Schlumberger

Company: **ENCANA OIL & GAS (USA) INC**

Well: **ROSE 22−12C (K22W)**
Field: **MAMM CREEK**
County: **GARFIELD** State: **COLORADO**

SLIM CEMENT MAPPING LOG
CBL−VDL
GAMMA RAY−CCL

County: GARFIELD
Field: MAMM CREEK
Location: SHL: 2311 FSL & 2218 FWL
Well: ROSE 22−12C (K22W)
Company: ENCANA OIL & GAS (USA) INC

LOCATION

SHL: 2311 FSL & 2218 FWL
BHL: 1832 FSL & 386 FWL

Elev.: K.B. 6973.00 ft
G.L. 6951.00 ft
D.F. 6972.00 ft

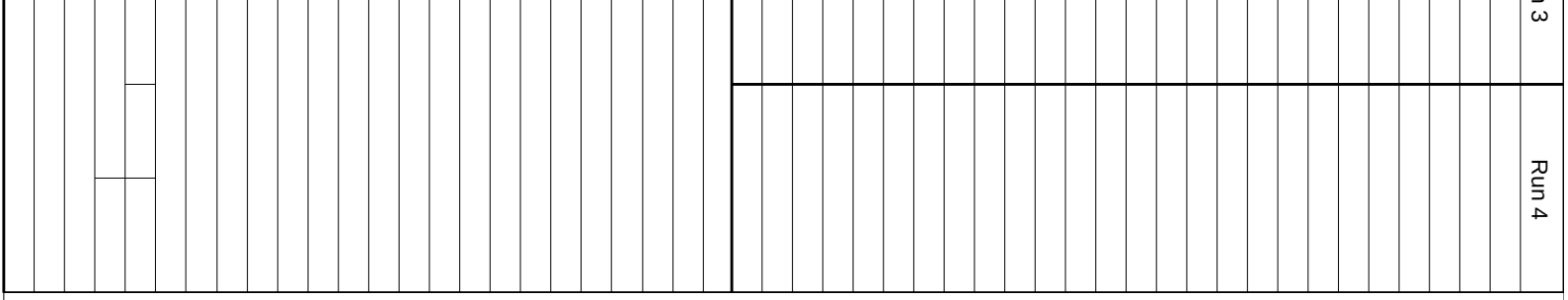
Permanent Datum: GROUND LEVEL Elev.: 6951.00 ft
Log Measured From: KELLY BUSHING 22.00 ft above Perm. Datum
Drilling Measured From: KELLY BUSHING

API Serial No.	Section	Township	Range
05−045−22122−0(	22	7S	93W

Logging Date		5−Jan−2014						
Run Number		1						
Depth Driller		9343 ft						
Schlumberger Depth		9268 ft						
Bottom Log Interval		9259 ft						
Top Log Interval		100 ft						
Casing Fluid Type		FRESH WATER						
Salinity								
Density		8.4 lbm/gal						
Fluid Level		100 ft						
BIT/CASING/TUBING STRING								
Bit Size		7.875 in						
From		6914 ft						
To		9343 ft						
Casing/Tubing Size		4.500 in						
Weight		11.6 lbm/ft						
Grade		S−80						
From		22 ft						
To		9323 ft						
Maximum Recorded Temperatures		252 degF						
Logger On Bottom	Time	5−Jan−2014	1:45					
Unit Number	Location	391	GRAND JUNCTION					
Recorded By		KIRSTIE BUNTING						
Witnessed By		UNWITNESSED						

		Run 1	Run 2	Run
PVT DATA	Oil Density			
	Water Salinity			
	Gas Gravity			
	Bo			
	Bw			
	1/Bg			
	Bubble Point Pressure			
	Bubble Point Temperature			
	Solution GOR			
	Maximum Deviation			
	CEMENTING DATA			
	Primary/Squeeze	Primary		
	Casing String No			
	Lead Cement Type			
	Volume			
	Density			
	Water Loss			
	Additives			
	Tail Cement Type			
	Volume			
	Density			
	Water Loss			
	Additives			
	Expected Cement Top			

Logging Date								
Run Number								
Depth Driller								
Schlumberger Depth								
Bottom Log Interval								
Top Log Interval								
Casing Fluid Type								
Salinity								
Density								
Fluid Level								
BIT/CASING/TUBING STRING								
Bit Size								
From								
To								
Casing/Tubing Size								
Weight								
Grade								
From								
To								
Maximum Recorded Temperatures								
Logger On Bottom	Time							
Unit Number	Location							
Recorded By								
Witnessed By								



DEPTH SUMMARY LISTING

Date Created: 14−AUG−2013 11:54:57

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW−JB	Type:	CMTD−B/A	Type:	1−25ZT
Serial Number:	6349	Serial Number:	3421	Serial Number:	112136
Calibration Date:	7−31−2013	Calibration Date:	14−AUG−201	Length:	19000 FT
Calibrator Serial Number:		Calibrator Serial Number:	174878		
Calibration Cable Type:	1−25ZT	Number of Calibration Points:	10	Conveyance Method:	Wireline
Wheel Correction 1:	−5	Calibration RMS:	3	Rig Type:	LAND
Wheel Correction 2:	−4	Calibration Peak Error:	8		

Depth Control Parameters

Log Sequence:	First Log In the Well
Rig Up Length At Surface:	0.00 FT
Rig Up Length At Bottom:	0.00 FT
Rig Up Length Correction:	0.00 FT
Stretch Correction:	
Tool Zero Check At Surface:	

Depth Control Remarks

1. ALL SCHLUMBERGER DEPTH CONTROL PROCEDURES USED
2. IDW USED AS PRIMARY DEPTH REFERENCE
3. SPWT DRUM COUNTER USED AS SECONDARY DEPTH REFERENCE
4.
5.
6.

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 OF 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.

OTHER SERVICES1	OTHER SERVICES2
OS1: RESERVOIR SATURATION	OS1:
OS2: LOG	OS2:
OS3: SIGMA MODE	OS3:
OS4:	OS4:
OS5:	OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
FIRST RUN IN HOLE CORRELATED TO DOWN LOG	
TOOL RAN AS PER TOOL SKETCH	
ENTRANCE: 01:00	
TIME ON BOTTOM: 01:45	
EXIT: 05:15	

MAXIMUM RECORDED TEMPERATURE: 252 DEGF

MAXIMUM RECORDED PRESSURE: 3828 PSIA

SHORT JOINTS: 7068 FT & 8065 FT

MAIN PASS LOGGED UNDER ZERO SURFACE PRESSURE

EXPECTED CBL AMPLITUDE IN FREE PIPE IS 80MV

CREW: KBUNTING, KJOHNS, JMANN, SKRAMER

THANK YOU FOR CHOOSING E&P WIRELINE, A SCHLUMBERGER COMPANY

RUN 1		RUN 2	
SERVICE ORDER #:	CGF9−00196	SERVICE ORDER #:	
PROGRAM VERSION:	19C0−187	PROGRAM VERSION:	
FLUID LEVEL:	100 ft	FLUID LEVEL:	

LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

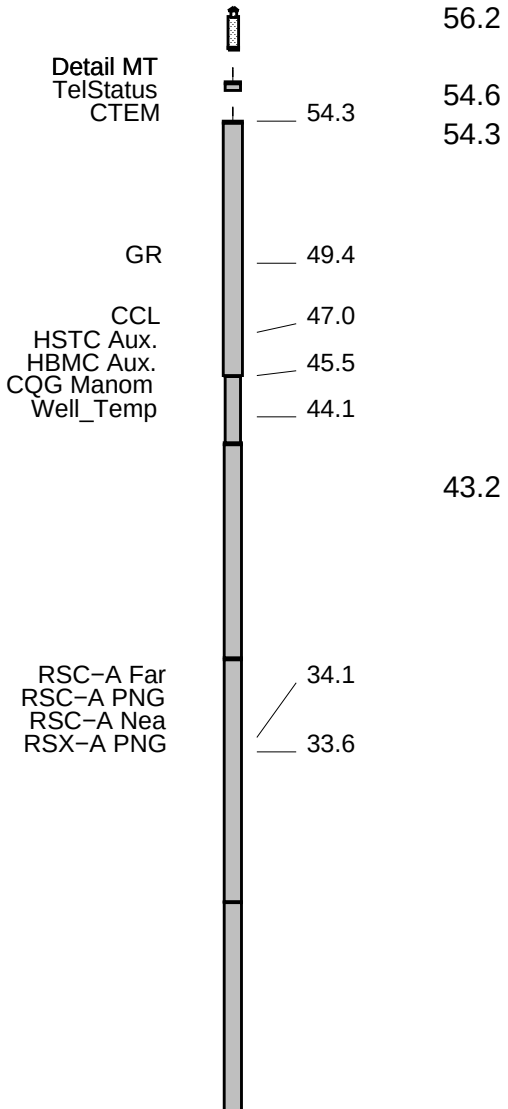
EQUIPMENT DESCRIPTION

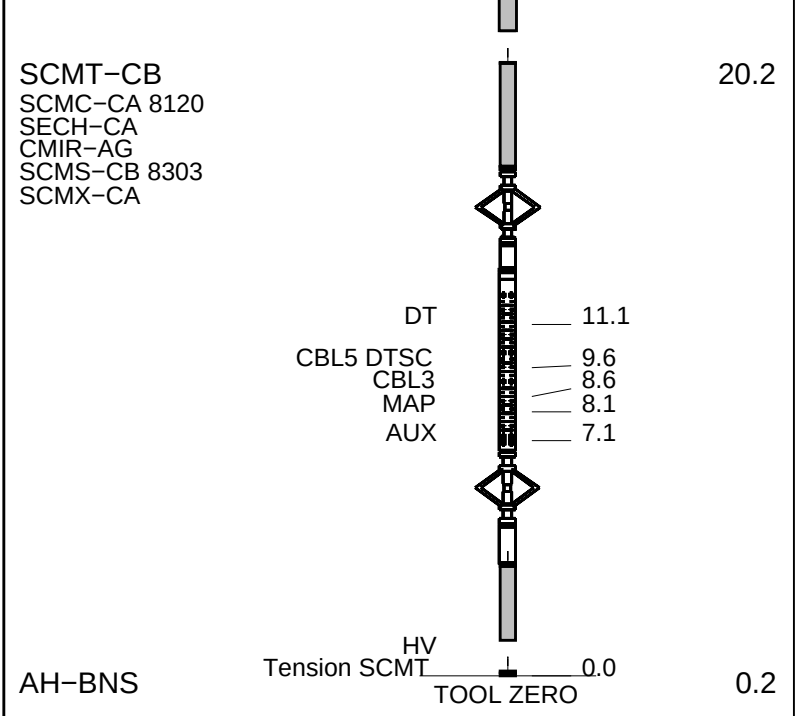
RUN 1 RUN 2

SURFACE EQUIPMENT

WITM−A
PSC_16MHZ

DOWNHOLE EQUIPMENT





MAXIMUM STRING DIAMETER 2.07 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN FEET

Schlumberger

MAIN PASS CBL VDL

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC **Well: ROSE 22−12C (K22W)**

Input DLIS Files

DEFAULT	**SCMT_RST_HBMS_038LUP**	**FN:37**	**PRODUCER**	**05−Jan−2014 02:14**	**9273.5 FT**	**−6.0 FT**

Output DLIS Files

DEFAULT	**SCMT_RST_HBMS_041PUP**	**FN:40**	**PRODUCER**	**05−Jan−2014 04:48**	**9276.5 FT**	**−50.5 FT**

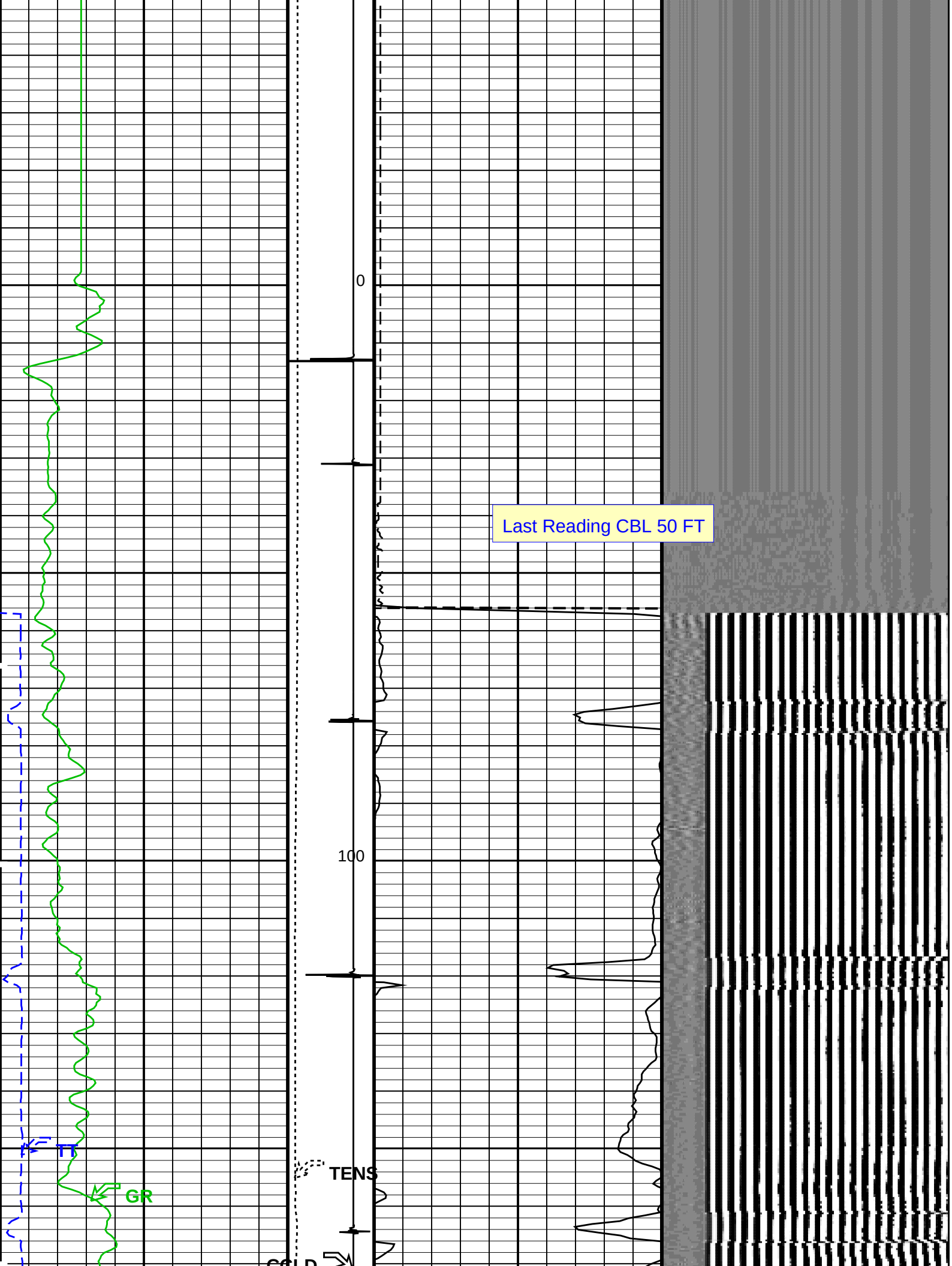
OP System Version: 19C0−187

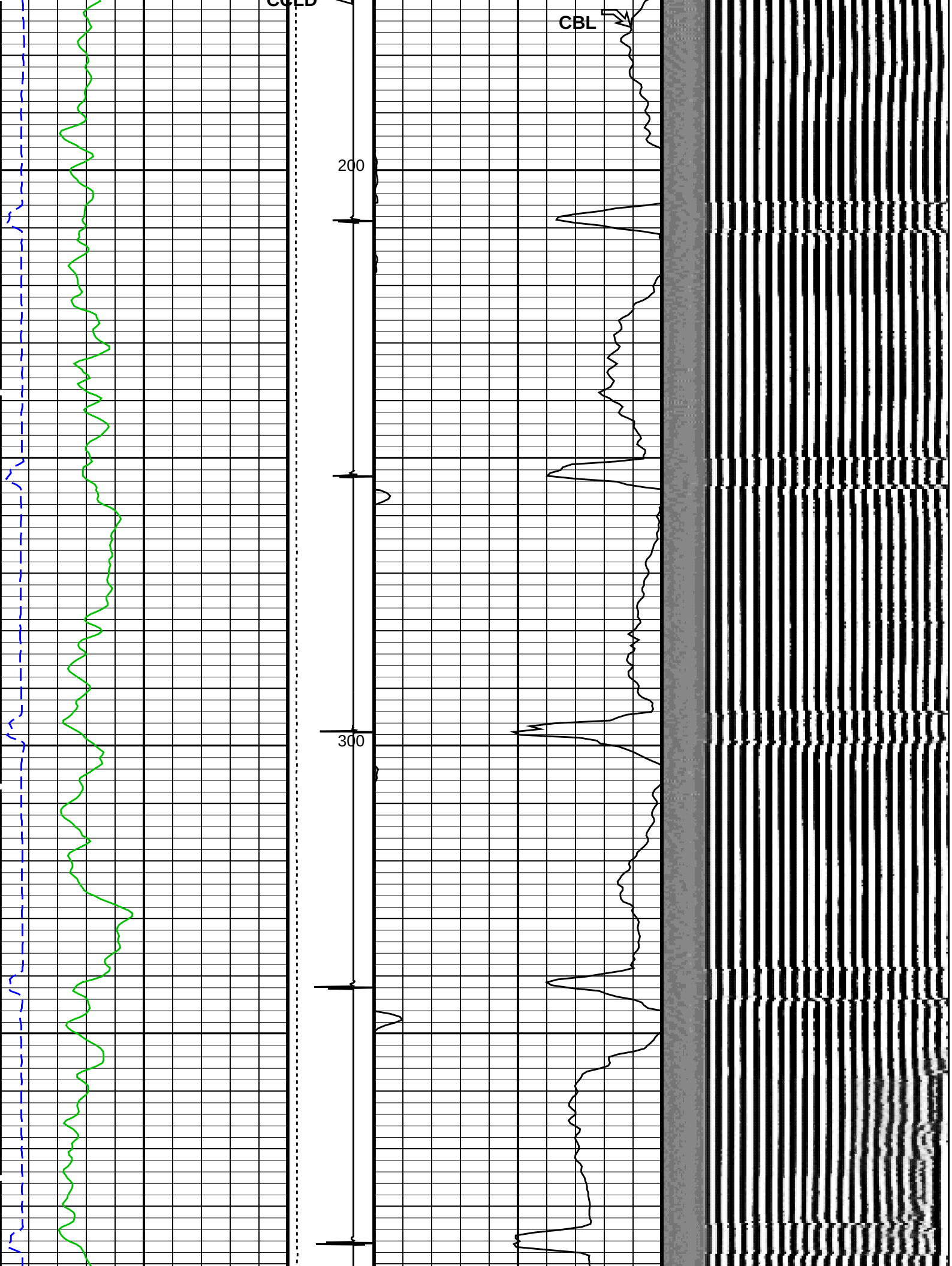
SCMT−CB	**19C0−187**	**RST−C**	**19C0−187**
HBMS−B	**19C0−187**		

PIP SUMMARY

Time Mark Every 60 S

Transit Time (TT) 260 (US) 160	**Discriminated CCL (CCLD)** 3 (V) −1	**CBL Amplitude (CBL)** 0 (MV) 10
Gamma Ray (GR) 0 (GAPI) 150	**Tension (TENS)** (LBF) 0 2000	**CBL Amplitude (CBL)** 0 (MV) 100
		Min Amplitude Max **VDL VariableDensity (VDL)** 200 (US) 1200


