

Company: ENCANA OIL & GAS (USA) INC

Well: FEDERAL 22-13BB (PJ21)

Field: PARACHUTE

County: GARFIELD State: COLORADO

SLIM CEMENT MAPPING LOG
CBL-VDL
GR-CCL

County: GARFIELD

Field: PARACHUTE

Location: SHL: 2112 FSL & 2030 FEL

Well: FEDERAL 22-13BB (PJ21)

Company: ENCANA OIL & GAS (USA) INC

LOCATION	
SHL: 2112 FSL & 2030 FEL BHL: 897 FSL & 310 FWL	Elev.: K.B. 6325.00 ft G.L. 6303.00 ft D.F. 6324.00 ft
Permanent Datum: _____	GROUND LEVEL _____
Log Measured From: _____	KELLY BUSHING _____
Drilling Measured From: _____	KELLY BUSHING _____
API Serial No. 05-045-21287-0C	Section 21
	Township 7S
	Range 95W

	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	30-Mar-2013
Run Number	1
Depth Driller	8110 ft
Schlumberger Depth	8018 ft
Bottom Log Interval	8009 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	8110 ft
Casing/Tubing Size	4.500 in
Weight	11.6 lbm/ft
Grade	S-80
From	22 ft
To	8063 ft
Maximum Recorded Temperatures	219 degF
Logger On Bottom	30-Mar-2013
Unit Number	391
Recorded By	KIRSTIE BUNTING
Witnessed By	BILLY MEYERS

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-MAR-2013 10:41:08

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW-B	Type:	CMTD-B/A	Type:	1-25ZT
Serial Number:	6214	Serial Number:	3421	Serial Number:	112136
Calibration Date:	24-APR-2012	Calibration Date:	20-FEB-2011	Length:	19500 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:	-3	Calibration RMS:	4		
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 POLICIES APPLIED
2. IDW USED AS PRIMARY DEPTH REFERENCE
3. SWPT DRUM COUNTER USED AS SECONDARY DEPTH REFERENCE
- 4.
- 5.
- 6.

DISCLAIMER

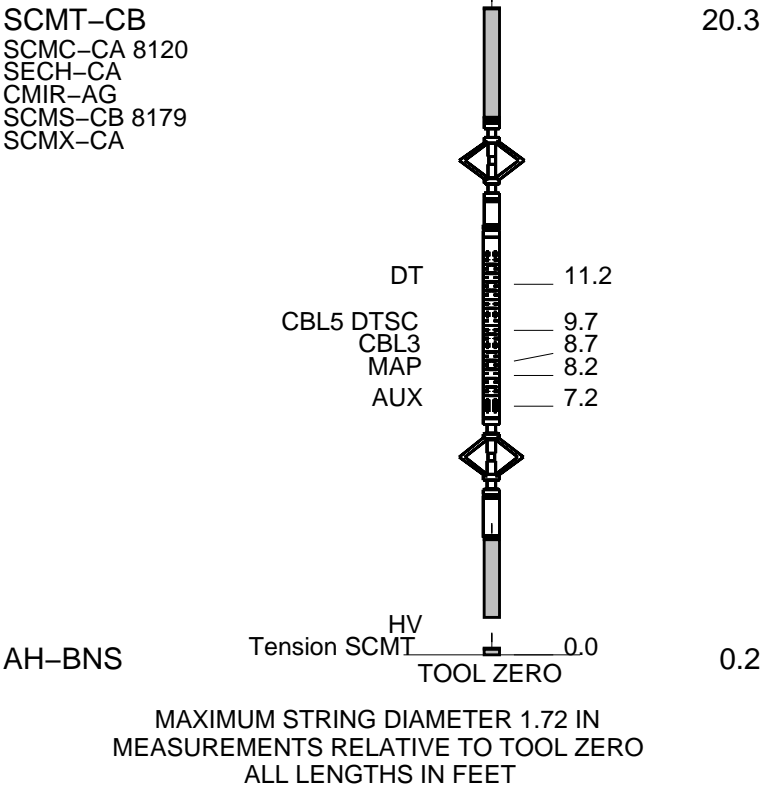
THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (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: 23:30	
TIME AT TD: 00:00	
EXIT TIME: 02:15	

RUN 1 SERVICE ORDER #: CGF9-00020 PROGRAM VERSION: 19C0-187 FLUID LEVEL: 60 ft			RUN 2 SERVICE ORDER #: PROGRAM VERSION: FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

	EQUIPMENT DESCRIPTION	
RUN 1		RUN 2

DOWNHOLE EQUIPMENT			
MH-22			53.4
MH-22			
Detail MT			
AH-38	TelStatus		51.8
PSPT	CTEM		51.5
PSC-A			51.5
PSPT-B 928			
PSTC-A 928			
PBMS-B 928	GR		47.8
CQG_F_Mano			
RTD_Thermometer			
GR	Well_Temp		44.8
CCL	CQG Manom		44.5
PBMS 928	CCL		44.0
	PBMS PSTC		43.3
RST-C			43.3
RSCH-A 469			
RSC-E			
RSS-A 461			
RSXH-A 493			
RSX-E			
	RSC-A Far		34.2
	RSC-A PNG		
	RSC-A Nea		
	RSX-A PNG		33.7



MAIN PASS CBL VDL

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC Well: FEDERAL 22-13BB (PJ21)

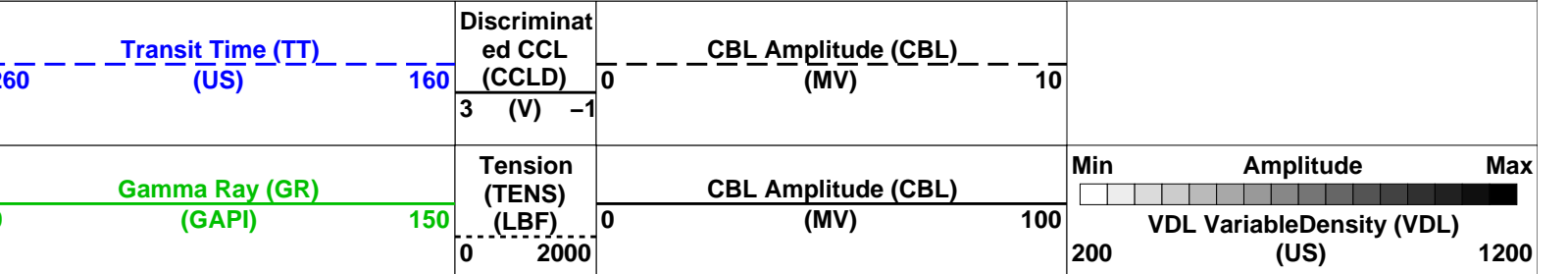
Input DLIS Files						
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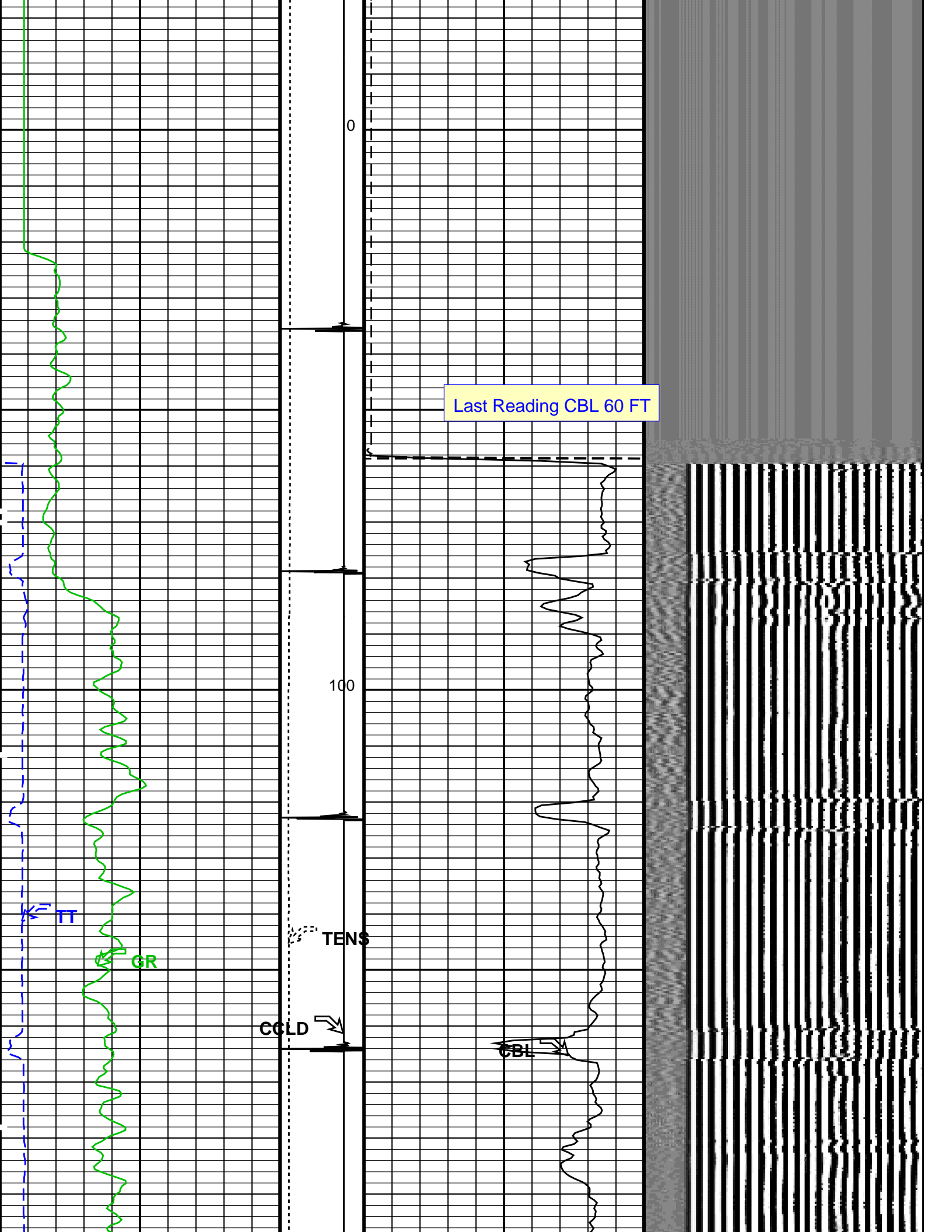
Output DLIS Files						
DEFAULT	SCMT_RST_PSP_025PUP	FN:24	PRODUCER	30-Mar-2013 01:57	8025.0 FT	-24.0 FT

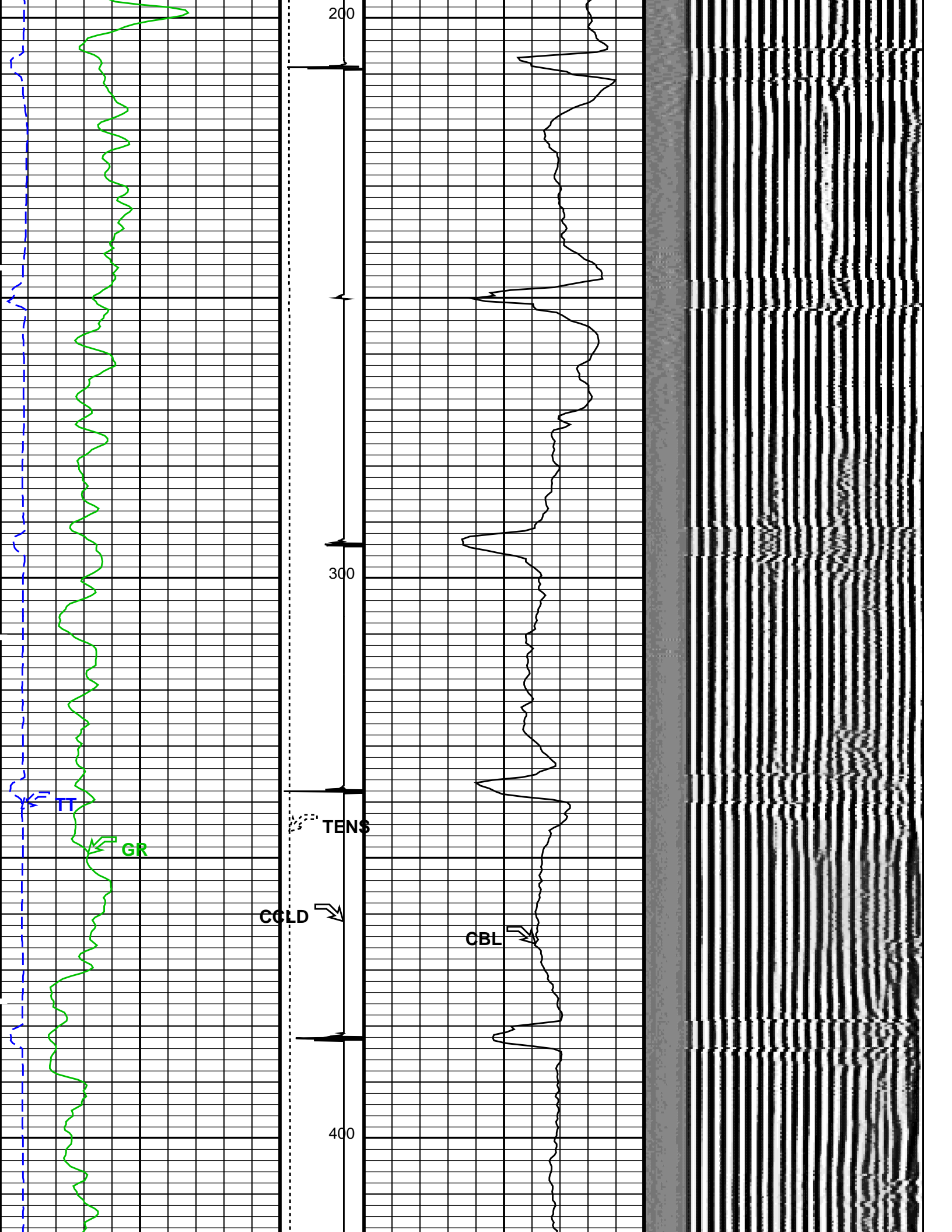
OP System Version: 19C0-187			
SCMT-CB	SRPC-5214-H2-2012-OP1	RST-C	SRPC-5214-H2-2012-OP1
PSPT	SRPC-5214-H2-2012-OP1		

