

Company: ENCANA OIL & GAS (USA) INC

Well: HAGEN FEDERAL 15-16C (PC22)

Field: SOUTH PARACHUTE

County: GARFIELD State: COLORADO

SLIM CEMENT MAPPING LOG  
CBL-VDL  
GR-CCL

County: GARFIELD  
Field: SOUTH PARACHUTE  
Location: SHL: 631 FNL & 1797 FWL  
Well: HAGEN FEDERAL 15-16C (PC22)  
Company: ENCANA OIL & GAS (USA) INC

LOCATION		GROUND LEVEL		Elev.: K.B. 6543.00 ft	
SHL: 631 FNL & 1797 FWL		BHL: 576 FSL & 874 FEL		G.L. 6521.00 ft	
Permanent Datum:		Log Measured From: KELLY BUSHING		Elev.: 22.00 ft above Perm. Datum	
Drilling Measured From: KELLY BUSHING		API Serial No. 05-045-22005-0C		Section 22	Township 7S Range 95W
Logging Date		22-Oct-2013			
Run Number	1				
Depth Driller	8630 ft				
Schlumberger Depth	8528 ft				
Bottom Log Interval	8519 ft				
Top Log Interval	60 ft				
Casing Fluid Type	FRESH WATER				
Salinity					
Density	8.4 lbm/gal				
Fluid Level	60 ft				
BIT/CASING/TUBING STRING					
Bit Size	8.750 in				
From	22 ft				
To	8630 ft				
Casing/Tubing Size	4.500 in				
Weight	11.6 lbm/ft				
Grade	S-80				
From	22 ft				
To	8600 ft				
Maximum Recorded Temperatures	220 degF				
Logger On Bottom	22-Oct-2013		9:45		
Unit Number	391	GRAND JUNCTION			
Recorded By	KIRSTIE BUNTING				
Witnessed By	SHANE				

PVT DATA		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				
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				
Unit Number				
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	Conveyance Method:	Wireline
Calibration Cable Type:	1-25ZT	Number of Calibration Points:	10	Rig Type:	LAND
Wheel Correction 1:	-5	Calibration RMS:	3		
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 OS1: RESERVOIR SATURATION OS2: LOG OS3: SIGMA MODE OS4: GR-CCL OS5:	OTHER SERVICES2 OS1: OS2: OS3: OS4: OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
FIRST RUN IN HOLE CORRELATED TO DOWN LOG	
TOOL RAN AS PER TOOL SKETCH	
ENTRANCE TIME: 8:45	
TIME ON BOTTOM: 9:45	
EXIT TIME: 12:00	

MAXIMUM RECORDED TEMPERATURE: 220 DEGF
MAXIMUM RECORDED PRESSURE: 3295 PSIA
EXPECTED CBL AMPLITUDE IN FREE PIPE IS 80 MV
MAIN PASS LOGGED AT ZERO SURFACE PRESSURE
SHORT JOINTS : 6183 FT & 7173 FT
THANK YOU FOR CHOOSING E&P WIRELINE, A SCHLUMBERGER COMPANY
CREW: KRUNTING, KIRWIN, WAZIR, KILUNG

RUN 1			RUN 2		
SERVICE ORDER #:		CGF9-00160	SERVICE ORDER #:		
PROGRAM VERSION:		19C0-187	PROGRAM VERSION:		
FLUID LEVEL:		60 ft	FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

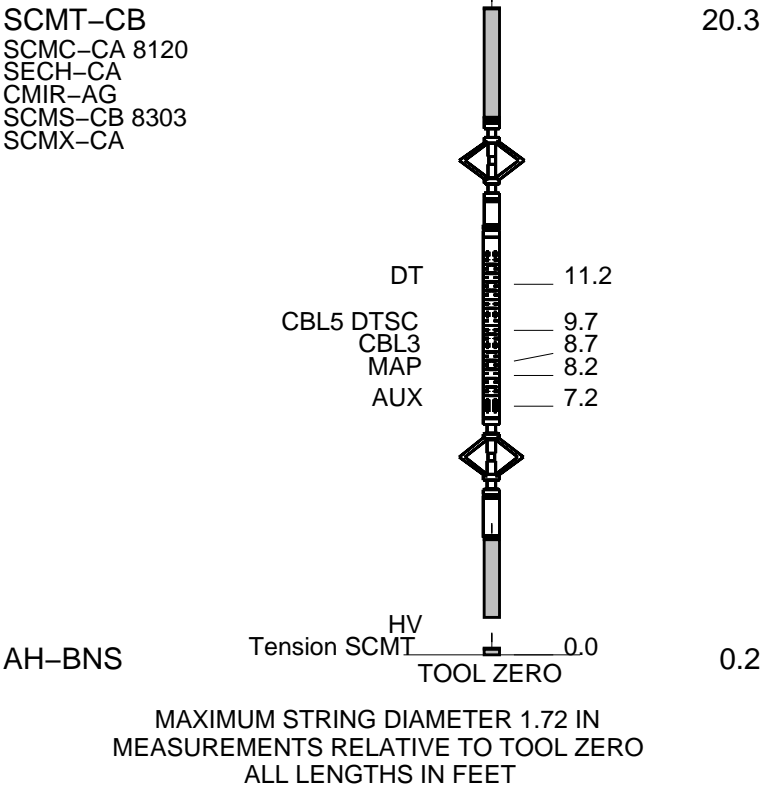
## EQUIPMENT DESCRIPTION

RUN 1 RUN 2

WITM-A  
PSC\_16MHZ

## DOWNHOLE EQUIPMENT

Device	Temperature (°C)
MH-22	53.4
MH-22	
Detail MT	
TelStatus	
CTEM	51.5
51.5	
PSPT	
PSC-A	
PSPT-B 928	
PSTC-A	
PBMS-B	47.8
CQG_F_Mano	
RTD_Thermometer	
GR	
Well_Temp	44.8
CQG Manom	44.5
CCL	44.0
PBMS	43.3
PBMS PSTC	
43.3	
RST-C	
RSCH-A 197	
RSC-E	
RSS-A 378	
RSXH-A 425	
RSX-E	
34.2	
RSC-A Far	
RSC-A PNG	
RSC-A Nea	
RSX-A PNG	33.7



Schlumberger

MAIN PASS CBL VDL

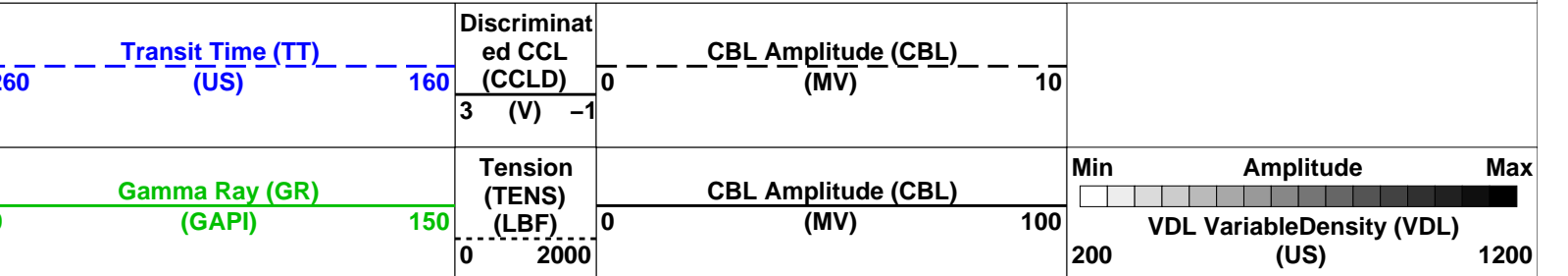
MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INCWell: HAGEN FEDERAL 15-16C (PC22)

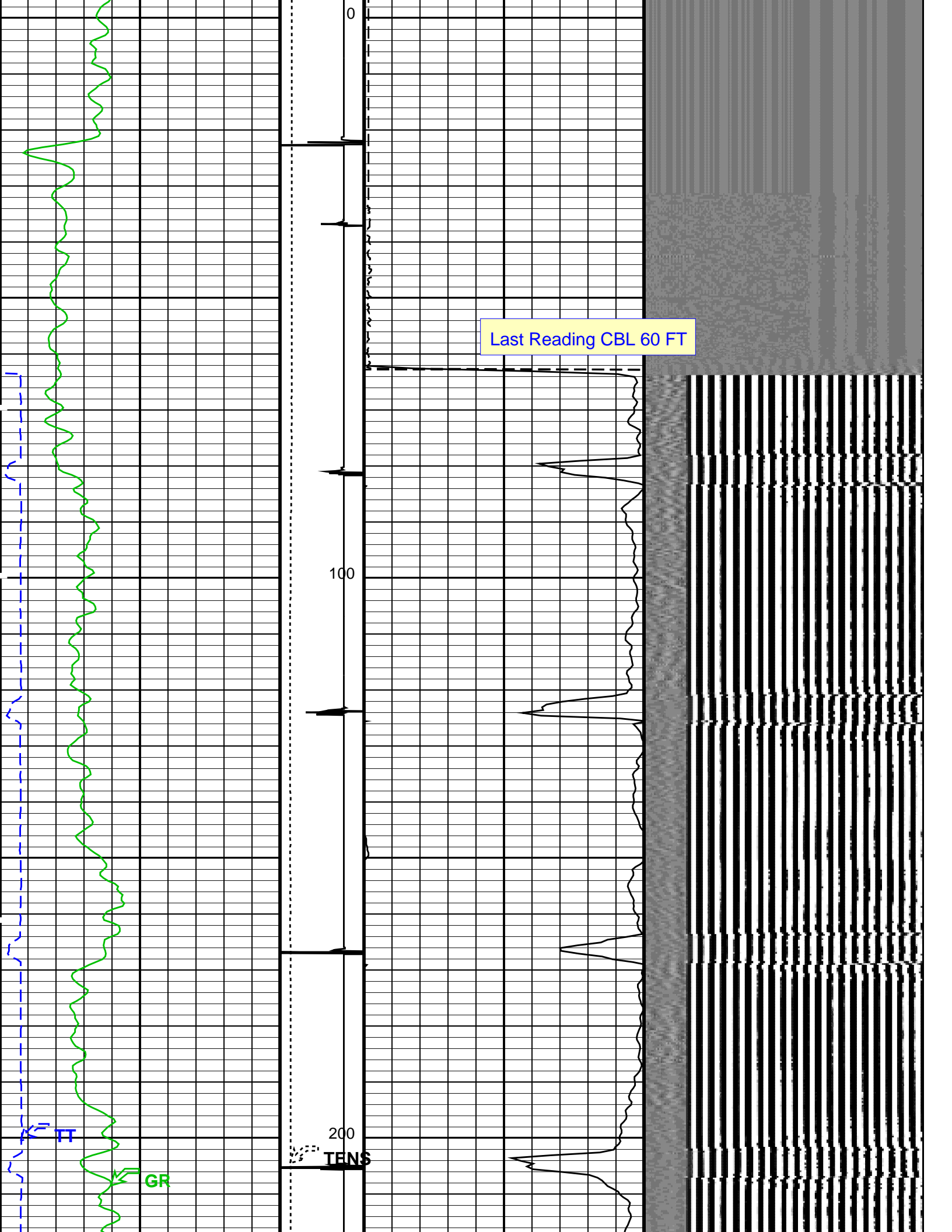
Input DLIS Files						
DEFAULT	SCMT_RST_PSP_074LUP	FN:70	PRODUCER	22-Oct-2013 09:35	8539.0 FT	-12.0 FT
Output DLIS Files						
DEFAULT	SCMT_RST_PSP_086PUP	FN:82	PRODUCER	22-Oct-2013 12:31	8547.0 FT	-4.0 FT
OP System Version: 19C0-187						
SCMT-CB	SRPC-5214-H2-2012-OP1	RST-C		SRPC-5214-H2-2012-OP1		
PSPT	SRPC-5214-H2-2012-OP1					

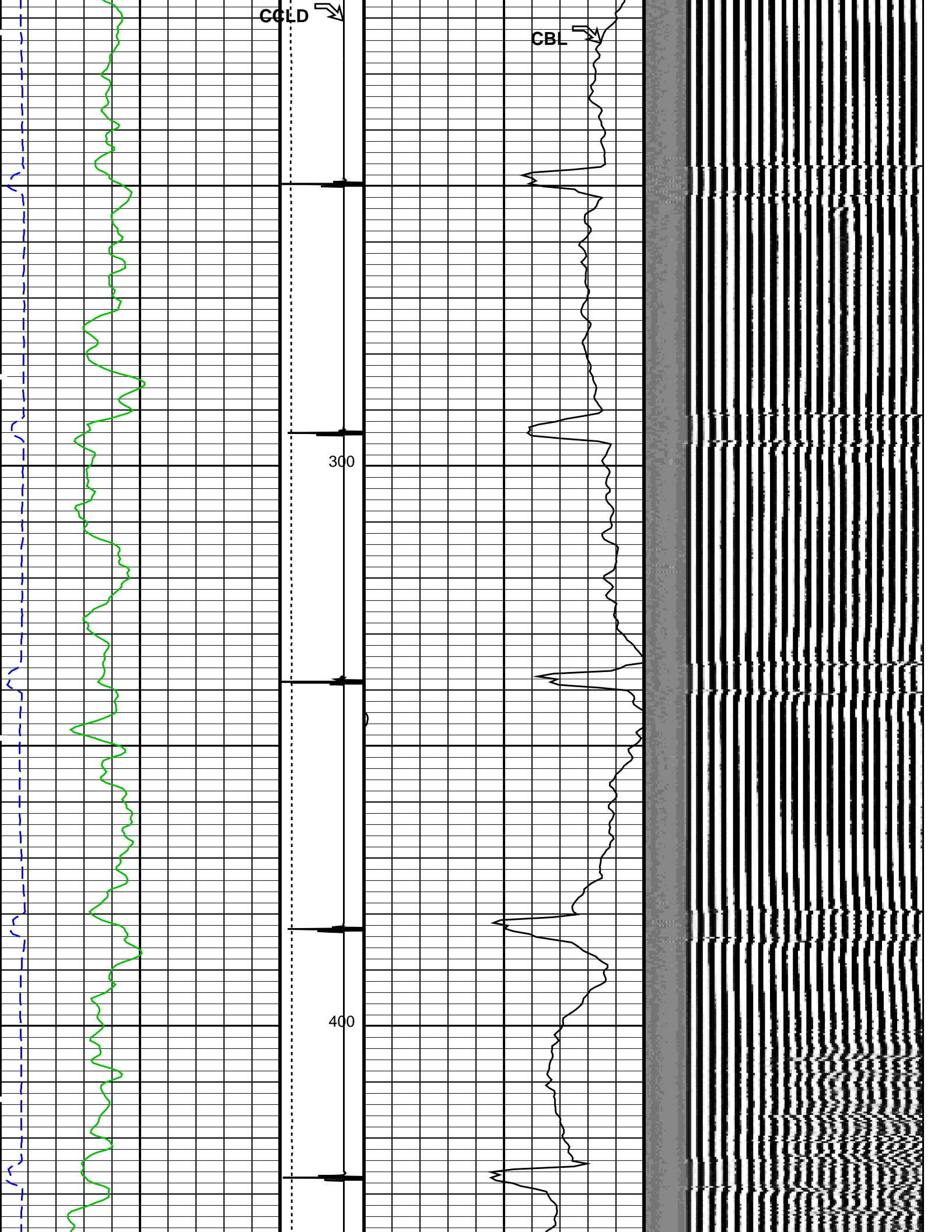
PIP SUMMARY

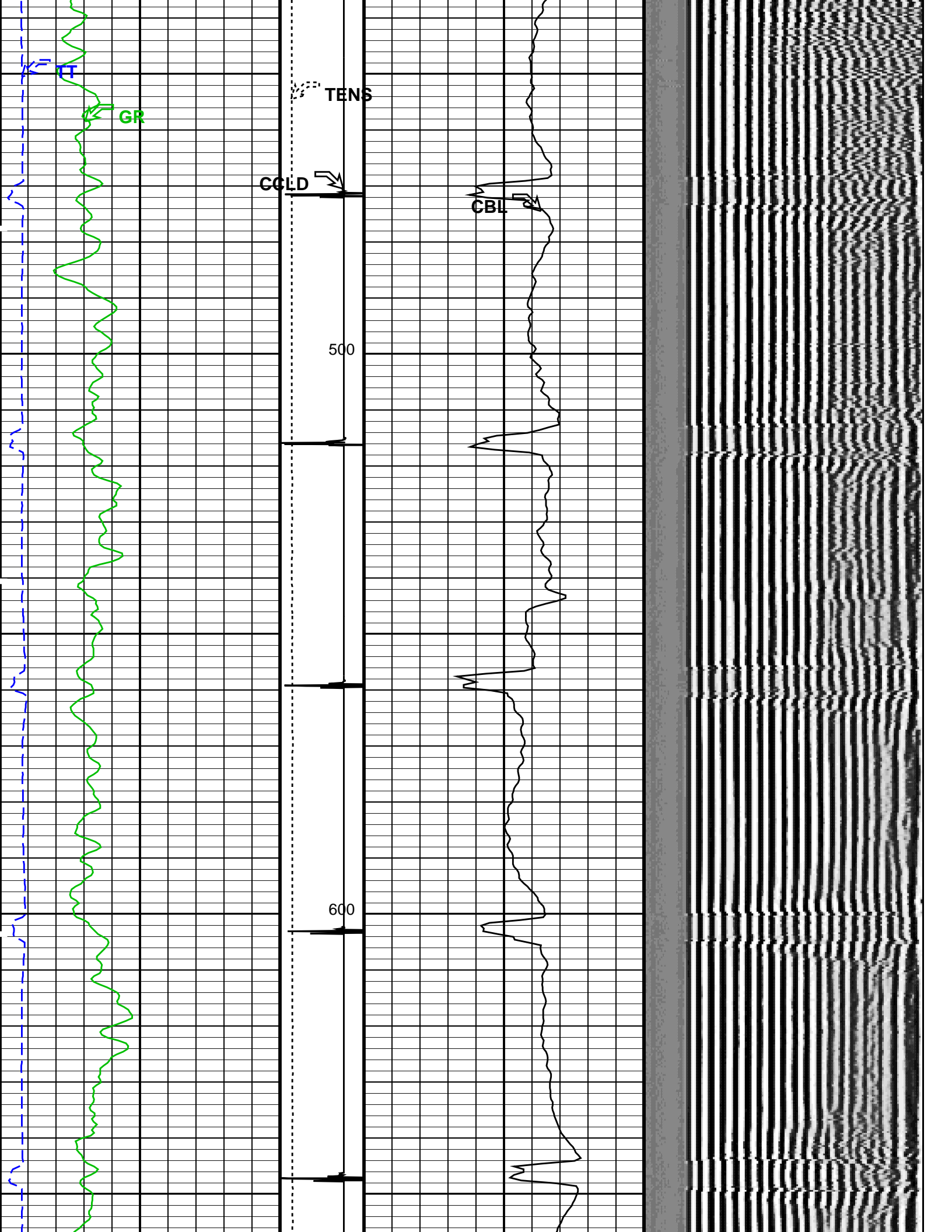
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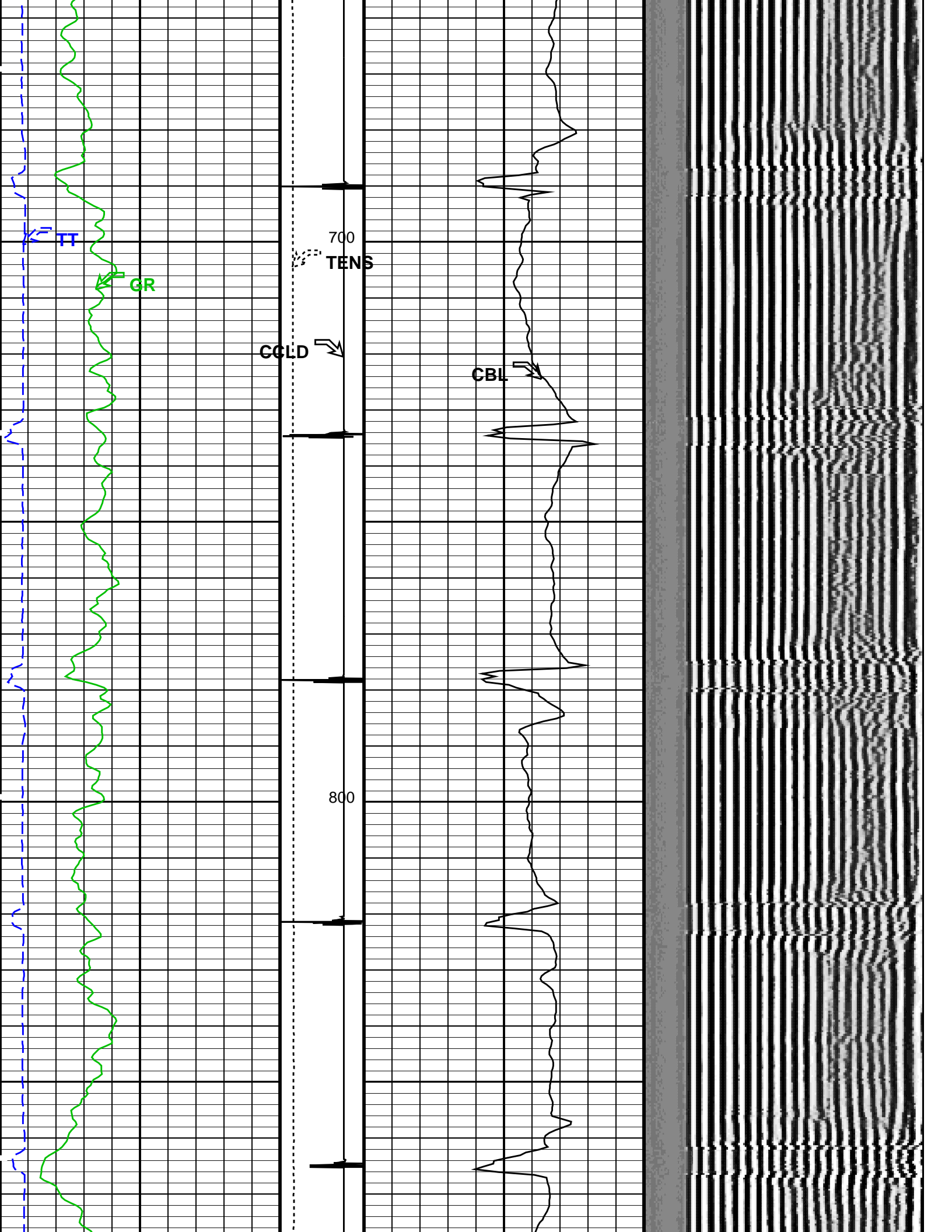


