

Company: Crestone Peak Resources Operating LLC

Well: Lochbuie Land 2E-25H-D166

Field: Wattenberg

County: Weld State: Colorado

Digital Sonic Logging Tool

CBL With VDL

County:		Weld	
Field:		Wattenberg	
Location:		NWNW	
Well:		Lochbuie Land 2E-25H-D166	
Company:		Crestone Peak Resources Operating LLC	
CBL With VDL		Location:	
		NWNW	
		938 FNL 297 FWL	
		Elev.: K.B. 5090.00 ft	
		G.L. 5077.00 ft	
		D.F. 5090.00 ft	
		Permanent Datum:	
		Log Measured From:	
		Drilling Measured From:	
		API Serial No.	
05-123-47986		Kelly Bushing	
Section:		Elev.: 13.00 ft	
25		5077.00 f	
Township:		above Perm.Datum	
1N			
Range:			
66			

Disclaimer

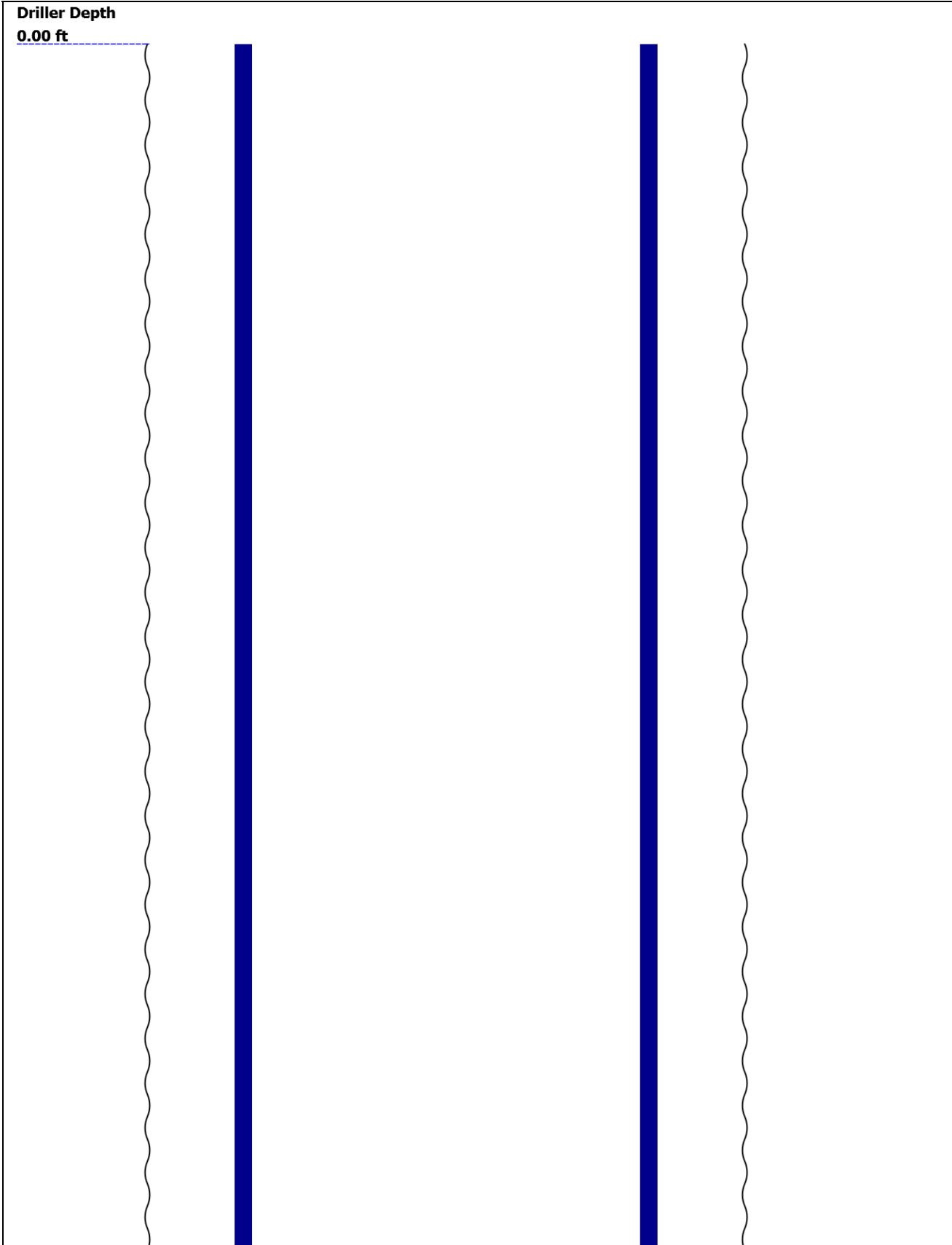
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Well Sketch





## Borehole Size/Casing/Tubing Record


Bit						
Bit Size ( in )	13.5					
Top Driller ( ft )	0					
Top Logger ( ft )	0					
Bottom Driller ( ft )	2382					
Bottom Logger ( ft )	2382					
Casing						
Size ( in )	9.625					
Weight ( lbm/ft )	40					
Inner Diameter ( in )	8.835					
Grade	N/A					
Top Driller ( ft )	0					
Top Logger ( ft )	0					
Bottom Driller ( ft )	2382					
Bottom Logger ( ft )	2382					

## Borehole Fluids

Parameter( unit )	One					
Fluid Type	Water					
Max Recorded Temperatures ( degF )	106					
Source of Sample	Active Tank					
Salinity ( ppm )	0					
Density ( lbm/gal )	8.34					
Funnel Viscosity ( s )						
Fluid Loss ( cm3 )						
PH						
Date/Time Circulation Stopped	NaN					
Date Logger on Bottom	08-Jan-2019					
Time Logger on Bottom	17:42:00					
Source RMF						
RMC	Pressed					
RM @ Meas Temp ( ohm.m@degF )	0.2 @ 68					
RMF @ Meas Temp ( ohm.m@degF )	0.15 @ 68					
RMC @ Meas Temp ( ohm.m@degF )						
RM @ BHT ( ohm.m@degF )	0.27 @ 212					

RM @ BHT ( ohm.m@degF )	0.07 @ 212				
RMF @ BHT ( ohm.m@degF )	0.05 @ 212				
RMC @ BHT ( ohm.m@degF )	NaN @ 212				
Total Solid ( % )					
High Gravity Solids ( % )					

# Remarks and Equipment Summary

One: Toolstring				One: Remarks	
<b>Equip name</b> <b>LEH-QT:2148</b> LEH-QT:2148	<b>Length</b> <b>36.58</b>	<b>MP name</b>	<b>Offset</b>	Thank you for choosing Schlumberger Wireline!	
				Log run for cement evaluation	
				Toolstring ran as per tool sketch	
				Log run under no pressure	
				Tool zero at KB at 13 ft	
				Crew: Alex Schaab, Tim Ludgate	
<b>DTC-H:8602</b> <b>33.1</b> ECH-KC:9680 DTC-H:8602					
<b>SGT-N</b> <b>30.1</b> SGH-K:2605 SGD-TAA SGC-TB					
<b>CAL-YA:213</b> <b>24.6</b> CAL-YA:213					
<b>DSLT-H:8049</b> <b>21.1</b> ECH-KH:8539 DSLCH:8049 SLS-E:389					
<b>BNS-STD</b> <b>0.46</b> SLS-E Head Tension TOOL_ZERO					
<b>CBL 3ft</b> <b>8.62</b> Upper-Near <b>8.62</b>					
<b>VDL 5ft</b> <b>7.62</b> Upper-Far <b>7.62</b>					
<b>Delta-T</b> <b>6.25</b>					
<b>Lower-Far</b> <b>4.88</b>					
<b>Lower-Near</b> <b>3.88</b>					
<b>SLS-E</b> <b>0.46</b> Head Tension TOOL_ZERO					
Lengths are in ft Maximum Outer Diameter = 6.250 in					

