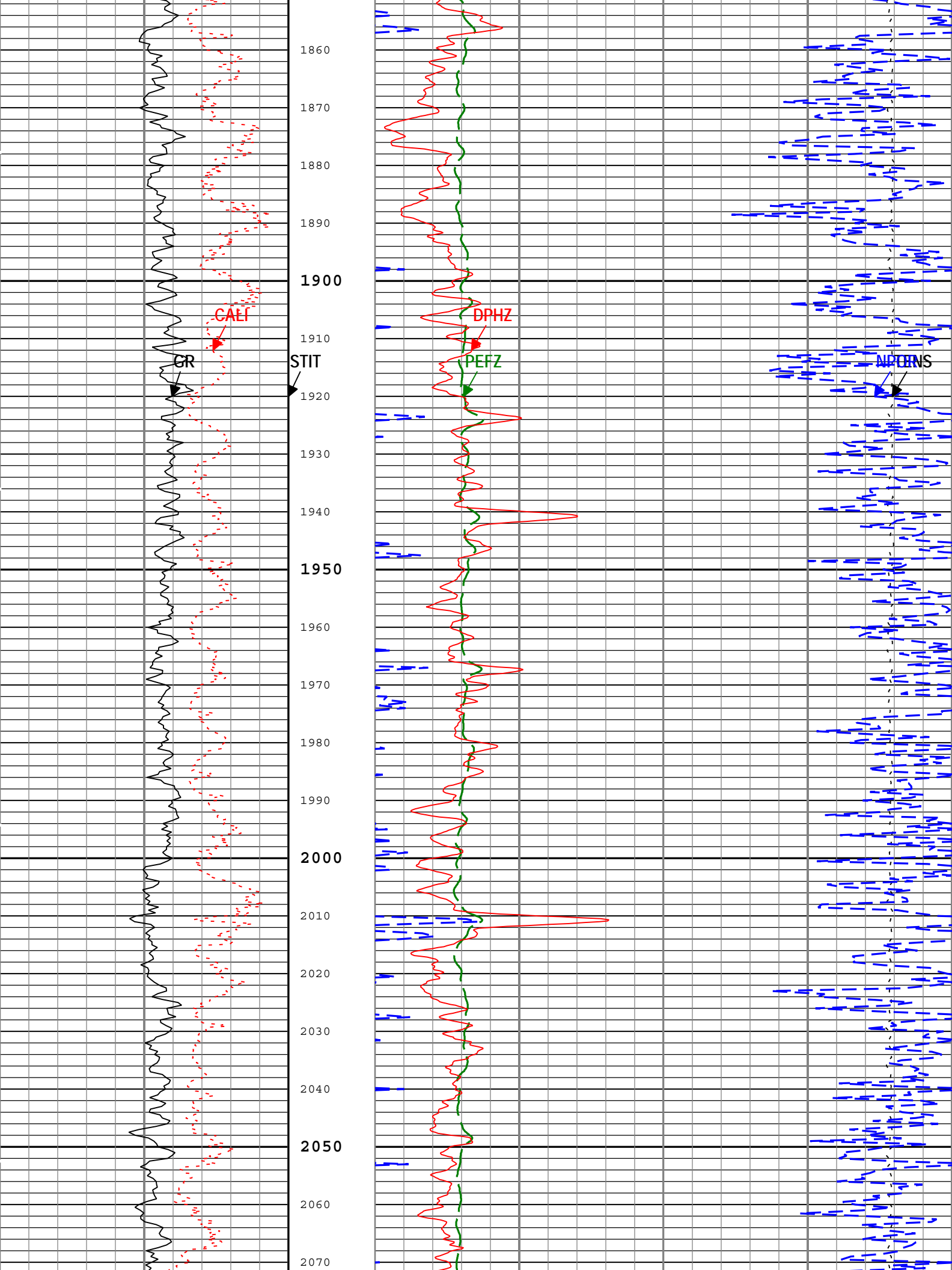


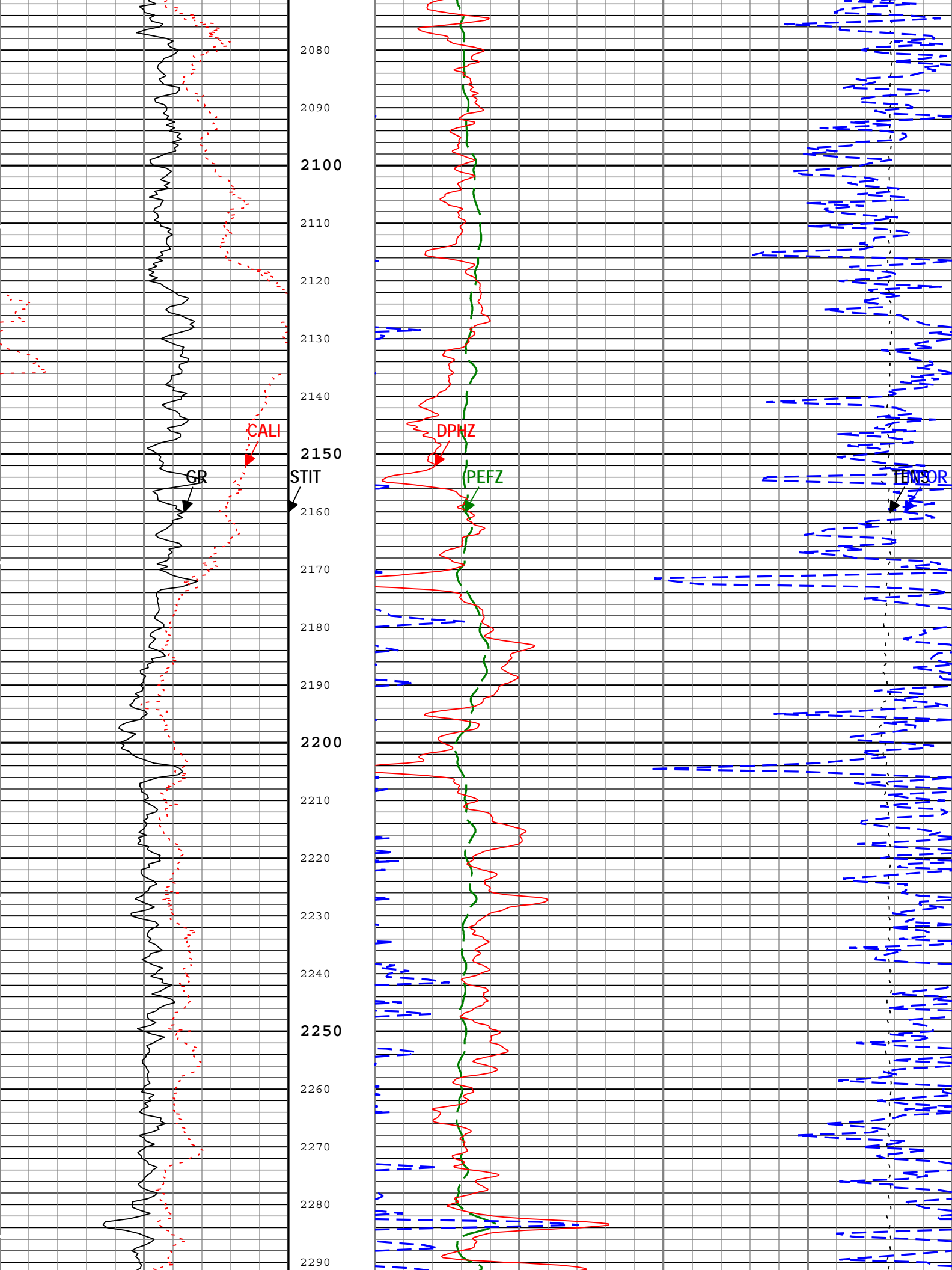


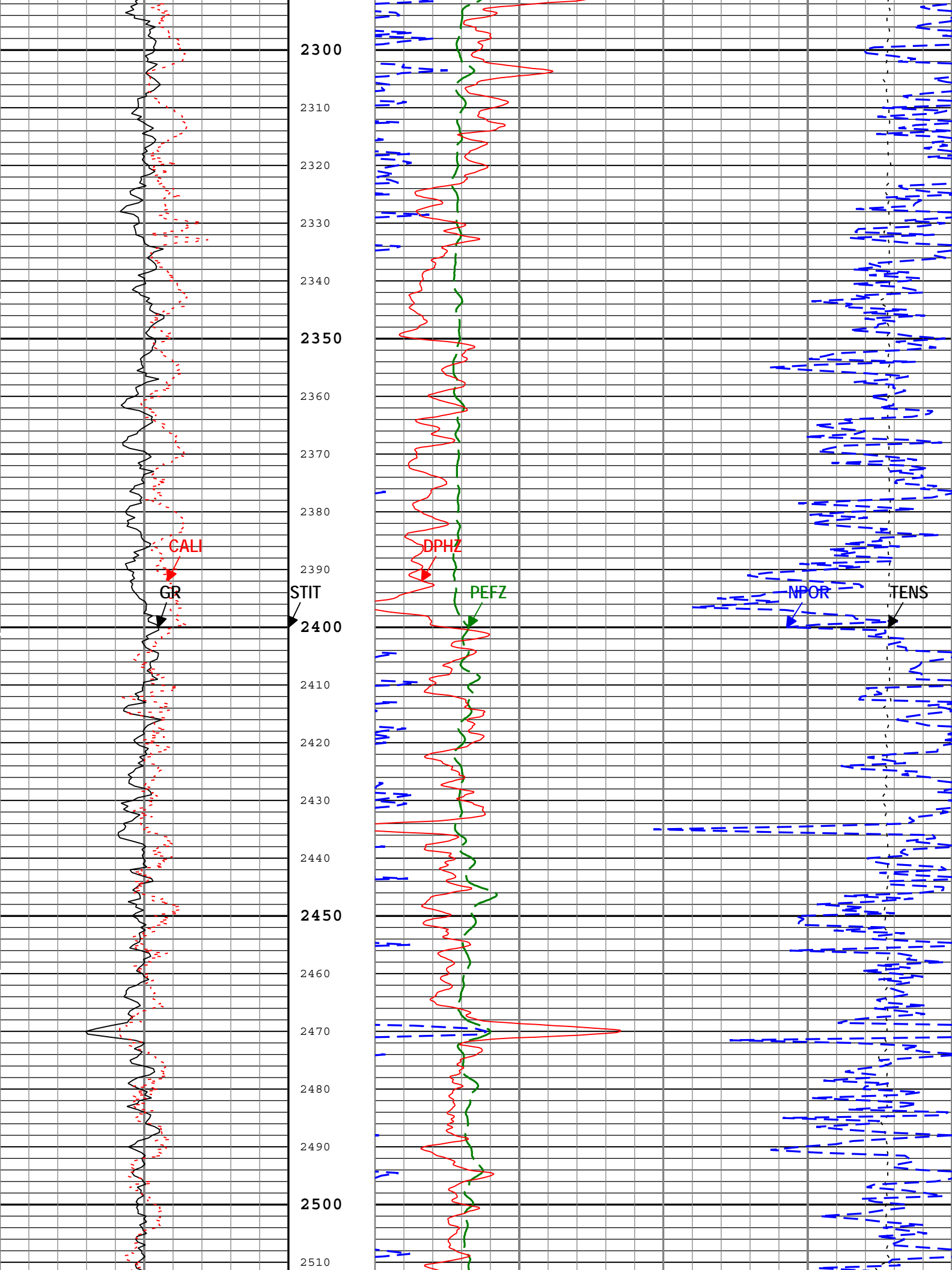


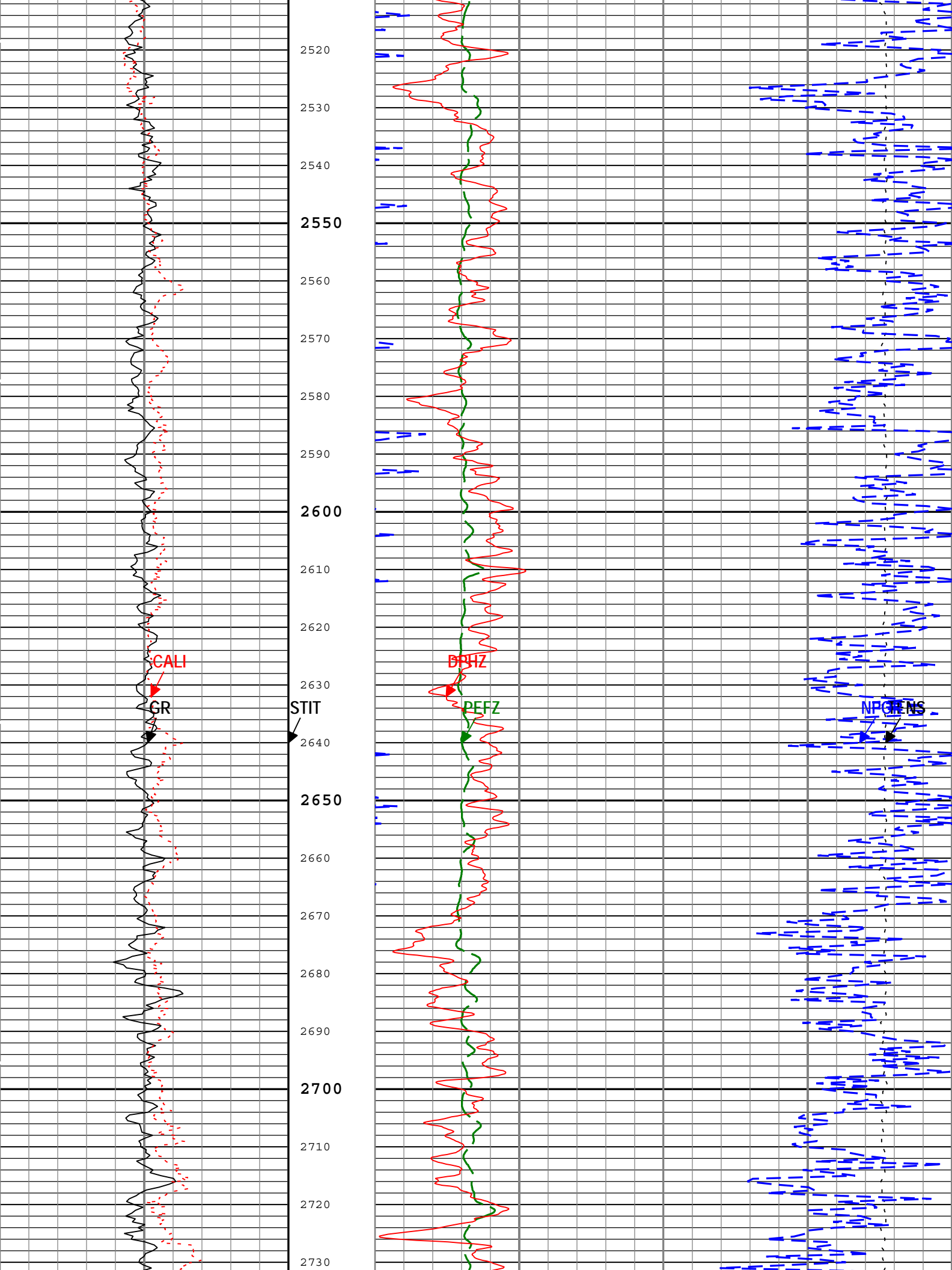


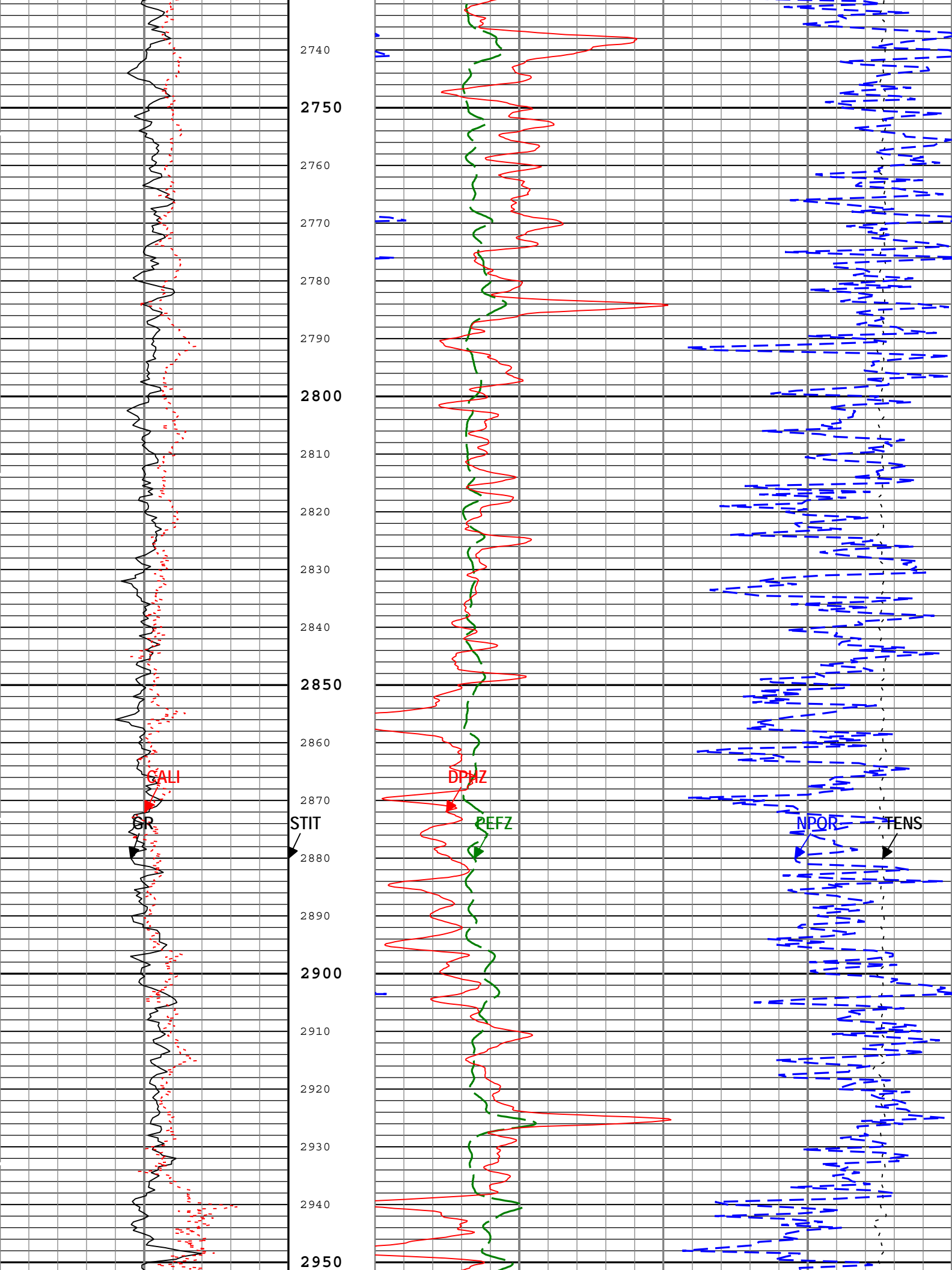


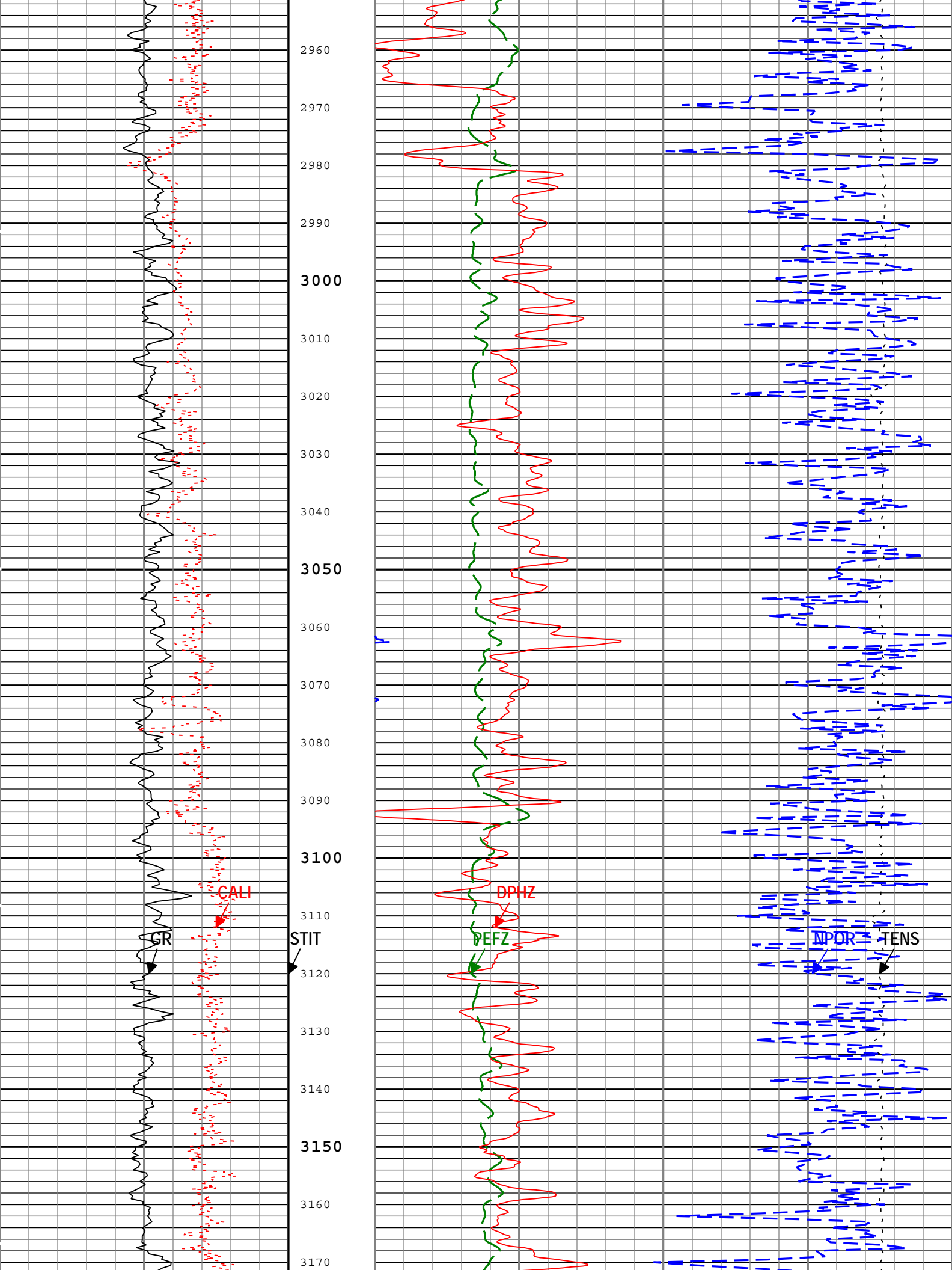


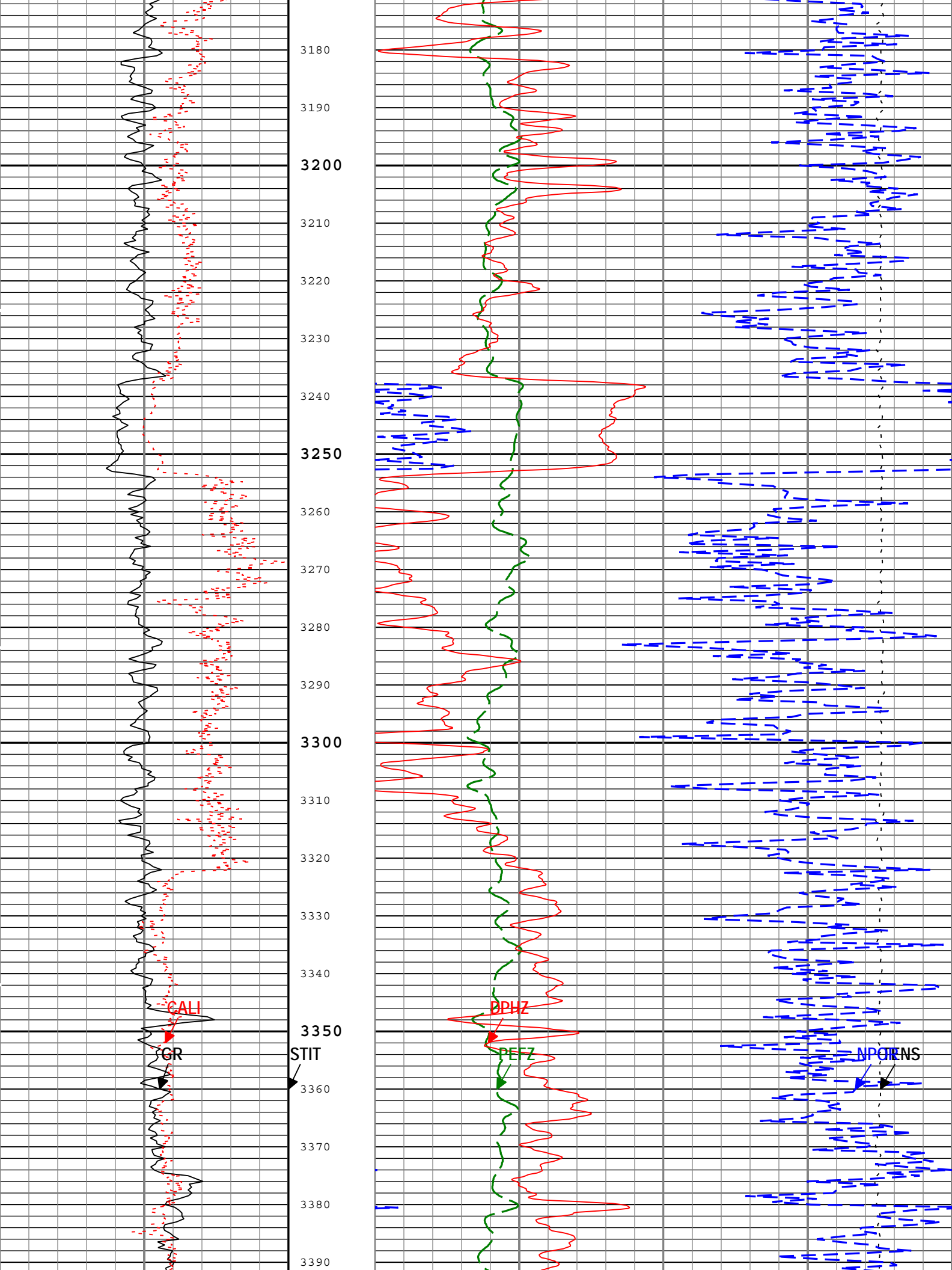


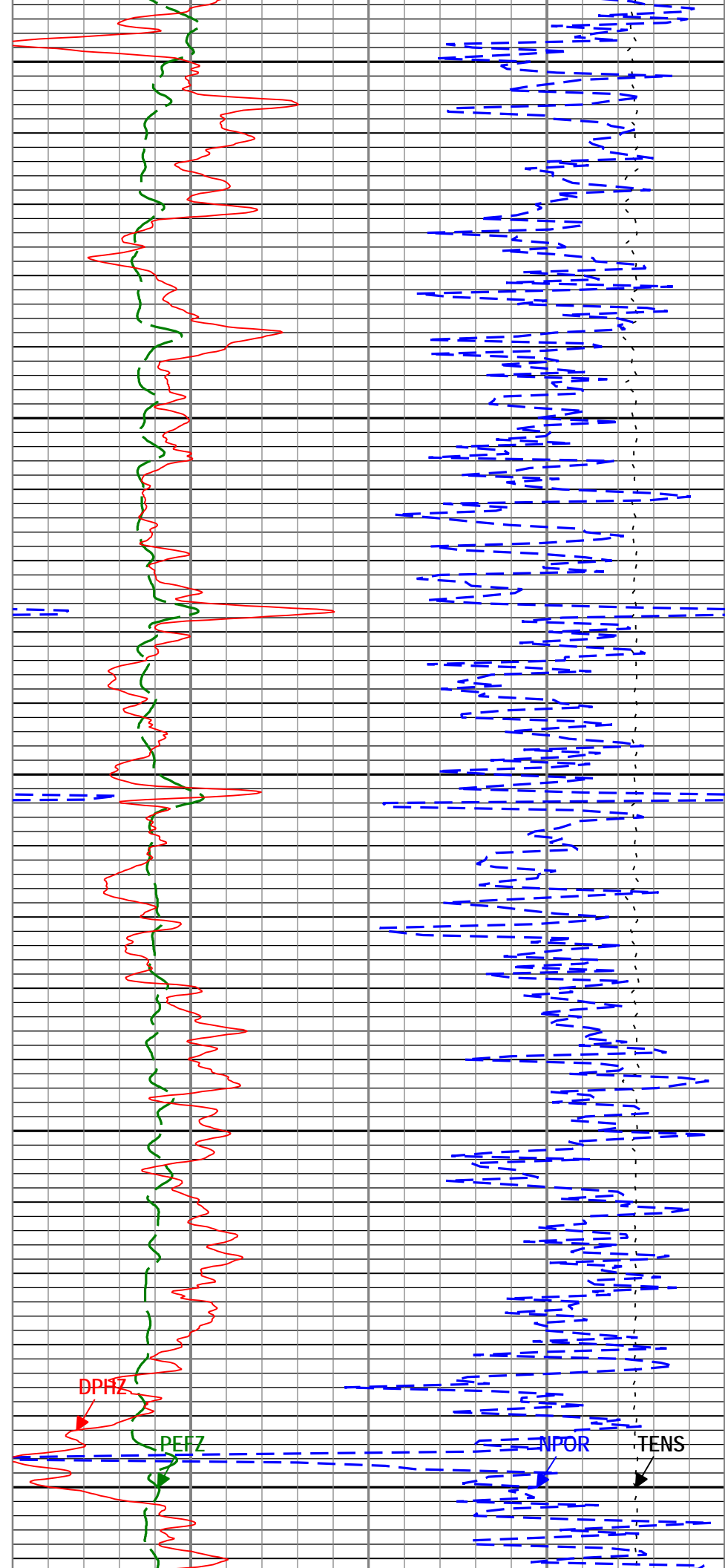
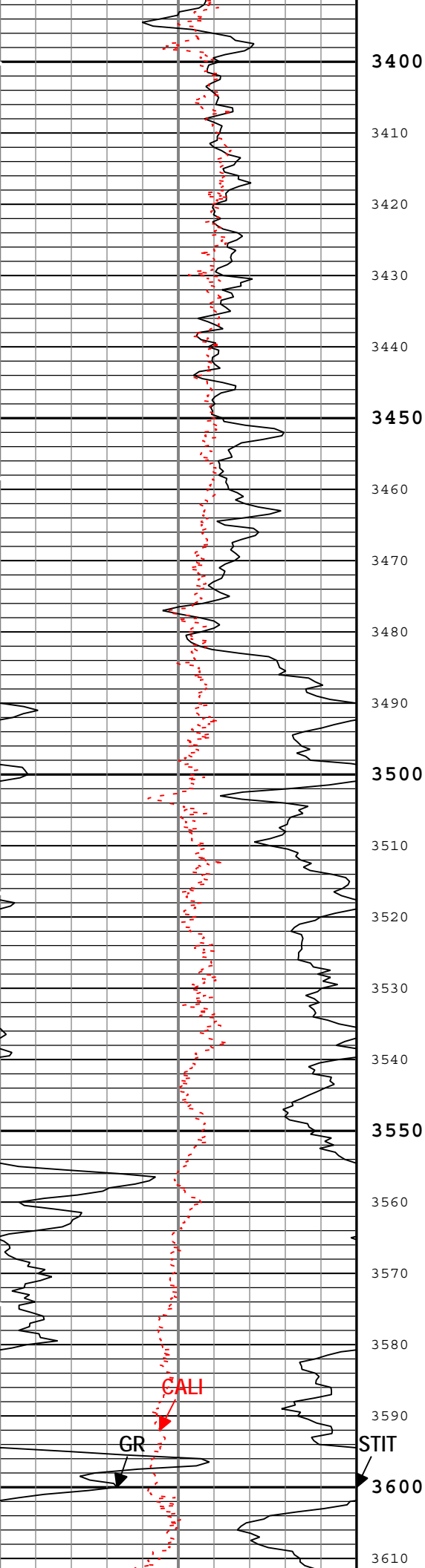


