



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

Well: **HAGEN 15-14A (PC22)**

Field: **SOUTH PARACHUTE**

County: **GARFIELD** State: **COLORADO**

**SLIM CEMENT MAPPING LOG**  
**CBL-VDL**  
**GAMMA RAY-CCL**

County:	GARFIELD		
Field:	SOUTH PARACHUTE		
Location:	SHL: 584 FNL & 1751 FWL		
Well:	HAGEN 15-14A (PC22)		
Company:	ENCANA OIL & GAS (USA) INC		
LOCATION			
SHL: 584 FNL & 1751 FWL BHL: 944 FSL & 2401 FWL		Elev.:	K.B. 6543.00 ft G.L. 6521.00 ft D.F. 6542.00 ft
Permanent Datum: _____		GROUND LEVEL	Elev.: 6521.00 ft
Log Measured From: _____		KELLY BUSHING	22.00 ft above Perm. Datum
Drilling Measured From: _____		KELLY BUSHING	
API Serial No. 05-045-22019-0C		Section 22	Township 7S Range 95W

Logging Date	14-Sep-2013		
Run Number	1		
Depth Driller	8080 ft		
Schlumberger Depth	7982 ft		
Bottom Log Interval	7973 ft		
Top Log Interval	50 ft		
Casing Fluid Type	FRESH WATER		
Salinity			
Density	8.4 lbm/gal		
Fluid Level	50 ft		
BIT/CASING/TUBING STRING			
Bit Size	8.750 in		
From	22 ft		
To	8080 ft		
Casing/Tubing Size	4.500 in		
Weight	11.6 lbm/ft		
Grade	S-80		
From	22 ft		
To	8080 ft		
Maximum Recorded Temperatures	218 degF		
Logger On Bottom	14-Sep-2013	Time	11:45
Unit Number	338	Location	GRAND JUNCTION
Recorded By	KIRSTIE BUNTING		
Witnessed By	ANDY HILL		

PVT DATA			
Oil Density	Run 1	Run 2	R
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			

## Date Created: 14-AUG-2013 11:54:57

## Logging Cable

Type:	1-25ZT
Serial Number:	112136
Length:	19000 FT
<hr/>	
Conveyance Method:	Wireline
Rig Type:	LAND

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

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.

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 SERVICES2  
OS1:  
OS2:  
OS3:  
OS4:  
OS5:

REMARKS: RUN NUMBER 2









TOOL RAN AS PER TOOL SKETCH

TIME ON BOTTOM: 11:45

EXIT- 15:00	
MAXIMUM RECORDED TEMPERATURE: 218 DEGF	
MAXIMUM RECORDED PRESSURE: 3288 PSIA	
SHORT JOINTS: 5754 FT & 6742 FT	
MAIN PASS LOGGED UNDER ZERO SURFACE PRESSURE	
EXPECTED CBL AMPLITUDE IN FREE PIPE IS 80MV	
CREW: KBUNTING, KJOHNS, JMANN	
THANK YOU FOR CHOOSING E&P WIRELINE, A SCHLUMBERGER COMPANY	

RUN 1			RUN 2		
SERVICE ORDER #:	CGF9-00139		SERVICE ORDER #:		
PROGRAM VERSION:	19C0-187		PROGRAM VERSION:		
FLUID LEVEL:	50 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			
MH-22			53.3
MH-22			
Detail MT			
AH-38	TelStatus		51.7
CTEM			51.5
PSPT			51.5
PSC-A			
PSPT-B 928			
PSTC-A			
PBMS-B	GR		47.8
CQG_F_Mano			
RTD_Thermometer			
GR	Well_Temp		44.7
CCL	CQG Manom		44.4
PBMS	CCL		44.0
	PBMS PSTC		43.2
RST-C			43.2
RSCH-A 197			
RSC-E			
RSS-A 255			
RSXH-A 425			
RSX-E			

SCMT-CB  
SCMC-CA 8120  
SECH-CA  
CMIR-AG  
SCMS-CB 8179  
SCMX-CA

20.2

DT 11.1  
CBL5 DTSC 9.6  
CBL3 8.6  
MAP 8.1  
AUX 7.1

20.2  
AH-BNS  
Tension SCMT  
HV  
TOOL ZERO  
0.0  
0.2

MAXIMUM STRING DIAMETER 1.72 IN  
MEASUREMENTS RELATIVE TO TOOL ZERO  
ALL LENGTHS IN FEET

Schlumberger

MAIN PASS CBL VDL

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC

Input DLIS Files

Well: HAGEN 15-14A (PC22

DEFAULT      Splice\_SCMT\_RST\_PSP\_057CUP      FN:1      PRODUCER      14-Sep-2013 15:09      8000.0 FT      0.2 FT

Output DLIS Files

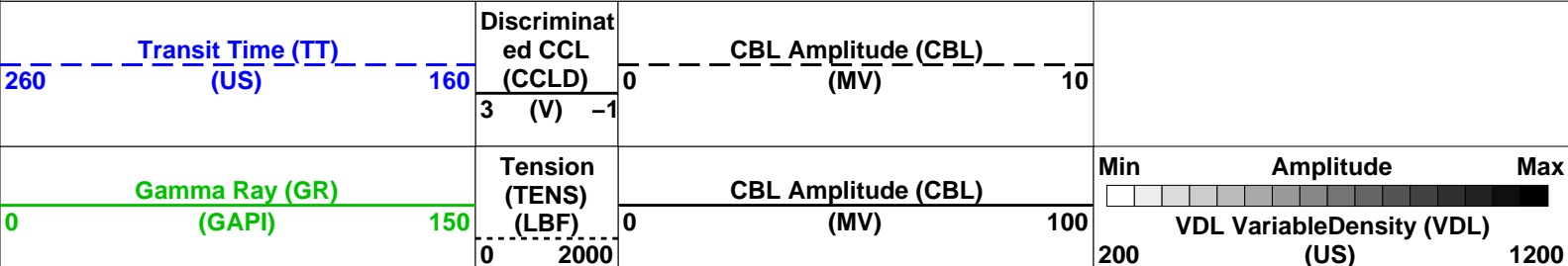
DEFAULT      SCMT\_RST\_PSP\_059PUP      FN:55      PRODUCER      14-Sep-2013 15:15      7992.5 FT      -47.0 FT

OP System Version: 19C0-187

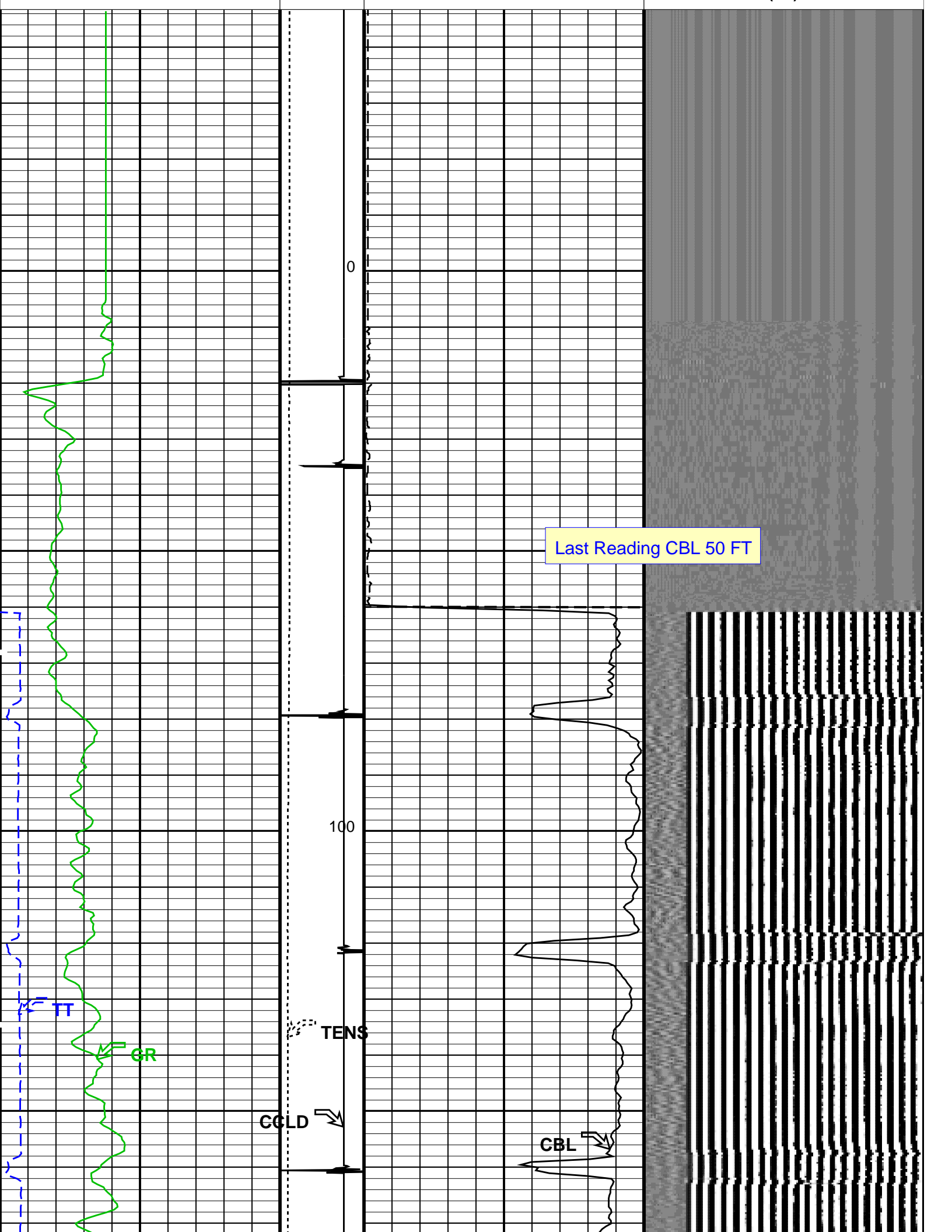
SCMT-CB      19C0-187      RST-C      19C0-187  
PSPT      19C0-187

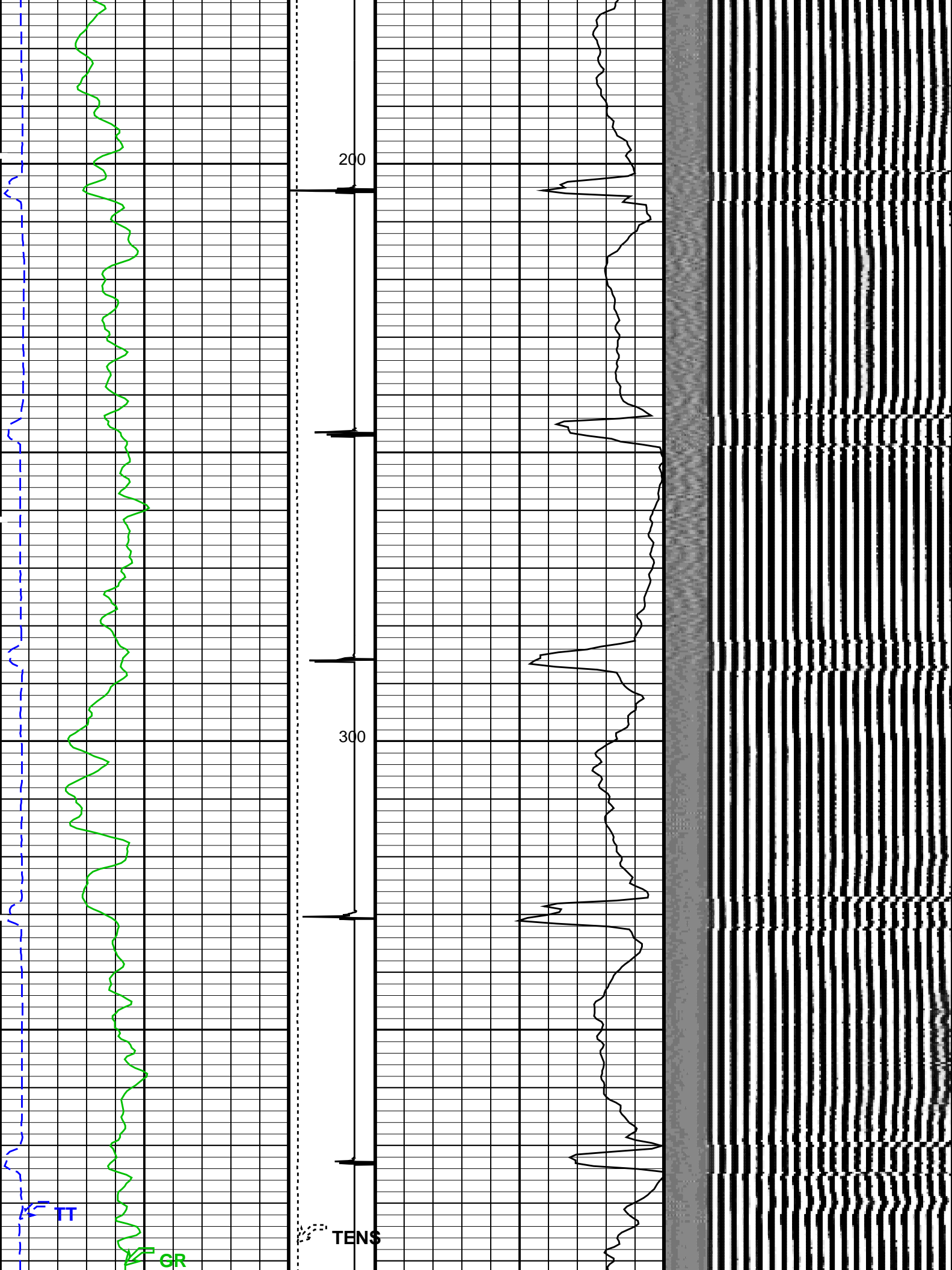
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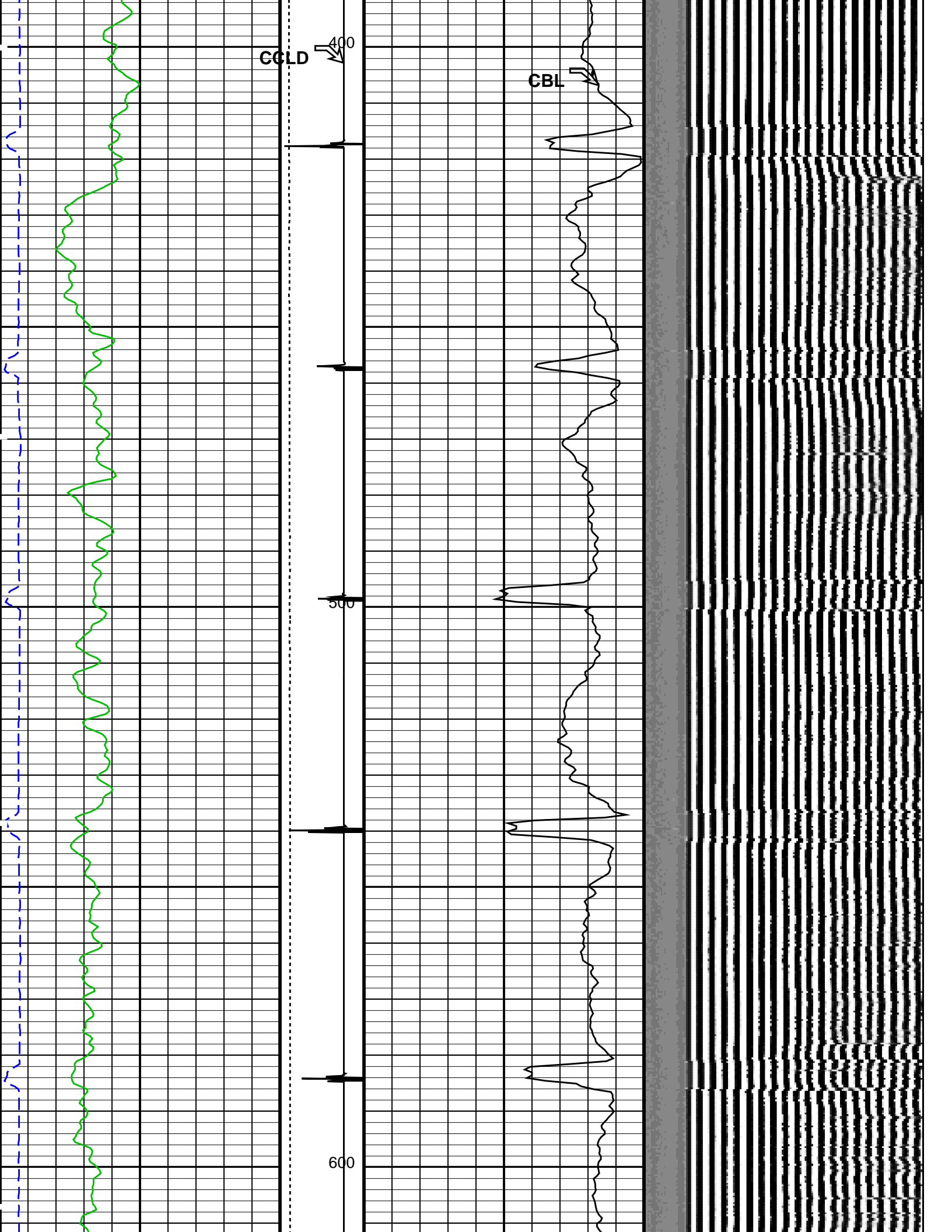
Time Mark Every 60 S

