

Company: Mustang Creek Operating LLC

Well: Graham 1 13

Field: Wildcat

County: El Paso State: Colorado

Sonic Scanner

Borehole Compressional

County:	El Paso
Field:	Wildcat
Location:	SHL: NWSW 1814' FSL & 934' FWL
Well:	Graham 1 13
Company:	Mustang Creek Operating LLC
Location:	
SHL: NWSW 1814' FSL & 934' FWL	Elev.: K.B. 6124.00 ft
Section 1, Township 13S, Range 60W	G.L. 6102.00 ft
Lat: 38.946070, Long: -104.068480	D.F. 6123.00 ft
Permanent Datum:	Ground Level 6102.00 f
Log Measured From:	Kelly Bushing 22.00 ft above Perm.Datum
Drilling Measured From:	Kelly Bushing
API Serial No.	Section: 1
05-041-06082-00	Township: 13S
	Range: 60W

Logging Date	07-Feb-2014
Run Number	Run 1
Depth Driller	10985.00 ft
Schlumberger Depth	10954.00 ft
Bottom Log Interval	10954.00 ft
Top Log Interval	5044.00 ft
Casing Driller Size @ Depth	9.625 in @ 5050.00 ft
Casing Schlumberger	5044 ft
Bit Size	7.875 in
Type Fluid In Hole	Chemical Gel
Density	9.3 lbm/gal
Fluid Loss	4.4 cm3
Source of Sample	Active Tank
RM @ Meas Temp	1.3 ohm.m @ 90 degF
RMF @ Meas Temp	0.99 ohm.m @ 90 degF
RMC @ Meas Temp	1.66 ohm.m @ 90 degF
Source RMF	Calculated
RM @ BHT	0.55 @ 220
RMF @ BHT	0.42 @ 220
Max Recorded Temperatures	220 degF
Circulation Stopped	06-Feb-2014 18:00:00
Logger on Bottom	07-Feb-2014 05:25:20
Unit Number	2135
Recorded By	Max Pace
Witnessed By	Chris Hansen

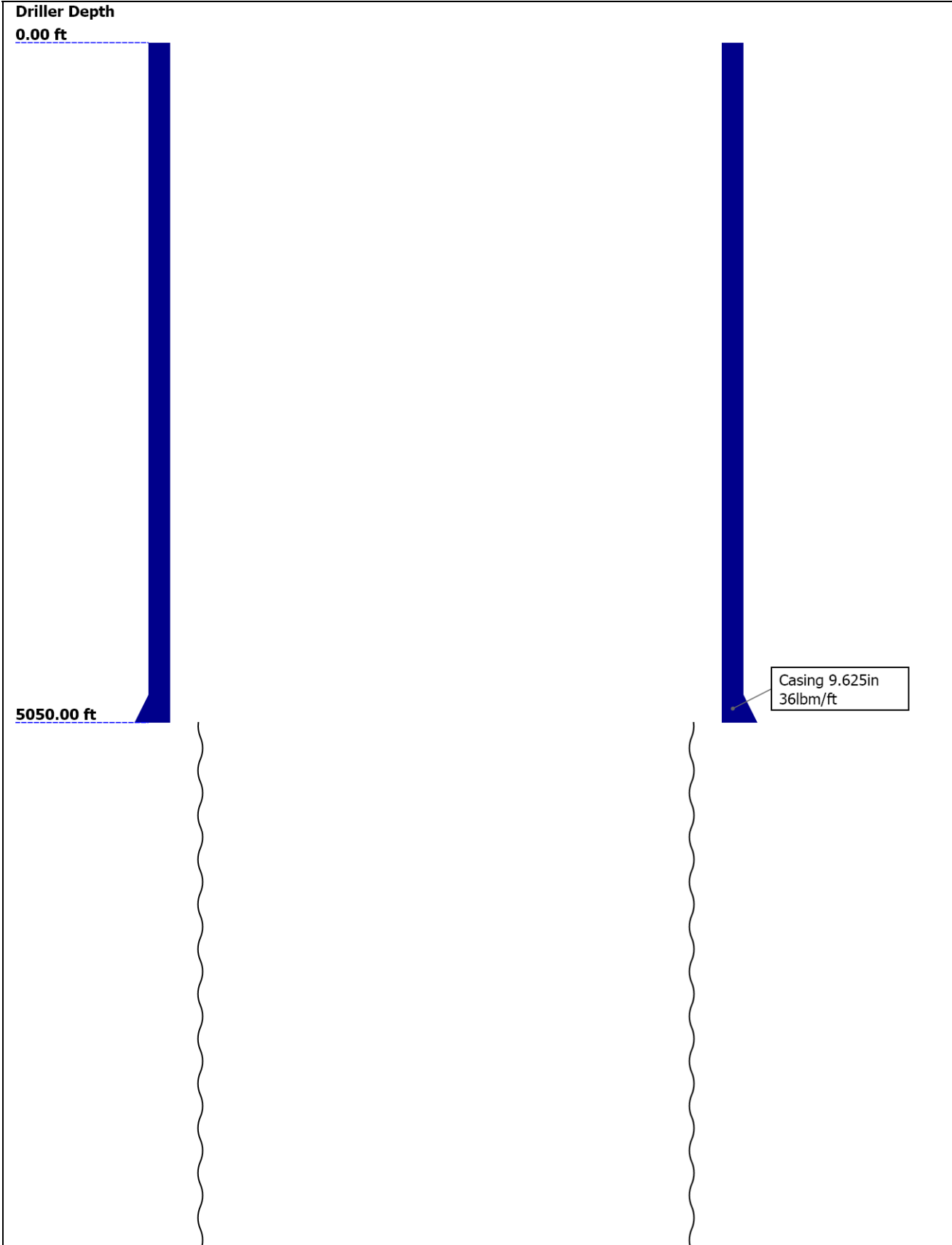
Disclaimer

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

Contents

- 1. Header
- 2. Disclaimer
- 3. Contents
- 4. Well Sketch
- 5. Borehole Size/Casing/Tubing Record
- 6. Borehole Fluids
- 7. Remarks and Equipment Summary
- 8. Depth Summary
- 9. Composite1
 - 9.1 Integration Summary
 - 9.2 Software Version
 - 9.3 Log (MAST_SONI_BHC_1)
- 10. Tail

Well Sketch



10985.00 ft

Open Hole 7.875in

Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	7.875					
Top Driller (ft)	5050					
Top Logger (ft)	5044					
Bottom Driller (ft)	10985					
Bottom Logger (ft)	10954					
Casing						
Size (in)	9.625					
Weight (lbm/ft)	36					
Inner Diameter (in)	8.921					
Grade	J55					
Top Driller (ft)	0					
Top Logger (ft)	0					
Bottom Driller (ft)	5050					
Bottom Logger (ft)	5044					

Borehole Fluids

Parameter(unit)	Run 1					
Fluid Type	Water					
Fluid Name	Chemical Gel					
Max Recorded Temperatures (degF)	220					
Source of Sample	Active Tank					
Salinity (ppm)	0					
Density (lbm/gal)	9.3					
Funnel Viscosity (s)	60					
Fluid Loss (cm3)	4.4					
PH	7.8					
Date/Time Circulation Stopped	06-Feb-2014 18:00:00					
Date Logger on Bottom	07-Feb-2014					
Time Logger on Bottom	05:25:20					
Source RMF	Calculated					
RMC	Calculated					
RM @ Meas Temp (ohm.m@degF)	1.3 @ 90					
RMF @ Meas Temp (ohm.m@degF)	0.99 @ 90					

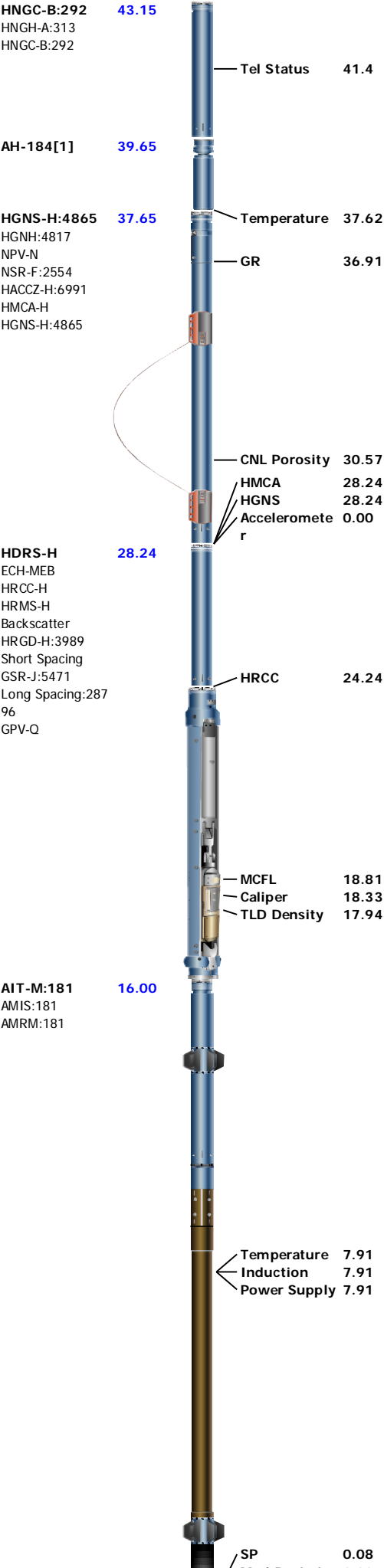
RMC @ Meas Temp (ohm.m@degF)	1.66 @ 90					
RM @ BHT (ohm.m@degF)	0.55 @ 220					
RMF @ BHT (ohm.m@degF)	0.42 @ 220					
RMC @ BHT (ohm.m@degF)	0.71 @ 220					
Total Solid (%)						
High Gravity Solids (%)						

Remarks and Equipment Summary

Run 1: Toolstring				Run 1: Remarks
Equip name LEH-QT LEH-QT	Length 117.08	MP name	Offset	All Schlumberger depth control procedures followed
				IDW used as primary depth reference
				Z chart used as secondary depth reference
EDTC-B EDTH-B EDTG-A EDTC-B	114.16			Limestone matrix (2.71 g/cm3) run as per client request
				Measurements effected by borehole rugosity
		CTEM ACCZ HV Gamma Ray TelStatus	110.66 0.00 0.00 108.79 107.66	This is the first run in hole
PPC-B[2]:8195 PPC-B:8195	107.66			Winch shut off at 6165 due to tight pull (500 pounds below MSP)
		PPC-B Caliper s	106.52	Logs spliced at 8500. Client requested change in sonic scanner mode to increase logging spe
MAST-B:8524 ECH-SF:8023 MAPC-BA:8023 MAMS-BA:8524 MASS-BA:8202 MAXS-BA:8078	101.14			
		MAMS	85.7	

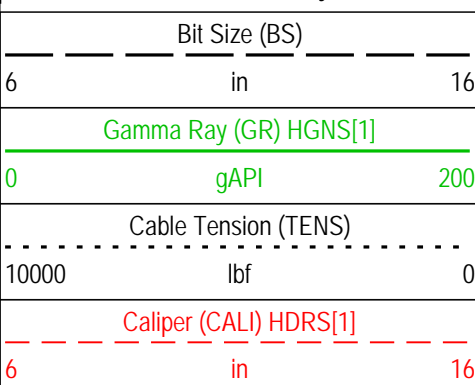


PPC-B[1]:8193 PPC-B:8193	59.86	MAXS	59.86
		PPC-B Caliper s	58.71
AH-184[2]	53.34		
HNGS-BA:169 HEH-K:186 HNGS-BA:169	51.34		
		GR	48.35



<div><div><div><div><div></div><div>Mud Resistiv 0.00</div><div>ity</div><div>Head Tension</div><div>TOOL_ZERO</div></div></div><div>Lengths are in ft</div><div>Maximum Outer Diameter = 5.000 in</div><div>Line: Sensor Location, Value: Gating Offset</div><div>All measurements are relative to TOOL_ZERO</div></div></div>					
Depth Summary					
		Run 1			
Depth Measuring Device					
Type		IDW-B			
Serial Number					
Calibration Date					
Calibrator Serial Number					
Calibration Cable Type					
Wheel Correction 1		0			
Wheel Correction 2		0			
Tension Device					
Type		CMTD-B/A			
Serial Number					
Calibration Date					
Calibrator Serial Number					
Number of Calibration Points		0			
Logging Cable					
Type		7-46NT-XS			
Serial Number					
Length		24000.00 ft			
Conveyance Type		Wireline			
Rig Type		Land			
Run 1: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					
Composite 1					
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	
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	
MAMS-BA	MAMS-BA Multimode Array Sonic Minimum Service Sonde	4.0.9119.3000			
Log	Company:Mustang Creek Operating LLC Well:Graham 1 13 Composite 1:S008				
Description: MAST_SONI_BHC Format: Log (MAST_SONI_BHC_1) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 07-Feb-2014 13:11:10					

TIME_1900 - Time Marked every 60.00 (s)



Stuck Tool Indicator, Total (STIT)

0 ft 50

Cable Drag

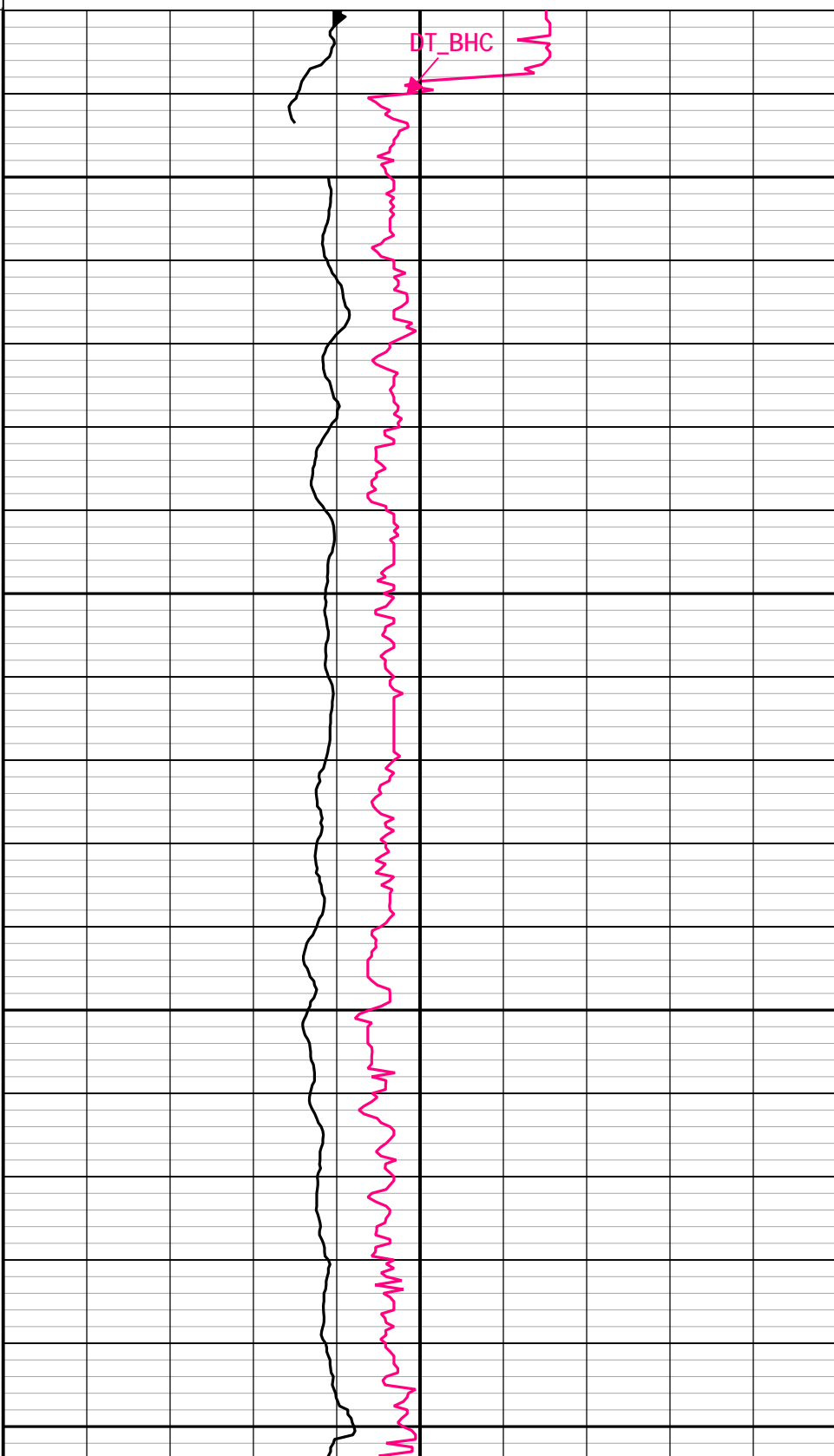
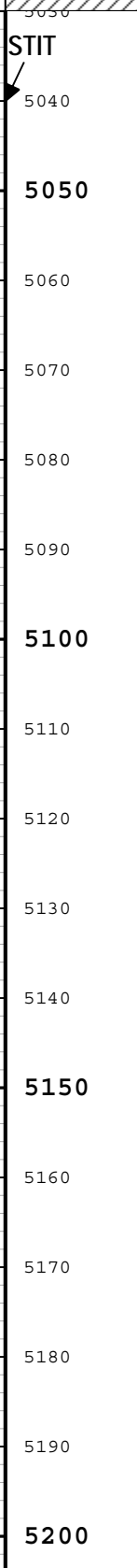
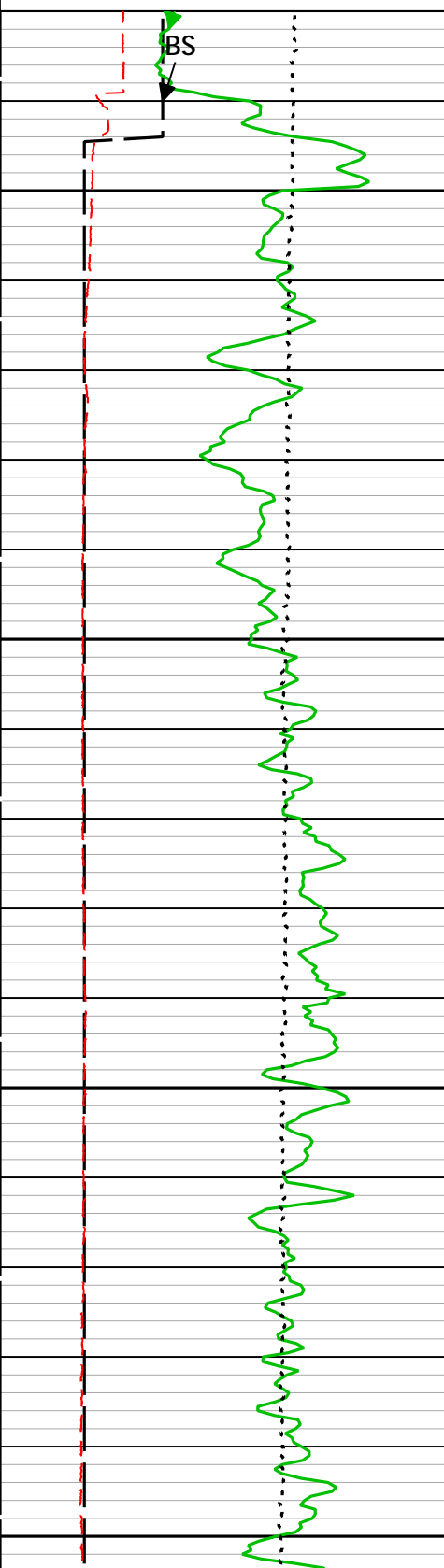
Tool_Tot. Drag

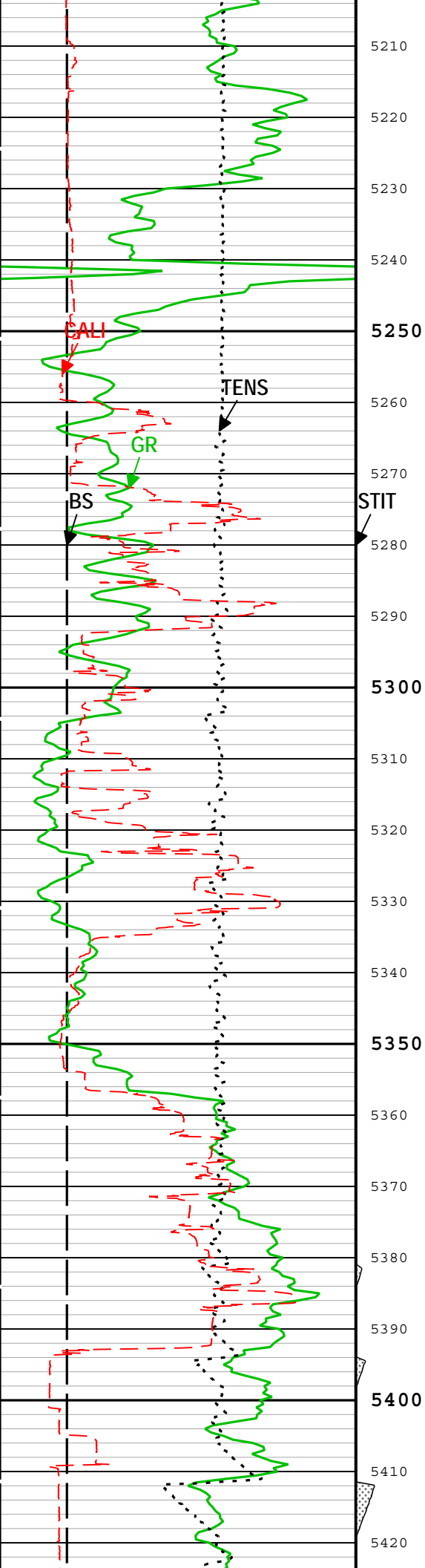
1.5 Feet Span Borehole Compensated Slowness from Near Spacing (DT_BHC) MAST-B[1]

