

Company: Caerus Operating LLC

Well: Puckett 15C-23 697

Field: Grand Valley

County: Garfield State: Colorado

County: Garfield  
Field: Grand Valley  
Location: Lat. 39.30°07.76"N Long. 108.11°18.38"W  
Well: Puckett 15C-23 697  
Company: Caerus Operating LLC

Cement Bond Log  
SCMT  
Gamma Ray / CCL

Location:		Lat. 39.30°07.76"N Long. 108.11°18.38"W	Elev.:	K.B.	8462.00 ft
Permanent Datum:				G.L.	8432.00 ft
Log Measured From:		Ground Level			
Drilling Measured From:		Kelly Bushing	30.00 ft		above Perm.Datum
API Serial No.		Kelly Bushing			
05045233780000		Section:	Township:	Range:	
		6S	23	97W	

Logging Date 21-Dec-2017

Run Number One

Depth Driller 9109.00 ft

Schlumberger Depth 9109.00 ft

Bottom Log Interval 9109.00 ft

Top Log Interval 2500.00 ft

Casing Fluid Type Water

Salinity

Density 8.4 lbm/gal

Fluid Level 8.00 ft

BIT/CASING/TUBING STRING

Bit Size 8.50 in

From 30.00 ft

To 9109.00 ft

Casing/Tubing Size 4.5 in

Weight 11.5 lbm/ft

Grade P110

From 30.00 ft

To 9109.00 ft

Max Recorded Temperatures 232 degF

Logger on Bottom 21-Dec-2017

Unit Number 3003

Recorded By John Emery

Witnessed By Ryan Tompkins

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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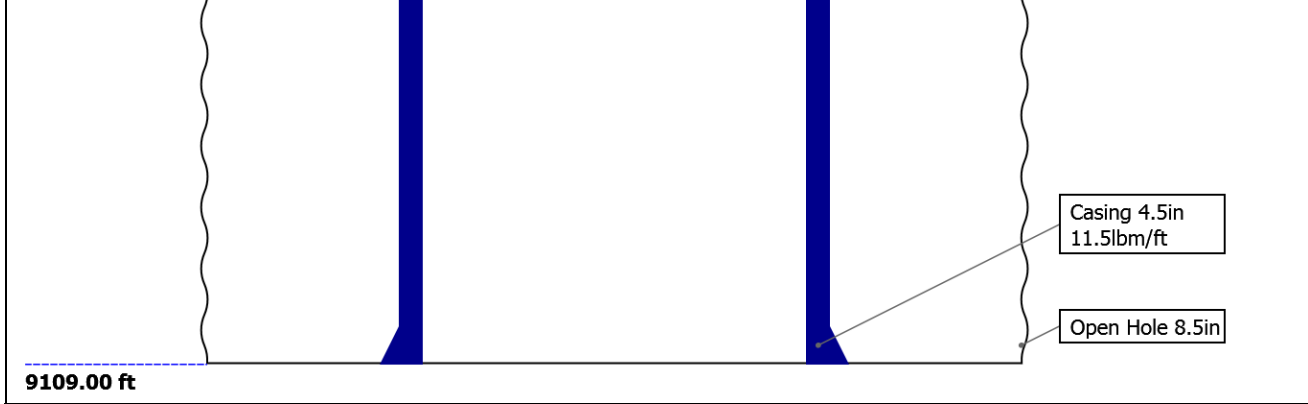
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Well Sketch

Driller Depth  
30.00 ft



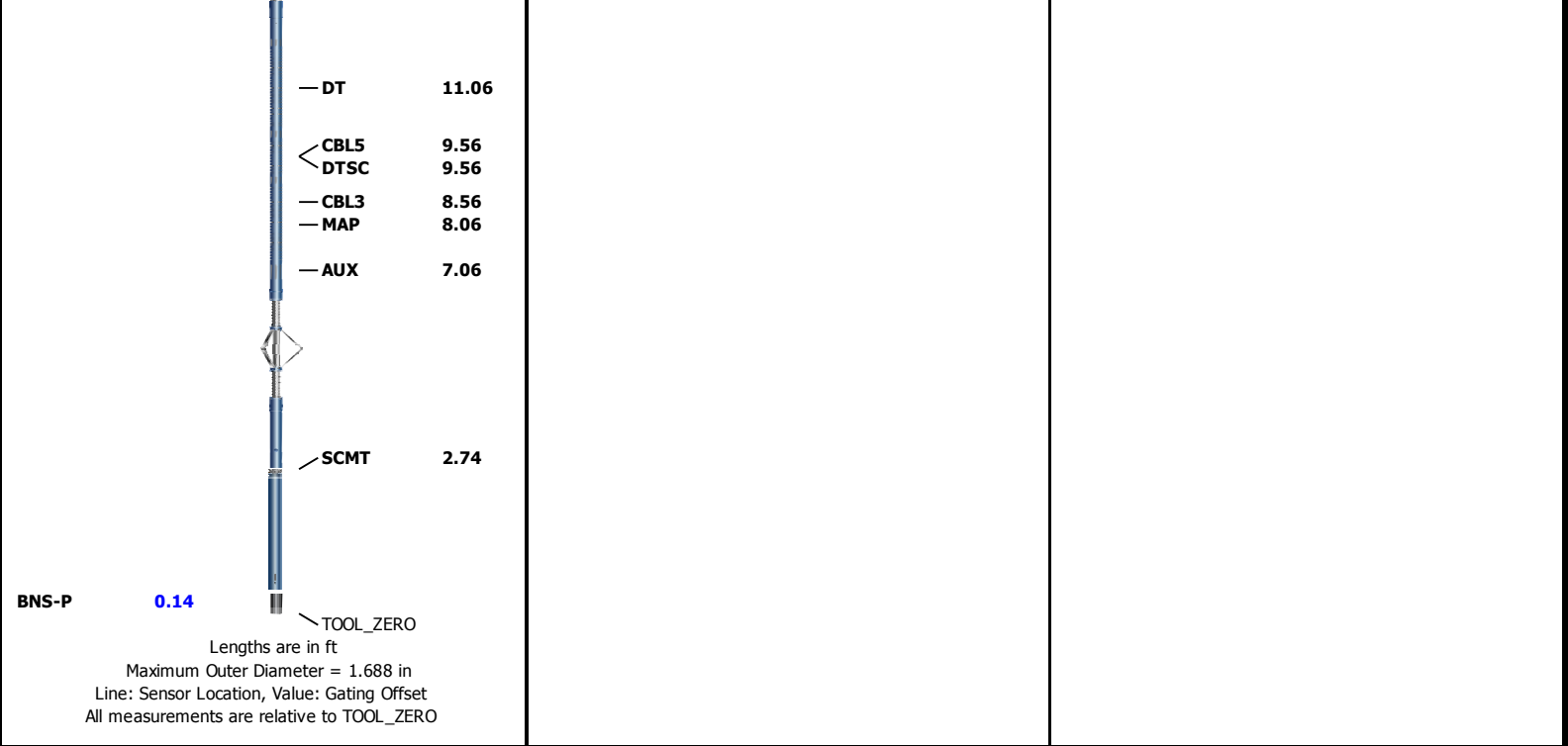


Borehole Size/Casing/Tubing Record

Bit						
Bit Size ( in )	8.5					
Top Driller ( ft )	30					
Top Logger ( ft )	30					
Bottom Driller ( ft )	9109					
Bottom Logger ( ft )	9109					
Casing						
Size ( in )	4.5					
Weight ( lbm/ft )	11.5					
Inner Diameter ( in )	4.005					
Grade	P110					
Top Driller ( ft )	30					
Top Logger ( ft )	30					
Bottom Driller ( ft )	9109					
Bottom Logger ( ft )	9109					

Remarks and Equipment Summary

One: Toolstring				One: Remarks		
Equip name	Length	MP name	Offset	Tools ran as per tool sketch		
PEH-EF	31.06			Max Temp of deg 232 F		
				Max Pressure of 3800 psi		
AH-38	28.7			Log correlated to RST Log		
PSTP-A:3823	28.42			TD tagged at 9108 ft		
PSC-A:3733				Short Joints at 6760-6770 ft		
PSTC-A:3733				Thank you for choosing Schlumberger		
PBMS-A:3823						
Sapphire 10kP SI						
SCMT-CB:8211	20.15					
SECH-CA						
SCMC-CA:8137						
CMIR-AG						
SCMS-CB:8211						
SCMX-CA:8270						



## Depth Summary

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			
Calibration Date			
Calibrator Serial Number			
Number of Calibration Points	0		
Logging Cable			
Type	1-32ZA-XS		
Serial Number			
Length	20000.00 ft		
Conveyance Type	Wireline		
Rig Type			
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			

## One

## Main Pass

## Software Version

Acquisition System

Maxwell 2017 SP3

Version

7.3.92069.3100

## Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[3]:Up	Up	2453.41 ft	9103.60 ft	21-Dec-2017 7:20:00 AM	21-Dec-2017 9:12:11 AM	ON	-9.00 ft	No

All depths are referenced to toolstring zero

## Log

Company:Caerus Operating LLC

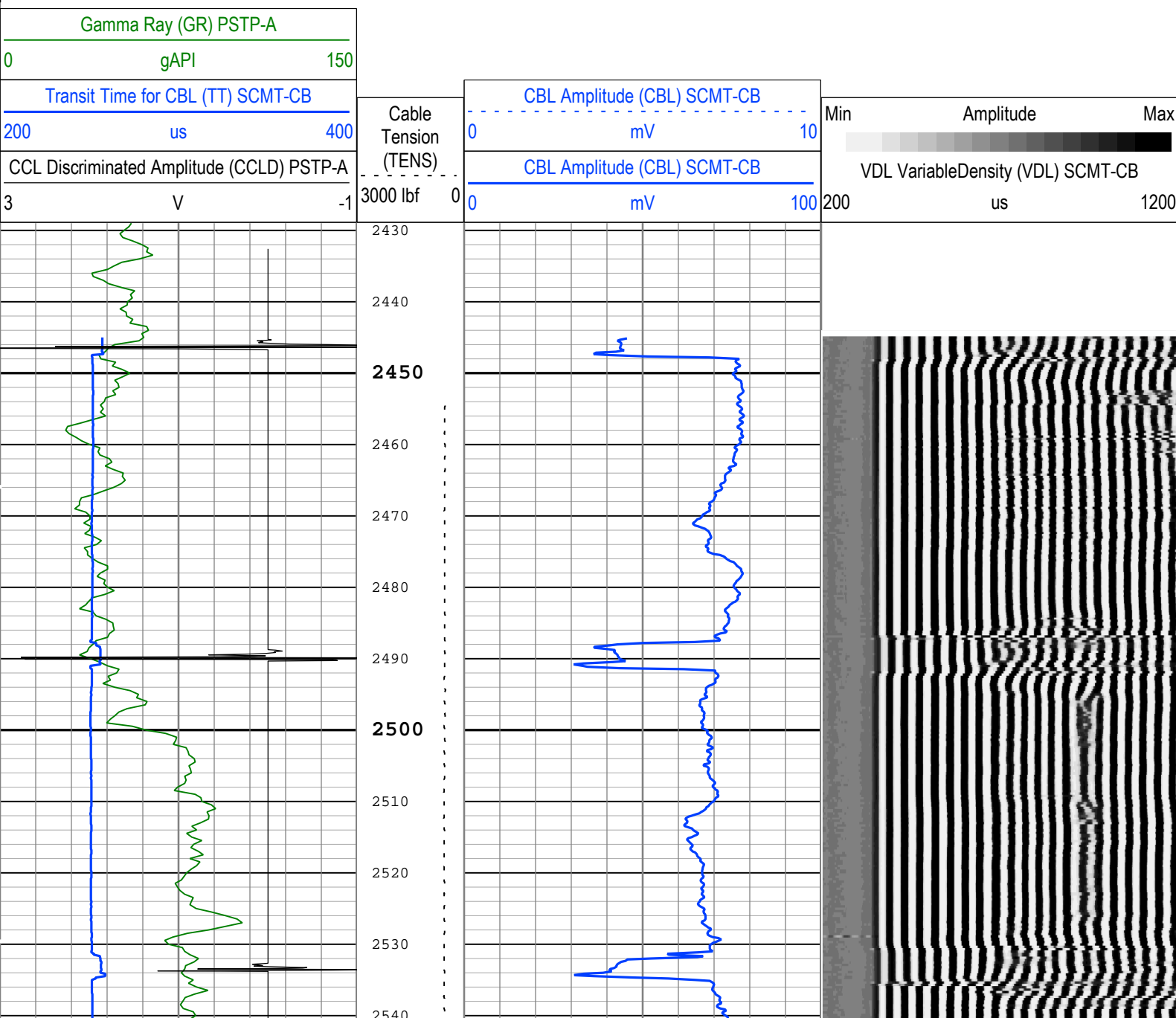
Well:Puckett 15C-23 697

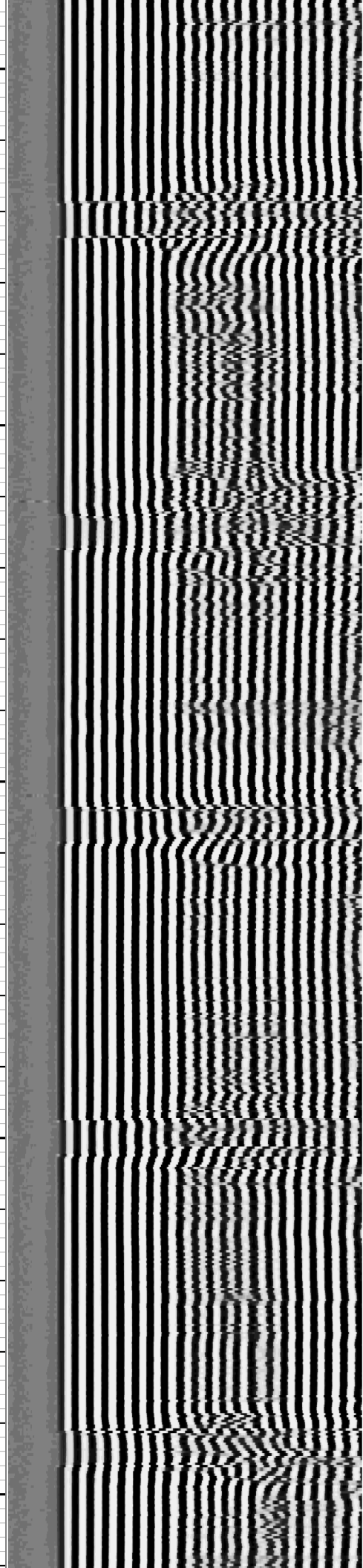
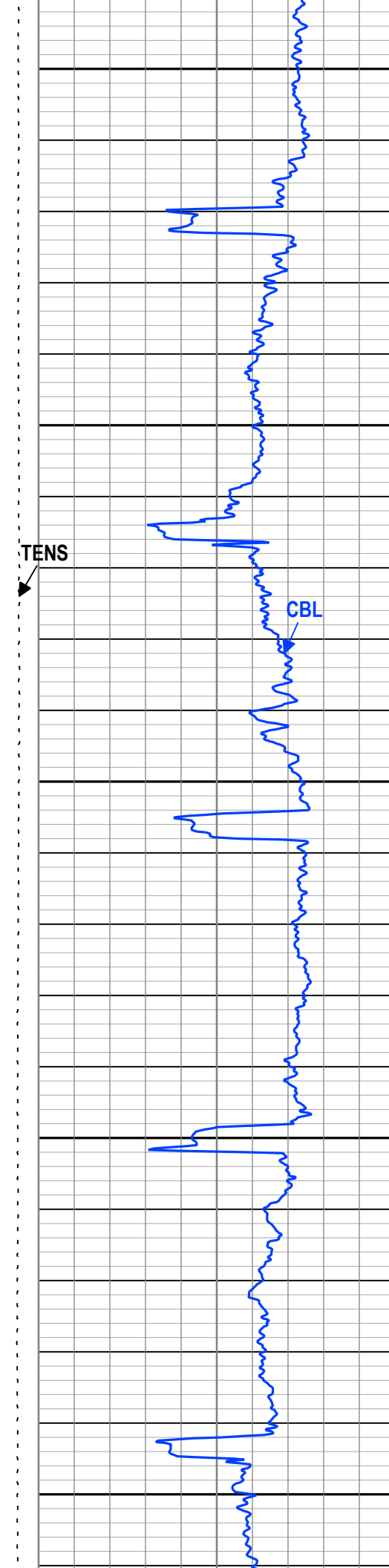
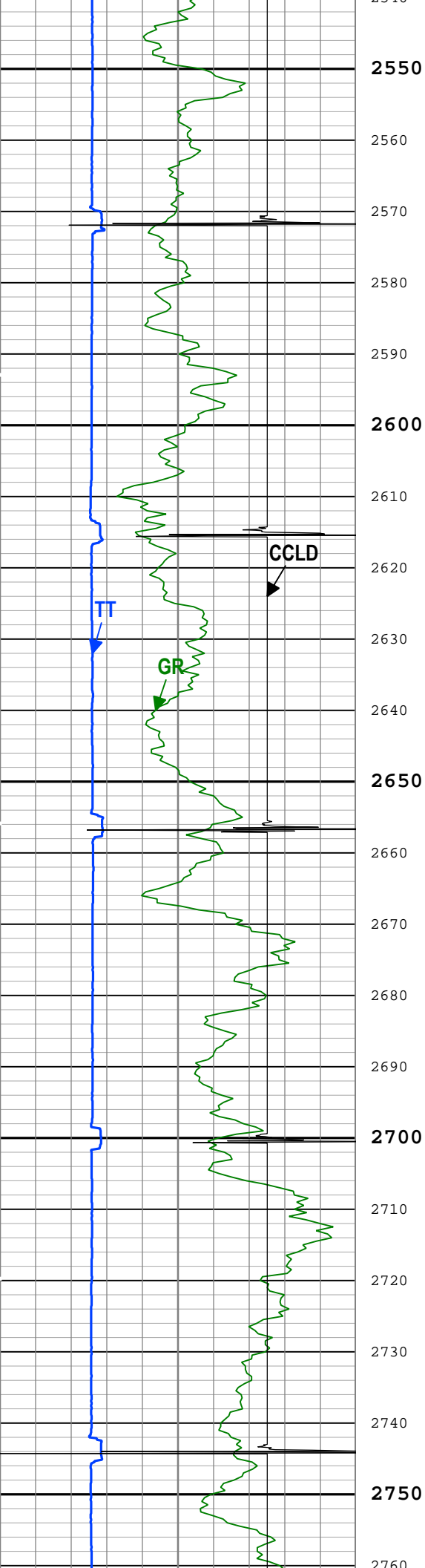
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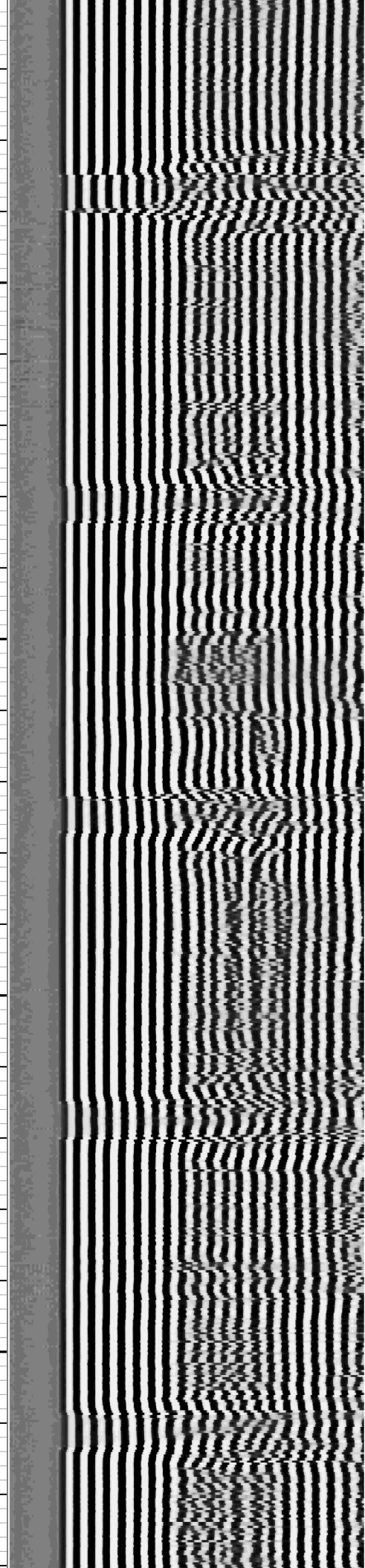
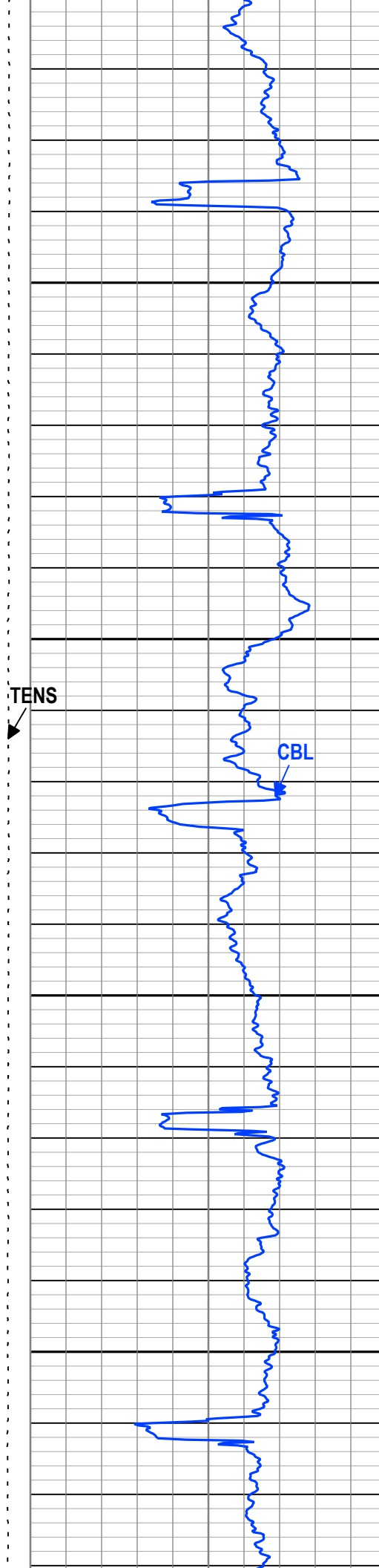
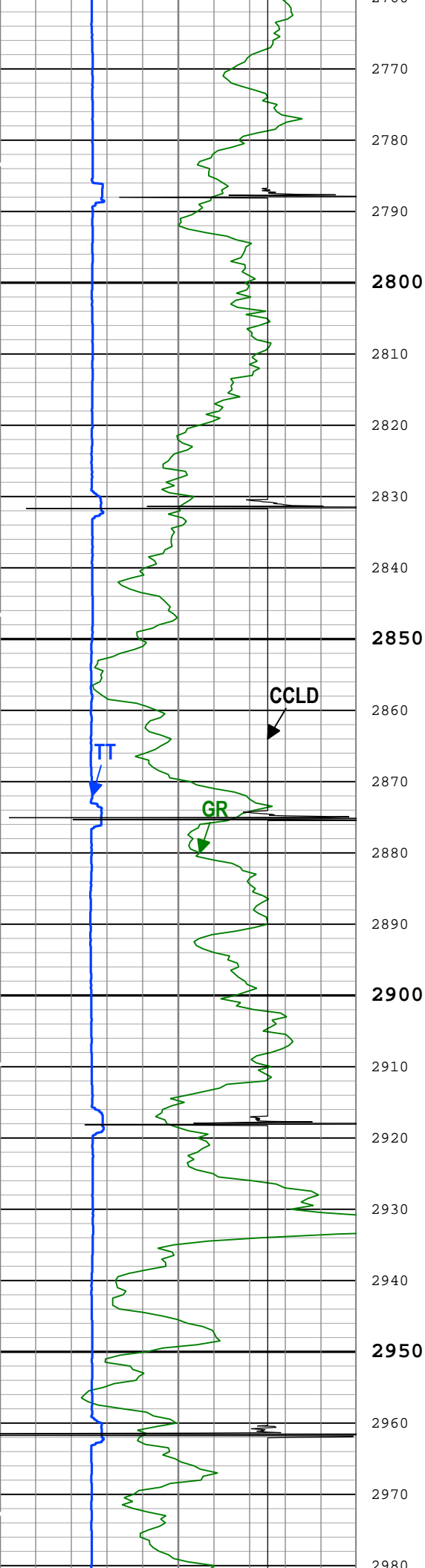
Description: SCMT Amplitudes and VDL Format: Log ( SCMT\_Amp\_VDL ) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth

