

Company: ENCANA OIL & GAS (USA) INC

Well: MF 03B-16 (H17 696)  
Field: NORTH PARACHUTE  
County: GARFIELD

State: COLORADO

County: GARFIELD  
Field: NORTH PARACHUTE  
Location: SHL: SENE/LOT 7 SEC 17 T6S -  
Well: MF 03B-16 (H17 696)  
Company: ENCANA OIL & GAS (USA) INC

CEMENT BOND LOG  
CBL - VDL  
GAMMA RAY - CCL

LOCATION

SHL: SENE/LOT 7 SEC 17 T6S - R96W  
BHL: LOT 3-16-6S-96 W 6TH PV

Elev.: K.B. 5676.00 ft  
G.L. 5654.00 ft  
D.F. 5675.00 ft

Permanent Datum: \_\_\_\_\_  
Log Measured From: KELLY BUSHING  
Drilling Measured From: KELLY BUSHING

GROUND LEVEL  
Elev.: 5654.00 ft

22.00 ft above Perm. Datum

API Serial No.  
05-045-18693-000C

Section  
17

Township  
6S

Range  
96W

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 20-Jun-2011

Run Number  
Depth Driller  
Schlumberger Depth  
Bottom Log Interval  
Top Log Interval  
Casing Fluid Type  
Salinity  
Density  
Fluid Level

ONE  
7479 ft  
7462 ft  
5400 ft  
200 ft  
WATER  
  
8.4 lbm/gal  
22 ft

BIT/CASING/TUBING STRING

Bit Size  
From  
To  
Casing/Tubing Size  
Weight  
Grade  
From  
To

7.875 in  
22 ft  
7479 ft  
4.500 in  
11.6 lbm/ft  
E80  
22 ft  
7461 ft

Maximum Recorded Temperatures  
Logger On Bottom  
Unit Number  
Recorded By  
Witnessed By

229 degF  
21-Jun-2011  
391  
SHOWKAT HOSSAIN  
UNATTENDED

Time  
Location

0:15

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: 21-JUN-2011 0:12:15

## Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW-B	Type:	CMTD-C	Type:	1-25ZT
Serial Number:	391	Serial Number:	5006	Serial Number:	391
Calibration Date:	09-NOV-2011	Calibration Date:	27-MAY-201	Length:	15000 FT
Calibrator Serial Number:	33	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:	6		

## Depth Control Parameters

Log Sequence:	First Log In the Well
Rig Up Length At Surface:	245.00 FT
Rig Up Length At Bottom:	246.00 FT
Rig Up Length Correction:	-1.00 FT
Stretch Correction:	3.00 FT
Tool Zero Check At Surface:	0.80 FT

### Depth Control Remarks

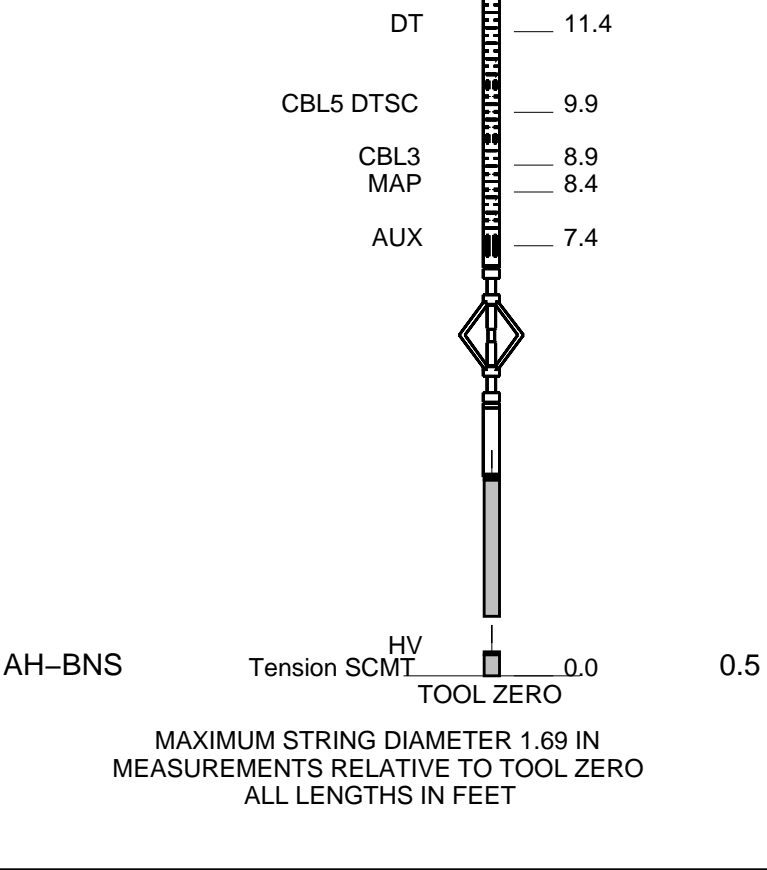
1. ALL SCHLUMBERGER DEPTH CONTROL POLICIES FOLLOWED.
2. IDW USED AS PRIMARY DEPTH CONTROL.
3. Z-CHART AND DRUM COUNTER USED AS SECONDARY DEPTH CONTROL
- 4.
- 5.
- 6.

## 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: NONE OS2: OS3: OS4: OS5:	OTHER SERVICES2 OS1: OS2: OS3: OS4: OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
THIS IS FIRST RUN IN WELL.	
TOOL RAN AS PER TOOL SKETCH.	
TD TAGGED AT: 7462 FT	
MAXIMUM RECORDED PRESSURE AT TD: 3093.6 PSIA	
MAXIMUM RECORDED TEMPERATURE AT TD: 228.7 DEGE	

EXPECTED FREE PIPE AMPLITUDE: 80 mV	
CBL TRANSIT TIME CYCLE SKIPPING IN ZONES OF GOOD CEMENT DUE TO LOW SIGNAL AMPLITUDE.	
AFE: 10141630	
THANK YOU FOR CHOOSING SCHLUMBERGER.	
CREW: W. AZIZ AND J. ROSA	
RUN 1 SERVICE ORDER #: PROGRAM VERSION: FLUID LEVEL:	RUN 2 SERVICE ORDER #: PROGRAM VERSION: FLUID LEVEL:
BOC2-00080 19C0-187 22 ft	
LOGGED INTERVAL	START STOP
EQUIPMENT DESCRIPTION	
RUN 1	RUN 2
SURFACE EQUIPMENT	
WITM-A 3412 PSC_16MHZ 3412	
DOWNHOLE EQUIPMENT	
MH-22 MH-22 391	30.6
AH-38 Detail MT TelStatus CTEM	29.0
PSPT PSC-A 1772 PSPT-A 1772 PSTC-A 1772 PBMS-A 1772 10k_Sapphire_Mano 1772 RTD_Thermometer 1772 GR	28.7 28.7
CCL 1772 PBMS 1772	25.0
Well_Temp Manometer CCL PBMS PSTC	21.9 21.8 21.2 20.5
SCMT-CB SCMC-CA 8120 SECH-CA 8120 CMIR-AG 8024 SCMS-CB 8317 SCMX-CA 8174	20.5



MAIN PASS 0 PSI

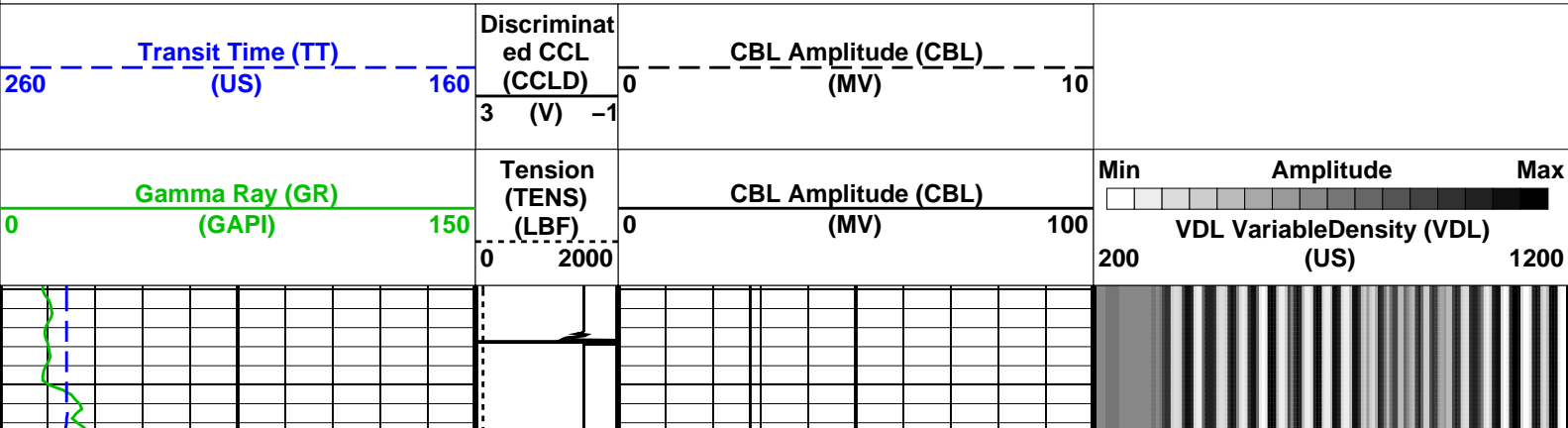
MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC Well: MF 03B-16 (H17 696)

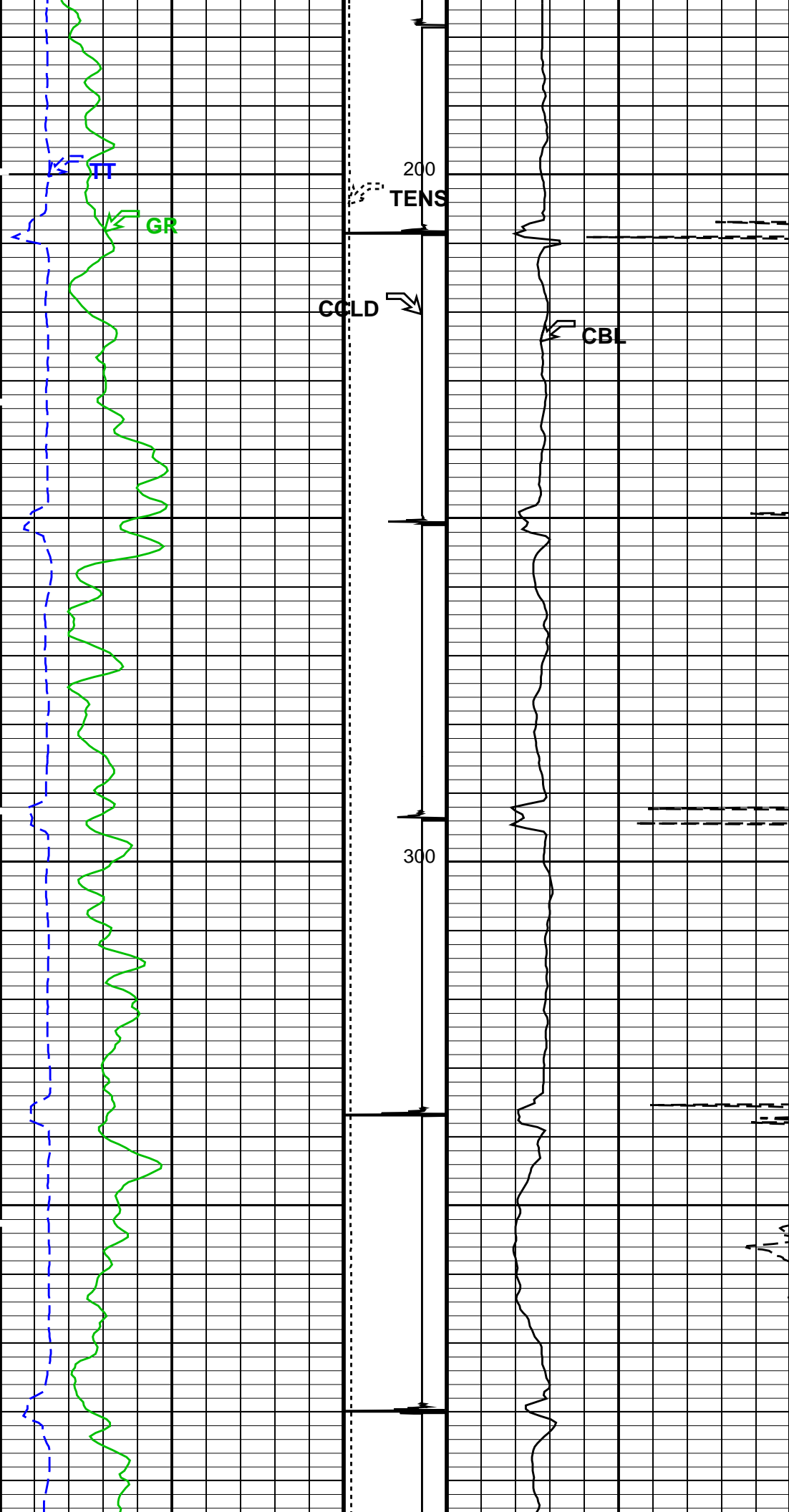
Output DLIS Files				
DEFAULT	SCMT_PSP_039LUP	FN:38	PRODUCER	21-Jun-2011 00:15

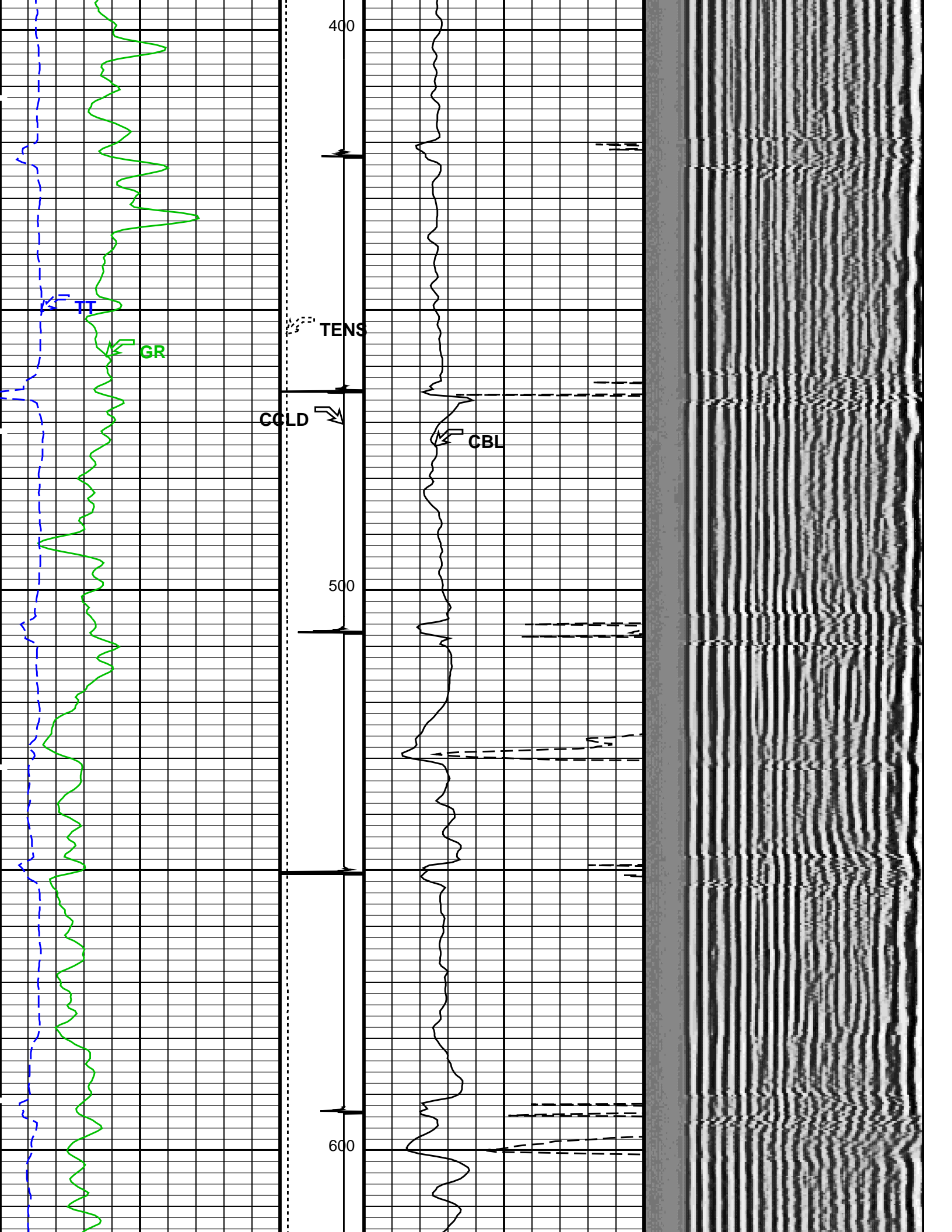
OP System Version: 19C0-187				
SCMT-CB	SRPC-5047-H1-2011-OP1	PSPT	19C0-187	