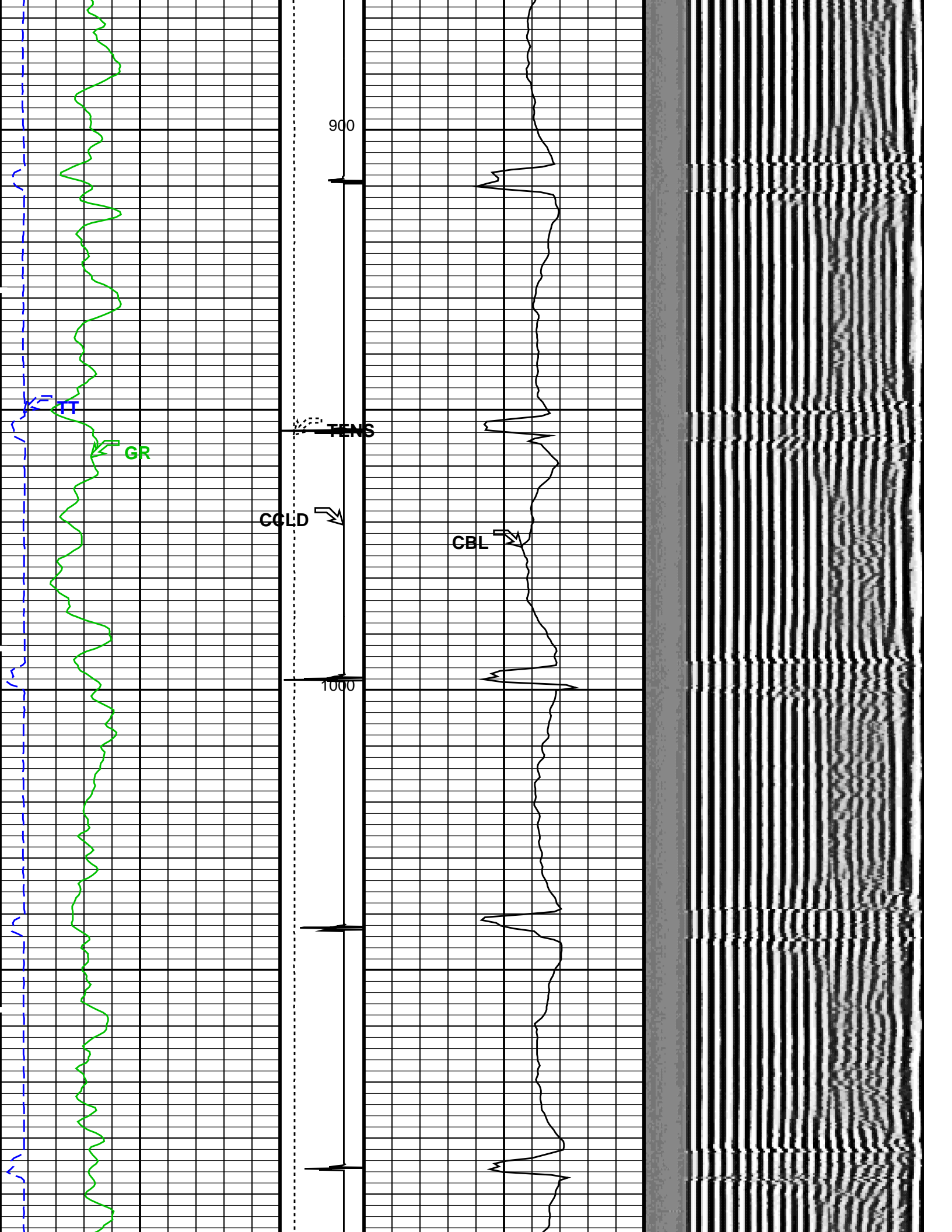




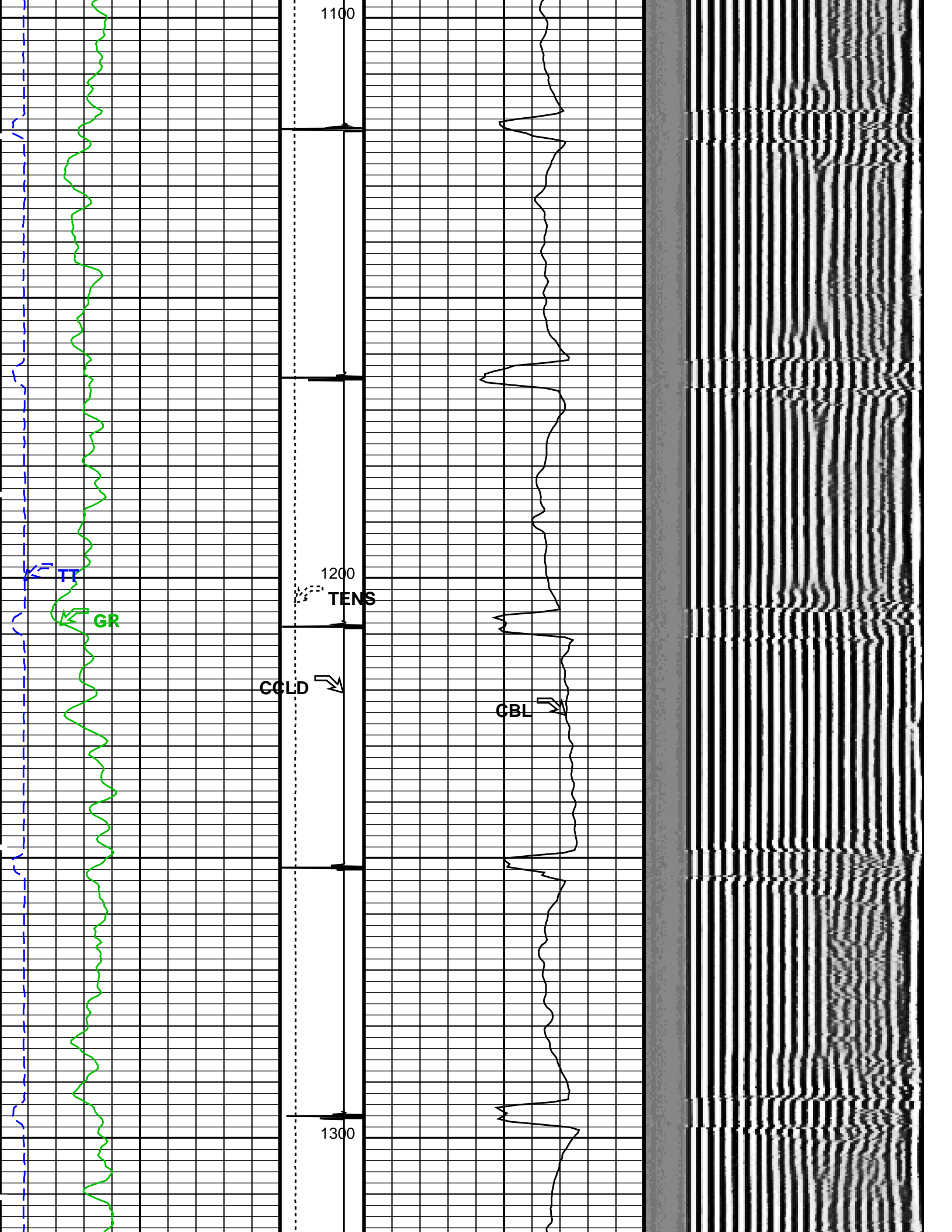


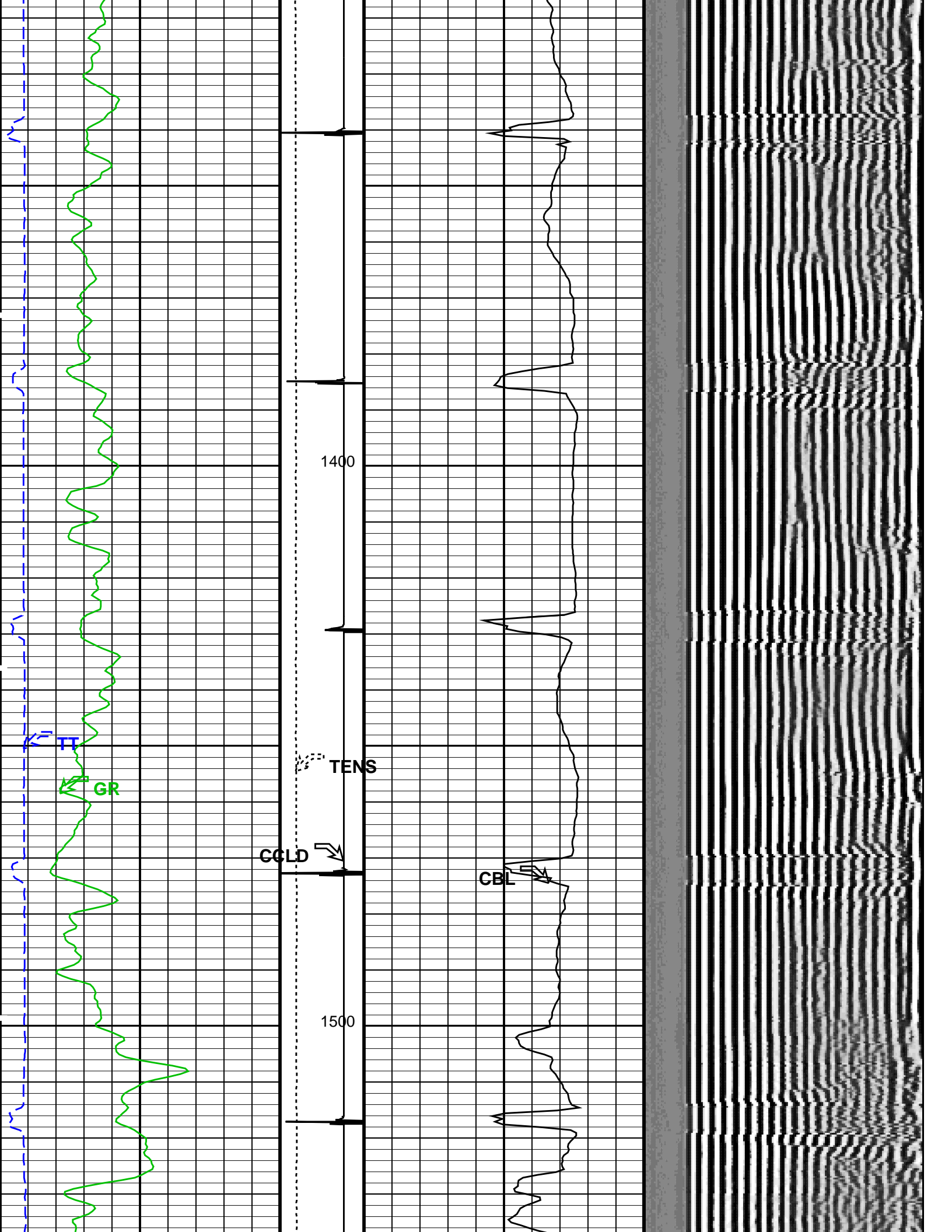


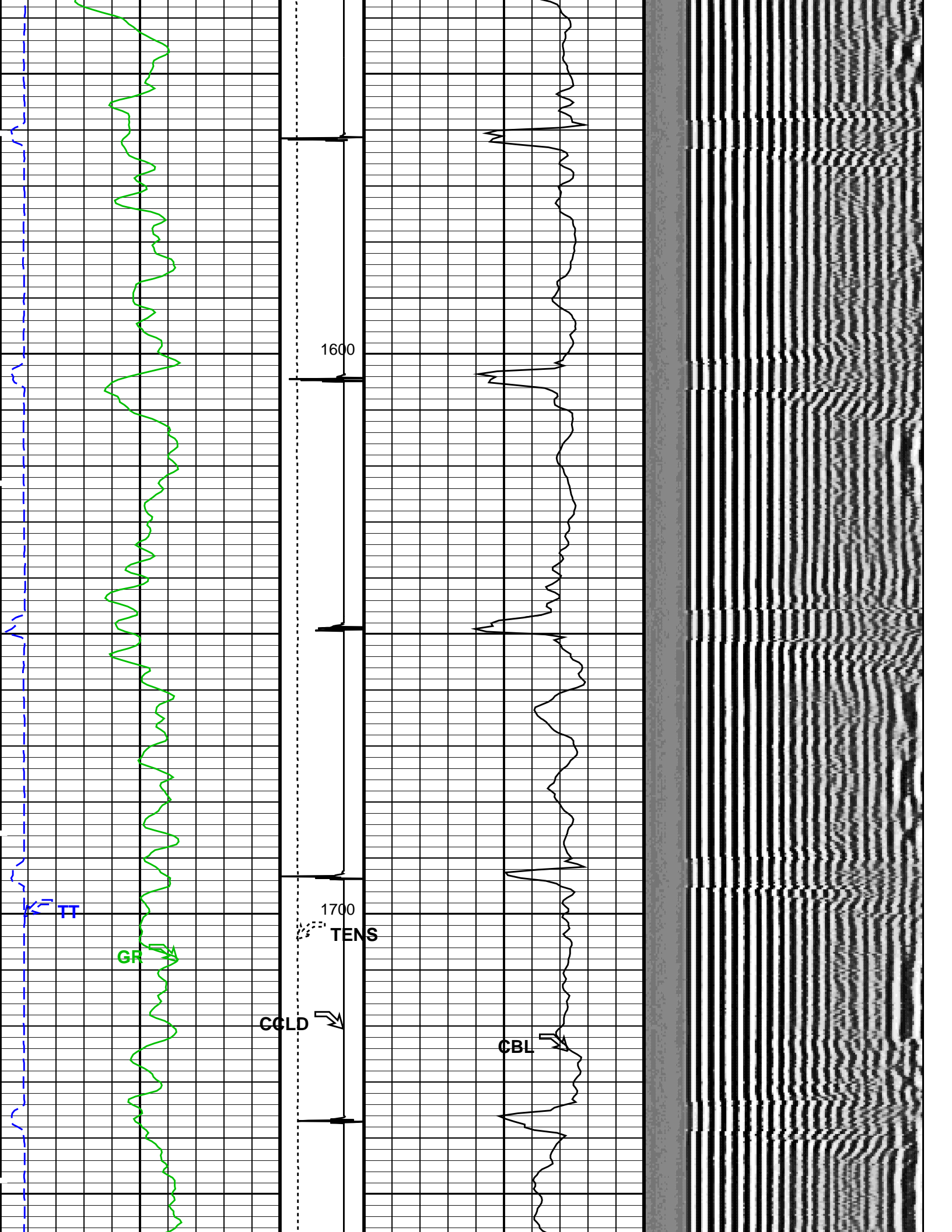




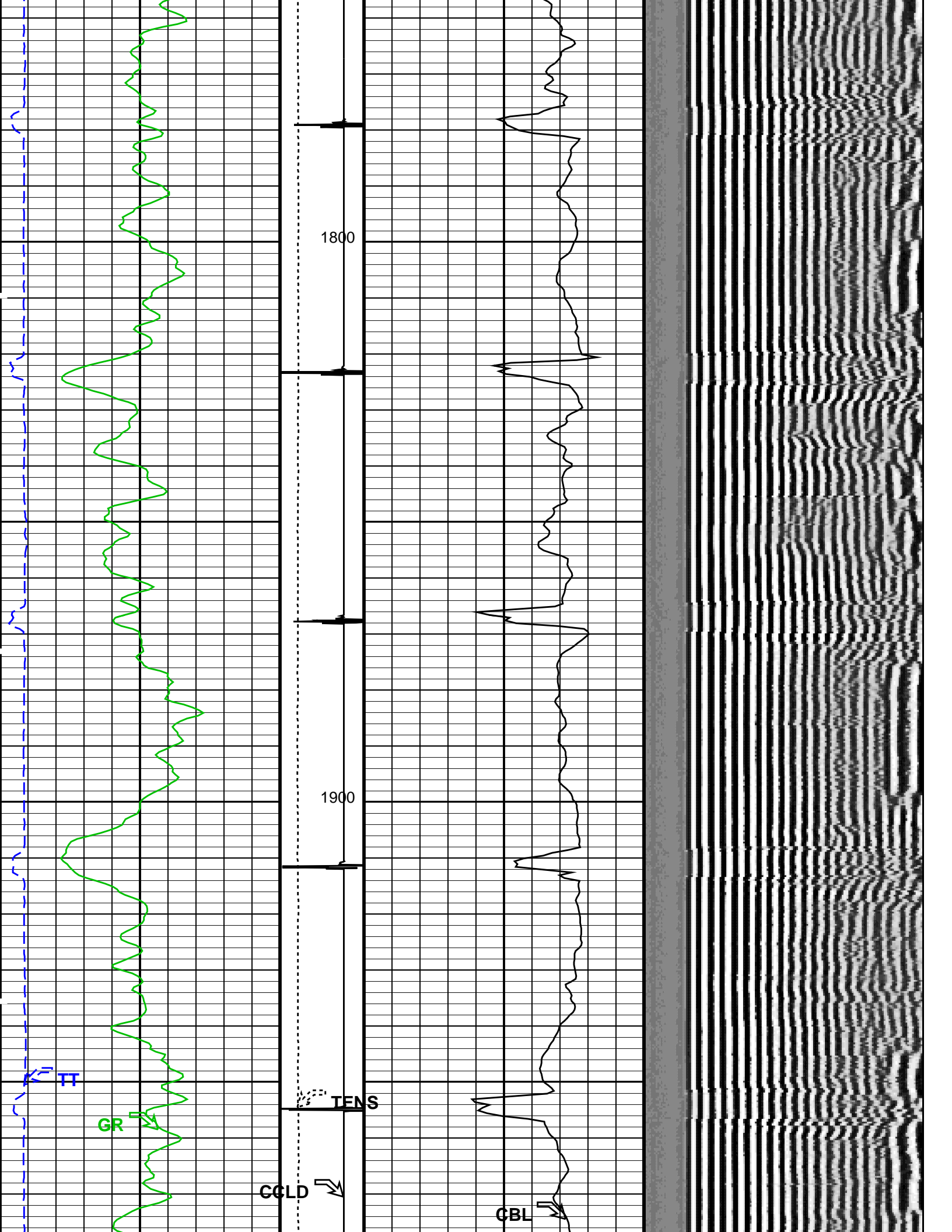


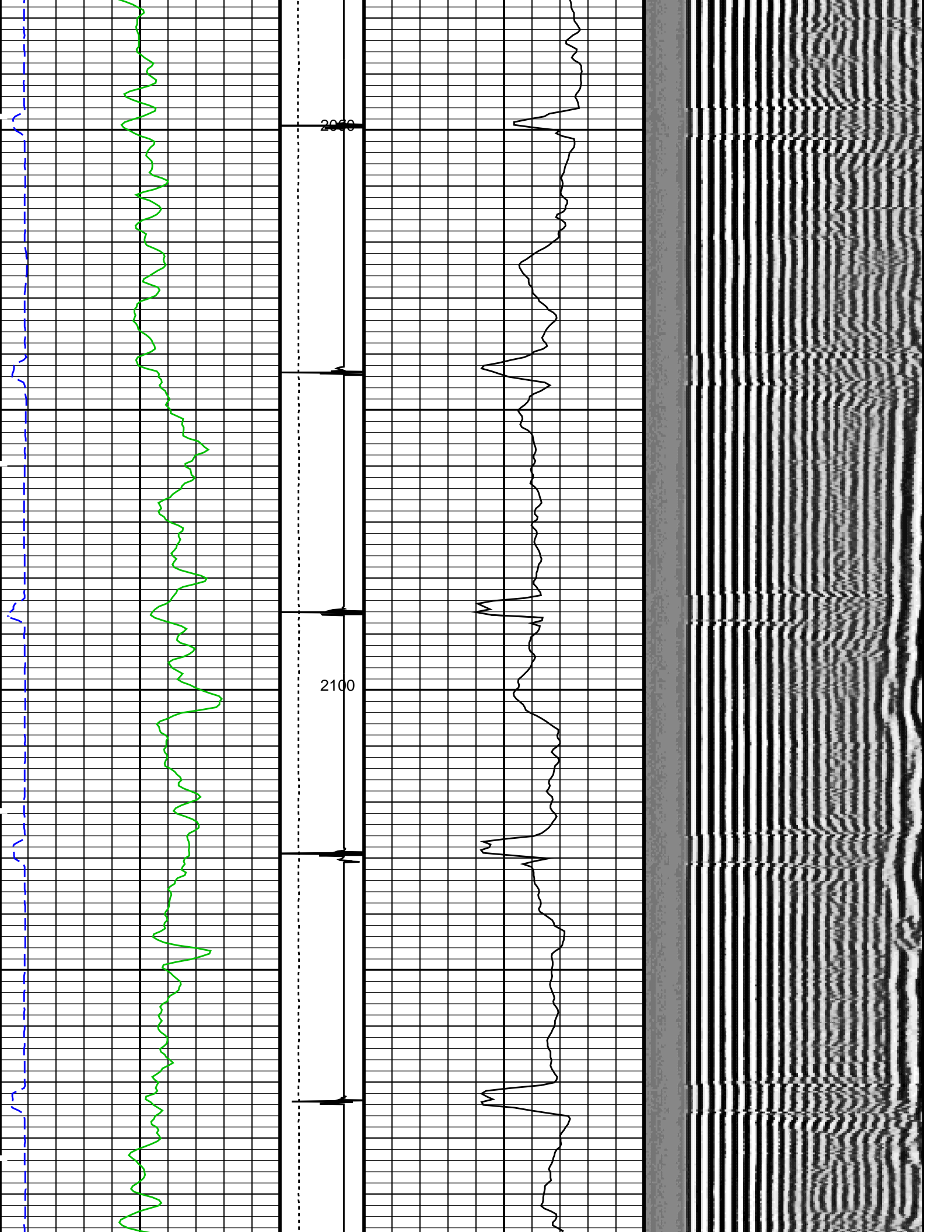


