

Company: Caerus Operating LLC

Well: NPR 24B-10 596

Field: NPR

County: Garfield State: Colorado

Cement Bond Log

RST Sigma Log

Gamma Ray / Collar Locator

County: Garfield
 Field: NPR
 Location: K10-596
 Well: NPR 24B-10 596
 Company: Caerus Operating LLC

Location: K10-596		Elev.: K.B. 6733.00 ft	
Permanent Datum: Log Measured From: Kelly Bushing		G.L. 6709.00 ft	
Drilling Measured From: Kelly Bushing		D.F. 6733.00 ft	
API Serial No. 05045237670000	Section: 10	Township: 5S	Range: 96W
Logging Date 17-Sep-2018	Run Number ONE	Depth Driller 9786.00 ft	Schlumberger Depth 9758.00 ft
Bottom Log Interval 9758.00 ft	Top Log Interval 2800.00 ft	Casing Fluid Type 2% KCL Water	Salinity
Density 8.49 lbn/gal	Fluid Level 8.00 ft	BIT/CASING/TUBING STRING	Bit Size 8.75 in
From 2944.00 ft	To 9758.00 ft	Casing/Tubing Size 4.5 in	Weight 11.6 lbn/ft
Grade P110	From 0.00 ft	To 9758.00 ft	Max Recorded Temperatures 276.2 degF
Logger on Bottom 17-Sep-2018	Time 20:30:00	Unit Number 3108	Location: Evanson, WY
Recorded By Richard Woods	Recorded By Richard Woods	Witnessed By Trent Ray	

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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10. ONE

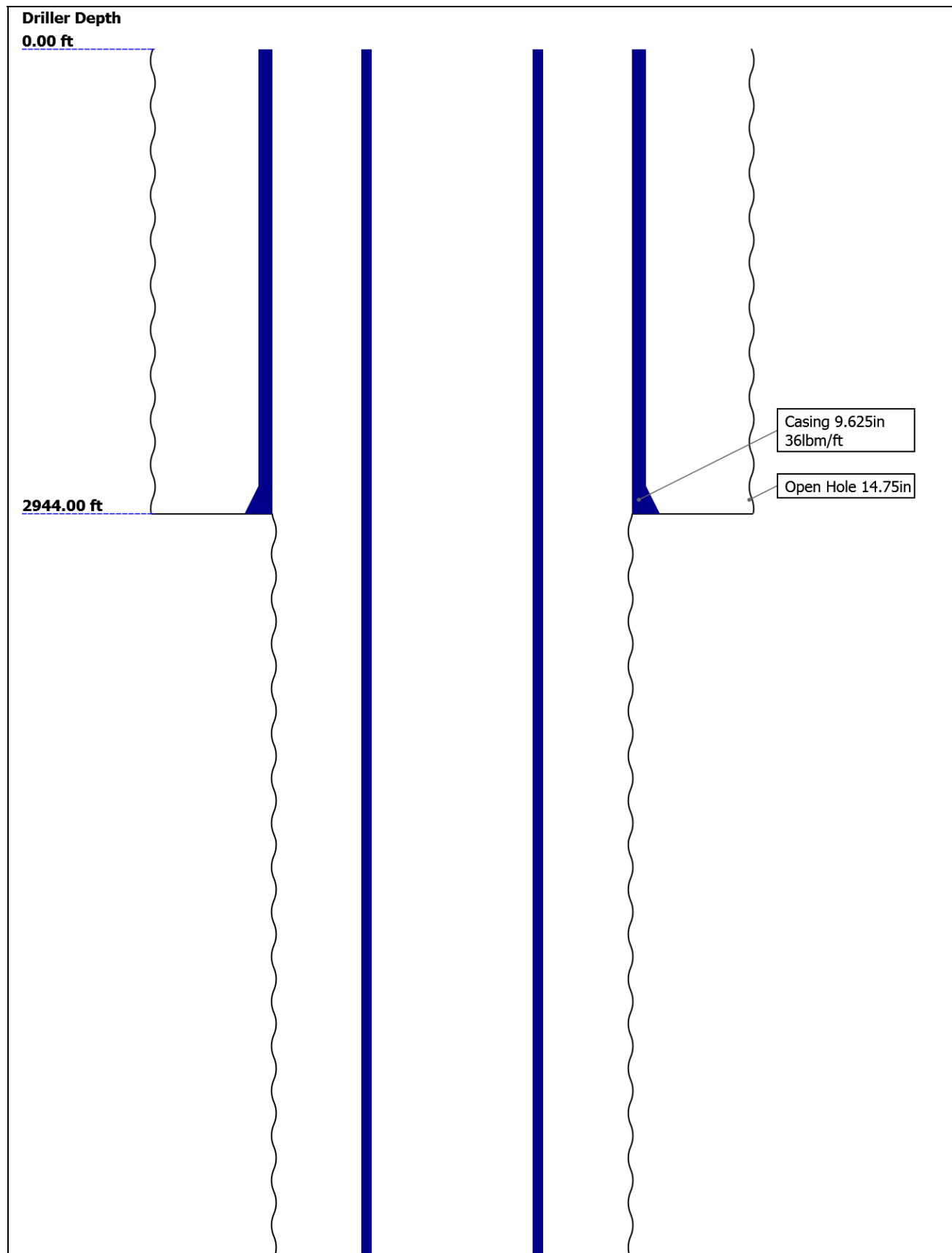
10.1 Integration Summary

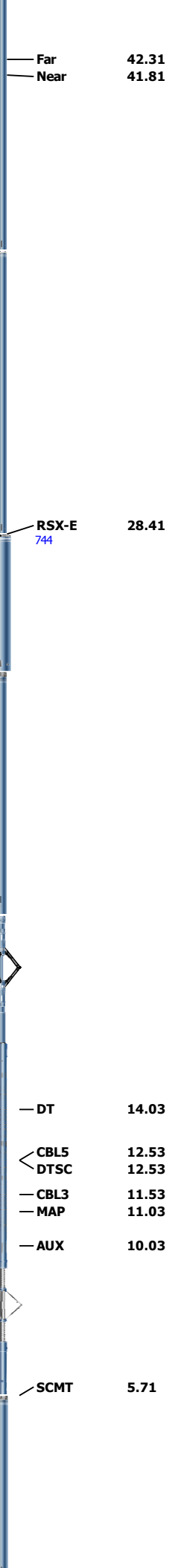
10.2 Software Version

10.3 Composite Summary

10.4 Log (RST SIGMA Answer)

Well Sketch





— Far 42.31
 — Near 41.81

PPAT-A 28.41

— RSX-E 28.41
 744

SCMT-HC:82 26.49

25
 UDFH-RMC:8
 220
 SCMC-HC:822
 5
 SCME-K
 SCMS-CA:822
 5
 UDFH-RMT
 SCMX-HC

— DT 14.03
 < CBL5 12.53
 DTSC 12.53
 — CBL3 11.53
 — MAP 11.03
 — AUX 10.03

— SCMT 5.71

BNS-P

0.14



TOOL_ZERO

Lengths are in ft

Maximum Outer Diameter = 2.065 in

Line: Sensor Location, Value: Gating Offset

All measurements are relative to TOOL_ZERO

Depth Summary

ONE

Depth Measuring Device

Type	IDW-JA
Serial Number	5979
Calibration Date	10-JUN-2017
Calibrator Serial Number	IDWC-C-57
Calibration Cable Type	1-25ZA-XXS
Wheel Correction 1	-3
Wheel Correction 2	-3

Tension Device

Type	CMTD-B/A
Serial Number	5036
Calibration Date	10-Sep-2018
Calibrator Serial Number	112544A
Number of Calibration Points	10
Calibration Root Mean Square Error	21
Calibration Peak Error	10

Logging Cable

Type	1-25ZA
Serial Number	112140
Length	16800.00 ft
Conveyance Type	Wireline
Rig Type	Crane

ONE:Depth Control Parameters

Log Sequence	First Log In the Well
Rig Up Length At Surface	
Rig Up Length At Bottom	
Rig Up Length Correction	
Stretch Correction	
Tool Zero Check At Surface	

Depth Control Remarks

All Schlumberger depth control policies followed.
IDW used for primary depth control.
Zchart used for secondary depth control.

ONE

Software Version

Acquisition System	Version
Maxwell 2018 SP1	8.1.99839.3100
Application Patch	Wireline_Hotfix-Mandatory-2018SP1_8.1.102865

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include
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ONE	Log[3]:Up	Up	97.03 ft	9762.48 ft	17-Sep-2018 9:23:14 PM	18-Sep-2018 2:34:32 AM	ON	8.10 ft	Yes
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All depths are referenced to toolstring zero

Log	Company:Caerus Operating LLC	Well:NPR 24B-10 596
	ONE: Log[3]:Up:S006	

Description: Sonic CBL with VDL Format: Log (Sonic CBL with VDL) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 18-Sep-2018 05:25:53

TIME_1900 - Time Marked every 60.00 (s)

■ BIEP - Bond Index Event Pips SCMT-HC

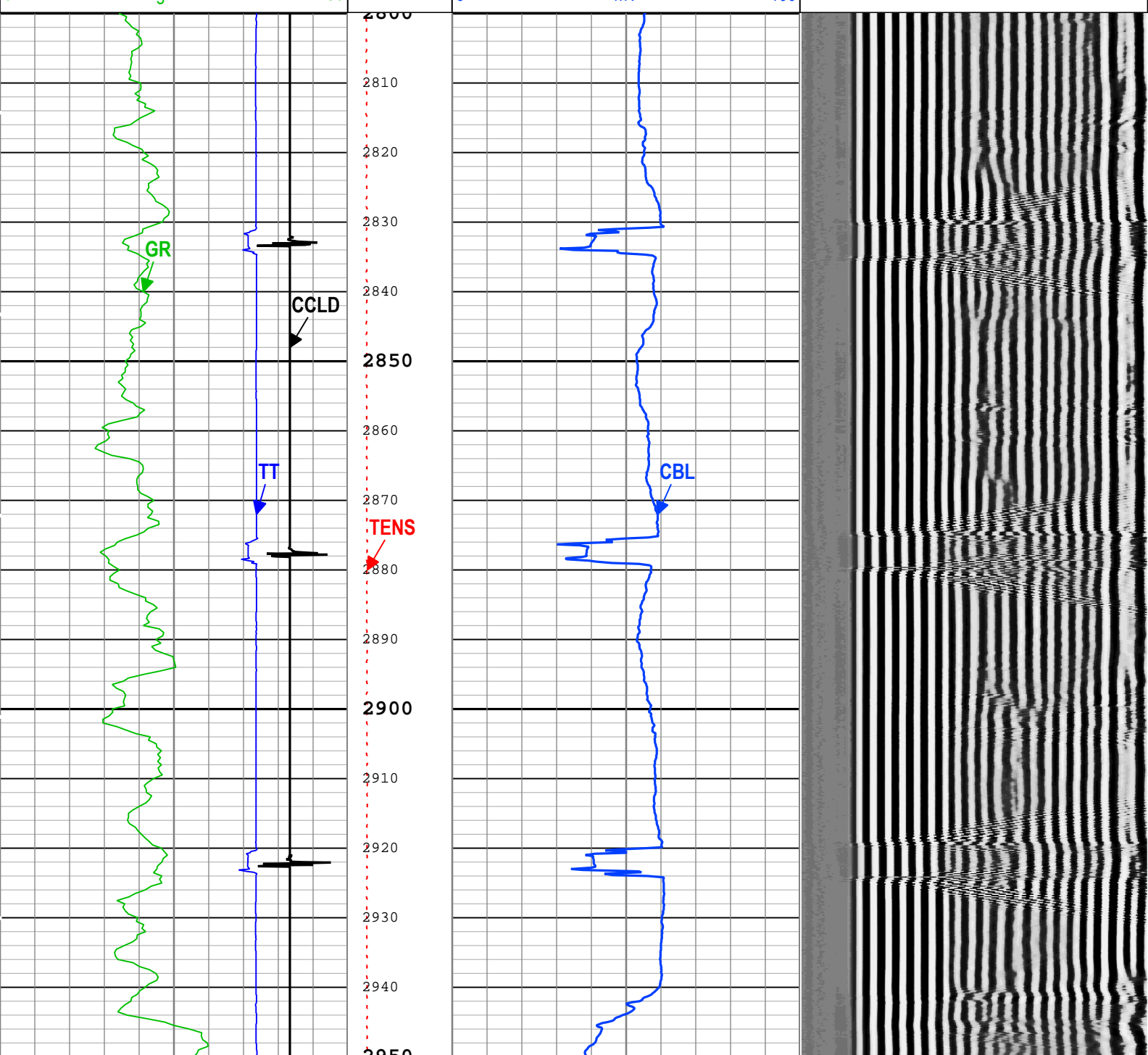
Transit Time for CBL (TT) SCMT-HC		
400	us	200

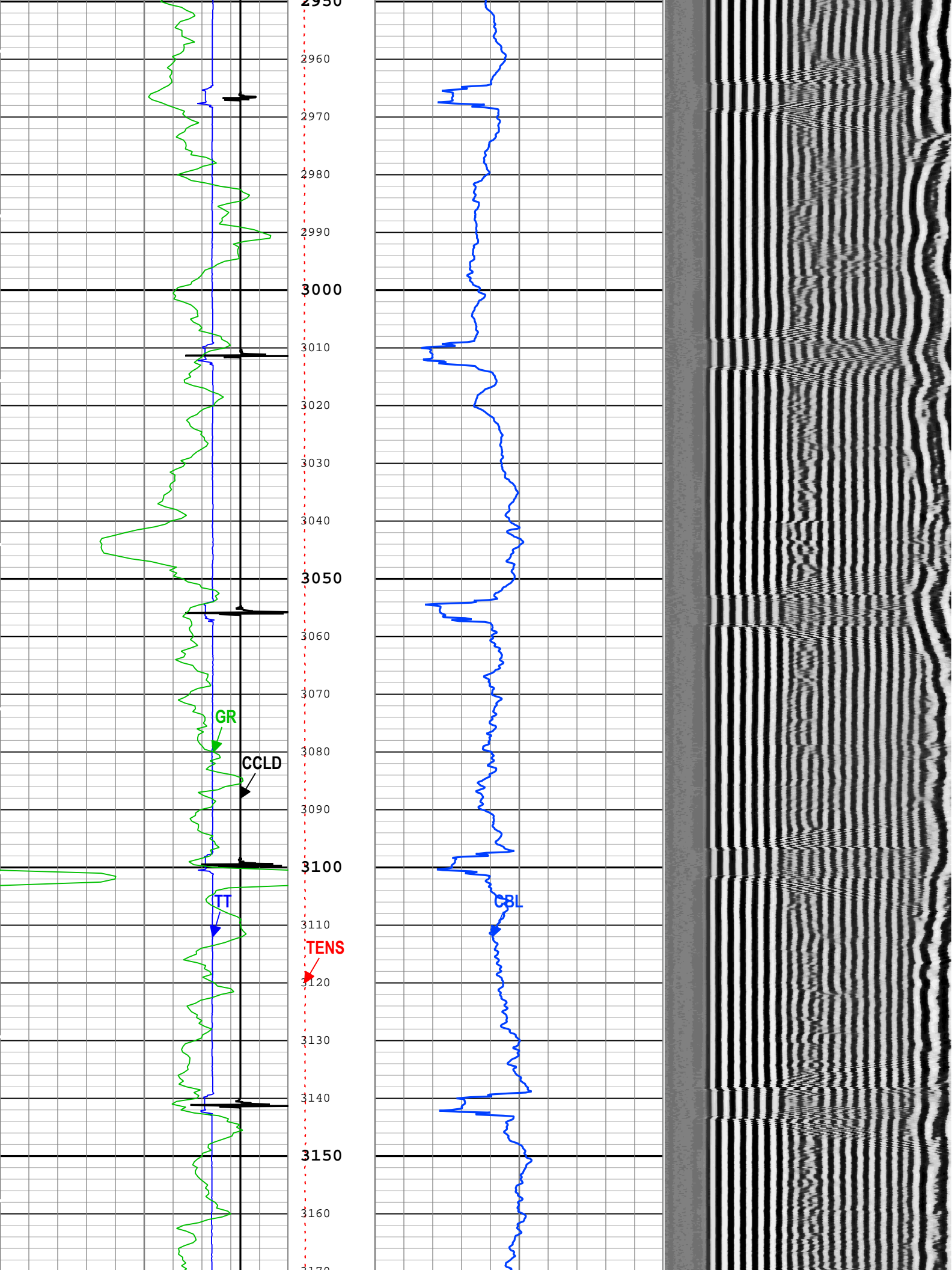
CCL Discriminated Amplitude (CCLD) PSTP-A		
-5	V	1

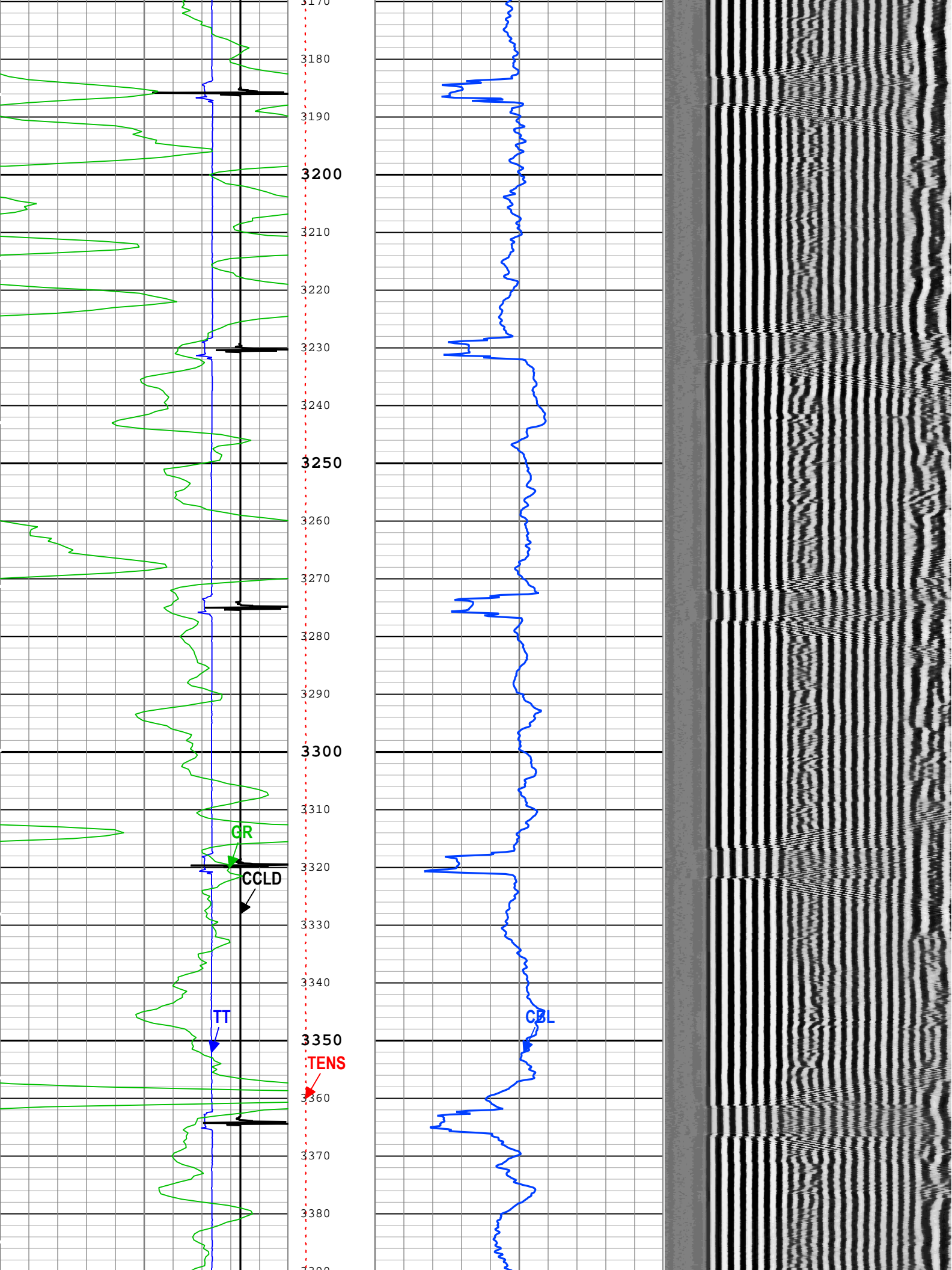
Gamma Ray (GR) PSTP-A		
0	gAPI	150

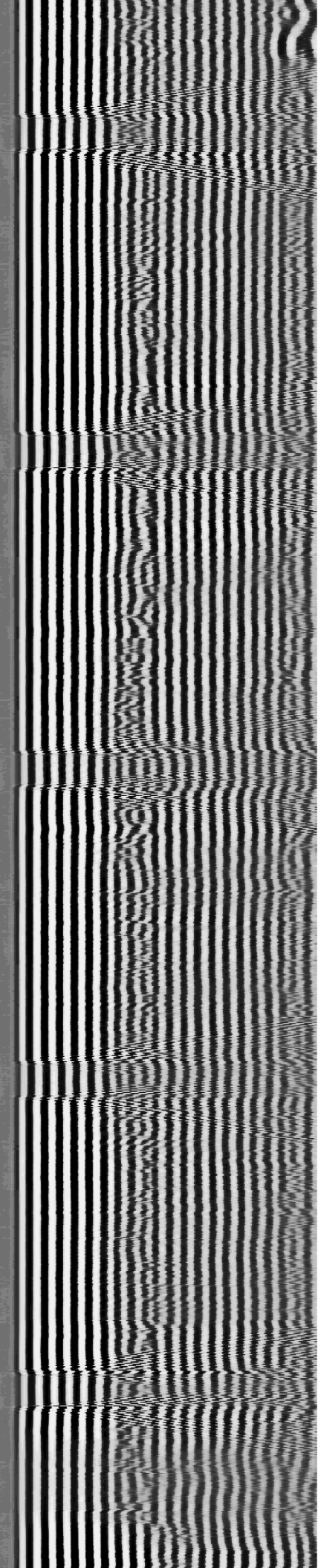
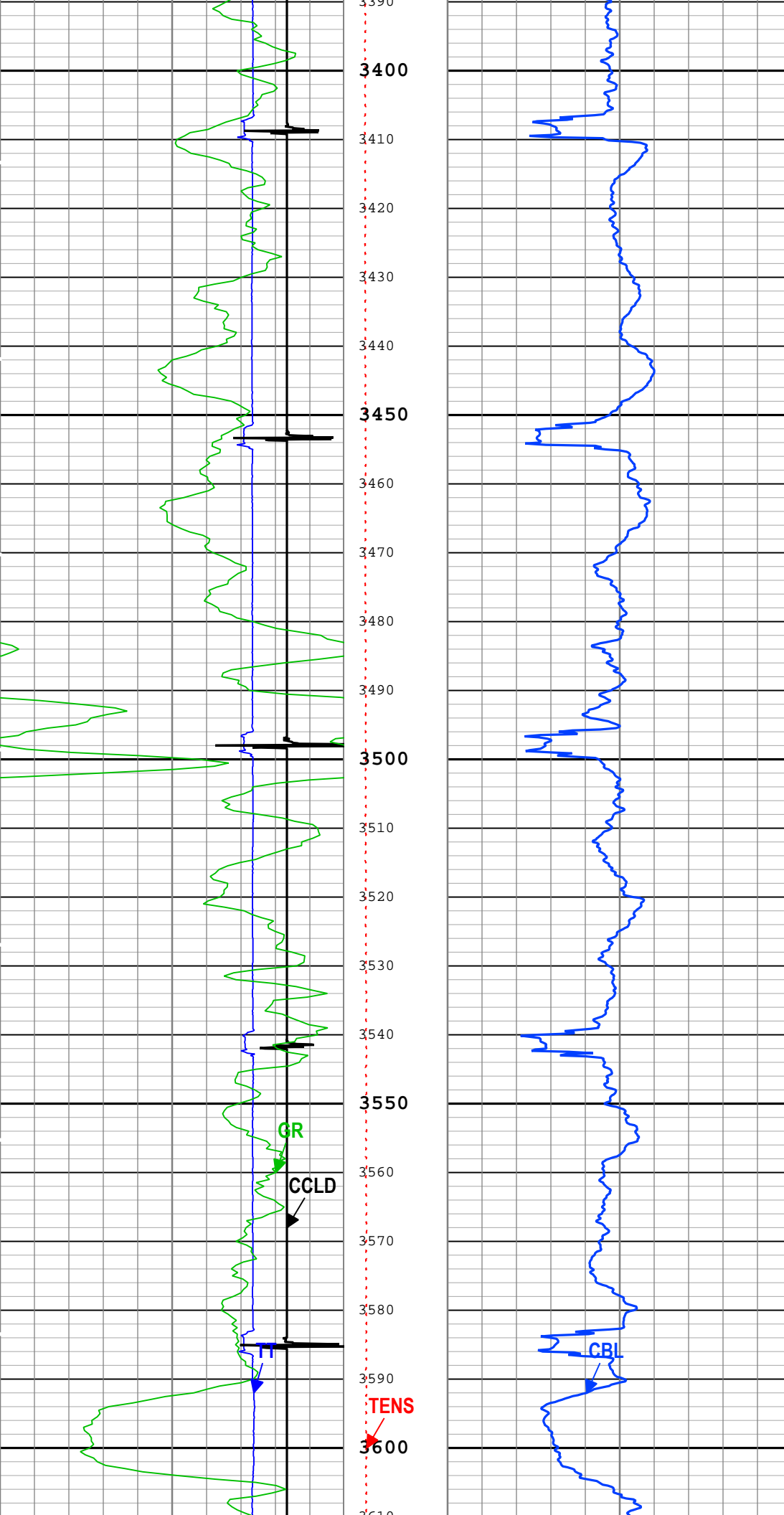
CBL Amplitude (CBL) SCMT-HC		
0	mV	10
CBL Amplitude (CBL) SCMT-HC		
0	mV	100

