

Company: Bonanza Creek

Well: State Seventy Holes J-18

Field: Wattenberg

County: Weld State: Colorado

Cement Bond Log

County:	Weld
Field:	Wattenberg
Location:	SESW, Sec18. T4N, R62W
Well:	State Seventy Holes J-18
Company:	Bonanza Creek
Location:	
SESWS, Sec18. T4N, R62W	Elev.: K.B. 4577.50 ft
SHL: 610FSL x 1455' FWL	G.L. 4564.00 ft
Lat/Long: 40.306861/-104.371342	D.F. 4576.50 ft
Permanent Datum:	Ground Level
Log Measured From:	Kelly Bushing
Drilling Measured From:	Kelly Bushing
API Serial No.	Section: 18
05-123-41614	Township: 4N
	Range: 62W

Logging Date	03-Oct-2016
Run Number	Two
Depth Driller	6800.00 ft
Schlumberger Depth	6800.00 ft
Bottom Log Interval	6728.00 ft
Top Log Interval	0.00 ft
Casing Fluid Type	Water
Salinity	
Density	8.4 lbm/gal
Fluid Level	8.00 ft
BIT/CASING/TUBING STRING	
Bit Size	8.75 in
From	1465.00 ft
To	6800.00 ft
Casing/Tubing Size	7 in
Weight	26 lbm/ft
Grade	N/A
From	0.00 ft
To	6748.00 ft
Max Recorded Temperatures	219 degF
Logger on Bottom	03-Oct-2016 15:13:00
Unit Number	2161
Recorded By	Stephen Tang
Witnessed By	Joe Kauffmann

Disclaimer

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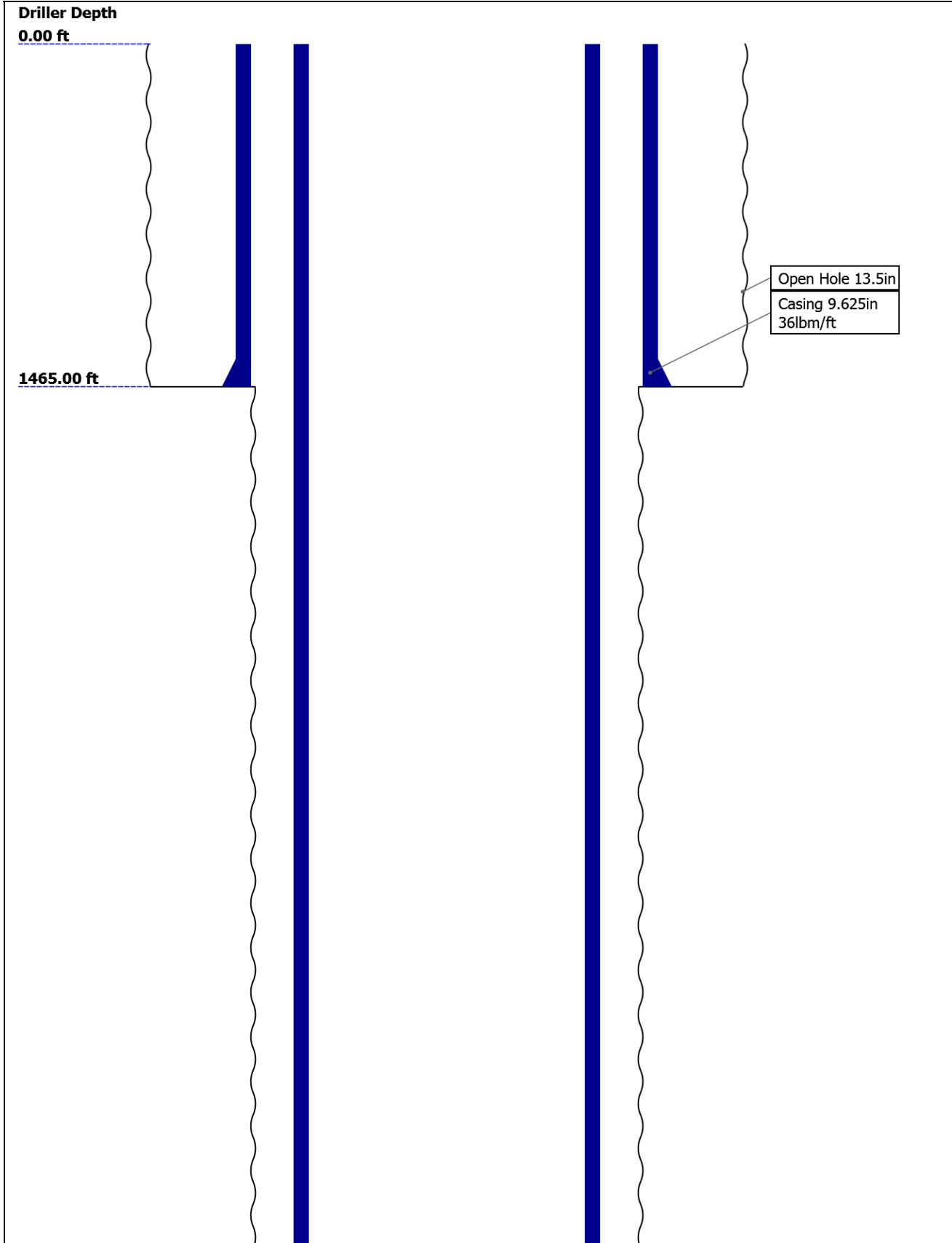
Contents

- 1. Header
- 2. Disclaimer
- 3. Contents
- 4. Well Sketch
- 5. Borehole Size/Casing/Tubing Record
- 6. Remarks and Equipment Summary
- 7. Depth Summary
- 8. Two Main pass 2500psi
  - 8.1 Integration Summary
  - 8.2 Software Version
  - 8.3 Composite Summary
  - 8.4 Log ( Sonic CBL with VDL )
  - 8.5 Parameter Listing
- 9. Two Main pass 0 psi
  - 9.1 Integration Summary
  - 9.2 Software Version
  - 9.3 Composite Summary

- 10.5 Parameter Listing
- 11. Tail

- 9.4 Log ( Sonic CBL with VDL )
- 9.5 Parameter Listing
- 10. Two Repeat pass 0 psi
- 10.1 Integration Summary
- 10.2 Software Version
- 10.3 Composite Summary
- 10.4 Log ( Sonic CBL with VDL )

Well Sketch



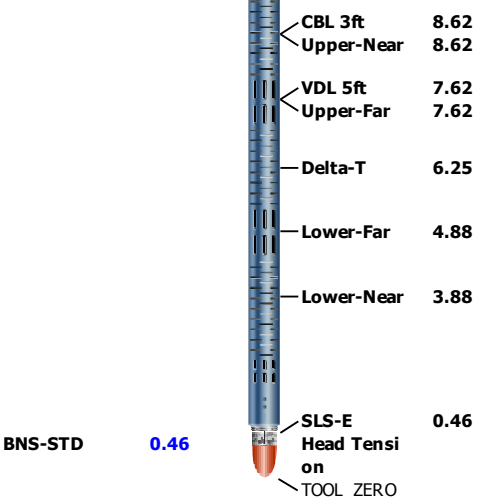


## Borehole Size/Casing/Tubing Record

Bit						
Bit Size ( in )	13.5	8.75				
Top Driller ( ft )	0	1465				
Top Logger ( ft )	0	1465				
Bottom Driller ( ft )	1465	6800				
Bottom Logger ( ft )	1465	6800				
Casing						
Size ( in )	9.625	7				
Weight ( lbm/ft )	36	26				
Inner Diameter ( in )	8.921	6.276				
Grade	N/A	N/A				
Top Driller ( ft )	0	0				
Top Logger ( ft )	0	0				
Bottom Driller ( ft )	1465	6748				
Bottom Logger ( ft )	1465	6748				

## Remarks and Equipment Summary

Two: Toolstring				Two: Remarks
<b>Equip name</b> <b>LEH-QT</b> LEH-QT	<b>Length</b> <b>36.01</b>	<b>MP name</b>	<b>Offset</b>	Toolstring ran as per toolsketch.
				Plug set at 6748 ft.
				CSG: 7" 26 lb/ft
<b>CAL-YA:666</b> CAL-YA:666	<b>33.1</b>			Main pass logged with 0 psi and 2500 psi.
		CCL	32.31	Repeat pass logged with 0 psi.
<b>DTC-H:8803</b> ECH-KC:10354 DTC-H:8803	<b>29.6</b>			
		CTEM HV	28.7 0.00	
		TelStatus ToolStatus	26.6 26.6	
<b>SGT-N:10210</b> SGH-K:2996 SGD-TAA:2166 1 SGC-TB:10210	<b>26.6</b>	GR	25.68	
<b>DSL-T-H:8279</b> ESL-KL:8221	<b>21.1</b>			



**BNS-STD**      **0.46**

Lengths are in ft  
Maximum Outer Diameter = 3.625 in  
Line: Sensor Location, Value: Gating Offset  
All measurements are relative to TOOL\_ZERO

## Depth Summary

	Two		
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### 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	146		
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		



Conveyance Type	Wireline		
Rig Type			
<b>Two:Depth Control Parameters</b>		<b>Depth Control Remarks</b>	
Log Sequence	Subsequent Trip To the Well	All Schlumberger depth procedures followed.	
Reference Log Name	Triple Combo	IDW used as primary depth procedure.	
Reference Log Run Number	One	Z-Chart used as secondary depth procedure.	
Reference Log Date	28-Sep-2016	Depth correlated to "Triple Combo" logged on 28-SEP-2016	
Subsequent Trip Down Log Correction			

## Two

## Main pass 2500psi

## Software Version

Acquisition System	Version
Maxwell 2016 SP2	6.2.68624.3100

## Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
Two	Log[6]:Up	Up	40.21 ft	6736.95 ft	03-Oct-2016 3:13:15 PM	03-Oct-2016 5:10:47 PM	ON	-2.34 ft	Yes

All depths are referenced to toolstring zero

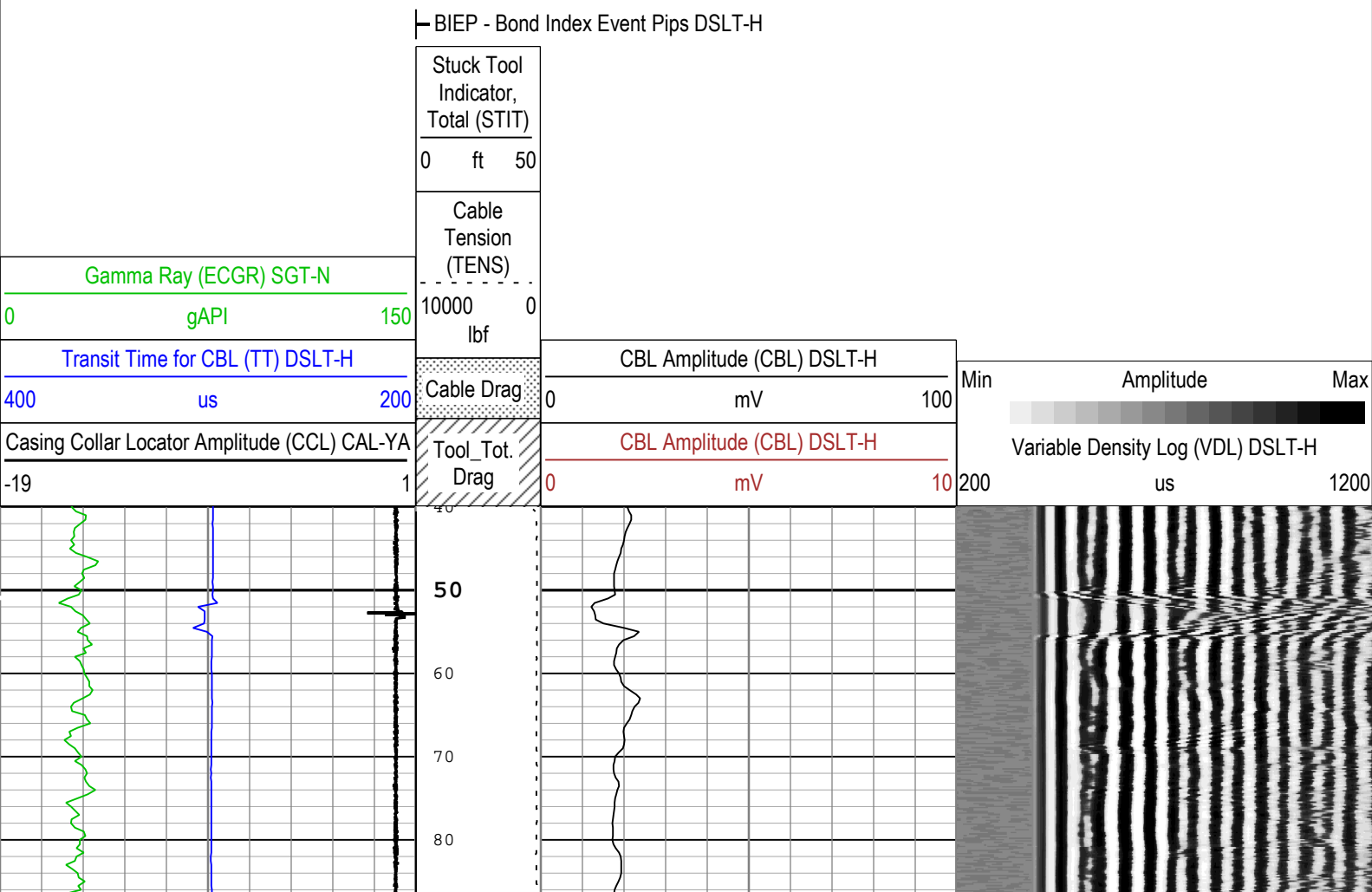
## Log

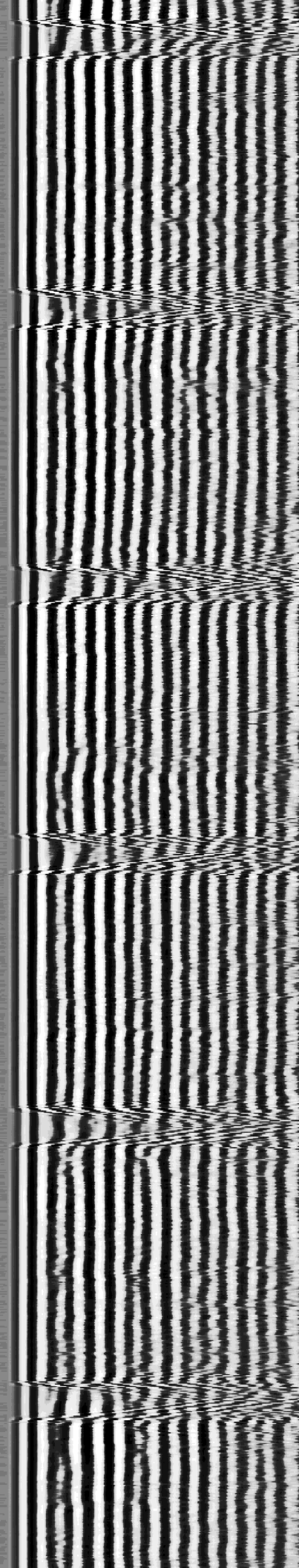
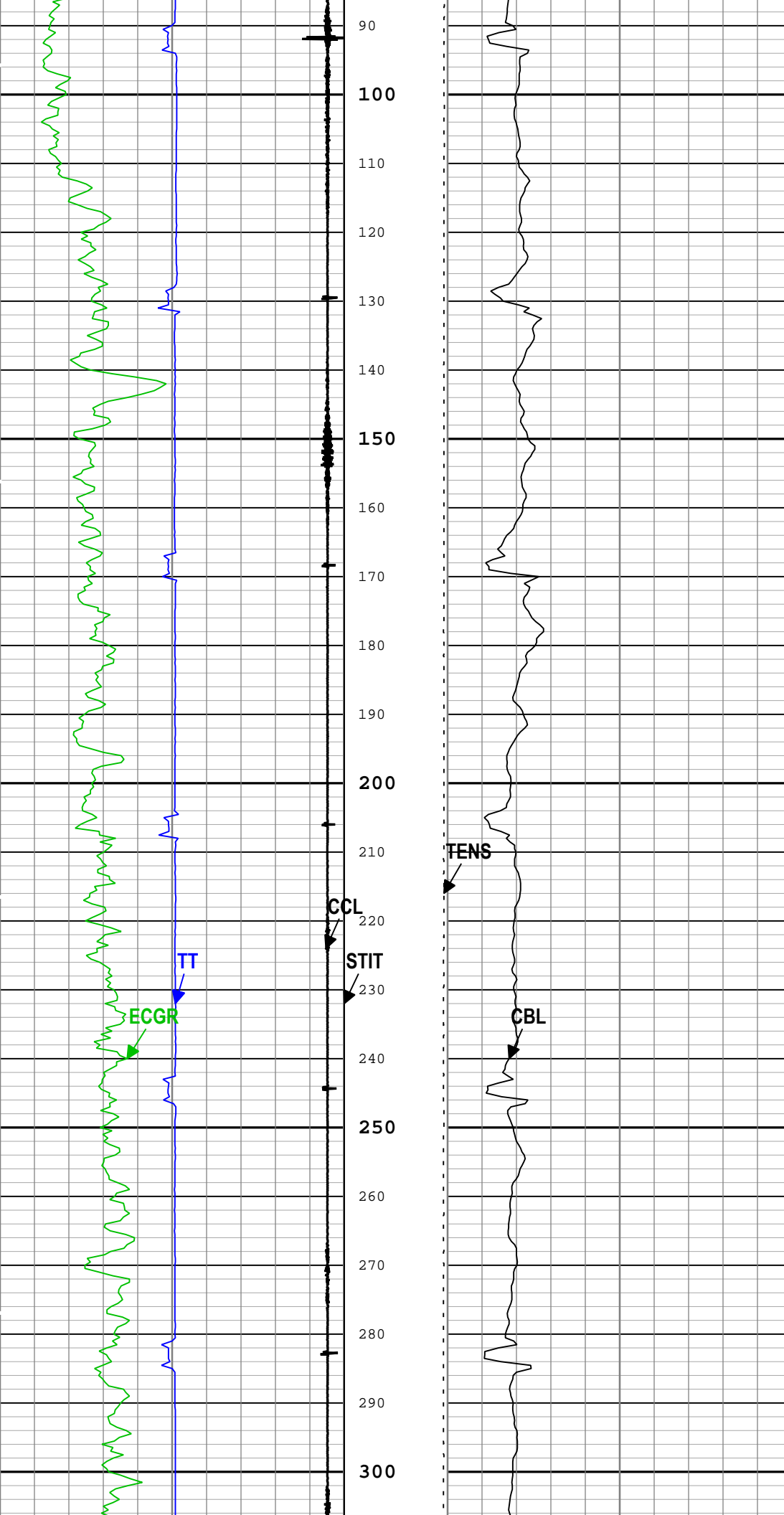
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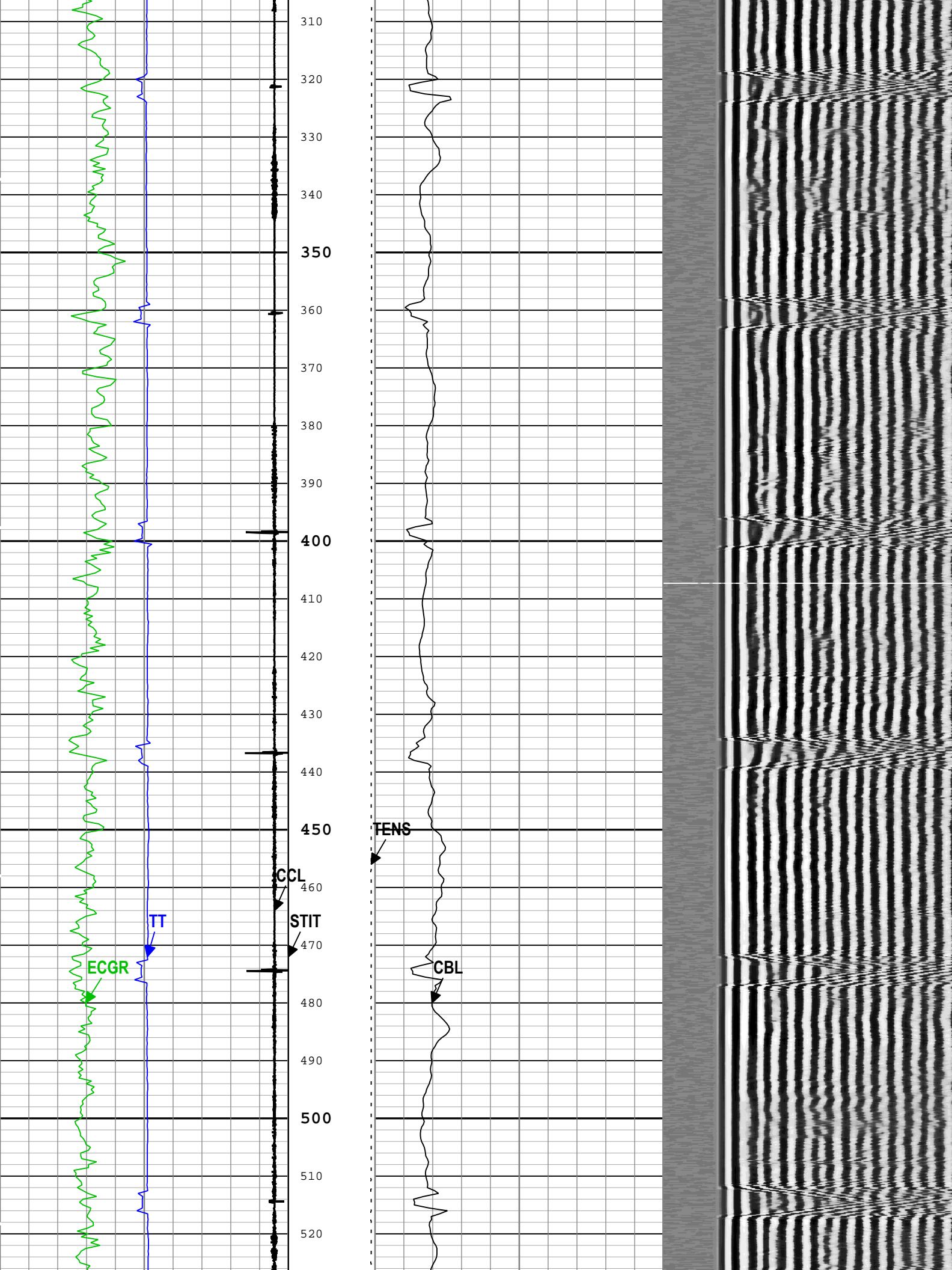
Two: Log[6]:Up:S008

Description: CBL\_VDL    Format: Log ( Sonic CBL with VDL )    Index Scale: 5 in per 100 ft    Index Unit: ft    Index Type: Measured Depth    Creation Date: 03-Oct-2016 17:16:48

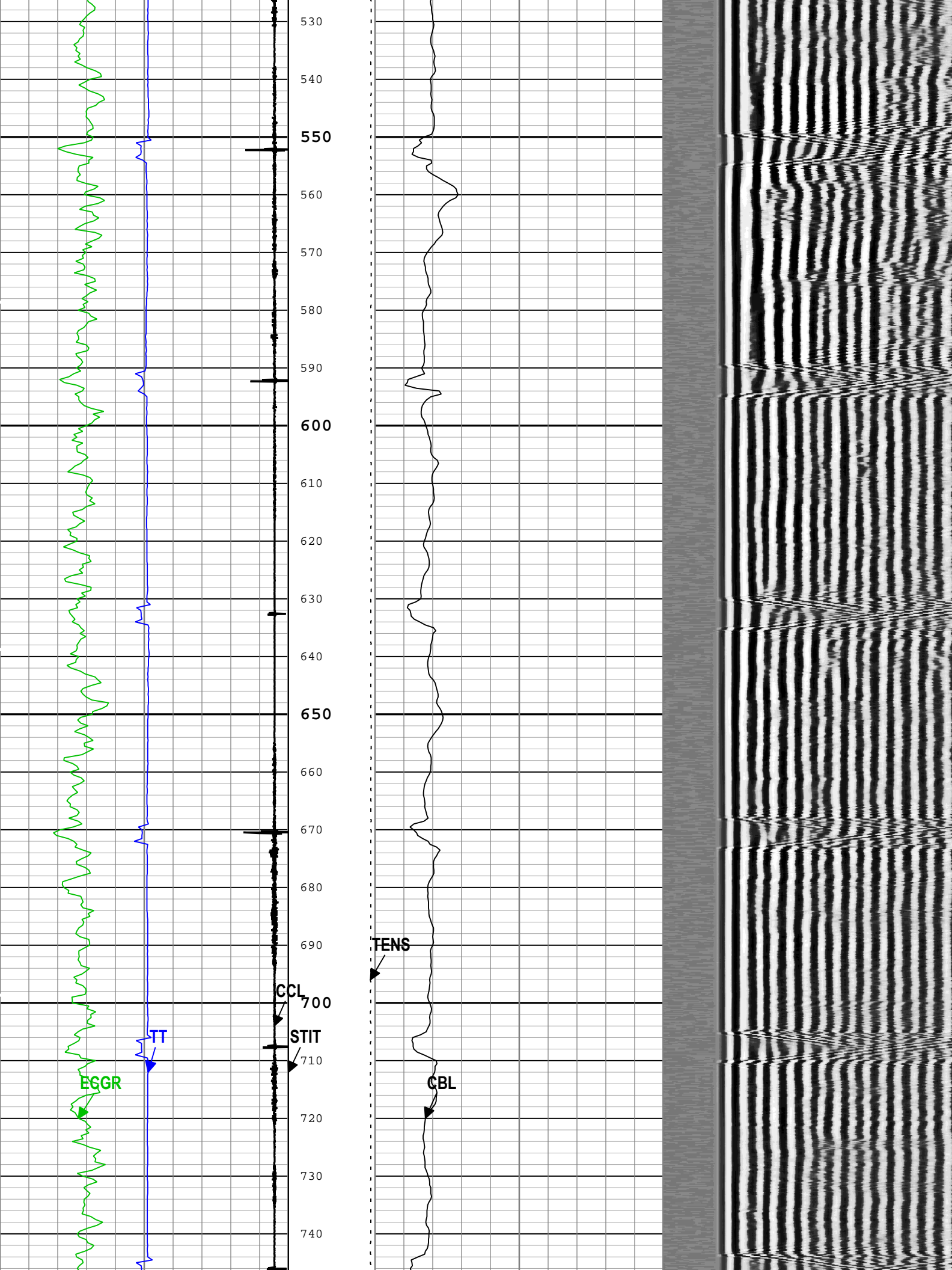
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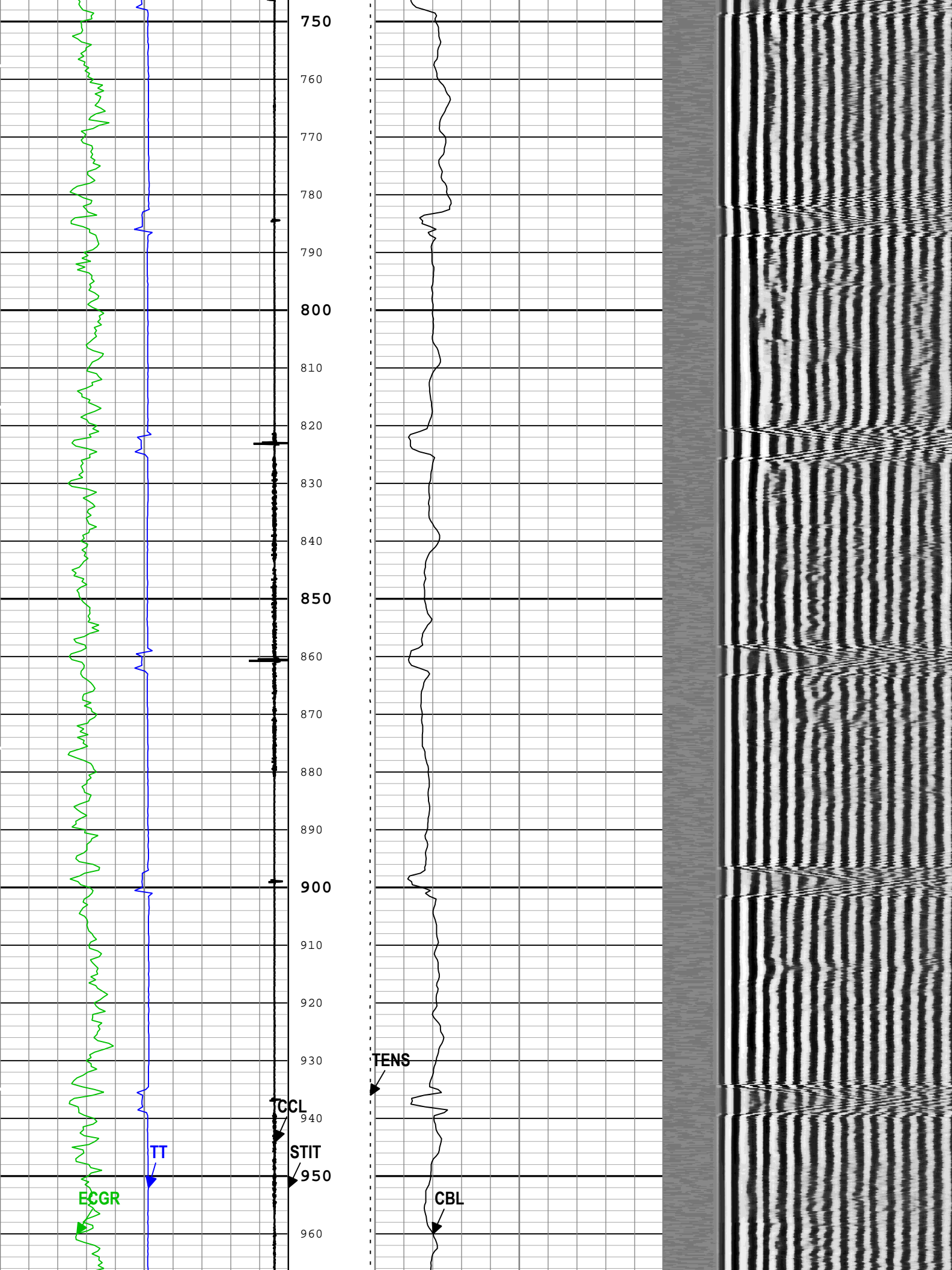