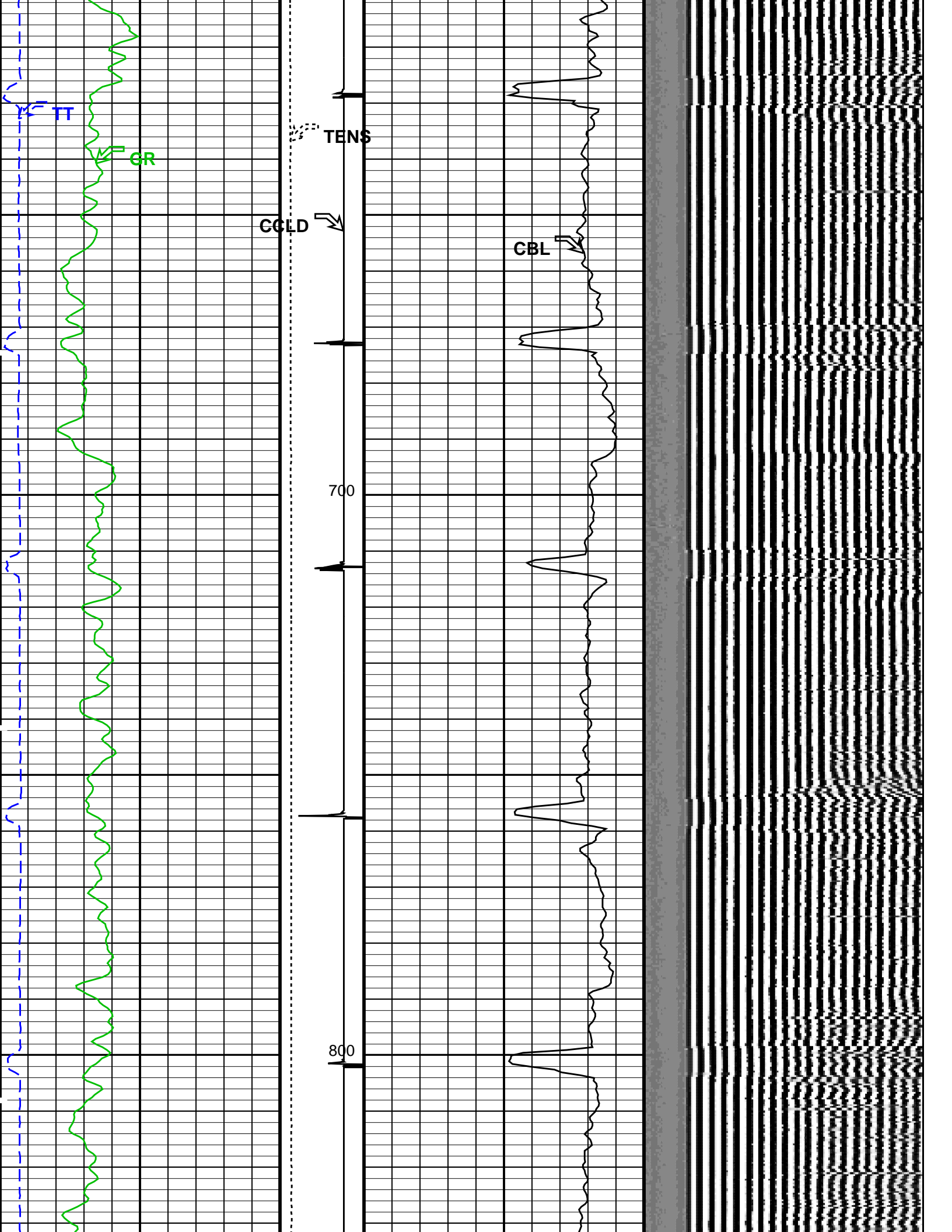


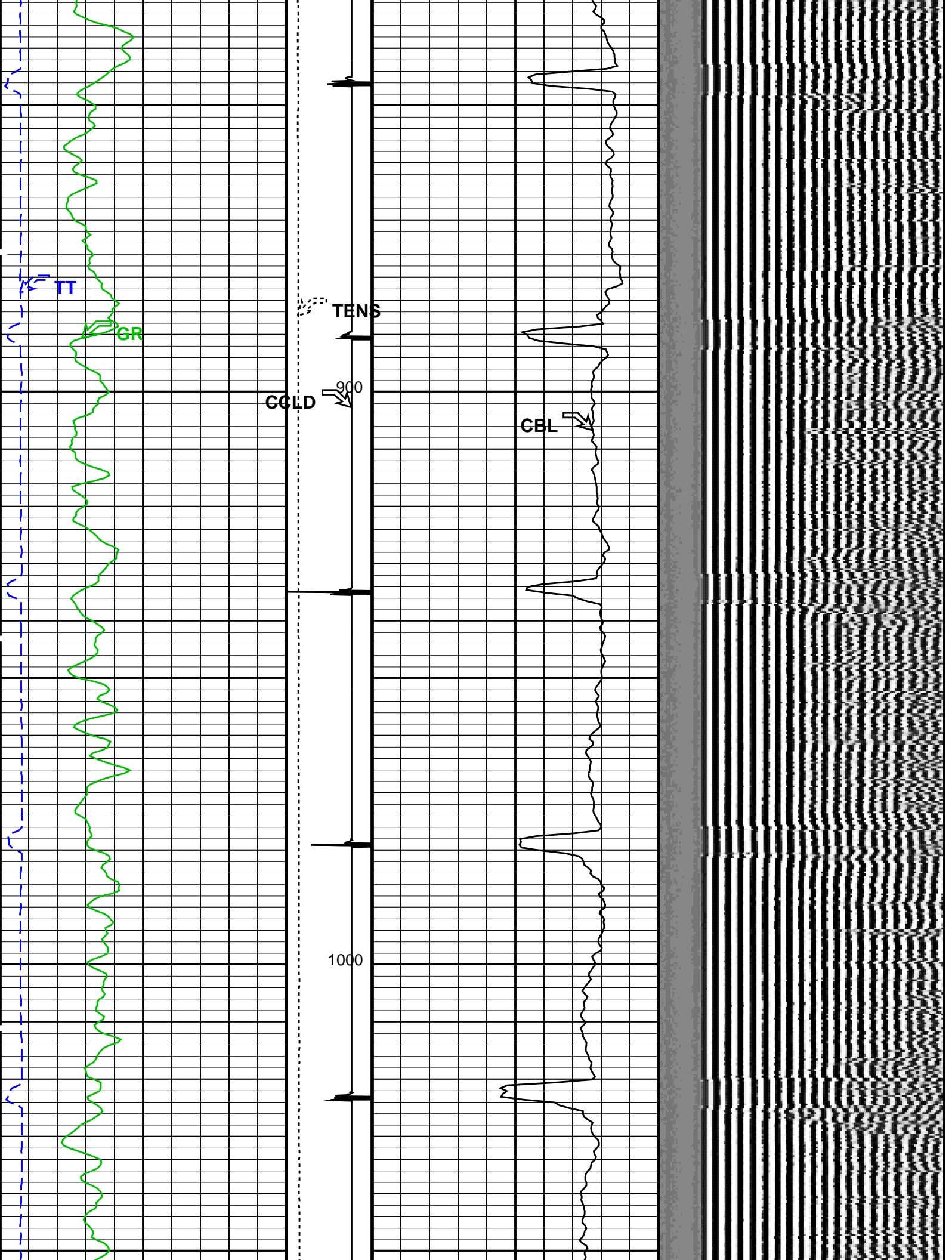




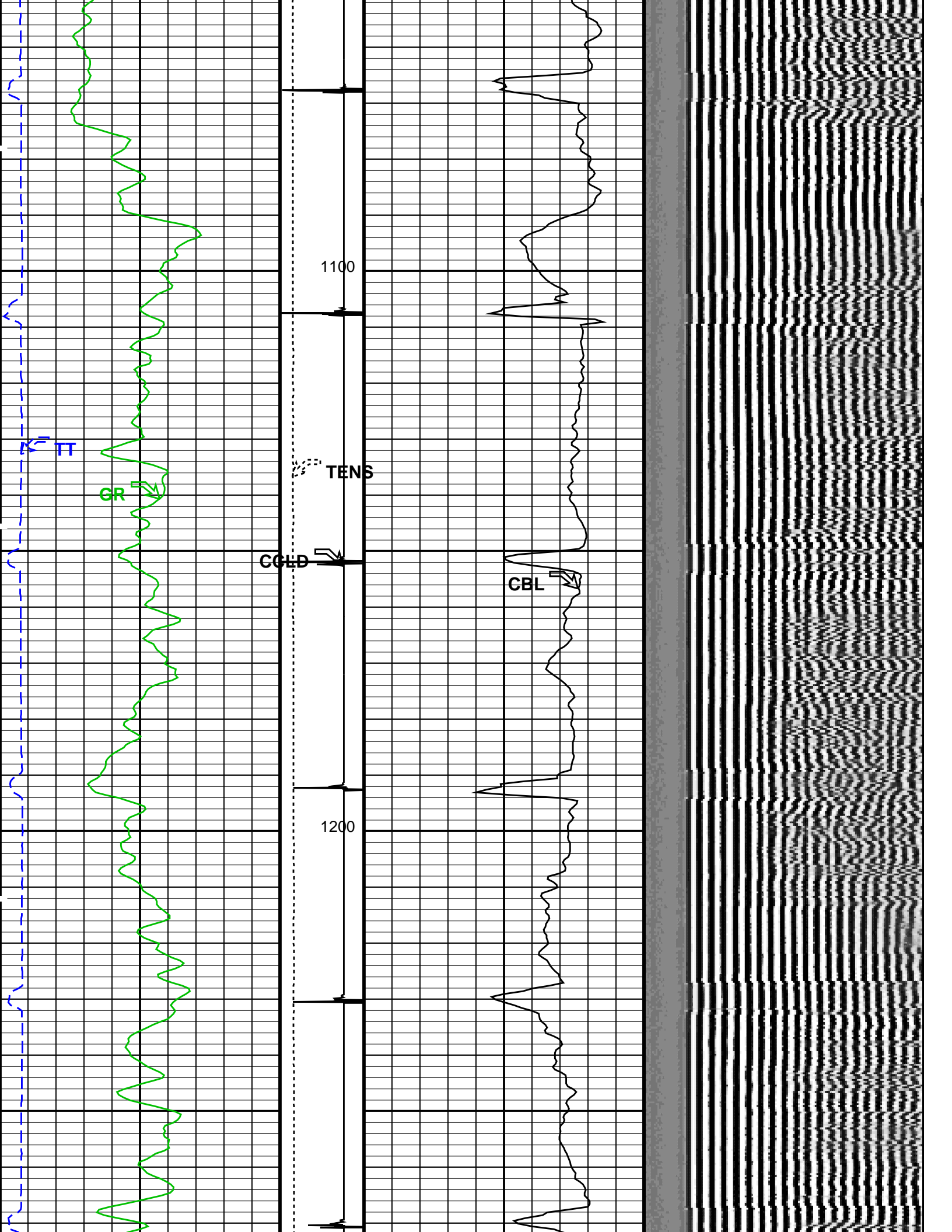


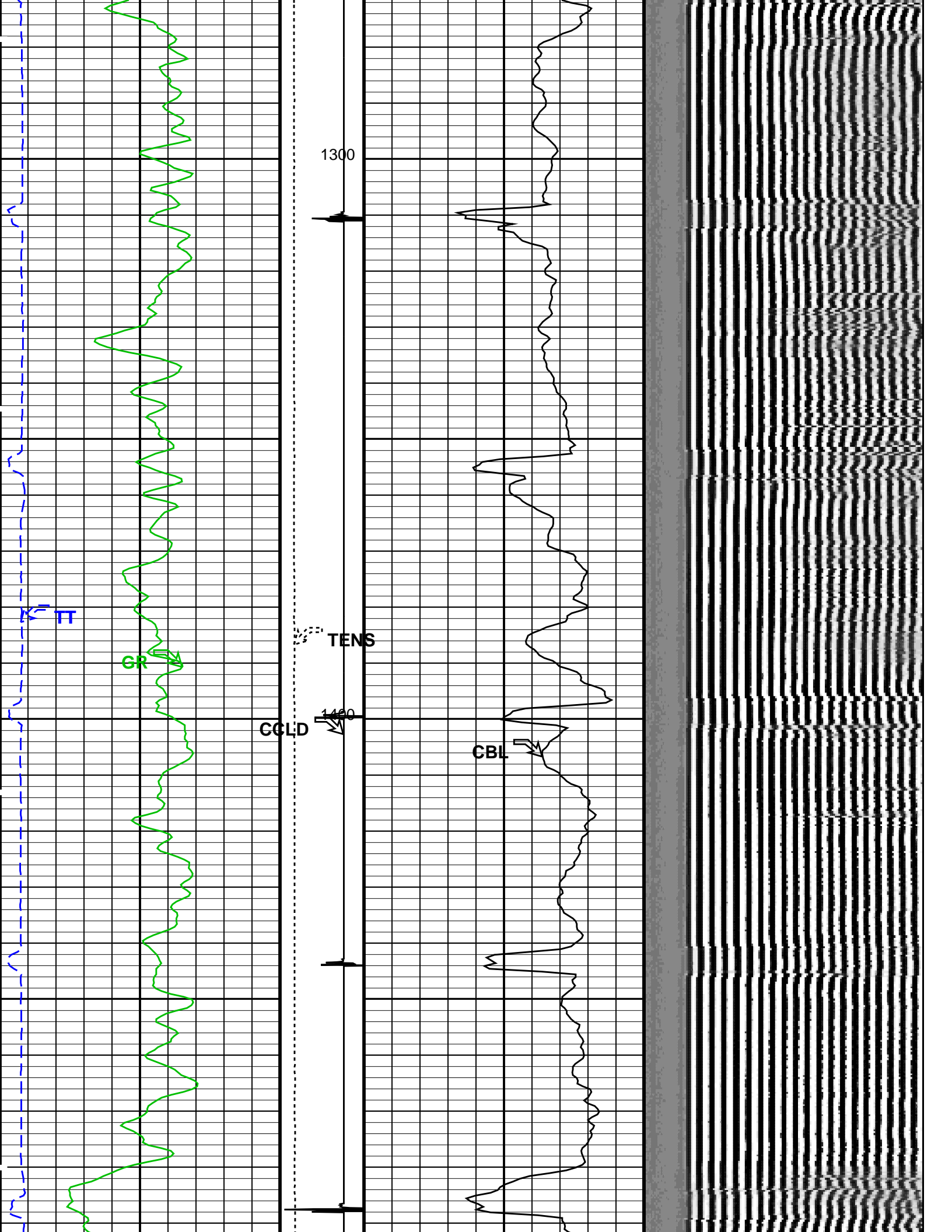


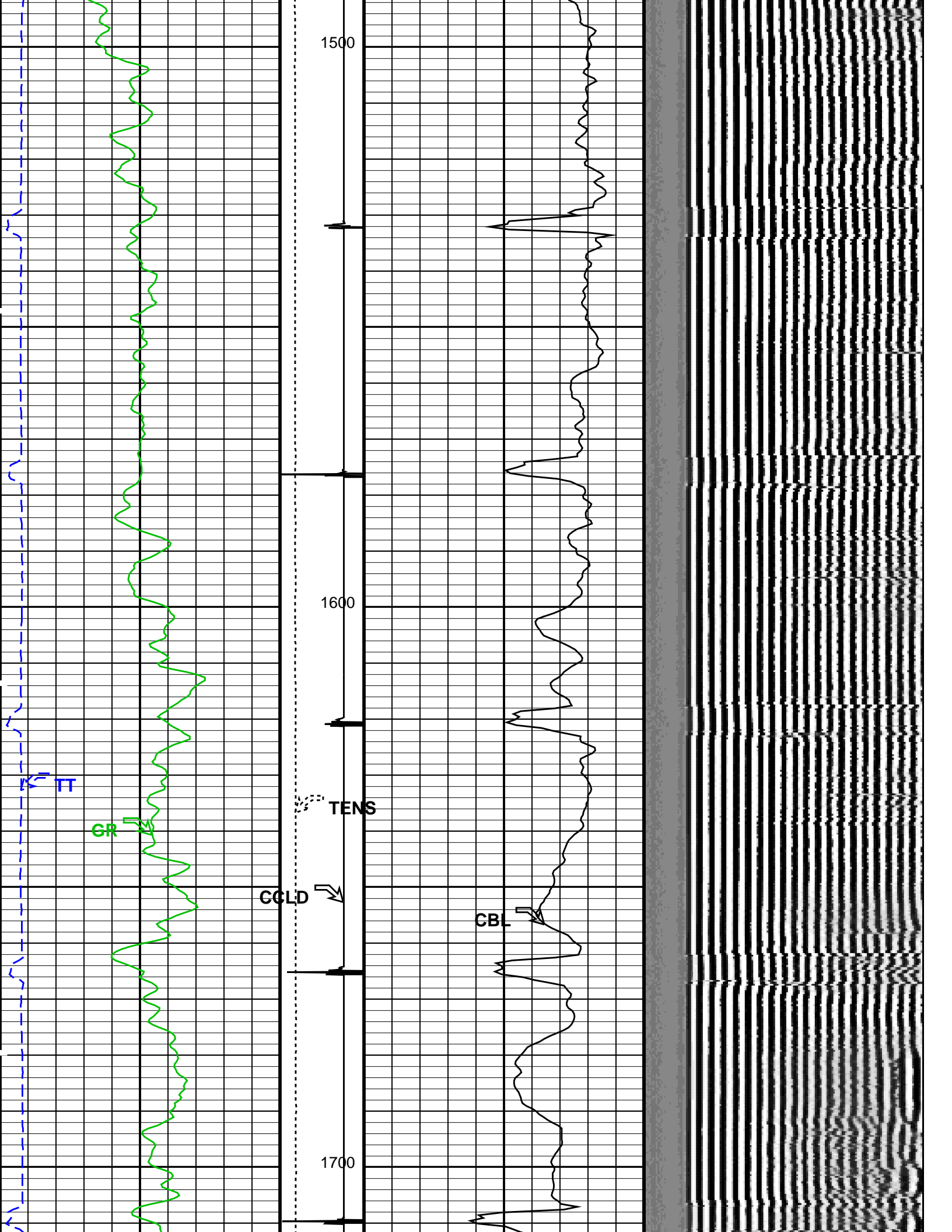




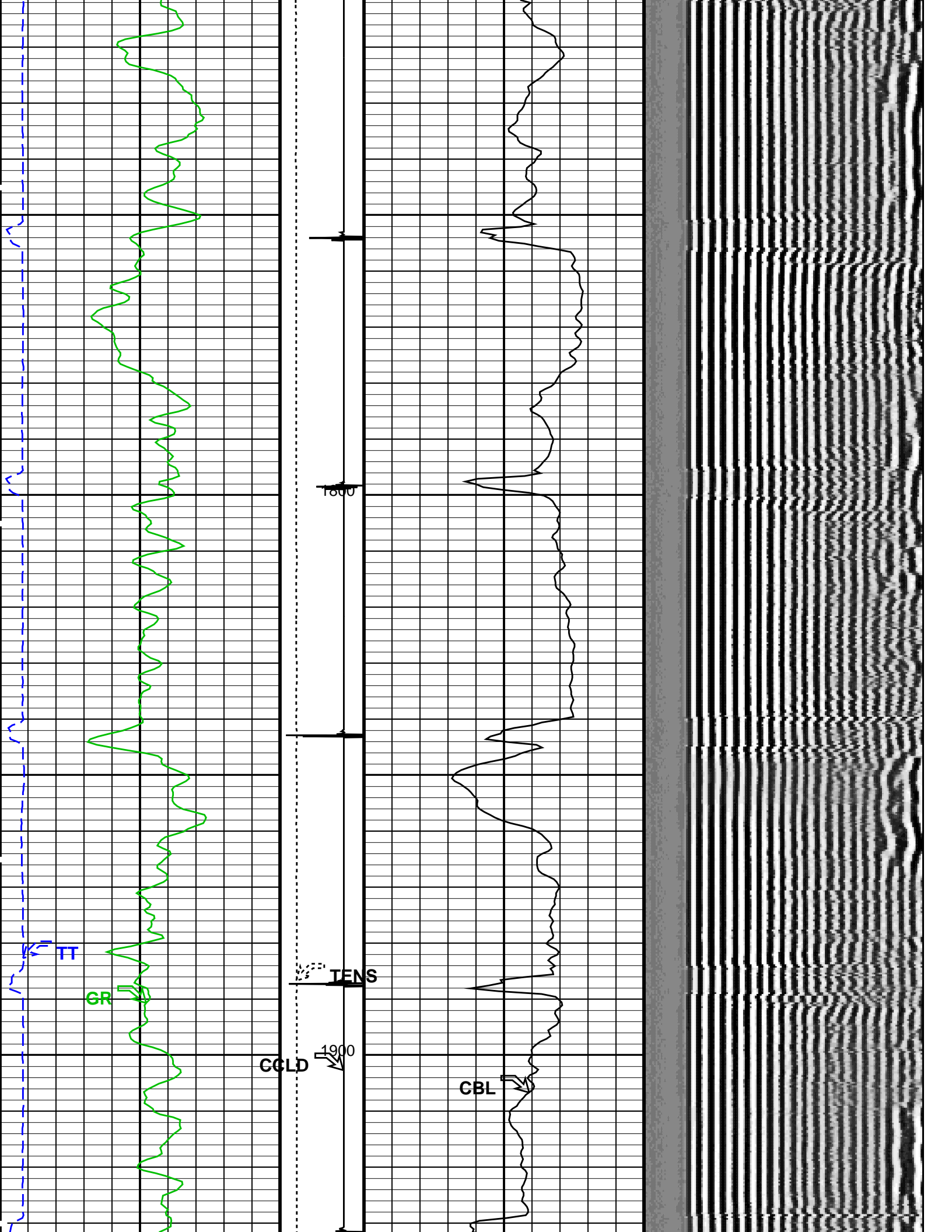


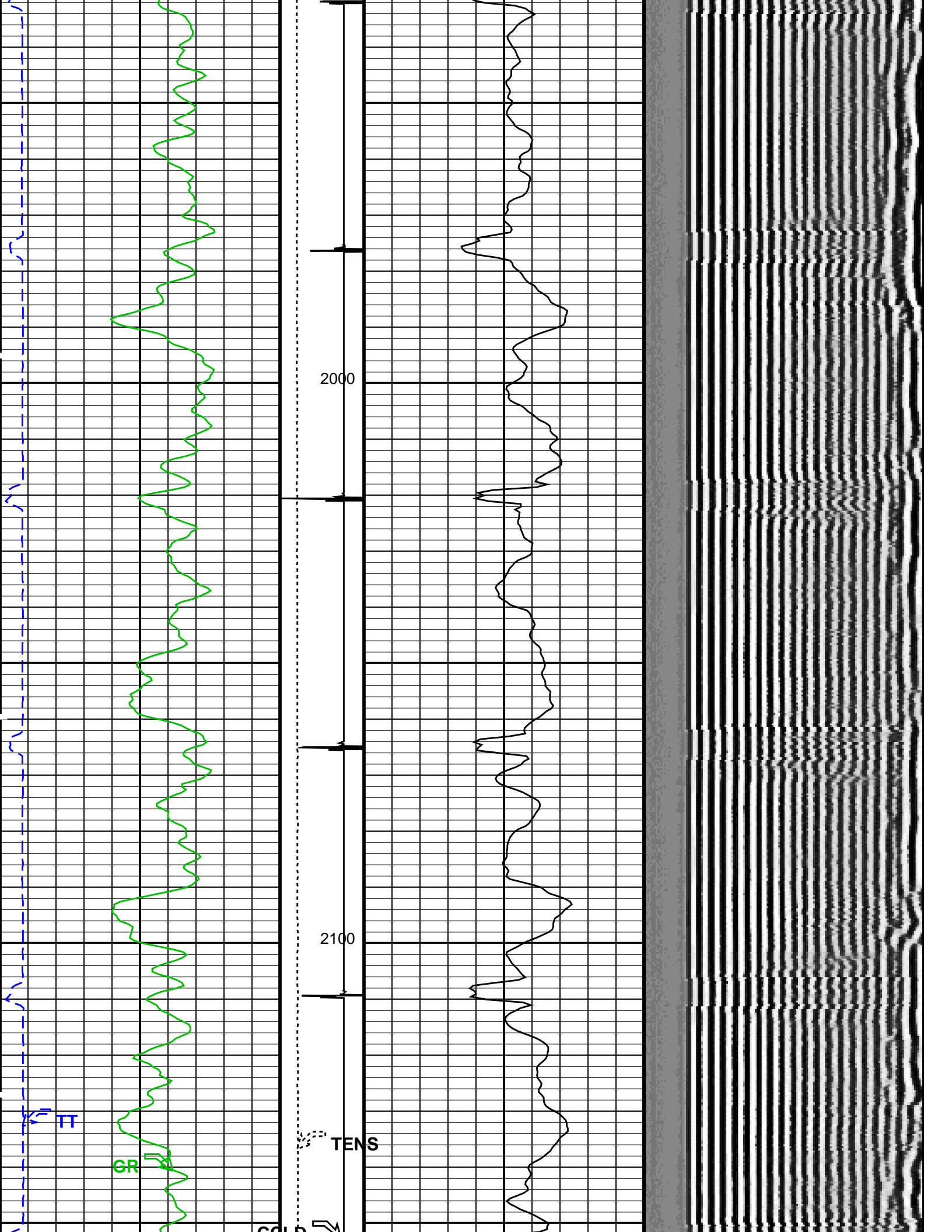


