



Company: ENCANA OIL & GAS (USA) INC.

Well: FEDERAL 29-4A (PA30)

Field: PARACHUTE

County: GARFIELD

State: COLORADO

County:	GARFIELD			
Field:	PARACHUTE			
Location:	SHL: 557' FNL & 371' FEL			
Well:	FEDERAL 29-4A (PA30)			
Company:	ENCANA OIL & GAS (USA) INC.			
CEMENT BOND LOG CBL - VDL GAMMA RAY - CCL		LOCATION		
		SHL: 557' FNL & 371' FEL BHL: NWNW 729' FNL & 442' FWL		Elev.: K.B. 5828.00 ft G.L. 5806.00 ft D.F. 5827.00 ft
		Permanent Datum:	GROUND LEVEL	Elev.: 5806.00 ft
		Log Measured From:	KELLY BUSHING	22.00 ft above Perm. Datum
		Drilling Measured From:	KELLY BUSHING	
Logging Date		21-Nov-2011		
Run Number		ONE		
Depth Driller		6565 ft		
Schlumberger Depth		6488 ft		
Bottom Log Interval		6479.4 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		8.750 in		
From		22 ft		
To		6565 ft		
Casing/Tubing Size		4.500 in		
Weight		11.6 lbm/ft		
Grade		S-80		
From		22 ft		
To		6542 ft		
Maximum Recorded Temperatures		200 degF		
Logger On Bottom		21-Nov-2011	10:58	
Unit Number		391	GRAND JUNCTION	
Recorded By		SHOWKAT HOSSAIN		
Witnessed By		UNATTENDED		

				Run 1	Run 2	Run 3
PVT DATA						
Oil Density						
Water Salinity						
Gas Gravity						
Bo						
Bw						
1/Bg						
Bubble Point Pressure						
Bubble Point Temperature						
Solution GOR						
Maximum Deviation						
CEMENTING DATA						
Primary/Squeeze				Primary		
Casing String No						
Lead Cement Type						
Volume						
Density						
Water Loss						
Additives						
Tail Cement Type						
Volume						
Density						
Water Loss						
Additives						
Expected Cement Top						
Logging Date						
Run Number						
Depth Driller						
Schlumberger Depth						
Bottom Log Interval						
Top Log Interval						
Casing Fluid Type						
Salinity						
Density						
Fluid Level						
BIT/CASING/TUBING STRING						
Bit Size						
From						
To						
Casing/Tubing Size						
Weight						
Grade						
From						
To						
Maximum Recorded Temperatures						
Logger On Bottom						
Unit Number						
Recorded By						
Witnessed By						

DEPTH SUMMARY LISTING

Date Created: 21-NOV-2011 12:12:27

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW-JA	Type:	CMTD-C	Type:	1-25ZT
Serial Number:	6322	Serial Number:	5006	Serial Number:	391
Calibration Date:	07-APR-2011	Calibration Date:	04-OCT-2011	Length:	14200 FT
Calibrator Serial Number:	33	Calibrator Serial Number:	174878		
Calibration Cable Type:	1-25P	Number of Calibration Points:	10	Conveyance Method:	Wireline
Wheel Correction 1:	-6	Calibration RMS:	4	Rig Type:	LAND
Wheel Correction 2:	-5	Calibration Peak Error:	8		

Depth Control Parameters

Log Sequence:	First Log In the Well
Rig Up Length At Surface:	215.00 FT
Rig Up Length At Bottom:	216.00 FT
Rig Up Length Correction:	-1.00 FT
Stretch Correction:	3.00 FT
Tool Zero Check At Surface:	0.40 FT

Depth Control Remarks

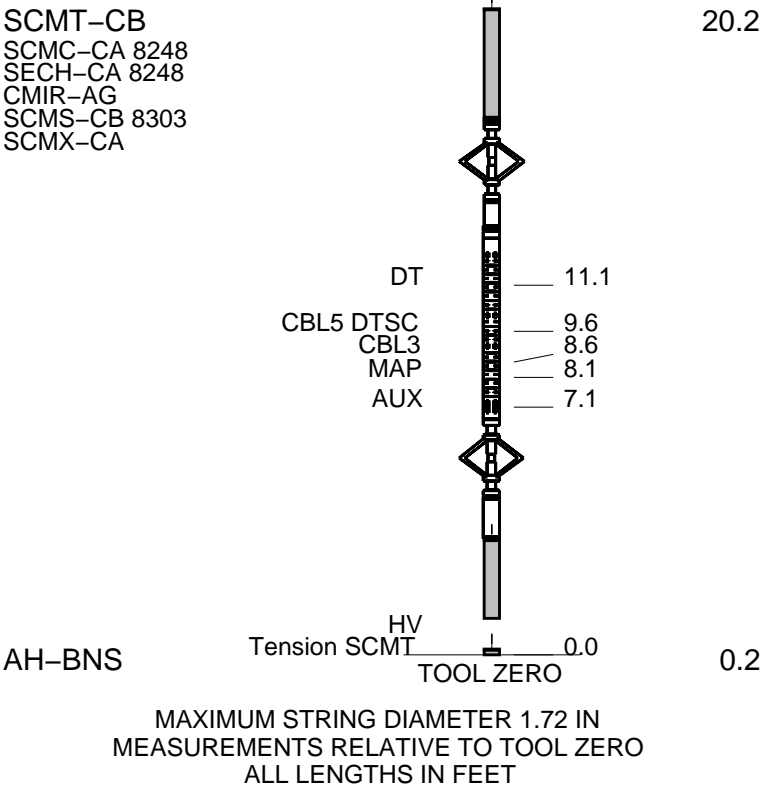
1. ALL SCHLUMBERGER DEPTH CONTROL PROCEDURES FOLLOWED.
2. IDW USED AS PRIMARY DEPTH CONTROL.
3. Z-CHART AND DRUM COUNTER USED AS SECONDARY DEPTH CONTROL.
- 4.
- 5.
- 6.

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: RST – SIGMA 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: 6488 FT	
MAXIMUM RECORDED PRESSURE AT TD: 2727.4 PSIA	
MAXIMUM RECORDED TEMPERATURE AT TD: 199.5 DEGF	

SHORT JOINT: 3873 FT – 3895 FT & 4858 FT – 4881 FT					
EXPECTED FREE PIPE AMPLITUDE: 80 mV					
CBL TRANSIT TIME CYCLE SKIPPING IN ZONES OF GOOD CEMENT DUE TO LOW SIGNAL AMPLITUDE.					
AFE: 10137396					
THANK YOU FOR CHOOSING SCHLUMBERGER.					
CREW: 391–W. AZIZ & J. ROSA					
RUN 1			RUN 2		
SERVICE ORDER #: PROGRAM VERSION: FLUID LEVEL:			SERVICE ORDER #: PROGRAM VERSION: FLUID LEVEL:		
BOC2–00183 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					



Schlumberger

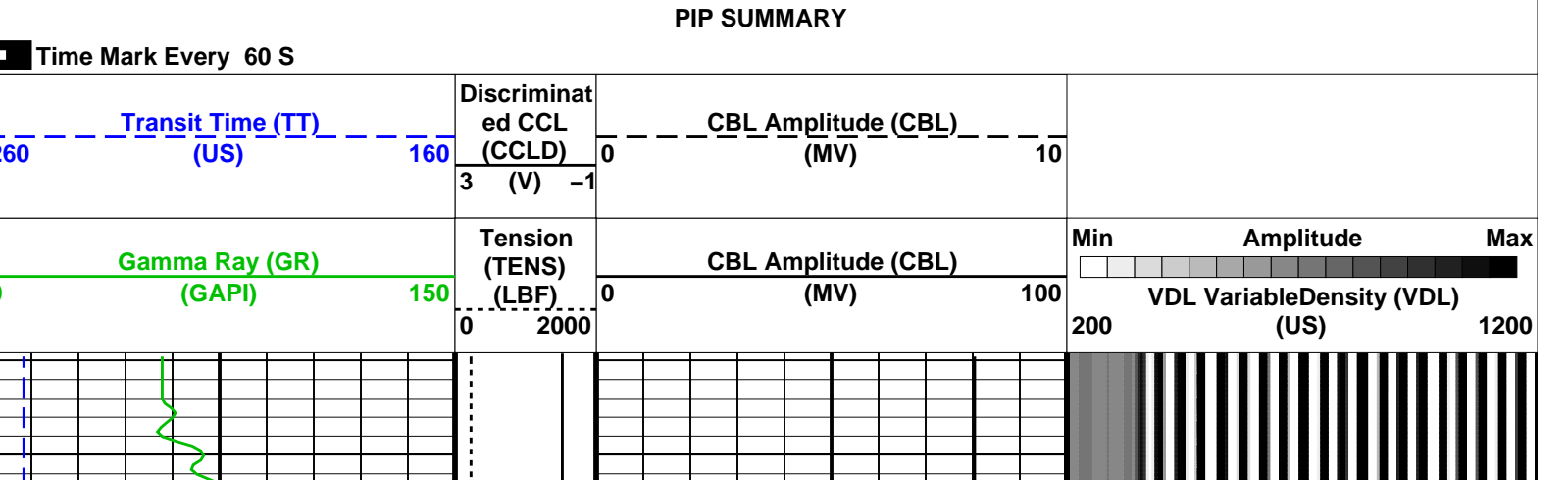
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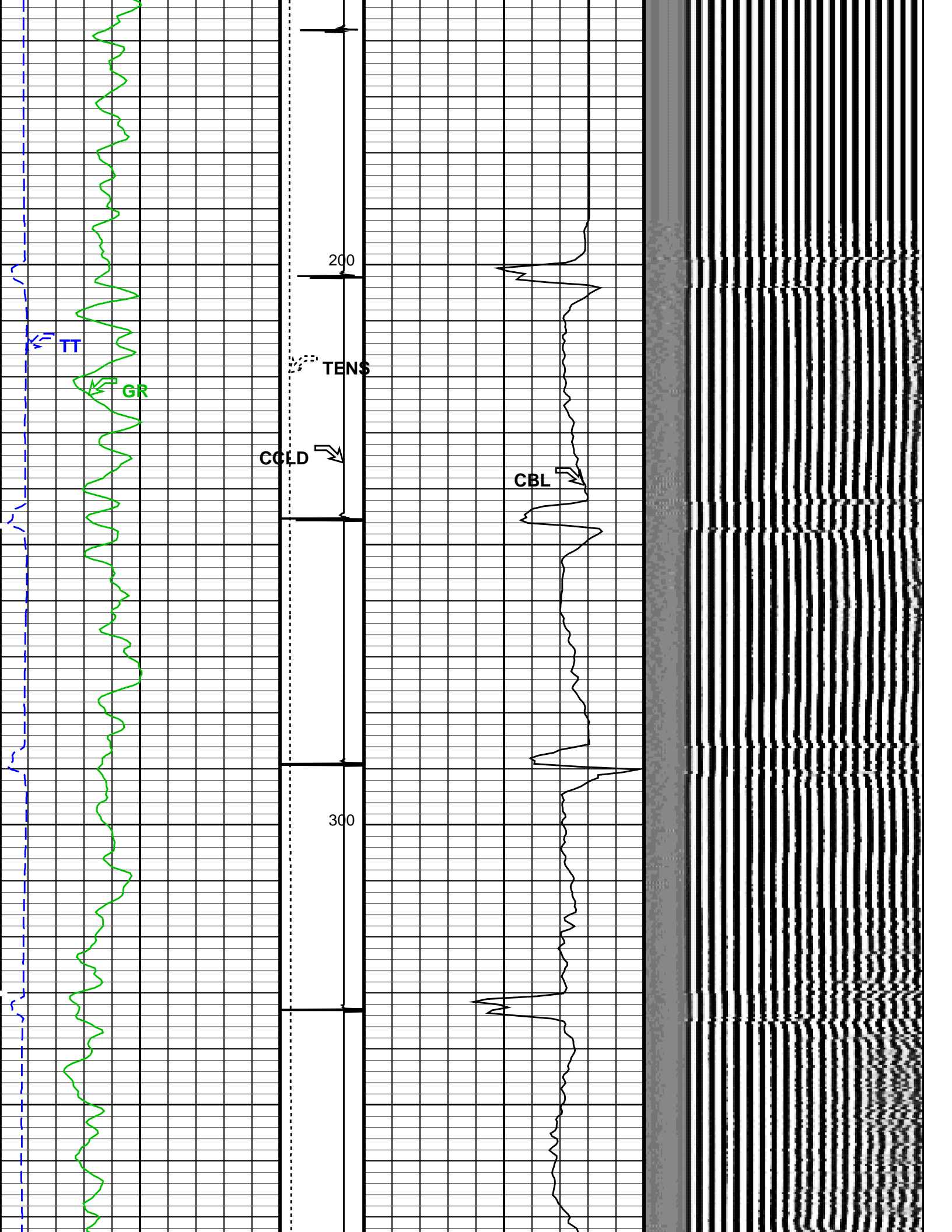
MAXIS Field Log

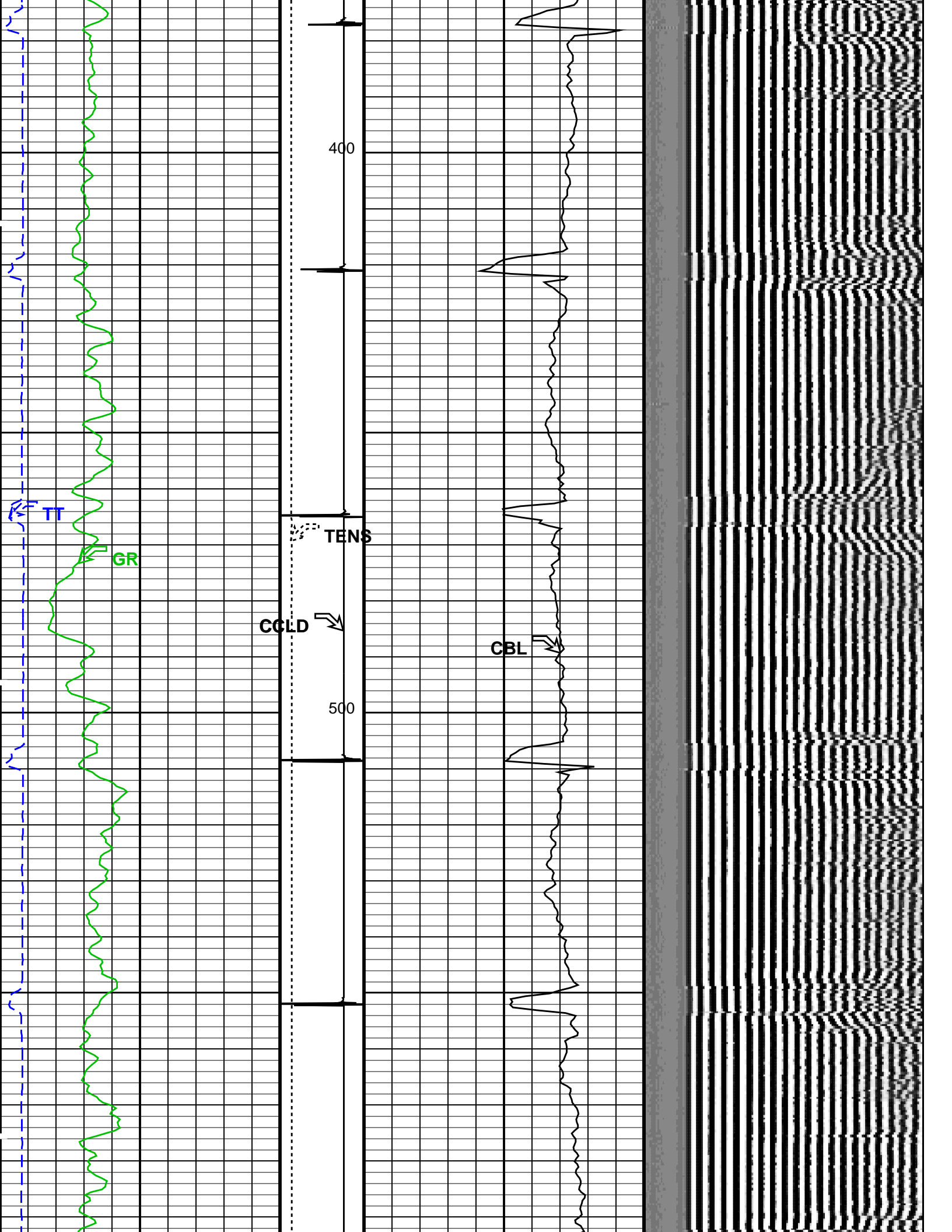
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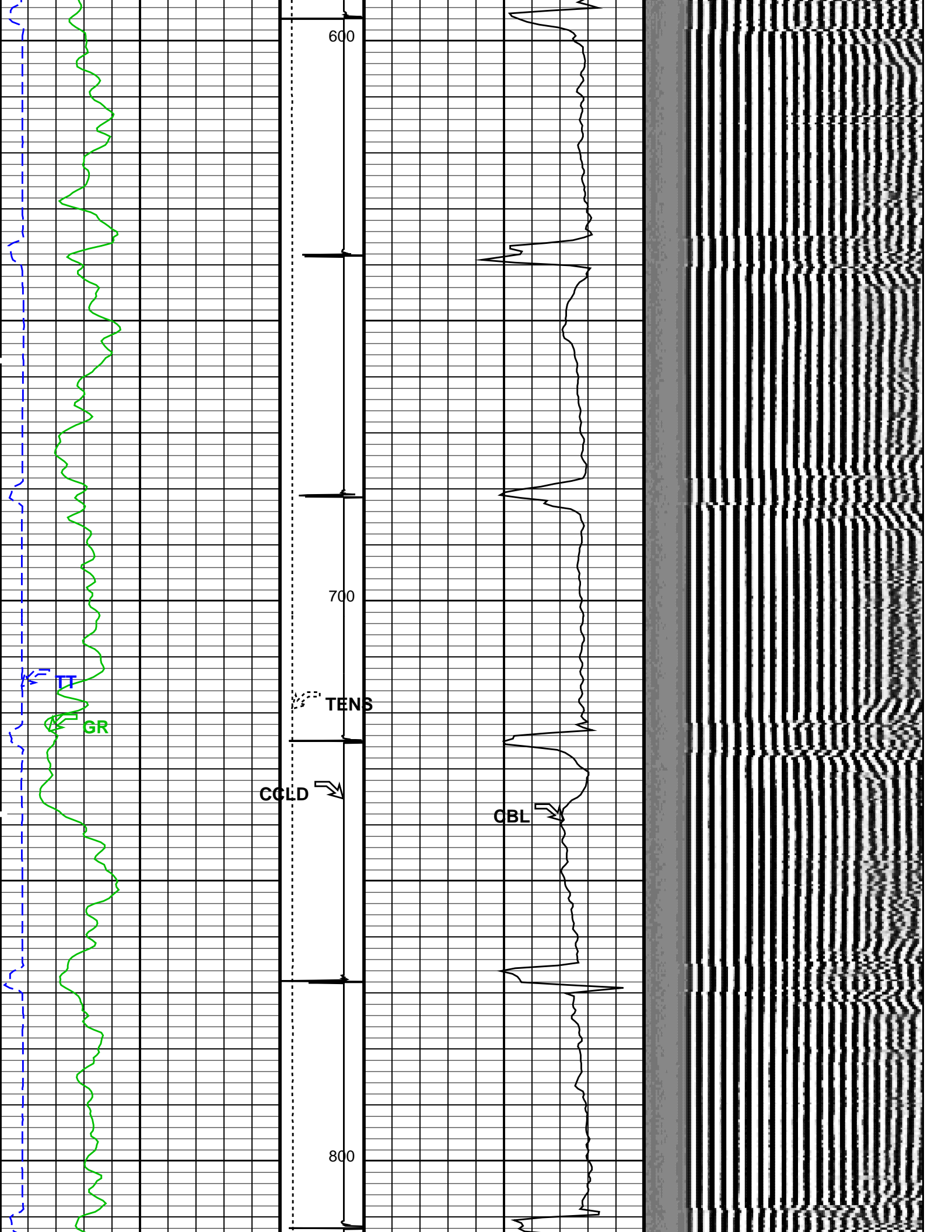
Output DLIS Files						
DEFAULT	SCMT_RST_PSP_011LUP	FN:10	PRODUCER	21-Nov-2011 10:58	6490.5 FT	139.0 FT

