

Company:		Nighthawk Production LLC				Schlumberger			
Well:		Silverton 16-10							
Field:		Jolly Ranch							
County:		Lincoln				State:		Colorado	
Platform Express									
Mico Log									
County:		Lincoln		Lat/Long : 39.539/-103.42		Elev.		K.B.	5242.00 ft
Field:		Jolly Ranch		SHL : 1183' FSL X 922' FEL SESE				G.L.	5227.00 ft
Location:		Lat/Long : 39.539/-103.42						D.F.	5241.00 ft
Well:		Silverton 16-10							
Company:		Nighthawk Production LLC							
Logging Date		12-Jun-2013							
Run Number		Run 1							
Depth Driller		8450.00 ft							
Schlumberger Depth		8460.00 ft							
Bottom Log Interval		8460.00 ft							
Top Log Interval		345.00 ft							
Casing Driller Size @ Depth		8.625 in @ 334.00 ft							
Casing Schlumberger		345 ft							
Bit Size		7.875 in							
Type Fluid In Hole		Chemical Gel							
Density		9 lbm/gal		68 s					
Fluid Loss		PH		7.3					
Source of Sample		Flowline							
RM @ Meas Temp		0.58 ohm.m @ 80 degF							
RMF @ Meas Temp		0.44 ohm.m @ 80 degF							
RMC @ Meas Temp		0.72 ohm.m @ 80 degF							
Source RMF		RMC		Calculated					
RM @ BHT		RMF @ BHT		0.25 @ 196 0.19 @ 196					
Max Recorded Temperatures		196 degF		196 196					
Circulation Stopped		Time		12-Jun-2013 13:30:00					
Logger on Bottom		Time		13-Jun-2013 21:40:23					
Unit Number		Location:		2135		Fort Morgan			
Recorded By		Arvin Shi							
Witnessed By		Anders Elgend / Jim Wier							

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.	

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Well Sketch

Driller Depth
0.00 ft

334.00 ft

Casing 8.625in
24lbm/ft



Borehole Size/Casing/Tubing Record						
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Bit						
Bit Size (in)	7.875					
Top Driller (ft)	334					
Top Logger (ft)	345					
Bottom Driller (ft)	8450					
Bottom Logger (ft)	8460					
Casing						
Size (in)	8.625					
Weight (lbm/ft)	24					
Inner Diameter (in)	8.099					
Top Driller (ft)	0					
Top Logger (ft)	0					
Bottom Driller (ft)	334					
Bottom Logger (ft)	345					

Operational Run Summary						
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Parameter (unit)	Run 1					
Date Log Started	12-Jun-2013					
Time Log Started	22:42:13					
Date Log Finished	14-Jun-2013					
Time Log Finished	00:03:34					
Top Log Interval (ft)	345.00					
Bottom Log Interval (ft)	8460.00					
Total Depth (ft)	8460.00					
Max Hole Deviation (deg)	NaN					
Azimuth of Max Deviation (deg)	NaN					
Bit Size (in)	7.875					
Logging Unit Number	2135					
Logging Unit Location	Fort Morgan					
Recorded By	Arvin Shi					
Witnessed By	Anders Elgerd / Jim Wier					
Service Order Number	C6VJ-00060					

Remarks and Equipment Summary				
Run 1: Toolstring				Run 1: Remarks
Equip name	Length	MP name	Offset	All Schlumberger depth measurement policies followed
LEH-QT	97.73			IDW used as primary depth measurement and Z-Chart as secondary depth measurement
LEH-QT				
AH-369	94.82			
EDTC-B:8593	93.39			
EDTH-B:8625				
EDTG-B:77756				
EDTC-B:8593				
		CTEM	89.89	
		ACCZ	0.00	
		HV	0.00	
		Gamma Ray	88.02	
		TelStatus	86.89	
		Temperature	86.87	
HGNS-H:4865	86.89			
HGNH:4817				
NPV-N		GR	86.15	
NSR-F:2554				
HMCA-H				
HACCZ-H:6991				
HGNS-H:4865				
		CNL Porosity	79.82	
		HGNS	77.48	
		HMCA	77.48	
		Accelerometer	0.00	
HDRS-H:3863	77.48			
ECH-MEB:2898				
HRCC-H:3828				
HRMS-H:3863				
Backscatter				
Short Spacing				
GPV-Q				
GSR-J:5471		HRCC	73.48	
Long Spacing:28620				
HRGD-H:3870				
		MCFL	68.05	
		Caliper	67.57	
		TLD Density	67.18	
HRLT-B	65.24			
HRUH-B				
HRUC-B				
HRLS-B				
HRLH-B				
HRLC-B				
AH-270				

Resistivity 53.47

AH-184[2]:28 41.04
29

MAST-B:8506 39.04
ECH-SF:8081
MAPC-BA:8081
MAMS-CA:8506

MAMS 23.6

AH-184[1]:75 18.00
7

AIT-H:398 16.00
AHIS:398
AHRM



Lengths are in ft
Maximum Outer Diameter = 9.000 in
Line: Sensor Location, Value: Gating Offset
All measurements are relative to TOOL_ZERO

Depth Summary

Depth Control Parameters		Run 1		
Conveyance Type		Wireline		
Rig Type		Land		
Depth Measuring Device		Run 1		
Type		IDW-B		
Wheel Correction 1		-7		
Wheel Correction 2		-5		
Tension Device		Run 1		
Type		CMTD-B/A		
Calibration Date		17-May-2013		
Calibrator Serial Number		78135		
Calibration Points		10		
Calibration RMS		13		
Calibration Peak Error		24		
Logging Cable		Run 1		
Type		7-46NT-XS		
Logging Cable Length (ft)		24000.00		

Run 1

5" Micro Log

Integration Summary

Output Channel(s)	Output Description	Input Parameter	Output Value	Unit
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Software Version

Acquisition System		Version	
MaxWell		3.1.9755.0	
Application Patch		SP-20130325-3.1.9755.1799	
Computation	Description	Version	
DepthCorrection	DepthCorrection	3.1.9755.1799	
Tool Elements	Description	Software Version	Firmware Version
HRCC-H	HILT High-Resolution Control Cartridge, 150 degC	3.1.9755.0	2.0

HRGD-H	HILT Resistivity Gamma-Ray Density Device, 150 degC	3.1.9755.0	3.0
HGNS-H	HILT Gamma-Ray and Neutron Sonde, 150 degC	3.1.9755.0	2.0

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	Depth Shift	Include Parallel Data
Run 1	Log[7]:Up	Up	105.88 ft	8480.06 ft	13-Jun-2013 9:41:24 PM	14-Jun-2013 12:02:54 AM	0.00 ft	

All depths are referenced to toolstring zero

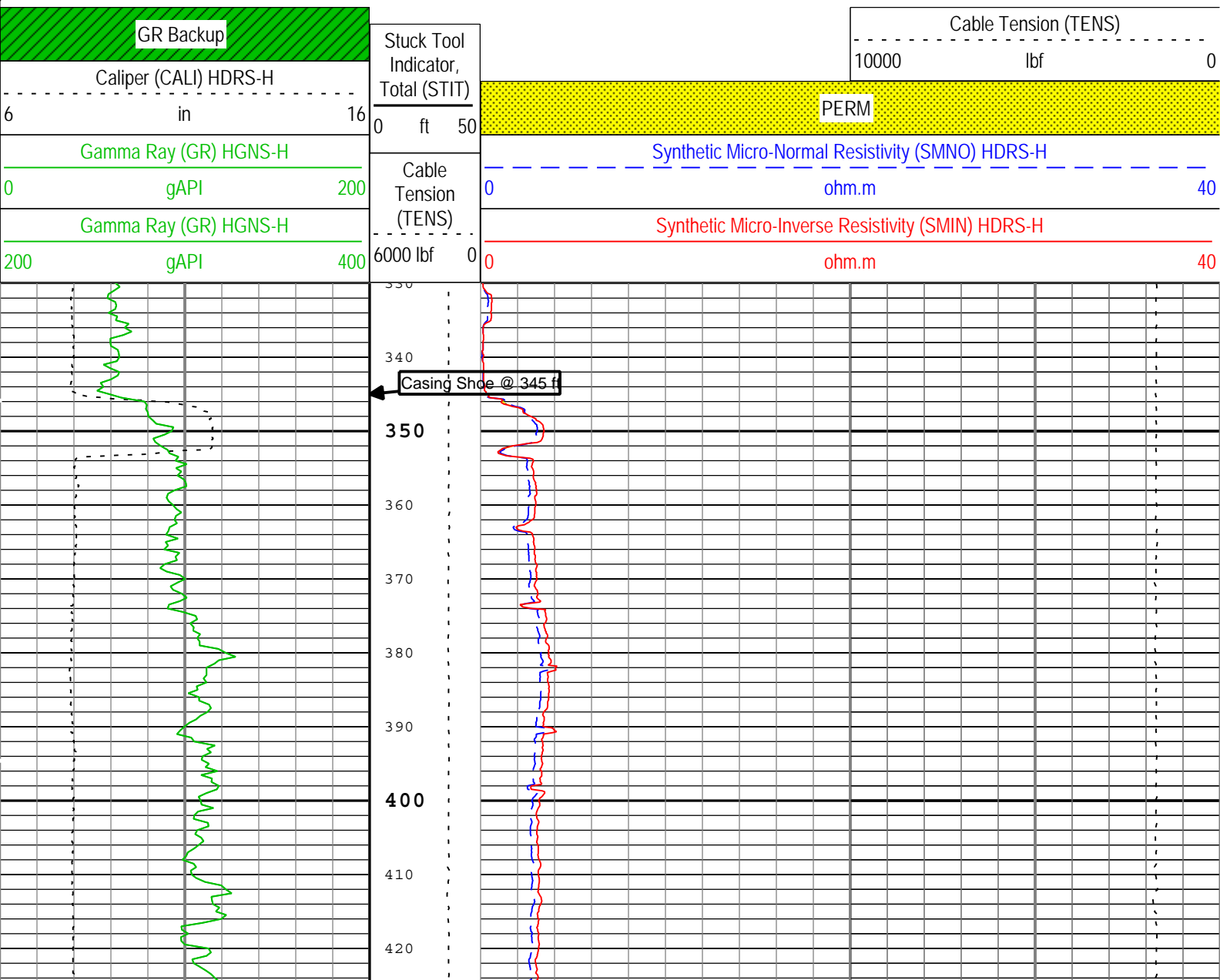
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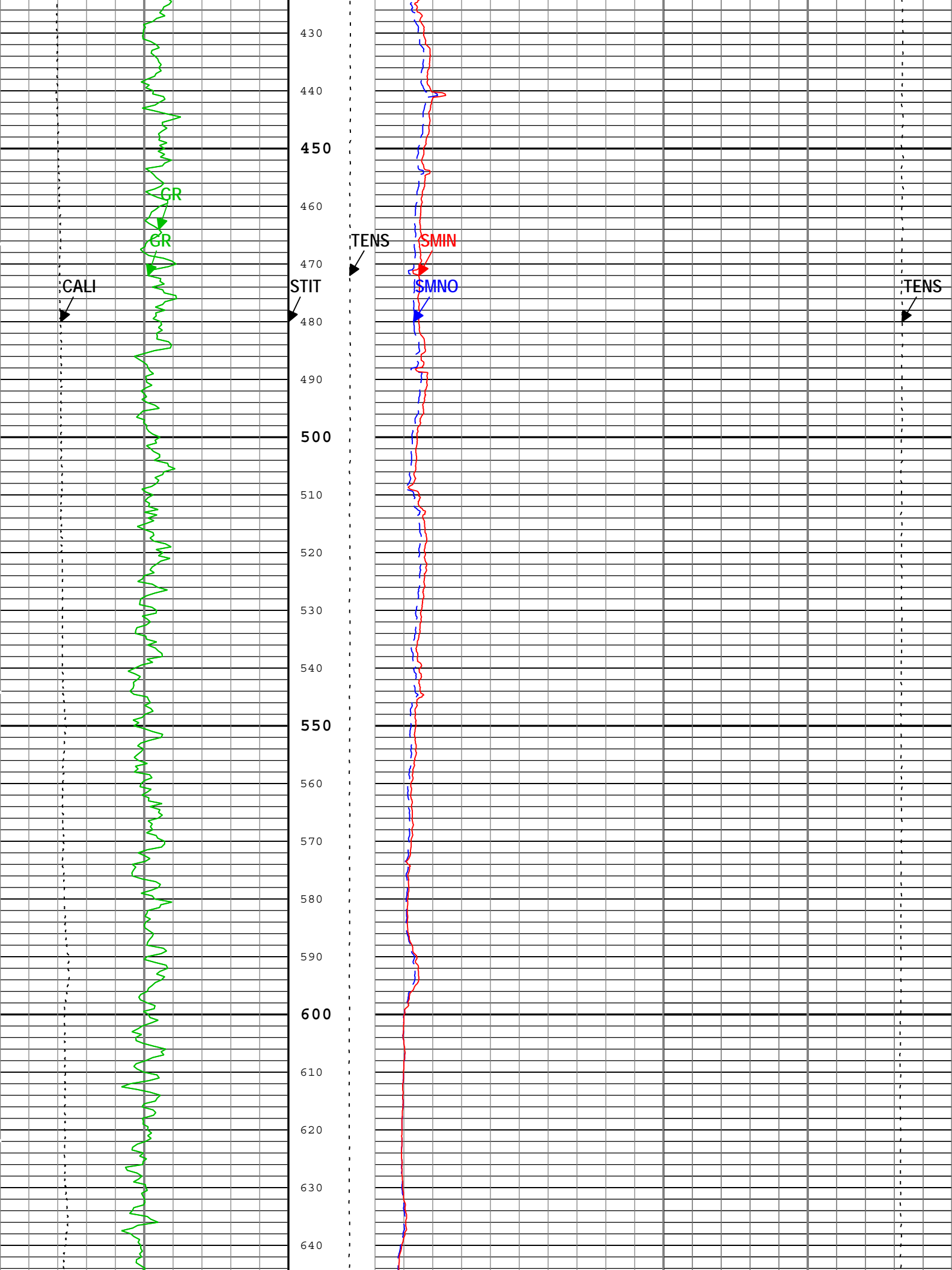
Run 1: Log[7]:Up

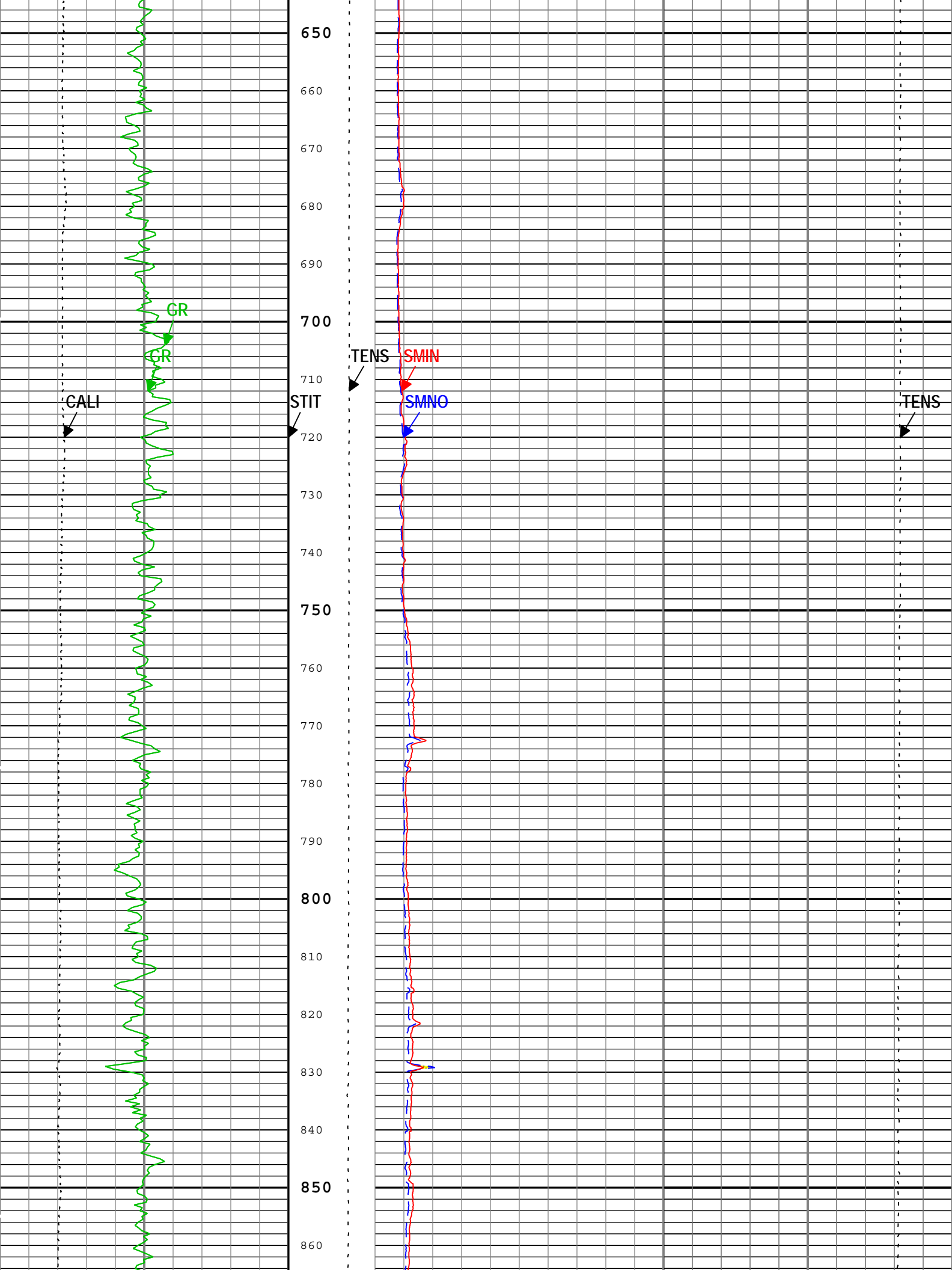
Description: MCFL processing for Platform Express Format: Log (KM 5in Micro Log) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured
Depth Creation Date: 14-Jun-2013 00:56:51

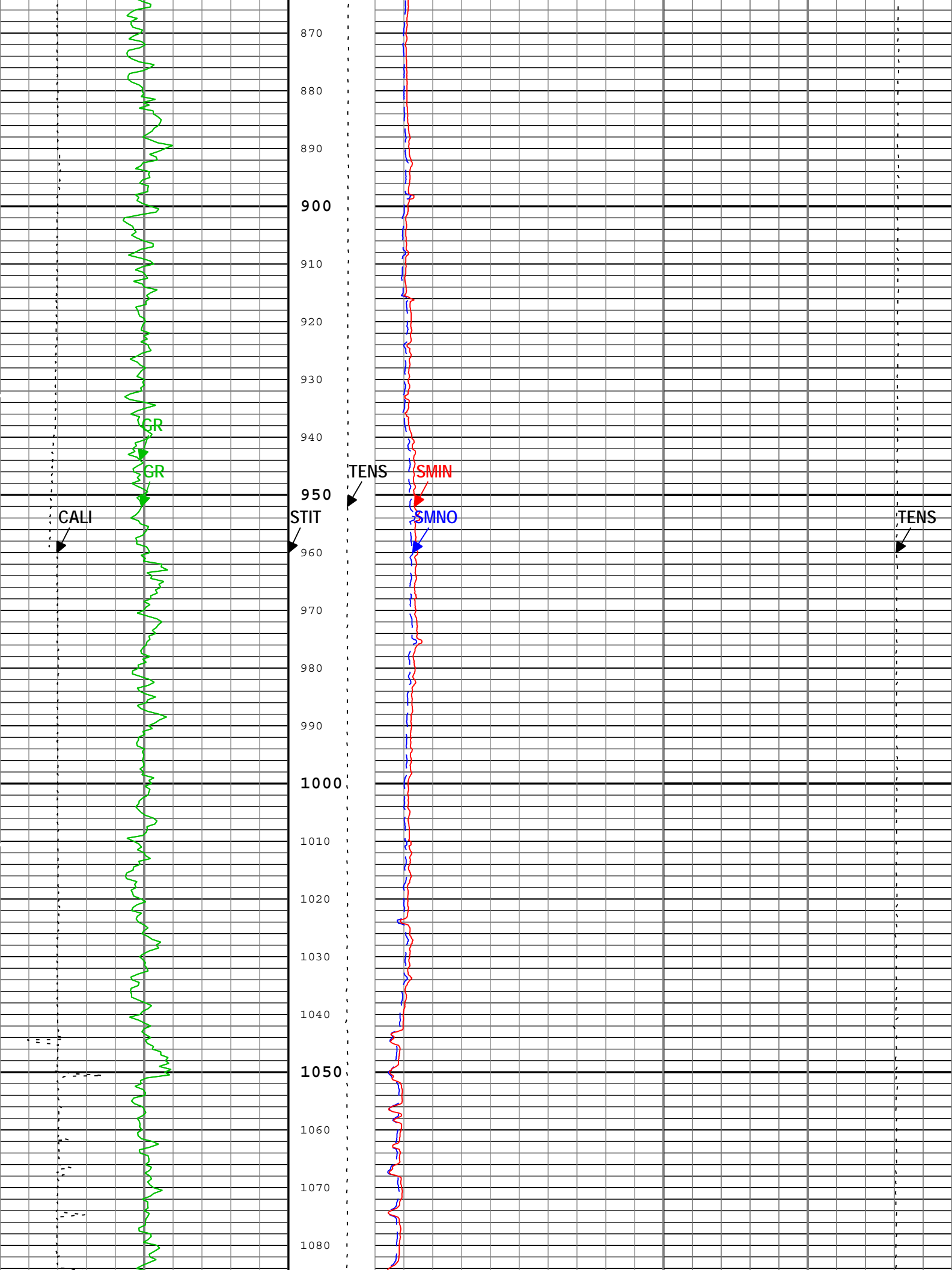
Channel	Source	Sampling
CALI	HDRS-H:HRCC-H:HRCC-H	1in
GR	HGNS-H:HGNS-H:HGNS-H	6in
SMIN	HDRS-H:HRMS-H:HRGD-H	2in
SMNO	HDRS-H:HRMS-H:HRGD-H	2in
STIT	DepthCorrection	6in
TENS	WLWorkflow	6in
TIME_1900	WLWorkflow	0.1in