Creation Date: 10-Jan-2018 10:18:03

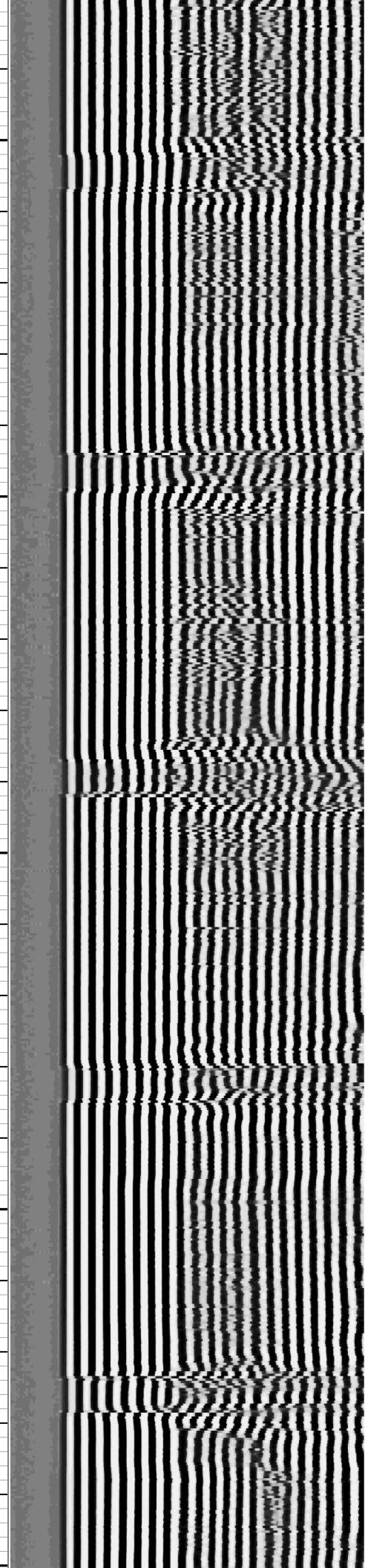
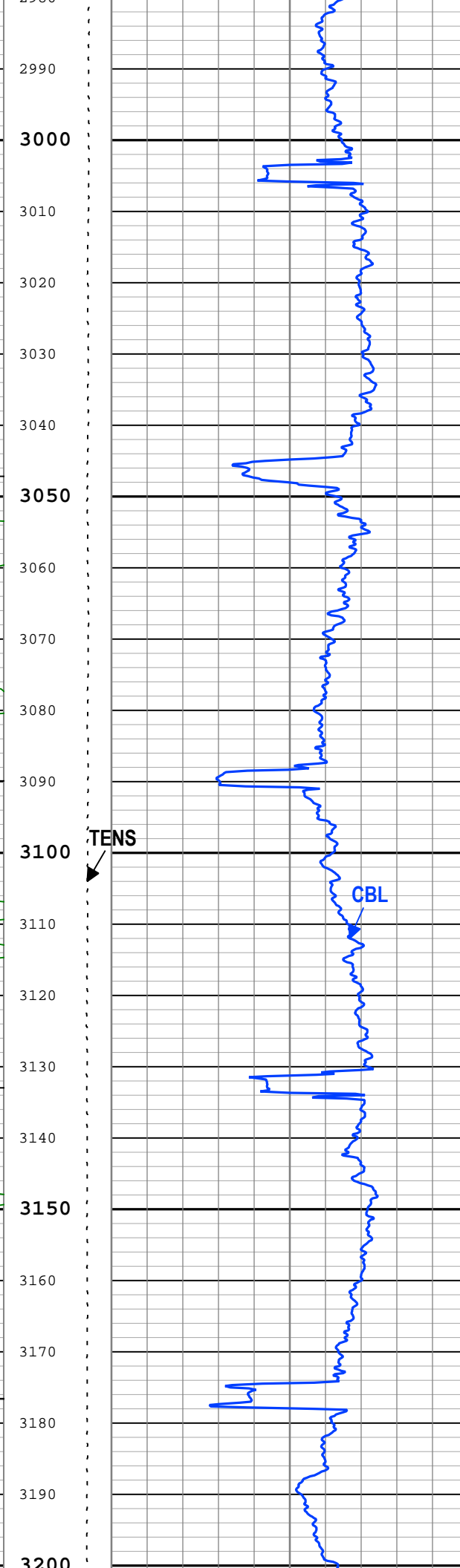
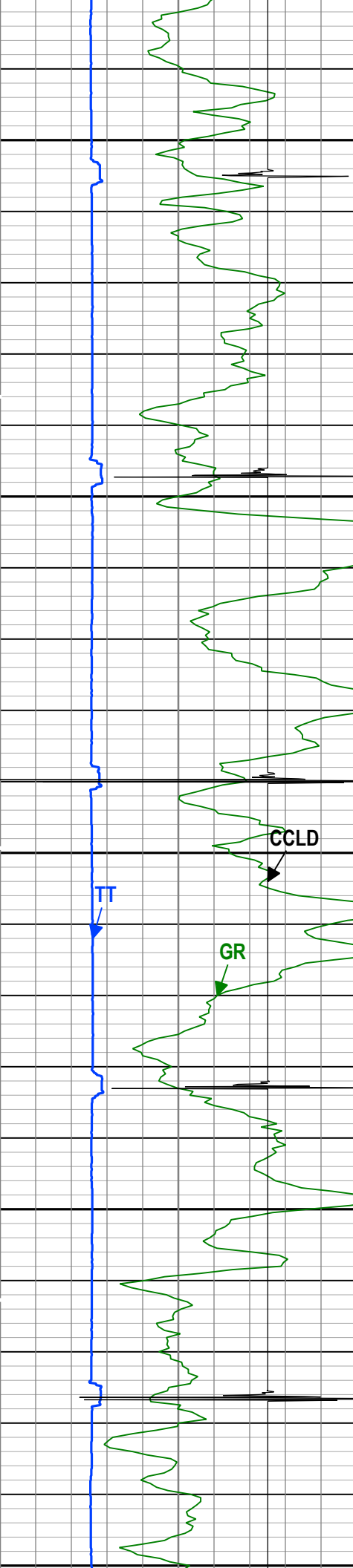
TIME\_1900 - Time Marked every 60.00 (s)



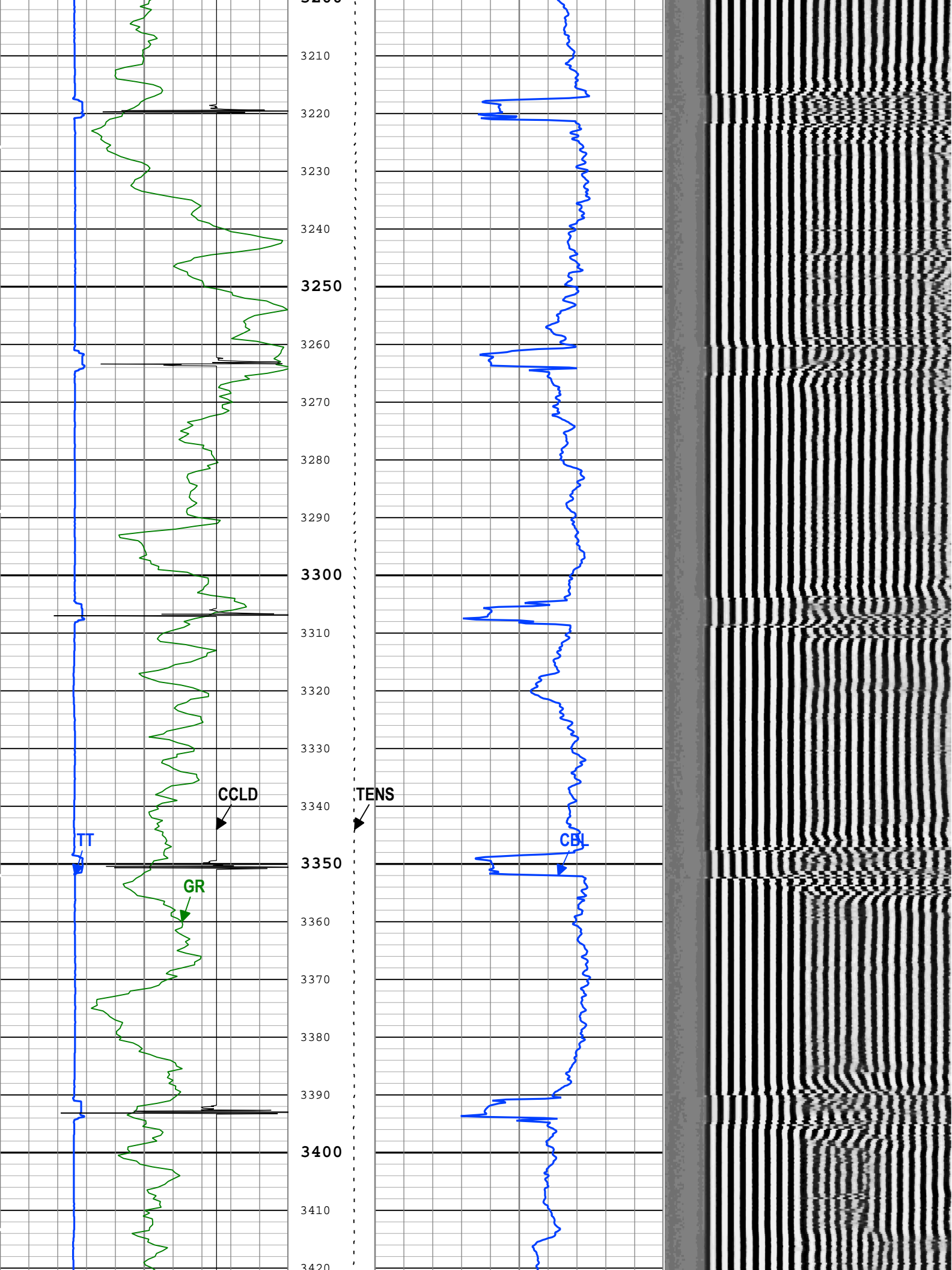


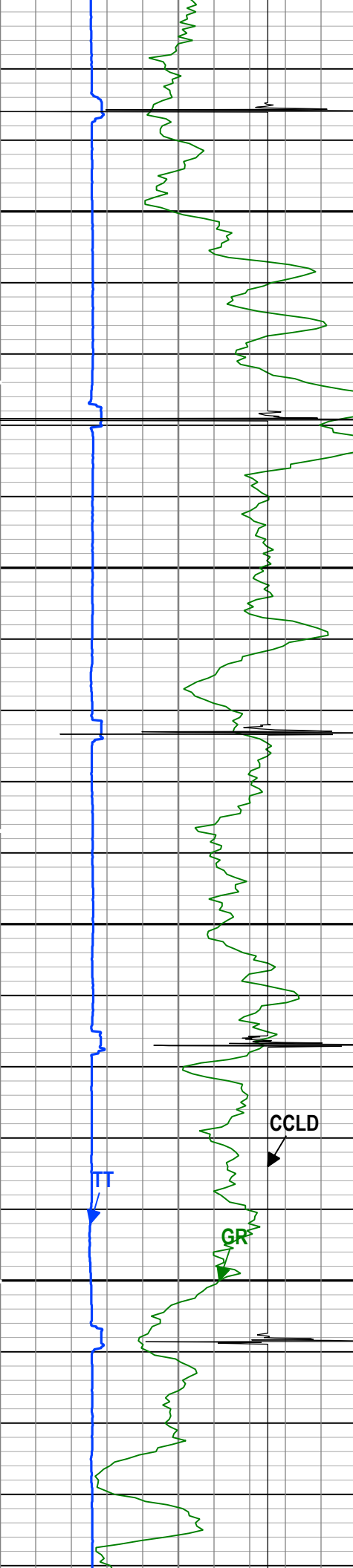




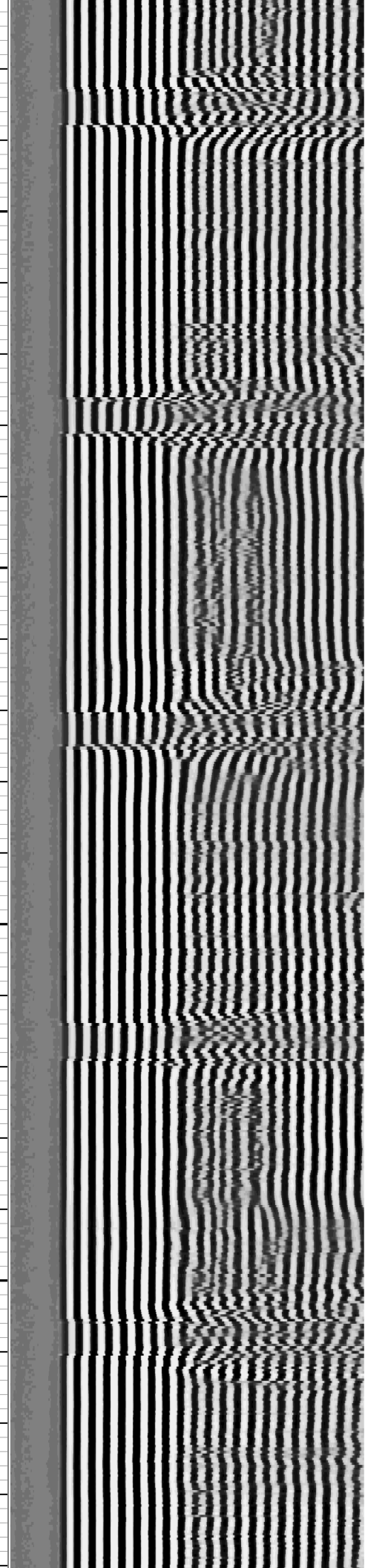
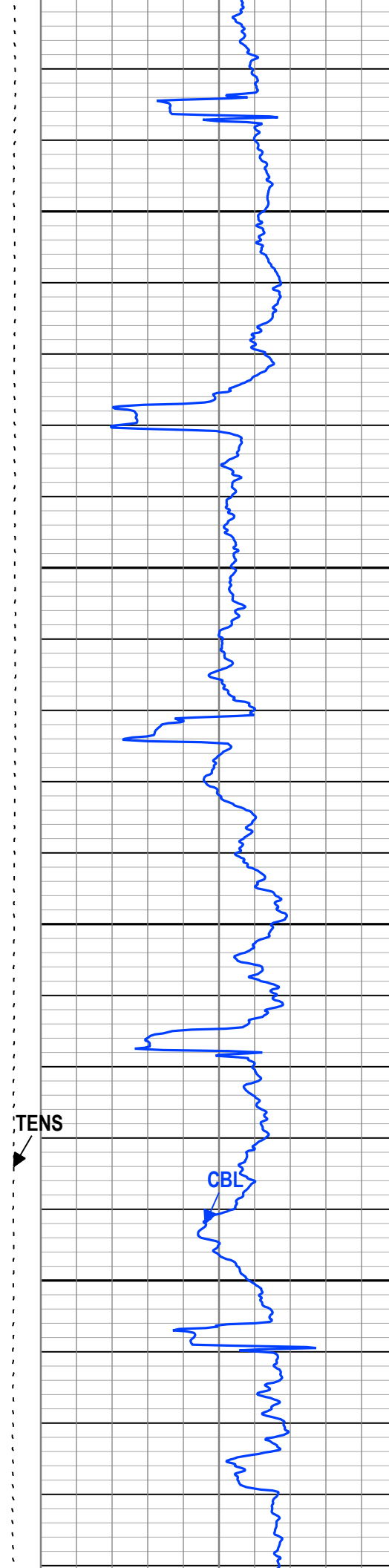


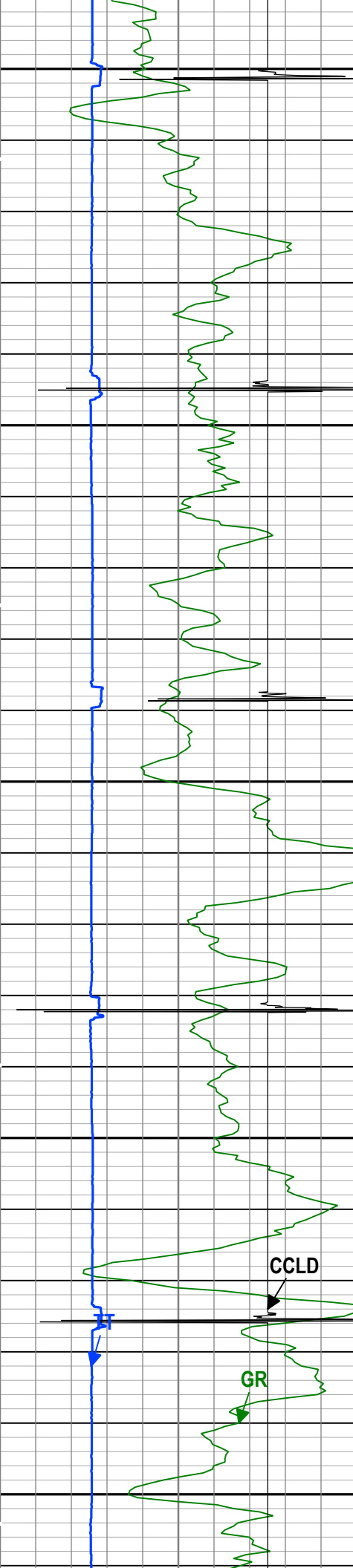




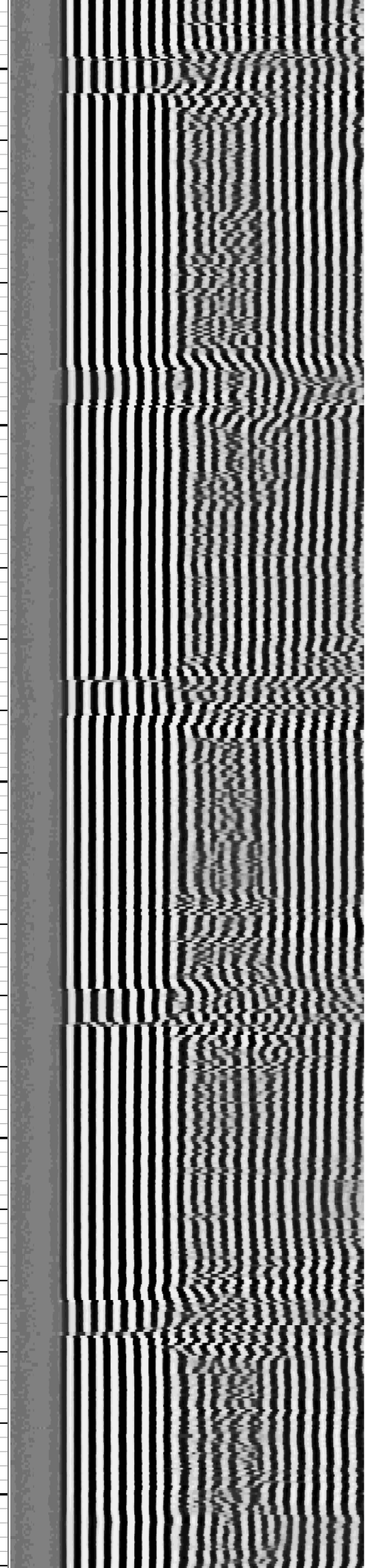
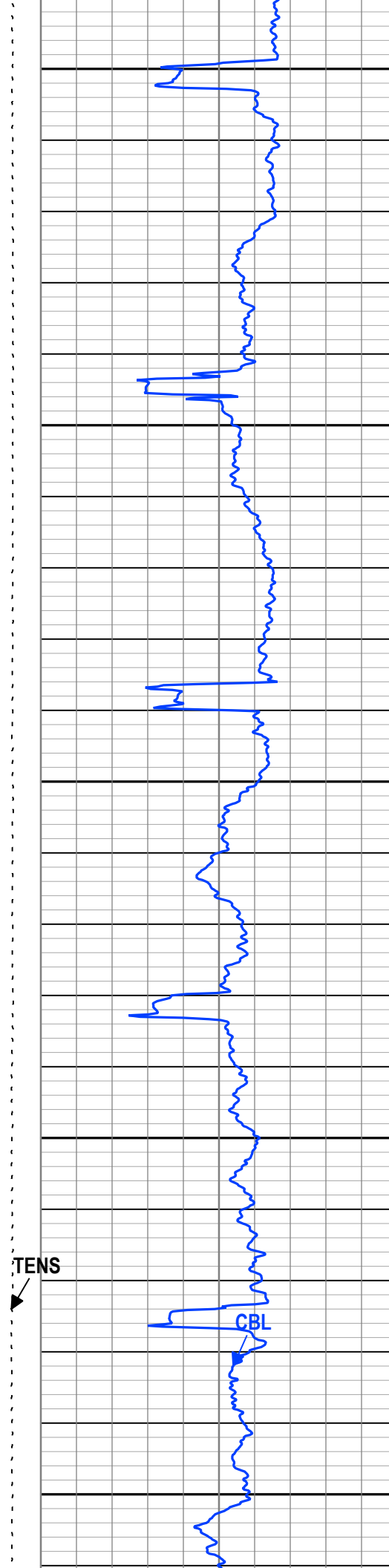


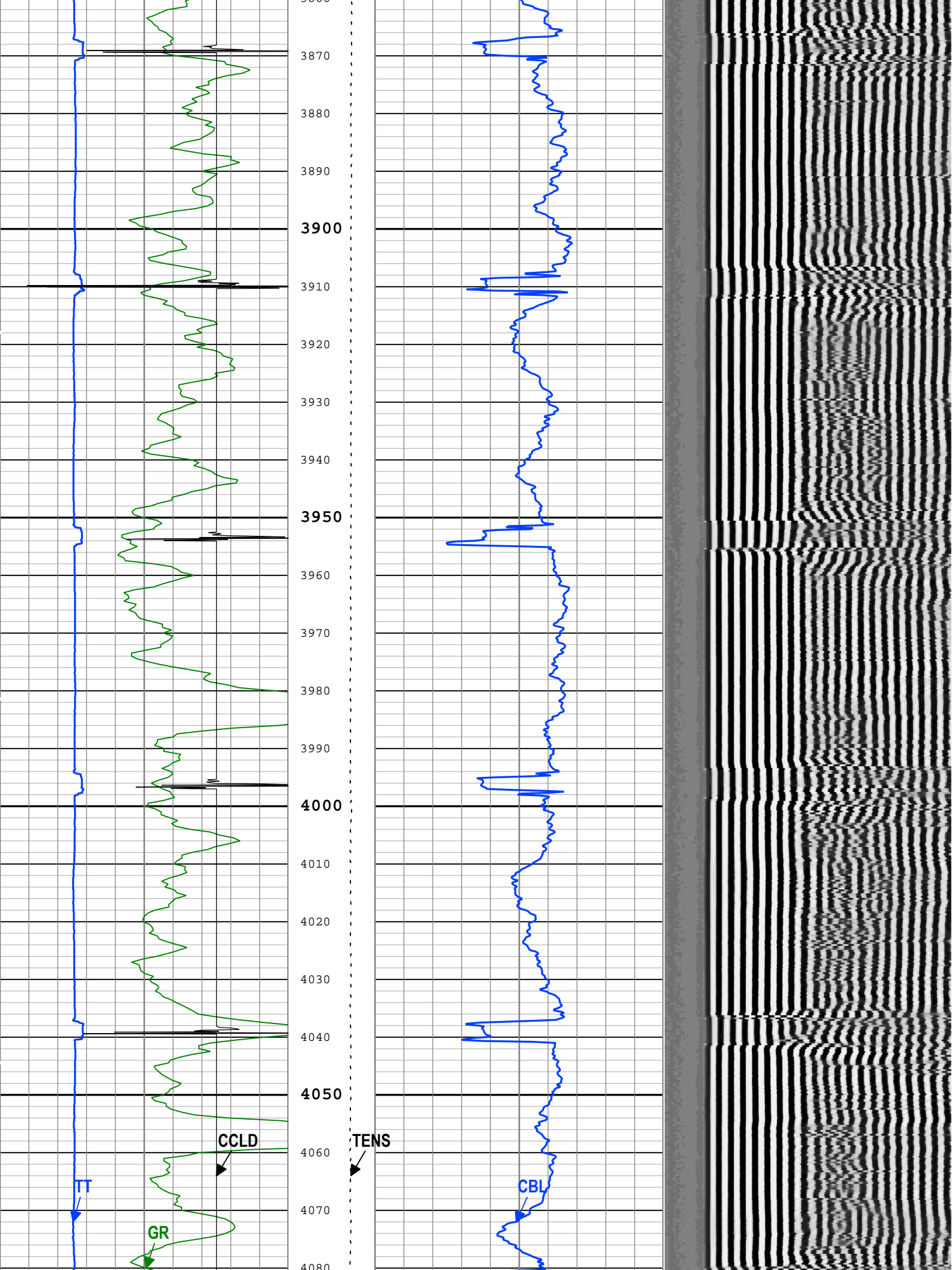
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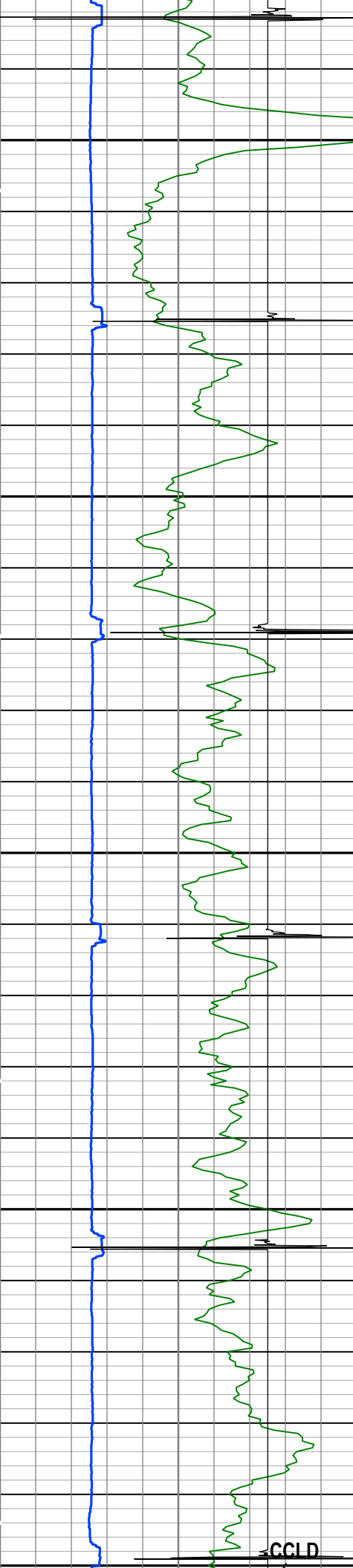