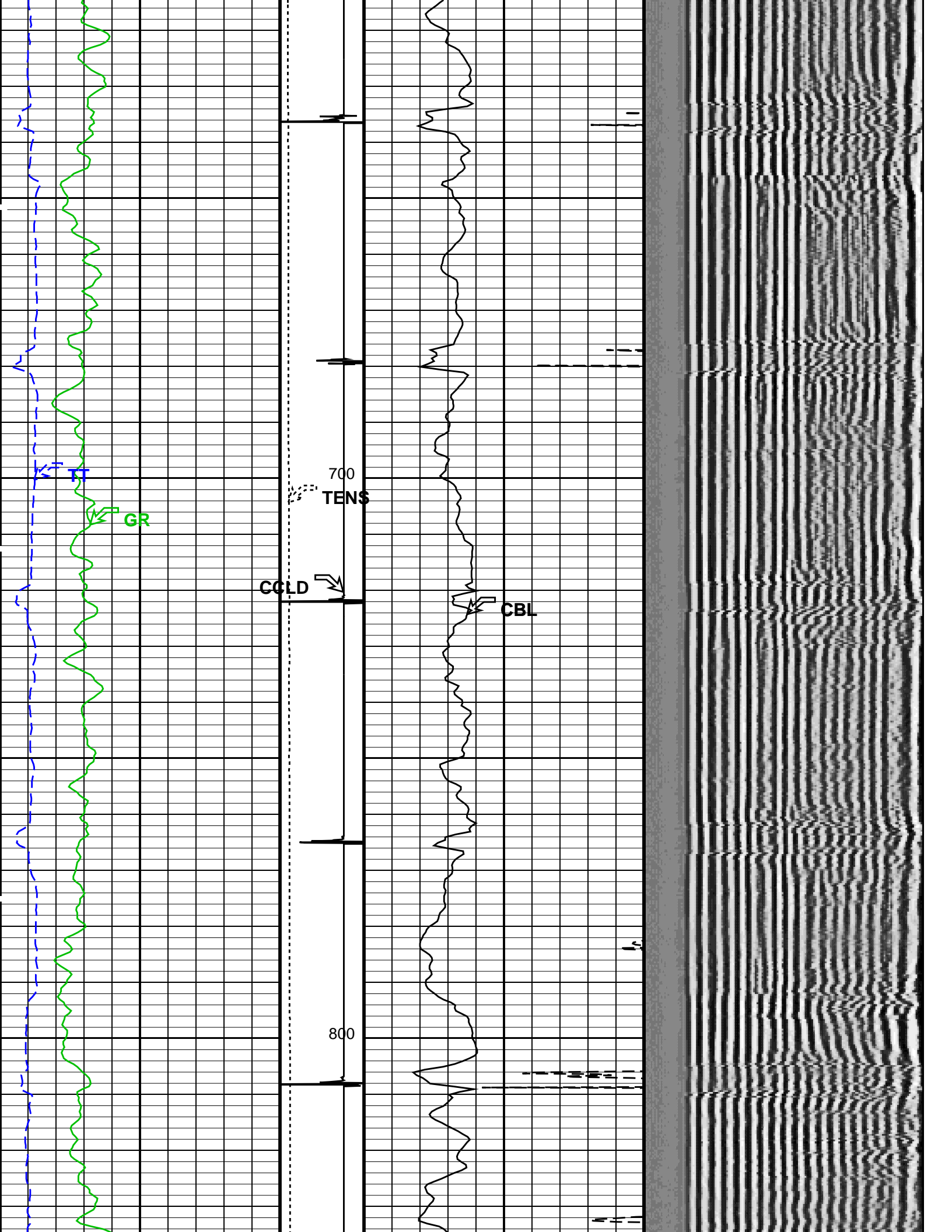
PIP SUMMARY				
Time Mark Every 60 S				

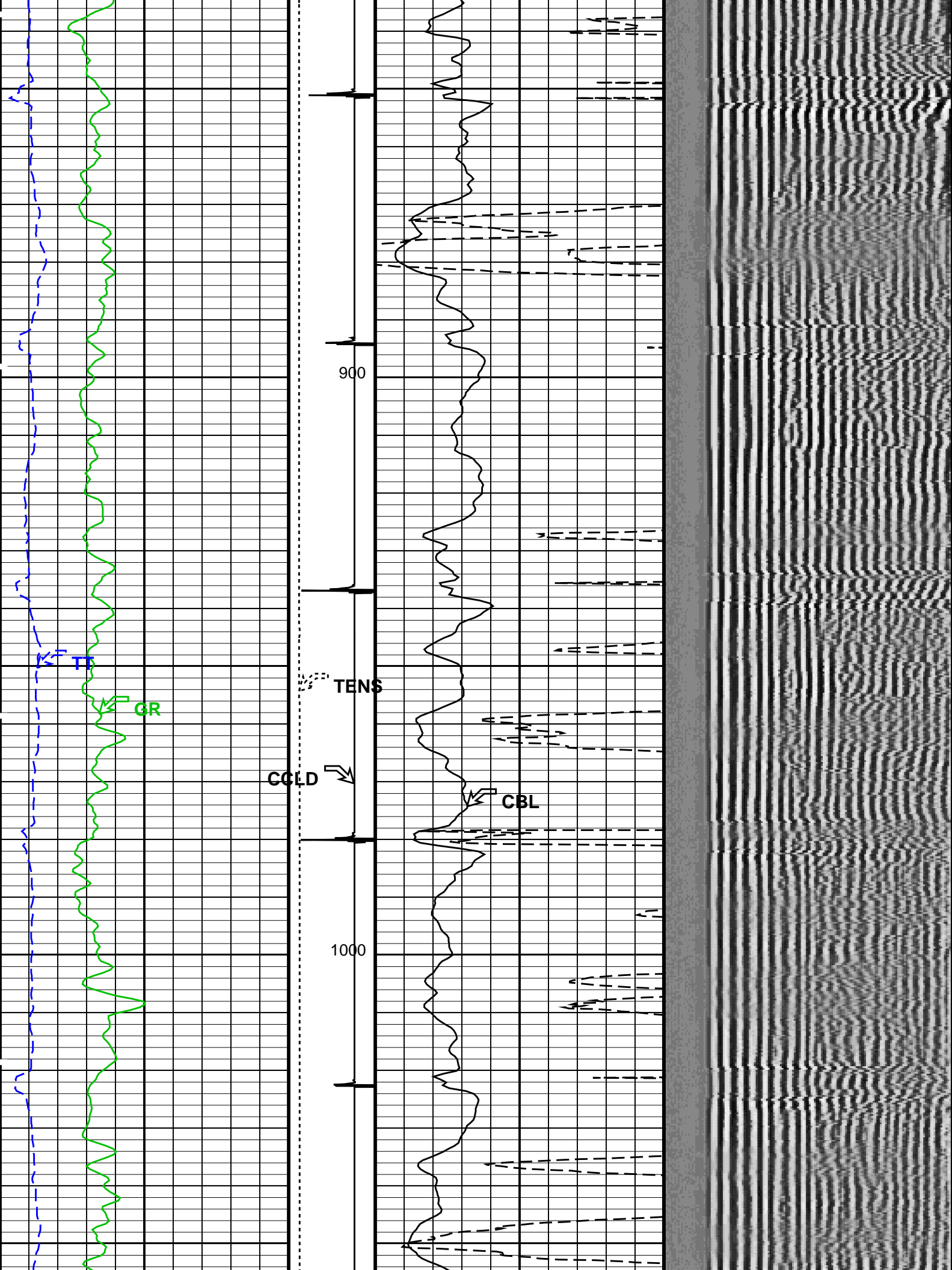




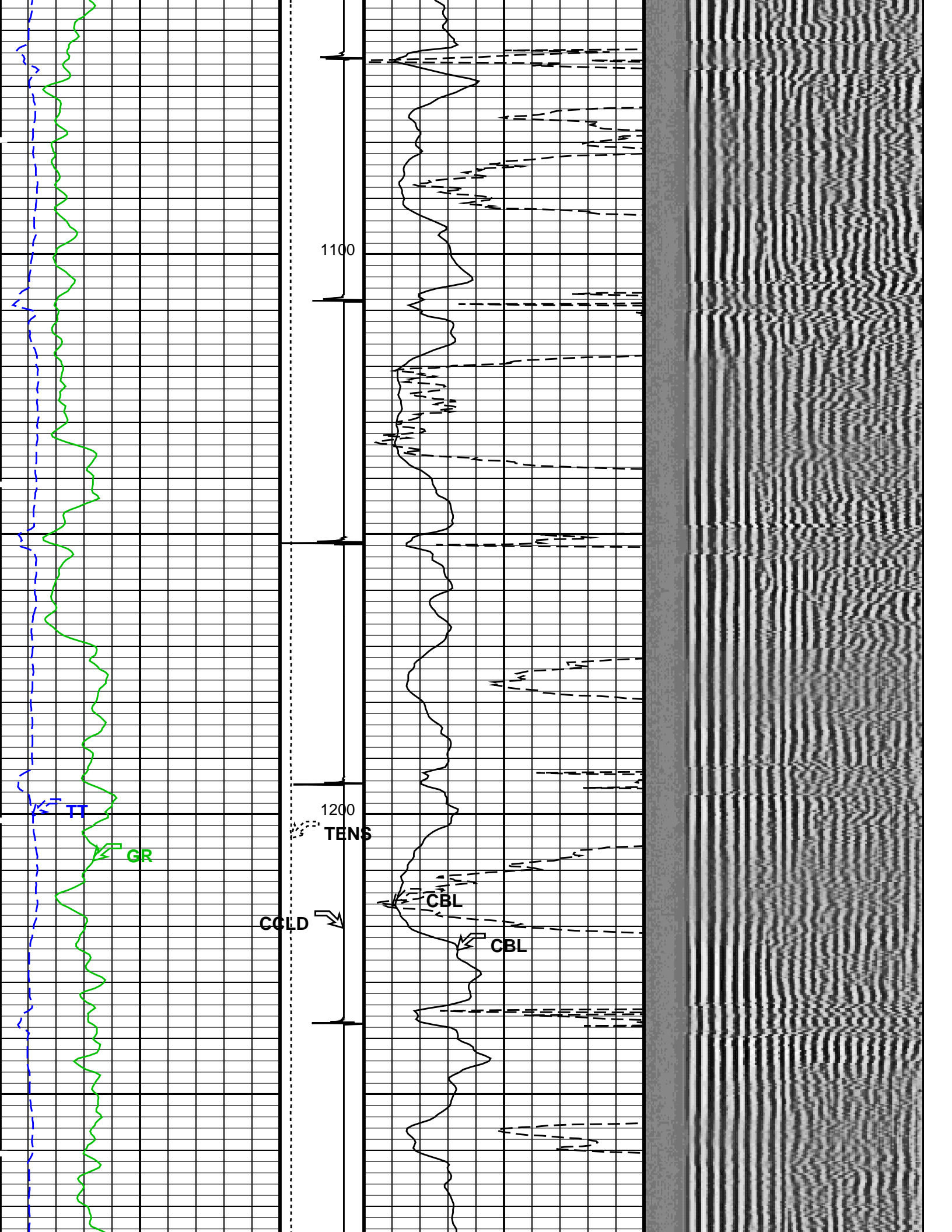


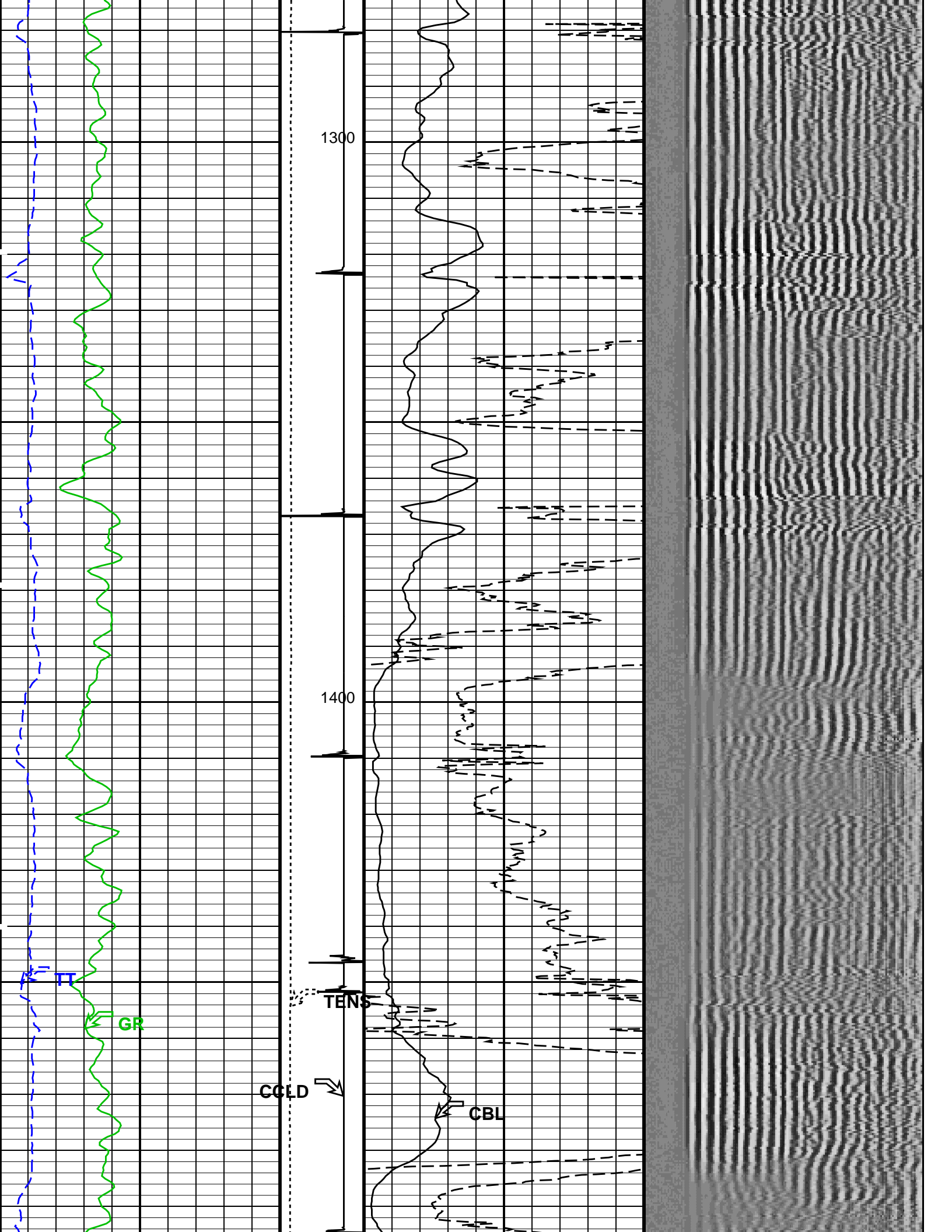


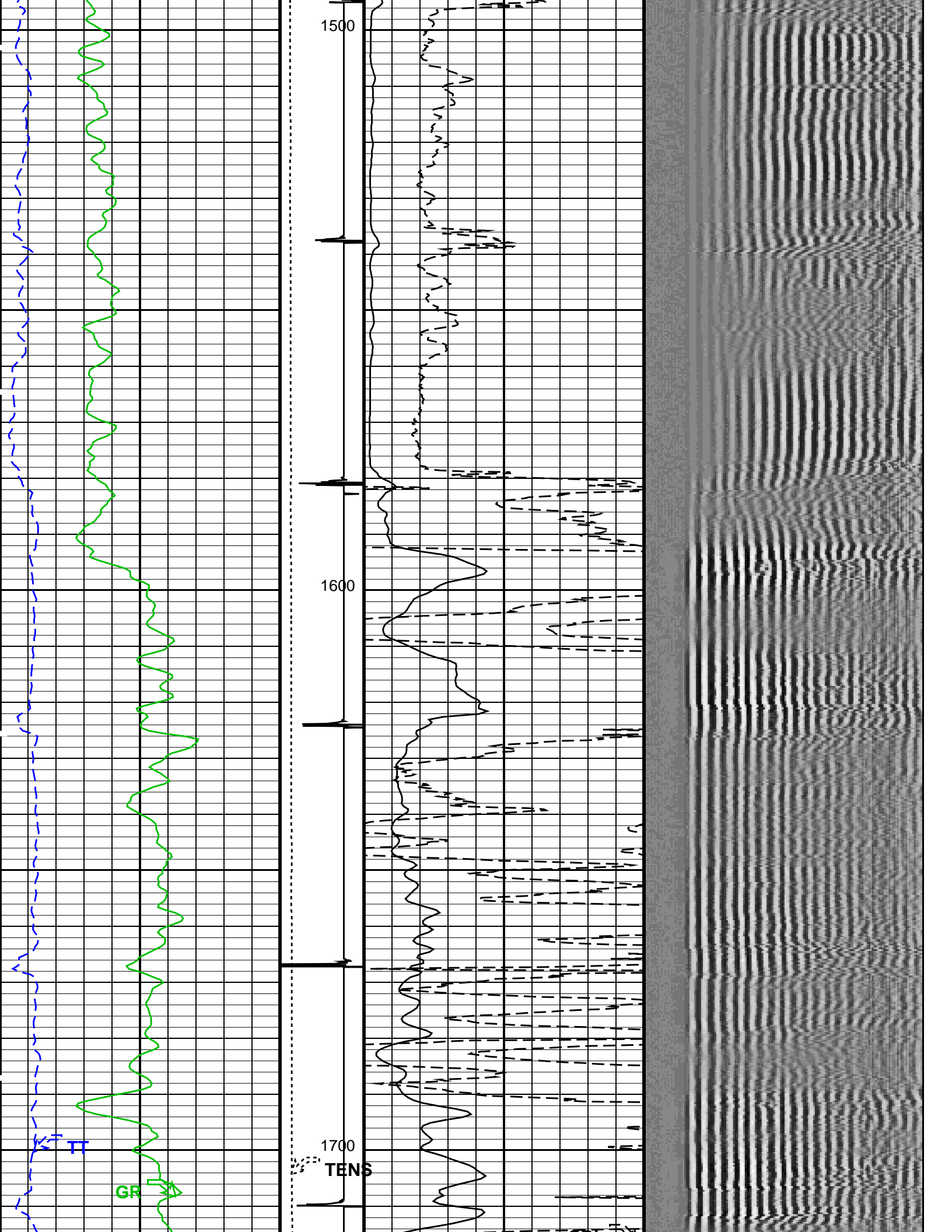


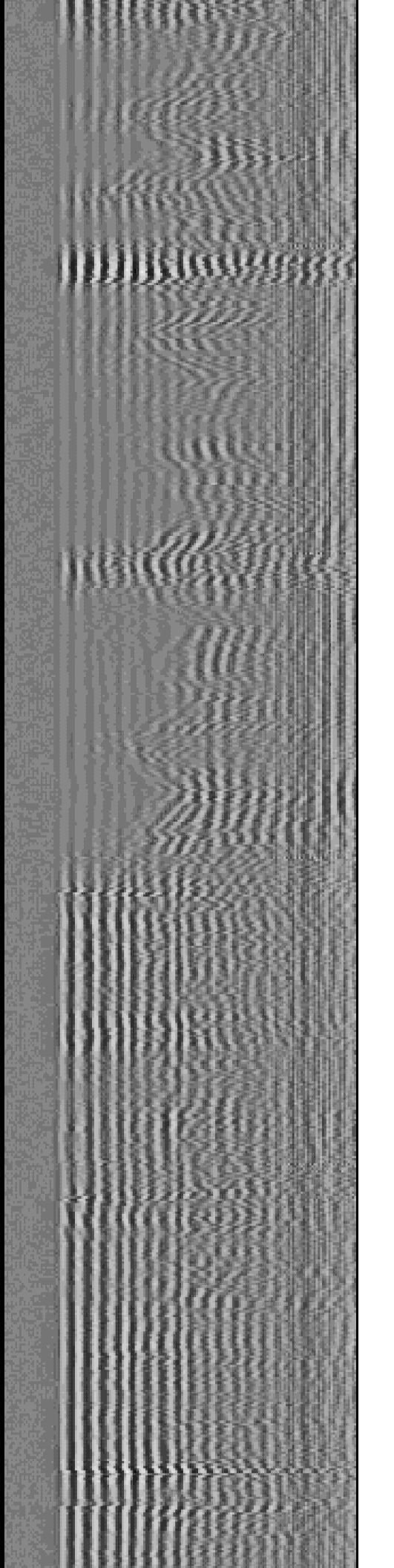
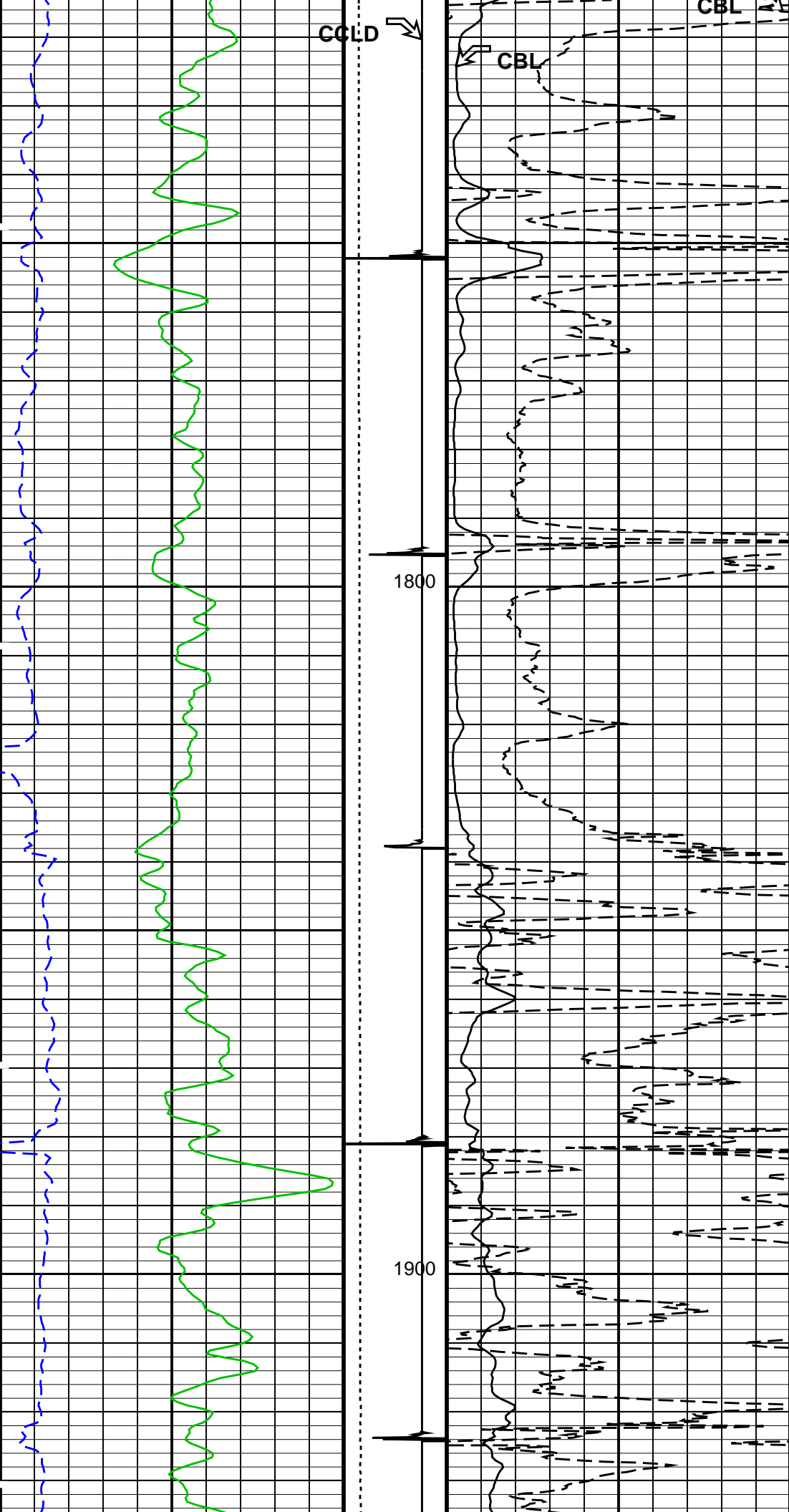