Maximum Outer Diameter = 6.250 in  
Line: Sensor Location, Value: Gating Offset  
All measurements are relative to TOOL\_ZERO

Depth Summary	
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	One		
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[illegible]

Type	IDW-B		
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Serial Number			
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Calibration Date			
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Calibrator Serial Number			
--------------------------	--	--	--

Calibration Cable Type			
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Wheel Correction 1	0		
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Wheel Correction 2	0		
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## Tension Device

Type	CMTD-B/A		
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Serial Number			
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Calibration Date			
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Calibrator Serial Number			
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Number of Calibration Points	0		
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Logging Cable	
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Type	7-46NT-XS		
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Serial Number			
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Length	24000.00 ft		
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Conveyance Type	Wireline		
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Rig Type	Crane USA		
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One:Depth Control Parameters	Depth Control Remarks
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One:Depth Control Parameters	Depth Control Remarks
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Log Sequence	First Log In the Well
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Rig Up Length At Surface	
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Rig Up Length At Bottom	
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Rig Up Length Correction	
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Stretch Correction	
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Tool Zero Check At Surface	
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## One

Software Version	
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Acquisition System	Version
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Acquisition System	Version
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Maxwell 2018 SP2	8.2.104493.3100
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Maxwell 2018 SP2	8.2.104493.3100
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[illegible]

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
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One	Log[2]:Up	Up	23.95 ft	2293.73 ft	08-Jan-2019 5:42:01 PM	08-Jan-2019 6:19:27 PM	ON	-2.00 ft	No
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All depths are referenced to toolstring zero

Log	Company:Crestone Peak Resources Operating LLC	Well:Lochbuie Land 2E-25H-D166
		One: Log[2]:Up:S005

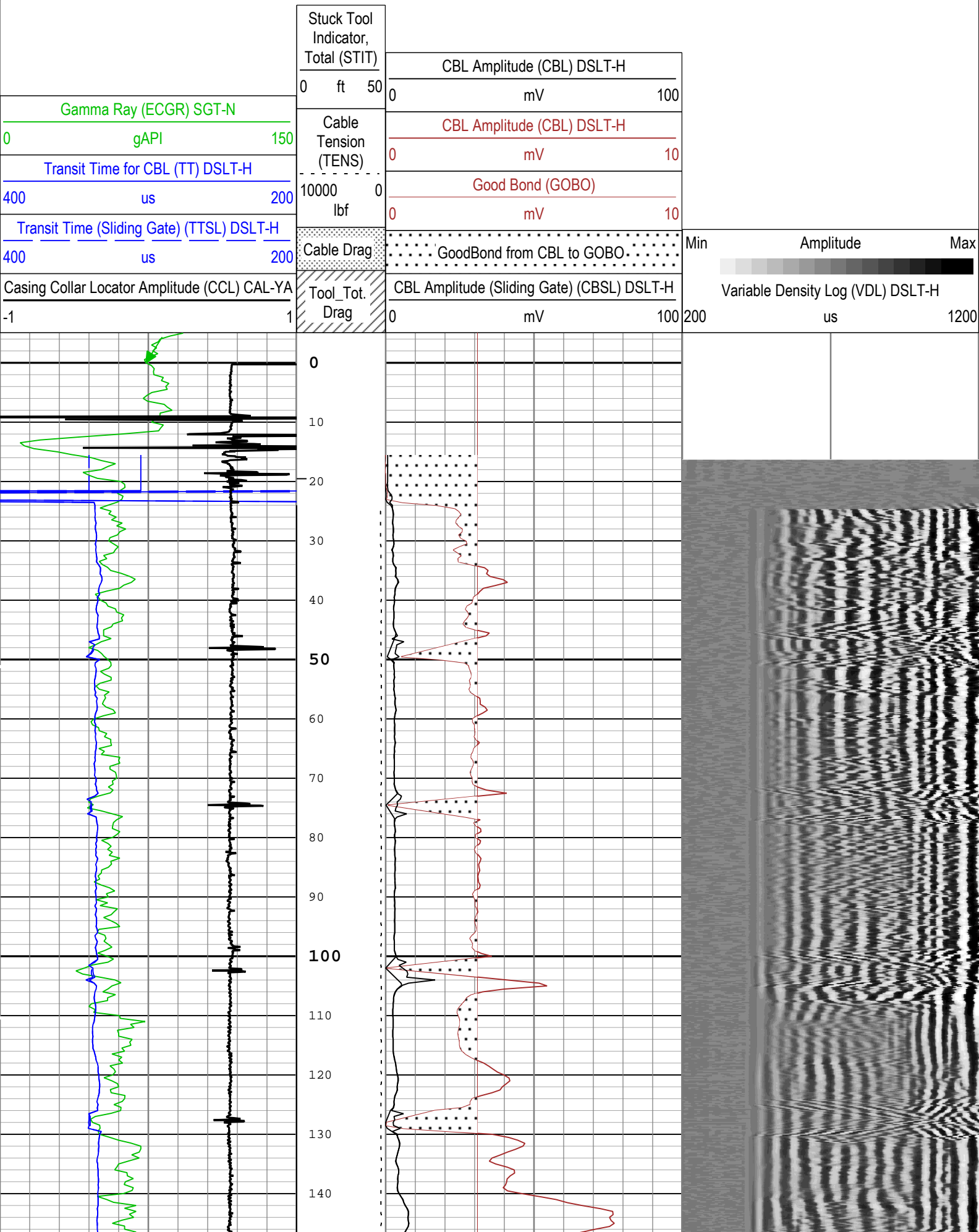
Log	Company:Crestone Peak Resources Operating LLC	Well:Lochbuie Land 2E-25H-D166
		One: Log[2]:Up:S005