160 us/ft 0

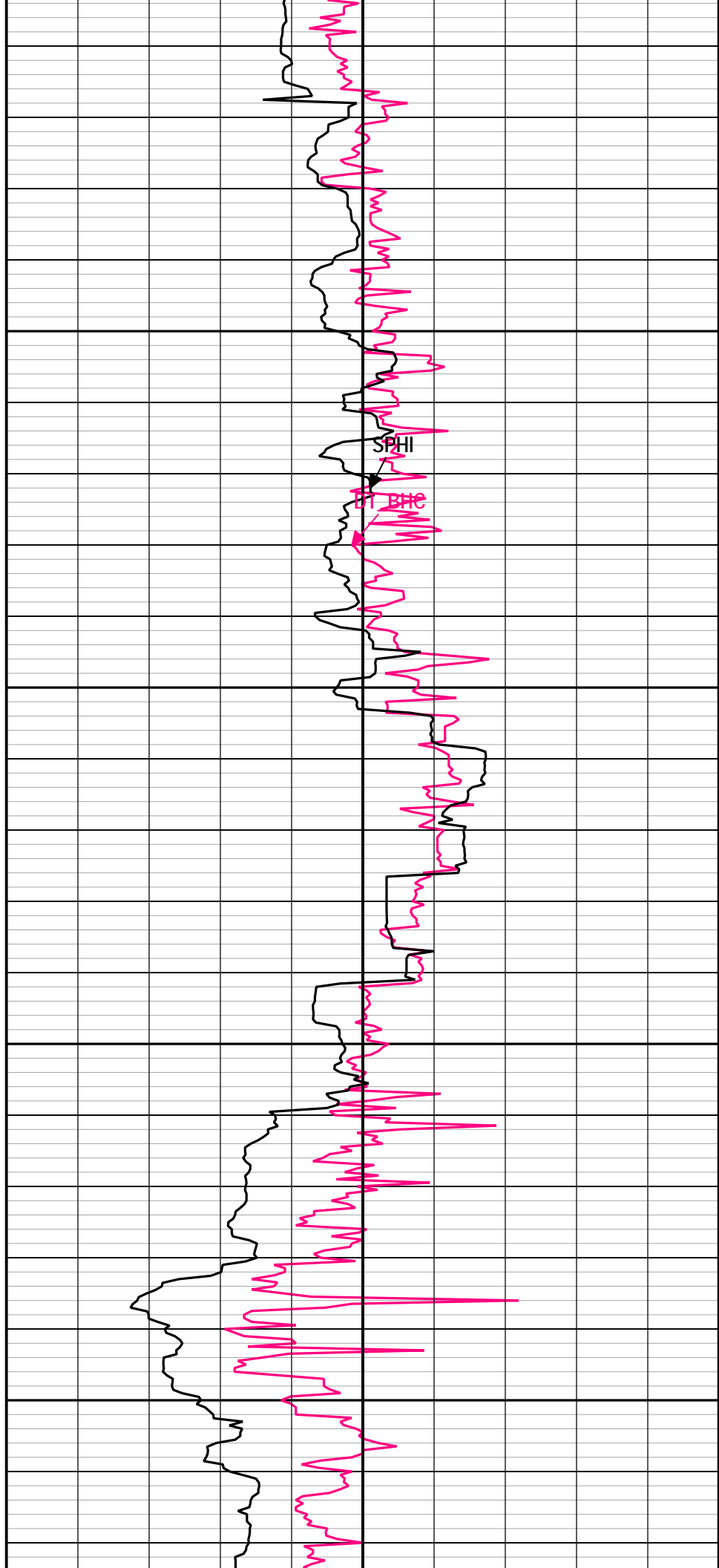
Sonic Porosity (SPHI) MAST-B[1]

0.45 ft3/ft3 -0.15

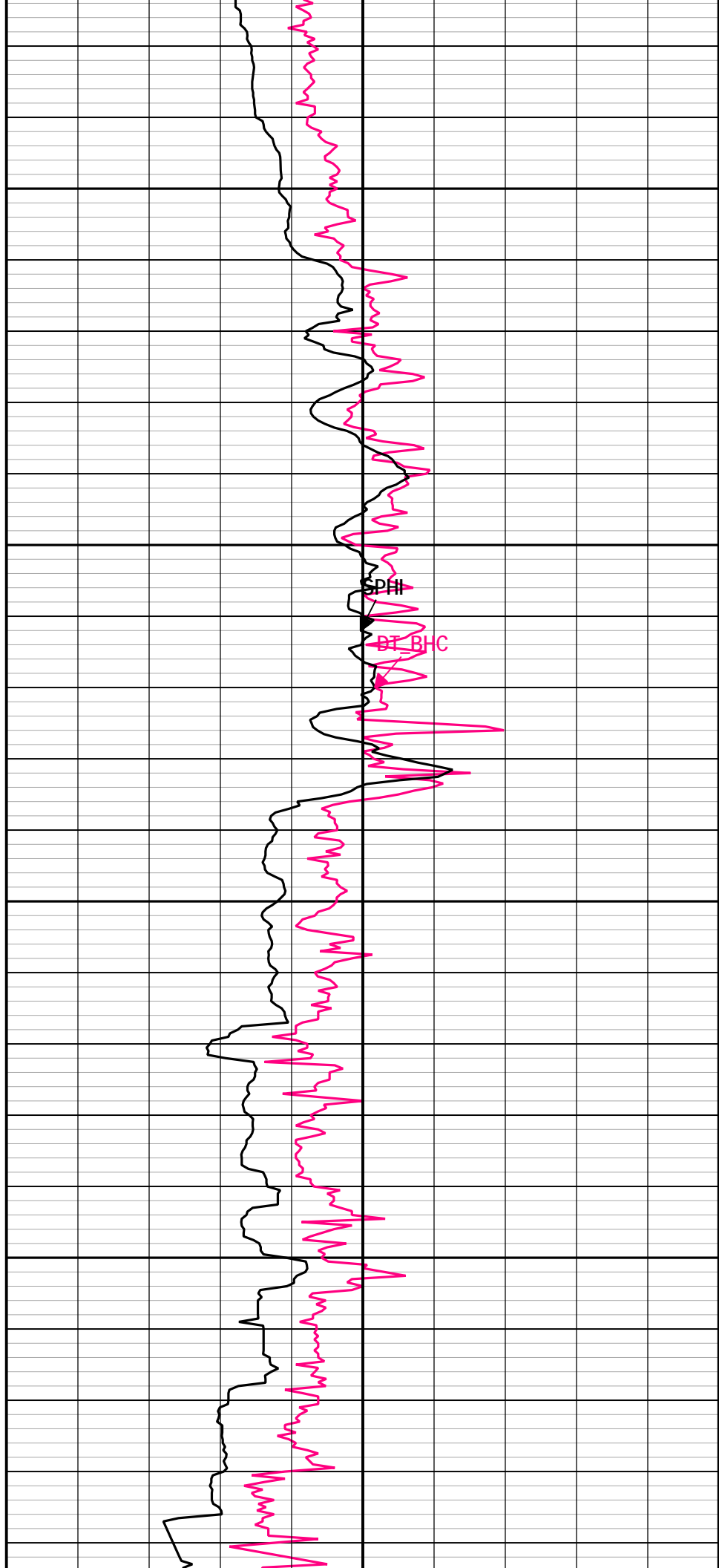
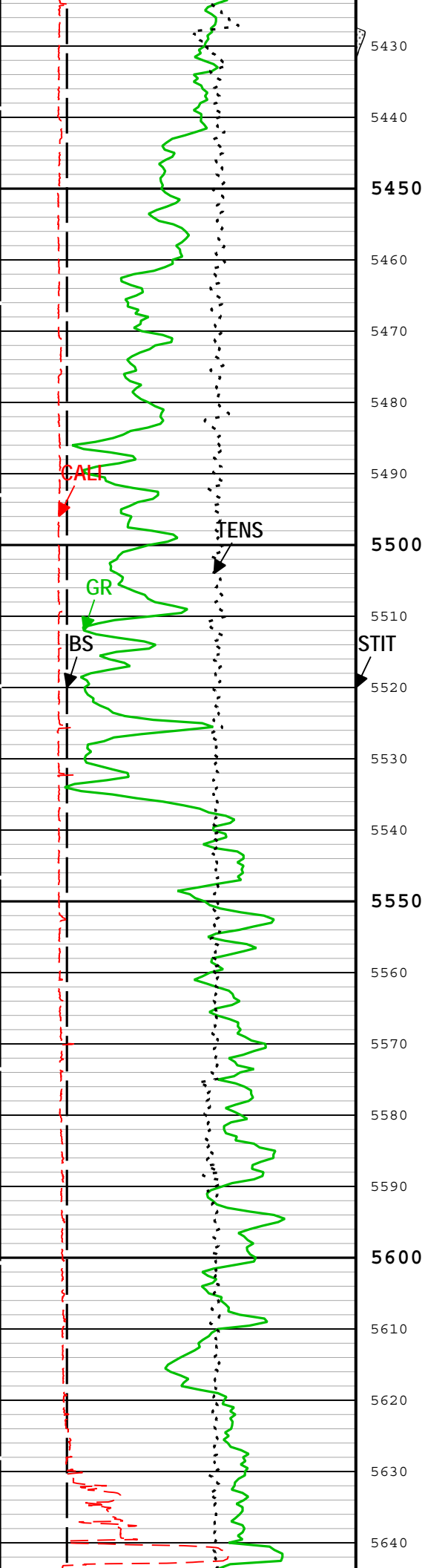


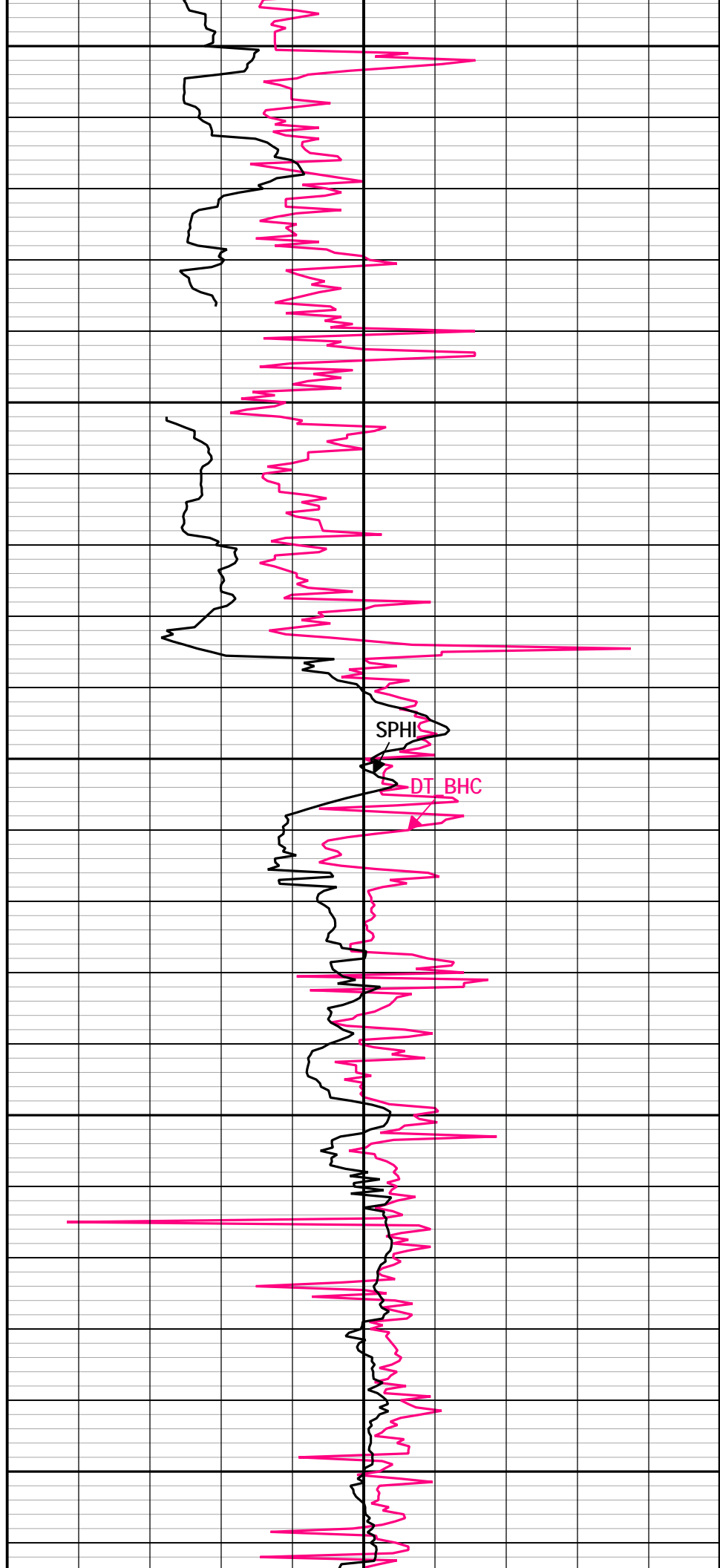
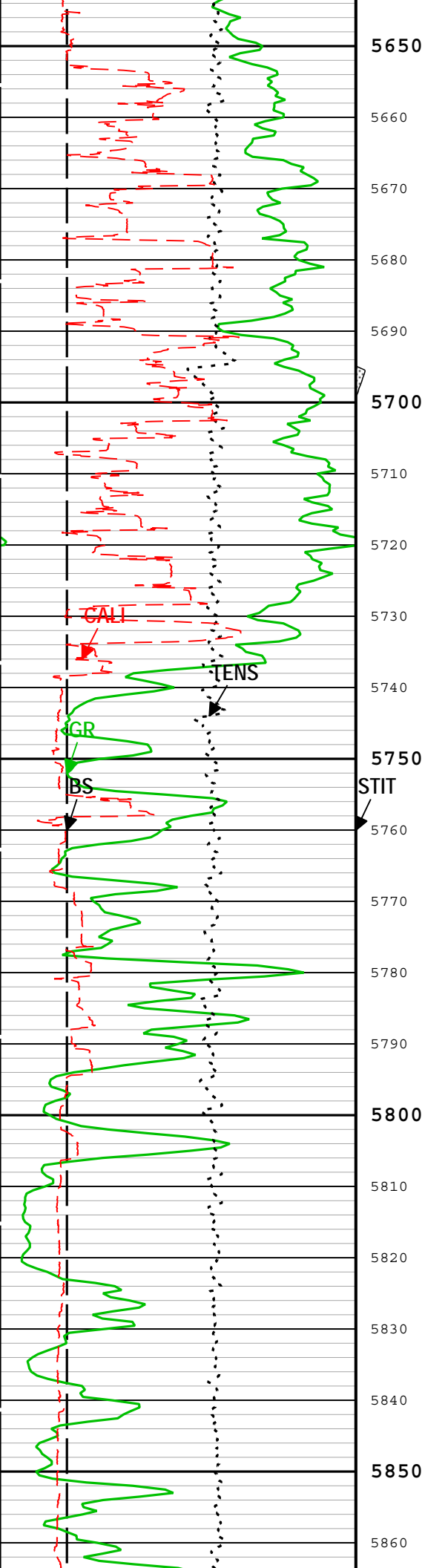


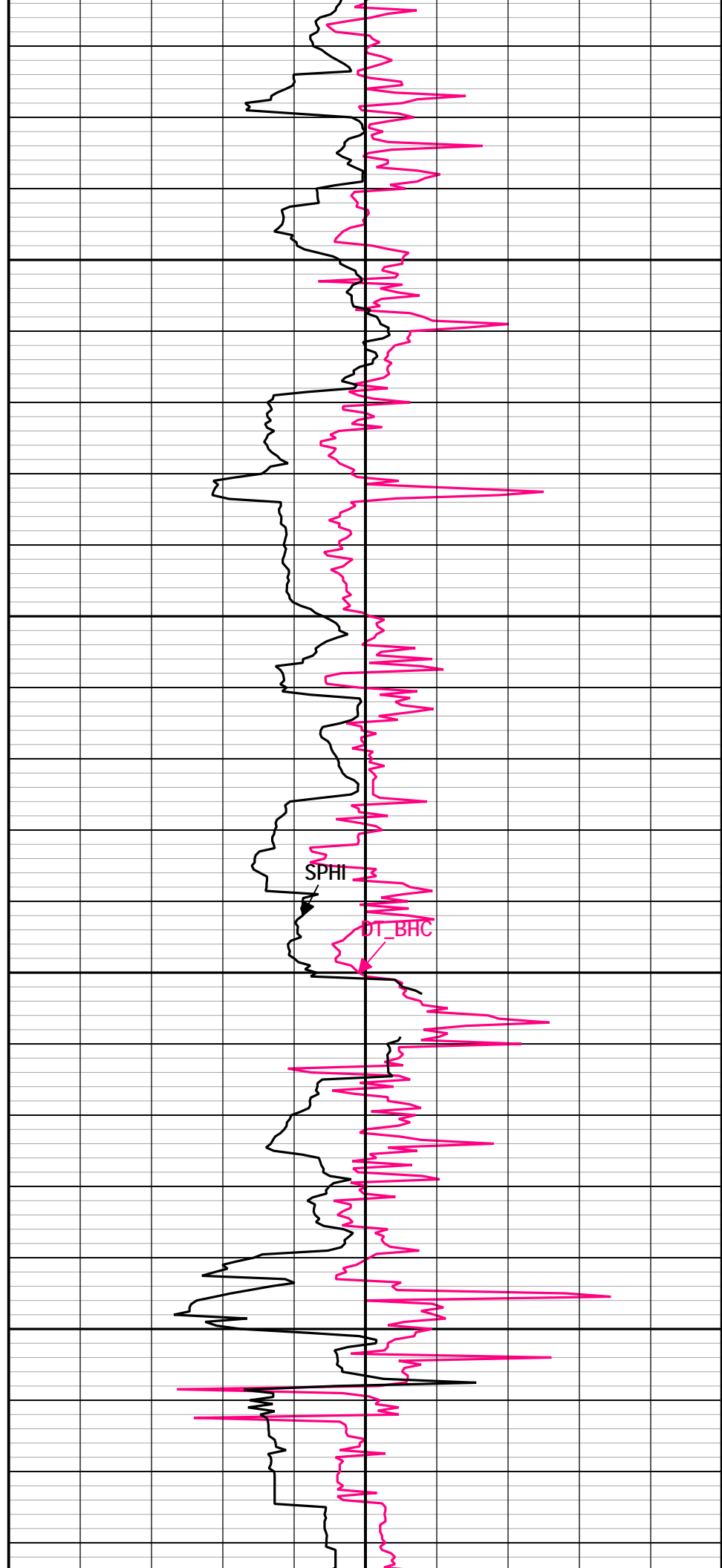
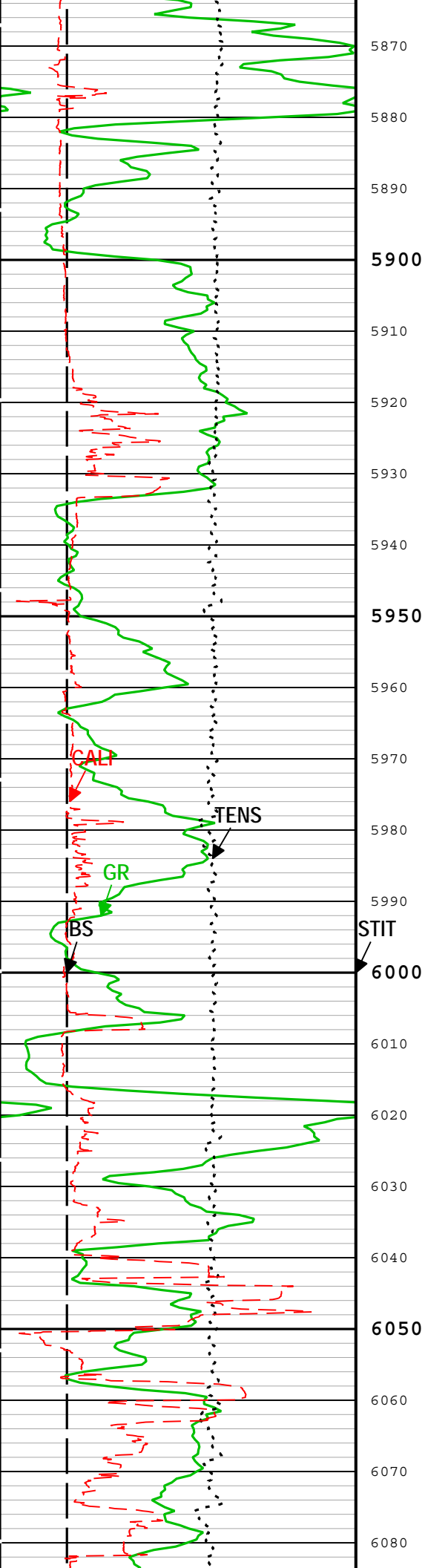
5210
5220
5230
5240
5250
5260
5270
5280
5290
5300
5310
5320
5330
5340
5350
5360
5370
5380
5390
5400
5410
5420