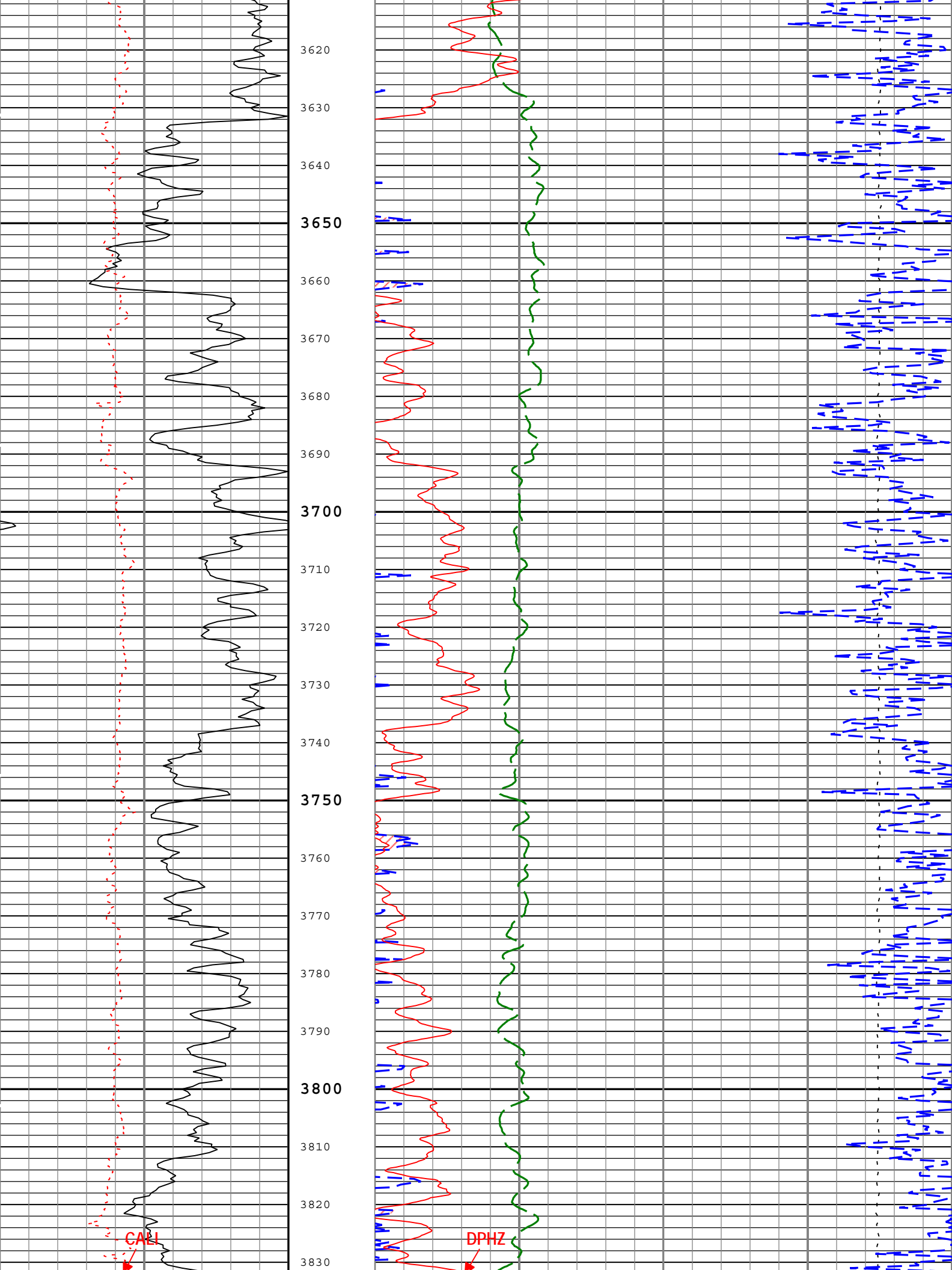


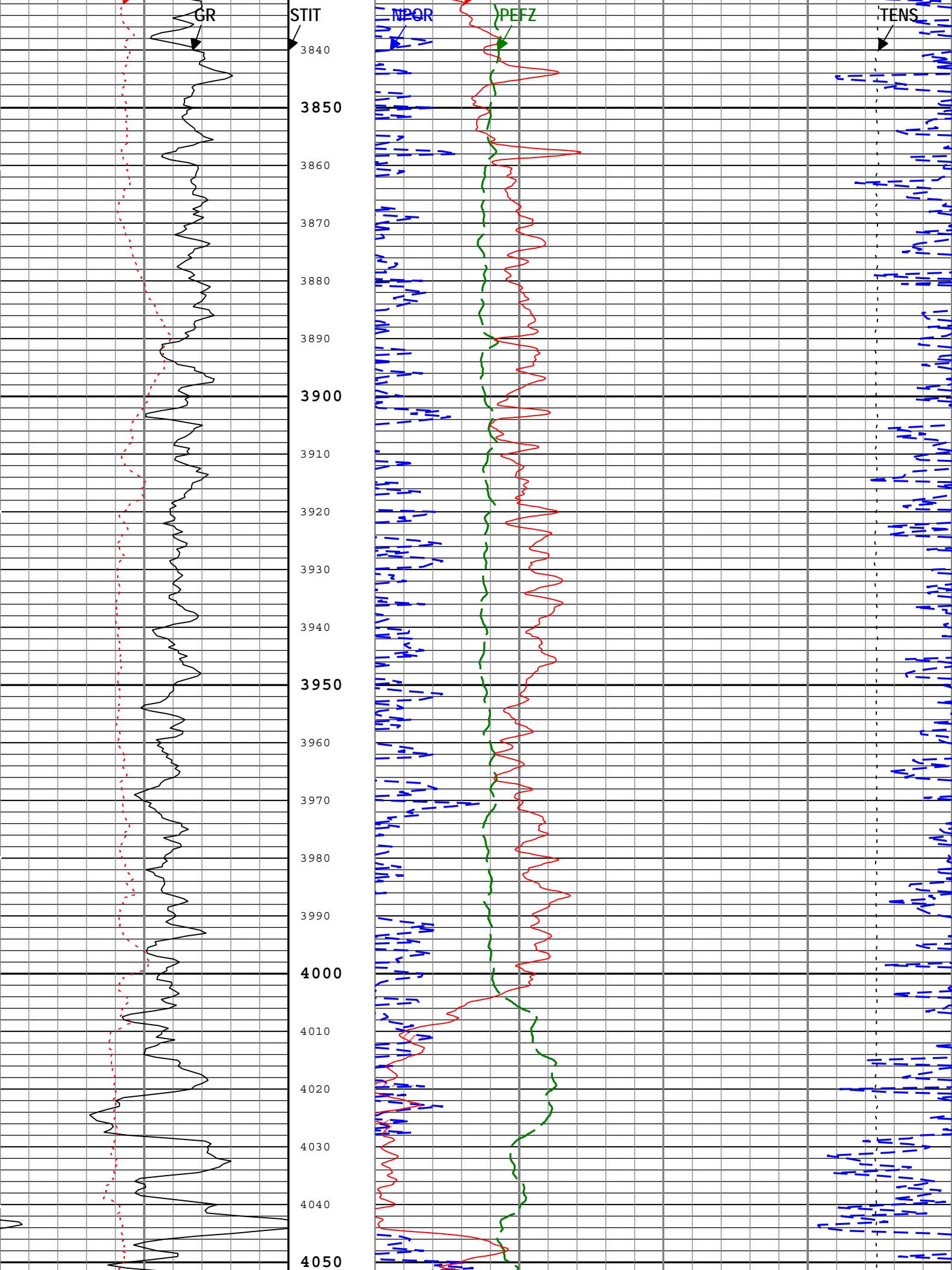


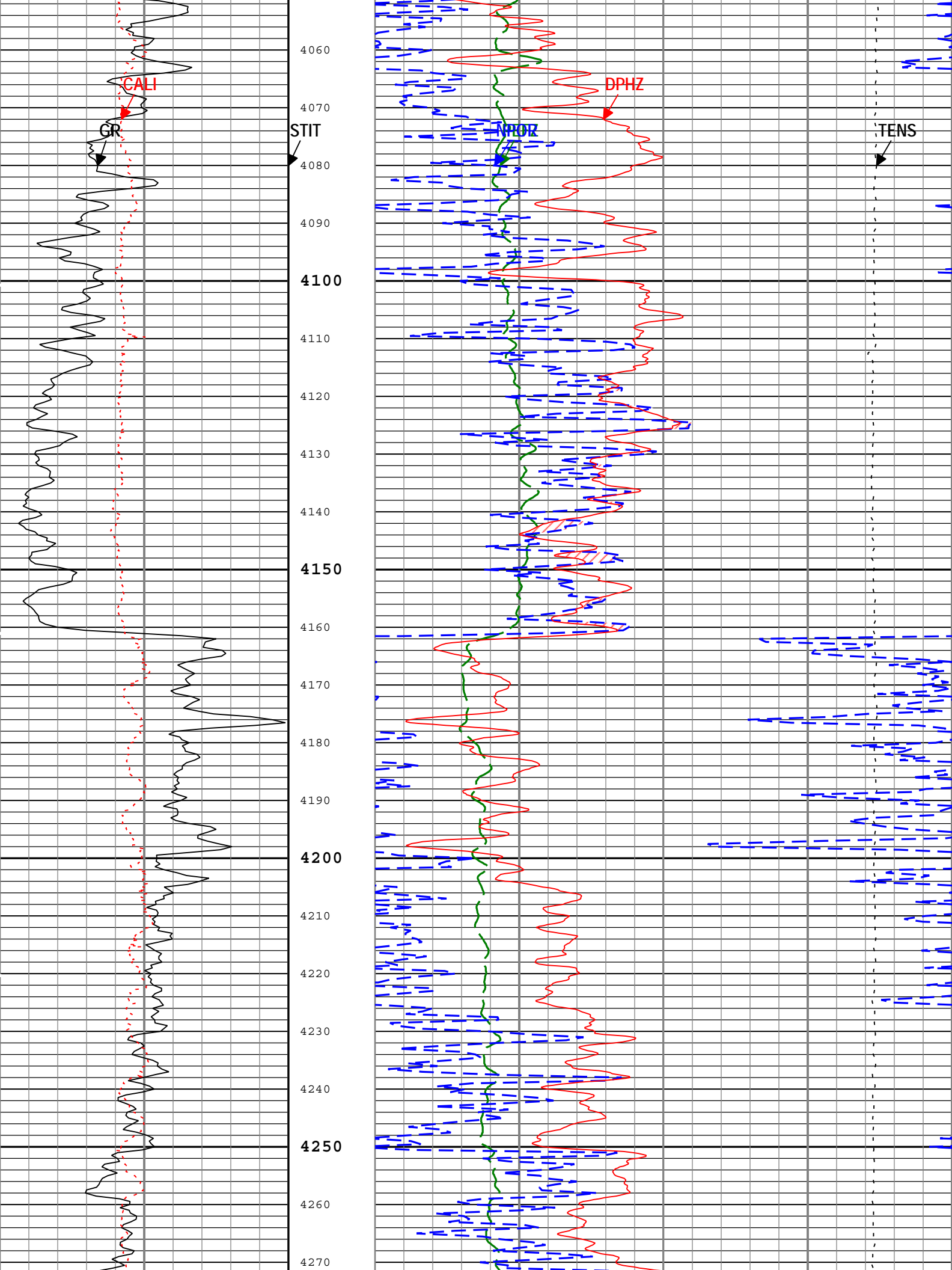


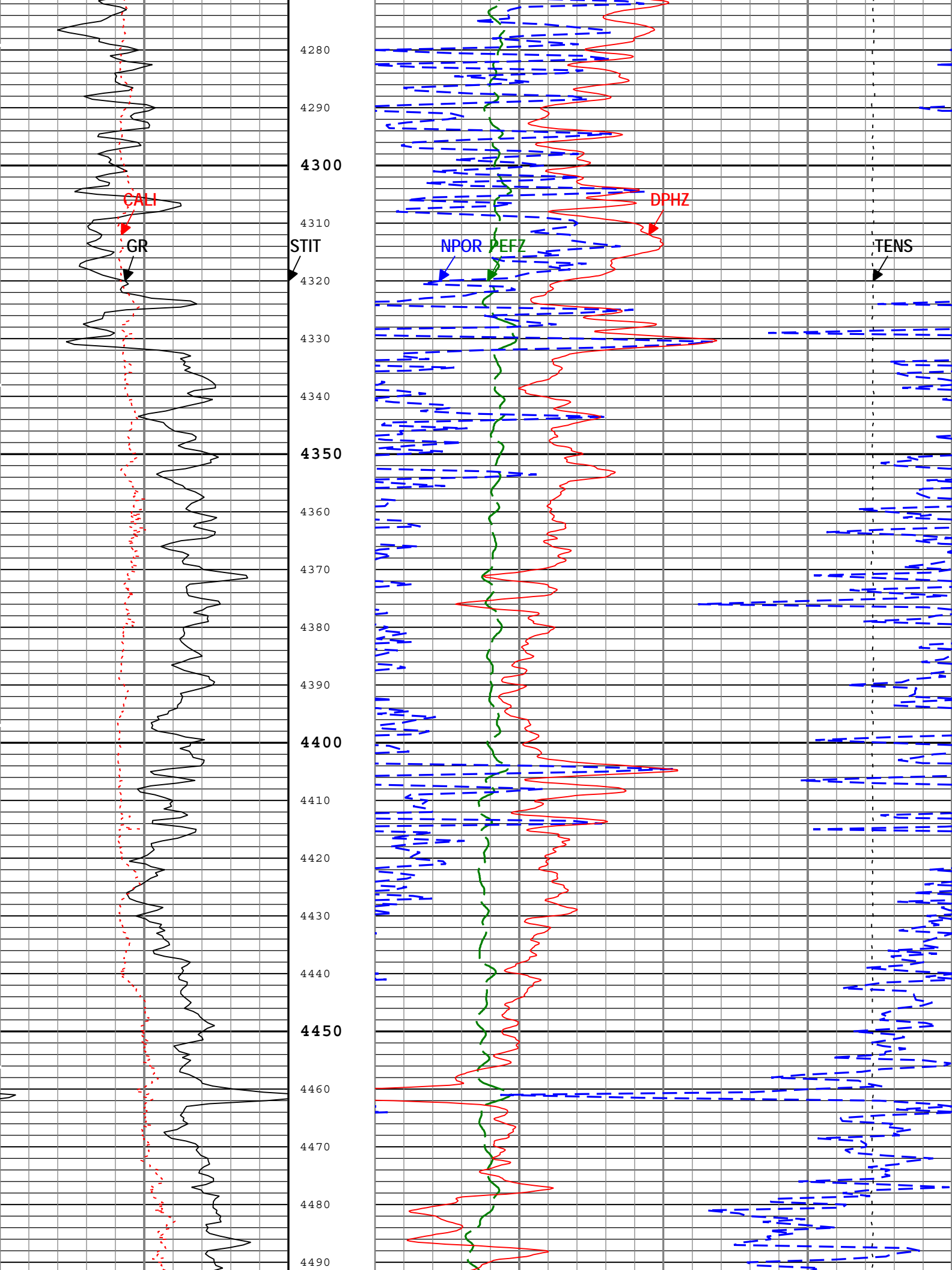


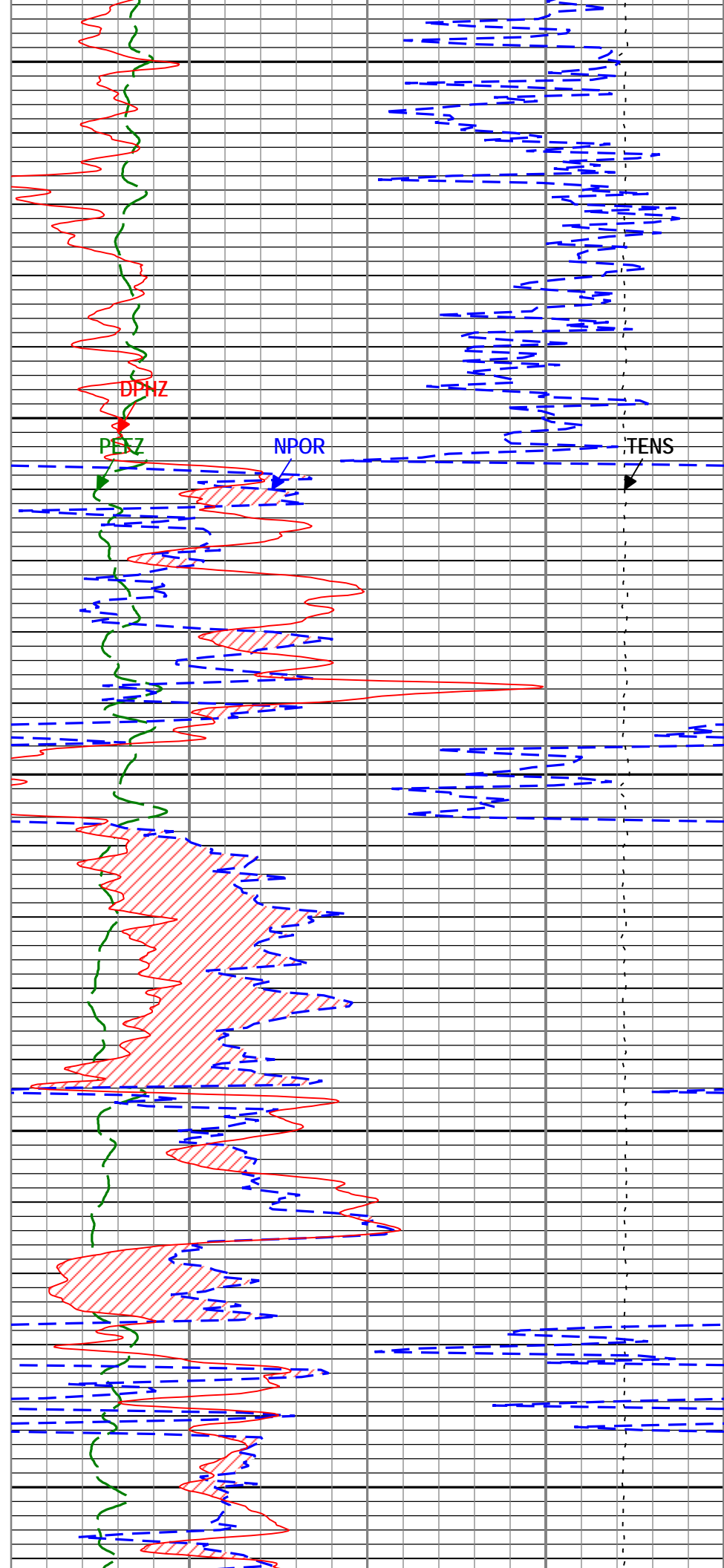
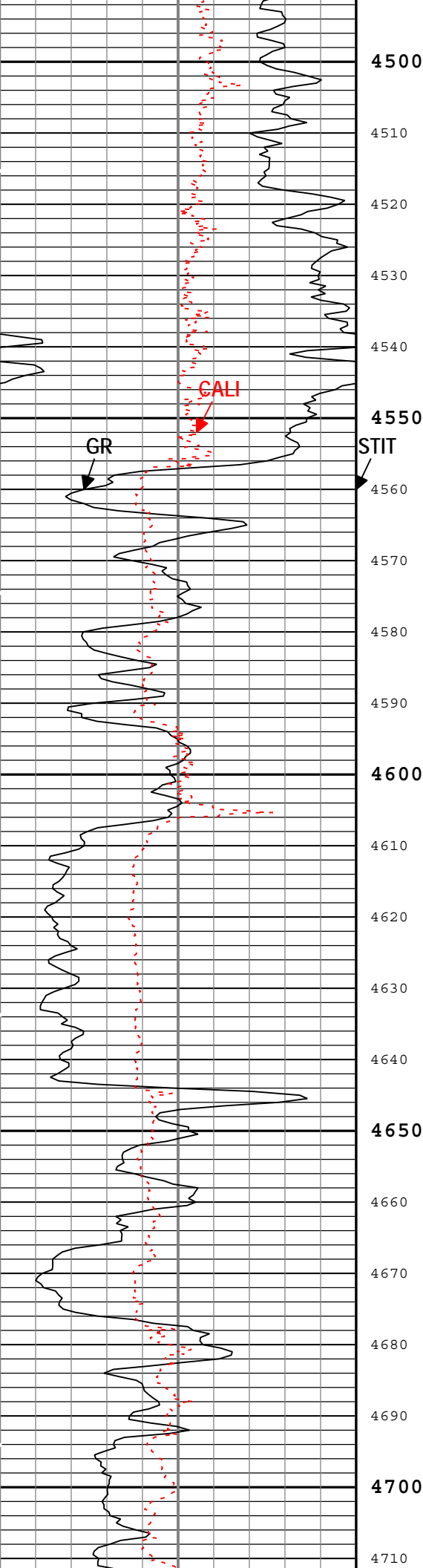


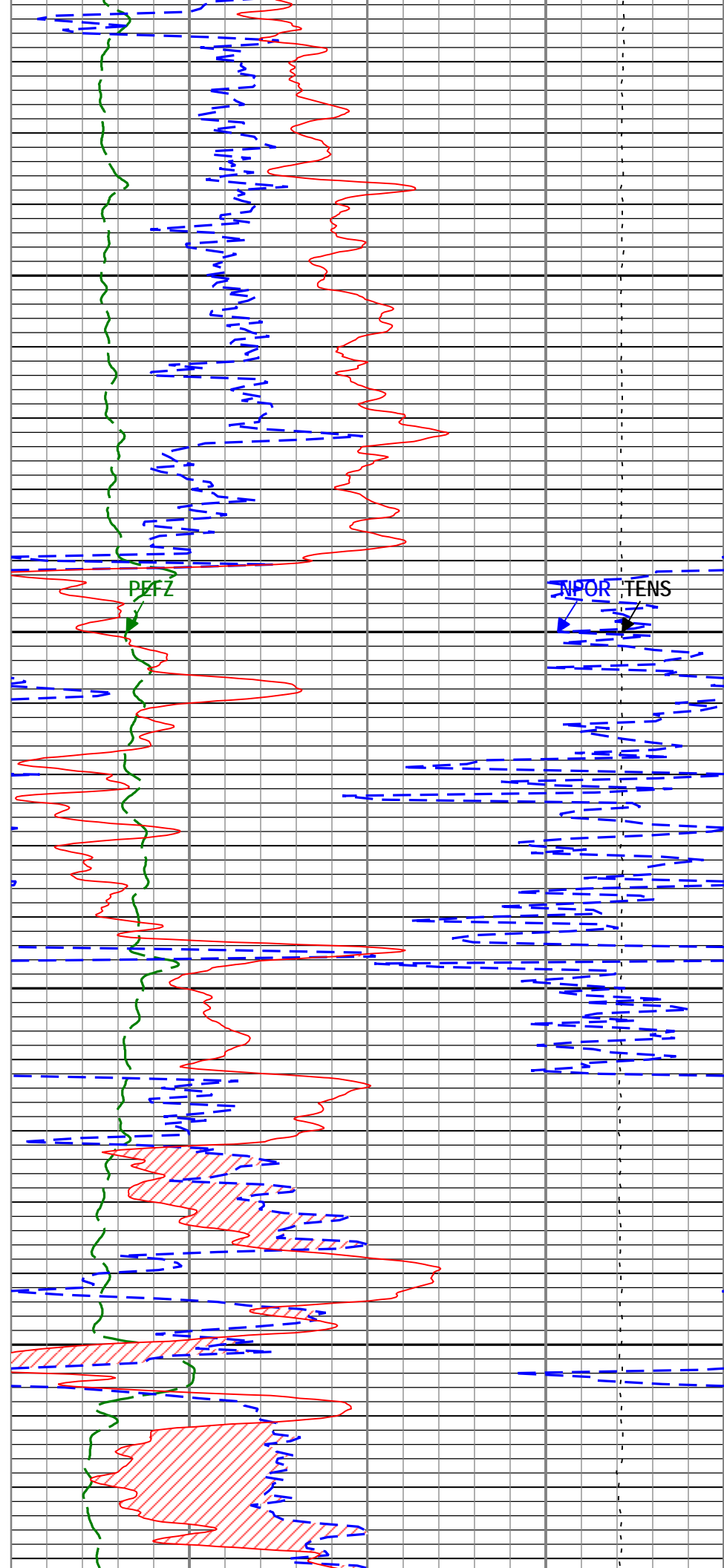
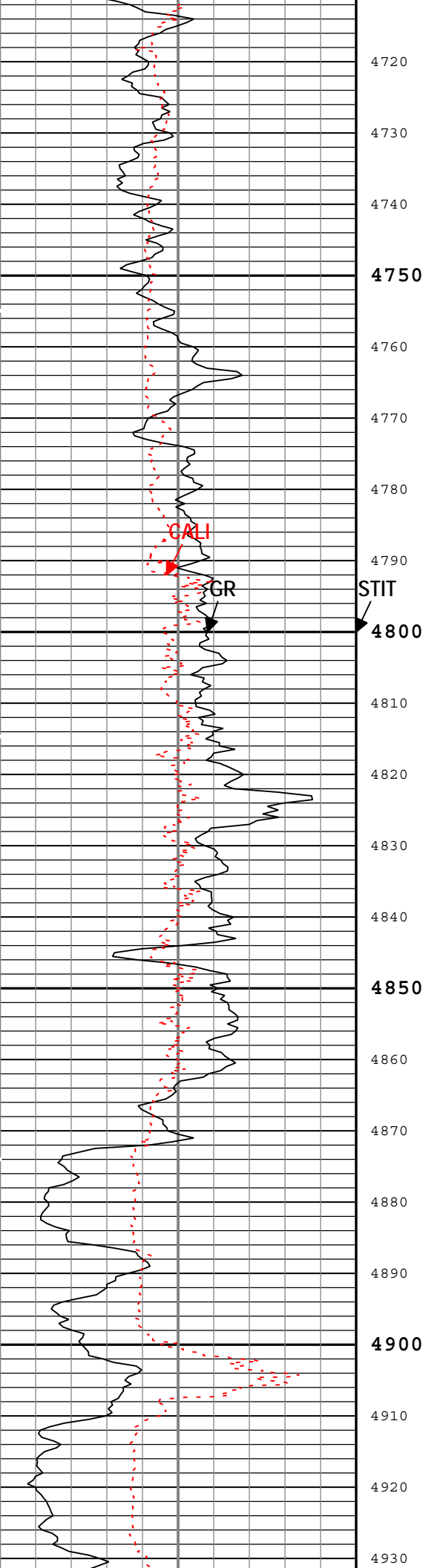