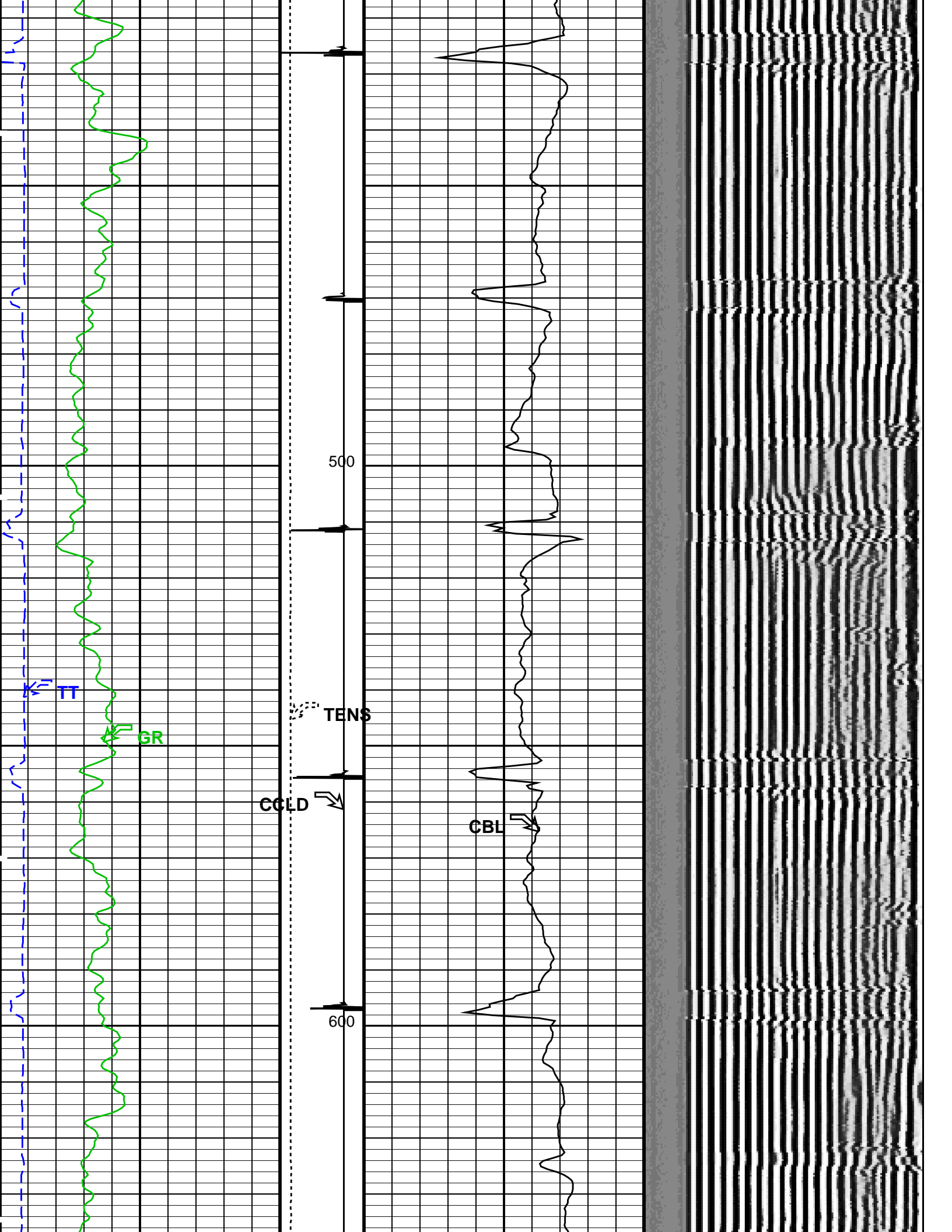
PIP SUMMARY

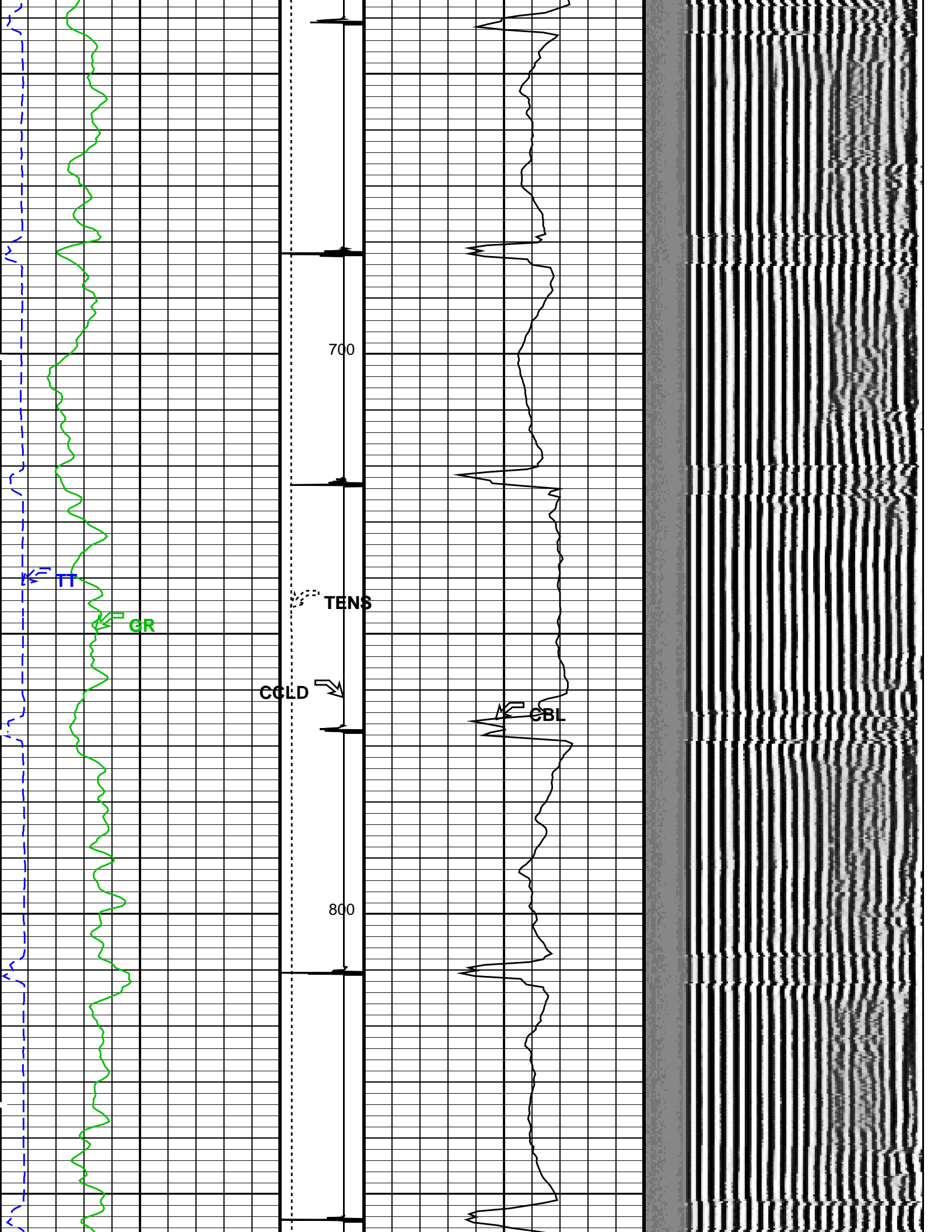
☒ Time Mark Every 60 S

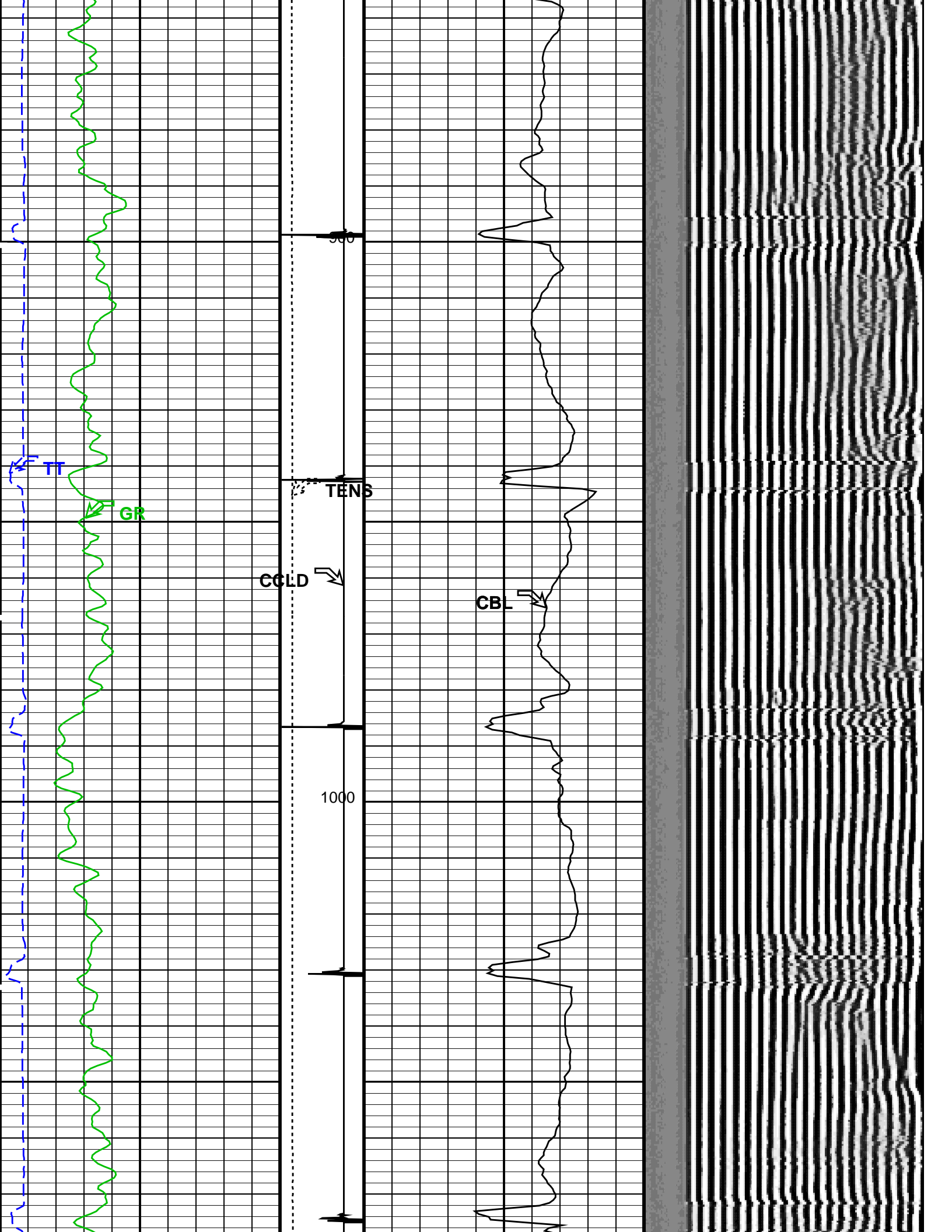


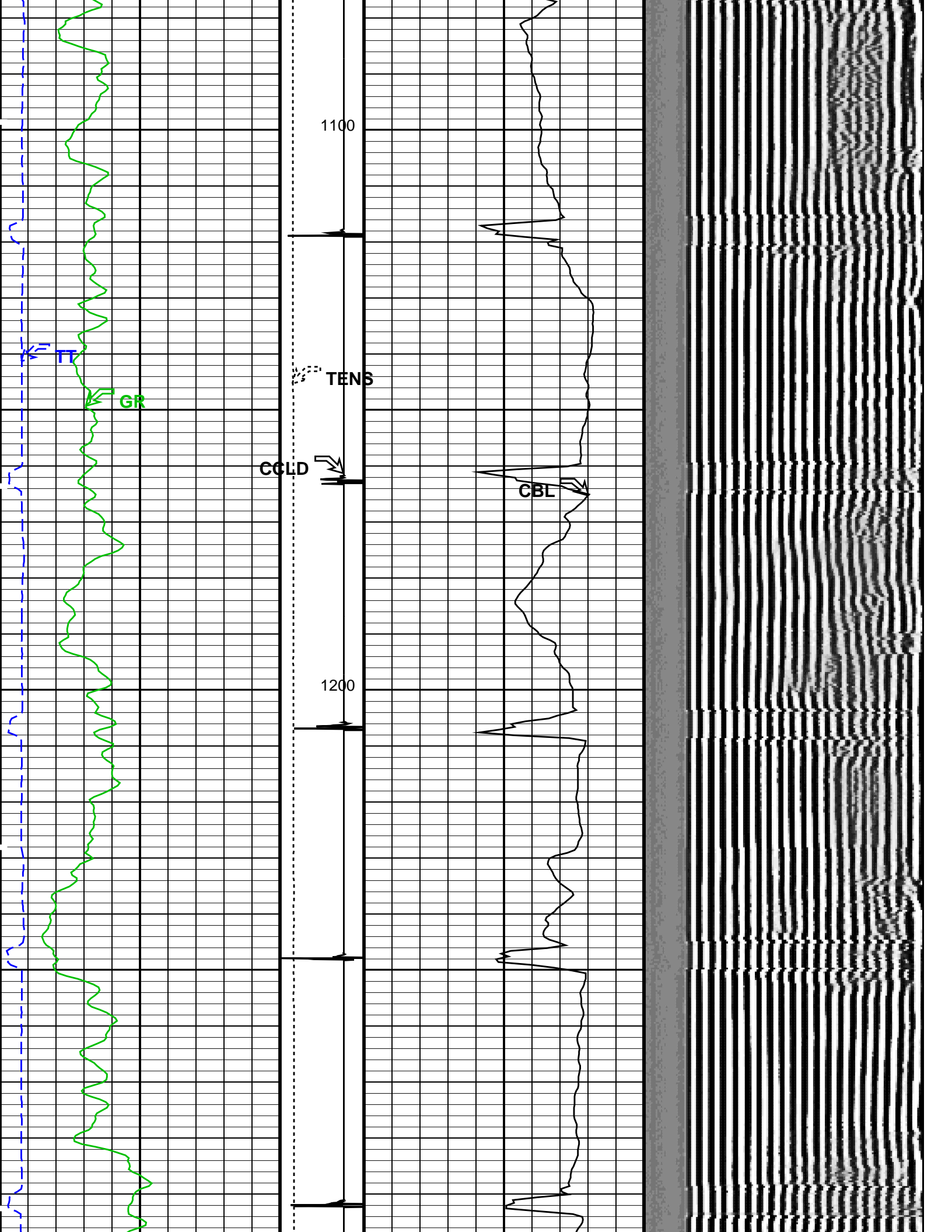


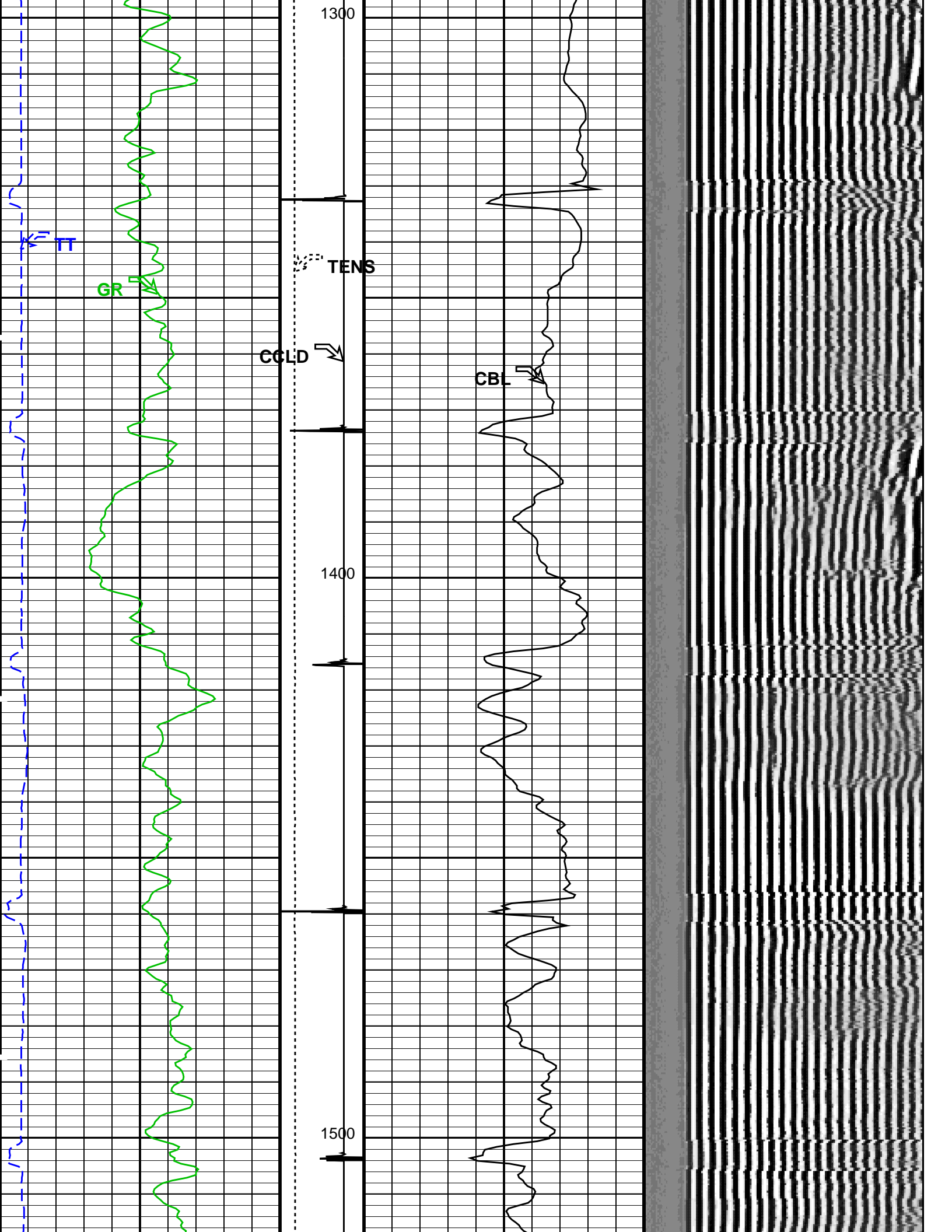