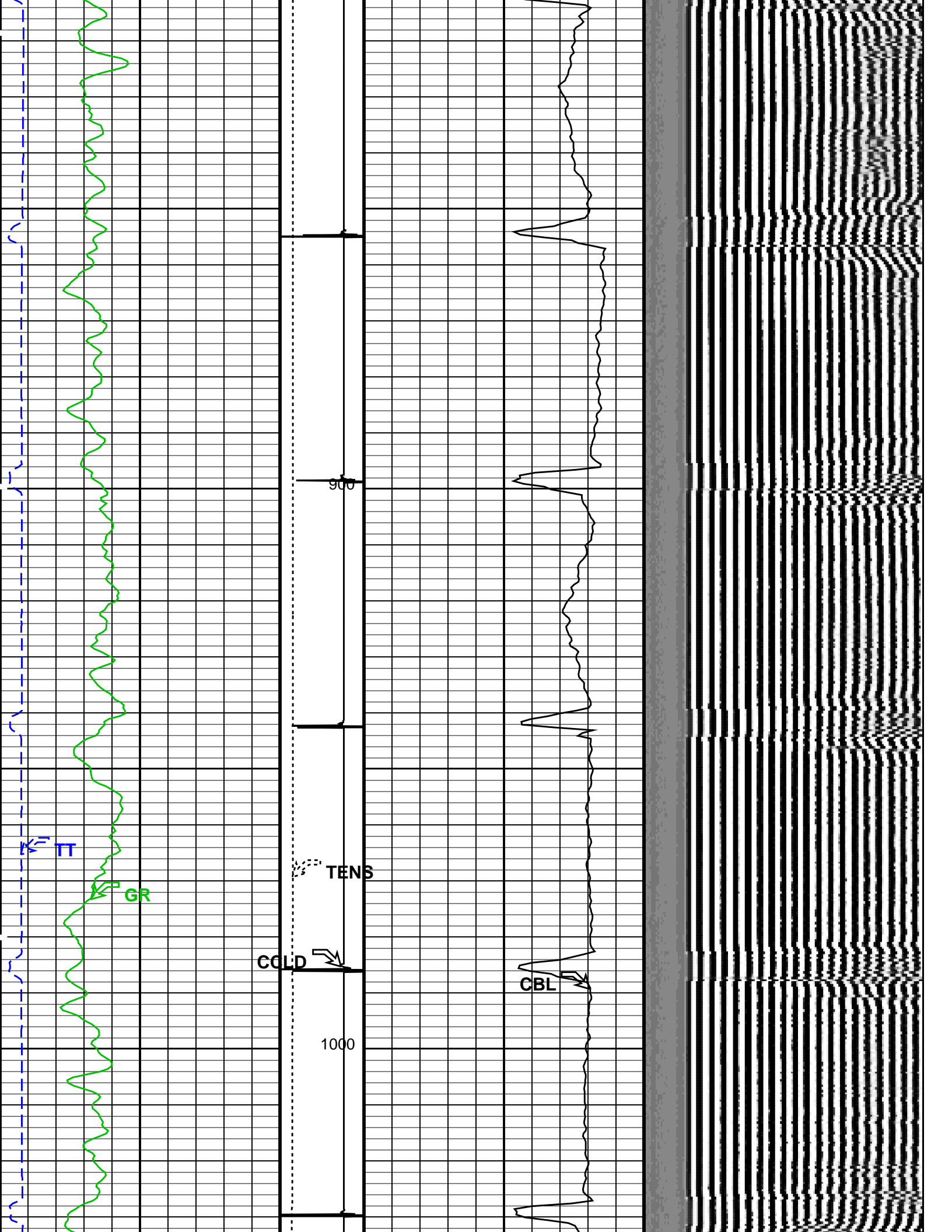
OP System Version: 19C0-187			
SCMT-CB PSPT	SRPC-5095-H2-2011-OP19_b 19C0-187	RST-C	SRPC-5095-H2-2011-OP19_b

