

Company: Nighthawk Production, LLC

Well: Telluride 13-2

Field: Arikaree Creek

County: Lincoln State: Colorado

Platform Express

Triple Combo

County:	Lincoln			
Field:	Arikaree Creek			
Location:	Lat/Long: 39.55194/-103.41555			
Well:	Telluride 13-2			
Company:	Nighthawk Production, LLC			
Location:		Lat/Long: 39.55194/-103.41555	Elev.:	K.B. 5201.00 ft
		SHL : 542' FSL X 353' FWL SWSW		G.L. 5186.00 ft
				D.F. 5200.00 ft
		Permanent Datum:	Ground Level	Elev.: 5186.00 f
Log Measured From:		Kelly Bushing 15.00 ft above Perm.Datum		
Drilling Measured From:		Kelly Bushing		
API Serial No.	Section:	Township:	Range:	
05-073-06562-00	2	6S	54W	

Logging Date 11-Dec-2013

Run Number Run One

Depth Driller 8210.00 ft

Schlumberger Depth 8217.00 ft

Bottom Log Interval 8217.00 ft

Top Log Interval 348.00 ft

Casing Driller Size @ Depth 8.625 in @ 348.00 ft

Casing Schlumberger 348 ft

Bit Size 7.875 in

Type Fluid In Hole Chemical Gel

Density Viscosity 9.1 lbm/gal 80 s

Fluid Loss PH 12 cm3 8

MUD Source of Sample Flowline

RM @ Meas Temp 0.94 ohm.m @ 75 degF

RMF @ Meas Temp 0.7 ohm.m @ 75 degF

RMC @ Meas Temp 1.18 ohm.m @ 75 degF

Source RMF RMC Calculated

RM @ BHT RMF @ BHT 0.37 @ 200 0.28 @ 200

Max Recorded Temperatures 200 degF 200 200

Circulation Stopped 09-Dec-2013 17:00:00

Logger on Bottom Time 11-Dec-2013 20:22:51

Unit Number Location: 9108

Recorded By Arvin Shi

Witnessed By Jim Weir

Disclaimer

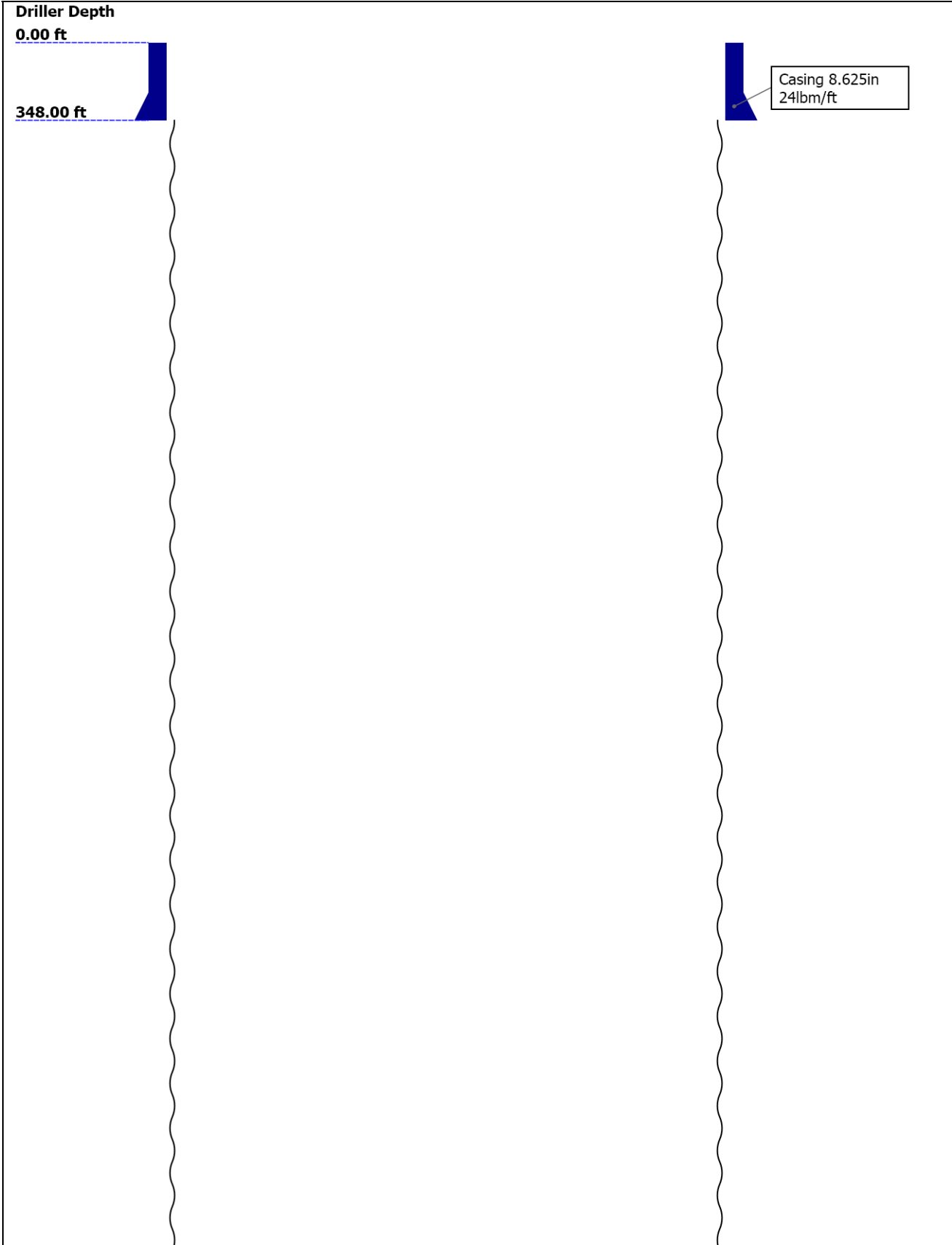
THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA;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

Contents

- Header
- Disclaimer
- Contents
- Well Sketch
- Borehole Size/Casing/Tubing Record
- Operational Run Summary
- Remarks and Equipment Summary
- Depth Summary
- Run One 5" Triple Combo
 - Integration Summary
 - Software Version
 - Composite Summary
 - Log (KM 5in Triple Combo)
 - Parameter Listing
- Run One 5" Triple Combo
 - Composite Summary
 - Log (KM 5in Triple Combo RA)

- 11. Calibration Report
- 12. Tail

Well Sketch





Borehole Size/Casing/Tubing Record

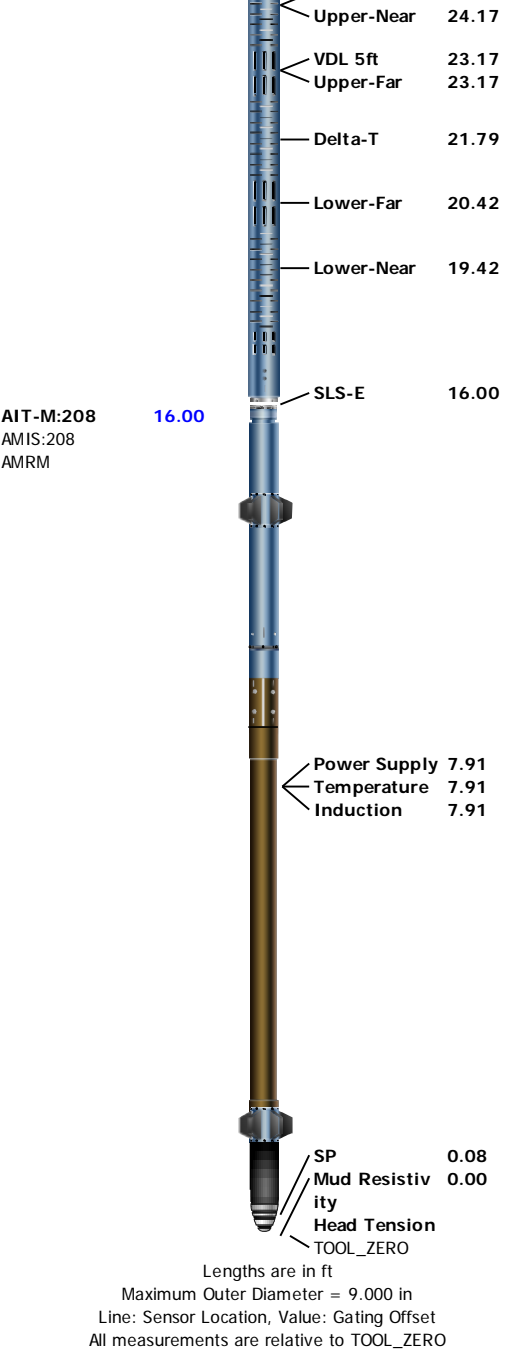
Bit						
Bit Size (in)	7.875					
Top Driller (ft)	348					
Top Logger (ft)	348					
Bottom Driller (ft)	8210					
Bottom Logger (ft)	8217					
Casing						
Size (in)	8.625					
Weight (lbm/ft)	24					
Inner Diameter (in)	8.097					
Grade	N/A					
Top Driller (ft)	0					
Top Logger (ft)	0					
Bottom Driller (ft)	348					
Bottom Logger (ft)	348					

Operational Run Summary

Parameter (unit)	Run One					
Date Log Started	11-Dec-2013					
Time Log Started	19:24:26					
Date Log Finished	11-Dec-2013					
Time Log Finished	23:56:22					
Top Log Interval (ft)						
Bottom Log Interval (ft)						
Total Depth (ft)	8217.00					
Max Hole Deviation (deg)						
Azimuth of Max Deviation (deg)						
Bit Size (in)	7.875					
Logging Unit Number	9108					
Logging Unit Location	Fort Morgan					
Recorded By	Arvin Shi					
Witnessed By	Jim Weir					
Service Order Number	C6V L00093					

Remarks and Equipment Summary

Run One: Toolstring				Run One: Remarks
Equip name	Length	MP name	Offset	All Schlumberger depth measurement policies followed IDW used as primary depth measurement and Z-Chart as secondary depth measurement Caliper has to close for about 10 ft at around 5700 ft since pulled to MSP
LEH-QT	66.21			
LEH-QT				
DTC-H	63.29	CTEM	62.39	
ECH-KC		HV	0.00	
DTC-H				
HGNS-H	60.29	ToolStatus	60.29	
HGNH		TelStatus	60.29	
NSR-F:5215		Temperature	60.26	
NPV-N		GR	59.55	
HGNS-H				
HACCZ-H:5955				
HMCA-H				
		CNL Porosity	53.21	
		HMCA	50.88	
		HGNS	50.88	
		Acceleromete	0.00	
		r		
HDRS-H	50.88			
ECH-MEB				
HRCC-H				
HRMS-H				
GSR-J:5240				
Long Spacing:289				
10				
Backscatter		HRCC	46.88	
HRGD-H:4791				
Short Spacing				
GPV-Q				
		MCFL	41.45	
		Caliper	40.96	
		TLD Density	40.57	
AH-184	38.64			
DSLT-H	36.64			
ECH-KH				
DSLCH				
SLS-E				
		CBL 3ft	24.17	

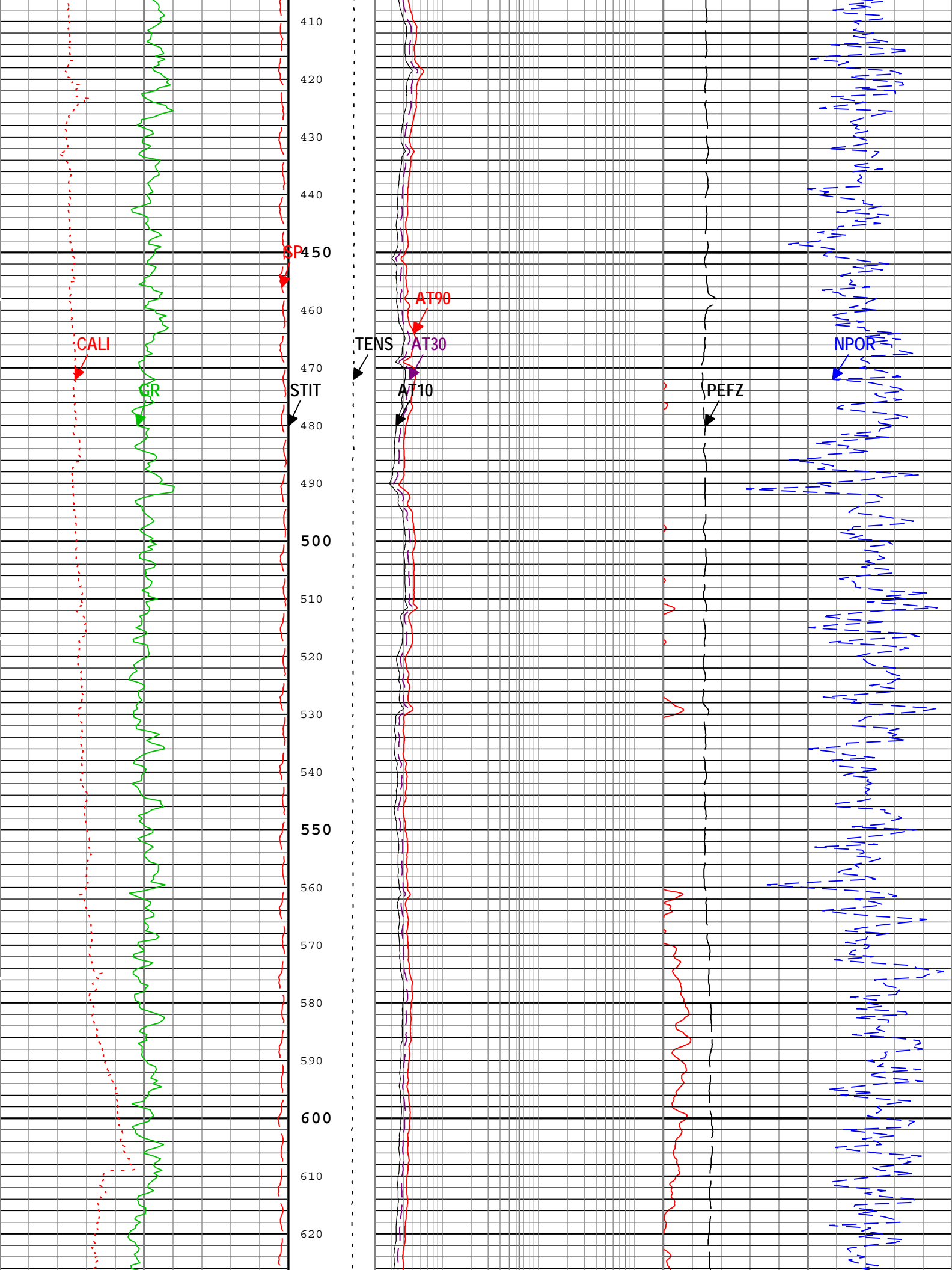


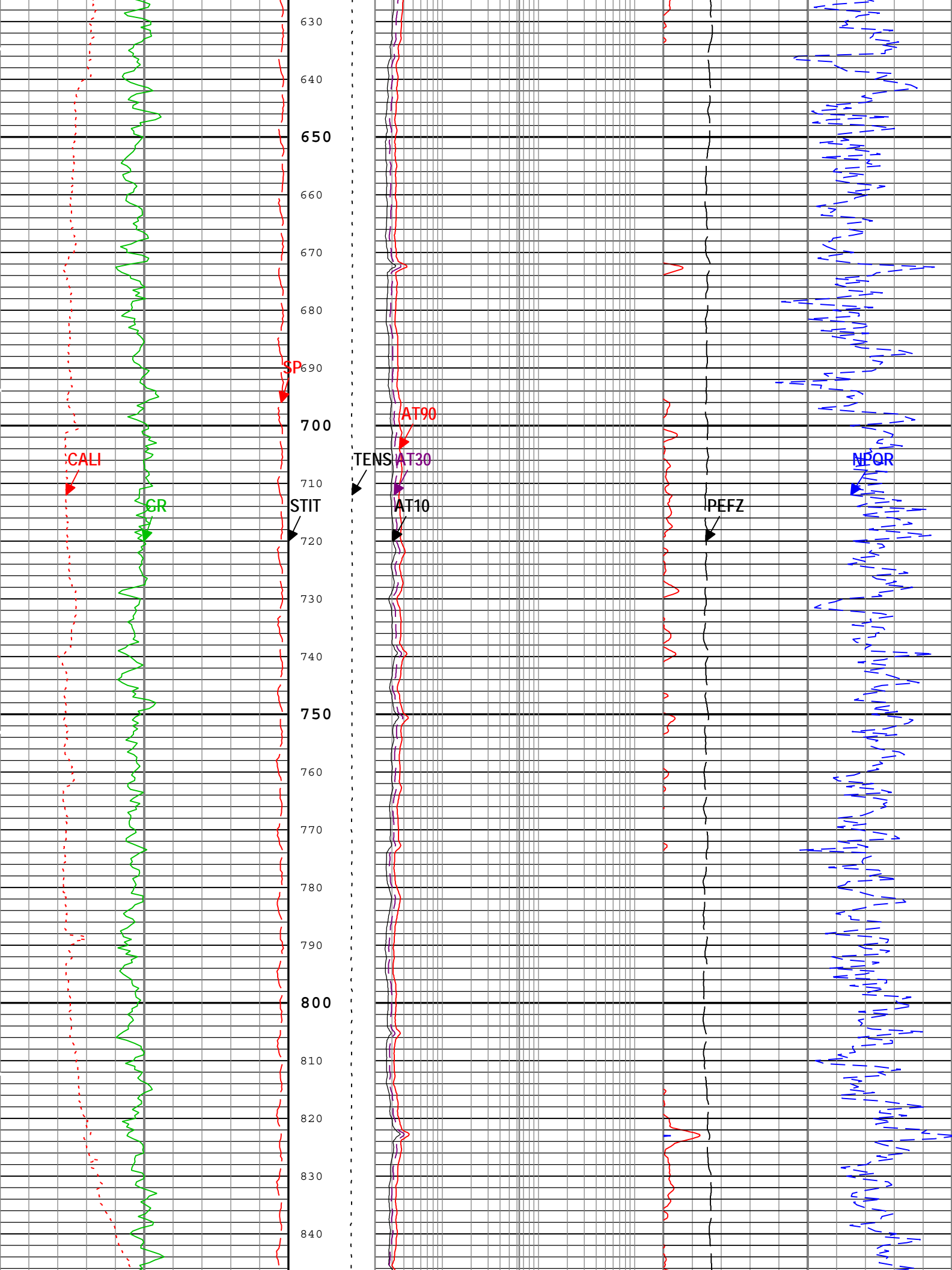
Depth Summary

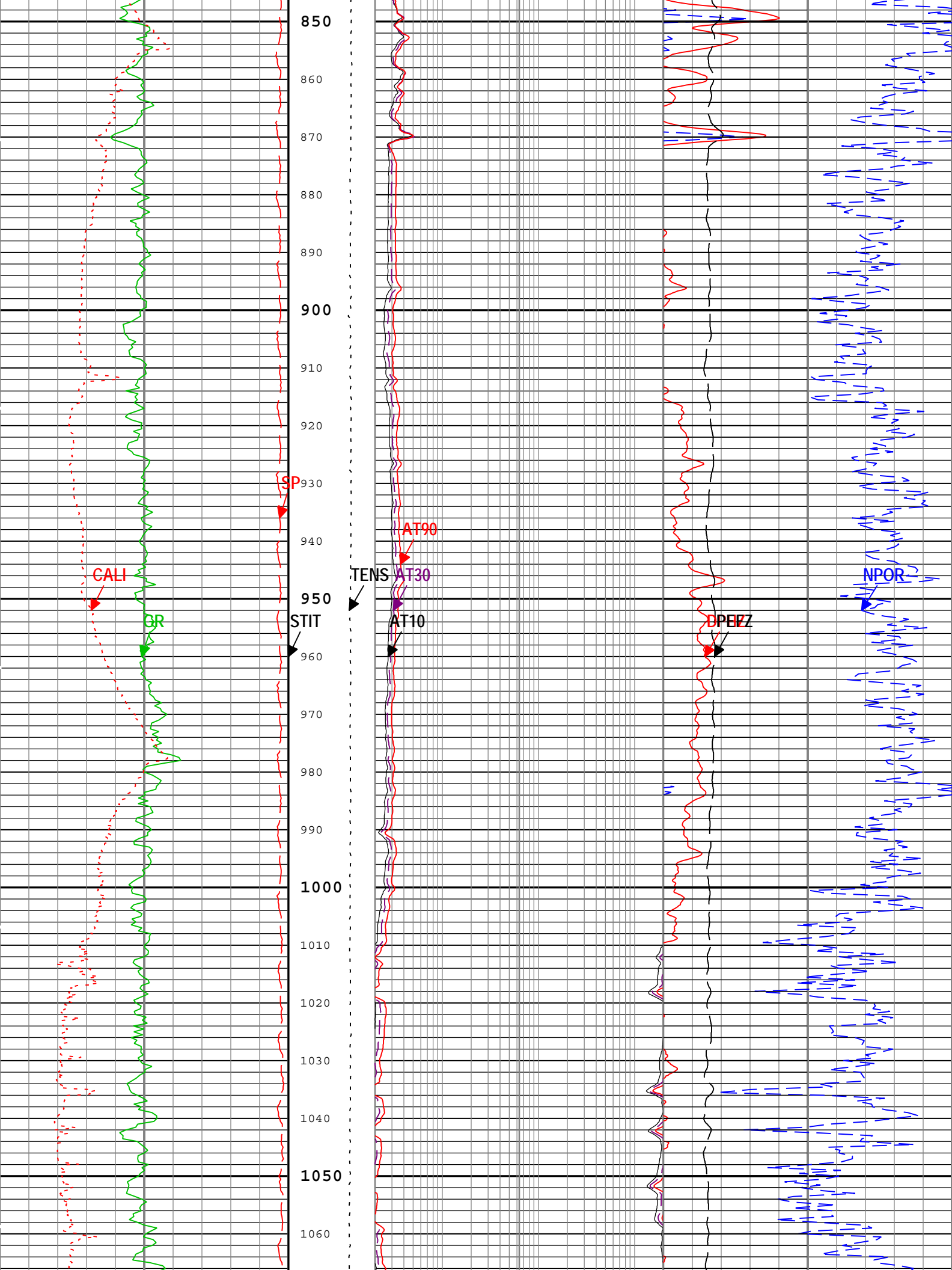
Run One			
Depth Measuring Device			
Type	IDW-B		
Serial Number			
Calibration Date			
Calibrator Serial Number			
Calibration Cable Type			
Wheel Correction 1	0		
Wheel Correction 2	0		
Tension Device			
Type	CMTD-B/A		
Serial Number	147		
Calibration Date	23-Oct-2013		
Calibrator Serial Number			
Number of Calibration Points	10		
Calibration Root Mean Square Error	8		
Calibration Peak Error	12		
Logging Cable			

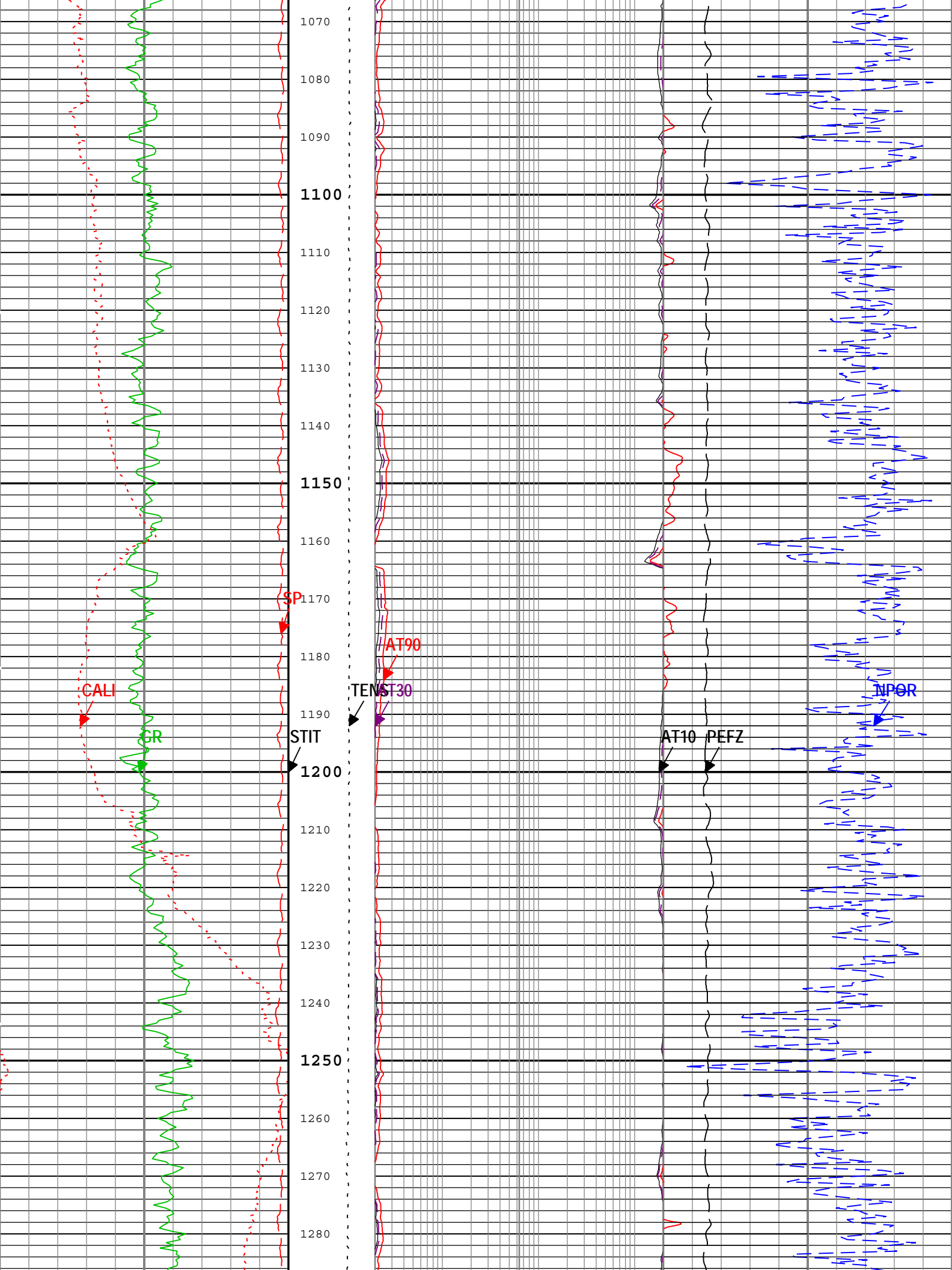
Type	7-46A-XS								
Serial Number									
Length	20000.00 ft								
Conveyance Type	Wireline								
Rig Type	Land								
Run One:Depth Control Parameters		Depth Control Remarks							
Log Sequence		First Log In the Well							
Rig Up Length At Surface									
Rig Up Length At Bottom									
Rig Up Length Correction									
Stretch Correction									
Tool Zero Check At Surface									
Run One									
5" Triple Combo									
Software Version									
Acquisition System		Version							
MaxWell		4.0.9163.3000							
Application Patch		Patch-NPD_NEXT_9163-12428-4.0.9163.3002							
Computation	Description		Version						
HENVIR	Computation Ensemble for the HGNS Neutron environmental corrections		4.0.9033.3000						
DepthCorrection	DepthCorrection		4.0.9125.3000						
Tool Elements	Description	Software Version	Firmware Version						
HRCC-H	HILT High-Resolution Control Cartridge, 150 degC	4.0.9033.3000	2.0						
HGNS-H	HILT Gamma-Ray and Neutron Sonde, 150 degC	4.0.9033.3000	2.0						
HRGD-H	HILT Resistivity Gamma-Ray Density Device, 150 degC	4.0.9033.3000	3.0						
AMIS	Array Induction Sonde - M	4.0.9163.3000	1						
Pass Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
Run One	Log[5]:Up	Up	310.87 ft	8235.43 ft	11-Dec-2013 9:09:48 PM	11-Dec-2013 11:45:17 PM	ON	1.11 ft	No
All depths are referenced to toolstring zero									
Log	Company:Nighthawk Production, LLC Well:Telluride 13-2 Run One: Log[5]:Up:S010								
Description: HGNS standard resolution porosities for Platform Express Format: Log (KM 5in Triple Combo) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 12-Dec-2013 00:42:53									
Channel	Source	Sampling							
AT10	AIT-M:AMIS:AMIS	3in							
AT30	AIT-M:AMIS:AMIS	3in							
AT90	AIT-M:AMIS:AMIS	3in							
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)									