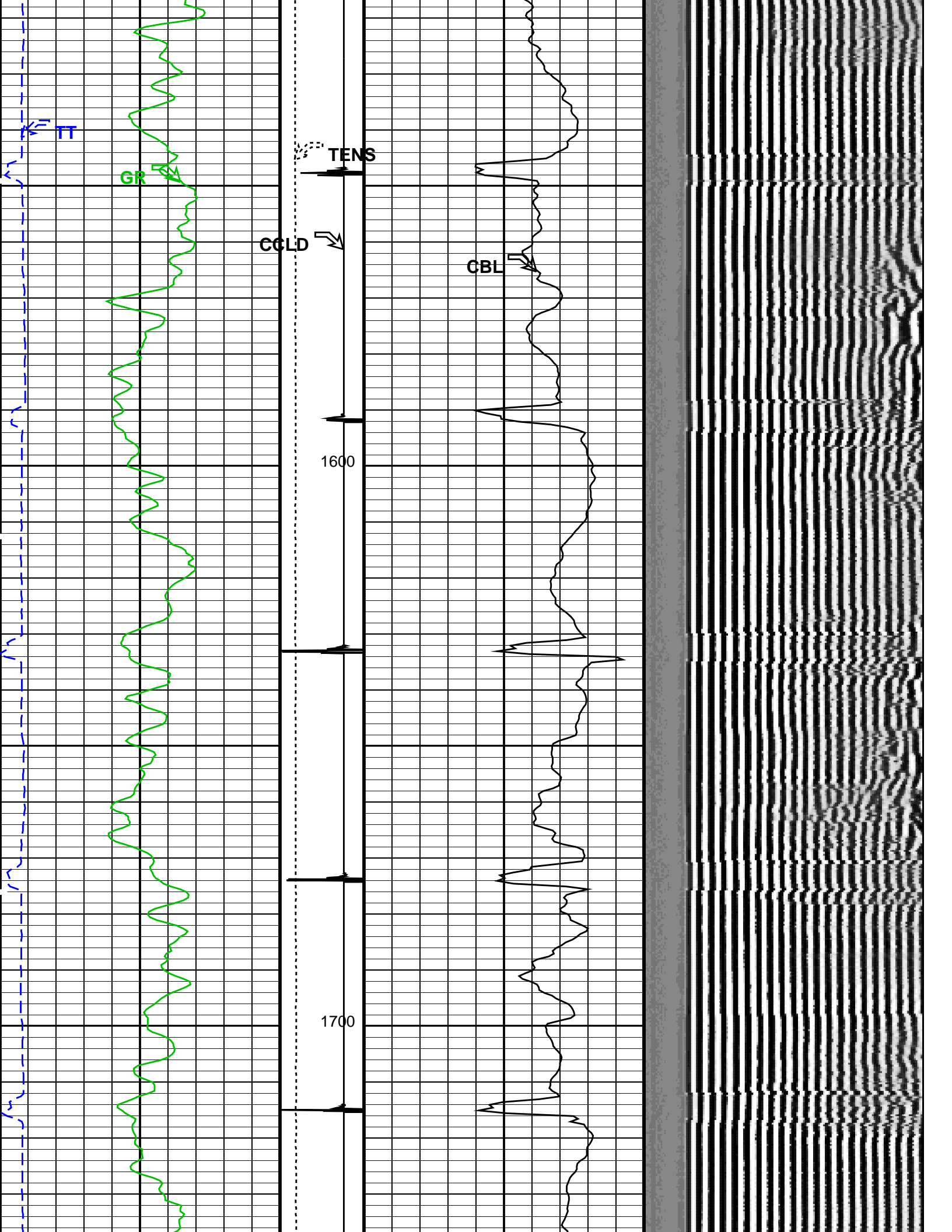


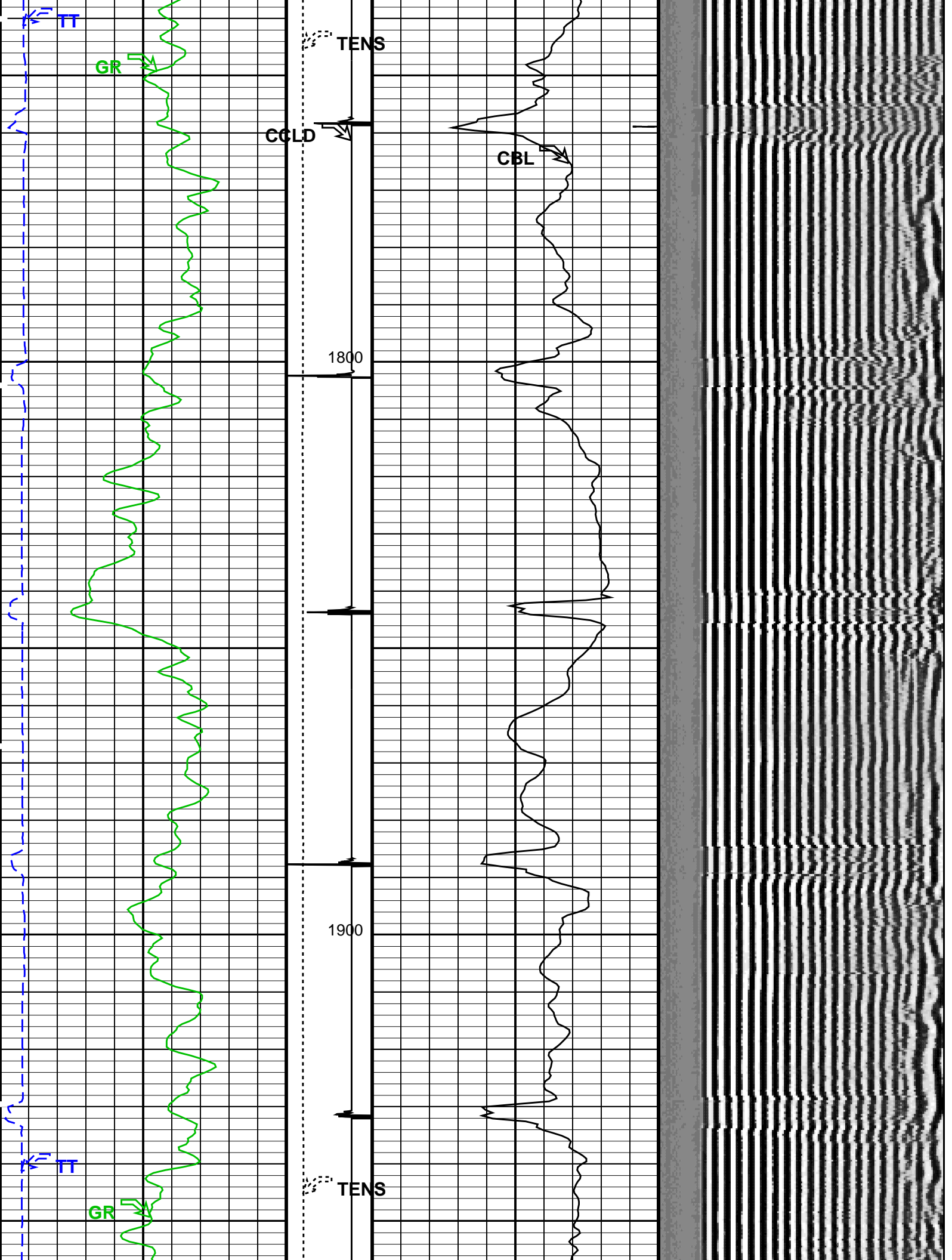


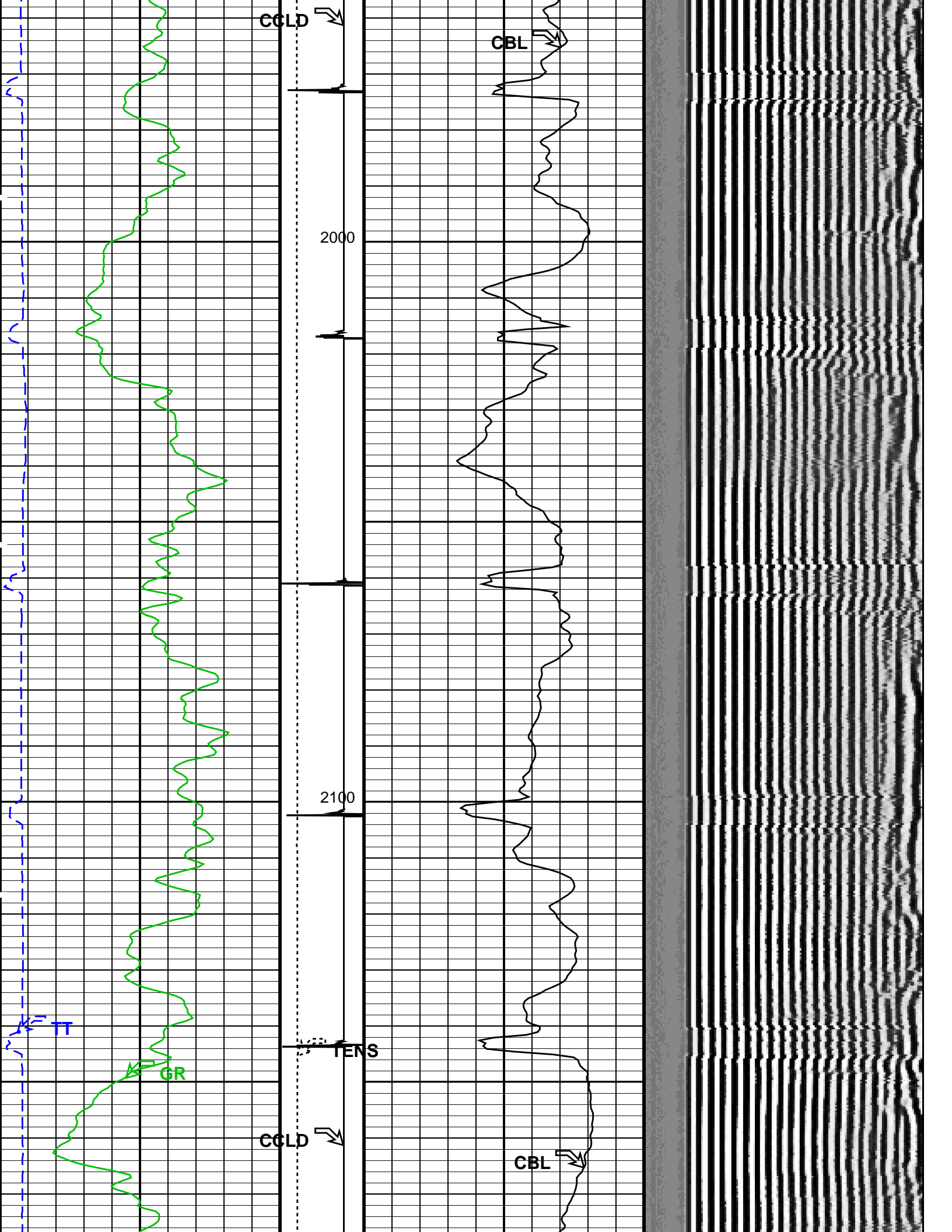


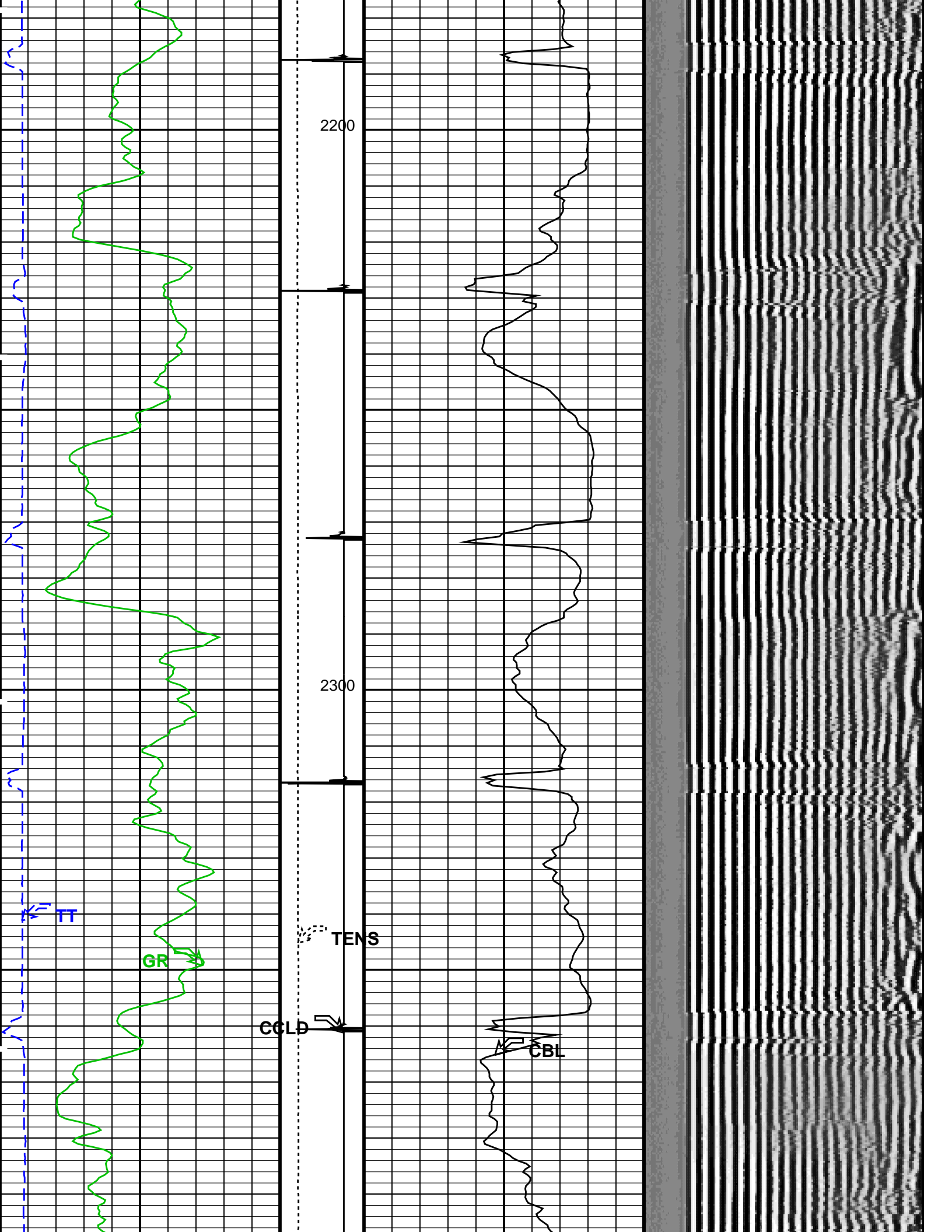


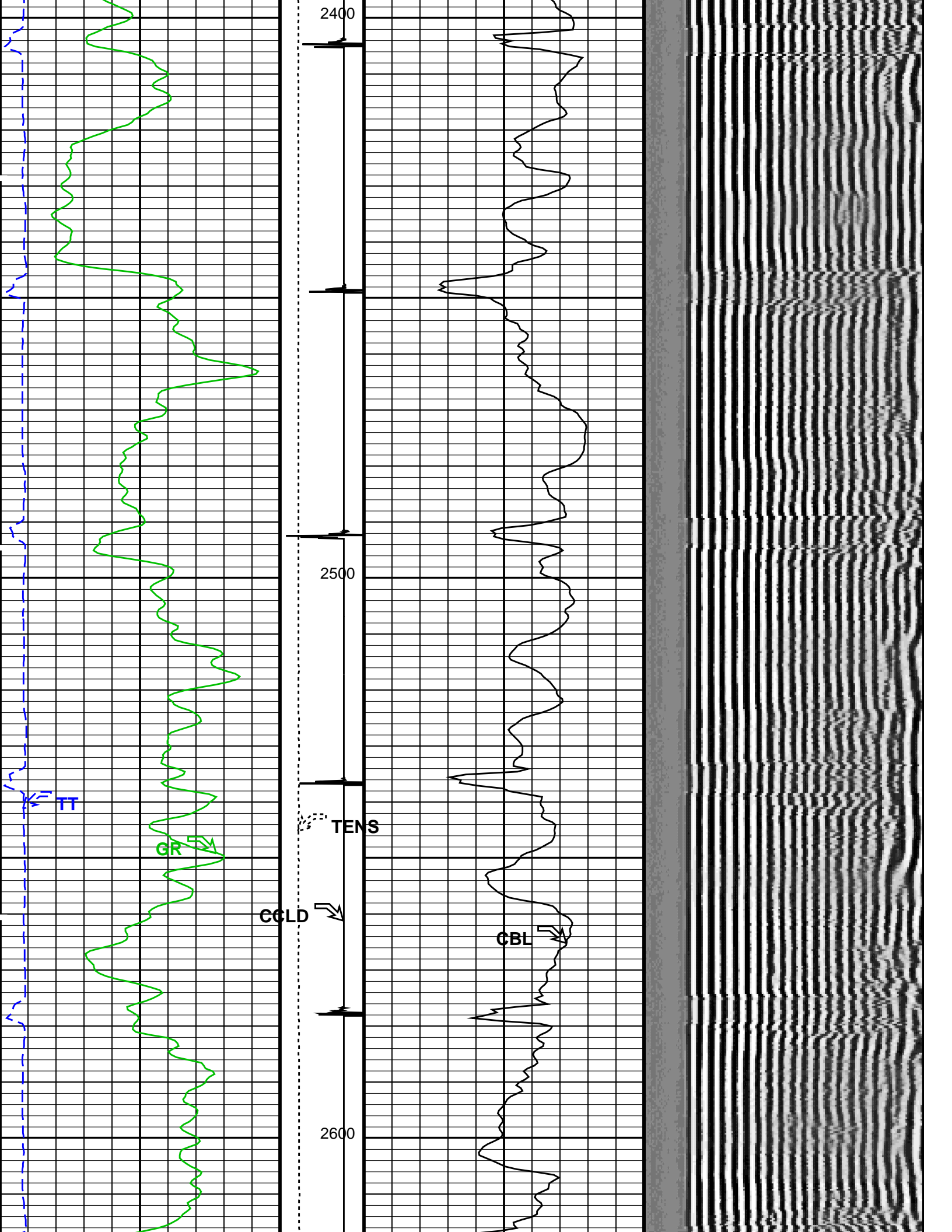


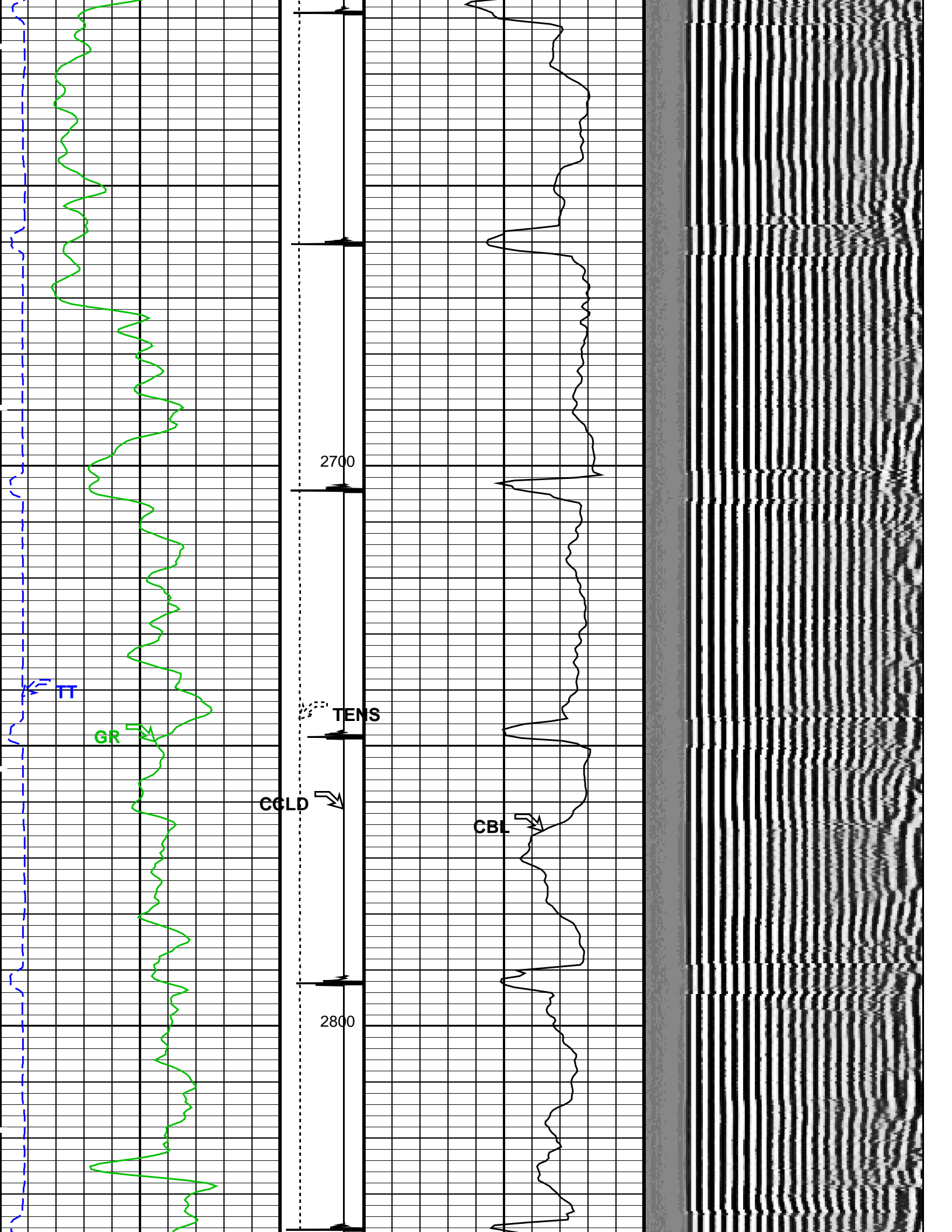


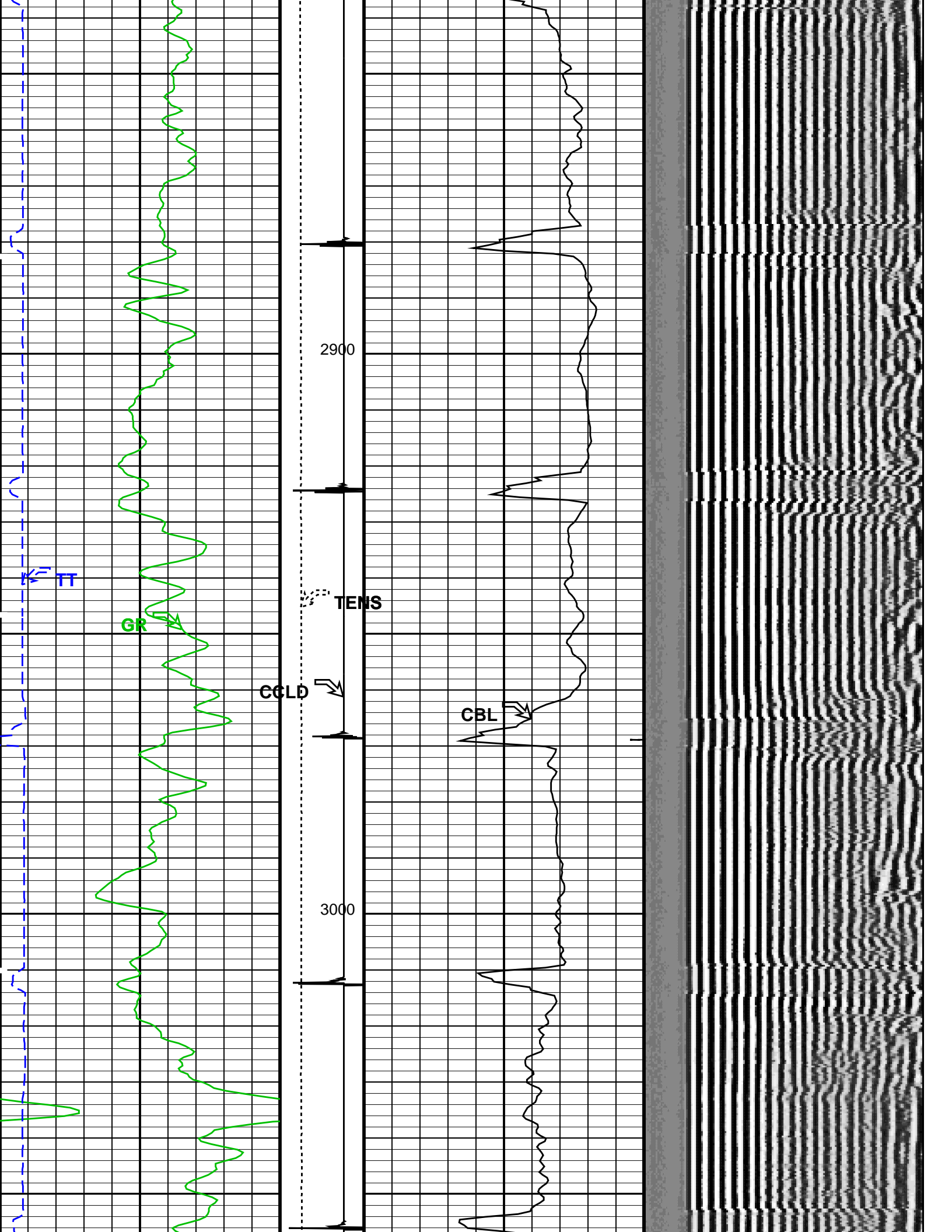


