Schlumberger

Company: PDC Energy Inc

Well: Vega #4N

Field: Wattenberg

County: Weld Country: United States of Americ

Cement Bond Log

Variable Density Log

Gamma Ray - CCL

County: Weld
Field: Wattenberg
Location: 2359' FNL & 2596' FWL
Well: Vega #4N
Company: PDC Energy Inc

Location:
2359' FNL & 2596' FWL
SENW 6 3N65W
Lat/Long: 40.2552/-104.70636

Elev.:	K.B.	5005.00	ft
	G.L.	4977.00	ft
	D.F.	5004.00	ft

Permanent Datum:	Ground Level	Elev.:	4977.00 f
Log Measured From:	Kelly Bushing	28.00 ft	above Perm.Datum
Drilling Measured From:	Kelly Bushing		

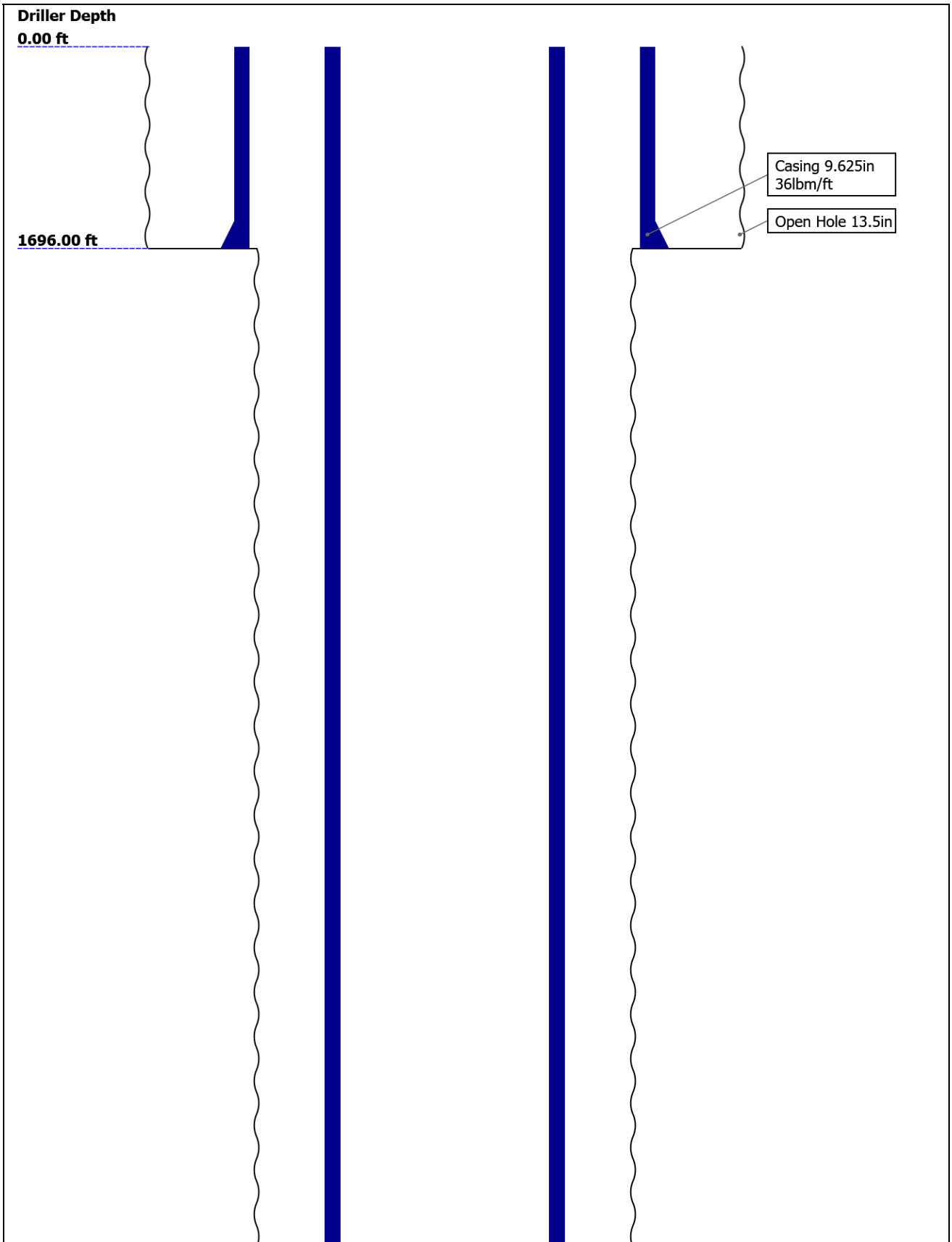
API Serial No.	Section:	Township:	Range:
05-123-48461	6	3N	65W

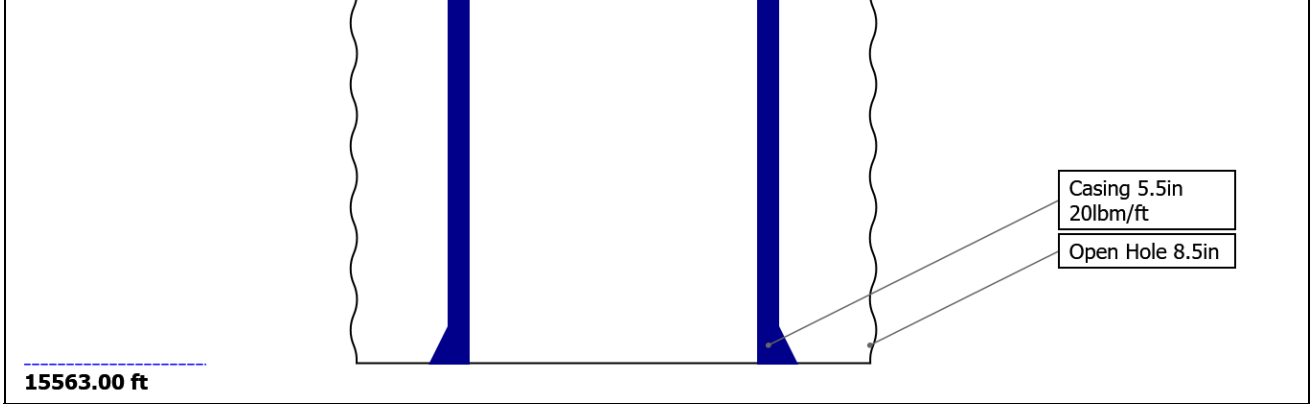
Logging Date	09-Apr-2022		
Run Number	1A		
Depth Driller	15563.00 ft		
Schlumberger Depth	15563.00 ft		
Bottom Log Interval	6969.00 ft		
Top Log Interval	72.00 ft		
Casing Fluid Type	Water		
Salinity			
Density	8.4 lbm/gal		
Fluid Level	8.00 ft		
BIT/CASING/TUBING STRING			
Bit Size	8.50 in		
From	1696.00 ft		
To	15563.00 ft		
Casing/Tubing Size	5.5 in		
Weight	20 lbm/ft		
Grade	N/A		
From	0.00 ft		
To	15563.00 ft		
Max Recorded Temperatures	236.71 degF		
Logger on Bottom Time	09-Apr-2022 12:57:00		
Unit Number Location:	TAM Fort Morgan		
Recorded By	E.Morrone/W. Armstrong		
Witnessed By	B. Myers		

Disclaimer

Contents

Well Sketch



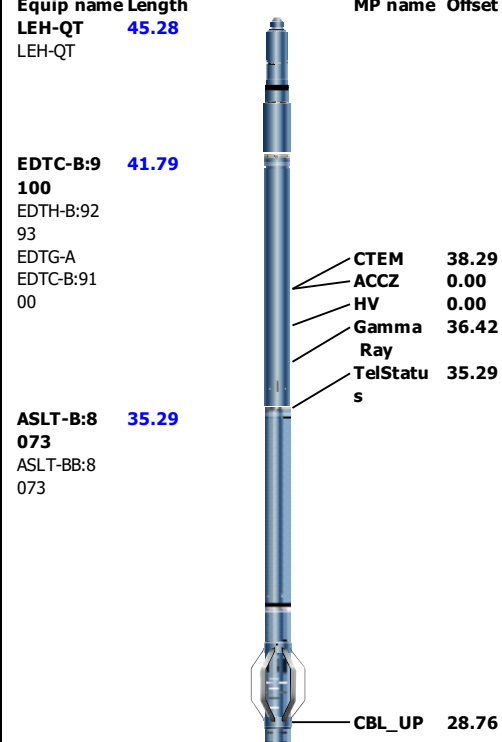


Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	13.5	8.5				
Top Driller (ft)	0	1696				
Top Logger (ft)	0	1696				
Bottom Driller (ft)	1696	15563				
Bottom Logger (ft)	1696	15563				
Casing						
Size (in)	9.625	5.5				
Weight (lbm/ft)	36	20				
Inner Diameter (in)	8.921	4.778				
Grade	N/A	N/A				
Top Driller (ft)	0	0				
Top Logger (ft)	0	0				
Bottom Driller (ft)	1696	15563				
Bottom Logger (ft)	1696	15563				

Remarks and Equipment Summary

1A: Toolstring



1A: Remarks

Thank you for choosing Schlumberger!
AFE: DC 003134
Log run for cement evaulation in 10 deg 6" resolution
Toolstring run as per tool sketch
IBCS-A sub with ICE-TX transducers run
Cement Info: Lead Cement: 12.9 ppg with expected TOC at 2400 ft Tail Cement: 13.7 ppg with expected TOC at 7700 ft
Log correlated to marker joint 6658.5 to 6669.8
Main and repeat passes logged under 5000
Areas with high eccentering negatively impactedlog quality

Lengths are in ft
Maximum Outer Diameter = 6.250 in
Line: Sensor Location, Value: Gating Offset
All measurements are relative to TOOL_ZERO

Depth Summary

	1A		
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	7-39PI-XXS		
Serial Number	1234		
Length	28000.00 ft		
Conveyance Type	Wireline		
Rig Type	Land		

1A:Depth Control Parameters		Depth Control Remarks
Log Sequence	First Log In the Well	Schlumberger depth control procedures followed
Rig Up Length At Surface		IDW used as primary depth control system
Rig Up Length At Bottom		Z-Chart used as secondary depth control system
Rig Up Length Correction		
Stretch Correction		
Tool Zero Check At Surface		

1A

Software Version

Acquisition System	Version
Maxwell 2022.0	12.0.215014.3100
Application Patch	Wireline_Hotfix-Mandatory-2022.0_12.0.216515

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
1A	Main[3]:Up	Up	82.68 ft	6980.58 ft	09-Apr-2022 12:57:05 PM	09-Apr-2022 2:39:23 PM	ON	11.01 ft	Yes

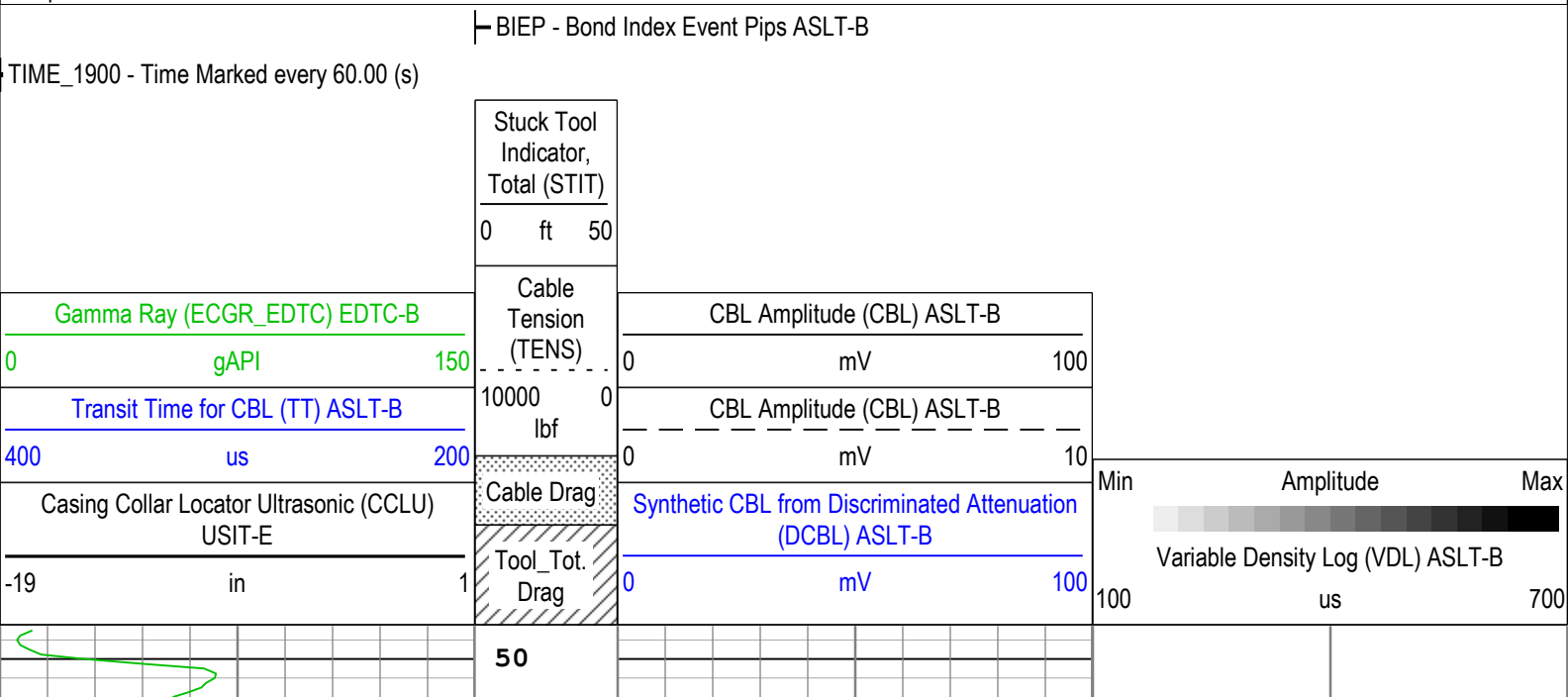
All depths are referenced to toolstring zero

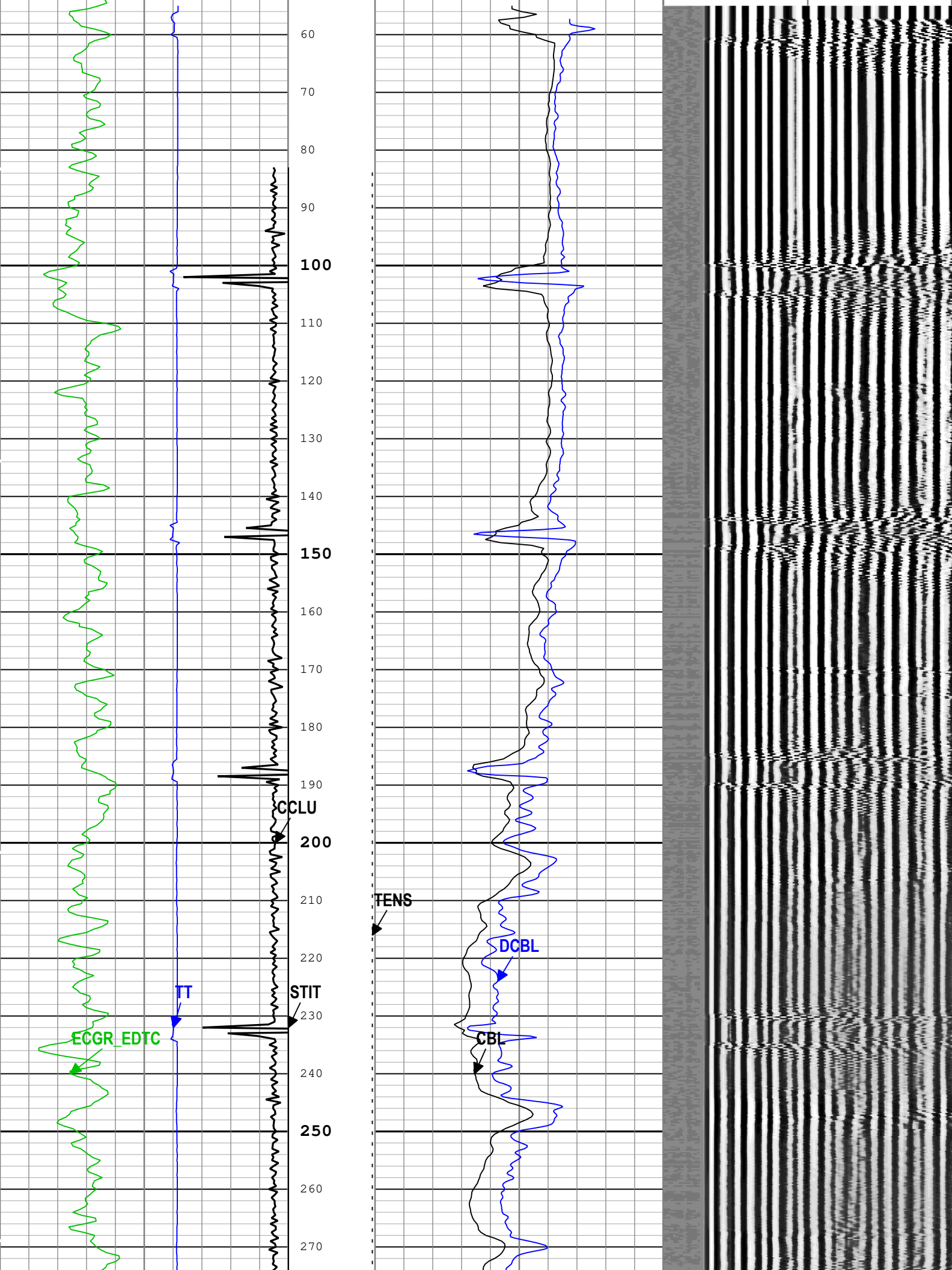
Log

Company:PDC Energy Inc Well:Vega #4N

1A: Main[3]:Up:S005

Description: CBL_VDL Format: Log (DSLT ASLT_CBL-VDL) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 09-Apr-2022 21:30:54

