

Company: Caerus Operating LLC

Well: Puckett 33C-23 697

Field: Grand Valley

County: Garfield State: Colorado

Cement Bond Log
Reservoir Saturation Log
Gamma Ray / CCLCounty: Garfield
Field: Grand Valley
Location: Lat 39.30' 07.76" N Long 108.11' 18.38"W
Well: Puckett 33C-23 697
Company: Caerus Operating LLC

Location:	Lat 39.30' 07.76" N Long 108.11' 18.38"W		Elev.: K.B. 8462.00 ft G.L. 8432.00 ft D.F. 8462.00 ft	
	Permanent Datum:	Ground Level	Elev.: 8432.00 f	
	Log Measured From:	Kelly Bushing	30.00 ft above Perm.Datum	
	Drilling Measured From:	Kelly Bushing		
API Serial No.	Section:	Township:	Range:	
5045233770000	23	6S	97W	

Logging Date 22-Dec-2017

Run Number One

Depth Driller 9539.00 ft

Schlumberger Depth 9539.00 ft

Bottom Log Interval 9500.00 ft

Top Log Interval 2500.00 ft

Casing Fluid Type Water

Salinity

Density 8.6 lbm/gal

Fluid Level 8.00 ft

BIT/CASING/TUBING STRING

Bit Size 8.50 in

From 30.00 ft

To 9539.00 ft

Casing/Tubing Size 4.5 in

Weight 11.6 lbm/ft

Grade P110

From 30.00 ft

To 9539.00 ft

Max Recorded Temperatures 239.7 degF

Logger on Bottom 22-Dec-2017 08:00:00

Unit Number 3003 Location: Evanston, Wyoming

Recorded By Justin Ray

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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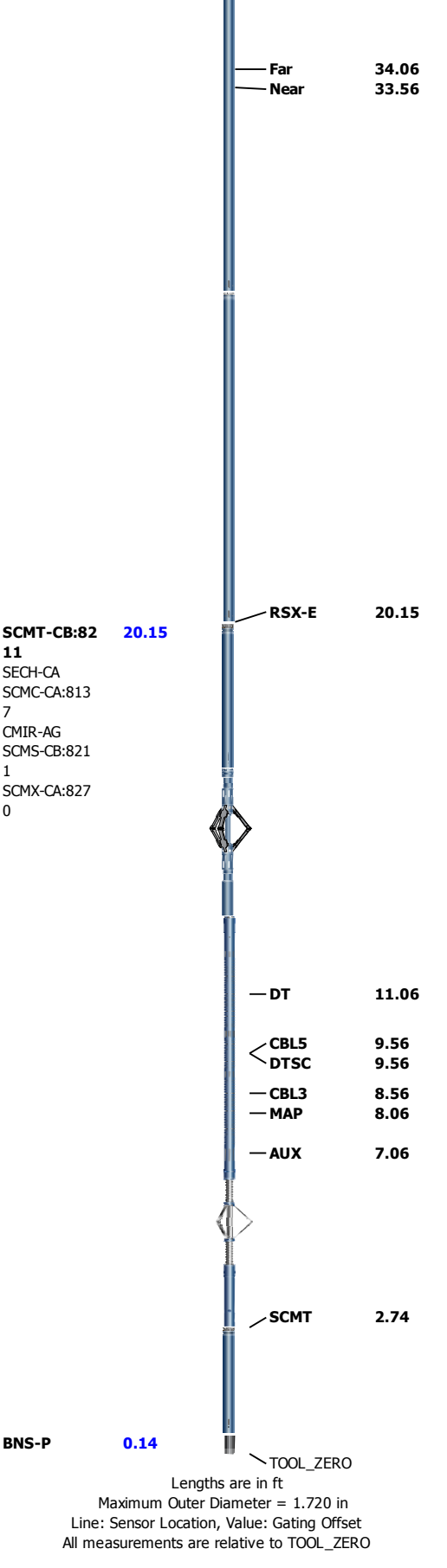
9.5 Parameter Listing

Well Sketch

Driller Depth

30.00 ft





Run 1	
Main 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
Run 1	Log[5]:Up	Up	2120.88 ft	9508.24 ft	22-Dec-2017 7:48:27 AM	22-Dec-2017 10:37:33 AM	ON	10.66 ft	Yes

All depths are referenced to toolstring zero

Log

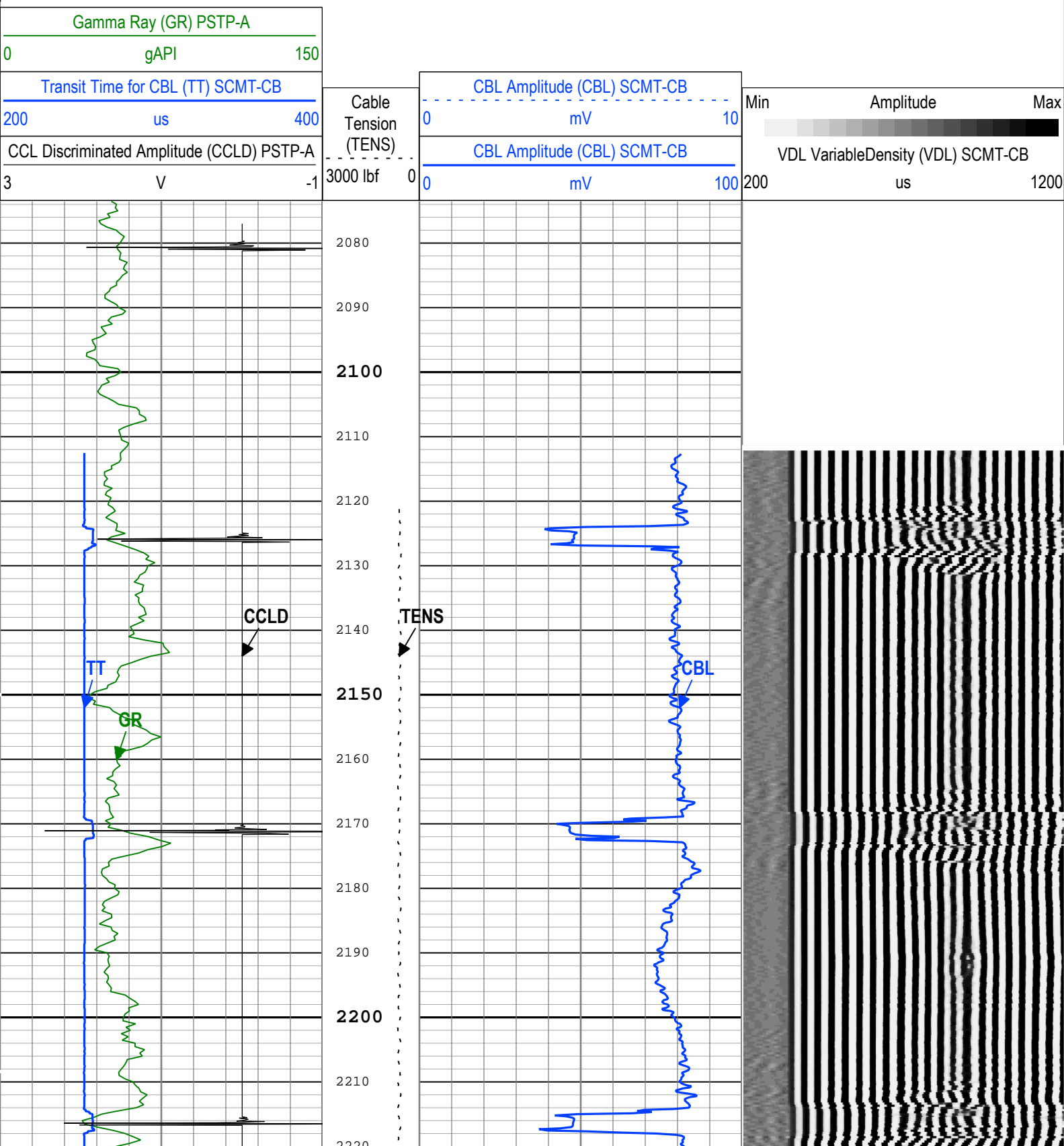
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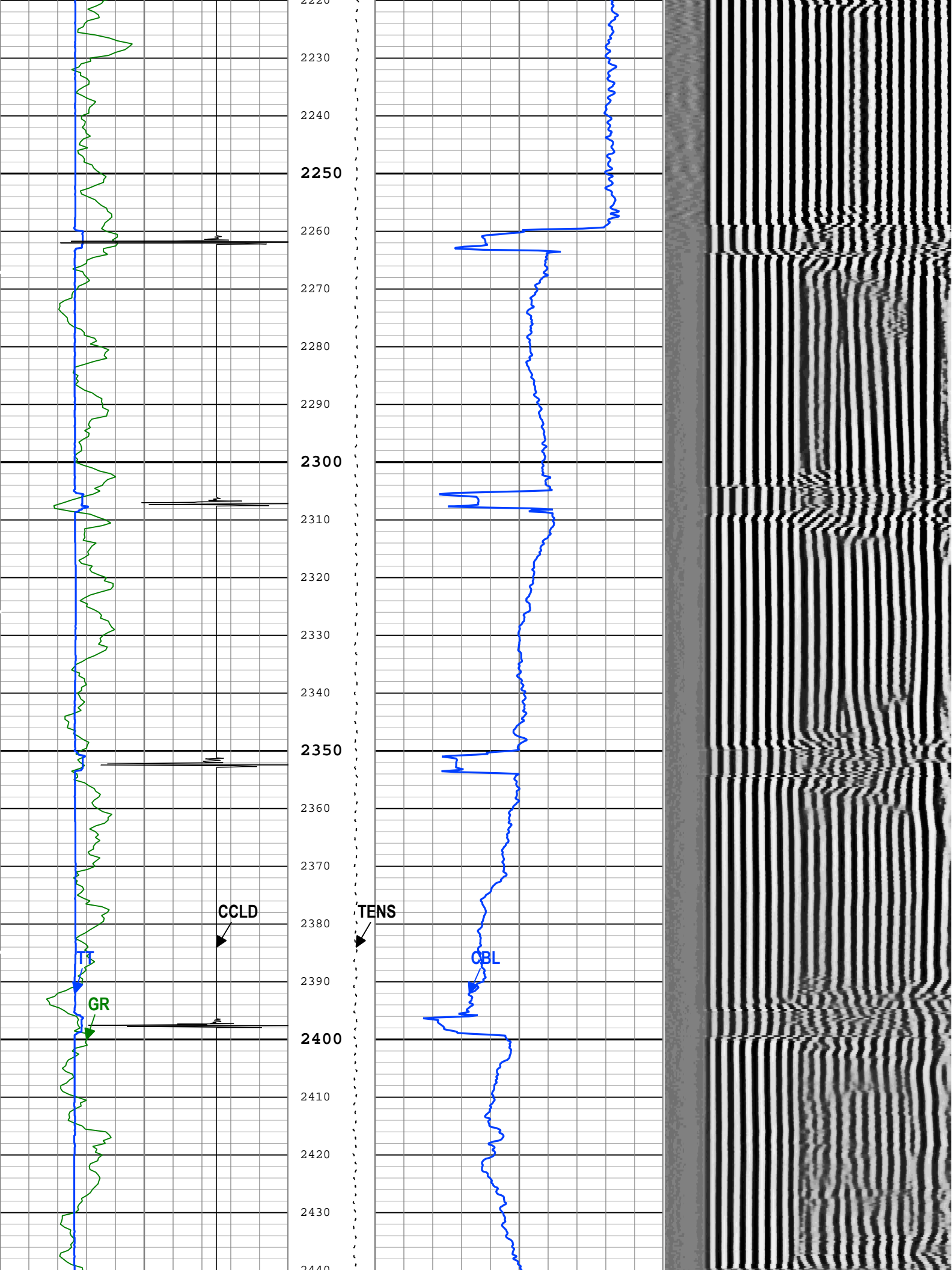
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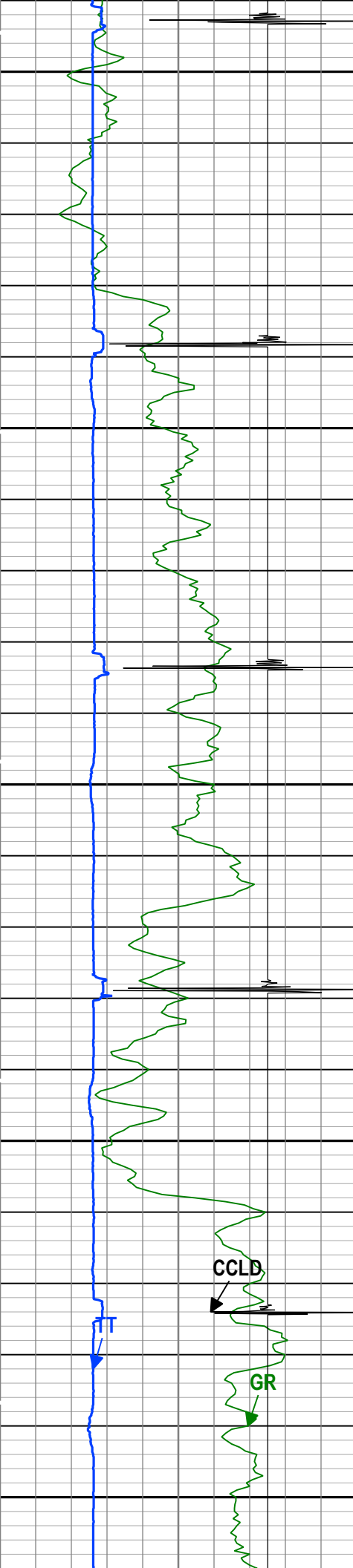
Run 1: Log[5]:Up:S005

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: 07-Jan-2018 11:11:44

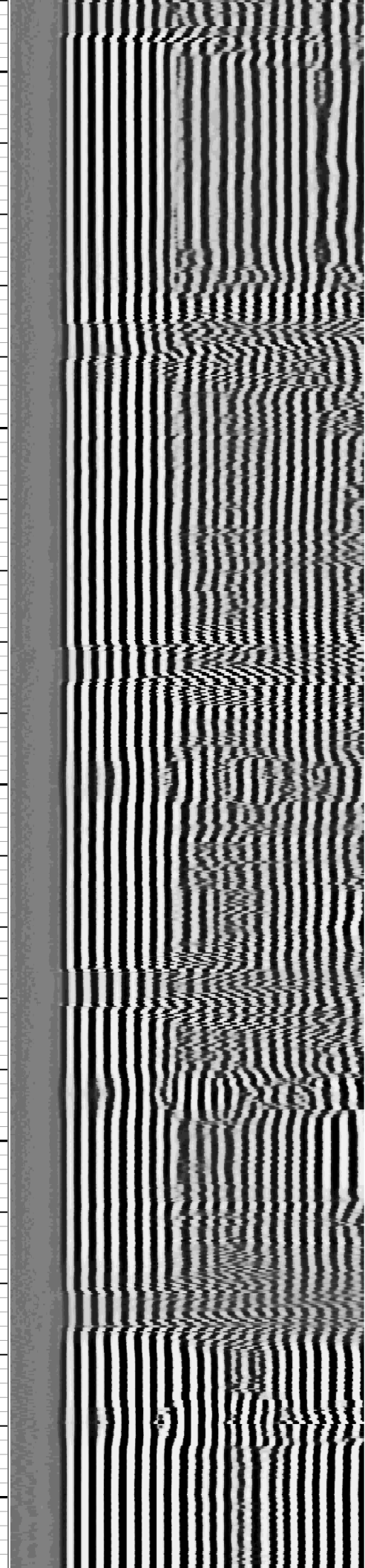
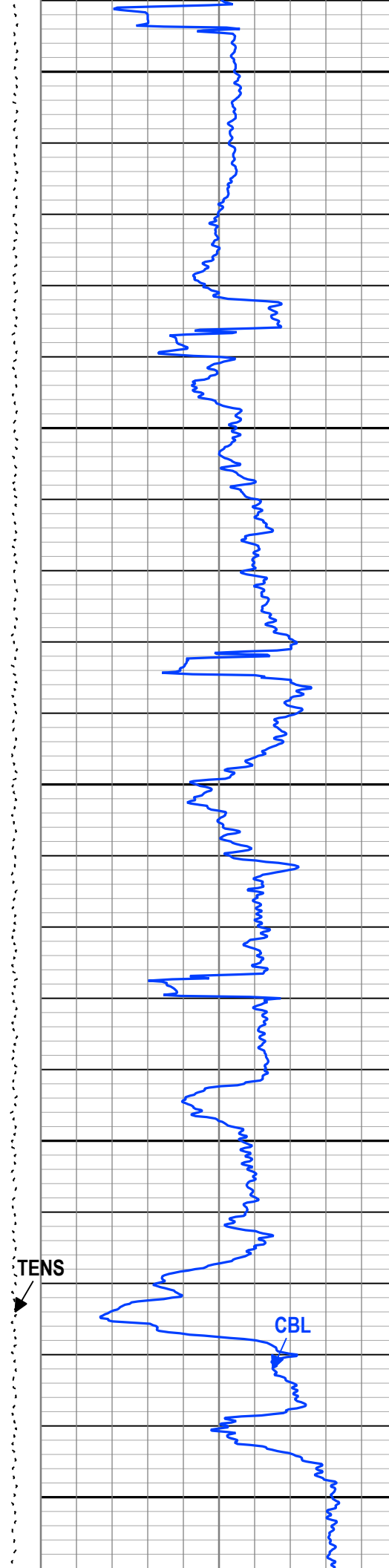
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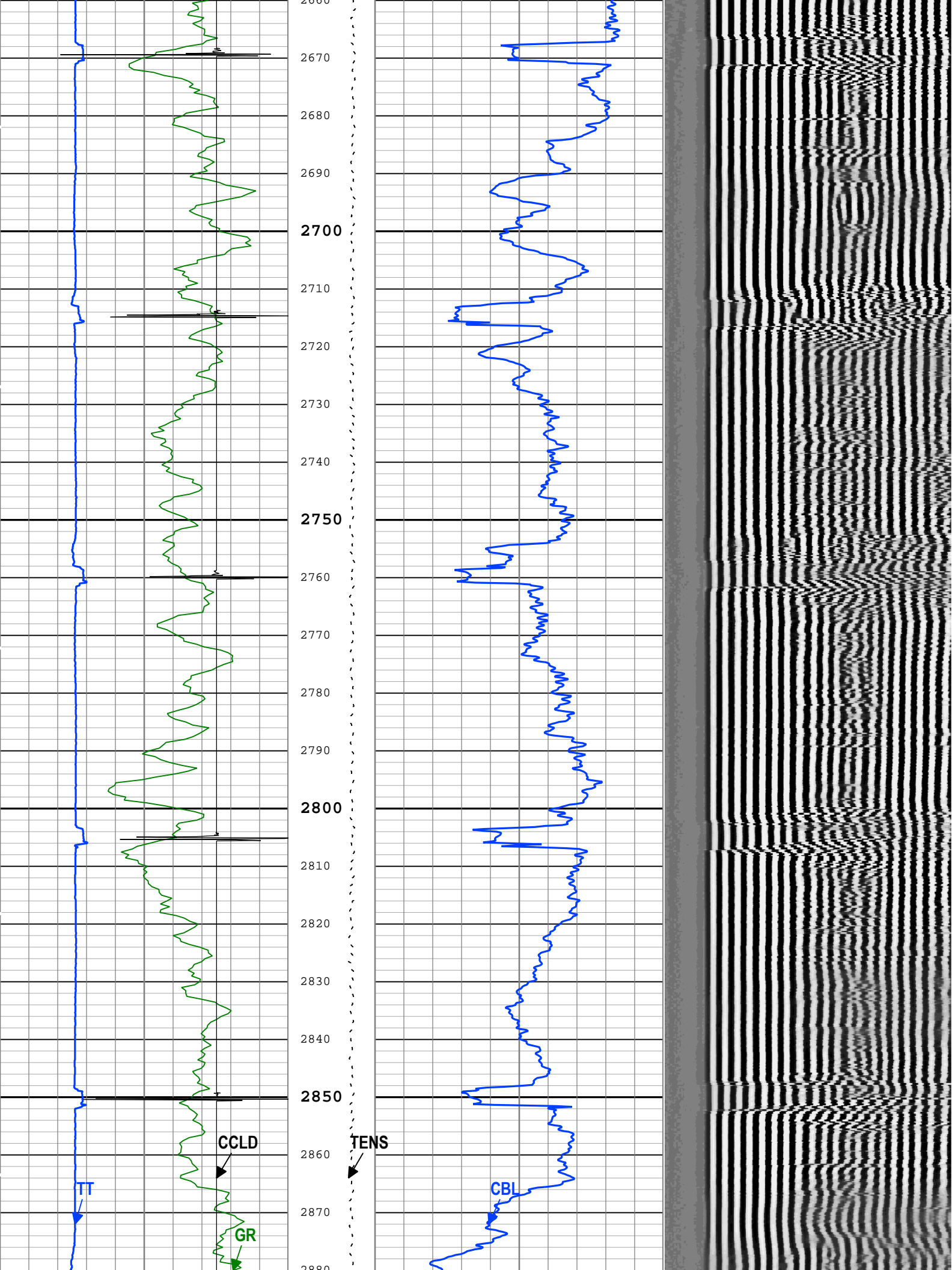


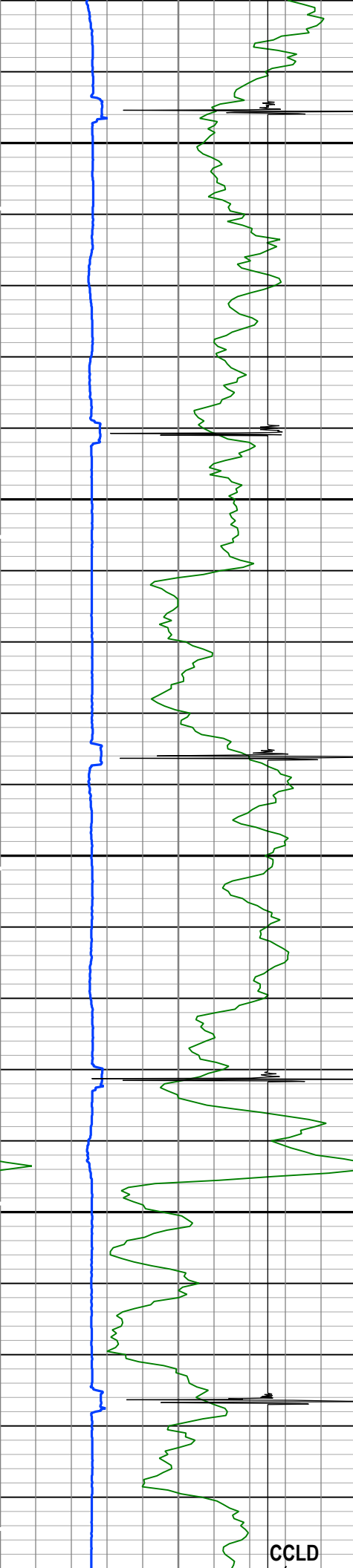




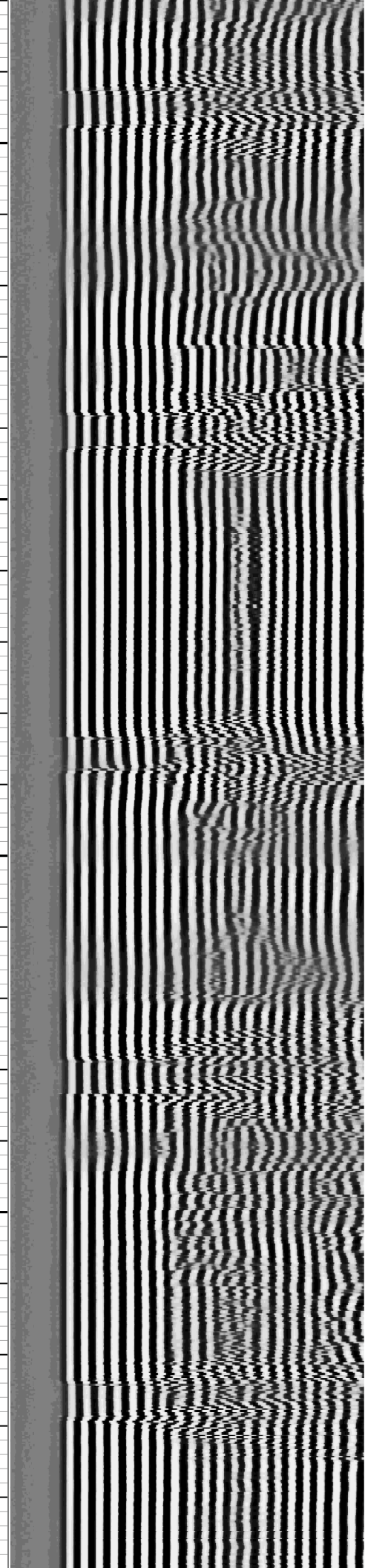
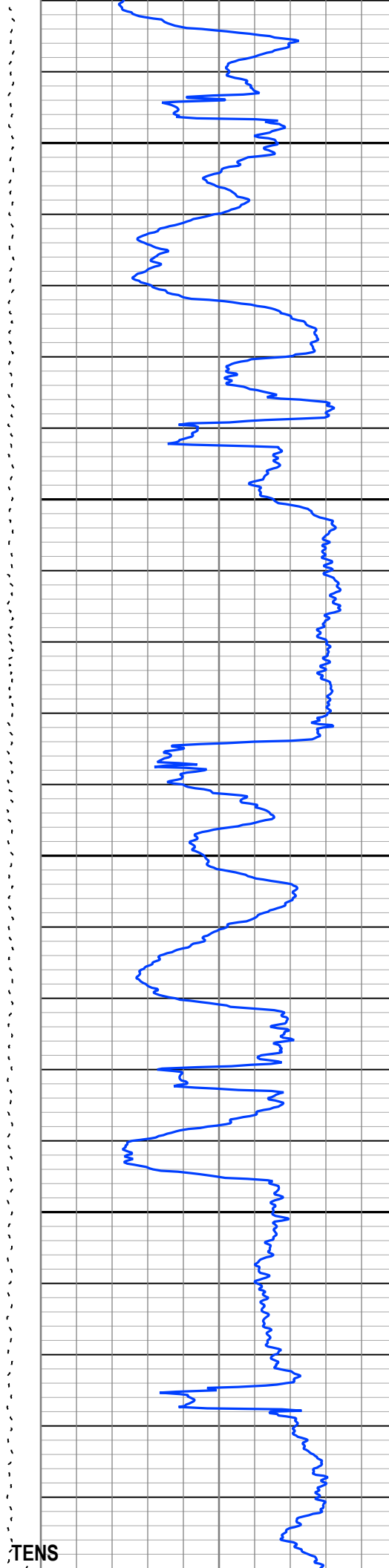
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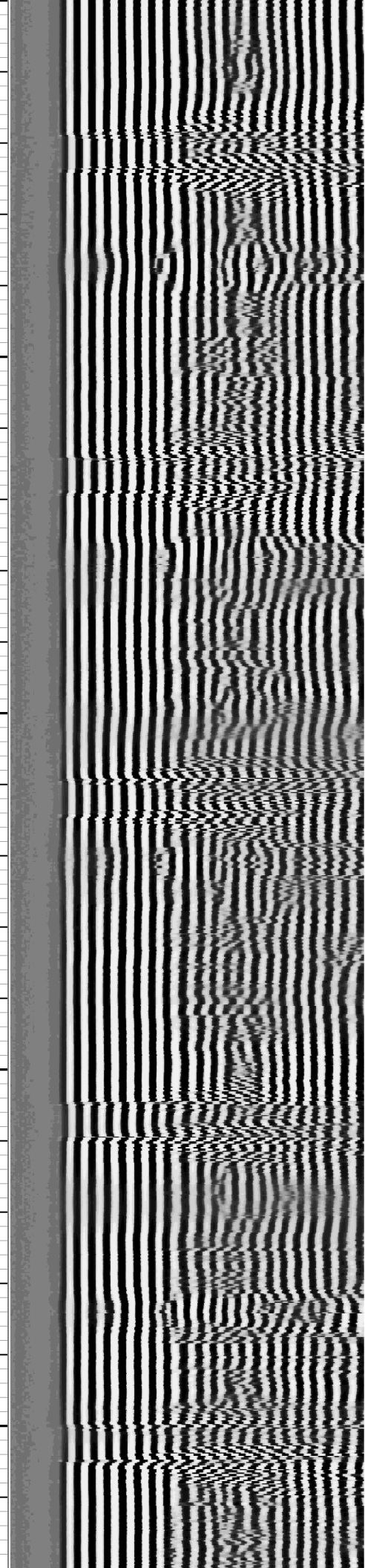
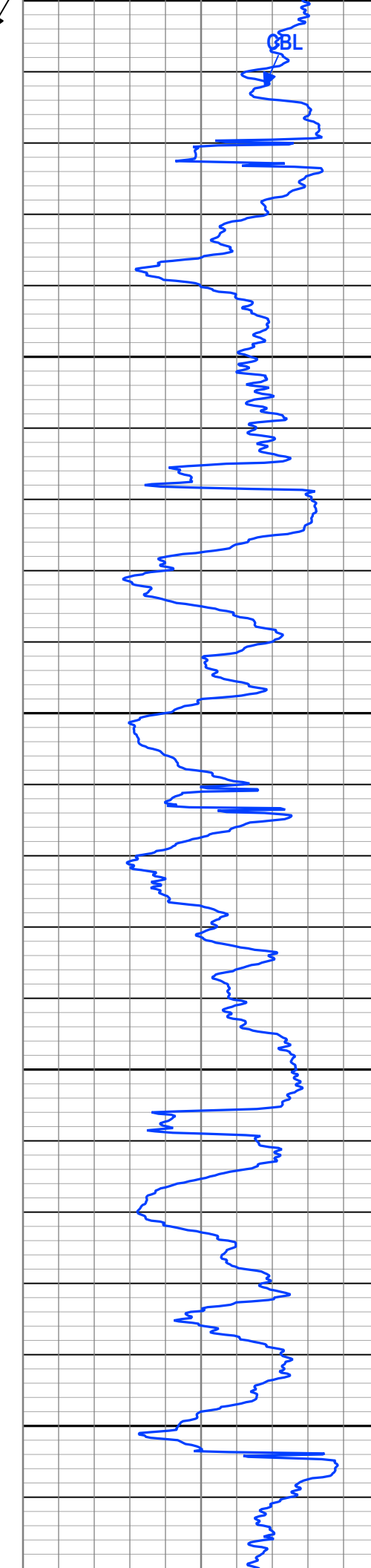
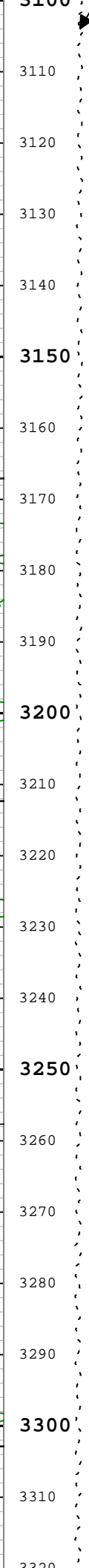
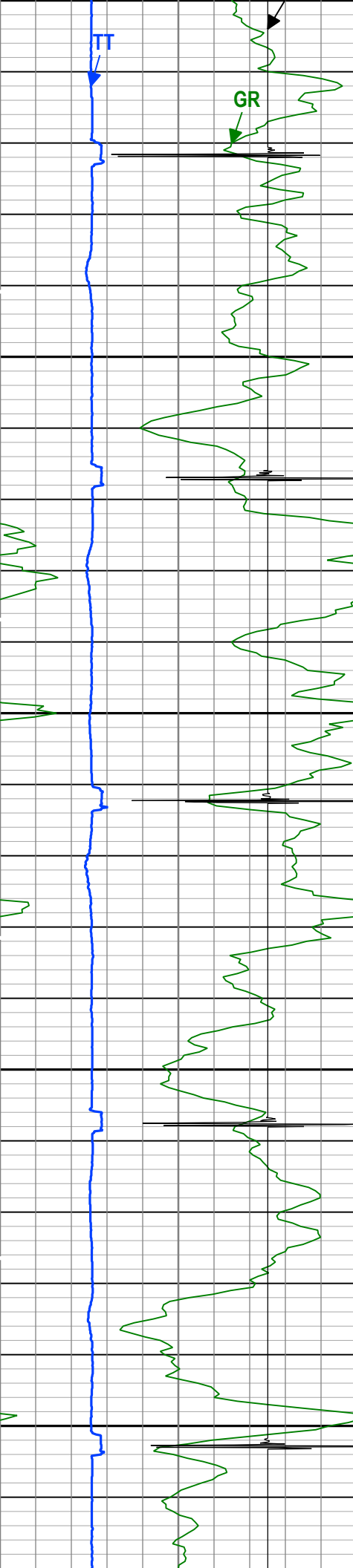


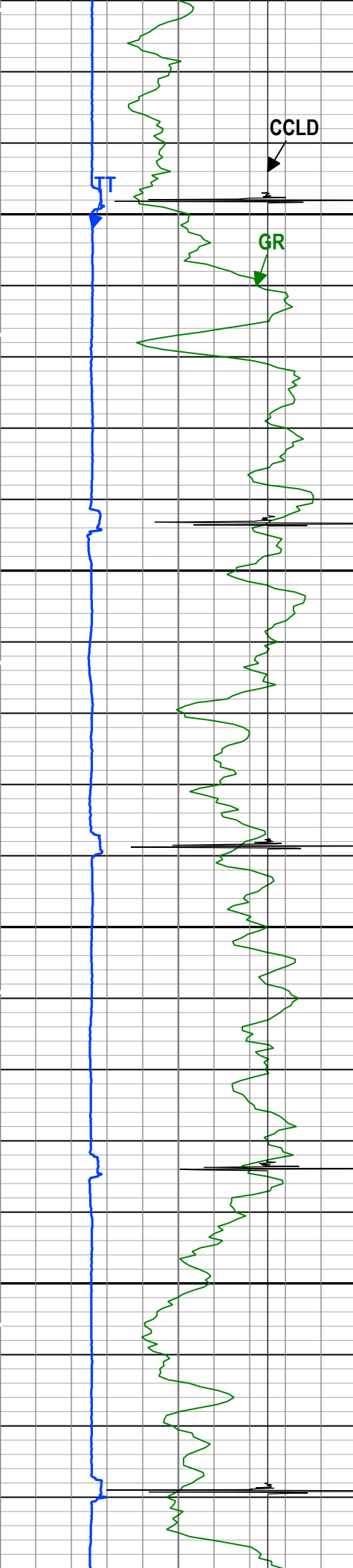
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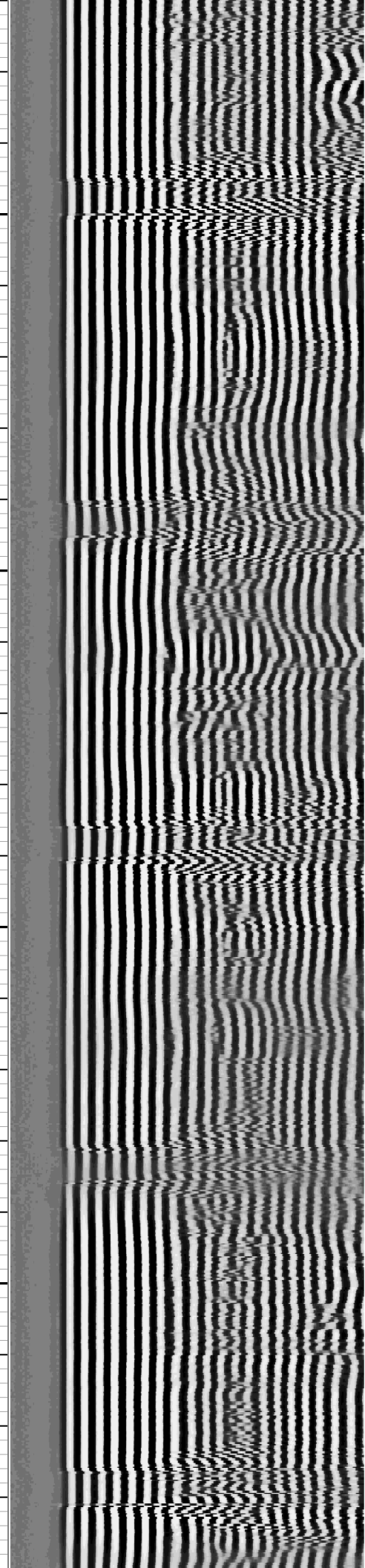
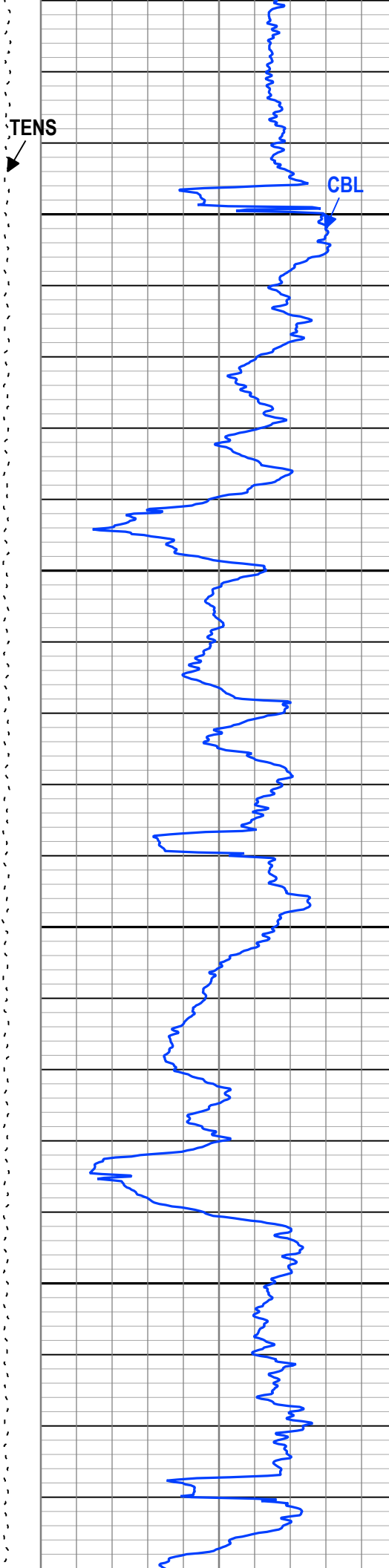
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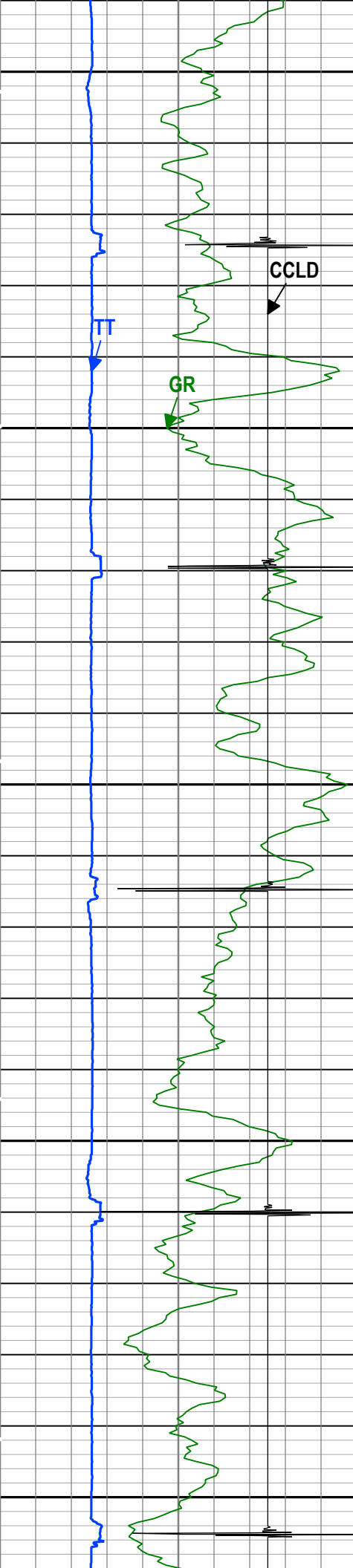
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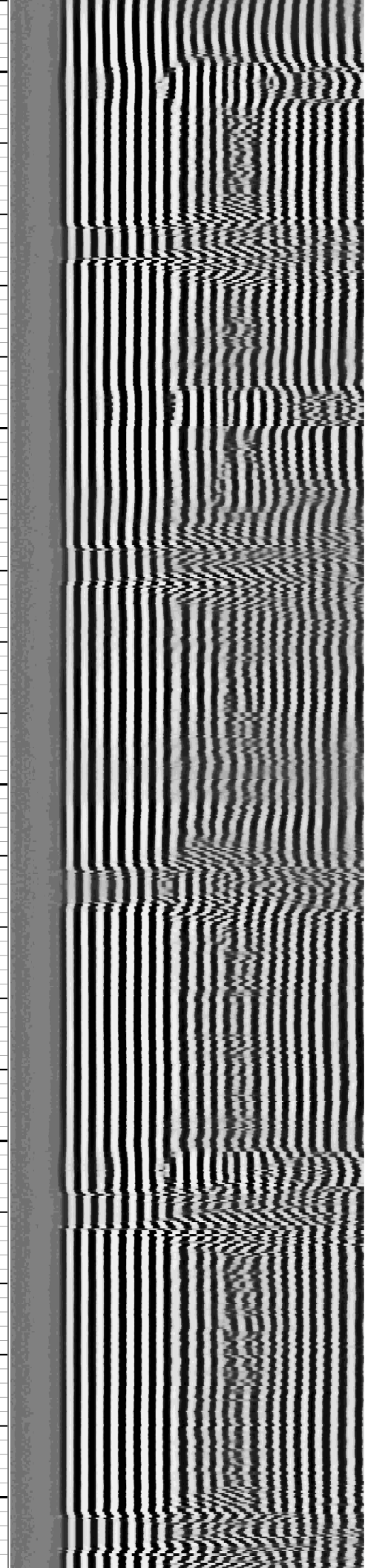
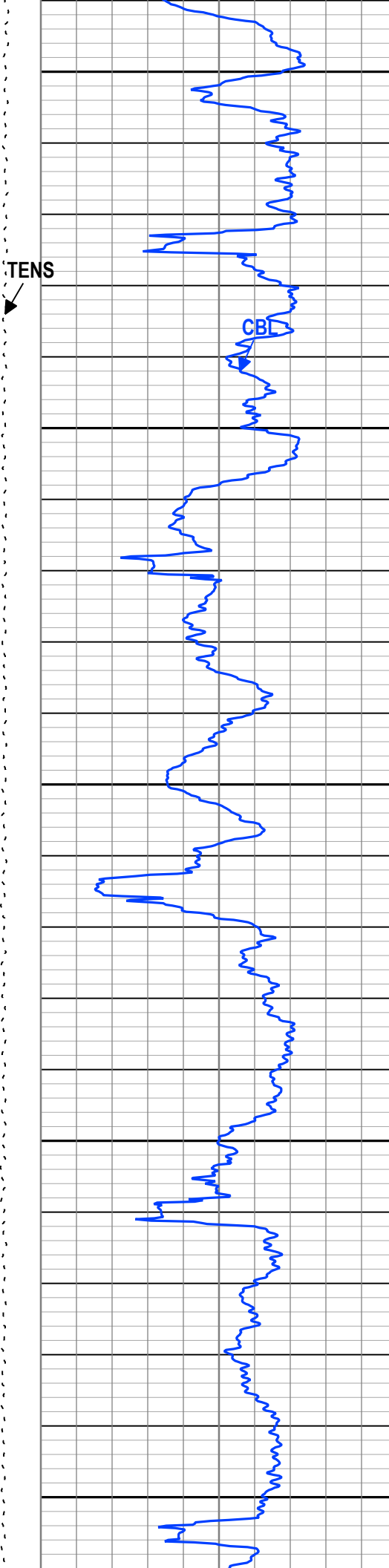


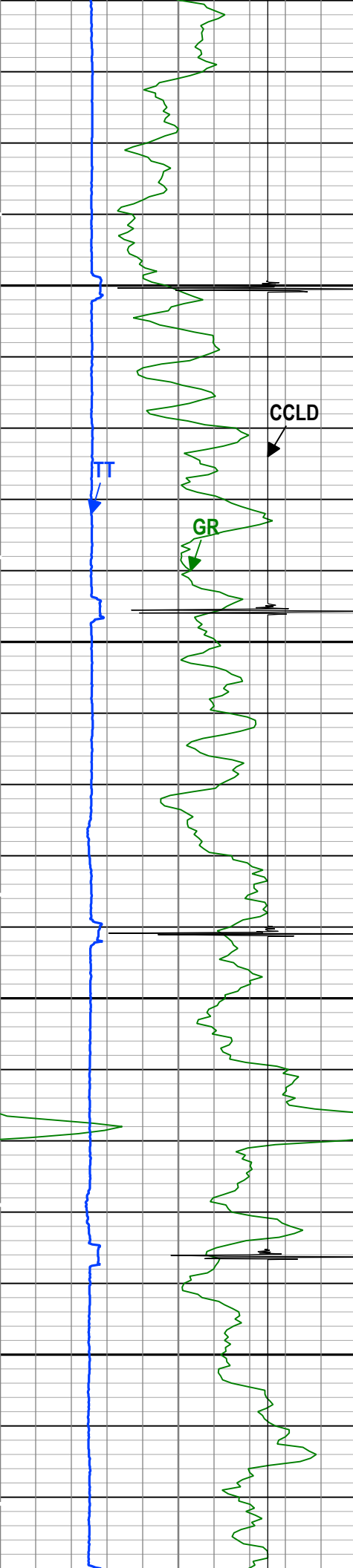
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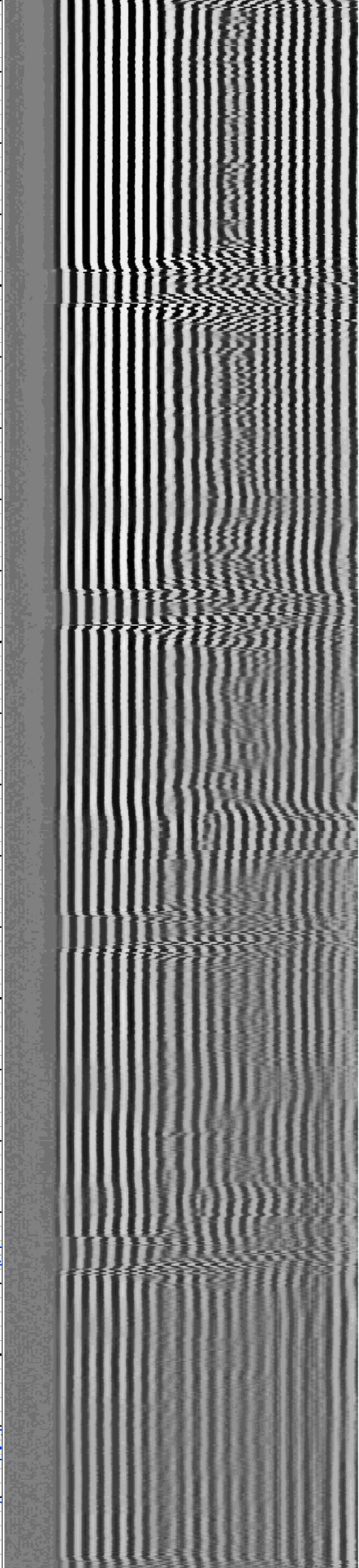
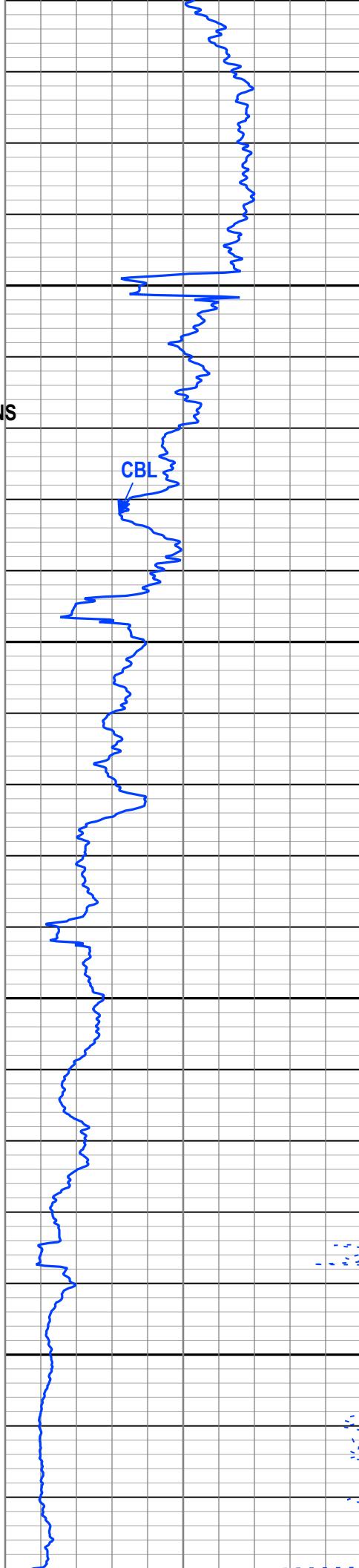