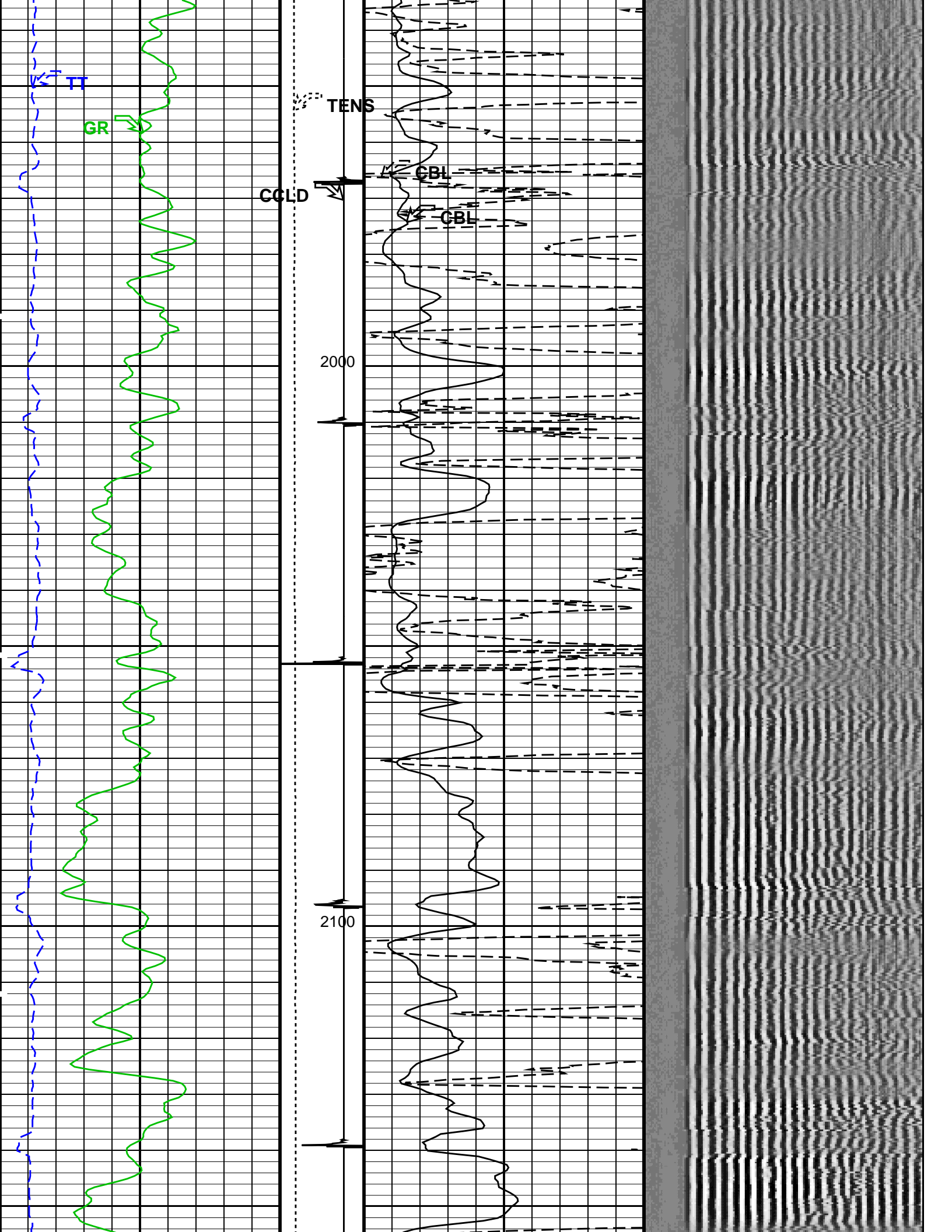


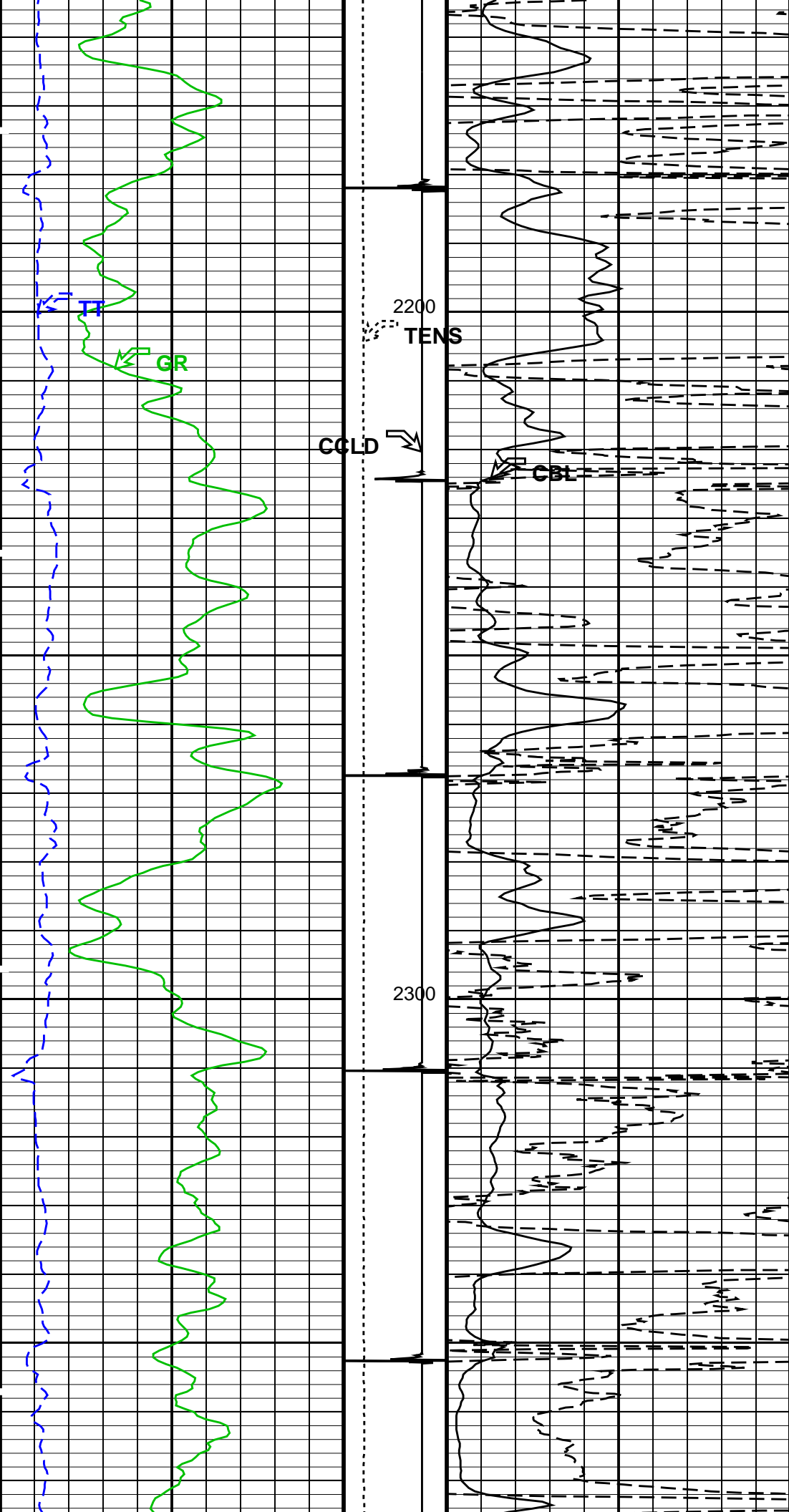


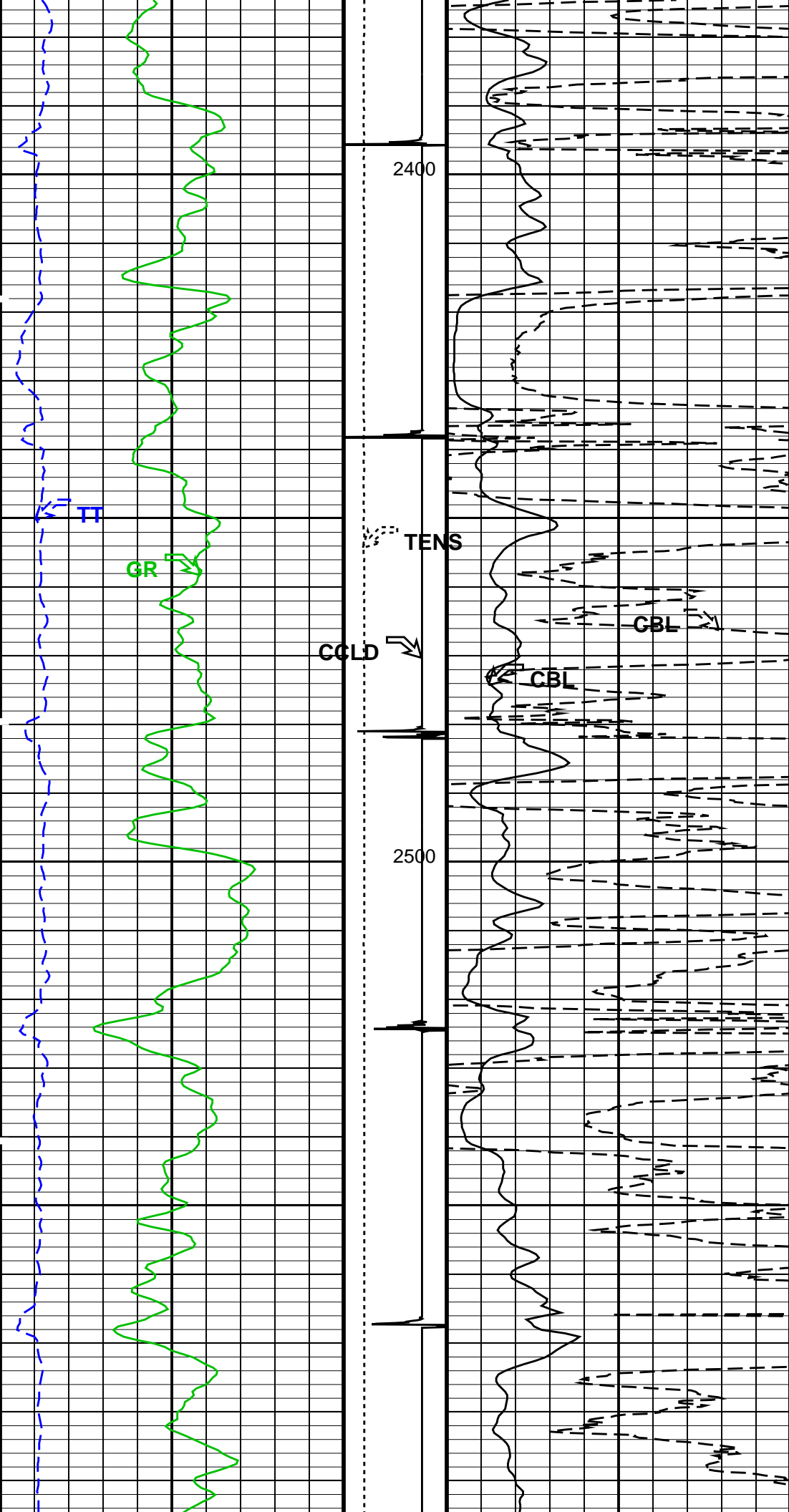




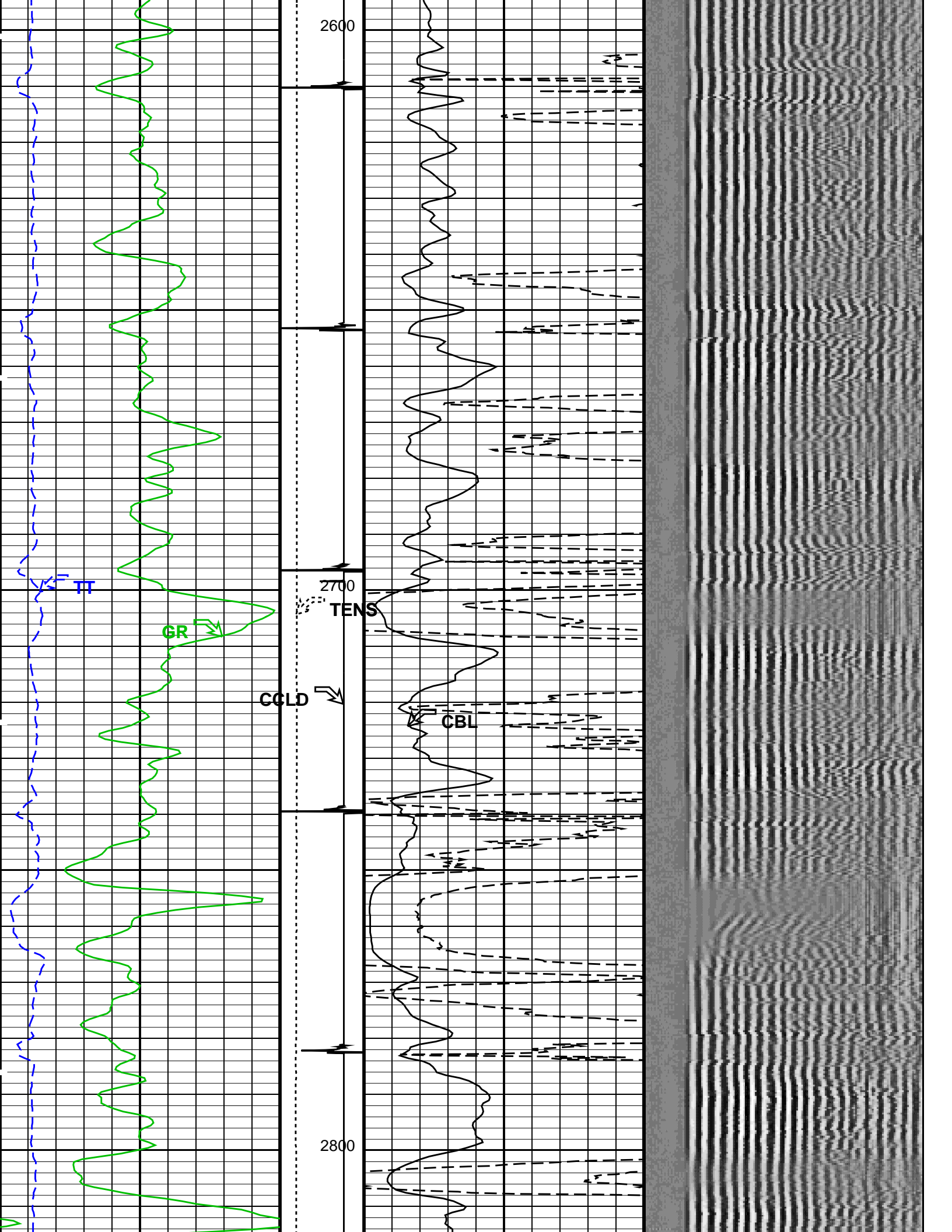


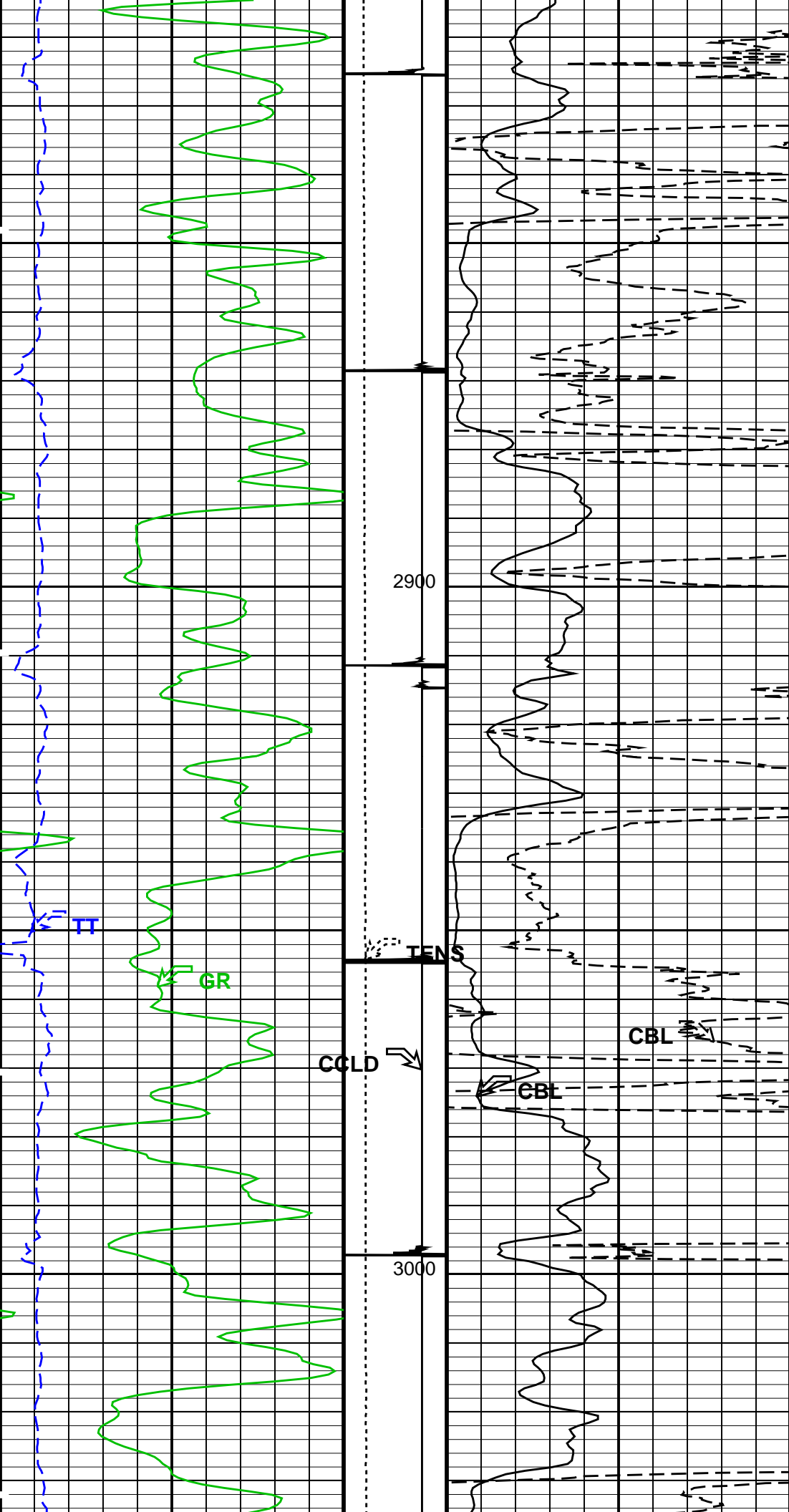


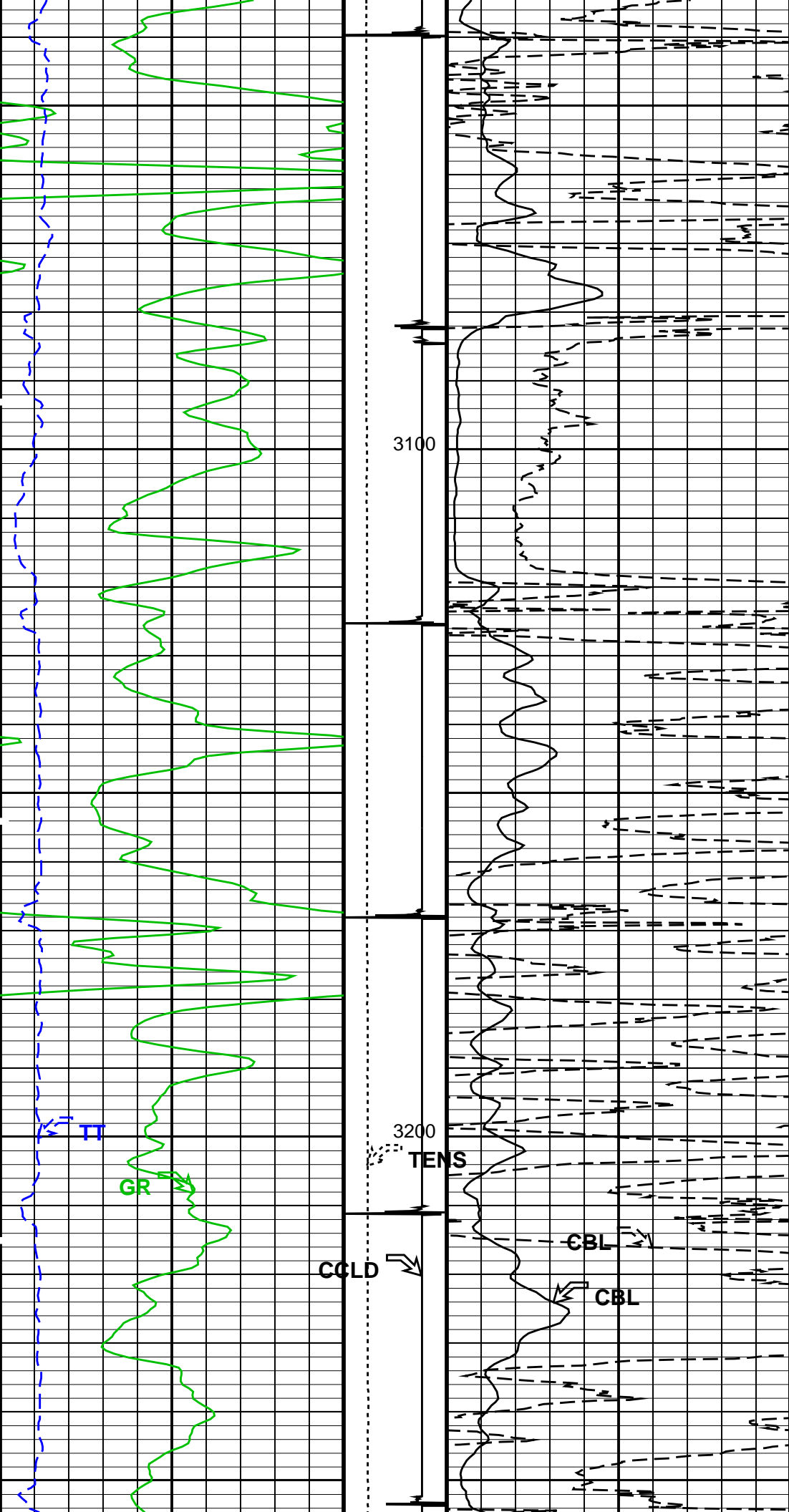




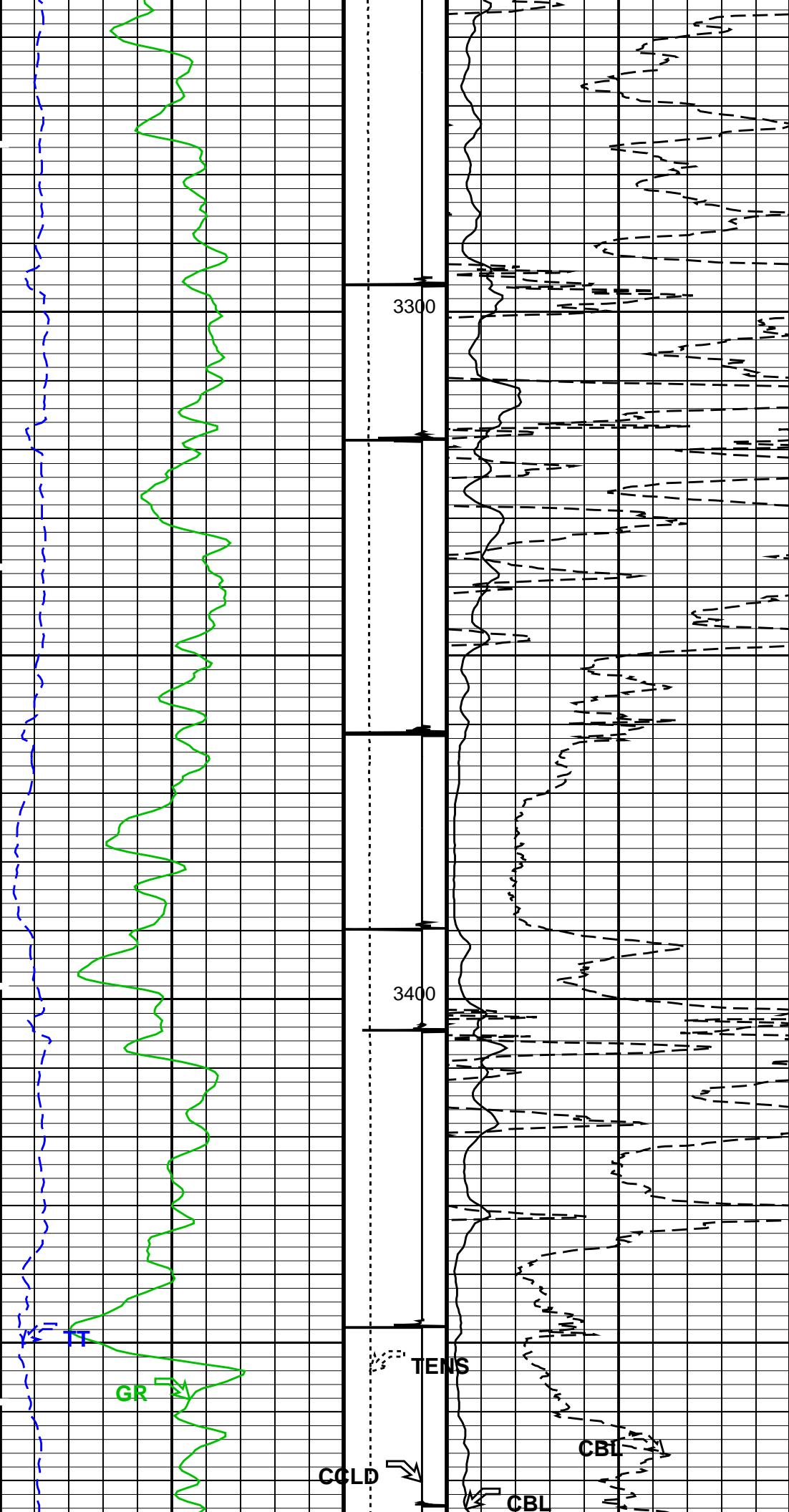


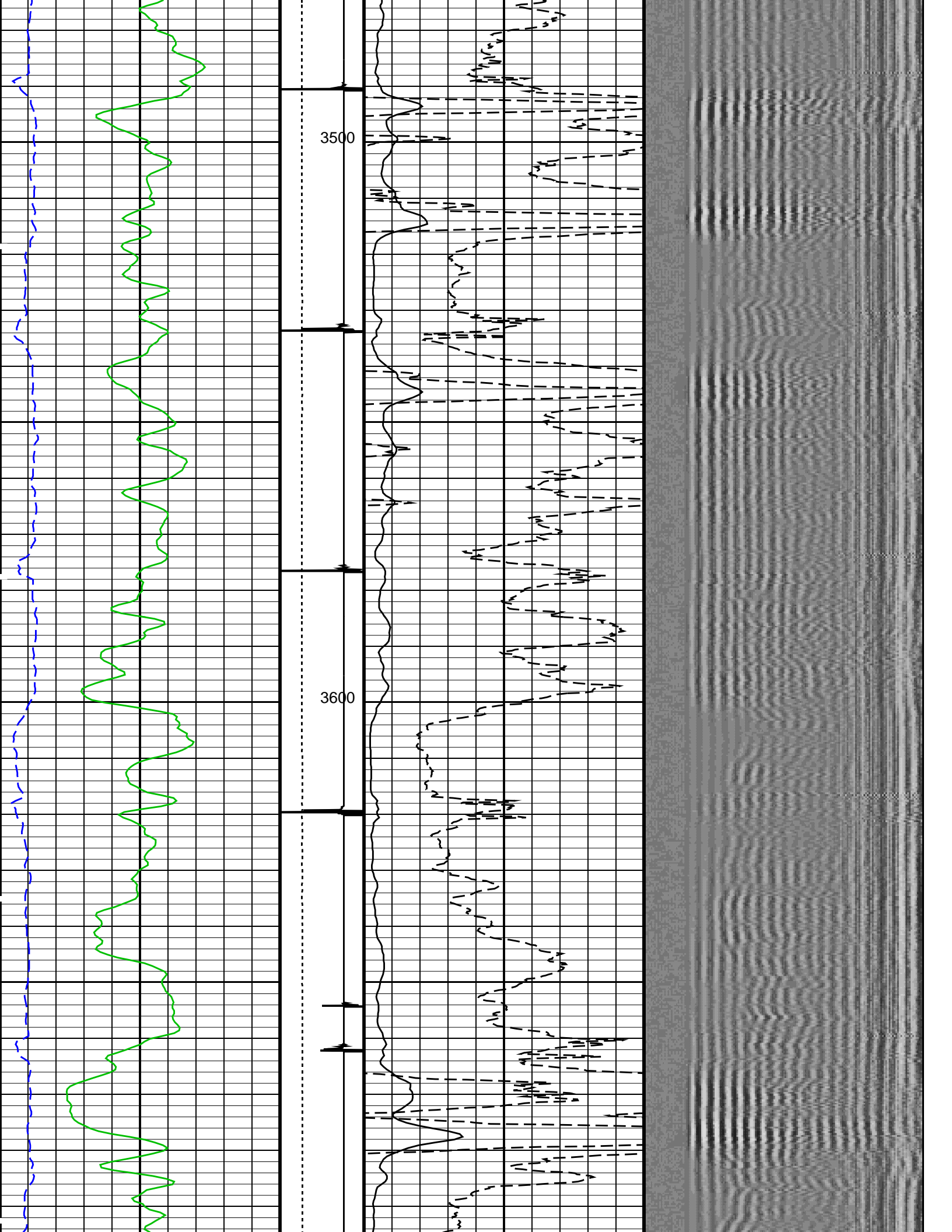




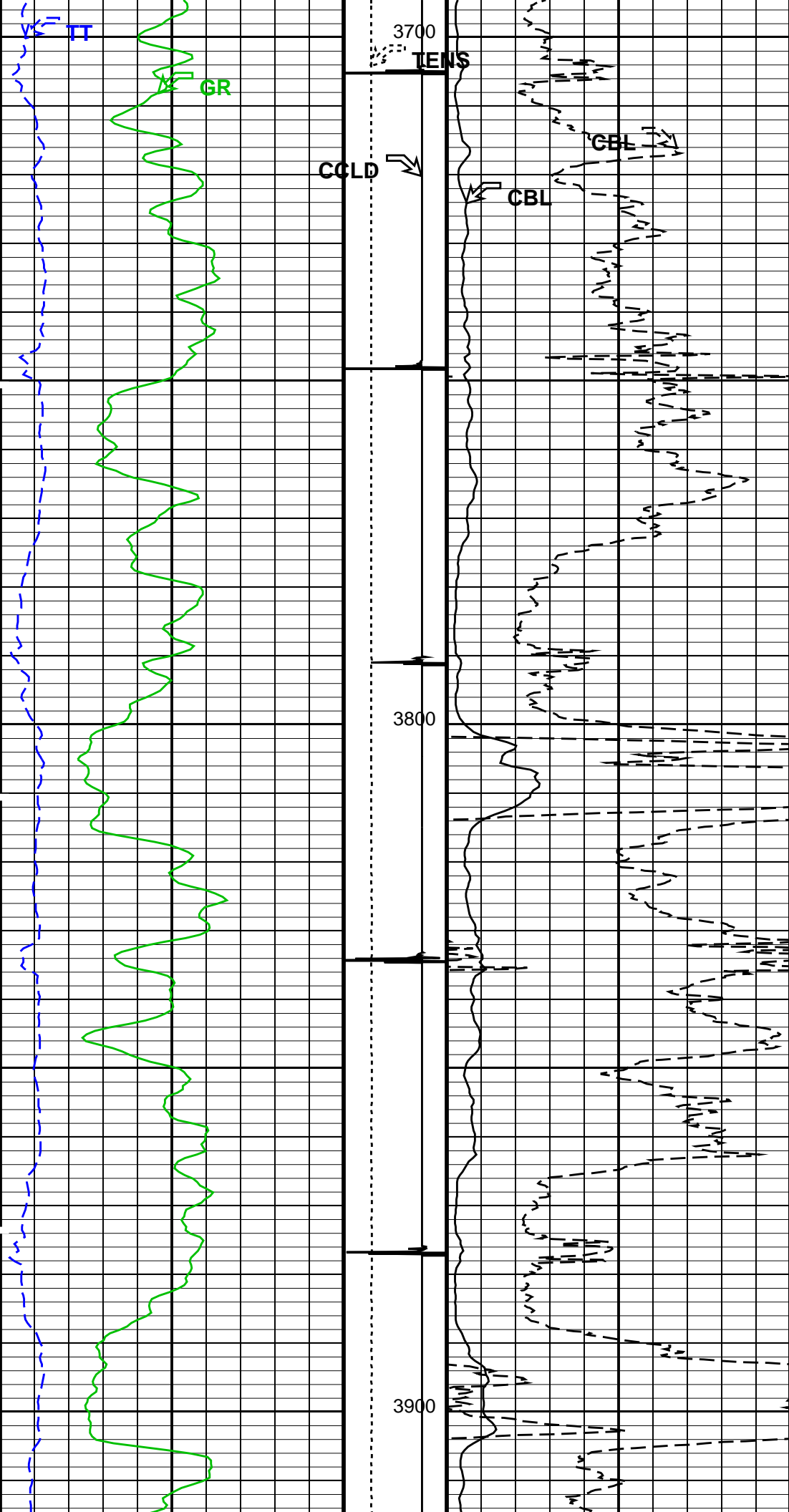


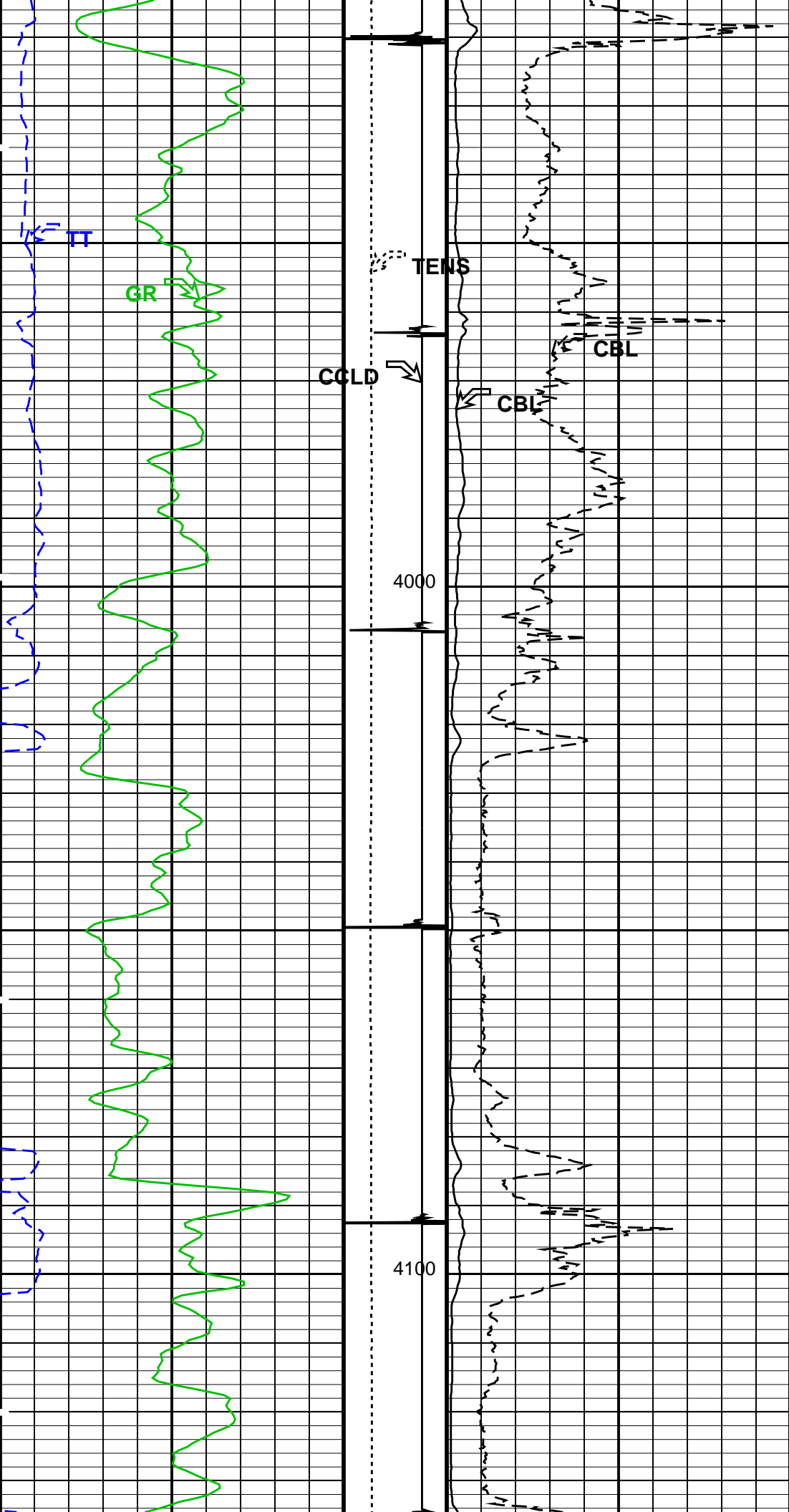


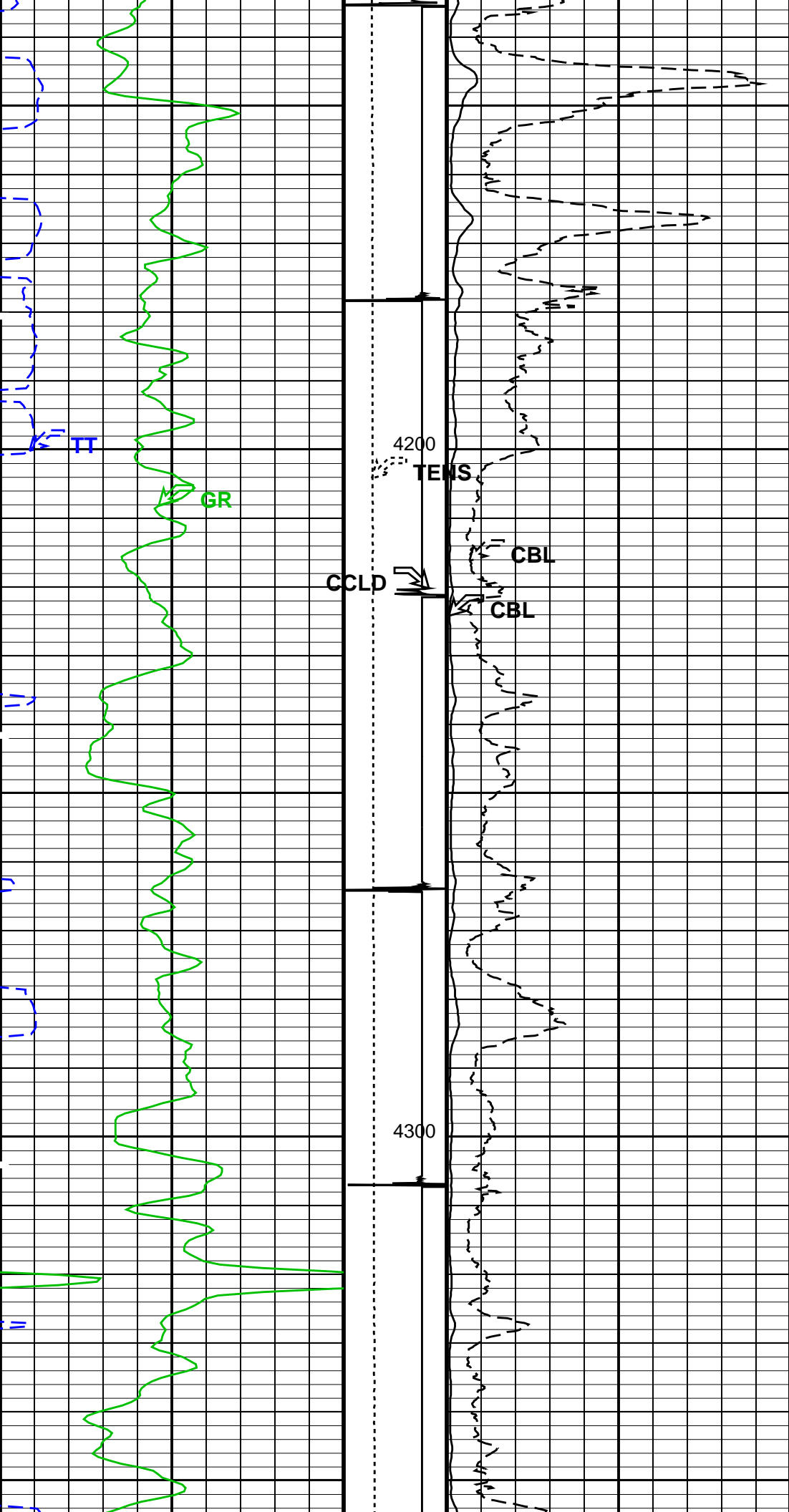


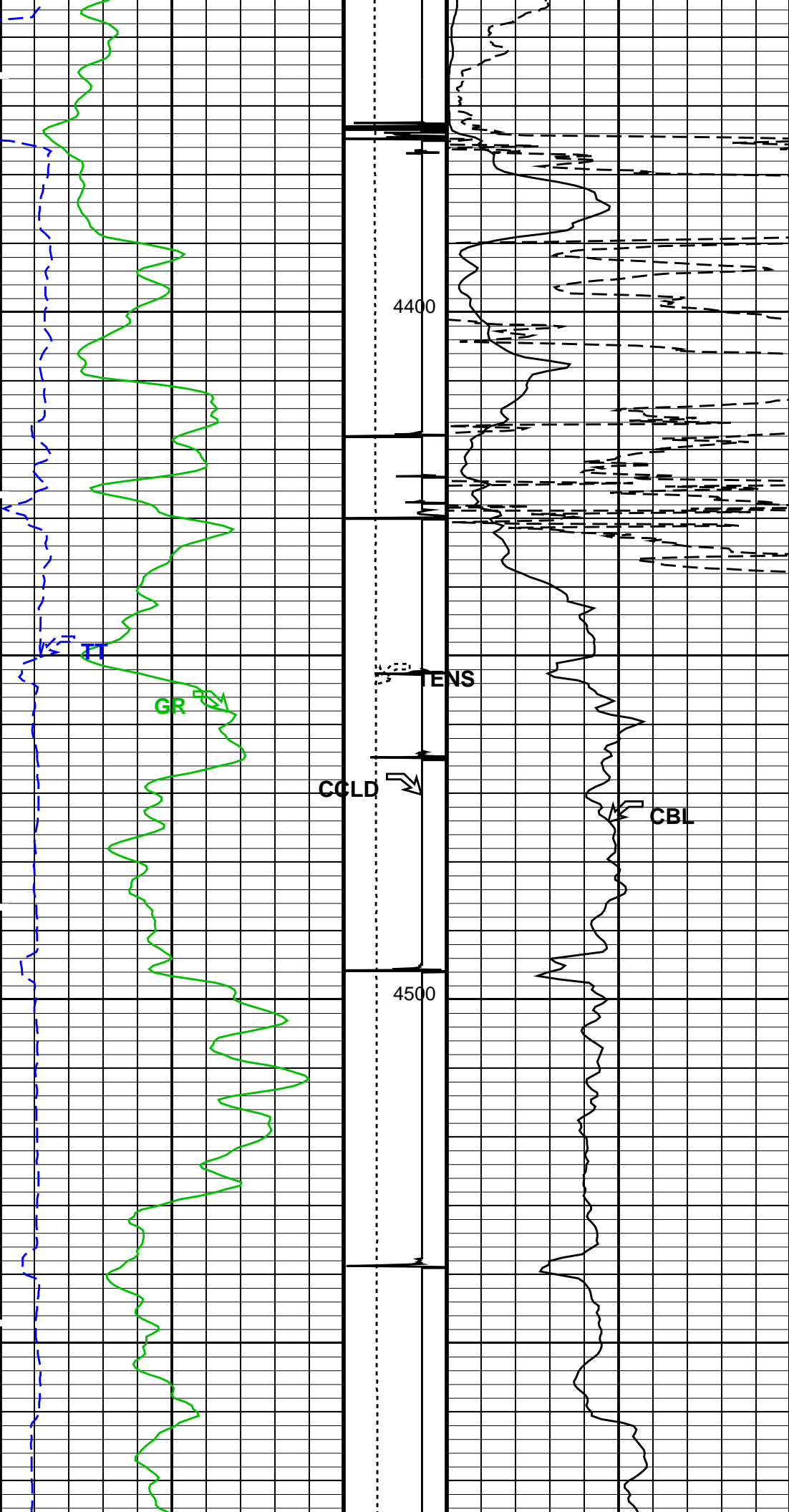




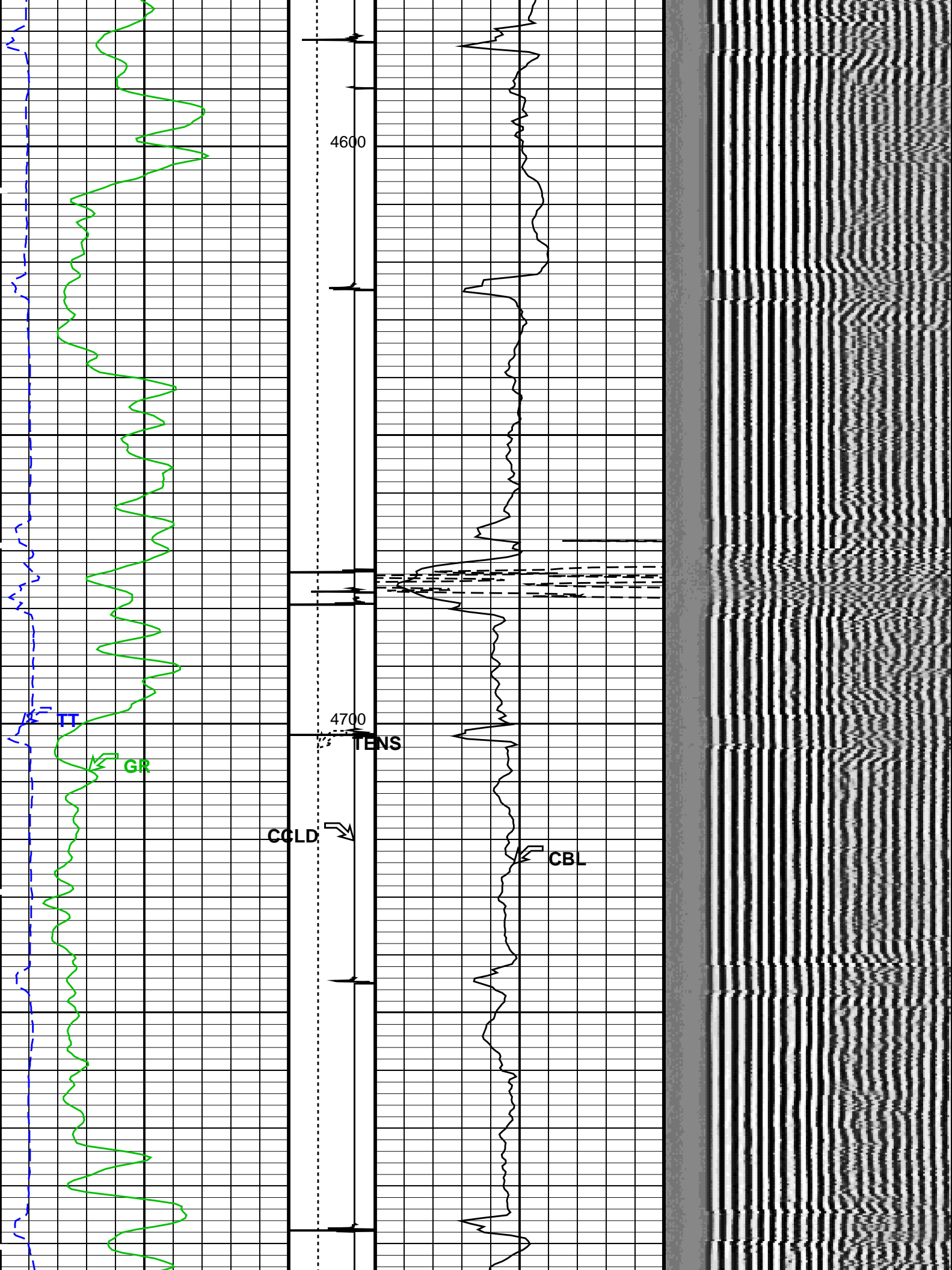


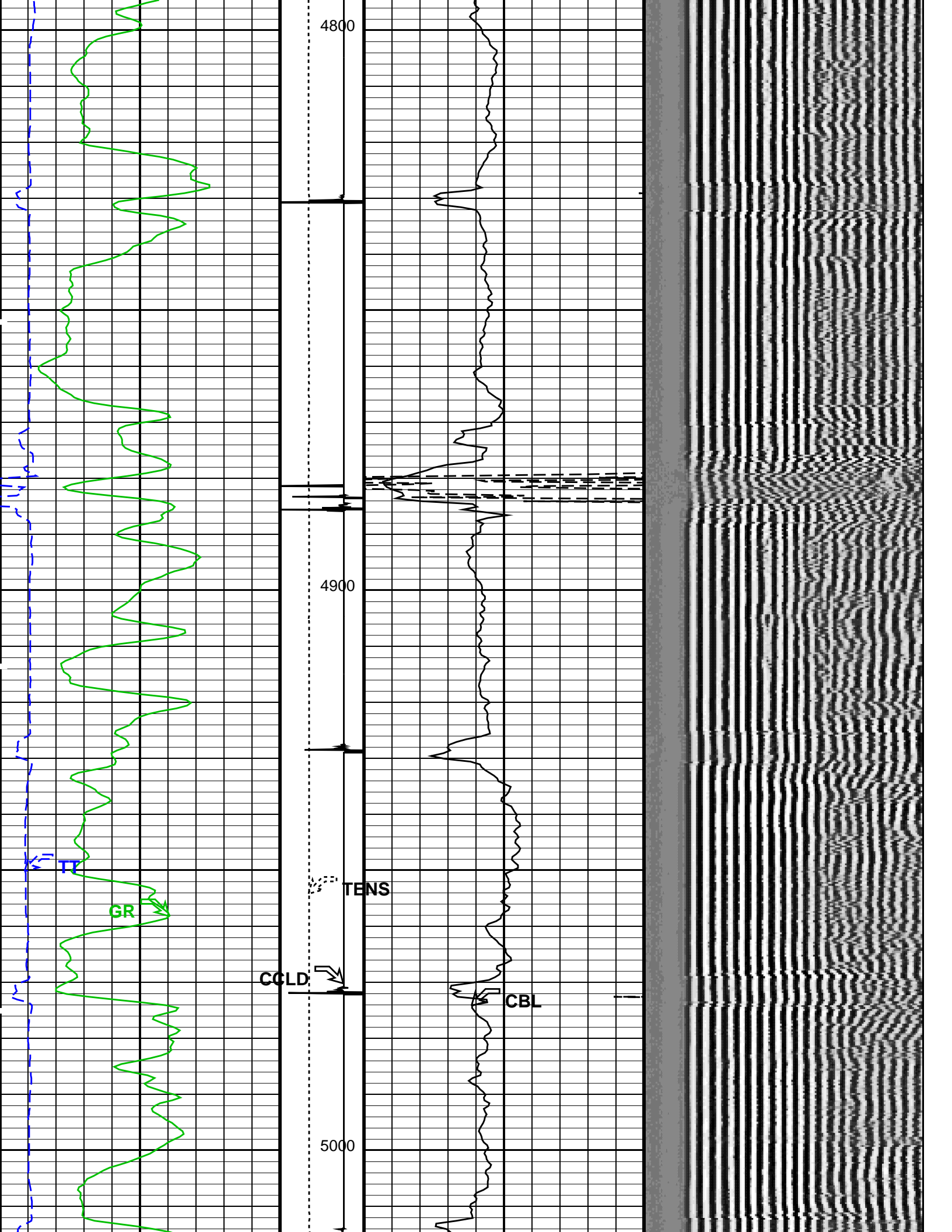


