

Company: ENCANA OIL & GAS (USA) INC

Well: KEINATH FEDERAL 9-14H (C100U)

Field: GRAND VALLEY

County: GARFIELD State: COLORADO

County: GARFIELD  
Field: GRAND VALLEY  
Location: SHL: NENW 1045' FNL & 1544' FSL  
Well: KEINATH FEDERAL 9-14H (C100U)  
Company: ENCANA OIL & GAS (USA) INC

CEMENT BOND LOG  
CBL - VDL  
GAMMA RAY - CCL

SHL: NENW 1045' FNL & 1544' FWL  
BHL: 1168' FSL & 2031' FWL

Elev.: K.B. 5590.00 ft  
G.L. 5568.00 ft  
D.F. 5589.00 ft

LOCATION

Permanent Datum: GROUND LEVEL Elev.: 5568.00 ft  
Log Measured From: KELLY BUSHING 22.00 ft above Perm. Datum  
Drilling Measured From: KELLY BUSHING

API Serial No. 05-045-20206-0000  
Section 10  
Township 8S  
Range 96W

	Run 1	Run 2	Run 3
Oil Density			
Water Salinity			
Gas Gravity			
Bo			
Bw			
1/Bg			
Bubble Point Pressure			
Bubble Point Temperature			
Solution GOR			
Maximum Deviation	92.47 deg		
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	12-Aug-2011		
Run Number	ONE		
Depth Driller	14225 ft		
Schlumberger Depth	9201 ft		
Bottom Log Interval	9192.4 ft		
Top Log Interval	200 ft		
Casing Fluid Type	WATER		
Salinity			
Density	8.4 lbm/gal		
Fluid Level	22 ft		
BIT/CASING/TUBING STRING			
Bit Size	6.500 in		
From	22 ft		
To	14225 ft		
Casing/Tubing Size	5.000 in		
Weight	23.2 lbm/ft		
Grade	P110EC		
From	22 ft		
To	14197 ft		
Maximum Recorded Temperatures	265 degF		
Logger On Bottom	12-Aug-2011	21:45	
Unit Number	391	GRAND JUNCTION	
Recorded By	SHOWKAT HOSSAIN		
Witnessed By	UNATTENDED		

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			
Unit Number			
Recorded By			
Witnessed By			

DEPTH SUMMARY LISTING	
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Date Created: 12-AUG-2011 22:37:01

## Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW-B	Type:	CMTD-C	Type:	1-25ZT
Serial Number:	6217	Serial Number:	5006	Serial Number:	391
Calibration Date:	14-JUN-2011	Calibration Date:	27-JUN-2011	Length:	14500 FT
Calibrator Serial Number:	33	Calibrator Serial Number:	174878		
Calibration Cable Type:	1-25P	Number of Calibration Points:	1	Conveyance Method:	Wireline
Wheel Correction 1:	-1			Rig Type:	LAND
Wheel Correction 2:	-2				

Depth Control Parameters	
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Log Sequence:	First Log In the Well
Rig Up Length At Surface:	245.00 FT
Rig Up Length At Bottom:	244.00 FT
Rig Up Length Correction:	1.00 FT
<b>Stretch Correction:</b>	<b>6.00 FT</b>
Tool Zero Check At Surface:	0.80 FT

Depth Control Remarks	
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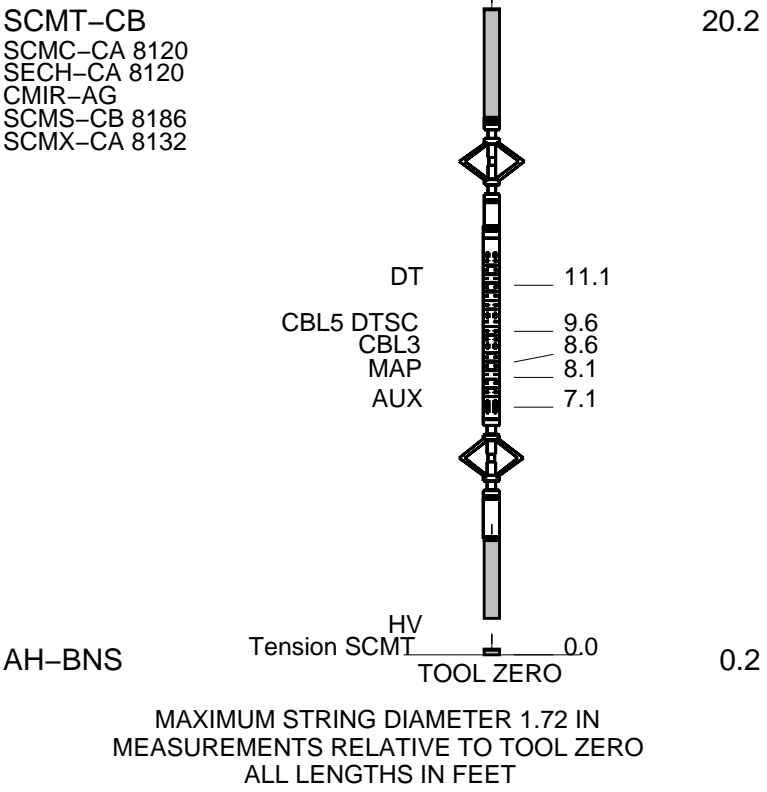
- |  |
|--|
| <ol style="list-style-type: none"><li>1. ALL SCHLUMBERGER DEPTH CONTROL PROCEDURES FOLLOWED.</li><li>2. IDW USED AS PRIMARY DEPTH CONTROL.</li><li>3. Z-CHART AND DRUM COUNTER USED AS SECONDARY DEPTH CONTROL.</li><li>4.</li><li>5.</li><li>6.</li></ol> |
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DISCLAIMER

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: RST – SIGMA	OS1:
OS2:	OS2:
OS3:	OS3:
OS4:	OS4:
OS5:	OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
THIS IS FIRST RUN IN WELL.	
TOOL RAN AS PER TOOL SKETCH.	
TD NOT TAGGED. MAXIMUM LOGGING DEPTH: 9201 FT	
MAXIMUM RECORDED PRESSURE AT TD: 3780.6 PSIA	
MAXIMUM RECORDED TEMPERATURE AT TD: 265 DEGF	

SHORT JOINTS: 5870 FT – 5891 FT & 8476 FT – 8496 FT					
EXPECTED FREE PIPE AMPLITUDE: 79 mV					
CBL TRANSIT TIME CYCLE SKIPPING IN ZONES OF GOOD CEMENT DUE TO LOW SIGNAL AMPLITUDE.					
RIGLESS. SLB CRANE					
THANK YOU FOR CHOOSING SCHLUMBERGER.					
CREW. W. AZIZ					
RUN 1			RUN 2		
SERVICE ORDER #: PROGRAM VERSION: FLUID LEVEL:			SERVICE ORDER #: PROGRAM VERSION: FLUID LEVEL:		
BOC2-00104 19C0-187 22 ft					
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP
EQUIPMENT DESCRIPTION					
RUN 1			RUN 2		
SURFACE EQUIPMENT					
WITM-A 3412 PSC_16MHZ 3412					
DOWNHOLE EQUIPMENT					
<div><div>MH-22 MH-22 391</div><div>AH-38</div><div>PSPT</div><div>PSC-A 1921 PSPT-A 3779 PSTC-A 1921 PBMS-A 3779 10k_Sapphire_Mano 3779 RTD_Thermometer 3779 GR 34552 CCL 3779 PBMS 3779</div><div>RST-C RSCH-A 429 RSC-E 430 RSS-A 373 RSXH-A 436 RSX-E 431</div><div>RSC-A Far RSC-A PNG RSC-A Nea RSX-A PNG</div></div>			<div><div><div><div></div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div>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Schlumberger

MAIN PASS 0 PSI

MAXIS Field Log

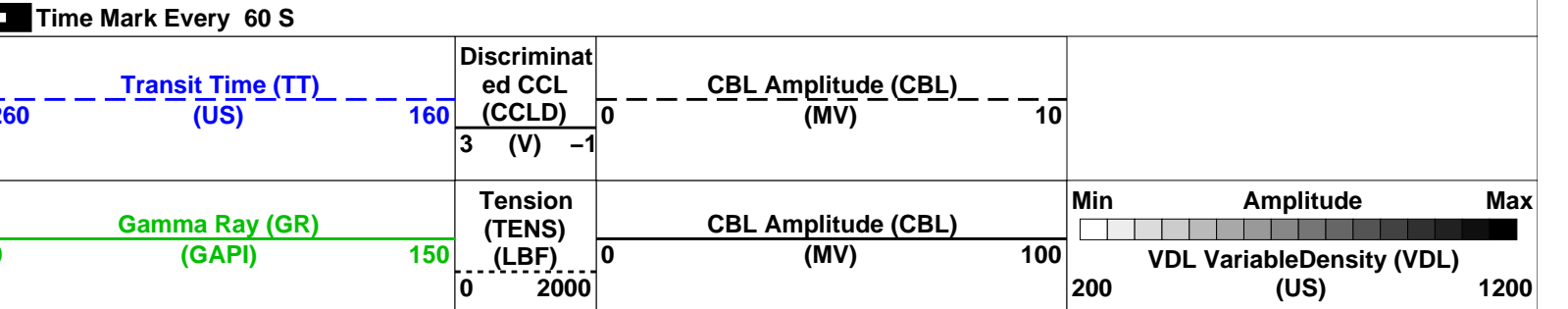
Company: ENCANA OIL & GAS (USA) INC Well: KEINATH FEDERAL 9-14H (C10OU)

Input DLIS Files						
DEFAULT	SCMT_RST_PSP_006LUP	FN:5	PRODUCER	12-Aug-2011 21:45	9267.5 FT	142.5 FT
Output DLIS Files						
DEFAULT	SCMT_RST_PSP_009PUP	FN:8	PRODUCER	13-Aug-2011 00:26	9273.5 FT	104.0 FT

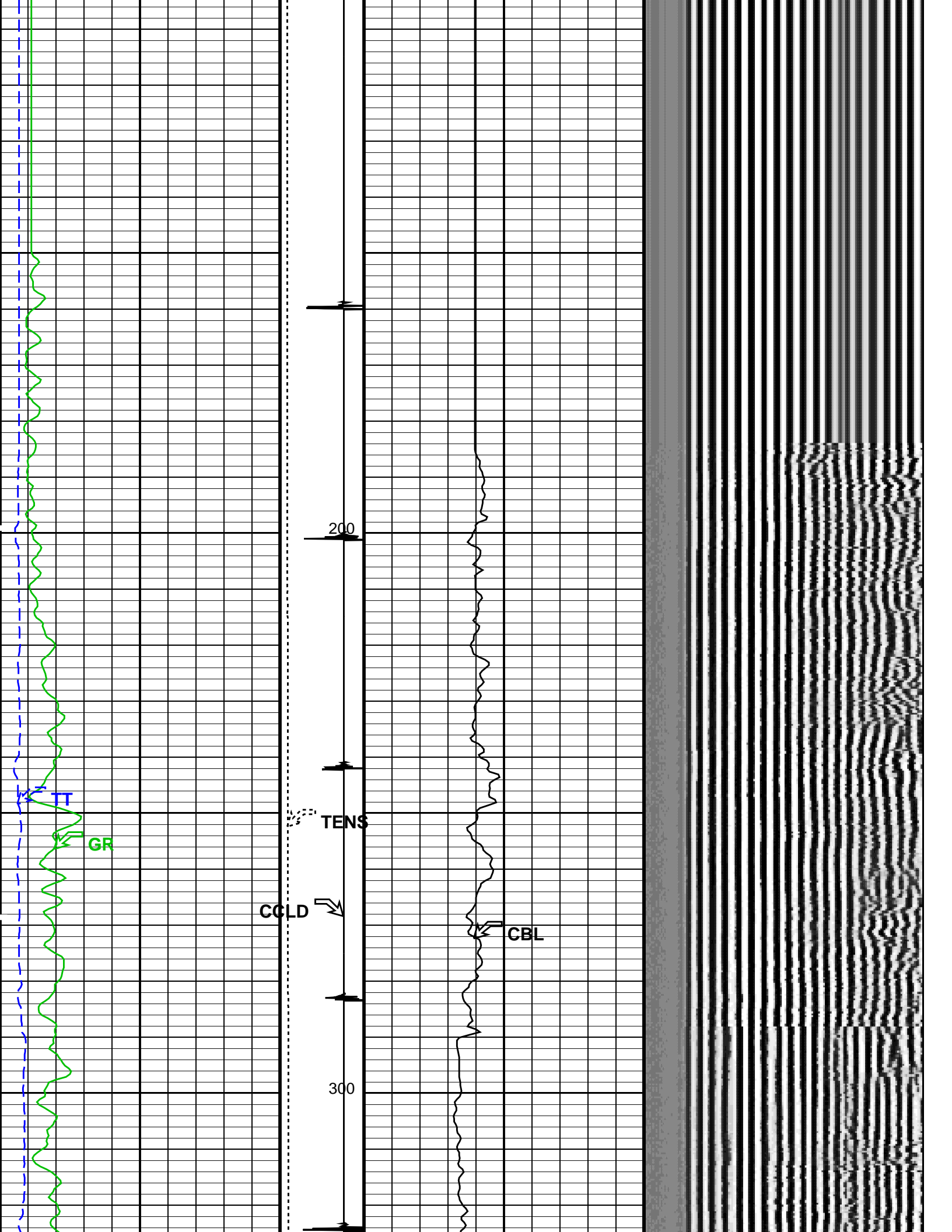
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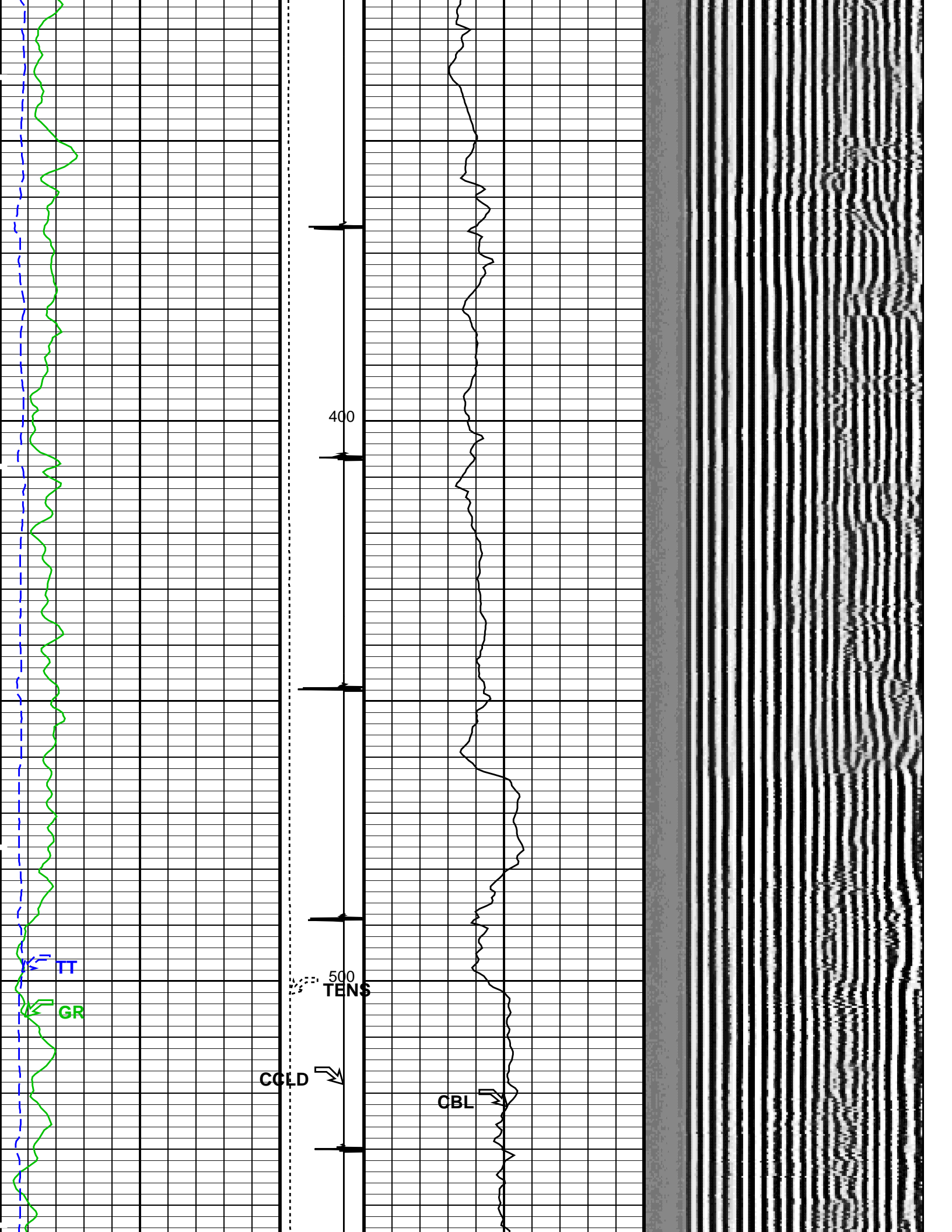
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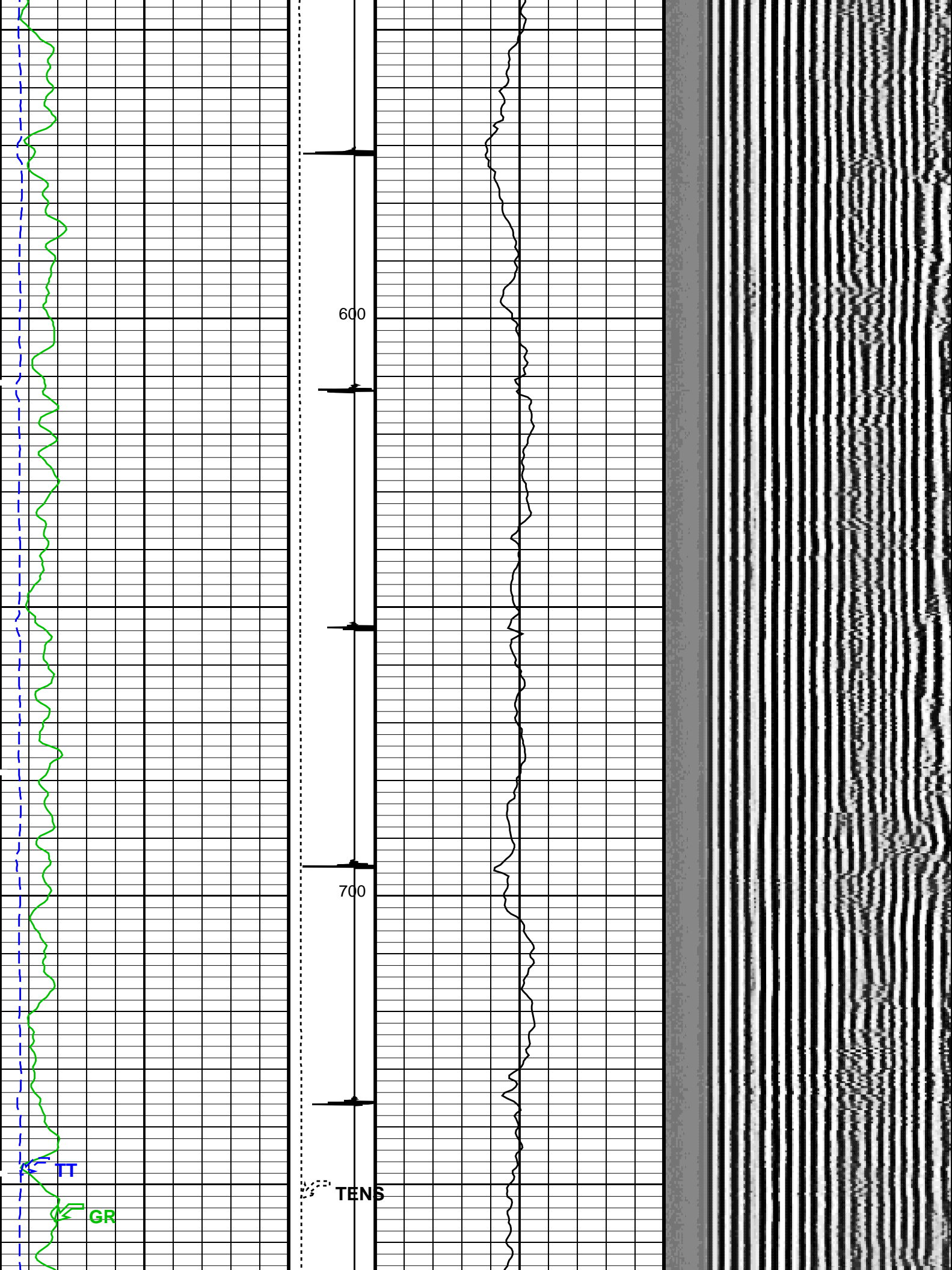
PIP SUMMARY