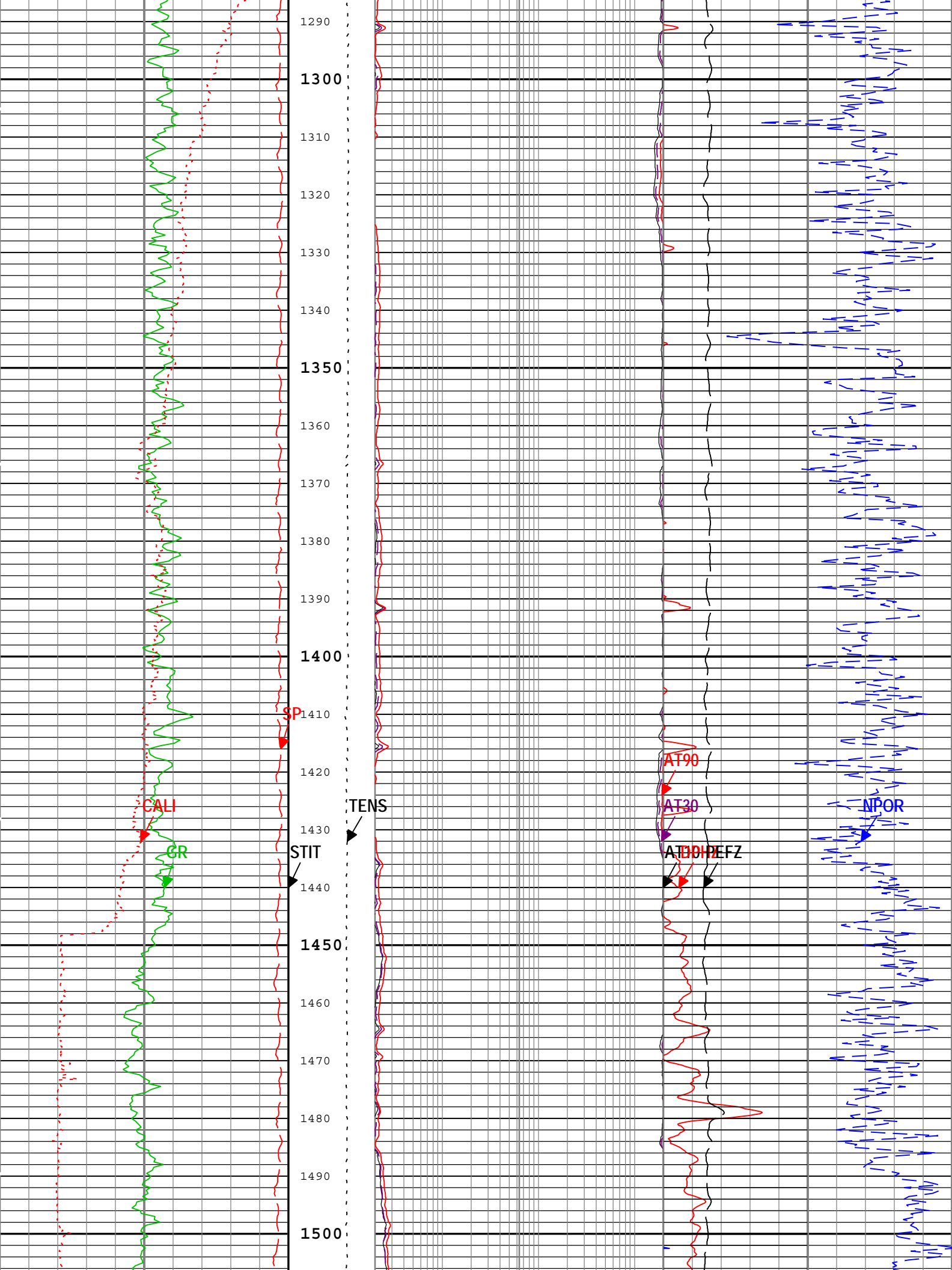
[illegible]