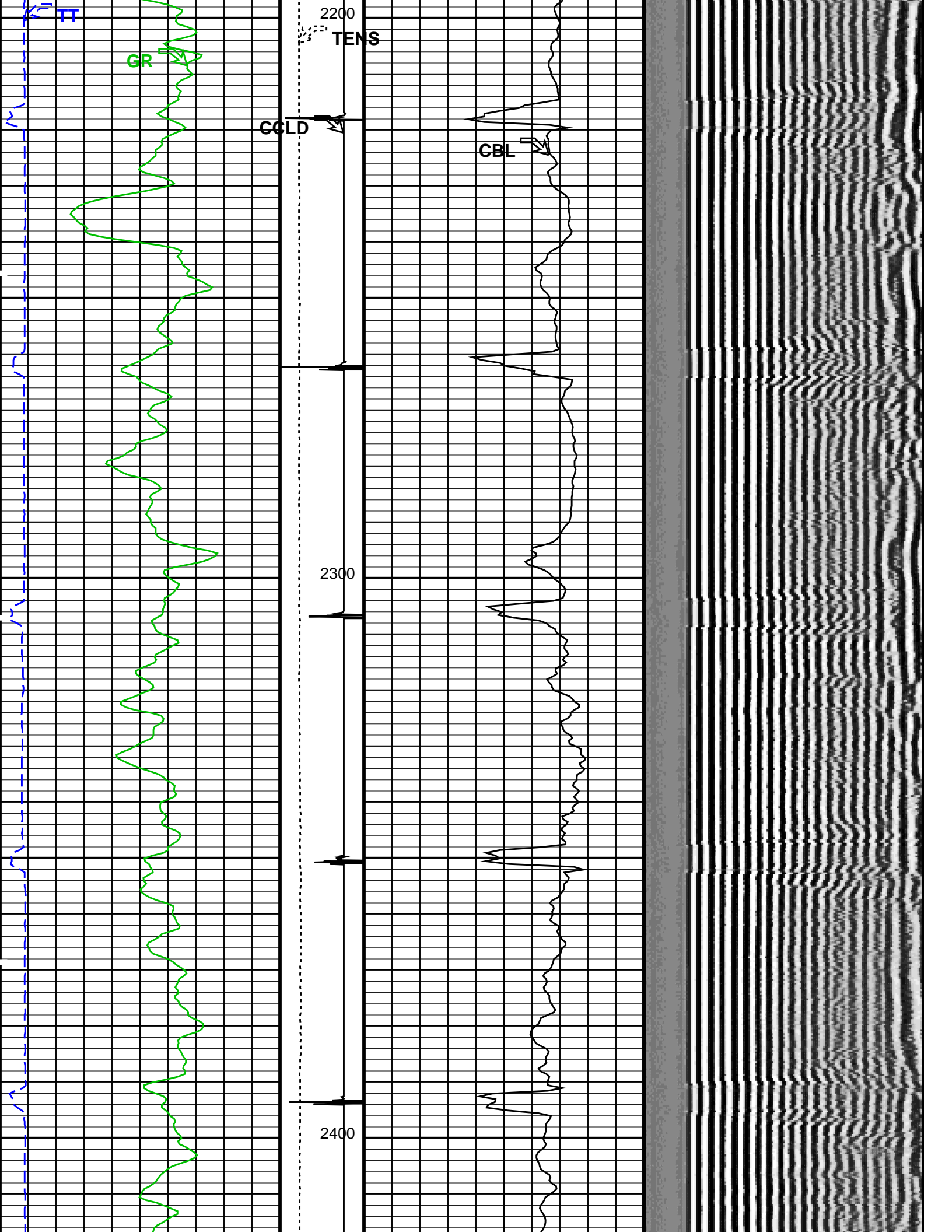


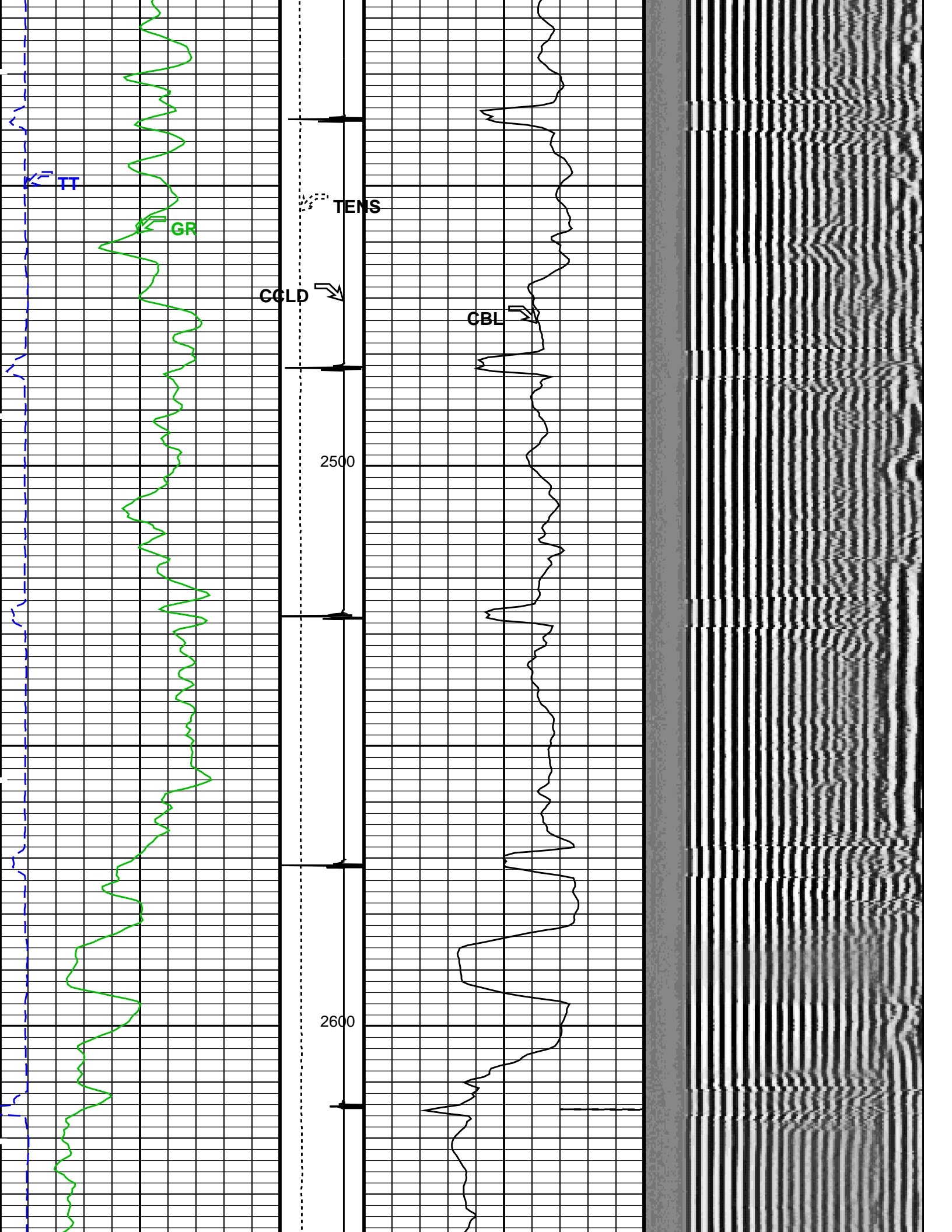




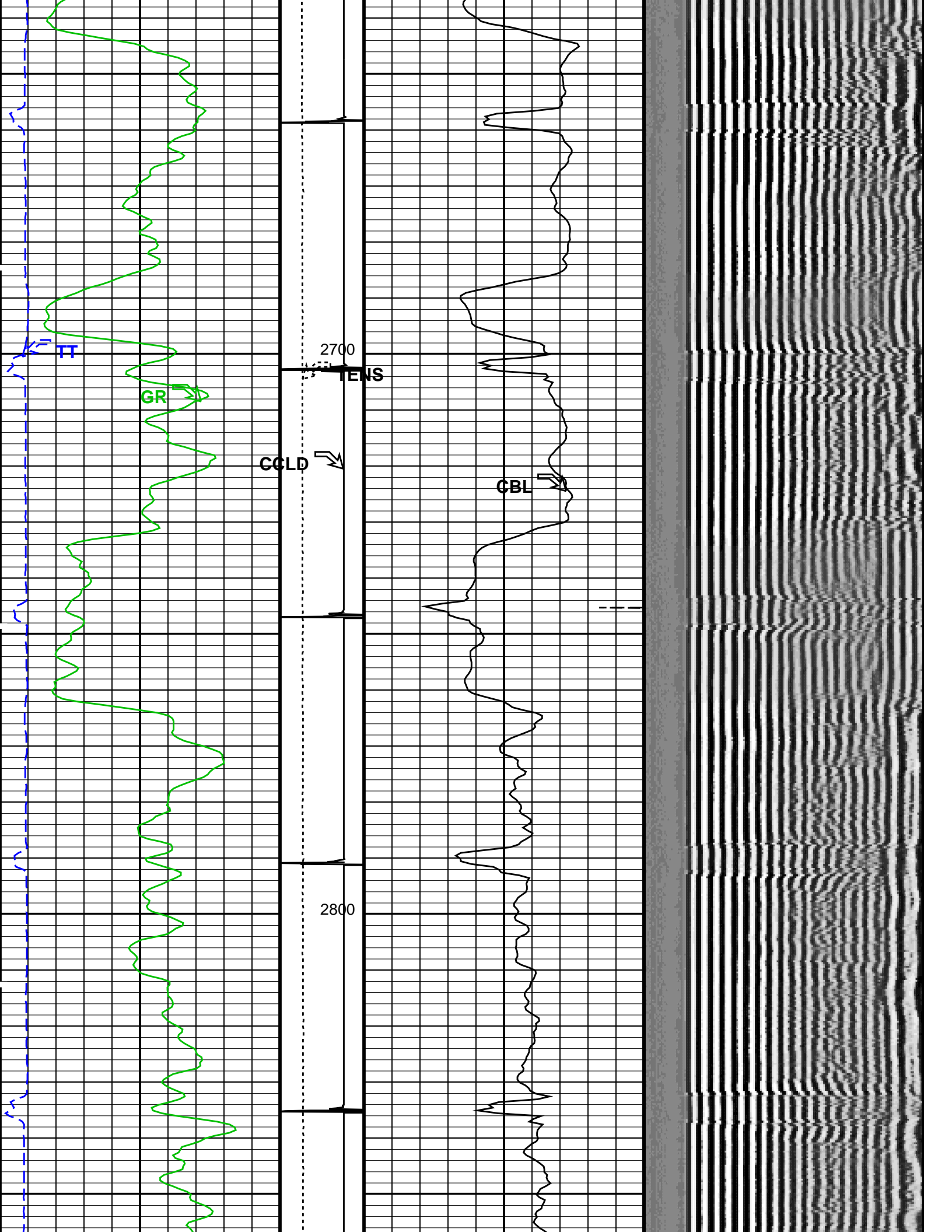


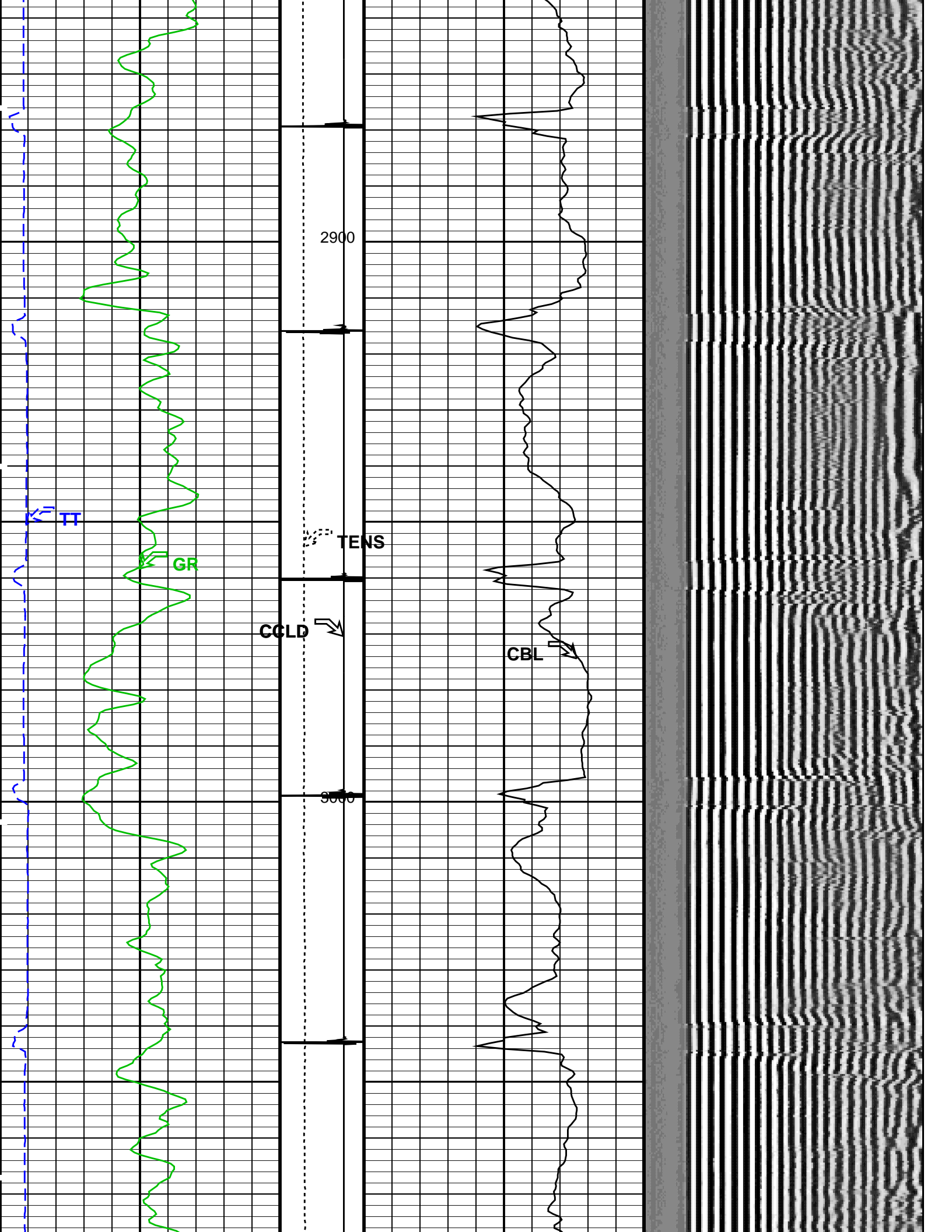


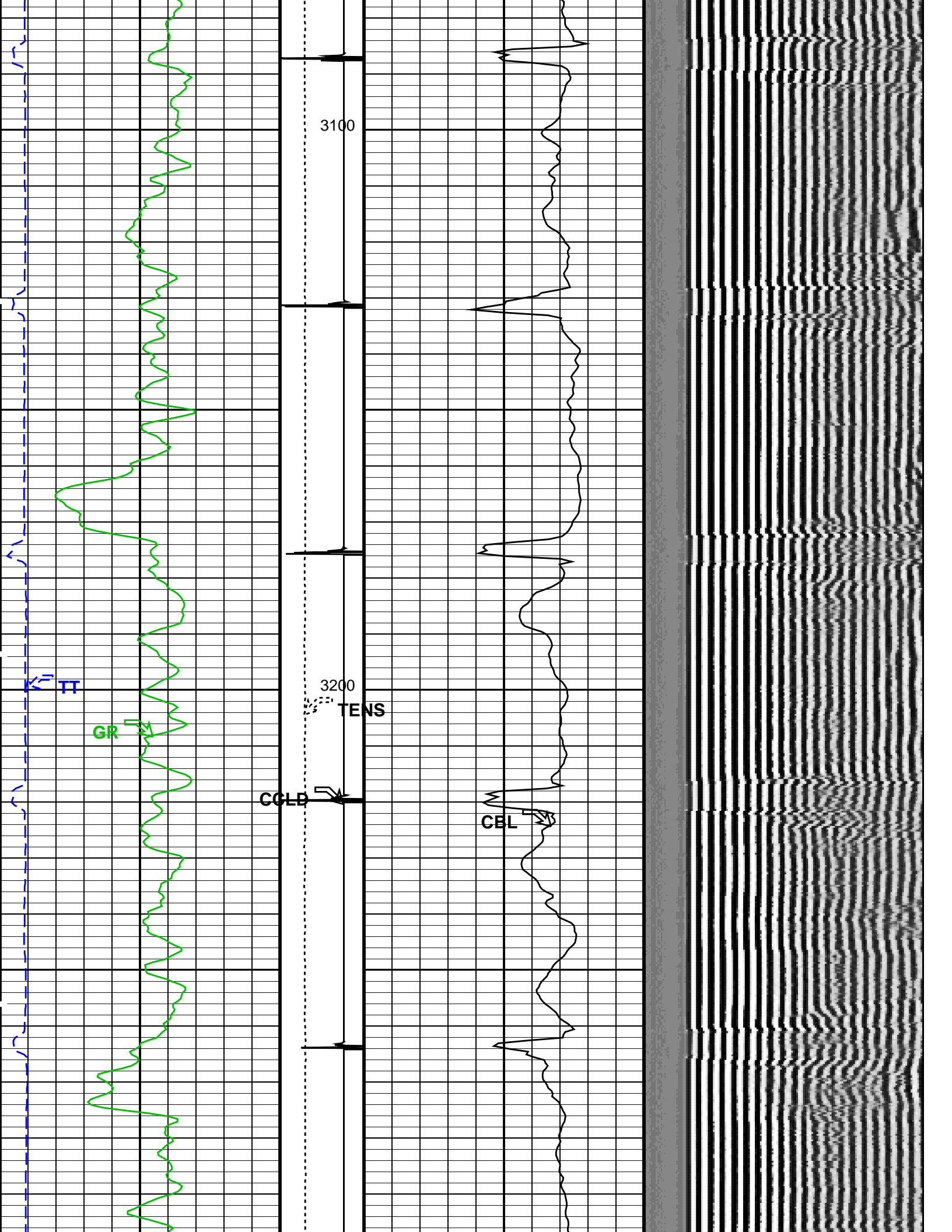