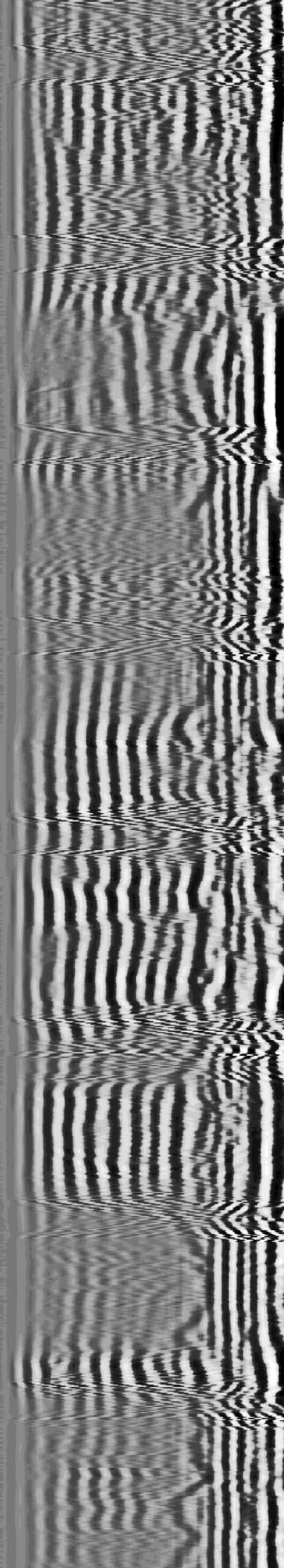
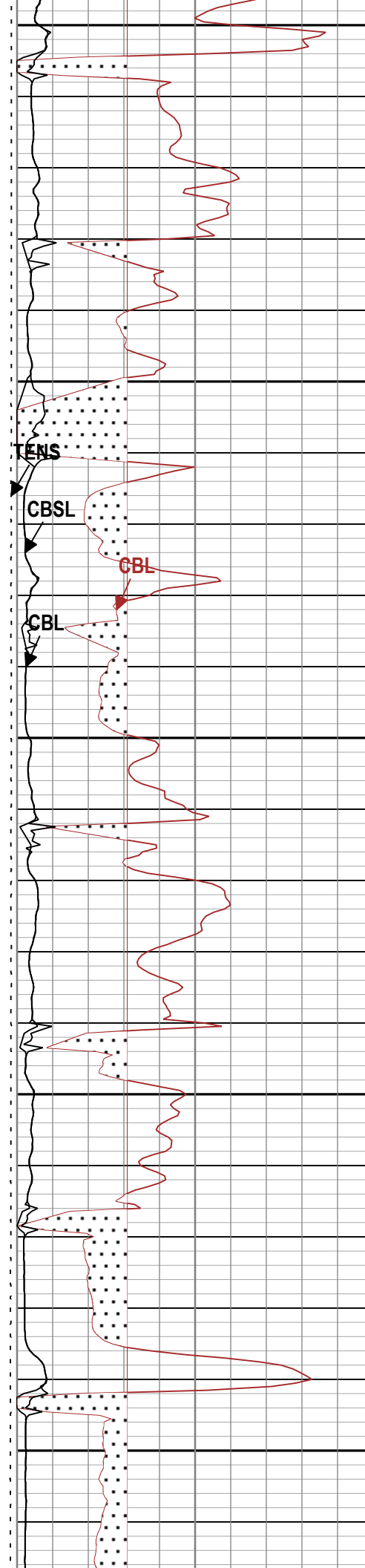
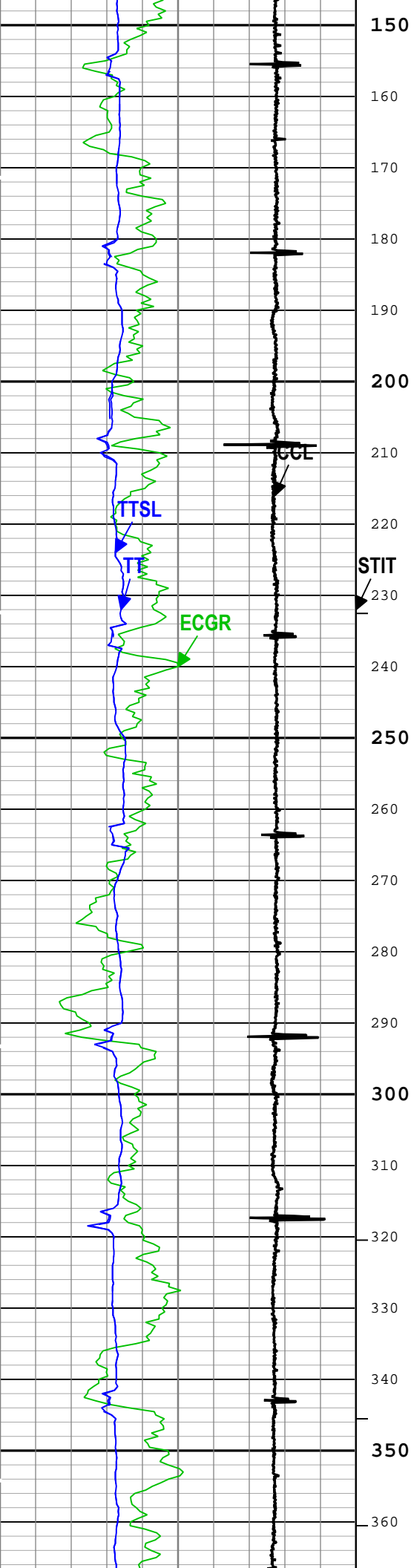
Log	Company:Crestone Peak Resources Operating LLC	Well:Lochbuie Land 2E-25H-D166
		One: Log[2]:Up:S005

Log	Company:Crestone Peak Resources Operating LLC	Well:Lochbuie Land 2E-25H-D166
		One: Log[2]:Up:S005

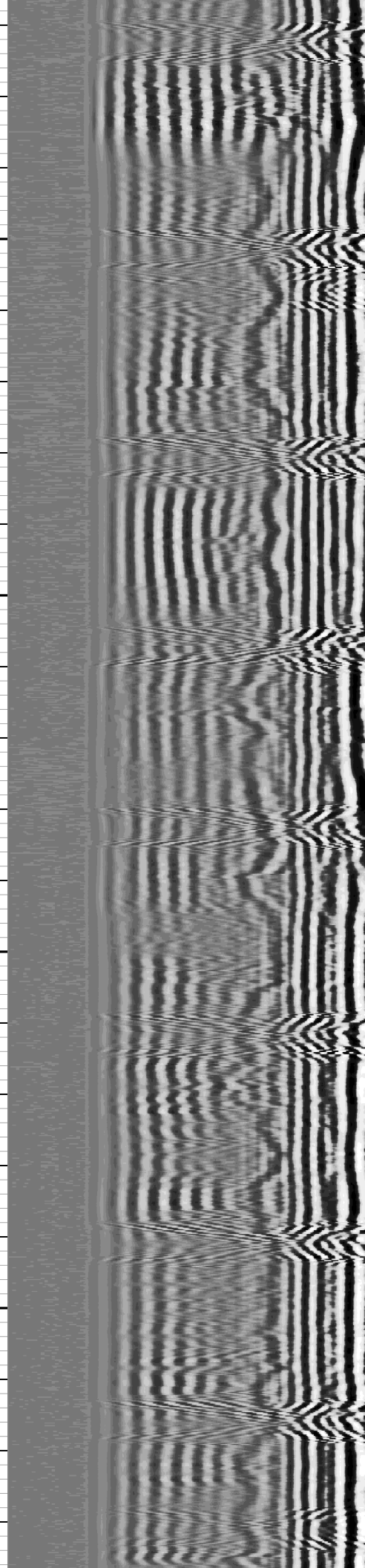
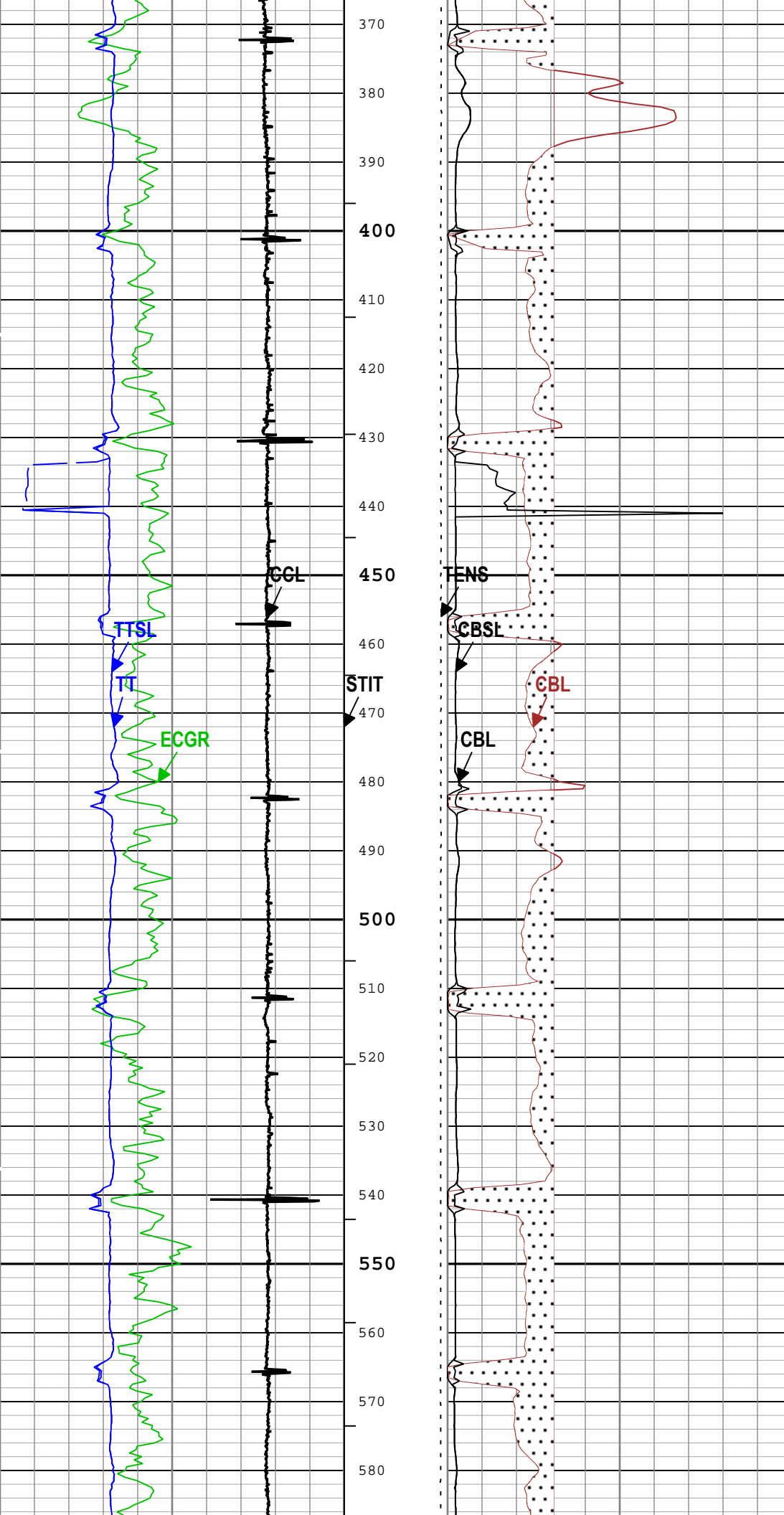
Description: CBL\_VDL   Format: Log ( Sonic CBL with VDL )   Index Scale: 5 in per 100 ft   Index Unit: ft   Index Type: Measured Depth   Creation Date:

TIME\_1900 - Time Marked every 60.00 (s)

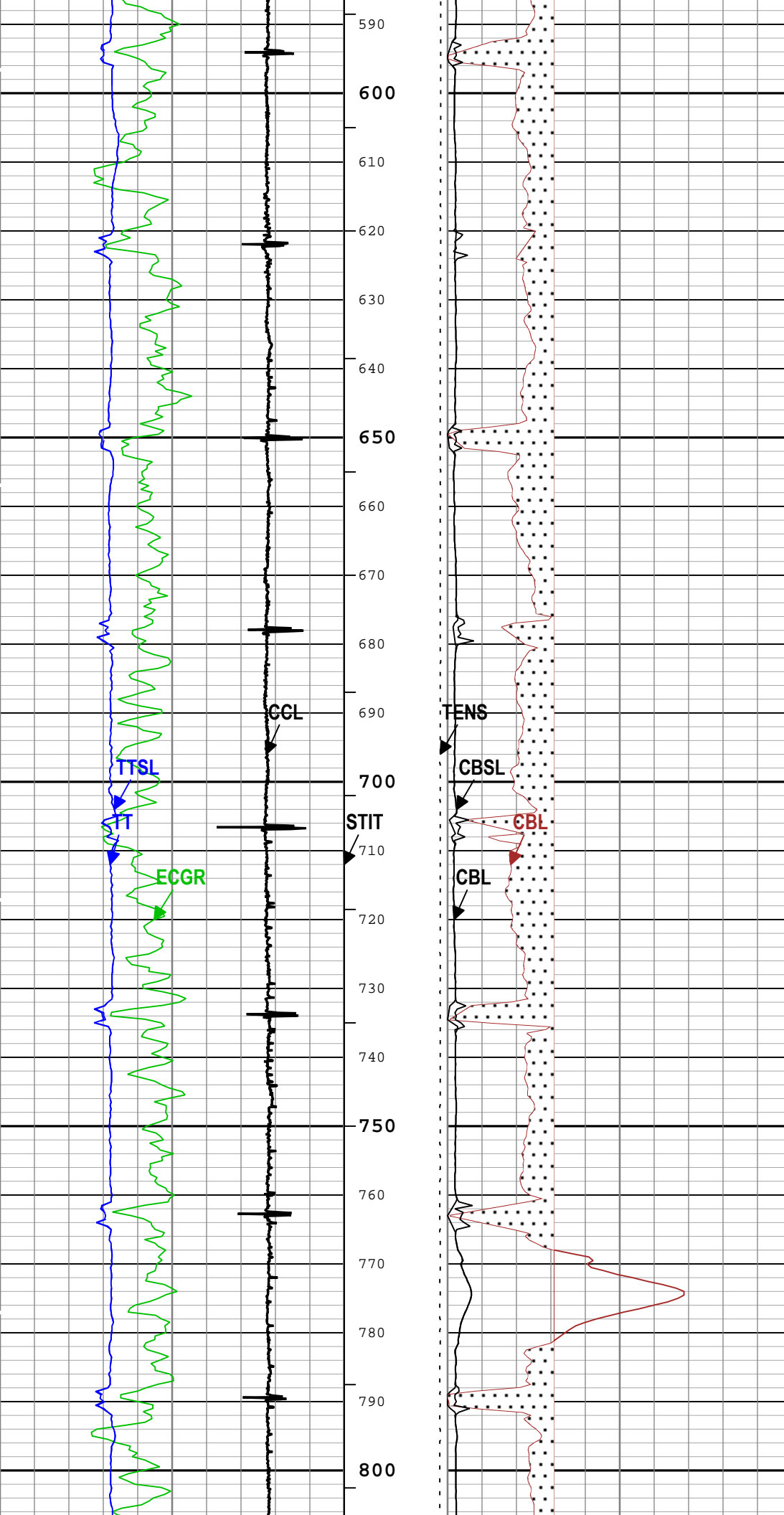


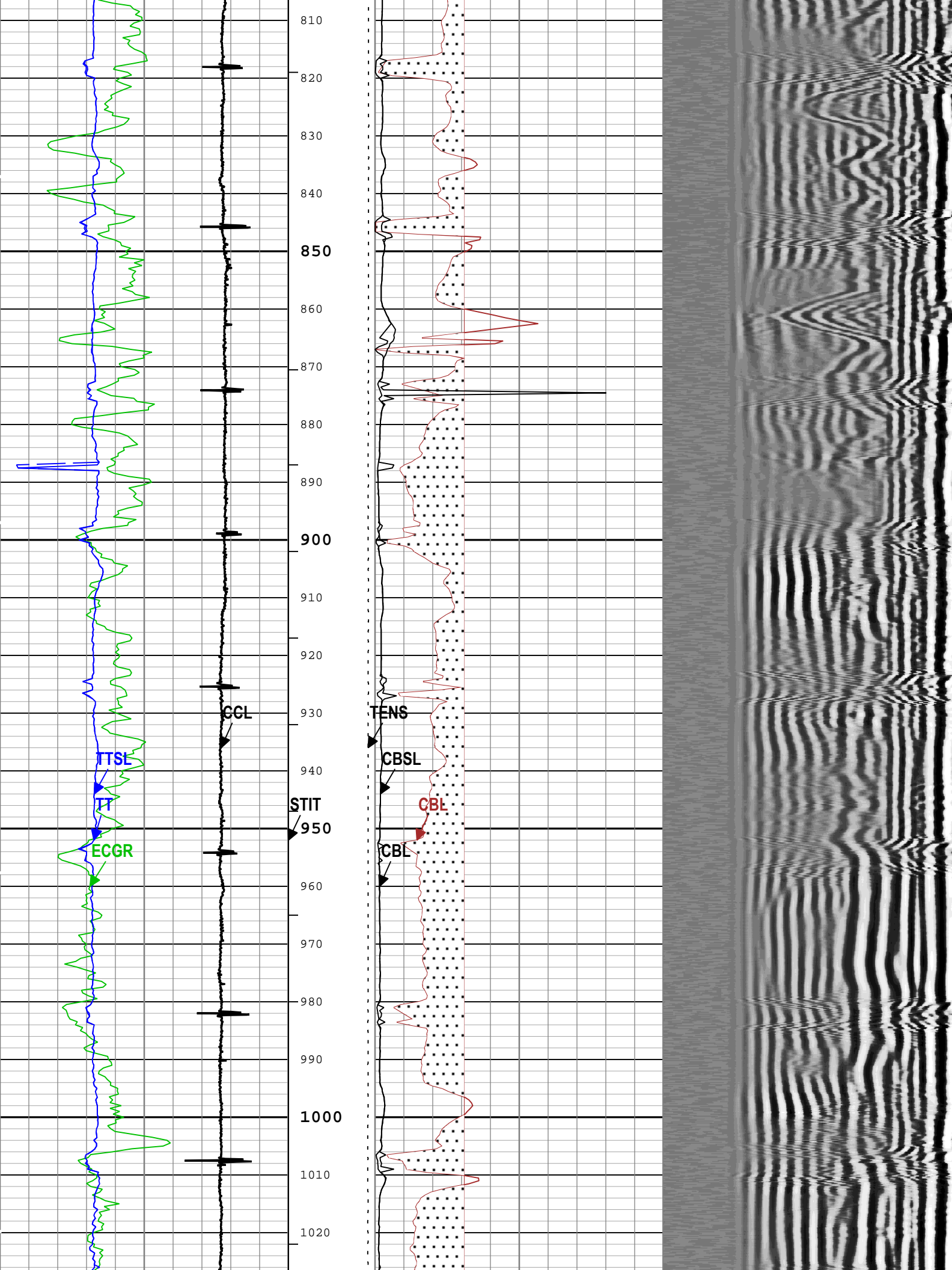