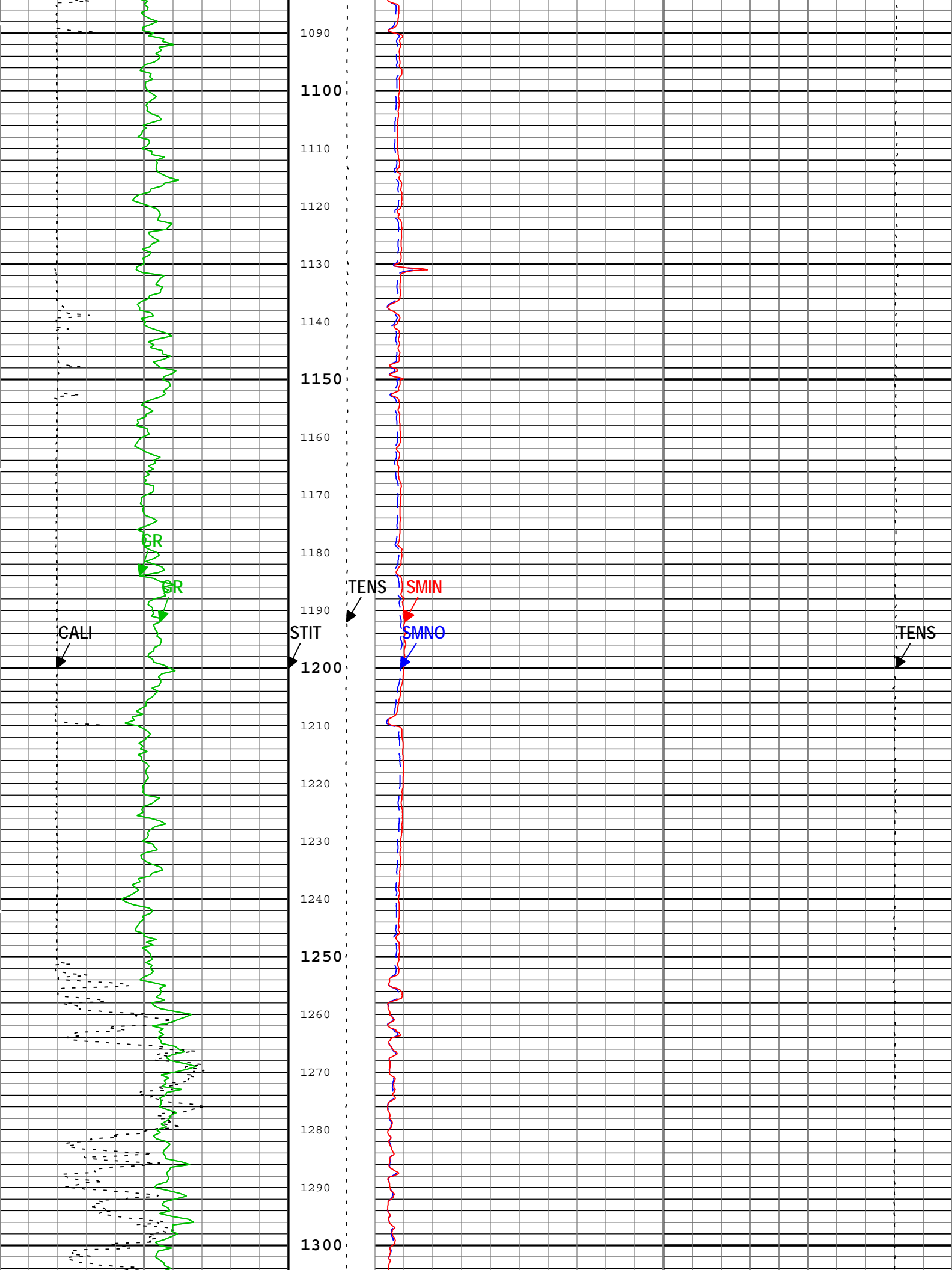
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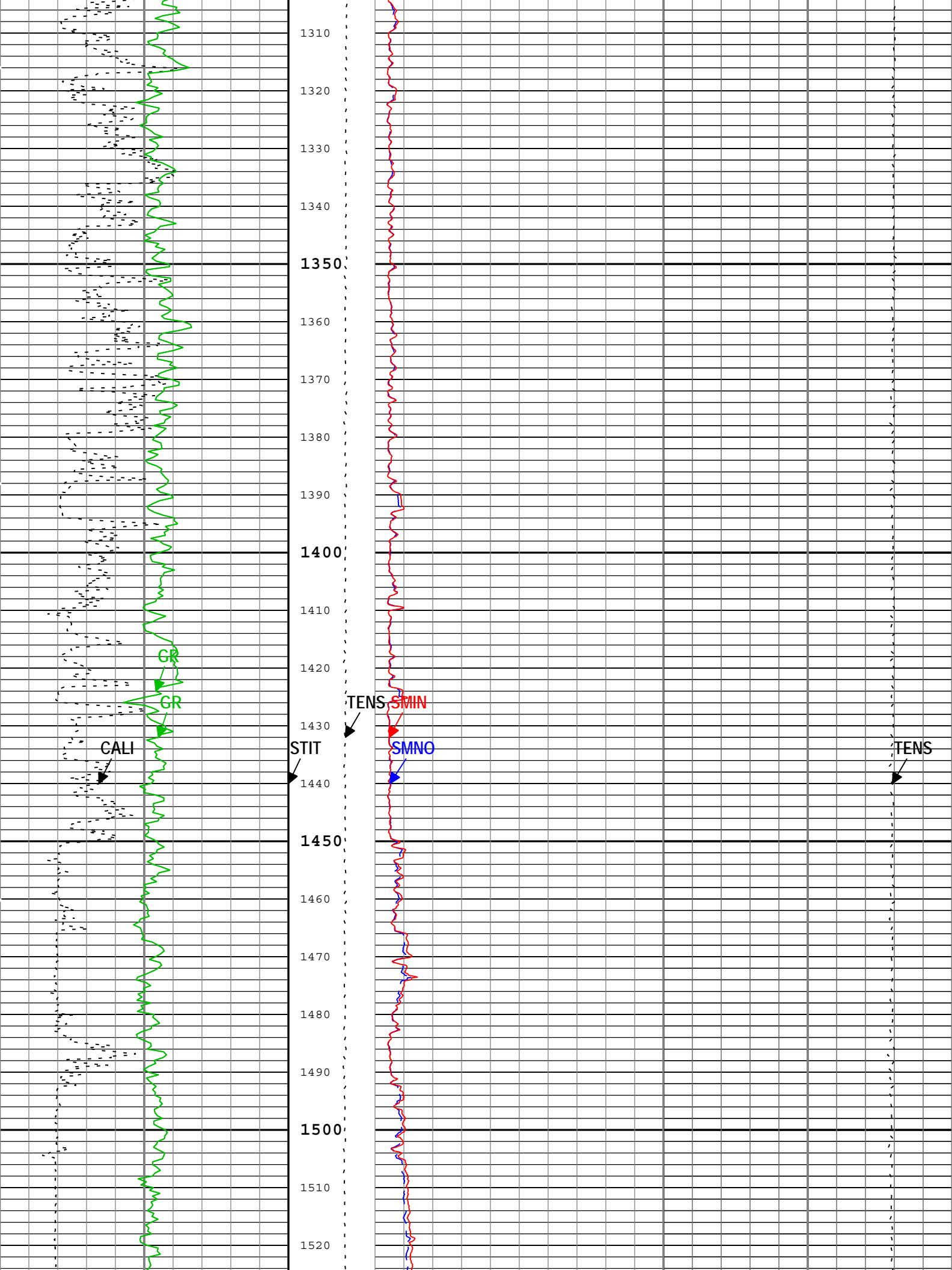