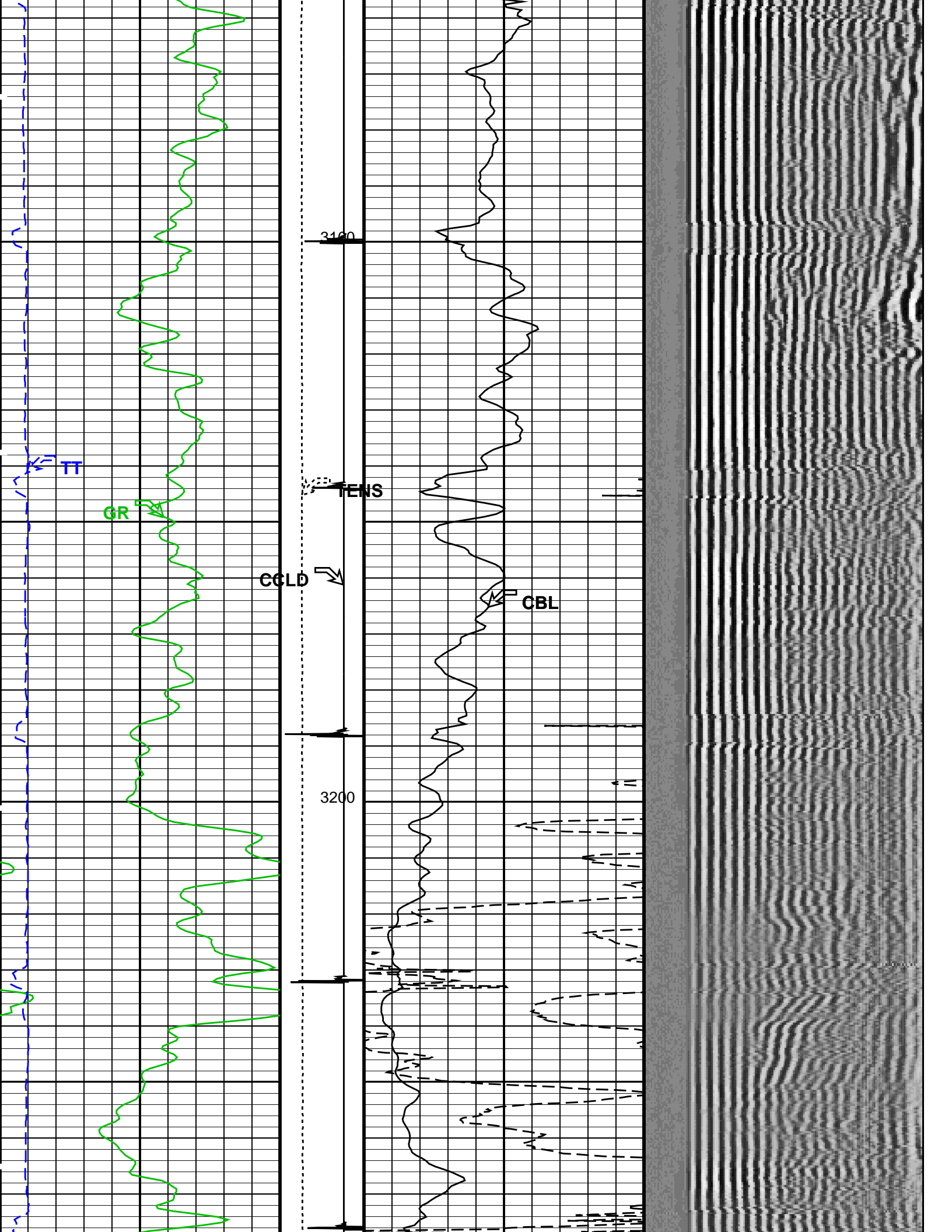


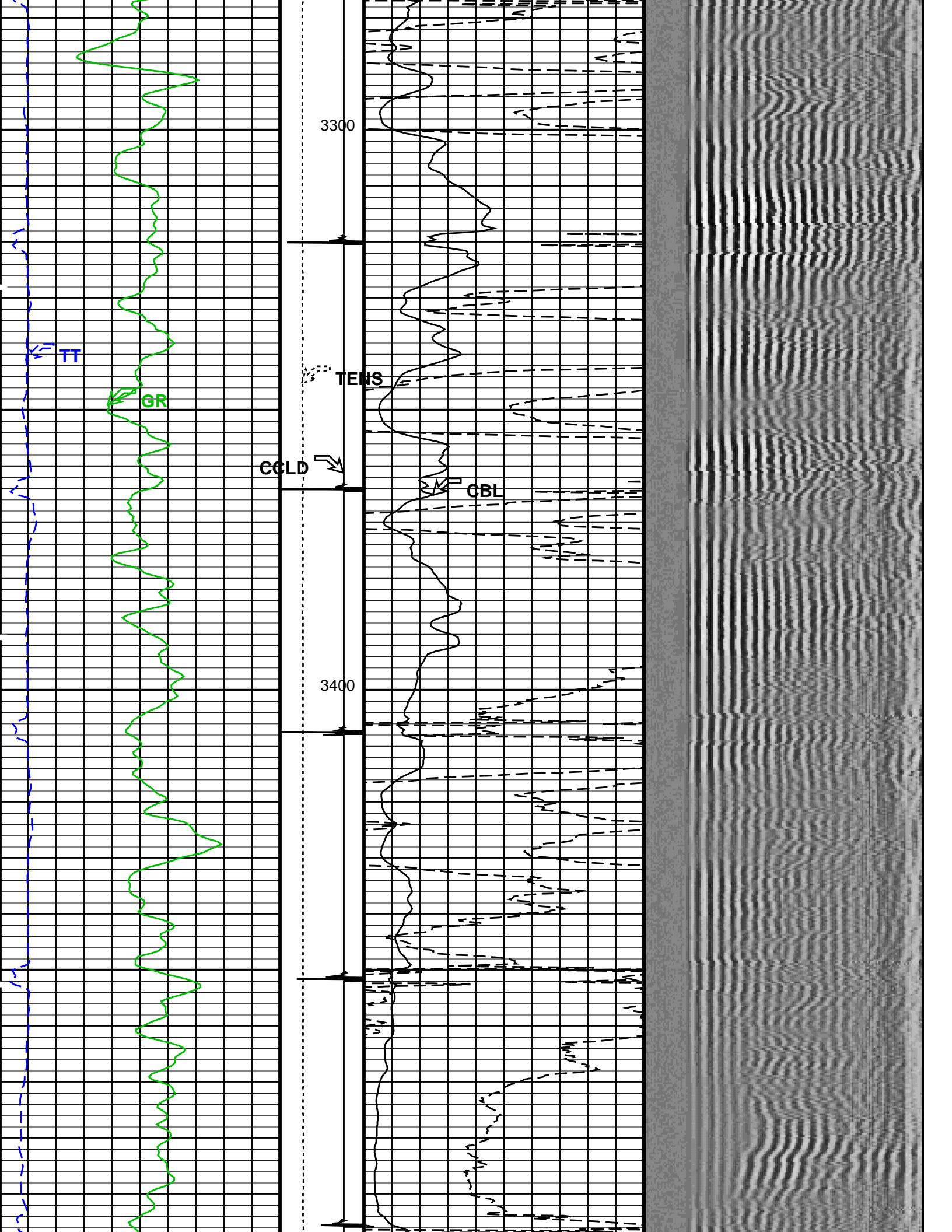


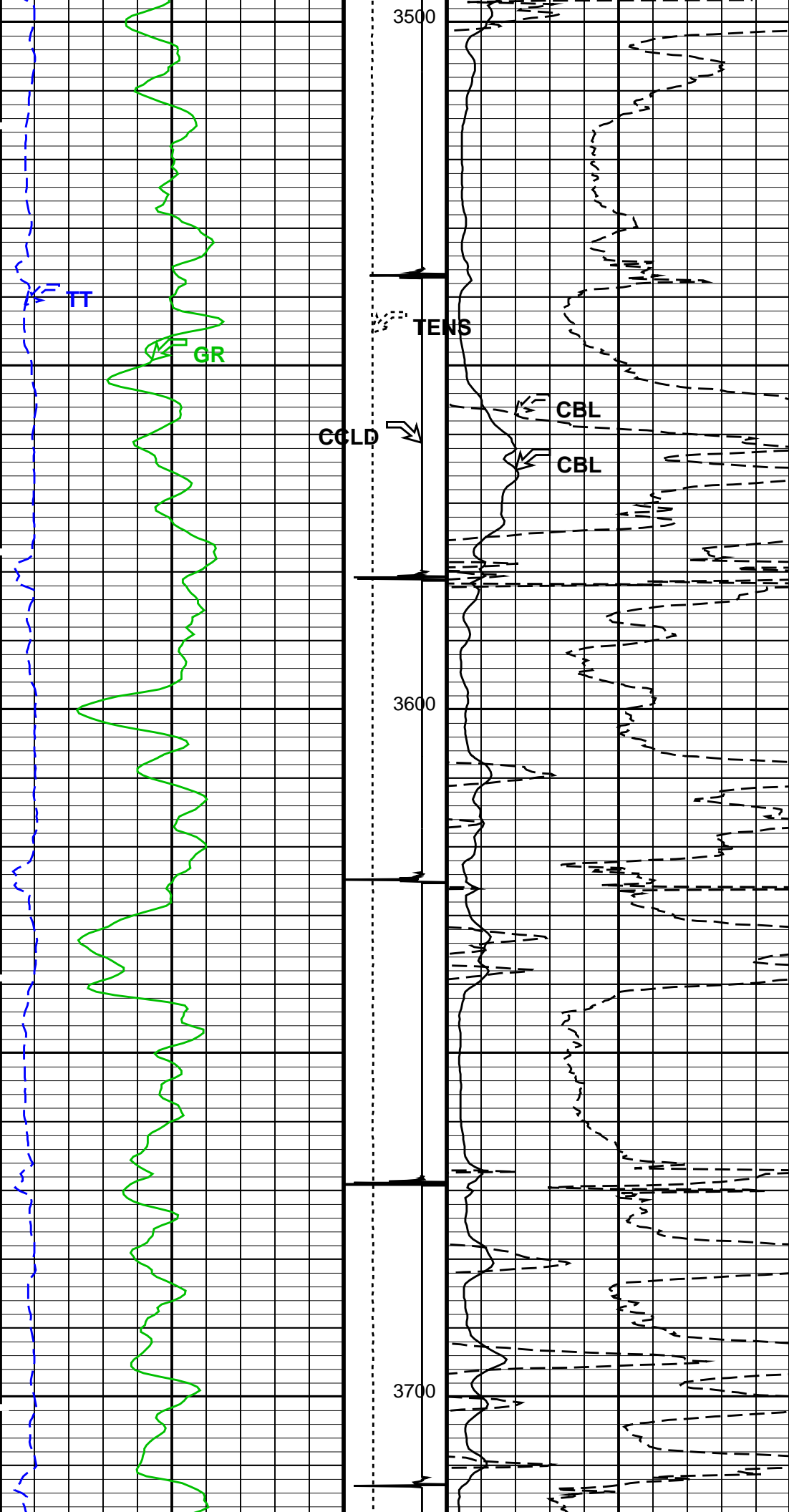


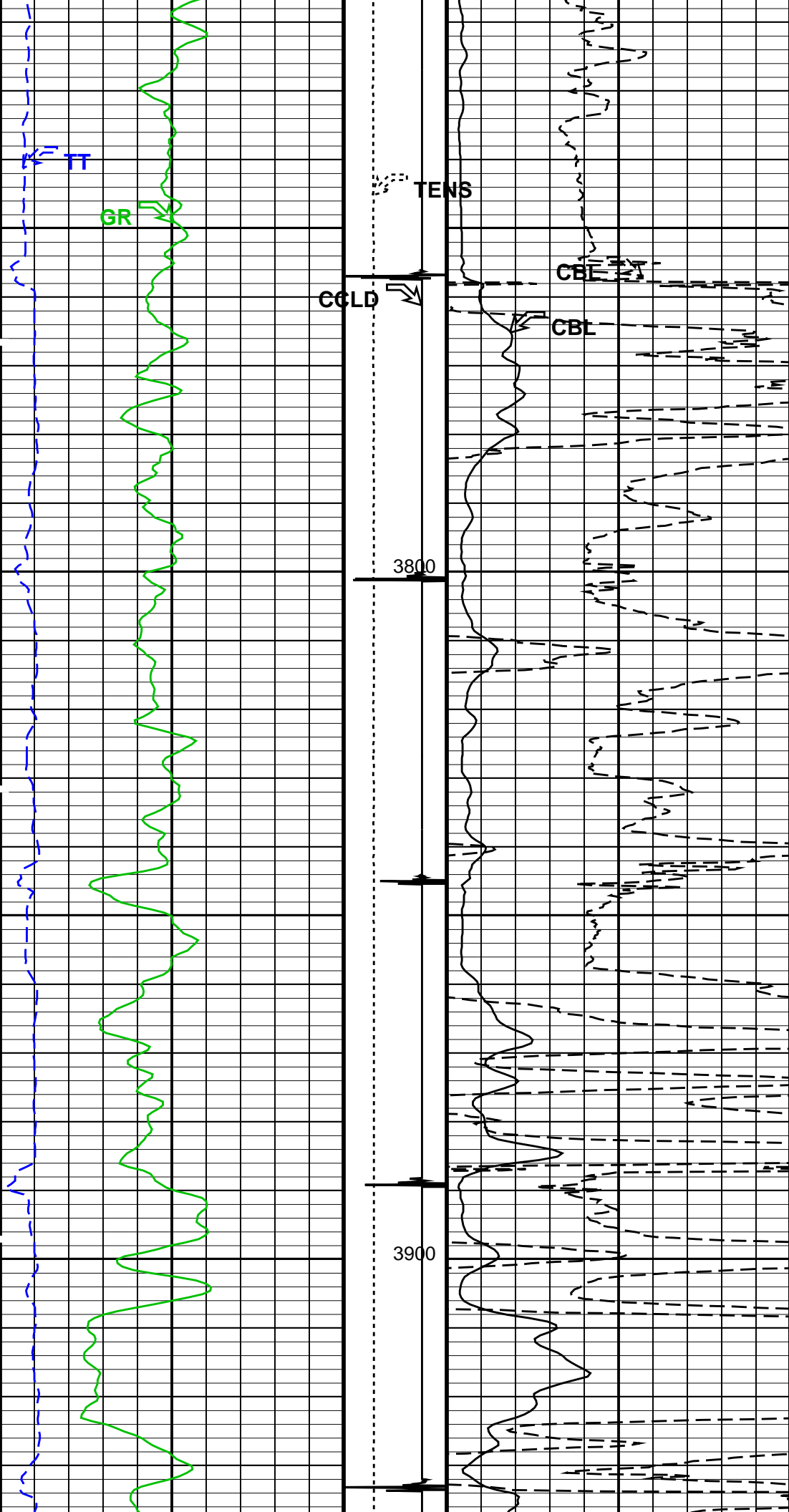


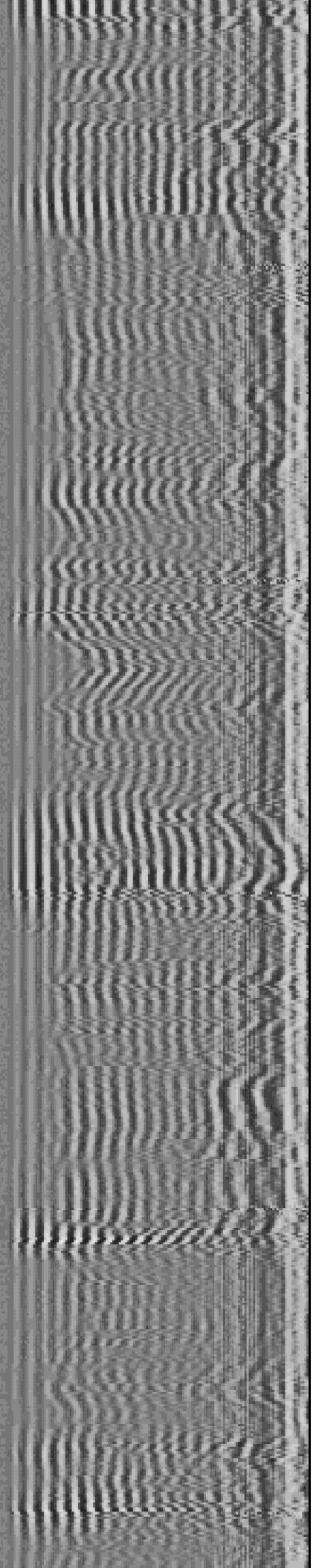
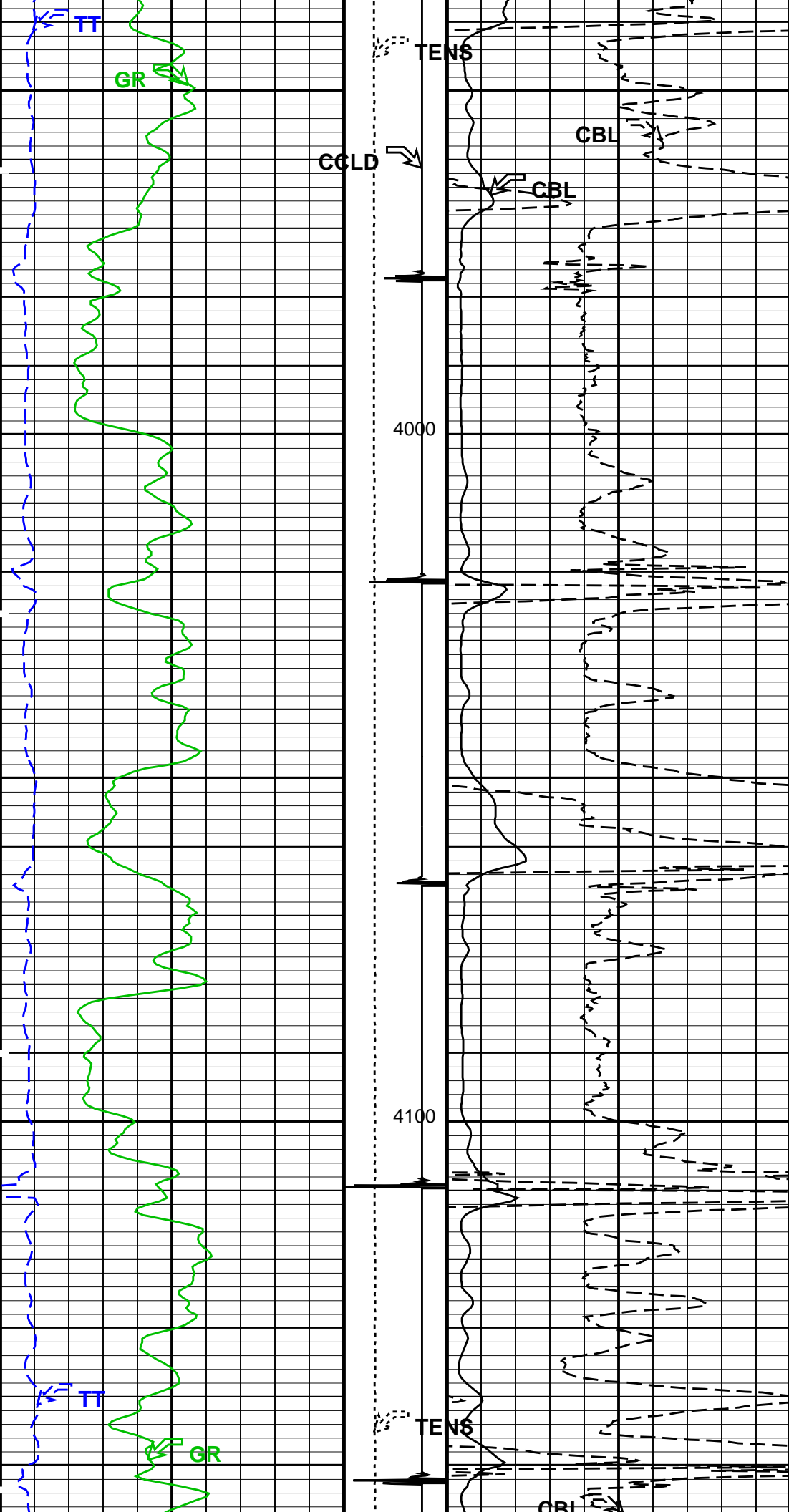