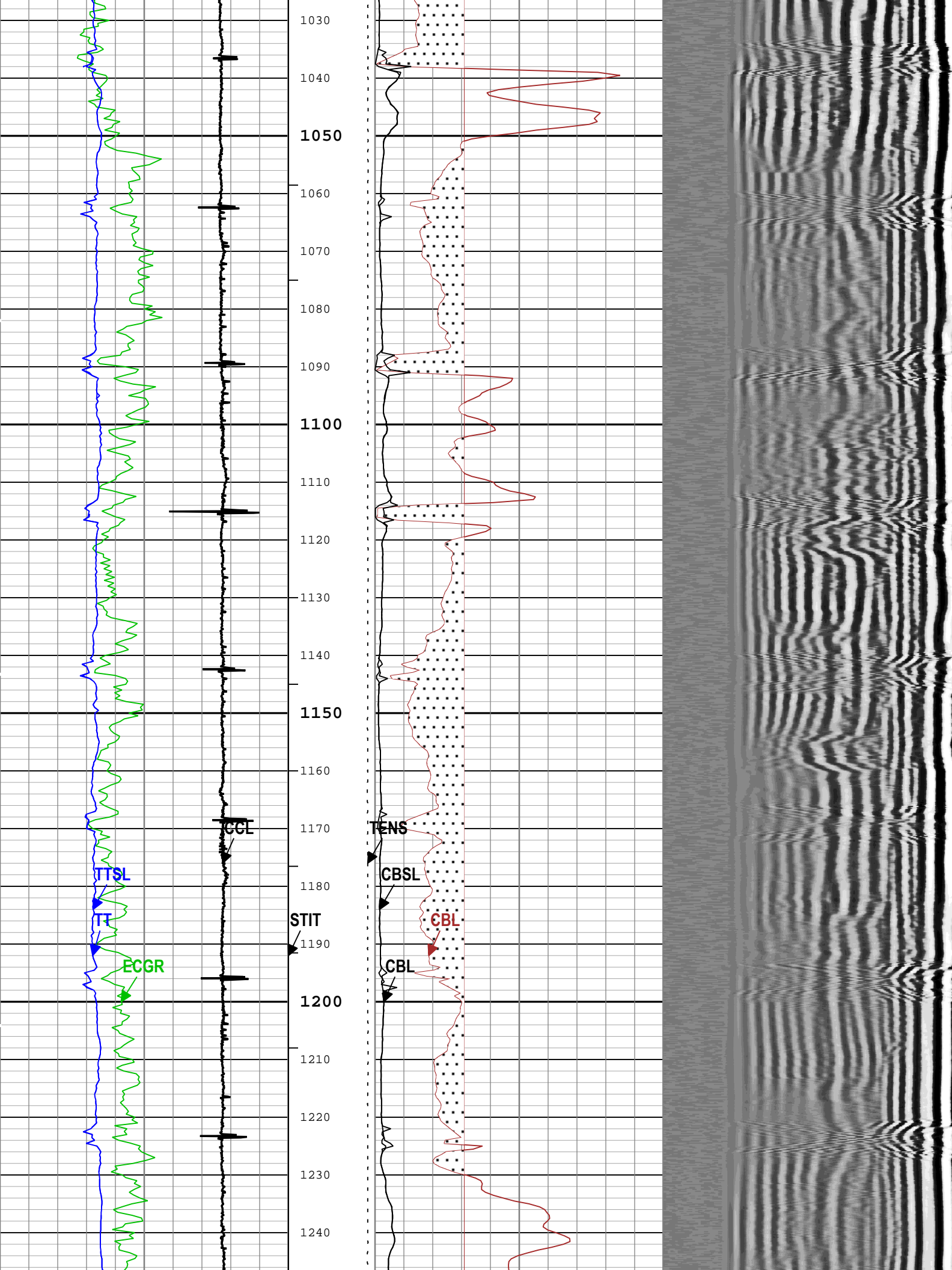




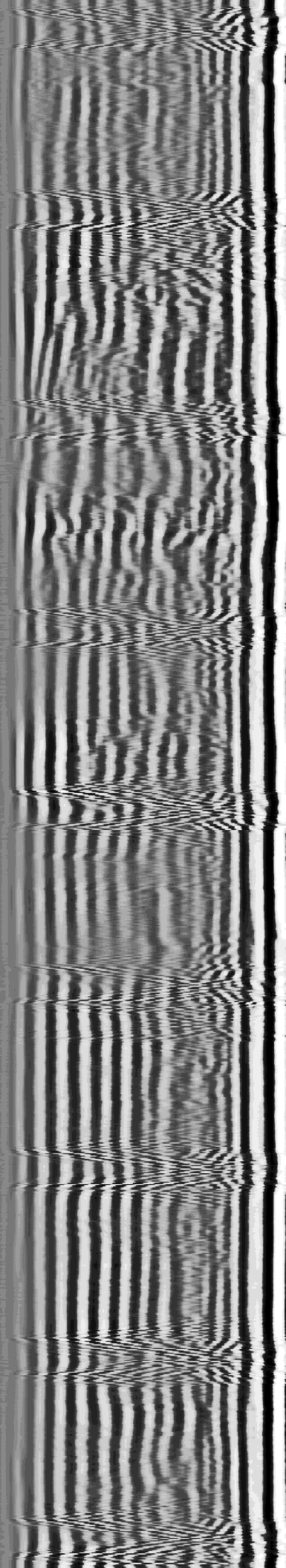
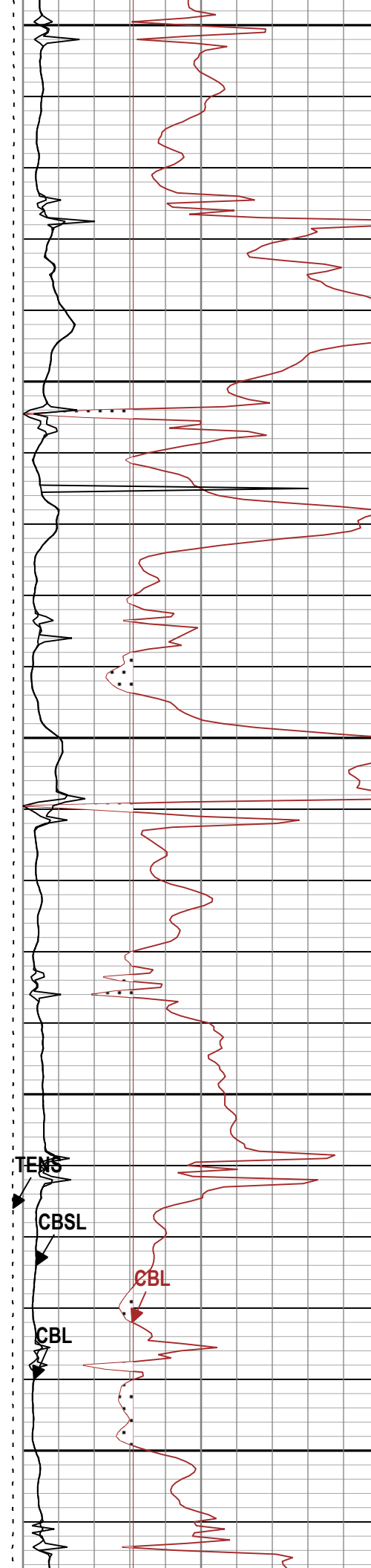
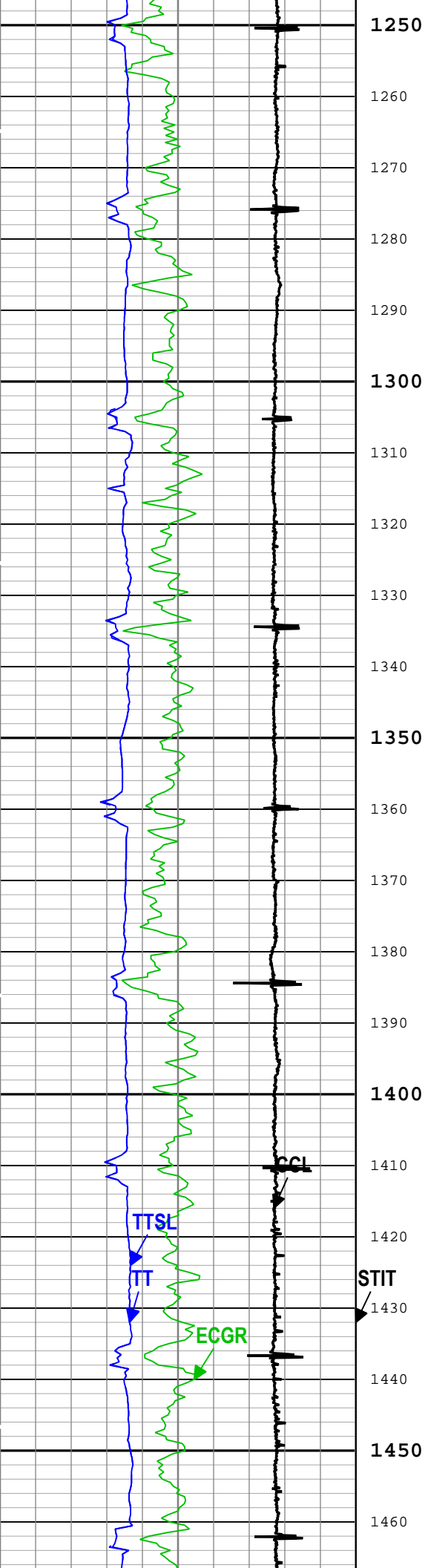