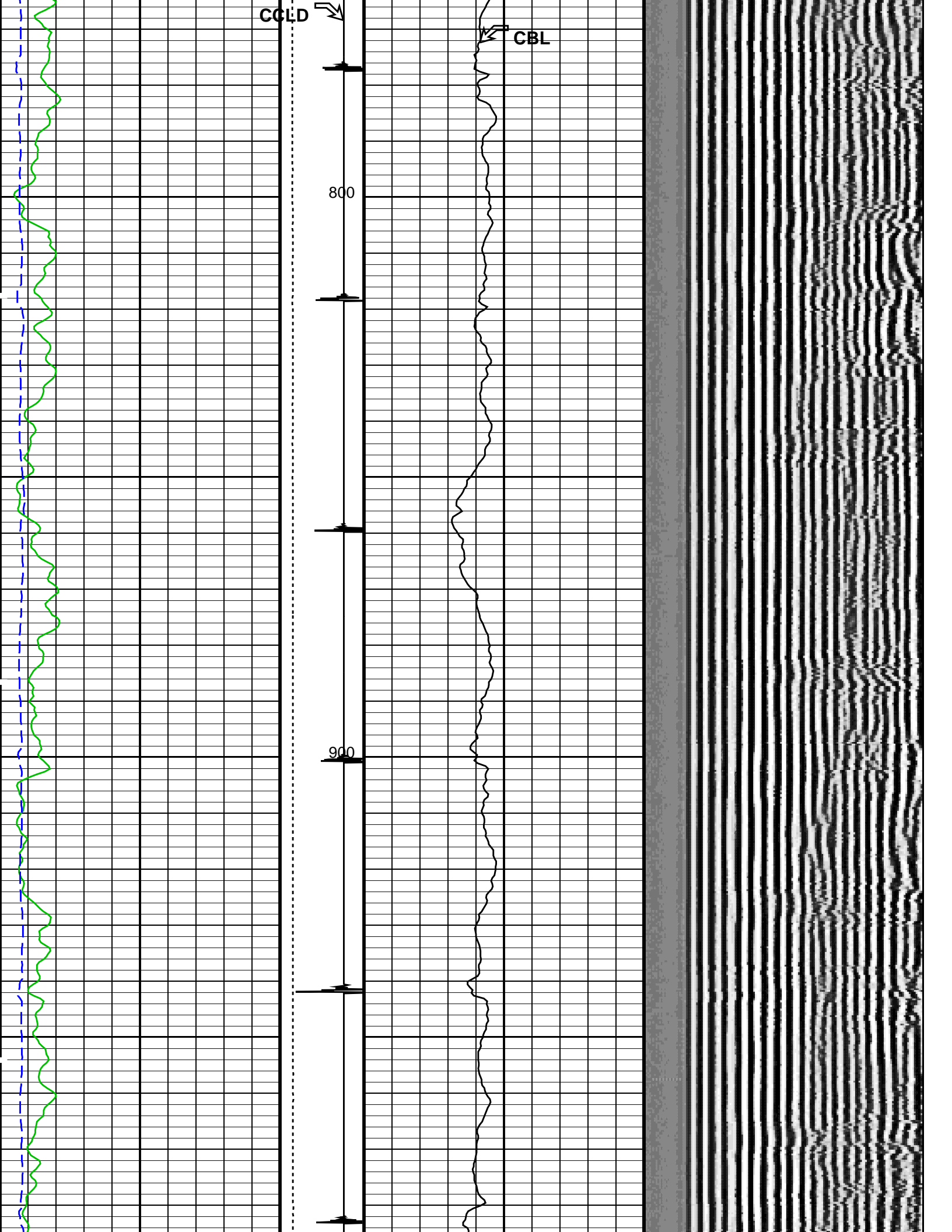


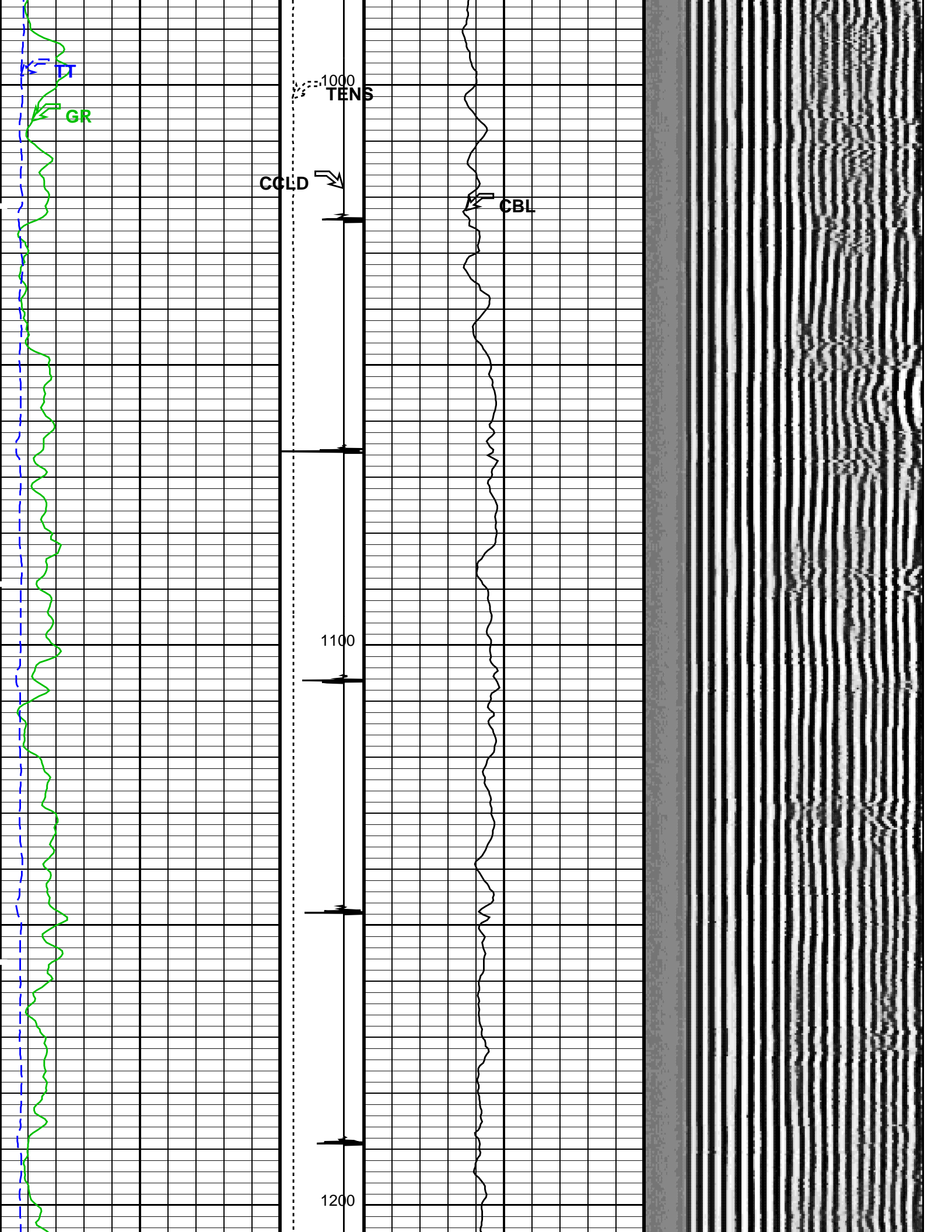




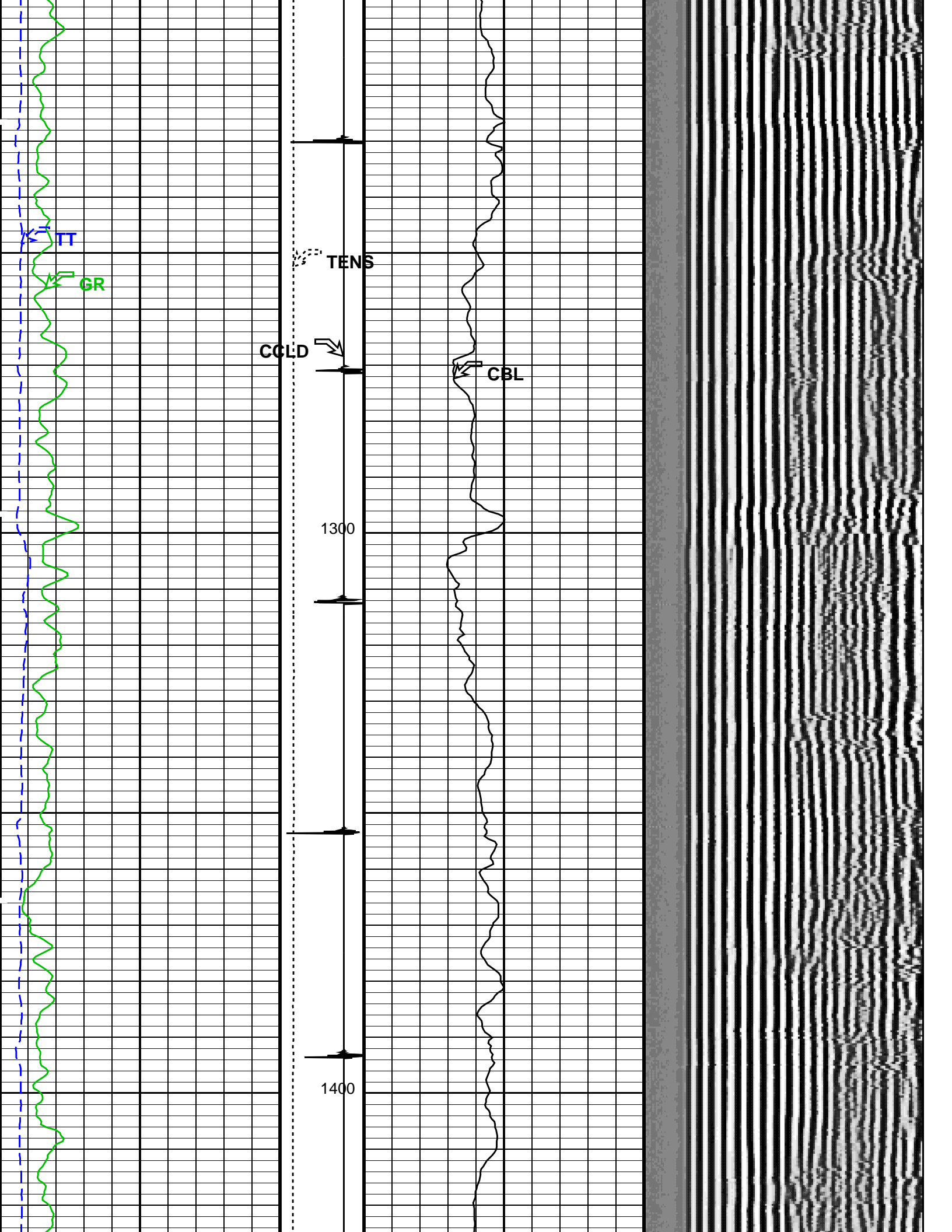


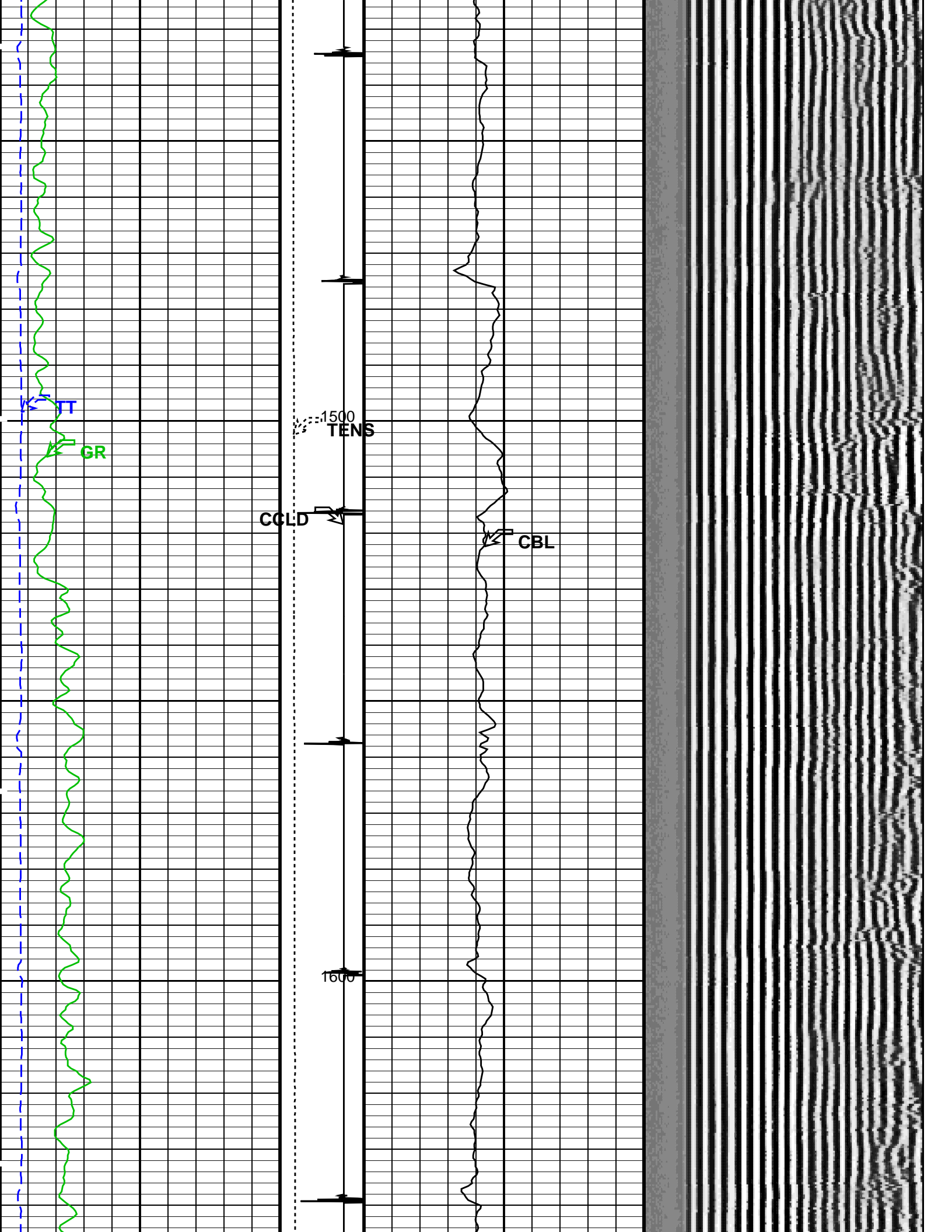


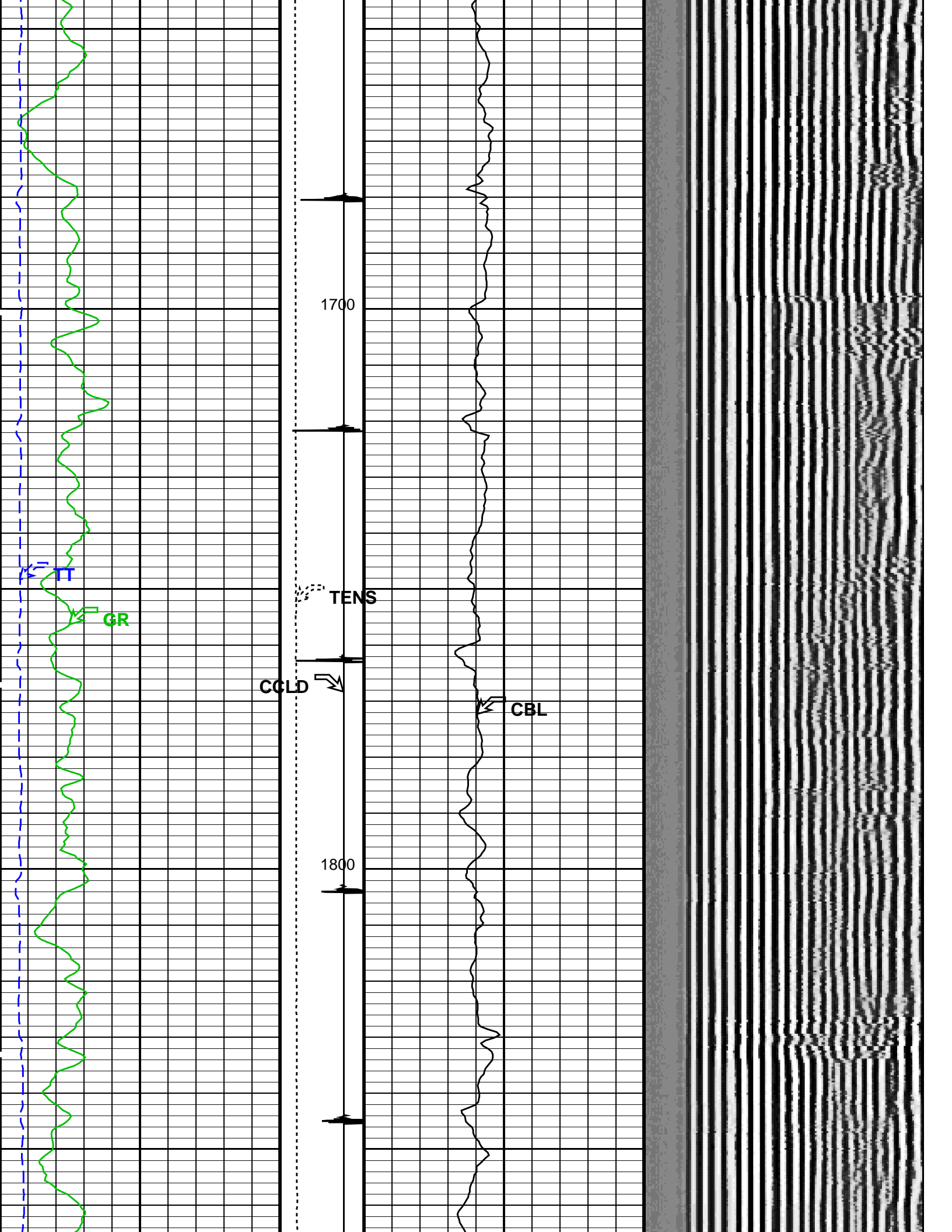




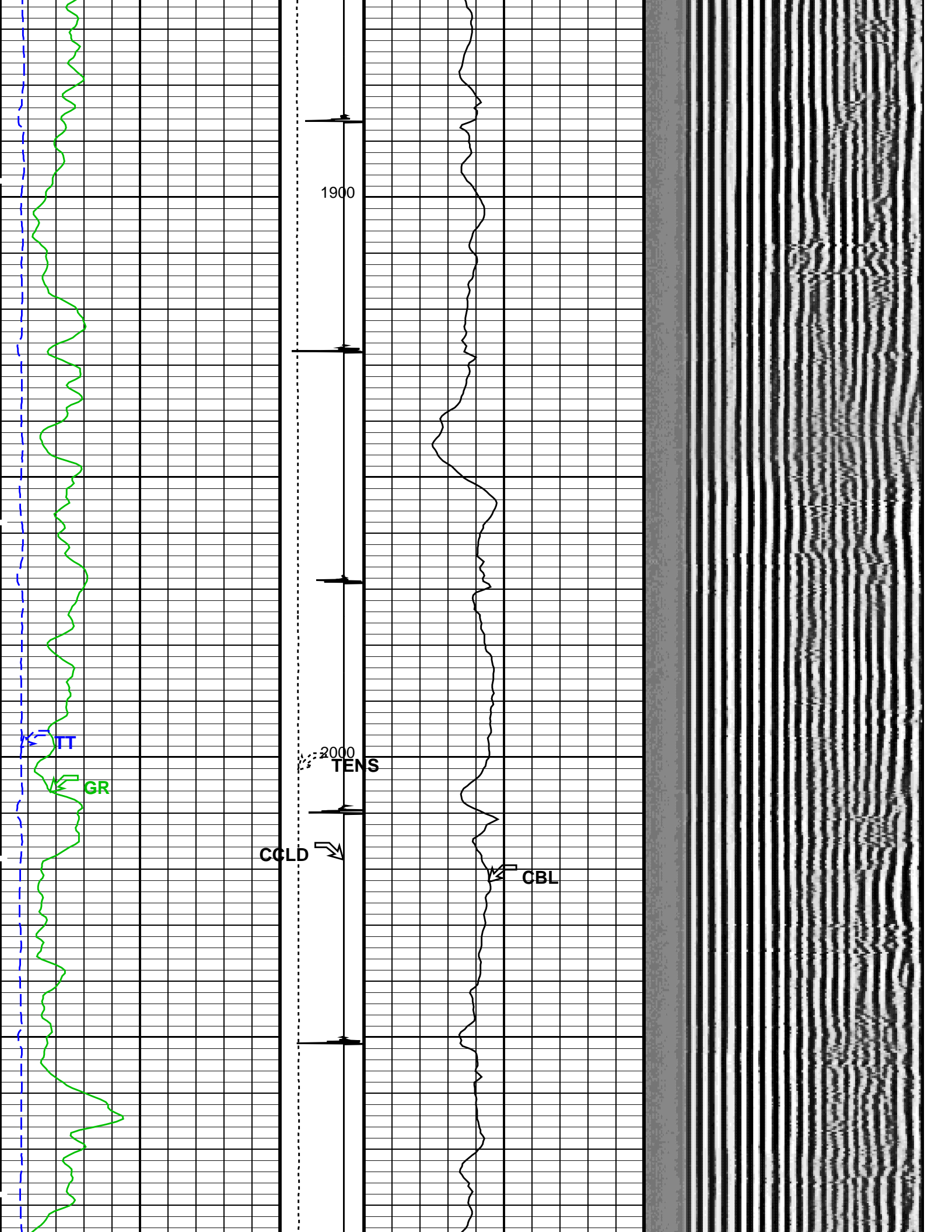


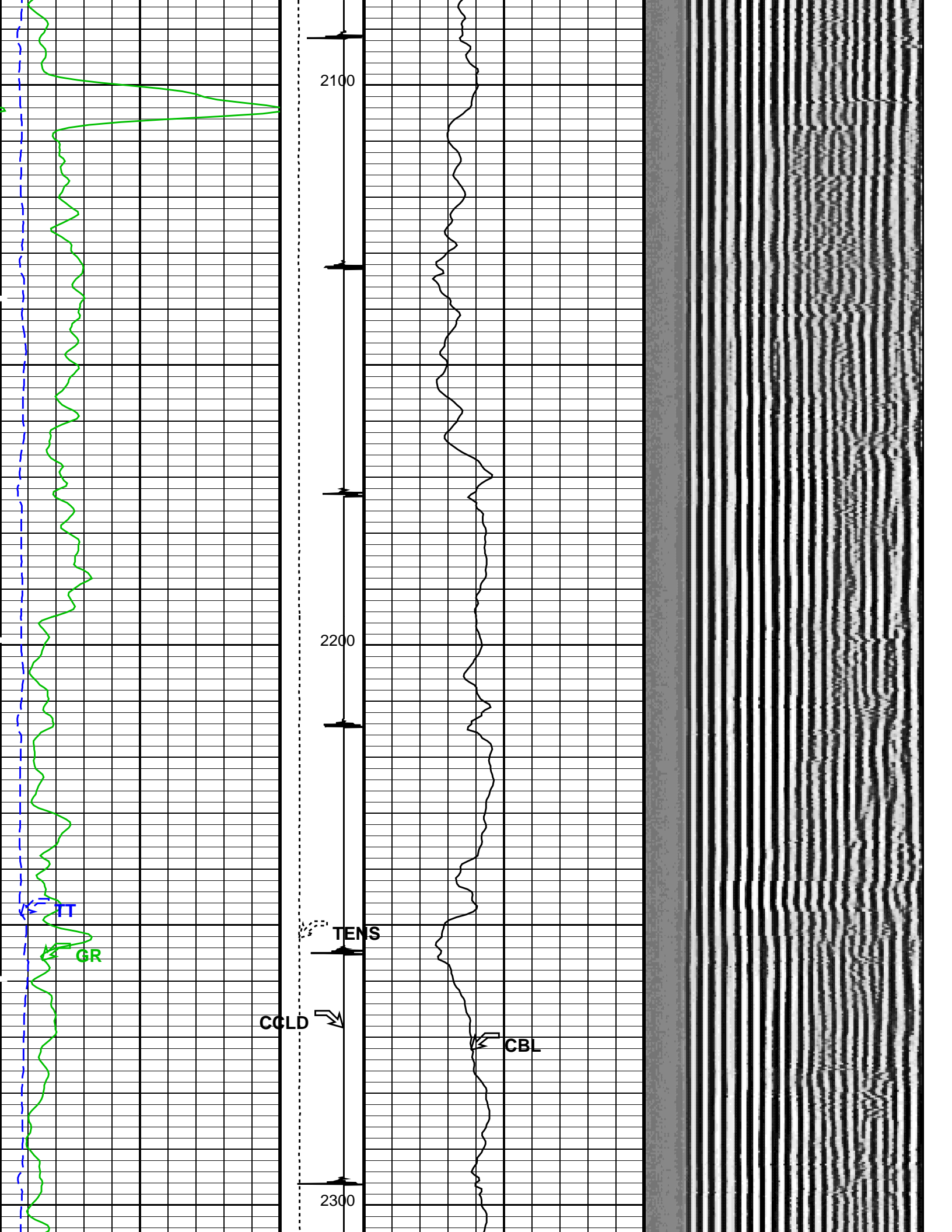


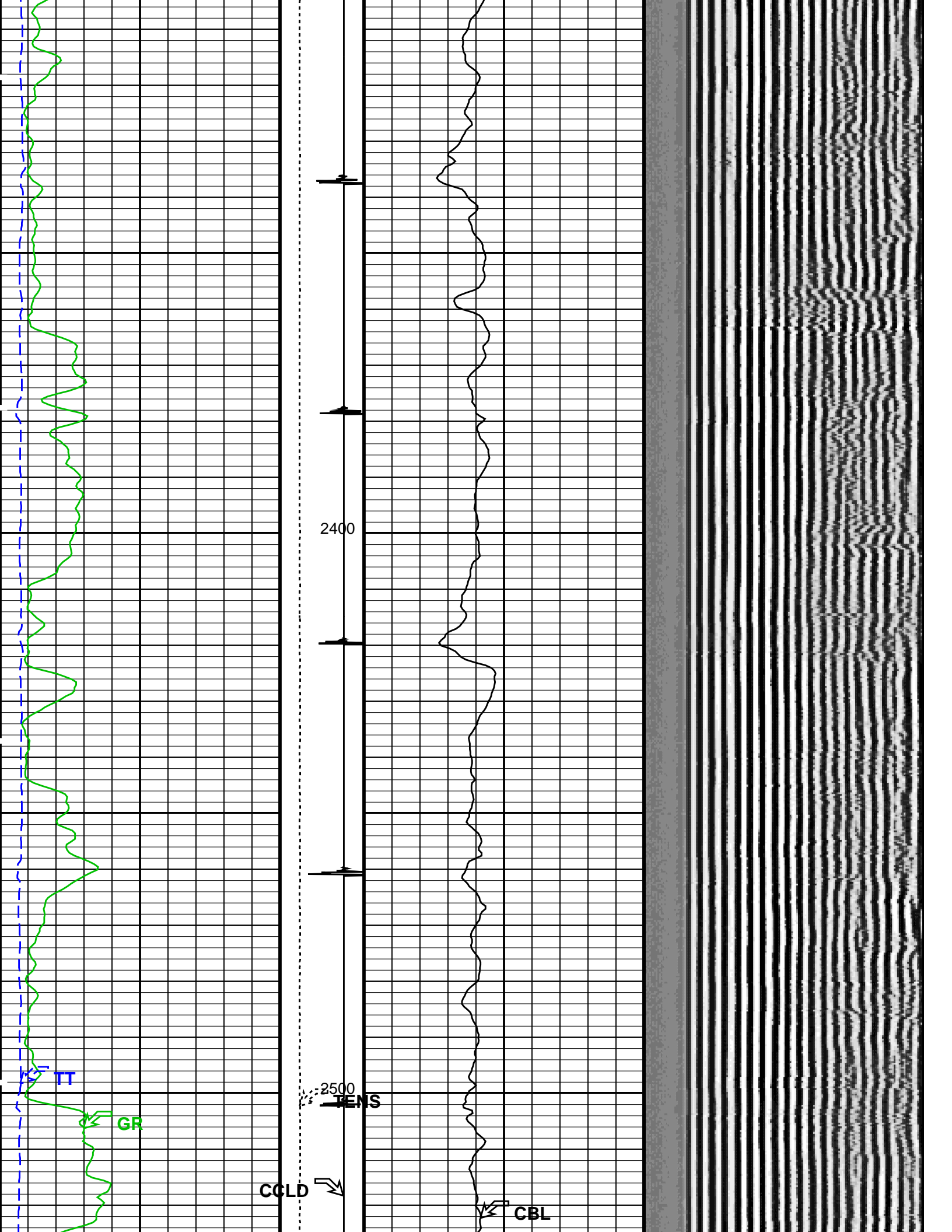


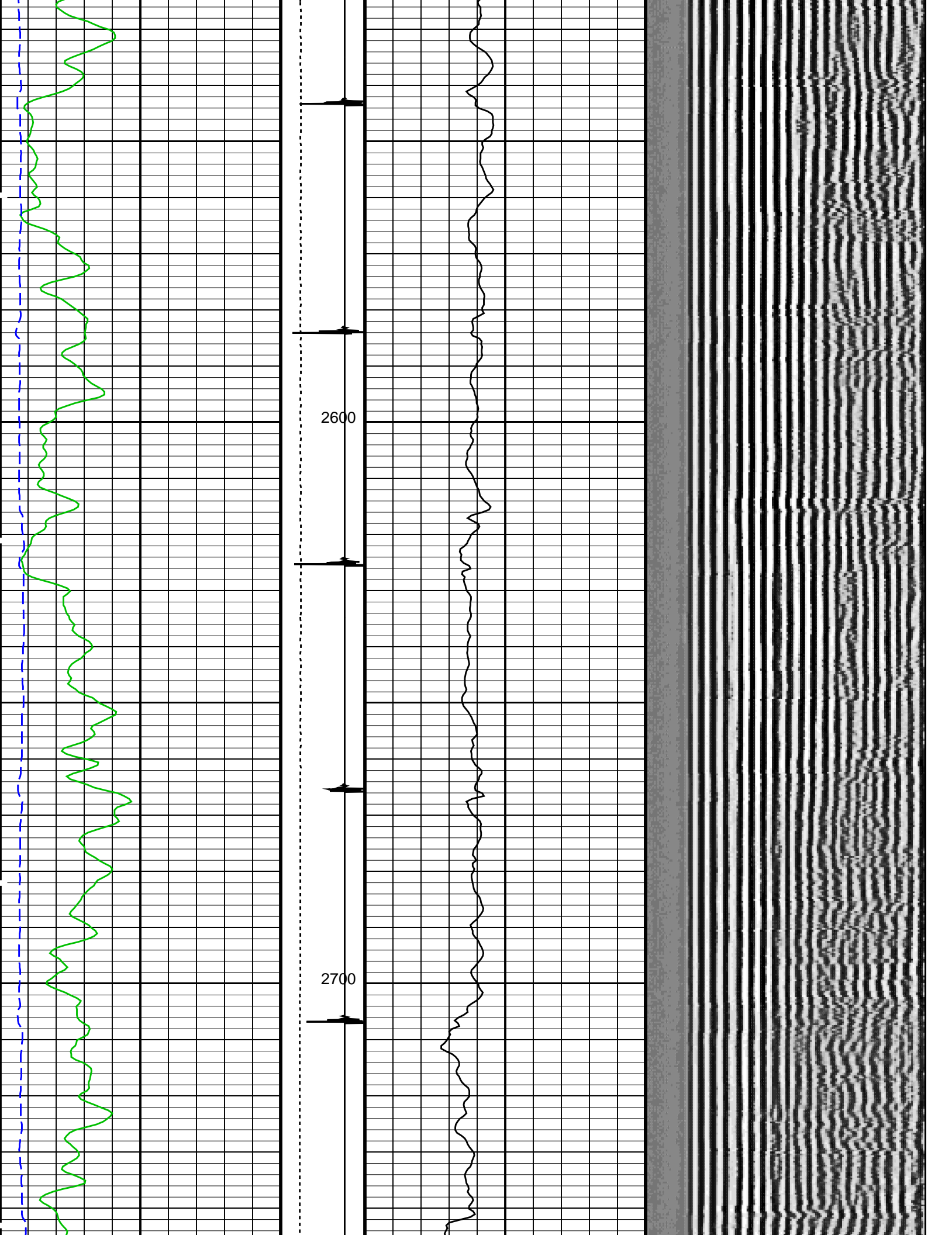




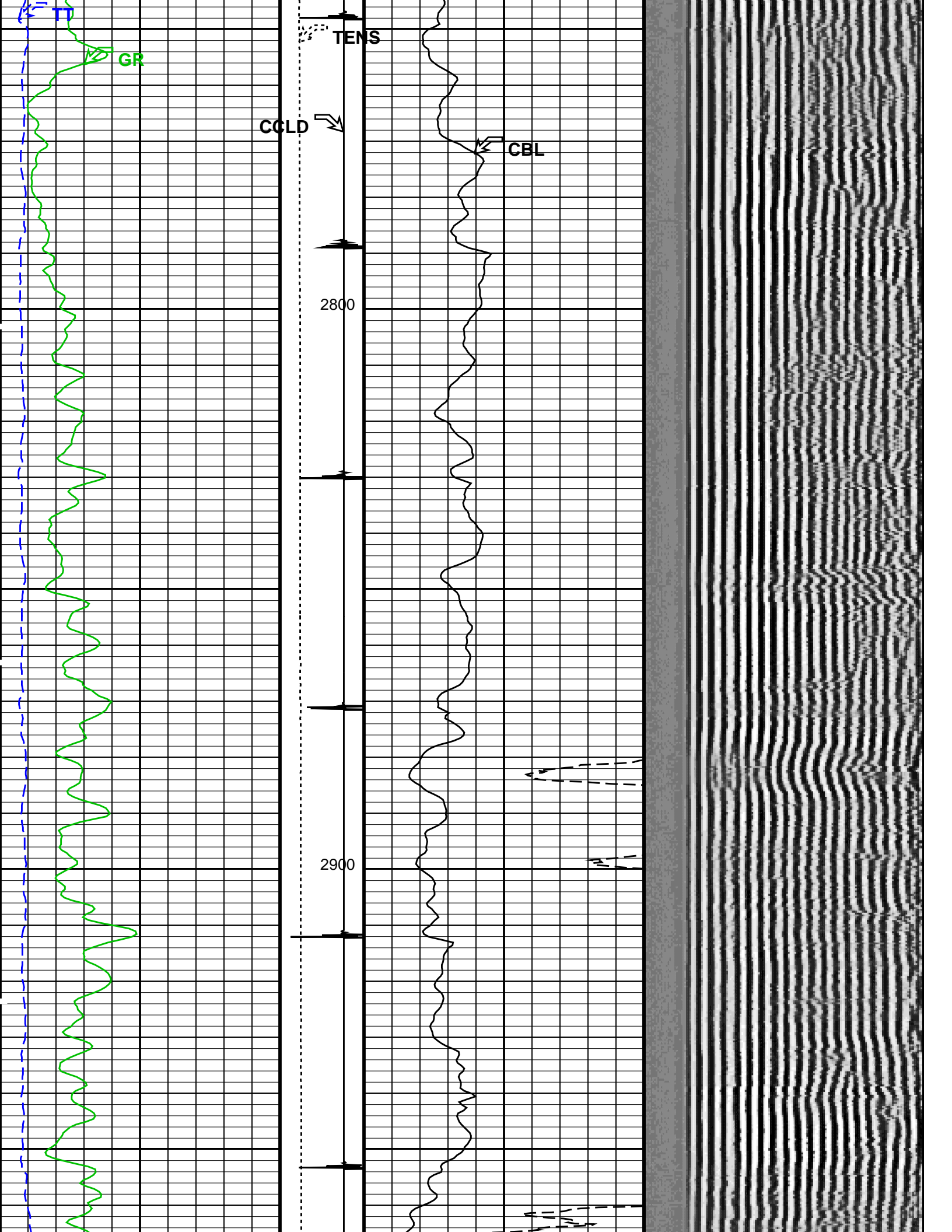


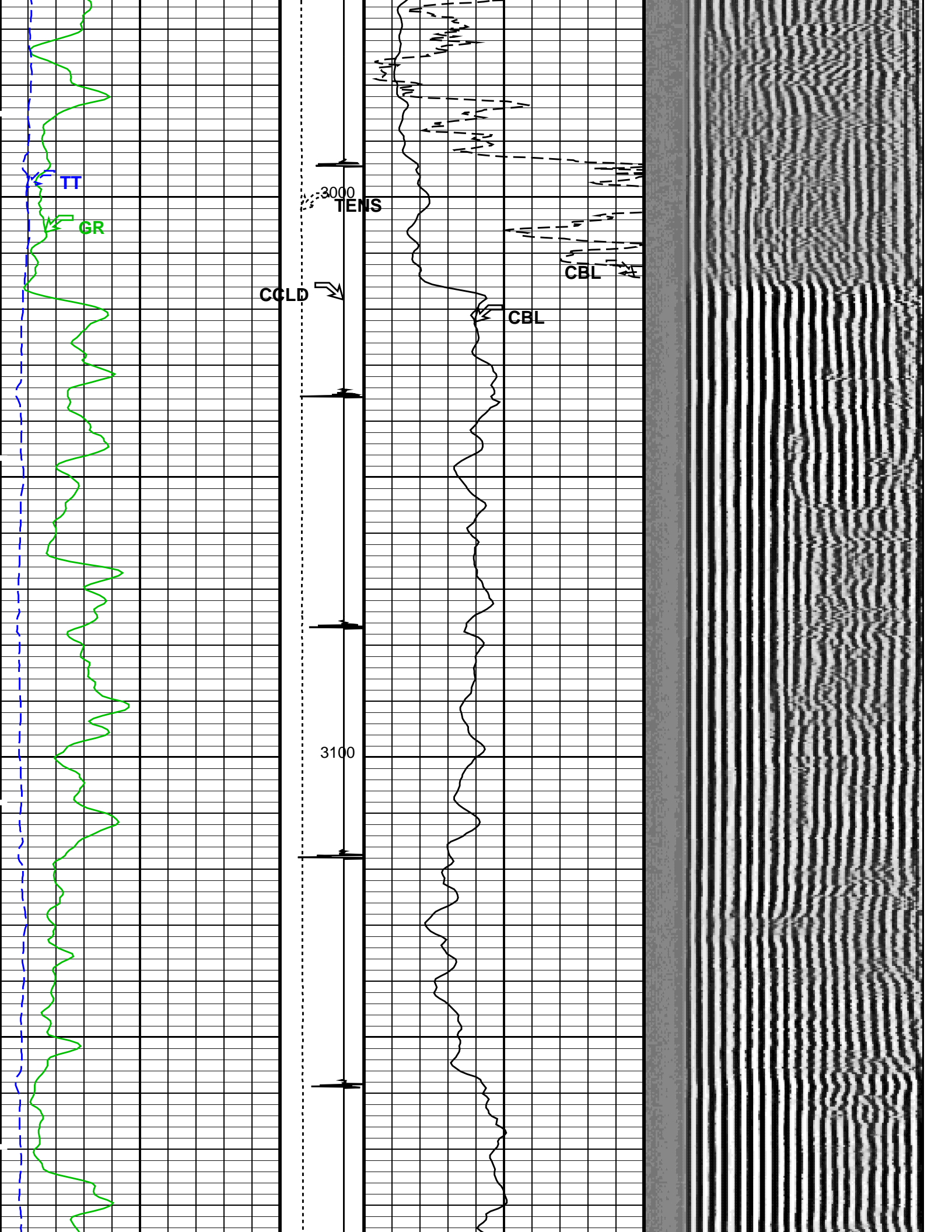


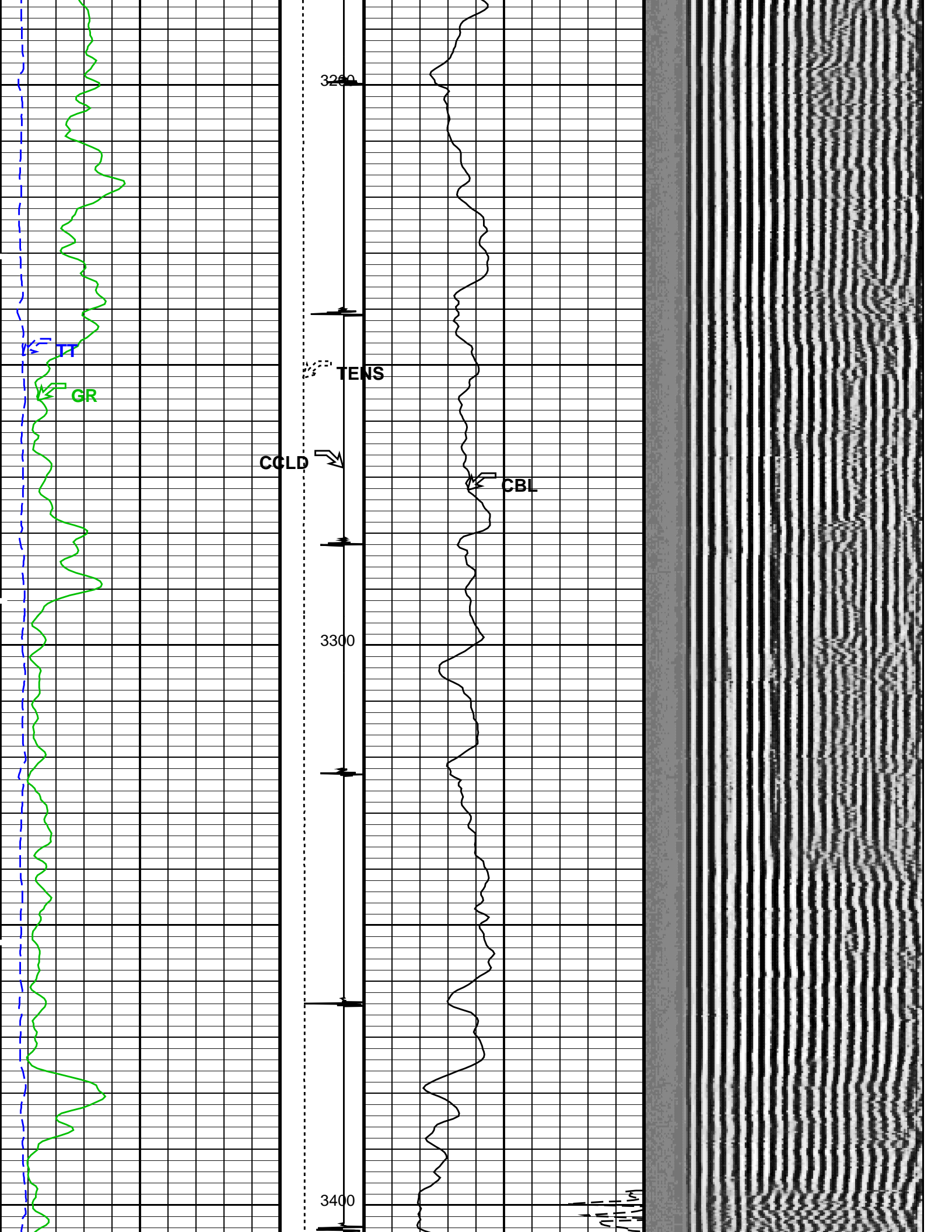