0
100
Last Reading CBL 50 FT
TT
GR
TENS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CBL
200
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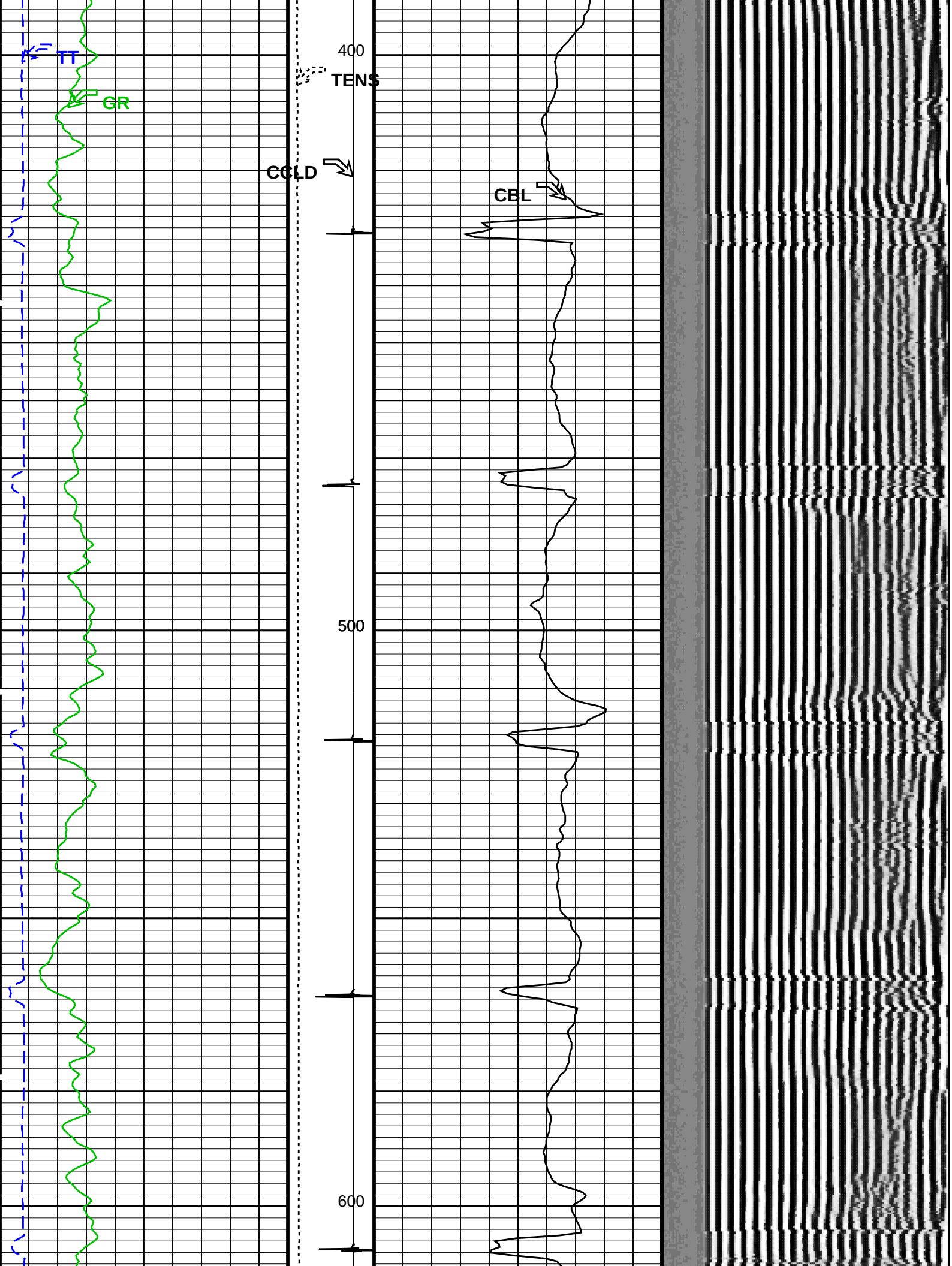
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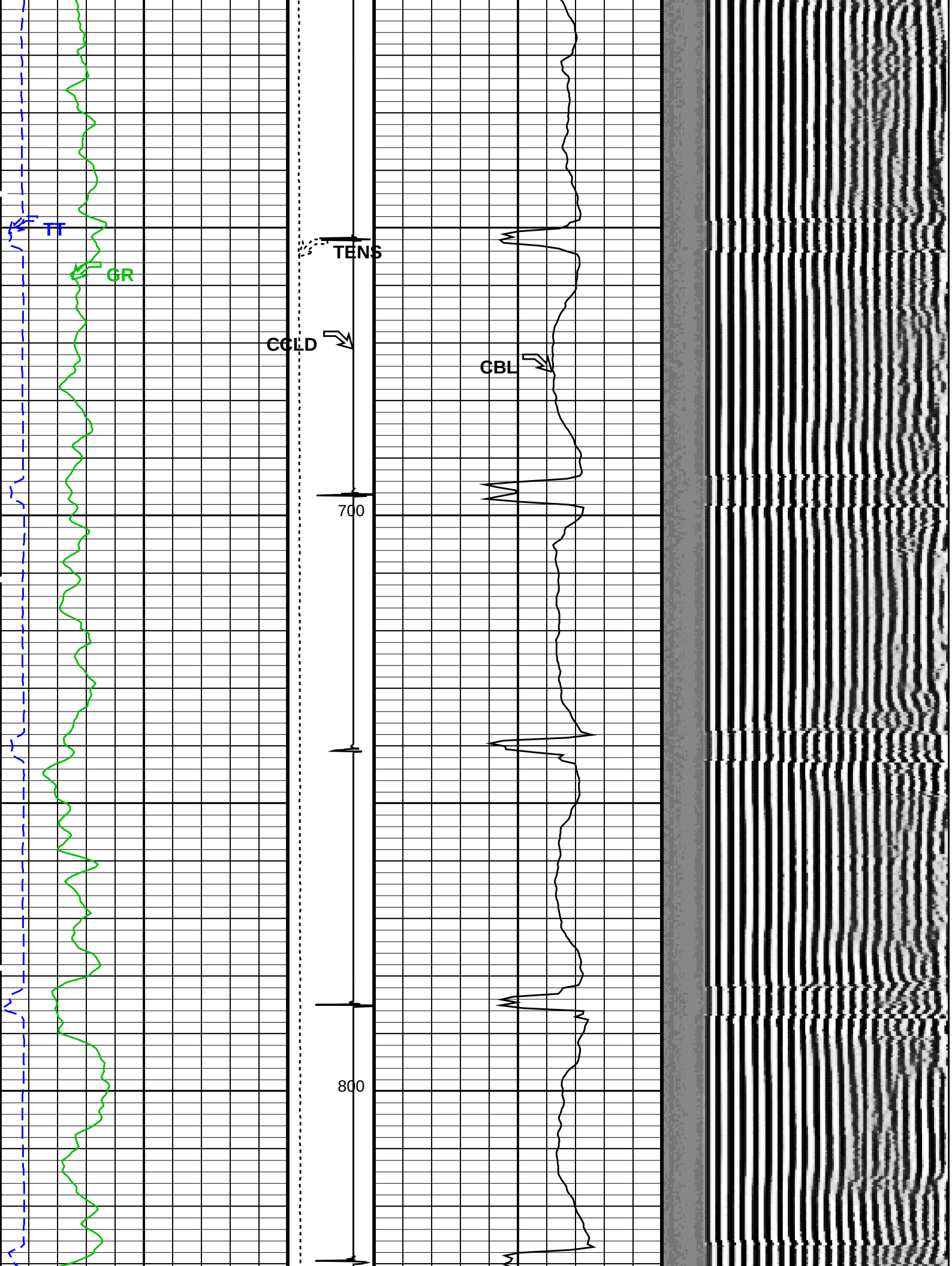
400
TENS
CCLD
CBL
500
600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CBL
700
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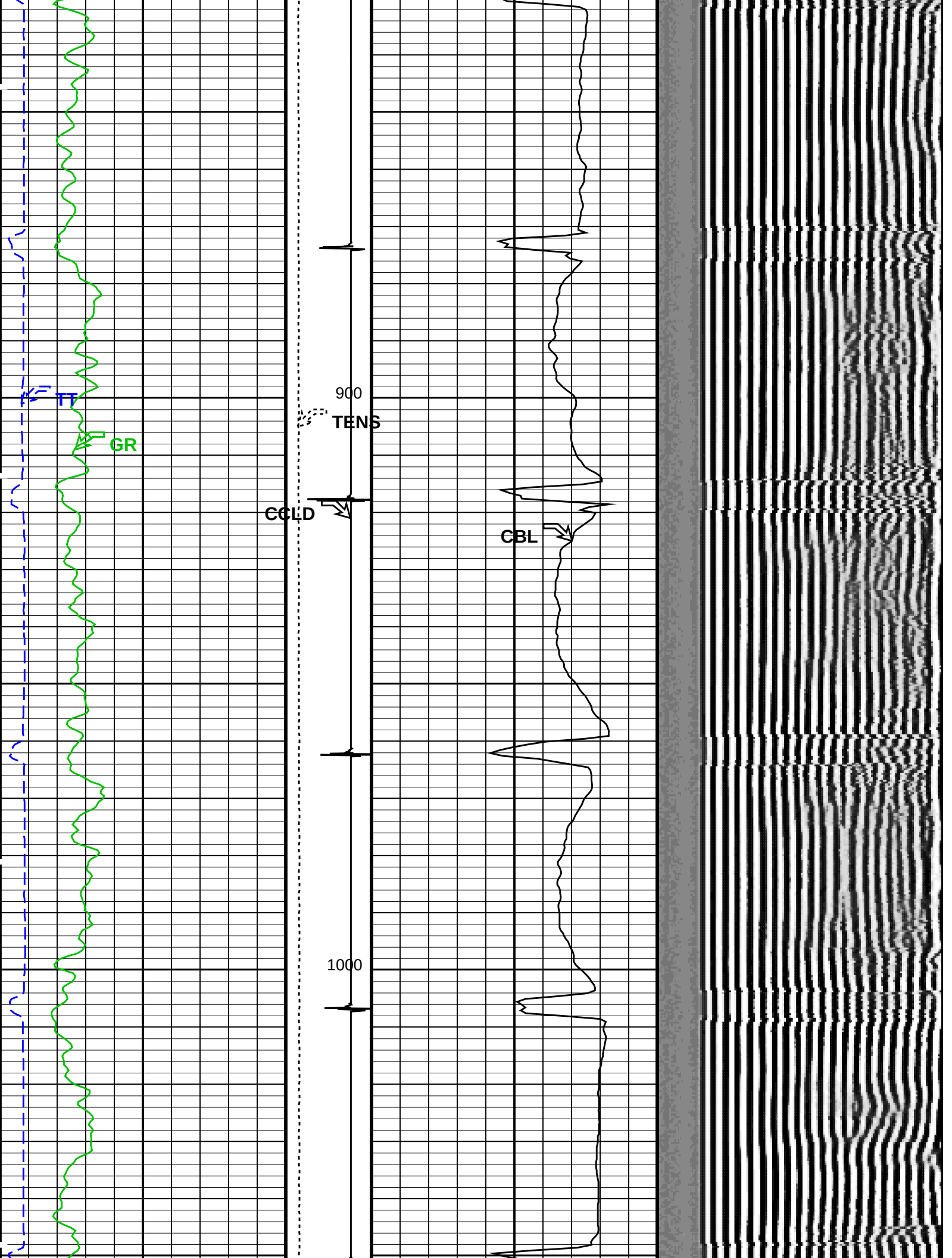
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CCLD
CBL
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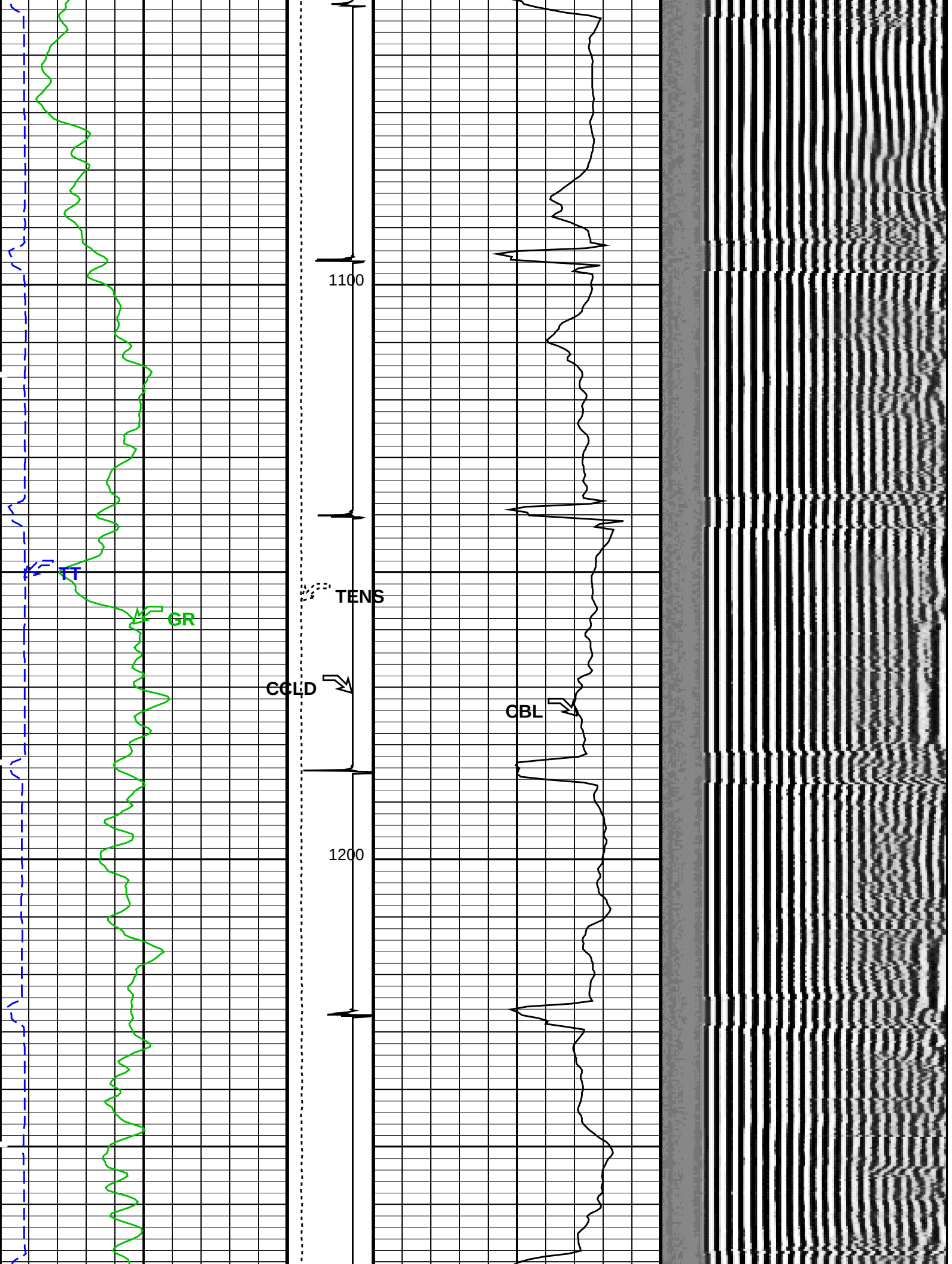
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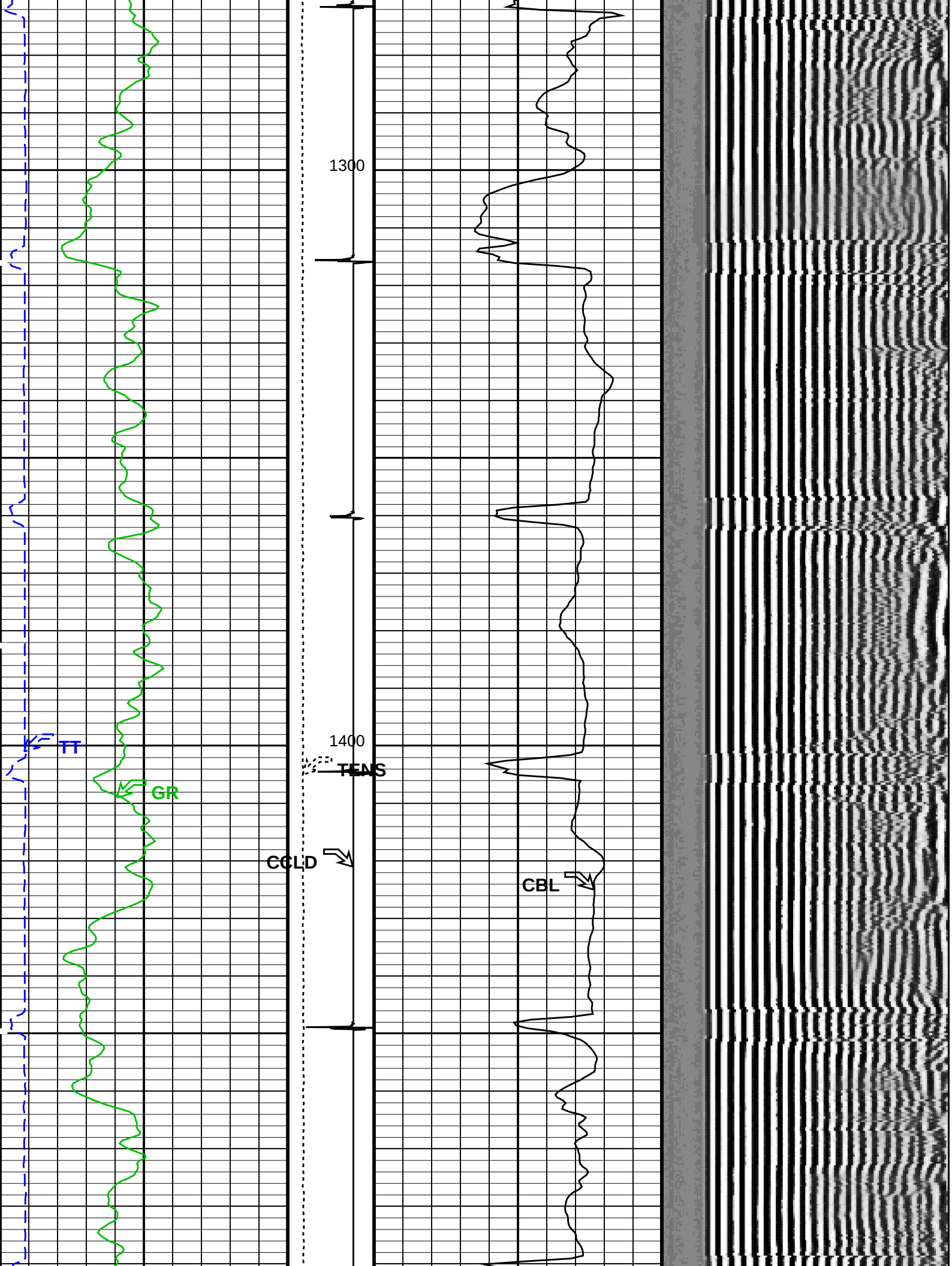
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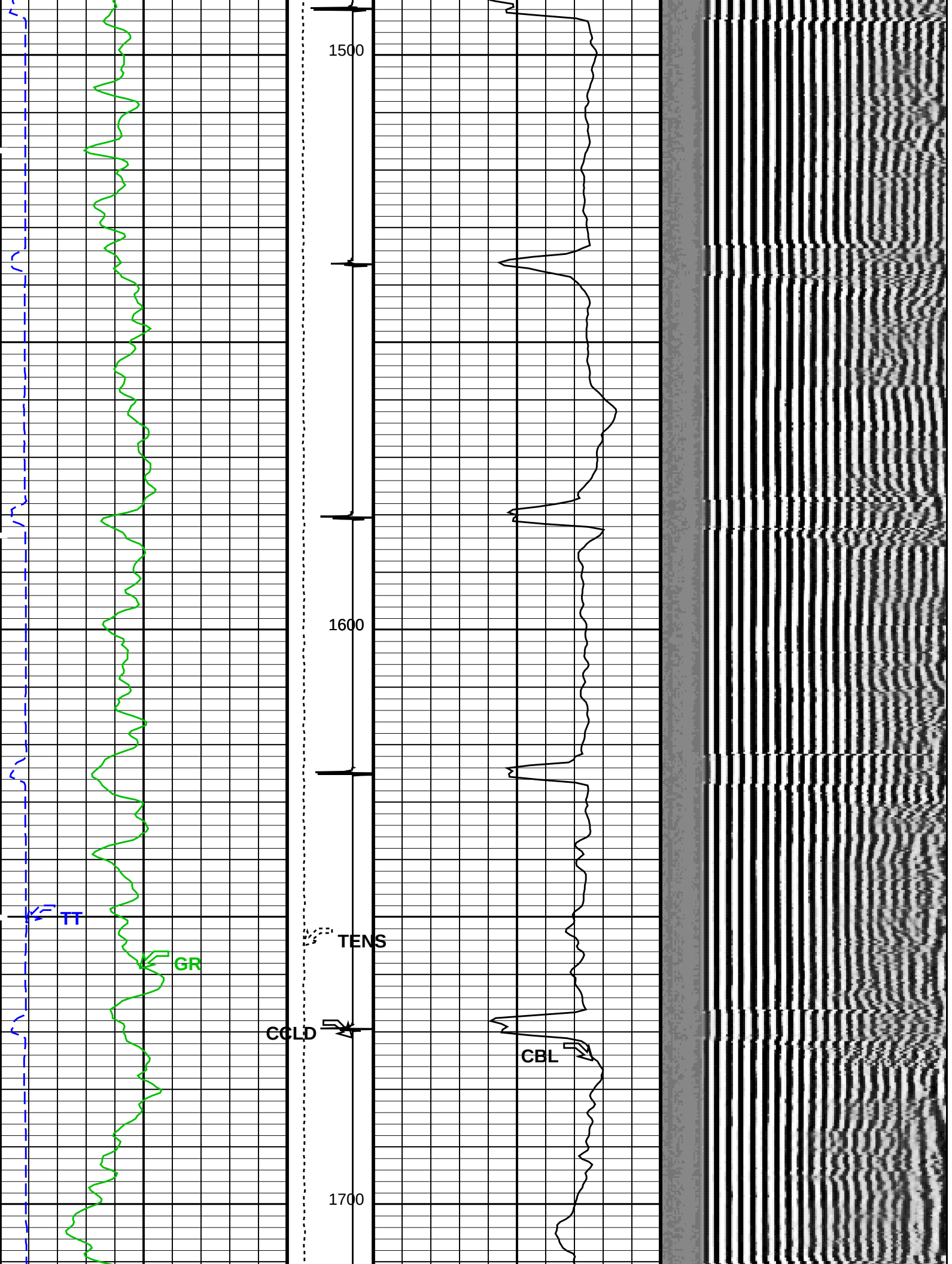