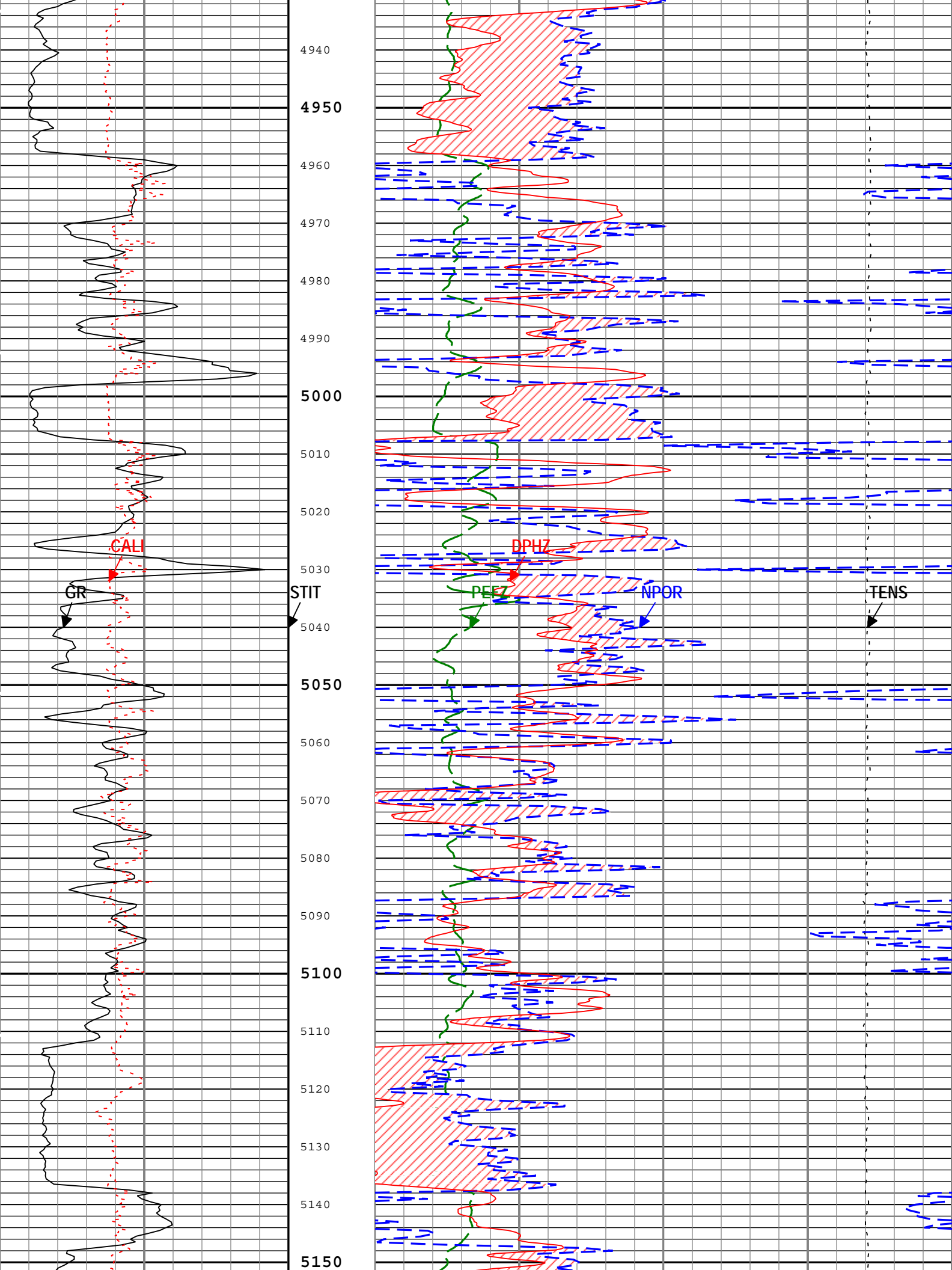


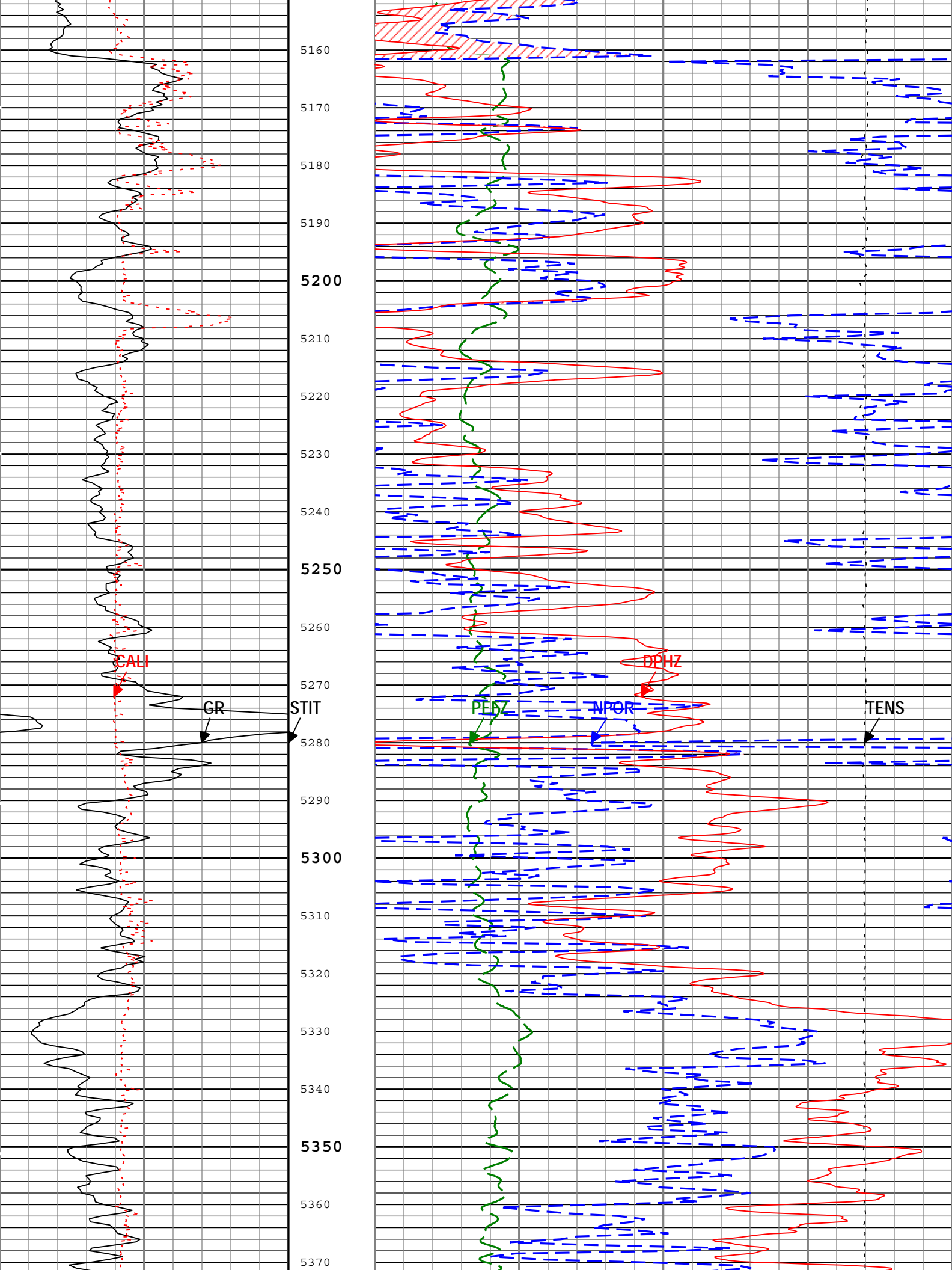


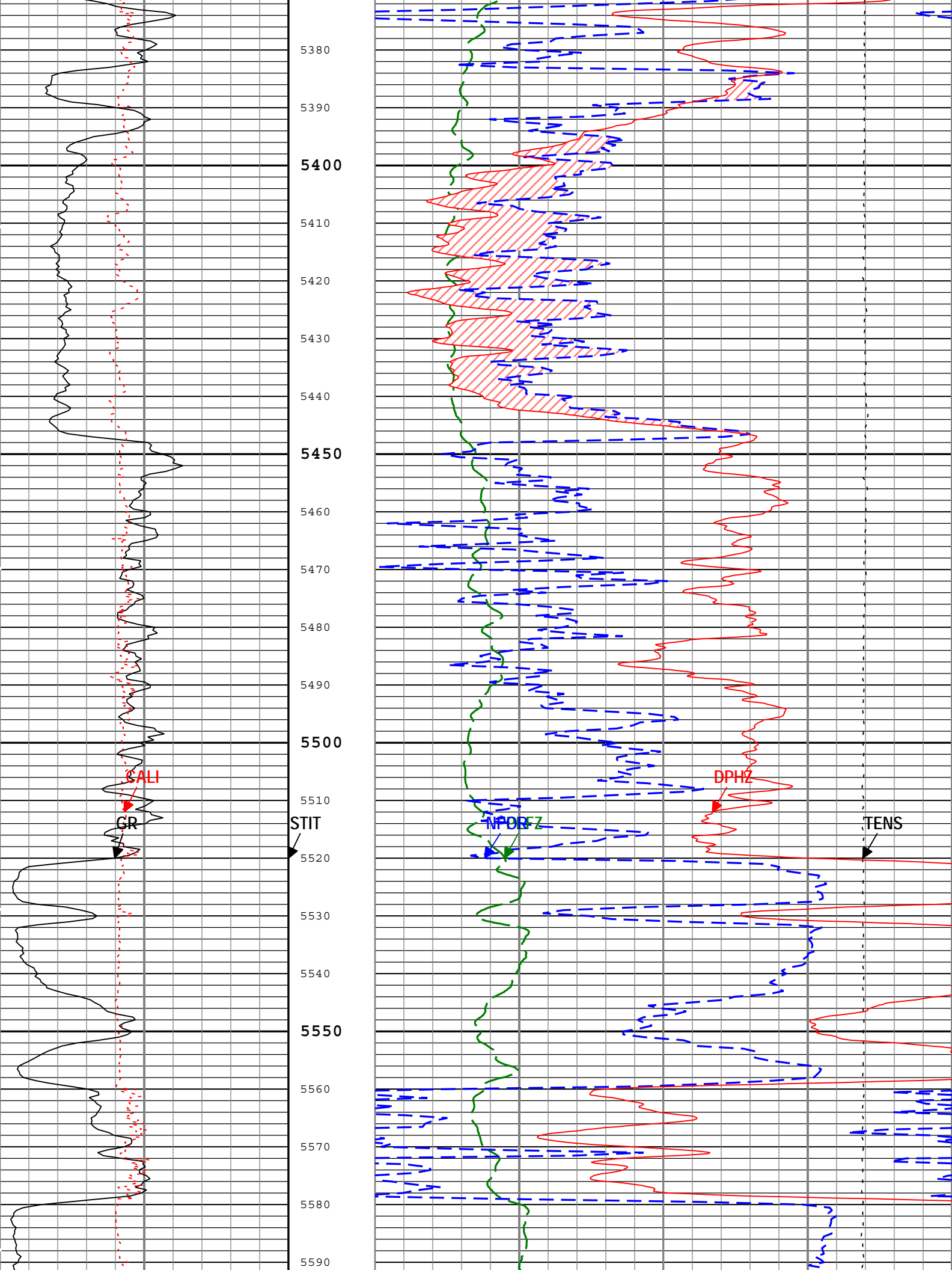


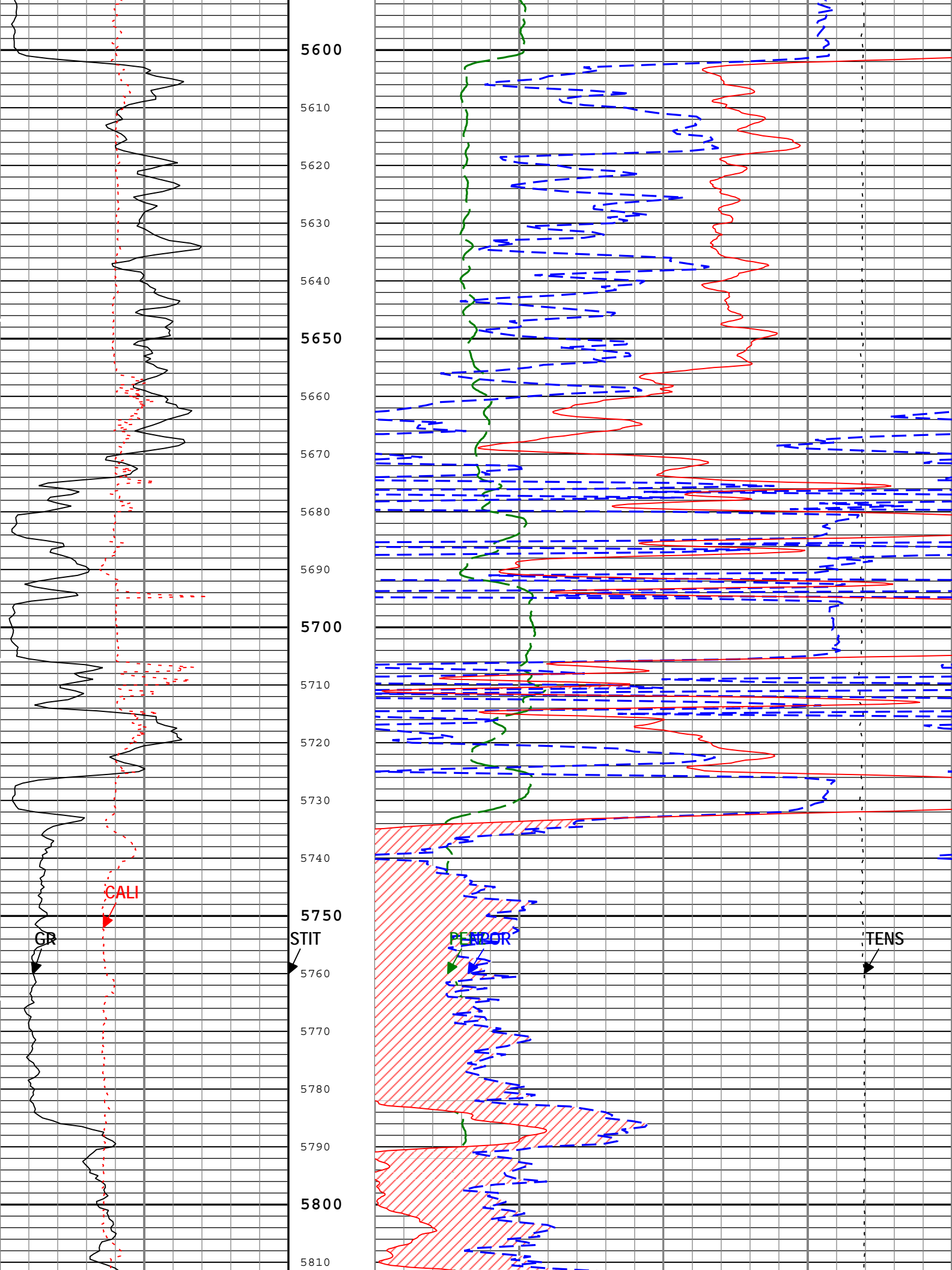


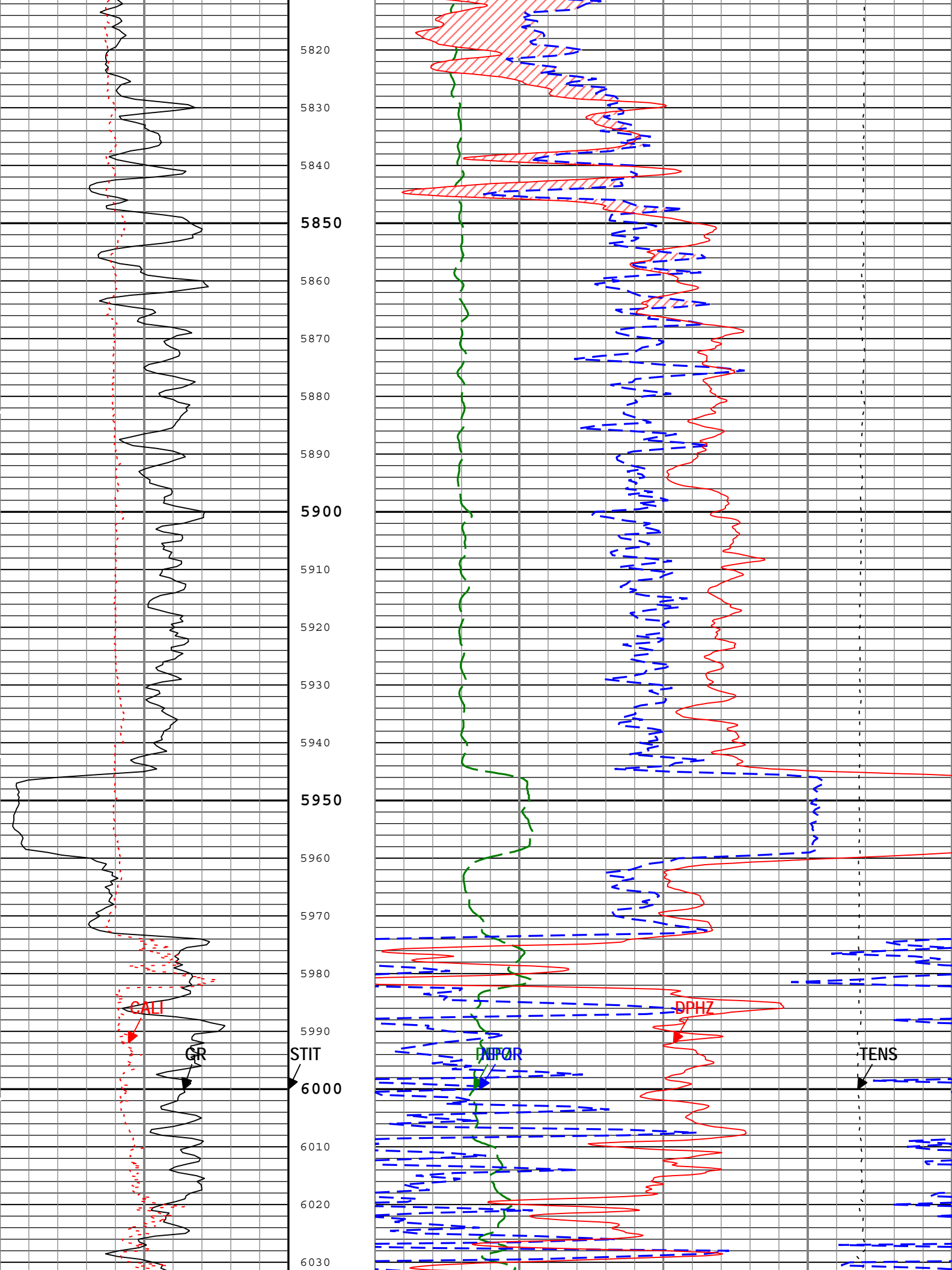


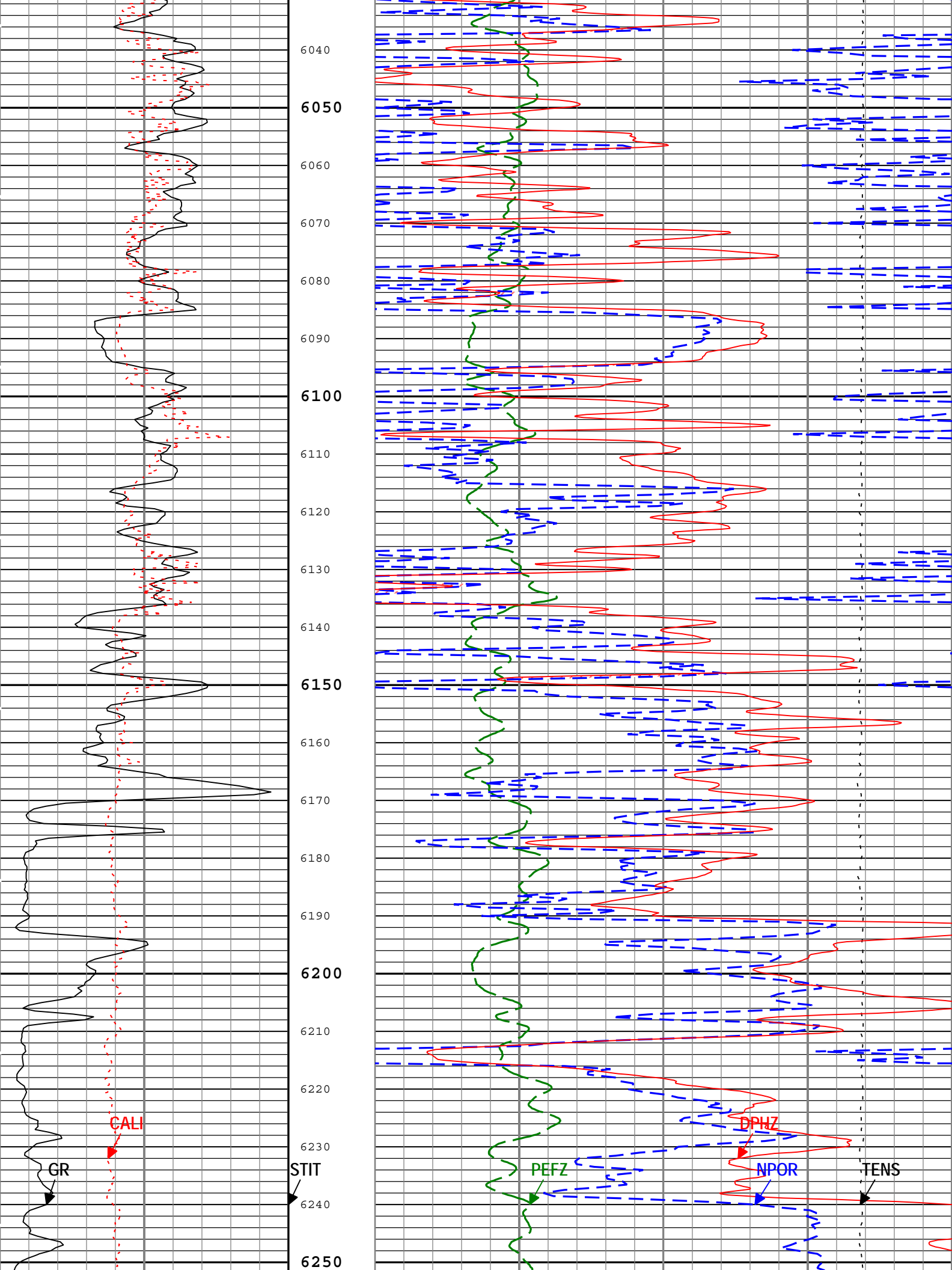


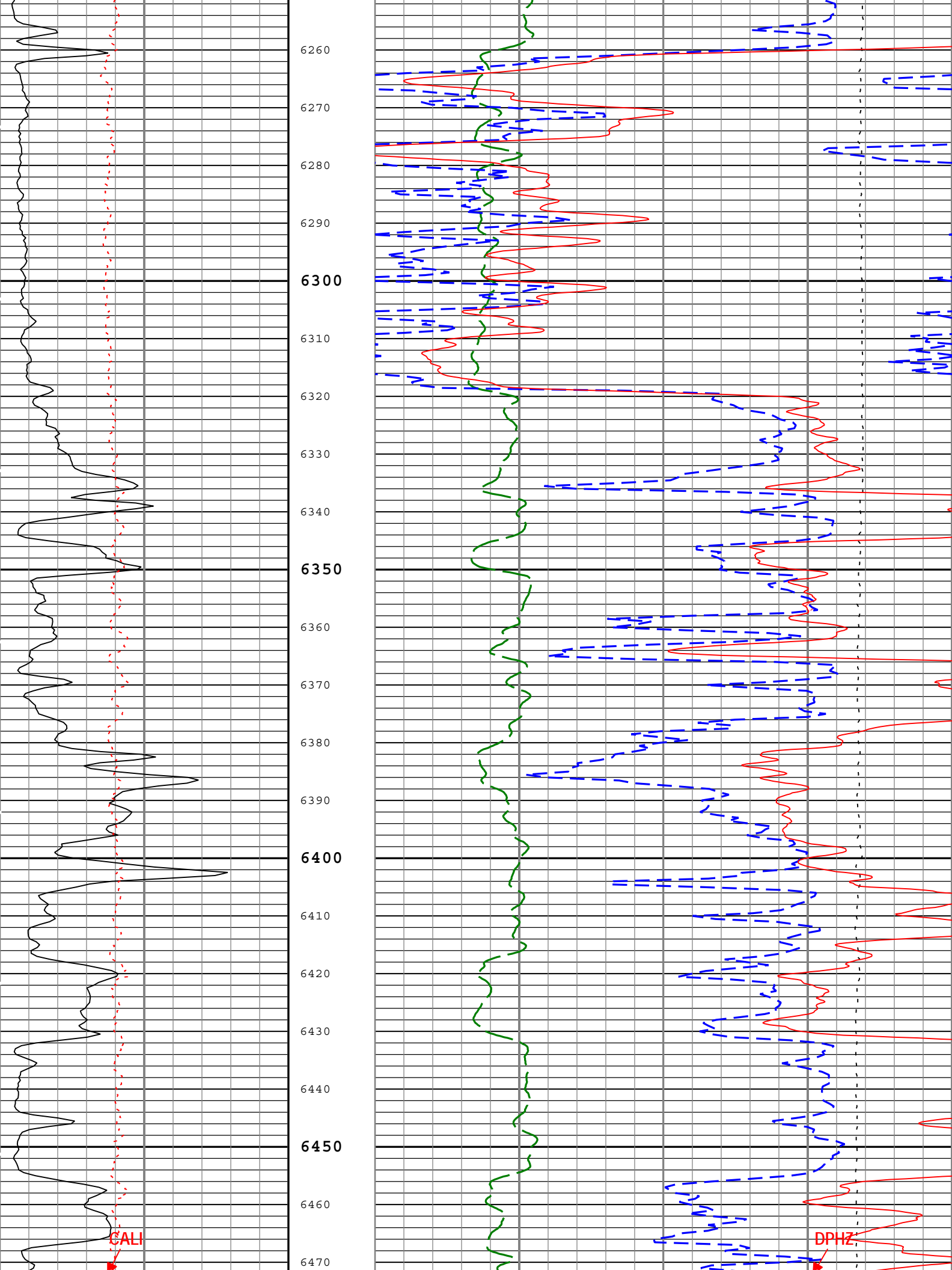


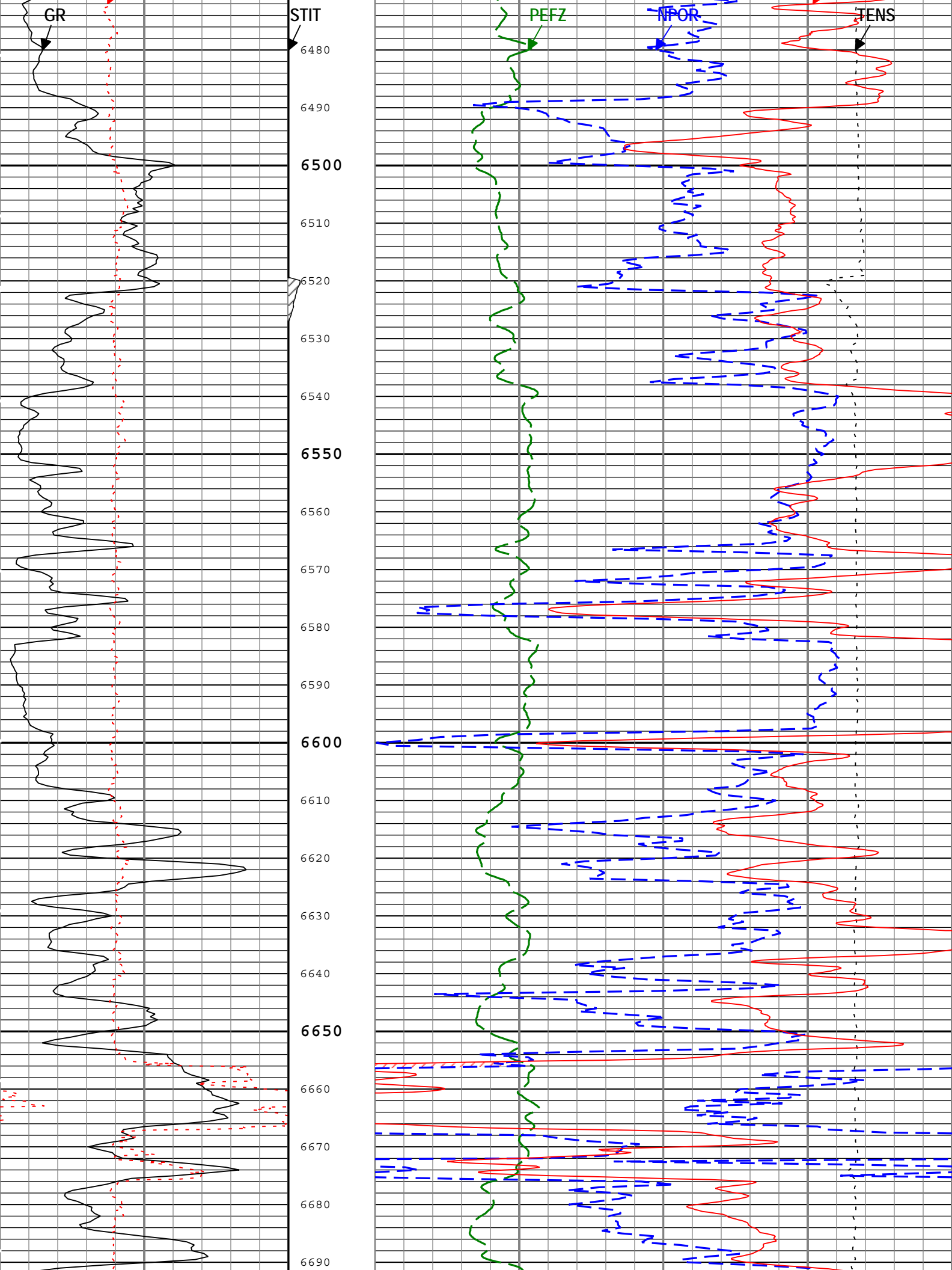


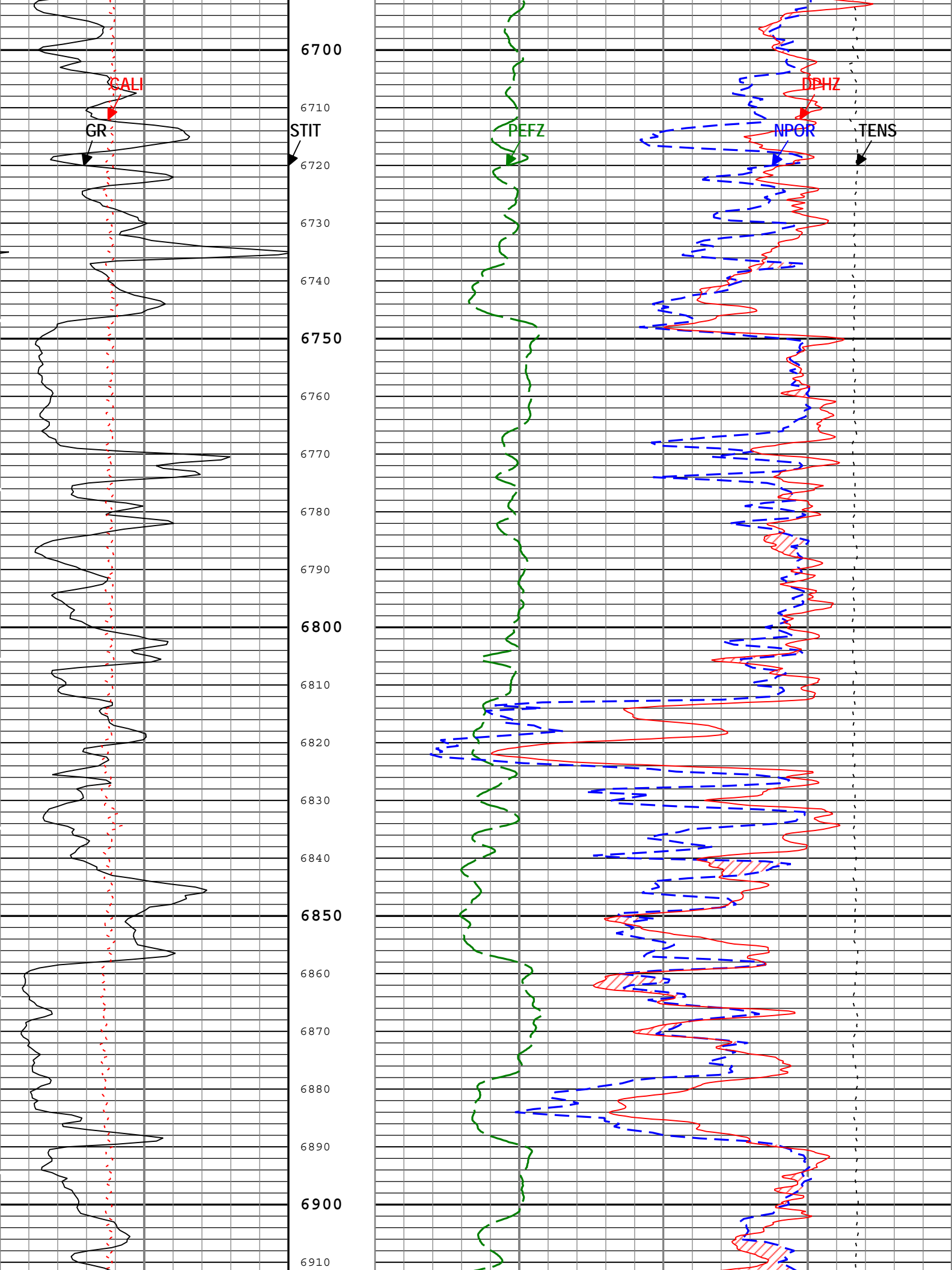


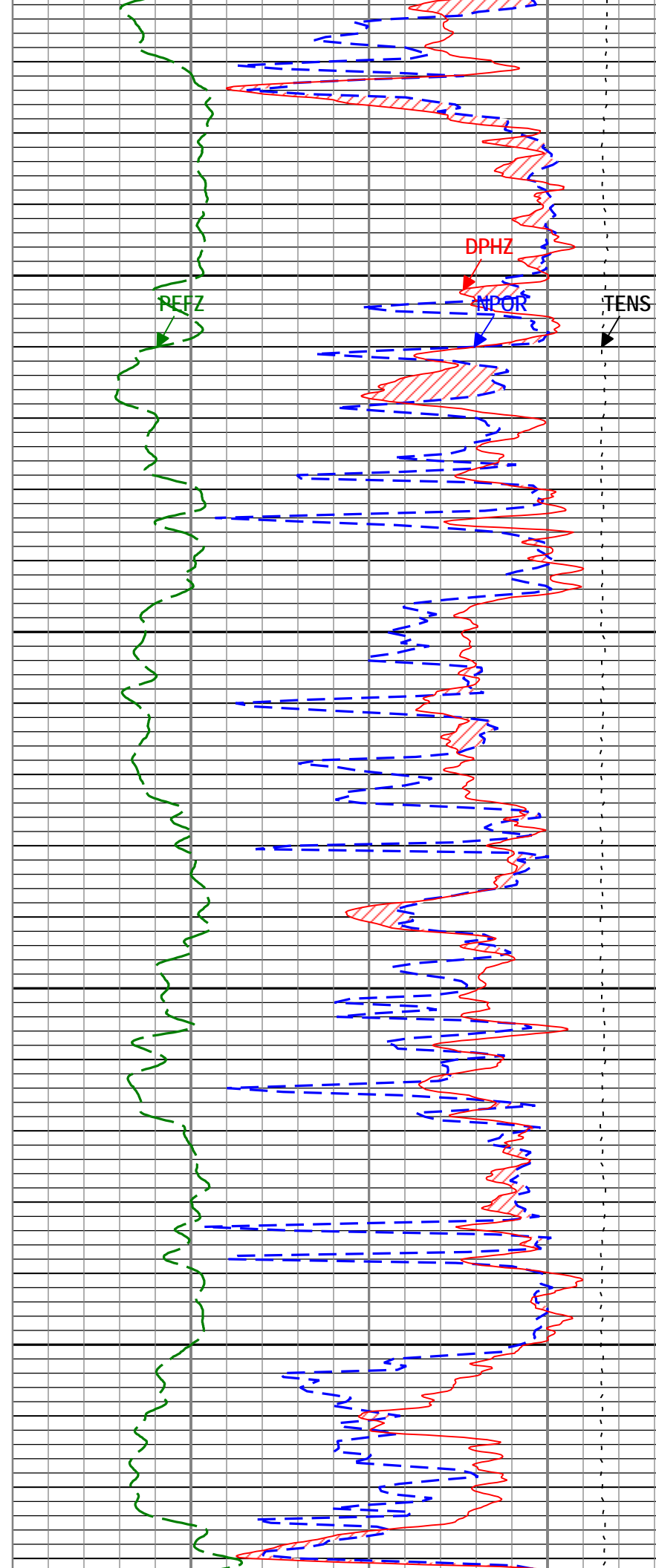
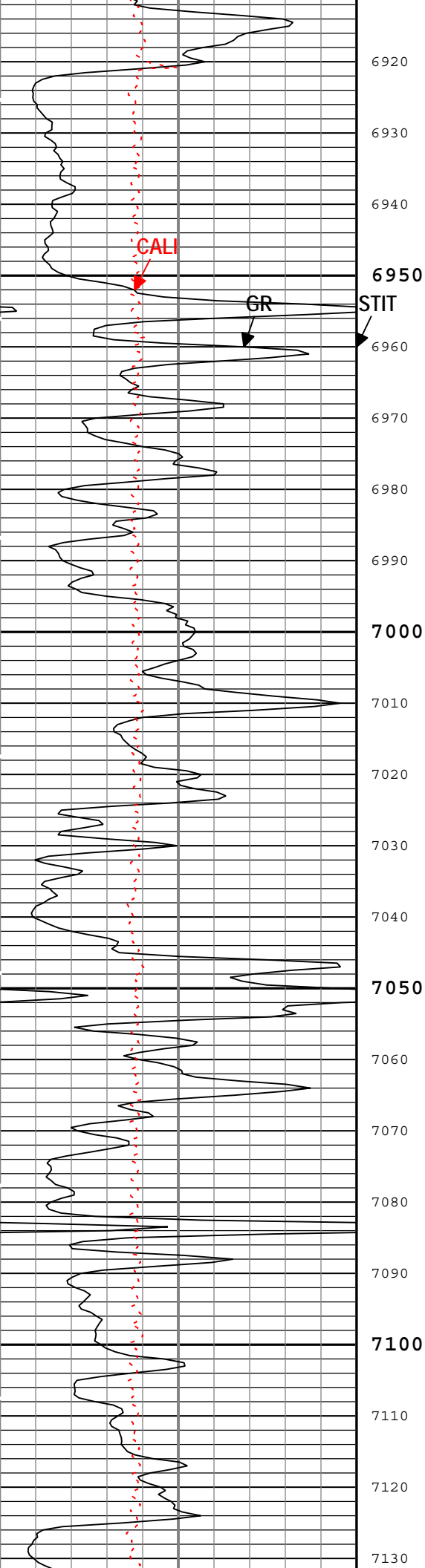


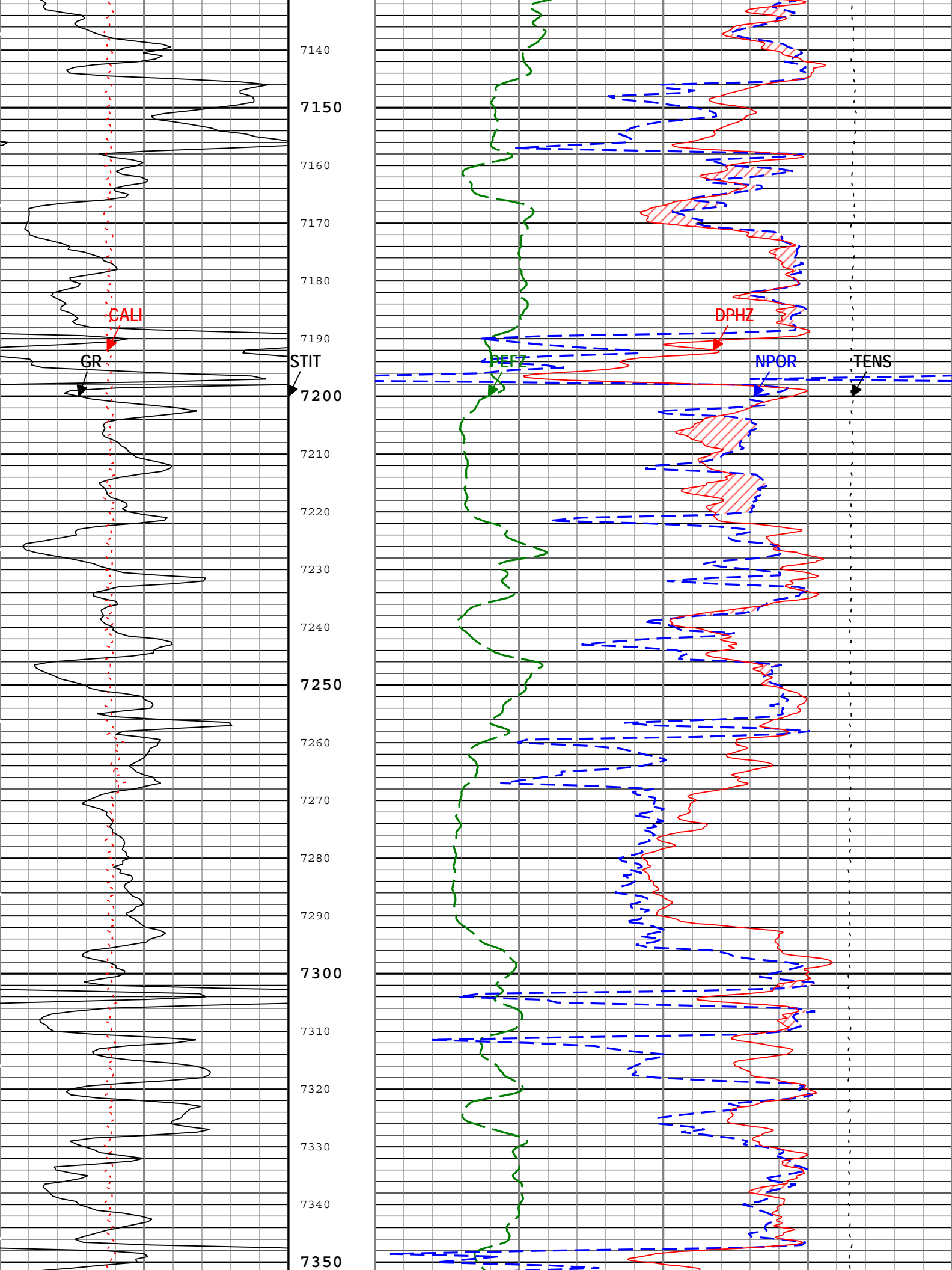


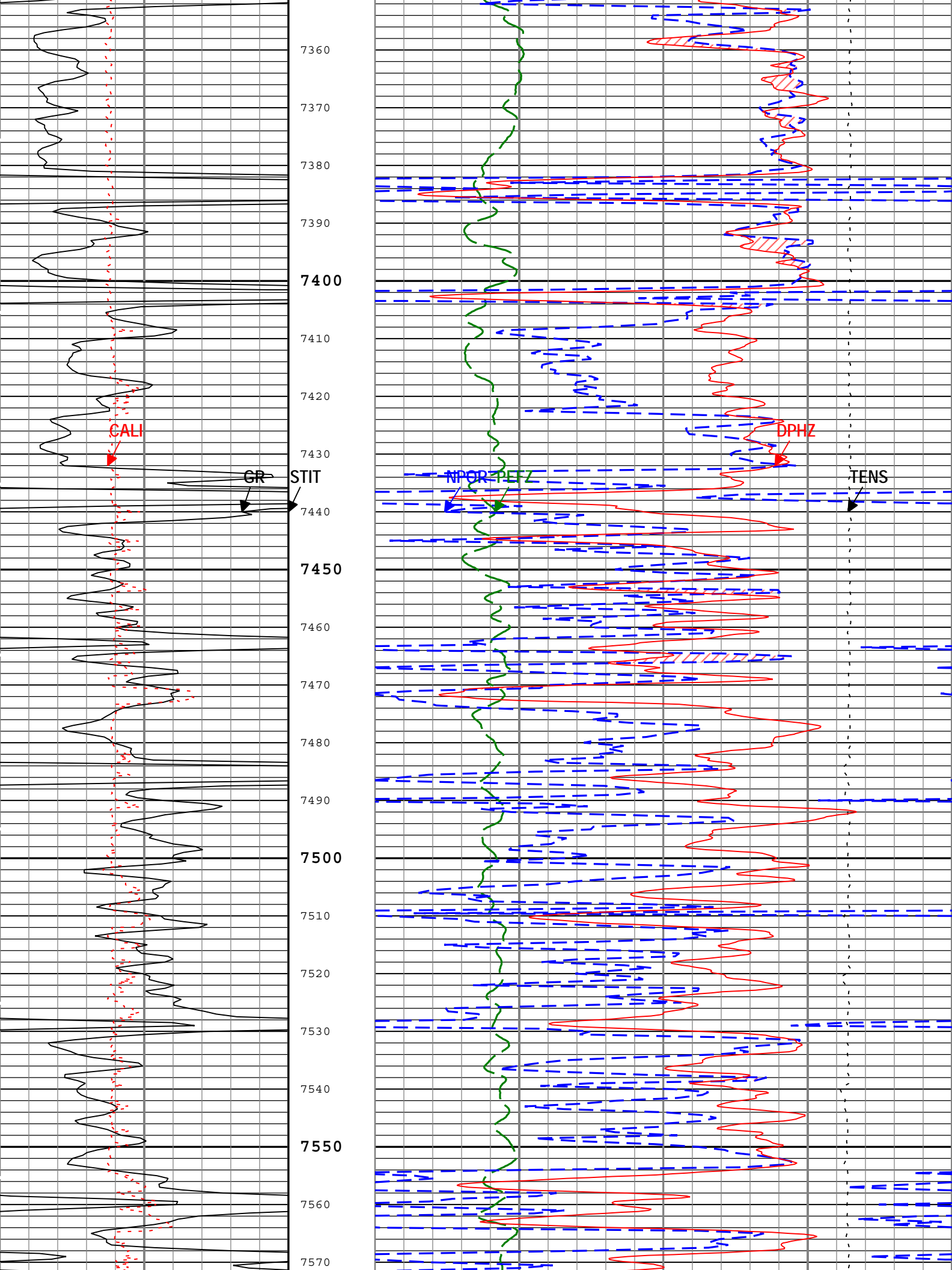


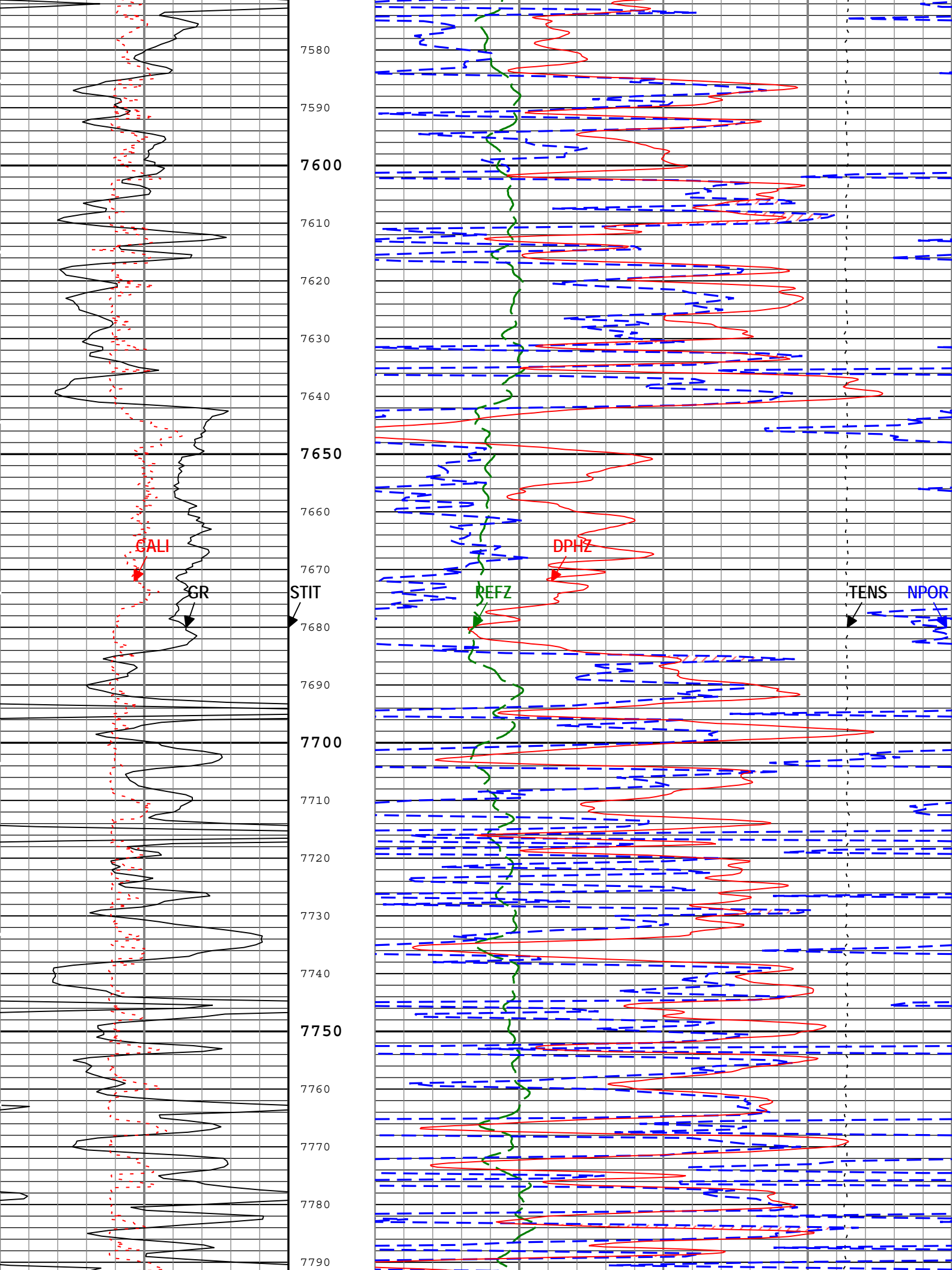


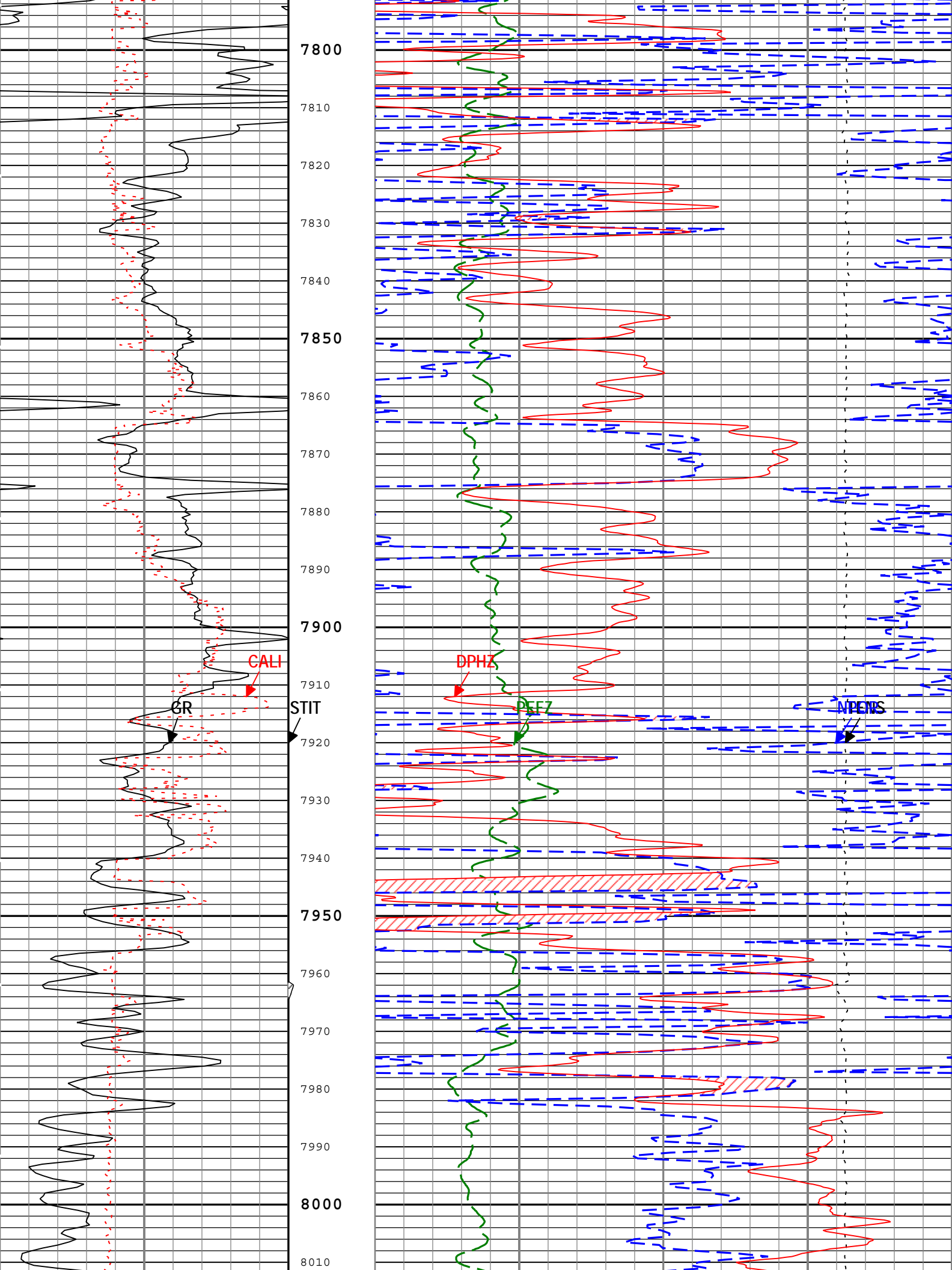


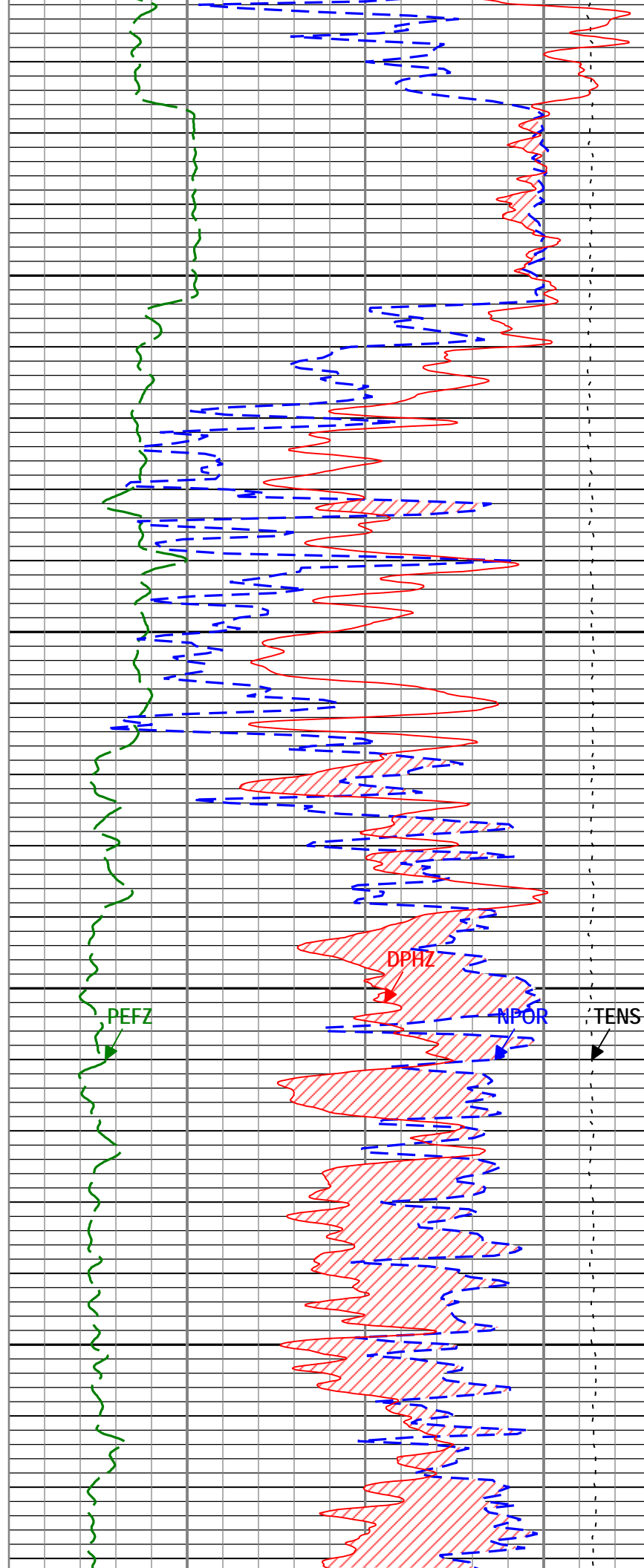
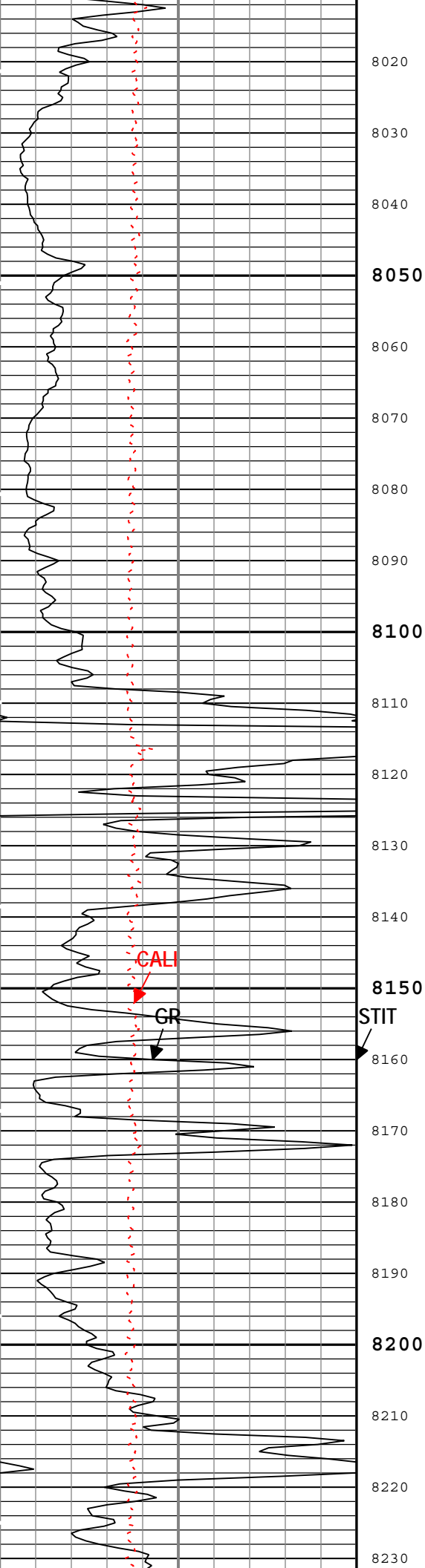


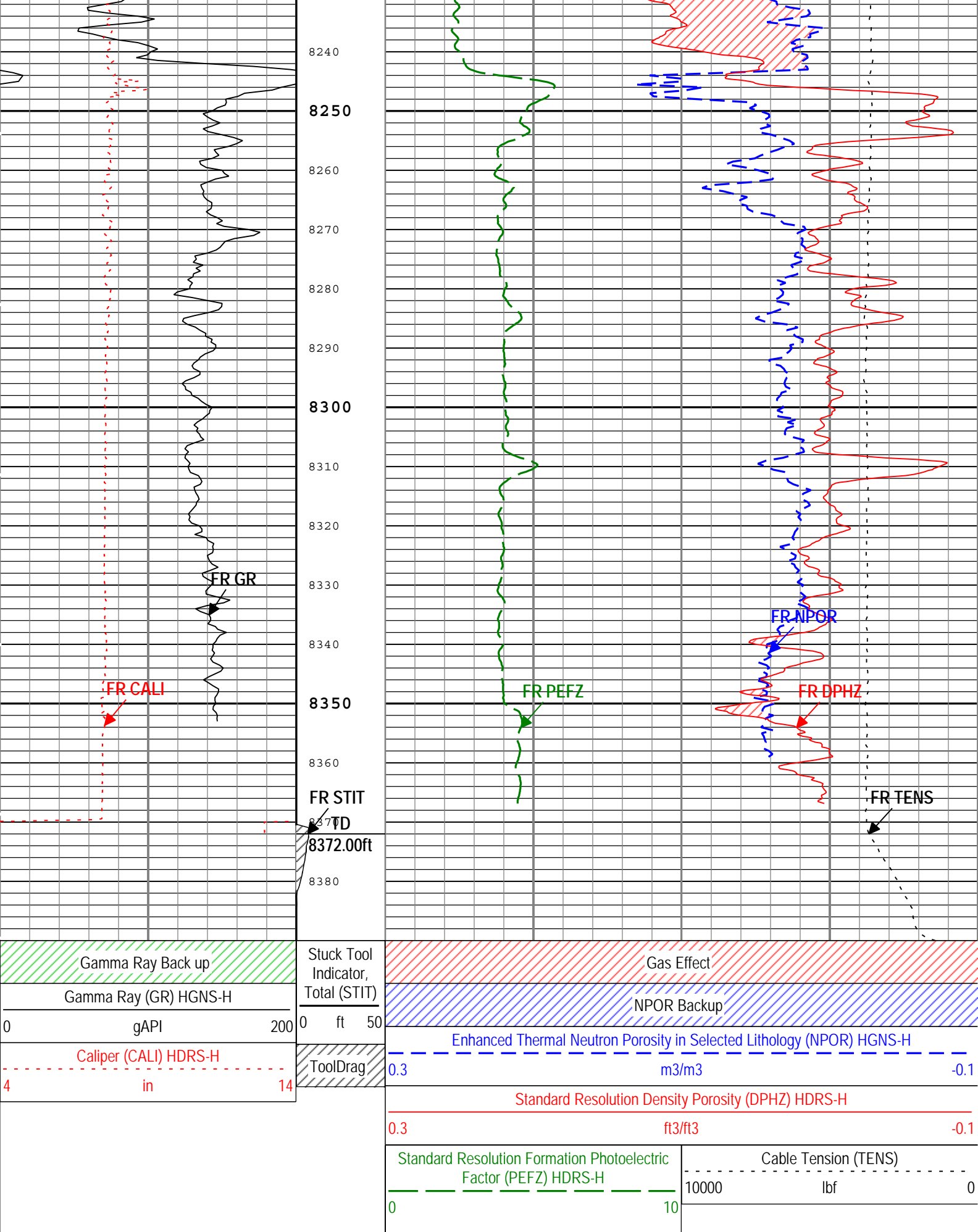




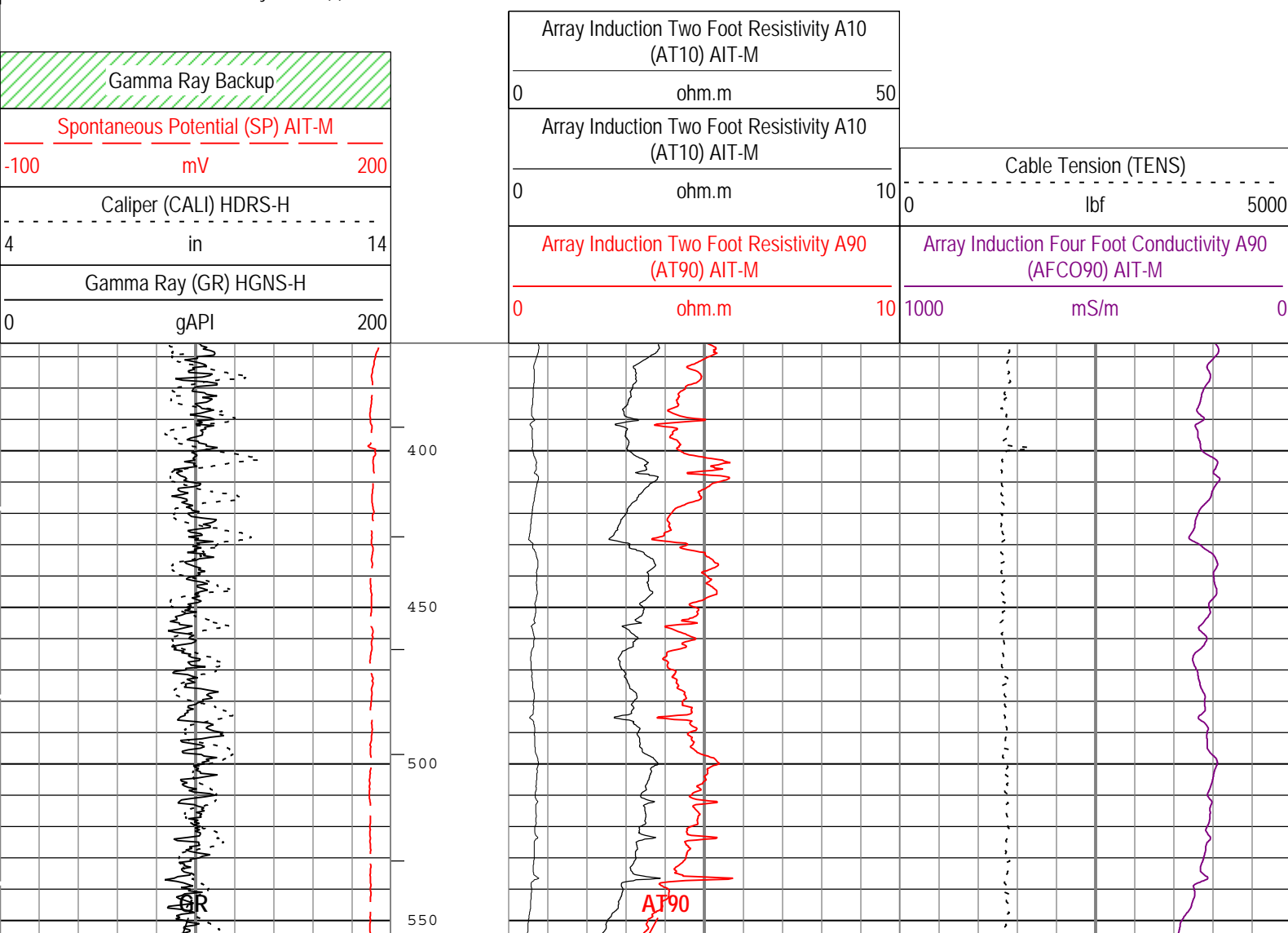


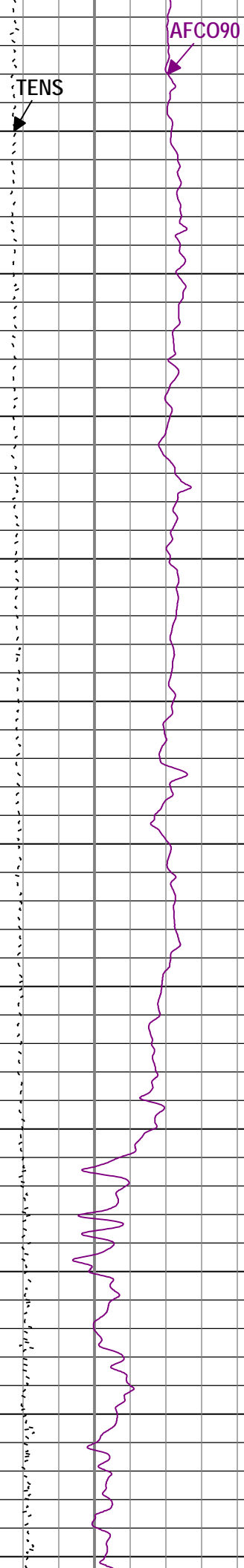
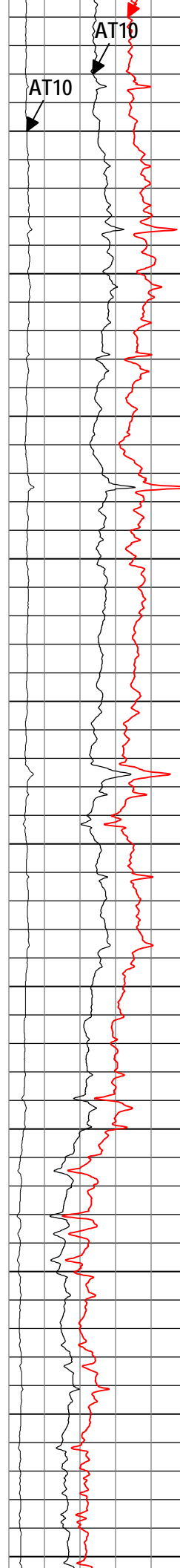
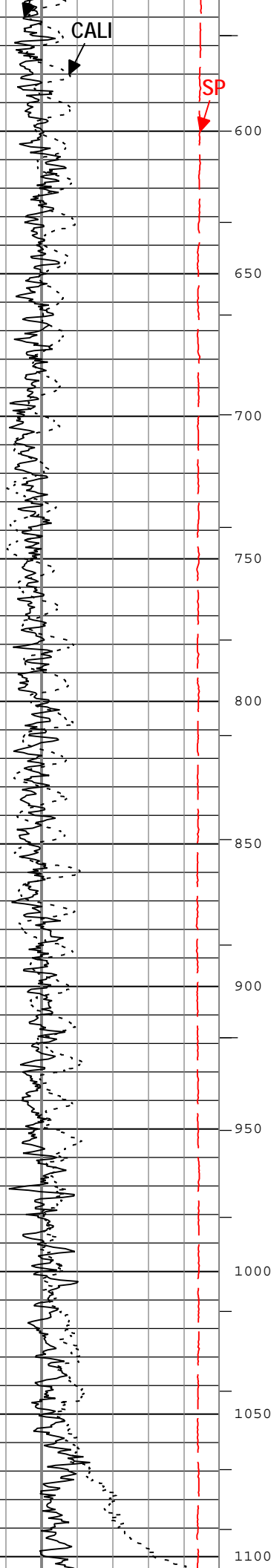


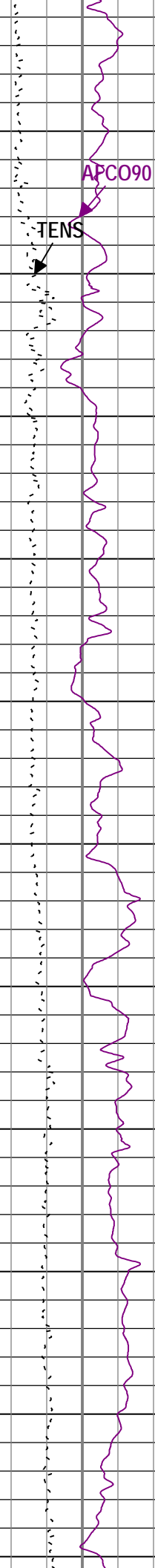
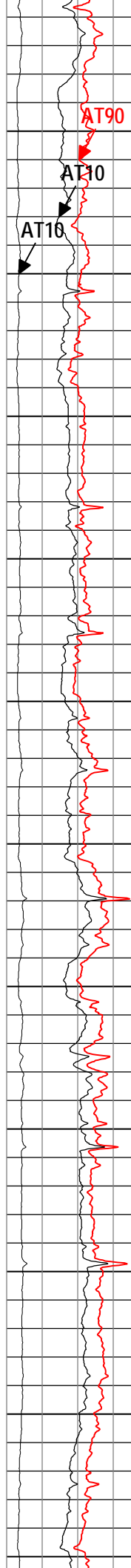
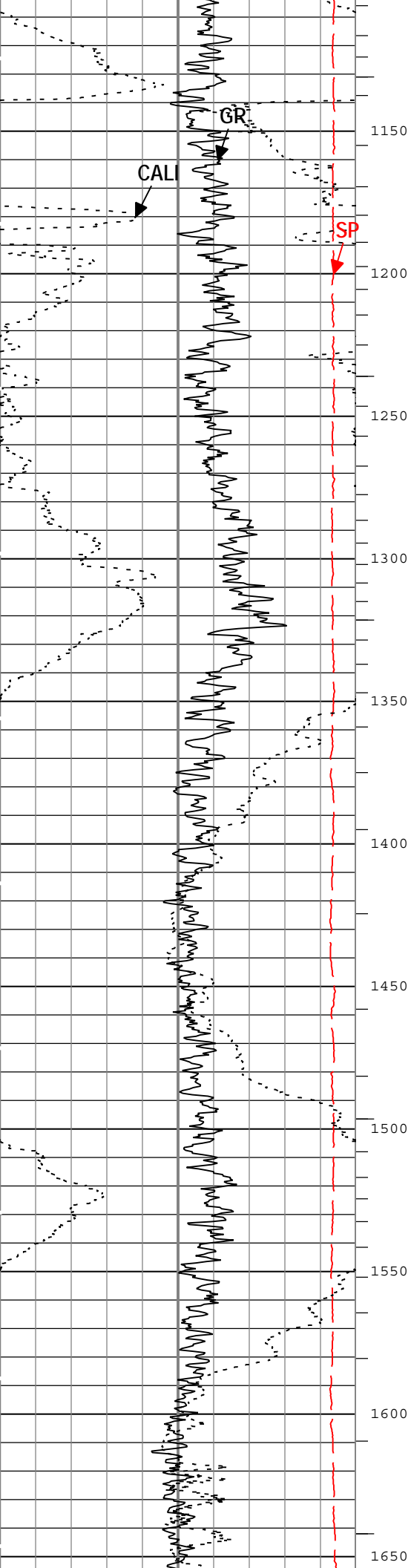


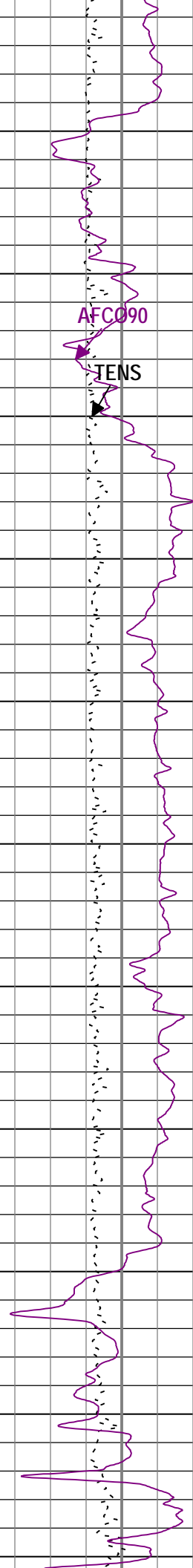
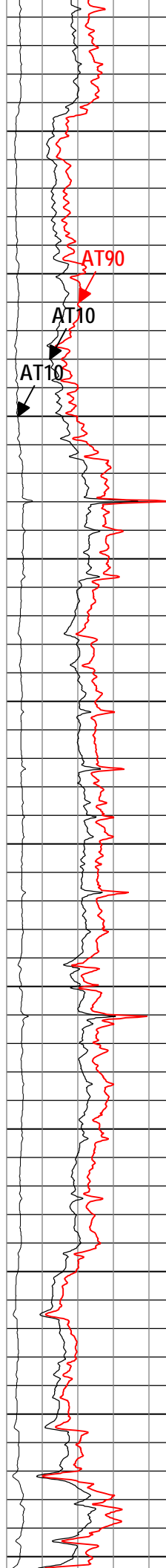
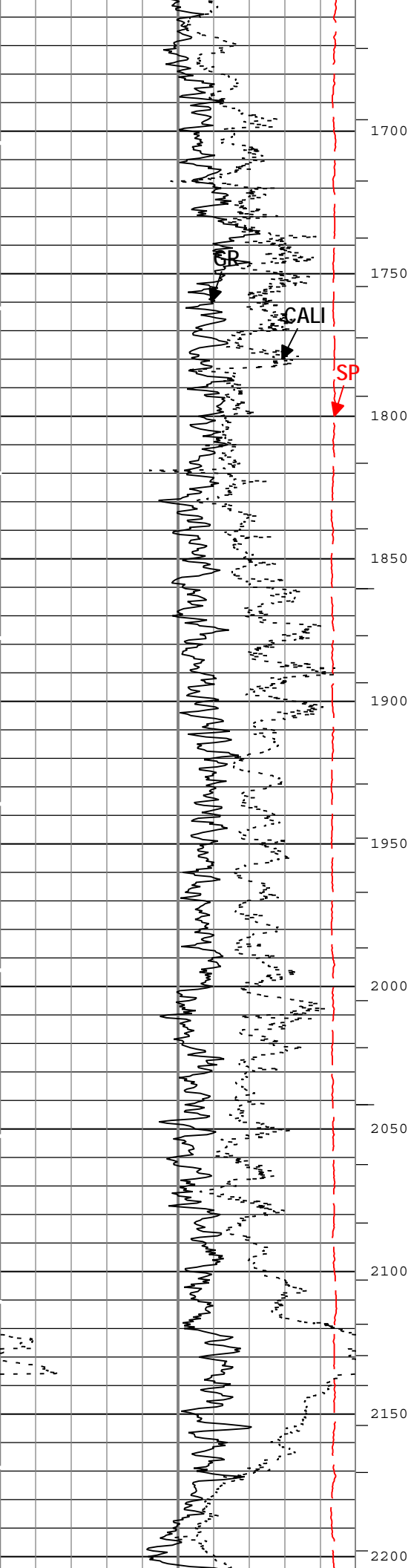