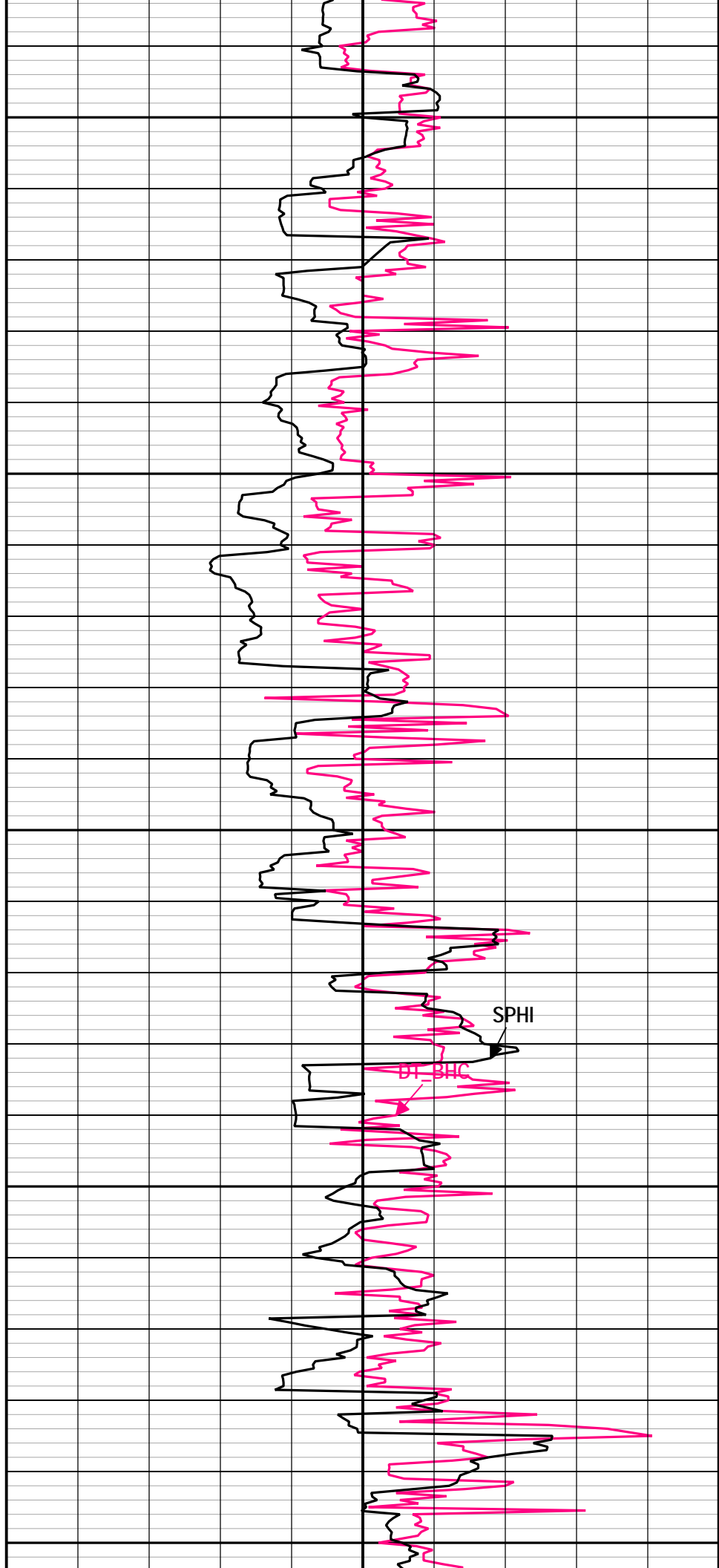
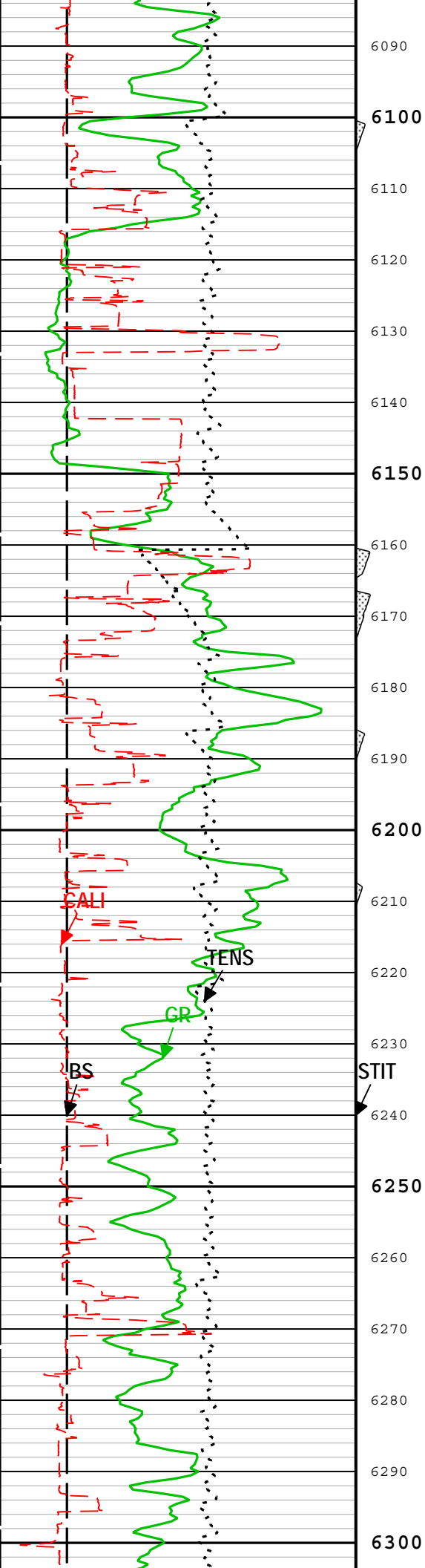


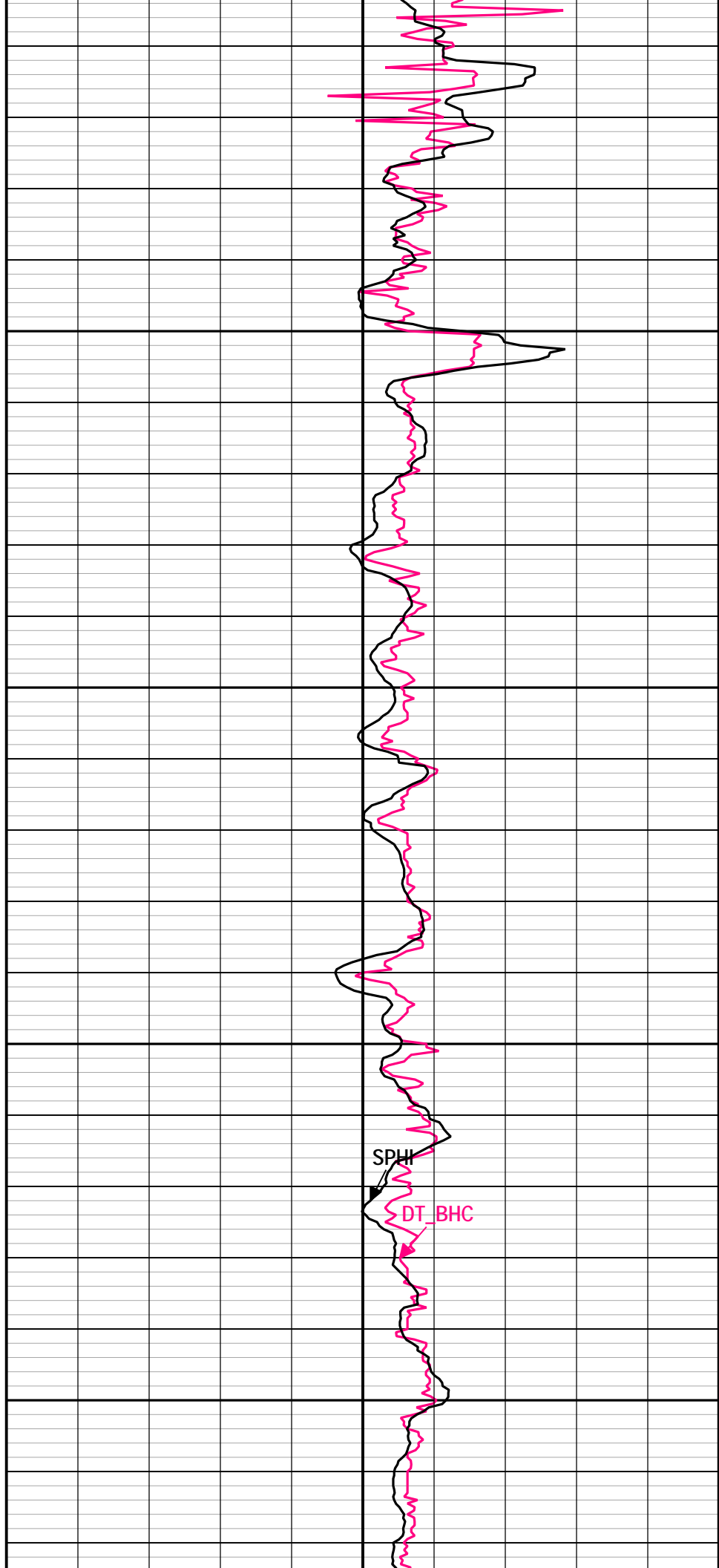
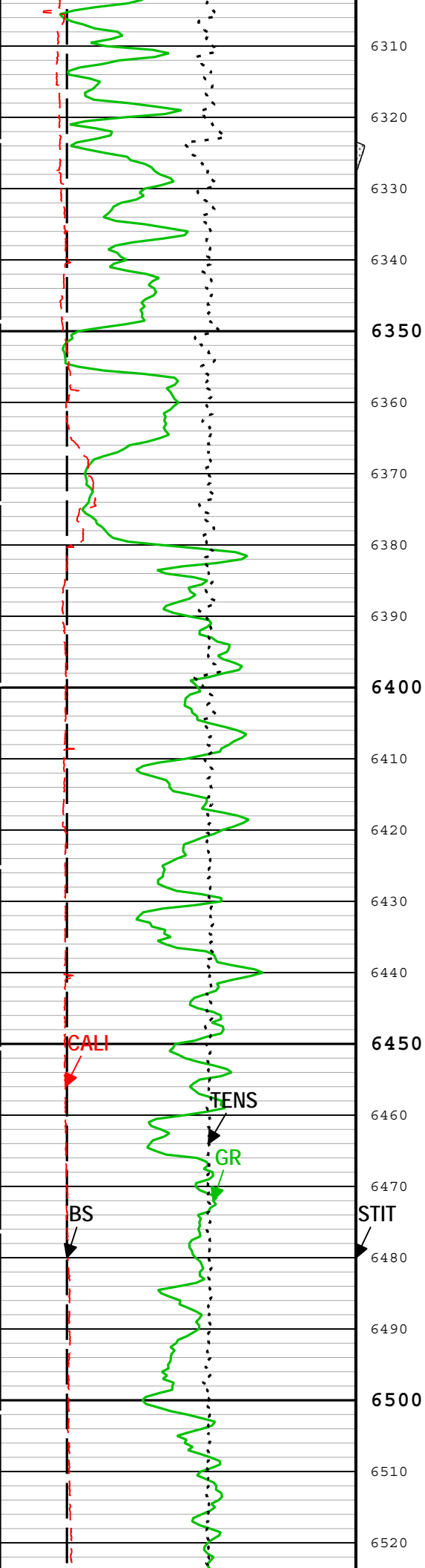
SPHI
STIT
BHC

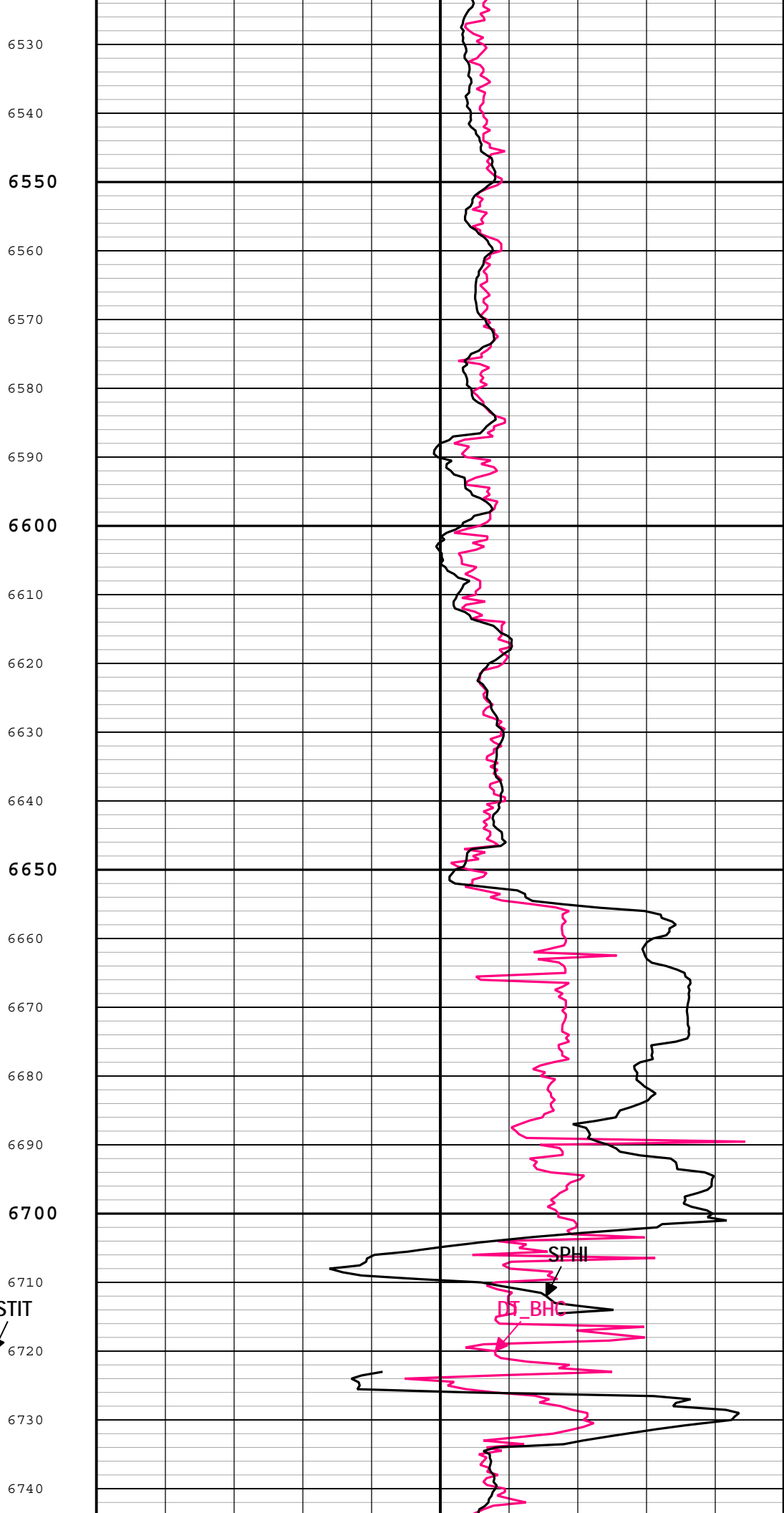
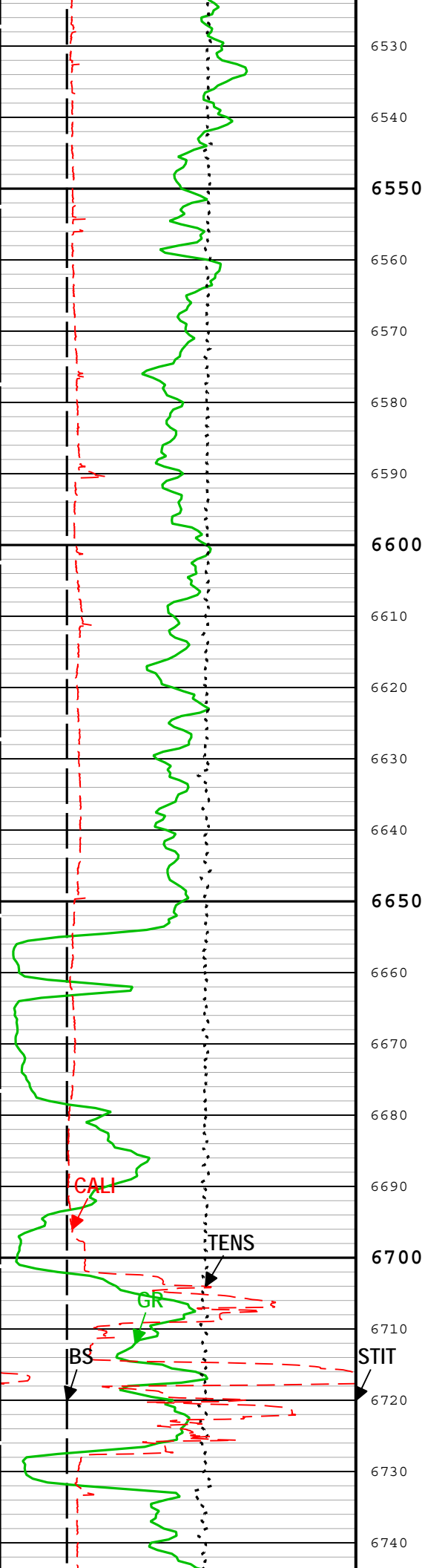


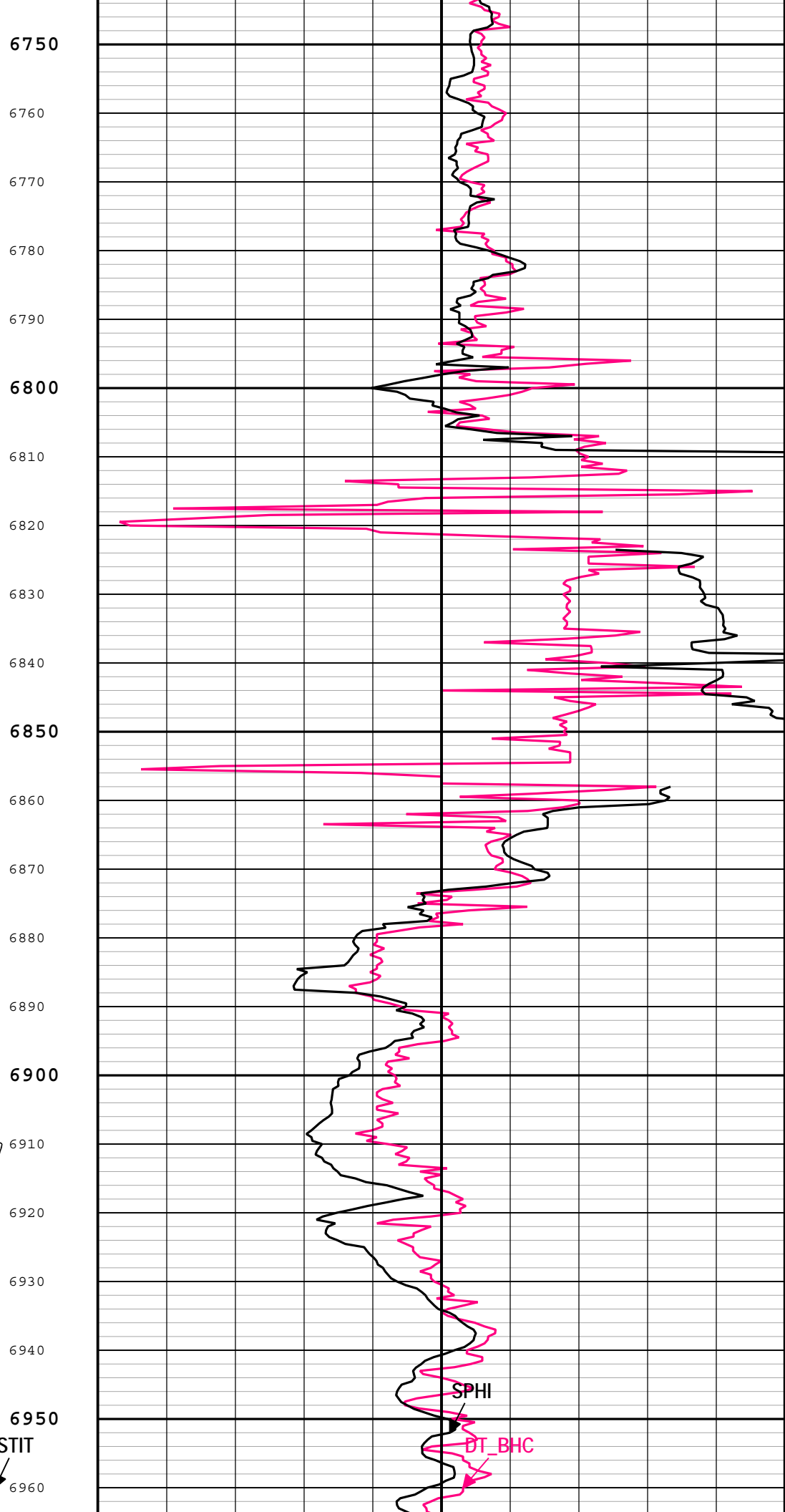
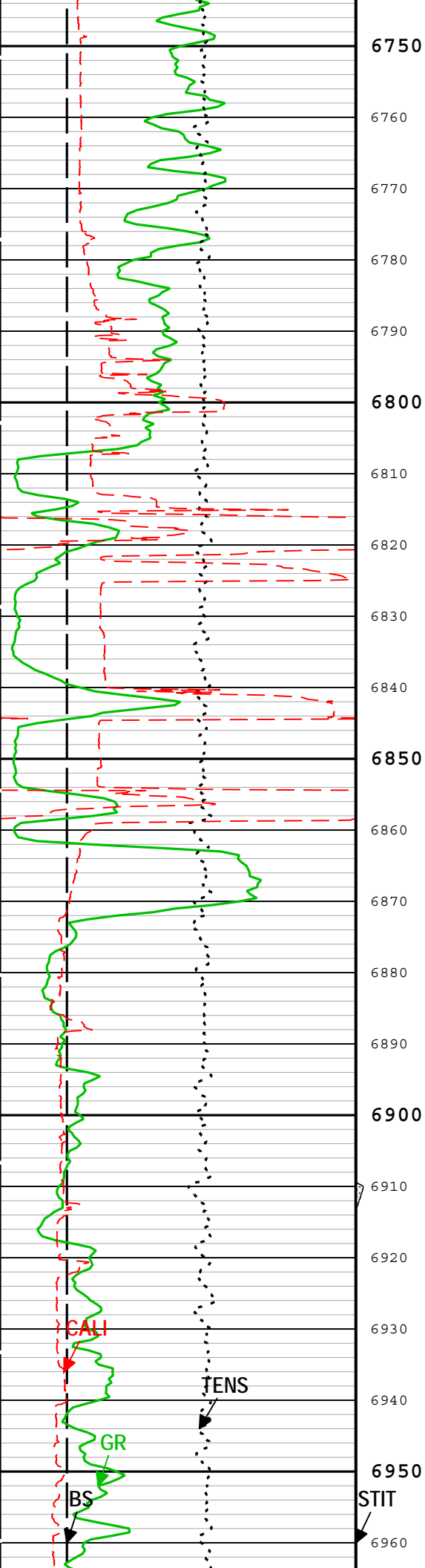