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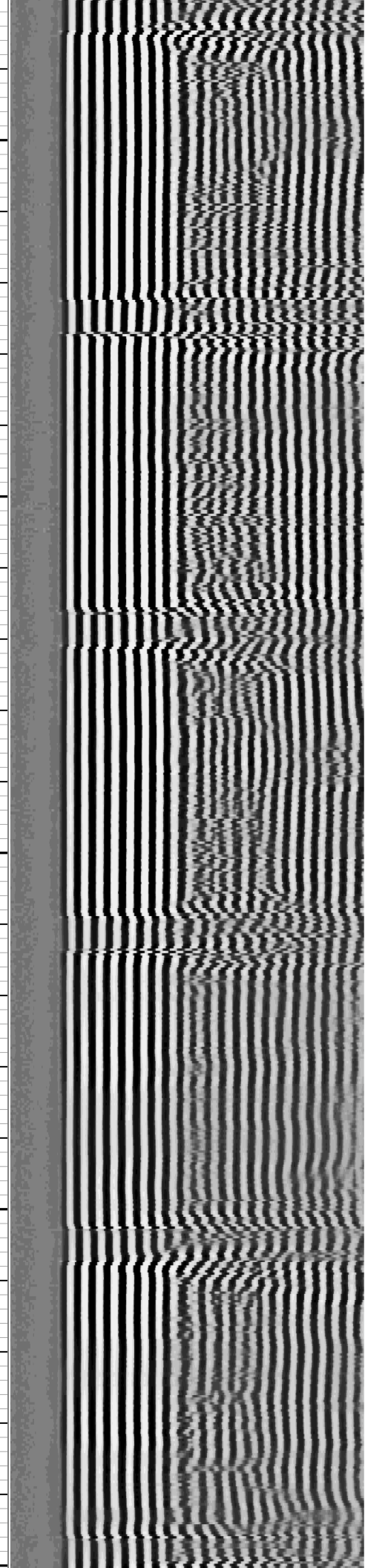
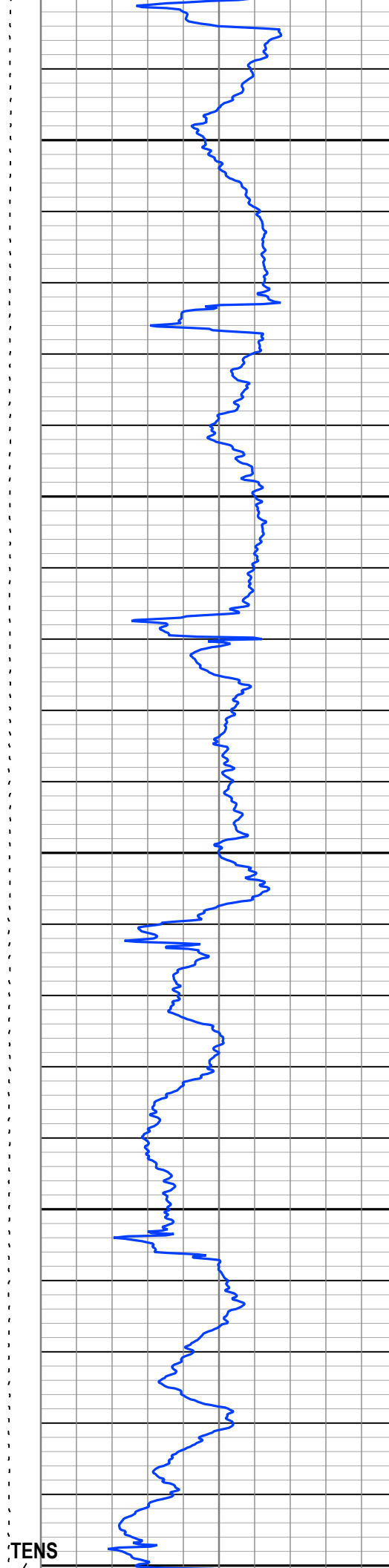






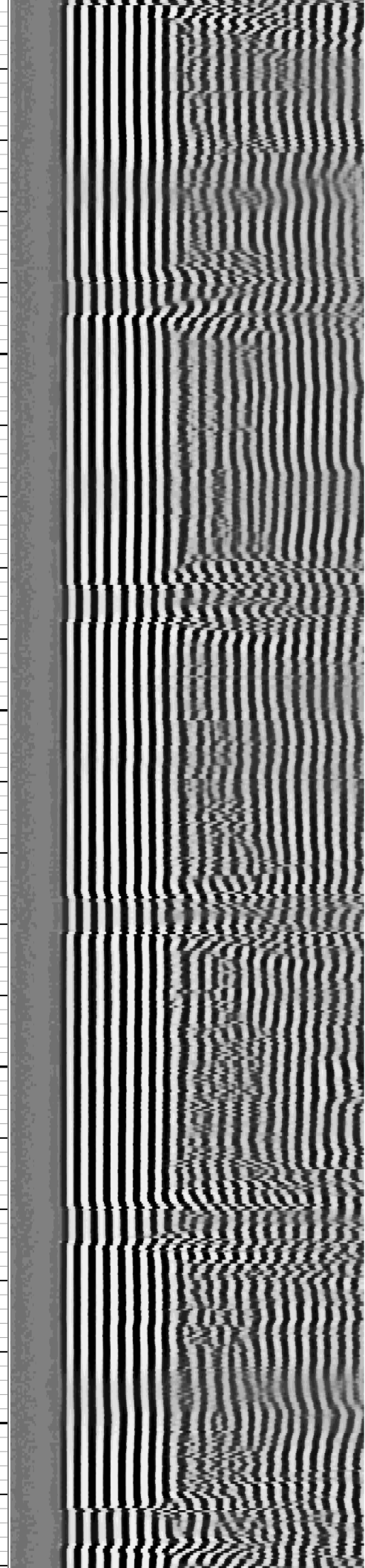
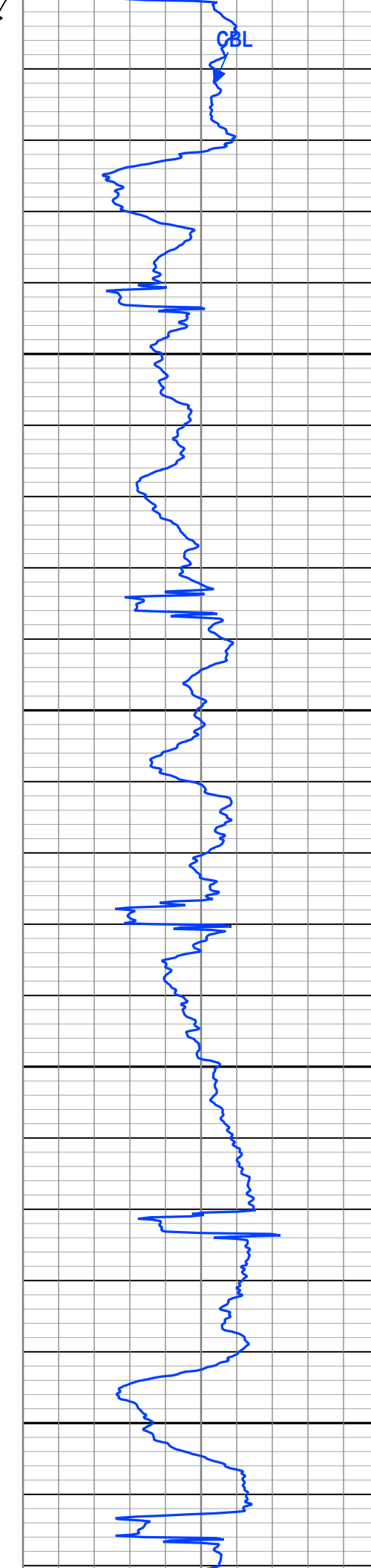
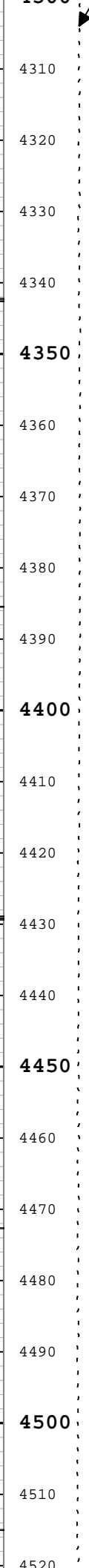
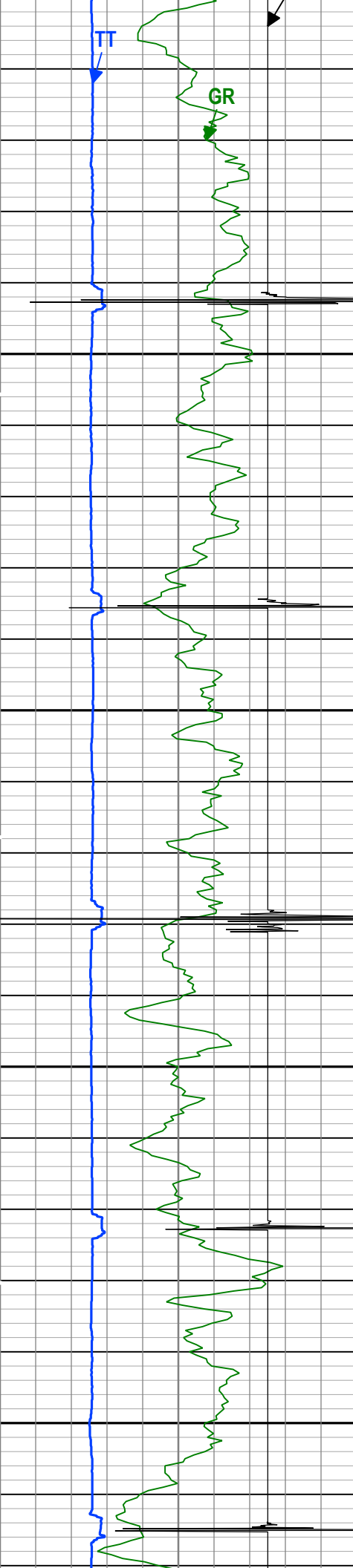


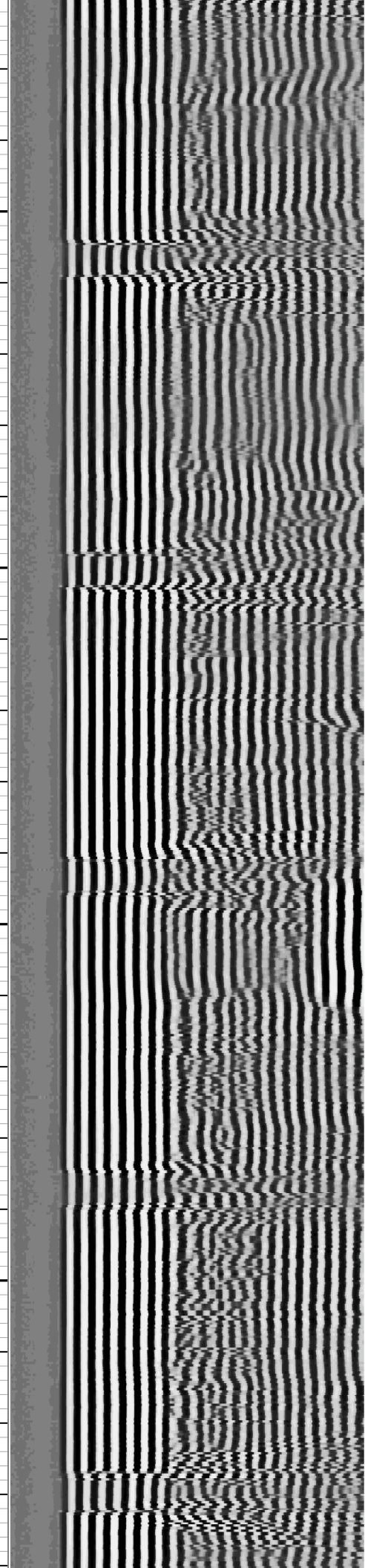
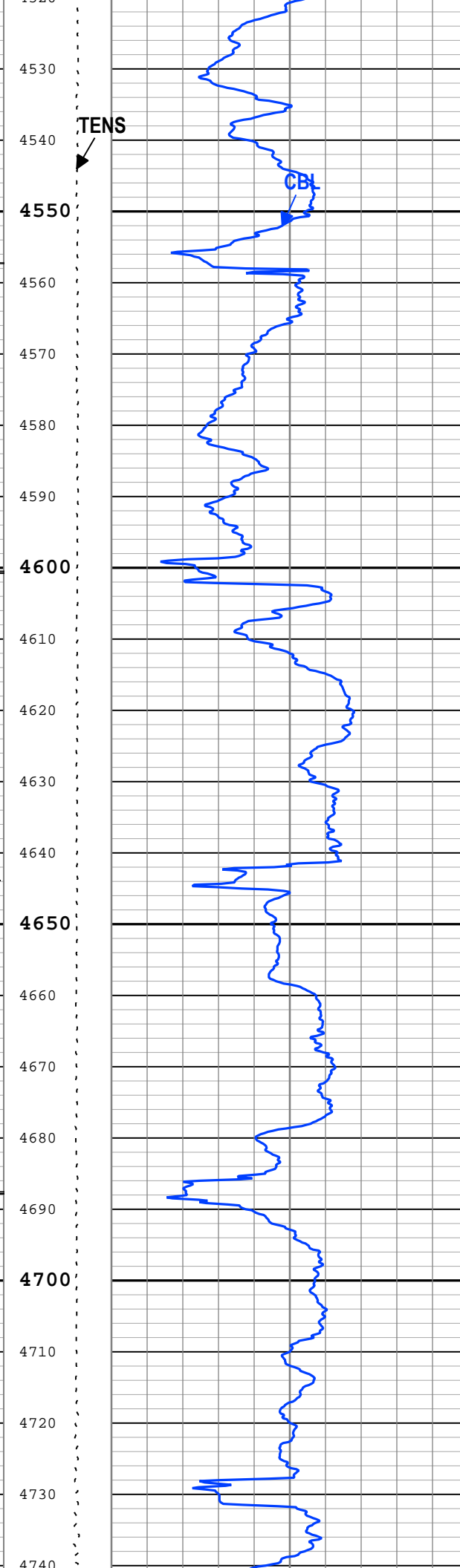
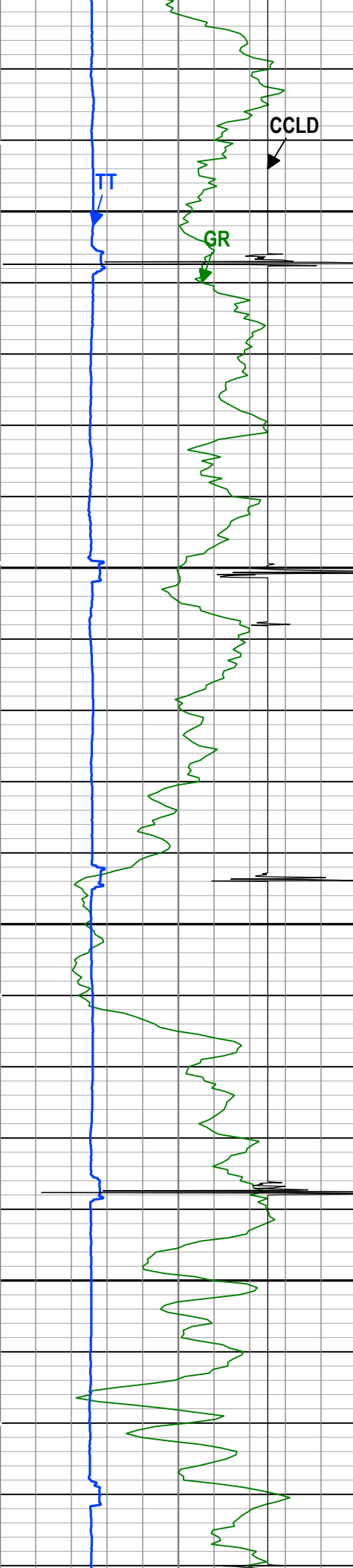
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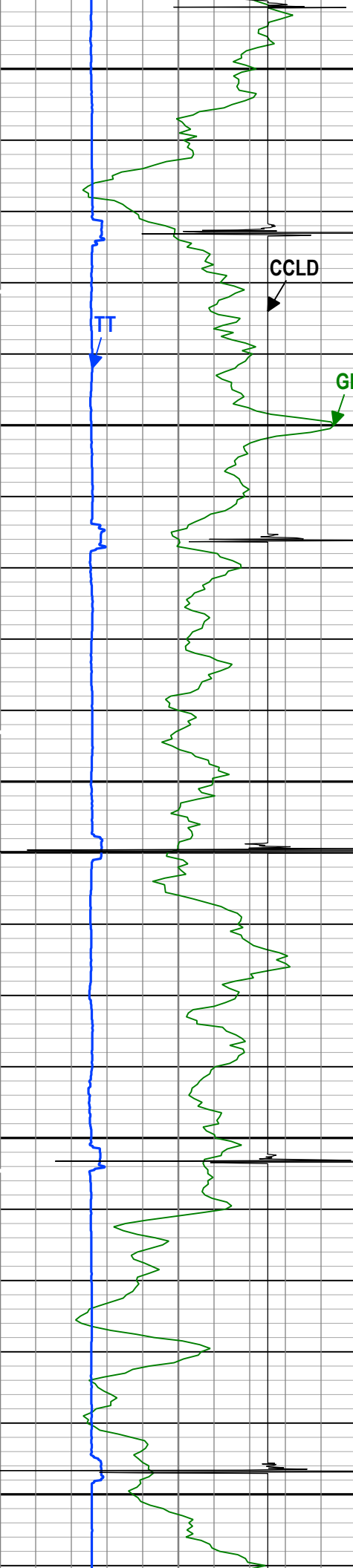
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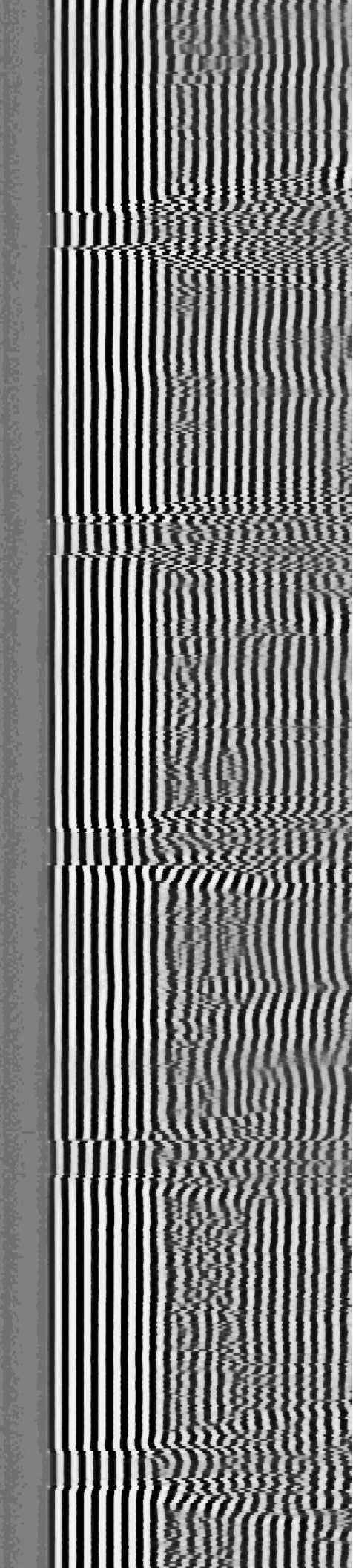
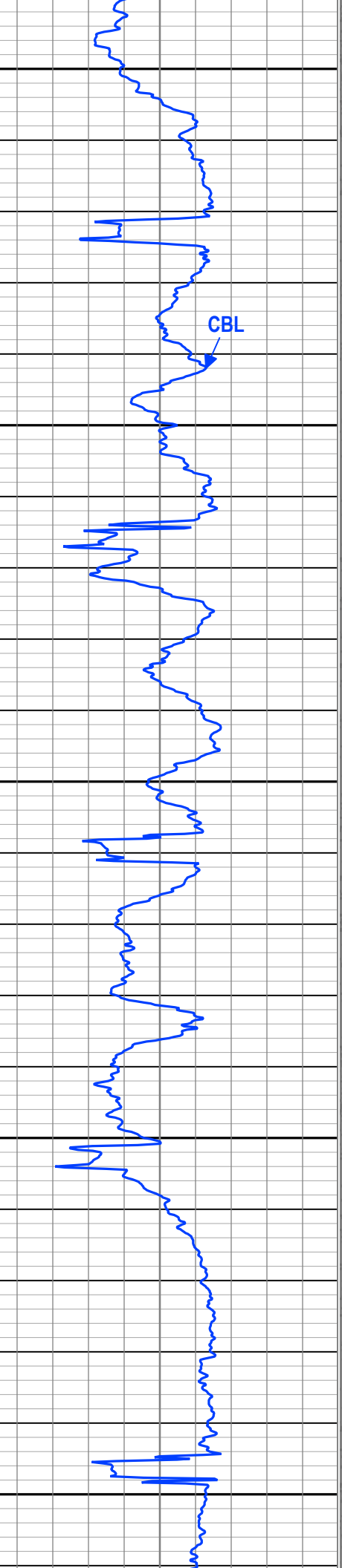


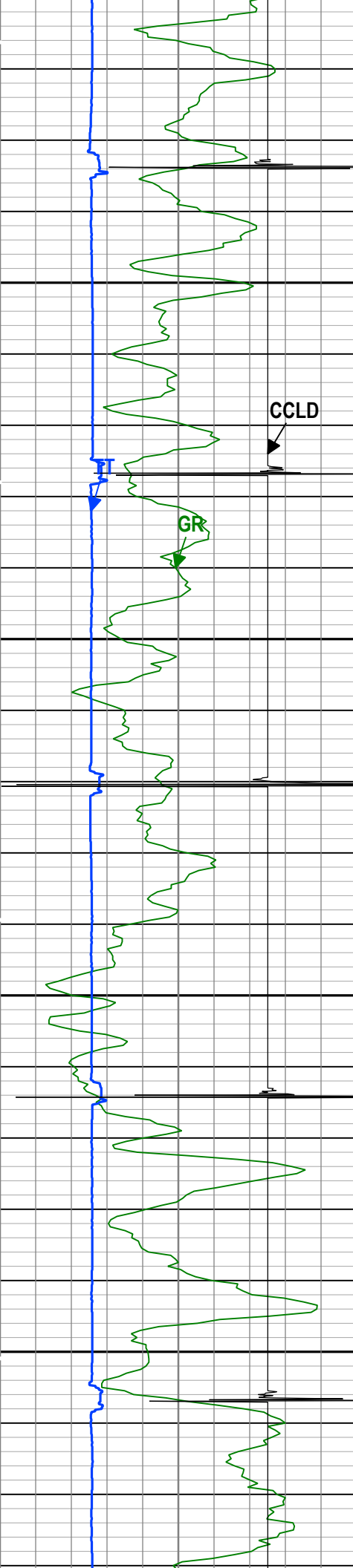




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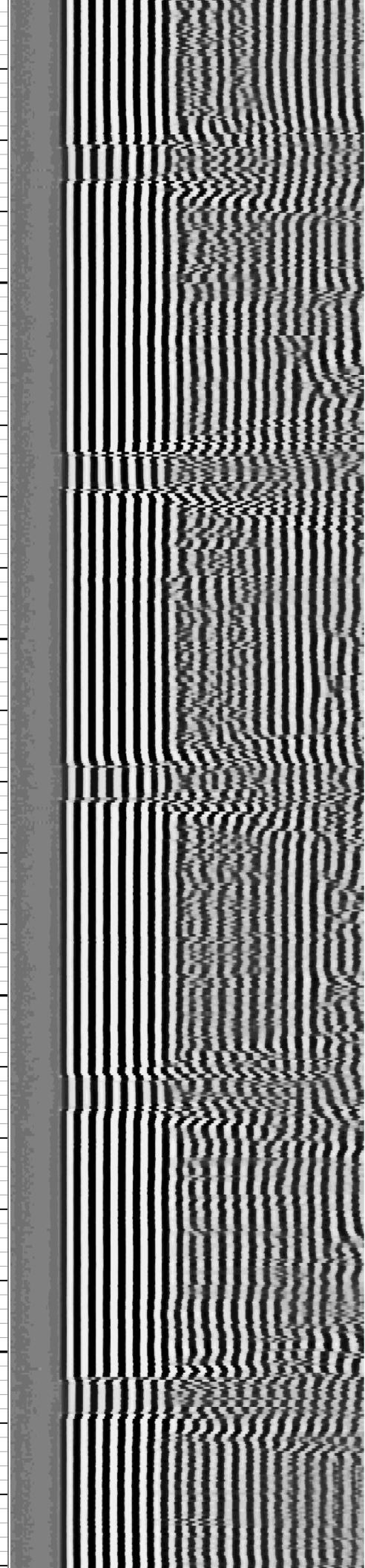
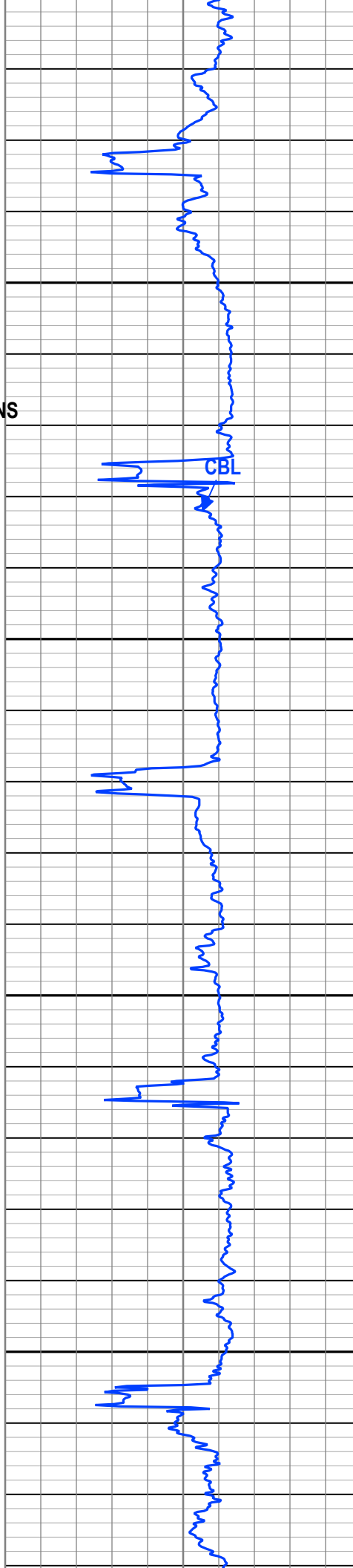