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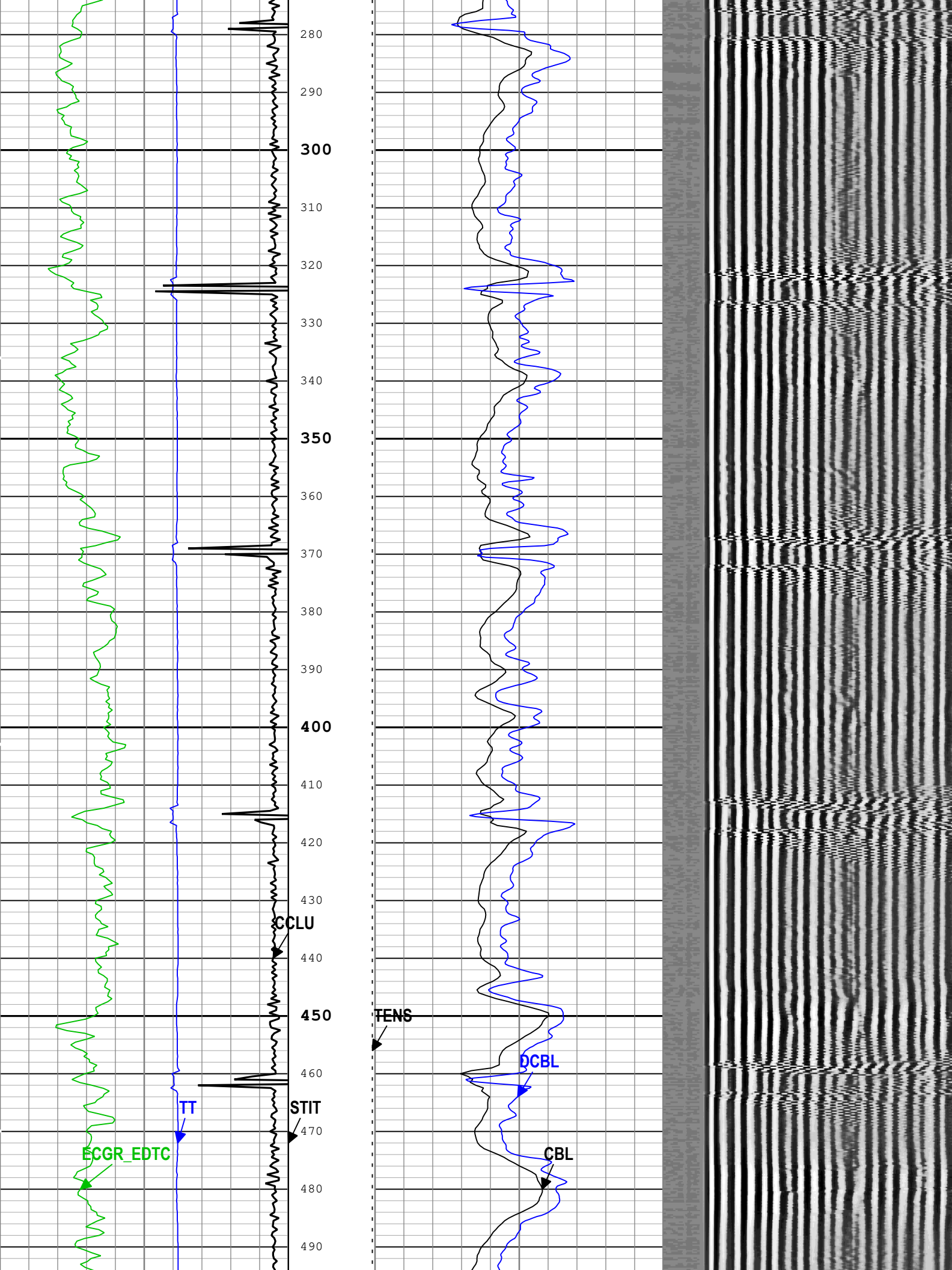
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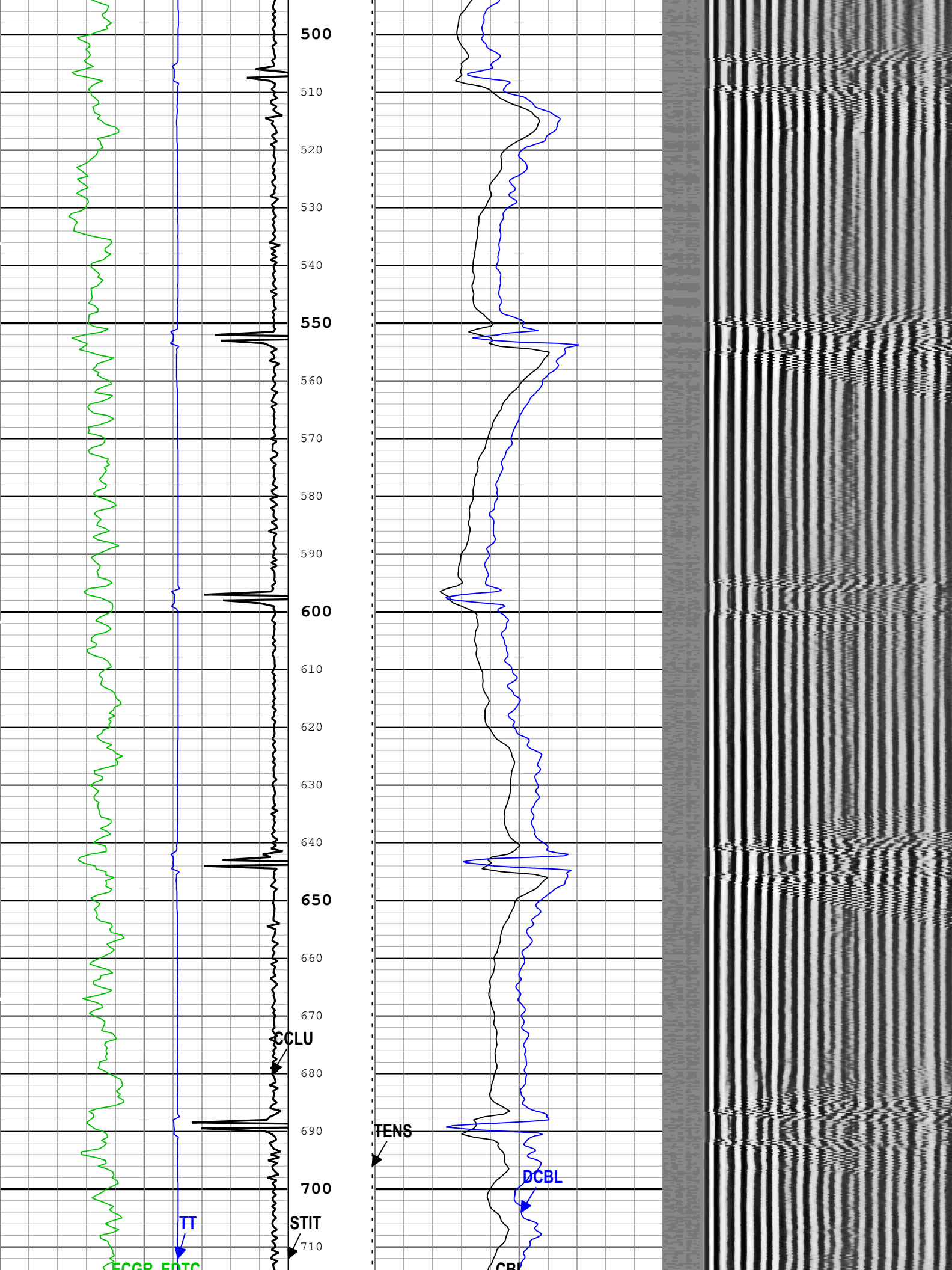
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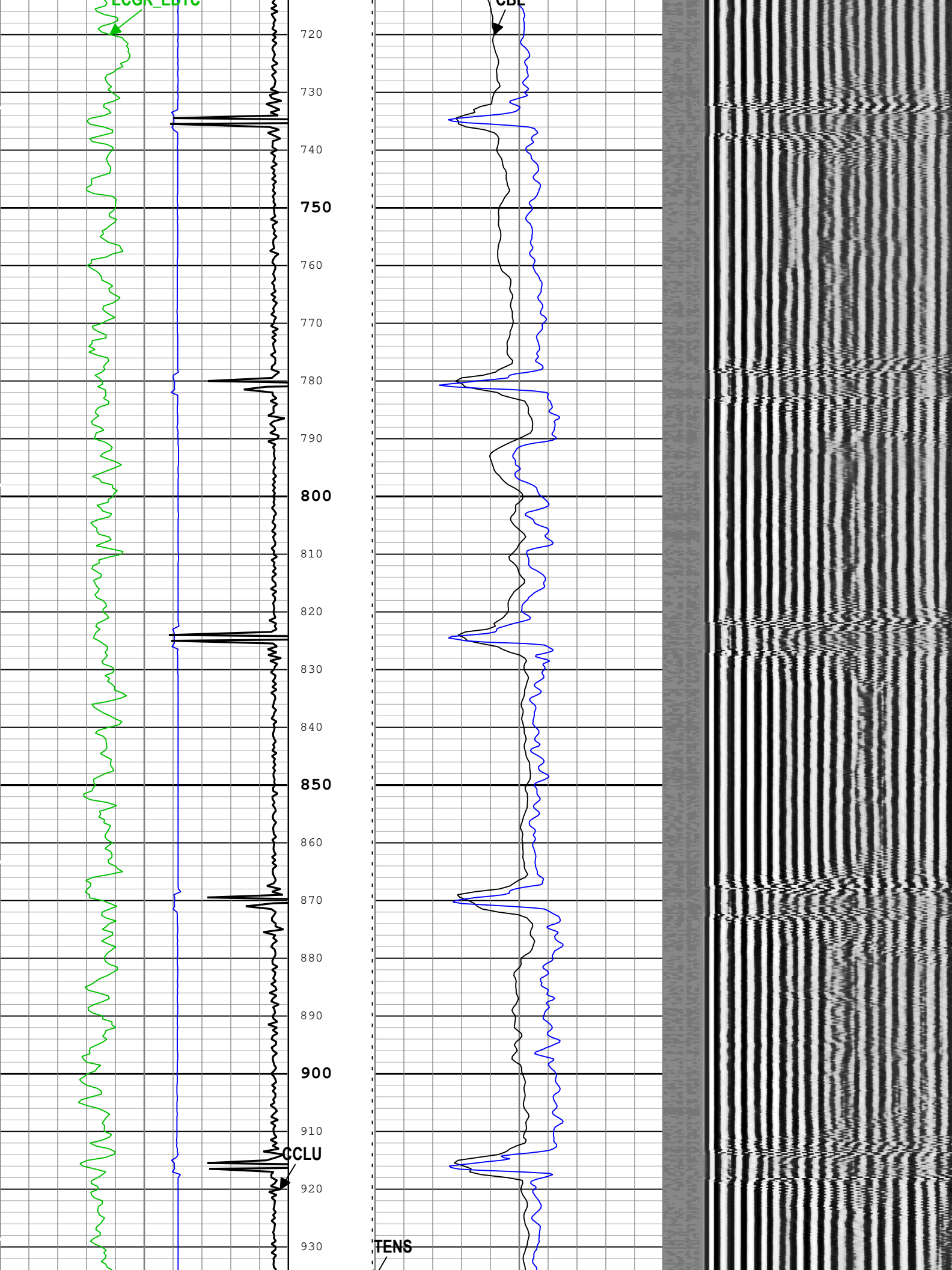
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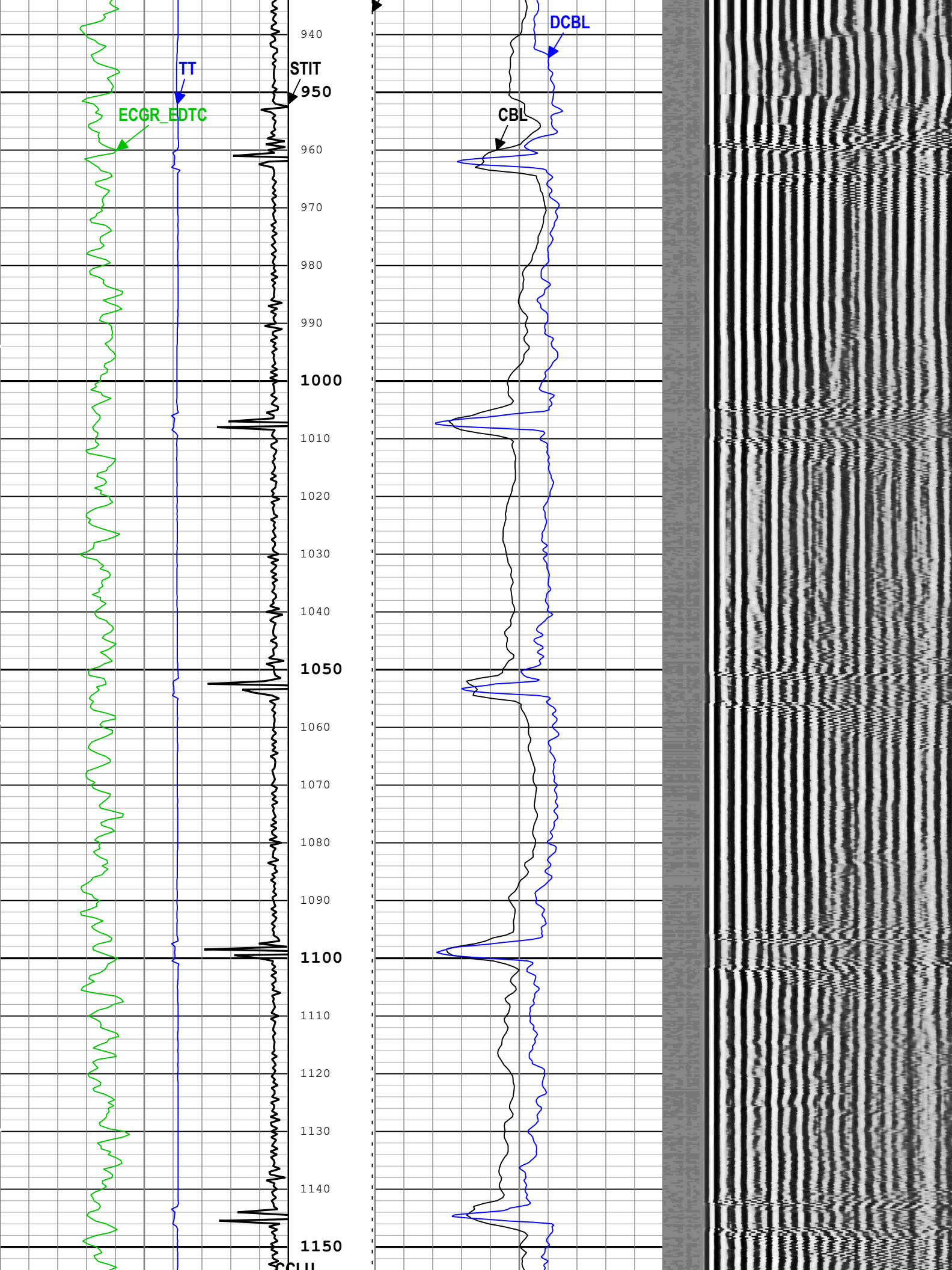
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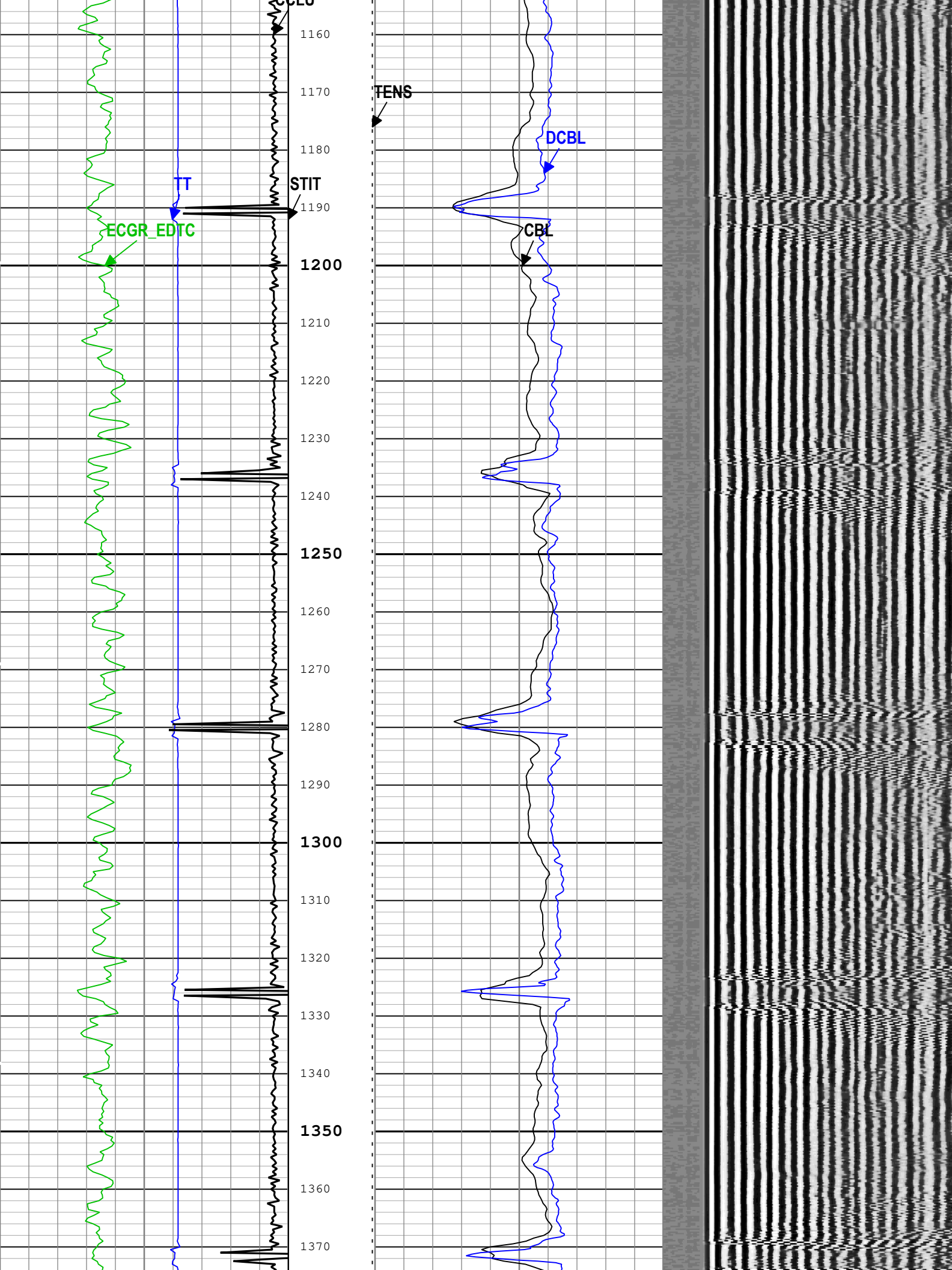
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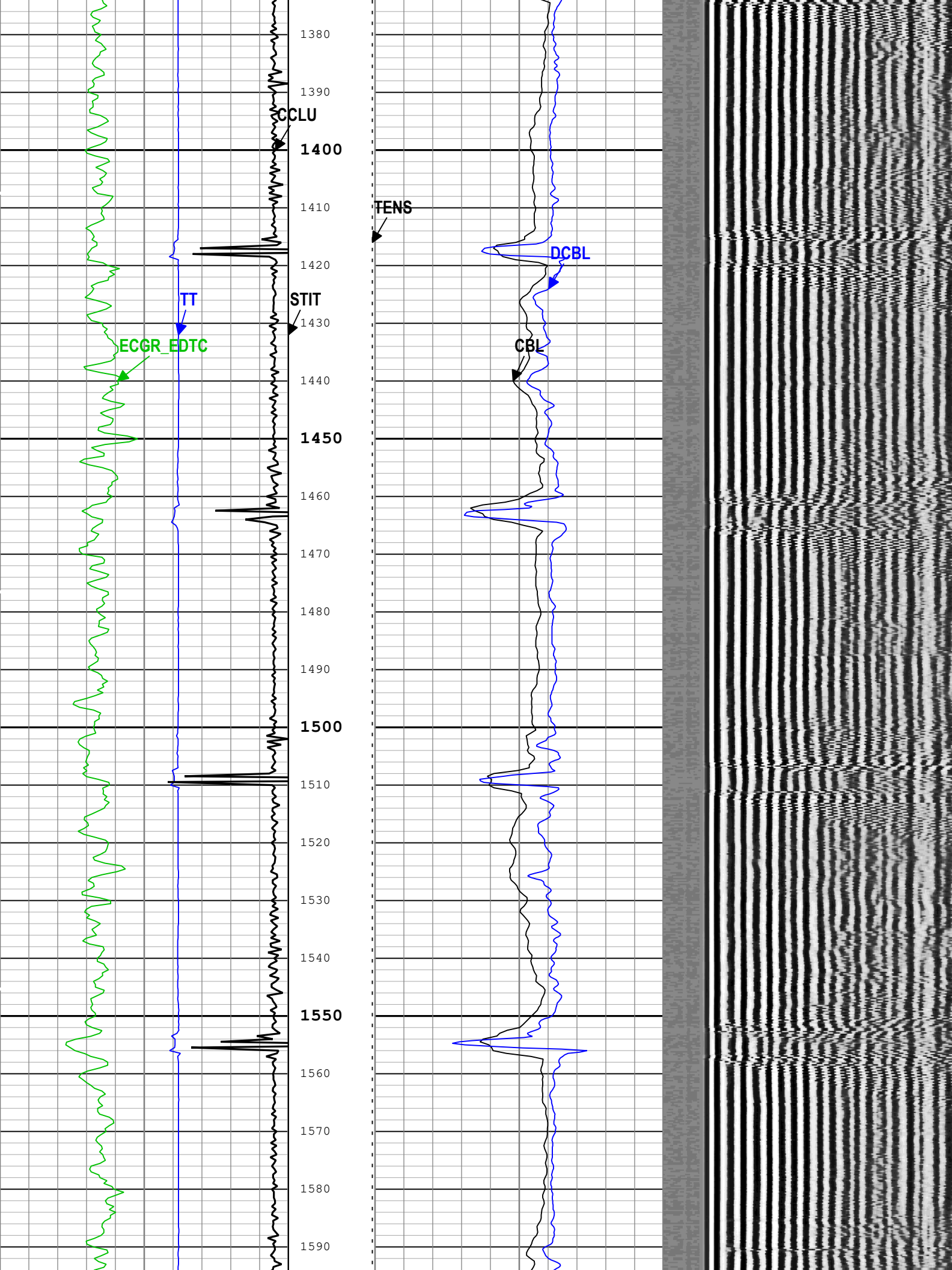