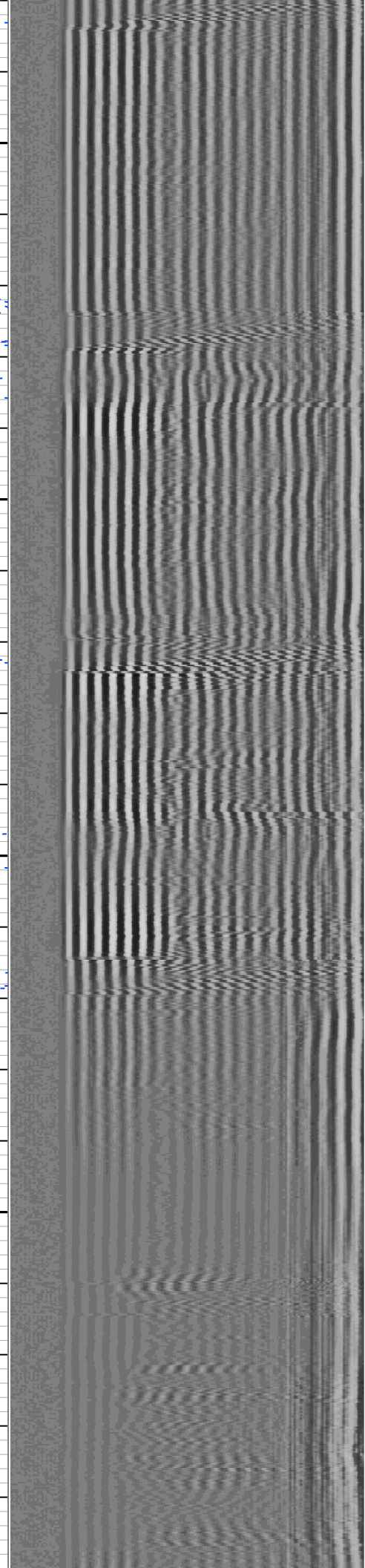
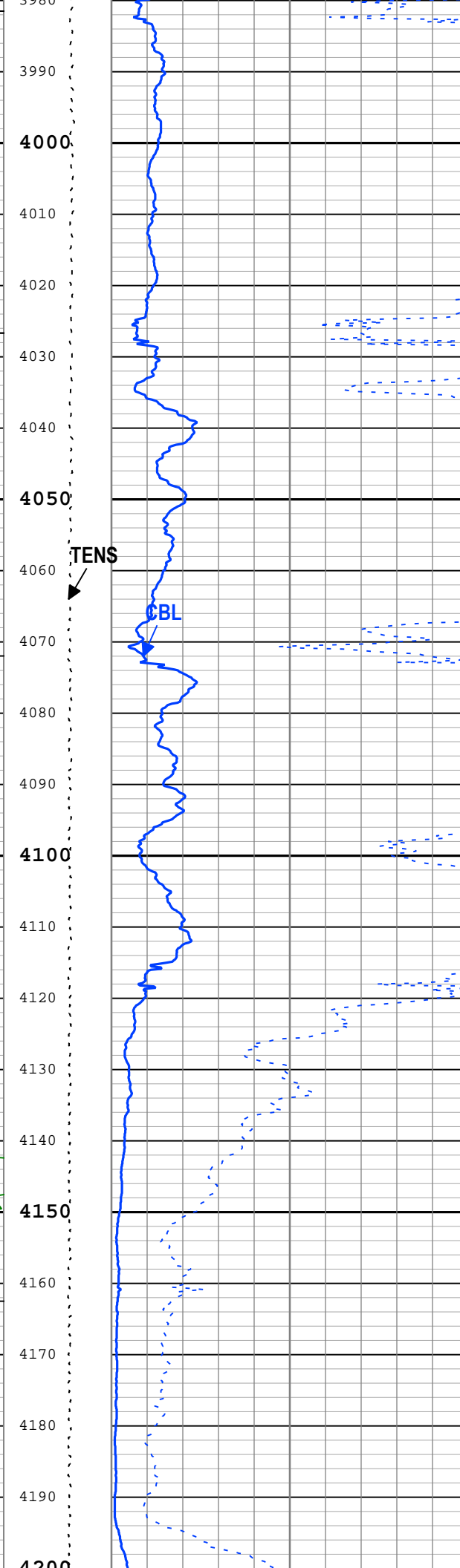
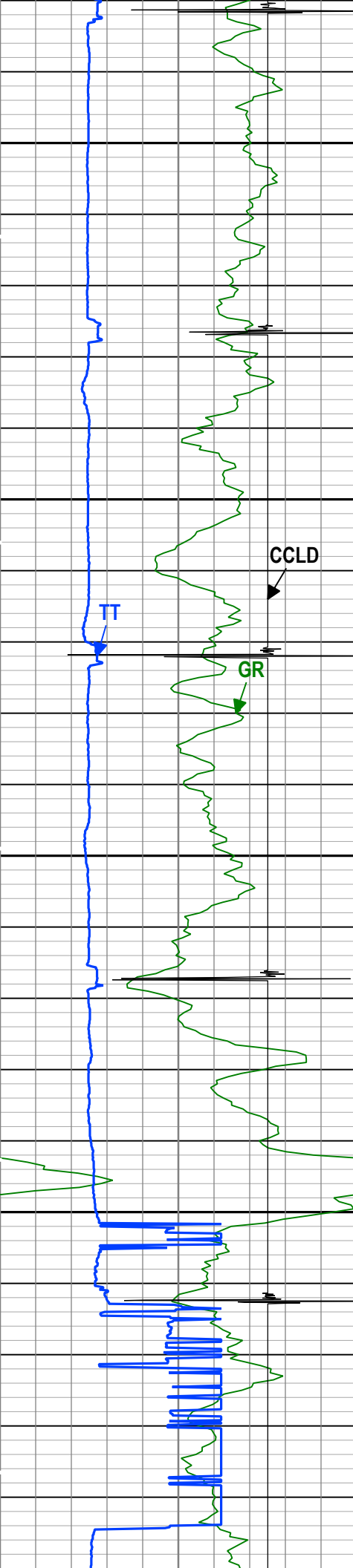


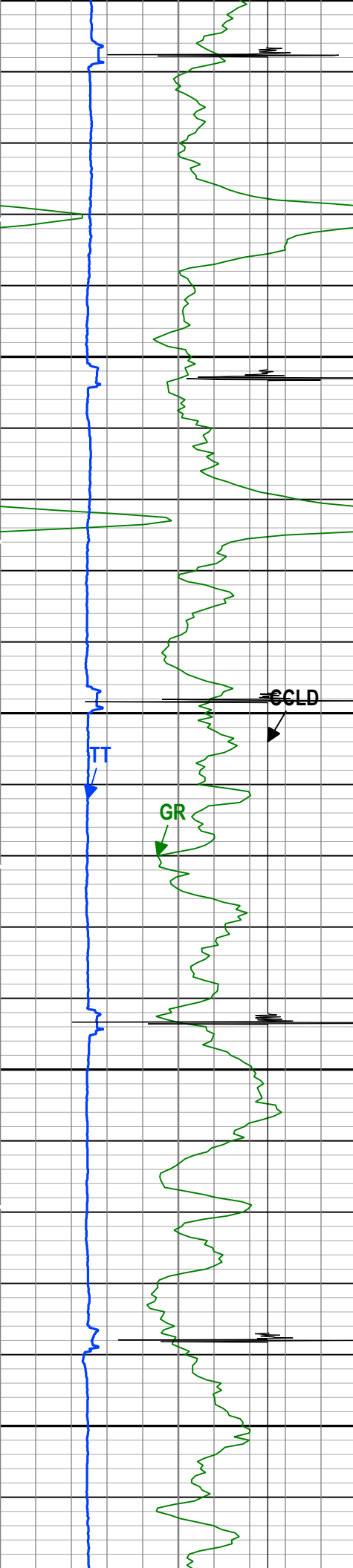
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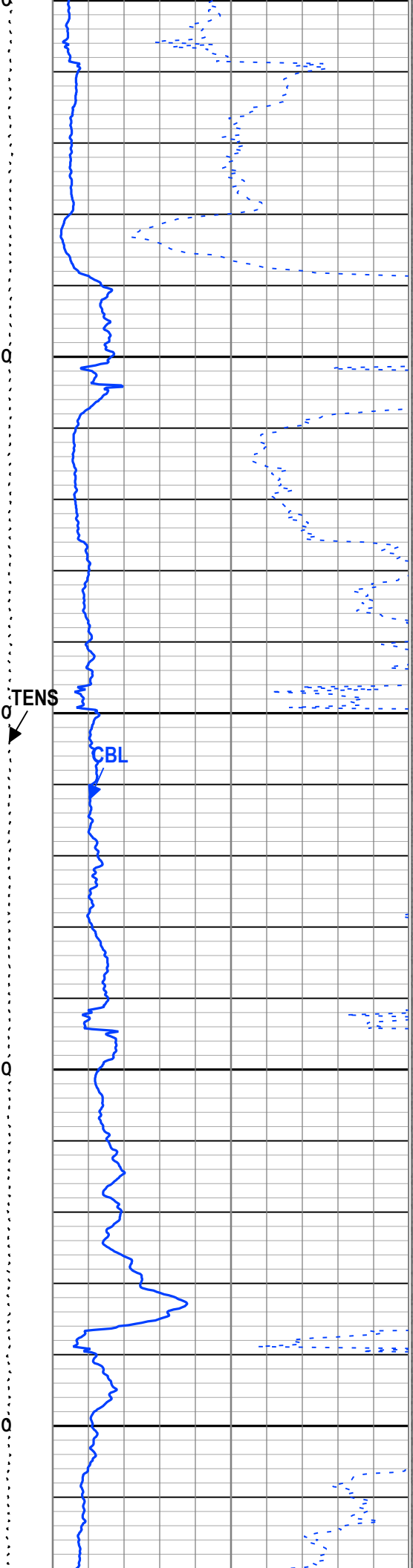
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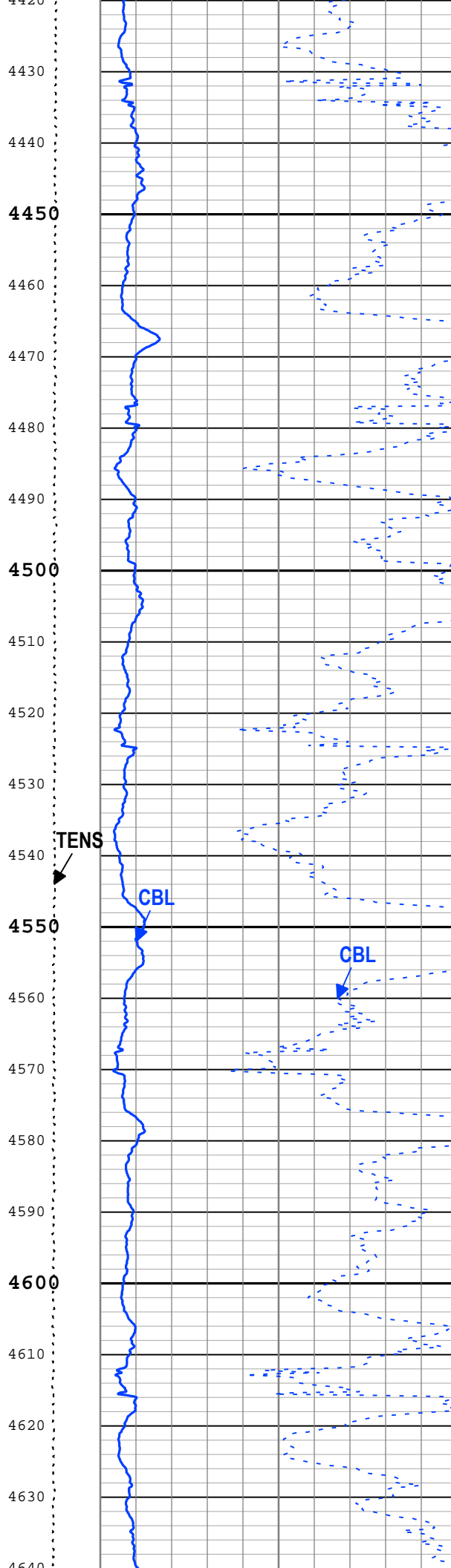
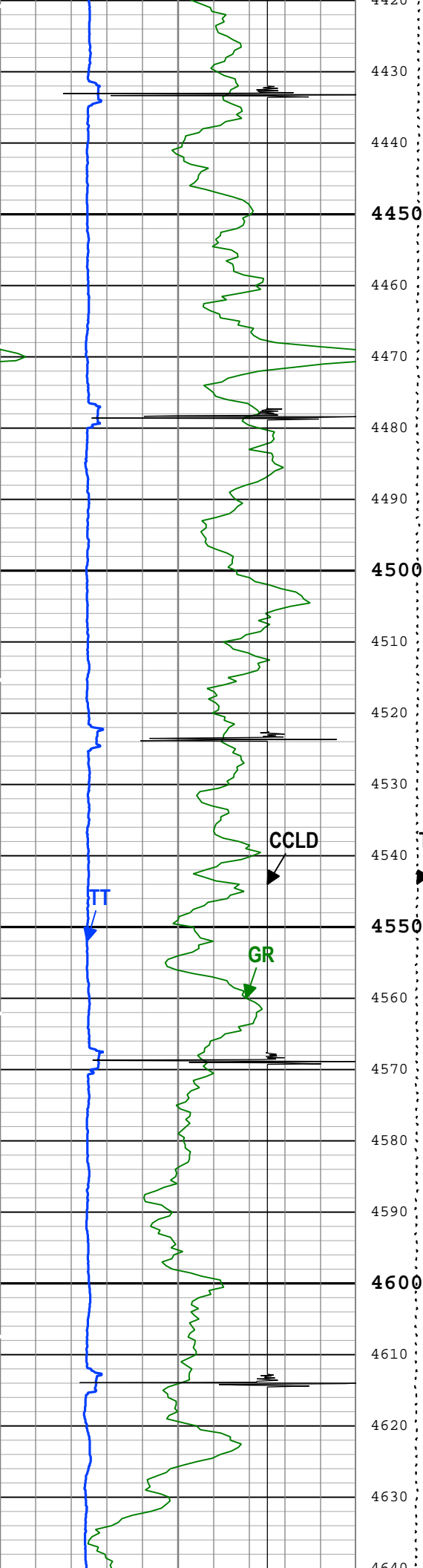


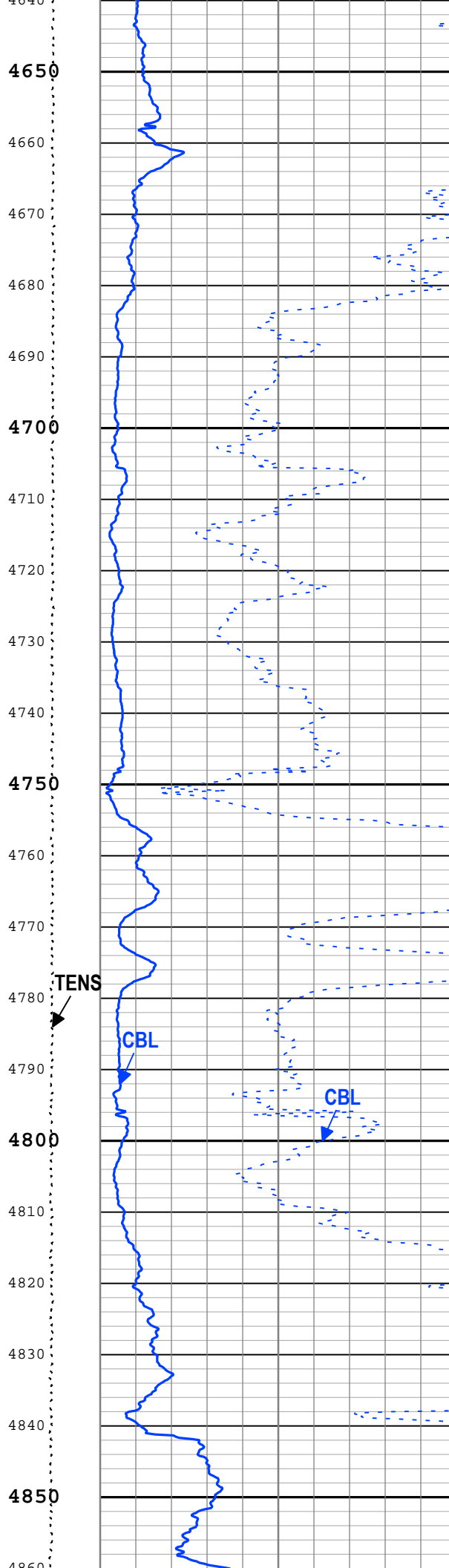
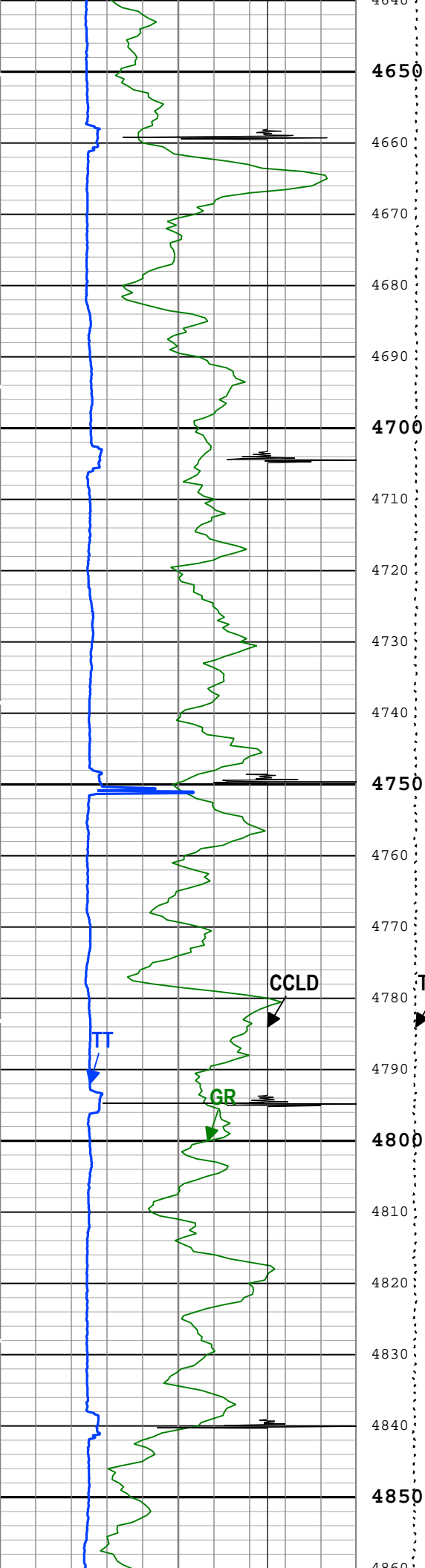


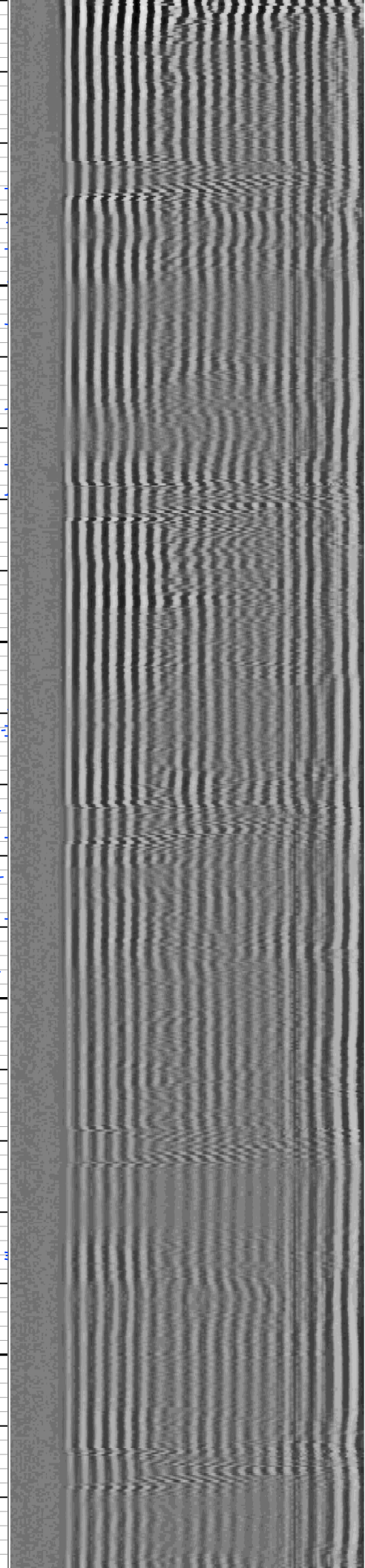
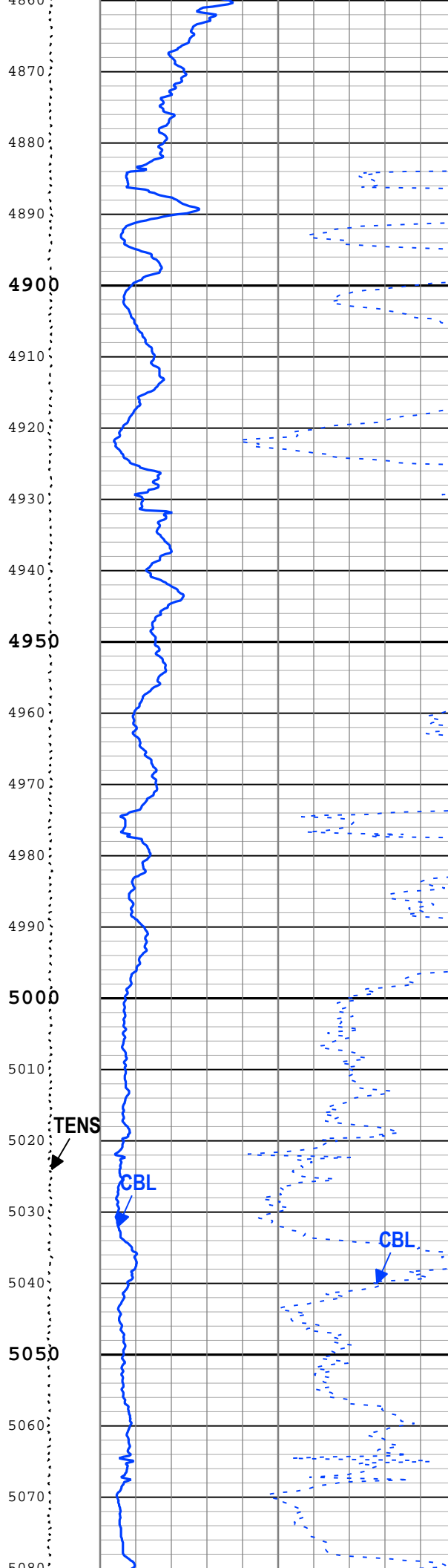
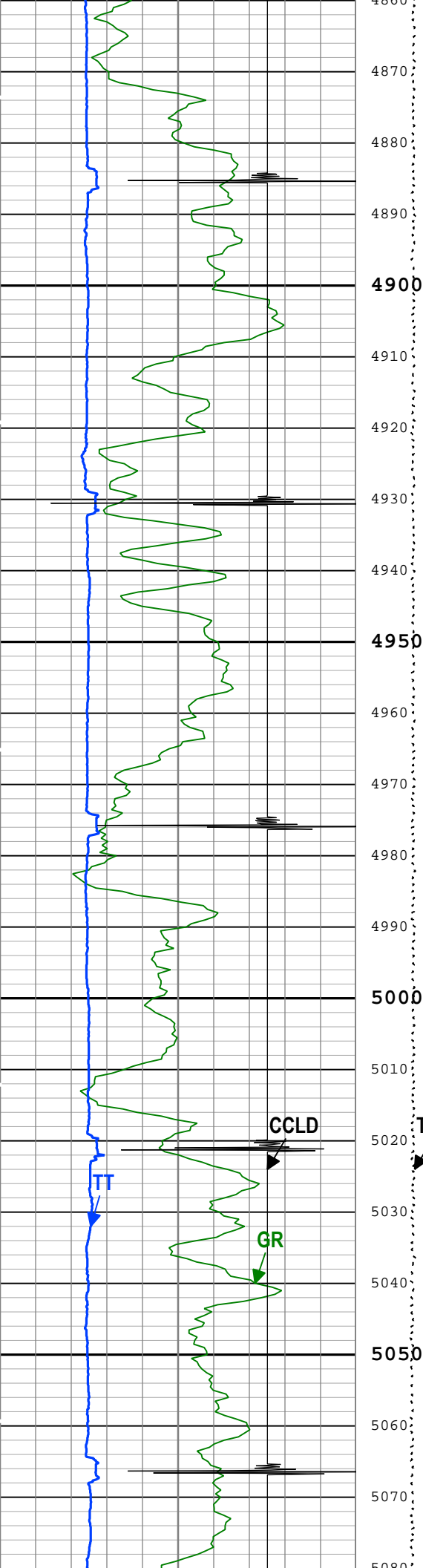


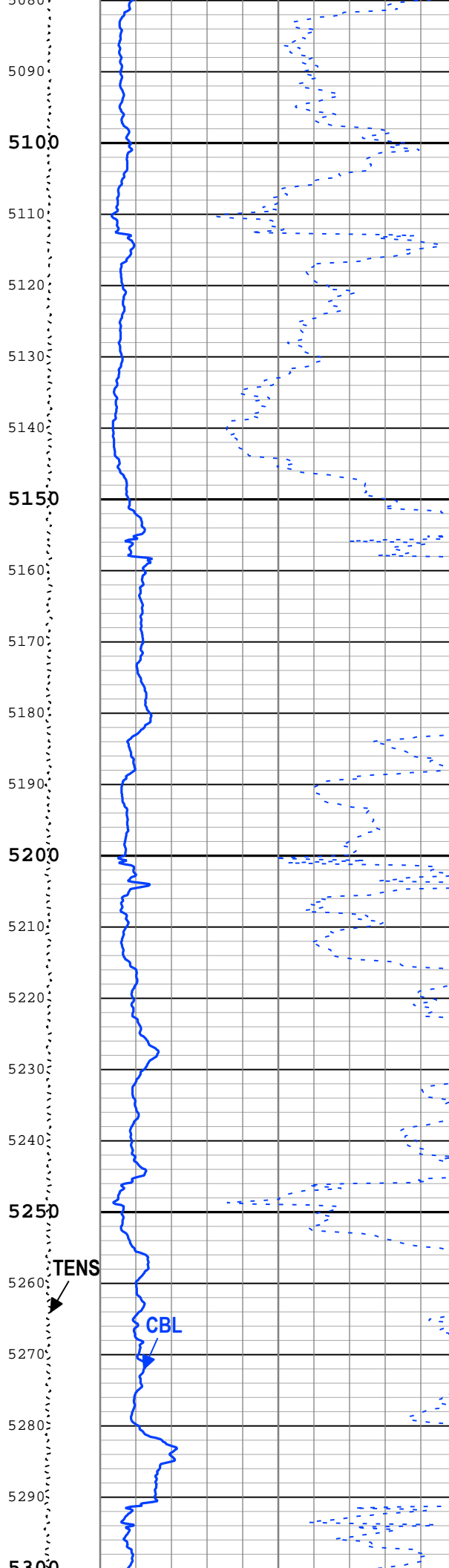
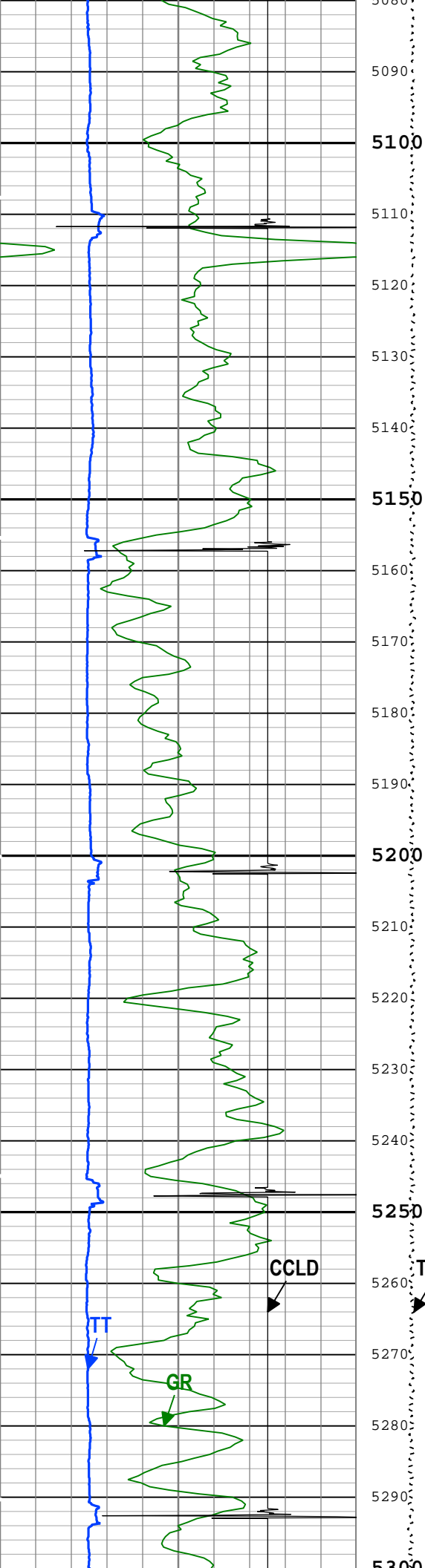
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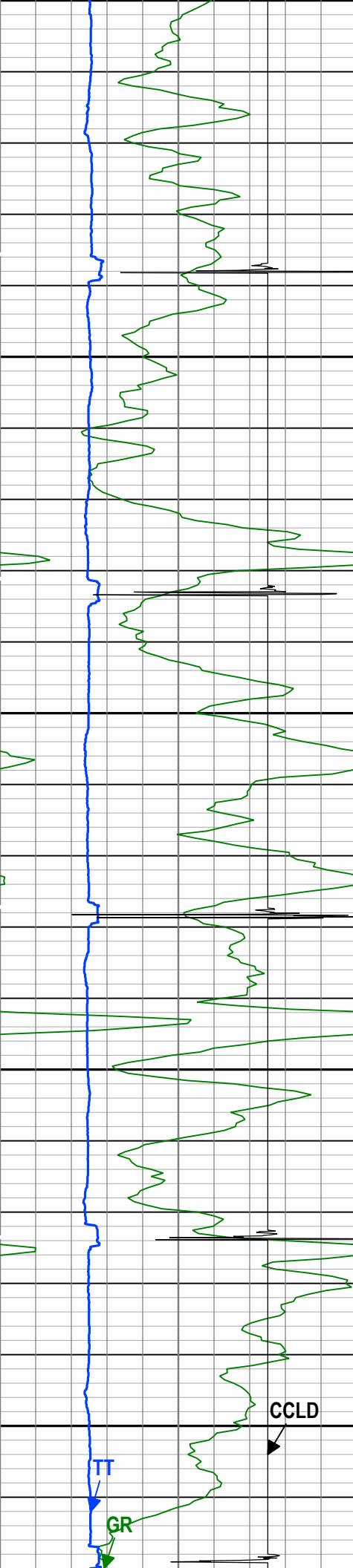




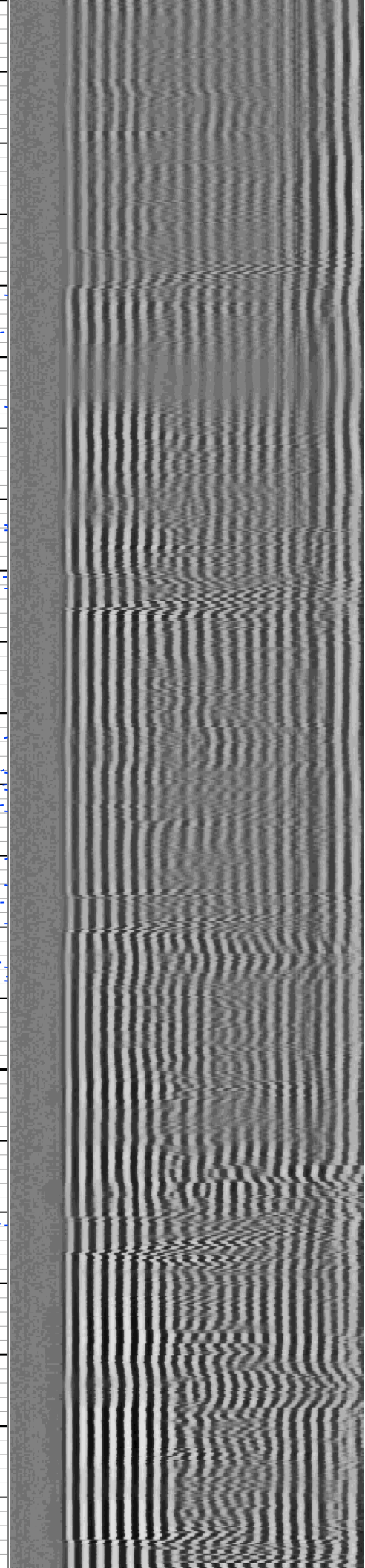
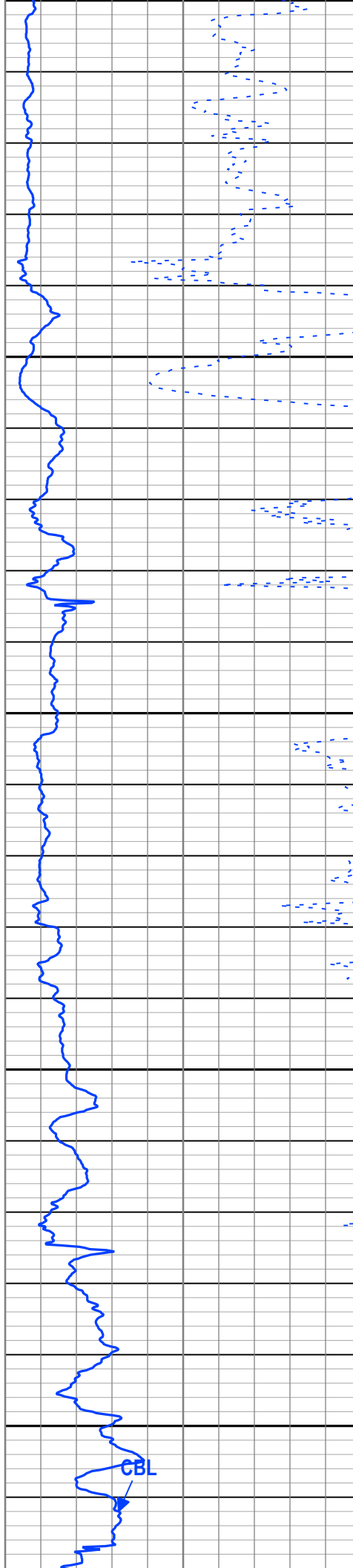


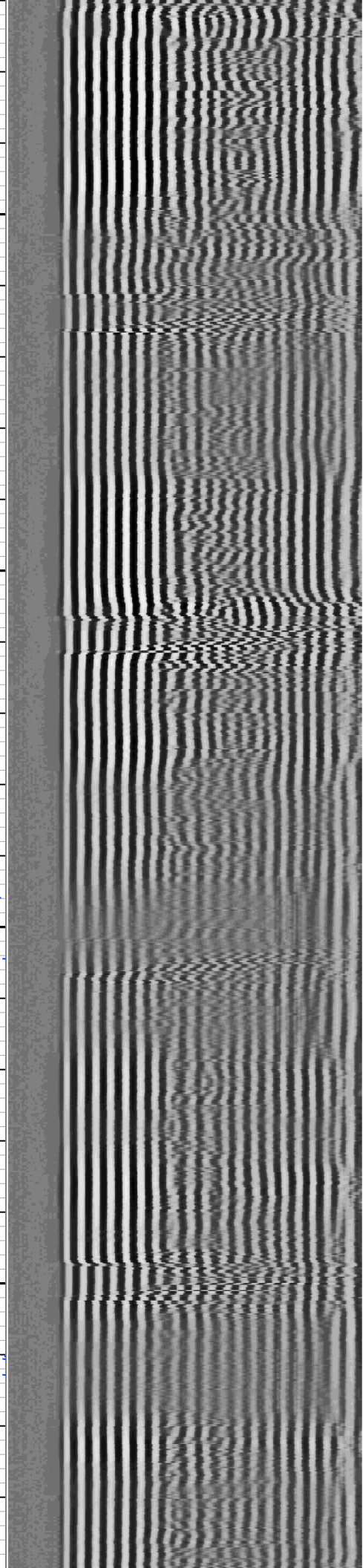
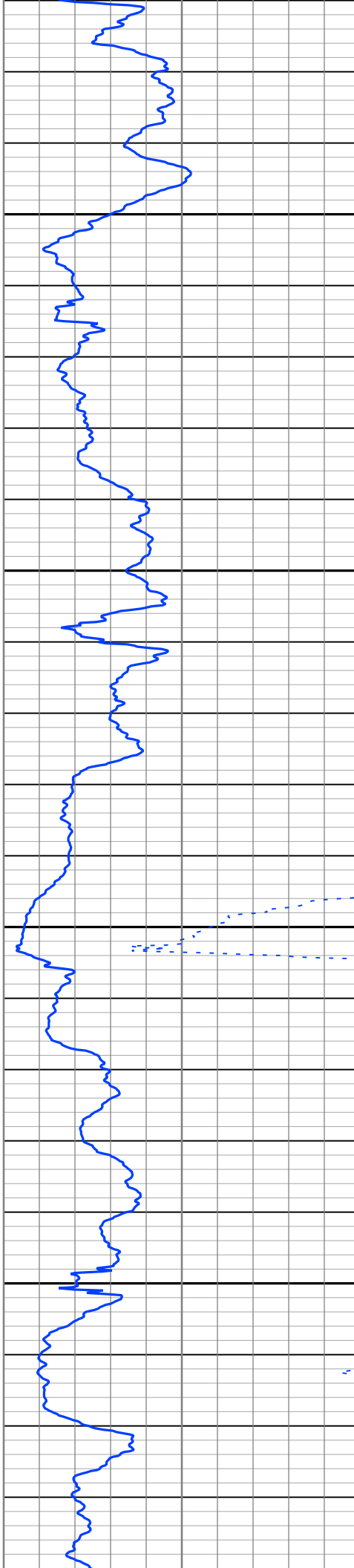
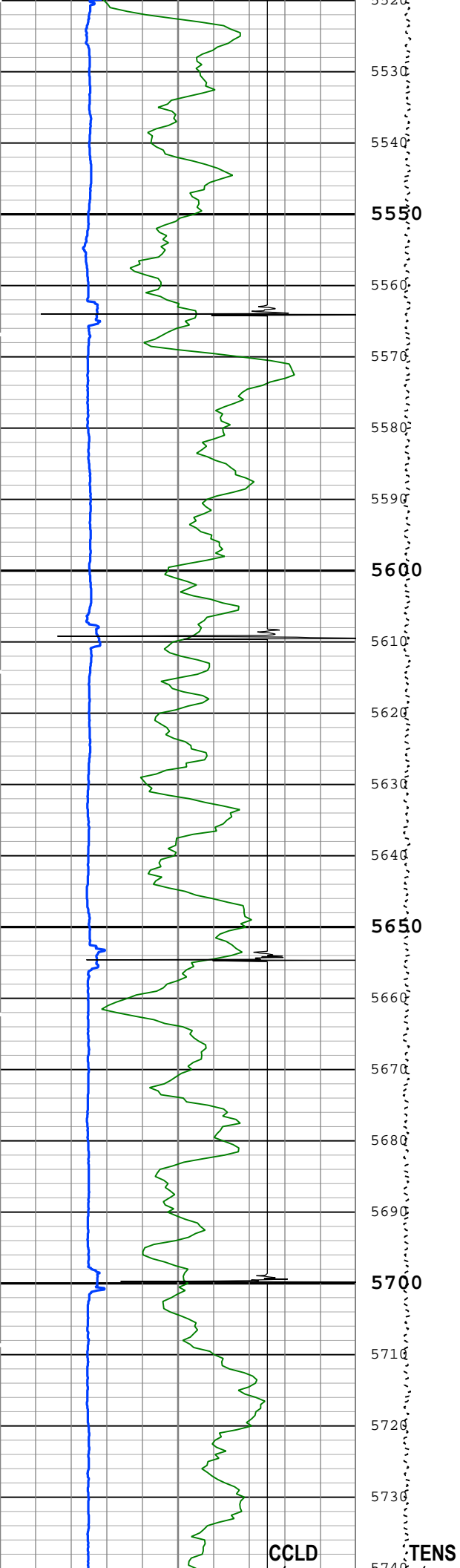


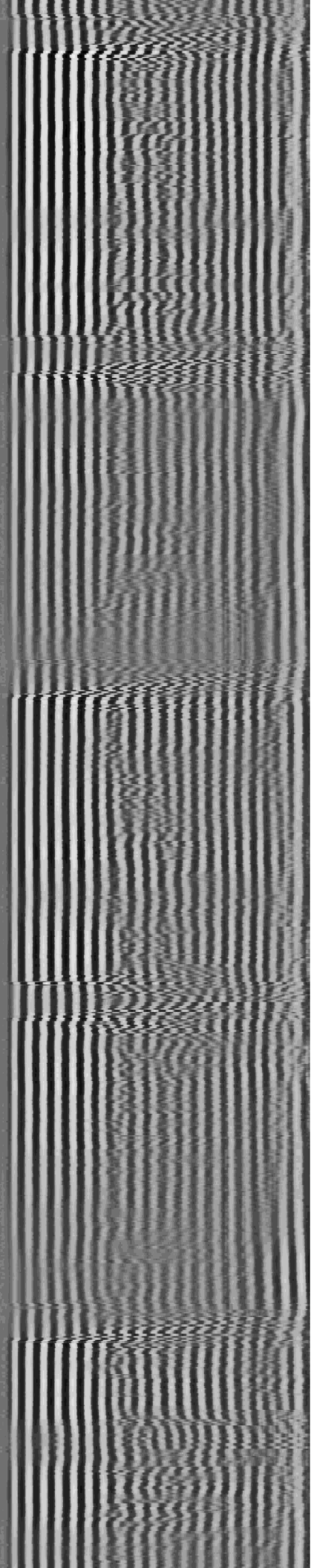
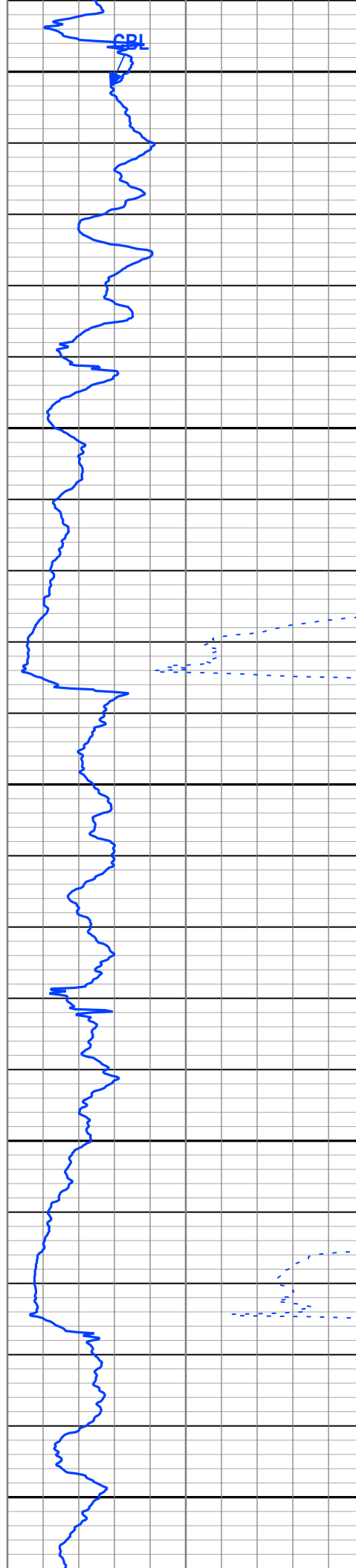
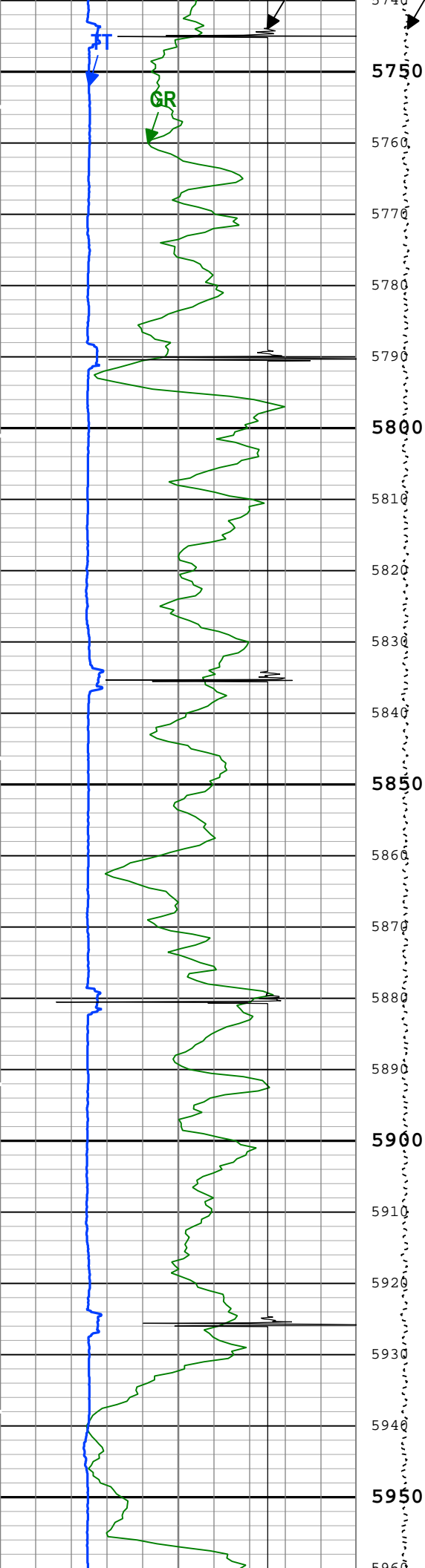