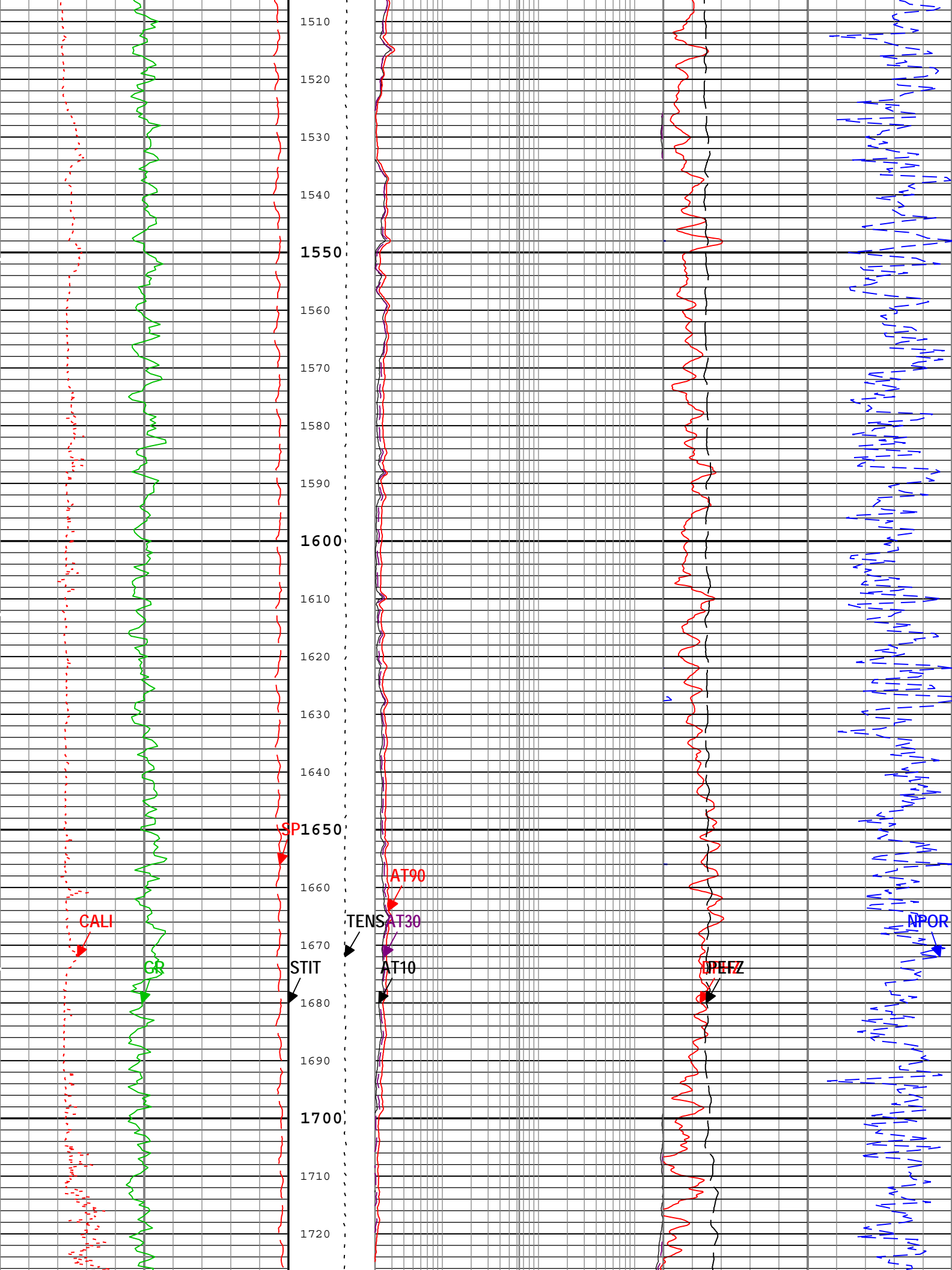


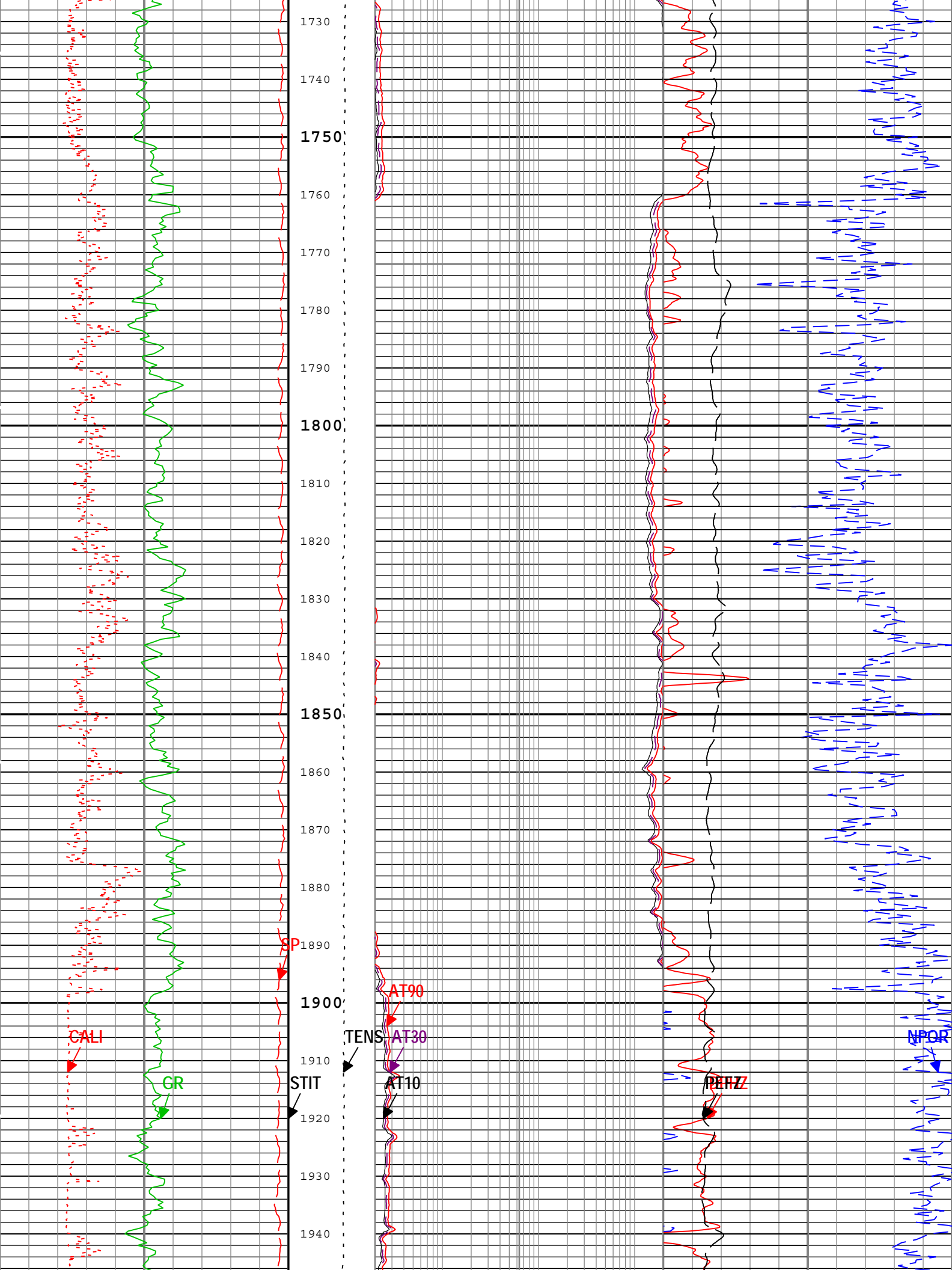


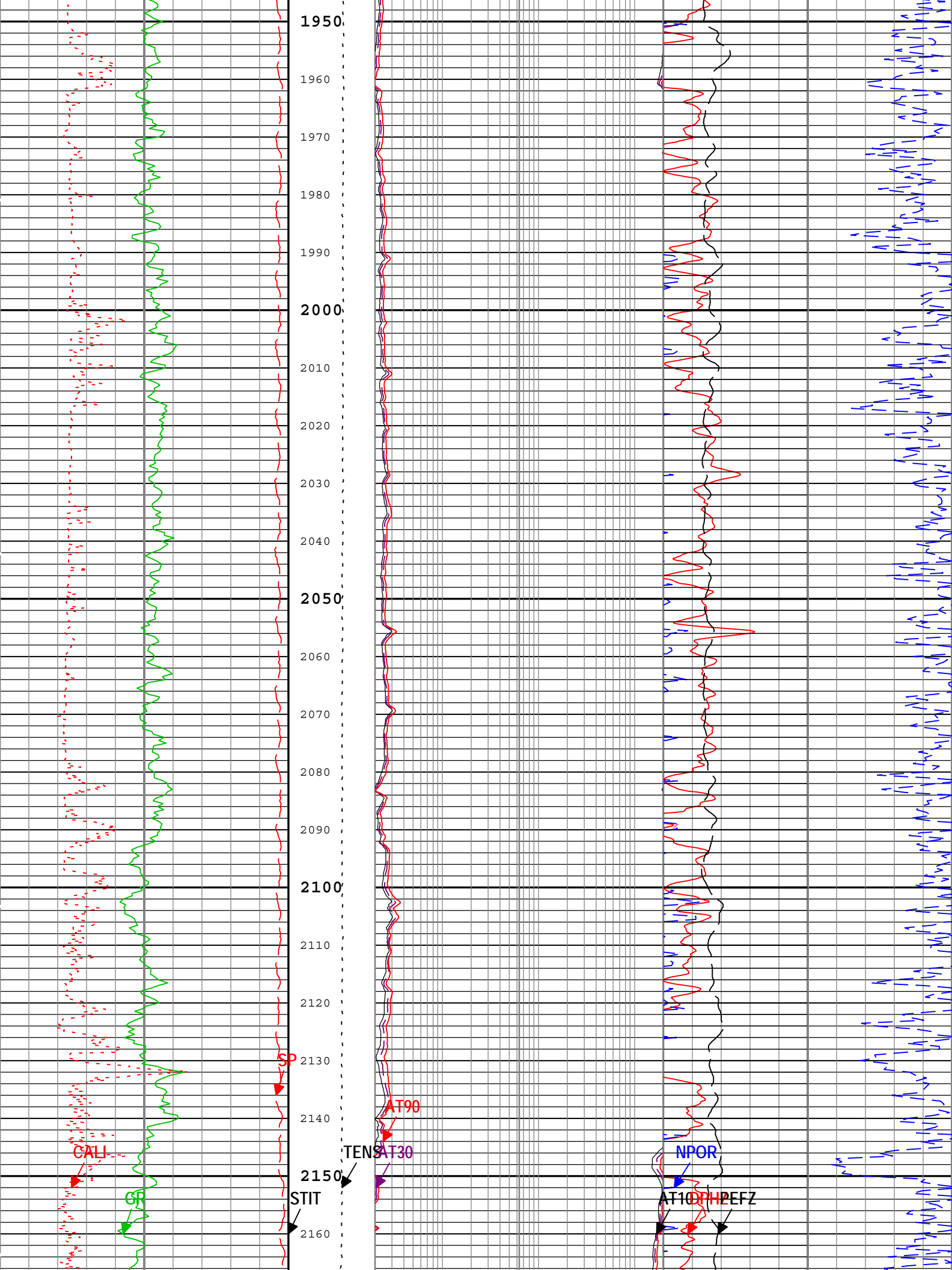


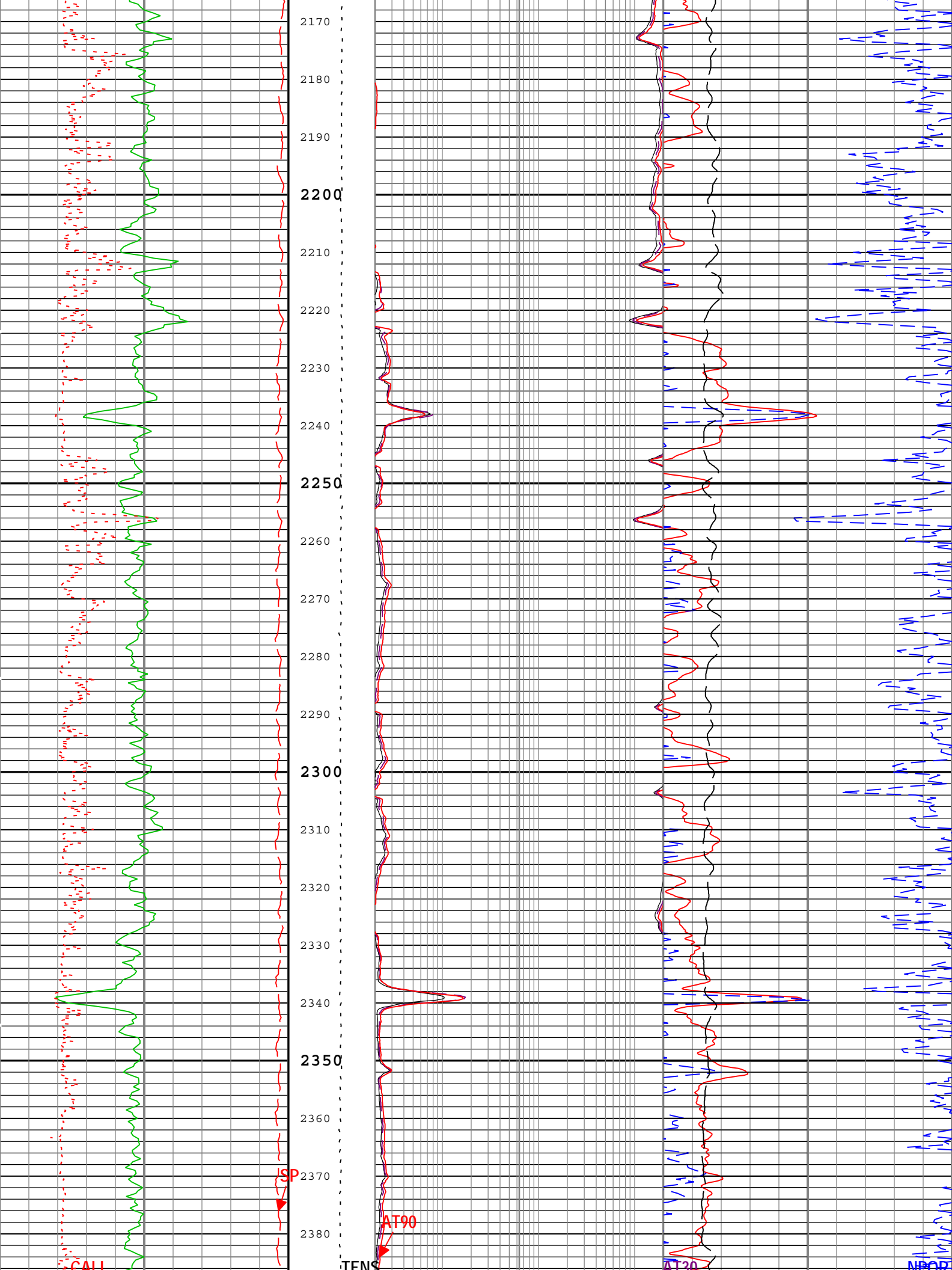


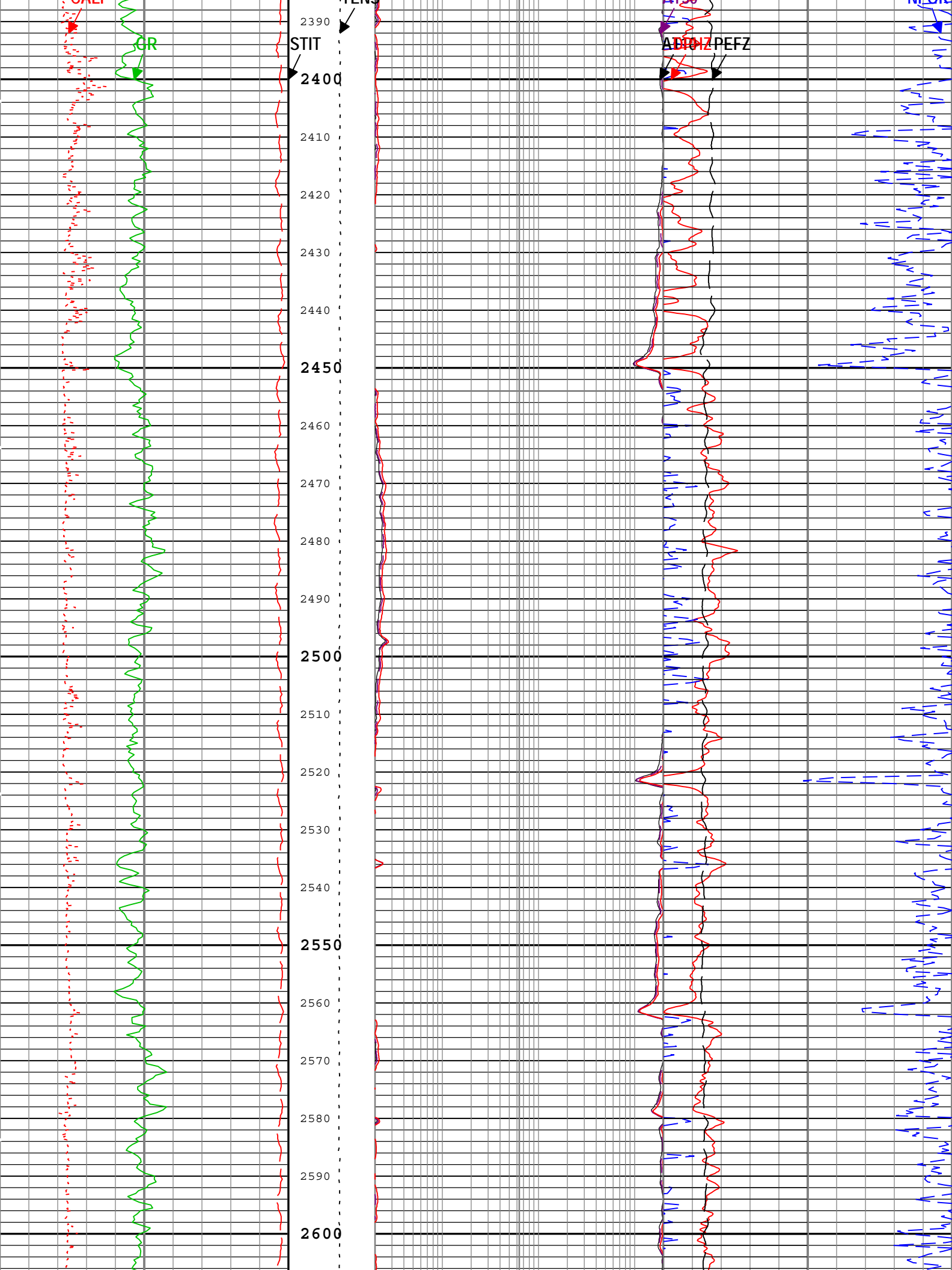


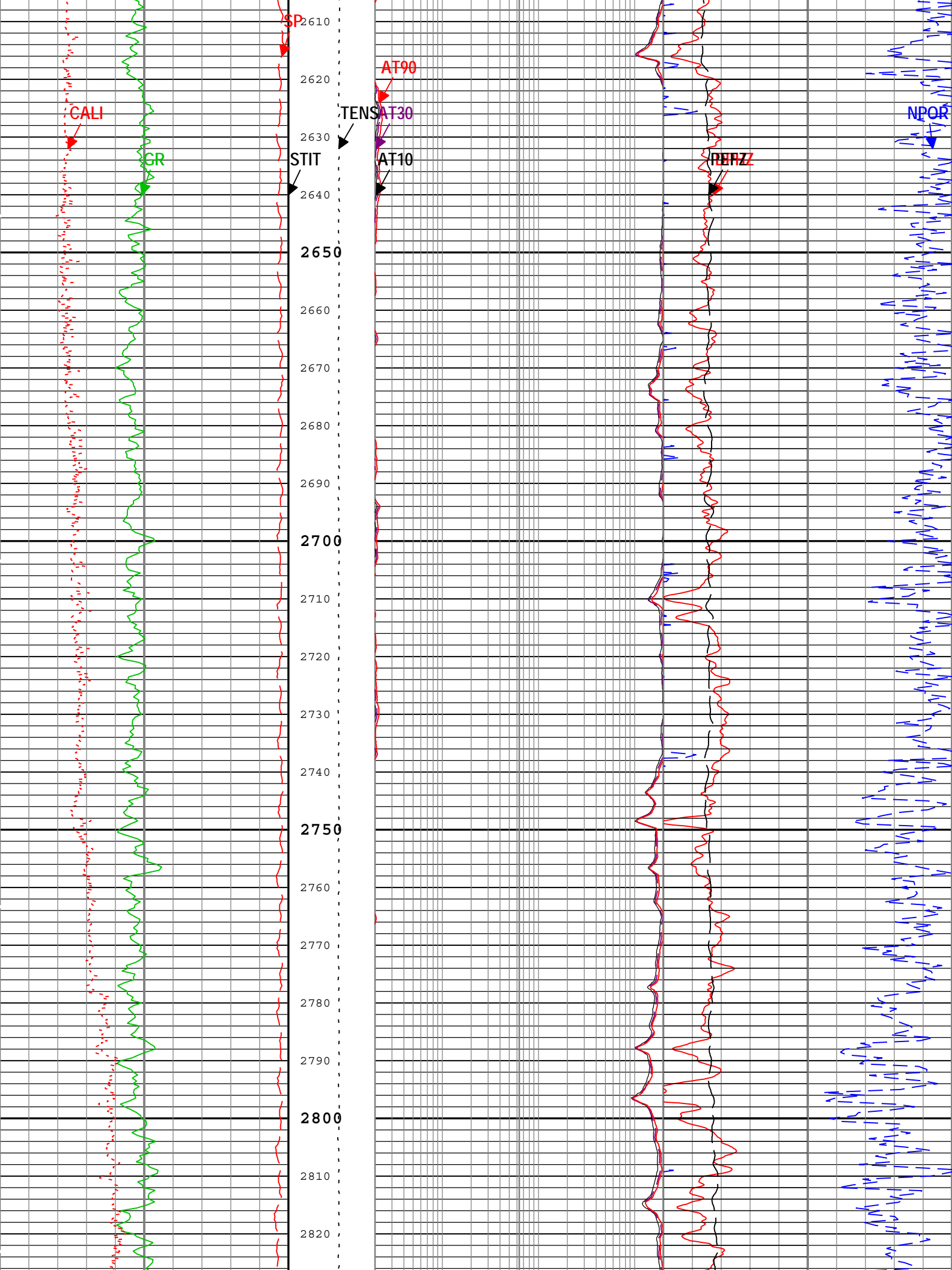


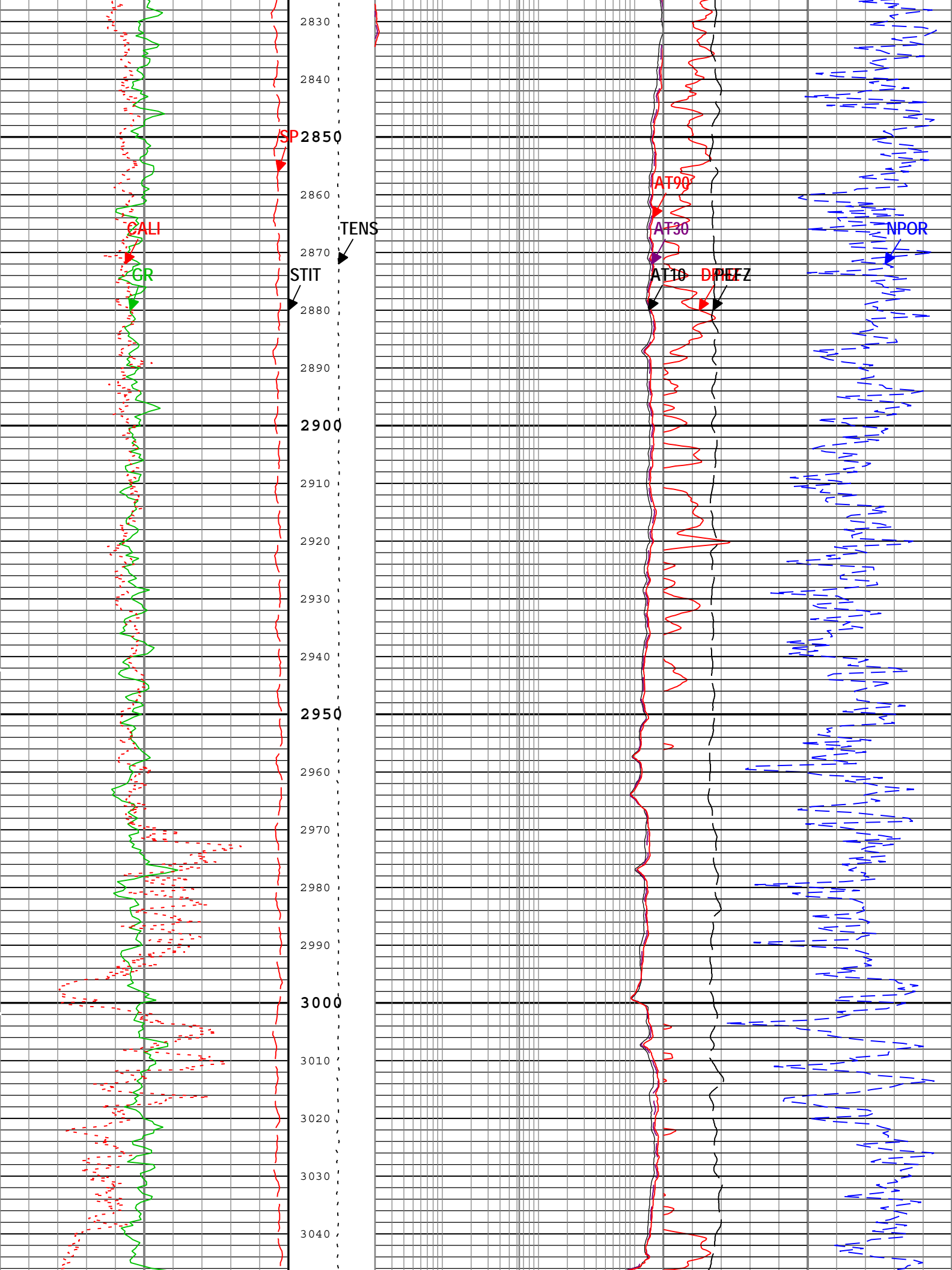


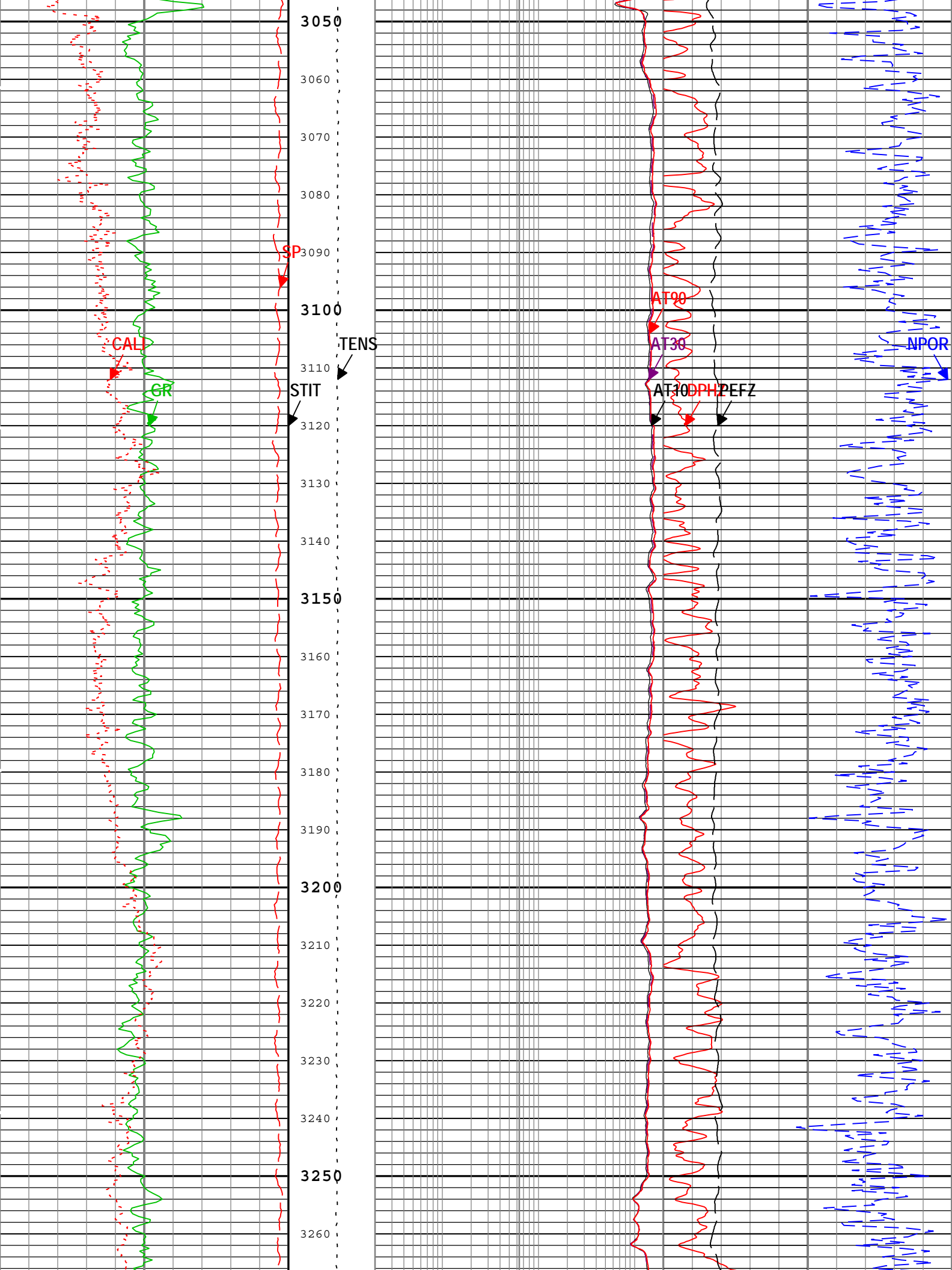


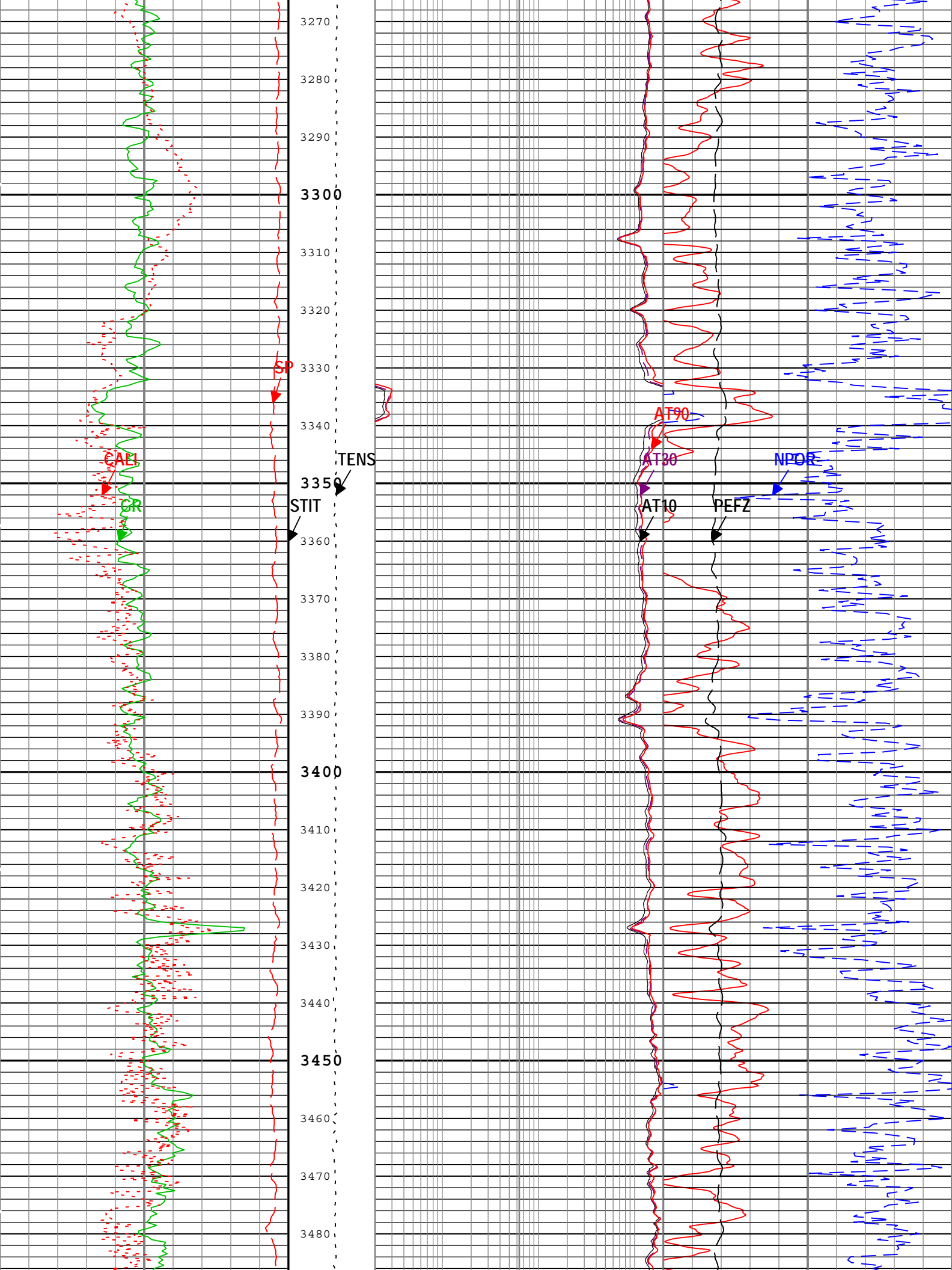


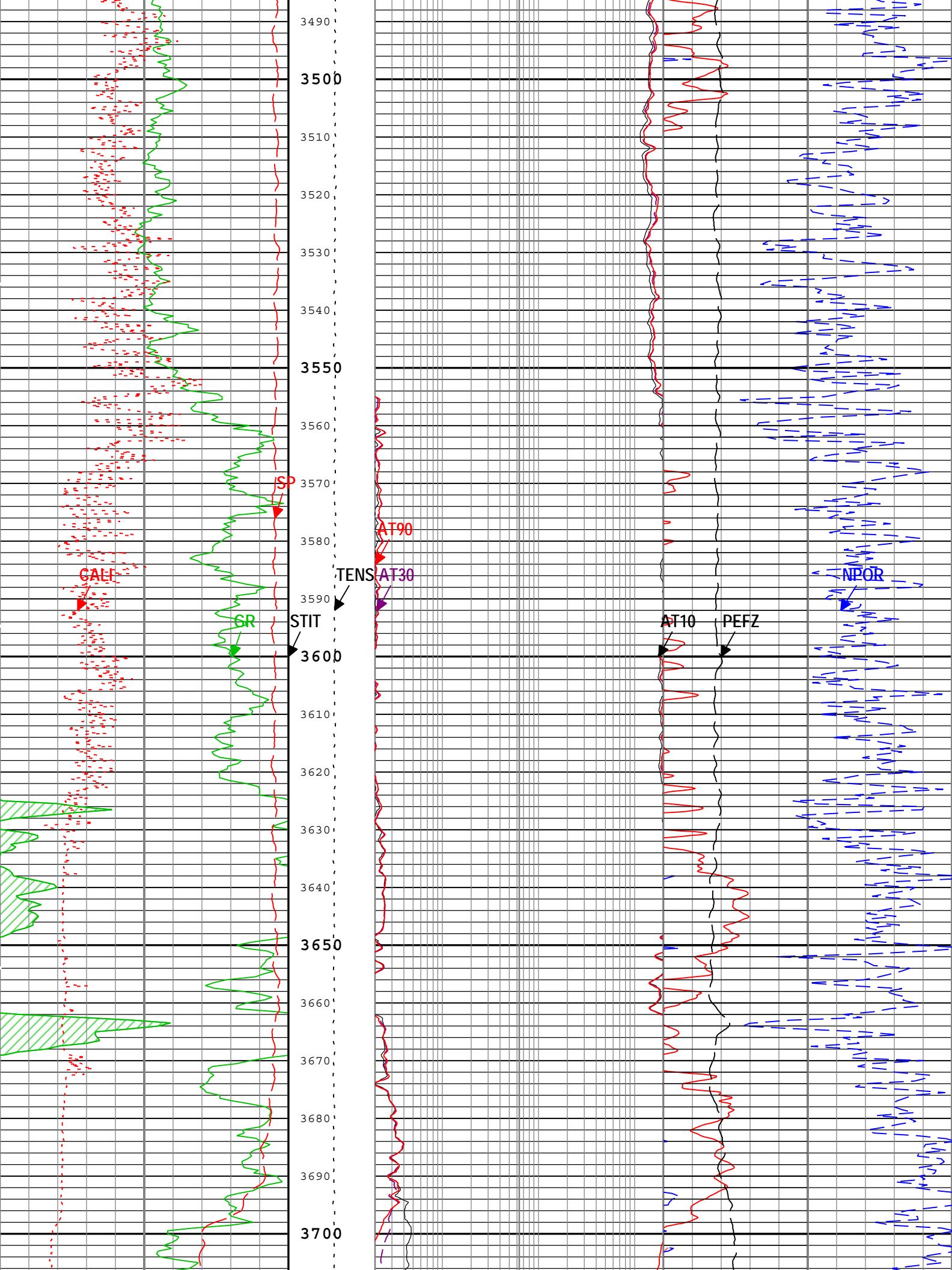


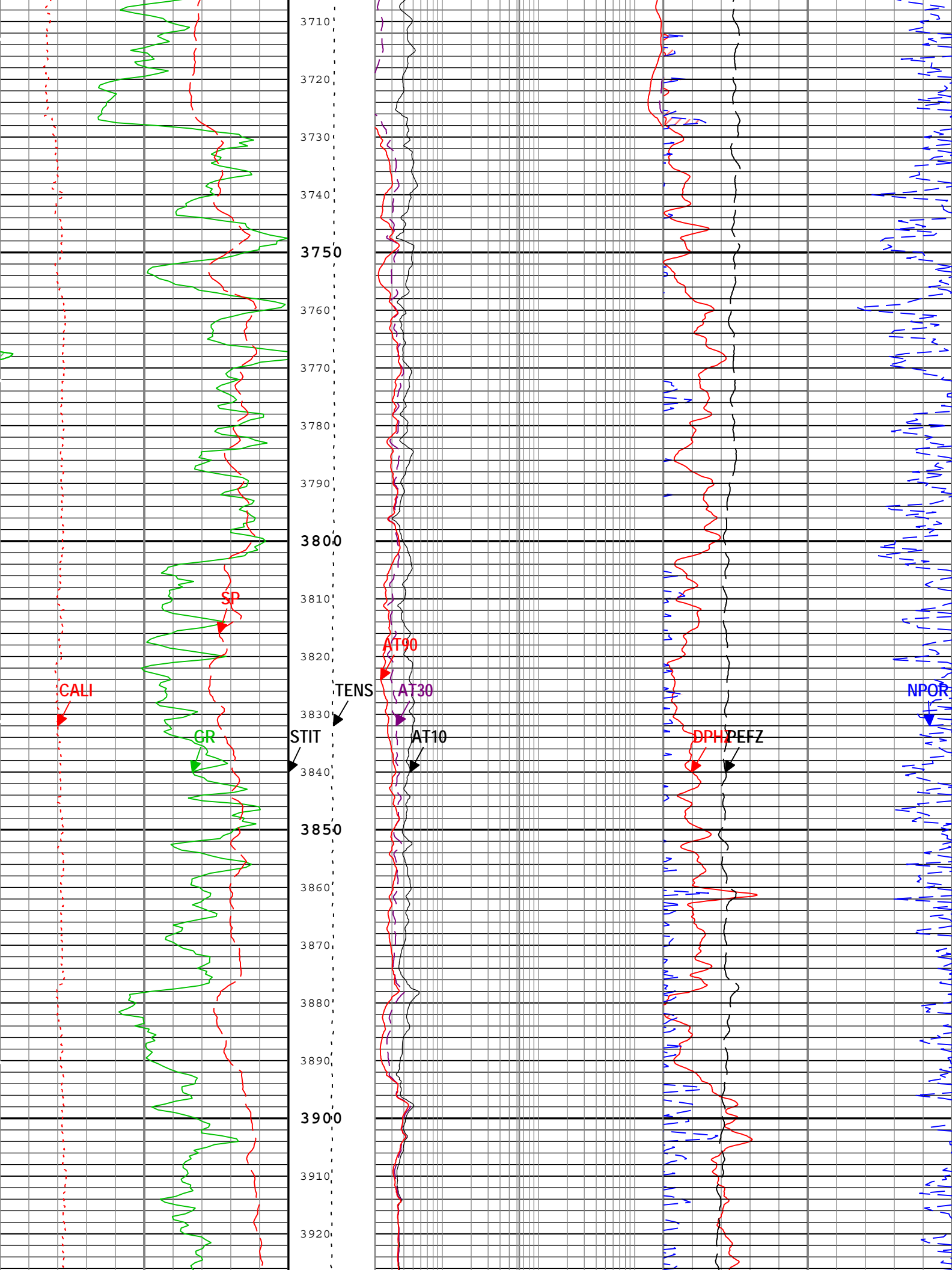


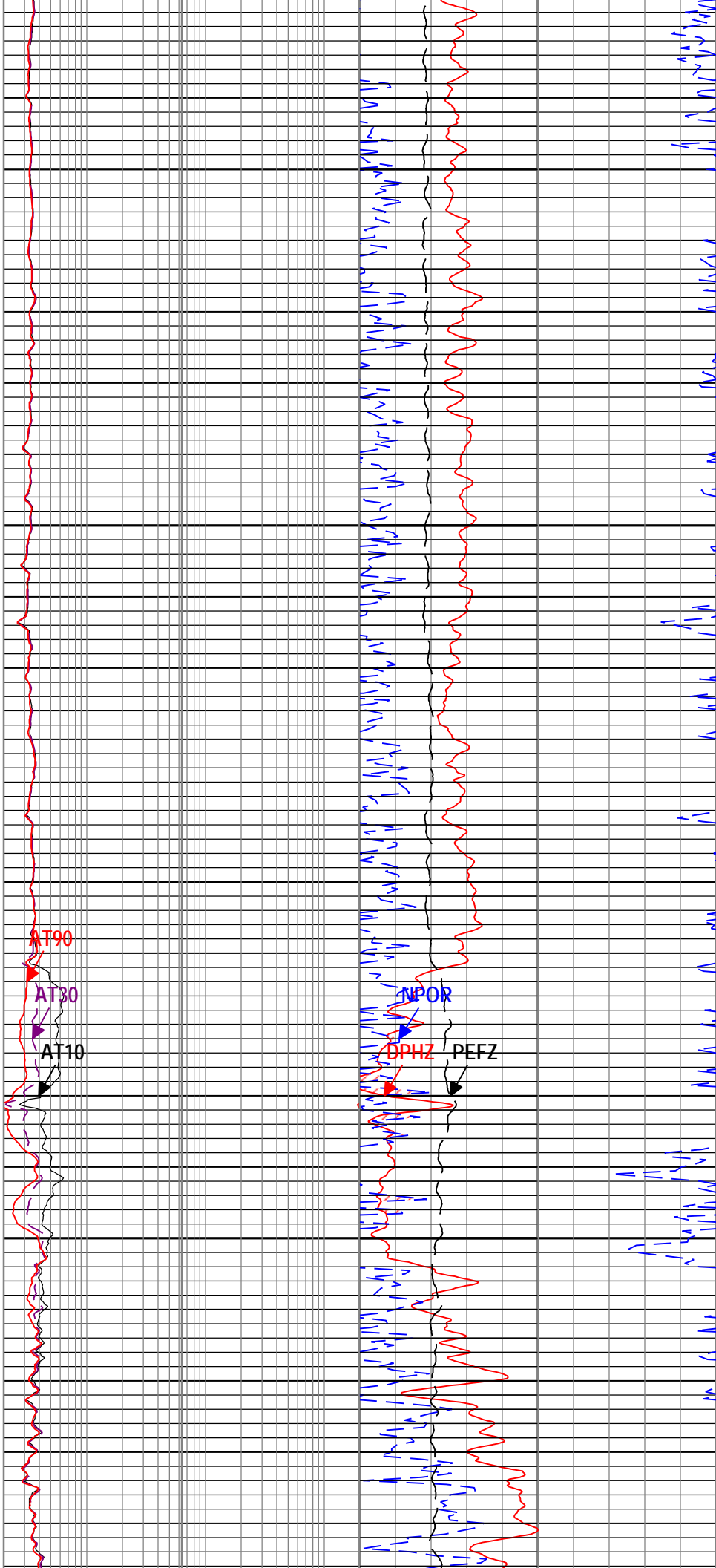
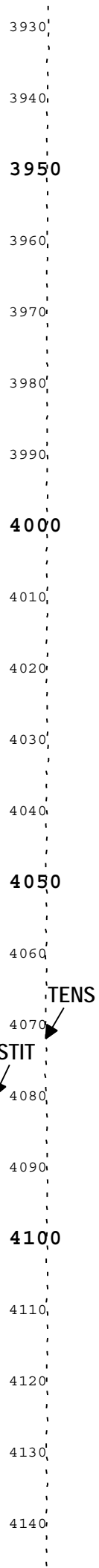
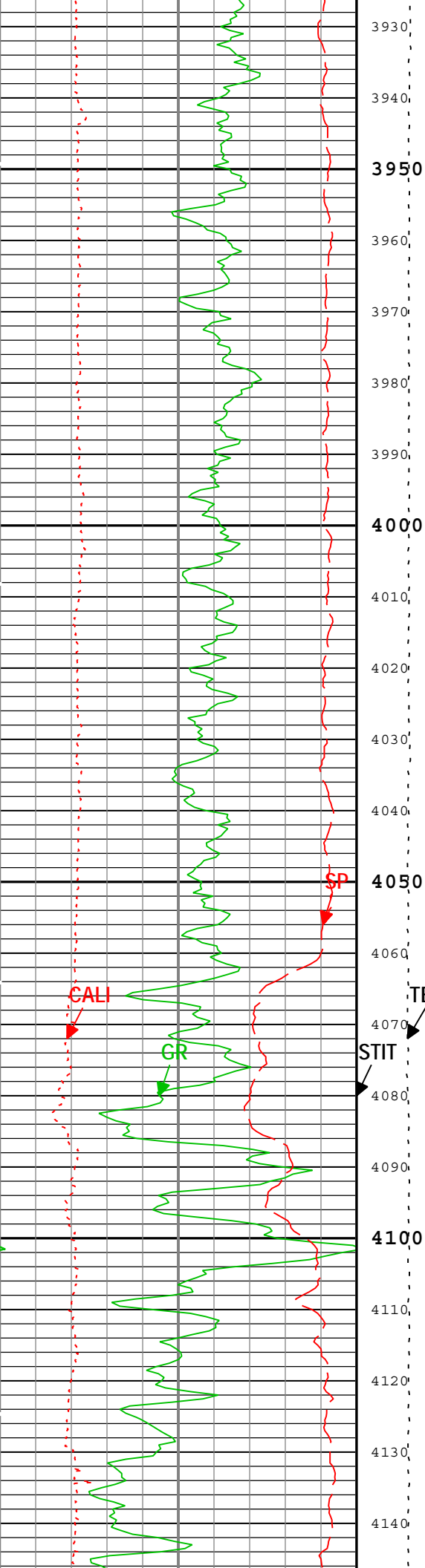