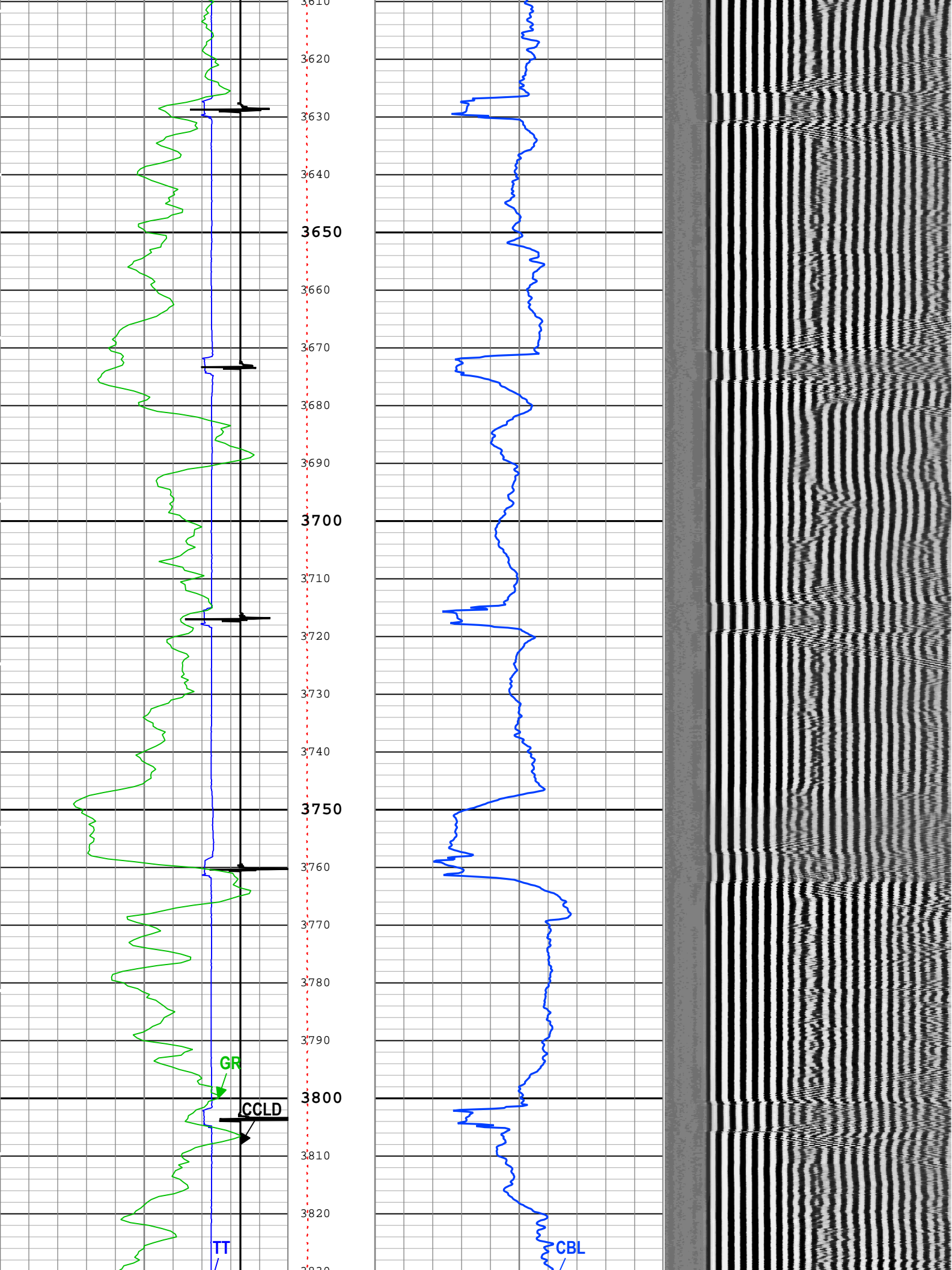
Min	Amplitude	Max
200	us	1200

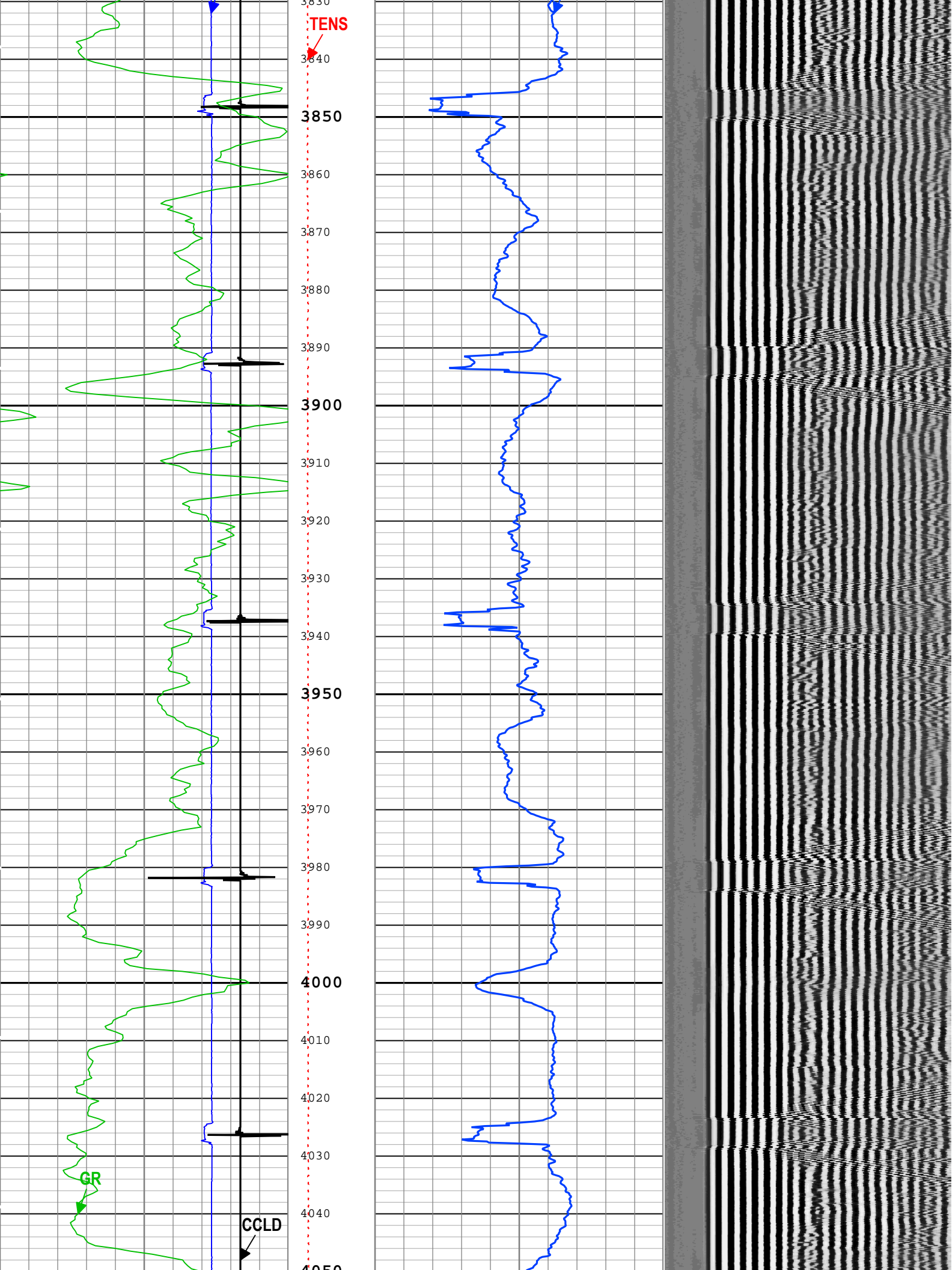


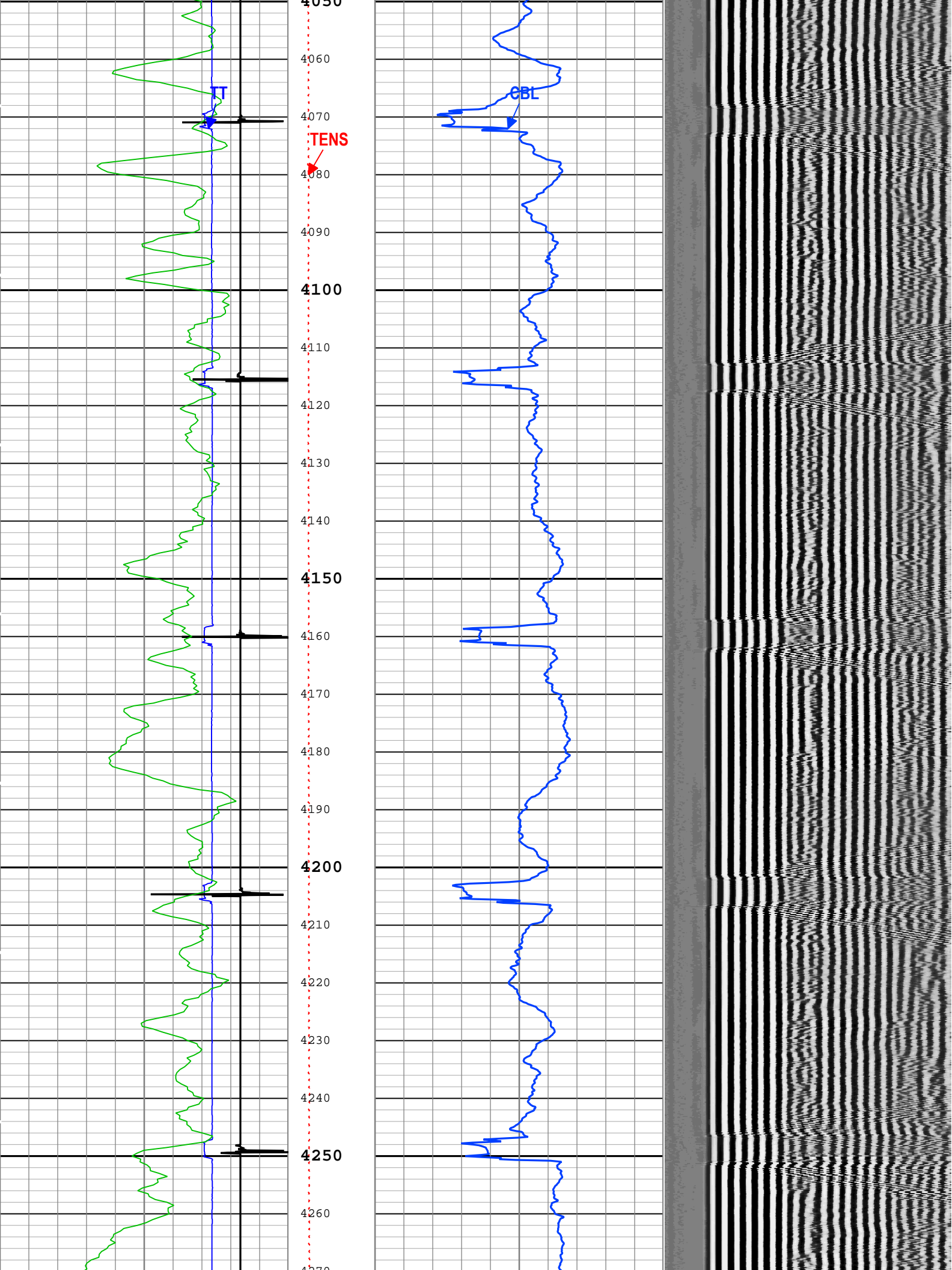


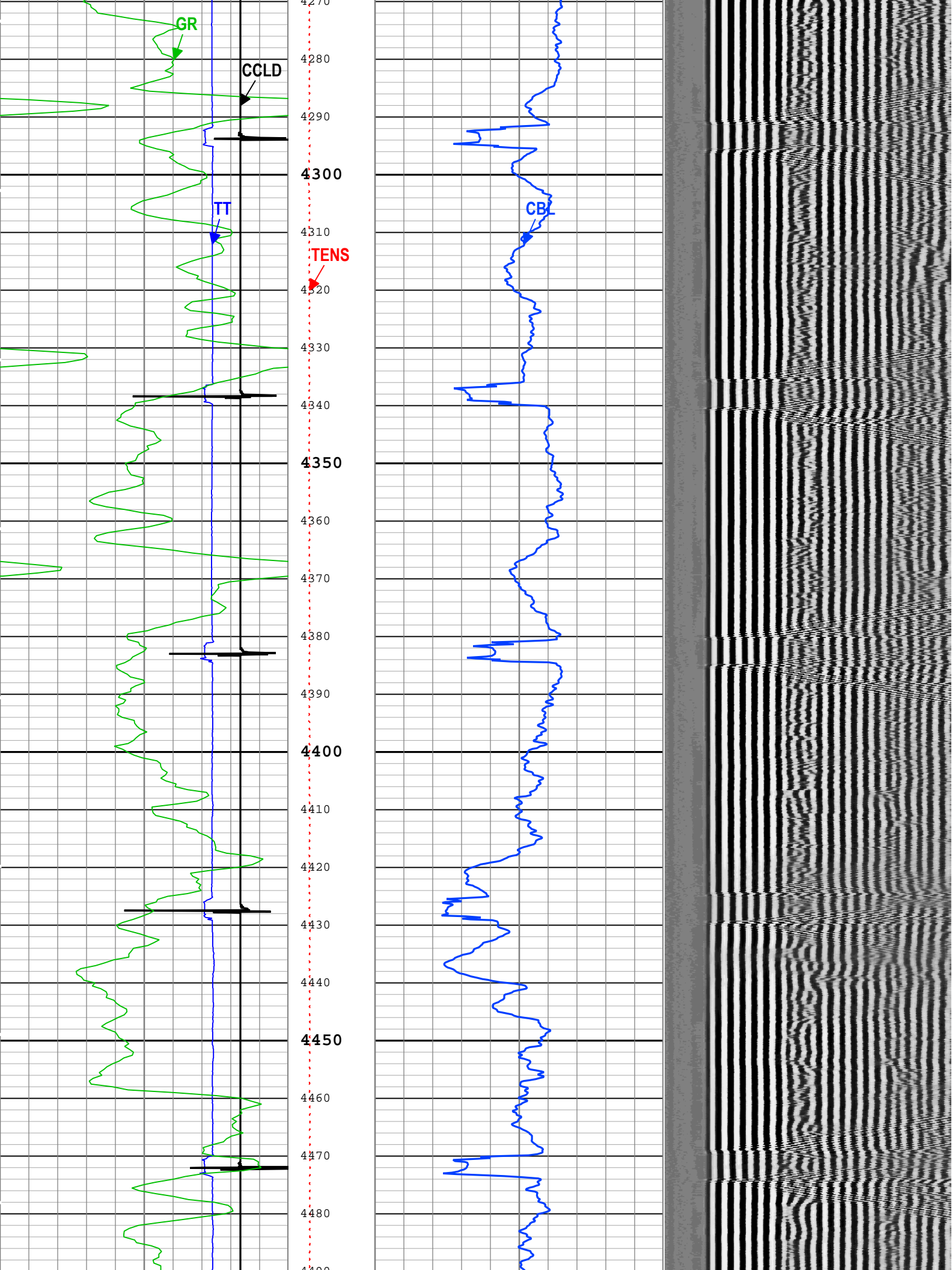


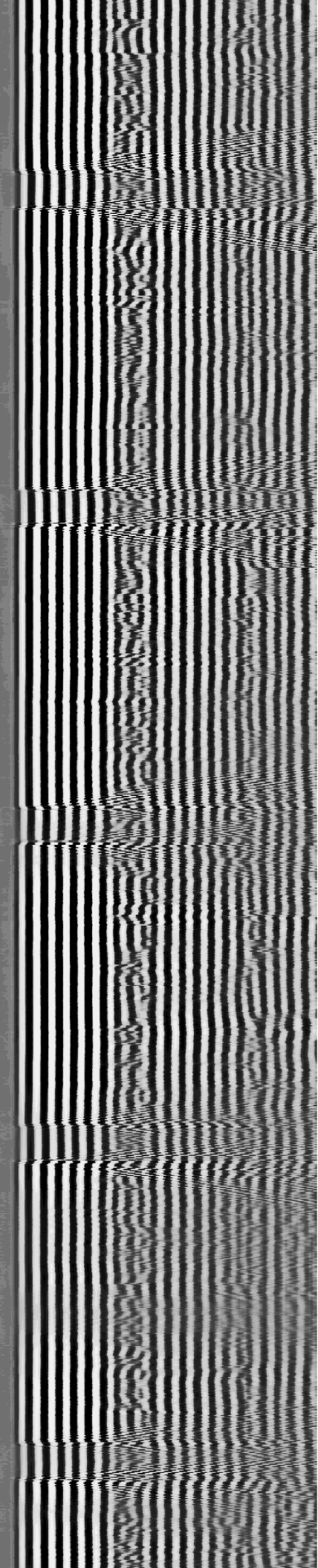
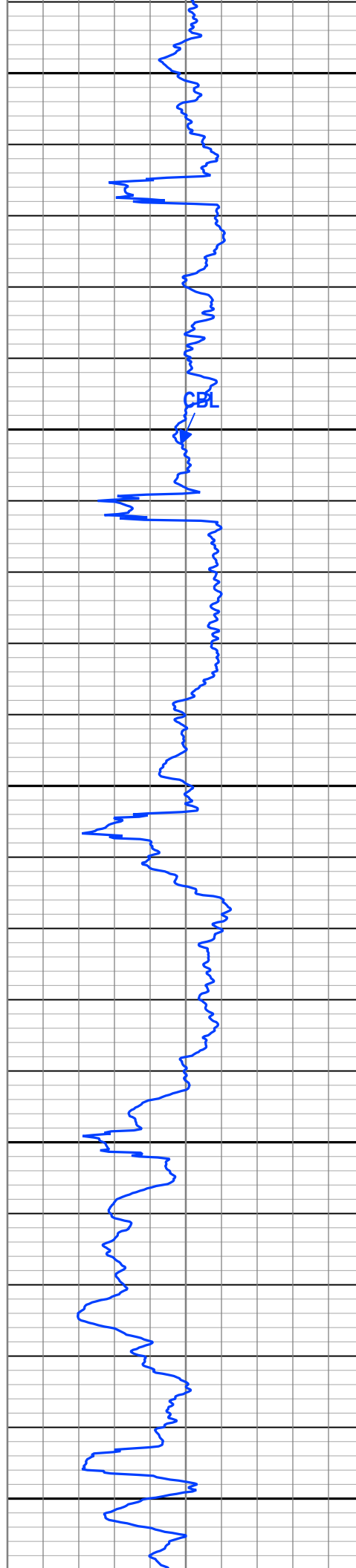
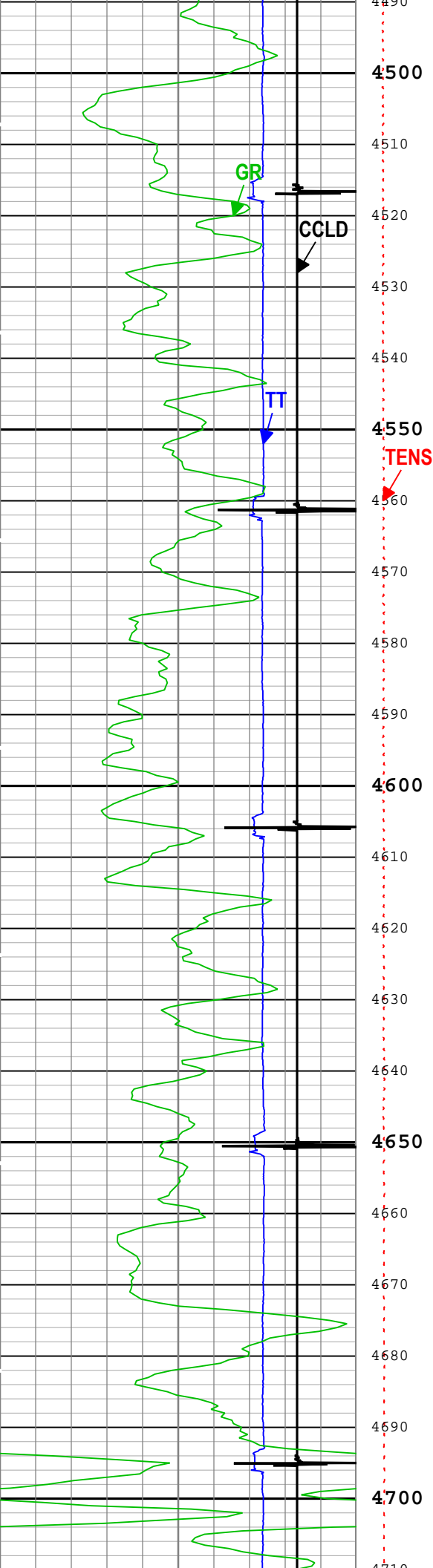