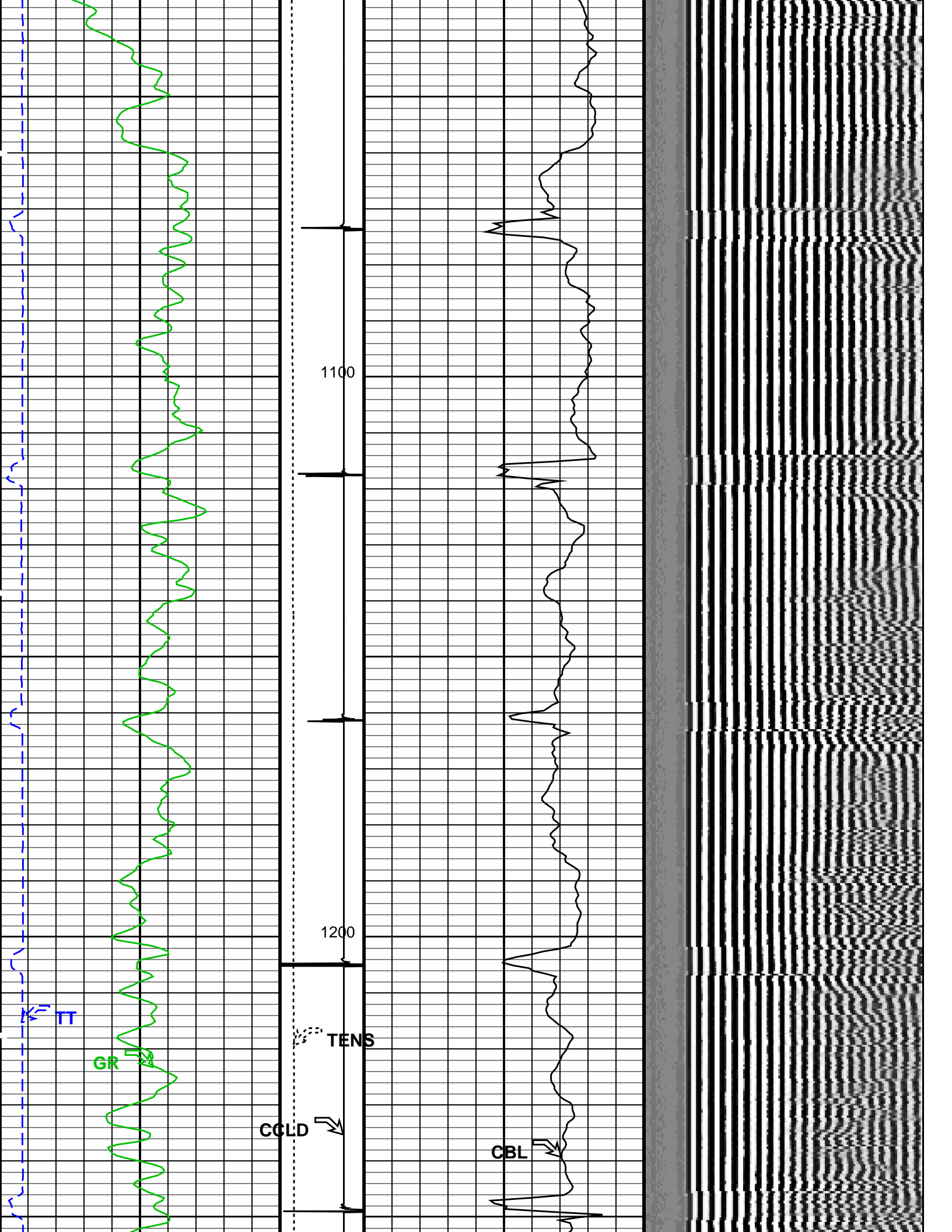


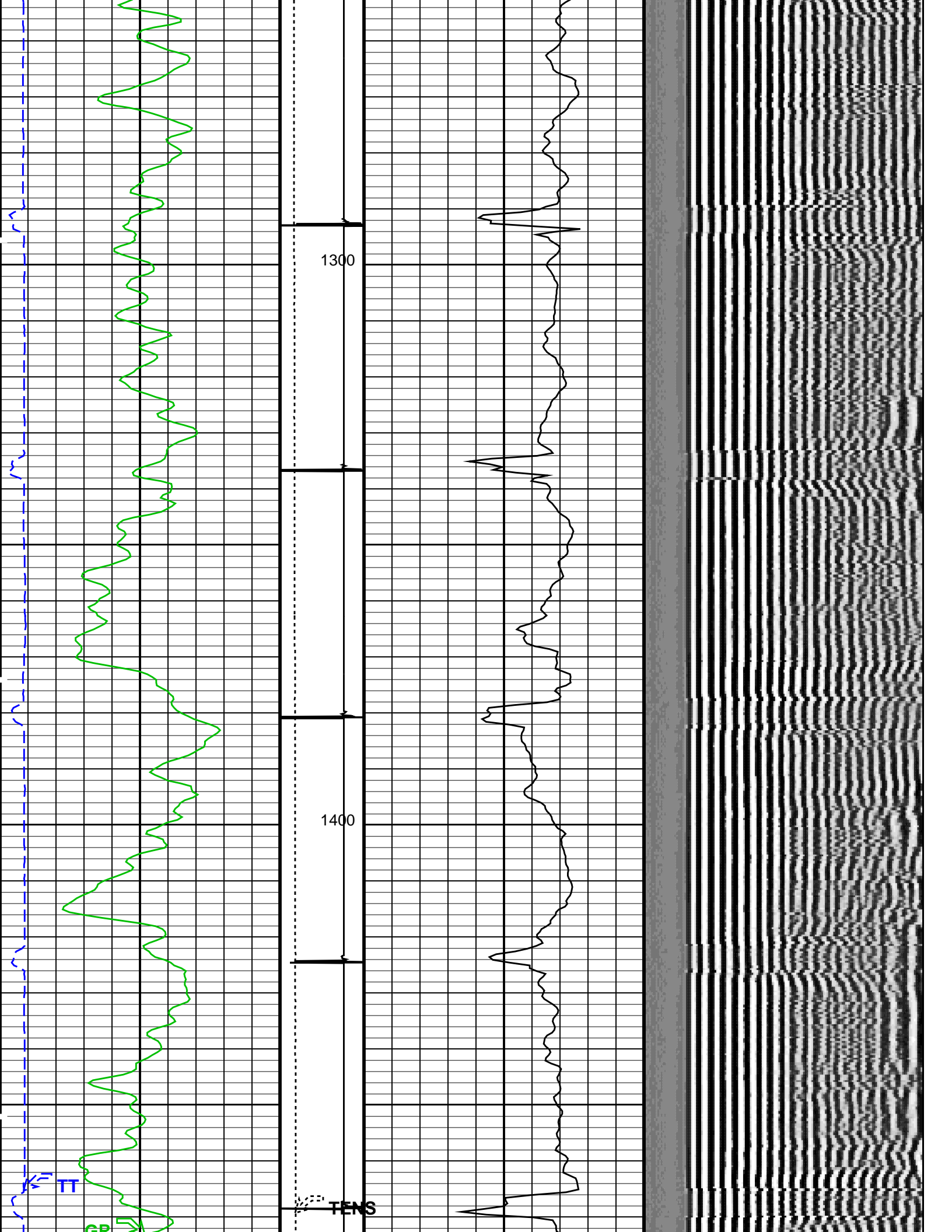


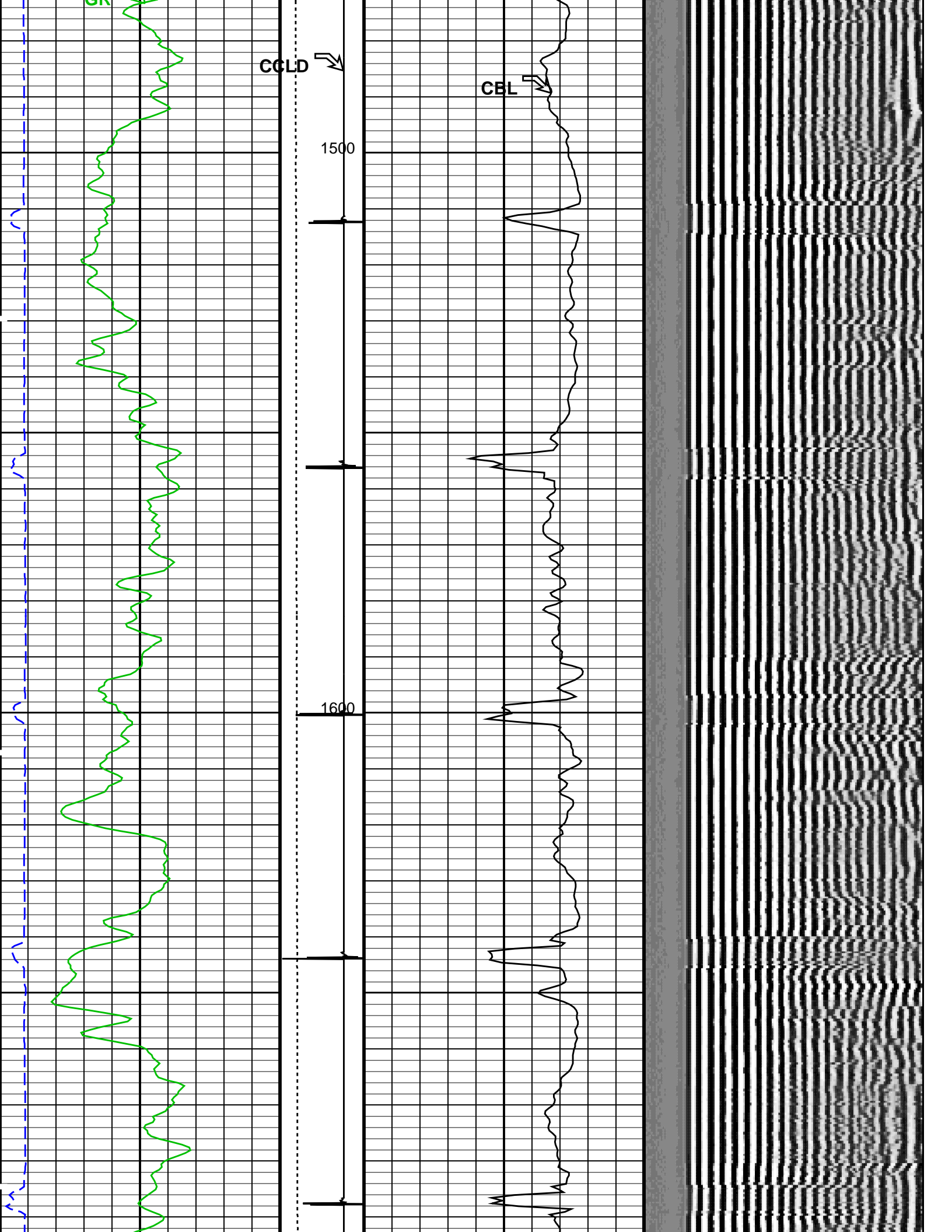


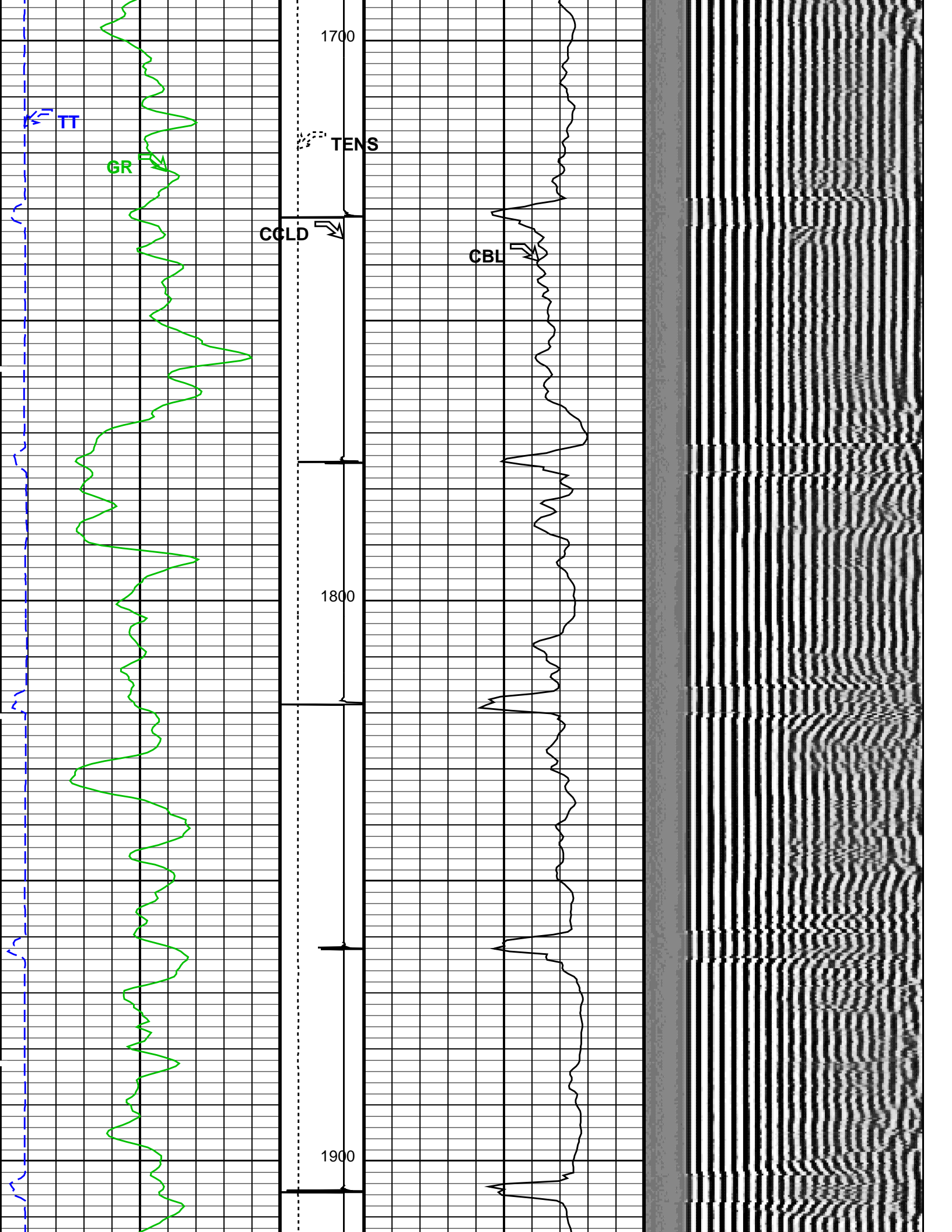


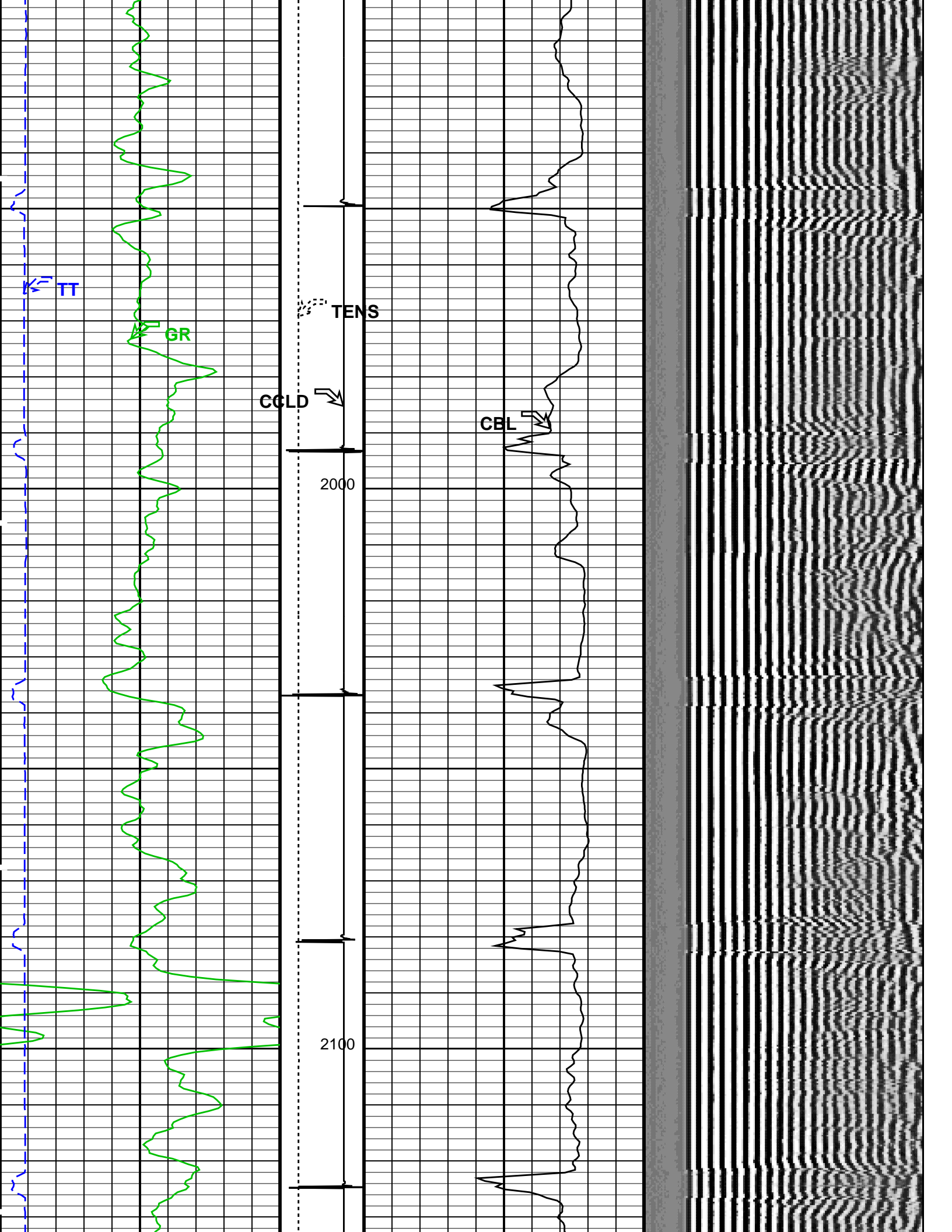


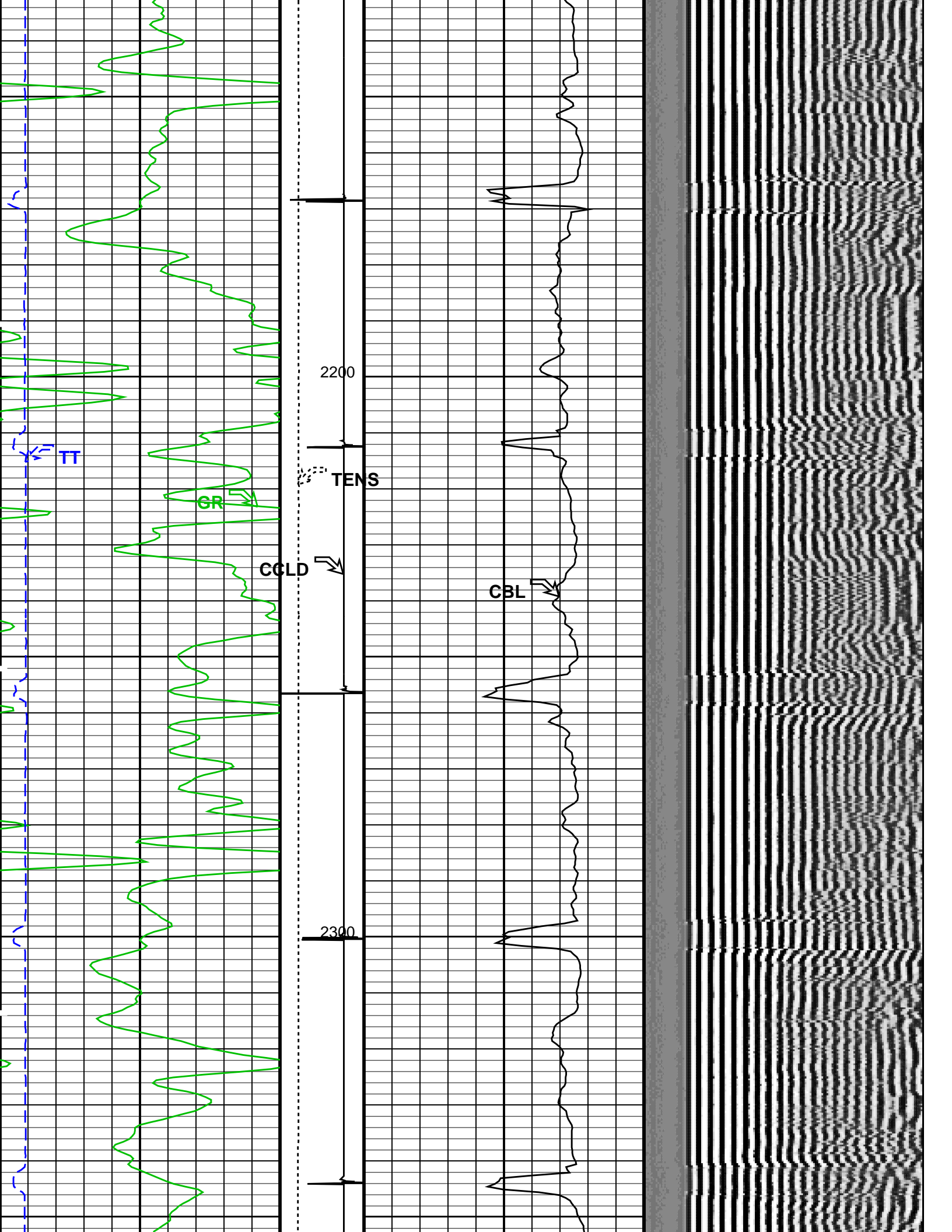