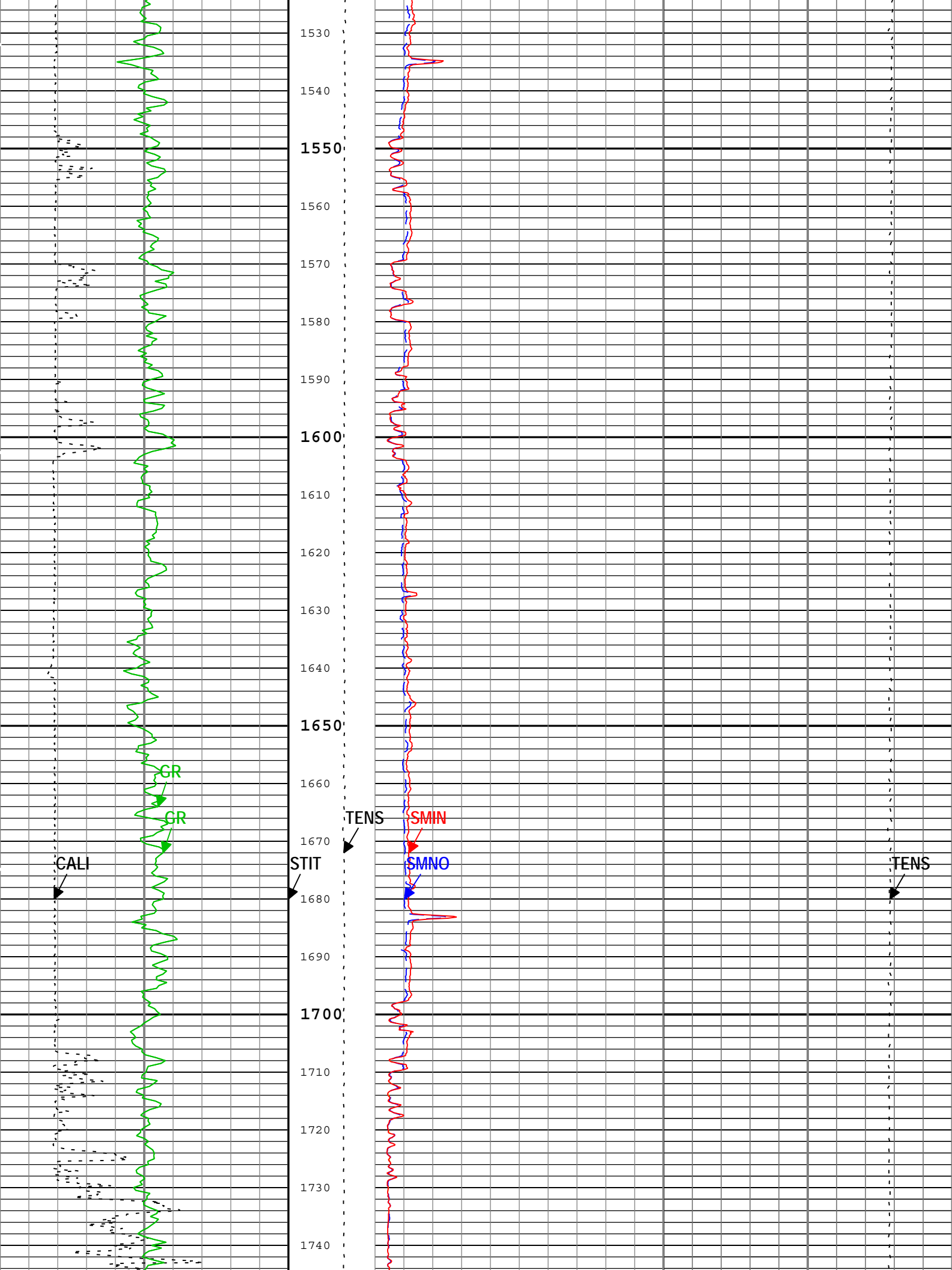


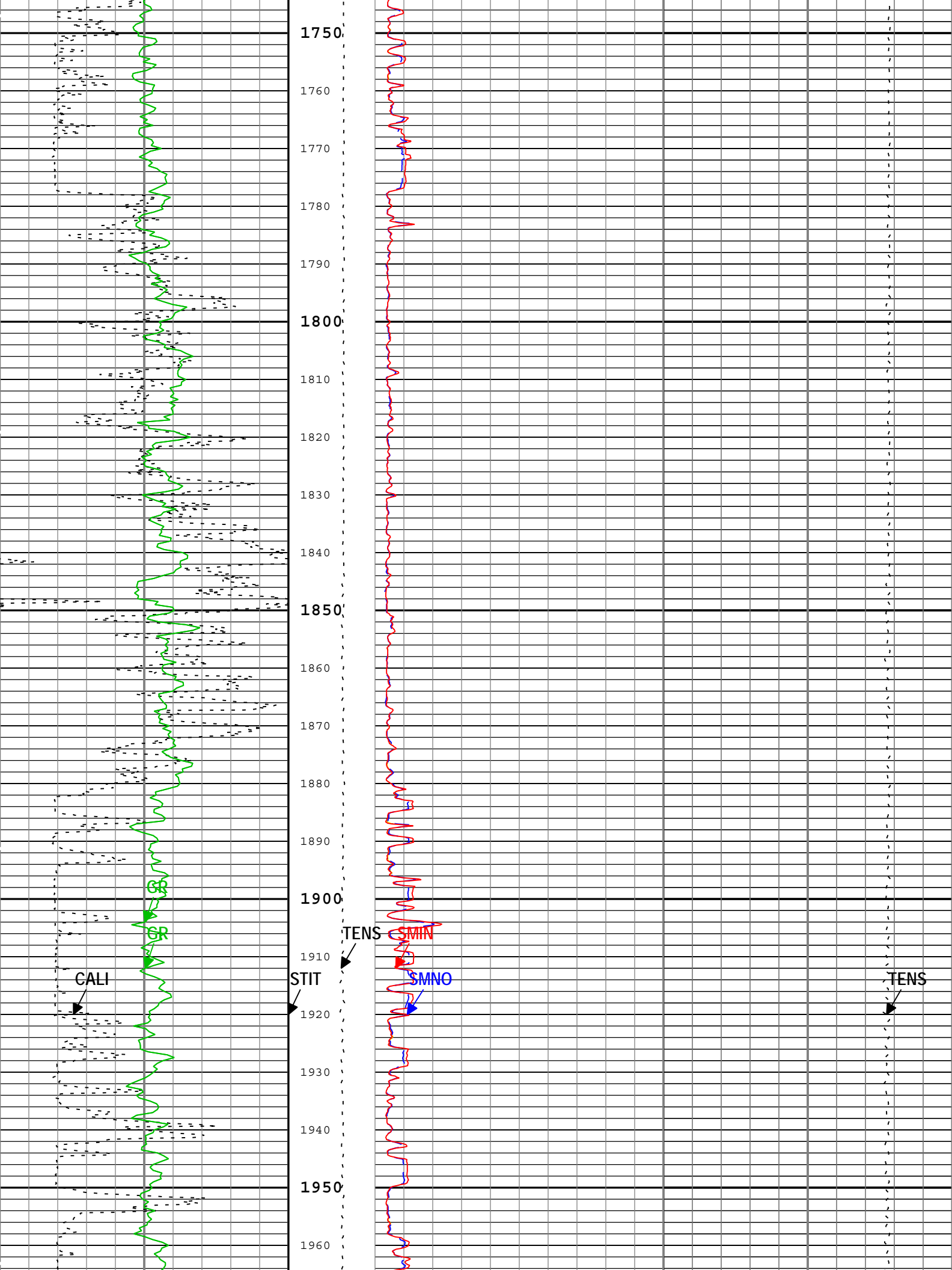


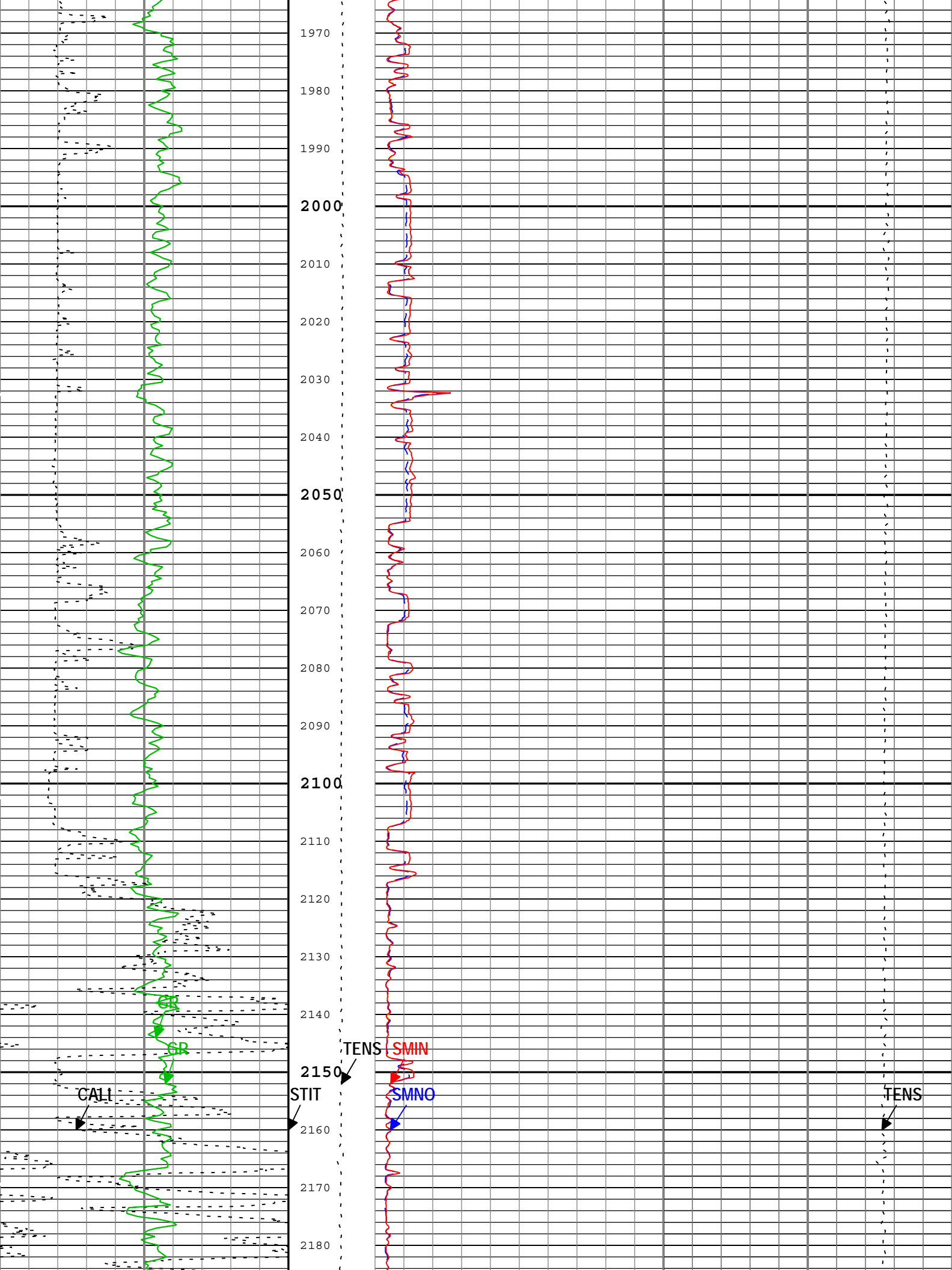


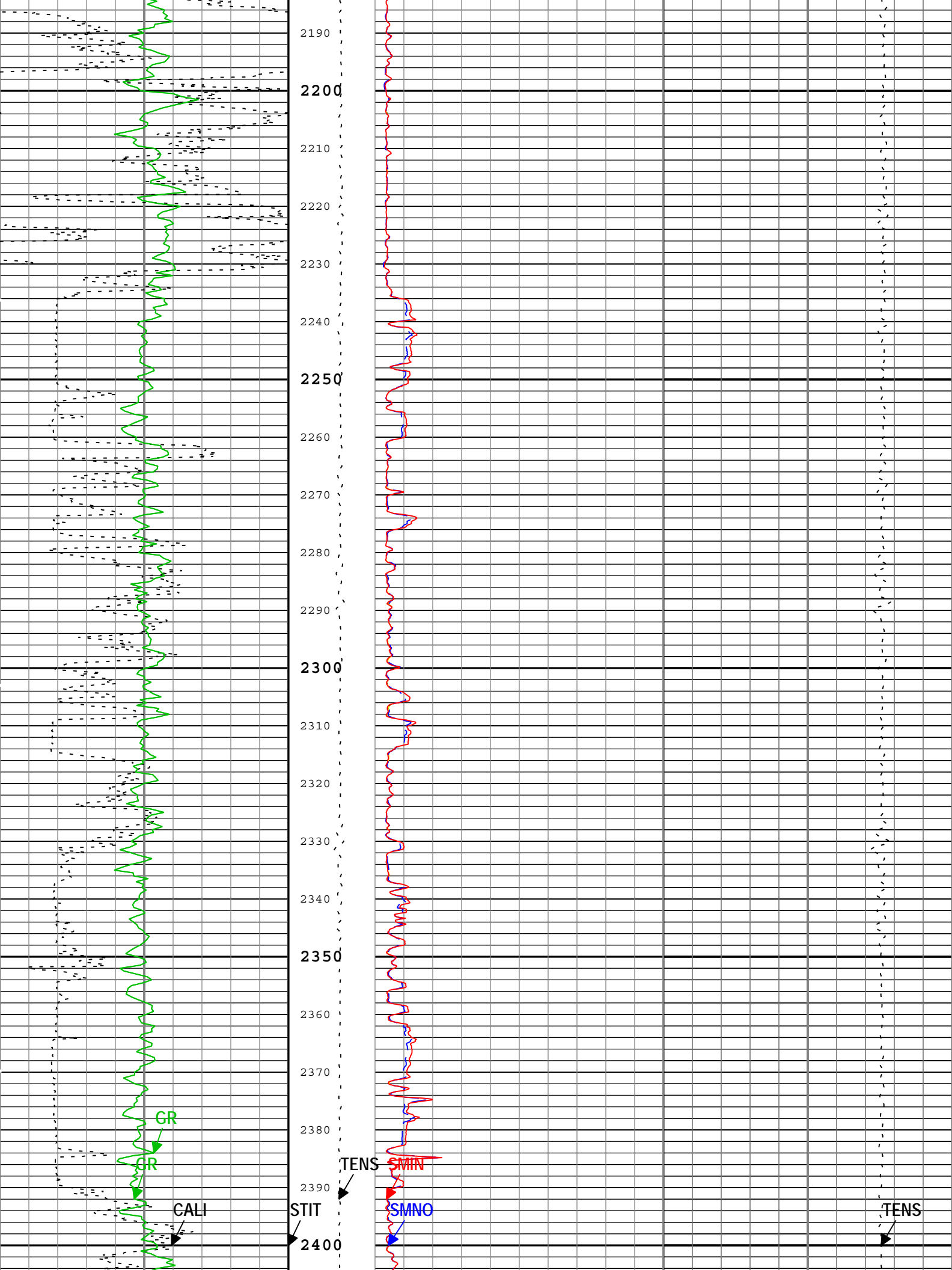


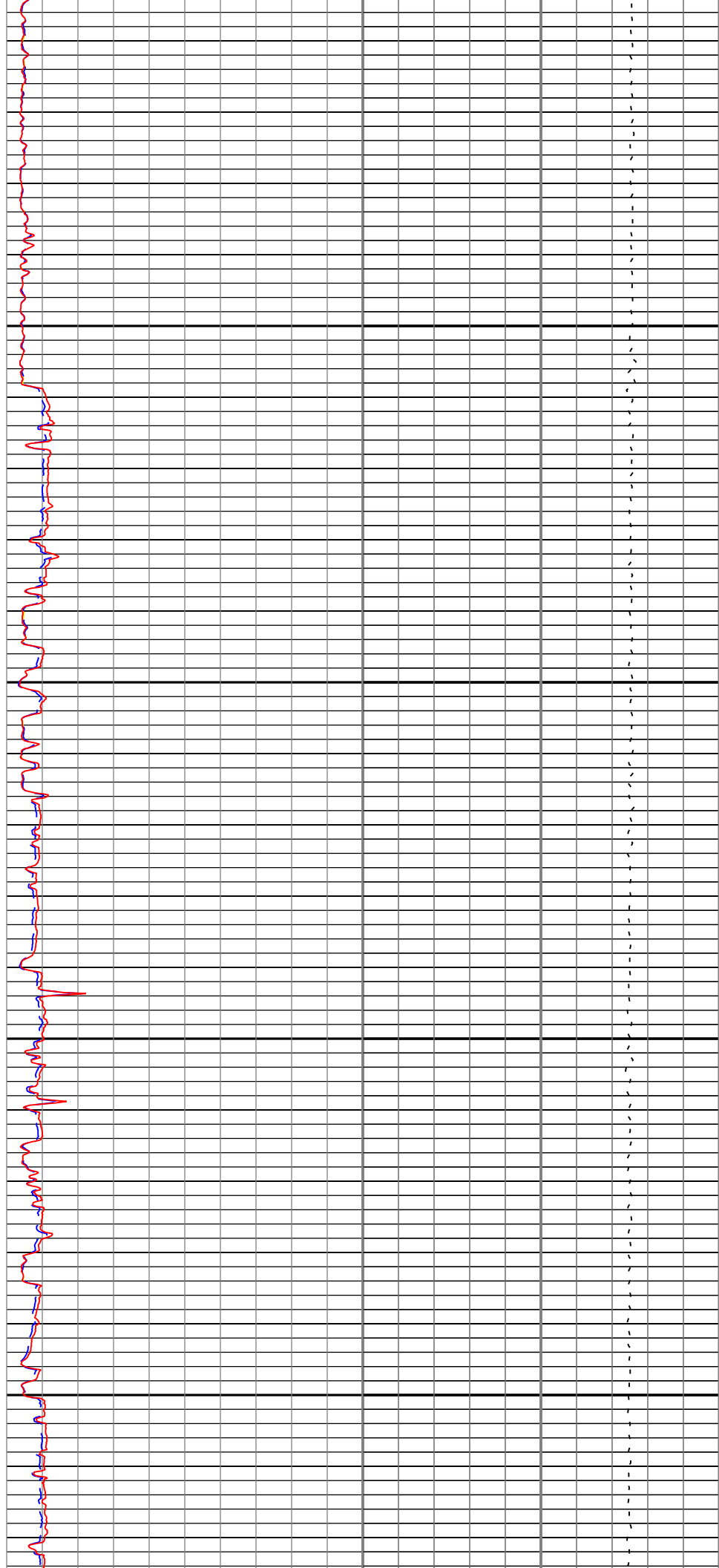
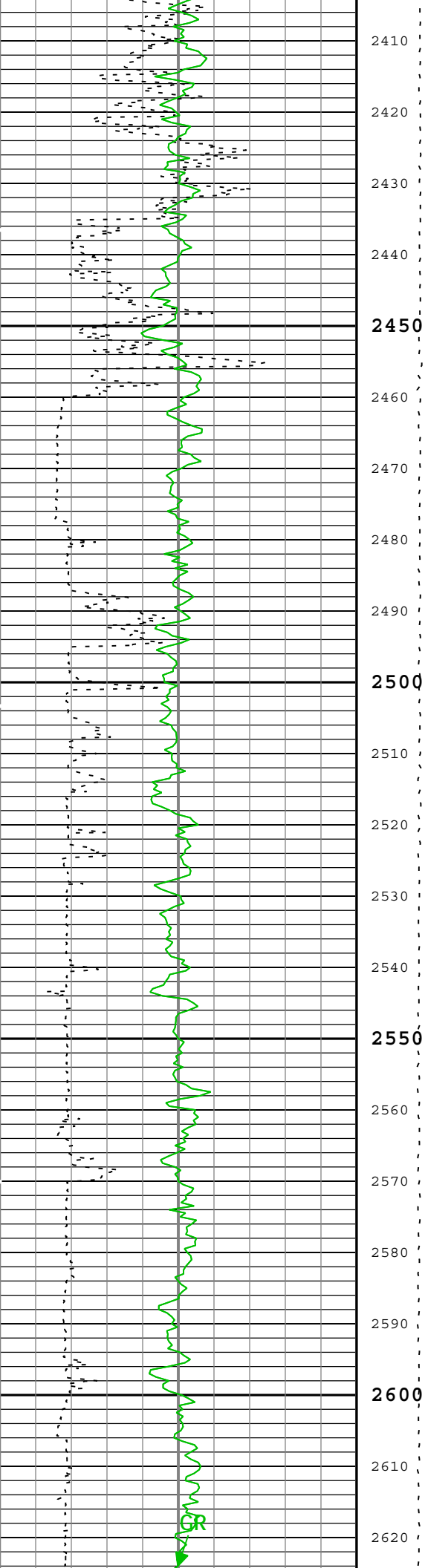