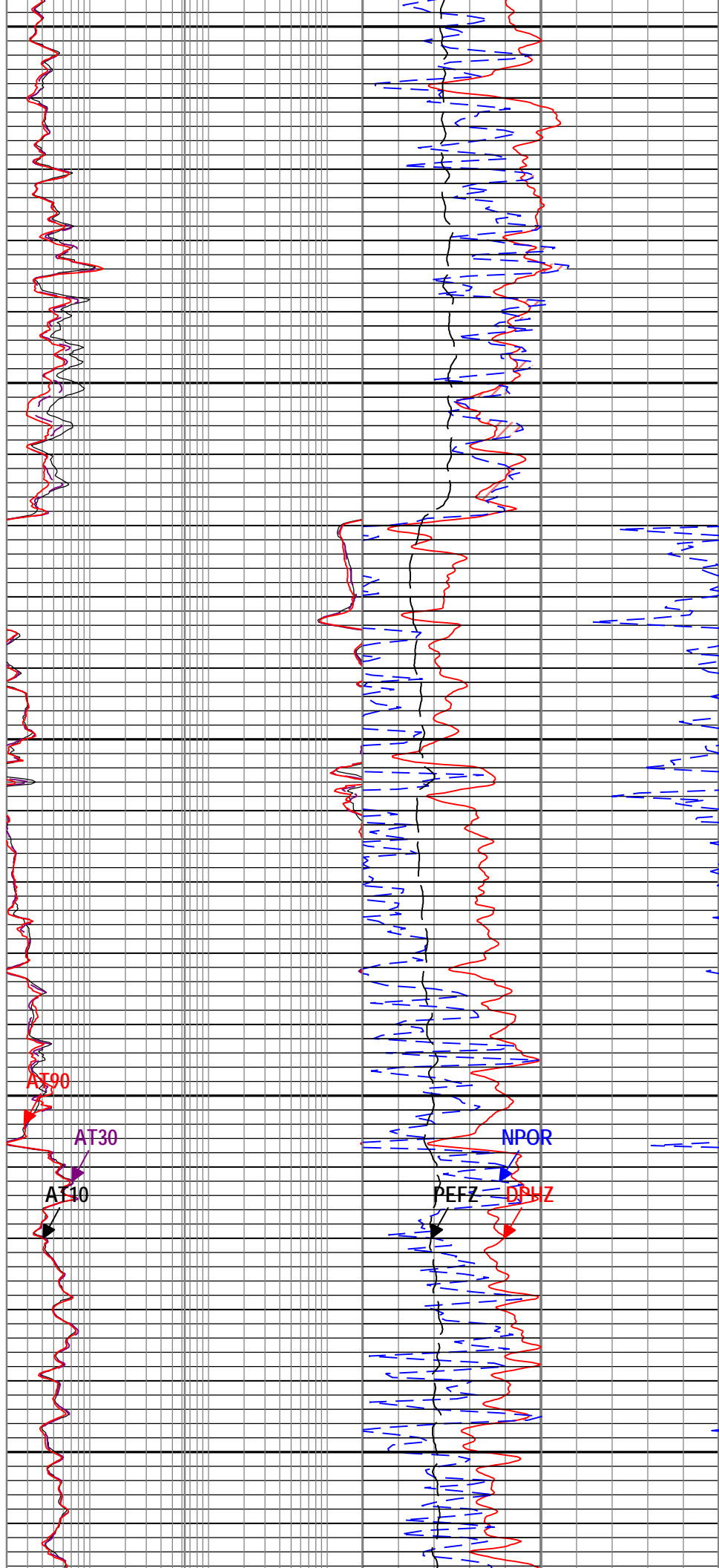
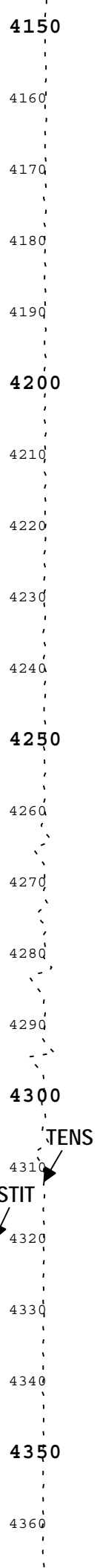
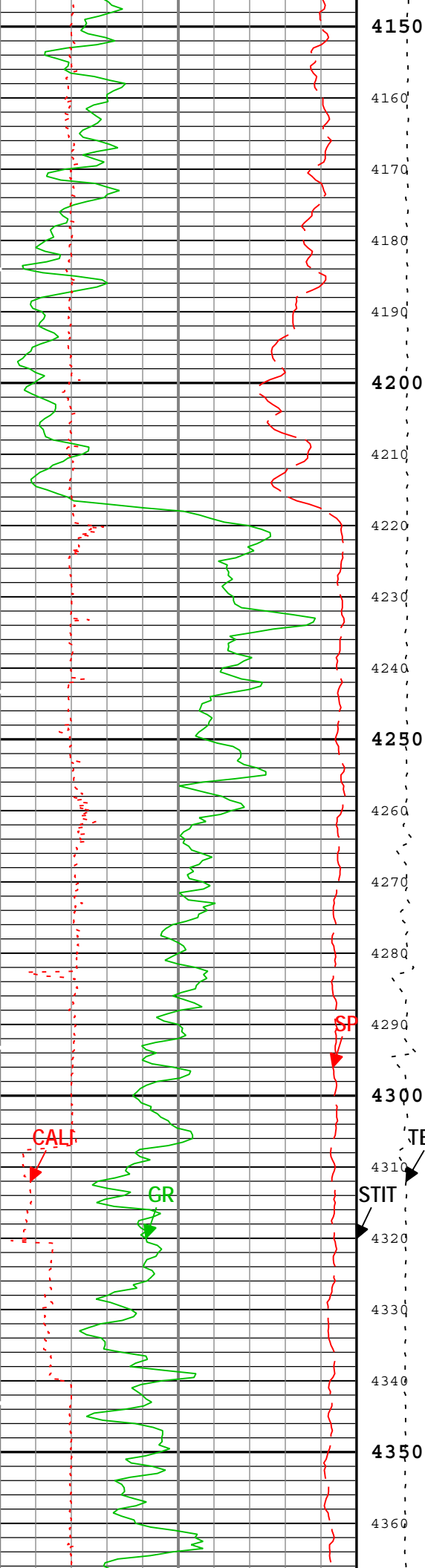








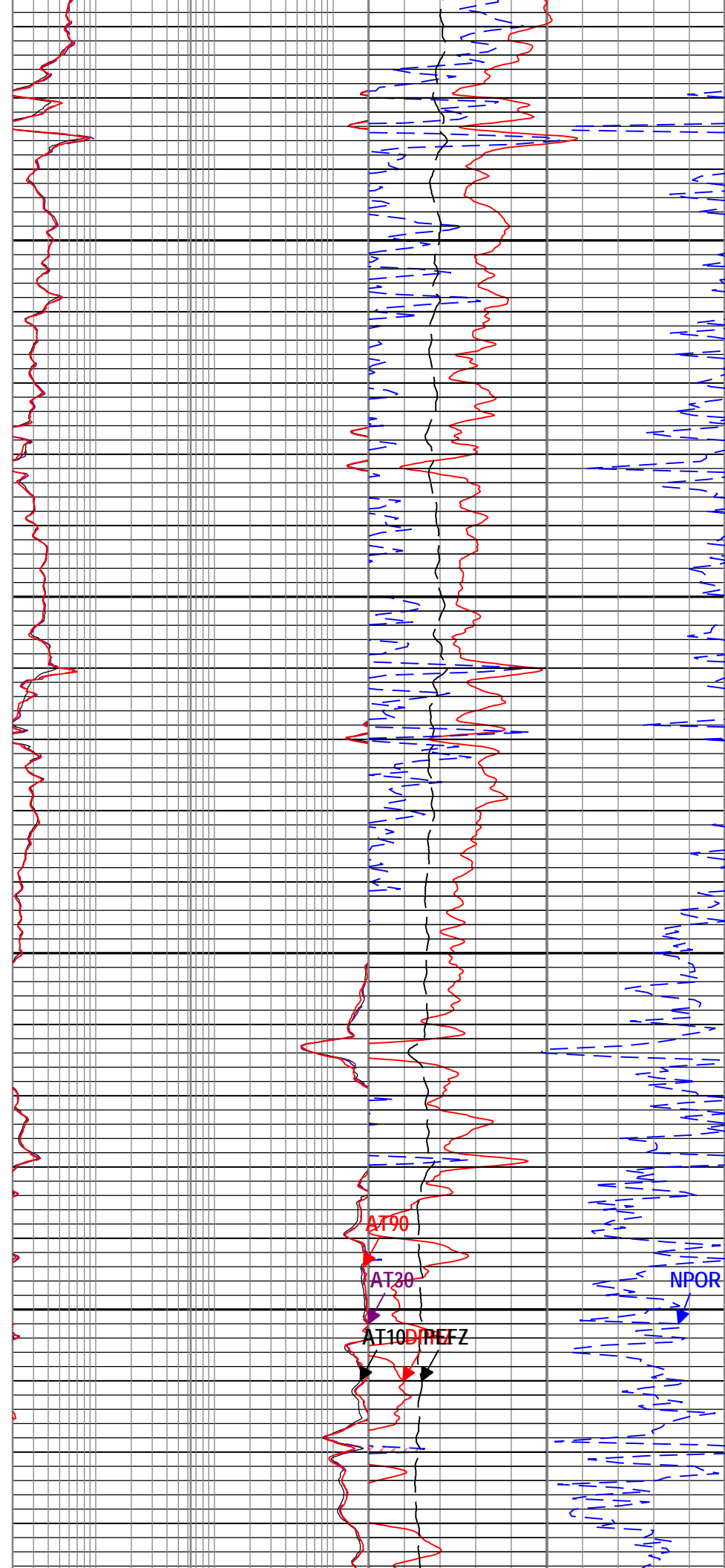
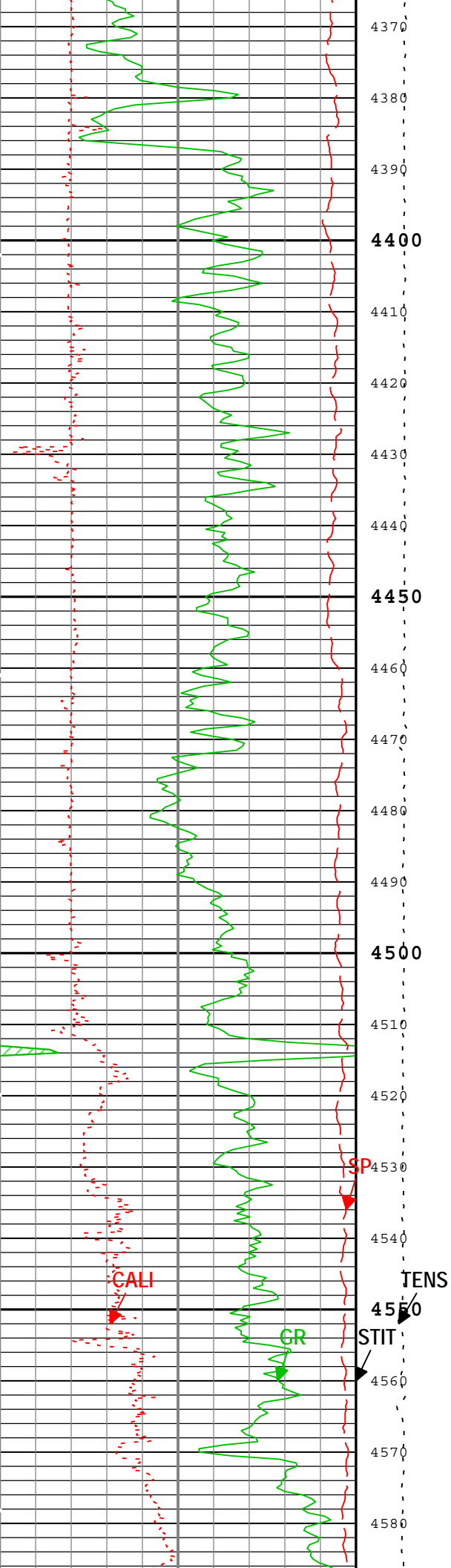


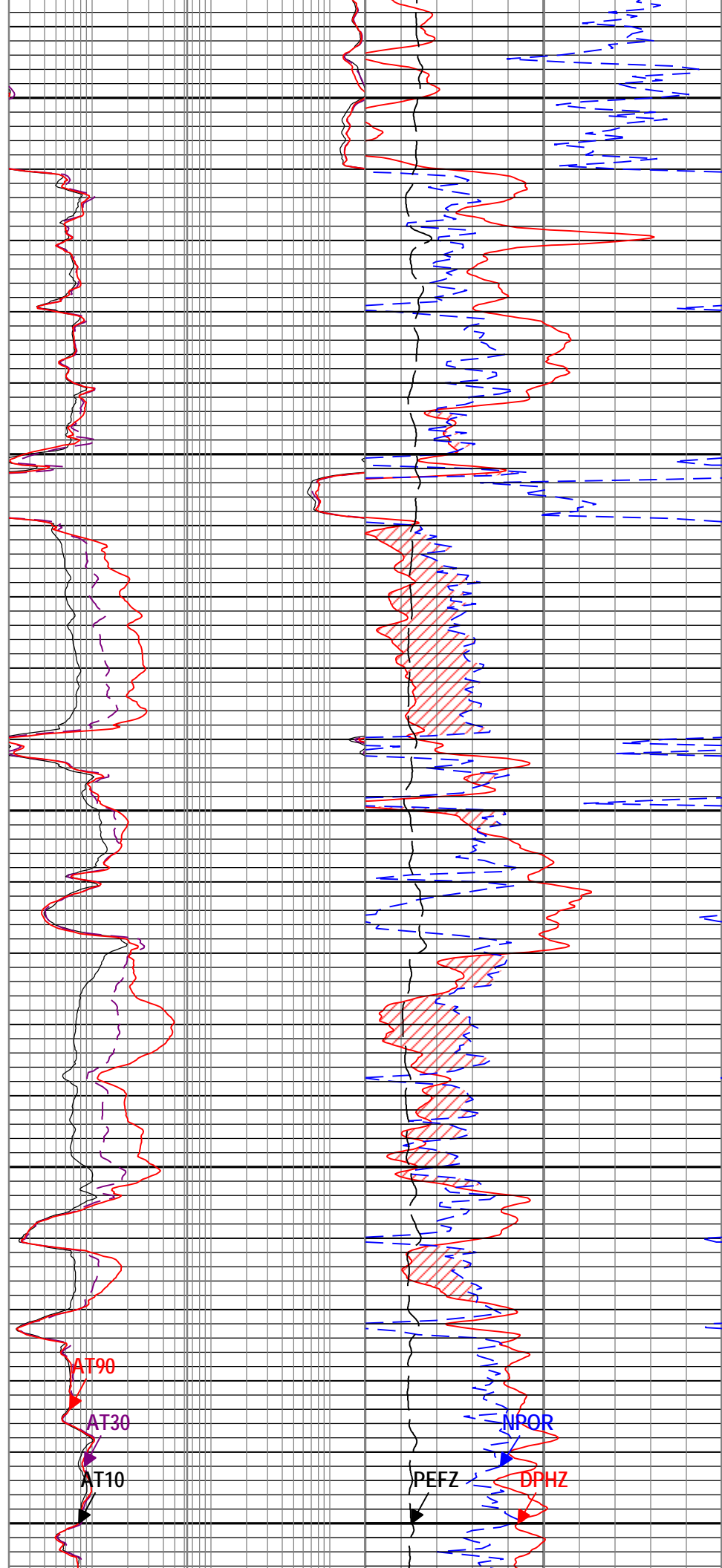
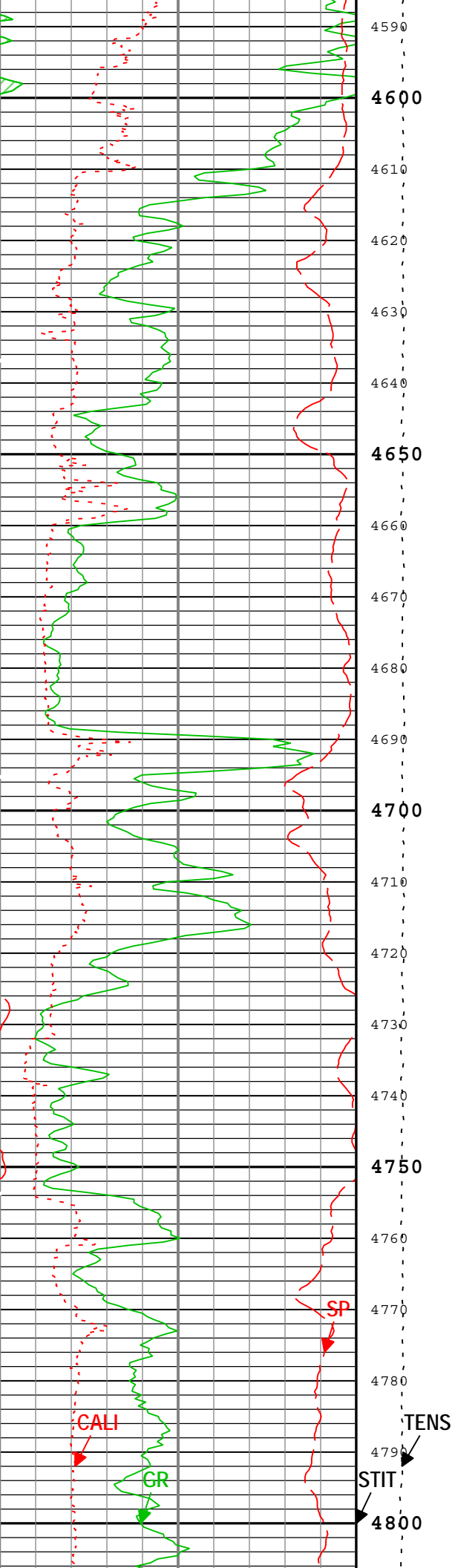


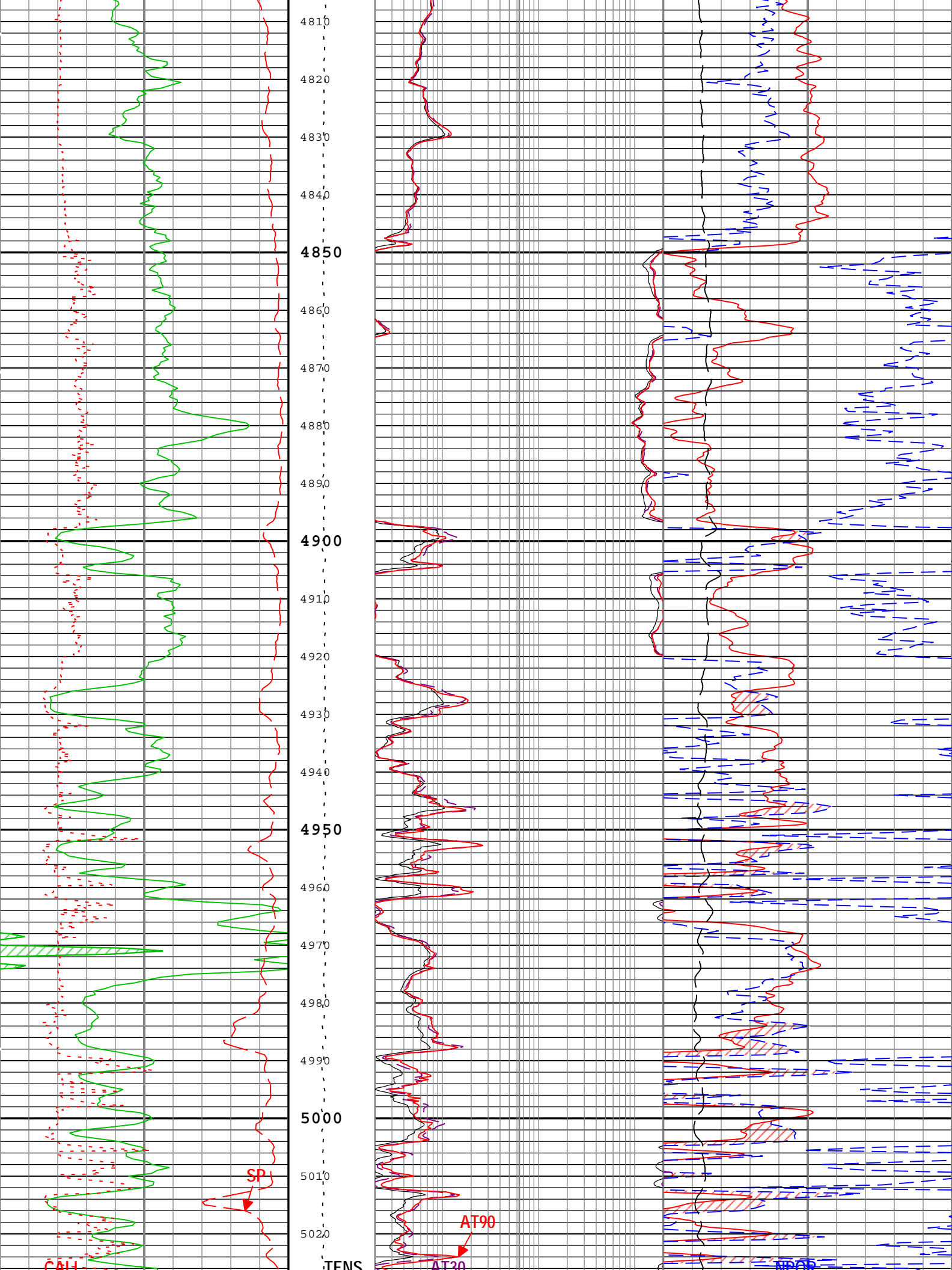
TENS
STIT

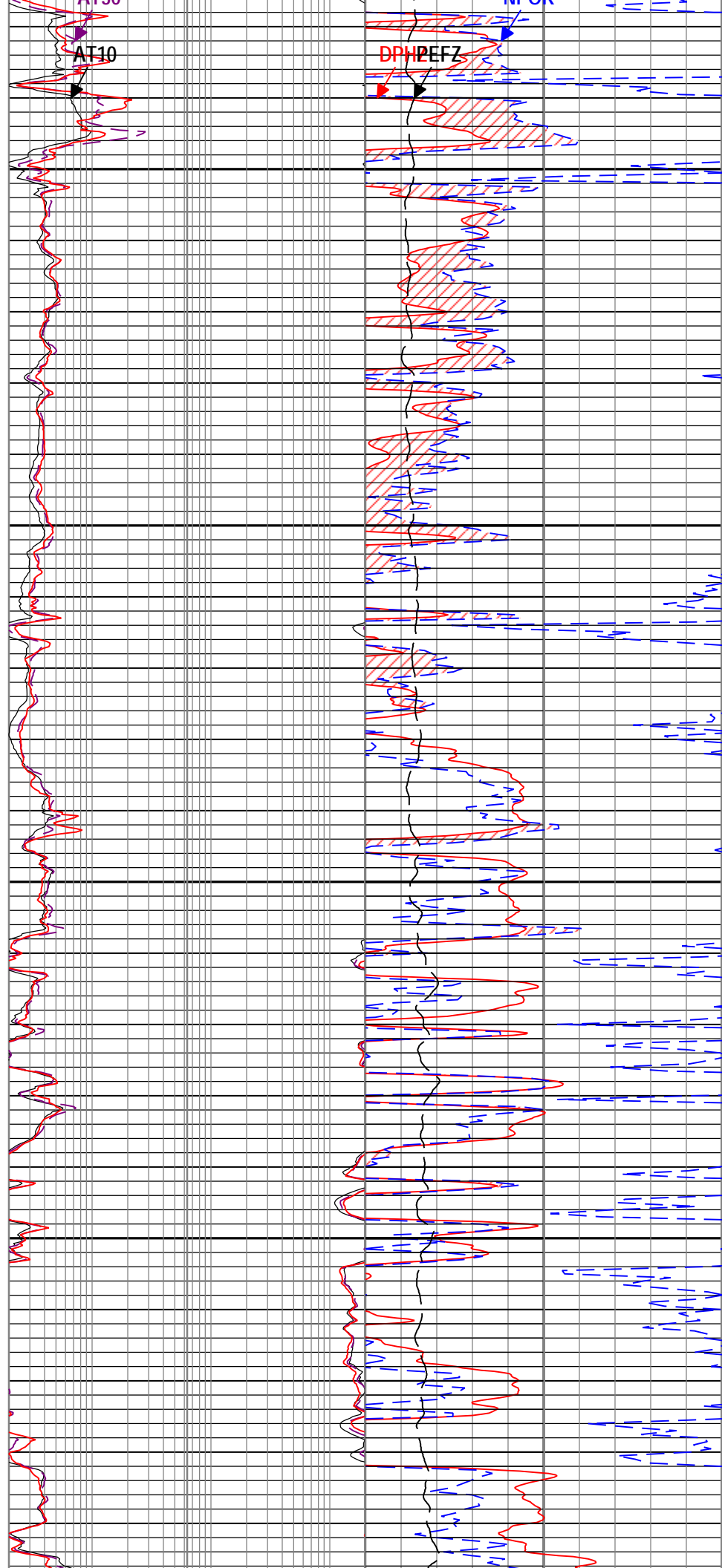
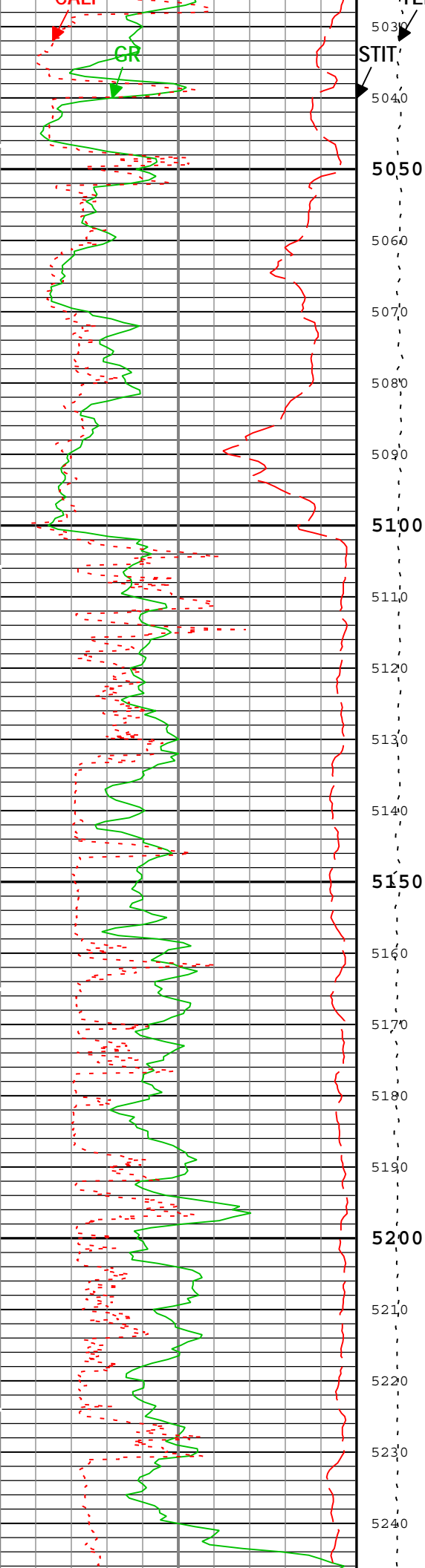
AT90
AT30
AT40

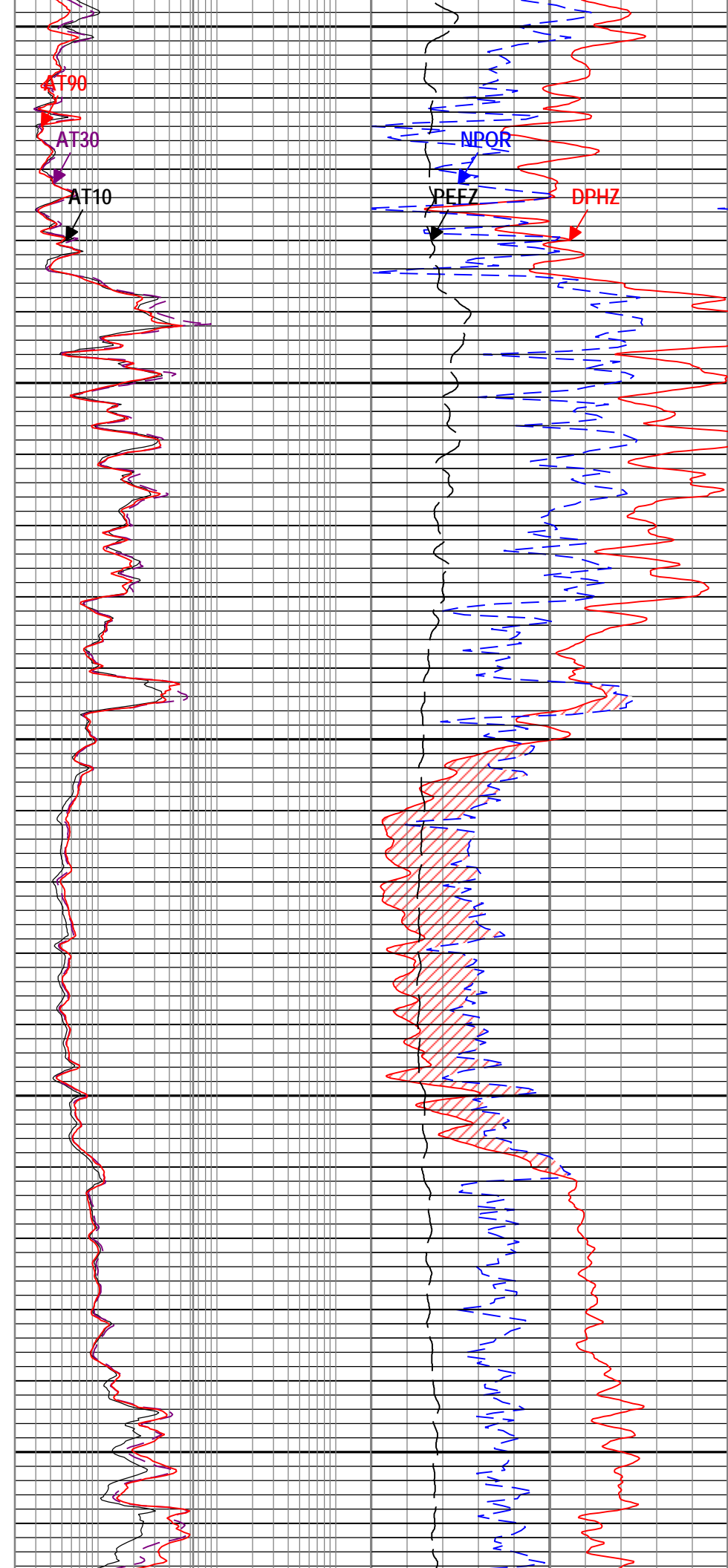
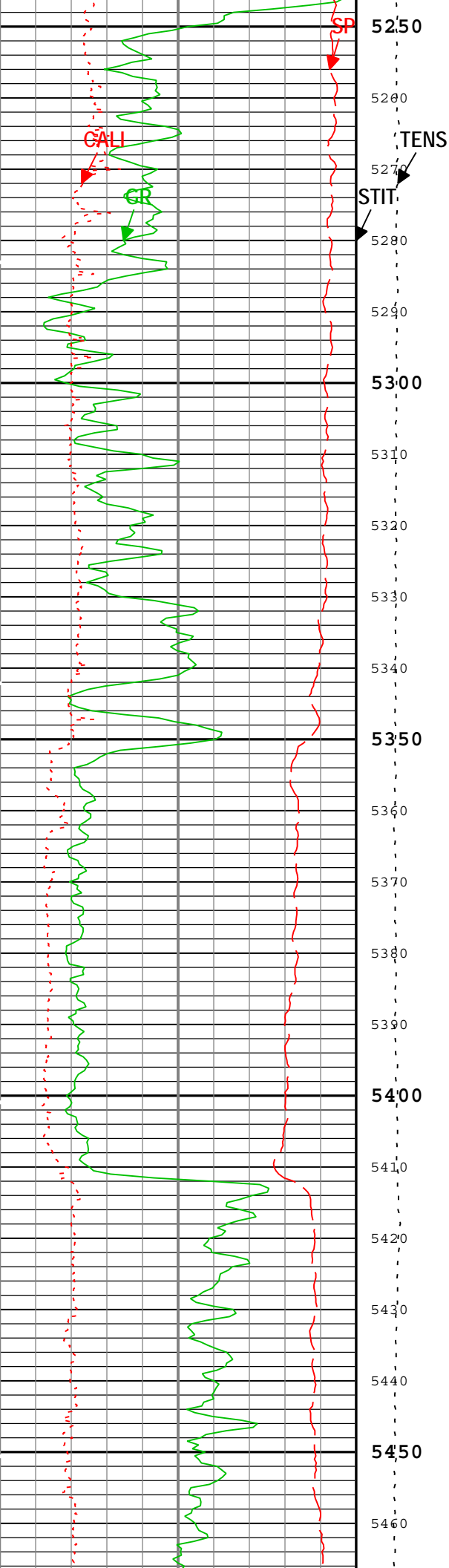
NPOR
PEFZ
DPH2