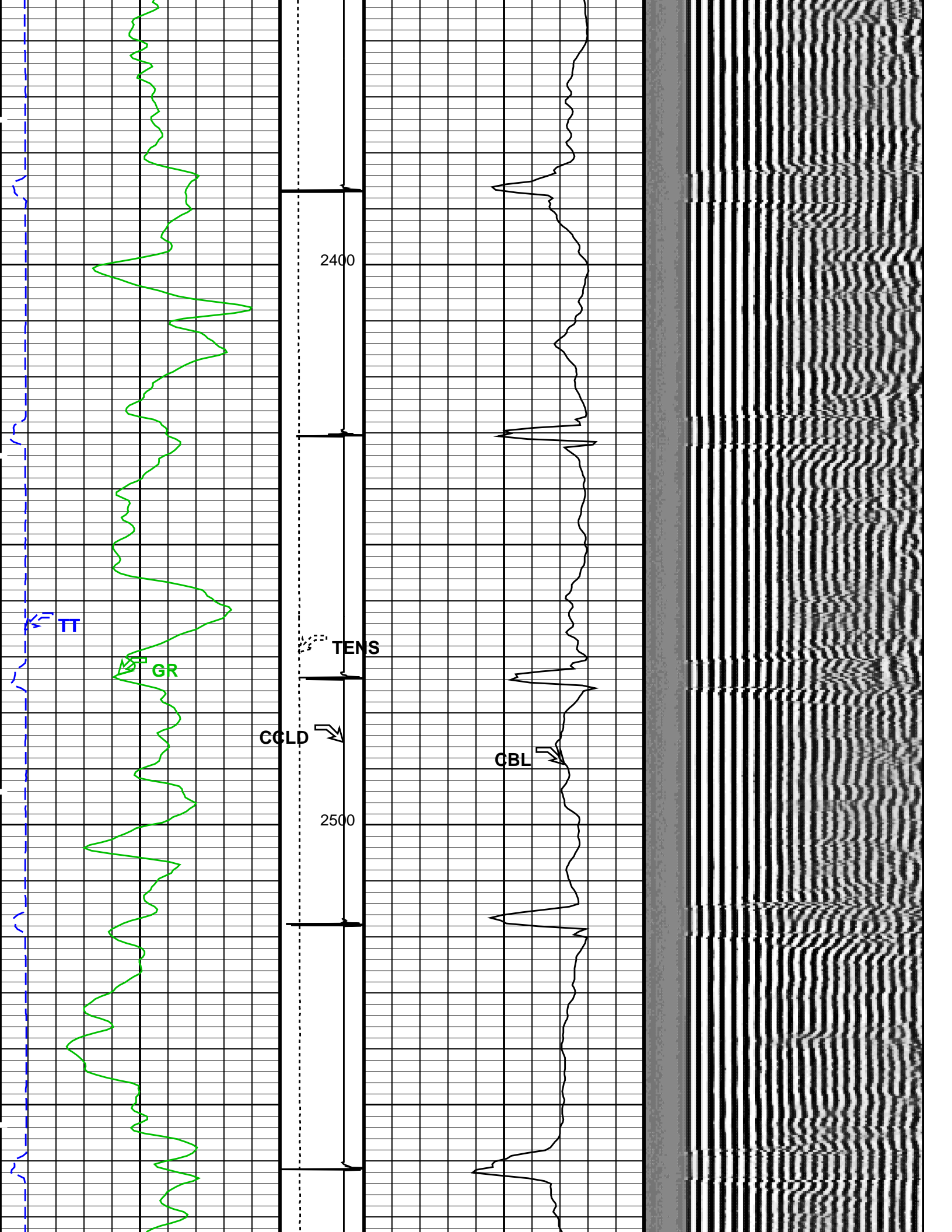


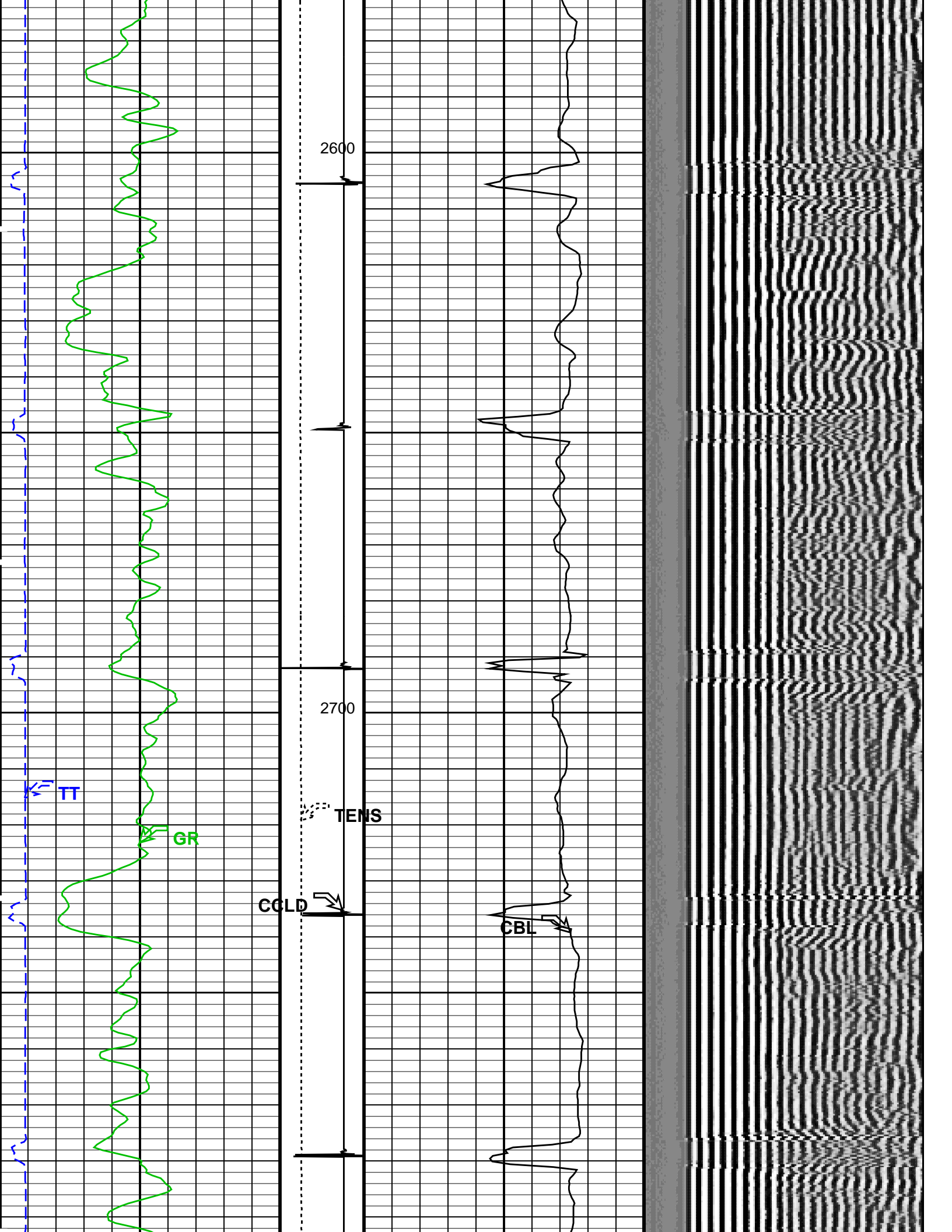


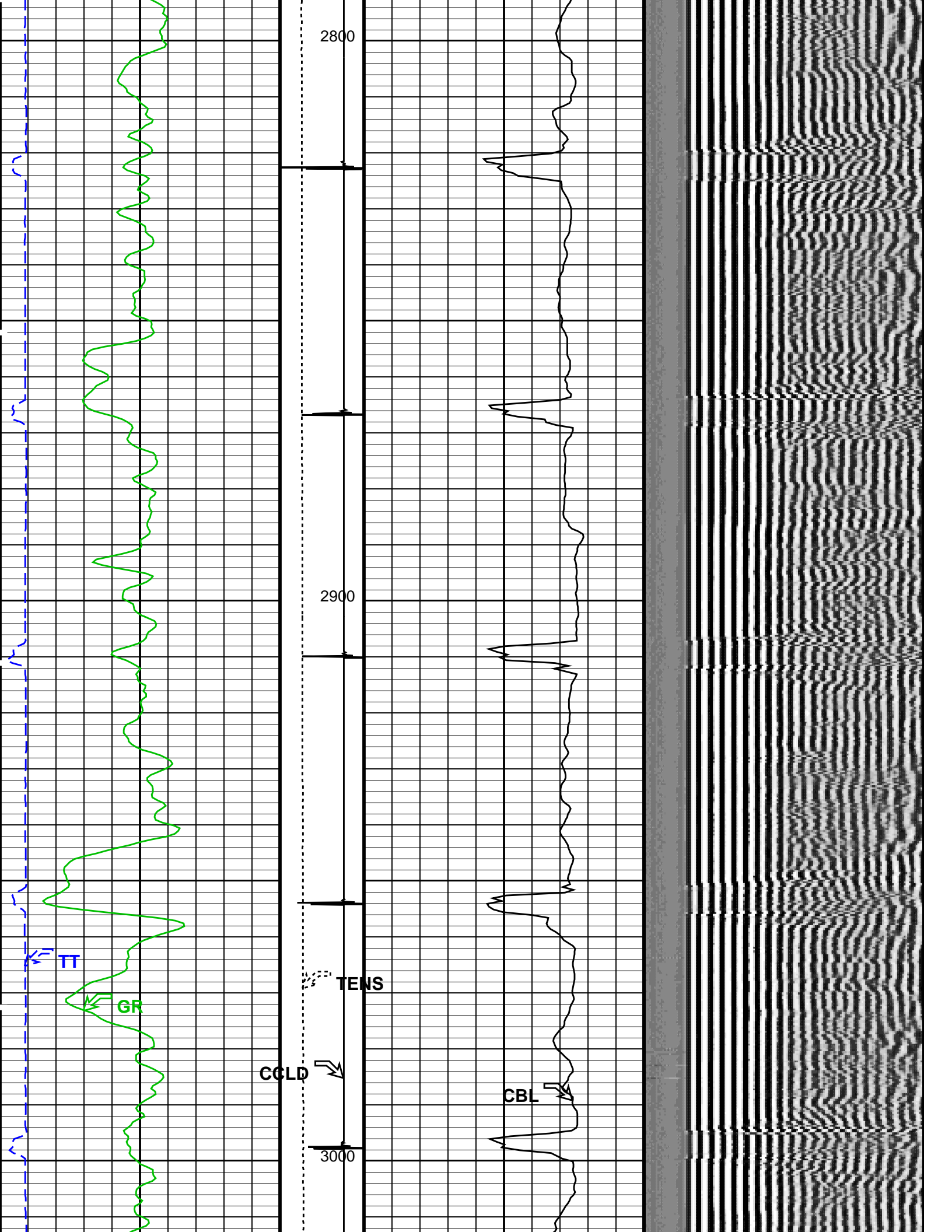


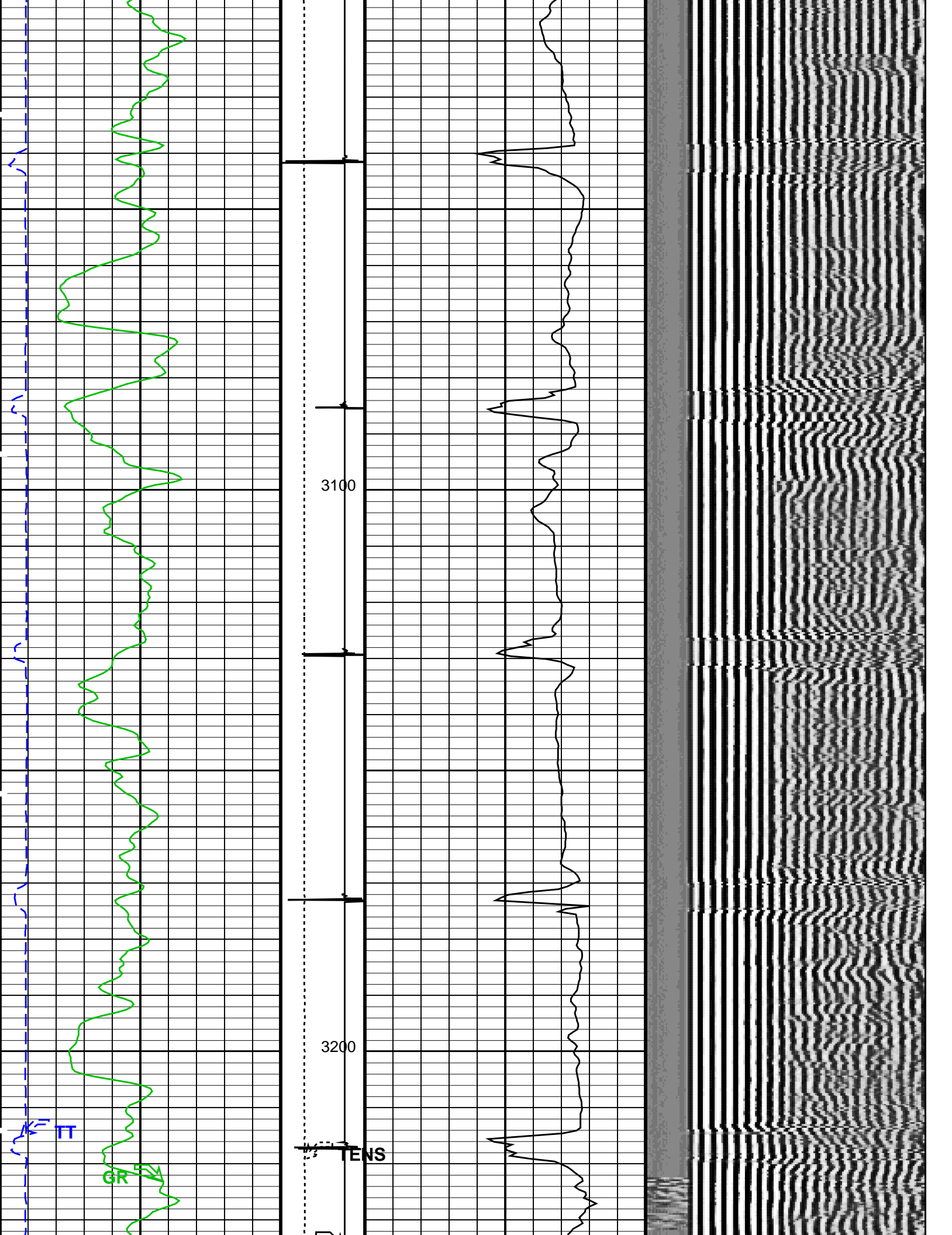


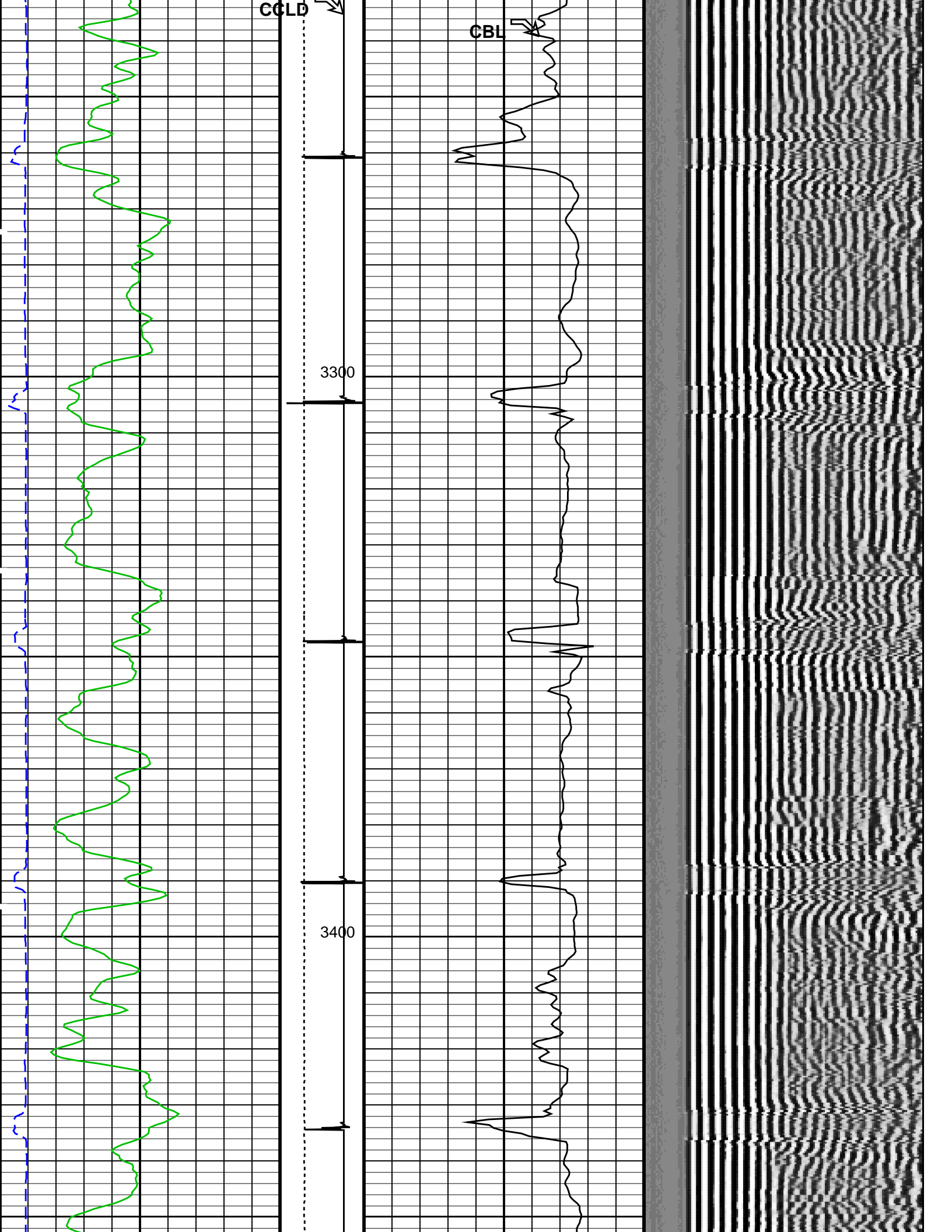