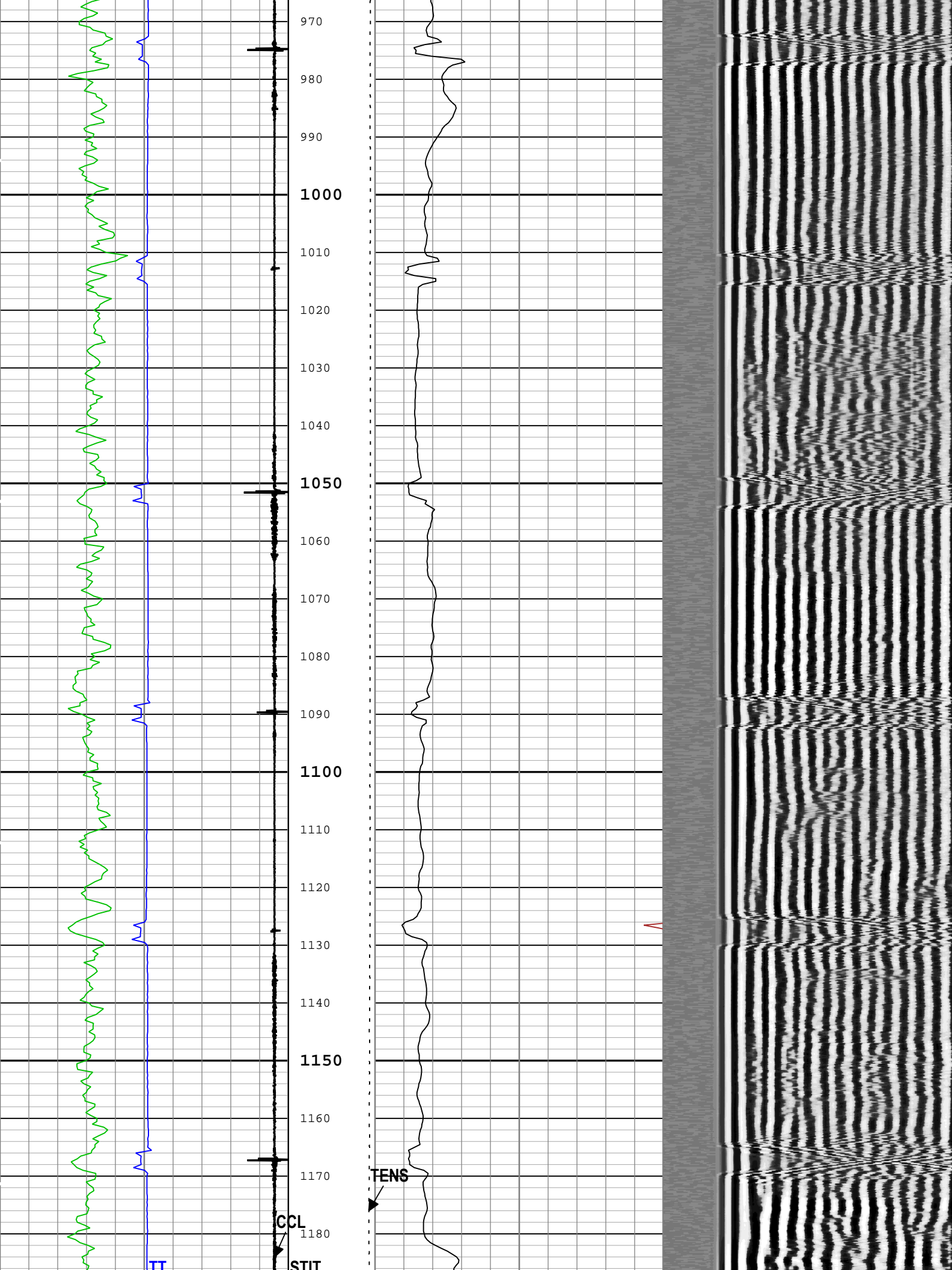




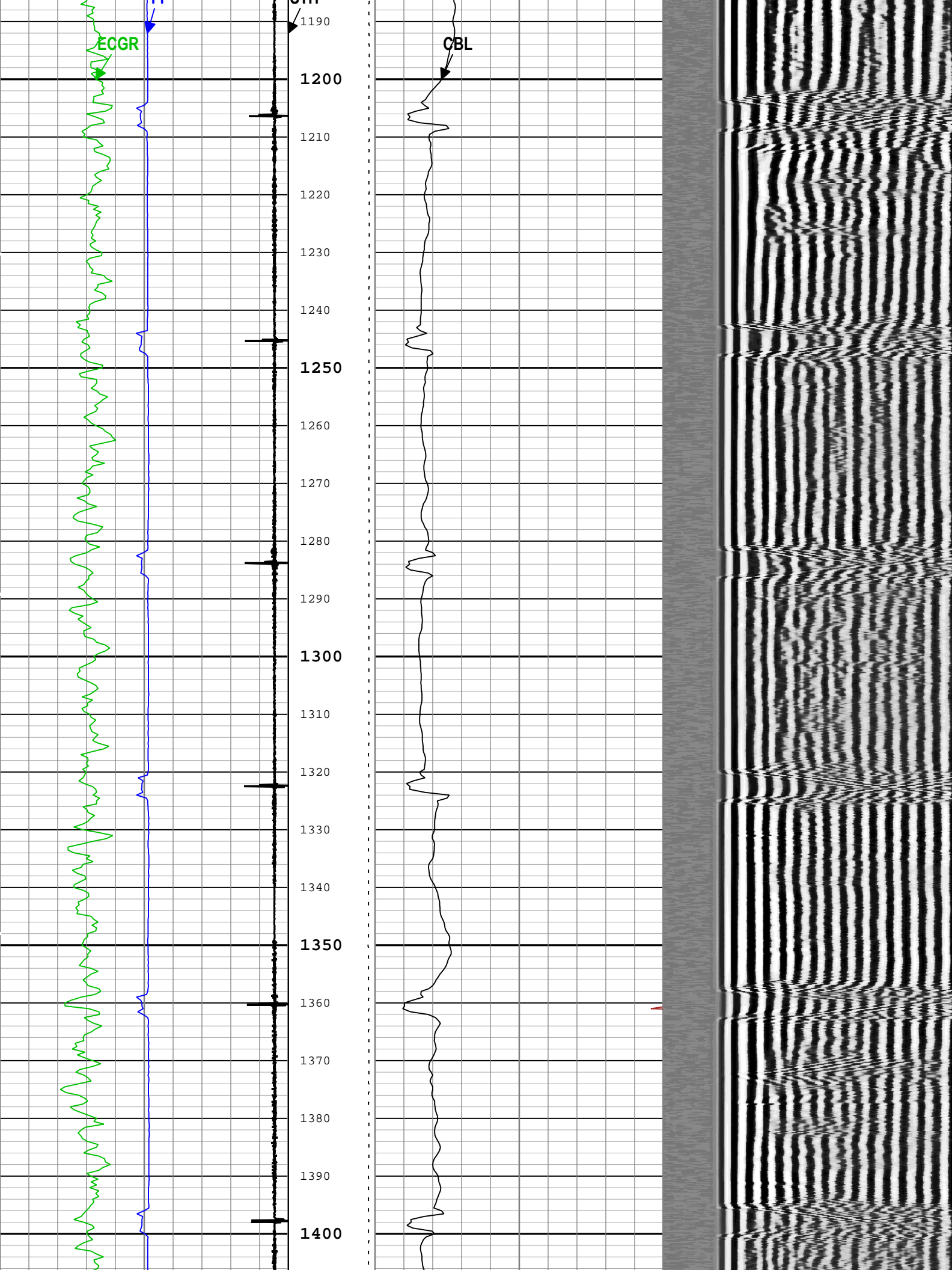


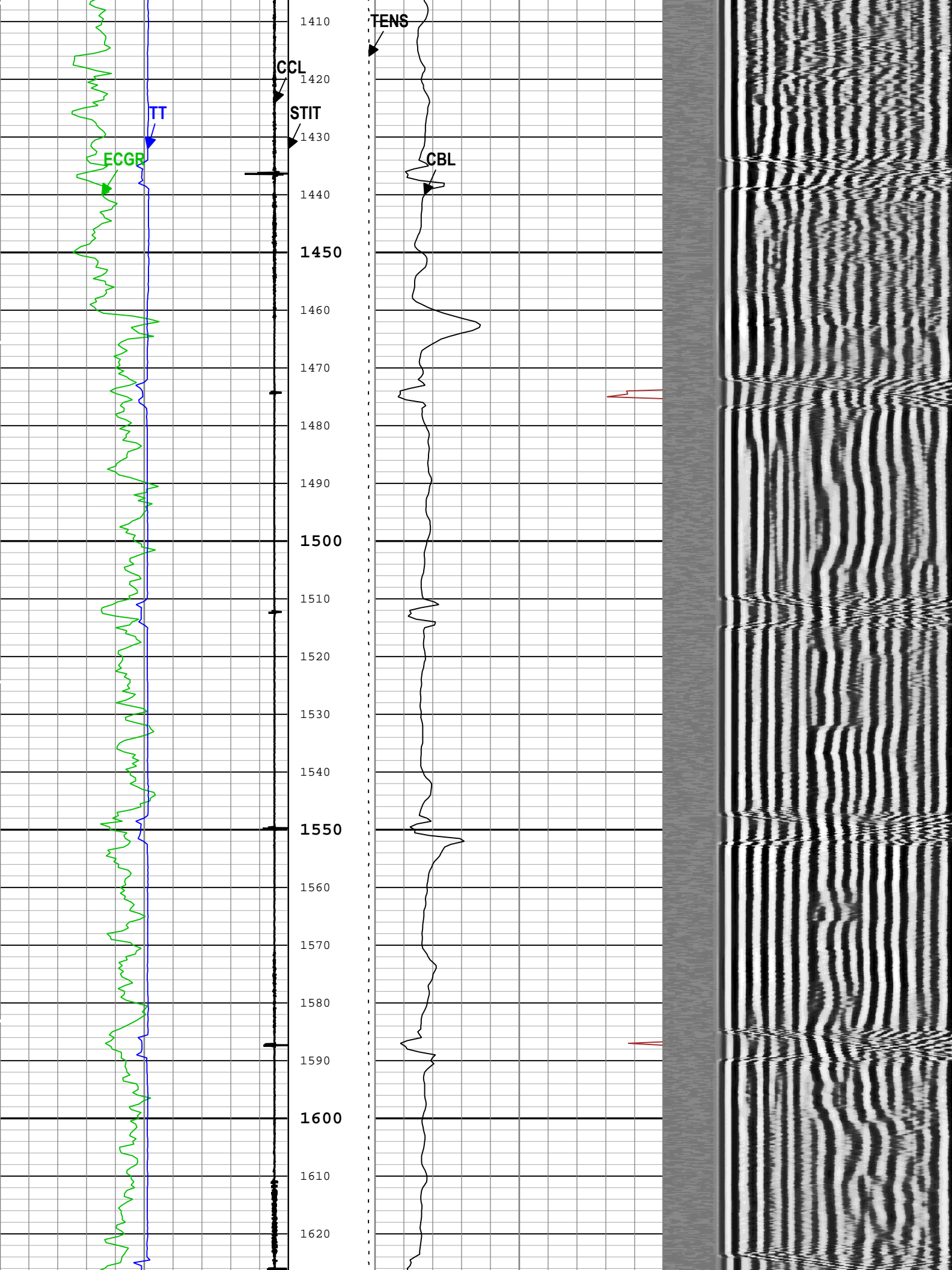




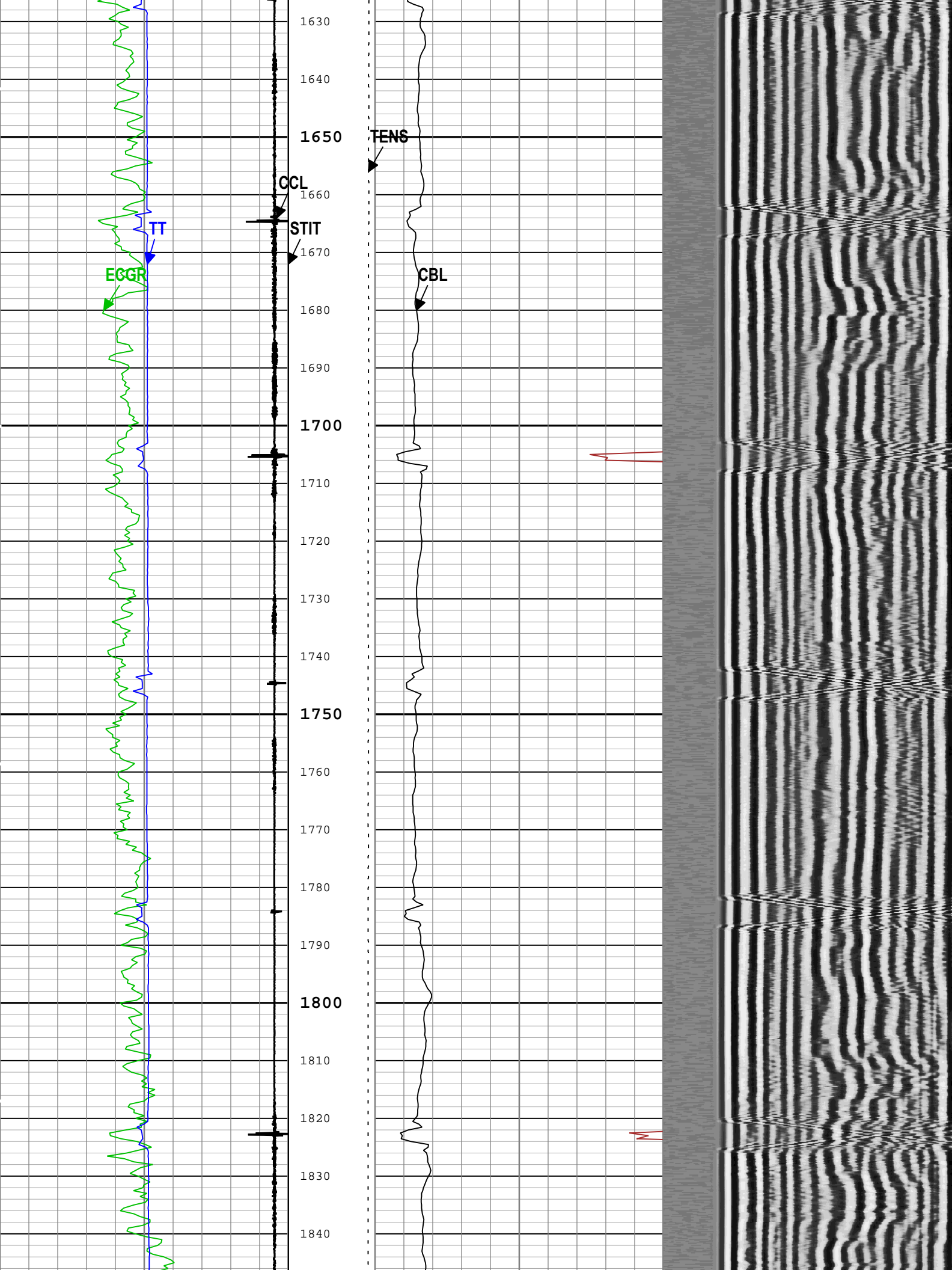


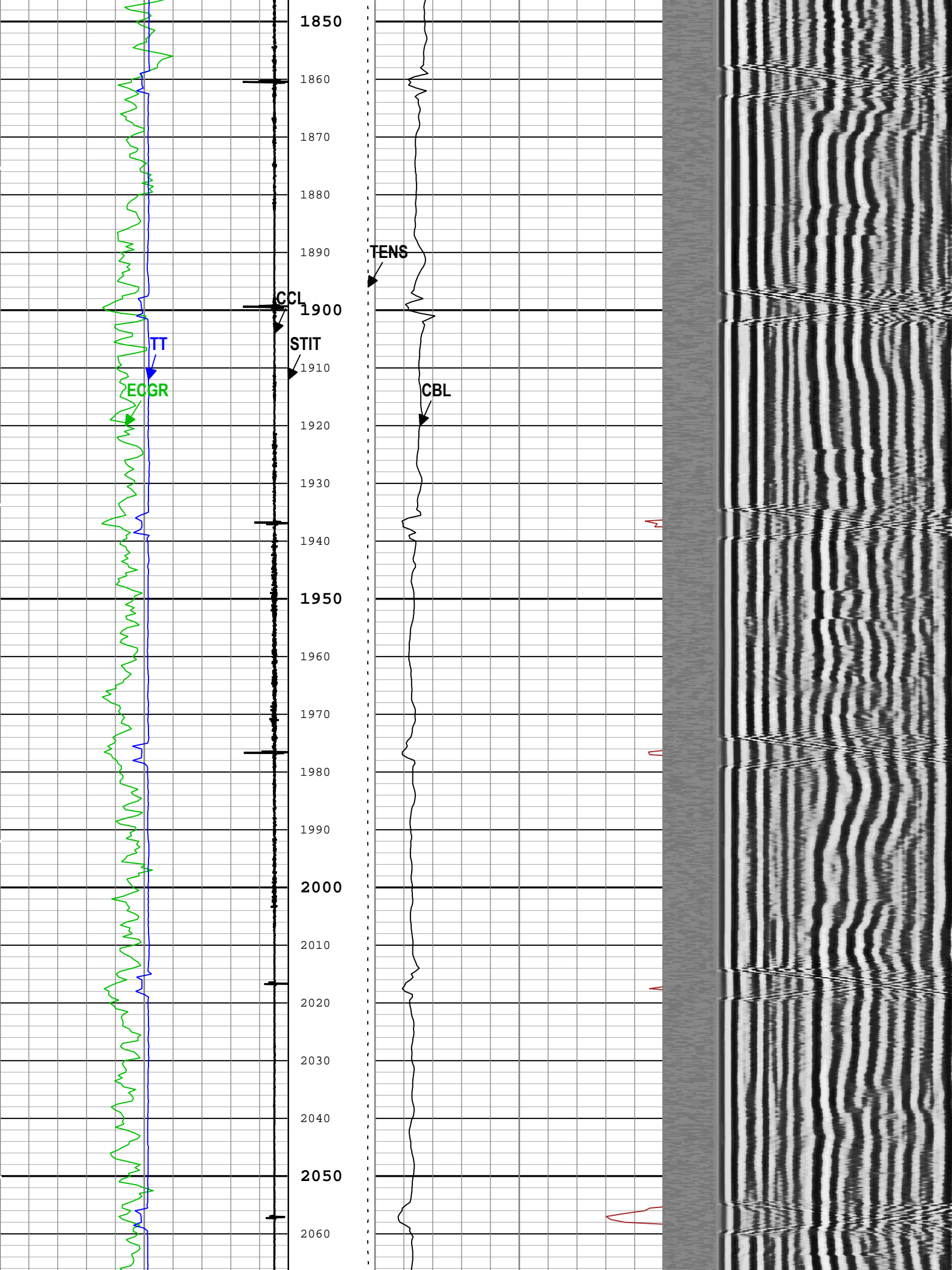


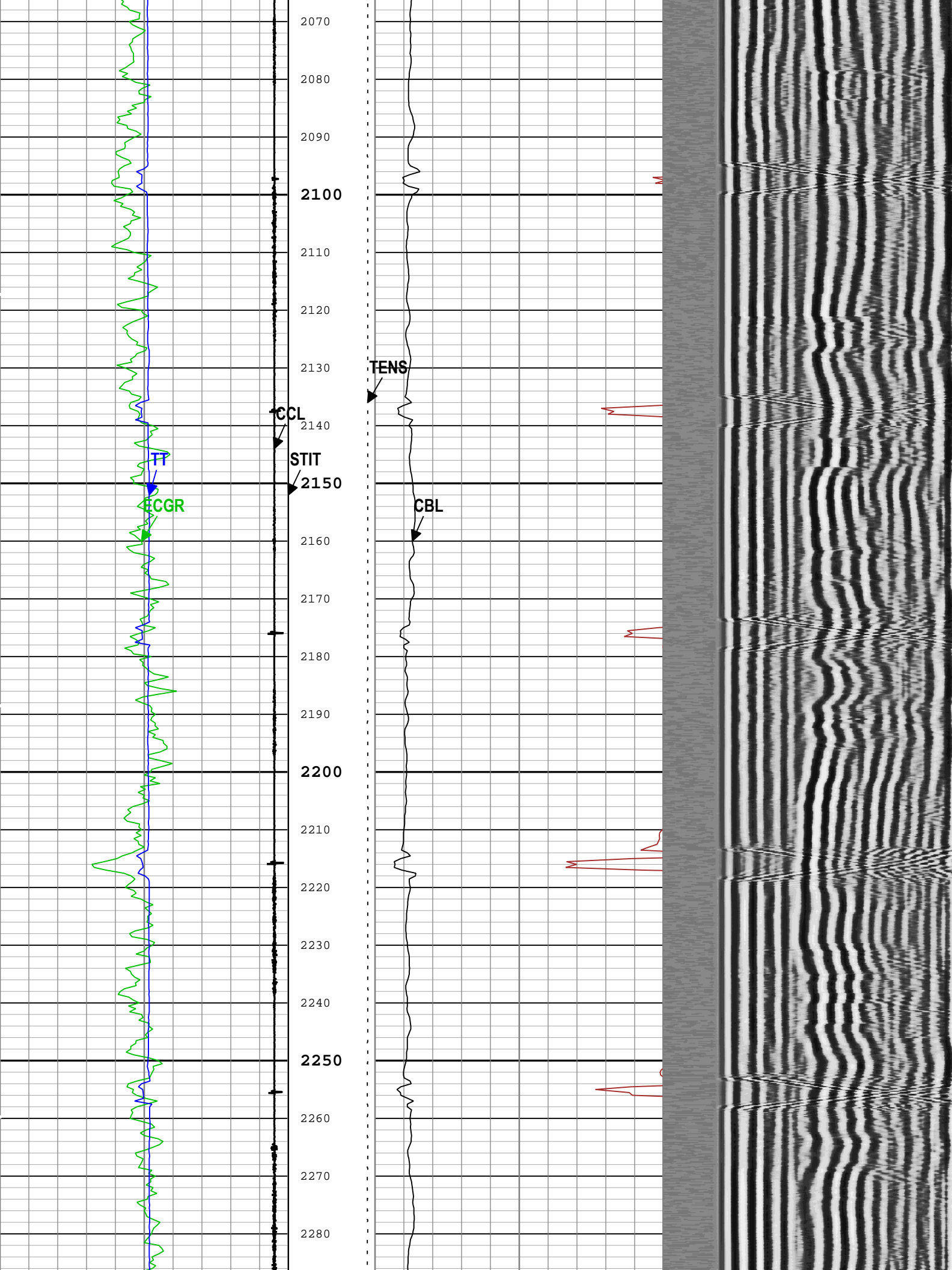




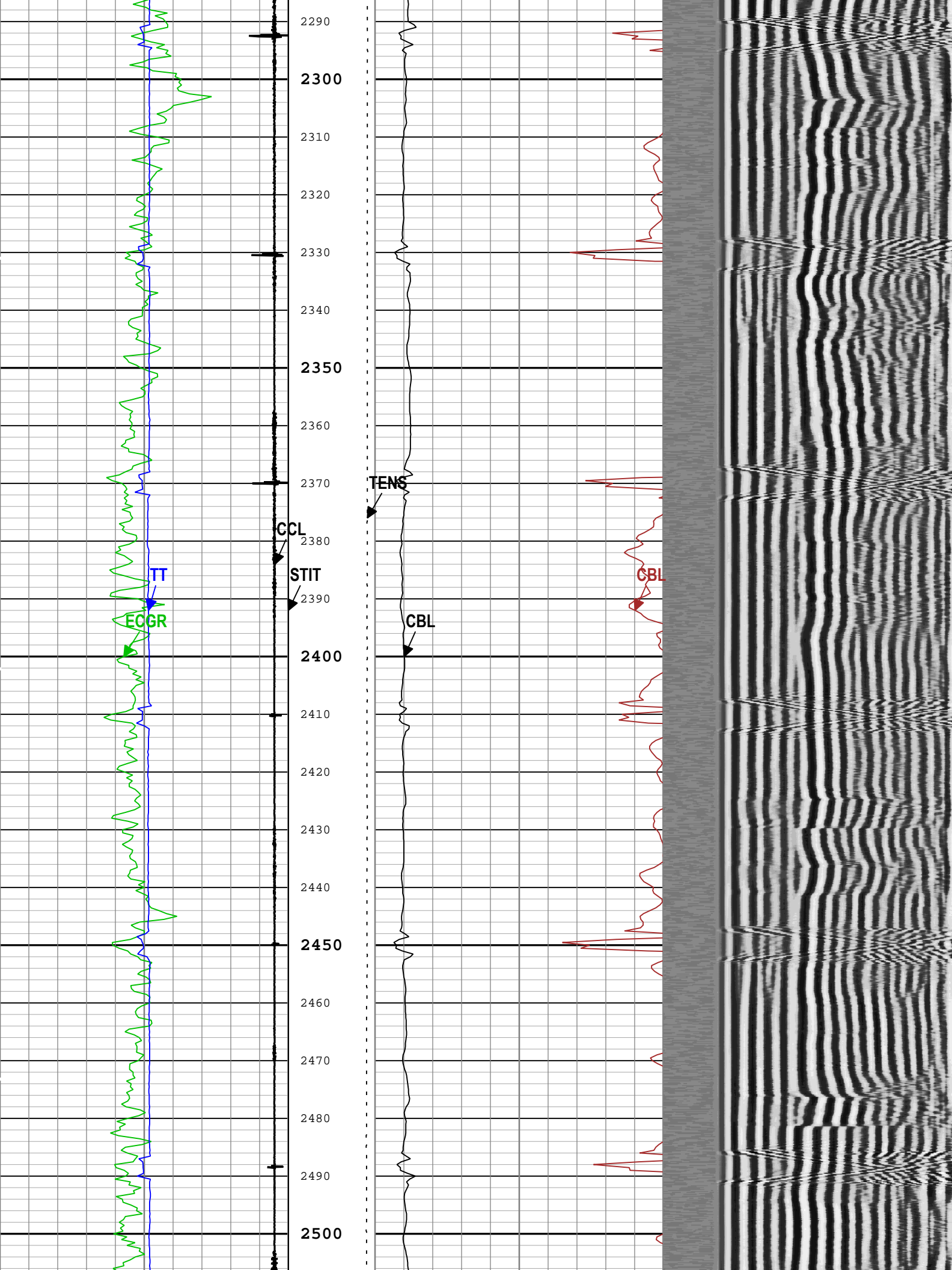


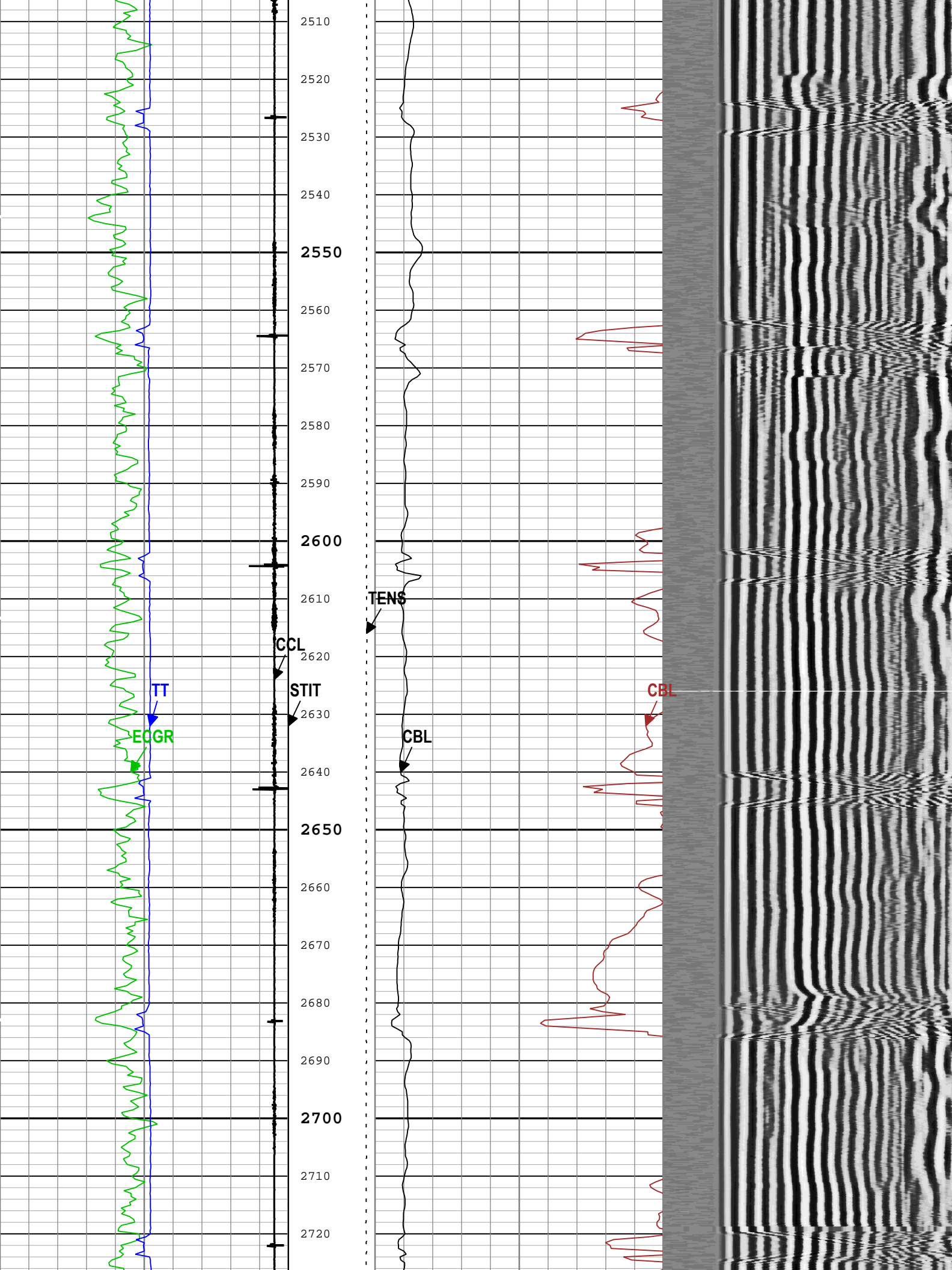