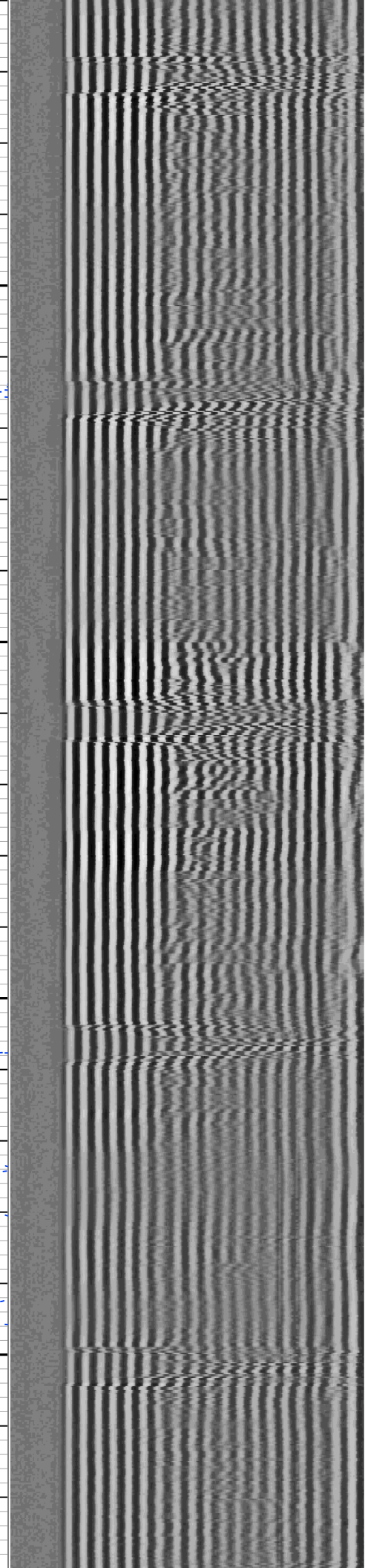
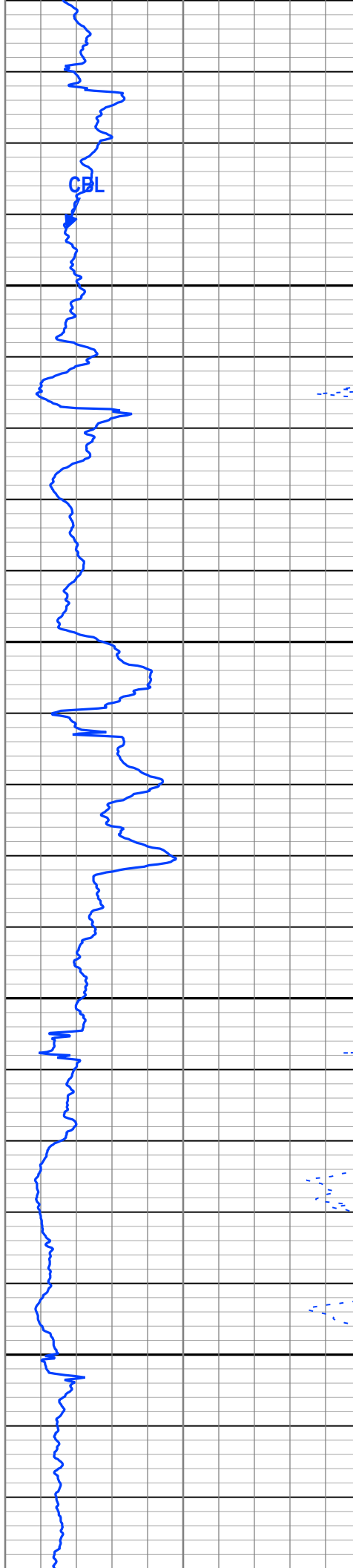
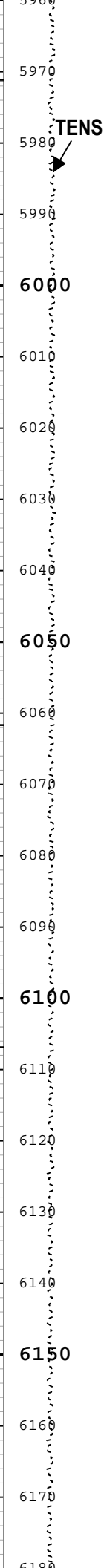
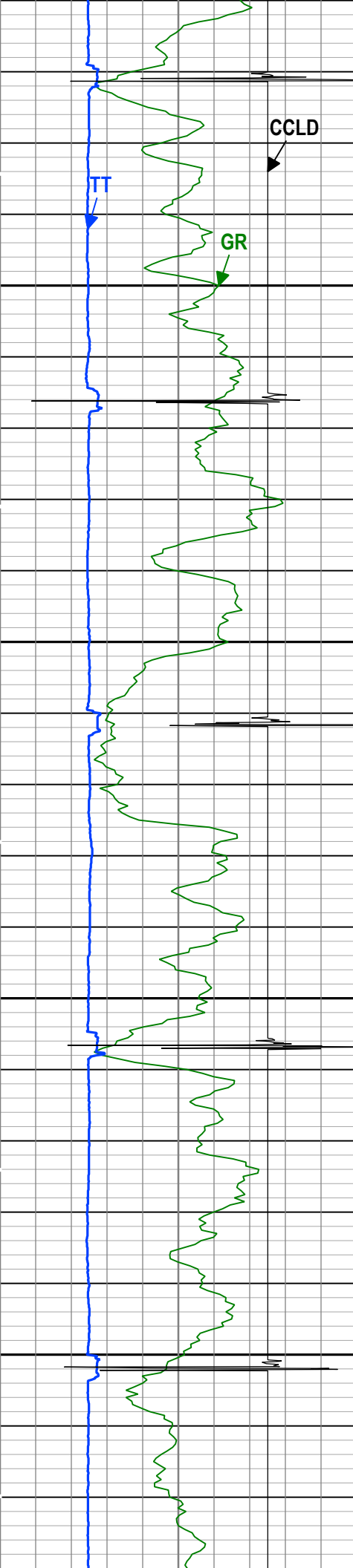


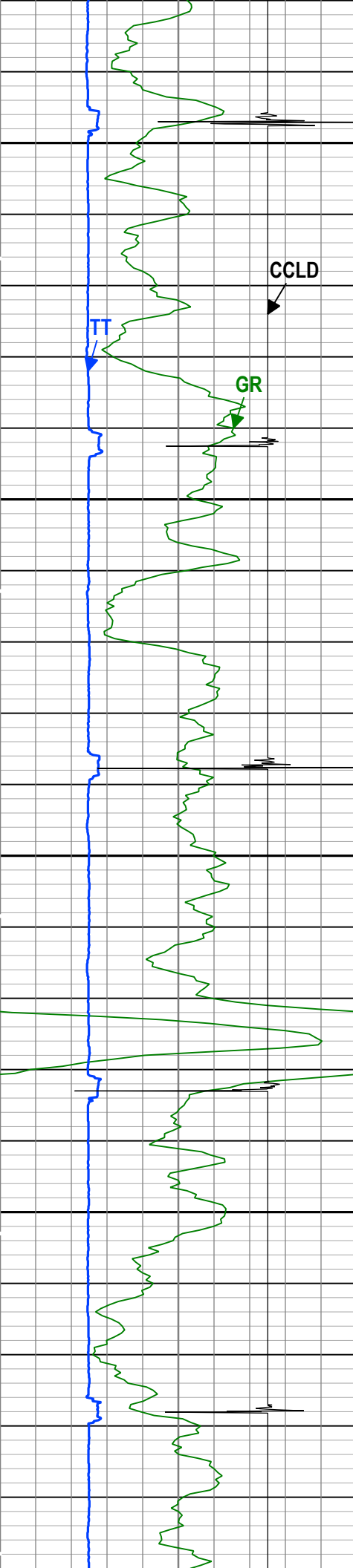
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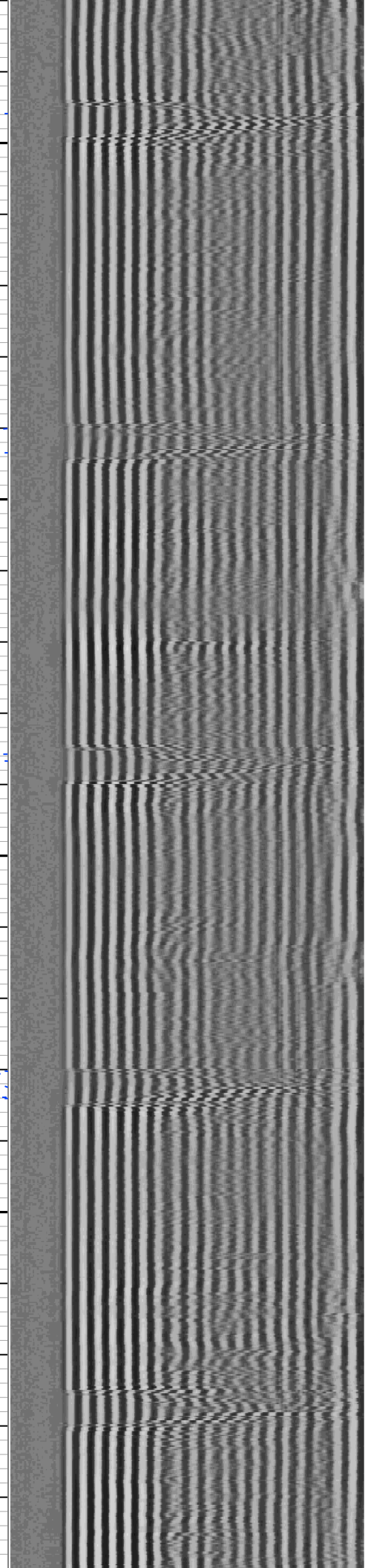
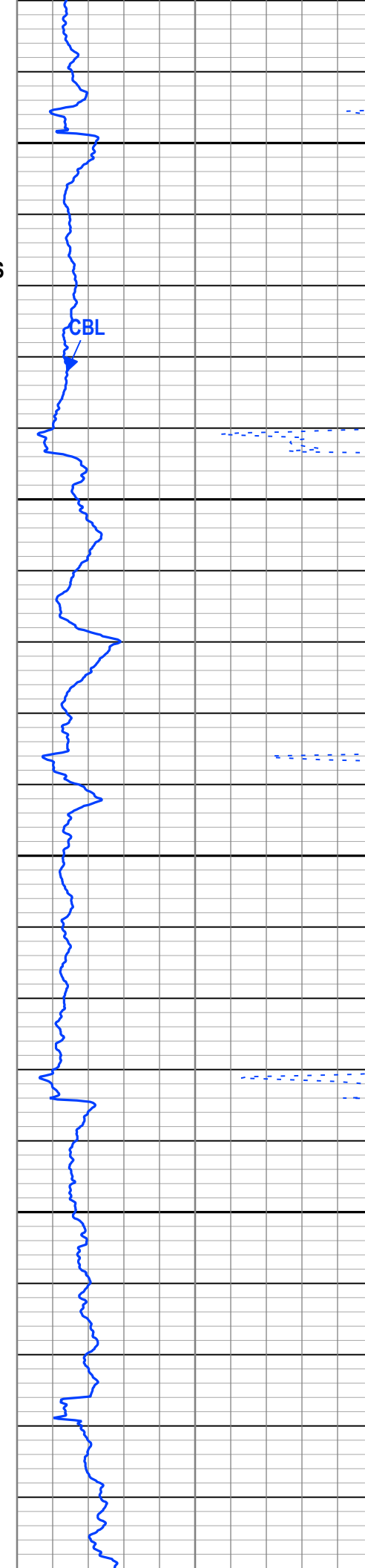


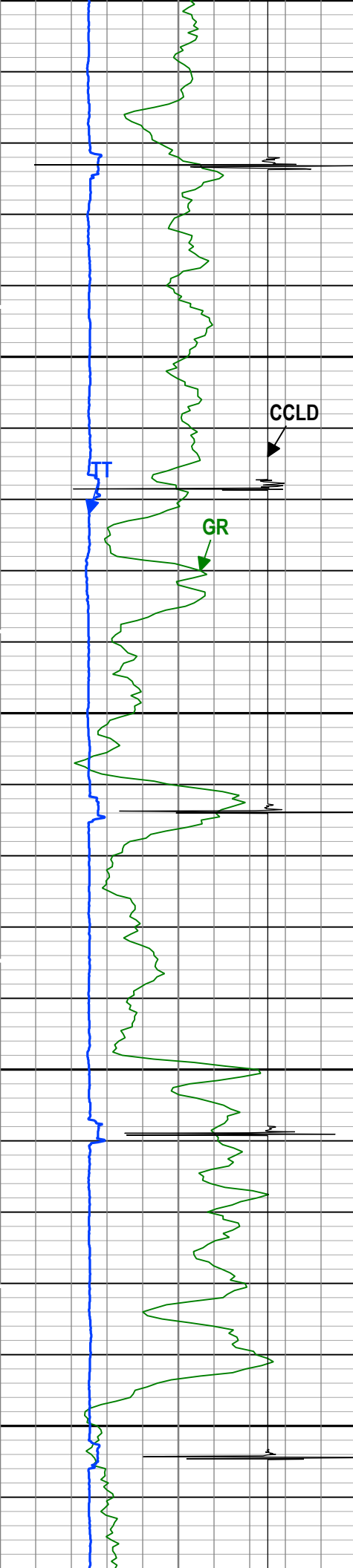




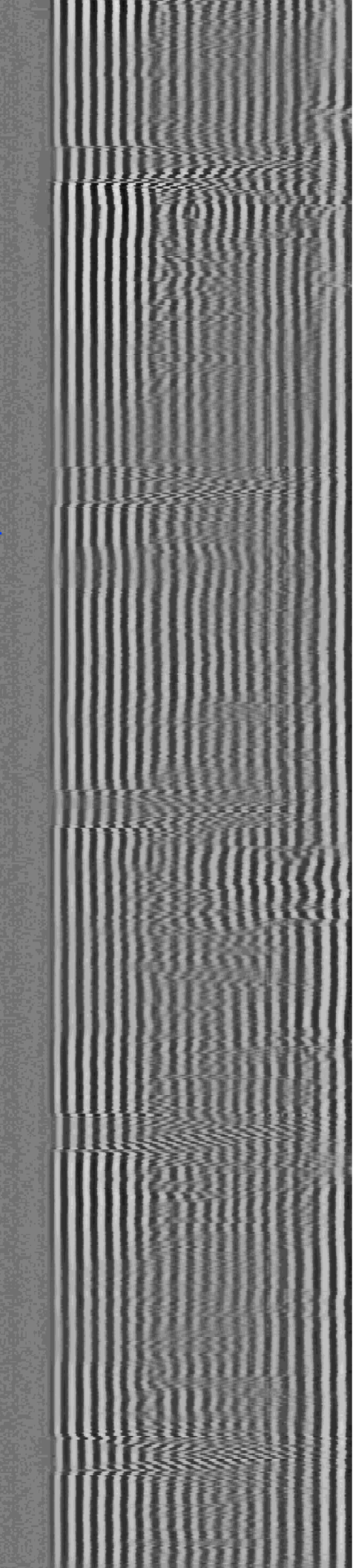
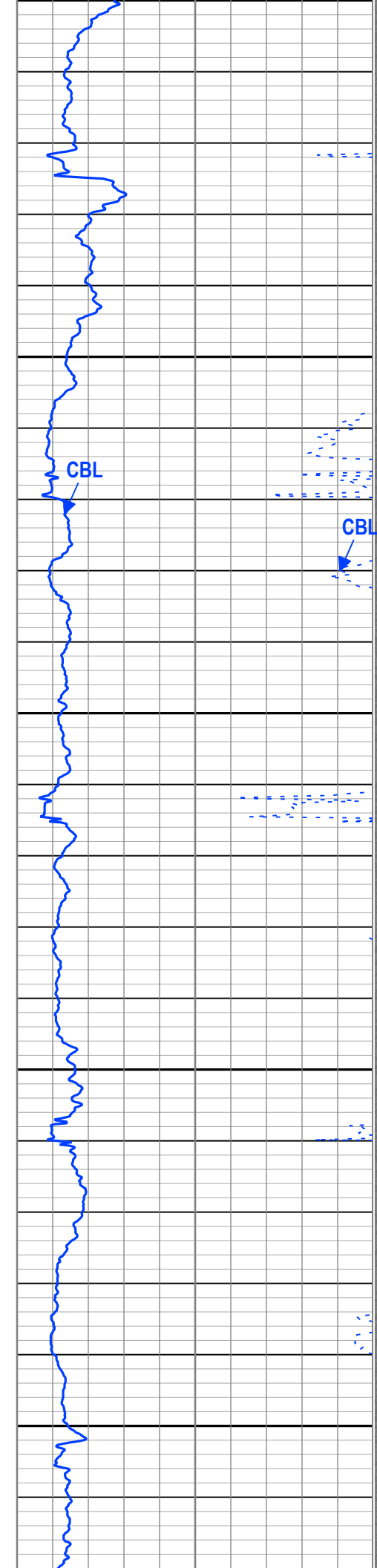
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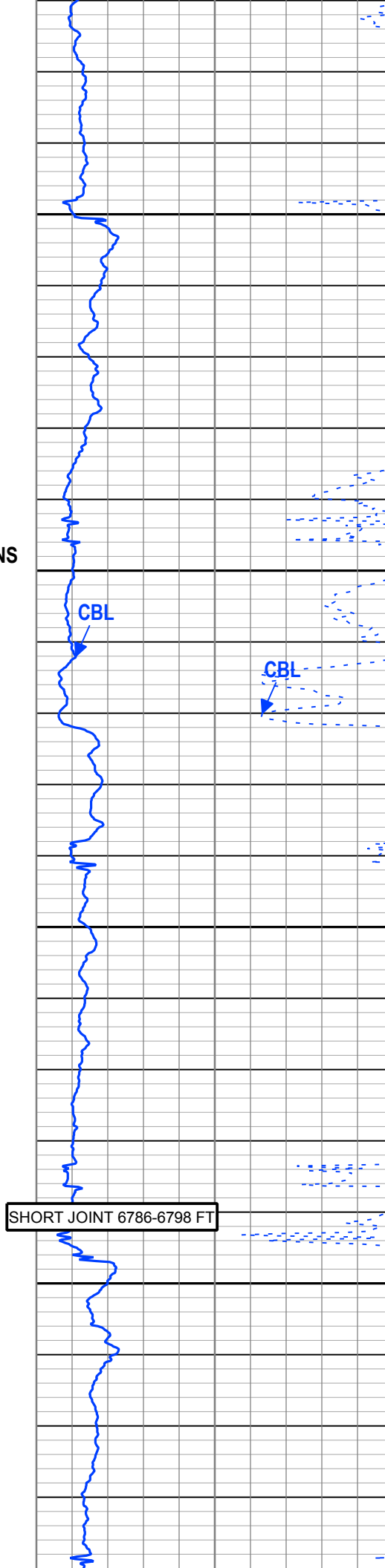
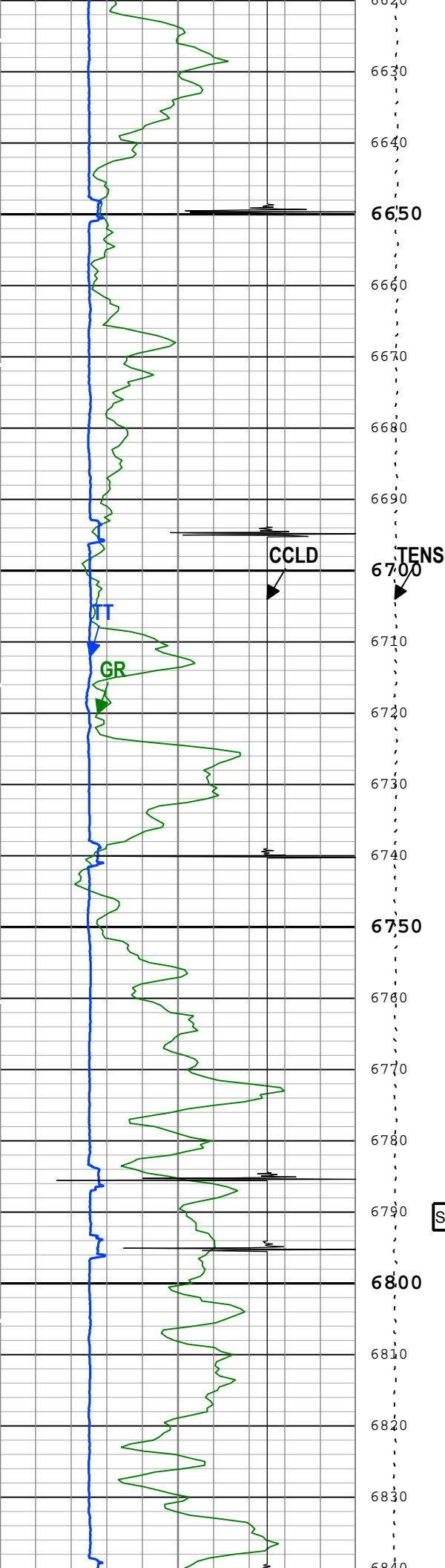
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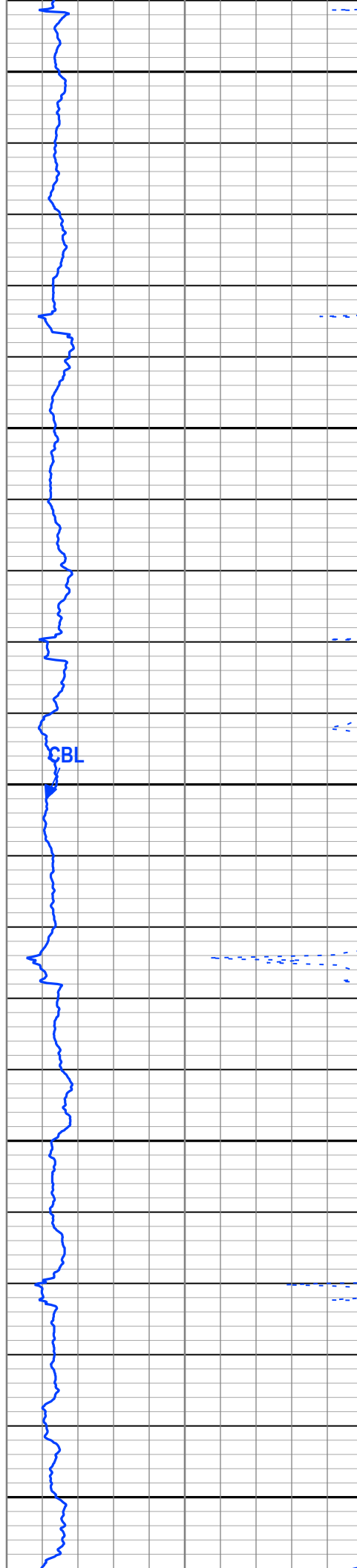
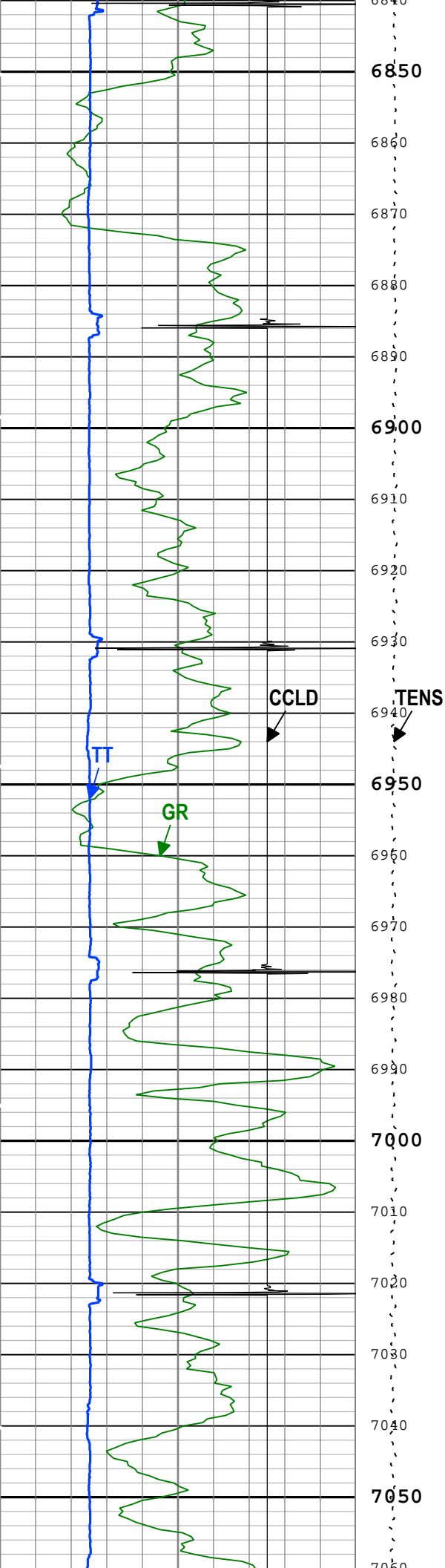


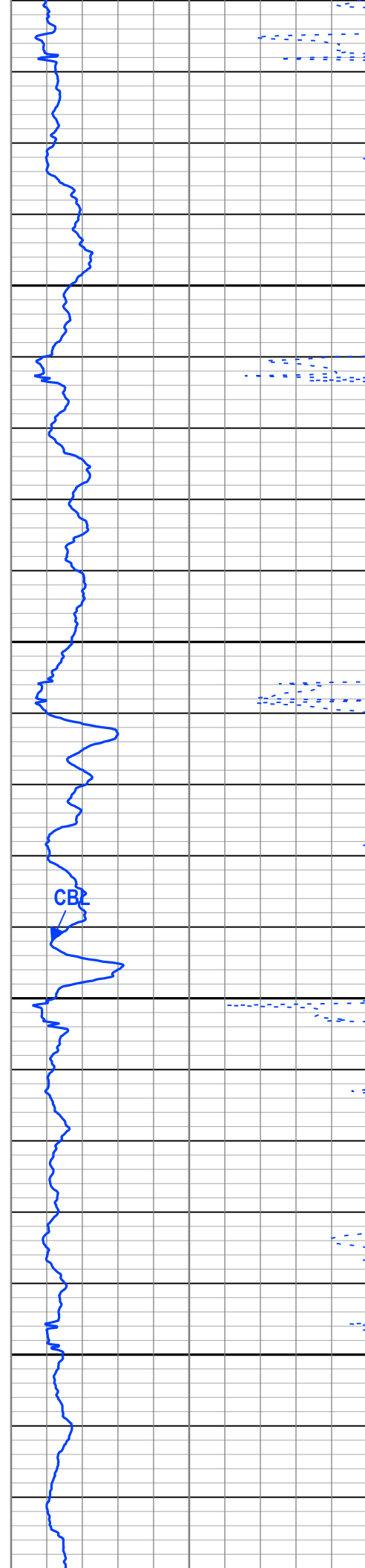
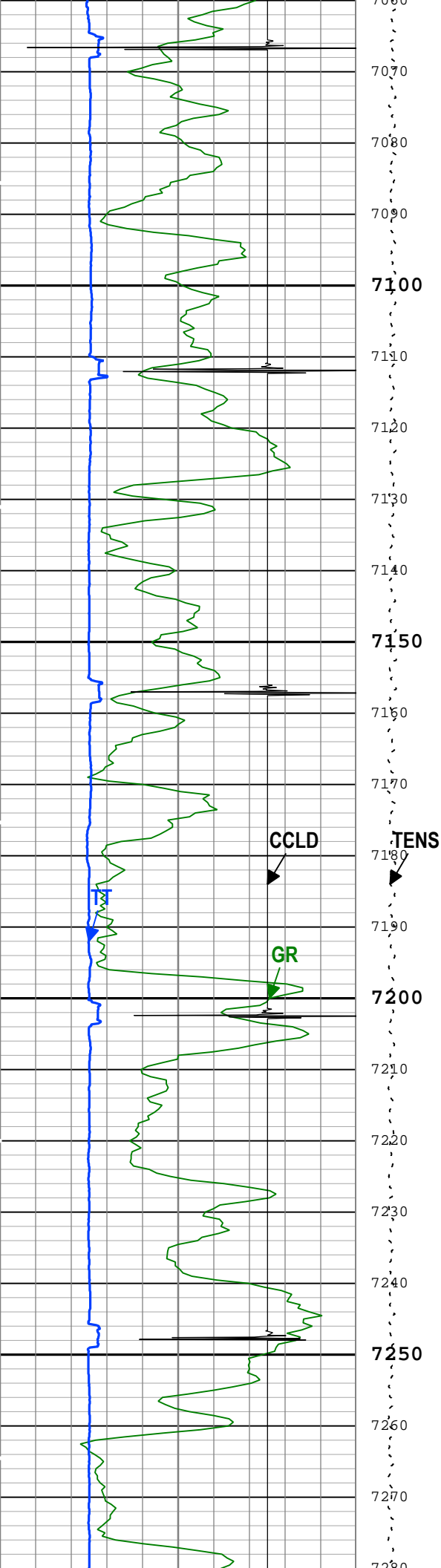


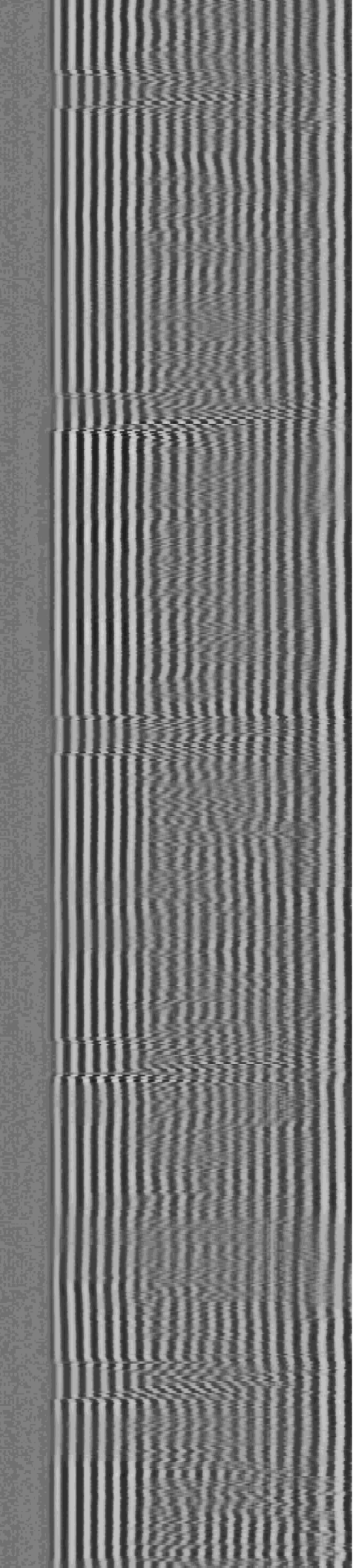
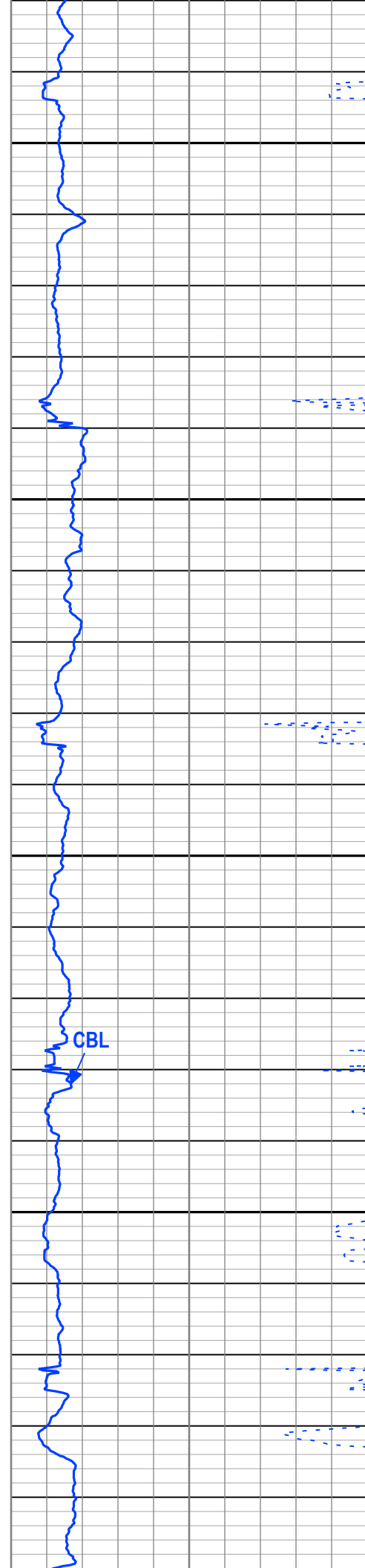
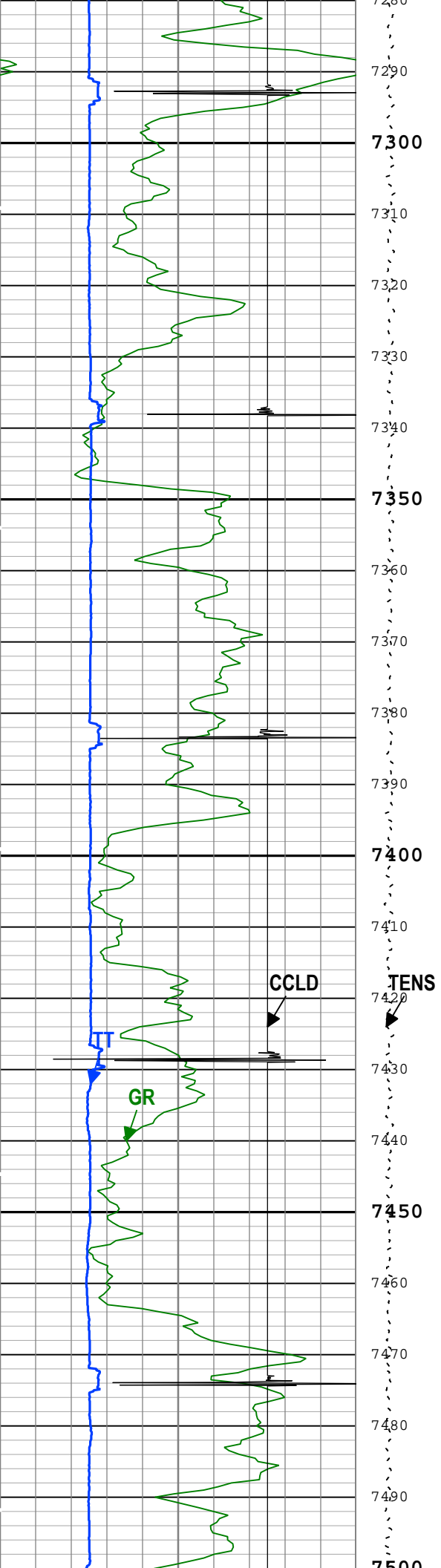
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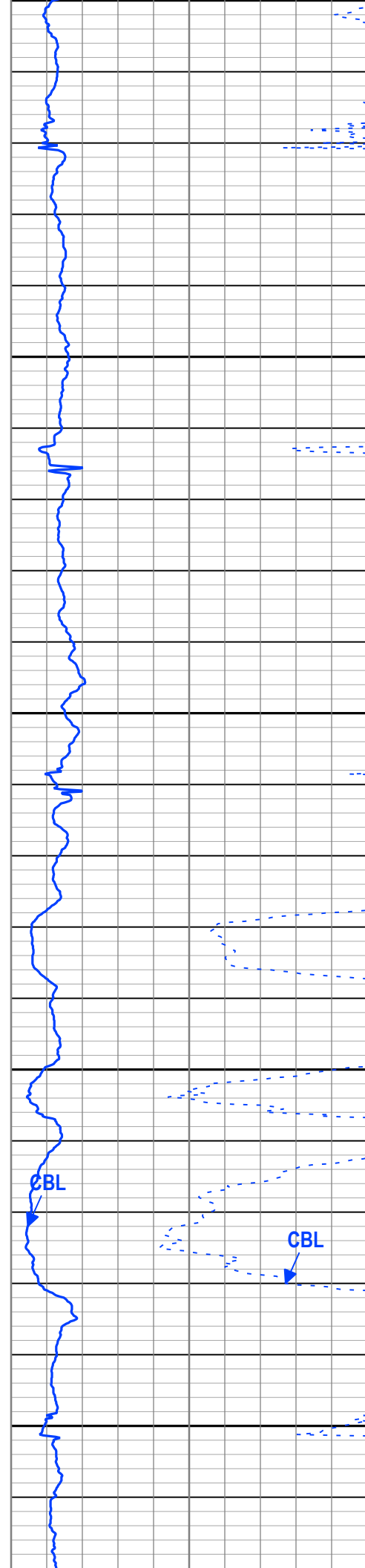
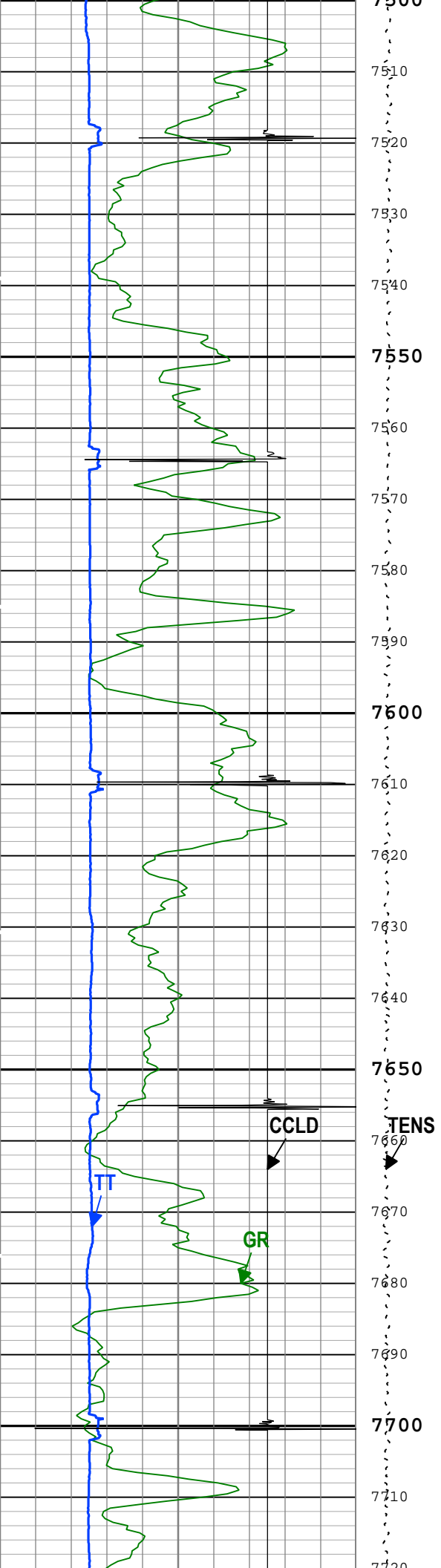


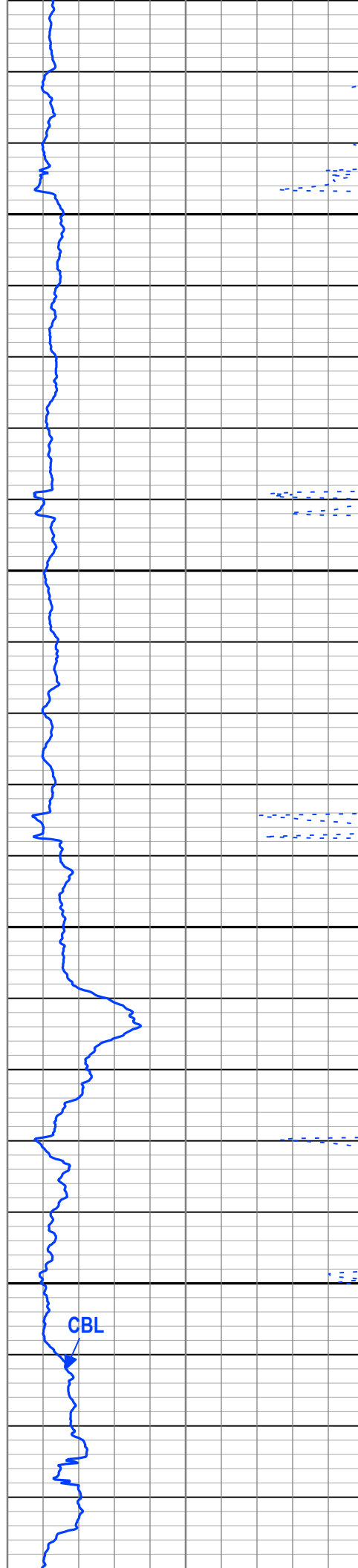
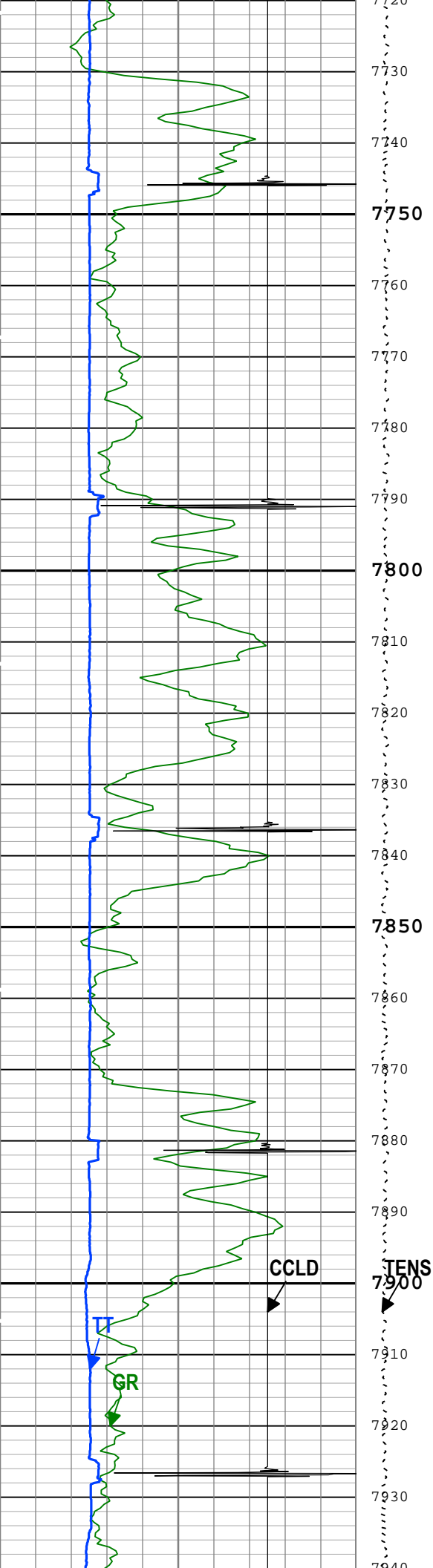


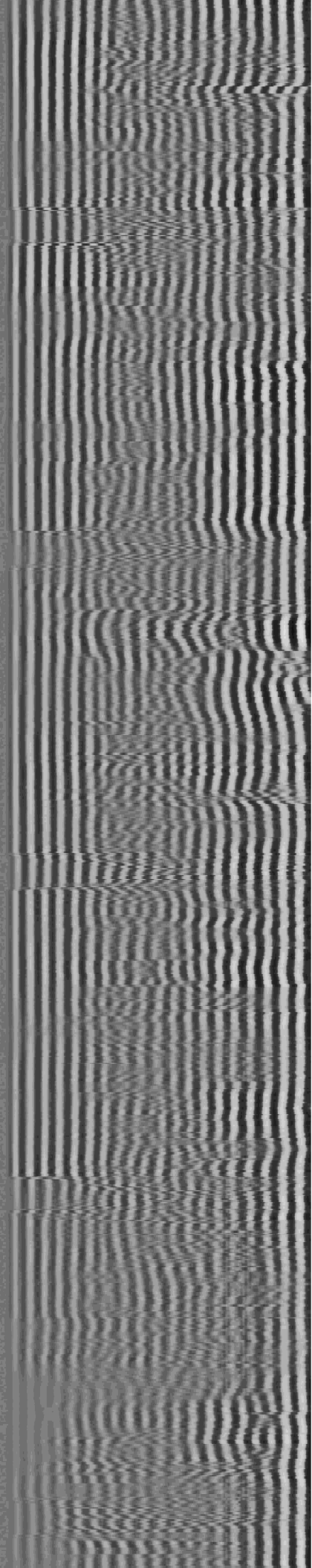
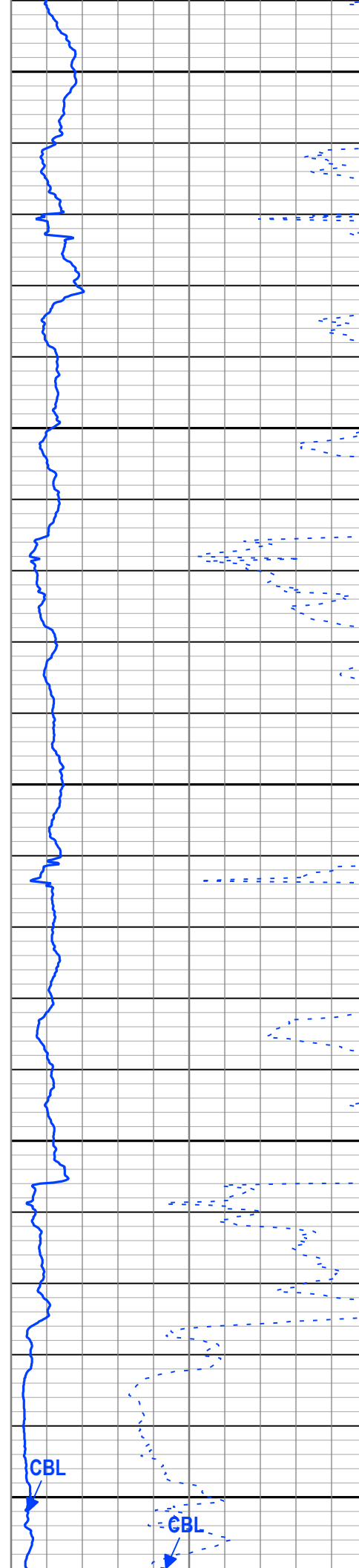
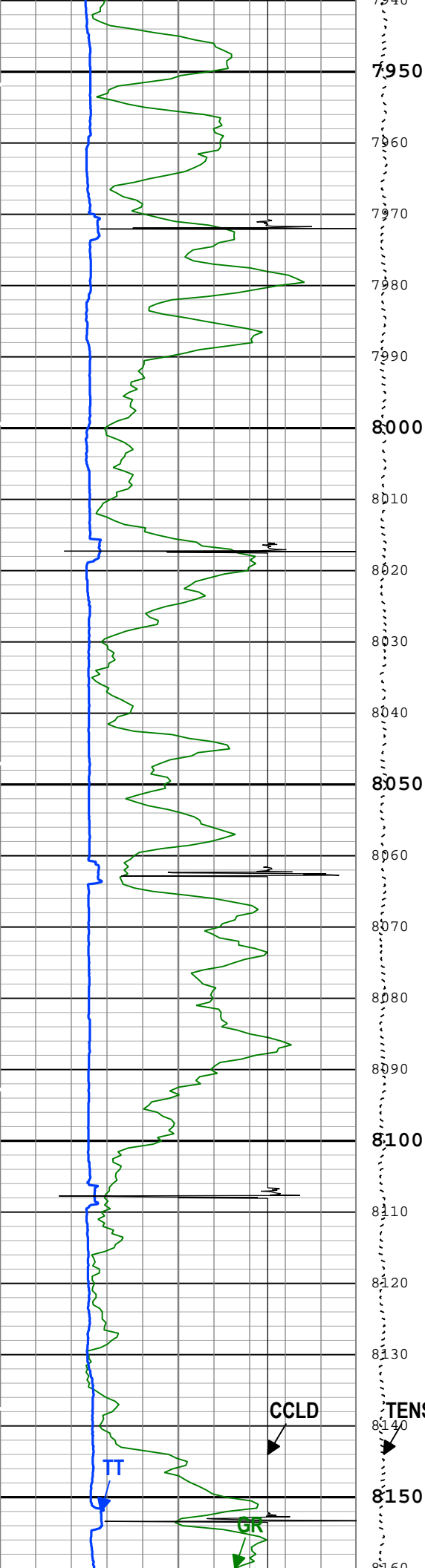