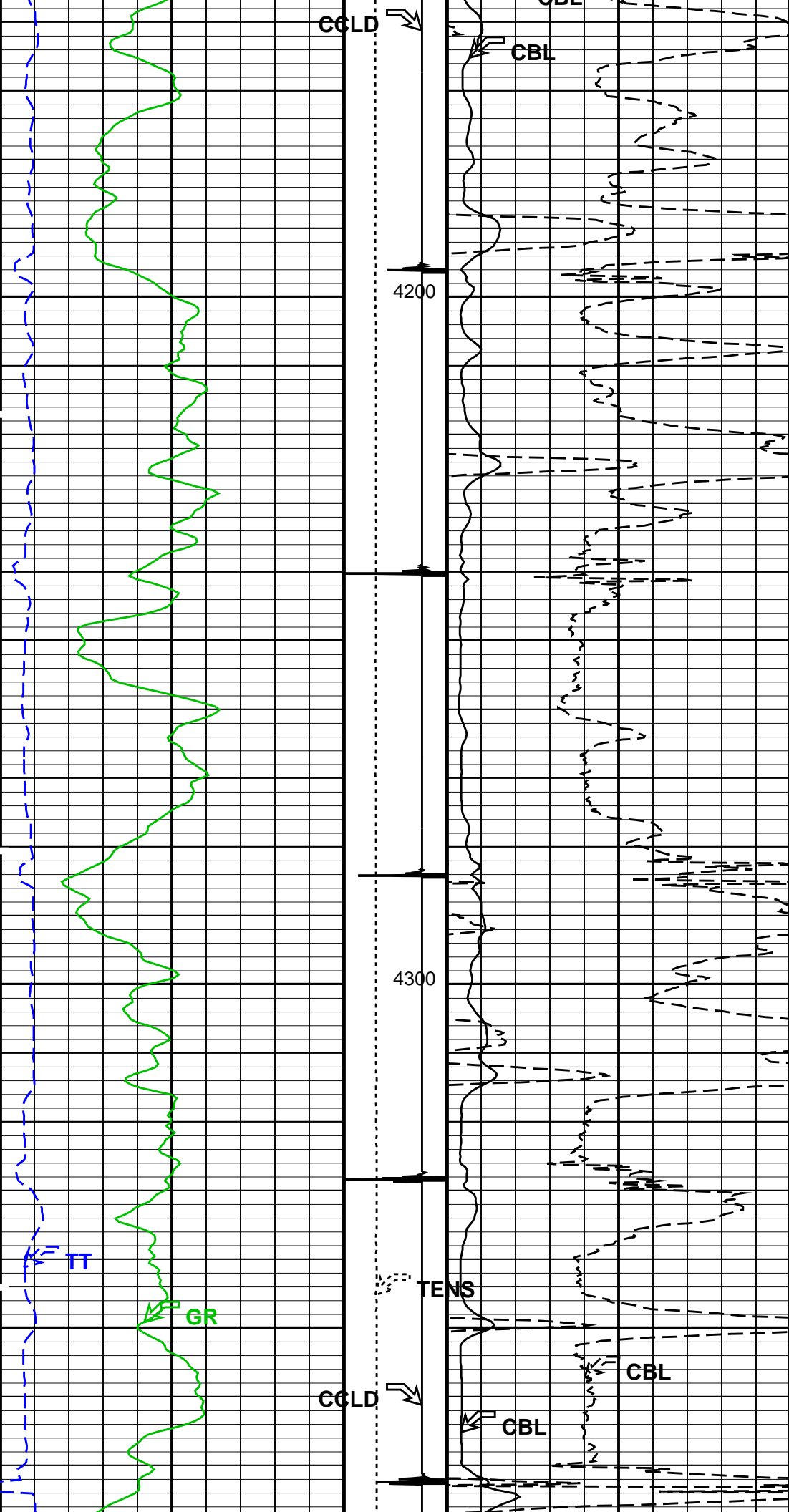


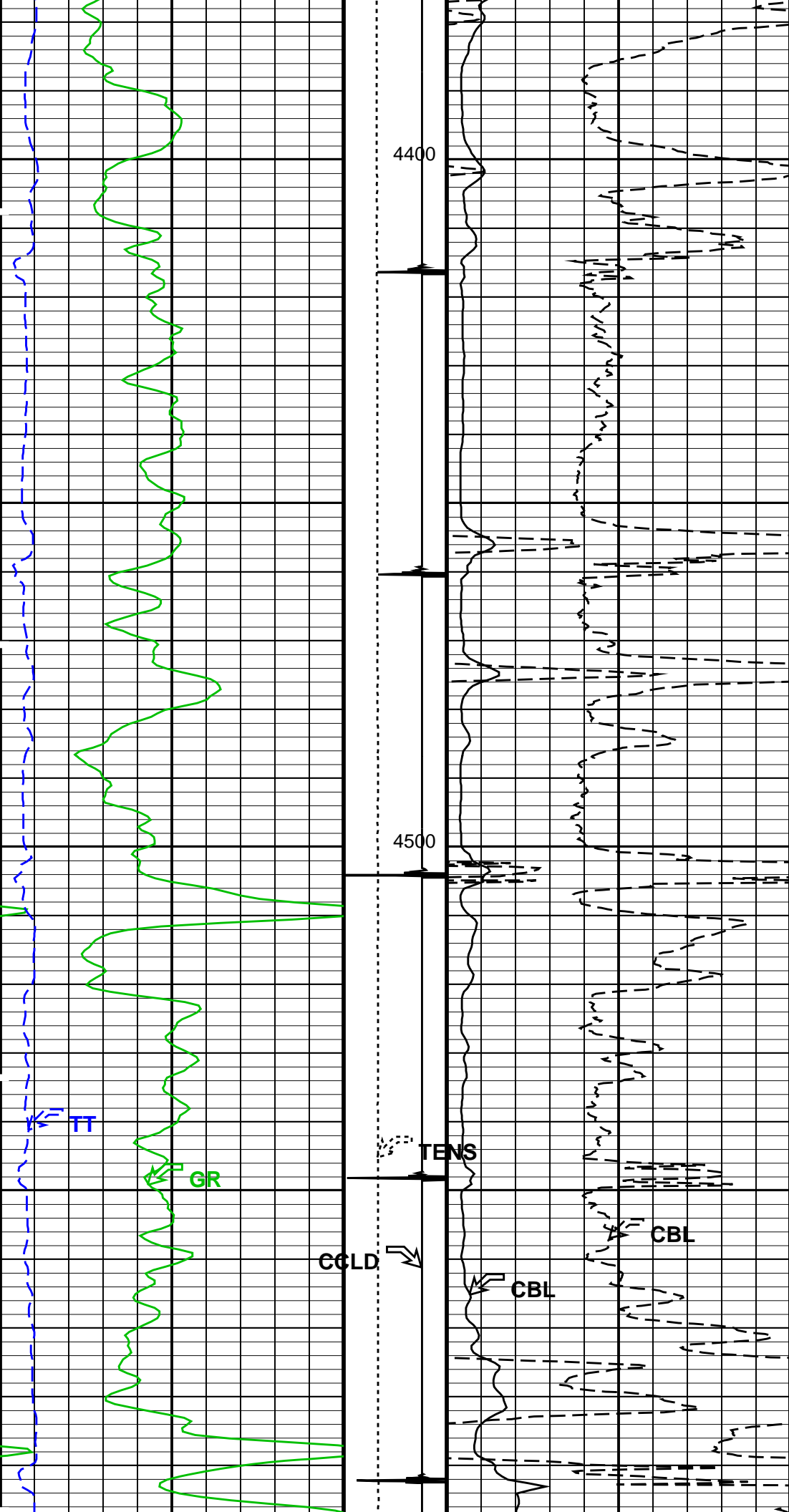


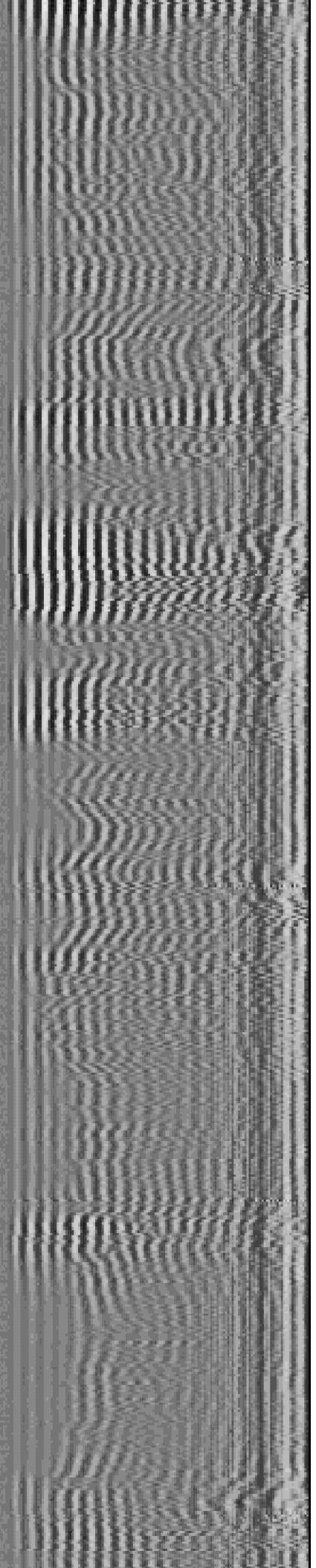
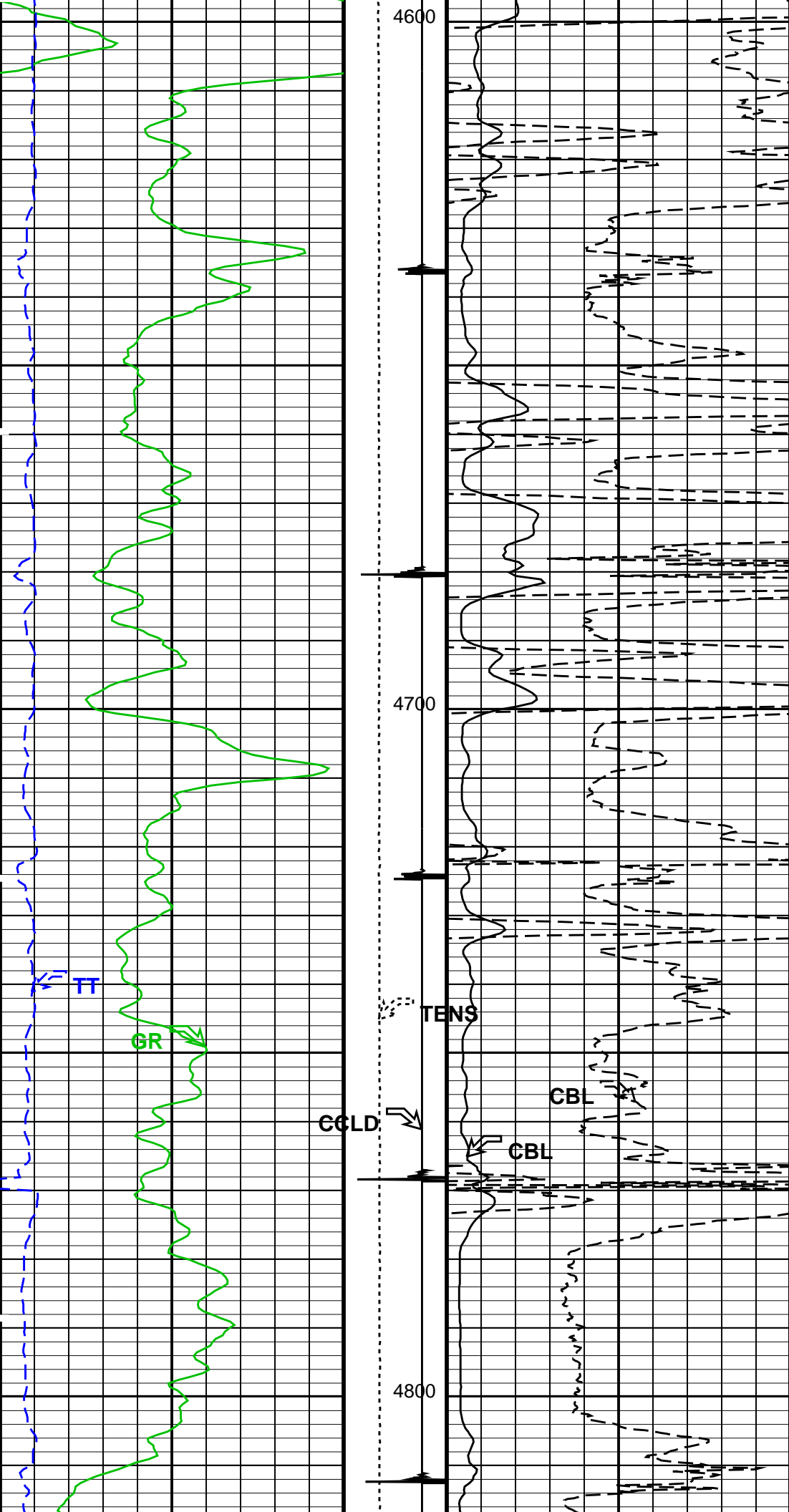