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TENS
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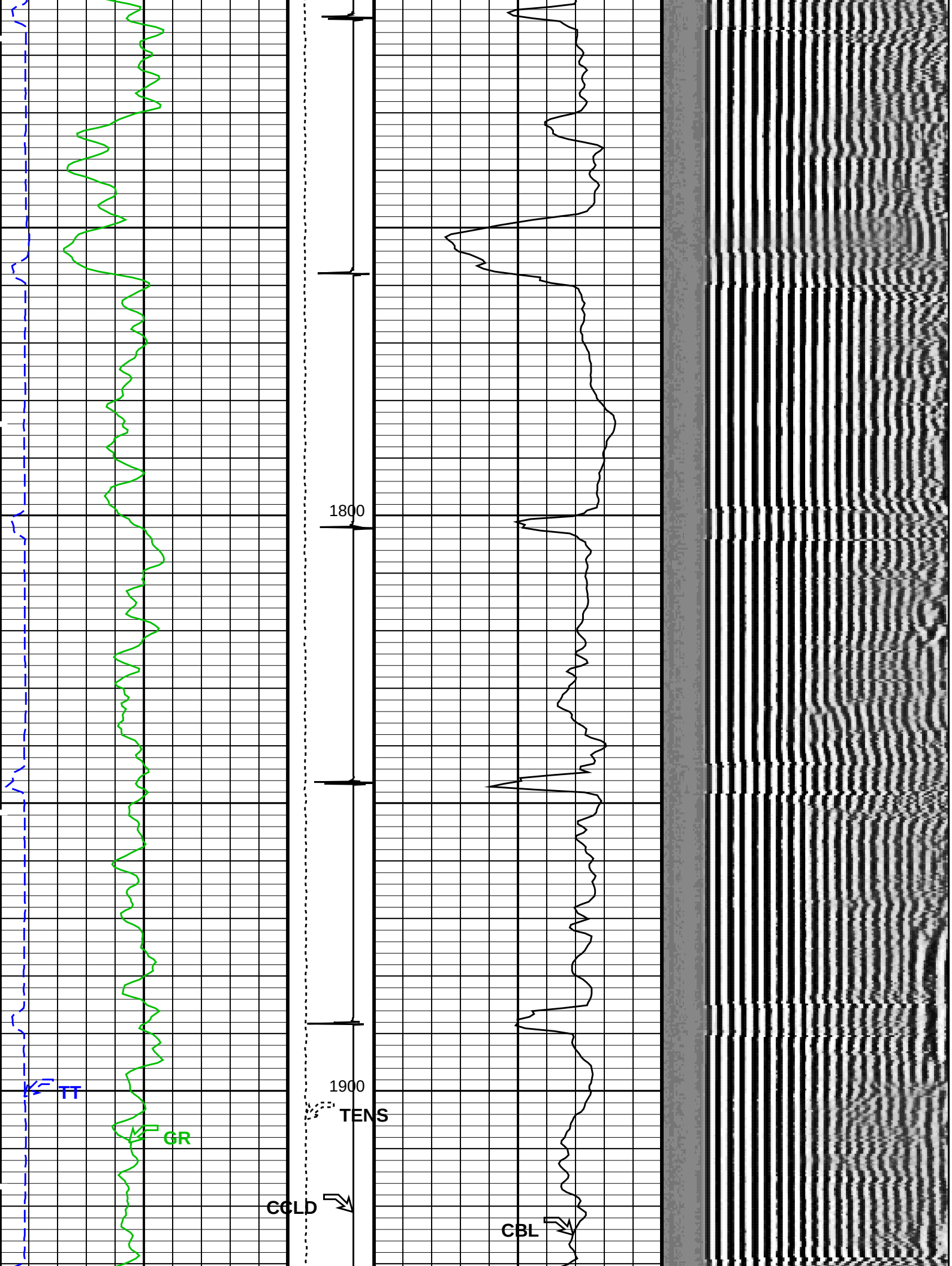
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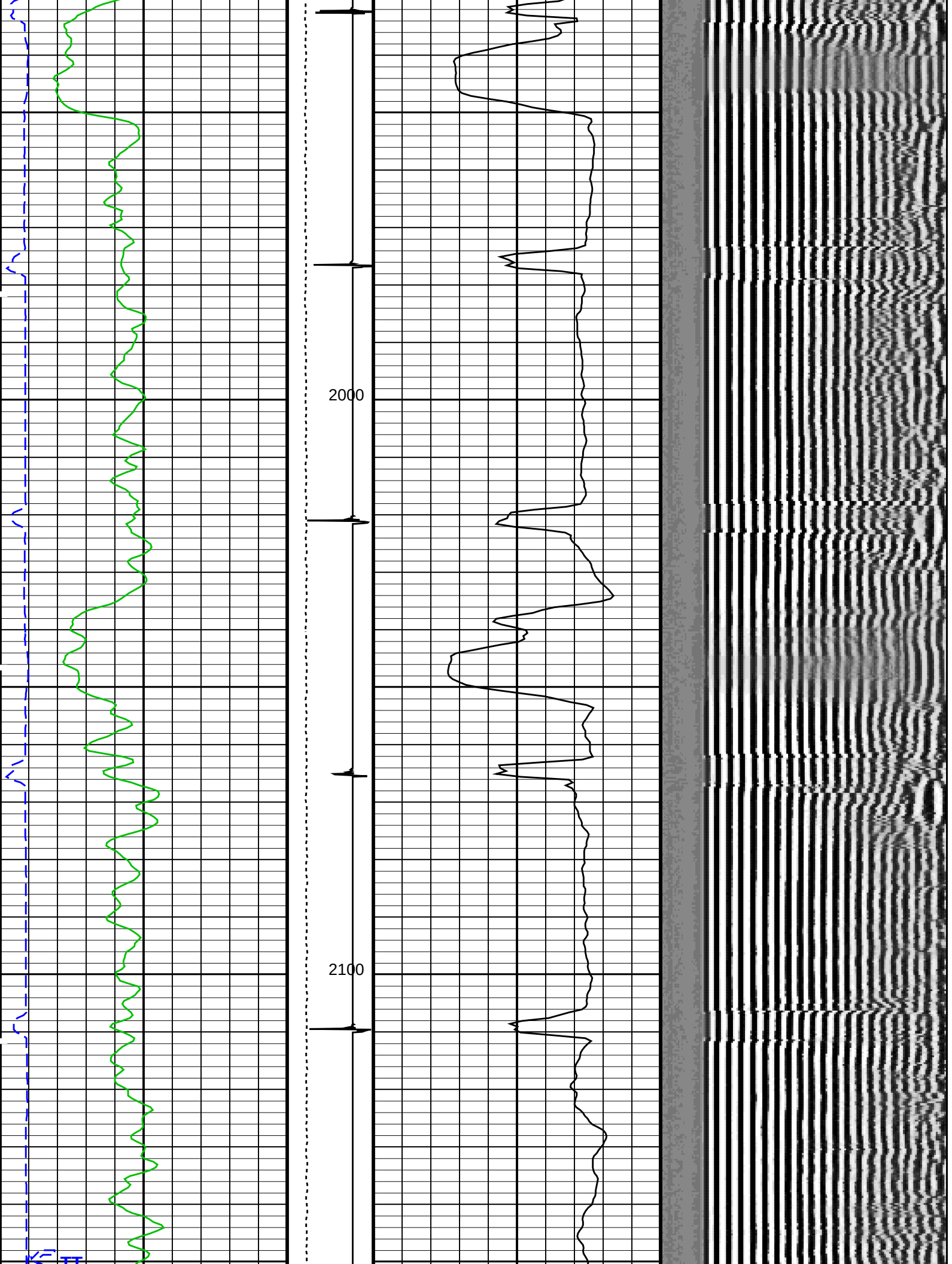
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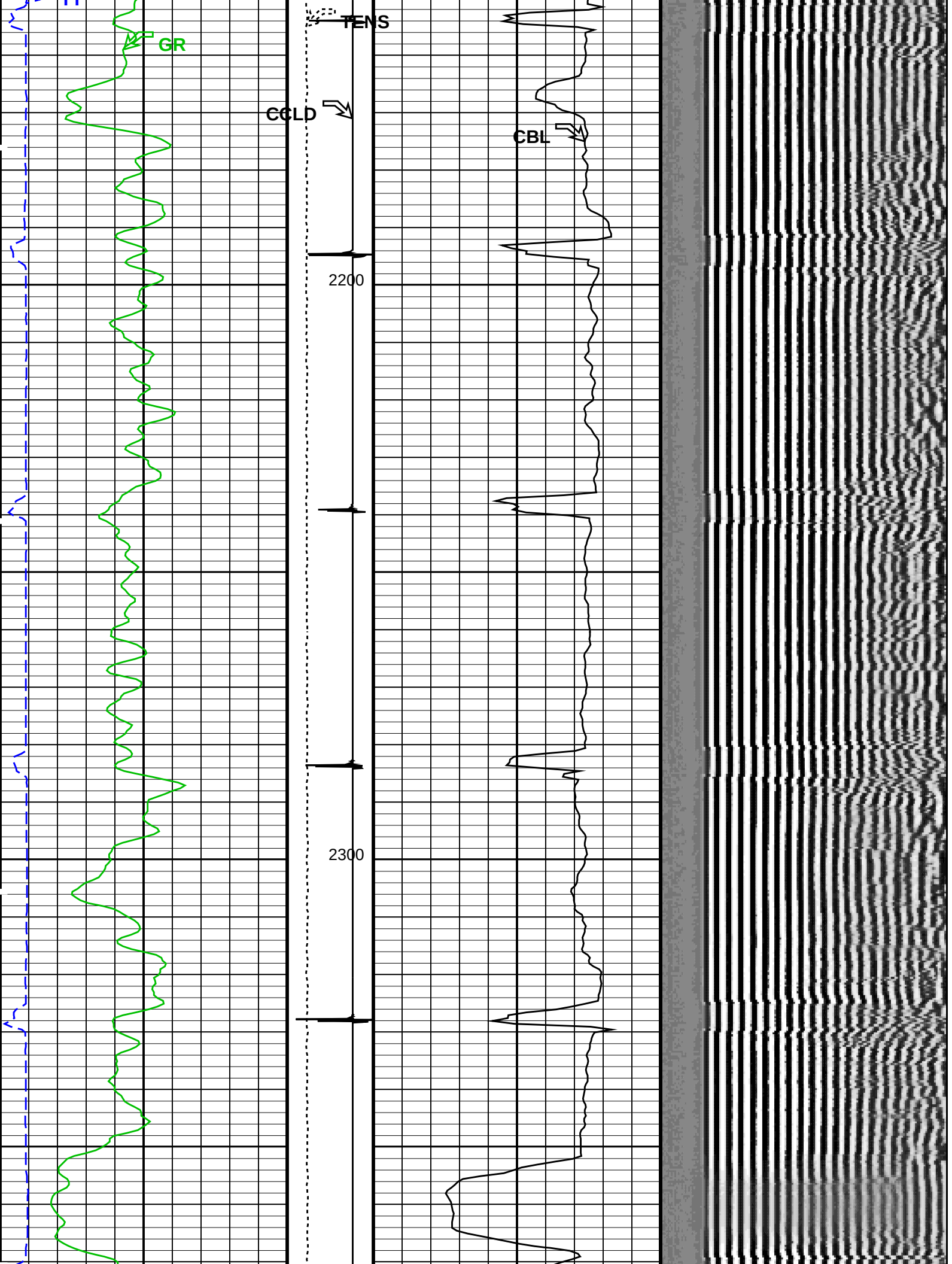
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CCLD
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2200
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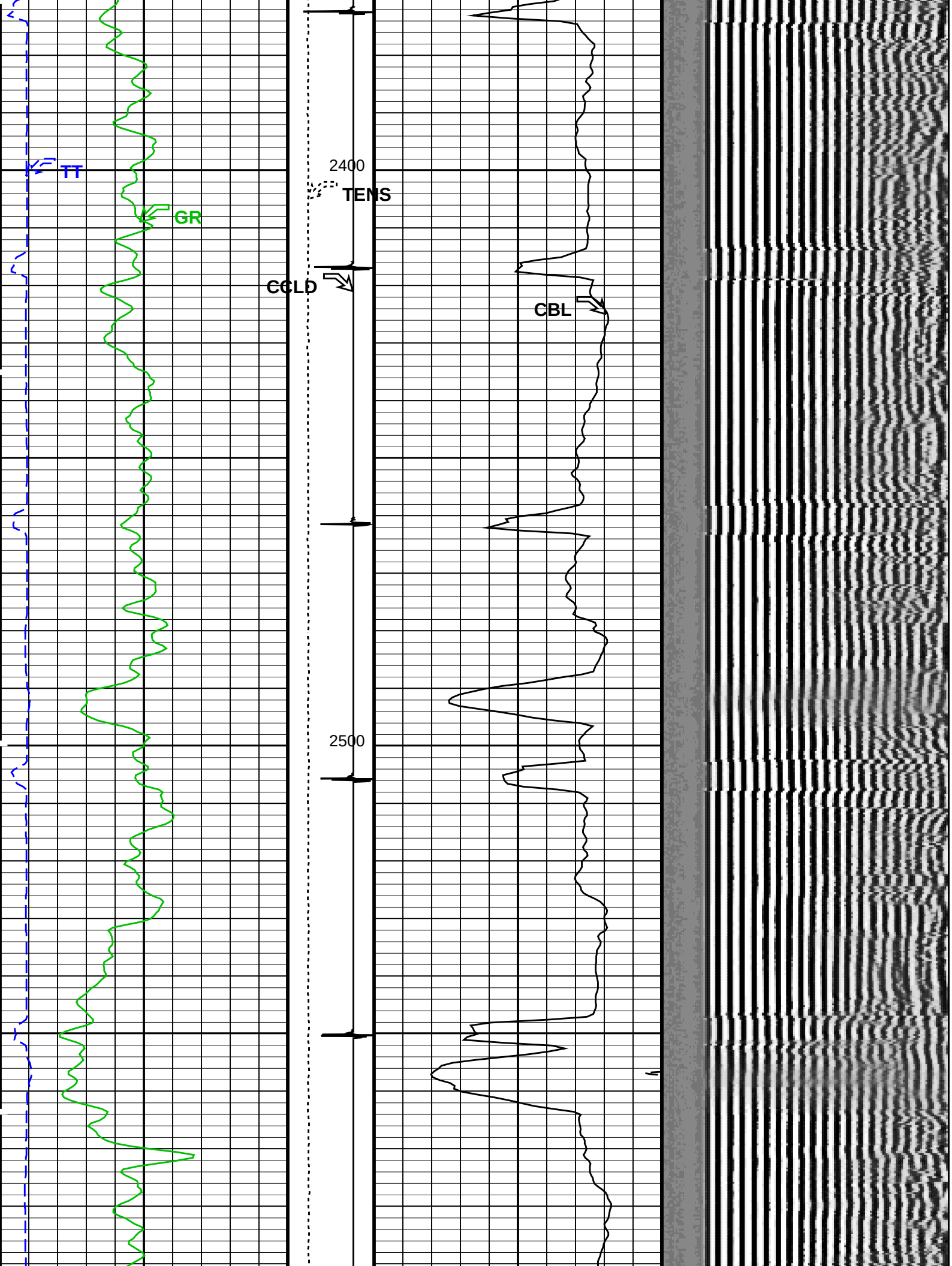
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TENS
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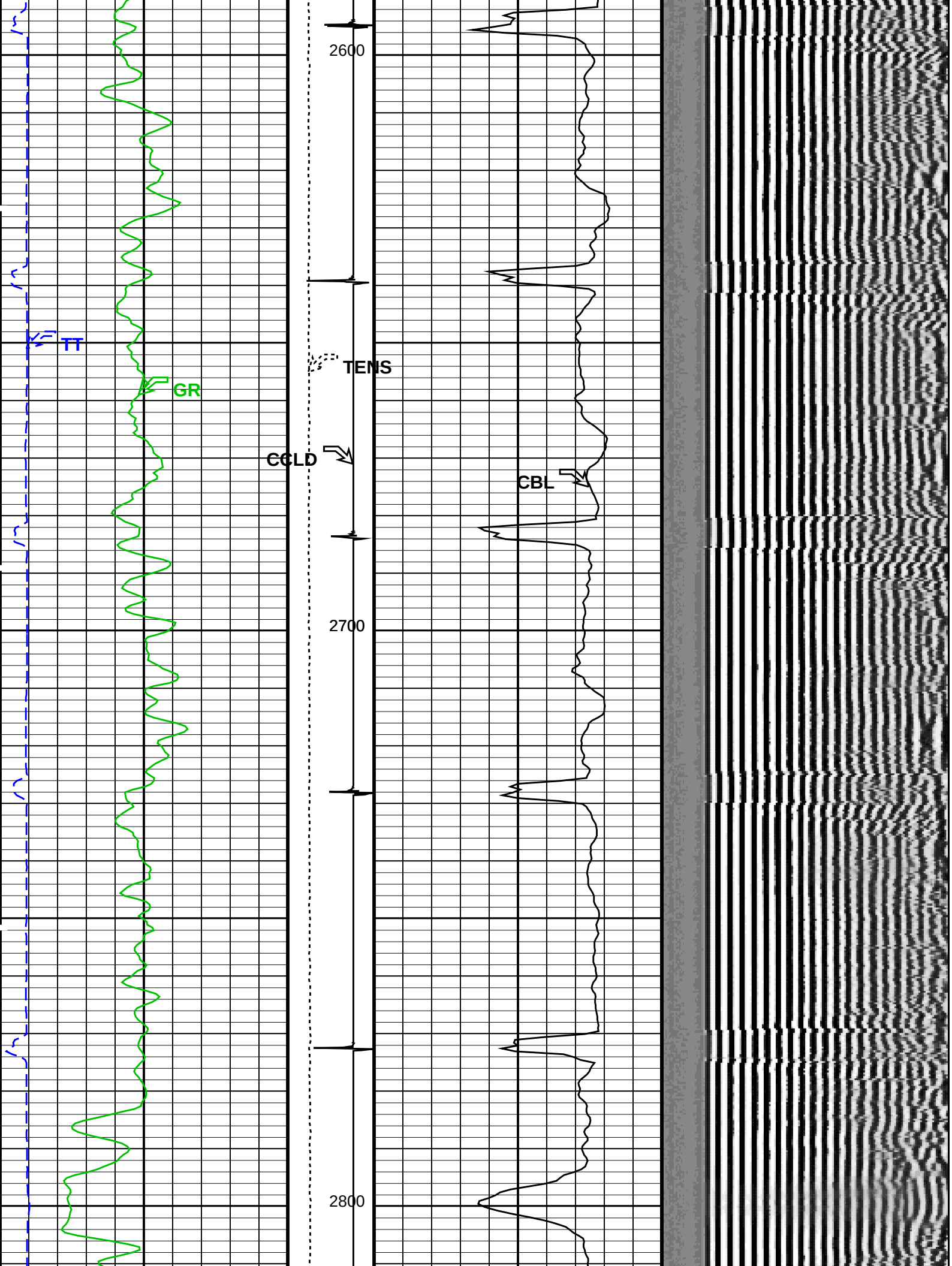
2500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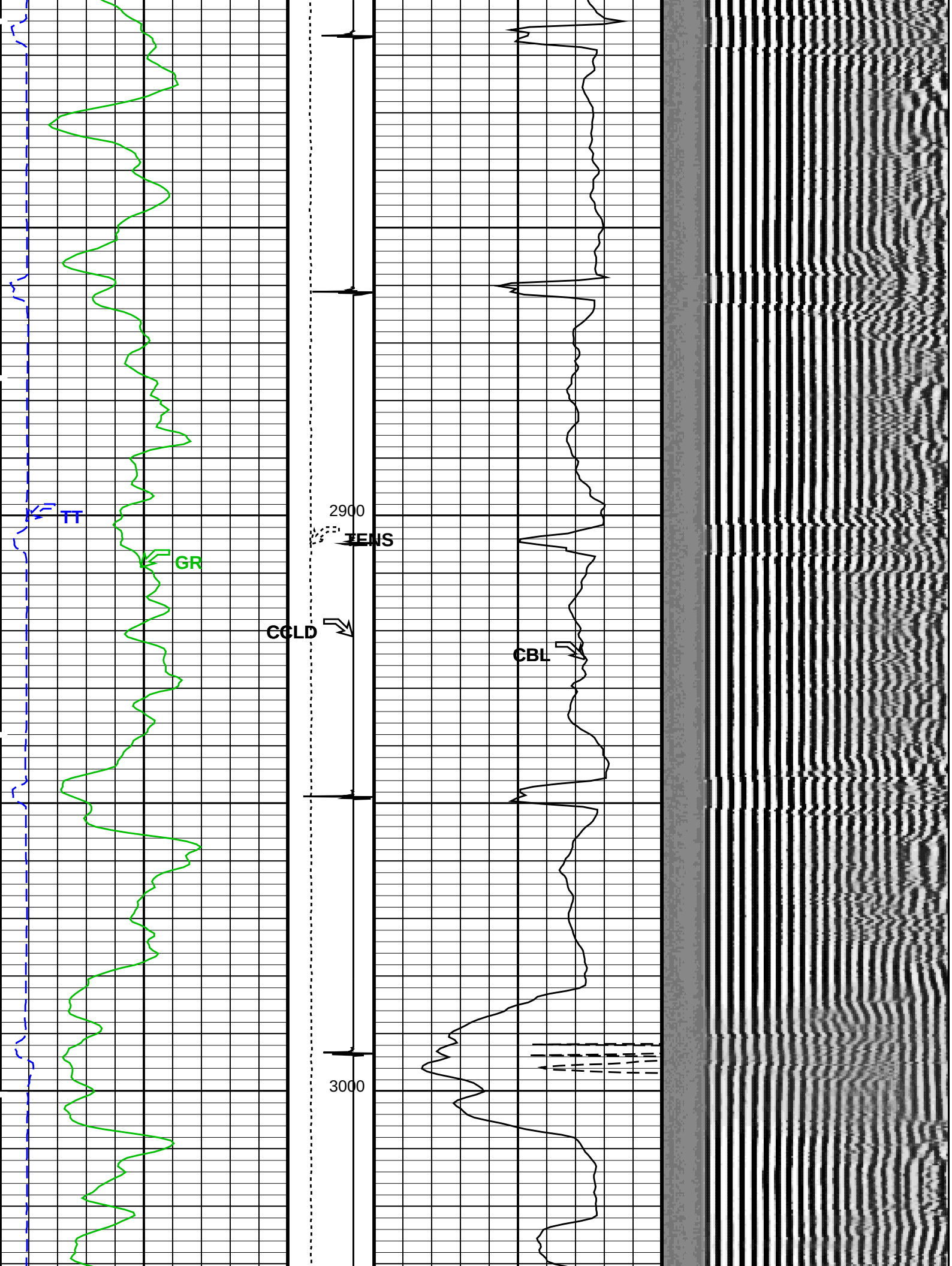