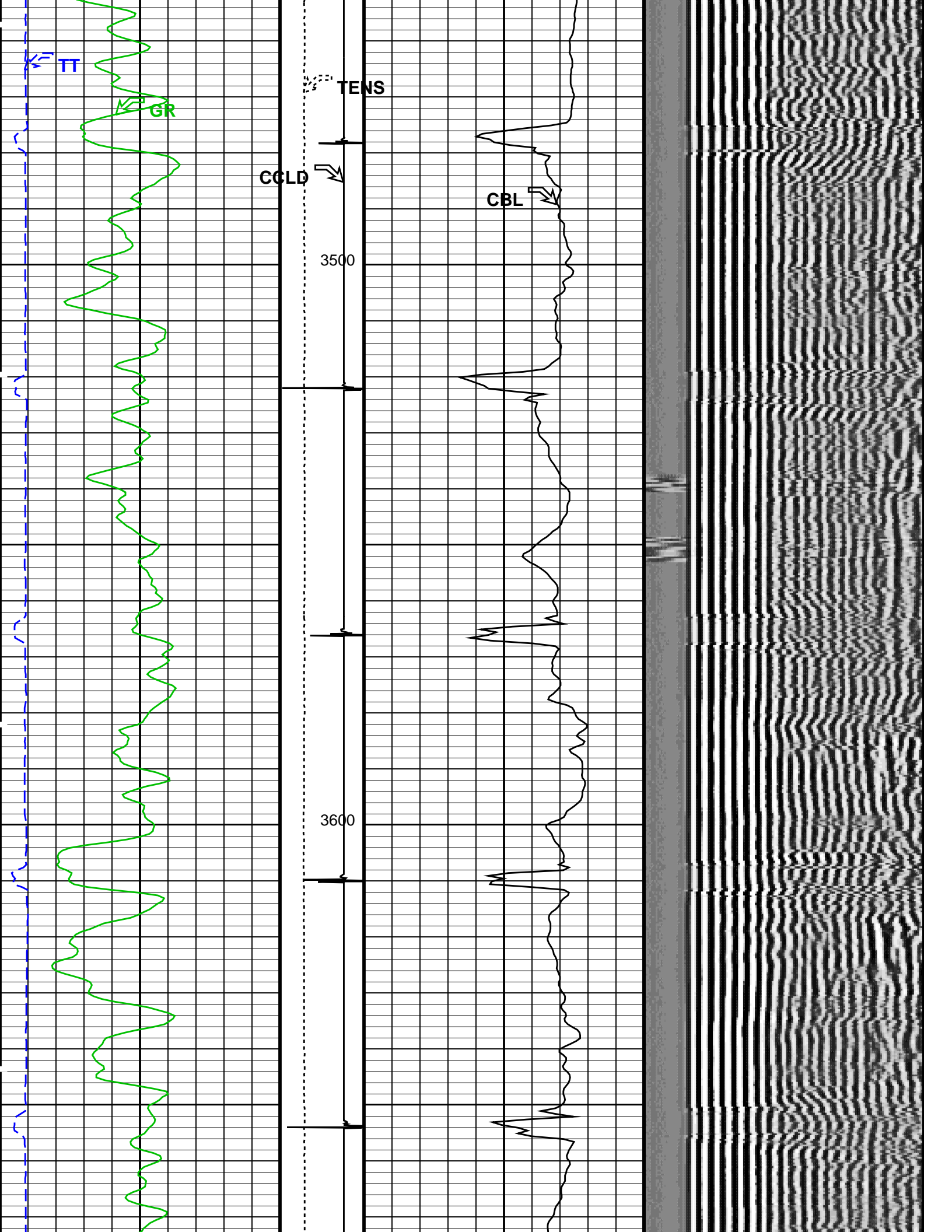


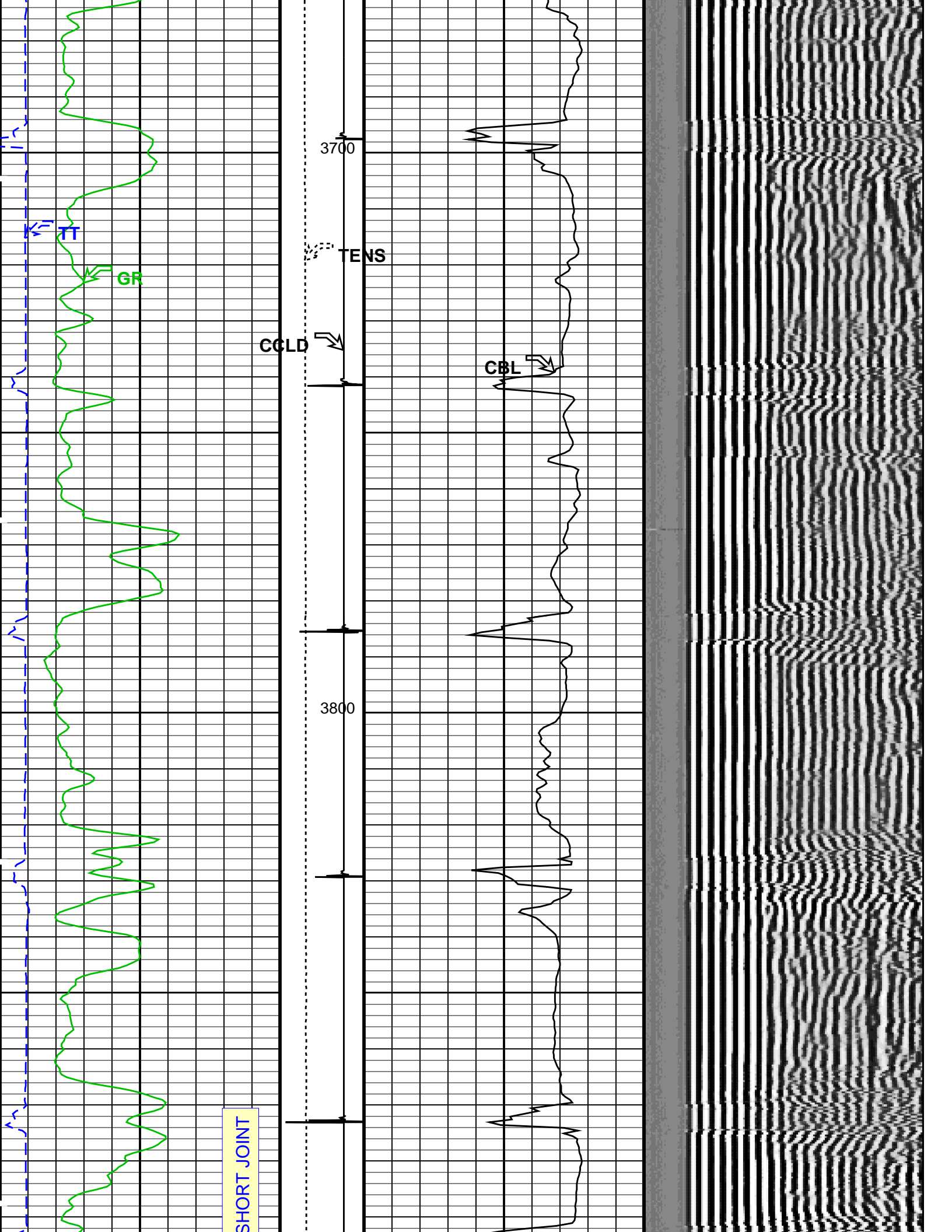


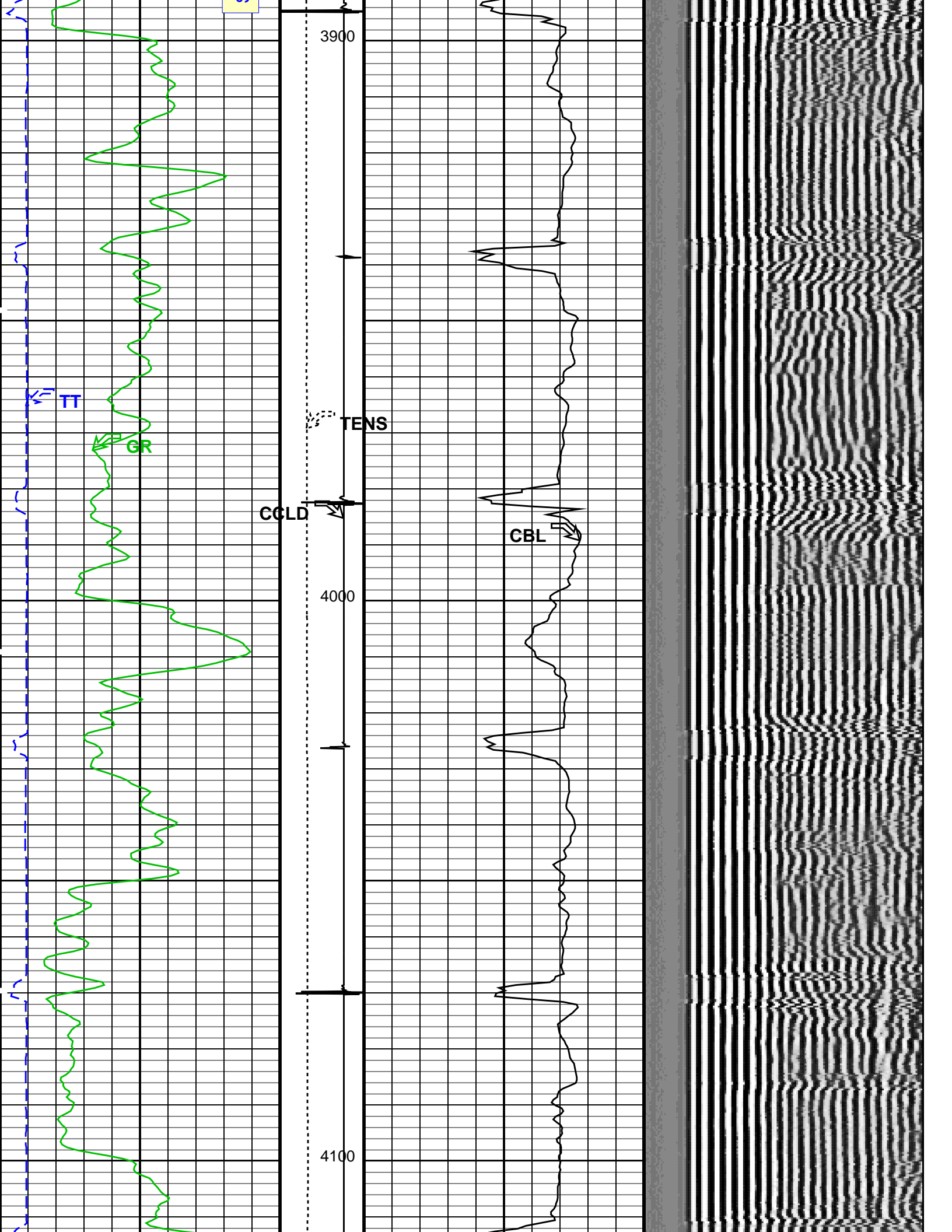


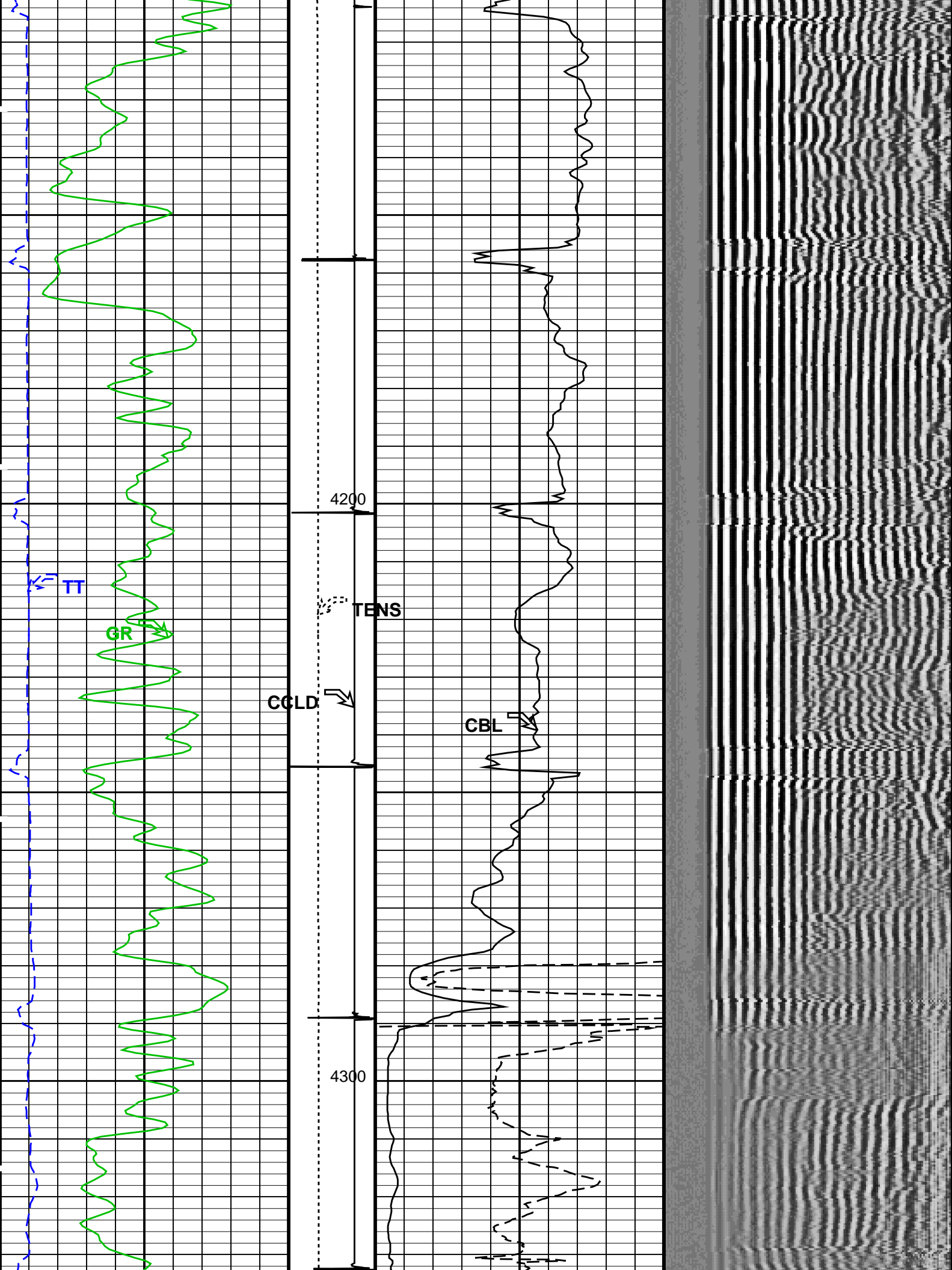


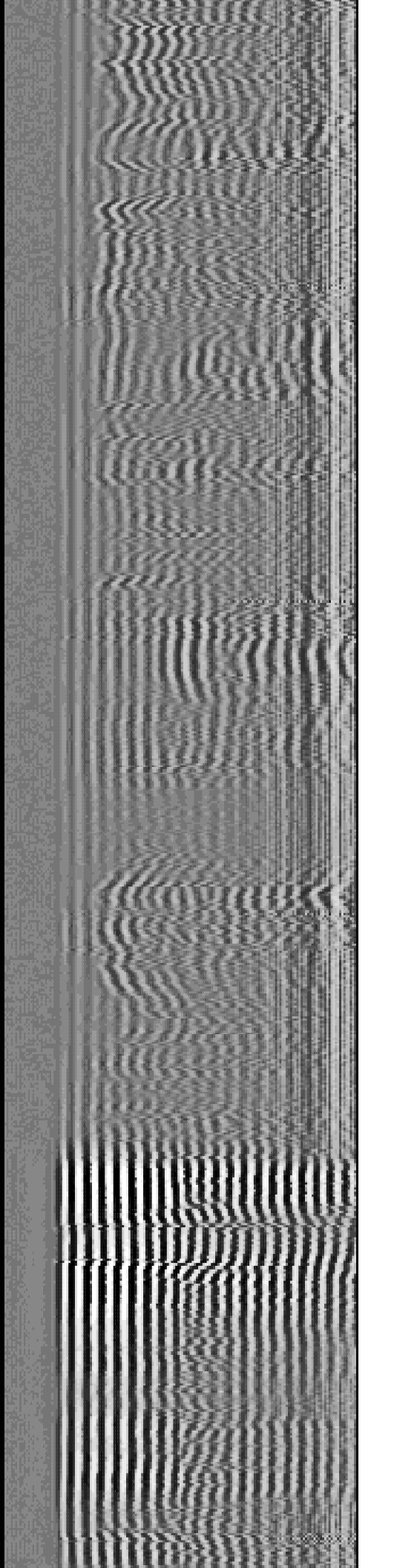
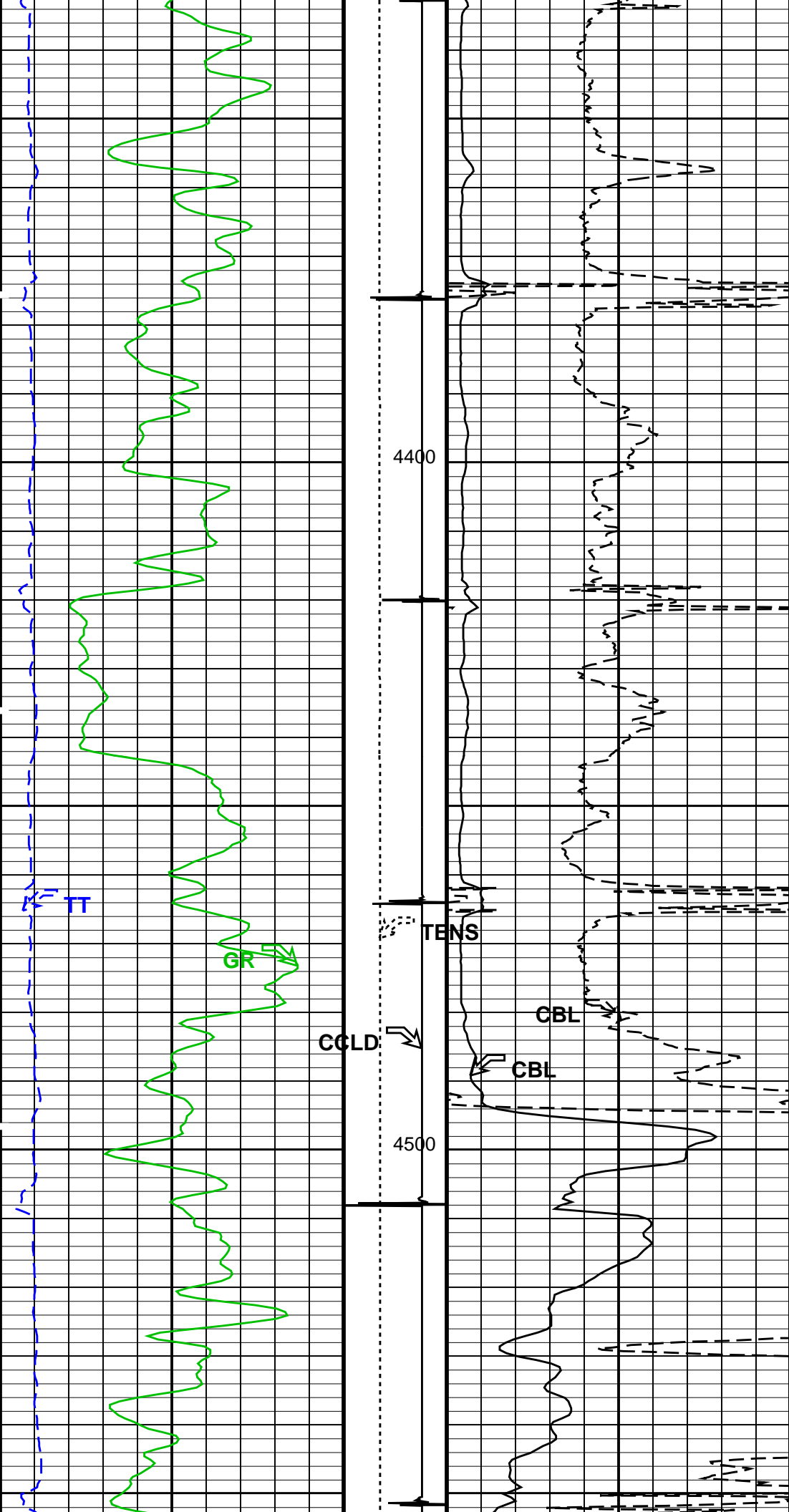