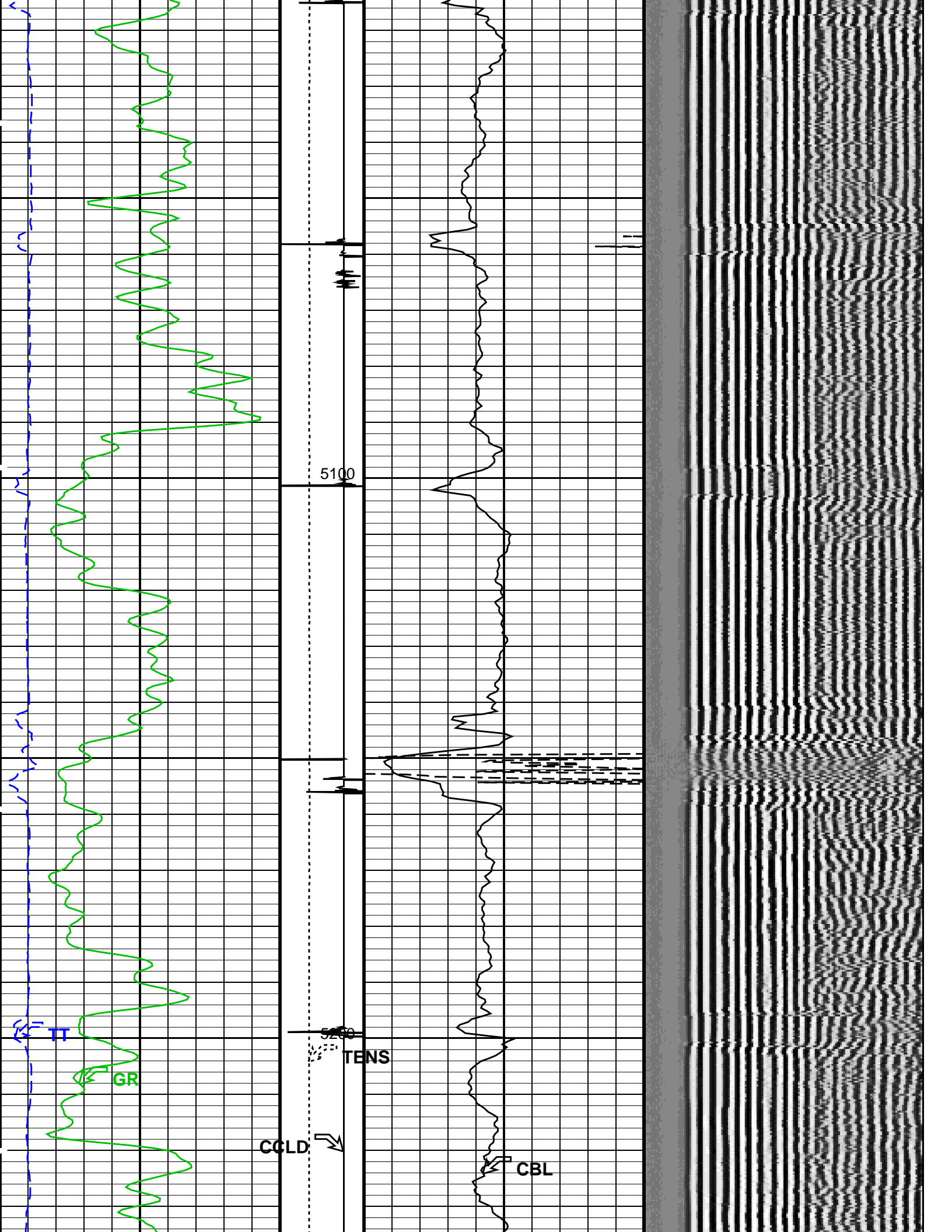


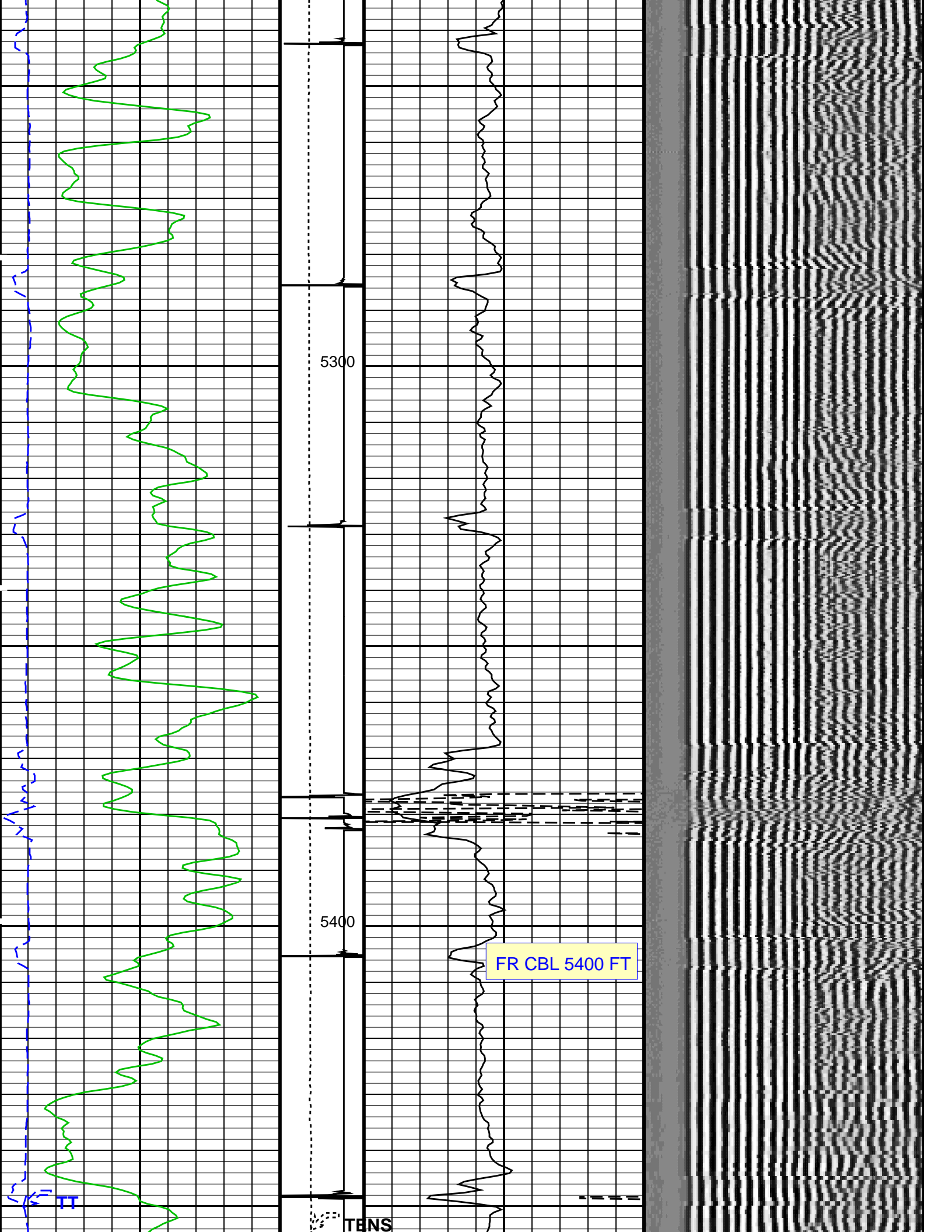




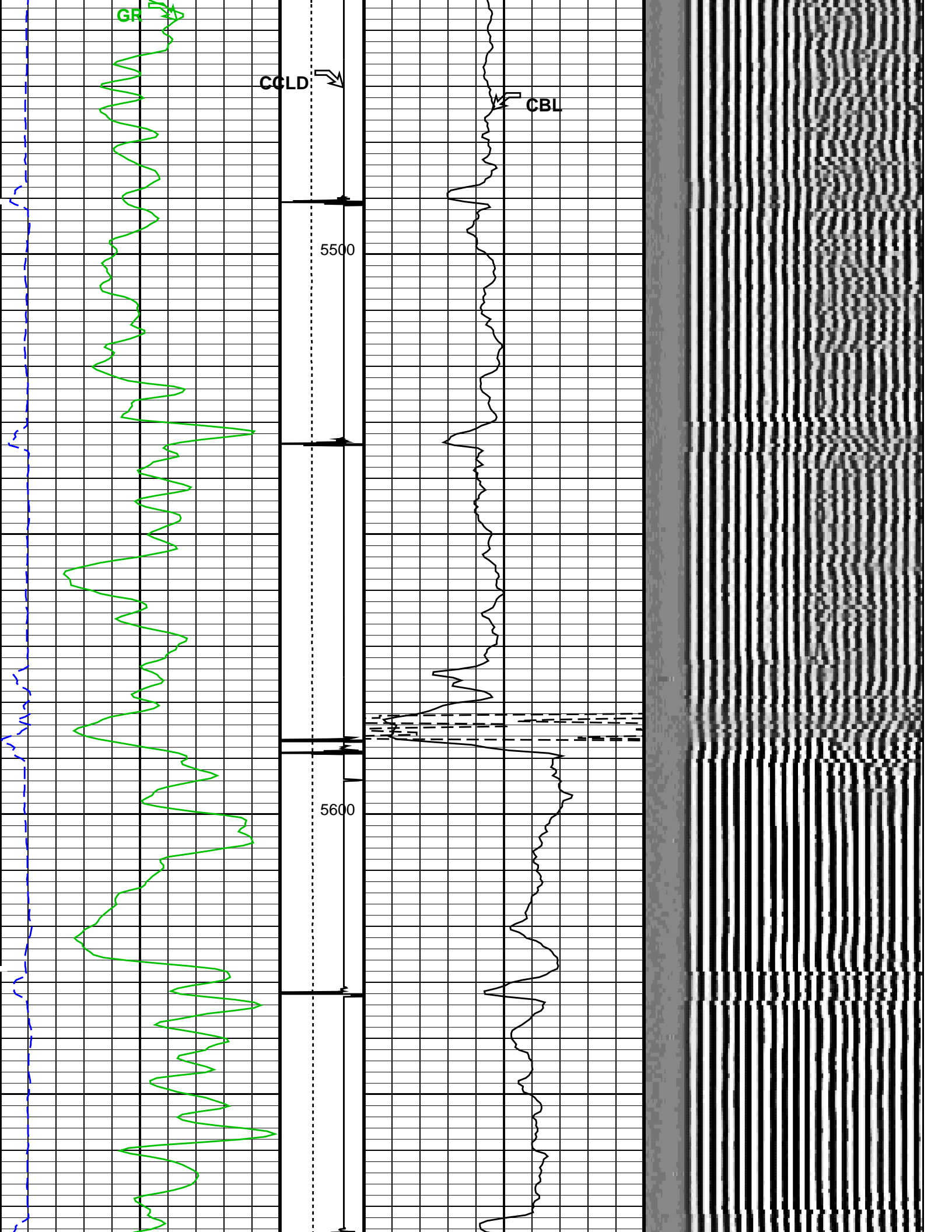


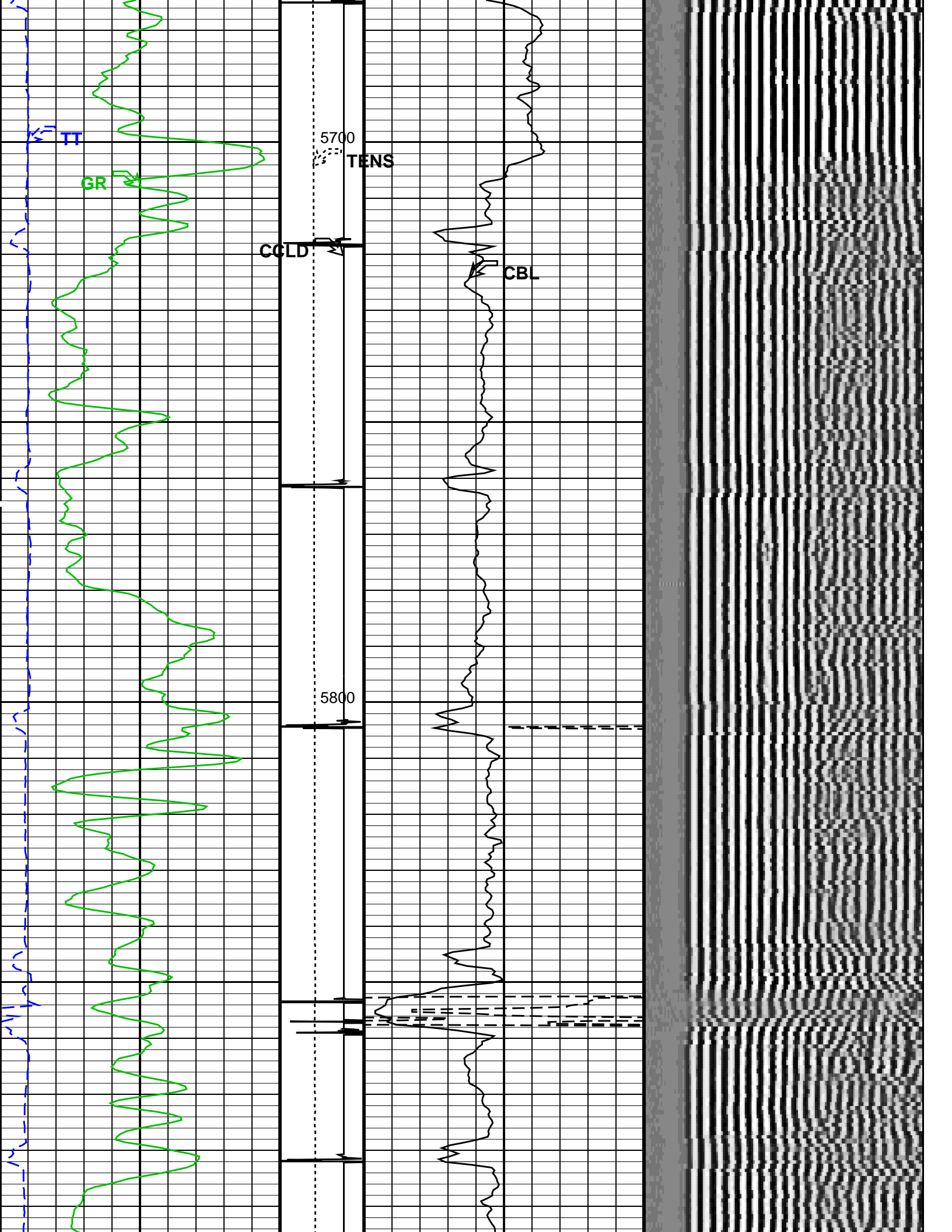


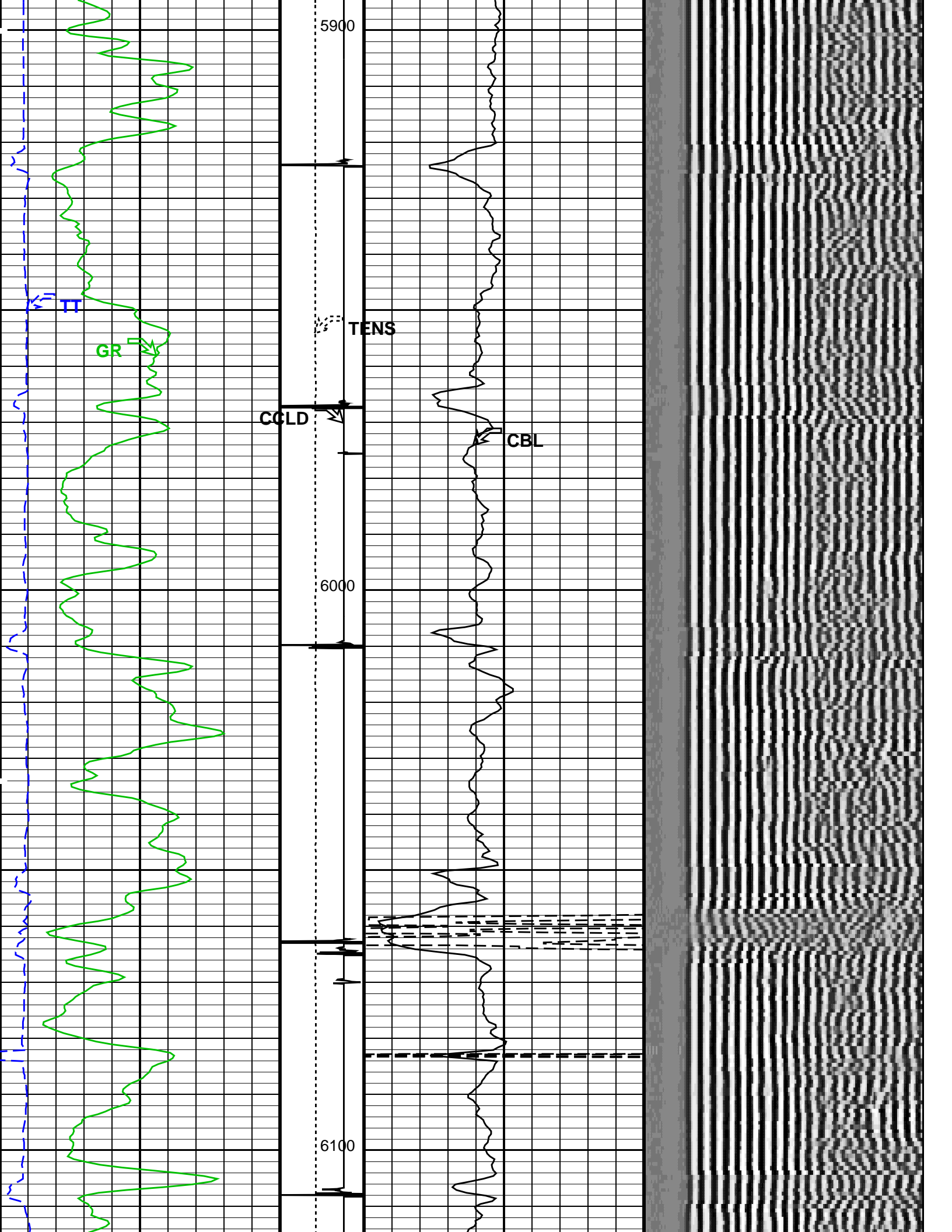


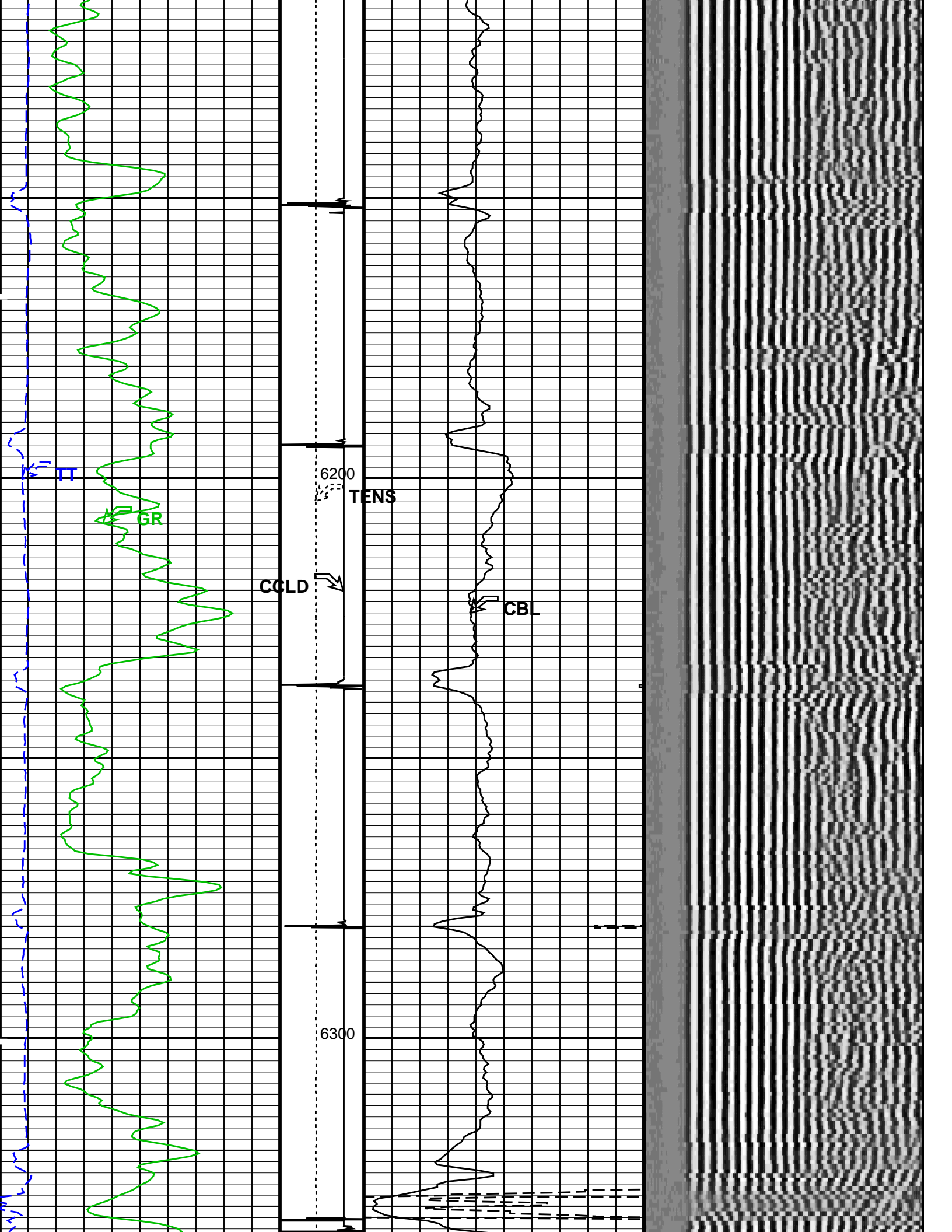


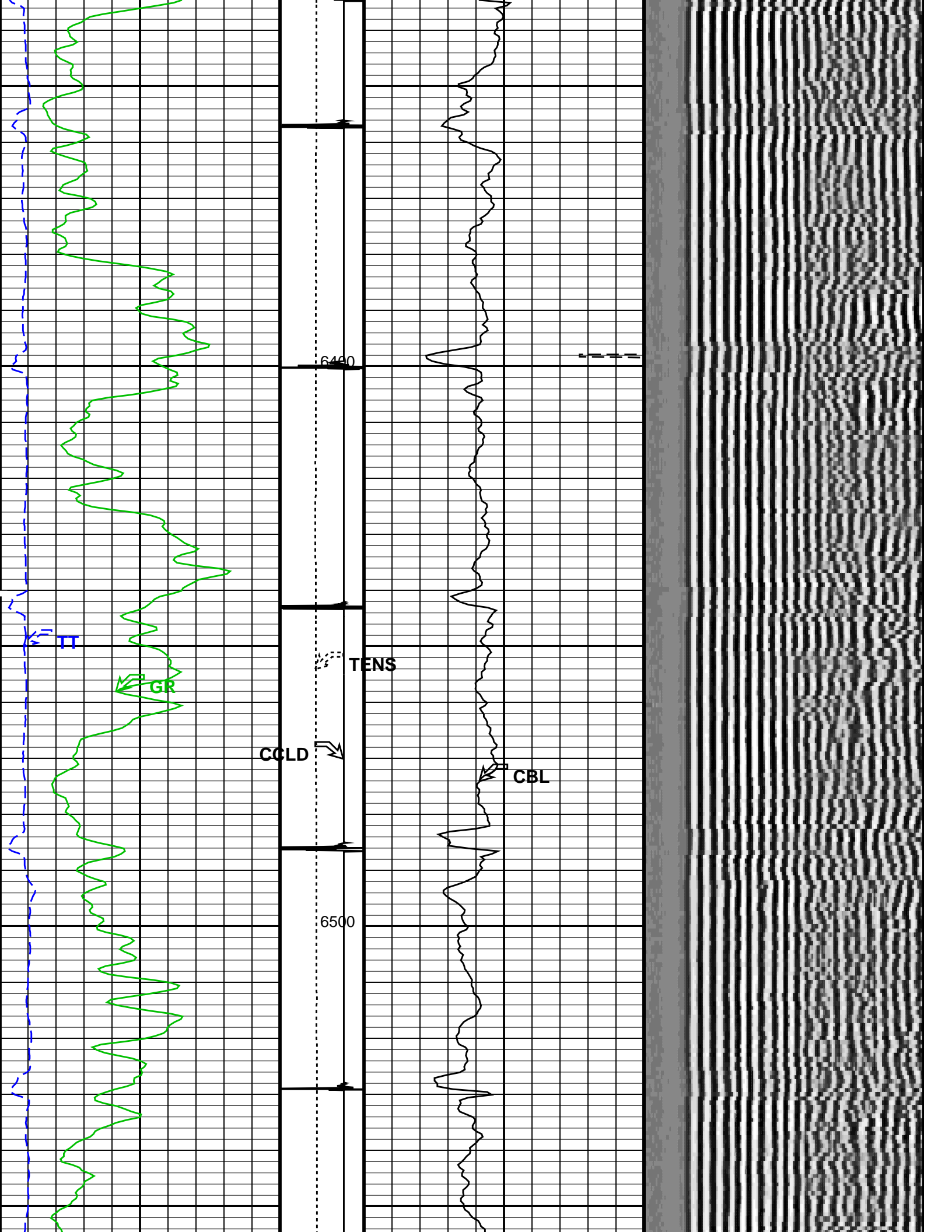




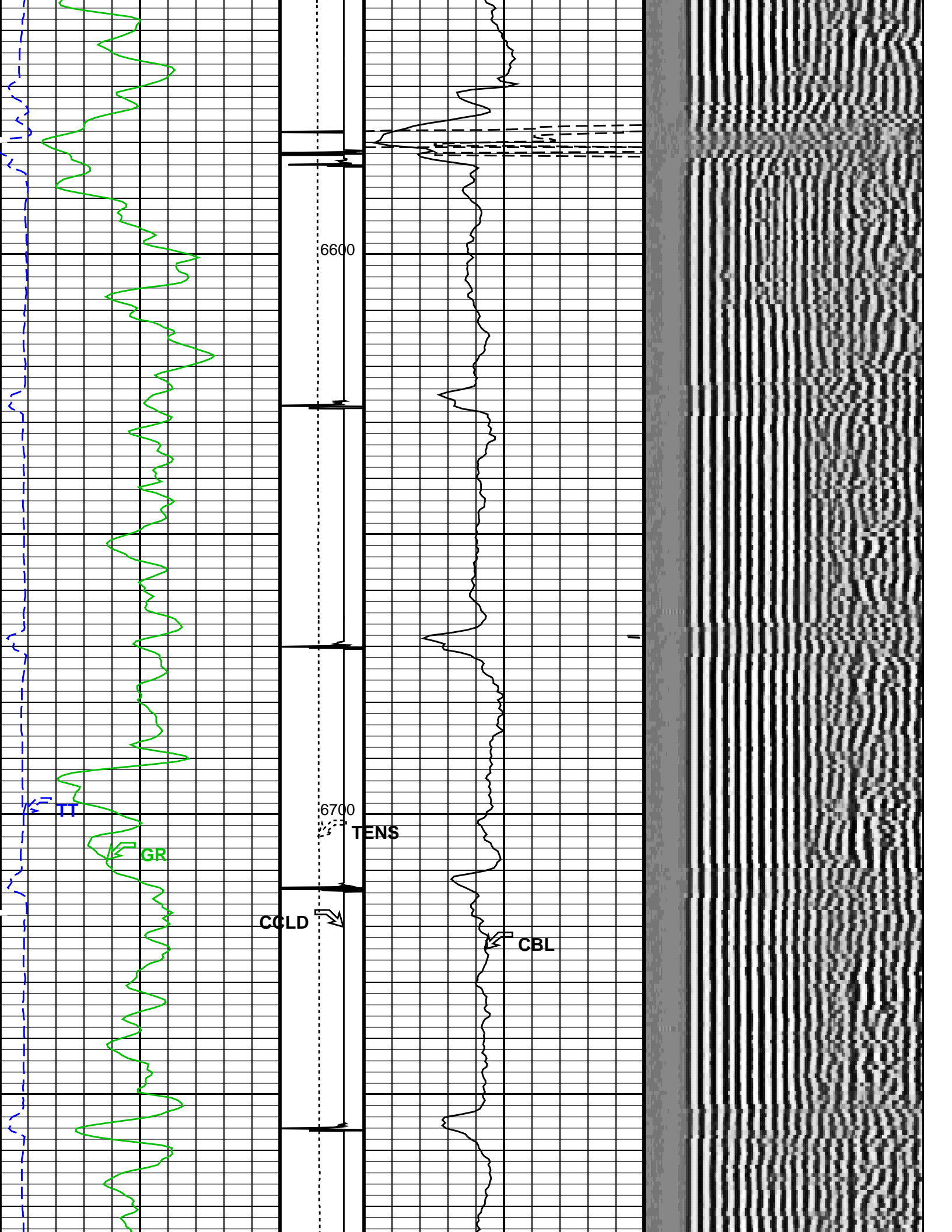


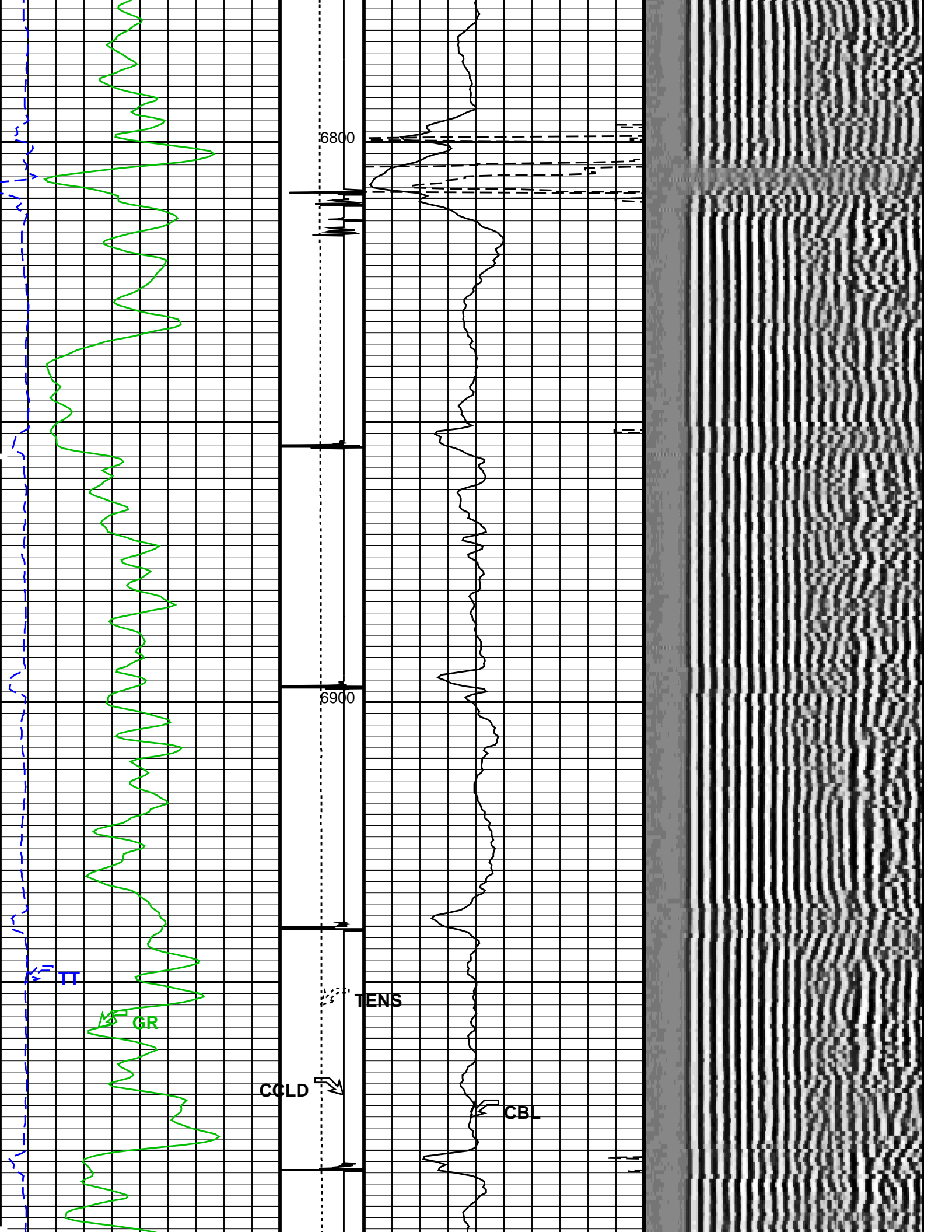


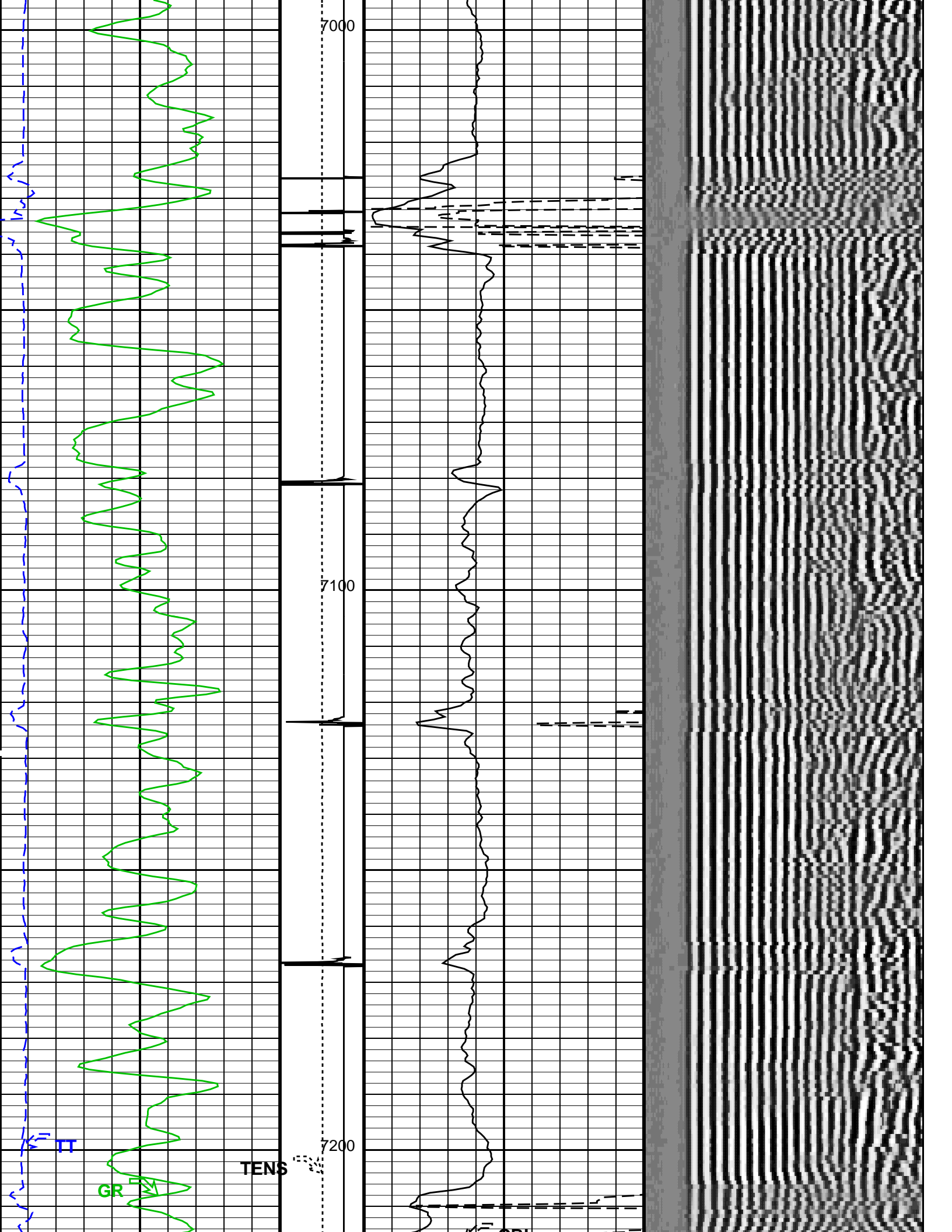




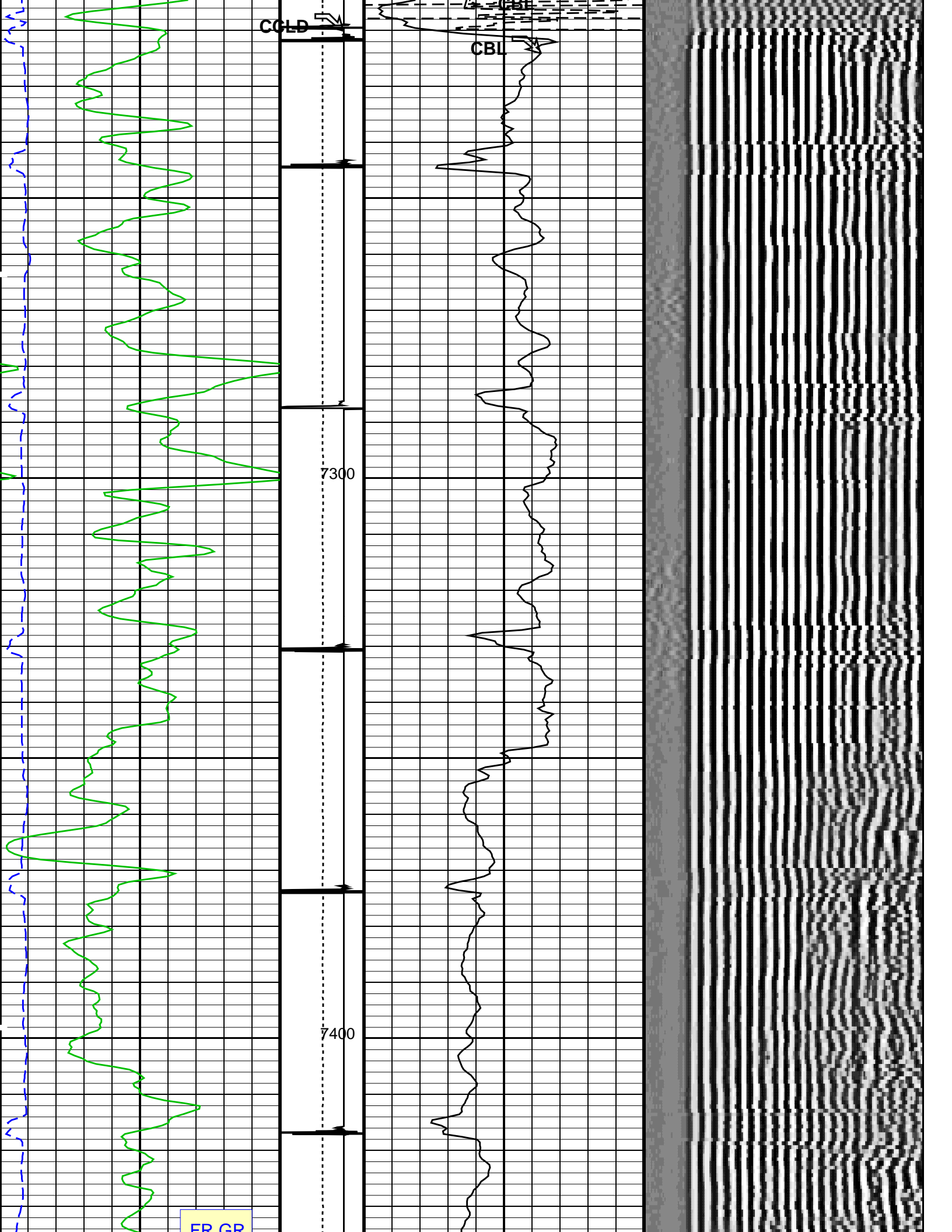


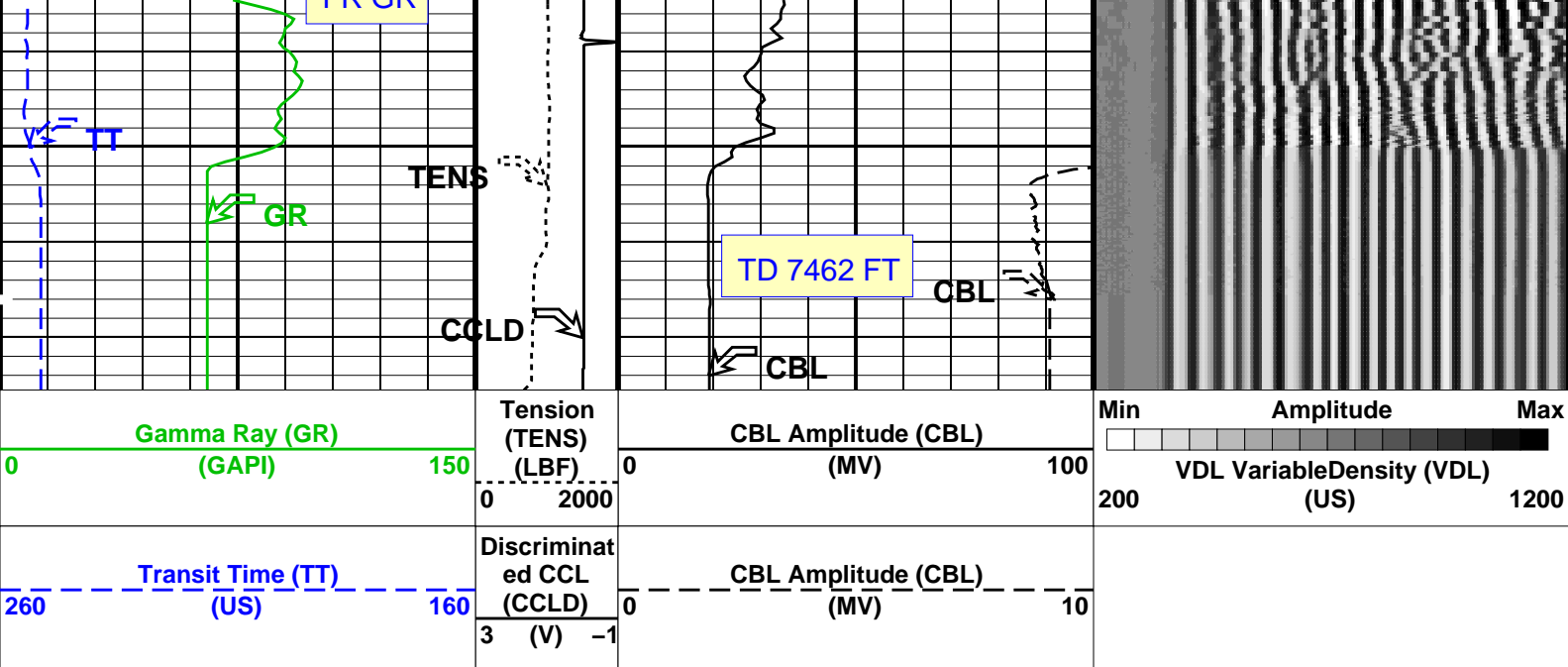












### PIP SUMMARY

Time Mark Every 60 S

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