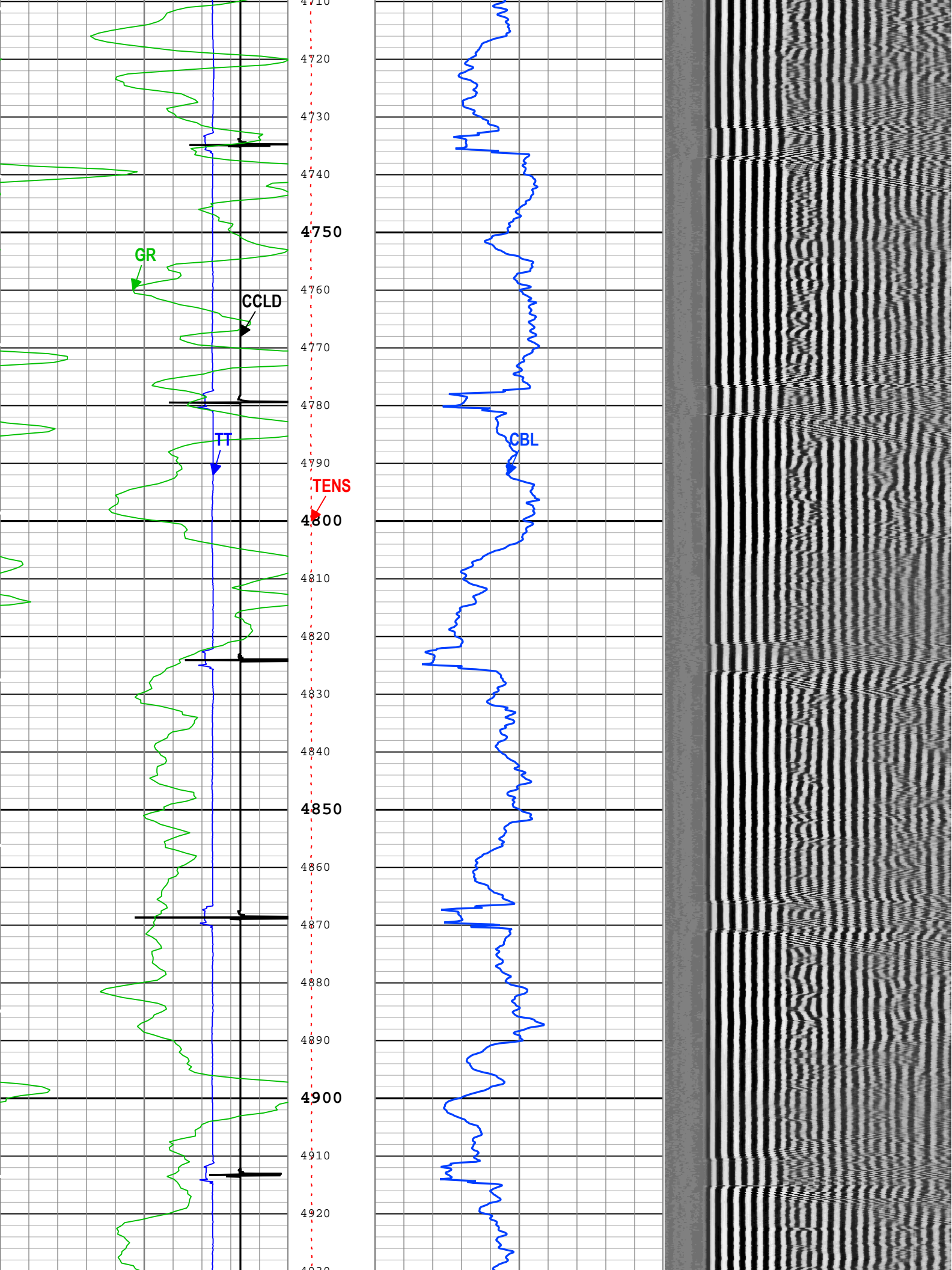


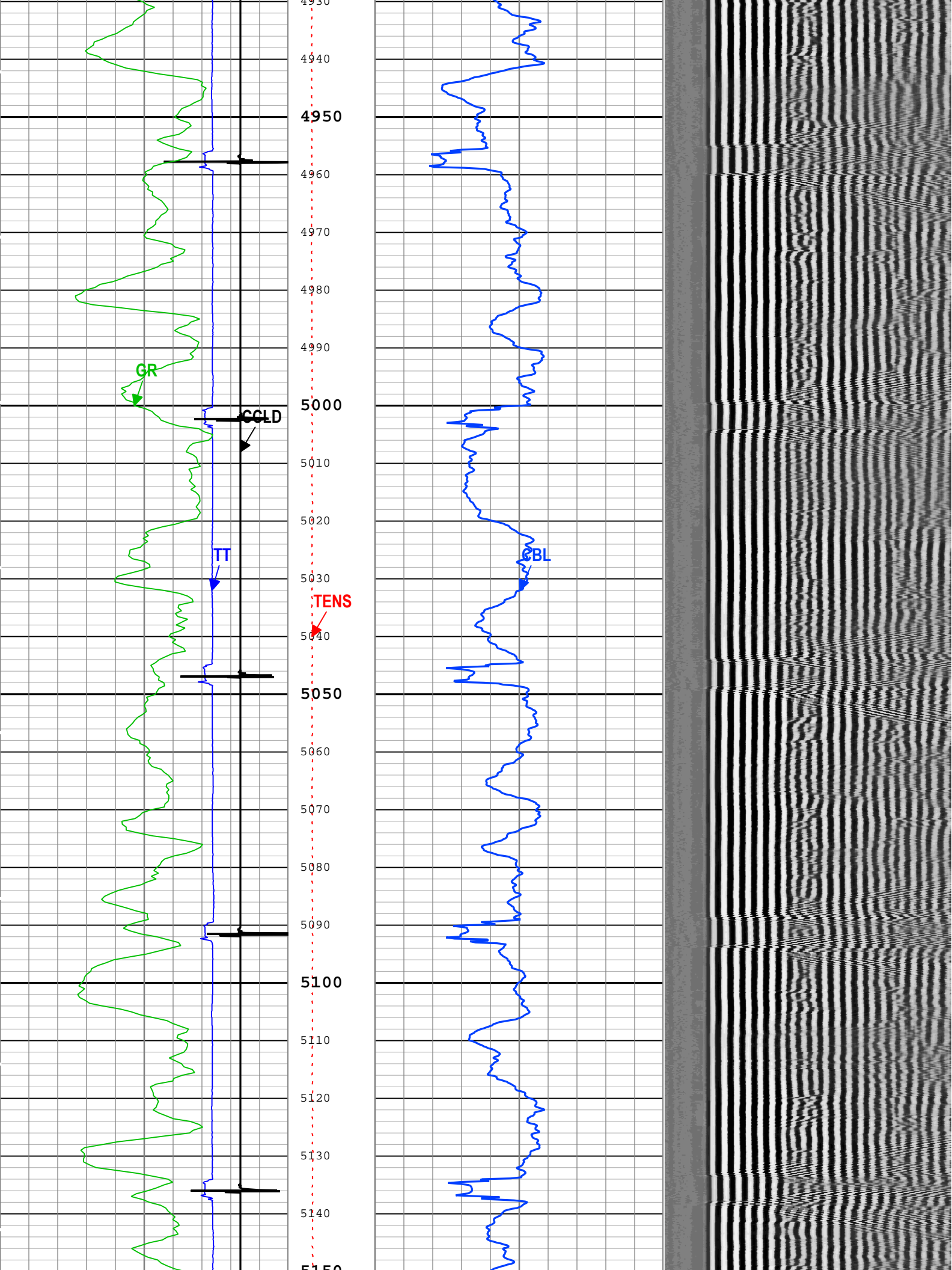


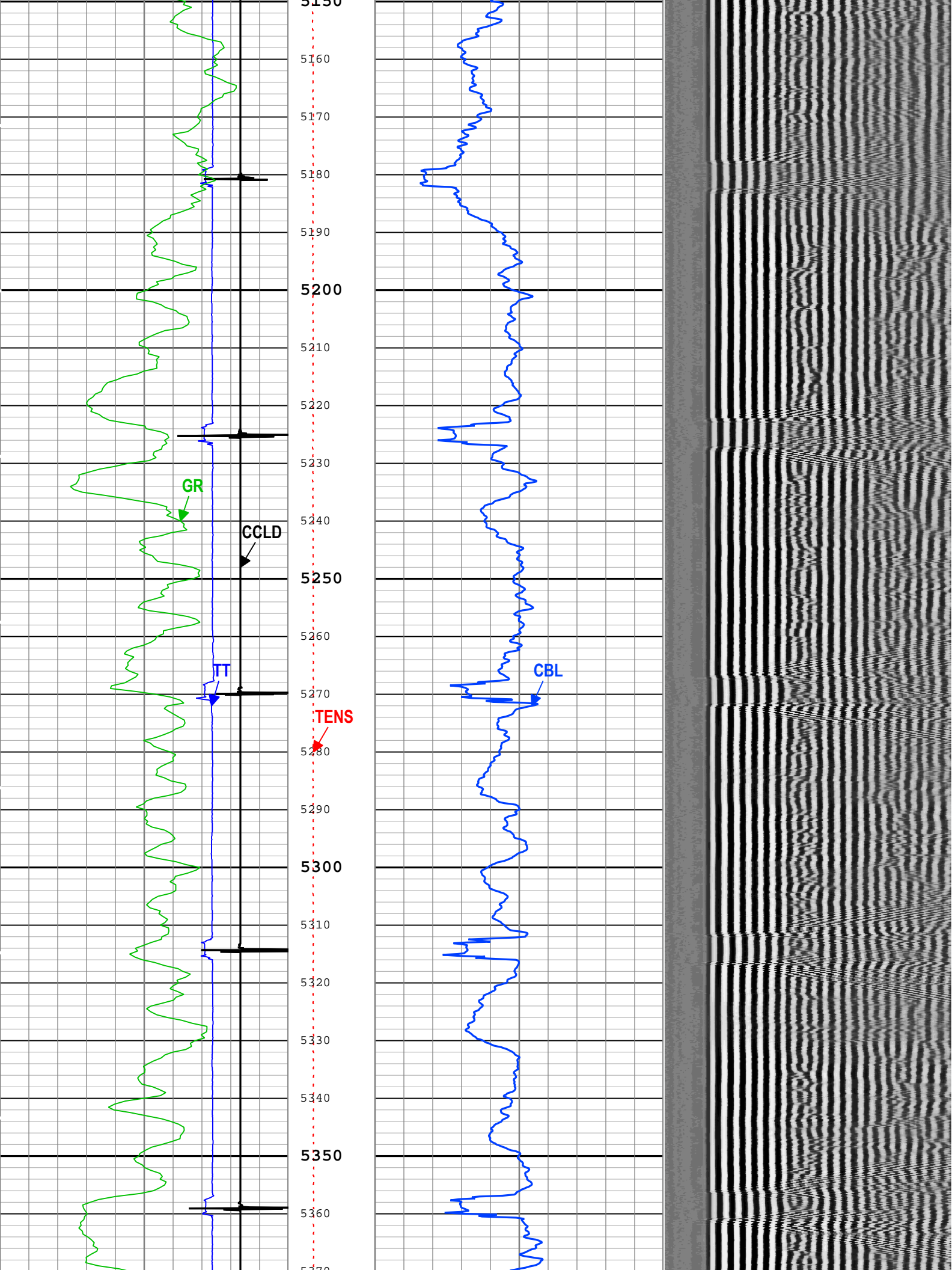


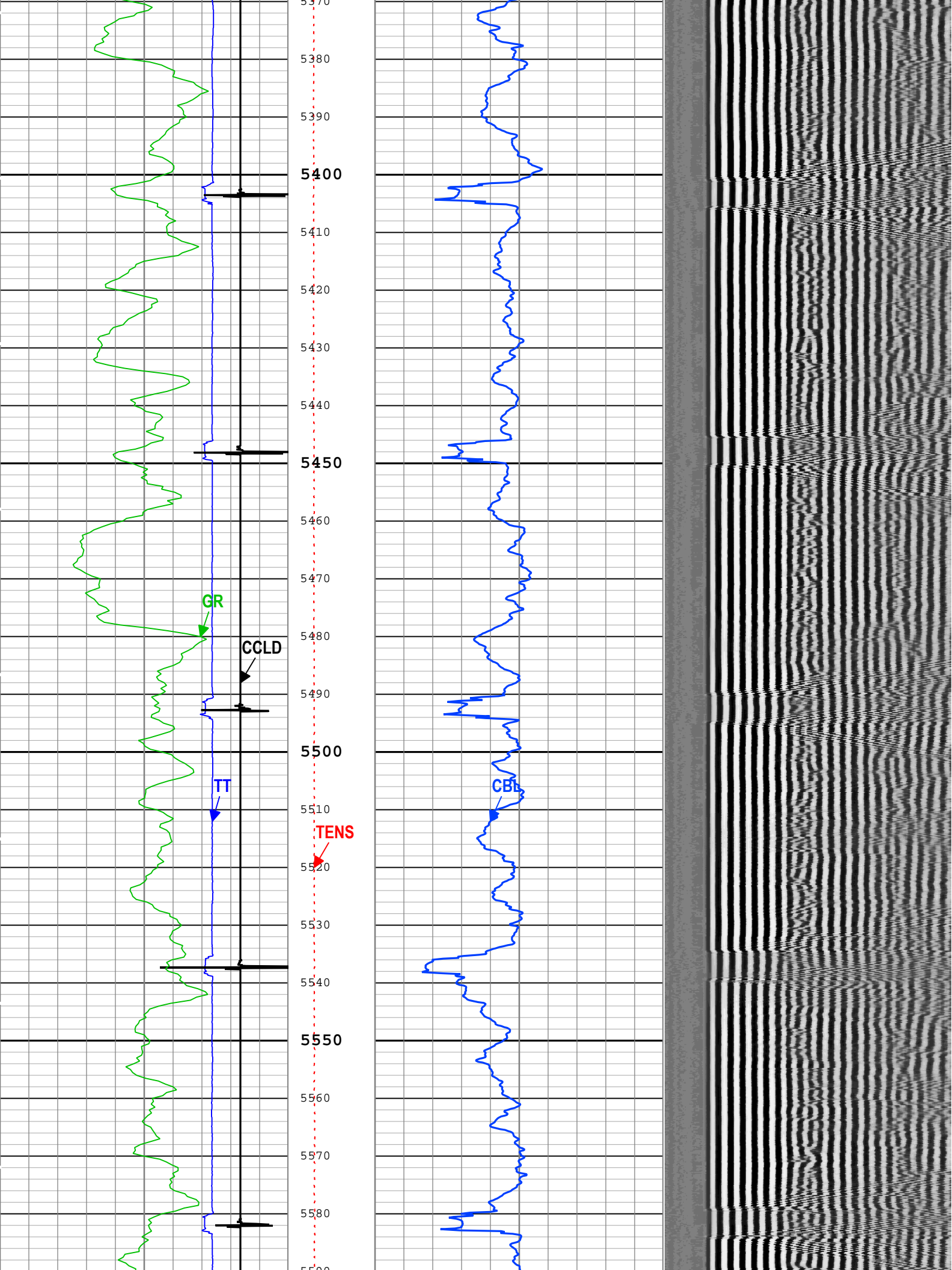


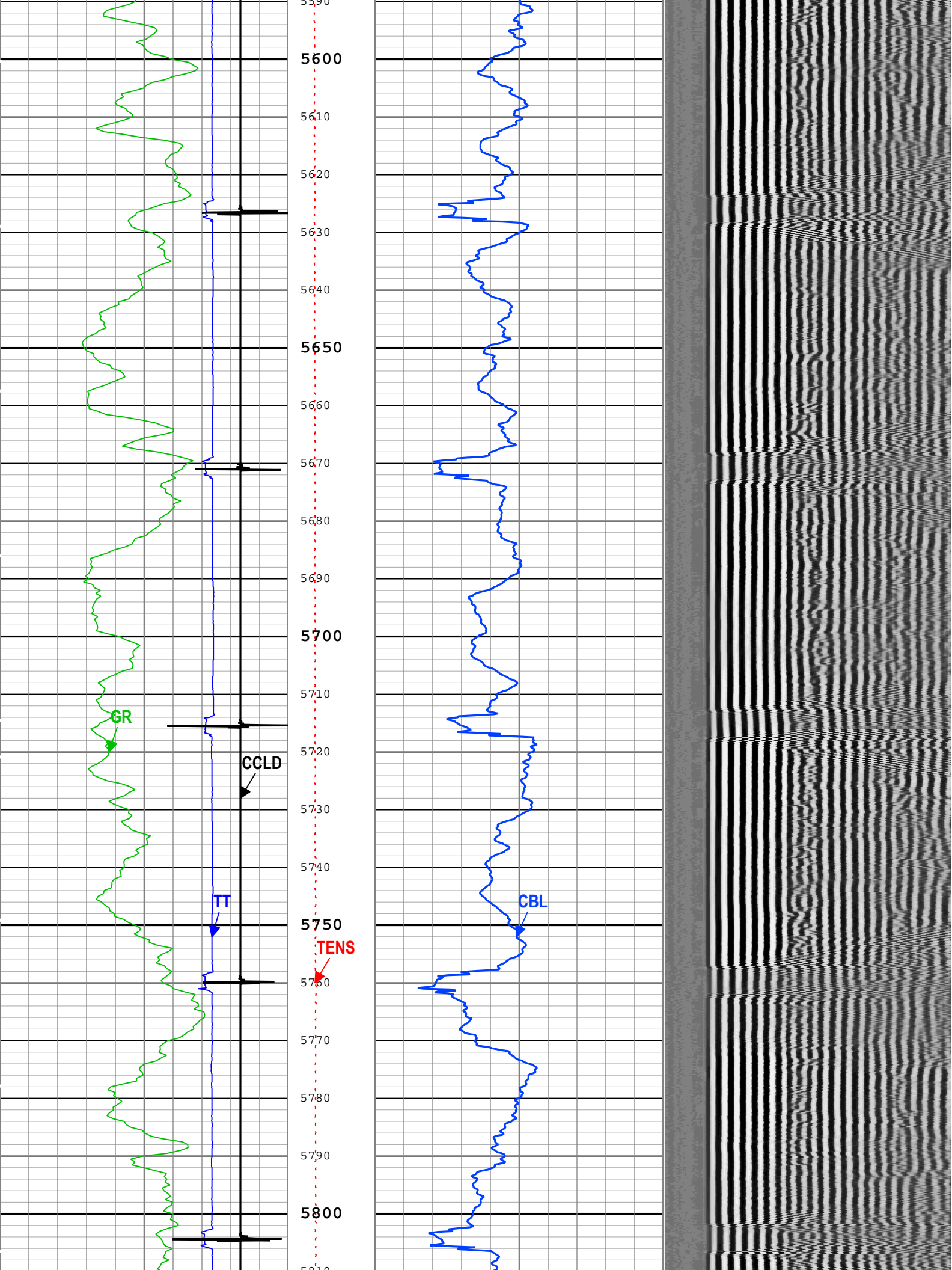


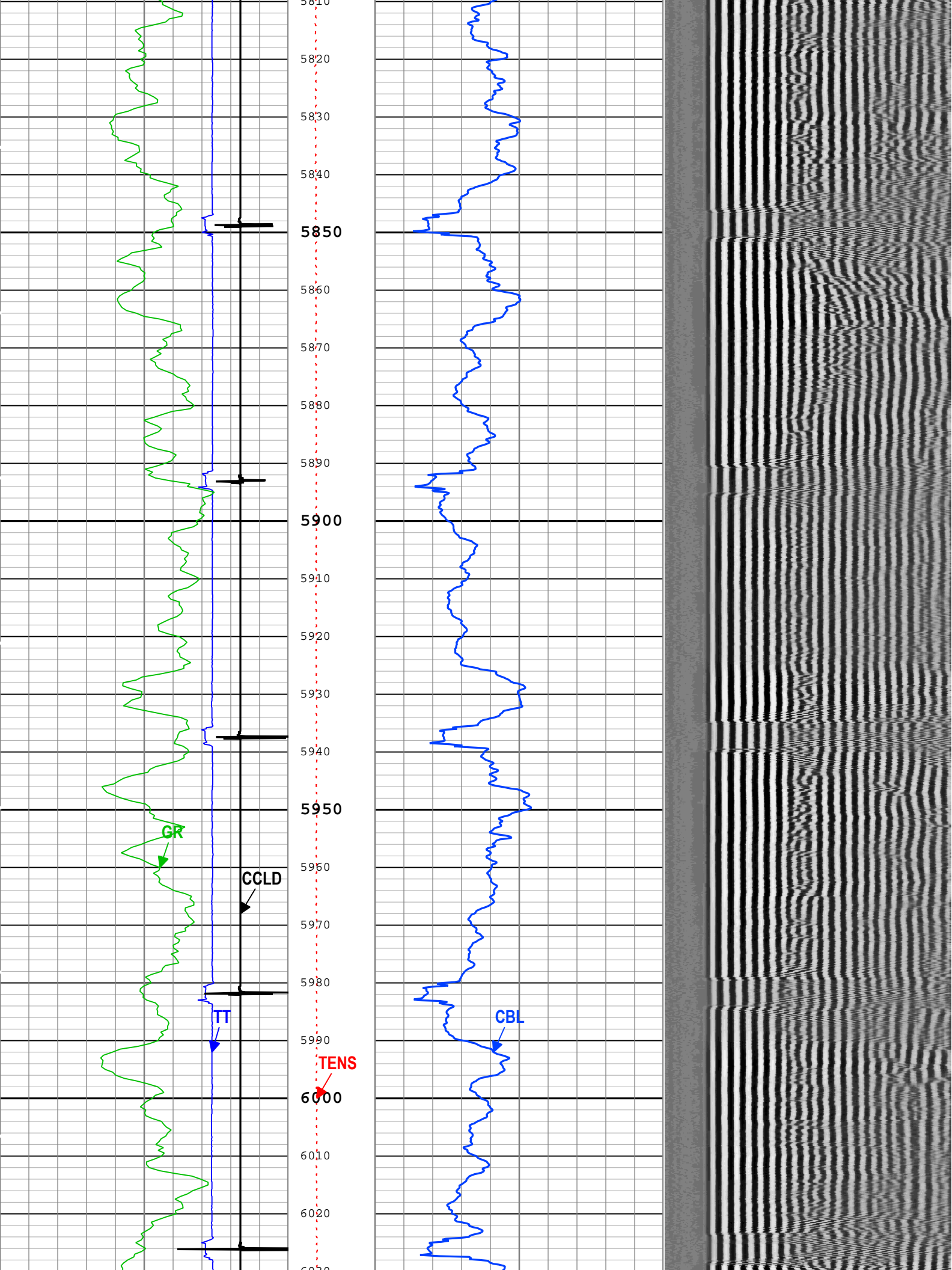


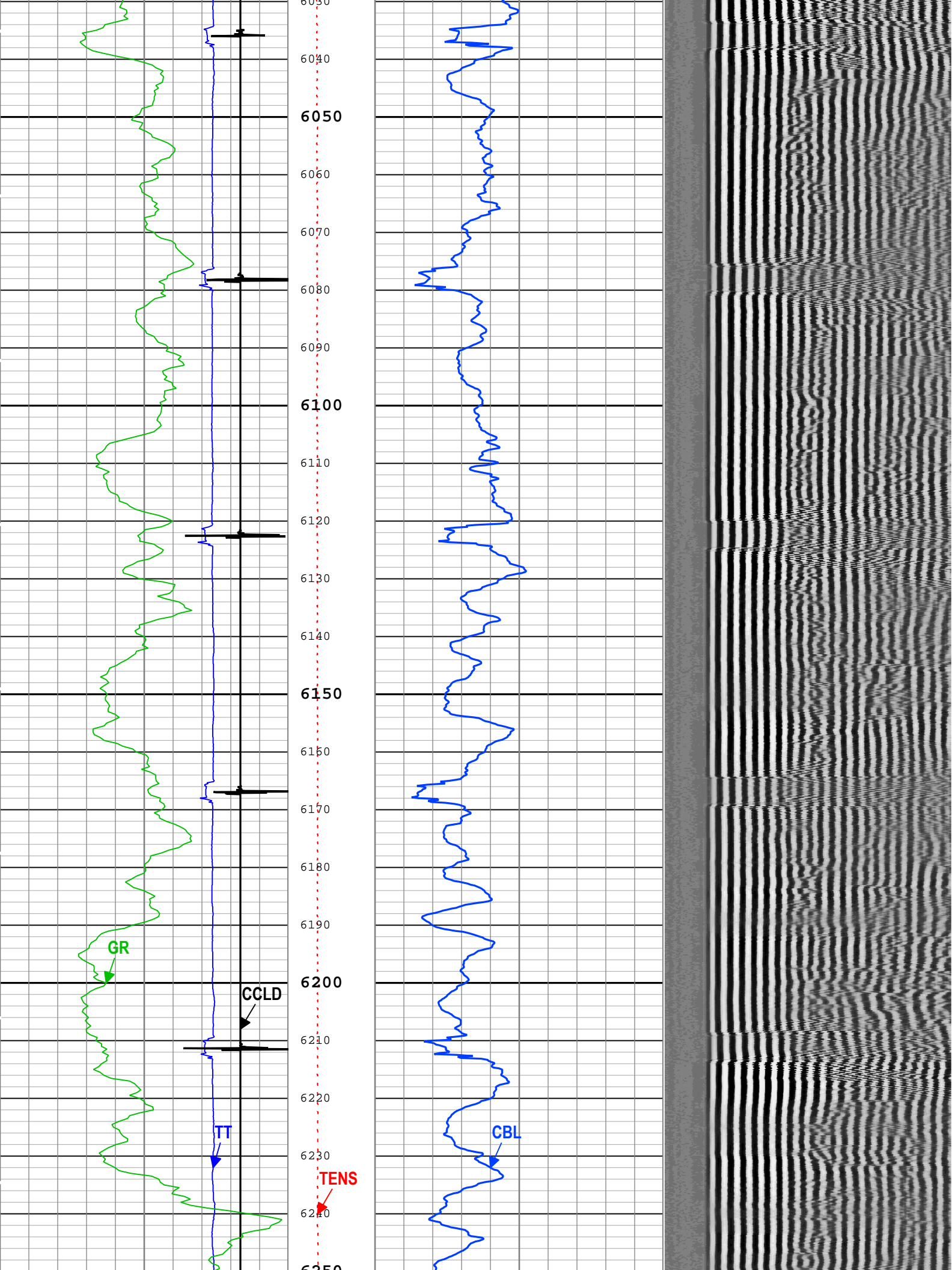


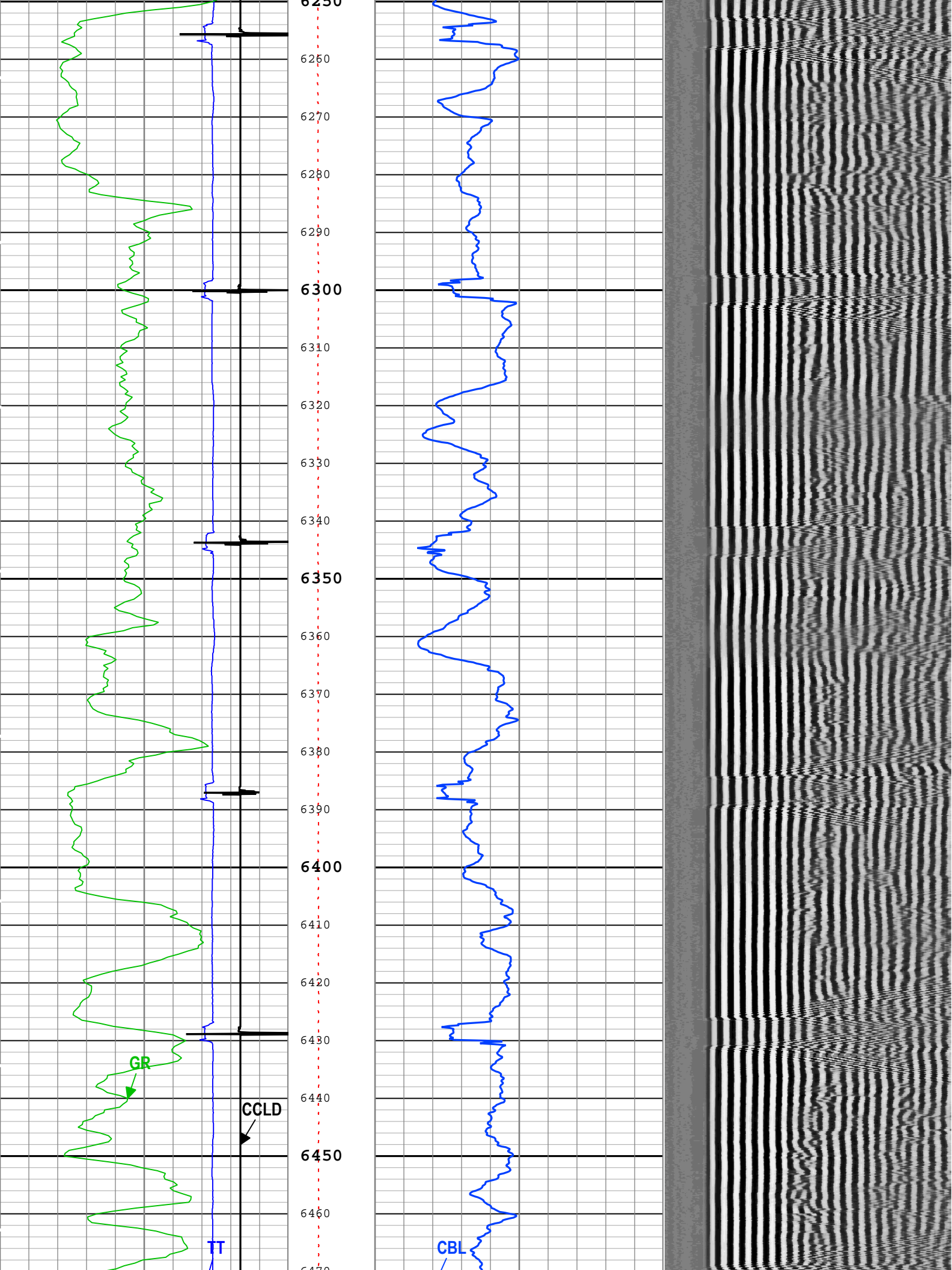


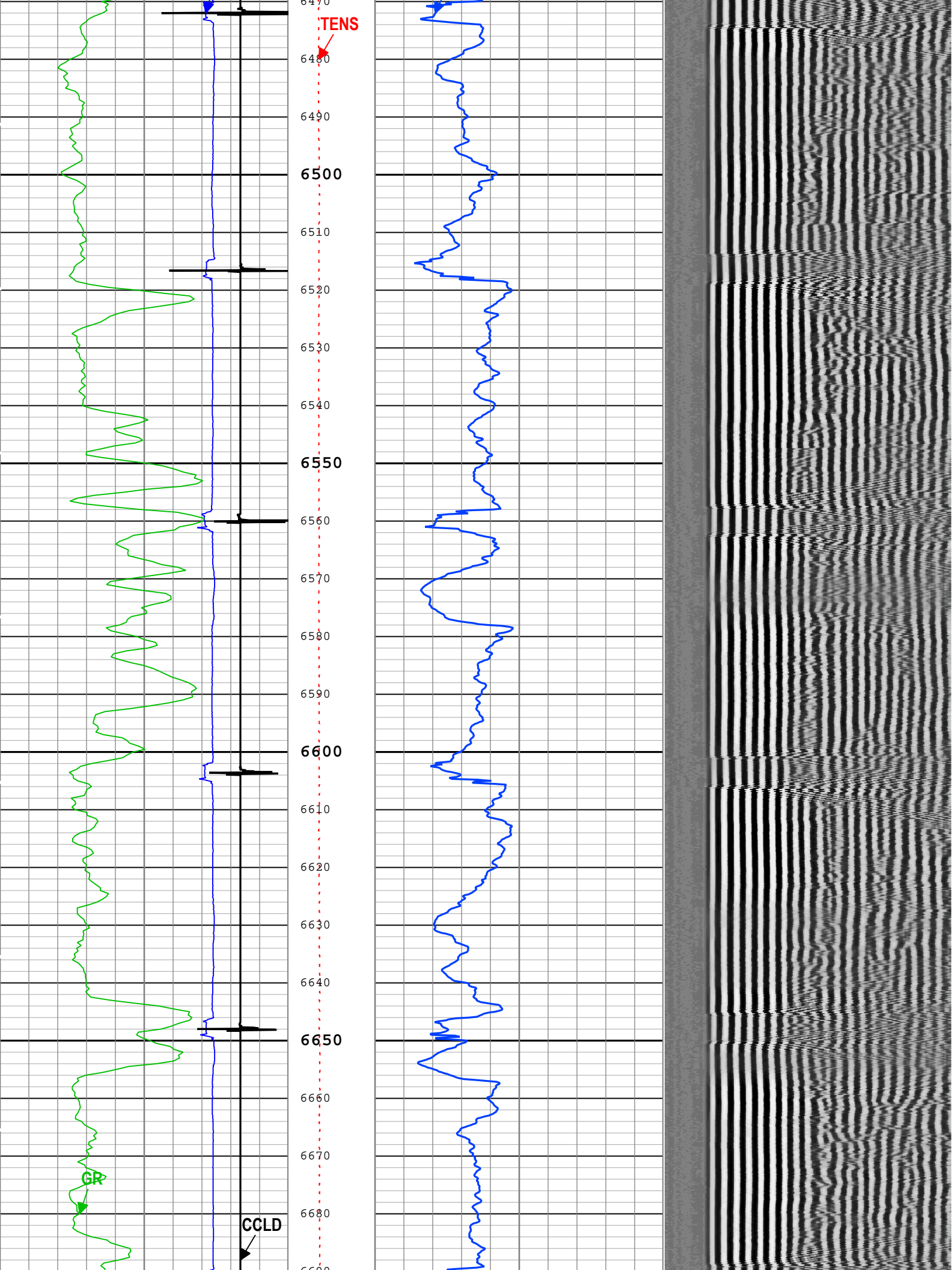


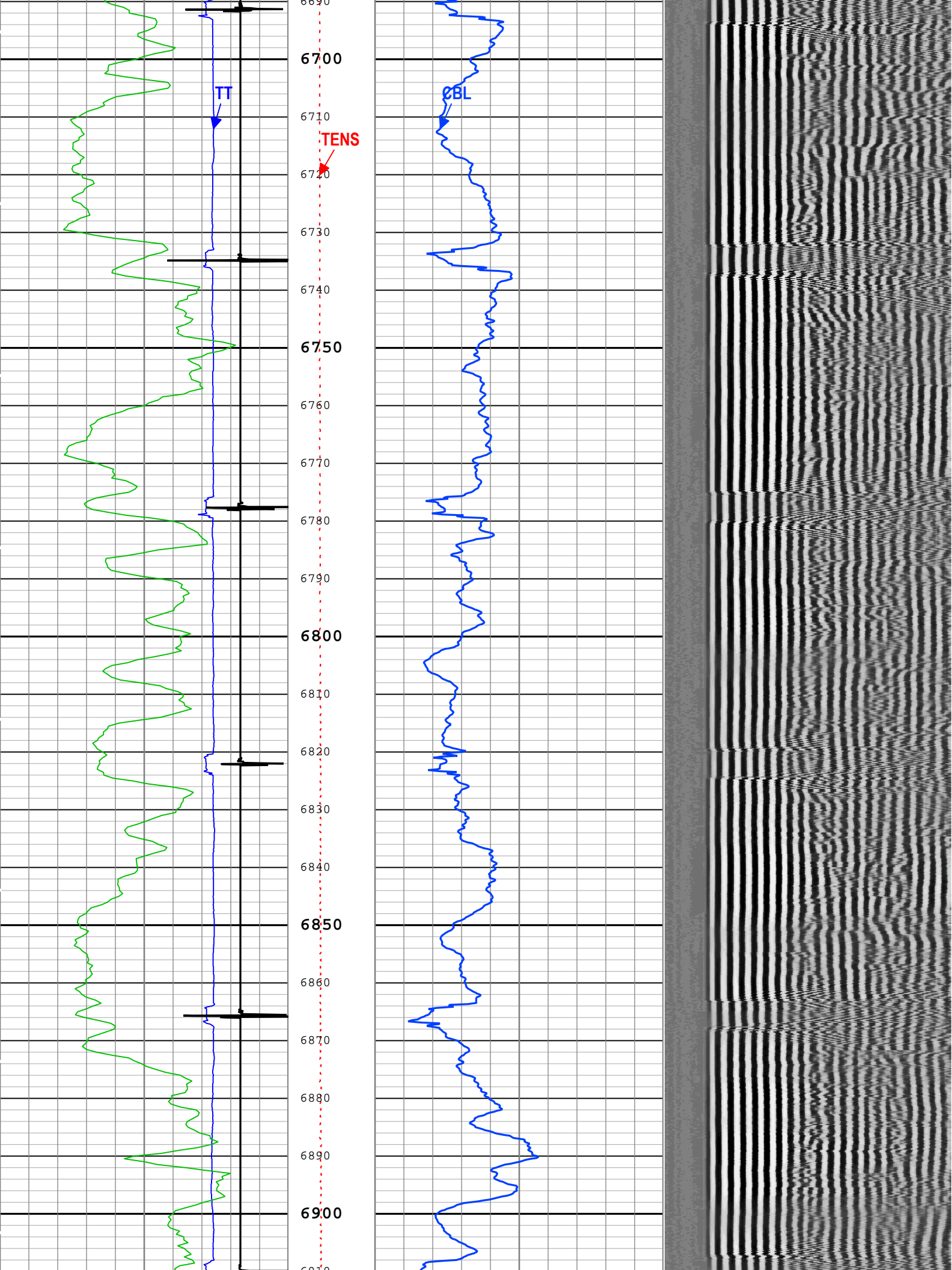


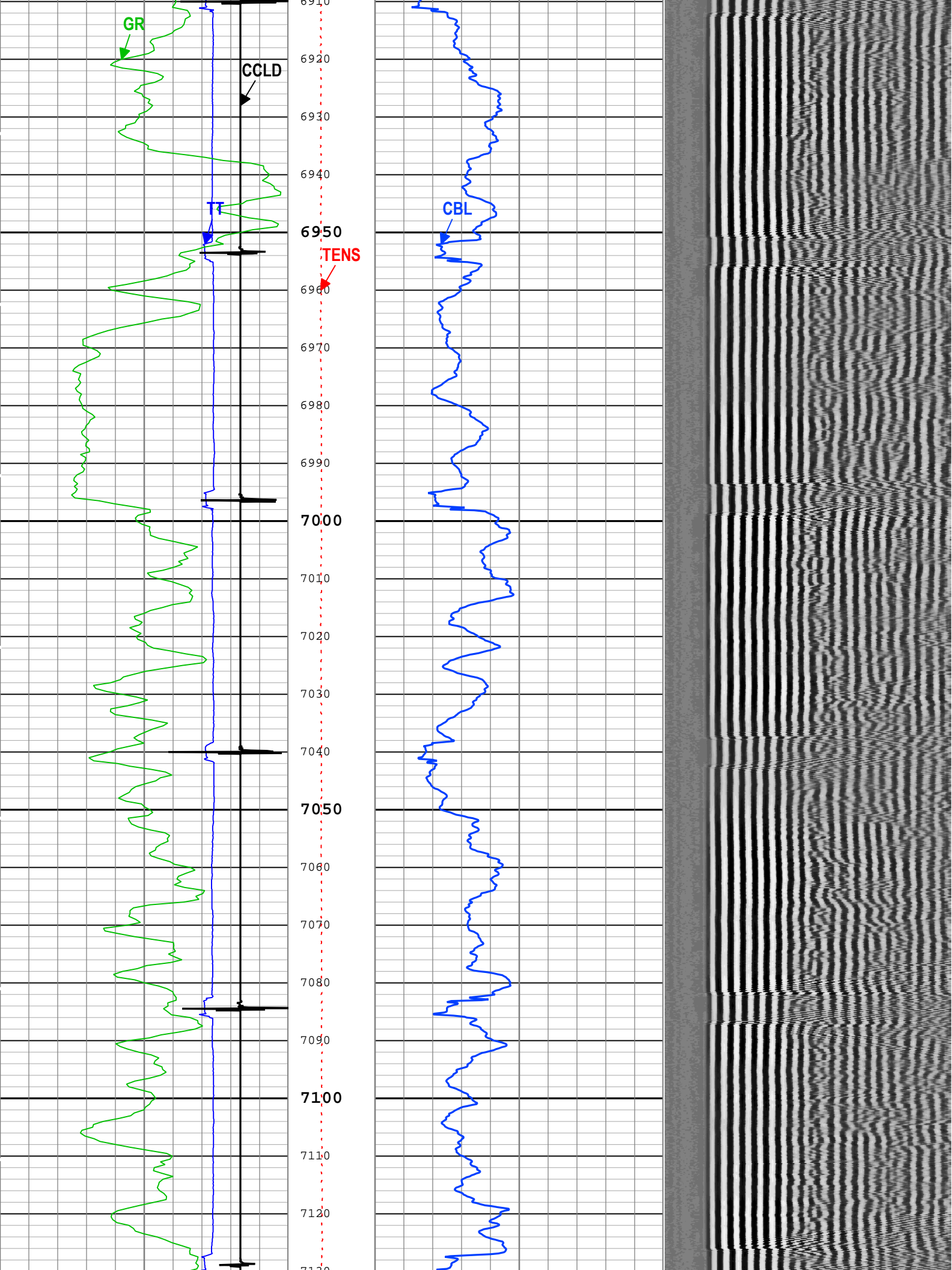


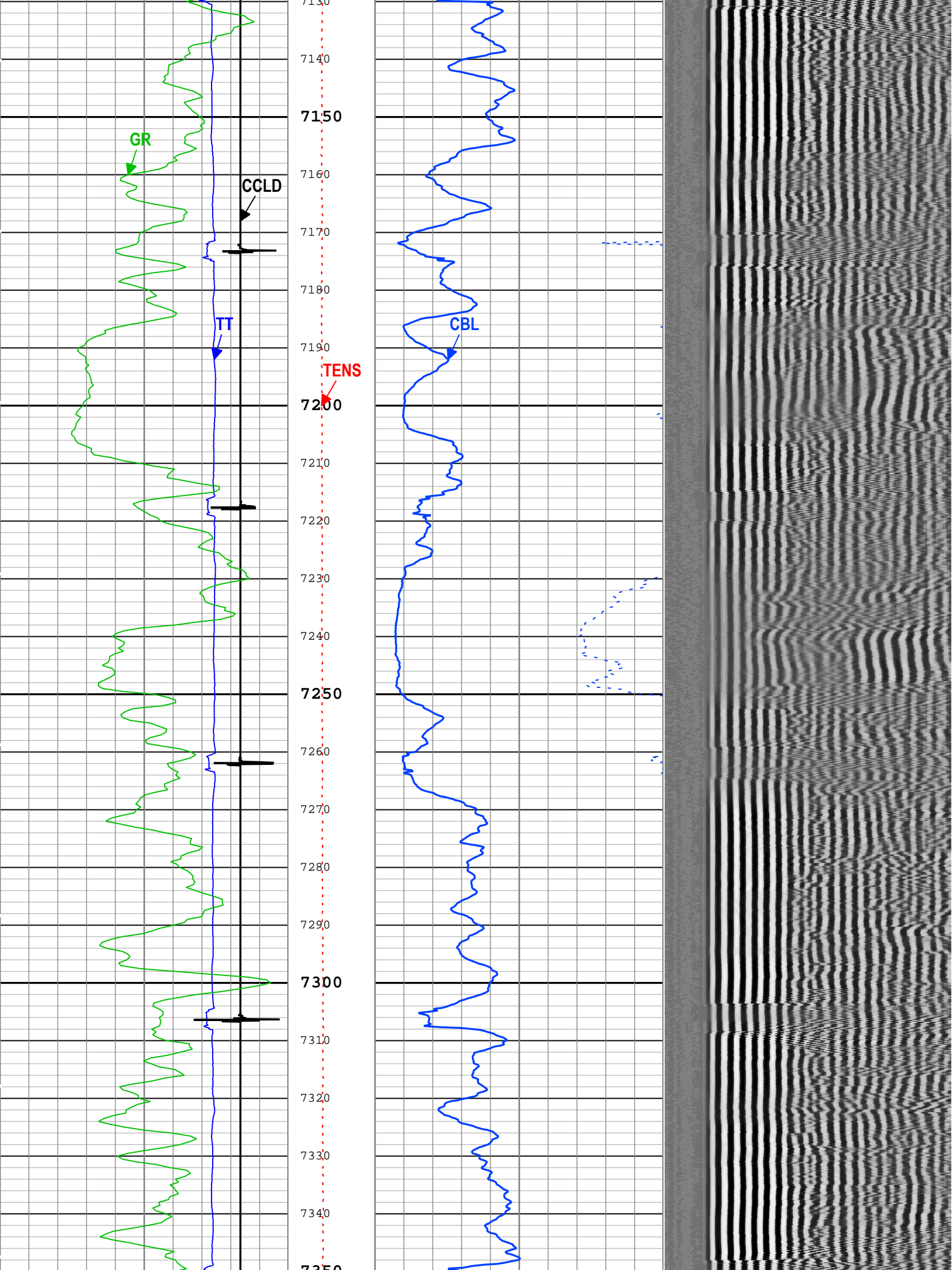


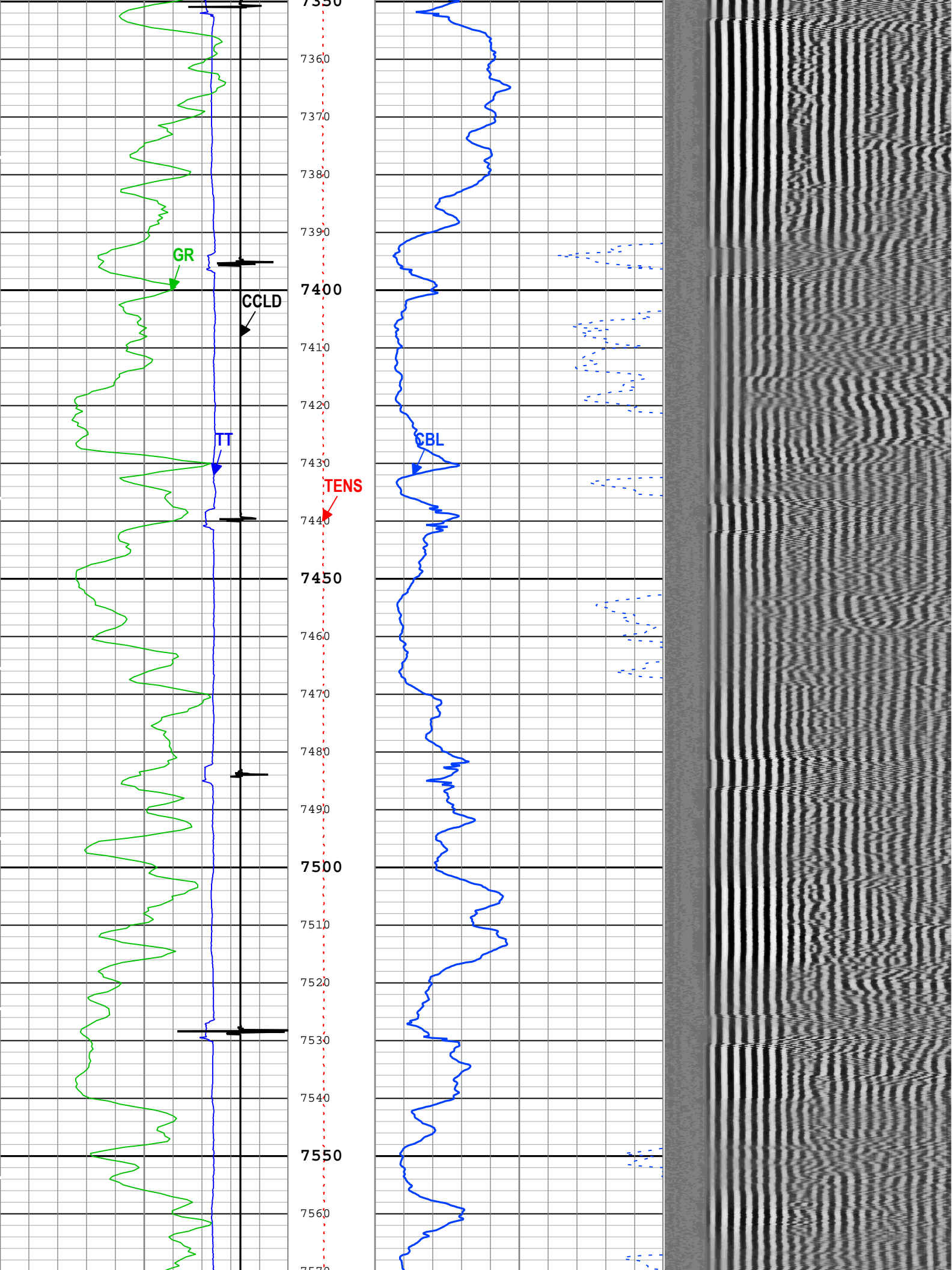


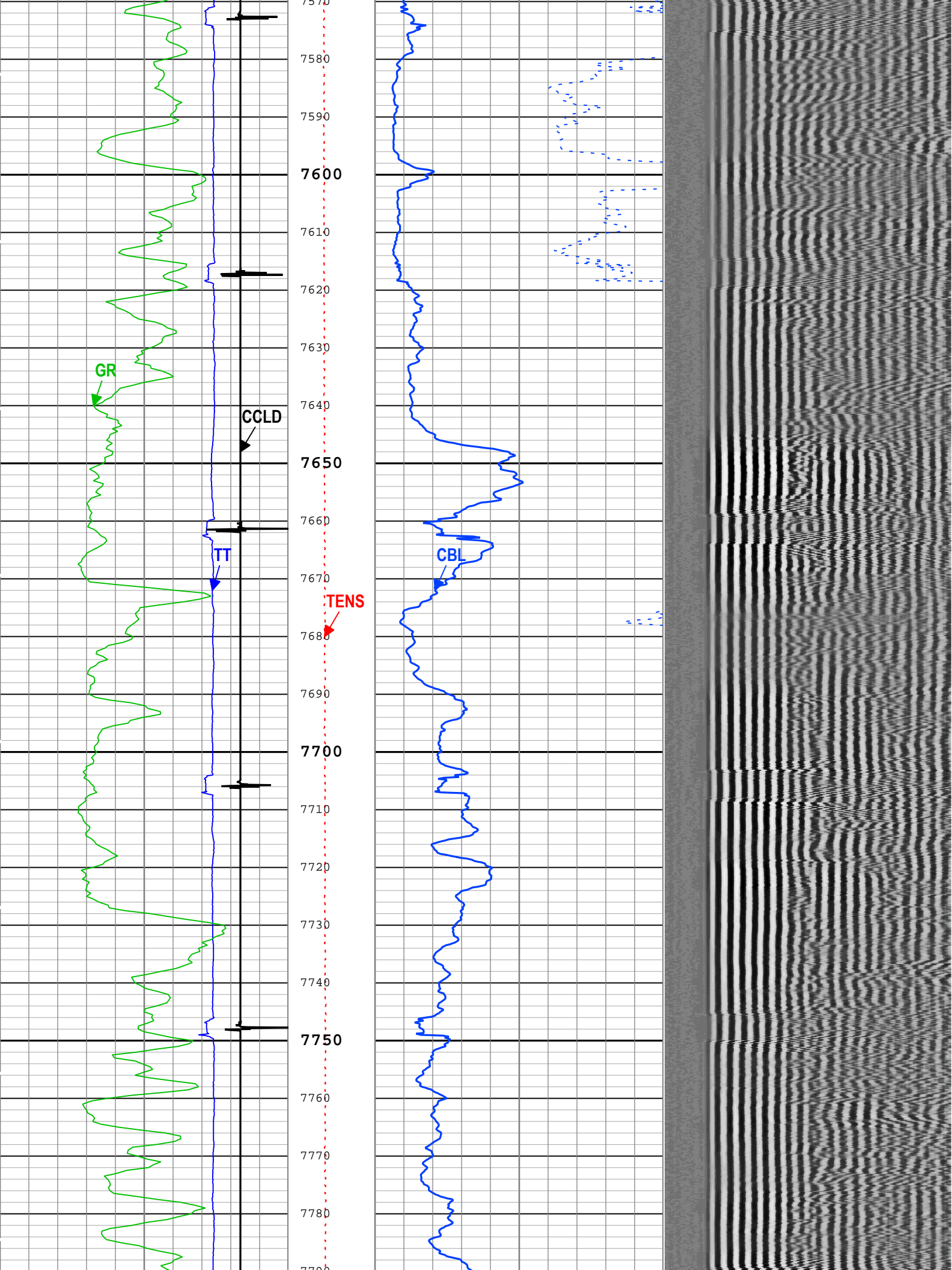


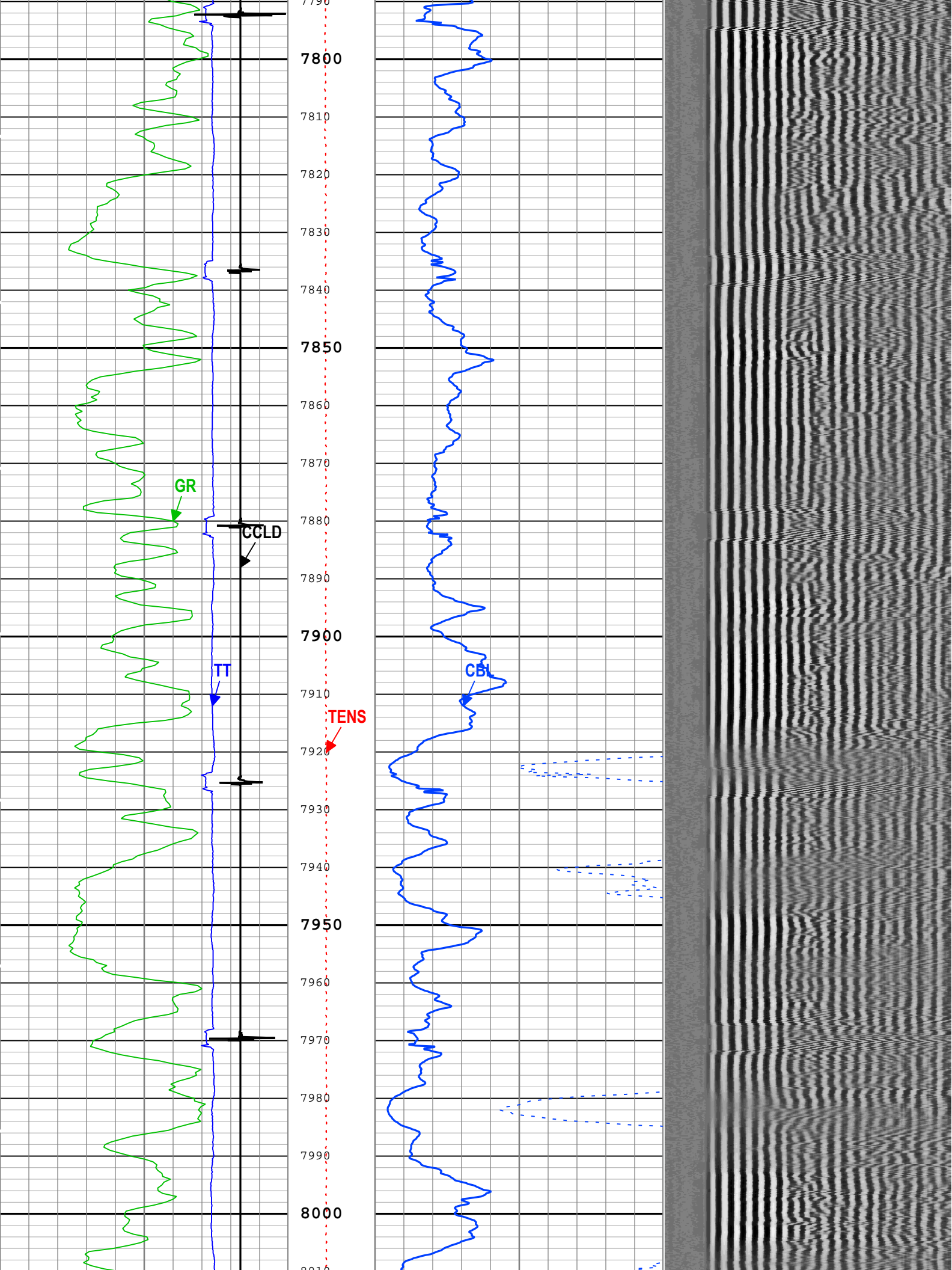


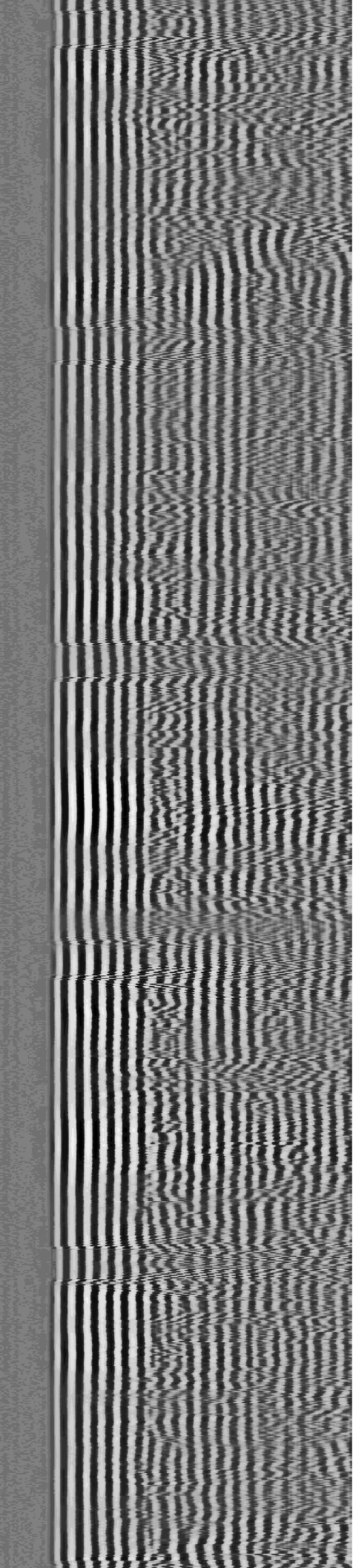
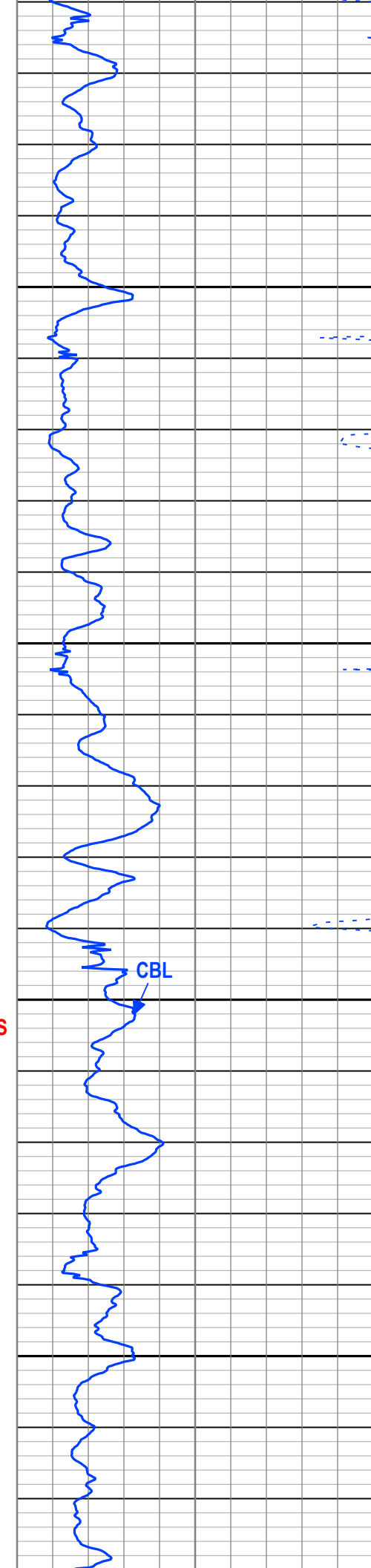
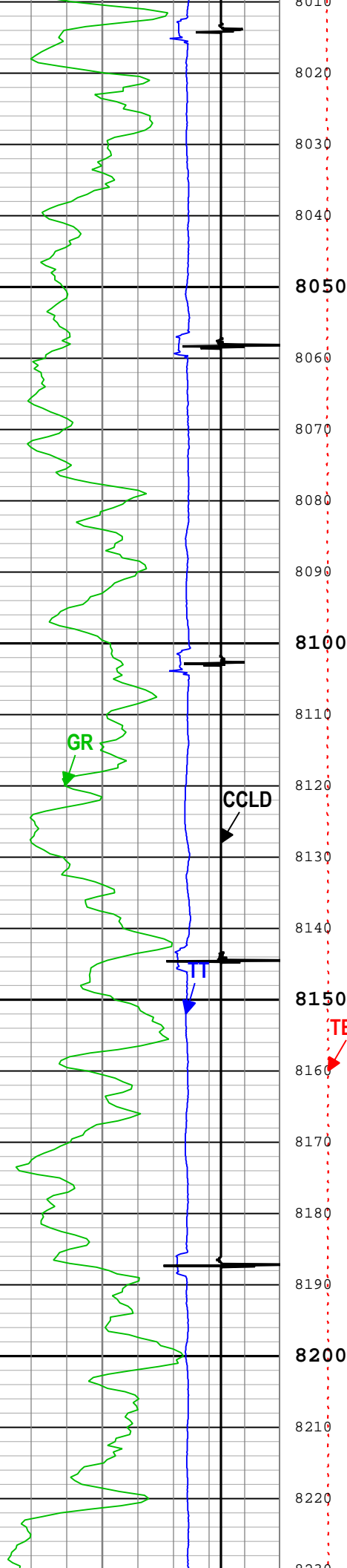