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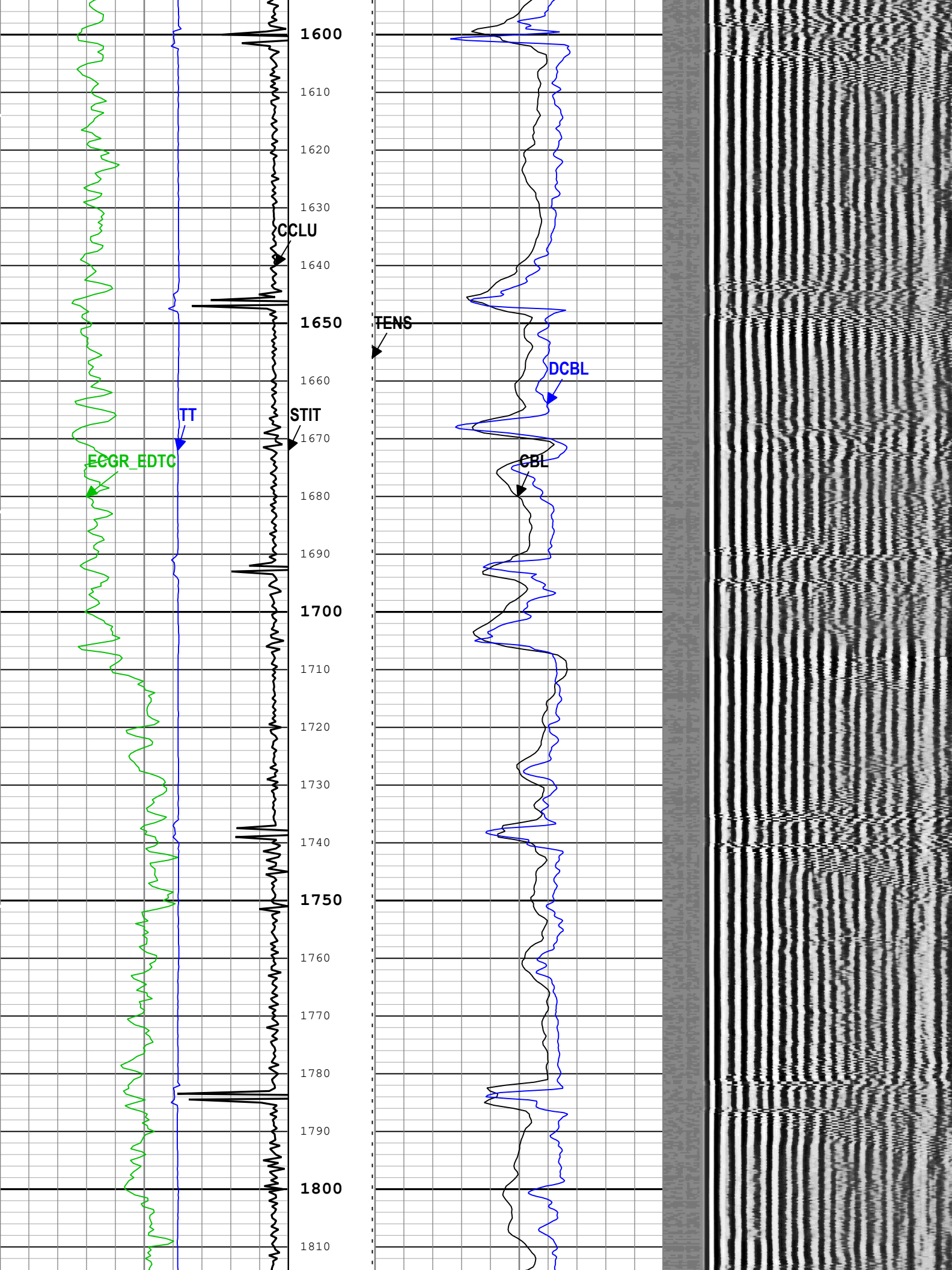
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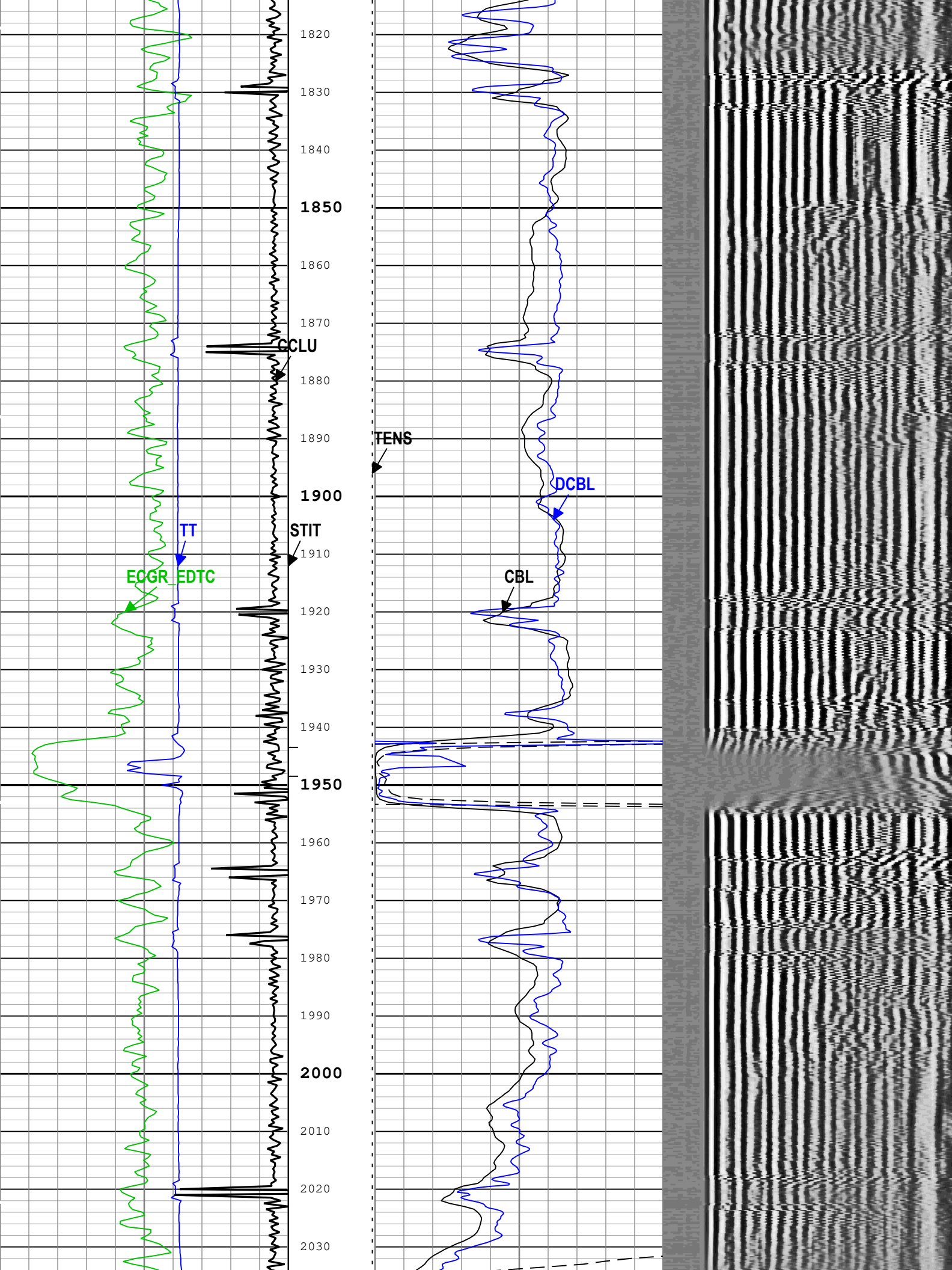
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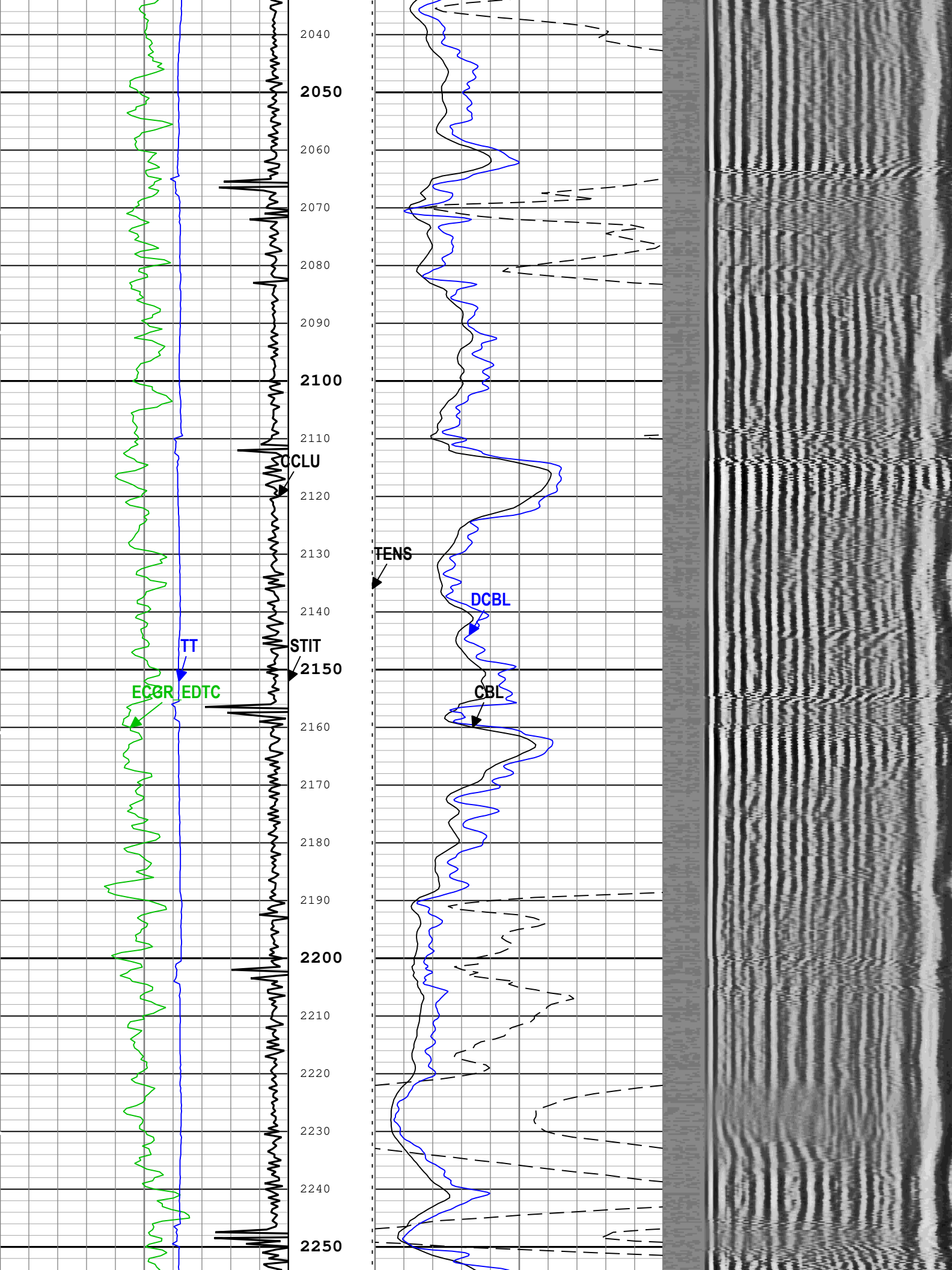
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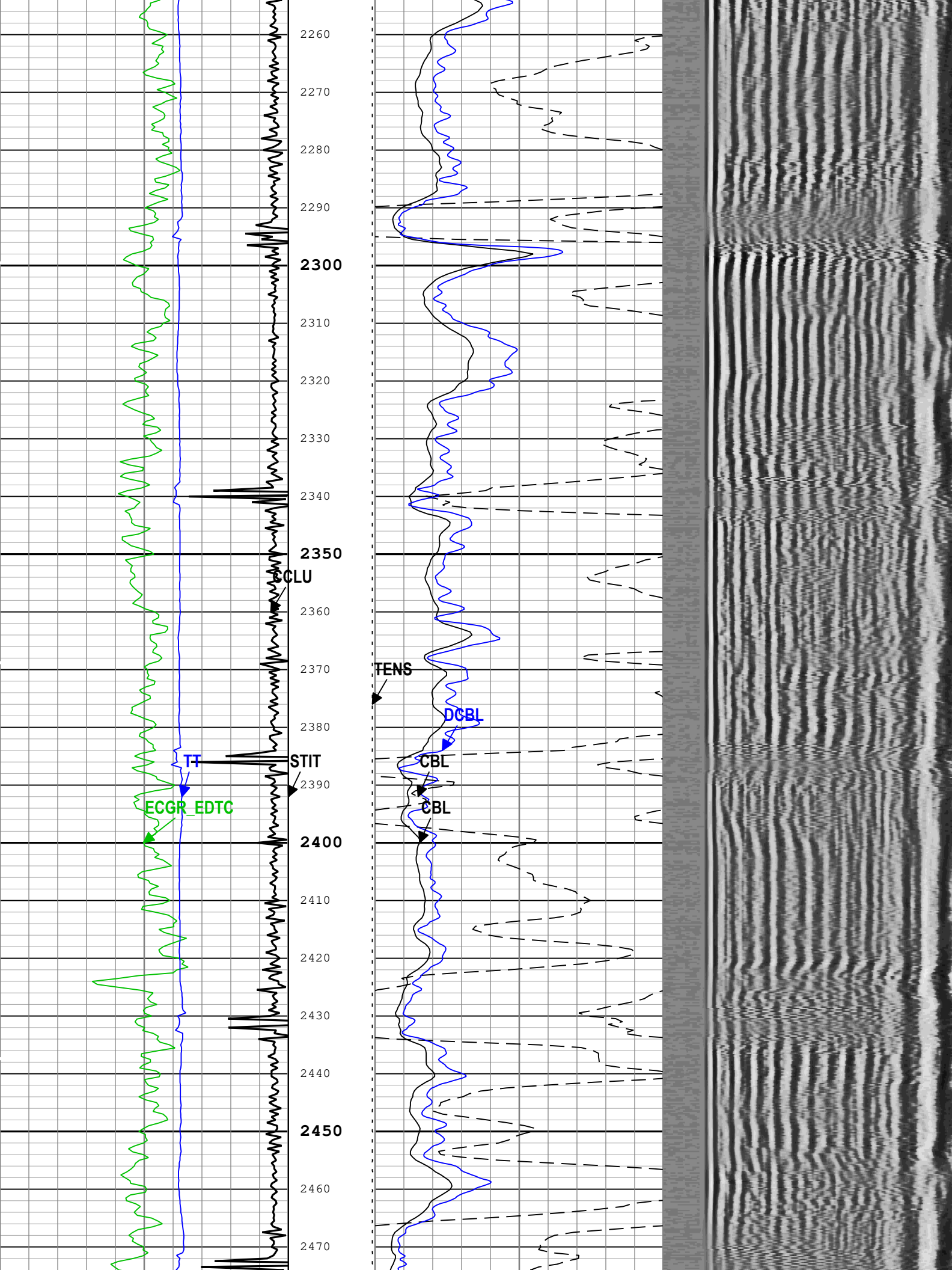
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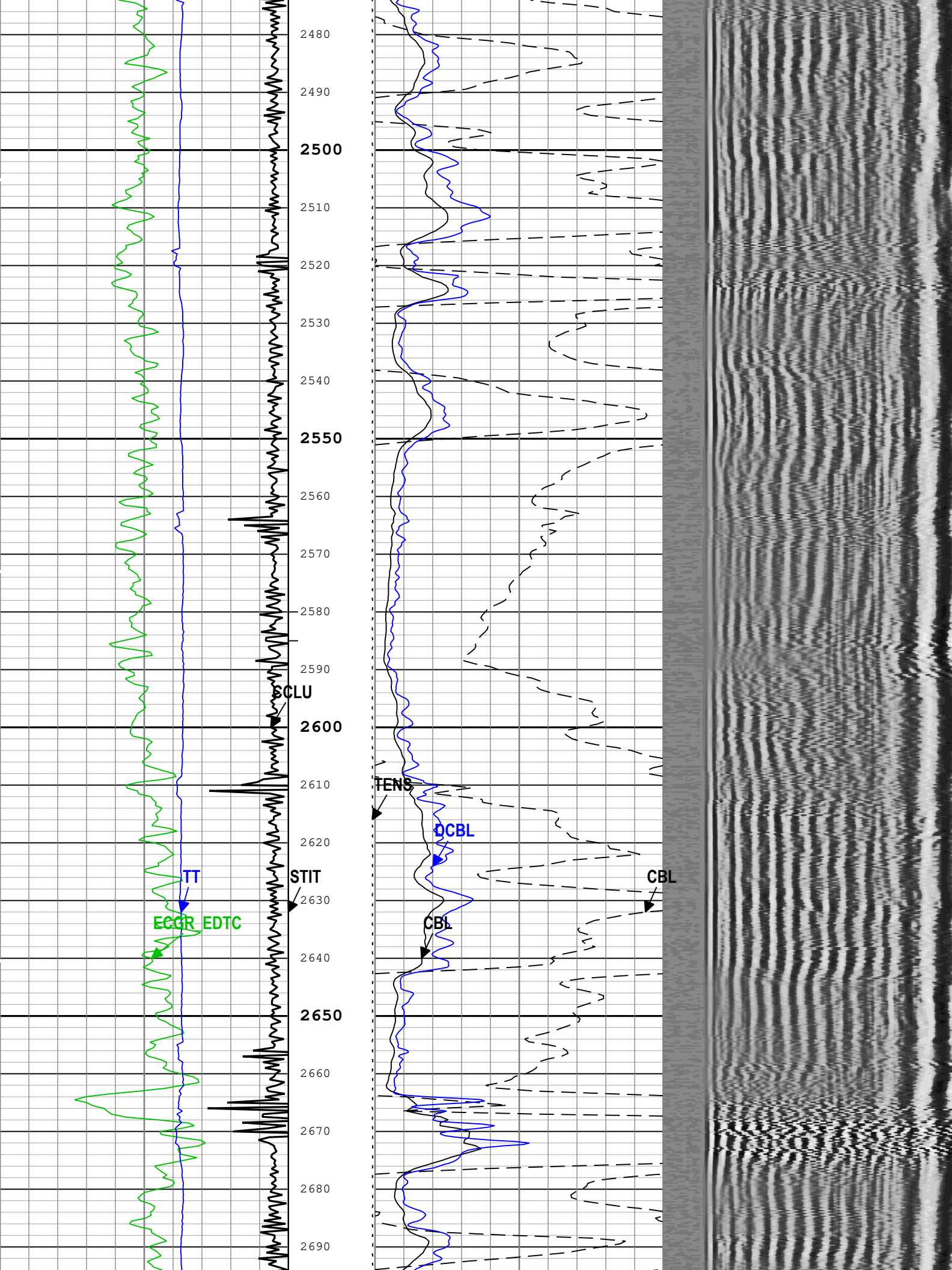
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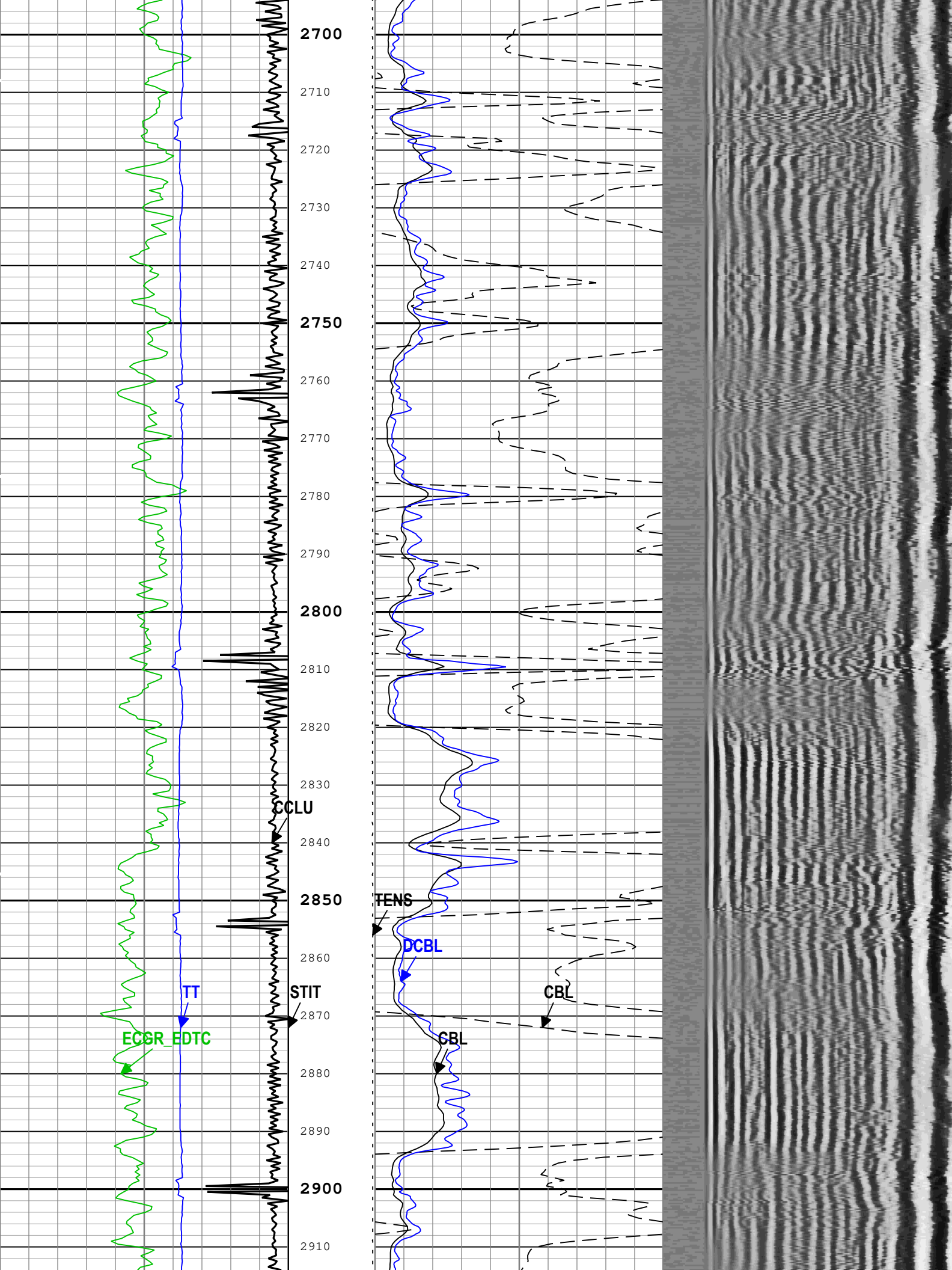