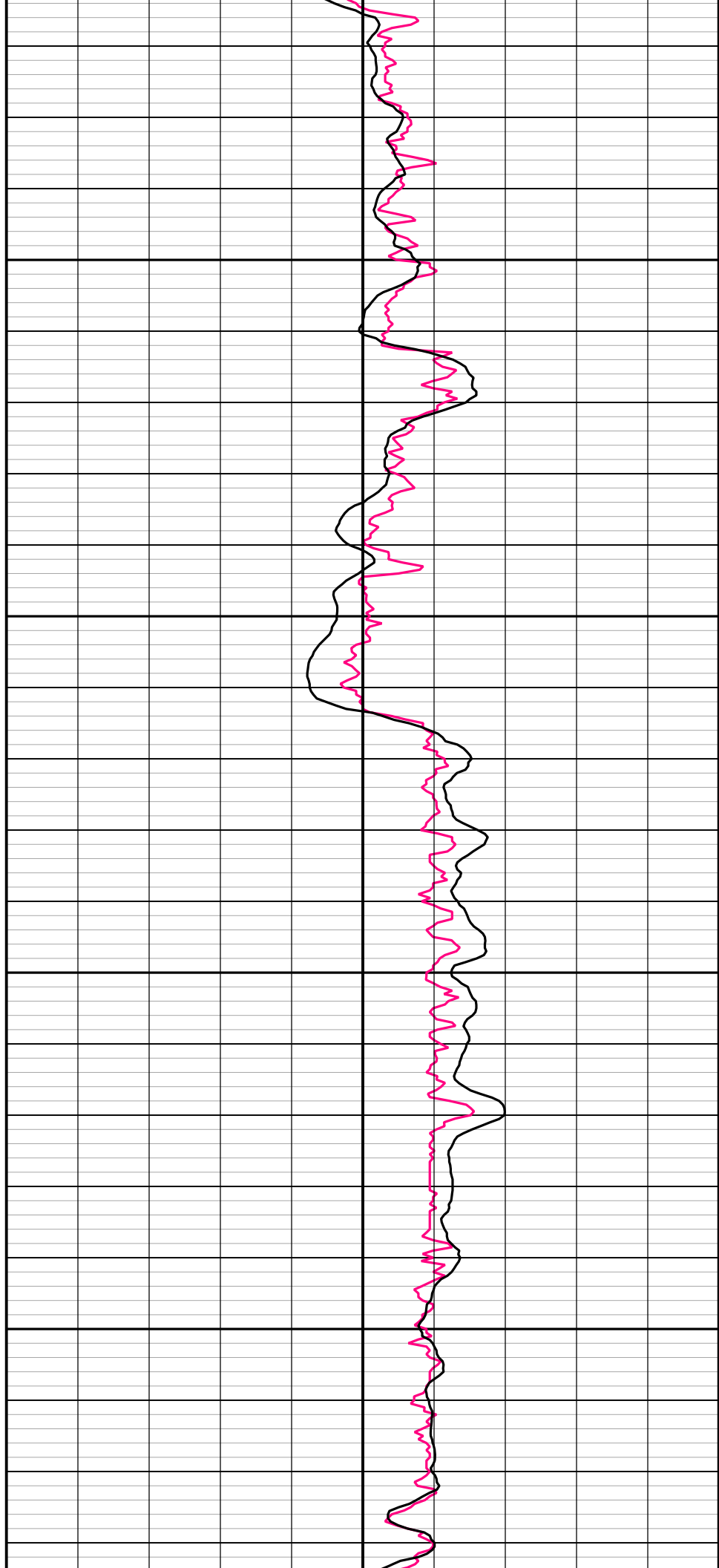
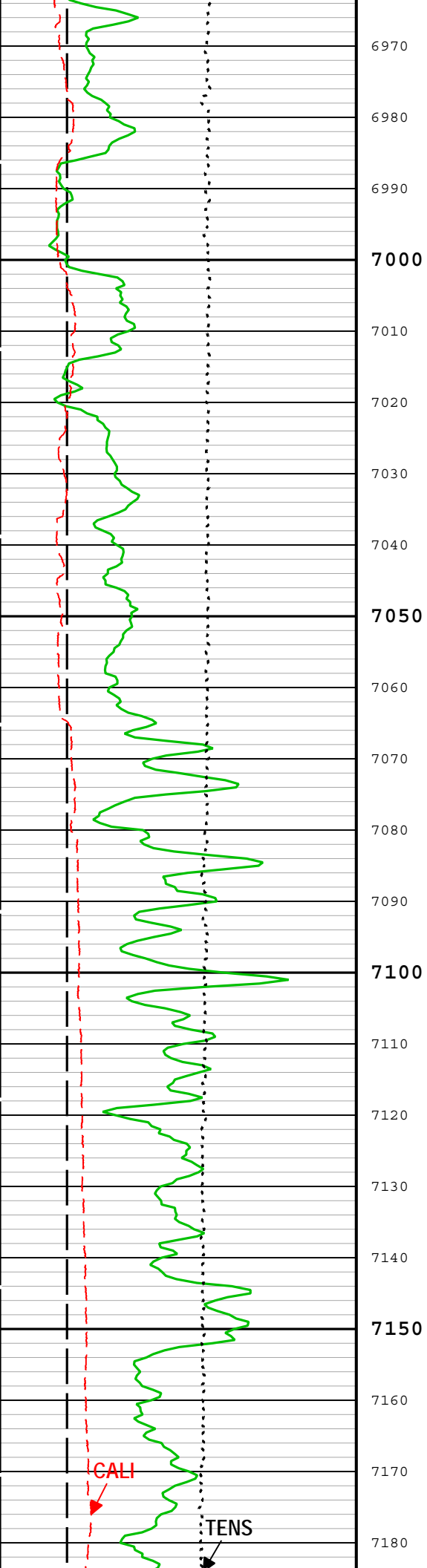


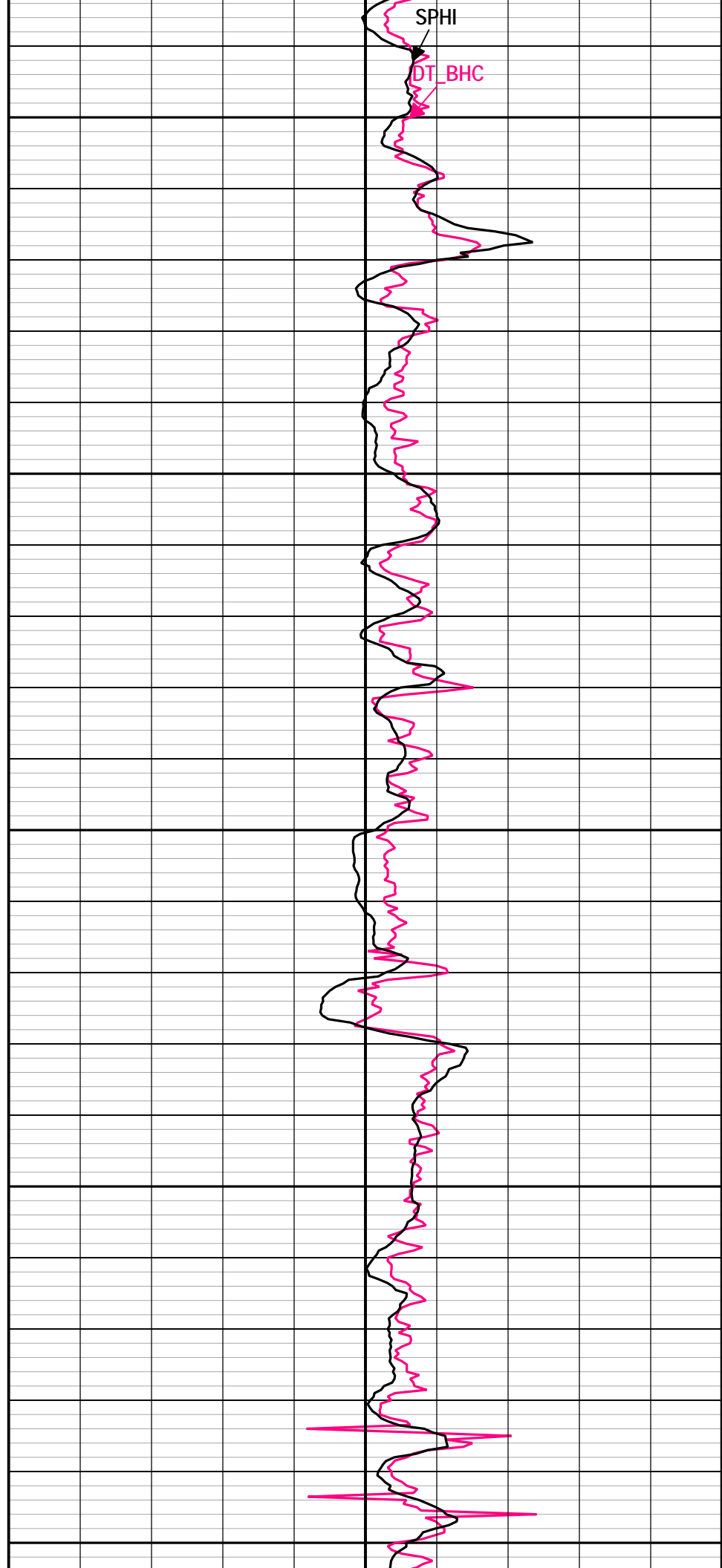
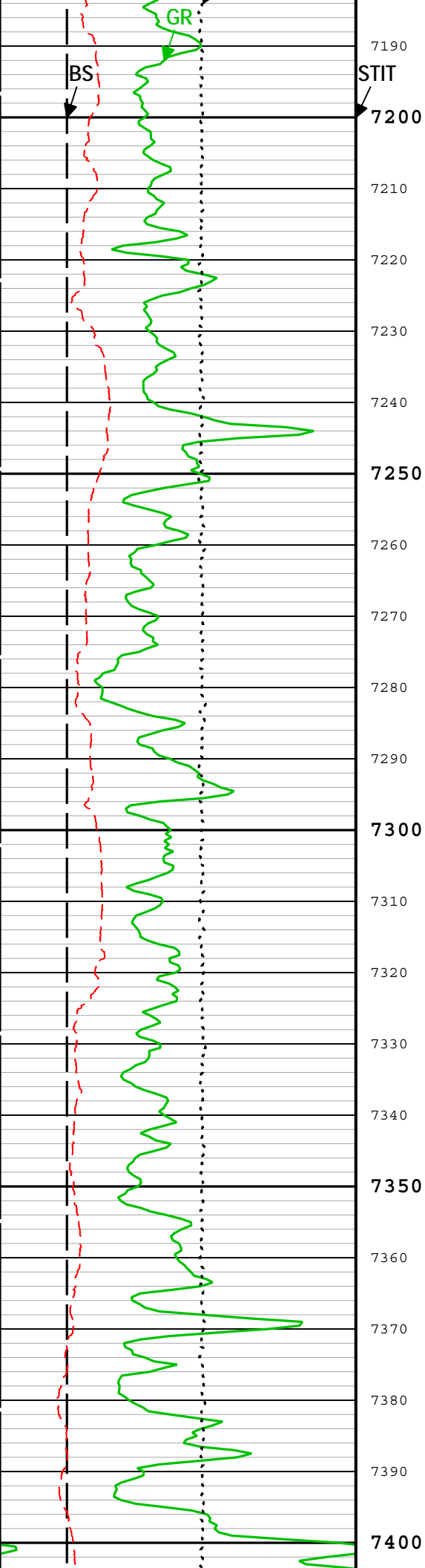


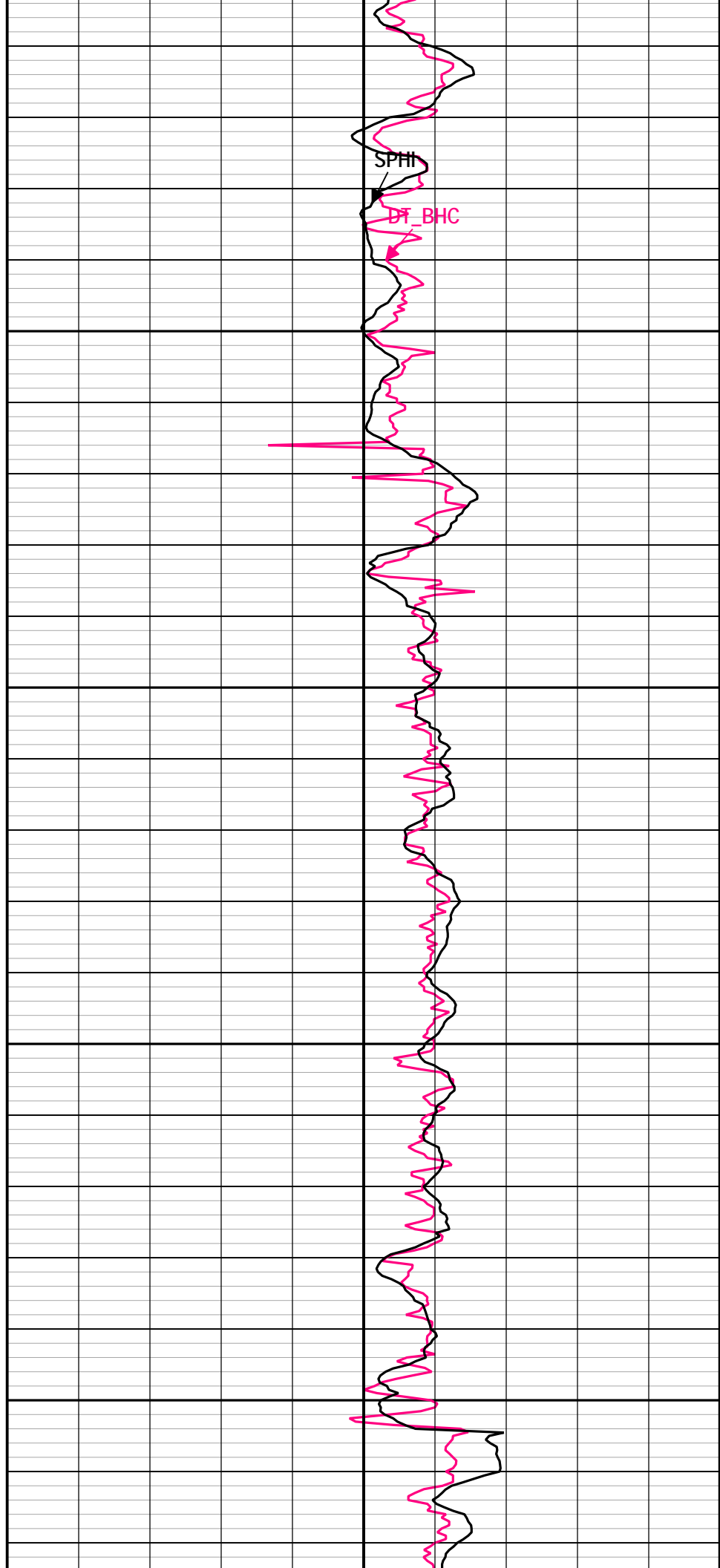
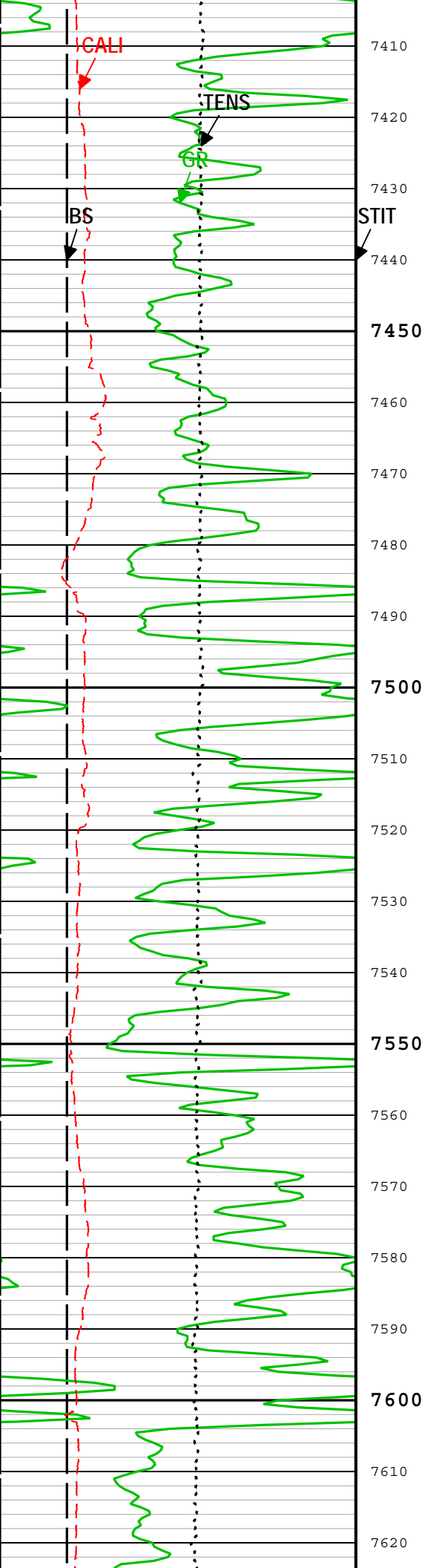


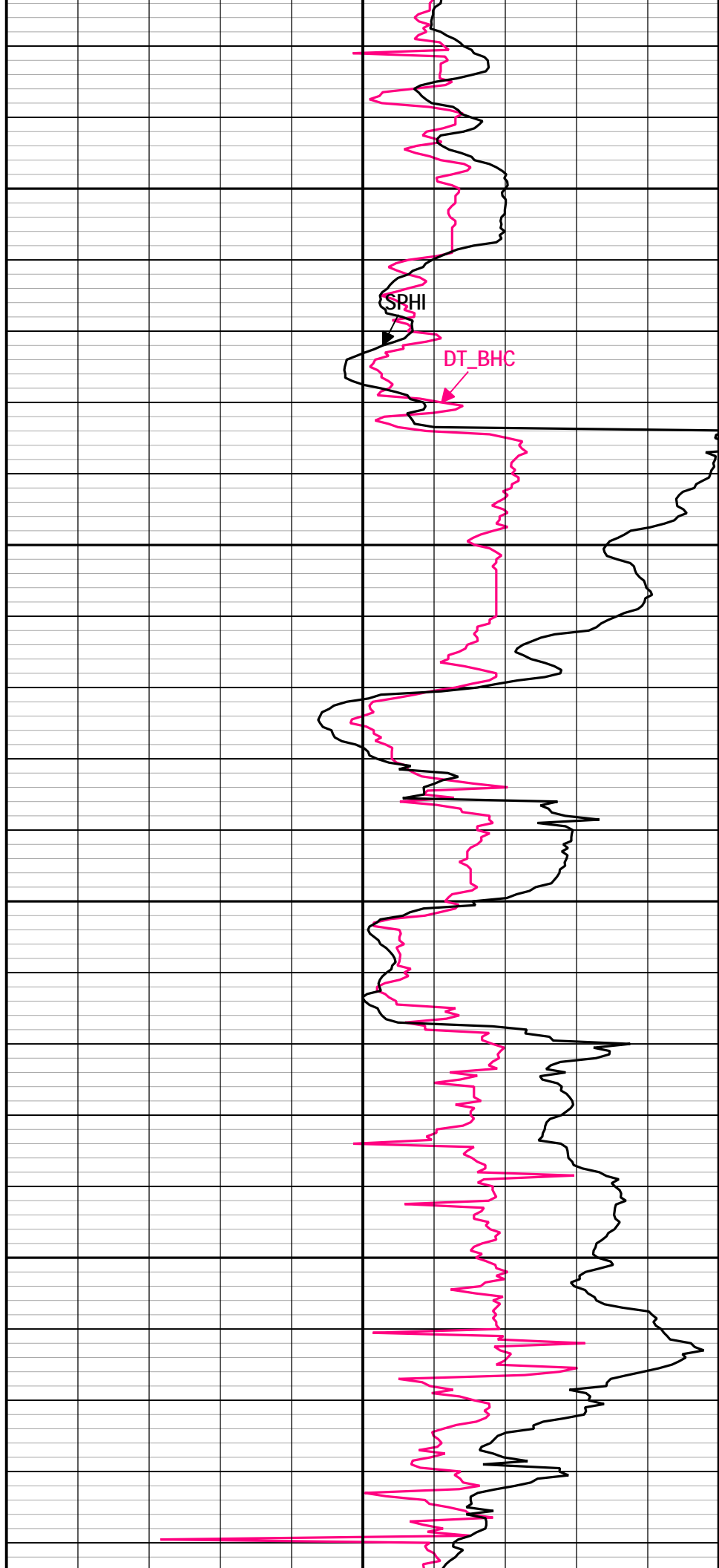
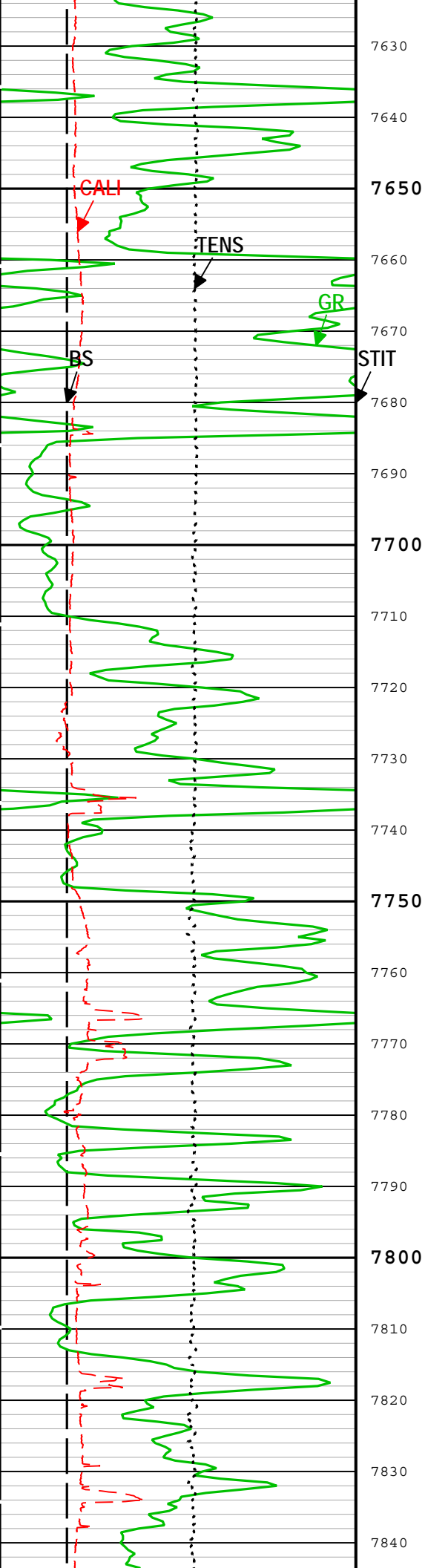