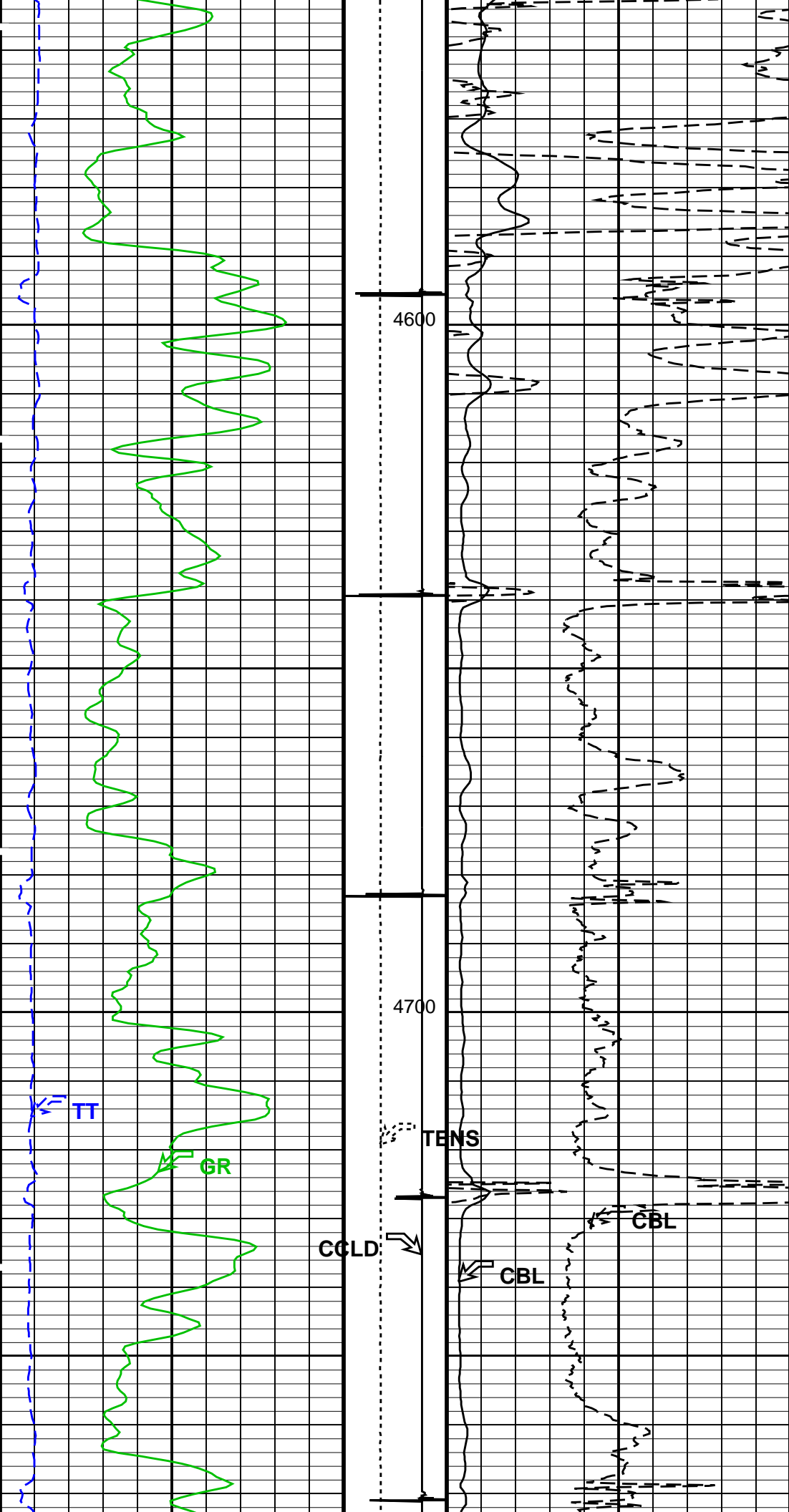


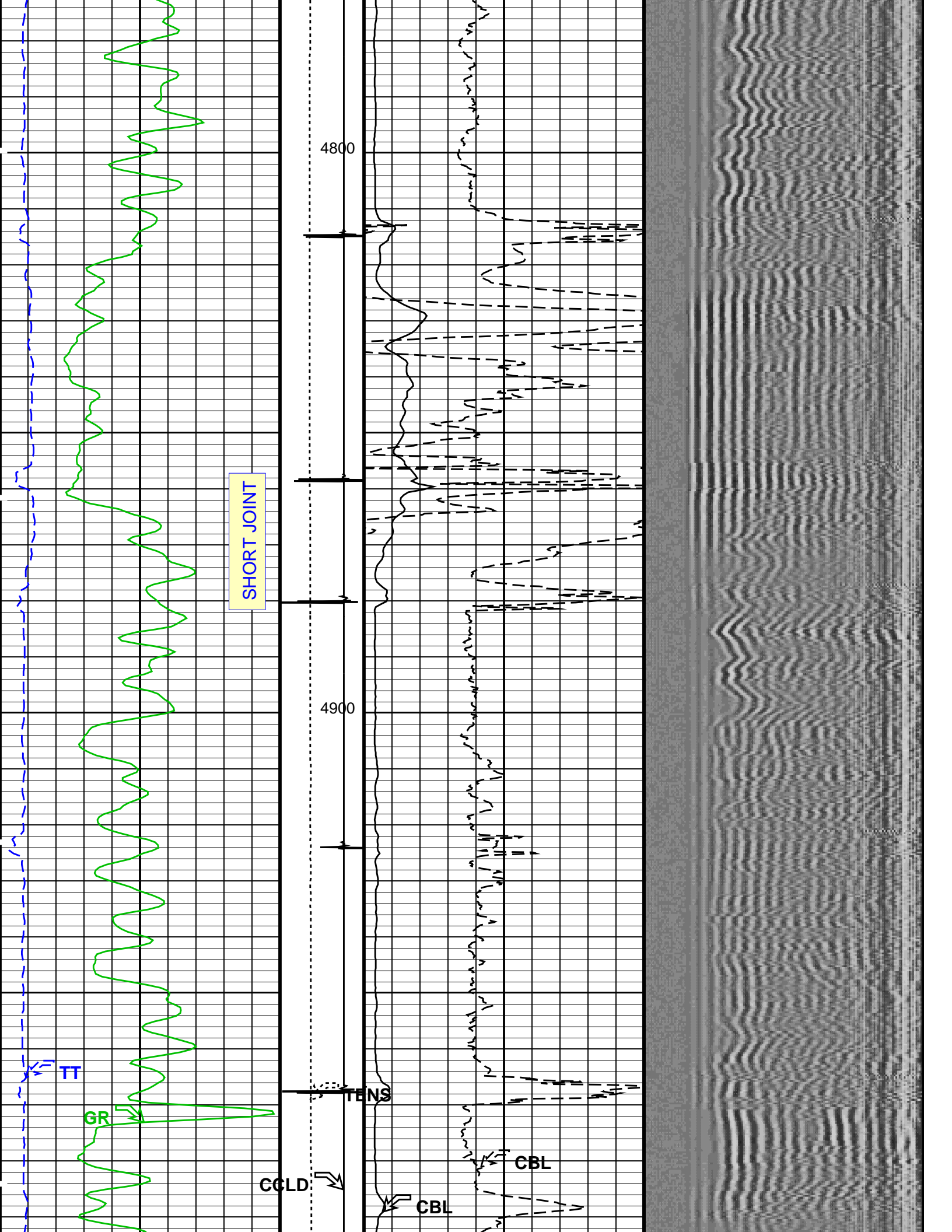


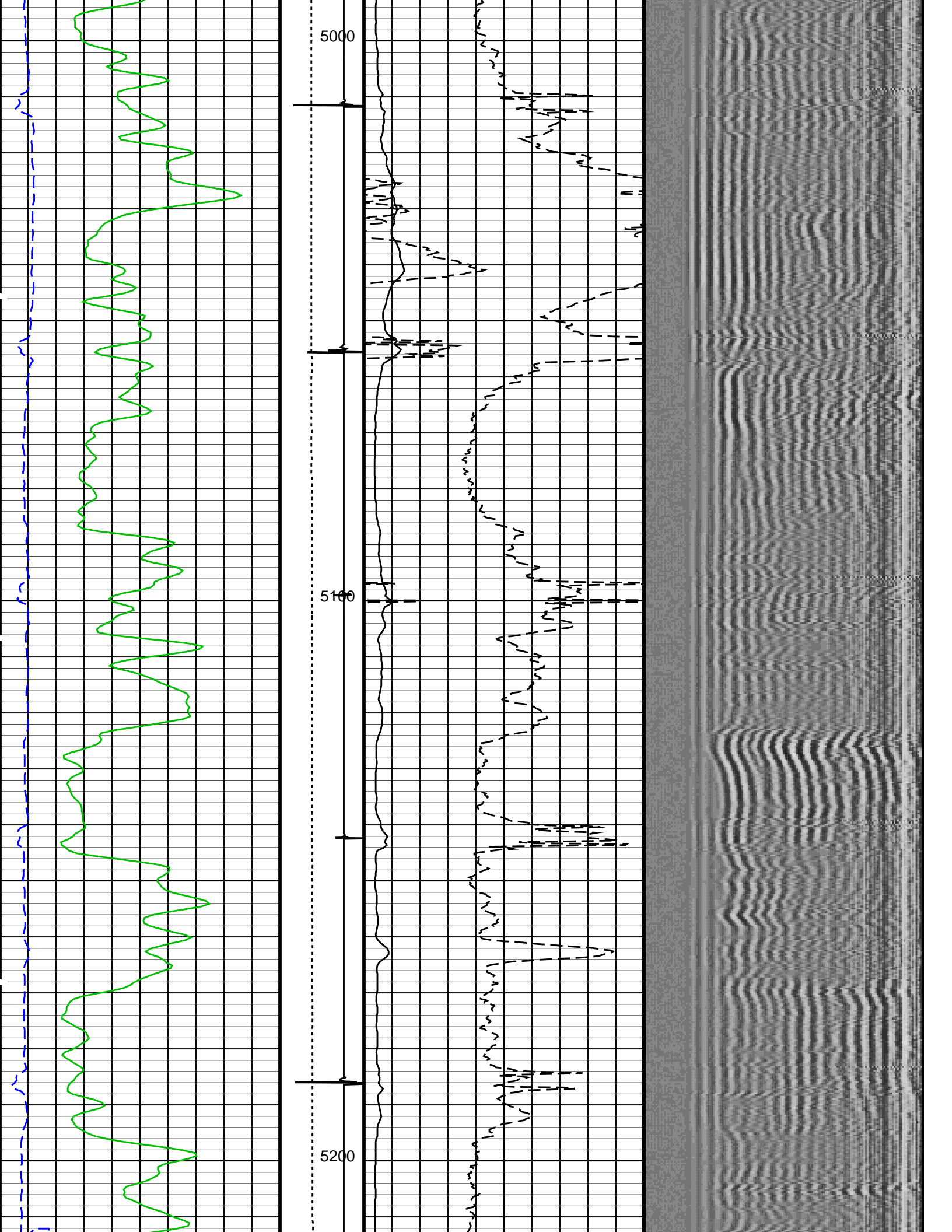


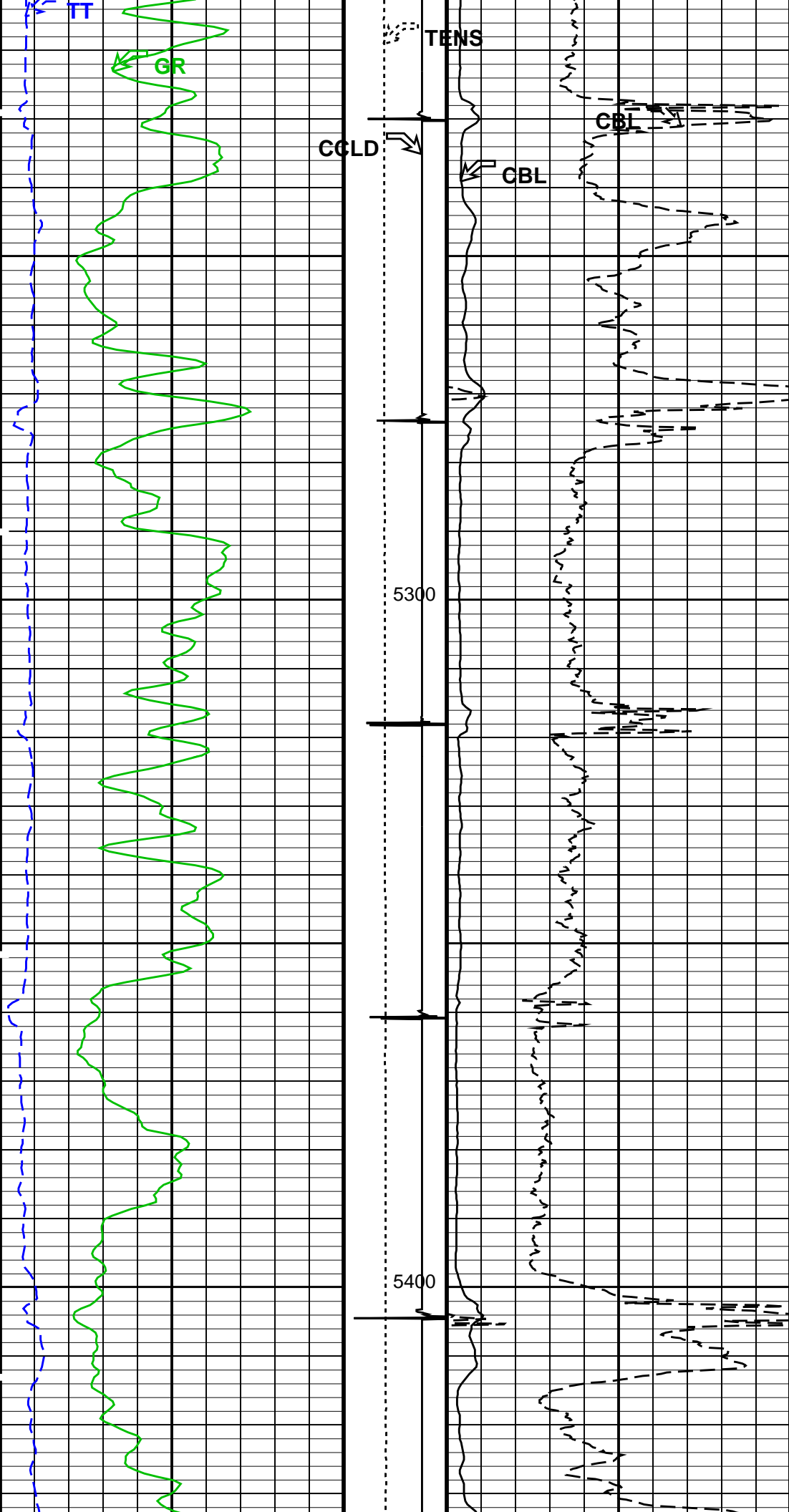


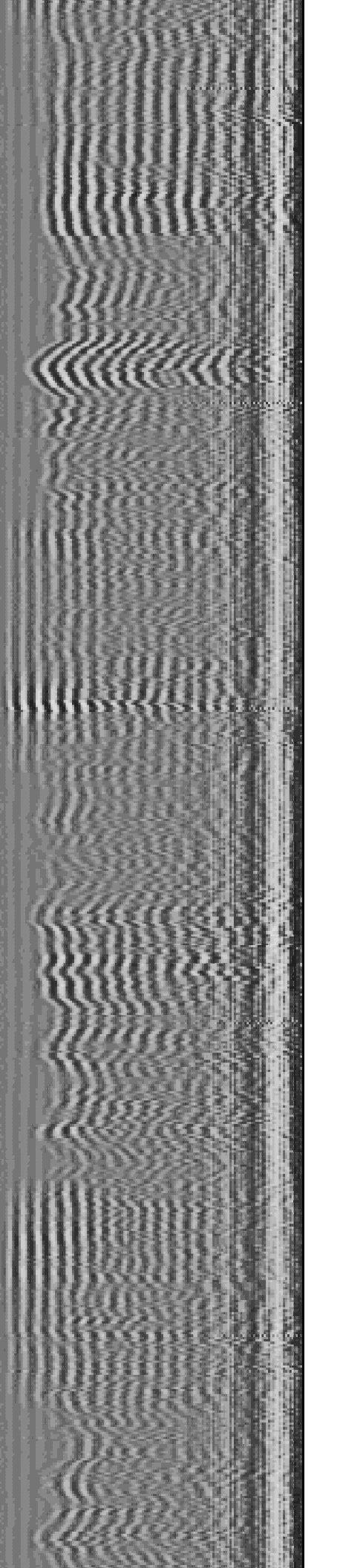
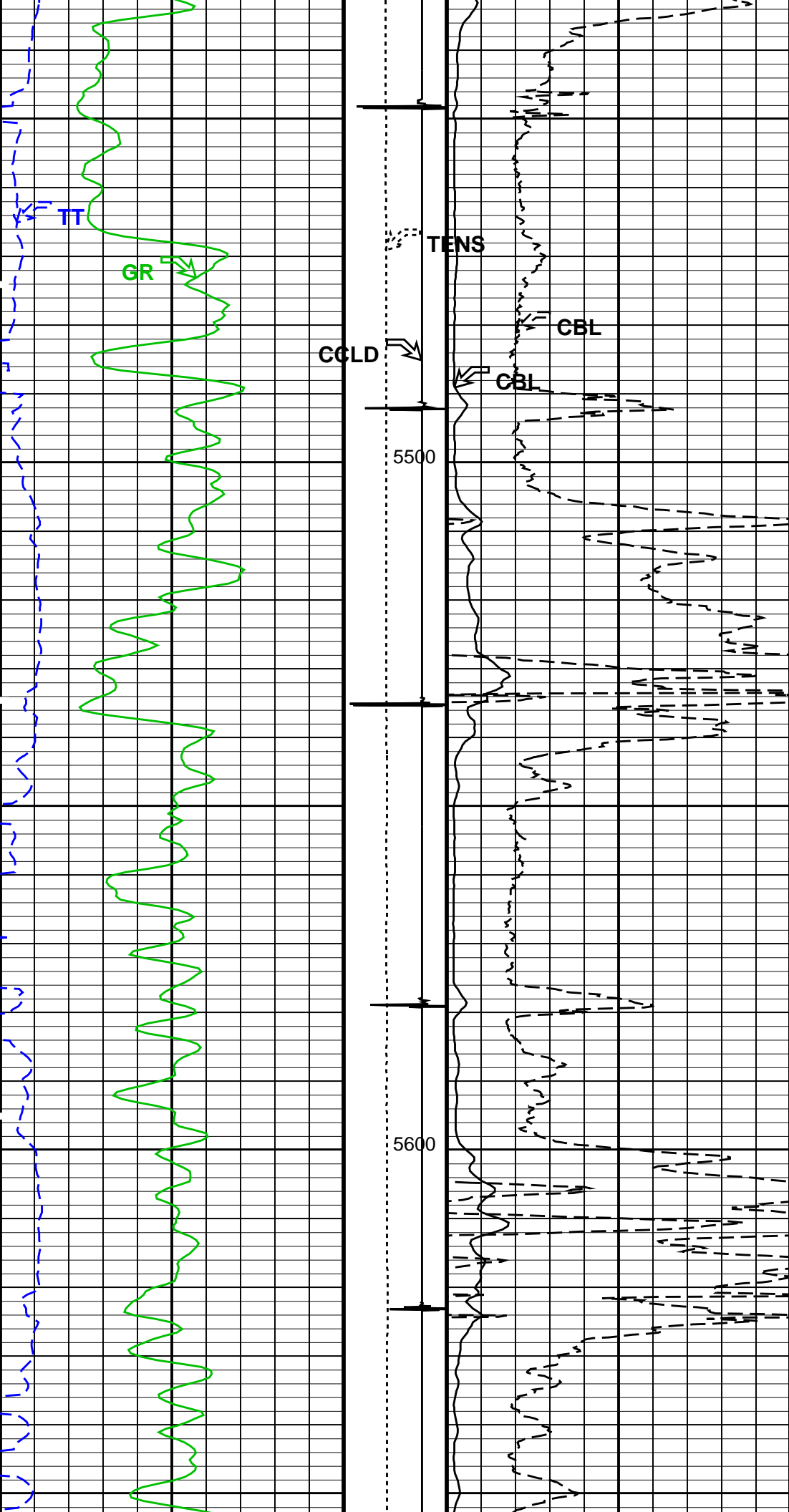