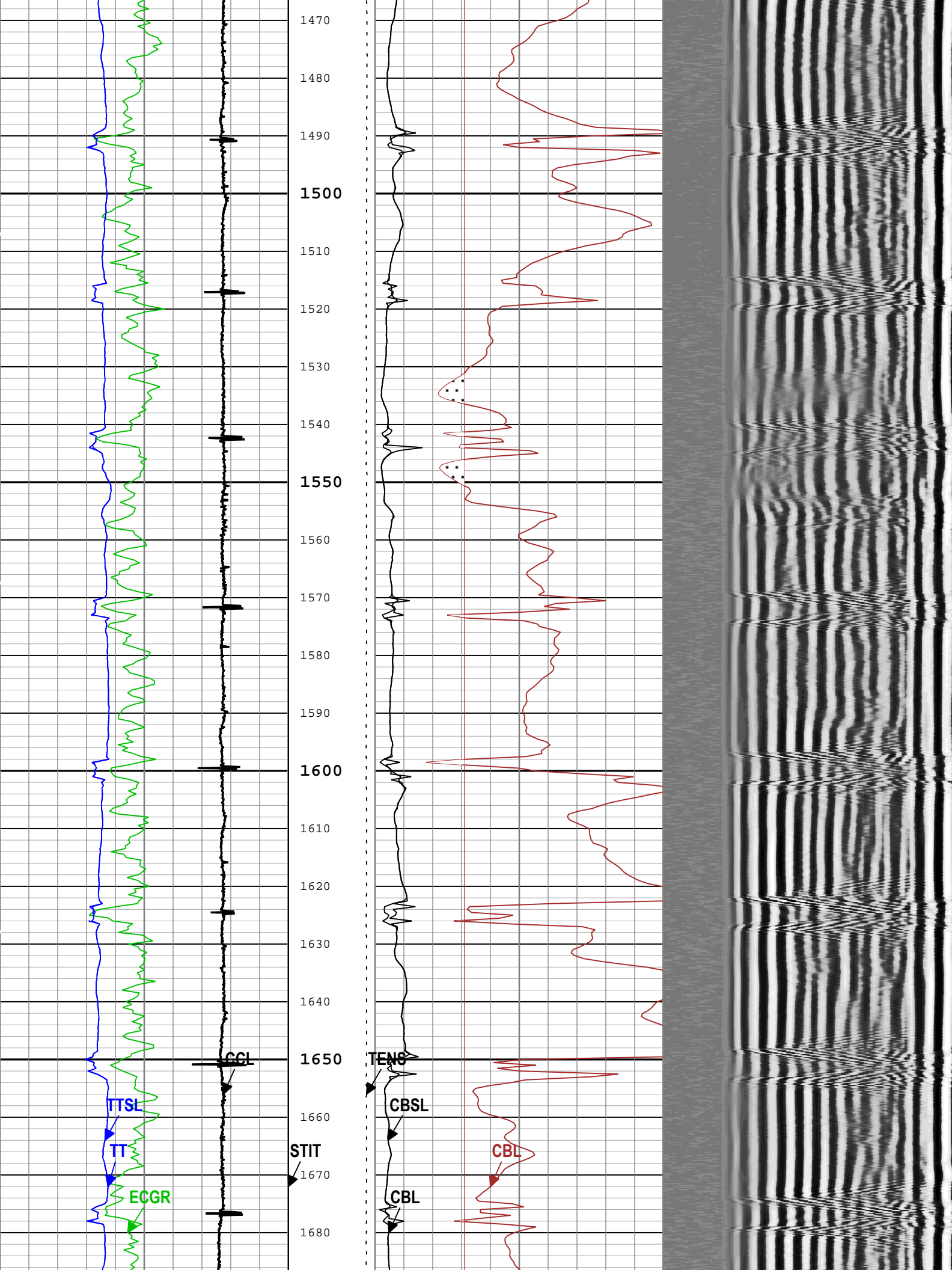


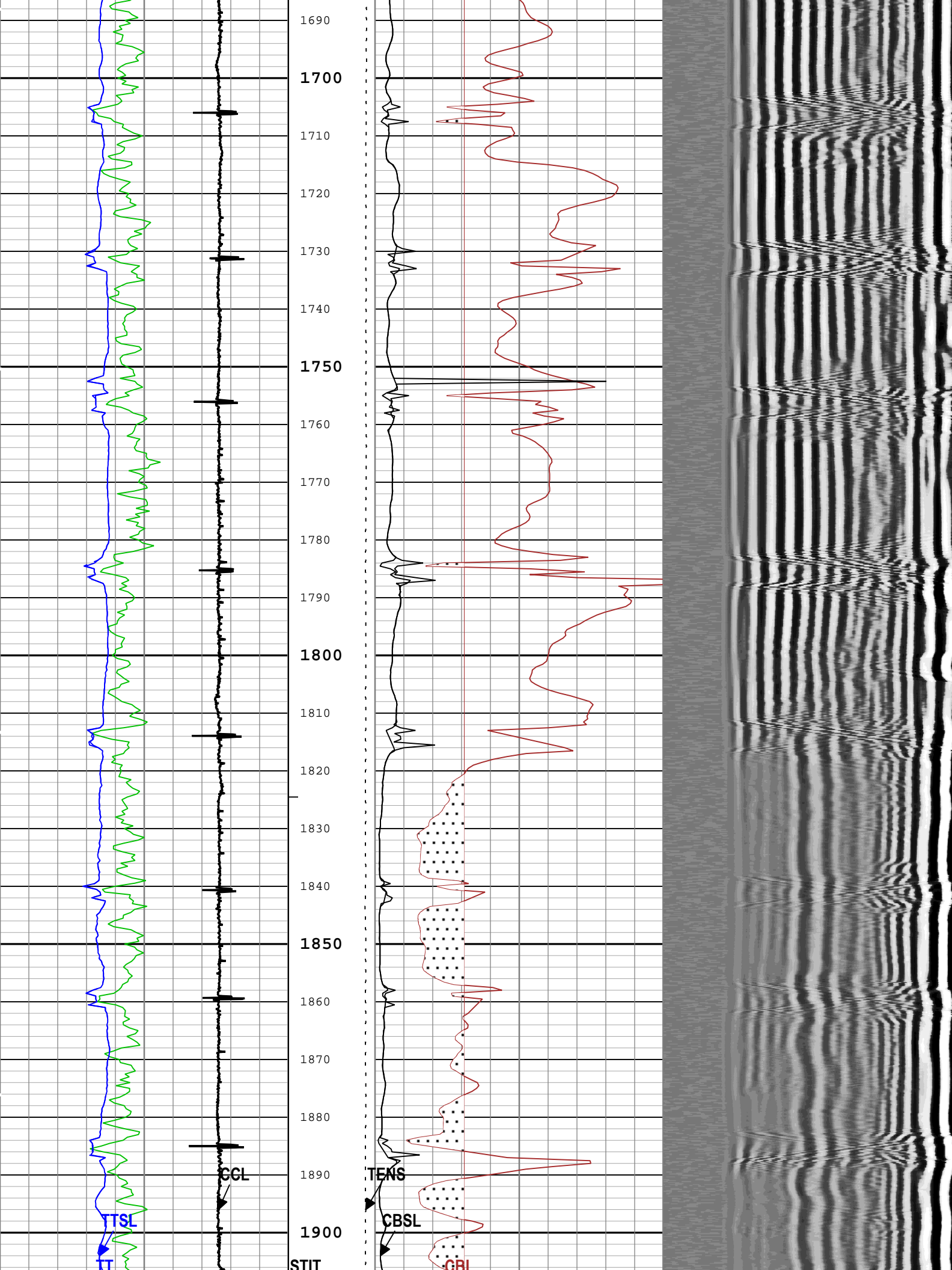