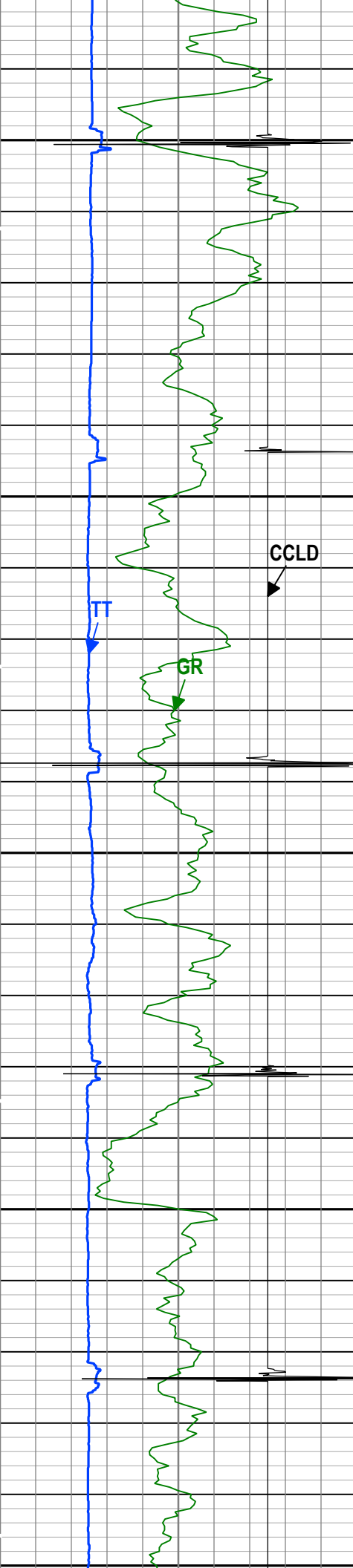


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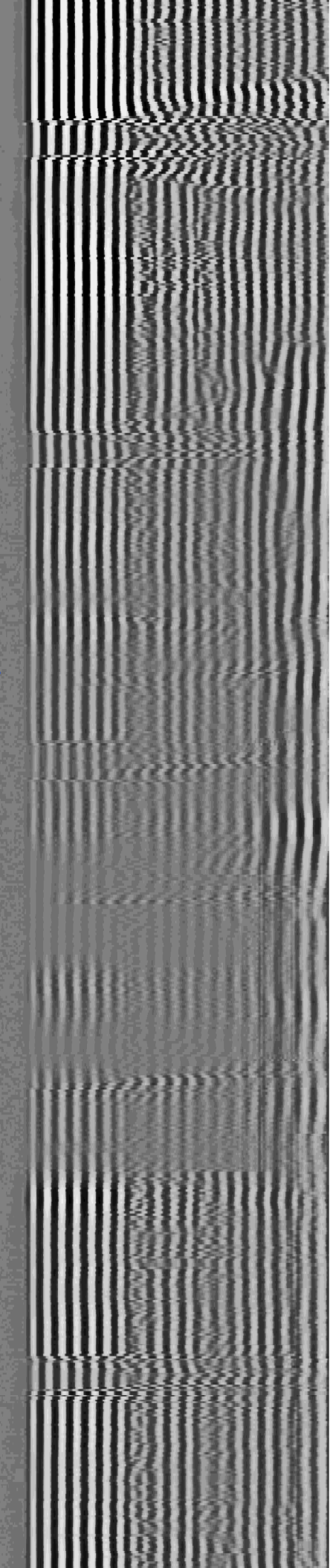
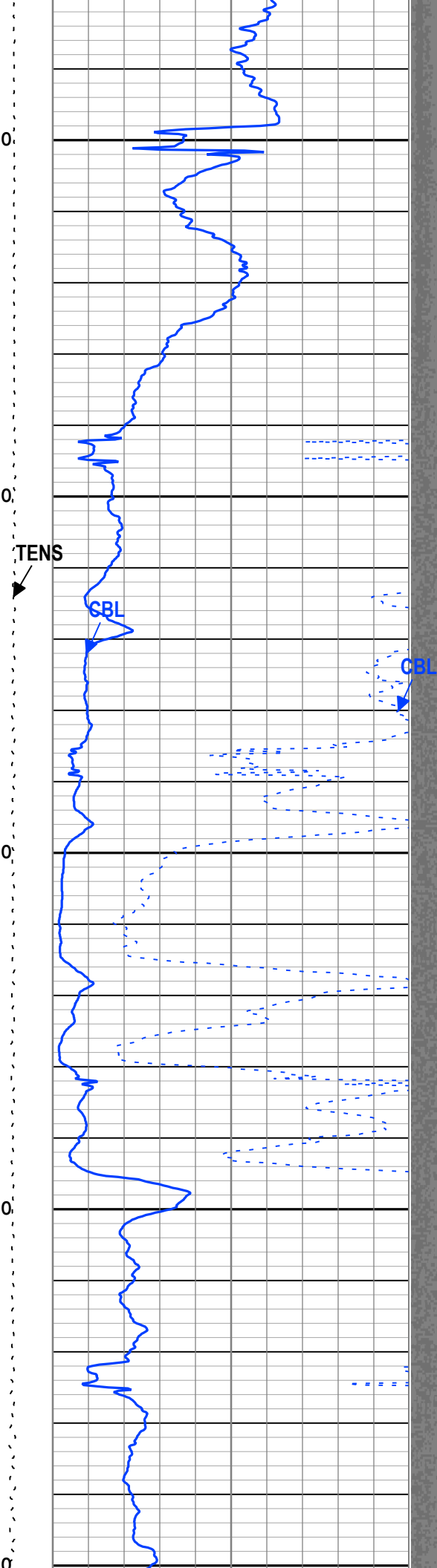
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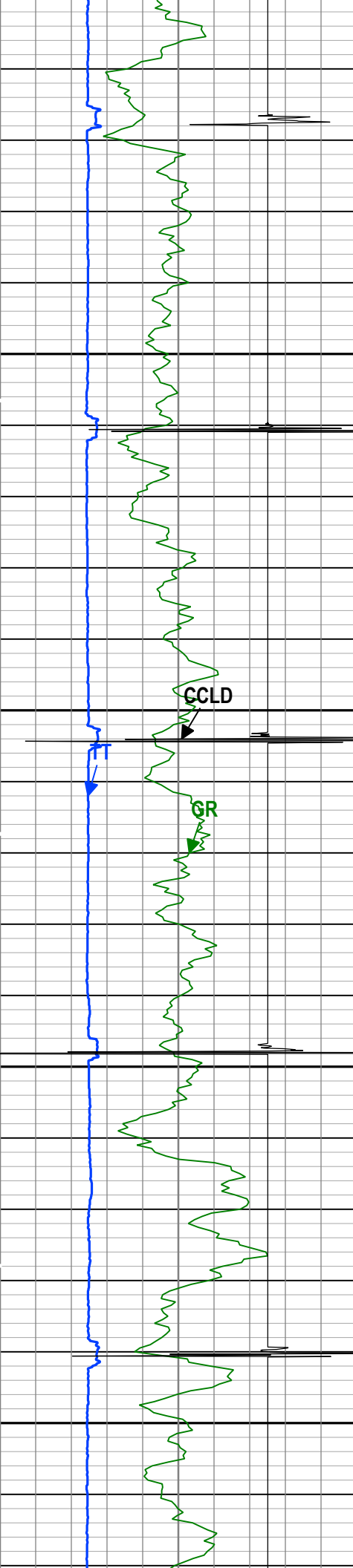
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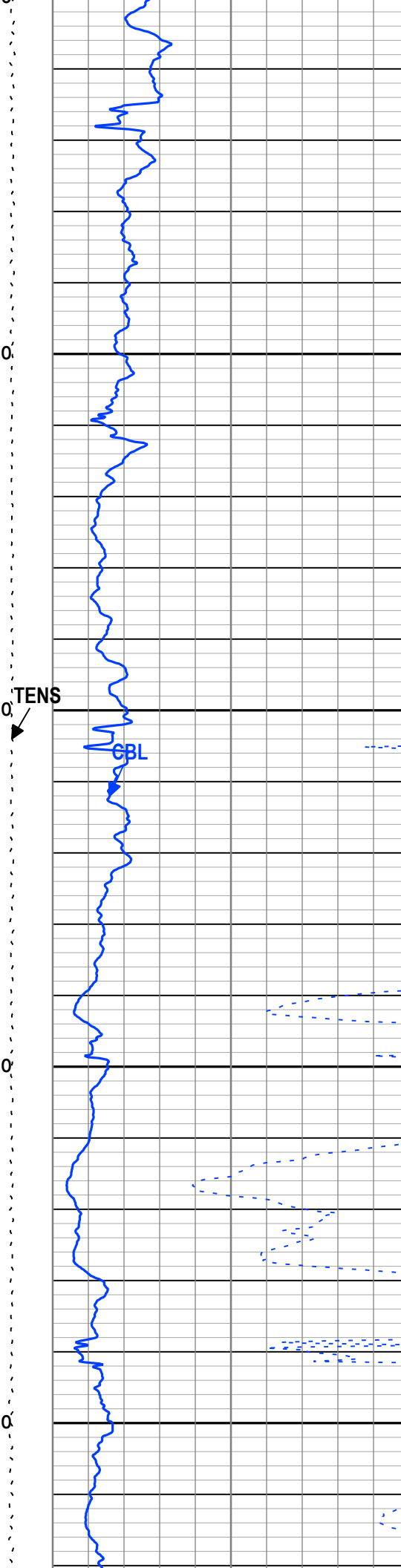


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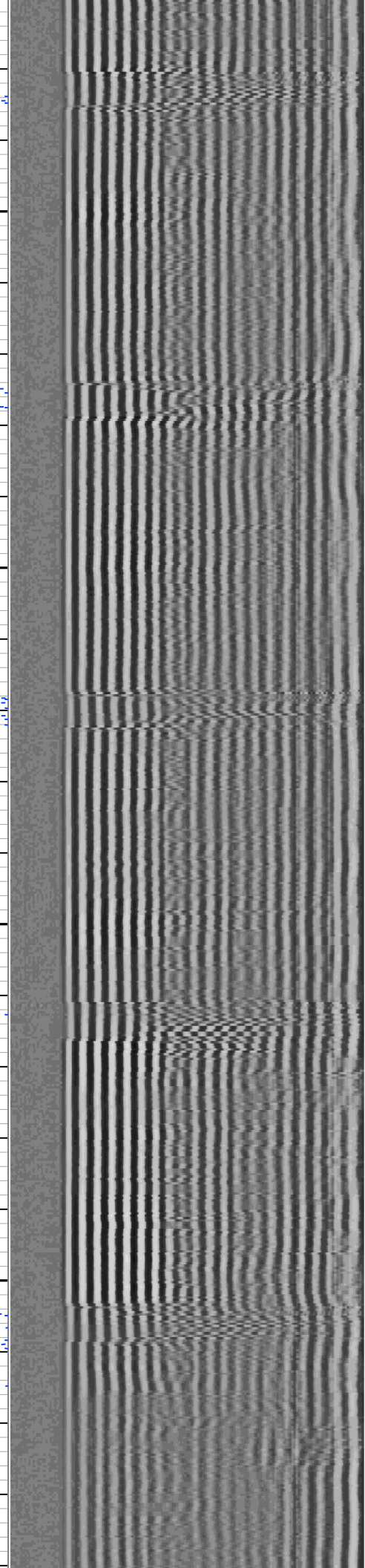
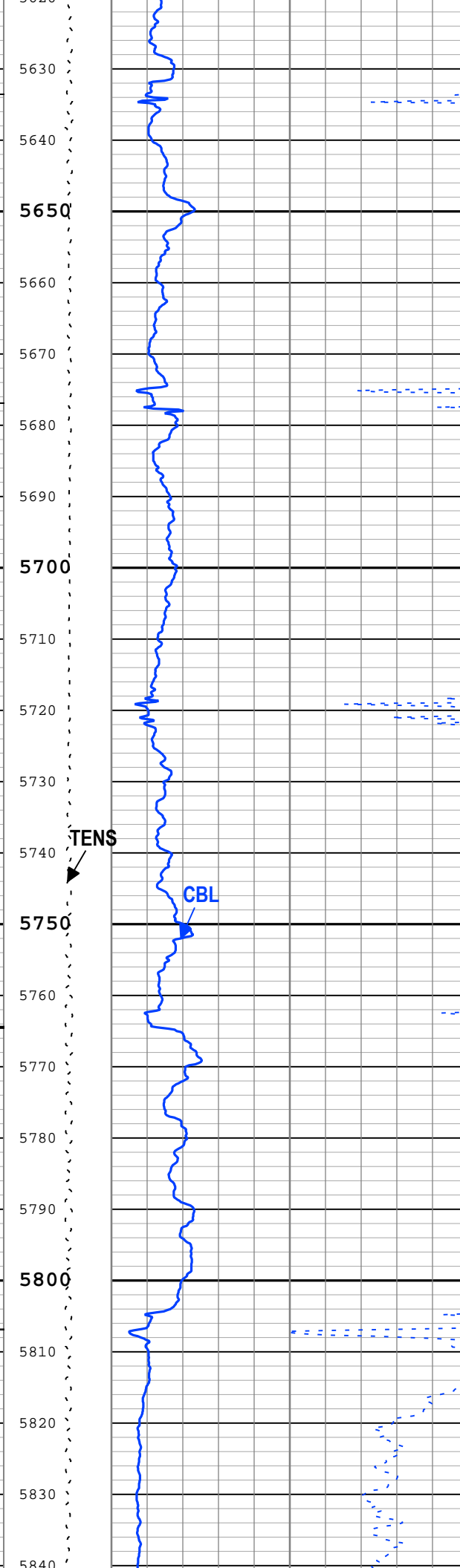
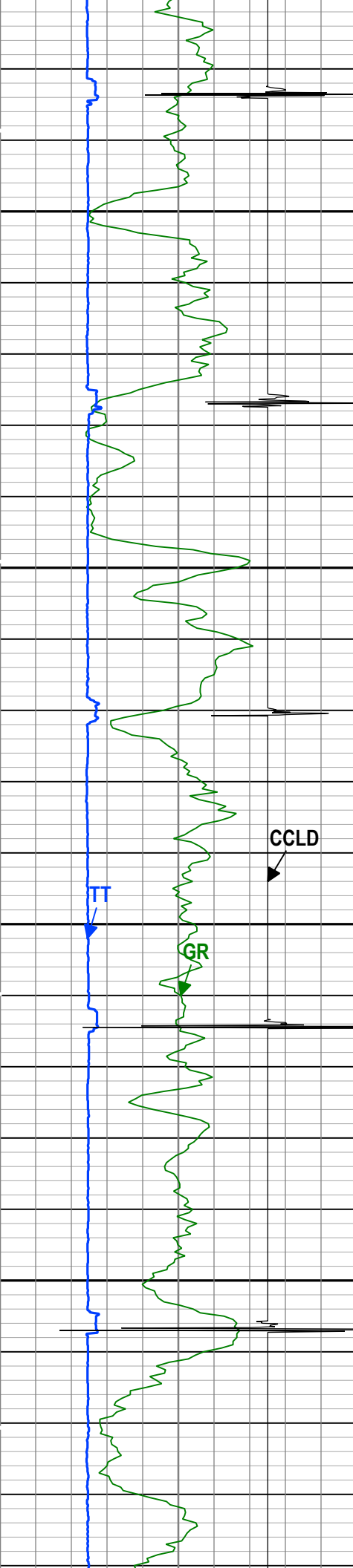


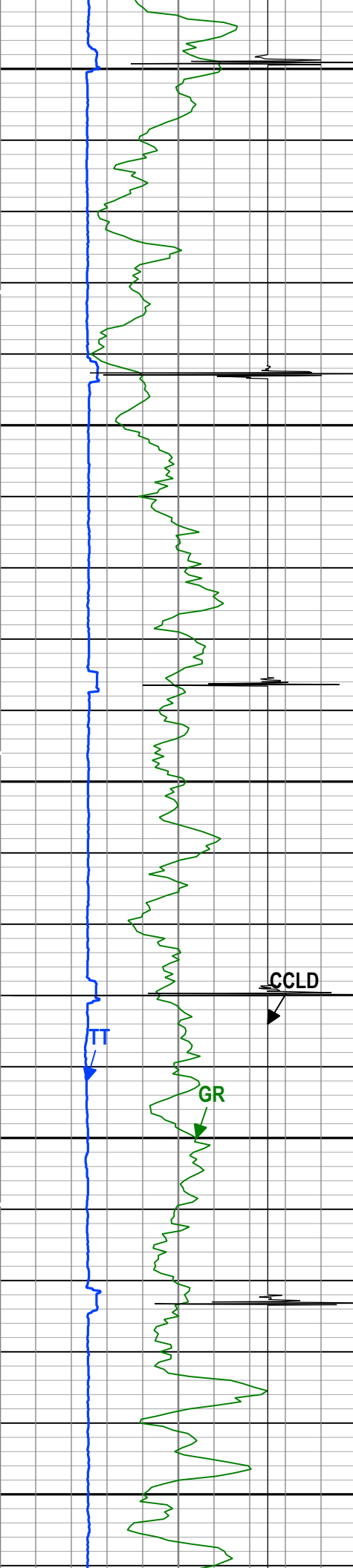


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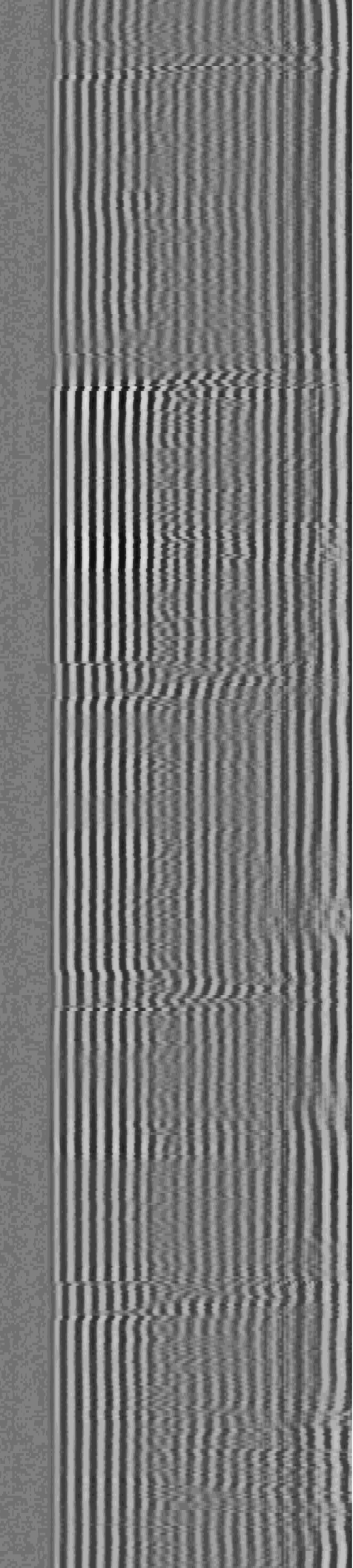
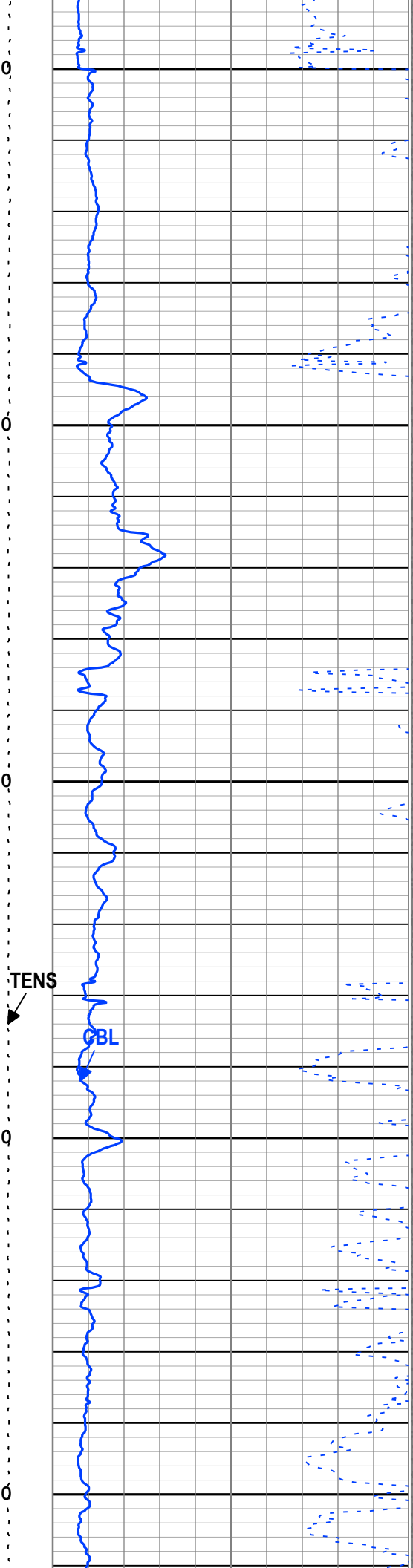