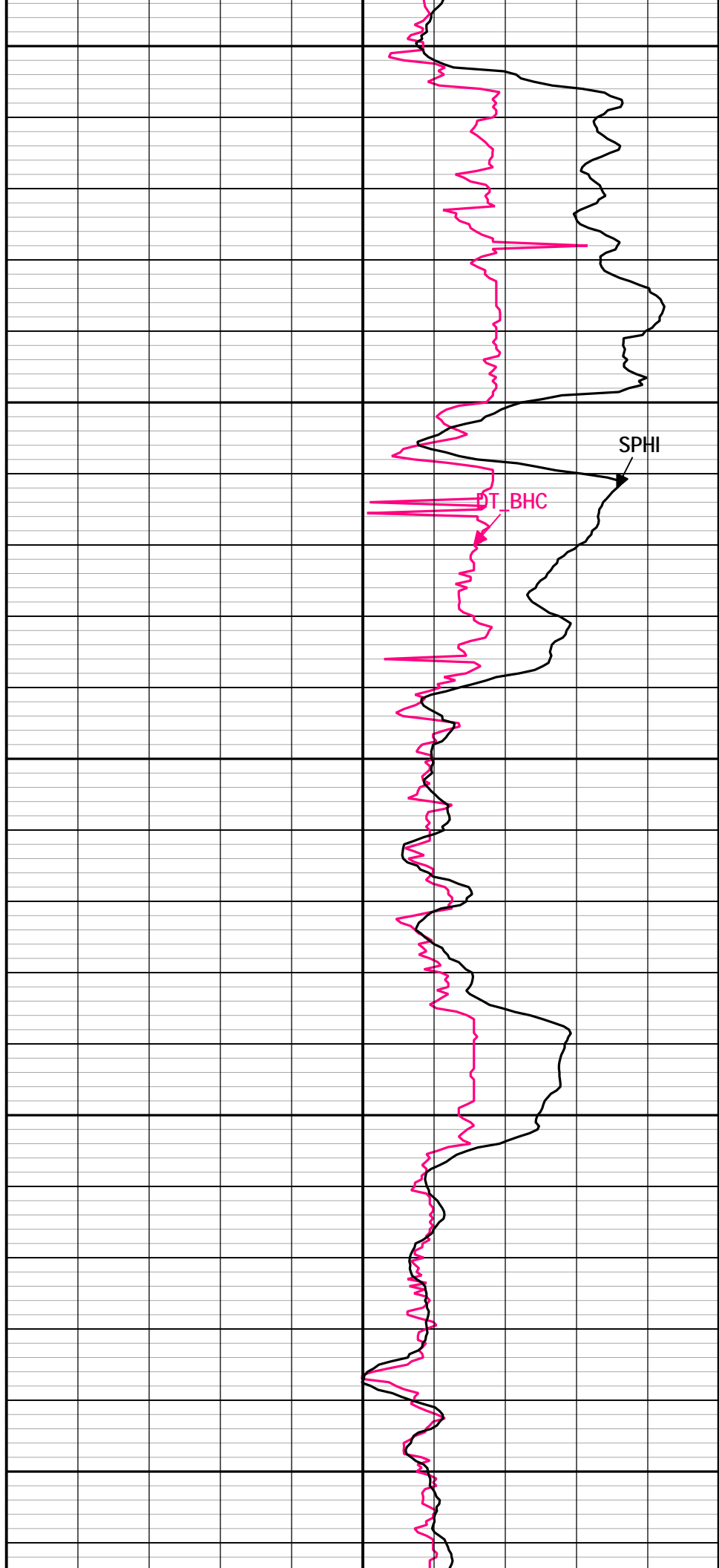
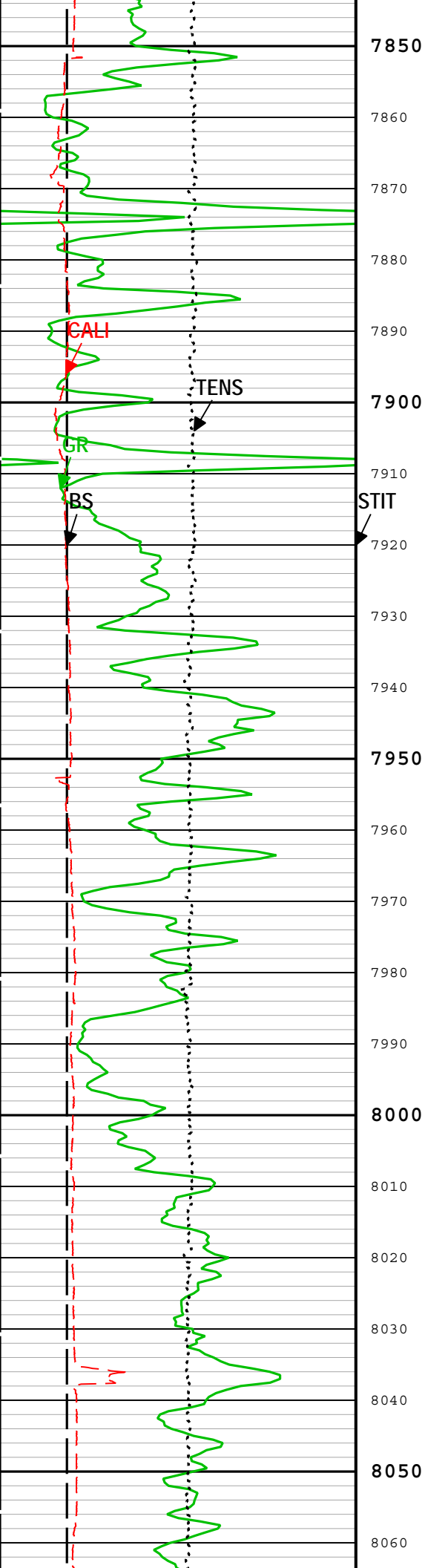


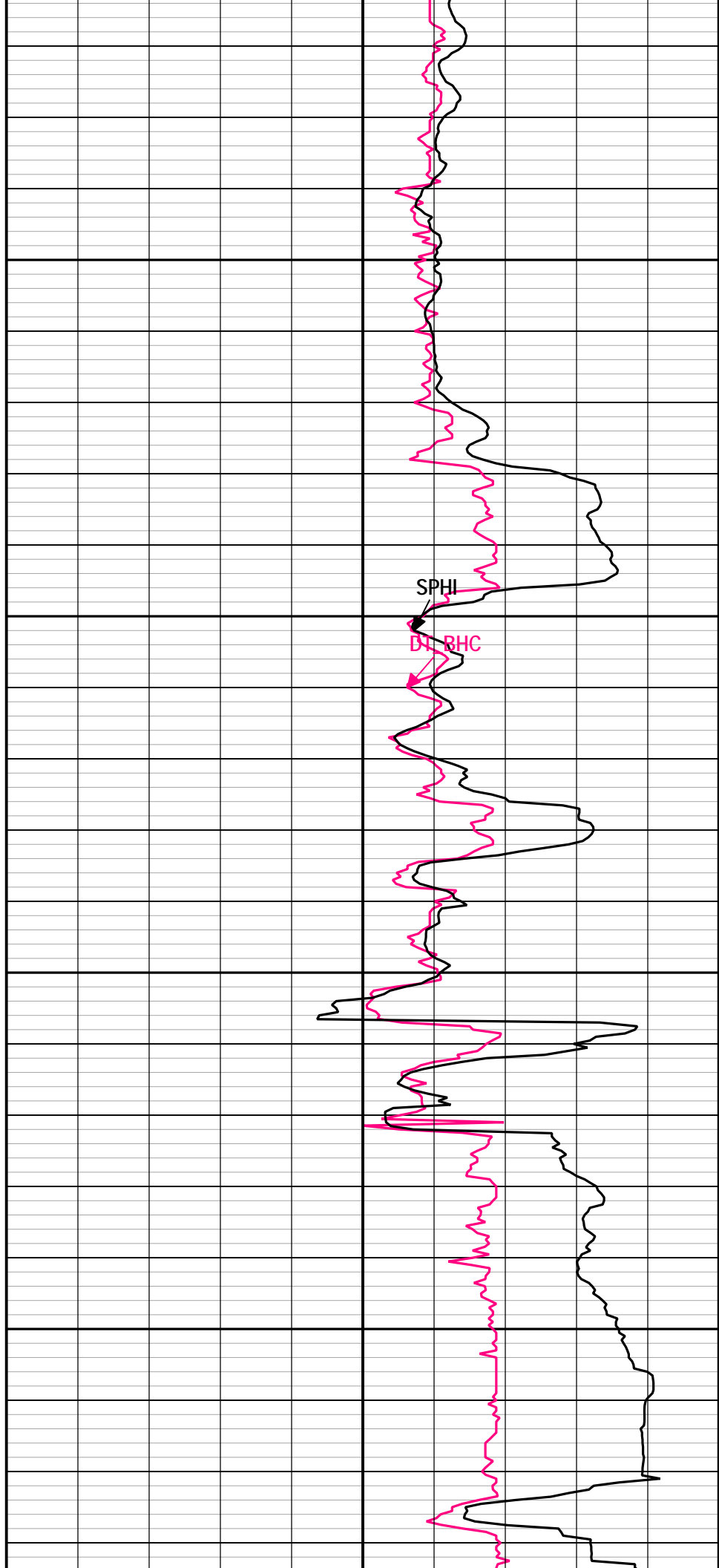
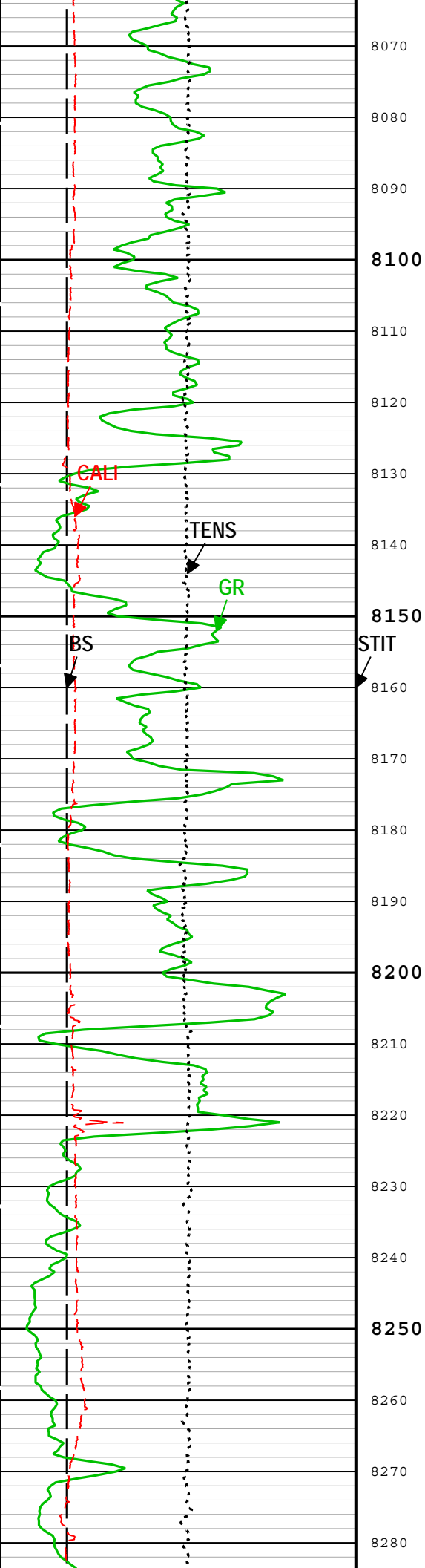


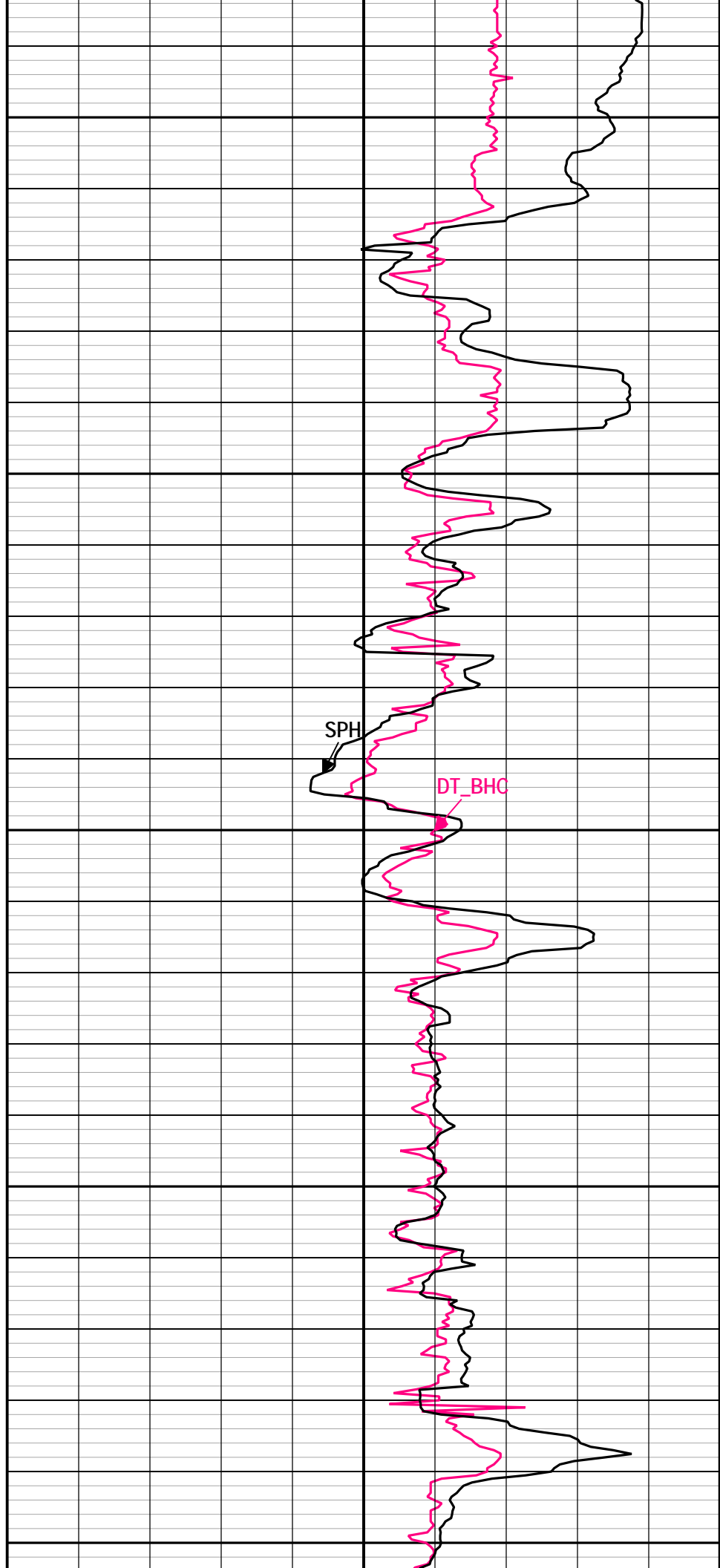
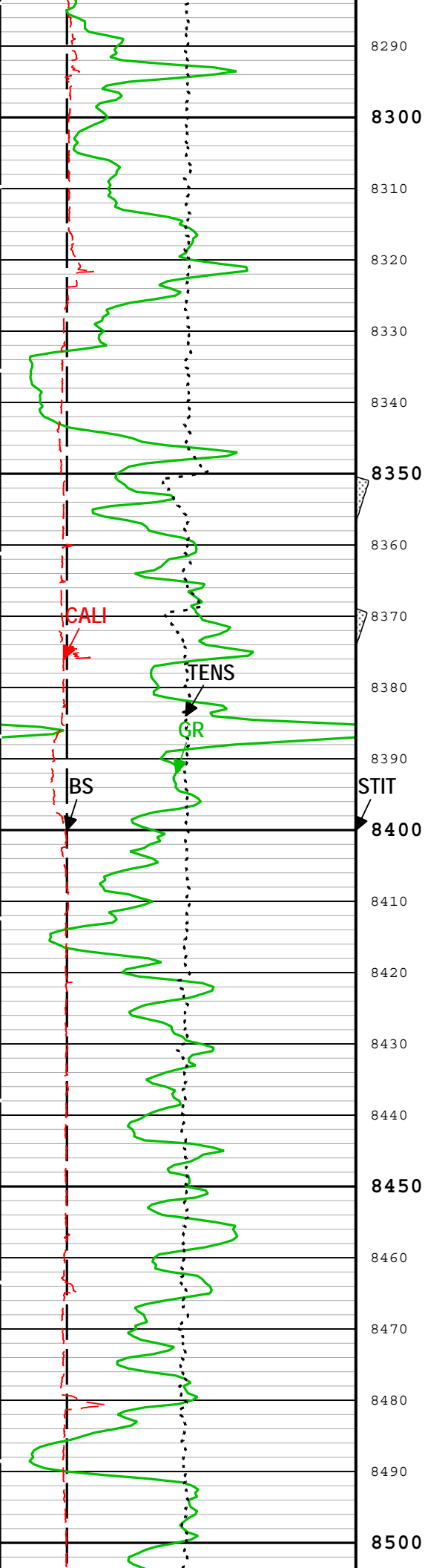