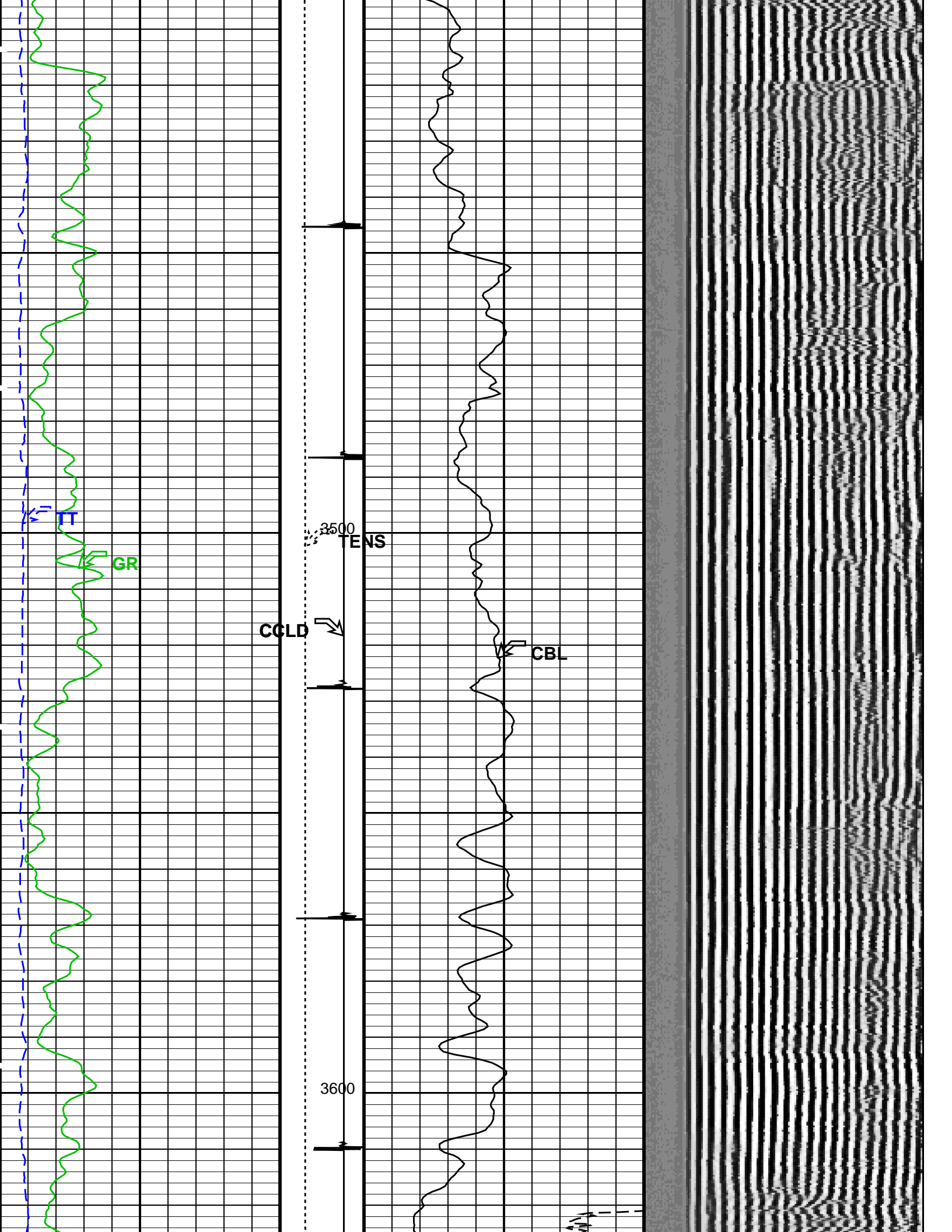




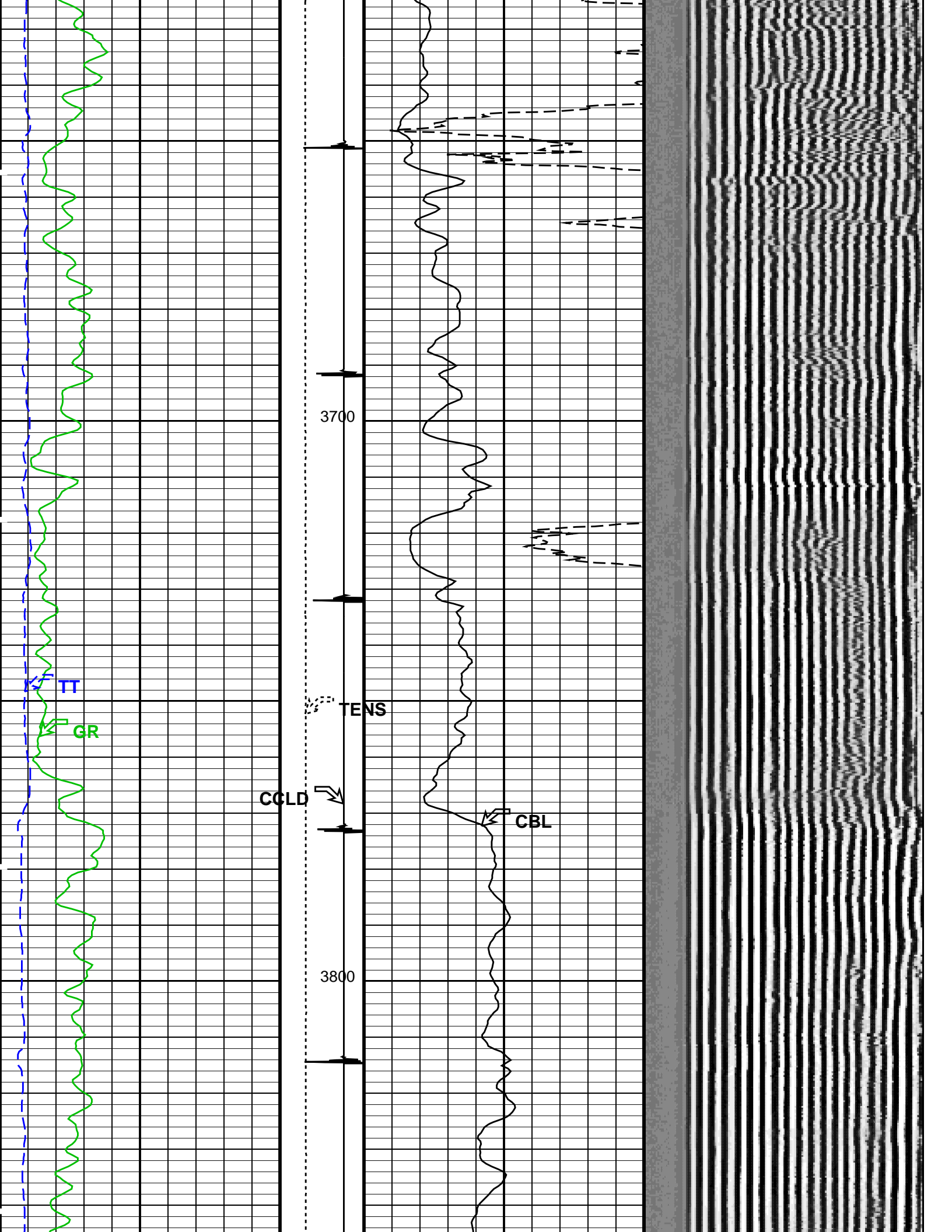


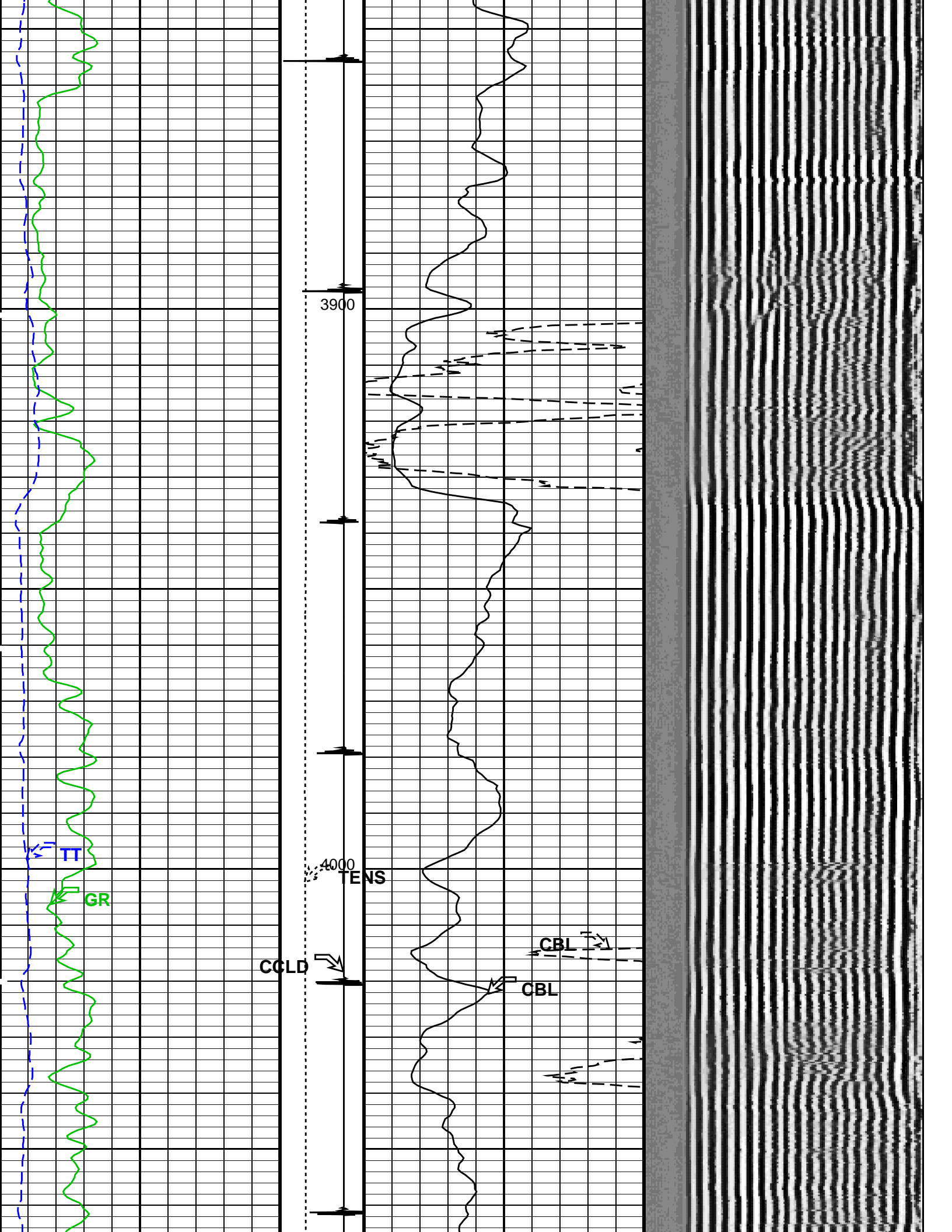


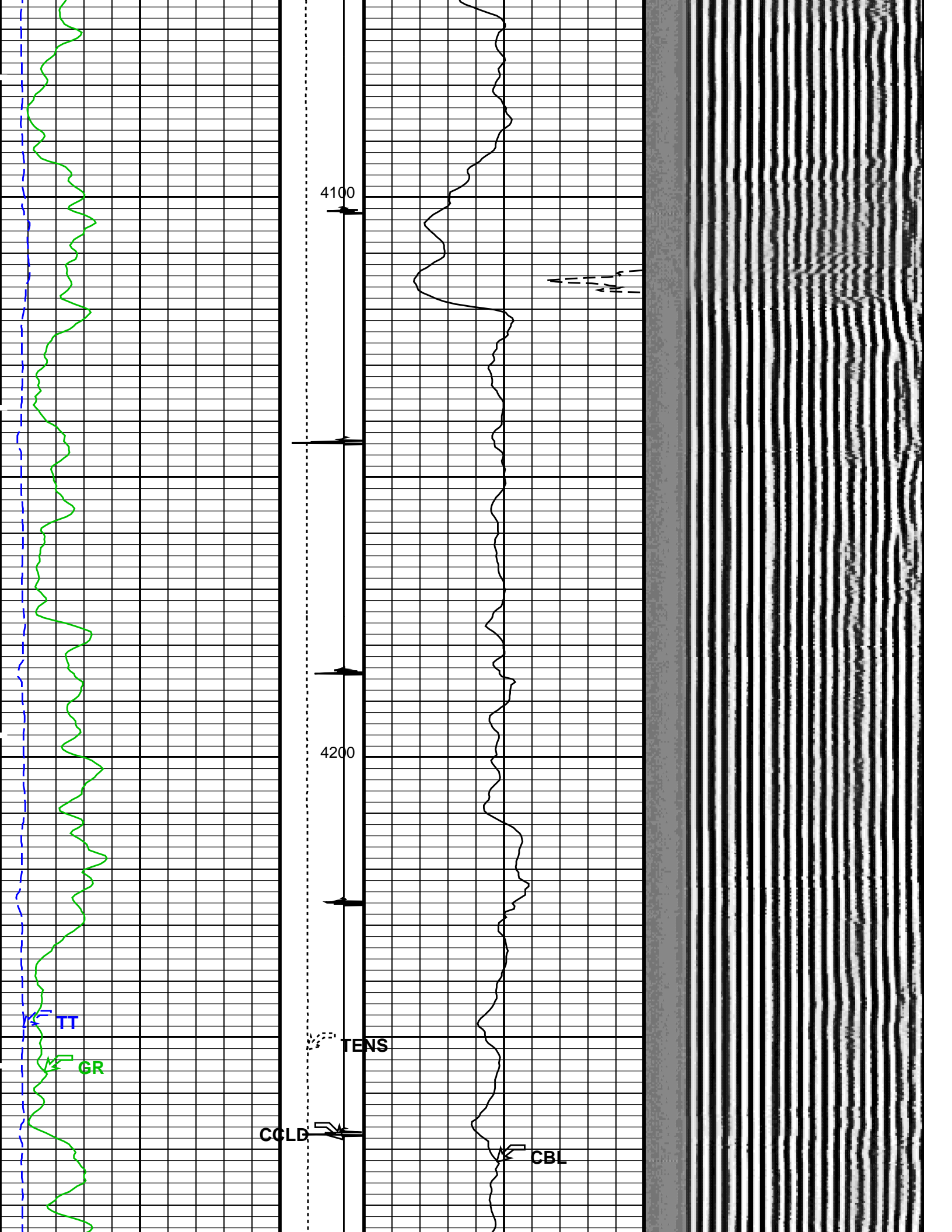


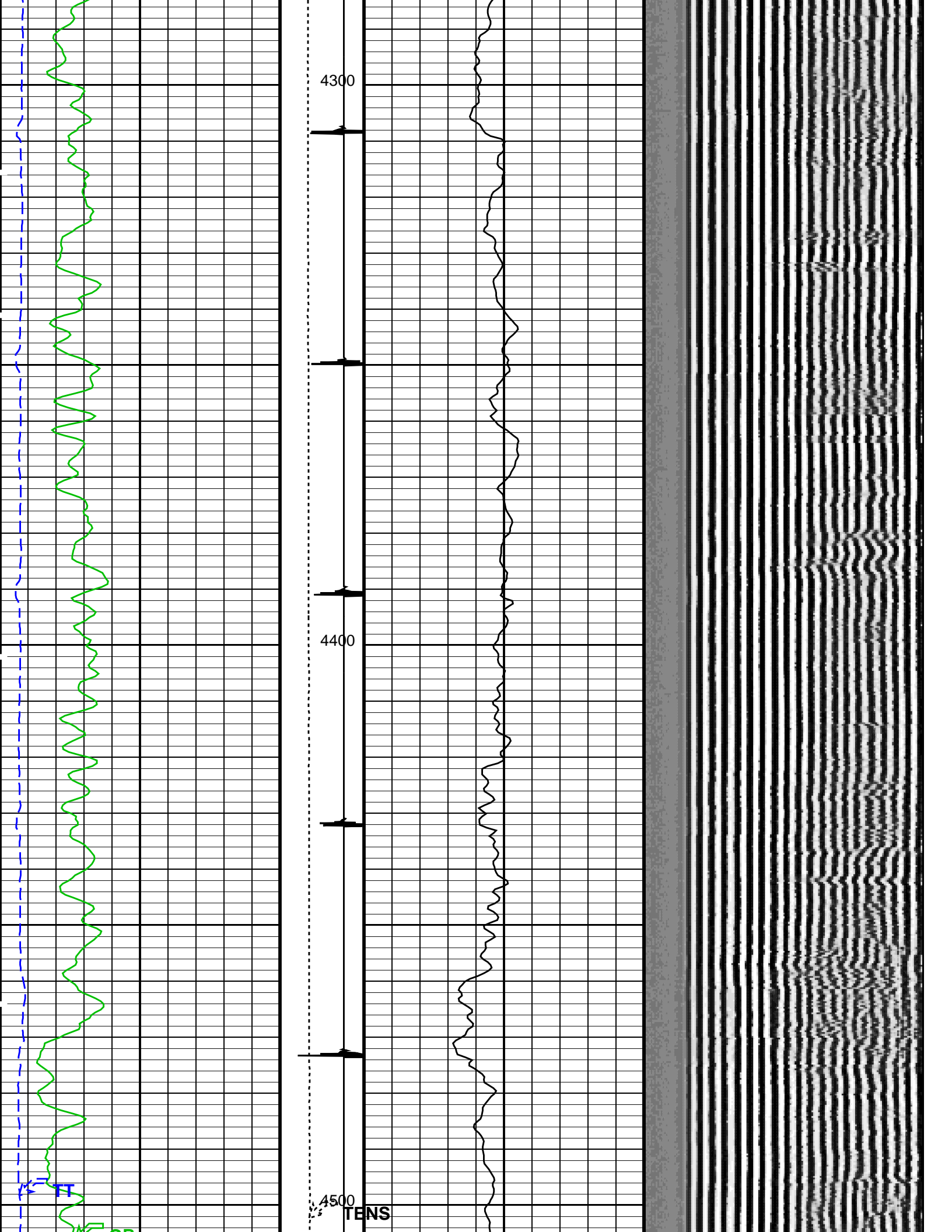




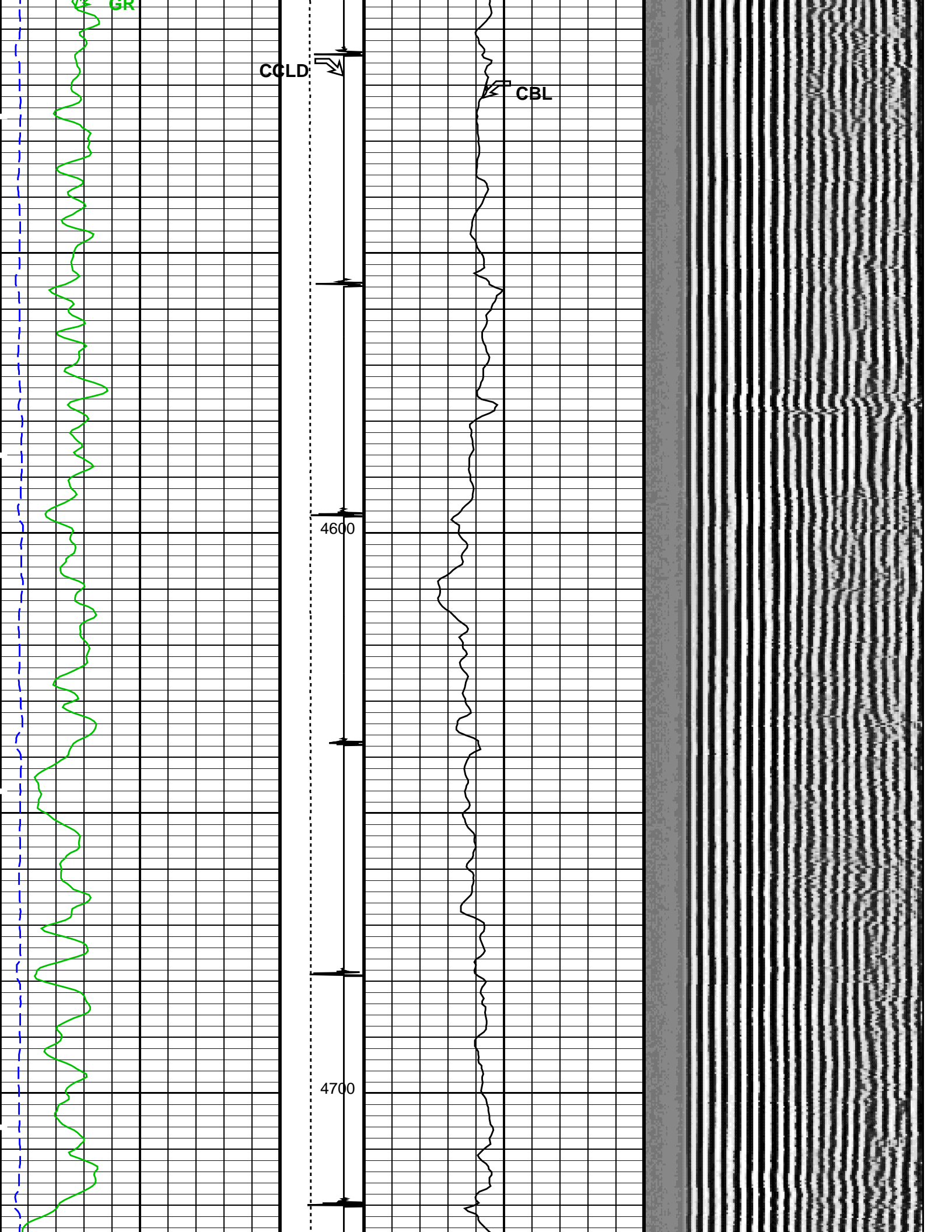


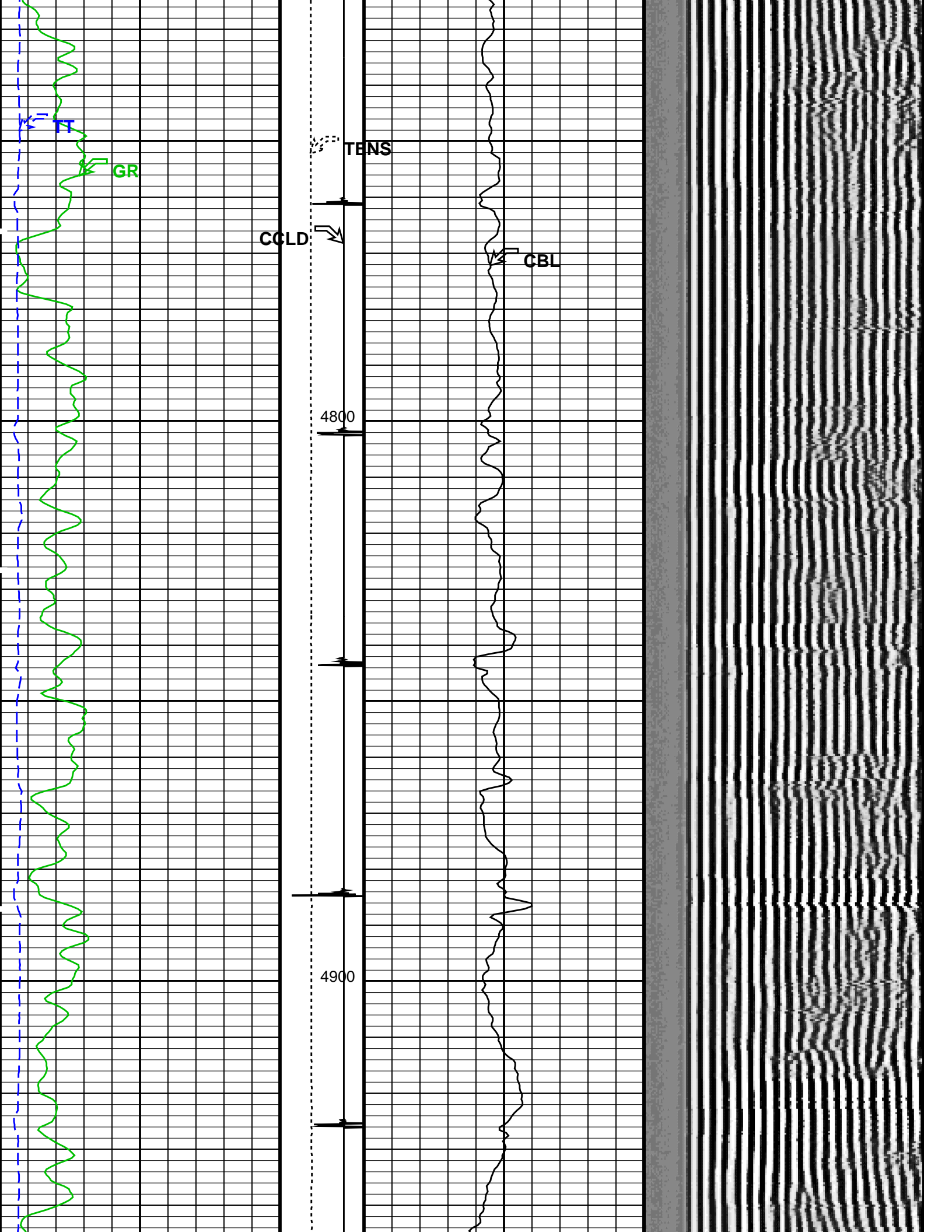


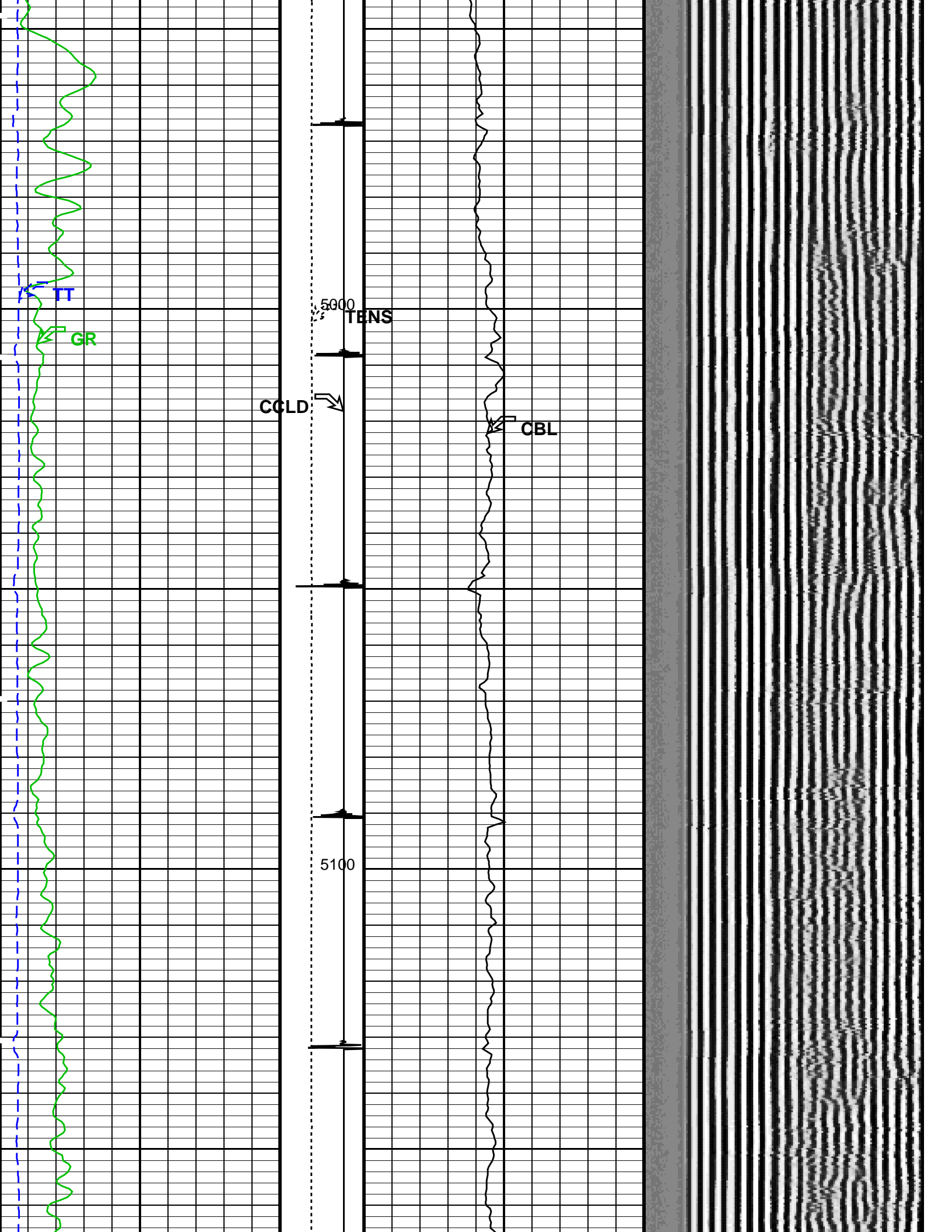


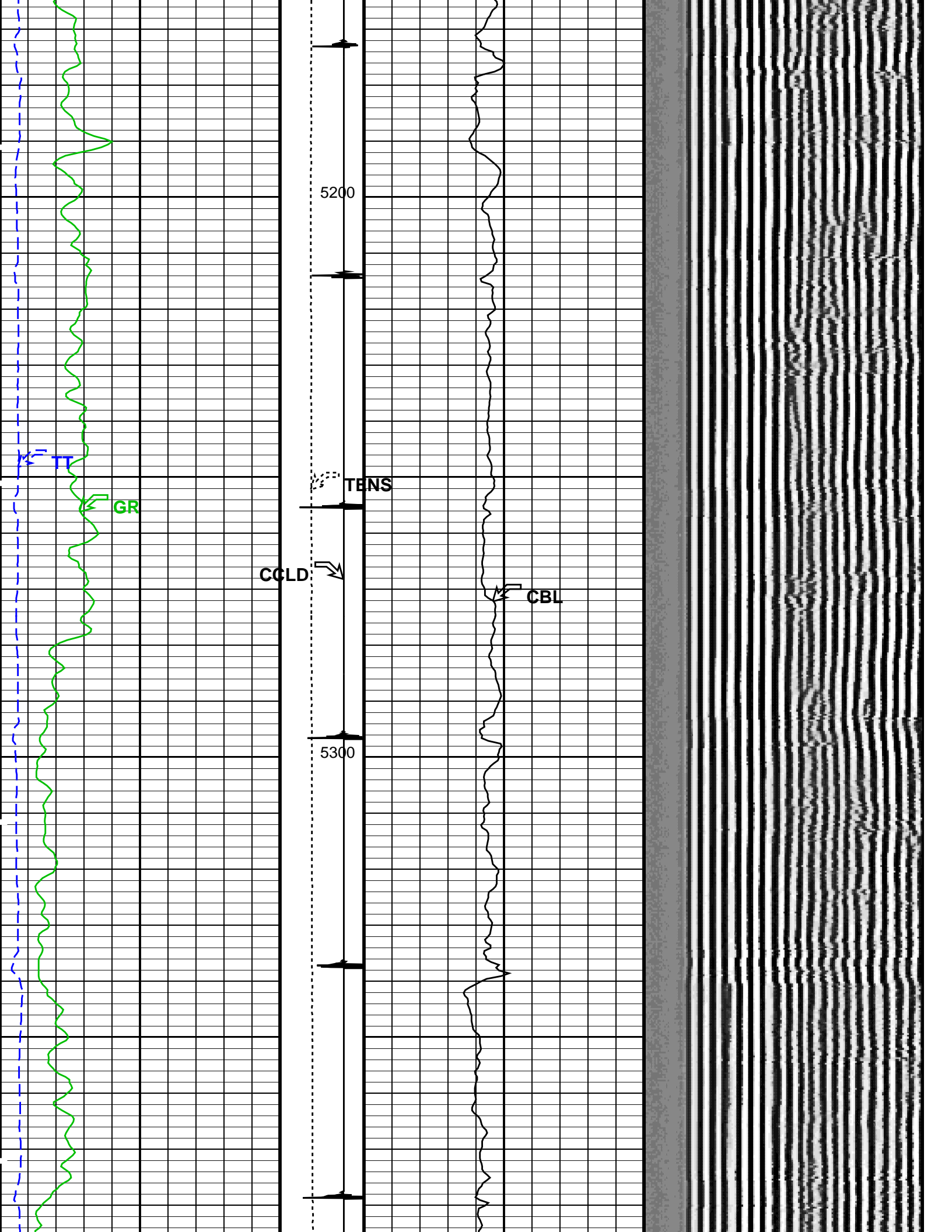




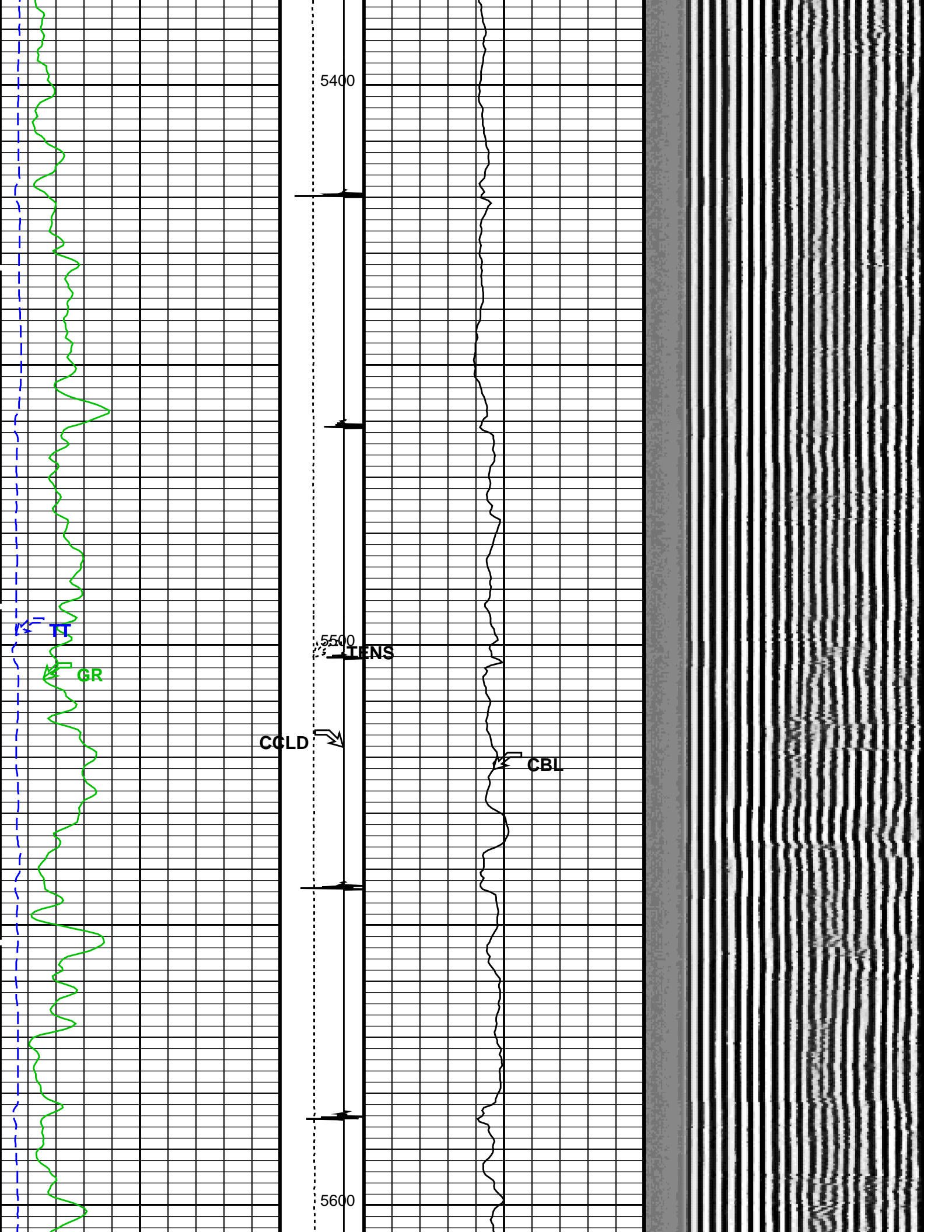


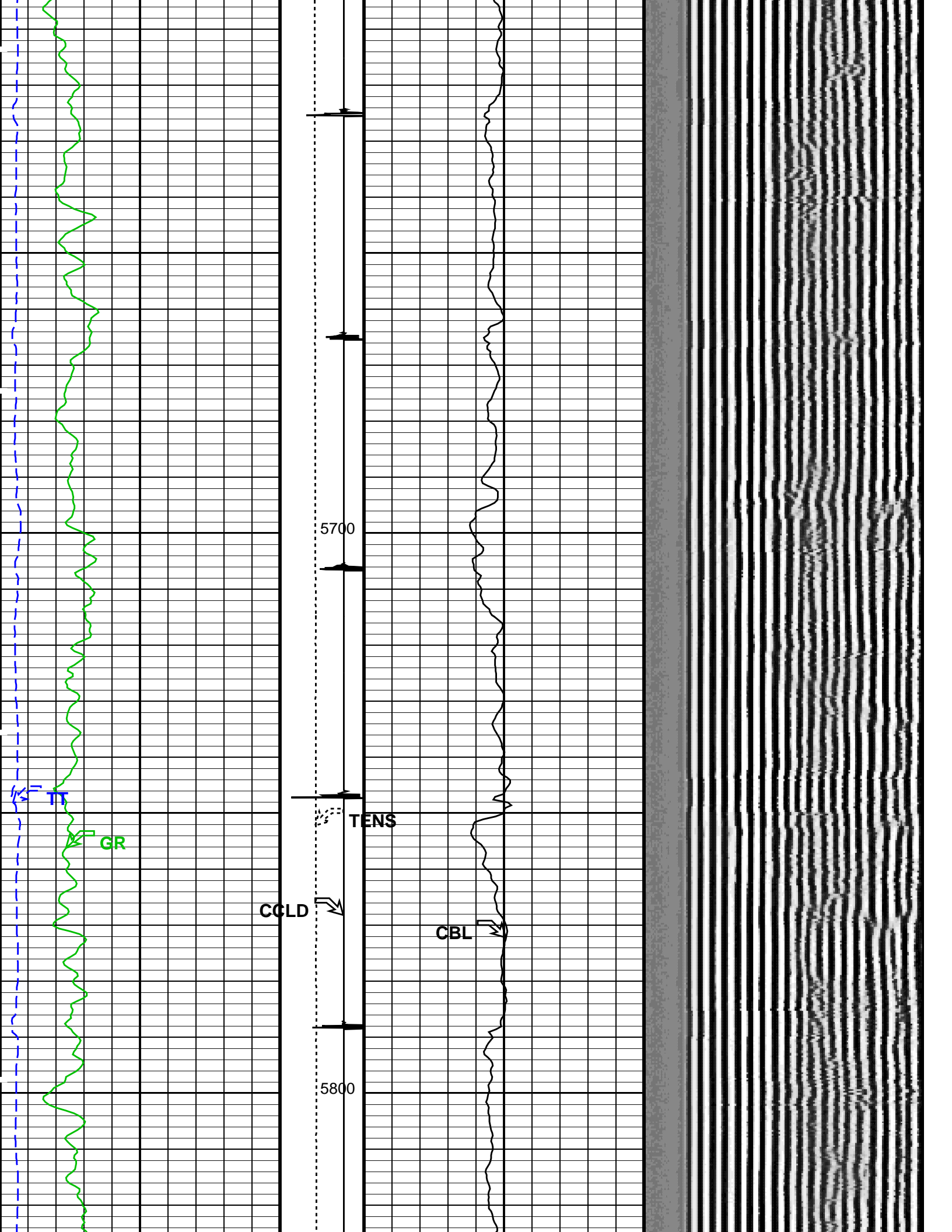