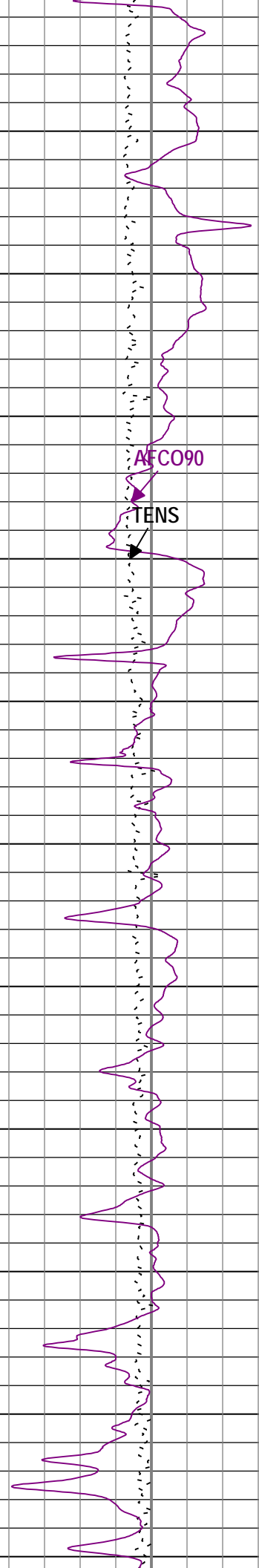
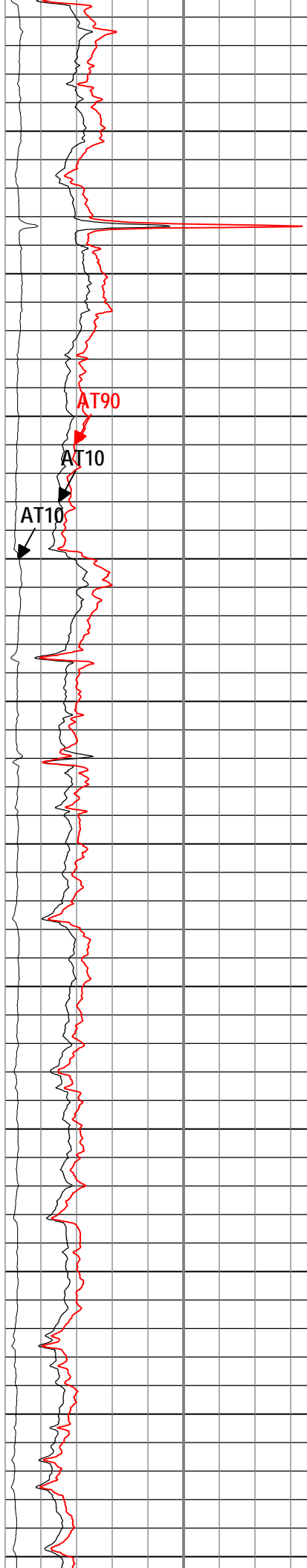
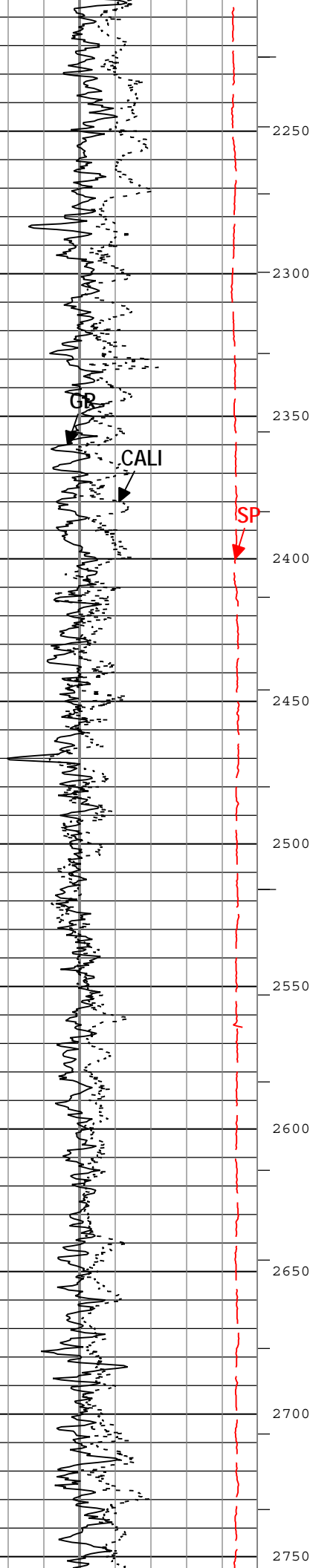
Channel Processing Parameters				
Parameter	Description	Tool	Value	Unit
BARI	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BHT	Bottom Hole Temperature	Borehole	200	degF
BS	Bit Size	WLSESSION	7.875	in
BSAL	Borehole Salinity	Borehole	1500	ppm
CALI_SHIFT	CALI Supplementary Offset	HDRS-H	-0.642	in
CBLO	Casing Bottom (Logger)	WLSESSION	366	ft
CDEN	Cement Density	HGNS-H	2	g/cm3
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	9.5	lbm/gal
DFT	Drilling Fluid Type	Borehole	Water	
DFT_WATER	Drilling Fluid Water Type	Borehole	WBM	
DHC	Density Hole Correction	HDRS-H	Bit Size	
FD	Fluid Density	Borehole	1	g/cm3
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	CALI	
GRSE	Generalized Mud Resistivity Selection, from Measured or Computed Mud Resistivity	Borehole	AMF	
GTSE	Generalized Temperature Selection, from Measured or Computed Temperature	Borehole	CTEM	
HSCO	Hole Size Correction Option	HGNS-H	Yes	
MATR	Rock Matrix for Neutron Porosity Corrections	Borehole	LIMESTONE	
MDEN	Matrix Density for Density Porosity	Borehole	2.71	g/cm3
MFST	Mud Filtrate Sample Temperature	Borehole	75	degF
RMFS	Resistivity of Mud Filtrate Sample	Borehole	0.57	ohm.m
TD	Total Measured Depth	Borehole	8372	ft
Tool Control Parameters				
Parameter	Description	Tool	Value	Unit
HMCA_BRD_TYPE	HMCA Board Type	HGNS-H	1	
HRGD_BRD_TYPE	HRGD Board Type	HDRS-H	WITH_HET	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	1800	ft/h
ONE				
2" Induction				
Integration Summary				
Output Channel(s)	Output Description	Input Parameter	Output Value	Unit
ICV	Integrated Cement Volume	GCSE_UP_PASS, FCD	2457.47	ft3
Software Version				
Acquisition System		Version		
MaxWell		4.0.9163.3000		
Application Patch		Patch-SP-10767_13393-4.0.9163.3001		
Computation	Description			Version
Borehole	Borehole Ensemble provides common Borehole Parameters and Channels			4.0.9213.3000
Tool Elements	Description	Software Version		Firmware Version
HRCC-H	HILT High-Resolution Control Cartridge, 150 degC	4.0.9231.3000		2.0
HGNS-H	HILT Gamma-Ray and Neutron Sonde, 150 degC	4.0.9231.3000		2.0

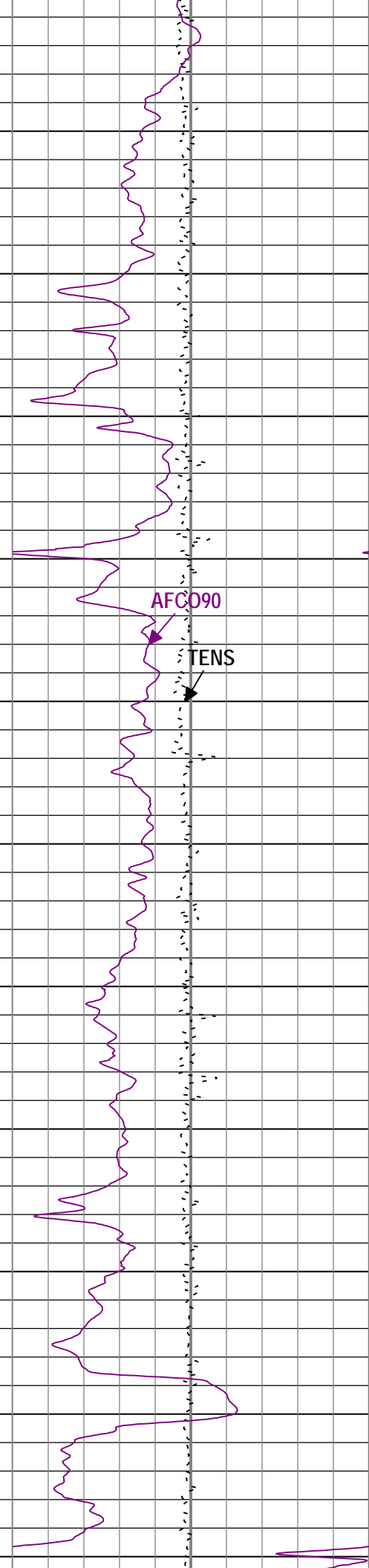
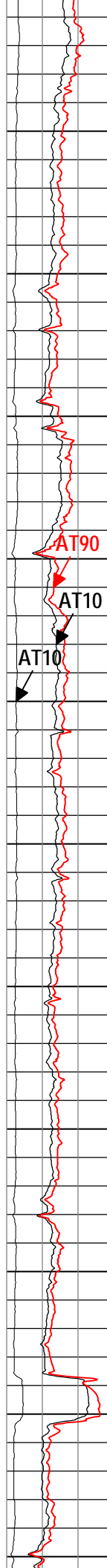
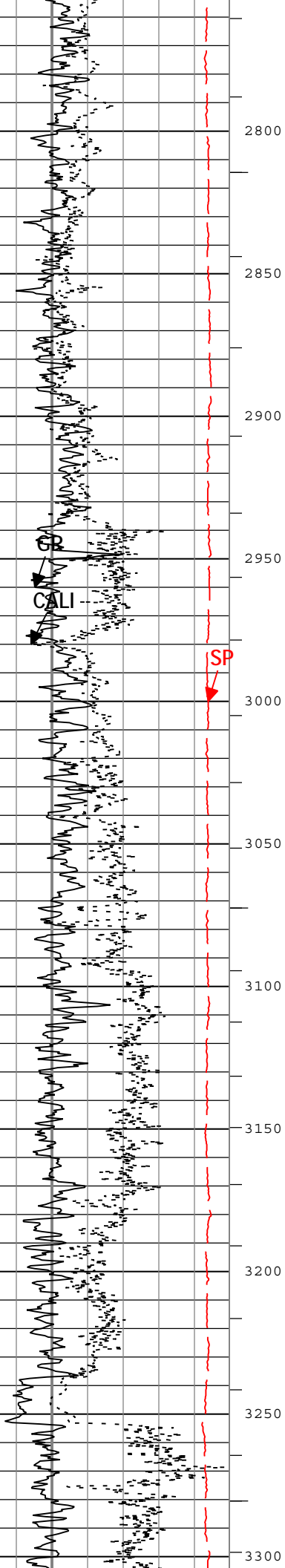


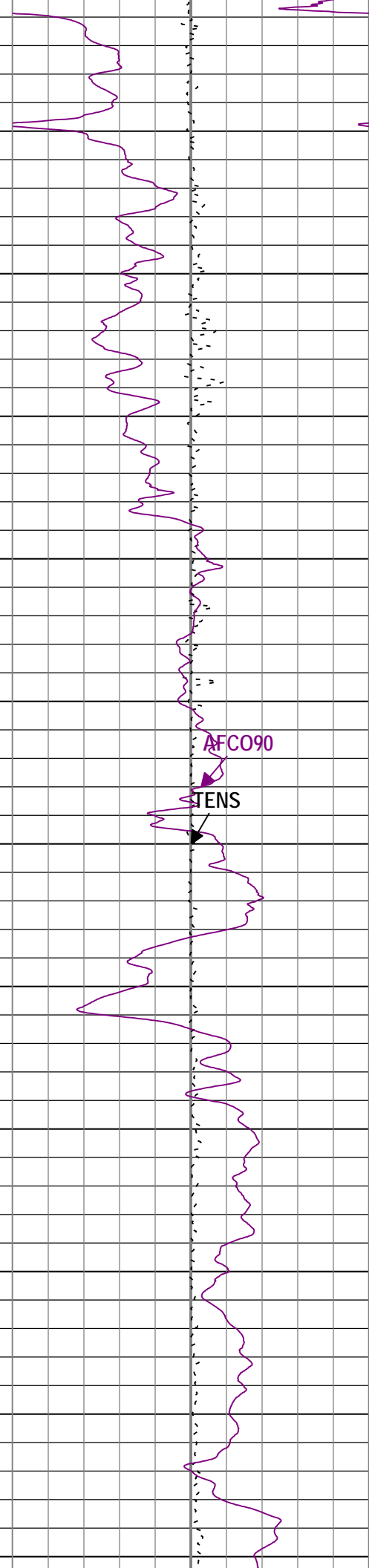
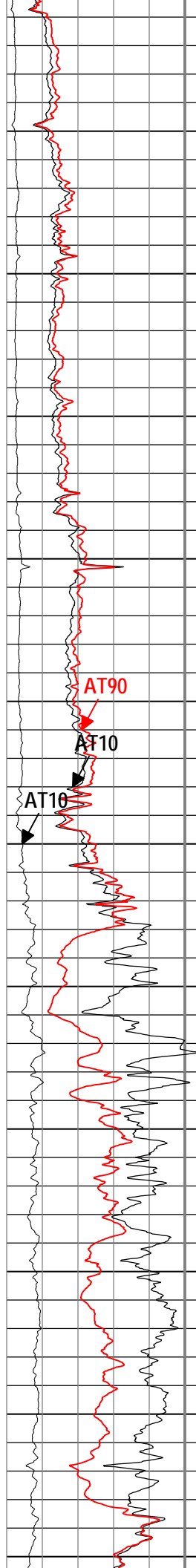
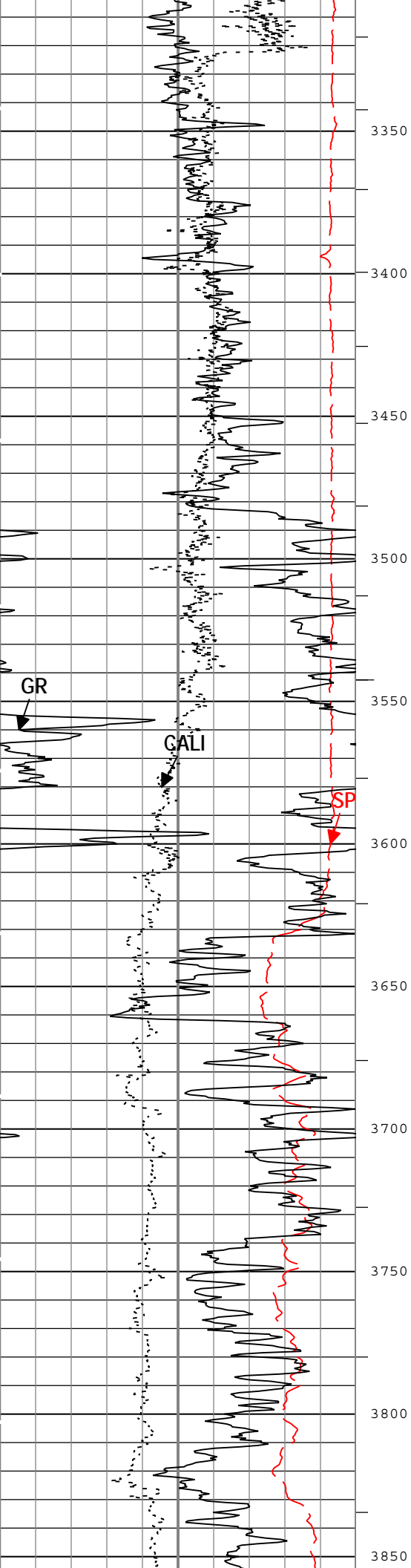


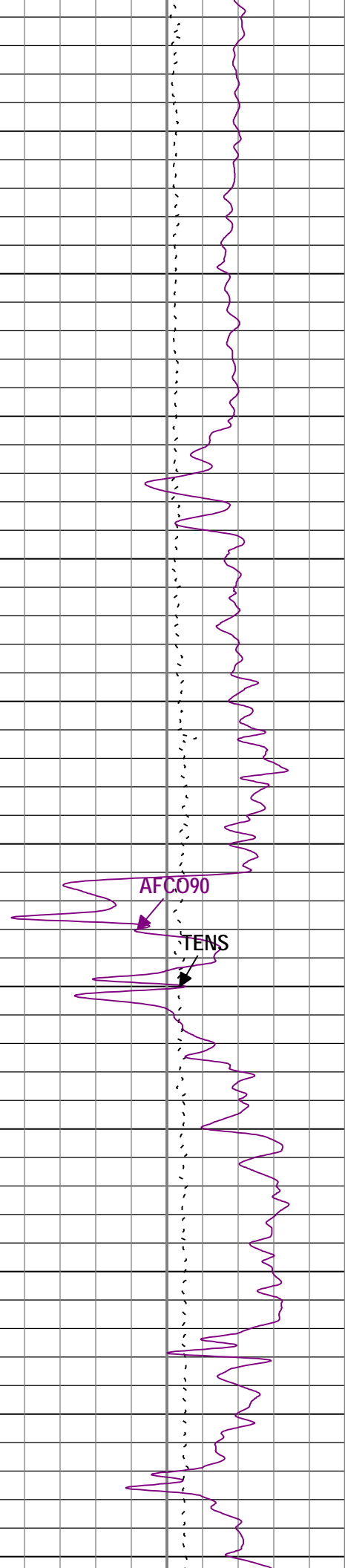
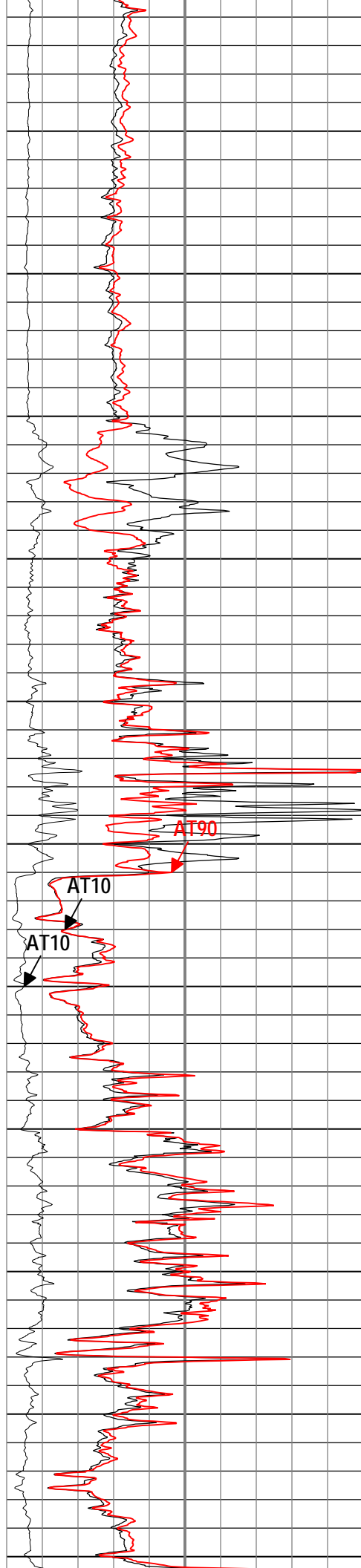
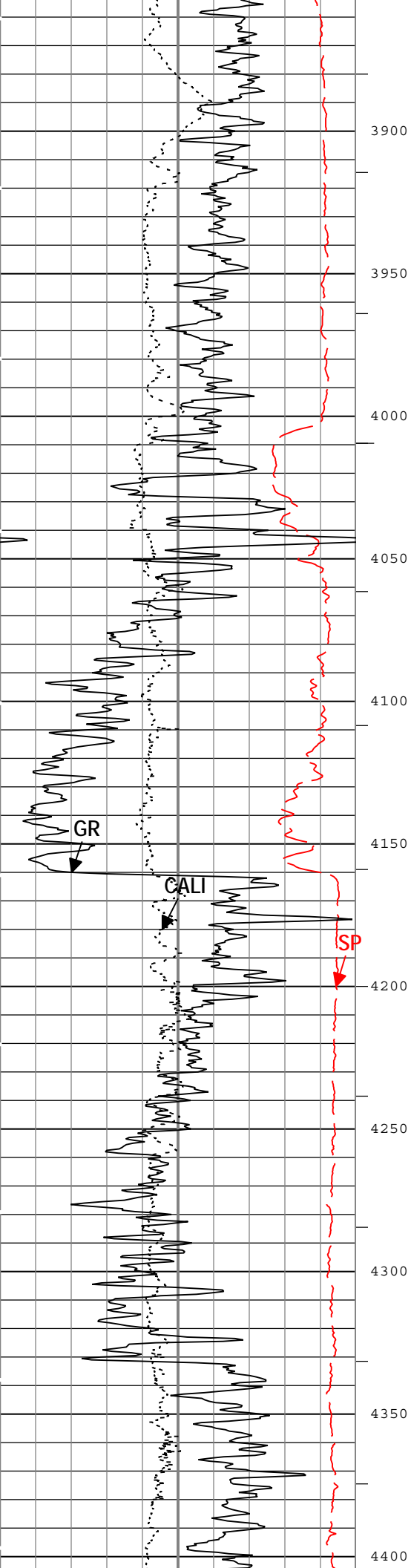


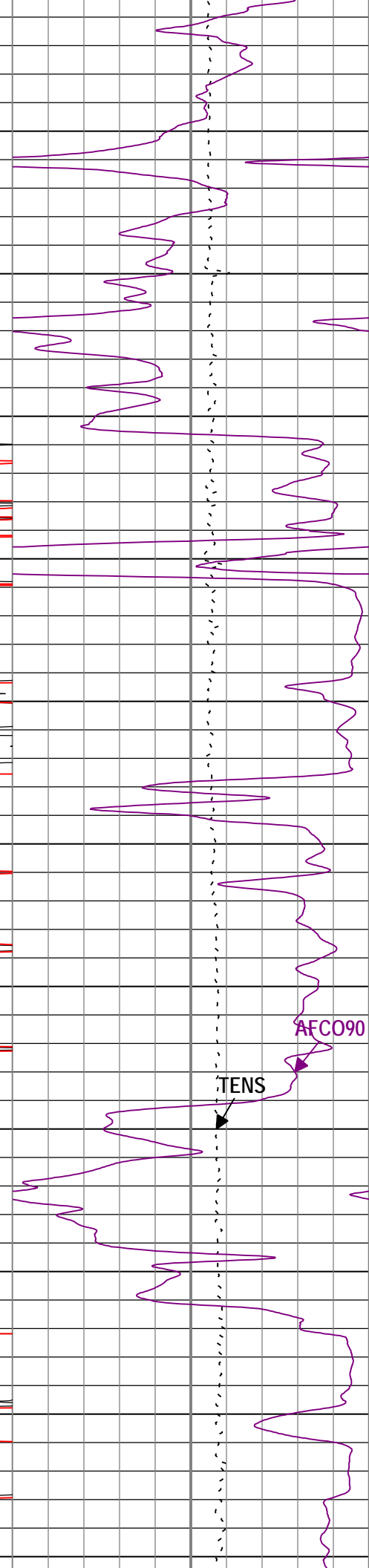
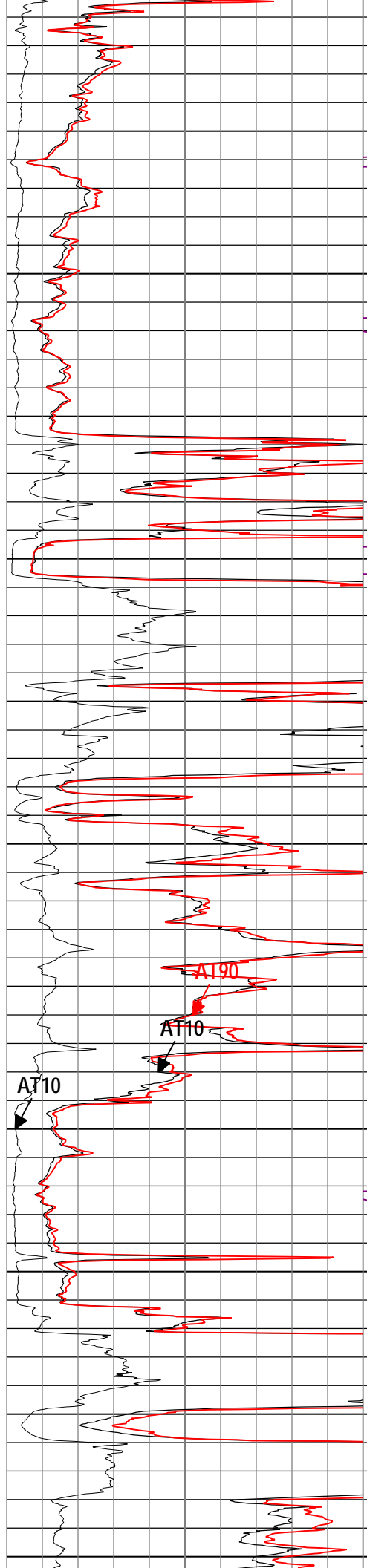
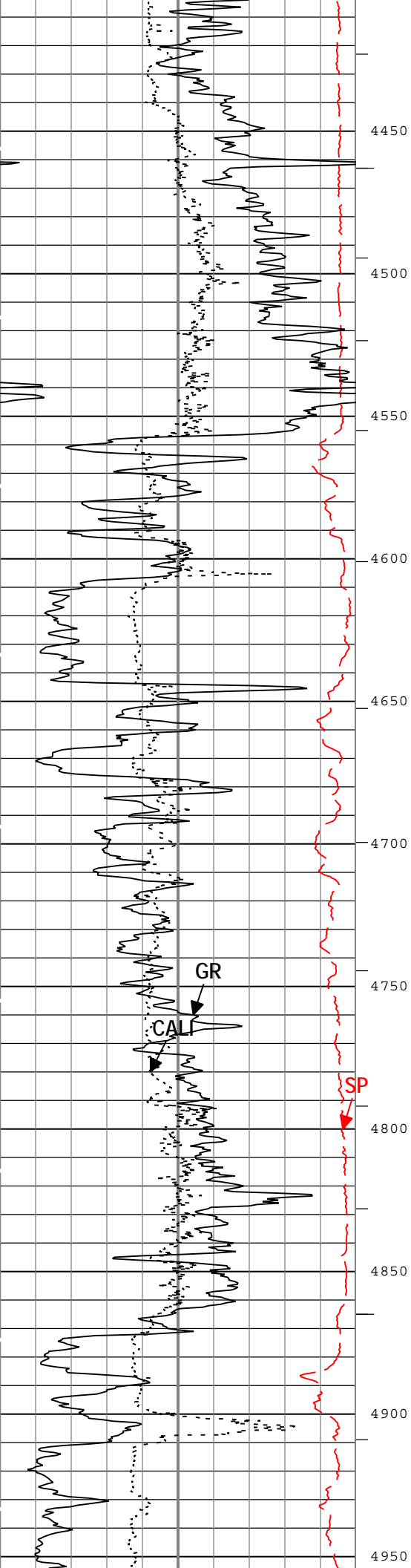


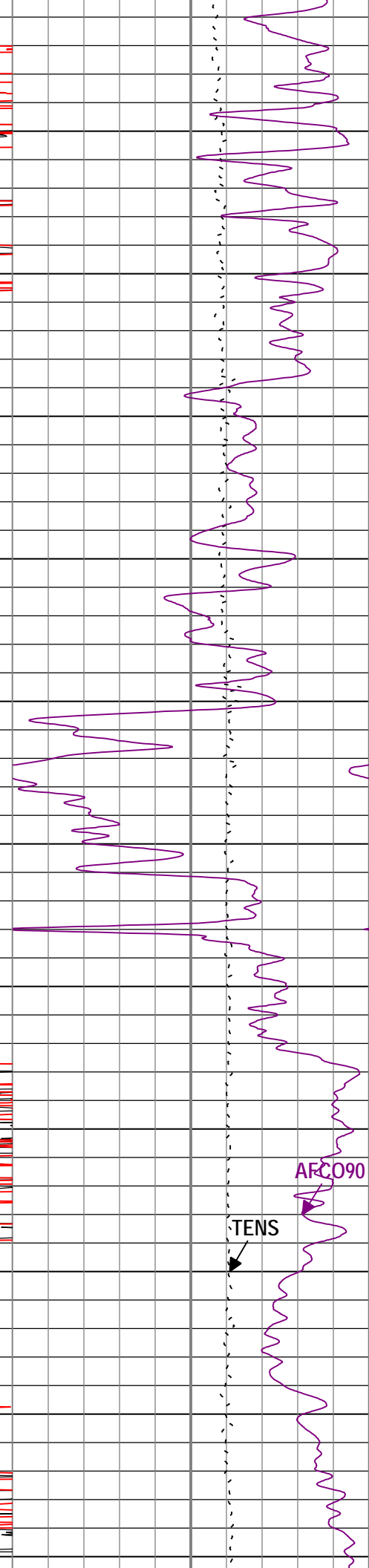
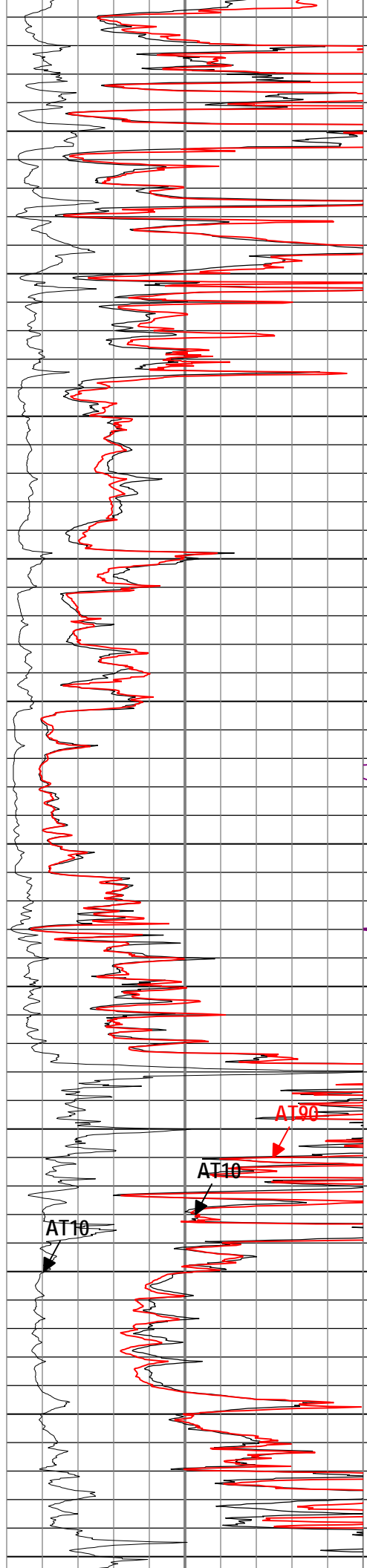
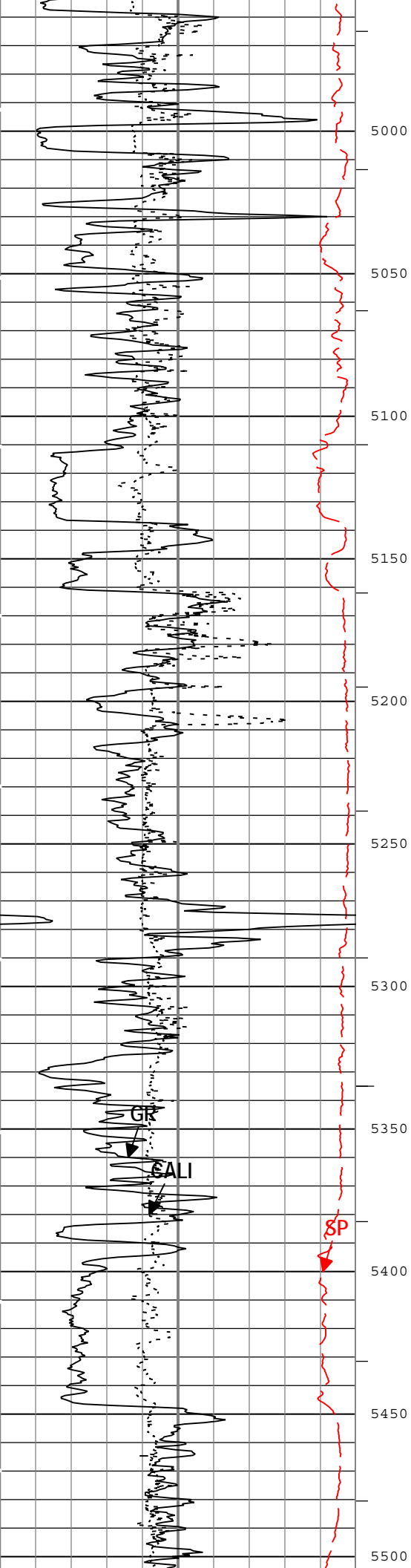


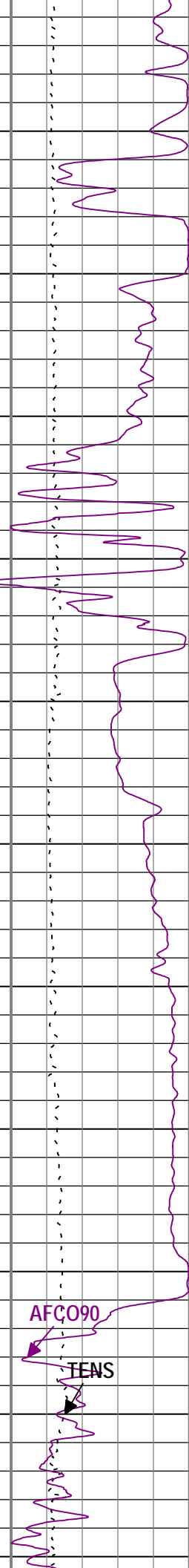
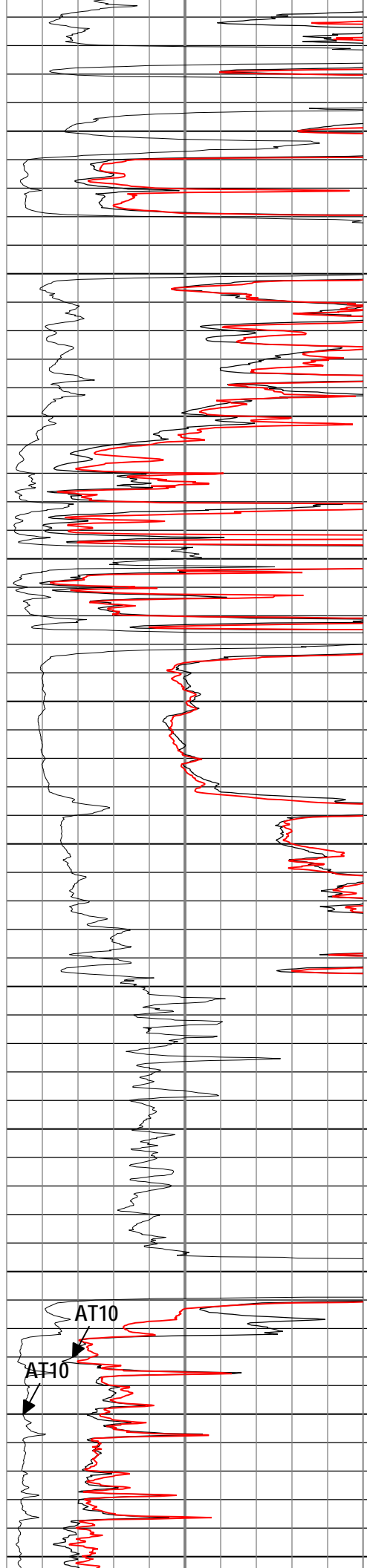
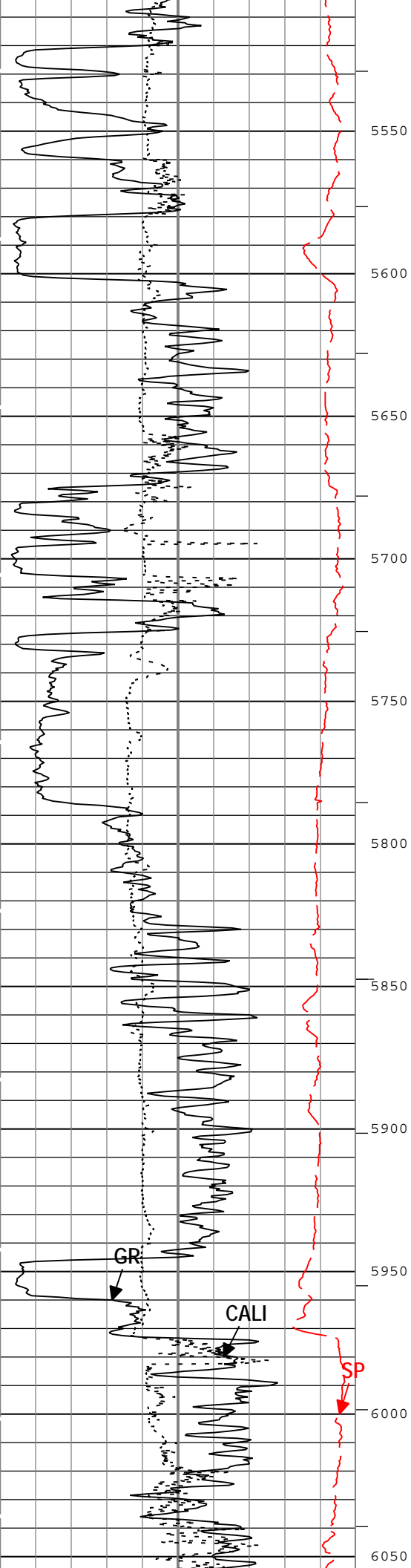


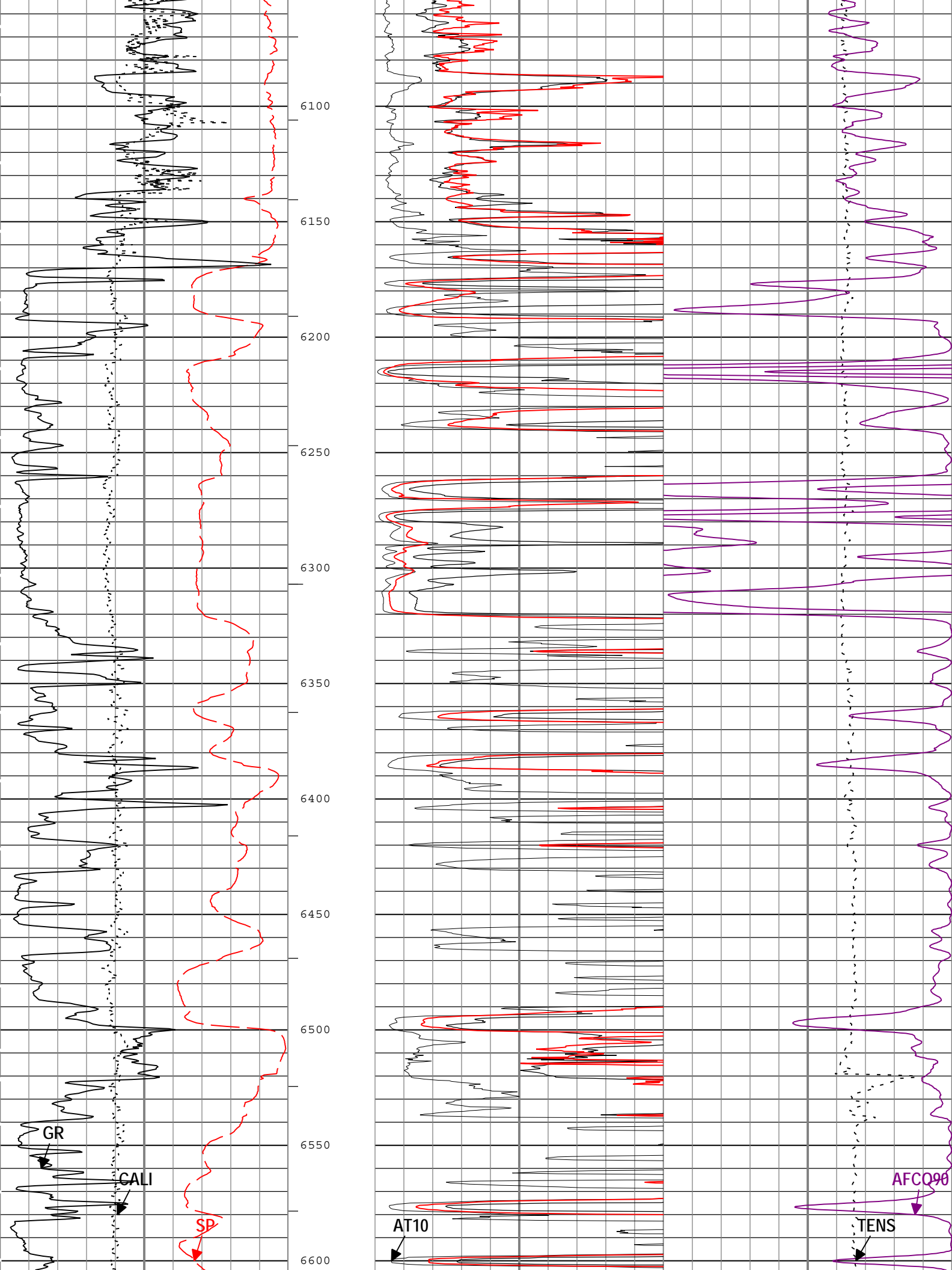


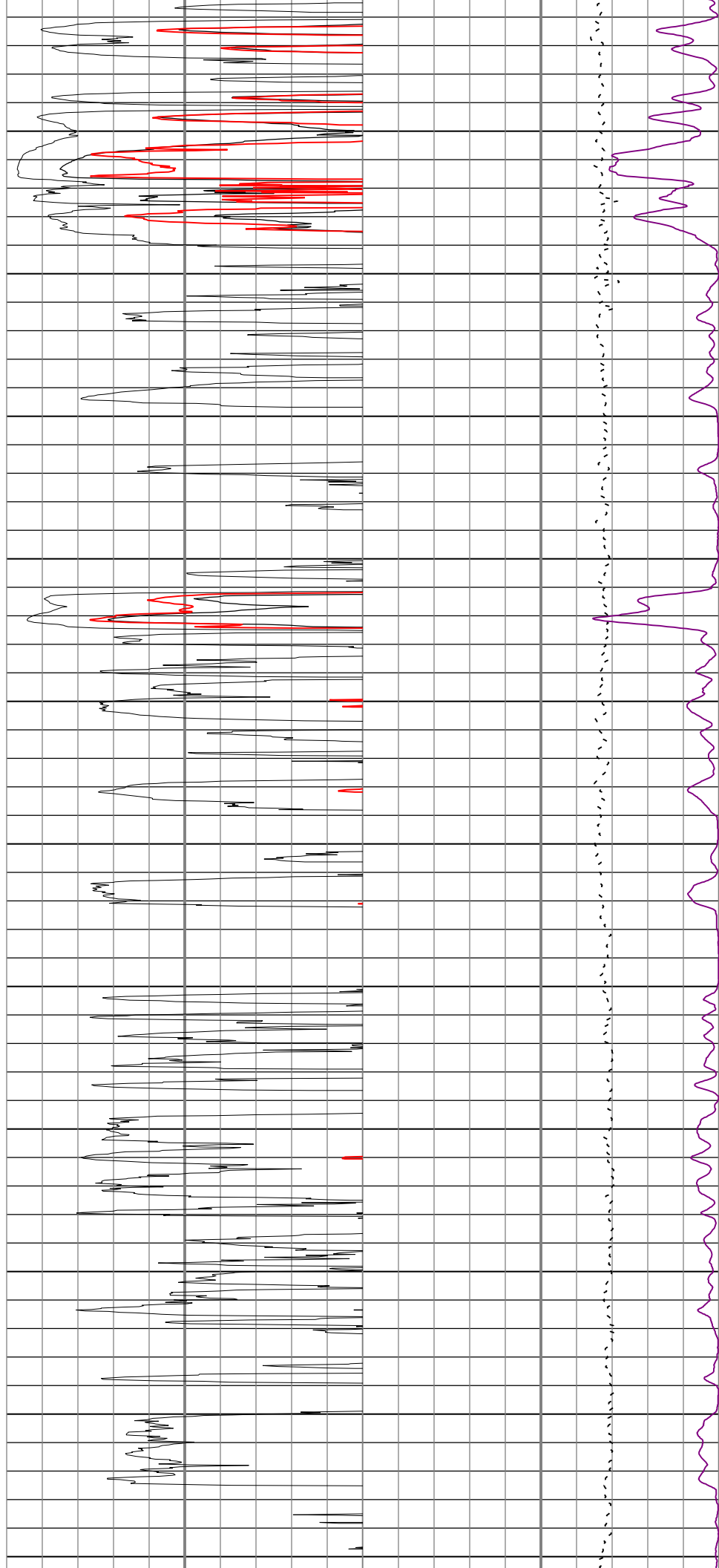
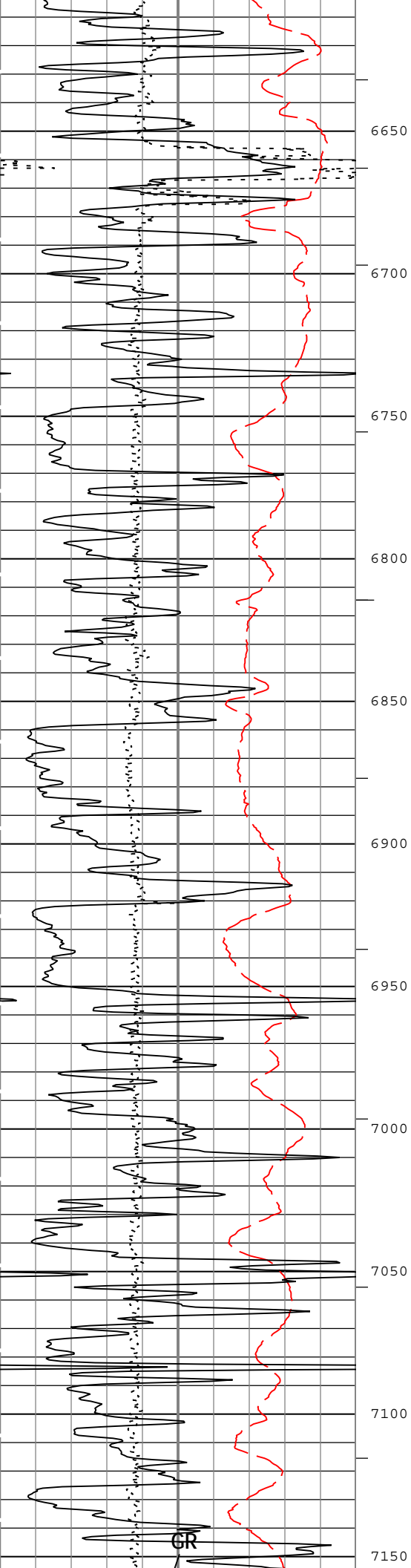