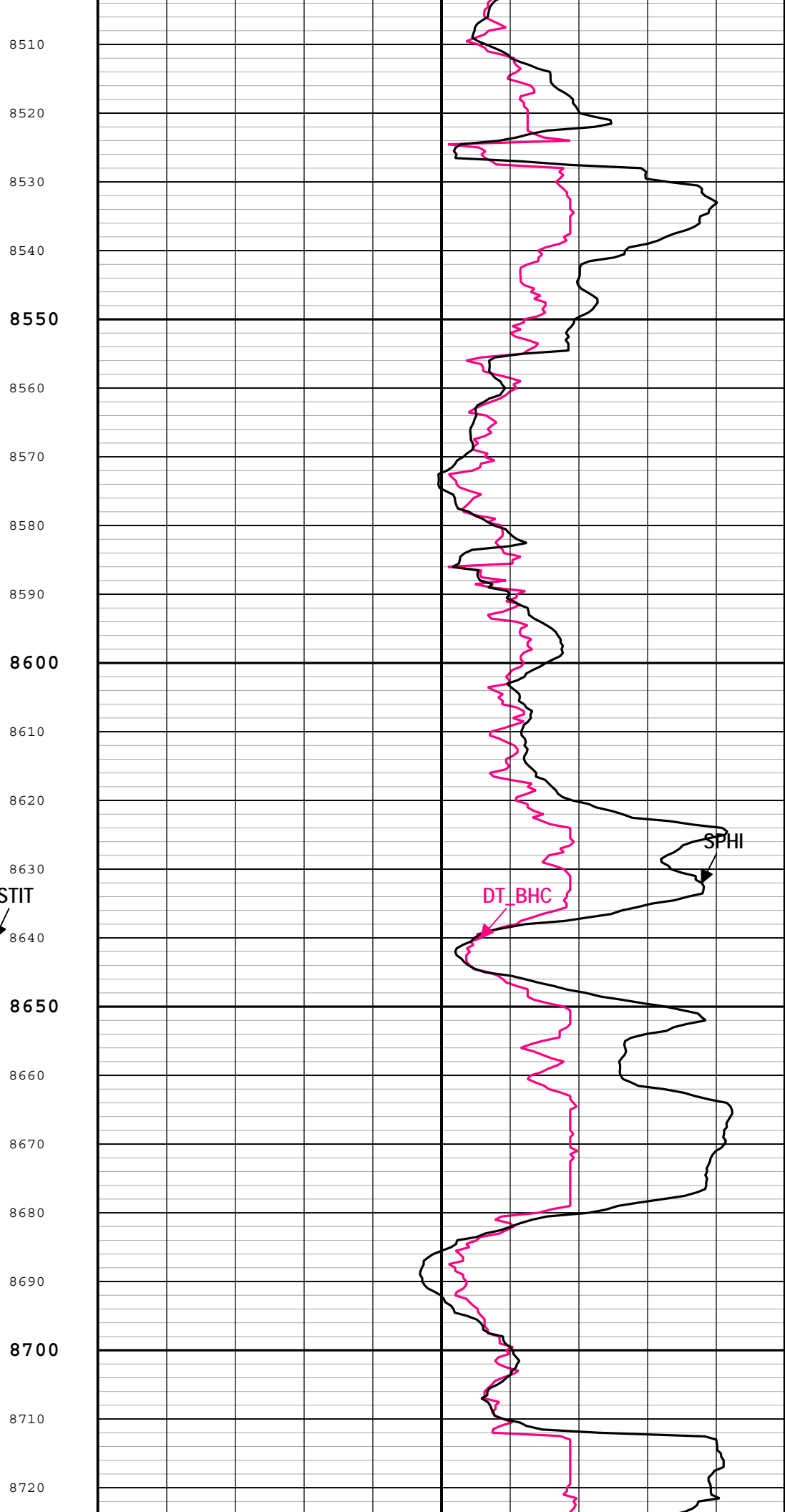
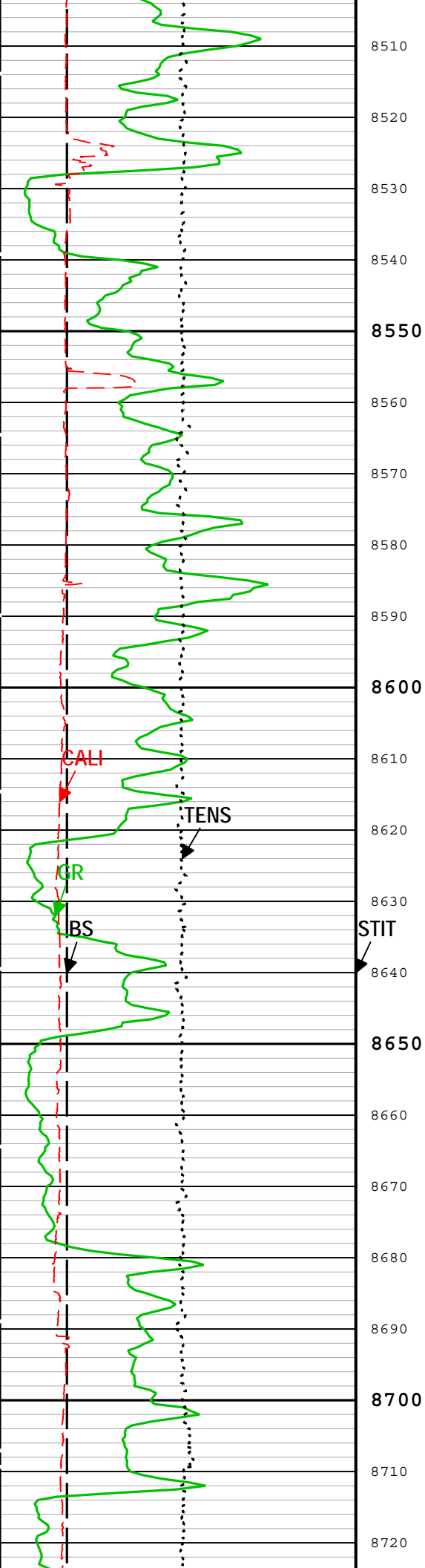


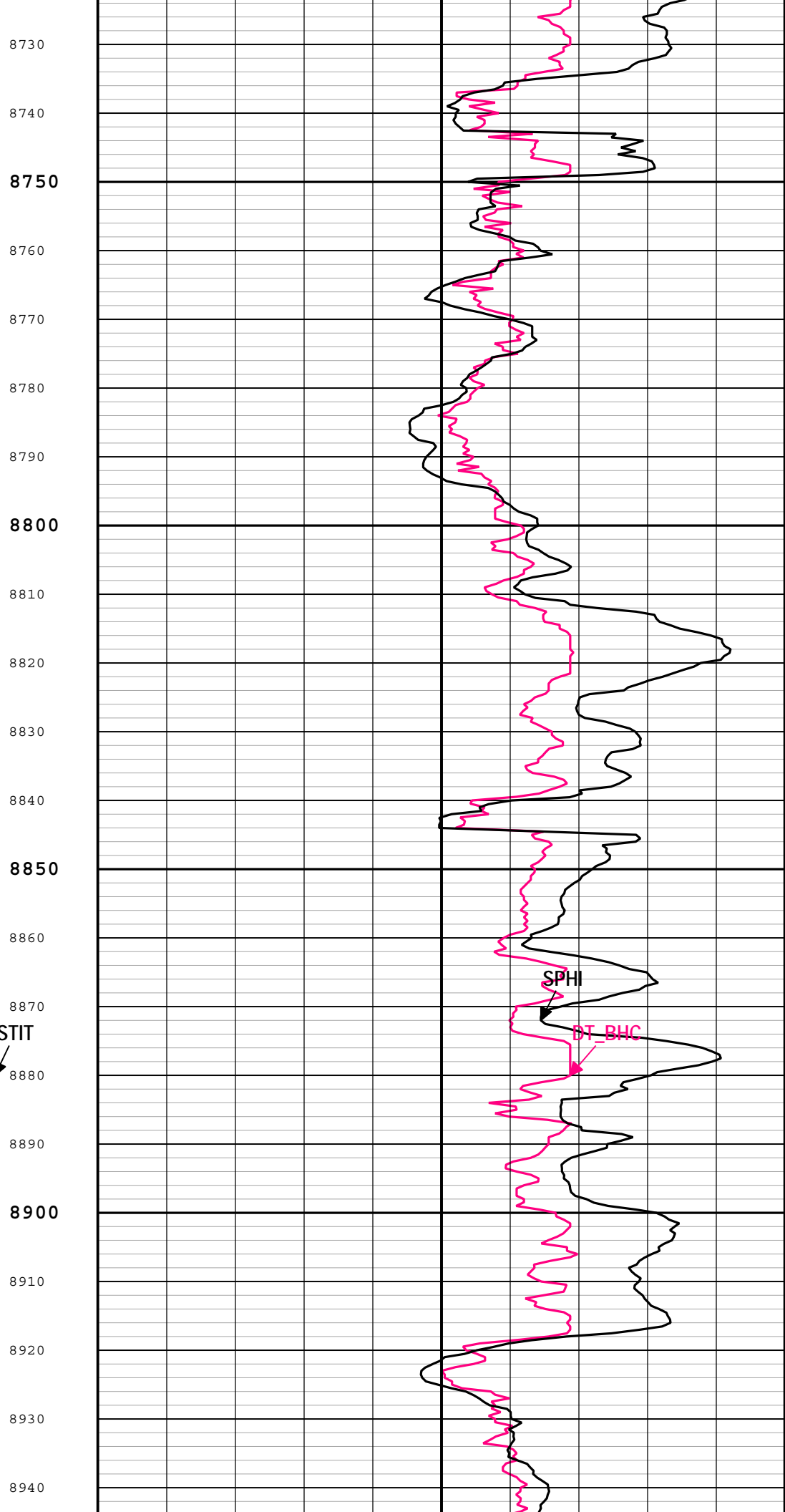
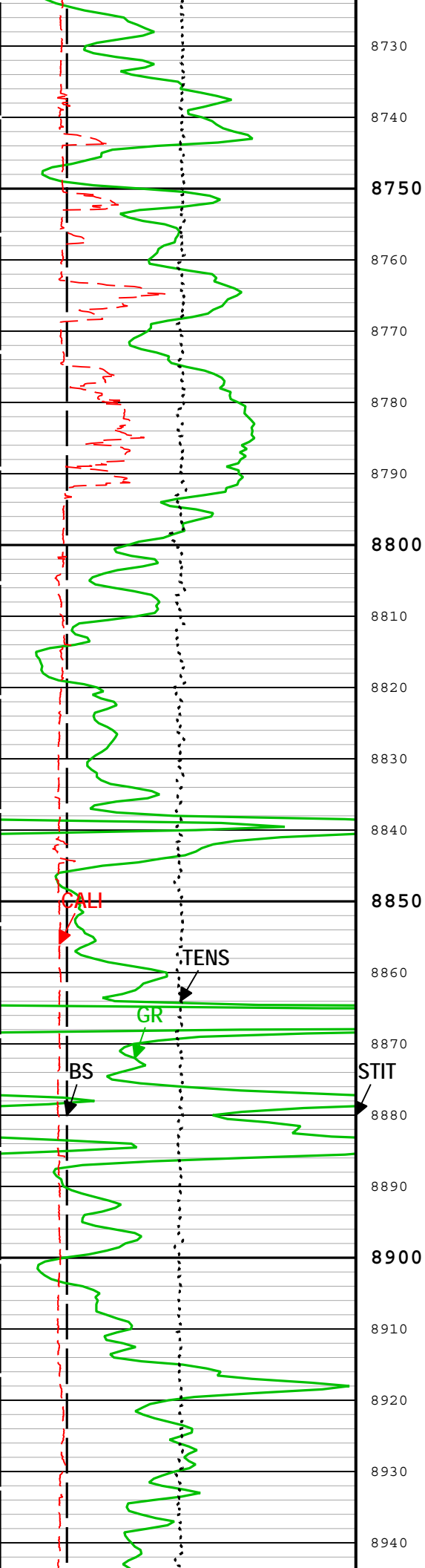


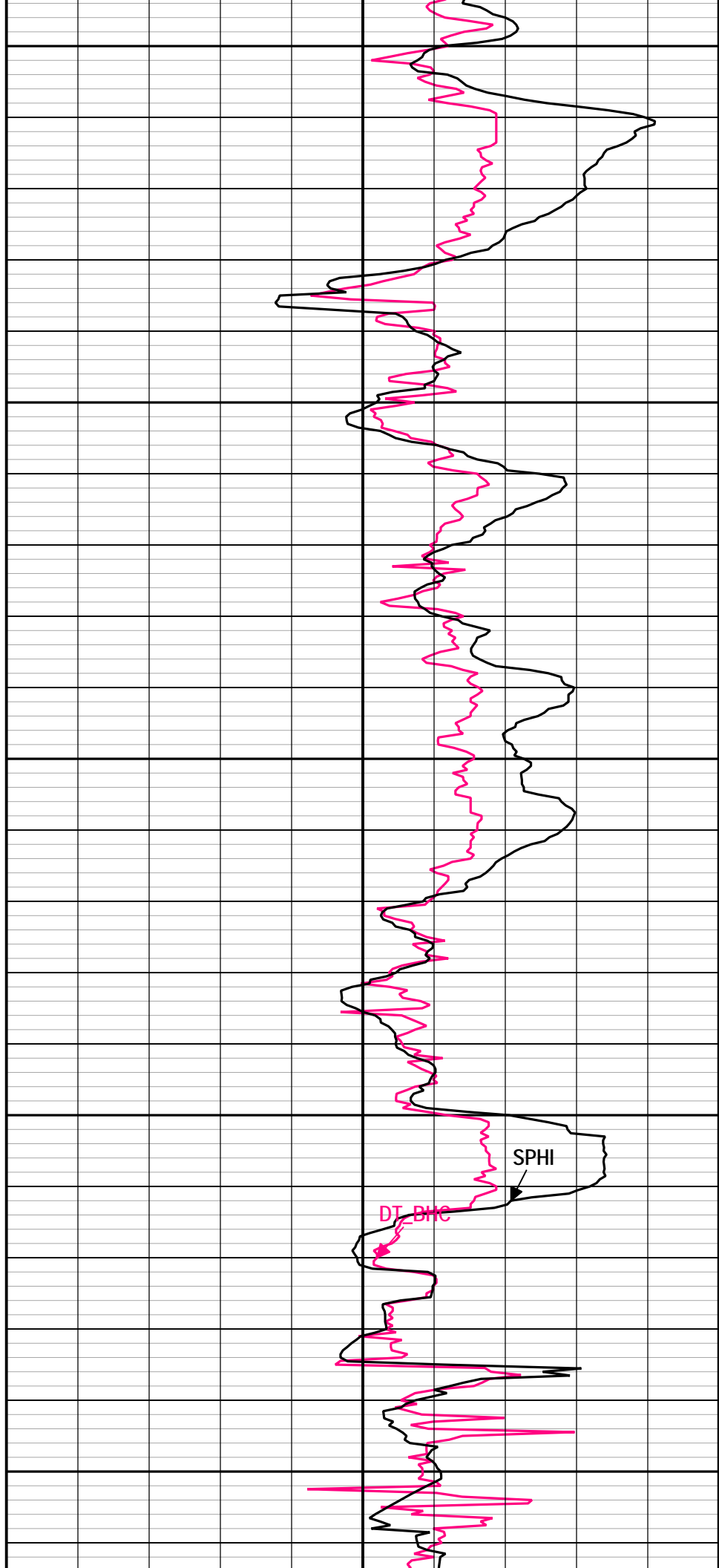
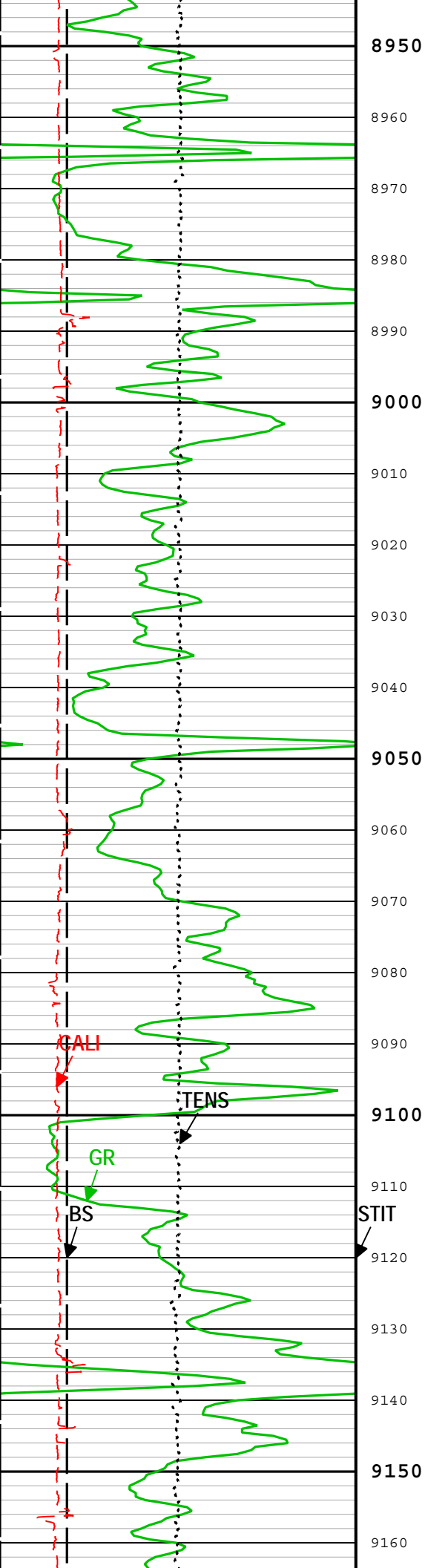


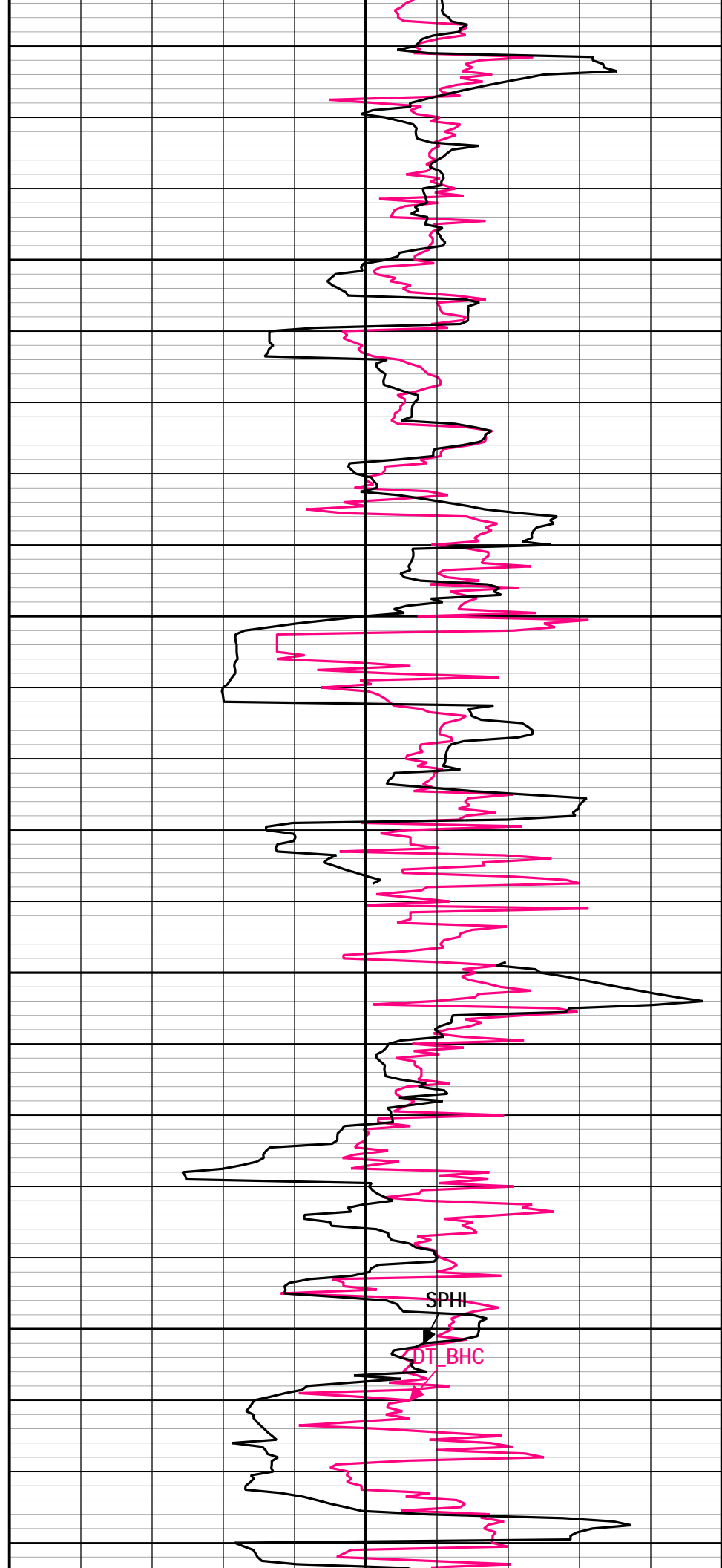
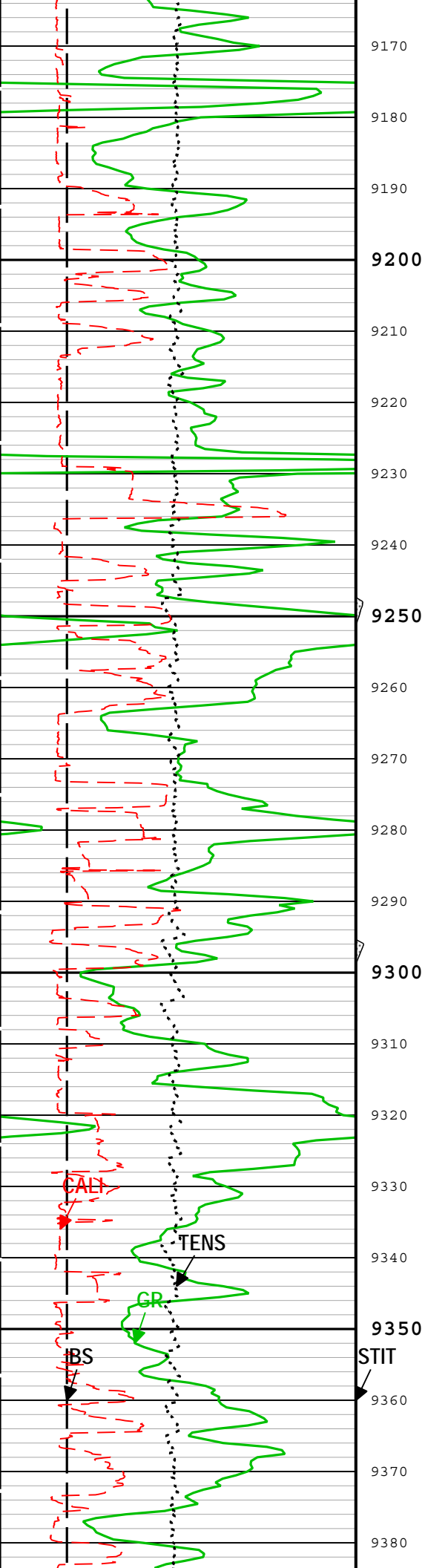