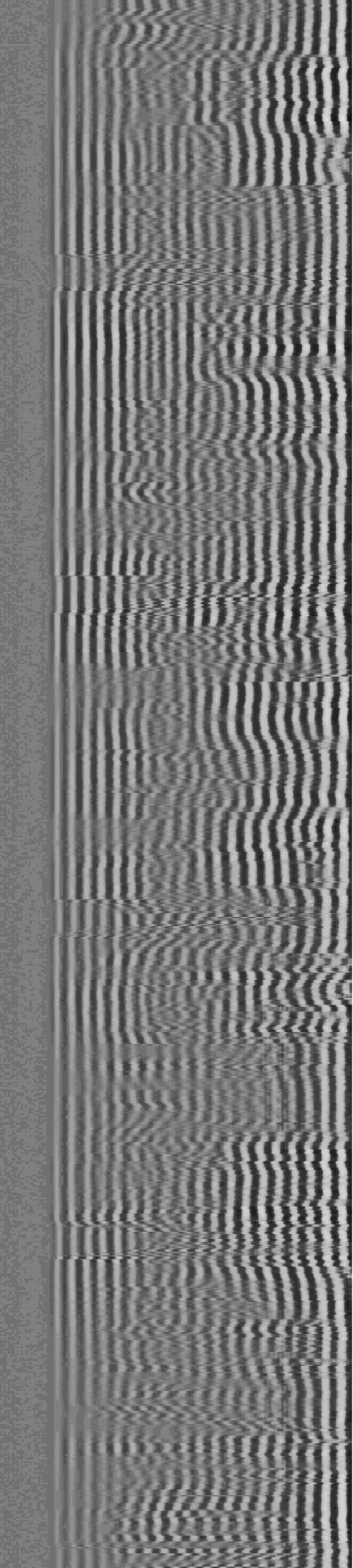
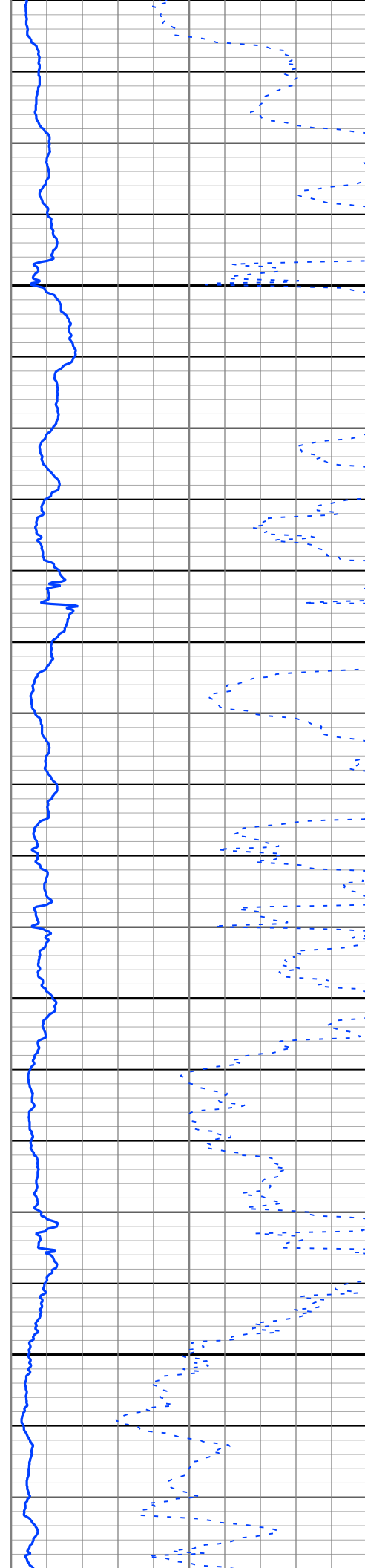
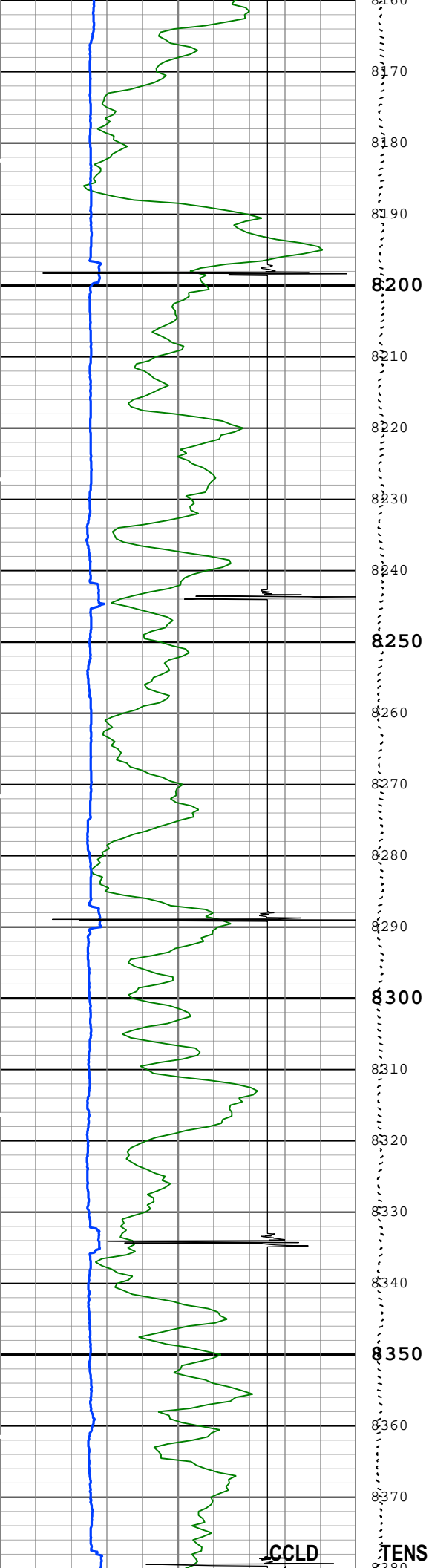


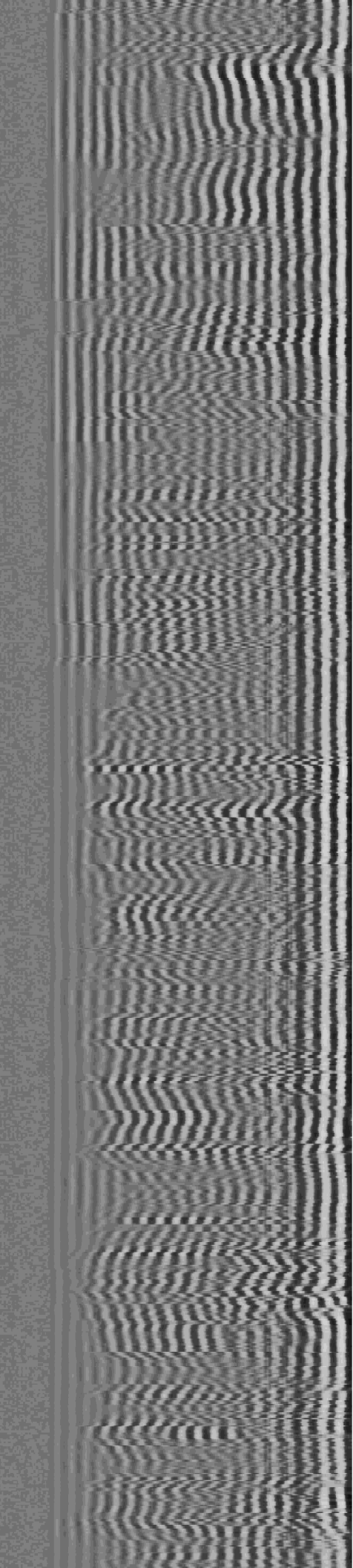
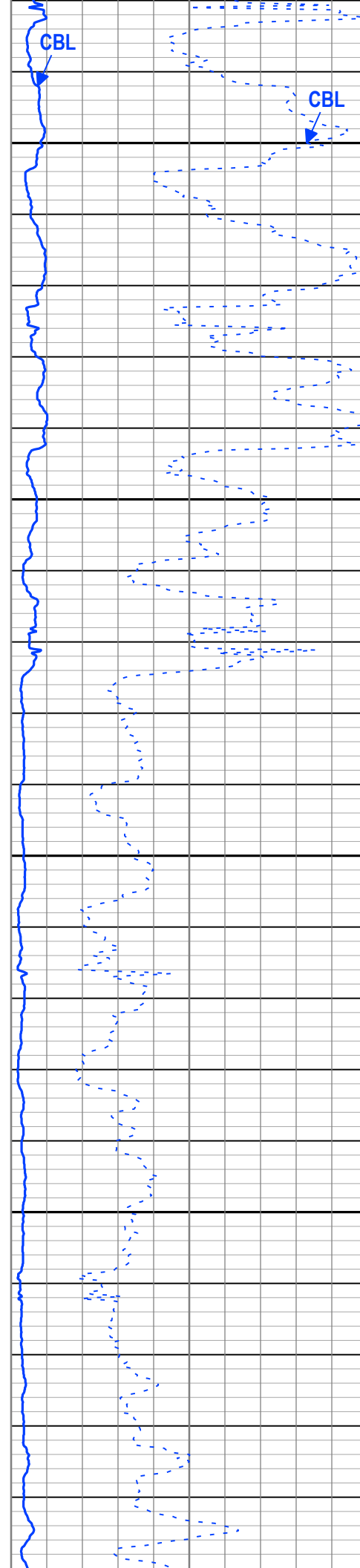
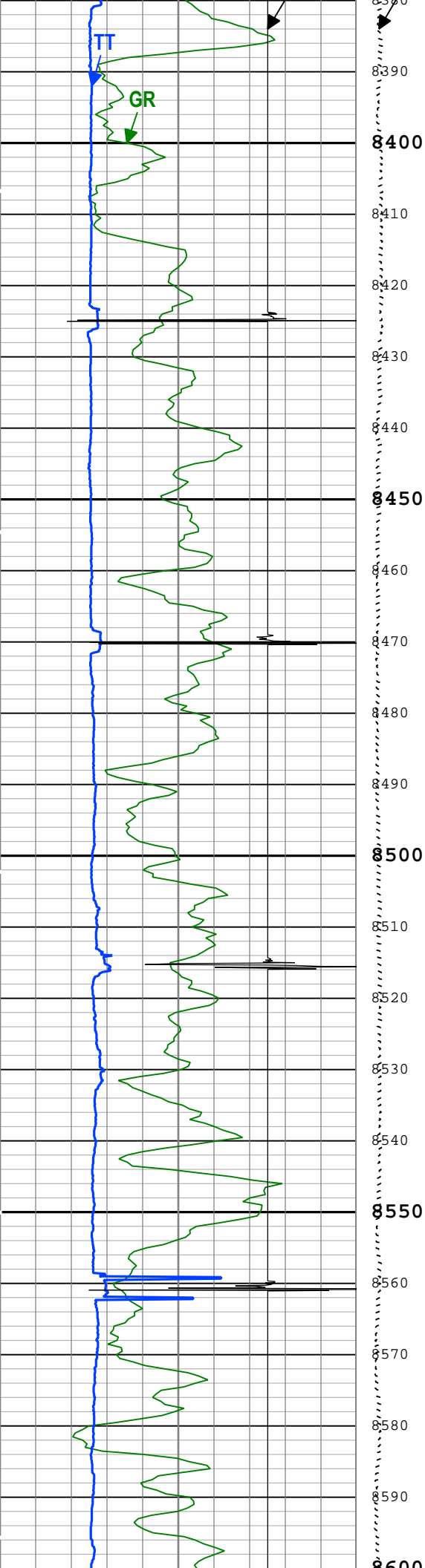


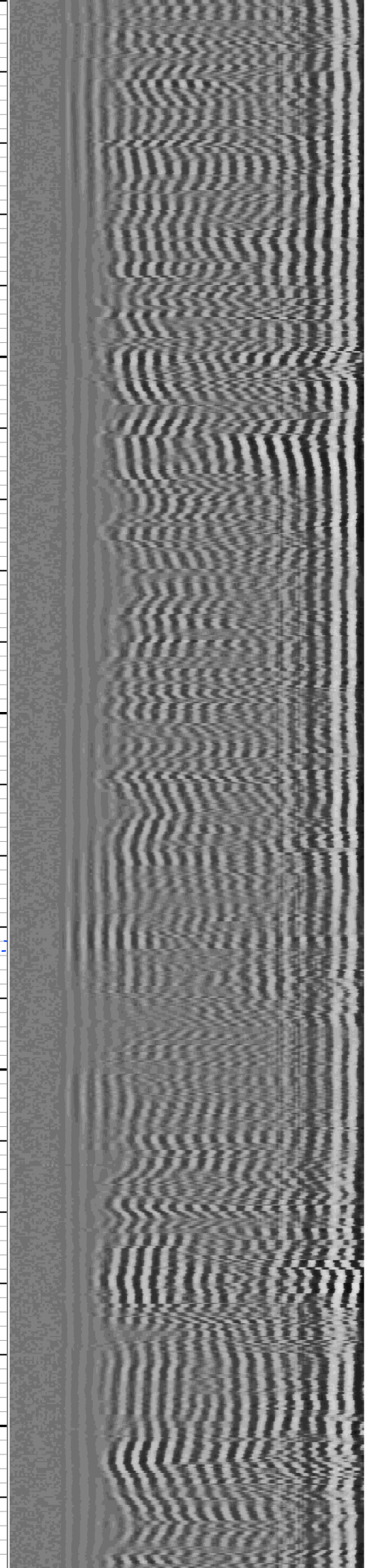
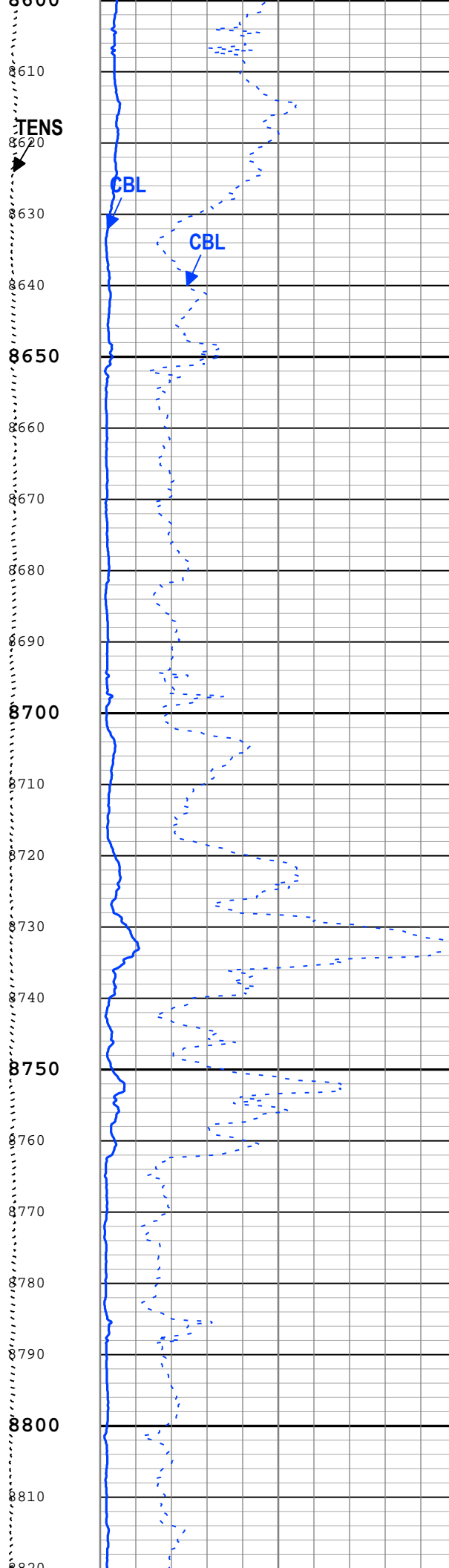
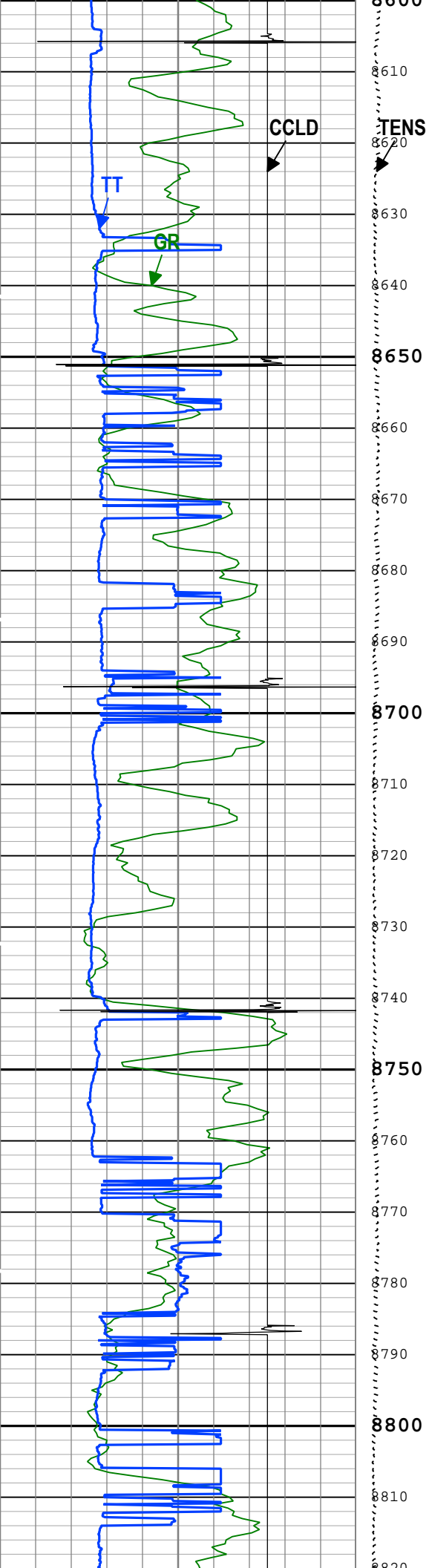


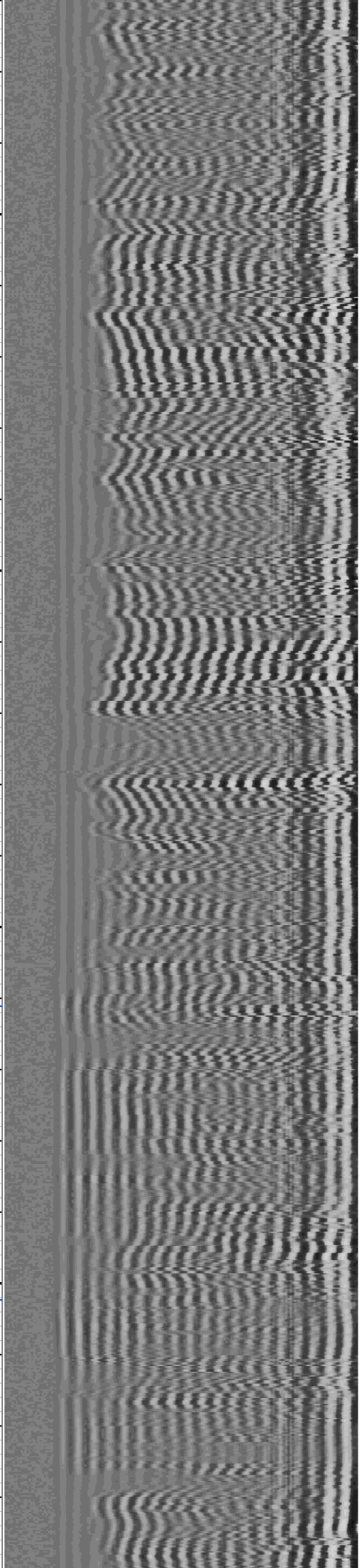
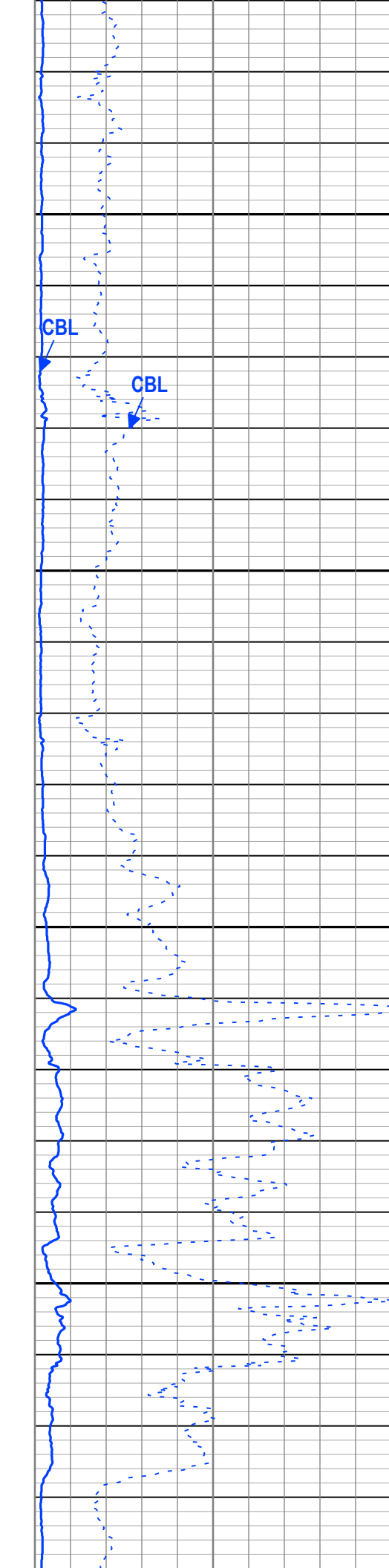
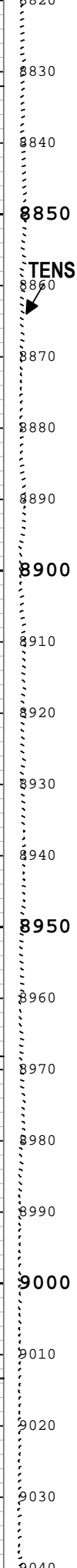
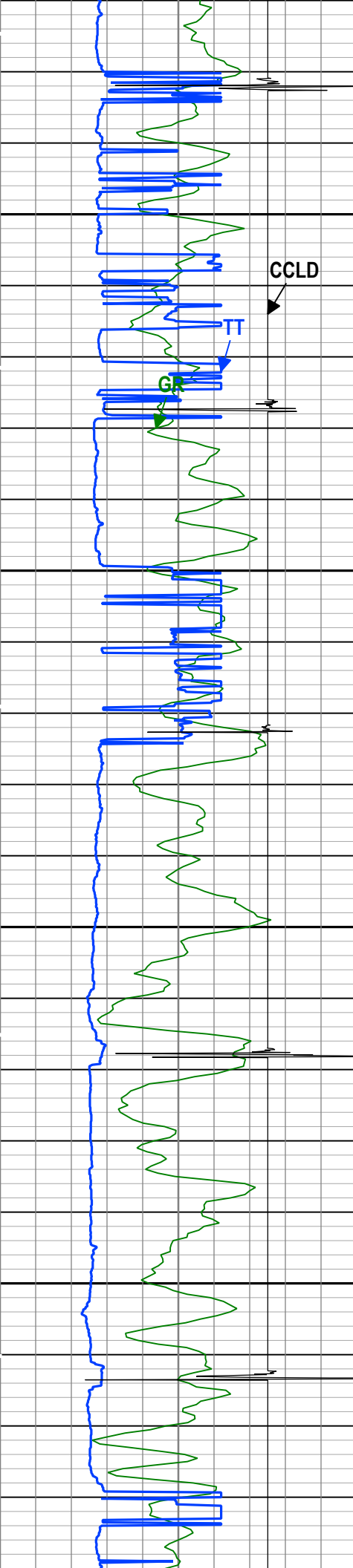


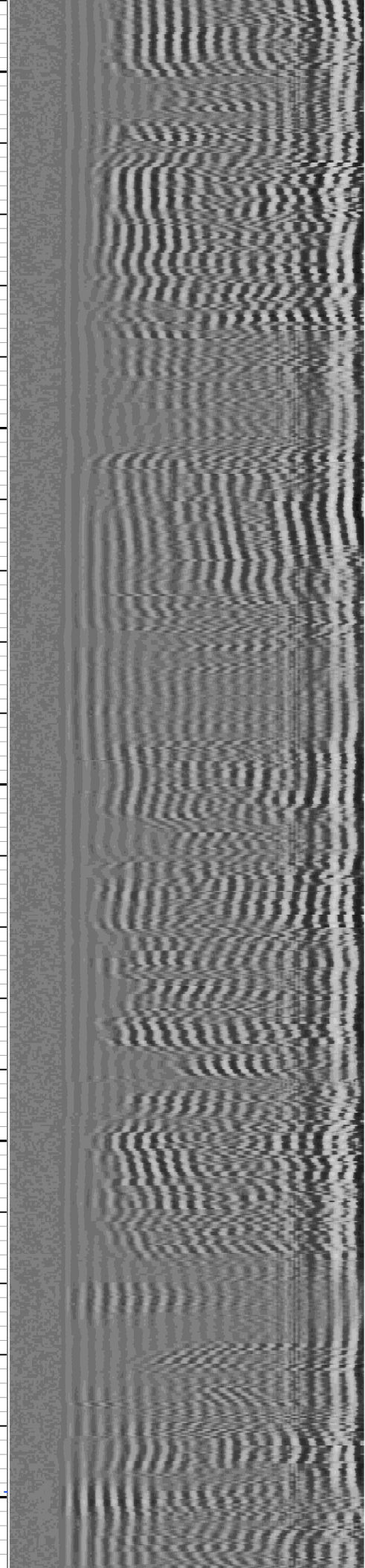
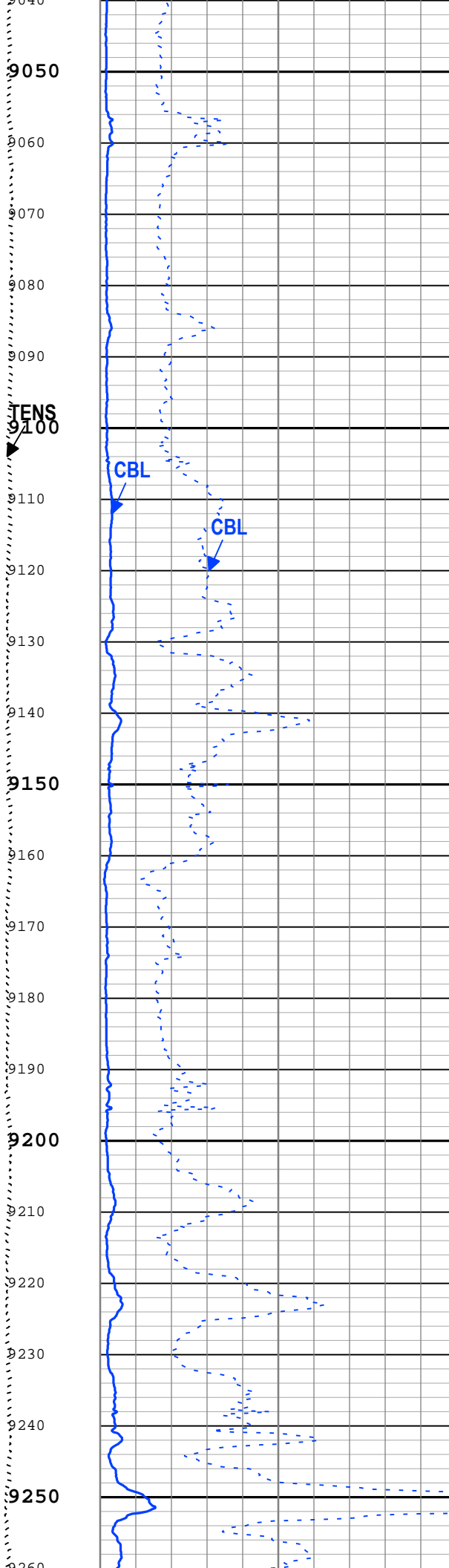
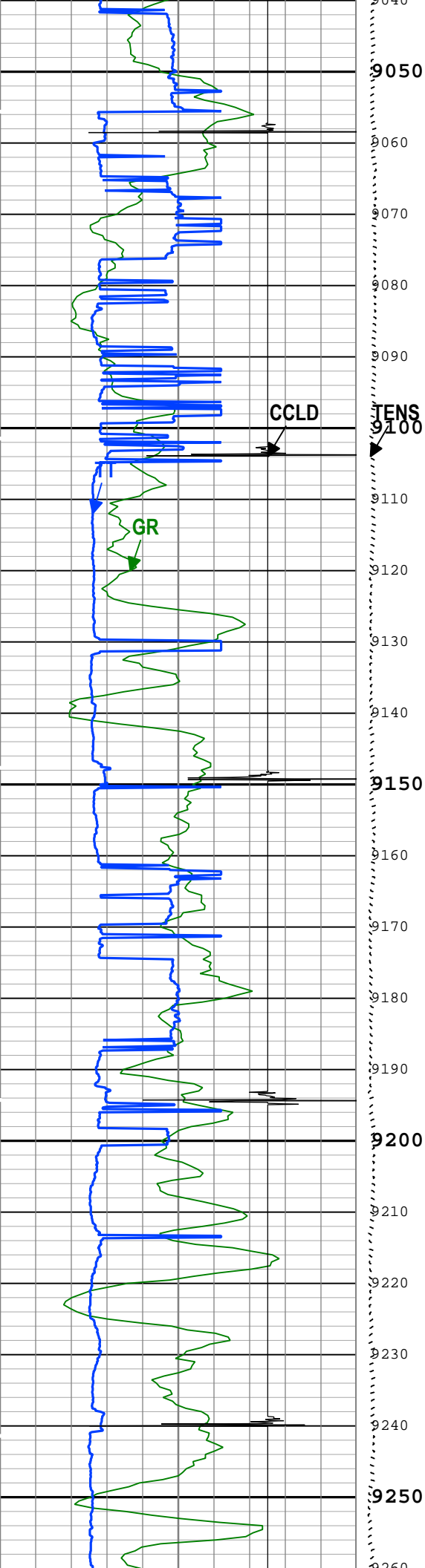


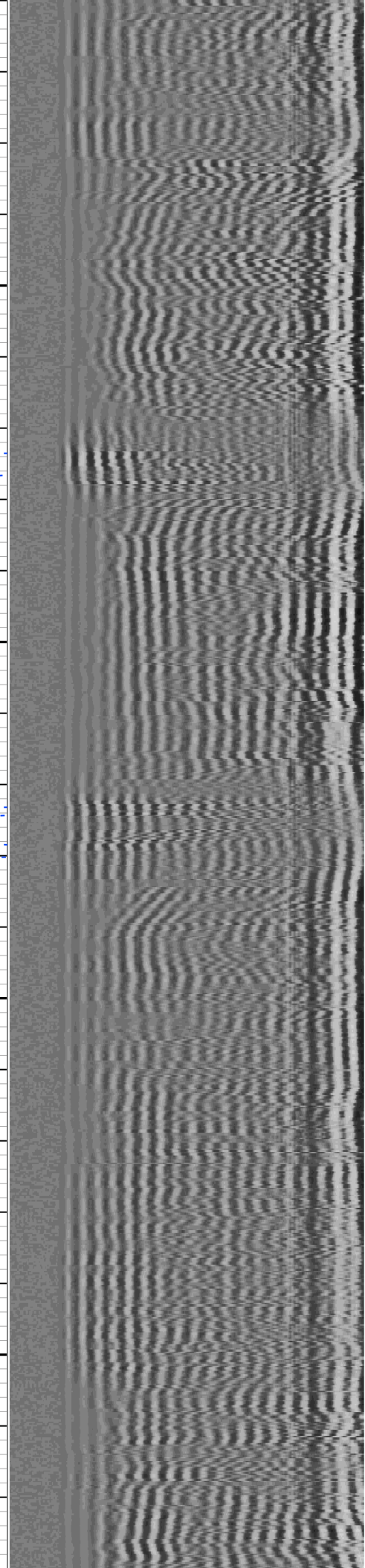
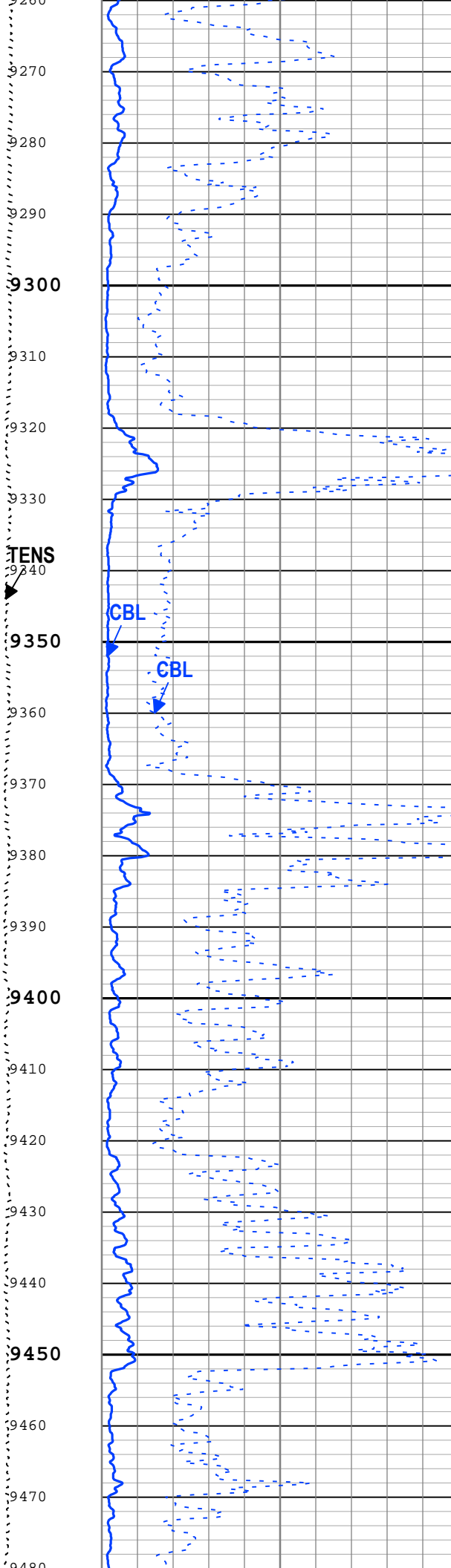
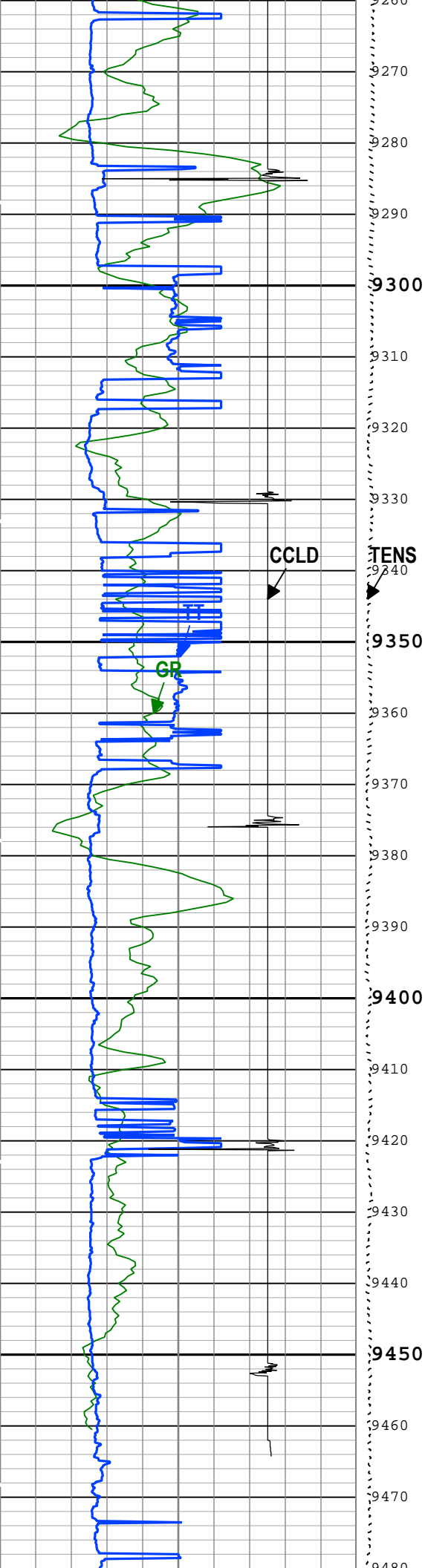












Acquisition System	Version
Maxwell 2017 SP3	7.3.92069.3100

Pass Summary

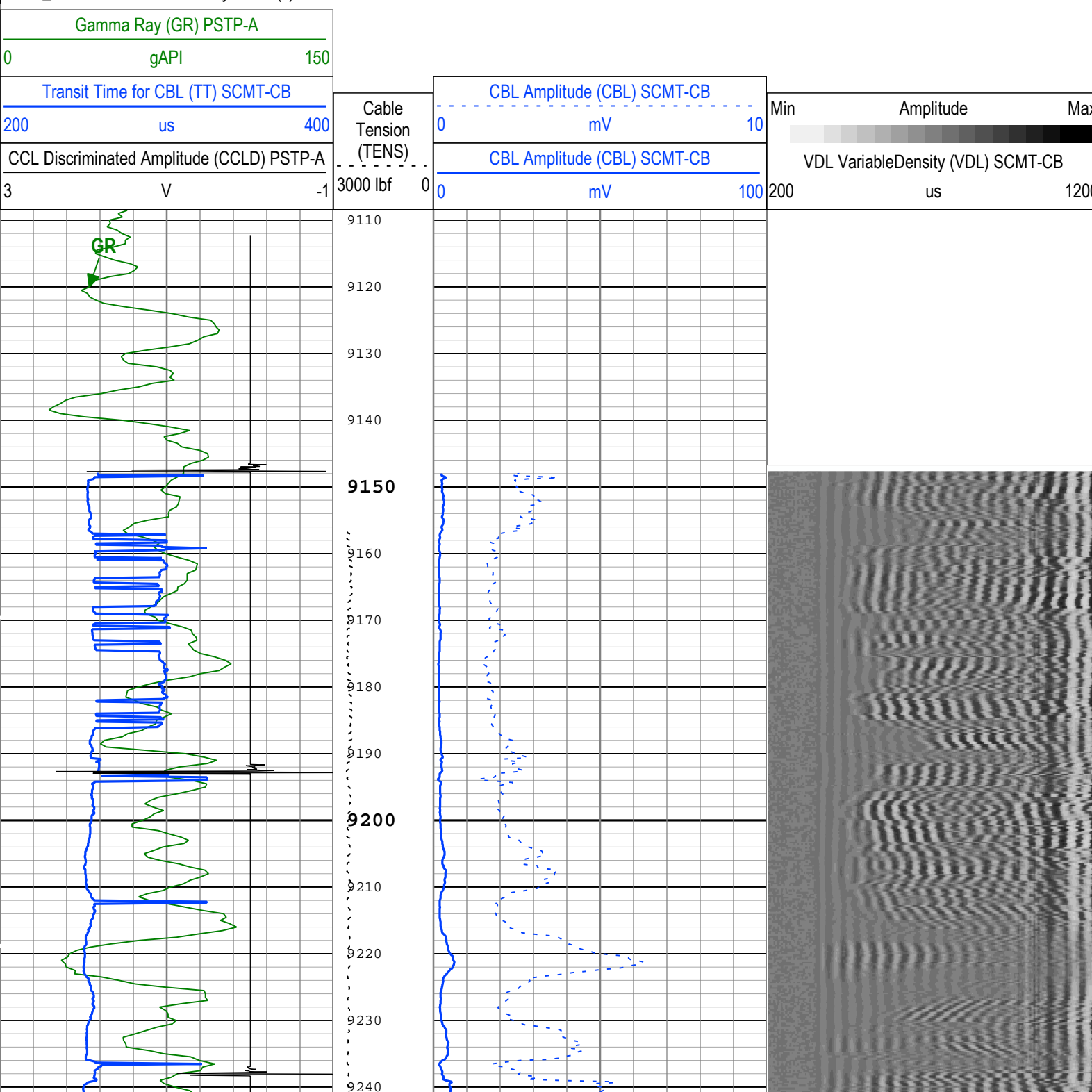
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
Run 1	Log[4]:Up	Up	9156.23 ft	9502.48 ft	22-Dec-2017 7:34:40 AM	22-Dec-2017 7:48:17 AM	ON	8.33 ft	Yes

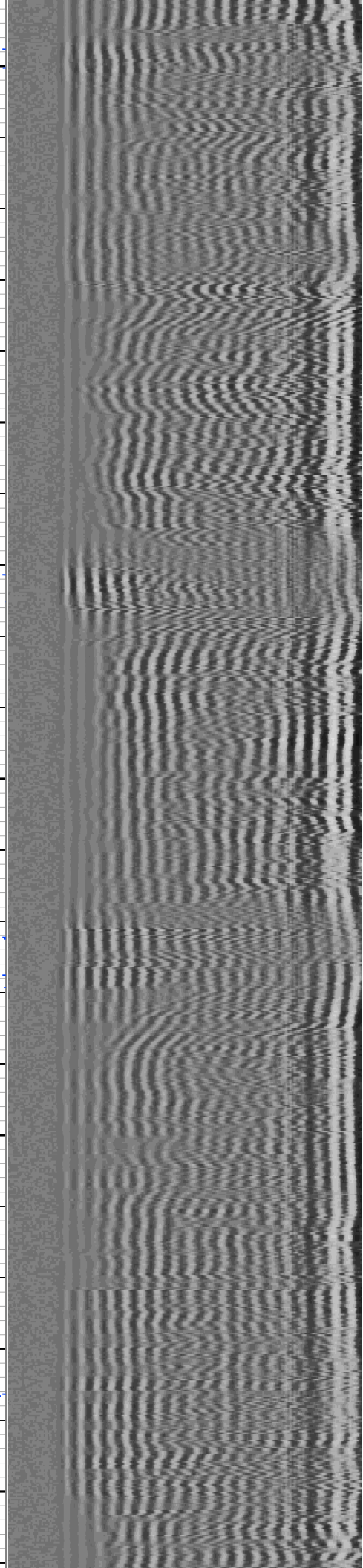
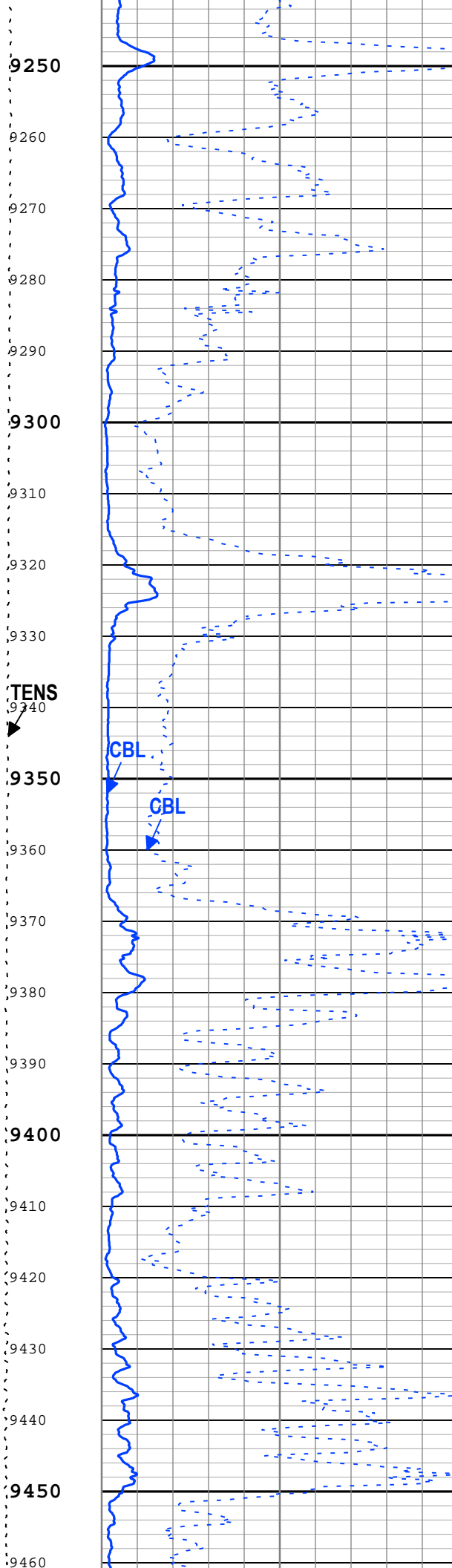
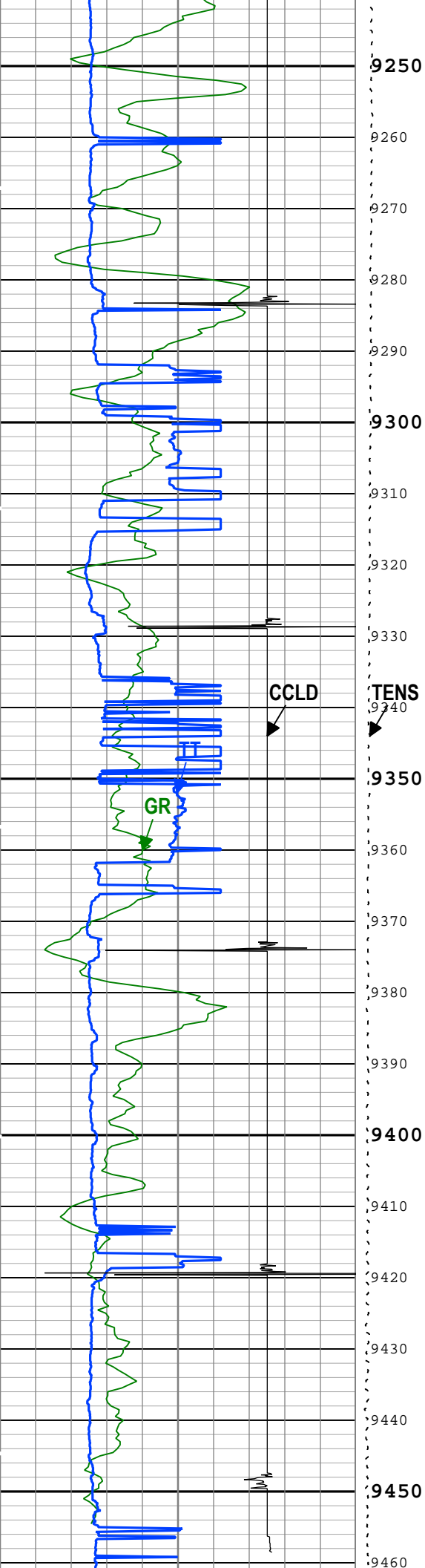
All depths are referenced to toolstring zero