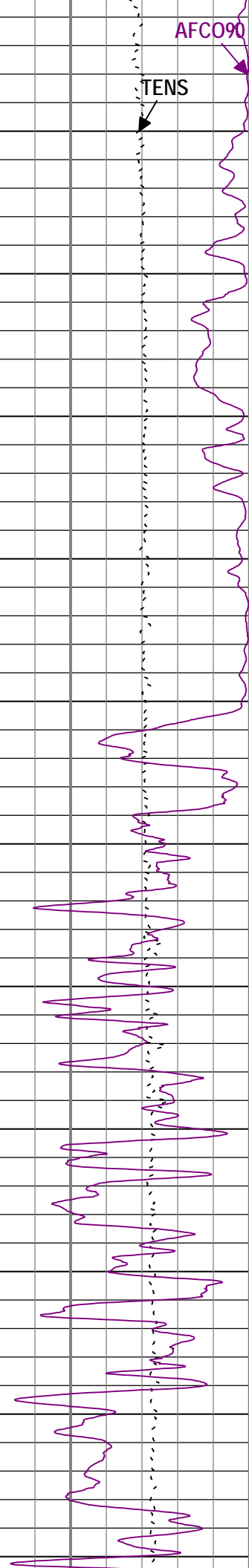
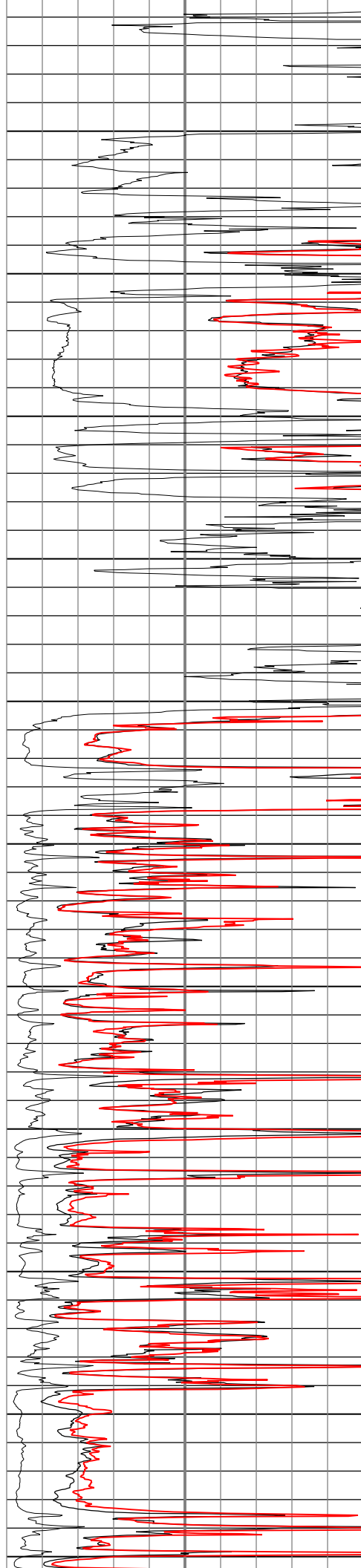
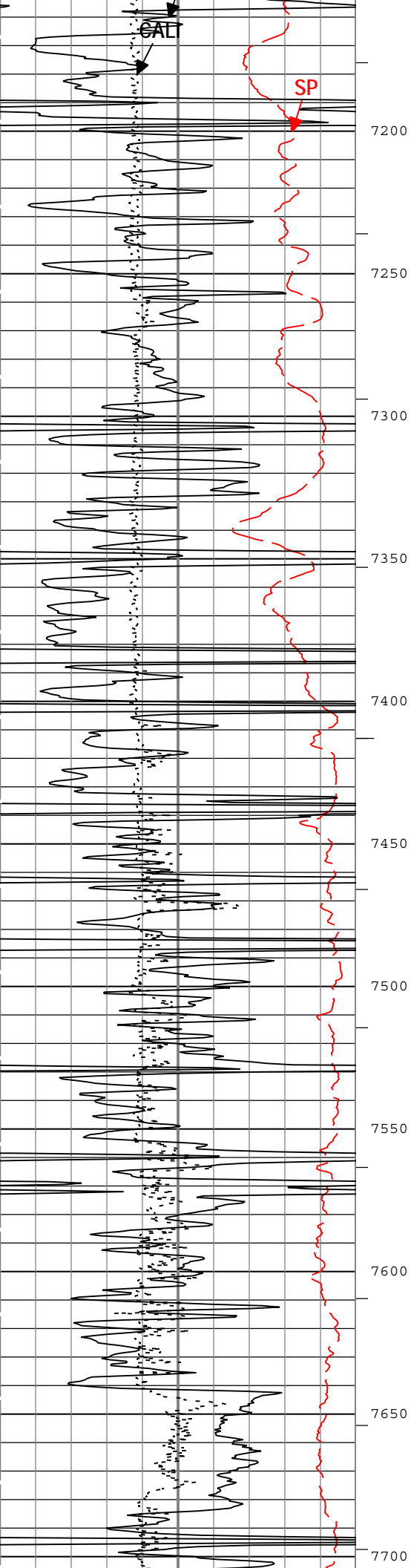


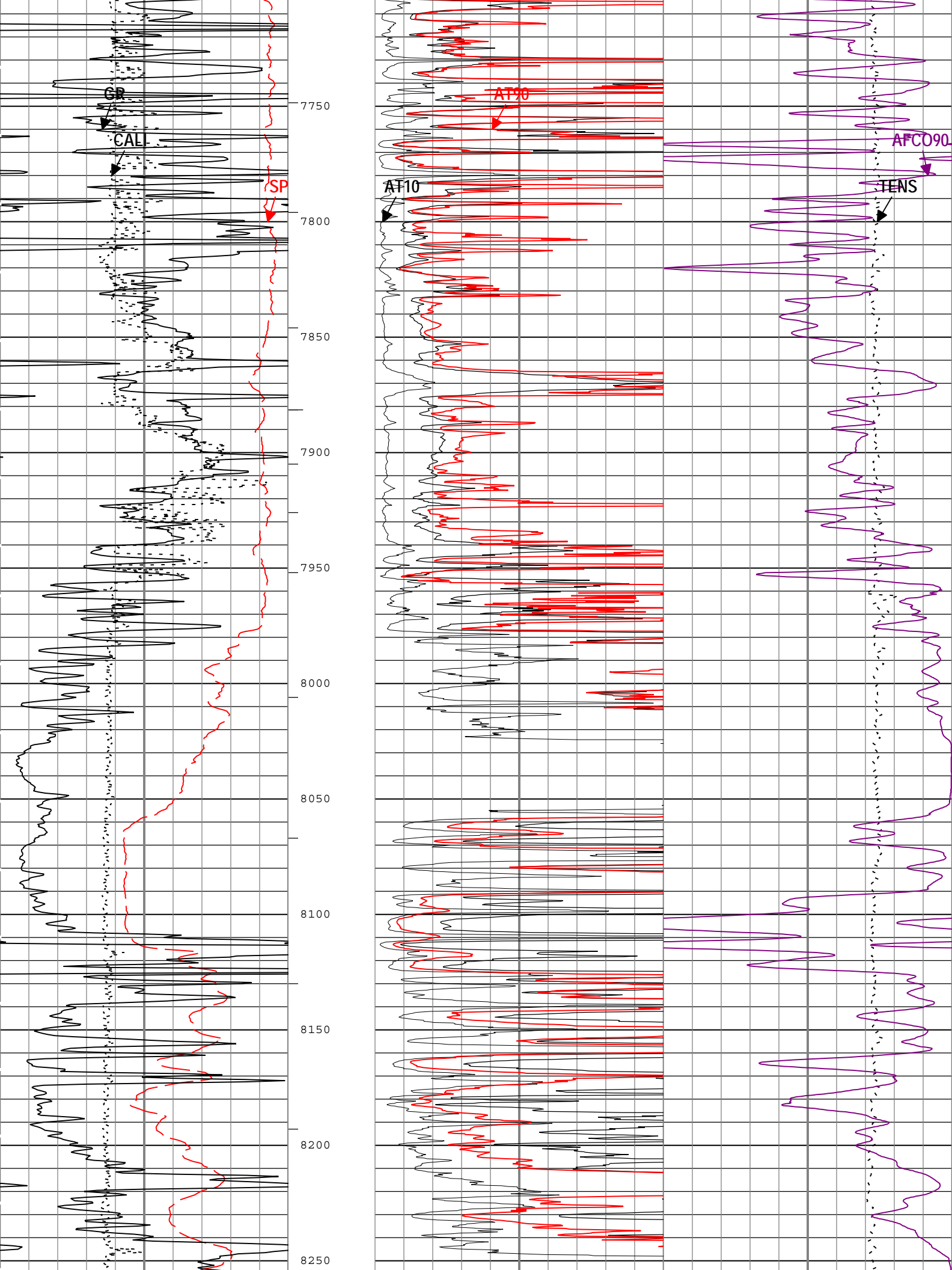


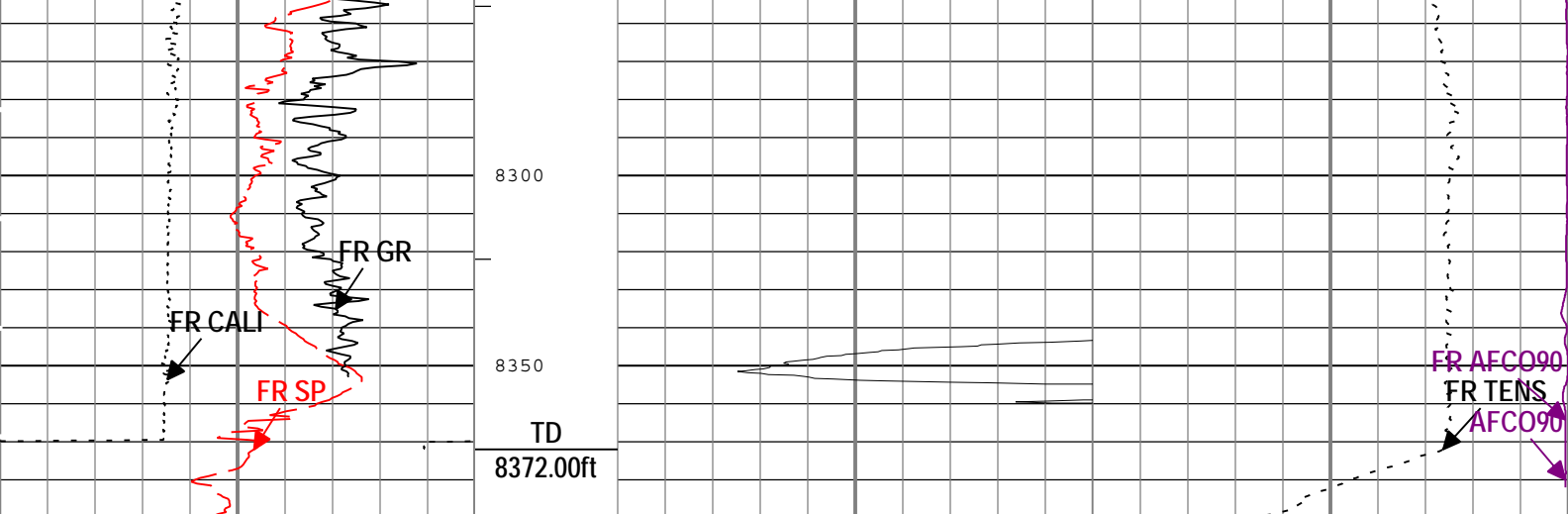












Gamma Ray Backup		
Spontaneous Potential (SP) AIT-M		
-100	mV	200
Caliper (CALI) HDRS-H		
4	in	14
Gamma Ray (GR) HGNS-H		
0	gAPI	200

Array Induction Two Foot Resistivity A10 (AT10) AIT-M		
0	ohm.m	50
Array Induction Two Foot Resistivity A10 (AT10) AIT-M		
0	ohm.m	10
Array Induction Two Foot Resistivity A90 (AT90) AIT-M		
0	ohm.m	10

Cable Tension (TENS)		
0	lbf	5000
Array Induction Four Foot Conductivity A90 (AFCO90) AIT-M		
1000	mS/m	0

TIME_1900 - Time Marked every 60.00 (s)

ICV - Integrated Cement Volume every 100.00 (ft3)

ICV - Integrated Cement Volume every 10.00 (ft3)

Description: AIT Basic Log Two Format: Log (EMD 2in Induction) Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 13-Sep-2014 00:07:33

Channel Processing Parameters				
Parameter	Description	Tool	Value	Unit
ABHM	Array Induction Borehole Correction Mode	AIT-M	Compute Standoff	
ACDE	Array Induction Casing Detection Enable	AIT-M	Yes	
ASTA	Array Induction Tool Standoff	AIT-M	1.25	in
BARI	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BS	Bit Size	WLSESSION	7.875	in
CALI_SHIFT	CALI Supplementary Offset	HDRS-H	-0.642	in
CBLO	Casing Bottom (Logger)	WLSESSION	366	ft
CDEN	Cement Density	HGNS-H	2	g/cm3
CSODDRL	Casing Outer Diameter - Zoned along driller depths	WLSESSION	8.625	in
DFD	Drilling Fluid Density	Borehole	9.5	lbm/gal
FCD	Future Casing (Outer) Diameter	WLSESSION	5.5	in
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	CALI	
GRSE	Generalized Mud Resistivity Selection, from Measured or Computed Mud Resistivity	Borehole	AMF	
SPDR	SP Drift Per Foot	AIT-M	0	mV/ft

Tool Control Parameters				
Parameter	Description	Tool	Value	Unit
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	1800	ft/h

ONE
5" Density

Software Version	
------------------	--

Acquisition System	Version
MaxWell	4.0.9163.3000
Application Patch	Patch-SP-10767_13393-4.0.9163.3001

Computation	Description	Version
DepthCorrection	DepthCorrection	4.0.9213.3000

Tool Elements	Description	Software Version	Firmware Version
HRCC-H	HILT High-Resolution Control Cartridge, 150 degC	4.0.9231.3000	2.0
HGNS-H	HILT Gamma-Ray and Neutron Sonde, 150 degC	4.0.9231.3000	2.0
HRGD-H	HILT Resistivity Gamma-Ray Density Device, 150 degC	4.0.9231.3000	11.12

Pass Summary	
--------------	--

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Main[5]:Up	Up	48.11 ft	8390.18 ft	12-Sep-2014 7:56:40 PM	12-Sep-2014 11:03:07 PM	ON	13.89 ft	No

All depths are referenced to toolstring zero

Log	Company:Nighthawk Production LLC	Well:Blackcomb 5-14 ONE: Main[5]:Up:S011
-----	----------------------------------	---------------------------------------------

Well:Blackcomb 5-14

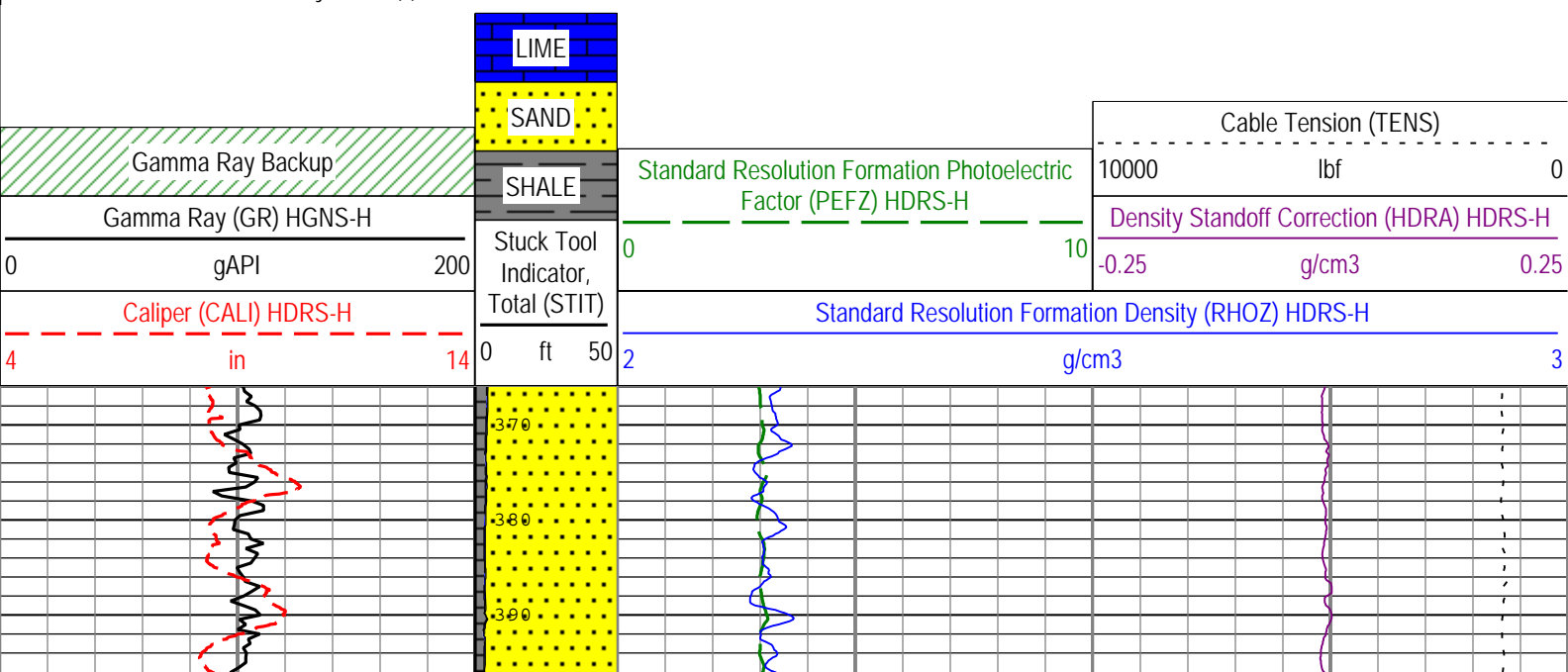
ONE: Main[5]:Up:S011

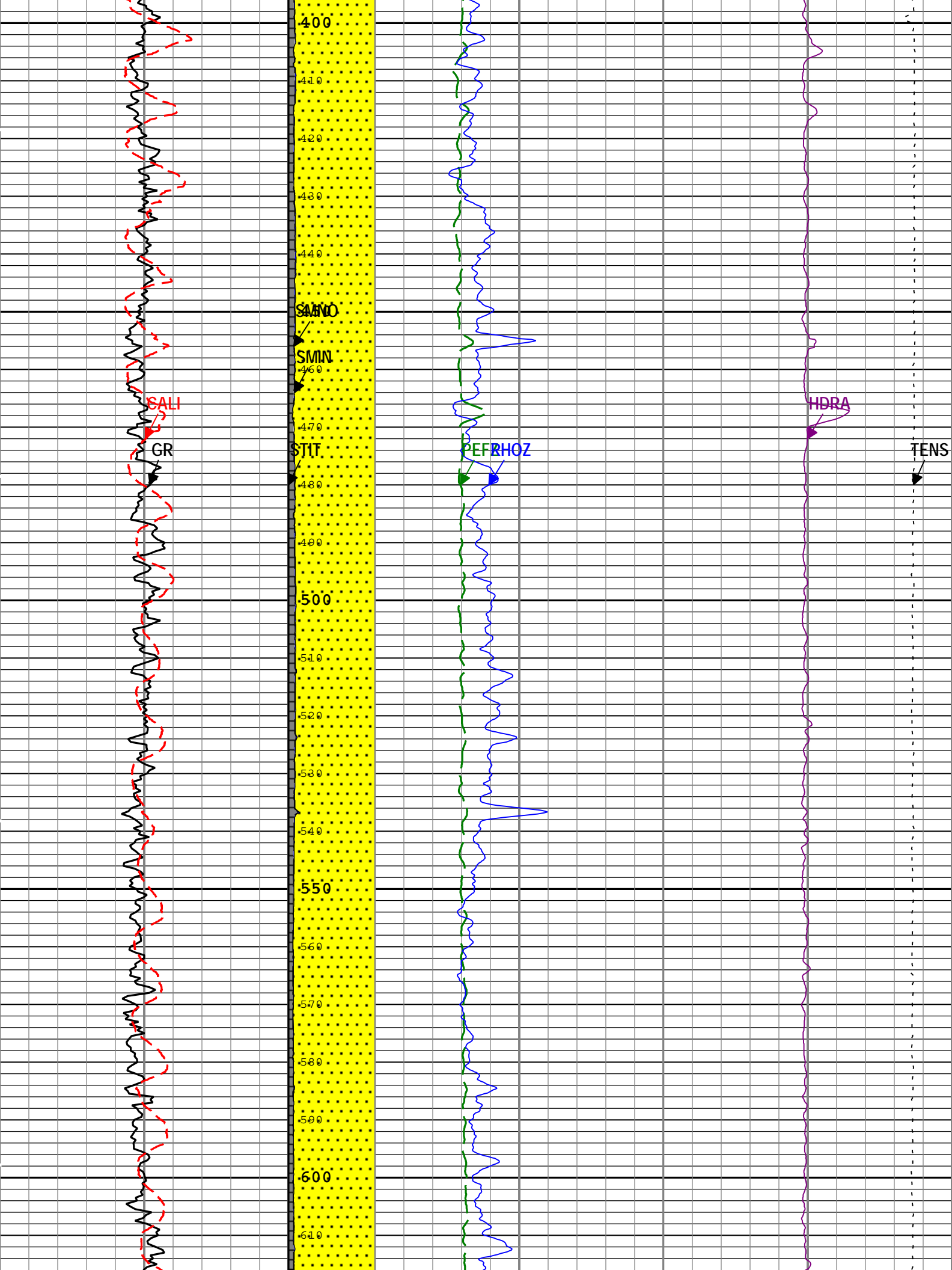
Description: HGNS standard resolution porosities for Platform Express Format: Log (EMD 5in Density) Index Scale: 5 in per 100 ft Index Unit: ft Index

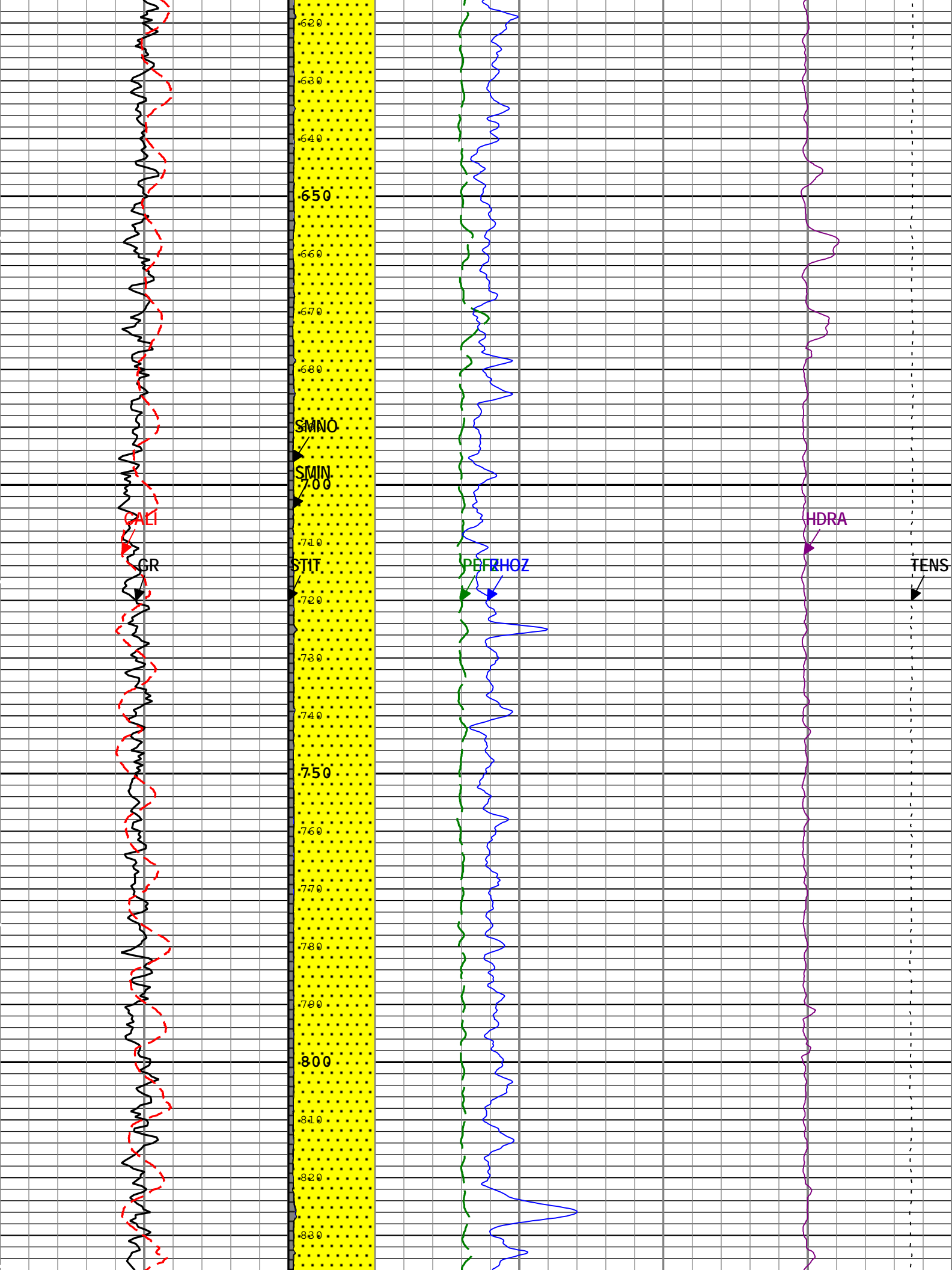
Type: Measured Depth Creation Date: 13-Sep-2014 00:07:35

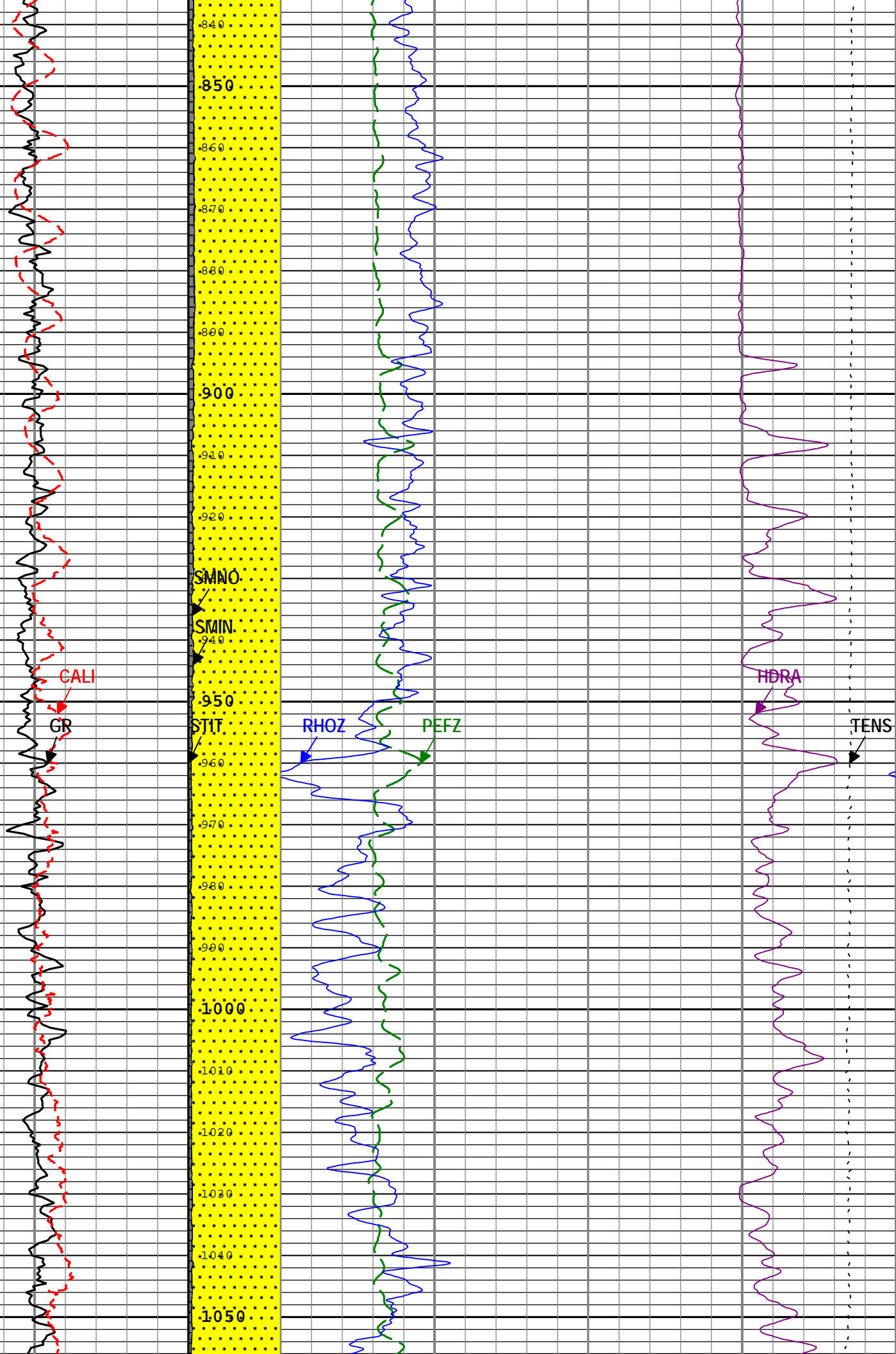
Channel	Source	Sampling
CALI	HDRS-H:HRCC-H:HRCC-H	1in
GR	HGNS-H:HGNS-H:HGNS-H	6in
HDRA	HDRS-H:HRMS-H:HRGD-H	2in
PEFZ	HDRS-H:HRMS-H:HRGD-H	2in
RHOZ	HDRS-H:HRMS-H:HRGD-H	2in
SMIN	HDRS-H:HRMS-H:HRGD-H	2in
SMNO	HDRS-H:HRMS-H:HRGD-H	2in
STIT	DepthCorrection	6in
TENS	WLWorkflow	6in
TIME_1900	WLWorkflow	0.1in

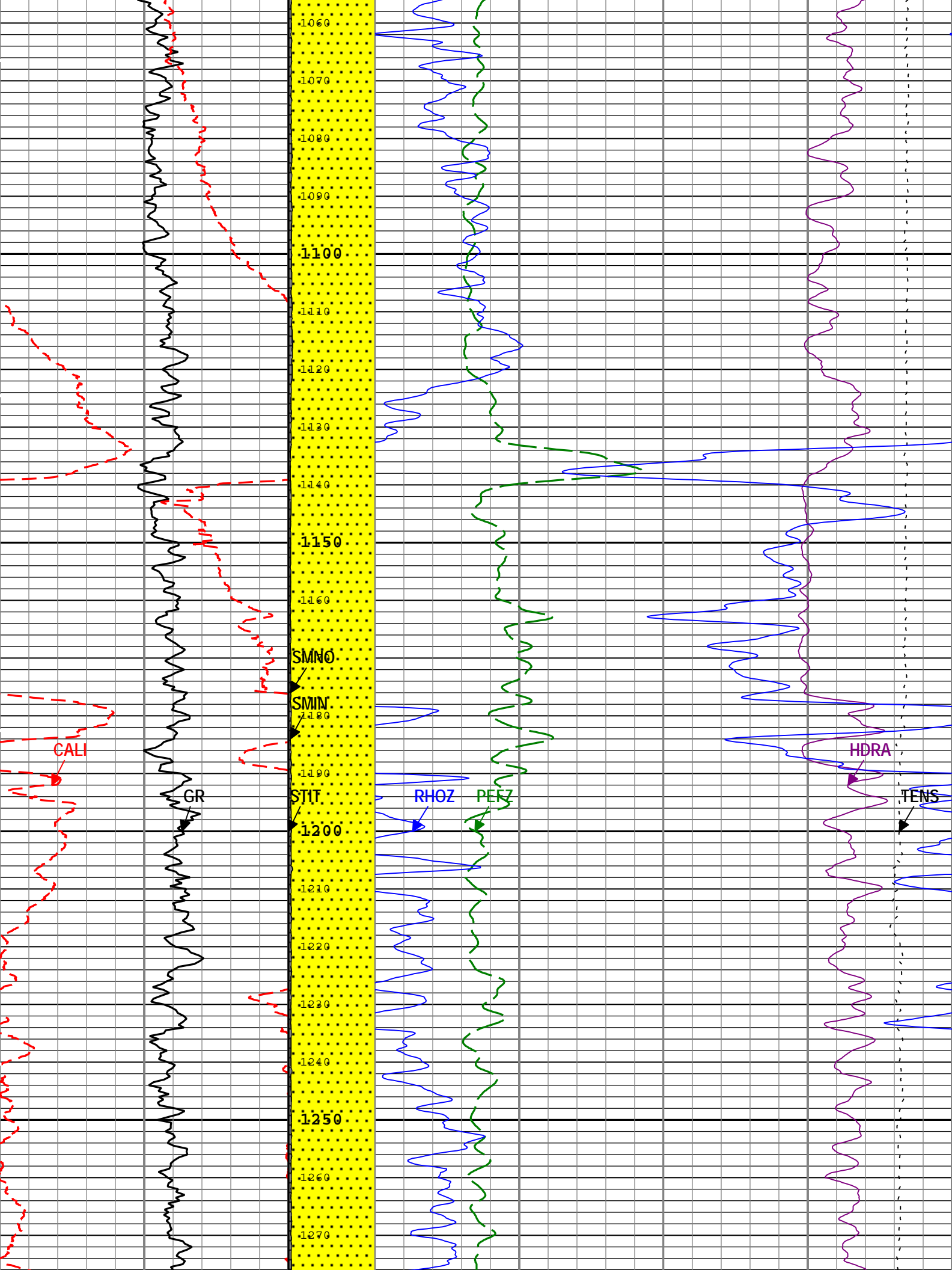
TIME_1900 - Time Marked every 60.00 (s)