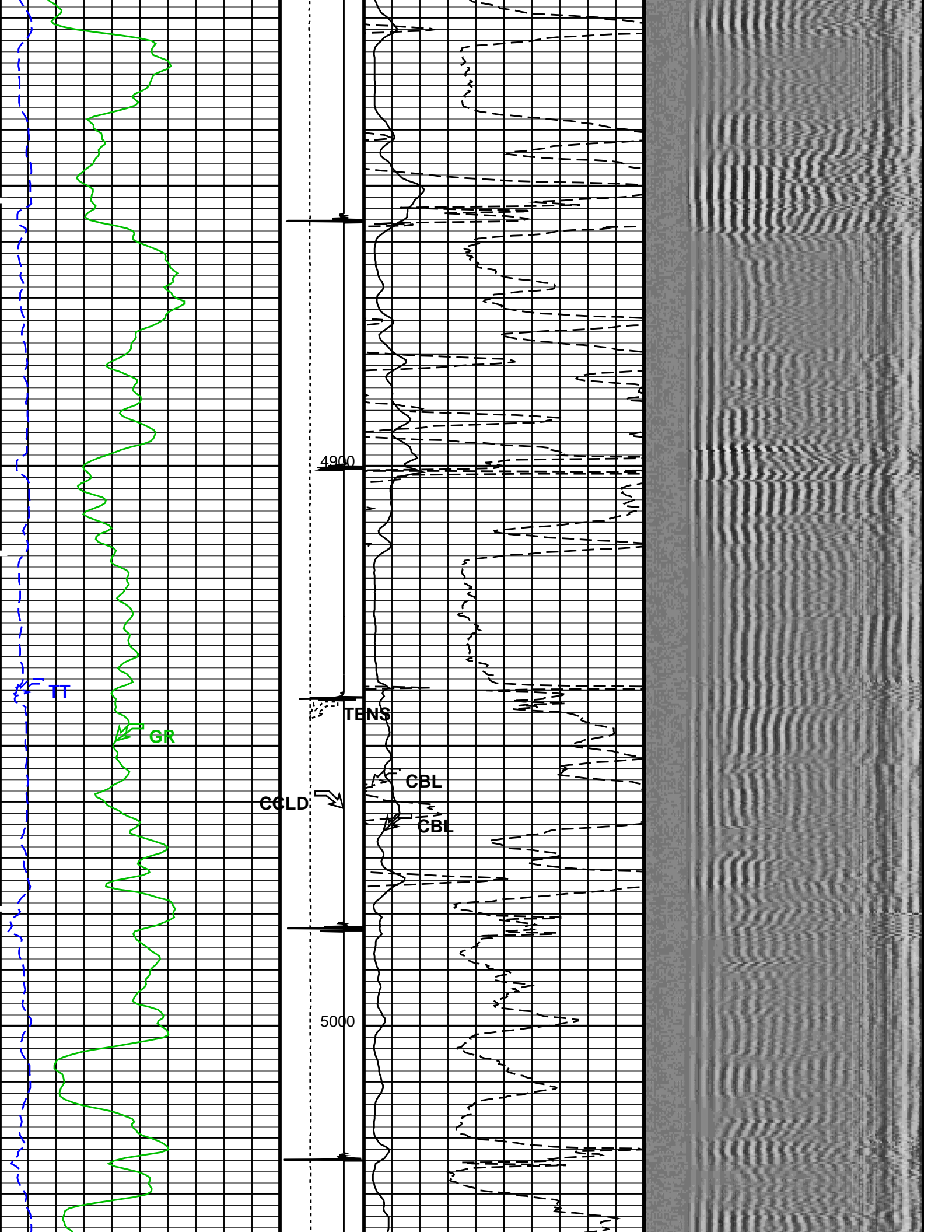


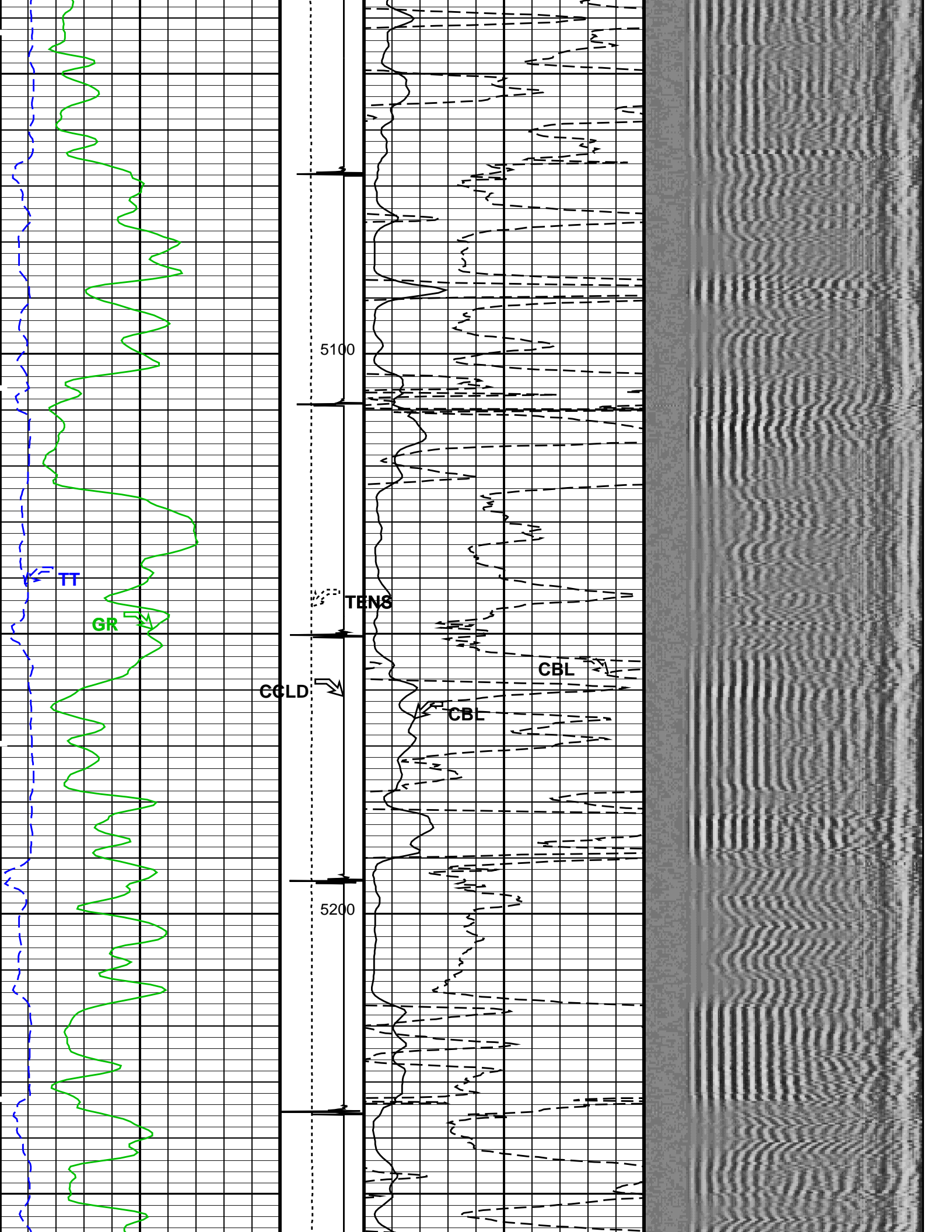


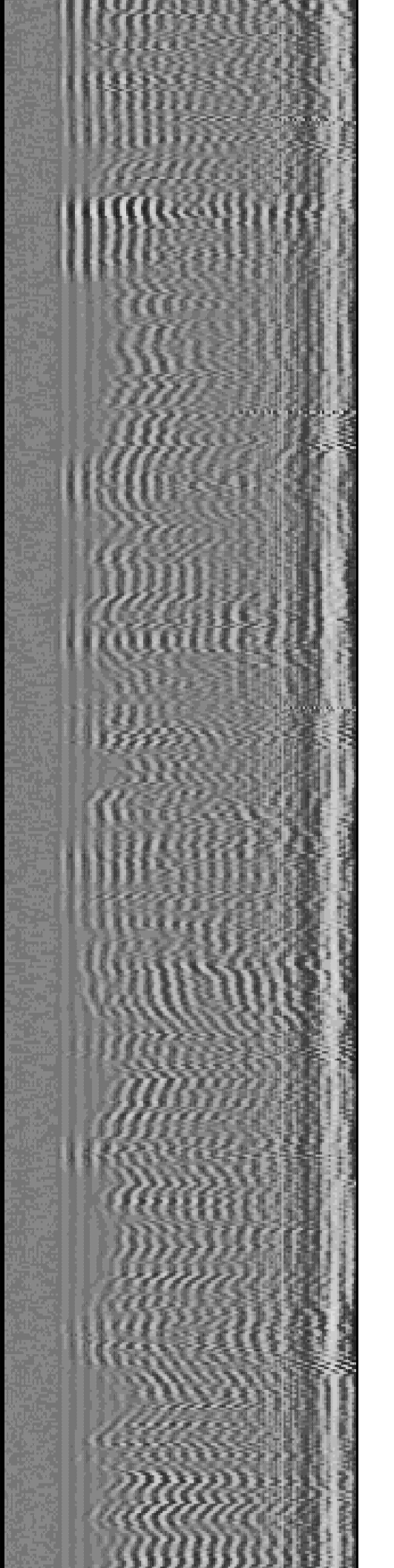
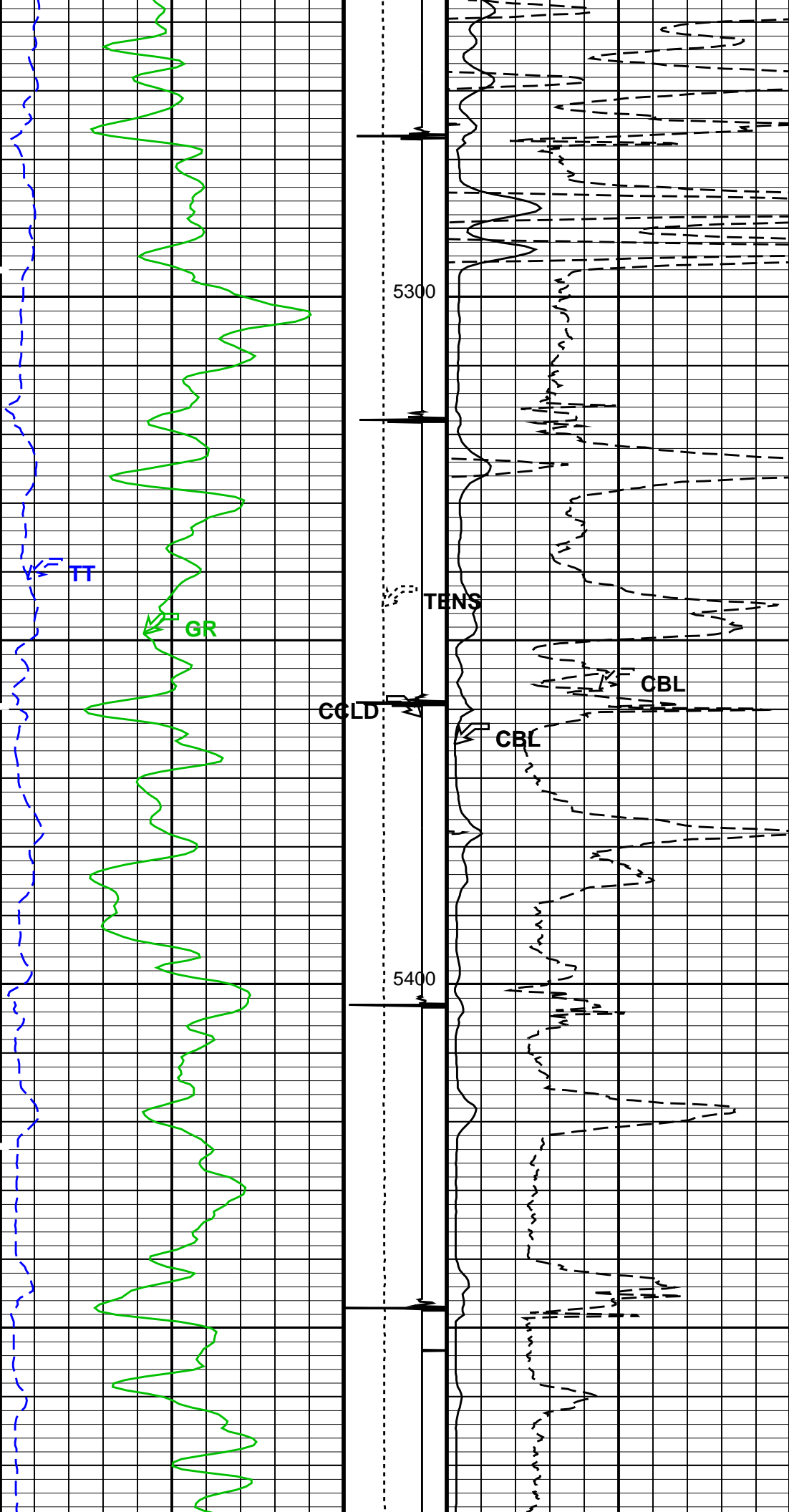


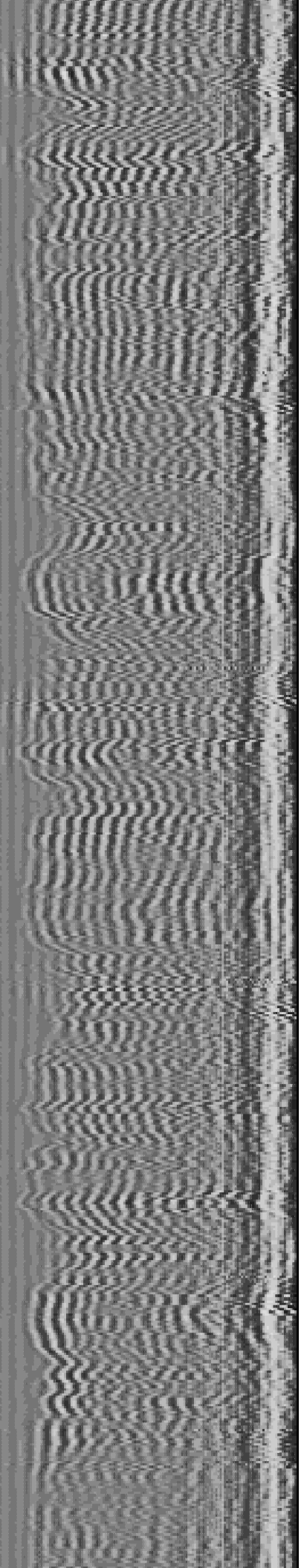
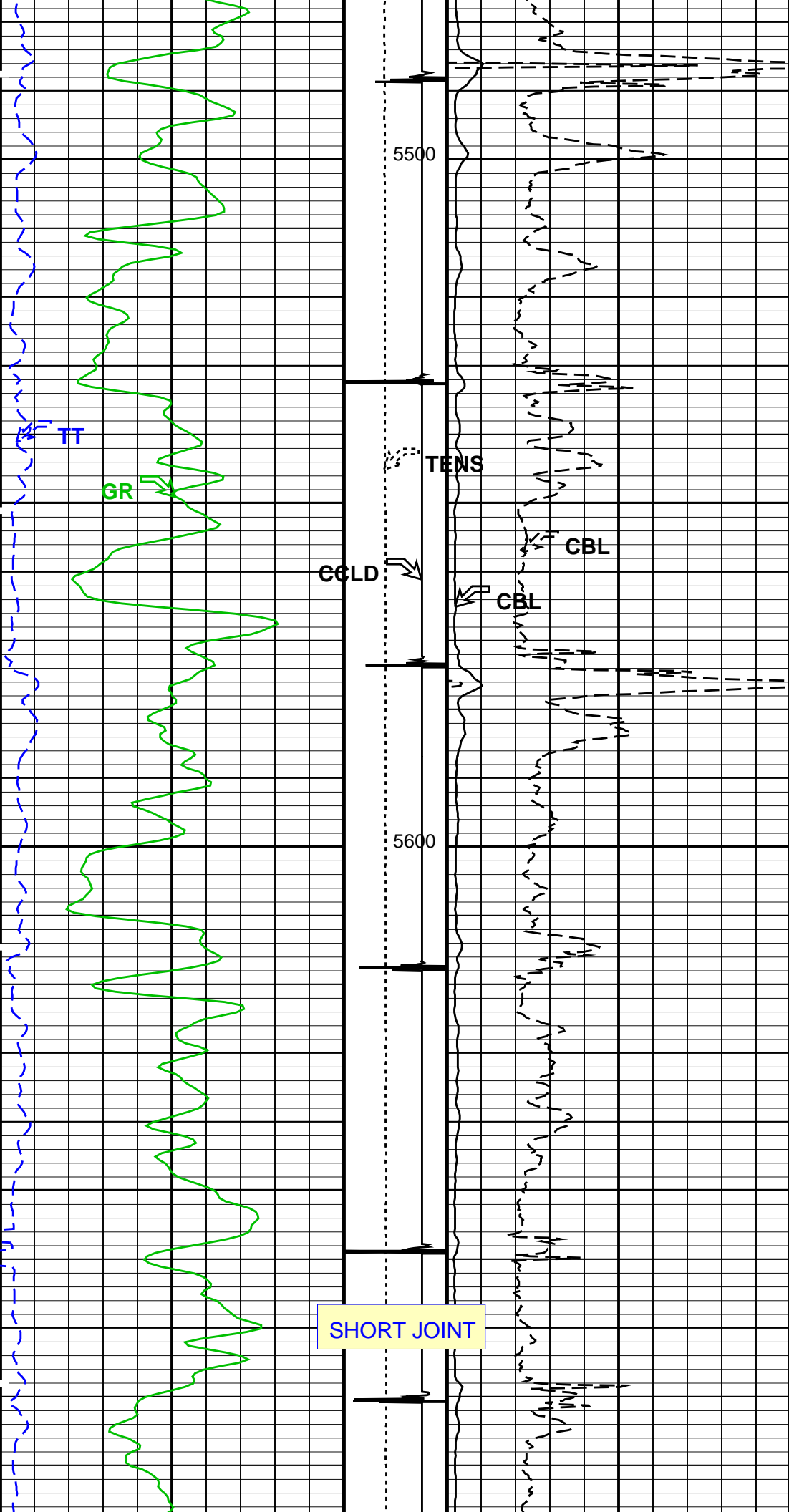


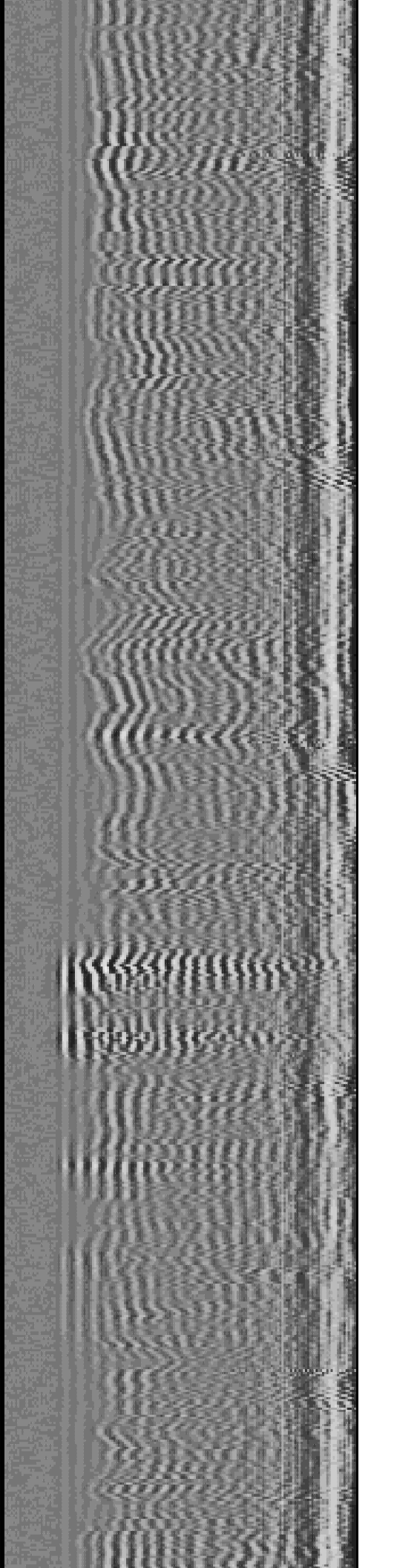
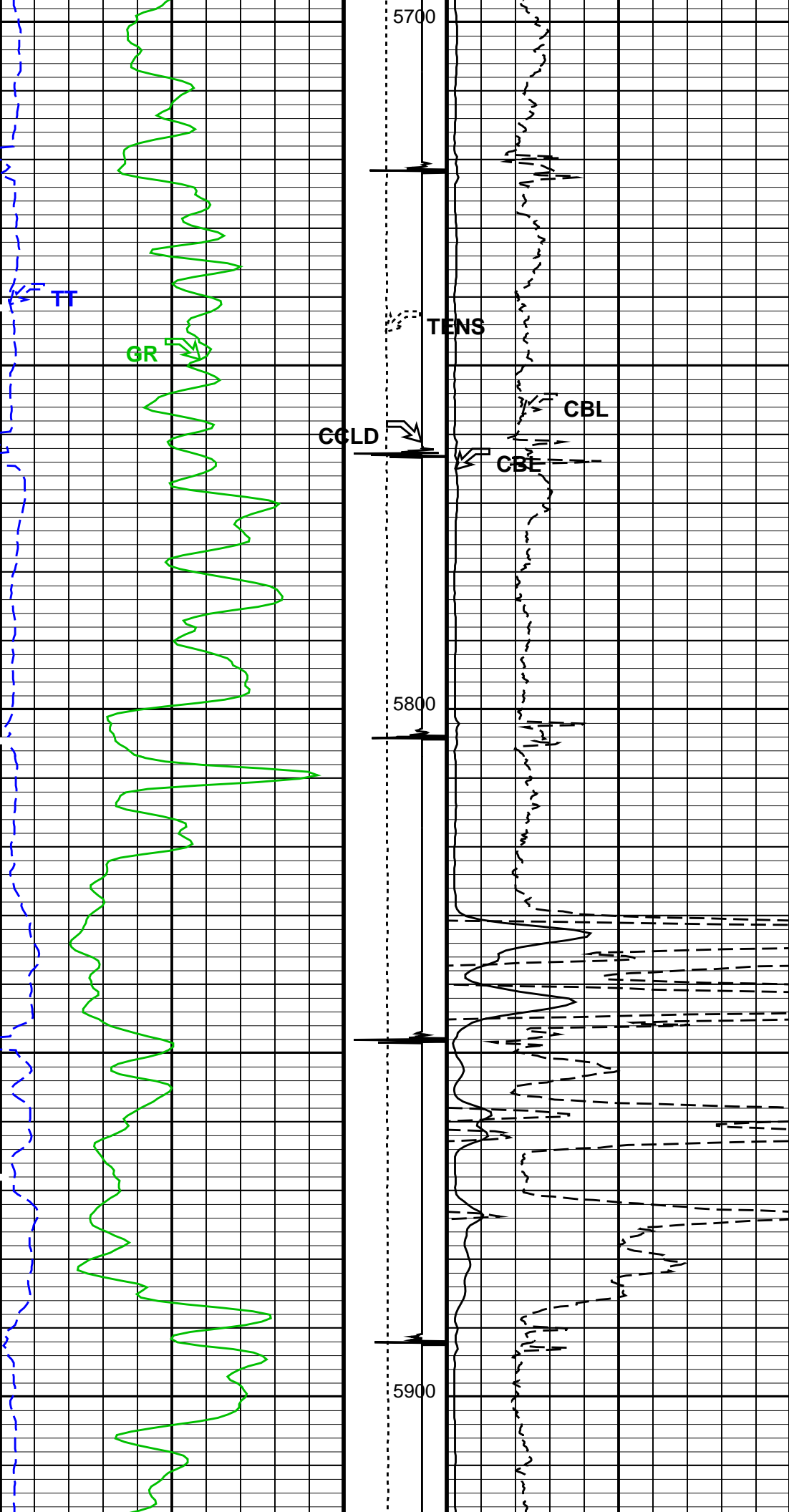