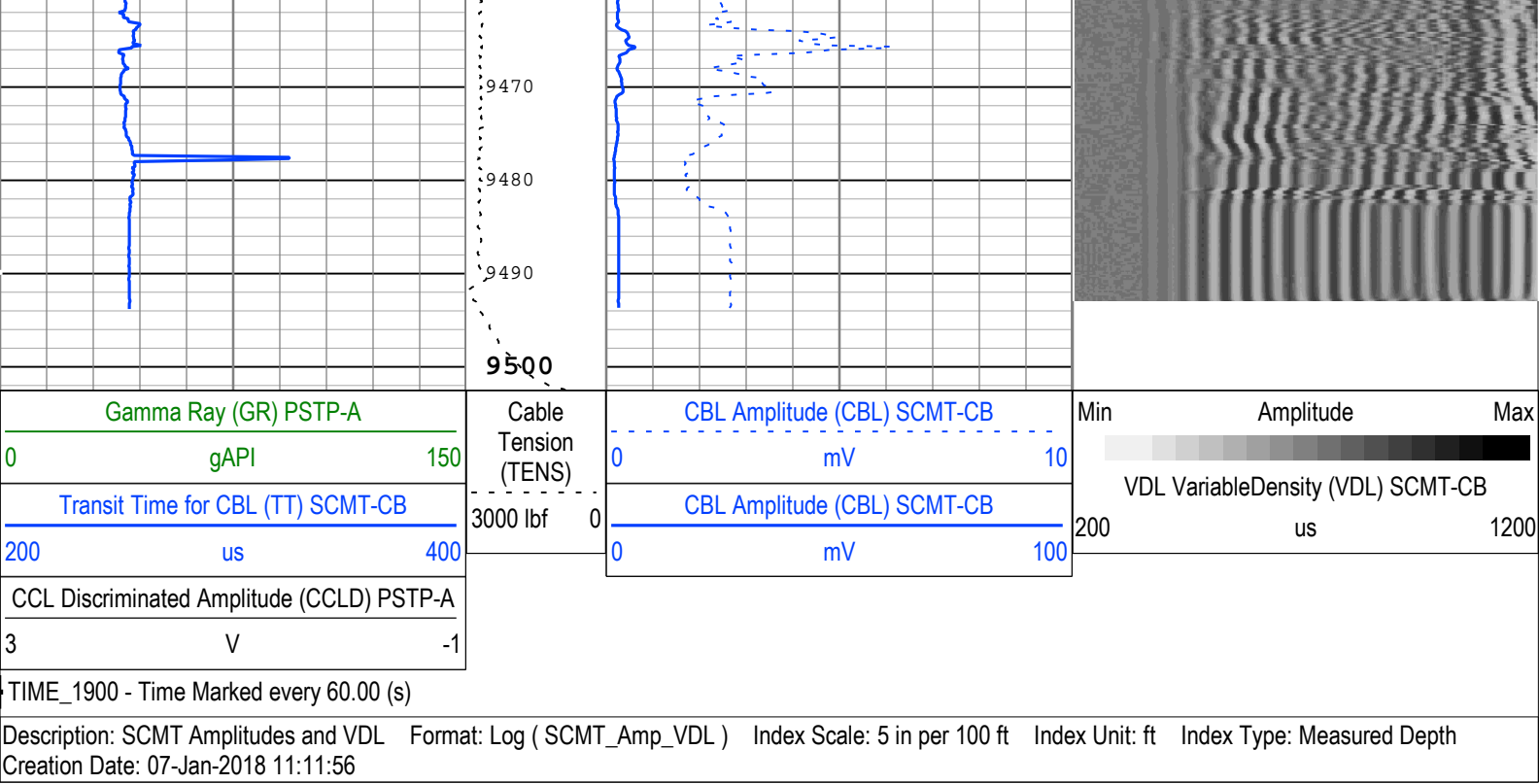
Log	Company:Caerus Operating LLC	Well:Puckett 33C-23 697
		Run 1: Log[4]:Up:S005

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: 07-Jan-2018 11:11:56

TIME_1900 - Time Marked every 60.00 (s)







Channel Processing Parameters

Run 1: 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
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	8.6	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
EDF	Elevation of Derrick Floor Above Permanent Datum	WLSESSION	30	ft
EPD	Elevation of Permanent Datum (PDAT) above Mean Sea Level	WLSESSION	8432	ft
GGRD	Geothermal Gradient	Borehole	1	0.01 degF/ft
GOBO_CURR	Good Bond in Arbitrary Cement	SCMT-CB	1.4	mV
GTSE	Generalized Temperature Selection, from Measured or Computed Temperature	Borehole	GTEM_LINEST(RT)	
MATT_CURR	Maximum Attenuation in Arbitrary Cement	SCMT-CB	16.92	dB/ft
MCI	Minimum Cemented Interval for Isolation	SCMT-CB	1.25	ft
MSA	Minimum Sonic Amplitude	SCMT-CB	0.51	mV
MSA_CURR	Minimum Sonic Amplitude in Arbitrary Cement	SCMT-CB	0.51	mV
PDAT	Permanent Datum	WLSESSION	GL	
RUN_SNUM	Run Sequence Number	WSDRUN	1	
SHT	Surface Hole Temperature	Borehole	68	degF

Tool Control Parameters

Run 1: Parameters				
Parameter	Description	Tool	Value	Unit
CMTM	SCMT Operating Mode	SCMT-CB	Log	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	150	ft/h
PCCG	PSP Downhole CCL Gain	PSTP-A	12 dB	

Free Pipe 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
Run 1	Log[6]:Up	Up	1851.61 ft	2111.78 ft	22-Dec-2017 10:43:44 AM	22-Dec-2017 10:48:25 AM	ON	0.00 ft	Yes

All depths are referenced to toolstring zero

Log

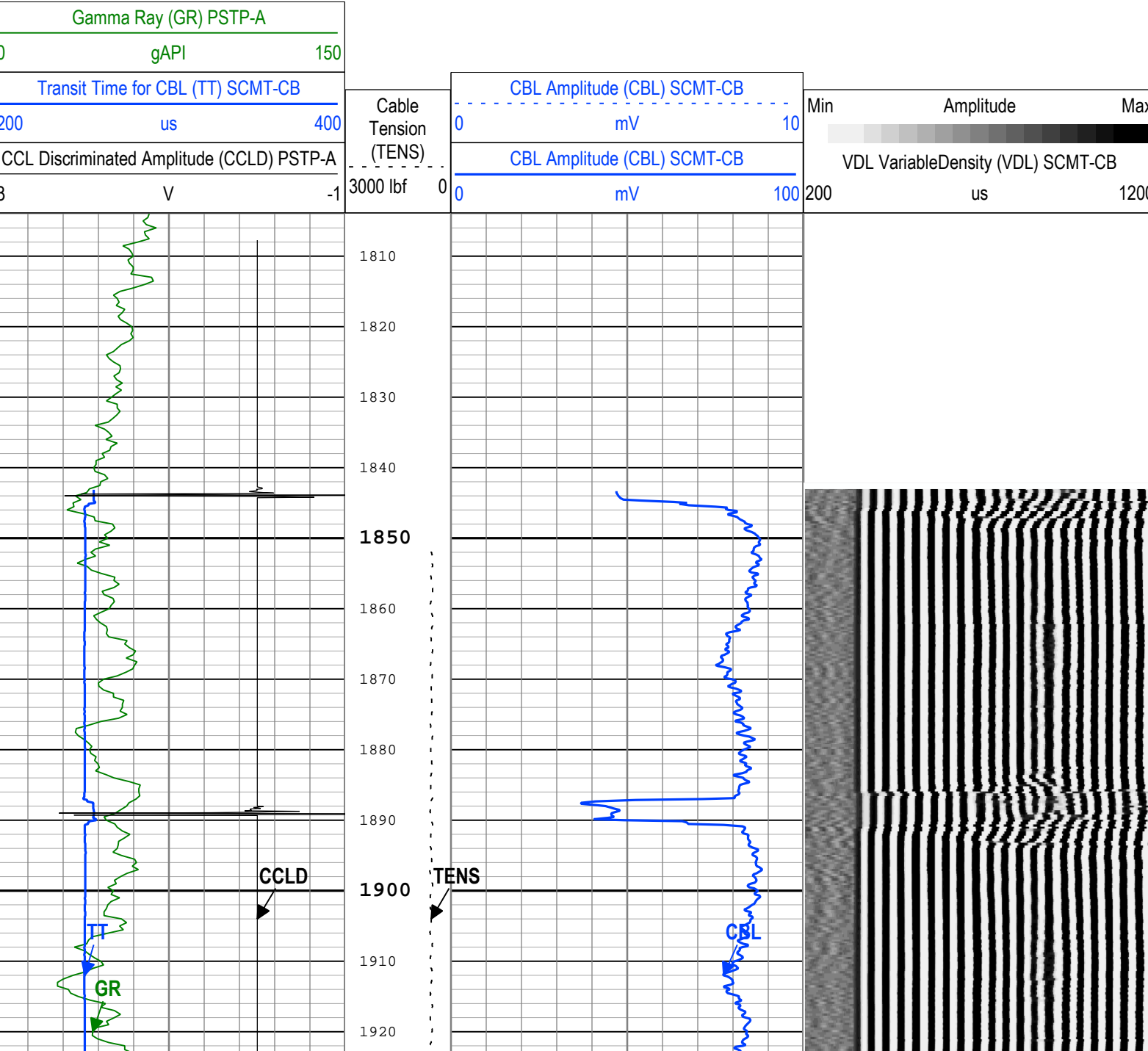
Company:Caerus Operating LLC

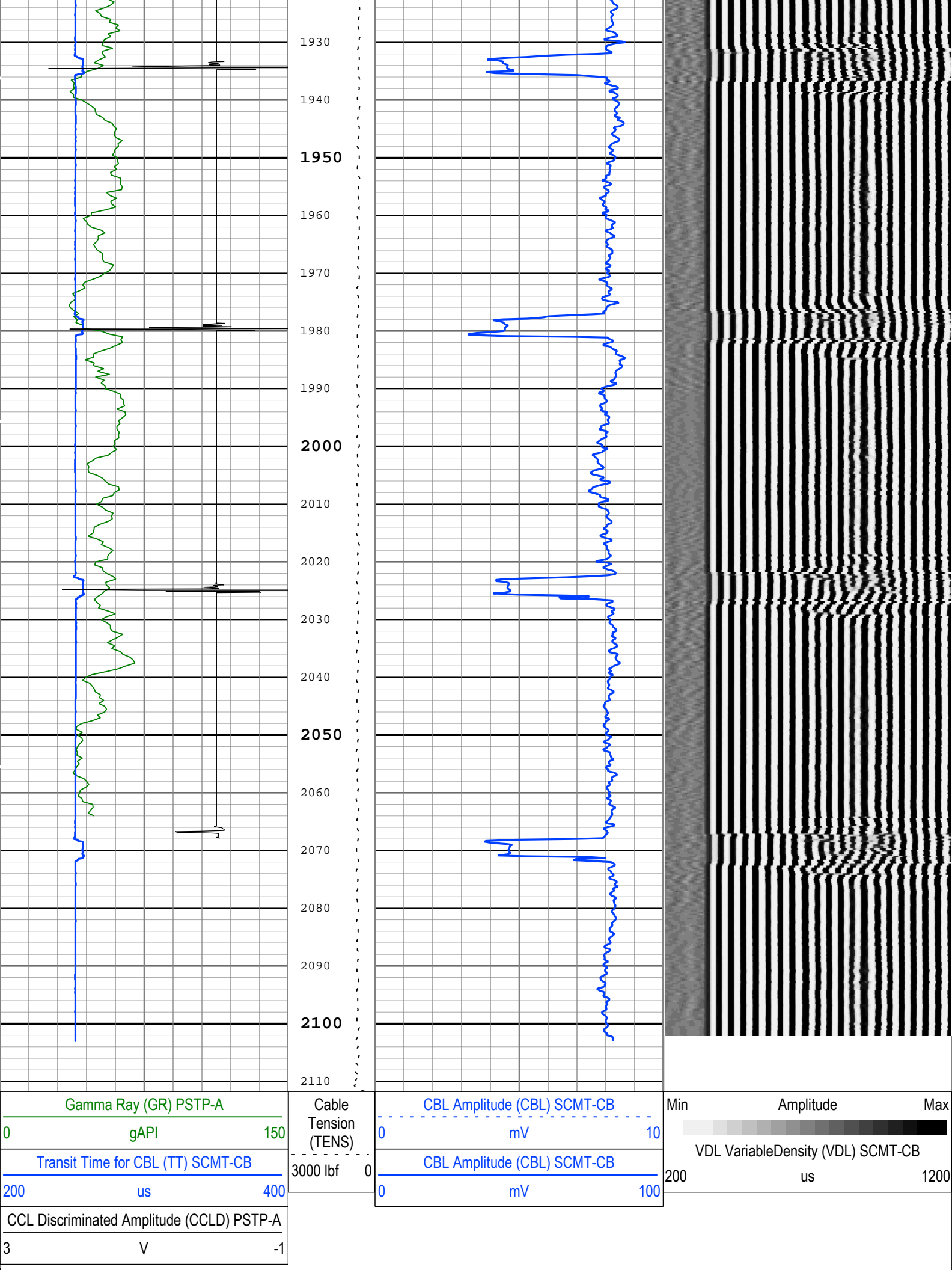
Well:Puckett 33C-23 697

Run 1: Log[6]:Up:S005

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: 07-Jan-2018 11:11:59

TIME_1900 - Time Marked every 60.00 (s)





Channel Processing Parameters**Run 1: 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
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	8.6	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
EDF	Elevation of Derrick Floor Above Permanent Datum	WLSESSION	30	ft
EPD	Elevation of Permanent Datum (PDAT) above Mean Sea Level	WLSESSION	8432	ft
GGRD	Geothermal Gradient	Borehole	1	0.01 degF/ft
GOBO_CURR	Good Bond in Arbitrary Cement	SCMT-CB	1.4	mV
GTSE	Generalized Temperature Selection, from Measured or Computed Temperature	Borehole	GTEM_LINEST(RT)	
MATT_CURR	Maximum Attenuation in Arbitrary Cement	SCMT-CB	16.92	dB/ft
MCI	Minimum Cemented Interval for Isolation	SCMT-CB	1.25	ft
MSA	Minimum Sonic Amplitude	SCMT-CB	0.51	mV
MSA_CURR	Minimum Sonic Amplitude in Arbitrary Cement	SCMT-CB	0.51	mV
PDAT	Permanent Datum	WLSESSION	GL	
RUN_SNUM	Run Sequence Number	WSDRUN	1	
SHT	Surface Hole Temperature	Borehole	68	degF

Tool Control Parameters**Run 1: Parameters**

Parameter	Description	Tool	Value	Unit
CMTM	SCMT Operating Mode	SCMT-CB	Log	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	150	ft/h
PCCG	PSP Downhole CCL Gain	PSTP-A	12 dB	

Run 1**Main 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
Run 1	Log[5]:Up	Up	2120.88 ft	9508.24 ft	22-Dec-2017 7:48:27 AM	22-Dec-2017 10:37:33 AM	ON	10.66 ft	Yes

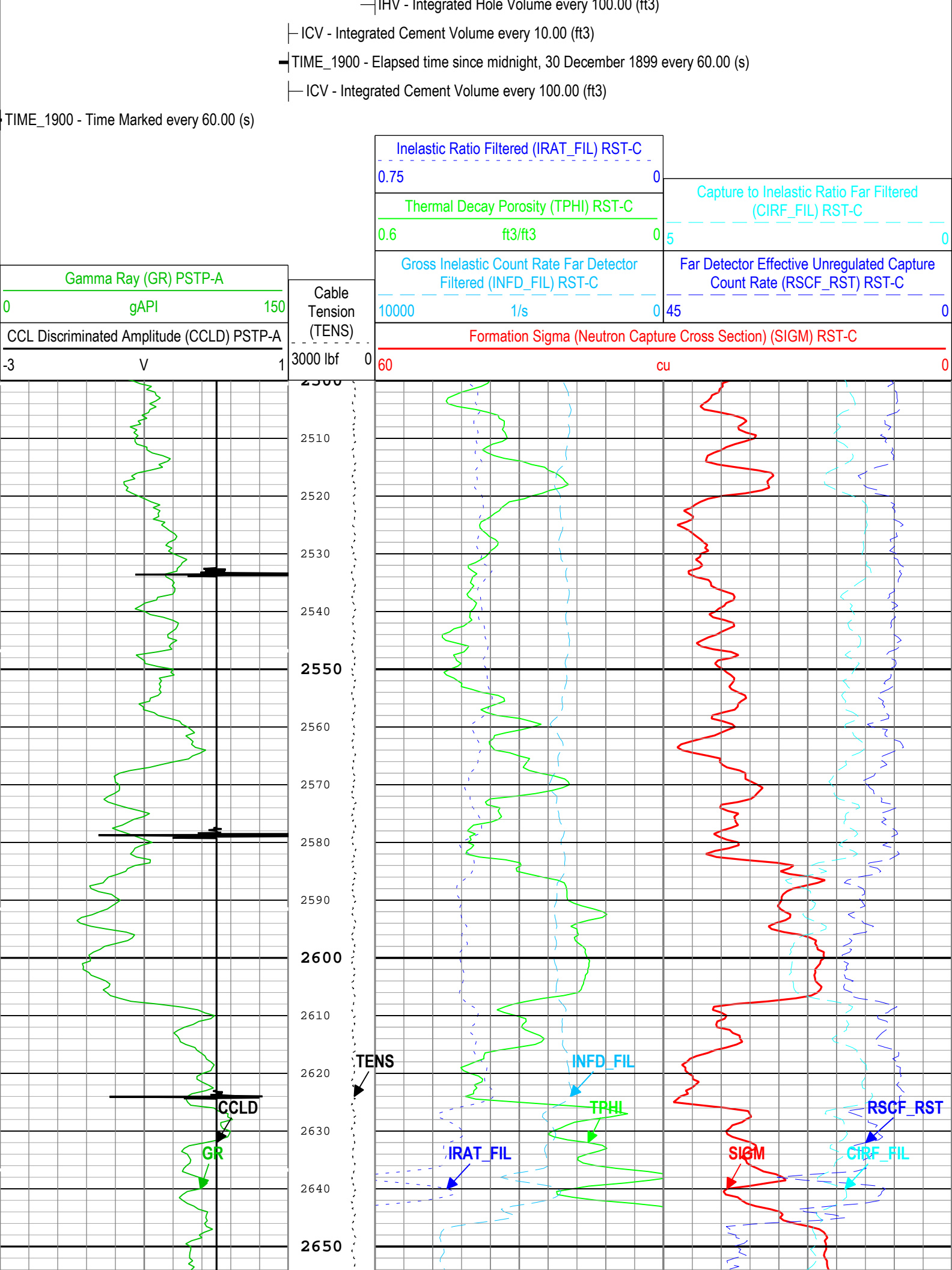
All depths are referenced to toolstring zero

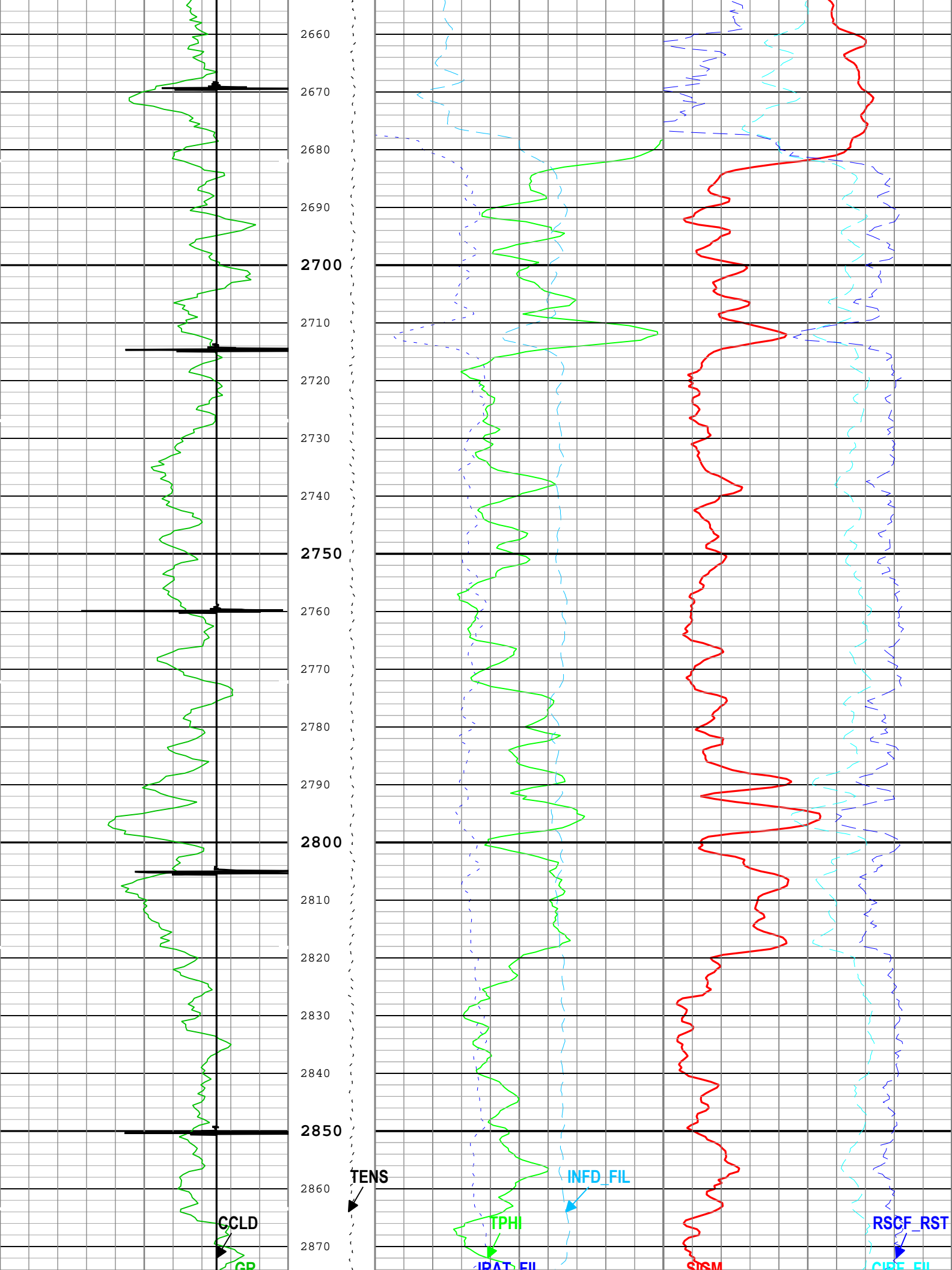
Log

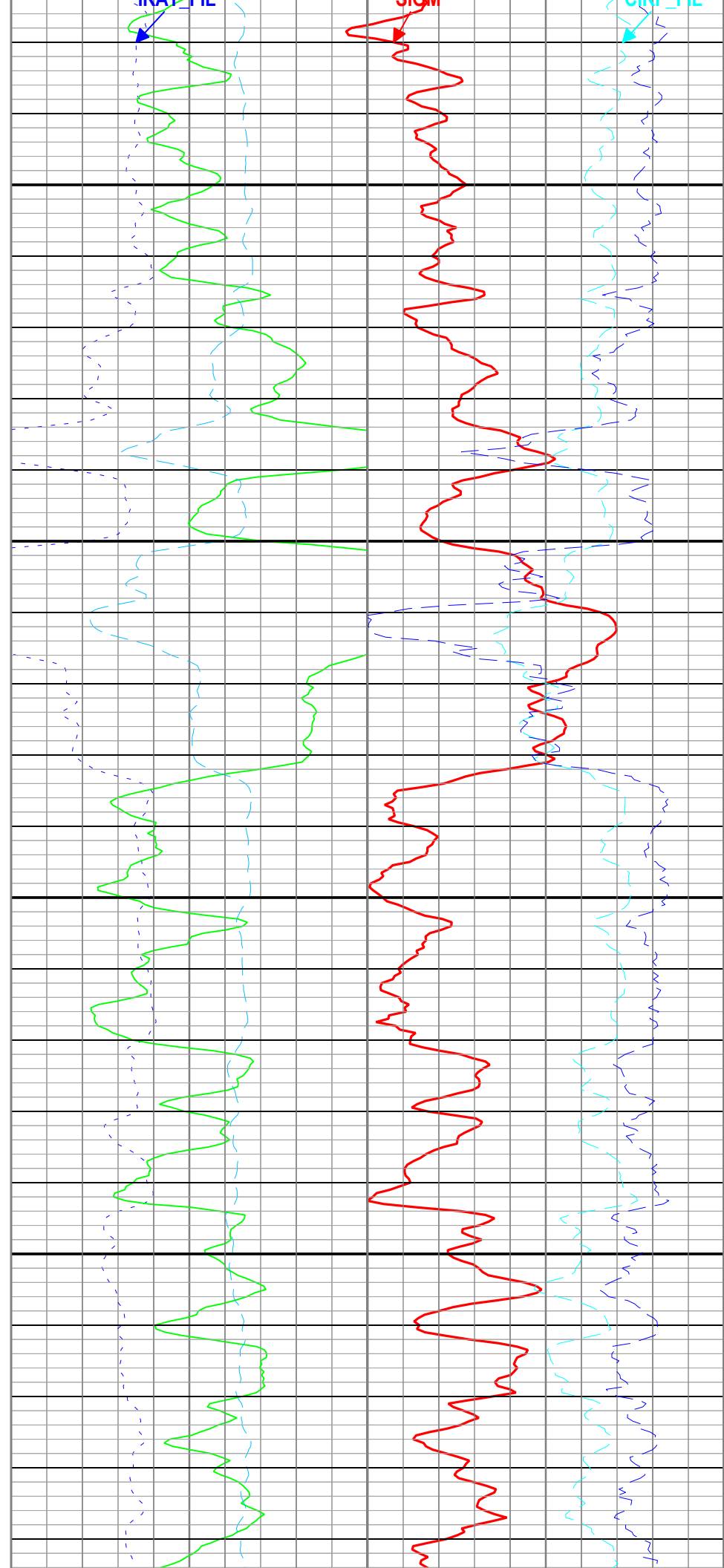
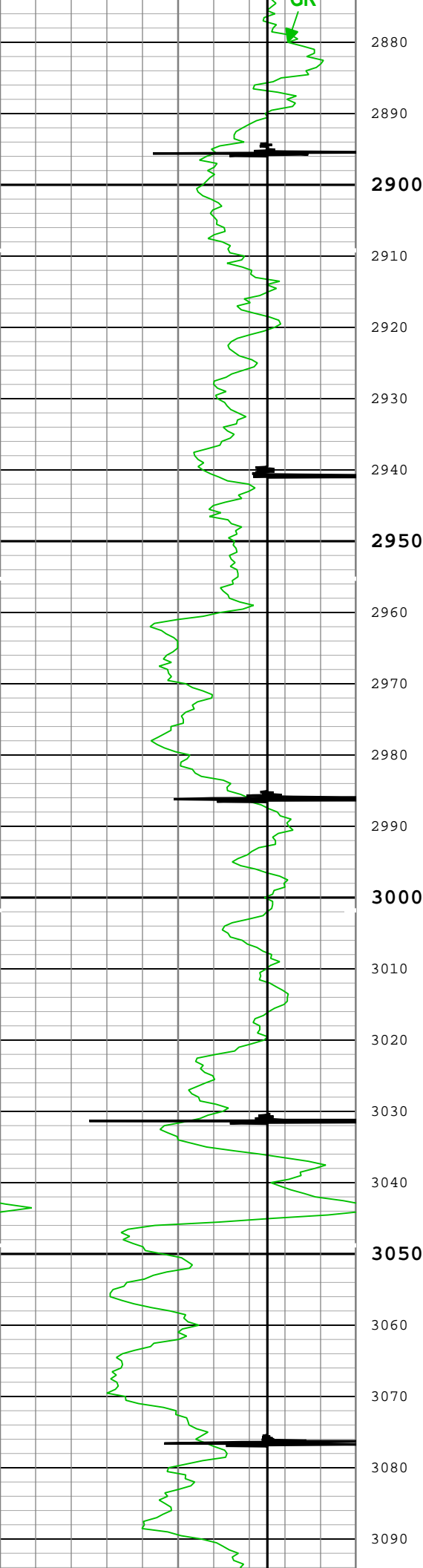
Company:Caerus Operating LLC

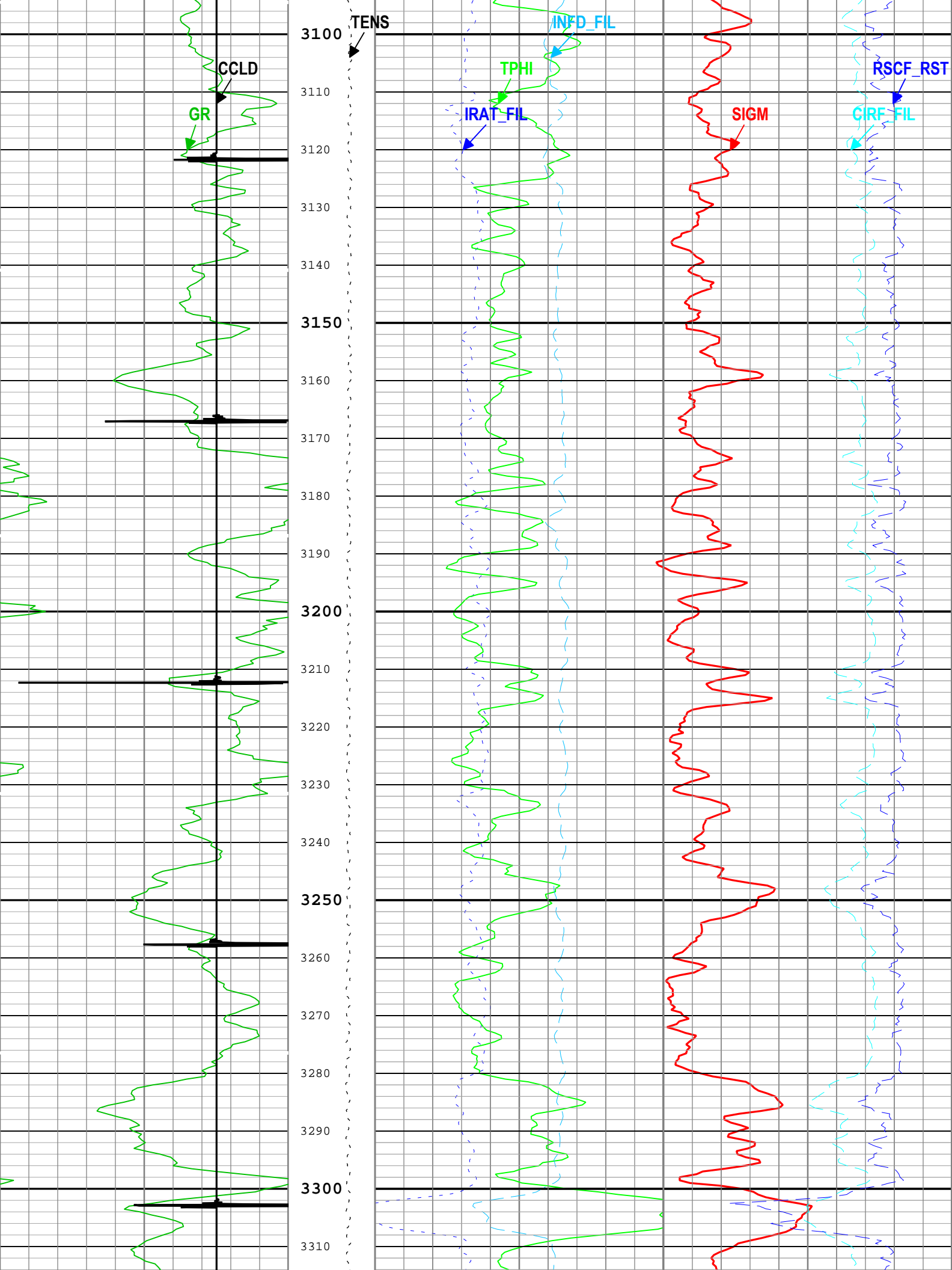
Well:Puckett 33C-23 697

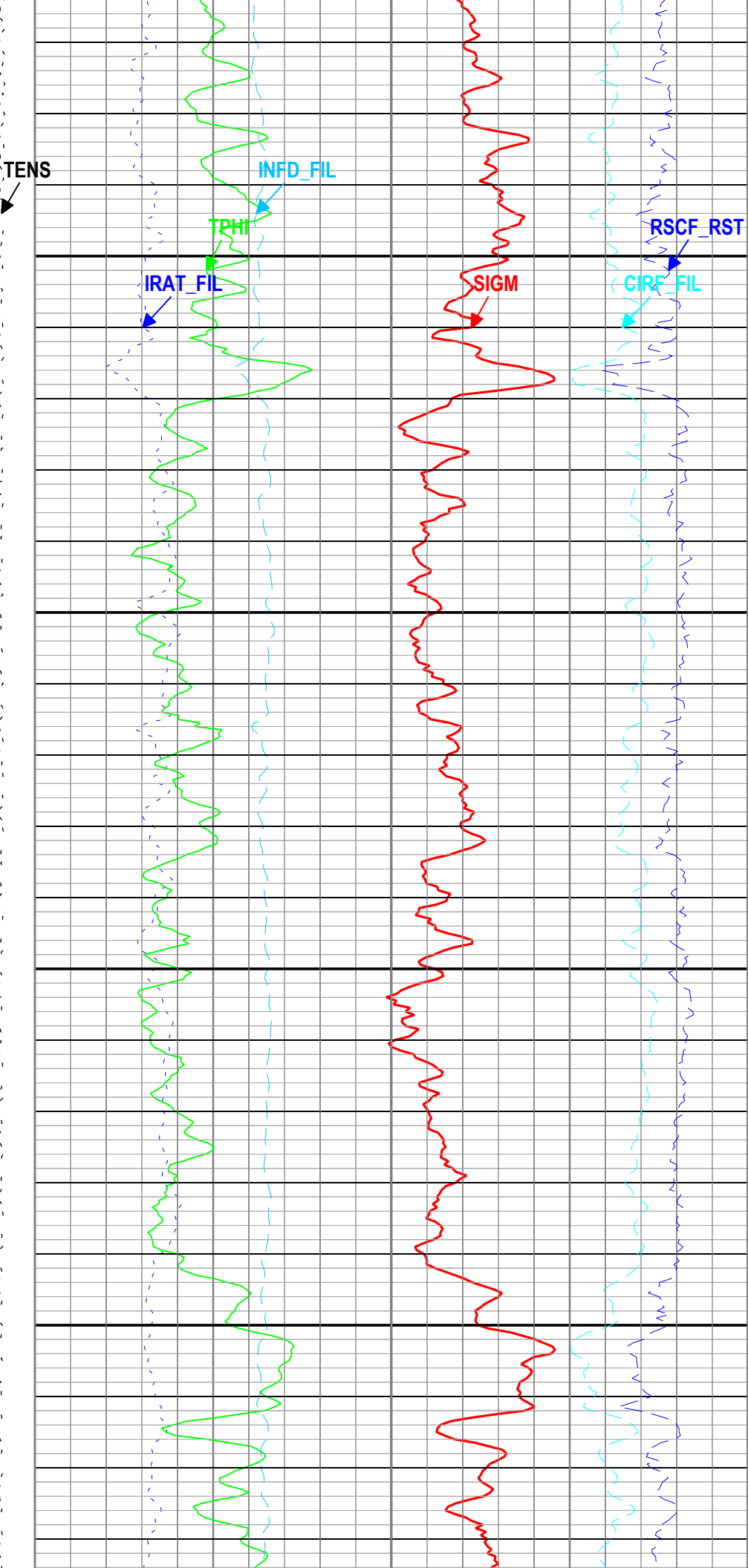
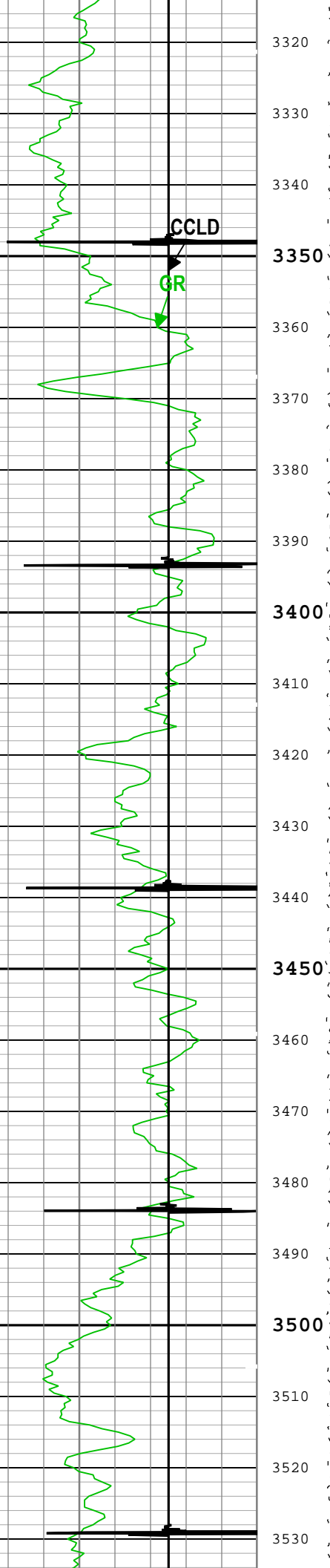
Run 1: Log[5]:Up:S005