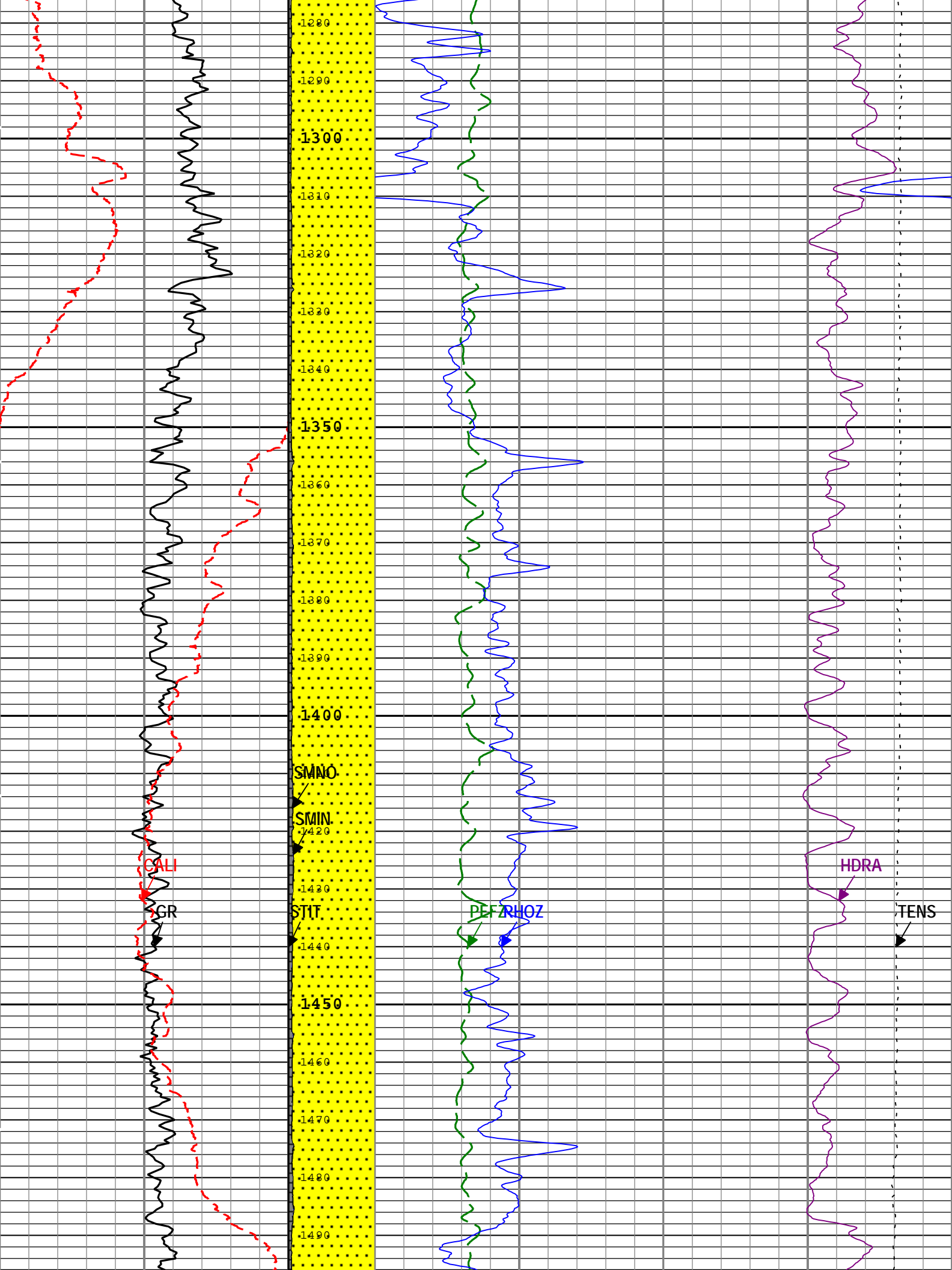


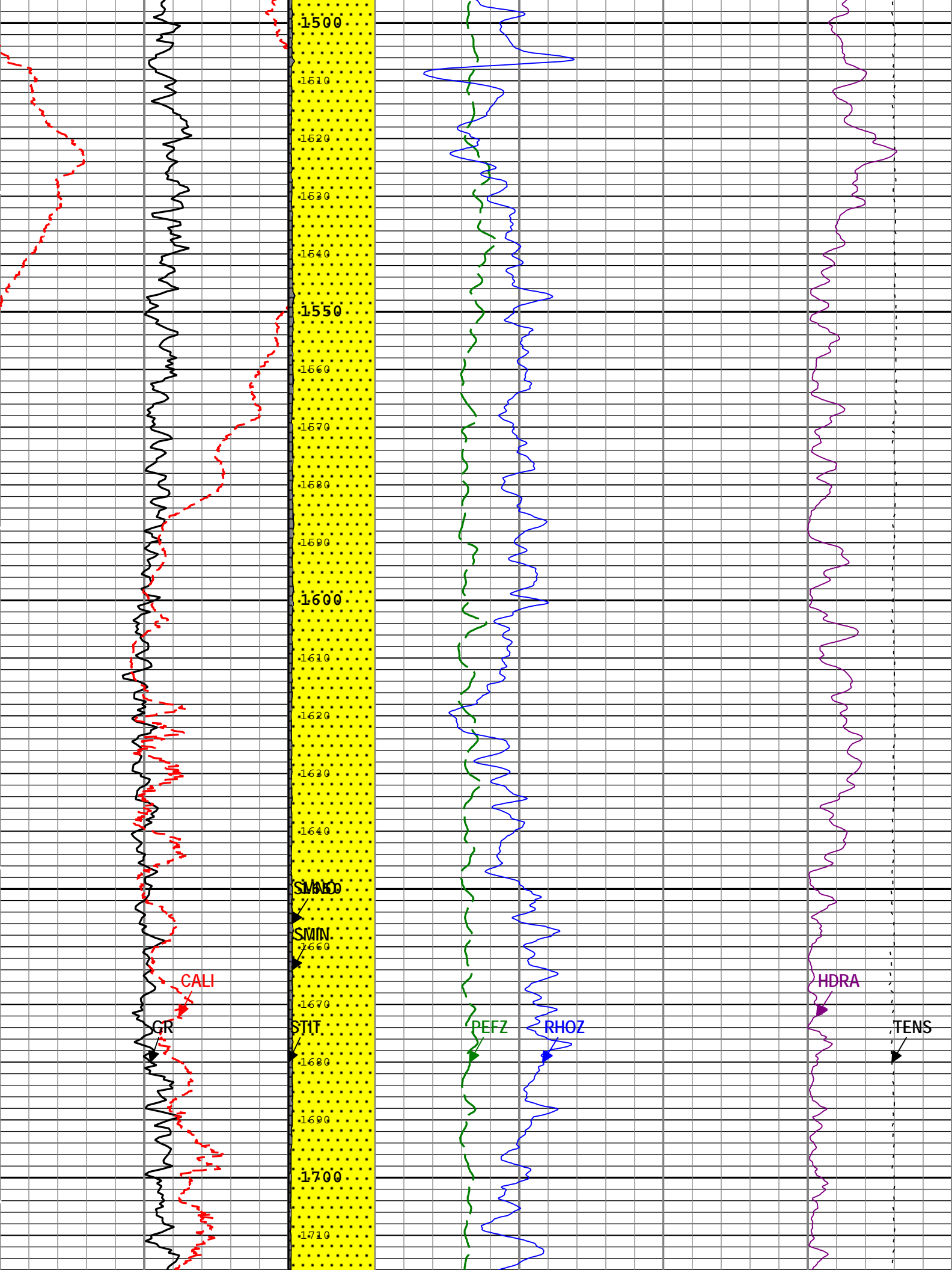


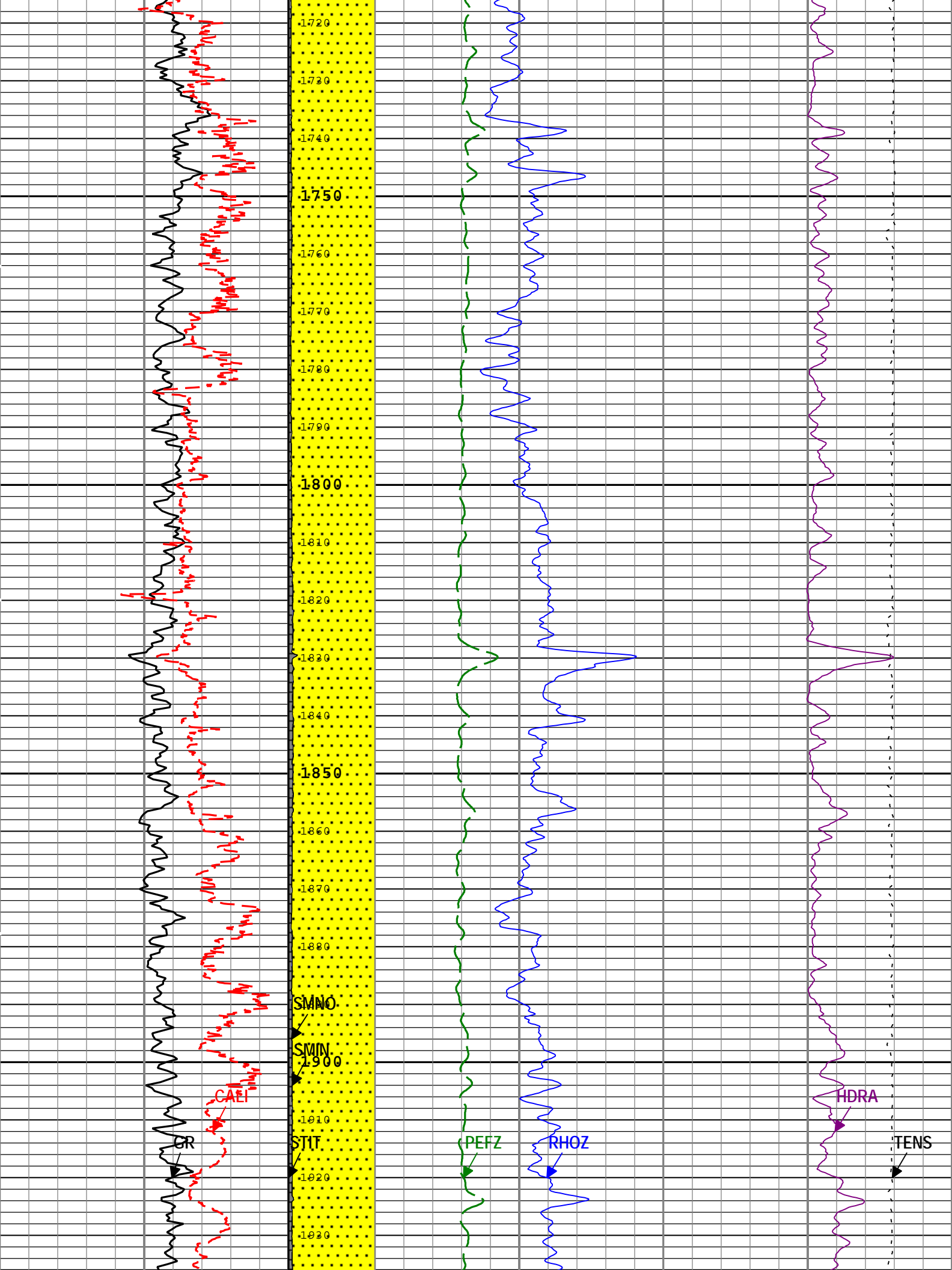


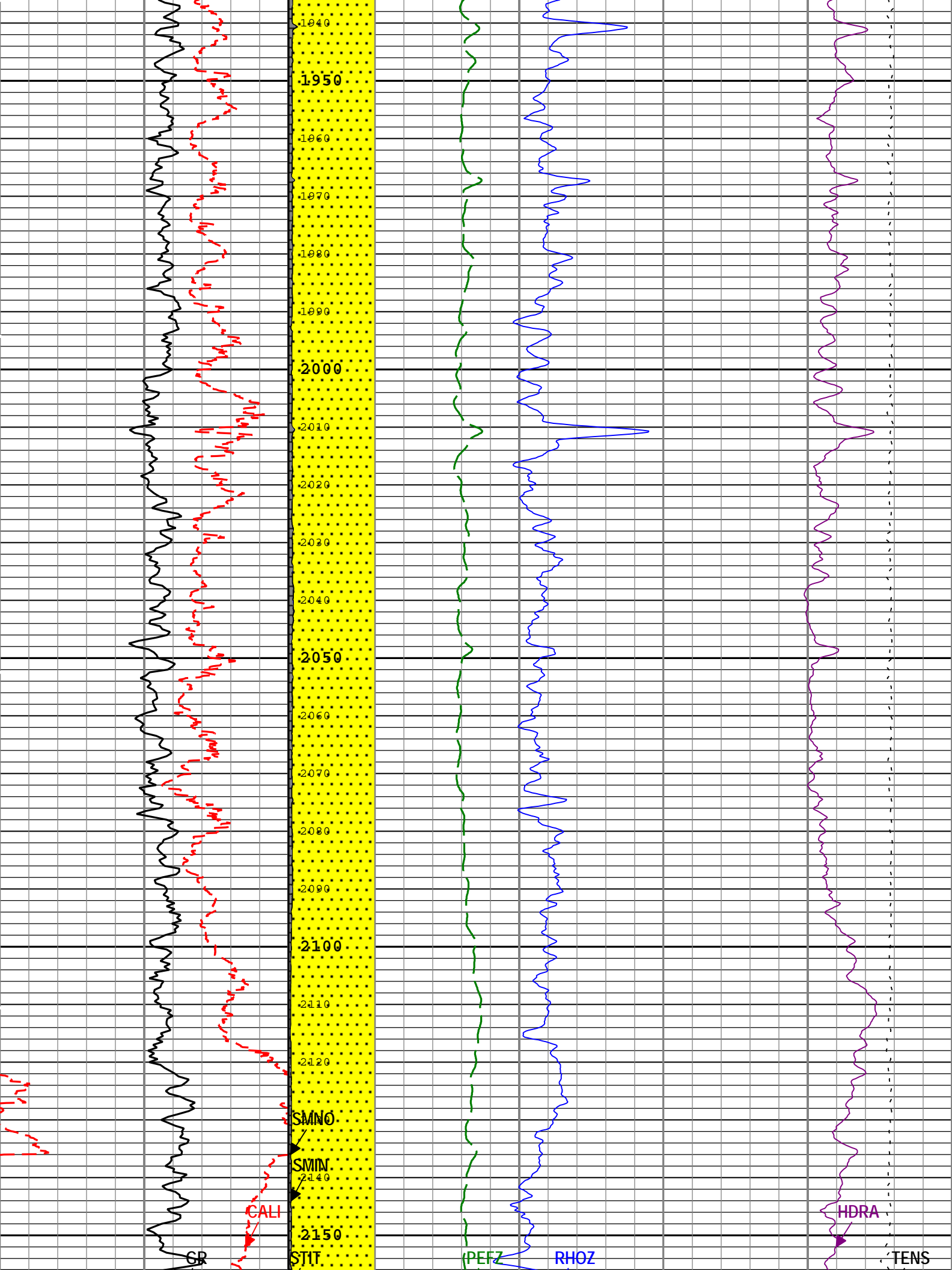


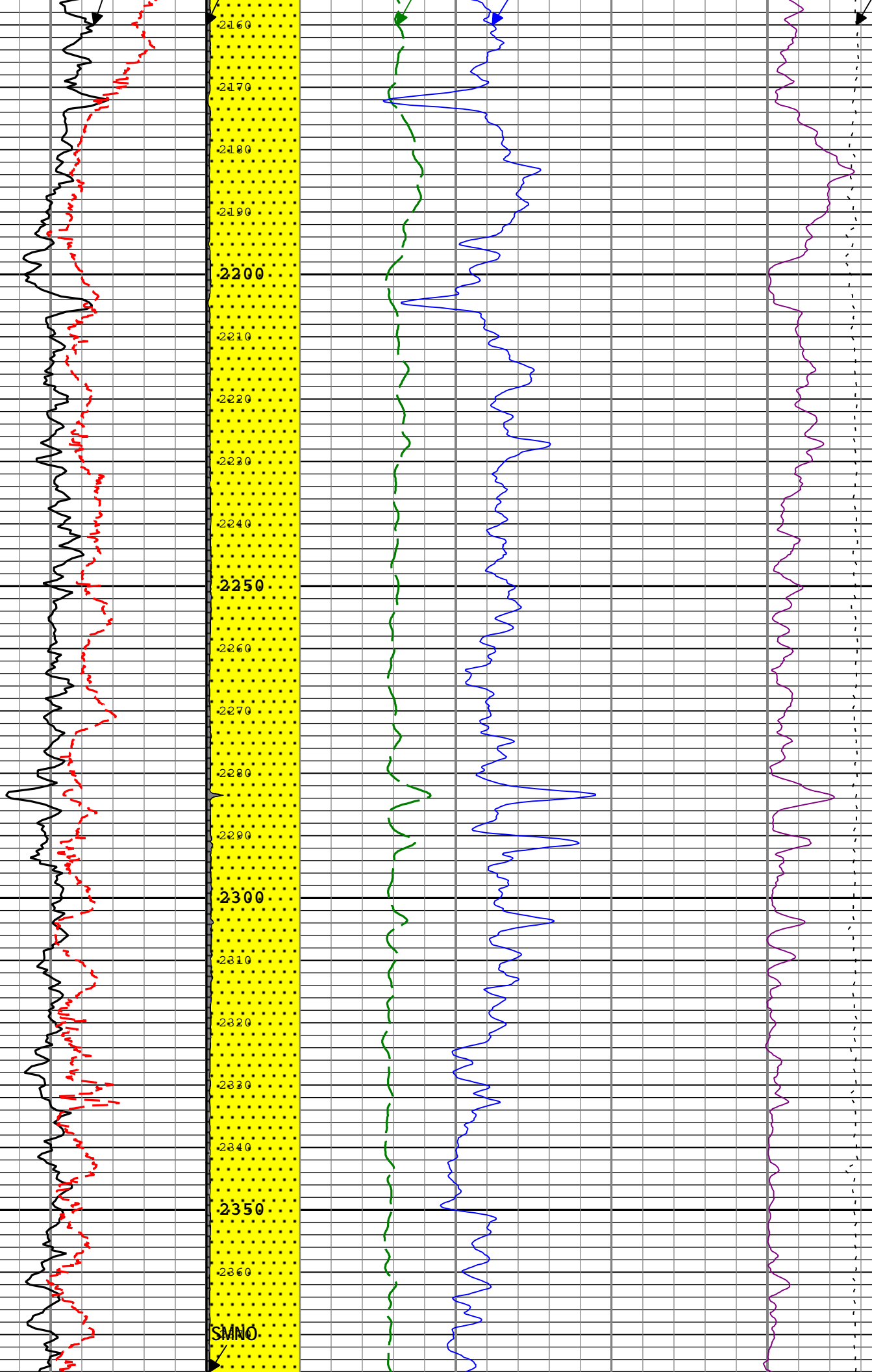


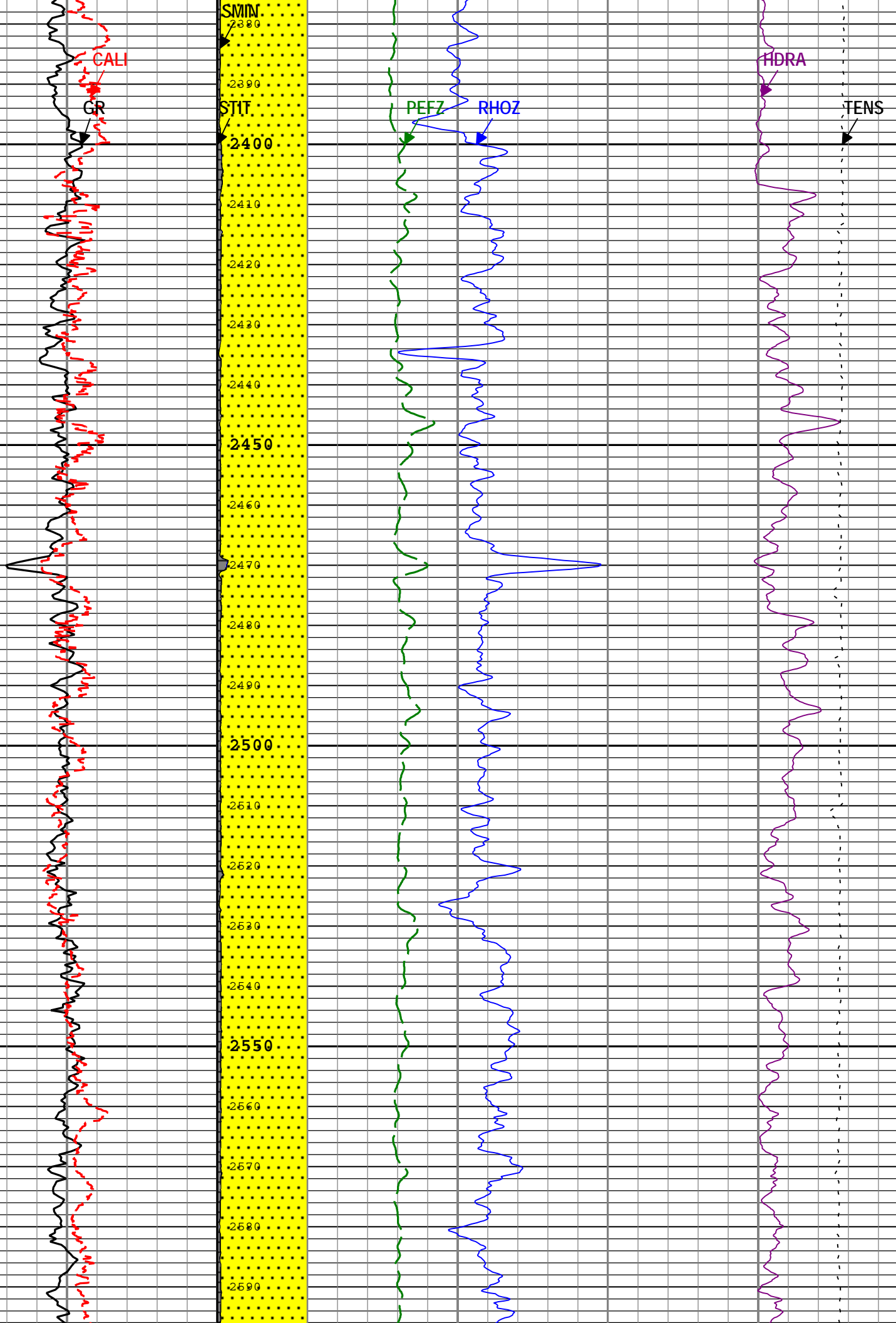


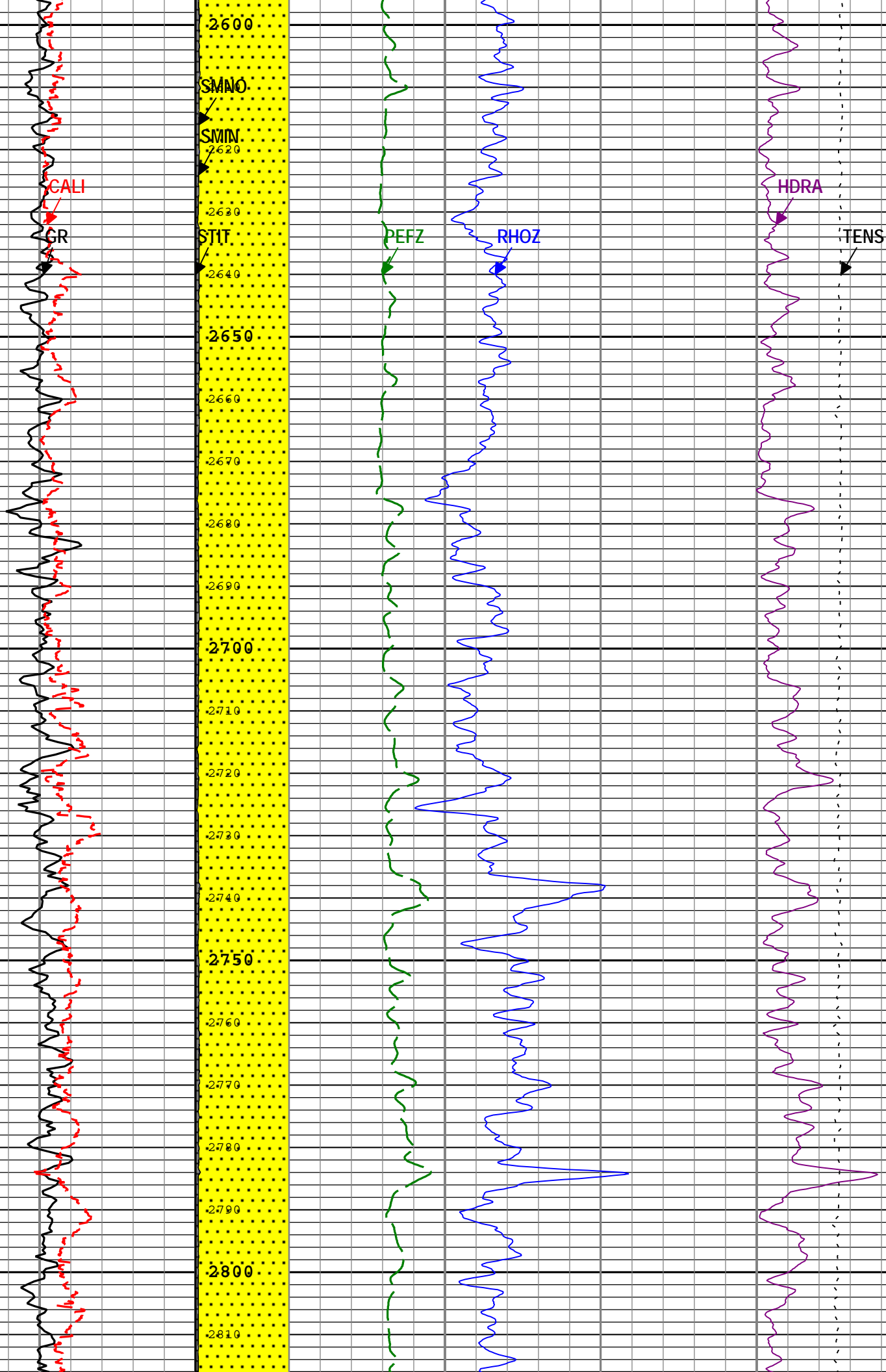


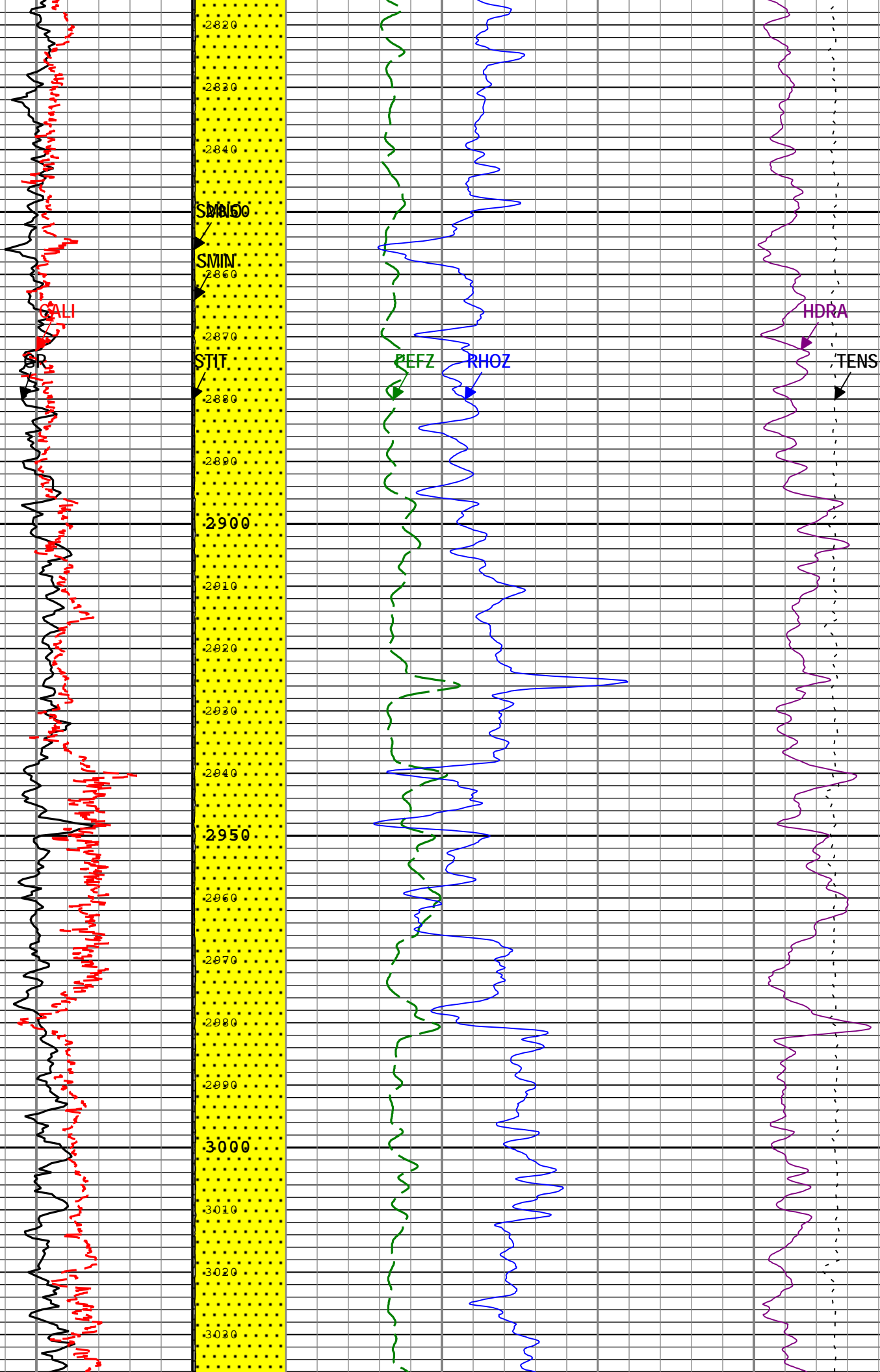


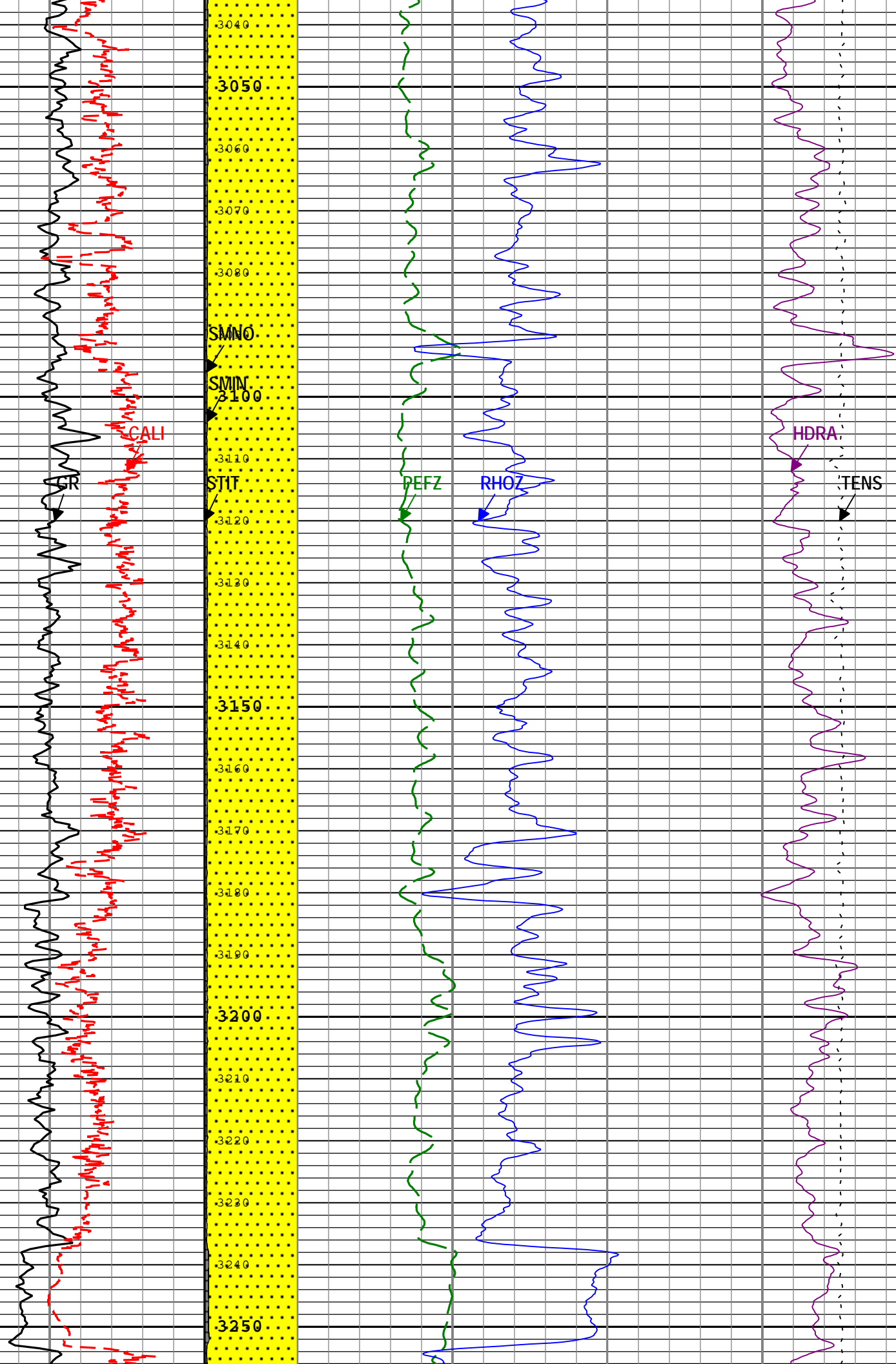


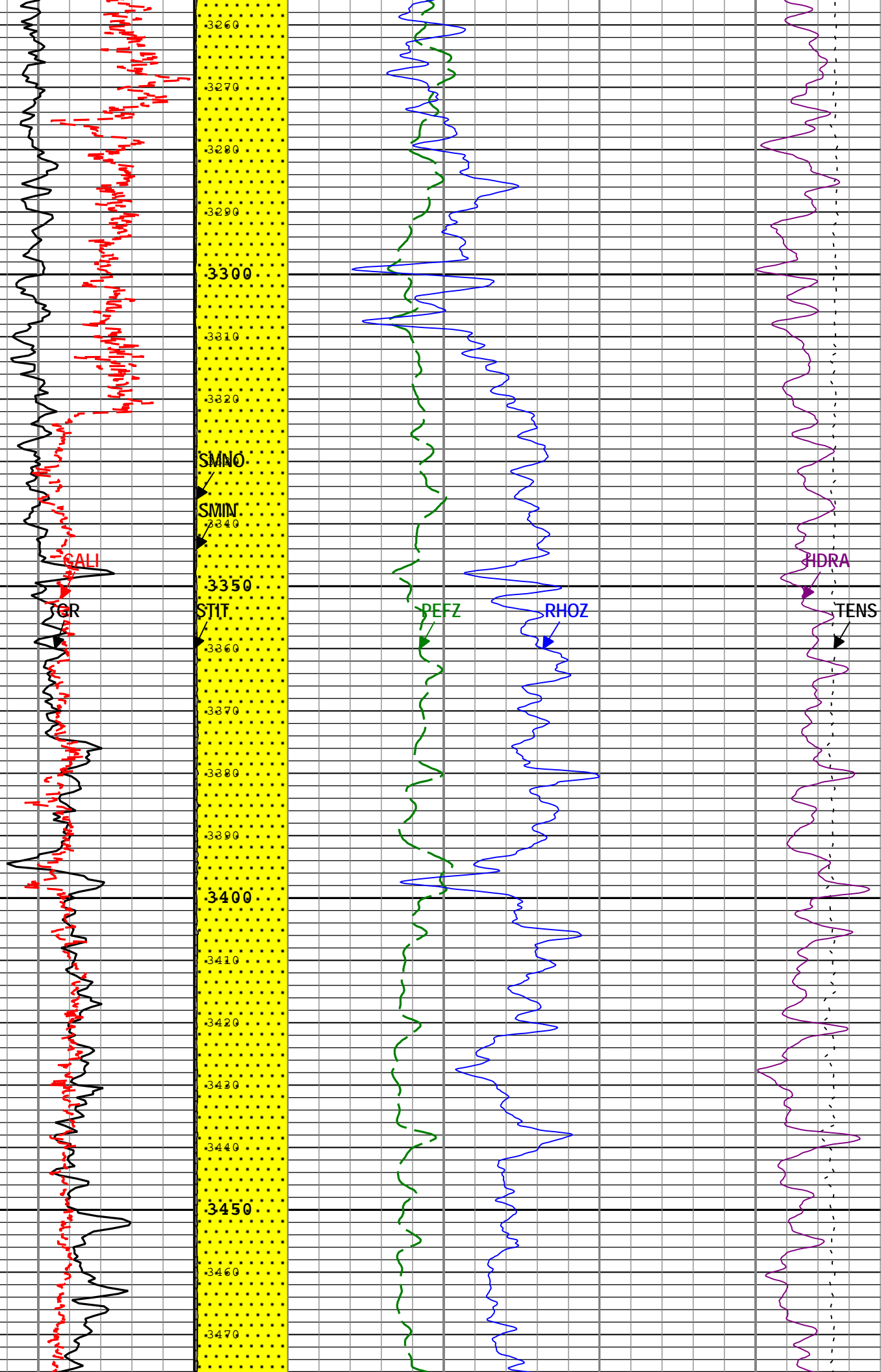


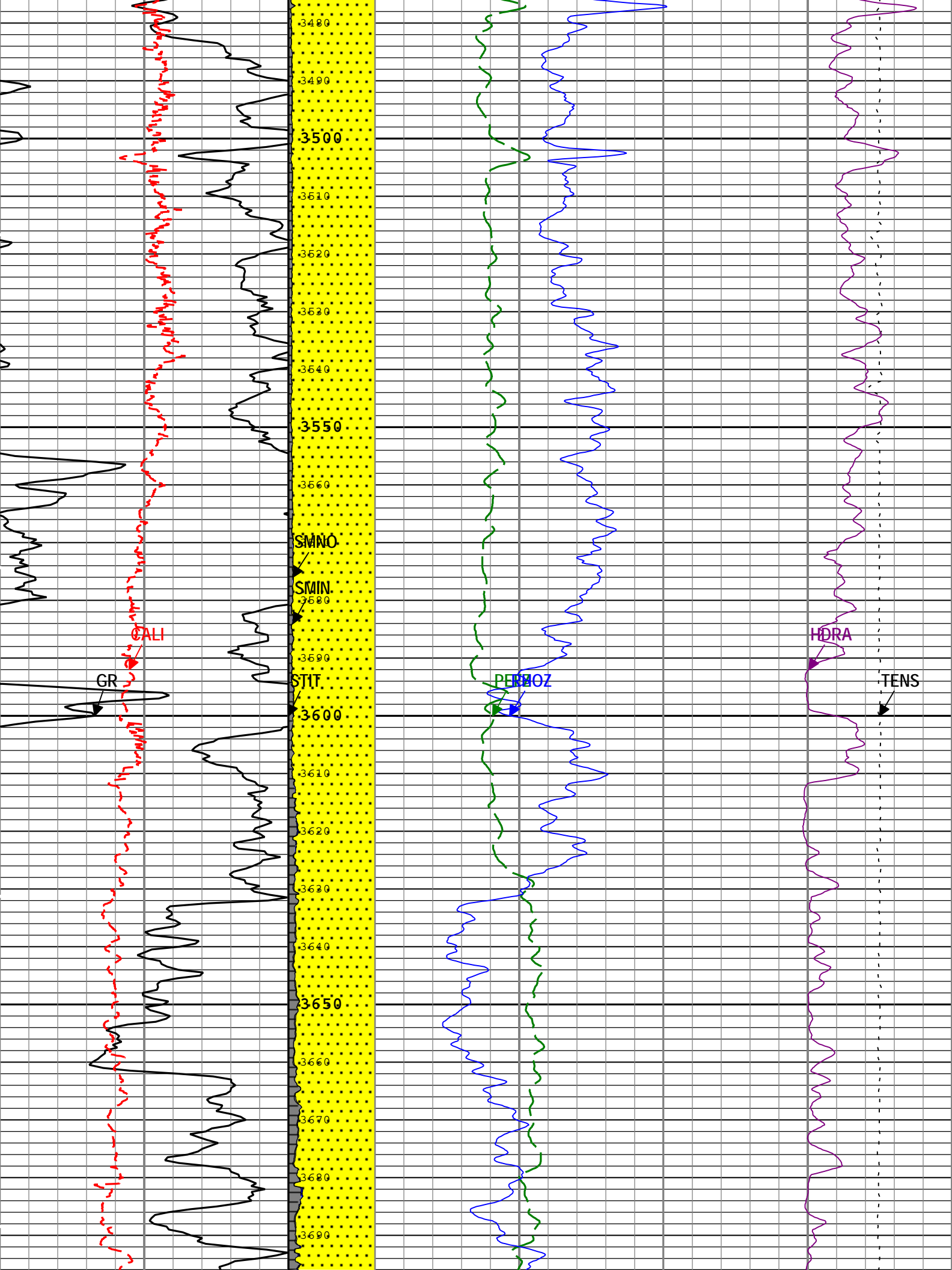


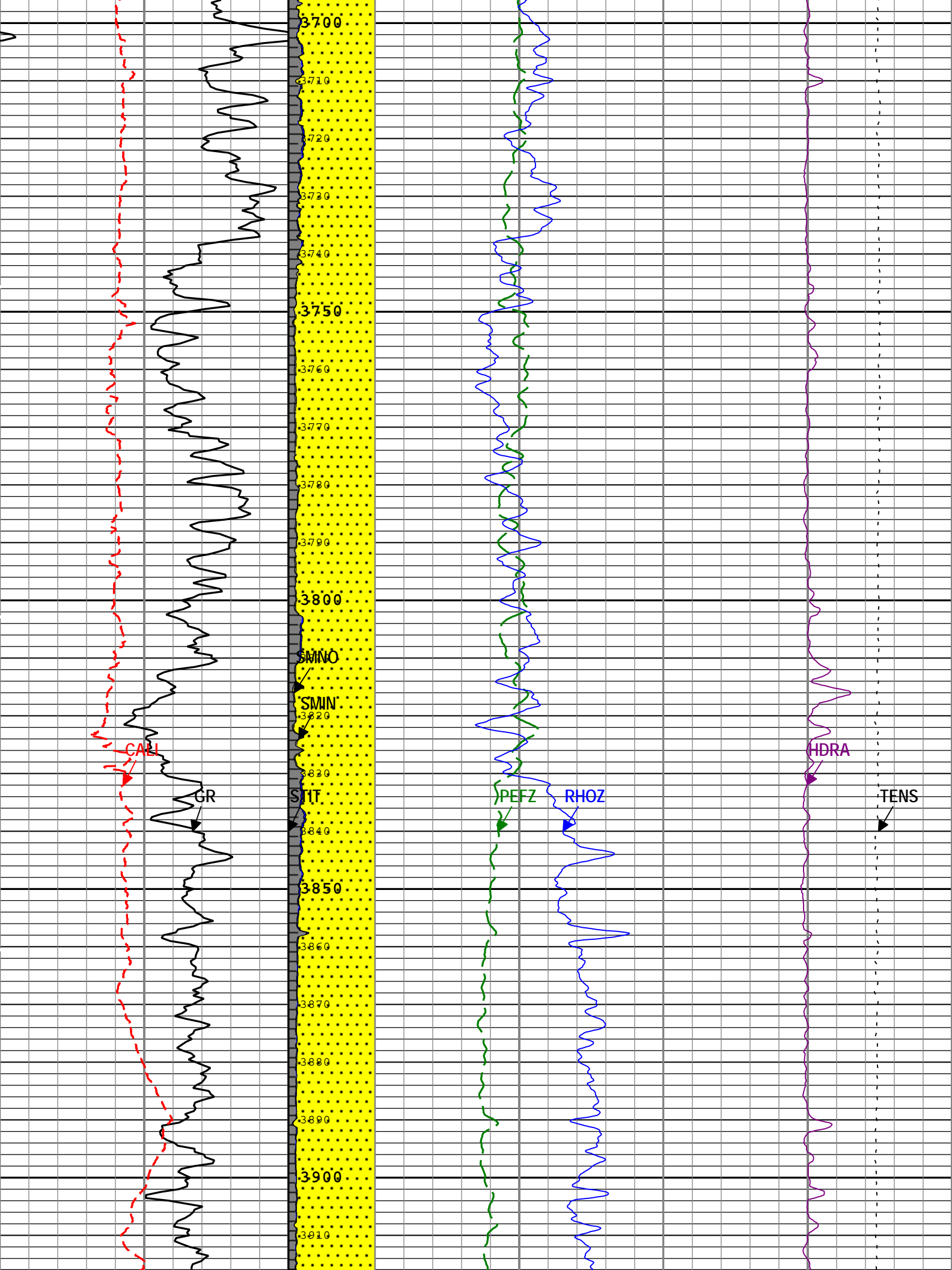


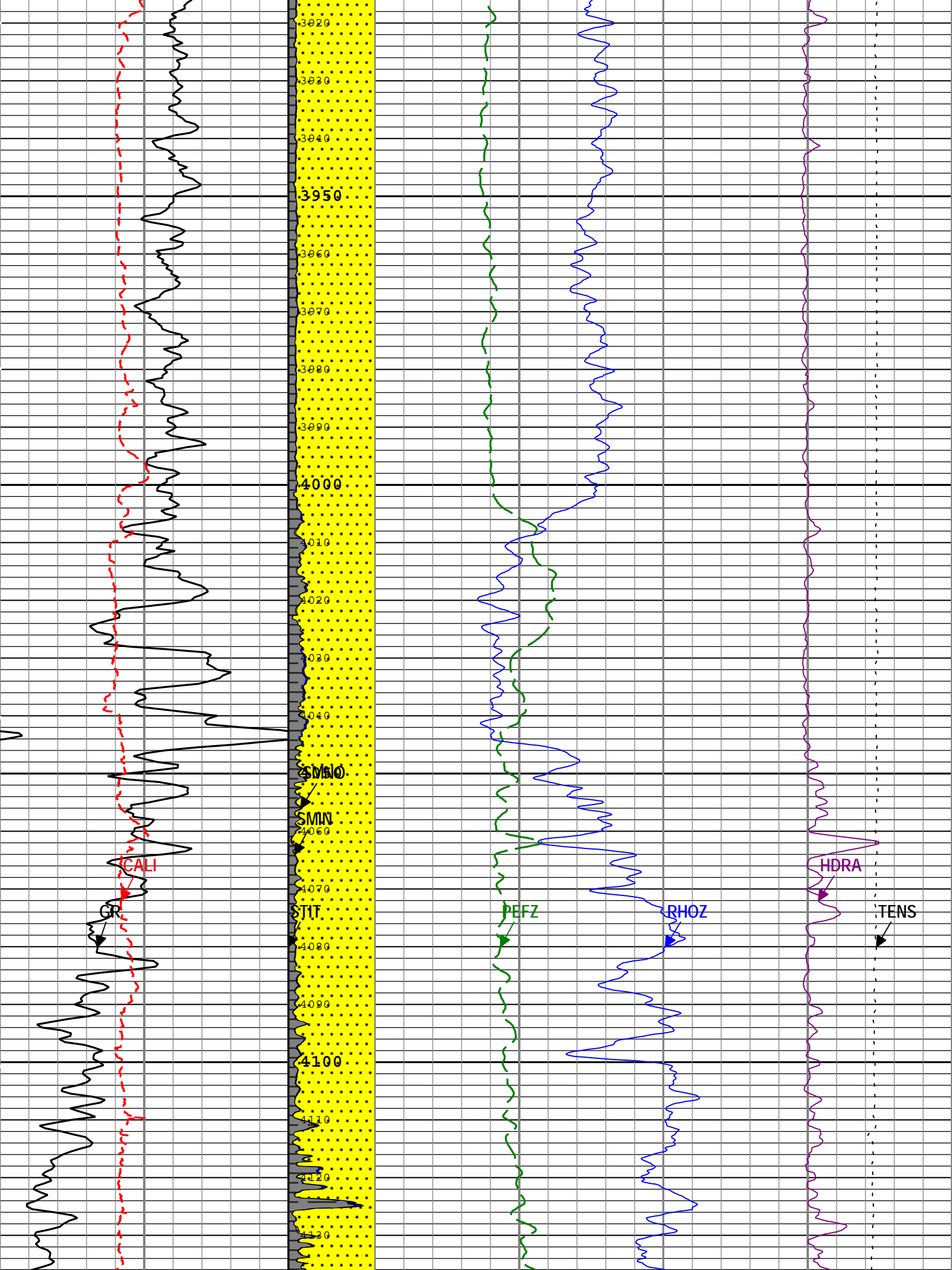


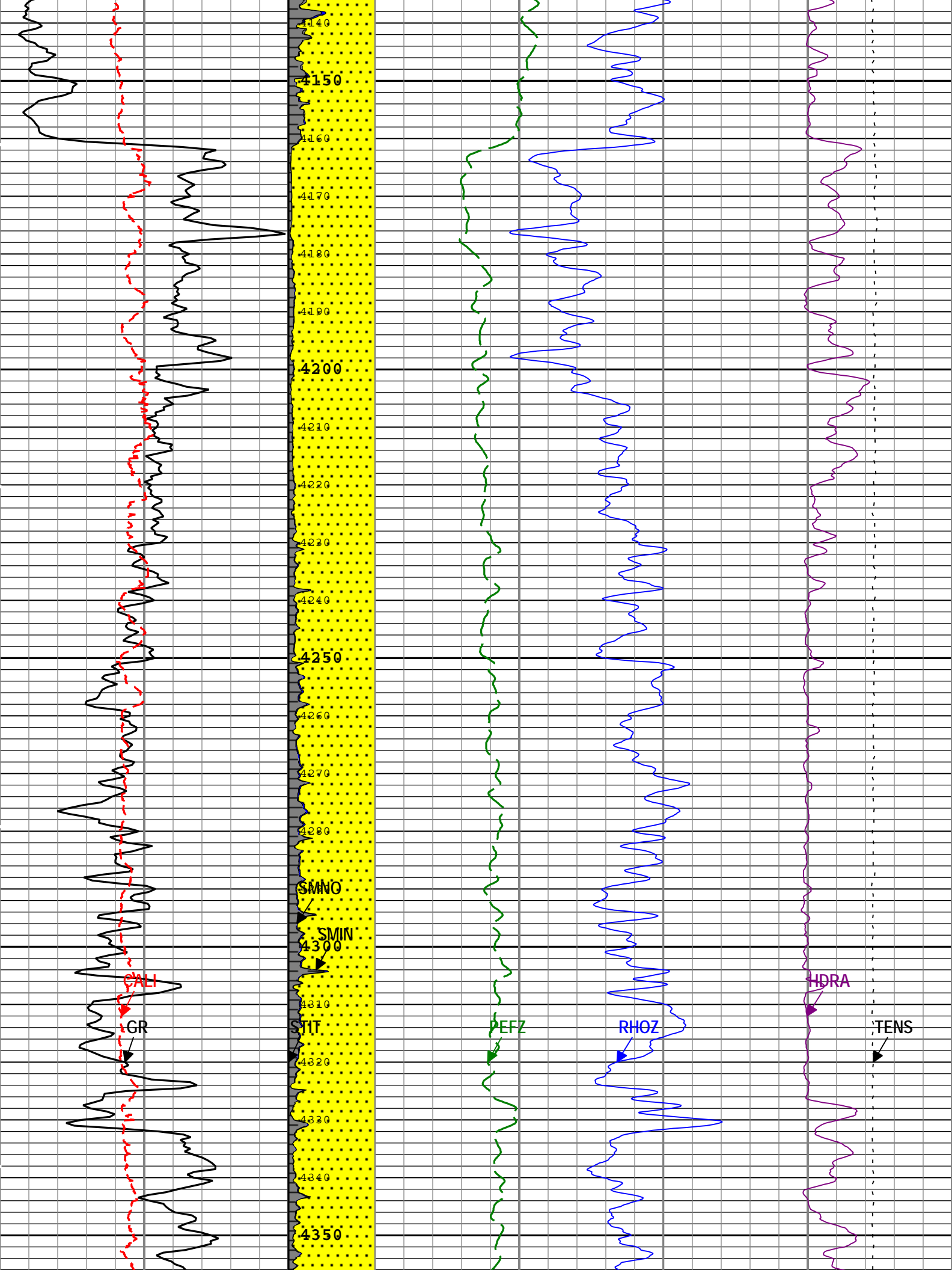


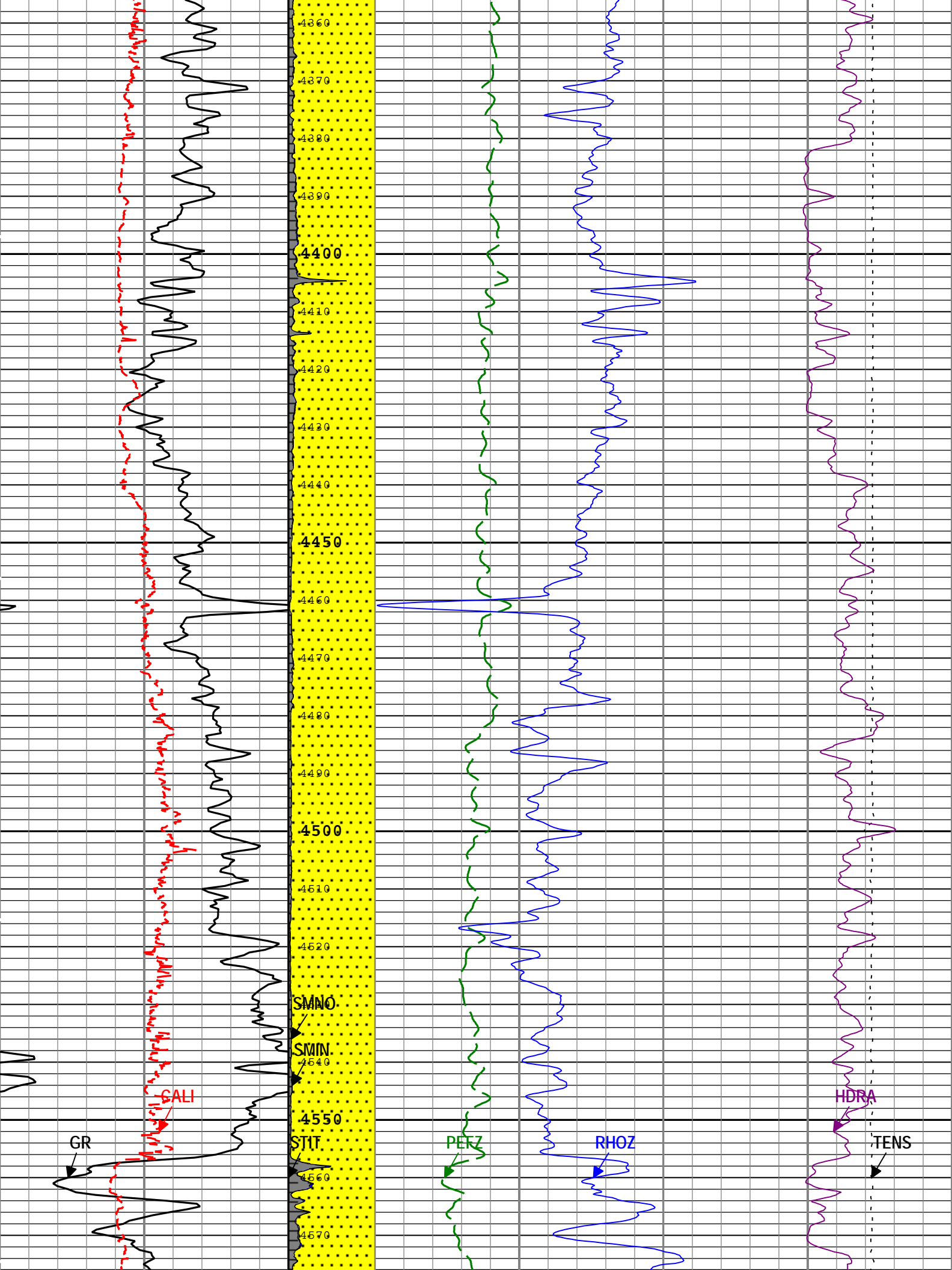


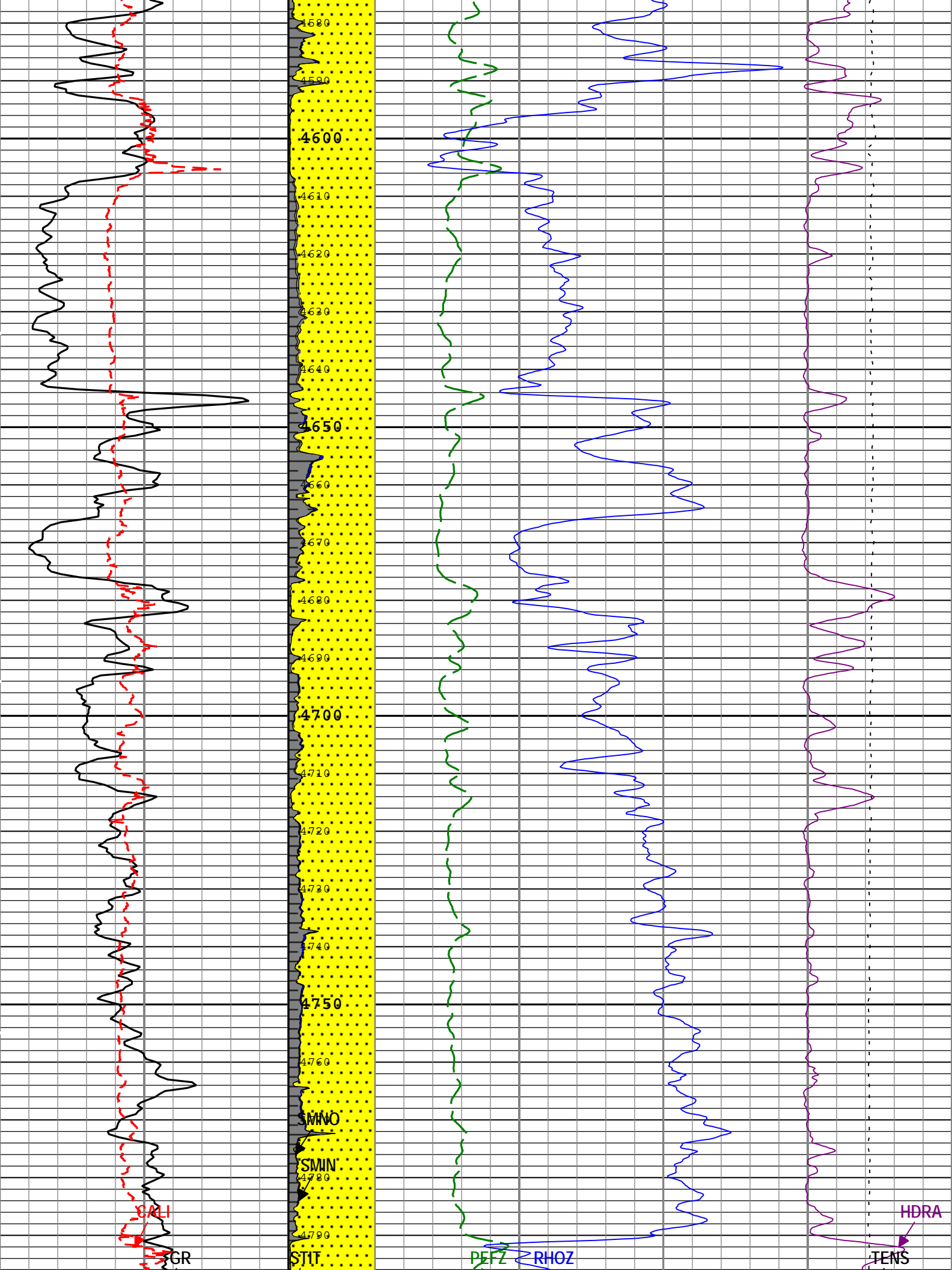


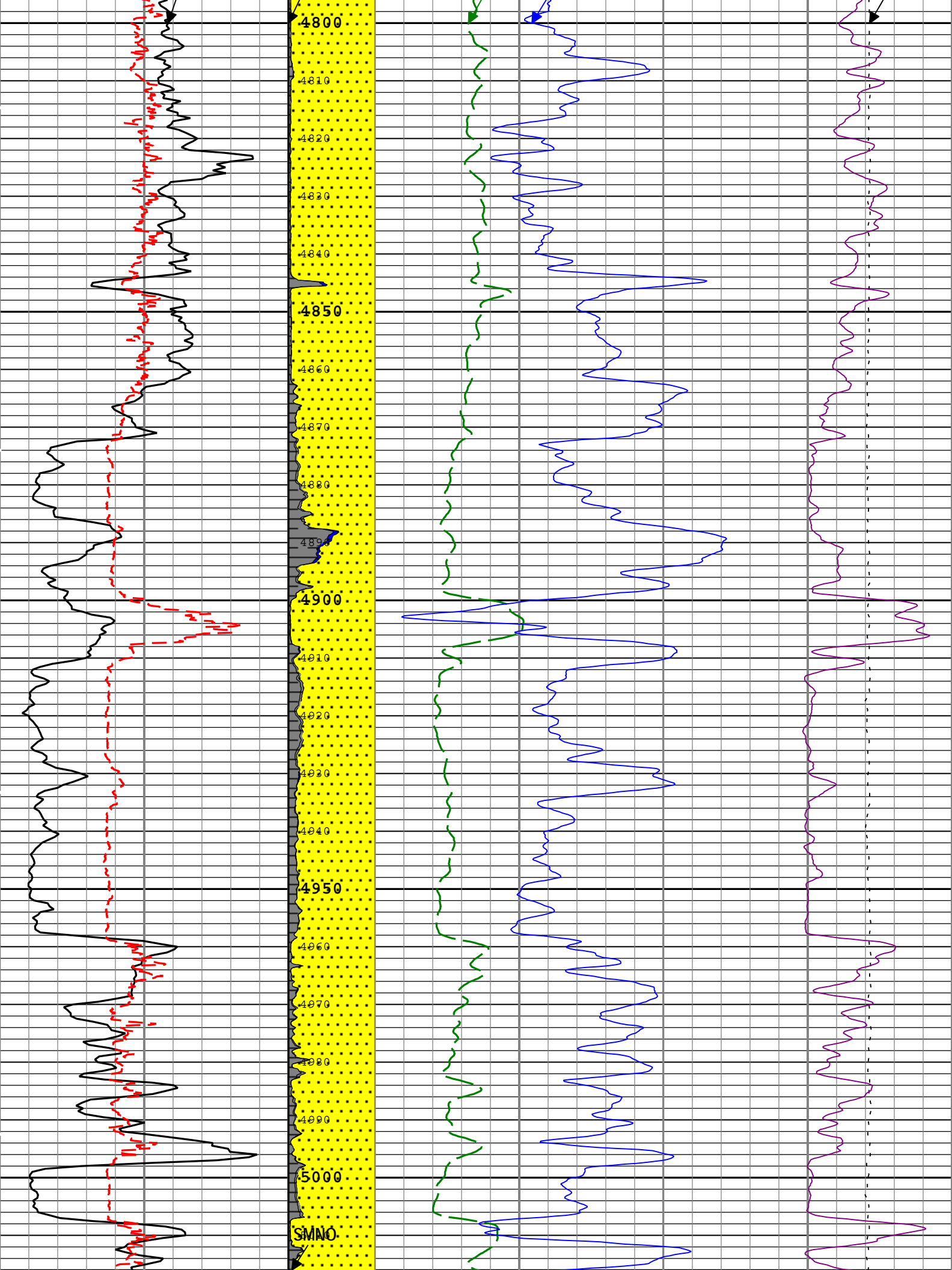


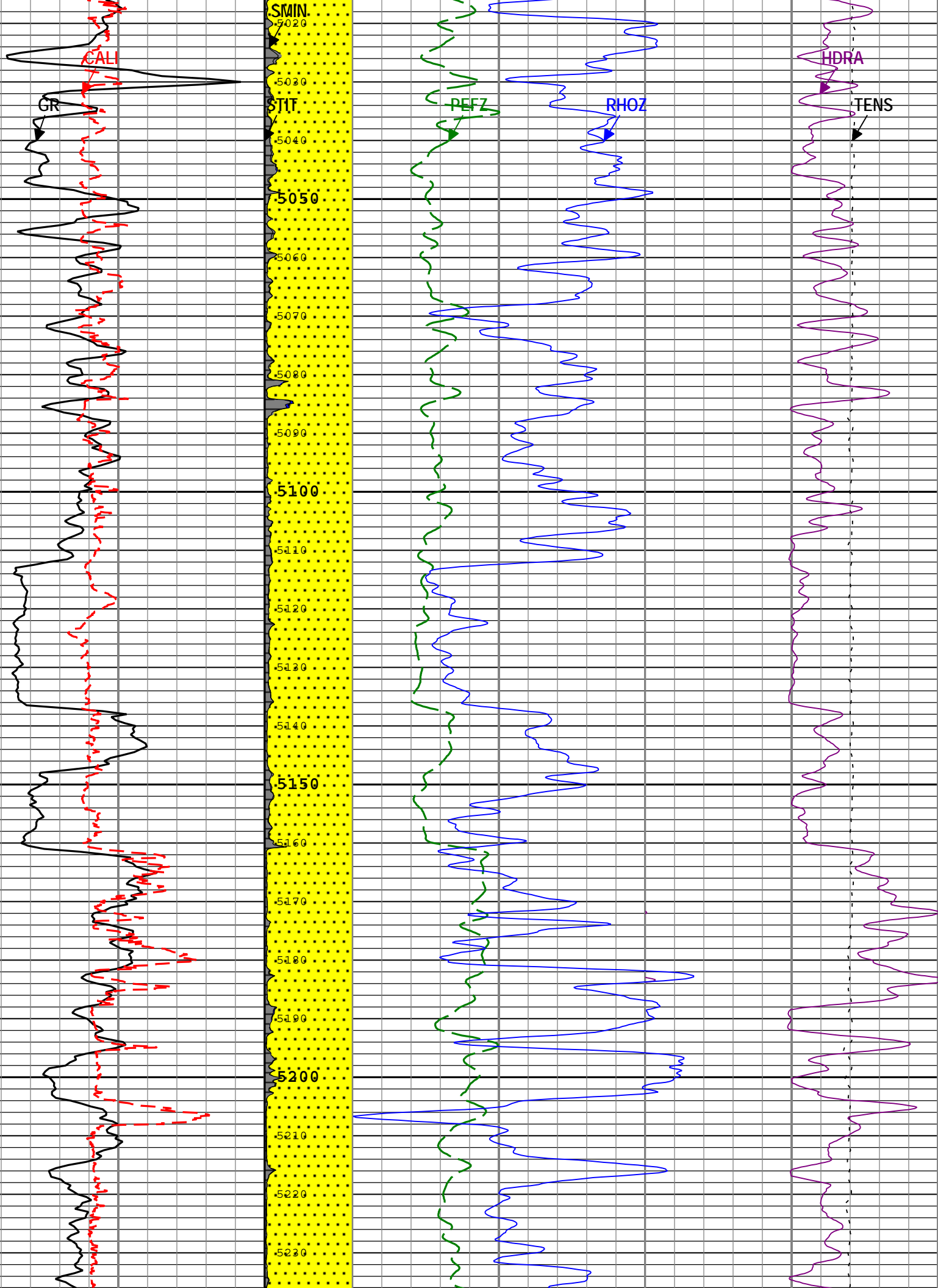


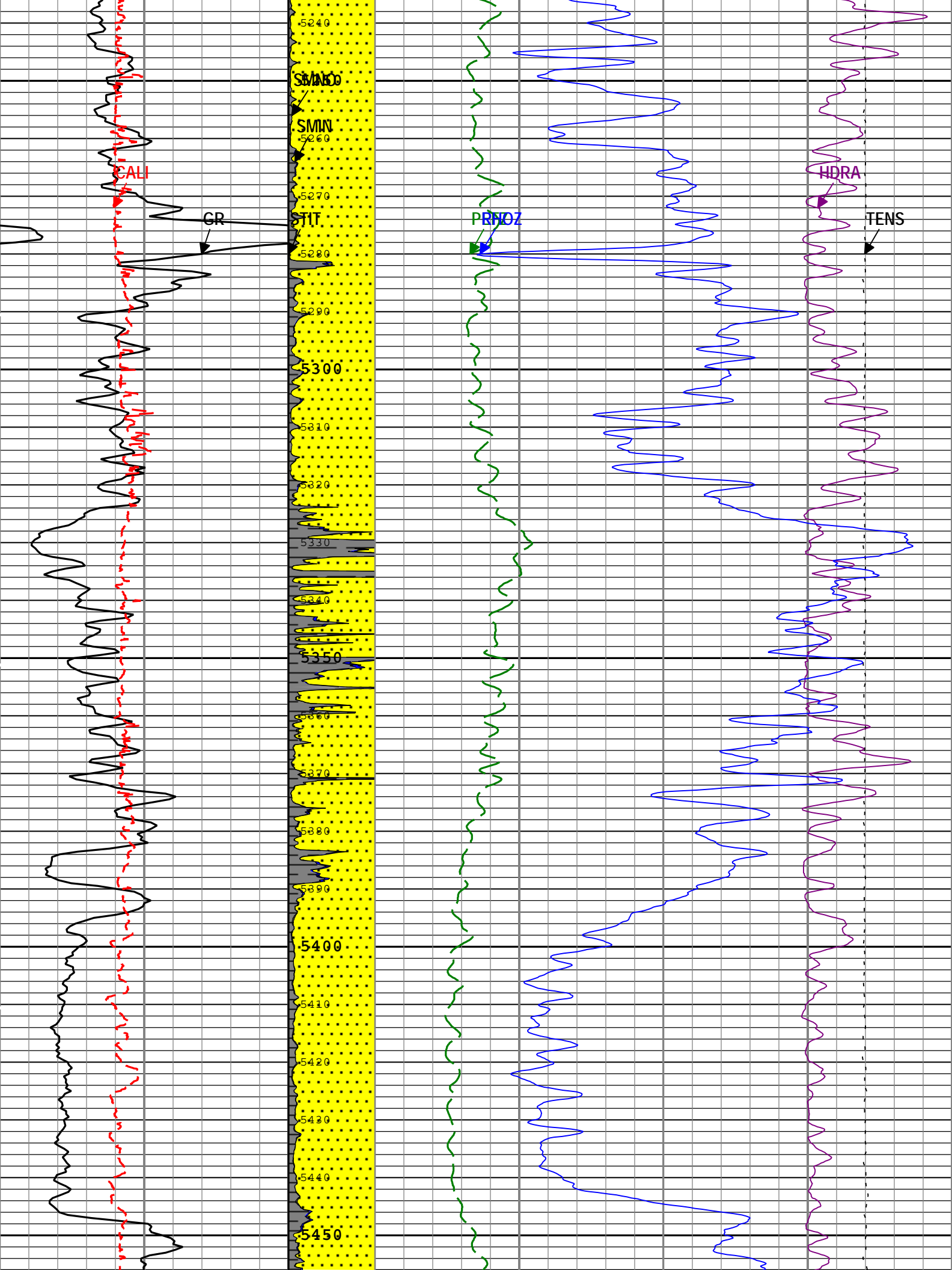


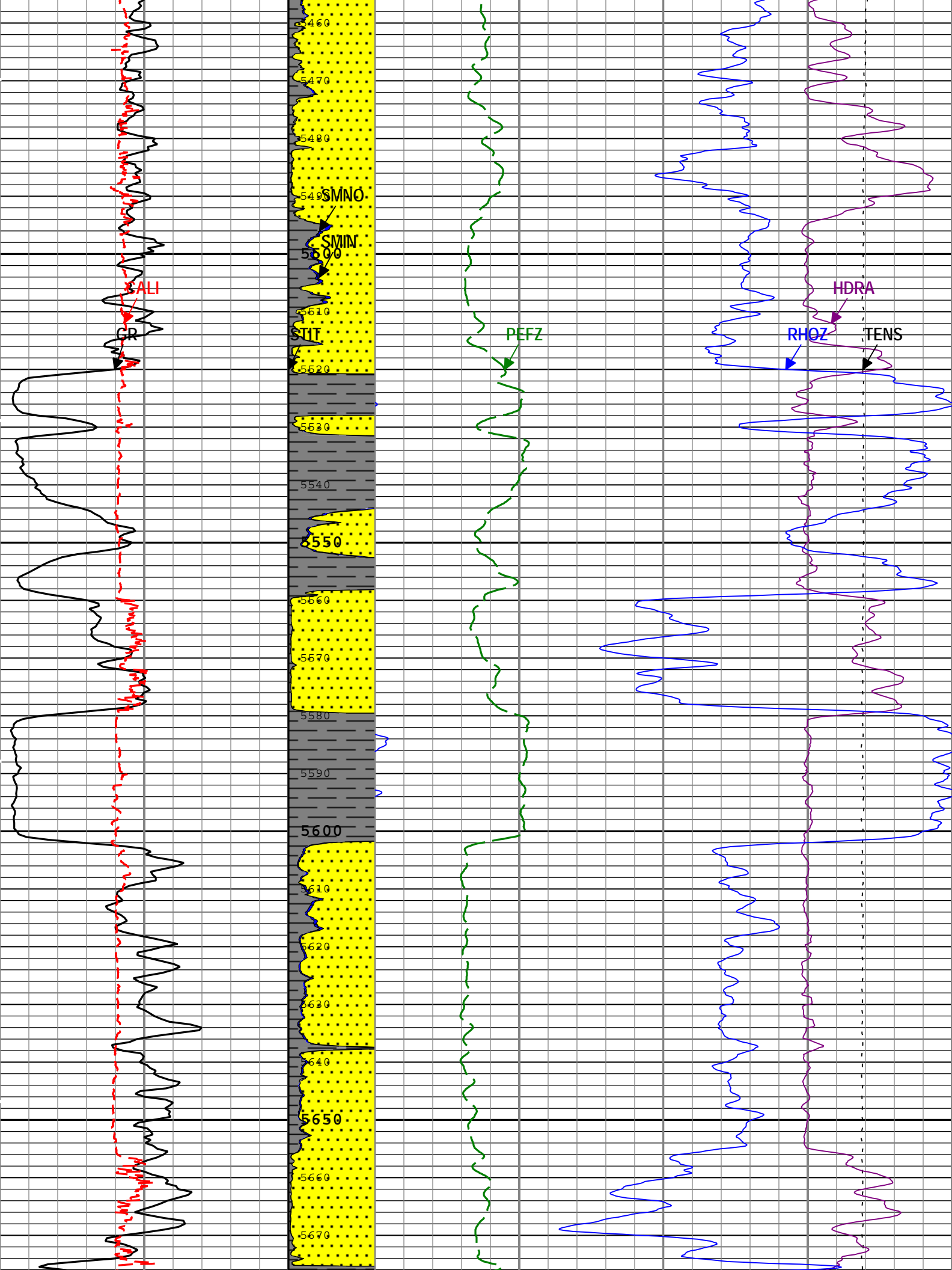


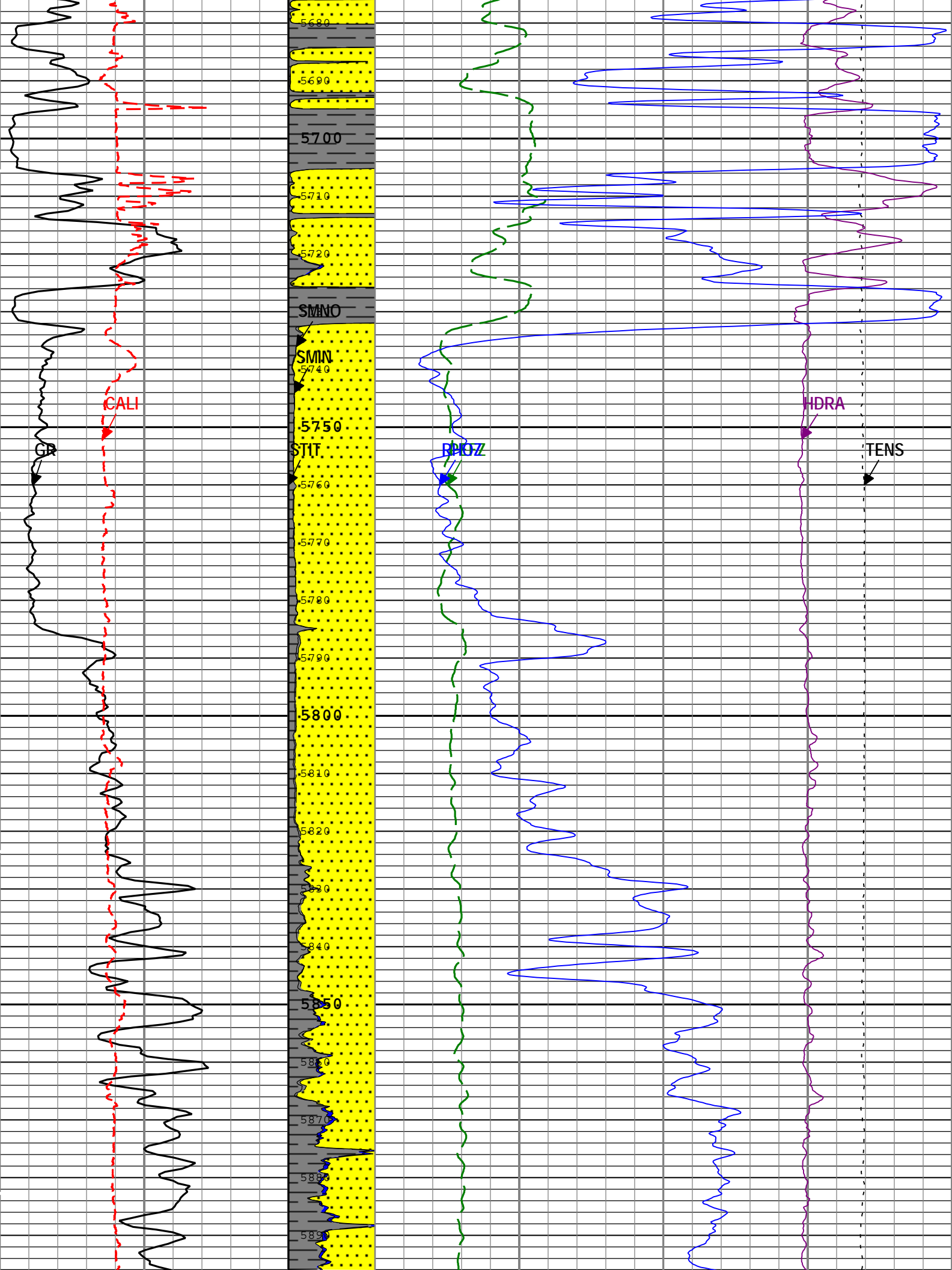


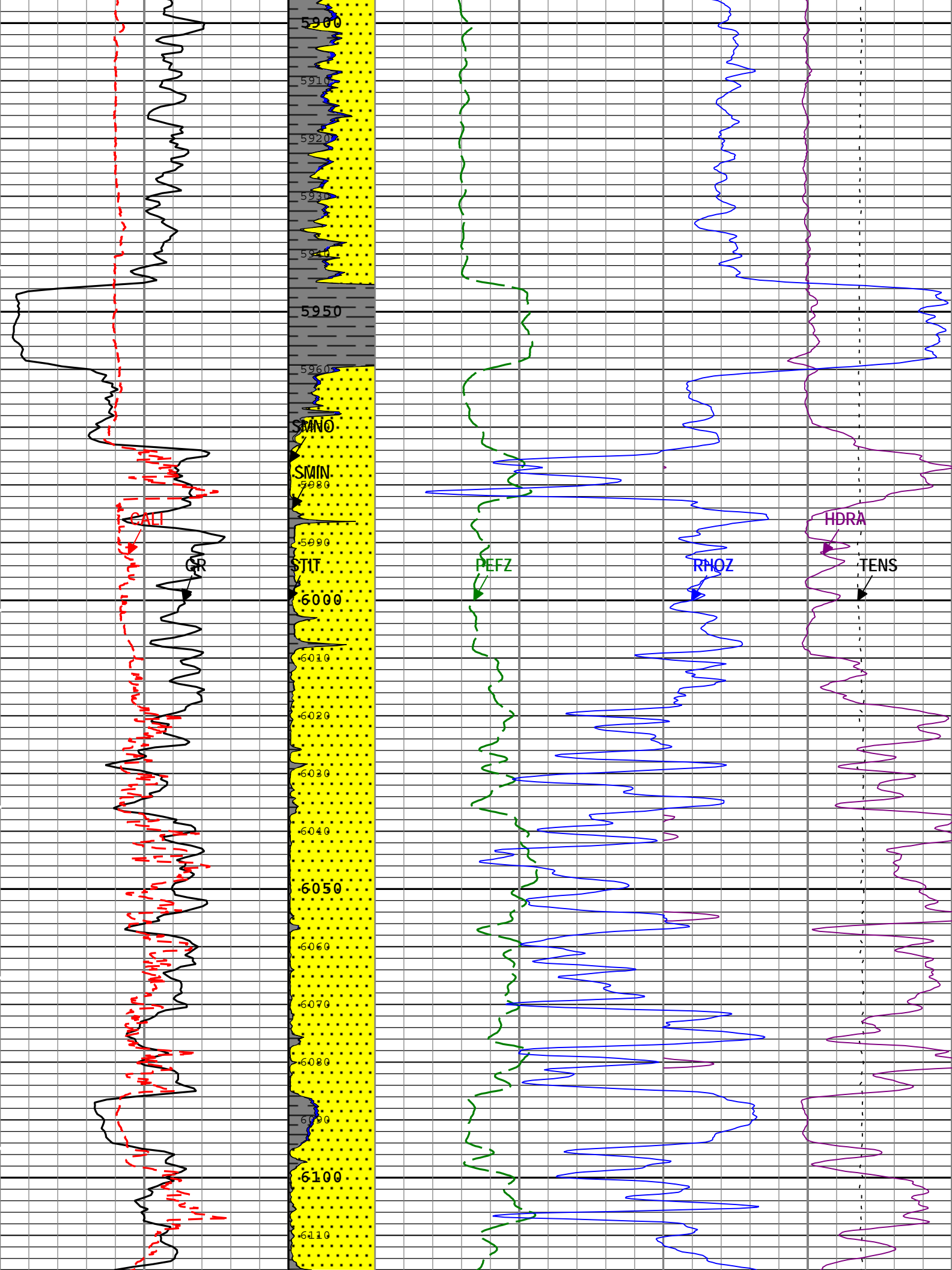


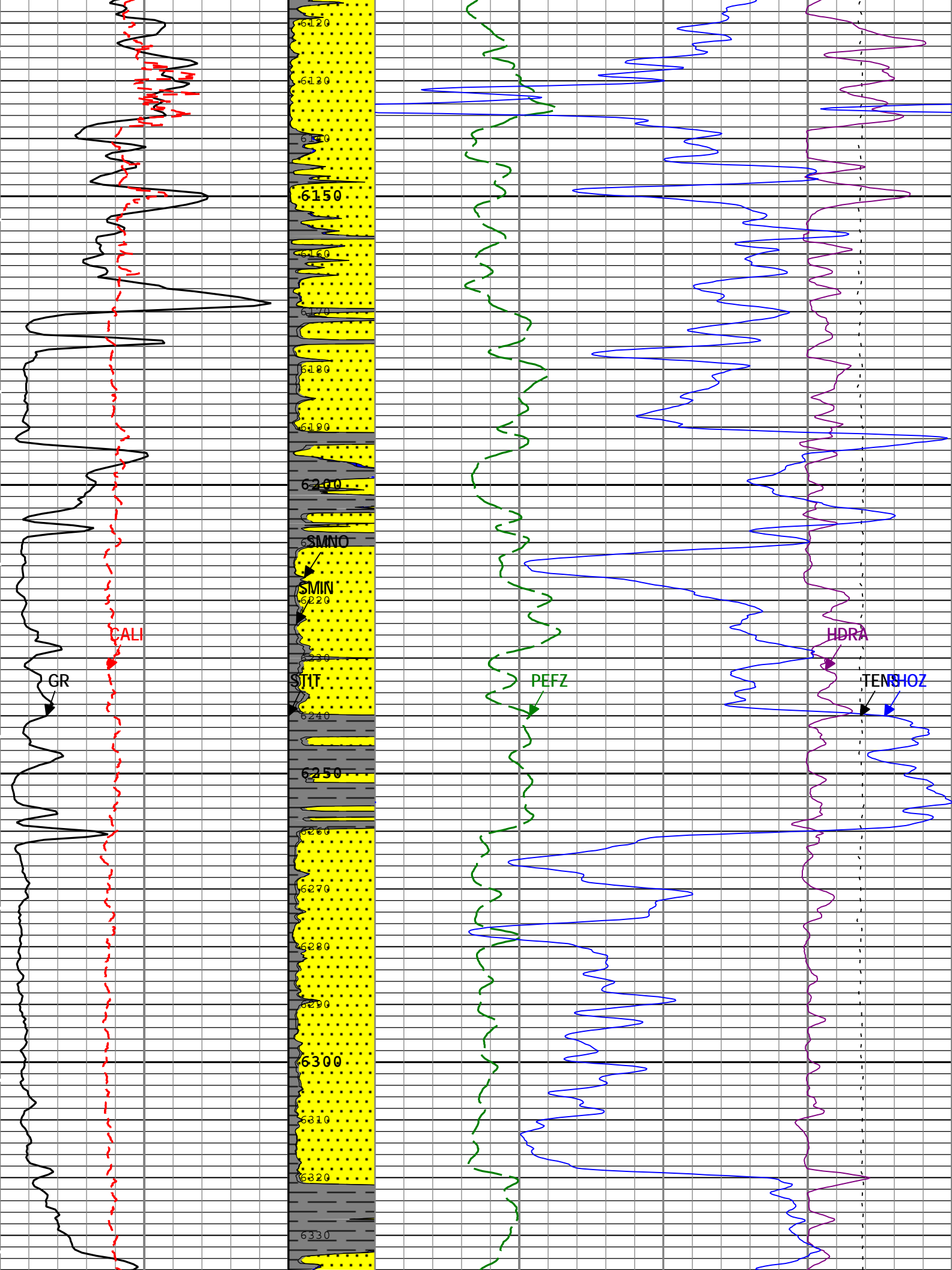


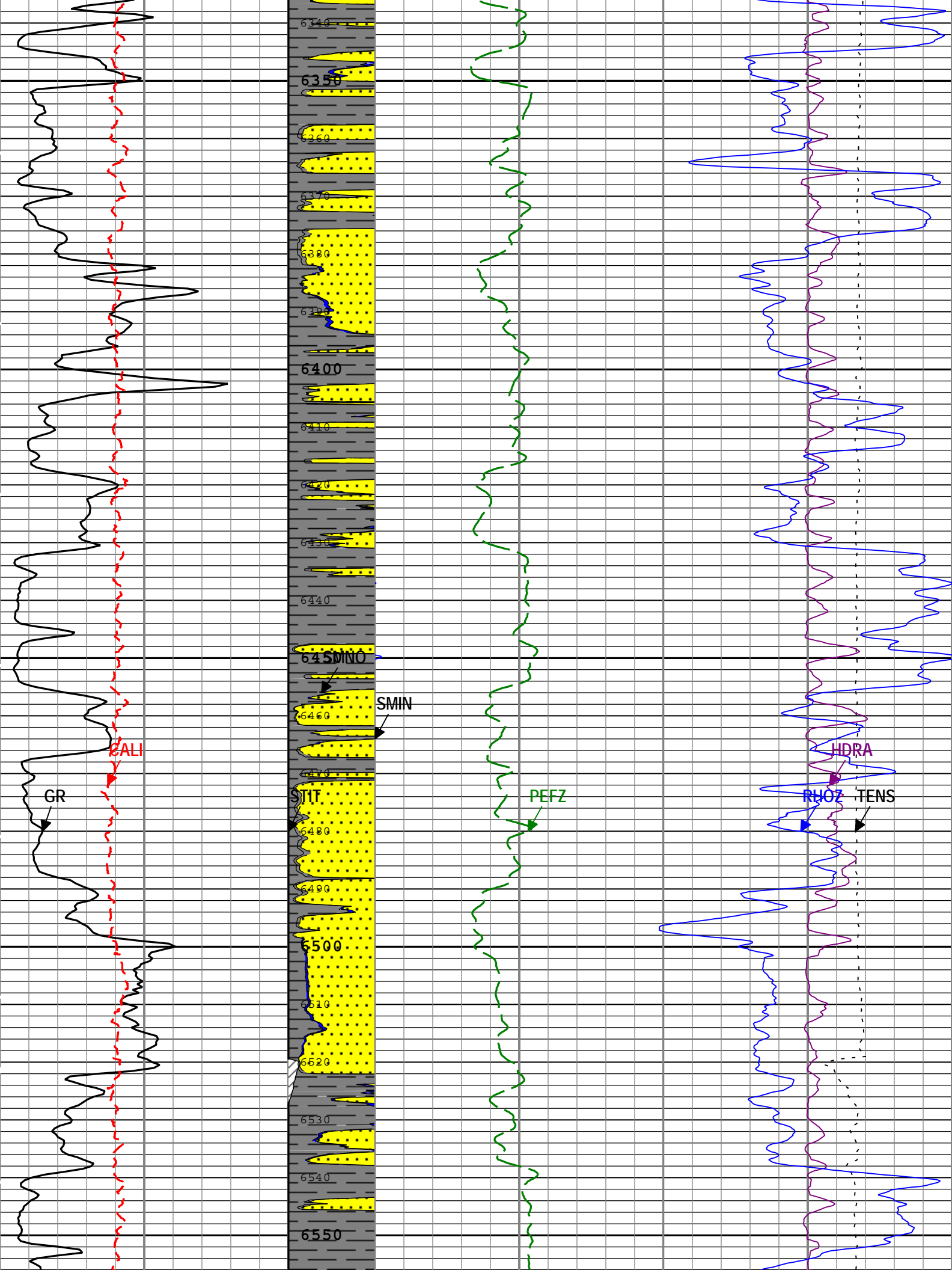


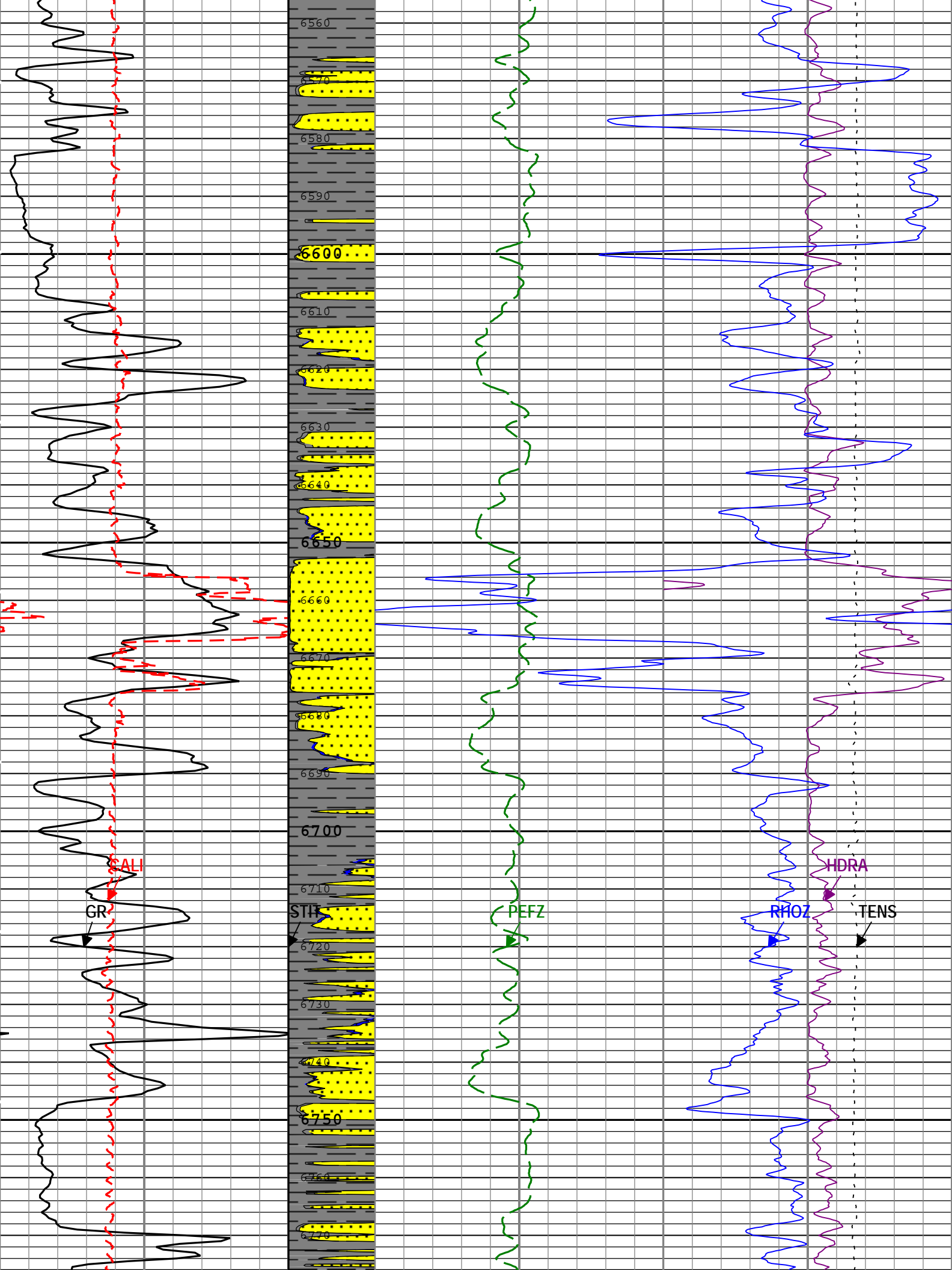


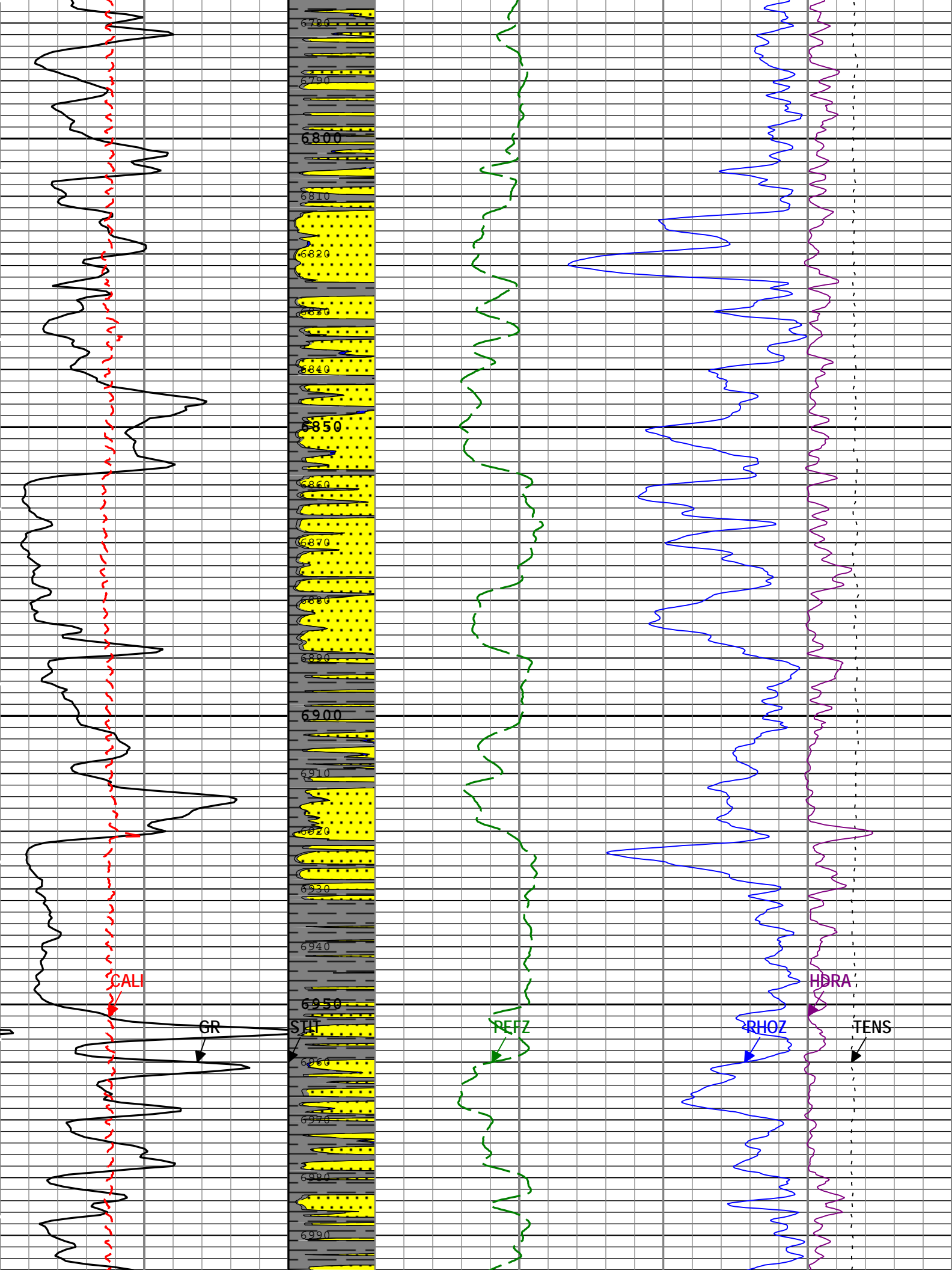


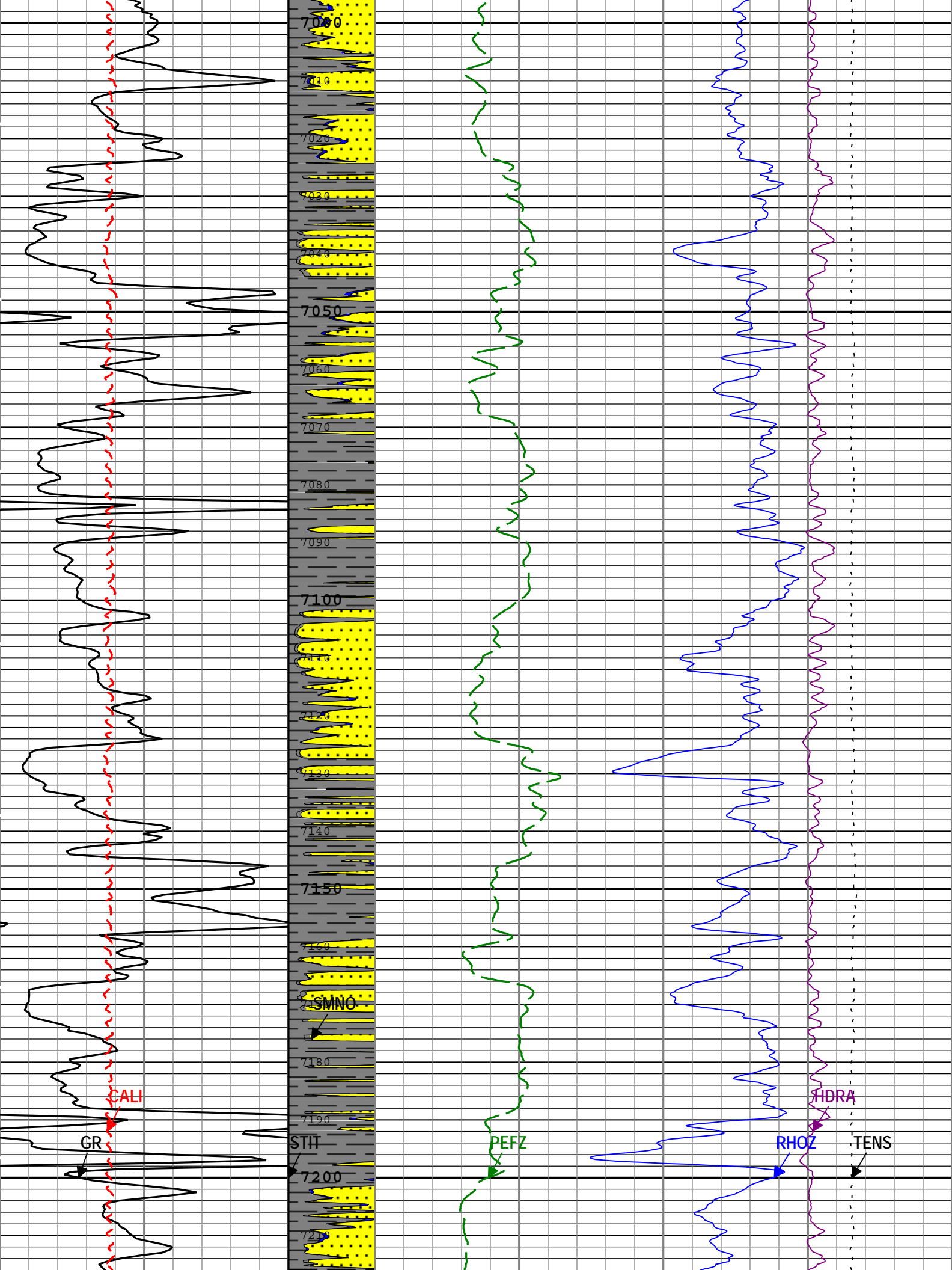


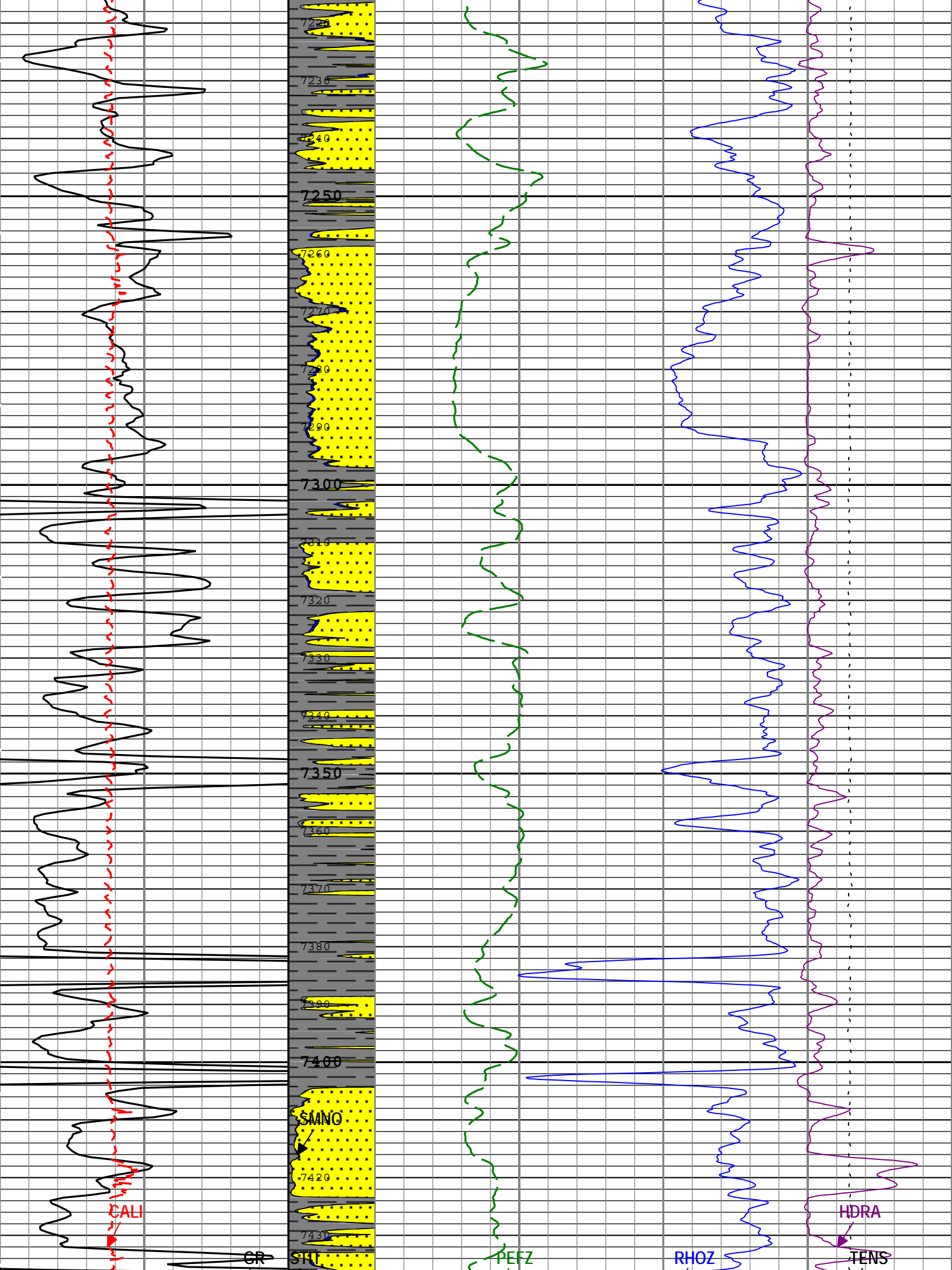


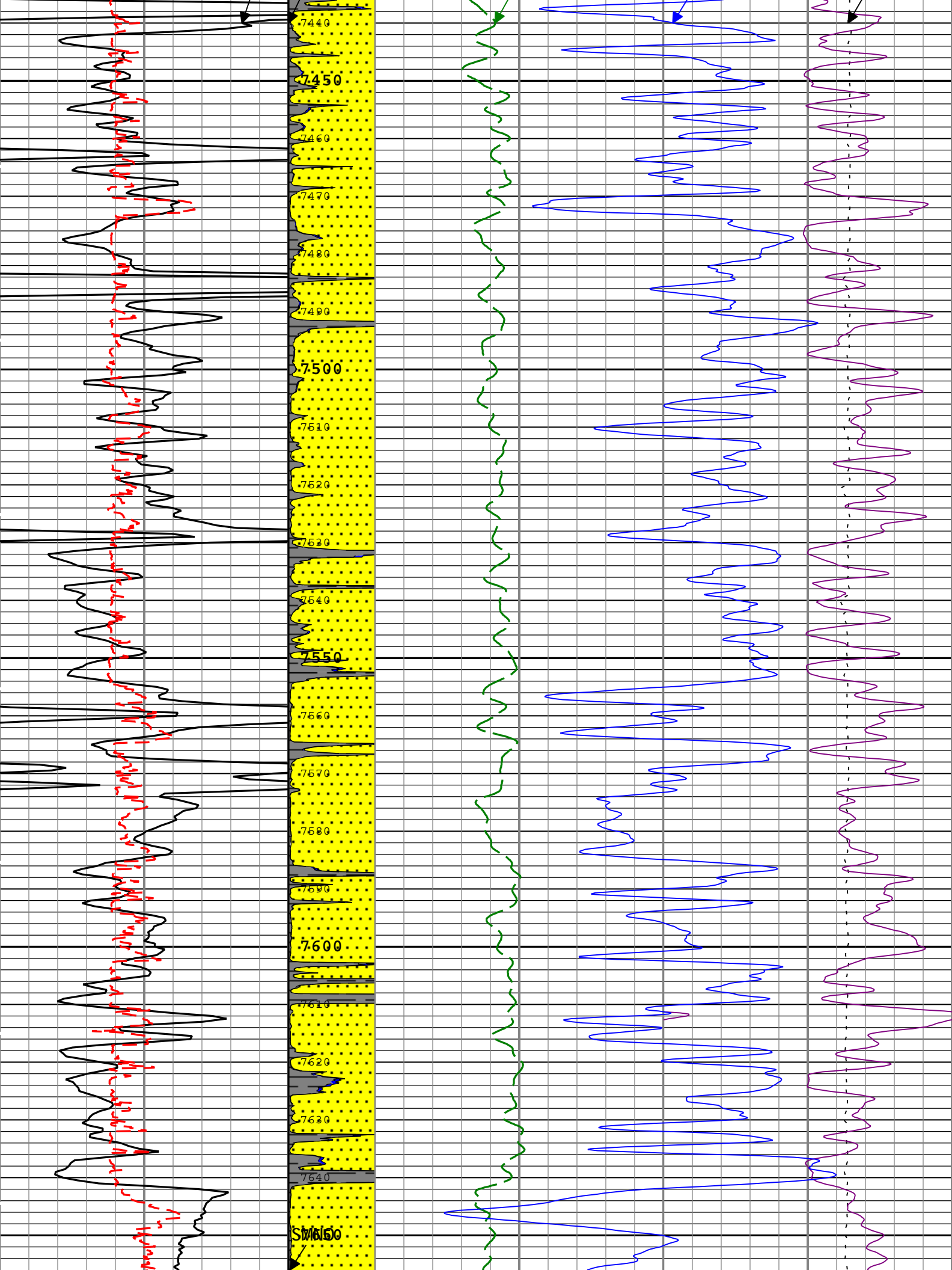


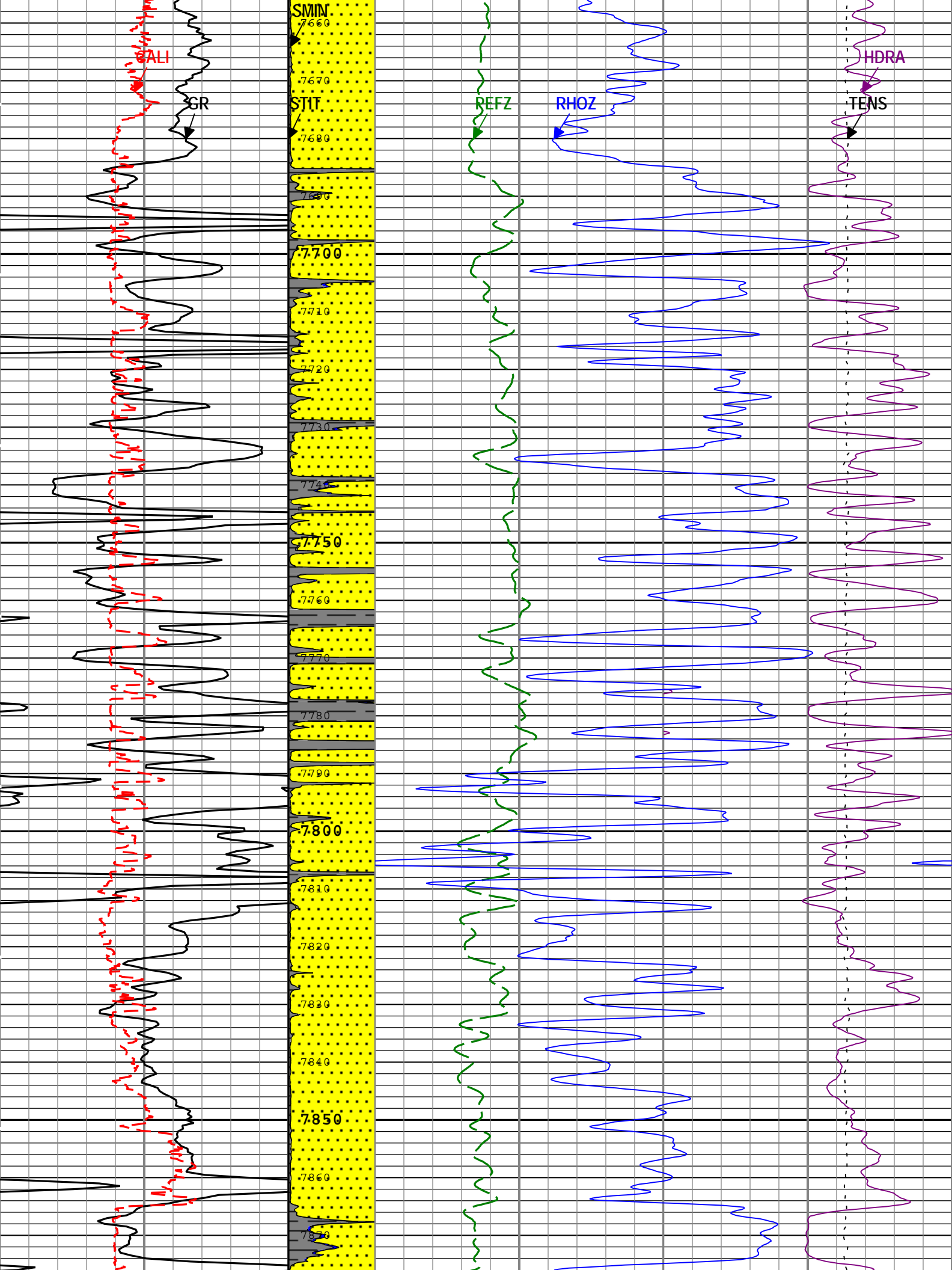


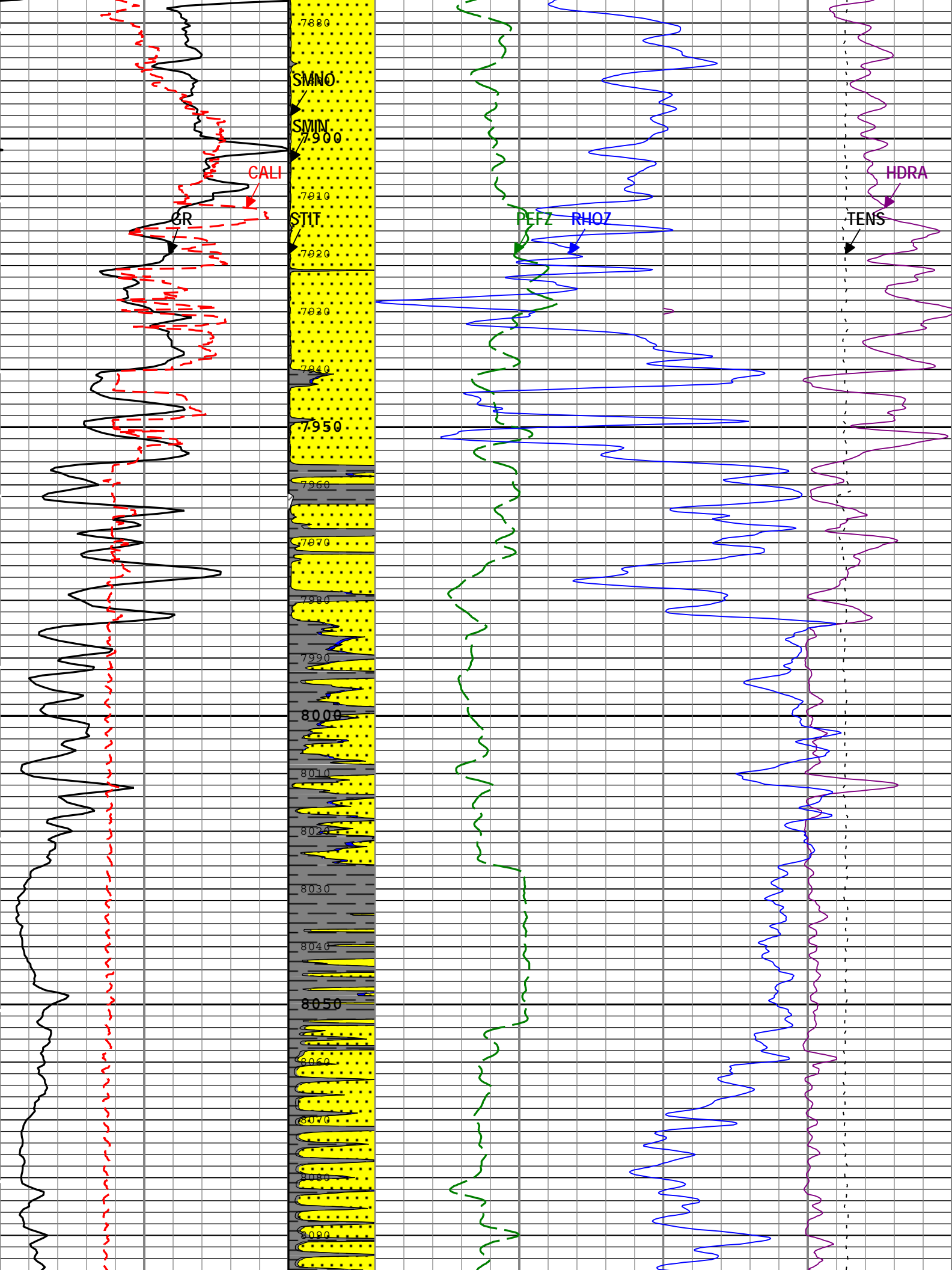


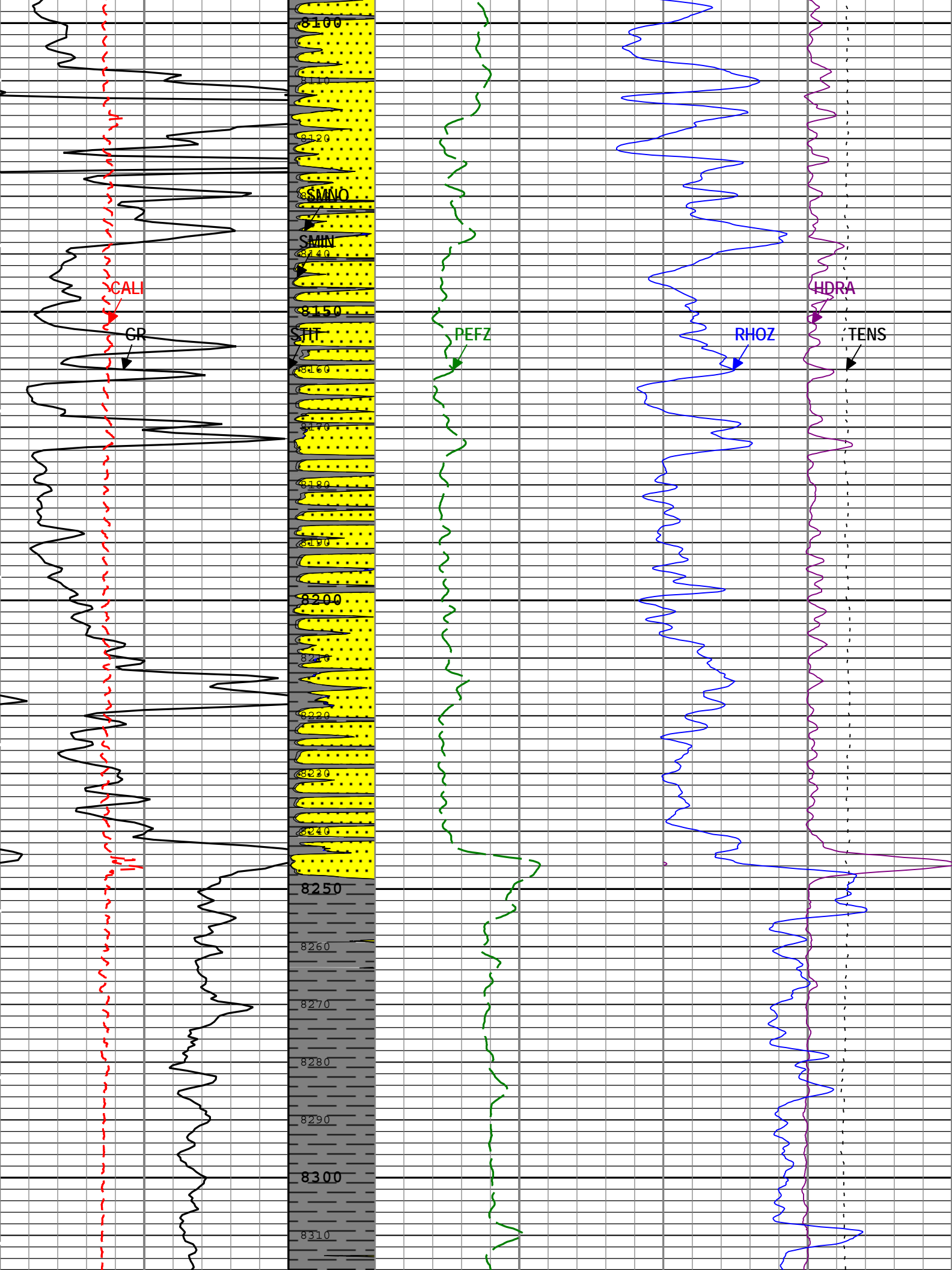


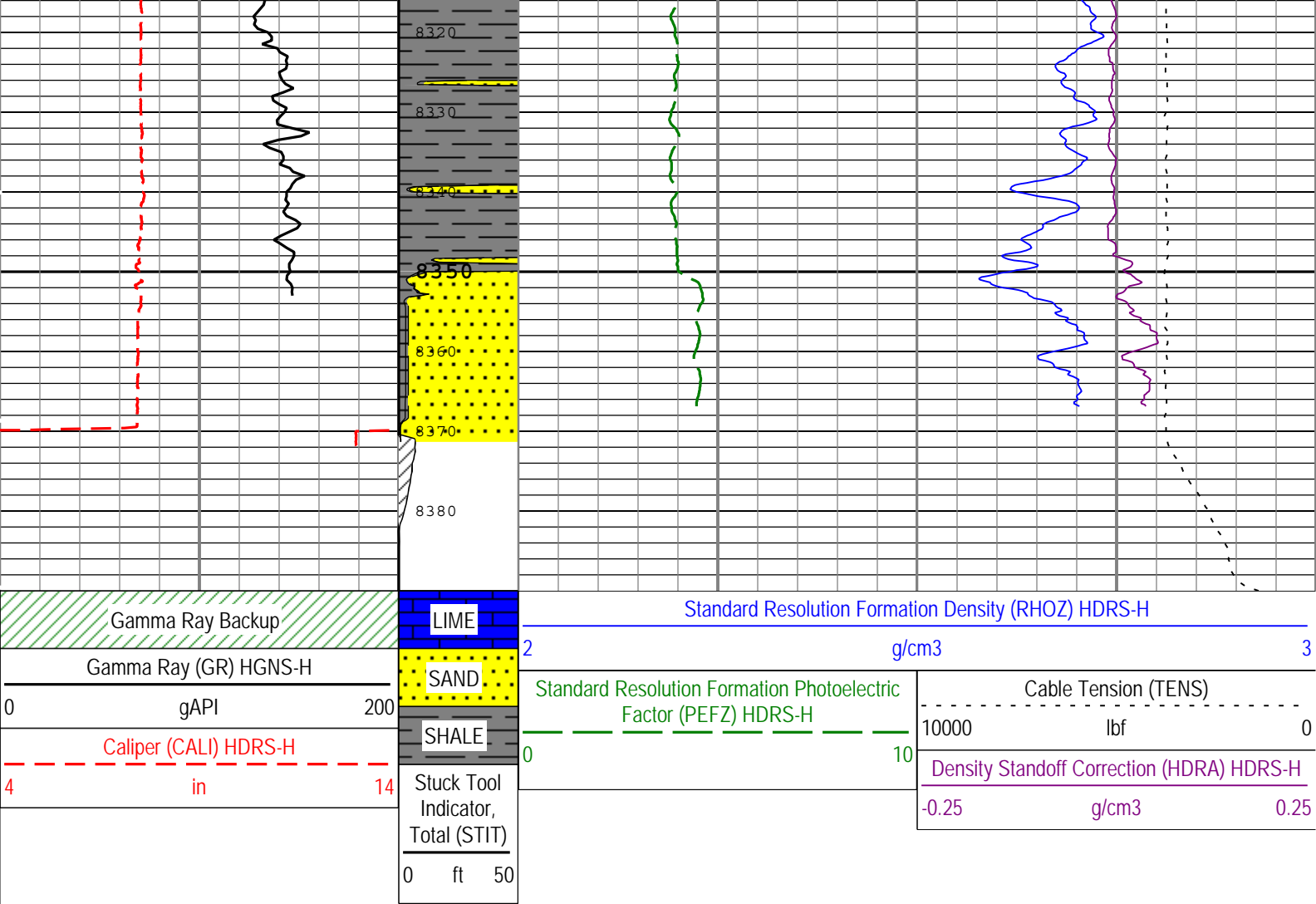












TIME_1900 - Time Marked every 60.00 (s)

Description: HGNS standard resolution porosities for Platform Express Format: Log (EMD 5in Density) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 13-Sep-2014 00:07:35

Channel Processing Parameters				
Parameter	Description	Tool	Value	Unit
BARI	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BS	Bit Size	WLSESSION	7.875	in
CALI_SHIFT	CALI Supplementary Offset	HDRS-H	-0.642	in
CBLO	Casing Bottom (Logger)	WLSESSION	366	ft
CDEN	Cement Density	HGNS-H	2	g/cm3
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	9.5	lbm/gal
DFT	Drilling Fluid Type	Borehole	Water	
DHC	Density Hole Correction	HDRS-H	Bit Size	
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	CALI	
GRSE	Generalized Mud Resistivity Selection, from Measured or Computed Mud Resistivity	Borehole	AMF	
TD	Total Measured Depth	Borehole	8372	ft

Tool Control Parameters				
Parameter	Description	Tool	Value	Unit
HRGD_BRD_TYPE	HRGD Board Type	HDRS-H	WITH_HET	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	1800	ft/h

5" Repeat Analysis

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[3]:Up	Up	7365.00 ft	8390.71 ft	12-Sep-2014 6:57:09 PM	12-Sep-2014 7:18:06 PM	ON	10.95 ft	No
ONE	Main[5]:Up	Up	48.11 ft	8390.18 ft	12-Sep-2014 7:56:40 PM	12-Sep-2014 11:03:07 PM	ON	13.89 ft	No

All depths are referenced to toolstring zero

Log

Company:Nighthawk Production LLC

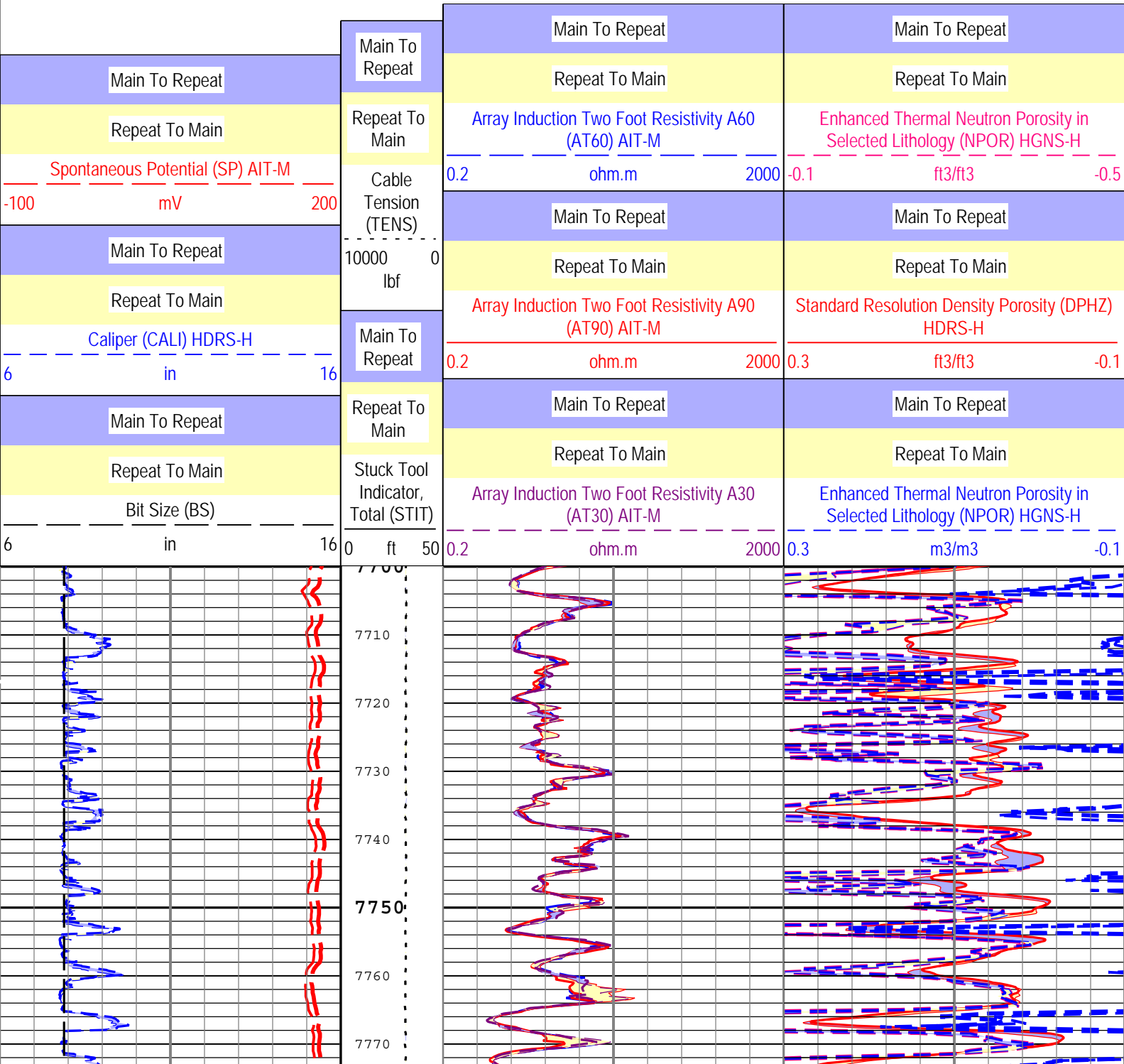
Well:Blackcomb 5-14

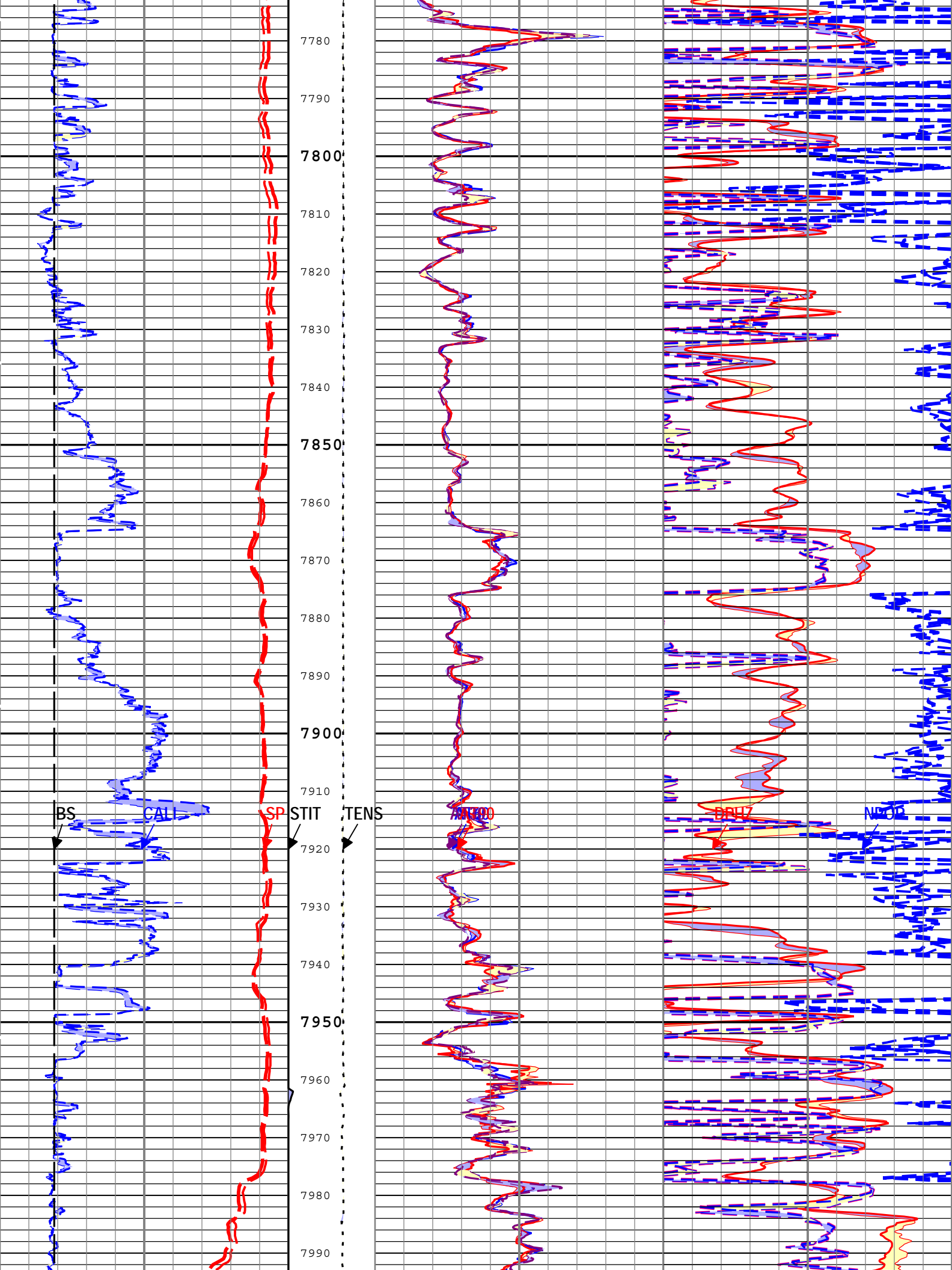
ONE: Log[3]:Up:S011

Description: HGNS standard resolution porosities for Platform Express Format: Log (EMD 5in Triple Combo Linear RA_1) Index Scale: 5 in per 100 ft

Index Unit: ft Index Type: Measured Depth Creation Date: 13-Sep-2014 00:07:38

TIME_1900 - Time Marked every 60.00 (s)





Main To Repeat	Repeat To Main	Spontaneous Potential (SP) AIT-M -100 mV 200	Main To Repeat	Repeat To Main	Array Induction Two Foot Resistivity A60 (AT60) AIT-M 0.2 ohm.m 2000	Main To Repeat	Repeat To Main	Enhanced Thermal Neutron Porosity in Selected Lithology (NPOR) HGNS-H -0.1 ft3/ft3 -0.5
Main To Repeat	Repeat To Main	Caliper (CALI) HDRS-H 6 in 16	Main To Repeat	Repeat To Main	Array Induction Two Foot Resistivity A90 (AT90) AIT-M 0.2 ohm.m 2000	Main To Repeat	Repeat To Main	Standard Resolution Density Porosity (DPHZ) HDRS-H 0.3 ft3/ft3 -0.1
Main To Repeat	Repeat To Main	Bit Size (BS) 6 in 16	Main To Repeat	Repeat To Main	Array Induction Two Foot Resistivity A30 (AT30) AIT-M 0.2 ohm.m 2000	Main To Repeat	Repeat To Main	Enhanced Thermal Neutron Porosity in Selected Lithology (NPOR) HGNS-H 0.3 m3/m3 -0.1

TIME_1900 - Time Marked every 60.00 (s)

Description: HGNS standard resolution porosities for Platform Express Format: Log (EMD 5in Triple Combo Linear RA_1) Index Scale: 5 in per 100 ft
Index Unit: ft Index Type: Measured Depth Creation Date: 13-Sep-2014 00:07:38

Calibration Report											
AIT-M (Array Induction Tool - M) Calibration - Run ONE											
Primary Equipment :											