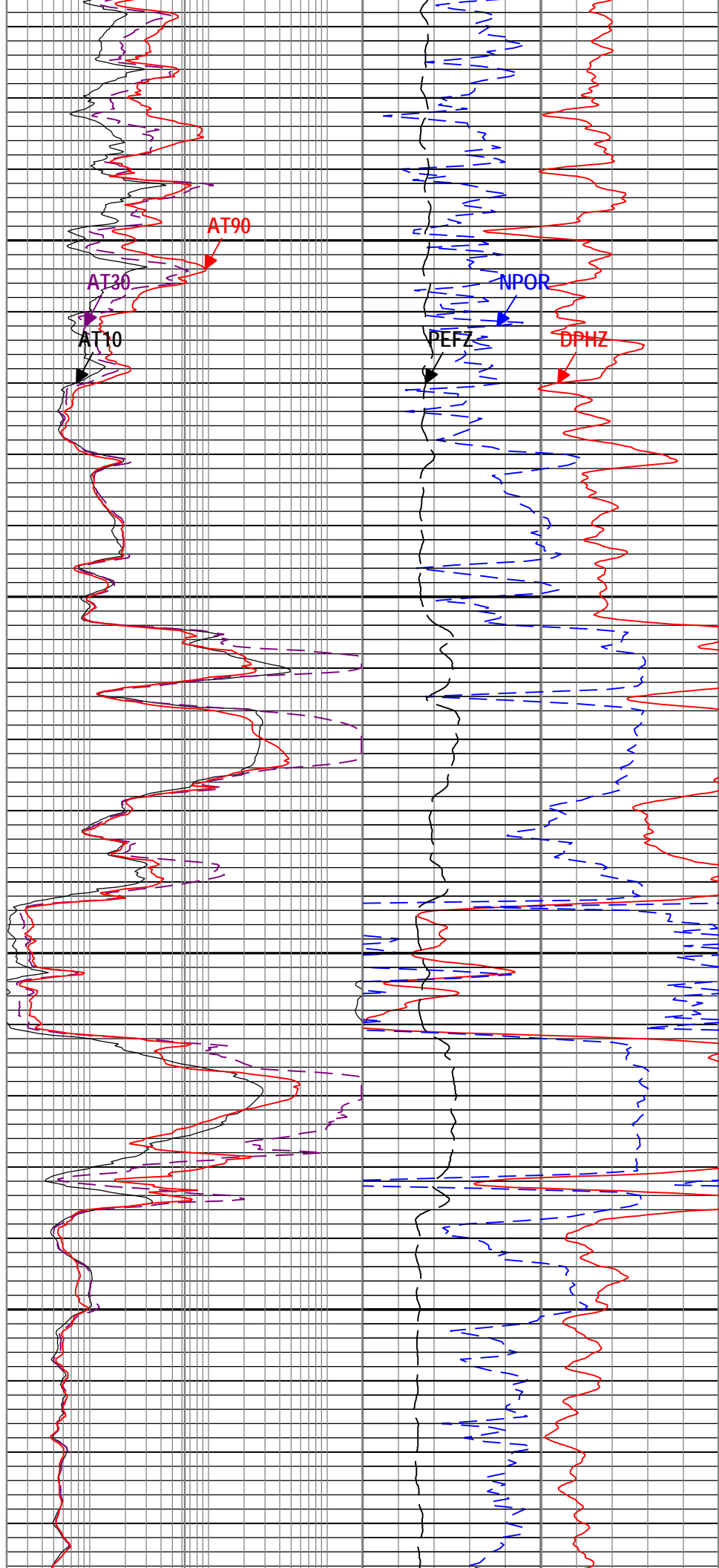
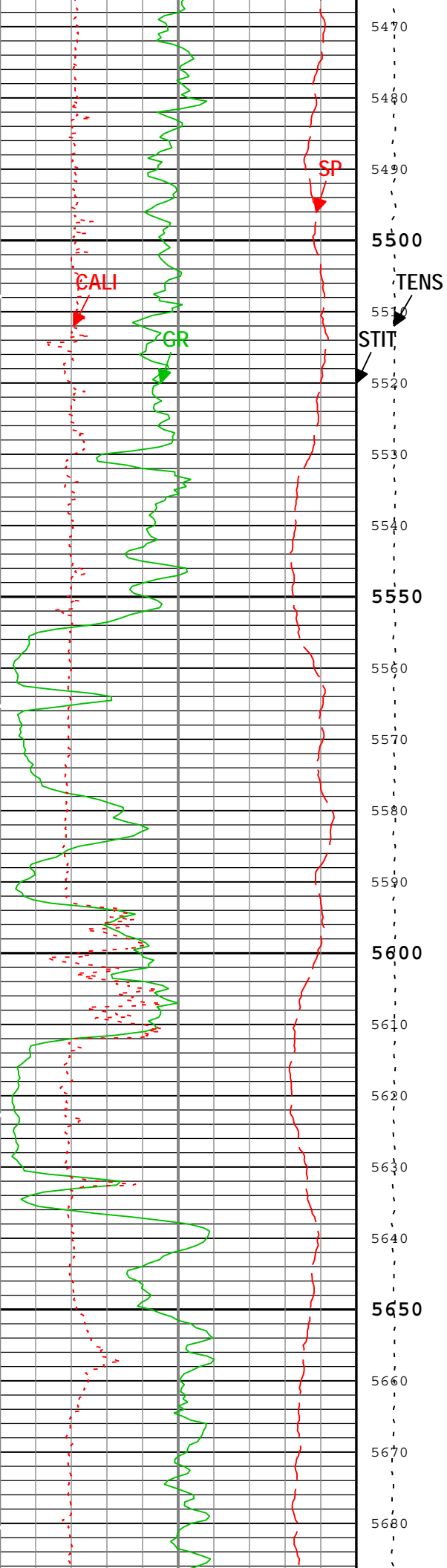


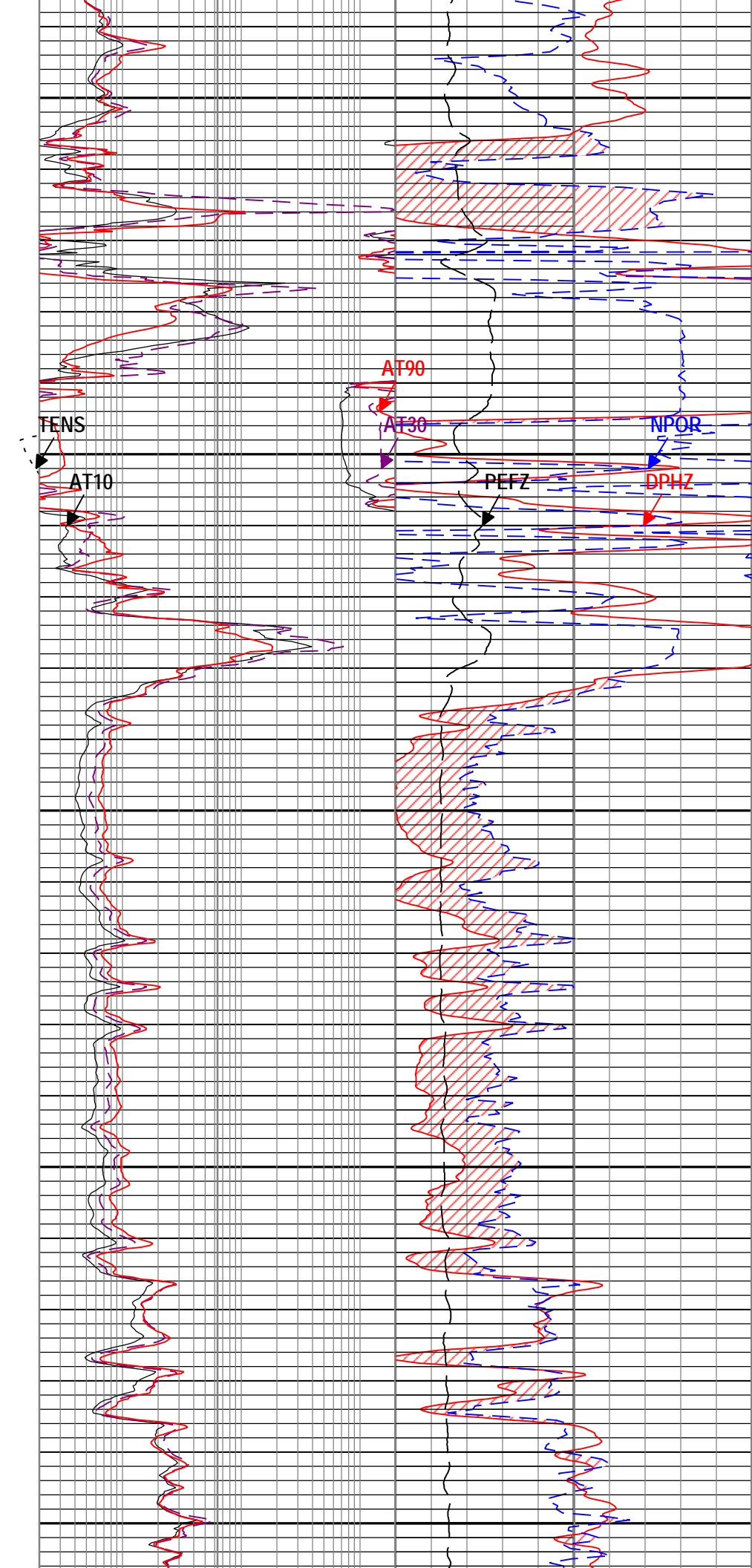
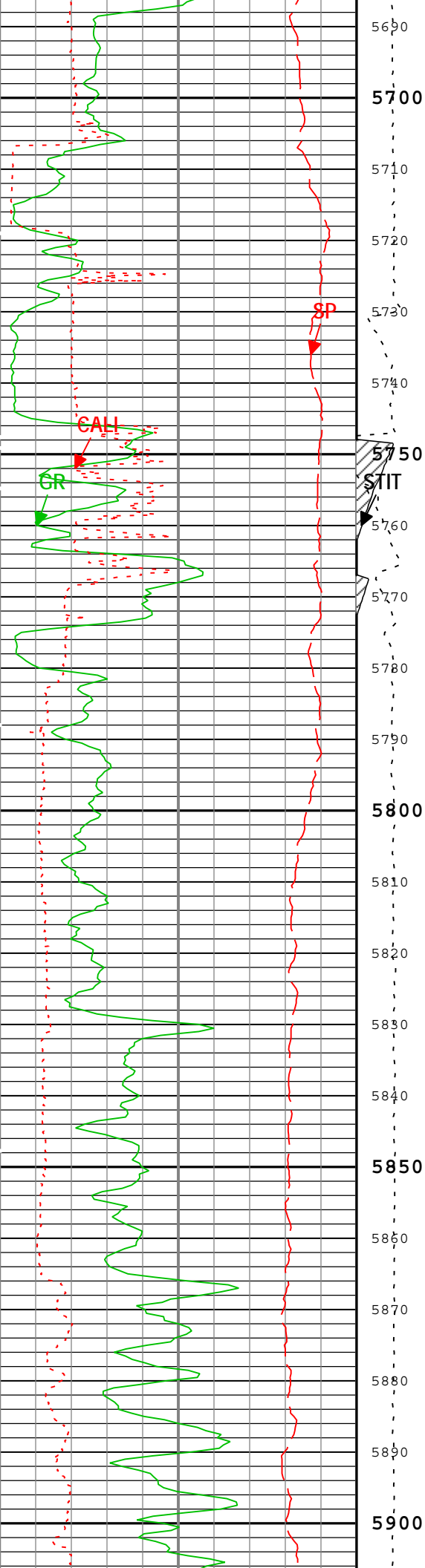


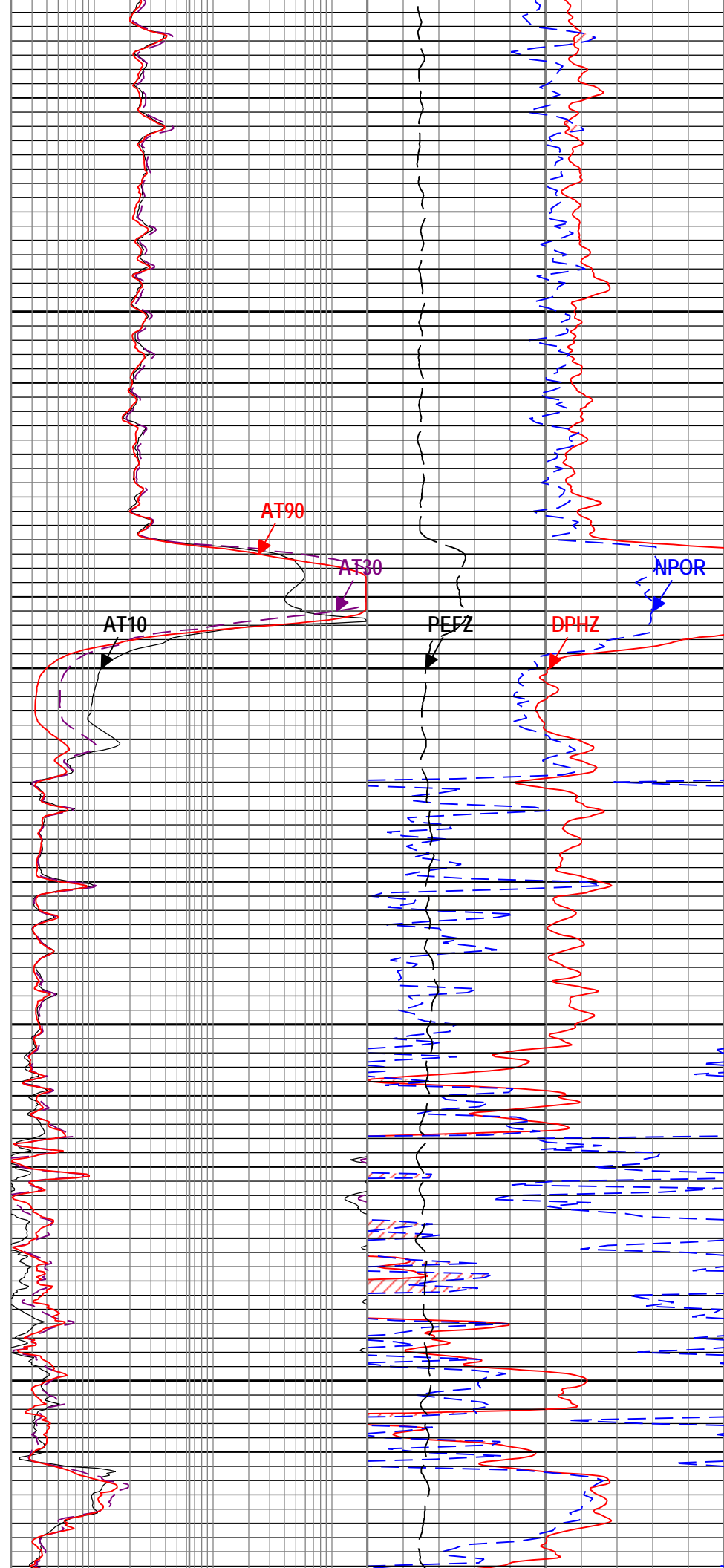
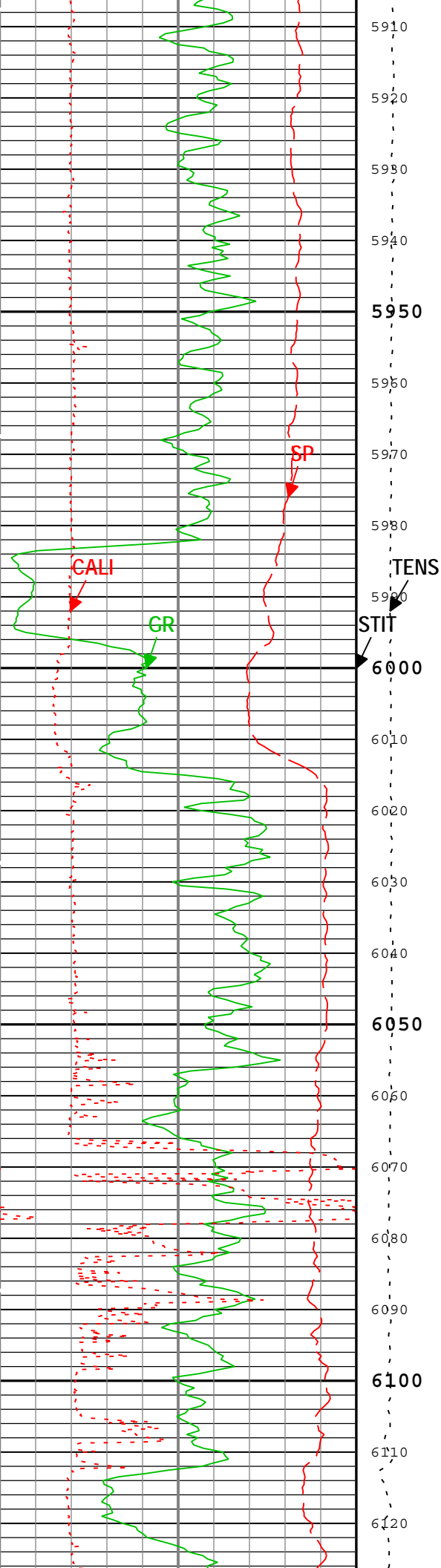


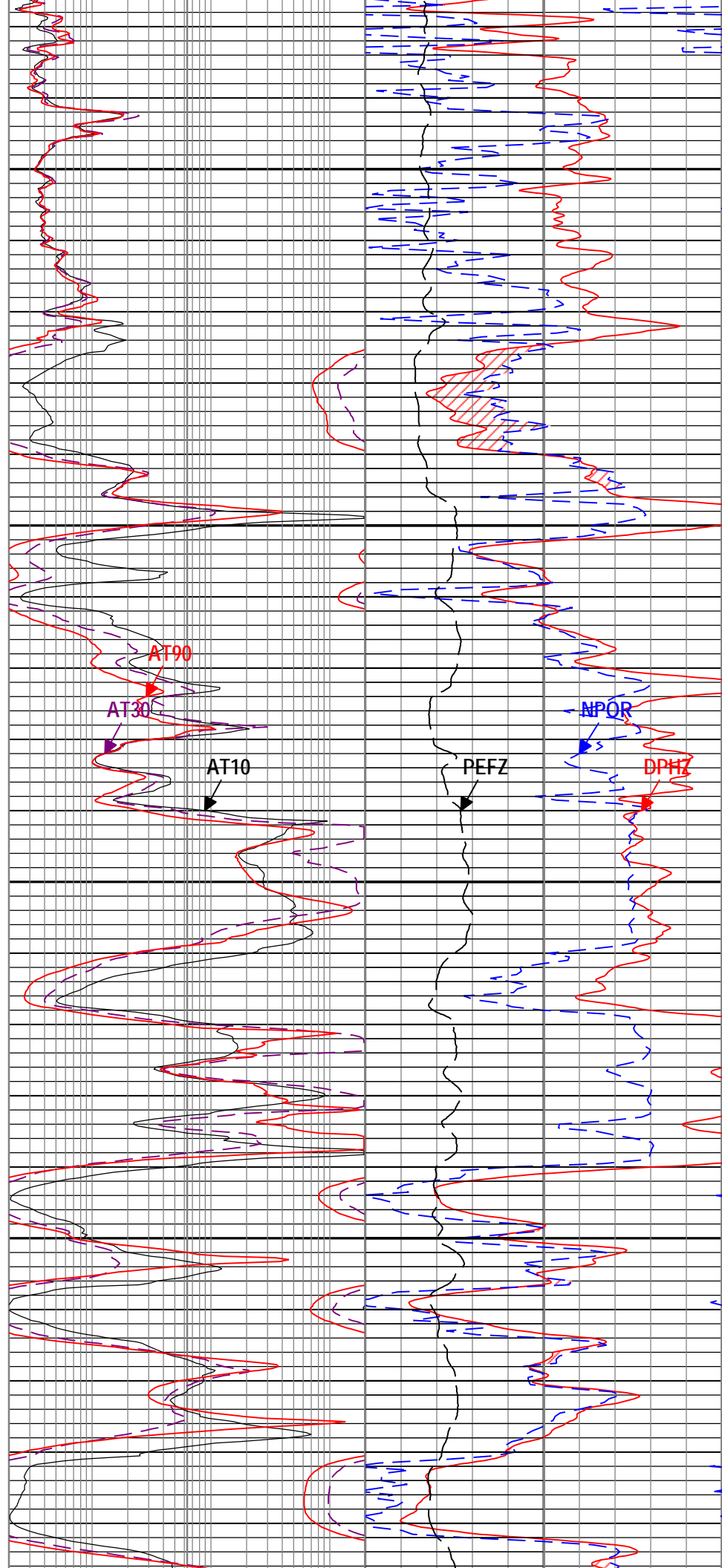
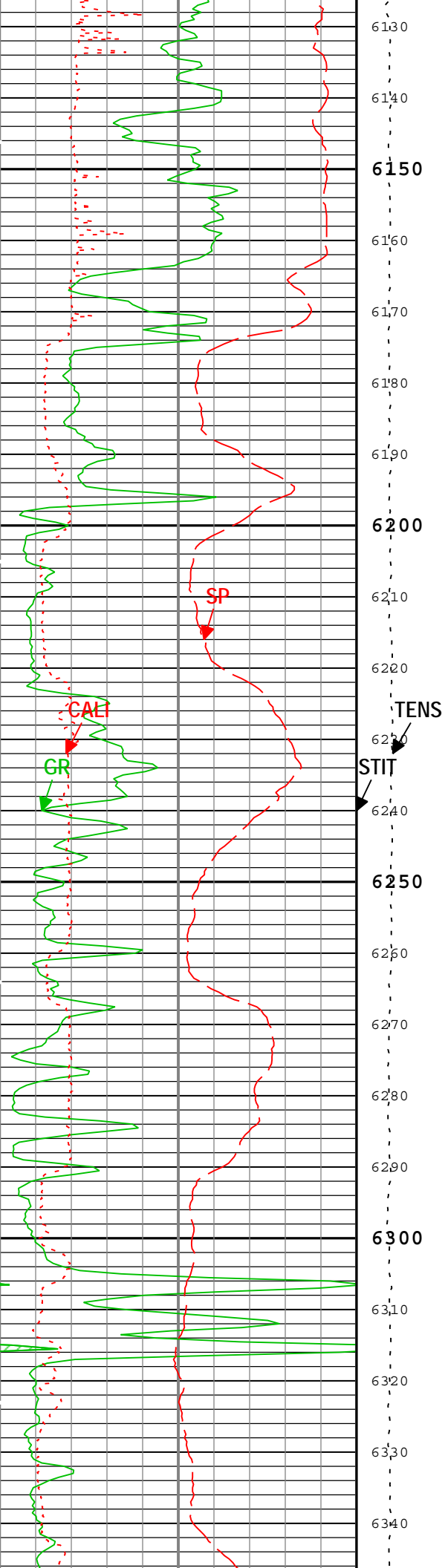