Graphics File Created: 21-Jun-2011 00:15

## OP System Version: 19C0-187

SCMT-CB SRPC-5047-H1-2011-OP1 PSPT 19C0-187

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

Sonde Serial Number	SCMS-CB 8317		
Current Casing Size	4.50000 IN		
Casing Weight	11.6000 LB/F		
Expected CBL Amplitude in Free Pipe Section	80 MV	Minimum Sonic Amplitude	0.572744 MV (100% Cement)
			1.53811 MV (80% Cement)
		MAP Minimum Sonic Amplitude	4.27504 MV (100% Cement)
			8.03067 MV (80% Cement)
Master Calibration (Normalization)		Before Calibration (Adjustment)	
Date of Master Calibration	8-JUN-2011		
CBL Correction Factor	0.0674965	CBL Adjustment Factor (CBAF)	1.0
MAP 1 Correction Factor	0.108127	MAP Adjustment Factor (MPAF)	1.0
MAP 2 Correction Factor	0.123424		
MAP 3 Correction Factor	0.134368		
MAP 4 Correction Factor	0.109324		
MAP 5 Correction Factor	0.0995051		
MAP 6 Correction Factor	0.108249		
MAP 7 Correction Factor	0.111559		
MAP 8 Correction Factor	0.121503		

### 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	228.424	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	342.424	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	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	204.5	US/F
FATT	Acoustic Attenuation due to Fluid	0	DB/F
FCF	CBL Fluid Compensation Factor	1	
GOBO	Good Bond	1.53811	MV
MAPD	SCMT MAP Peak Detection Mode	PEAK	
MAPG	SCMT MAP Peak Detection T0 Delay and Noise Gate	171.424	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	4.27504	MV
MSA	Minimum Sonic Amplitude	0.572744	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
DORL	Depth Offset for Repeat Analysis	0.0	FT
TD	Total Depth	-50000	FT

## Output DLIS Files

DEFAULT SCMT\_PSP\_039LUP FN:38 PRODUCER 21-Jun-2011 00:15

**Schlumberger**

## REPEAT ANALYSIS

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC

Well: MF 03B-16 (H17 696)