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TENS
CCLD
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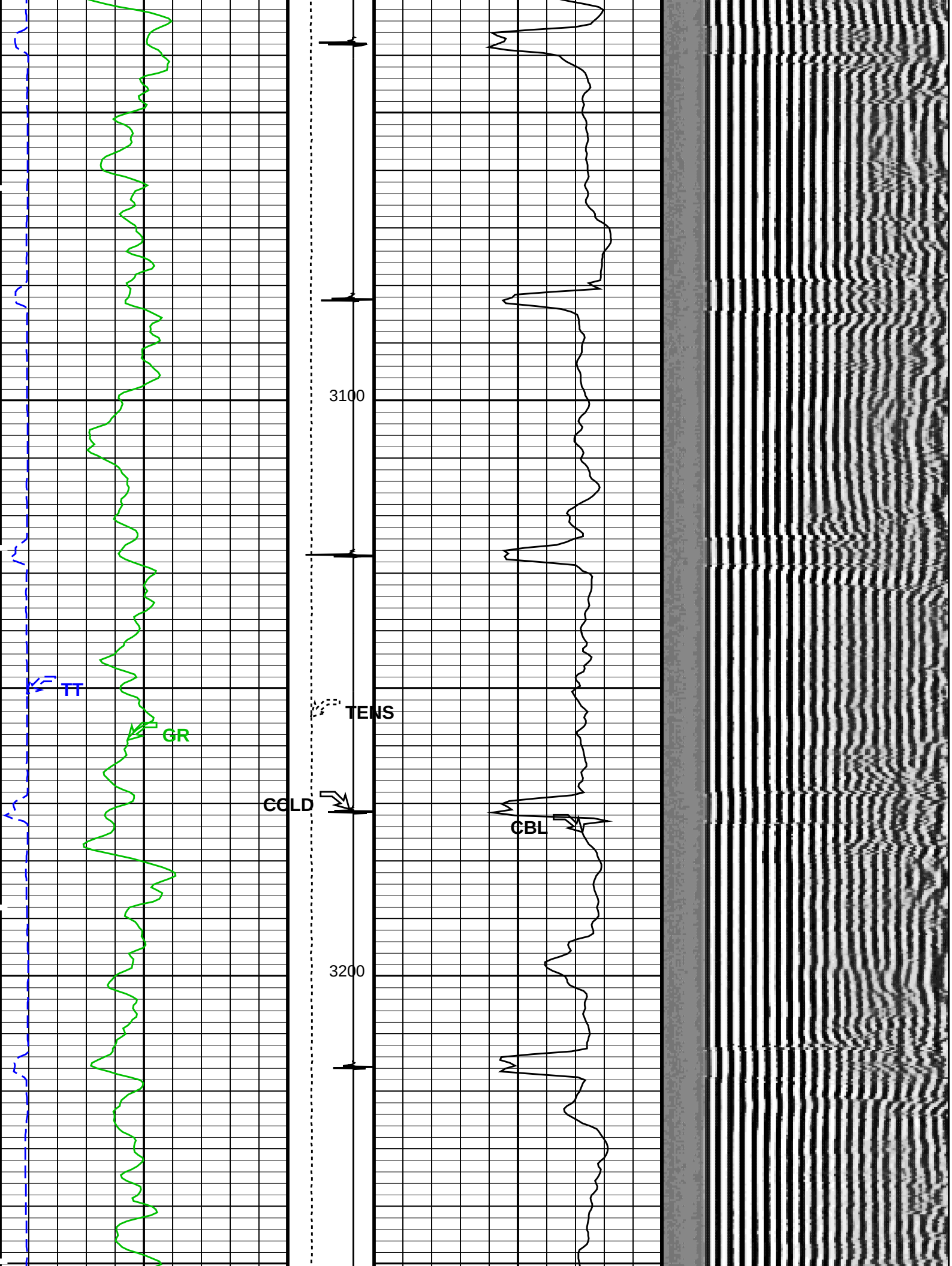
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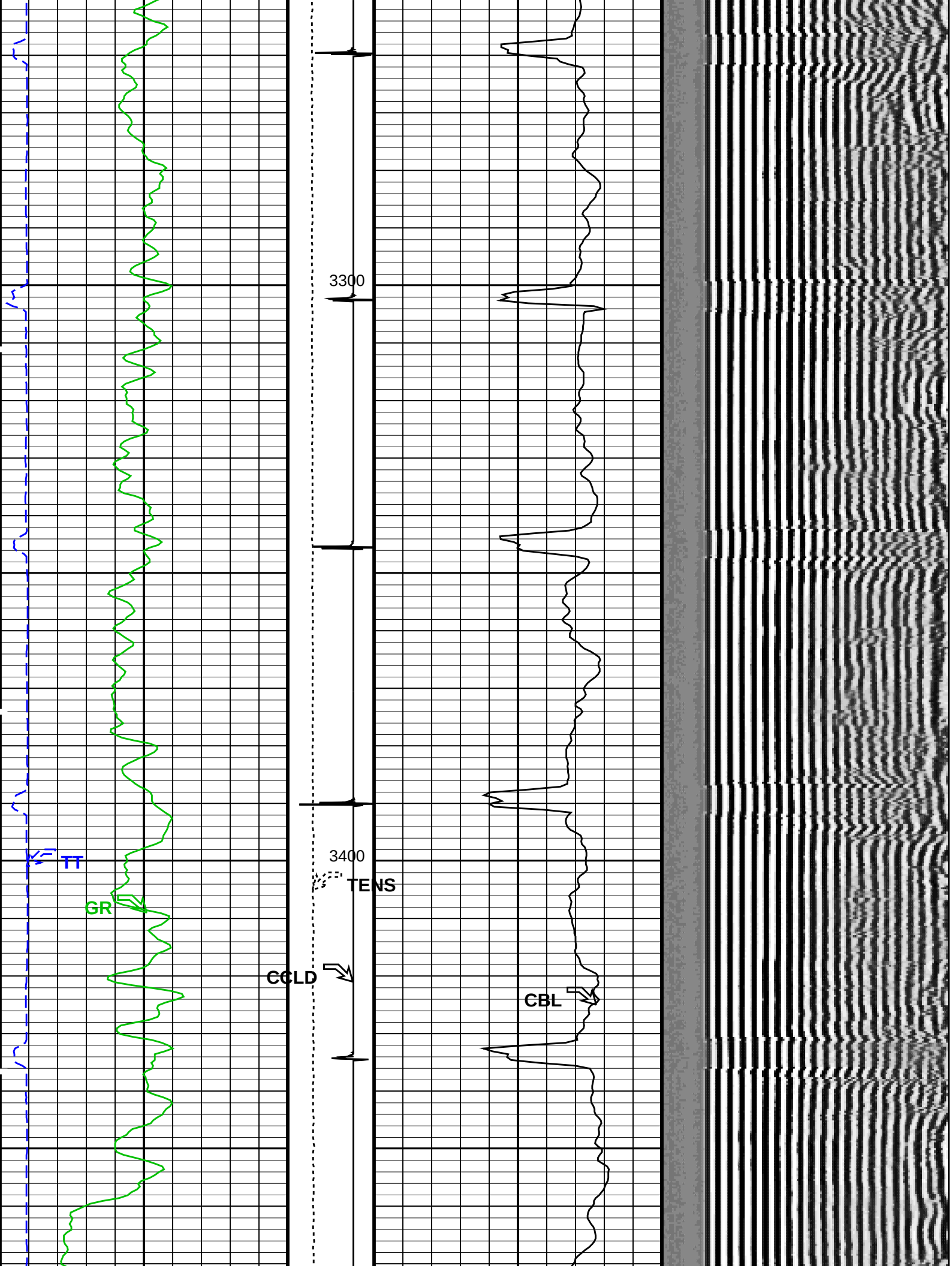
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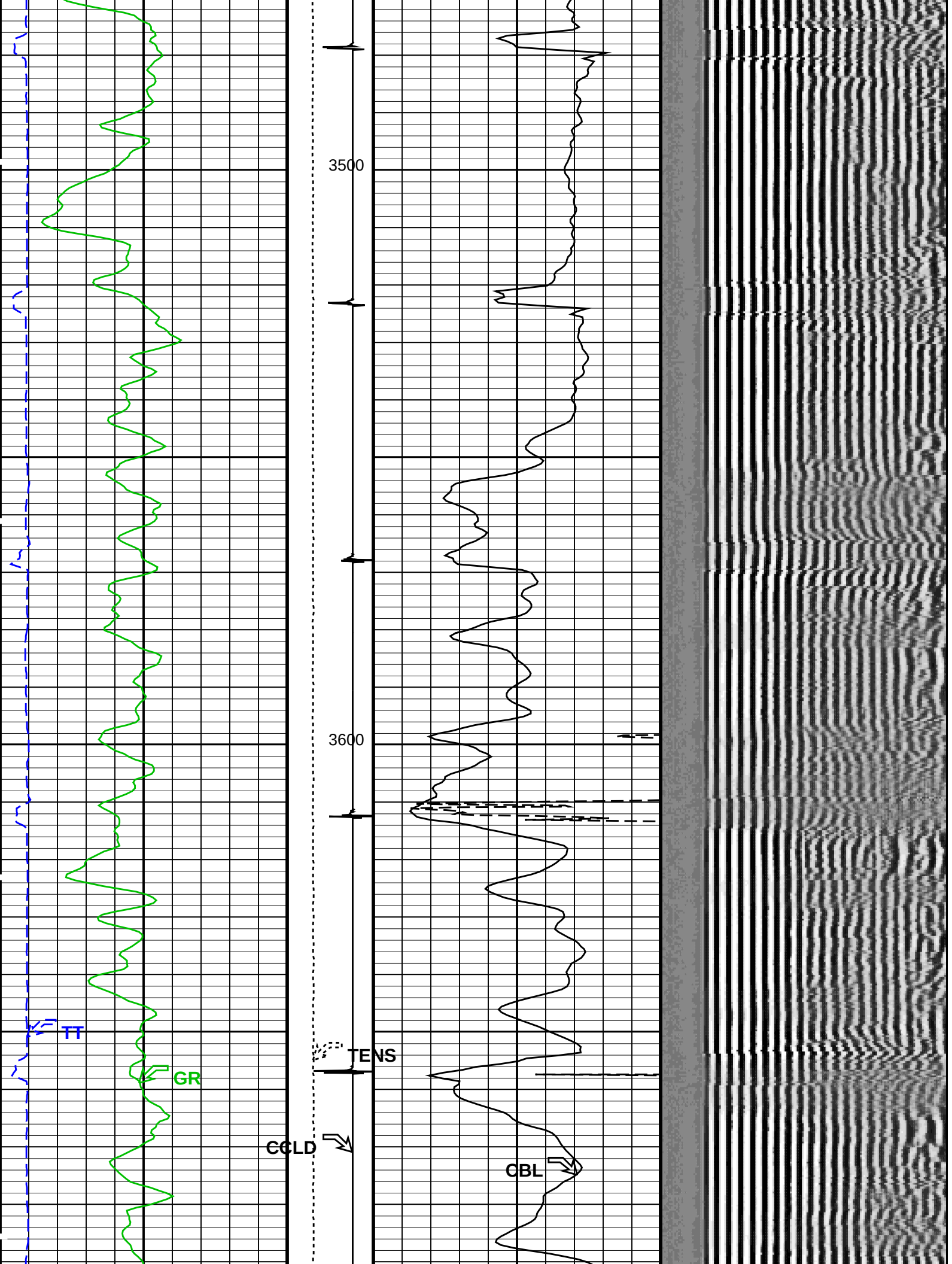
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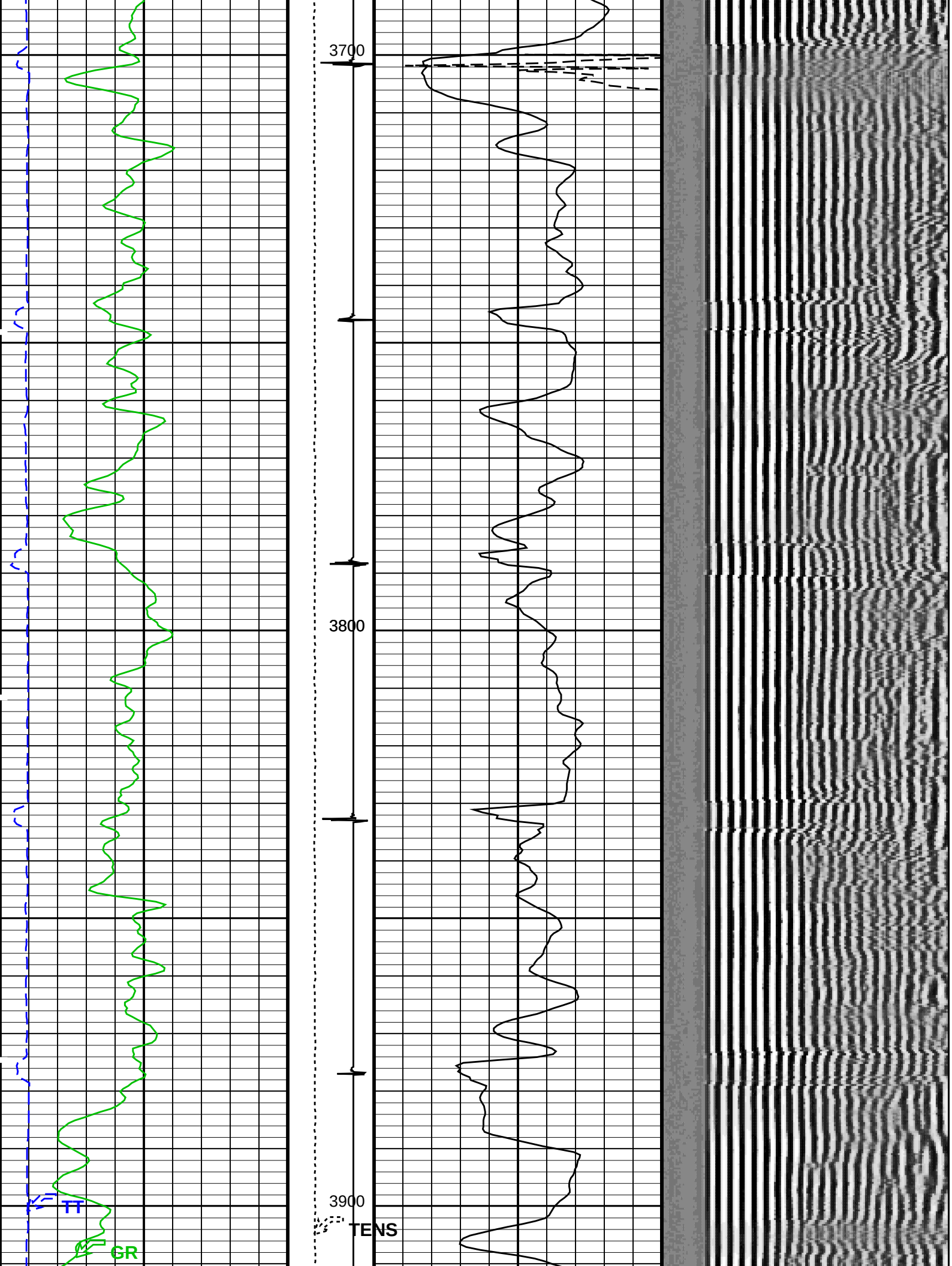
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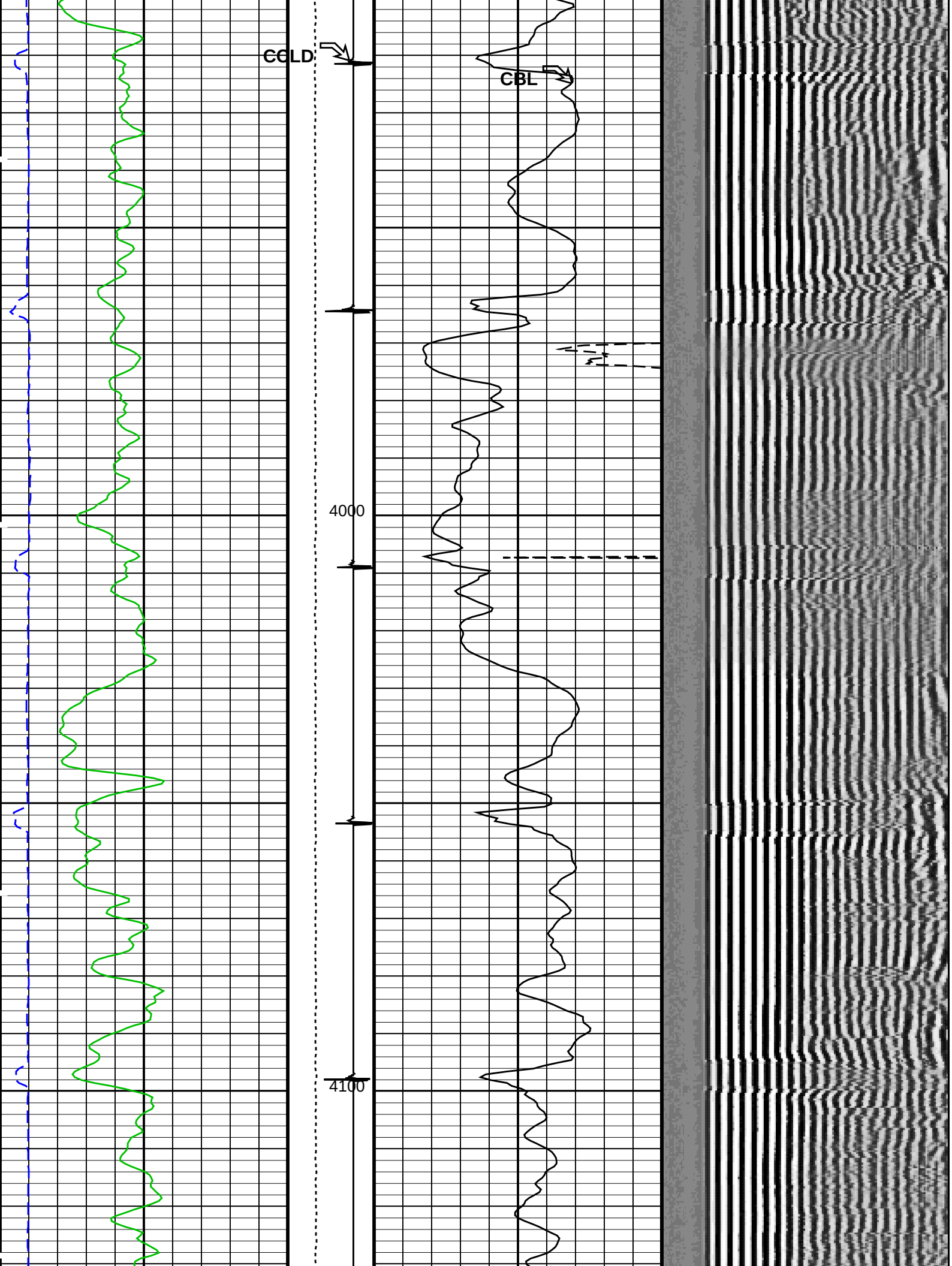
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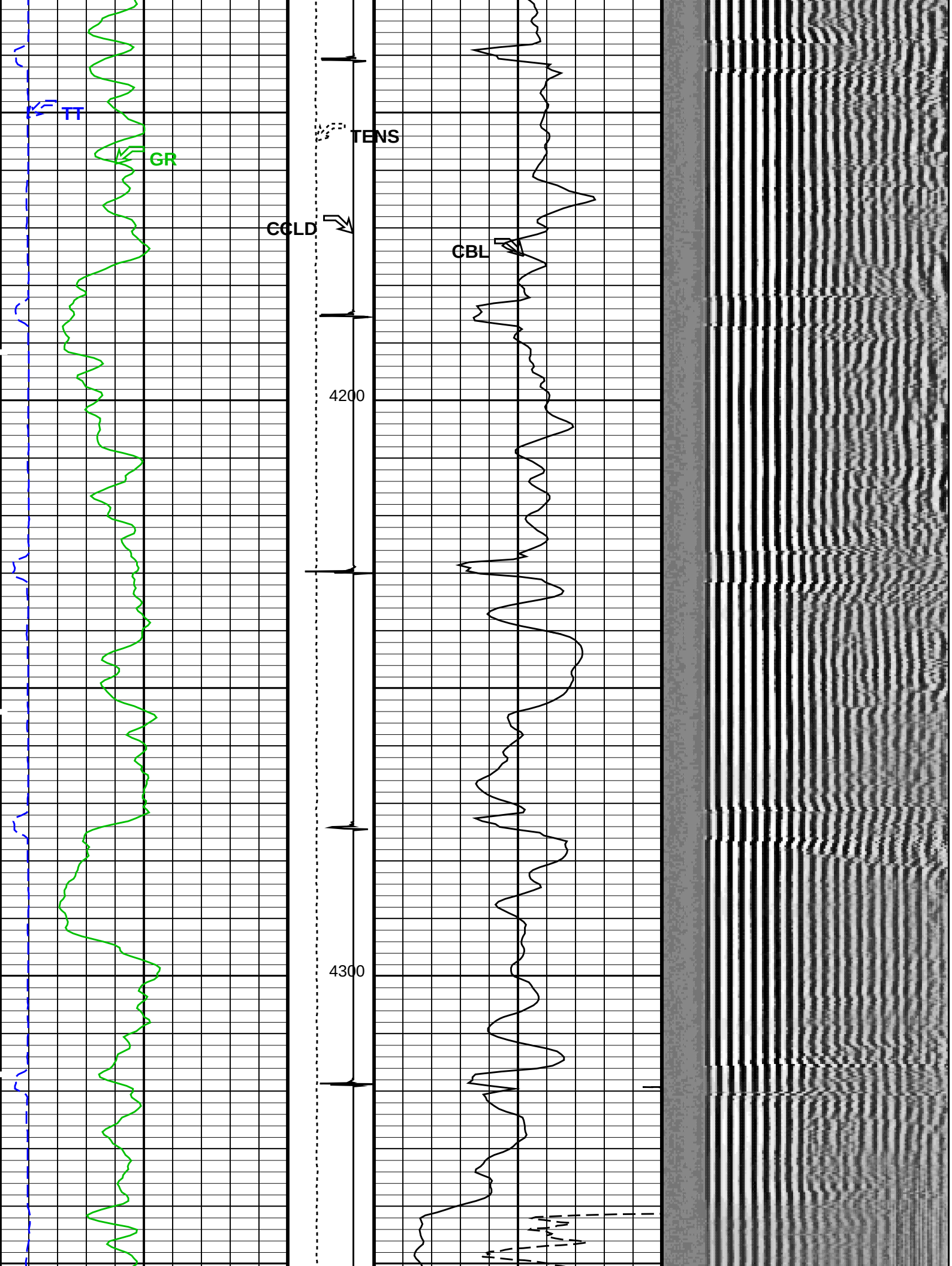
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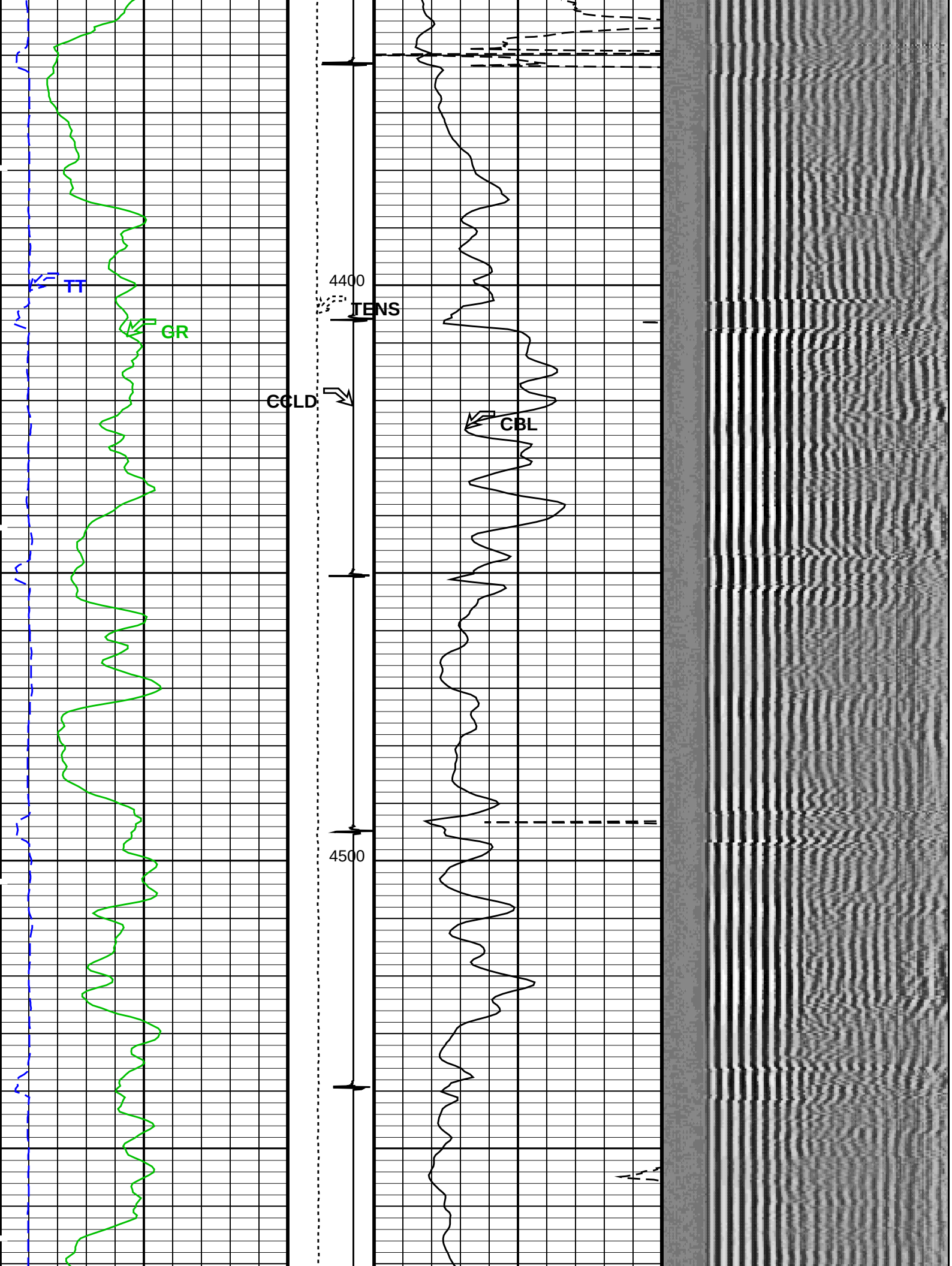
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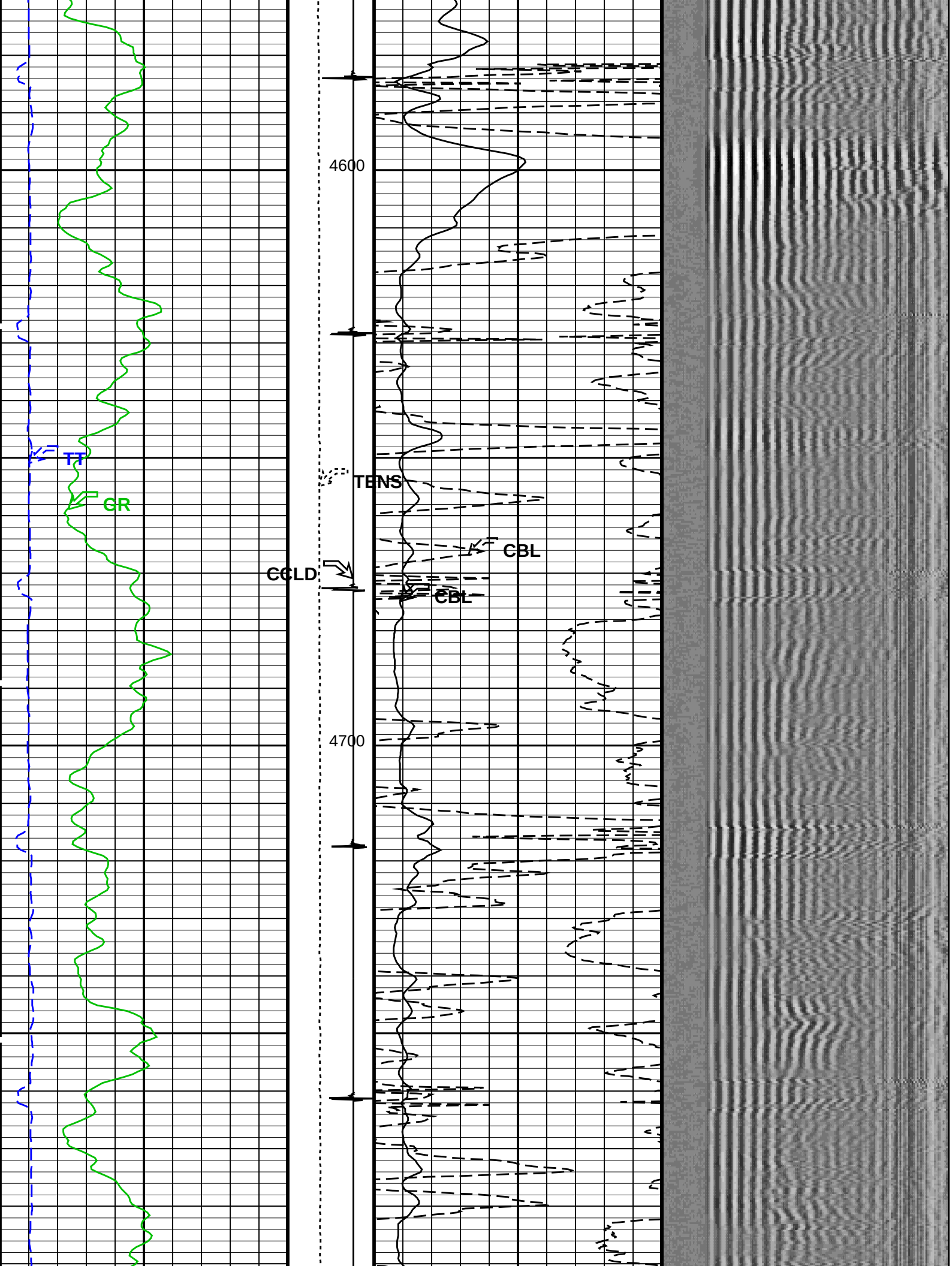