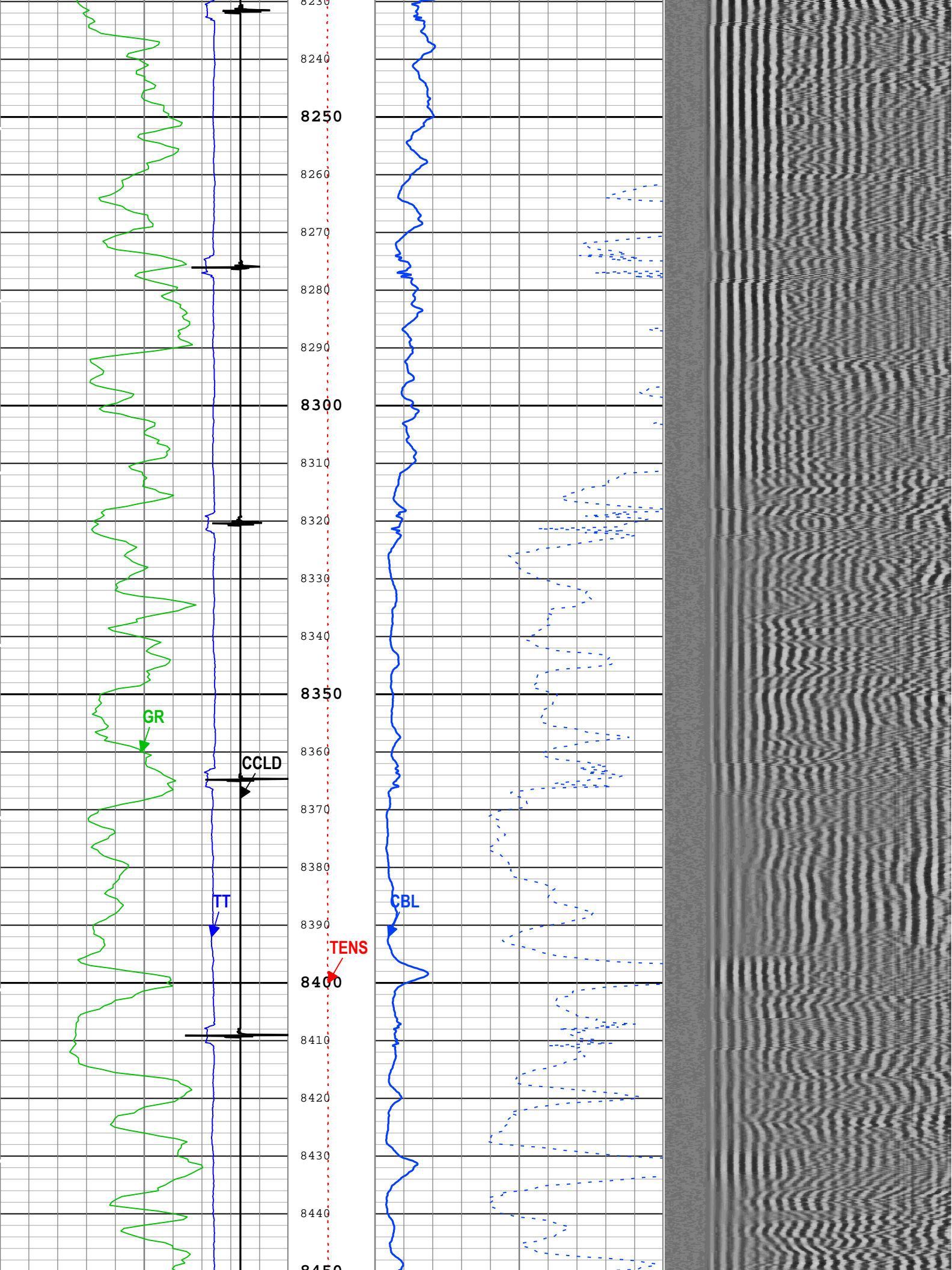


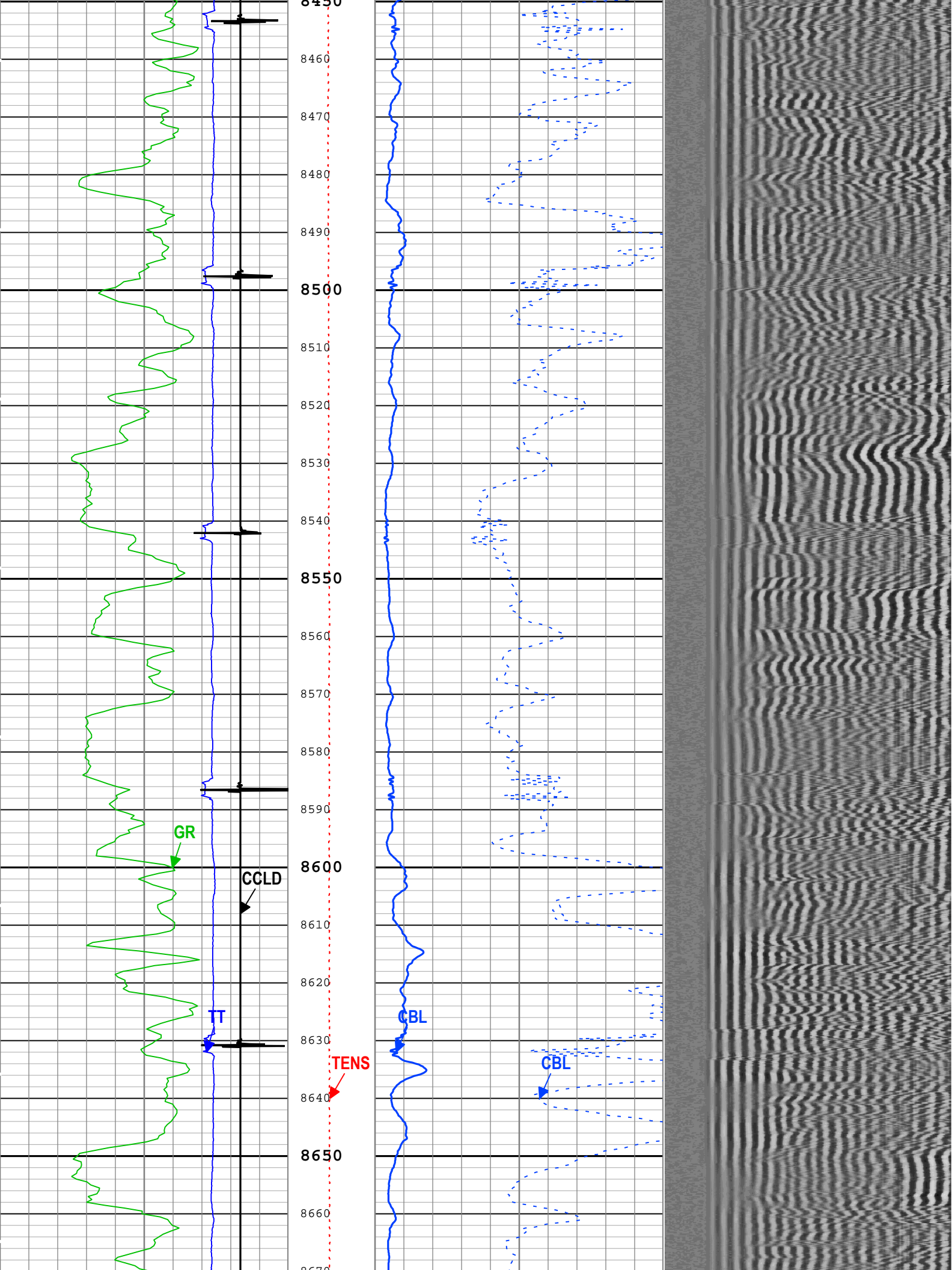


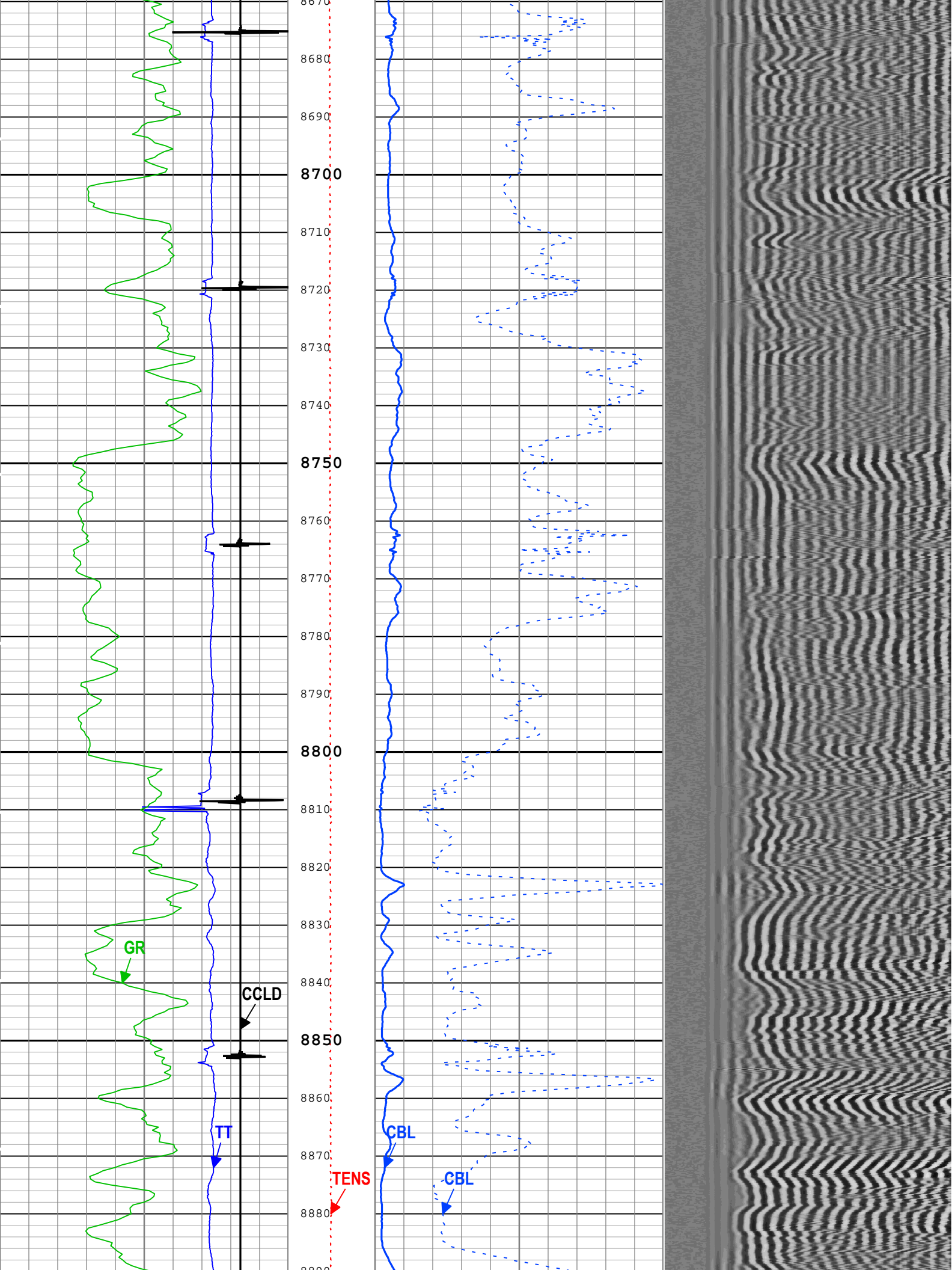


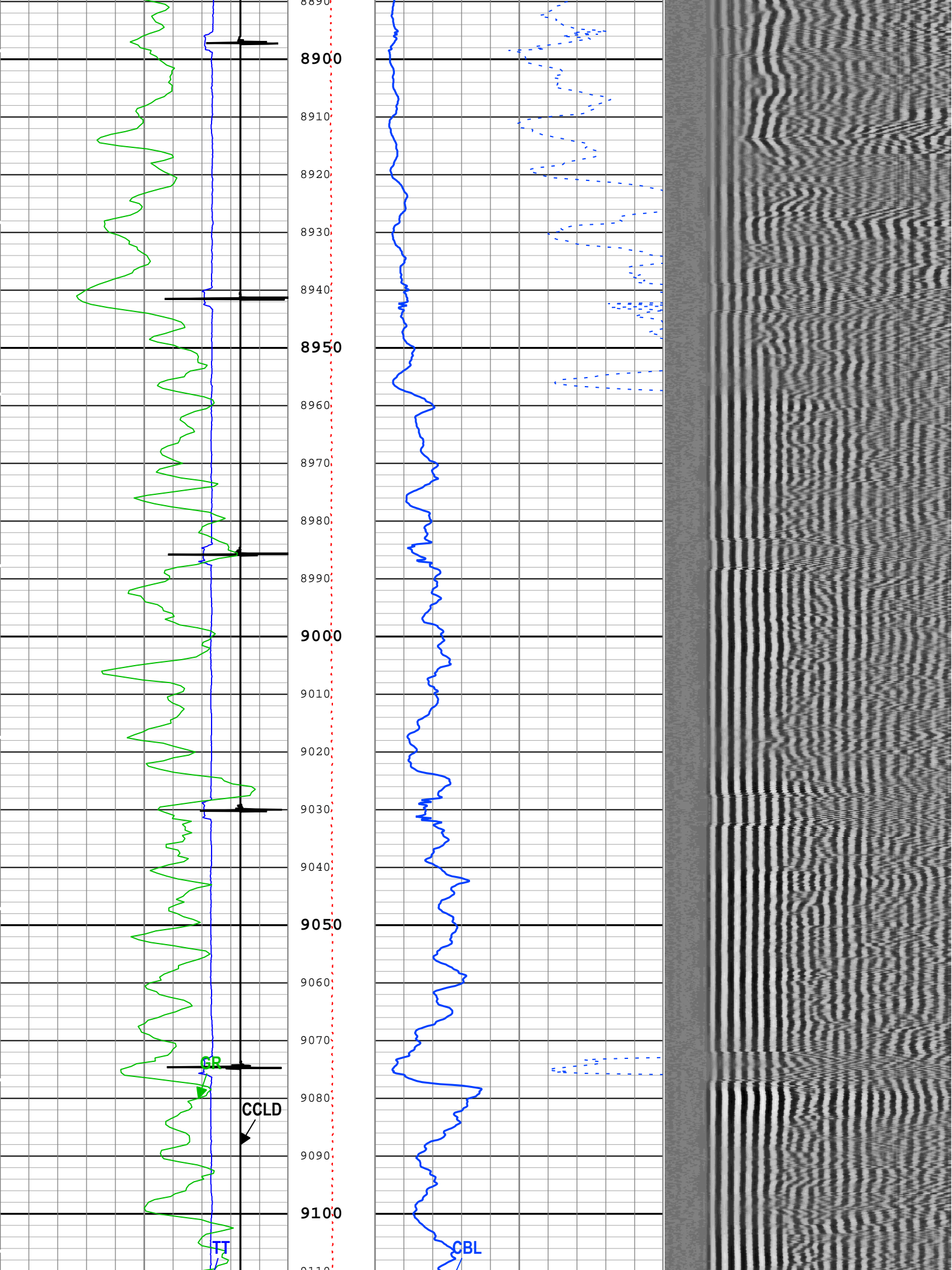


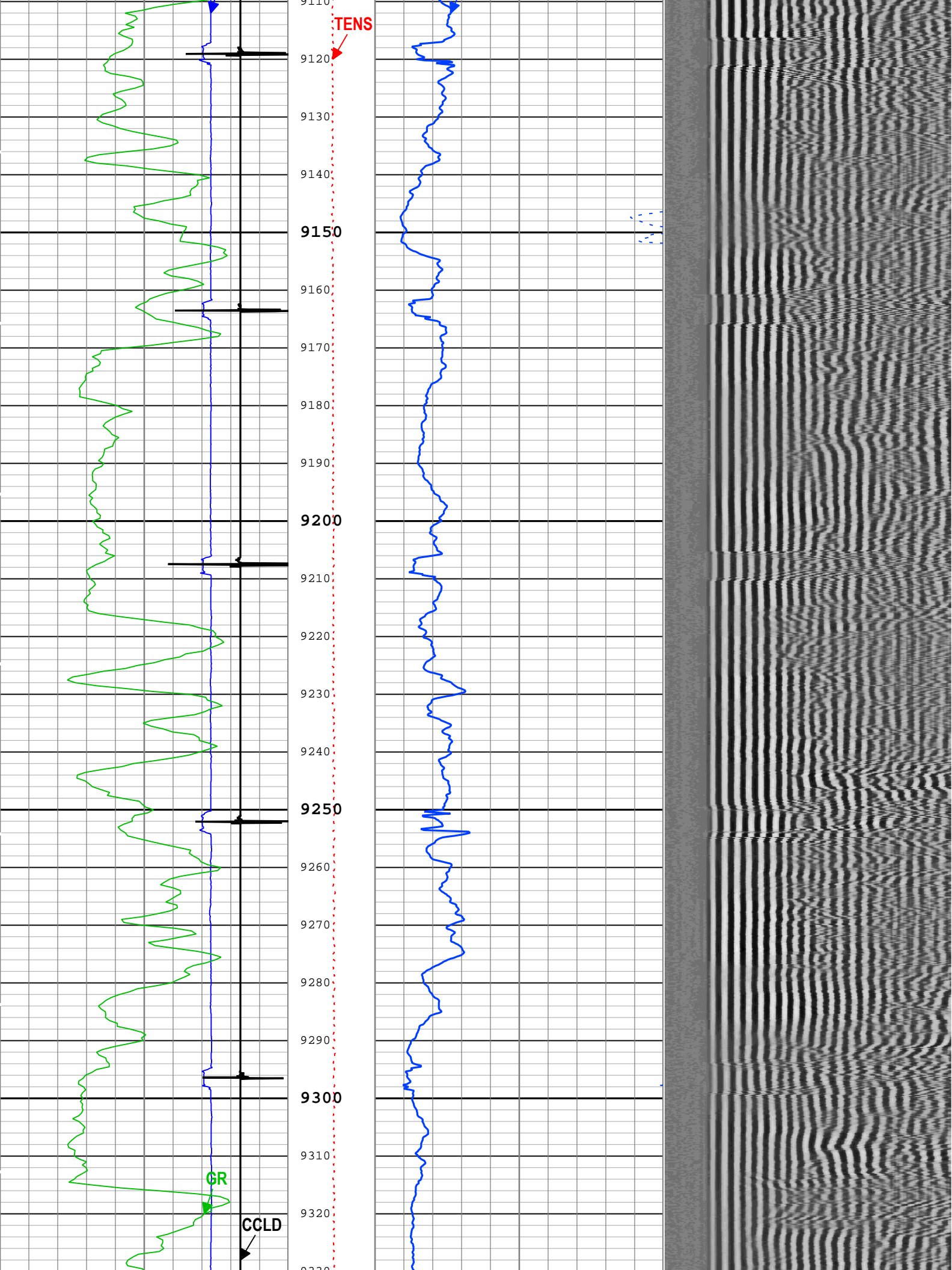


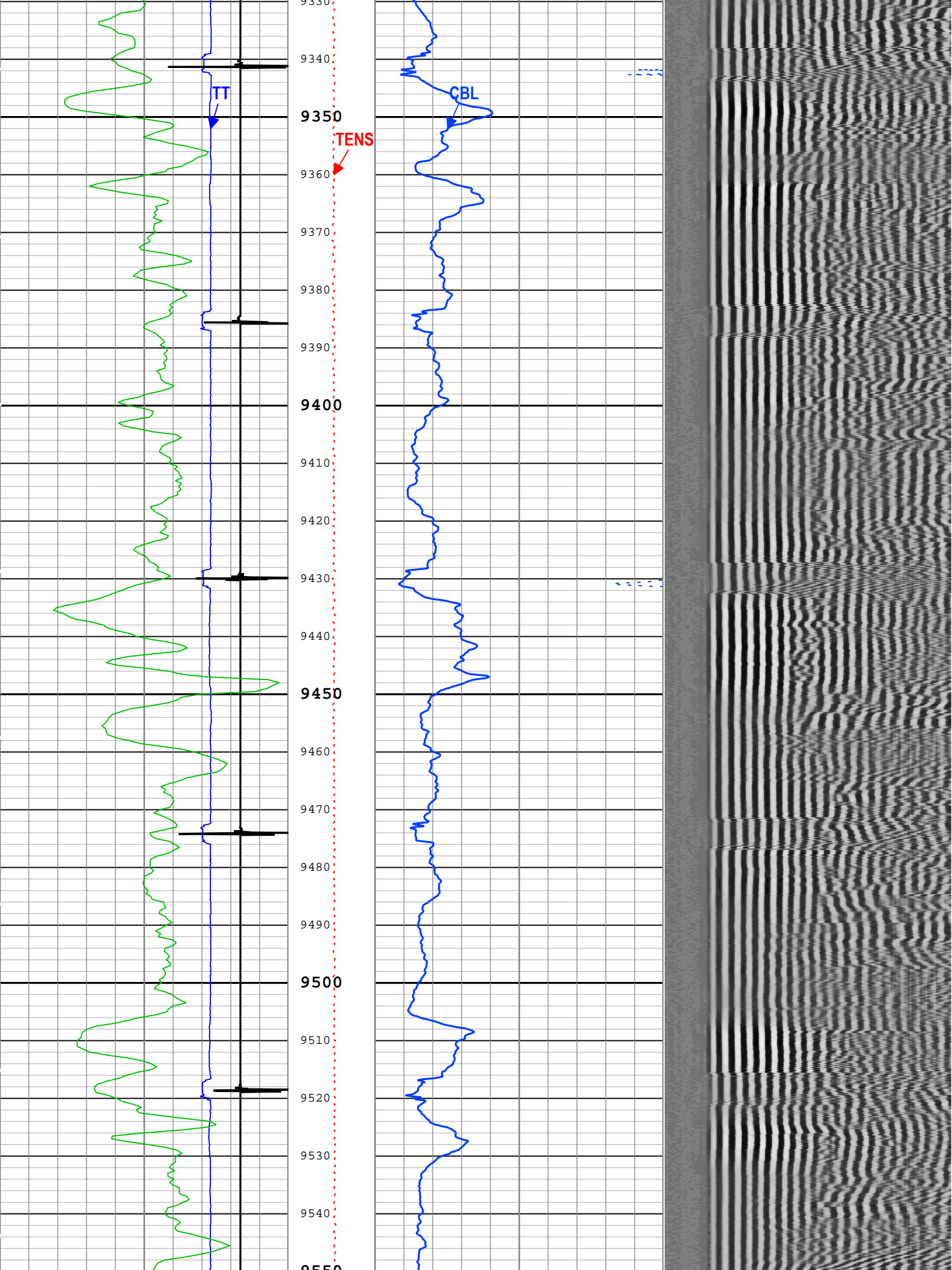


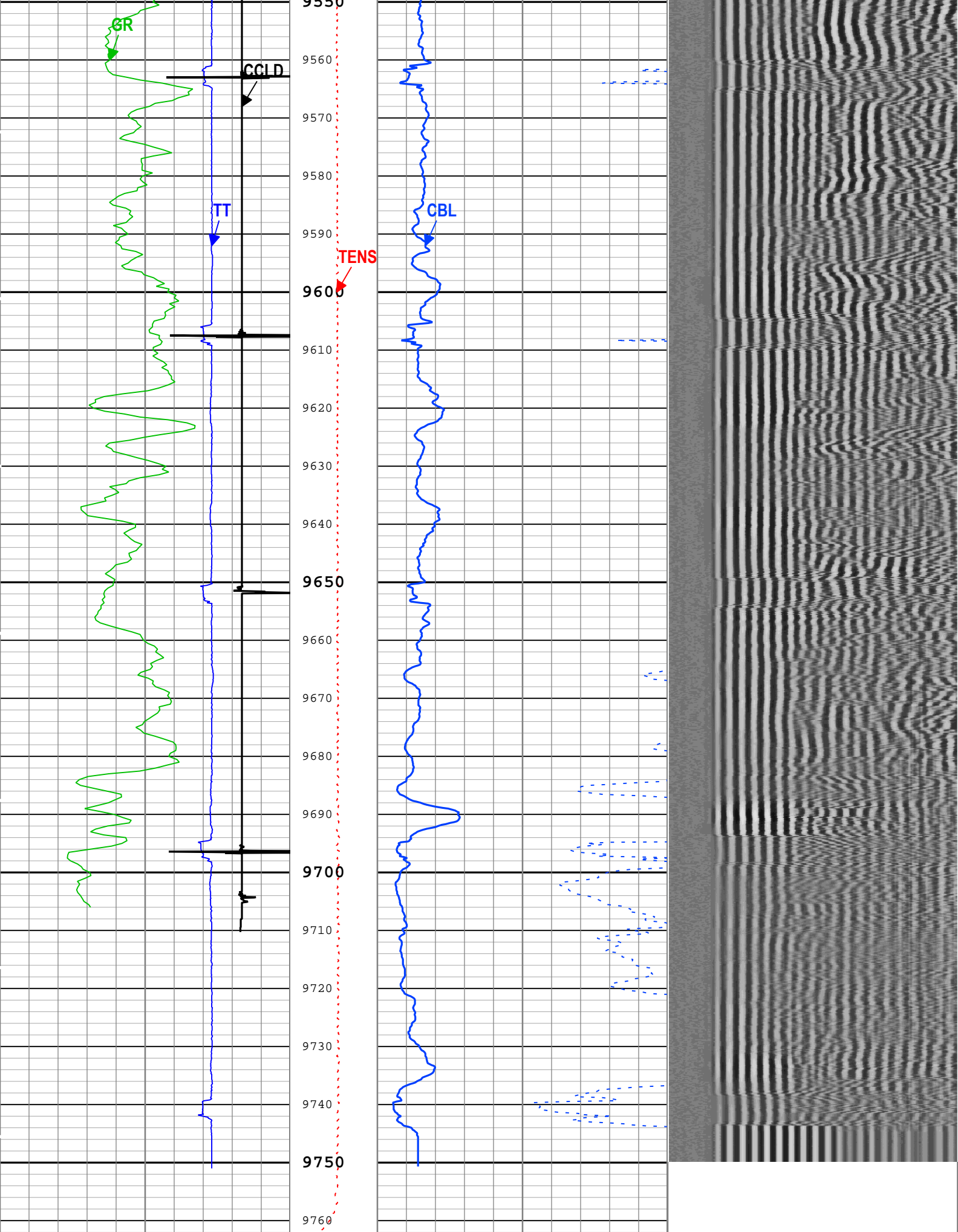












Transit Time for CBL (TT) SCMT-HC	Cable Tension	CBL Amplitude (CBL) SCMT-HC	Min	Amplitude	Max
400 100 200	0 10	0 10			

400 us	200	(TENS)	0	mv	10	200	us	1200
CCL Discriminated Amplitude (CCLD) PSTP-A		0	CBL Amplitude (CBL) SCMT-HC		100	VDL VariableDensity (VDL) SCMT-HC		
-5	V	1	0	mV	100			
Gamma Ray (GR) PSTP-A								
0	gAPI	150						

BIEP - Bond Index Event Pips SCMT-HC

TIME_1900 - Time Marked every 60.00 (s)

Description: Sonic CBL with VDL Format: Log (Sonic CBL with VDL) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 18-Sep-2018 05:25:53

Channel Processing Parameters

ONE: Parameters

Parameter	Description	Tool	Value	Unit
BHT	Bottom Hole Temperature	Borehole	276.2	degF
CB3G	SCMT CBL 3 ft Peak Detection T0_Delay and Noise Gate	SCMT-HC	233.29	us
CBLG	CBL Gate Width	SCMT-HC	43	us
CBRA	CBL LQC Reference Amplitude in Free Pipe	SCMT-HC	Depth Zoned	mV
THNO	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.25	in
DFD	Drilling Fluid Density	Borehole	8.49	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	24	ft
EPD	Elevation of Permanent Datum (PDAT) above Mean Sea Level	WLSESSION	6709	ft
GGRD	Geothermal Gradient	Borehole	1	0.01 degF/ft
GOBO_CURR	Good Bond in Arbitrary Cement	SCMT-HC	Depth Zoned	mV
GTSE	Generalized Temperature Selection, from Measured or Computed Temperature	Borehole	GTEM_LINEST(RT)	
MATT_CURR	Maximum Attenuation in Arbitrary Cement	SCMT-HC	Depth Zoned	dB/ft
MCI	Minimum Cemented Interval for Isolation	SCMT-HC	Depth Zoned	ft
MSA	Minimum Sonic Amplitude	SCMT-HC	Depth Zoned	mV
MSA_CURR	Minimum Sonic Amplitude in Arbitrary Cement	SCMT-HC	Depth Zoned	mV
PDAT	Permanent Datum	WLSESSION	GL	
RUN_SNUM	Run Sequence Number	WSDRUN	3	
SHT	Surface Hole Temperature	Borehole	68	degF
TD	Total Measured Depth	Borehole	9758	ft

Depth Zone Parameters

Parameter	Value	Start (ft)	Stop (ft)
CBRA	80	2800	9758
CBRA	0	9758	9762.5
GOBO_CURR	1.4	2800	9758
GOBO_CURR	0	9758	9762.5
MATT_CURR	16.92	2800	9758
MATT_CURR	0	9758	9762.5
MCI	14.81	2800	2944
MCI	1.25	2944	9758
MCI	0	9758	9762.5
MSA	0.51	2800	9758
MSA	0	9758	9762.5
MSA_CURR	0.51	2800	9758
MSA_CURR	0	9758	9762.5

All depths are actual.

Tool Control Parameters

ONE: Parameters

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

ONE

Software Version

Acquisition System	Version
Maxwell 2018 SP1	8.1.99839.3100
Application Patch	Wireline_Hotfix-Mandatory-2018SP1_8.1.102865

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[2]:Up	Up	9308.64 ft	9773.64 ft	17-Sep-2018 8:18:27 PM	17-Sep-2018 8:38:43 PM	ON	5.63 ft	Yes

All depths are referenced to toolstring zero

Log

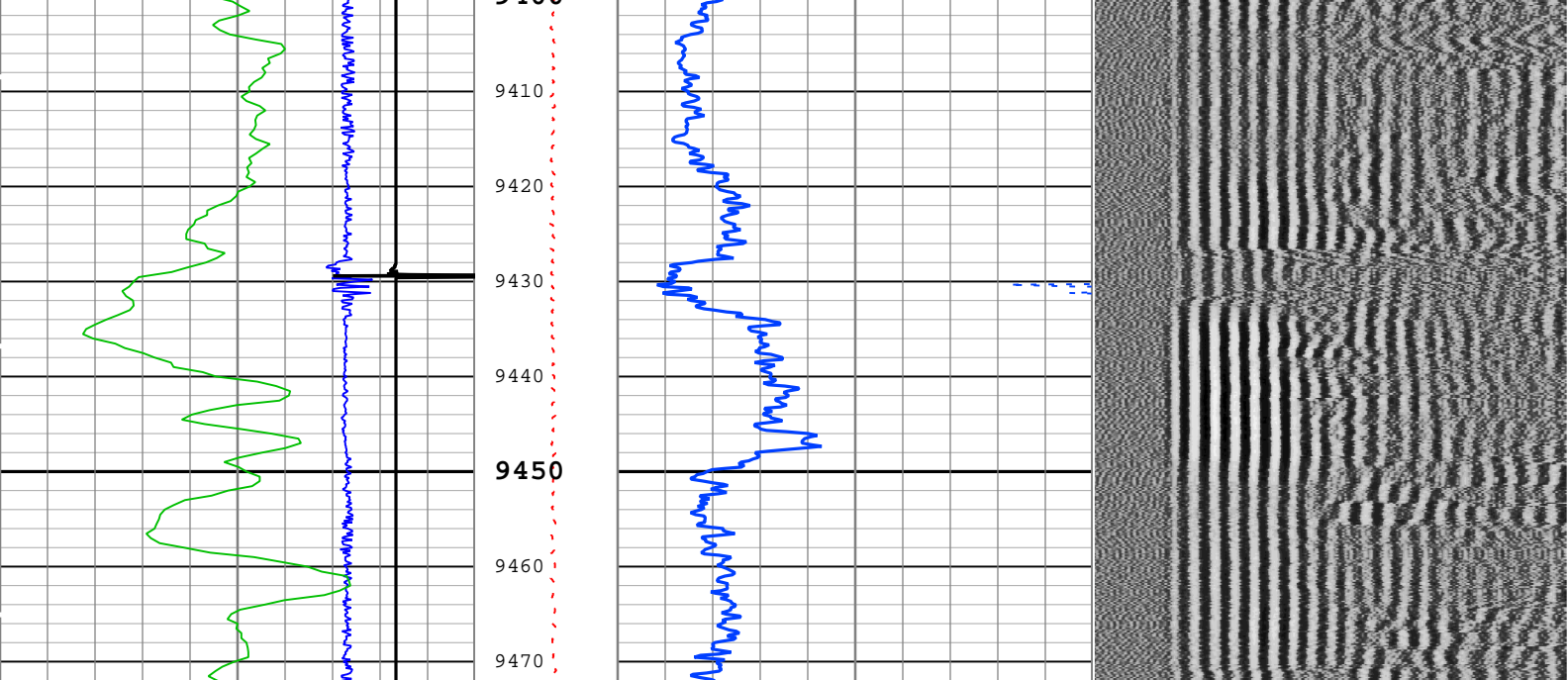
Company:Caerus Operating LLC Well:NPR 24B-10 596
ONE: Log[2]:Up:S006

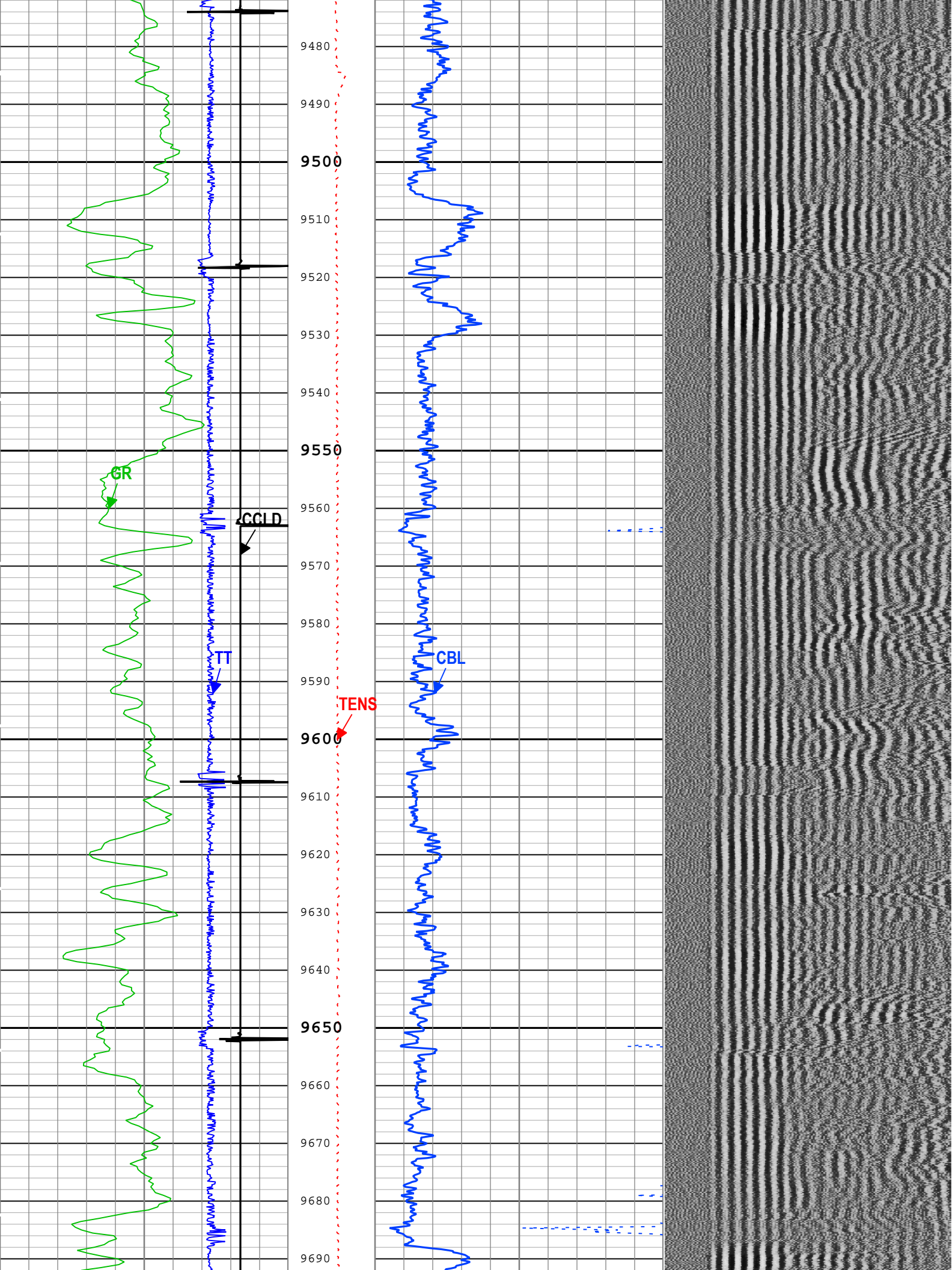
Description: Sonic CBL with VDL Format: Log (Sonic CBL with VDL) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 18-Sep-2018 05:26:00

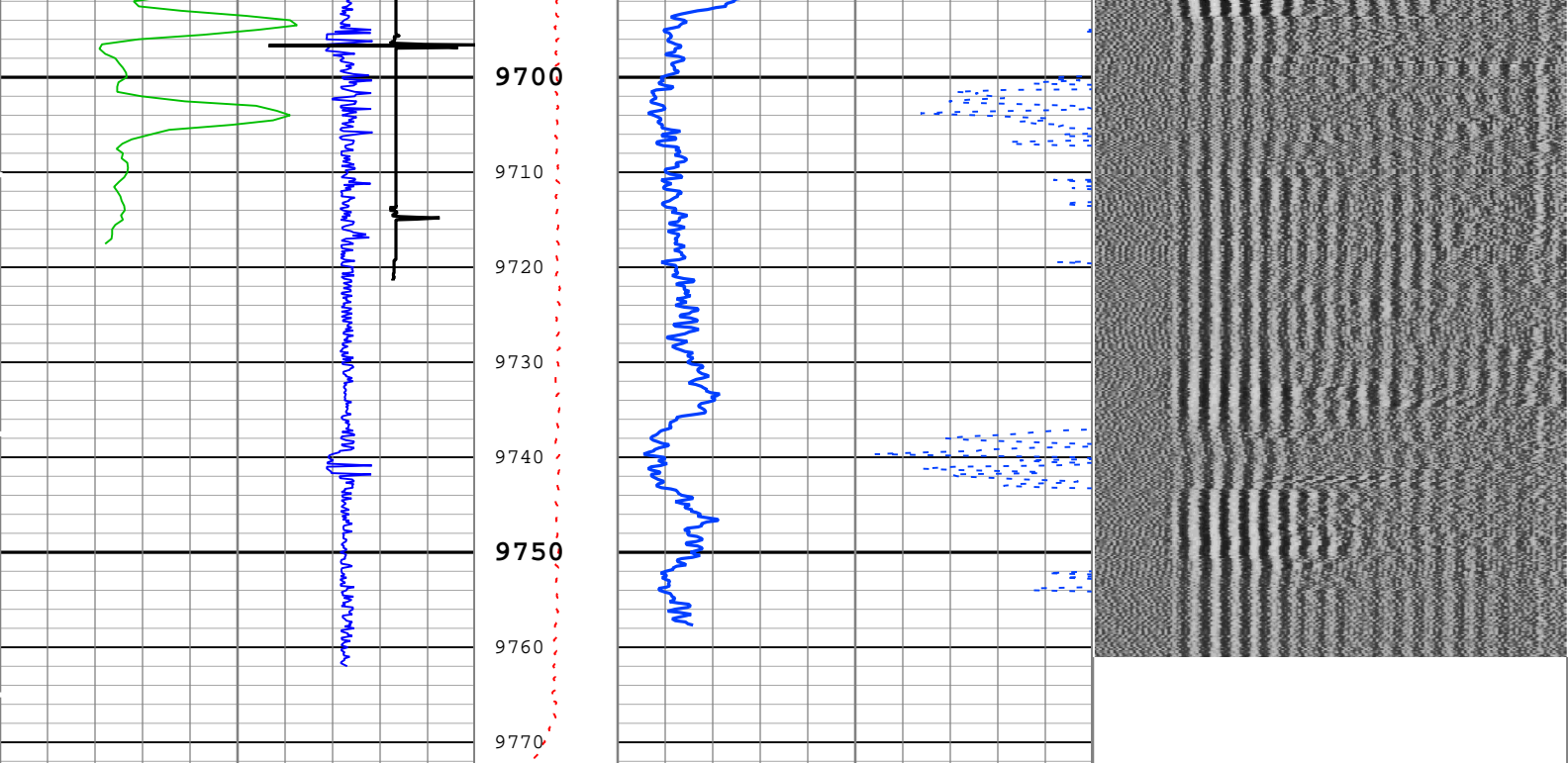
■ BIEP - Bond Index Event Pips SCMT-HC

TIME_1900 - Time Marked every 60.00 (s)

Transit Time for CBL (TT) SCMT-HC		Cable Tension (TENS)	CBL Amplitude (CBL) SCMT-HC		VDL VariableDensity (VDL) SCMT-HC
400 us	200		0 mV	10	
CCL Discriminated Amplitude (CCLD) PSTP-A		-5 V	CBL Amplitude (CBL) SCMT-HC		Min Amplitude Max
1			0 mV		
Gamma Ray (GR) PSTP-A		0 lbf 3000	CBL Amplitude (CBL) SCMT-HC		200 us 1200
gAPI 150			0 mV		







Transit Time for CBL (TT) SCMT-HC		Cable Tension (TENS) 0 lbf 3000	CBL Amplitude (CBL) SCMT-HC		Min Amplitude Max
400 us	200		0 mV	10	
CCL Discriminated Amplitude (CCLD) PSTP-A		Cable Tension (TENS) 0 lbf 3000	CBL Amplitude (CBL) SCMT-HC		VDL VariableDensity (VDL) SCMT-HC
-5 V	1		0 mV	100	
Gamma Ray (GR) PSTP-A					200 us 1200
0 gAPI	150				

TIME_1900 - Time Marked every 60.00 (s)

■ BIEP - Bond Index Event Pips SCMT-HC

Description: Sonic CBL with VDL Format: Log (Sonic CBL with VDL) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 18-Sep-2018 05:26:00

Channel Processing Parameters

ONE: Parameters

Parameter	Description	Tool	Value	Unit
BHT	Bottom Hole Temperature	Borehole	276.2	degF
CB3G	SCMT CBL 3 ft Peak Detection T0_Delay and Noise Gate	SCMT-HC	243.13	us
CBLG	CBL Gate Width	SCMT-HC	27	us
CBRA	CBL LQC Reference Amplitude in Free Pipe	SCMT-HC	Depth Zoned	mV
THNO	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.25	in
DFD	Drilling Fluid Density	Borehole	8.49	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	24	ft
EPD	Elevation of Permanent Datum (PDAT) above Mean Sea Level	WLSESSION	6709	ft
GGRD	Geothermal Gradient	Borehole	1	0.01 degF/ft
GOBO_CURR	Good Bond in Arbitrary Cement	SCMT-HC	Depth Zoned	mV
GTSE	Generalized Temperature Selection, from Measured or Computed Temperature	Borehole	GTEM_LINEST(RT)	
MATT_CURR	Maximum Attenuation in Arbitrary Cement	SCMT-HC	Depth Zoned	dB/ft
MCI	Minimum Cemented Interval for Isolation	SCMT-HC	Depth Zoned	ft
MSA	Minimum Sonic Amplitude	SCMT-HC	Depth Zoned	mV
MSA_CURR	Minimum Sonic Amplitude in Arbitrary Cement	SCMT-HC	Depth Zoned	mV

MSA_CURR	Minimum Sonic Amplitude in Arbitrary Cement	SCMT-HC	Depth Zoned	ft
PDAT	Permanent Datum	WLSESSION	GL	
RUN_SNUM	Run Sequence Number	WSDRUN	3	
SHT	Surface Hole Temperature	Borehole	68	degF
TD	Total Measured Depth	Borehole	9758	ft

Depth Zone Parameters

Parameter	Value	Start (ft)	Stop (ft)
CBRA	80	9400	9758
CBRA	0	9758	9773.67
GOBO_CURR	1.4	9400	9758
GOBO_CURR	0	9758	9773.67
MATT_CURR	16.92	9400	9758
MATT_CURR	0	9758	9773.67
MCI	1.25	9400	9758
MCI	0	9758	9773.67
MSA	0.51	9400	9758
MSA	0	9758	9773.67
MSA_CURR	0.51	9400	9758
MSA_CURR	0	9758	9773.67

All depth are actual.