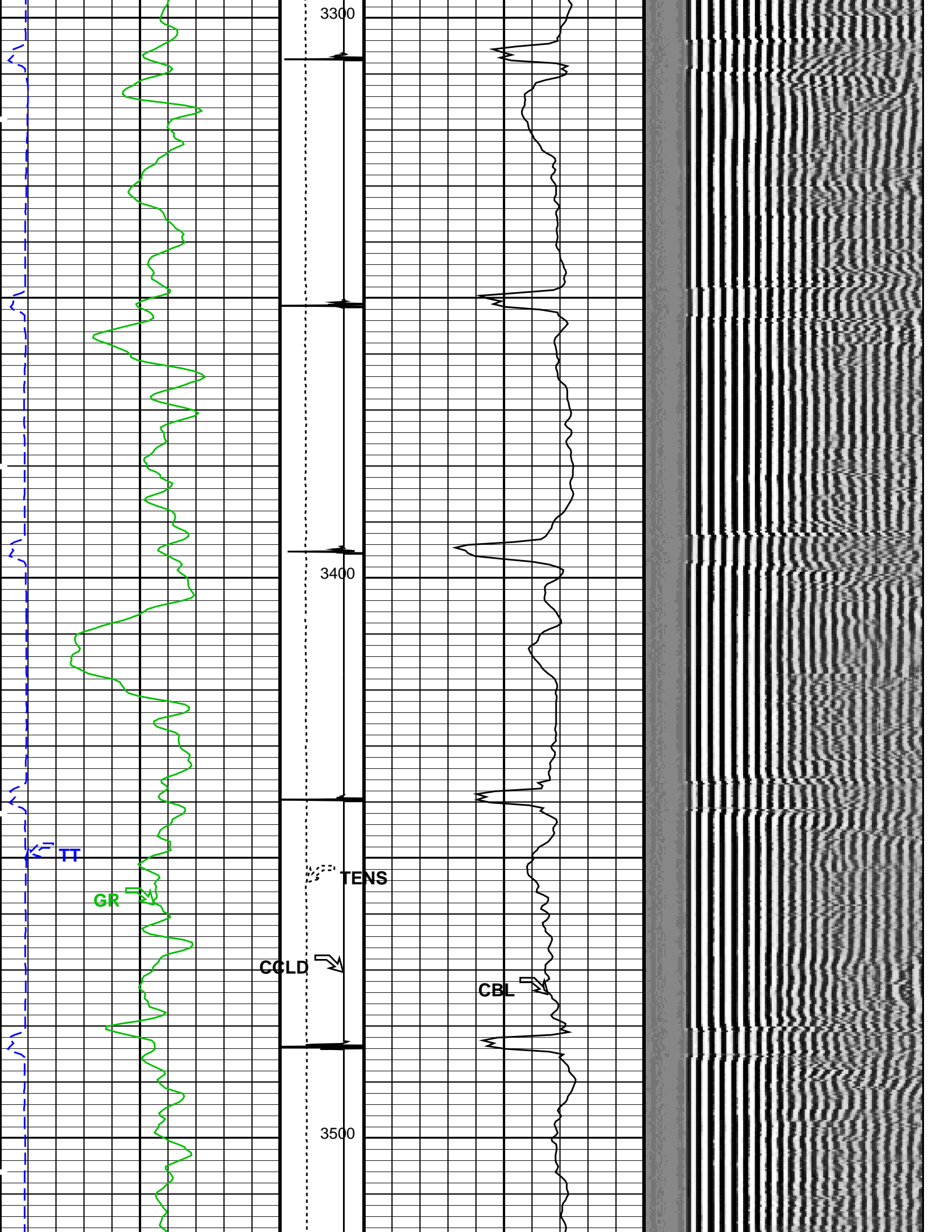




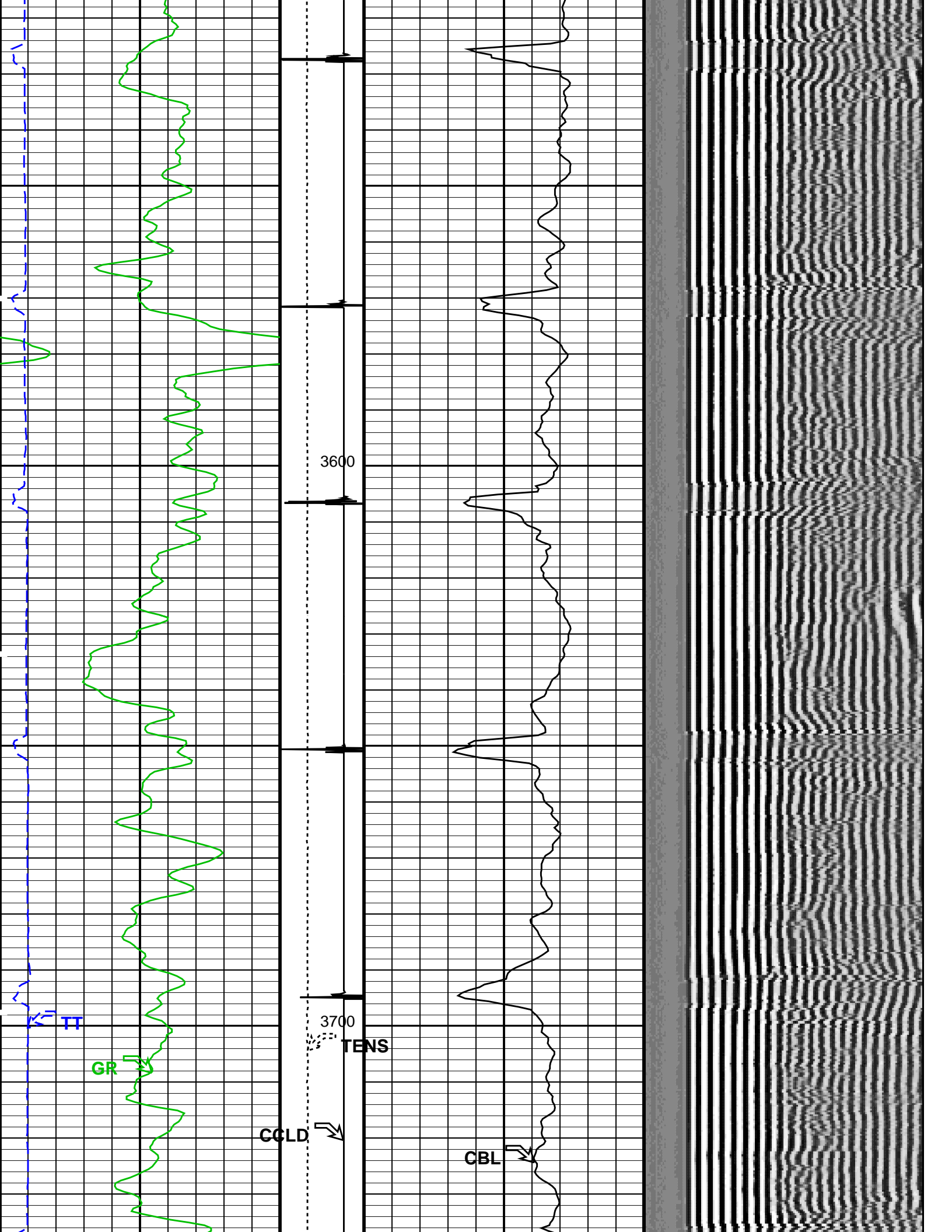


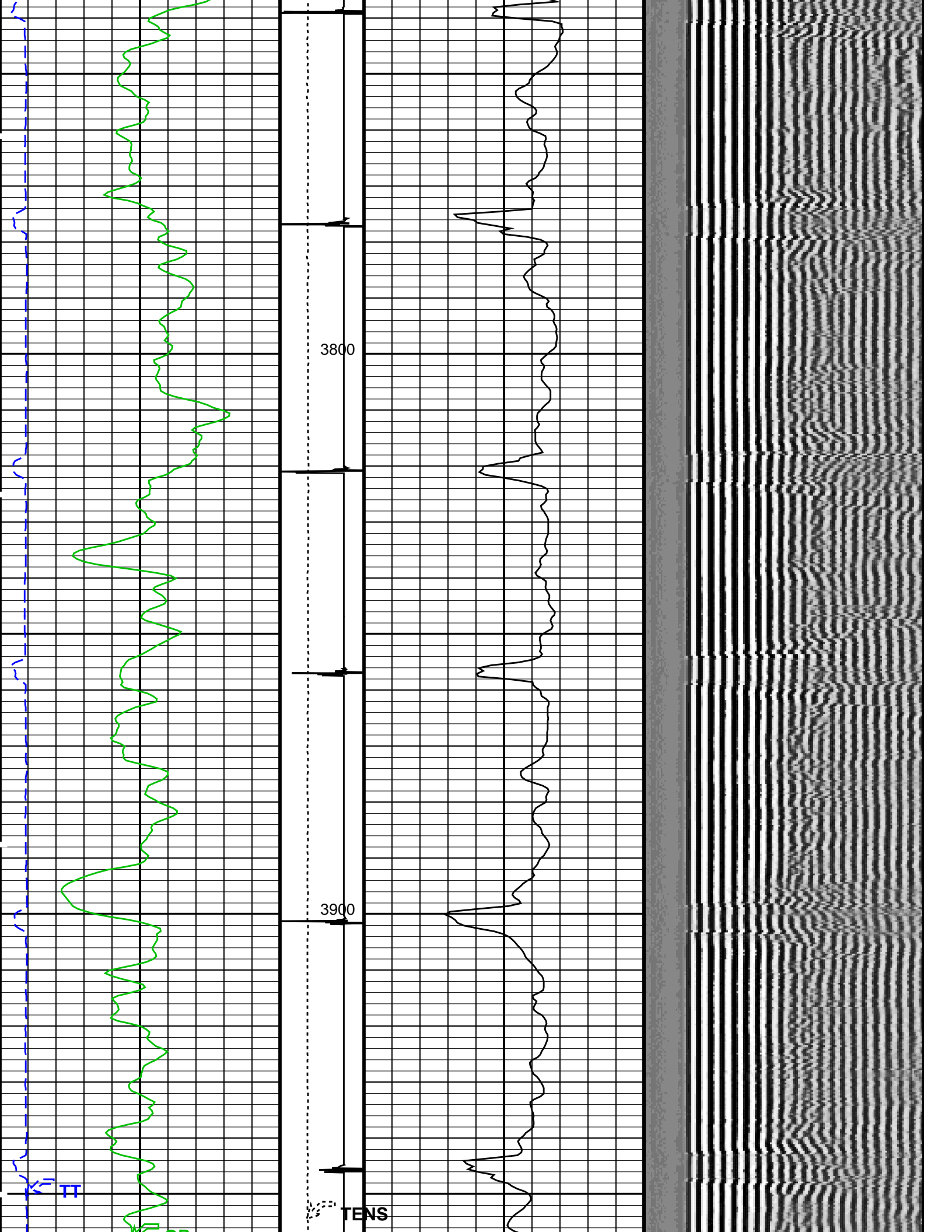


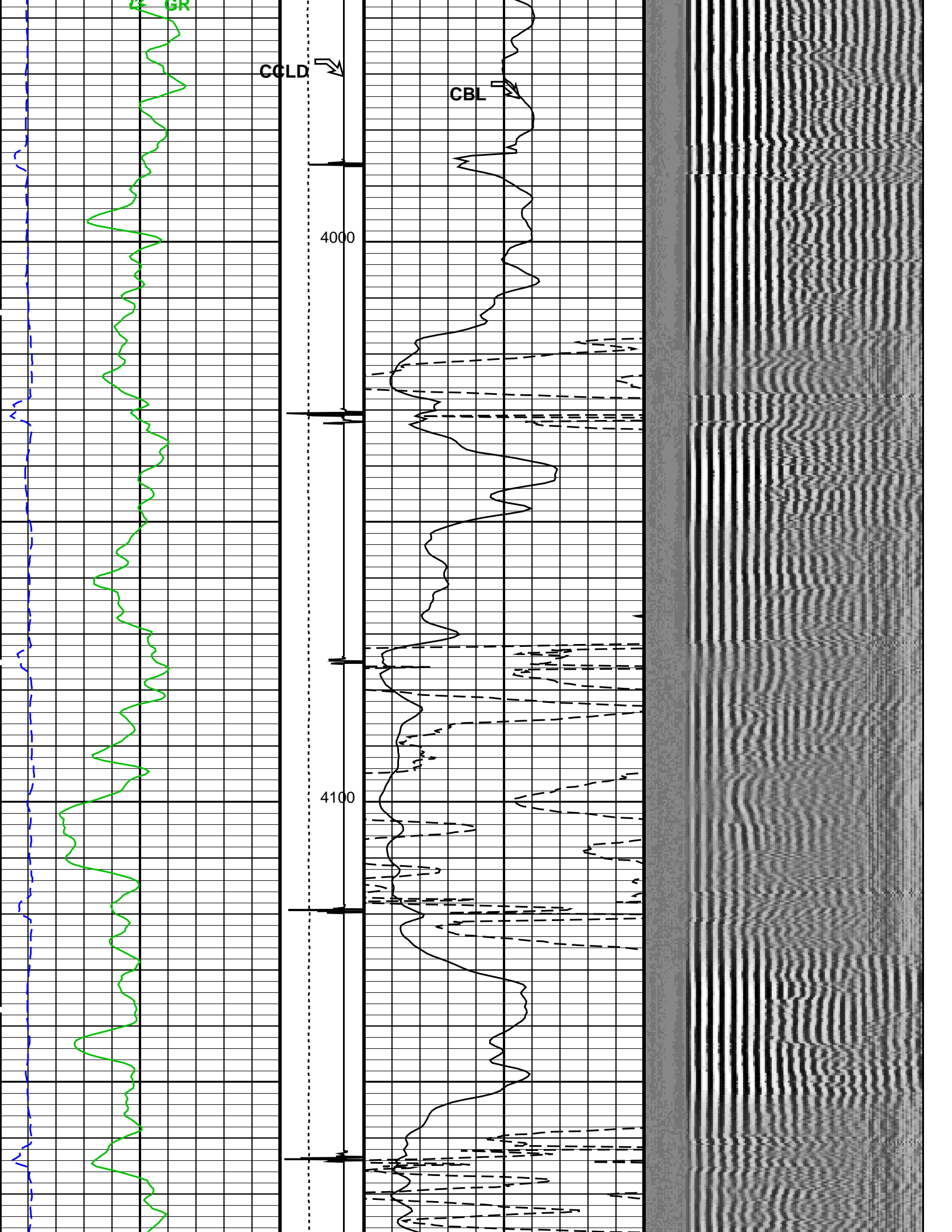


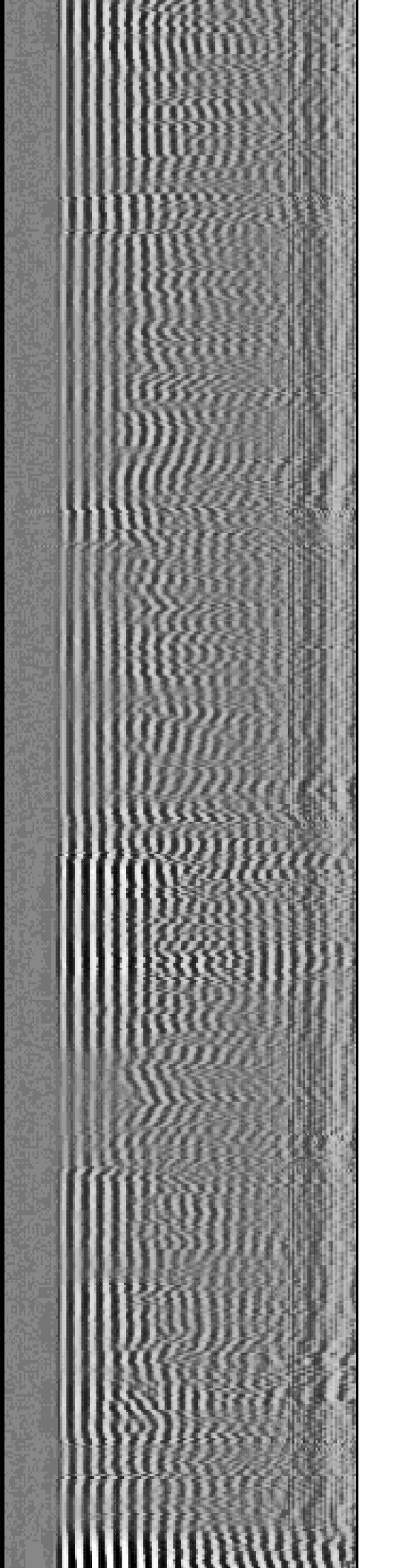
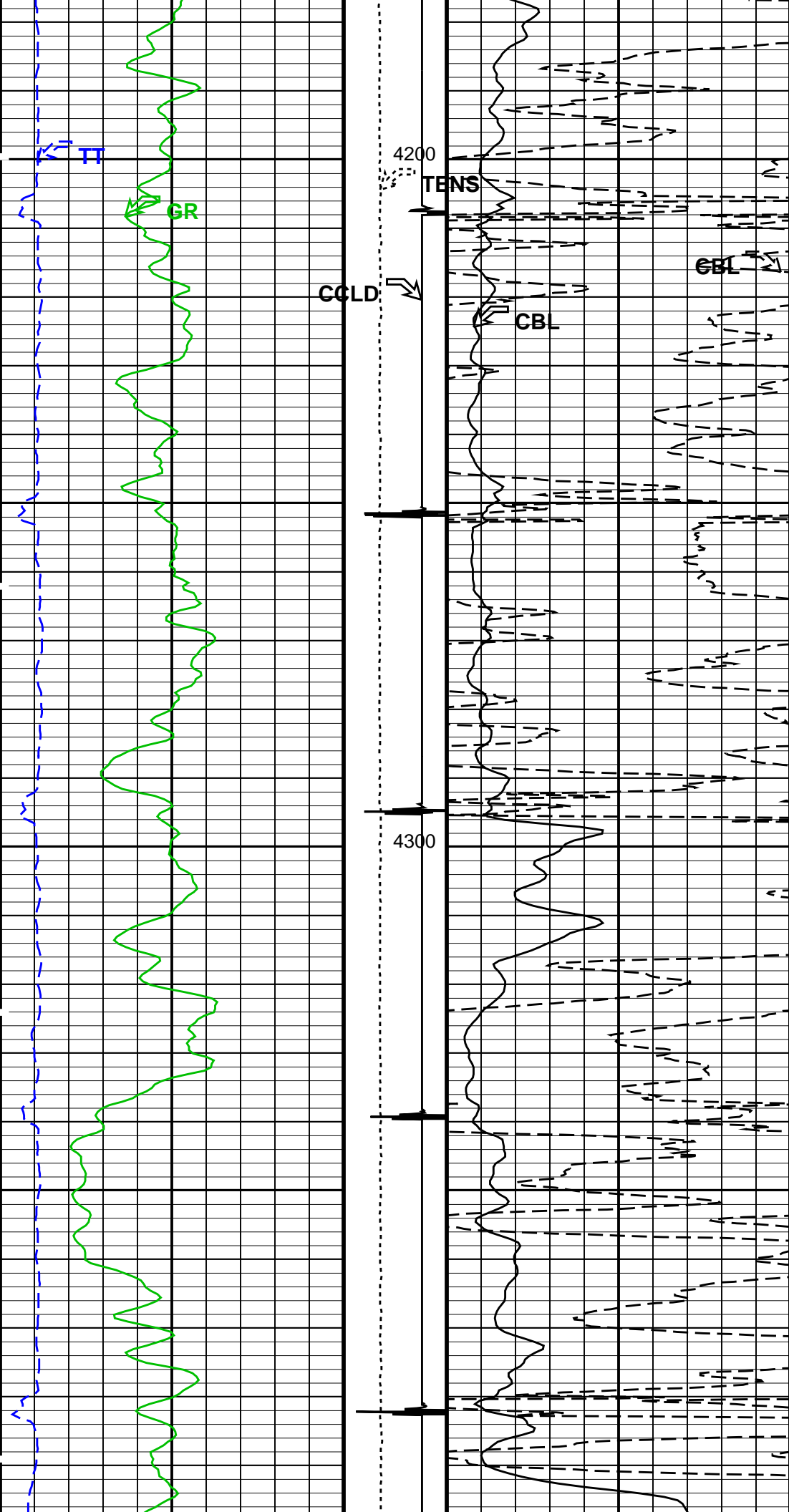