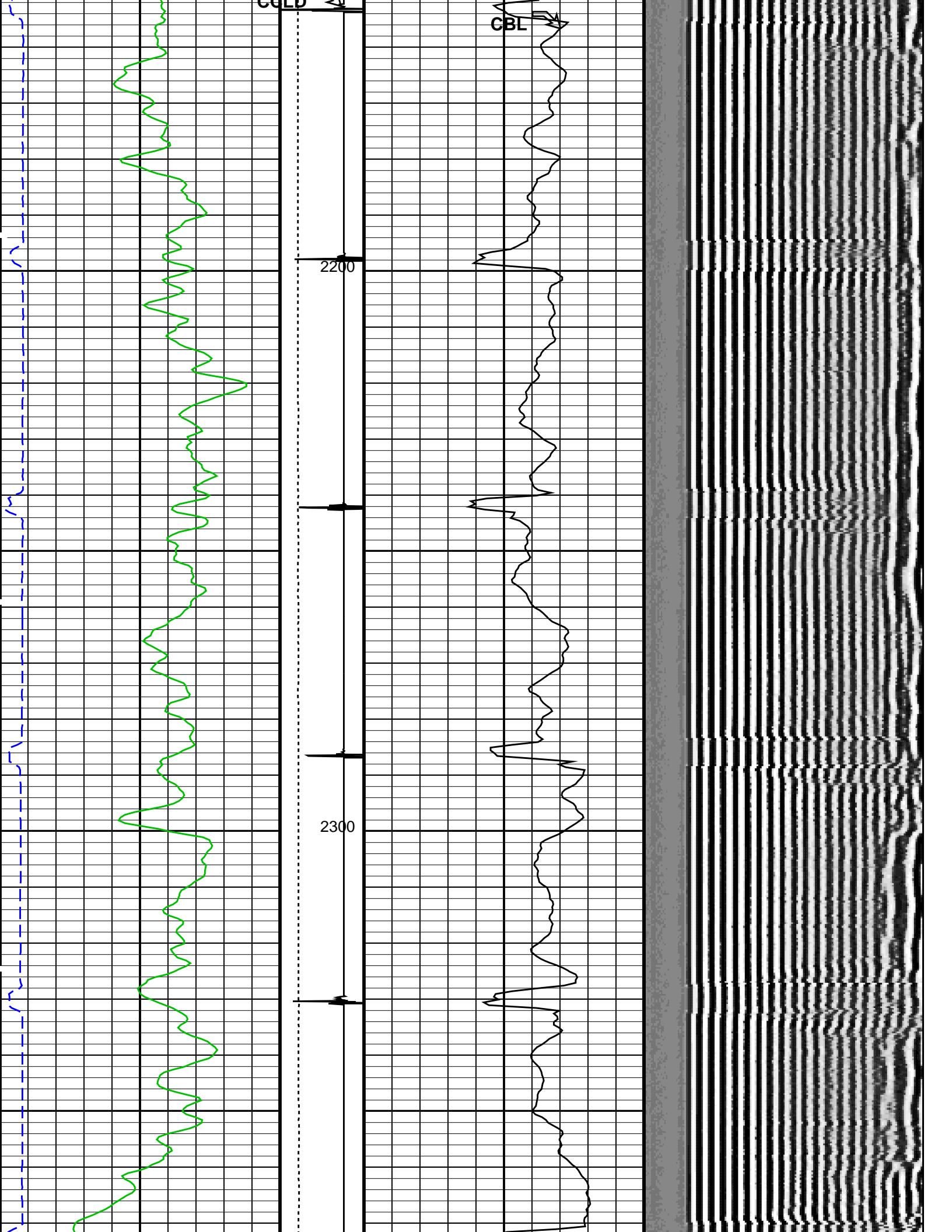


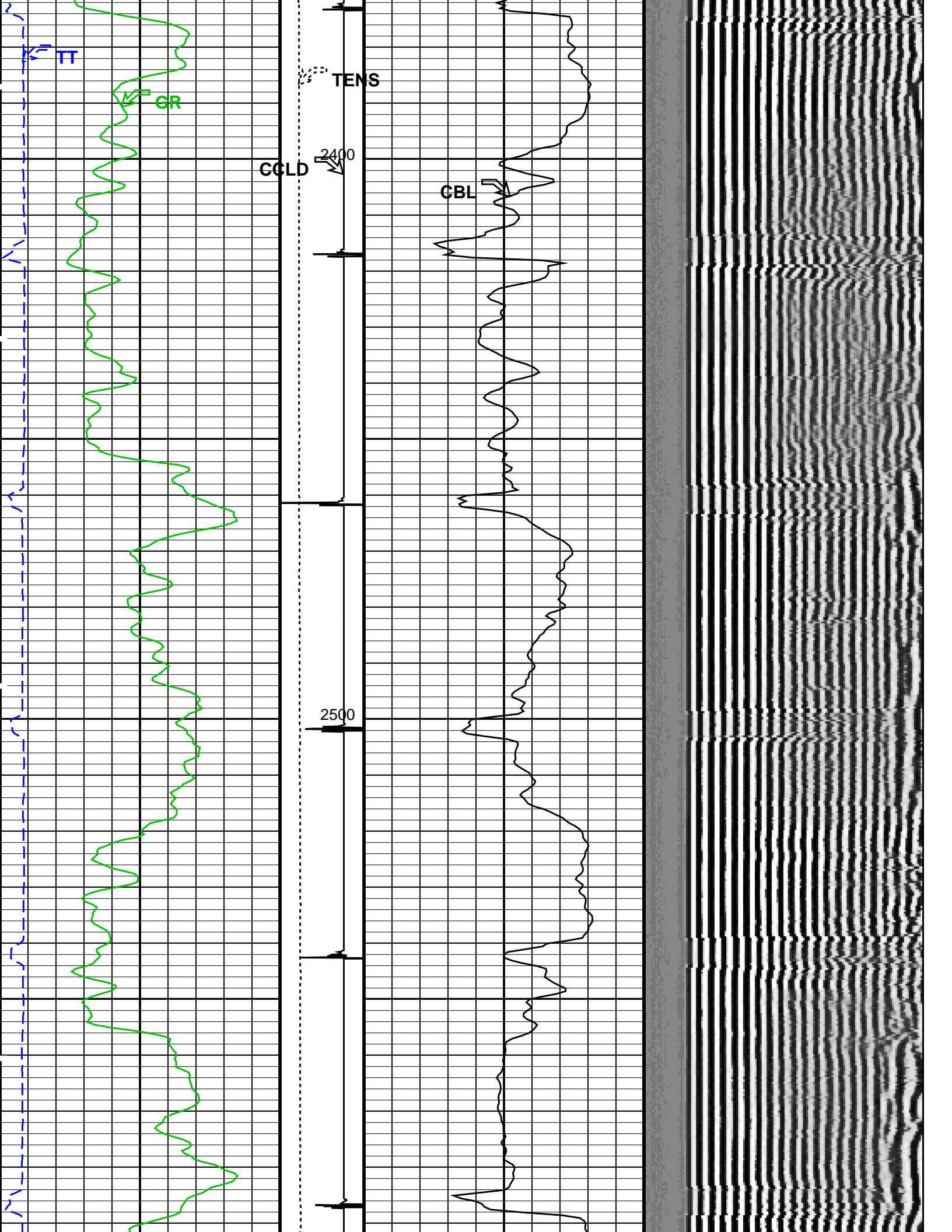




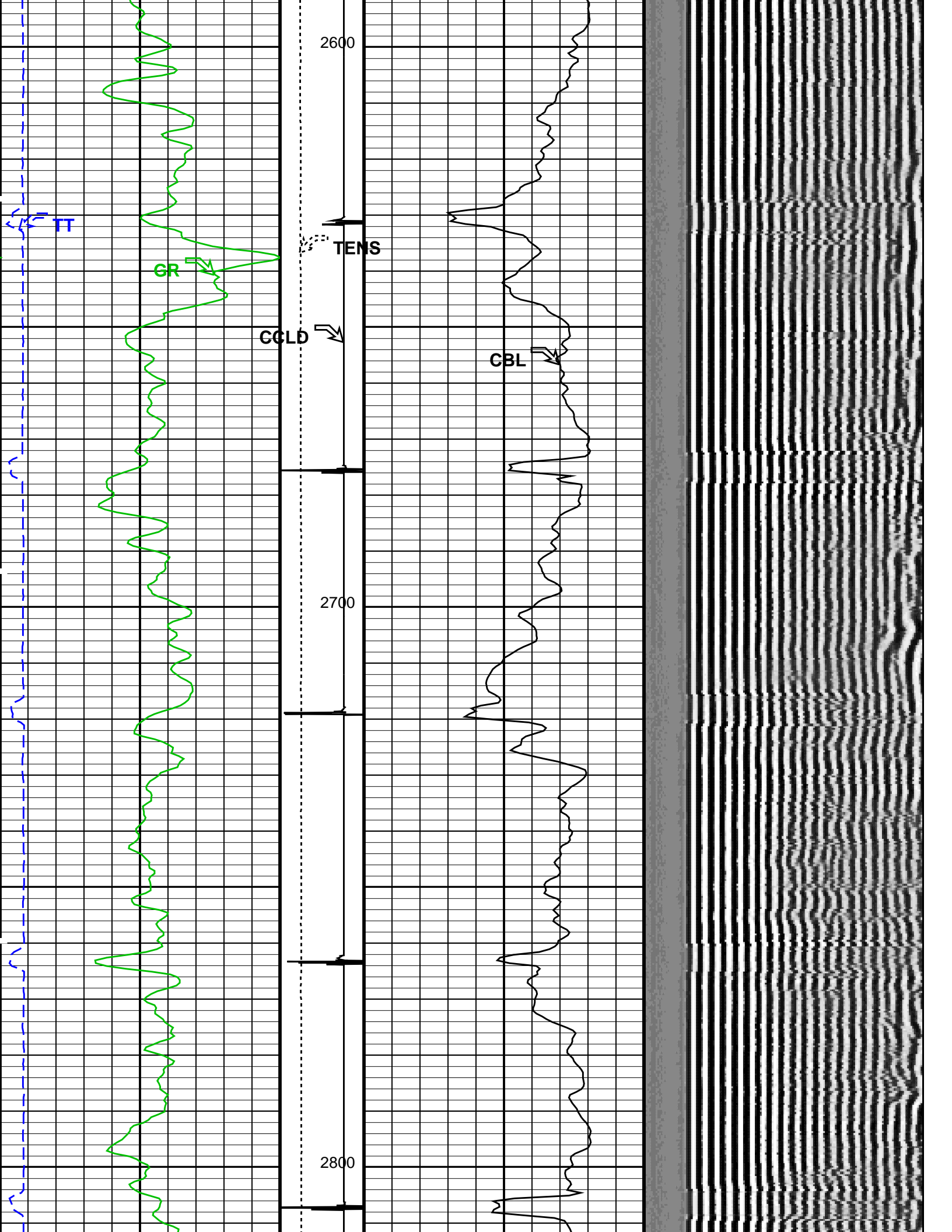


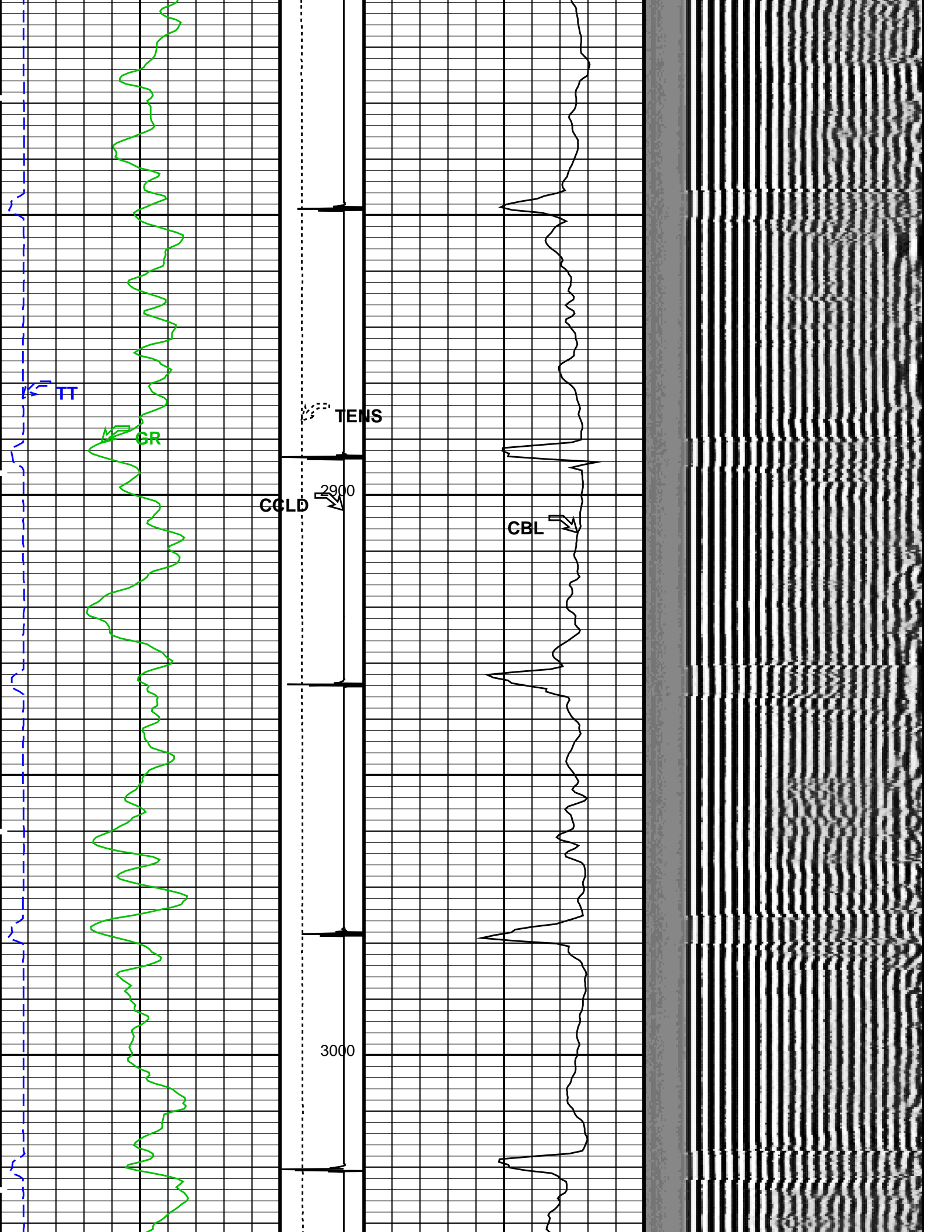


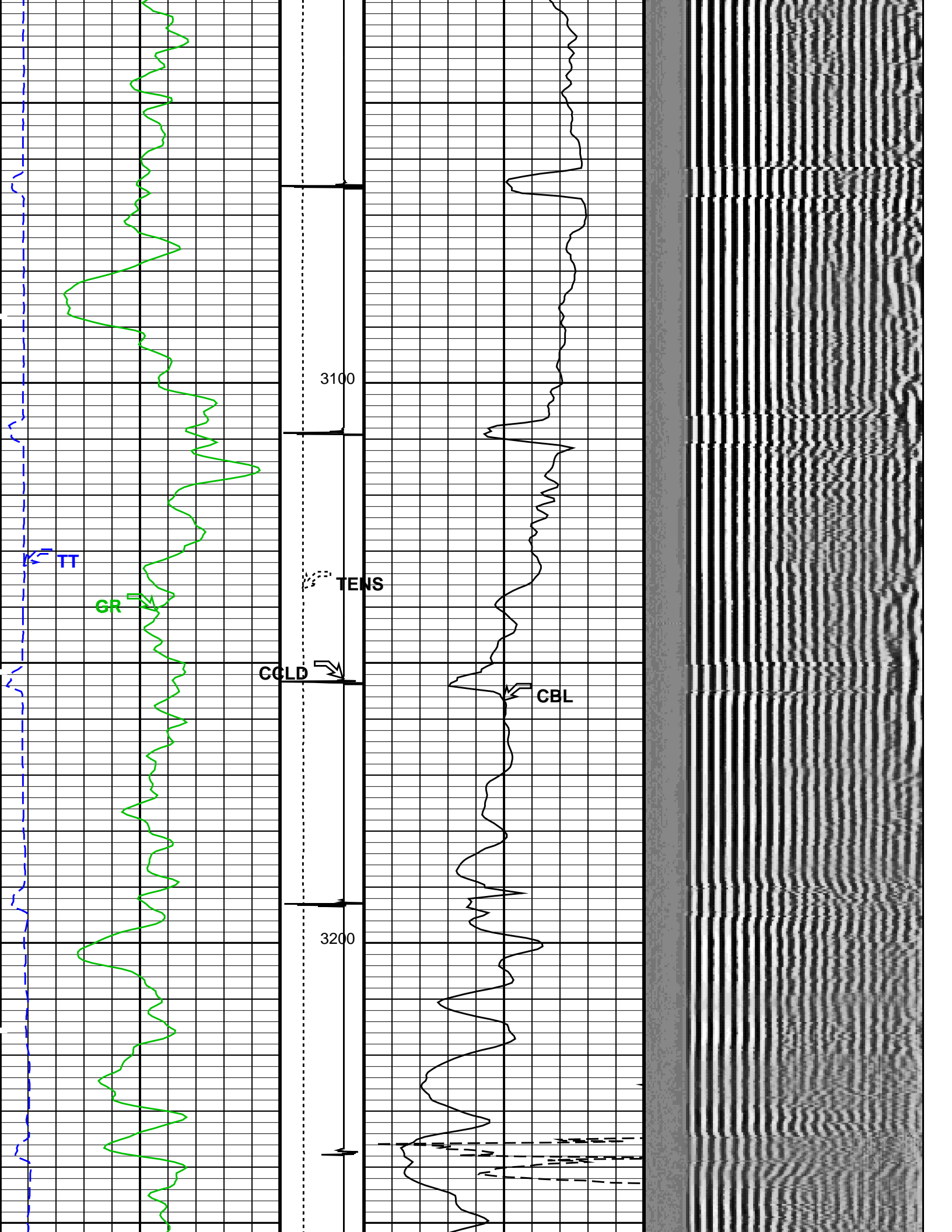


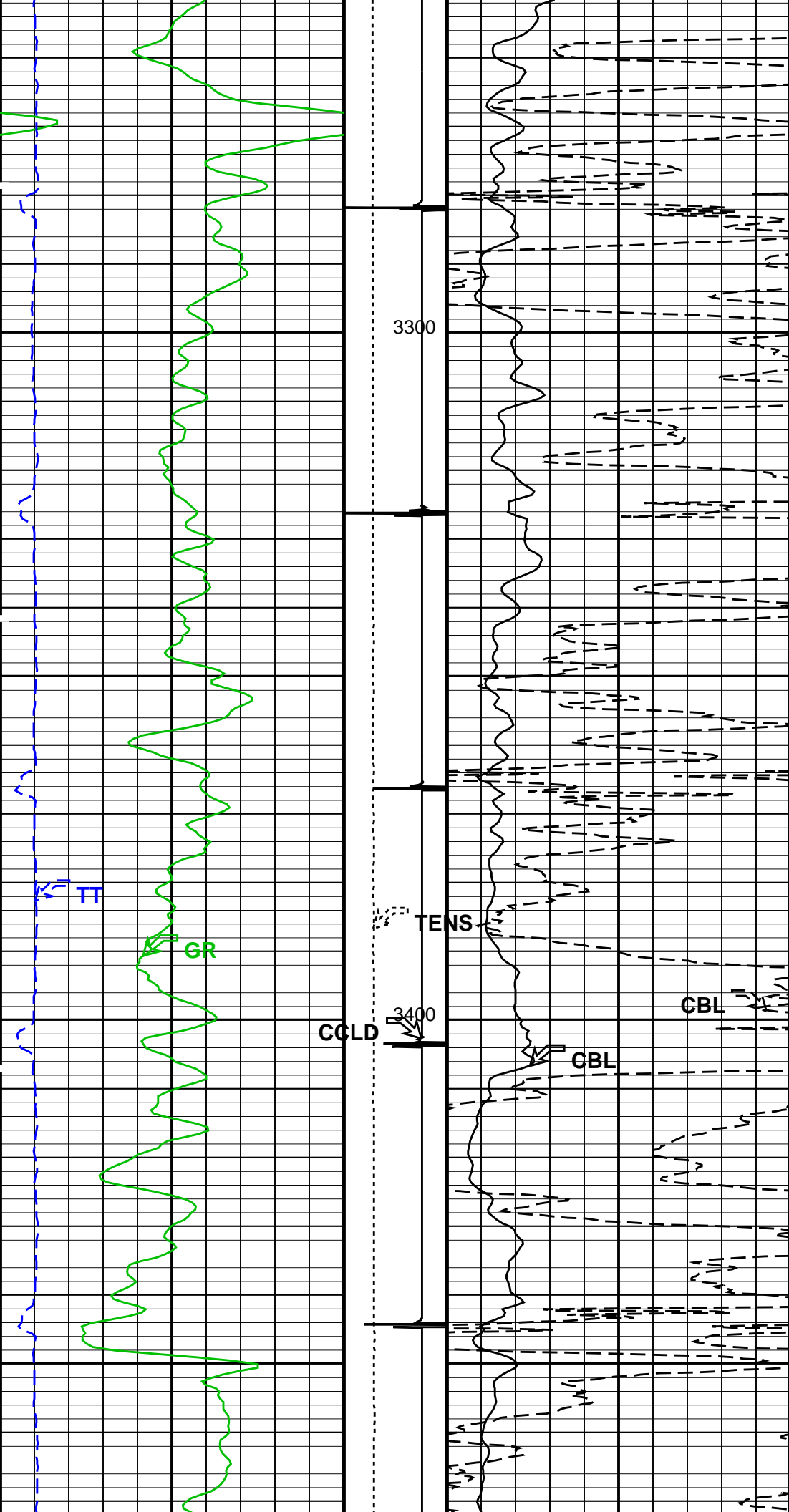




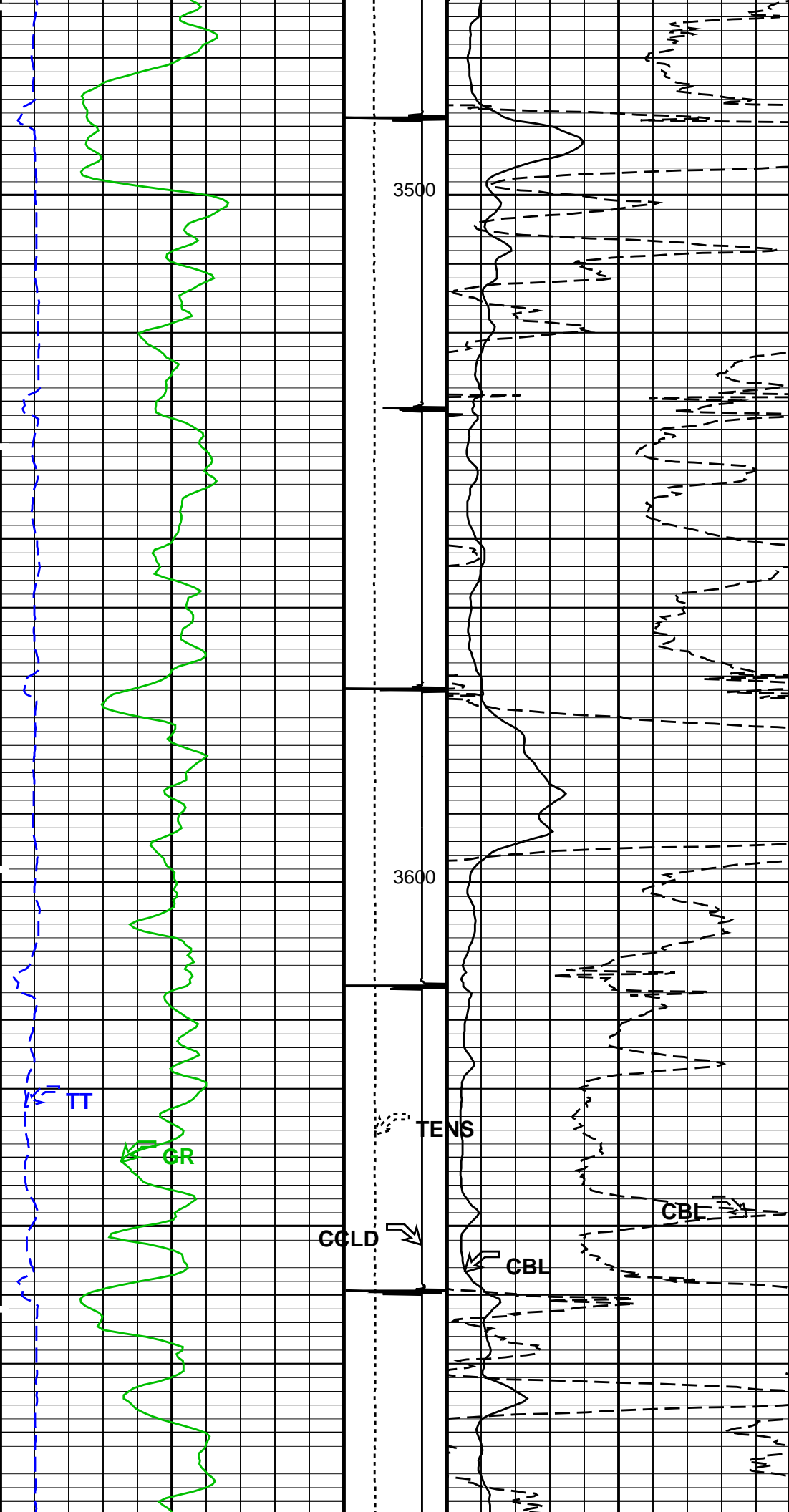