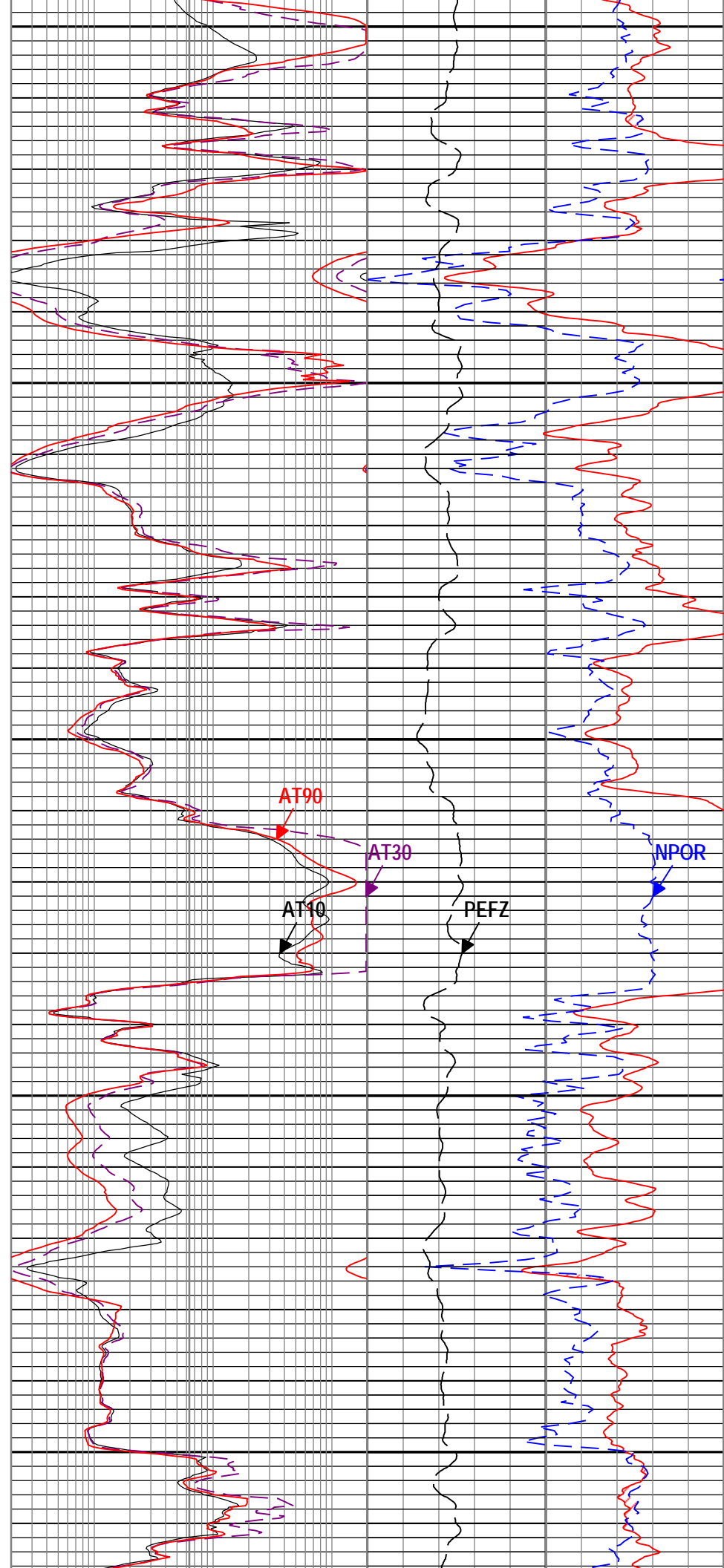
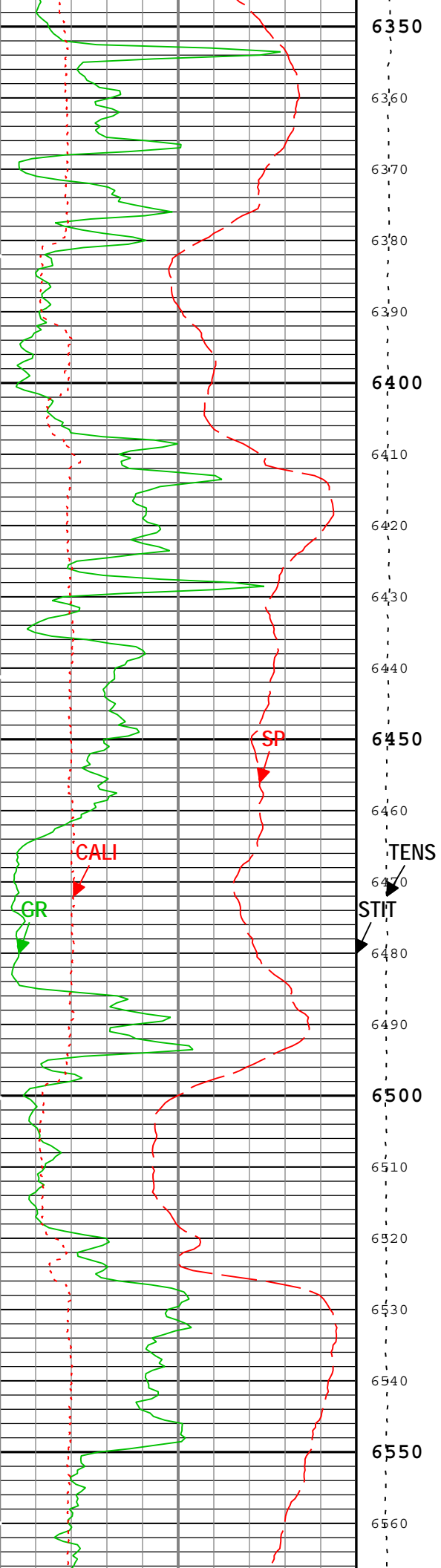


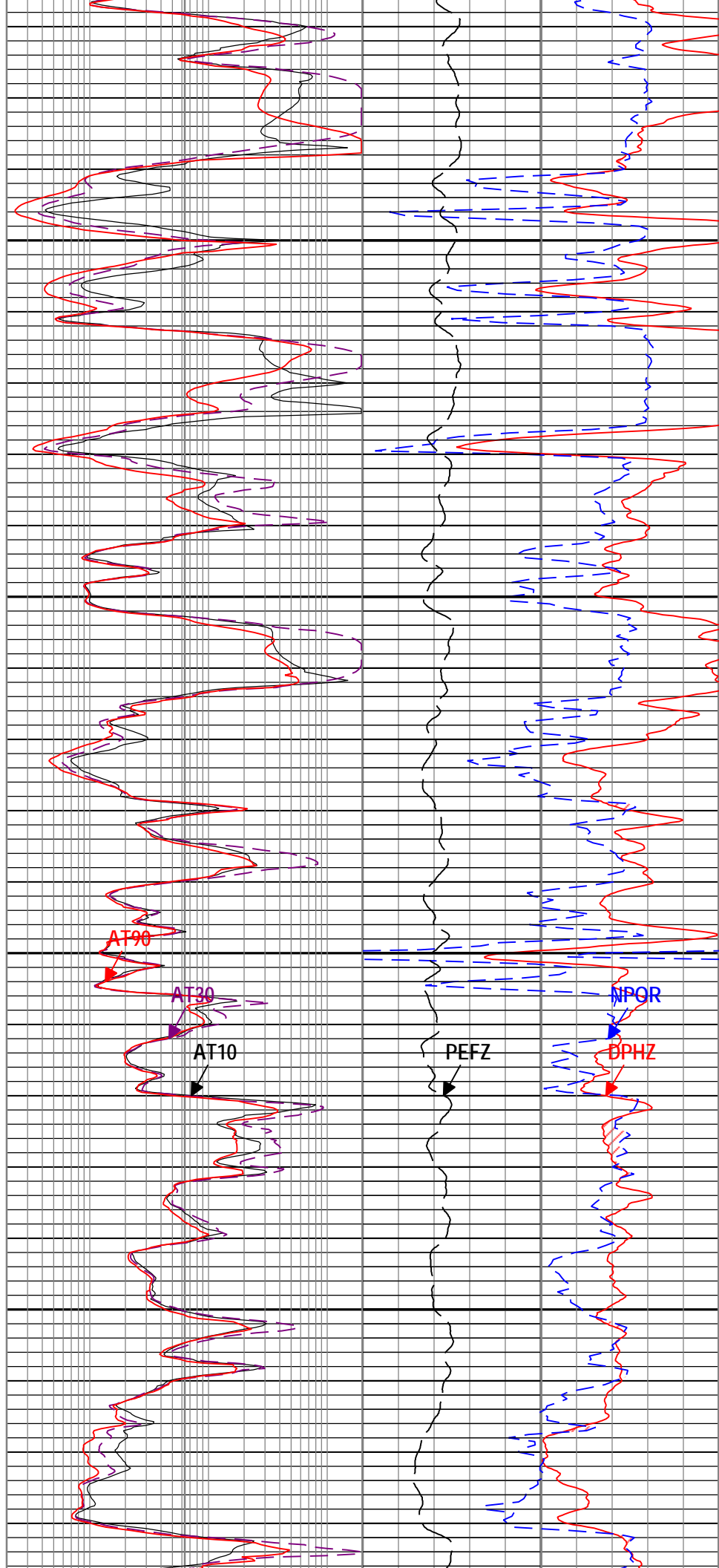
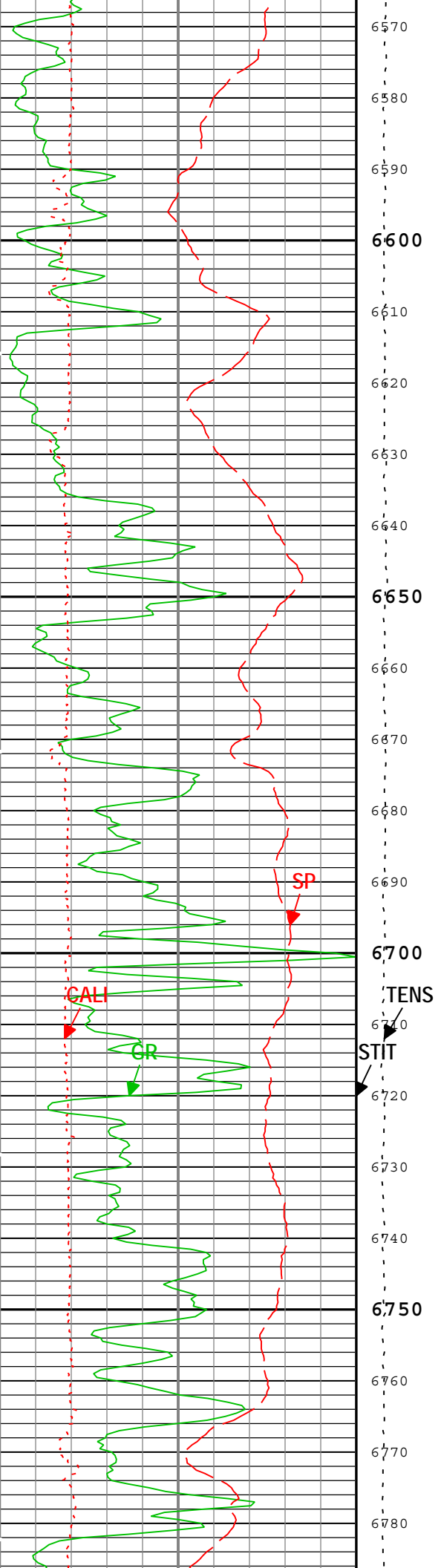


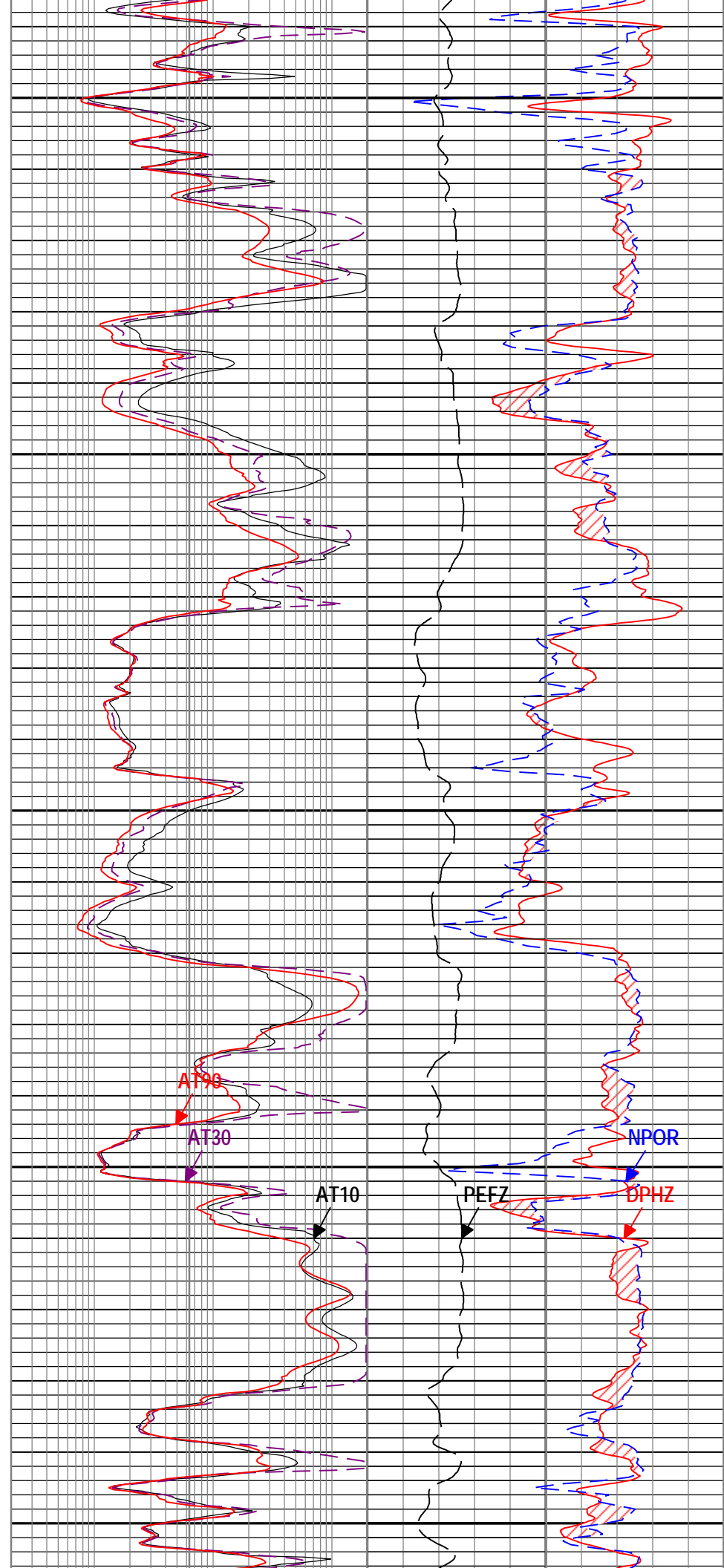
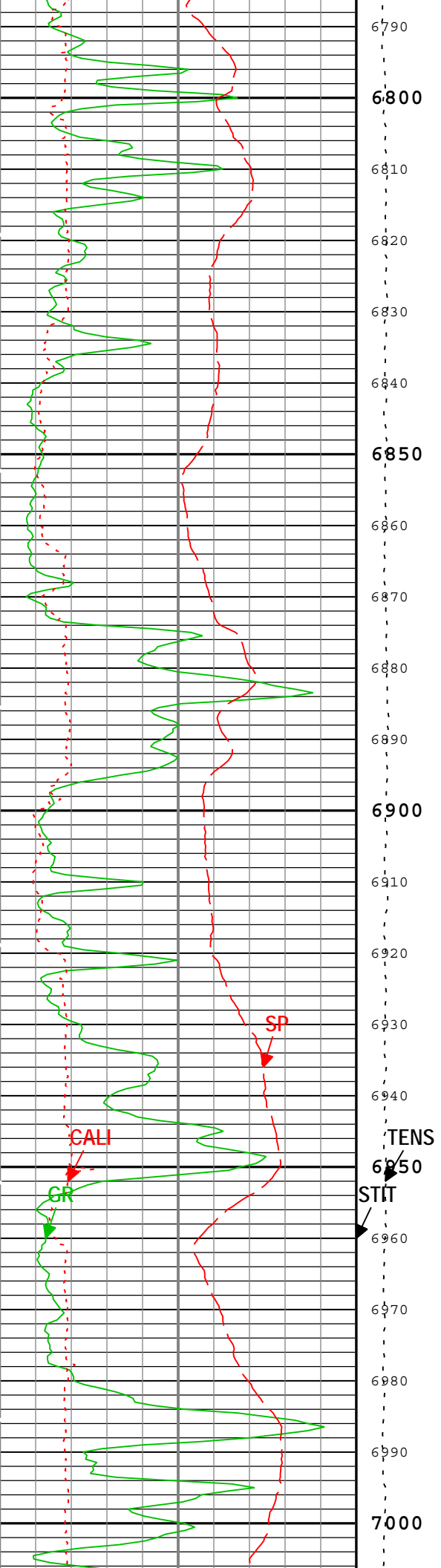


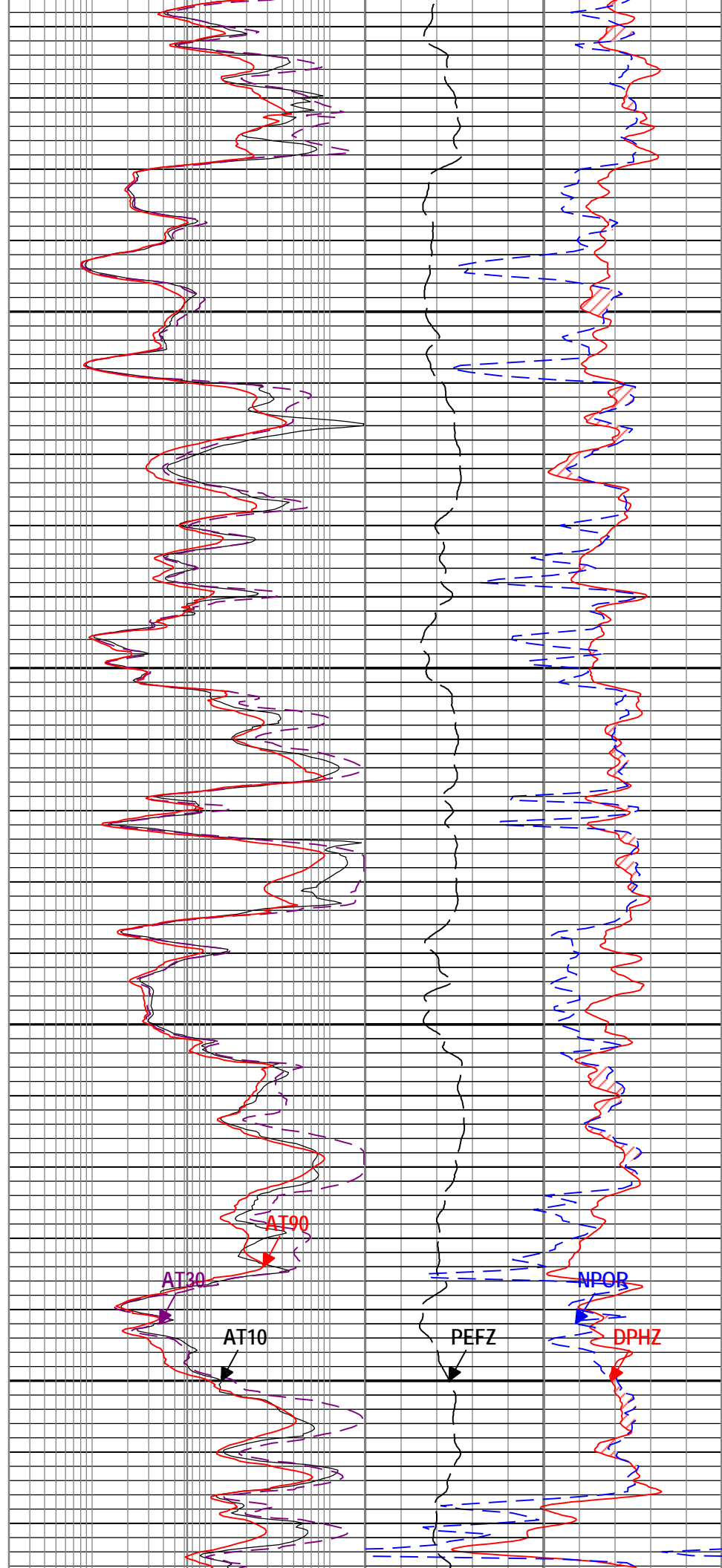
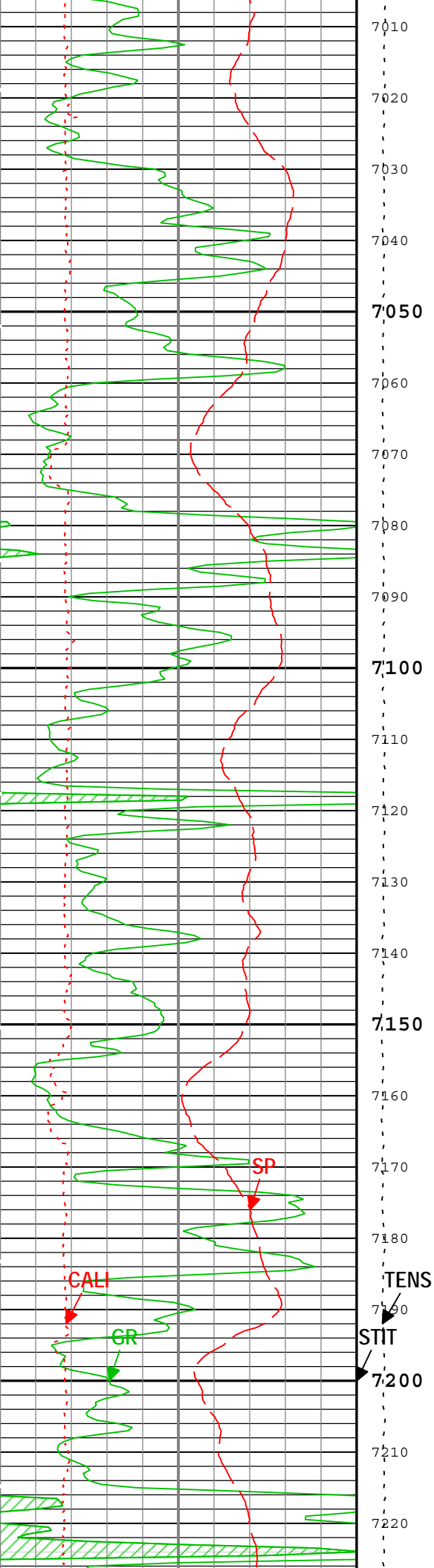


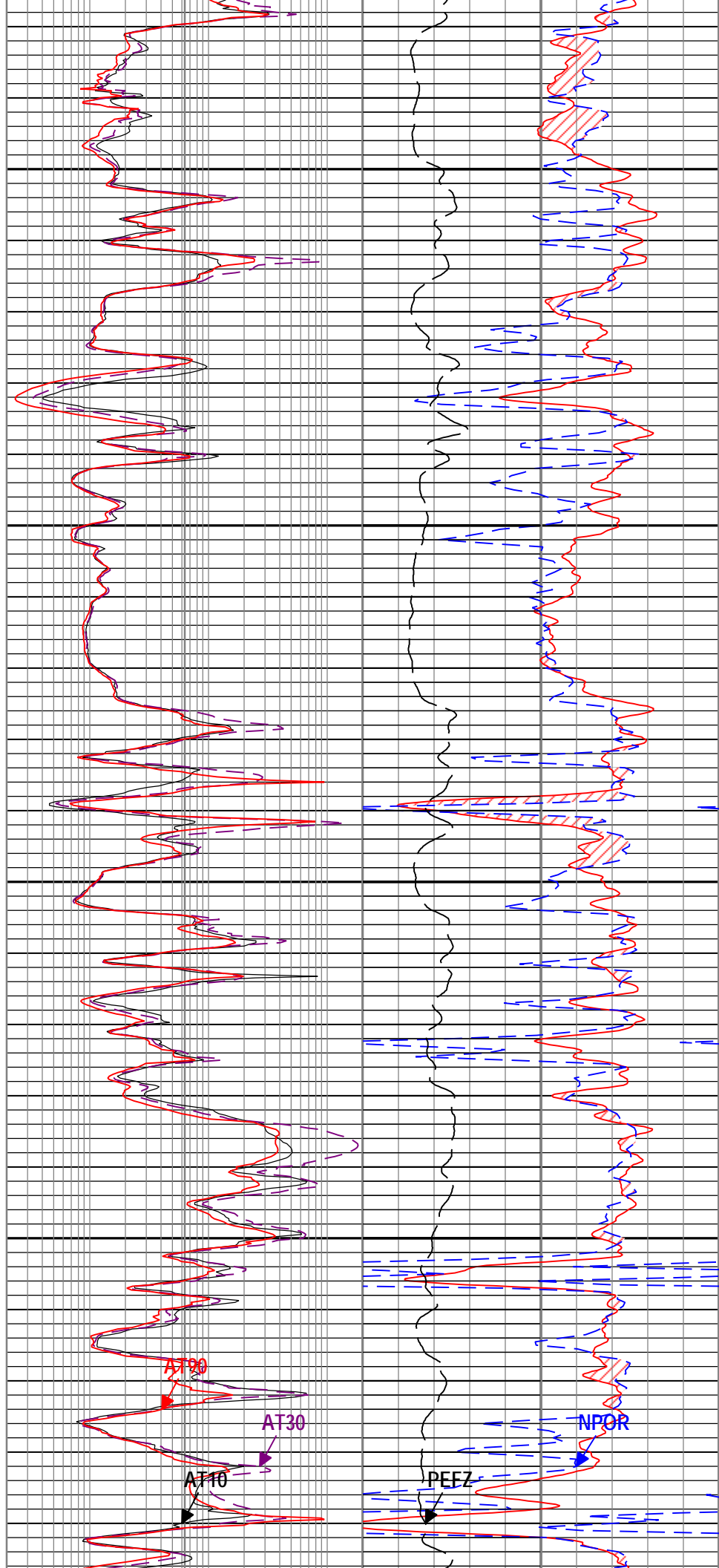
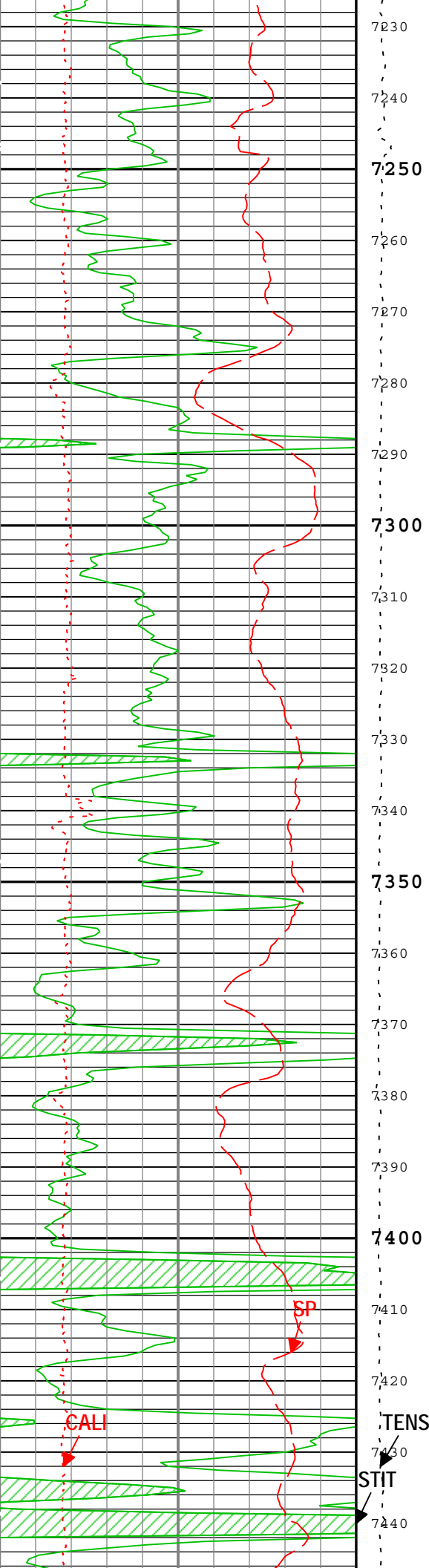