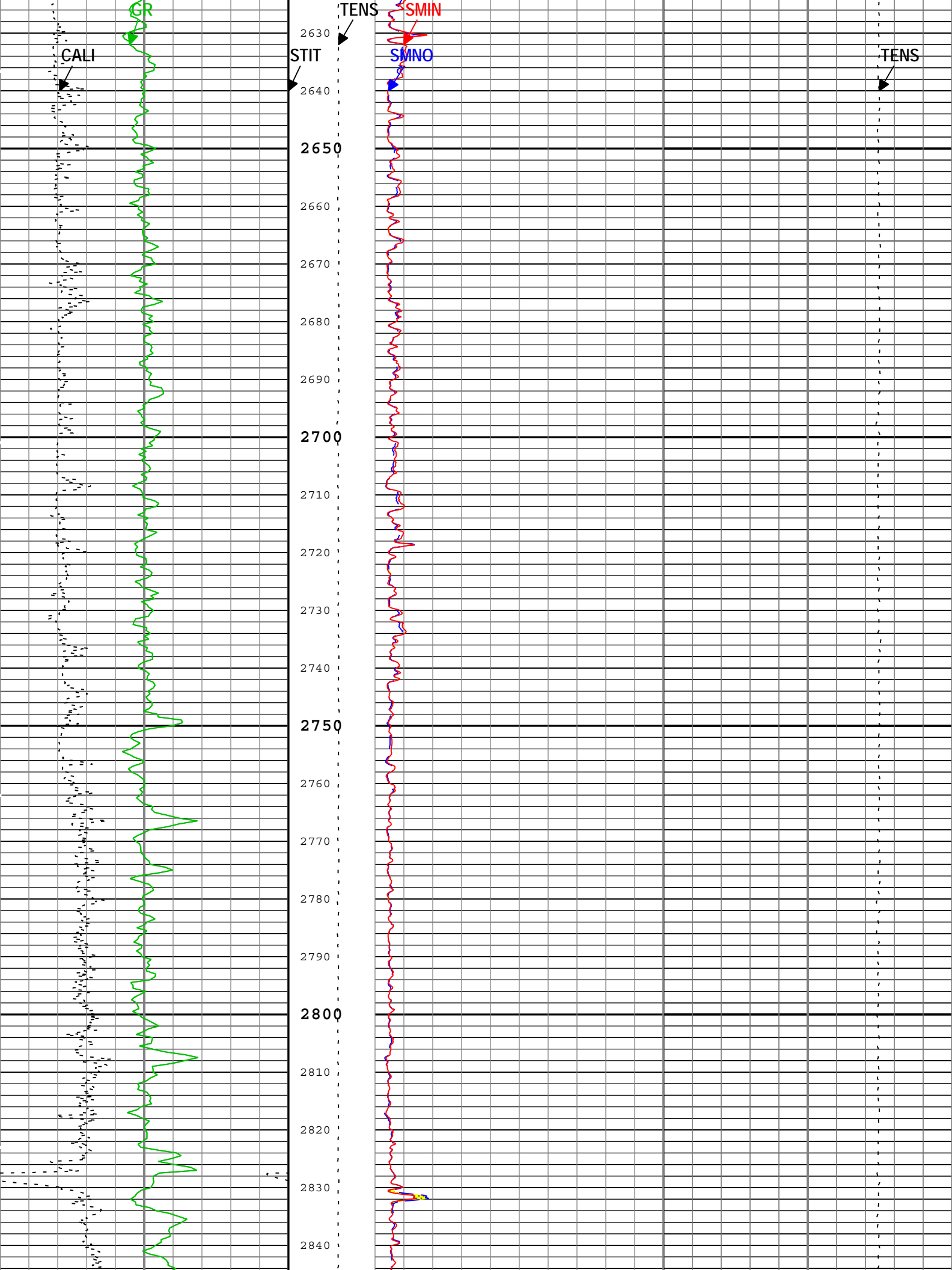


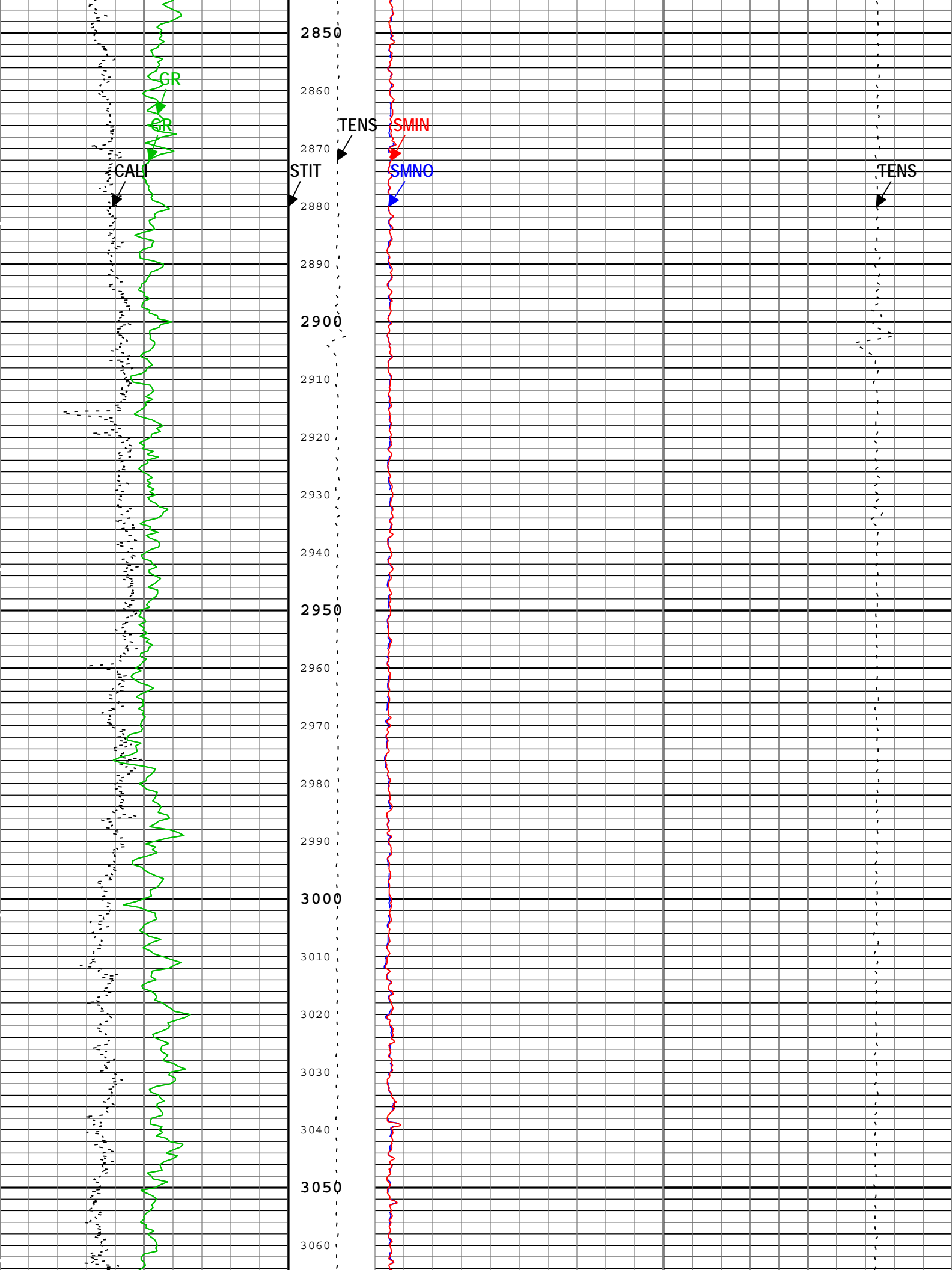


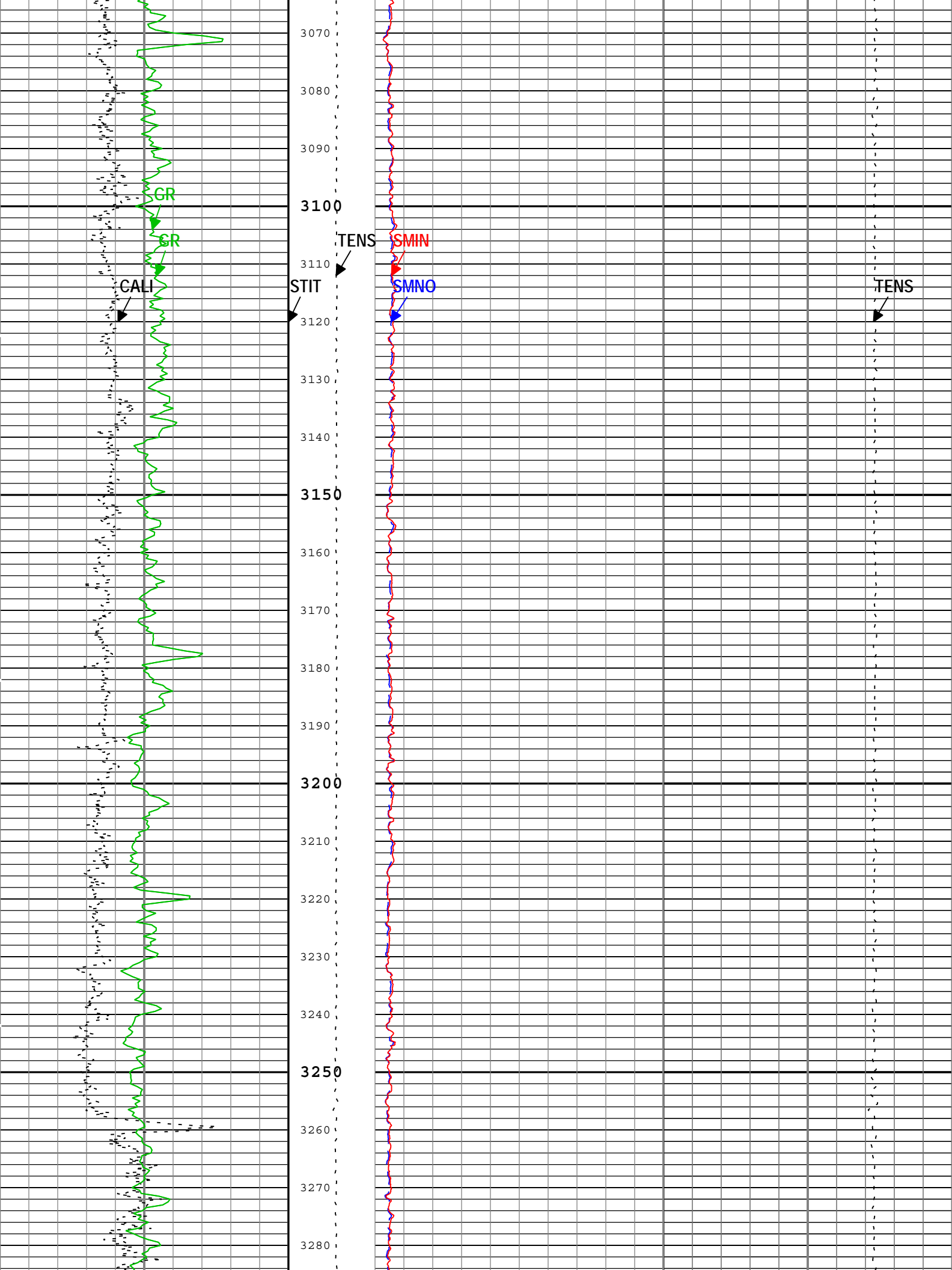


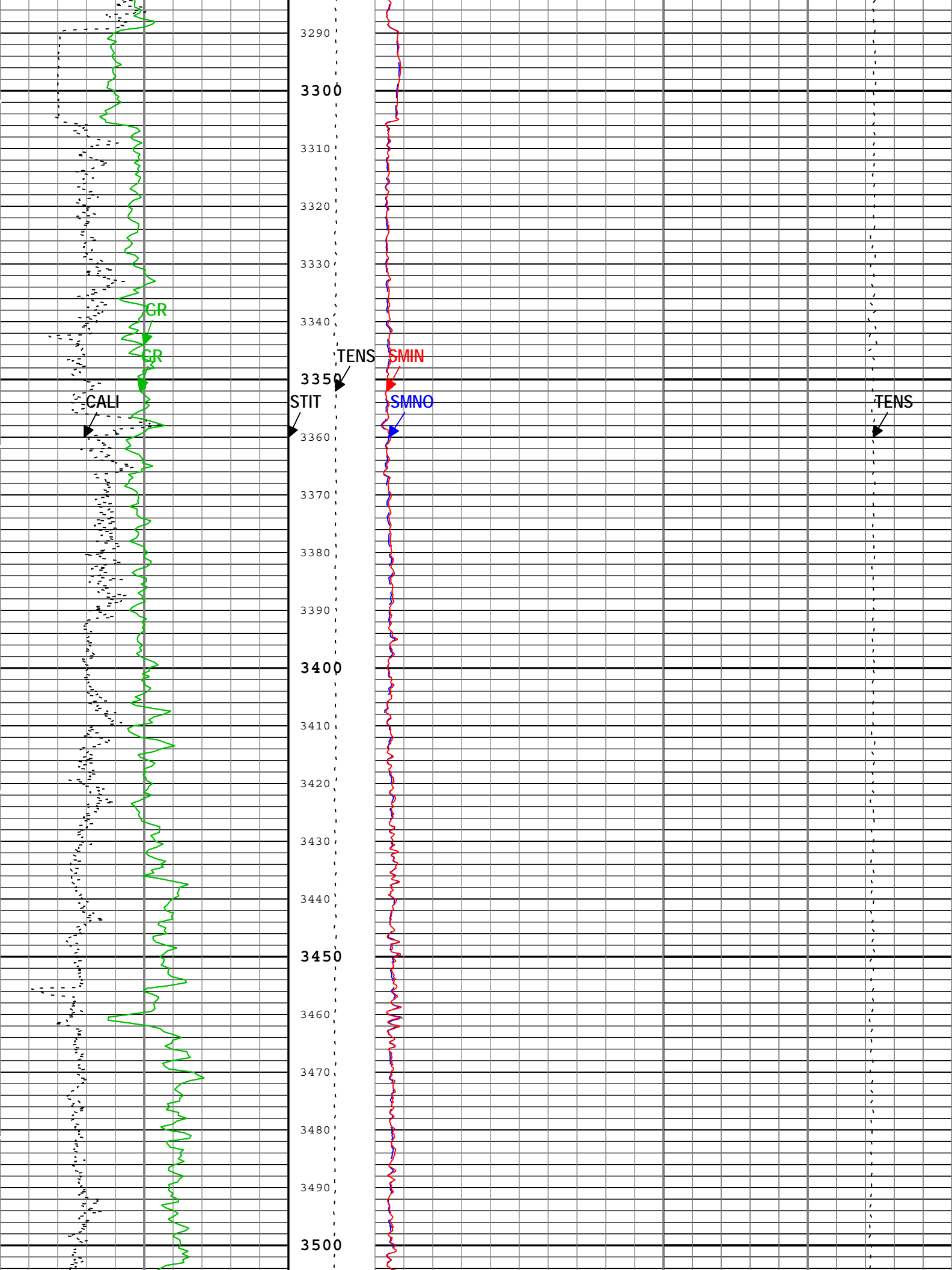


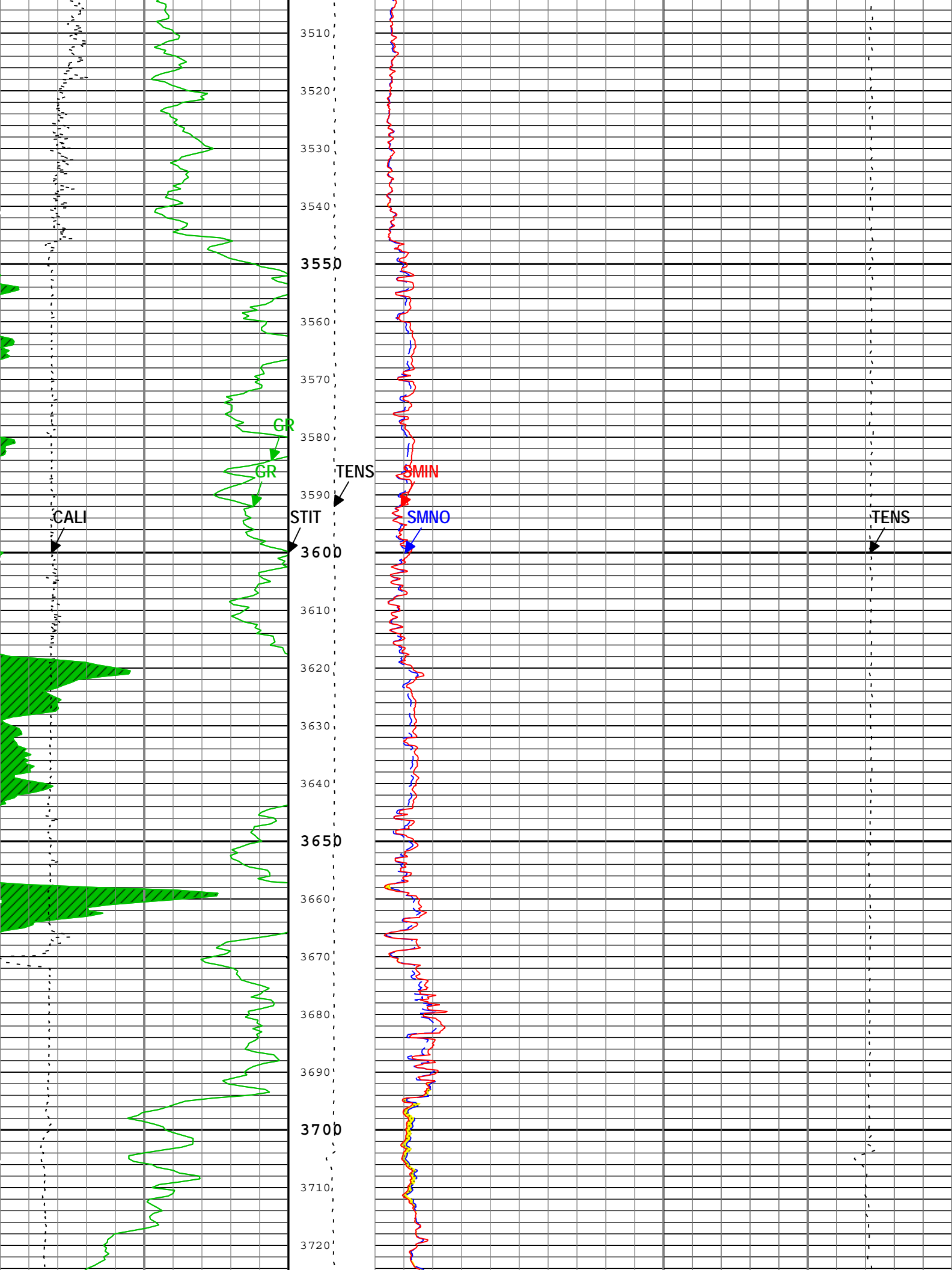


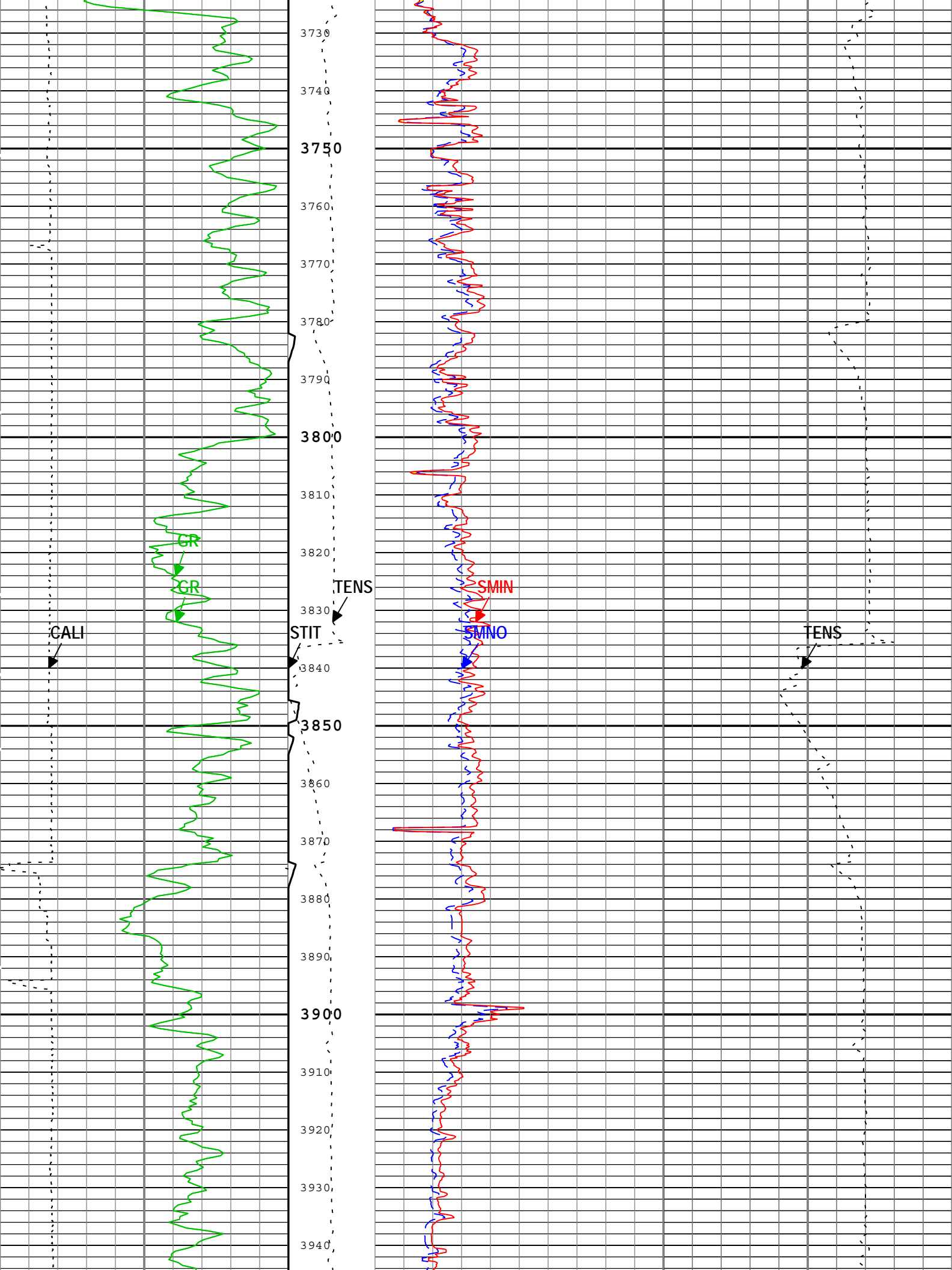


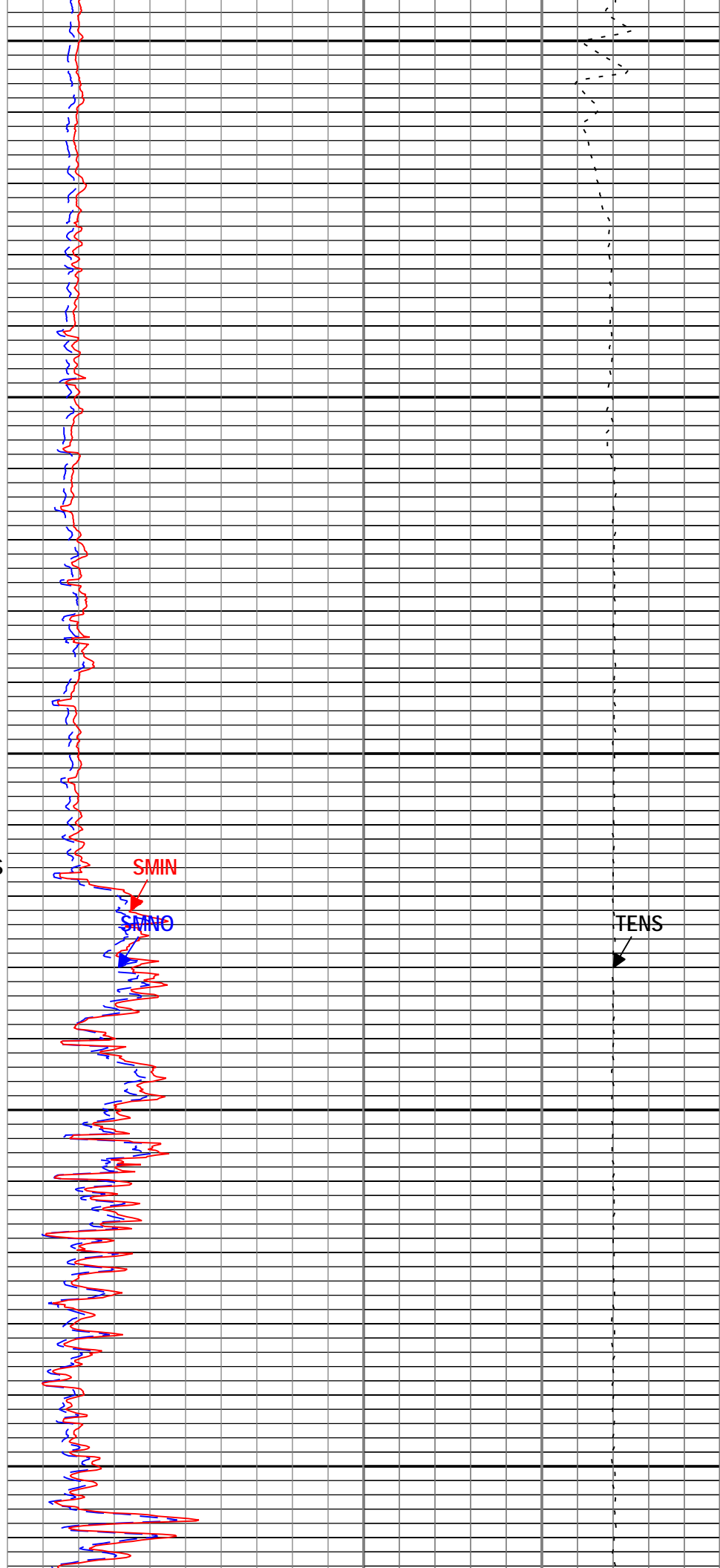
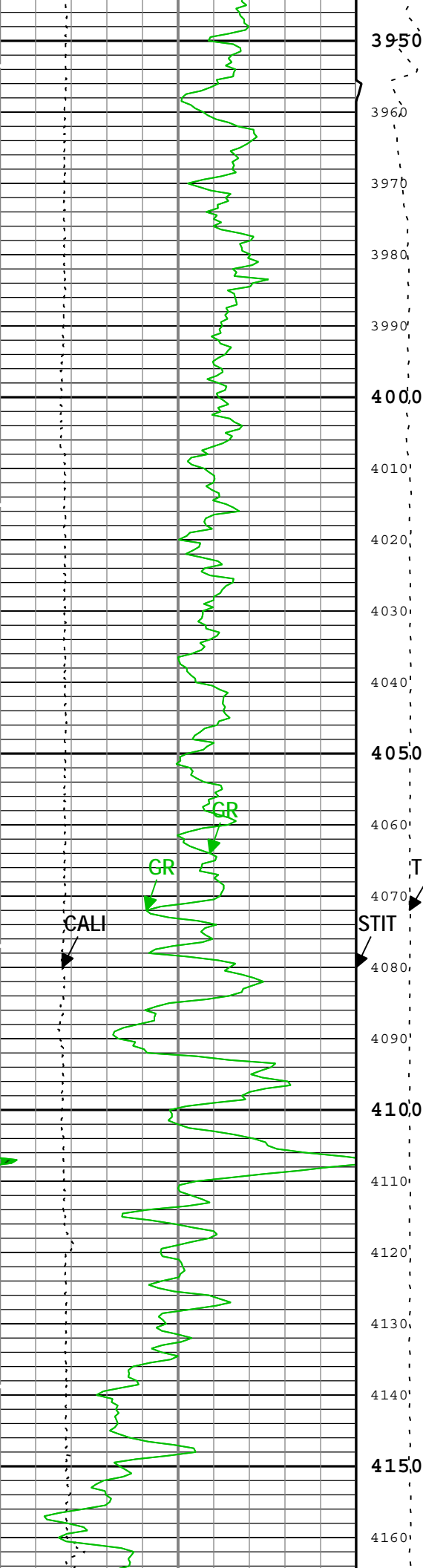


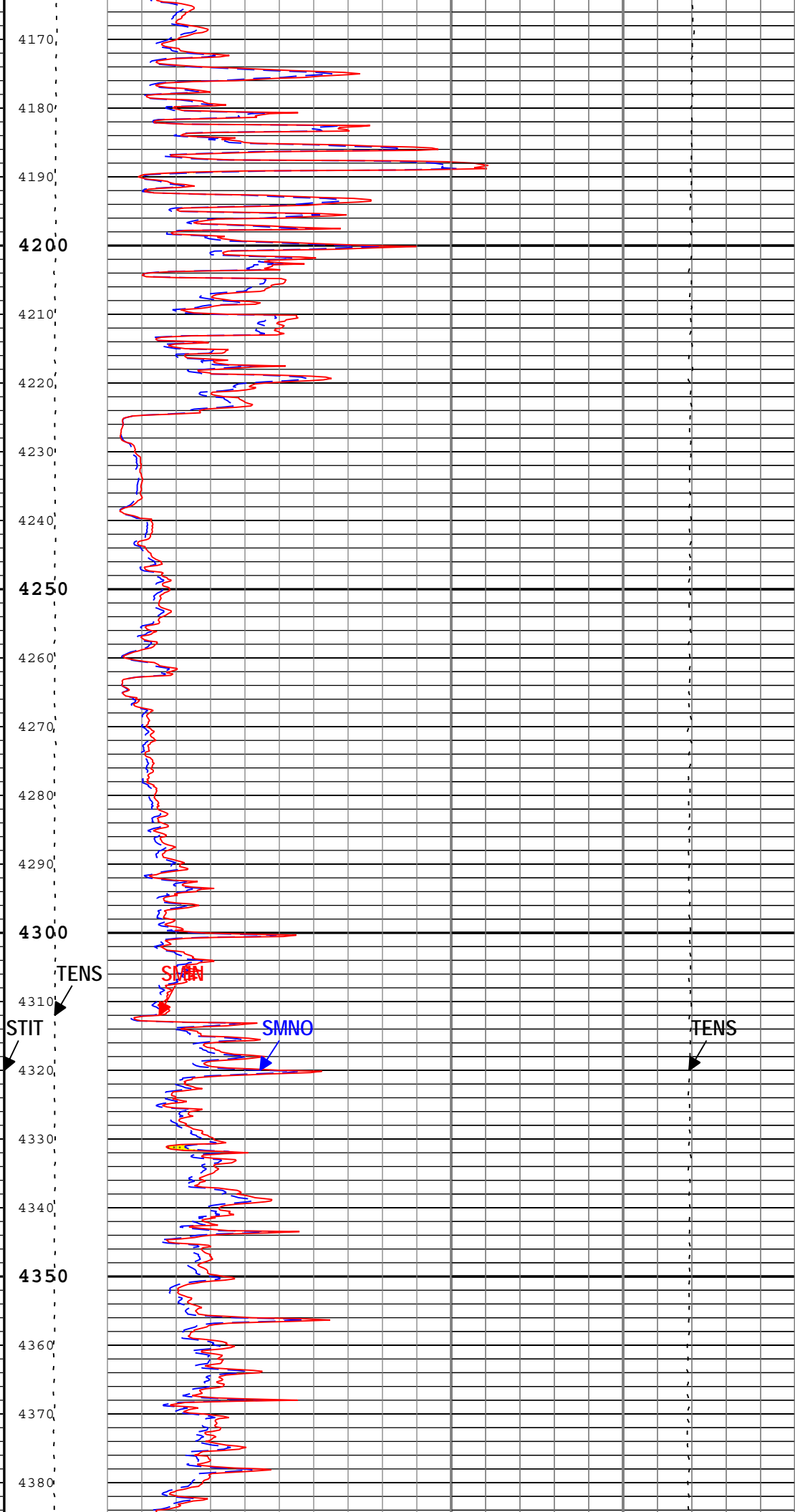
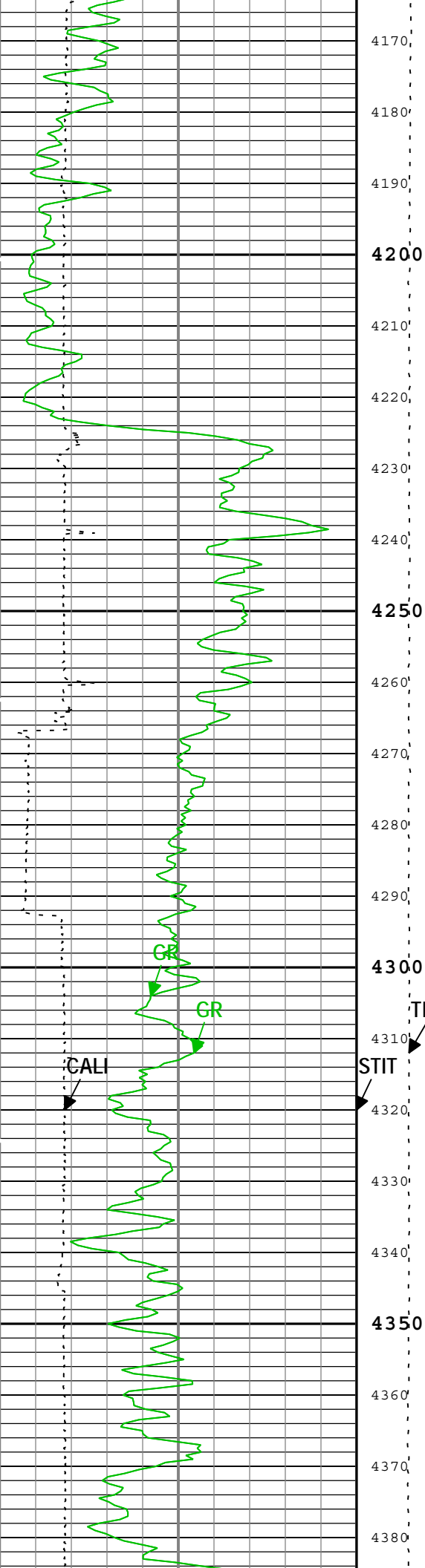


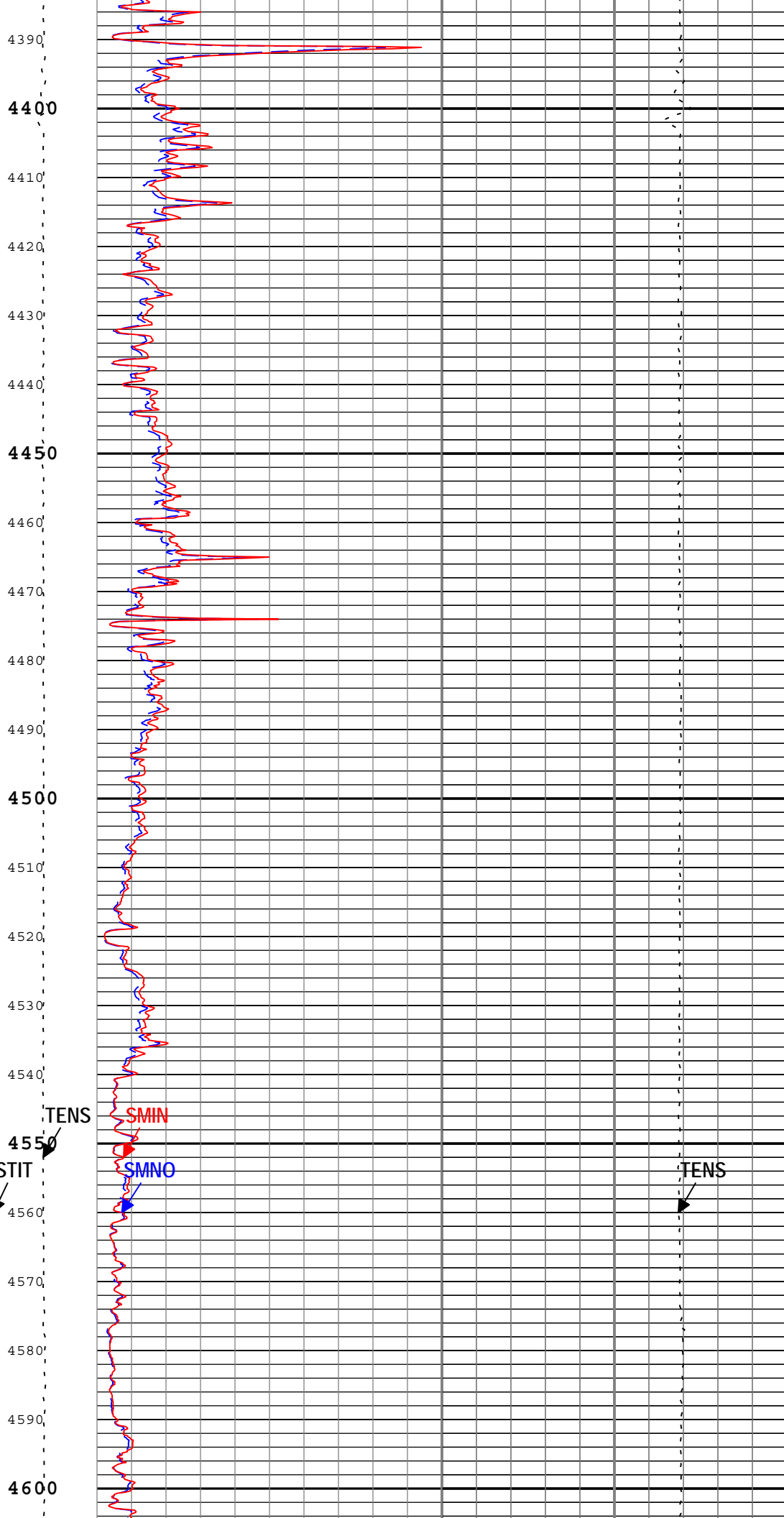
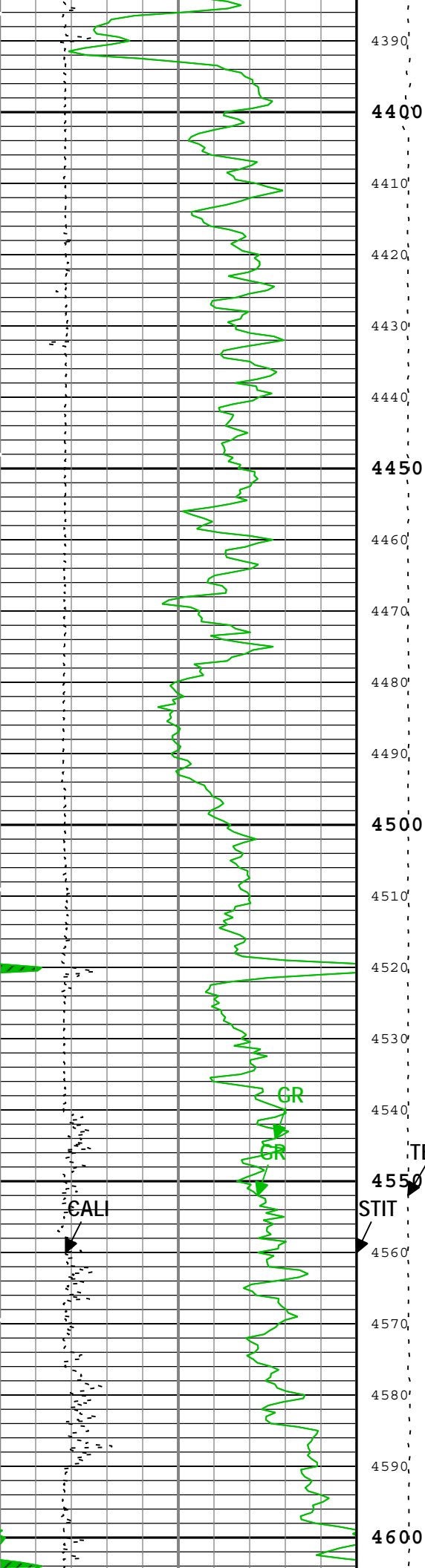


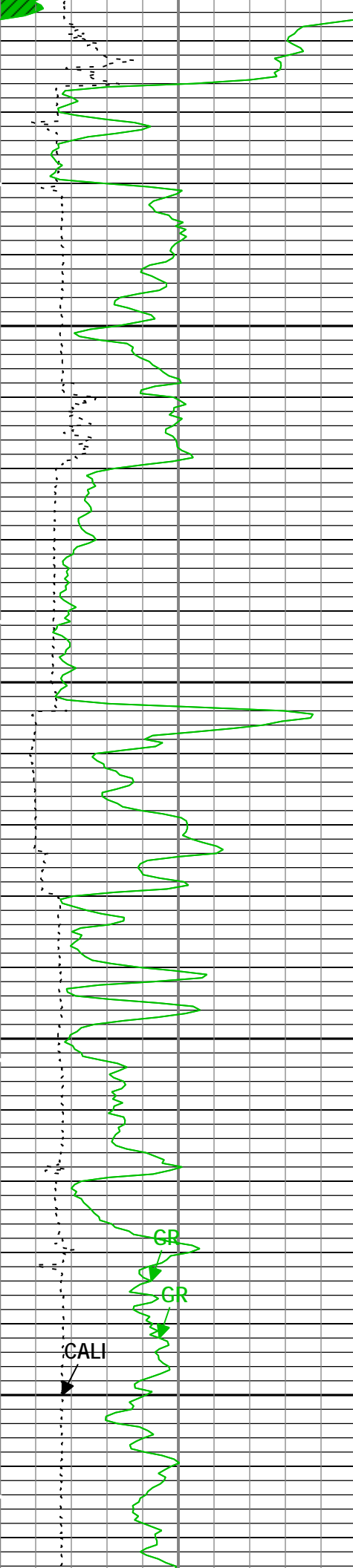




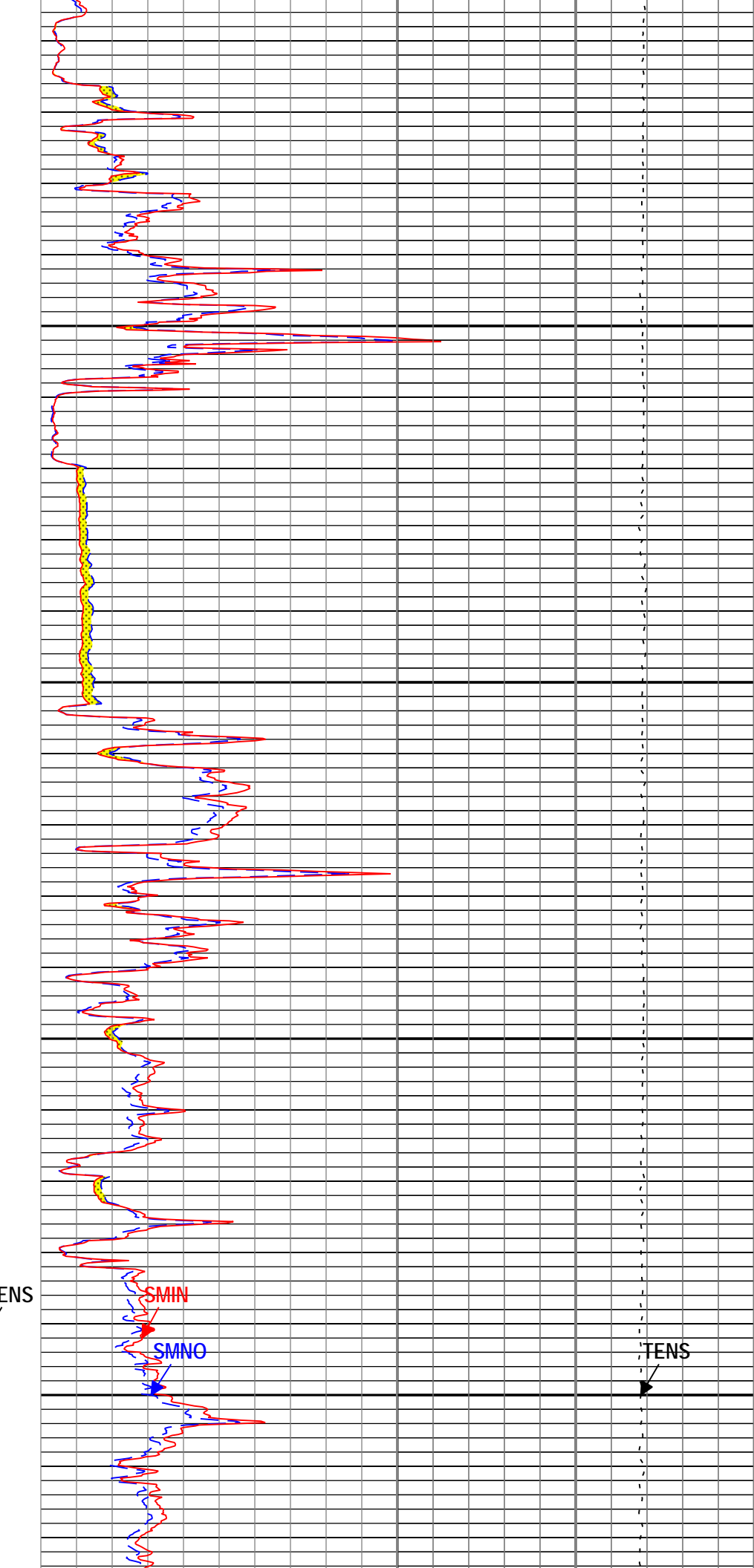








4610
4620
4630
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4680
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4800
4810
4820