Tool Control Parameters

ONE: Parameters

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

ONE

Software Version

Acquisition System	Version
Maxwell 2018 SP1	8.1.99839.3100
Application Patch	Wireline_Hotfix-Mandatory-2018SP1_8.1.102865

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[3]:Up	Up	97.03 ft	9762.48 ft	17-Sep-2018 9:23:14 PM	18-Sep-2018 2:34:32 AM	ON	8.10 ft	Yes

All depths are referenced to toolstring zero

Log	Company:Caerus Operating LLC	Well:NPR 24B-10 596
	ONE: Log[3]:Up:S006	

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: 18-Sep-2018 05:26:02

TIME_1900 - Time Marked every 60.00 (s)

— TIME_1900 - Elapsed time since midnight, 30 December 1899 every 60.00 (s)

— IHV - Integrated Hole Volume every 10.00 (ft3)

— IHV - Integrated Hole Volume every 100.00 (ft3)

— ICV - Integrated Cement Volume every 10.00 (ft3)

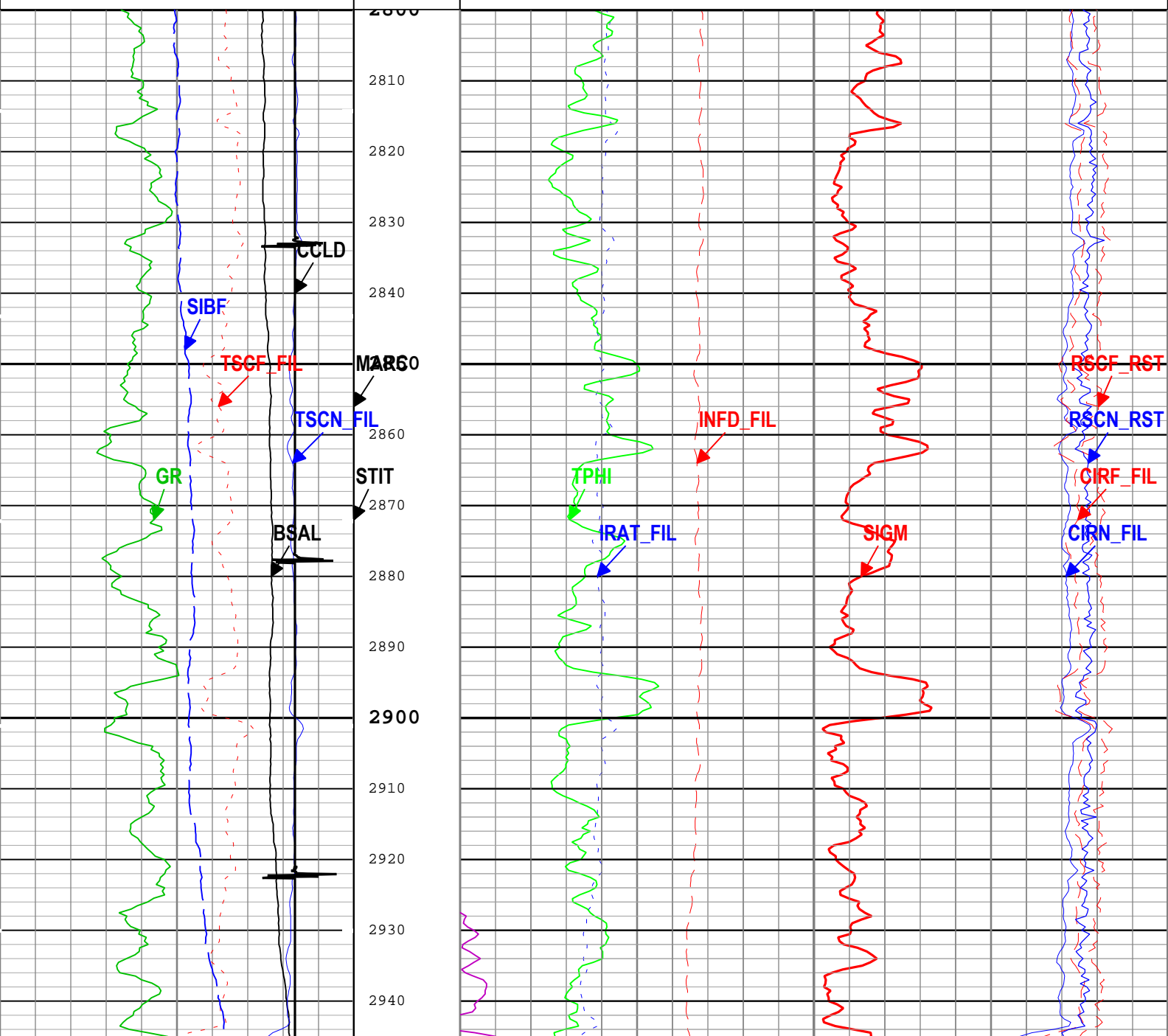
— ICV - Integrated Cement Volume every 100.00 (ft3)

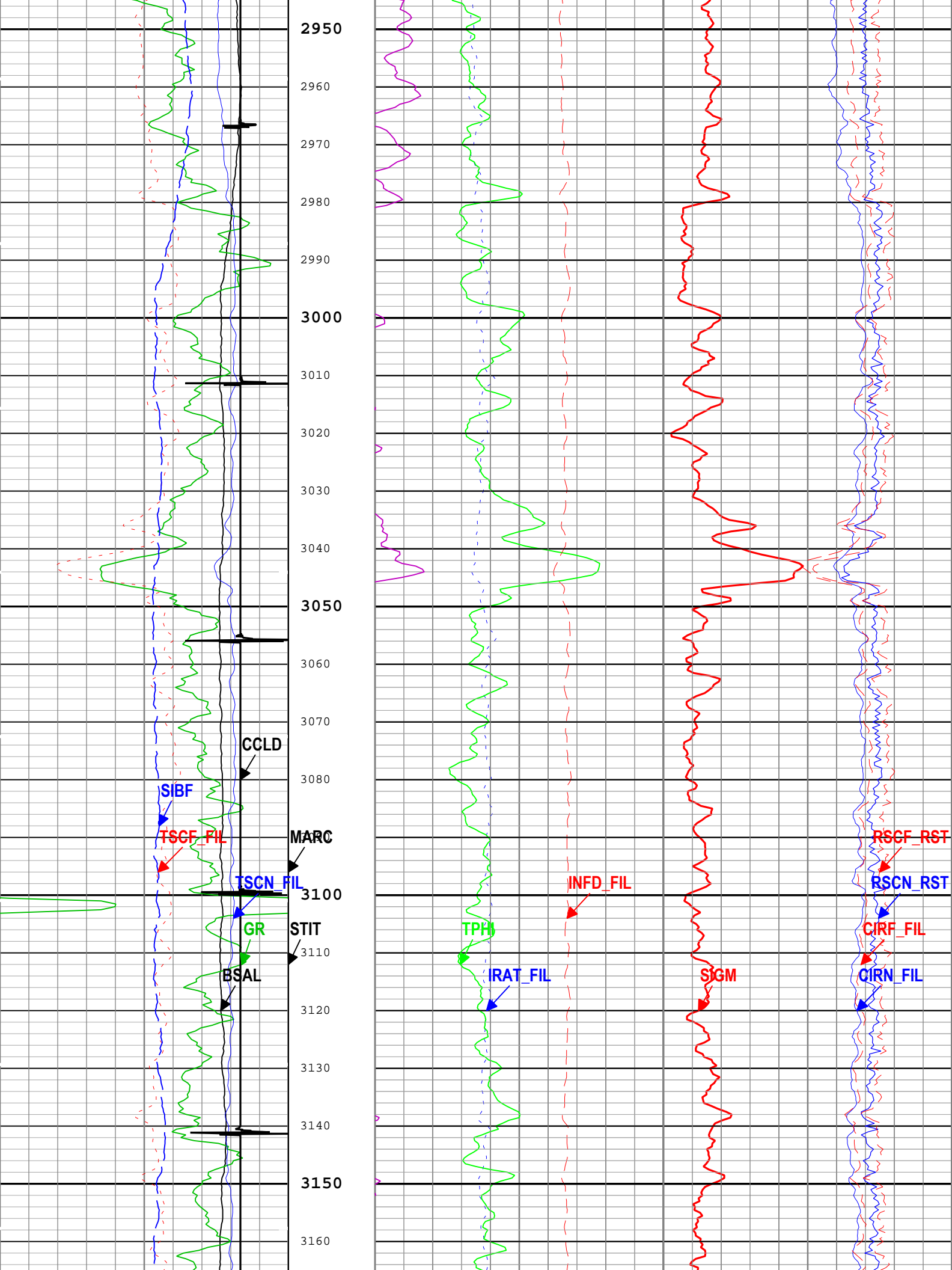
Borehole Salinity (BSAL) RST-C		
450	ppk	-50
Gamma Ray (GR) PSTP-A		
0	gAPI	150
Total Selected Count Rate Near Detector Filtered (TSCN_FIL) RST-C		
30000	1/s	0
Total Selected Count Rate Far Detector Filtered (TSCF_FIL) RST-C		
12000	1/s	0
Sigma Borehole Fluid (SIBF) RST-C		
100	cu	0
CCL Discriminated Amplitude (CCLD) PSTP-A		
-5	V	1

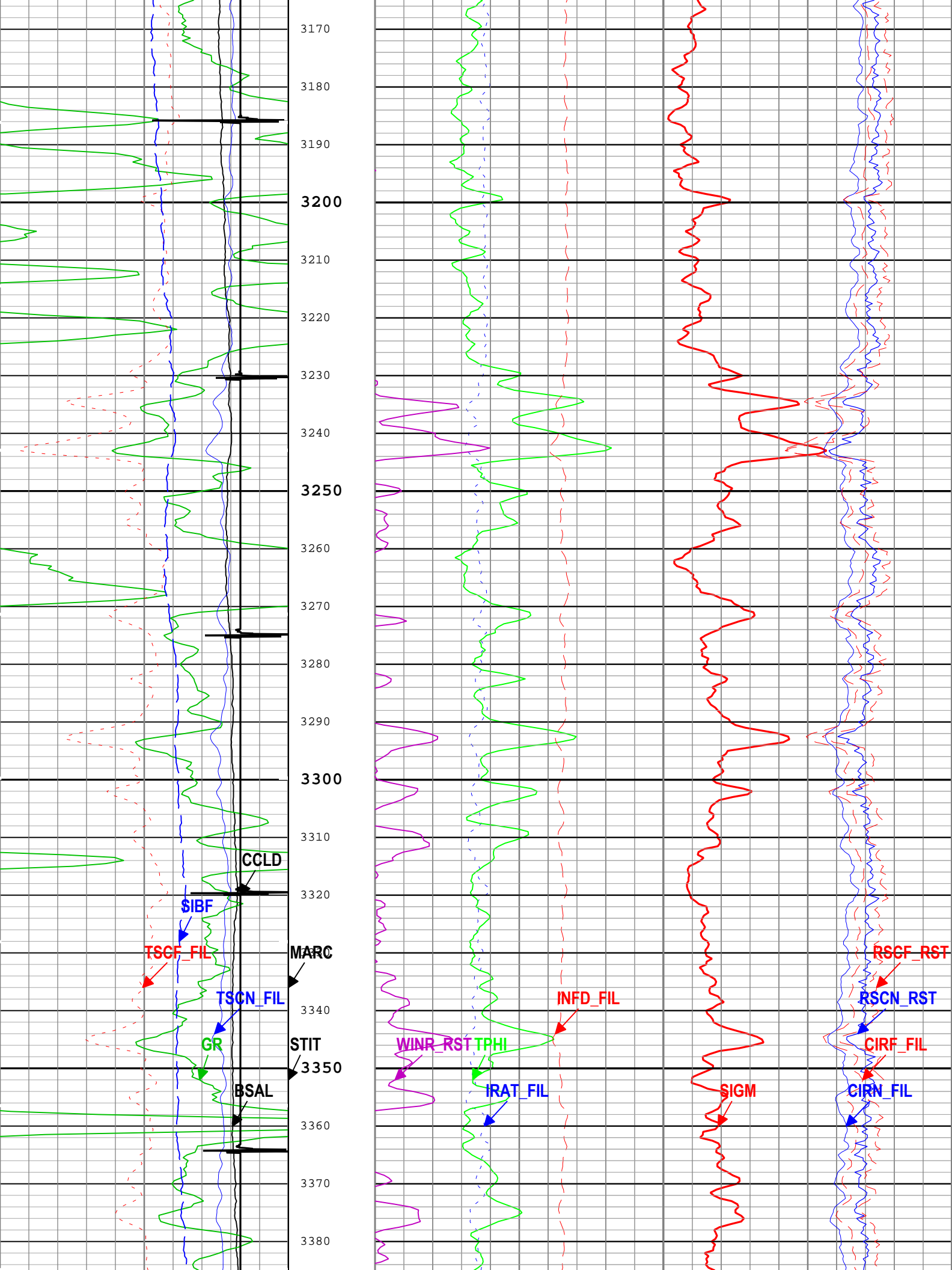
Stuck Tool Indicator, Total (STIT)	0	ft	50
Cable Drag From STIA to STIT	0.75		0
Tool_Tot. Drag From D3T to STIT	0.6	ft3/ft3	0
Minitron Arc Count (MARC) RST-C	60	cu	0

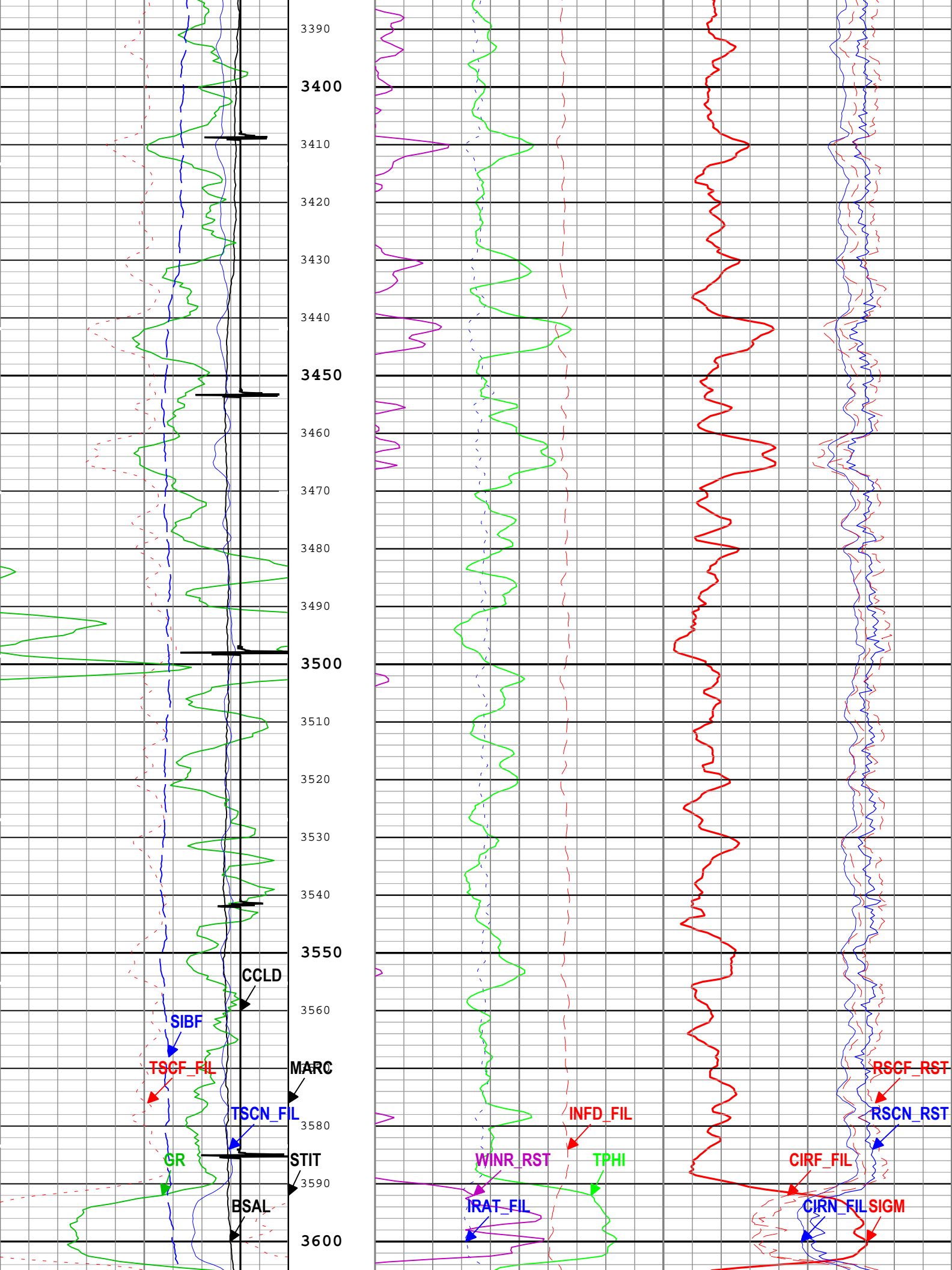
Inelastic Ratio Filtered (IRAT_FIL) RST-C		
0.75		0
Thermal Decay Porosity (TPHI) RST-C		
0.6	ft3/ft3	0
Gross Inelastic Count Rate Far Detector Filtered (INFD_FIL) RST-C		
10000	1/s	0
Formation Sigma (Neutron Capture Cross Section) (SIGM) RST-C		
60	cu	0
Weighted Inelastic Ratio (WINR_RST) RST-C		
0		0.4

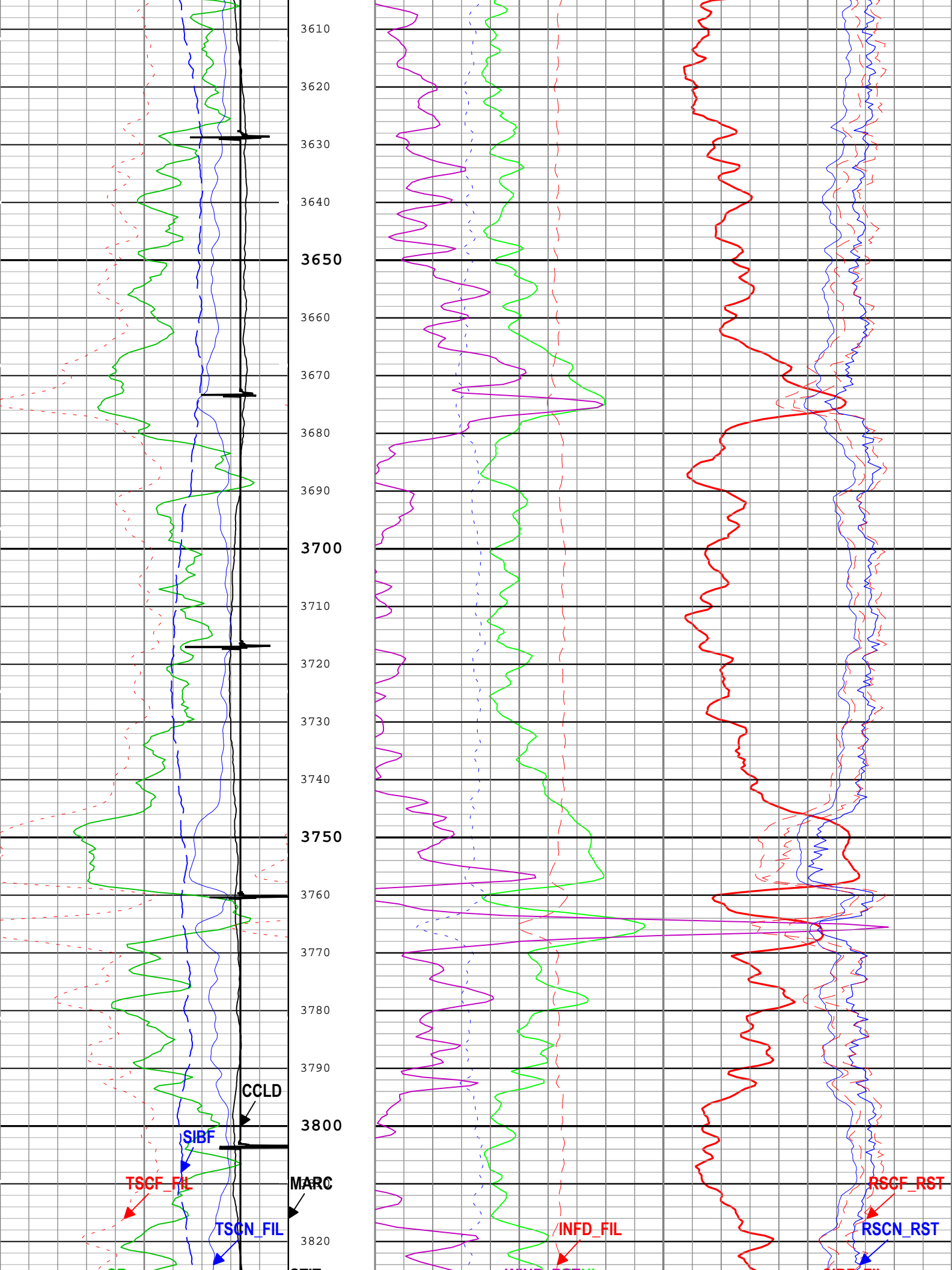
Capture to Inelastic Ratio Near Filtered (CIRN_FIL) RST-C	
2.5	0
Capture to Inelastic Ratio Far Filtered (CIRF_FIL) RST-C	
5	0
Near Detector Effective Unregulated Capture Count Rate (RSCN_RST) RST-C	
45	0
Far Detector Effective Unregulated Capture Count Rate (RSCF_RST) RST-C	
45	0

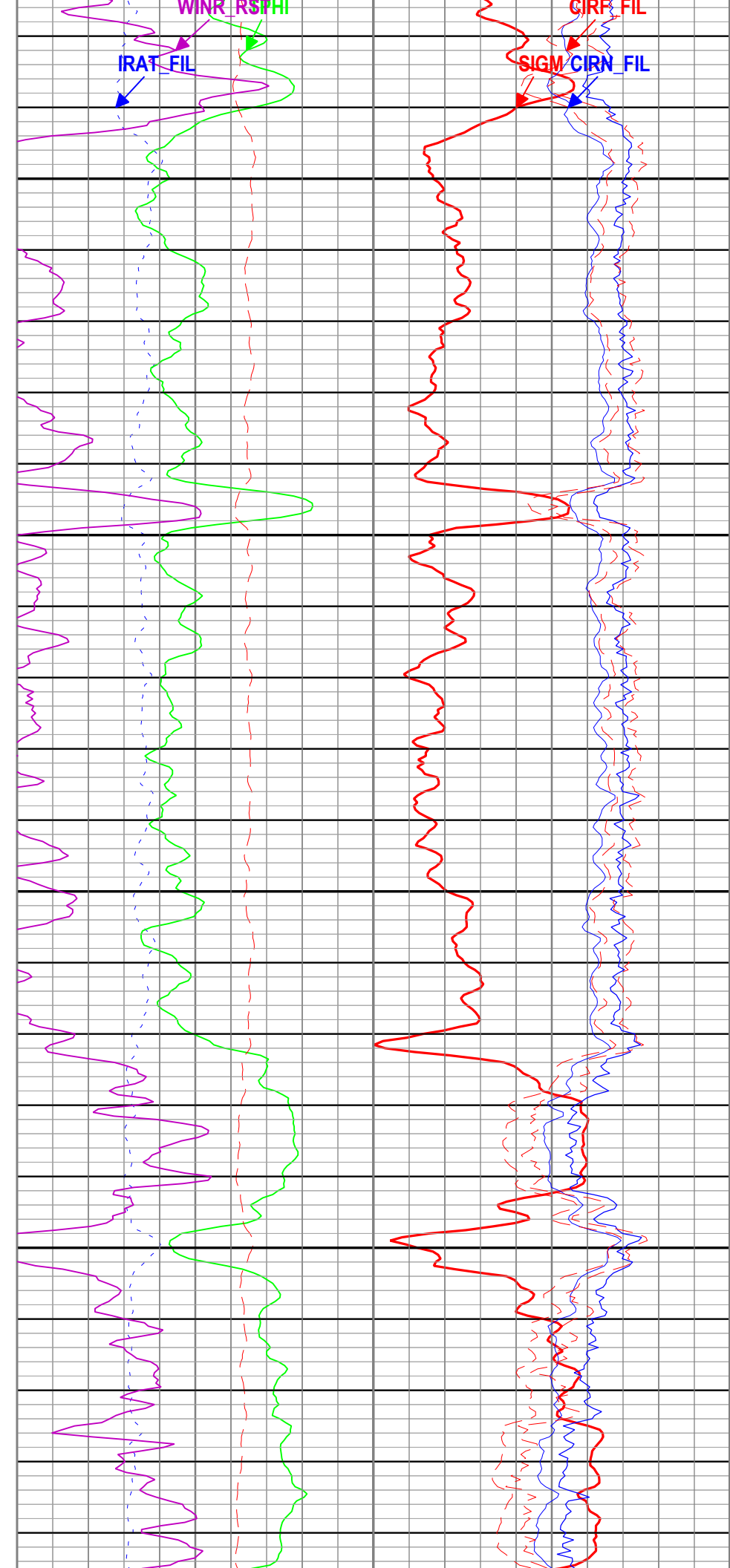
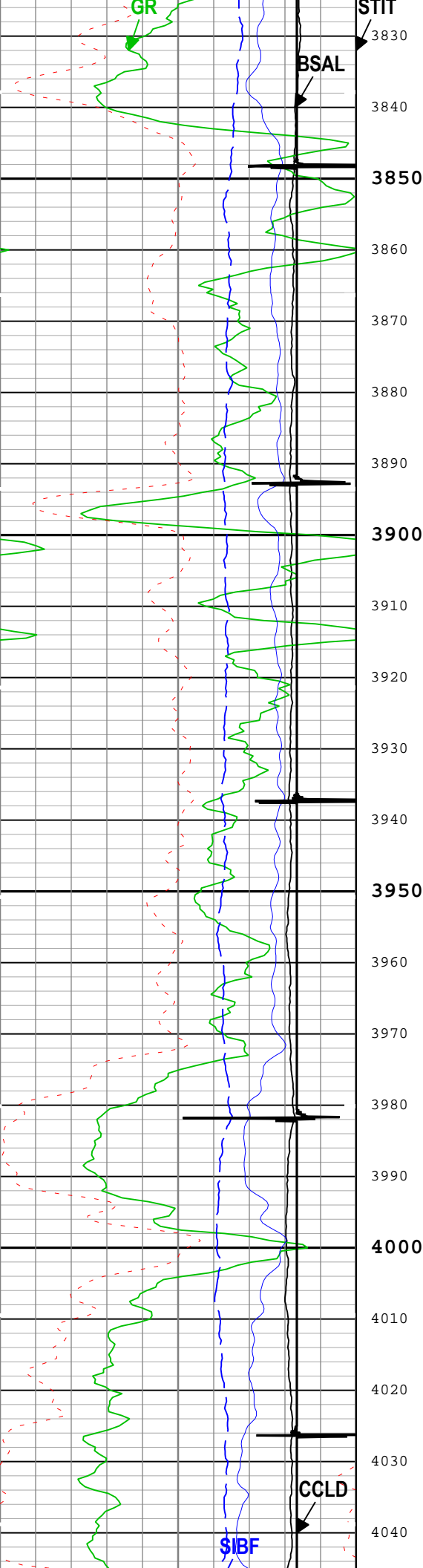


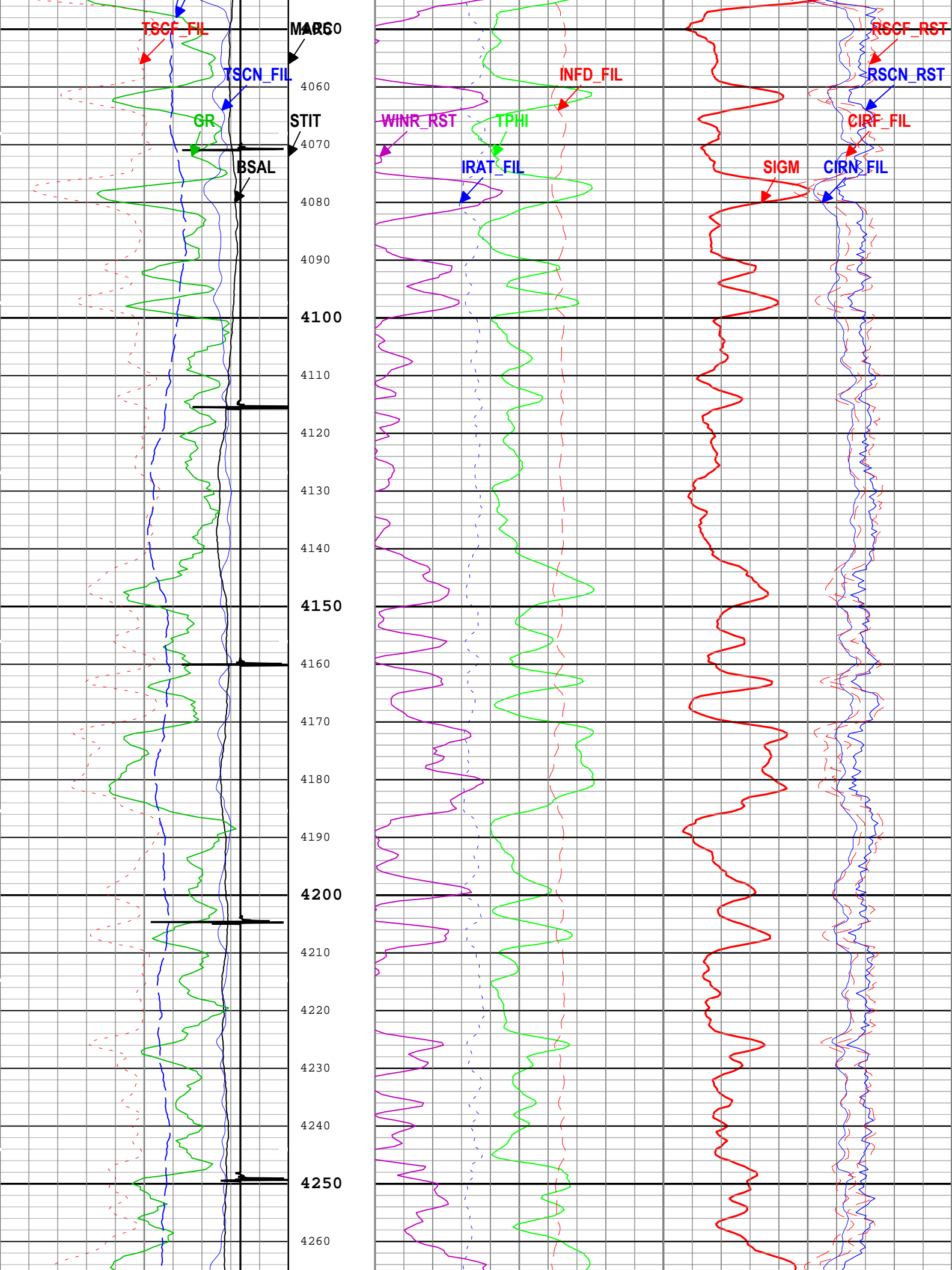


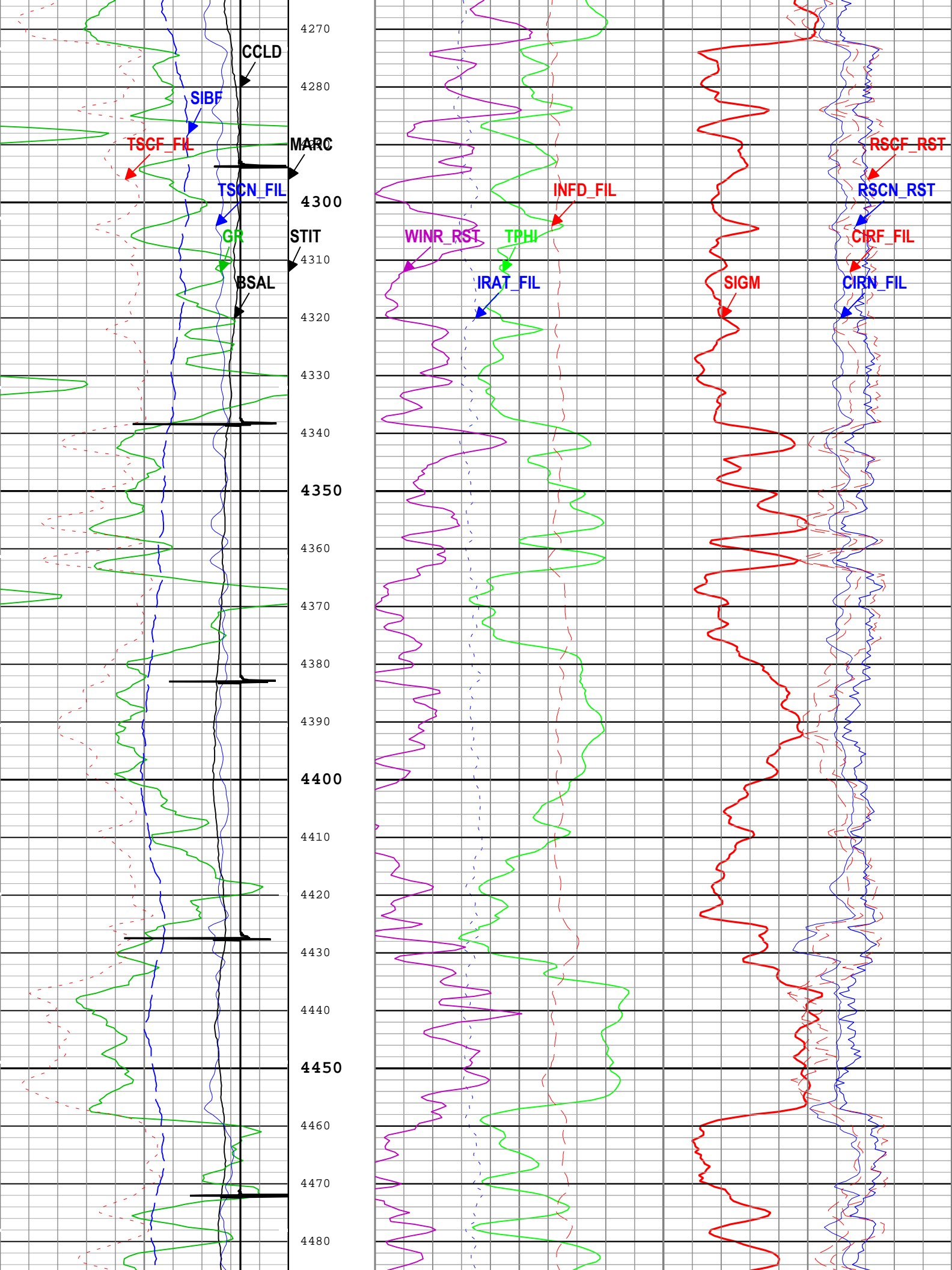


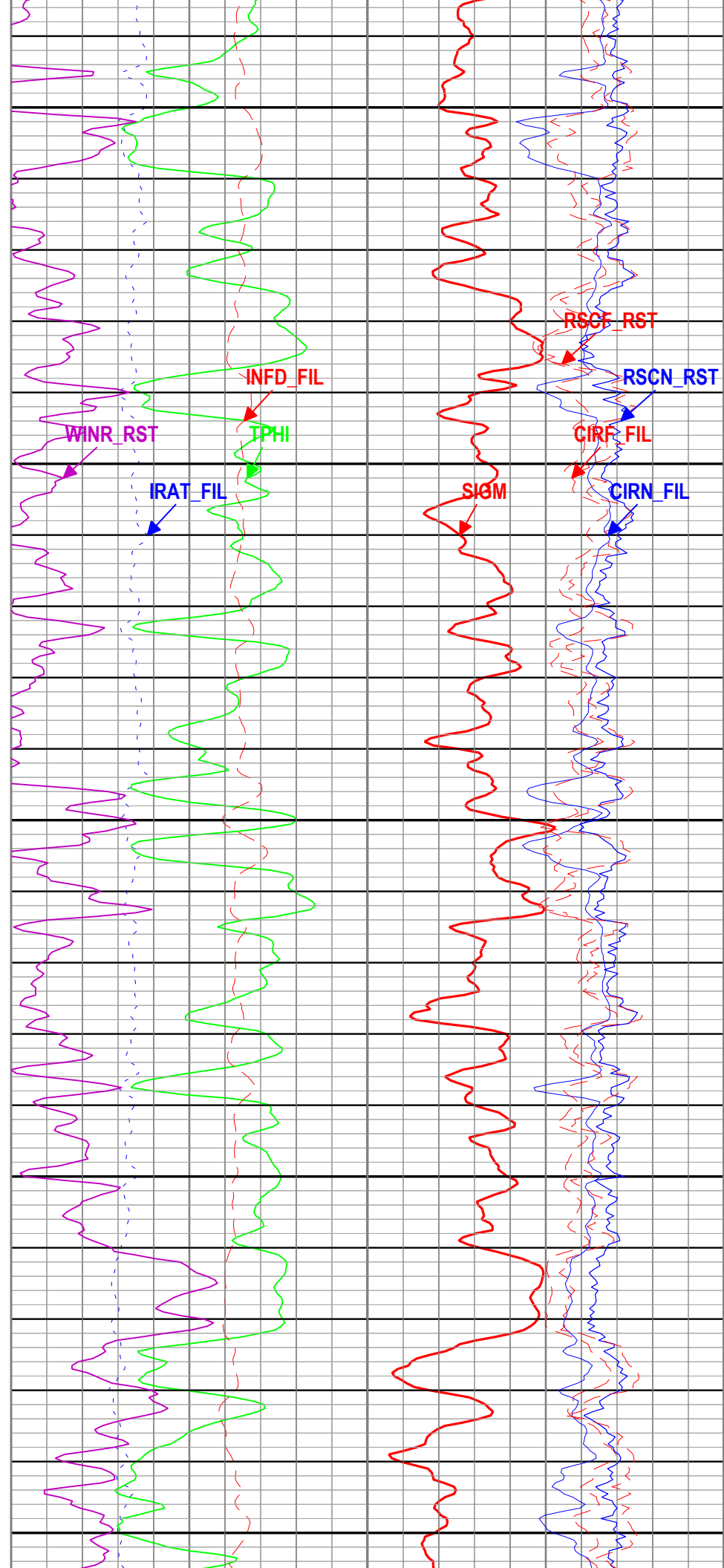
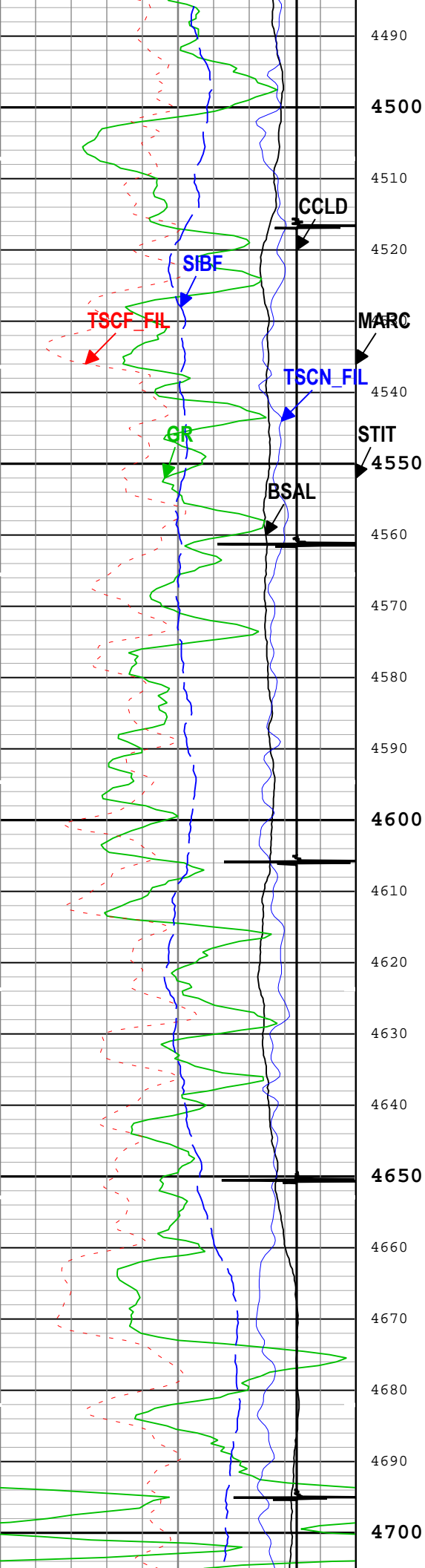