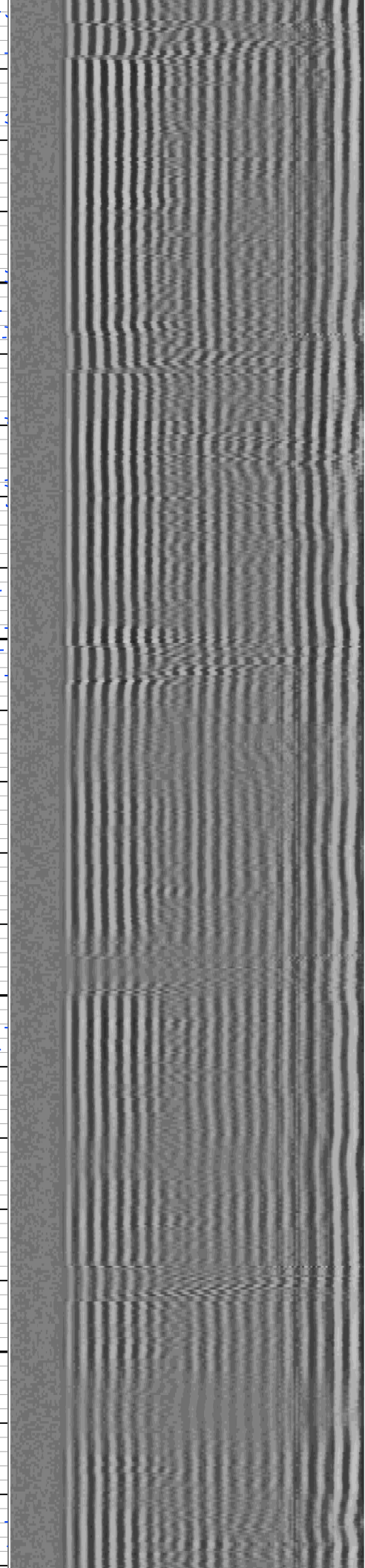
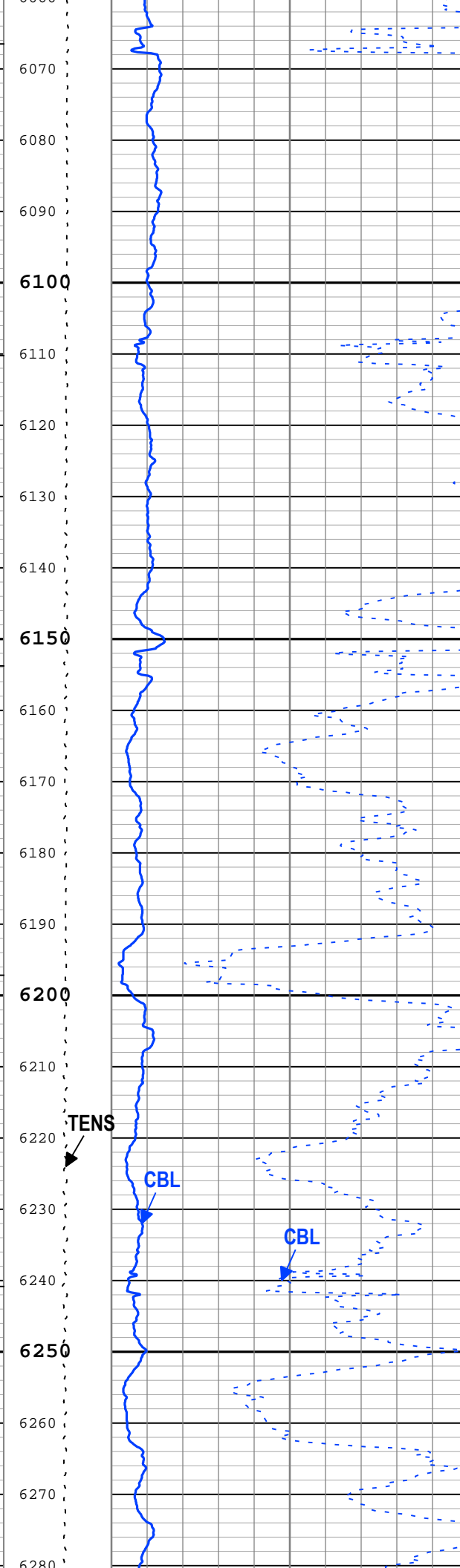
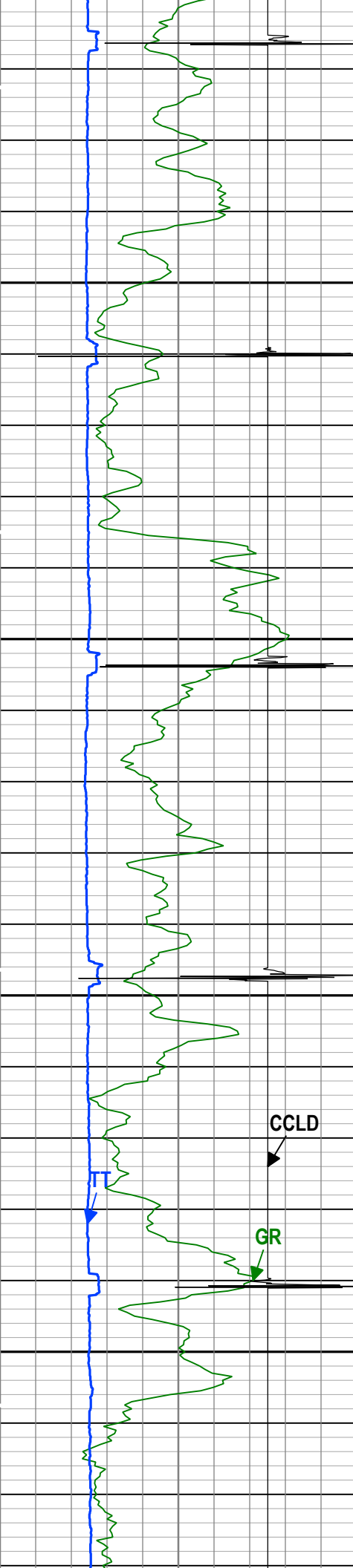




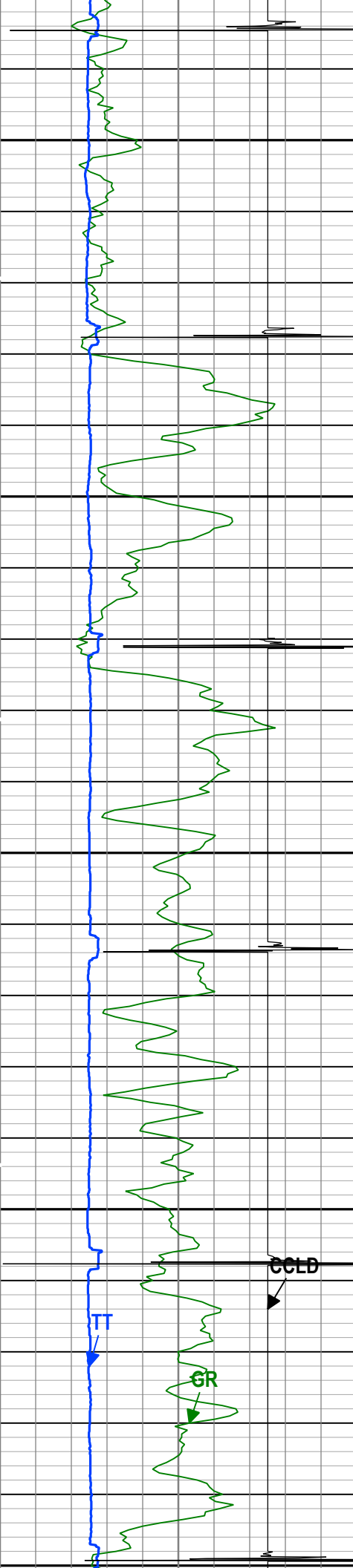


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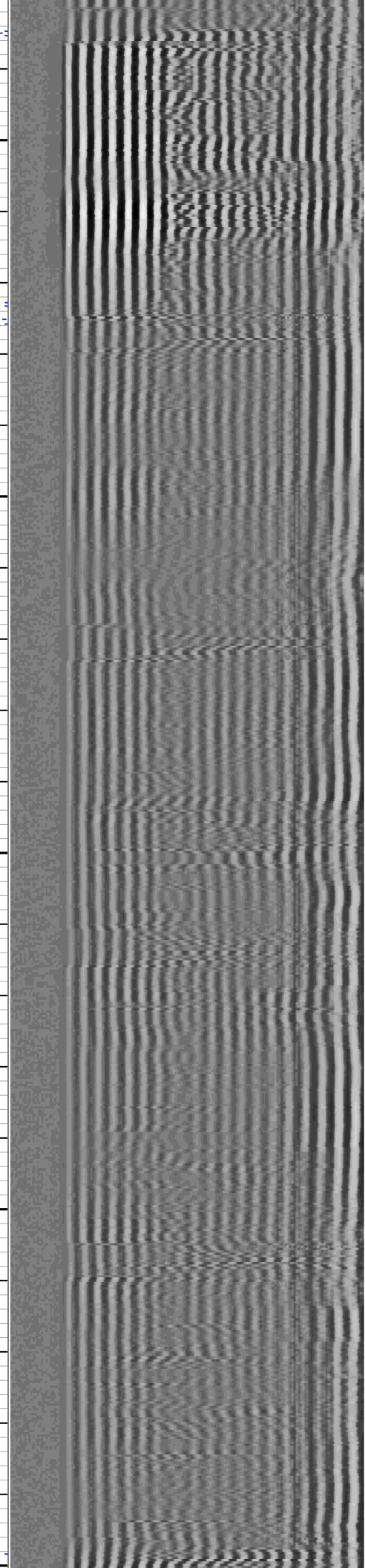
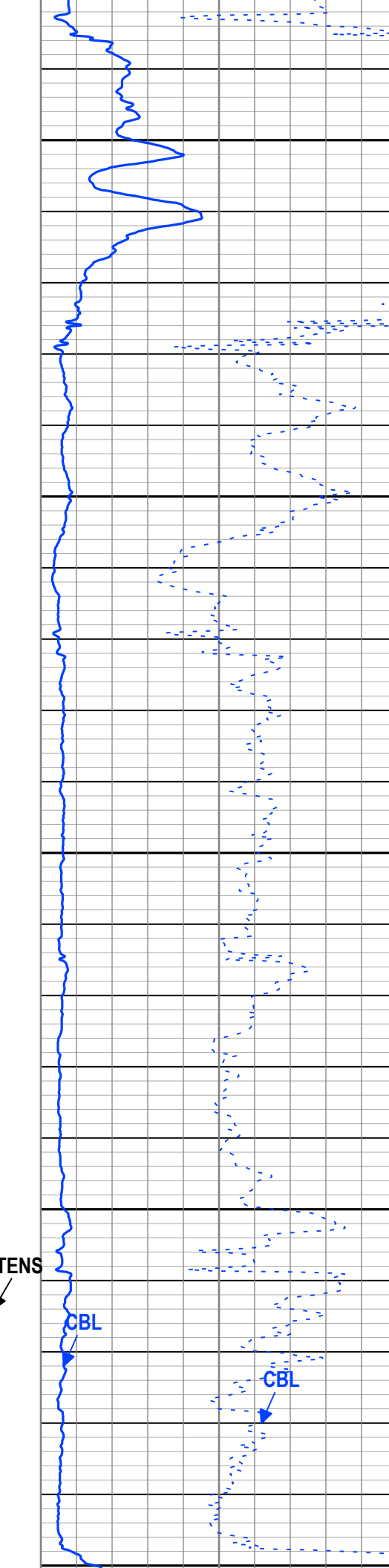


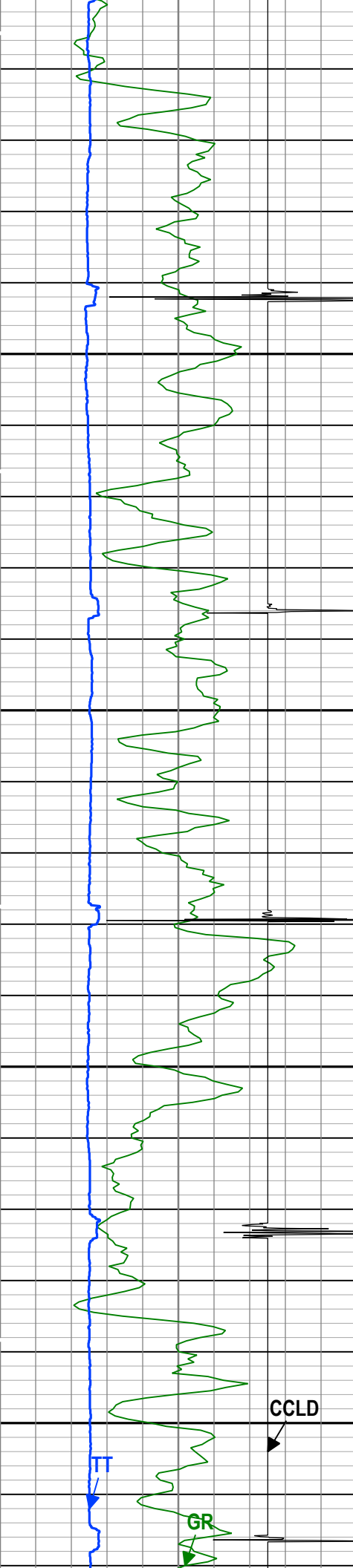




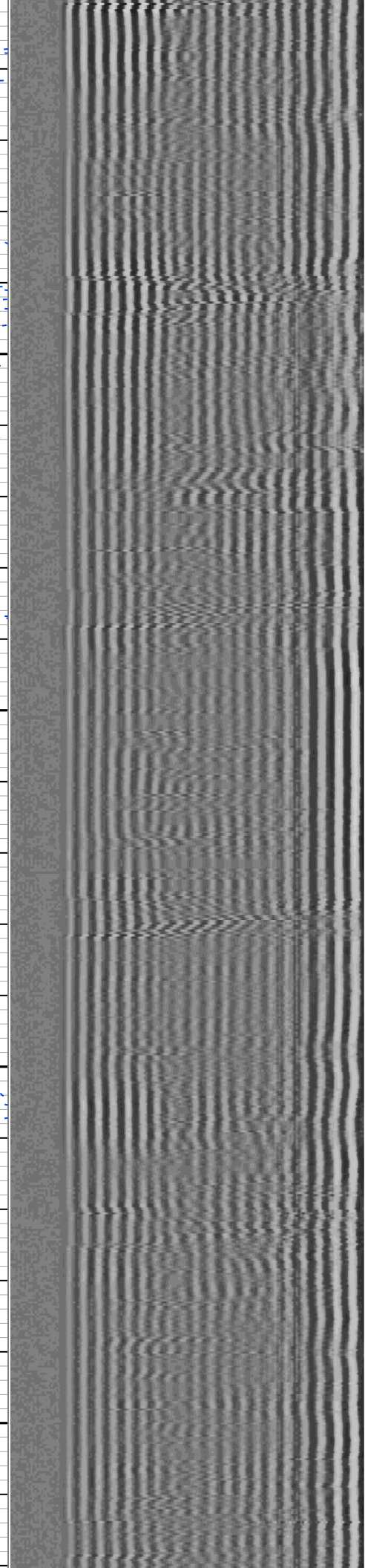
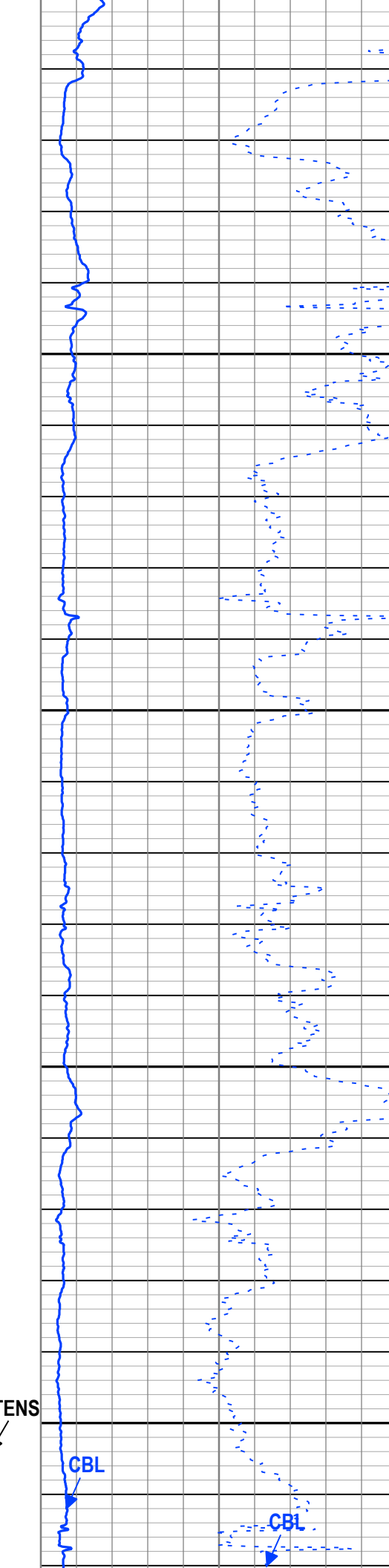