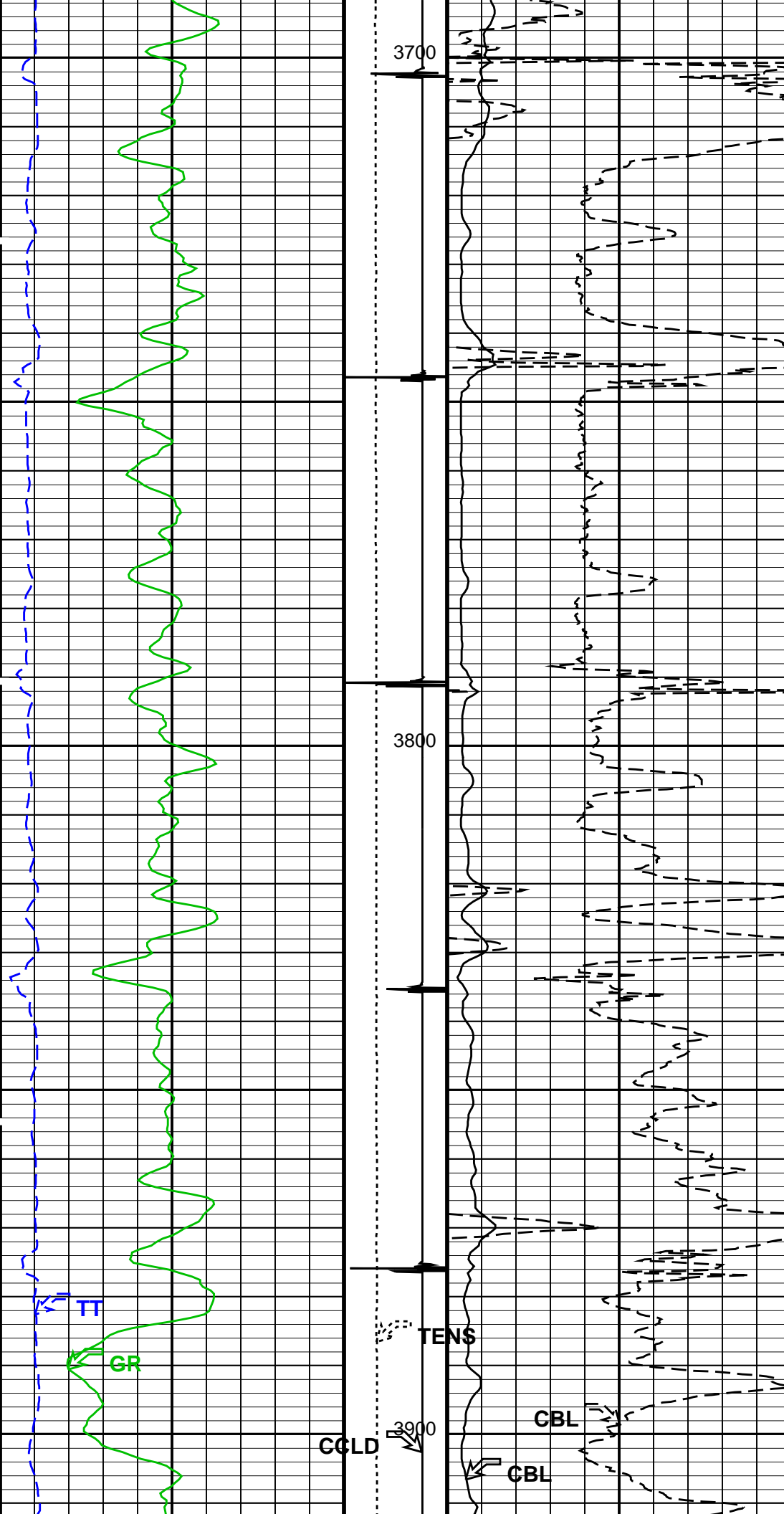


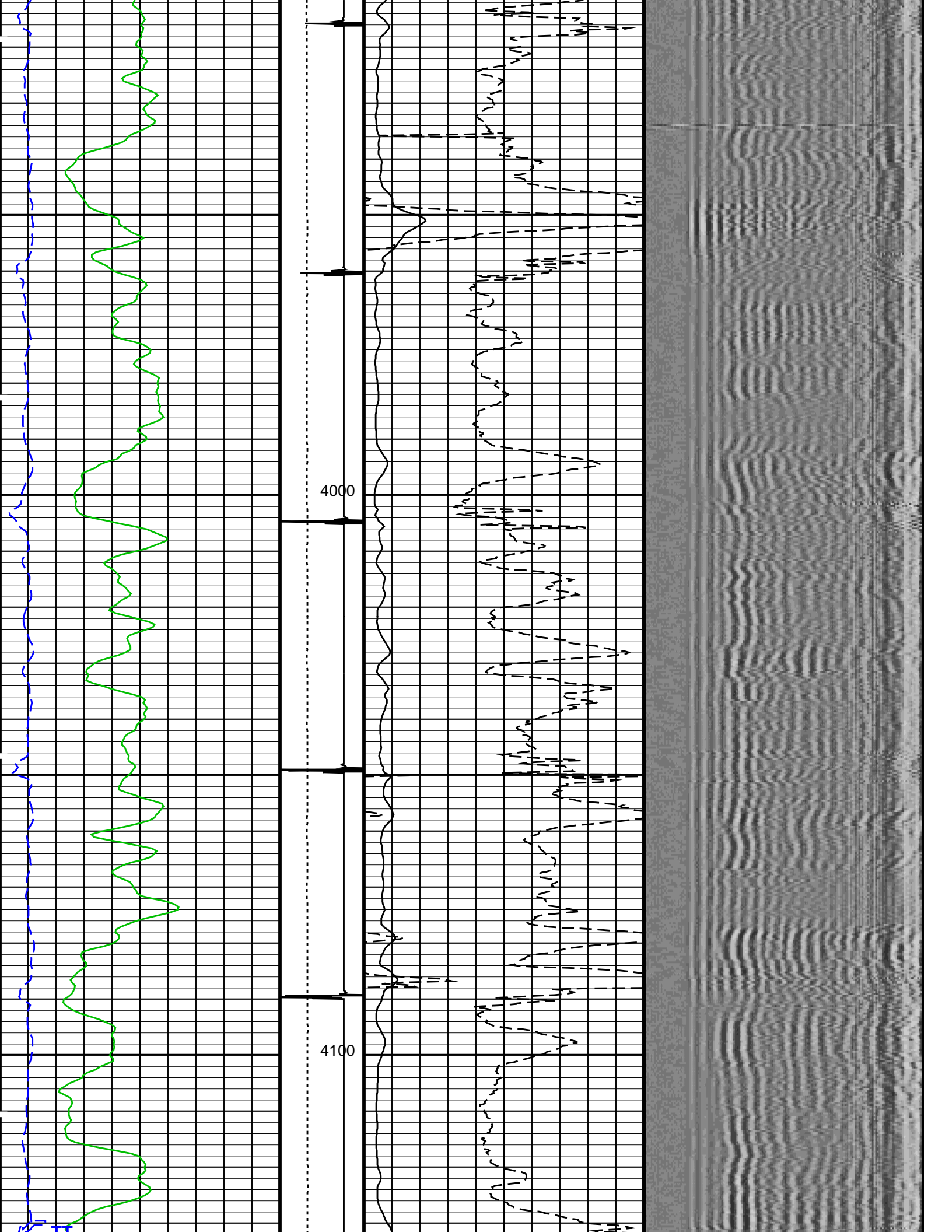


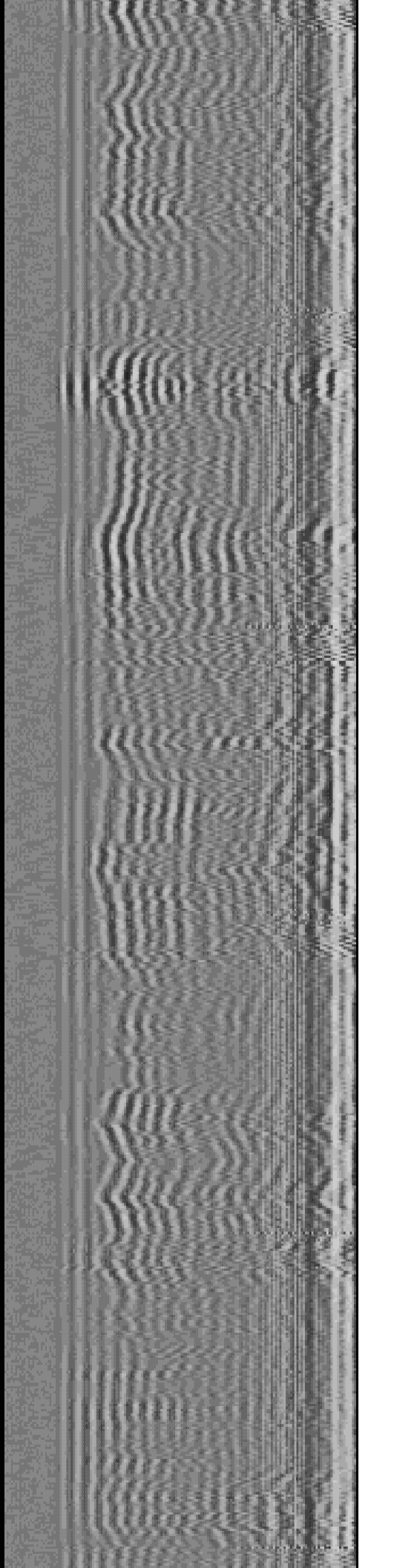
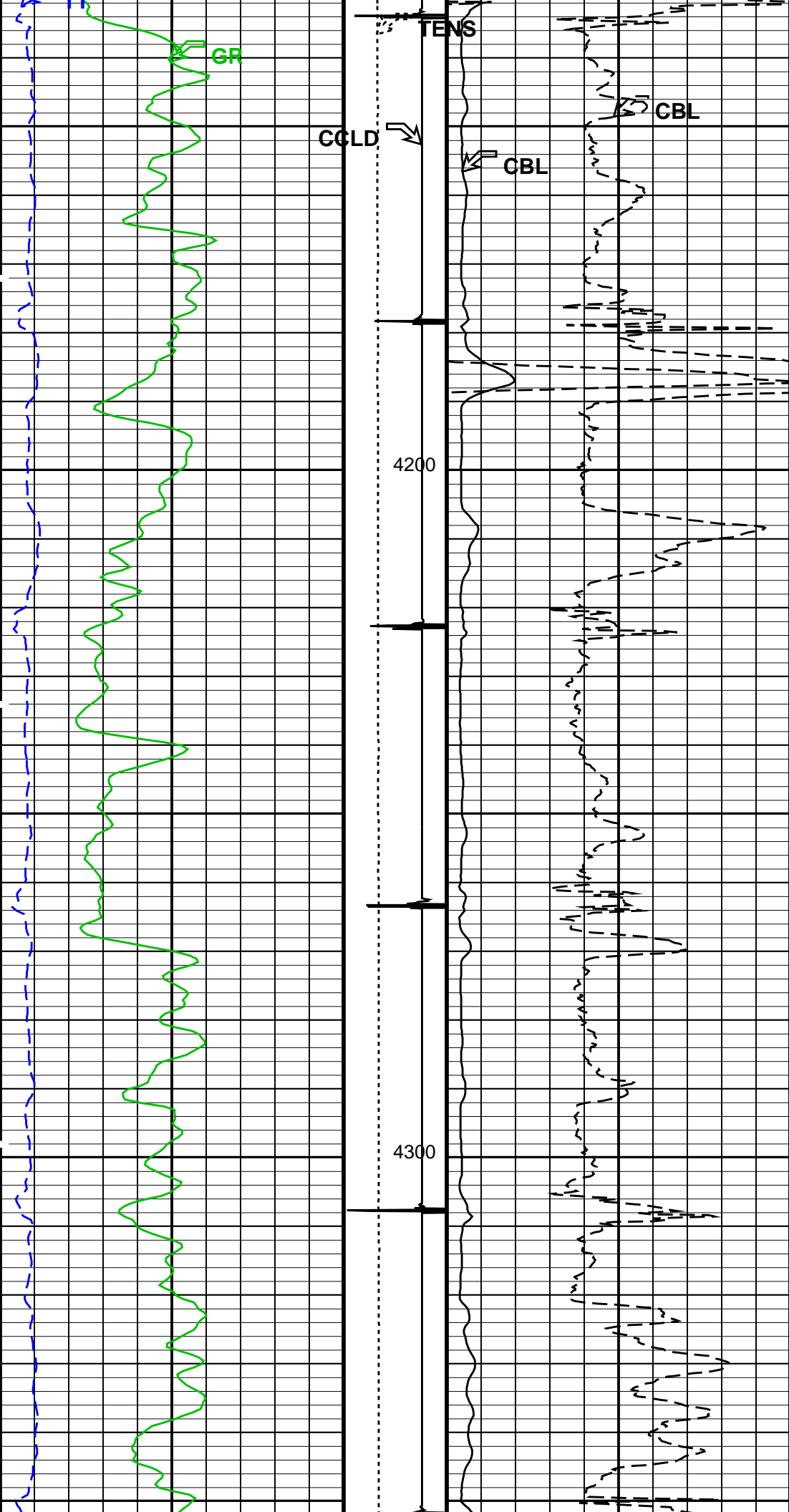




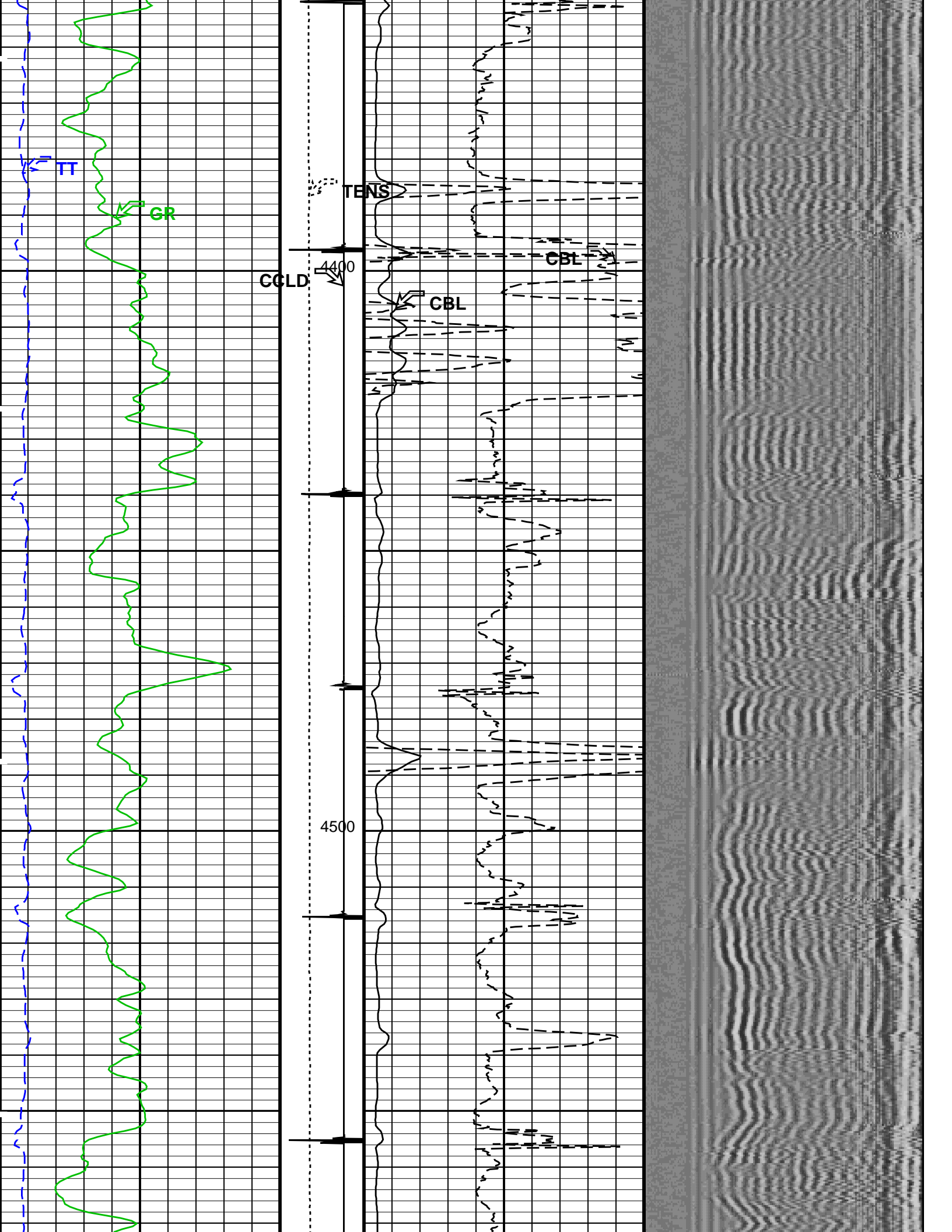


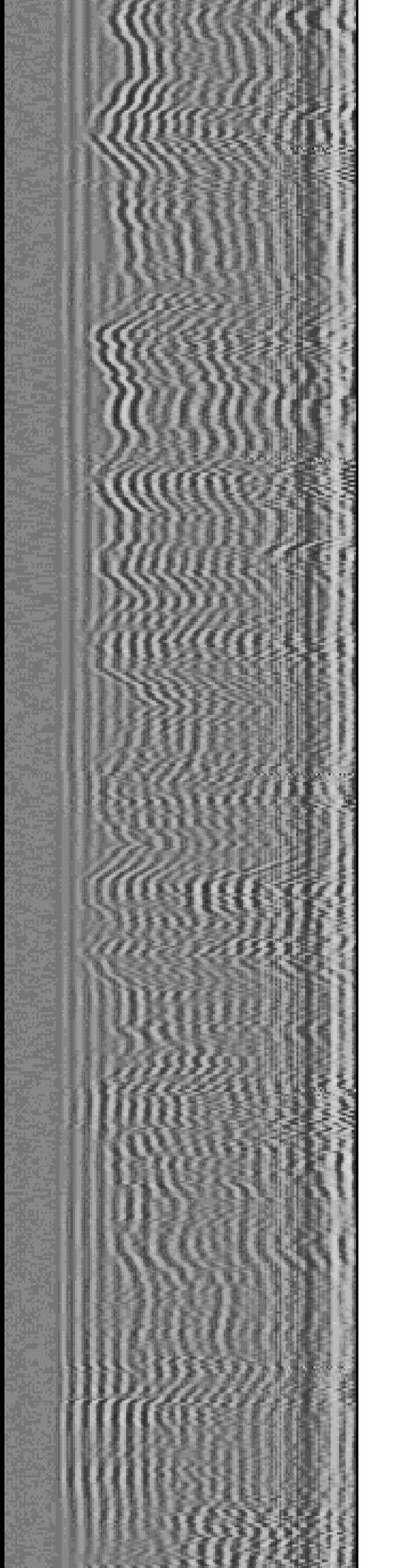
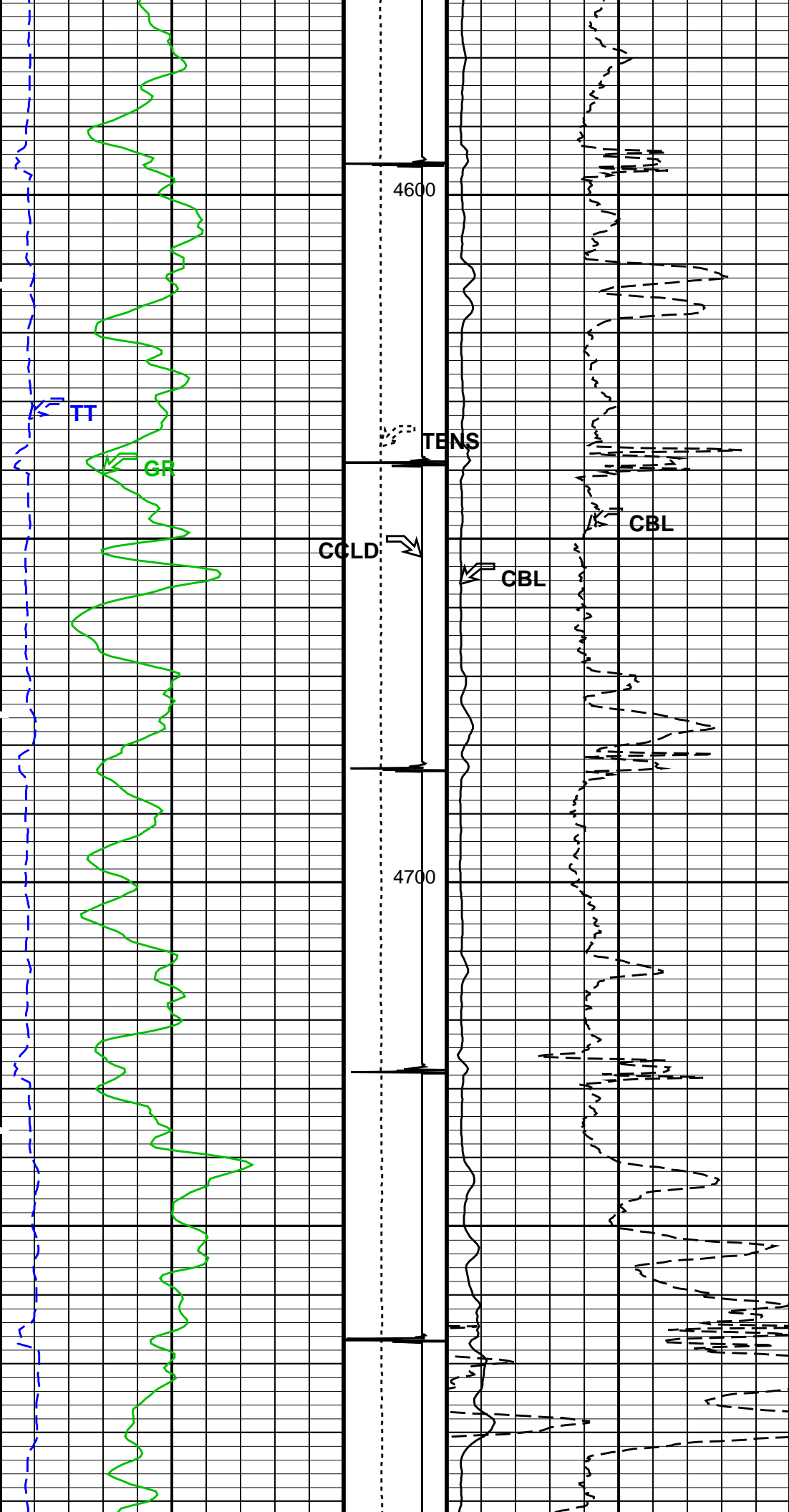