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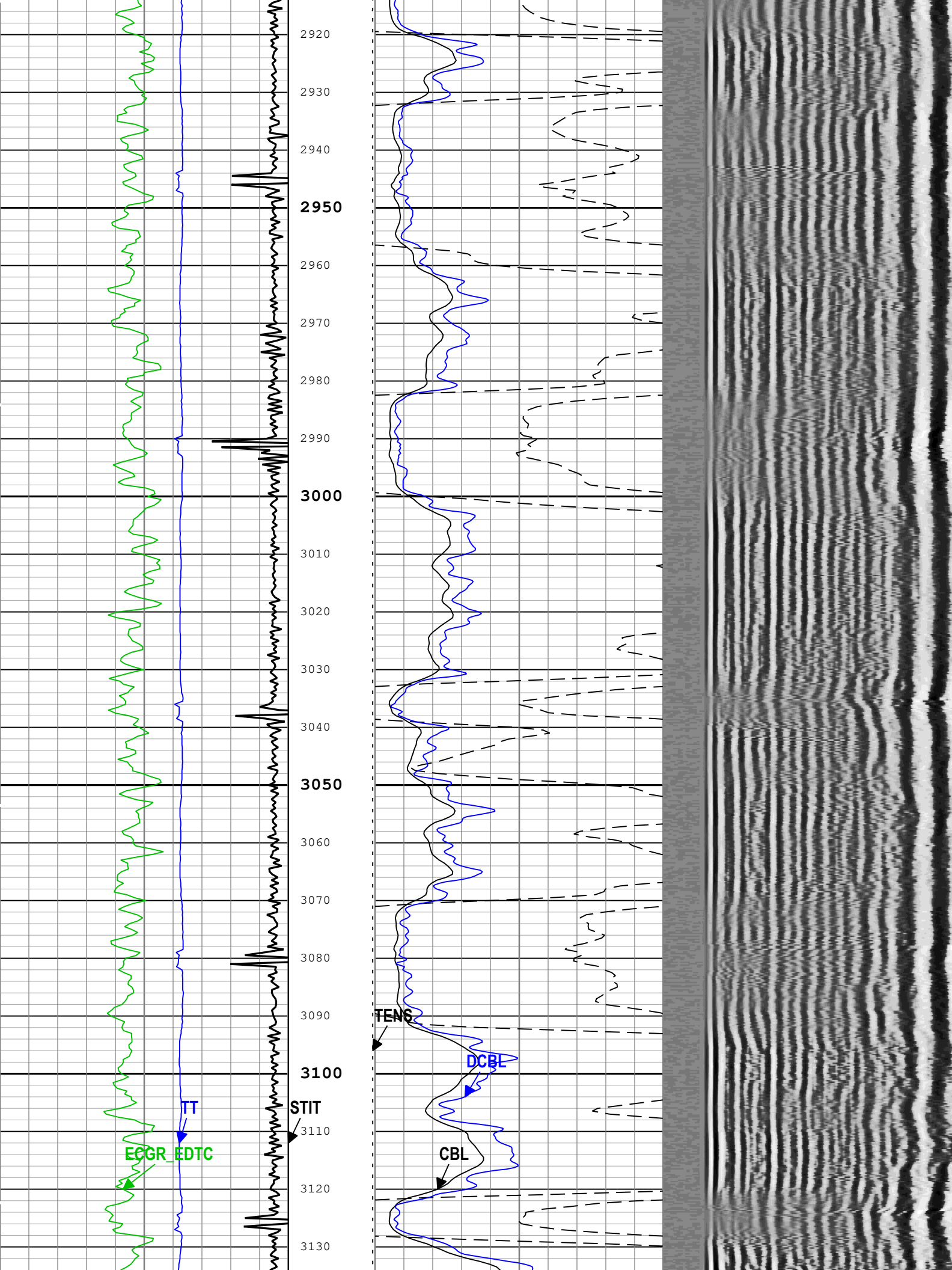
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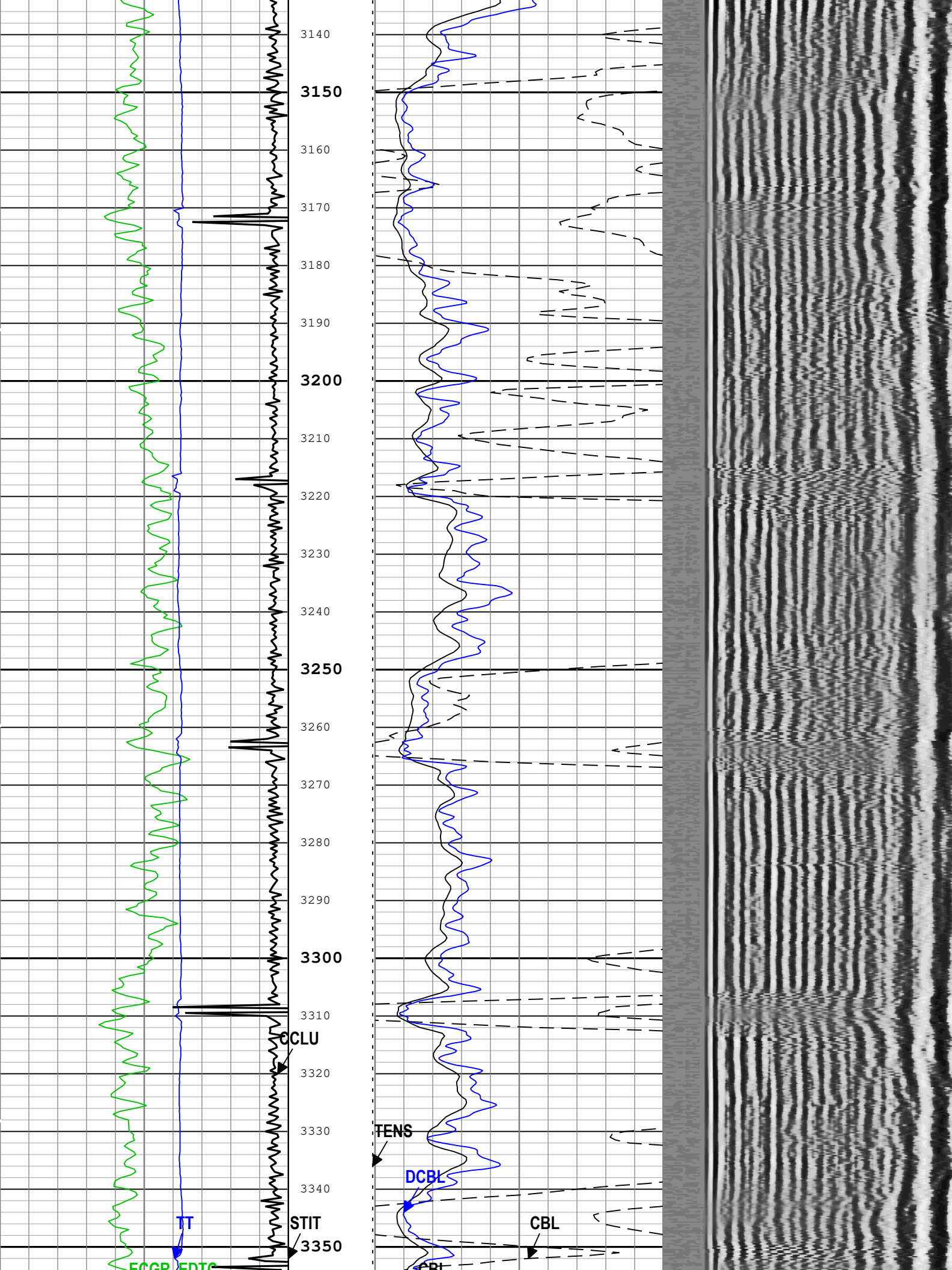
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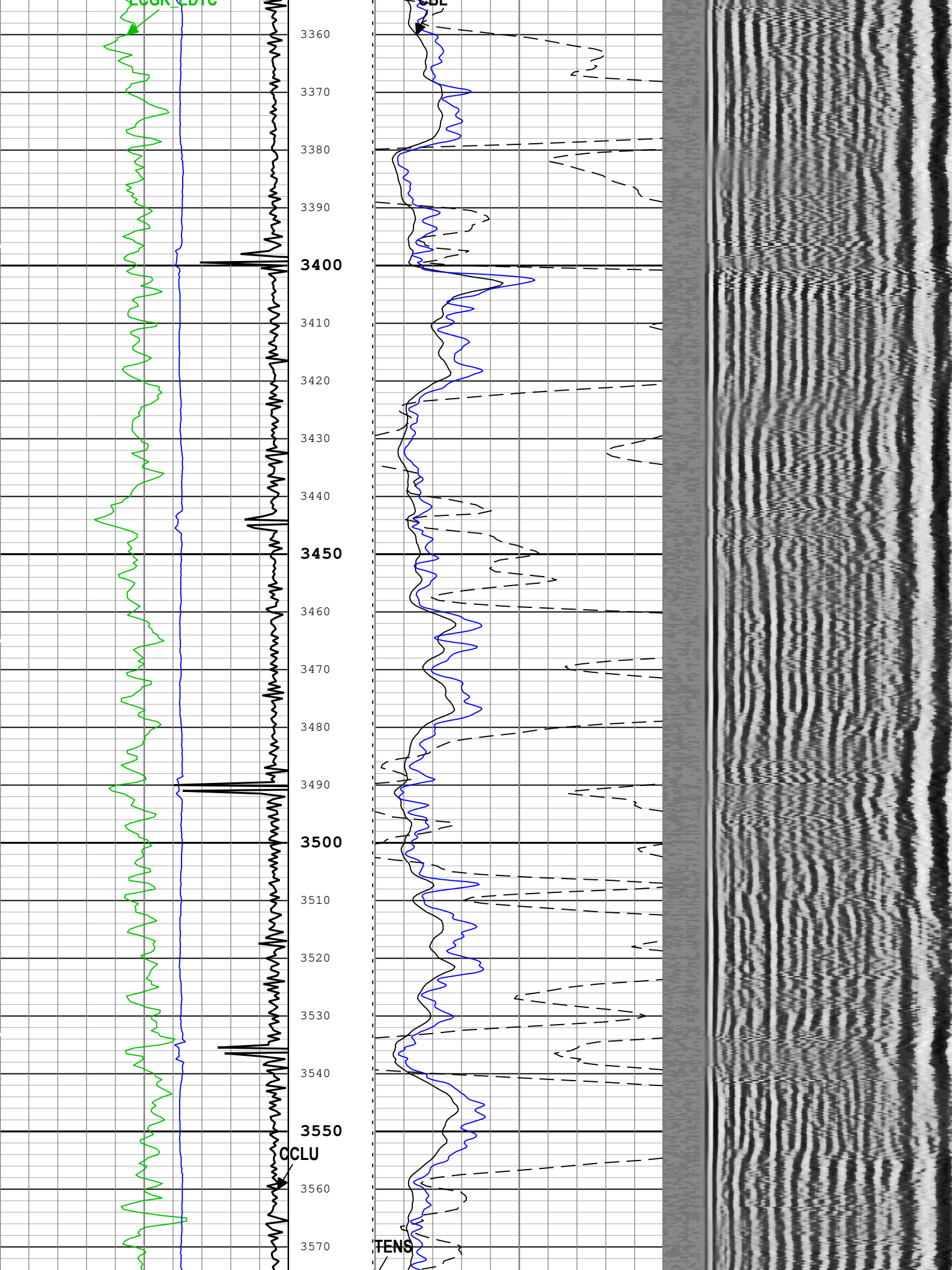
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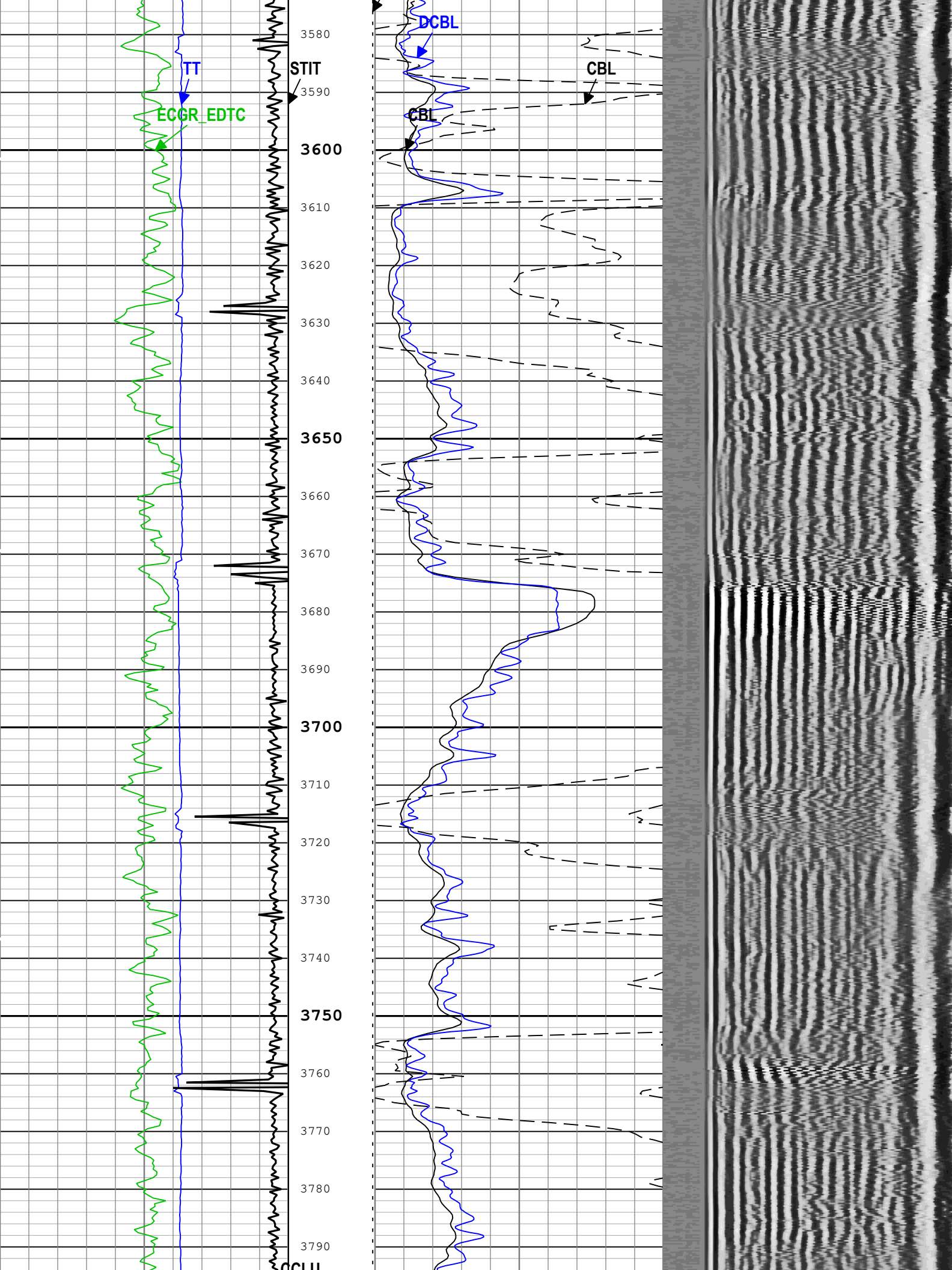
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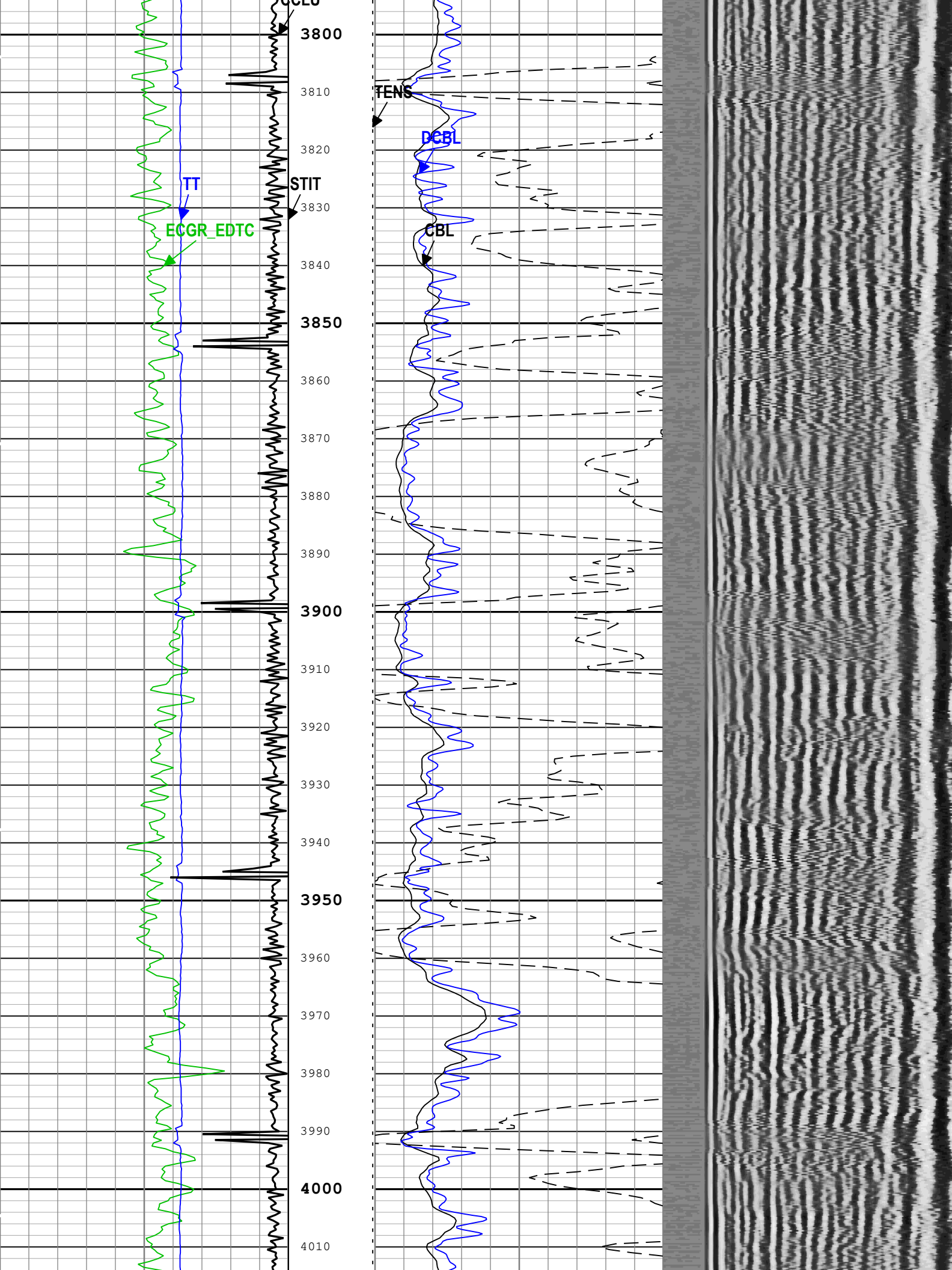
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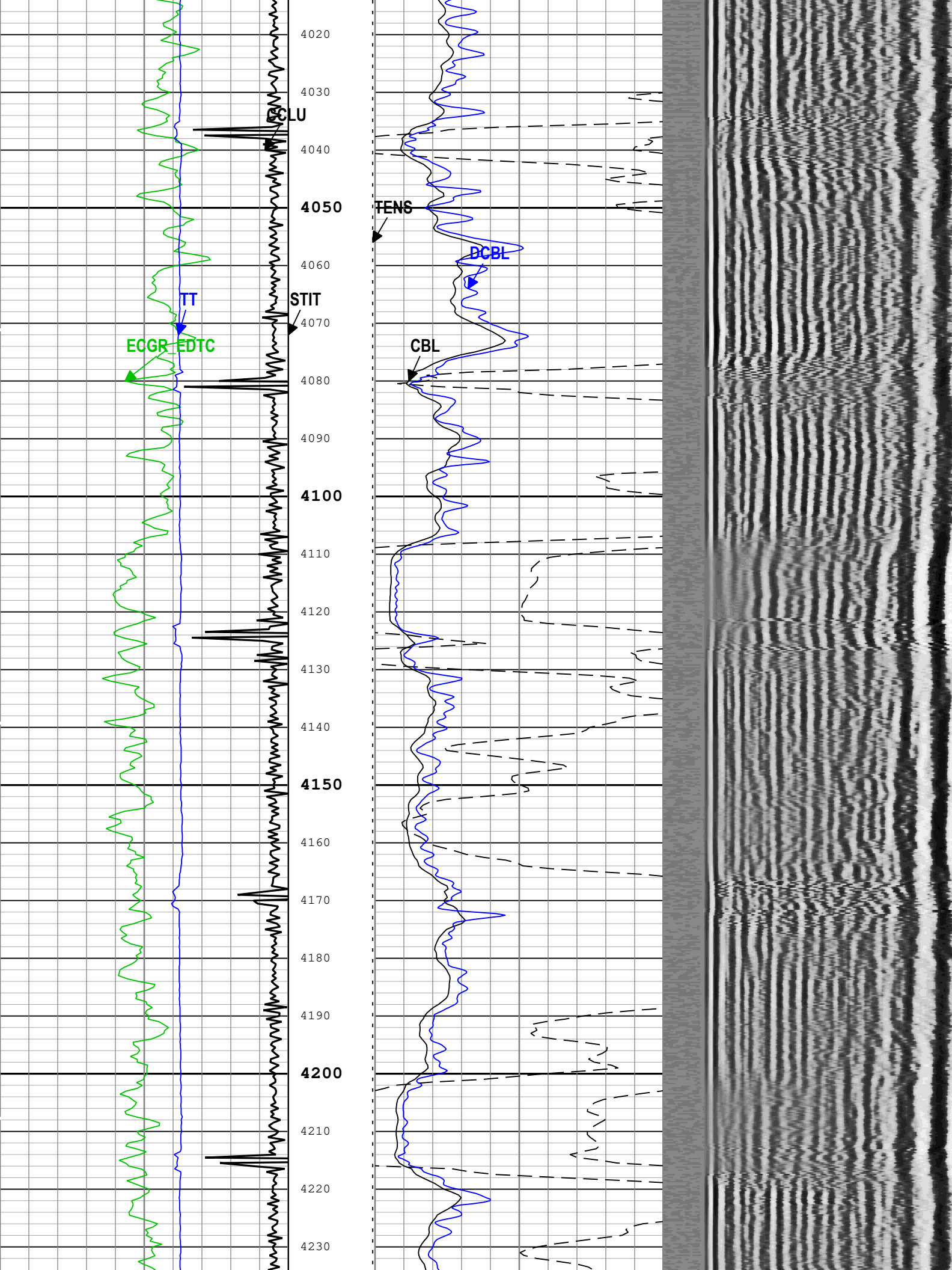
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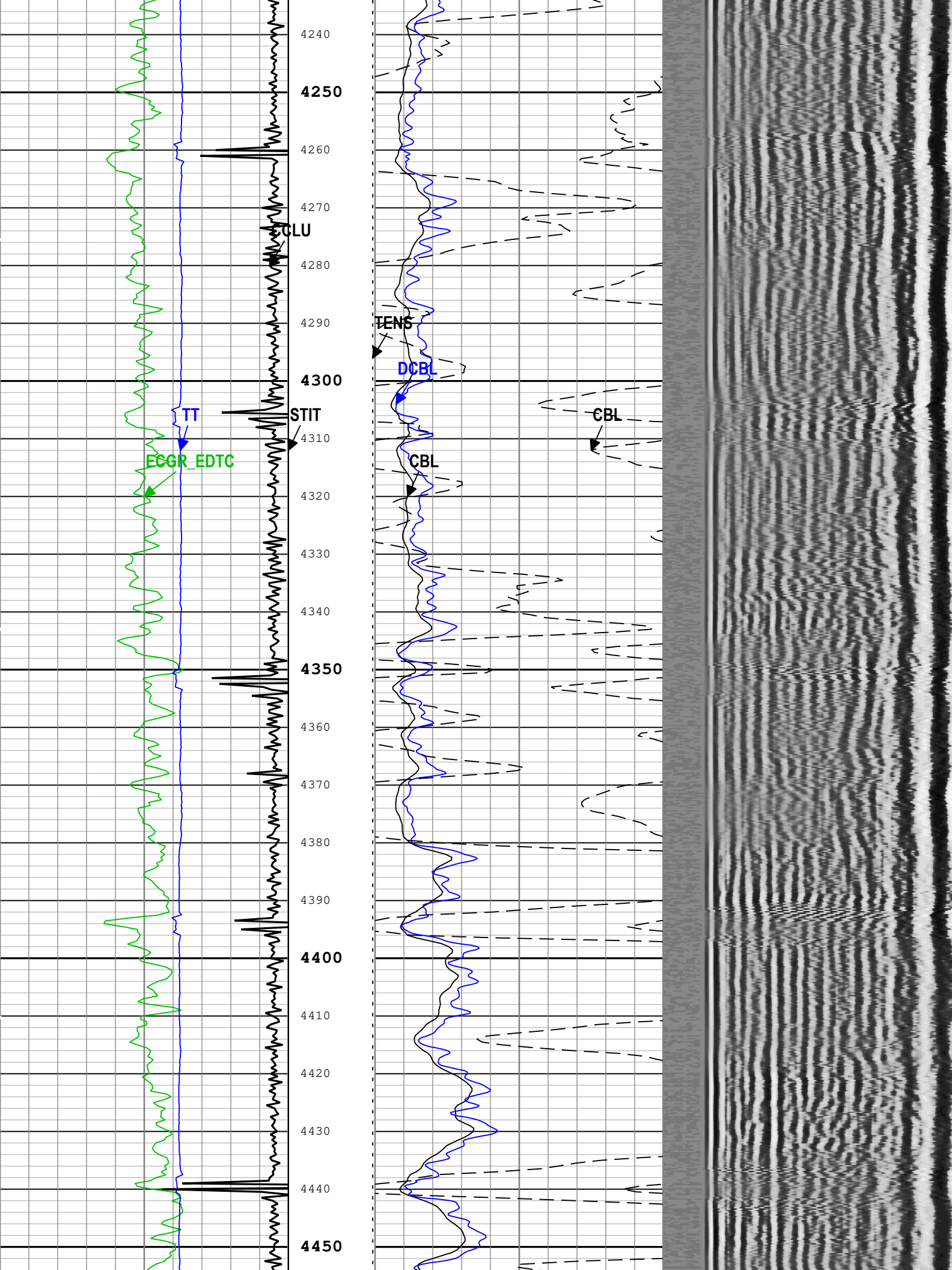