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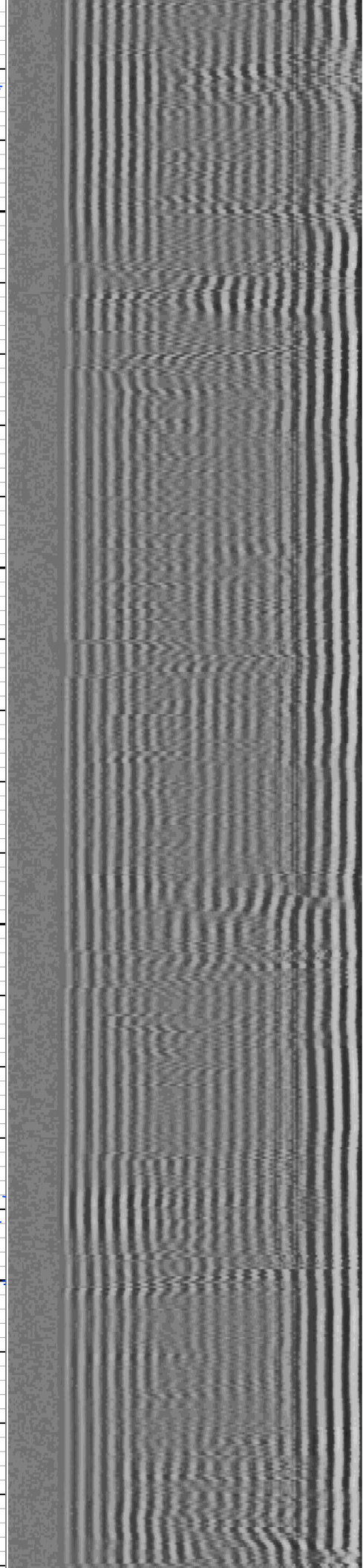
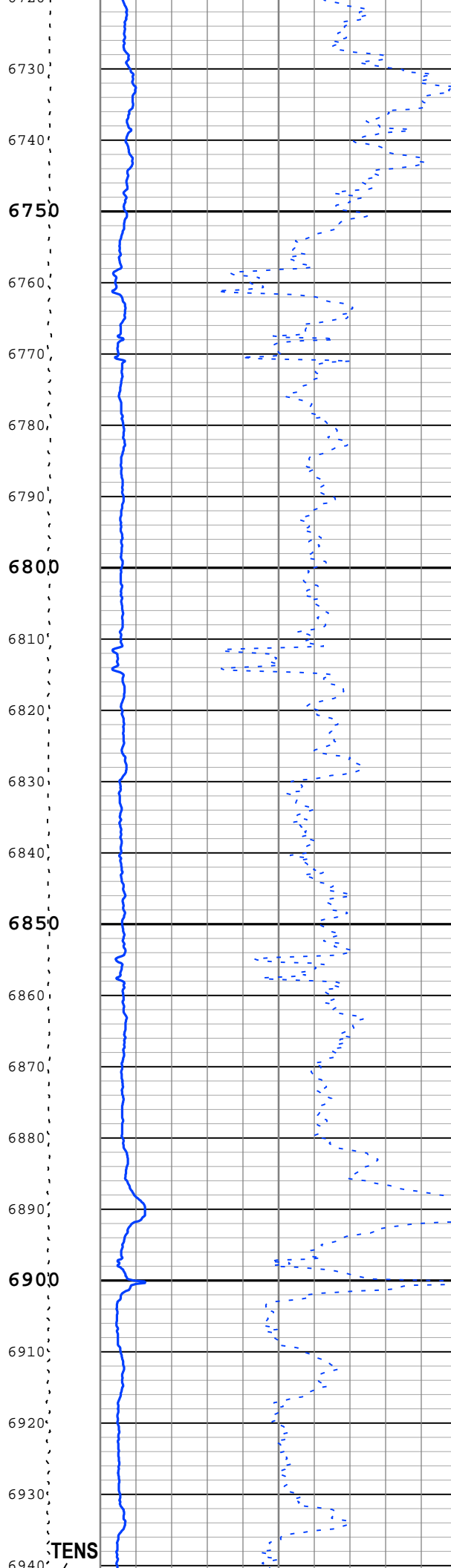
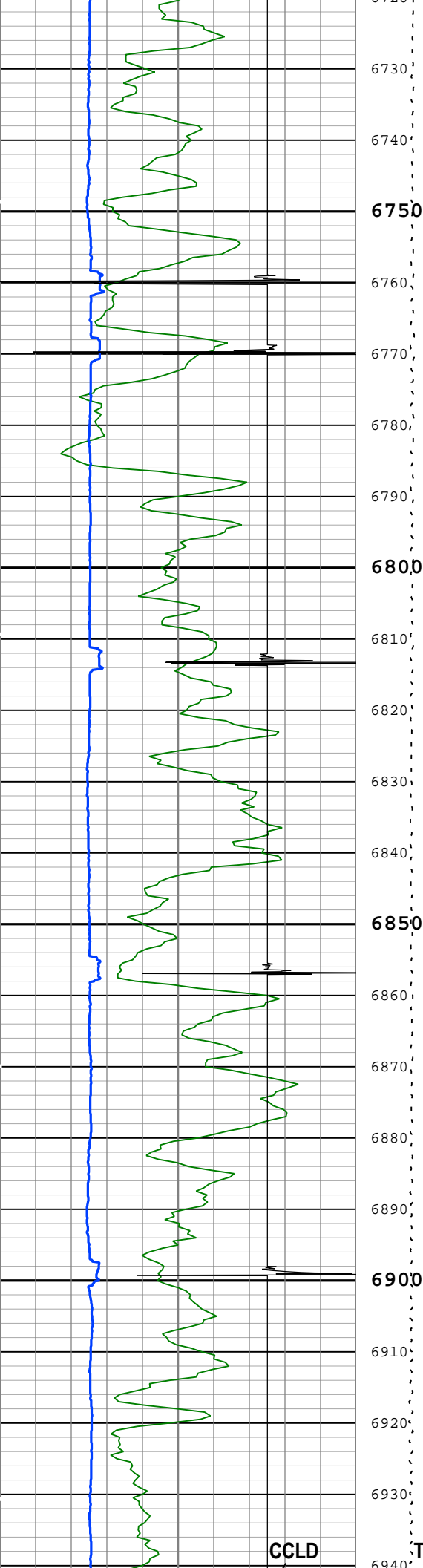
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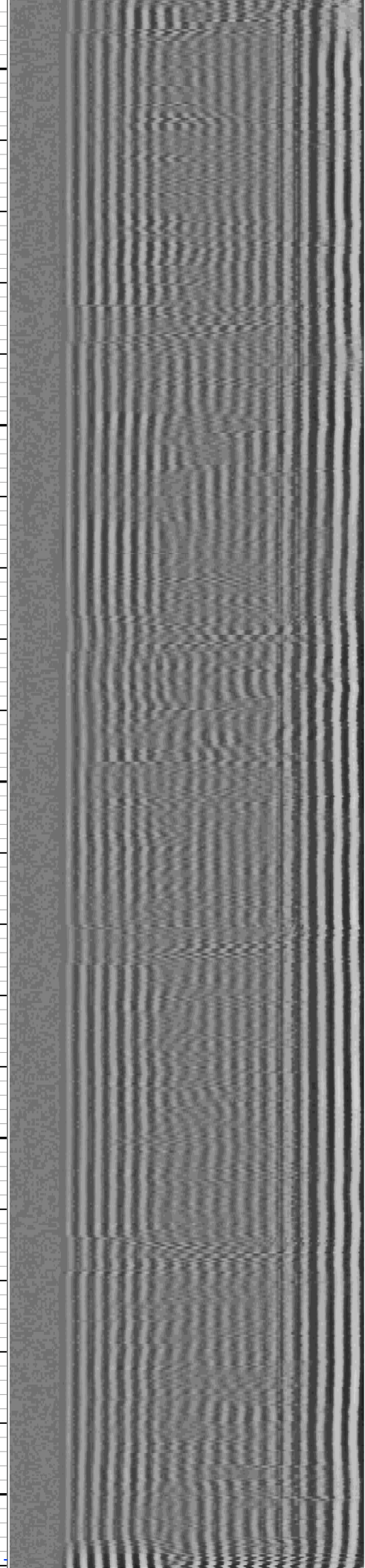
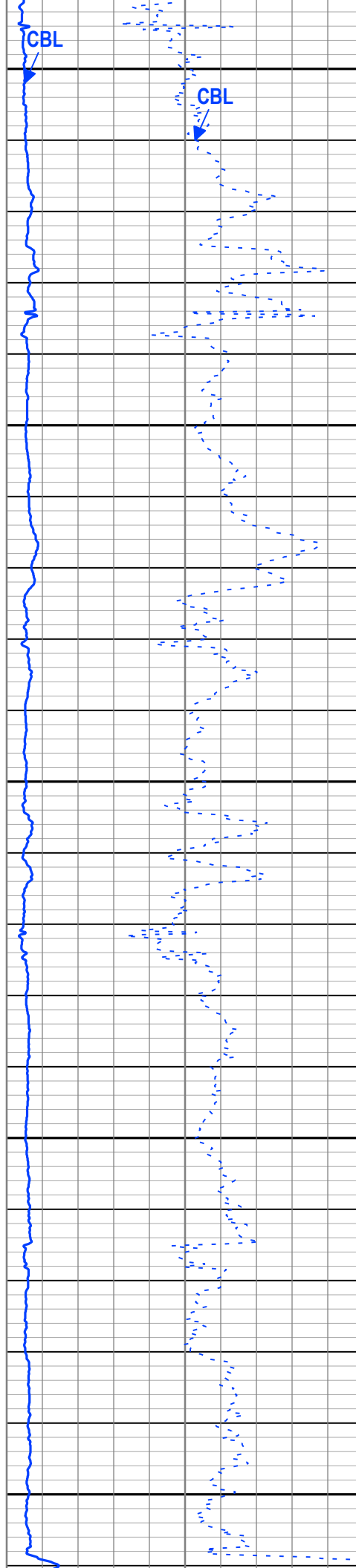
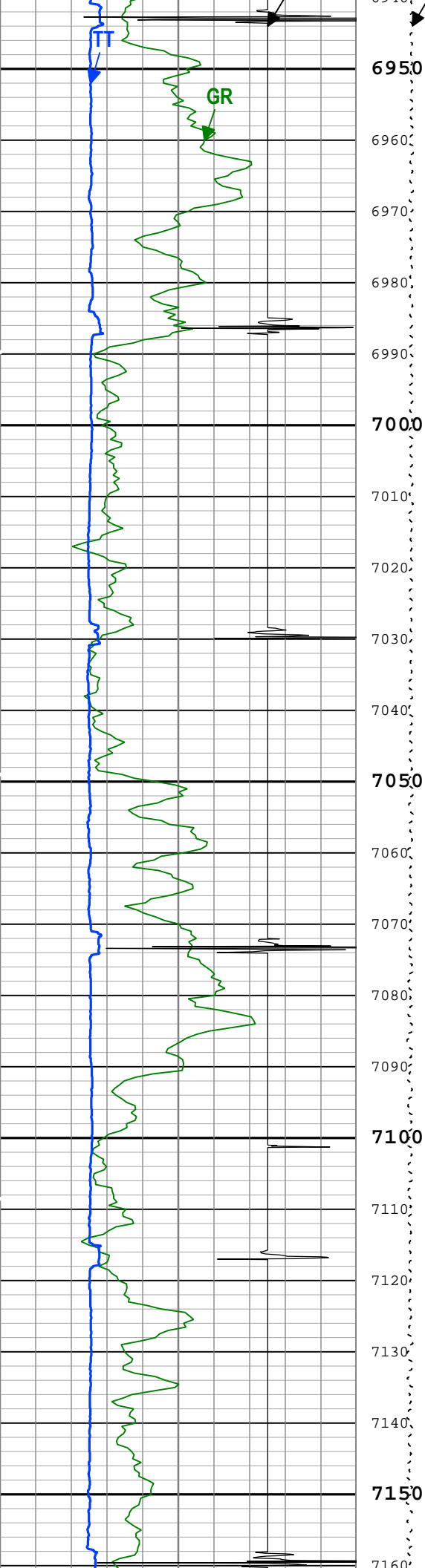
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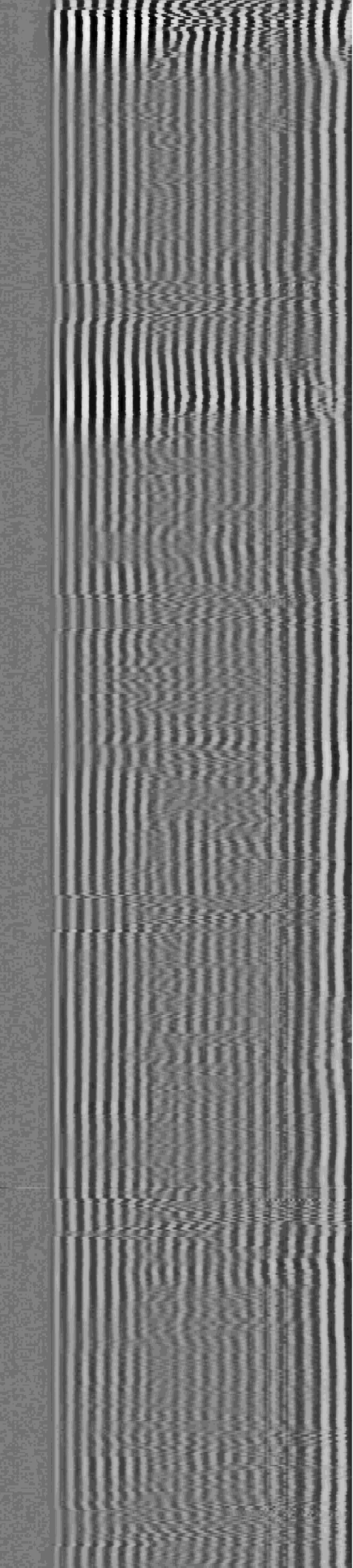
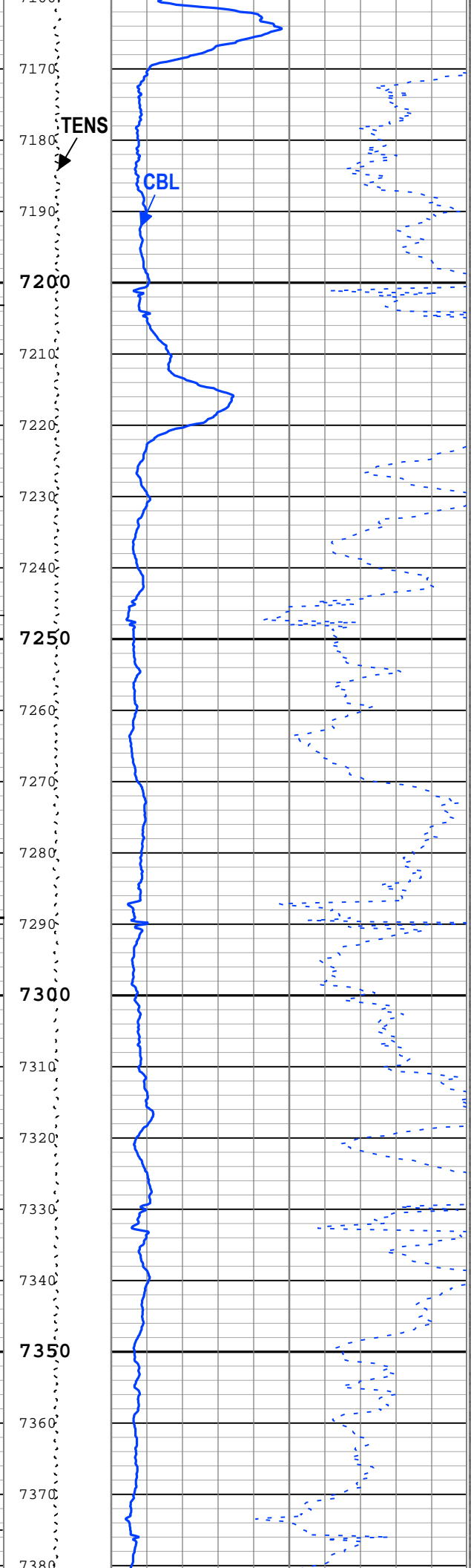
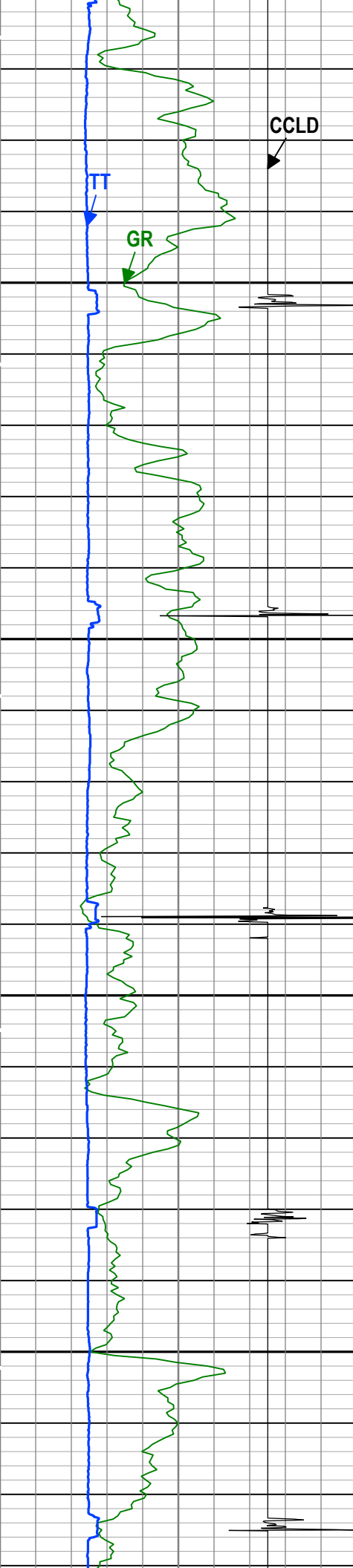
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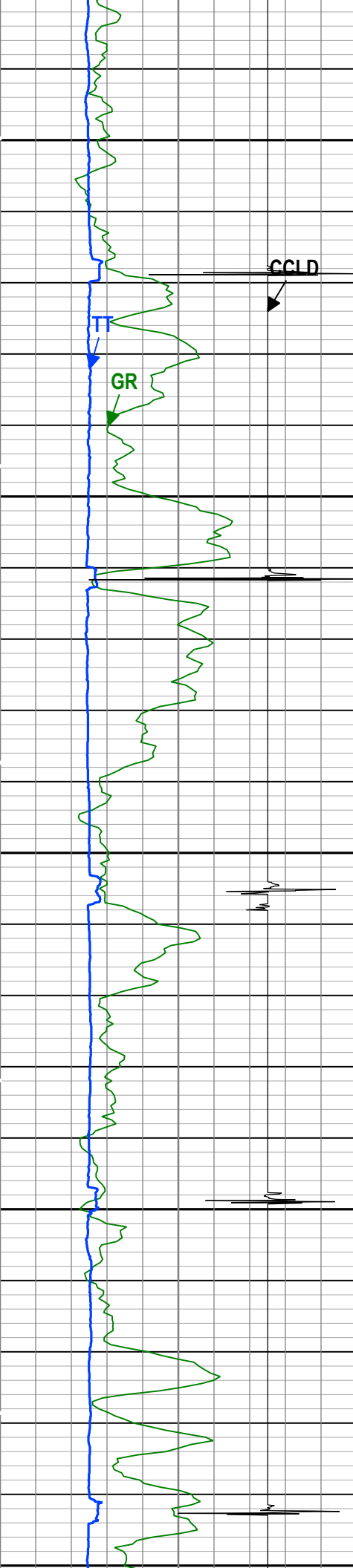
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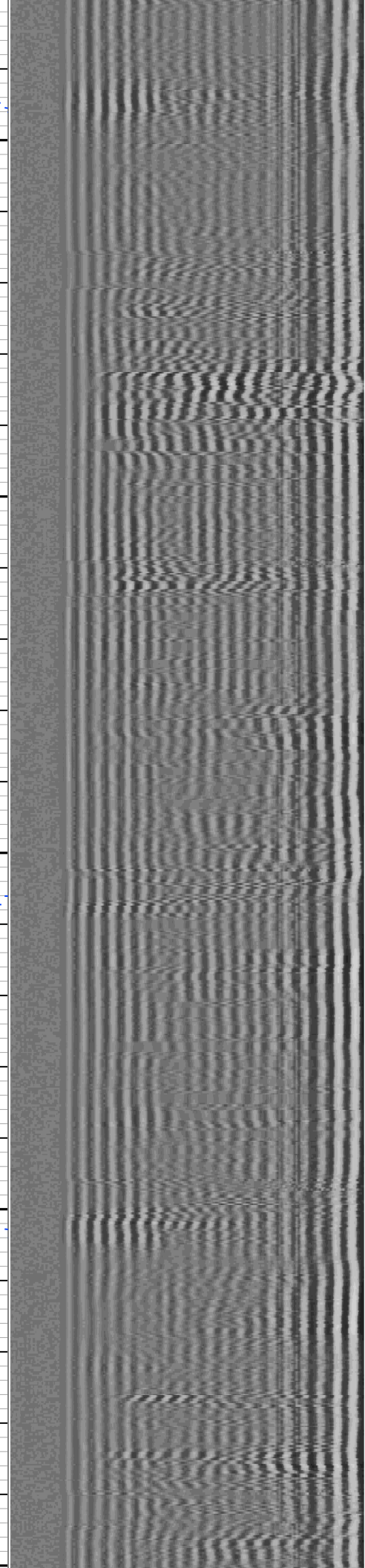
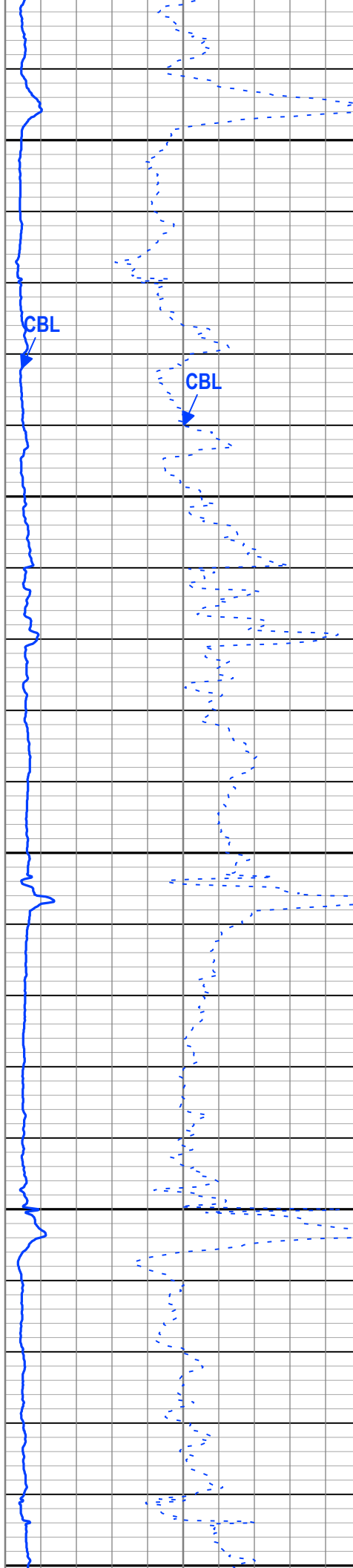


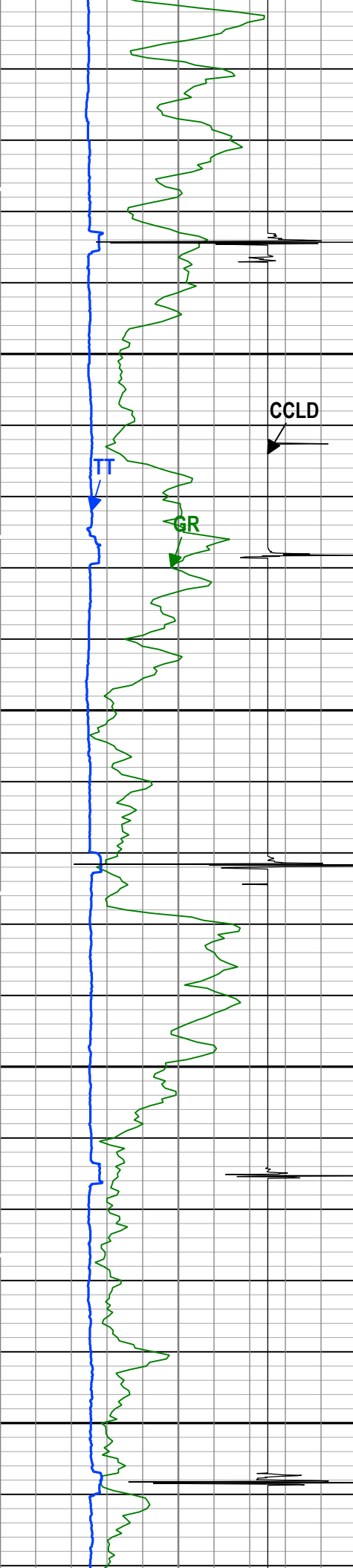




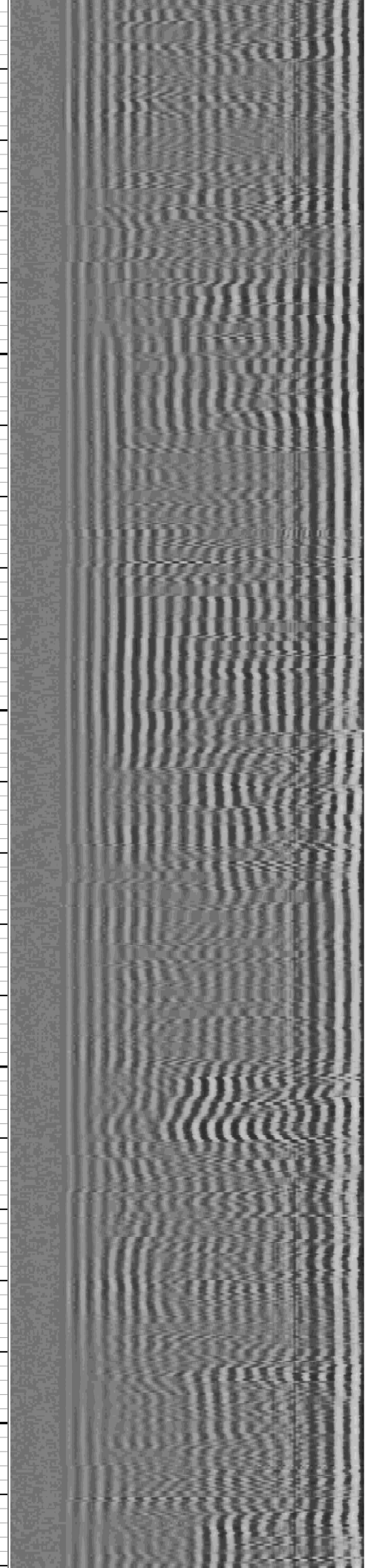
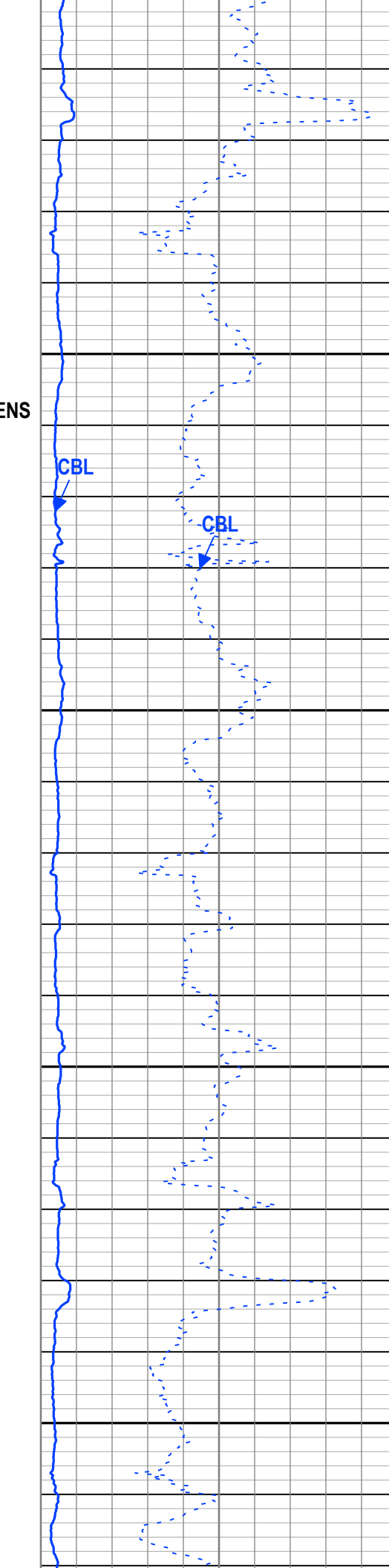


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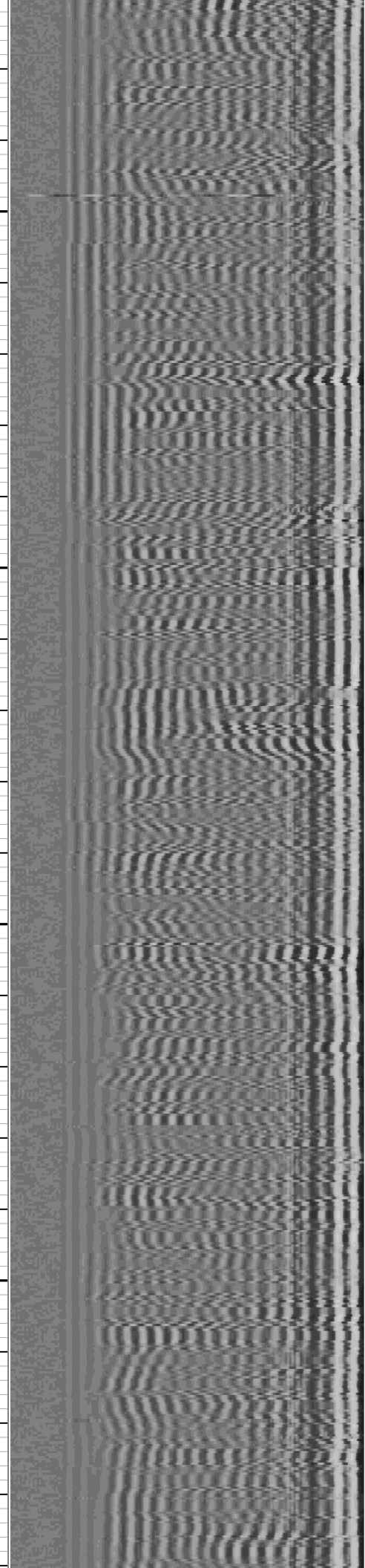
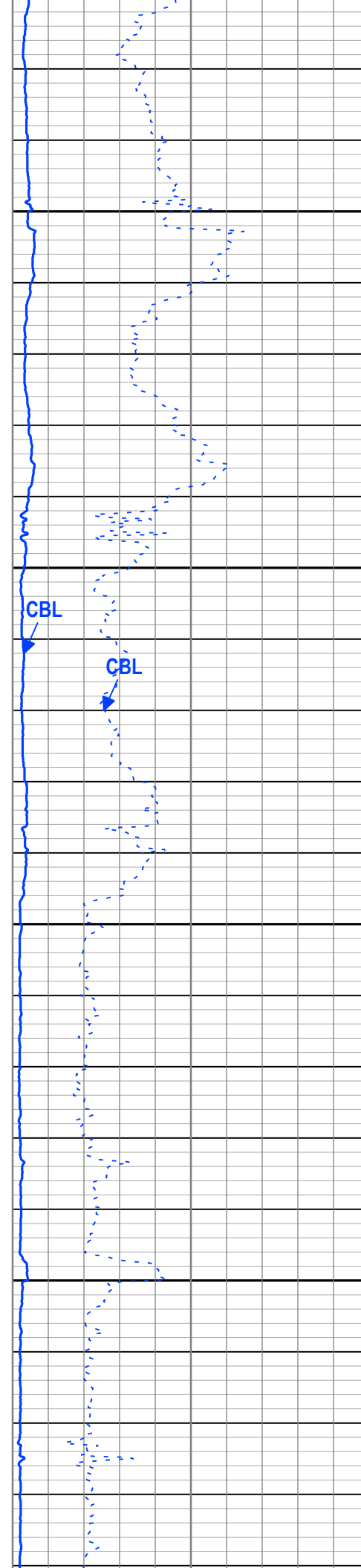
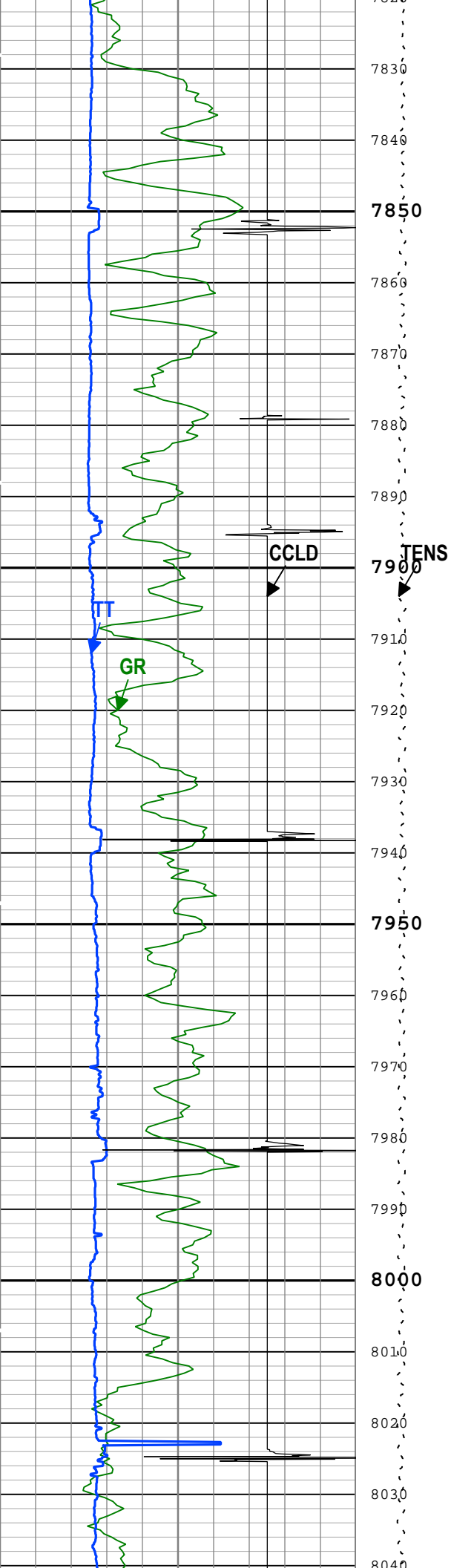