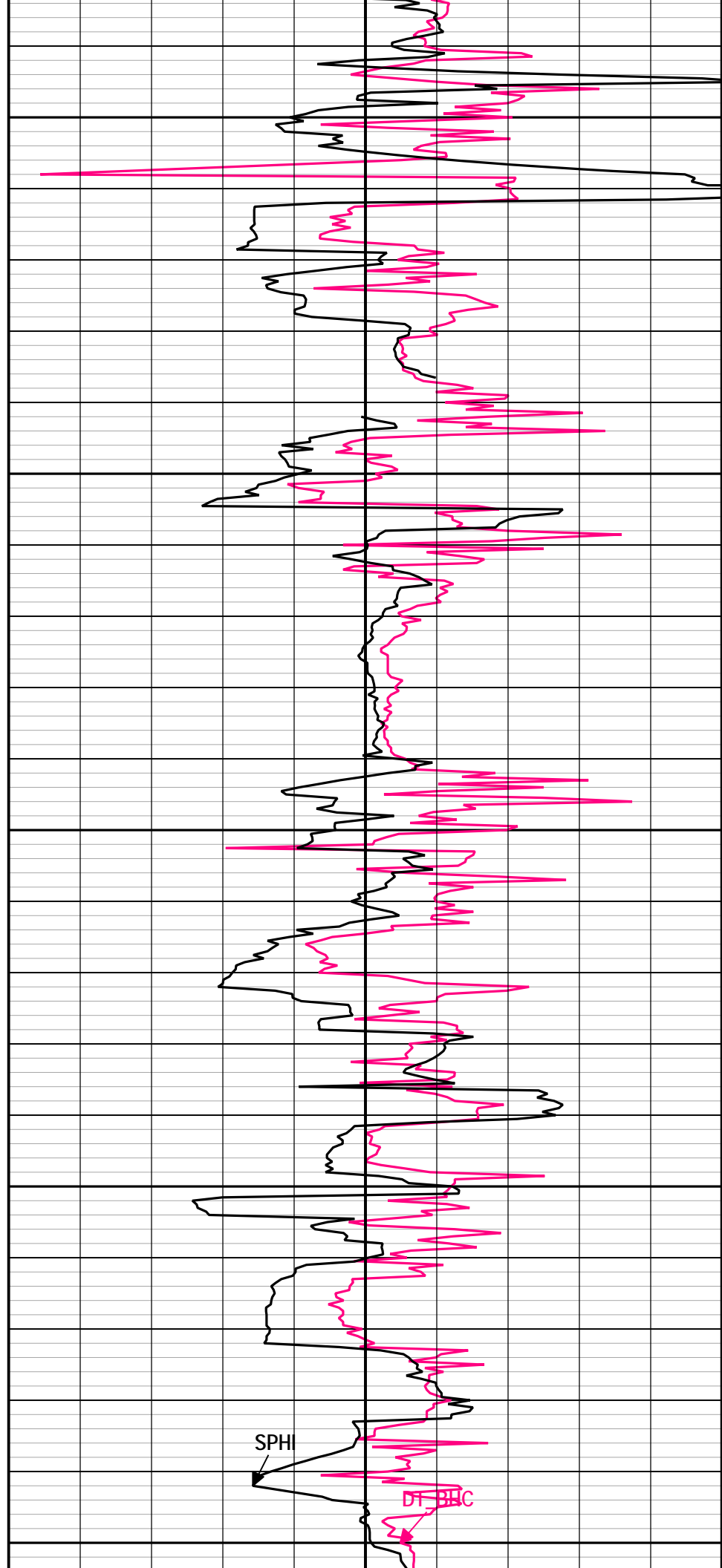
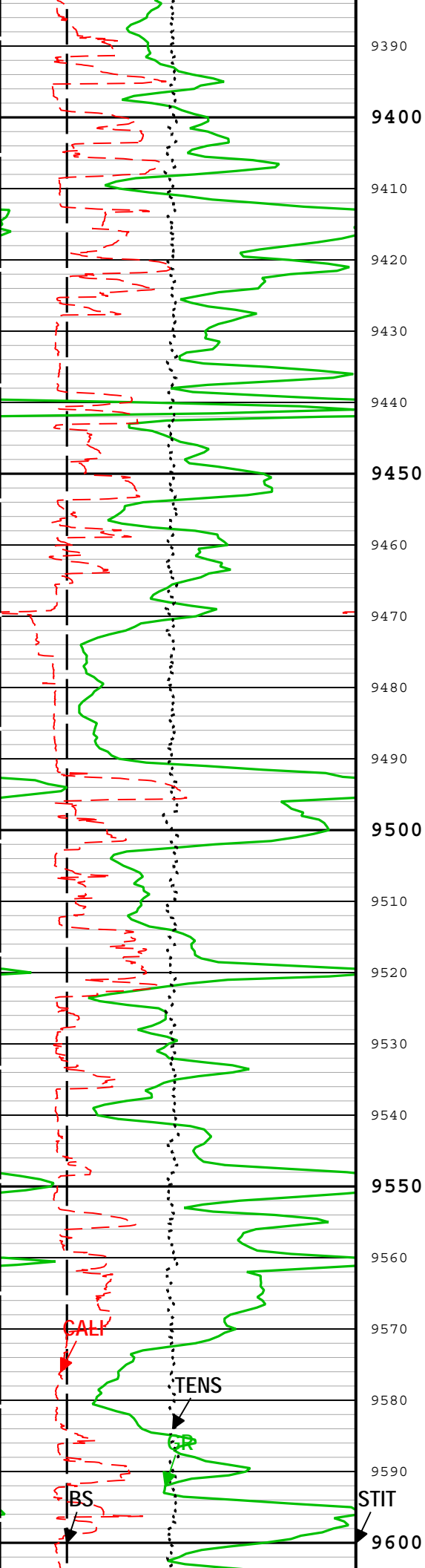


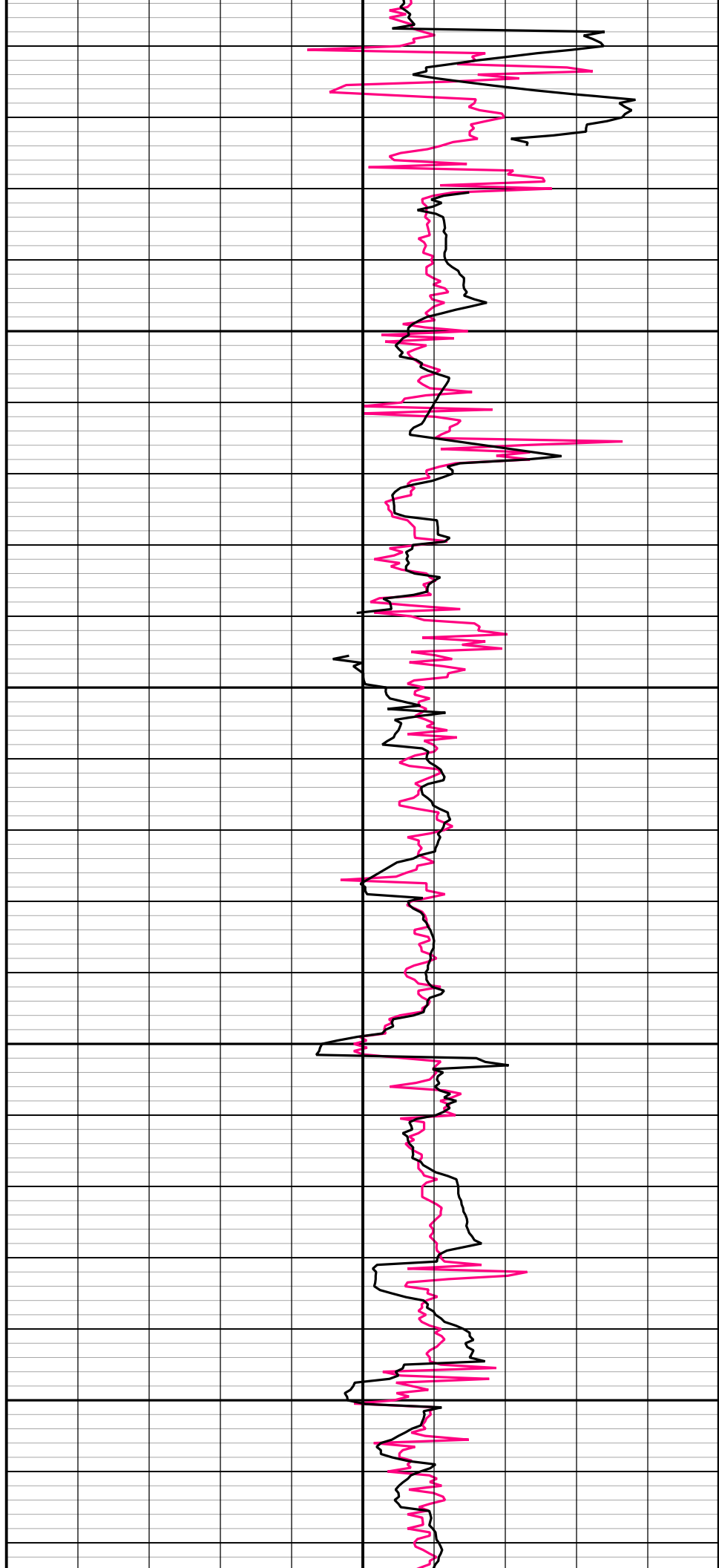
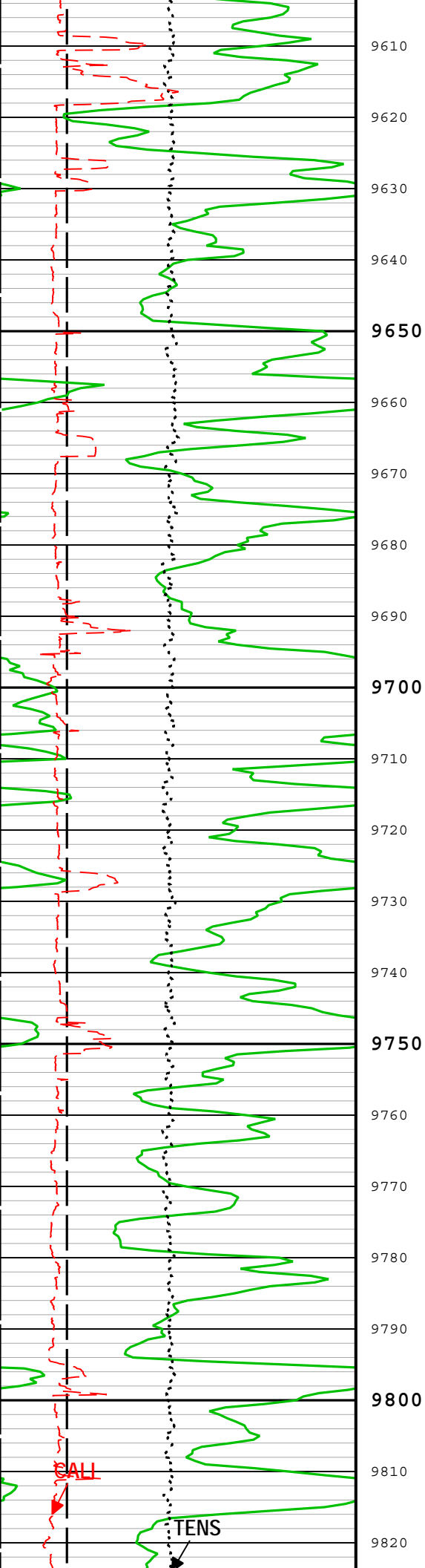


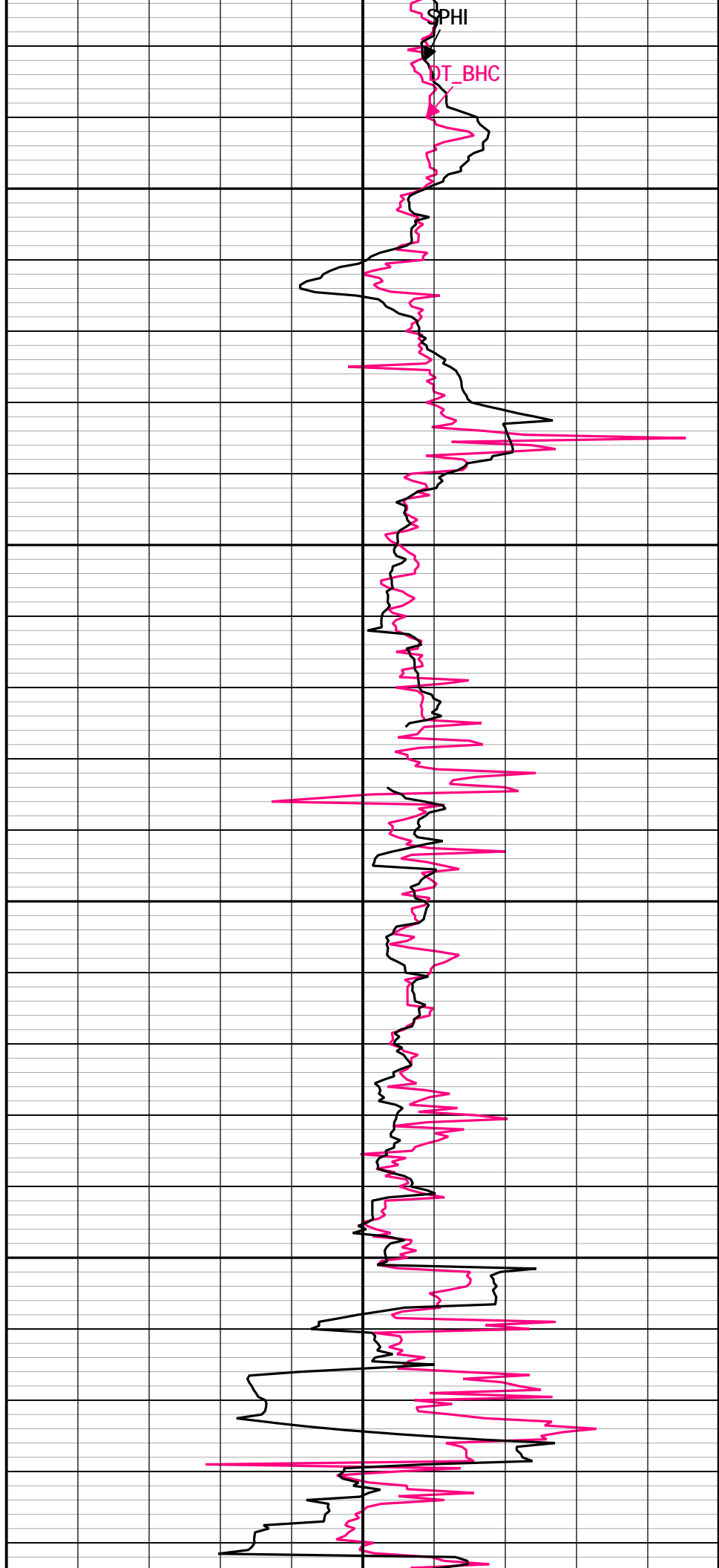
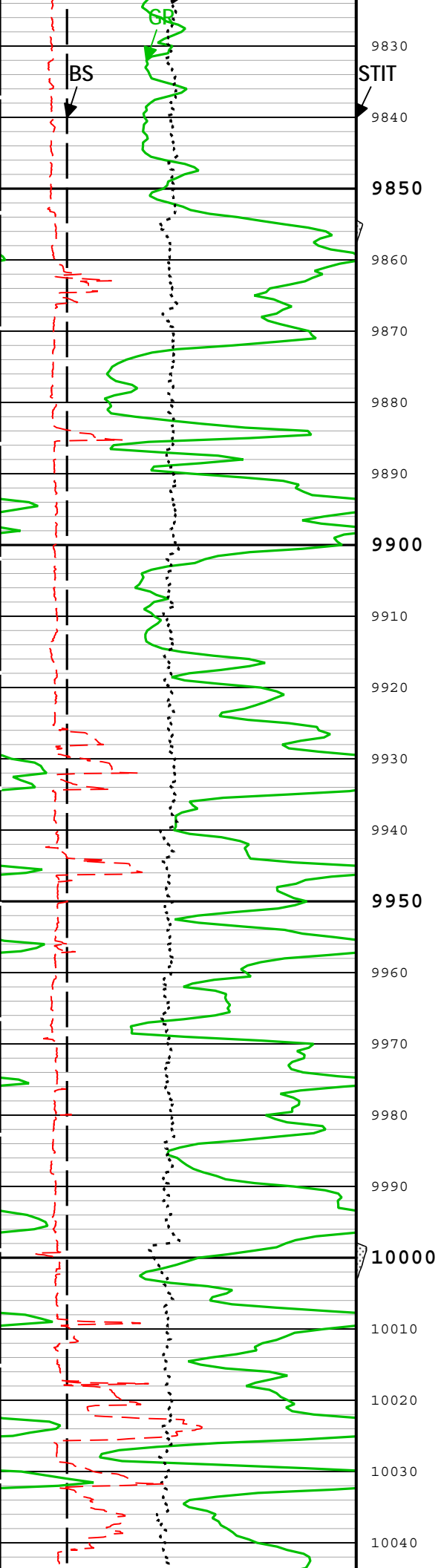


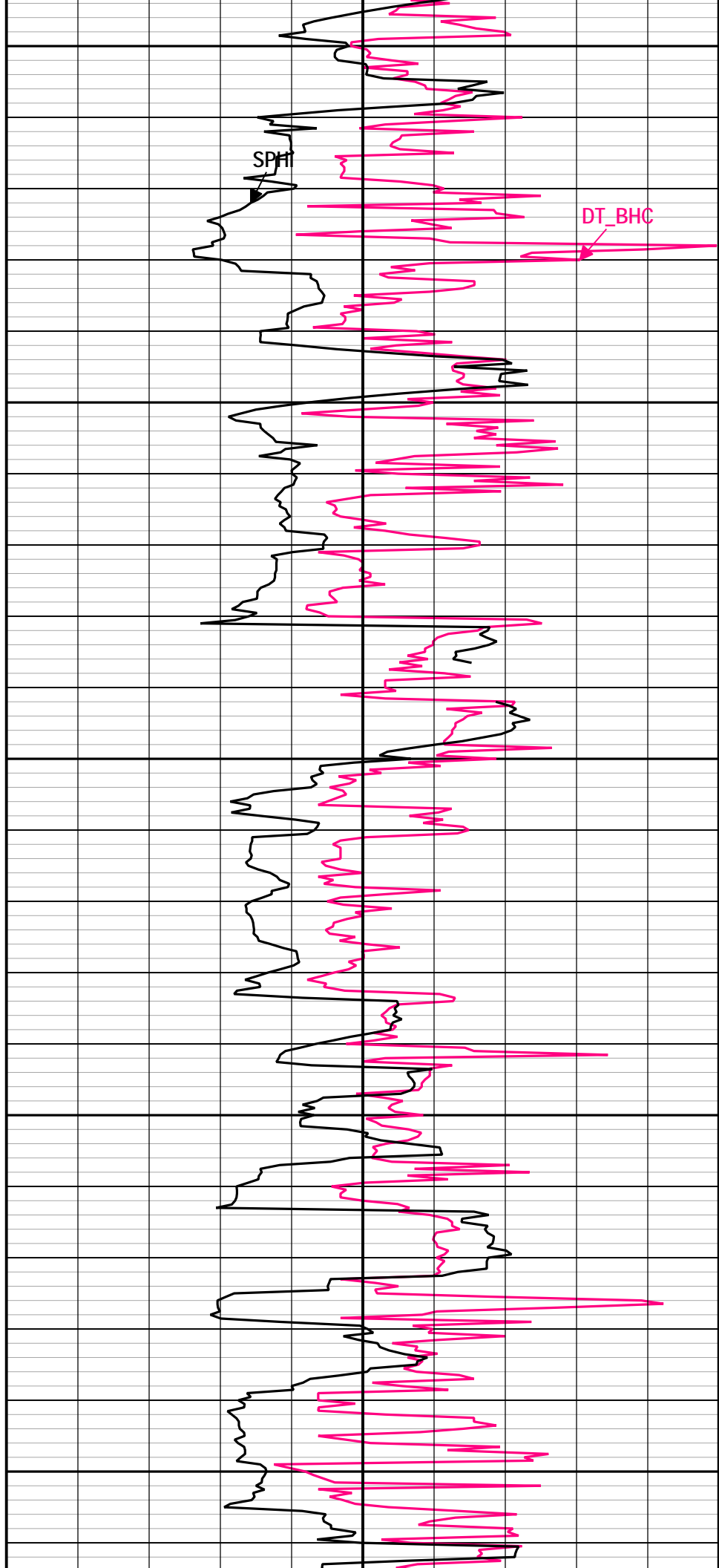
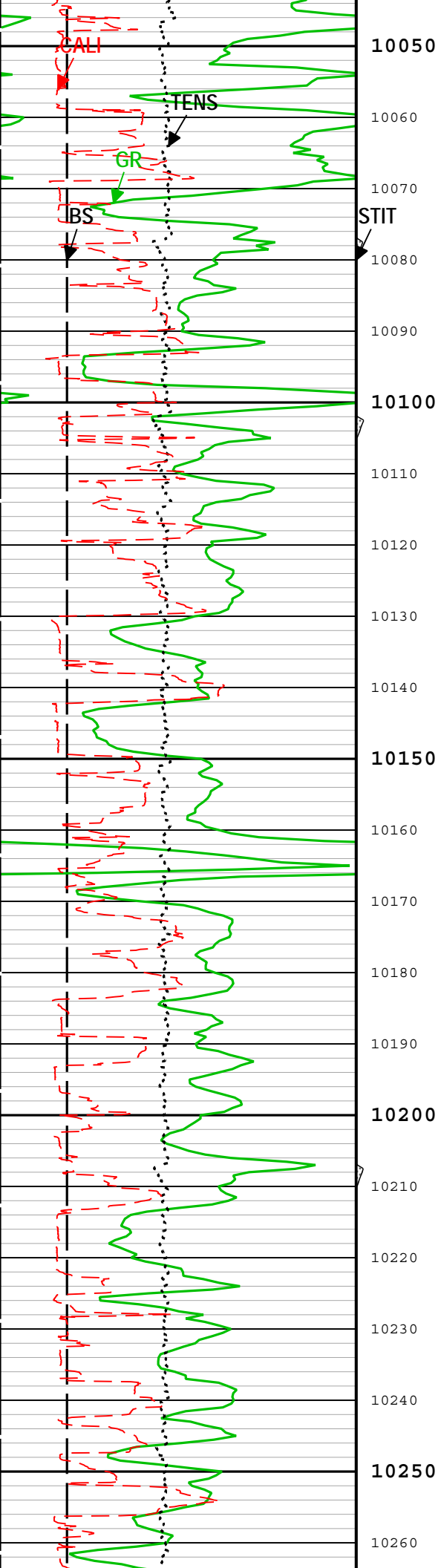