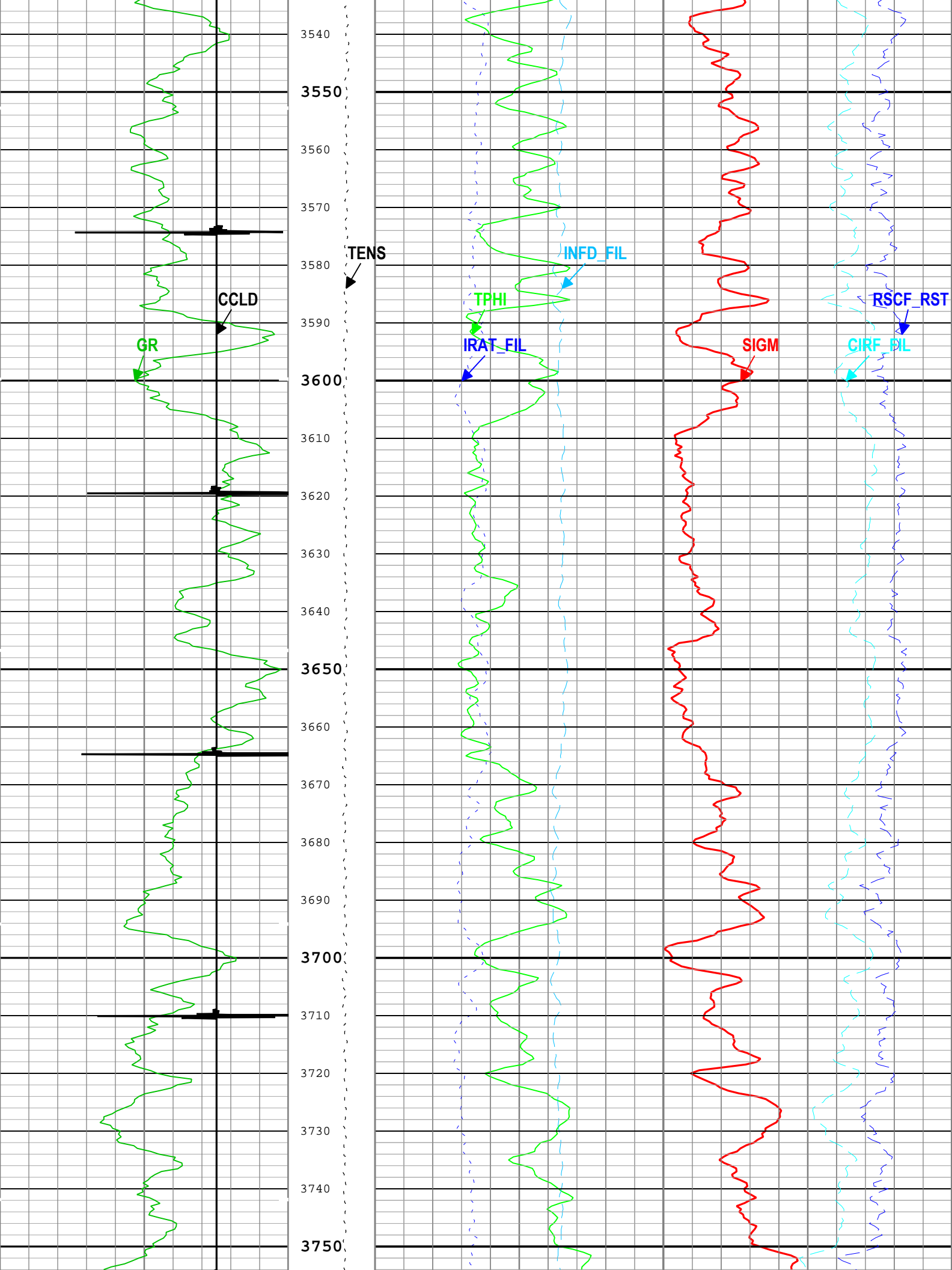


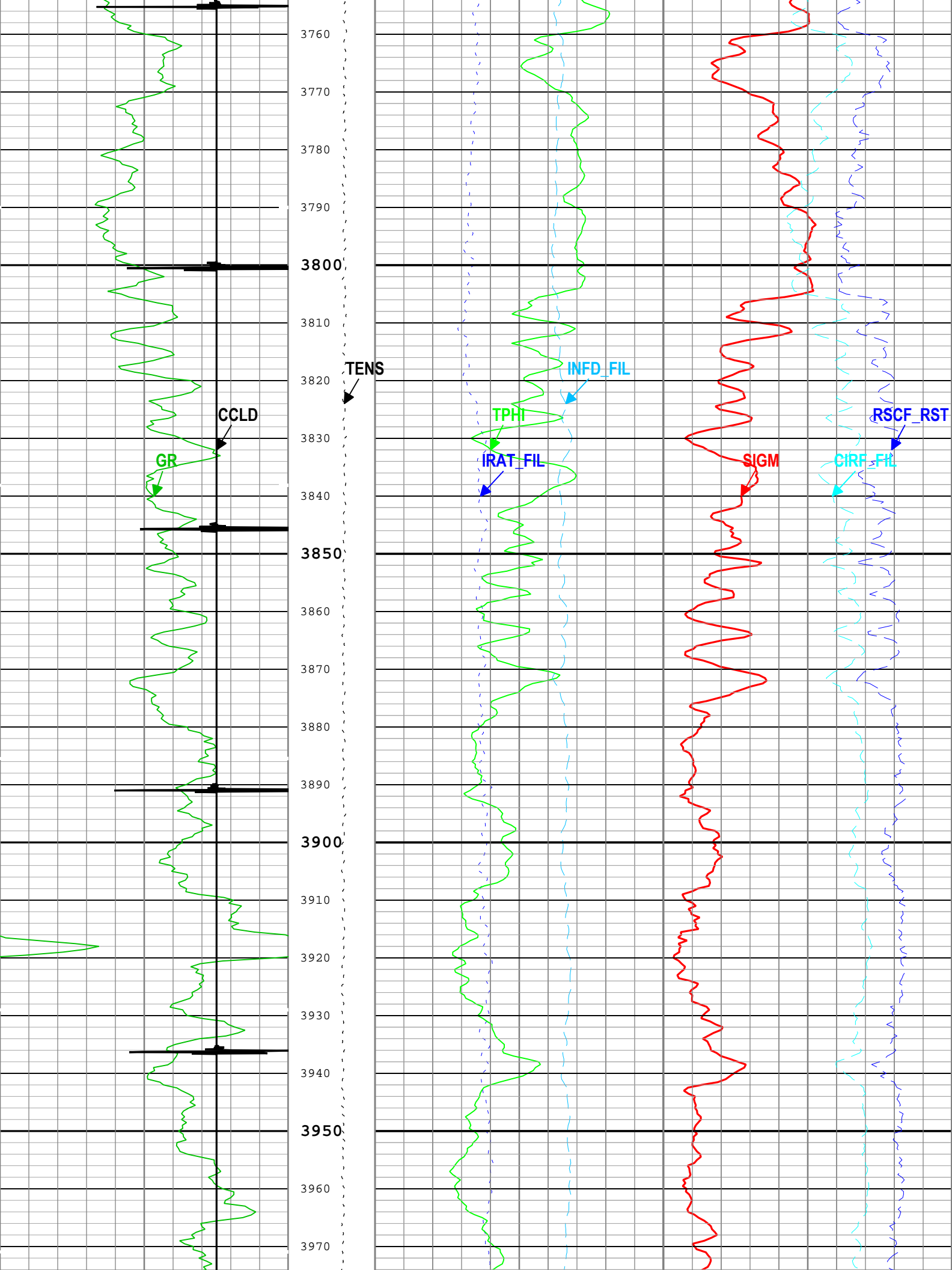


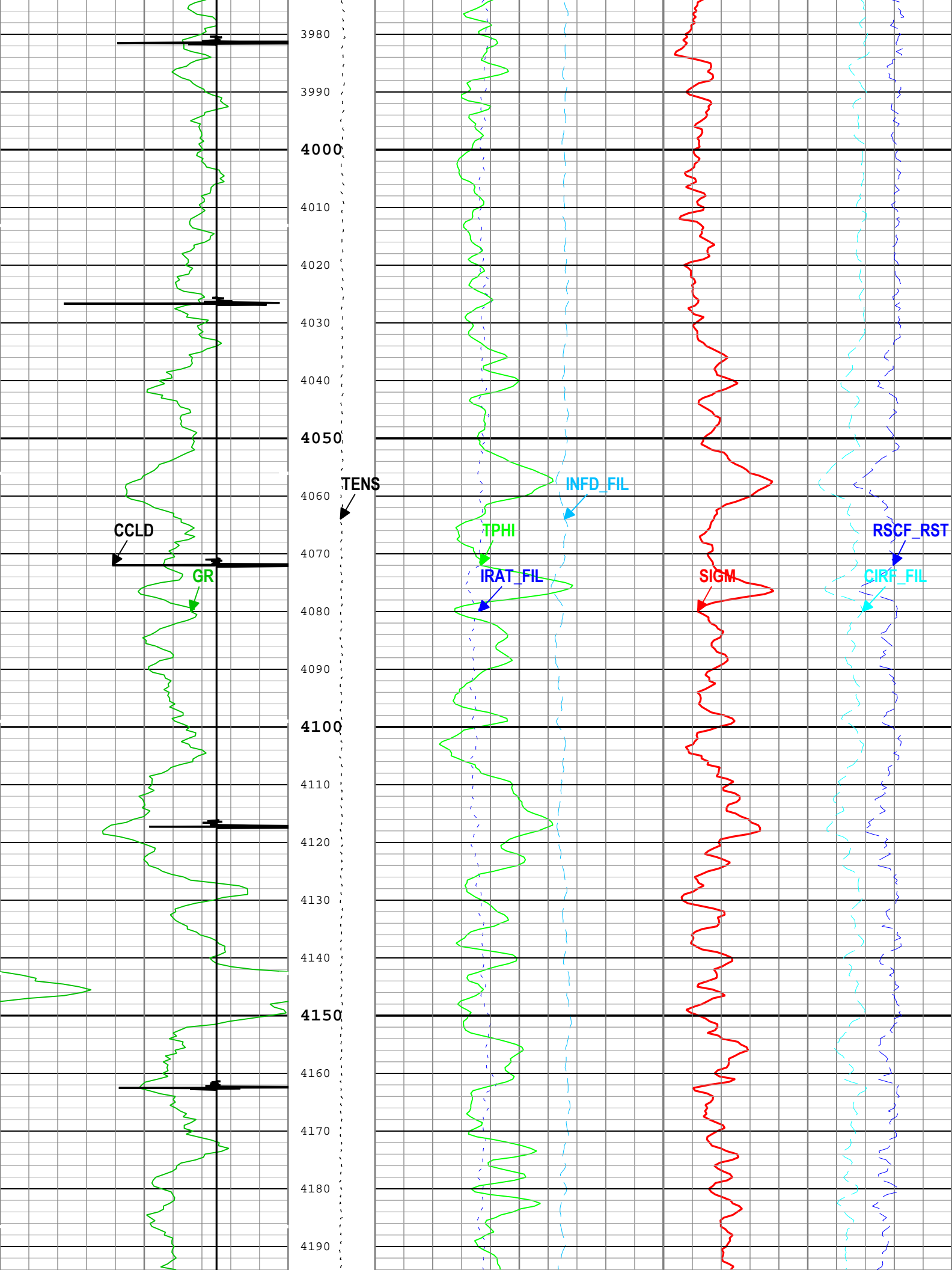


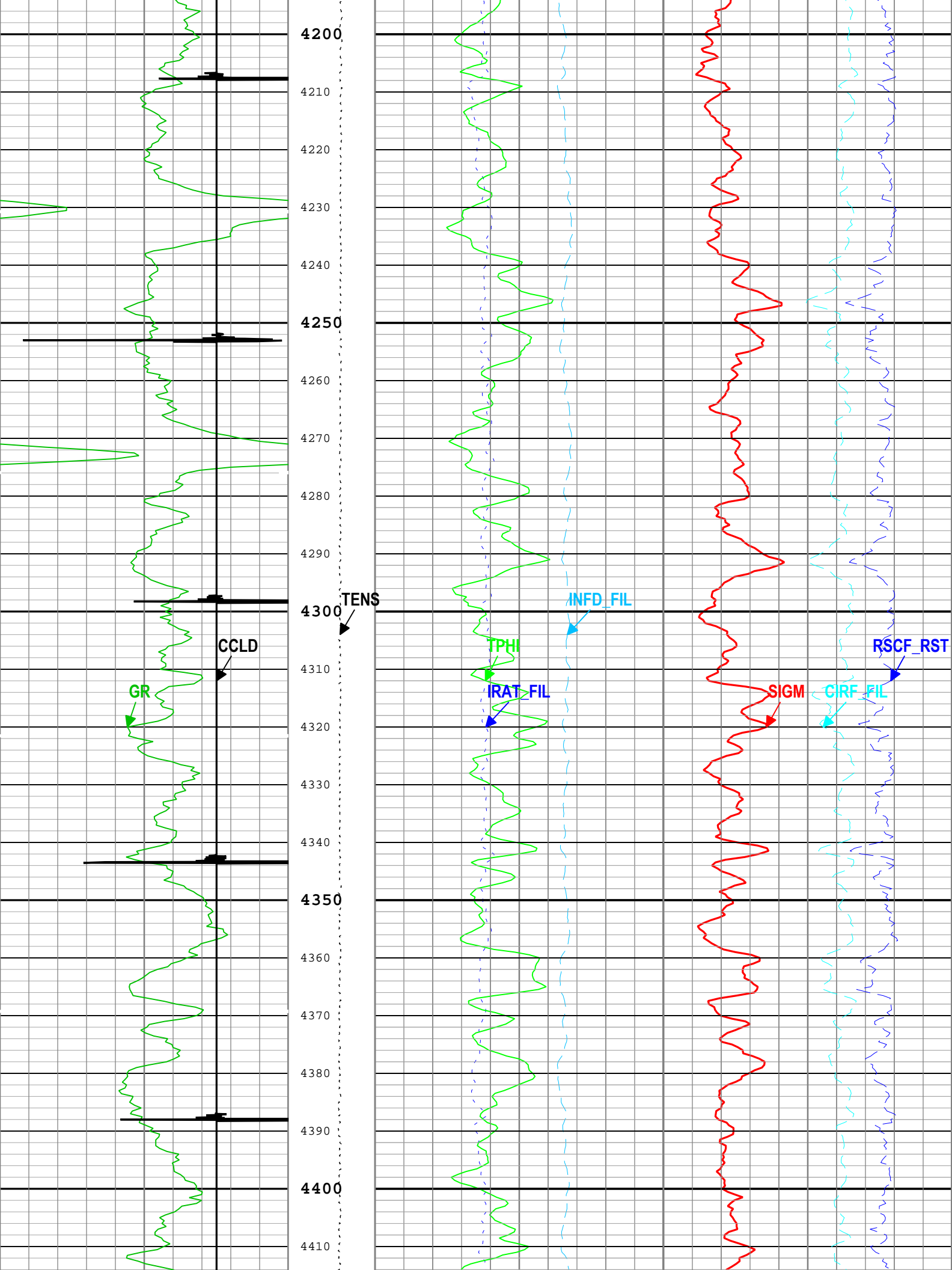


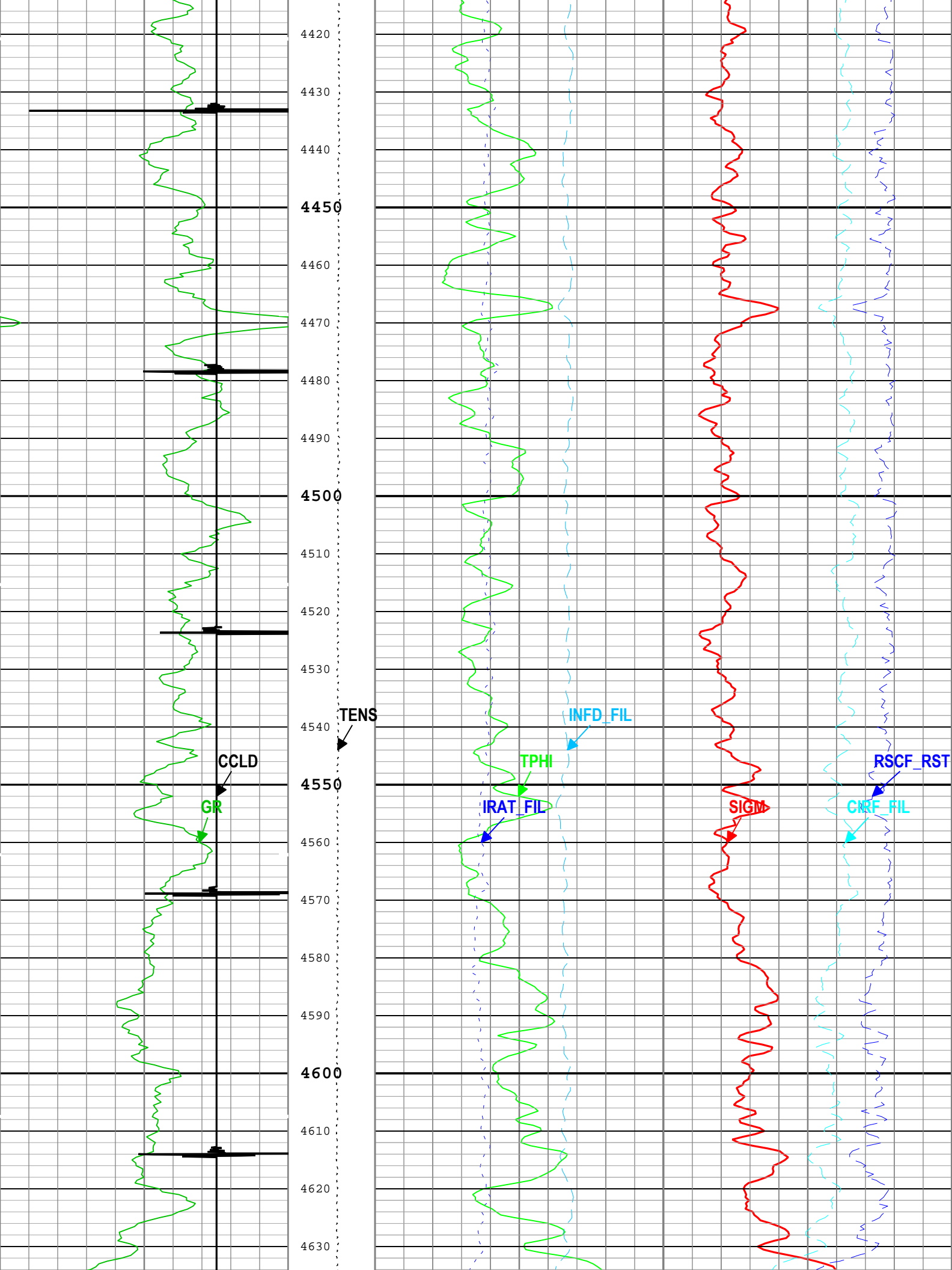


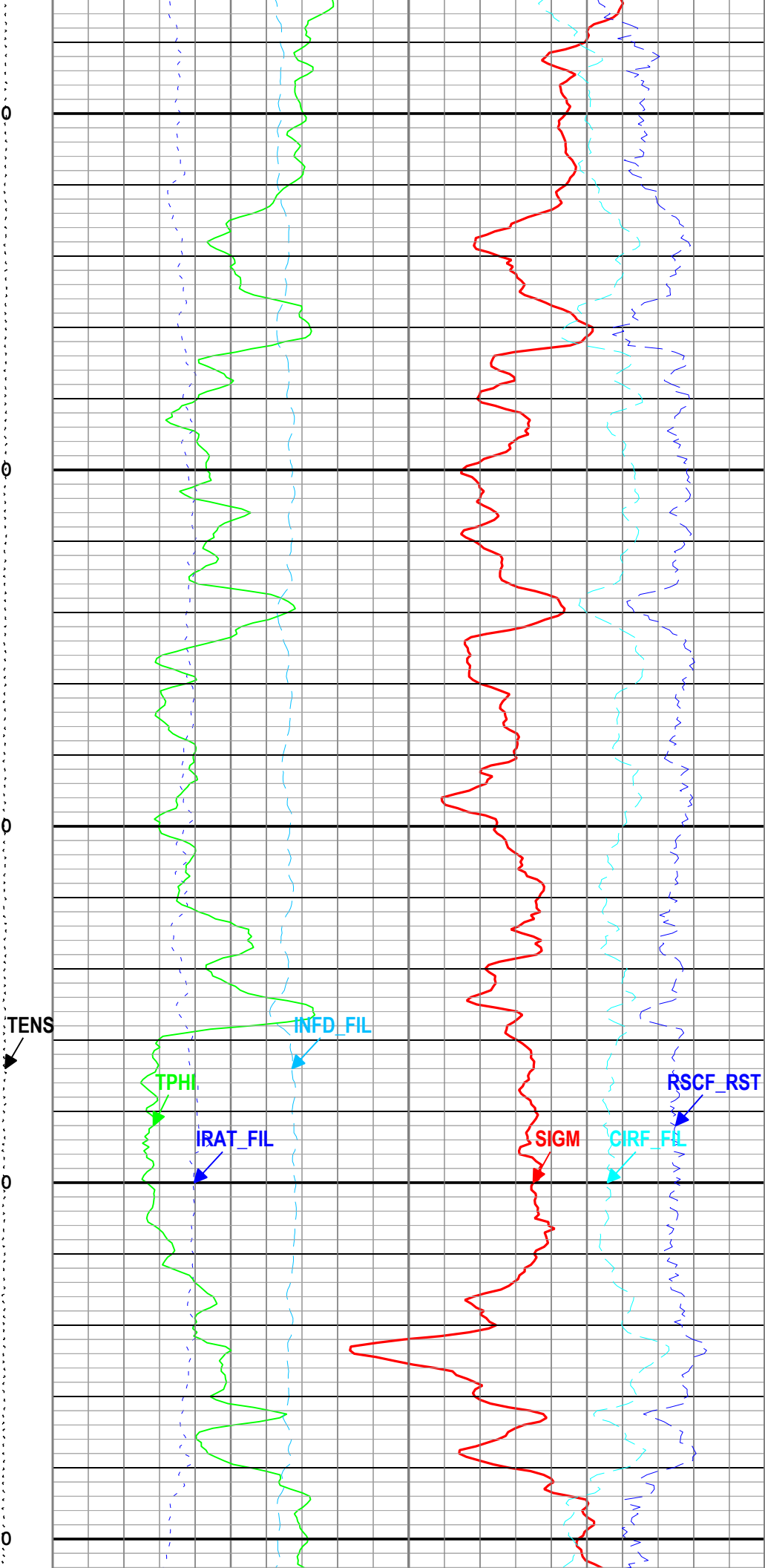
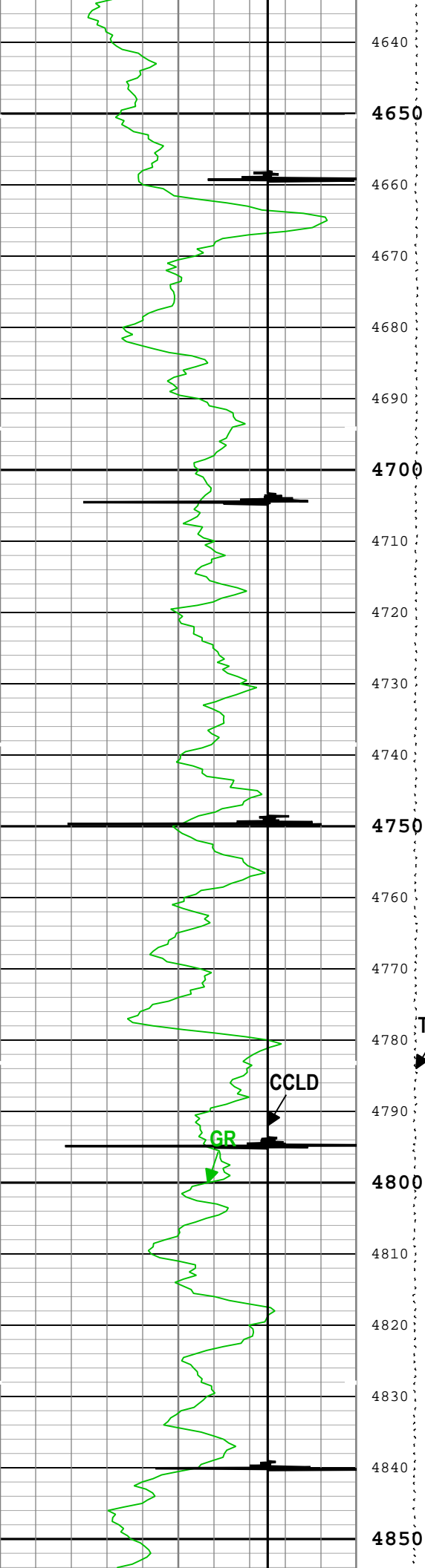


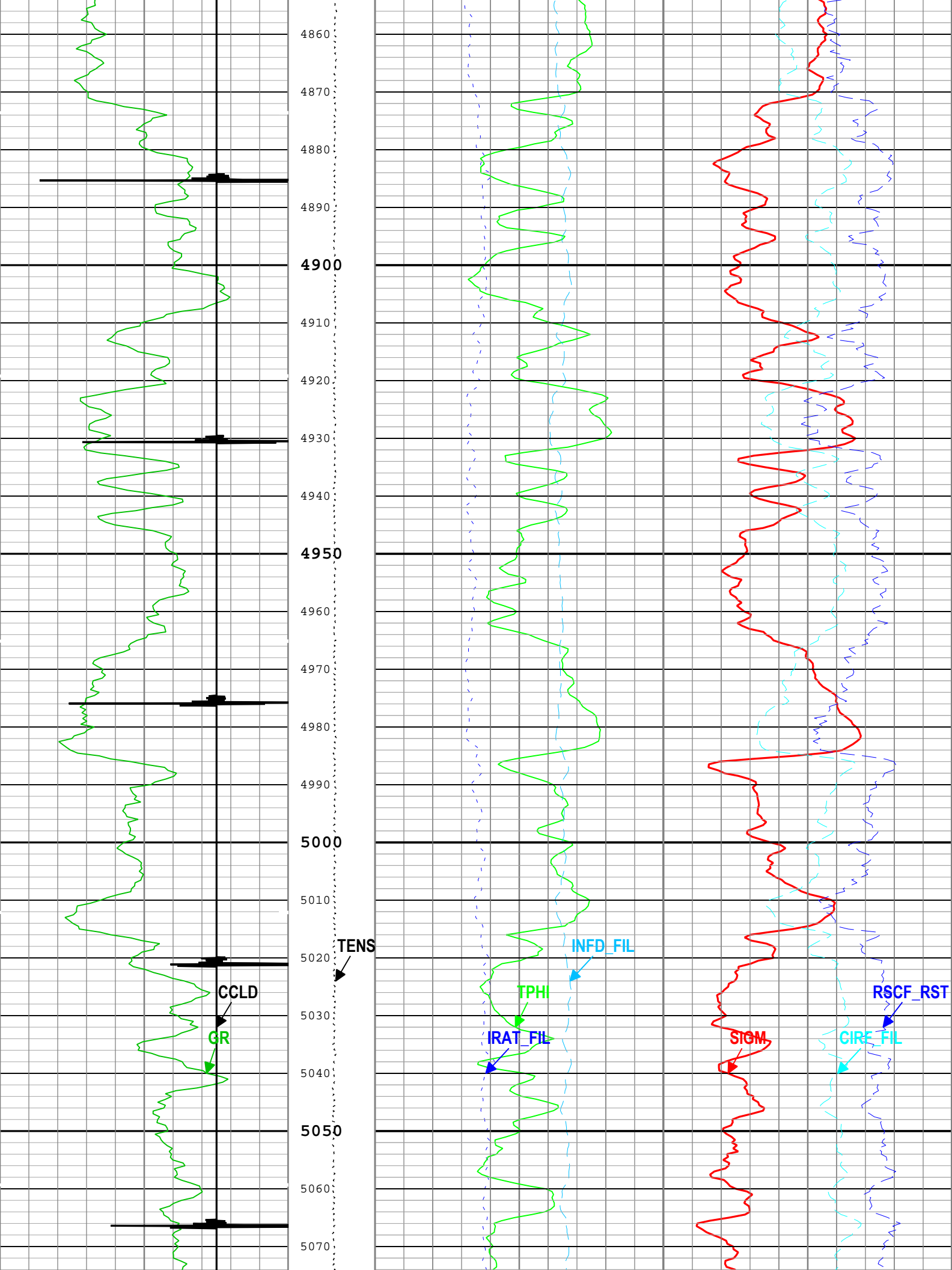


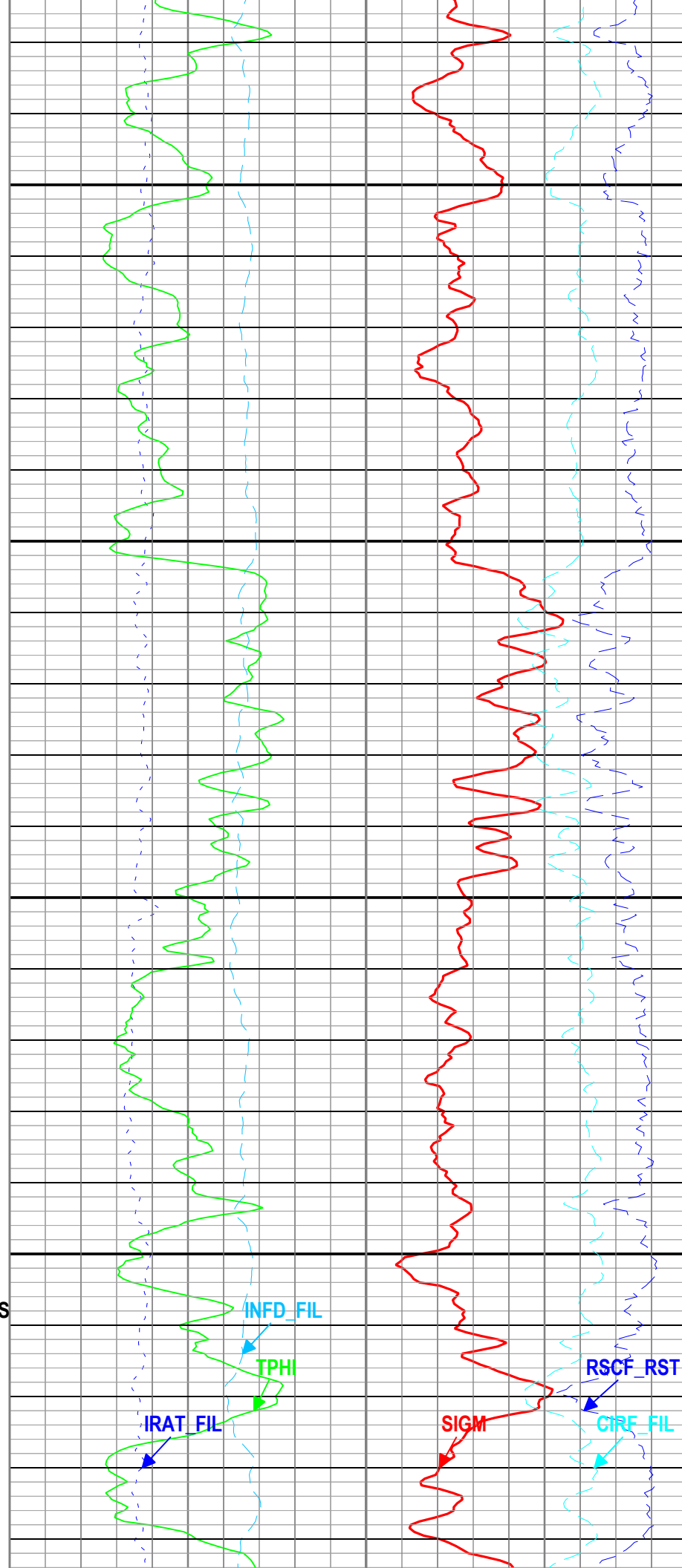
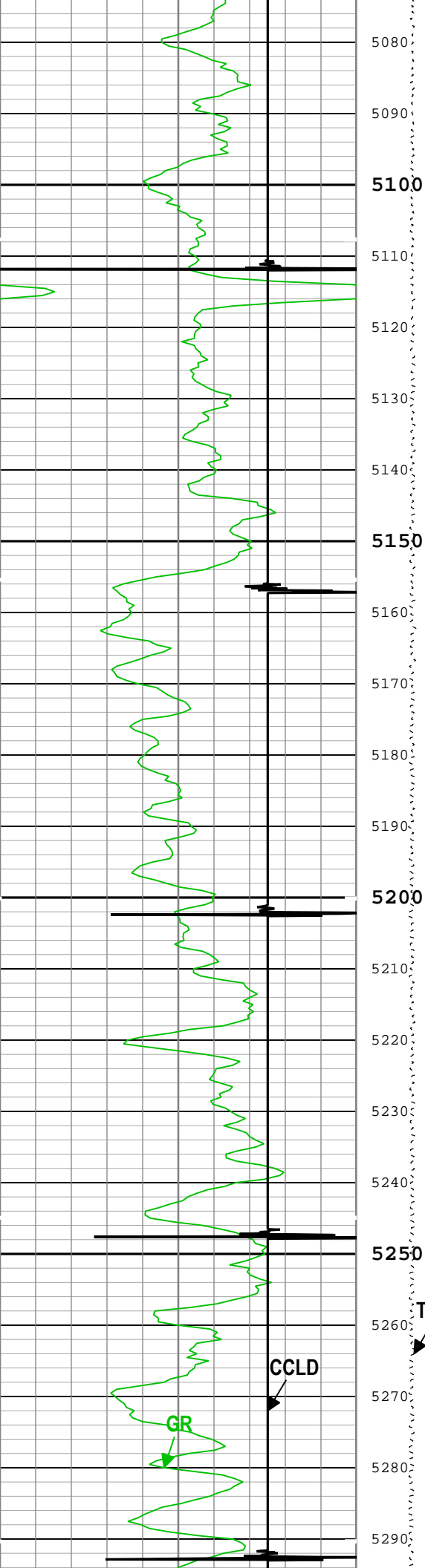


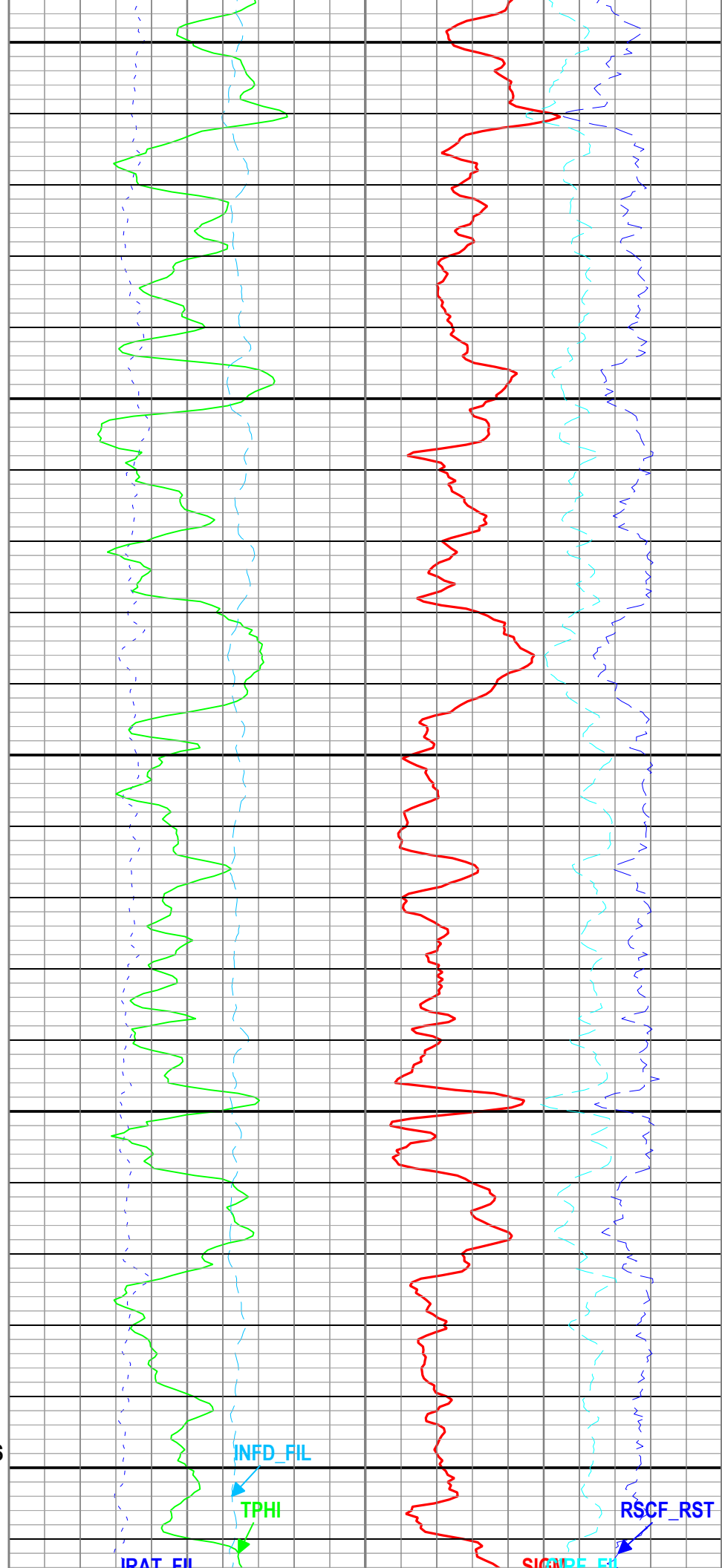
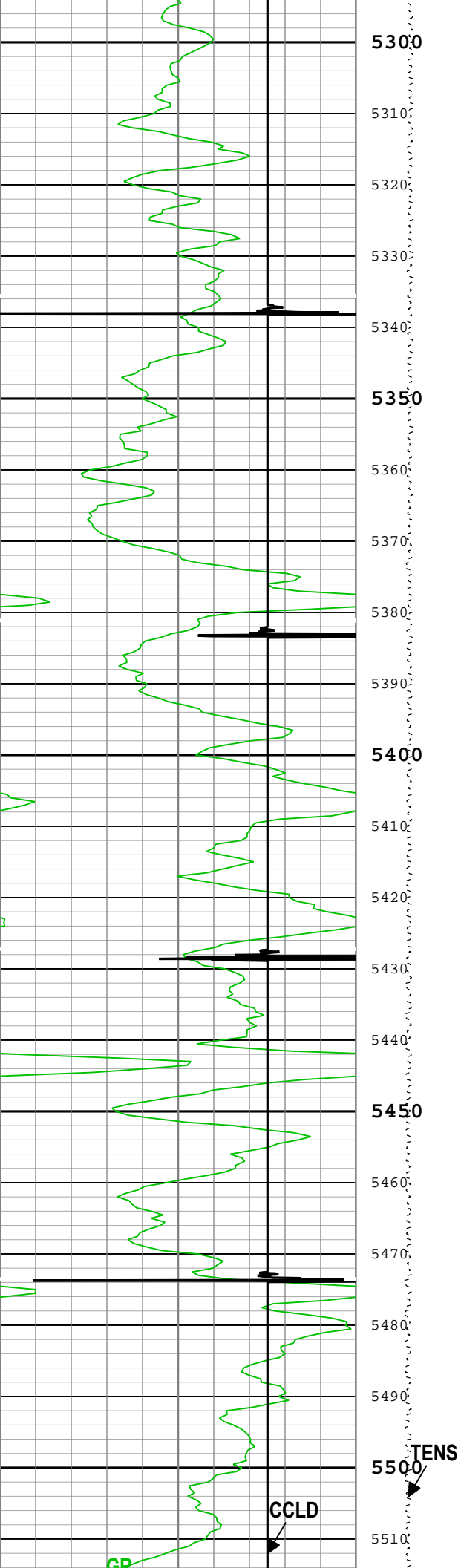


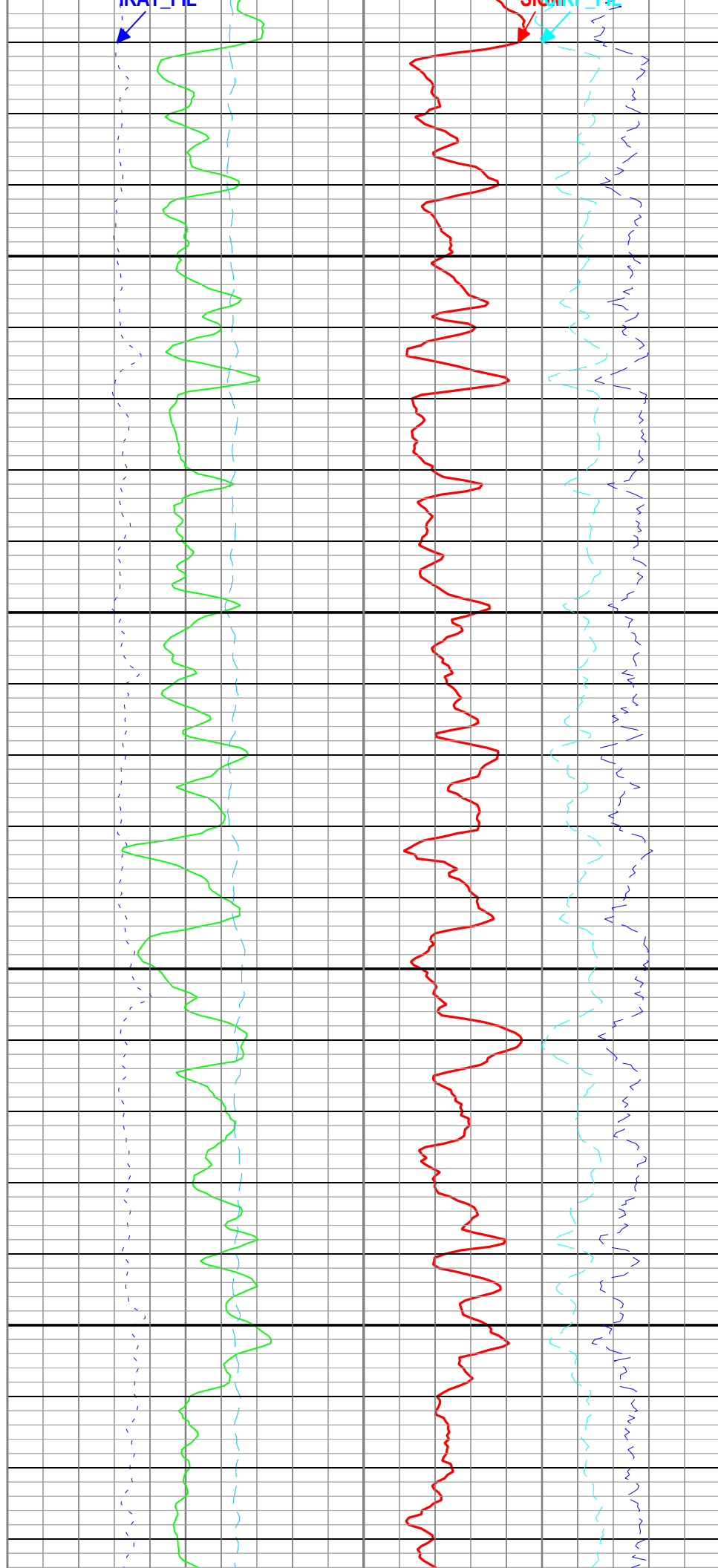
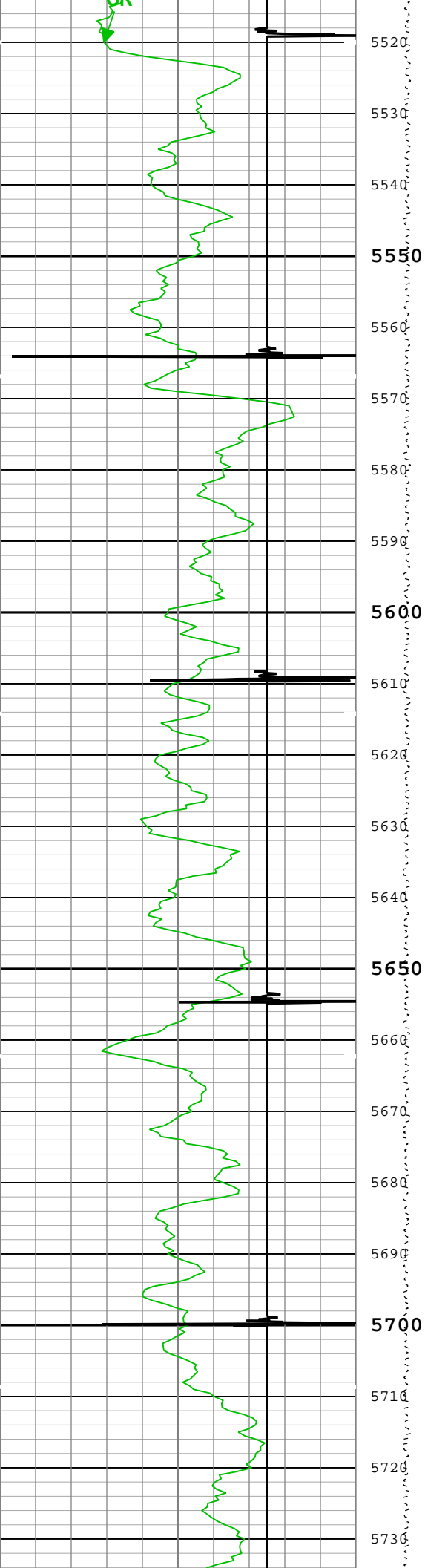


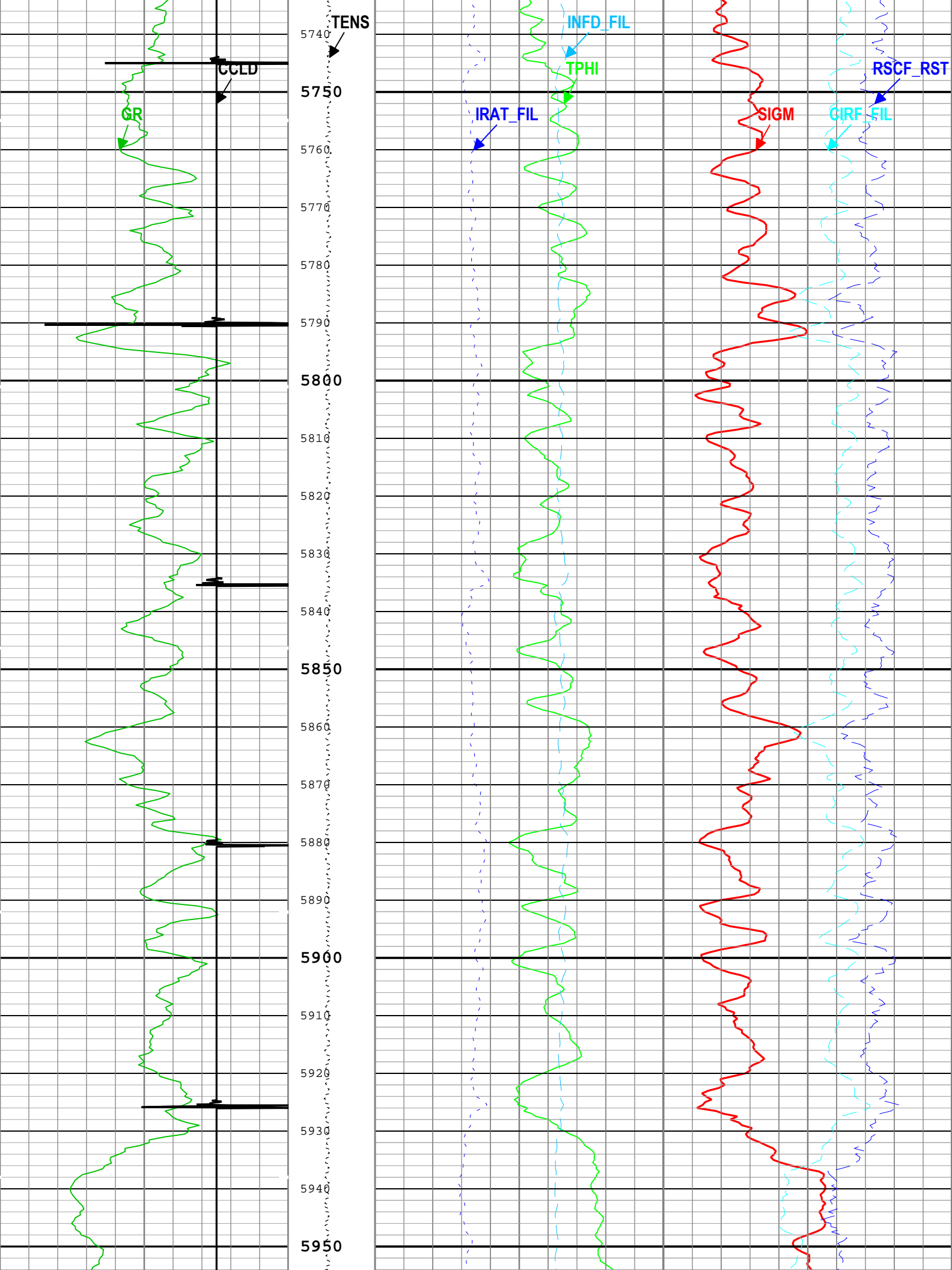


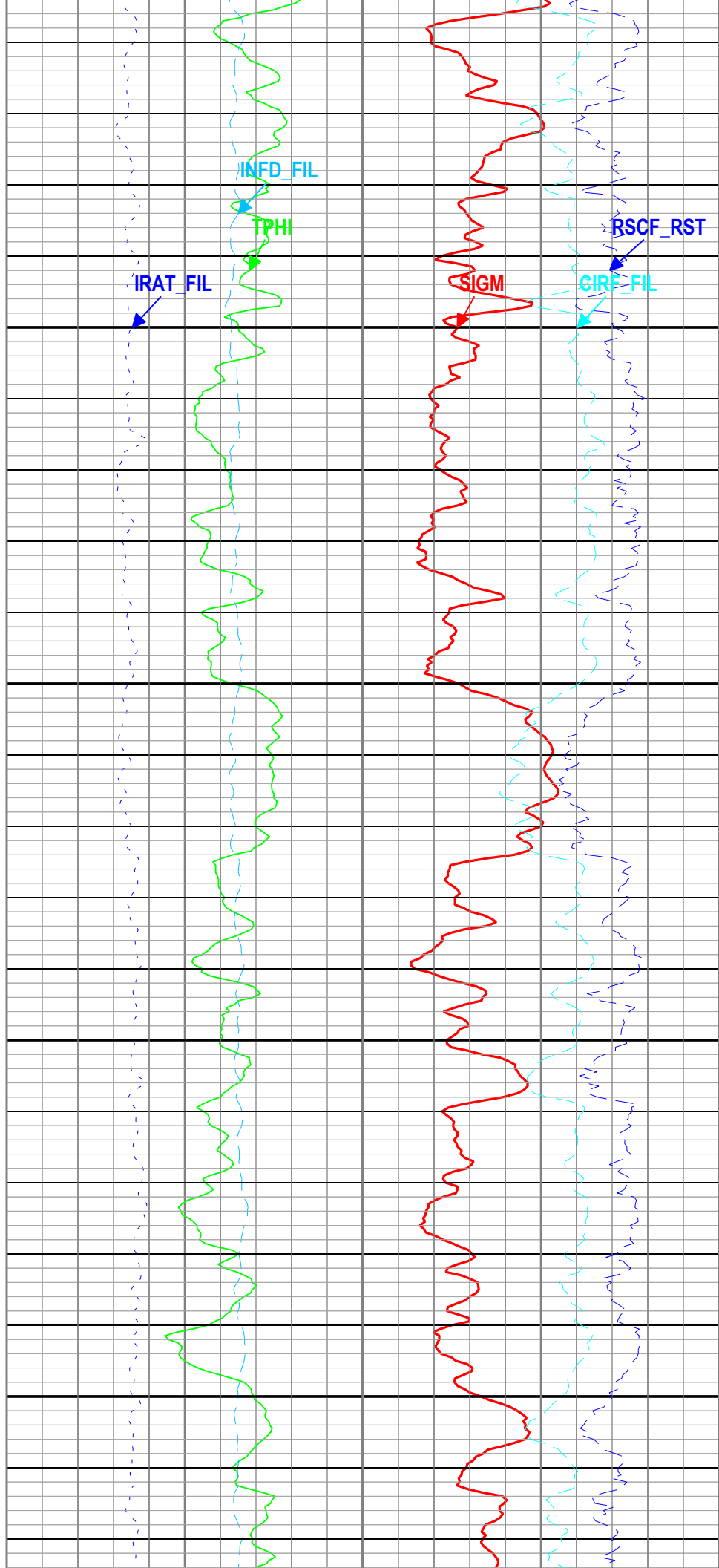
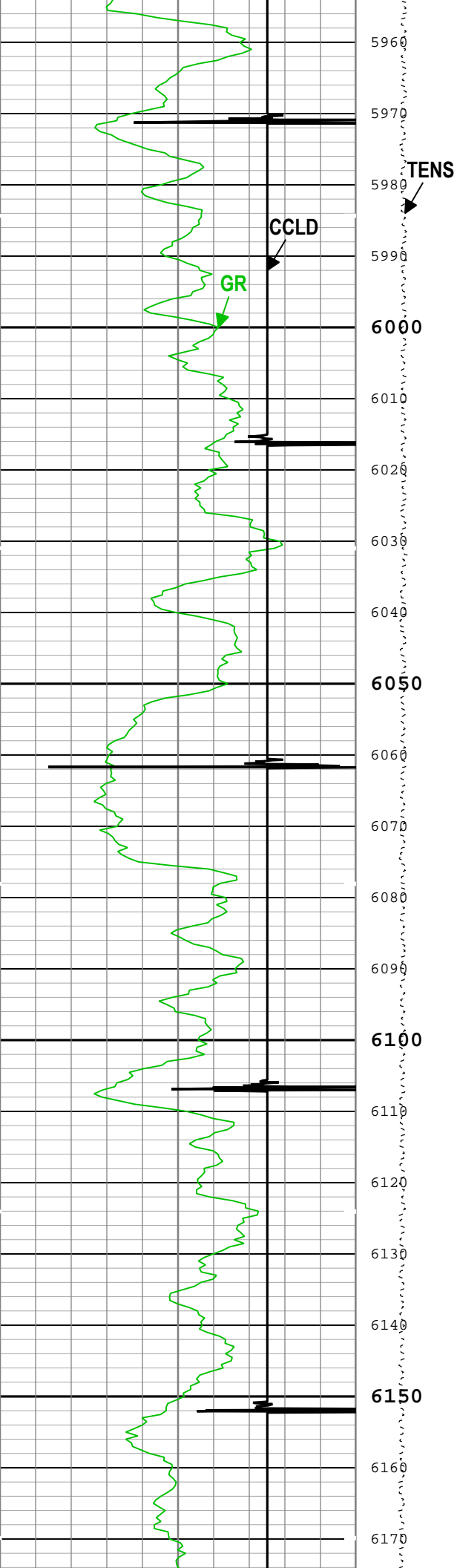