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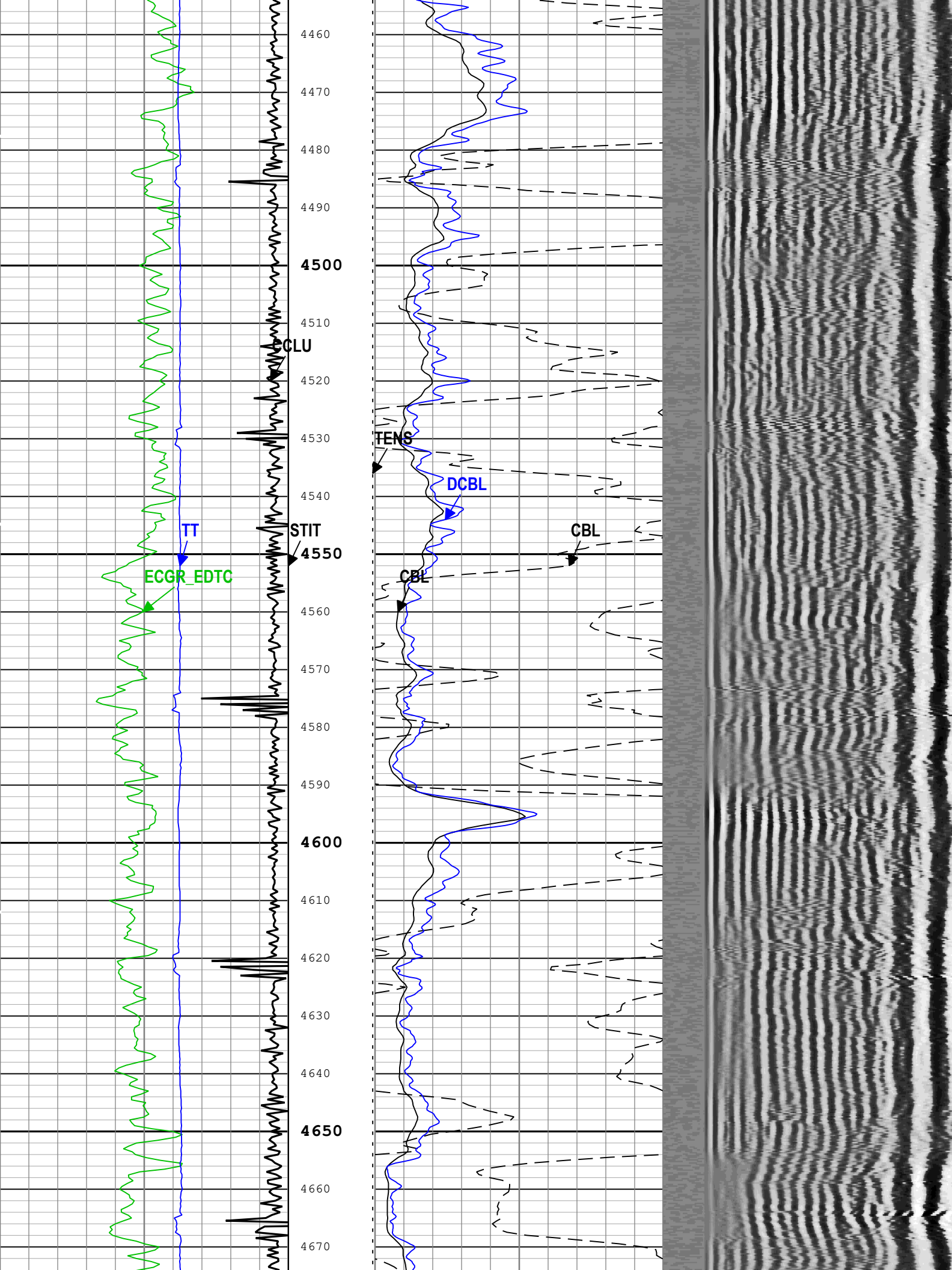
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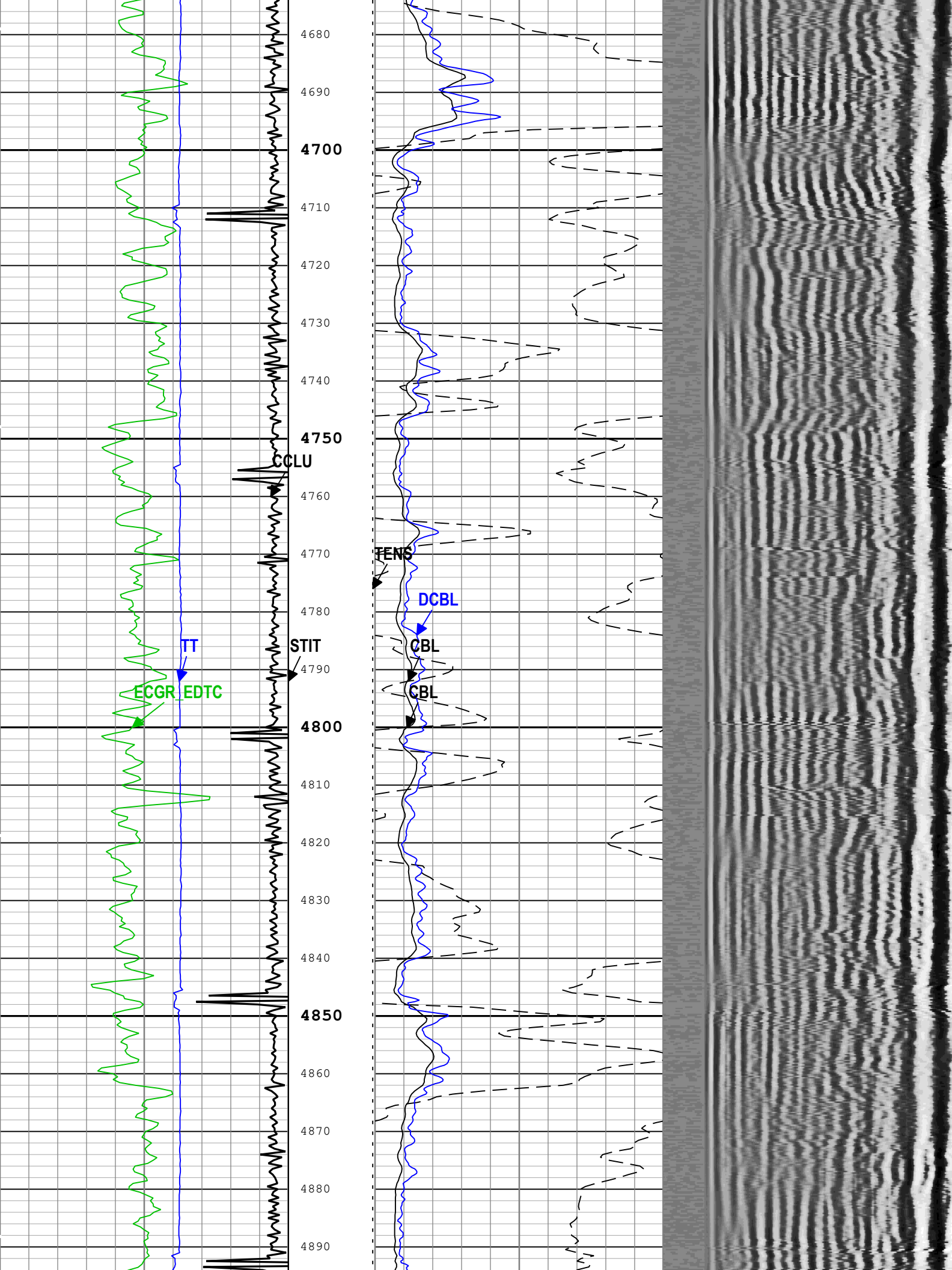
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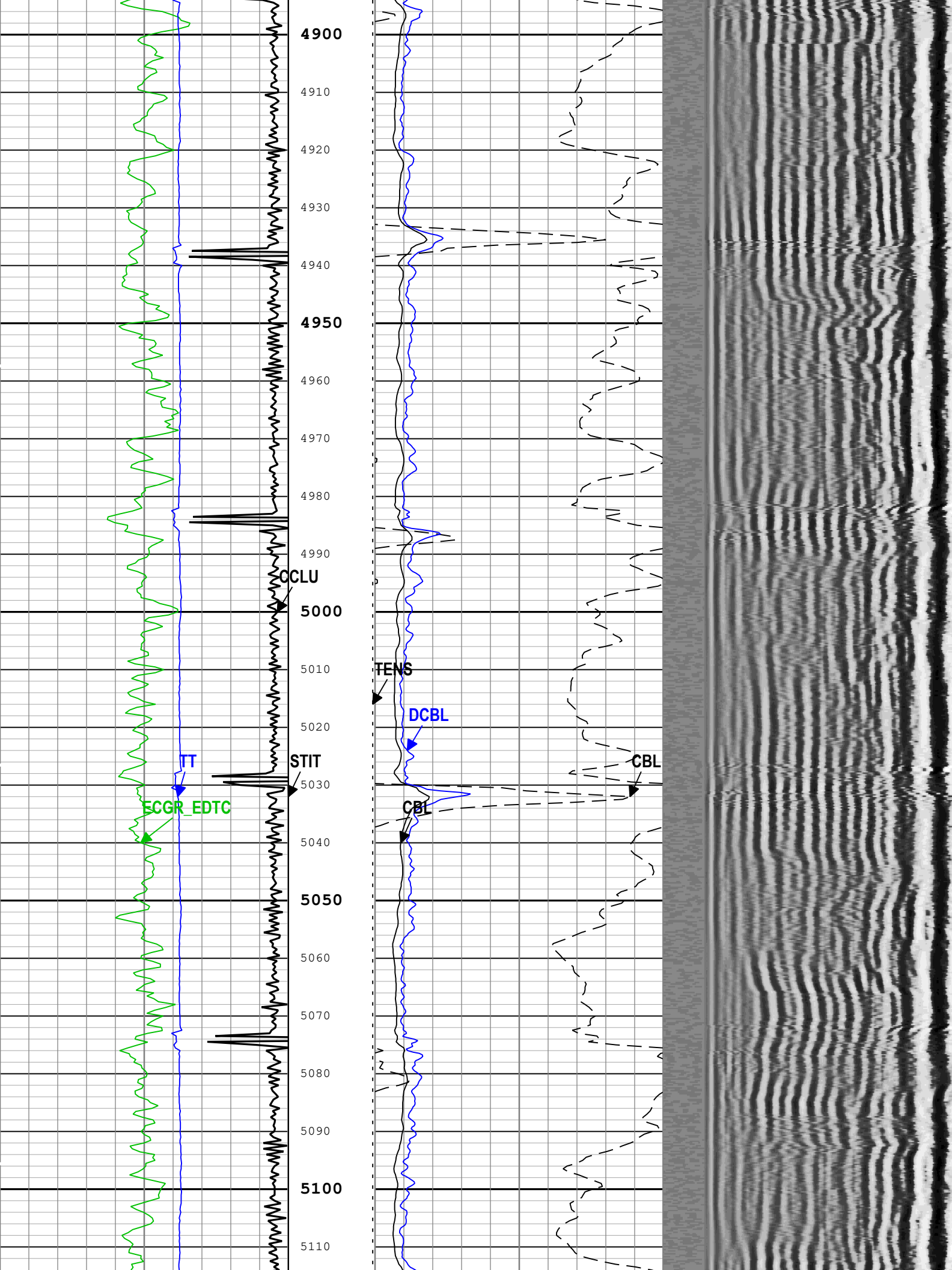
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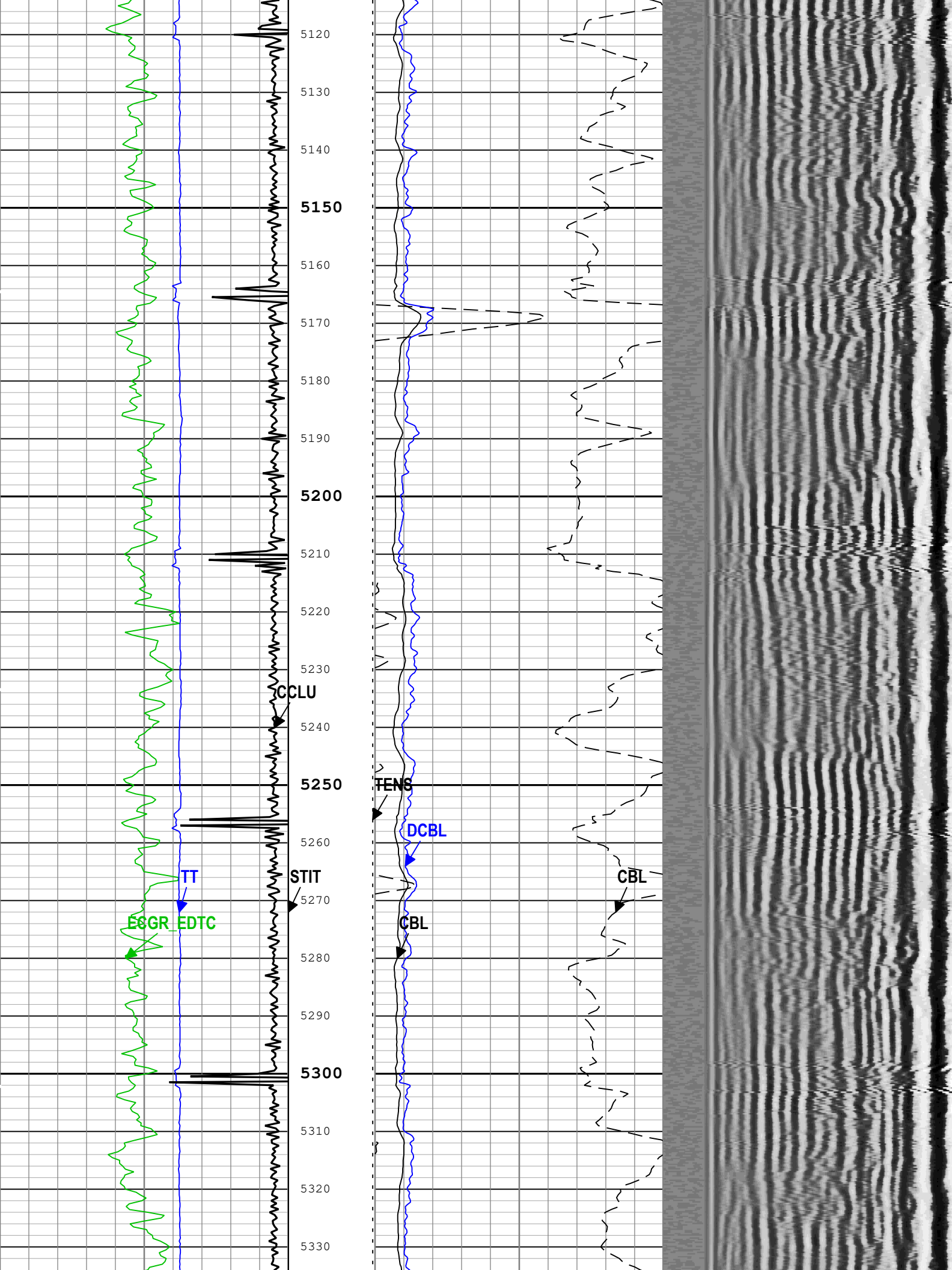
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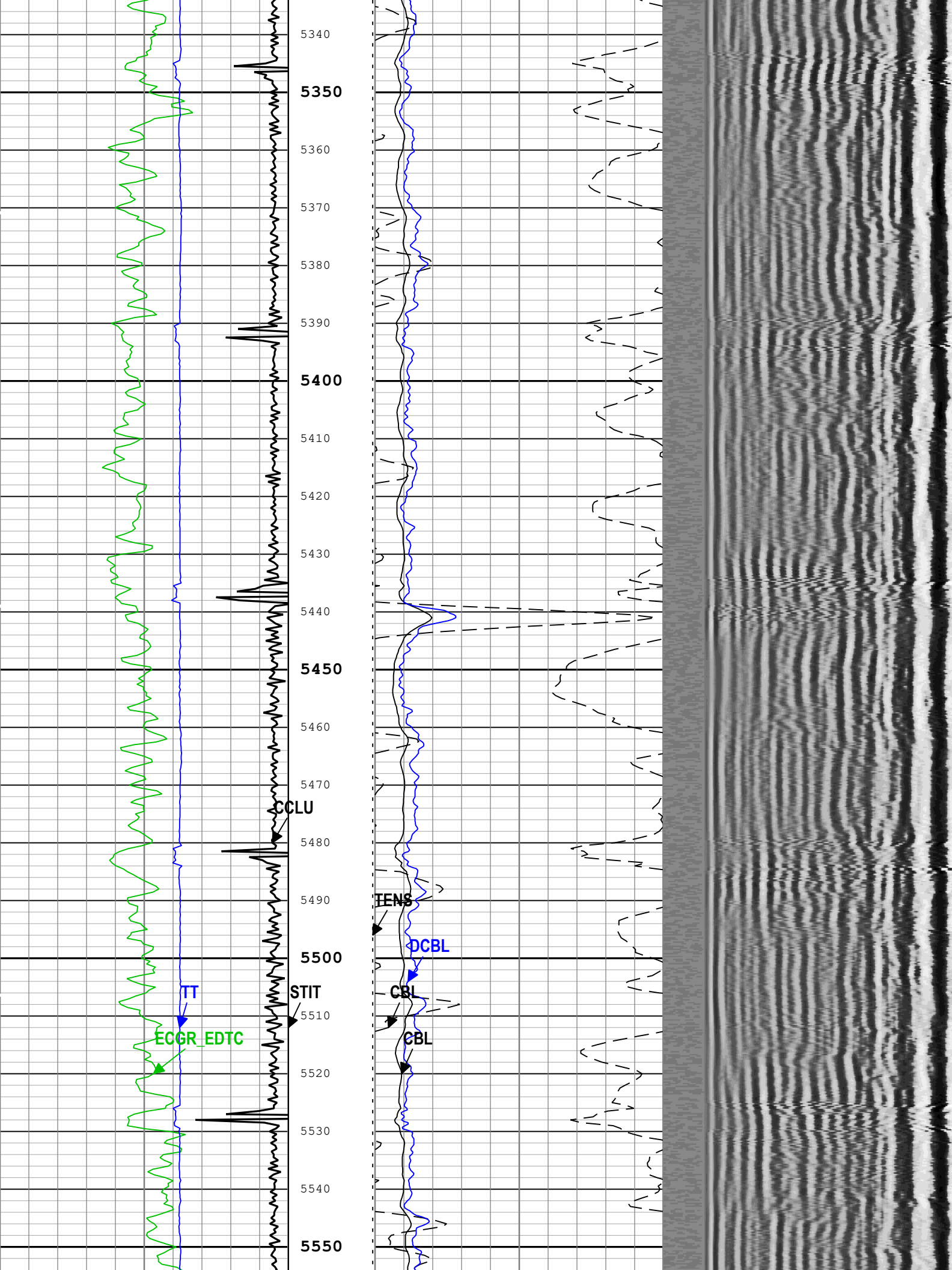
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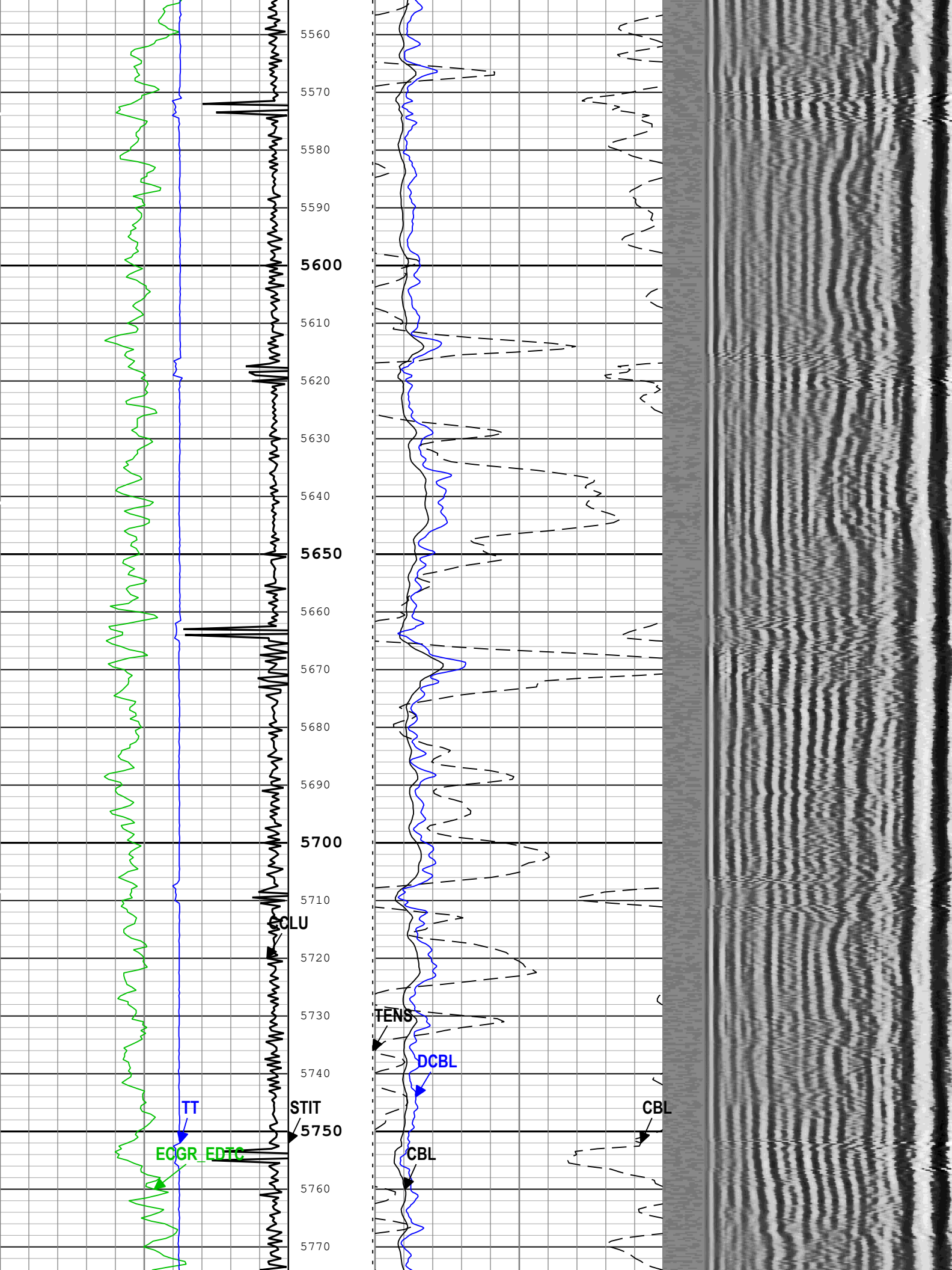