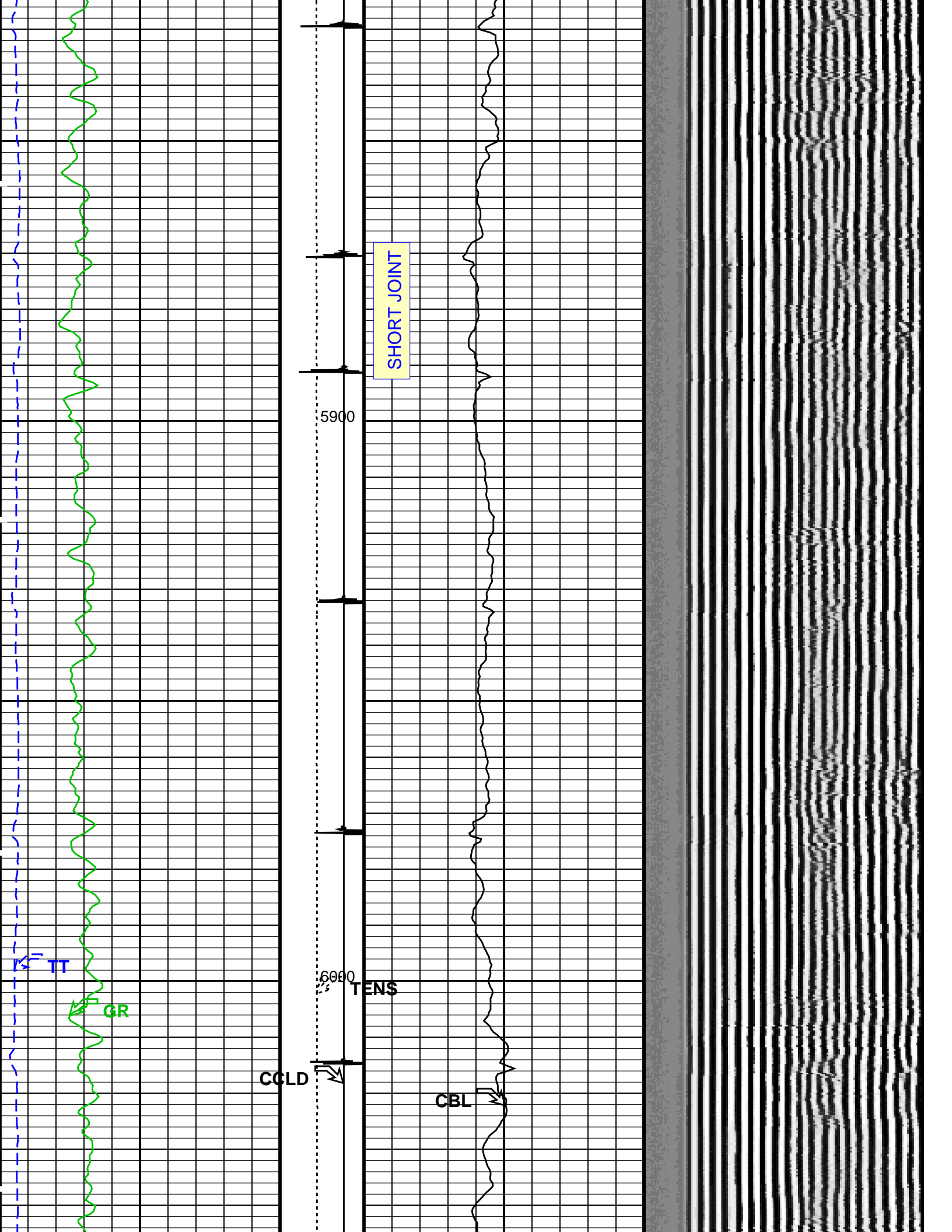


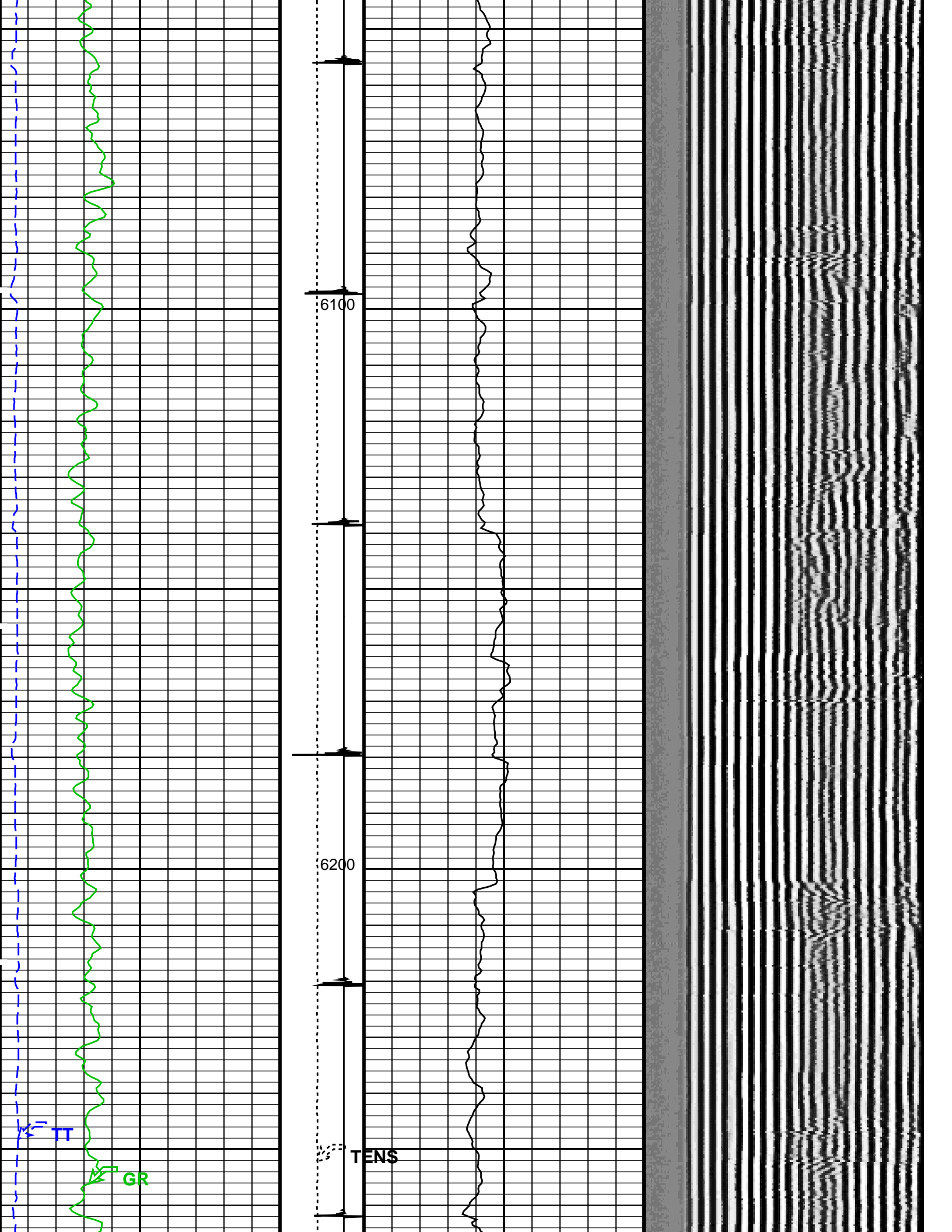




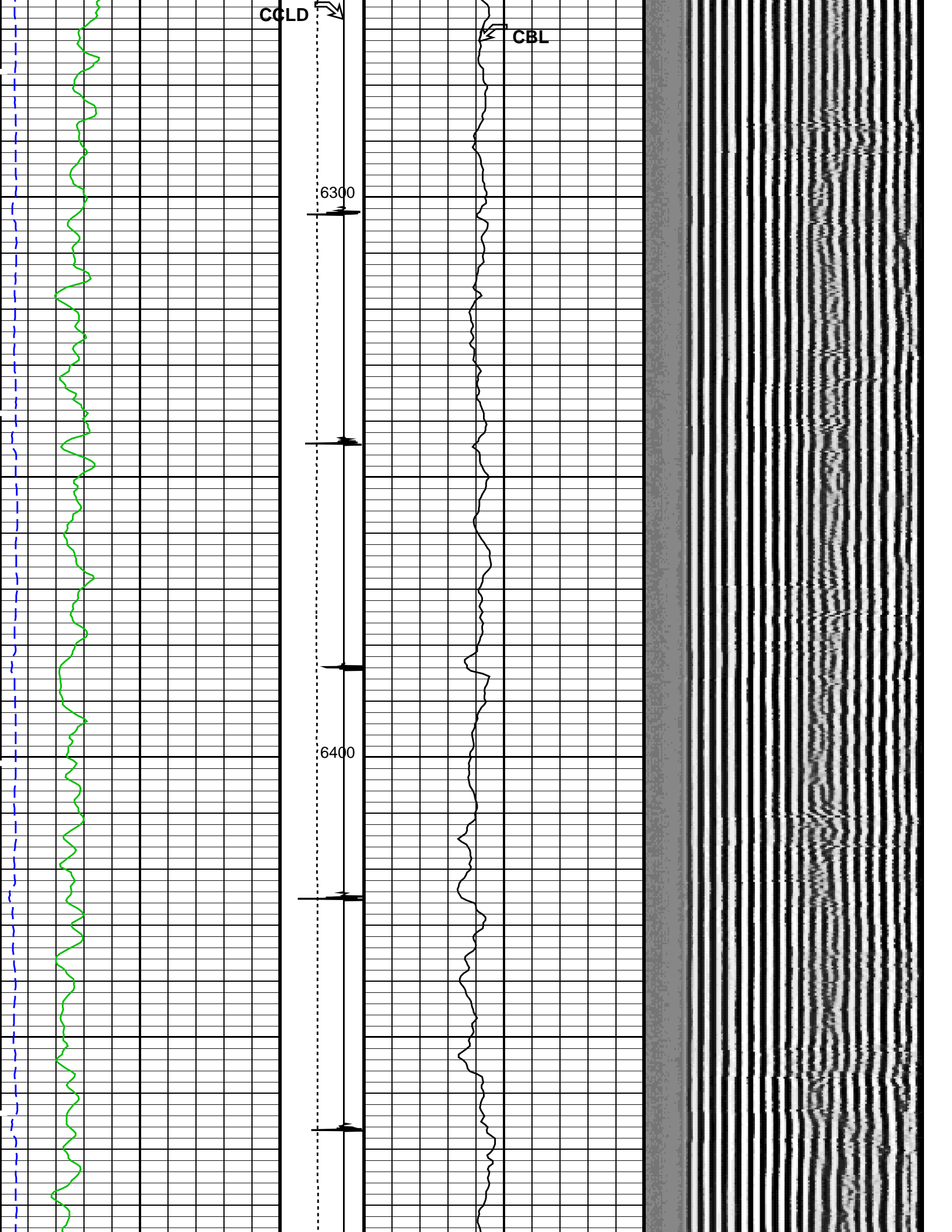


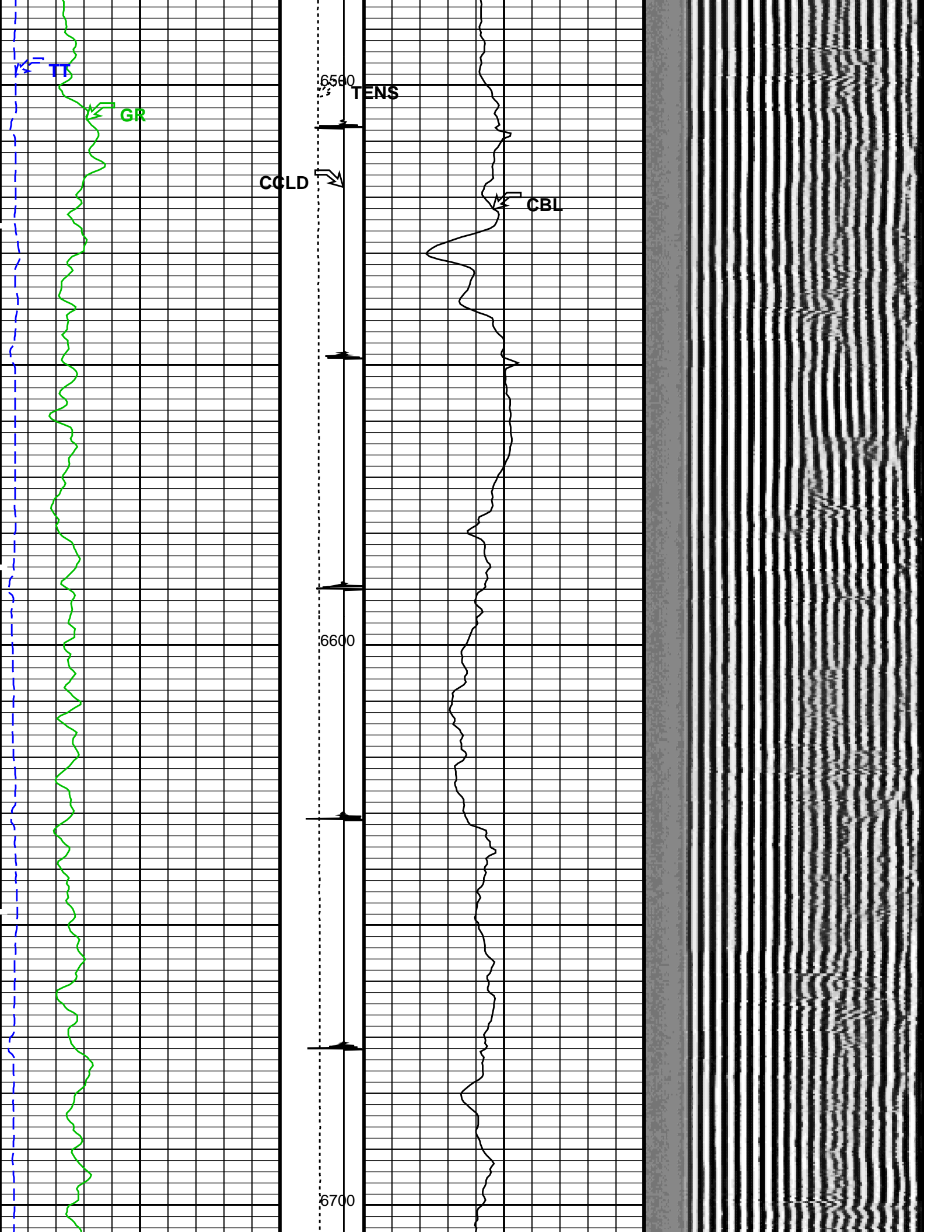


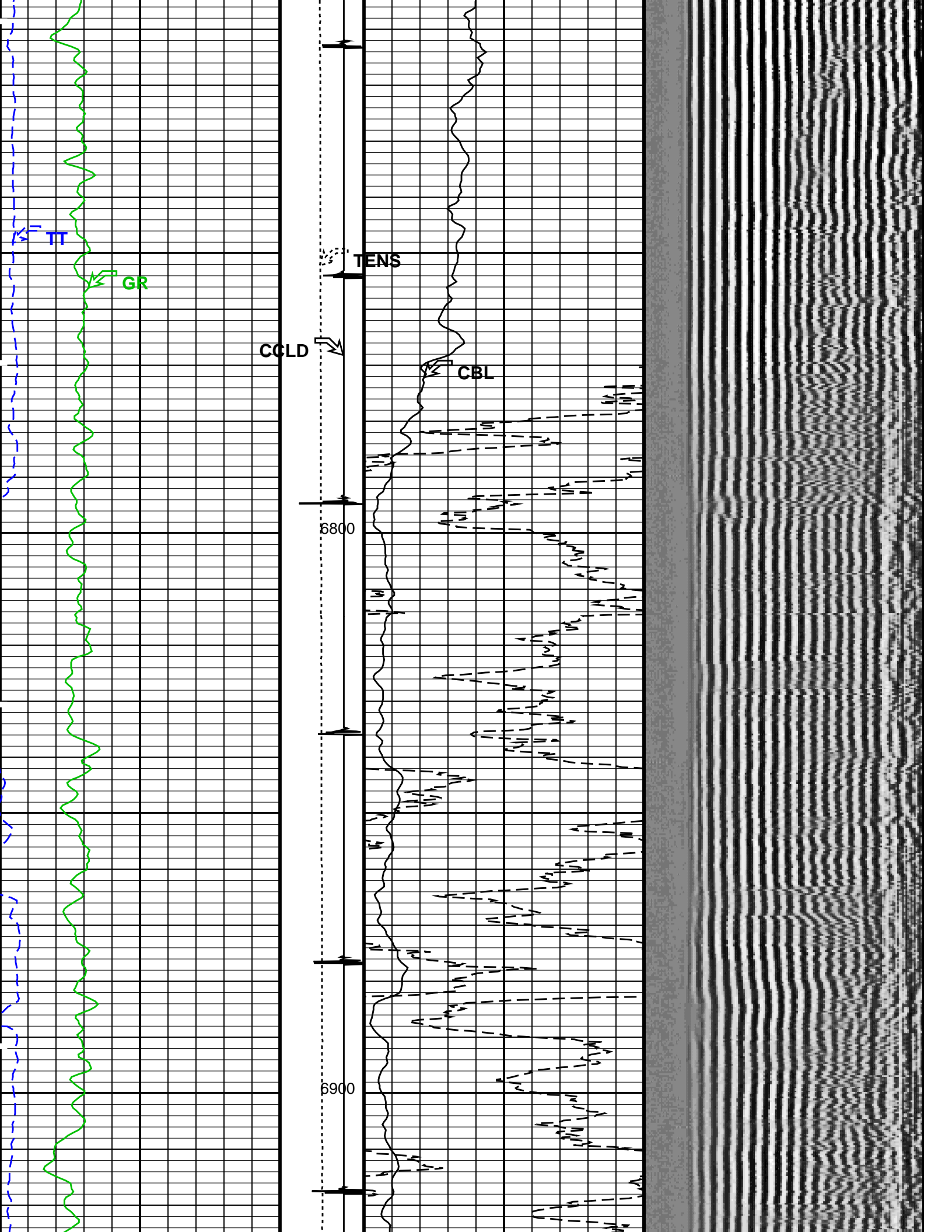


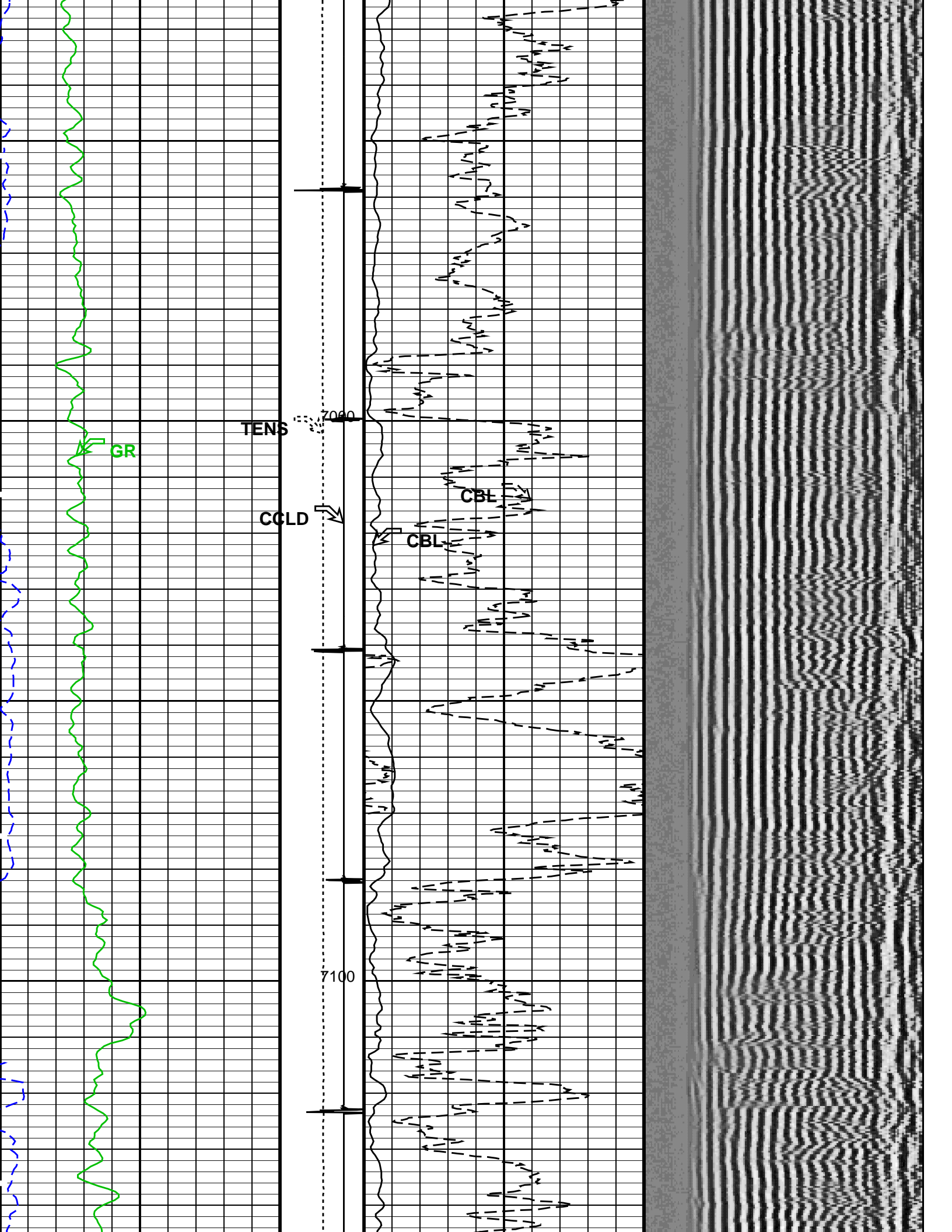




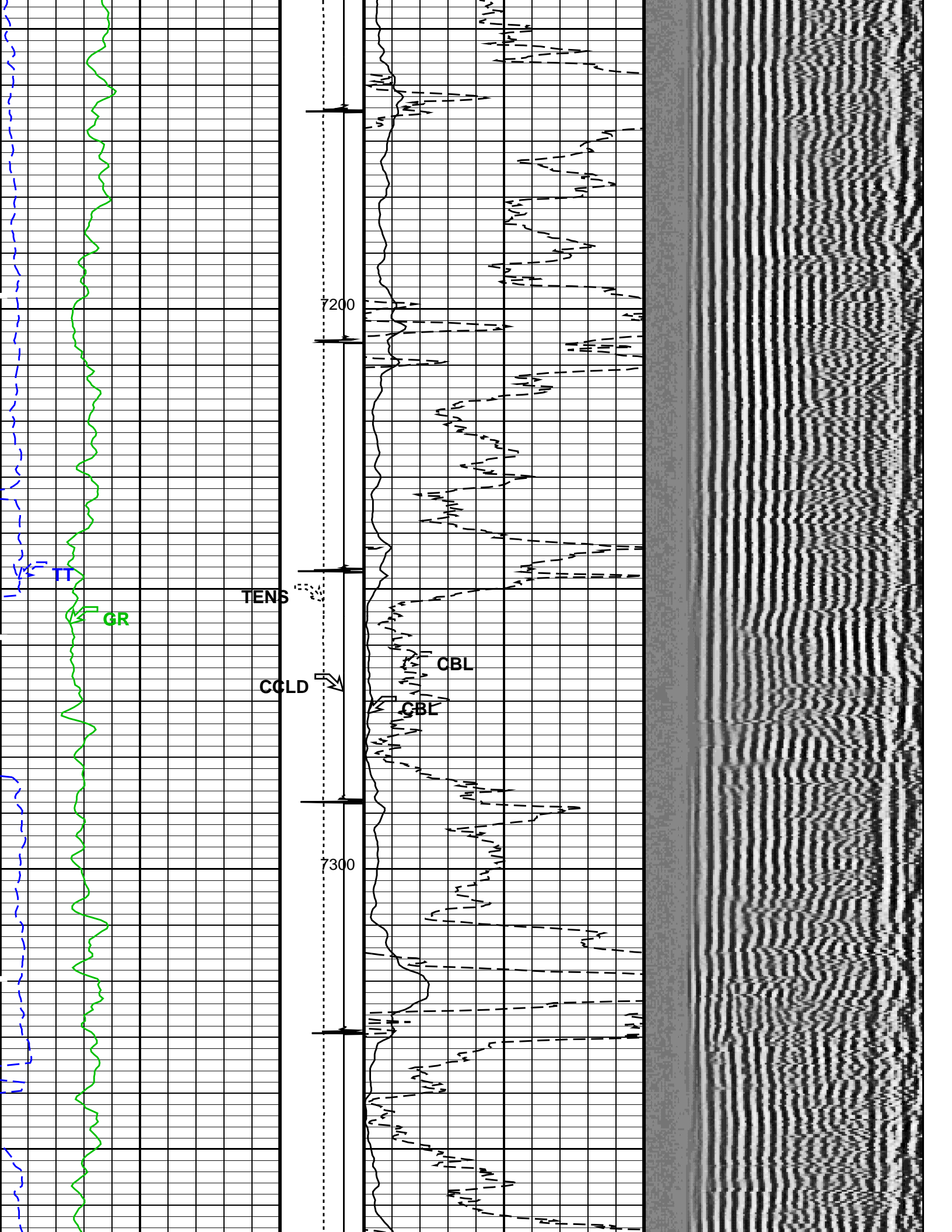


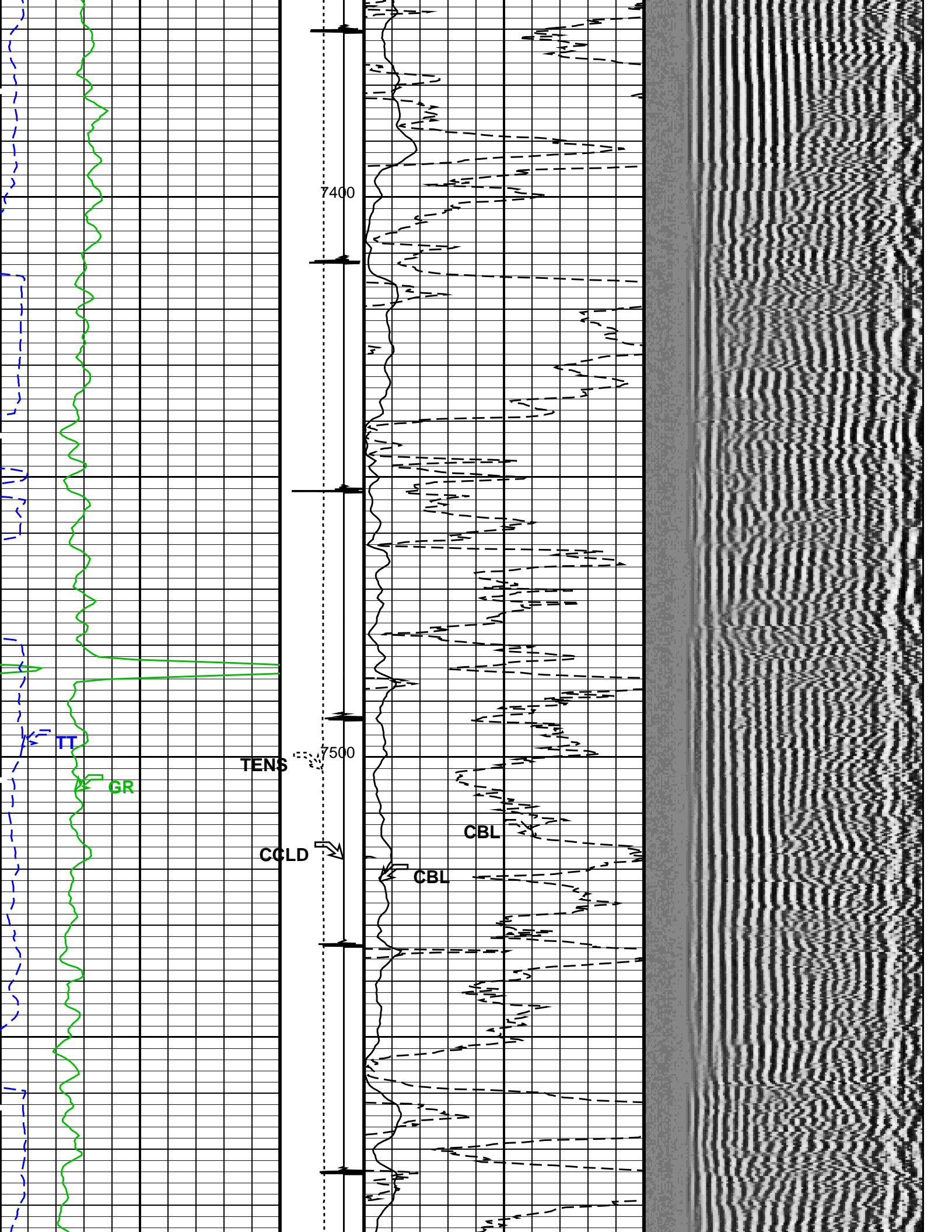


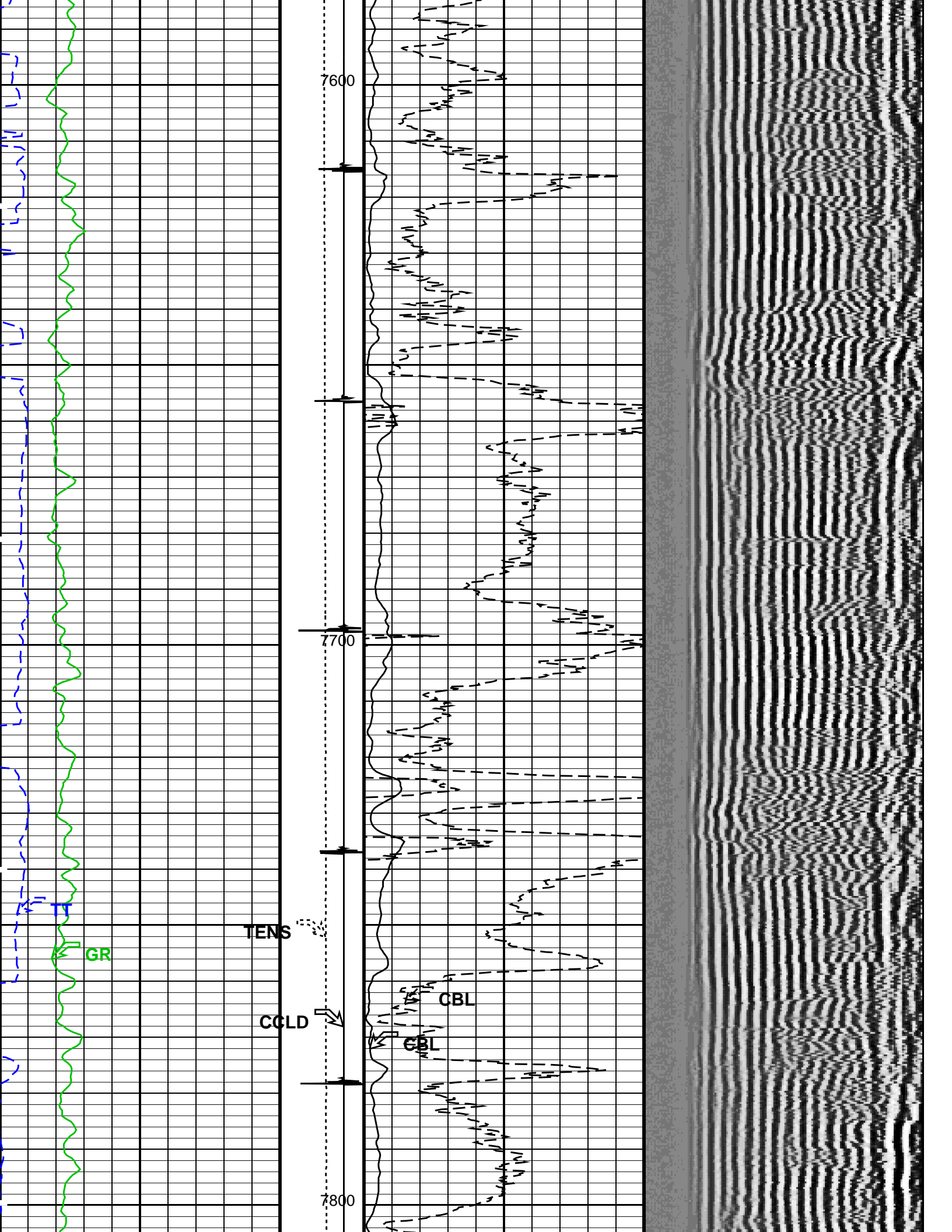




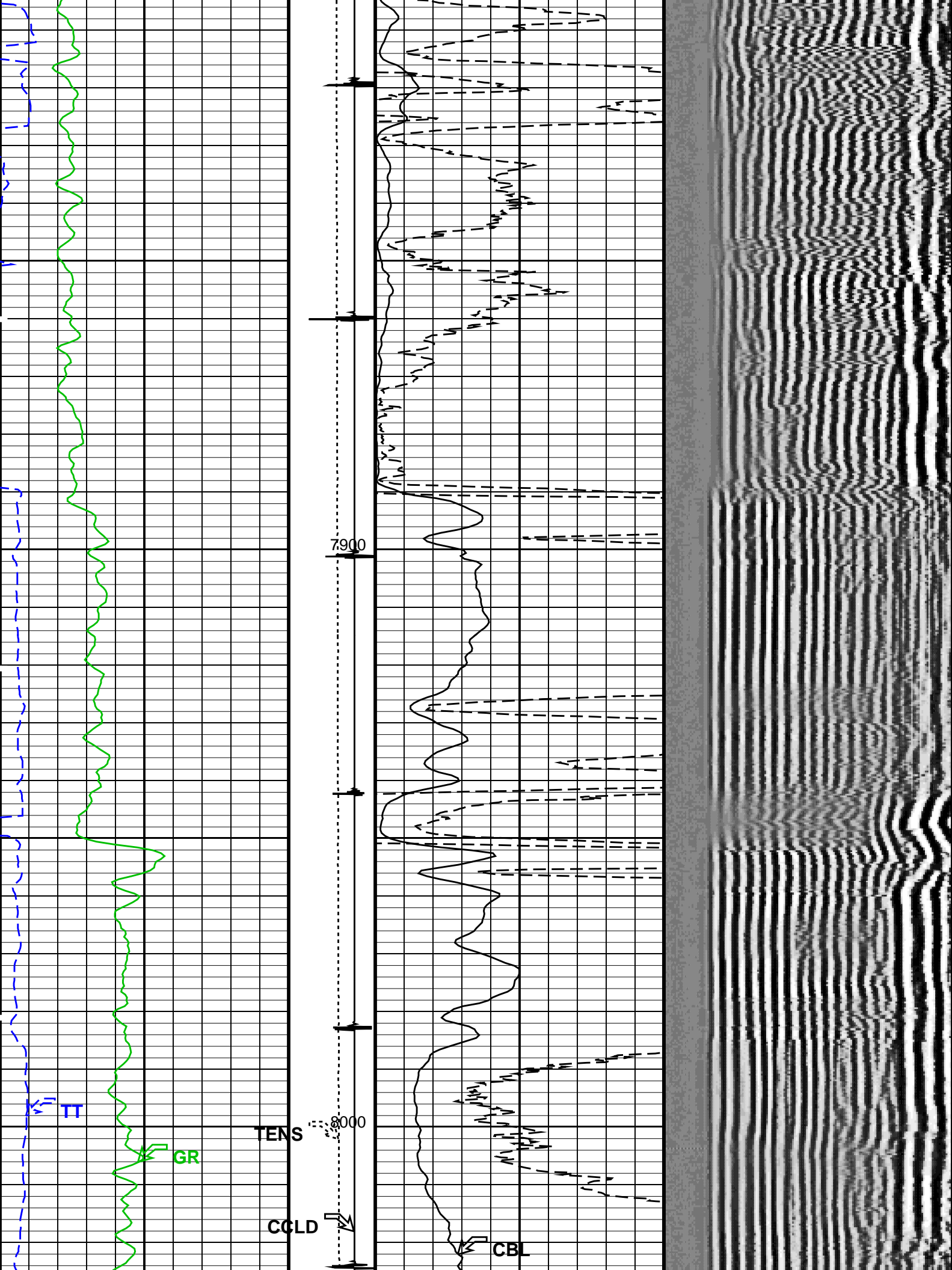


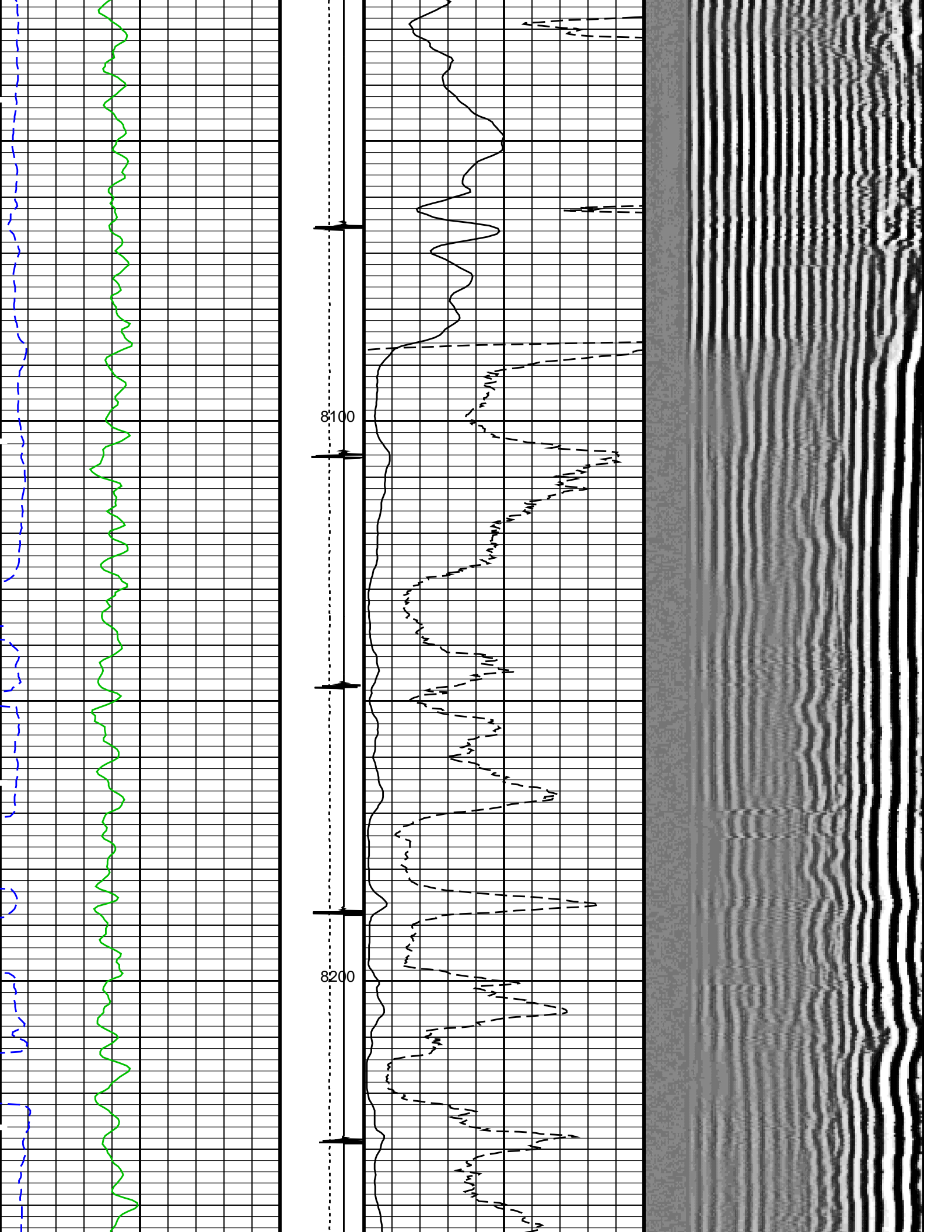




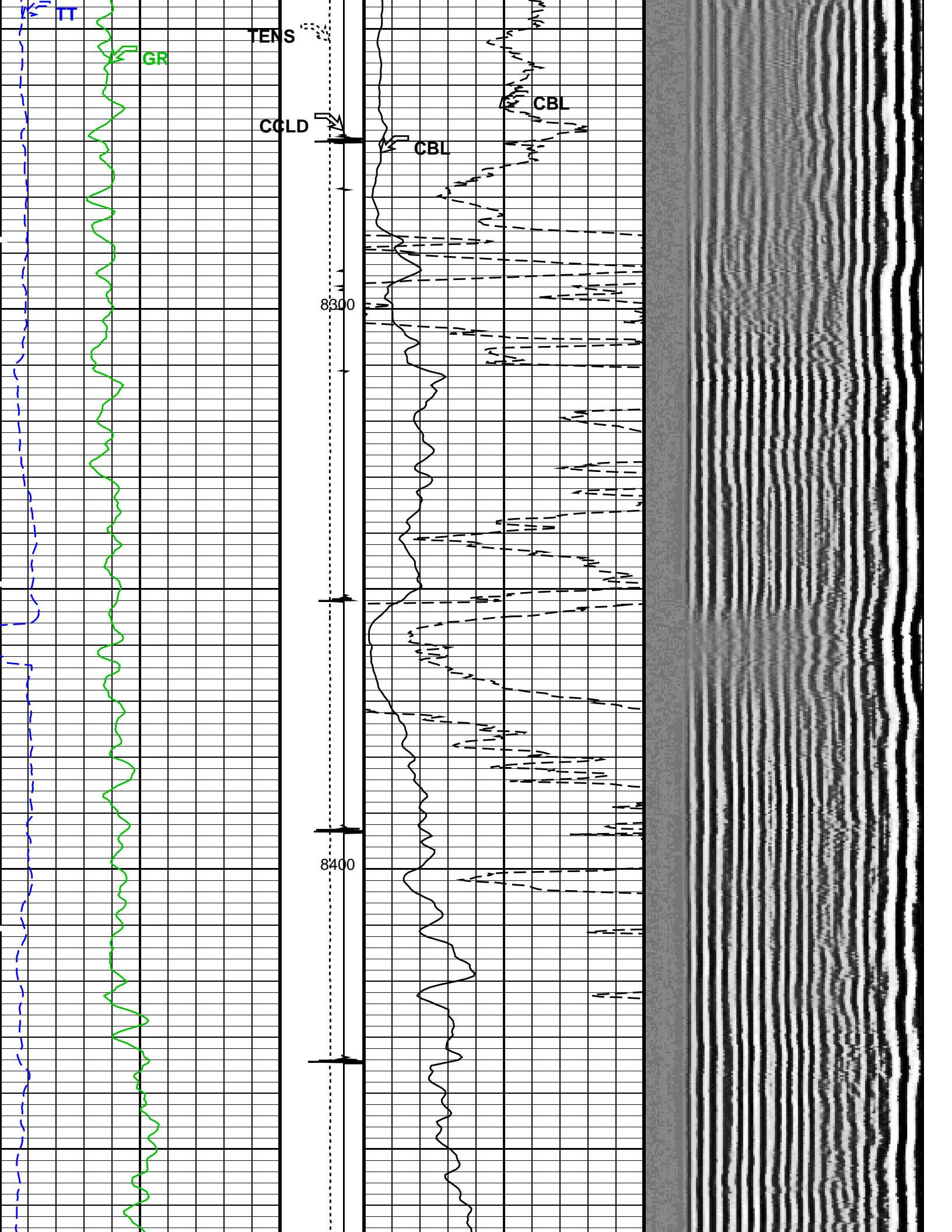