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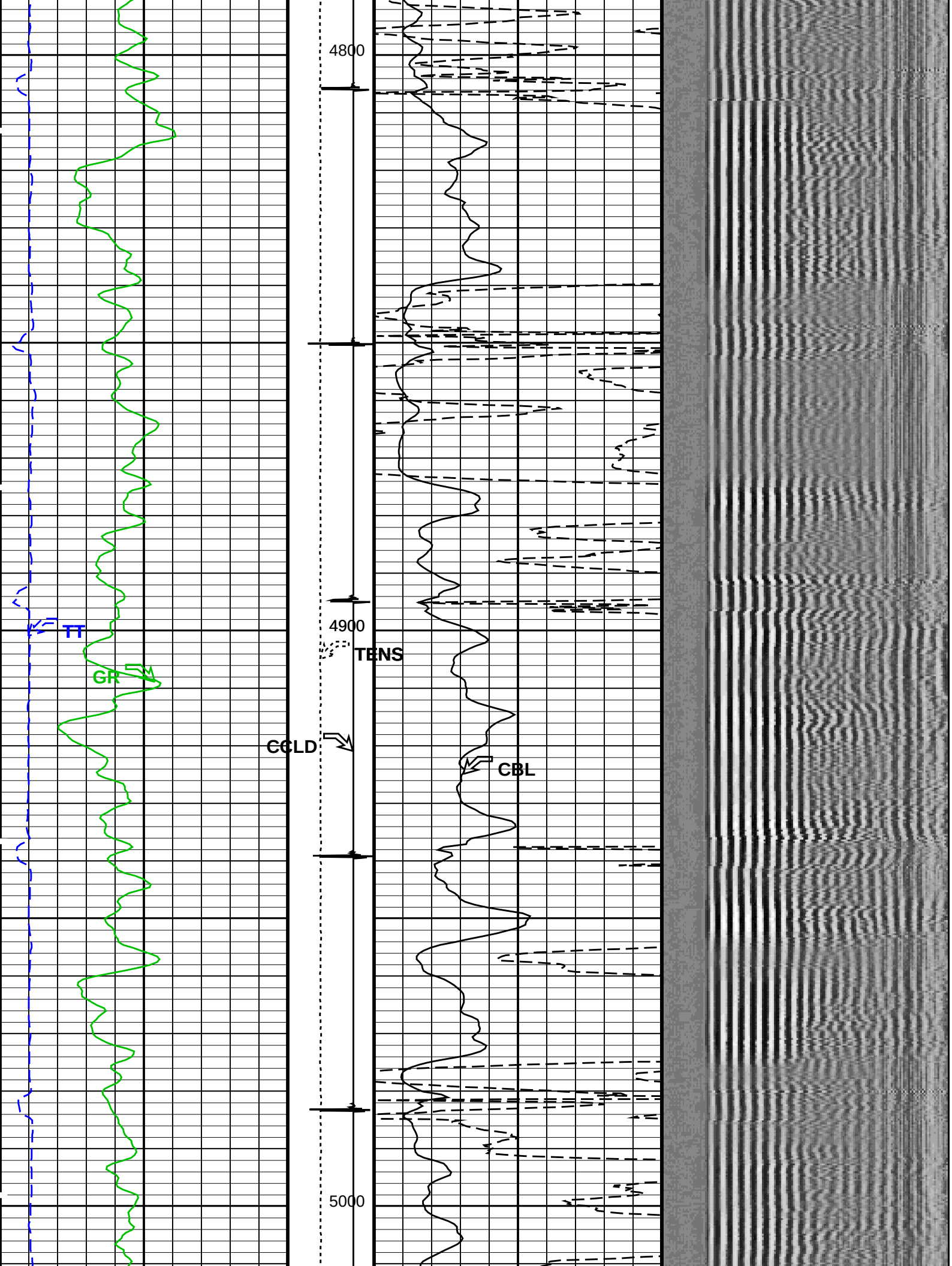
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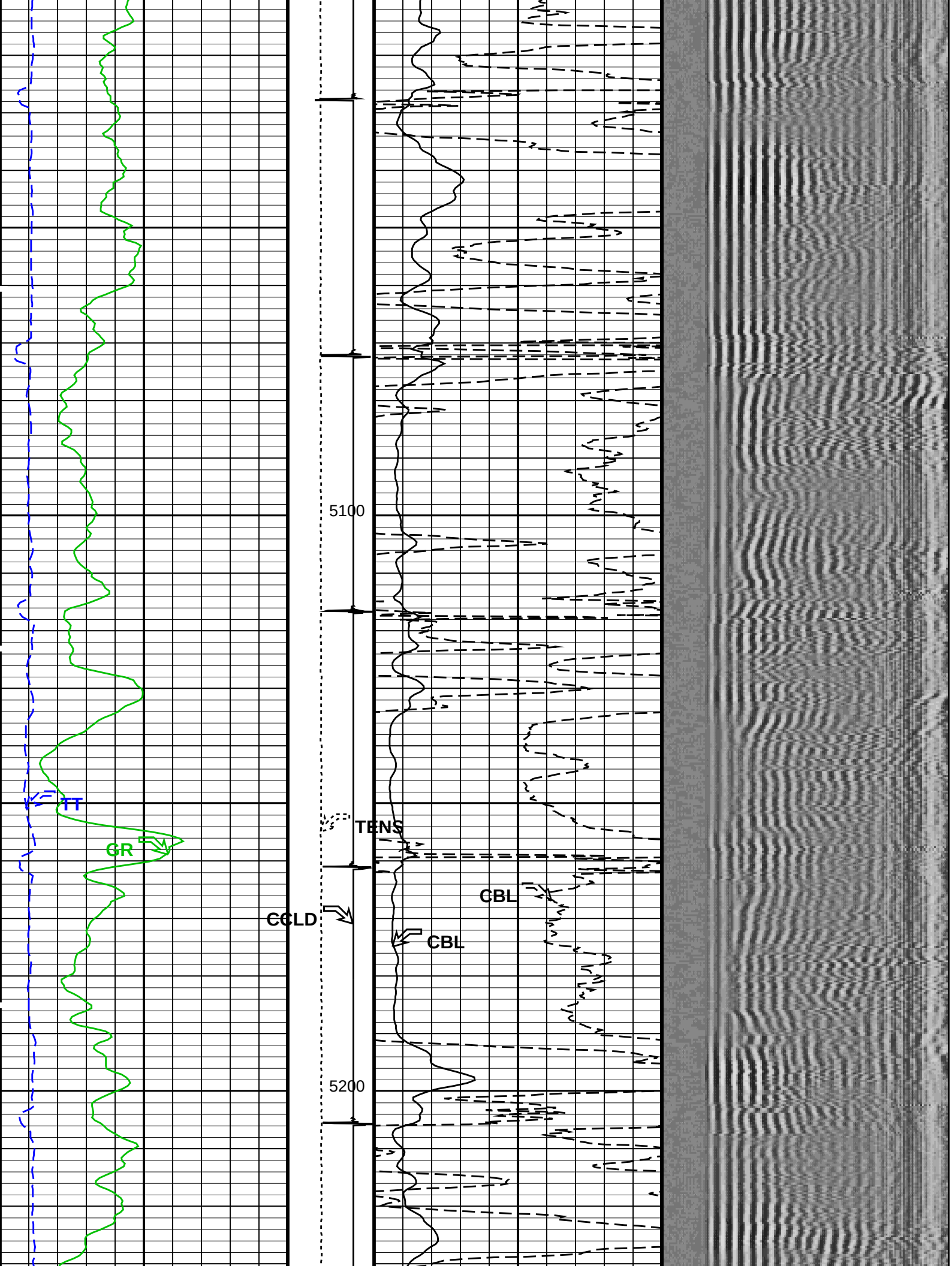
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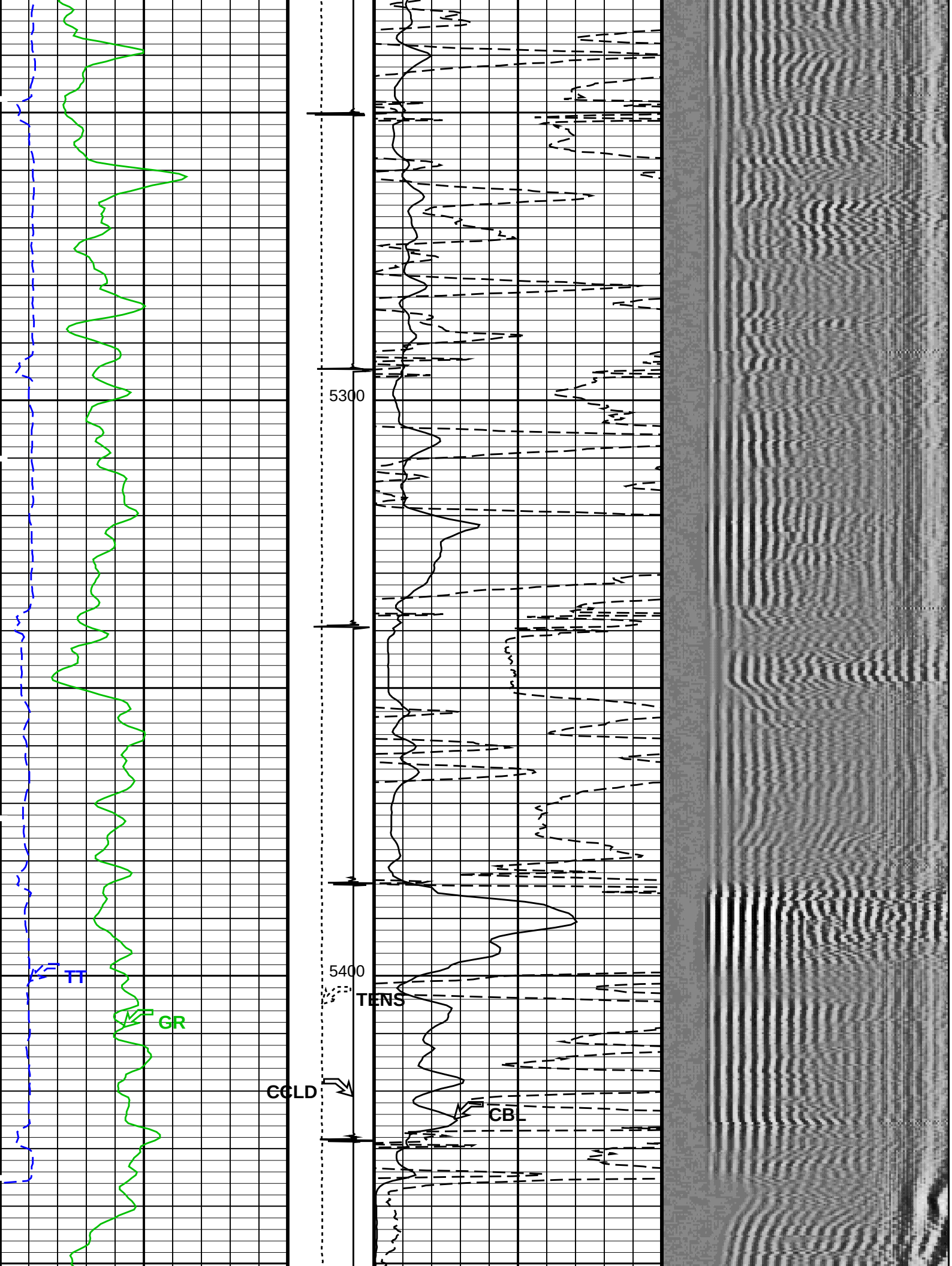
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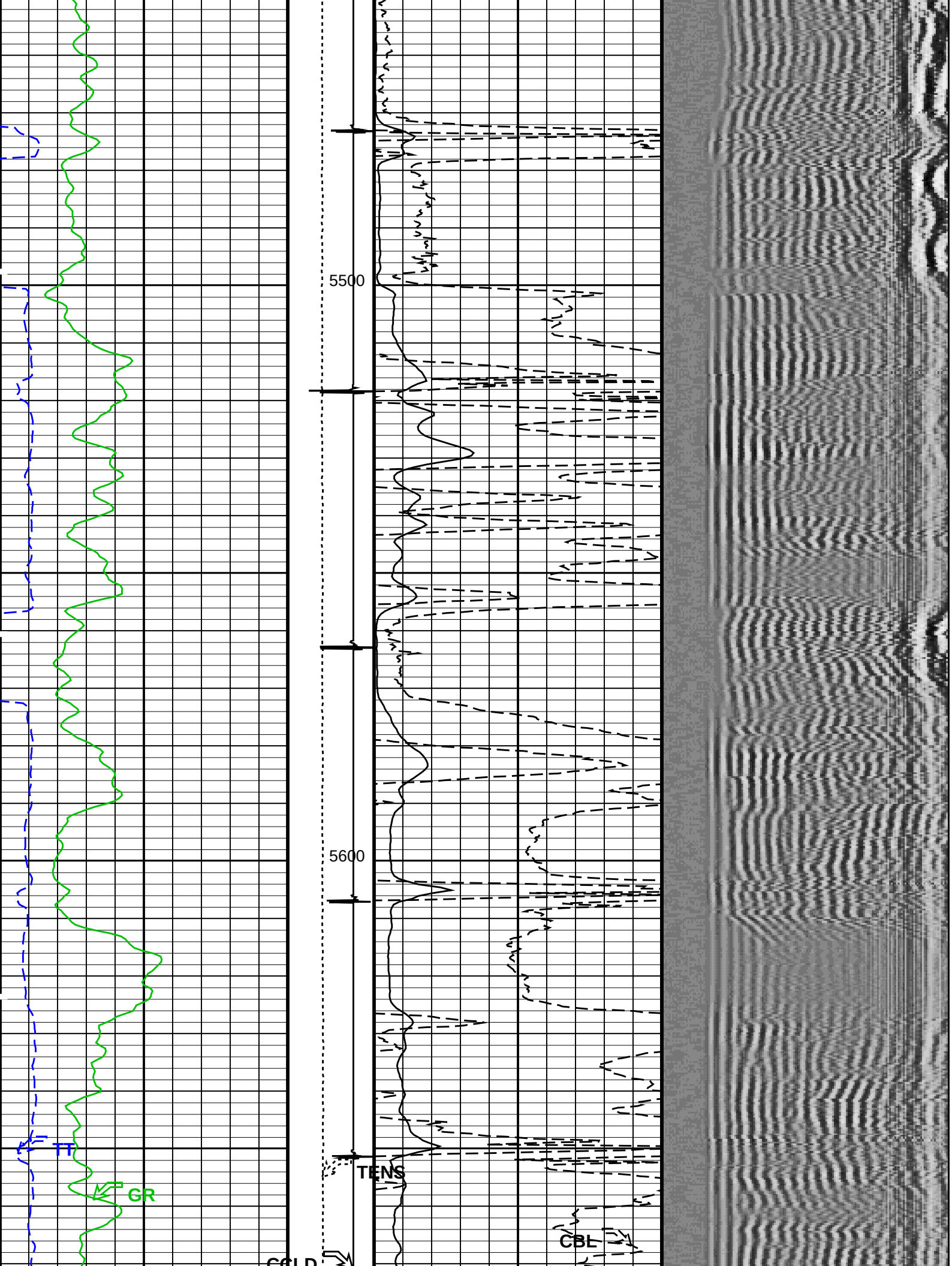
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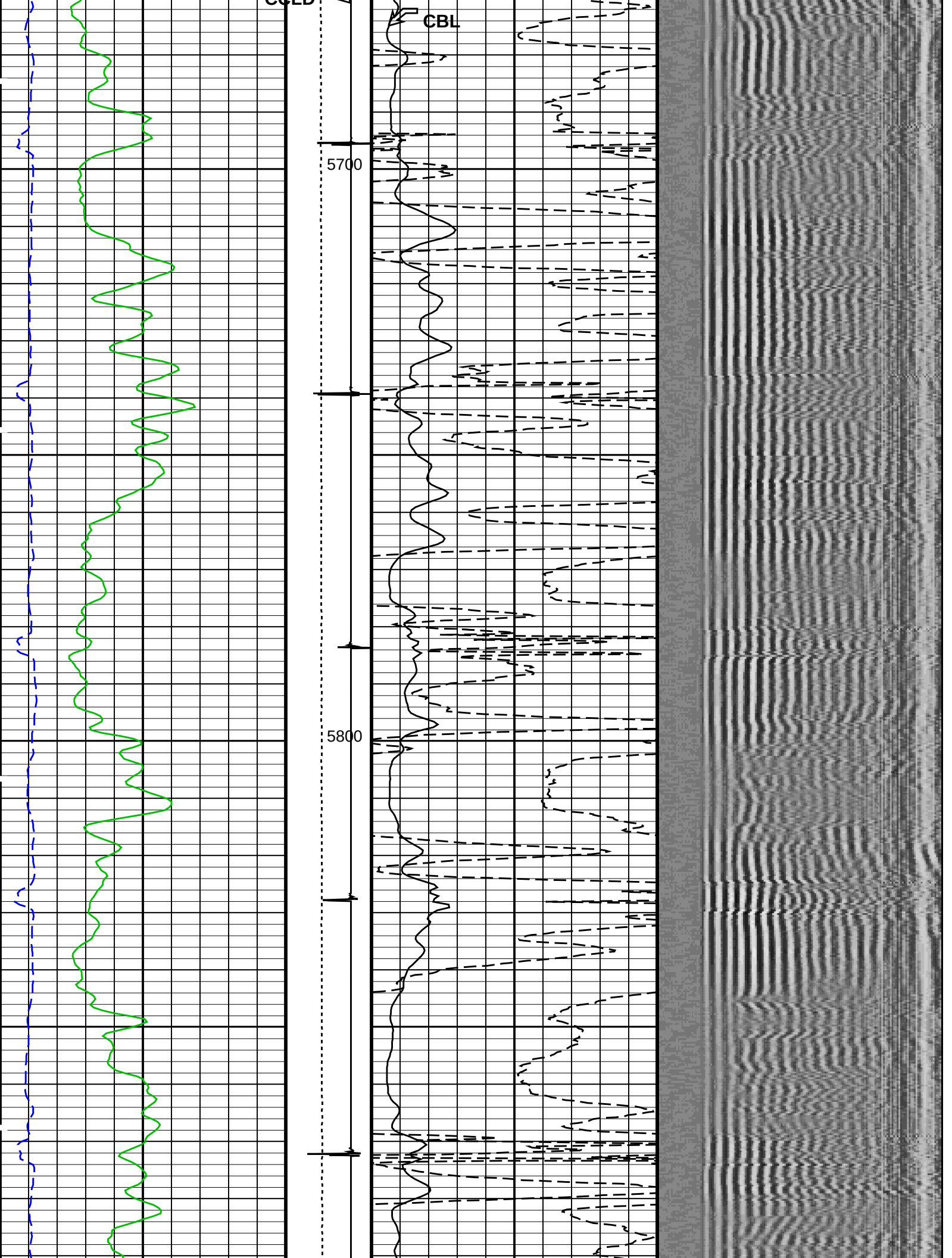
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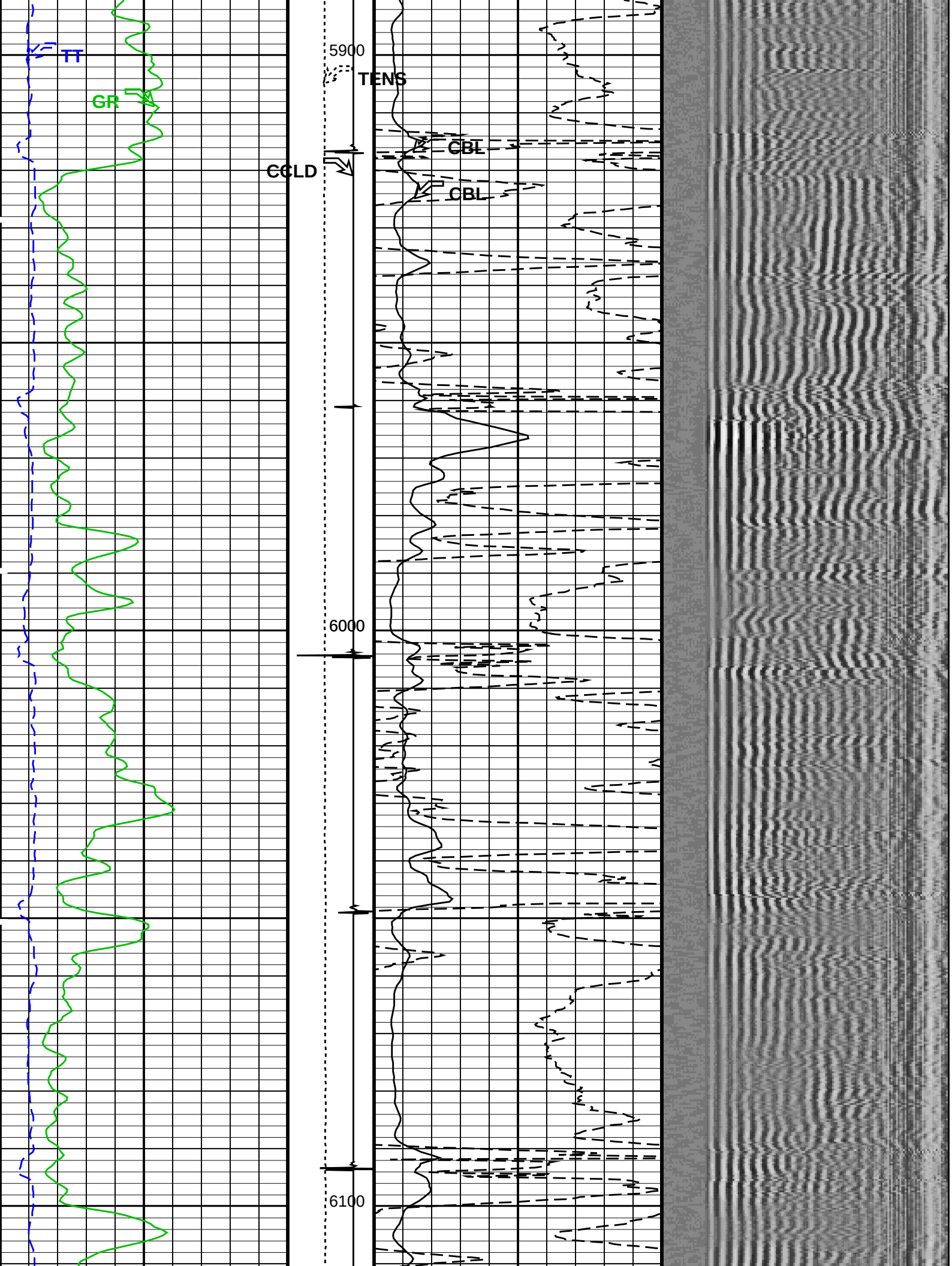
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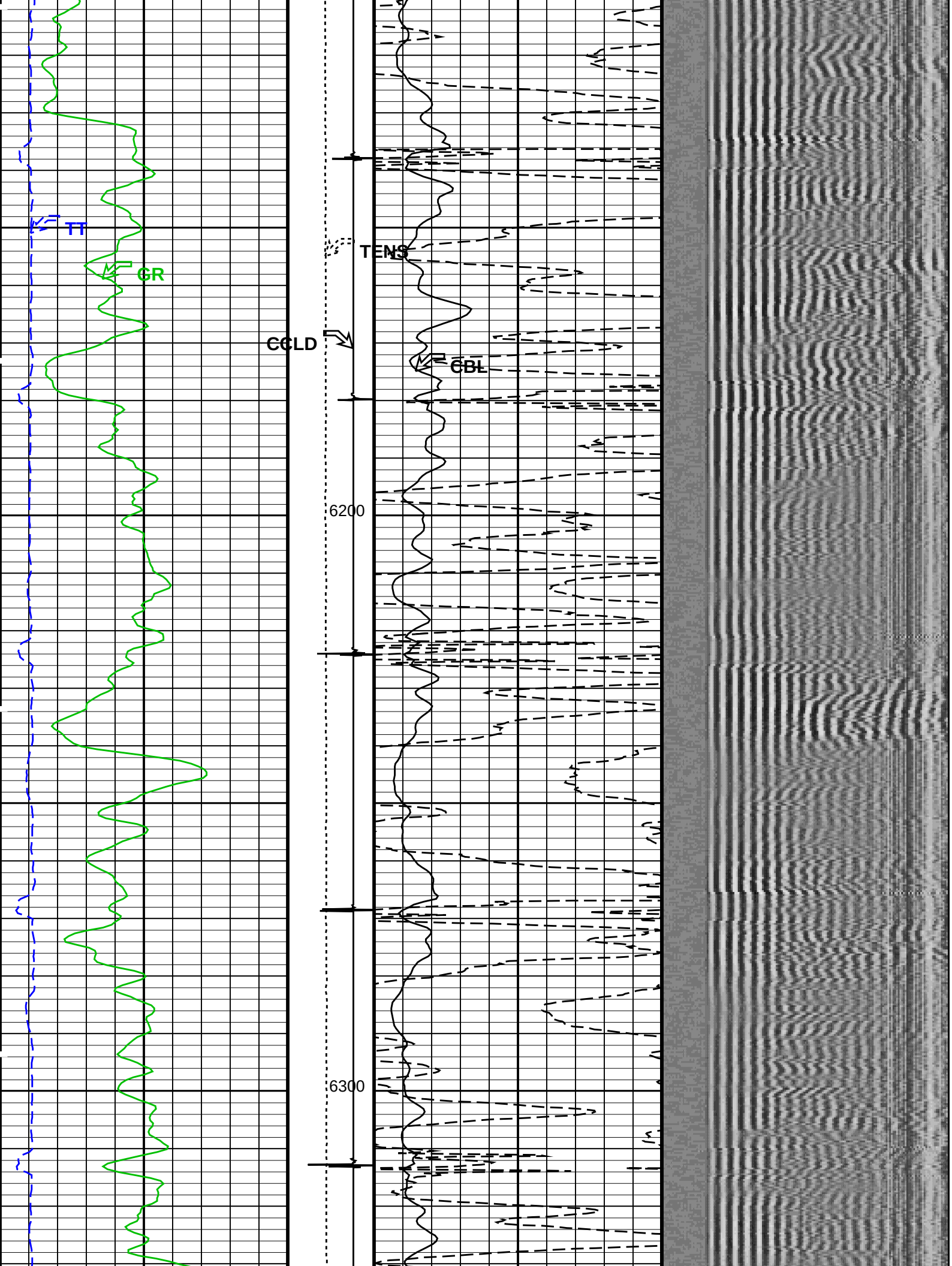
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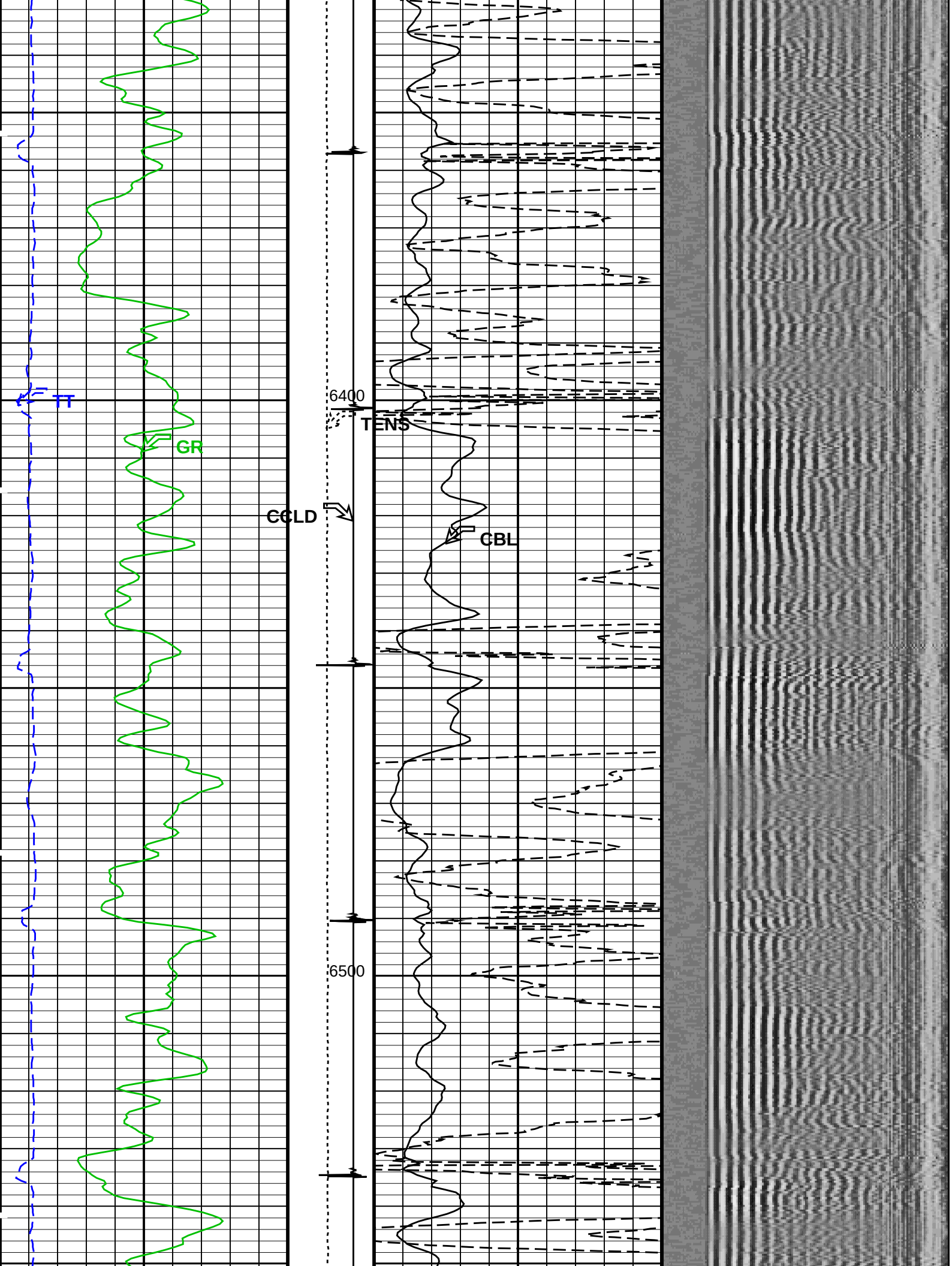