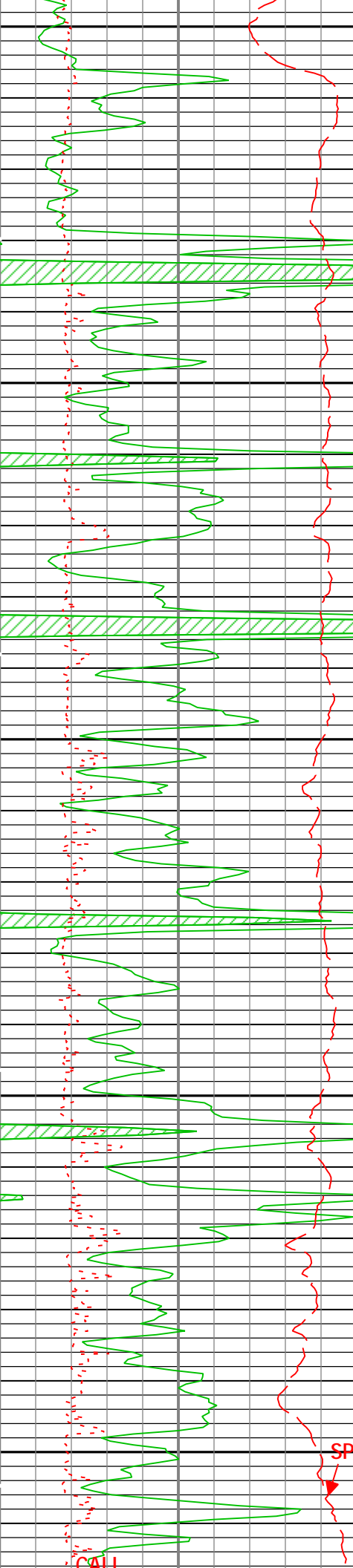




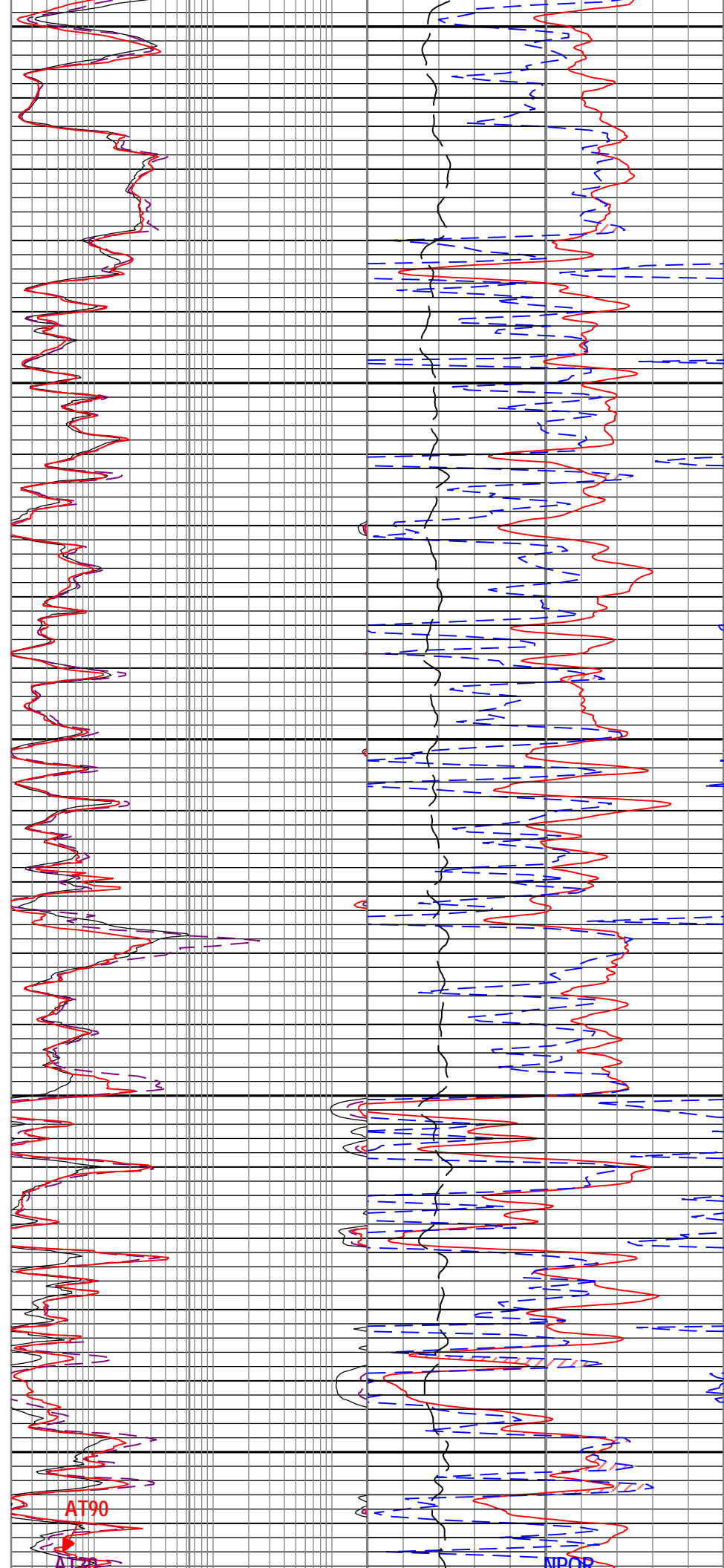


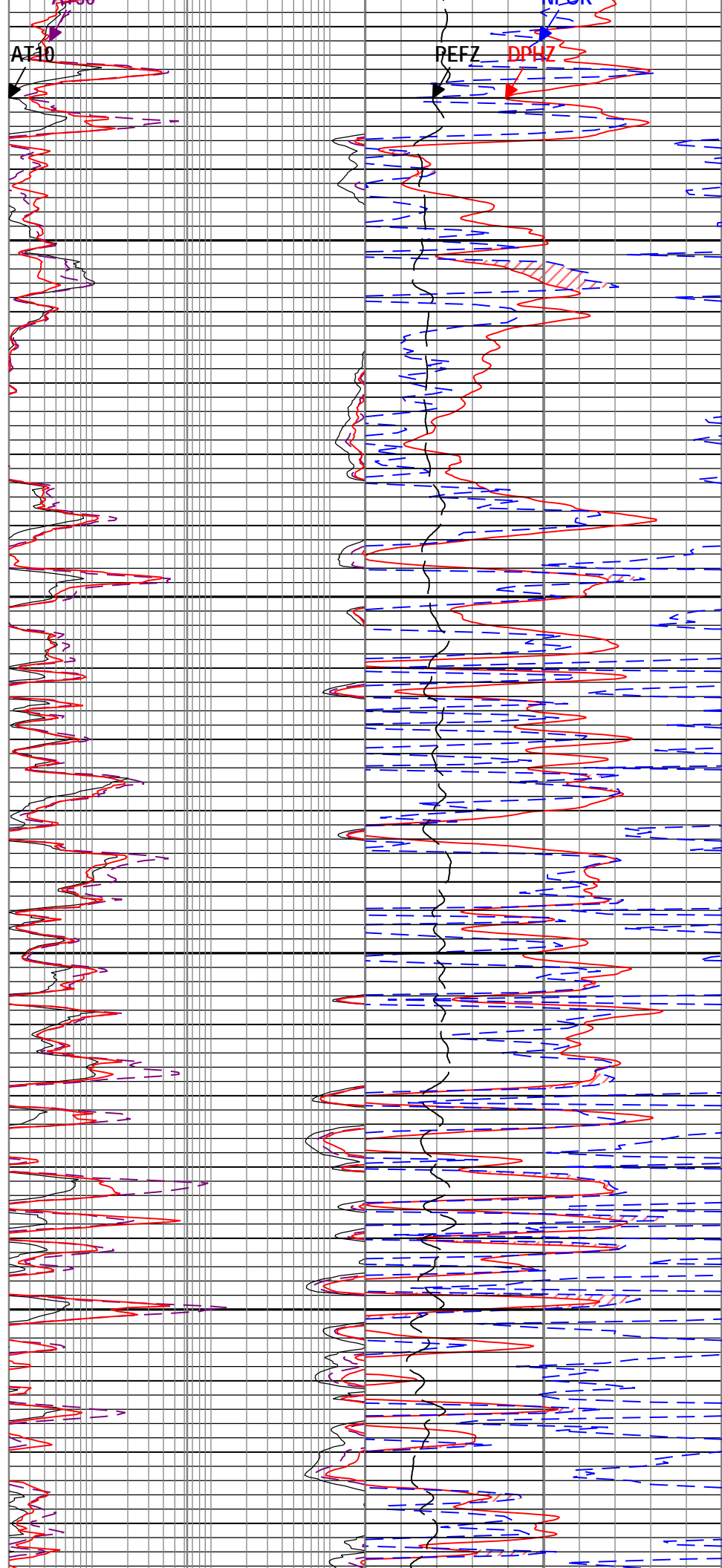
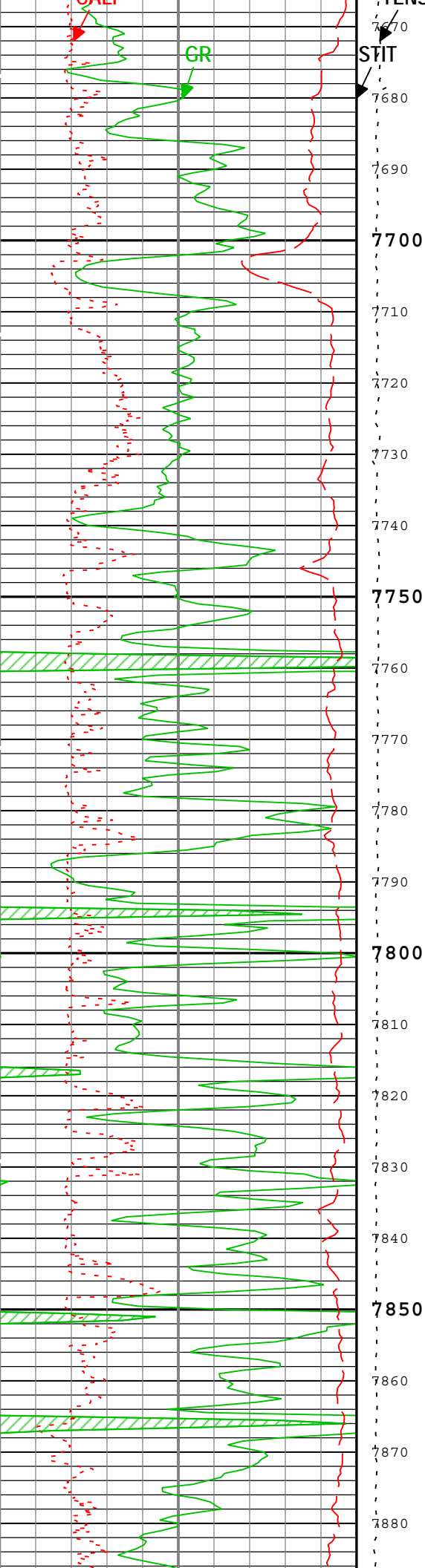


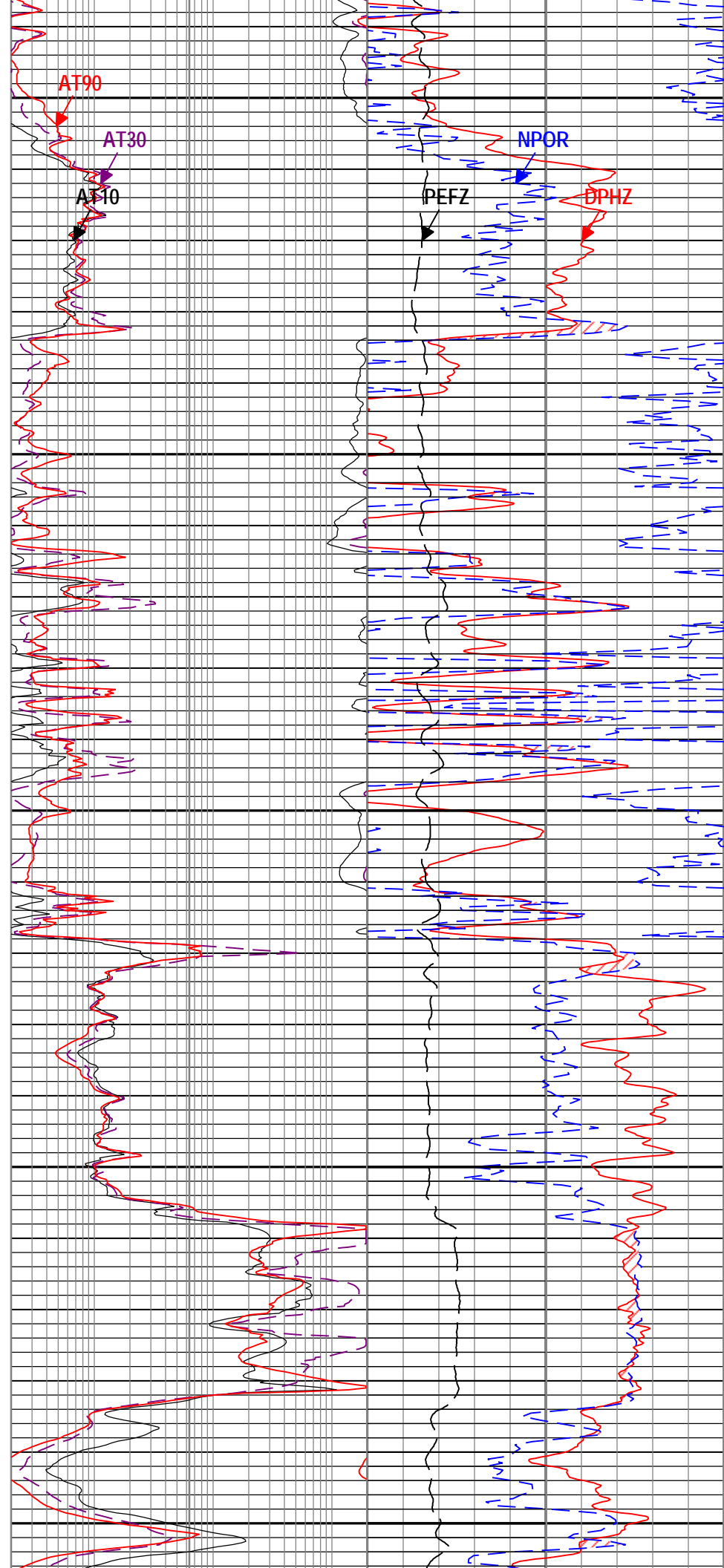
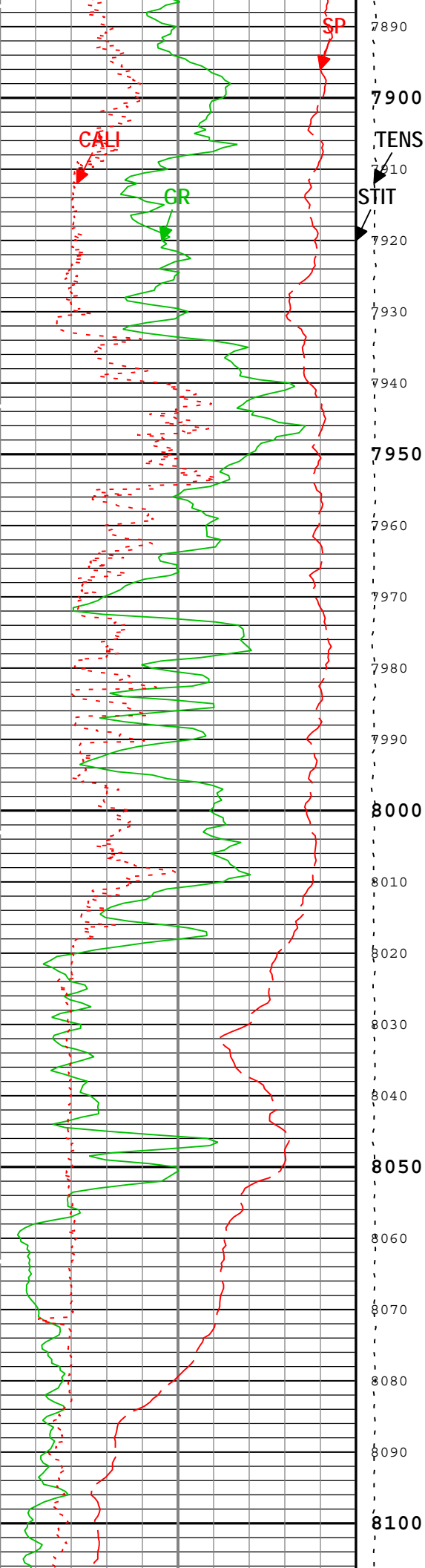


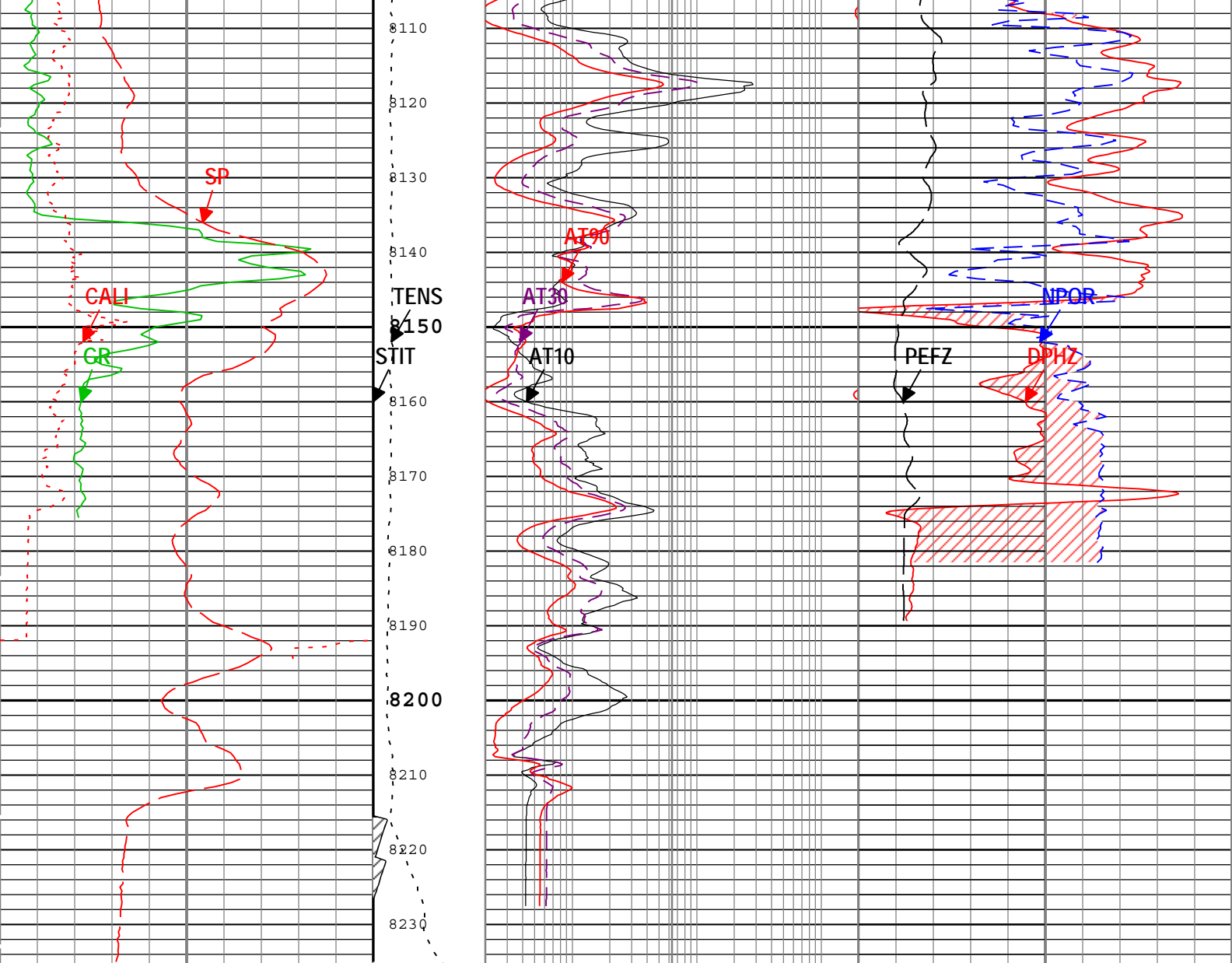


7450
7460
7470
7480
7490
7500
7510
7520
7530
7540
7550
7560
7570
7580
7590
7600
7610
7620
7630
7640
7650
7660
TENS









Gamma Ray Back up			Stuck Tool Indicator, Total (STIT)	Array Induction Two Foot Resistivity A10 (AT10) AIT-M		Gas Effect	
Gamma Ray (GR) HGNS-H				2 ohm.m 2000		NPOR Backup	
0	gAPI 200		0 ft 50	Array Induction Two Foot Resistivity A30 (AT30) AIT-M		Standard Resolution Density Porosity (DPHZ) HDRS-H	
6	in 16		Cable Tension (TENS)	2 ohm.m 2000		0.3	ft3/ft3 -0.1
Spontaneous Potential (SP) AIT-M				Array Induction Two Foot Resistivity A90 (AT90) AIT-M		Enhanced Thermal Neutron Porosity in Selected Lithology (NPOR) HGNS-H	
0	mV 200		6000 lbf 0	2 ohm.m 2000		0.3	m3/m3 -0.1
						Standard Resolution Formation Photoelectric Factor (PEFZ) HDRS-H	
						0 10	

TIME_1900 - Time Marked every 60.00 (s)

Description: HGNS standard resolution porosities for Platform Express Format: Log (KM 5in Triple Combo) Index Scale: 5 in per 100 ft Index Unit: ft
Index Type: Measured Depth Creation Date: 12-Dec-2013 00:42:53

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	1.625	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	0	ppm
CALI_SHIFT	CALI Supplementary Offset	HDRS-H	0.135	in
CBLO	Casing Bottom (Logger)	WLSESSION	348	ft
CDEN	Cement Density	HGNS-H	2	g/cm3
DFD	Drilling Fluid Density	Borehole	9.1	lbm/gal
DFT	Drilling Fluid Type	Borehole	Water	
DFT_WATER	Drilling Fluid Water Type	Borehole	Chemical Gel	
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	0.7	ohm.m
SOCO	Standoff Correction Option	HGNS-H	Yes	
SPDR	SP Drift Per Foot	AIT-M	0	mV/ft
TD	Total Measured Depth	Borehole	8217	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	3600	ft/h

Run One				
5" Triple Combo				

Pass Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
Run One	Log[4]:Up	Up	6997.27 ft	8229.10 ft	11-Dec-2013 8:31:34 PM	11-Dec-2013 8:54:50 PM	ON	14.00 ft	No
Run One	Log[5]:Up	Up	310.87 ft	8235.43 ft	11-Dec-2013 9:09:48 PM	11-Dec-2013 11:45:17 PM	ON	1.11 ft	No
All depths are referenced to toolstring zero									

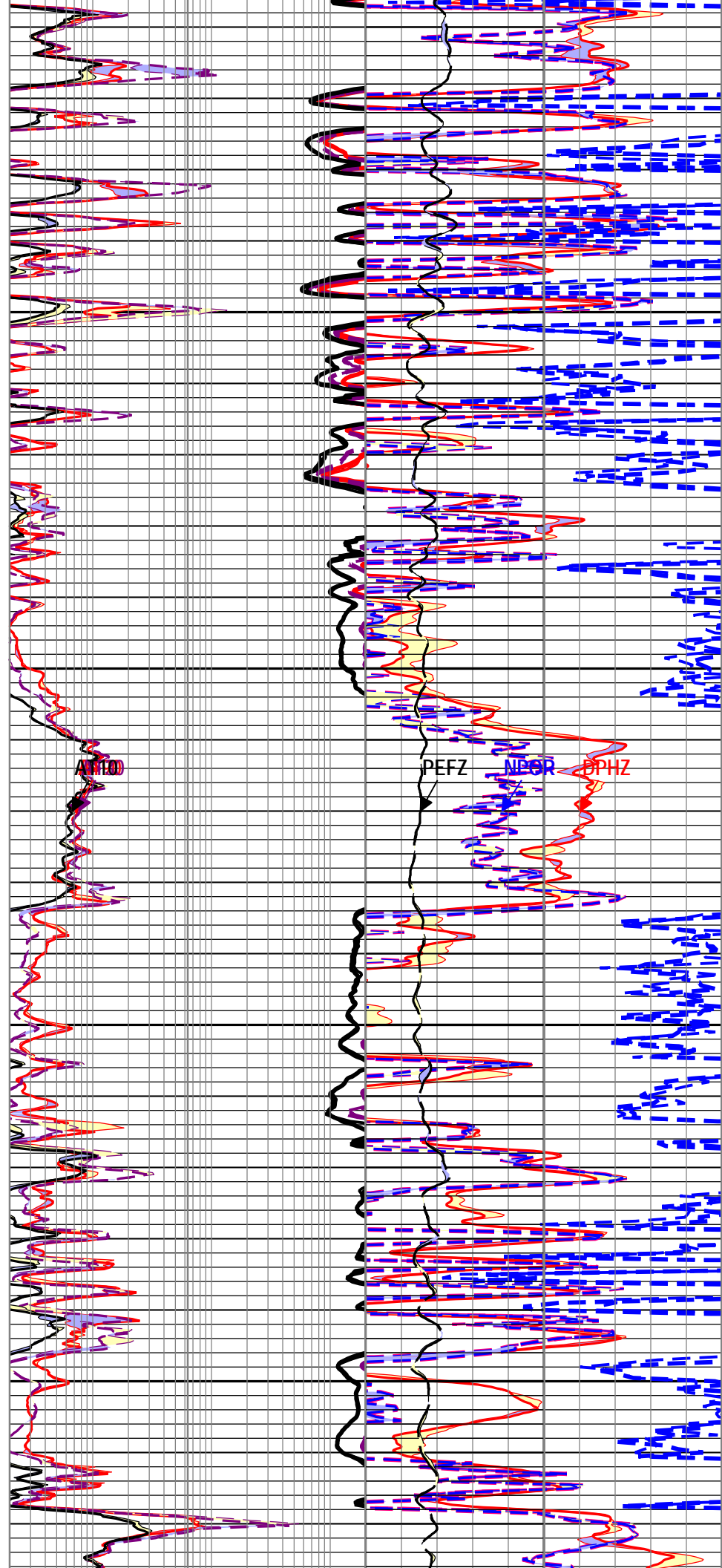
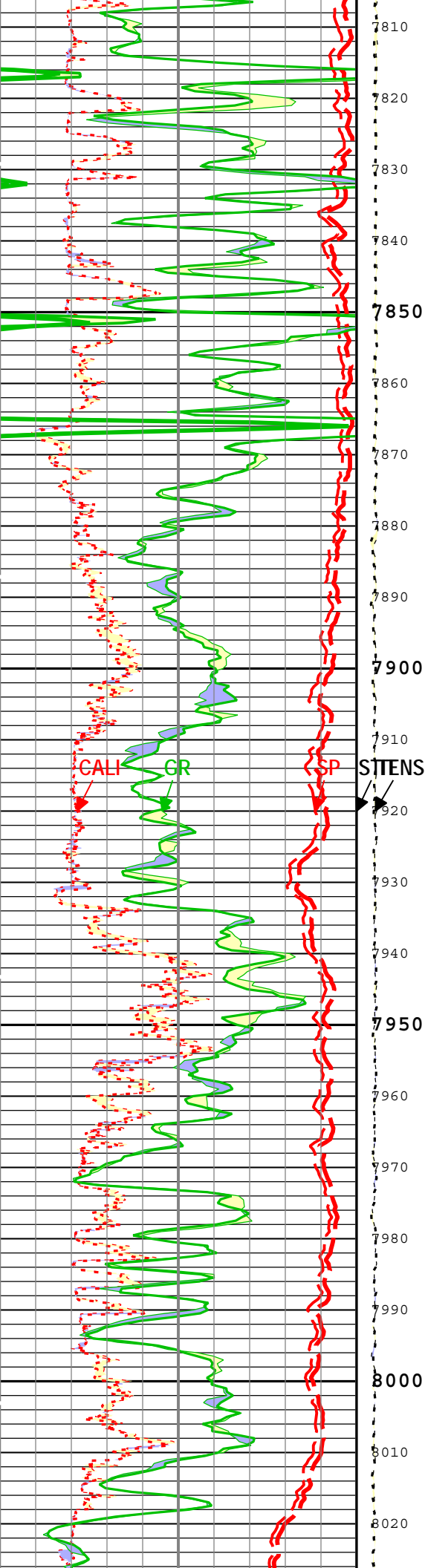
Log	<div> <div>Company:Nighthawk Production, LLC</div> <div>Well:Telluride 13-2</div> <div>Run One: Log[5]:Up:S010</div> </div>								
-----	---	--	--	--	--	--	--	--	--