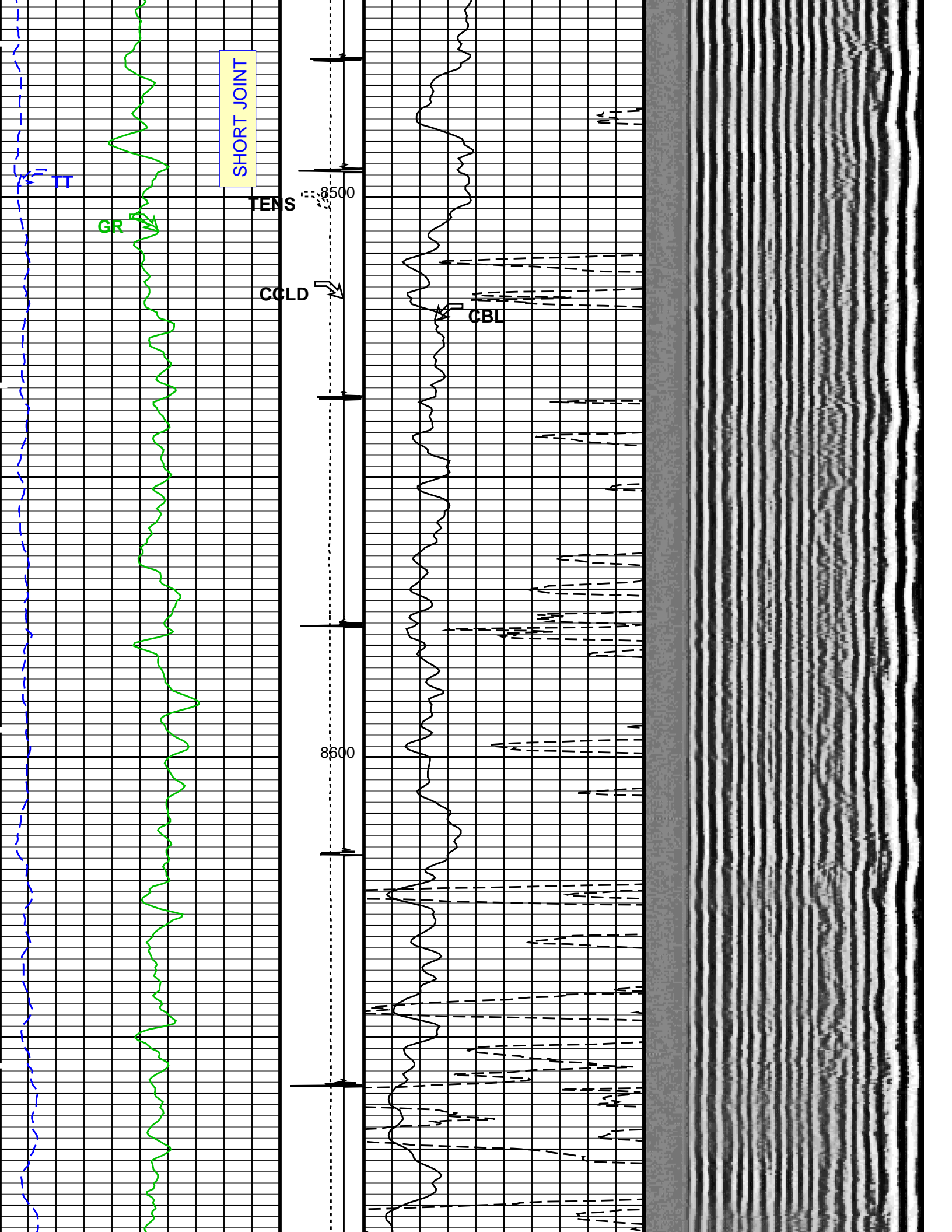


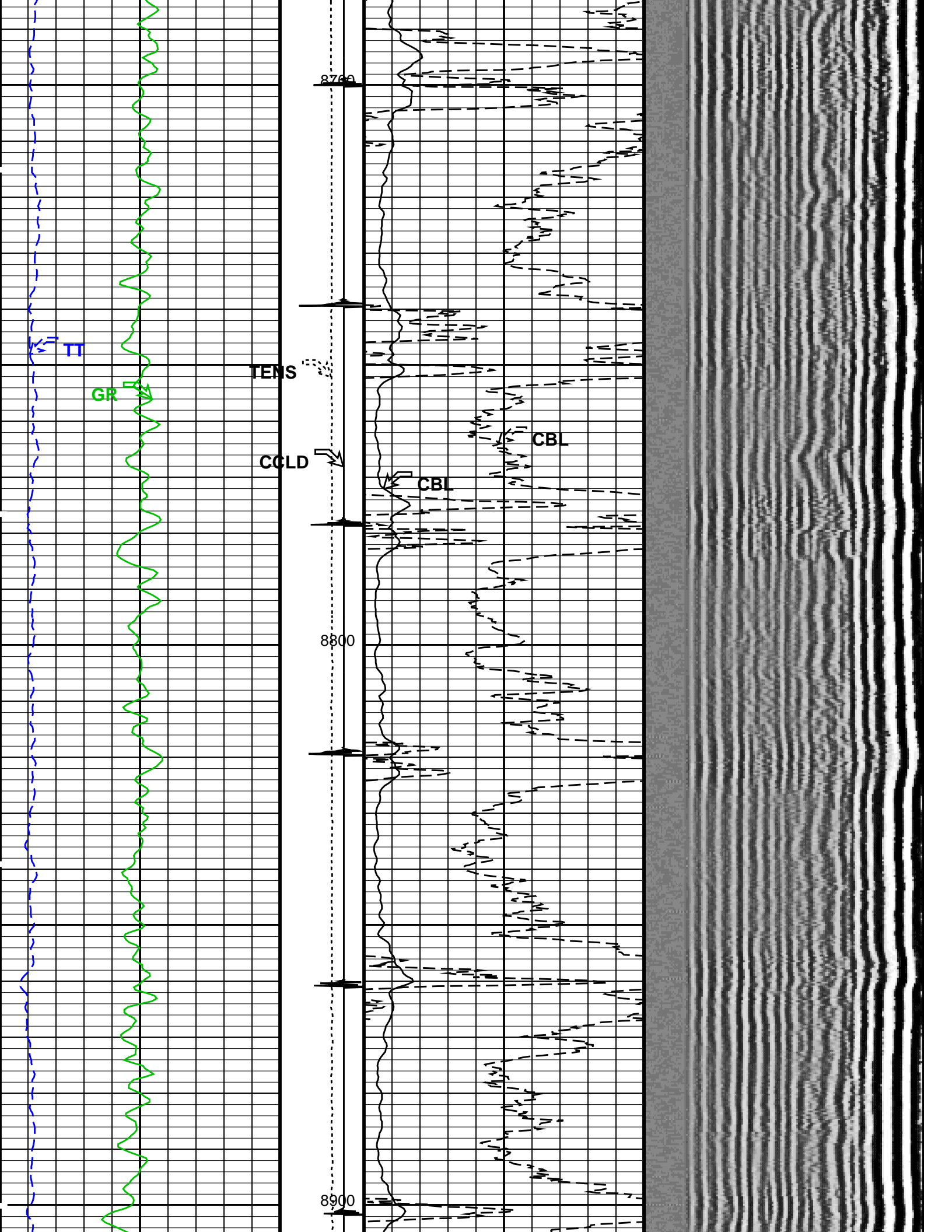


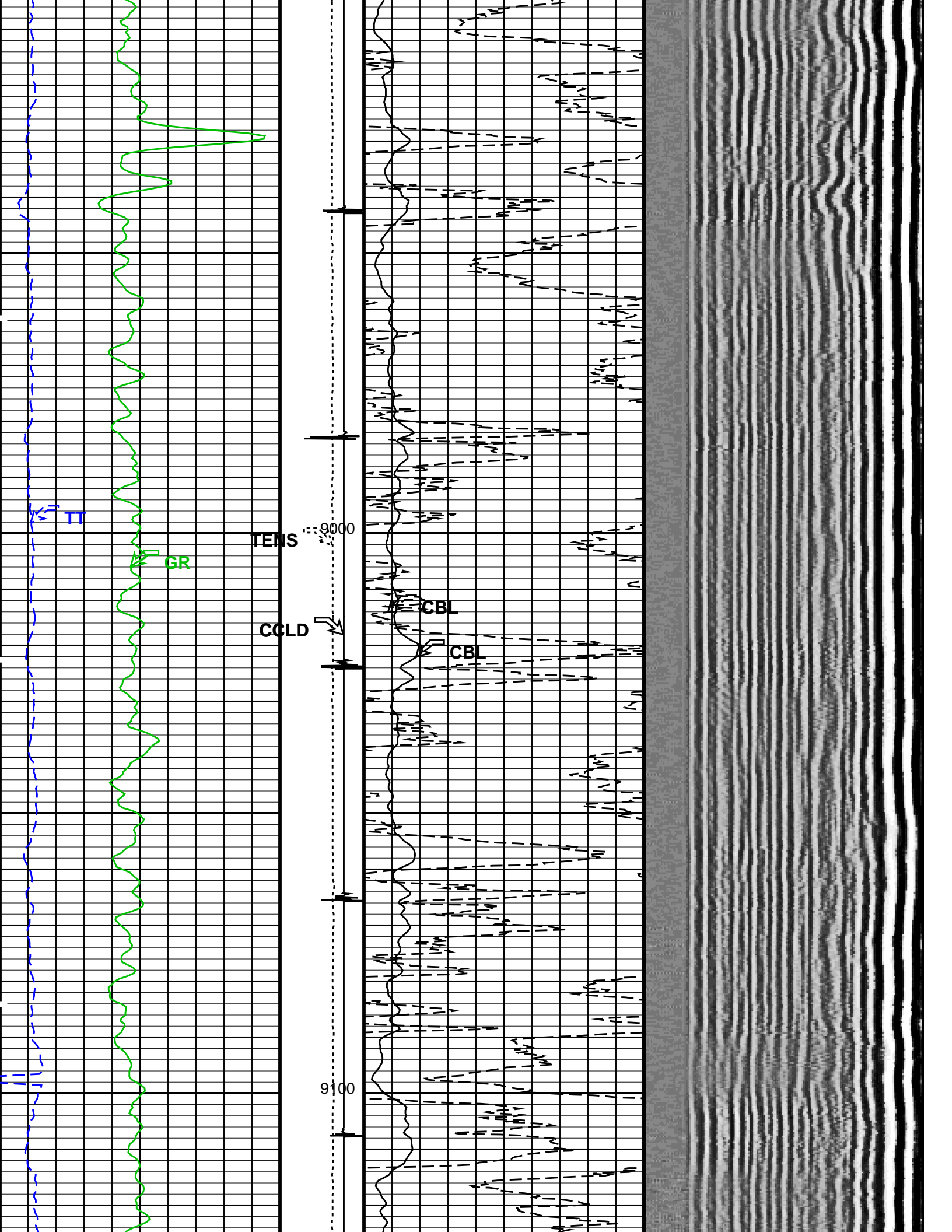




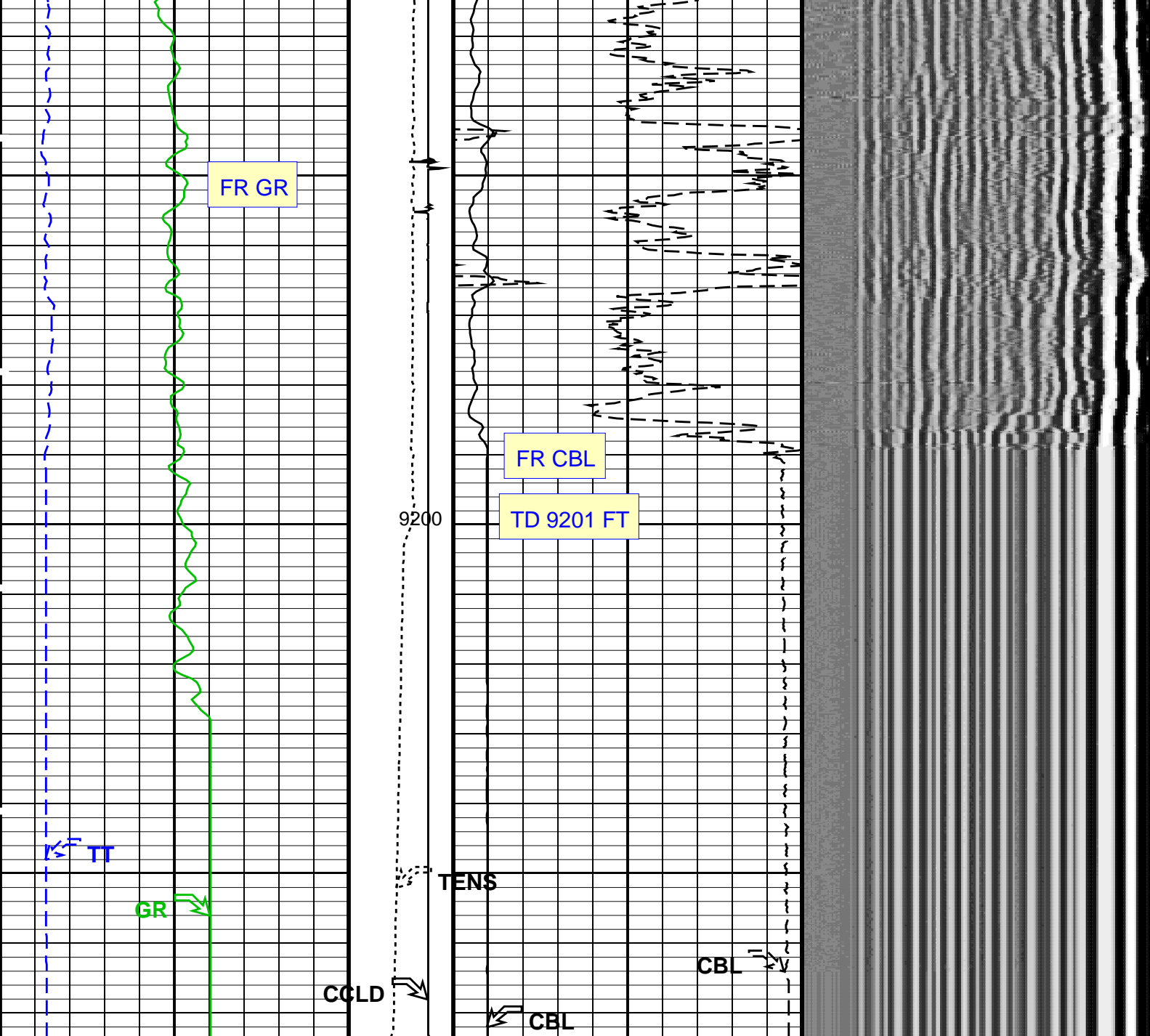












Gamma Ray (GR) (GAPI)	Tension (TENS) (LBF)	CBL Amplitude (CBL) (MV)	Min 200	Amplitude Max	Max 1200
0 150	0 2000	0 100	VDL Variable Density (VDL) (US)		
Transit Time (TT) (US)	Discriminat ed CCL (CCLD) (V)	CBL Amplitude (CBL) (MV)			
260 160	3 -1	0 10			

PIP SUMMARY

Time Mark Every 60 S

Format: CBL\_VDL Vertical Scale: 5" per 100'