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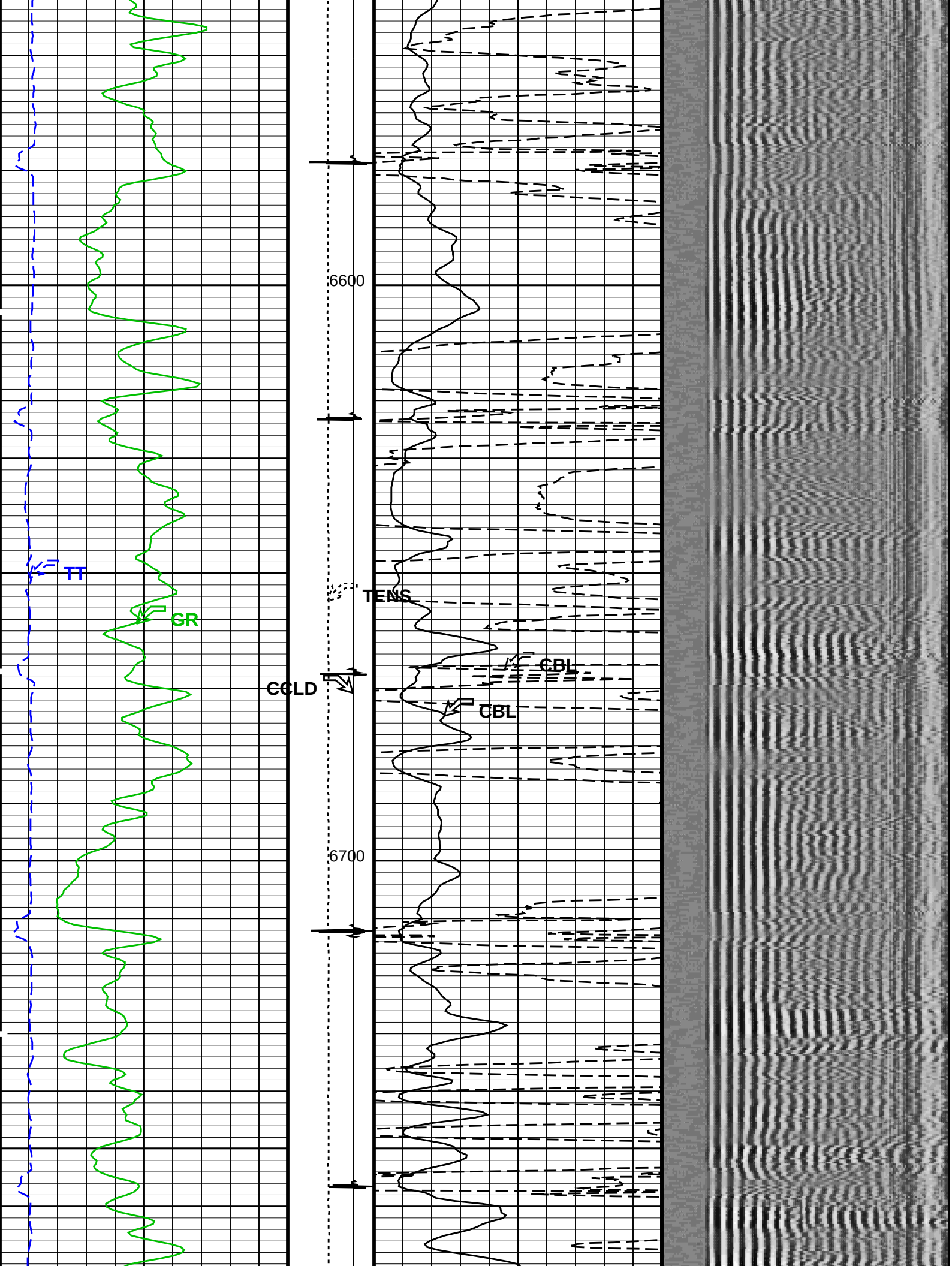
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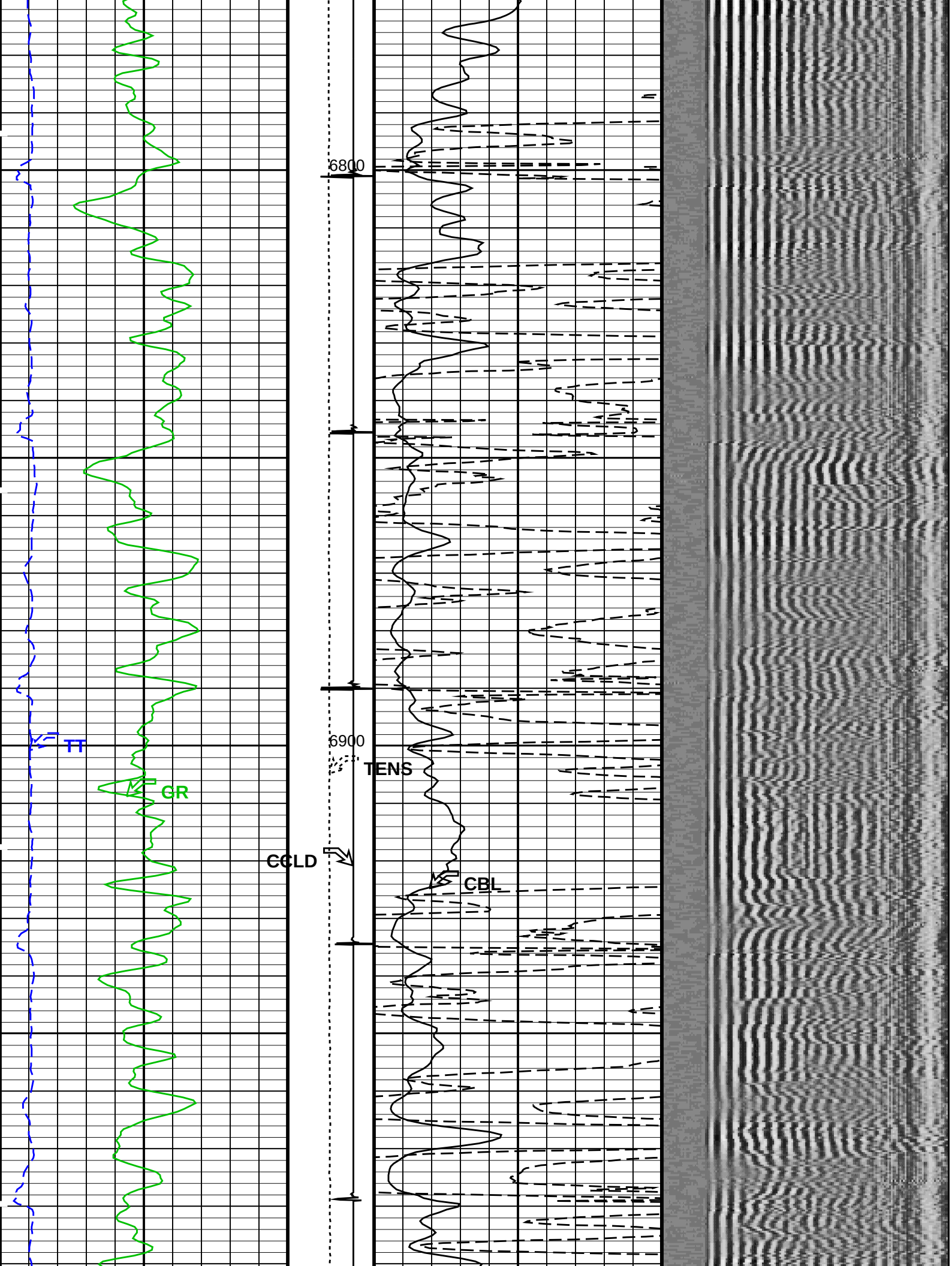
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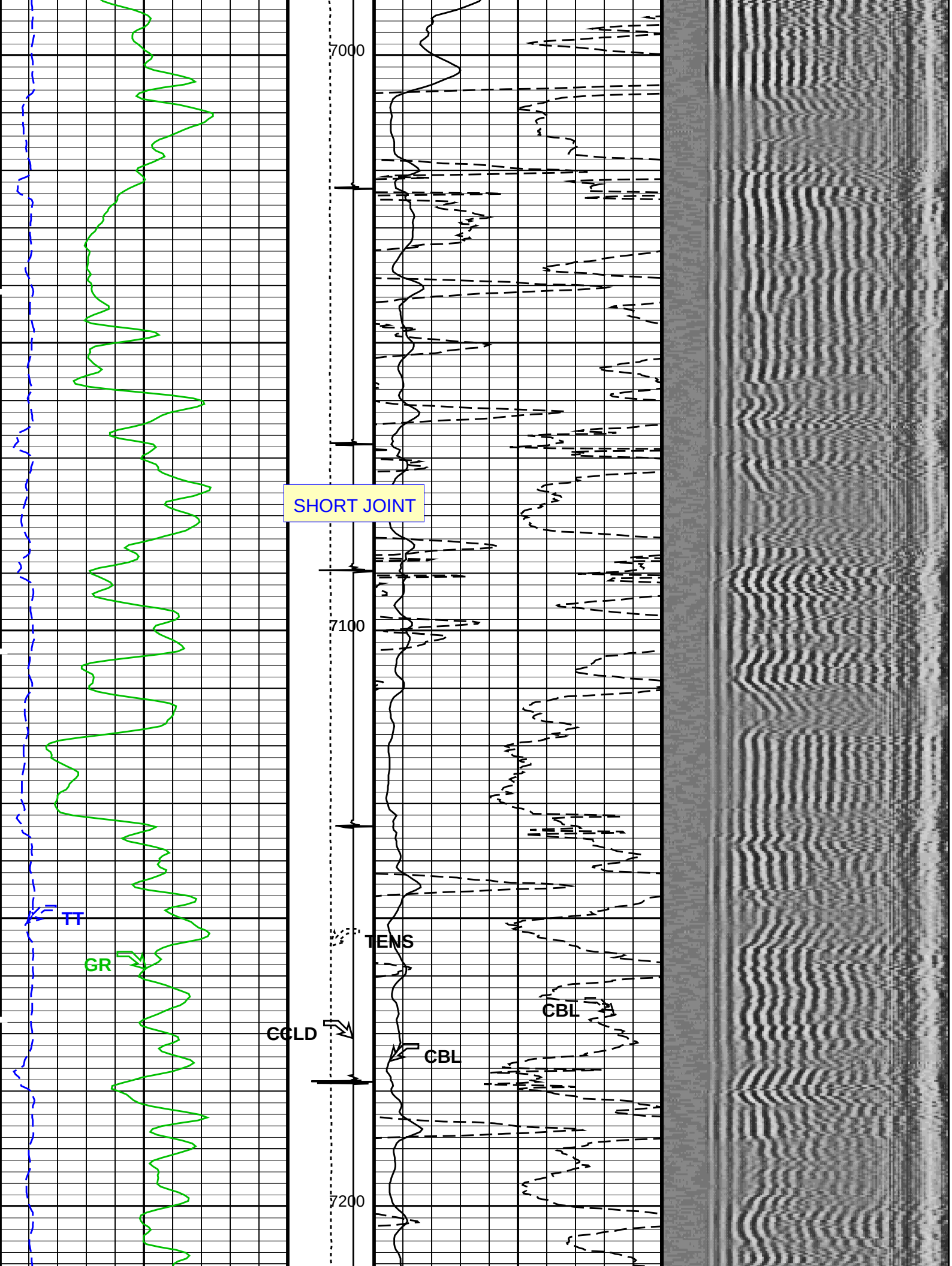
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GR
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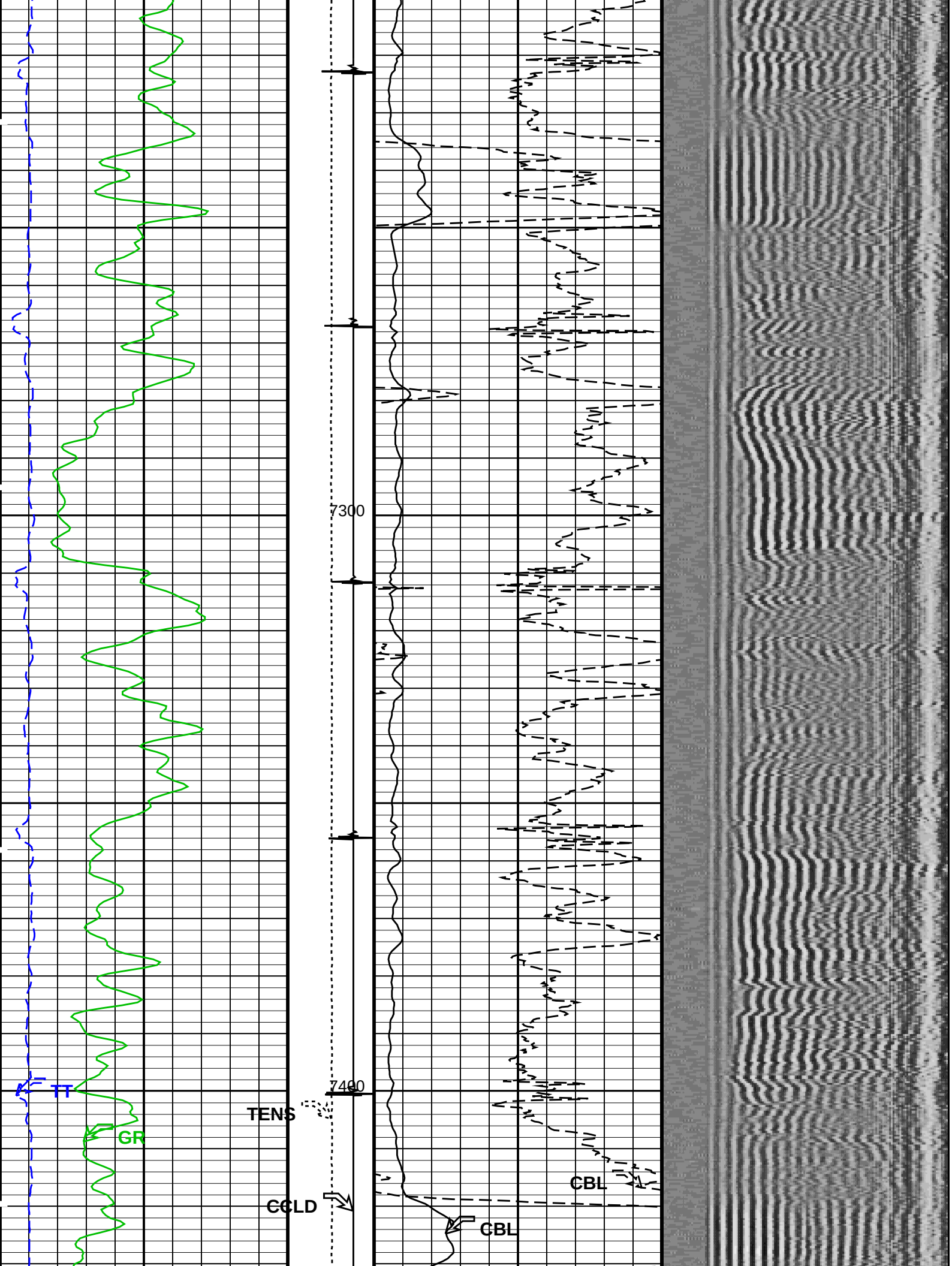
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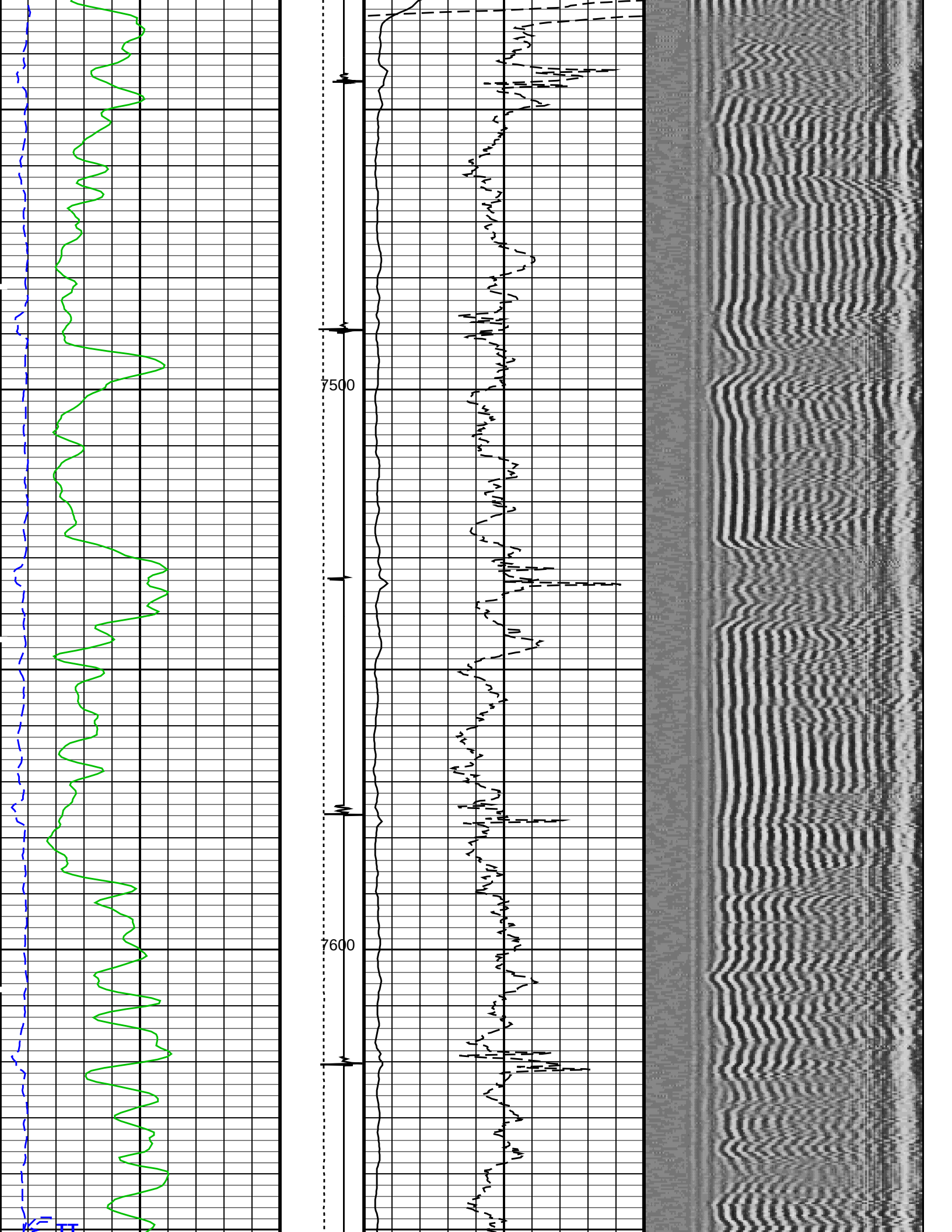
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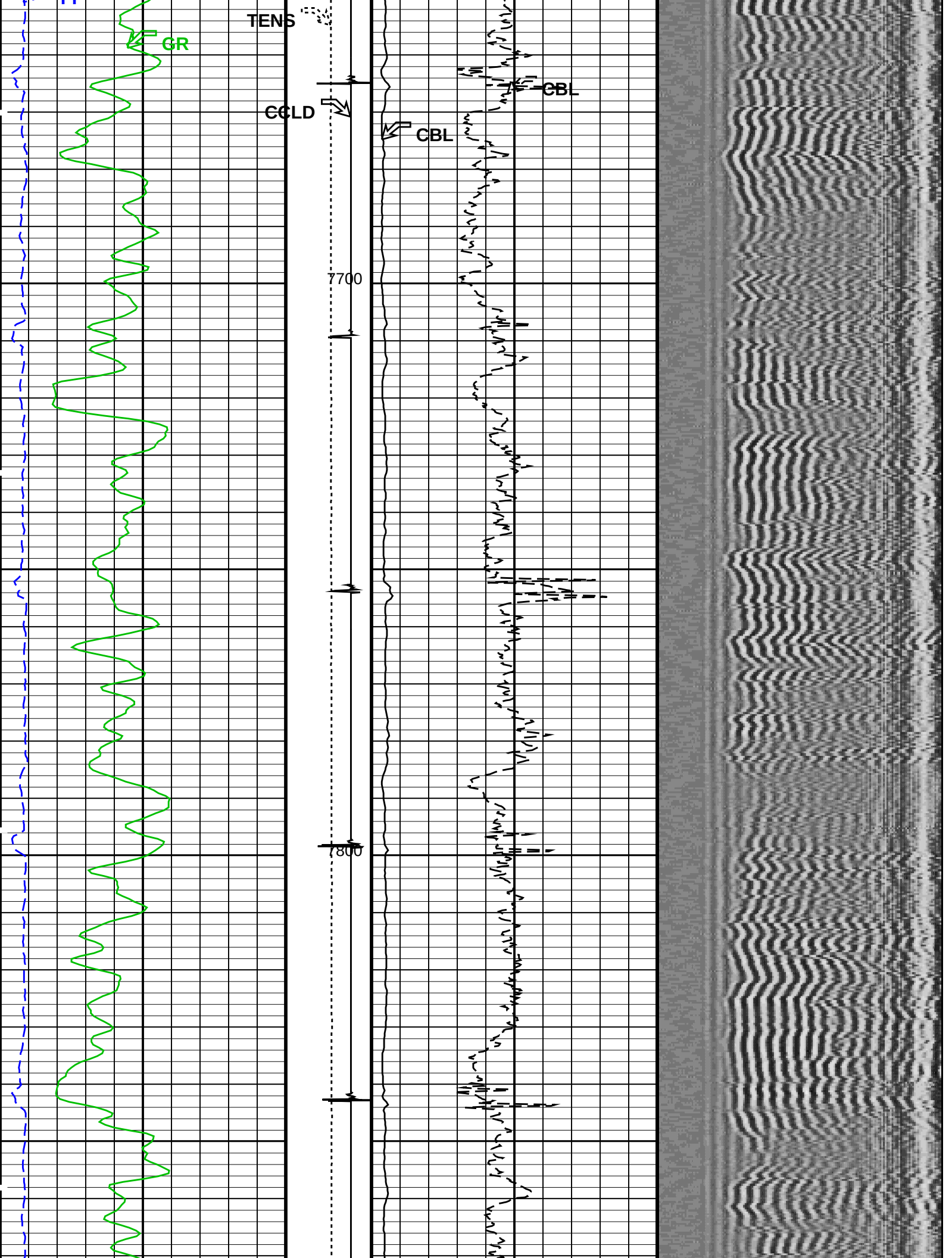
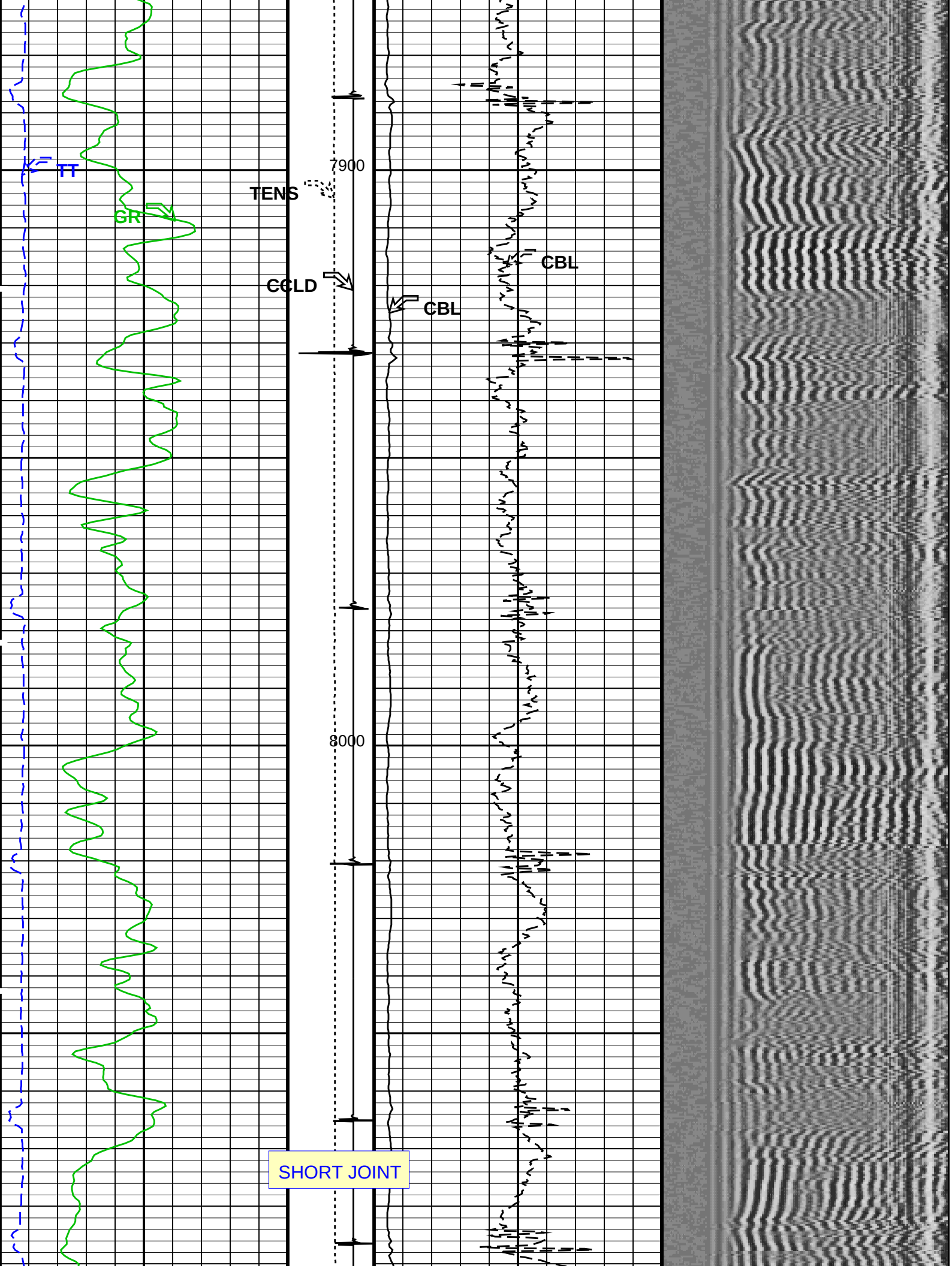
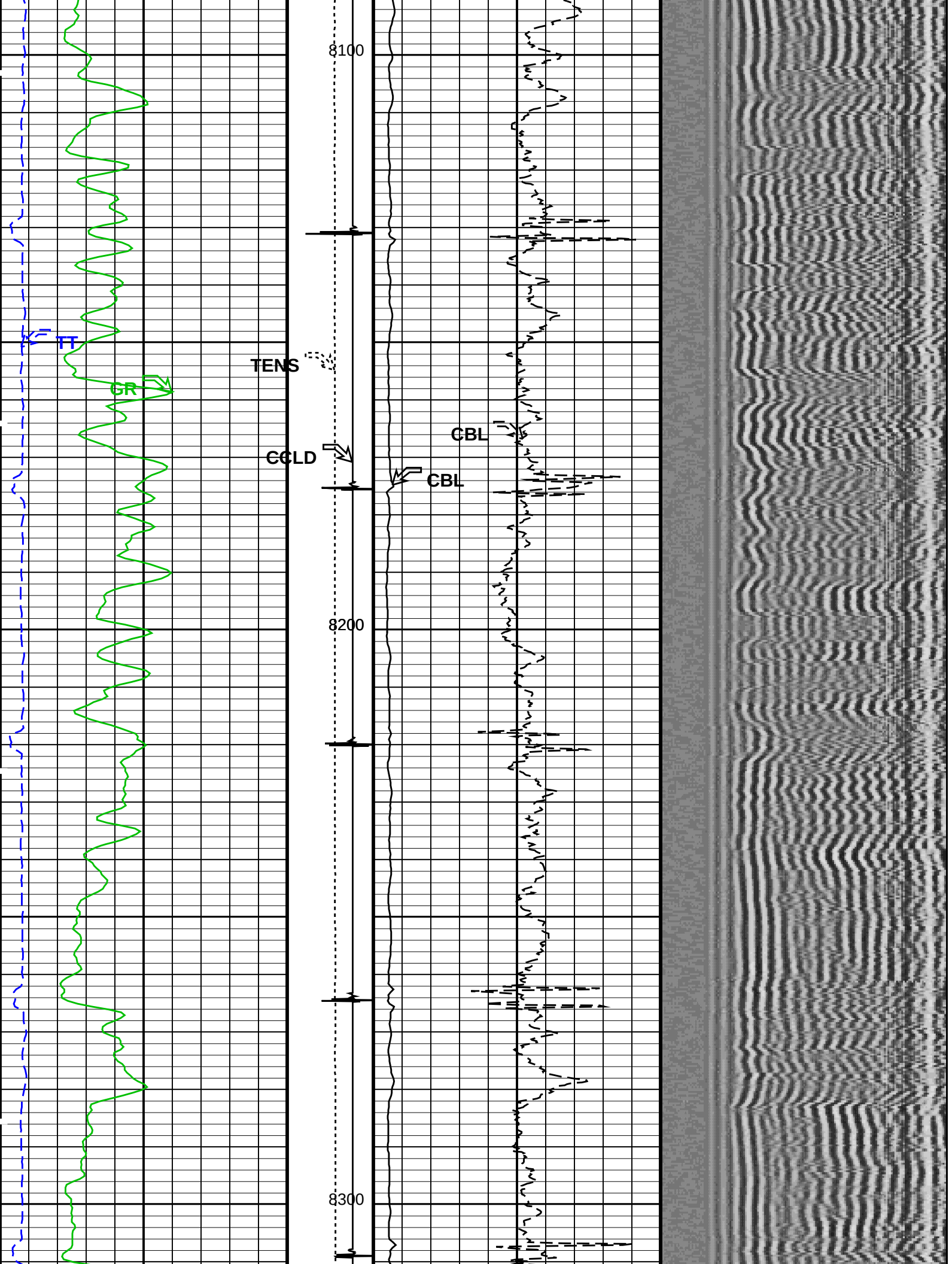
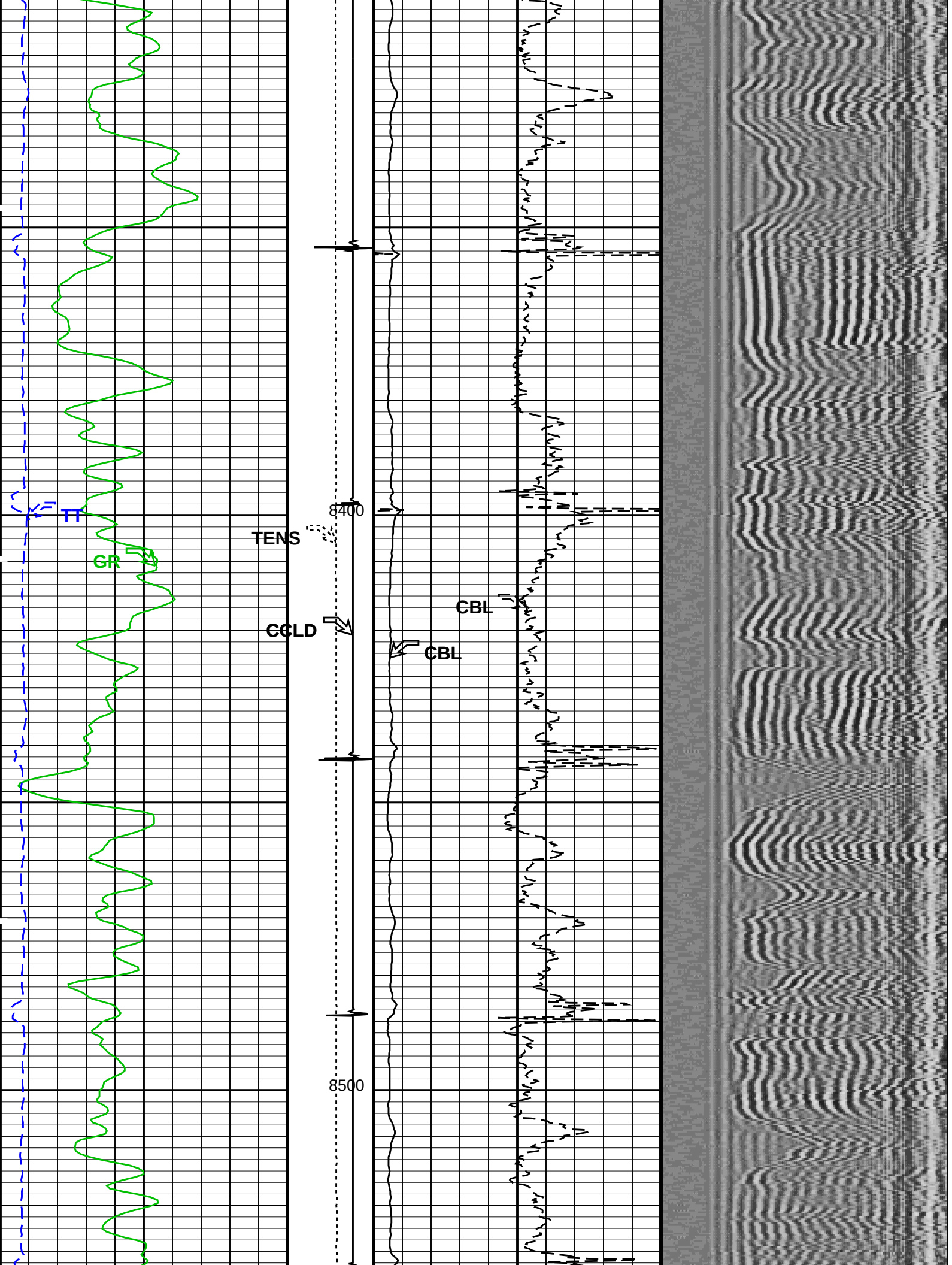
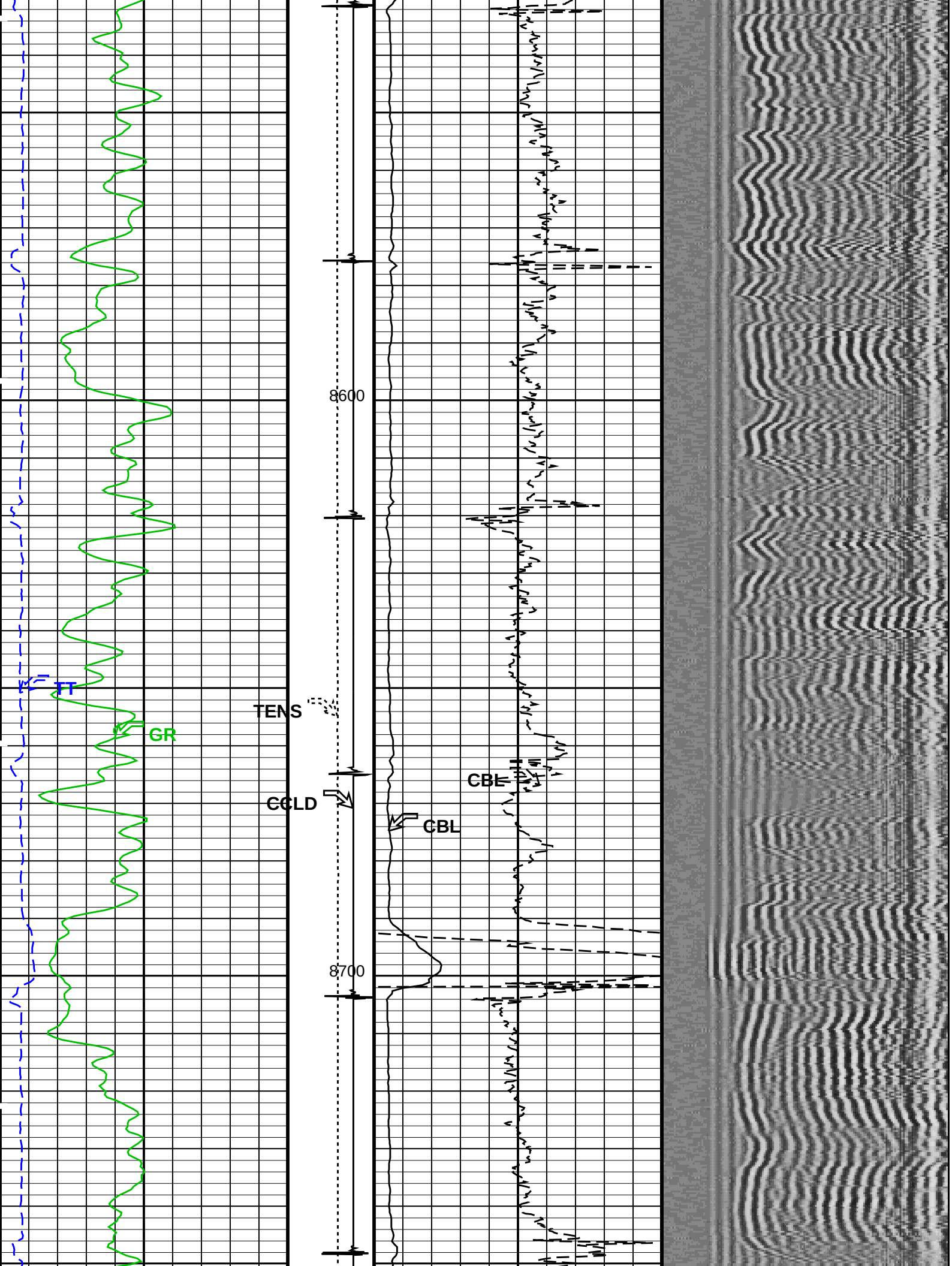
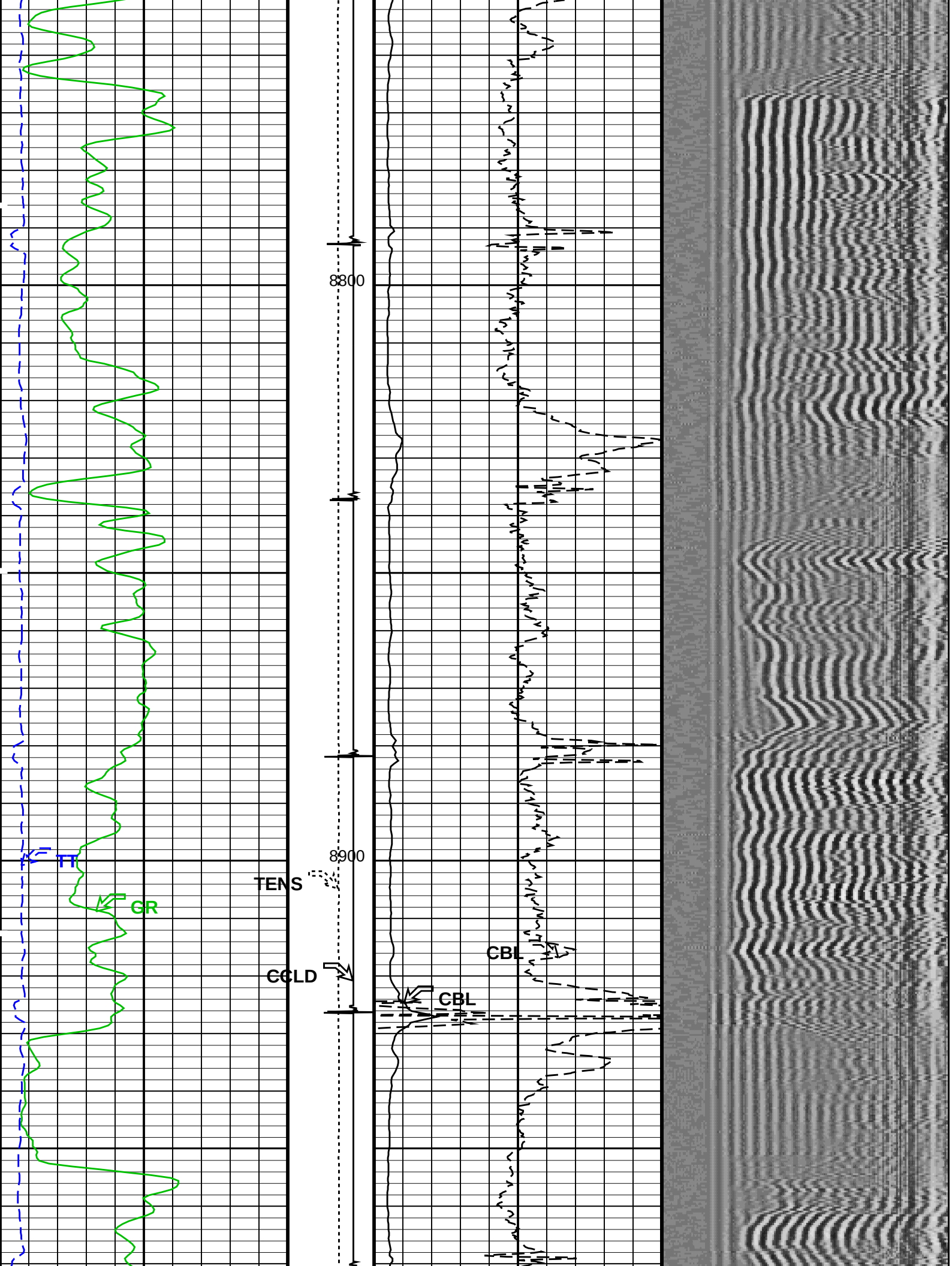