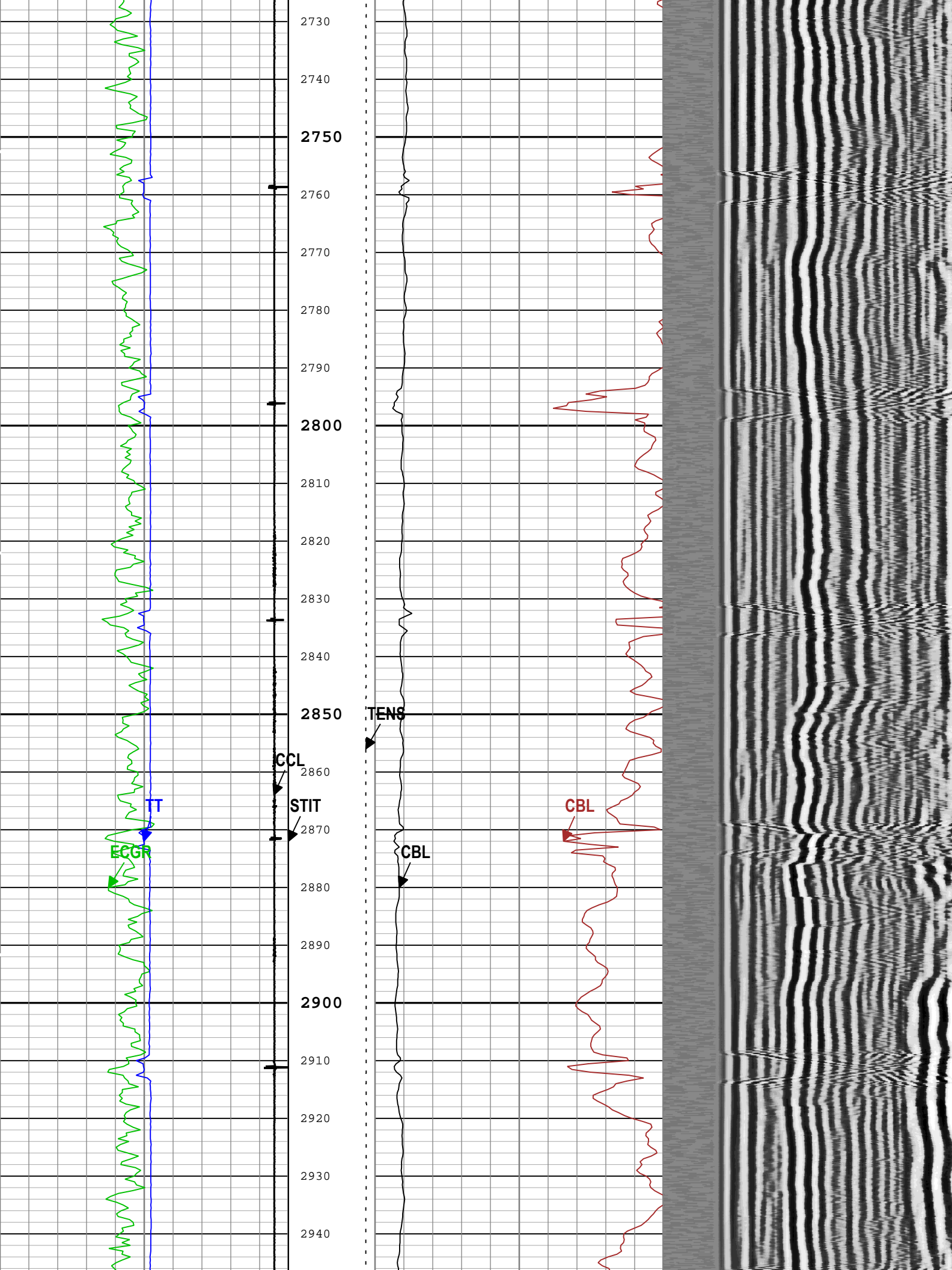




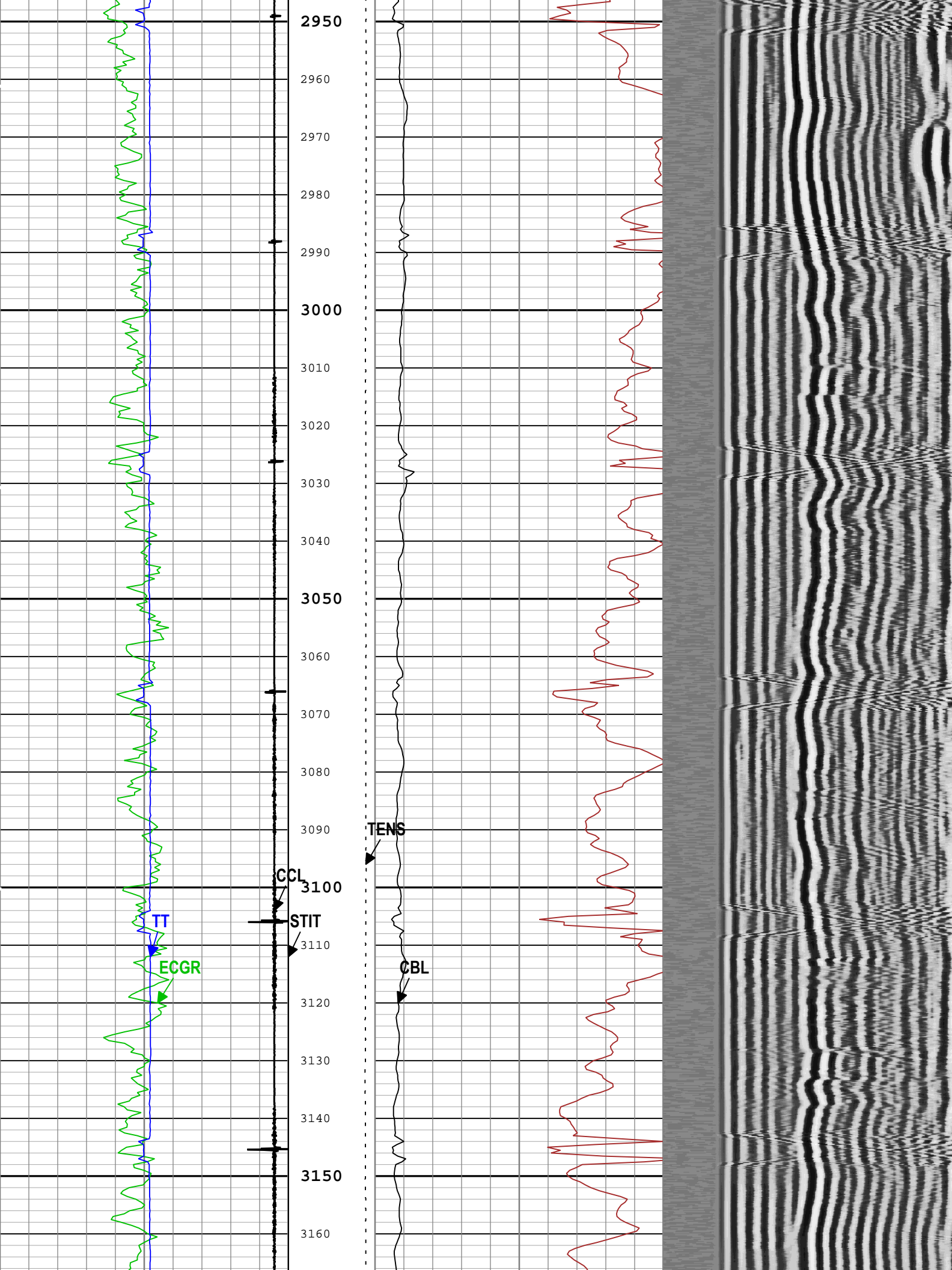


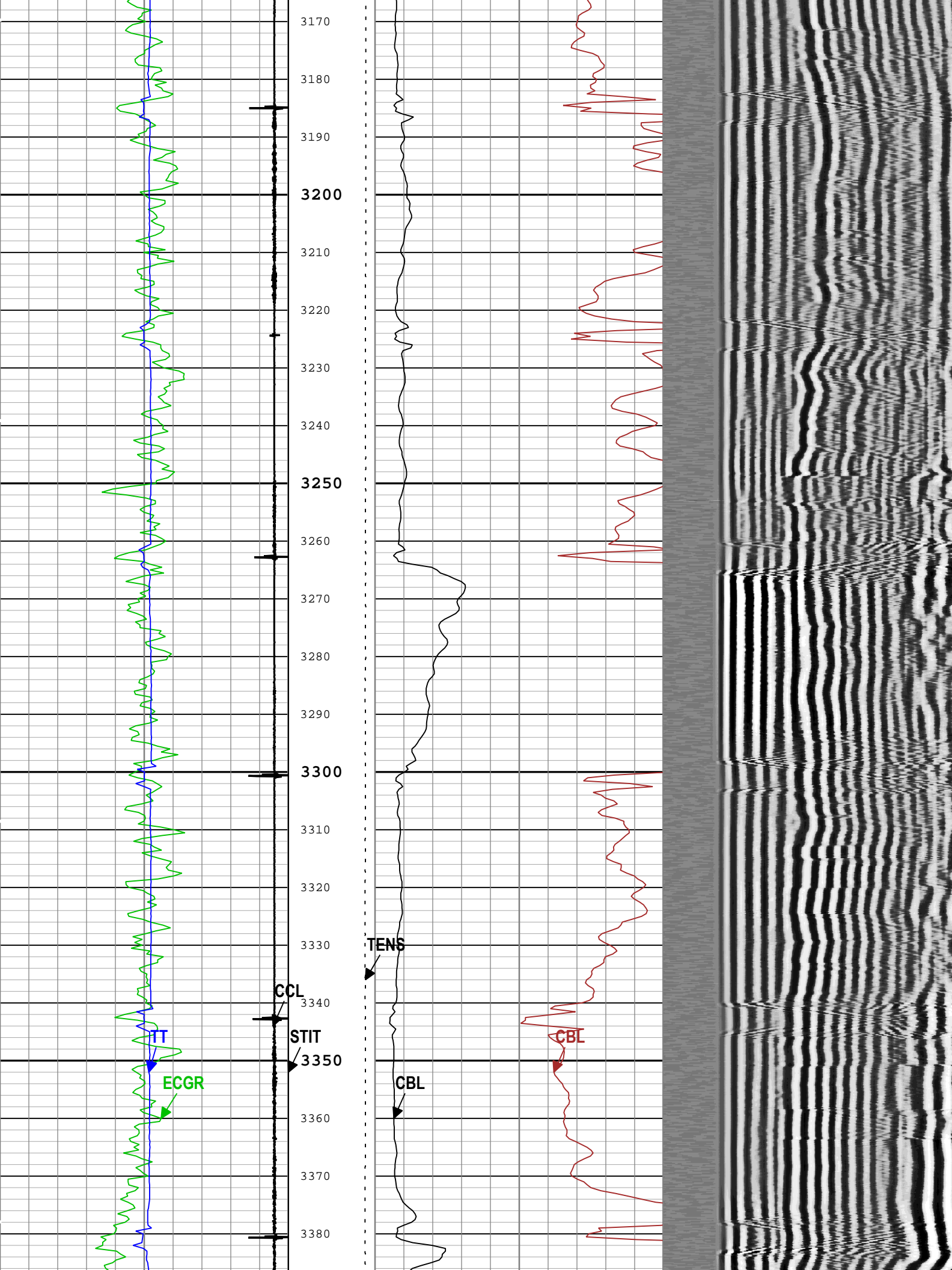




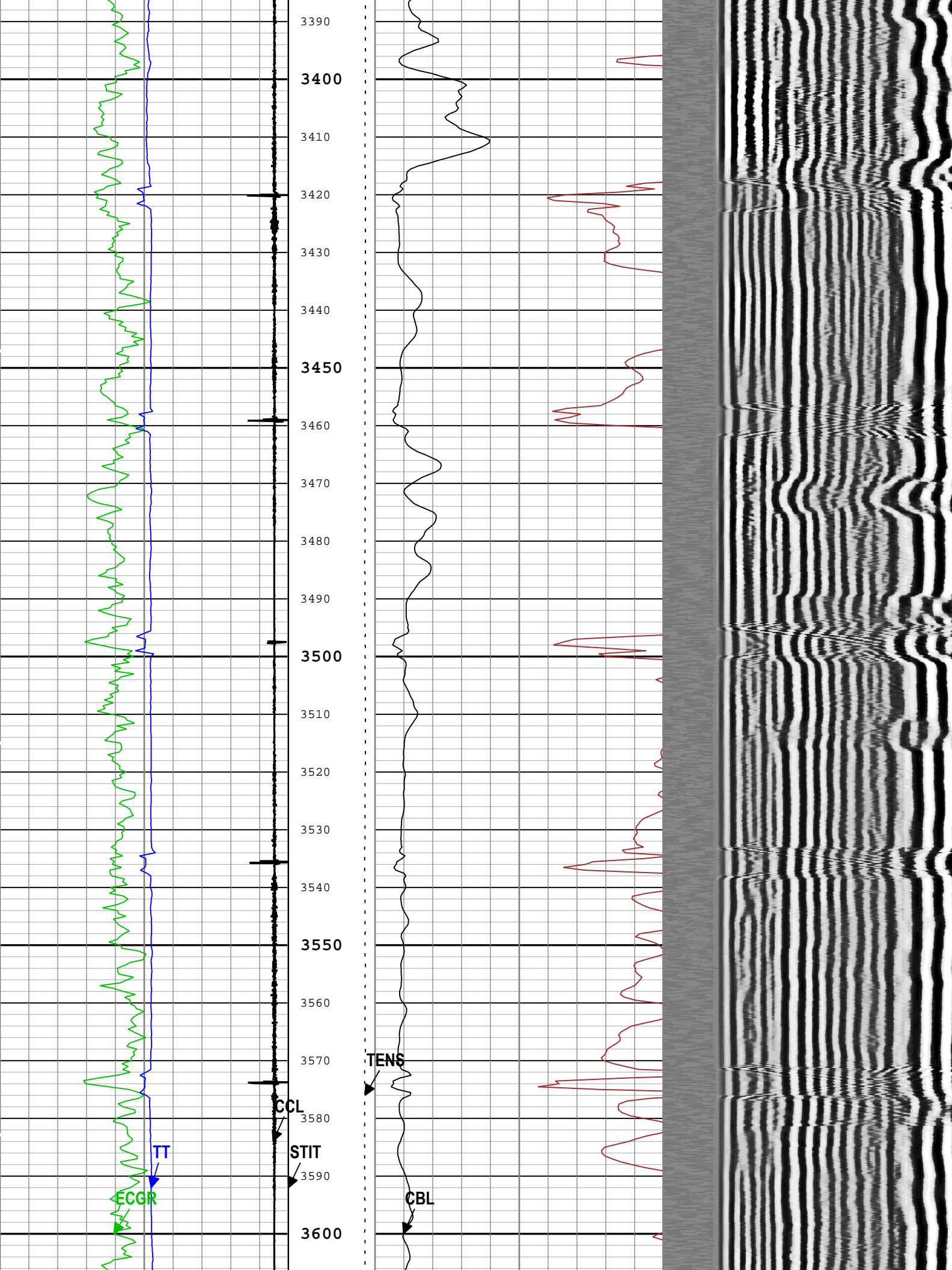


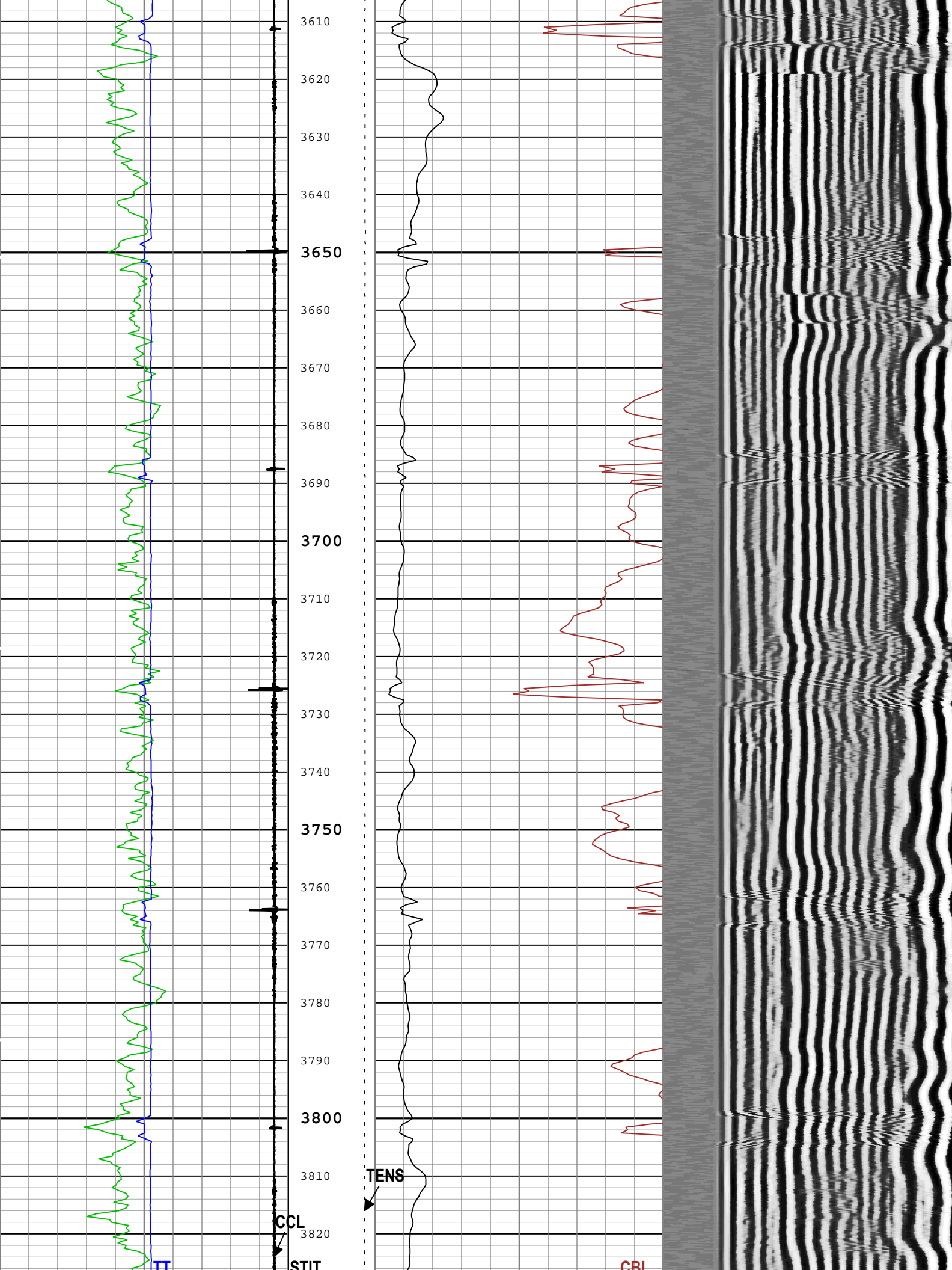


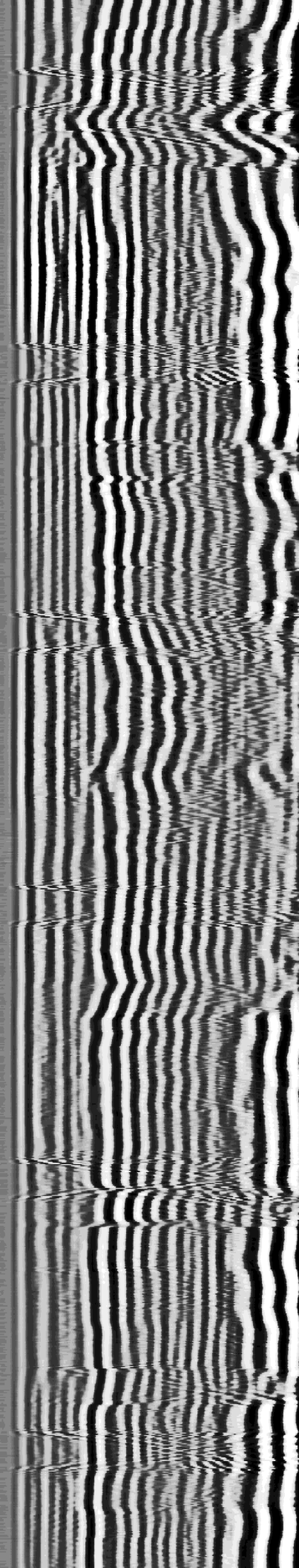
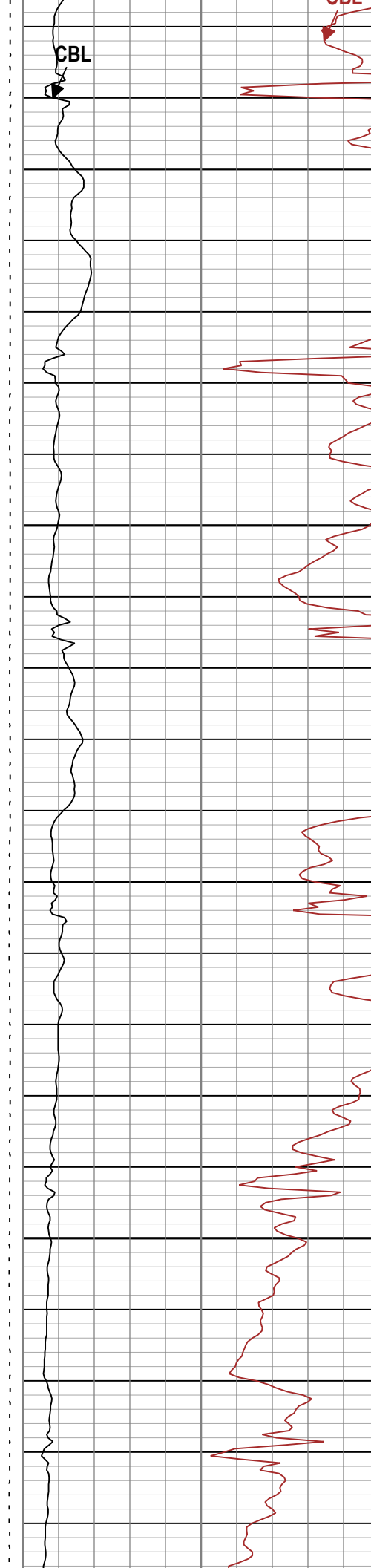
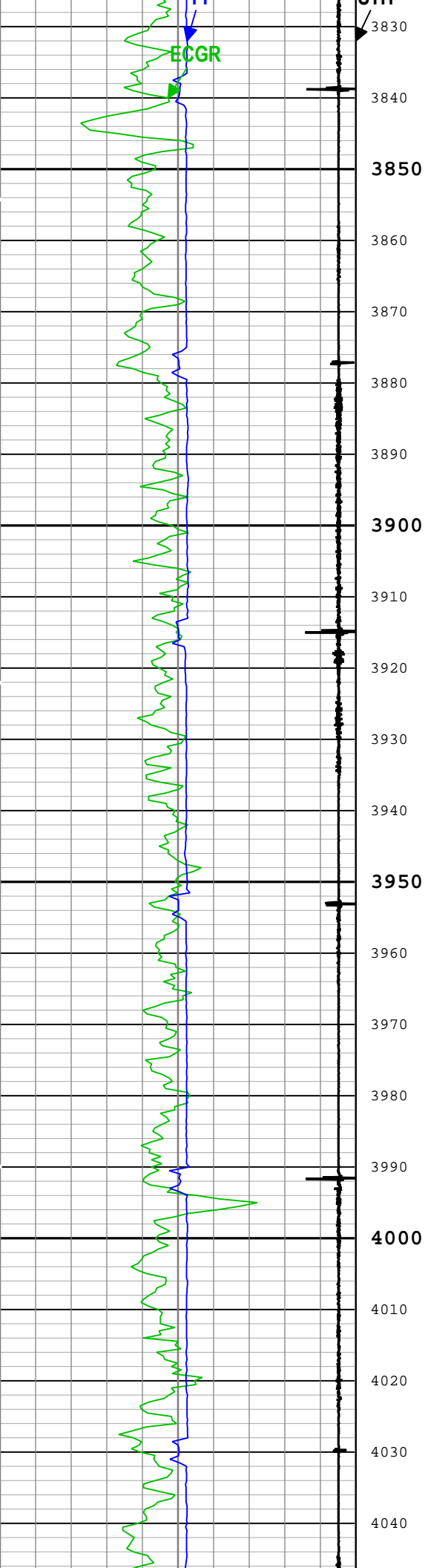