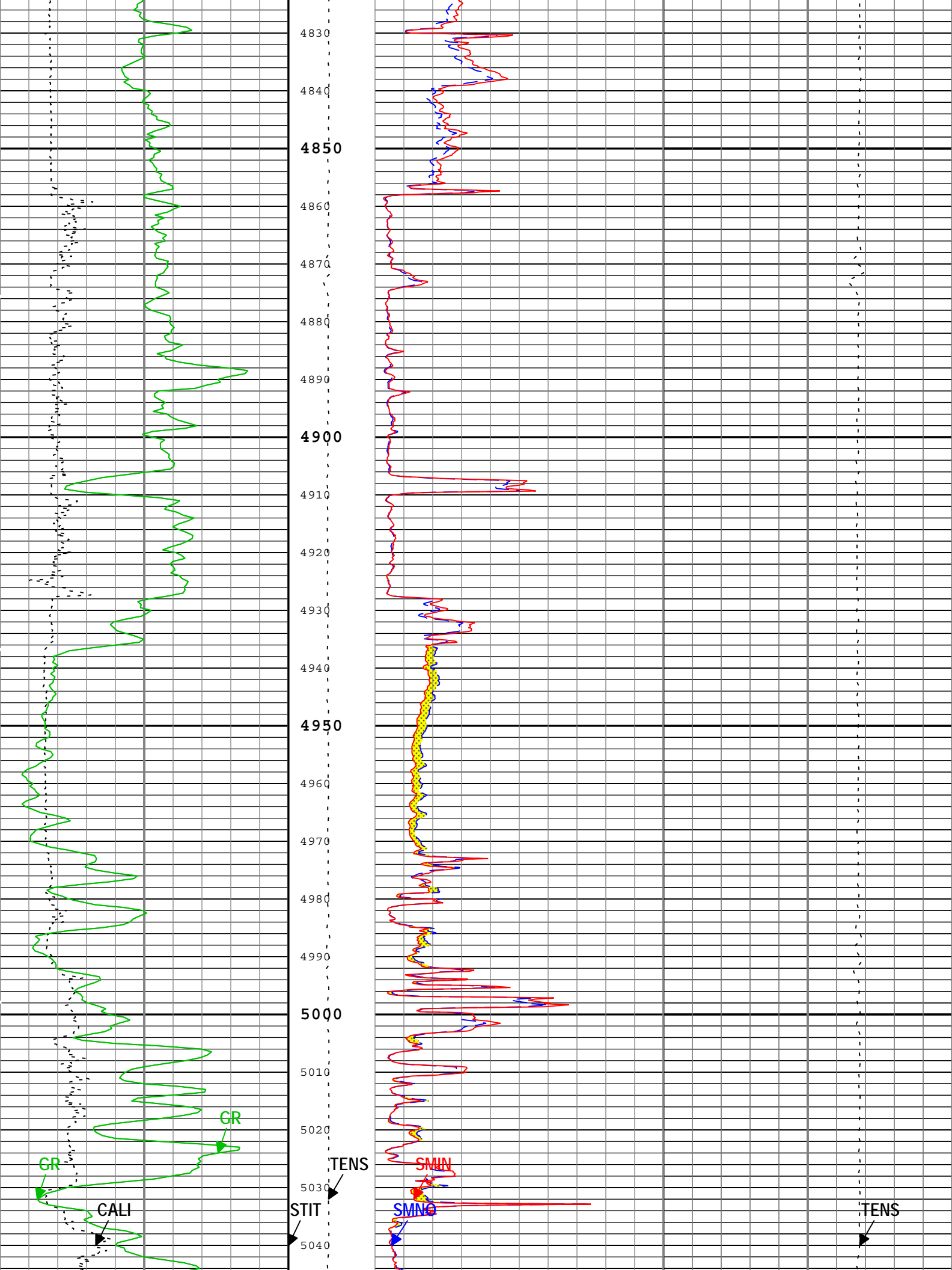
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STIT

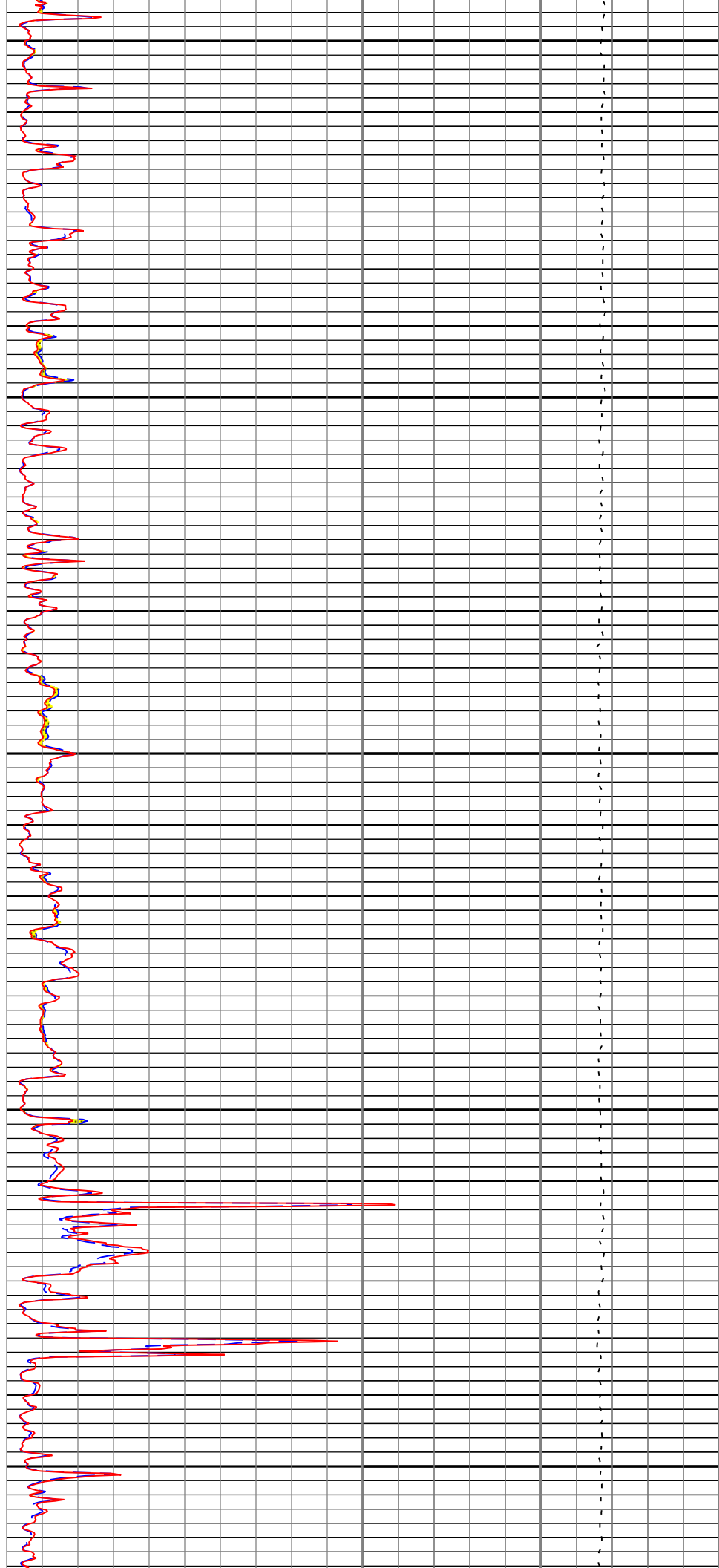
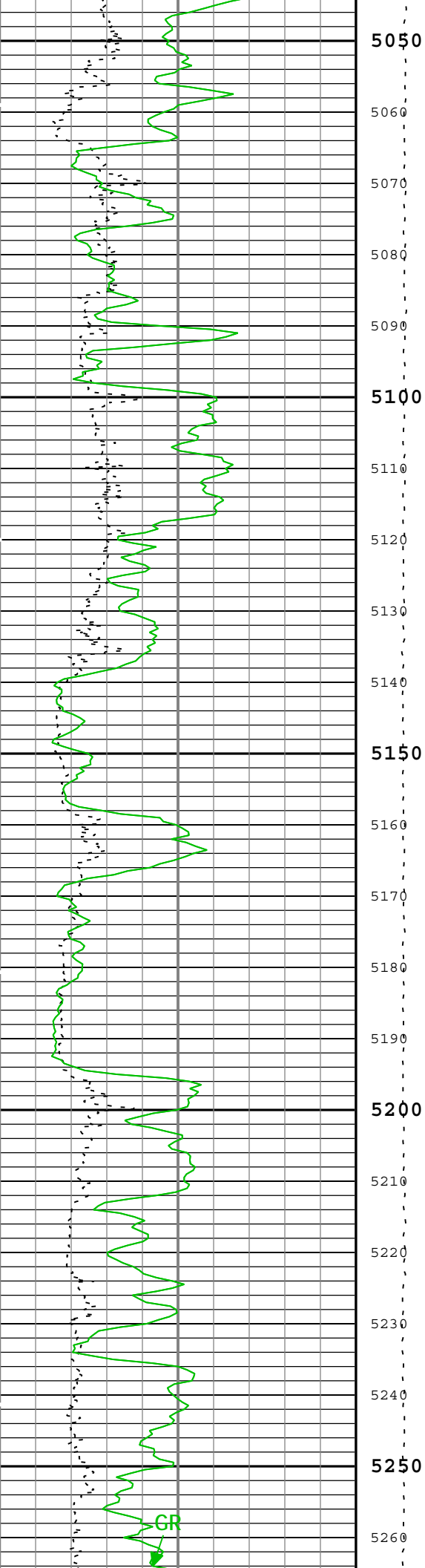
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SMNO

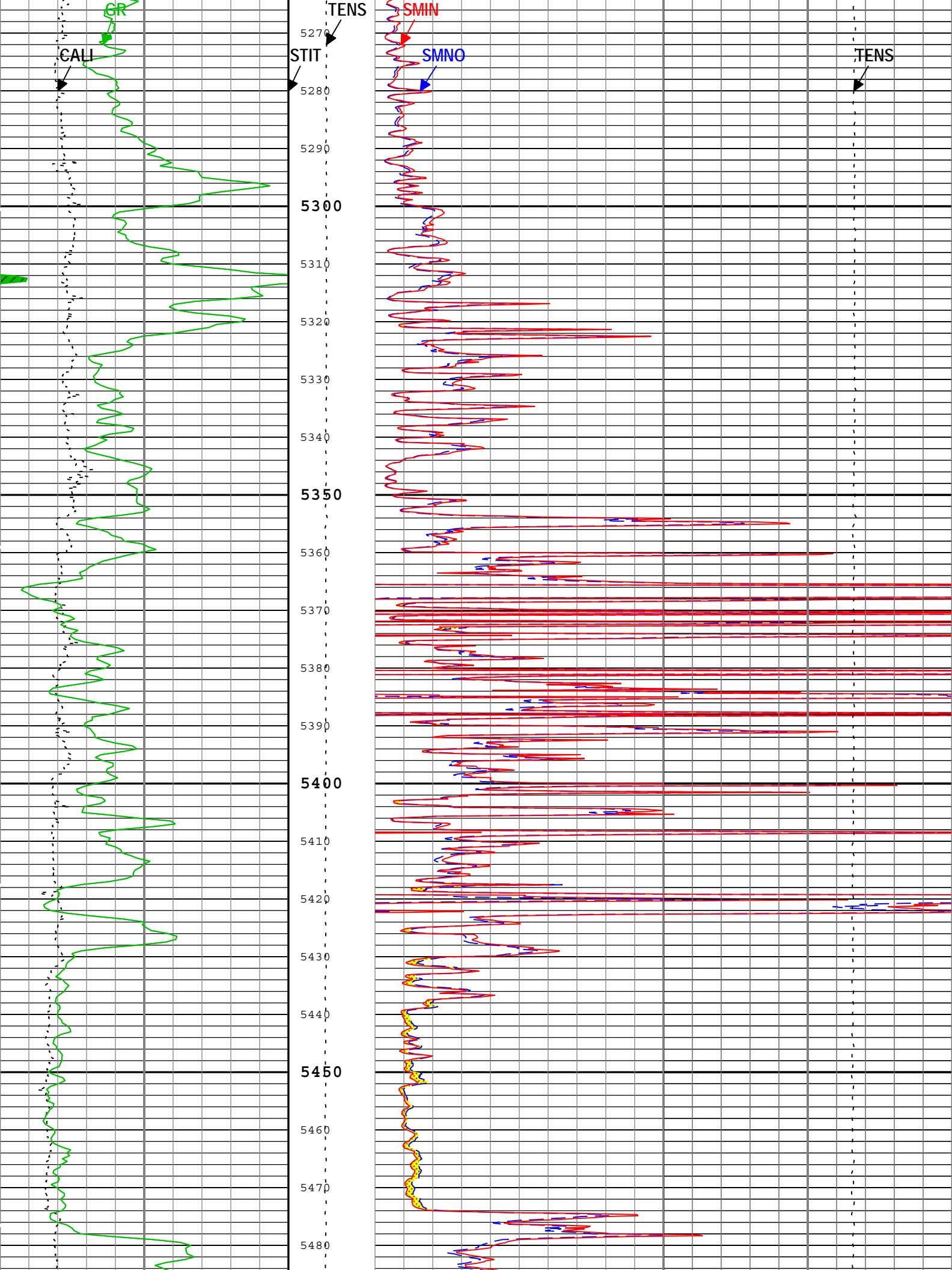
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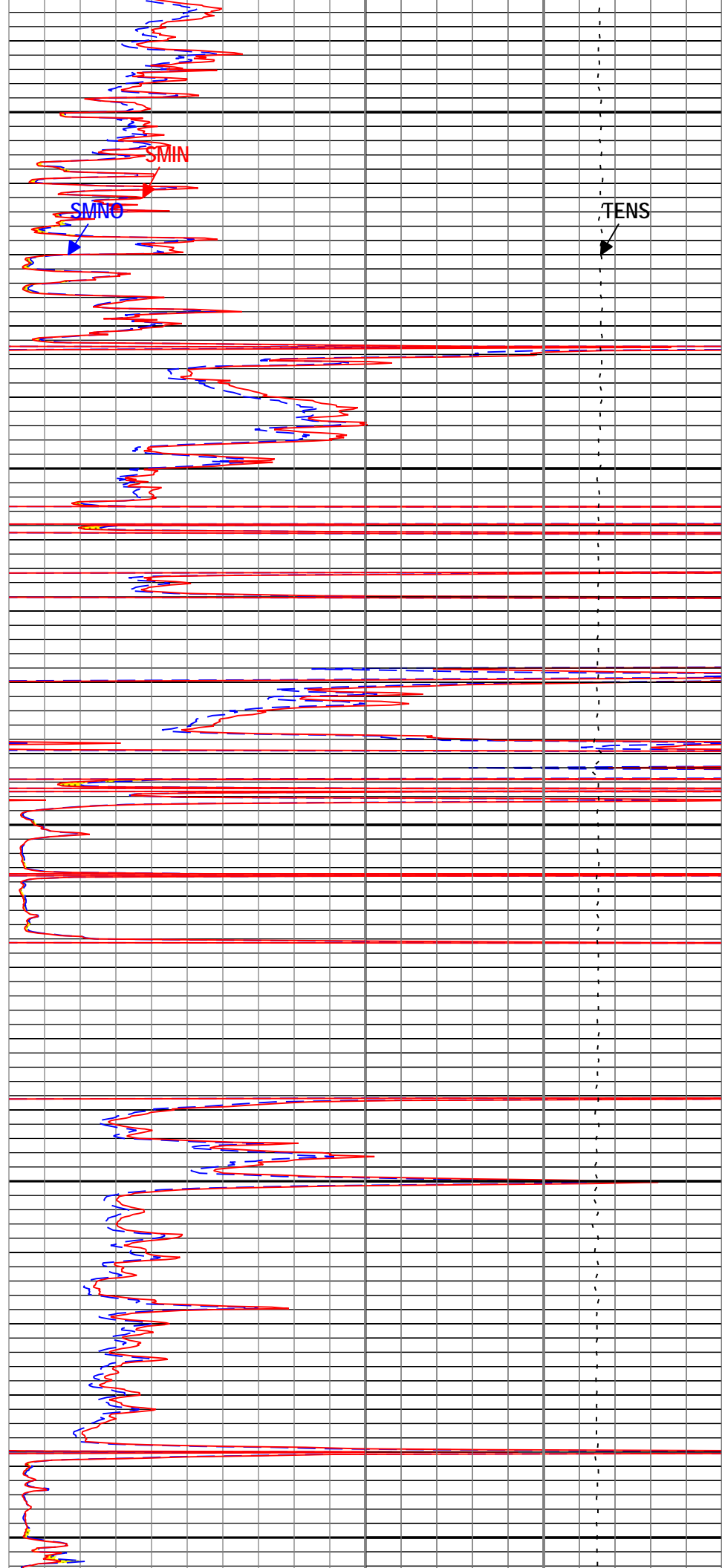
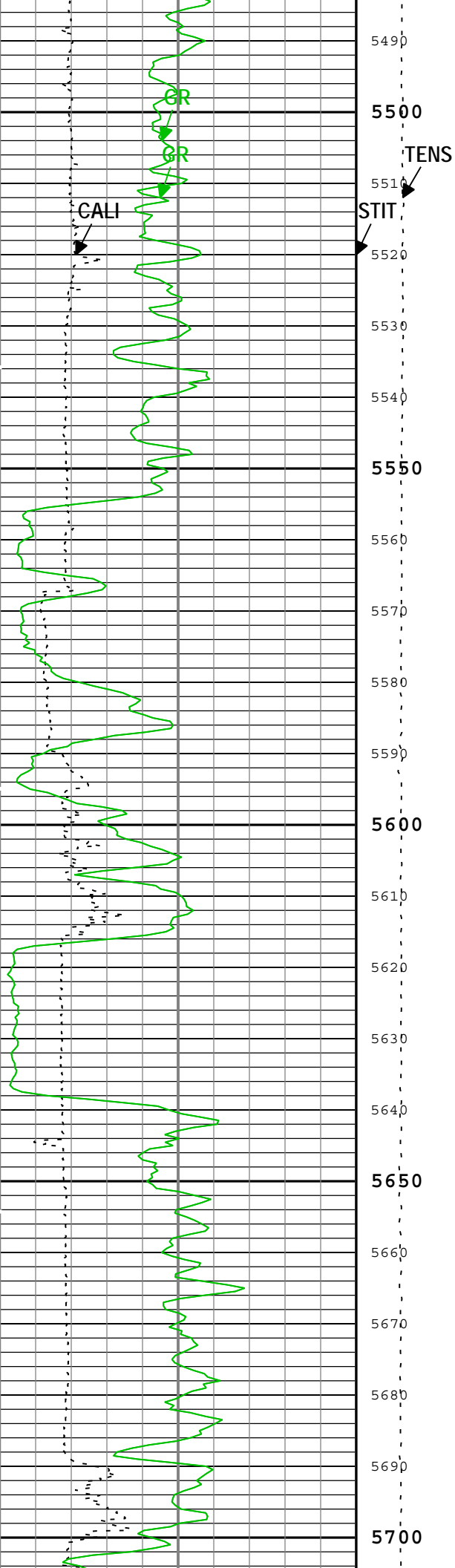
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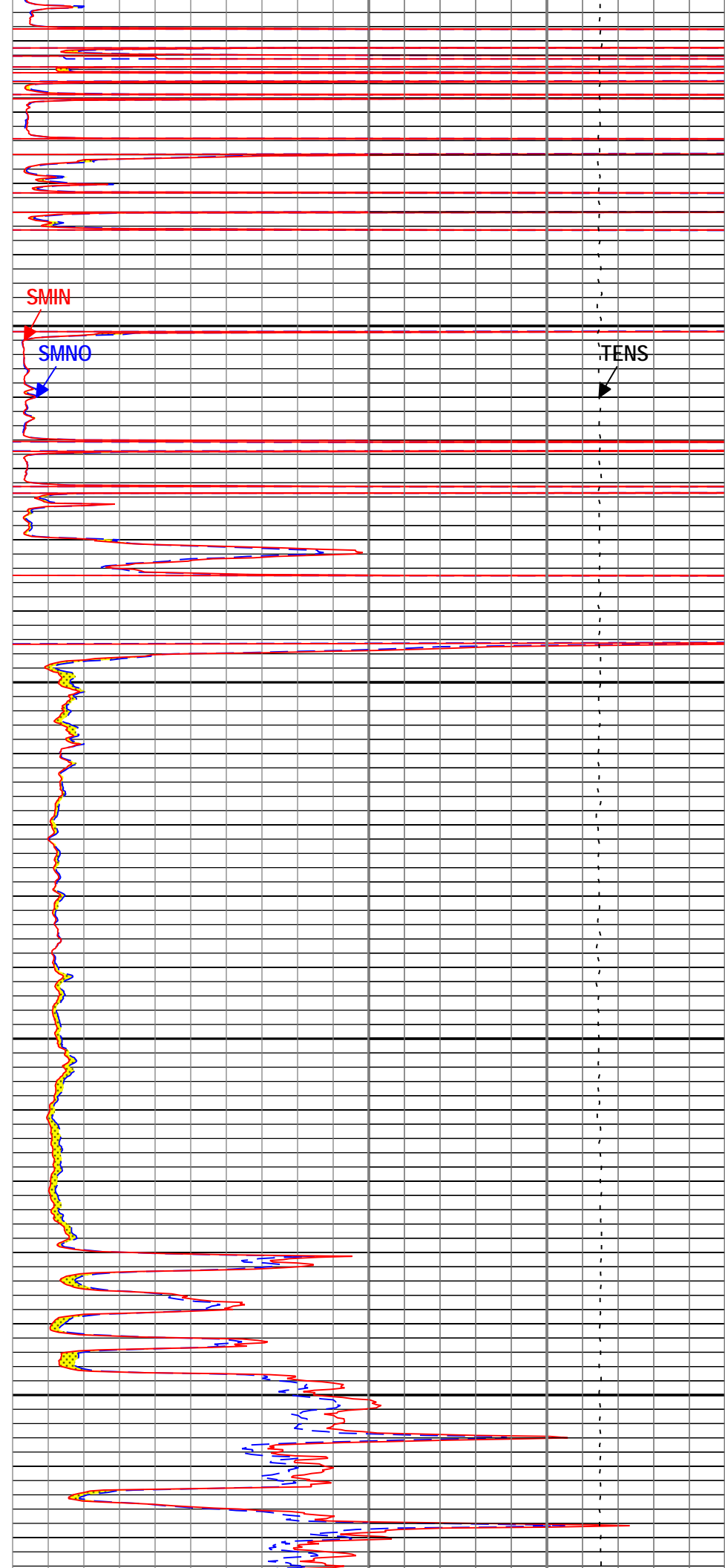
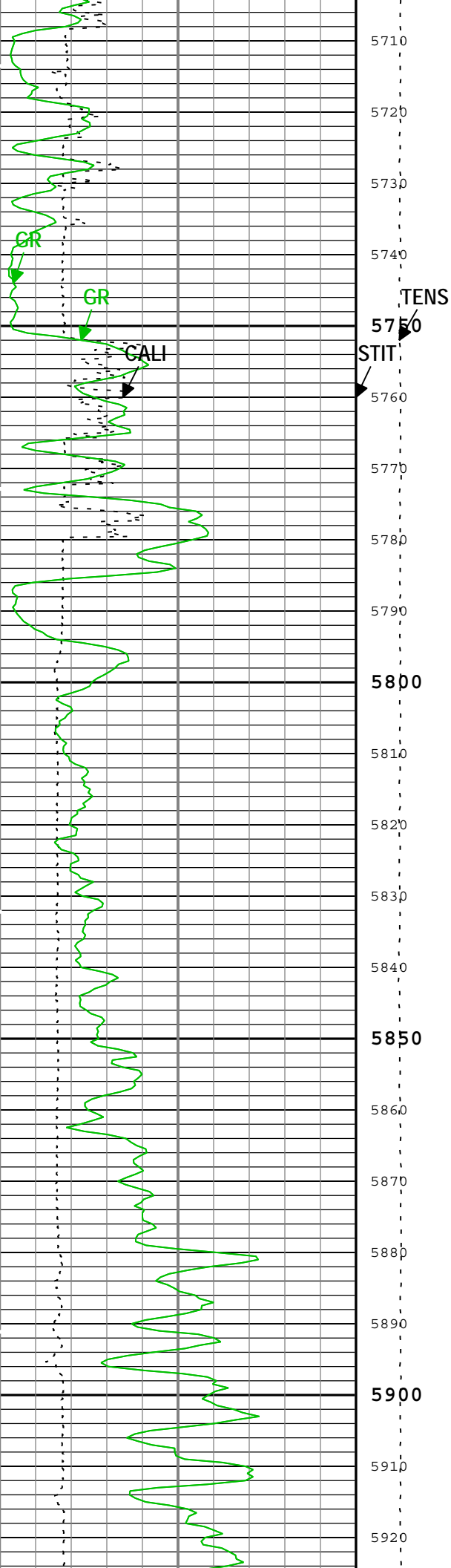
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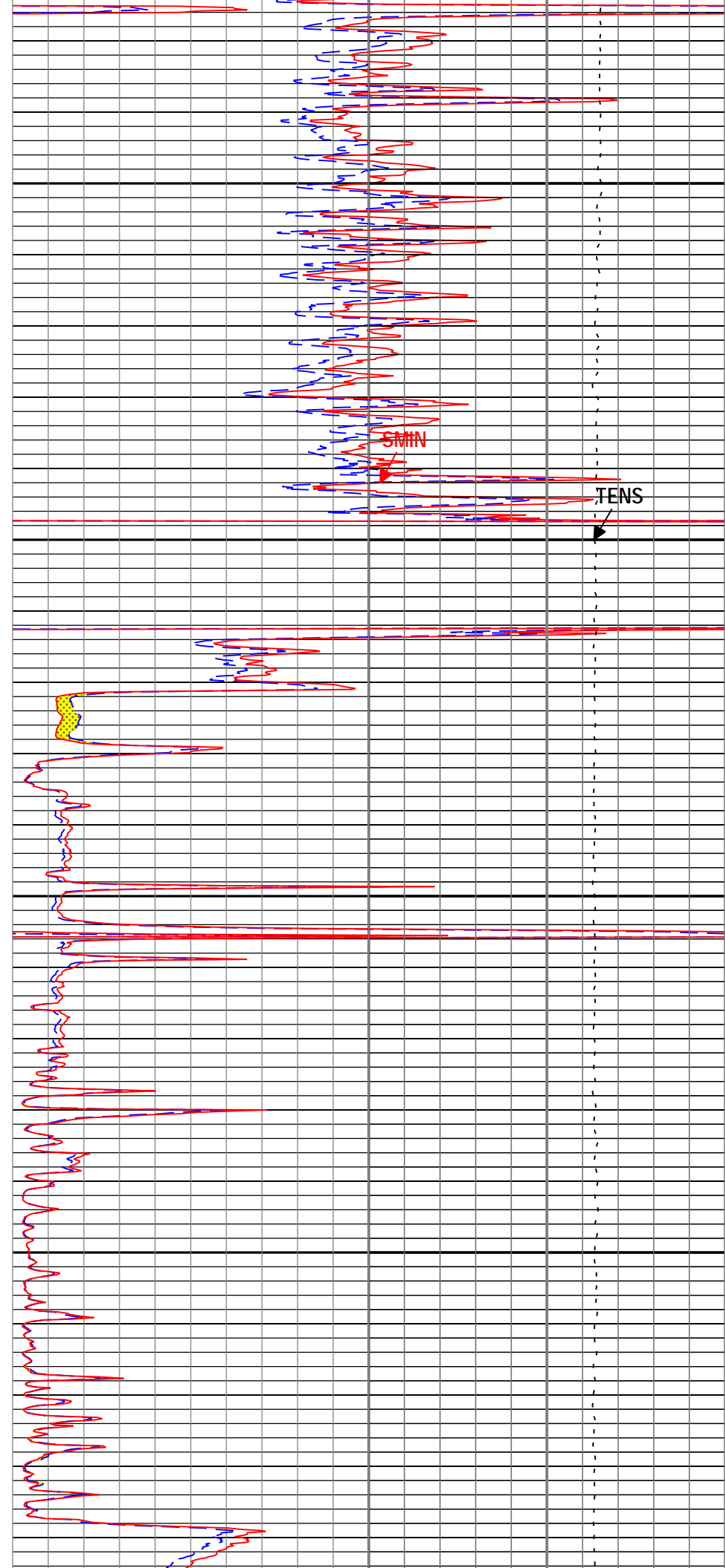
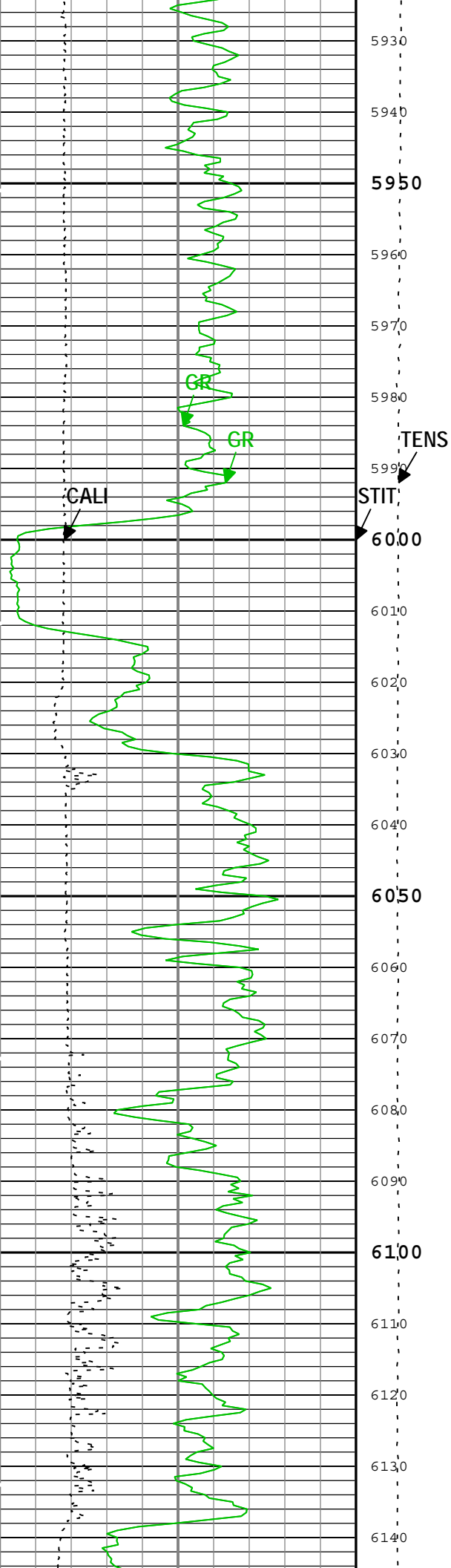