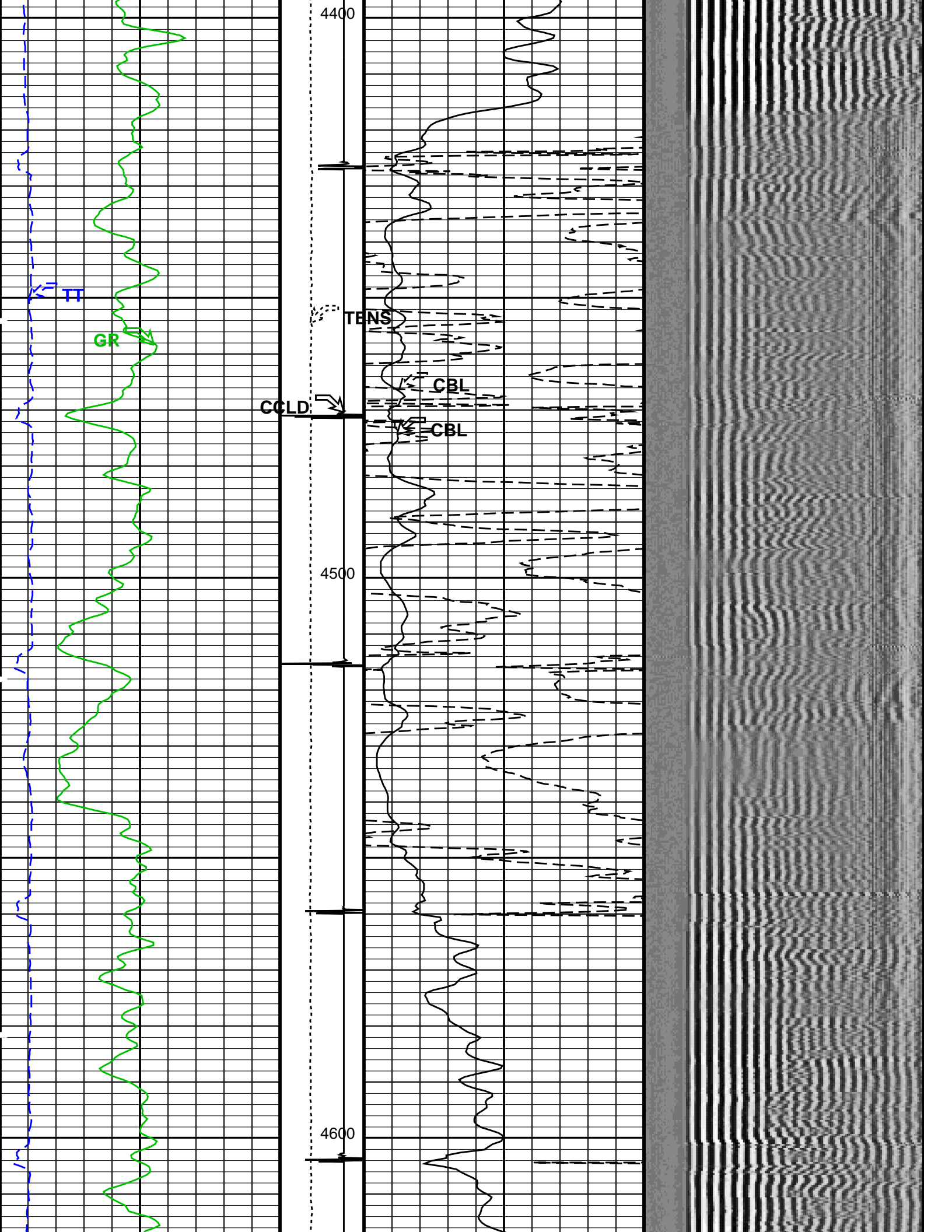


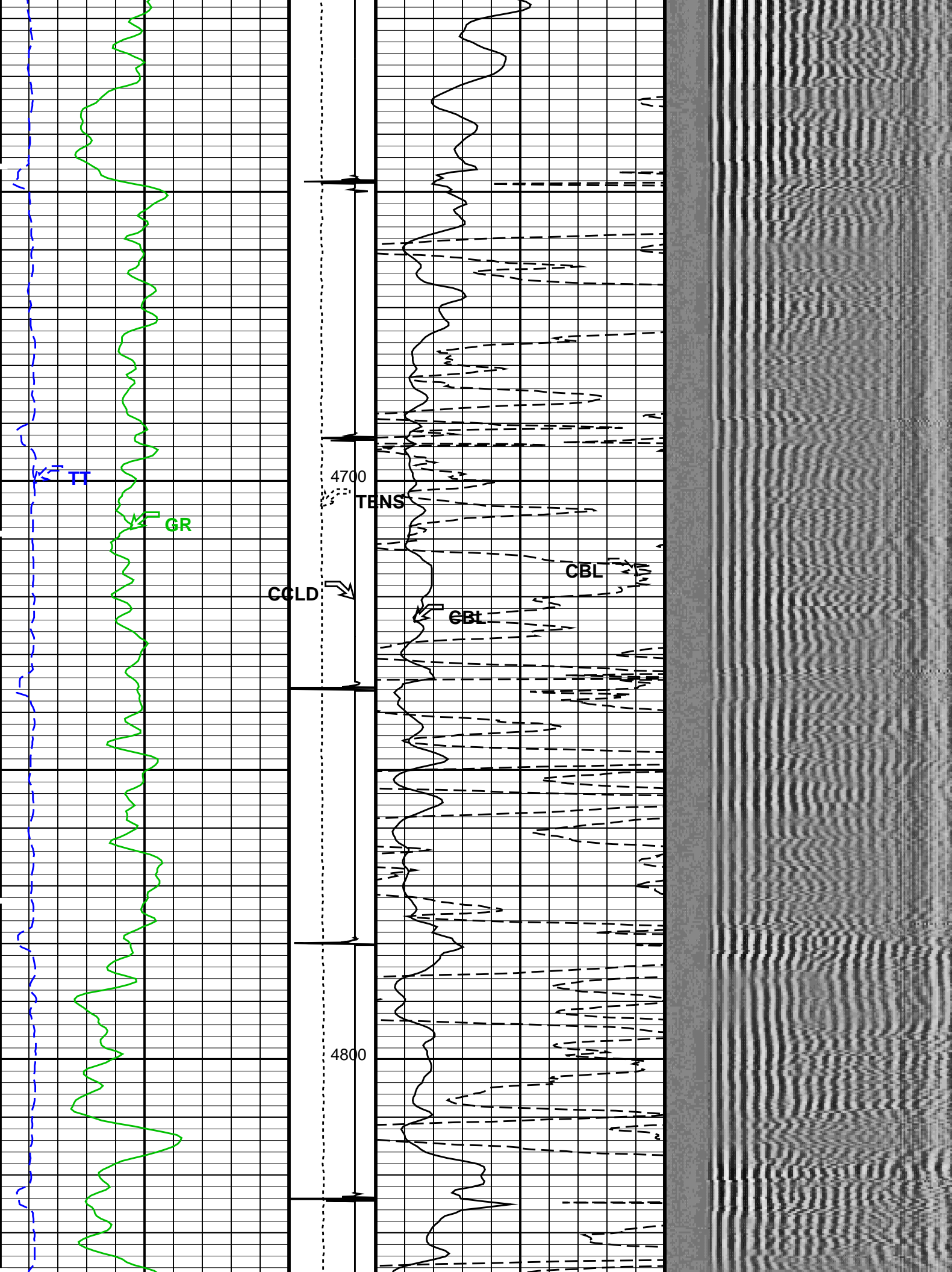


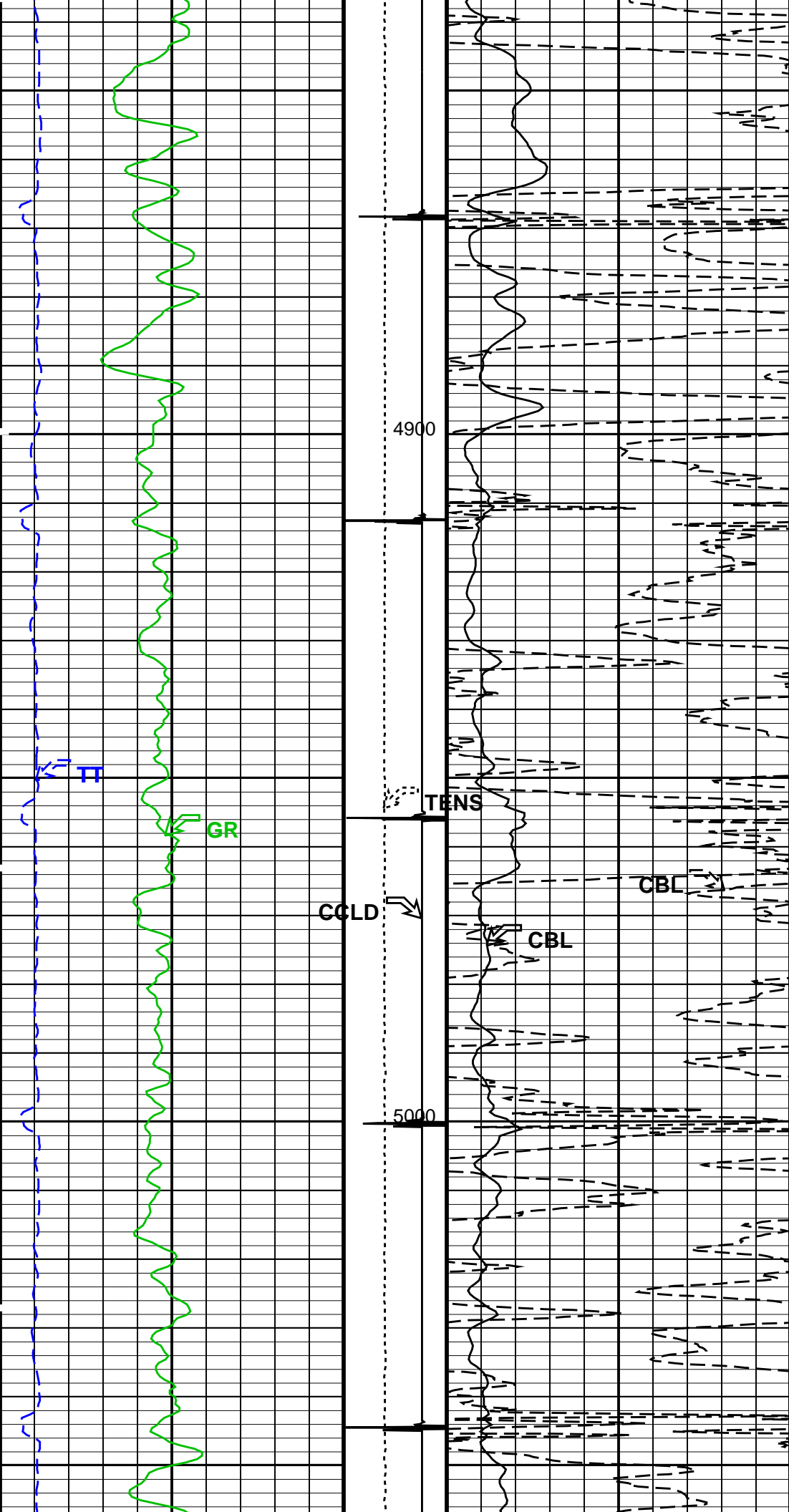




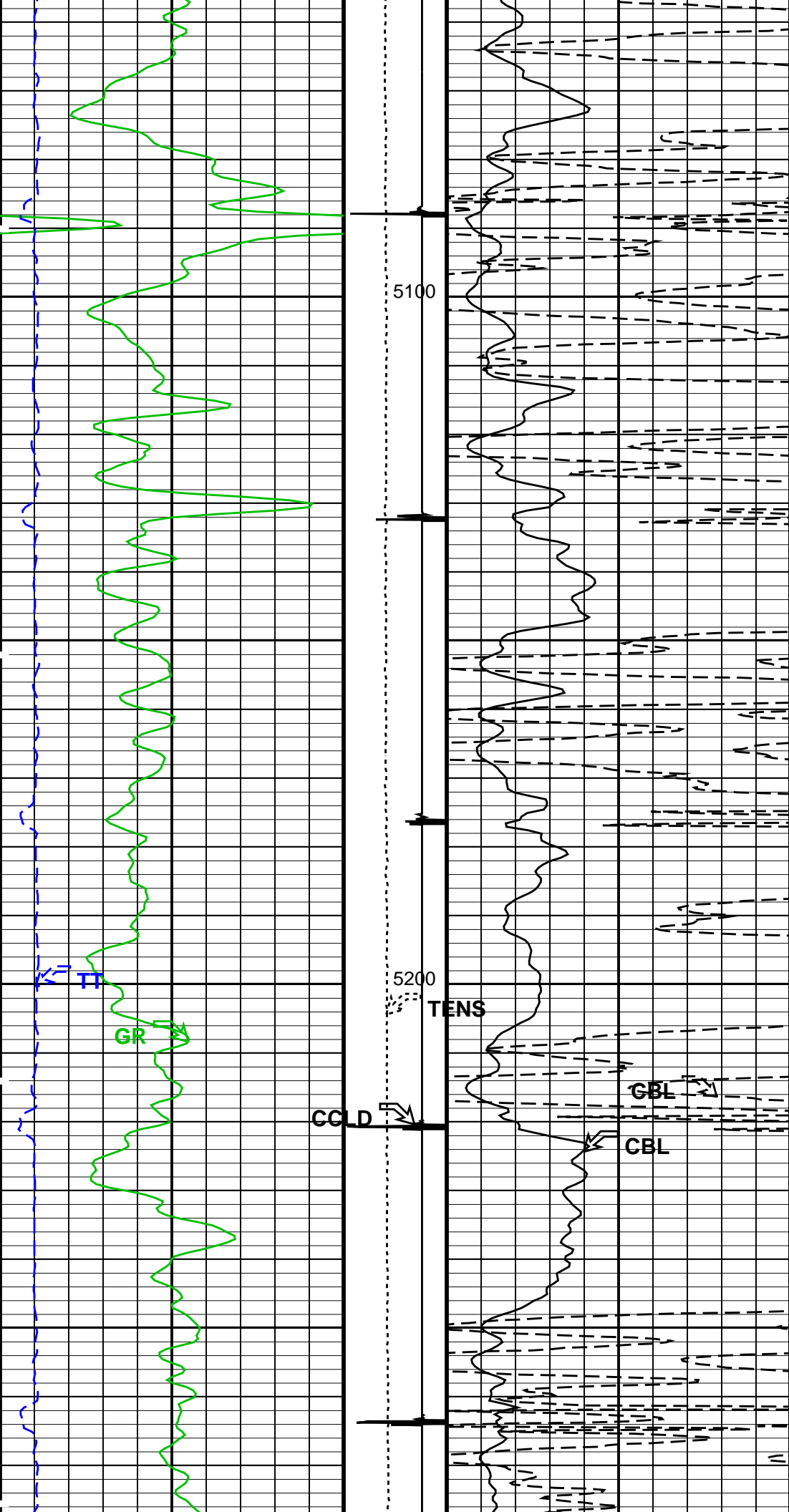




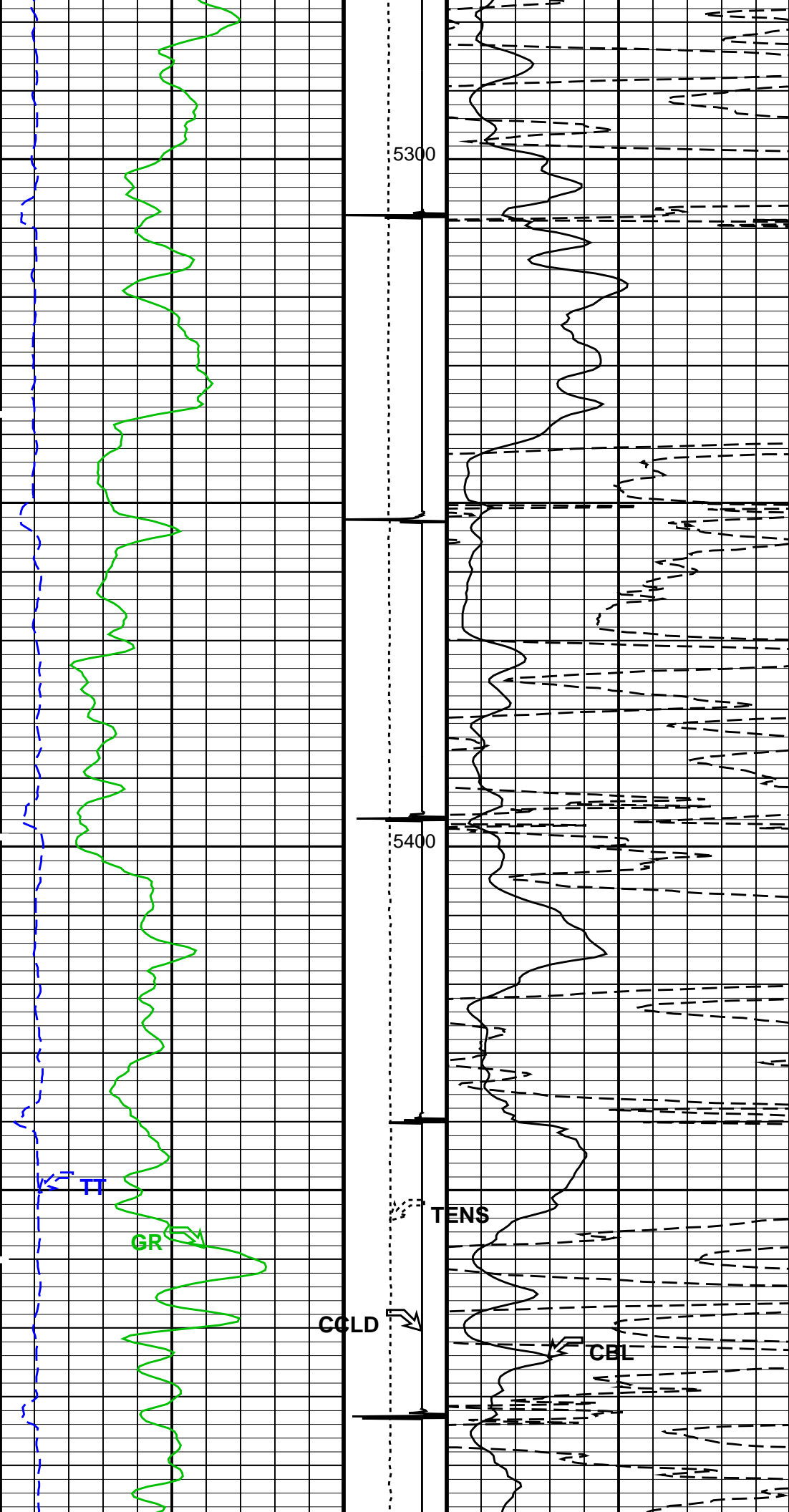


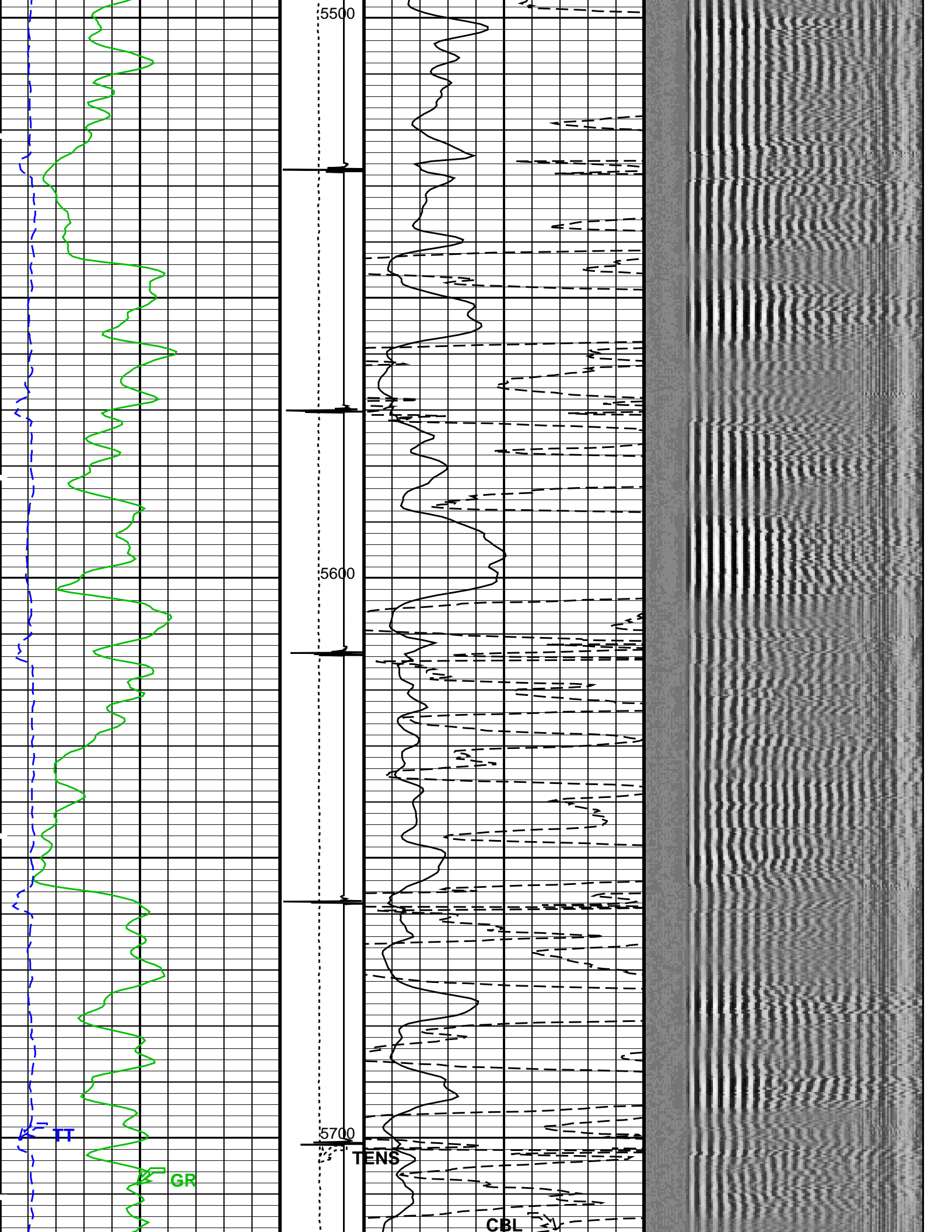


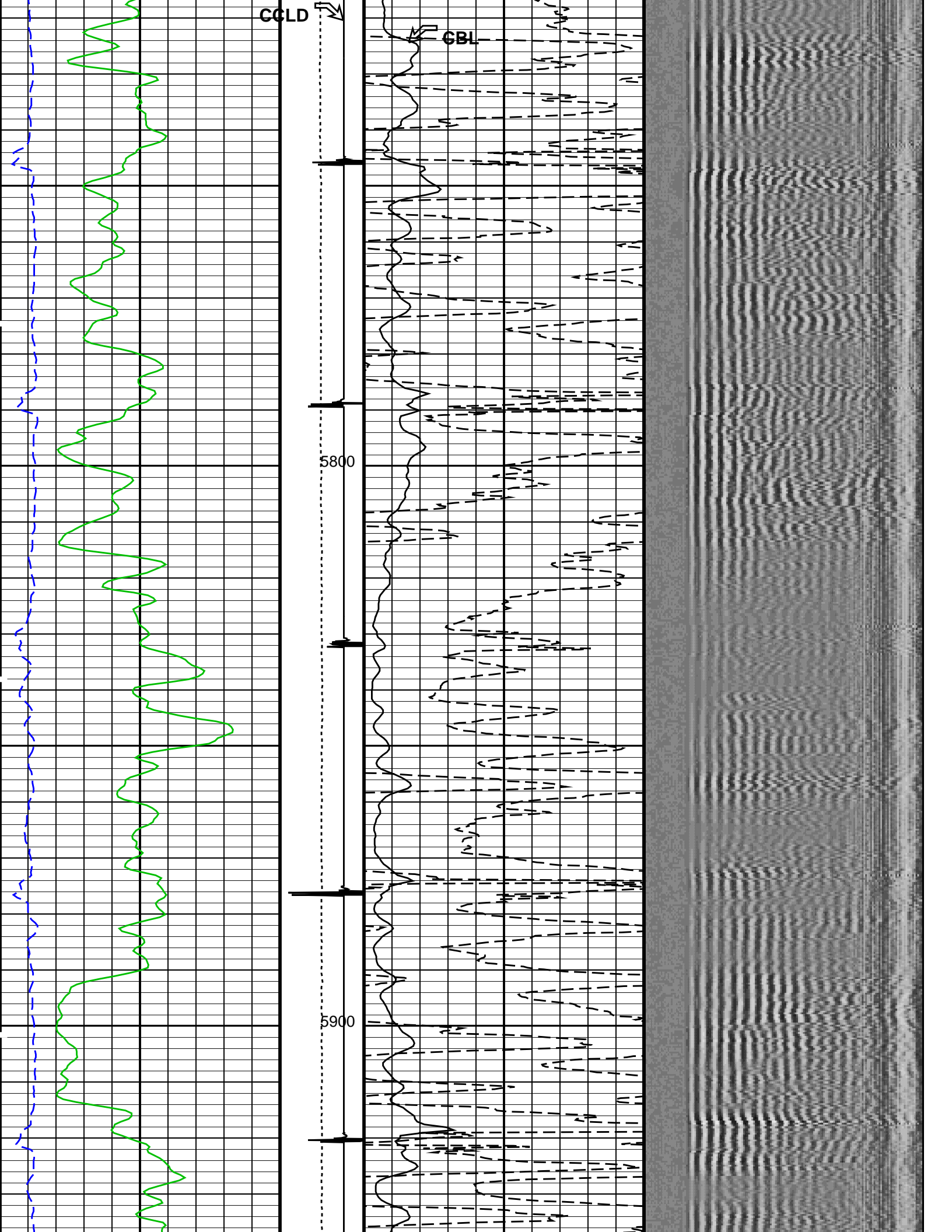




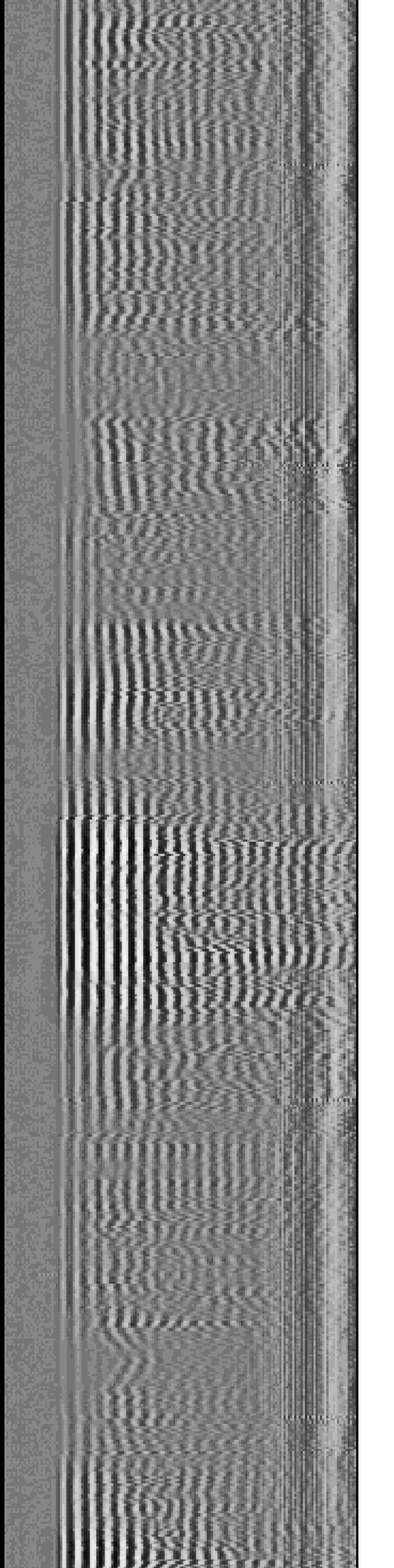
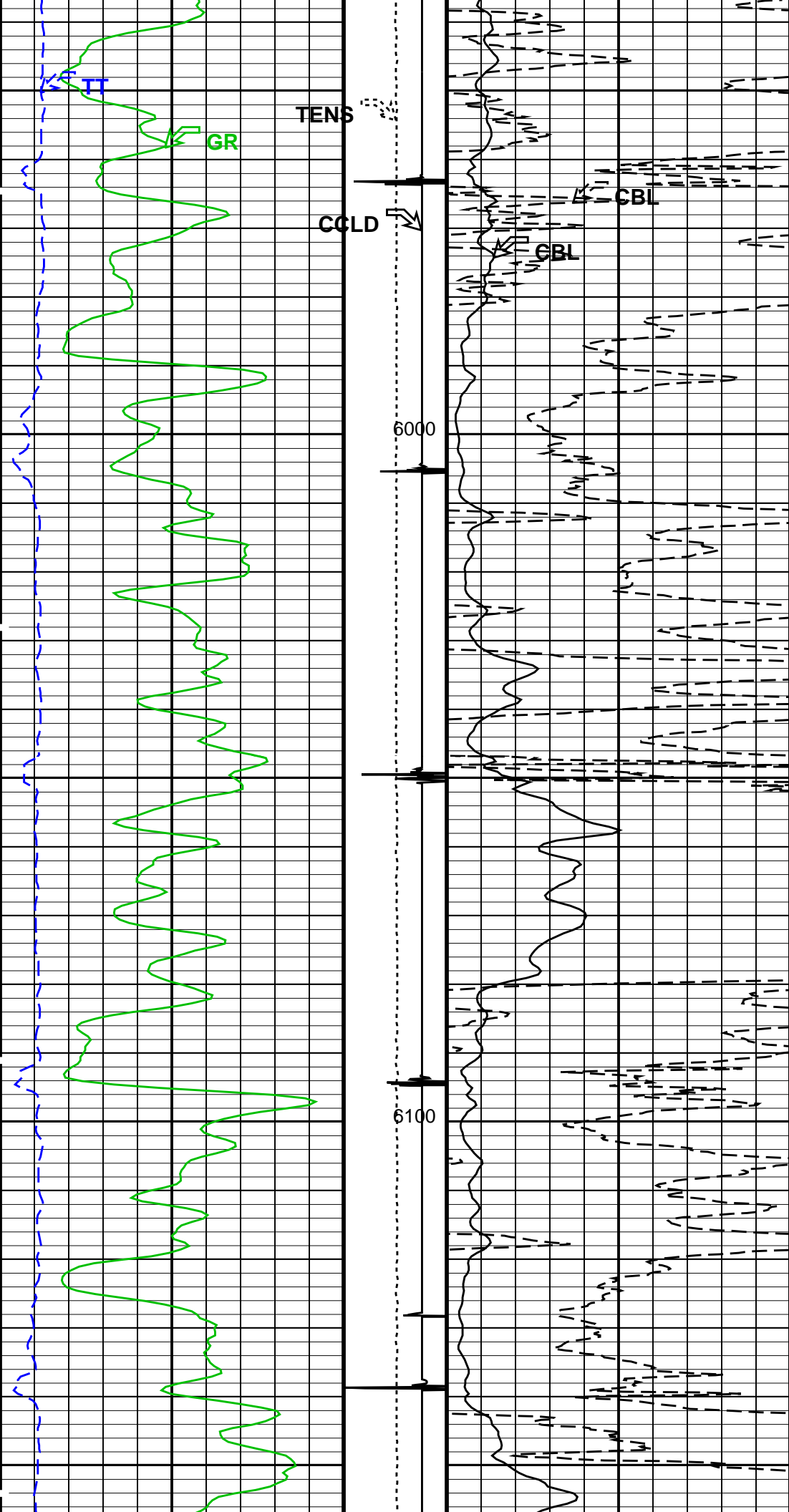