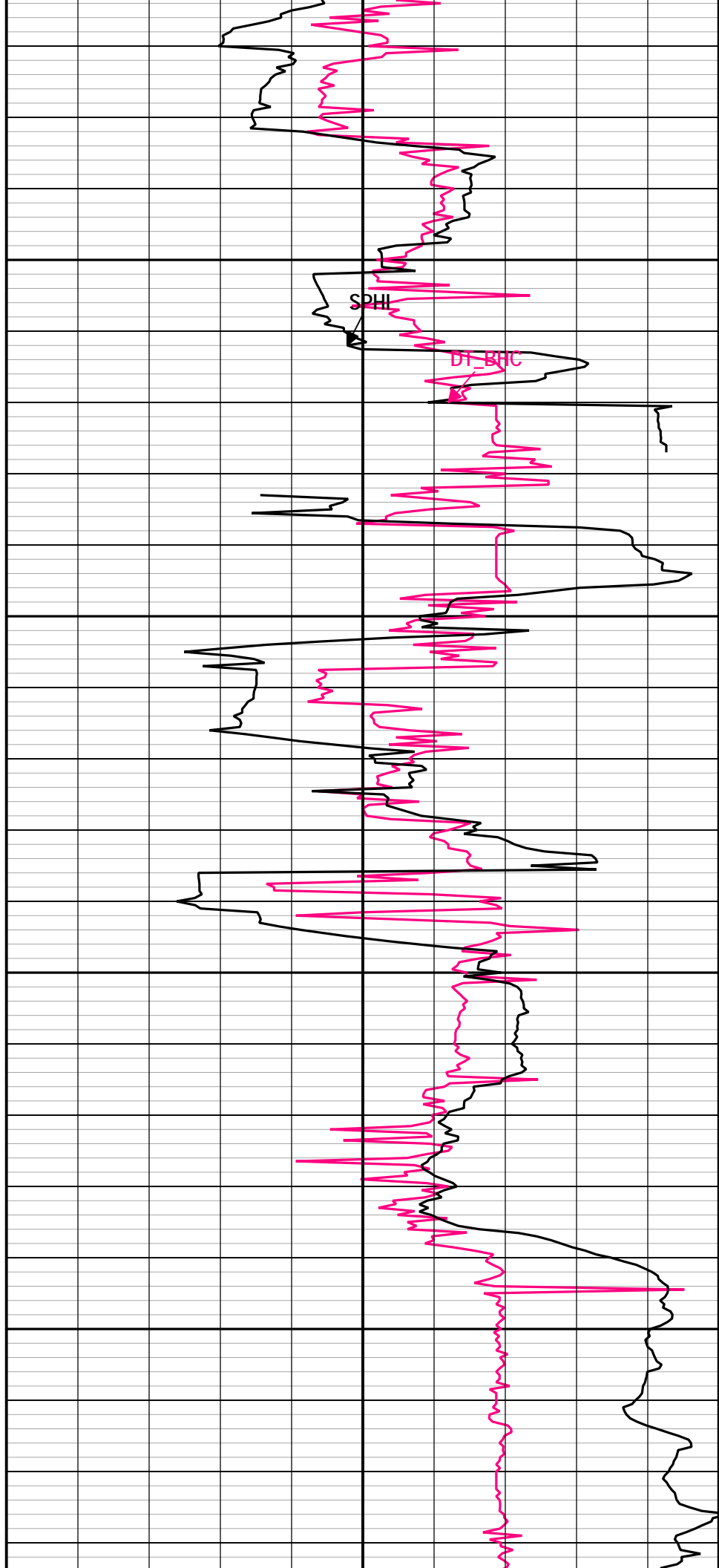
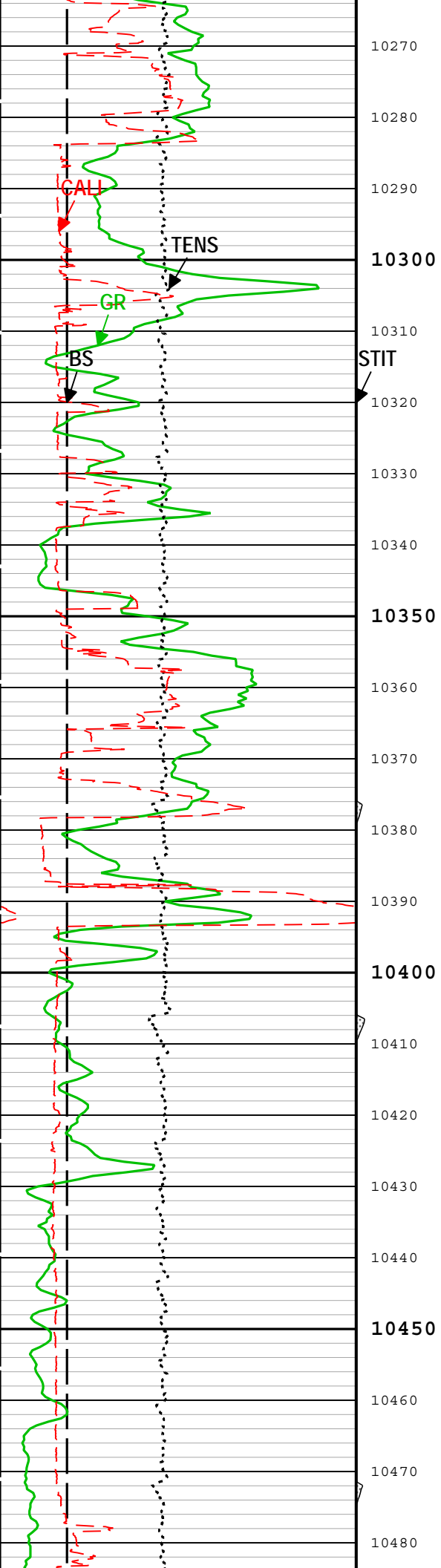


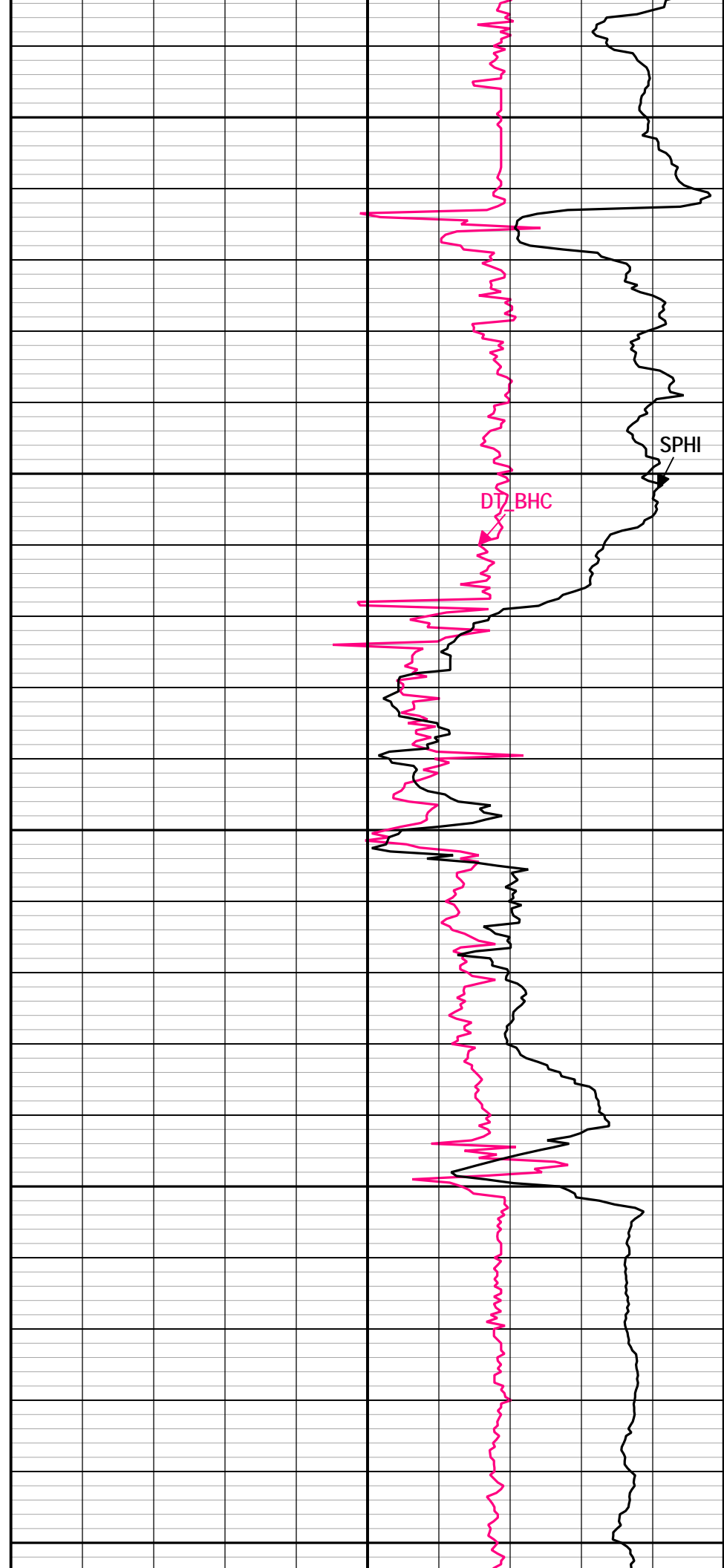
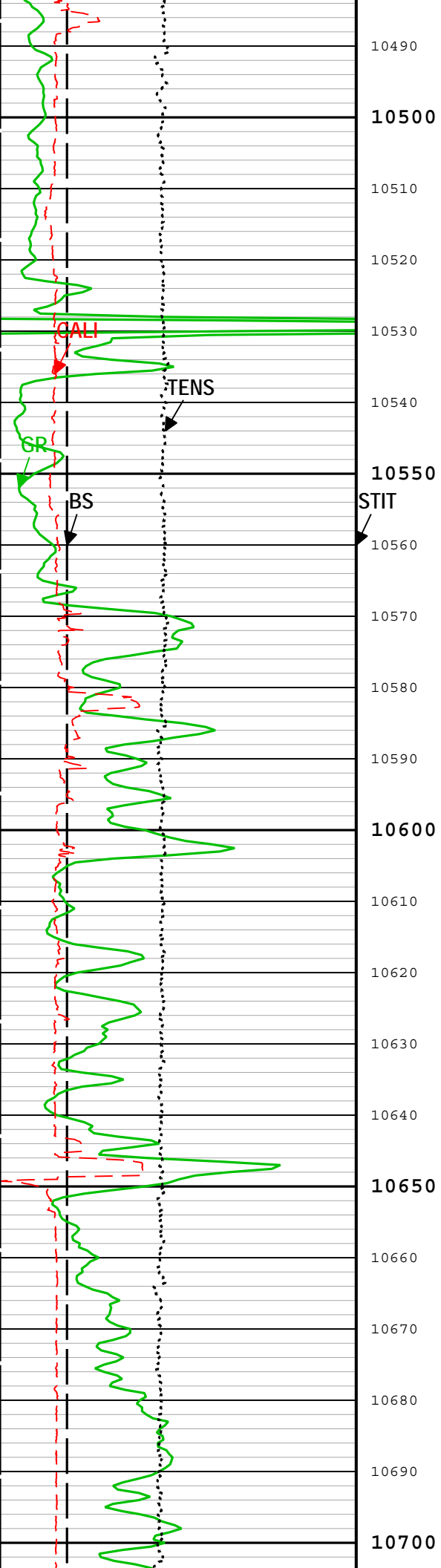


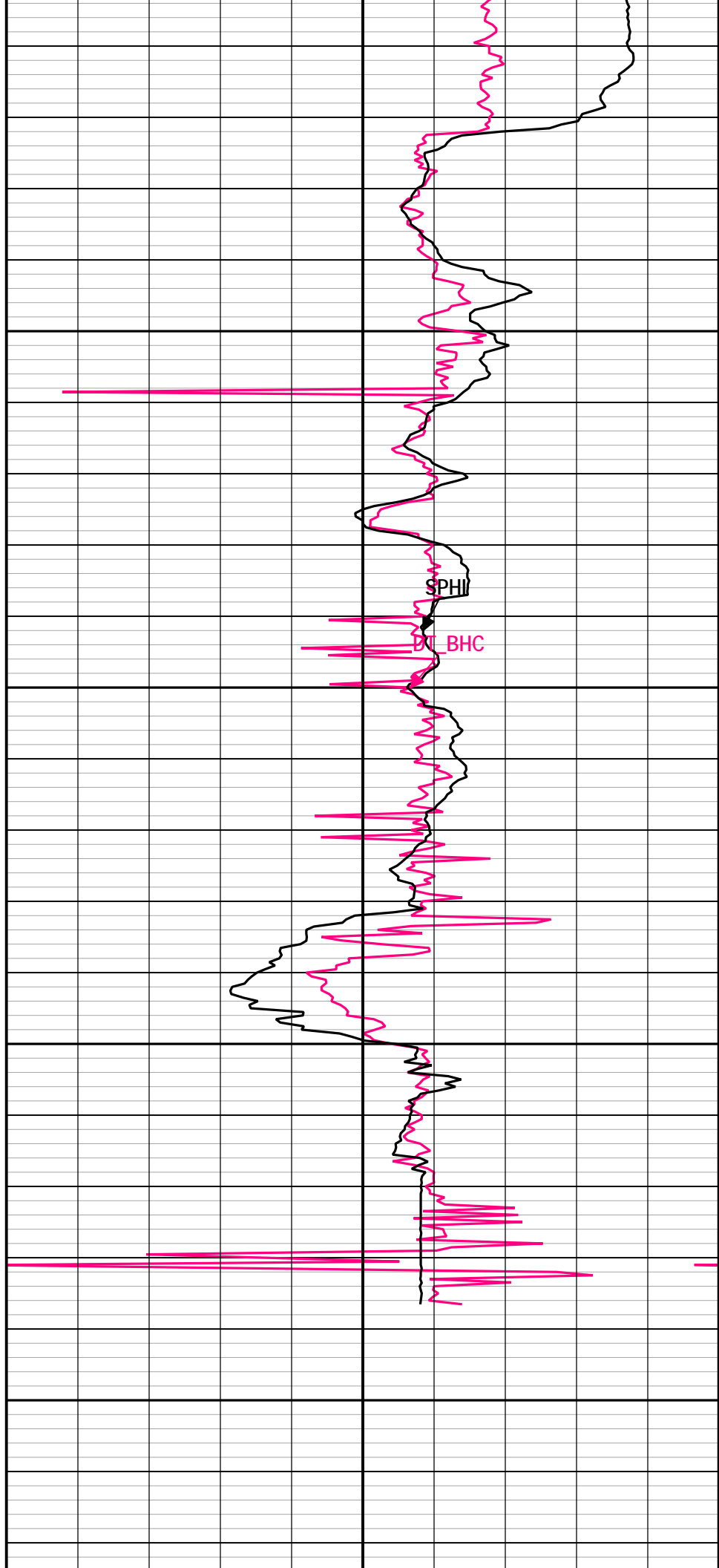
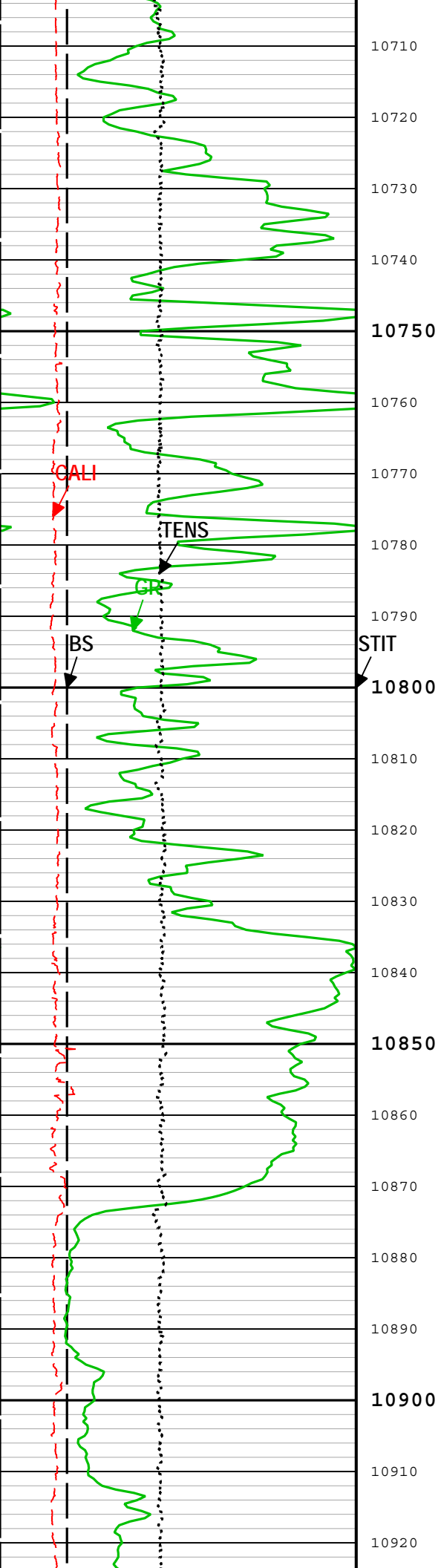


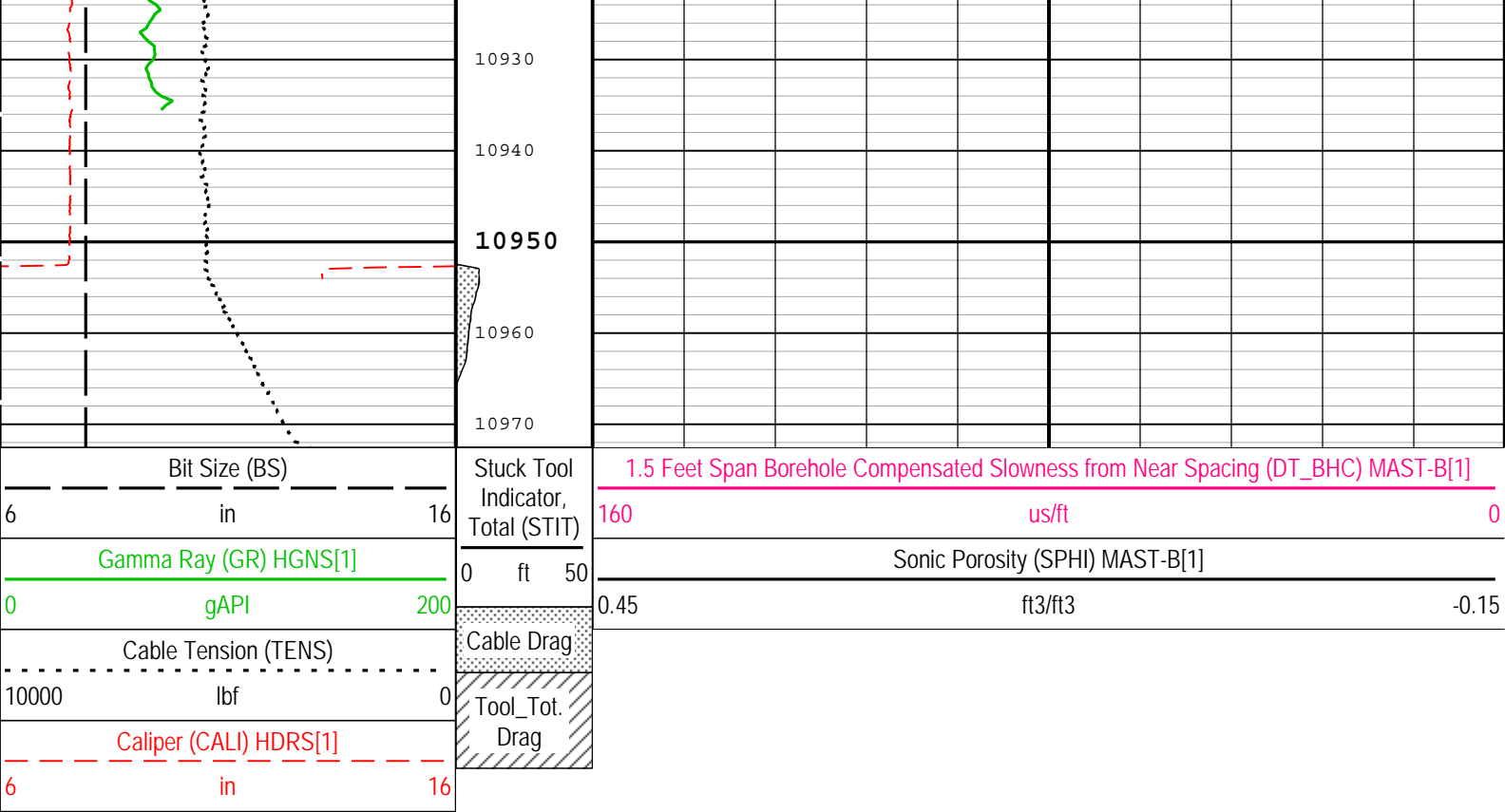












TIME_1900 - Time Marked every 60.00 (s)

Description: MAST_SONI_BHC Format: Log (MAST_SONI_BHC_1) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 07-Feb-2014 13:11:10

Company: Mustang Creek Operating LLC

Schlumberger

Well: Graham 1 13

Field:	Wildcat
County:	El Paso
State:	Colorado

Sonic Scanner
Borehole Compressional