Graphics File Created: 13-Aug-2011 00:26

OP System Version: 19C0-187

SCMT-CB SRPC-5047-H1-2011-OP19 RST-C SRPC-5047-H1-2011-OP19  
PSPT 19C0-187

<<<SCMT Cement Evaluation Information Summary>>>

Sonde Serial Number SCMS-CB 8186



Current Casing Size	5.0 IN		
Casing Weight	23.2000 LB/F		
Expected CBL Amplitude in Free Pipe Section	79 MV	Minimum Sonic Amplitude	5.89920 MV (100% Cement)
			9.91197 MV (80% Cement)
		MAP Minimum Sonic Amplitude	19.0993 MV (100% Cement)
			26.5958 MV (80% Cement)

Master Calibration (Normalization)		Before Calibration (Adjustment)	
Date of Master Calibration	23-FEB-2011		
CBL Correction Factor	0.0700110	CBL Adjustment Factor (CBAF)	1.0
MAP 1 Correction Factor	0.0960446	MAP Adjustment Factor (MPAF)	1.0
MAP 2 Correction Factor	0.103019		
MAP 3 Correction Factor	0.112474		
MAP 4 Correction Factor	0.170246		
MAP 5 Correction Factor	0.138168		
MAP 6 Correction Factor	0.126543		
MAP 7 Correction Factor	0.0891491		
MAP 8 Correction Factor	0.107987		