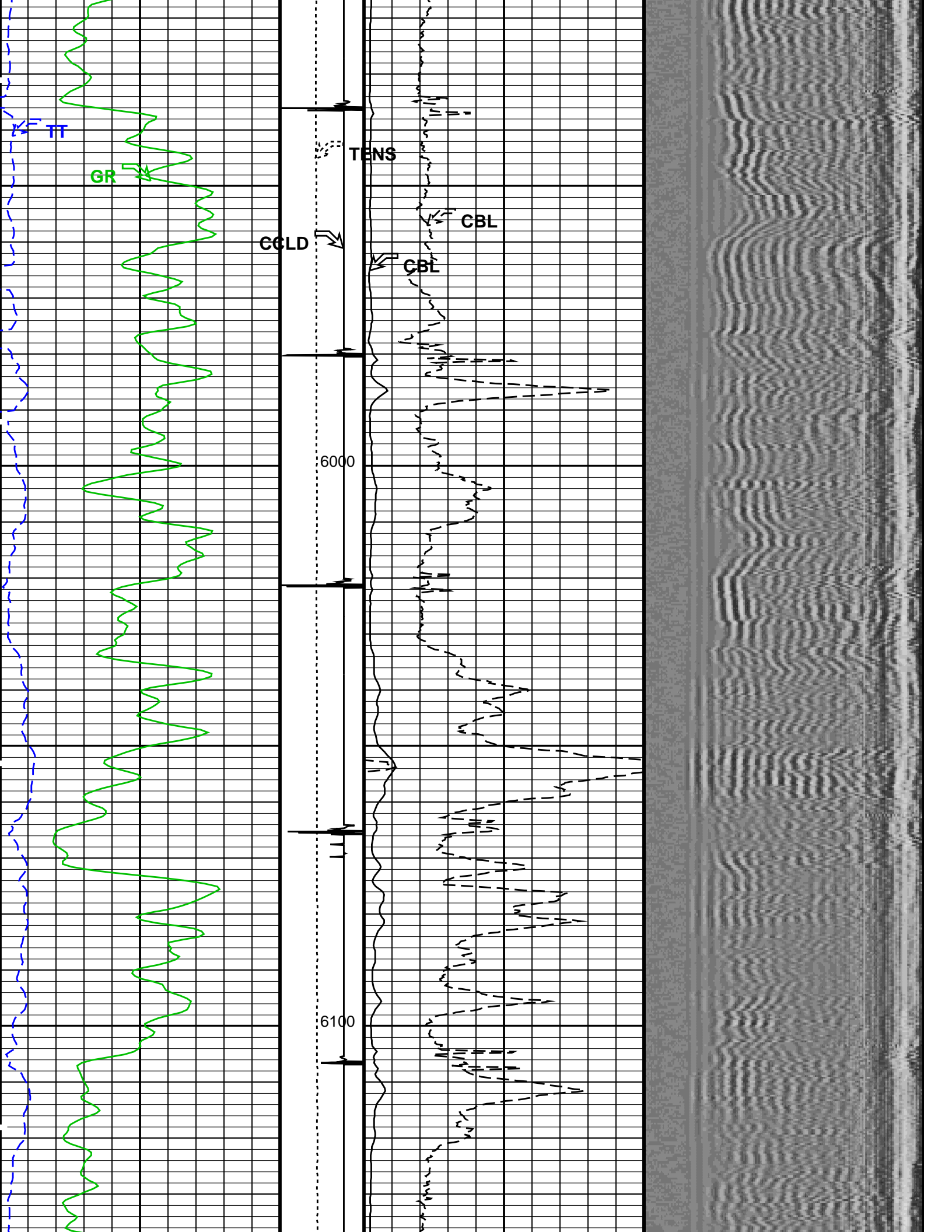


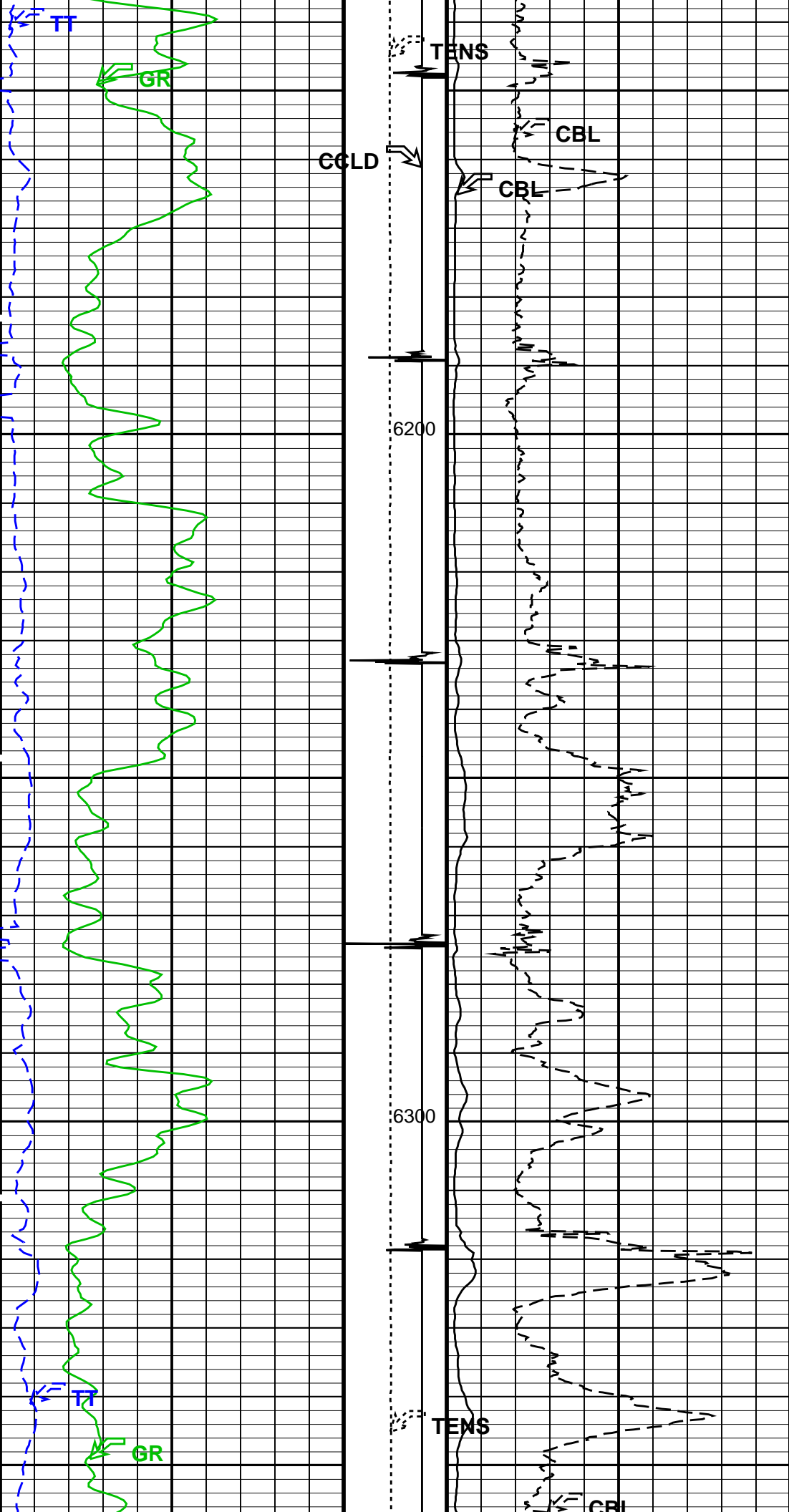


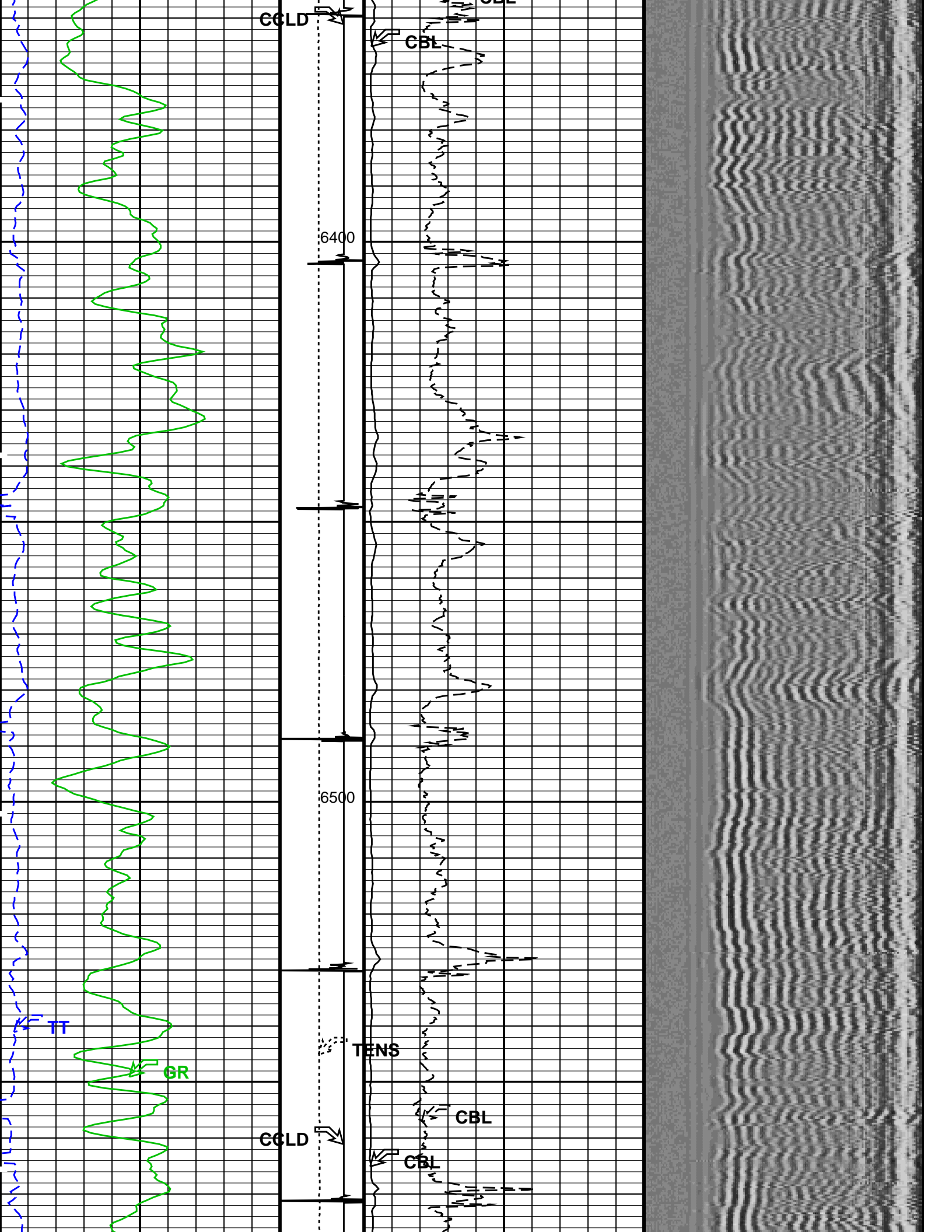


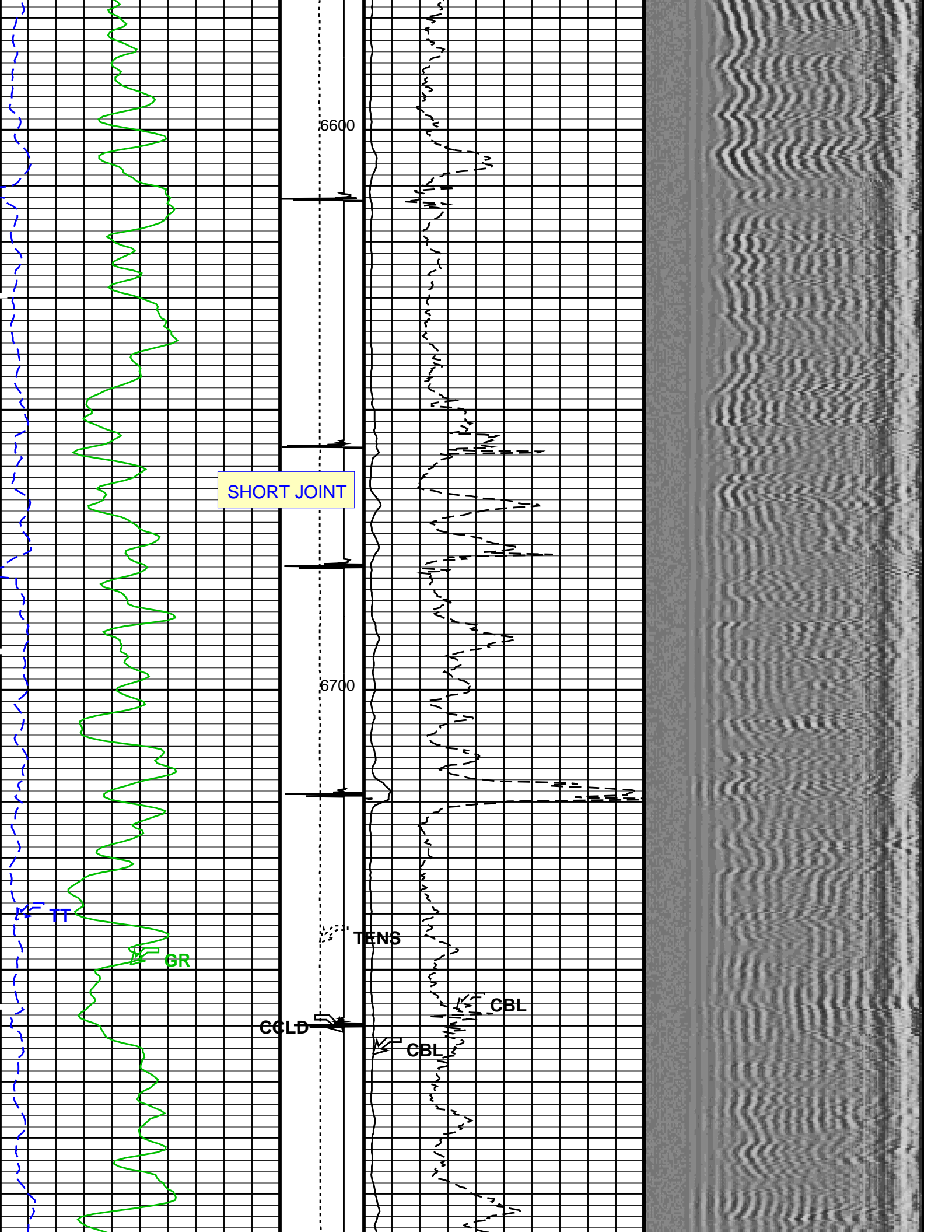


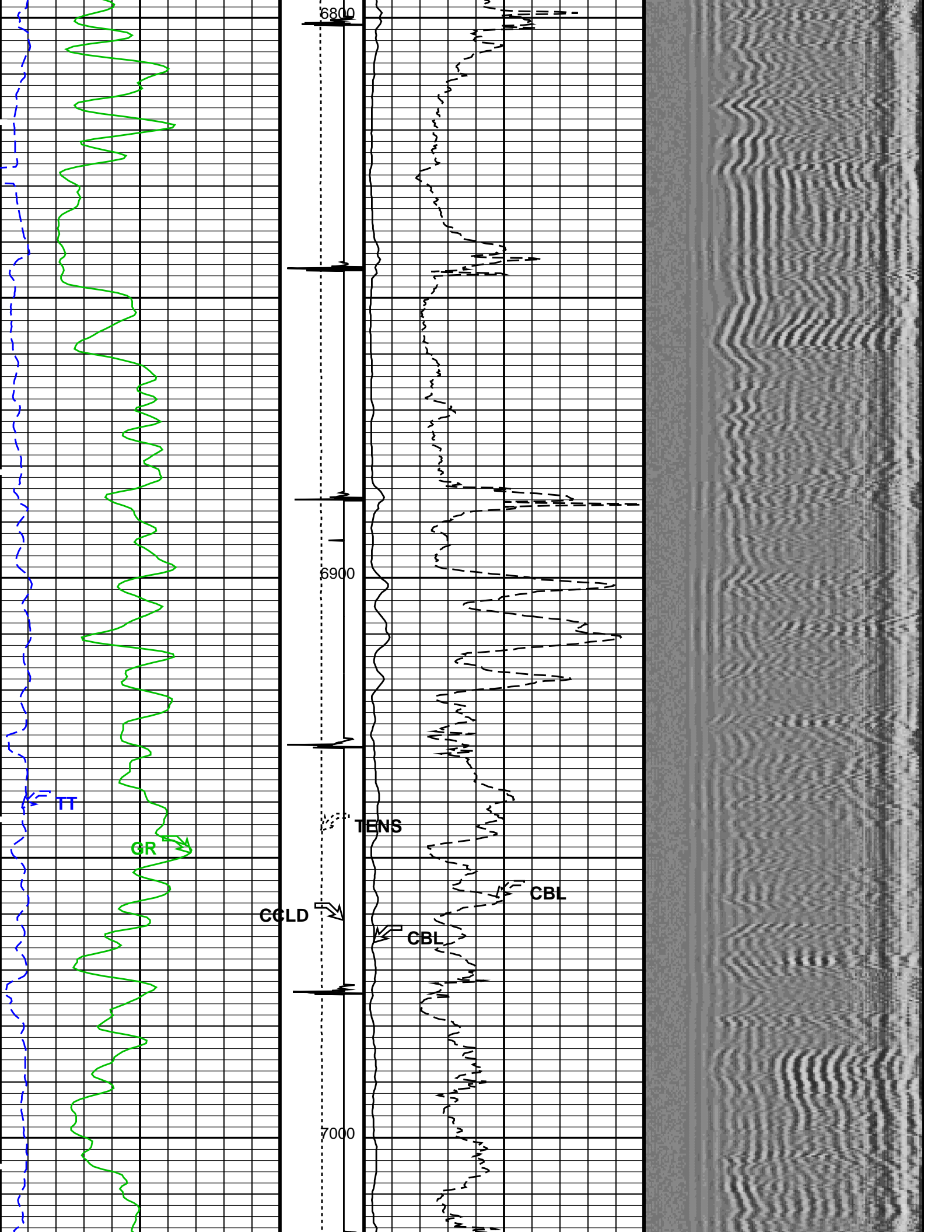


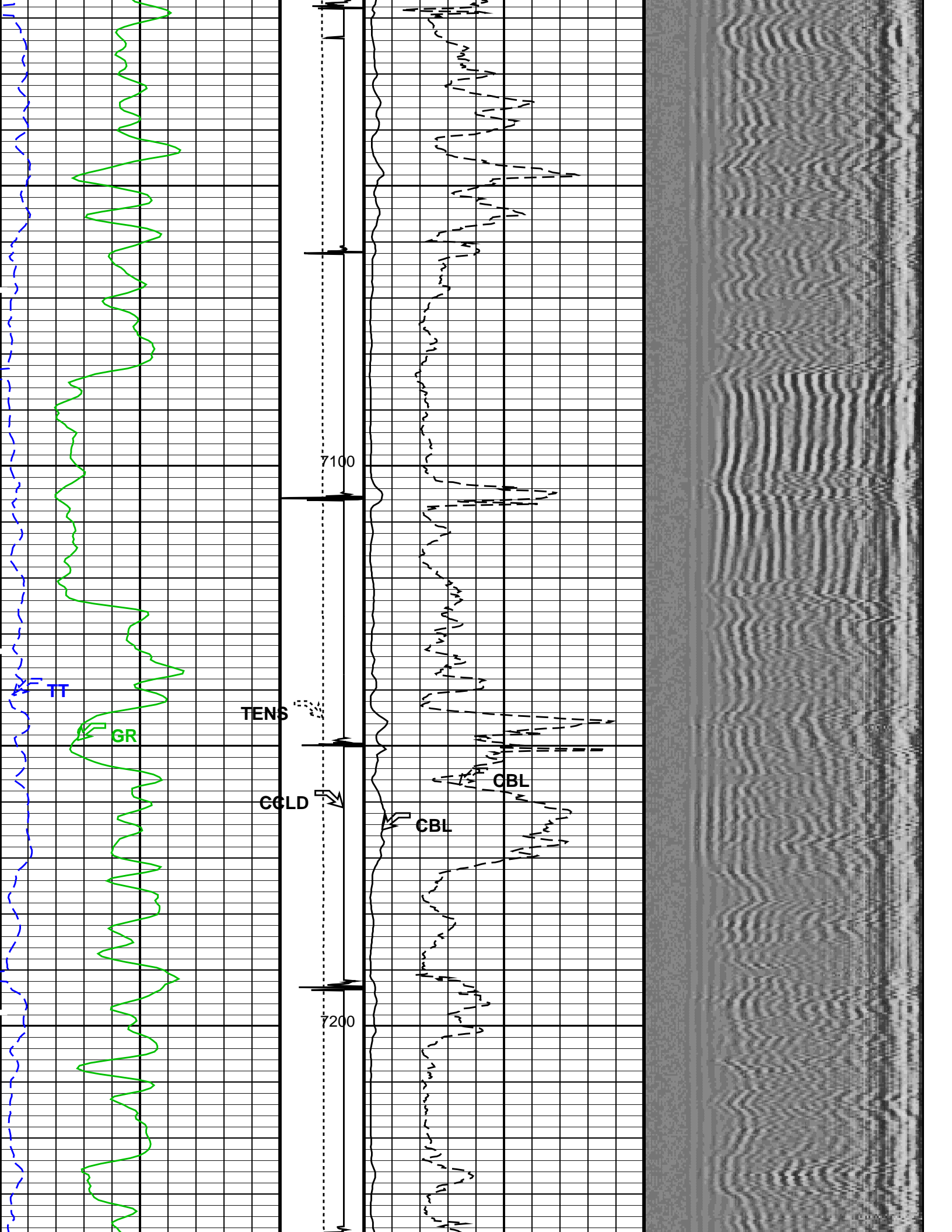


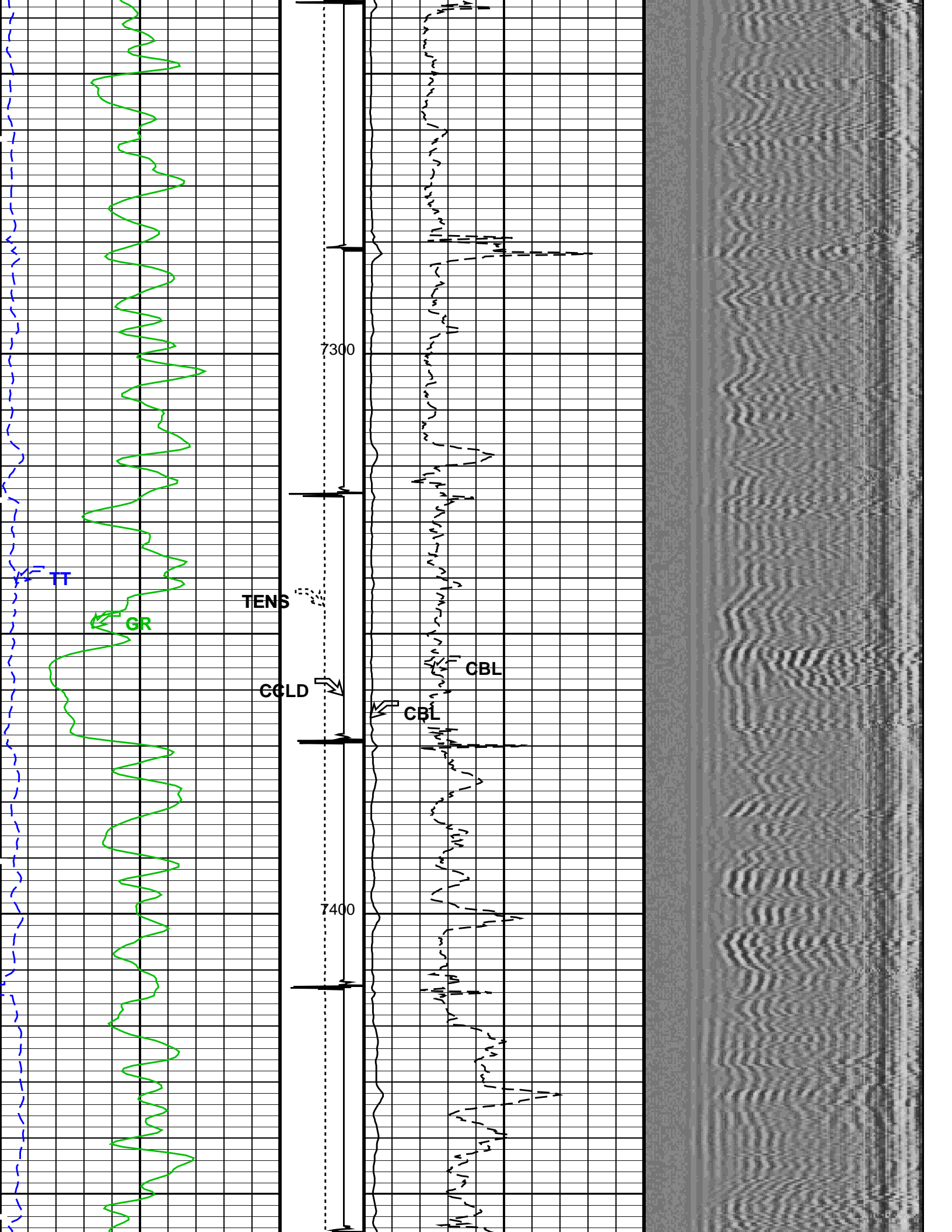


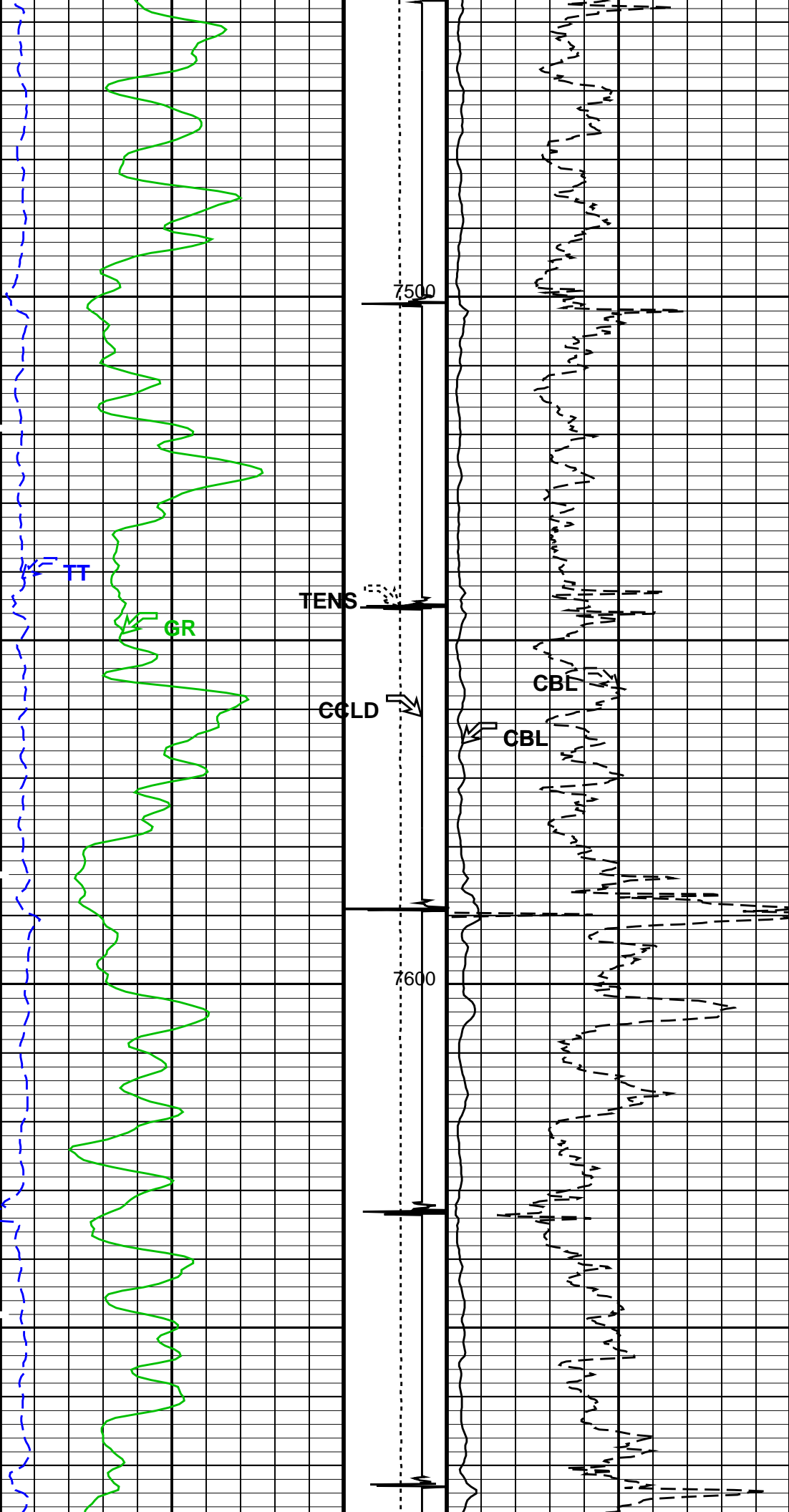


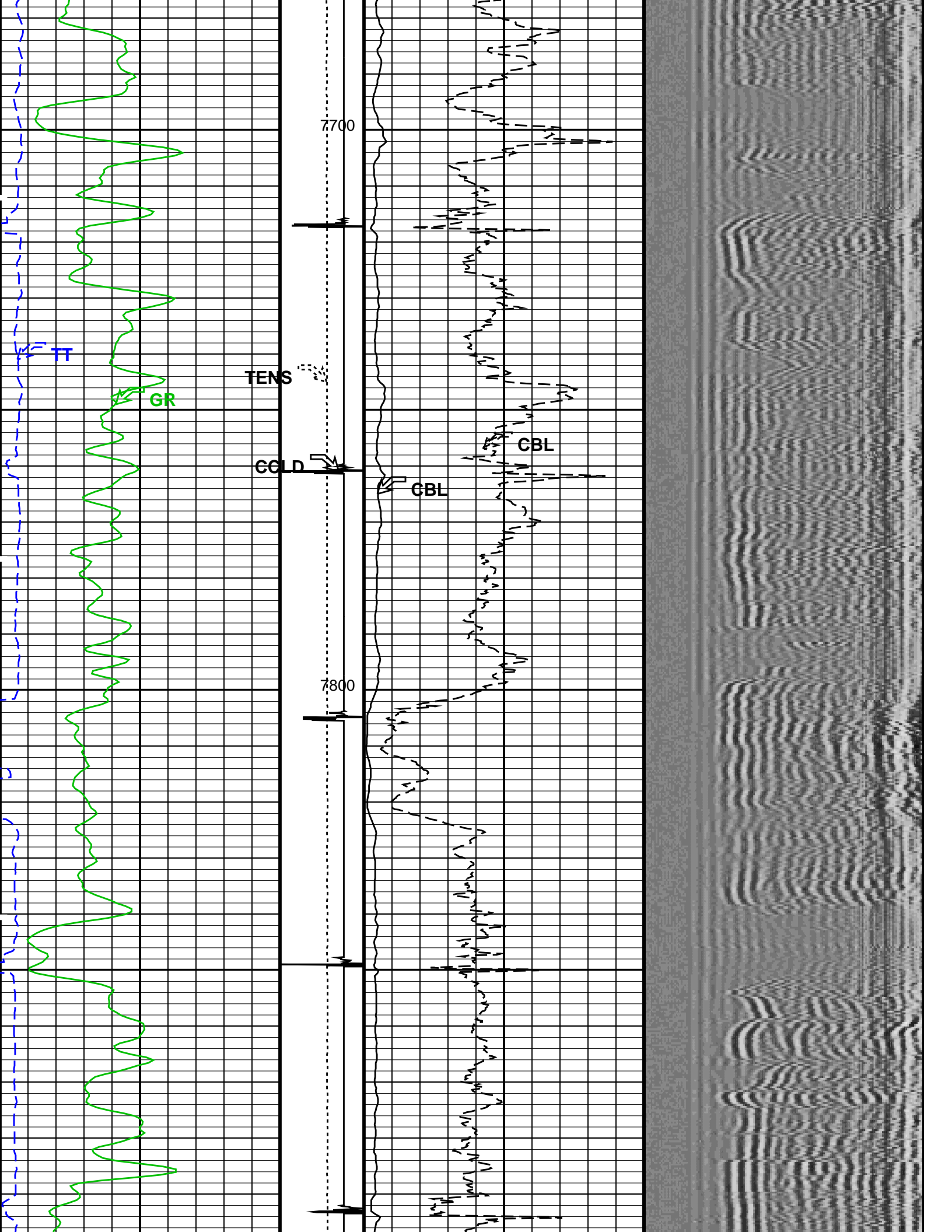


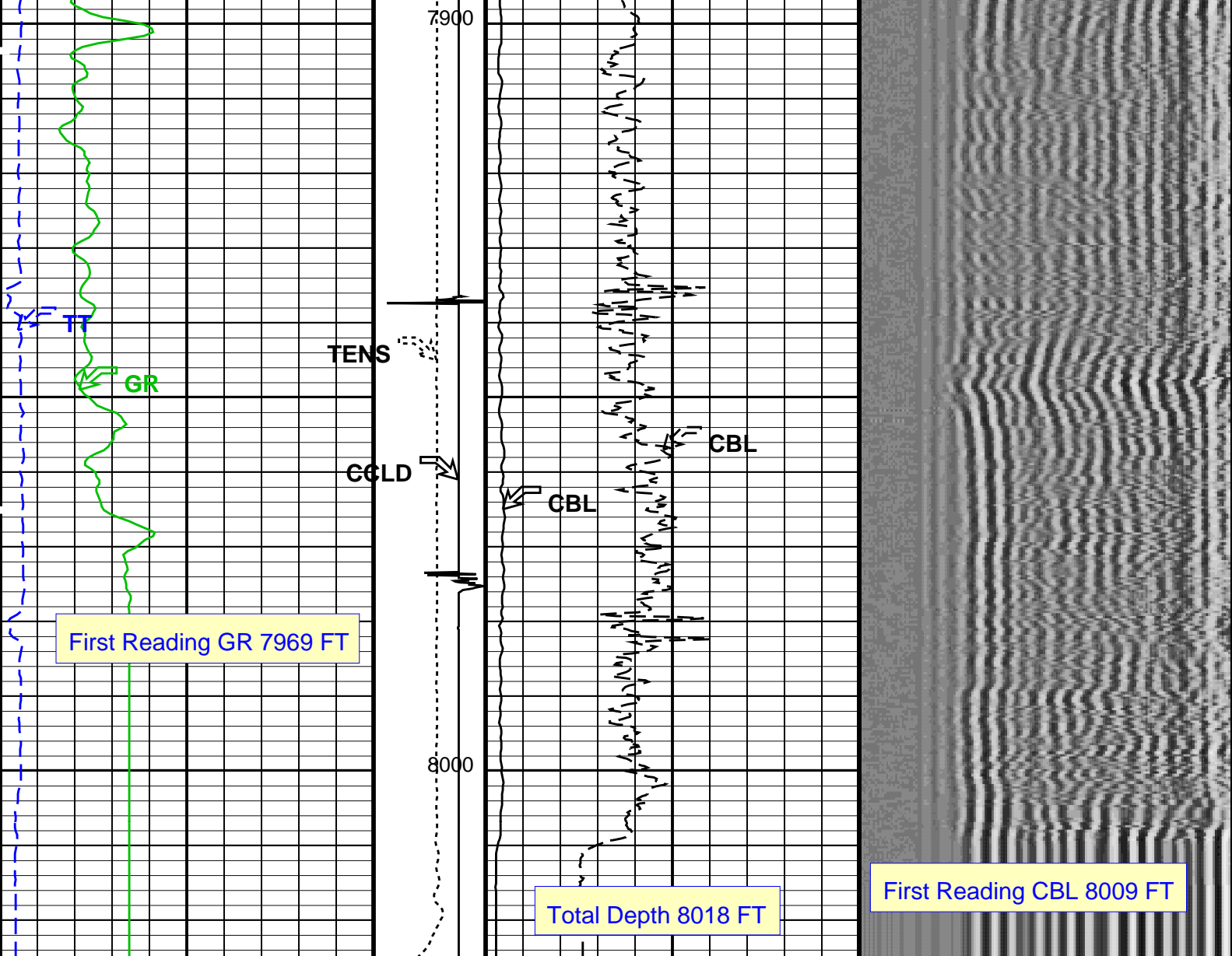












Gamma Ray (GR) (GAPI)	Tension (TENS) (LBF)	CBL Amplitude (CBL) (MV)	Min 200	Amplitude VARIABLE DENSITY (VARIABLE DENSITY) (US)	Max 1200
0 150	0 2000	0 100			
Transit Time (TT) (US)	Discriminat ed CCL (CCLD) (V)	CBL Amplitude (CBL) (MV)			
260 160	3 -1	0 10			

PIP SUMMARY

Time Mark Every 60 S

Format: CBL_VDL Vertical Scale: 5" per 100'

Graphics File Created: 30-Mar-2013 01:57

OP System Version: 19C0-187

SCMT-CB PSPT	SRPC-5214-H2-2012-OP1; SRPC-5214-H2-2012-OP1;	RST-C	SRPC-5214-H2-2012-OP1;
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<<<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 2-JAN-2013

CBL Correction Factor 0.0710826