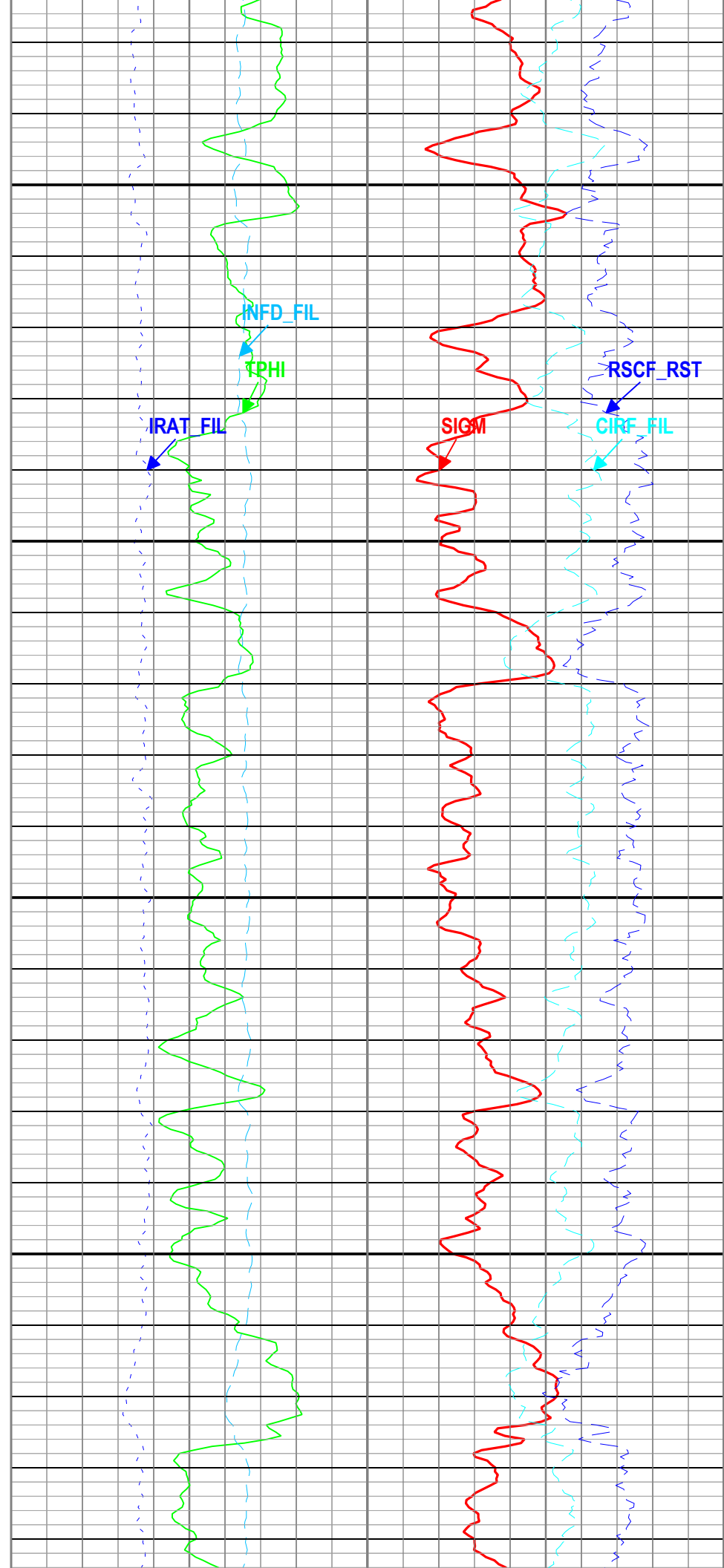
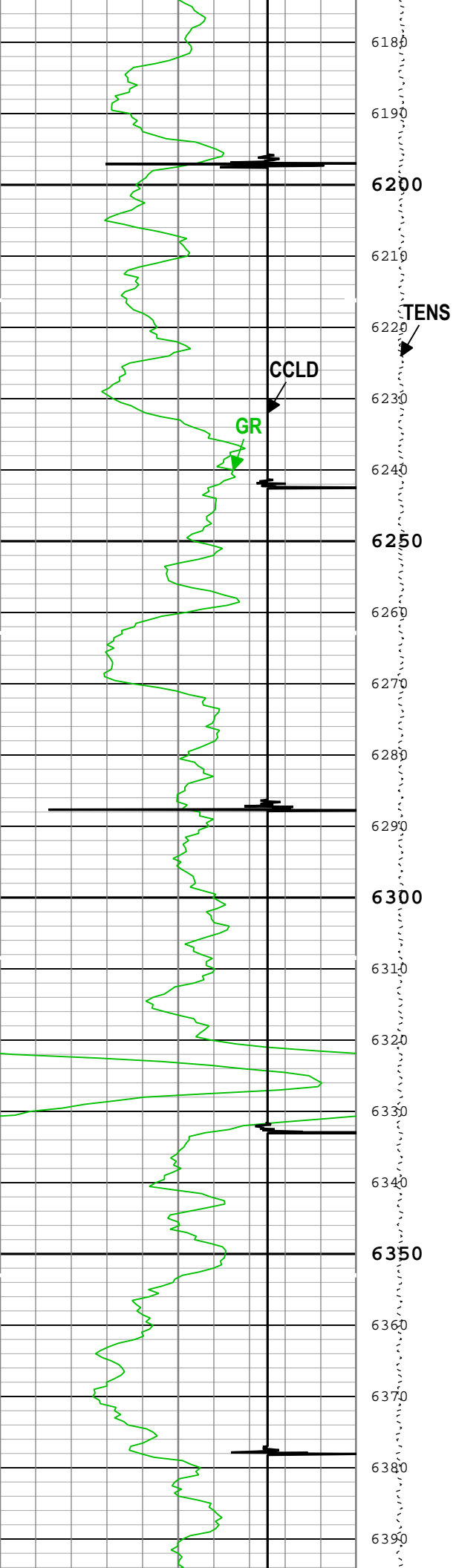


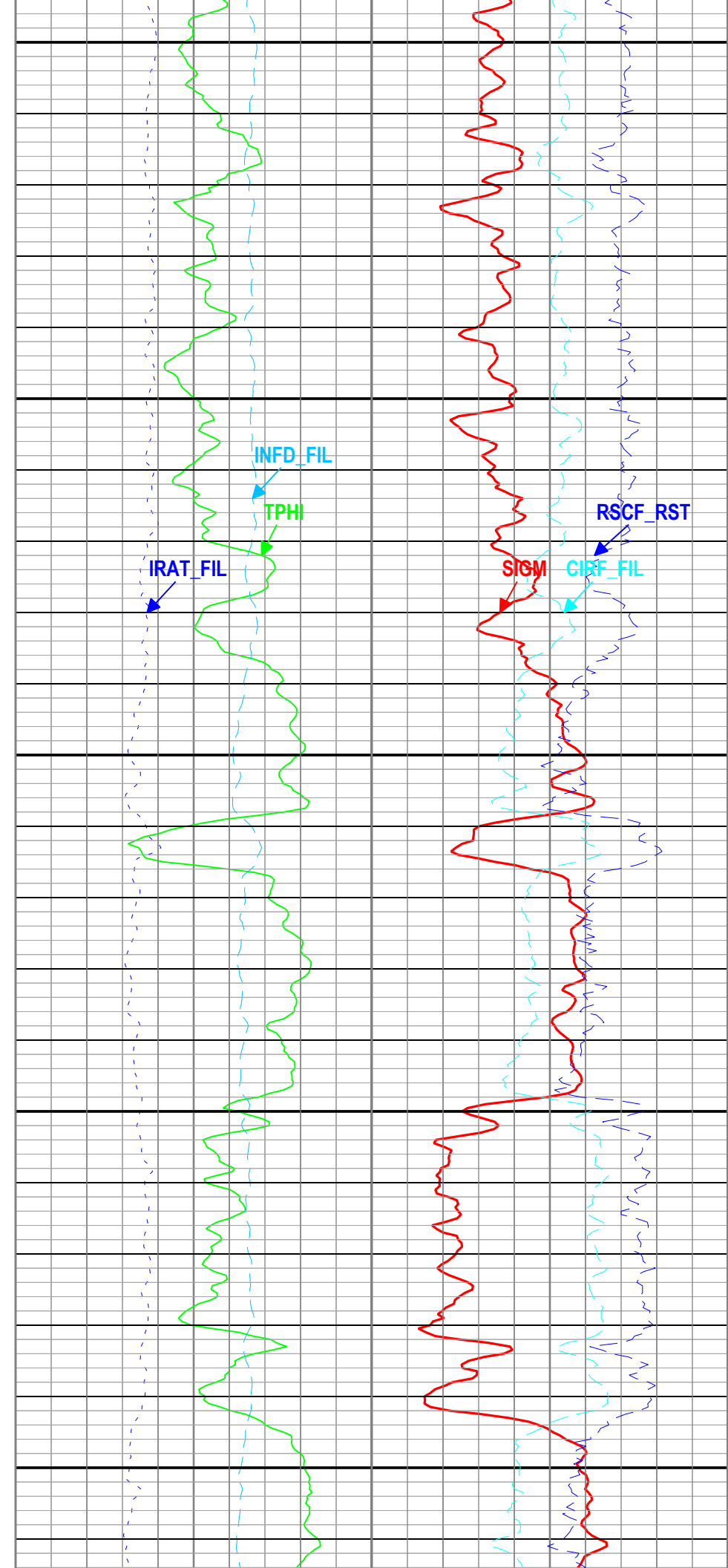
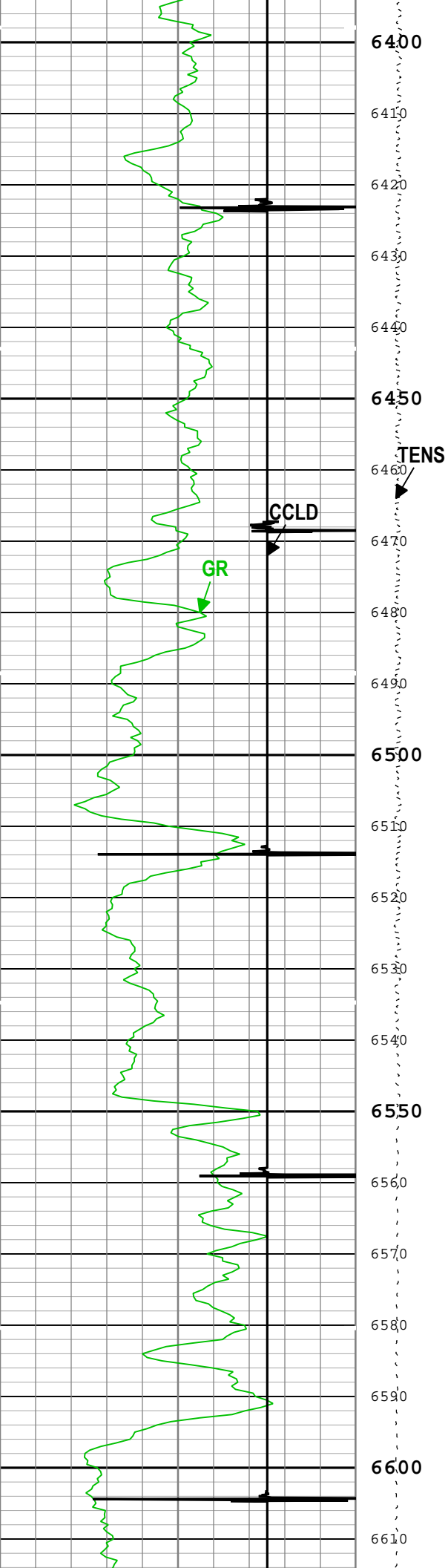


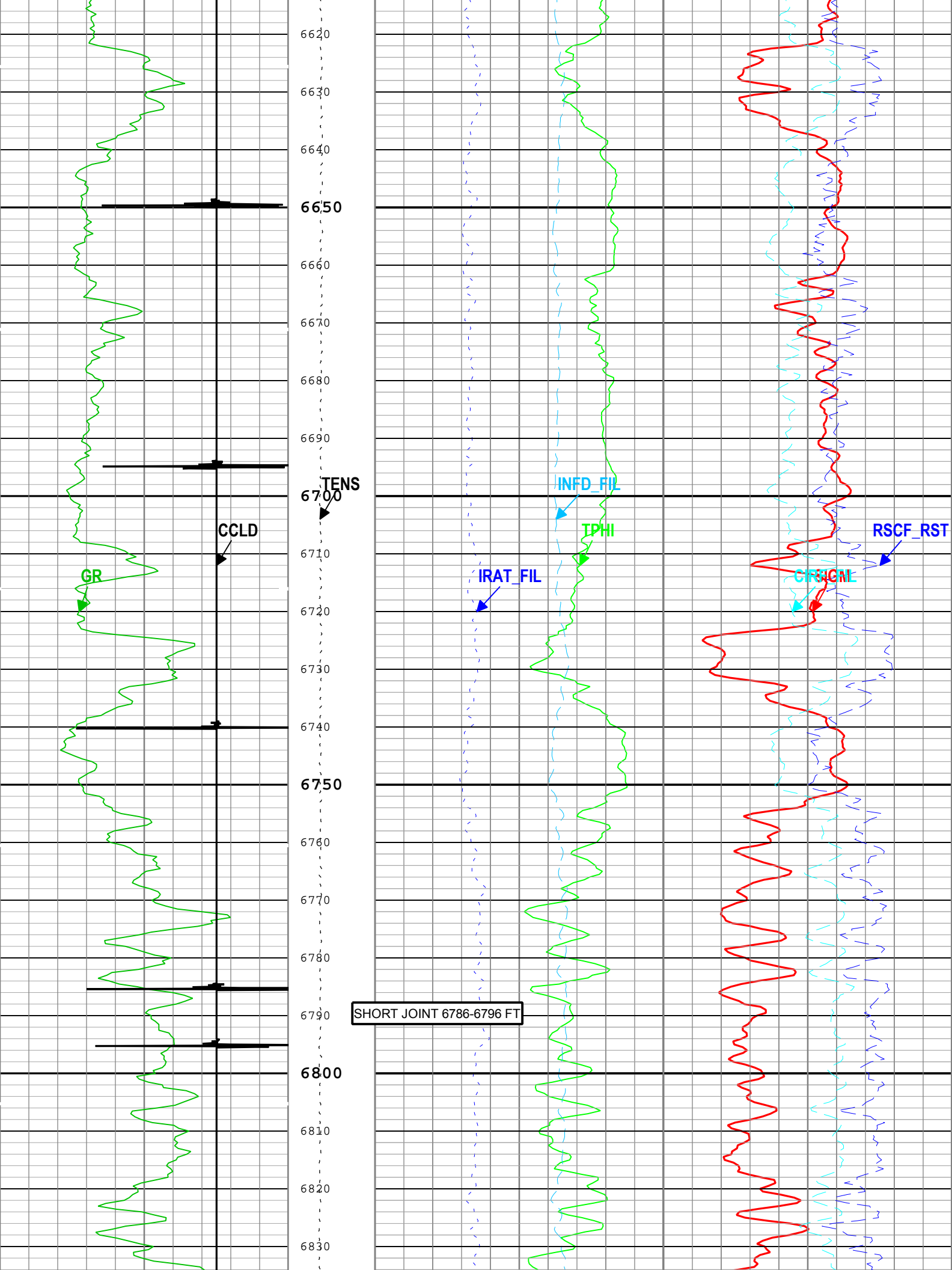


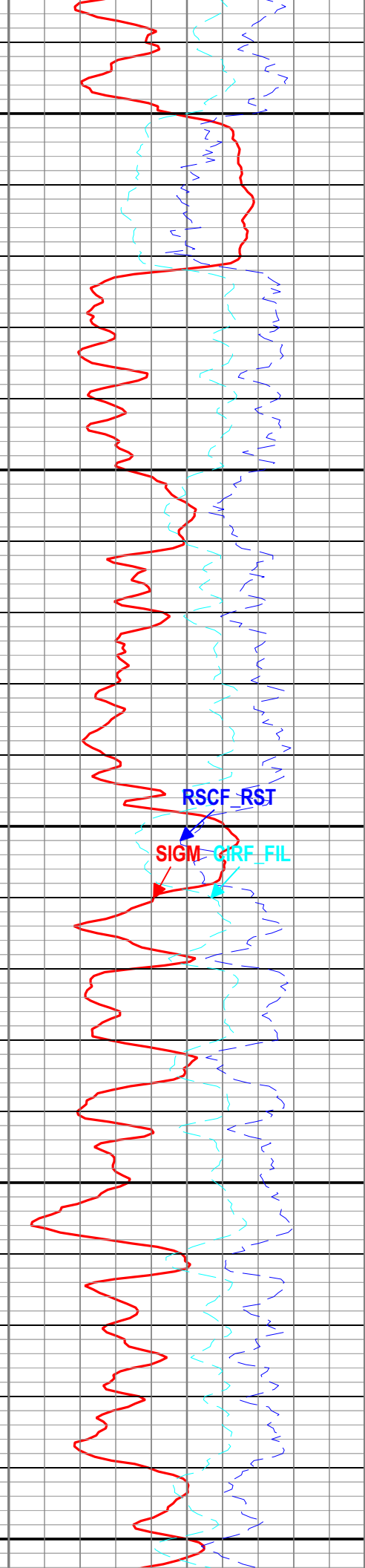
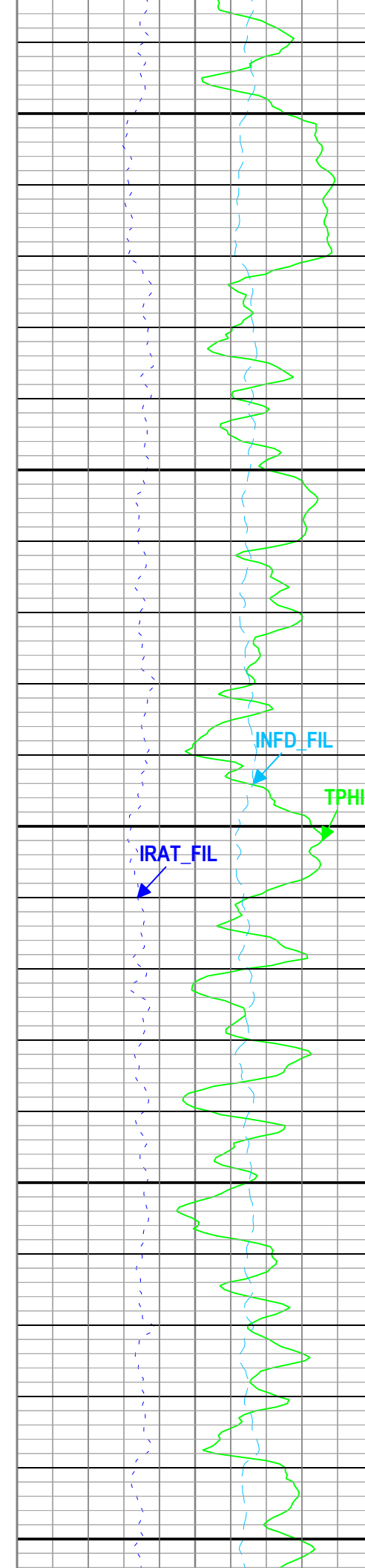
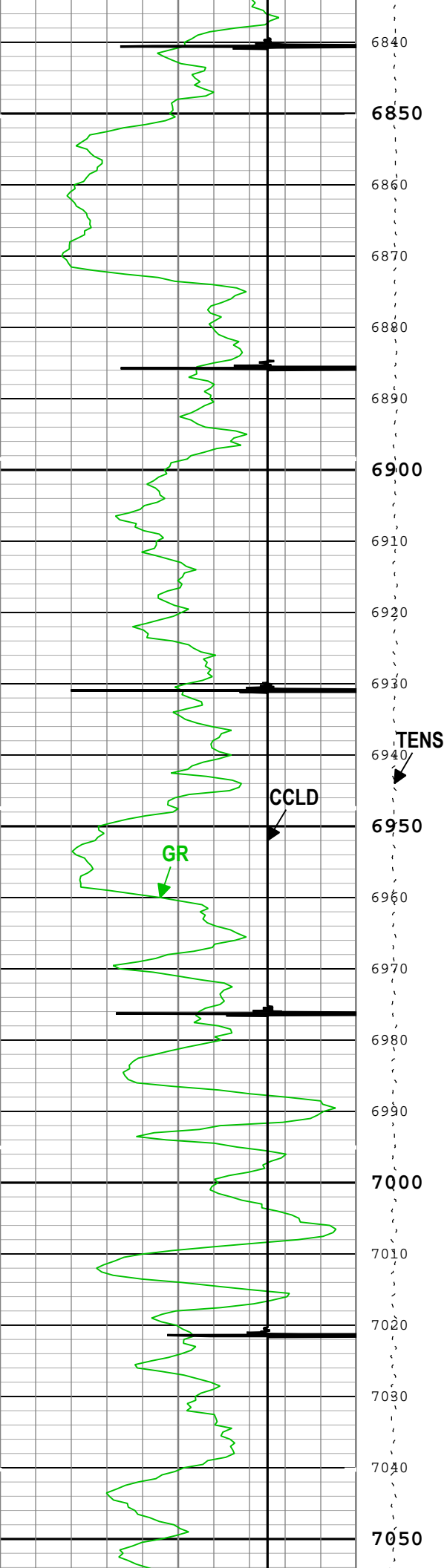


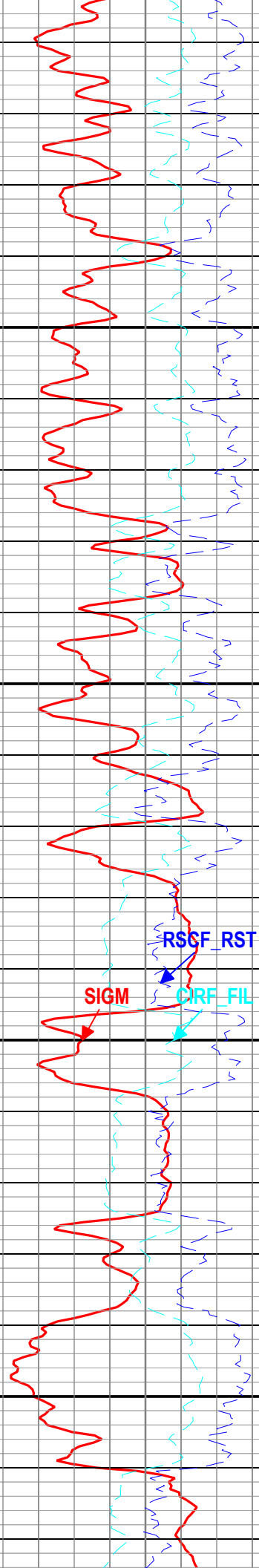
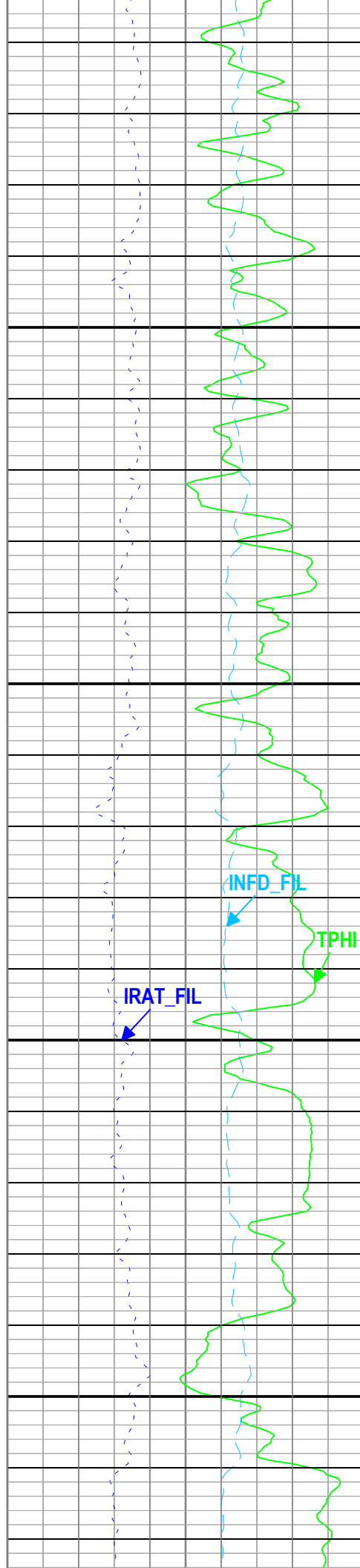
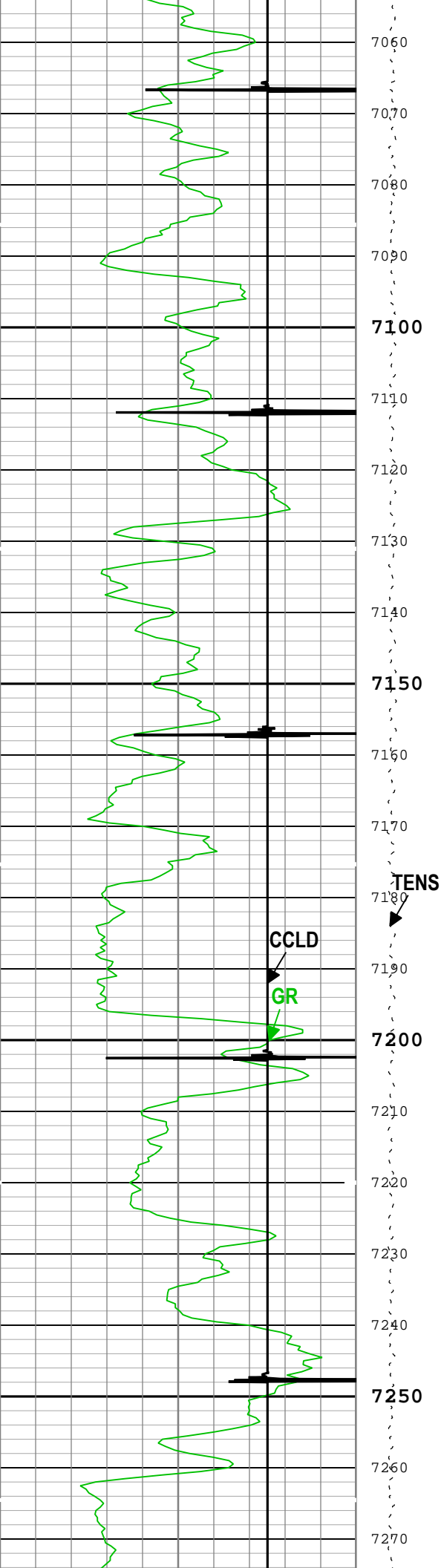


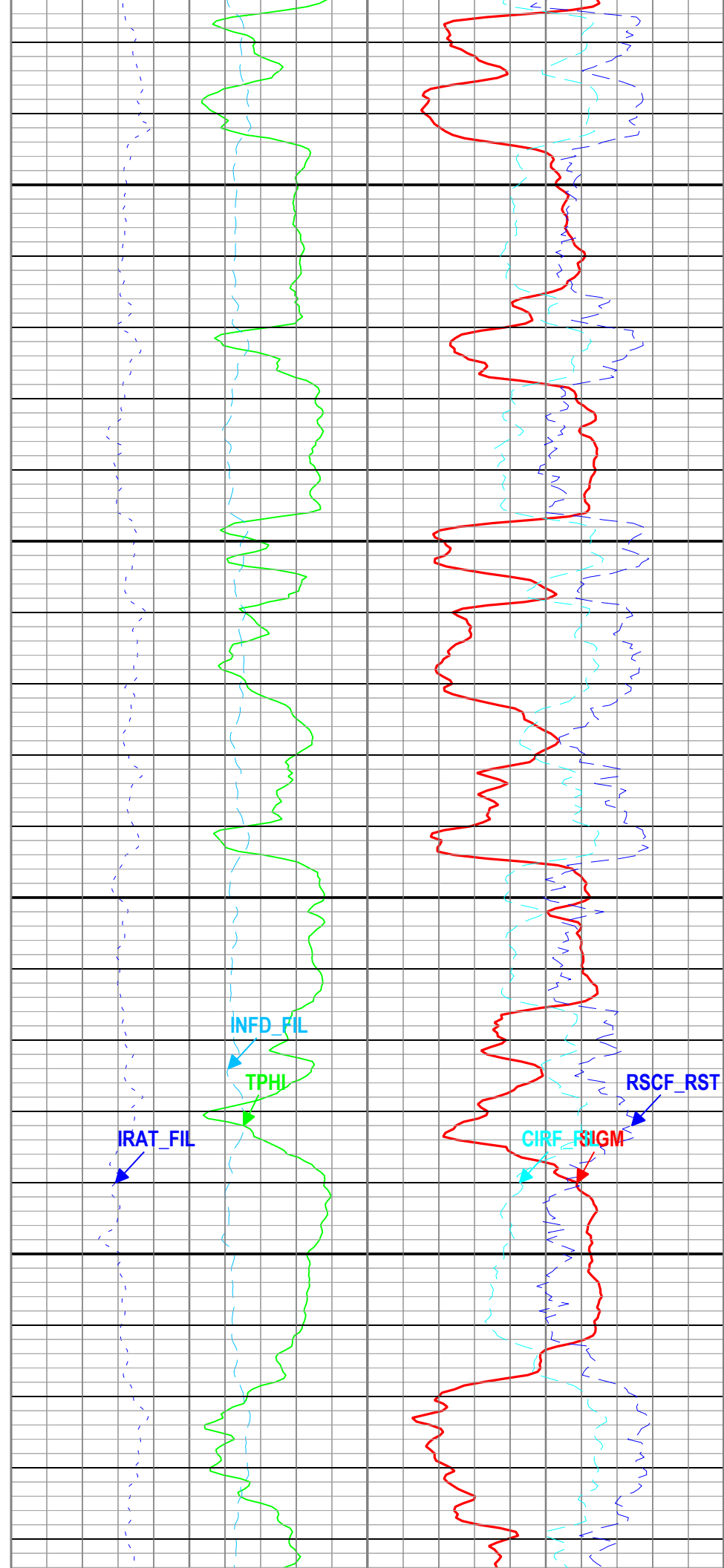
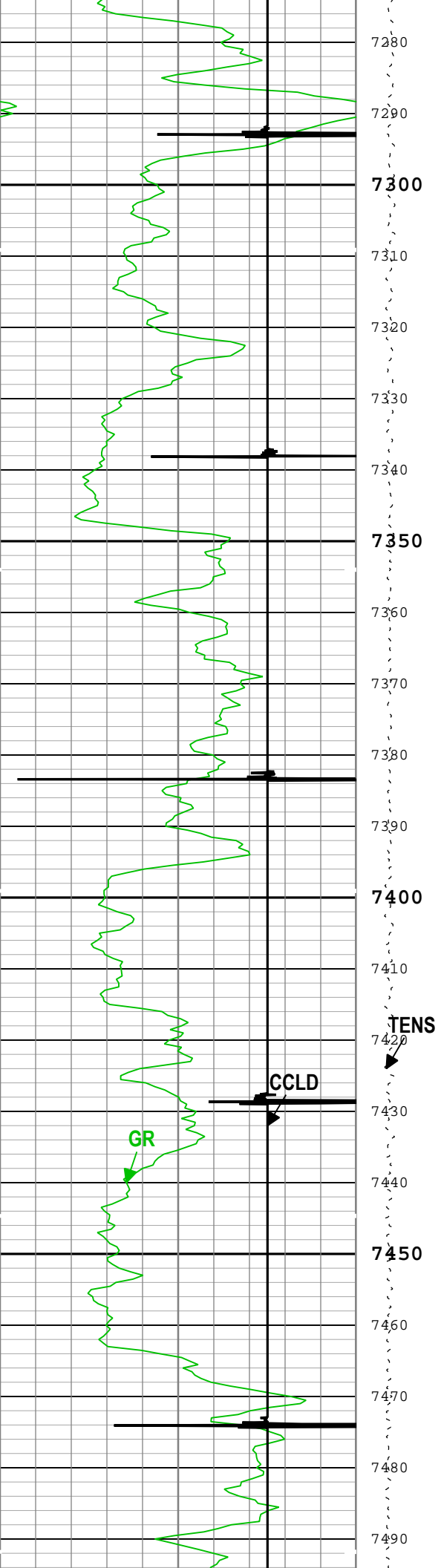


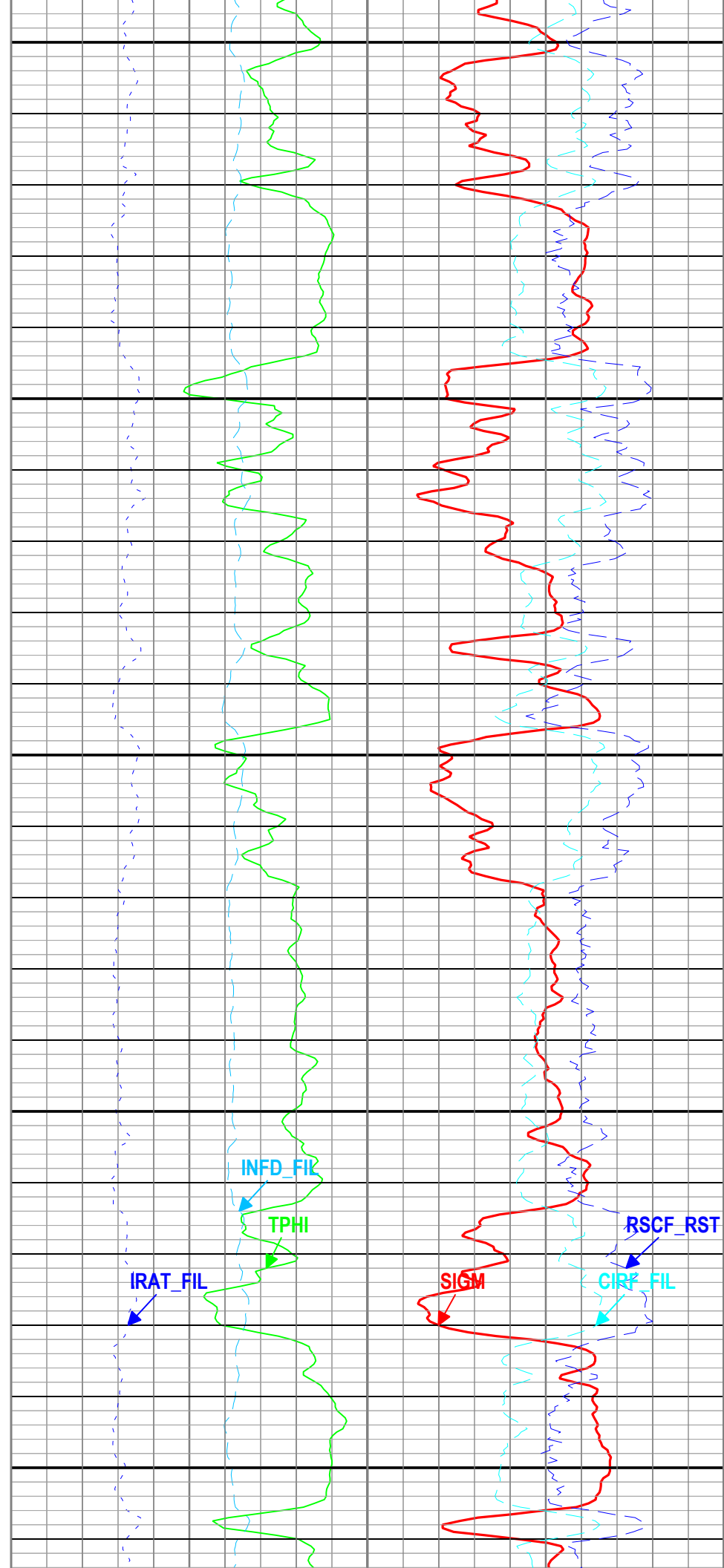
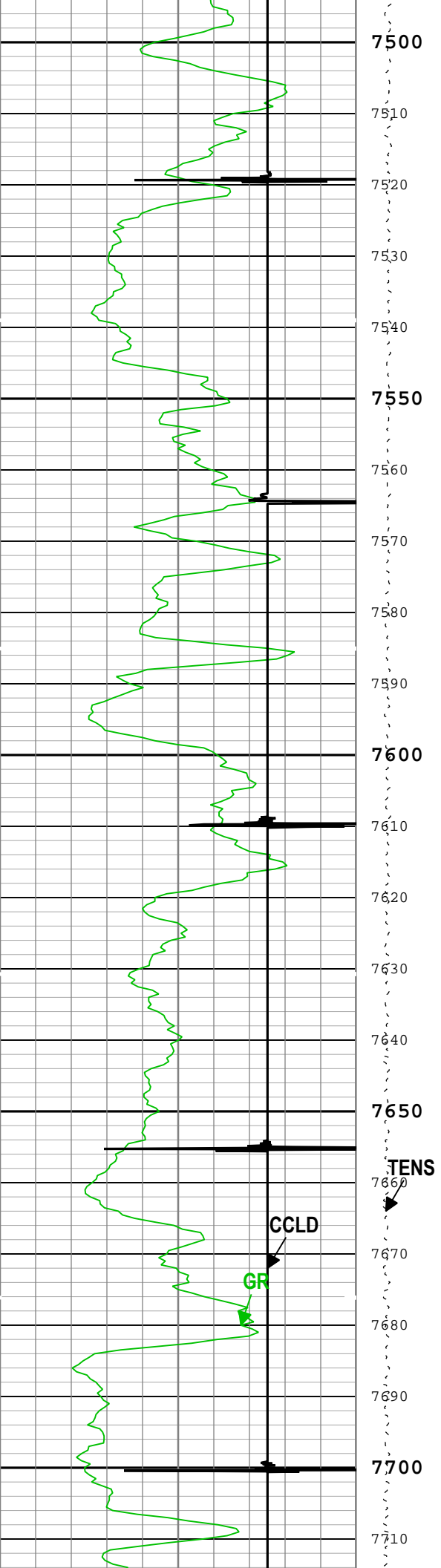


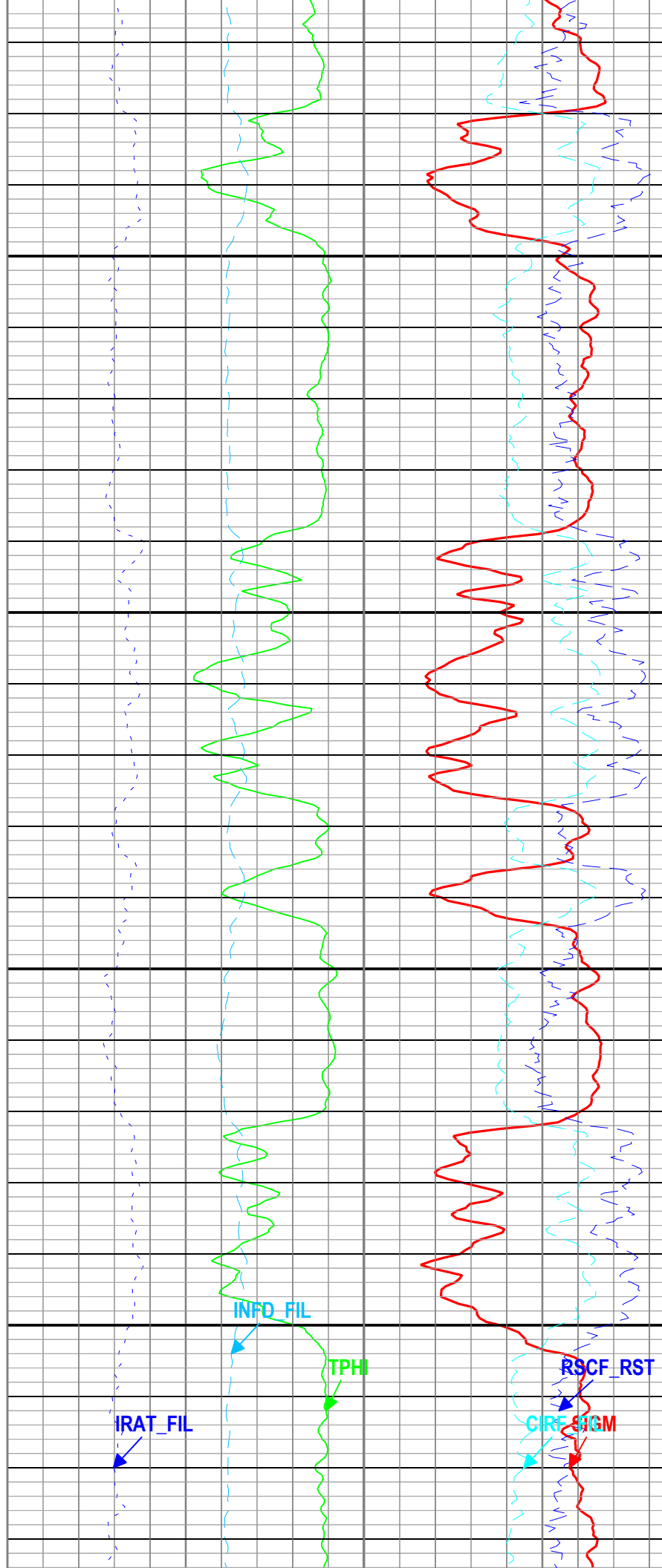
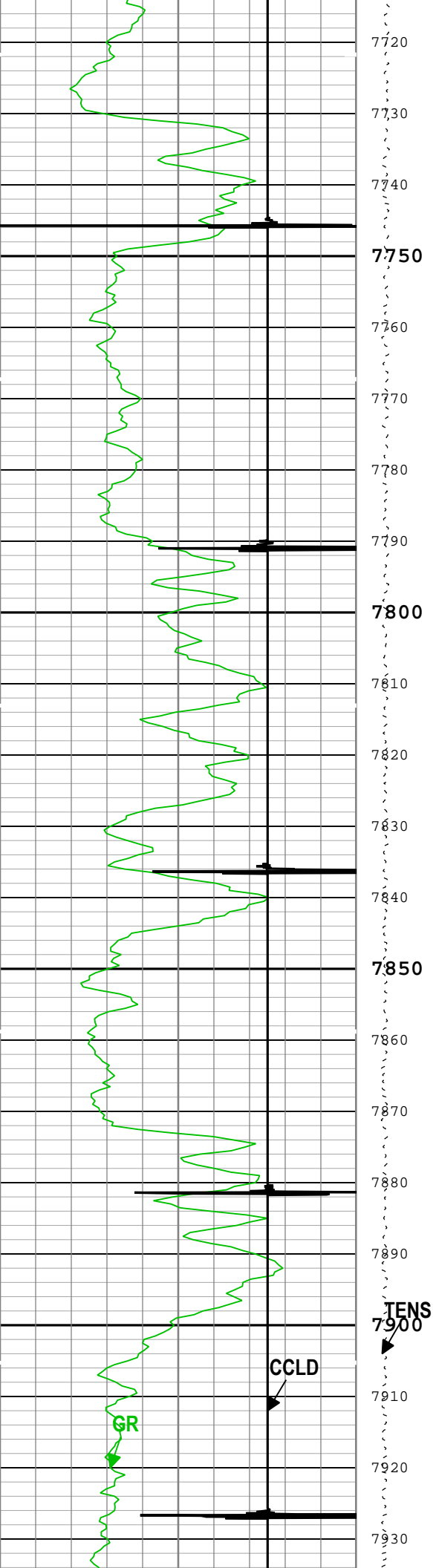


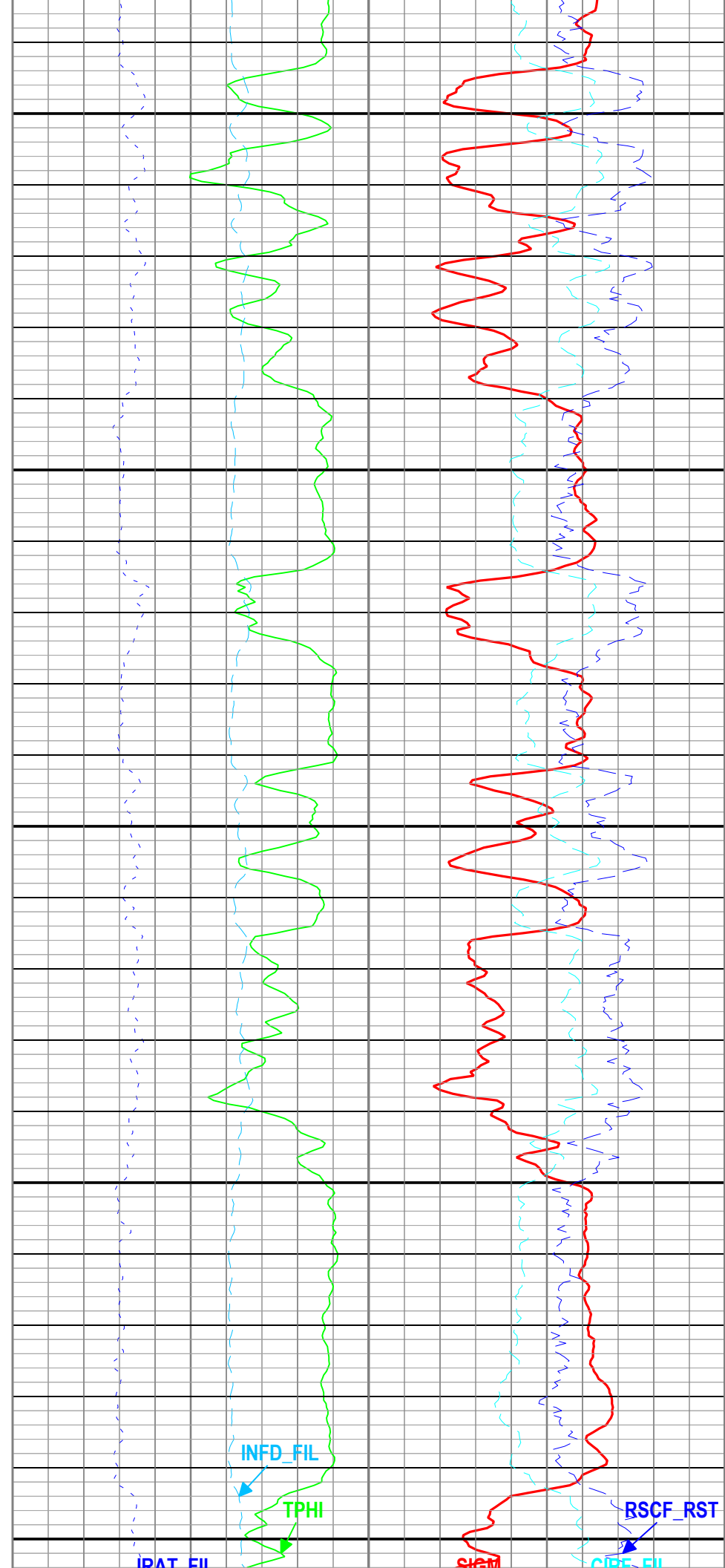
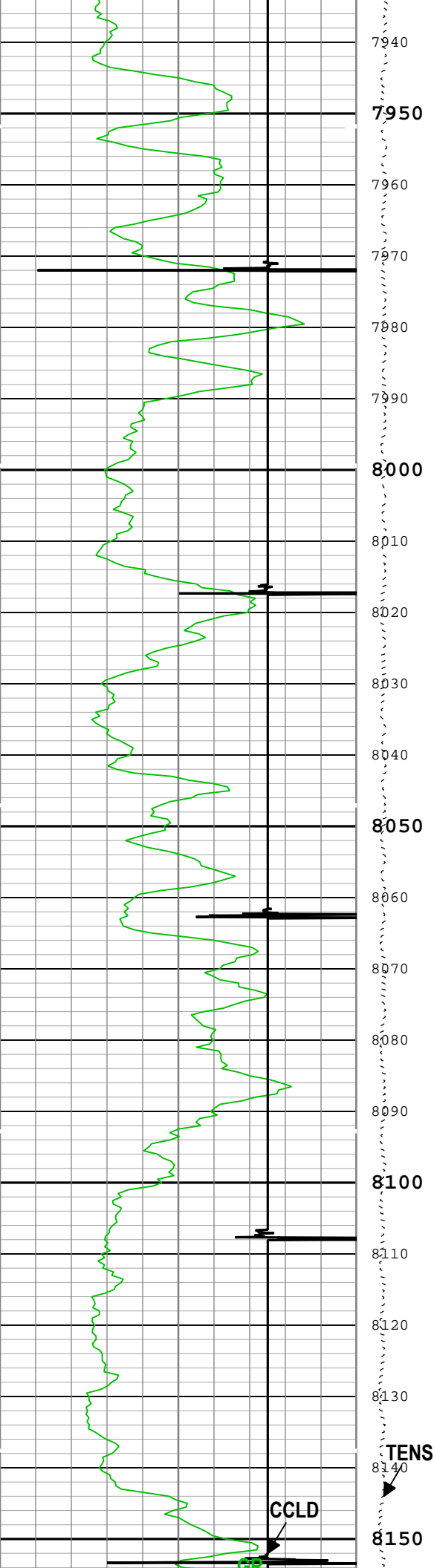