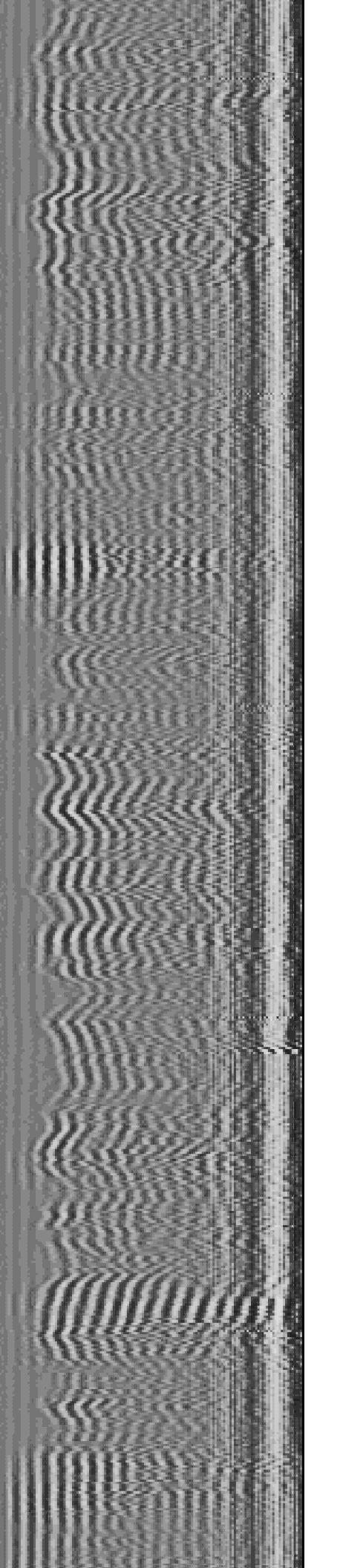
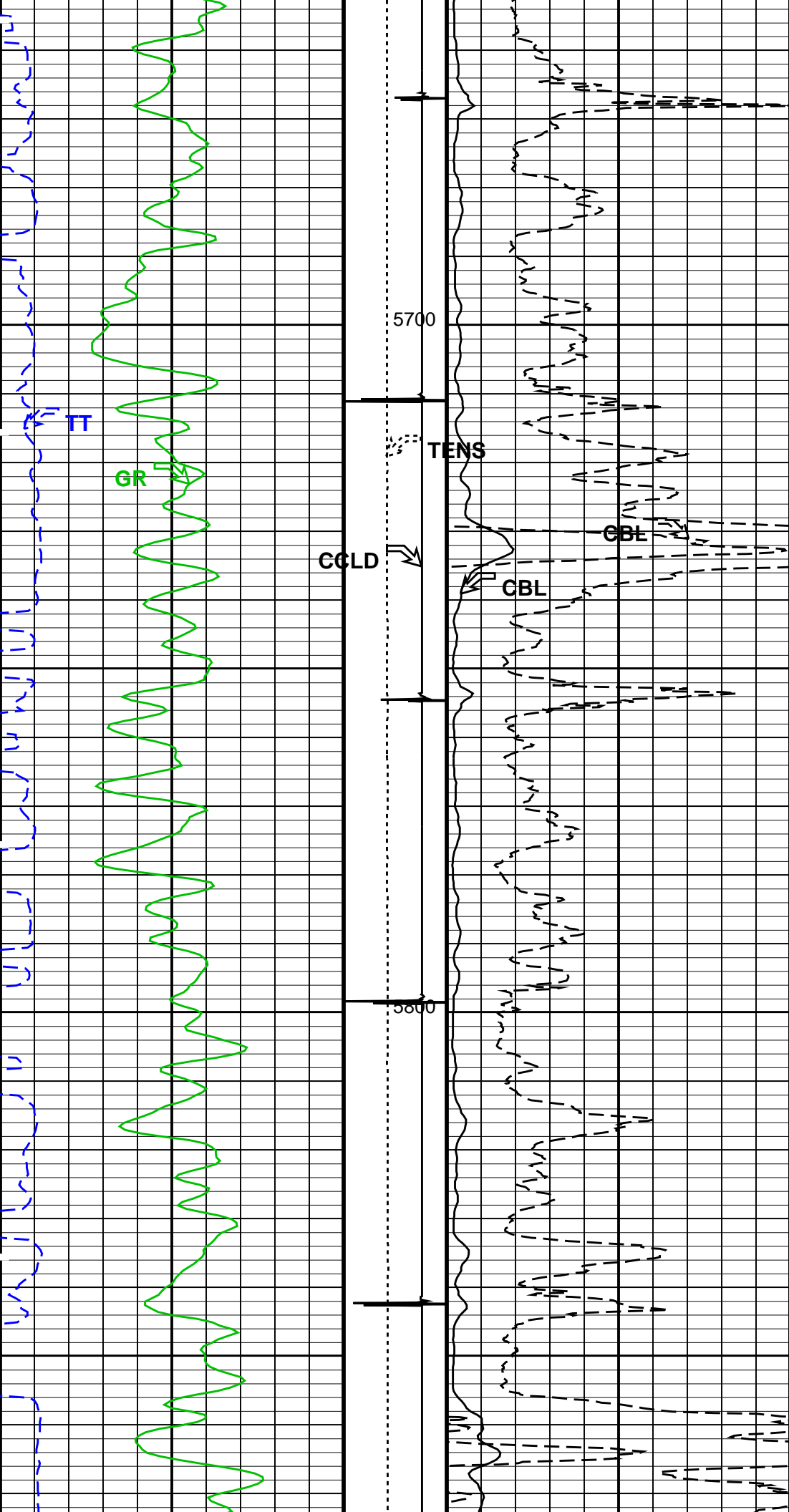


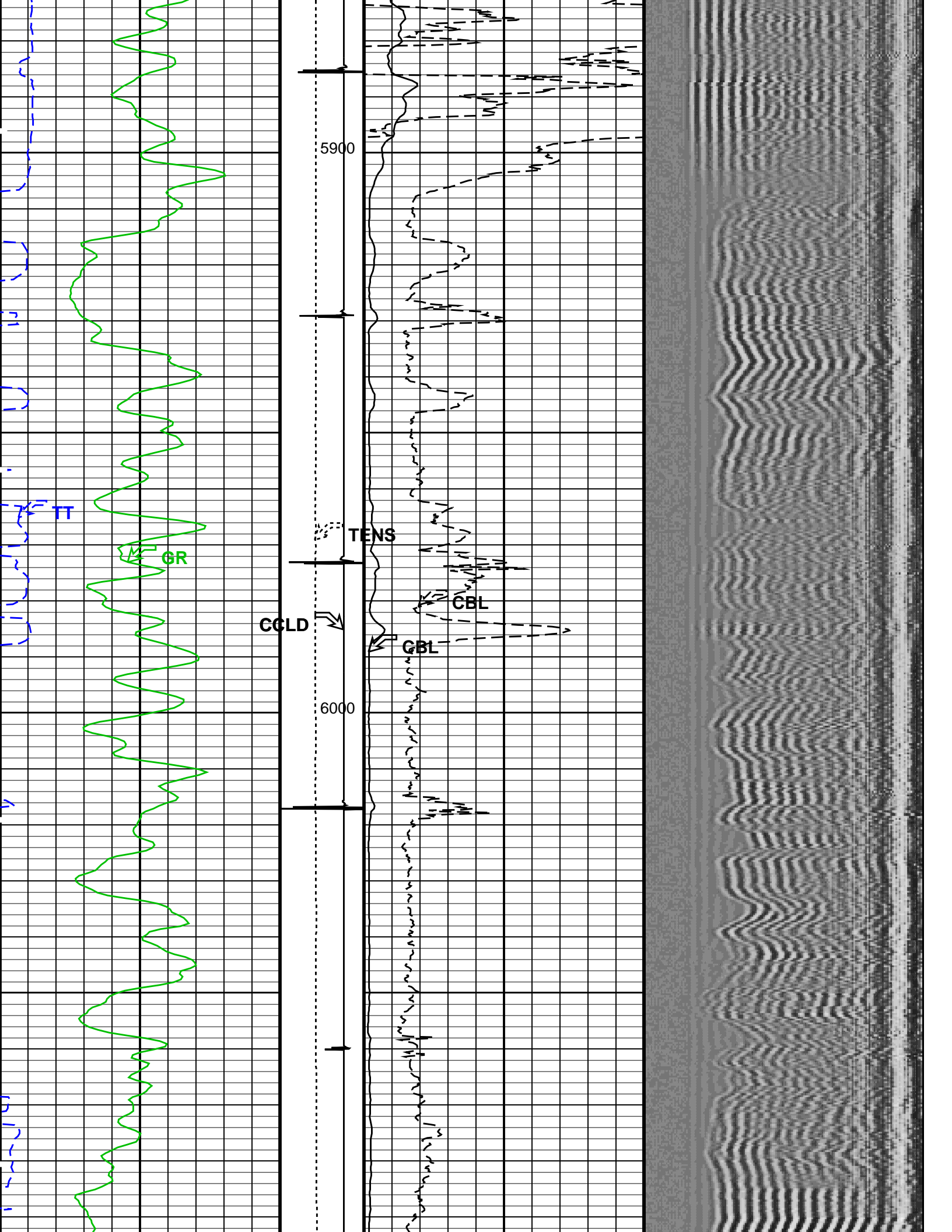


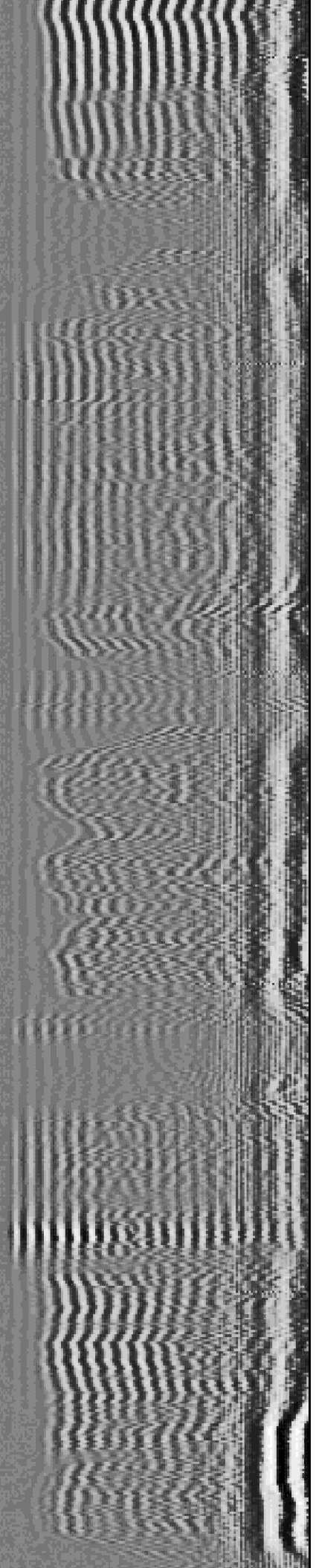
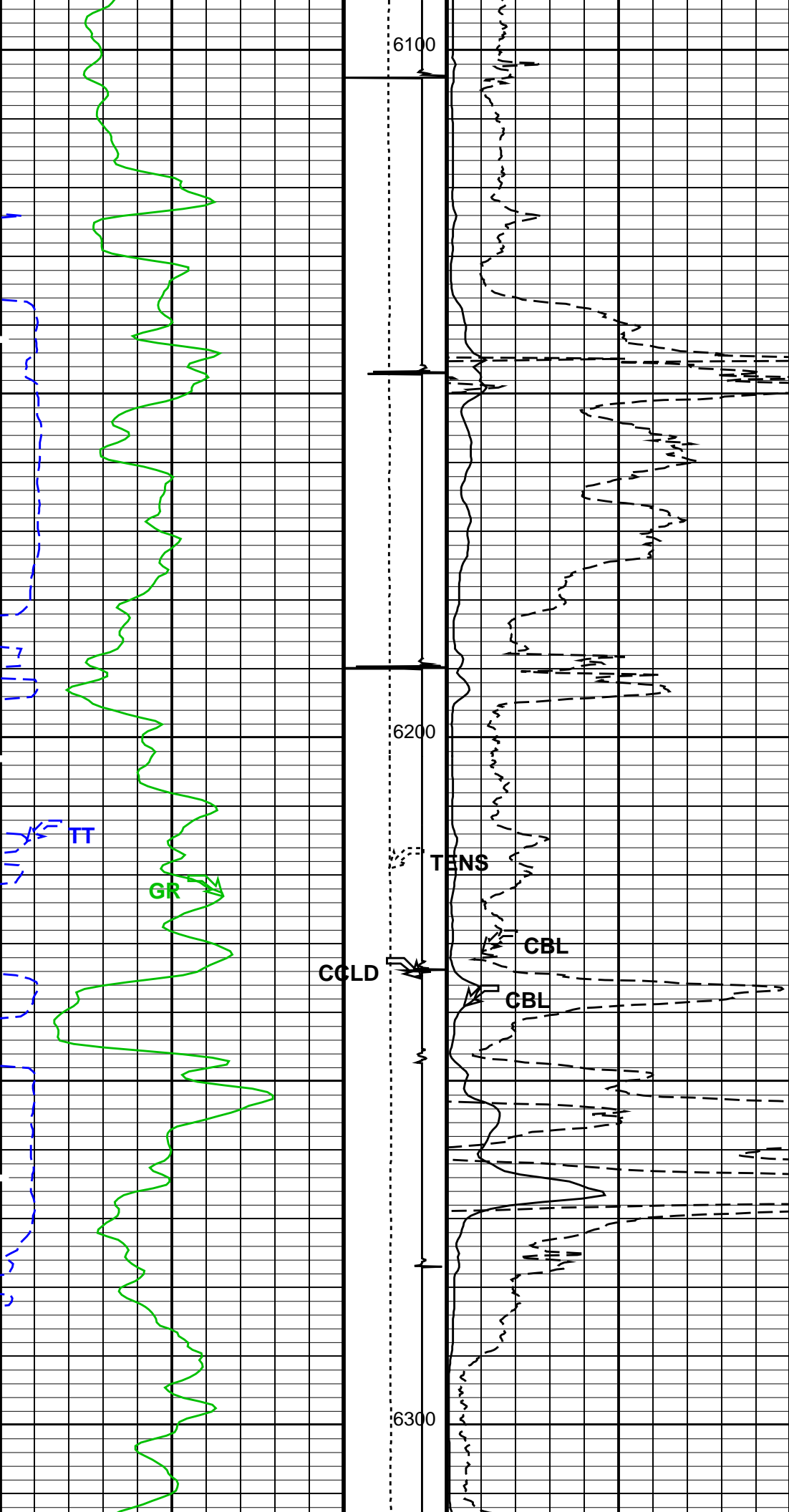


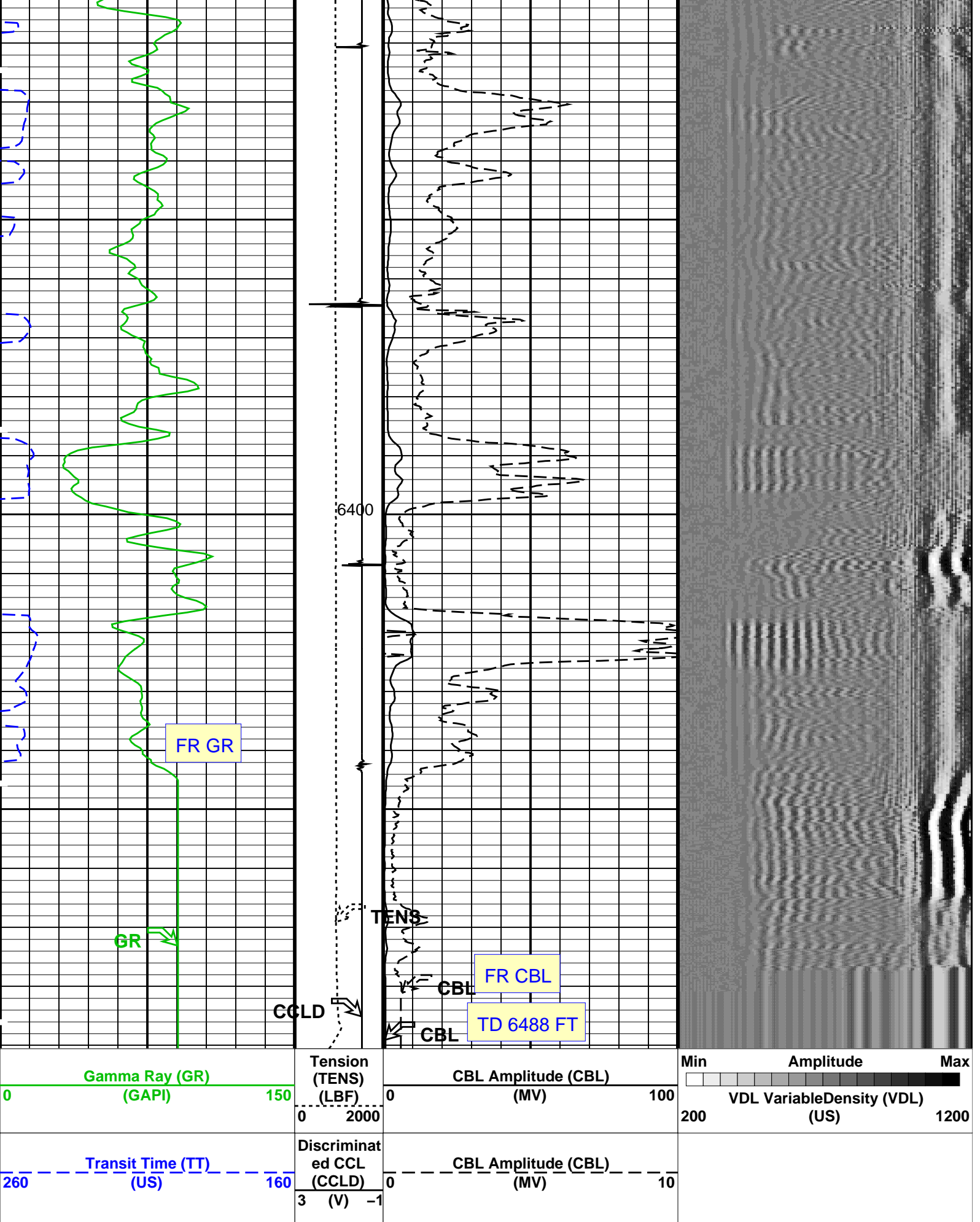












OP System Version: 19C0-187

SCMT-CB SRPC-5095-H2-2011-OP19_b RST-C SRPC-5095-H2-2011-OP19_b
PSPT 19C0-187

<<<SCMT Cement Evaluation Information Summary>>>

Sonde Serial Number	SCMS-CB 8303		
Current Casing Size	4.50000 IN		
Casing Weight	11.6000 LB/F		
Expected CBL Amplitude in Free Pipe Section	80 MV	Minimum Sonic Amplitude	0.579149 MV (100% Cement)
			1.55185 MV (80% Cement)
		MAP Minimum Sonic Amplitude	4.32284 MV (100% Cement)
			8.10244 MV (80% Cement)
Master Calibration (Normalization)	Before Calibration (Adjustment)		
Date of Master Calibration	17-JAN-2011		
CBL Correction Factor	0.0743637	CBL Adjustment Factor (CBAF)	1.0
MAP 1 Correction Factor	0.165722	MAP Adjustment Factor (MPAF)	1.0
MAP 2 Correction Factor	0.192039		
MAP 3 Correction Factor	0.132977		
MAP 4 Correction Factor	0.175062		
MAP 5 Correction Factor	0.161562		
MAP 6 Correction Factor	0.177685		
MAP 7 Correction Factor	0.144065		
MAP 8 Correction Factor	0.233552		

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	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	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
DORL	Depth Offset for Repeat Analysis	0.0	FT
TD	Total Depth	-50000	FT

Output DLIS Files



REPEAT ANALYSIS

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC.