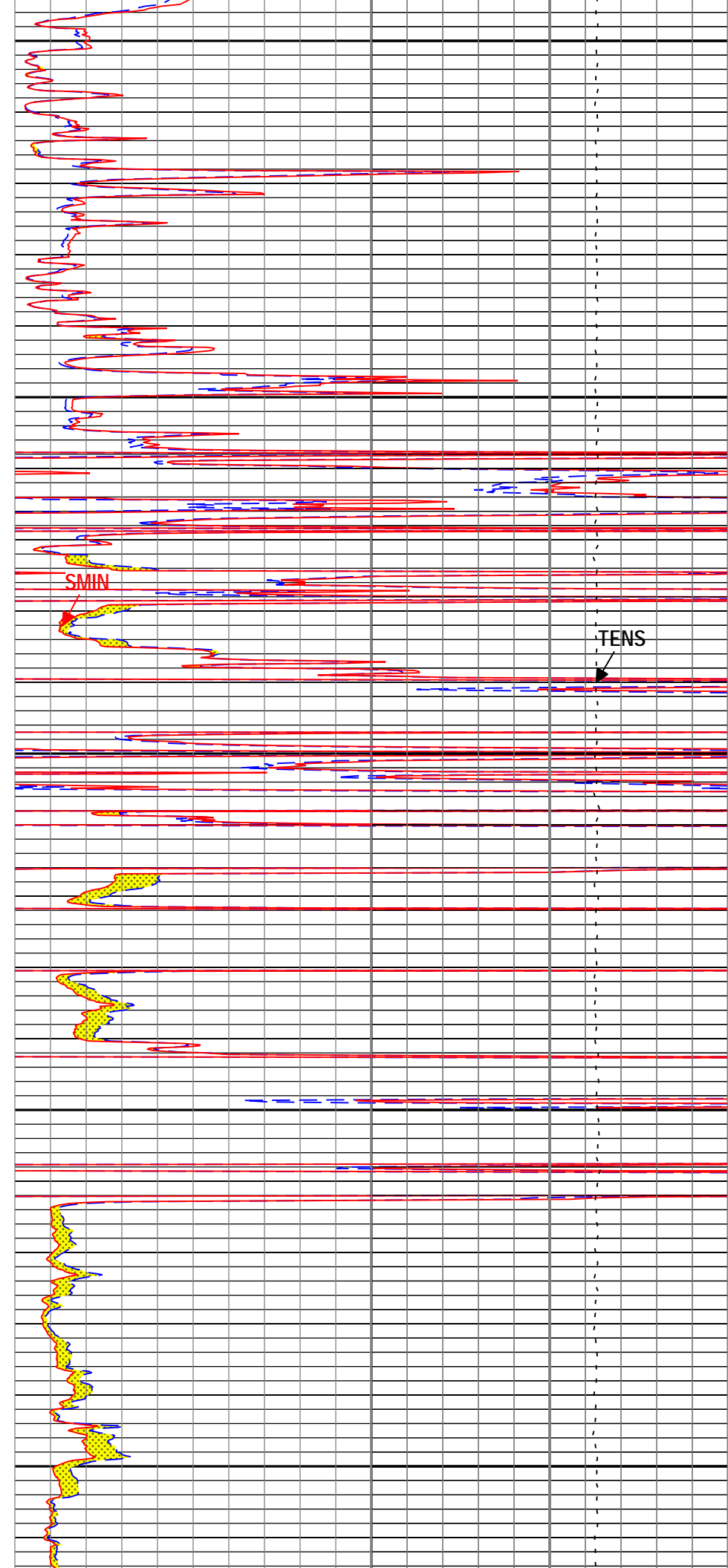
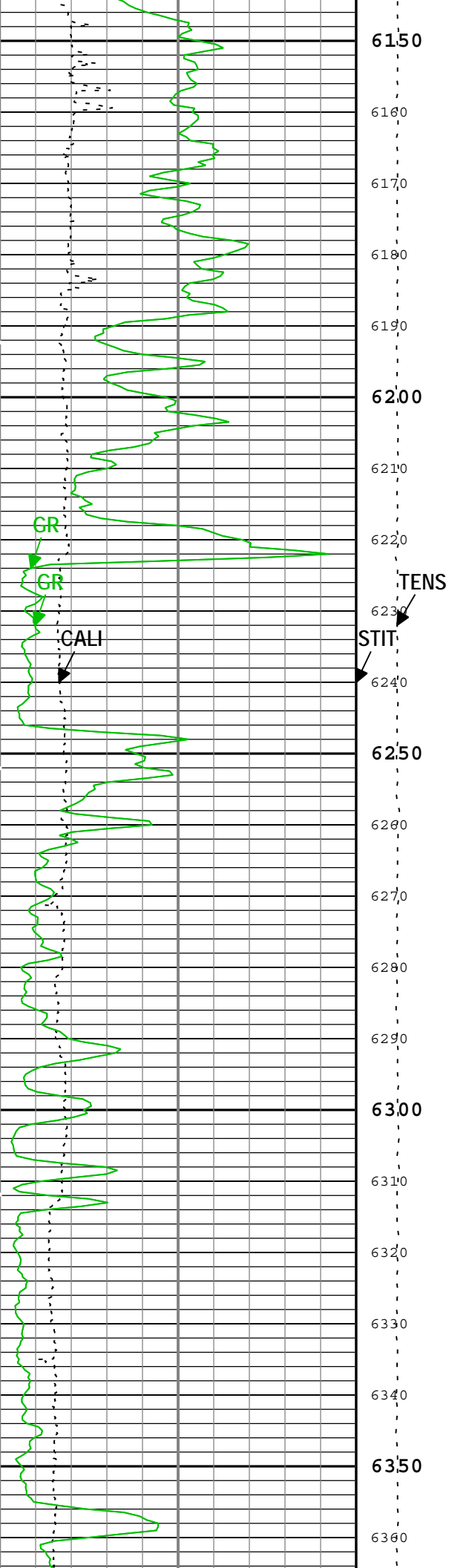


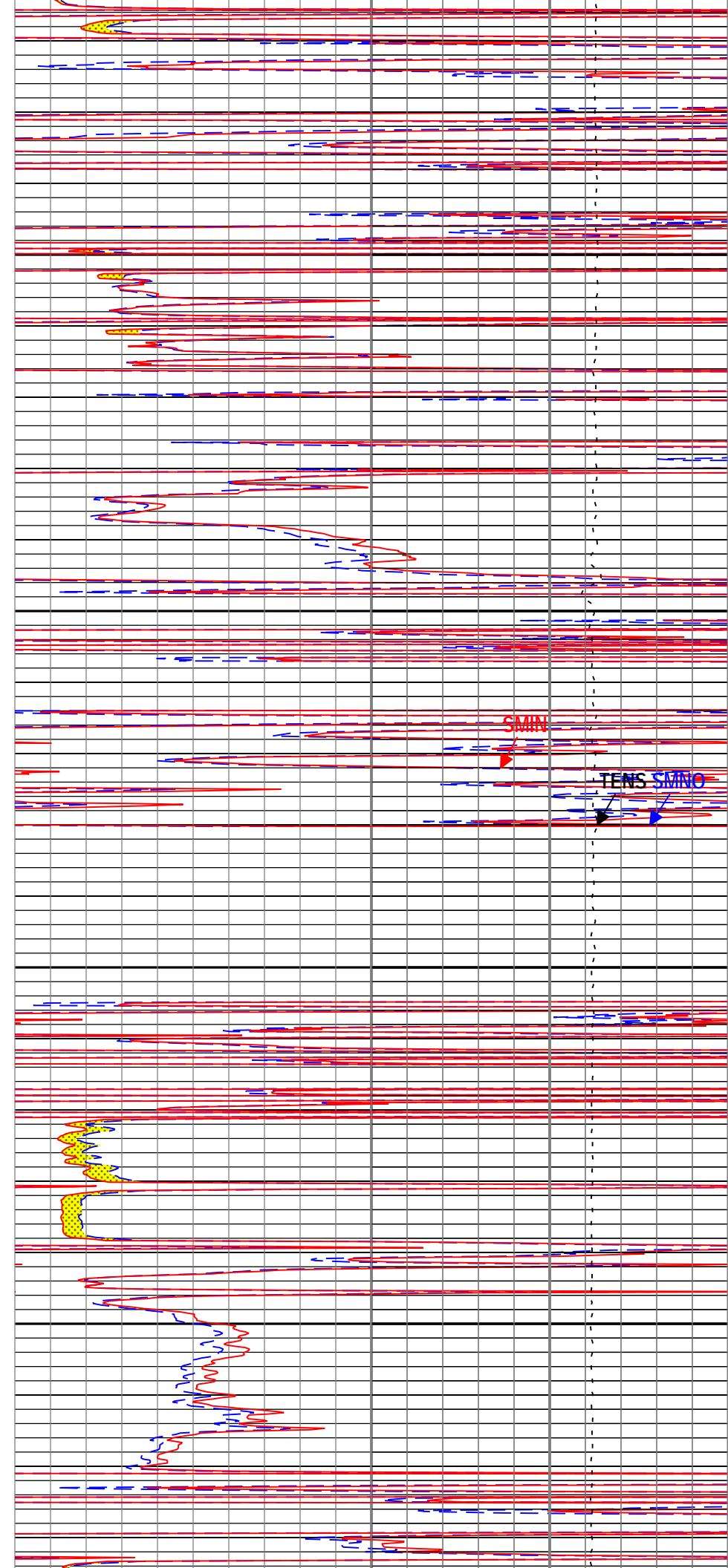
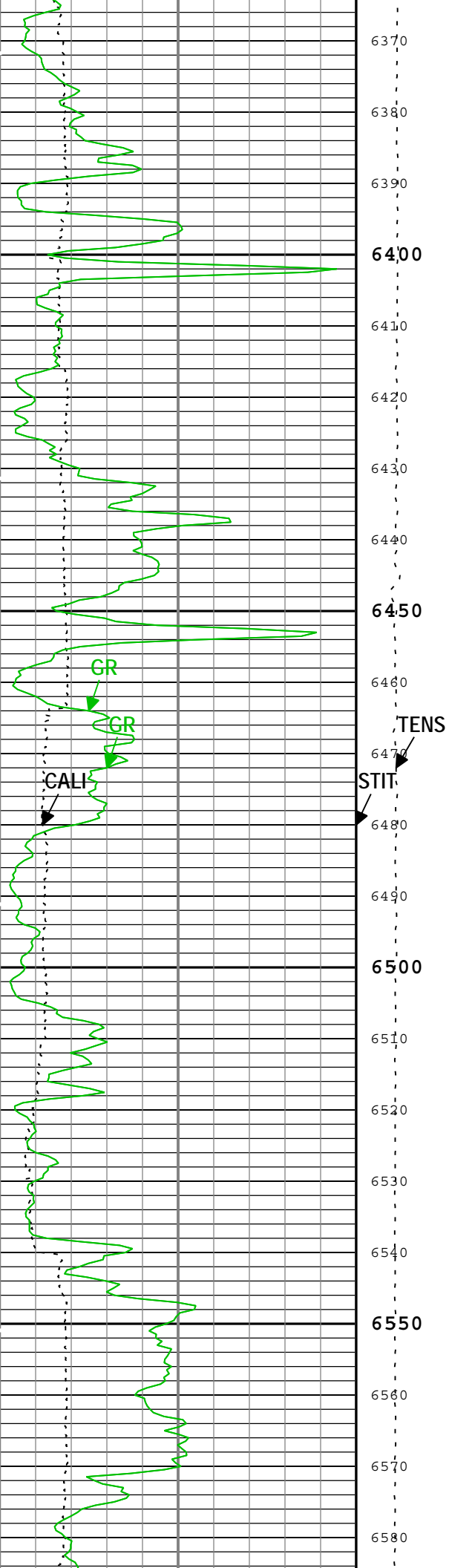