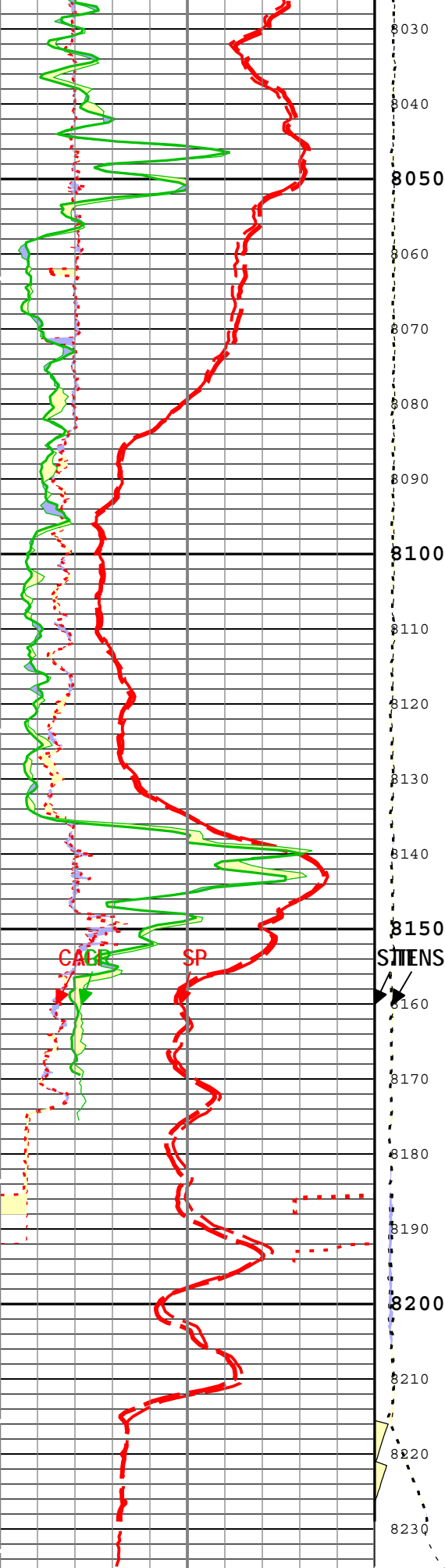
Description: HGNS standard resolution porosities for Platform Express
 Format: Log (KM 5in Triple Combo RA)
 Index Scale: 5 in per 100 ft
 Index Unit: ft
 Index Type: Measured Depth
 Creation Date: 12-Dec-2013 00:42:56

TIME_1900 - Time Marked every 60.00 (s)

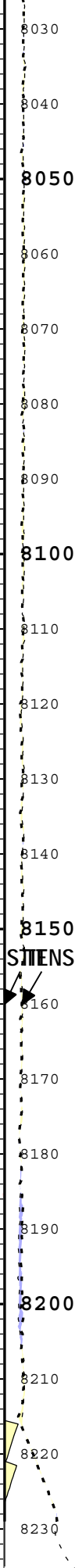
Main To Report

[illegible]

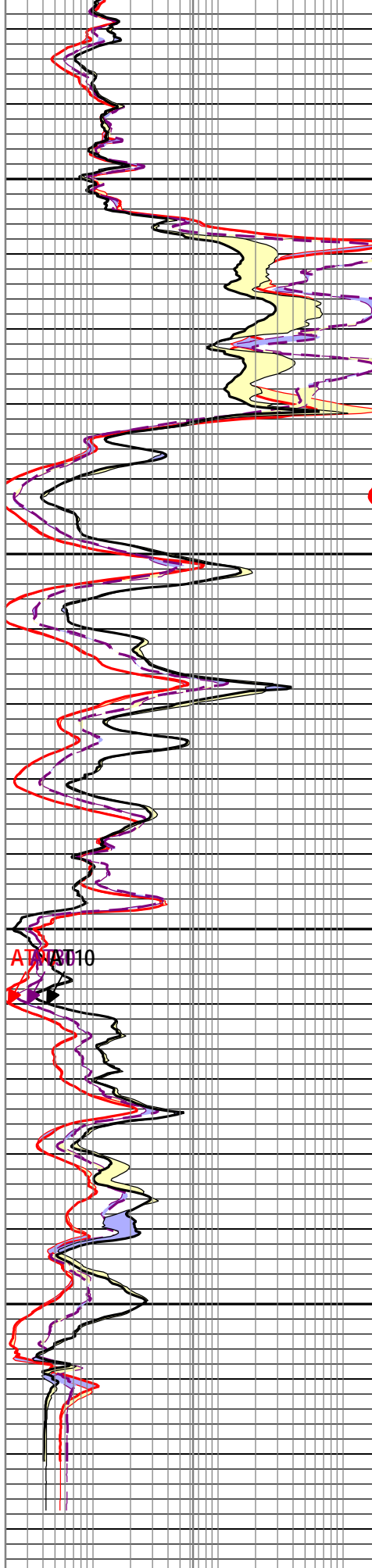




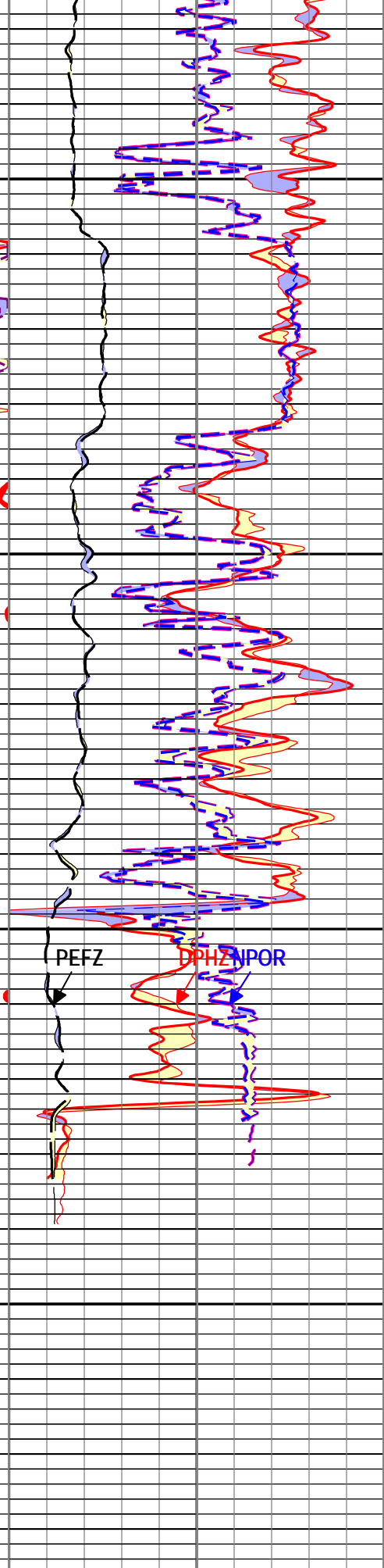
Main To Repeat
Repeat To Main



Main To Repeat



Main To Repeat
Repeat To Main



Main To Repeat
Repeat To Main

Repeat To Main	Repeat To Main	Repeat To Main
Caliper (CALI) HDRS-H 6 in 16	Repeat To Main	Array Induction Two Foot Resistivity A90 (AT90) AIT-M 2 ohm.m 2000
Main To Repeat	Cable Tension (TENS) 6000 lbf 0	Enhanced Thermal Neutron Porosity in Selected Lithology (NPOR) HGNS-H -0.1 ft3/ft3 -0.5
Repeat To Main	Main To Repeat	Main To Repeat
Spontaneous Potential (SP) AIT-M 0 mV 200	Main To Repeat	Repeat To Main
Main To Repeat	Repeat To Main	Array Induction Two Foot Resistivity A30 (AT30) AIT-M 2 ohm.m 2000
Repeat To Main	Stuck Tool Indicator, Total (STIT) 0 ft 50	Standard Resolution Density Porosity (DPHZ) HDRS-H 0.3 ft3/ft3 -0.1
Gamma Ray (GR) HGNS-H 200 gAPI 400		Main To Repeat
Main To Repeat		Repeat To Main
Repeat To Main		Array Induction Two Foot Resistivity A10 (AT10) AIT-M 2 ohm.m 2000
Gamma Ray (GR) HGNS-H 0 gAPI 200		Enhanced Thermal Neutron Porosity in Selected Lithology (NPOR) HGNS-H 0.3 m3/m3 -0.1
		Main To Repeat
		Repeat To Main
		Standard Resolution Formation Photoelectric Factor (PEFZ) HDRS-H 0 10

TIME_1900 - Time Marked every 60.00 (s)

Description: HGNS standard resolution porosities for Platform Express Format: Log (KM 5in Triple Combo RA) Index Scale: 5 in per 100 ft Index Unit: ft
Index Type: Measured Depth Creation Date: 12-Dec-2013 00:42:56

Calibration Report							
AIT-M (Array Induction Tool - M) Calibration - Run Run One							
Primary Equipment :							
File code for AIT-MA Sonde Tool Element				AMIS	208		
Auxiliary Equipment :							
File code for AIT Bottom Nose Tool Element				AMRM			
AIT Sonde Calibration - Test Loop Gain							
Master (EEPROM):		11:02:08 18-Sep-2013					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Test Loop Gain - 0		Master	1.000	0.950	1.015	1.050	
Test Loop Phase - 0	deg	Master	0	-3.000	1.496	3.000	
Test Loop Gain - 1		Master	1.000	0.950	1.016	1.050	
Test Loop Phase - 1	deg	Master	0	-3.000	-0.178	3.000	
Test Loop Gain - 2		Master	1.000	0.950	1.014	1.050	
Test Loop Phase - 2	deg	Master	0	-3.000	-0.068	3.000	
Test Loop Gain - 3		Master	1.000	0.950	1.015	1.050	
Test Loop Phase - 3	deg	Master	0	-3.000	-0.048	3.000	
Test Loop Gain - 4		Master	1.000	0.950	0.996	1.050	
Test Loop Phase - 4	deg	Master	0	-3.000	0.057	3.000	
Test Loop Gain - 5		Master	1.000	0.950	0.992	1.050	
Test Loop Phase - 5	deg	Master	0	-3.000	-0.046	3.000	
Test Loop Gain - 6		Master	1.000	0.950	0.997	1.050	
Test Loop Phase - 6	deg	Master	0	-3.000	0.236	3.000	
Test Loop Gain - 7		Master	1.000	0.950	1.006	1.050	
Test Loop Phase - 7	deg	Master	0	-3.000	-0.132	3.000	
AIT Sonde Calibration - Sonde Error Correction							
Master (EEPROM):		11:02:08 18-Sep-2013					

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Sonde Error Correction Real - 0	mS/m	Master	----	-231.000	-59.254	119.000	
Sonde Error Correction Quad - 0		Master	----	-2250.000	-59.772	2250.000	
Sonde Error Correction Real - 1	mS/m	Master	----	114.000	151.006	204.000	
Sonde Error Correction Quad - 1		Master	----	-625.000	-99.133	625.000	
Sonde Error Correction Real - 2	mS/m	Master	----	66.000	118.101	156.000	
Sonde Error Correction Quad - 2		Master	----	-350.000	-74.984	350.000	
Sonde Error Correction Real - 3	mS/m	Master	----	39.000	51.184	89.000	
Sonde Error Correction Quad - 3		Master	----	-250.000	-8.868	250.000	
Sonde Error Correction Real - 4	mS/m	Master	----	15.000	26.303	35.000	
Sonde Error Correction Quad - 4		Master	----	-63.000	7.747	63.000	
Sonde Error Correction Real - 5	mS/m	Master	----	4.000	12.283	24.000	
Sonde Error Correction Quad - 5		Master	----	-50.000	-7.300	50.000	
Sonde Error Correction Real - 6	mS/m	Master	----	5.000	9.849	15.000	
Sonde Error Correction Quad - 6		Master	----	-30.000	8.224	30.000	
Sonde Error Correction Real - 7	mS/m	Master	----	-5.000	-1.764	5.000	
Sonde Error Correction Quad - 7		Master	----	-30.000	1.914	30.000	

AIT Mud Calibration - Mud Calibration Gain

Master (EEPROM): 11:02:08 18-Sep-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Coarse Gain		Master	1.000	0.800	0.827	1.200	
Fine Gain		Master	1.000	0.800	0.817	1.200	

AIT Electronics Check - Thru Calibration Check

Master (EEPROM): 11:02:08 18-Sep-2013 Before (Measured): 16:05:57 08-Dec-2013 Expired by 2 days After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Thru Cal Mag - 0	V	Master	----	0.366	0.563	0.854	
		Before	----	0.366	0.561	0.854	
		After	----	----	----	----	
		Before-Master	----	----	-0.002	----	
		After-Before	----	----	----	----	
Thru Cal Phase - 0	deg	Master	----	137.000	-177.704	-103.000	
		Before	----	137.000	-177.796	-103.000	
		After	----	----	----	----	
		Before-Master	----	----	-0.092	----	
		After-Before	----	----	----	----	
Thru Cal Mag - 1	V	Master	----	0.762	1.152	1.778	
		Before	----	0.762	1.145	1.778	
		After	----	----	----	----	
		Before-Master	----	----	-0.007	----	
		After-Before	----	----	----	----	
Thru Cal Phase - 1	deg	Master	----	136.000	-176.564	-104.000	
		Before	----	136.000	-176.571	-104.000	
		After	----	----	----	----	
		Before-Master	----	----	-0.007	----	
		After-Before	----	----	----	----	
Thru Cal Mag - 2	V	Master	----	0.372	0.613	0.868	
		Before	----	0.372	0.613	0.868	
		After	----	----	----	----	
		Before-Master	----	----	0.000	----	
		After-Before	----	----	----	----	
Thru Cal Phase - 2	deg	Master	----	132.000	-170.882	-108.000	
		Before	----	132.000	-170.652	-108.000	
		After	----	----	----	----	
		Before-Master	----	----	0.230	----	
		After-Before	----	----	----	----	
Thru Cal Mag - 3	V	Master	----	0.420	0.693	0.980	
		Before	----	0.420	0.692	0.980	
		After	----	----	----	----	
		Before-Master	----	----	-0.001	----	
		After-Before	----	----	----	----	
Thru Cal Phase - 3	deg	Master	----	131.000	-170.902	-109.000	
		Before	----	131.000	-170.673	-109.000	
		After	----	----	----	----	
		Before-Master	----	----	0.229	----	

		After-Before	----	----	----	----	
Thru Cal Mag - 4	V	Master	----	0.804	1.317	1.876	
		Before	----	0.804	1.316	1.876	
		After	----	----	----	----	
		Before-Master	----	----	-0.001	----	
		After-Before	----	----	----	----	
Thru Cal Phase - 4	deg	Master	----	125.000	-171.242	-115.000	
		Before	----	125.000	-171.023	-115.000	
		After	----	----	----	----	
		Before-Master	----	----	0.219	----	
		After-Before	----	----	----	----	
Thru Cal Mag - 5	V	Master	----	1.176	1.929	2.744	
		Before	----	1.176	1.928	2.744	
		After	----	----	----	----	
		Before-Master	----	----	-0.001	----	
		After-Before	----	----	----	----	
Thru Cal Phase - 5	deg	Master	----	122.000	-171.725	-118.000	
		Before	----	122.000	-171.504	-118.000	
		After	----	----	----	----	
		Before-Master	----	----	0.221	----	
		After-Before	----	----	----	----	
Thru Cal Mag - 6	V	Master	----	1.176	1.932	2.744	
		Before	----	1.176	1.930	2.744	
		After	----	----	----	----	
		Before-Master	----	----	-0.002	----	
		After-Before	----	----	----	----	
Thru Cal Phase - 6	deg	Master	----	121.000	-171.716	-119.000	
		Before	----	121.000	-171.495	-119.000	
		After	----	----	----	----	
		Before-Master	----	----	0.221	----	
		After-Before	----	----	----	----	
Thru Cal Mag - 7	V	Master	----	0.846	1.378	1.974	
		Before	----	0.846	1.376	1.974	
		After	----	----	----	----	
		Before-Master	----	----	-0.002	----	
		After-Before	----	----	----	----	
Thru Cal Phase - 7	deg	Master	----	115.000	-173.828	-125.000	
		Before	----	115.000	-173.593	-125.000	
		After	----	----	----	----	
		Before-Master	----	----	0.235	----	
		After-Before	----	----	----	----	
SPA Zero	mV	Master		-50.000	-0.015	50.000	
		Before		-50.000	-0.008	50.000	
		After	----	----	----	----	
		Before-Master	----	----	0.007	----	
		After-Before	----	----	----	----	
SPA Plus	mV	Master		941.000	992.571	1040.000	
		Before		941.000	992.820	1040.000	
		After	----	----	----	----	
		Before-Master	----	----	0.249	----	
		After-Before	----	----	----	----	
Temperature Zero	V	Master		-0.050	0.000	0.050	
		Before		-0.050	0.000	0.050	
		After	----	----	----	----	
		Before-Master	----	----	0.000	----	
		After-Before	----	----	----	----	
Temperature Plus	V	Master		0.870	0.919	0.960	
		Before		0.870	0.919	0.960	
		After	----	----	----	----	
		Before-Master	----	----	0.000	----	
		After-Before	----	----	----	----	

DSLT-H (Digitizing Sonic Logging Tool - H) Calibration - Run Run One	
Primary Equipment :	
Sonic Logging Sonde E supports 3'-5'BHC DT and CBL/VDL	SLS-E
CBL Normalization - CBL Accumulations	

Master:							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Upper Far Amplitude - 0		Master	----	----	----	----	
Upper Near Raw Amplitude - 0	mV	Master	----	----	----	----	
Lower Far Amplitude - 0		Master	----	----	----	----	
Lower Near Raw Amplitude - 0	mV	Master	----	----	----	----	

CBL Normalization - CBL/VDL Coefficients

Master:							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
CBL Correction Factor for UT		Master	3.500	2.700	NOT DONE	4.300	
CBL Correction Factor for LT		Master	2.500	1.700	NOT DONE	4.300	
VDL Ratio between UT and LT for CBLB Mode		Master	1.000		NOT DONE		

CBL Free Pipe Adjustment - Free Pipe Measurement

Before:							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
CBL Amplitude - 0	mV	Before	----	----	----	----	
CBL Reference Amplitude (CBRA) - 0	mV	Before	----	----	----	----	
Measurement Depth - 0	ft	Before	----	----	----	----	

CBL Free Pipe Adjustment - CBL Amplitude Coefficient

Before:							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
CBL Adjustment Factor		Before	1.000	0.200	NOT DONE	5.000	
Depth of Before Calibration	ft	Before			NOT DONE		

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

Primary Equipment :			
HILT High-Resolution Control Cartridge, 150 degC	HRCC-H		
HILT Resistivity Gamma-Ray Density Device, 150 degC	HRGD-H	4791	
Auxiliary Equipment :			
HRDD Backscatter Detector	Backscatter		
HRDD Long Spacing Detector	Long Spacing	28910	
HRDD Short Spacing Detector	Short Spacing		
Cesium 137 Gamma-Ray Logging Source	GSR-J	5240	
HILT High-Resolution Control Cartridge, 150 degC	HRCC-H		
HILT High-Resolution Mechanical Sonde, 150 degC	HRMS-H		
Calibration Parameter :			
Small Ring Size (Caliper Calibration Small Ring)	8.00		
Large Ring Size (Caliper Calibration Large Ring)	12.00		

HDRS Caliper Calibration - Caliper Accumulations

Before (Measured): 16:11:50 08-Dec-2013 Expired by 2 days							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Small Ring	in	Before	8.00	6.00	8.25	10.00	
Large Ring	in	Before	12.00	9.00	12.41	15.00	

HDRS Density Calibration - Inversion Results

Master (EEPROM): 12:53:24 18-Nov-2013							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Rho Aluminum	g/cm3	Master	2.596	2.586	2.597	2.606	
Rho Magnesium	g/cm3	Master	1.686	1.676	1.687	1.696	
Pe Aluminum		Master	2.570	2.470	2.537	2.670	
Pe Magnesium		Master	2.650	2.550	2.628	2.750	

HDRS Density Calibration - Deviation Summary

Master (EEPROM): 12:53:24 18-Nov-2013							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
BS Average Deviation	%	Master	0	-0.6000	0.3527	0.6000	
BS Max Deviation	%	Master	0	-1.6000	0.8243	1.6000	
SS Average Deviation	%	Master	0	-1.0000	0.4053	1.0000	
SS Max Deviation	%	Master	0	-2.5000	0.7822	2.5000	

SS Max Deviation	%	Master	0	-2.5000	0.7838	2.5000	
LS Average Deviation	%	Master	0	-1.5000	0.6020	1.5000	
LS Max Deviation	%	Master	0	-3.5000	2.3690	3.5000	

HDRS Density Calibration - Background Summary

Master (EEPROM):		12:53:24 18-Nov-2013		Before (Measured):		16:20:24 08-Dec-2013 Expired by 2 days	
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
BS Window Ratio		Master	1.0000		0.7400		
		Before	0.7400	0.7030	0.7407	0.7770	
		Before-Master	-----	-----	0.0007	-----	
BS Window Sum	1/s	Master	1		25691		
		Before	25691	24407	25785	26976	
		Before-Master	-----	-----	94	-----	
SS Window Ratio		Master	1.0000		0.4831		
		Before	0.4831	0.4589	0.4851	0.5073	
		Before-Master	-----	-----	0.0020	-----	
SS Window Sum	1/s	Master	1		11424		
		Before	11424	10853	11404	11995	
		Before-Master	-----	-----	-20	-----	
LS Window Ratio		Master	1.0000		0.2983		
		Before	0.2983	0.2834	0.3014	0.3132	
		Before-Master	-----	-----	0.0031	-----	
LS Window Sum	1/s	Master	1		1338		
		Before	1338	1271	1334	1405	
		Before-Master	-----	-----	-4	-----	

HDRS Density Calibration - Photo-multiplier High Voltages

Master (EEPROM):		12:53:24 18-Nov-2013		Before (Measured):		16:20:24 08-Dec-2013 Expired by 2 days	
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
BS PM High Voltage	V	Master		1000	1341	2400	
		Before		1000	1322	2400	
		Before-Master	-----	-100	-19	100	
SS PM High Voltage	V	Master		1000	1889	2400	
		Before		1000	1988	2400	
		Before-Master	-----	-100	99	100	
LS PM High Voltage	V	Master		1000	1330	2400	
		Before		1000	1308	2400	
		Before-Master	-----	-100	-22	100	

HDRS Density Calibration - Crystal Quality Resolutions

Master (EEPROM):		12:53:24 18-Nov-2013		Before (Measured):		16:20:24 08-Dec-2013 Expired by 2 days	
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
BS Crystal Resolution	%	Master		5.00	11.82	25.00	
		Before		5.00	11.75	25.00	
		Before-Master	-----	-1.00	-0.07	1.00	
SS Crystal Resolution	%	Master		5.00	10.74	20.00	
		Before		5.00	10.89	20.00	
		Before-Master	-----	-1.00	0.15	1.00	
LS Crystal Resolution	%	Master		5.00	8.45	20.00	
		Before		5.00	8.57	20.00	
		Before-Master	-----	-1.00	0.12	1.00	

HDRS MCFL Calibration - MCFL Accumulations

Before (Measured):		16:06:31 08-Dec-2013 Expired by 2 days					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Main Resistivity	ohm.m	Before	3875	3565	3850	4185	
Deep Resistivity	ohm.m	Before	3830	3524	3793	4136	
Shallow Resistivity	ohm.m	Before	3830	3524	3808	4136	

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

HGNS-H (HILT Gamma-Ray and Neutron Sonde, 150 degC) Calibration - Run Run One			
Primary Equipment :			
HILT Gamma-Ray and Neutron Sonde, 150 degC		HGNS-H	
Auxiliary Equipment :			
HGNS Accelerometer, 150 degC		HACCZ-H	5955
AmBe Neutron Logging Source		NSR-F	5215

Calibration Parameter :							
Water Temperature							
Housing Size							
JIG-BKG (Jig minus background reference)				165			

HGNS Accelerometer Calibration - Accelerometer Accumulations

Before (Measured):		19:29:42 11-Dec-2013					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
AZ Vertical Measurement	ft/s2	Before	32.2	31.5	32.0	32.8	

HGNS Accelerometer EEPROM - Accelerometer EEPROM Read

Master (EEPROM):		00:00:00 15-Jan-2007					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Accelerometer Manufacturer		Master			QAT_160		
Accelerometer Reference Temperature	degF	Master		30.2	77.0	122.0	
Accelerometer Coefficients - 0		Master	----	----	1155.700	----	
Accelerometer Coefficients - 1		Master	----	----	26.890	----	
Accelerometer Coefficients - 2		Master	----	----	-0.008	----	
Accelerometer Coefficients - 3		Master	----	----	0.000	----	
Accelerometer Coefficients - 4		Master	----	----	2.748	----	
Accelerometer Coefficients - 5		Master	----	----	0.000	----	
Accelerometer Coefficients - 6		Master	----	----	0.000	----	
Accelerometer Coefficients - 7		Master	----	----	0.000	----	
Accelerometer Coefficients - 8		Master	----	----	298.600	----	
Accelerometer Coefficients - 9		Master	----	----	0.983	----	

HGNS Neutron Calibration - HGNS Neutron Accumulations

Master (EEPROM):		13:41:08 21-Oct-2013	Before (Measured):		16:05:35 08-Dec-2013	After:	
					Expired by 2 days		
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Near Zero Measurement	1/s	Master	0	5.0	24.3	40.0	
		Before	0	5.0	25.2	40.0	
		After	----	----	----	----	
		Before-Master	----	-3.6	0.9	3.6	
		After-Before	----	----	----	----	
Far Zero Measurement	1/s	Master	0	5.0	28.6	40.0	
		Before	0	5.0	27.4	40.0	
		After	----	----	----	----	
		Before-Master	----	-4.3	-1.2	4.3	
		After-Before	----	----	----	----	
Near Plus Measurement	1/s	Master	6031.0	4700.0	5252.0	6900.0	
		Before	----	----	----	----	
		After	----	----	----	----	
		Before-Master	----	----	----	----	
		After-Before	----	----	----	----	
Far Plus Measurement	1/s	Master	2793.0	1900.0	2176.0	2900.0	
		Before	----	----	----	----	
		After	----	----	----	----	
		Before-Master	----	----	----	----	
		After-Before	----	----	----	----	
Near Corrected Plus Measurement	1/s	Master		4700.0	5324.0	6900.0	
		Before	----	----	----	----	
		After	----	----	----	----	
		Before-Master	----	----	----	----	
		After-Before	----	----	----	----	
Far Corrected Plus Measurement	1/s	Master		1900.0	2209.0	2900.0	
		Before	----	----	----	----	
		After	----	----	----	----	
		Before-Master	----	----	----	----	
		After-Before	----	----	----	----	

HGNS Gamma-Ray Calibration - Gamma-Ray Accumulations

Before (Measured):		16:12:26 08-Dec-2013	Expired by 2 days		After:		
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
RGR Zero Measurement	gAPI	Before	30.0	0	83.5	120.0	
		After	----	----	----	----	
		After-Before	----	----	----	----	

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit		
RHTE Zero Measurement - 0	lbf	Before	----	----	----	----		
RHTE Plus Measurement - 0	lbf	Before	----	----	----	----		
HTEN Gain - 0		Before	----	----	----	----		
HTEN Offset - 0	lbf	Before	----	----	----	----		

Company:	Nighthawk Production, LLC	Schlumberger
Well:	Telluride 13-2	
Field:	Arikaree Creek	
County:	Lincoln	
State:	Colorado	
Platform Express		
Triple Combo		