TENS
GR
CCLD
CBL
CBL
7700
7800

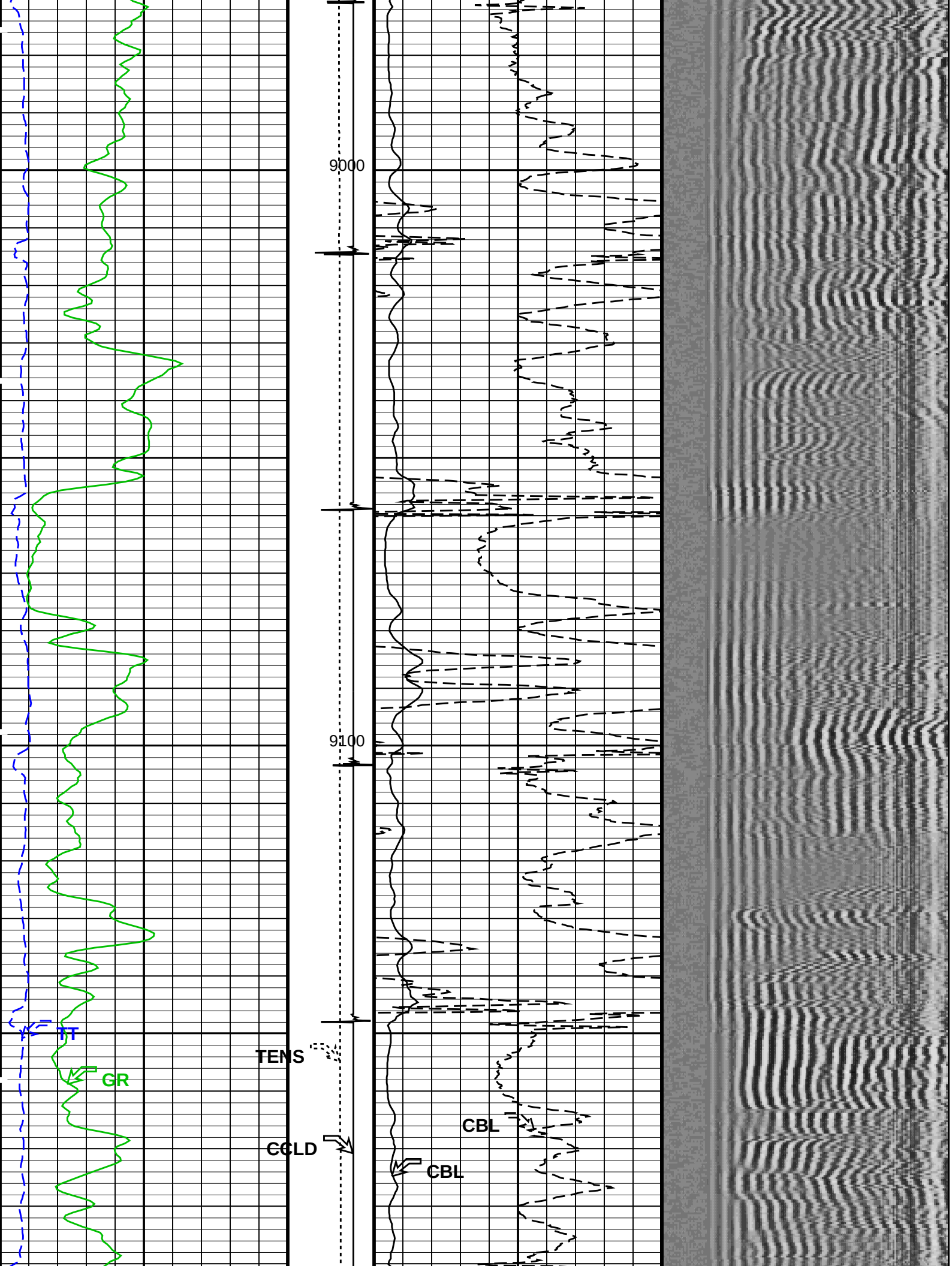

TT
GR
TENS
7900
CCLD
CBL
CBL
8000
SHORT JOINT

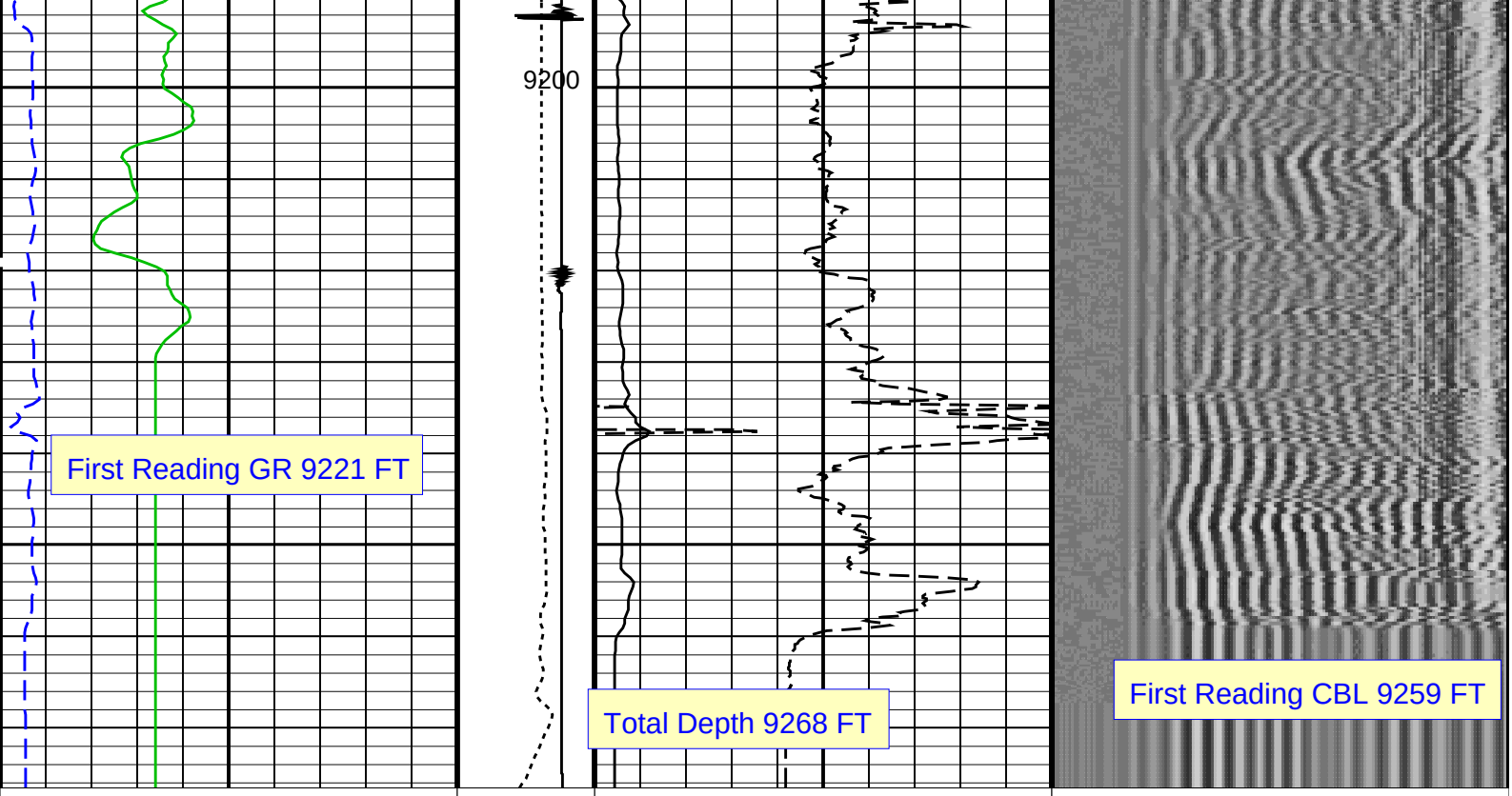

8100
TT
TENS
GR
CBL
CCLD
CBL
8200
8300


TT
GR
8400
TENS
CBL
CCLD
CBL
8500


8600
8700
TT
GR
TENS
CCLD
CBL
CBL


8800
8900
TT
GR
TENS
CCLD
CBL
CBL


9000
9100
TT
GR
TENS
CCLD
CBL
CBL



Gamma Ray (GR)	Tension (TENS)	CBL Amplitude (CBL)	Min Amplitude Max
0 (GAPI) 150	(LBF) 0 2000	0 (MV) 100	VDL VariableDensity (VDL) 200 (US) 1200
Transit Time (TT) 260 (US) 160	Discriminated CCL (CCLD) 3 (V) −1	CBL Amplitude (CBL) 0 (MV) 10	

PIP SUMMARY

Time Mark Every 60 S

Format: CBL_VDL Vertical Scale: 5" per 100' Graphics File Created: 05−Jan−2014 04:49

OP System Version: 19C0−187

SCMT−CB	19C0−187	RST−C	19C0−187
HBMS−B	19C0−187		

<<<SCMT Cement Evaluation Information Summary>>>

Sonde Serial Number	SCMS−CB 8303		
Current Casing Size	4.50000 IN		
Casing Weight	11.6000 LB/F		
Expected CBL Amplitude in Free Pipe Section	80 MV	Minimum Sonic Amplitude	0.579149 MV (100% Cement) 1.55185 MV (80% Cement)
		MAP Minimum Sonic Amplitude	4.32284 MV (100% Cement) 8.10244 MV (80% Cement)
Master Calibration (Normalization)		Before Calibration (Adjustment)	
Date of Master Calibration	19−NOV−2013		
CBL Correction Factor	0.0743678	CBL Adjustment Factor (CBAF)	1.0
MAP 1 Correction Factor	0.127925	MAP Adjustment Factor (MPAF)	1.0
MAP 2 Correction Factor	0.120622		
MAP 3 Correction Factor	0.153607		
MAP 4 Correction Factor	0.159414		
MAP 5 Correction Factor	0.164508		

MAP 6 Correction Factor	0.182220
MAP 7 Correction Factor	0.190086
MAP 8 Correction Factor	0.182177

Parameters

DLIS Name	Description	Value	
	SCMT−CB: Slim Cement Mapping Tool, 1−11/16 OD		
BILI	Bond Index Level for Zone Isolation	0.8	
CB3D	SCMT CBL 3 ft Peak Detection Mode	PEAK	
CB3G	SCMT CBL 3 ft Peak Detection T0_Delay and Noise Gate	224.559	US
CB3T	SCMT CBL 3 ft Fixed Threshold Level	20	MV
CB5D	SCMT CBL 5 ft Peak Detection Mode	PEAK	
CB5G	SCMT CBL 5 ft Peak Detection T0_Delay and Noise Gate	338.559	US
CB5T	SCMT CBL 5 ft Fixed Threshold Level	20	MV
CBLG	CBL Gate Width	45	US
CBRA	CBL LQC Reference Amplitude in Free Pipe	80	MV
CMCF	CBL Cement Type Compensation Factor	1	
CMTC	SCMT Slow Channel Multiplexer Mode	SCAN	
CMTM	SCMT Operating Mode	LOG	
CSCS	SCMT Slow Channel Index	VCC	
CTHI	Casing Thickness	0.255617	IN
DTF	Delta−T Fluid	189	US/F
FATT	Acoustic Attenuation due to Fluid	0	DB/F
FCF	CBL Fluid Compensation Factor	0.924277	
GOBO	Good Bond	1.55185	MV
MAPD	SCMT MAP Peak Detection Mode	PEAK	
MAPG	SCMT MAP Peak Detection T0_Delay and Noise Gate	167.559	US
MAPT	SCMT MAP Fixed Threshold Level	30	MV
MATT	Maximum Attenuation	16.5449	DB/F
MCCF	MAP Cement Type Compensation Factor	1	
MCI	Minimum Cemented Interval for Isolation	1.25	FT
MMSA	MAP Minimum Sonic Amplitude	4.32284	MV
MSA	Minimum Sonic Amplitude	0.579149	MV
PEDE	Peak Detection On/Off Switch in Playback	OFF	
VDLG	VDL Manual Gain	5	
ZCMT	Acoustic Impedance of Cement	6.8	MRAY
	System and Miscellaneous		
CSIZ	Current Casing Size	4.500	IN
CWEI	Casing Weight	11.60	LB/F
DFD	Drilling Fluid Density	8.40	LB/G
DO	Depth Offset for Playback	3.0	FT
PP	Playback Processing	RECOMPUTE	
TD	Total Depth	9268	FT

Input DLIS Files

DEFAULT	SCMT_RST_HBMS_038LUP	FN:37	PRODUCER	05−Jan−2014 02:14	9273.5 FT	−6.0 FT

Output DLIS Files

DEFAULT	SCMT_RST_HBMS_041PUP	FN:40	PRODUCER	05−Jan−2014 04:48

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REPEAT ANALYSIS CBL VDL

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC

Well: ROSE 22−12C (K22W)

Input DLIS Files

DEFAULT	SCMT_RST_HBMS_036LUP	FN:35	PRODUCER	05−Jan−2014 01:28	7251.0 FT	6942.5 FT
DEFAULT	SCMT_RST_HBMS_041PUP	FN:40	PRODUCER	05−Jan−2014 04:48	9276.5 FT	−50.5 FT

Output DLIS Files

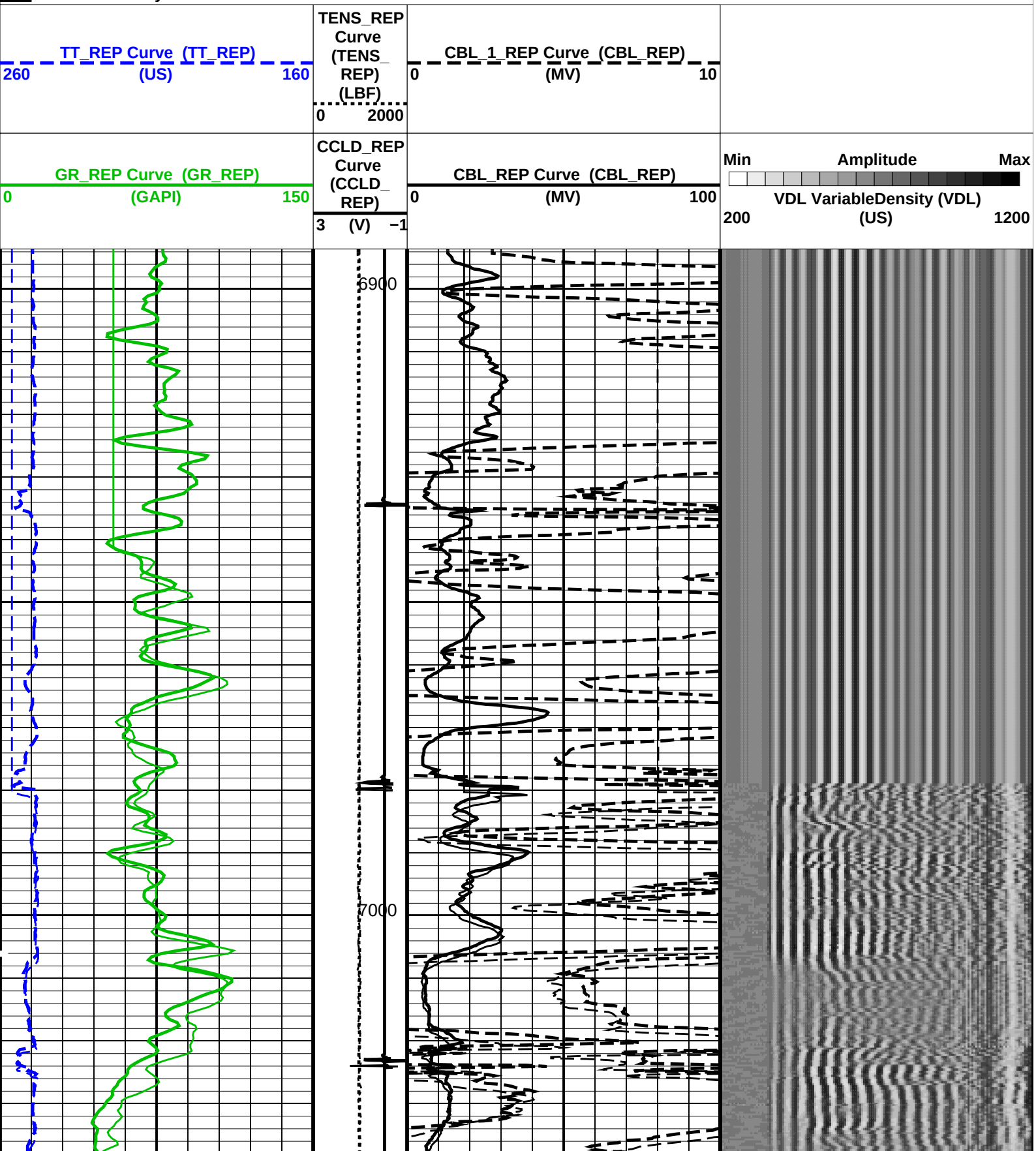
DEFAULT SCMT_RST_HBMS_042PUP FN:41 PRODUCER 05−Jan−2014 04:54 7249.0 FT 6893.0 FT