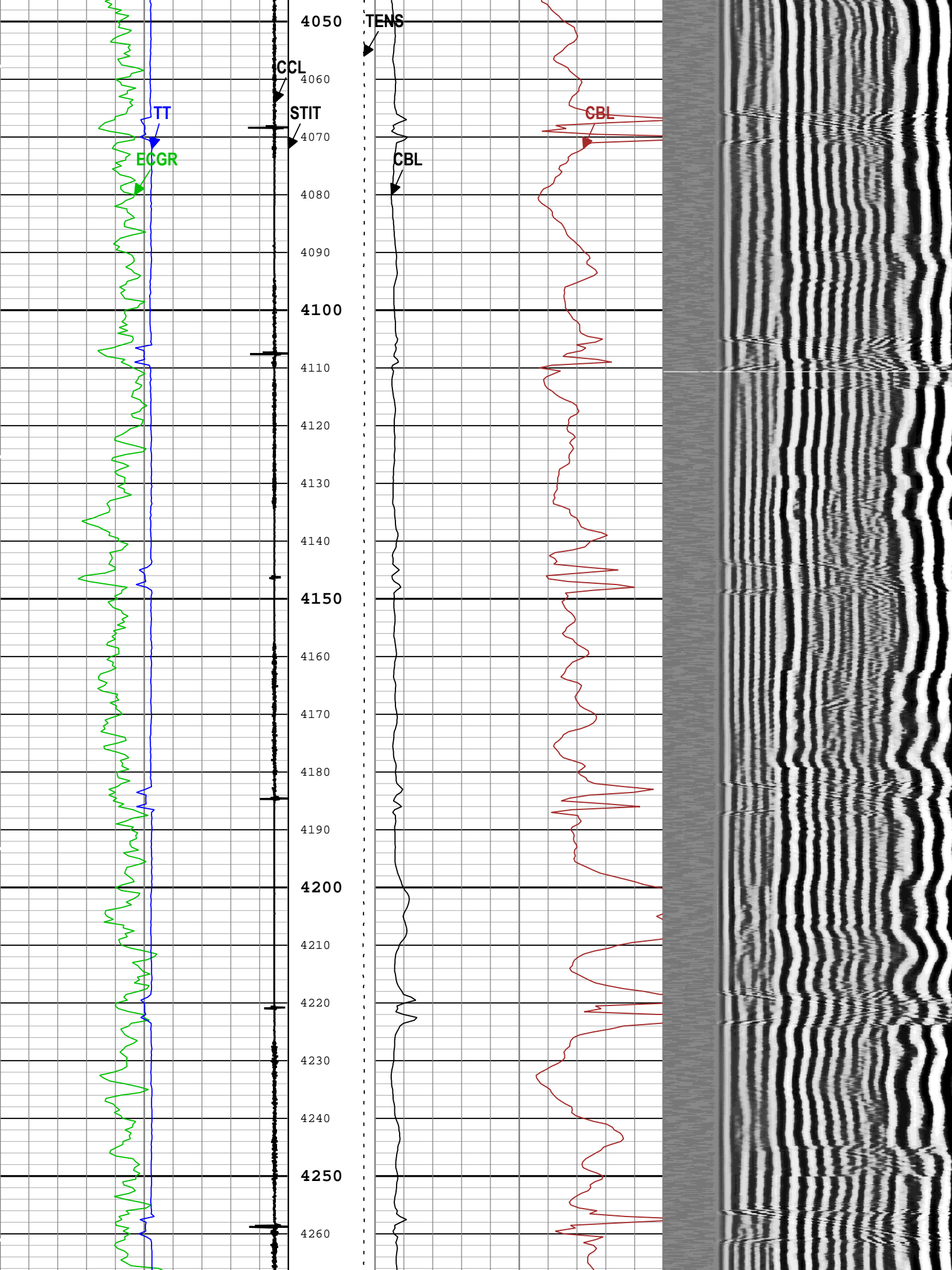


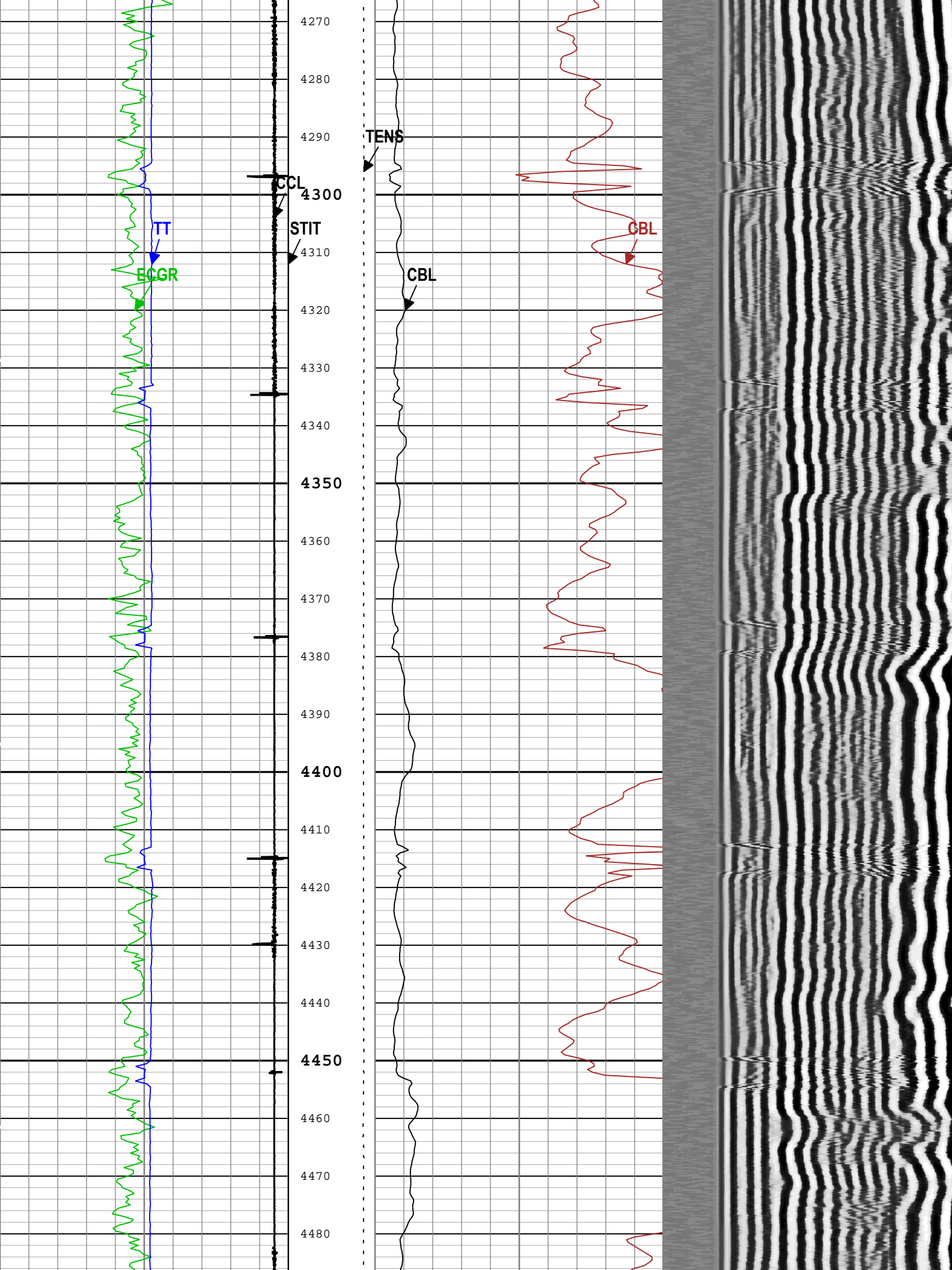


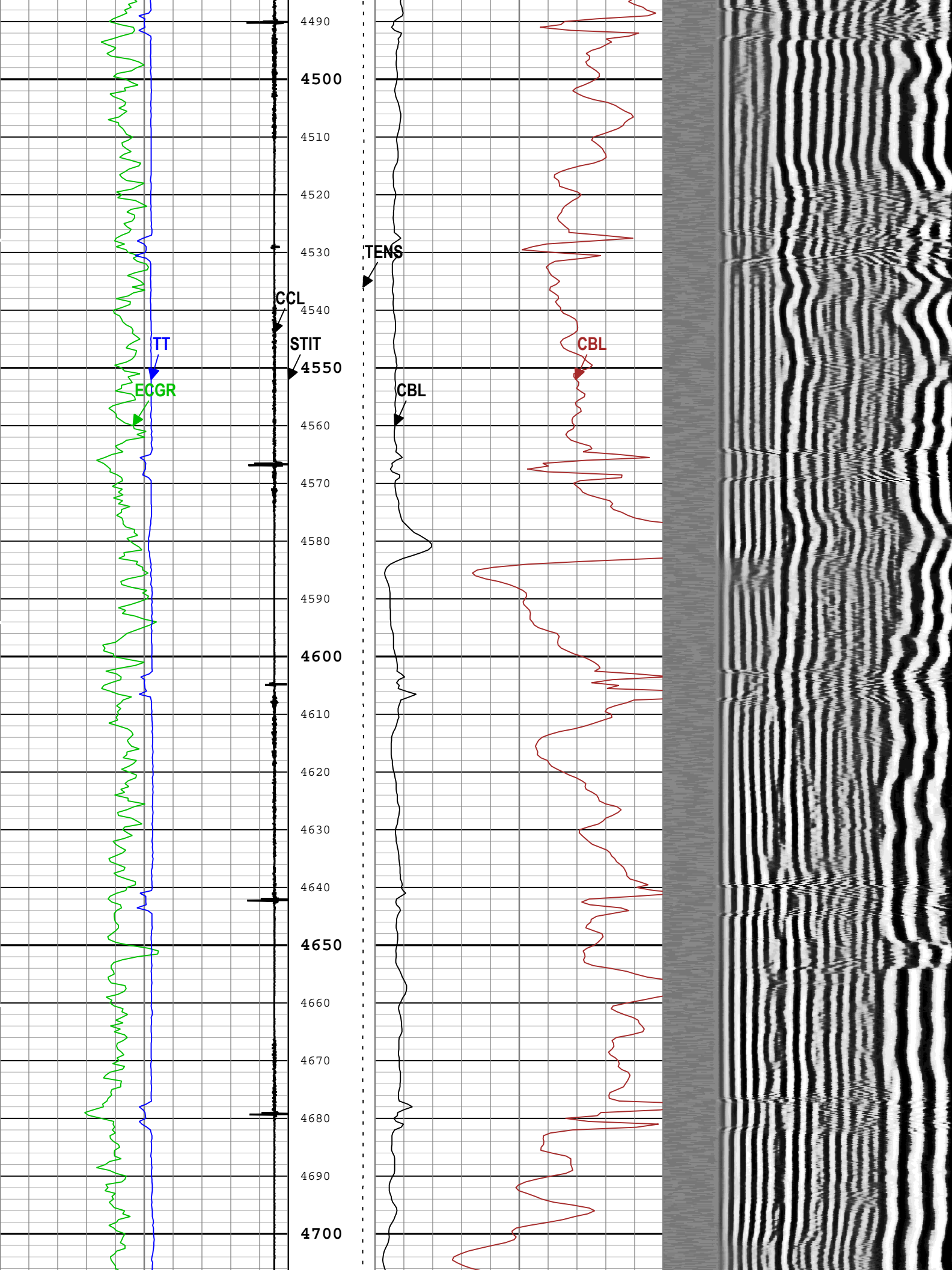




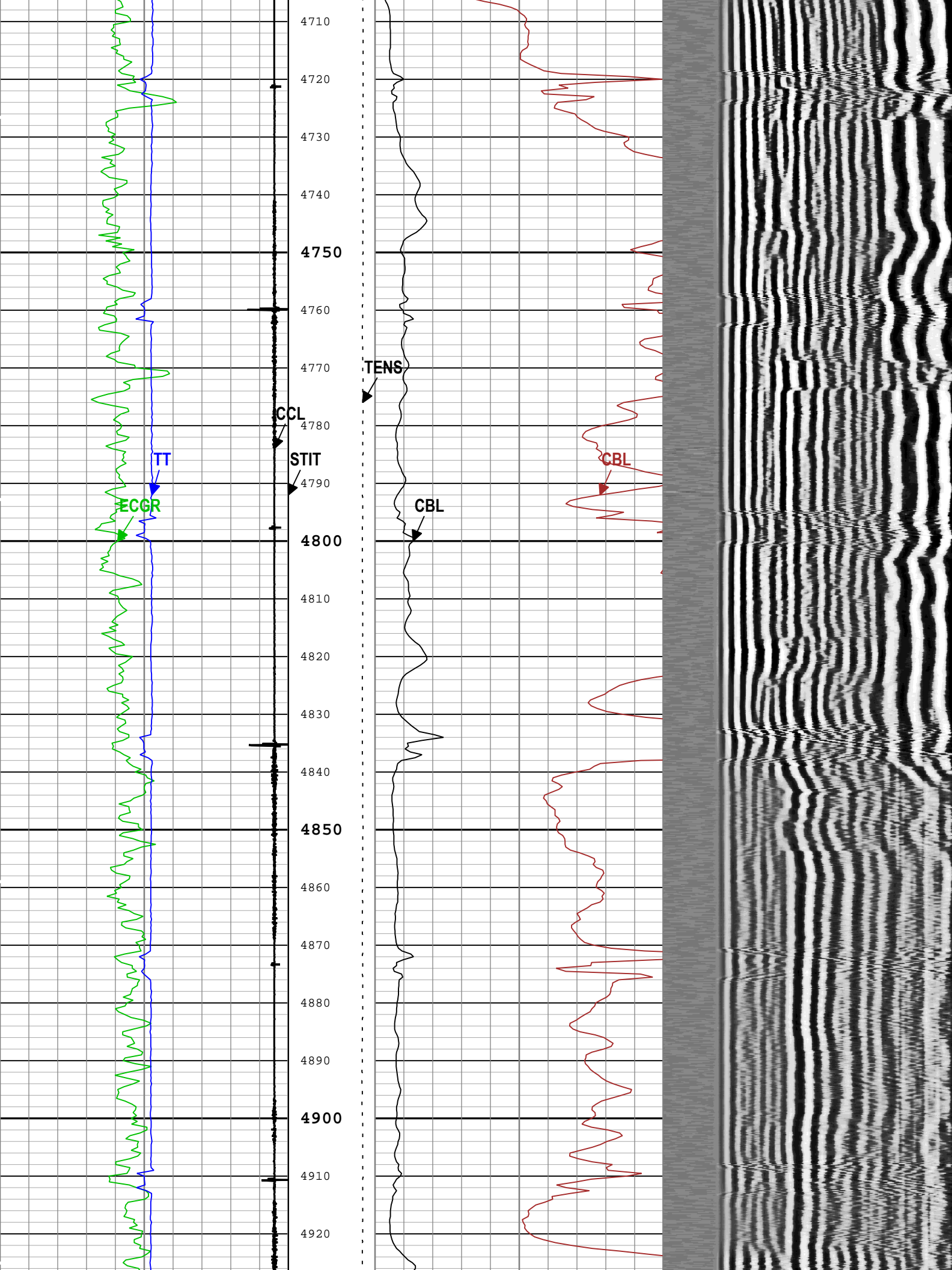


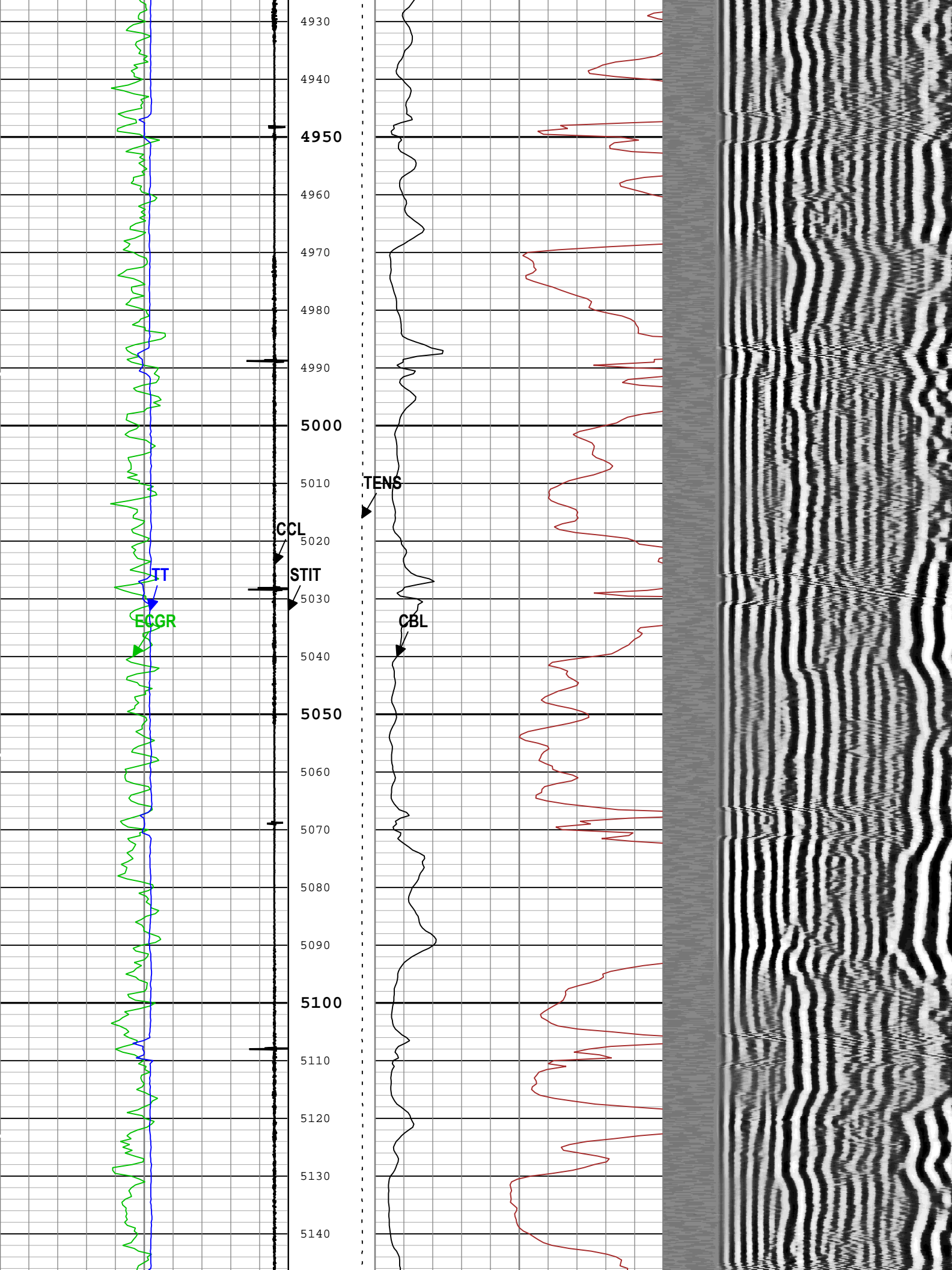




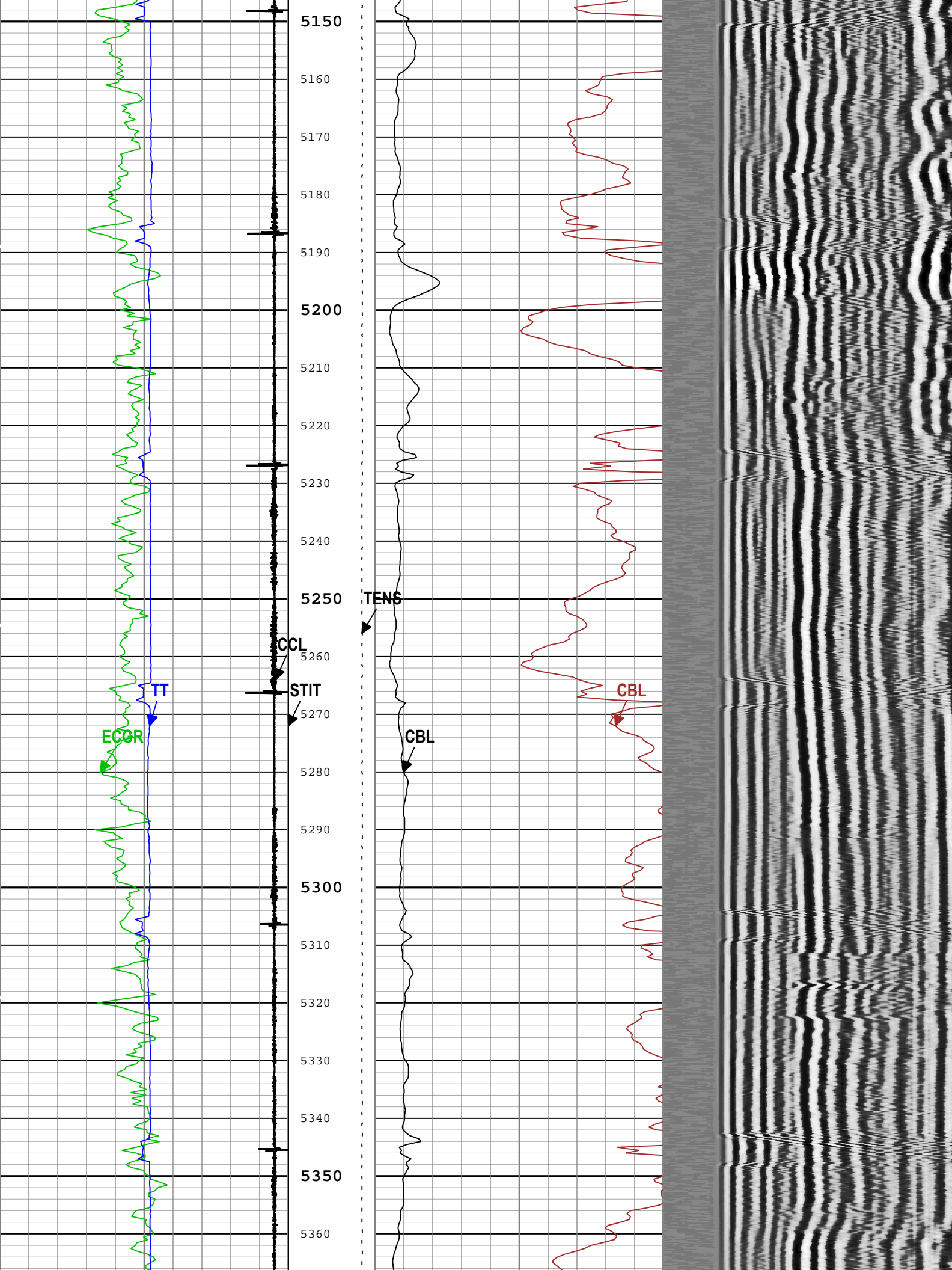


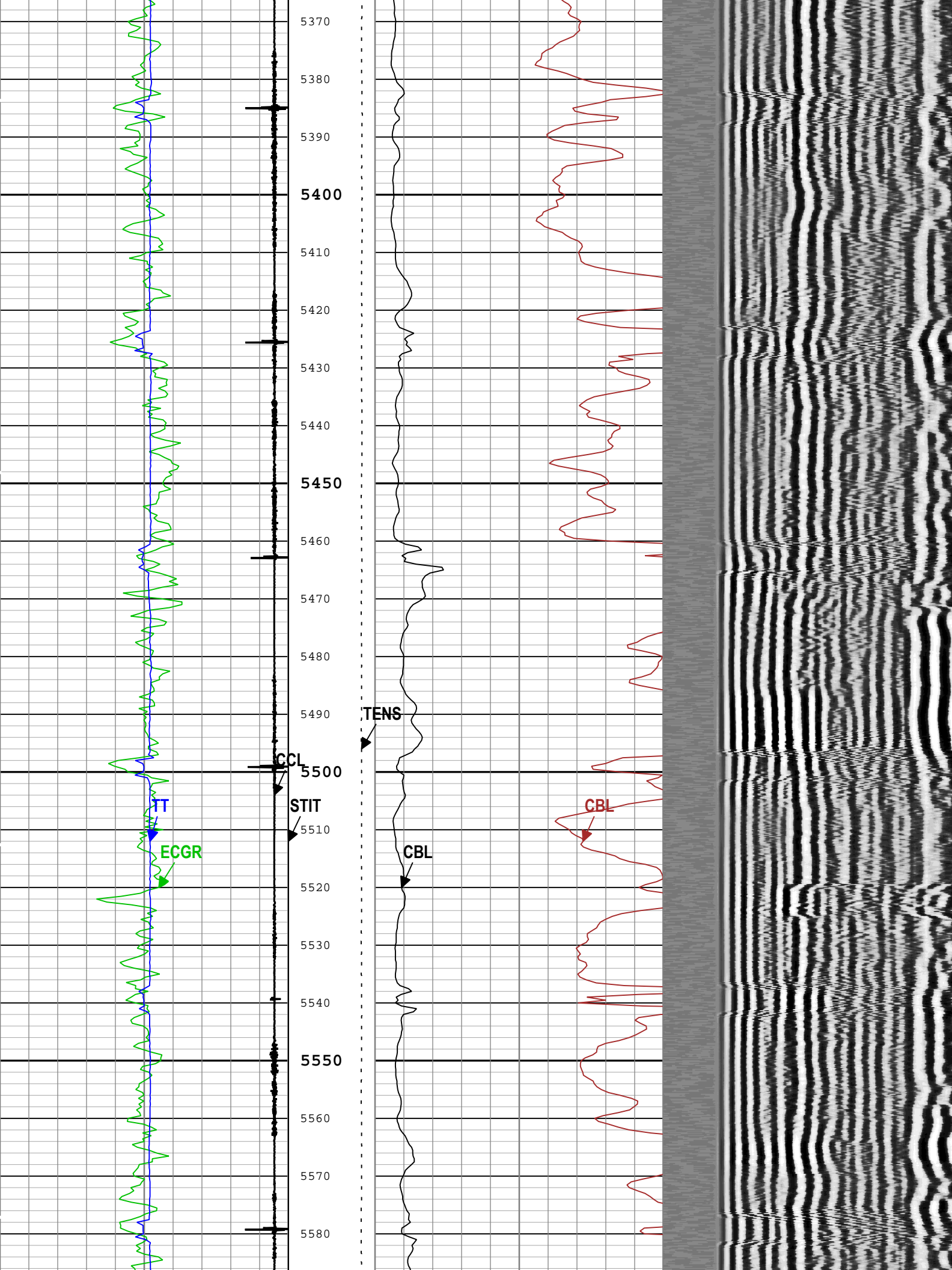


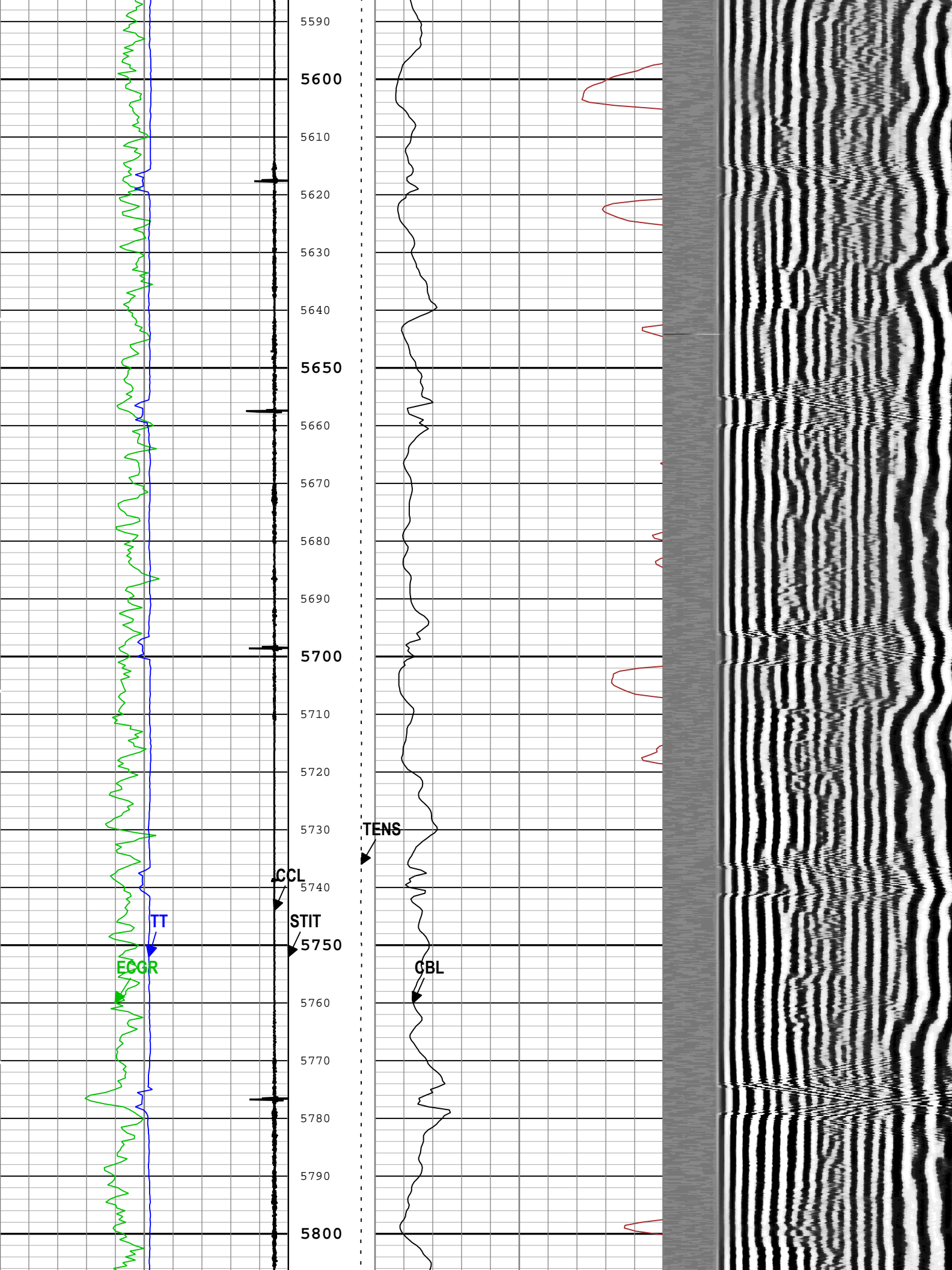




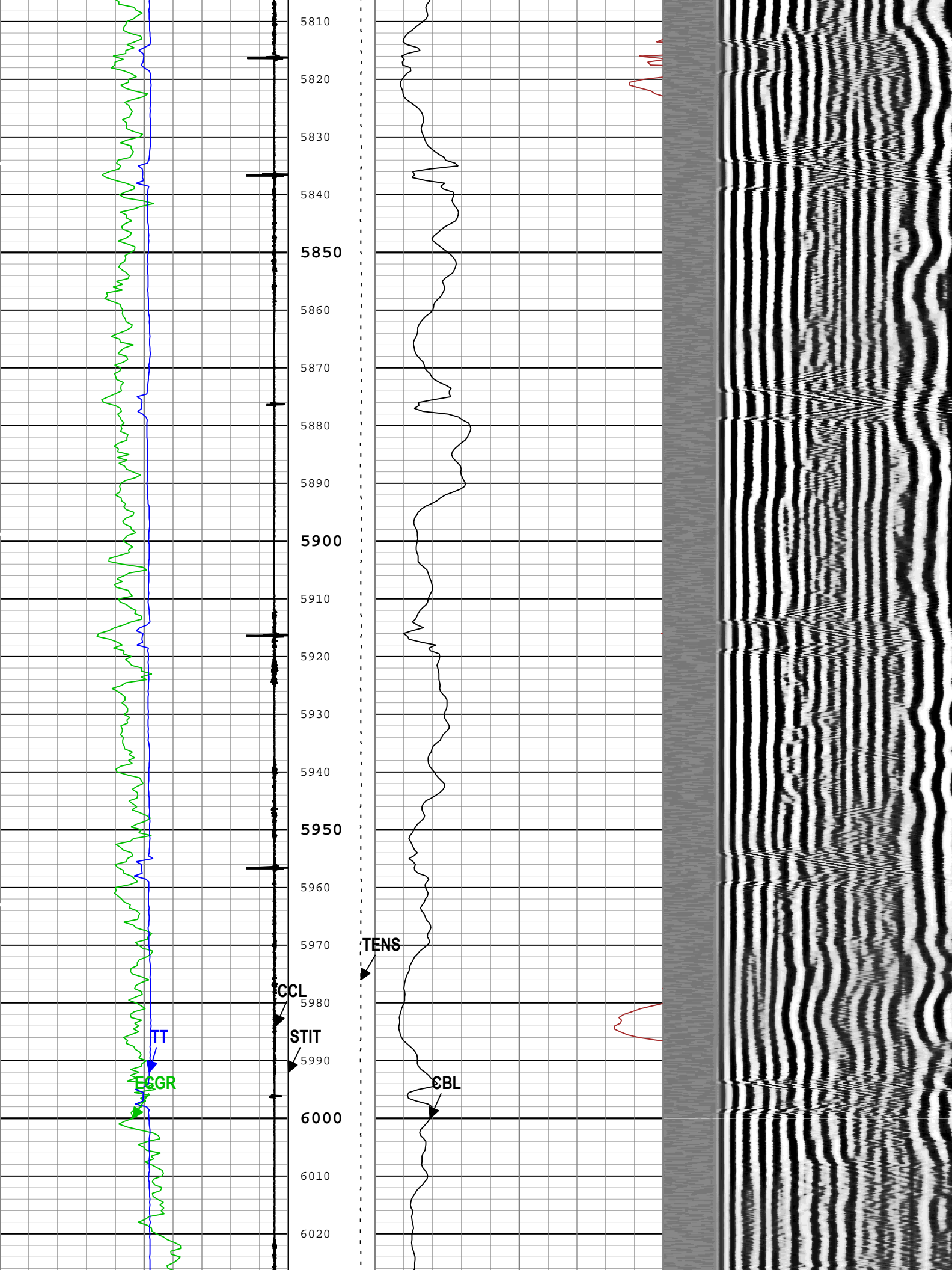


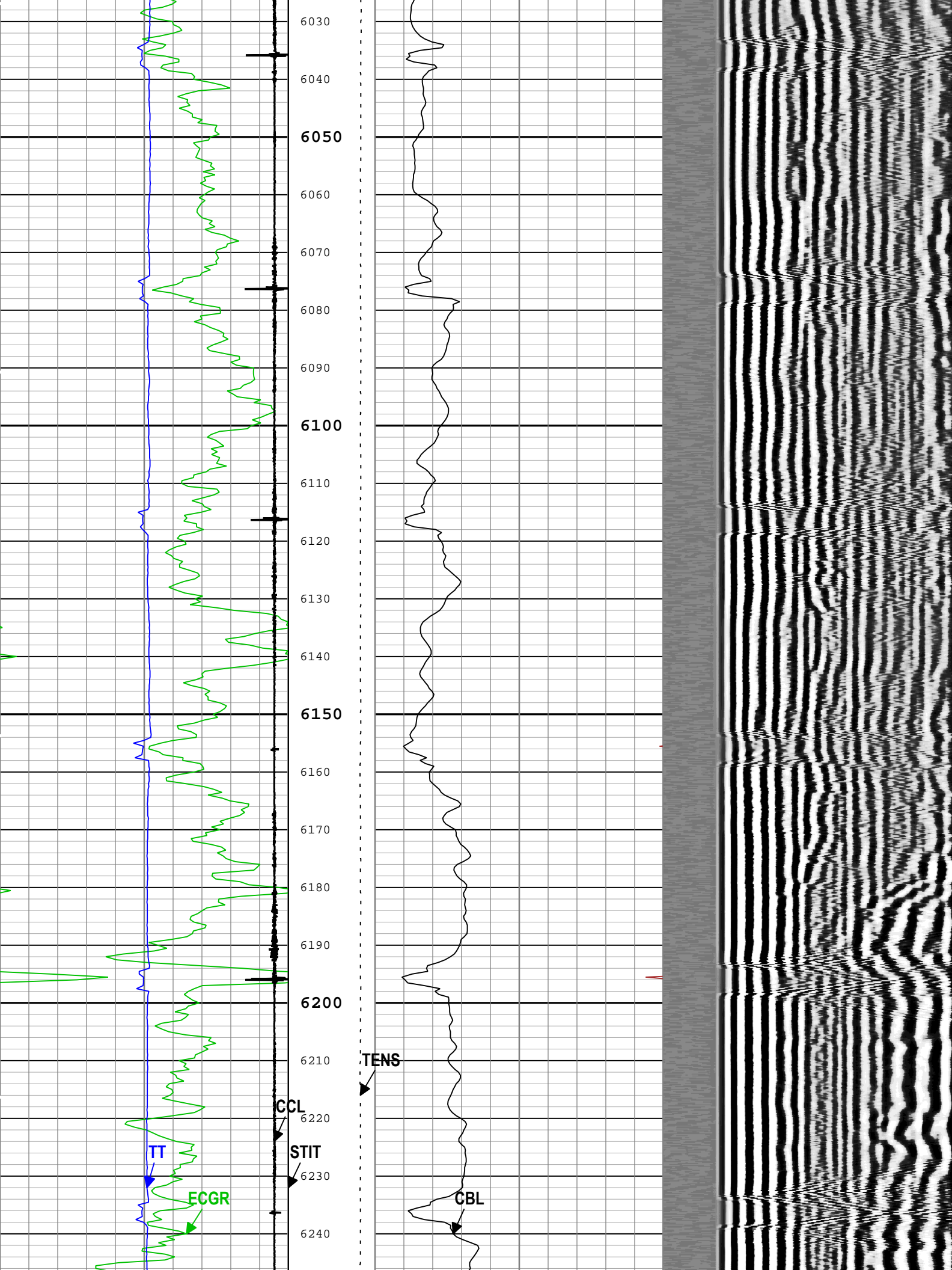


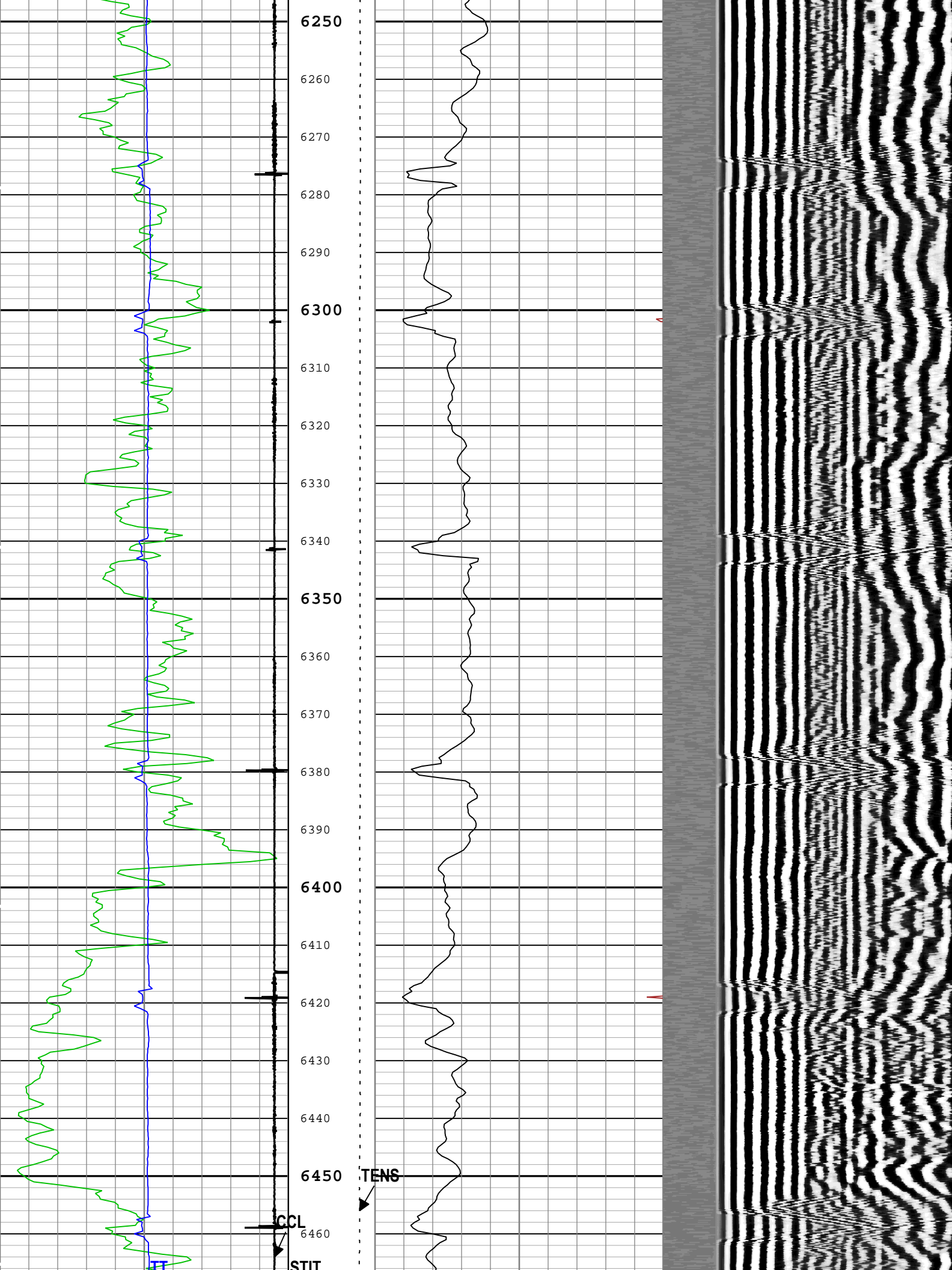




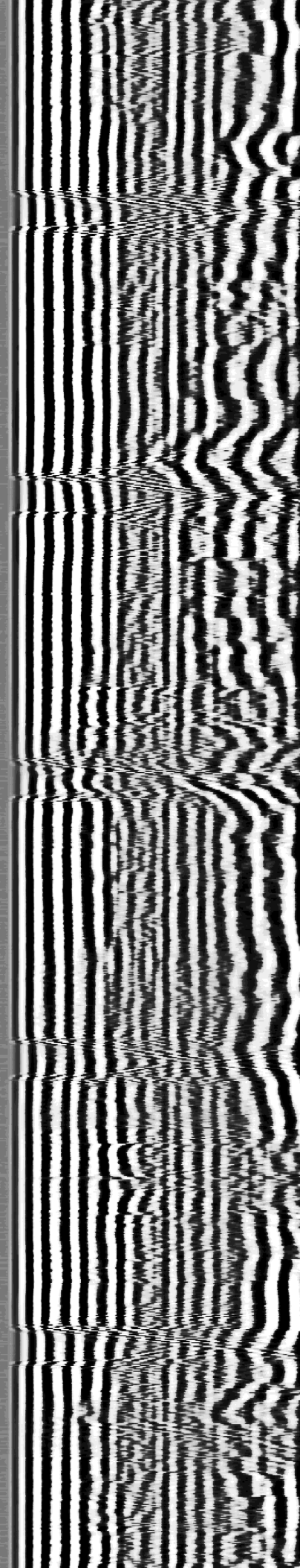
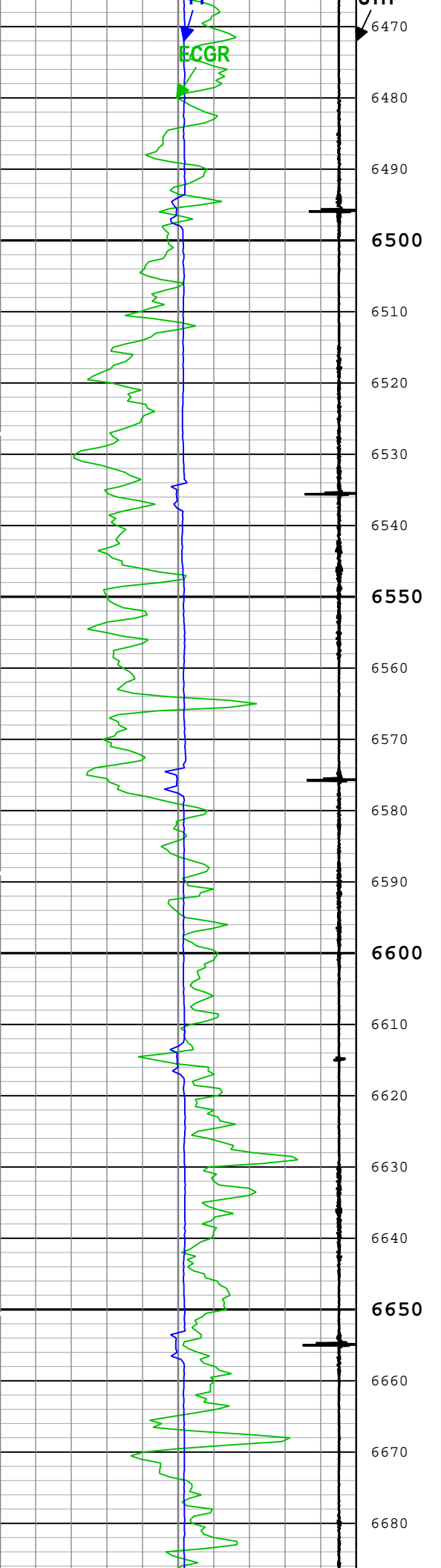


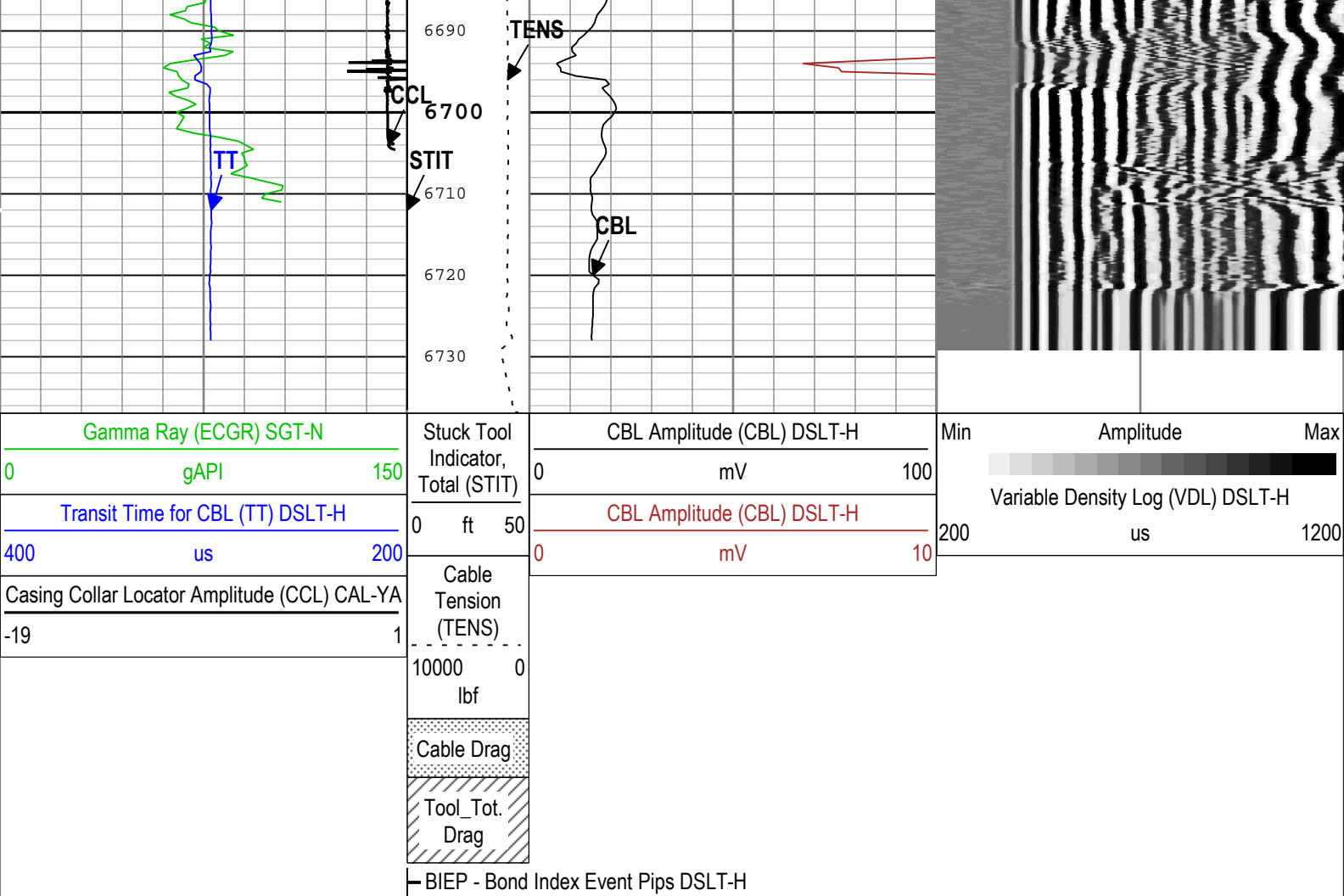












TIME\_1900 - Time Marked every 60.00 (s)

Description: CBL\_VDL Format: Log ( Sonic CBL with VDL ) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 03-Oct-2016 17:16:48

Channel Processing Parameters				
Two: Parameters				
Parameter	Description	Tool	Value	Unit
AMSG	Auxiliary Minimum Sliding Gate	DSLTH	Time Zoned	us
ISSBAR	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	Depth Zoned	in
CBLO	Casing Bottom (Logger)	WLSESSION	6748	ft
CBRA	CBL LQC Reference Amplitude in Free Pipe	DSLTH	62	mV
CCL_MULTIPLIER	Casing Collar Locator Multiplier	CAL-YA	1	
CDEN	Cement Density	SGT-N	2	g/cm3
DETE	Delta-T Detection	DSLTH	E1	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS(RT)	
GOBO_CURR	Good Bond in Arbitrary Cement	DSLTH	2.87	mV
MAHTR	Manual High Threshold Reference for first arrival detection	DSLTH	120	
MATT_CURR	Maximum Attenuation in Arbitrary Cement	DSLTH	11.82	dB/ft
MCI	Minimum Cemented Interval for Isolation	DSLTH	Depth Zoned	ft
MNHTR	Minimum High Threshold Reference for first arrival detection	DSLTH	100	
MSA	Minimum Sonic Amplitude	DSLTH	1.33	mV



MSA_CURR	Minimum Sonic Amplitude in Arbitrary Cement	DSLTH	1.33	mV
NMSG	Near Minimum Sliding Gate	DSLTH	283	us
NMXG	Near Maximum Sliding Gate	DSLTH	Time Zoned	us
SGAD	Sliding Gate Status	DSLTH	Off	
SGDT	Sliding Gate Delta-T	DSLTH	Time Zoned	us/ft

Depth Zone Parameters			
Parameter	Value	Start ( ft )	Stop ( ft )
BS	13.5	40	1465
BS	8.75	1465	6736.92
MCI	14.81	40	1465
MCI	10	1465	6736.92
All depth are actual.			