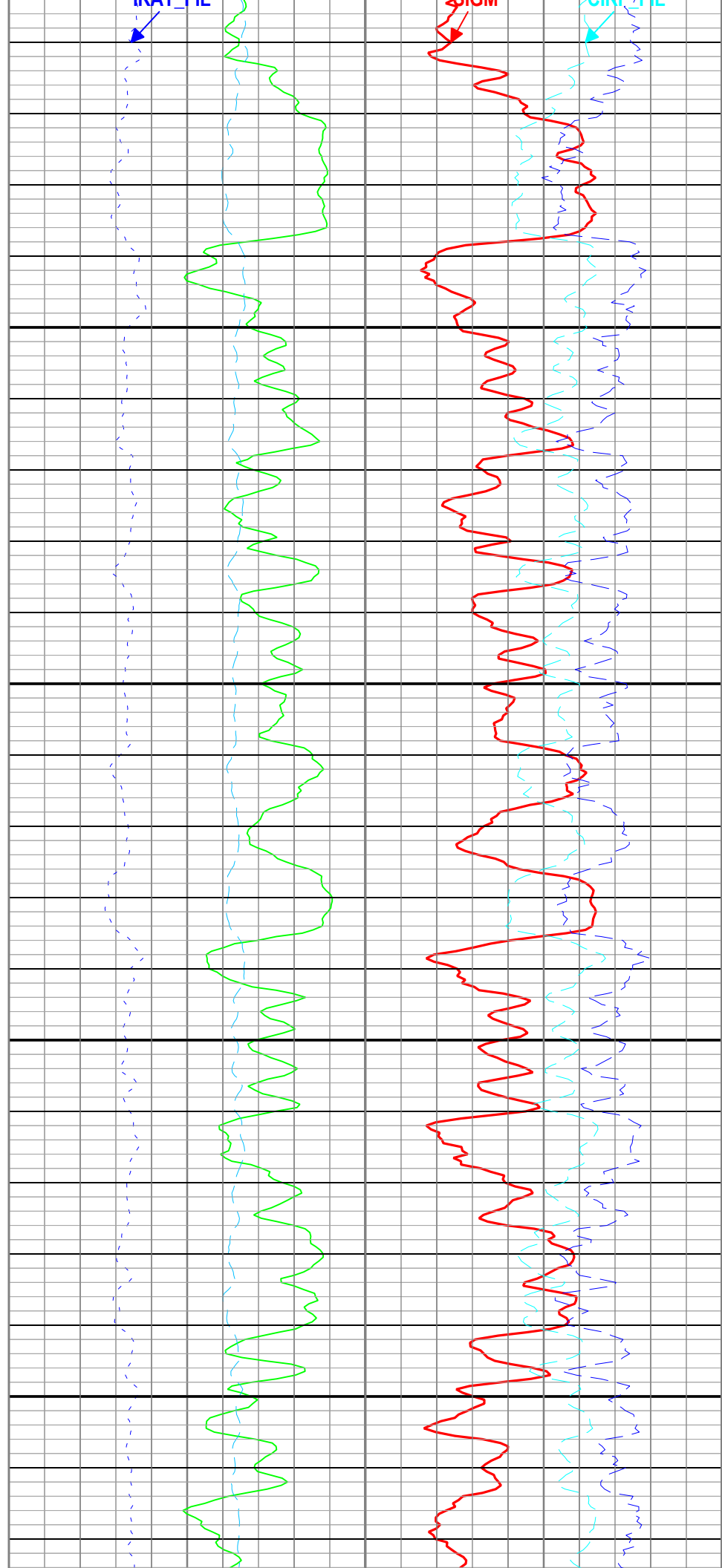
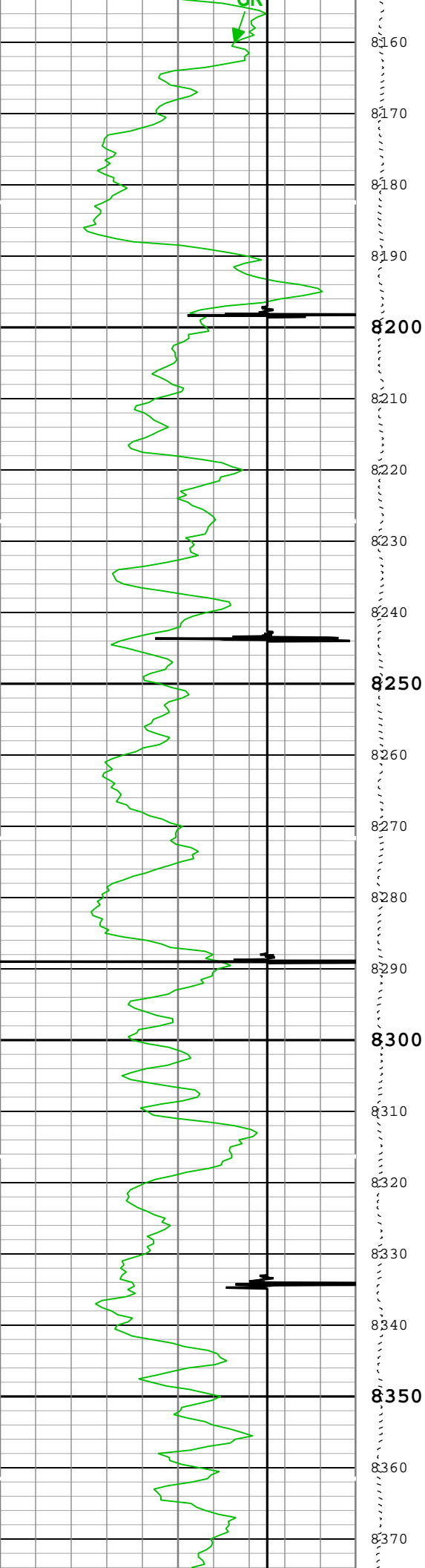


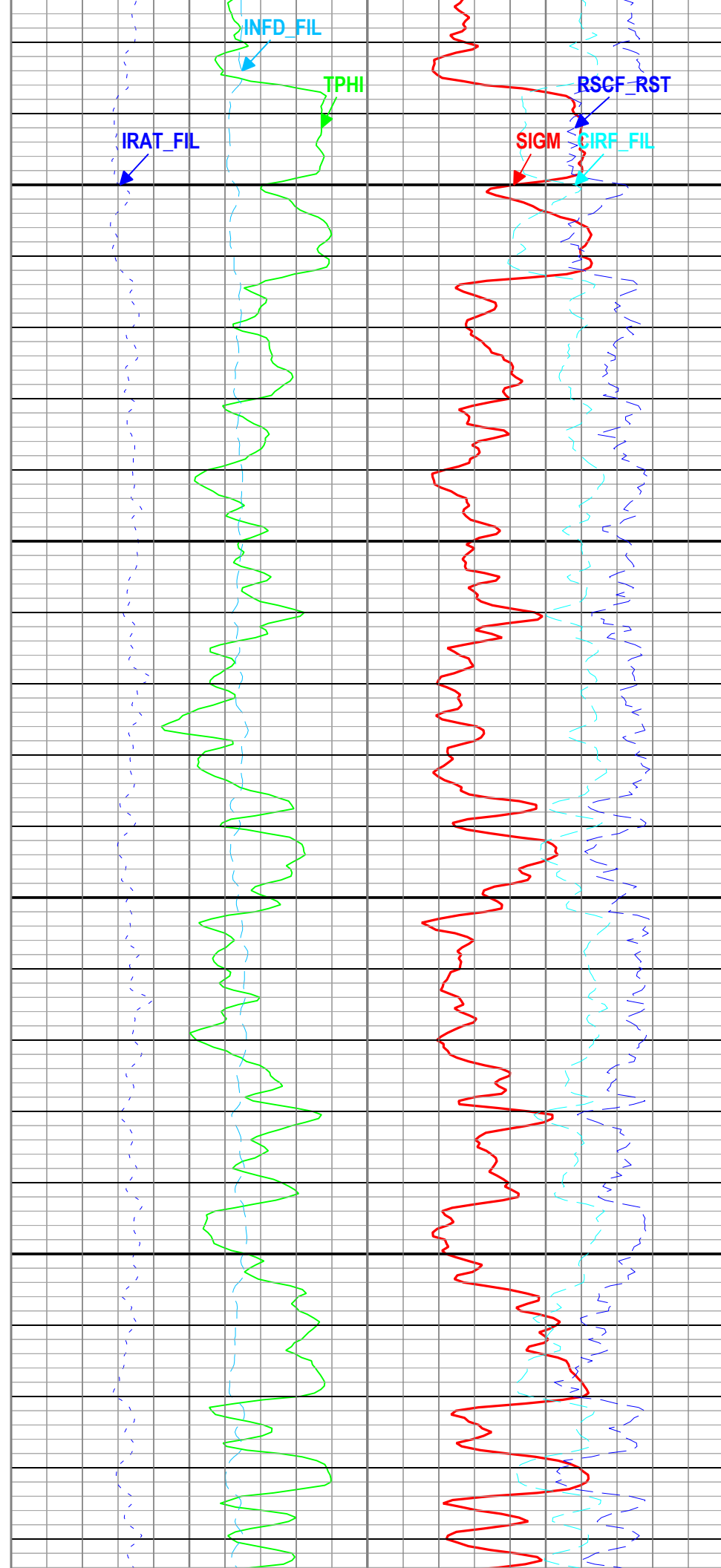
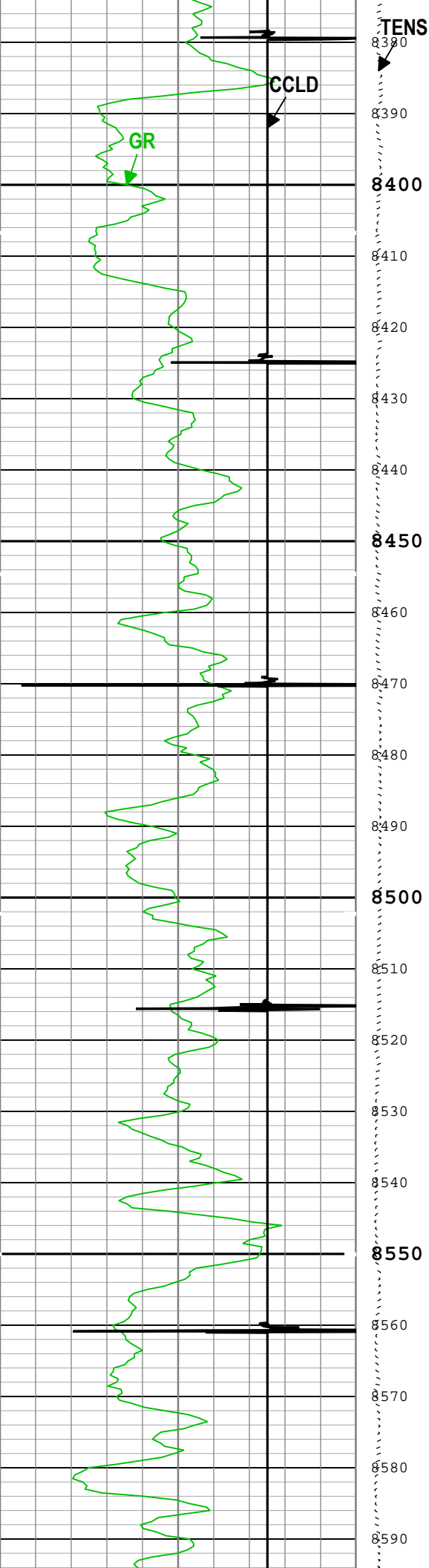


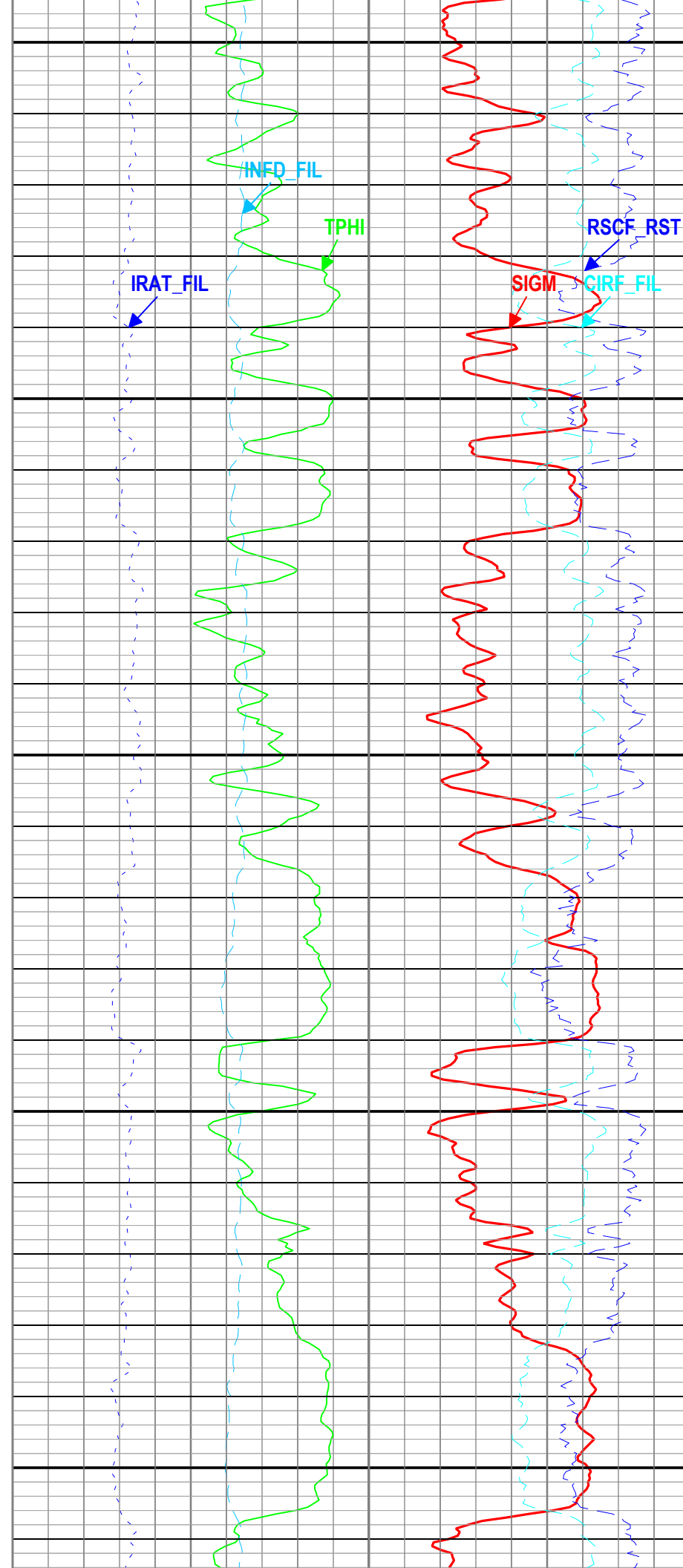
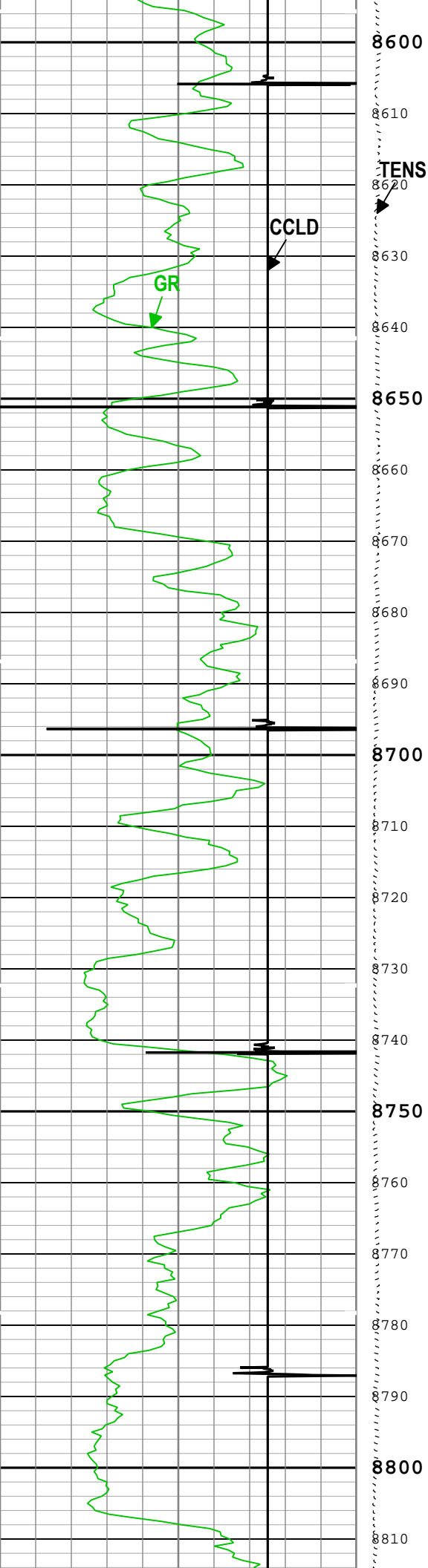


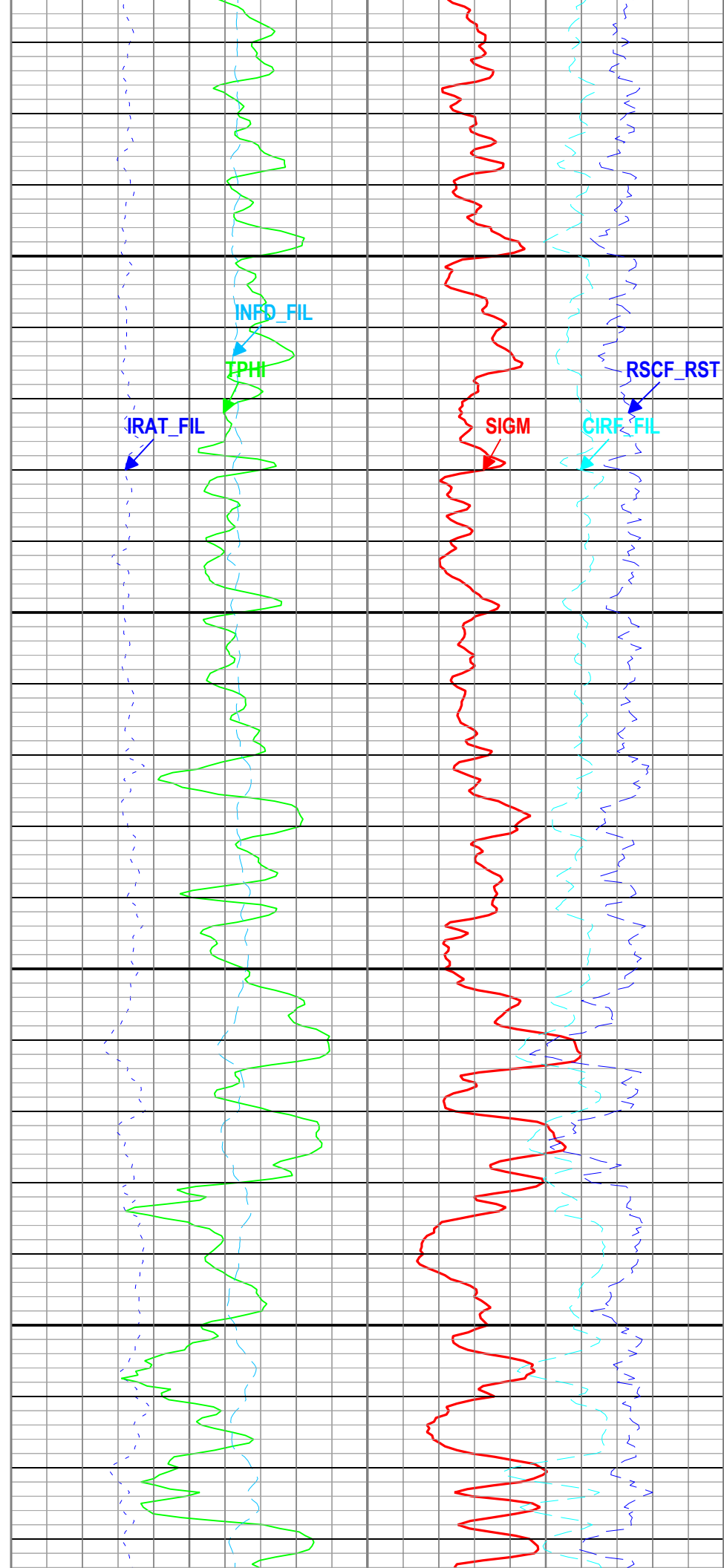
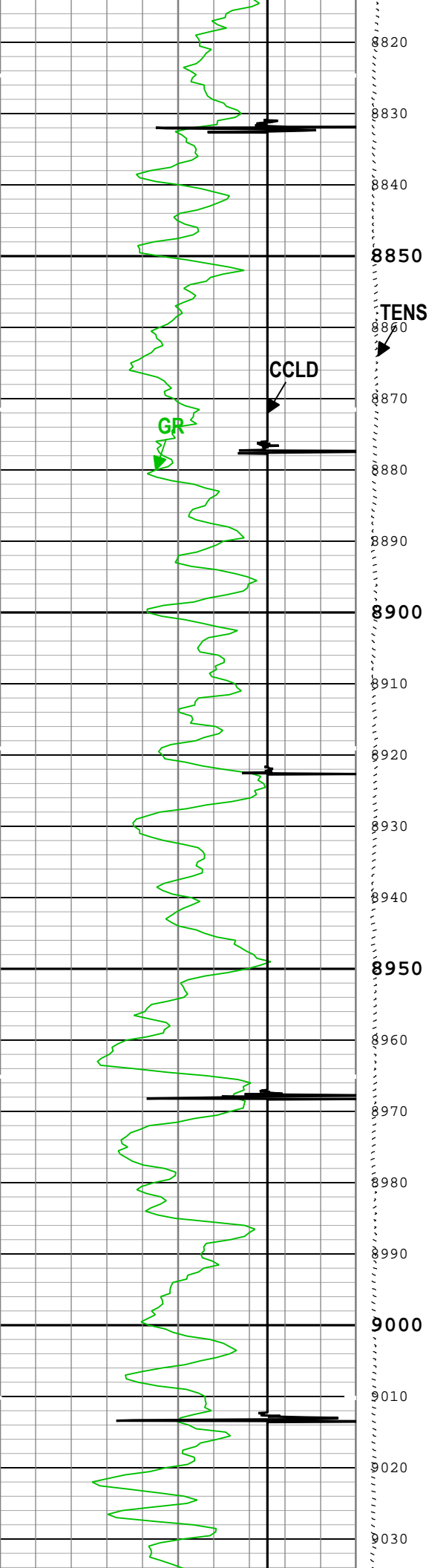


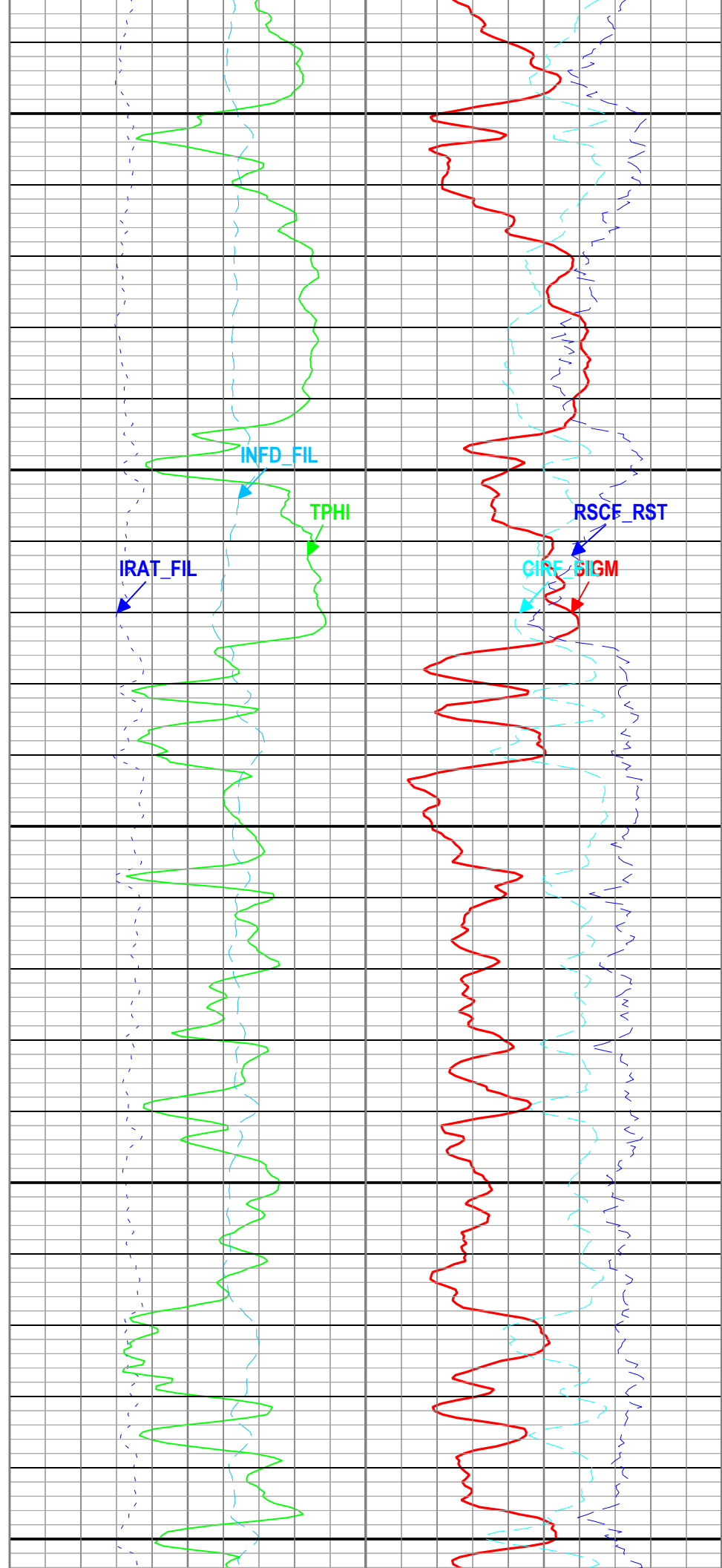
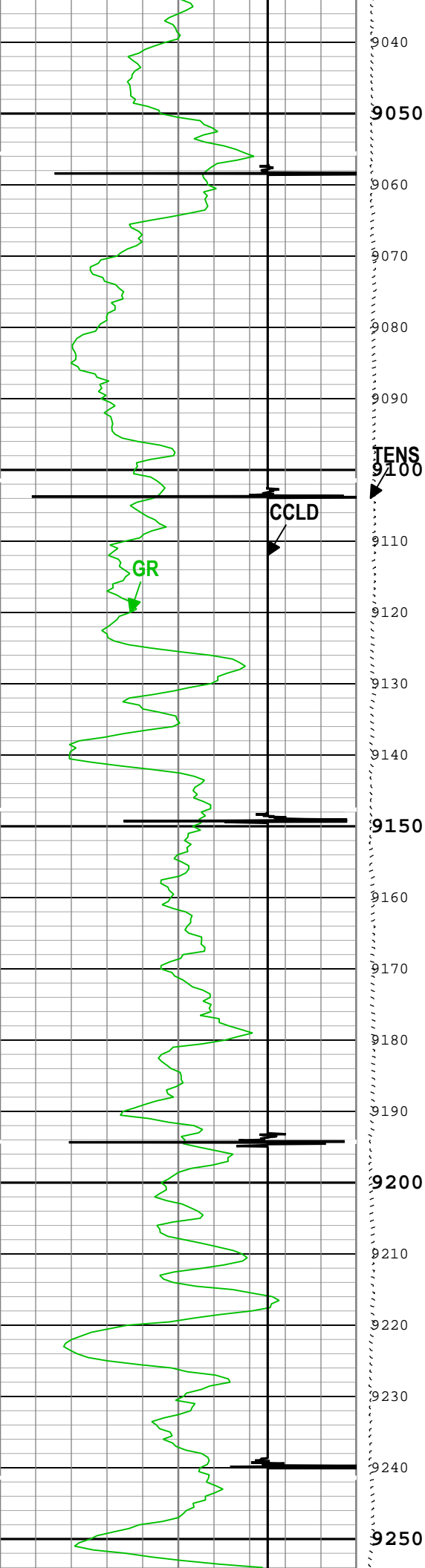


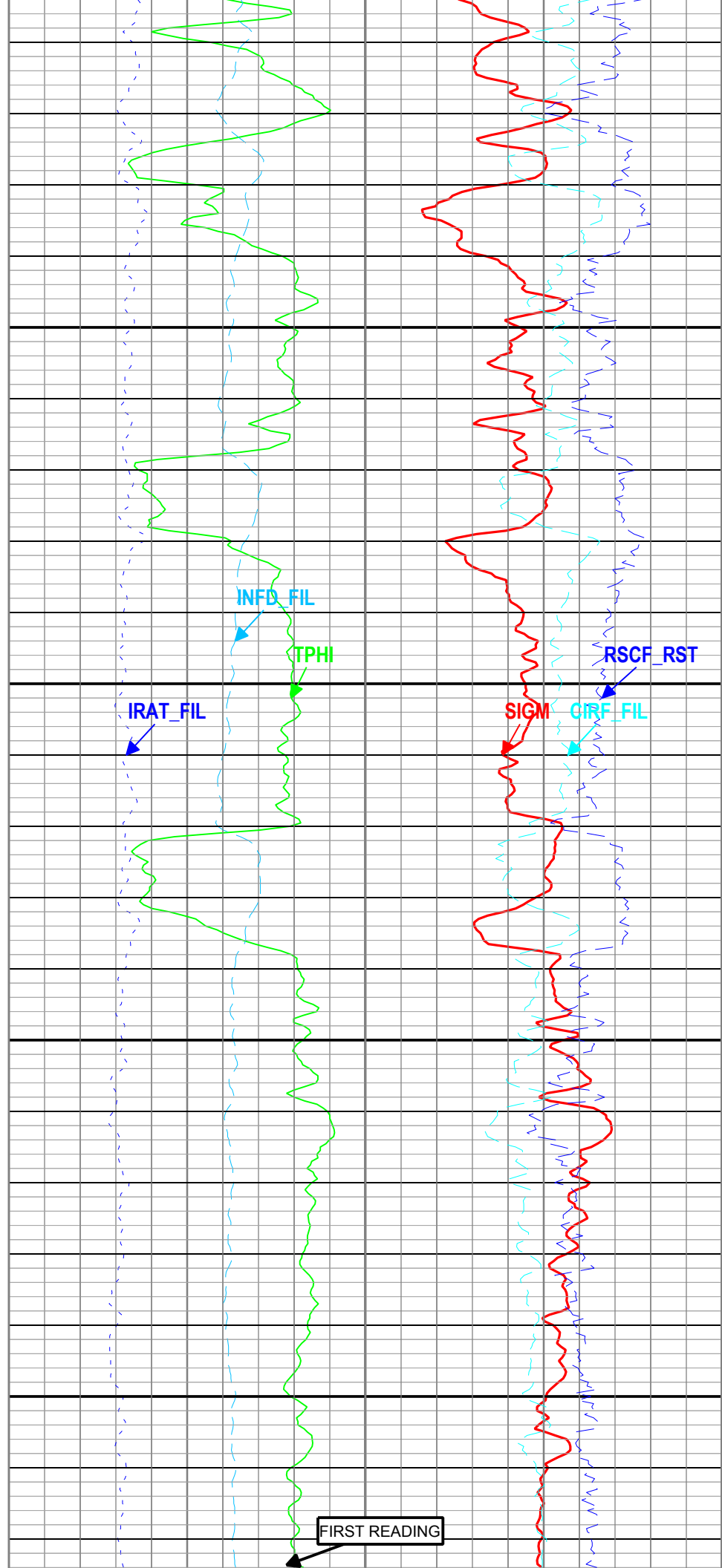
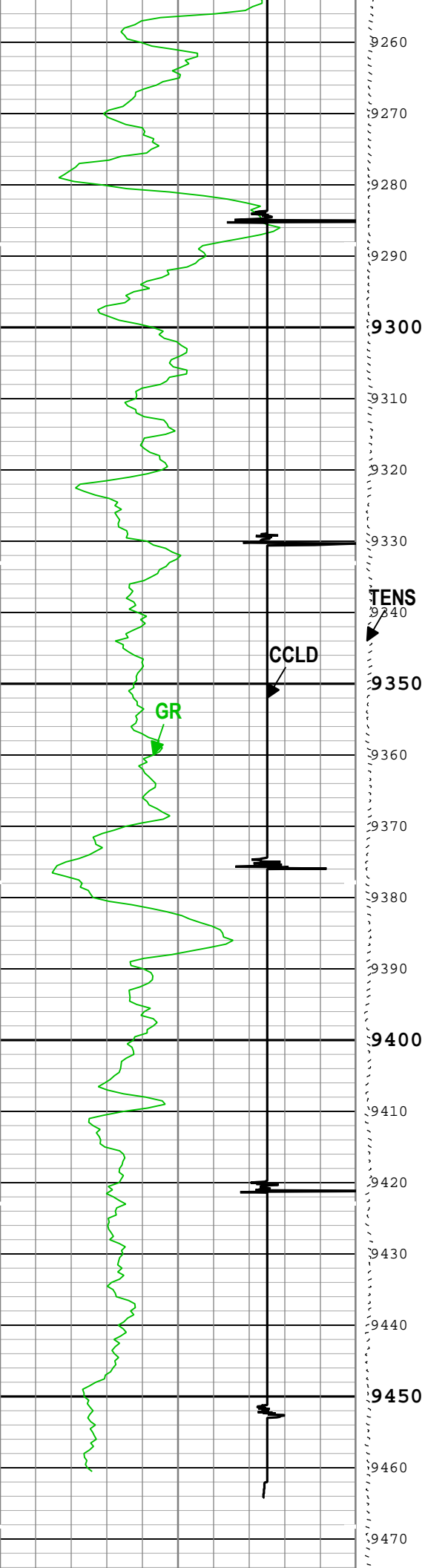


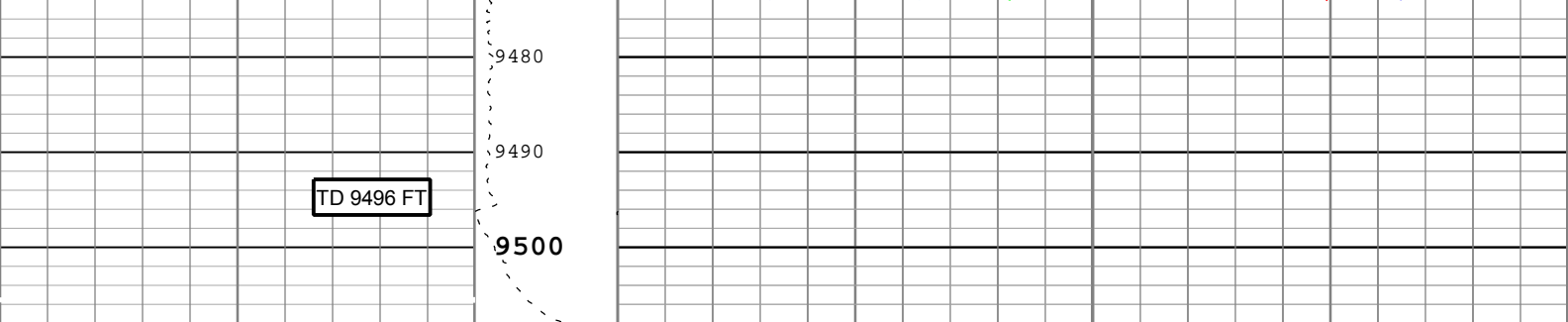












Gamma Ray (GR) PSTP-A			Cable Tension (TENS)	Formation Sigma (Neutron Capture Cross Section) (SIGM) RST-C		
0	gAPI	150		60	cu0	
CCL Discriminated Amplitude (CCLD) PSTP-A				Inelastic Ratio Filtered (IRAT_FIL) RST-C		
-3	V	1		0.75	0	Capture to Inelastic Ratio Far Filtered (CIRF_FIL) RST-C
				50		
			Thermal Decay Porosity (TPHI) RST-C			
			0.6	ft3/ft3	0	Far Detector Effective Unregulated Capture Count Rate (RSCF_RST) RST-C
			Gross Inelastic Count Rate Far Detector Filtered (INFD_FIL) RST-C			
			10000	1/s	0	

- TIME_1900 - Time Marked every 60.00 (s)
- ICV - Integrated Cement Volume every 100.00 (ft3)
 - TIME_1900 - Elapsed time since midnight, 30 December 1899 every 60.00 (s)
 - ICV - Integrated Cement Volume every 10.00 (ft3)
 - IHV - Integrated Hole Volume every 100.00 (ft3)
 - IHV - Integrated Hole Volume every 10.00 (ft3)

Description: RST SIGMA Answer Format: Log (RST SIGMA Answer) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 07-Jan-2018 11:12:02

Channel Processing Parameters

Run 1: Parameters				
Parameter	Description	Tool	Value	Unit
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	8.5	in
BSAL	Borehole Salinity	Borehole	0	ppm
BSALOPT	Borehole Salinity Option	RST-C	Unknown	
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
MATR	Rock Matrix for Neutron Porosity Corrections	Borehole	SANDSTONE	

Tool Control Parameters

Run 1: Parameters				
Parameter	Description	Tool	Value	Unit
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	150	ft/h
PCCG	PSP Downhole CCL Gain	PSTP-A	12 dB	
RST_DLM	Depth Log Mode	RST-C	Sigma	

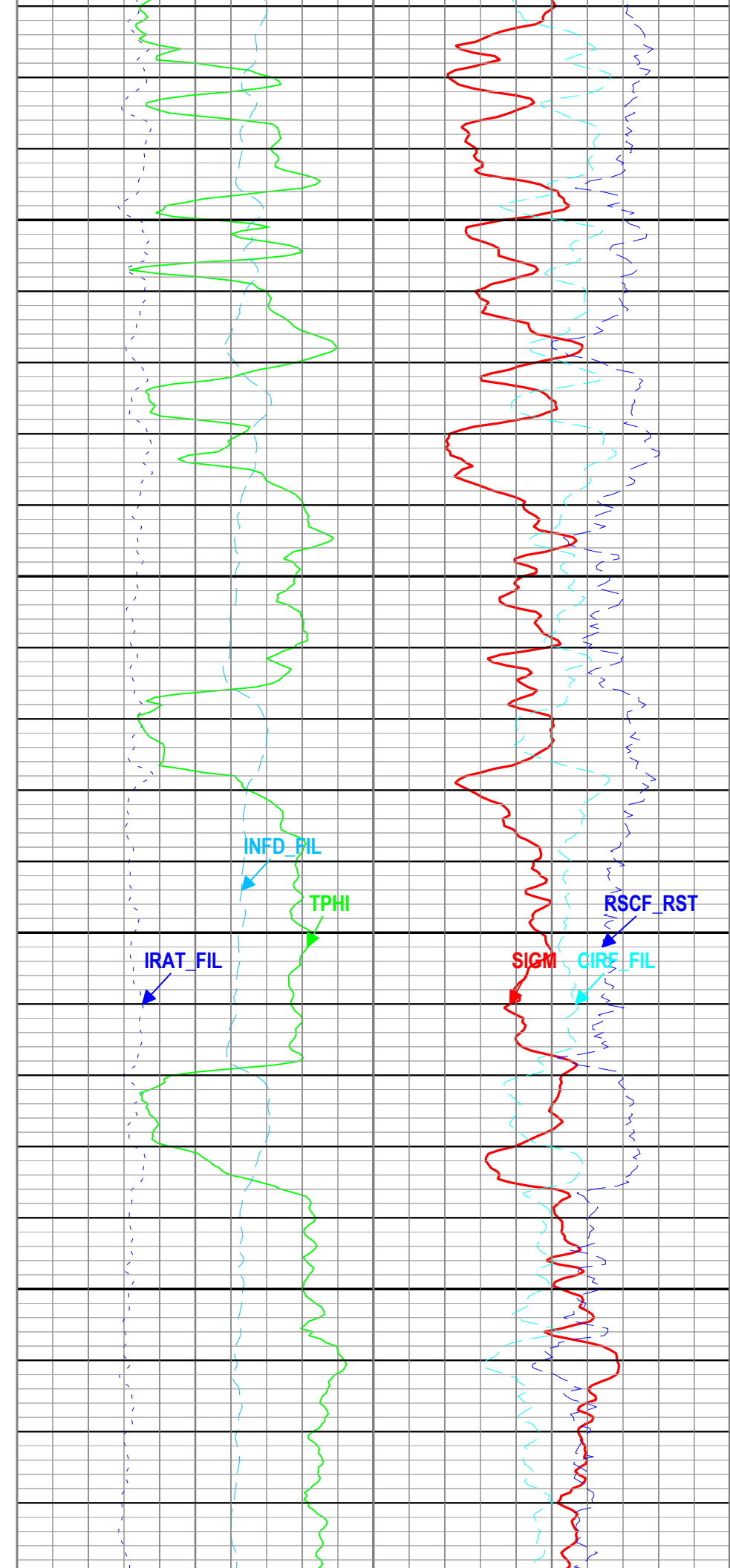
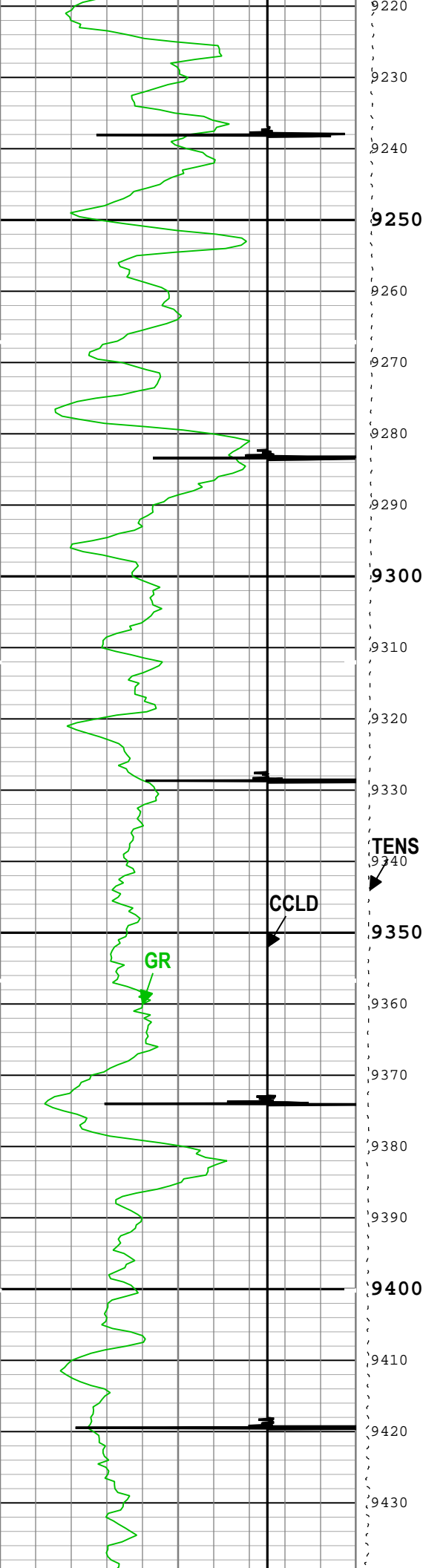
Run 1

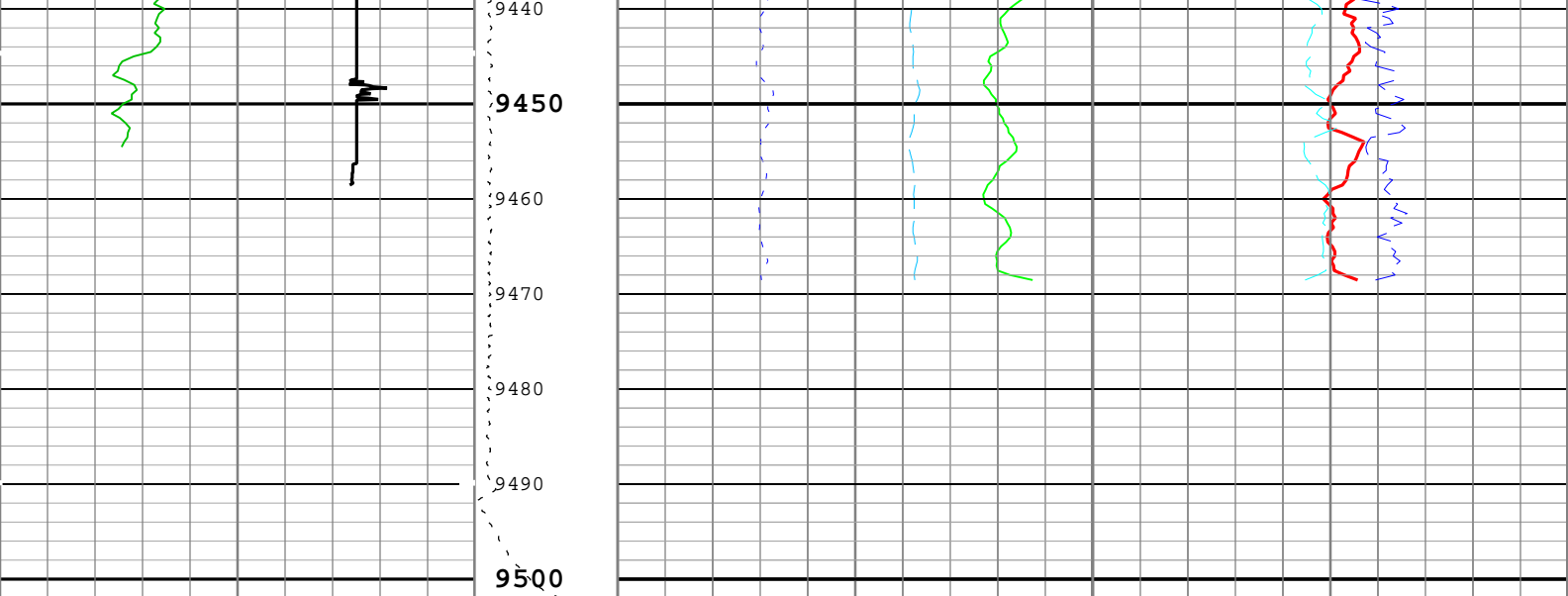
Repeat Pass

Software Version

Acquisition System	Version
Maxwell 2017 SP3	7.3.92069.3100

Pass Summary





Gamma Ray (GR) PSTP-A		Cable Tension (TENS)	Formation Sigma (Neutron Capture Cross Section) (SIGM) RST-C	
0	gAPI 150		60	cu 0
CCL Discriminated Amplitude (CCLD) PSTP-A		3000 lbf 0	Inelastic Ratio Filtered (IRAT_FIL) RST-C	Capture to Inelastic Ratio Far Filtered (CIRF_FIL) RST-C
-3	V 1		0.75 0	5 0
			Thermal Decay Porosity (TPHI) RST-C	Far Detector Effective Unregulated Capture Count Rate (RSCF_RST) RST-C
			0.6 ft3/ft3 0	45 0
			Gross Inelastic Count Rate Far Detector Filtered (INFD_FIL) RST-C	
			10000 1/s 0	

TIME_1900 - Time Marked every 60.00 (s)

- ICV - Integrated Cement Volume every 100.00 (ft3)
- TIME_1900 - Elapsed time since midnight, 30 December 1899 every 60.00 (s)
- ICV - Integrated Cement Volume every 10.00 (ft3)
- IHV - Integrated Hole Volume every 100.00 (ft3)
- IHV - Integrated Hole Volume every 10.00 (ft3)

Description: RST SIGMA Answer Format: Log (RST SIGMA Answer) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 07-Jan-2018 11:12:08

Channel Processing Parameters

Run 1: Parameters

Parameter	Description	Tool	Value	Unit
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	8.5	in
BSAL	Borehole Salinity	Borehole	0	ppm
BSALOPT	Borehole Salinity Option	RST-C	Unknown	
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
MATR	Rock Matrix for Neutron Porosity Corrections	Borehole	SANDSTONE	

Tool Control Parameters

Run 1: Parameters

Parameter	Description	Tool	Value	Unit
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	150	ft/h
PCCG	PSP Downhole CCL Gain	PSTP-A	12 dB	
RST_DLM	Depth Log Mode	RST-C	Sigma	

Company:	Caerus Operating LLC	Schlumberger
Well:	Puckett 33C-23 697	
Field:	Grand Valley	
County:	Garfield	
State:	Colorado	
Cement Bond Log		
Reservoir Saturation Log		
Gama Ray / CCL		