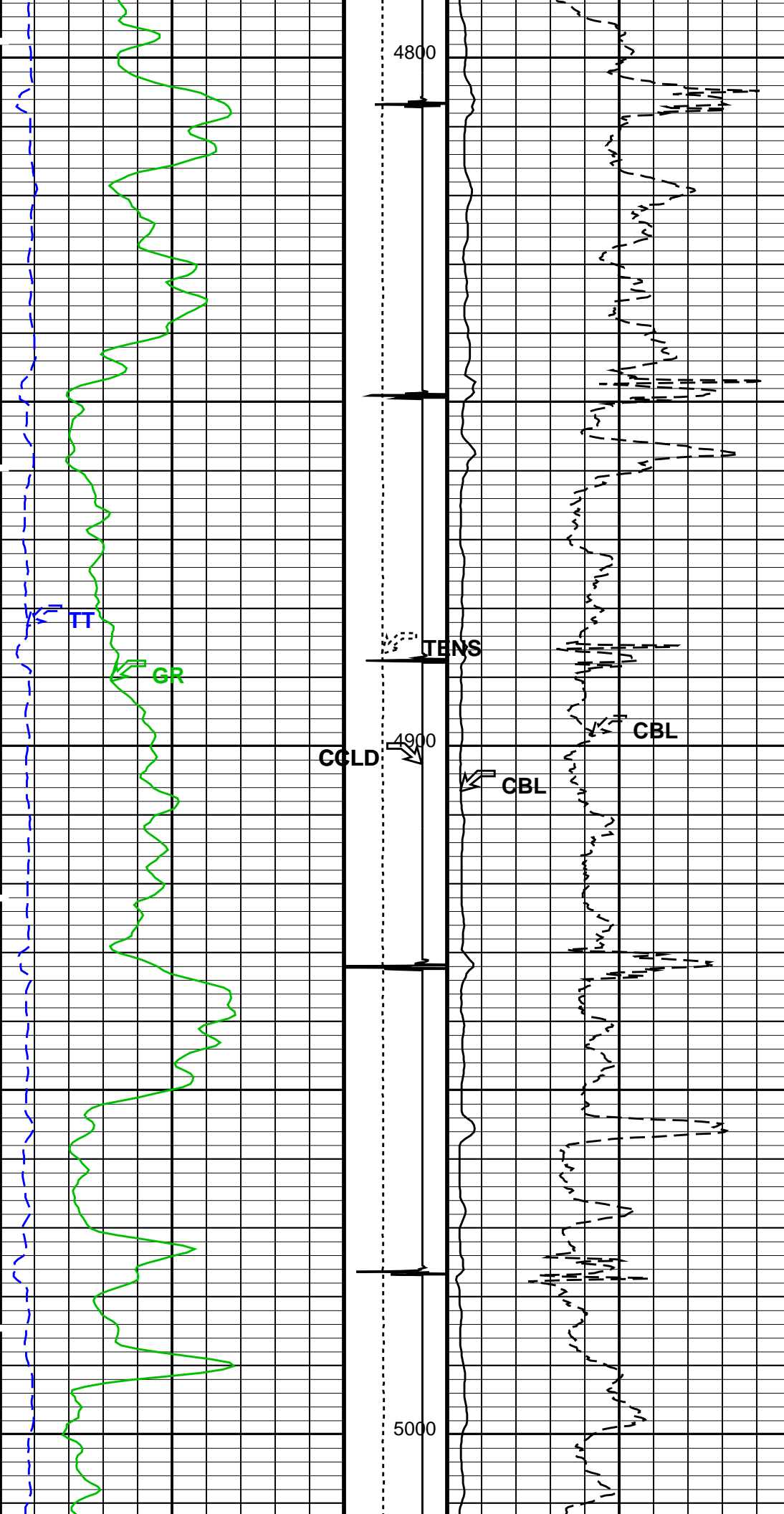


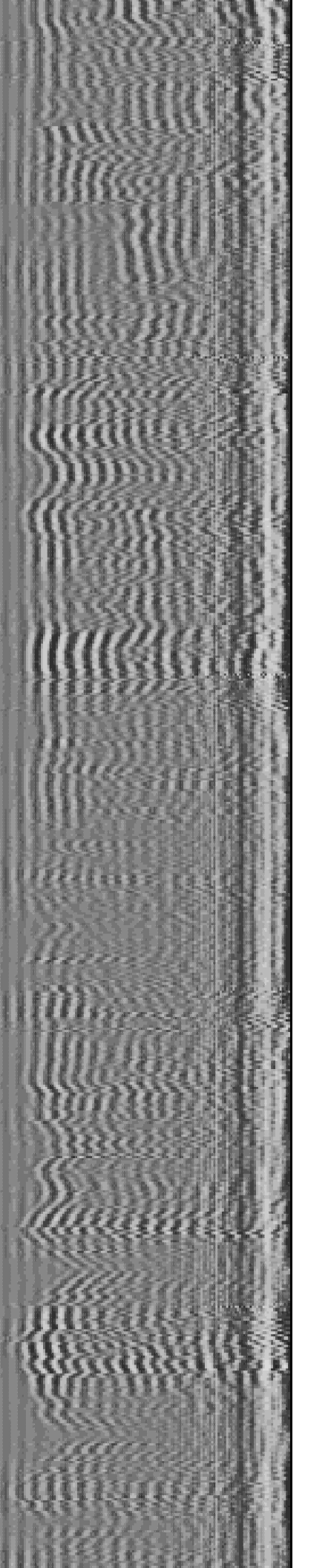
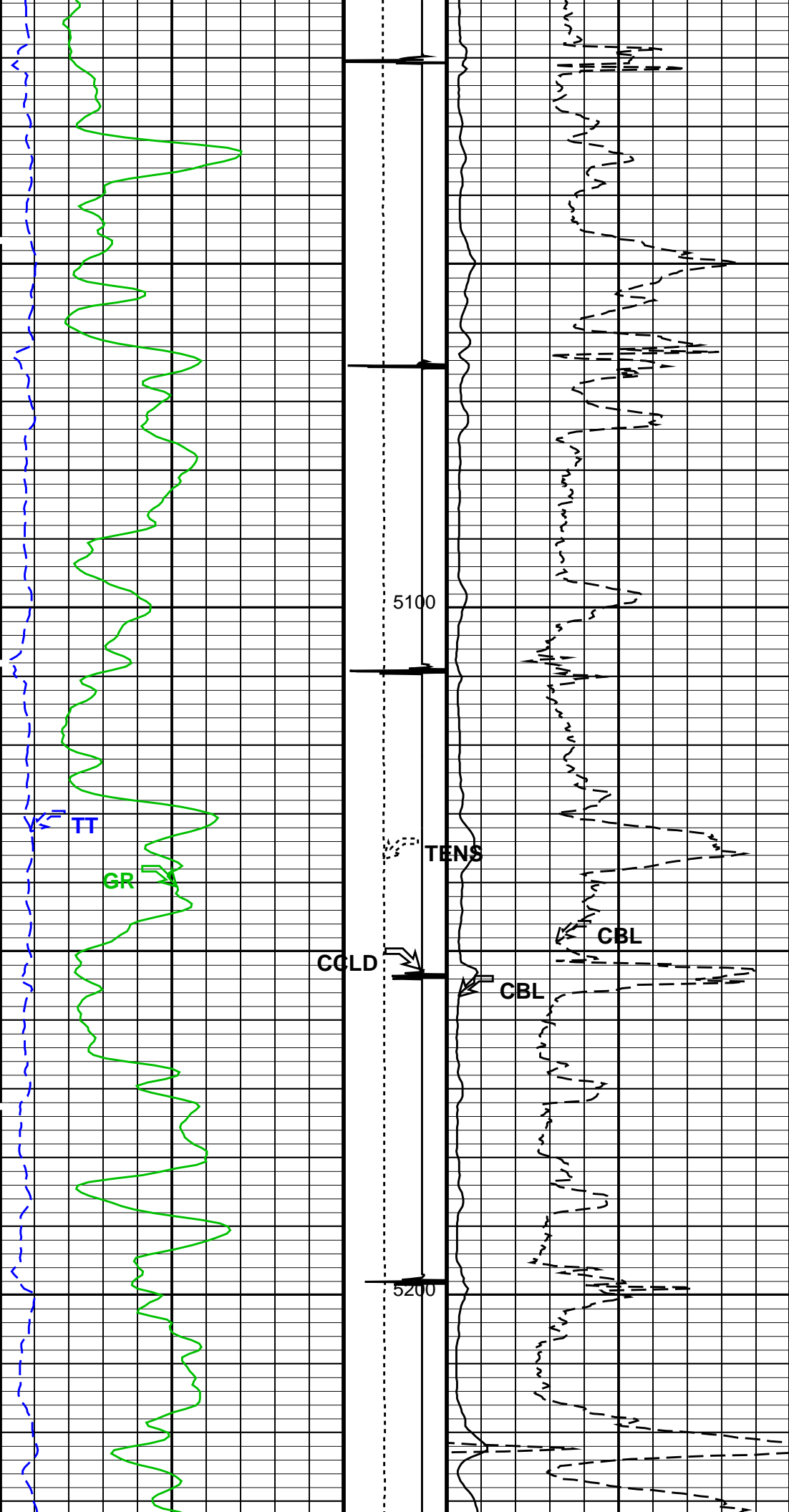




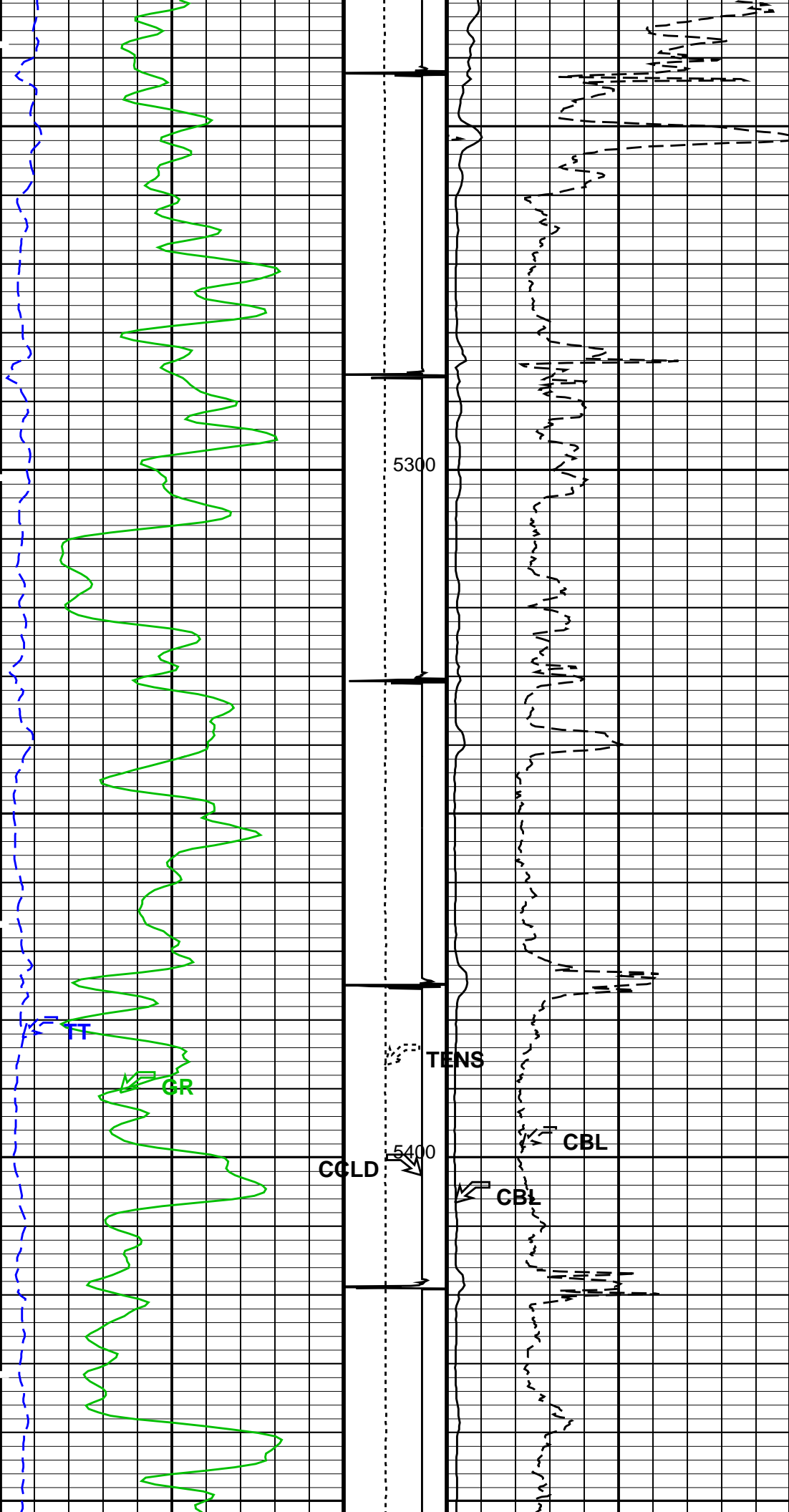


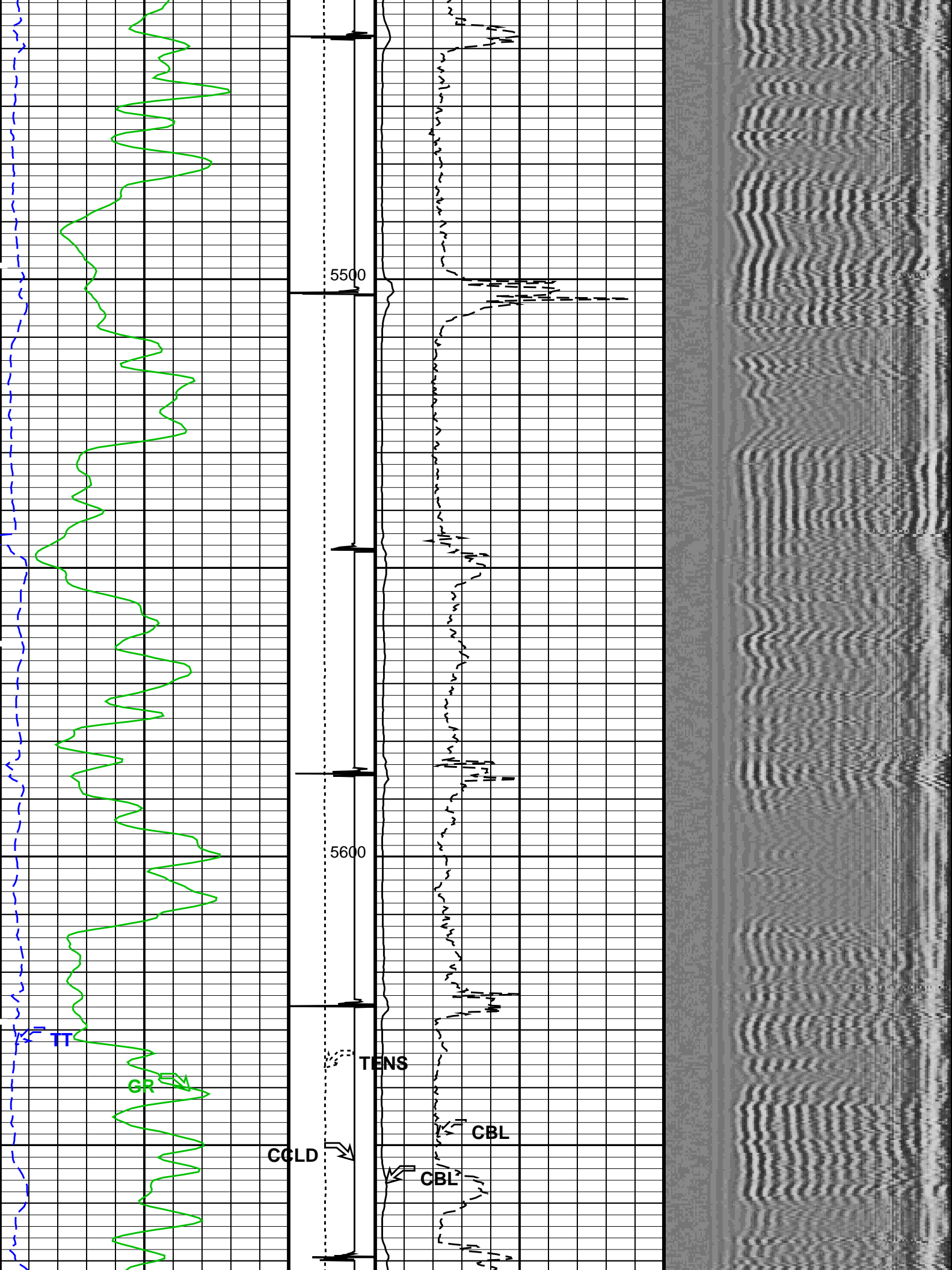


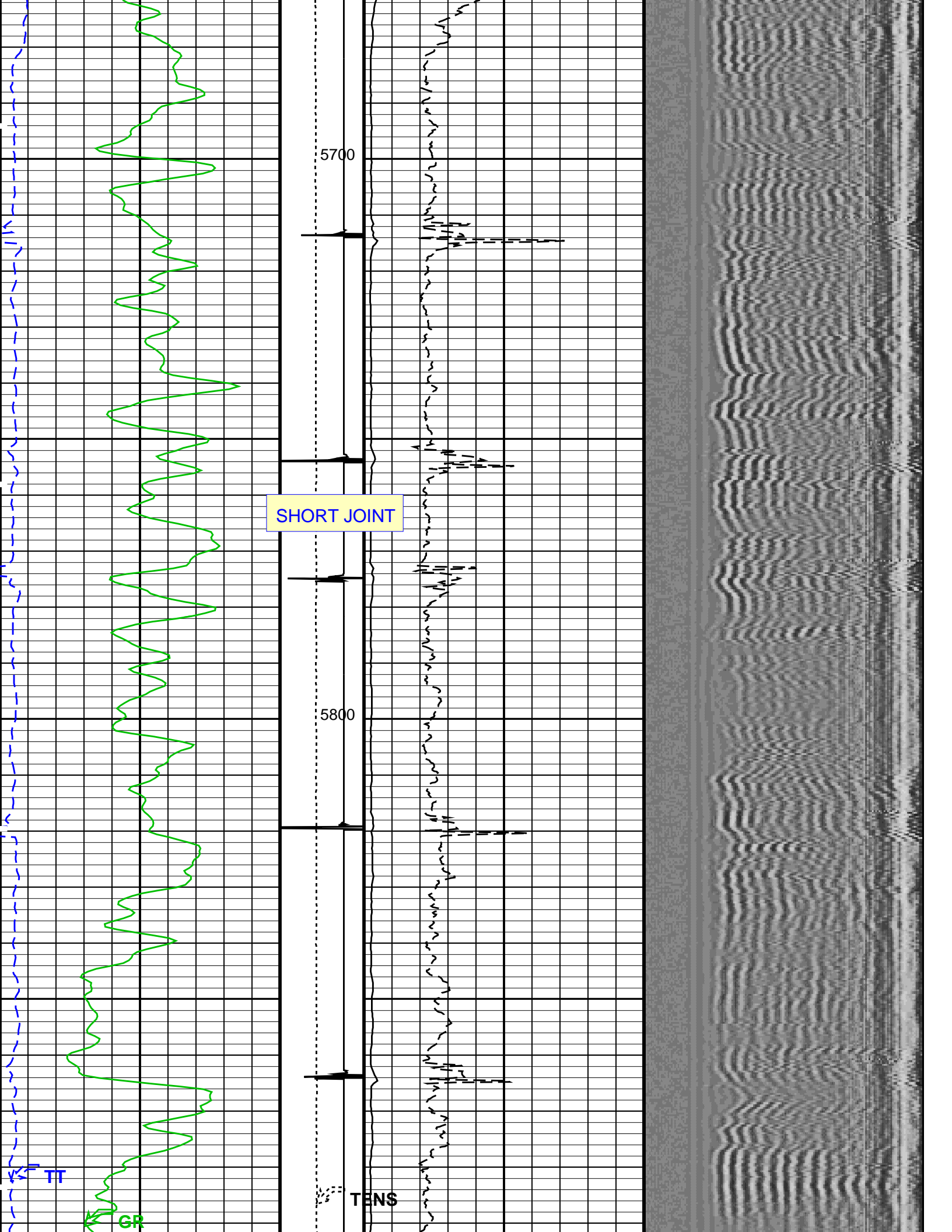


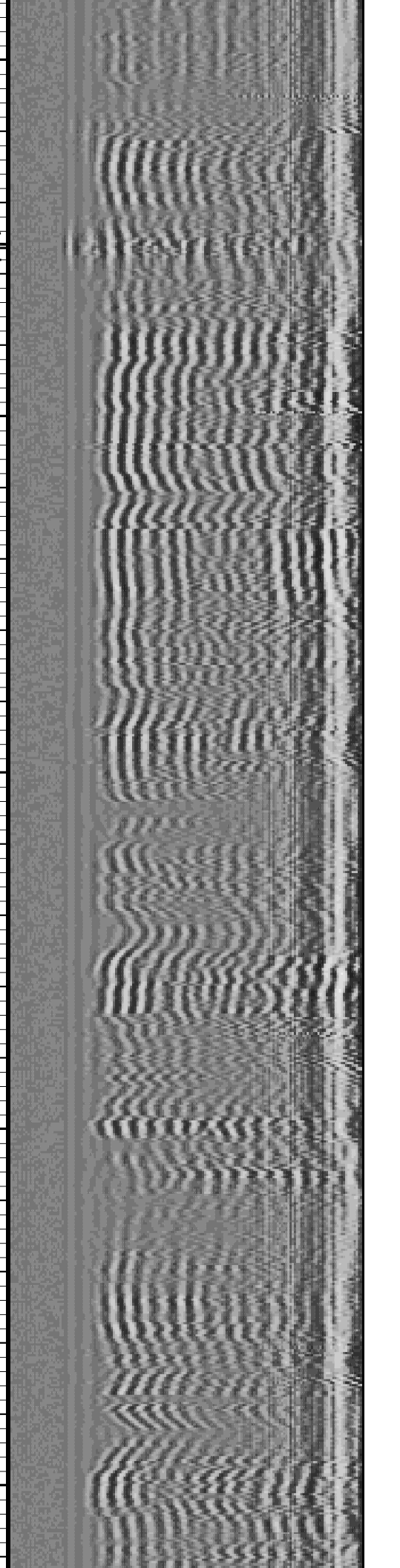
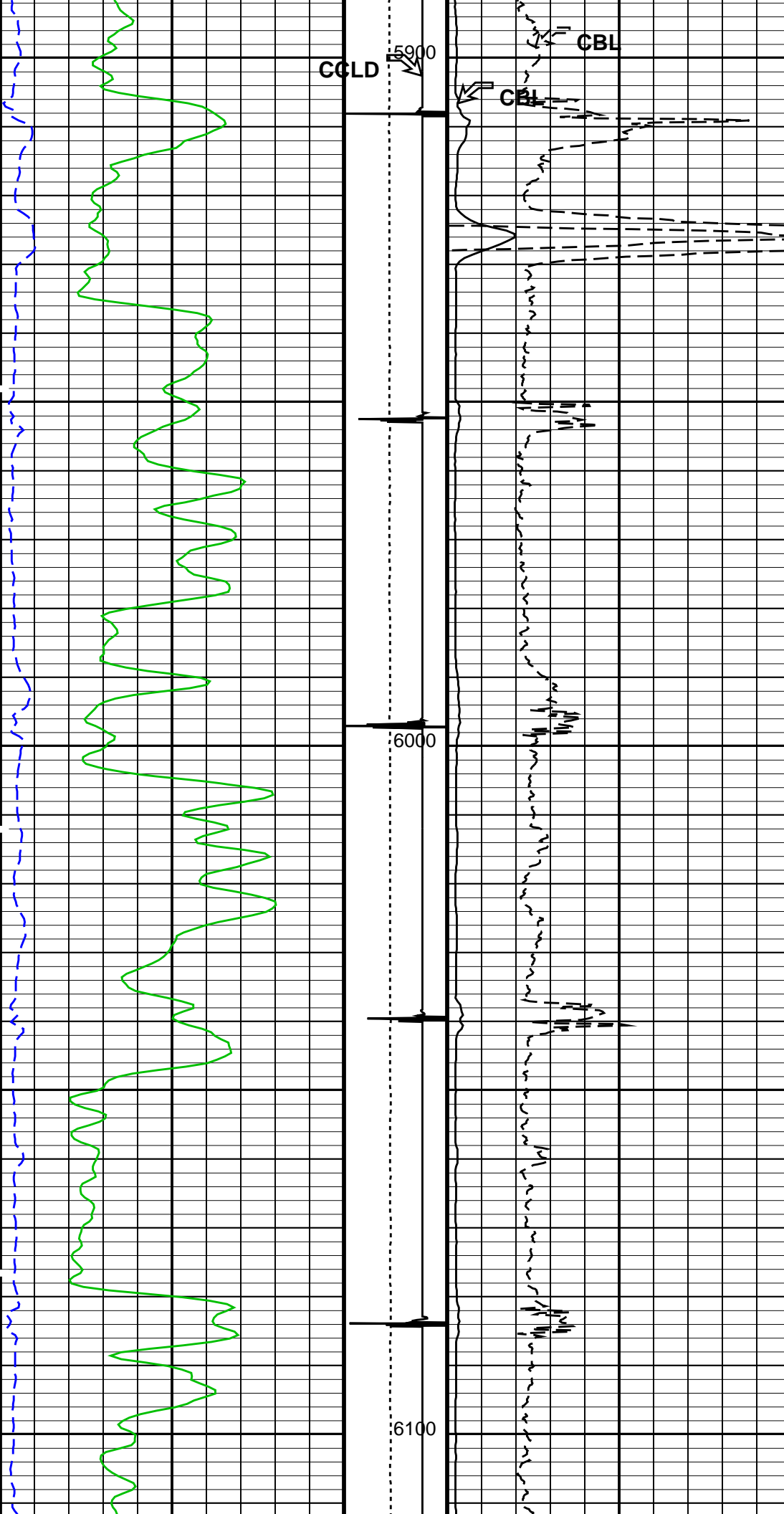