Well: FEDERAL 29-4A (PA30)

Input DLIS Files

DEFAULT SCMT_RST_PSP_010PUP FN:9 PRODUCER 21-Nov-2011 10:53 5005.5 FT 4623.5 FT

Output DLIS Files

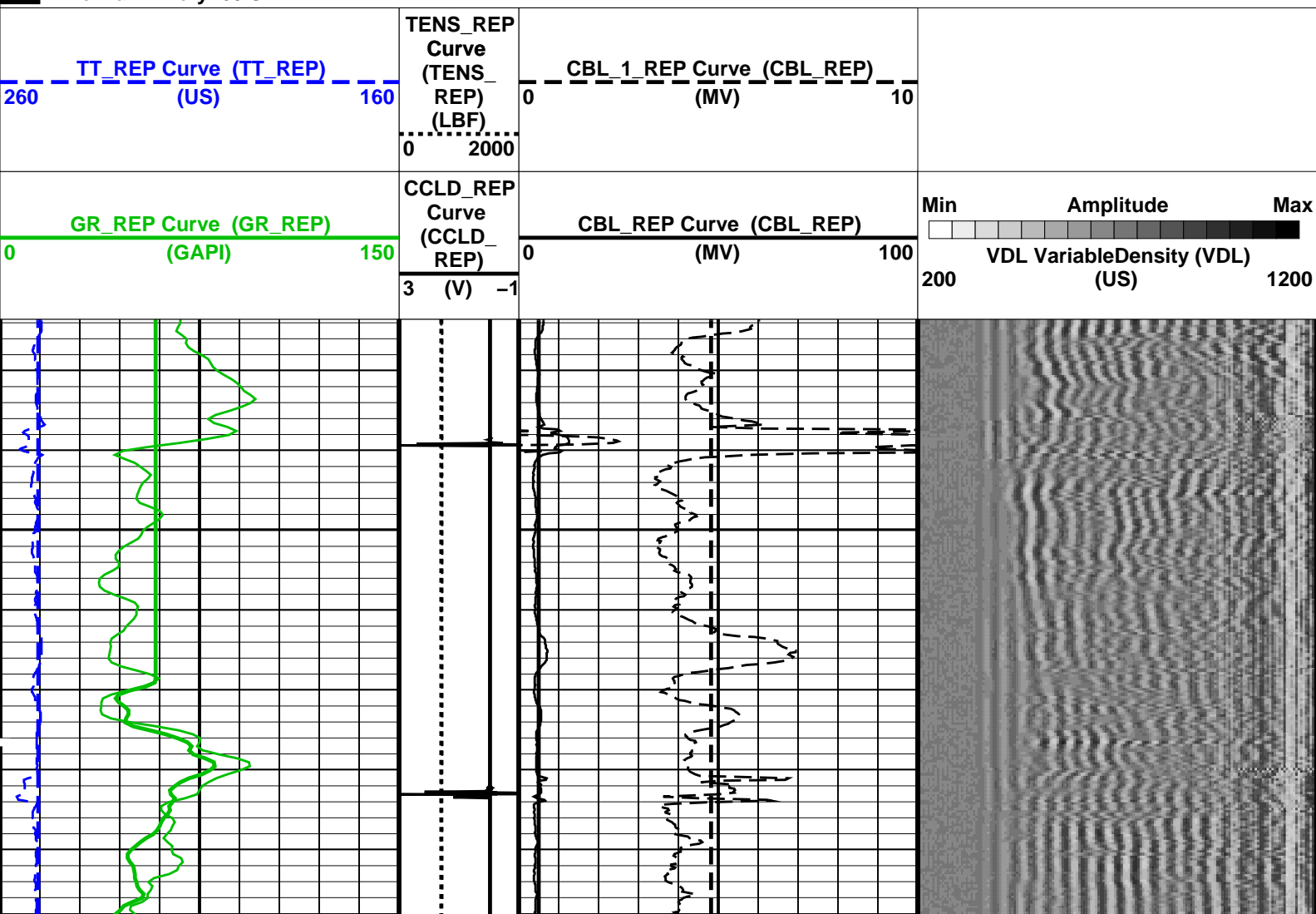
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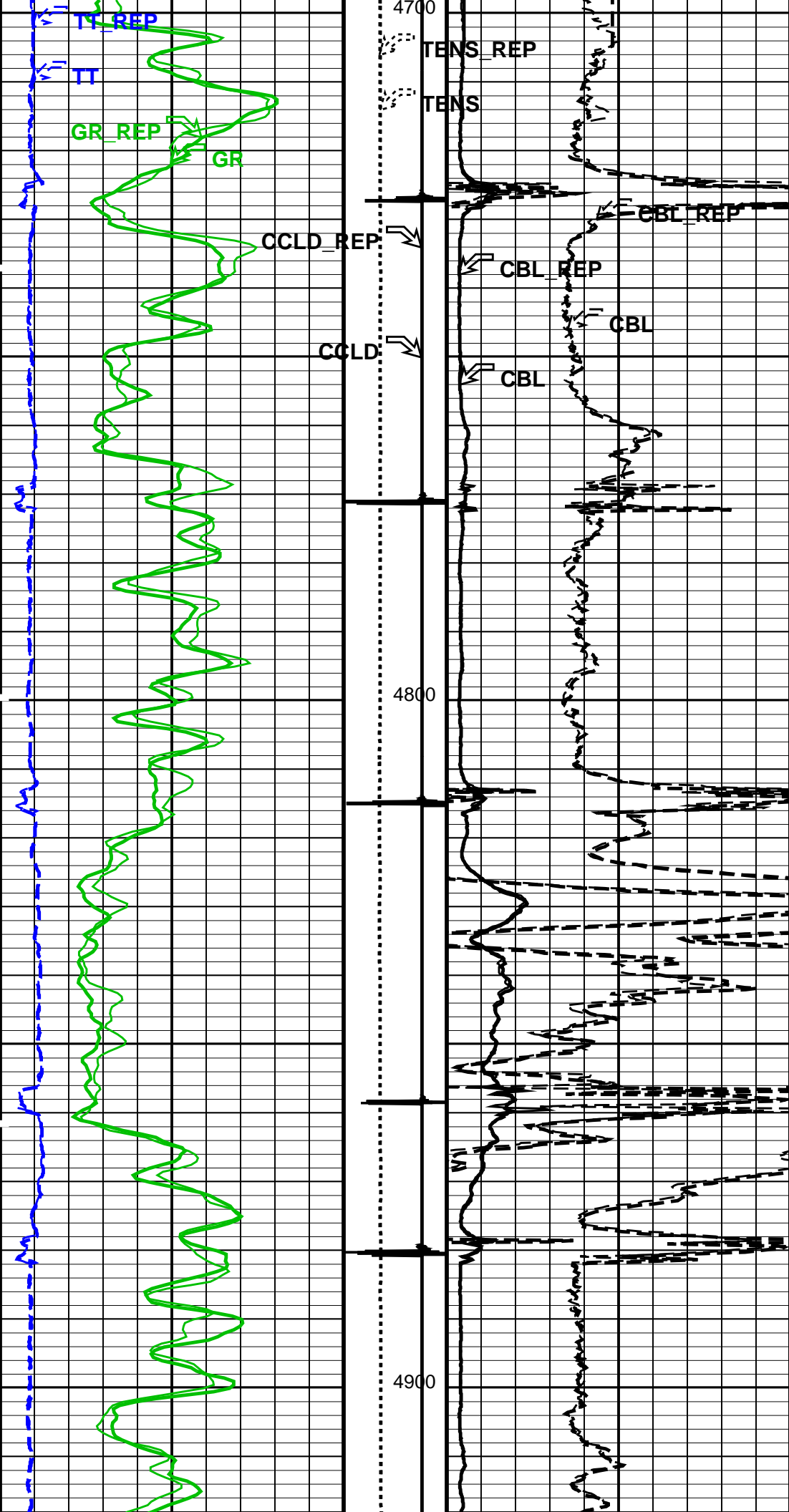
OP System Version: 19C0-187

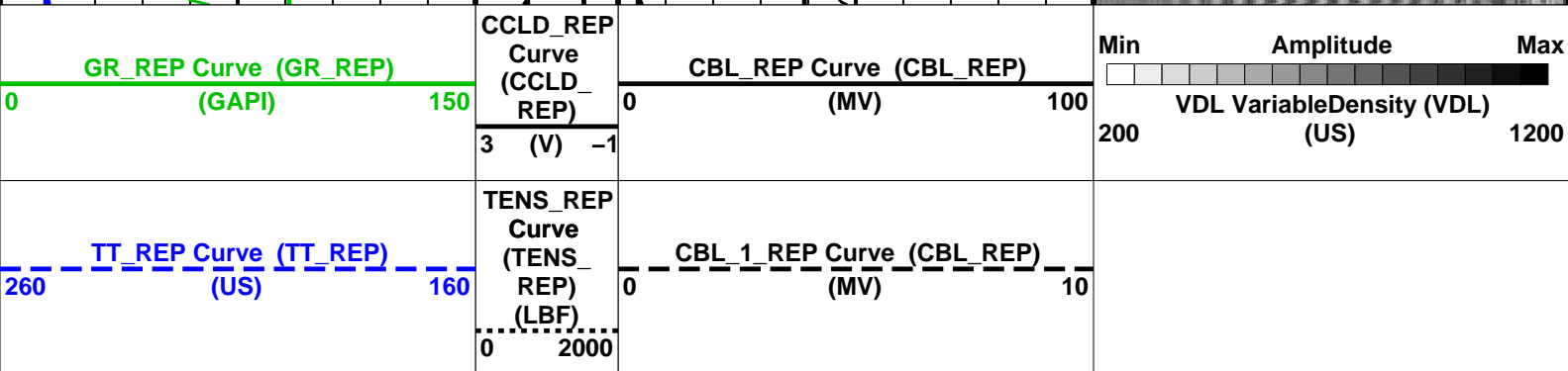
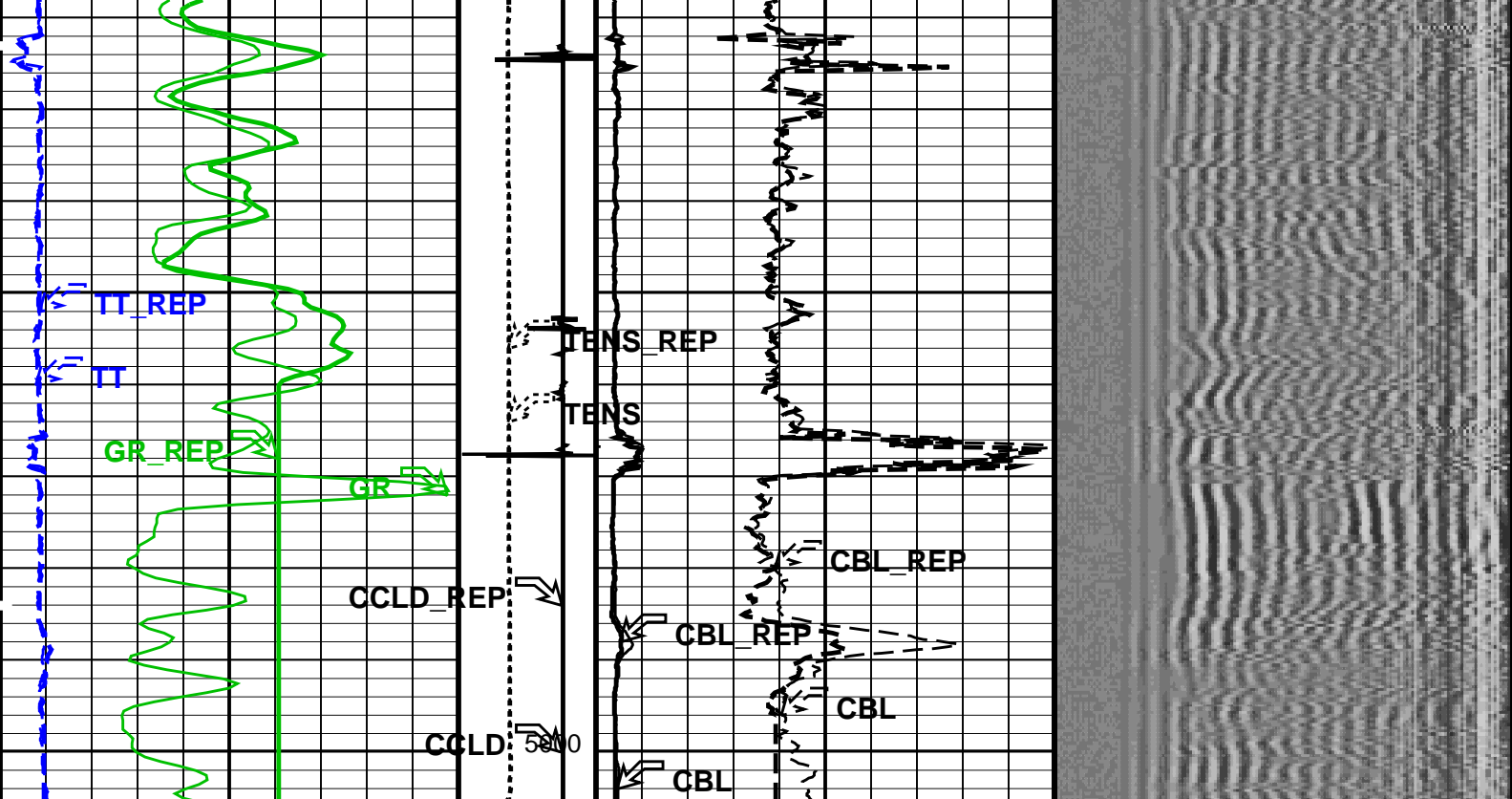
SCMT-CB SRPC-5095-H2-2011-OP19_b RST-C SRPC-5095-H2-2011-OP19_b
PSPT 19C0-187

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: 21-Nov-2011 10:58

OP System Version: 19C0-187

SCMT-CB PSPT	SRPC-5095-H2-2011-OP19_b 19C0-187	RST-C	SRPC-5095-H2-2011-OP19_b
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<<<SCMT Cement Evaluation Information Summary>>>

Sonde Serial Number SCMS-CB 8303

Current Casing Size 4.50000 IN

Casing Weight 11.6000 LB/F

Expected CBL Amplitude
in Free Pipe Section 80 MV

Minimum Sonic Amplitude	0.579149 MV (100% Cement)
	1.55185 MV (80% Cement)
MAP Minimum Sonic Amplitude	4.32284 MV (100% Cement)
	8.10244 MV (80% Cement)

Master Calibration (Normalization)

Date of Master Calibration 17-JAN-2011

CBL Correction Factor 0.0743637

MAP 1 Correction Factor 0.165722

MAP 2 Correction Factor 0.192039

Before Calibration (Adjustment)

CBL Adjustment Factor (CBAF) 1.0

MAP Adjustment Factor (MPAF) 1.0

MAP 3 Correction Factor	0.132977
MAP 4 Correction Factor	0.175062
MAP 5 Correction Factor	0.161562
MAP 6 Correction Factor	0.177685
MAP 7 Correction Factor	0.144065
MAP 8 Correction Factor	0.233552

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	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	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
DORL	Depth Offset for Repeat Analysis	0.0	FT
TD	Total Depth	-50000	FT

Input DLIS Files

DEFAULT SCMT_RST_PSP_010PUP FN:9 PRODUCER 21-Nov-2011 10:53 5005.5 FT 4623.5 FT

Output DLIS Files

DEFAULT SCMT_RST_PSP_011LUP FN:10 PRODUCER 21-Nov-2011 10:58

Schlumberger

COEFFICIENTS

MAXIS Field Log

Client: ENCANA OIL & GAS (USA) INC.

Field: PARACHUTE

Well: PAD PA30

Run date: 21-Nov-2011

Tool:

PSP

Sub Type:

PBMS

Sensor:

Clock Model

PBMS Digitalization Clock

Sonde Serial NB

Sensor Serial NB 3779

Calib Date ddmmyy 090107

Matrix Size 16

Coeff CRC D285

Clock Coeff

	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:	PARACHUTE	Sub Type:	PBMS
Well:	PAD PA30	Sensor:	Sapphire
Run date:	21-Nov-2011		

PBMS Sapphire 10kPsi Gauge

Sonde Serial NB

Sensor Serial NB 3779

Calib Date ddmmyy 090107

Matrix Size 66

Coeff CRC 4C82

Pres Coeff

	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	+1.146352372057E+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	+1.109160002120E+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.	Tool:	PSP
Field:	PARACHUTE	Sub Type:	PBMS
Well:	PAD PA30	Sensor:	GR
Run date:	21-Nov-2011		

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: PARACHUTE

Well: PAD PA30

Run date: 21-Nov-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: FEDERAL 29-4A (PA30)

Field: PARACHUTE

County: GARFIELD

State: COLORADO

CEMENT BOND LOG
CBL – VDL
GAMMA RAY – CCL