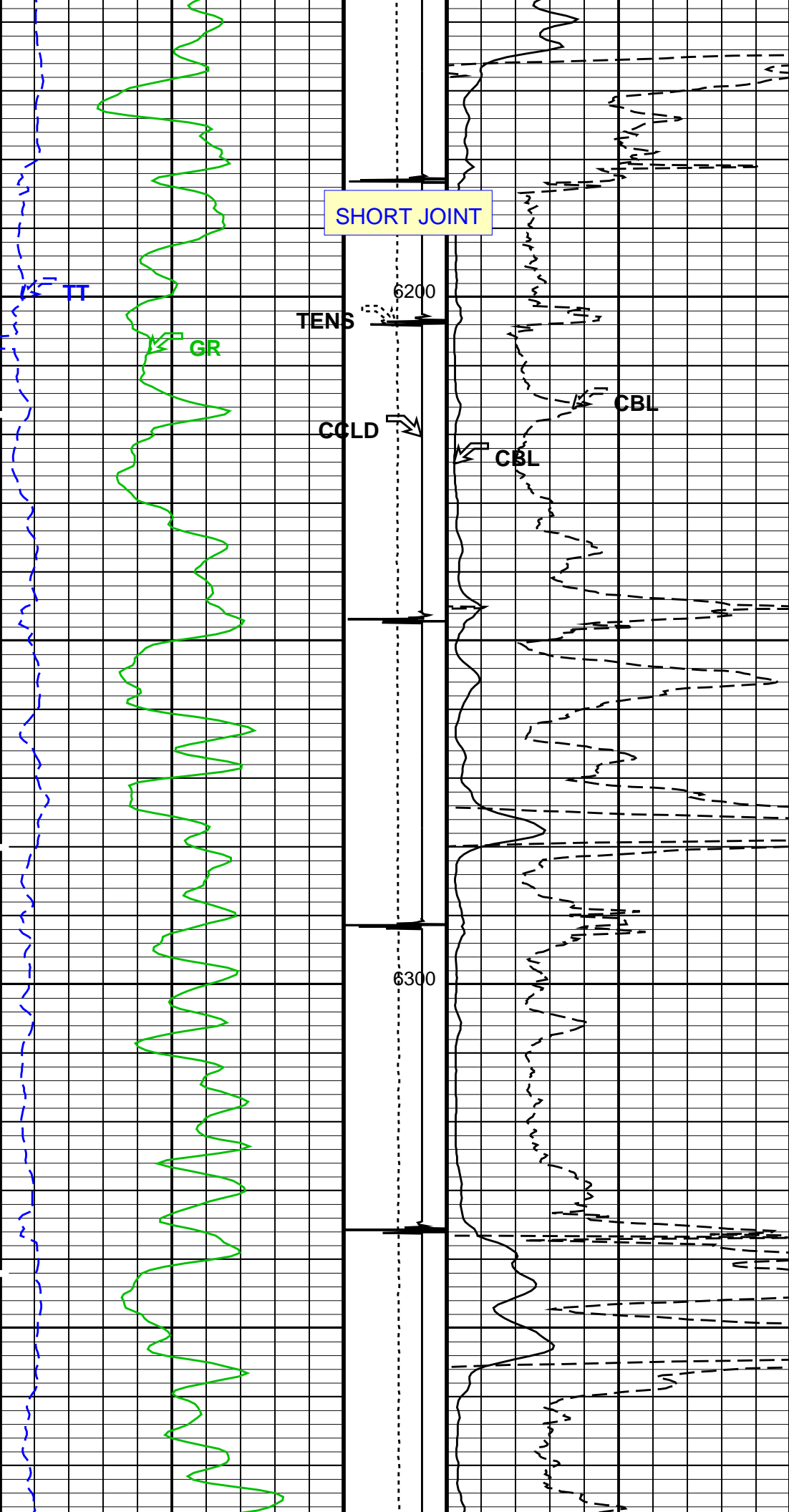


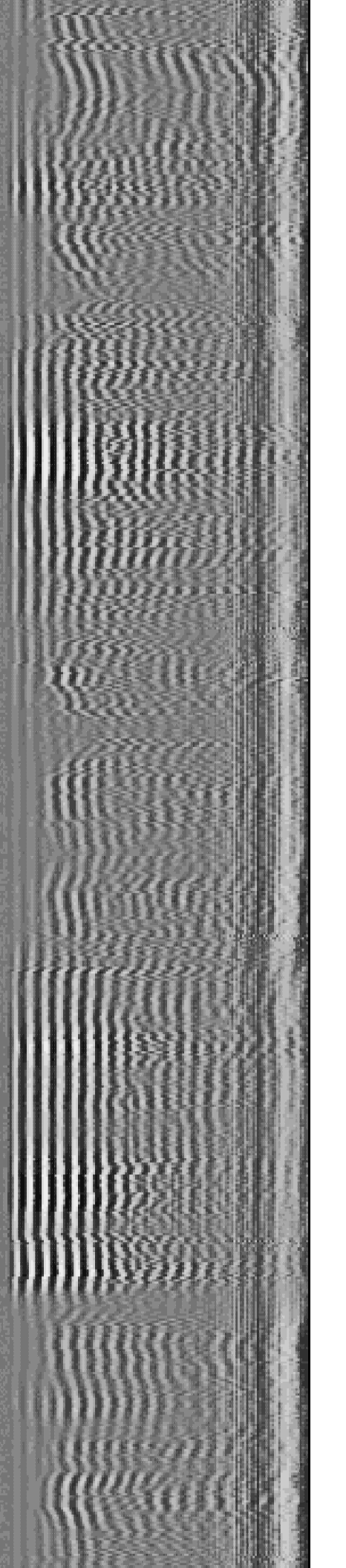
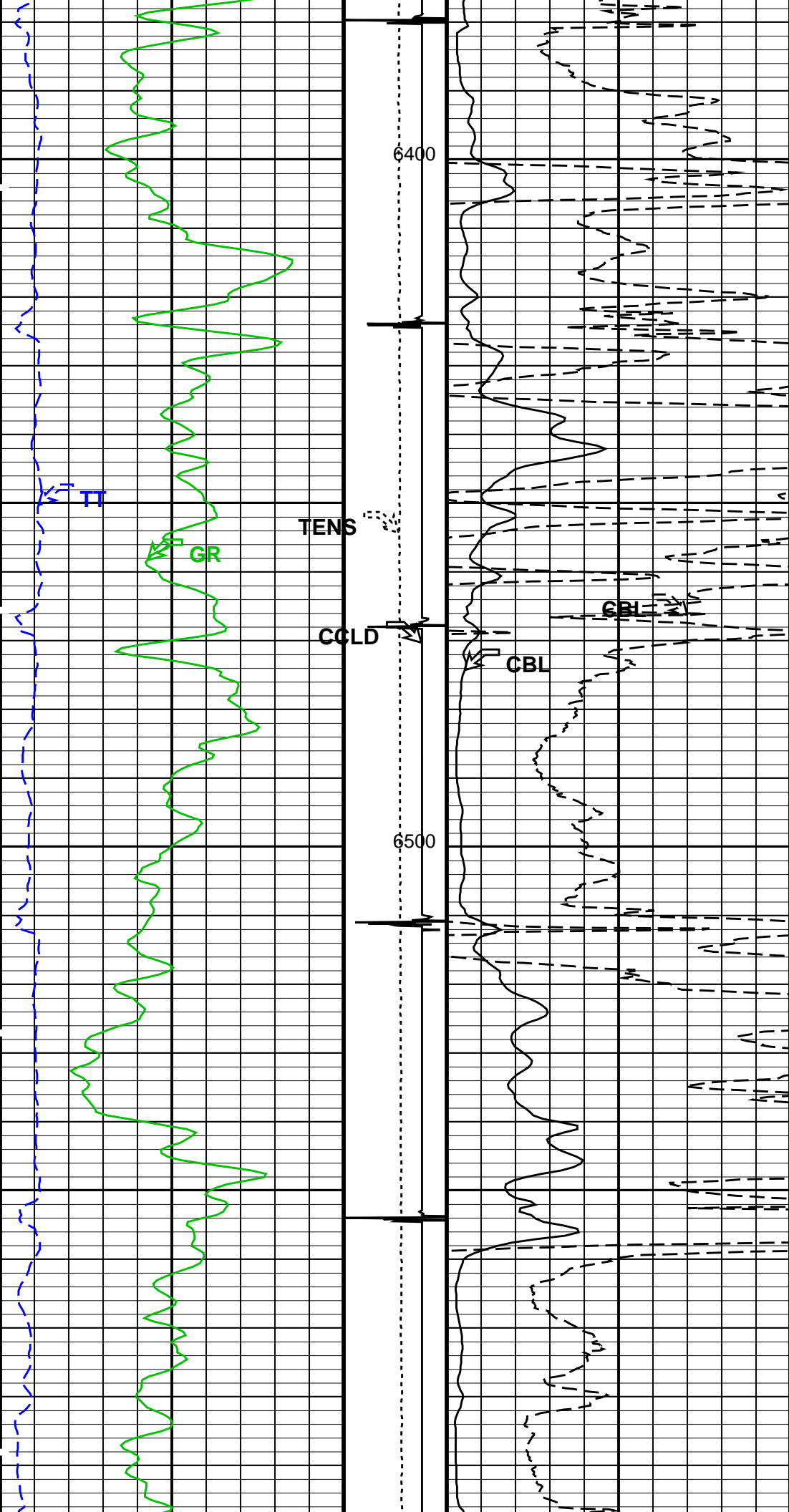