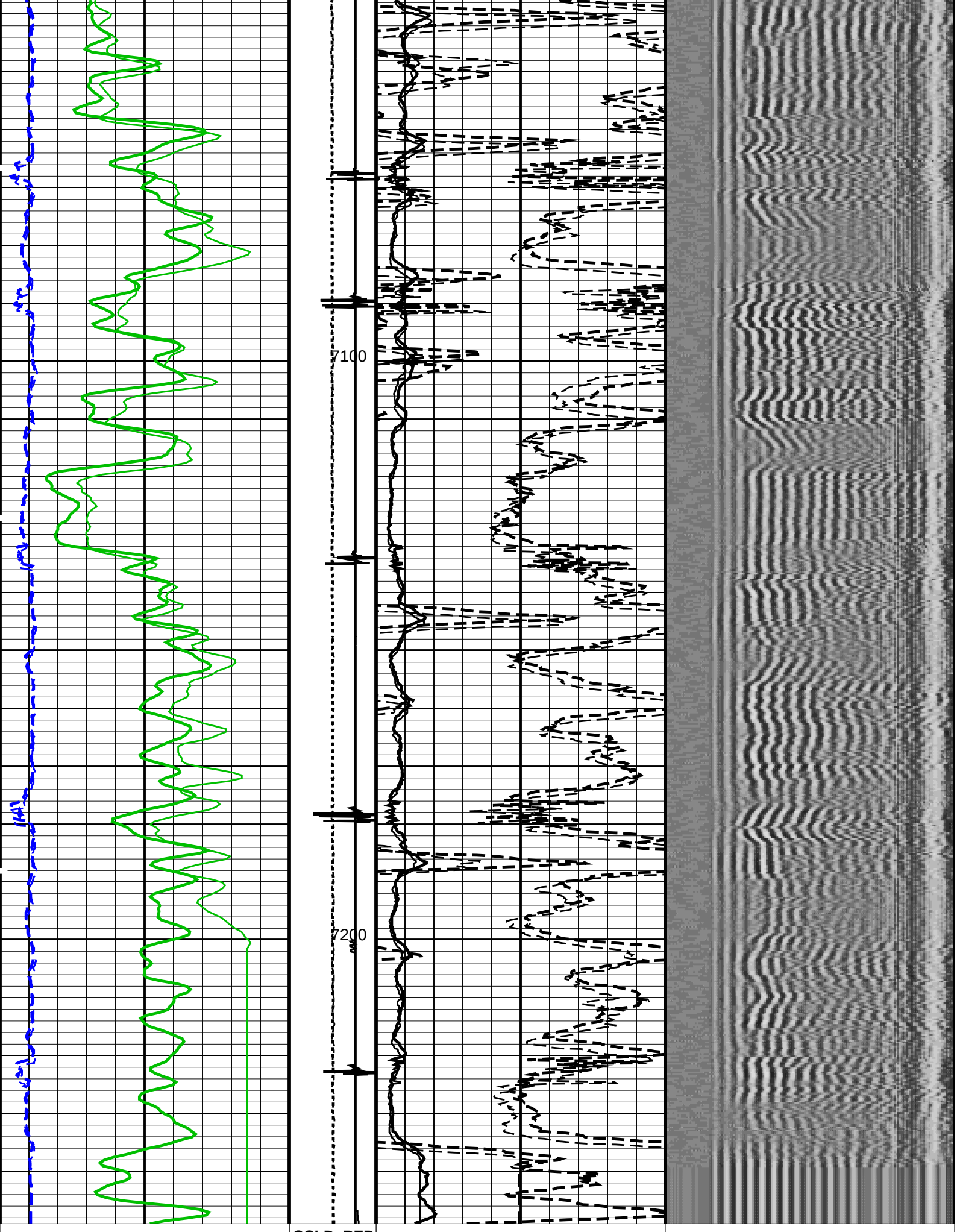
OP System Version: 19C0−187

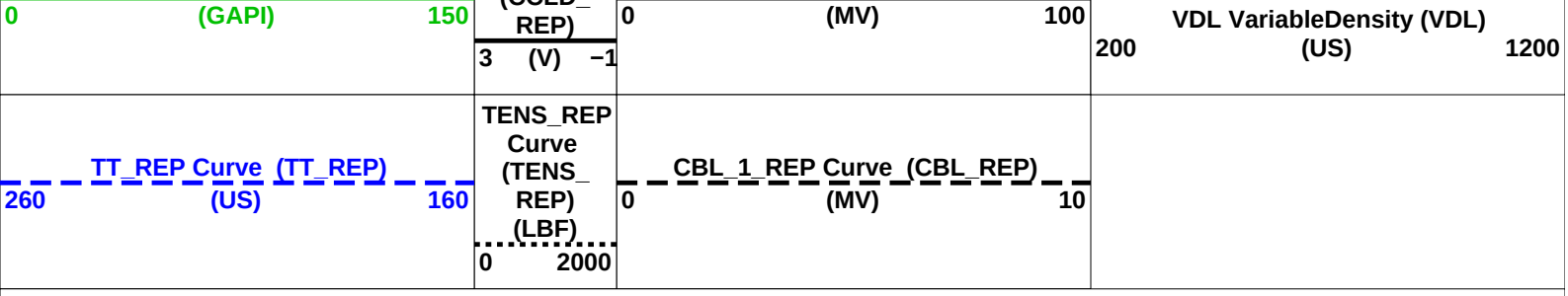
SCMT−CB	19C0−187	RST−C	19C0−187
HBMS−B	19C0−187		

PIP SUMMARY

Time Mark Every 60 S




7100
7200
GR_REP Curve (GR_REP)
CCLD_REP Curve (CCLD
CBL_REP Curve (CBL_REP)
Min
Amplitude
Max



PIP SUMMARY

Time Mark Every 60 S

Format: CBL_VDL_REP Vertical Scale: 5" per 100' Graphics File Created: 05−Jan−2014 04:54

OP System Version: 19C0−187

SCMT−CB	19C0−187	RST−C	19C0−187
HBMS−B	19C0−187		

<<<SCMT Cement Evaluation Information Summary>>>

Sonde Serial Number	SCMS−CB 8303		
Current Casing Size	4.50000 IN		
Casing Weight	11.6000 LB/F		
Expected CBL Amplitude in Free Pipe Section	80 MV	Minimum Sonic Amplitude	0.579149 MV (100% Cement) 1.55185 MV (80% Cement)
		MAP Minimum Sonic Amplitude	4.32284 MV (100% Cement) 8.10244 MV (80% Cement)
Master Calibration (Normalization)		Before Calibration (Adjustment)	
Date of Master Calibration	19−NOV−2013		
CBL Correction Factor	0.0743678	CBL Adjustment Factor (CBAF)	1.0
MAP 1 Correction Factor	0.127925	MAP Adjustment Factor (MPAF)	1.0
MAP 2 Correction Factor	0.120622		
MAP 3 Correction Factor	0.153607		
MAP 4 Correction Factor	0.159414		
MAP 5 Correction Factor	0.164508		
MAP 6 Correction Factor	0.182220		
MAP 7 Correction Factor	0.190086		
MAP 8 Correction Factor	0.182177		

Parameters

DLIS Name	Description	Value	
	SCMT−CB: Slim Cement Mapping Tool, 1−11/16 OD		
BILI	Bond Index Level for Zone Isolation	0.8	
CB3D	SCMT CBL 3 ft Peak Detection Mode	PEAK	
CB3G	SCMT CBL 3 ft Peak Detection T0_Delay and Noise Gate	224.559	US
CB3T	SCMT CBL 3 ft Fixed Threshold Level	20	MV
CB5D	SCMT CBL 5 ft Peak Detection Mode	PEAK	
CB5G	SCMT CBL 5 ft Peak Detection T0_Delay and Noise Gate	338.559	US
CB5T	SCMT CBL 5 ft Fixed Threshold Level	20	MV
CBLG	CBL Gate Width	45	US
CBRA	CBL LQC Reference Amplitude in Free Pipe	80	MV
CMCF	CBL Cement Type Compensation Factor	1	
CMTC	SCMT Slow Channel Multiplexer Mode	SCAN	
CMTM	SCMT Operating Mode	LOG	
CSCS	SCMT Slow Channel Index	VCC	
CTHI	Casing Thickness	0.255617	IN
DTF	Delta−T Fluid	189	US/F
FATT	Acoustic Attenuation due to Fluid	0	DB/F
FCF	CBL Fluid Compensation Factor	0.924277	
GOBO	Good Bond	1.55185	MV
MAPD	SCMT MAP Peak Detection Mode	PEAK	
MAPG	SCMT MAP Peak Detection T0_Delay and Noise Gate	167.559	US
MAPT	SCMT MAP Fixed Threshold Level	30	MV

MATT	Maximum Attenuation	16.5449	DB/F
MCCF	MAP Cement Type Compensation Factor	1	
MCI	Minimum Cemented Interval for Isolation	1.25	FT
MMSA	MAP Minimum Sonic Amplitude	4.32284	MV
MSA	Minimum Sonic Amplitude	0.579149	MV
PEDE	Peak Detection On/Off Switch in Playback	OFF	
VDLG	VDL Manual Gain	5	
ZCMT	Acoustic Impedance of Cement	6.8	MRAY
System and Miscellaneous			
CSIZ	Current Casing Size	4.500	IN
CWEI	Casing Weight	11.60	LB/F
DFD	Drilling Fluid Density	8.40	LB/G
DO	Depth Offset for Playback	−2.0	FT
DORL	Depth Offset for Repeat Analysis	0.0	FT
PP	Playback Processing	RECOMPUTE	
TD	Total Depth	9268	FT

Input DLIS Files

DEFAULT	SCMT_RST_HBMS_036LUP	FN:35	PRODUCER	05−Jan−2014 01:28	7251.0 FT	6942.5 FT
DEFAULT	SCMT_RST_HBMS_041PUP	FN:40	PRODUCER	05−Jan−2014 04:48	9276.5 FT	−50.5 FT

Output DLIS Files

DEFAULT	SCMT_RST_HBMS_042PUP	FN:41	PRODUCER	05−Jan−2014 04:54

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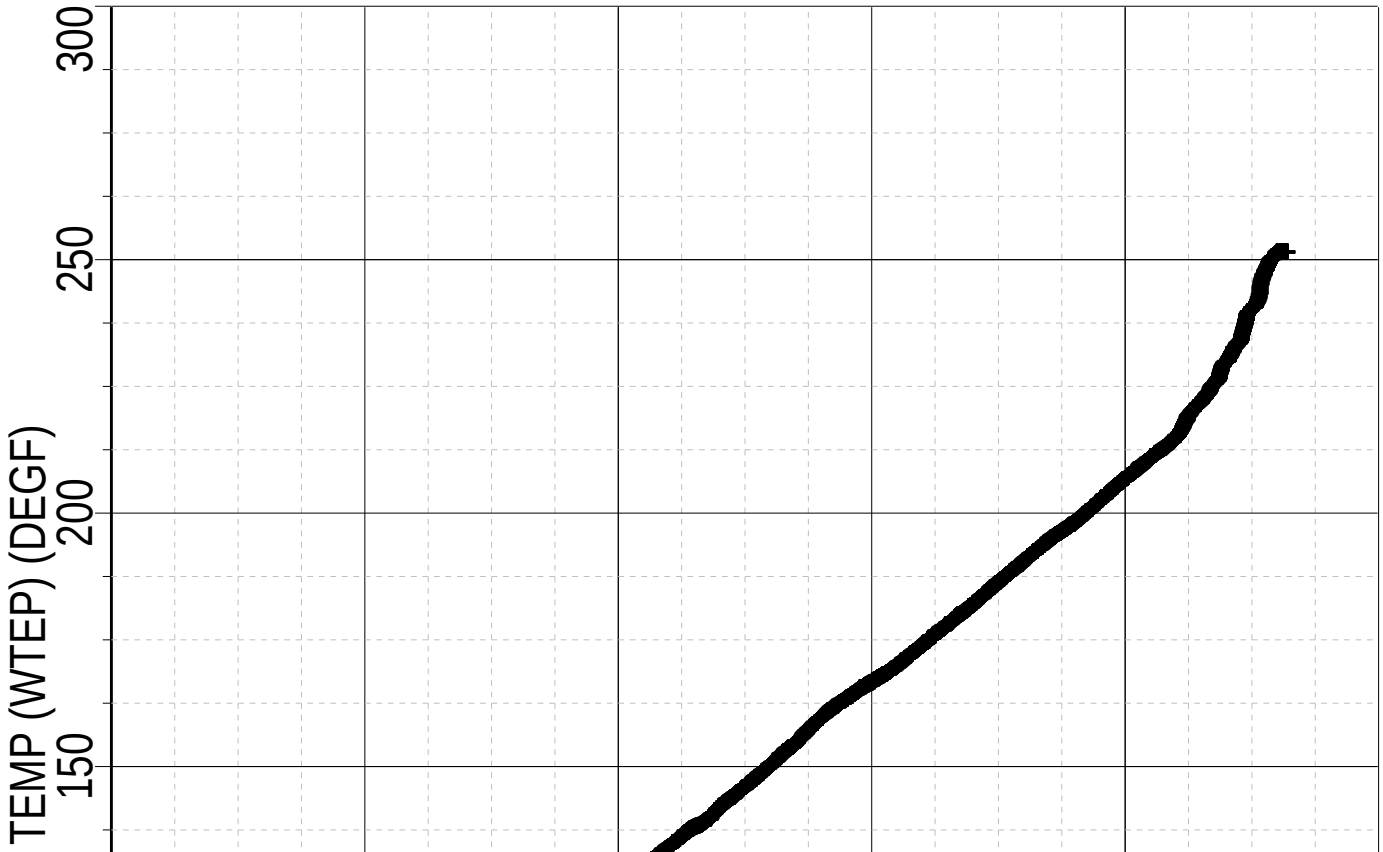
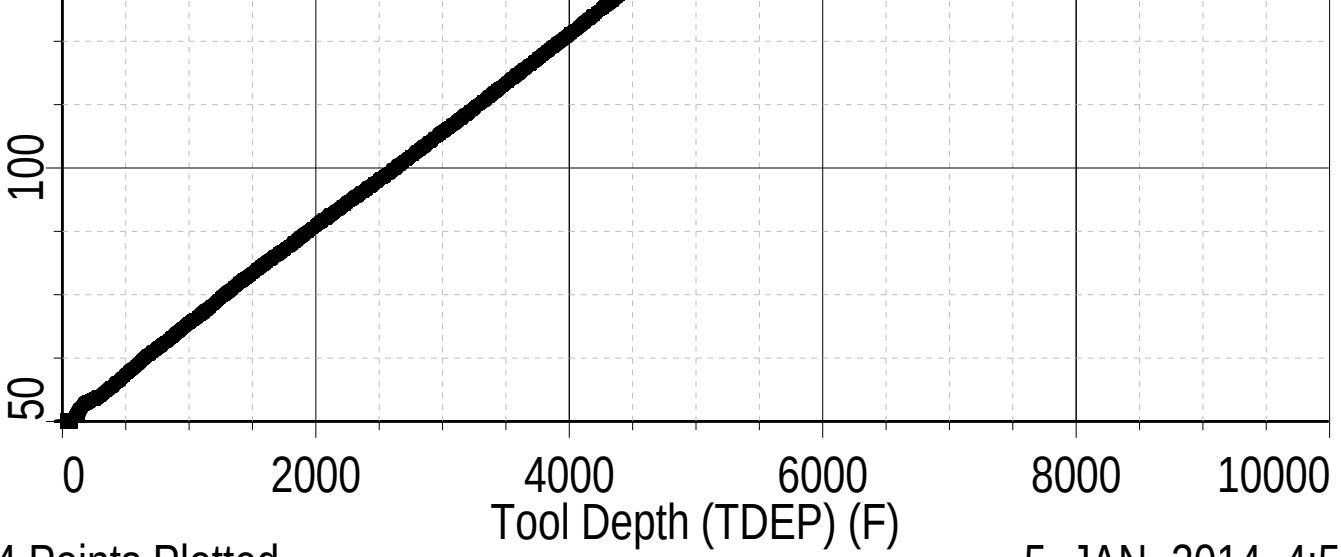
TEMPERATURE PLOT

MAXIS Field Log

Index: 9276.5 − −50.5 FT





18554 Points Plotted 5−JAN−2014 4:53

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HBMS COEFFICIENTS

MAXIS Field Log

Client:	**ENCANA OIL & GAS (USA) INC**	**Tool:**	**PSP**
Field:	**MAMM CREEK**	**Sub Type:**	**PBMS**
Well:	**ROSE 22−12C (K22W)**	**Sensor:**	**GR**
Run date:	**5−Jan−2014**		

PBMS Gamma Ray

Sonde Serial NB	**RESISTORS FOR GR SENSOR N.37166,TOOL HBMS−BA2955. SENSOR S/N:**
Sensor Serial NB	**37166**
Calib Date ddmmyy	**280912**
Matrix Size	**12**
Coeff CRC	**6646**

GR HV Rt

	Rt0**	**Rt**1**
Rt0**	**+.200000000000e+04**	**+.193000000000e+04**

Client:	**ENCANA OIL & GAS (USA) INC**	**Tool:**	**PSP**
Field:	**MAMM CREEK**	**Sub Type:**	**PBMS**
Well:	**ROSE 22−12C (K22W)**	**Sensor:**	**WellTemp RTD**
Run date:	**5−Jan−2014**		

PBMS RTD Well Thermometer

Sonde Serial NB	**COEFFICIENTS FOR RTD THERMOMETER PBMS−B.2955 S/N:**
Sensor Serial NB	**2955**
Calib Date ddmmyy	**140513**
Matrix Size	**16**
Coeff CRC	**9ABB**

WTemp Coeff

	Tt0**	**Tt**1**	**Tt**2**
Tt0**	**−.579466850375E+03**	**+.321000211776E+03**	**−.769493413393E+02**

	Tt3**	**Tt**4**	**Tt**5**
Tt0**	**+.118371810108E+02**	**−.654027317127E+00**	**0.0**

Client:	**ENCANA OIL & GAS (USA) INC**	**Tool:**	**PSP**
Field:	**MAMM CREEK**	**Sub Type:**	**PBMS**
Well:	**ROSE 22−12C (K22W)**	**Sensor:**	**CQG**
Run date:	**5−Jan−2014**		

PBMS Quartz Gauge type F

Sonde Serial NB	**COEFFICIENTS FOR CQG PBMS−B.2955 S/N:**
Sensor Serial NB	**2955**
Calib Date ddmmyy	**140513**
Matrix Size	**66**
Coeff CRC	**AD6E**

Pres Coeff

	Fb0**	**Fb**1**	**Fb**2**
Fc0**	**+.805218055799E+04**	**+.230687803777E−01**	**+.120020876821E−07**

Fc**1	−.107970514637E+01	−.131245085272E−04	−.102678735701E−09
Fc**2	+.111466223414E−05	+.524200534425E−10	+.949904926223E−15
Fc**3	+.255809900188E−11	+.160726360322E−15	0.0
Fc**4	0.0	0.0	0.0
Fc**5	0.0	0.0	0.0

	Fb**3	Fb**4	Fb**5
Fc**0	−.772560939667E−10	−.145379238115E−14	−.218737246914E−19
Fc**1	+.968642492374E−16	+.223810216552E−19	0.0
Fc**2	0.0	0.0	0.0
Fc**3	0.0	0.0	0.0
Fc**4	0.0	0.0	0.0
Fc**5	0.0	0.0	0.0

PBMS Quartz Gauge type F

Sonde Serial NB	**:**
Sensor Serial NB	**2955**
Calib Date ddmmyy	**140513**
Matrix Size	**66**
Coeff CRC	**EC8A**

Temp Coeff

	Fc**0	Fc**1	Fc**2
Fb**0	+.120725065588E+03	−.313379211795E−03	+.708634488020E−08
Fb**1	−.596235012256E−02	+.182626448637E−07	+.104369551702E−12
Fb**2	−.295513003186E−07	+.341136223414E−12	−.998721617444E−18
Fb**3	−.375208992867E−12	+.712560466778E−17	0.0
Fb**4	0.0	0.0	0.0
Fb**5	0.0	0.0	0.0

	Fc**3	Fc**4	Fc**5
Fb**0	+.136541410168E−12	−.403343086990E−17	−.830542374631E−21
Fb**1	−.618398112617E−18	+.429129395353E−21	0.0
Fb**2	0.0	0.0	0.0
Fb**3	0.0	0.0	0.0
Fb**4	0.0	0.0	0.0
Fb**5	0.0	0.0	0.0

PBMS Quartz Gauge type F

Sonde Serial NB	**:**
Sensor Serial NB	**2955**
Calib Date ddmmyy	**140513**
Matrix Size	**16**
Coeff CRC	**6C01**

Clock Freq Coeff

	(Fb'−Fc')**0	(Fb'−Fc')**1	(Fb'−Fc')**2
(Fb'−Fc')**0	+.310812532328E+05	+.224728840165E−02	+.742962292518E−06
	(Fb'−Fc')**3	(Fb'−Fc')**4	(Fb'−Fc')**5
(Fb'−Fc')**0	−.673865003325E−10	−.911707425039E−16	−.961889742081E−20

PBMS Quartz Gauge type F

Sonde Serial NB	**:**
Sensor Serial NB	**2955**
Calib Date ddmmyy	**140513**
Matrix Size	**16**
Coeff CRC	**D6FA**

Clock Temp Coeff

	(Fb'−Fc')**0	(Fb'−Fc')**1	(Fb'−Fc')**2
(Fb'−Fc')**0	+.122085335110E+03	−.602096613375E−02	−.167139647989E−07
	(Fb'−Fc')**3	(Fb'−Fc')**4	(Fb'−Fc')**5
(Fb'−Fc')**0	−.105604526136E−11	−.109719083283E−15	+.100037226713E−19

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MASTER CALIBRATION

MAXIS Field Log

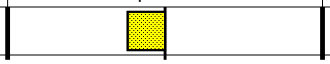
Slim Cement Mapping Tool, 1−11/16 OD / Equipment Identification

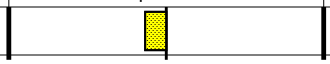
Primary Equipment:		
Slim Cement Mapping Xmitter Electronics	SCMX − CA	
Slim Cement Mapping Sonde	SCMS − CB	8303
Slim Cement Mapping Cartridge	SCMC − CA	8120
Auxiliary Equipment:		
Slim Electronics Cartridge Housing	SECH − CA	

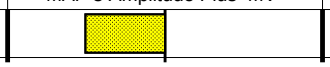
Slim Cement Mapping Tool, 1−11/16 OD Master Calibration

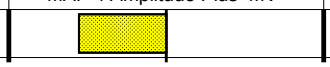
Slim Cement Mapping Tool, 1-11/16 OD Master Calibration

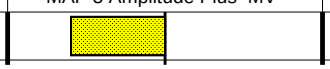
SCMT CBL and MAP Amplitude Normalization in SFT−155/−255

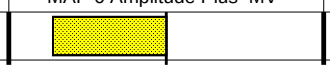
Phase	MAP 1 Amplitude Plus MV	Value
Master		938.0
	500.0 (Minimum) 1075 (Nominal) 1650 (Maximum)	

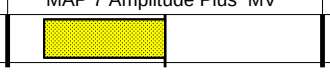
Phase	MAP 2 Amplitude Plus MV	Value
Master		994.8
	500.0 (Minimum) 1075 (Nominal) 1650 (Maximum)	

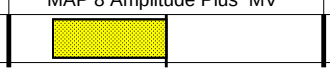
Phase	MAP 3 Amplitude Plus MV	Value
Master		781.2
	500.0 (Minimum) 1075 (Nominal) 1650 (Maximum)	

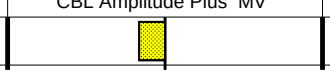
Phase	MAP 4 Amplitude Plus MV	Value
Master		752.8
	500.0 (Minimum) 1075 (Nominal) 1650 (Maximum)	

Phase	MAP 5 Amplitude Plus MV	Value
Master		729.4
	500.0 (Minimum) 1075 (Nominal) 1650 (Maximum)	

Phase	MAP 6 Amplitude Plus MV	Value
Master		658.5
	500.0 (Minimum) 1075 (Nominal) 1650 (Maximum)	

Phase	MAP 7 Amplitude Plus MV	Value
Master		631.3
	500.0 (Minimum) 1075 (Nominal) 1650 (Maximum)	

Phase	MAP 8 Amplitude Plus MV	Value
Master		658.7
	500.0 (Minimum) 1075 (Nominal) 1650 (Maximum)	

Phase	CBL Amplitude Plus MV	Value
Master		1291
	1000 (Minimum) 1350 (Nominal) 1700 (Maximum)	

Master: 19−Nov−2013 13:46

Company: **ENCANA OIL & GAS (USA) INC**

Schlumberger

Well: **ROSE 22−12C (K22W)**
Field: **MAMM CREEK**
County: **GARFIELD**
State: **COLORADO**

SLIM CEMENT MAPPING LOG
CBL−VDL
GAMMA RAY−CCL