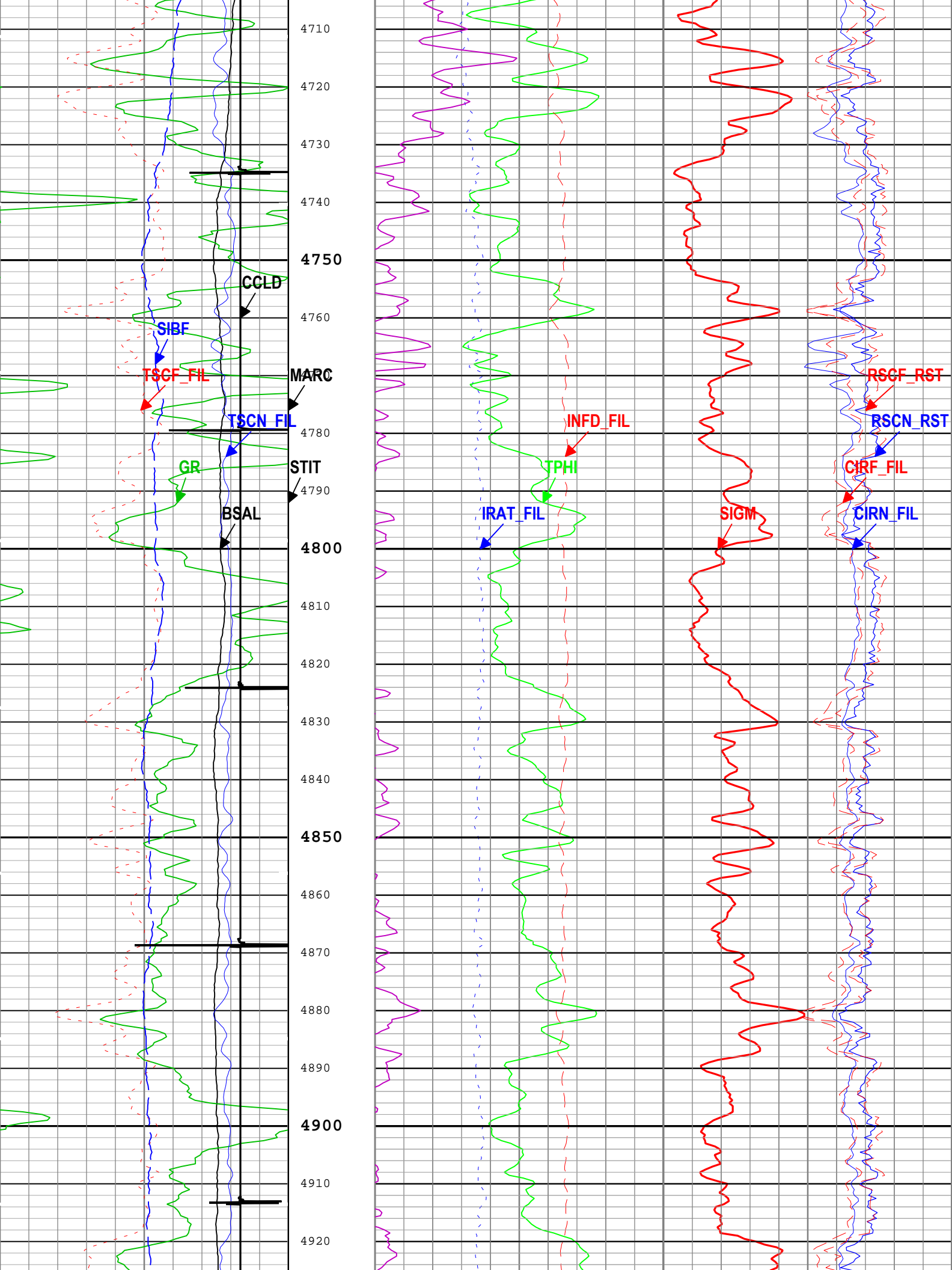


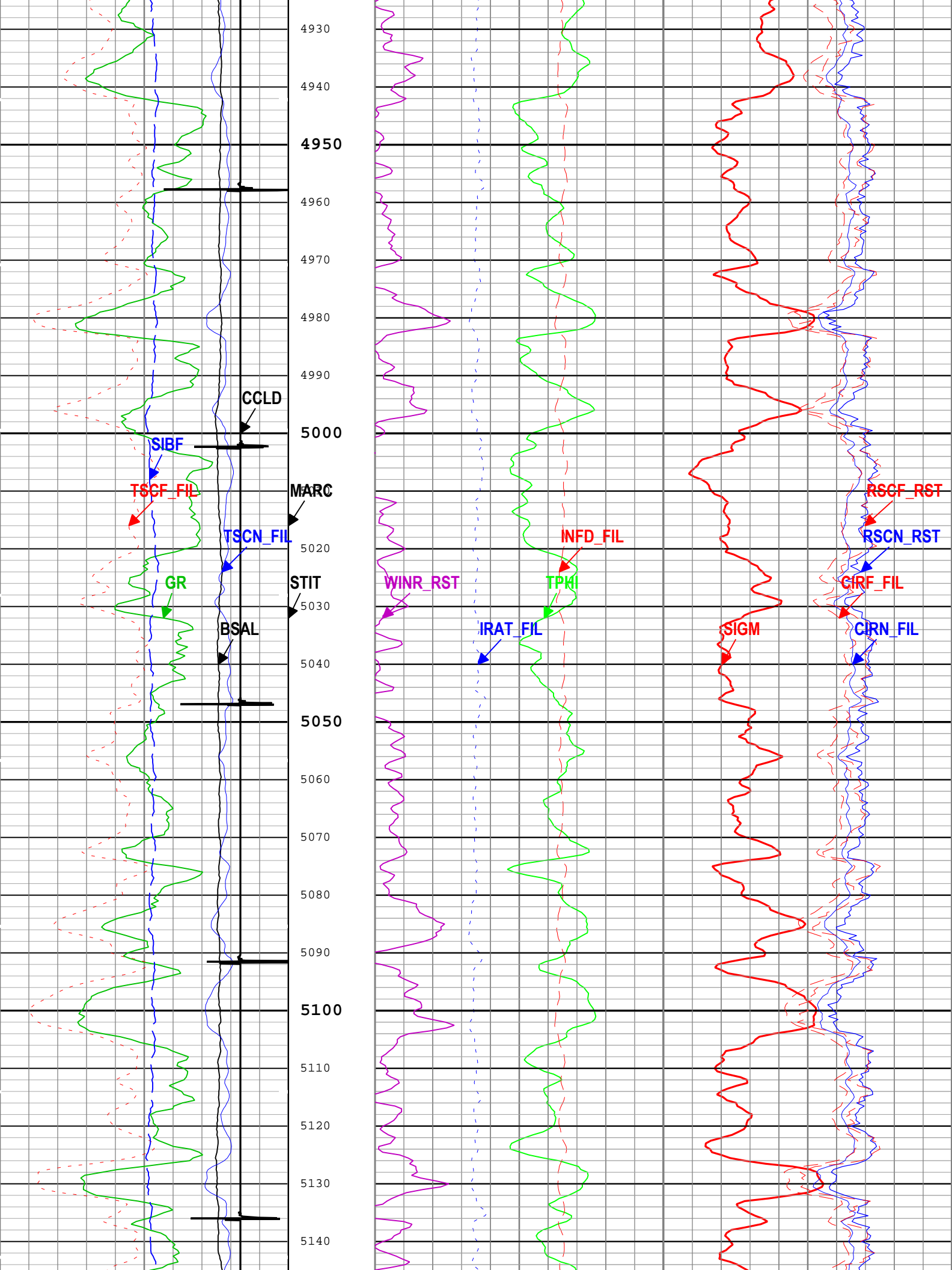


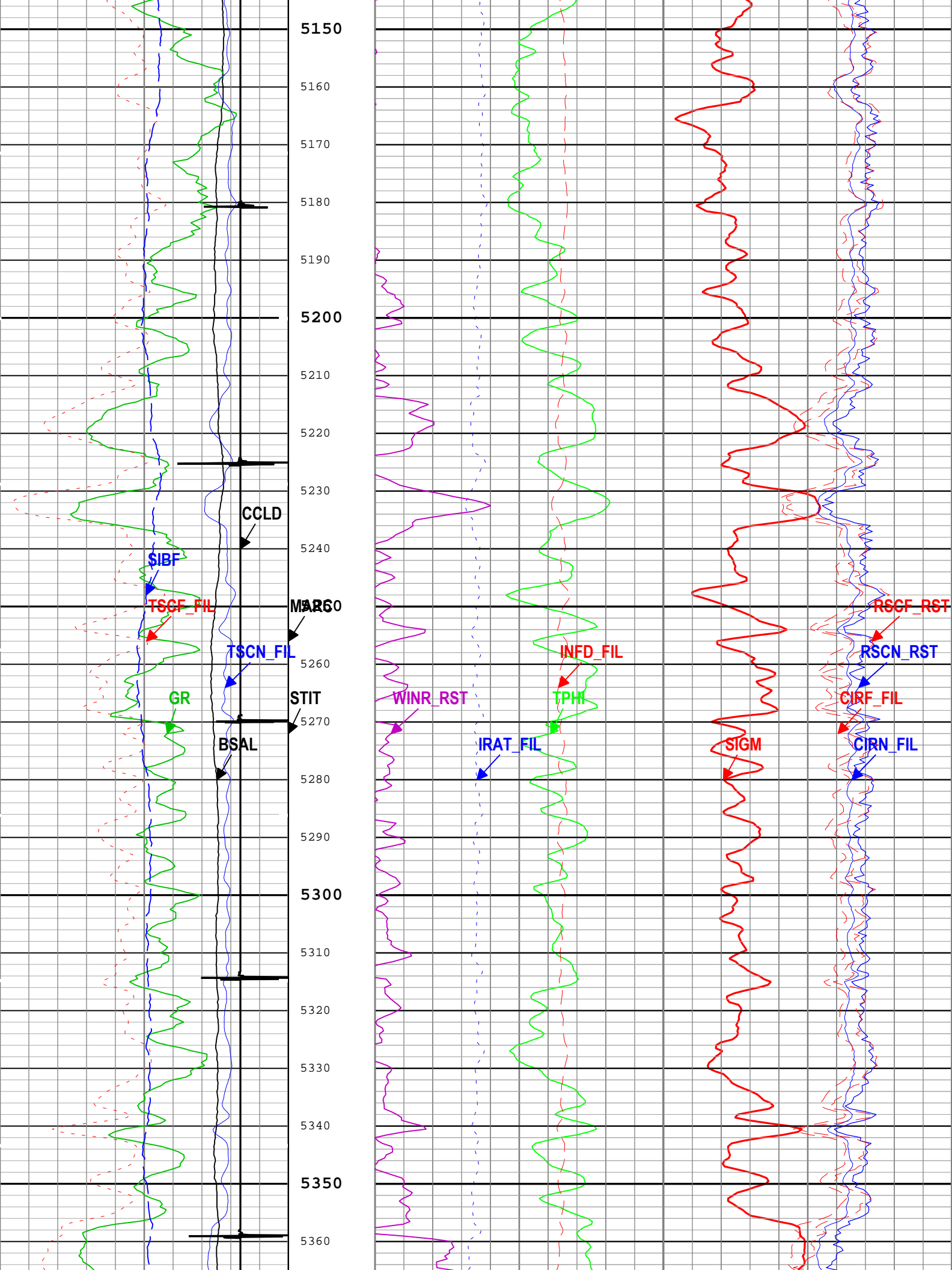


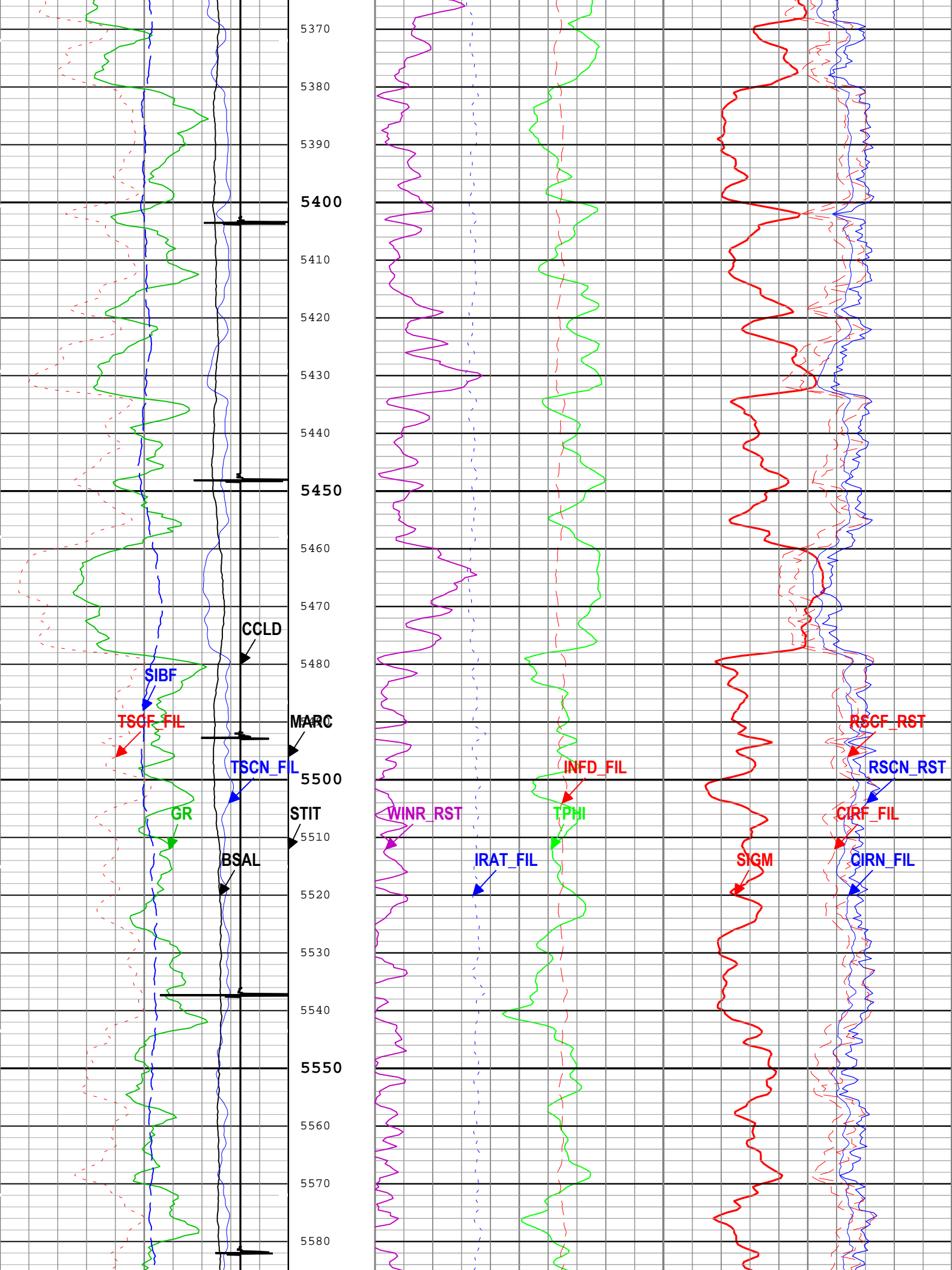


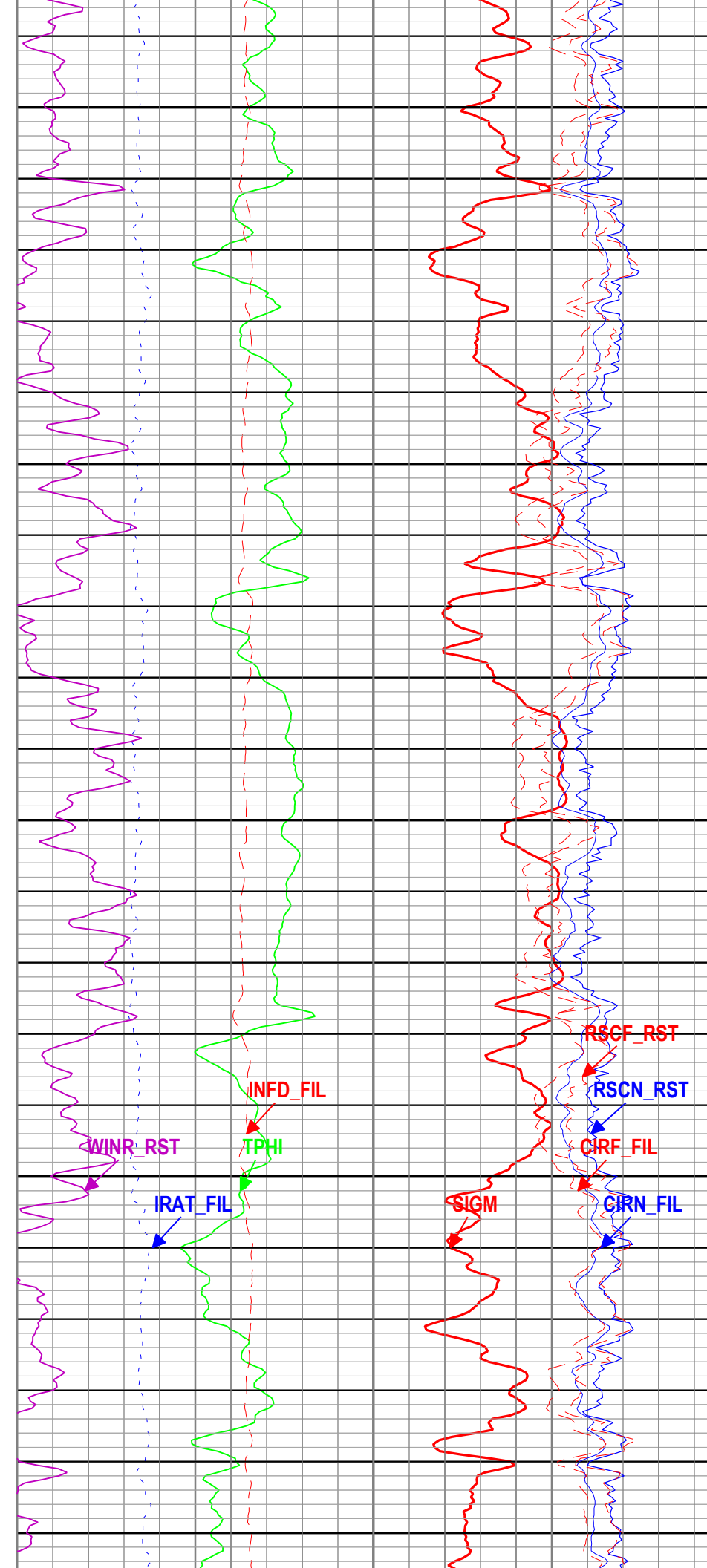
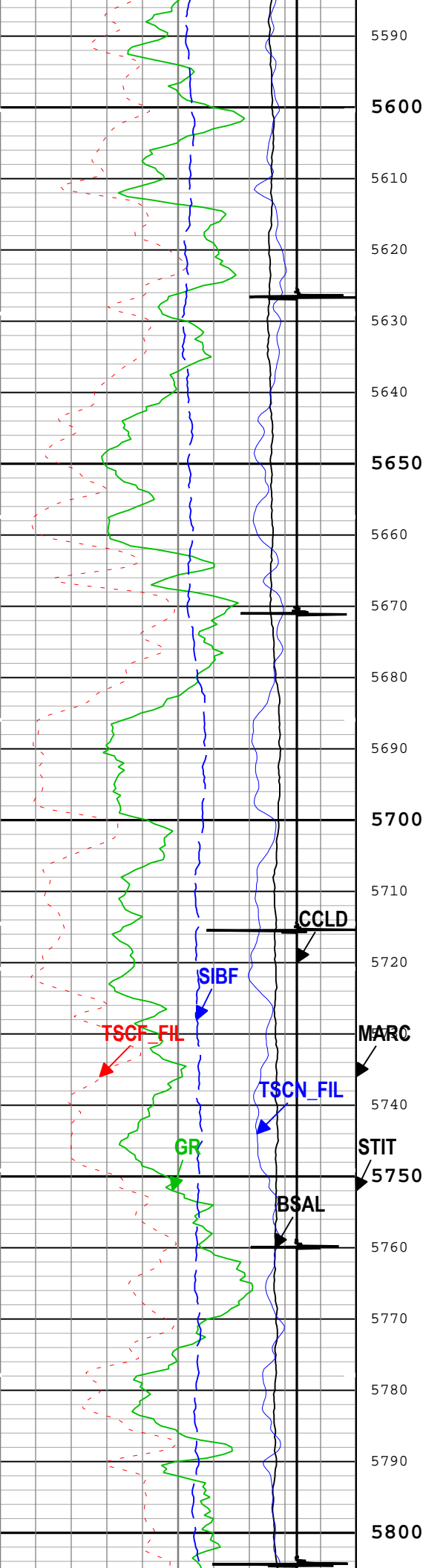


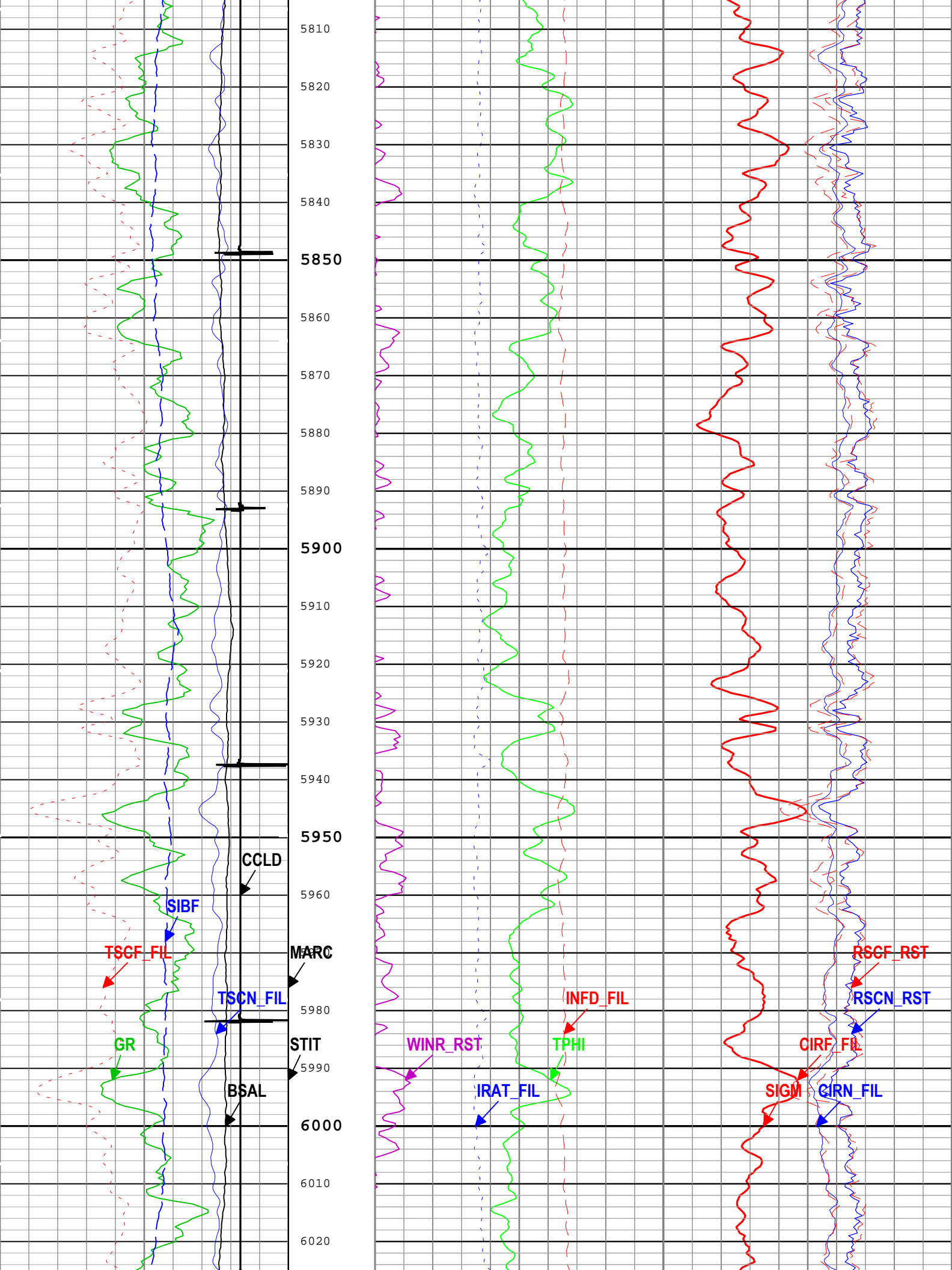


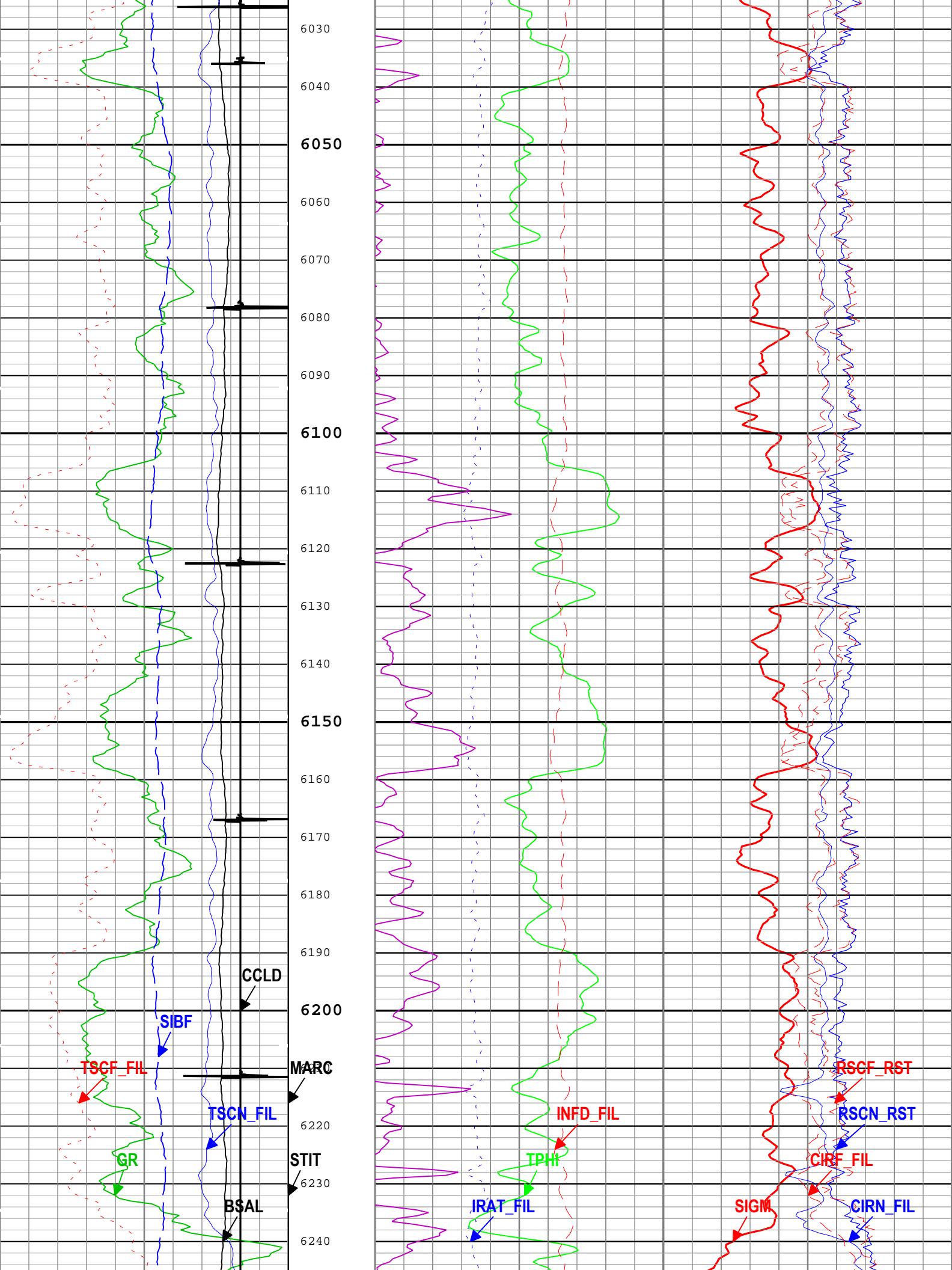


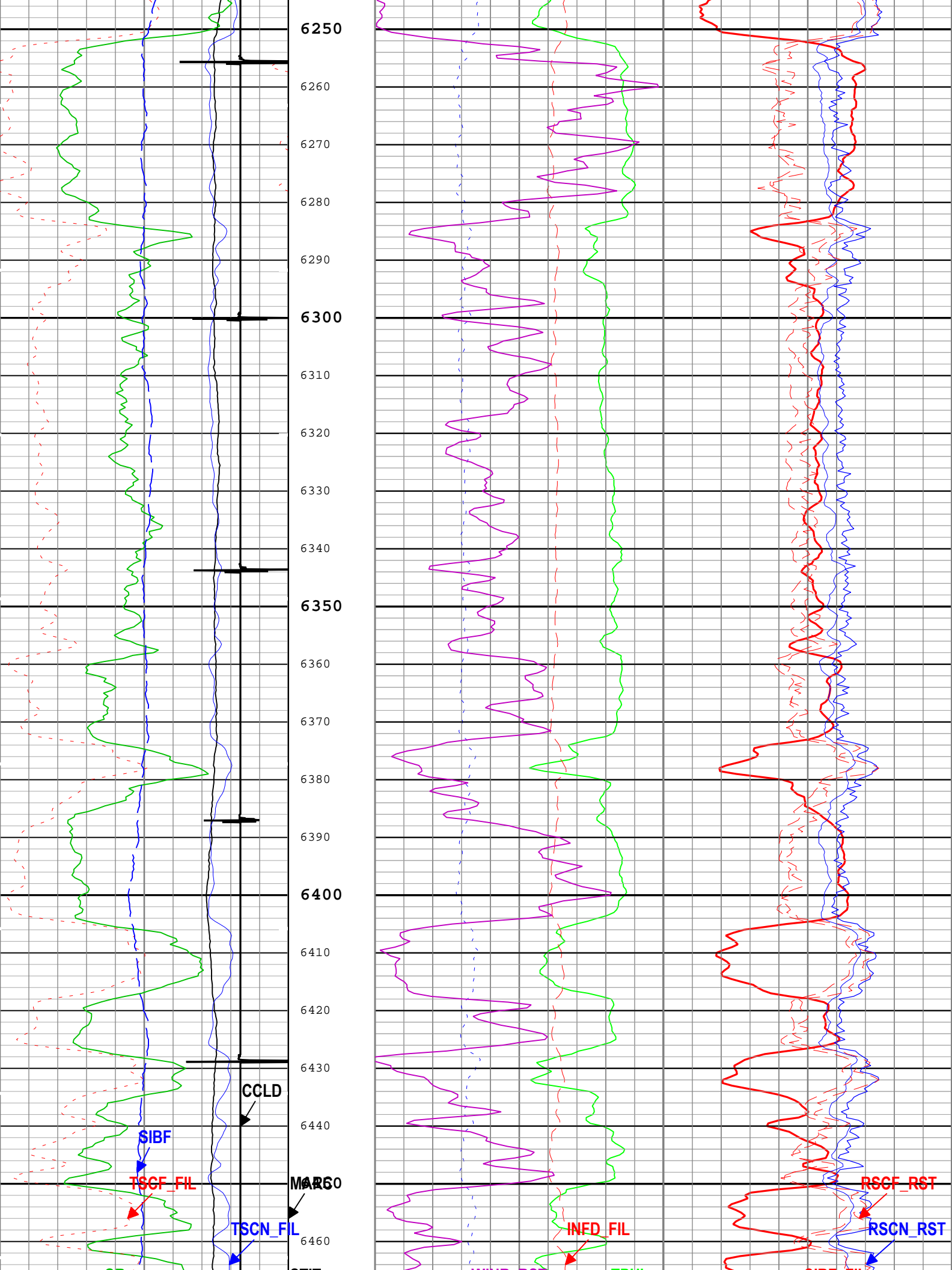


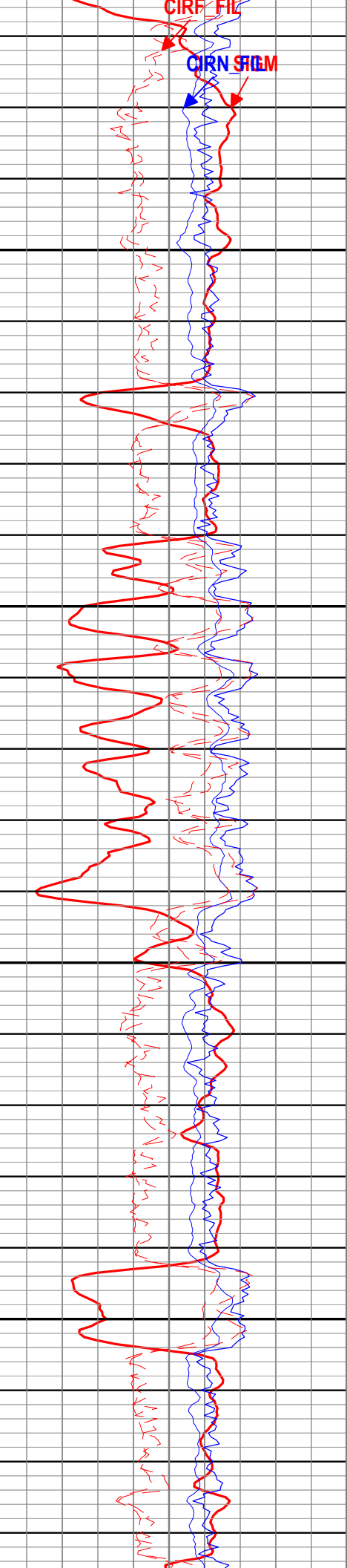
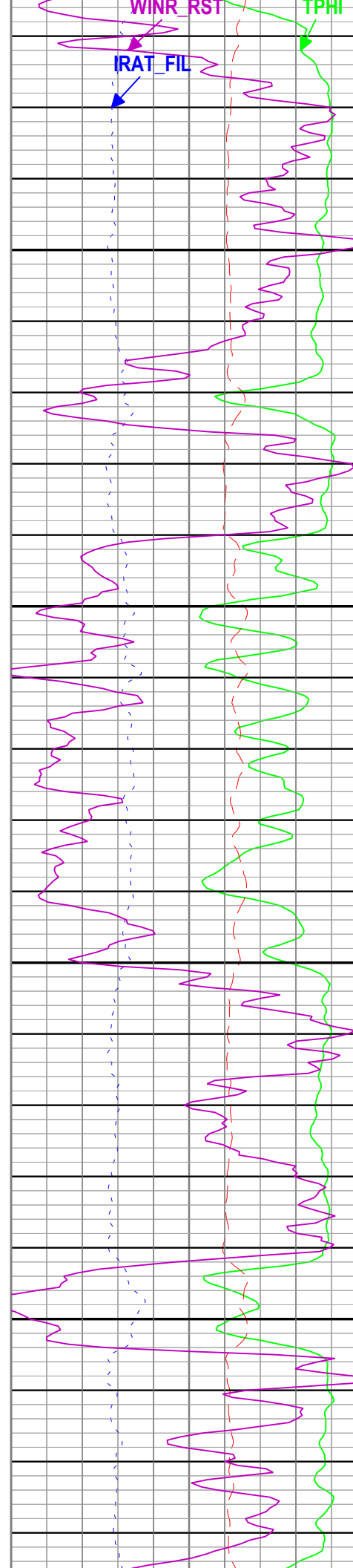
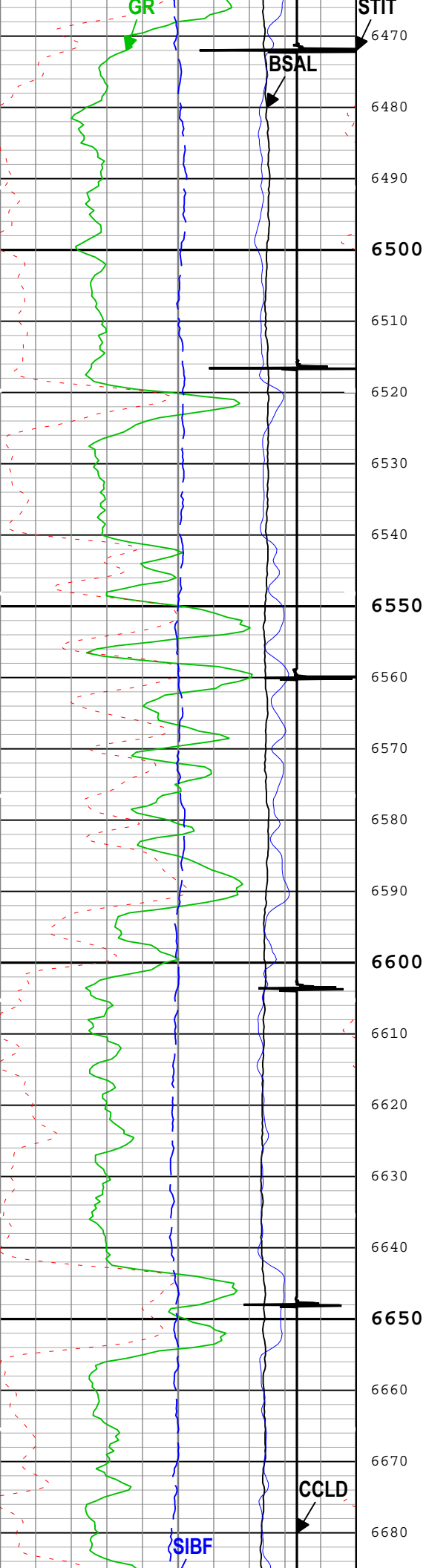