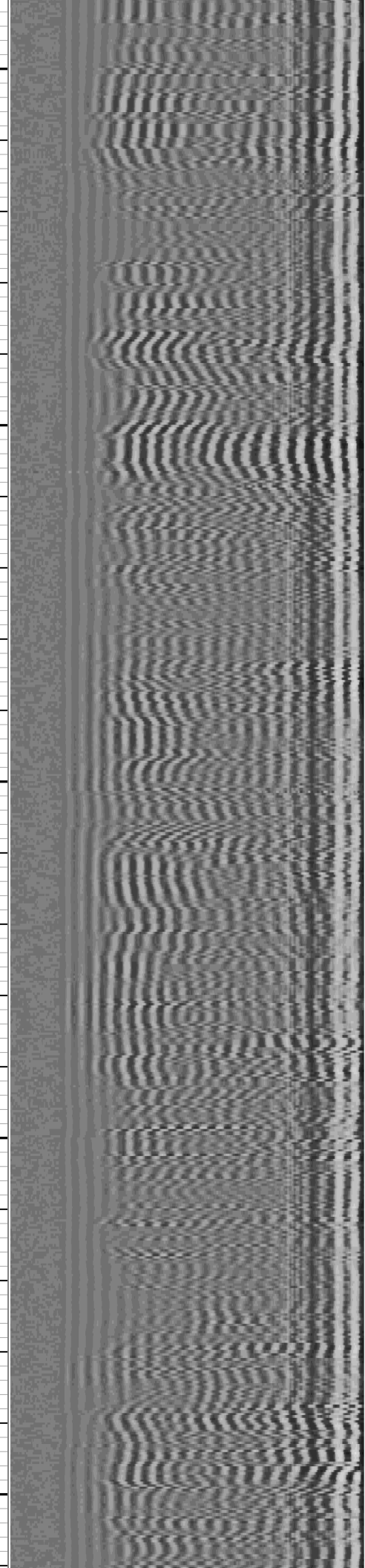
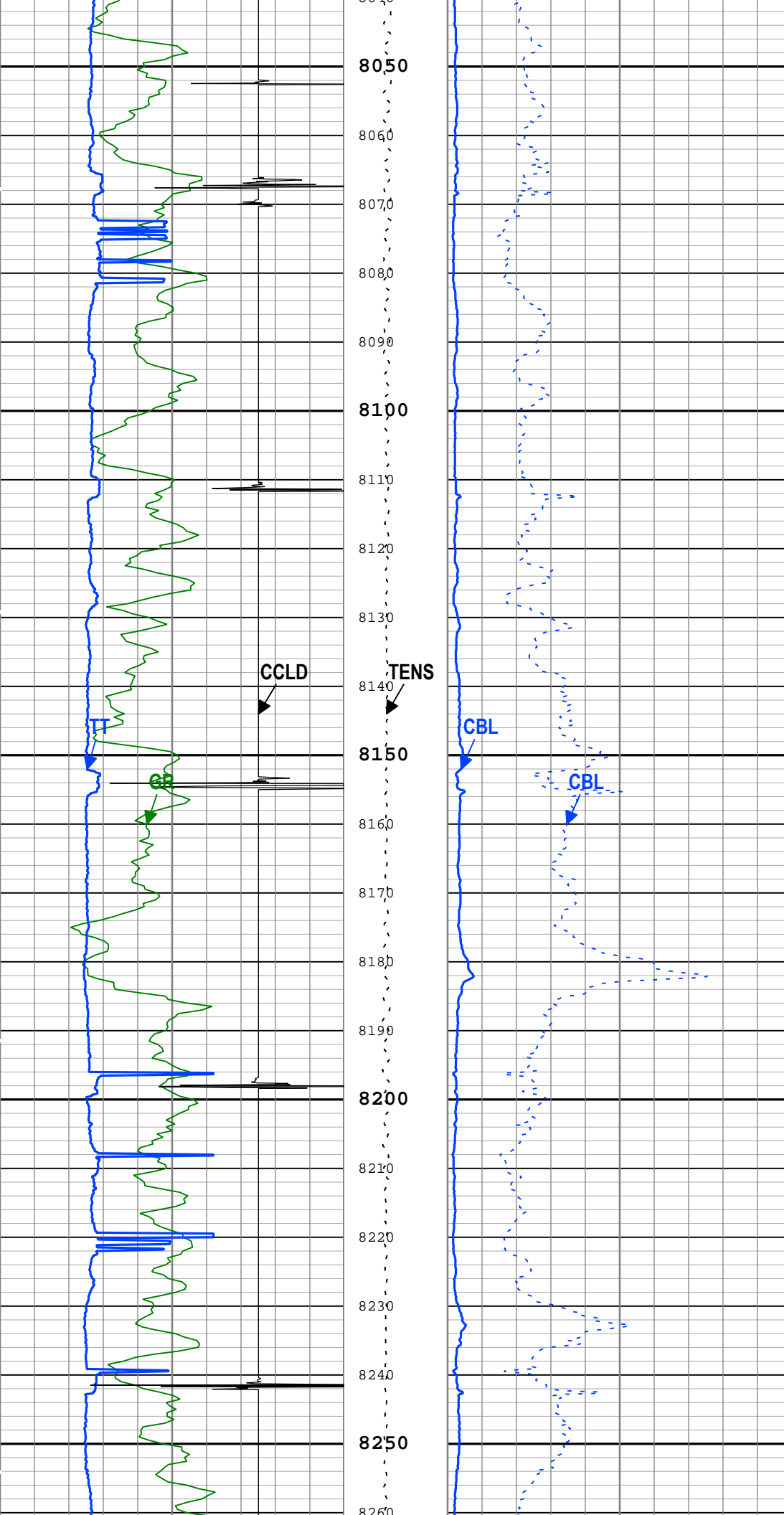


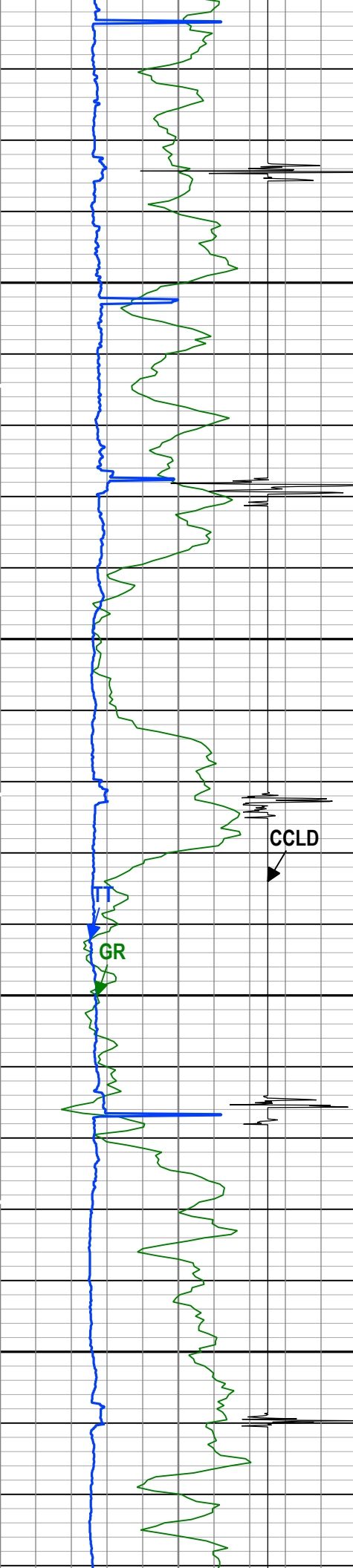
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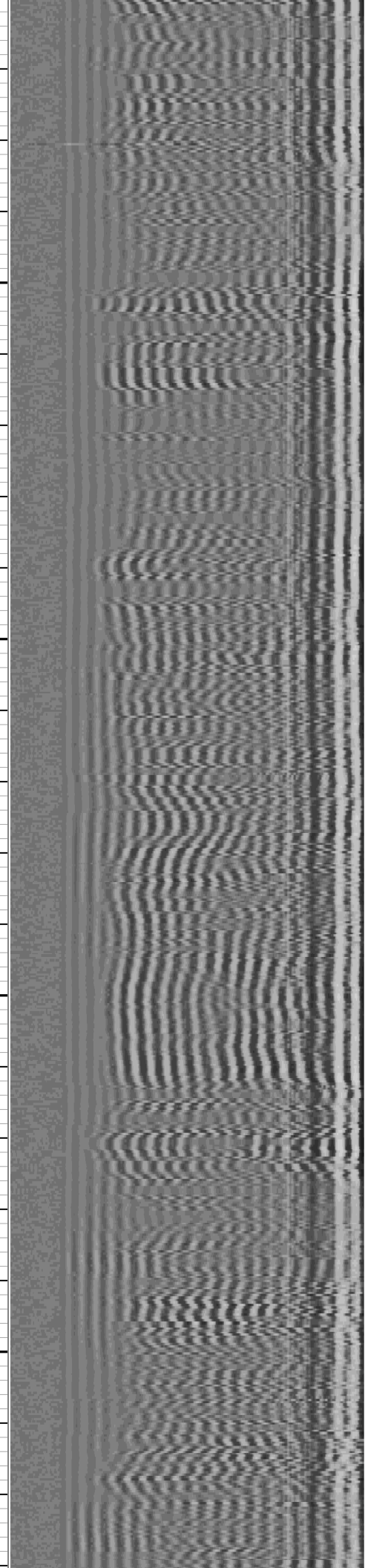
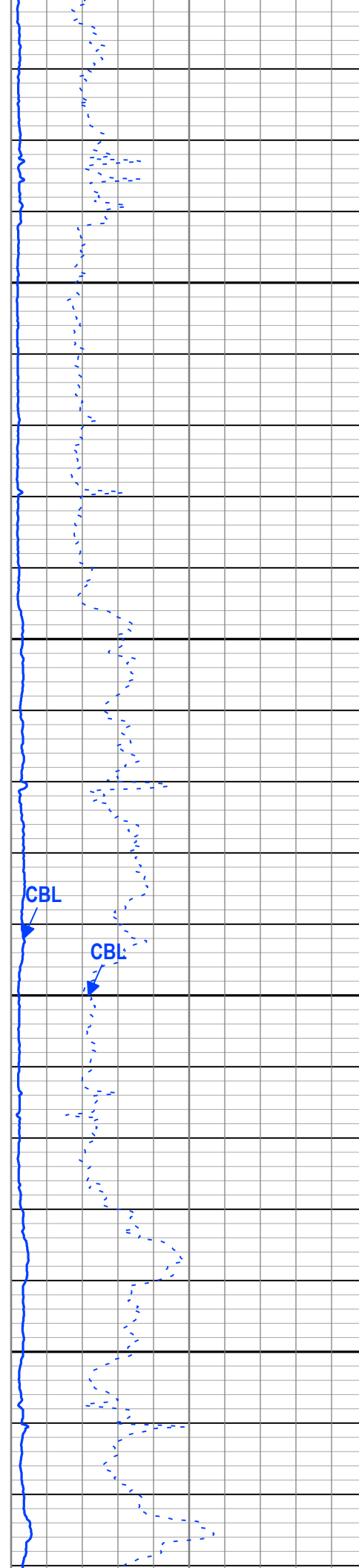


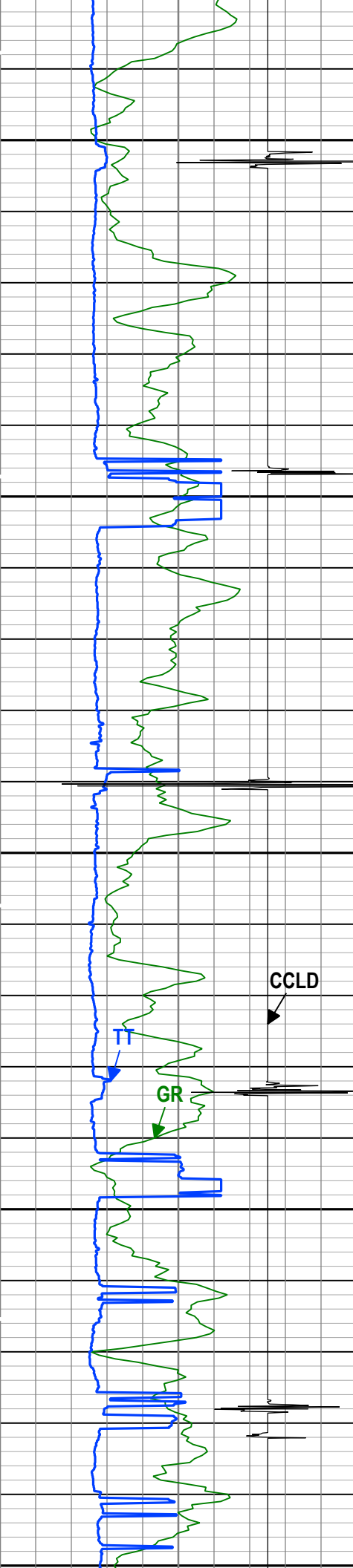




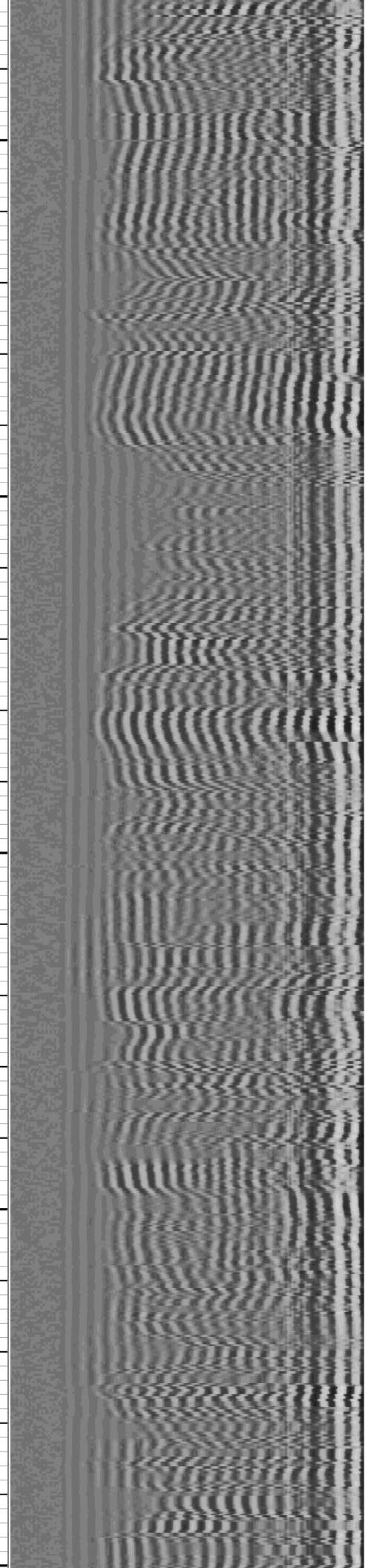
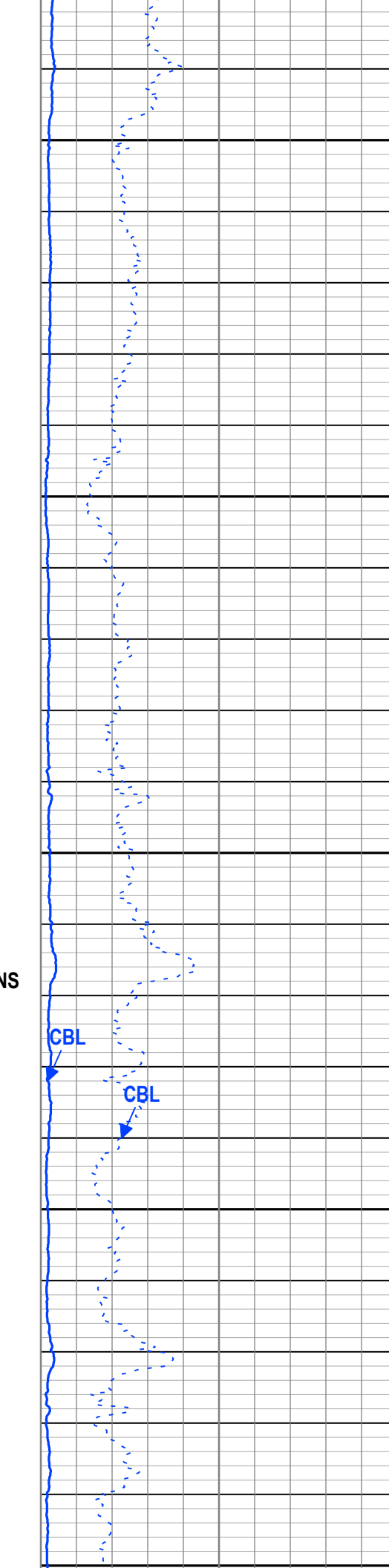


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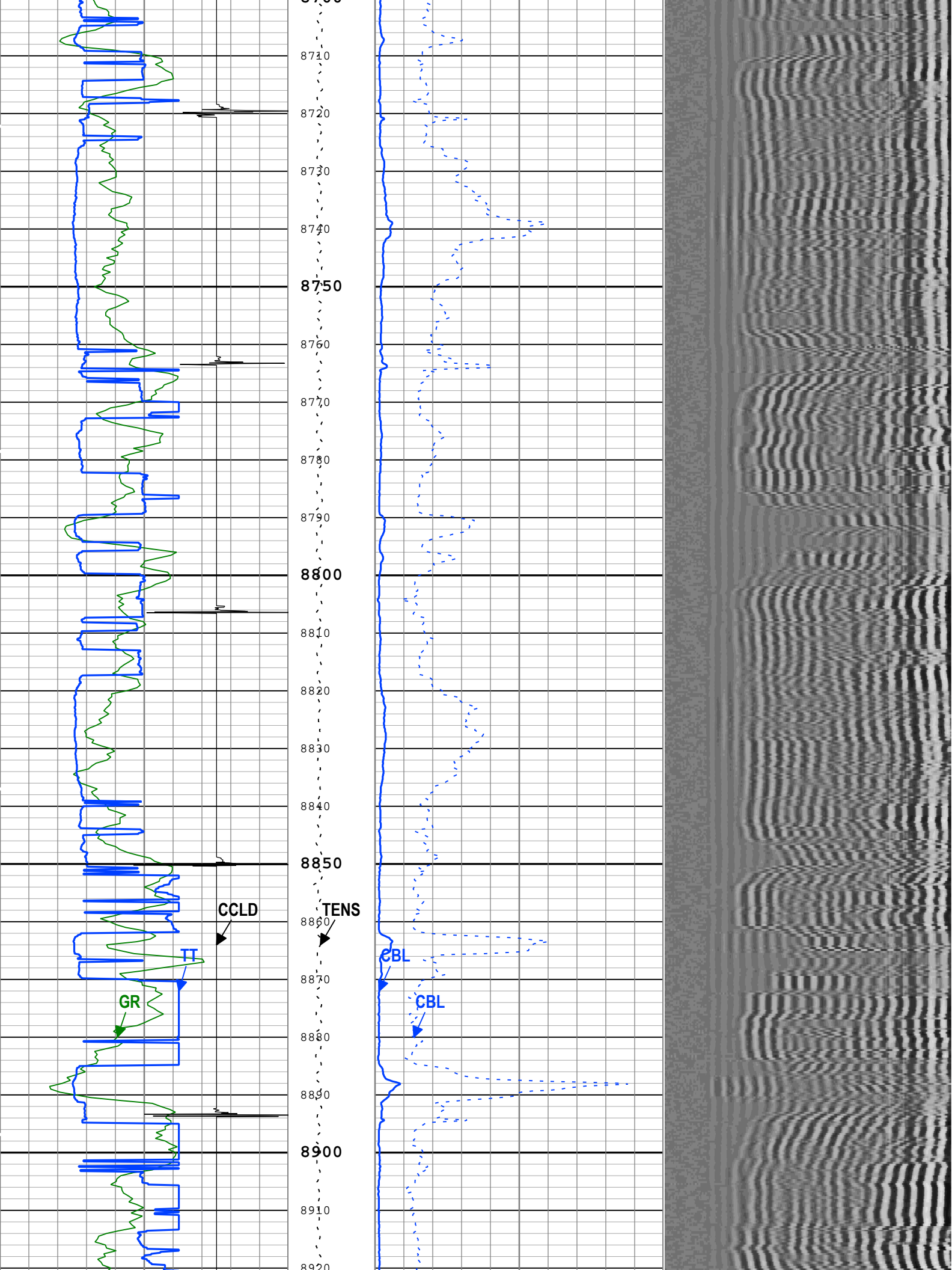


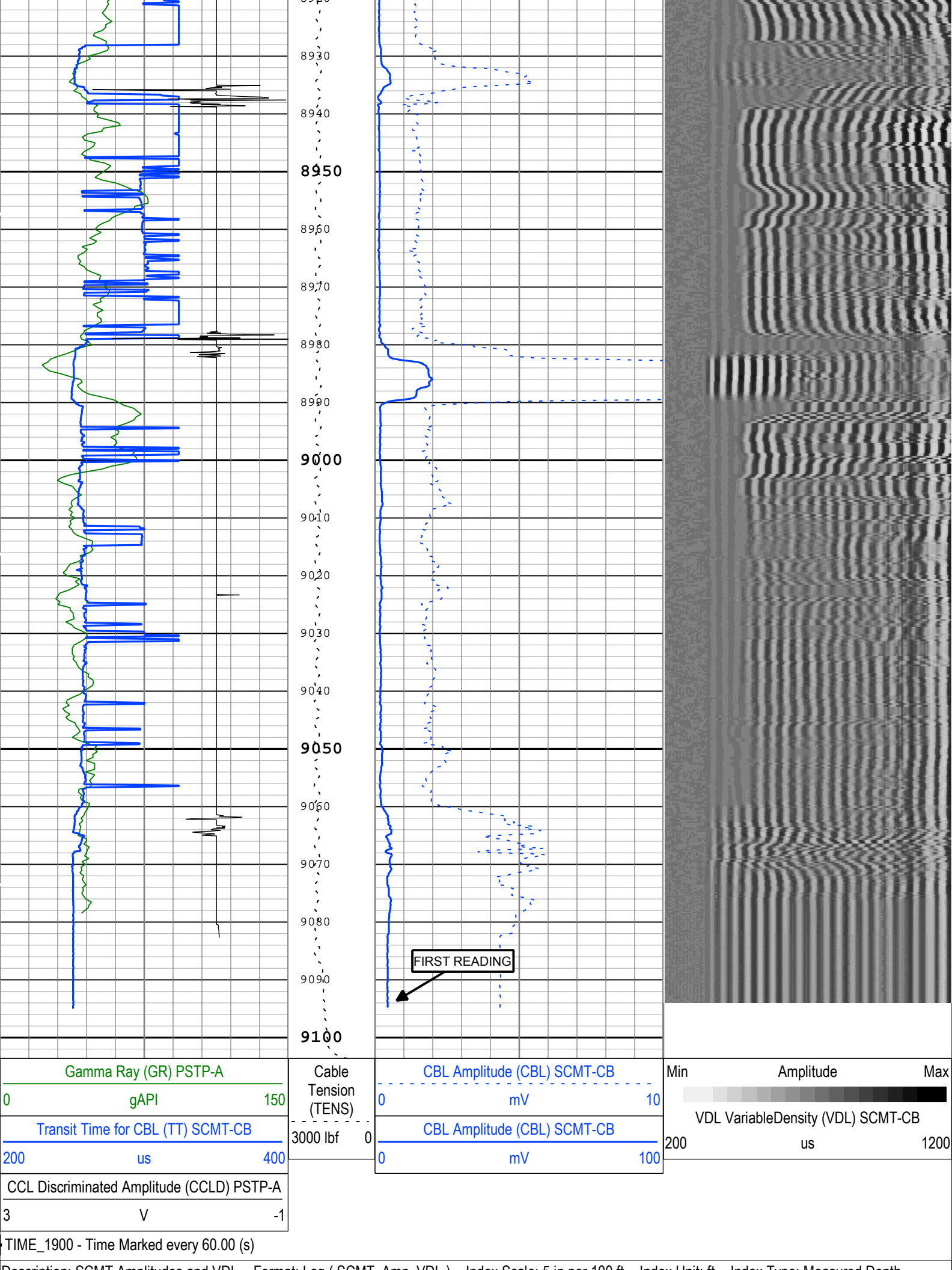


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Channel Processing Parameters				
One: Parameters				
Parameter	Description	Tool	Value	Unit
BHT	Bottom Hole Temperature	Borehole	212	degF
CB3G	SCMT CBL 3 ft Peak Detection T0_Delay and Noise Gate	SCMT-CB	224	us
CBLG	CBL Gate Width	SCMT-CB	40	us
CBRA	CBL LQC Reference Amplitude in Free Pipe	SCMT-CB	80	mV
THNO	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.248	in
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
EDF	Elevation of Derrick Floor Above Permanent Datum	WLSESSION	30	ft
EPD	Elevation of Permanent Datum (PDAT) above Mean Sea Level	WLSESSION	8432	ft
FCF	CBL Fluid Compensation Factor	SCMT-CB	1	
GGRD	Geothermal Gradient	Borehole	1	0.01 degF/ft
GTSE	Generalized Temperature Selection, from Measured or Computed Temperature	Borehole	GTEM_LINEST(RT)	
MSA	Minimum Sonic Amplitude	SCMT-CB	0.48	mV
PDAT	Permanent Datum	WLSESSION	GL	
RUN_SNUM	Run Sequence Number	WSDRUN	8	
SHT	Surface Hole Temperature	Borehole	68	degF
TD	Total Measured Depth	Borehole	9109	ft