Time Zone Parameters					
Parameter	Value	Start Time	Stop Time	Start Depth ( ft )	Stop Depth ( ft )
AMSG	218	03-Oct-2016 15:13:15	03-Oct-2016 16:20:08	6736.95	2882.01
AMSG	235	03-Oct-2016 16:20:08	03-Oct-2016 16:20:13	2882.01	2875.88
AMSG	252	03-Oct-2016 16:20:13	03-Oct-2016 16:20:41	2875.88	2843.46
AMSG	244	03-Oct-2016 16:20:41	03-Oct-2016 16:20:53	2843.46	2829.23
AMSG	237	03-Oct-2016 16:20:53	03-Oct-2016 17:10:47	2829.23	40.21
NMXG	463	03-Oct-2016 15:13:15	03-Oct-2016 16:20:04	6736.95	2886.42
NMXG	378	03-Oct-2016 16:20:04	03-Oct-2016 17:10:47	2886.42	40.21
SGDT	62	03-Oct-2016 15:13:15	03-Oct-2016 15:44:16	6736.95	5300.88
SGDT	59	03-Oct-2016 15:44:16	03-Oct-2016 15:52:31	5300.88	4757.79
SGDT	54	03-Oct-2016 15:52:31	03-Oct-2016 17:10:47	4757.79	40.21
All depth are at tool zero.					

Tool Control Parameters				
Two: Parameters				
Parameter	Description	Tool	Value	Unit
MODE	DSLTH Acquisition Mode	DSLTH	CBL	
RATE	DSLTH Firing Rate	DSLTH	15 Hz	
DTFS	DSLTH Telemetry Frame Size	DSLTH	536	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	3600	ft/h

Two				
Main pass 0 psi				

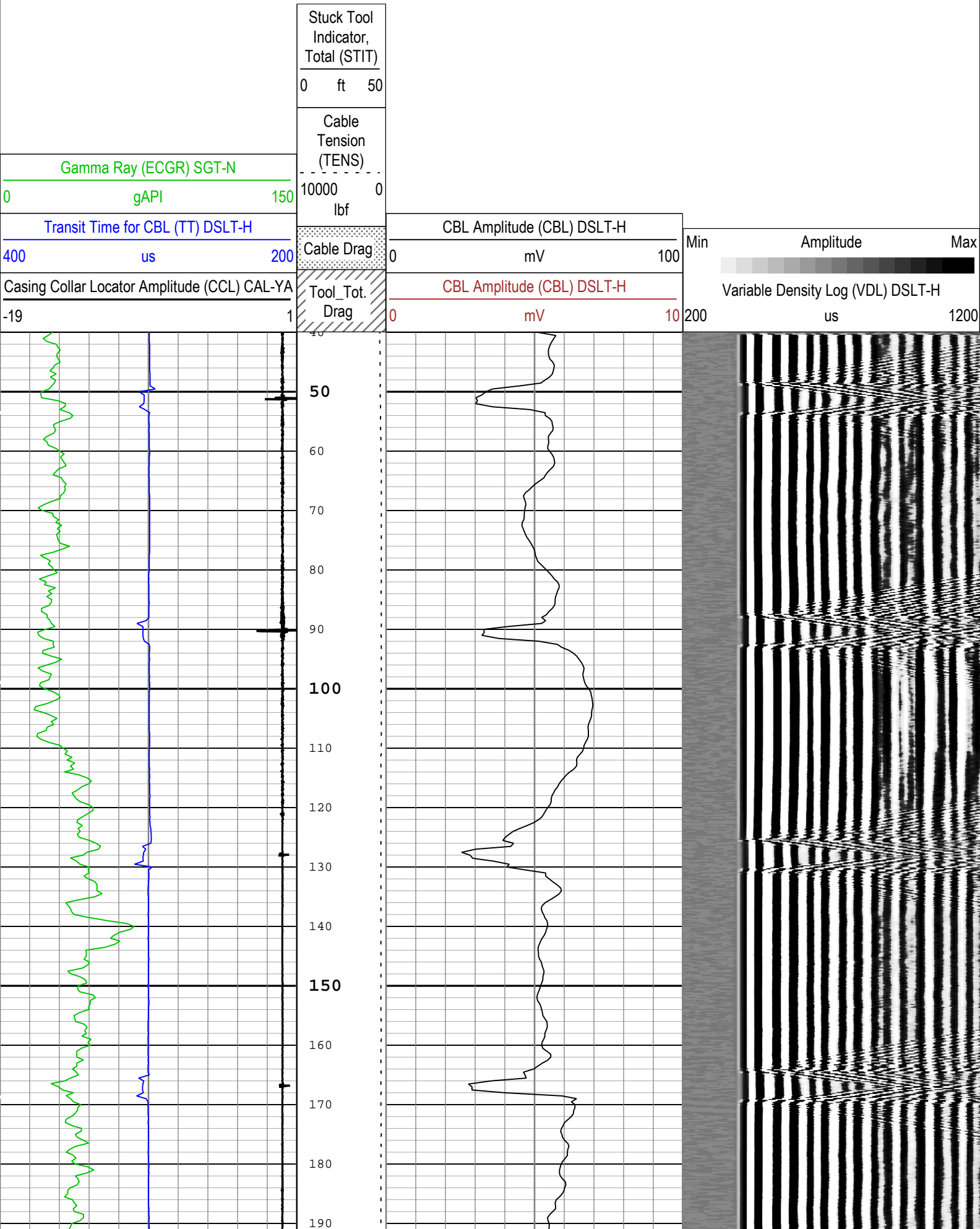
Software Version	
Acquisition System	Version
Maxwell 2016 SP2	6.2.68624.3100

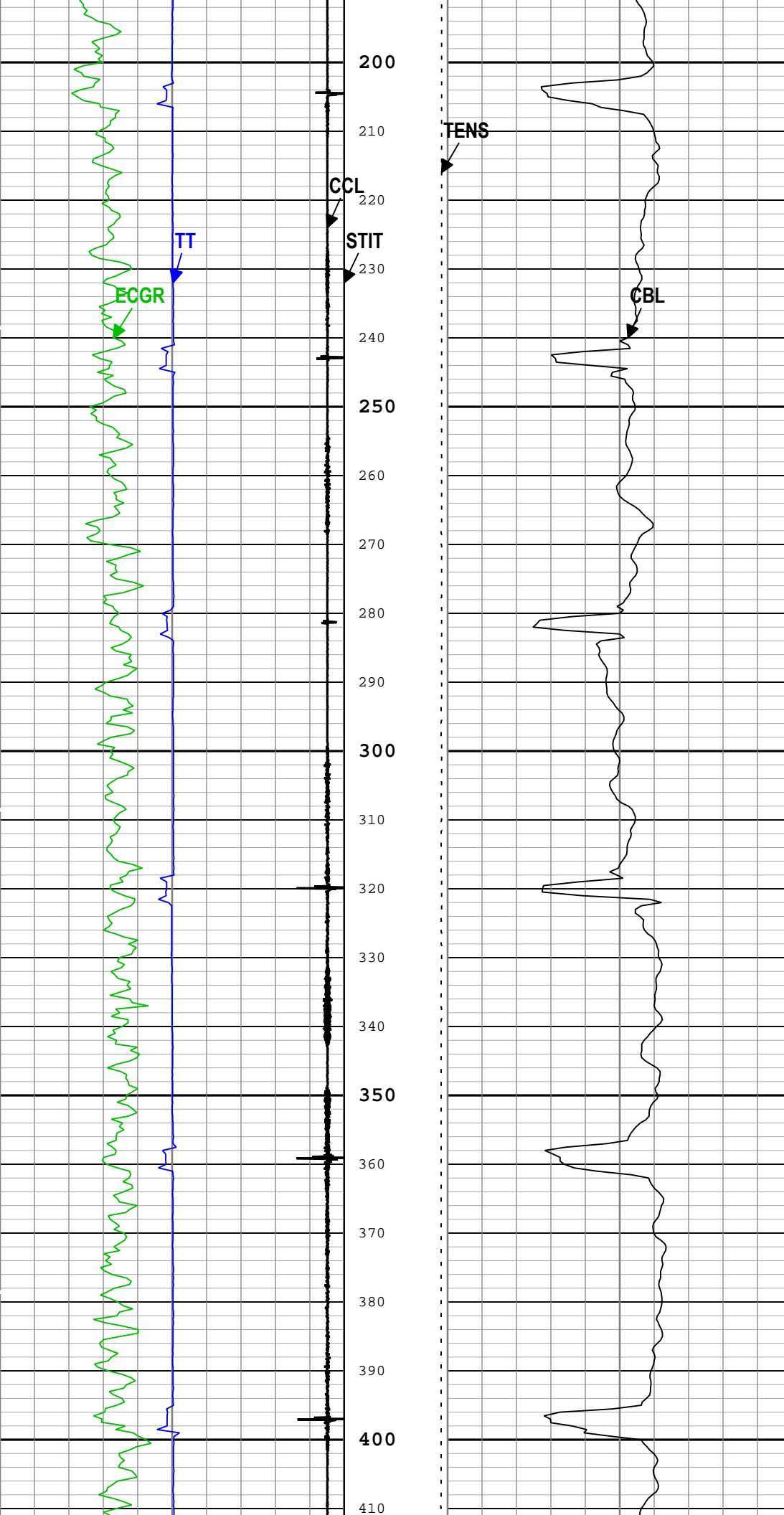
Pass Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
Two	Log[4]:Up	Up	34.73 ft	6729.88 ft	03-Oct-2016 12:17:51 PM	03-Oct-2016 2:01:43 PM	ON	0.00 ft	No
All depths are referenced to toolstring zero									

Log	Company:Bonanza Creek					Well:State Seventy Holes J-18					
	Two: Log[4]:Up:S008										
Description: CBL_VDL							Format: Log ( Sonic CBL with VDL )	Index Scale: 5 in per 100 ft	Index Unit: ft	Index Type: Measured Depth	Creation Date:

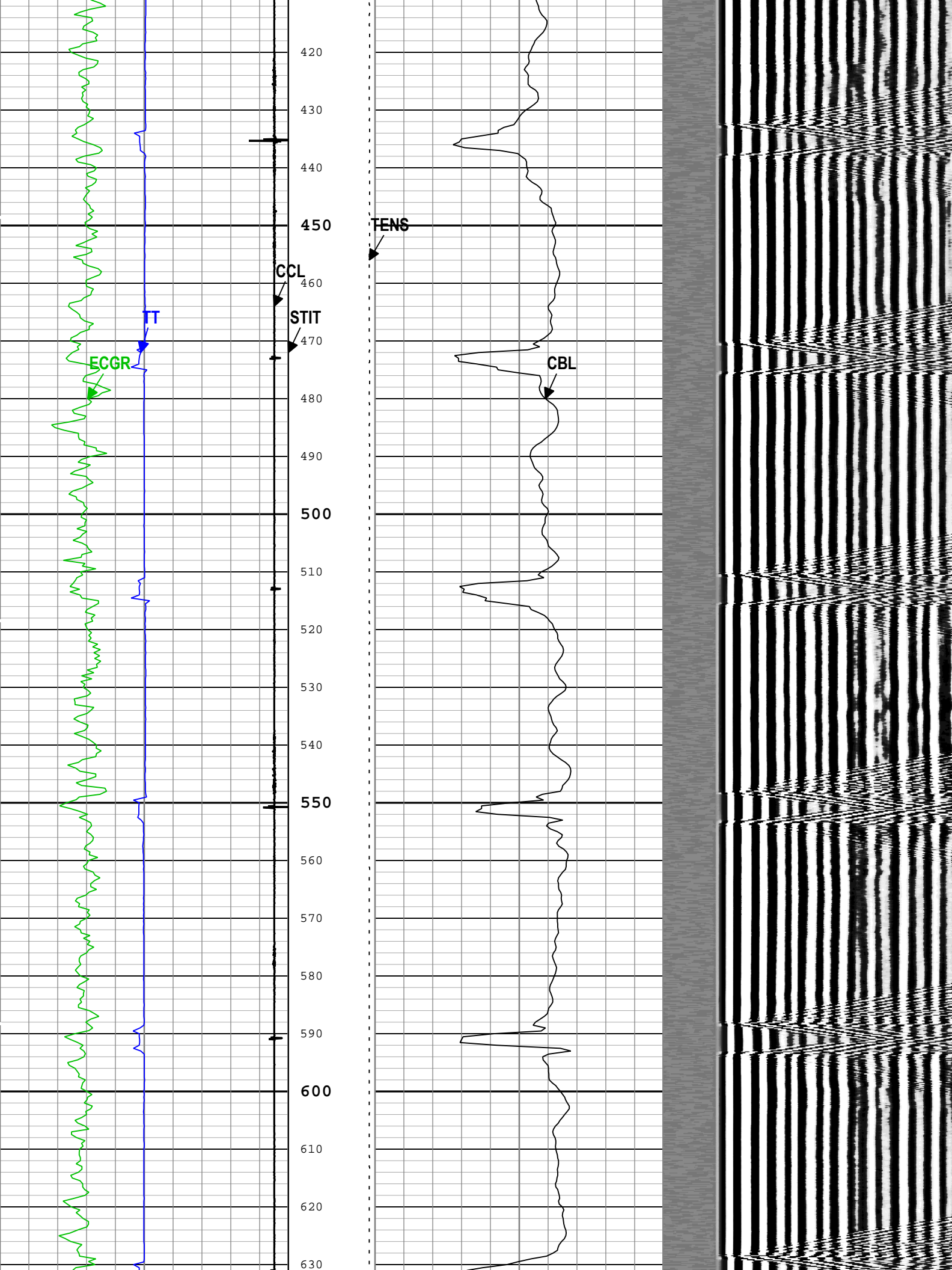
BIEP - Bond Index Event Pips DSLT-H

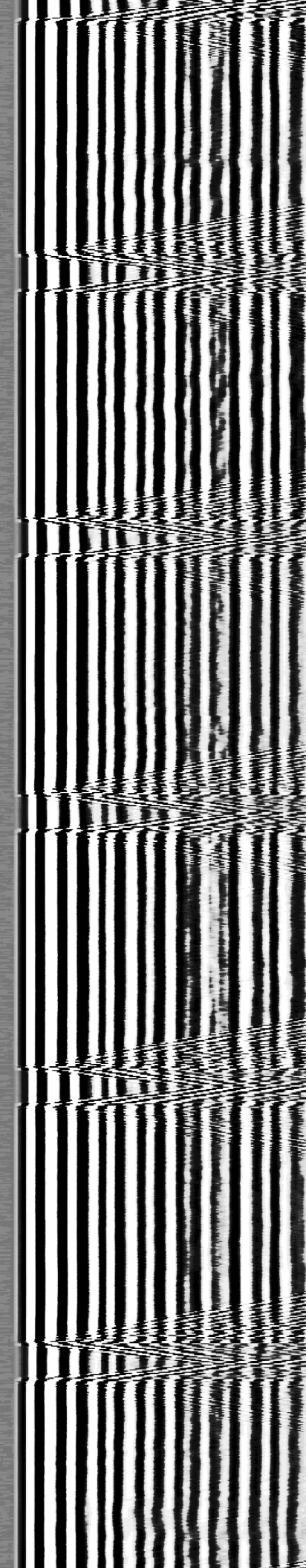
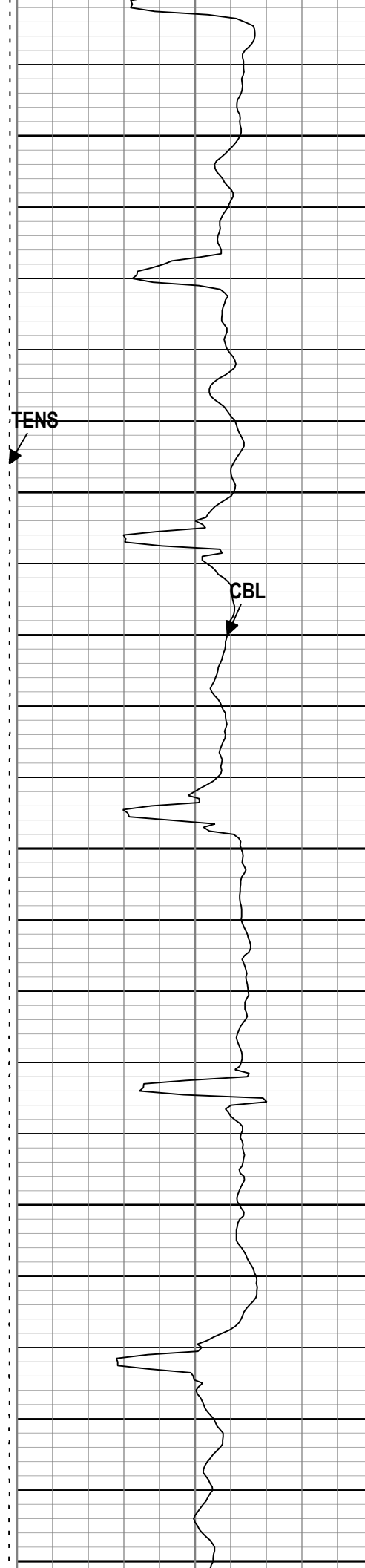
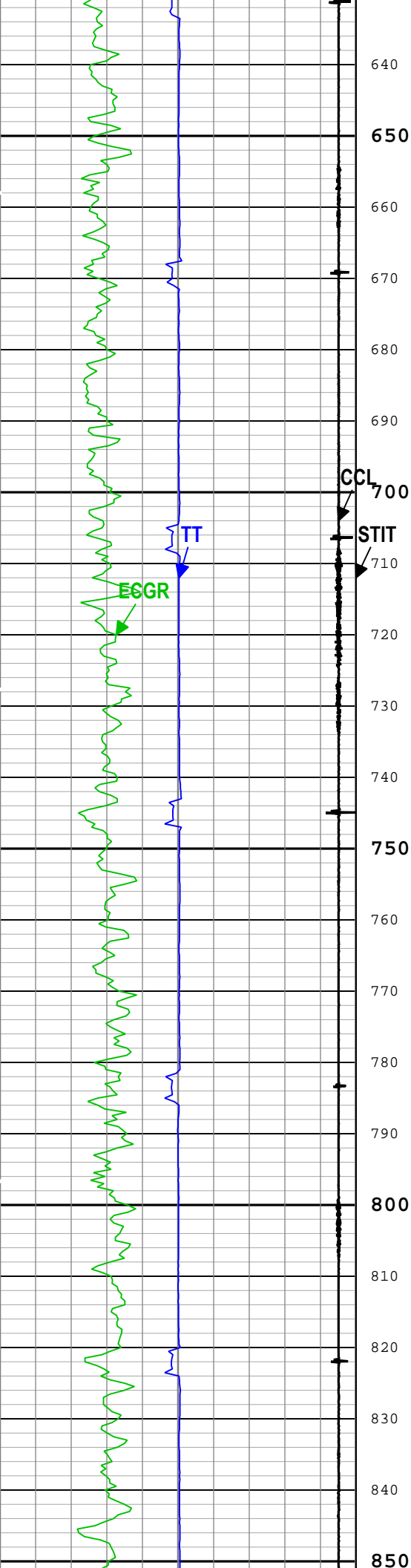
TIME\_1900 - Time Marked every 60.00 (s)