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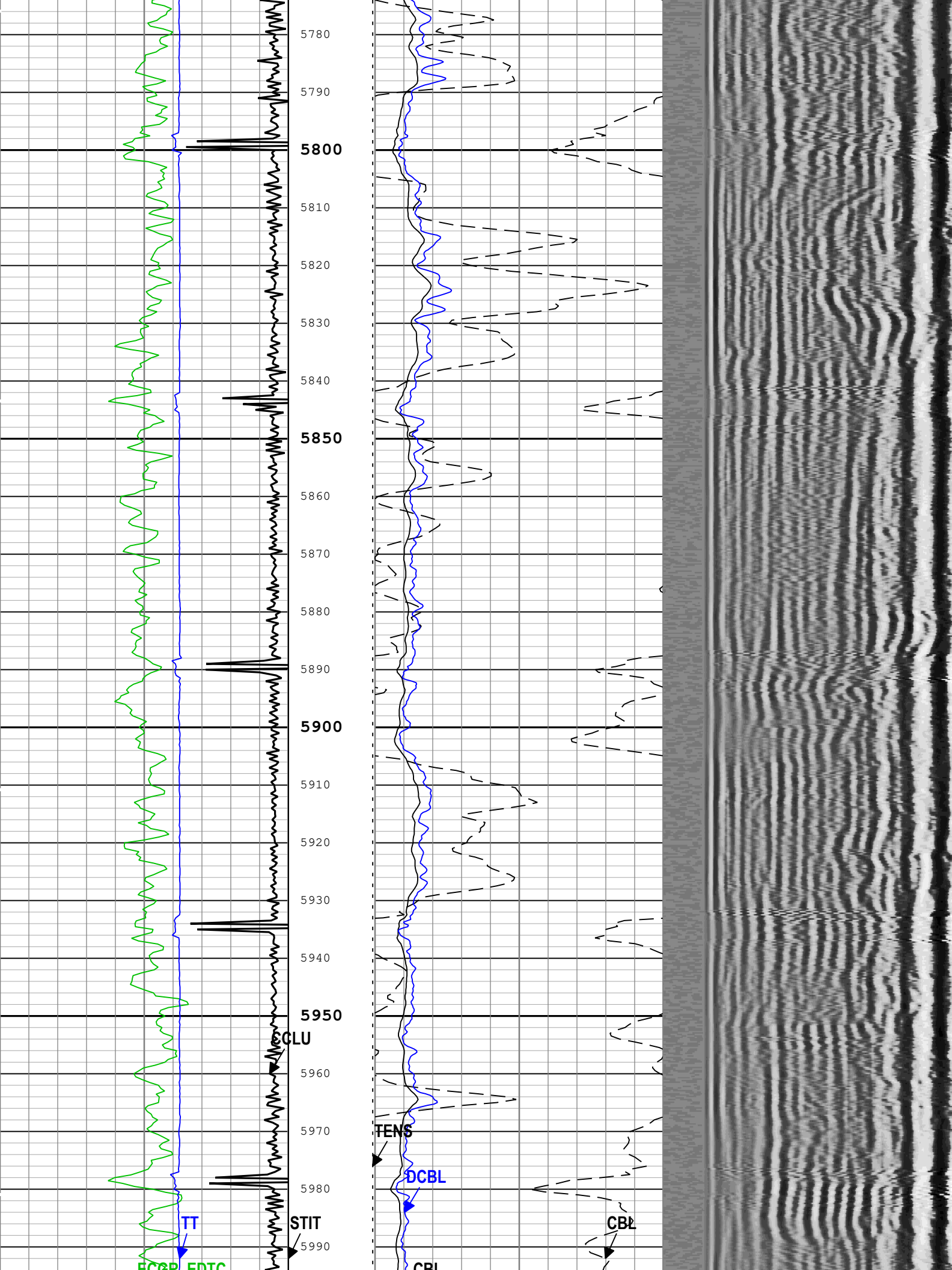
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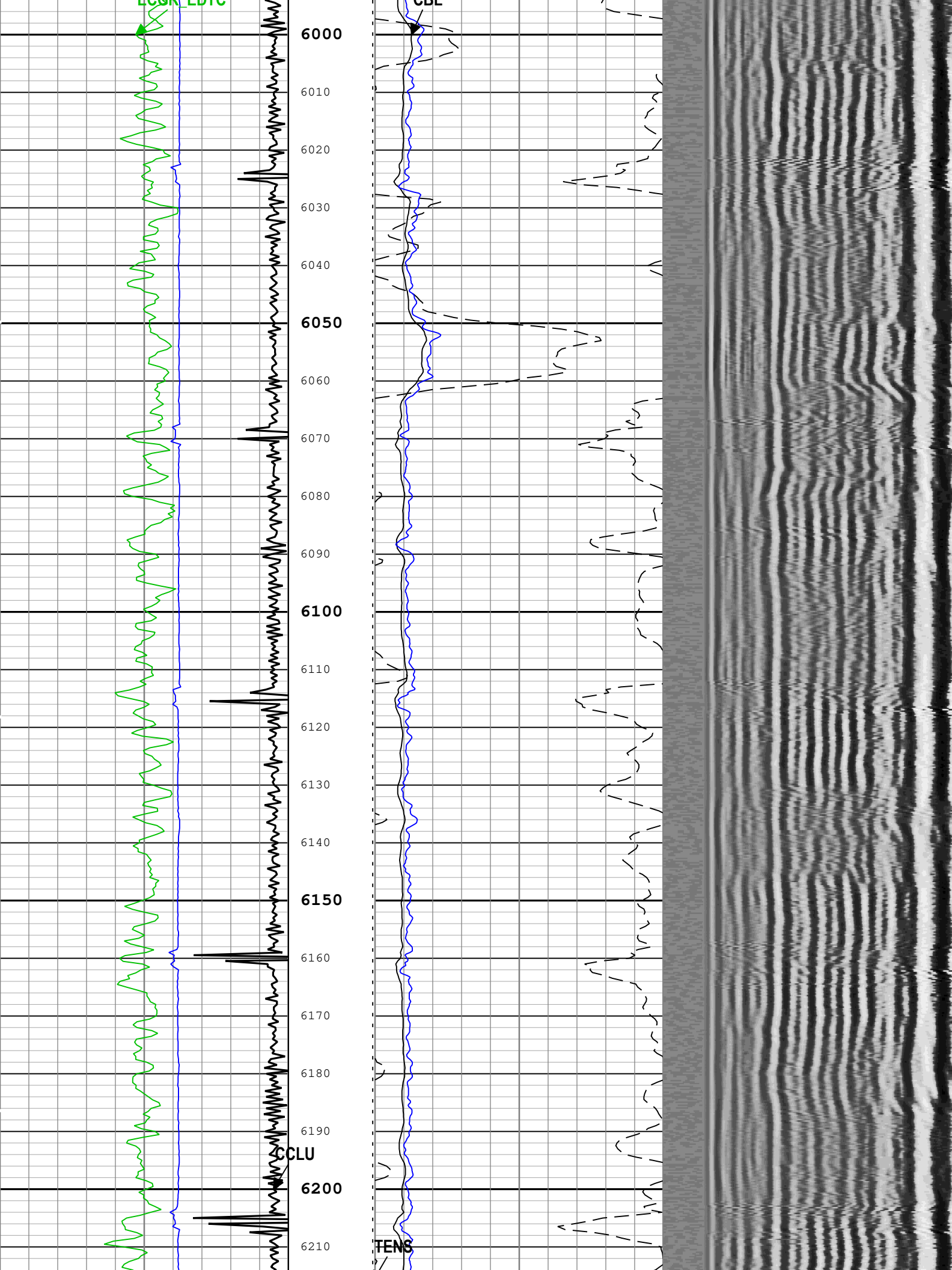
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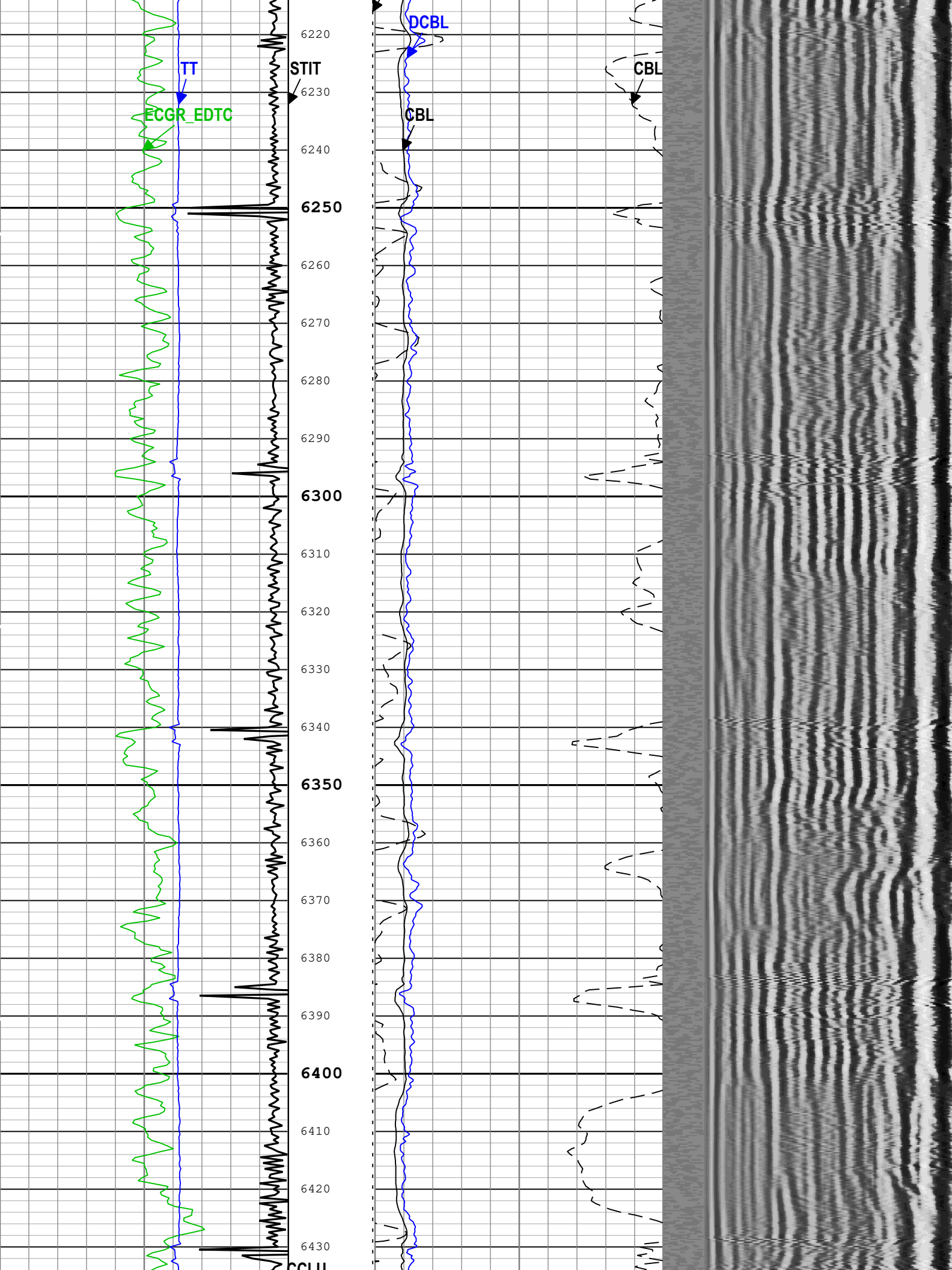
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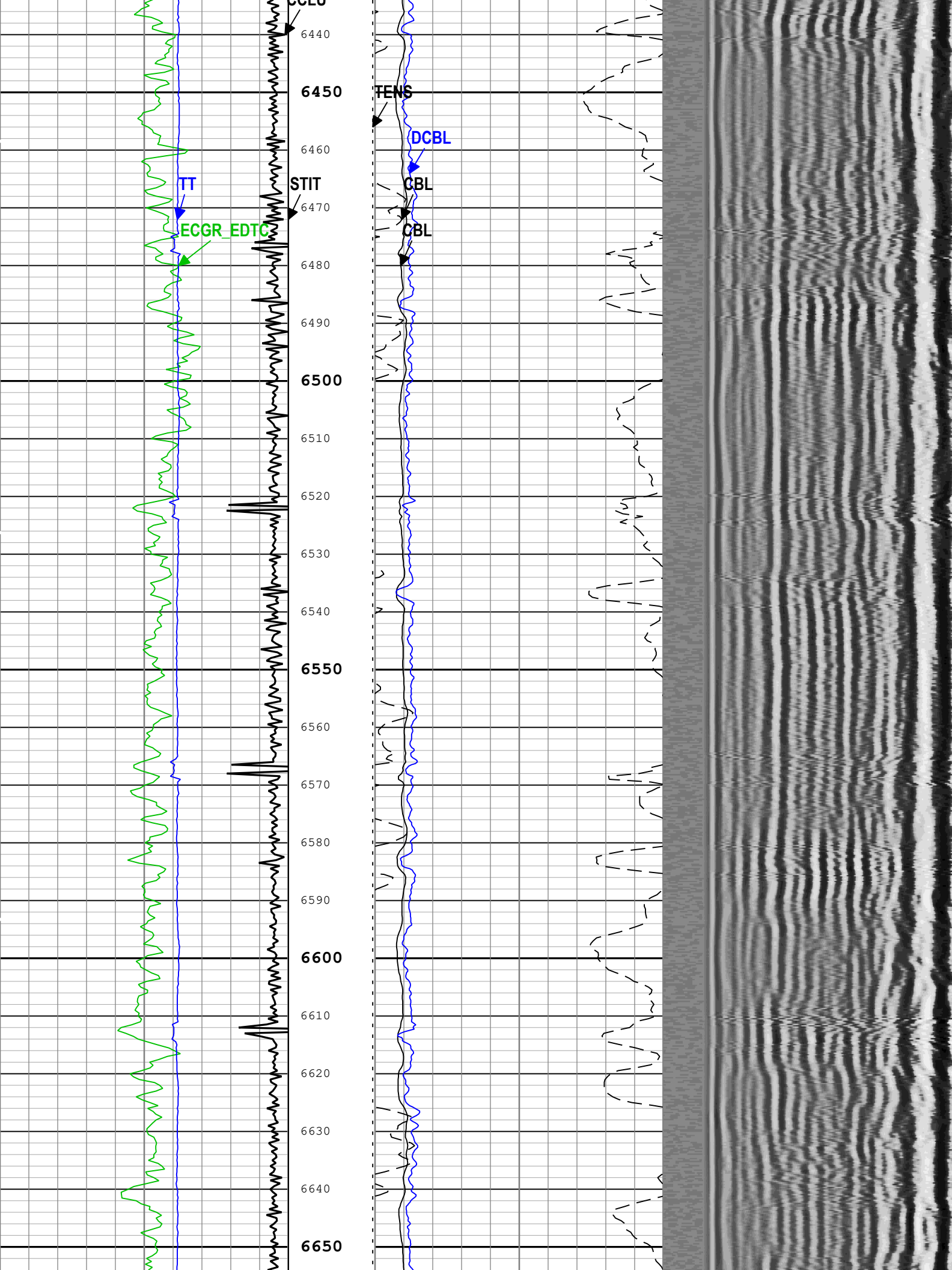
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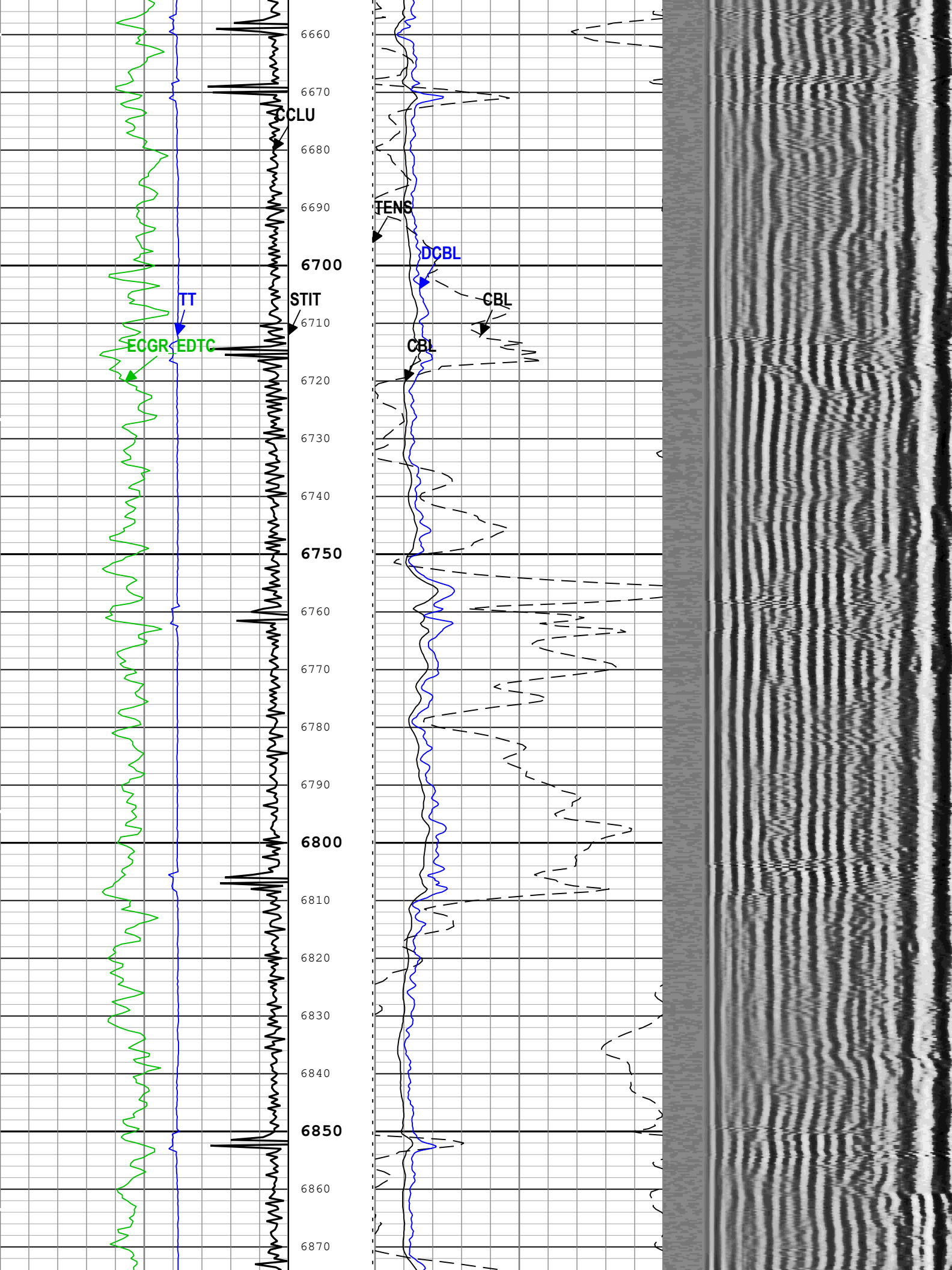
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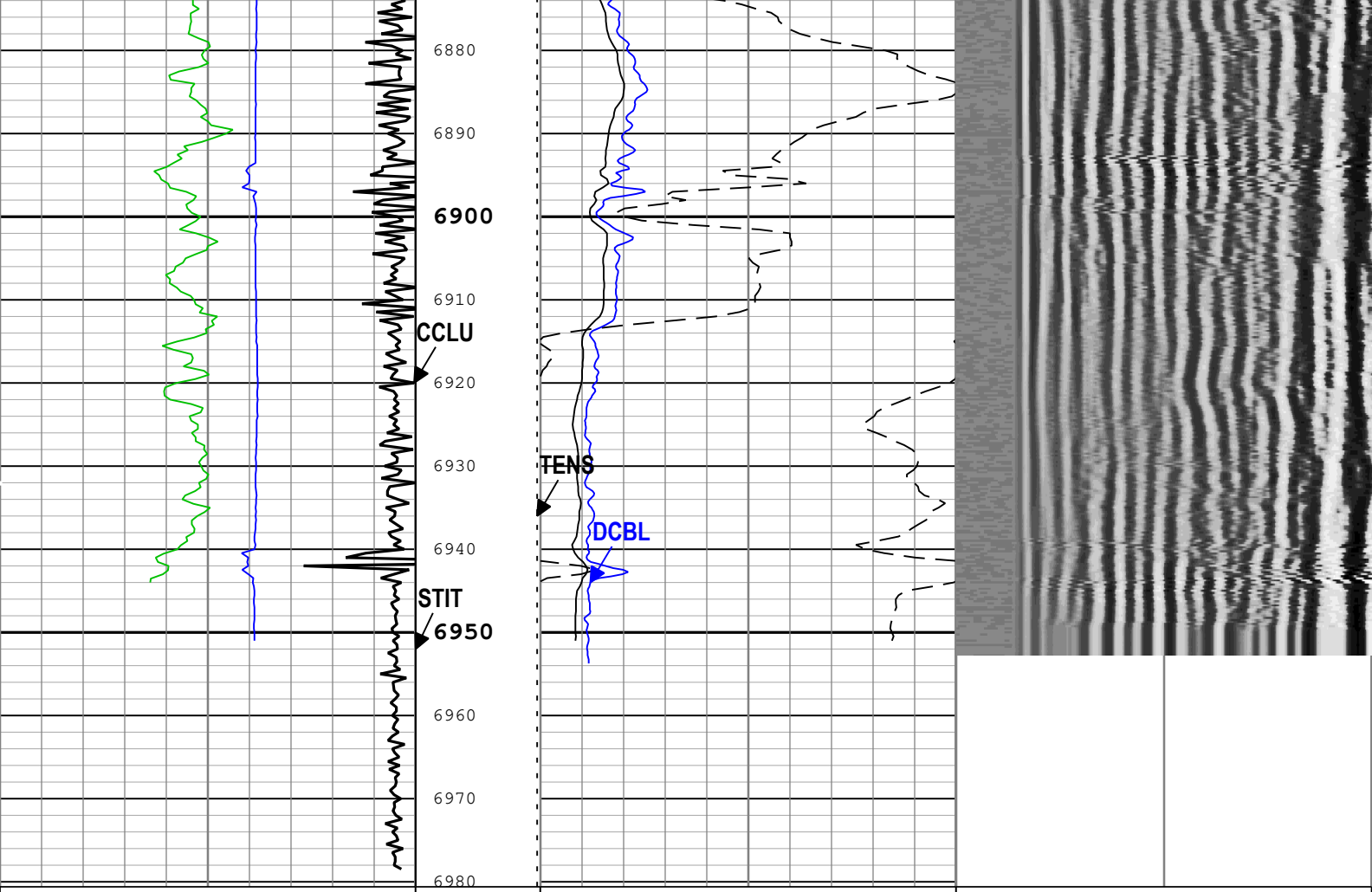