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	229.261	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	343.261	US
CB5T	SCMT CBL 5 ft Fixed Threshold Level	20	MV
CBLG	CBL Gate Width	40	US
CBRA	CBL LQC Reference Amplitude in Free Pipe	79	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	0.480067	IN
DTF	Delta-T Fluid	204.5	US/F
FATT	Acoustic Attenuation due to Fluid	0	DB/F
FCF	CBL Fluid Compensation Factor	1	
GOBO	Good Bond	9.91197	MV
MAPD	SCMT MAP Peak Detection Mode	PEAK	
MAPG	SCMT MAP Peak Detection T0_Delay and Noise Gate	172.261	US
MAPT	SCMT MAP Fixed Threshold Level	30	MV
MATT	Maximum Attenuation	9.1631	DB/F
MCCF	MAP Cement Type Compensation Factor	1	
MCI	Minimum Cemented Interval for Isolation	3	FT
MMSA	MAP Minimum Sonic Amplitude	19.0993	MV
MSA	Minimum Sonic Amplitude	5.8992	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	5.000	IN
CWEI	Casing Weight	23.20	LB/F
DO	Depth Offset for Playback	6.0	FT
DORL	Depth Offset for Repeat Analysis	0.0	FT
PP	Playback Processing	NORMAL	
TD	Total Depth	9201	FT

Input DLIS Files

DEFAULT	SCMT_RST_PSP_006LUP	FN:5	PRODUCER	12-Aug-2011 21:45	9267.5 FT	142.5 FT
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Output DLIS Files

DEFAULT	SCMT_RST_PSP_009PUP	FN:8	PRODUCER	13-Aug-2011 00:26
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Company: ENCANA OIL & GAS (USA) INC

Well: KEINATH FEDERAL 9-14H (C100U)

## Input DLIS Files

DEFAULT	SCMT_RST_PSP_006LUP	FN:5	PRODUCER	12-Aug-2011 21:45	9267.5 FT	142.5 FT
DEFAULT	SCMT_RST_PSP_004PUP	FN:3	PRODUCER	12-Aug-2011 21:36	7517.5 FT	7104.0 FT

## Output DLIS Files

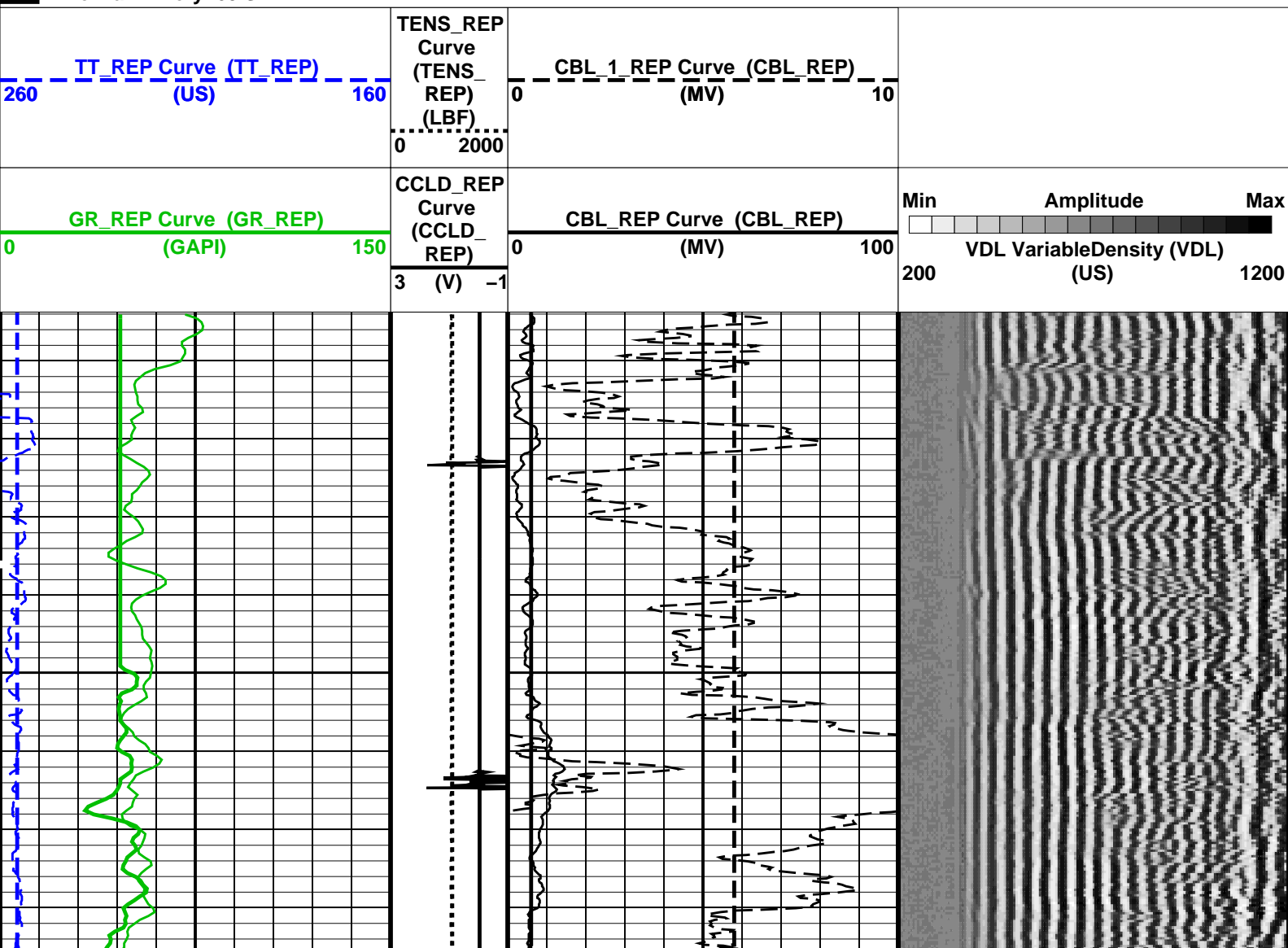
DEFAULT	SCMT_RST_PSP_009PUP	FN:8	PRODUCER	13-Aug-2011 00:26
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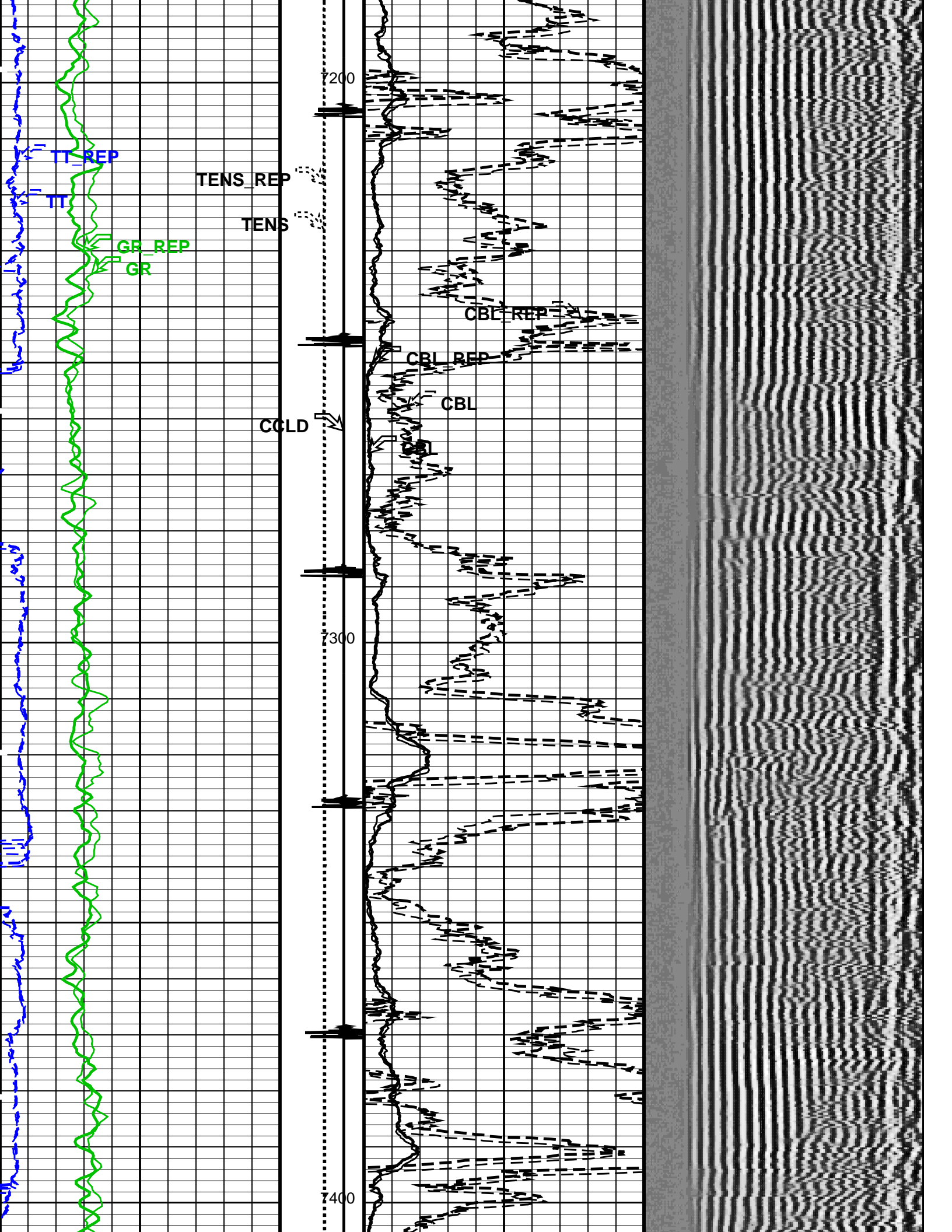
## OP System Version: 19C0-187

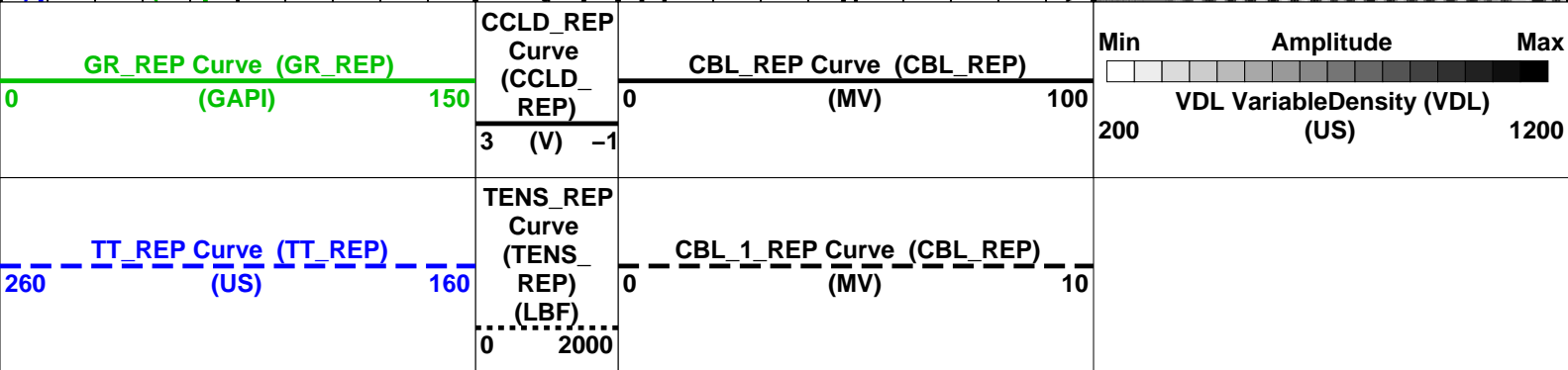
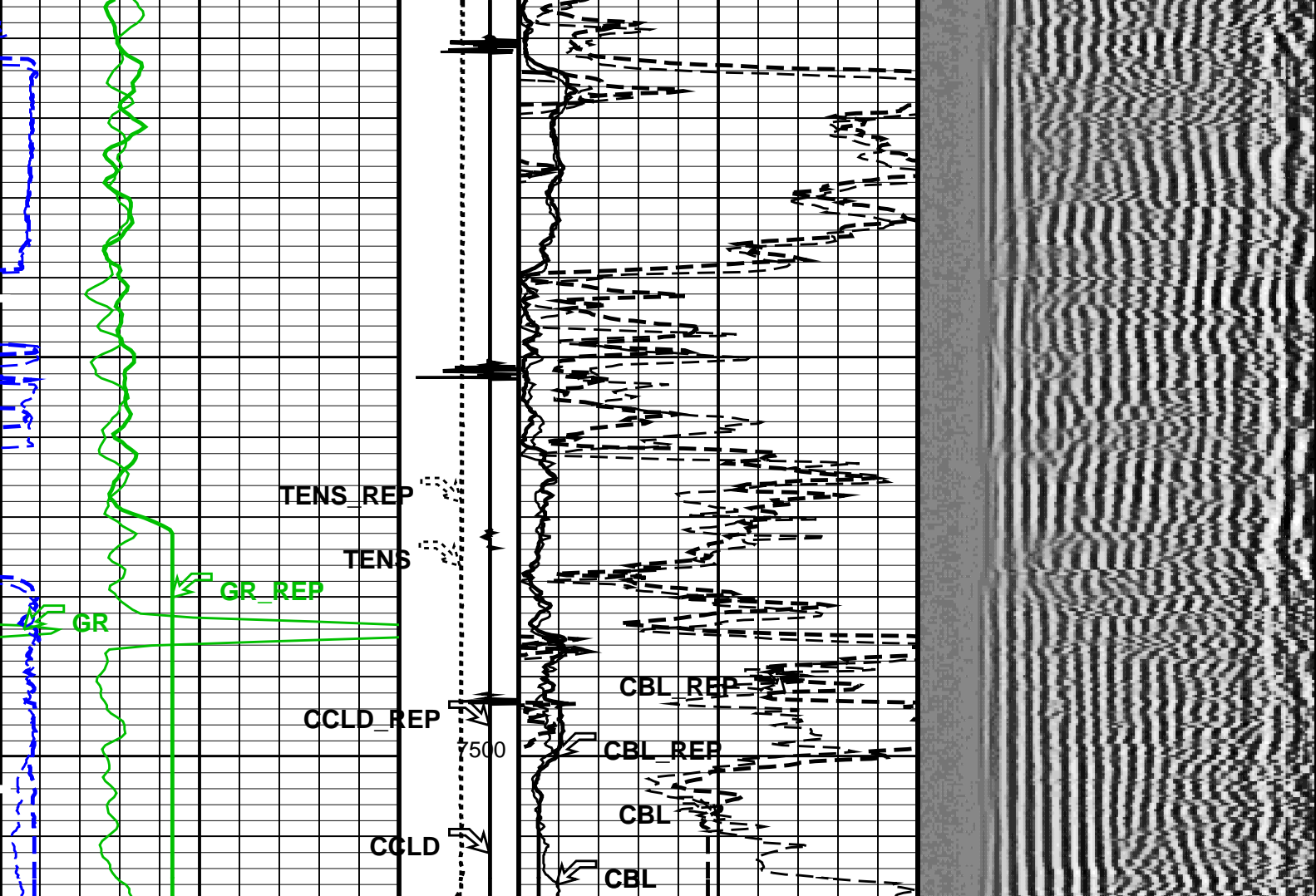
SCMT-CB PSPT	SRPC-5047-H1-2011-OP19 19C0-187	RST-C	SRPC-5047-H1-2011-OP19
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## PIP SUMMARY

☒ Time Mark Every 60 S







PIP SUMMARY

Time Mark Every 60 S

Format: CBL\_VDL\_REP Vertical Scale: 5" per 100'

Graphics File Created: 13-Aug-2011 00:26

OP System Version: 19C0-187

SCMT-CB PSPT	SRPC-5047-H1-2011-OP19 19C0-187	RST-C	SRPC-5047-H1-2011-OP19
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<<<SCMT Cement Evaluation Information Summary>>>

Sonde Serial Number SCMS-CB 8186

Current Casing Size 5.0 IN

Casing Weight 23.2000 LB/F

Expected CBL Amplitude  
in Free Pipe Section 79 MV

Minimum Sonic Amplitude

MAP Minimum Sonic Amplitude

5.89920 MV (100% Cement)

9.91197 MV (80% Cement)

19.0993 MV (100% Cement)

26.5958 MV (80% Cement)

## Master Calibration (Normalization)

## Before Calibration (Adjustment)

Date of Master Calibration 23-FEB-2011

CBL Correction Factor 0.0700110

CBL Adjustment Factor (CBAF) 1.0

MAP 1 Correction Factor 0.0960446

MAP Adjustment Factor (MPAF) 1.0

MAP 2 Correction Factor 0.103019

MAP 3 Correction Factor 0.112474

MAP 4 Correction Factor 0.170246

MAP 5 Correction Factor 0.138168

MAP 6 Correction Factor 0.126543

MAP 7 Correction Factor 0.0891491

MAP 8 Correction Factor 0.107987

## 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	229.261	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	343.261	US
CB5T	SCMT CBL 5 ft Fixed Threshold Level	20	MV
CBLG	CBL Gate Width	40	US
CBRA	CBL LQC Reference Amplitude in Free Pipe	79	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	0.480067	IN
DTF	Delta-T Fluid	204.5	US/F
FATT	Acoustic Attenuation due to Fluid	0	DB/F
FCF	CBL Fluid Compensation Factor	1	
GOBO	Good Bond	9.91197	MV
MAPD	SCMT MAP Peak Detection Mode	PEAK	
MAPG	SCMT MAP Peak Detection T0_Delay and Noise Gate	172.261	US
MAPT	SCMT MAP Fixed Threshold Level	30	MV
MATT	Maximum Attenuation	9.1631	DB/F
MCCF	MAP Cement Type Compensation Factor	1	
MCI	Minimum Cemented Interval for Isolation	3	FT
MMSA	MAP Minimum Sonic Amplitude	19.0993	MV
MSA	Minimum Sonic Amplitude	5.8992	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	5.000	IN
CWEI	Casing Weight	23.20	LB/F
DO	Depth Offset for Playback	6.0	FT
DORL	Depth Offset for Repeat Analysis	0.0	FT
PP	Playback Processing	NORMAL	
TD	Total Depth	9201	FT

## Input DLIS Files

DEFAULT	SCMT_RST_PSP_006LUP	FN:5	PRODUCER	12-Aug-2011 21:45	9267.5 FT	142.5 FT
DEFAULT	SCMT_RST_PSP_004PUP	FN:3	PRODUCER	12-Aug-2011 21:36	7517.5 FT	7104.0 FT

## Output DLIS Files

DEFAULT	SCMT_RST_PSP_009PUP	FN:8	PRODUCER	13-Aug-2011 00:26
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Client:	ENCANA OIL & GAS (USA) INC	Tool:	PSP
Field:	GRAND VALLEY	Sub Type:	PBMS
Well:	C100U PAD	Sensor:	Clock Model
Run date:	12-Aug-2011		

PBMS Digitalization Clock

Sonde Serial NB  
Sensor Serial NB 3779  
Calib Date ddmmyy 090107  
Matrix Size 16  
Coeff CRC D285

	Temp**0	Temp**1	Temp**2
Temp**0	-.210501098404E+03	-.537713340627E+01	-.752421519422E-01
	Temp**3	Temp**4	Temp**5
Temp**0	+.630273975887E-03	+.266728381738E-05	0.0

Client:	ENCANA OIL & GAS (USA) INC	Tool:	PSP
Field:	GRAND VALLEY	Sub Type:	PBMS
Well:	C100U PAD	Sensor:	Sapphire
Run date:	12-Aug-2011		

PBMS Sapphire 10kPsi Gauge

Sonde Serial NB  
Sensor Serial NB 3779  
Calib Date ddmmyy 090107  
Matrix Size 66  
Coeff CRC 4C82

	Tt**0	Tt**1	Tt**2
Tp**0	-.611876617639E+04	+.471061007964E+04	-.216447354932E+04

Tp**1	+.371836126905E+04	−.234756196935E+04	+.129149325686E+04
Tp**2	+.193143980957E+02	−.189348218853E+01	−.341812471126E+01
Tp**3	−.568815065386E+01	+.200079683569E+01	0.0
Tp**4	0.0	0.0	0.0
Tp**5	0.0	0.0	0.0
	Tt**3	Tt**4	Tt**5
Tp**0	+.380249508124E+03	−.247683004908E+02	0.0
Tp**1	−.227135245080E+03	+.146352372057E+02	0.0
Tp**2	0.0	0.0	0.0
Tp**3	0.0	0.0	0.0
Tp**4	0.0	0.0	0.0
Tp**5	0.0	0.0	0.0

PBMS Sapphire 10kPsi Gauge

Sonde Serial NB :  
Sensor Serial NB 3779  
Calib Date ddmmyy 090107  
Matrix Size 66  
Coeff CRC C39E

Temp Coeff

	Tp**0	Tp**1	Tp**2
Tt**0	−.278275571347E+03	+.251216271916E+01	−.820715649824E+00
Tt**1	+.598349067015E+02	−.107326373545E+01	+.652890183203E−01
Tt**2	+.109160002120E+02	+.262812193556E+00	−.450134240377E−02
Tt**3	−.673302171285E+00	−.213772918779E−01	0.0
Tt**4	0.0	0.0	0.0
Tt**5	0.0	0.0	0.0
	Tp**3	Tp**4	Tp**5
Tt**0	+.151507143209E+00	−.592670012996E−02	0.0
Tt**1	+.127486538512E−01	−.437897076104E−02	0.0
Tt**2	0.0	0.0	0.0
Tt**3	0.0	0.0	0.0
Tt**4	0.0	0.0	0.0
Tt**5	0.0	0.0	0.0

Client: ENCANA OIL & GAS (USA) INC

Field: GRAND VALLEY

Well: C10OU PAD

Run date: 12–Aug–2011

Tool: PSP

Sub Type: PBMS

Sensor: GR

PBMS Gamma Ray

Sonde Serial NB

Sensor Serial NB

Calib Date ddmmyy

Matrix Size

Coeff CRC

RESISTORS FOR GR SENSOR N.34552,TOOL PBMS–AA3779. SENSOR S/N:

34552

030606

12

3AE5

GR HV Rt

	Rt**0	Rt**1
Rt**0	+.200000000000e+04	+.214000000000e+04

Client: ENCANA OIL & GAS (USA) INC

Field: GRAND VALLEY

Well: C10OU PAD

Run date: 12–Aug–2011

Tool: PSP

Sub Type: PBMS

Sensor: WellTemp RTD

PBMS RTD Well Thermometer

Sonde Serial NB

Sensor Serial NB

Calib Date ddmmyy

Matrix Size

Coeff CRC

COEFFICIENTS FOR RTD THERMOMETER PBMS–A.3779 S/N:

3779

090107

16

3846

WTemp Coeff

	Tt**0	Tt**1	Tt**2
Tt**0	+.492135102627E+02	–.278827553804E+03	+.142867554561E+03
	Tt**3	Tt**4	Tt**5
Tt**0	–.233378392336E+02	+.145553494493E+01	0.0

Company: ENCANA OIL & GAS (USA) INC



Well: KEINATH FEDERAL 9–14H (C100U)

Field: GRAND VALLEY

County: GARFIELD

State: COLORADO

CEMENT BOND LOG  
CBL – VDL  
GAMMA RAY – CCL