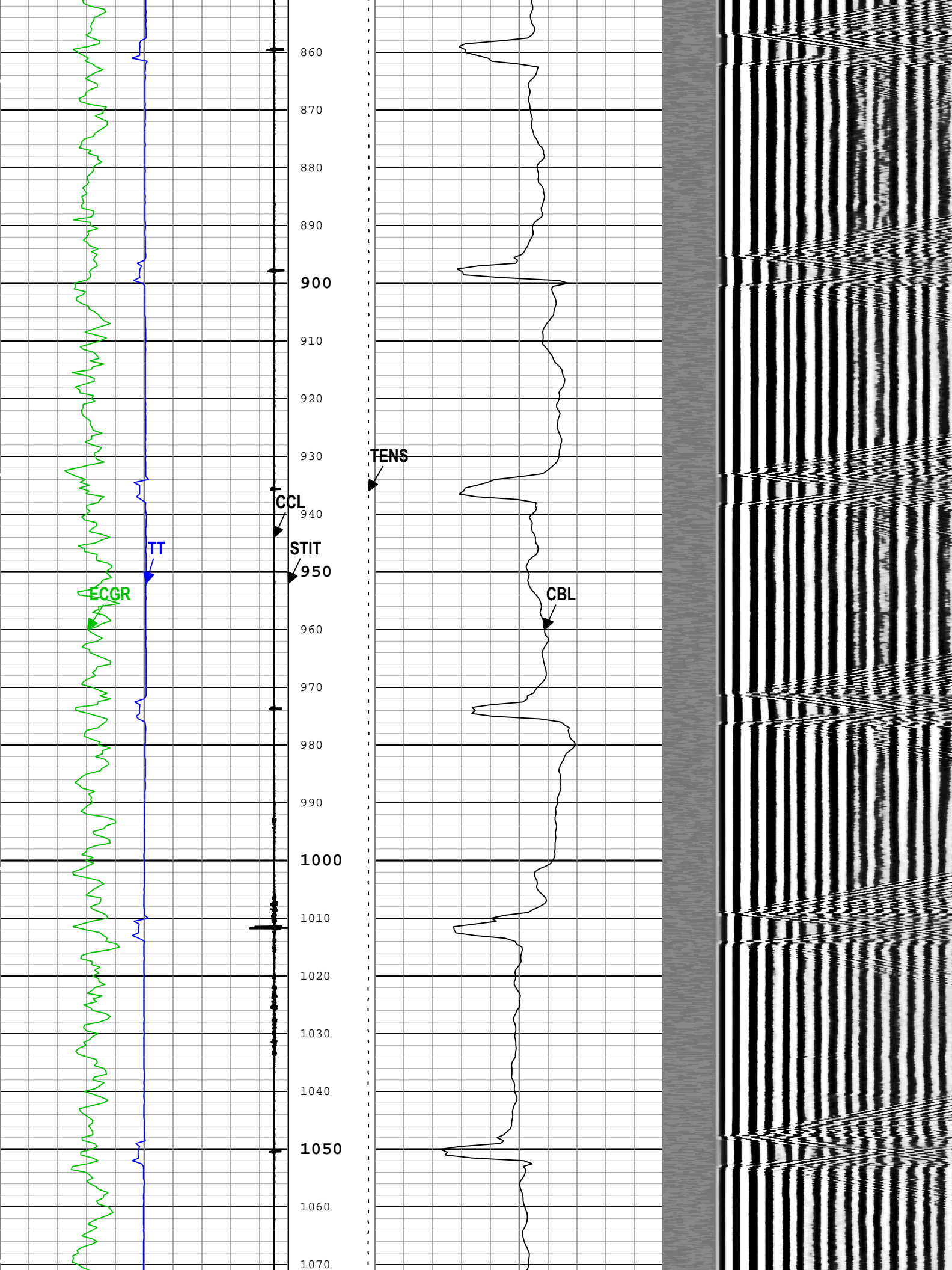




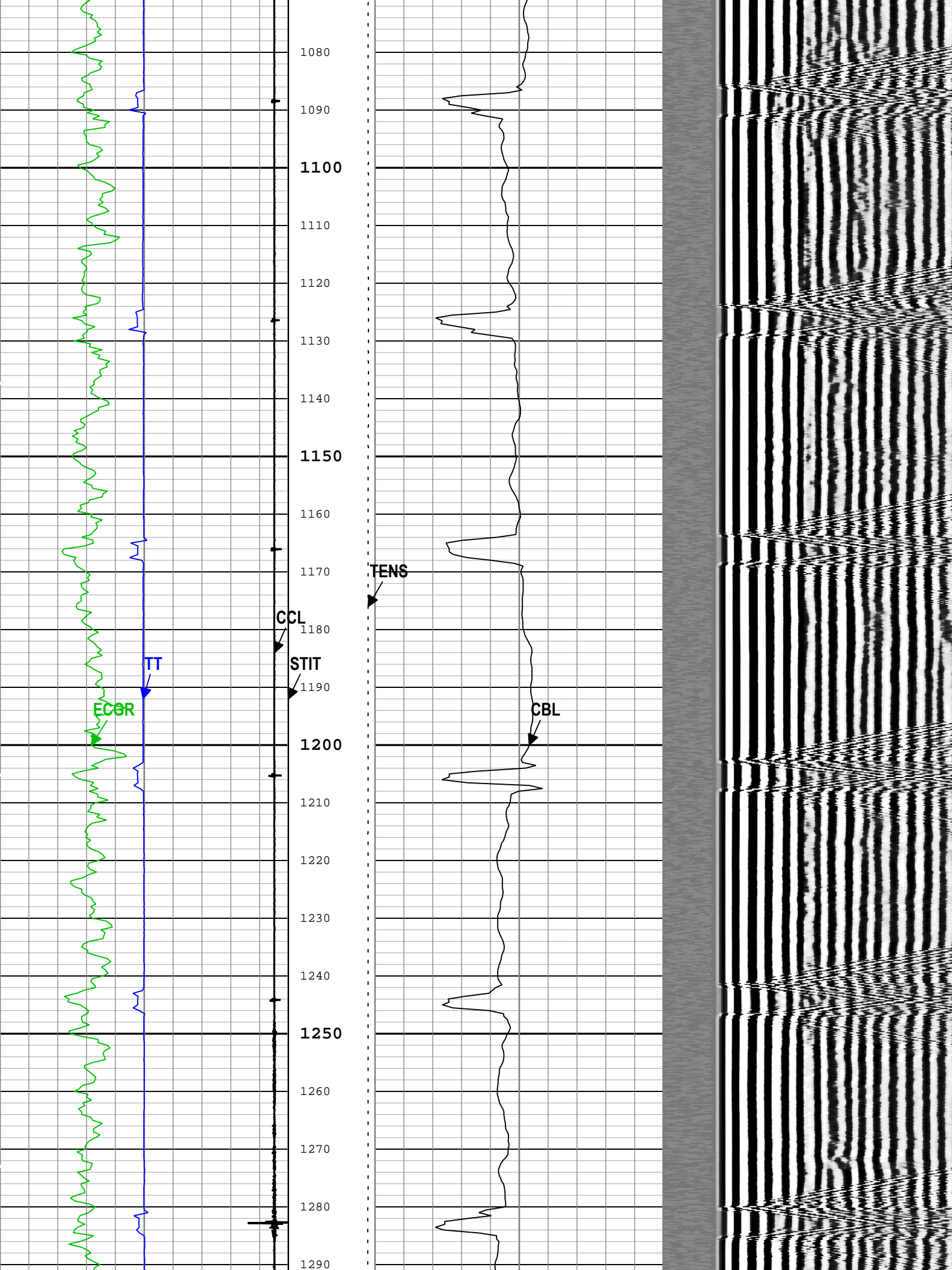


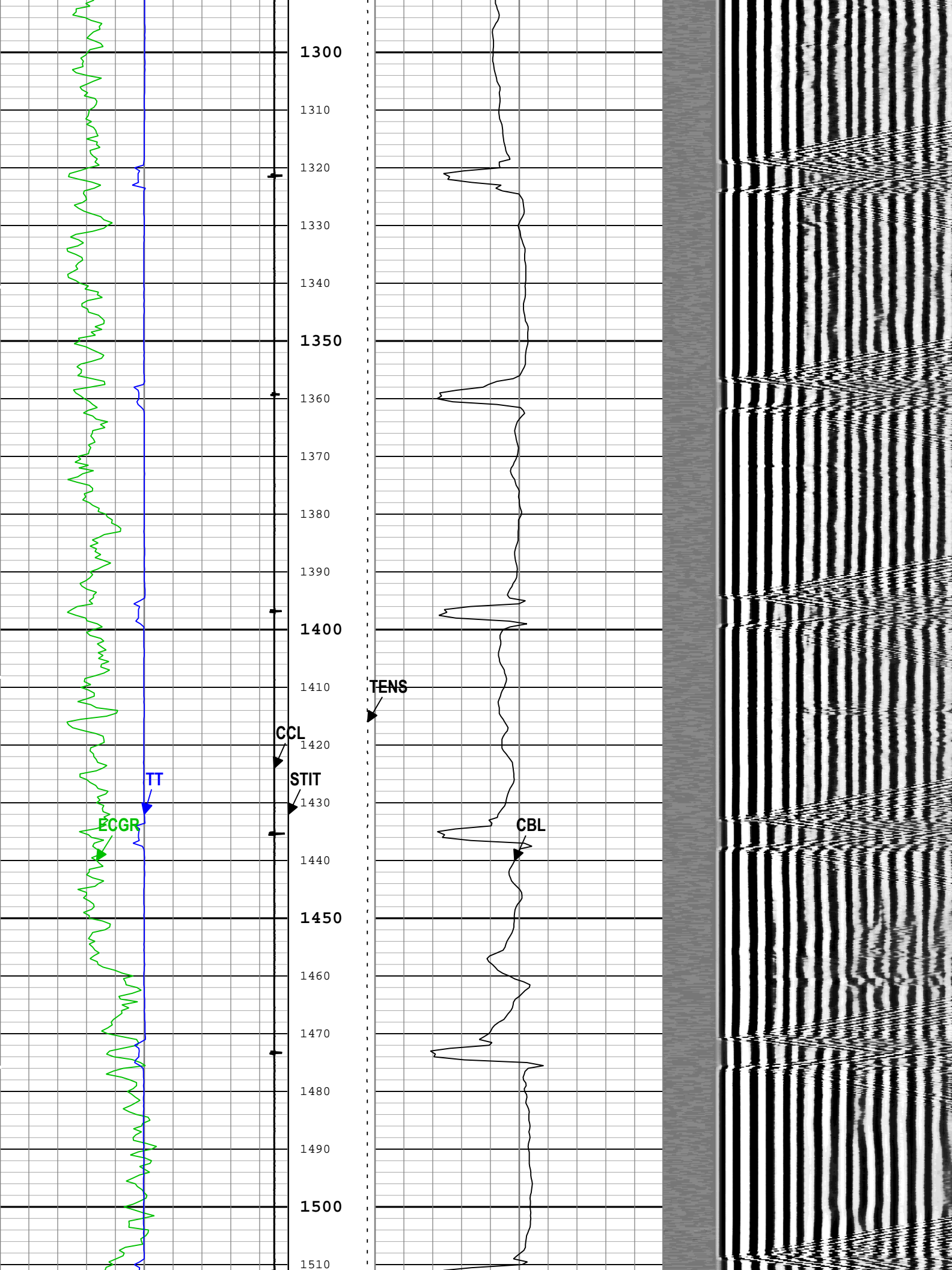


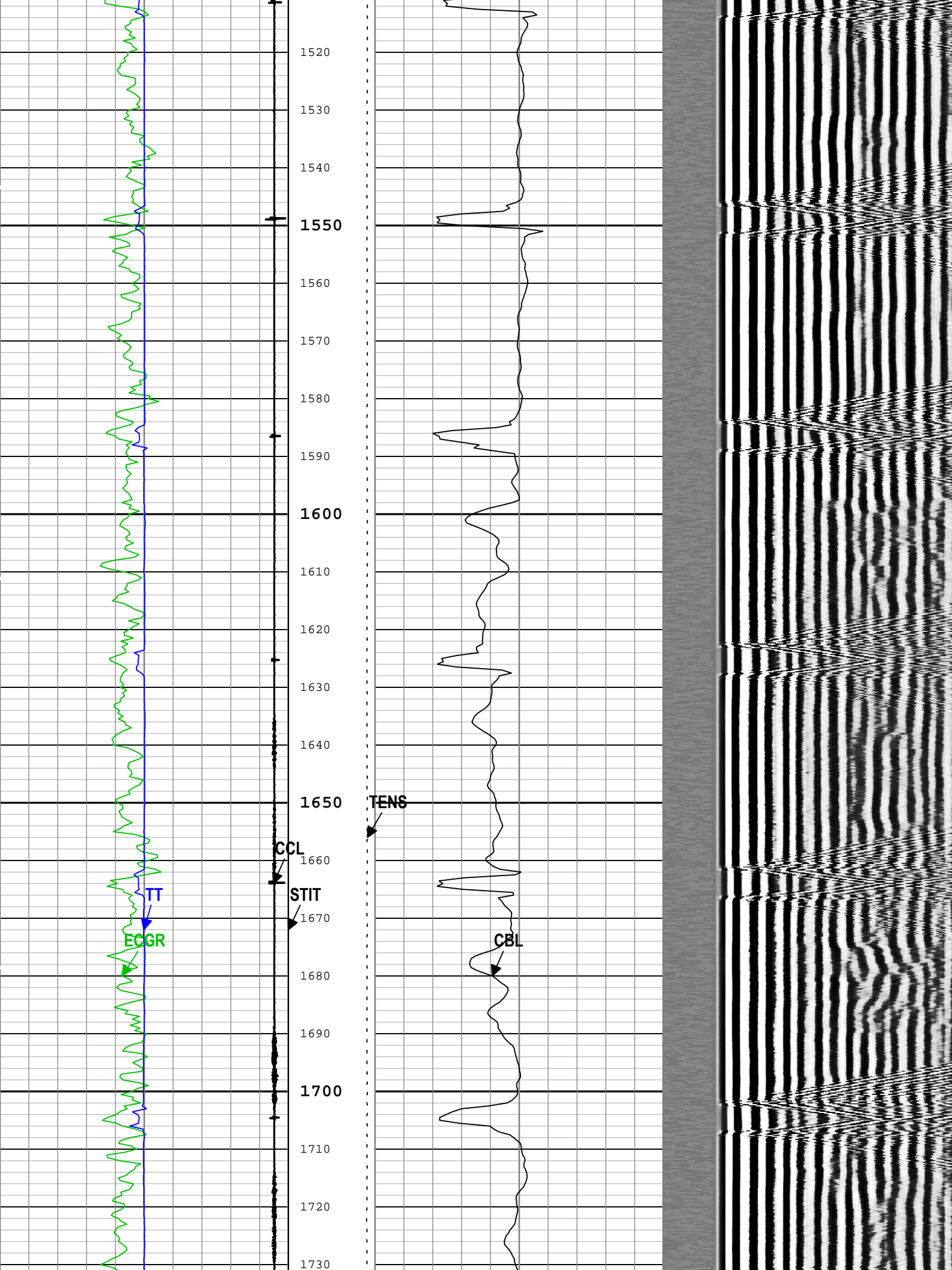




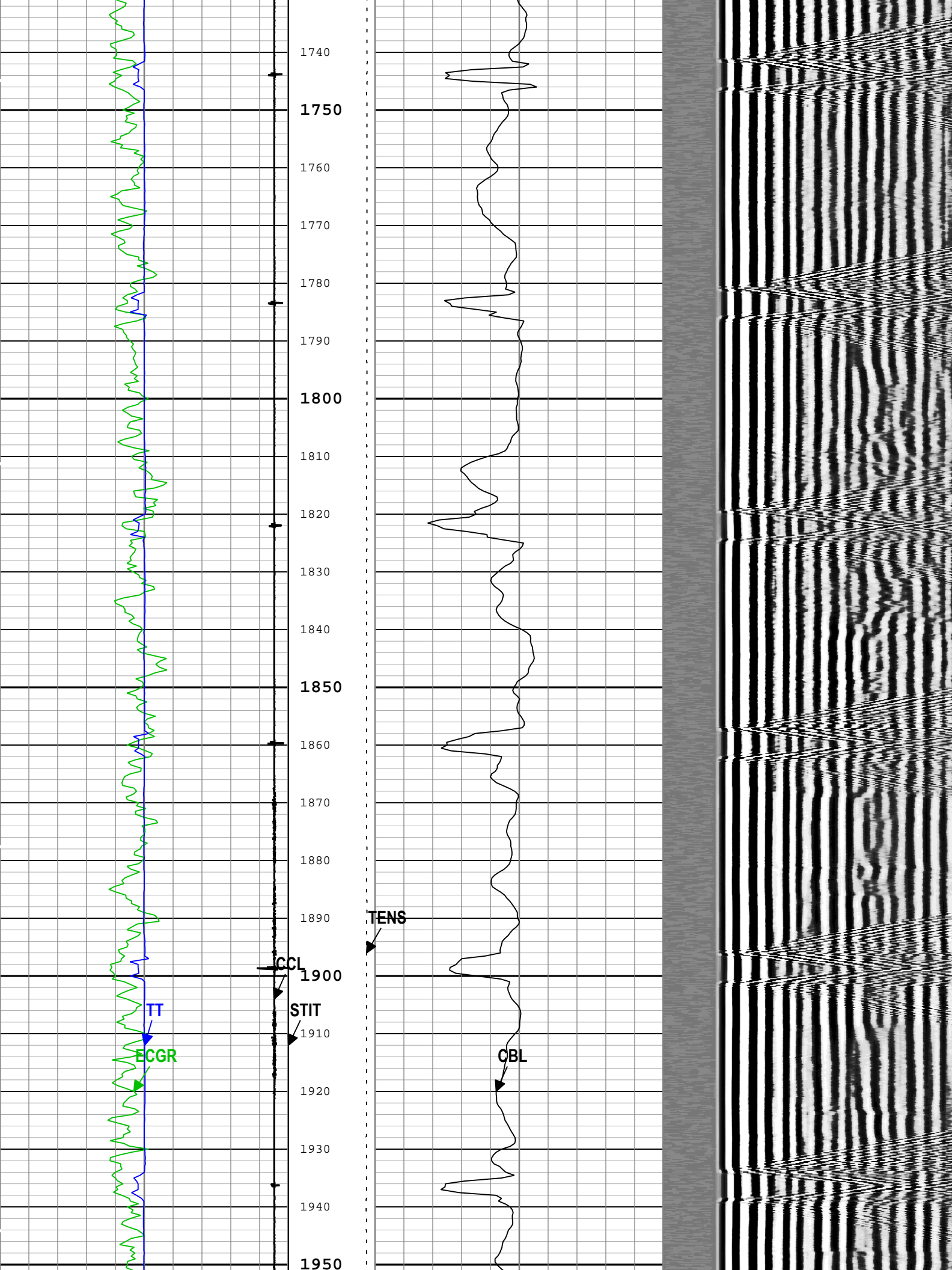


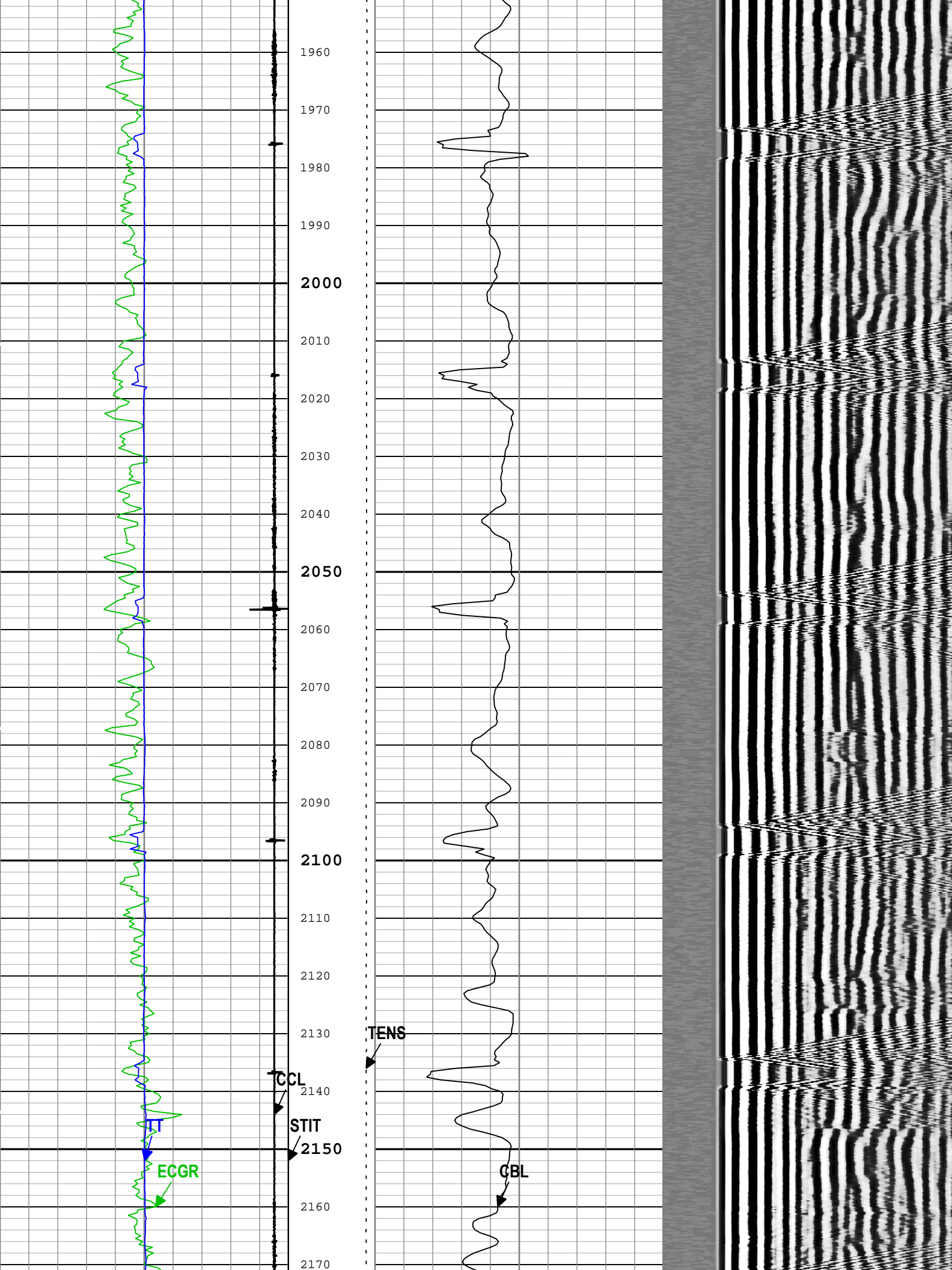


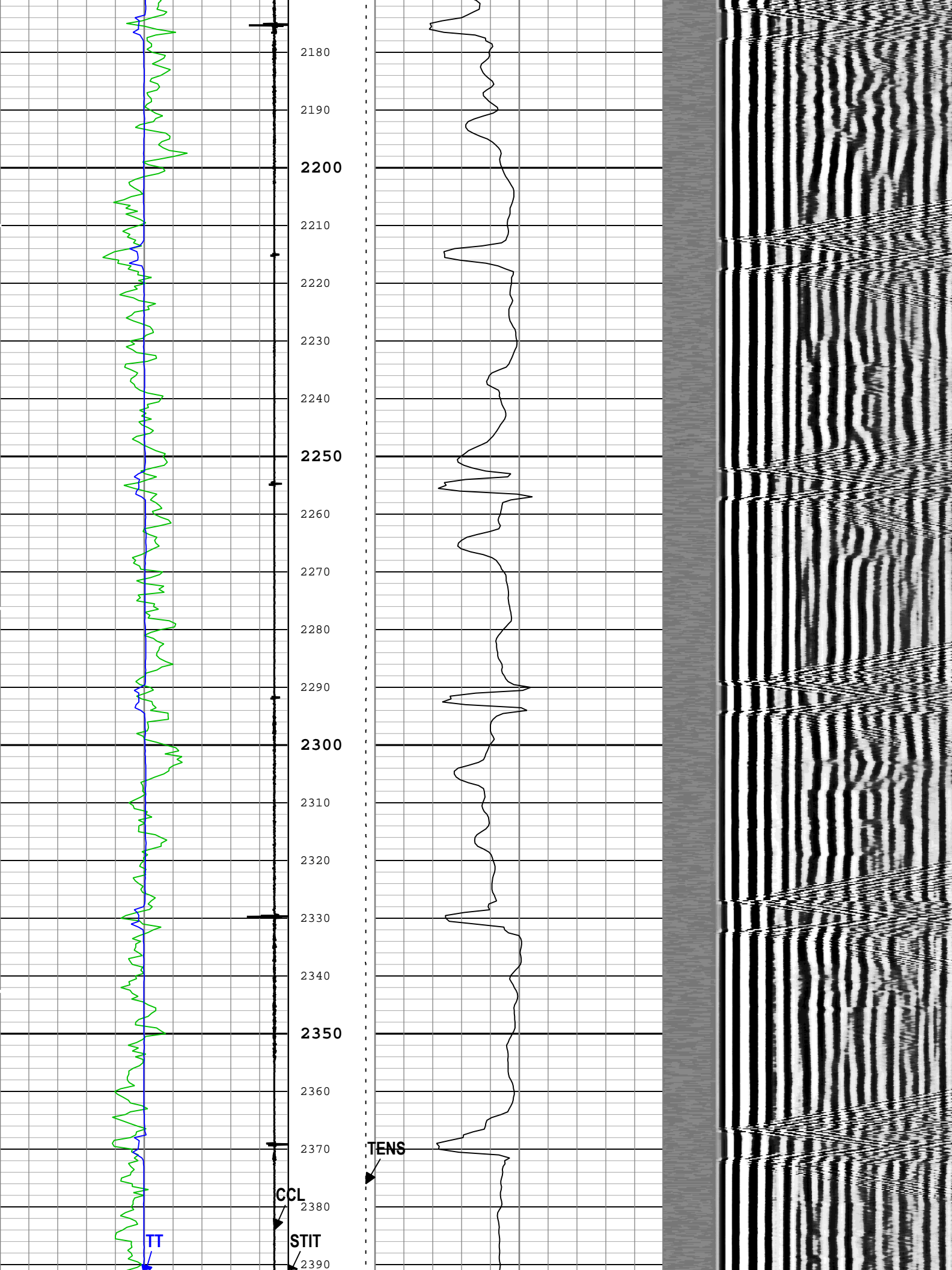




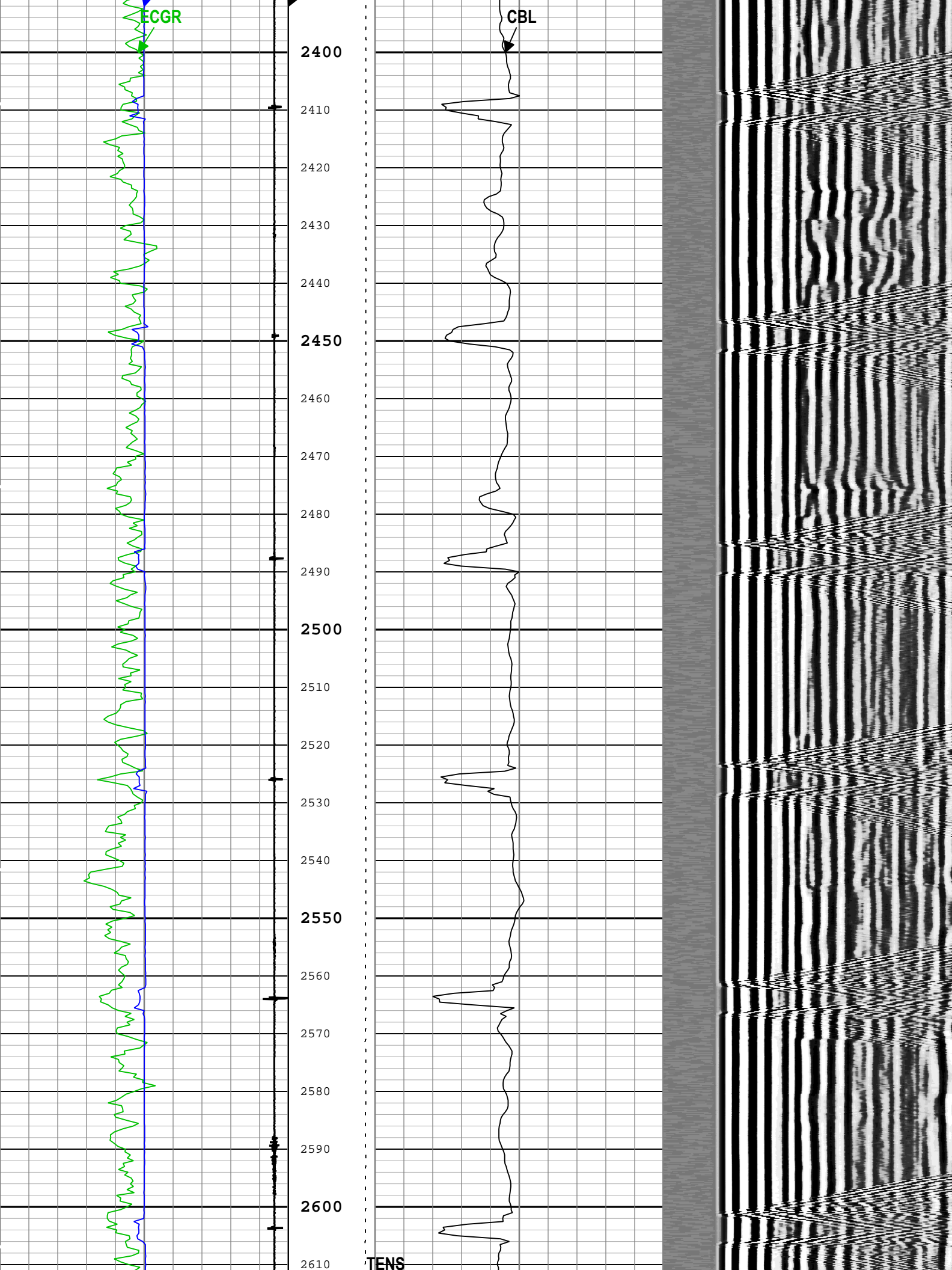


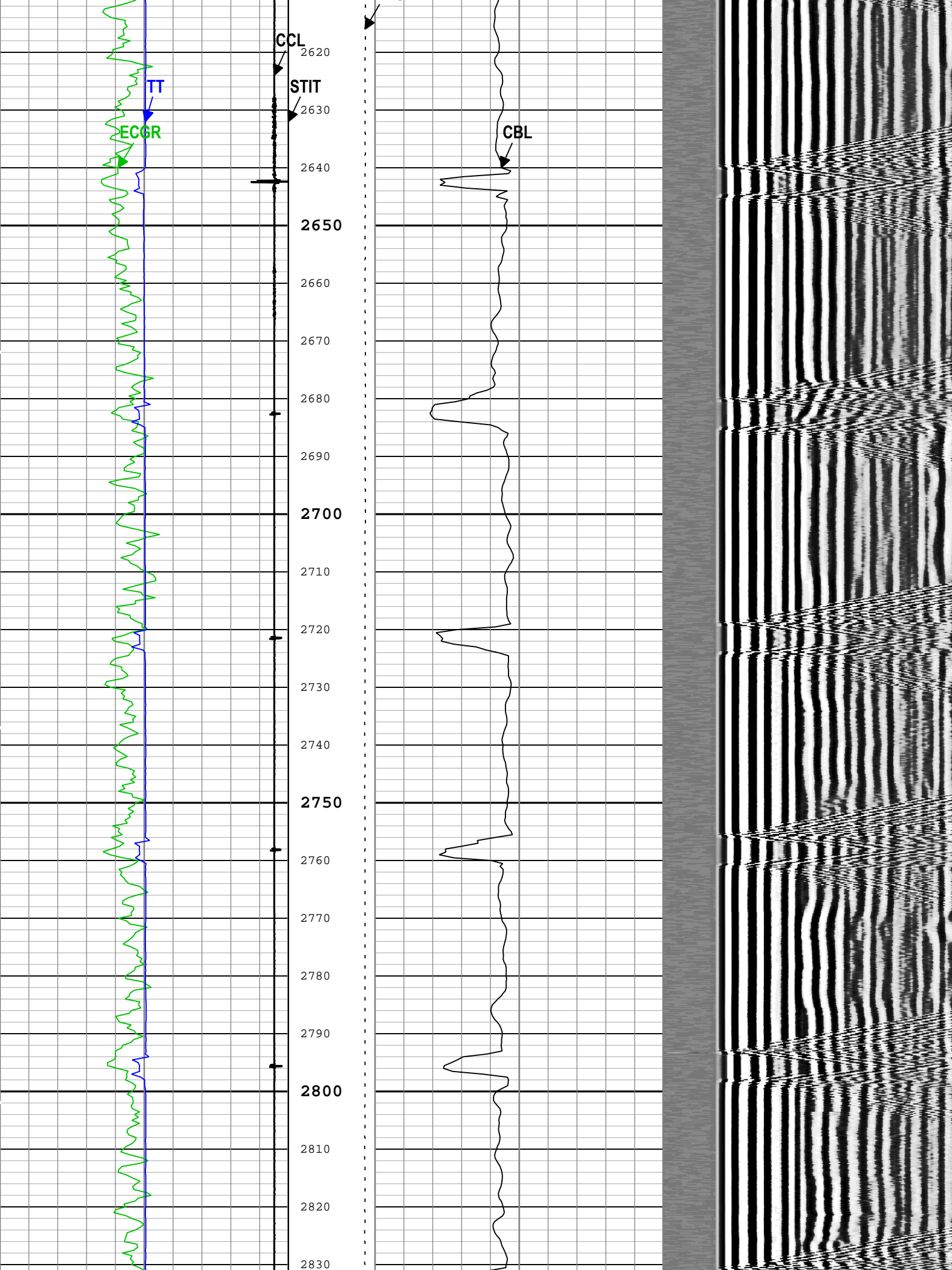


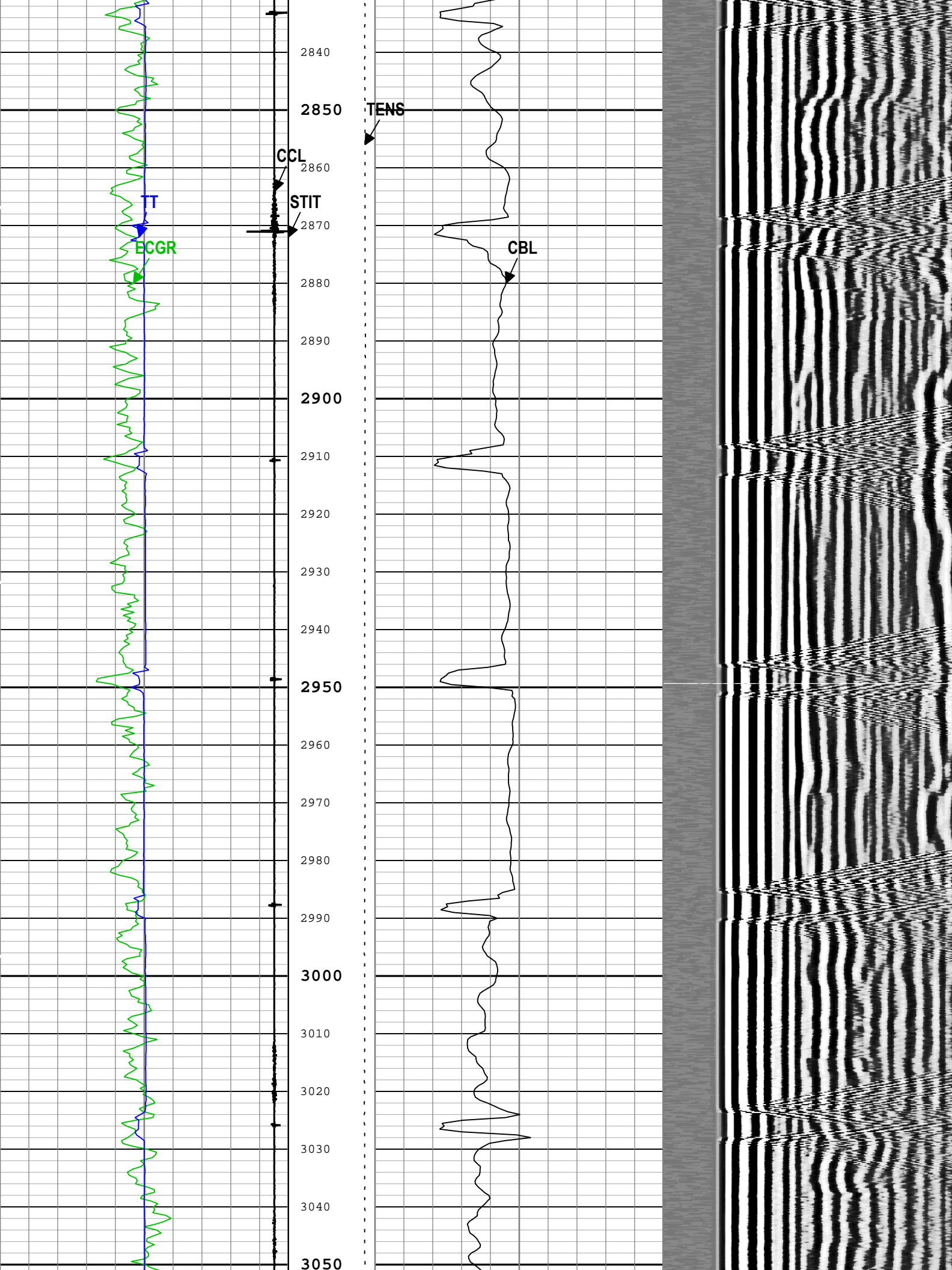




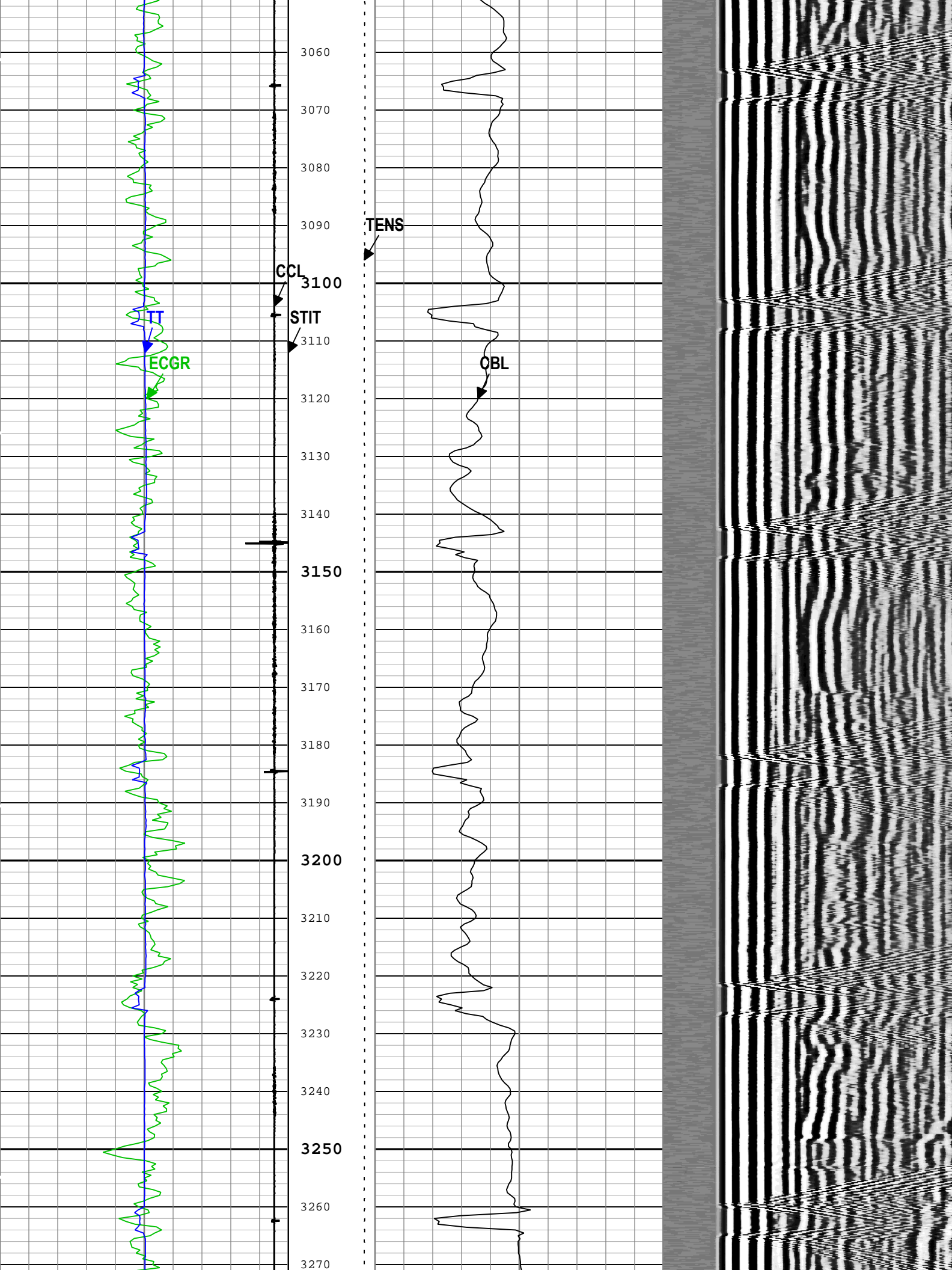


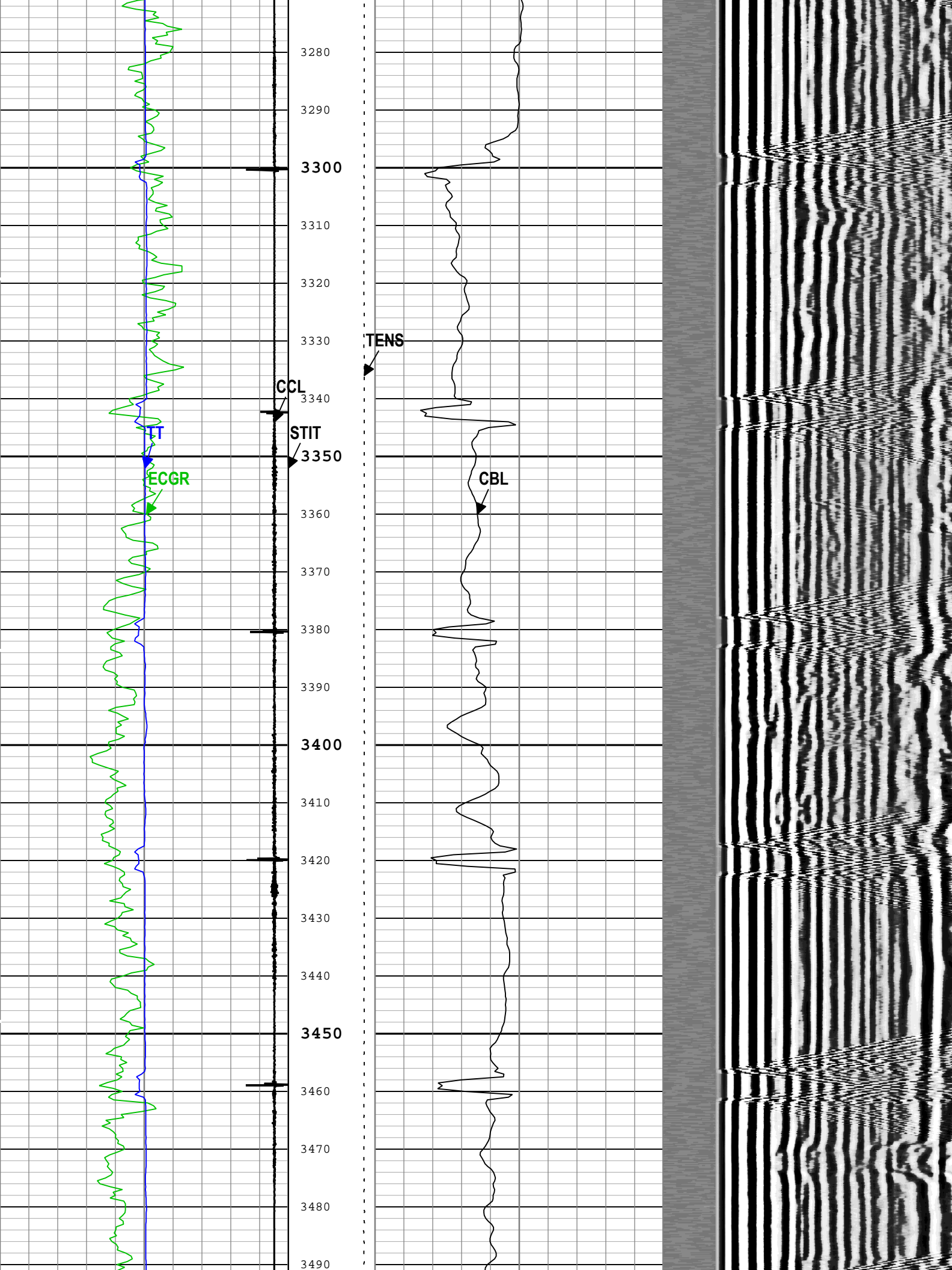


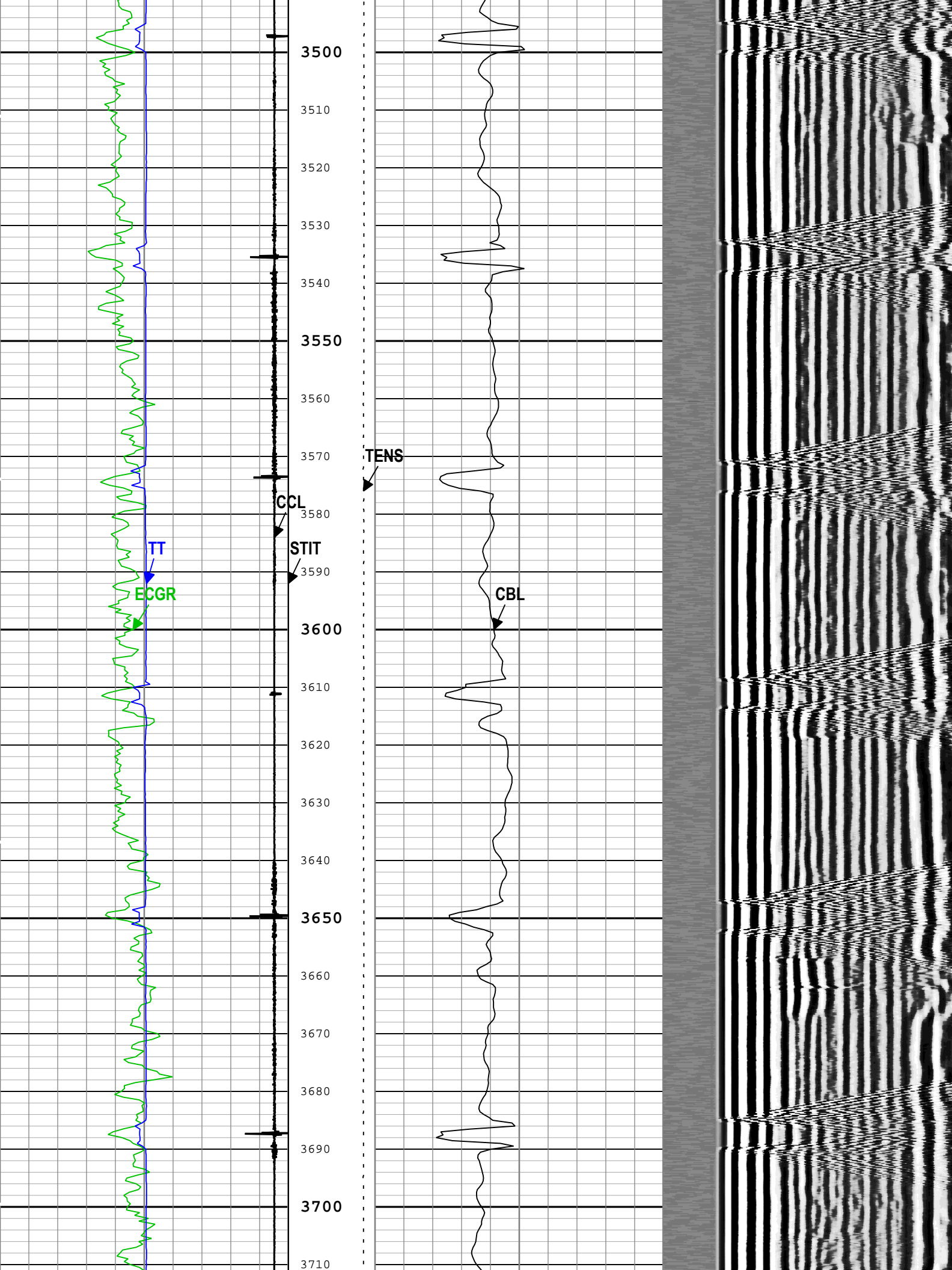




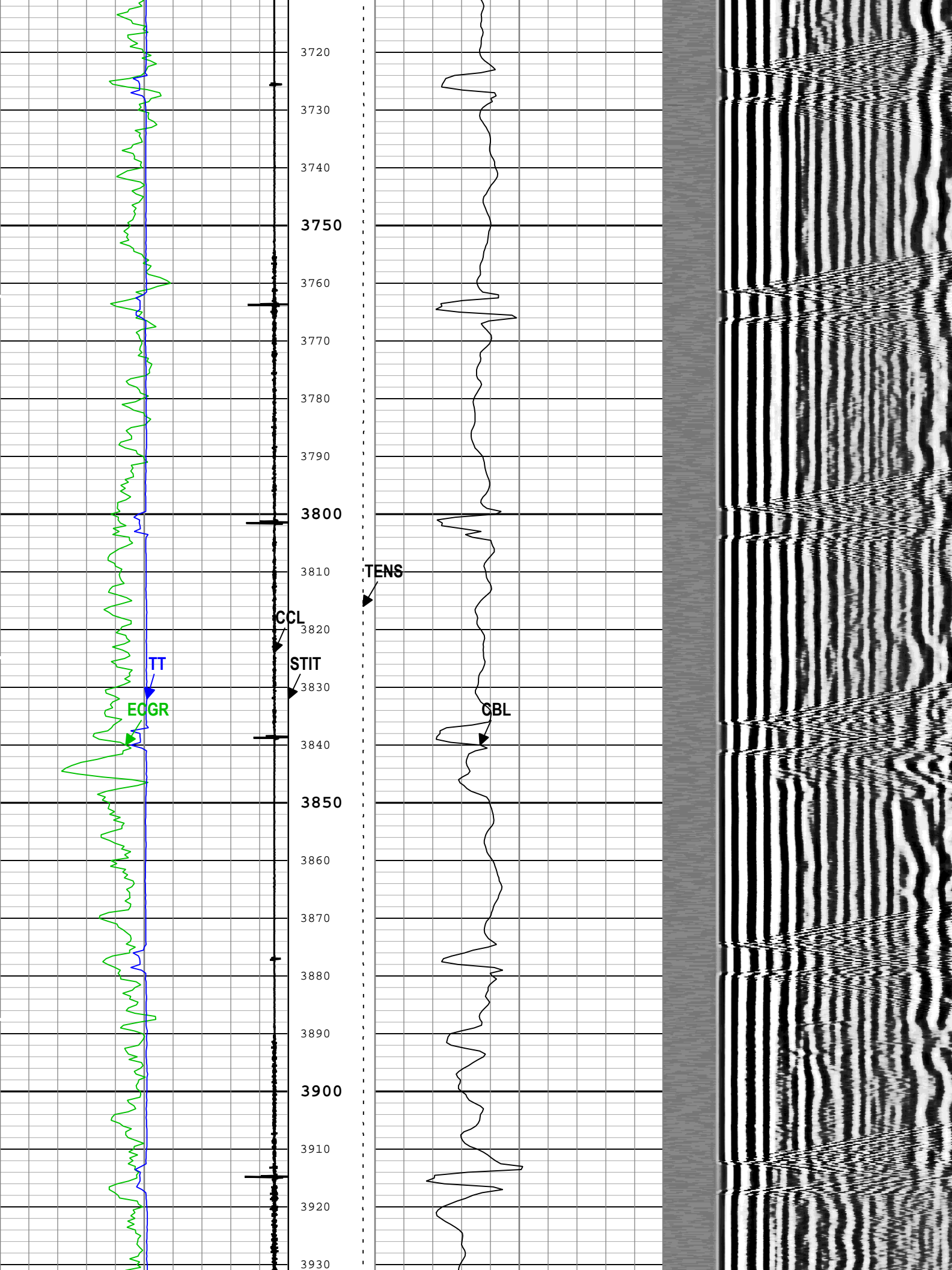


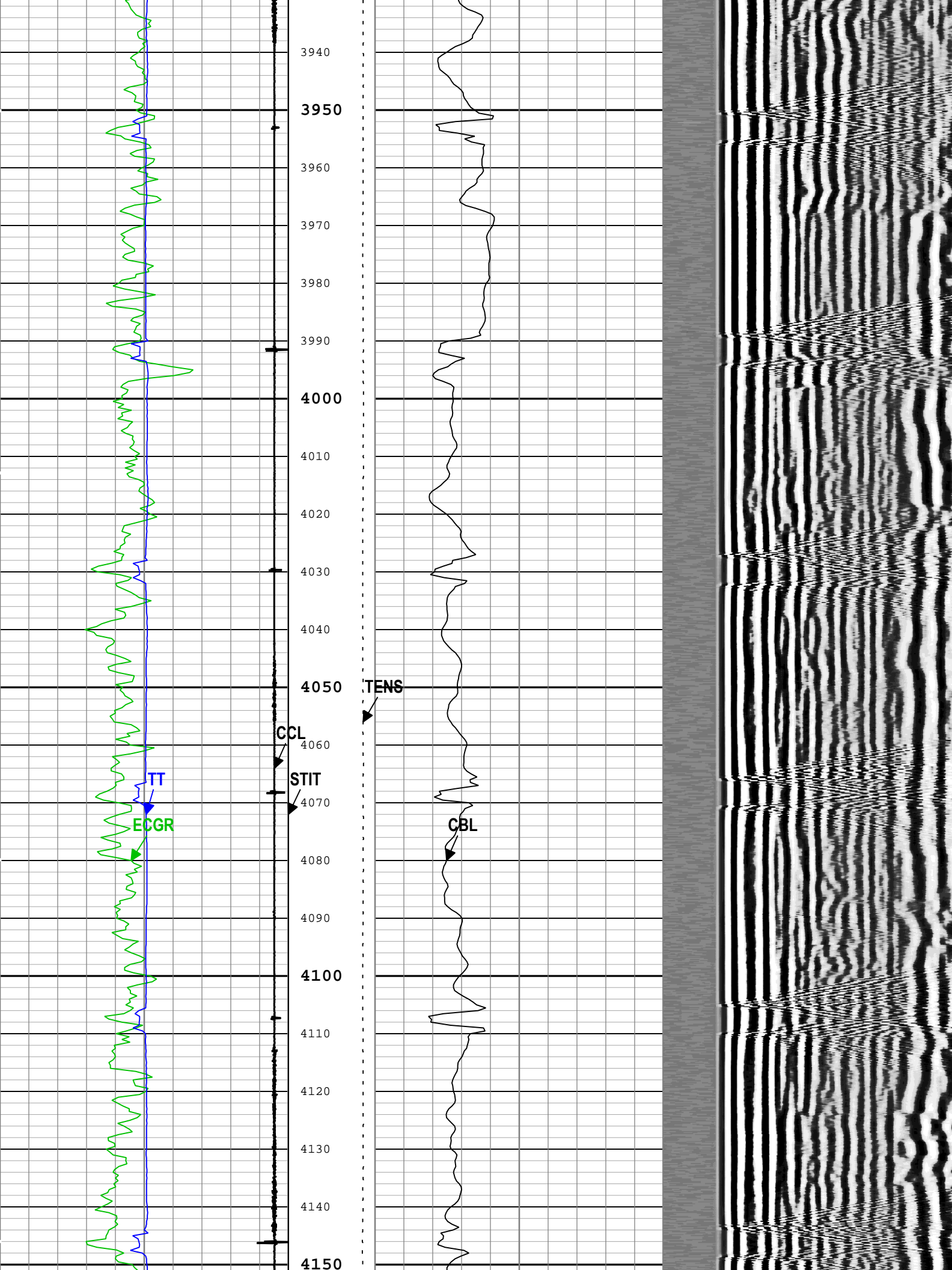


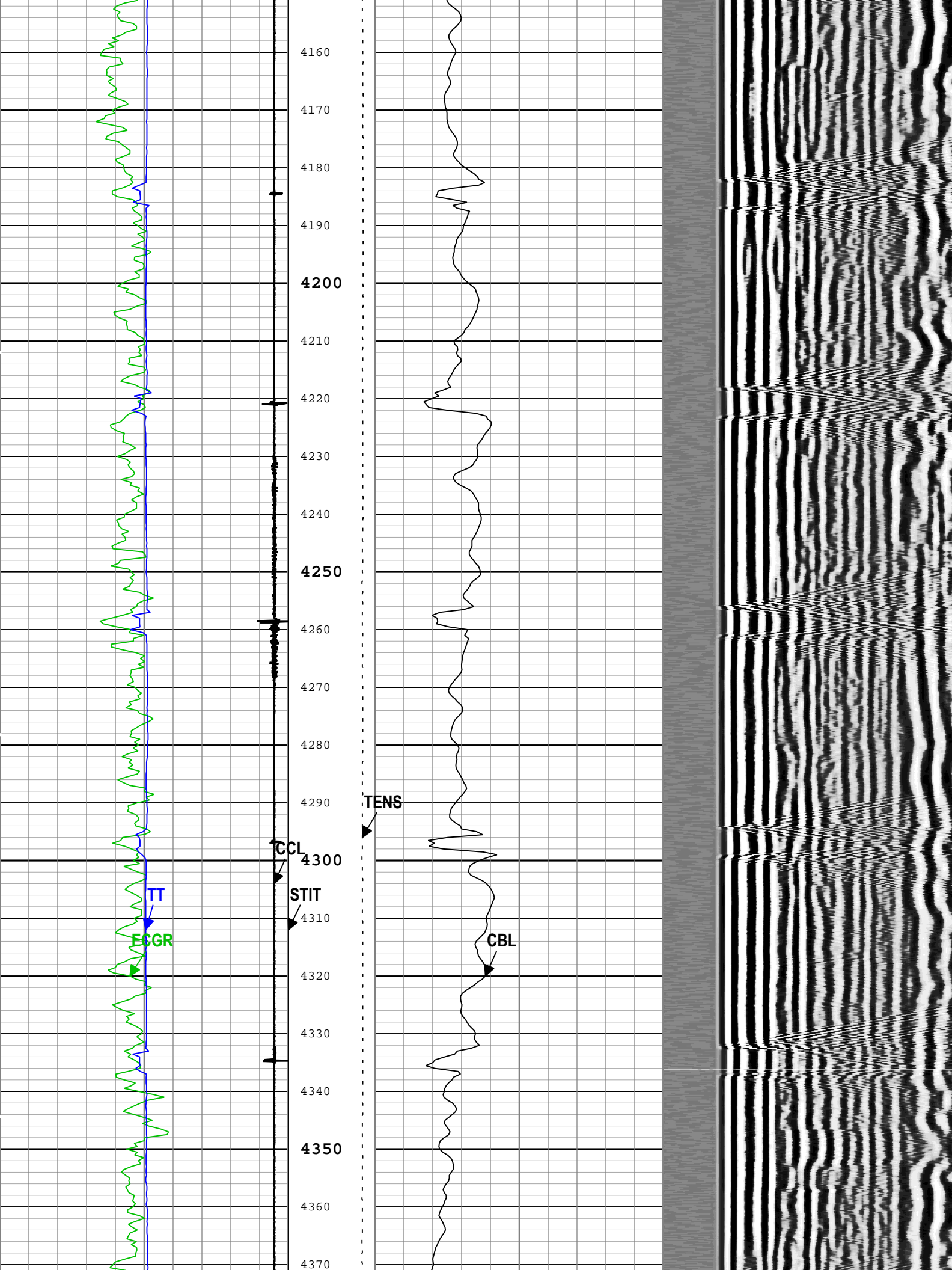




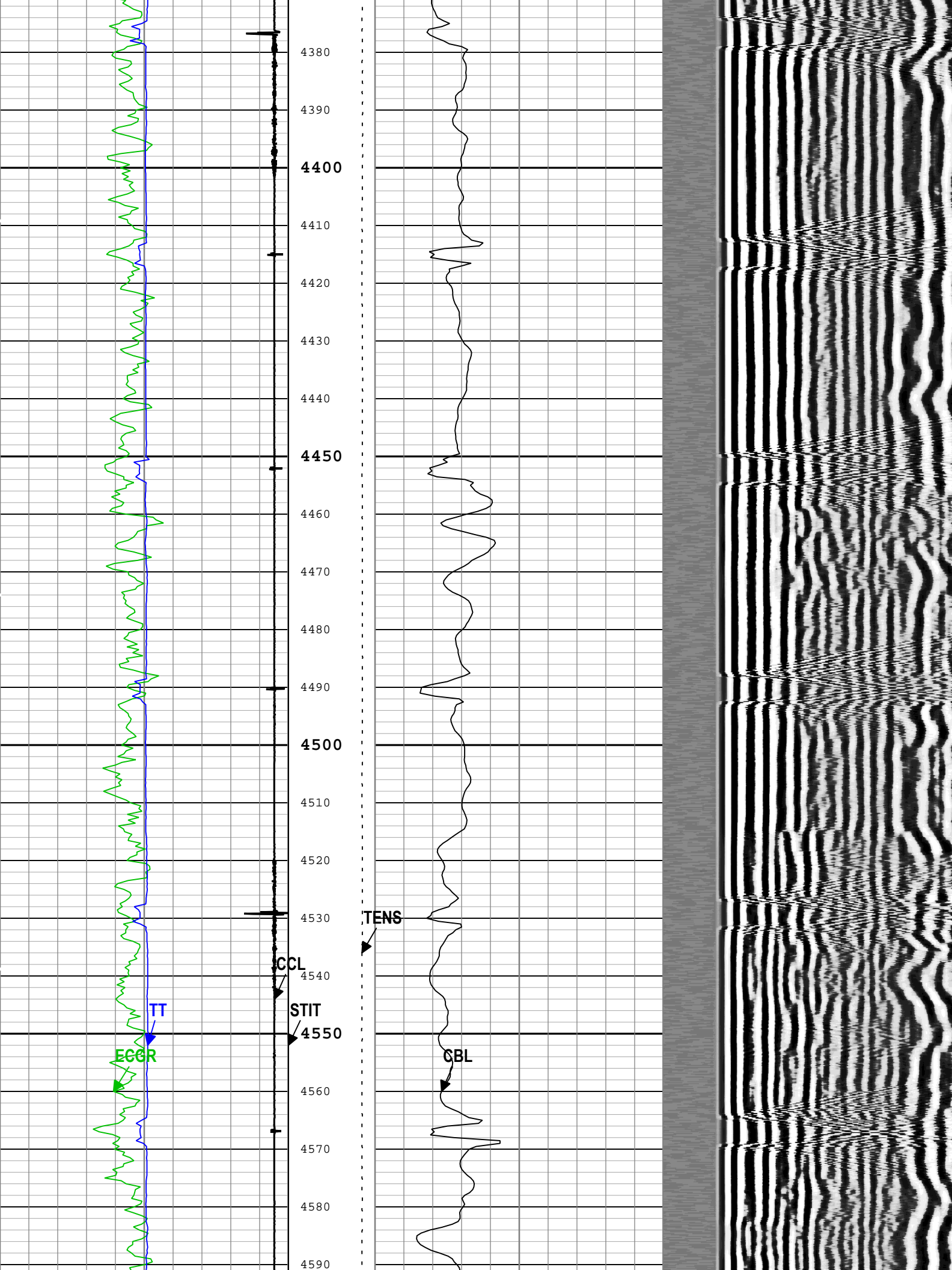


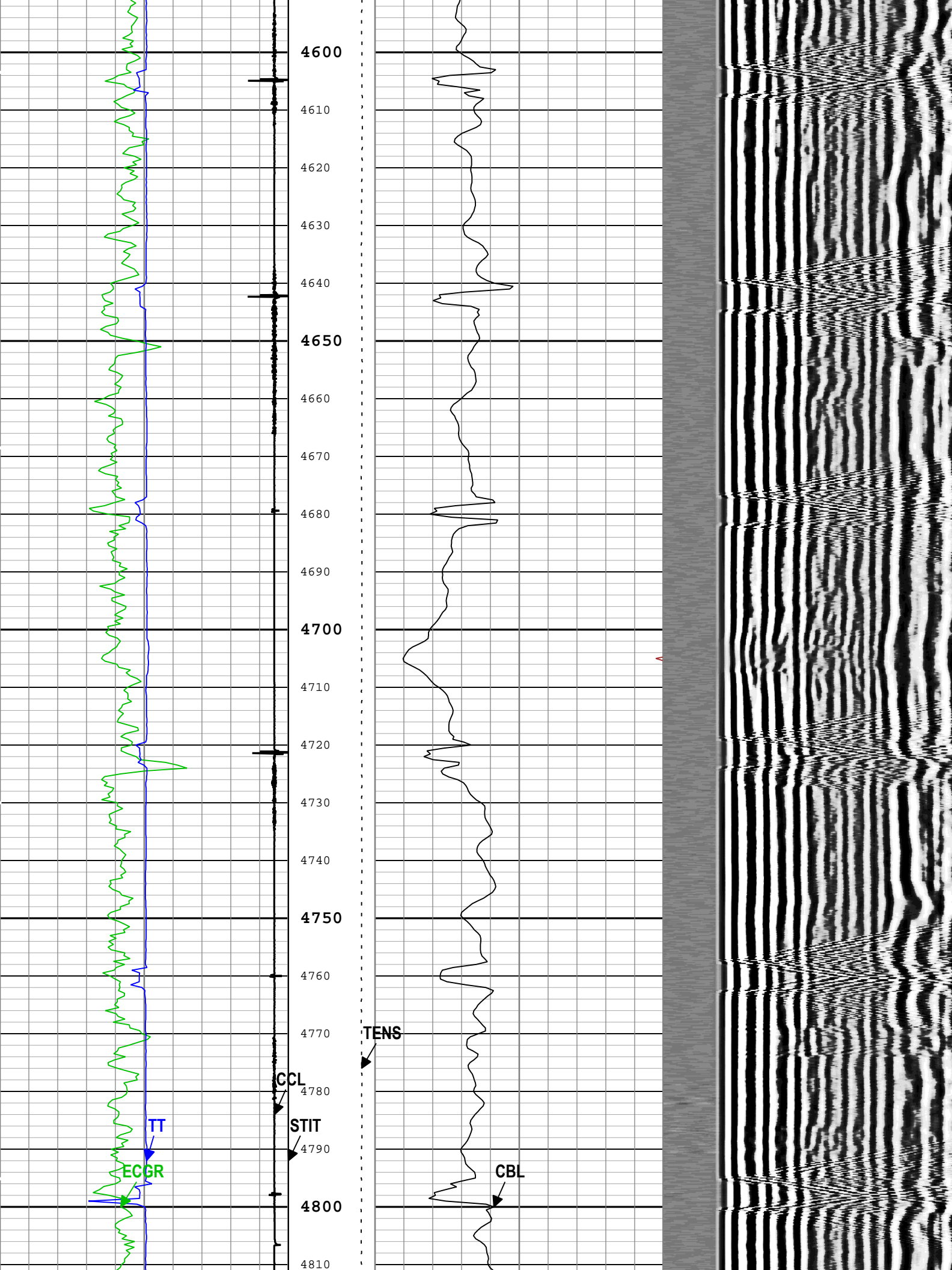


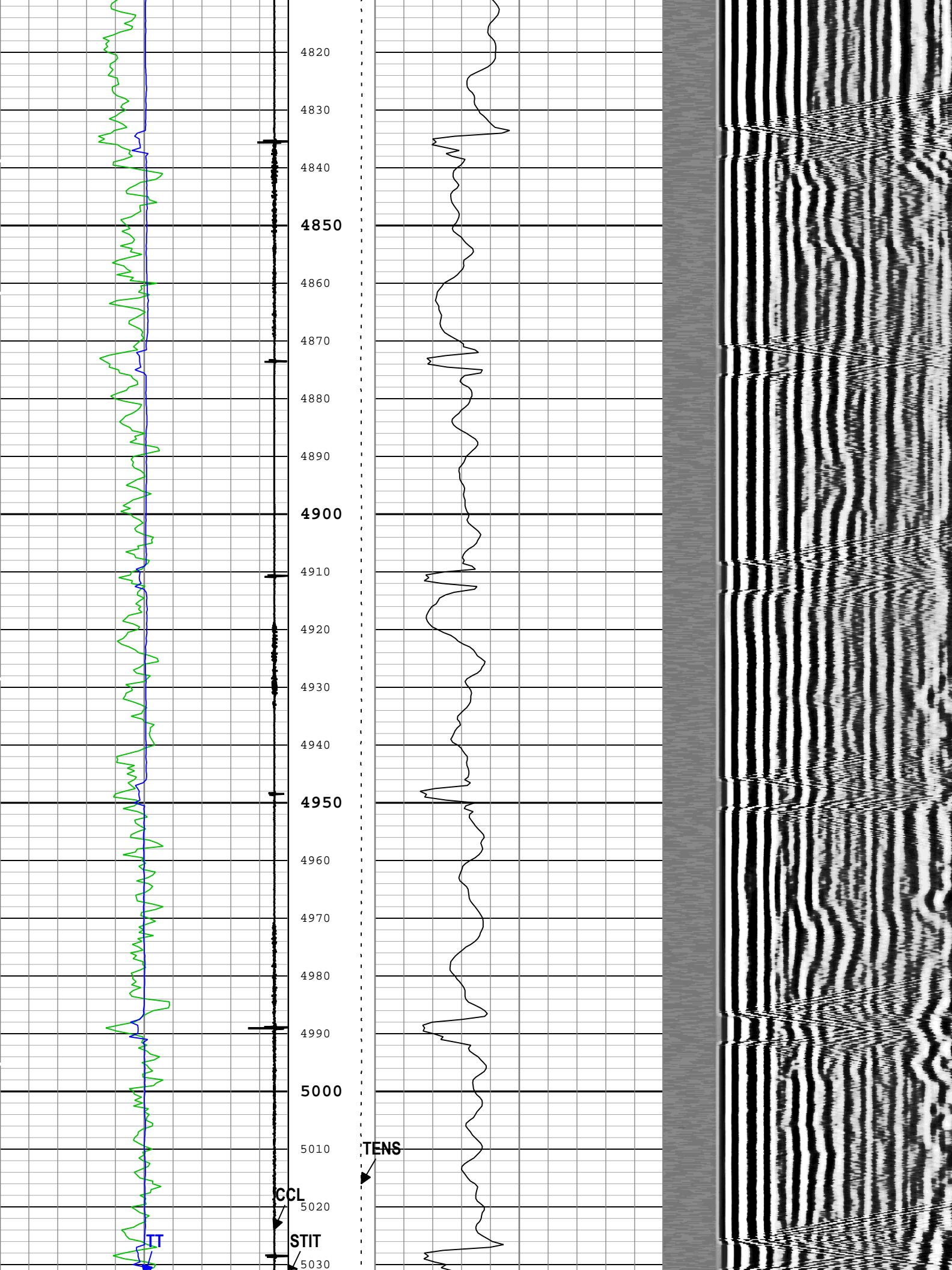




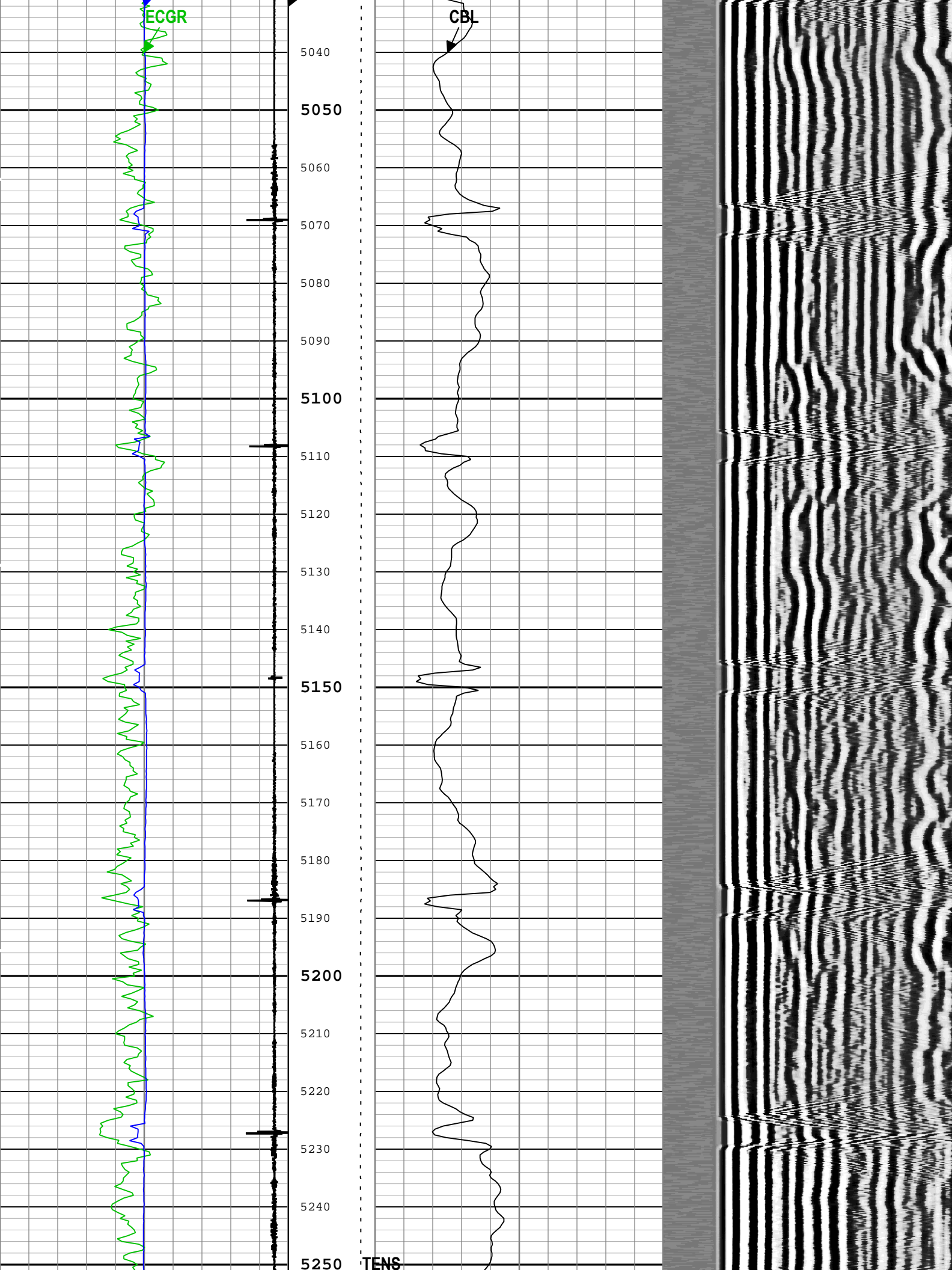


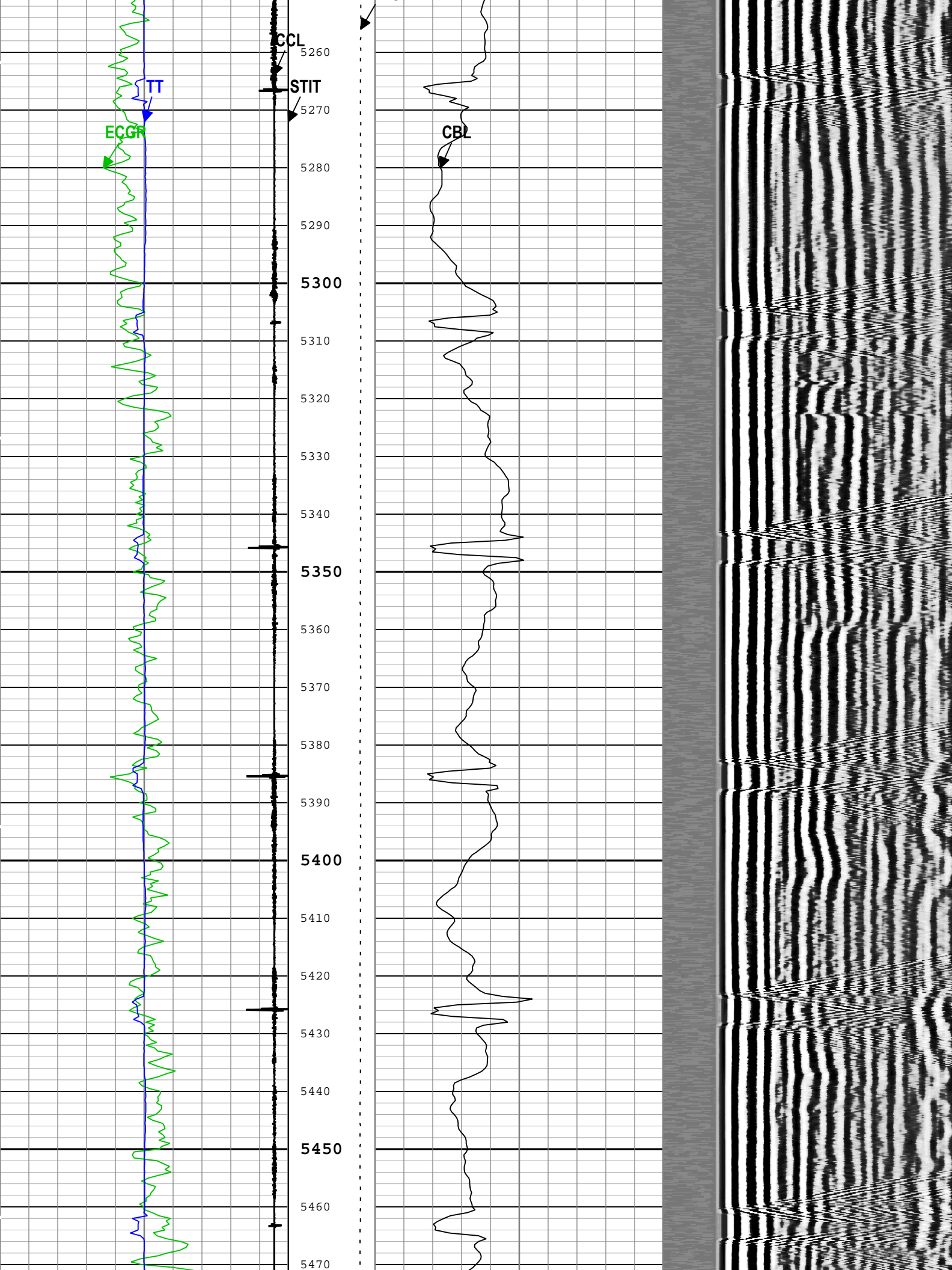


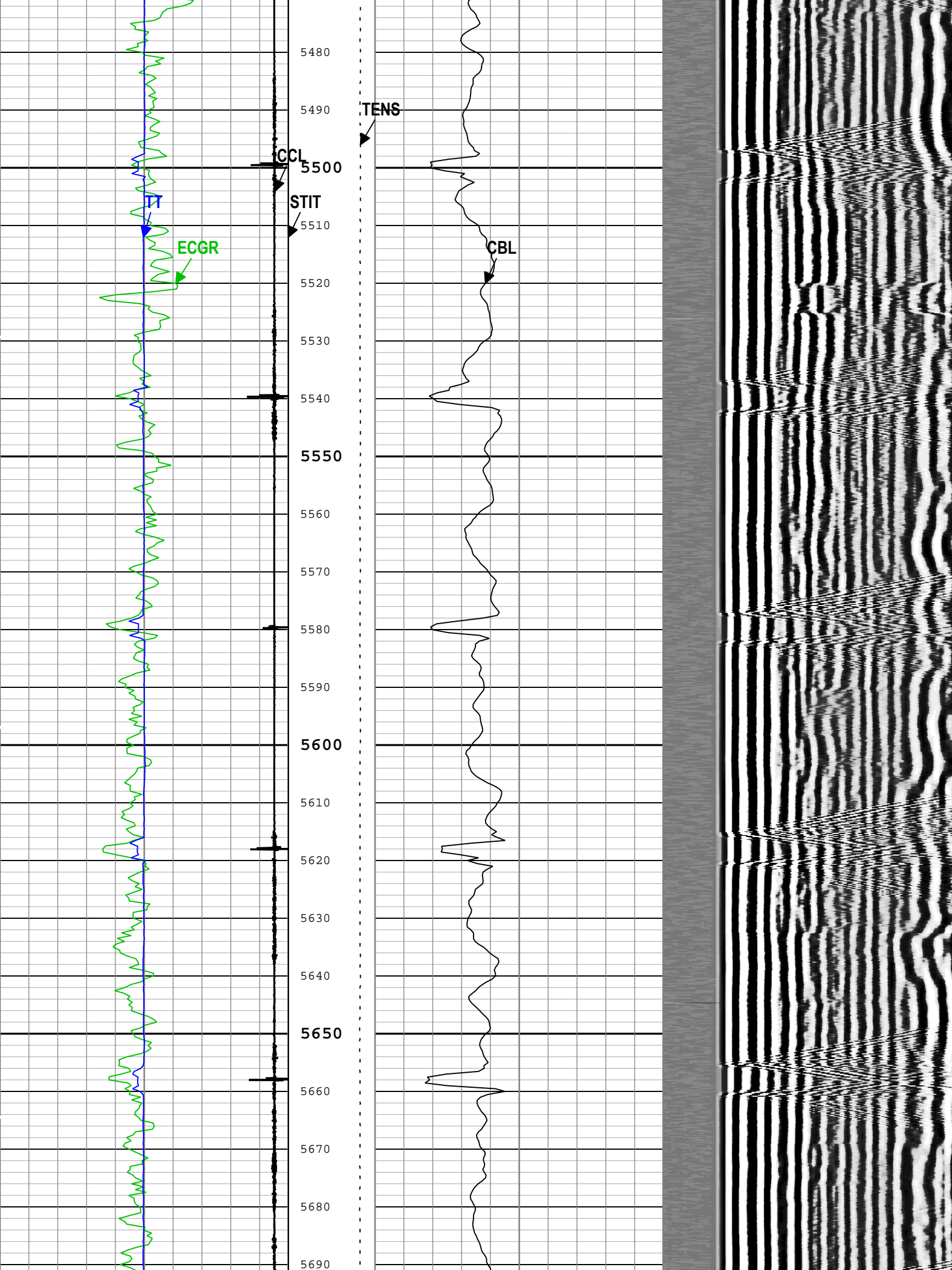




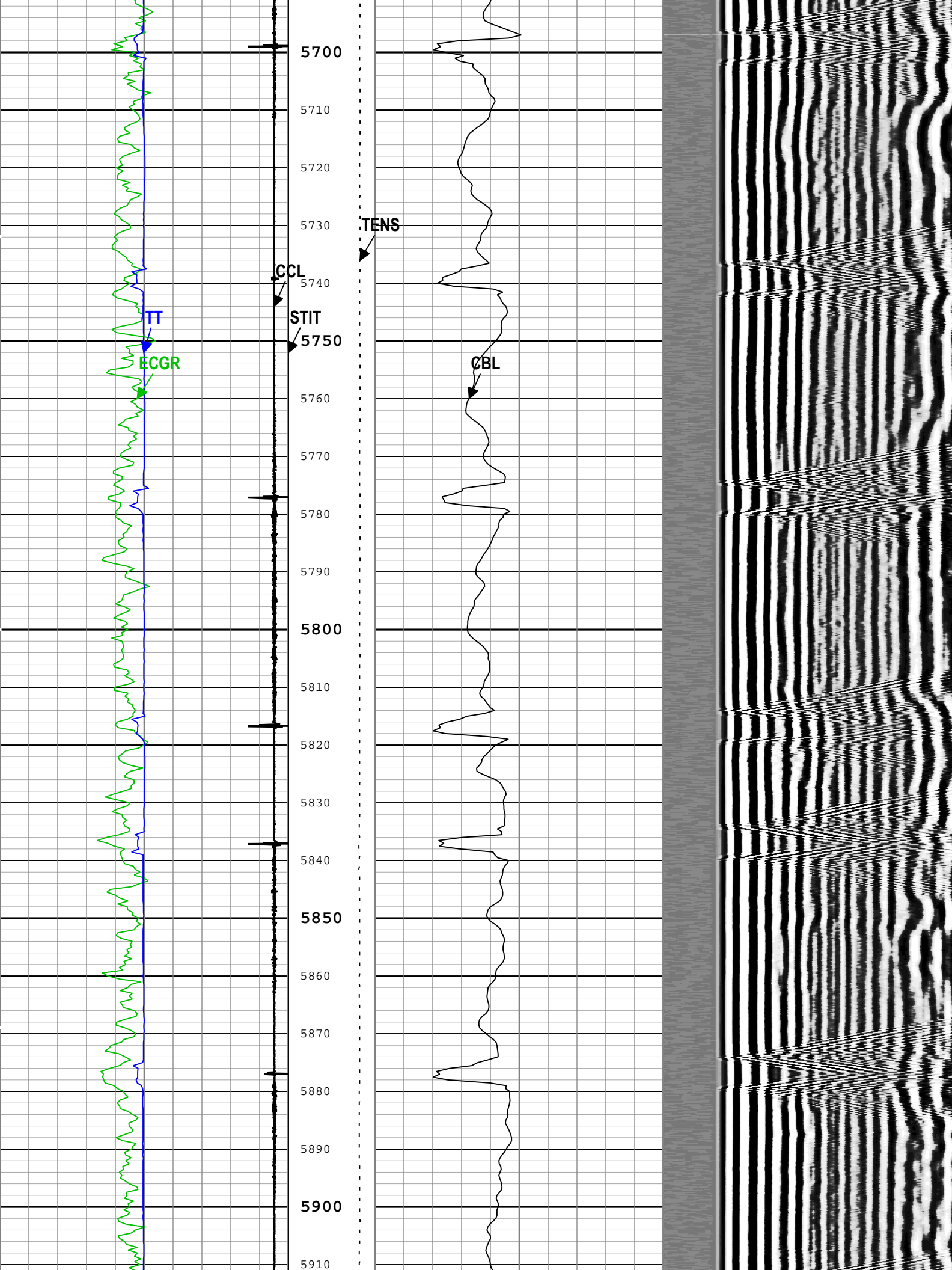


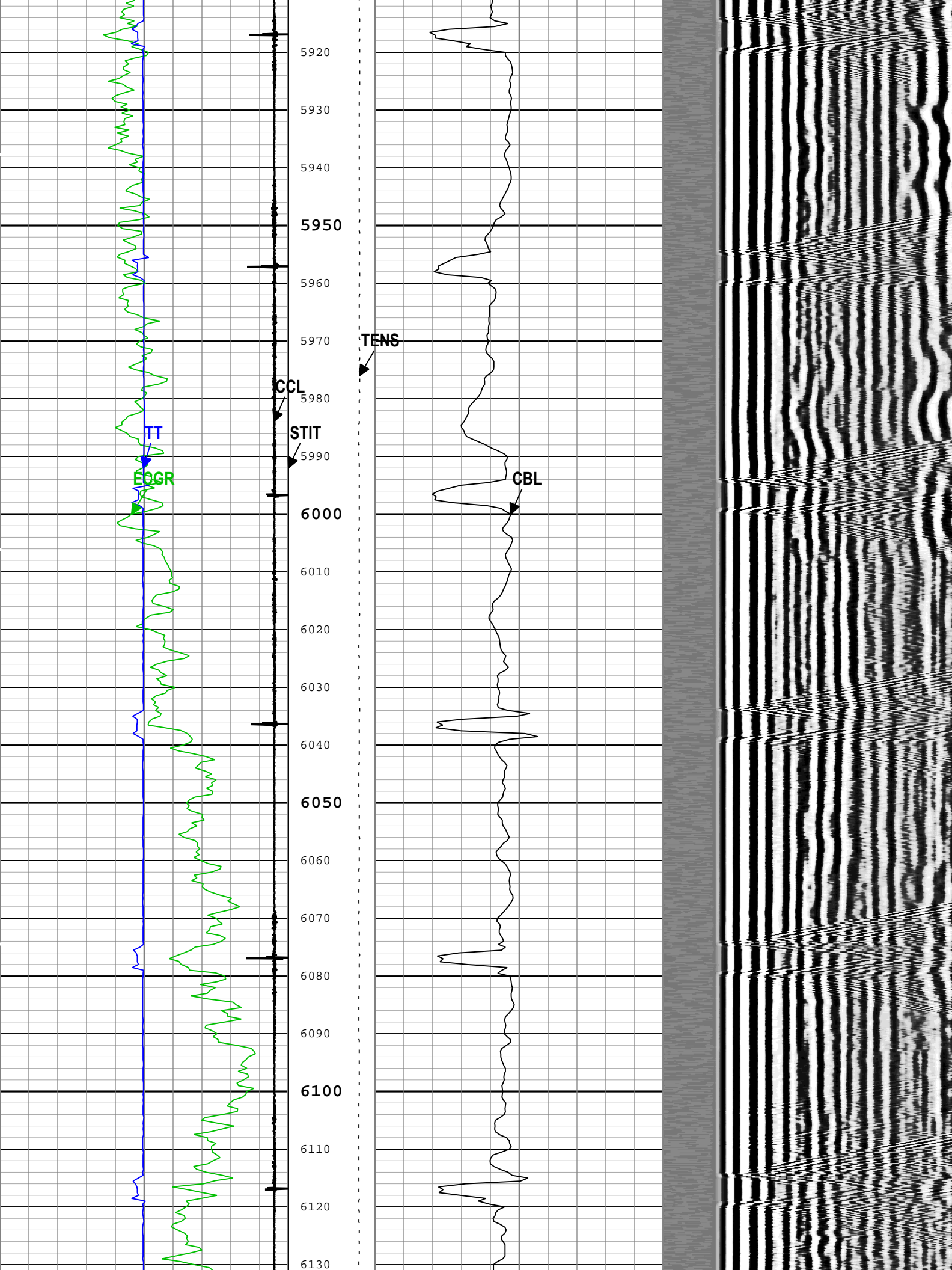


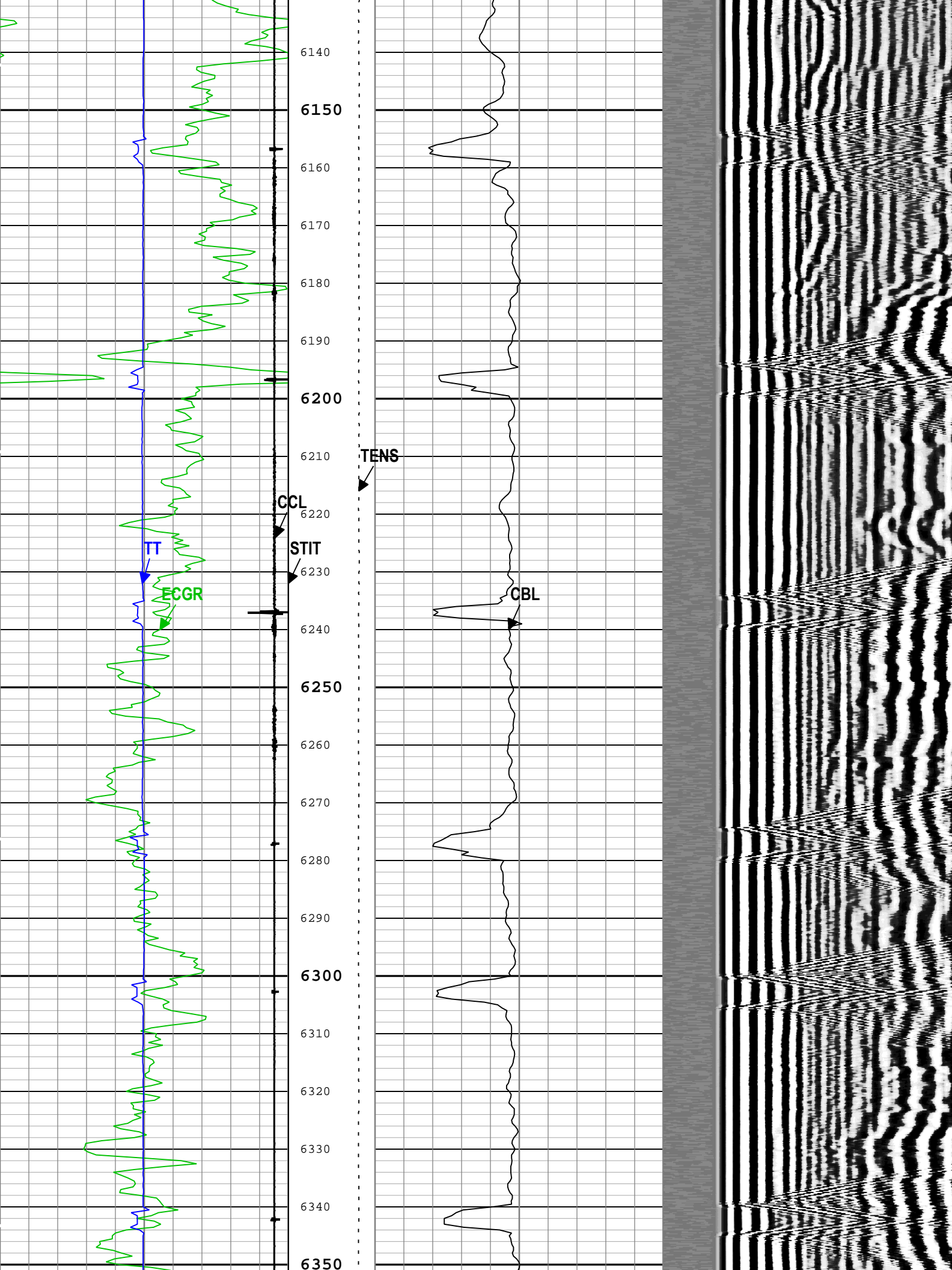




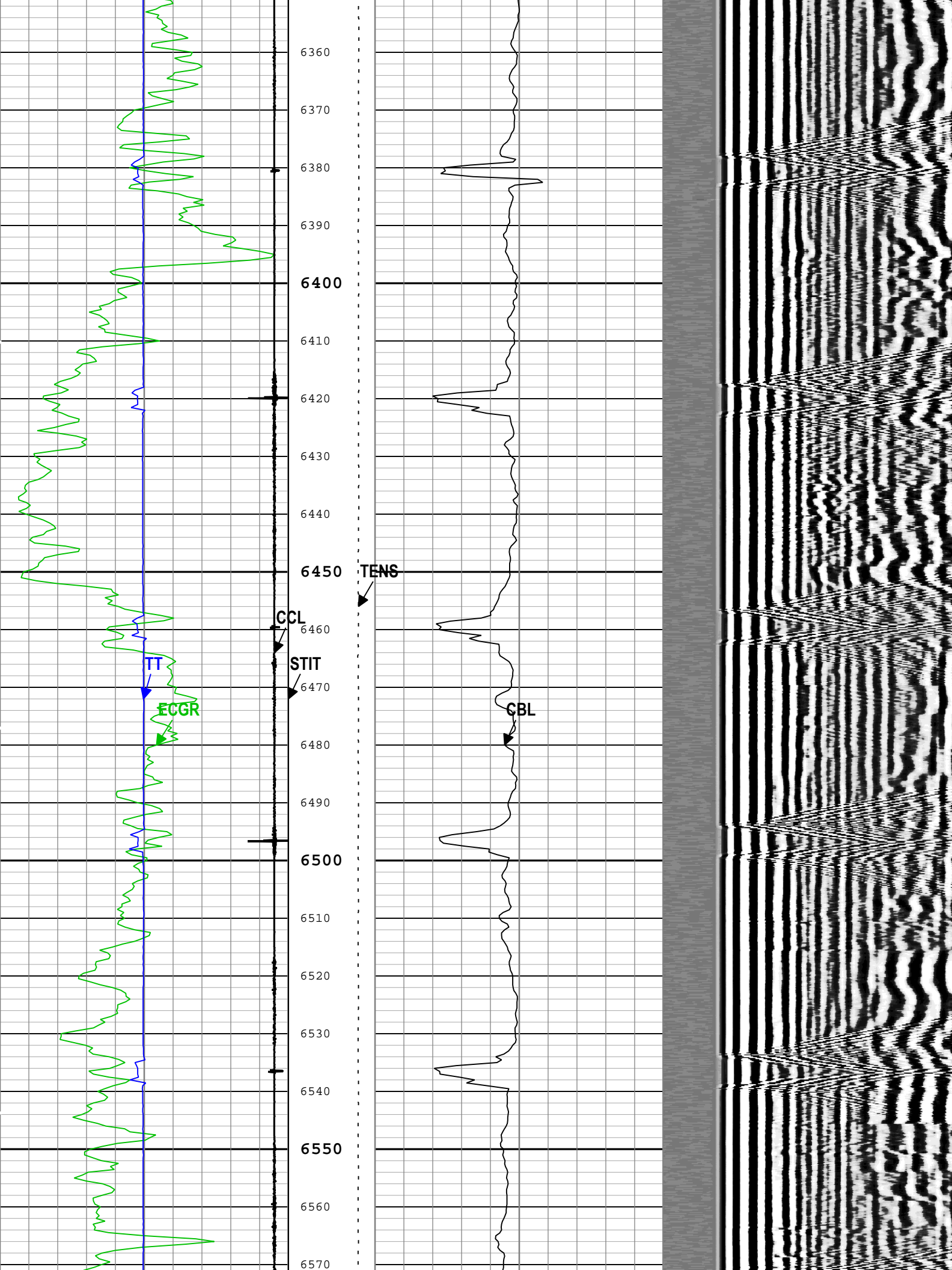


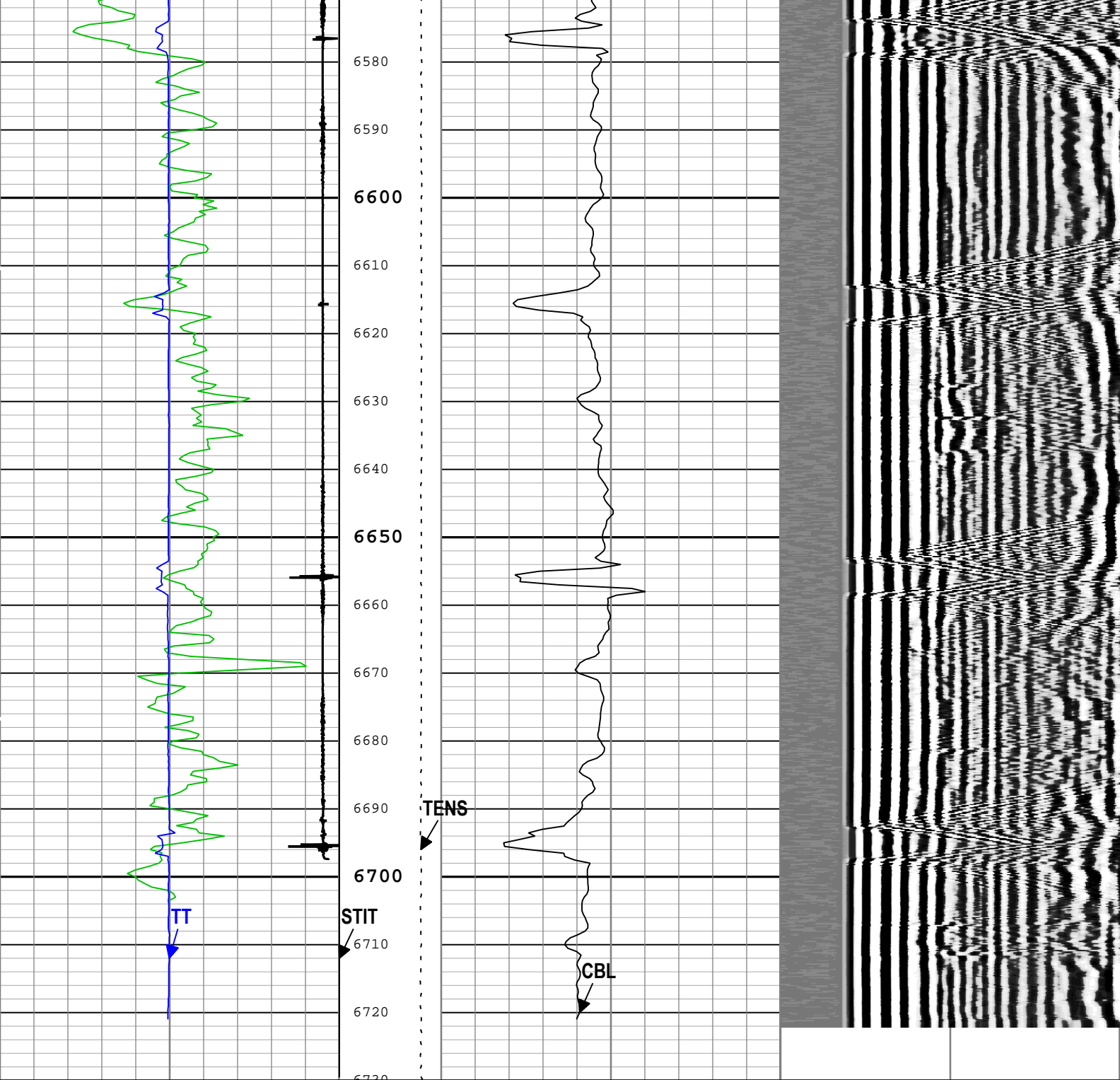












<div>Gamma Ray (ECGR) SGT-N</div> <div>0150</div> <div>gAPI</div>	<div>Stuck Tool Indicator, Total (STIT)</div> <div>050</div> <div>ft</div>	<div>CBL Amplitude (CBL) DSLT-H</div> <div>0100</div> <div>mV</div>	<div>Min</div> <div>Amplitude</div> <div>Max</div>
<div>Transit Time for CBL (TT) DSLT-H</div> <div>400200</div> <div>us</div>	<div>Cable Tension (TENS)</div> <div>100000</div> <div>lbf</div>	<div>CBL Amplitude (CBL) DSLT-H</div> <div>010</div> <div>mV</div>	<div>Variable Density Log (VDL) DSLT-H</div> <div>2001200</div> <div>us</div>
<div>Casing Collar Locator Amplitude (CCL) CAL-YA</div> <div>-191</div>	<div>Cable Drag</div>		
	<div>Tool_Tot. Drag</div>		

TIME\_1900 - Time Marked every 60.00 (s)

Channel Processing Parameters					
Two: Parameters					
Parameter	Description	Tool	Value	Unit	
AMSG	Auxiliary Minimum Sliding Gate	DSLTH	218	us	
ISSBAR	Barite Mud Presence Flag	Borehole	No		