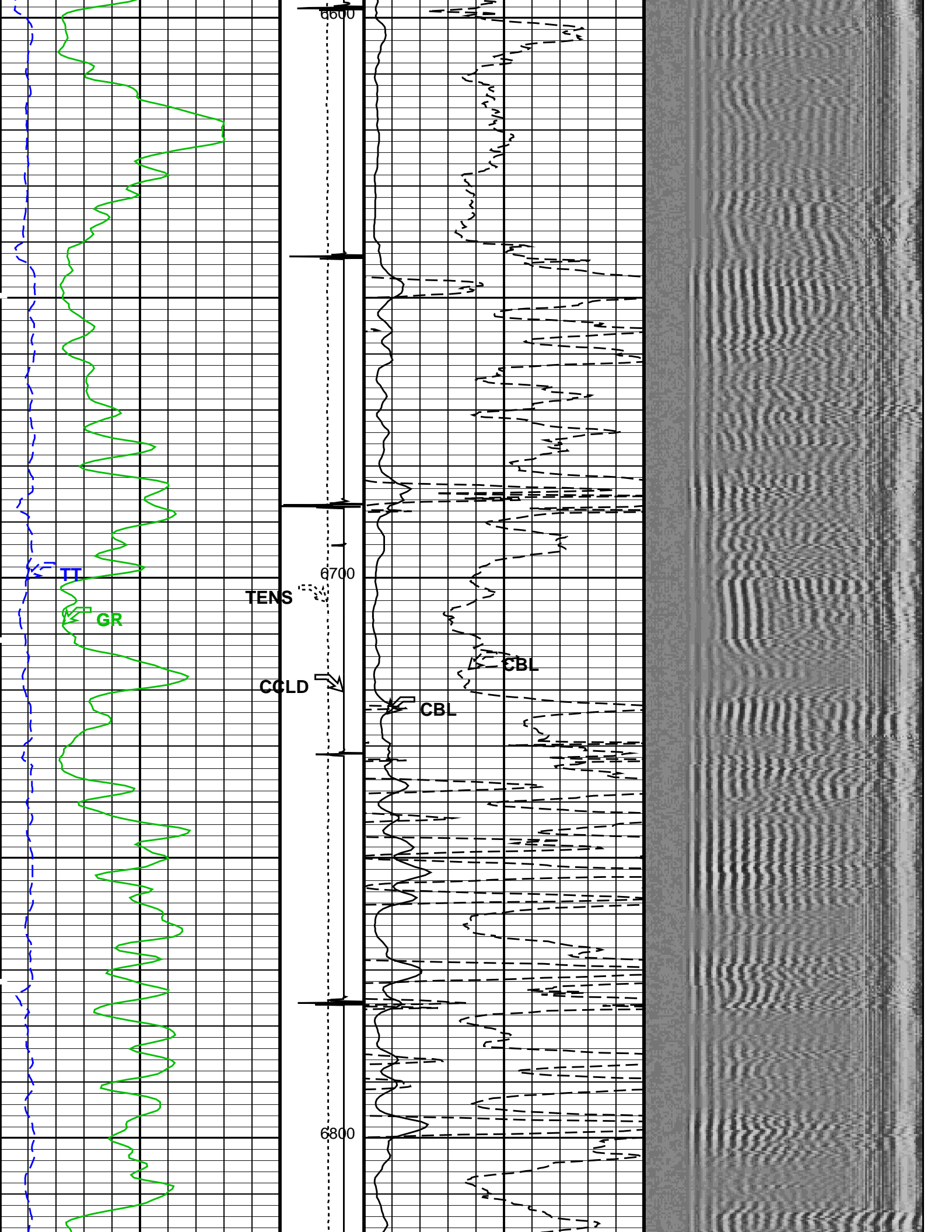


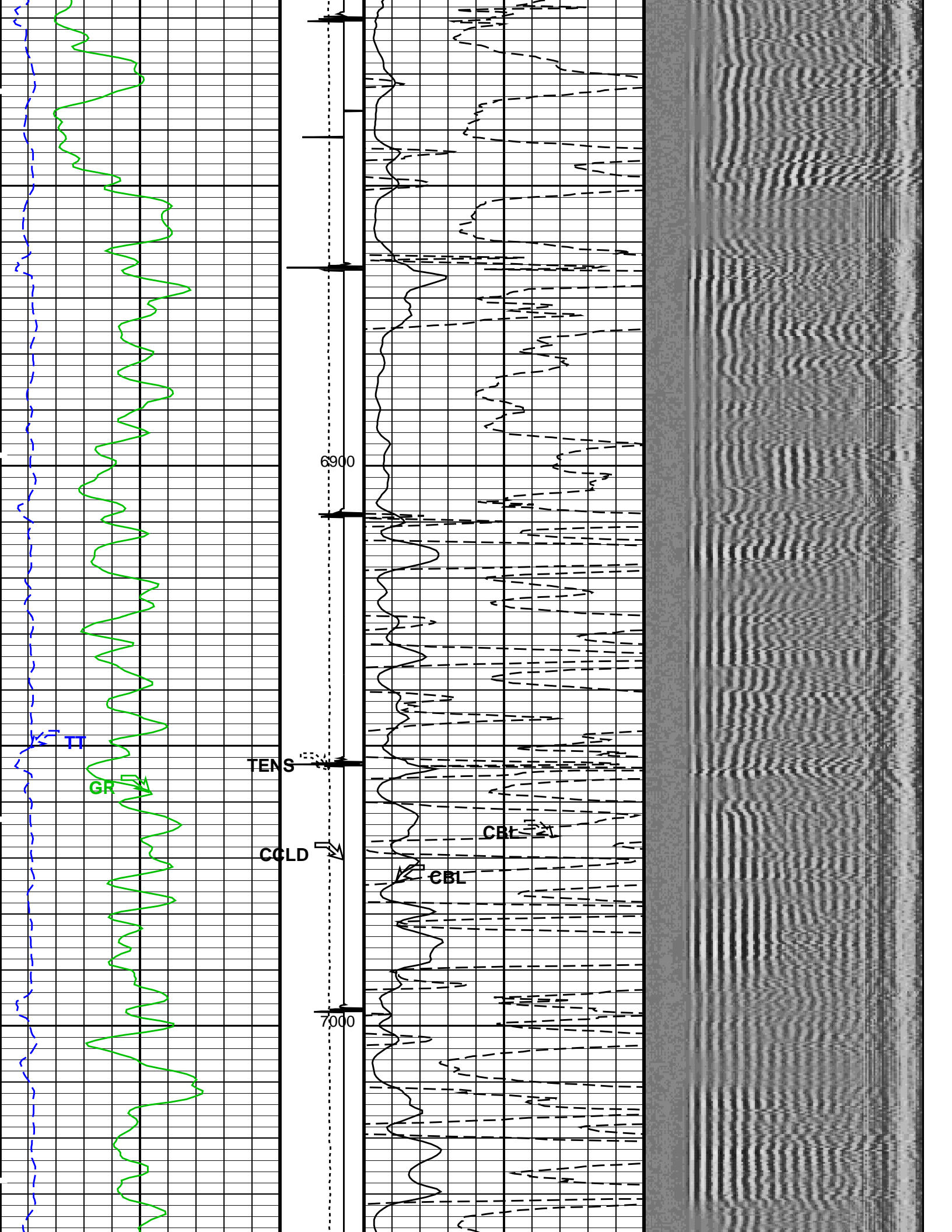




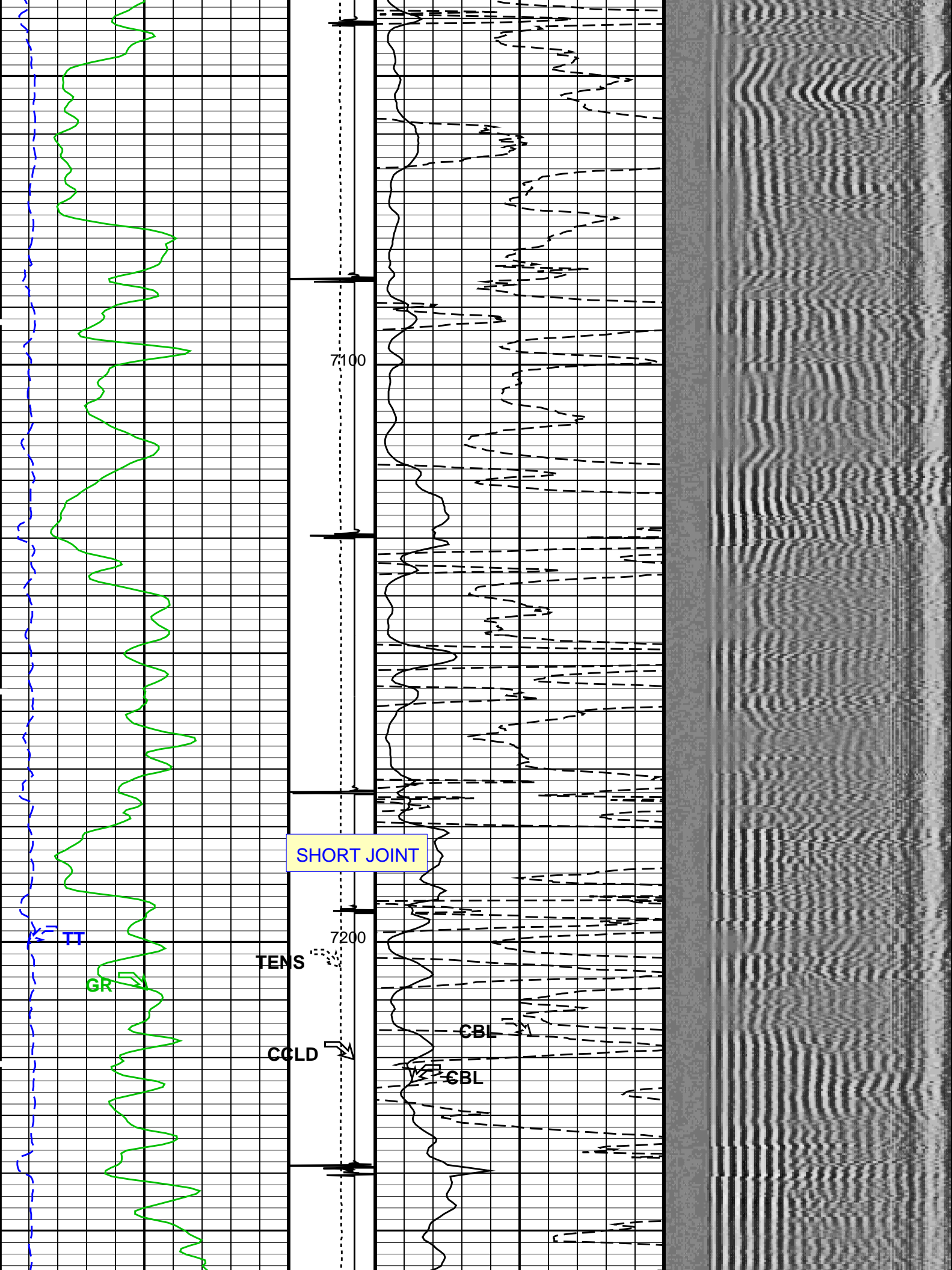


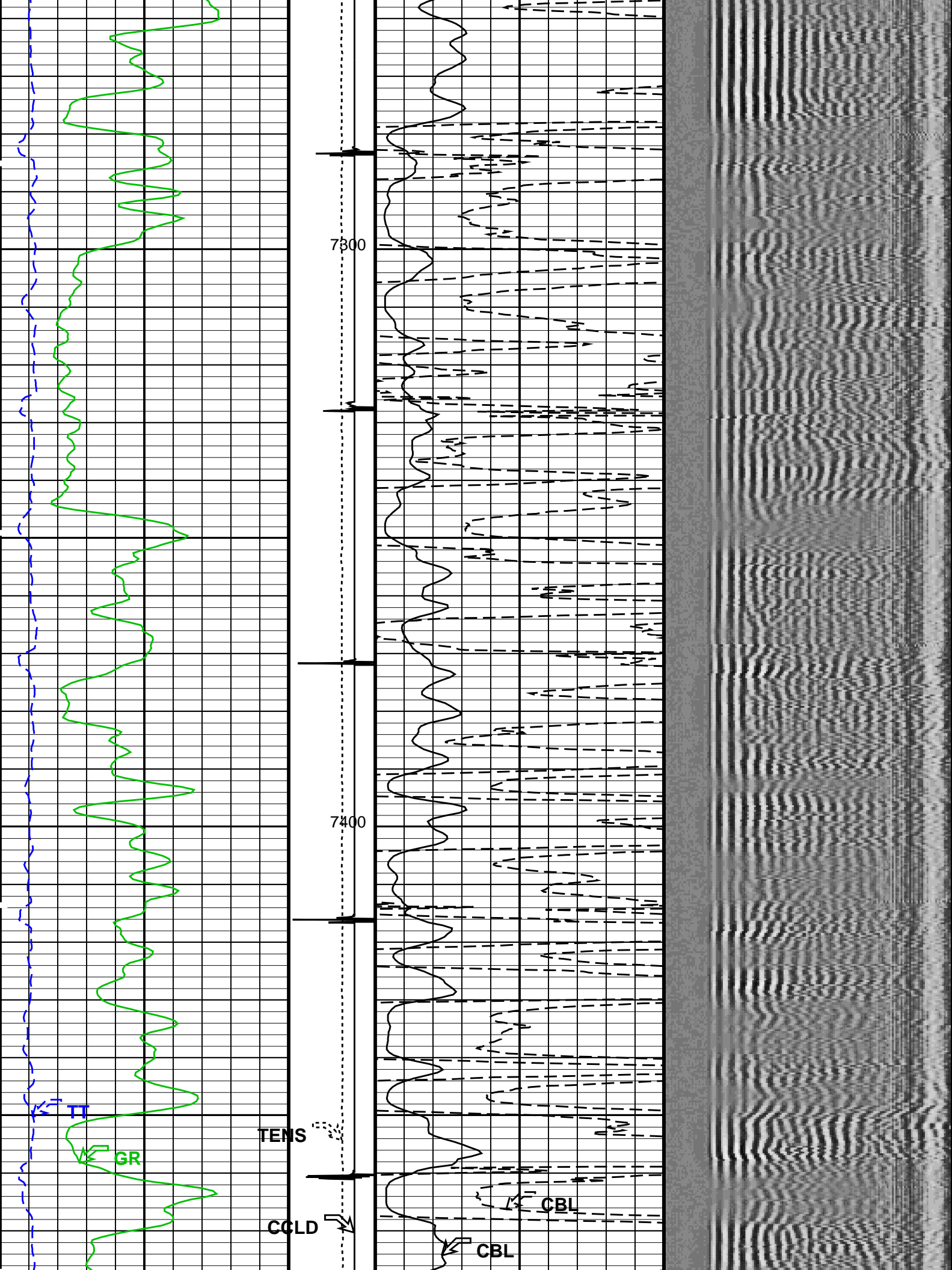


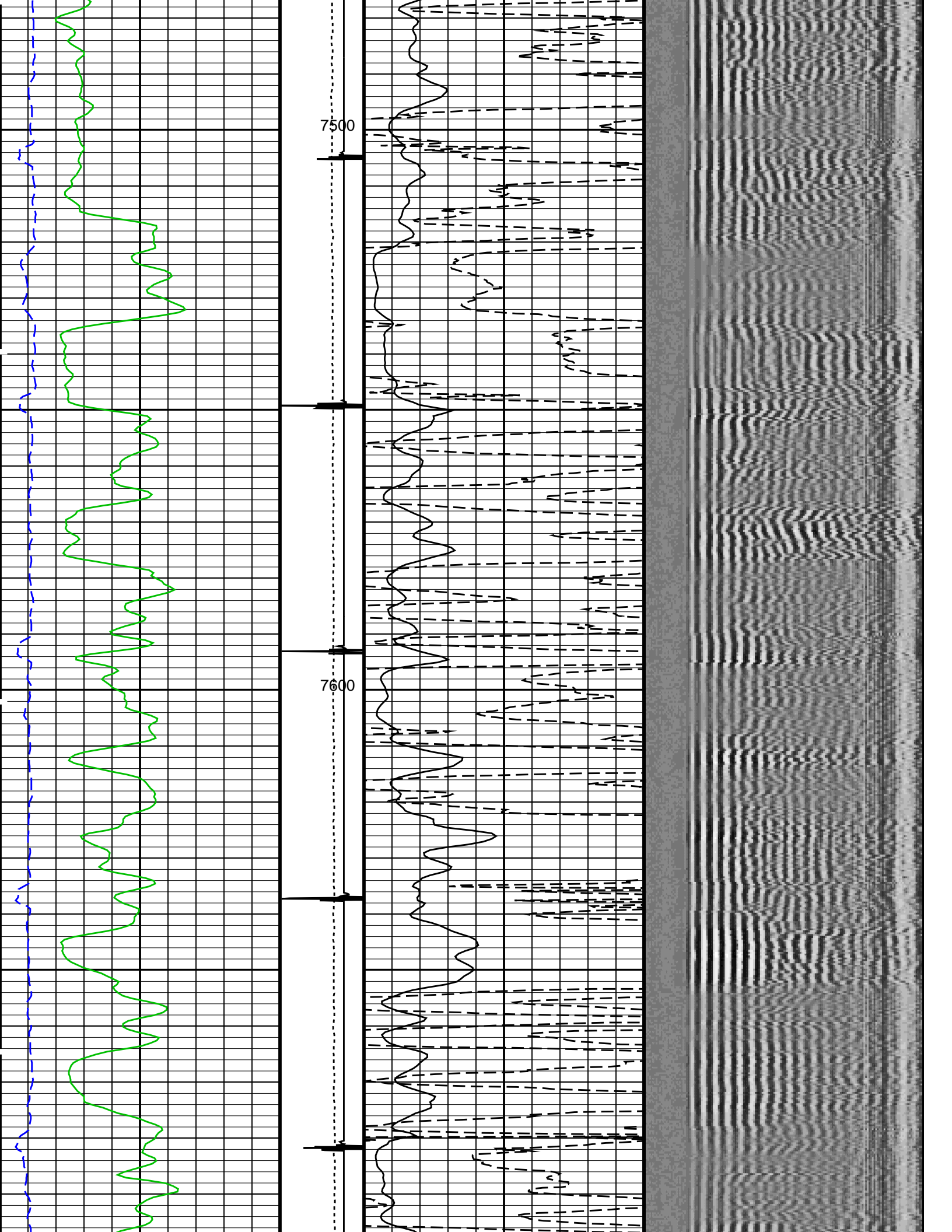




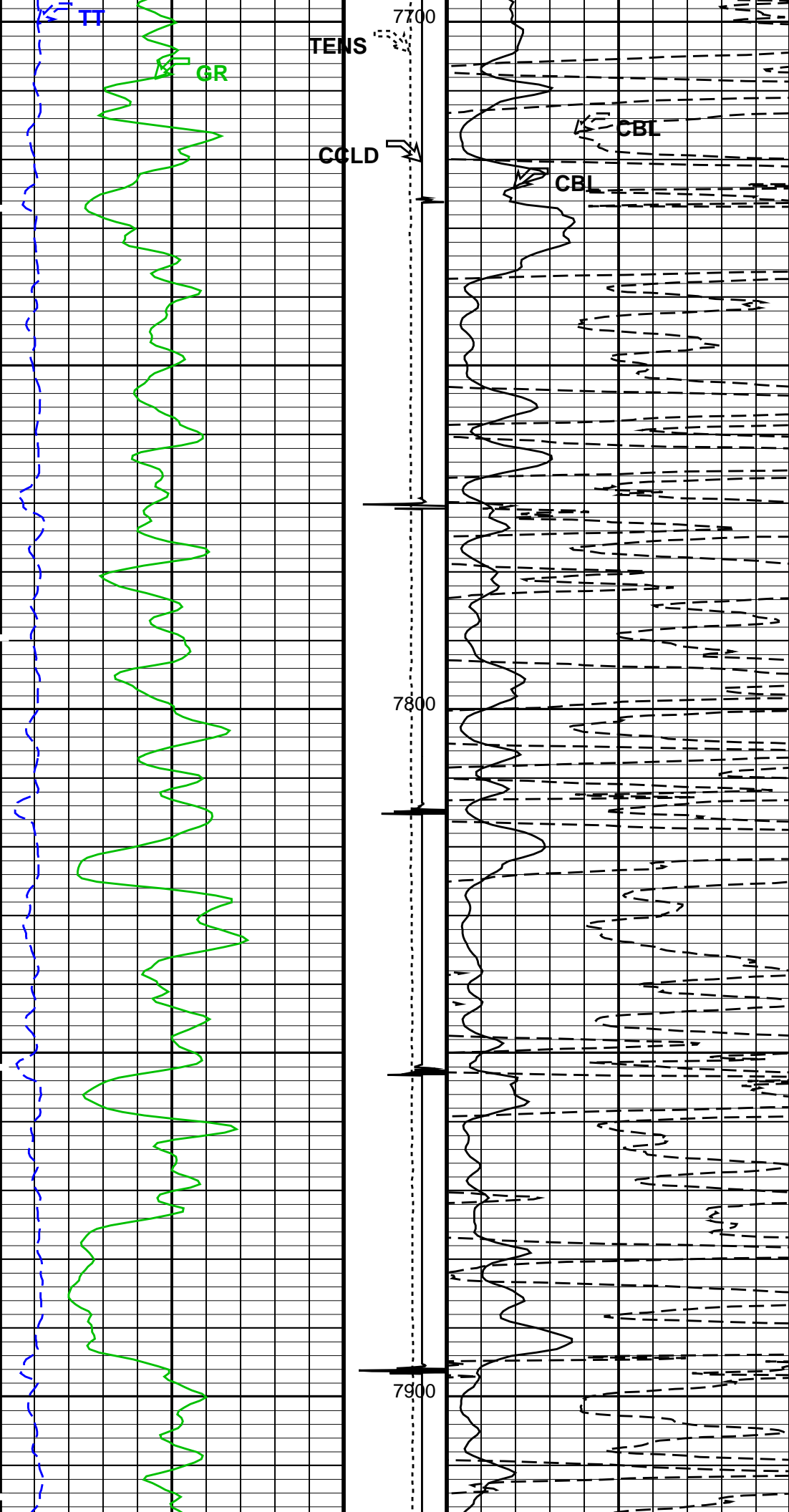




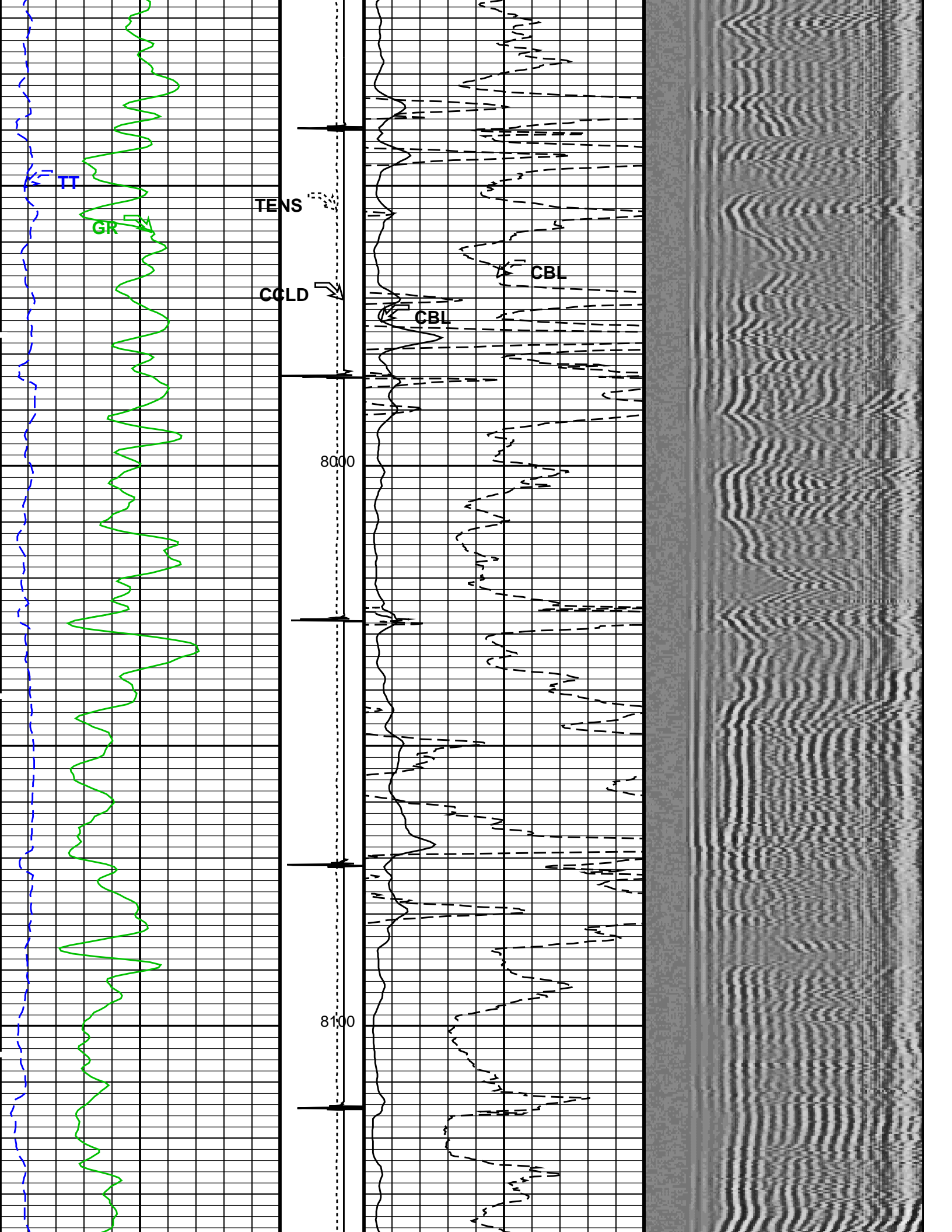


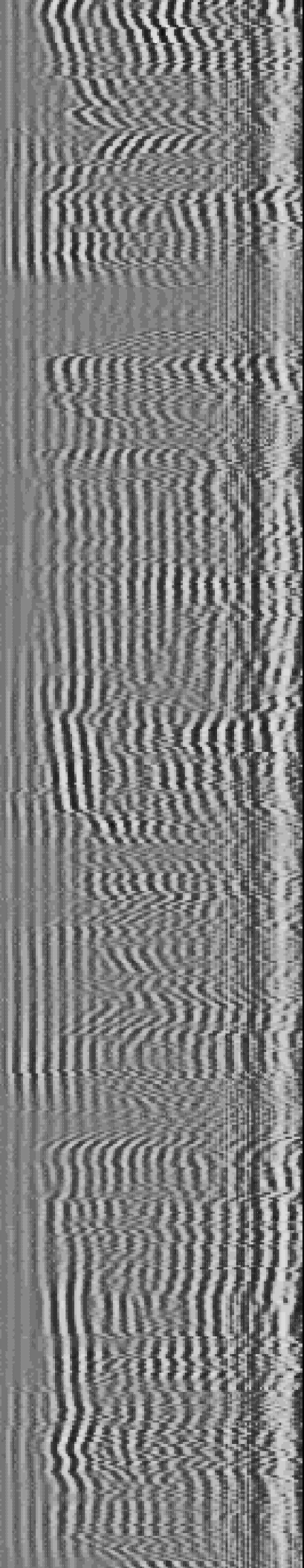
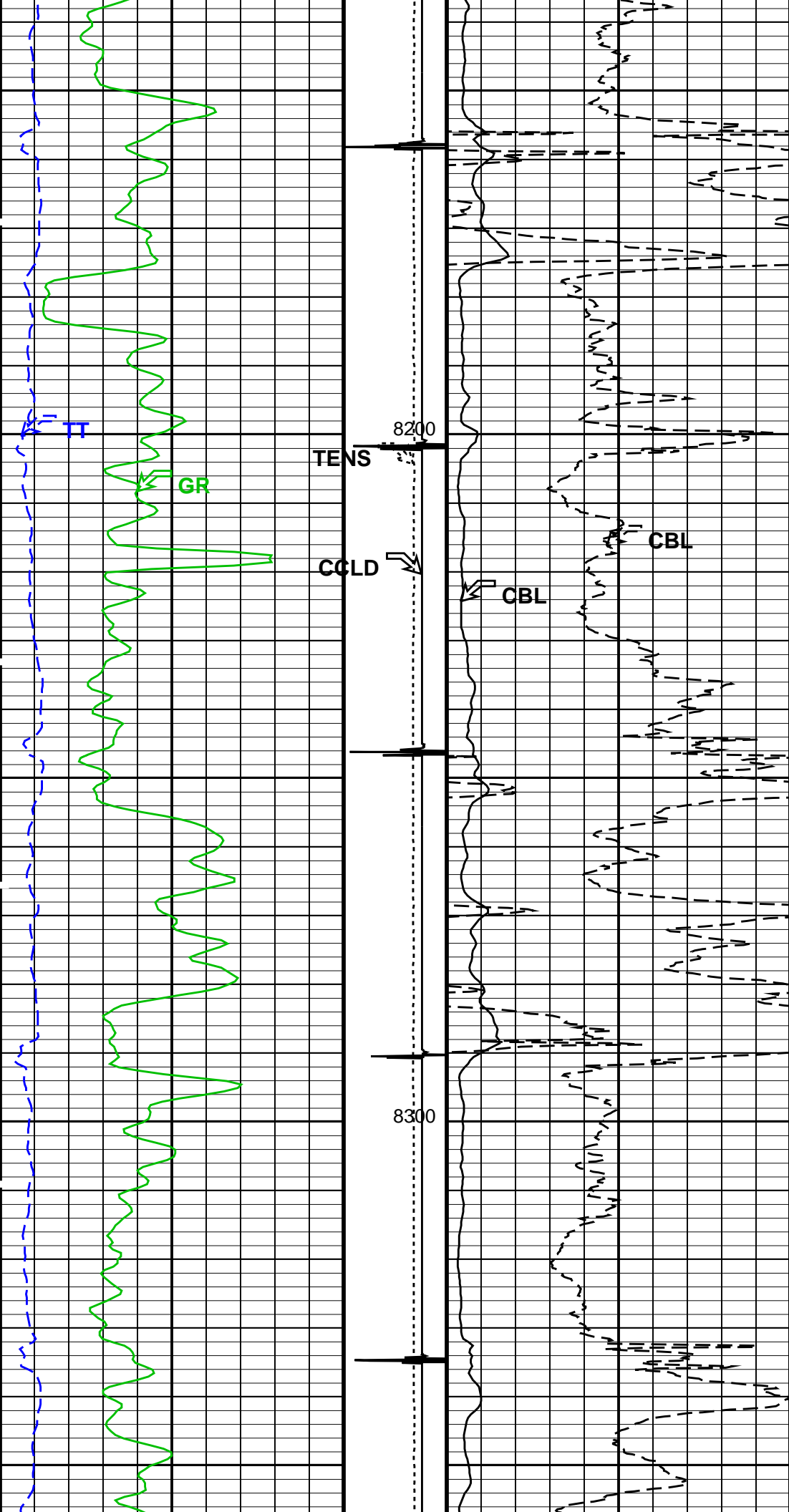


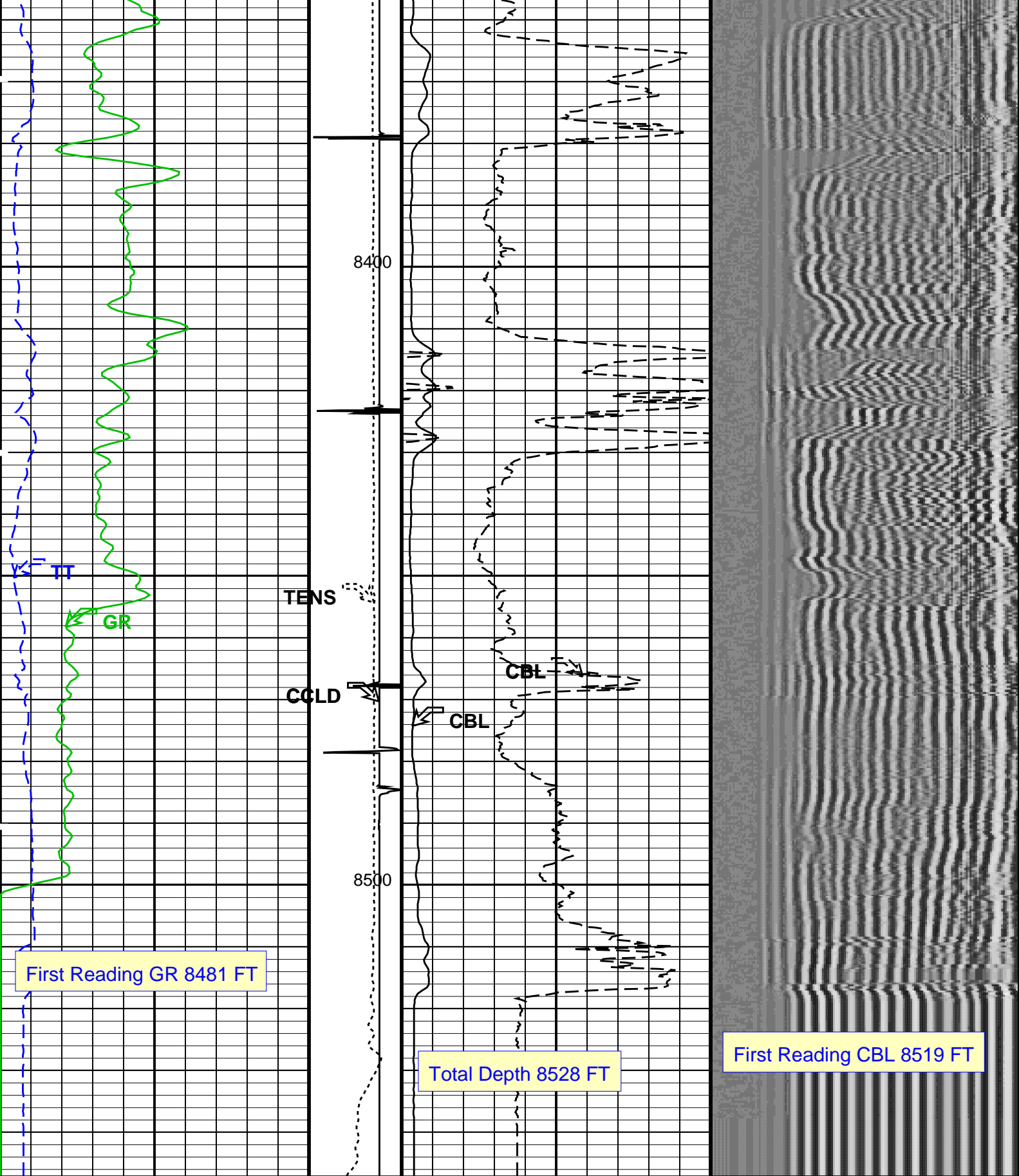












<p>Gamma Ray (GR) (GAPI)</p> <p>0 150</p>	<p>Tension (TENS) (LBF)</p> <p>0 2000</p>	<p>CBL Amplitude (CBL) (MV)</p> <p>0 100</p>	<p>Min Amplitude Max</p> <p>200 VDL VariableDensity (VDL) (US) 1200</p>
<p>Transit Time (TT) (US)</p> <p>260 160</p>	<p>Discriminat ed CCL (CCLD) (V)</p> <p>3 -1</p>	<p>CBL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