## Input DLIS Files

DEFAULT SCMT\_PSP\_037PUP FN:36 PRODUCER 21-Jun-2011 00:09 5419.0 FT 5040.5 FT

## Output DLIS Files

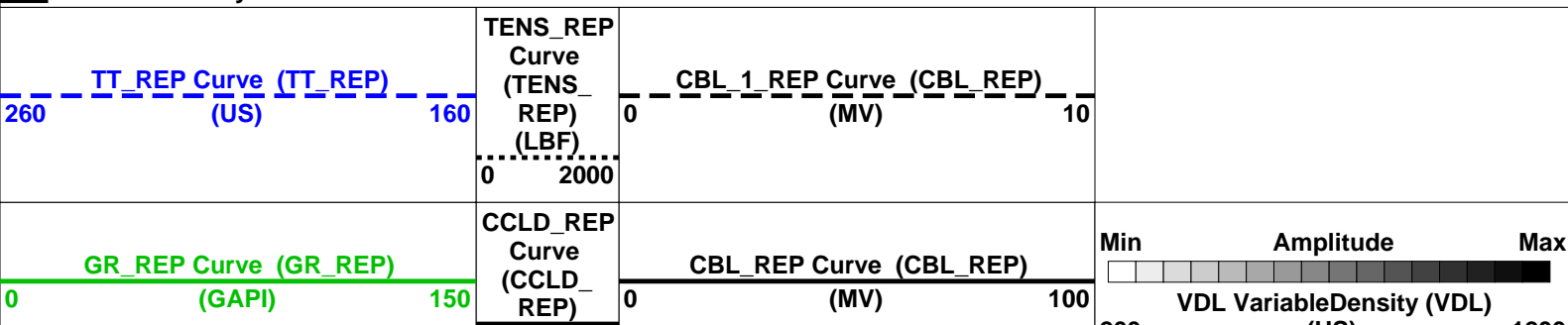
DEFAULT SCMT\_PSP\_039LUP FN:38 PRODUCER 21-Jun-2011 00:15

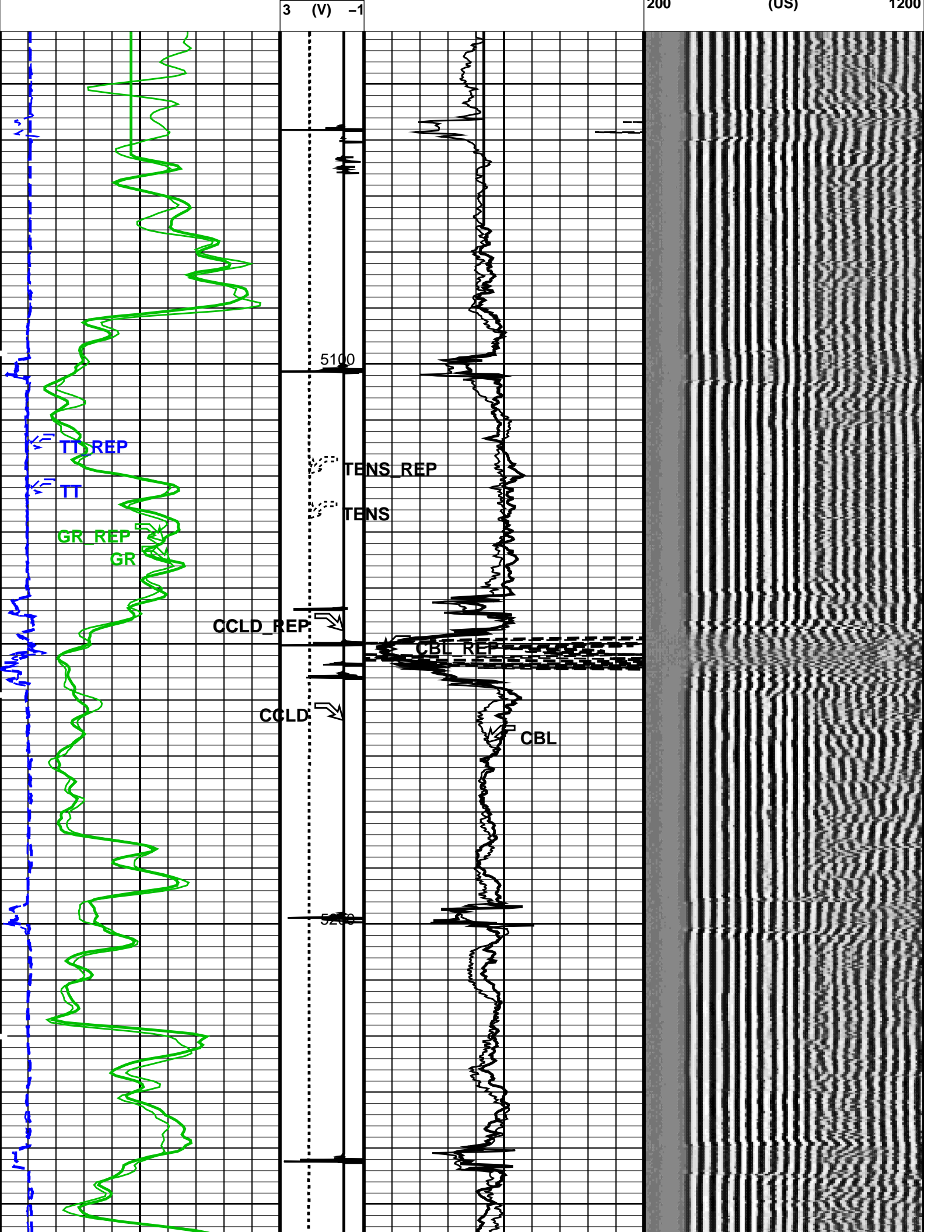
## OP System Version: 19C0-187

SCMT-CB SRPC-5047-H1-2011-OP1 PSPT 19C0-187

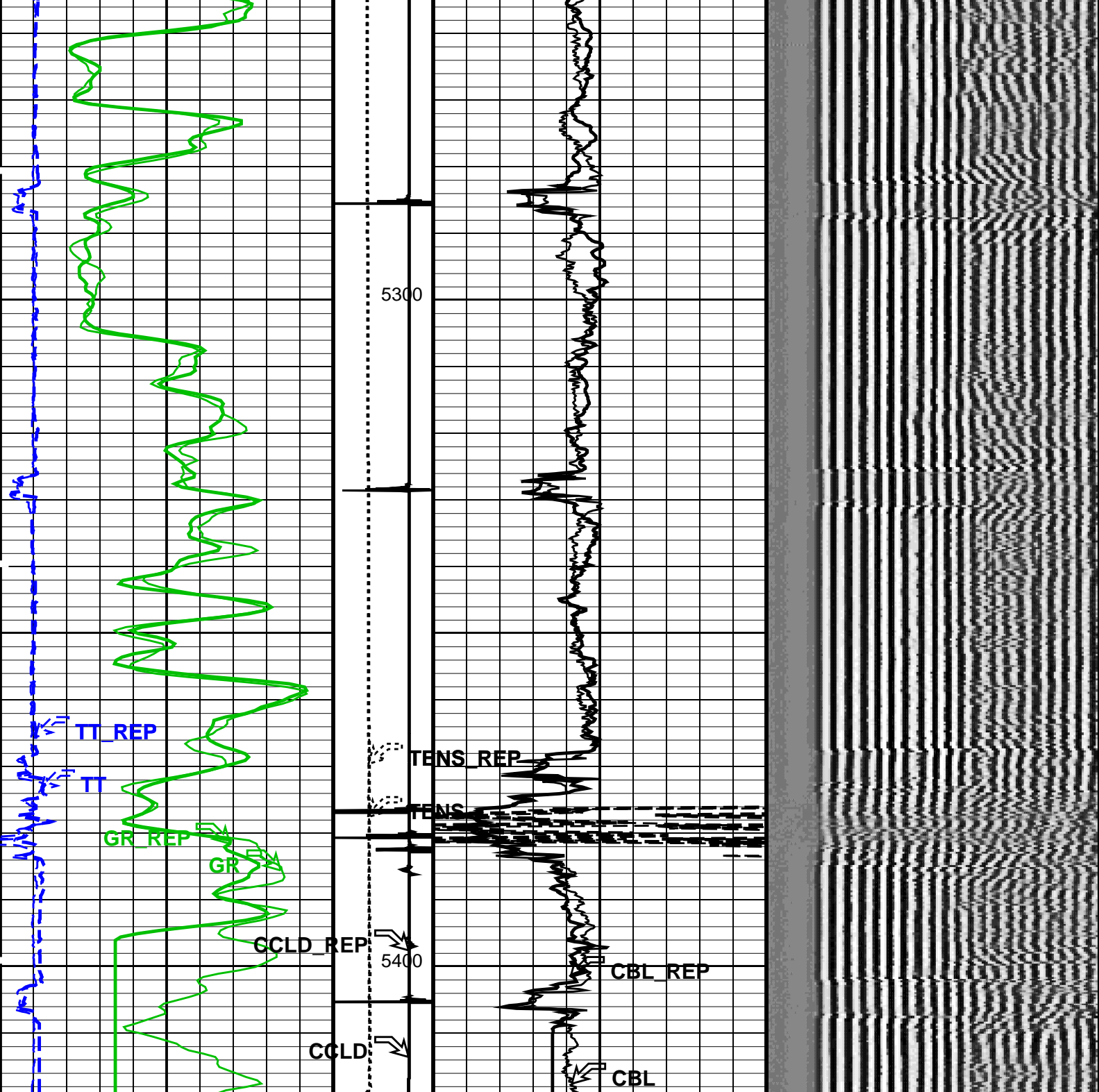
## PIP SUMMARY

Time Mark Every 60 S









<p>GR_REP Curve (GR_REP) (GAPI)</p> <p>0 150</p>	<p>CCLD_REP Curve (CCLD_REP)</p> <p>3 (V) -1</p>	<p>CBL_REP Curve (CBL_REP) (MV)</p> <p>0 100</p>	<p>Min Amplitude Max</p> <p>200 VDL VariableDensity (VDL) (US) 1200</p>
<p>TT_REP Curve (TT_REP) (US)</p> <p>260 160</p>	<p>TENS_REP Curve (TENS_REP) (LBF)</p> <p>0 2000</p>	<p>CBL_1_REP Curve (CBL_REP) (MV)</p> <p>0 10</p>	

PIP SUMMARY

SCMT-CB	SRPC-5047-H1-2011-OP15	PSPT	19C0-187
<<<SCMT Cement Evaluation Information Summary>>>			
Sonde Serial Number	SCMS-CB 8317		
Current Casing Size	4.50000 IN		
Casing Weight	11.6000 LB/F		
Expected CBL Amplitude in Free Pipe Section	80 MV	Minimum Sonic Amplitude	0.572744 MV (100% Cement)
			1.53811 MV (80% Cement)
		MAP Minimum Sonic Amplitude	4.27504 MV (100% Cement)
			8.03067 MV (80% Cement)
Master Calibration (Normalization)	Before Calibration (Adjustment)		
Date of Master Calibration	8-JUN-2011		
CBL Correction Factor	0.0674965	CBL Adjustment Factor (CBAF)	1.0
MAP 1 Correction Factor	0.108127	MAP Adjustment Factor (MPAF)	1.0
MAP 2 Correction Factor	0.123424		
MAP 3 Correction Factor	0.134368		
MAP 4 Correction Factor	0.109324		
MAP 5 Correction Factor	0.0995051		
MAP 6 Correction Factor	0.108249		
MAP 7 Correction Factor	0.111559		
MAP 8 Correction Factor	0.121503		

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	228.424	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	342.424	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	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	204.5	US/F
FATT	Acoustic Attenuation due to Fluid	0	DB/F
FCF	CBL Fluid Compensation Factor	1	
GOBO	Good Bond	1.53811	MV
MAPD	SCMT MAP Peak Detection Mode	PEAK	
MAPG	SCMT MAP Peak Detection T0_Delay and Noise Gate	171.424	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	4.27504	MV
MSA	Minimum Sonic Amplitude	0.572744	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
DORL	Depth Offset for Repeat Analysis	0.0	FT
TD	Total Depth	-50000	FT

Input DLIS Files						
DEFAULT	SCMT_PSP_037PUP	FN:36	PRODUCER	21-Jun-2011 00:09	5419.0 FT	5040.5 FT

# Output DLIS Files

DEFAULT

SCMT\_PSP\_039LUP

FN:38

PRODUCER

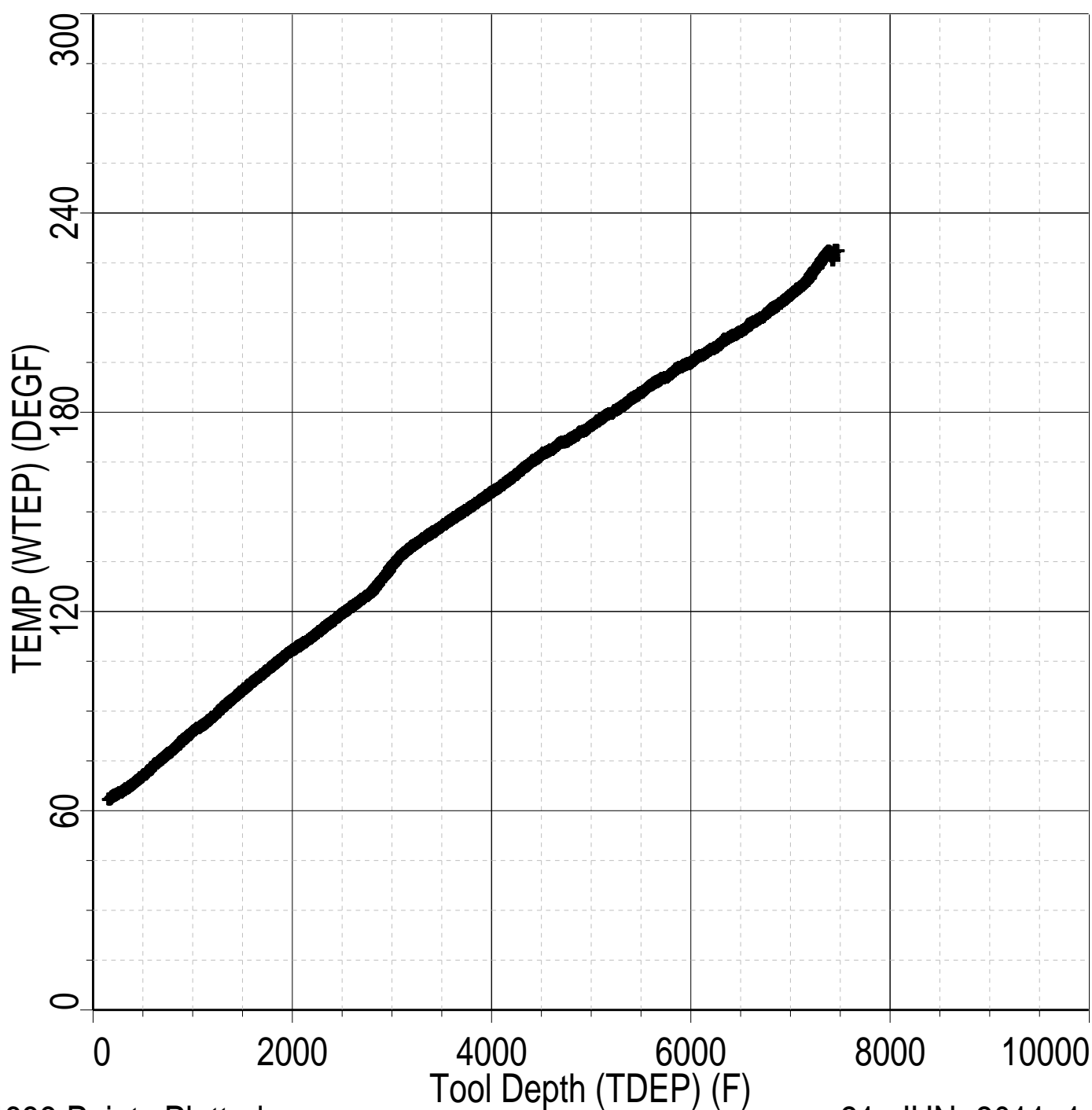
21-Jun-2011 00:15

**Schlumberger**

## TEMPERATURE PLOT

MAXIS Field Log

Index: 7475.5 – 159.5 FT



14633 Points Plotted

21-JUN-2011 1:58

## MAXIS Field Log

Client: ENCANA OIL & GAS (USA) INC  
Field: NORTH PARACHUTE  
Well: PAD H17  
Run date: 20-Jun-2011

Tool: PSP  
Sub Type: PBMS  
Sensor: Clock Model

## PBMS Digitalization Clock

Sonde Serial NB

Sensor Serial NB 1772

Calib Date ddmmyy 250102

Matrix Size 16

Coeff CRC 279D

## Clock Coeff

Temp\*\*0

Temp\*\*1

Temp\*\*2

Temp\*\*0

- .161517143435E+03

- .455833634022E+01

- .104938566503E+00

Temp\*\*3

Temp\*\*4

Temp\*\*5

Temp\*\*0

+ .665806803953E-03

+ .215816423936E-05

0.0

Client: ENCANA OIL & GAS (USA) INC  
Field: NORTH PARACHUTE  
Well: PAD H17  
Run date: 20-Jun-2011

Tool: PSP  
Sub Type: PBMS  
Sensor: Sapphire

## PBMS Sapphire 10kPsi Gauge

Sonde Serial NB

Sensor Serial NB

COEFFICIENTS FOR SAPPHIRE PBMS-A.1772 S/N:

1772



Calib Date ddmmyy 250102  
Matrix Size 66  
Coeff CRC 7015

Pres Coeff

	Tt**0	Tt**1	Tt**2
Tp**0	-.301728254764E+05	+.213698779657E+05	-.667784145806E+04
Tp**1	+.222783691269E+05	-.154949942910E+05	+.506915258152E+04
Tp**2	-.219998557234E+03	+.903672682639E+02	-.973284421881E+01
Tp**3	+.373083861809E+01	-.914930924512E+00	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	+.999867705458E+03	-.587093588268E+02	0.0
Tp**1	-.790152285056E+03	+.481404114544E+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 1772  
Calib Date ddmmyy 250102  
Matrix Size 66  
Coeff CRC 8D09

Temp Coeff

	Tp**0	Tp**1	Tp**2
Tt**0	+.232726172867E+04	+.748146006300E+01	-.308596169368E+01
Tt**1	-.145543937674E+04	-.382344629538E+01	+.886665691754E+00
Tt**2	+.319573055861E+03	+.722043926946E+00	-.543588515298E-01
Tt**3	-.247026874426E+02	-.512988254724E-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	+.711608702827E+00	-.763411838100E-01	0.0
Tt**1	-.147911019947E+00	+.159378916834E-01	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

Tt**4	0.0	0.0	0.0
Tt**5	0.0	0.0	0.0

Client:	ENCANA OIL & GAS (USA) INC	Tool:	PSP
Field:	NORTH PARACHUTE	Sub Type:	PBMS
Well:	PAD H17	Sensor:	GR
Run date:	20-Jun-2011		

PBMS Gamma Ray	
Sonde Serial NB	RESISTORS FOR GR SENSOR N.33401,TOOL PBMS-AA1772. SENSOR S/N:
Sensor Serial NB	33401
Calib Date ddmmyy	021101
Matrix Size	12
Coeff CRC	1F7D
GR HV Rt	
	<div> <div>Rt**0</div> <div>Rt**1</div> </div>
Rt**0	<div> <div>+.150000000000e+04</div> <div>+.236000000000e+04</div> </div>

Client:	ENCANA OIL & GAS (USA) INC	Tool:	PSP
Field:	NORTH PARACHUTE	Sub Type:	PBMS
Well:	PAD H17	Sensor:	WellTemp RTD
Run date:	20-Jun-2011		

PBMS RTD Well Thermometer	
Sonde Serial NB	
Sensor Serial NB	1772
Calib Date ddmmyy	250102
Matrix Size	16
Coeff CRC	0B6D

WTemp Coeff

	Tt**0	Tt**1	Tt**2
Tt**0	-.578338733285E+03	+.354557410577E+03	-.963404561888E+02
	Tt**3	Tt**4	Tt**5
Tt**0	+.167992041034E+02	-.106406976994E+01	0.0

---

Company: ENCANA OIL & GAS (USA) INC

Schlumberger

Well: MF 03B-16 (H17 696)  
Field: NORTH PARACHUTE  
County: GARFIELD  
State: COLORADO

CEMENT BOND LOG  
CBL – VDL  
GAMMA RAY – CCL