Gamma Ray (ECGR_EDTC) EDTC-B	Stuck Tool Indicator, Total (STIT)	CBL Amplitude (CBL) ASLT-B	Min Amplitude Max
0 gAPI 150	0 ft 50	0 mV 100	Variable Density Log (VDL) ASLT-B
Transit Time for CBL (TT) ASLT-B		CBL Amplitude (CBL) ASLT-B	100 us 700
400 us 200		0 mV 10	
Casing Collar Locator Ultrasonic (CCLU) USIT-E	Cable Tension (TENS)	Synthetic CBL from Discriminated Attenuation (DCBL) ASLT-B	
-19 in 1	10000 lbf 0	0 mV 100	
	Cable Drag		
	Tool_Tot. Drag		

TIME_1900 - Time Marked every 60.00 (s)

BIEP - Bond Index Event Pips ASLT-B

Description: CBL_VDL Format: Log (DSLT ASLT_CBL-VDL) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 09-Apr-2022 21:30:54

Channel Processing Parameters

1A: Parameters

Parameter	Description	Tool	Value	Unit
BARI(ISSBAR)	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	Depth Zoned	in
CBLO	Casing Bottom (Logger)	WLSESSION	15563	ft
CBRA	CBL LQC Reference Amplitude in Free Pipe	ASLT-B	72	mV
CDEN	Cement Density	USIT-E	1.55	g/cm3

CDEN	Cement Density	EDTC-B	2	g/cm3
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Regular Cement	
THNO	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.361	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	
DTF	Delta-T Fluid	Borehole	189	us/ft
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FCF	CBL Fluid Compensation Factor	ASLT-B	1.01	
FD	Fluid Density	USIT-E	1.44	g/cm3
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS(RT)	
GOBO	Good Bond	ASLT-B	4.3	mV
GOBO_CURR	Good Bond in Arbitrary Cement	ASLT-B	4.3	mV
HEMA	Hematite Presence Flag	Borehole	No	
IBC_FRP_OFFSET	IBC Flexural Offset from Free Pipe	USIT-E	-5.92	dB/m
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	IBC_FRP_OFFSET	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	FreePipe Norm.	
IMAR	Image Rotation	USIT-E	Off	
MATT	Maximum Attenuation	ASLT-B	11.85	dB/ft
MATT_CURR	Maximum Attenuation in Arbitrary Cement	ASLT-B	11.85	dB/ft
MCI	Minimum Cemented Interval for Isolation	ASLT-B	Depth Zoned	ft
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	22.44	us
MSA	Minimum Sonic Amplitude	ASLT-B	2.12	mV
MSA_CURR	Minimum Sonic Amplitude in Arbitrary Cement	ASLT-B	2.12	mV
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.32	
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.28	
RUN_SNUM	Run Sequence Number	WSDRUN	1	
THDH	Maximum Search Thickness (percentage of nominal)	USIT-E	120	%
THDL	Minimum Search Thickness (percentage of nominal)	USIT-E	80	%
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.87	Mrayl
U-USIT_UFAO	USIT Flexural Attenuation Offset	USIT-E	-22	dB/m
UFSFILT	Ultrasonic Flexural Surface Filter	USIT-E	LPF 250k	
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
ZMUD	Acoustic Impedance of Mud	Borehole	1.5	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.2	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Depth Zone Parameters

Parameter	Value	Start (ft)	Stop (ft)
BS	13.5	46.5	1696
BS	8.5	1696	6980.58
MCI	14.81	46.5	1696
MCI	4.75	1696	6980.58

All depth are actual.

Tool Control Parameters

1A: Parameters

Parameter	Description	Tool	Value	Unit

AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	dB
EMXV	EMEX Voltage	USIT-E	Time Zoned	V
IBC_ACQTYPE	IBC Acquisition type	USIT-E	1 MHz	
IBC_FLEXDBP	IBC Flex Duration Before Peak	USIT-E	30	us
ICE2_ACQ	Ultrasonic ICE2 Acquisition	USIT-E	Yes	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	4010	ft/h
MODE	SSLT Firing Mode	ASLT-B	Attenuation	
UPAT	USIT Emission Pattern	USIT-E	Pattern 375 KHz	
UWKM	USIT Working Mode	USIT-E	10 deg at 6.0 in	
U-USIT_UTAN	Transducer Angles	USIT-E	33_DEG	
VDM	SSLT VDL Display Mode	ASLT-B	R5	
VRES	Vertical Resolution	USIT-E	6.0 in	

Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
EMXV	45	09-Apr-2022 12:57:05	09-Apr-2022 13:19:23	6980.58	5480.12
EMXV	40	09-Apr-2022 13:19:23	09-Apr-2022 13:40:33	5480.12	4033.68
EMXV	35	09-Apr-2022 13:40:33	09-Apr-2022 13:40:42	4033.68	4024.37
EMXV	30	09-Apr-2022 13:40:42	09-Apr-2022 14:39:23	4024.37	82.68

All depth are at tool zero.

1A

Software Version

Acquisition System	Version
Maxwell 2022.0	12.0.215014.3100
Application Patch	Wireline_Hotfix-Mandatory-2022.0_12.0.216515

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
1A	Repeat[2]:Up	Up	6607.82 ft	6981.60 ft	09-Apr-2022 12:27:01 PM	09-Apr-2022 12:48:04 PM	ON	11.53 ft	Yes

All depths are referenced to toolstring zero

Log

Company:PDC Energy Inc Well:Vega #4N

1A: Repeat[2]:Up:S005

Description: CBL_VDL Format: Log (DSLT ASLT_CBL-VDL) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 09-Apr-2022 21:31:03

BIEP - Bond Index Event Pips ASLT-B

TIME_1900 - Time Marked every 60.00 (s)

Stuck Tool Indicator, Total (STIT)
0 ft 50

Gamma Ray (ECGR_EDTC) EDTC-B
0 gAPI 150

Cable Tension (TENS)
10000 0 lbf

CBL Amplitude (CBL) ASLT-B
0 mV 100

Transit Time for CBL (TT) ASLT-B
400 us 200

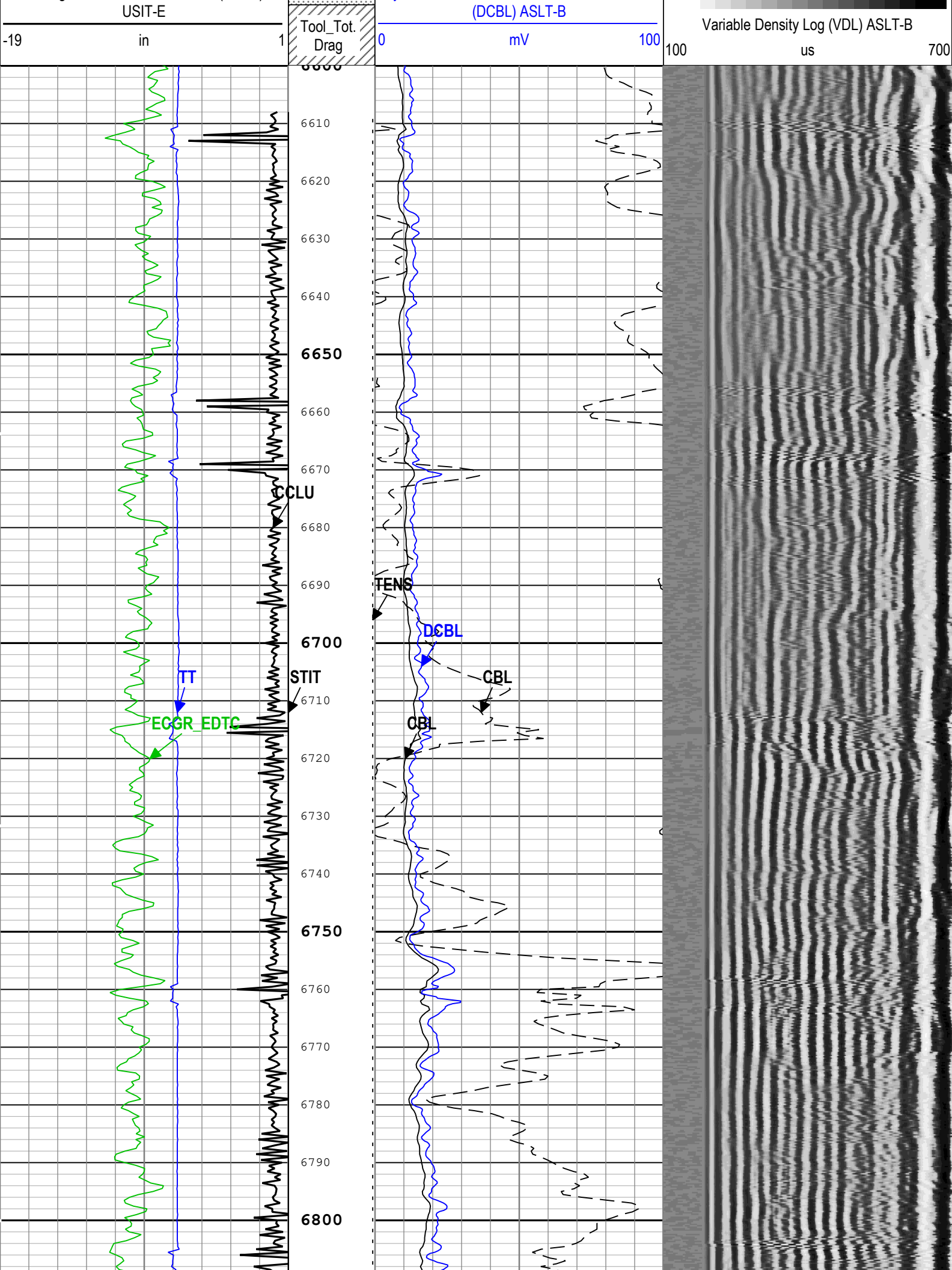
CBL Amplitude (CBL) ASLT-B
0 mV 10

Cable Drag

Min Amplitude Max

Casing Collar Locator Ultrasonic (CCLU)

Synthetic CBL from Discriminated Attenuation


USIT-E
-19
in
1
Tool_Tot.
Drag
(DCBL) ASLT-B
0
mV
100
Variable Density Log (VDL) ASLT-B
100
us
700
6610
6620
6630
6640
6650
6660
6670
CCLU
6680
6690
TENS
6700
DCBL
TT
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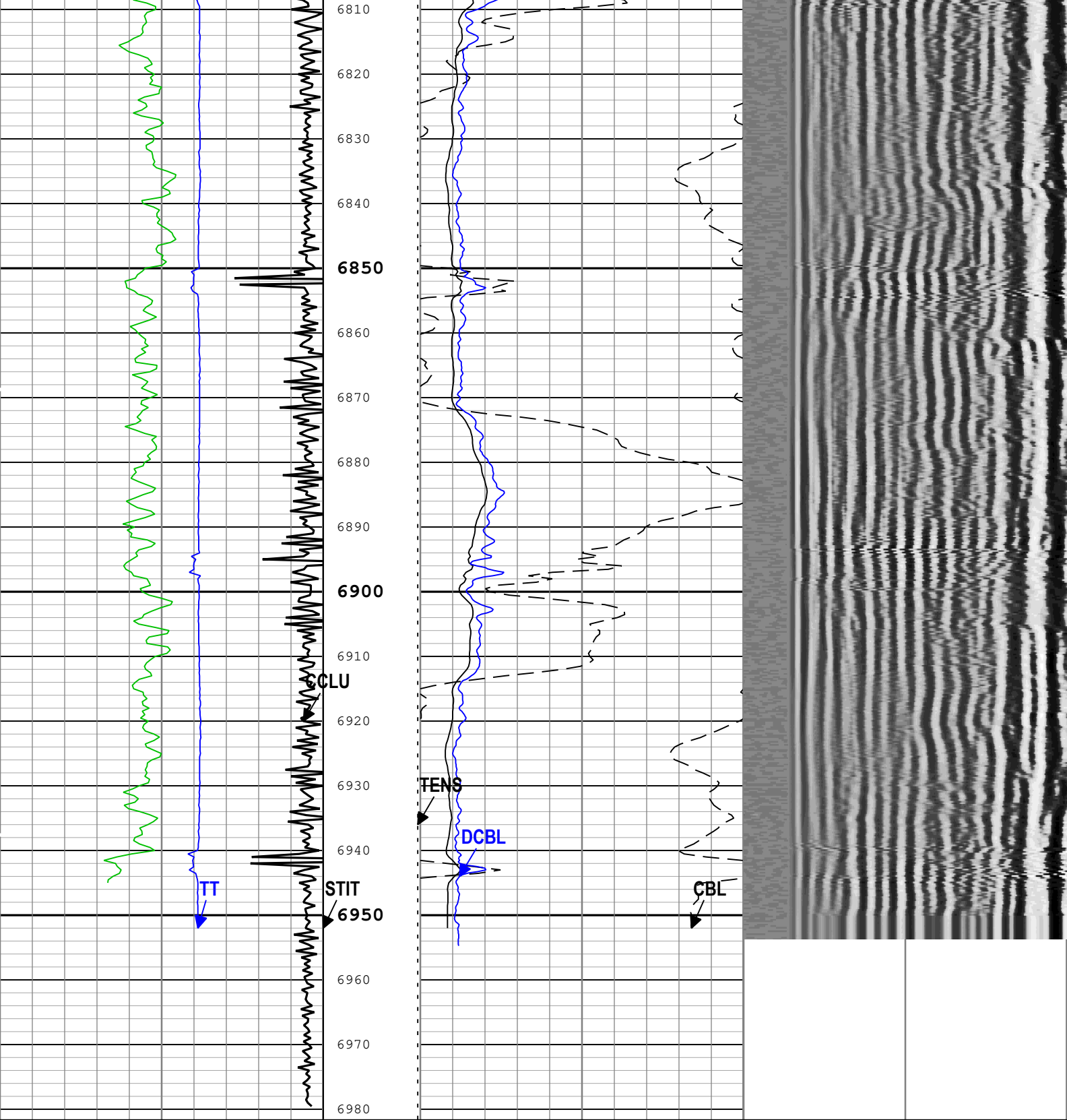
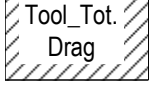


Gamma Ray (ECGR_EDTC) EDTC-B 0 gAPI 150	Stuck Tool Indicator, Total (STIT) 0 ft 50	CBL Amplitude (CBL) ASLT-B 0 mV 100
Transit Time for CBL (TT) ASLT-B 400 us 200		CBL Amplitude (CBL) ASLT-B 0 mV 10
Casing Collar Locator Ultrasonic (CCLU) USIT-E -19 in 1	Cable Tension (TENS) 10000 0 lbf	Synthetic CBL from Discriminated Attenuation (DCBL) ASLT-B 0 mV 100
	Cable Drag	