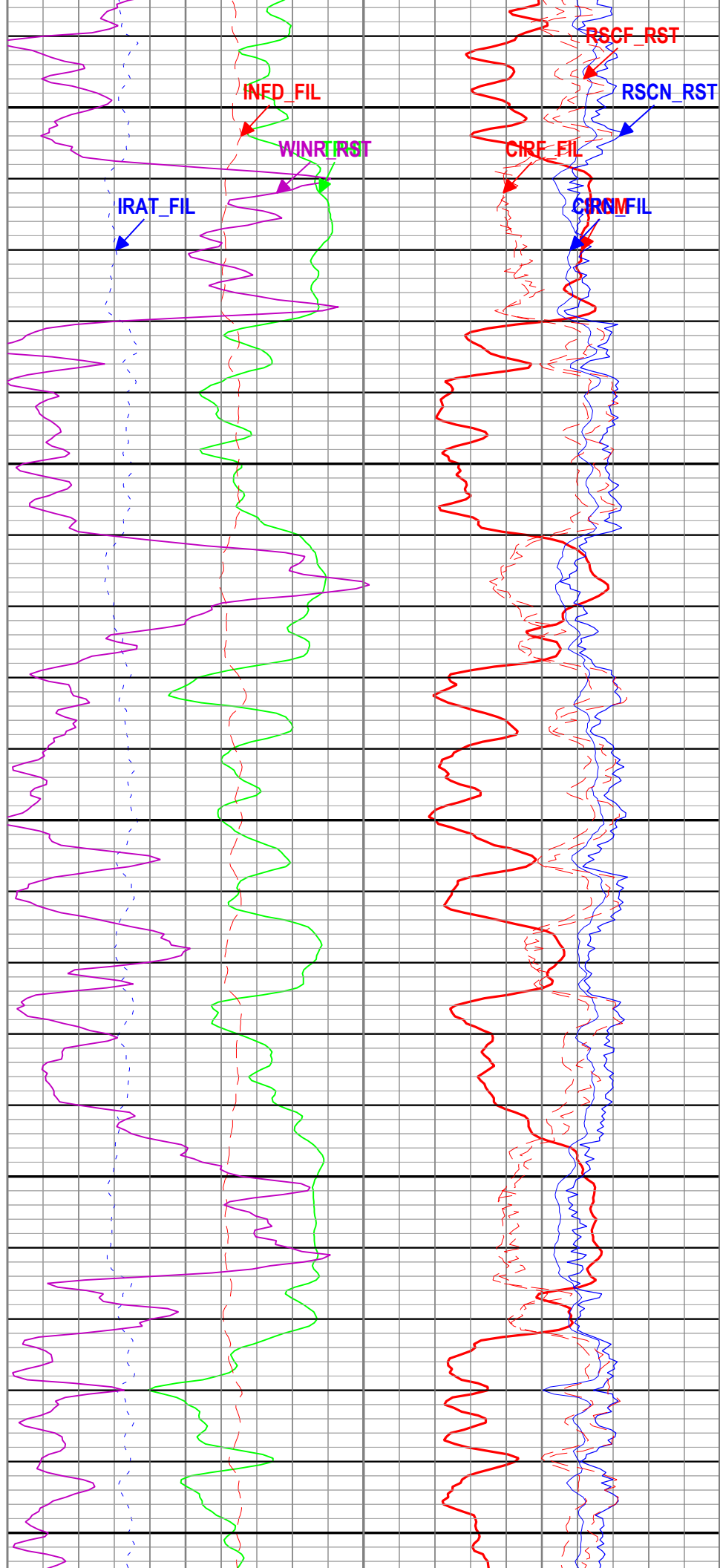
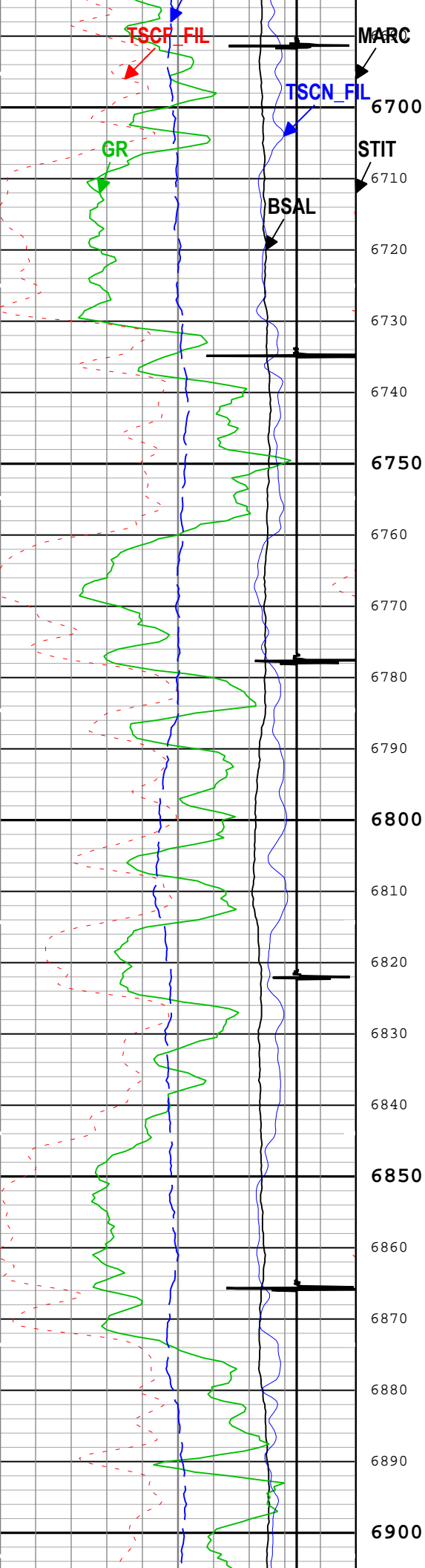


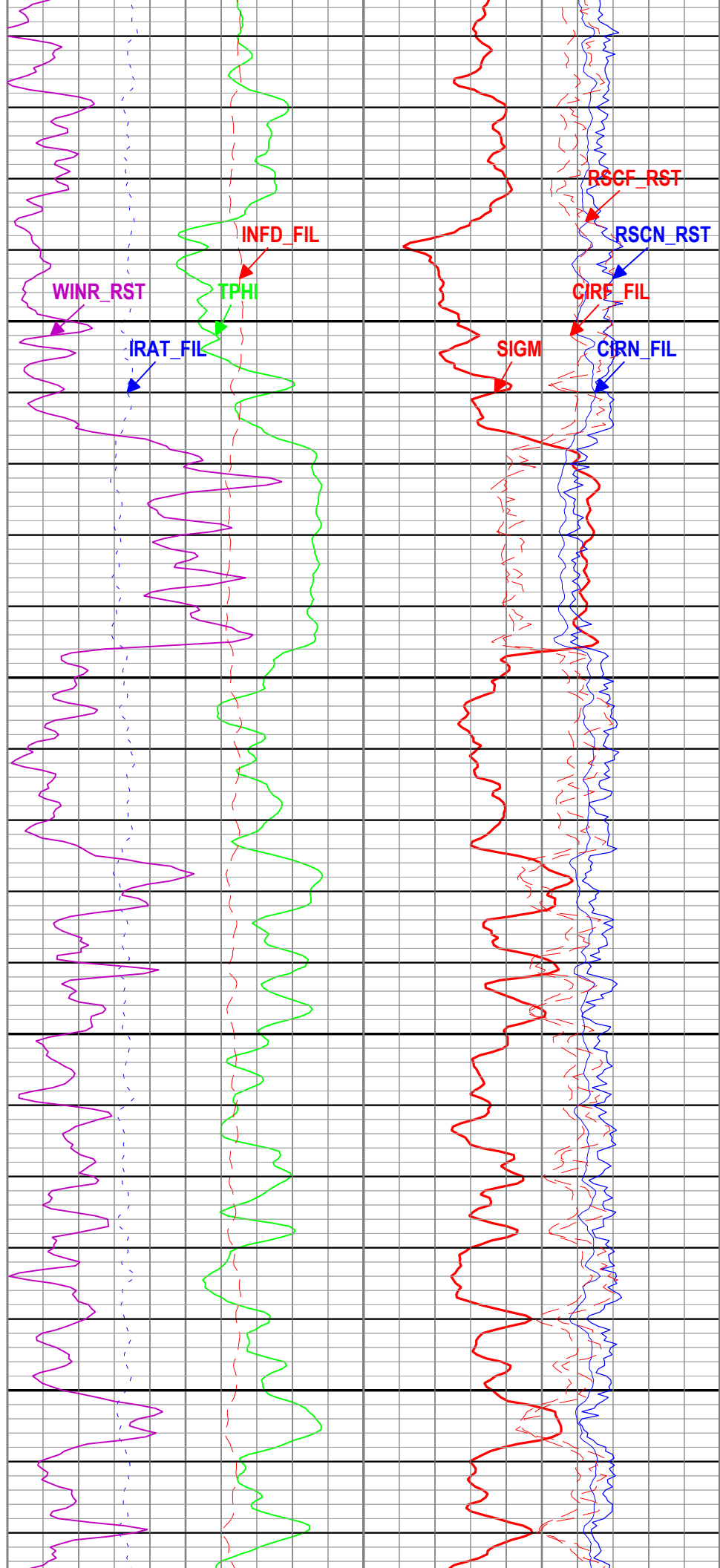
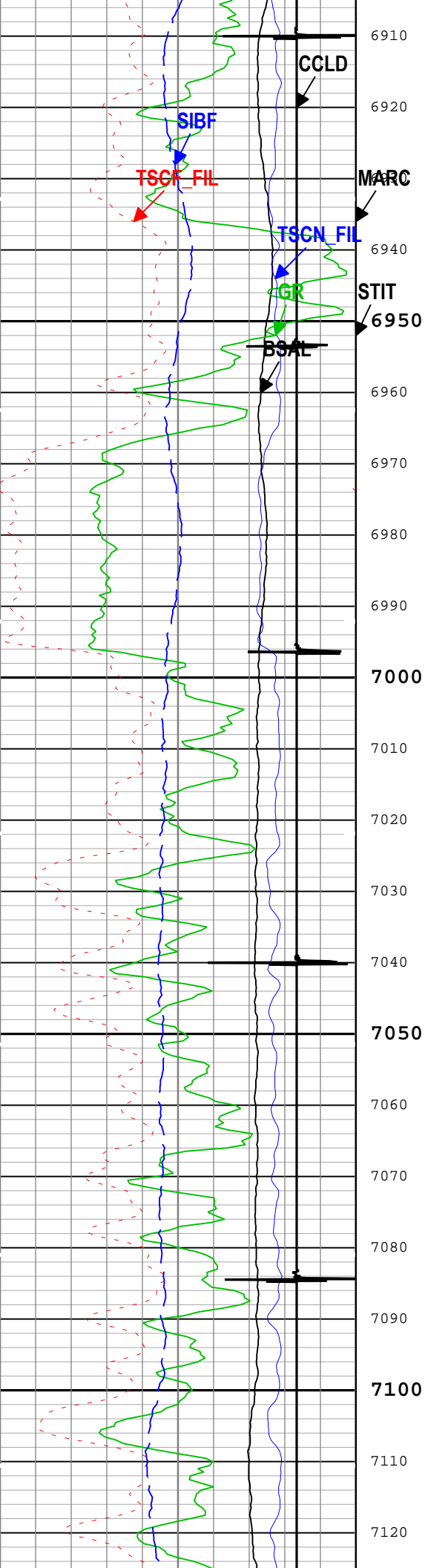


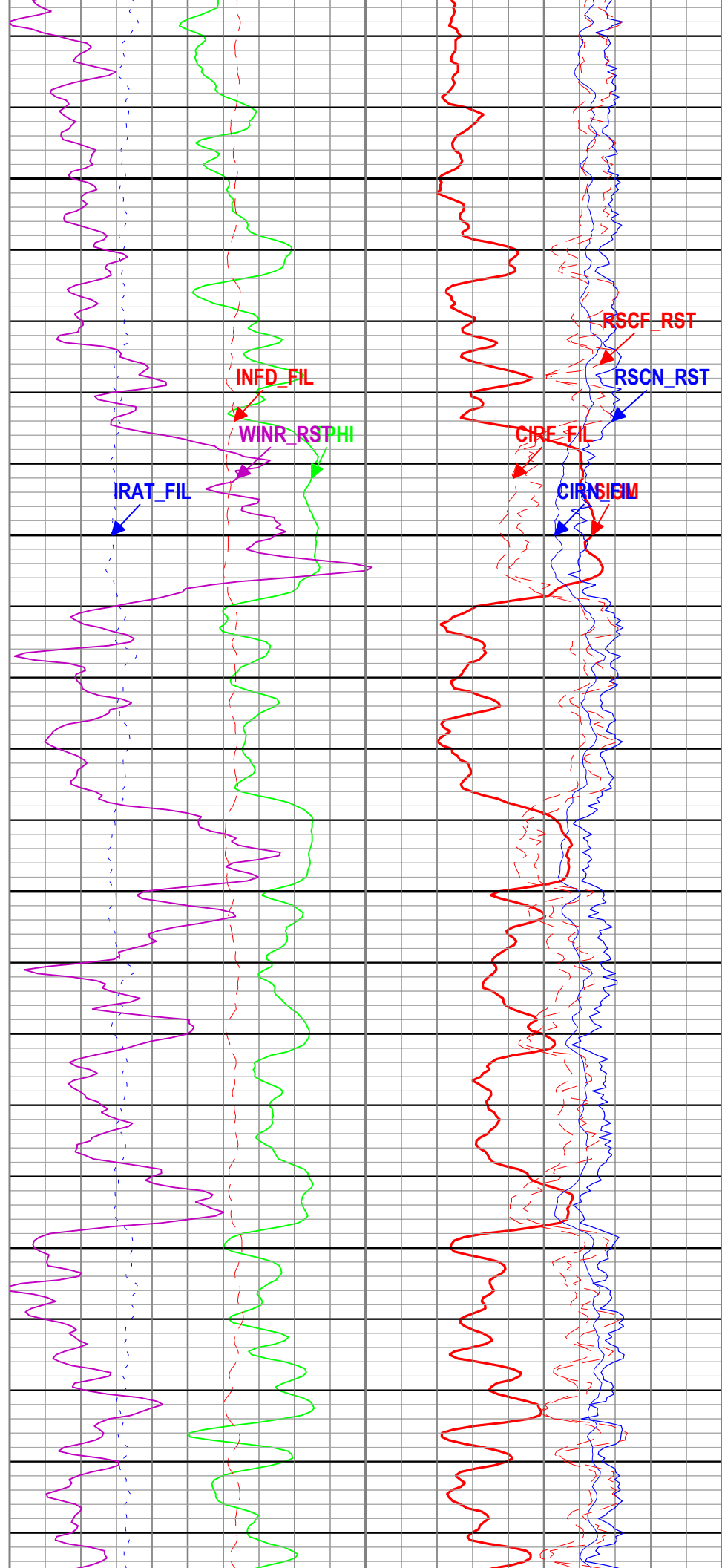
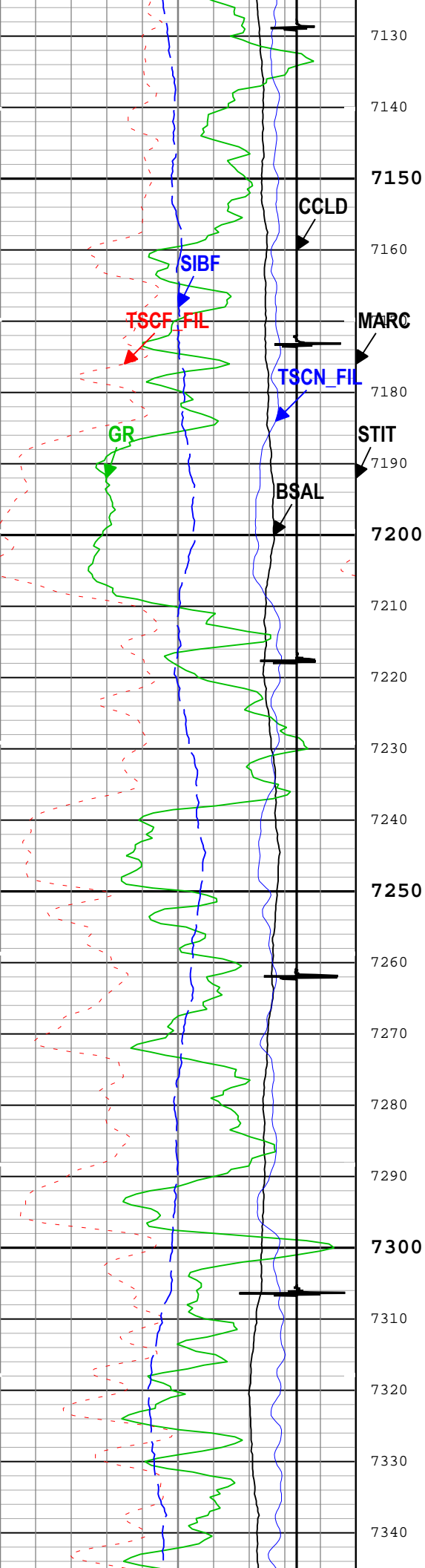


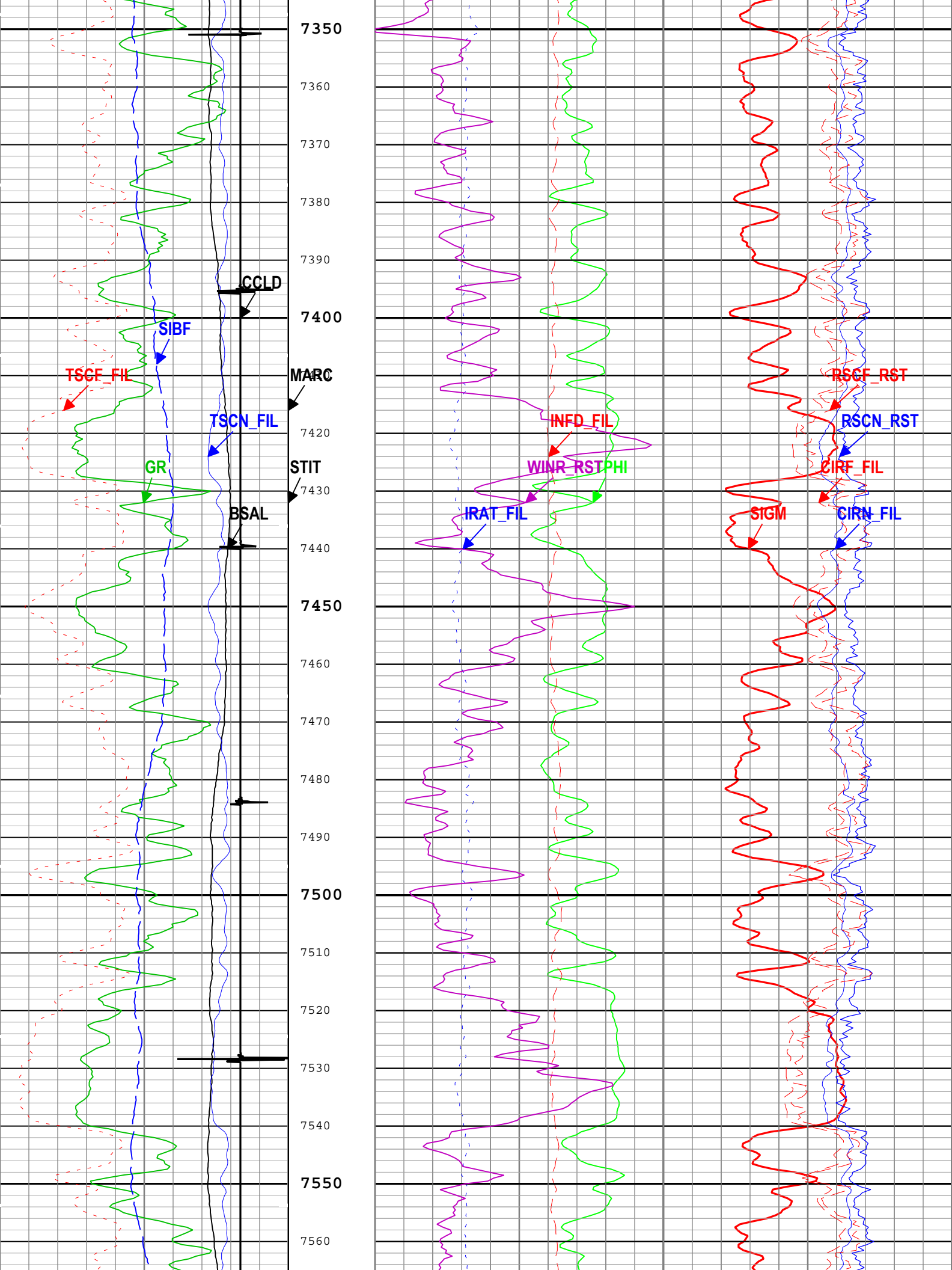


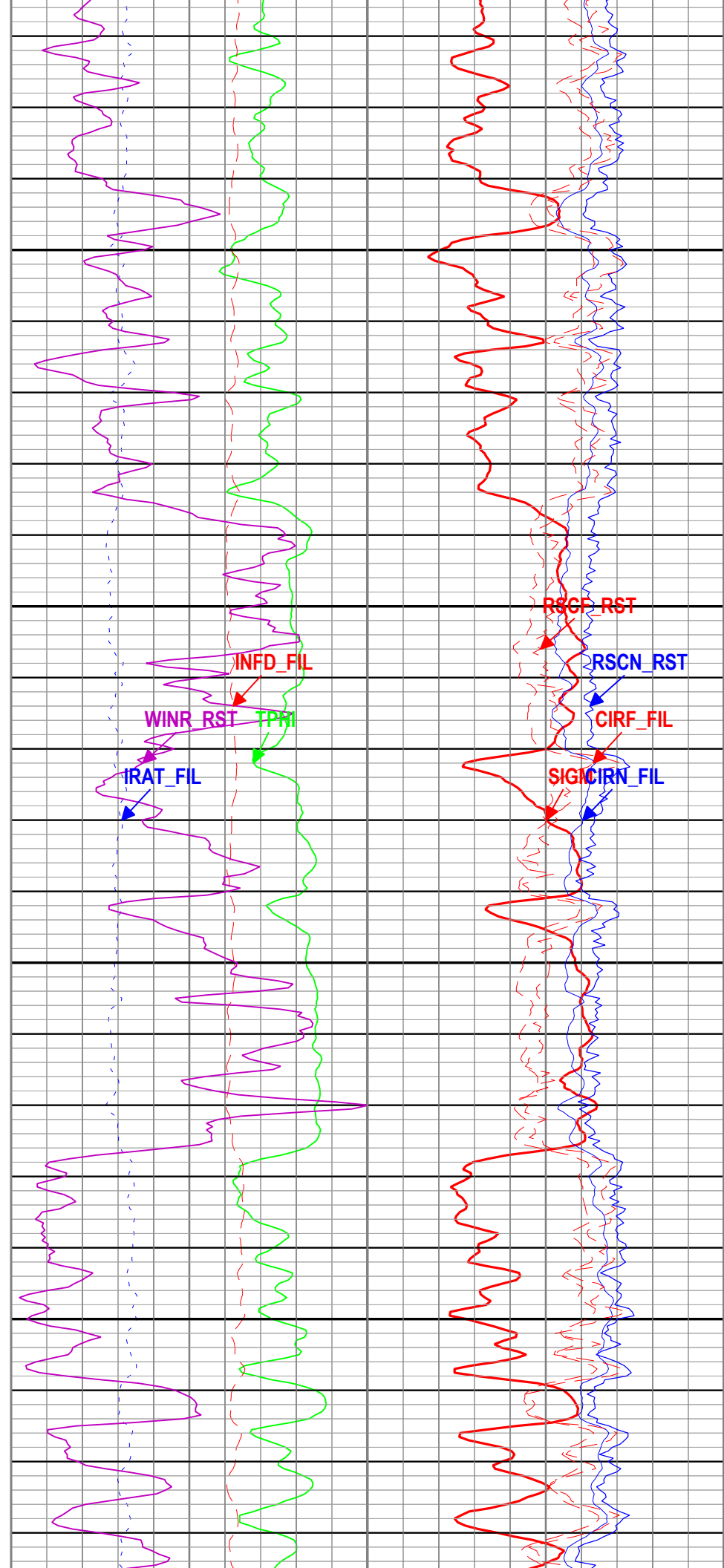
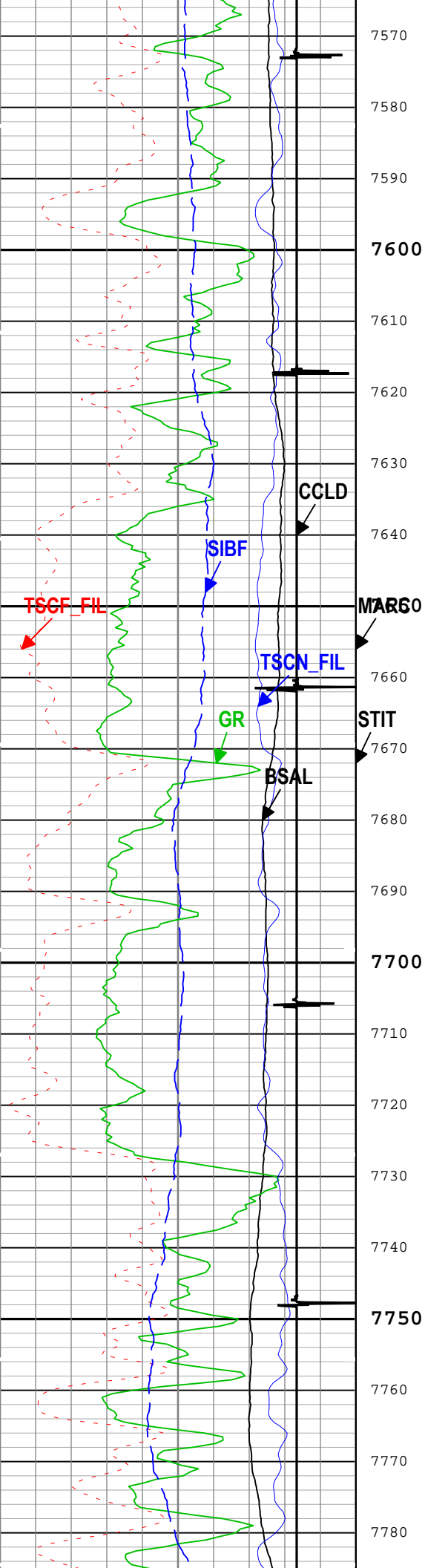