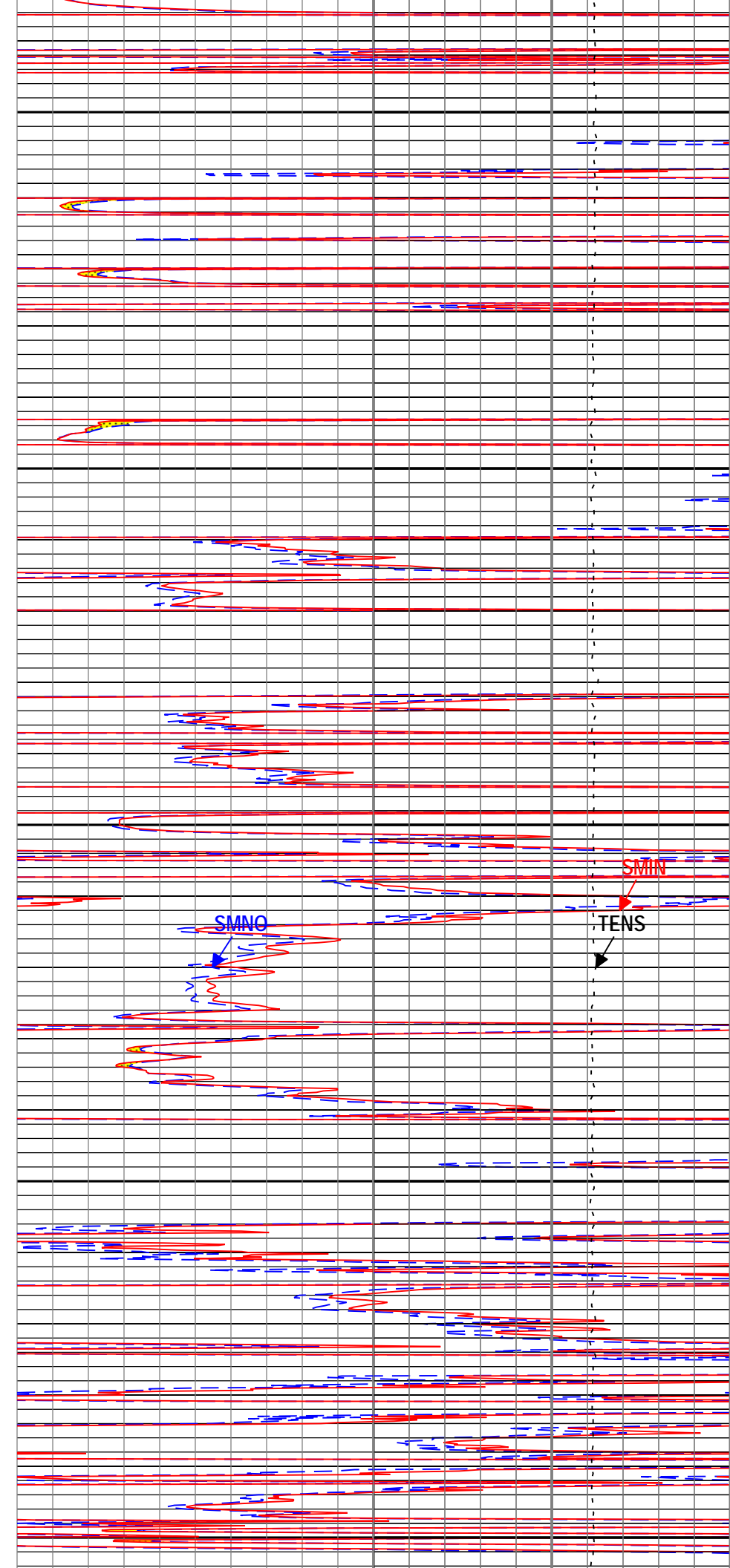
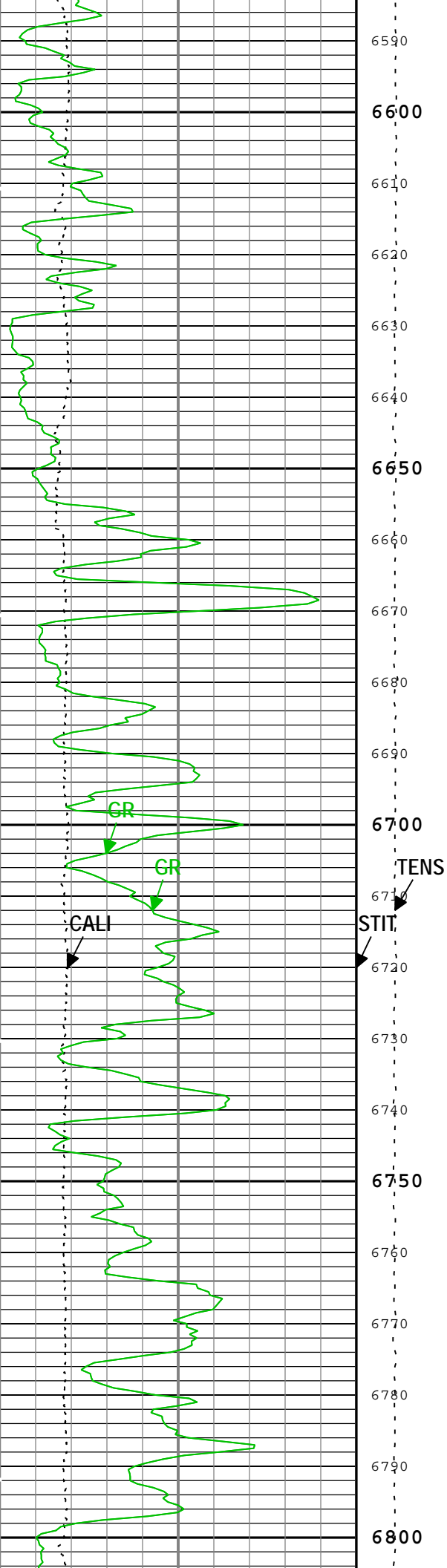


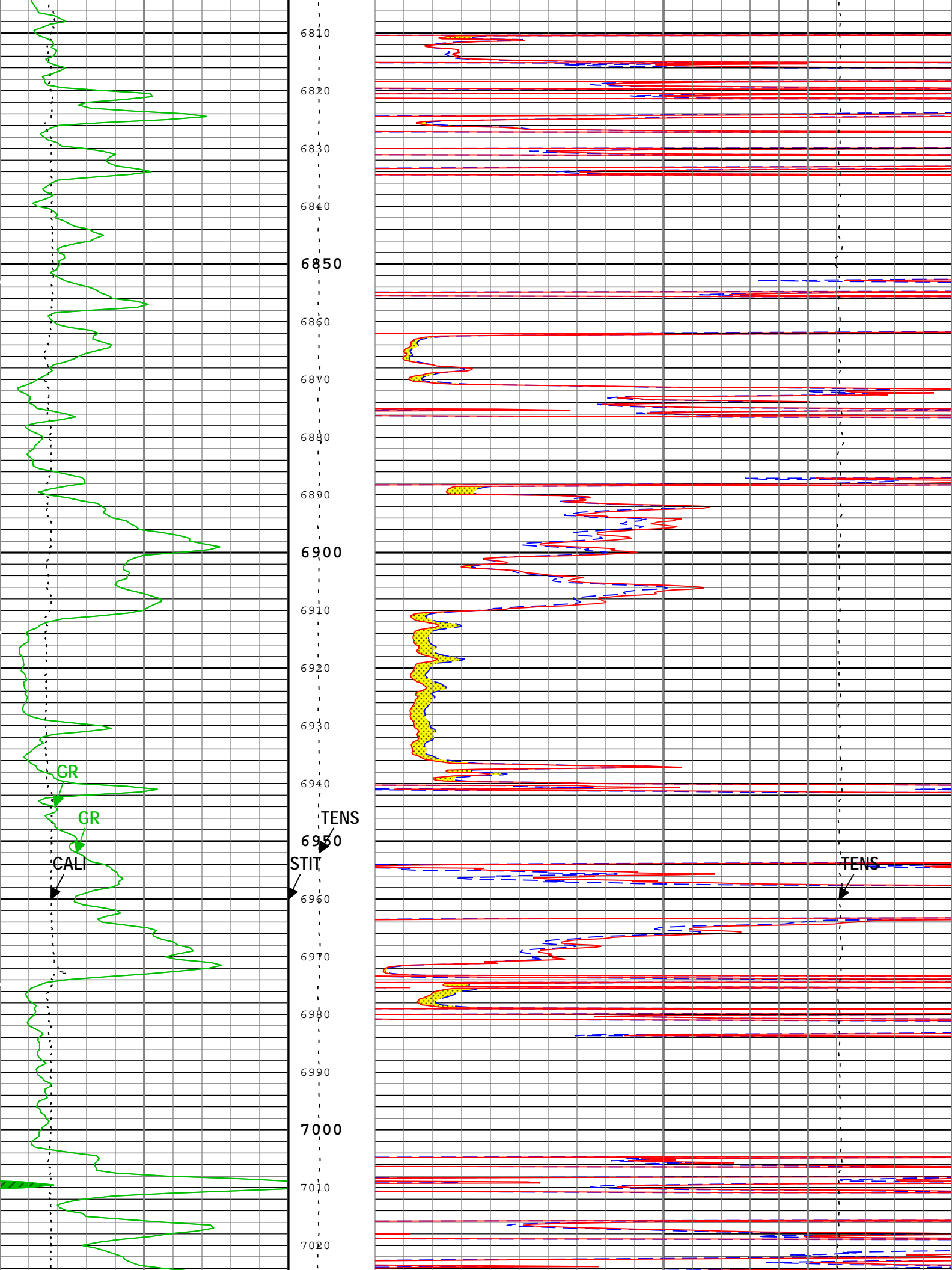


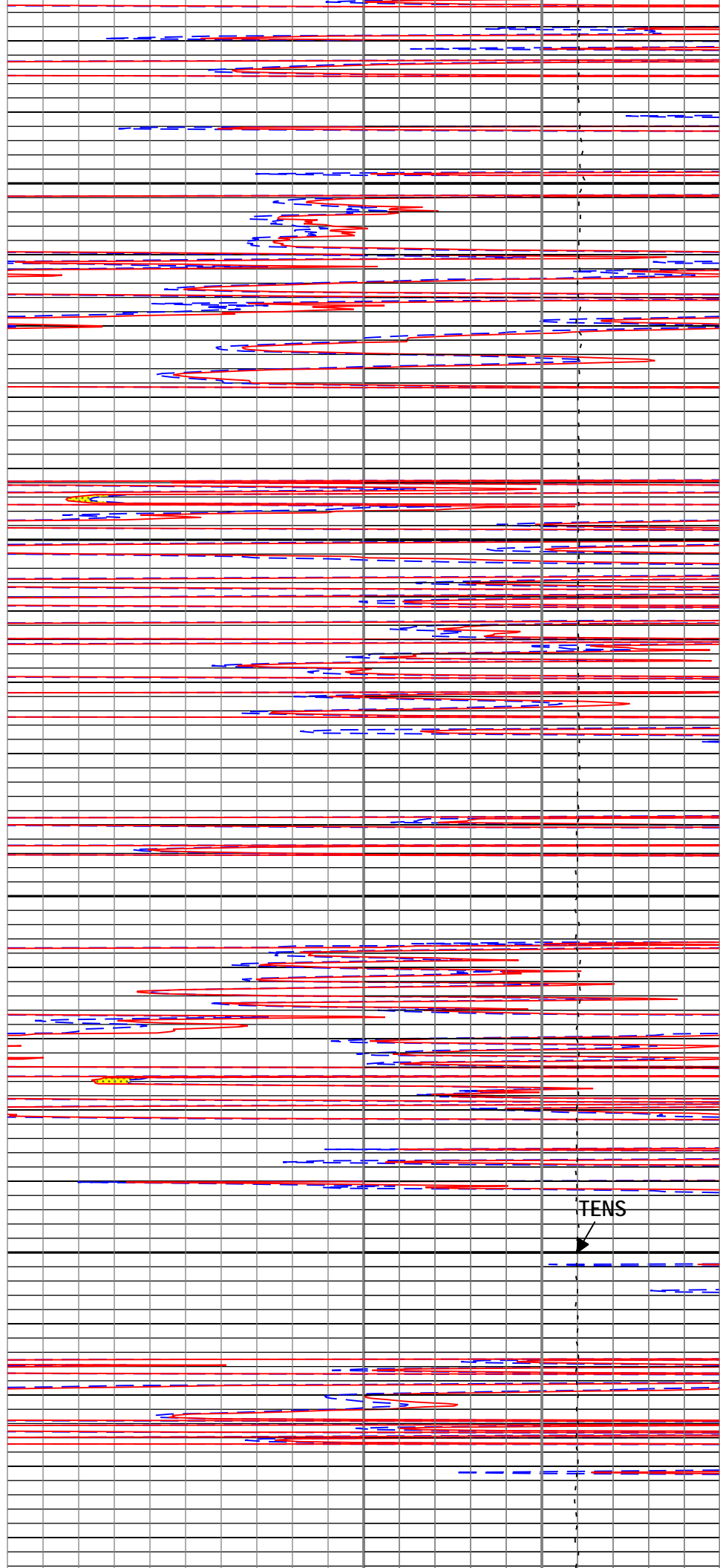
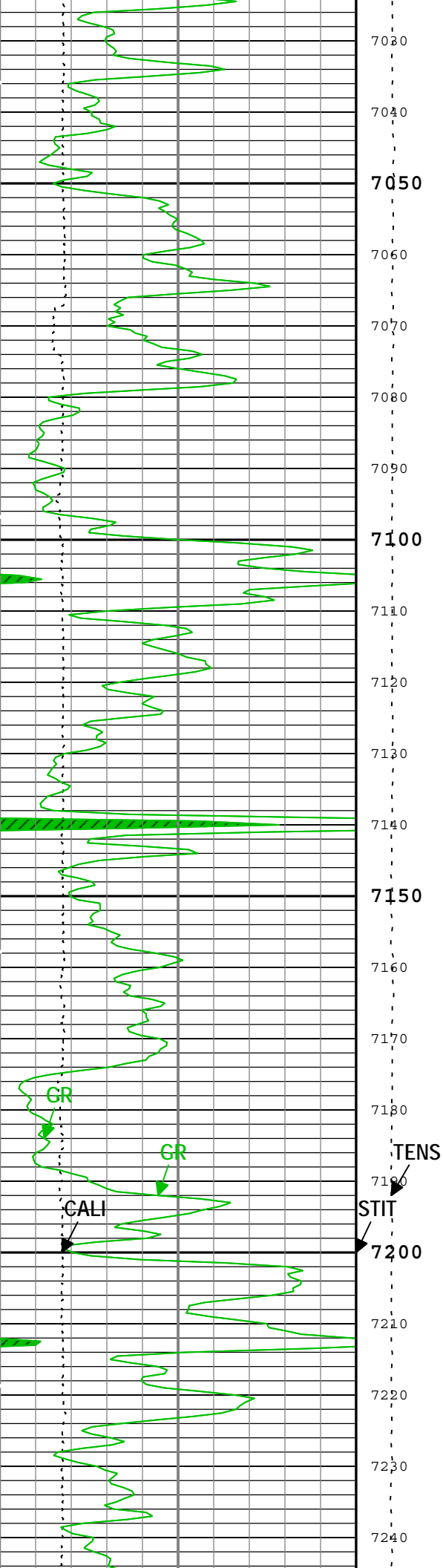


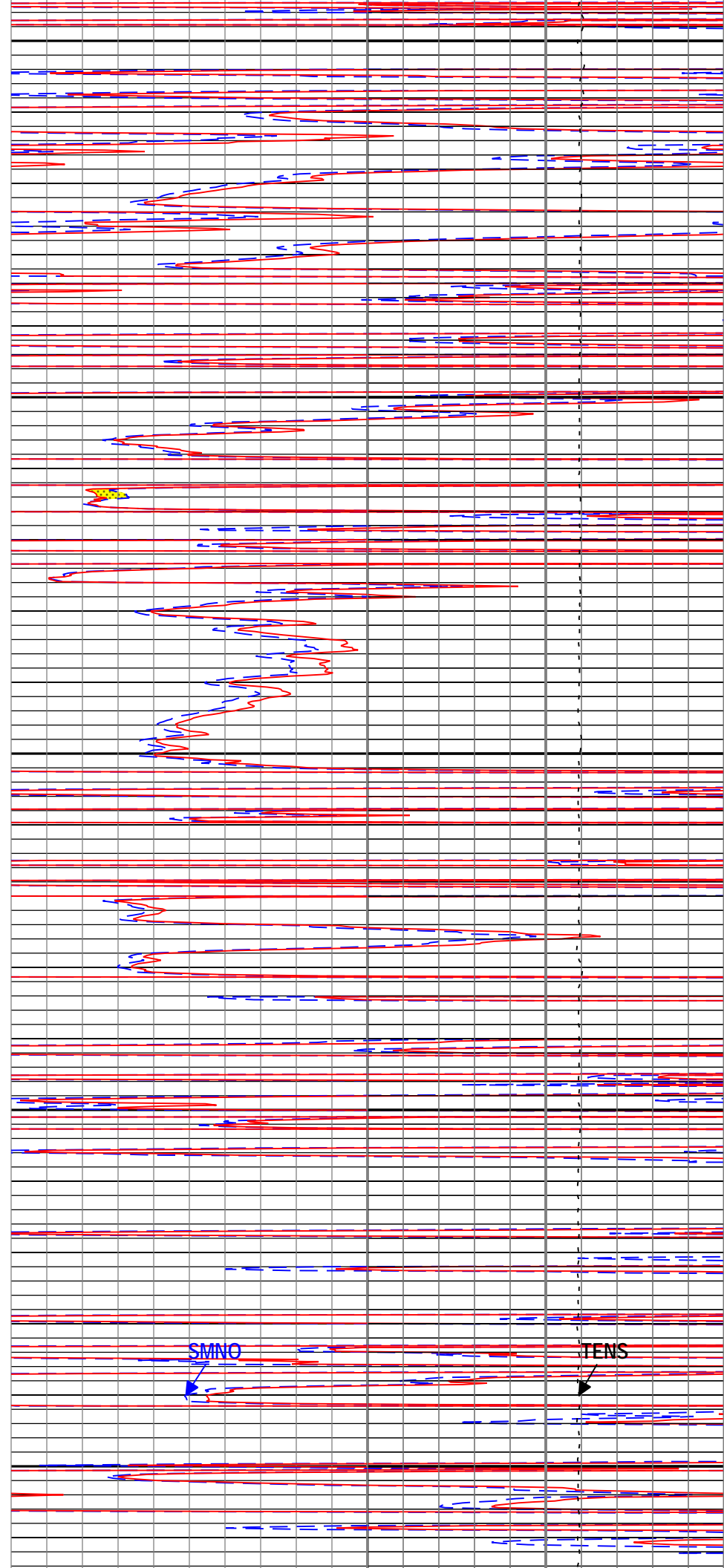
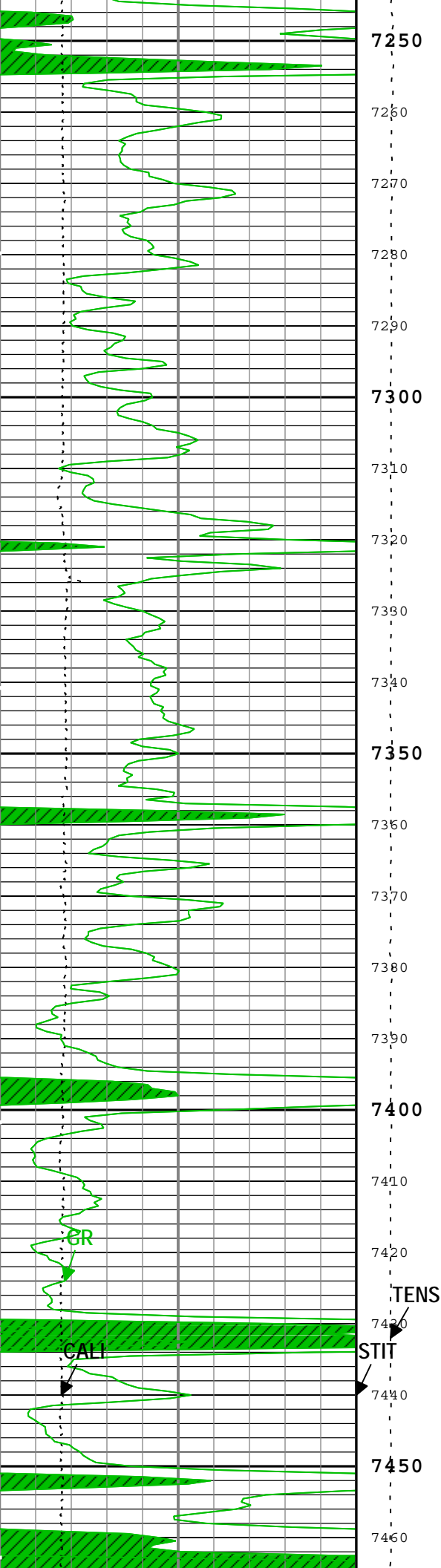


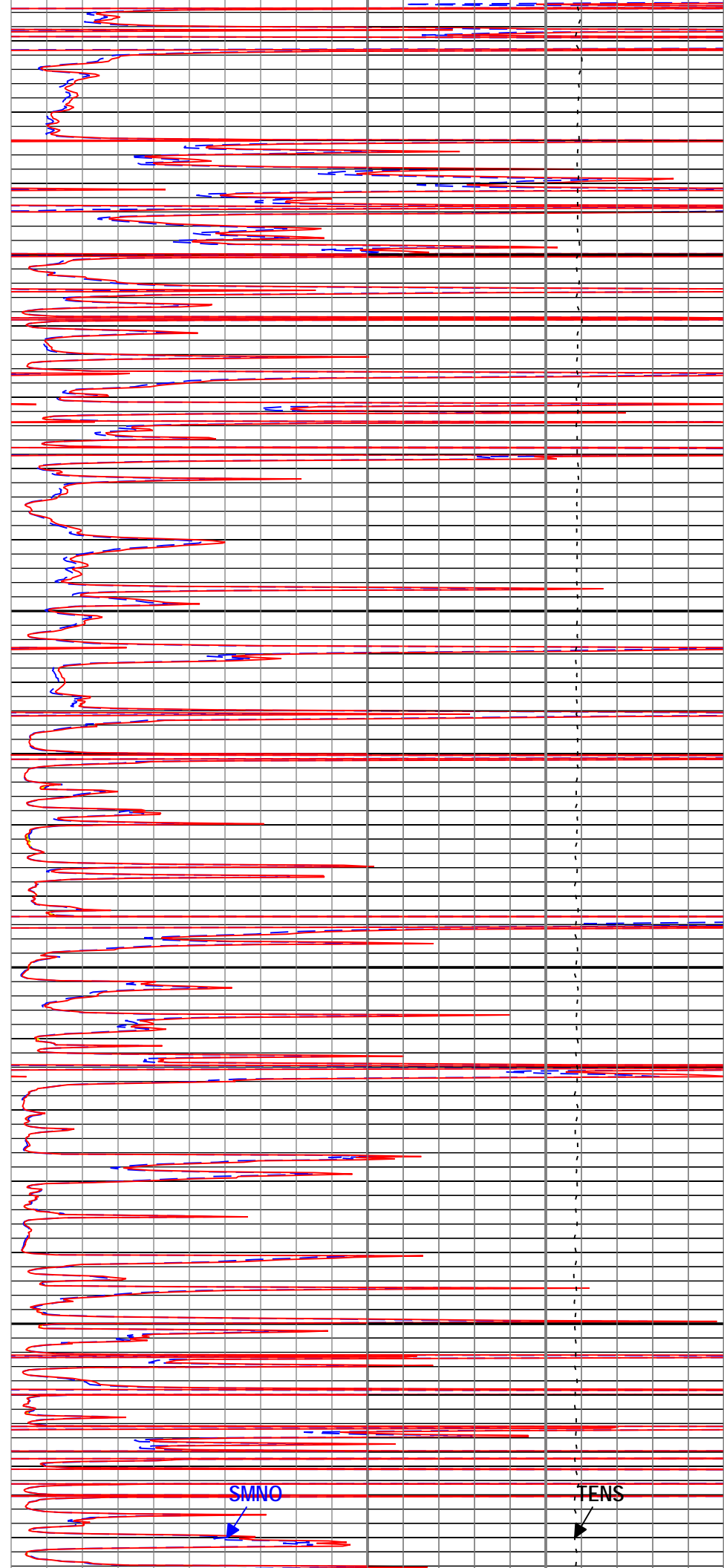
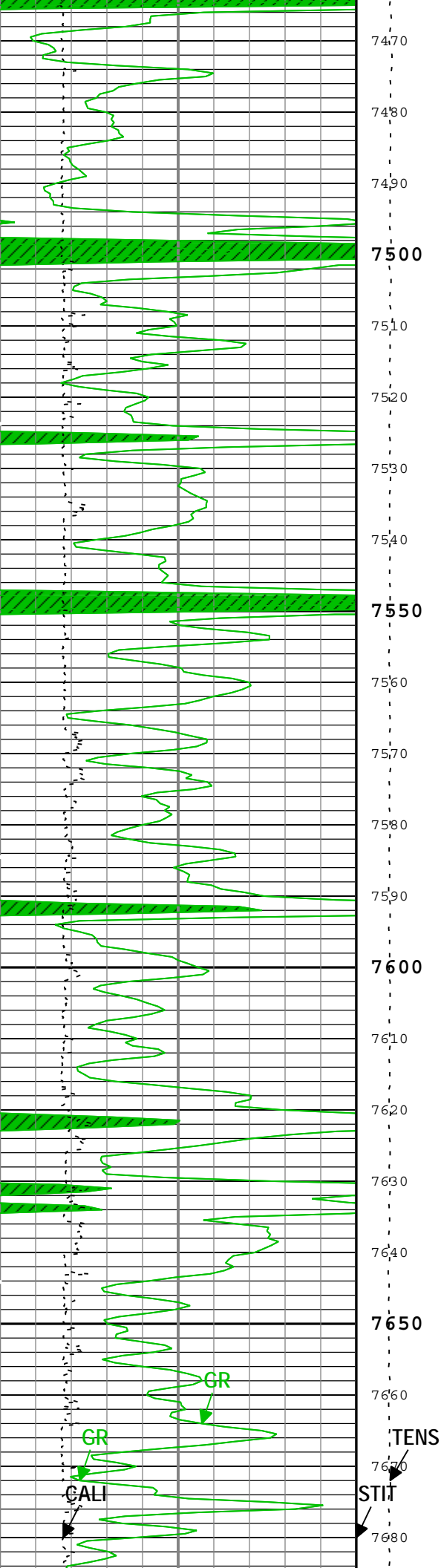