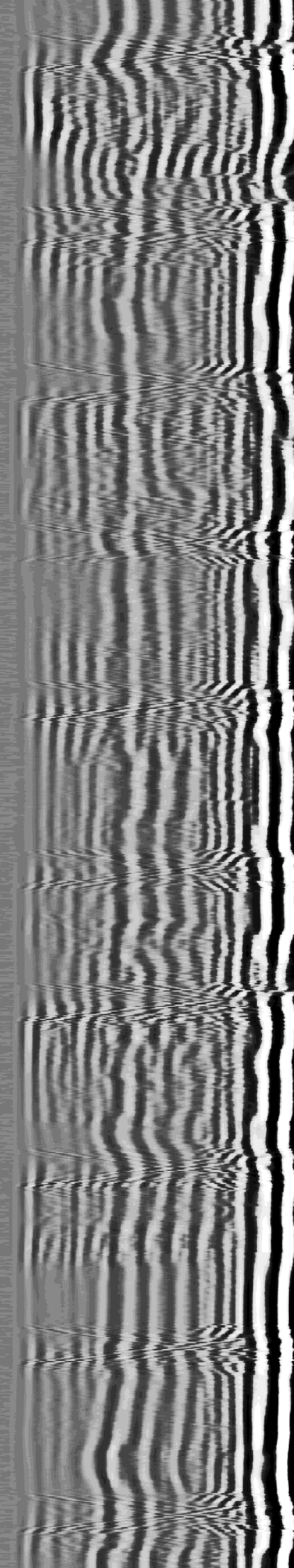
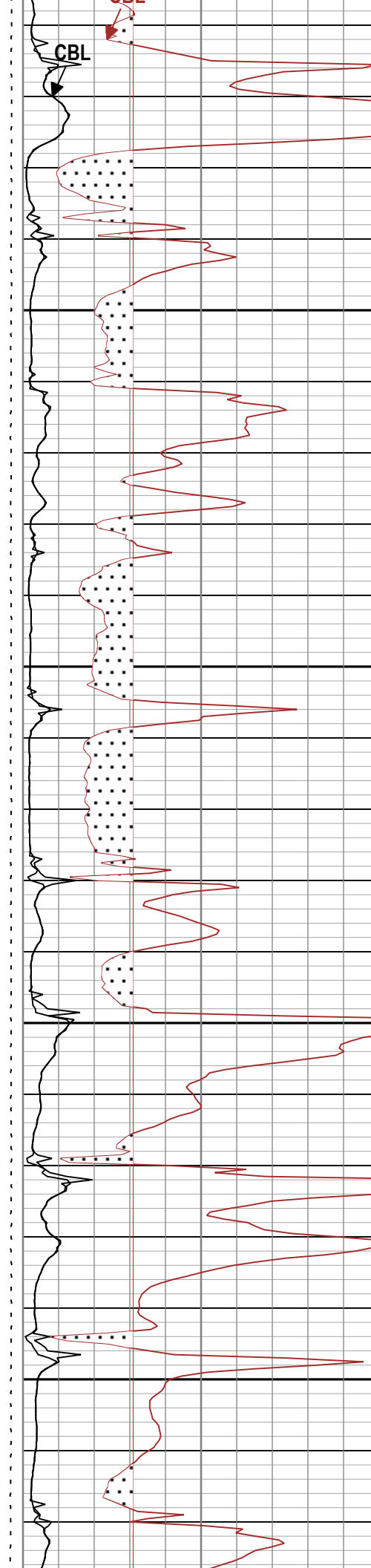
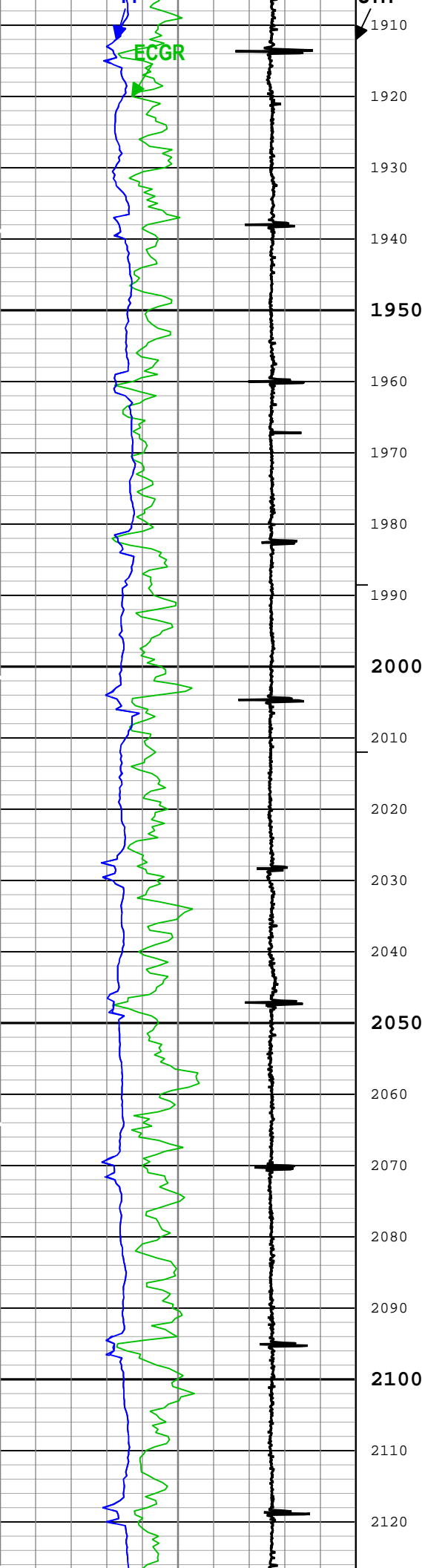