Tool Control Parameters				
One: Parameters				
Parameter	Description	Tool	Value	Unit
CMTM	SCMT Operating Mode	SCMT-CB	Log	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	1800	ft/h
PCCG	PSP Downhole CCL Gain	PSTP-A	24 dB	

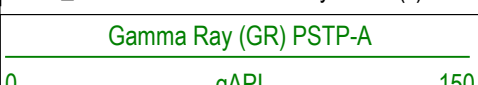
One				
Repeat Pass				

Software Version	
Acquisition System	Version
Maxwell 2017 SP3	7.3.92069.3100

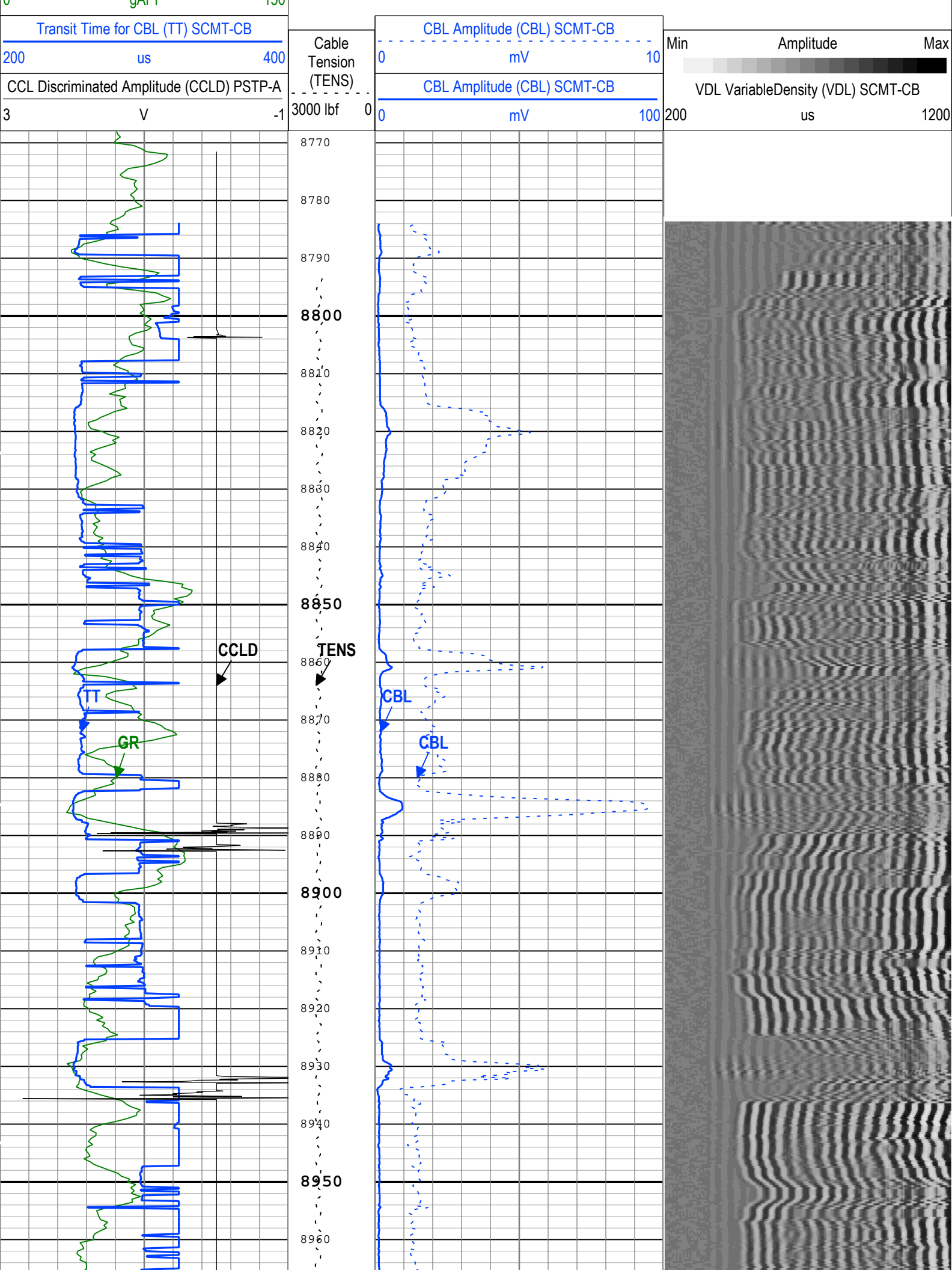
Pass Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[2]:Up	Up	8792.39 ft	9093.73 ft	21-Dec-2017 7:11:57 AM	21-Dec-2017 7:17:29 AM	ON	-9.00 ft	No
All depths are referenced to toolstring zero									

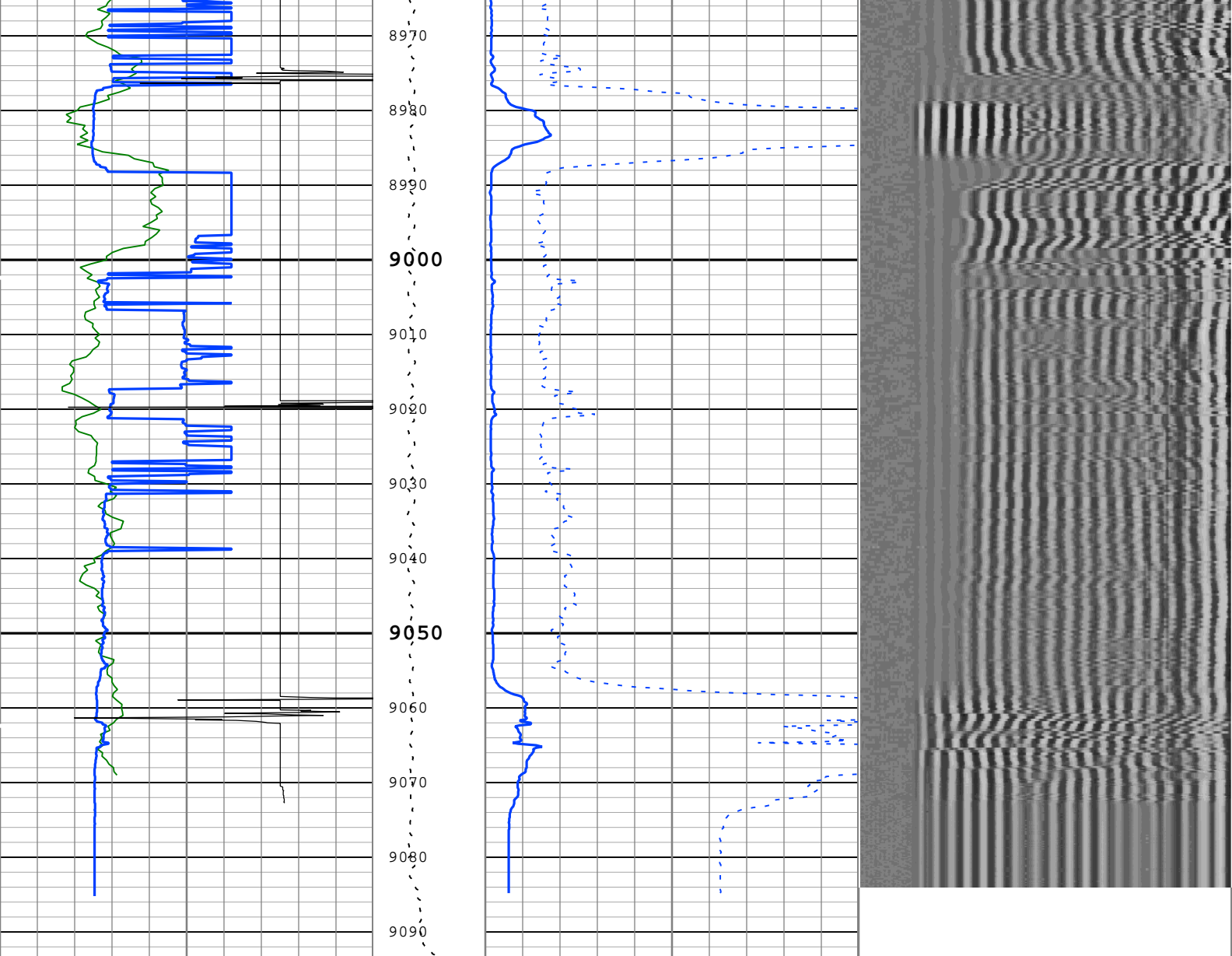
Log	Company:Caerus Operating LLC      Well:Puckett 15C-23 697 One: Log[2]:Up:S009
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TIME\_1900 - Time Marked every 60.00 (s)









Gamma Ray (GR) PSTP-A	Cable Tension (TENS)	CBL Amplitude (CBL) SCMT-CB	Min	Amplitude	Max
0 gAPI 150	3000 lbf 0	0 mV 10			
Transit Time for CBL (TT) SCMT-CB		CBL Amplitude (CBL) SCMT-CB	VDL VariableDensity (VDL) SCMT-CB		
200 us 400		0 mV 100	200 us 1200		
CCL Discriminated Amplitude (CCLD) PSTP-A					
3 V -1					

TIME\_1900 - Time Marked every 60.00 (s)

Description: SCMT Amplitudes and VDL    Format: Log ( SCMT\_Amp\_VDL )    Index Scale: 5 in per 100 ft    Index Unit: ft    Index Type: Measured Depth  
Creation Date: 10-Jan-2018 10:18:14

## Channel Processing Parameters

### One: Parameters

Parameter	Description	Tool	Value	Unit
BHT	Bottom Hole Temperature	Borehole	212	degF
CB3G	SCMT CBL 3 ft Peak Detection T0_Delay and Noise Gate	SCMT-CB	224	us
CBLG	CBL Gate Width	SCMT-CB	40	us
CBRA	CBL LQC Reference Amplitude in Free Pipe	SCMT-CB	80	mV
THNO	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.248	in
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DET_CATEGORY	Drilling Fluid Type	Borehole	Water	

DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
EDF	Elevation of Derrick Floor Above Permanent Datum	WLSESSION	30	ft
EPD	Elevation of Permanent Datum (PDAT) above Mean Sea Level	WLSESSION	8432	ft
FCF	CBL Fluid Compensation Factor	SCMT-CB	1	
GGRD	Geothermal Gradient	Borehole	1	0.01 degF/ft
GTSE	Generalized Temperature Selection, from Measured or Computed Temperature	Borehole	GTEM_LINEST(RT)	
MSA	Minimum Sonic Amplitude	SCMT-CB	0.48	mV
PDAT	Permanent Datum	WLSESSION	GL	
RUN_SNUM	Run Sequence Number	WSDRUN	8	
SHT	Surface Hole Temperature	Borehole	68	degF
TD	Total Measured Depth	Borehole	9109	ft

Tool Control Parameters

One: Parameters

Parameter	Description	Tool	Value	Unit
CMTM	SCMT Operating Mode	SCMT-CB	Log	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	1800	ft/h
PCCG	PSP Downhole CCL Gain	PSTP-A	Time Zoned	

Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth ( ft )	Stop Depth ( ft )
PCCG	36 dB	21-Dec-2017 07:11:57	21-Dec-2017 07:16:07	9093.72	8877.14
PCCG	12 dB	21-Dec-2017 07:16:07	21-Dec-2017 07:17:01	8877.14	8821.93
PCCG	24 dB	21-Dec-2017 07:17:01	21-Dec-2017 07:17:29	8821.93	8792.39

All depths are at tool zero.

One

Free Pipe

Software Version

Acquisition System	Version
Maxwell 2017 SP3	7.3.92069.3100

Pass Summary

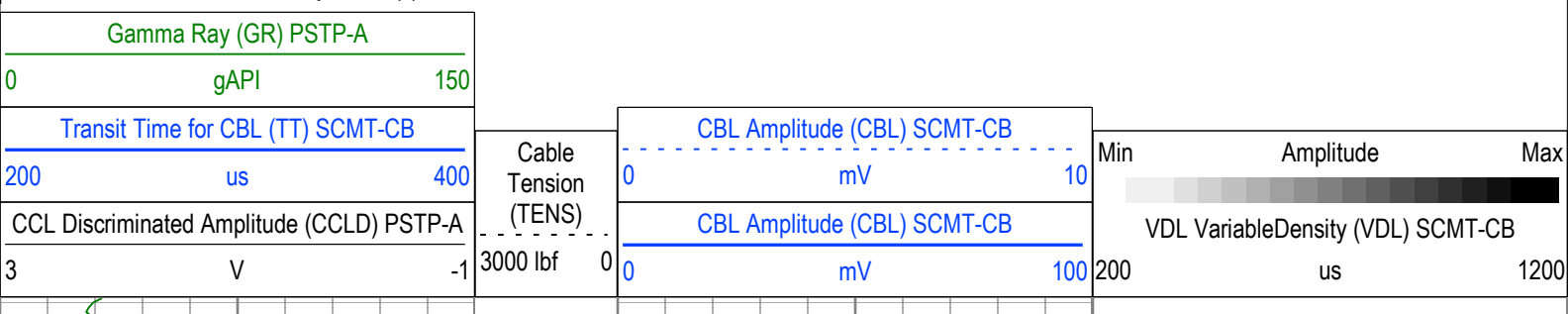
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[5]:Up	Up	1320.08 ft	1580.28 ft	21-Dec-2017 9:23:38 AM	21-Dec-2017 9:28:05 AM	ON	0.00 ft	No

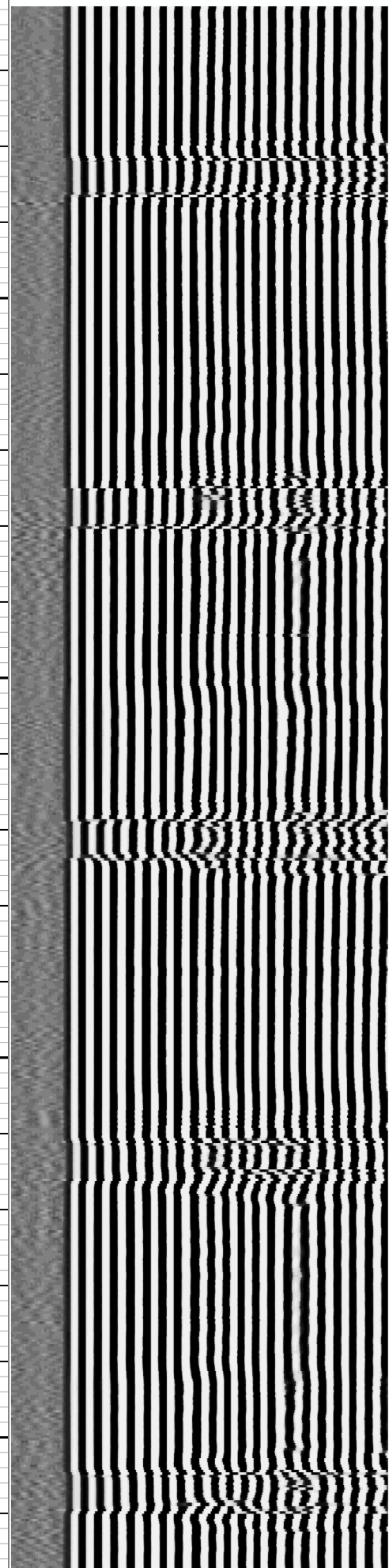
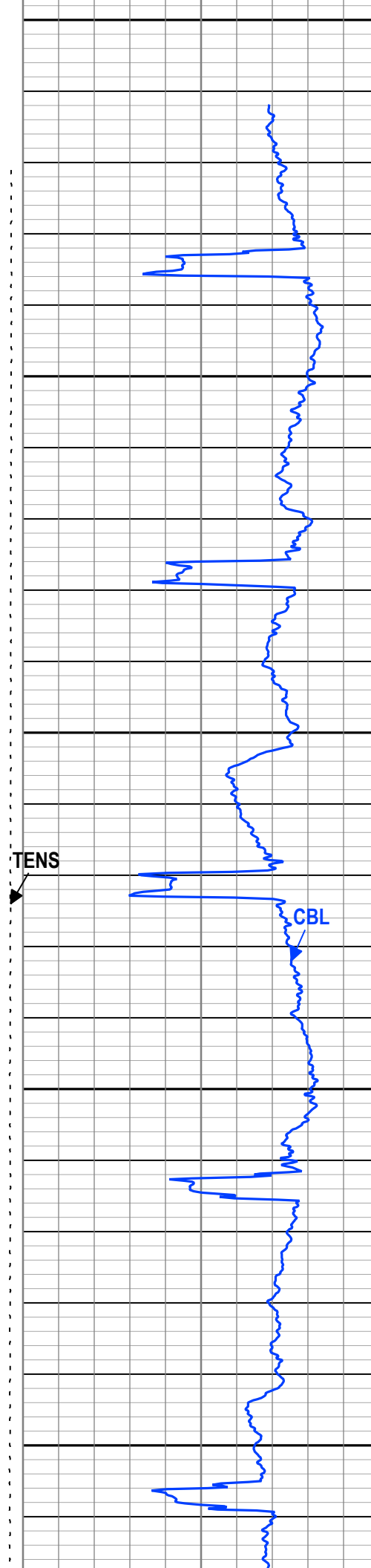
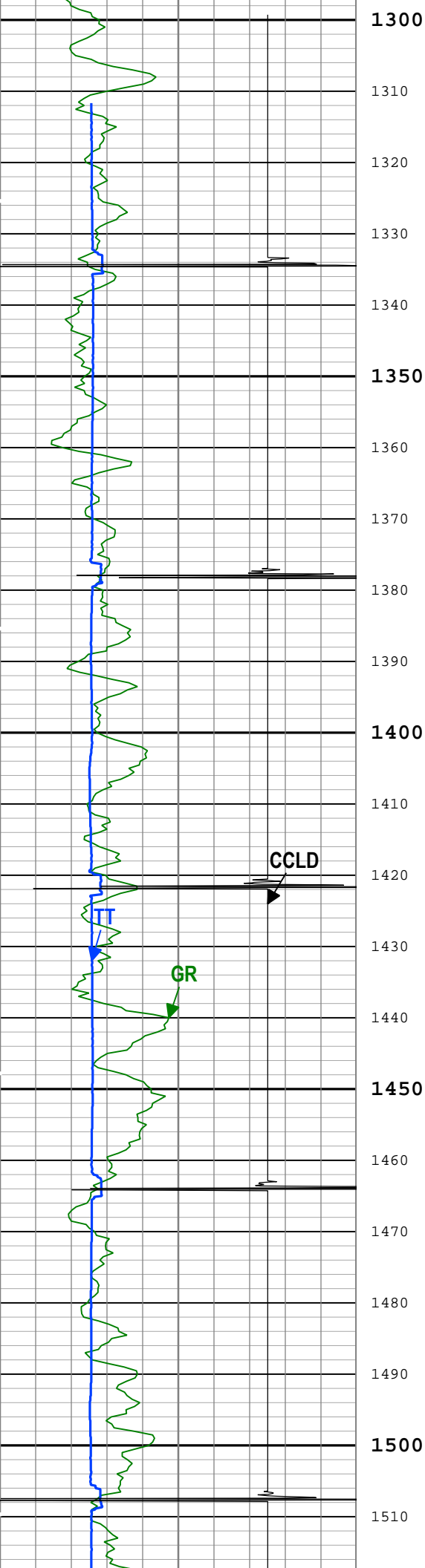
All depths are referenced to toolstring zero

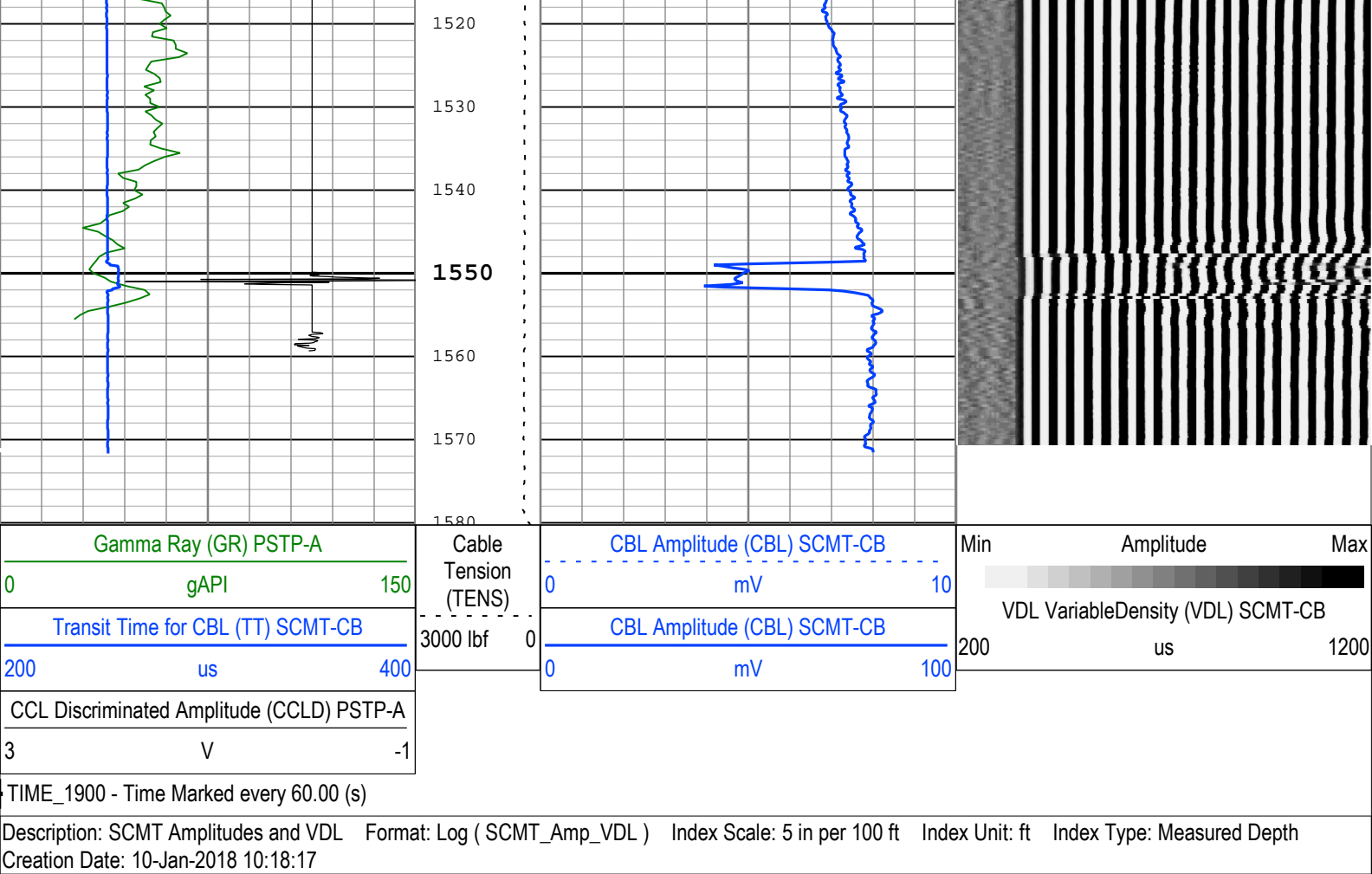
Log

Description: SCMT Amplitudes and VDL    Format: Log ( SCMT\_Amp\_VDL )    Index Scale: 5 in per 100 ft    Index Unit: ft    Index Type: Measured Depth  
Creation Date: 10-Jan-2018 10:18:17

TIME\_1900 - Time Marked every 60.00 (s)







## Channel Processing Parameters

### One: Parameters

Parameter	Description	Tool	Value	Unit
BHT	Bottom Hole Temperature	Borehole	212	degF
CB3G	SCMT CBL 3 ft Peak Detection T0_Delay and Noise Gate	SCMT-CB	224	us
CBLG	CBL Gate Width	SCMT-CB	40	us
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THNO	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.248	in
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
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DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
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EDF	Elevation of Derrick Floor Above Permanent Datum	WLSESSION	30	ft
EPD	Elevation of Permanent Datum (PDAT) above Mean Sea Level	WLSESSION	8432	ft
FCF	CBL Fluid Compensation Factor	SCMT-CB	1	
GGRD	Geothermal Gradient	Borehole	1	0.01 degF/ft
GTSE	Generalized Temperature Selection, from Measured or Computed Temperature	Borehole	GTEM_LINEST(RT)	
MSA	Minimum Sonic Amplitude	SCMT-CB	0.48	mV
PDAT	Permanent Datum	WLSESSION	GL	
RUN_SNUM	Run Sequence Number	WSDRUN	8	
SHT	Surface Hole Temperature	Borehole	68	degF
TD	Total Measured Depth	Borehole	9109	ft

## Tool Control Parameters

### One: Parameters



Parameter	Description	Tool	Value	Unit
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MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	1800	ft/h
PCCG	PSP Downhole CCL Gain	PSTP-A	24 dB	

Company: Caerus Operating LLC

**Schlumberger**

Well: Puckett 15C-23 697

Field: Grand Valley

County: Garfield

State: Colorado

Cement Bond Log

SCMT