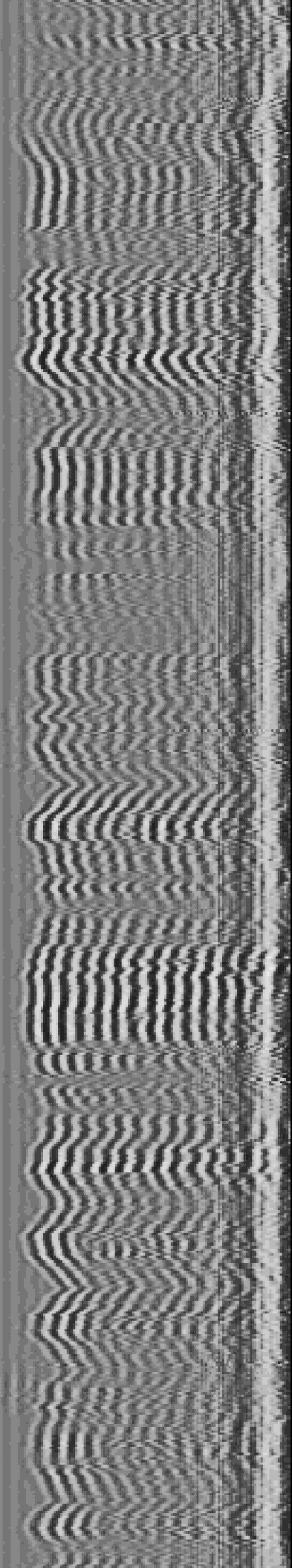
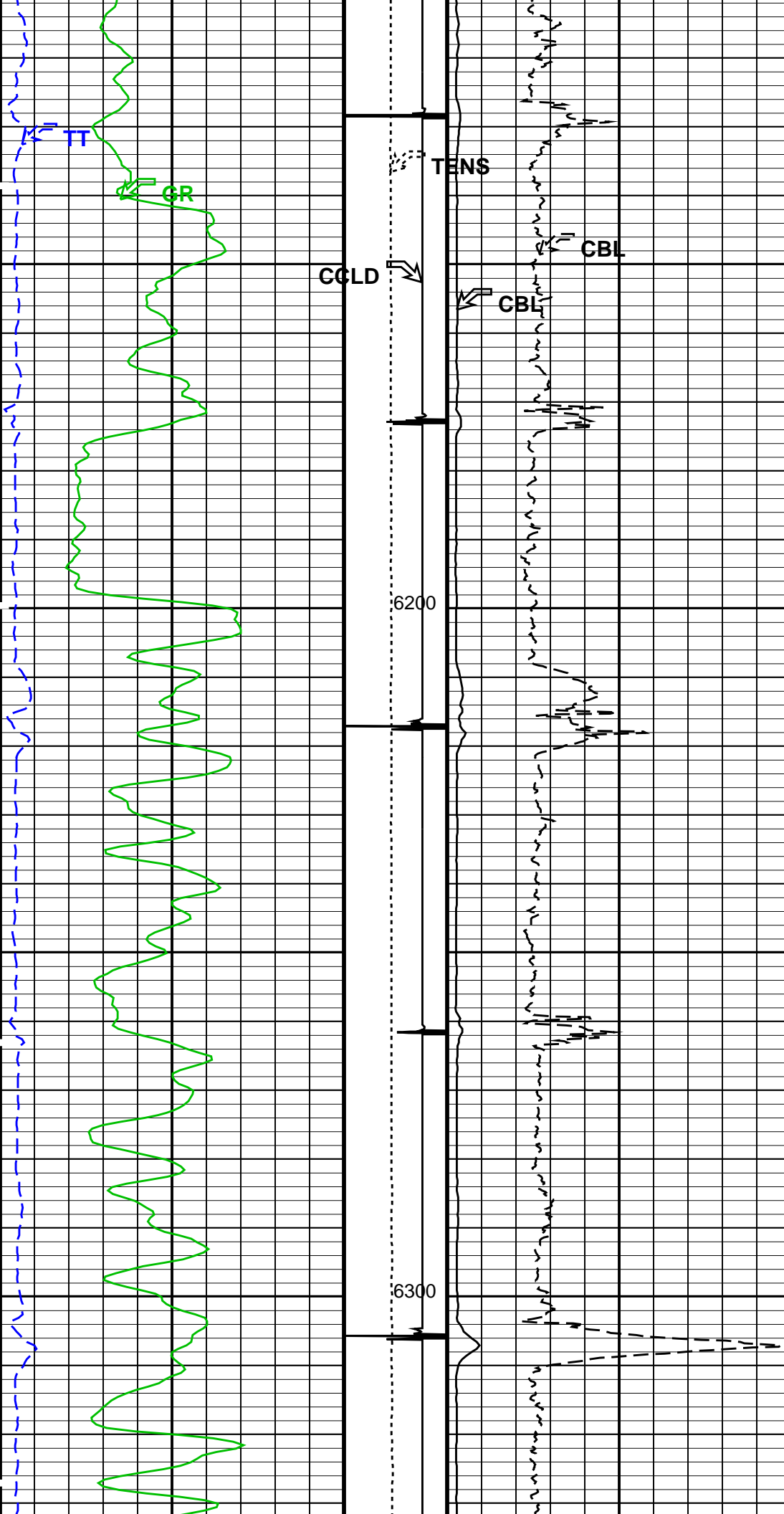


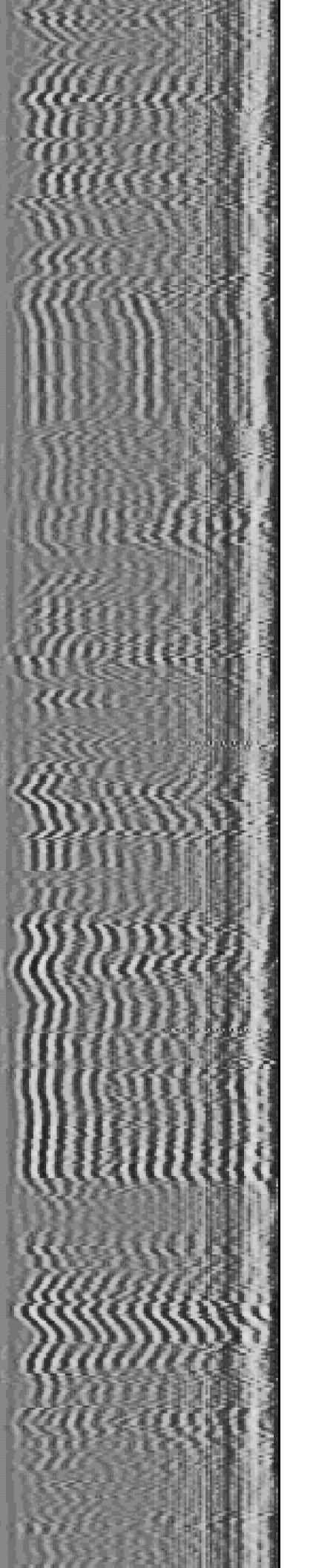
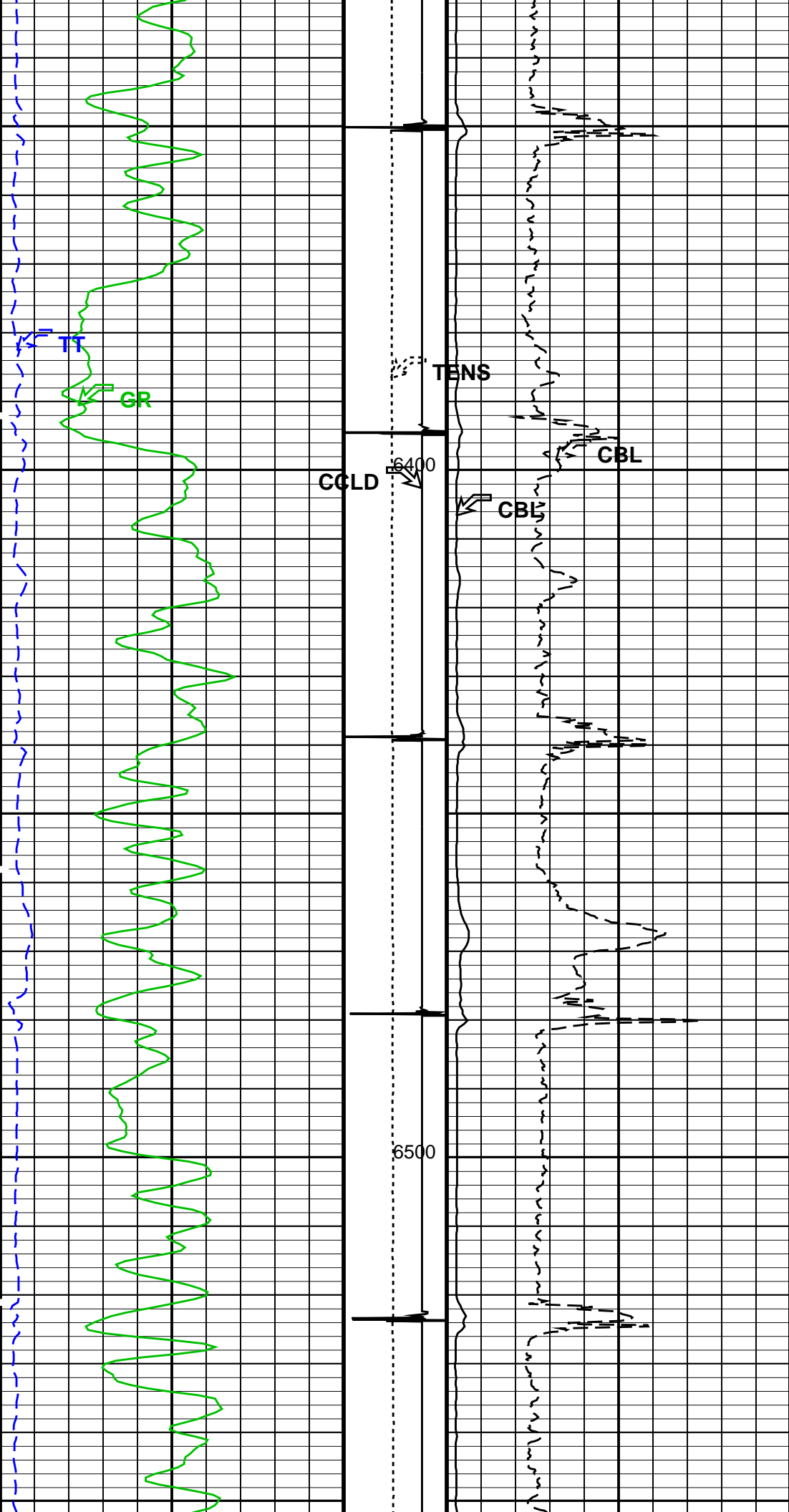


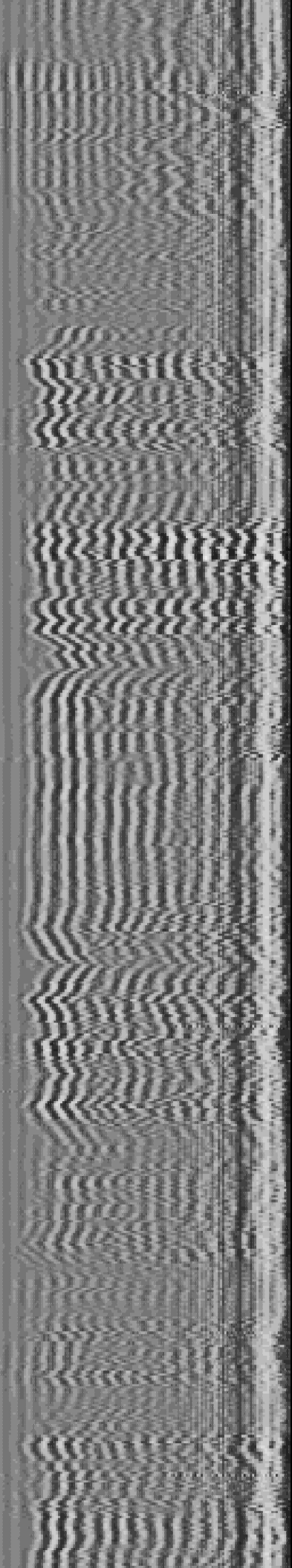
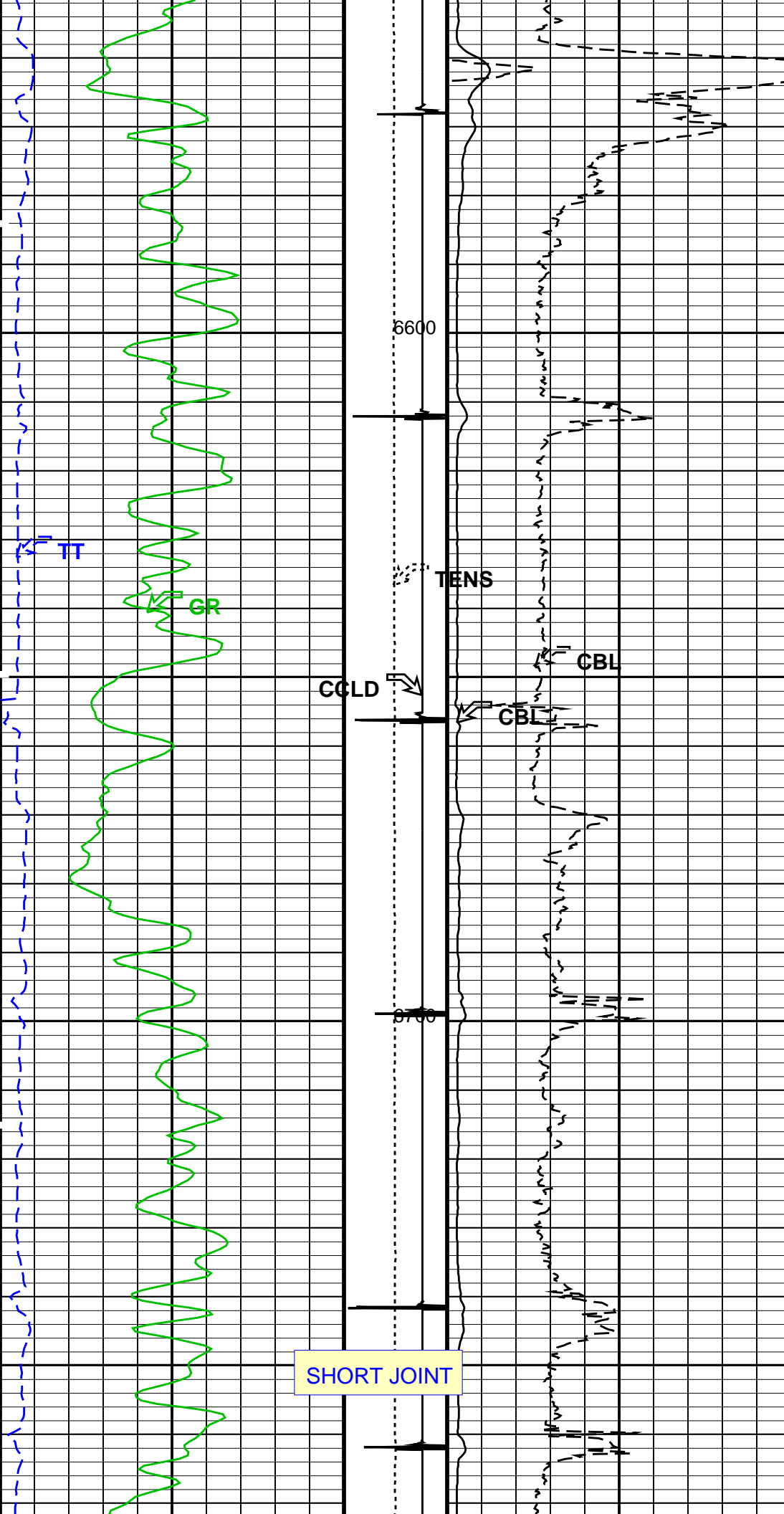


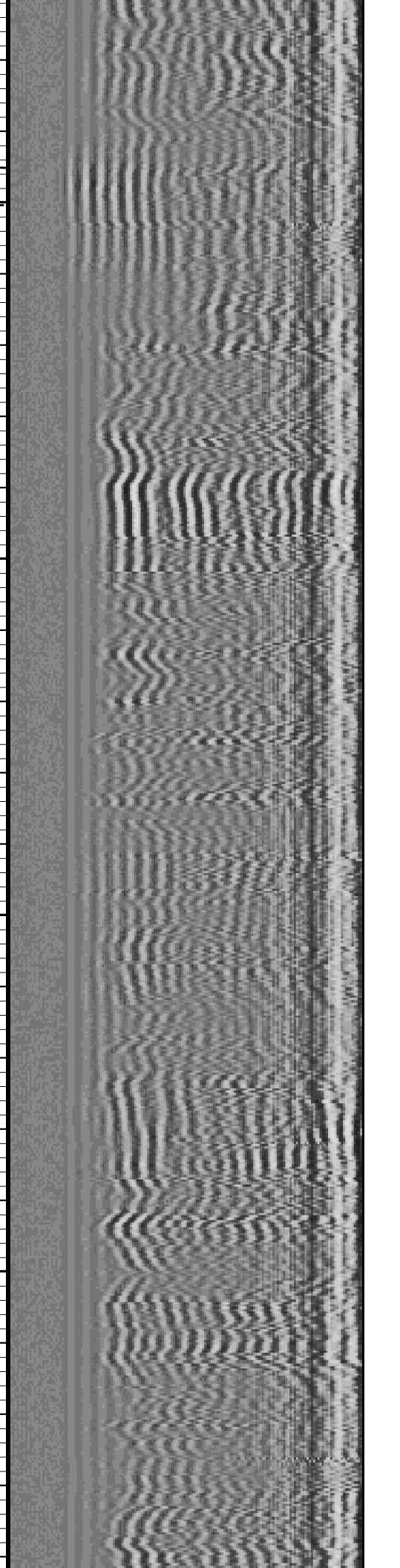
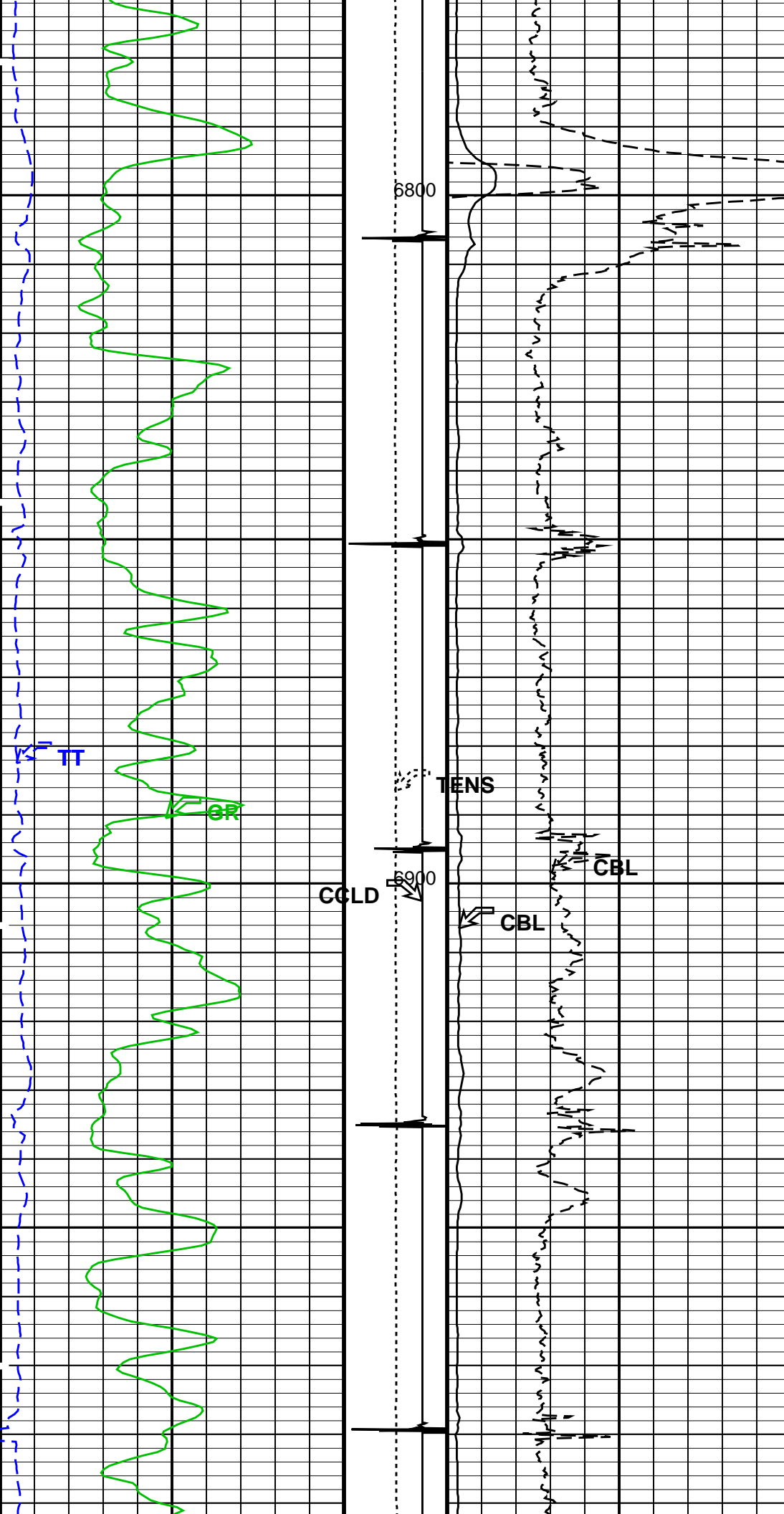