## OP System Version: 19C0-187

SCMT-CB	SRPC-5214-H2-2012-OP1	RST-C	SRPC-5214-H2-2012-OP1
PSPT	SRPC-5214-H2-2012-OP1		

## &lt;&lt;&lt;SCMT Cement Evaluation Information Summary&gt;&gt;&gt;

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	7-SEP-2012		
CBL Correction Factor	0.0756720	CBL Adjustment Factor (CBAF)	1.0
MAP 1 Correction Factor	0.136845	MAP Adjustment Factor (MPAF)	1.0
MAP 2 Correction Factor	0.165126		
MAP 3 Correction Factor	0.125717		
MAP 4 Correction Factor	0.196395		
MAP 5 Correction Factor	0.147692		
MAP 6 Correction Factor	0.128887		
MAP 7 Correction Factor	0.150775		
MAP 8 Correction Factor	0.144577		

## 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			
CWEI	Casing Weight	11.60	LB/F
DFD	Drilling Fluid Density	8.40	LB/G
DO	Depth Offset for Playback	0.0	FT



Input DLIS Files

DEFAULT	SCMT_RST_PSP_074LUP	FN:70	PRODUCER	22-Oct-2013 09:35	8539.0 FT	-12.0 FT
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Output DLIS Files

DEFAULT	SCMT_RST_PSP_086PUP	FN:82	PRODUCER	22-Oct-2013 12:31		
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REPEAT ANALYSIS CBL VDL

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC	Well: HAGEN FEDERAL 15-16C (PC22)
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Input DLIS Files

DEFAULT	SCMT_RST_PSP_072LUP	FN:68	PRODUCER	22-Oct-2013 09:17	6429.0 FT	6059.5 FT
DEFAULT	SCMT_RST_PSP_086PUP	FN:82	PRODUCER	22-Oct-2013 12:31	8547.0 FT	-4.0 FT

Output DLIS Files

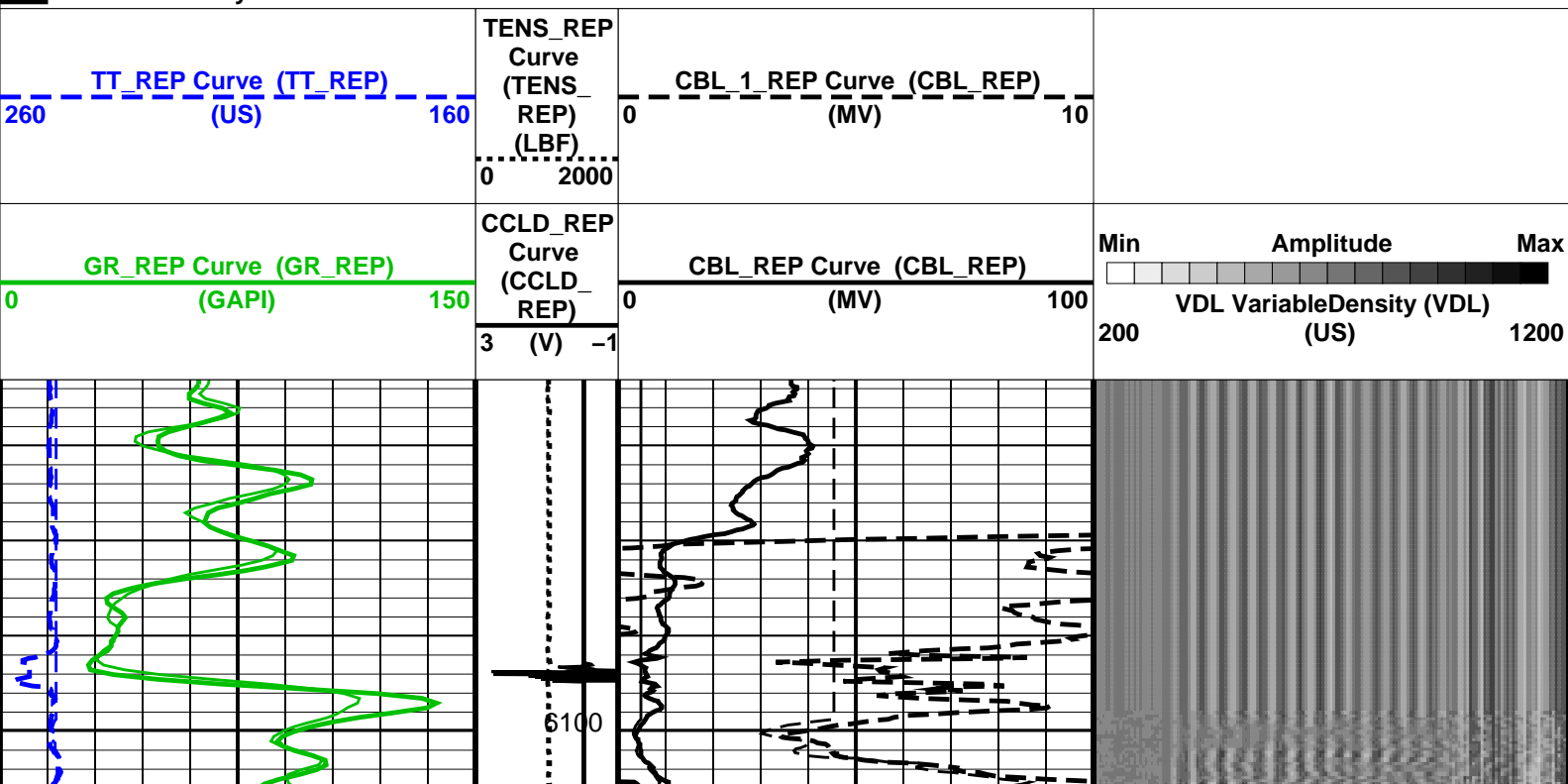
DEFAULT	SCMT_RST_PSP_087PUP	FN:83	PRODUCER	22-Oct-2013 12:38	6432.0 FT	6062.5 FT
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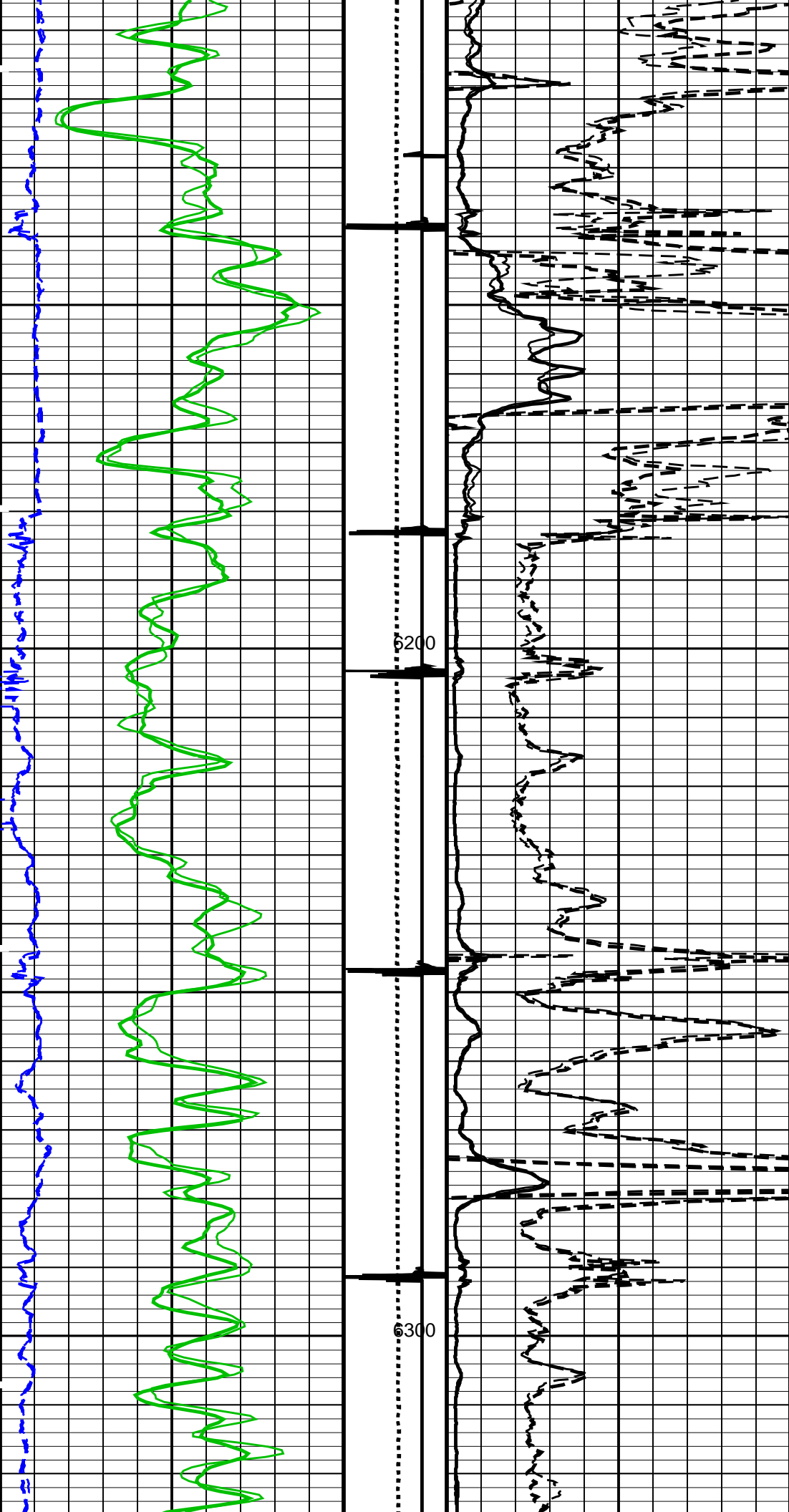
OP System Version: 19C0-187

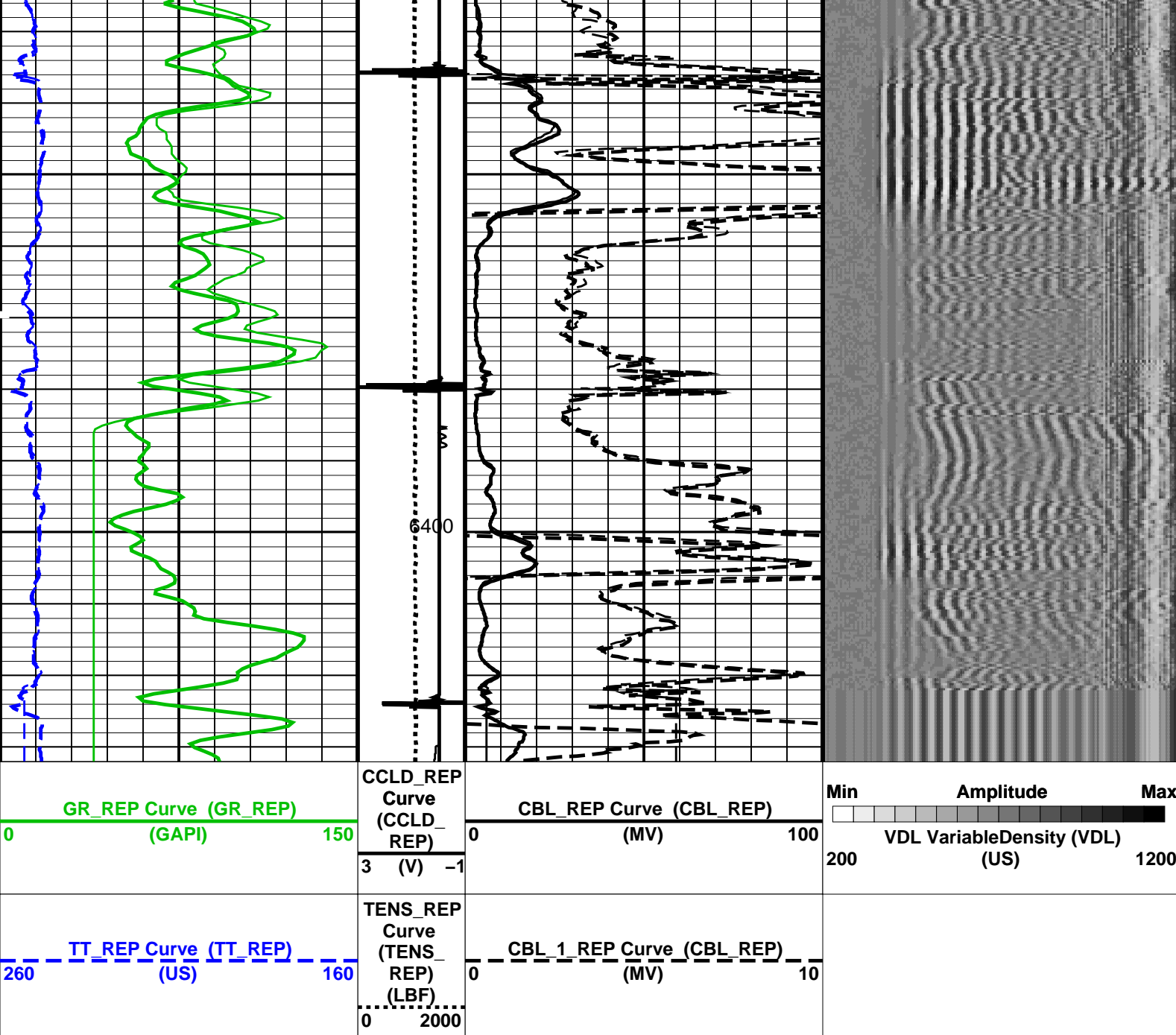
SCMT-CB PSPT	SRPC-5214-H2-2012-OP1	RST-C	SRPC-5214-H2-2012-OP1
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PIP SUMMARY

Time Mark Every 60 S







#### PIP SUMMARY

Time Mark Every 60 S

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

Graphics File Created: 22-Oct-2013 12:38

### OP System Version: 19C0-187

SCMT-CB SRPC-5214-H2-2012-OP1! RST-C SRPC-5214-H2-2012-OP1!  
PSPT SRPC-5214-H2-2012-OP1!

#### <<<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 80 MV  
in Free Pipe Section

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 7-SEP-2012

CBL Correction Factor	0.0756720	CBL Adjustment Factor (CBAF)	1.0
MAP 1 Correction Factor	0.136845	MAP Adjustment Factor (MPAF)	1.0
MAP 2 Correction Factor	0.165126		
MAP 3 Correction Factor	0.125717		
MAP 4 Correction Factor	0.196395		
MAP 5 Correction Factor	0.147692		
MAP 6 Correction Factor	0.128887		
MAP 7 Correction Factor	0.150775		
MAP 8 Correction Factor	0.144577		

## 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		
CWEI	Casing Weight	11.60 LB/F
DFD	Drilling Fluid Density	8.40 LB/G
DO	Depth Offset for Playback	3.0 FT
DORL	Depth Offset for Repeat Analysis	0.0 FT
PP	Playback Processing	RECOMPUTE
TD	Total Depth	8528 FT

## Input DLIS Files

DEFAULT	SCMT_RST_PSP_072LUP	FN:68	PRODUCER	22-Oct-2013 09:17	6429.0 FT	6059.5 FT
DEFAULT	SCMT_RST_PSP_086PUP	FN:82	PRODUCER	22-Oct-2013 12:31	8547.0 FT	-4.0 FT

## Output DLIS Files

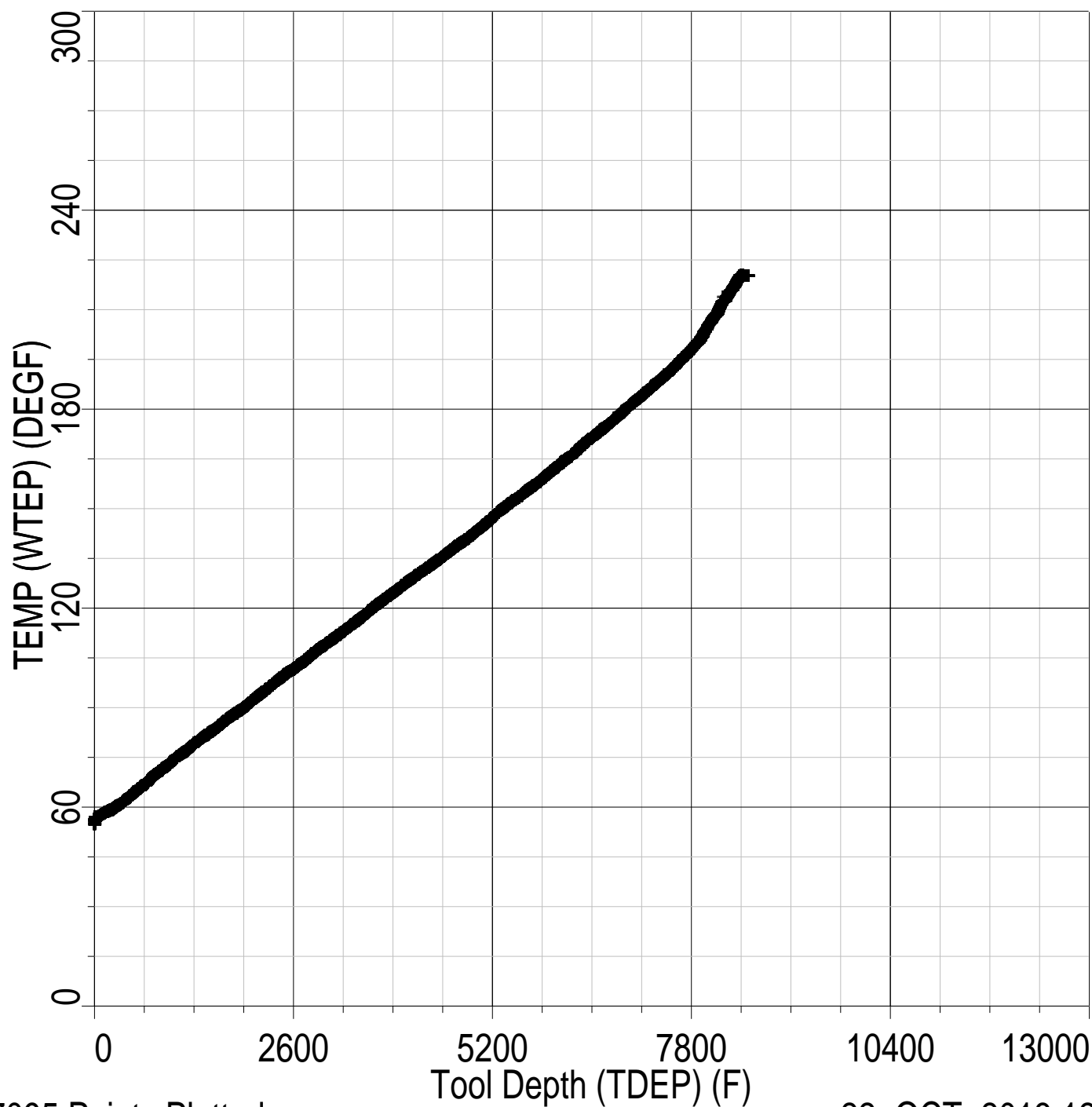
DEFAULT	SCMT_RST_PSP_087PUP	FN:83	PRODUCER	22-Oct-2013 12:38
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**Schlumberger**

**TEMPERATURE PLOT**



Index: 8547.0 – -4.0 FT



17095 Points Plotted

22-OCT-2013 12:37

**Schlumberger**

**PBMS COEFFICIENTS**

MAXIS Field Log

Client: ENCANA OIL & GAS (USA) INC

Field: SOUTH PARACHUTE

Well: HAGEN FEDERAL 15-16C (PC22)

Run date: 22-Oct-2013

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

090800

12

CFE2

GR HV Rt

Rt\*\*0

Rt\*\*1

Rt\*\*0

+ .182000000000e+04

+ .332000000000e+04

Client: ENCANA OIL & GAS (USA) INC

Field: SOUTH PARACHUTE

Well: HAGEN FEDERAL 15-16C (PC22)

Run date: 22-Oct-2013

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-B.928 S/N: 928

280612

16

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

Client: ENCANA OIL & GAS (USA) INC  
Field: SOUTH PARACHUTE  
Well: HAGEN FEDERAL 15-16C (PC22)  
Run date: 22-Oct-2013

Tool: PSP  
Sub Type: PBMS  
Sensor: CQG

PBMS Quartz Gauge type F

Sonde Serial NB COEFFICIENTS FOR CQG PBMS-B.928 S/N:  
Sensor Serial NB 928  
Calib Date ddmmyy 280612  
Matrix Size 66  
Coeff CRC 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 928  
Calib Date ddmmyy 280612  
Matrix Size 66

Matrix Size 00  
Coeff CRC 283B

Temp Coeff

	Fc**0	Fc**1	Fc**2
Fb**0	+1.117016867873E+03	-.284359629614E-03	+6.04391180345E-08
Fb**1	-.598309140812E-02	+1.182731130848E-07	+1.160166486172E-12
Fb**2	-.307621454576E-07	+3.300601550309E-12	+3.311233548560E-17
Fb**3	-.419658736767E-12	+1.117473708647E-16	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	+1.114322792679E-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	+2.288920923041E-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	565328877075E-03	333717531829E-07



(Fb'-Fc')*0	4.113369319827E+03	-3.363338877073E-02	-3.333717331829E-07
	(Fb'-Fc')**3	(Fb'-Fc')**4	(Fb'-Fc')**5
(Fb'-Fc')**0	-.124387135327E-12	+.713102327208E-16	-.316084316842E-20

**Schlumberger**

## MASTER CALIBRATION

MAXIS Field Log

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

**Primary Equipment:**




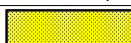





Slim Cement Mapping Xmitter Electronics	SCMX - CA	
Slim Cement Mapping Sonde	SCMS - CB	8303
Slim Cement Mapping Cartridge	SCMC - CA	8120

**Auxiliary Equipment:**

Slim Electronics Cartridge Housing	SECH - CA
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### 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		876.9	Master		726.7
	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		954.5	Master		611.0
	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		812.5	Master		931.0
	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		795.9	Master		830.0
	500.0 (Minimum) 1075 (Nominal) 1650 (Maximum)			500.0 (Minimum) 1075 (Nominal) 1650 (Maximum)	
Phase	CBL Amplitude Plus MV	Value			
Master		1269			
	1000 (Minimum) 1350 (Nominal) 1700 (Maximum)				

Master: Calibration out of date 7-Sep-2012 16:30

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

**Schlumberger**

Well: **HAGEN FEDERAL 15-16C (PC22)**

Field: **SOUTH PARACHUTE**

County: **GARFIELD**

State: **COLORADO**

SLIM CEMENT MAPPING LOG

CBL-VDL

GR-CCL