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased		
BS	Bit Size	WLSESSION	Depth Zoned	in	
CBLO	Casing Bottom (Logger)	WLSESSION	6748	ft	
CBRA	CBL LQC Reference Amplitude in Free Pipe	DSLTH	62	mV	
CCL_MULTIPLIER	Casing Collar Locator Multiplier	CAL-YA	1		
CDEN	Cement Density	SGT-N	2	g/cm3	
DETE	Delta-T Detection	DSLTH	E1		
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal	
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)		
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS(RT)		
GOBO_CURR	Good Bond in Arbitrary Cement	DSLTH	2.87	mV	
MAHTR	Manual High Threshold Reference for first arrival detection	DSLTH	120		
MATT_CURR	Maximum Attenuation in Arbitrary Cement	DSLTH	11.82	dB/ft	
MCI	Minimum Cemented Interval for Isolation	DSLTH	Depth Zoned	ft	
MNHTR	Minimum High Threshold Reference for first arrival detection	DSLTH	100		
MSA	Minimum Sonic Amplitude	DSLTH	1.33	mV	
MSA_CURR	Minimum Sonic Amplitude in Arbitrary Cement	DSLTH	1.33	mV	
NMSG	Near Minimum Sliding Gate	DSLTH	283	us	
NMXG	Near Maximum Sliding Gate	DSLTH	Time Zoned	us	
SGAD	Sliding Gate Status	DSLTH	Off		
SGDT	Sliding Gate Delta-T	DSLTH	62	us/ft	
Depth Zone Parameters					
Parameter	Value	Start ( ft )	Stop ( ft )		
BS	13.5	40	1465		
BS	8.75	1465	6729.92		
MCI	14.81	40	1465		
MCI	10	1465	6729.92		
All depth are actual.					
Time Zone Parameters					
Parameter	Value	Start Time	Stop Time	Start Depth ( ft )	Stop Depth ( ft )
NMXG	950	03-Oct-2016 12:17:51	03-Oct-2016 13:37:21	6729.88	1586.95
NMXG	665	03-Oct-2016 13:37:21	03-Oct-2016 13:37:22	1586.95	1585.26
NMXG	527	03-Oct-2016 13:37:22	03-Oct-2016 13:37:24	1585.26	1583.1
NMXG	497	03-Oct-2016 13:37:24	03-Oct-2016 13:37:34	1583.1	1572.48
NMXG	463	03-Oct-2016 13:37:34	03-Oct-2016 14:01:43	1572.48	34.73
All depth are at tool zero.					
Tool Control Parameters					



MODE	DSLT Acquisition Mode	DSLT-H	CBL	
RATE	DSLT Firing Rate	DSLT-H	15 Hz	
DTFS	DSLT Telemetry Frame Size	DSLT-H	536	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	3600	ft/h

Two

Repeat pass 0 psi

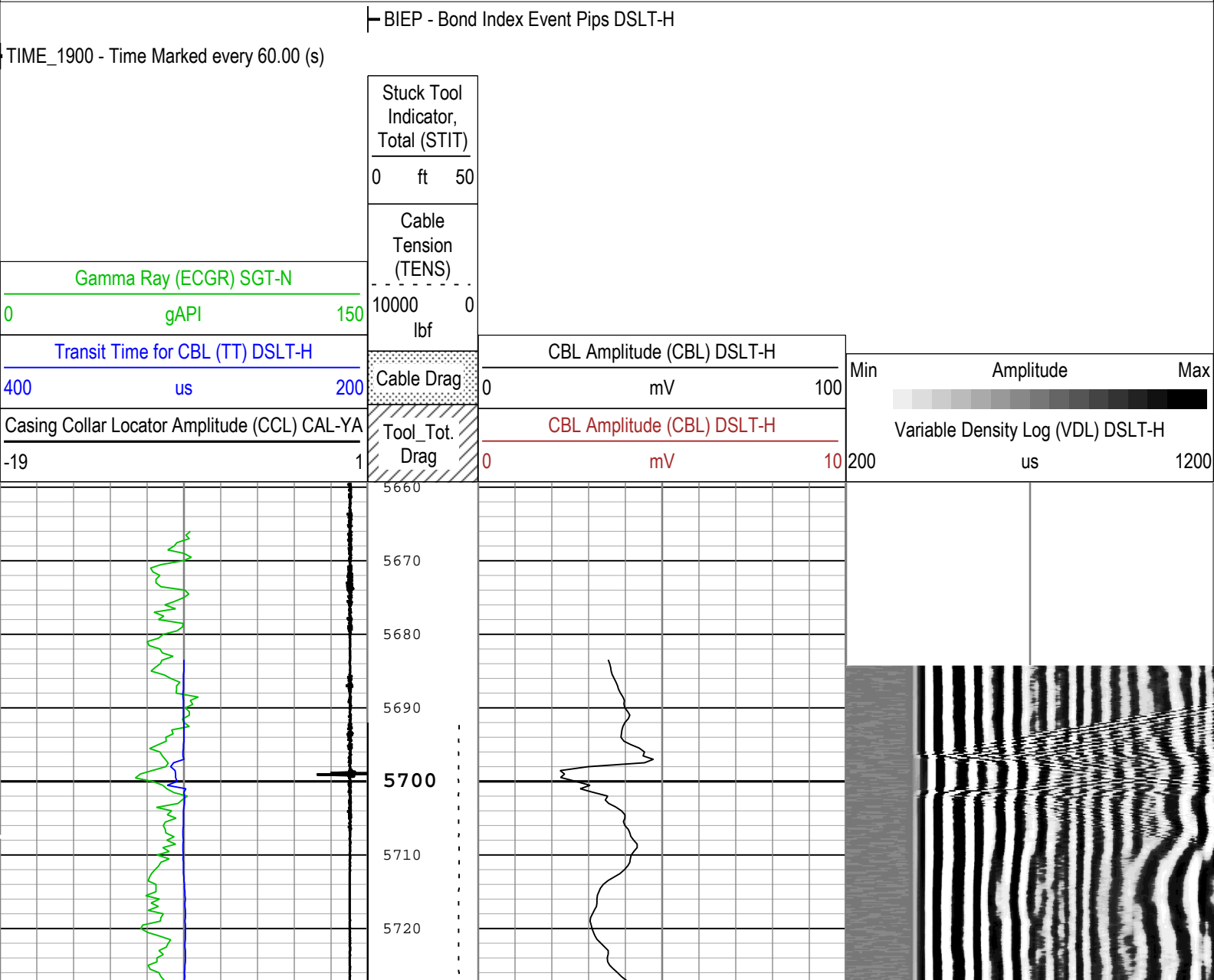
Software Version	
Acquisition System	Version