File code for AIT-MA Sonde Tool Element			AMIS		181						
Auxiliary Equipment :											
File code for AIT Bottom Nose Tool Element			AMRM		181						
AIT Sonde Calibration - Test Loop Gain											
Master (EEPROM):		15:52:07 18-Jun-2014									
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<table><tr><td></td><td></td><td></td><td></td></tr></table>				
Test Loop Gain - 0		Master	1.000	0.950	1.016	1.050	<table><tr><td></td><td></td><td></td><td></td></tr></table>				
Test Loop Phase - 0	deg	Master	0	-3.000	-0.873	3.000	<table><tr><td></td><td></td><td></td><td></td></tr></table>				
Test Loop Gain - 1		Master	1.000	0.950	1.016	1.050	<table><tr><td></td><td></td><td></td><td></td></tr></table>				
Test Loop Phase - 1	deg	Master	0	-3.000	-0.523	3.000	<table><tr><td></td><td></td><td></td><td></td></tr></table>				
Test Loop Gain - 2		Master	1.000	0.950	1.020	1.050	<table><tr><td></td><td></td><td></td><td></td></tr></table>				
Test Loop Phase - 2	deg	Master	0	-3.000	-0.285	3.000	<table><tr><td></td><td></td><td></td><td></td></tr></table>				
Test Loop Gain - 3		Master	1.000	0.950	1.017	1.050	<table><tr><td></td><td></td><td></td><td></td></tr></table>				
Test Loop Phase - 3	deg	Master	0	-3.000	-0.364	3.000	<table><tr><td></td><td></td><td></td><td></td></tr></table>				
Test Loop Gain - 4		Master	1.000	0.950	0.996	1.050	<table><tr><td></td><td></td><td></td><td></td></tr></table>				
Test Loop Phase - 4	deg	Master	0	-3.000	0.047	3.000	<table><tr><td></td><td></td><td></td><td></td></tr></table>				
Test Loop Gain - 5		Master	1.000	0.950	0.992	1.050	<table><tr><td></td><td></td><td></td><td></td></tr></table>				
Test Loop Phase - 5	deg	Master	0	-3.000	-0.306	3.000	<table><tr><td></td><td></td><td></td><td></td></tr></table>				
Test Loop Gain - 6		Master	1.000	0.950	0.998	1.050	<table><tr><td></td><td></td><td></td><td></td></tr></table>				
Test Loop Phase - 6	deg	Master	0	-3.000	-0.014	3.000	<table><tr><td></td><td></td><td></td><td></td></tr></table>				
Test Loop Gain - 7		Master	1.000	0.950	1.012	1.050	<table><tr><td></td><td></td><td></td><td></td></tr></table>				
Test Loop Phase - 7	deg	Master	0	-3.000	-0.171	3.000	<table><tr><td></td><td></td><td></td><td></td></tr></table>				
AIT Sonde Calibration - Sonde Error Correction											
Master (EEPROM):		15:52:07 18-Jun-2014									
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<table><tr><td></td><td></td><td></td><td></td></tr></table>				
Sonde Error Correction Real - 0	mS/m	Master	-----	-231.000	-105.375	119.000	<table><tr><td></td><td></td><td></td><td></td></tr></table>				
Sonde Error Correction Quad - 0		Master	-----	-2250.000	128.249	2250.000	<table><tr><td></td><td></td><td></td><td></td></tr></table>				
Sonde Error Correction Real - 1	mS/m	Master	-----	114.000	154.526	204.000	<table><tr><td></td><td></td><td></td><td></td></tr></table>				
Sonde Error Correction Quad - 1		Master	-----	625.000	120.428	625.000	<table><tr><td></td><td></td><td></td><td></td></tr></table>				

Sonde Error Correction Quad - 1		Master	-----	-625.000	-120.436	625.000	
Sonde Error Correction Real - 2	mS/m	Master	-----	66.000	113.010	156.000	
Sonde Error Correction Quad - 2		Master	-----	-350.000	-106.668	350.000	
Sonde Error Correction Real - 3	mS/m	Master	-----	39.000	49.722	89.000	
Sonde Error Correction Quad - 3		Master	-----	-250.000	-9.512	250.000	
Sonde Error Correction Real - 4	mS/m	Master	-----	15.000	25.368	35.000	
Sonde Error Correction Quad - 4		Master	-----	-63.000	-11.301	63.000	
Sonde Error Correction Real - 5	mS/m	Master	-----	4.000	10.767	24.000	
Sonde Error Correction Quad - 5		Master	-----	-50.000	19.041	50.000	
Sonde Error Correction Real - 6	mS/m	Master	-----	5.000	9.775	15.000	
Sonde Error Correction Quad - 6		Master	-----	-30.000	0.982	30.000	
Sonde Error Correction Real - 7	mS/m	Master	-----	-5.000	-1.211	5.000	
Sonde Error Correction Quad - 7		Master	-----	-30.000	1.407	30.000	

AIT Mud Calibration - Mud Calibration Gain

Master (EEPROM): 15:52:07 18-Jun-2014							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Coarse Gain		Master	1.000	0.800	0.903	1.200	
Fine Gain		Master	1.000	0.800	0.900	1.200	

AIT Electronics Check - Thru Calibration Check

Master (EEPROM): 15:52:07 18-Jun-2014							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Thru Cal Mag - 0	V	Master	-----	0.366	0.576	0.854	
Thru Cal Phase - 0	deg	Master	-----	137.000	-169.574	-103.000	