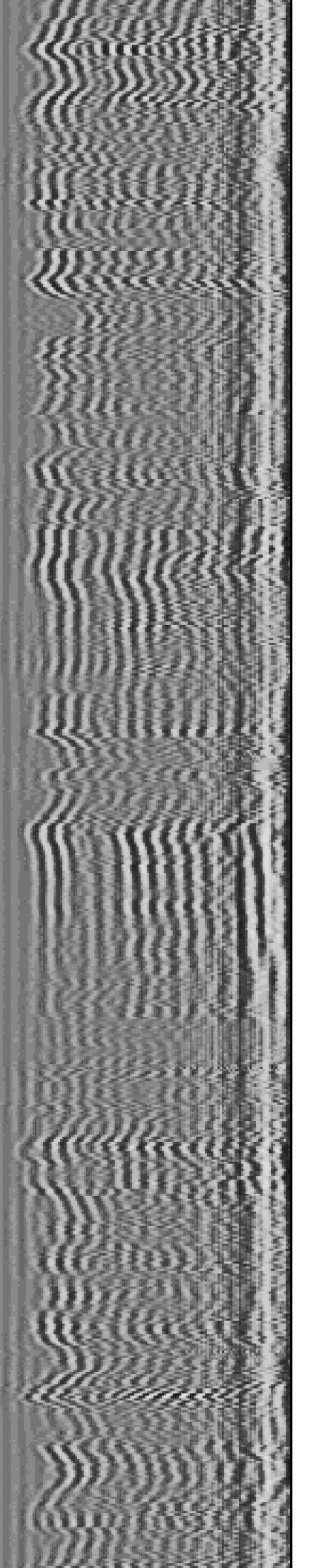
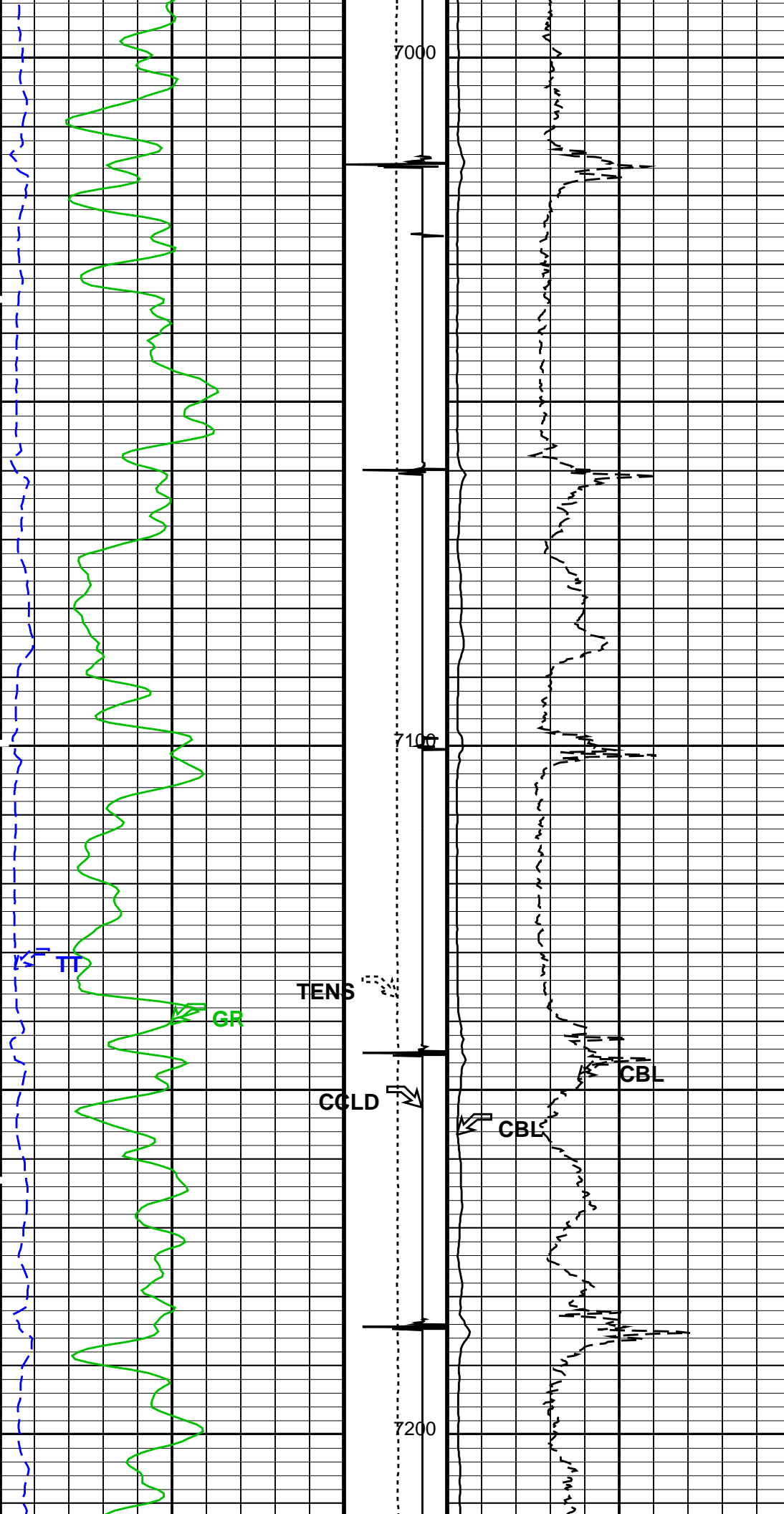


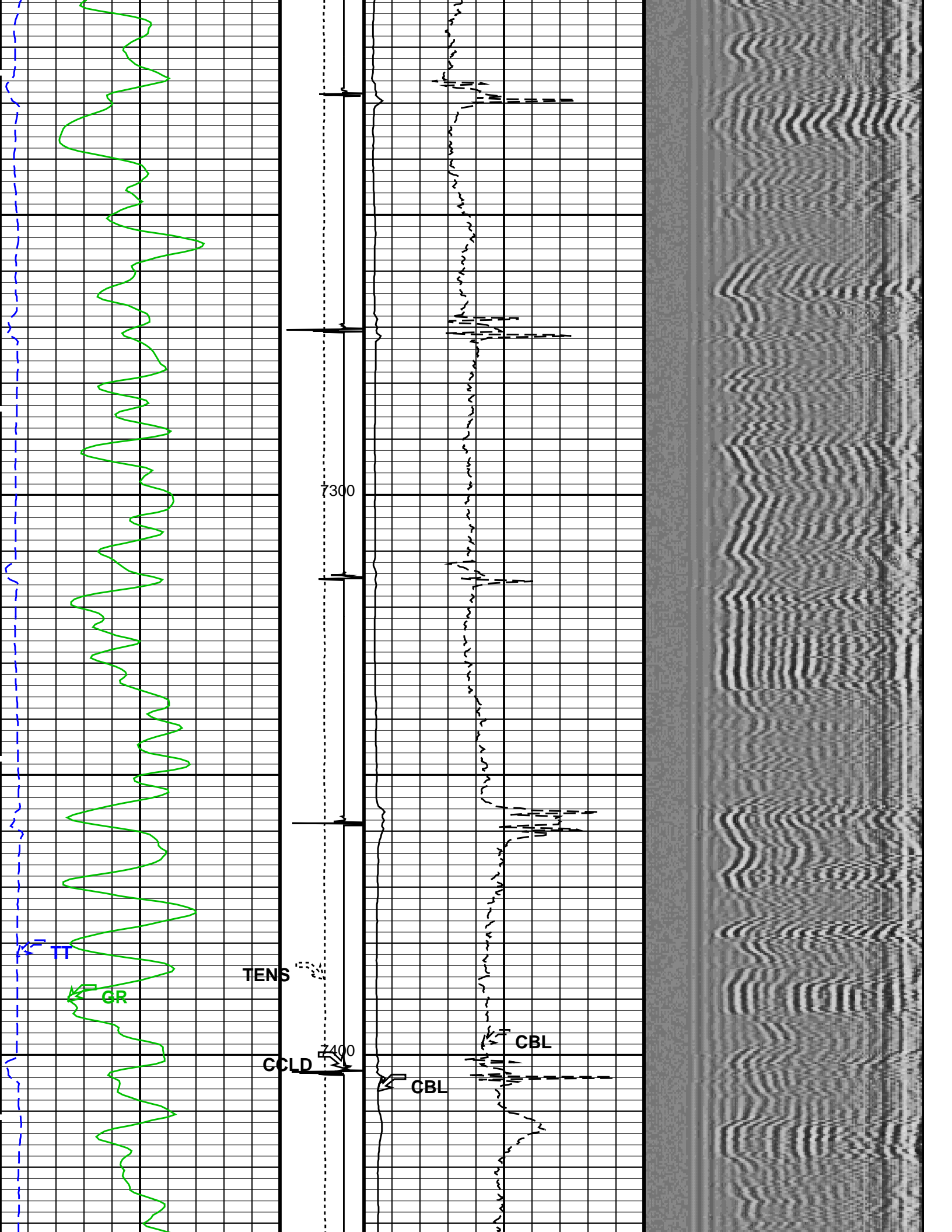


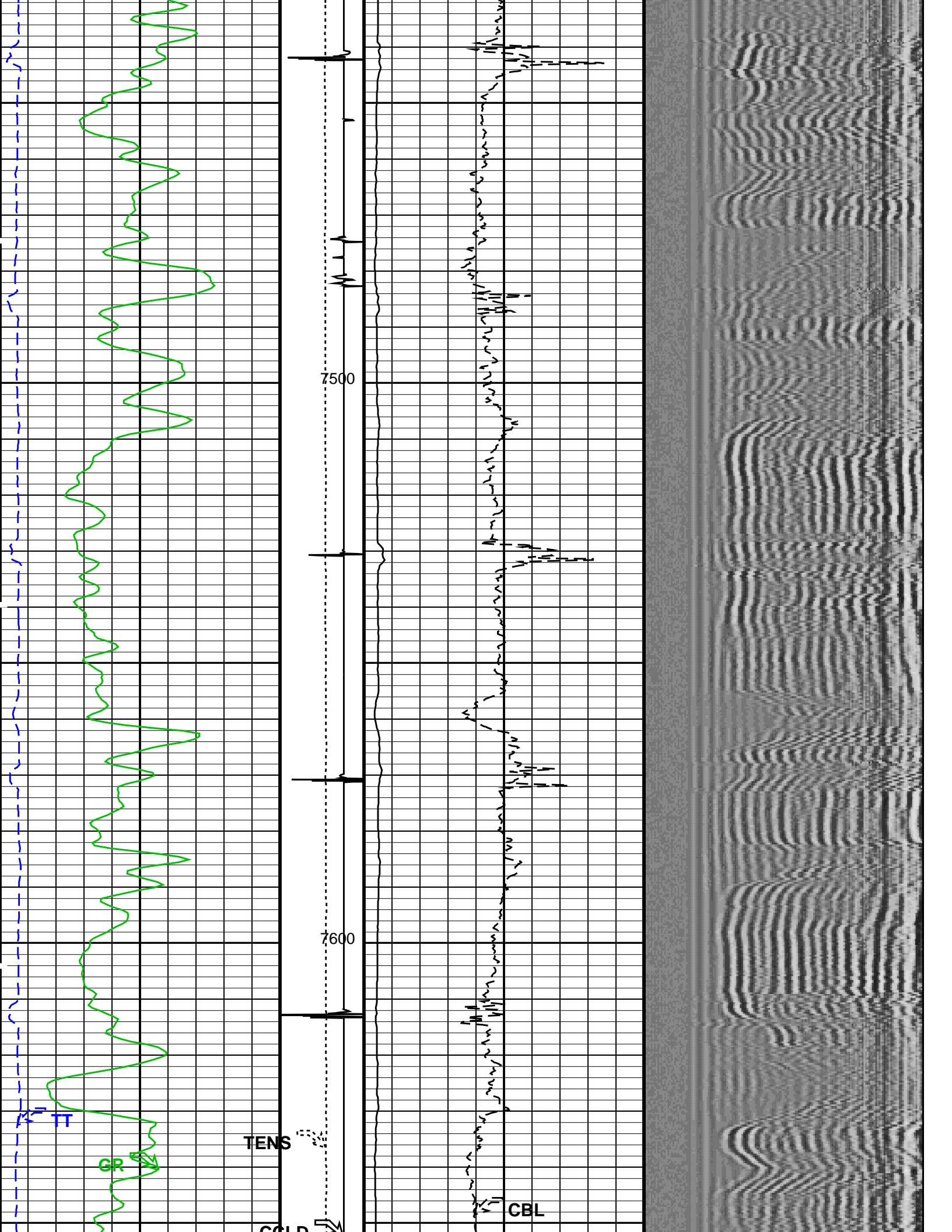


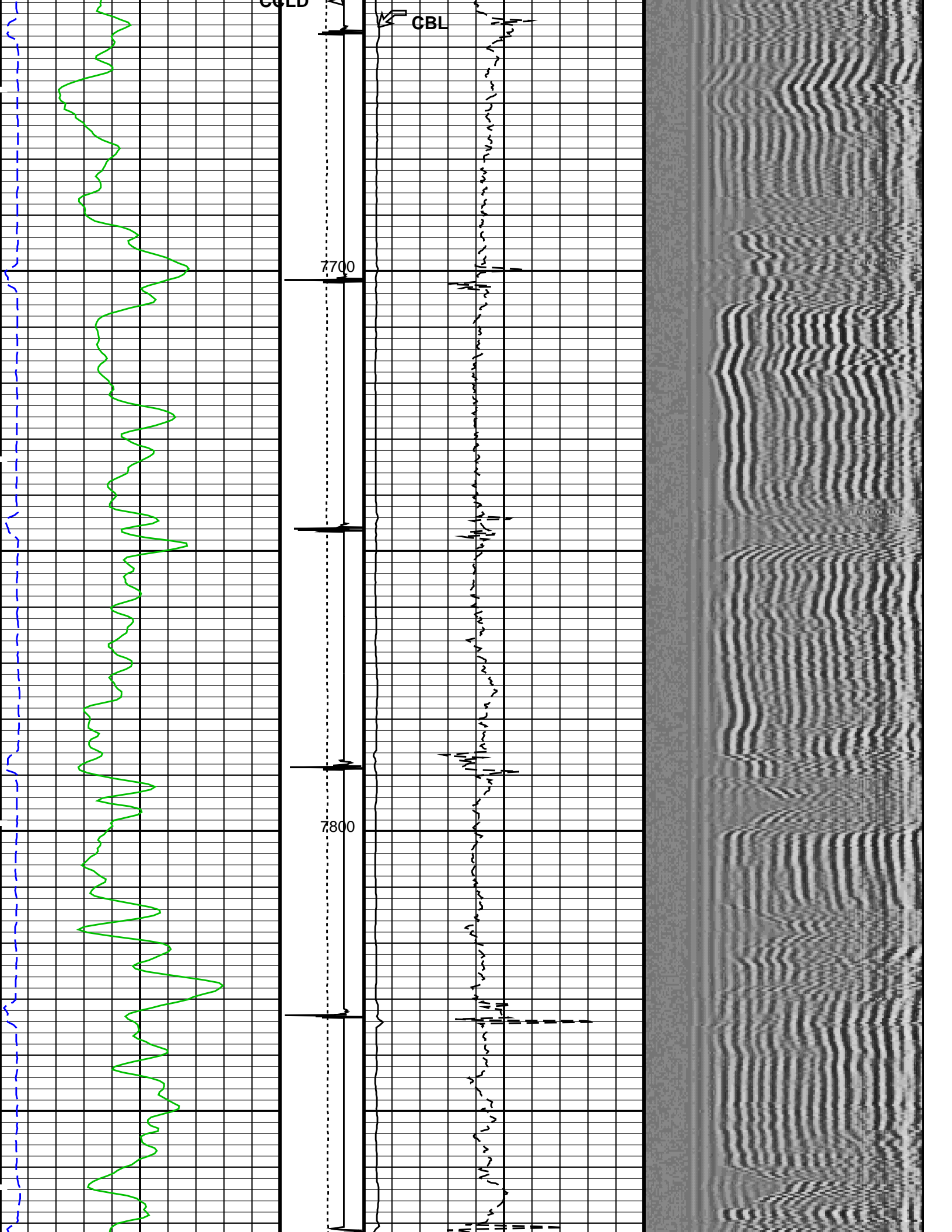




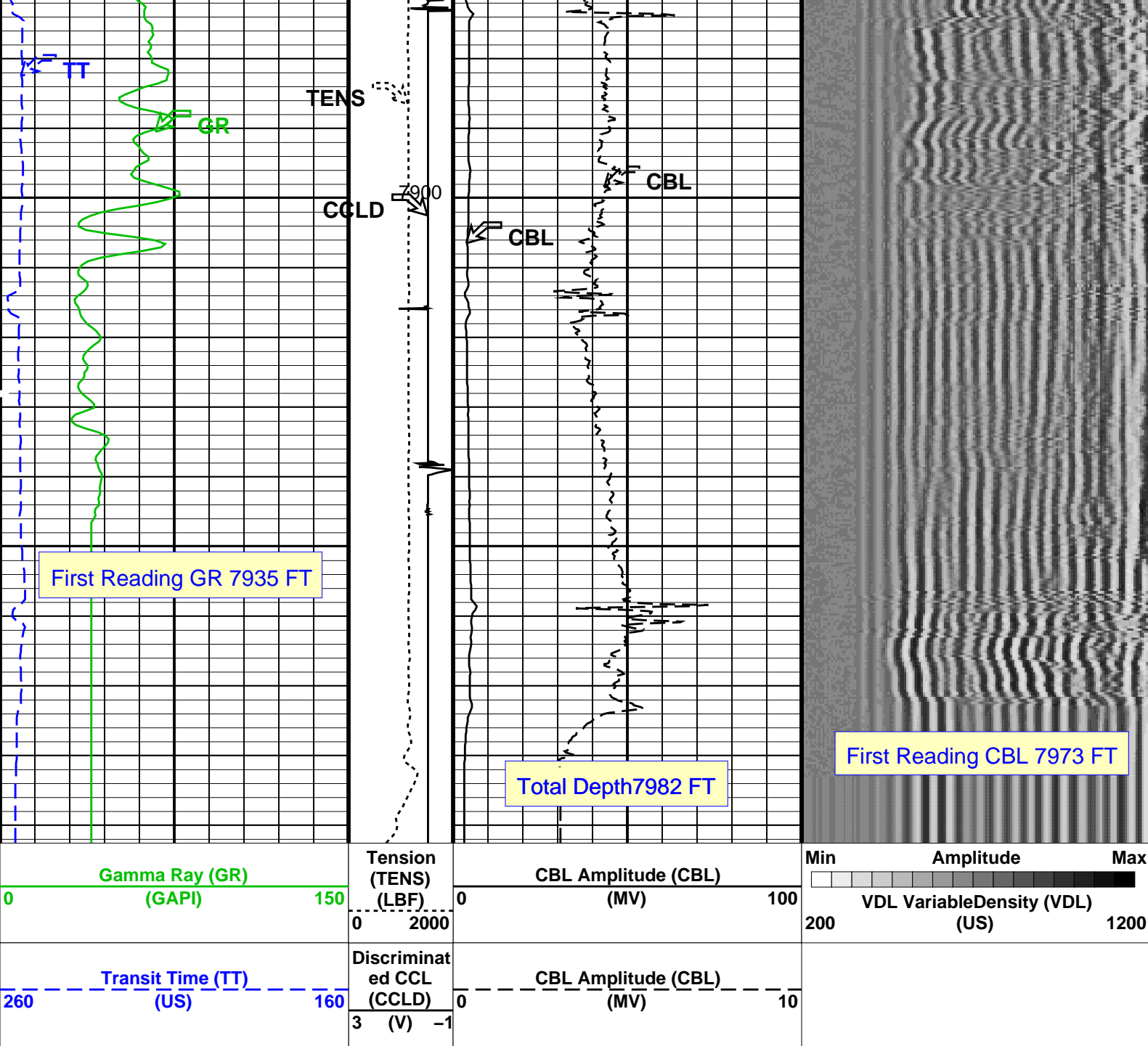












#### PIP SUMMARY

Time Mark Every 60 S

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

Graphics File Created: 14-Sep-2013 15:15

### OP System Version: 19C0-187

SCMT-CB	19C0-187	RST-C	19C0-187
PSPT	19C0-187		

#### <<<SCMT Cement Evaluation Information Summary>>>

Sonde Serial Number SCMS-CB 8179

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 6-MAR-2012

CBL Correction Factor 0.0704263

CBL Adjustment Factor (CBAF) 1.0

MAP 1 Correction Factor 0.0993191

MAP Adjustment Factor (MPAF) 1.0

MAP 2 Correction Factor 0.0941329

MAP 3 Correction Factor 0.101552

MAP 4 Correction Factor 0.114415

MAP 5 Correction Factor 0.127992

MAP 6 Correction Factor 0.121190

MAP 7 Correction Factor 0.112867

MAP 8 Correction Factor 0.102913

## 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	4.0	FT
PP	Playback Processing	RECOMPUTE	
TD	Total Depth	7982	FT

## Input DLIS Files

DEFAULT	Splice_SCMT_RST_PSP_057CUP	FN:1	PRODUCER	14-Sep-2013 15:09	8000.0 FT	0.2 FT
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## Output DLIS Files

DEFAULT	SCMT_RST_PSP_059PUP	FN:55	PRODUCER	14-Sep-2013 15:15
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Schlumberger

REPEAT ANALYSIS CBL VDL

## Input DLIS Files

DEFAULT	SCMT_RST_PSP_046LUP	FN:44	PRODUCER	14-Sep-2013 11:08	6028.5 FT	5684.7 FT
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## Output DLIS Files