Min Amplitude Max

Variable Density Log (VDL) ASLT-B

100 us 700



TIME_1900 - Time Marked every 60.00 (s)

BIEP - Bond Index Event Pips ASLT-B

Description: CBL_VDL Format: Log (DSLT ASLT_CBL-VDL) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 09-Apr-2022 21:31:03

Channel Processing Parameters

1A: Parameters

Parameter	Description	Tool	Value	Unit
BARI(ISSBAR)	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	8.5	in
CBLO	Casing Bottom (Logger)	WLSESSION	15563	ft
CBRA	CBL LQC Reference Amplitude in Free Pipe	ASLT-B	72	mV
CDEN	Cement Density	USIT-E	1.55	g/cm3
CDEN	Cement Density	EDTC-B	2	g/cm3
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Regular Cement	
THNO	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.361	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	
DTF	Delta-T Fluid	Borehole	189	us/ft
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FCF	CBL Fluid Compensation Factor	ASLT-B	1.01	
FD	Fluid Density	USIT-E	1.44	g/cm3
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS(RT)	
GOBO	Good Bond	ASLT-B	4.3	mV
GOBO_CURR	Good Bond in Arbitrary Cement	ASLT-B	4.3	mV
HEMA	Hematite Presence Flag	Borehole	No	
IBC_FRP_OFFSET	IBC Flexural Offset from Free Pipe	USIT-E	-5.92	dB/m
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	IBC_FRP_OFFSET	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	FreePipe Norm.	
IMAR	Image Rotation	USIT-E	Off	
MATT	Maximum Attenuation	ASLT-B	11.85	dB/ft
MATT_CURR	Maximum Attenuation in Arbitrary Cement	ASLT-B	11.85	dB/ft
MCI	Minimum Cemented Interval for Isolation	ASLT-B	4.75	ft
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	22.44	us
MSA	Minimum Sonic Amplitude	ASLT-B	2.12	mV
MSA_CURR	Minimum Sonic Amplitude in Arbitrary Cement	ASLT-B	2.12	mV
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.32	
MUD_N_THE	Theoretical Mud Normalization Factor	USIT-E	1.28	
RUN_SNUM	Run Sequence Number	WSDRUN	1	
THDH	Maximum Search Thickness (percentage of nominal)	USIT-E	120	%
THDL	Minimum Search Thickness (percentage of nominal)	USIT-E	80	%
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	1.87	Mrayl
U-USIT_UFAO	USIT Flexural Attenuation Offset	USIT-E	-22	dB/m
UFSFILT	Ultrasonic Flexural Surface Filter	USIT-E	LPF 250k	
U-USIT_UIAR	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	

U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
ZMUD	Acoustic Impedance of Mud	Borehole	1.5	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.2	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Tool Control Parameters

1A: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	48	dB
EMXV	EMEX Voltage	USIT-E	45	V
IBC_ACQTYPE	IBC Acquisition type	USIT-E	1 MHz	
IBC_FLEXDBP	IBC Flex Duration Before Peak	USIT-E	30	us
ICE2_ACQ	Ultrasonic ICE2 Acquisition	USIT-E	Yes	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	4010	ft/h
MODE	SSLT Firing Mode	ASLT-B	Attenuation	
UPAT	USIT Emission Pattern	USIT-E	Pattern 375 KHz	
UWKM	USIT Working Mode	USIT-E	10 deg at 6.0 in	
U-USIT_UTAN	Transducer Angles	USIT-E	33_DEG	
VDM	SSLT VDL Display Mode	ASLT-B	R5	
VRES	Vertical Resolution	USIT-E	6.0 in	

1A

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
1A	Repeat[2]:Up	Up	6607.82 ft	6981.60 ft	09-Apr-2022 12:27:01 PM	09-Apr-2022 12:48:04 PM	ON	11.53 ft	Yes
1A	Main[3]:Up	Up	82.68 ft	6980.58 ft	09-Apr-2022 12:57:05 PM	09-Apr-2022 2:39:23 PM	ON	11.01 ft	Yes

All depths are referenced to toolstring zero

Log

Company:PDC Energy Inc Well:Vega #4N

1A: Main[3]:Up:S005

Description: CBL_VDL Format: Log (DSLT ASLT_CBL-VDL RA) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 09-Apr-2022 21:31:05

TIME_1900 - Time Marked every 60.00 (s)

BIEP - Bond Index Event Pips ASLT-B

Main To Repeat

Repeat To Main

Gamma Ray (ECGR_EDTC) EDTC-B

0 gAPI 150

Main To Repeat

Repeat To Main

Transit Time for CBL (TT) ASLT-B

400 us 200

Main To Repeat

Repeat To

Main To Repeat

Repeat To Main

Cable Tension (TENS)

10000 0

lbf

Main To Repeat

Repeat To

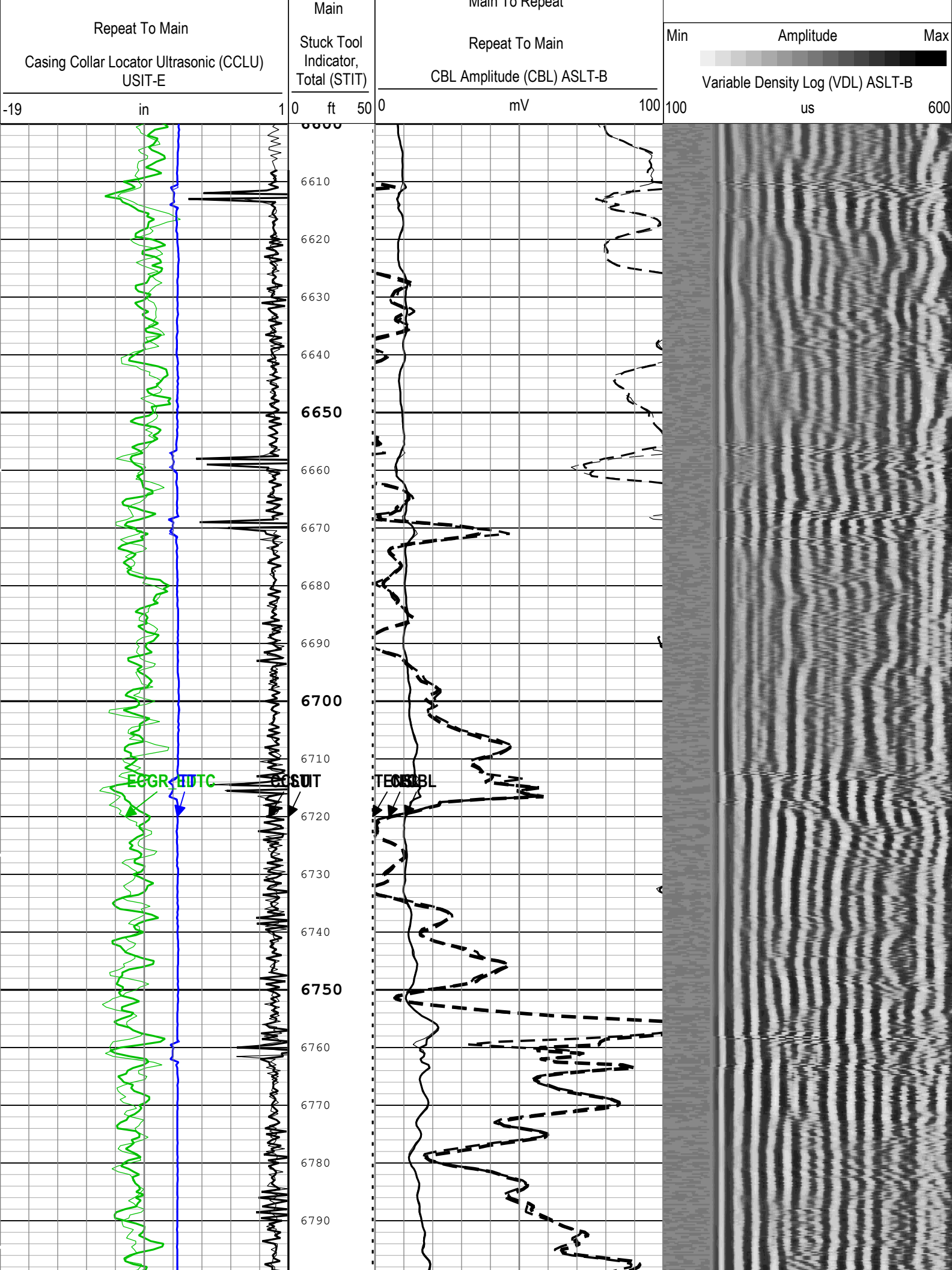
Main To Repeat

Repeat To Main

CBL Amplitude (CBL) ASLT-B

0 mV 10

Main To Repeat


Repeat To Main
Casing Collar Locator Ultrasonic (CCLU)
USIT-E
-19
in
1
Main
Stuck Tool Indicator, Total (STIT)
0
ft
50
Main To Repeat
Repeat To Main
CBL Amplitude (CBL) ASLT-B
0
mV
100
Min
Amplitude
Max
Variable Density Log (VDL) ASLT-B
100
us
600
6610
6620
6630
6640
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6690
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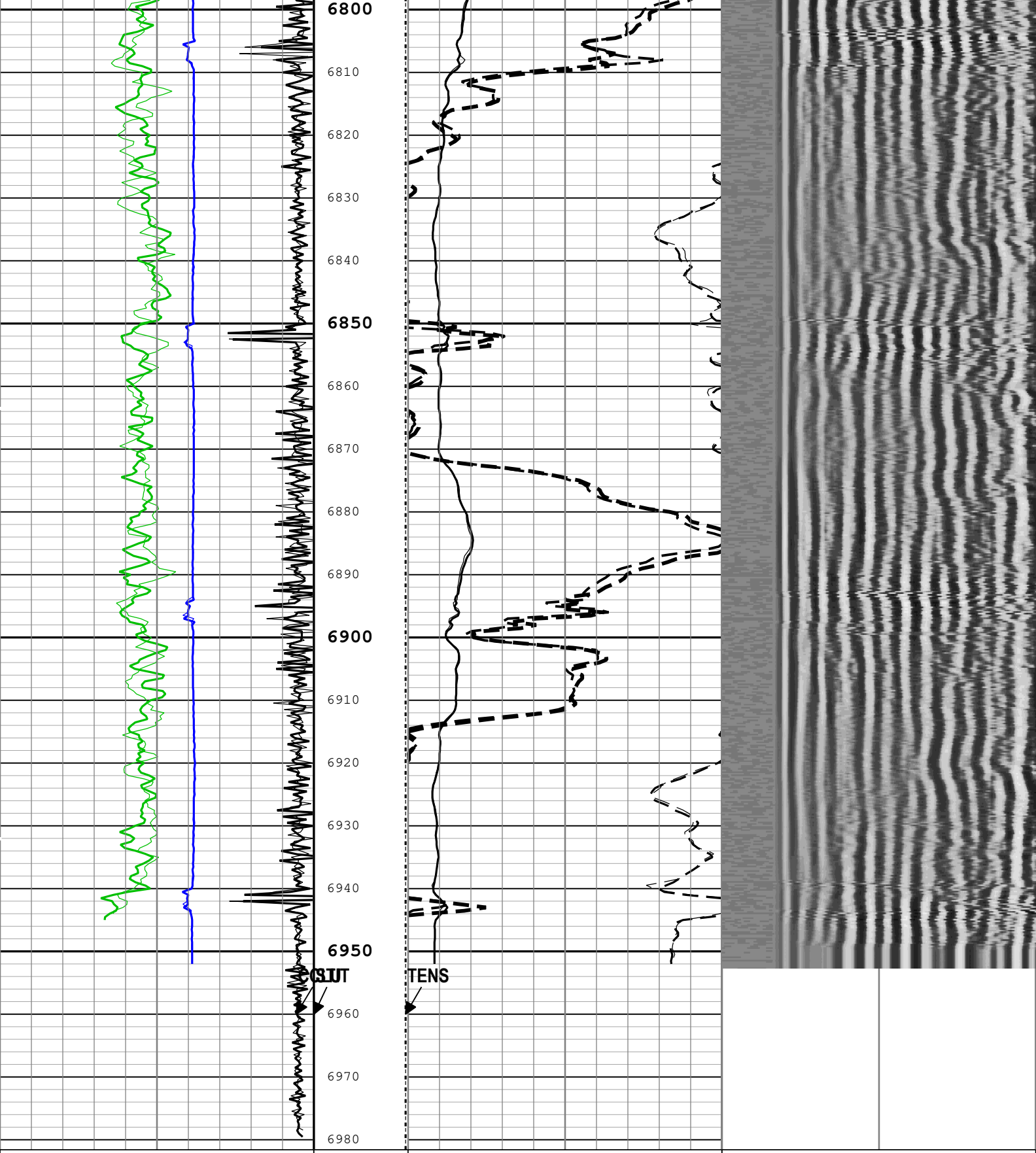


Main To Repeat

Repeat To Main

Gamma Ray (ECGR_EDTC) EDTC-B

0 gAPI 150

Main To Repeat

Repeat To Main

Cable Tension (TENS)

10000 0

Main To Repeat

Repeat To Main

CBL Amplitude (CBL) ASLT-B

0 mV 10

Min Amplitude Max

Variable Density Log (VDL) ASLT-B

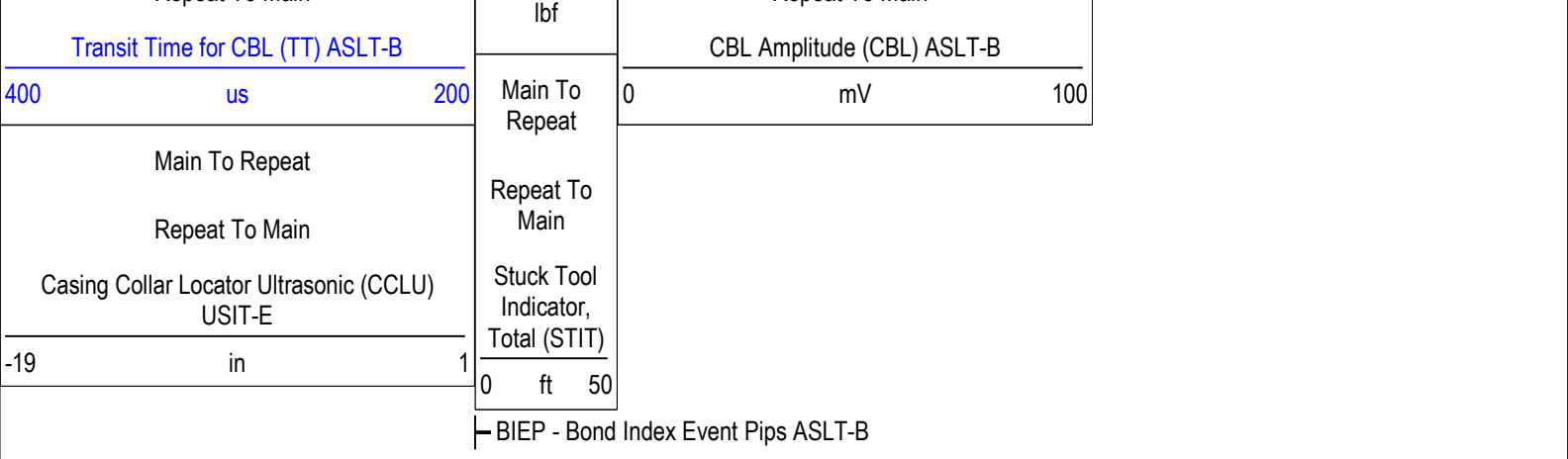
100 us 600

Main To Repeat

Repeat To Main

Main To Repeat

Repeat To Main



Description: CBL_VDL Format: Log (DSLT ASLT_CBL-VDL RA) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 09-Apr-2022 21:31:05

Calibration Report

ASLT-B (Array Sonic Logging Tool - B) Calibration - Run 1A

Primary Equipment :

Array Sonic Logging Tool - BB	ASLT-BB	8073

CBL Amplitude Normalization - CBL Accumulations

Master (Measured): 16:12:55 04-Mar-2019 Expired by 766 days

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Sonic Amplitude Upper Transmitter - Receiver 5 (SA_U5)		Master	3145.0	2040.0	3066.1	4250.0
Sonic Raw Amplitude Upper Transmitter - Receiver 1 (RA_U1)	mV	Master	187.500	123.000	214.701	248.000
Sonic Amplitude Lower Transmitter - Receiver 1 (SA_L1)		Master	3145.0	2040.0	3605.9	4250.0
Sonic Raw Amplitude Lower Transmitter - Receiver 5 (RA_L5)	mV	Master	187.500	123.000	192.737	248.000

CBL Amplitude Normalization - CBL/VDL Coefficients

Master (Measured): 16:12:55 04-Mar-2019 Expired by 766 days

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
CBL Correction Factor for Upper Transmitter (CBCF_UT)		Master	0.500	-----	0.540	-----
CBL Correction Factor for Lower Transmitter (CBCF_LT)		Master	0.500	-----	0.602	-----
VDL Ratio between UT and LT for CBLB Mode (VDR)		Master	1.000	-----	0.850	-----

CBL Amplitude Free Pipe Adjustment - Free Pipe Measurements

Before (Manual Entry): 18:35:49 28-Feb-2022

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
CBL Amplitude (CBLF) - 0	mV	Before	-----	-----	-----	-----
CBL Reference Amplitude (CBRA) - 0	mV	Before	-----	-----	-----	-----
Measurement Depth (DEPTH) - 0	ft	Before	-----	-----	-----	-----

CBL Amplitude Free Pipe Adjustment - CBL Amplitude Coefficients

Before (Manual Entry): 18:35:49 28-Feb-2022

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
CBL Adjustment Factor (CBL_ADJUST_FACTOR)		Before	1.000	0.300	0.656	3.000
Depth of Before Calibration (BDEP)	ft	Before	-----	-----	734.29	-----

EDTC-B (Enhanced Digital Telemetry Cartridge - Version B) Calibration - Run 1A

Primary Equipment :

EDTC-B	EDTC-B	9100

Calibration Parameter :

Plus Reference

EDTC-B Accelerometer Calibration - EDTC-B Accelerometer Calibration

Before (Measured): 08:47:03 08-Apr-2022 Expired by 1 days

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
AZ Vertical Measurement	ft/s2	Before	32.19	31.53	32.20	32.84

EDTC-B Memory Data - EDTC-B Memory Data

Master (EEPROM): 11:47:33 09-Apr-2022

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Initial PMT HV	V	Master	-----	-----	1419.000	-----
Accelerometer Serial Number		Master	-----	-----	262	-----
Accelerometer Coefficients - 0		Master	-----	-----	2.983E+000	-----
Accelerometer Coefficients - 1		Master	-----	-----	2.885E-004	-----
Accelerometer Coefficients - 2		Master	-----	-----	-1.620E-008	-----
Accelerometer Coefficients - 3		Master	-----	-----	-7.677E-008	-----
Accelerometer Coefficients - 4		Master	-----	-----	1.861E-009	-----
Accelerometer Coefficients - 5		Master	-----	-----	-1.417E-011	-----
Accelerometer Coefficients - 6		Master	-----	-----	3.634E-014	-----
Accelerometer Coefficients - 7		Master	-----	-----	-9.532E-003	-----
Accelerometer Coefficients - 8		Master	-----	-----	7.439E-005	-----
Accelerometer Coefficients - 9		Master	-----	-----	-4.137E-008	-----
Accelerometer Coefficients - 10		Master	-----	-----	-7.368E-010	-----
Accelerometer Coefficients - 11		Master	-----	-----	2.162E-012	-----
Gamma-Ray Detector Serial Number		Master	-----	-----	7125	-----

EDTC-B Gamma-Ray Calibration - Gamma Ray Coefficients

Before: After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Gamma Ray Gain		Before	1.000	0.900	NOT DONE	1.100
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----

EDTC-B Gamma-Ray Calibration - Gamma Ray Accumulations

Before: After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
RGR Zero Measurement - 0	gAPI	Before	-----	-----	-----	-----
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
RGR Plus Measurement	gAPI	Before	-----	-----	NOT DONE	-----
		After	-----	-----	NOT DONE	-----
		After-Before	-----	-----	-----	-----

LEH-QT (Logging Equipment Head - QT, 3-3/8 inch 31 pin HPHT with Tension Sensor) Calibration - Run 1A

Primary Equipment :

Logging Equipment Head - QT, 3-3/8 inch 31 pin HPHT with Tension Sensor LEH-QT

HTEN Master Calibration - HTEN Master Calibration

Master:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
HTEN Shop Gain		Master	1.000	0.800	NOT DONE	4.500
HTEN Shop Offset	lbf	Master	0	-1000.000	NOT DONE	1000.000

HTEN Before Calibration - HTEN Before Calibration

Before:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
RHTE Zero Measurement - 0	lbf	Before	-----	-----	-----	-----
RHTE Plus Measurement - 0	lbf	Before	-----	-----	-----	-----
HTEN Gain - 0		Before	-----	-----	-----	-----
HTEN Offset - 0	lbf	Before	-----	-----	-----	-----

Company:	PDC Energy Inc
Well:	Vega #4N
Field:	Wattenberg
County:	Weld
Country:	United States of America - US

Schlumberger

Cement Bond Log
Variable Density Log
Gamma Ray - CCL