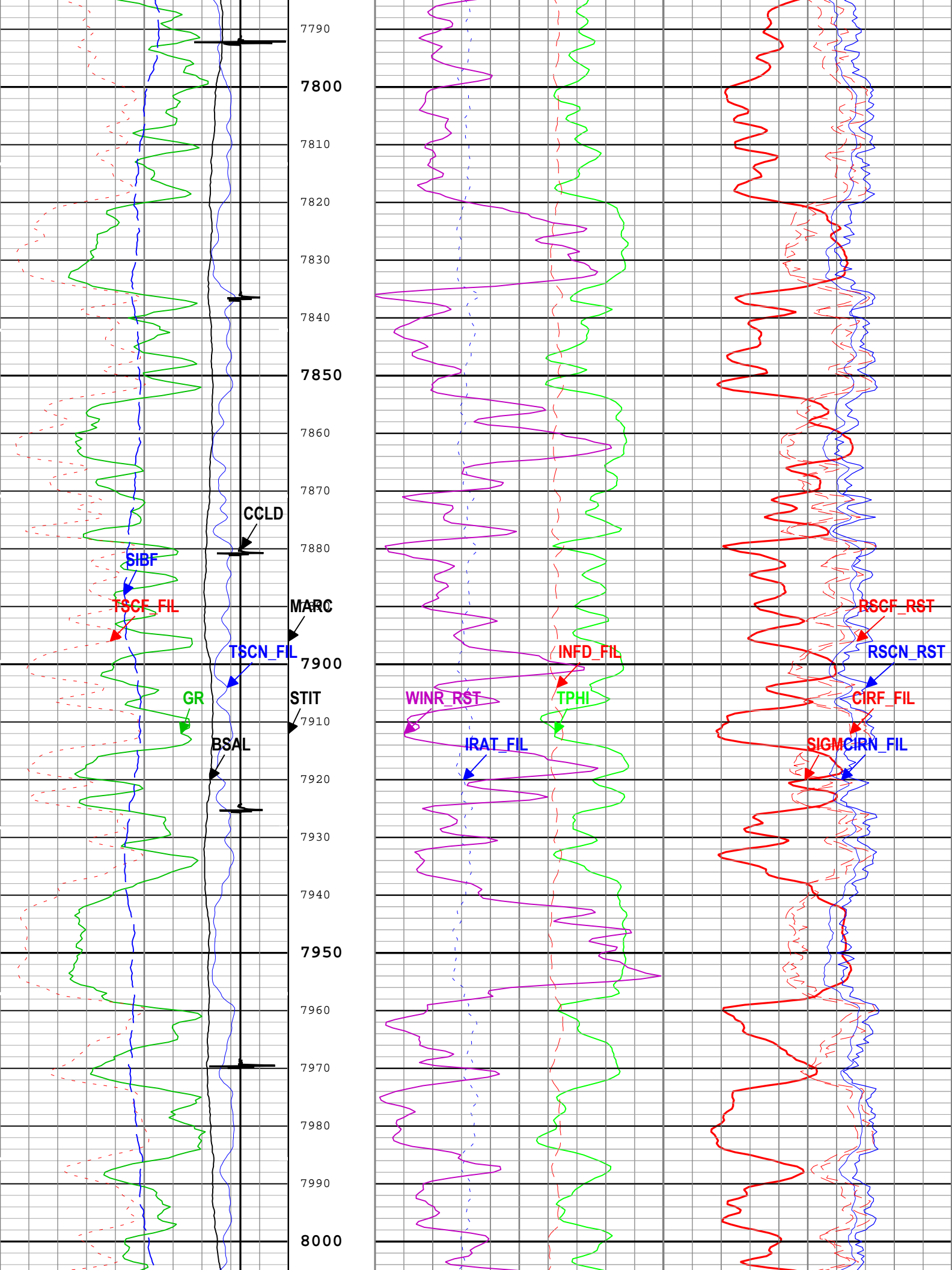


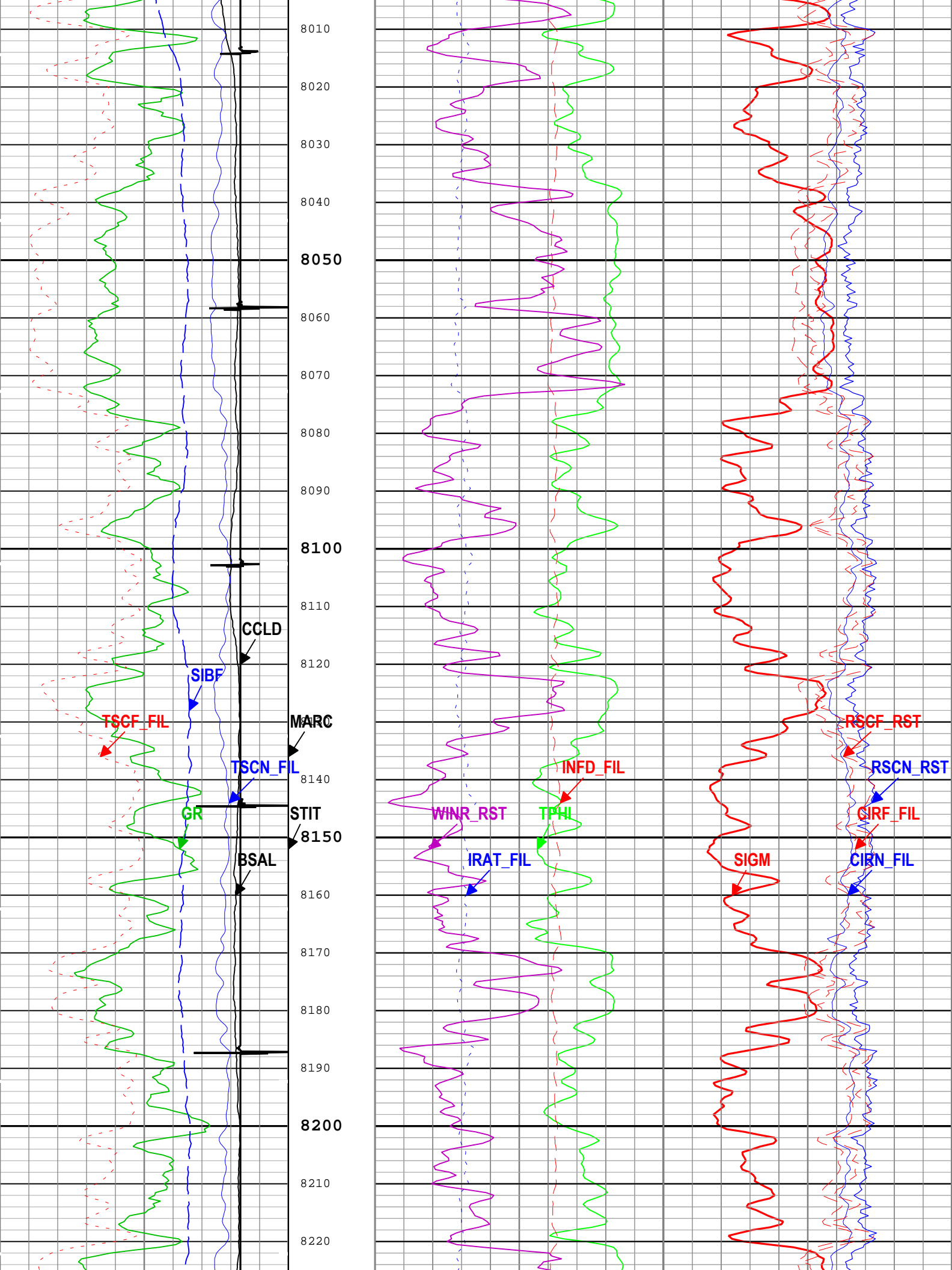


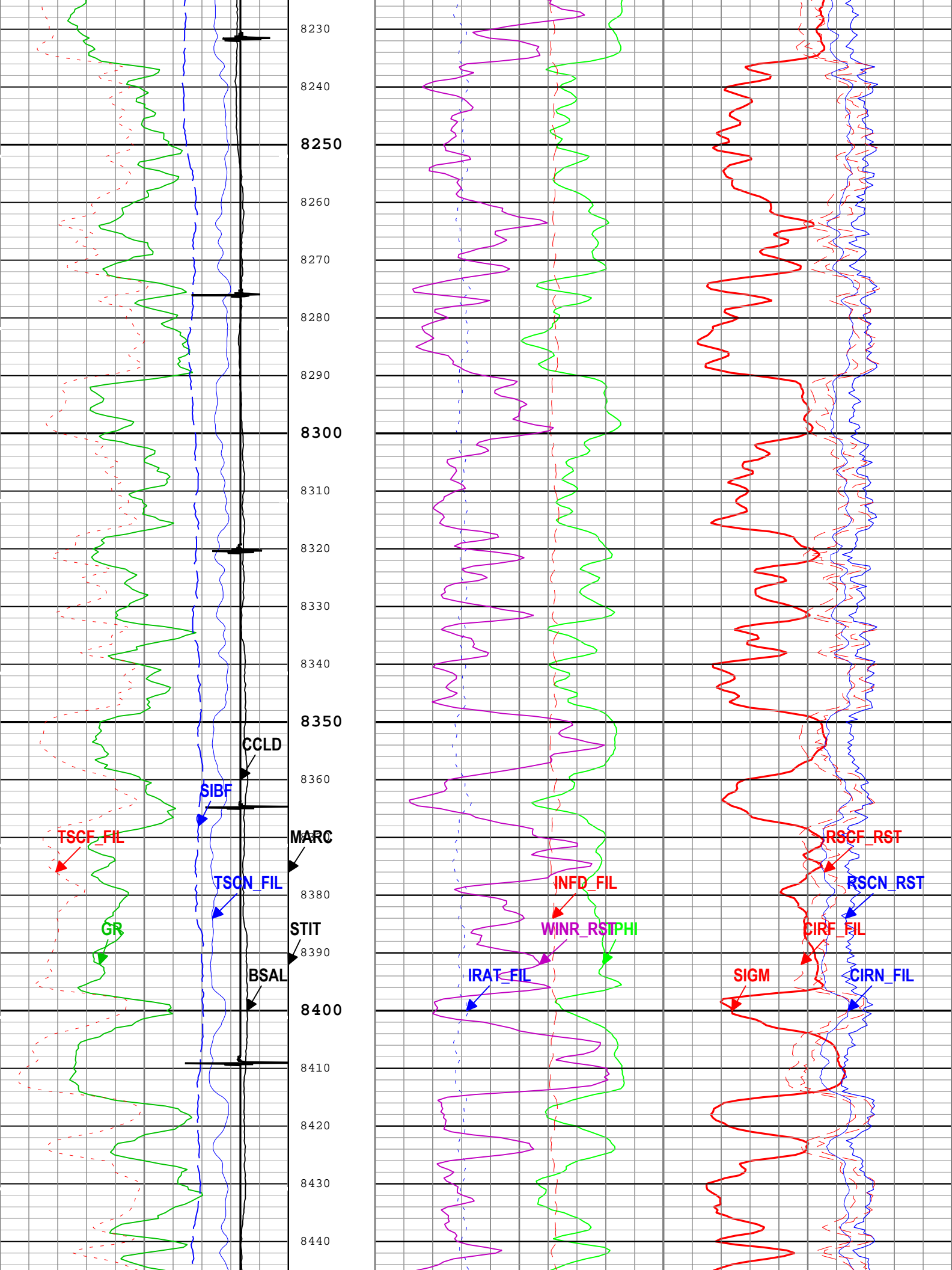


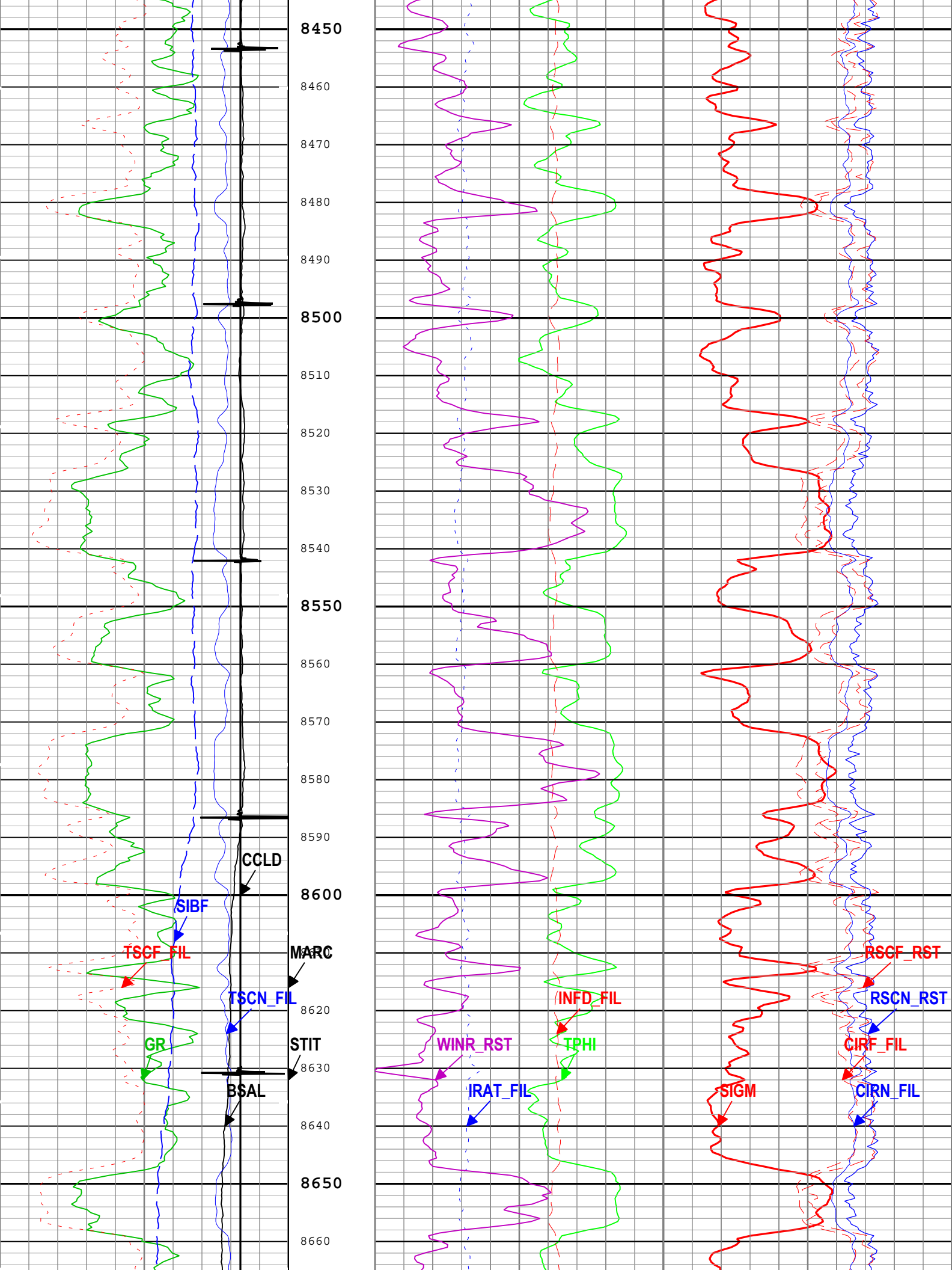


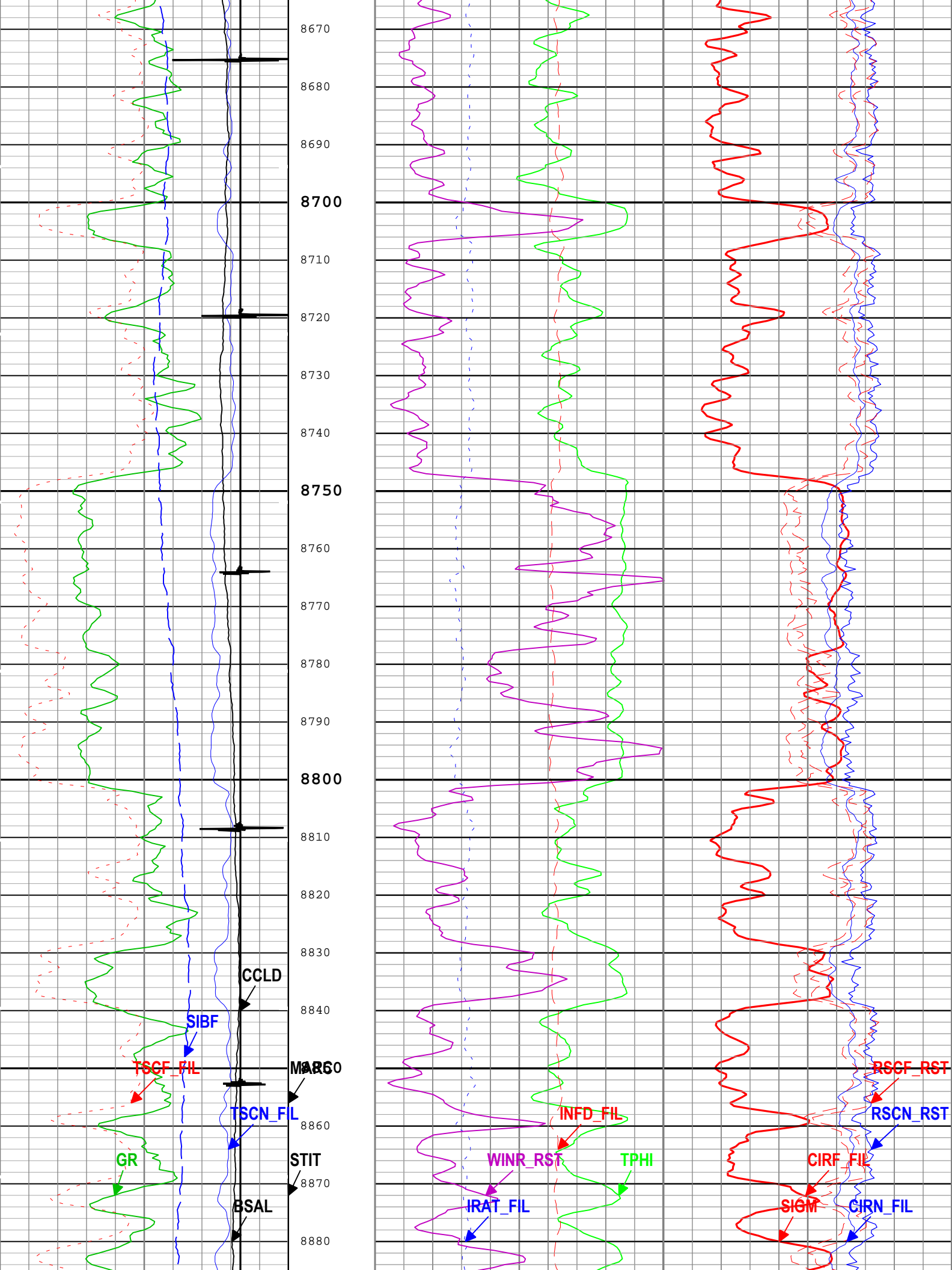


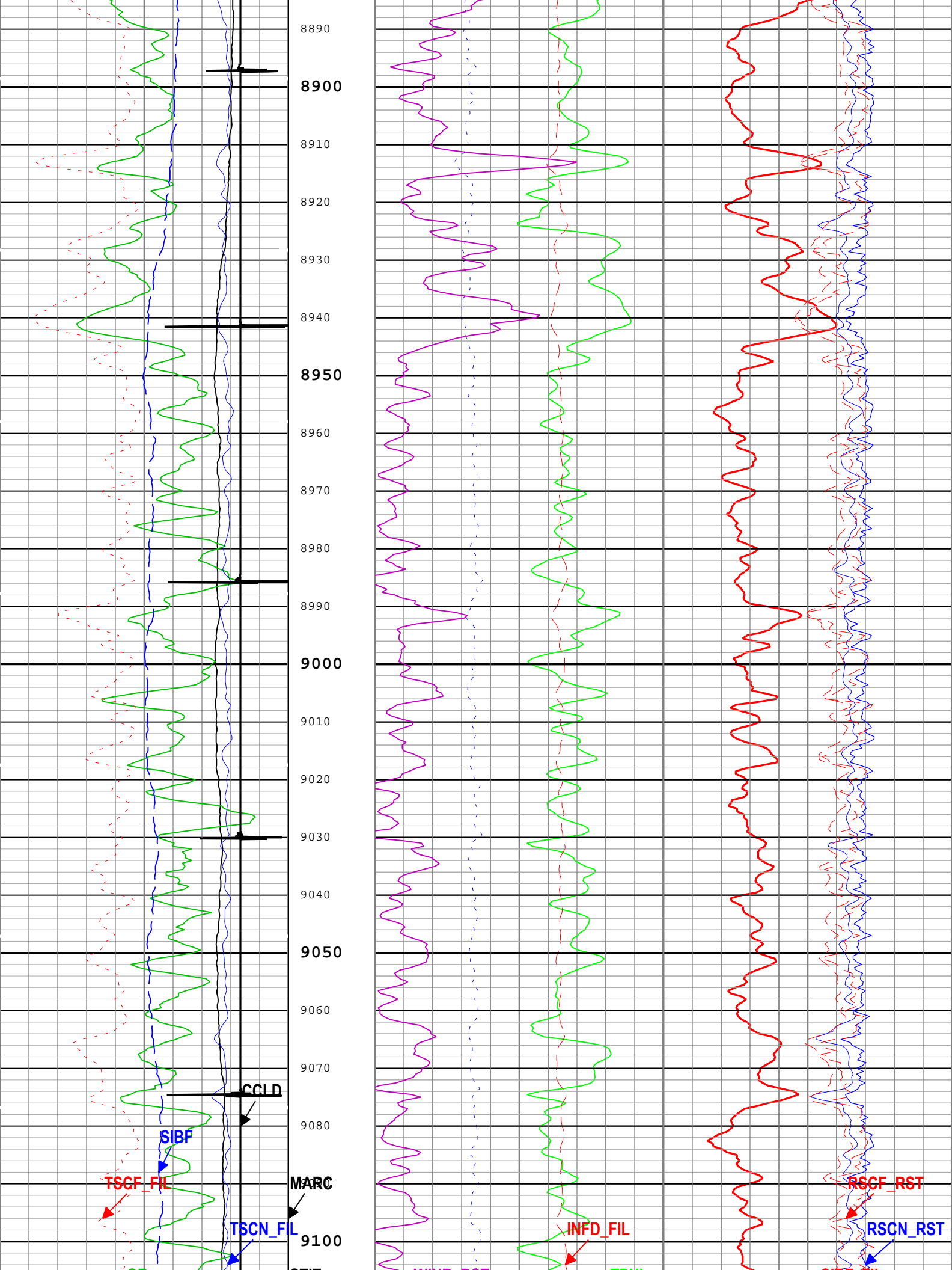


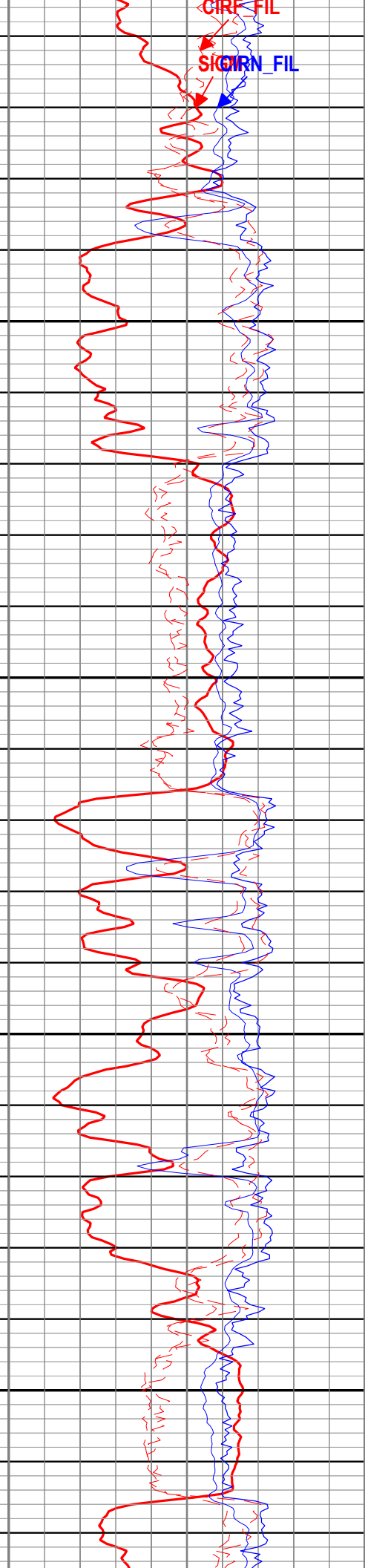
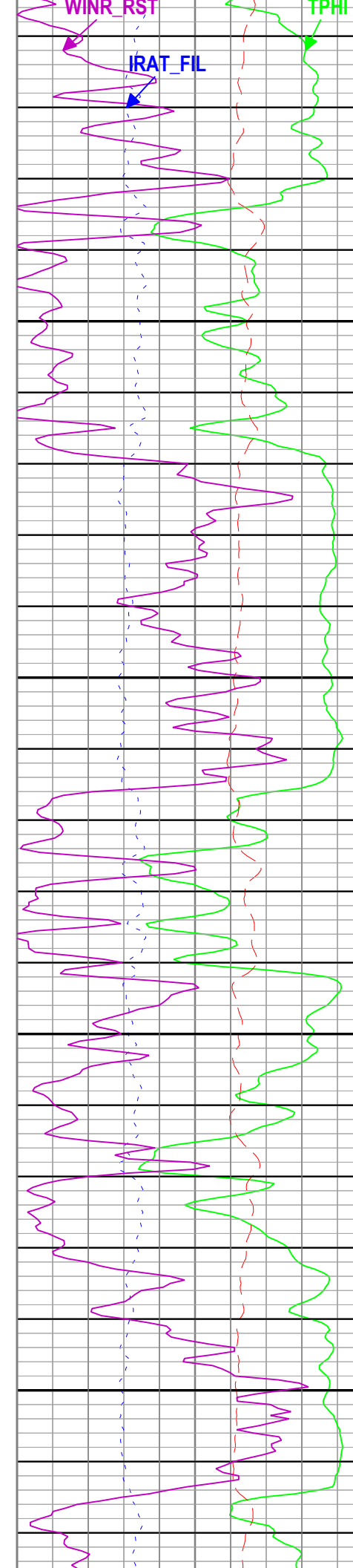
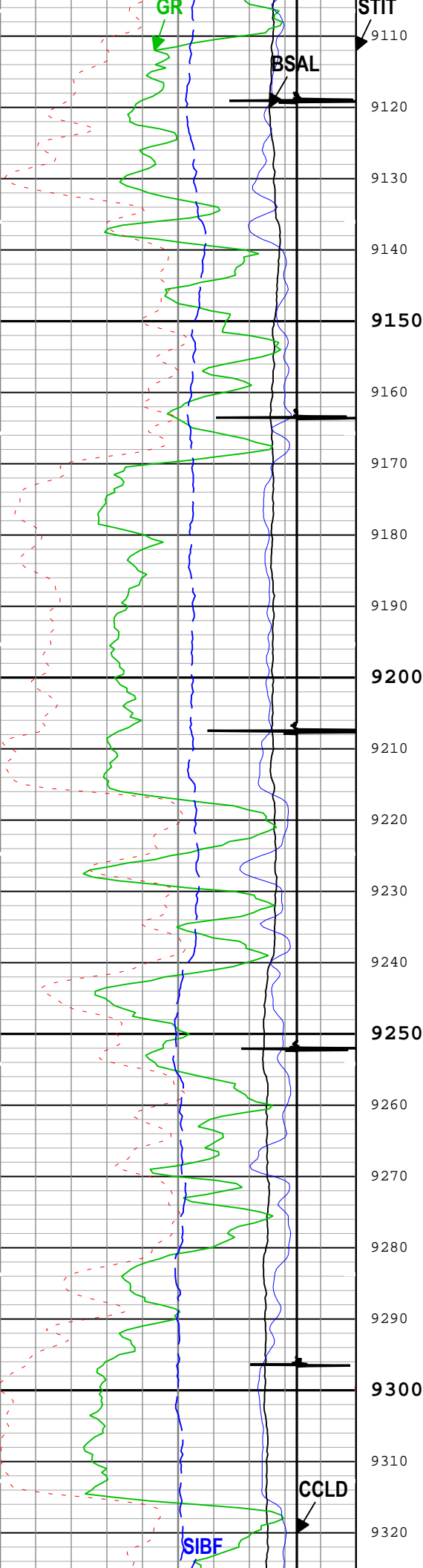


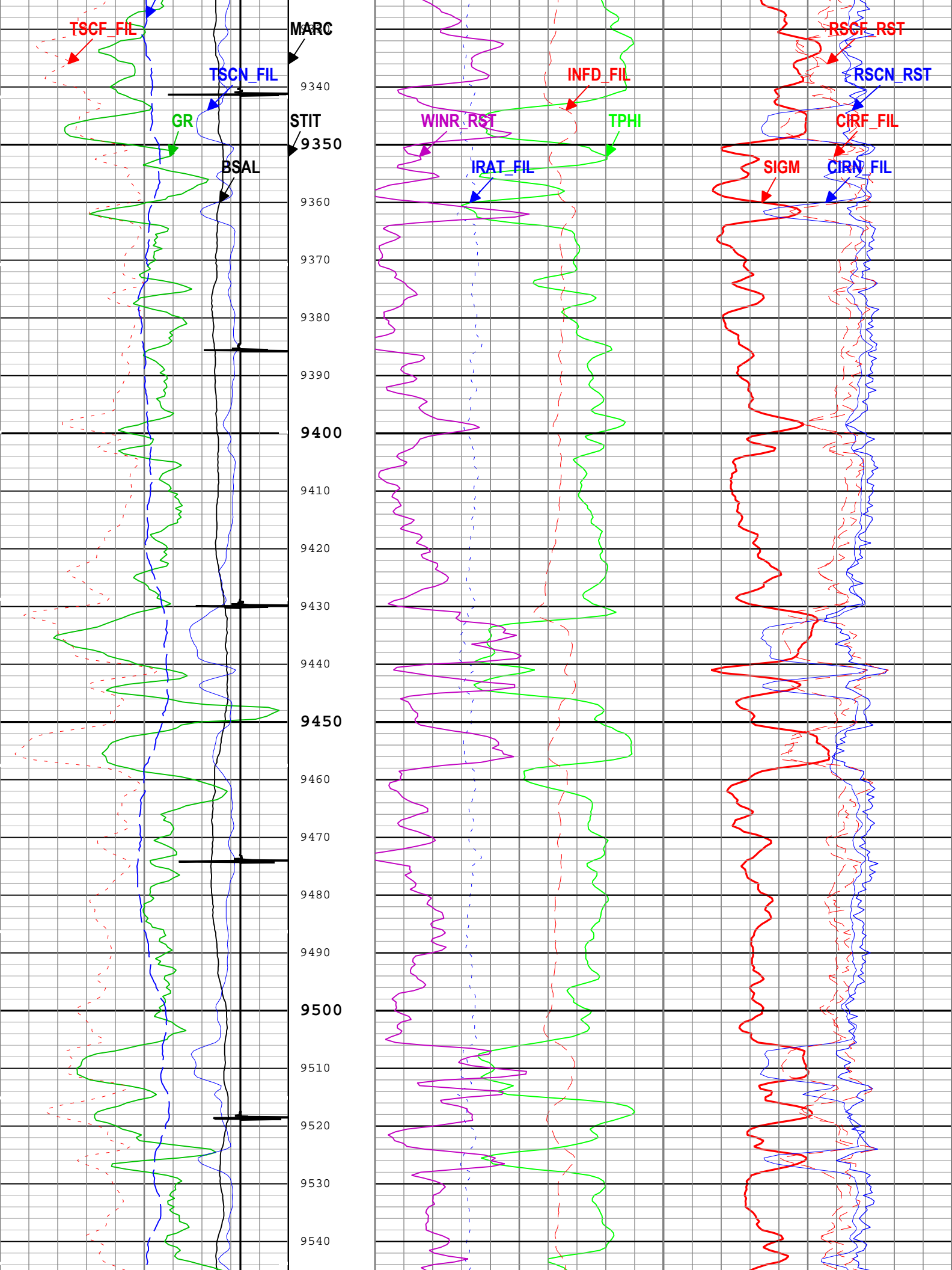


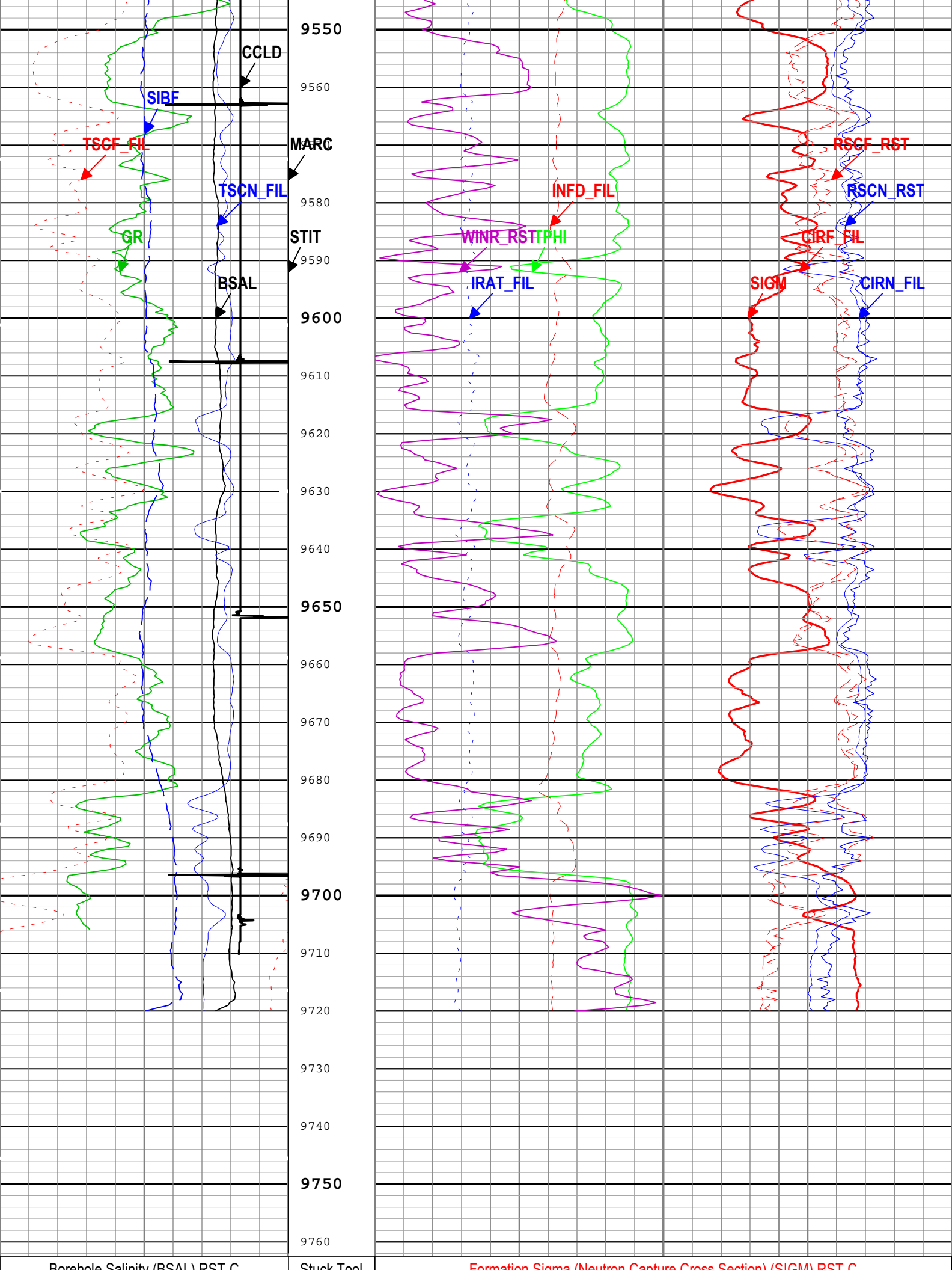












Borehole Salinity (BSAL) PST C

Stuck Tool

Formation Sigma (Neutron Capture Cross Section) (SIGM) PST C

Borehole Salinity (BSAL) RST-C	Indicator, Total (STIT)	Formation Sigma (Neutron Capture Cross Section) (SIGM) RST-C
450 ppm -50	60	cu 0
Gamma Ray (GR) PSTP-A	0 ft 50	Weighted Inelastic Ratio (WINR_RST) RST-C
0 gAPI 150		0 0.4
Total Selected Count Rate Near Detector Filtered (TSCN_FIL) RST-C	Cable Drag From STIA to STIT	Inelastic Ratio Filtered (IRAT_FIL) RST-C
30000 1/s 0		0.75 0
Total Selected Count Rate Far Detector Filtered (TSCF_FIL) RST-C	Tool_Tot. Drag From D3T to STIT	Capture to Inelastic Ratio Near Filtered (CIRN_FIL) RST-C
12000 1/s 0		2.5 0
Sigma Borehole Fluid (SIBF) RST-C	Minitron Arc Count (MARC) RST-C	Capture to Inelastic Ratio Far Filtered (CIRF_FIL) RST-C
100 cu 0		5 0
CCL Discriminated Amplitude (CCLD) PSTP-A	0 5	Near Detector Effective Unregulated Capture Count Rate (RSCN_RST) RST-C
-5 V 1		45 0
		Far Detector Effective Unregulated Capture Count Rate (RSCF_RST) RST-C
		45 0

— ICV - Integrated Cement Volume every 100.00 (ft3)

— ICV - Integrated Cement Volume every 10.00 (ft3)

— IHV - Integrated Hole Volume every 100.00 (ft3)

— IHV - Integrated Hole Volume every 10.00 (ft3)

— TIME_1900 - Elapsed time since midnight, 30 December 1899 every 60.00 (s)

TIME_1900 - Time Marked every 60.00 (s)

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: 18-Sep-2018 05:26:02

Channel Processing Parameters

ONE: Parameters

Parameter	Description	Tool	Value	Unit
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	Depth Zoned	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	
TD	Total Measured Depth	Borehole	9758	ft

Depth Zone Parameters

Parameter	Value	Start (ft)	Stop (ft)
BS	14.75	2800	2944
BS	8.75	2944	9758

All depth are actual.

Tool Control Parameters

ONE: 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	

ONE

Software Version

Acquisition System	Version
Maxwell 2018 SP1	8.1.99839.3100
Application Patch	Wireline_Hotfix-Mandatory-2018SP1_8.1.102865

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[2]:Up	Up	9308.64 ft	9773.64 ft	17-Sep-2018 8:18:27 PM	17-Sep-2018 8:38:43 PM	ON	5.63 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Caerus Operating LLC Well:NPR 24B-10 596

ONE: Log[2]:Up:S006

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: 18-Sep-2018 05:26:06

TIME_1900 - Elapsed time since midnight, 30 December 1899 every 60.00 (s)

IHV - Integrated Hole Volume every 10.00 (ft3)

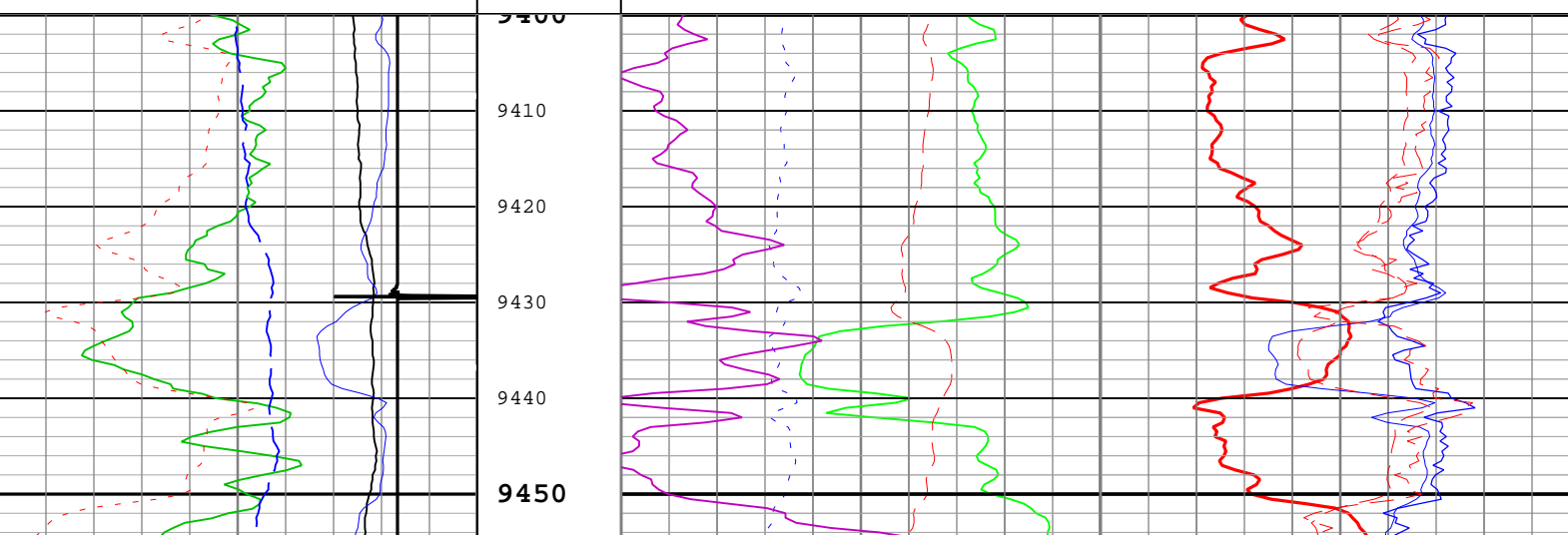
IHV - Integrated Hole Volume every 100.00 (ft3)

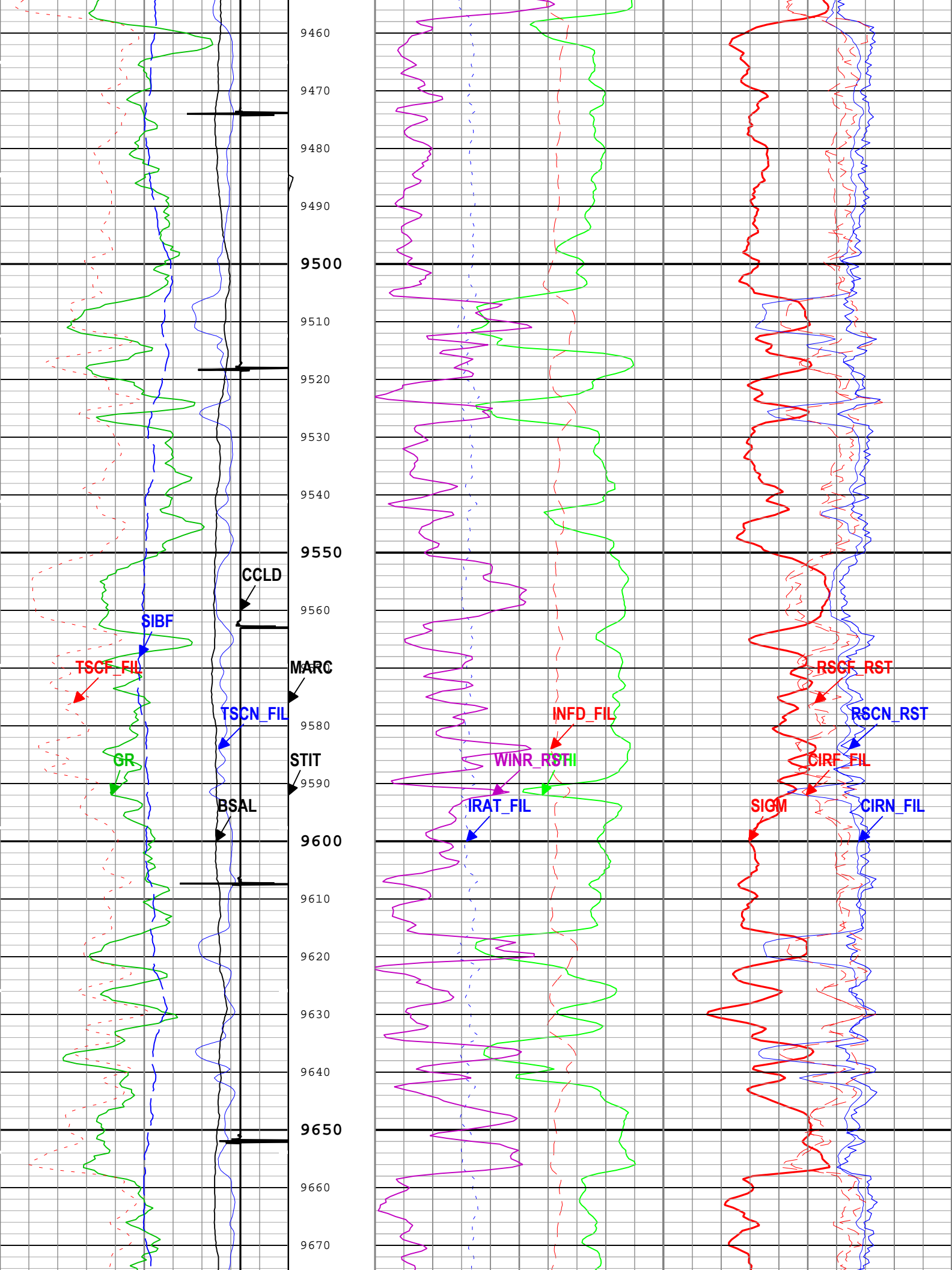
ICV - Integrated Cement Volume every 10.00 (ft3)

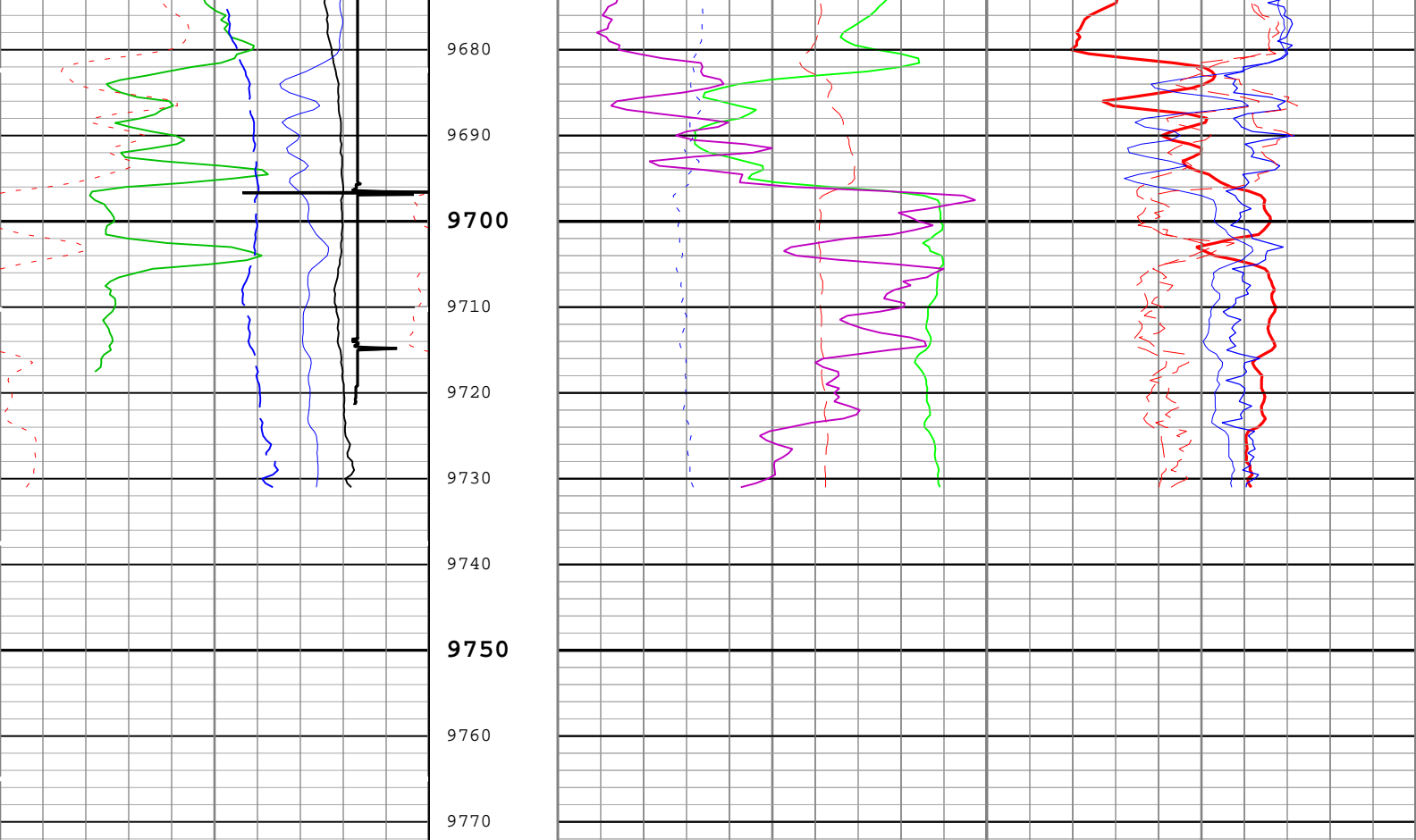
TIME_1900 - Time Marked every 60.00 (s)

ICV - Integrated Cement Volume every 100.00 (ft3)

Borehole Salinity (BSAL) RST-C	Stuck Tool Indicator, Total (STIT)	Capture to Inelastic Ratio Near Filtered (CIRN_FIL) RST-C
450 ppk -50	0 ft 50	2.5 0
Gamma Ray (GR) PSTP-A	Cable Drag From STIA to STIT	Capture to Inelastic Ratio Far Filtered (CIRF_FIL) RST-C
0 gAPI 150	0.75 0	5 0
Total Selected Count Rate Near Detector Filtered (TSCN_FIL) RST-C	Tool_Tot. Drag From D3T to STIT	Near Detector Effective Unregulated Capture Count Rate (RSCN_RST) RST-C
30000 1/s 0	0.6 ft3/ft3 0	45 0
Total Selected Count Rate Far Detector Filtered (TSCF_FIL) RST-C	Minitron Arc Count (MARC) RST-C	Far Detector Effective Unregulated Capture Count Rate (RSCF_RST) RST-C
12000 1/s 0	60 cu 0	45 0
Sigma Borehole Fluid (SIBF) RST-C		Formation Sigma (Neutron Capture Cross Section) (SIGM) RST-C
100 cu 0		60 cu 0
CCL Discriminated Amplitude (CCLD) PSTP-A		Weighted Inelastic Ratio (WINR_RST) RST-C
-5 V 1		0 0.4







Borehole Salinity (BSAL) RST-C 450 ppk -50	Stuck Tool Indicator, Total (STIT) 0 ft 50	Formation Sigma (Neutron Capture Cross Section) (SIGM) RST-C 60 cu 0	
Gamma Ray (GR) PSTP-A 0 gAPI 150	Cable Drag From STIA to STIT	Weighted Inelastic Ratio (WINR_RST) RST-C 0 0.4	
Total Selected Count Rate Near Detector Filtered (TSCN_FIL) RST-C 30000 1/s 0	Tool_Tot. Drag From D3T to STIT	Inelastic Ratio Filtered (IRAT_FIL) RST-C 0.75 0	Capture to Inelastic Ratio Near Filtered (CIRN_FIL) RST-C 2.5 0
Total Selected Count Rate Far Detector Filtered (TSCF_FIL) RST-C 12000 1/s 0	Minitron Arc Count (MARC) RST-C 0 5	Thermal Decay Porosity (TPHI) RST-C 0.6 ft3/ft3 0	Capture to Inelastic Ratio Far Filtered (CIRF_FIL) RST-C 5 0
Sigma Borehole Fluid (SIBF) RST-C 100 cu 0		Gross Inelastic Count Rate Far Detector Filtered (INFD_FIL) RST-C 10000 1/s 0	Near Detector Effective Unregulated Capture Count Rate (RSCN_RST) RST-C 45 0
CCL Discriminated Amplitude (CCLD) PSTP-A -5 V 1			Far Detector Effective Unregulated Capture Count Rate (RSCF_RST) RST-C 45 0

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

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: 18-Sep-2018 05:26:06

Parameter	Description	Tool	Value	Unit
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	8.75	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	
TD	Total Measured Depth	Borehole	9758	ft

Tool Control Parameters

ONE: 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: NPR 24B-10 596

Field: NPR

County: Garfield

State: Colorado

Cement Bond Log

RST Sigma Log

Gamma Ray / Collar Locator