Thru Cal Mag - 1	V	Master	-----	0.762	1.179	1.778	
Thru Cal Phase - 1	deg	Master	-----	136.000	-170.676	-104.000	
Thru Cal Mag - 2	V	Master	-----	0.372	0.585	0.868	
Thru Cal Phase - 2	deg	Master	-----	132.000	-174.320	-108.000	
Thru Cal Mag - 3	V	Master	-----	0.420	0.661	0.980	
Thru Cal Phase - 3	deg	Master	-----	131.000	-175.098	-109.000	
Thru Cal Mag - 4	V	Master	-----	0.804	1.234	1.876	
Thru Cal Phase - 4	deg	Master	-----	125.000	178.625	-115.000	
Thru Cal Mag - 5	V	Master	-----	1.176	1.797	2.744	
Thru Cal Phase - 5	deg	Master	-----	122.000	176.963	-118.000	
Thru Cal Mag - 6	V	Master	-----	1.176	1.796	2.744	
Thru Cal Phase - 6	deg	Master	-----	121.000	176.970	-119.000	
Thru Cal Mag - 7	V	Master	-----	0.846	1.295	1.974	
Thru Cal Phase - 7	deg	Master	-----	115.000	176.186	-125.000	
SPA Zero	mV	Master		-50.000	0.159	50.000	
SPA Plus	mV	Master		941.000	992.540	1040.000	
Temperature Zero	V	Master		-0.050	0.000	0.050	
Temperature Plus	V	Master		0.870	0.919	0.960	

HDRS-H (HILT Density and Rxo Sonde, 150 degC) Calibration - Run ONE

Primary Equipment :					
	HILT High-Resolution Control Cartridge, 150 degC	HRCC-H		4923	
	HILT Resistivity Gamma-Ray Density Device, 150 degC	HRGD-H		3760	
Auxiliary Equipment :					
	HRDD Backscatter Detector	Backscatter		3760	
	HRDD Long Spacing Detector	Long Spacing		3760	
	HRDD Short Spacing Detector	Short Spacing		3760	
	Cesium 137 Gamma-Ray Logging Source	GSR-J		5471	
	HILT High-Resolution Control Cartridge, 150 degC	HRCC-H		4923	
	HILT High-Resolution Mechanical Sonde, 150 degC	HRMS-H		3760	
Calibration Parameter :					
	Small Ring Size (Caliper Calibration Small Ring)	8.00			
	Large Ring Size (Caliper Calibration Large Ring)	12.00			

HDRS Density Calibration - Inversion Results

Master (EEPROM): 14:43:16 09-Sep-2014							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	

Accelerometer Coefficients - 8		Master	-----	-----	500.500	-----	
Accelerometer Coefficients - 9		Master	-----	-----	0.994	-----	

HGNS Neutron Calibration - HGNS Neutron Accumulations

Master (EEPROM): 14:29:32 23-Jul-2014

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Near Zero Measurement	1/s	Master	0	5.0	27.5	40.0	
Far Zero Measurement	1/s	Master	0	5.0	28.9	40.0	
Near Plus Measurement	1/s	Master	6031.0	4700.0	5764.0	6900.0	
Far Plus Measurement	1/s	Master	2793.0	1900.0	2396.0	2900.0	
Near Corrected Plus Measurement	1/s	Master		4700.0	5720.0	6900.0	
Far Corrected Plus Measurement	1/s	Master		1900.0	2356.0	2900.0	

ADT-C (Dielectric Scanner) Calibration - Run ONE

Primary Equipment :							
ADT Pad Element			ADP-C		727		
Calibration Parameter :							
Small Ring Size (Caliper Calibration Small Ring)			8.00				
Large Ring Size (Caliper Calibration Large Ring)			12.00				

ADT Caliper Calibration - Caliper Accumulations

Before (Measured): 18:36:39 15-Jul-2014 Expired by 28 days

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Small Ring RCAL	in	Before	8.00	4.00	7.38	12.00	
Large Ring RCAL	in	Before	12.00	6.00	11.02	18.00	

EDTC-B (Enhanced Digital Telemetry Cartridge - Version B) Calibration - Run ONE

Primary Equipment :							
EDTC-B			EDTC-B		8625		
Calibration Parameter :							
Plus Reference (Jig minus background reference)			165				

EDTC-B Memory Data - EDTC-B Memory Data

Master (EEPROM): 19:19:18 12-Sep-2014

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Initial PMT HV	V	Master			1686.000		
Accelerometer Serial Number		Master			659		
Accelerometer Coefficients - 0		Master	-----	-----	2.925	-----	
Accelerometer Coefficients - 1		Master	-----	-----	0.000	-----	
Accelerometer Coefficients - 2		Master	-----	-----	0.000	-----	
Accelerometer Coefficients - 3		Master	-----	-----	0.000	-----	
Accelerometer Coefficients - 4		Master	-----	-----	0.000	-----	
Accelerometer Coefficients - 5		Master	-----	-----	0.000	-----	
Accelerometer Coefficients - 6		Master	-----	-----	0.000	-----	
Accelerometer Coefficients - 7		Master	-----	-----	-0.005	-----	
Accelerometer Coefficients - 8		Master	-----	-----	0.000	-----	
Accelerometer Coefficients - 9		Master	-----	-----	0.000	-----	
Accelerometer Coefficients - 10		Master	-----	-----	0.000	-----	
Accelerometer Coefficients - 11		Master	-----	-----	0.000	-----	
Gamma-Ray Detector Serial Number		Master			7756		

Company: Nighthawk Production LLC

Schlumberger

Well: Blackcomb 5-14

Field: Arikaree Creek

County: Lincoln

Country: USA

Platform Express Field Print

Triple Combo

Induction & Nuclear