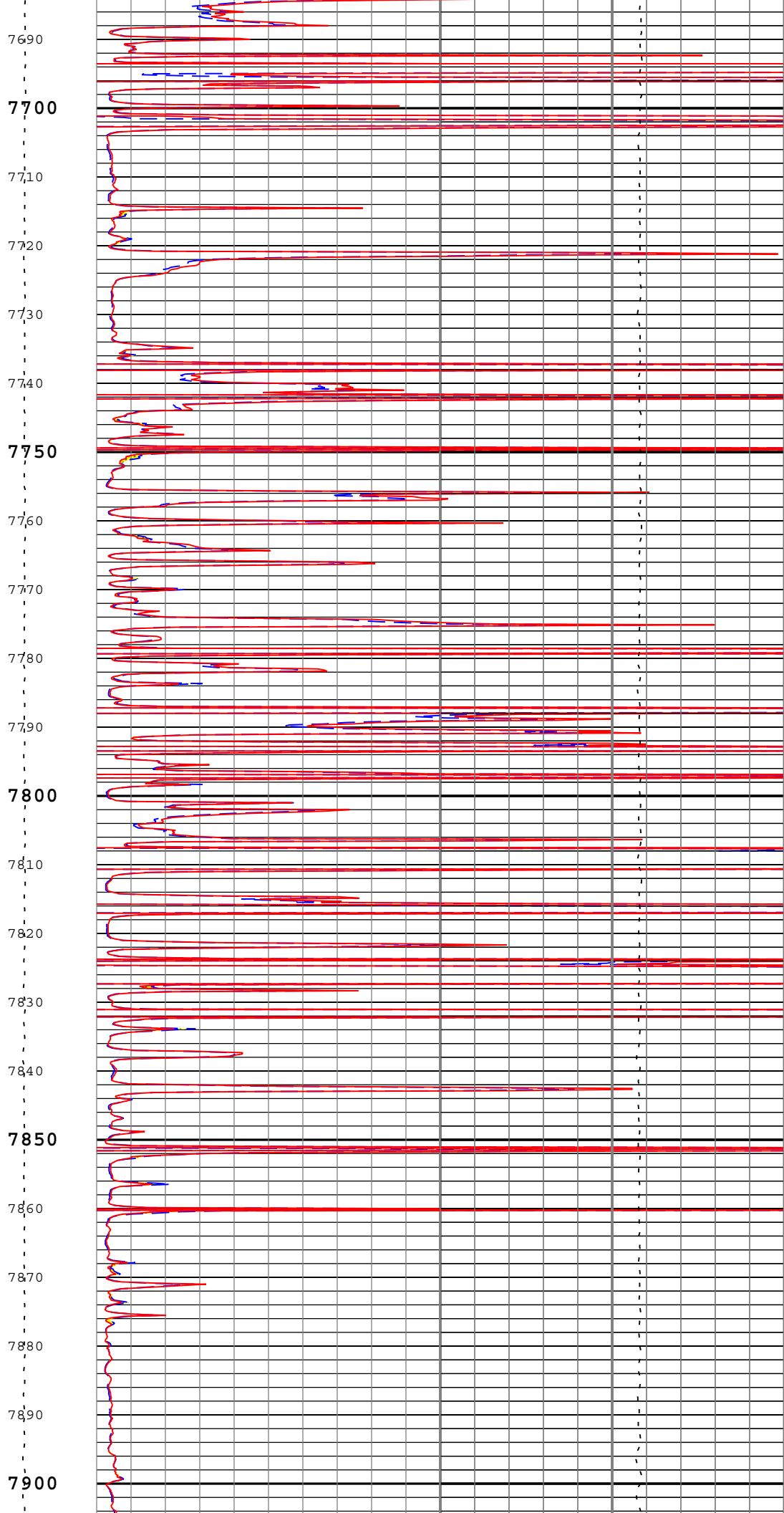
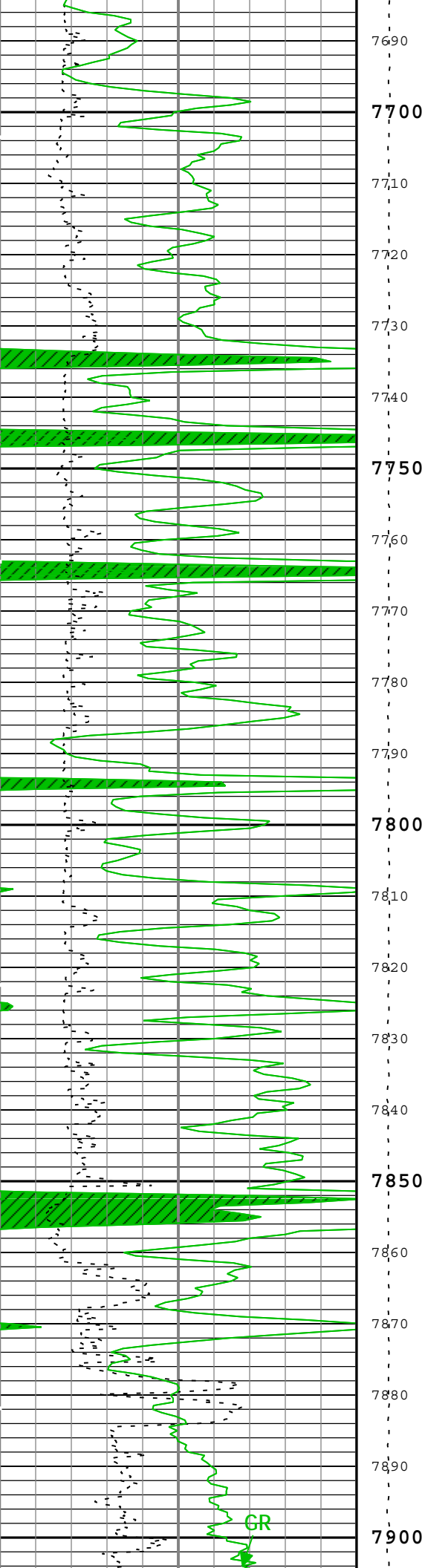


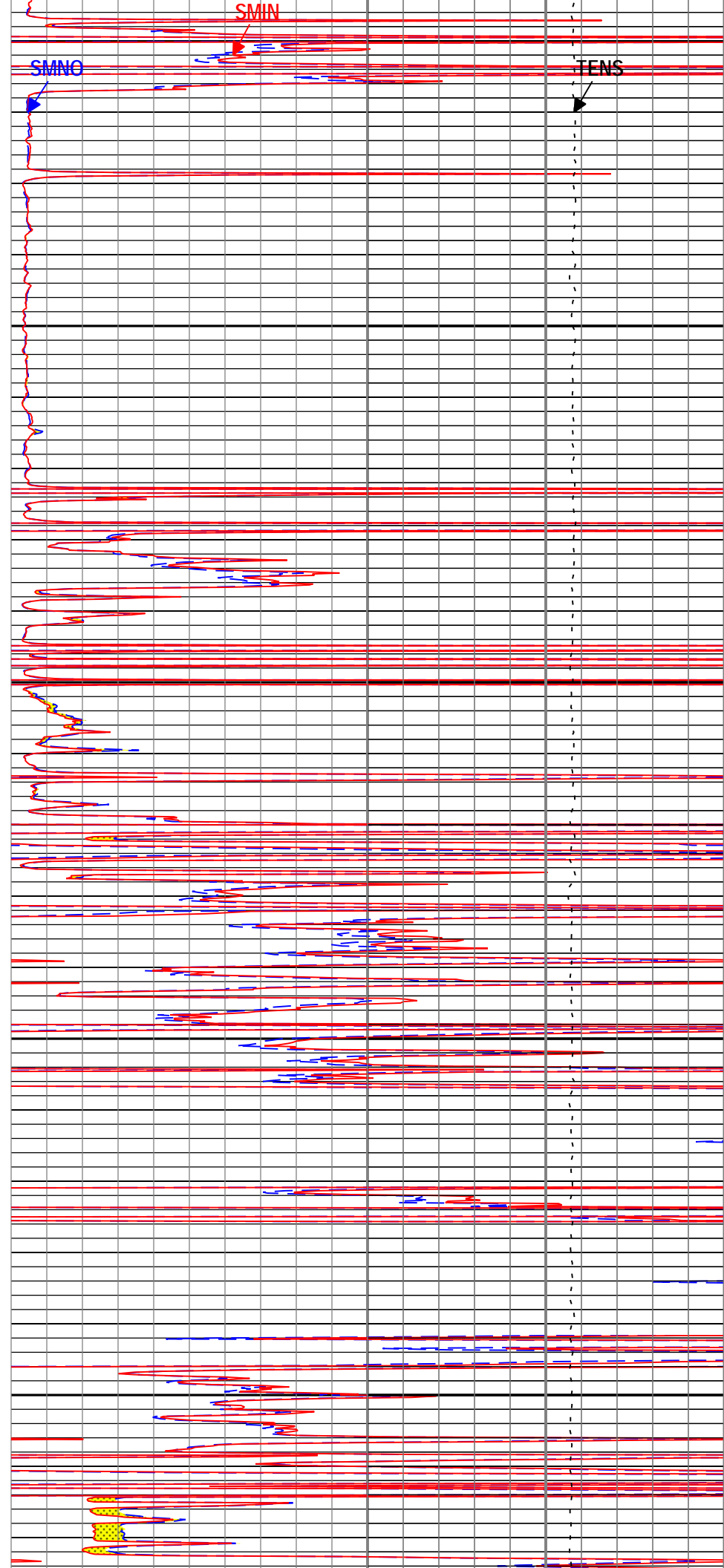
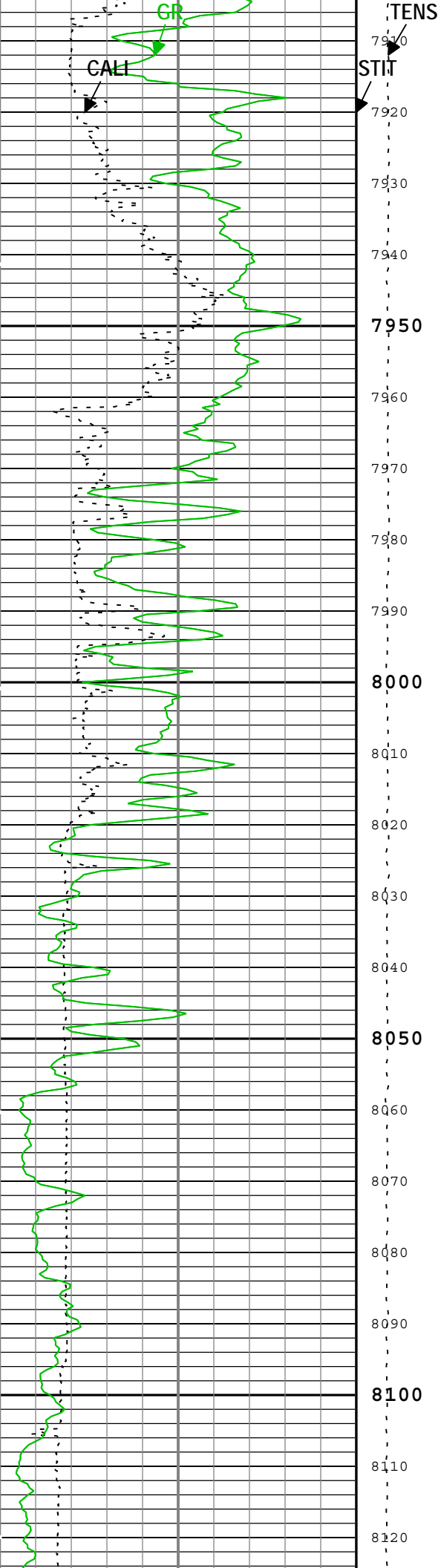


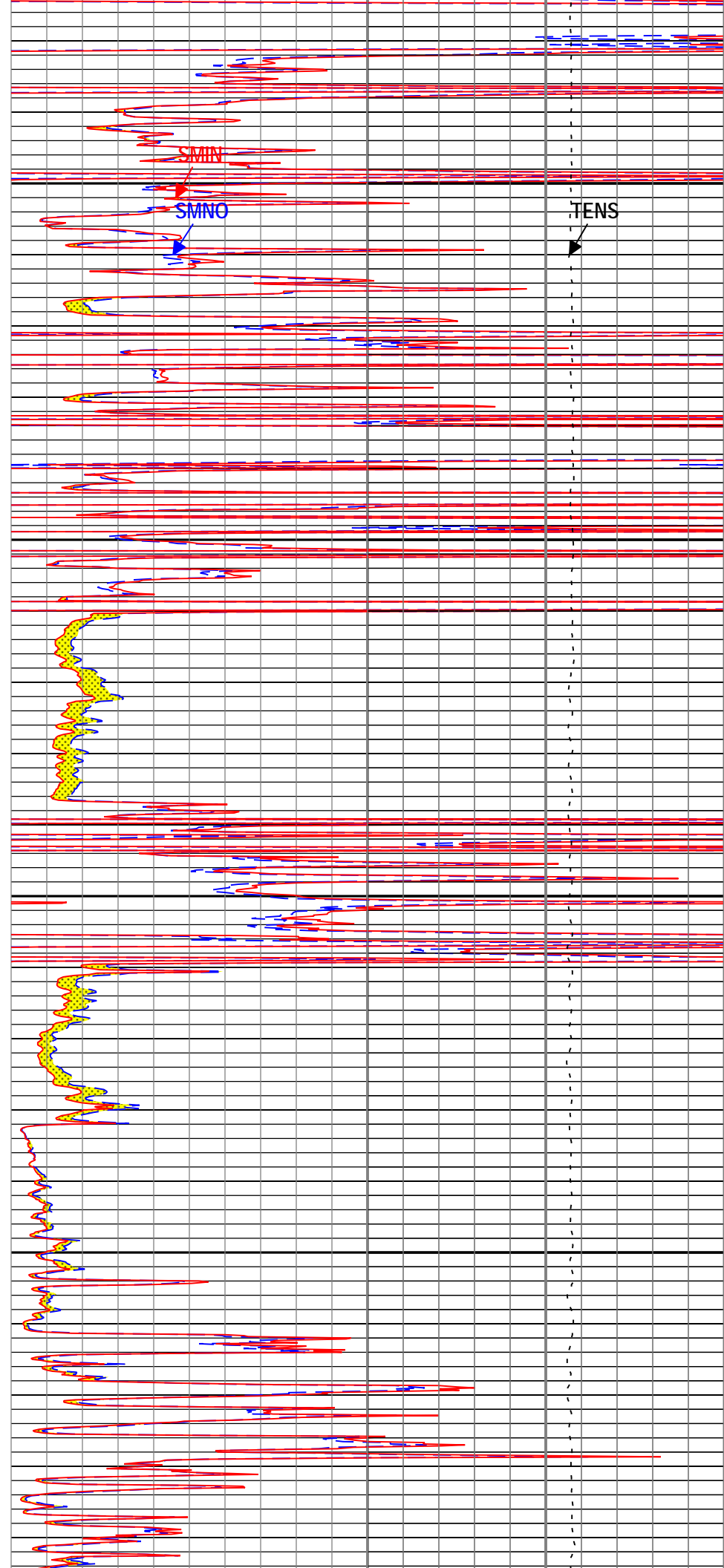
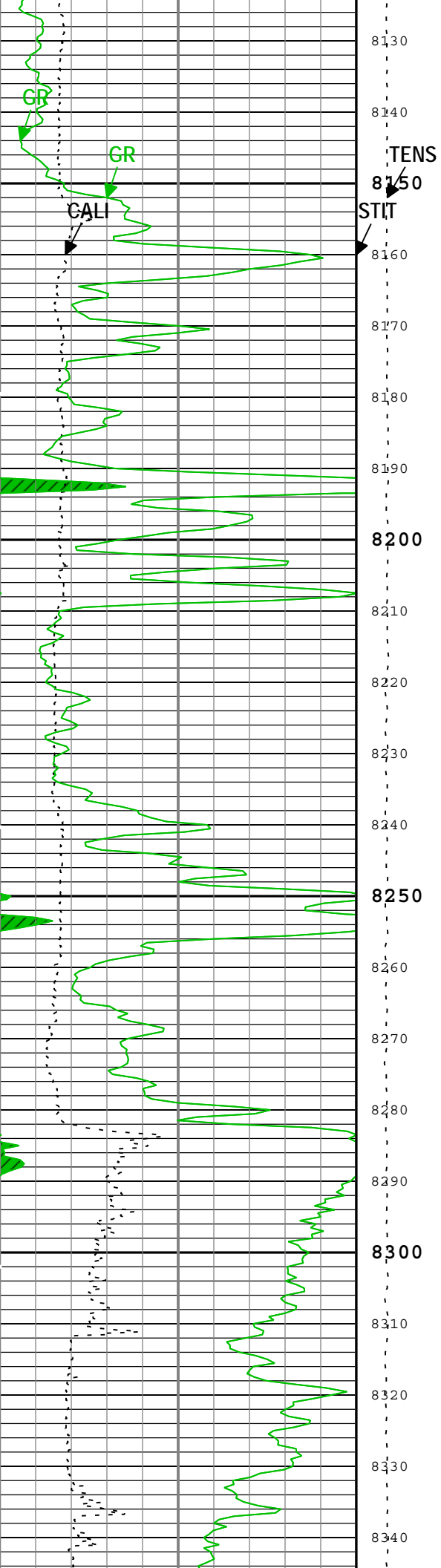


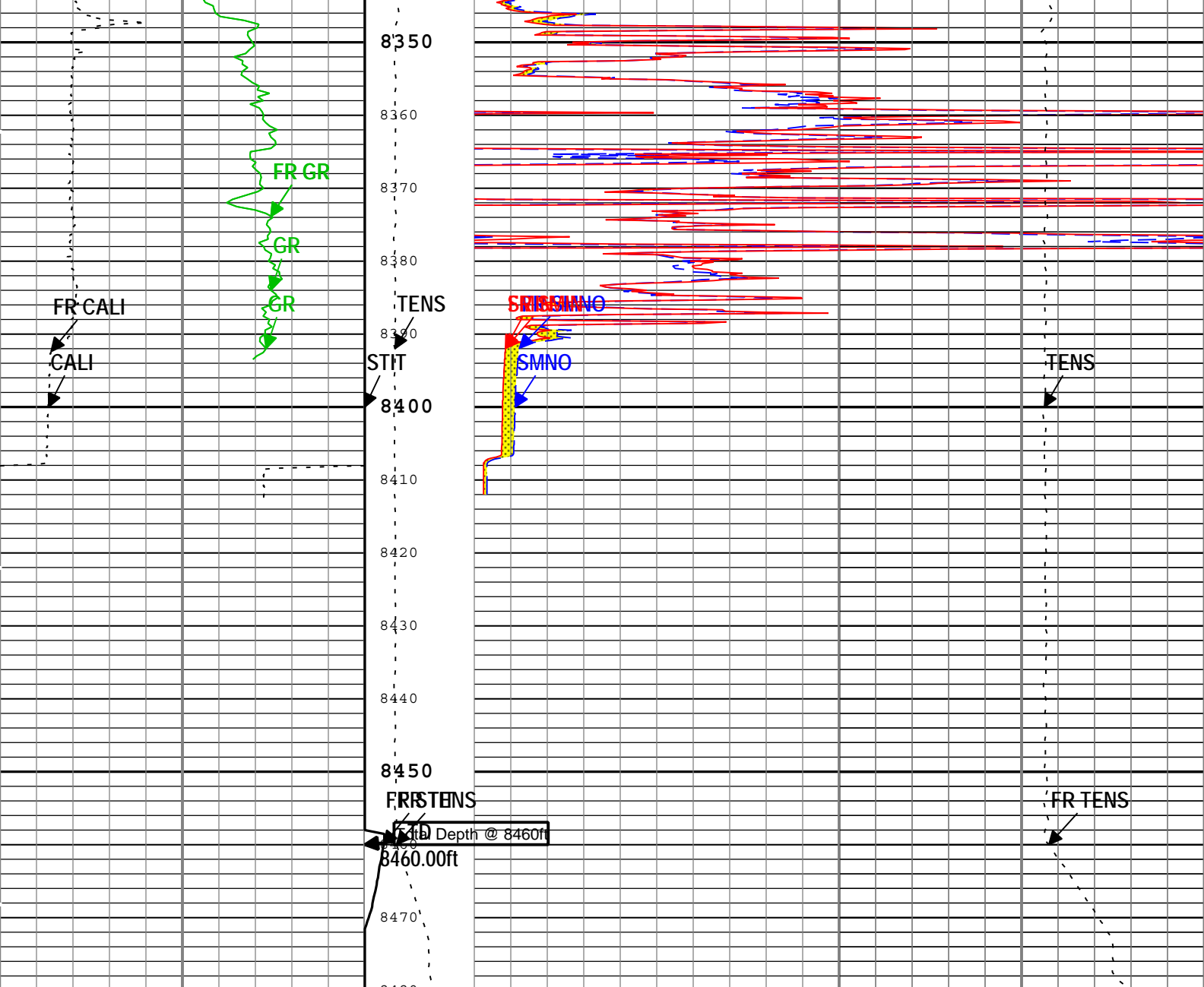












GR Backup			Stuck Tool Indicator, Total (STIT)	PERM		
Caliper (CALI) HDRS-H				Synthetic Micro-Normal Resistivity (SMNO) HDRS-H		
6	in	16	0 ft 50	0	ohm.m	40
Gamma Ray (GR) HGNS-H			Cable Tension (TENS)	Synthetic Micro-Inverse Resistivity (SMIN) HDRS-H		
0	gAPI	200		0	ohm.m	40
Gamma Ray (GR) HGNS-H				Cable Tension (TENS)		
200	gAPI	400	6000 lbf 0	10000 lbf 0		

TIME_1900 - Time Marked every 60.00 (s)


Description: MCFL processing for Platform Express Format: Log (KM 5in Micro Log) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured
Depth Creation Date: 14-Jun-2013 00:56:51

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	Depth Zoned	in
CALI_SHIFT	CALI Supplementary Offset	HDRS-H	0.07	in
CBLO	Casing Bottom (Logger)	WLSESSION	345	ft
CDEN	Cement Density	HGNS-H	2	g/cm3

CCLEN	Cement Density	HGNS-H	2	grams
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	9	lbm/gal
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	
SOCO	Standoff Correction Option	HGNS-H	Yes	
TD	Total Measured Depth	Borehole	8460	ft

Depth Zone Parameters			
Parameter	Value	Start (ft)	Stop (ft)
BS	0	330	345
BS	7.875	345	8480
All depth are actual.			

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	3600	ft/h

Company:	Nighthawk Production LLC	
Well:	Silverton 16-10	
Field:	Jolly Ranch	
County:	Lincoln	
State:	Colorado	

Platform Express
Mico Log