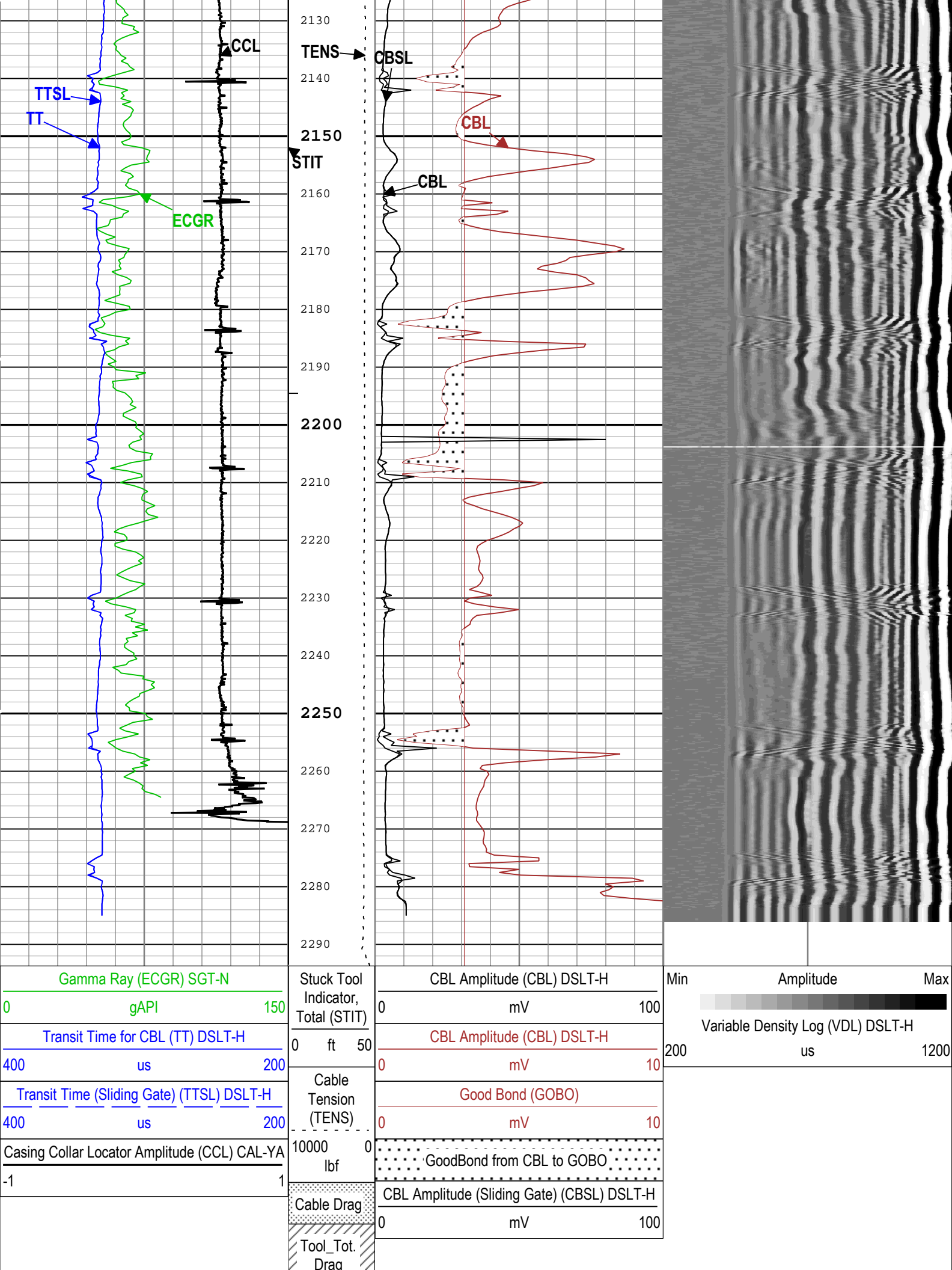












Gamma Ray (ECGR) SGT-N		
0	gAPI	150
Transit Time for CBL (TT) DSLT-H		
400	us	200
Transit Time (Sliding Gate) (TTSL) DSLT-H		
400	us	200
Casing Collar Locator Amplitude (CCL) CAL-YA		
-1		1

Stuck Tool Indicator, Total (STIT)	
0	ft 50
Cable Tension (TENS)	
10000	lbf
Cable Drag	
Tool_Tot. Drag	

CBL Amplitude (CBL) DSLT-H	
0	mV 100
CBL Amplitude (CBL) DSLT-H	
0	mV 10
Good Bond (GOBO)	
0	mV 10
GoodBond from CBL to GOBO	
CBL Amplitude (Sliding Gate) (CBSL) DSLT-H	
0	mV 100

Min	Amplitude	Max
Variable Density Log (VDL) DSLT-H		
200	us	1200

Channel Processing Parameters				
One: Parameters				
Parameter	Description	Tool	Value	Unit
BARI(ISSBAR)	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	13.5	in
CBLO	Casing Bottom (Logger)	WLSESSION	2382	ft
CBRA	CBL LQC Reference Amplitude in Free Pipe	DSLTH	52	mV
CCL_MULTIPLIER	Casing Collar Locator Multiplier	CAL-YA	15	
CDEN	Cement Density	SGT-N	2	g/cm3
DETE	Delta-T Detection	DSLTH	E1	
DFD	Drilling Fluid Density	Borehole	8.34	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)	
MAHTR	Manual High Threshold Reference for first arrival detection	DSLTH	120	
MATT_CURR	Maximum Attenuation in Arbitrary Cement	DSLTH	10.91	dB/ft
MCI	Minimum Cemented Interval for Isolation	DSLTH	14.81	ft
MNHTR	Minimum High Threshold Reference for first arrival detection	DSLTH	100	
MSA	Minimum Sonic Amplitude	DSLTH	1.53	mV
MSA_CURR	Minimum Sonic Amplitude in Arbitrary Cement	DSLTH	1.53	mV
NMSG	Near Minimum Sliding Gate	DSLTH	305	us
SGAD	Sliding Gate Status	DSLTH	Off	
SGDT	Sliding Gate Delta-T	DSLTH	57	us/ft
VDLG	VDL Manual Gain	DSLTH	6.5	
Tool Control Parameters				
One: 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
SGAI	Selectable Acquisition Gain	DSLTH	x1	

Company: Crestone Peak Resources Operating LLC

**Schlumberger**

Well: Lochbuie Land 2E-25H-D166

Field: Wattenberg

County:	Weld
State:	Colorado
Digital Sonic Logging Tool	
CBL With VDL	