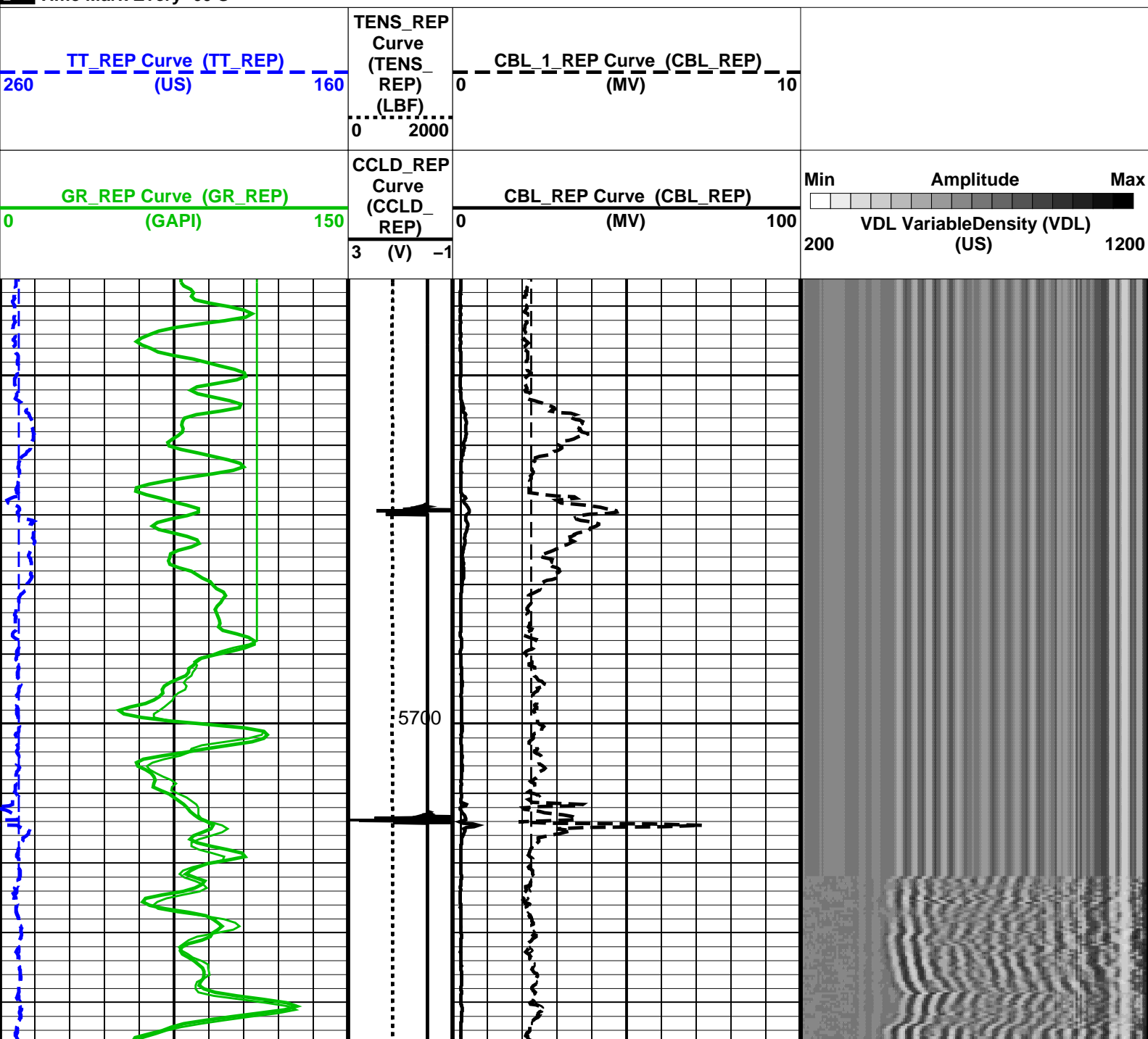
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## OP System Version: 19C0-187

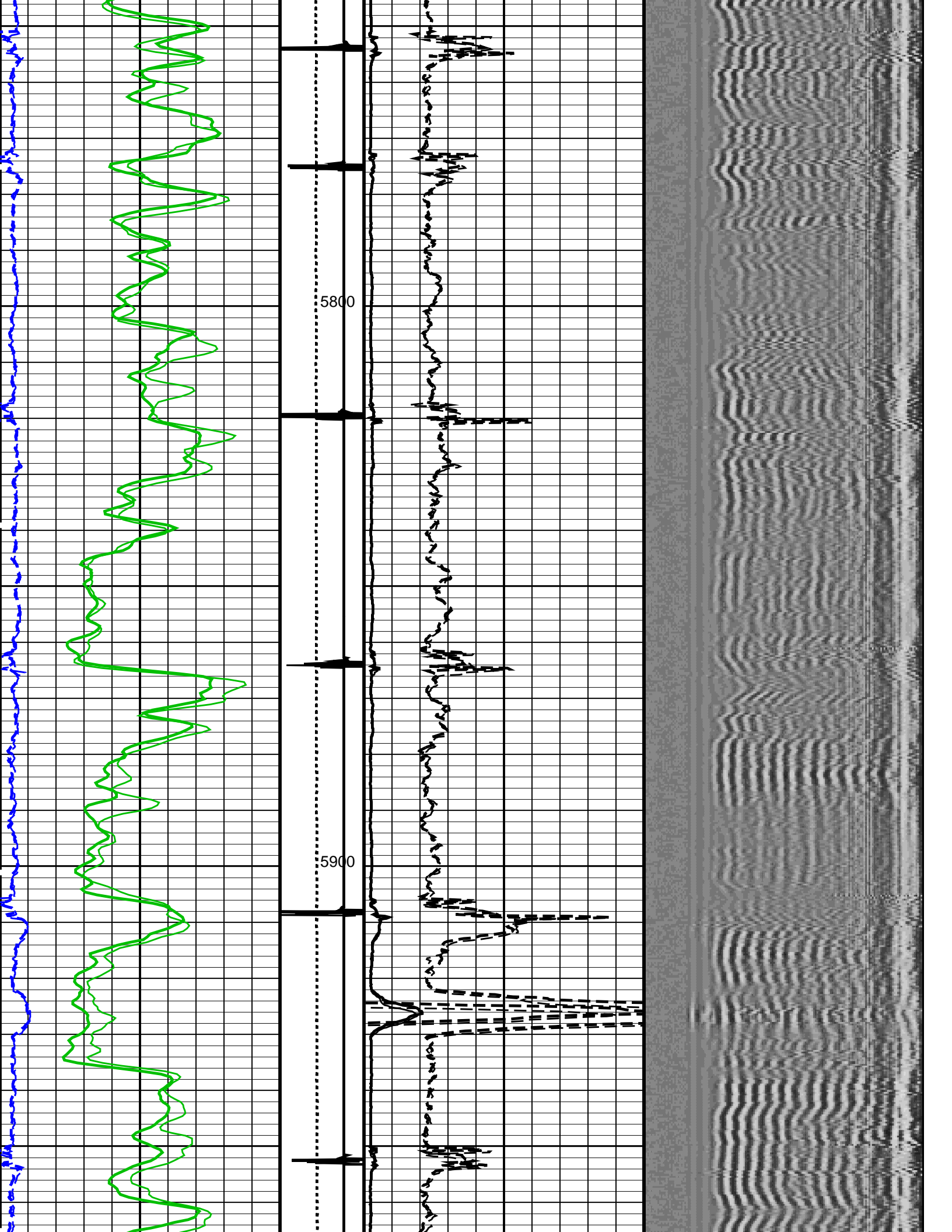
SCMT-CB	19C0-187	RST-C	19C0-187
PSPT	19C0-187		

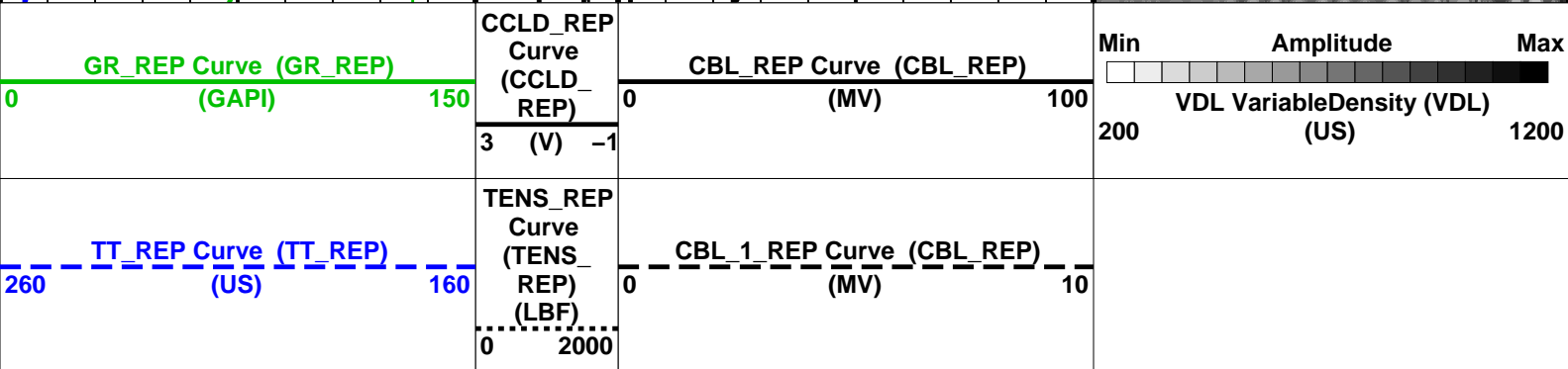
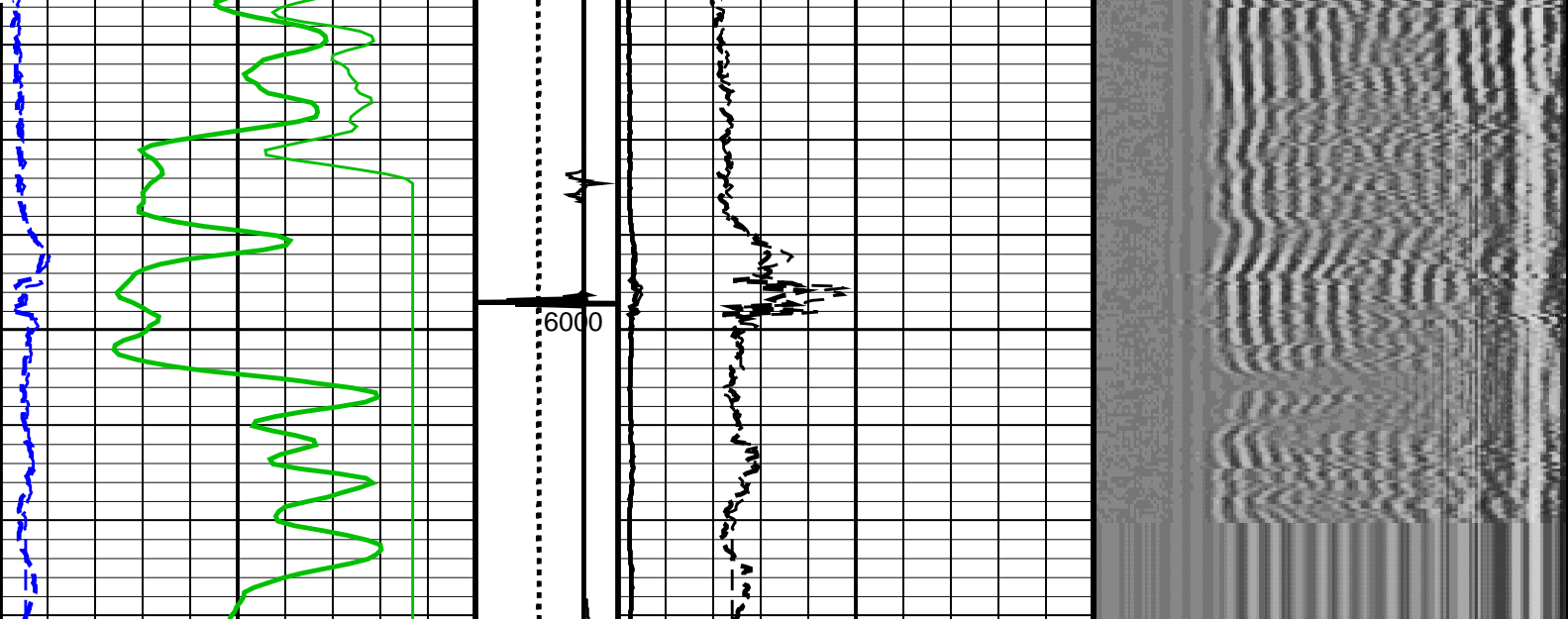
## PIP SUMMARY

Time Mark Every 60 S









#### PIP SUMMARY

Time Mark Every 60 S

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

Graphics File Created: 14-Sep-2013 15:20

### OP System Version: 19C0-187

SCMT-CB	19C0-187	RST-C	19C0-187
PSPT	19C0-187		

#### <<<SCMT Cement Evaluation Information Summary>>>

Sonde Serial Number	SCMS-CB 8179		
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	6-MAR-2012		
CBL Correction Factor	0.0704263	CBL Adjustment Factor (CBAF)	1.0
MAP 1 Correction Factor	0.0993191	MAP Adjustment Factor (MPAF)	1.0
MAP 2 Correction Factor	0.0941329		
MAP 3 Correction Factor	0.101552		
MAP 4 Correction Factor	0.114415		
MAP 5 Correction Factor	0.127992		
MAP 6 Correction Factor	0.121190		
MAP 7 Correction Factor	0.112867		
MAP 8 Correction Factor	0.102913		

## 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	7982	FT

### Input DLIS Files

DEFAULT	SCMT_RST_PSP_046LUP	FN:44	PRODUCER	14-Sep-2013 11:08	6028.5 FT	5684.7 FT
DEFAULT	SCMT_RST_PSP_059PUP	FN:55	PRODUCER	14-Sep-2013 15:15	7992.5 FT	-47.0 FT

### Output DLIS Files

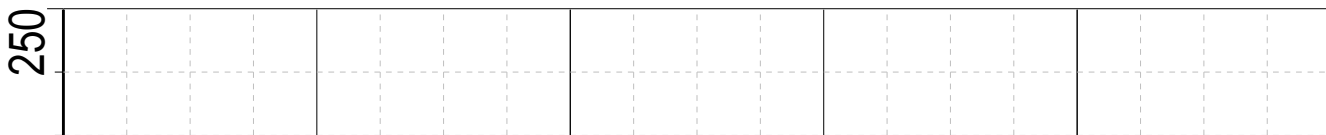
DEFAULT	SCMT_RST_PSP_061PUP	FN:57	PRODUCER	14-Sep-2013 15:20
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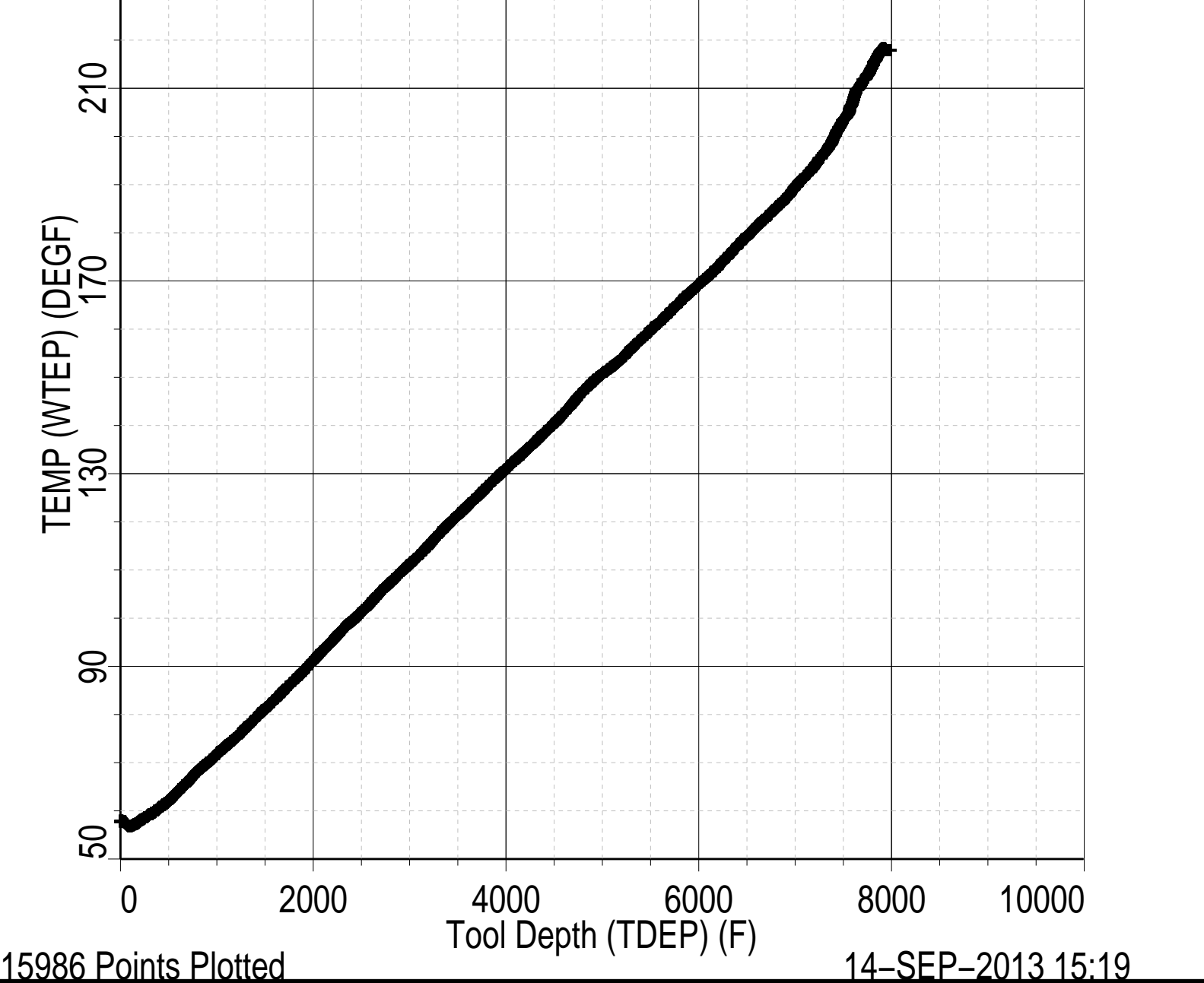
**Schlumberger**

**TEMPERATURE PLOT**

MAXIS Field Log

Index: 7992.5 – -47.0 FT





**Schlumberger**

## PBMS COEFFICIENTS

MAXIS Field Log

Client: ENCANA OIL & GAS (USA) INC  
Field: SOUTH PARACHUTE  
Well: HAGEN 15-14A (PC22)  
Run date: 14-Sep-2013

Tool: PSP  
Sub Type: PBMS  
Sensor: GR

PBMS Gamma Ray

Sonde Serial NB

Sensor Serial NB

RESISTORS FOR GR SENSOR N.33223, TOOL PBMS-BA0928. SENSOR S/N:

33223

Calib Date ddmmyy 090800  
Matrix Size 12  
Coeff CRC CFE2

GR HV Rt

Rt\*\*0

Rt\*\*1

Rt\*\*0

+.182000000000e+04

+.332000000000e+04

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Client: ENCANA OIL & GAS (USA) INC  
Field: SOUTH PARACHUTE  
Well: HAGEN 15-14A (PC22)  
Run date: 14-Sep-2013

Tool: PSP  
Sub Type: PBMS  
Sensor: WellTemp RTD

---

PBMS RTD Well Thermometer

Sonde Serial NB COEFFICIENTS FOR RTD THERMOMETER PBMS-B.928 S/N:  
Sensor Serial NB 928  
Calib Date ddmmyy 280612  
Matrix Size 16  
Coeff CRC A24E

WTemp Coeff

Tt\*\*0

Tt\*\*1

Tt\*\*2

Tt\*\*0

-.391987973189E+03

+.191346892512E+03

-.440920753451E+02

Tt\*\*3

Tt\*\*4

Tt\*\*5

Tt\*\*0

+.957191300908E+01

-.711421725686E+00

0.0

---



PBMS Quartz Gauge type F

Sonde Serial NB

Sensor Serial NB

Calib Date ddmmyy

Matrix Size

Coeff CRC

COEFFICIENTS FOR CQG PBMS-B.928 S/N:

928

280612

66

9DC3

Pres Coeff

	Fb**0	Fb**1	Fb**2
Fc**0	+714463802232E+04	+183434658655E-01	-.156620073569E-06
Fc**1	-.100638308957E+01	-.119899563644E-04	-.912155899025E-10
Fc**2	+936268101283E-06	+423898071451E-10	+958076371919E-15
Fc**3	+185123362373E-11	+203107925433E-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	-.746577997611E-10	-.588773826860E-15	-.622250441458E-19
Fc**1	-.120636521092E-15	+400325894750E-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

Calib Date ddmmyy

Matrix Size

Coeff CRC

:

928

280612

66

283B

Temp Coeff

	Fc**0	Fc**1	Fc**2
Fb**0	+117016867873E+03	-.284359629614E-03	+604391180345E-08
Fb**1	-.598309140812E-02	+182731130848E-07	+160166486172E-12
Fb**2	-.307621454576E-07	+300601550309E-12	+311233548560E-17
Fb**3	-.419658736767E-12	+117473708647E-16	0.0

Fb**0	0.0	0.0	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	+1.14322792679E-12	+1.153807711176E-17	-.736714260866E-21
Fb**1	-.528037875456E-18	-.220337637519E-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 928  
Calib Date ddmmyy 280612  
Matrix Size 16  
Coeff CRC 093F

Clock Freq Coeff

	(Fb'-Fc')**0	(Fb'-Fc')**1	(Fb'-Fc')**2
(Fb'-Fc')**0	+3.10874009898E+05	+2.88920923041E-02	+6.97940727038E-06
	(Fb'-Fc')**3	(Fb'-Fc')**4	(Fb'-Fc')**5
(Fb'-Fc')**0	-.657432344763E-10	-.412920638782E-15	+2.13369826099E-20

PBMS Quartz Gauge type F

Sonde Serial NB :  
Sensor Serial NB 928  
Calib Date ddmmyy 280612  
Matrix Size 16  
Coeff CRC 8419

Clock Temp Coeff

	(Fb'-Fc')**0	(Fb'-Fc')**1	(Fb'-Fc')**2
(Fb'-Fc')**0	+1.115369519827E+03	-.565338877075E-02	-.333717531829E-07
	(Fb'-Fc')**3	(Fb'-Fc')**4	(Fb'-Fc')**5
(Fb'-Fc')**0	-.124387135327E-12	+7.13102327208E-16	-.316084316842E-20

## 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

8179

Slim Cement Mapping Cartridge










SCMC – CA

8248

## Auxiliary Equipment:

Slim Electronics Cartridge Housing

SECH – CA

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	Phase	MAP 2 Amplitude Plus MV		Value
Master			1208	Master			1275
	500.0 (Minimum)	1075 (Nominal)	1650 (Maximum)		500.0 (Minimum)	1075 (Nominal)	1650 (Maximum)
Phase	MAP 3 Amplitude Plus MV		Value	Phase	MAP 4 Amplitude Plus MV		Value
Master			1182	Master			1049
	500.0 (Minimum)	1075 (Nominal)	1650 (Maximum)		500.0 (Minimum)	1075 (Nominal)	1650 (Maximum)
Phase	MAP 5 Amplitude Plus MV		Value	Phase	MAP 6 Amplitude Plus MV		Value
Master			937.6	Master			990.2
	500.0 (Minimum)	1075 (Nominal)	1650 (Maximum)		500.0 (Minimum)	1075 (Nominal)	1650 (Maximum)
Phase	MAP 7 Amplitude Plus MV		Value	Phase	MAP 8 Amplitude Plus MV		Value
Master			1063	Master			1166
	500.0 (Minimum)	1075 (Nominal)	1650 (Maximum)		500.0 (Minimum)	1075 (Nominal)	1650 (Maximum)
Phase	CBL Amplitude Plus MV		Value				
Master			1363				
	1000 (Minimum)	1350 (Nominal)	1700 (Maximum)				
Master: Calibration out of date 6–Mar–2012 15:06							

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

Schlumberger

Well: **HAGEN 15–14A (PC22)**Field: **SOUTH PARACHUTE**County: **GARFIELD**State: **COLORADO**

SLIM CEMENT MAPPING LOG

CBL–VDL