Maxwell 2016 SP2	6.2.68624.3100

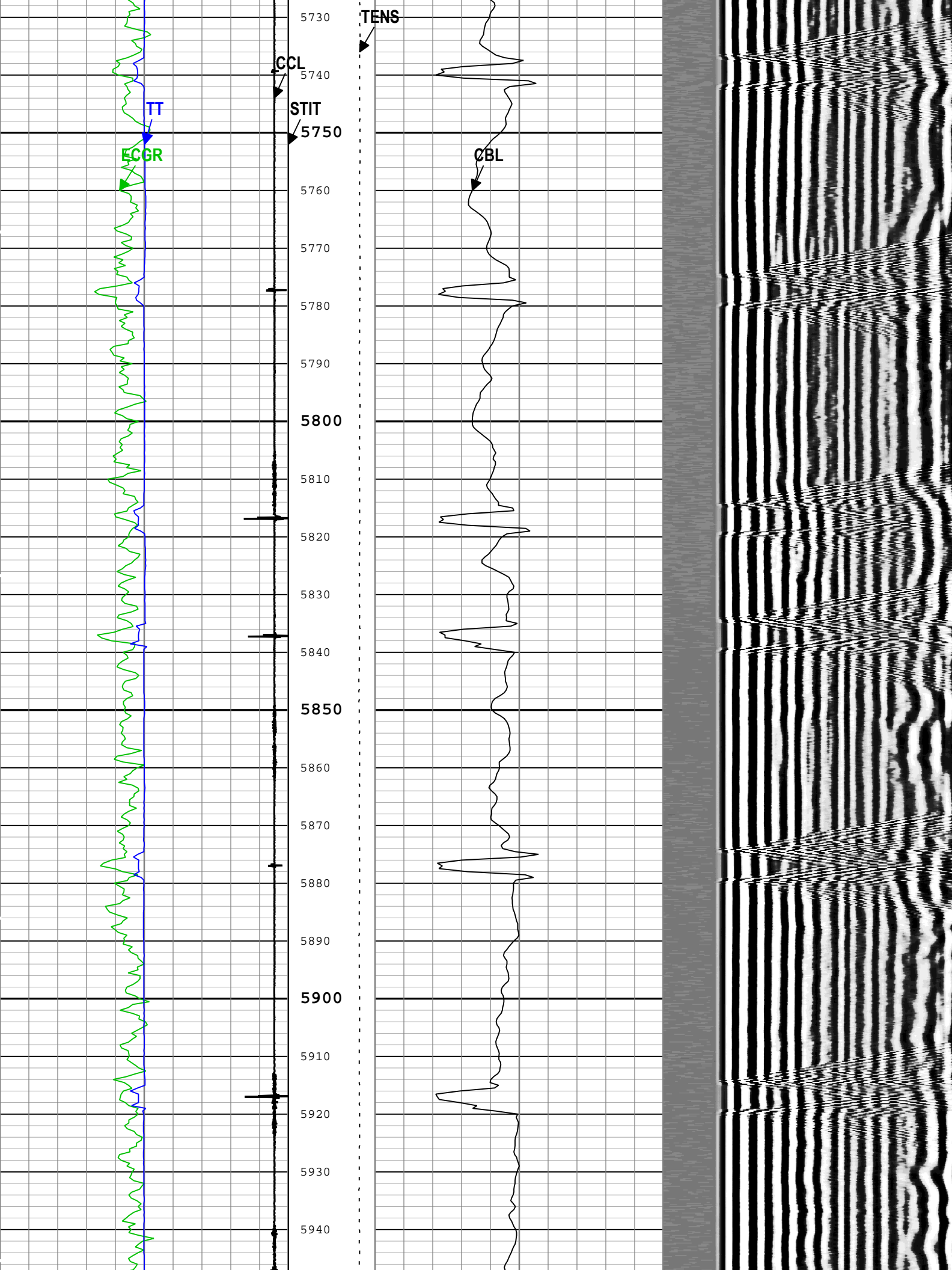
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
Two	Log[3]:Up	Up	5691.64 ft	6102.34 ft	03-Oct-2016 12:07:14 PM	03-Oct-2016 12:14:16 PM	ON	-1.37 ft	No

All depths are referenced to toolstring zero

Log	Company:Bonanza Creek      Well:State Seventy Holes J-18 Two: Log[3]:Up:S008
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Description: CBL\_VDL   Format: Log ( Sonic CBL with VDL )   Index Scale: 5 in per 100 ft   Index Unit: ft   Index Type: Measured Depth   Creation Date: 03-Oct-2016 17:17:02









Channel Processing Parameters				
Two: Parameters				
Parameter	Description	Tool	Value	Unit
AMSG	Auxiliary Minimum Sliding Gate	DSLT-H	218	us
ISSBAR	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	8.75	in
CBLO	Casing Bottom (Logger)	WLSESSION	6748	ft
CBRA	CBL LQC Reference Amplitude in Free Pipe	DSLT-H	62	mV
CCL_MULTIPLIER	Casing Collar Locator Multiplier	CAL-YA	1	
CDEN	Cement Density	SGT-N	2	g/cm3
DETE	Delta-T Detection	DSLT-H	E1	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS(RT)	
GOBO_CURR	Good Bond in Arbitrary Cement	DSLT-H	2.87	mV
MAHTR	Manual High Threshold Reference for first arrival detection	DSLT-H	120	
MATT_CURR	Maximum Attenuation in Arbitrary Cement	DSLT-H	11.82	dB/ft
MCI	Minimum Cemented Interval for Isolation	DSLT-H	10	ft
MNHTR	Minimum High Threshold Reference for first arrival detection	DSLT-H	100	
MSA	Minimum Sonic Amplitude	DSLT-H	1.33	mV
MSA_CURR	Minimum Sonic Amplitude in Arbitrary Cement	DSLT-H	1.33	mV
NMSG	Near Minimum Sliding Gate	DSLT-H	283	us
NMXG	Near Maximum Sliding Gate	DSLT-H	950	us
SGAD	Sliding Gate Status	DSLT-H	Off	
SGDT	Sliding Gate Delta-T	DSLT-H	62	us/ft
Tool Control Parameters				
Two: Parameters				
Parameter	Description	Tool	Value	Unit
MODE	DSLT Acquisition Mode	DSLT-H	CBL	
RATE	DSLT Firing Rate	DSLT-H	15 Hz	
DTFS	DSLT Telemetry Frame Size	DSLT-H	536	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	3600	ft/h

Company:	Bonanza Creek	<b>Schlumberger</b>
Well:	State Seventy Holes J-18	
Field:	Wattenberg	
County:	Weld	
State:	Colorado	

Cement Bond Log