CBL Adjustment Factor (CBAF) 1.0

MAP 1 Correction Factor 0.103584

MAP Adjustment Factor (MPAF) 1.0

MAP 2 Correction Factor 0.0974321

MAP 3 Correction Factor 0.0970306

MAP 4 Correction Factor 0.107300

MAP 5 Correction Factor 0.113090

MAP 6 Correction Factor 0.0923740

MAP 7 Correction Factor 0.0954019

MAP 8 Correction Factor 0.0947290

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	4.0	FT
PP	Playback Processing	RECOMPUTE	
TD	Total Depth	8018	FT

Input DLIS Files

DEFAULT	SCMT_RST_PSP_022LUP	FN:21	PRODUCER	29-Mar-2013 23:47	8021.0 FT	16.5 FT
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Output DLIS Files

DEFAULT	SCMT_RST_PSP_025PUP	FN:24	PRODUCER	30-Mar-2013 01:57
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Schlumberger

REPEAT ANALYSIS CBL VDL

Input DLIS Files

DEFAULT	SCMT_RST_PSP_020LUP	FN:19	PRODUCER	29-Mar-2013 23:31	5843.5 FT	5526.0 FT
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Output DLIS Files

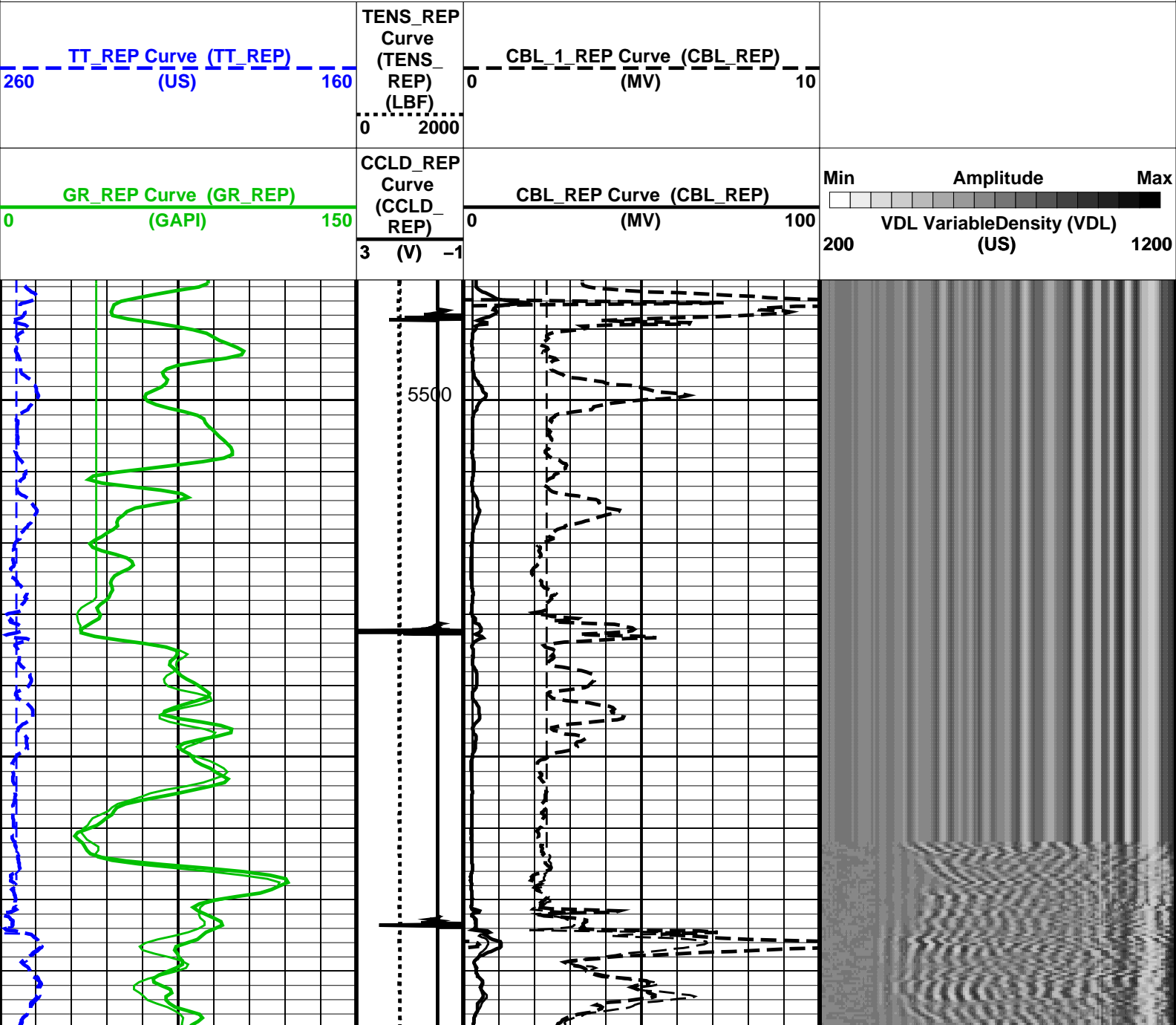
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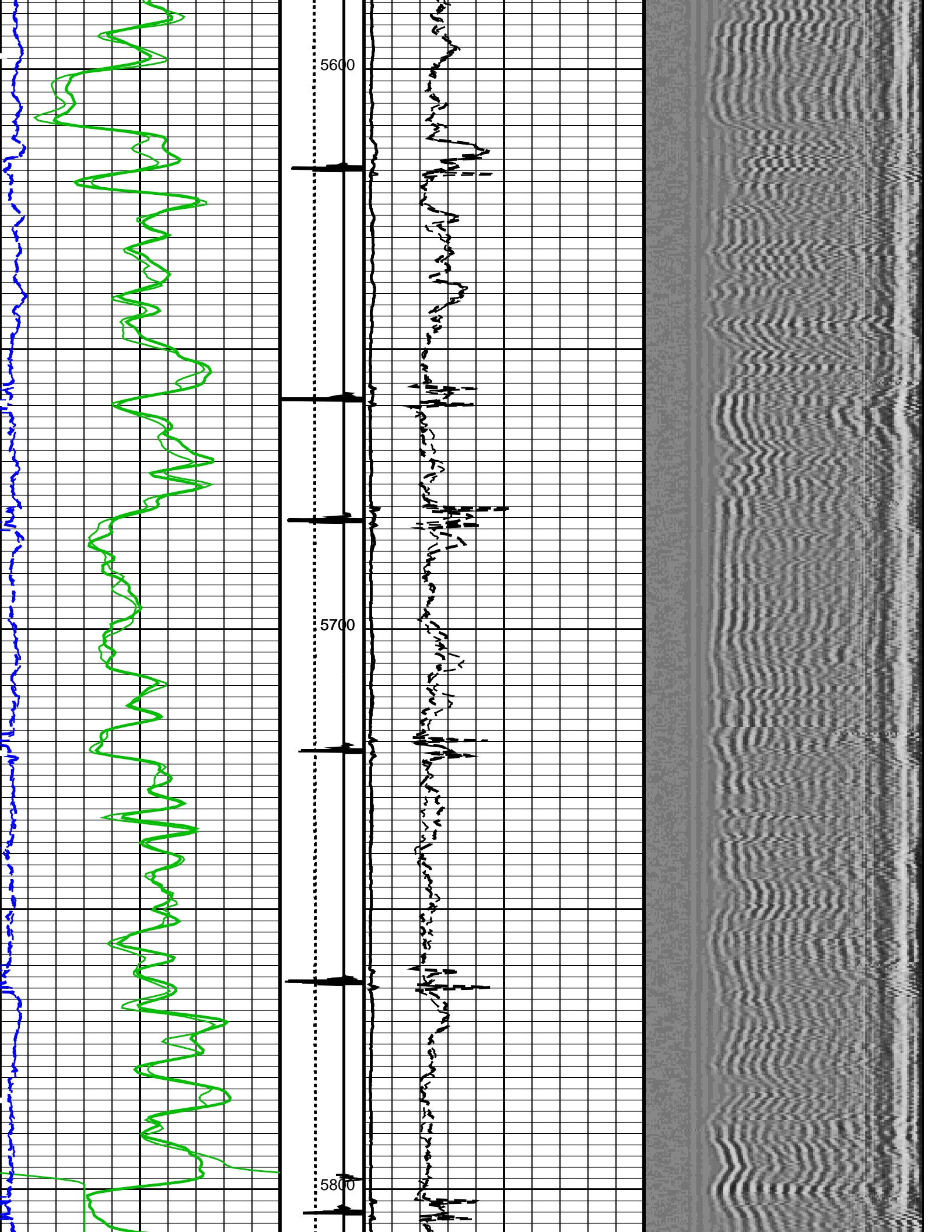
OP System Version: 19C0-187

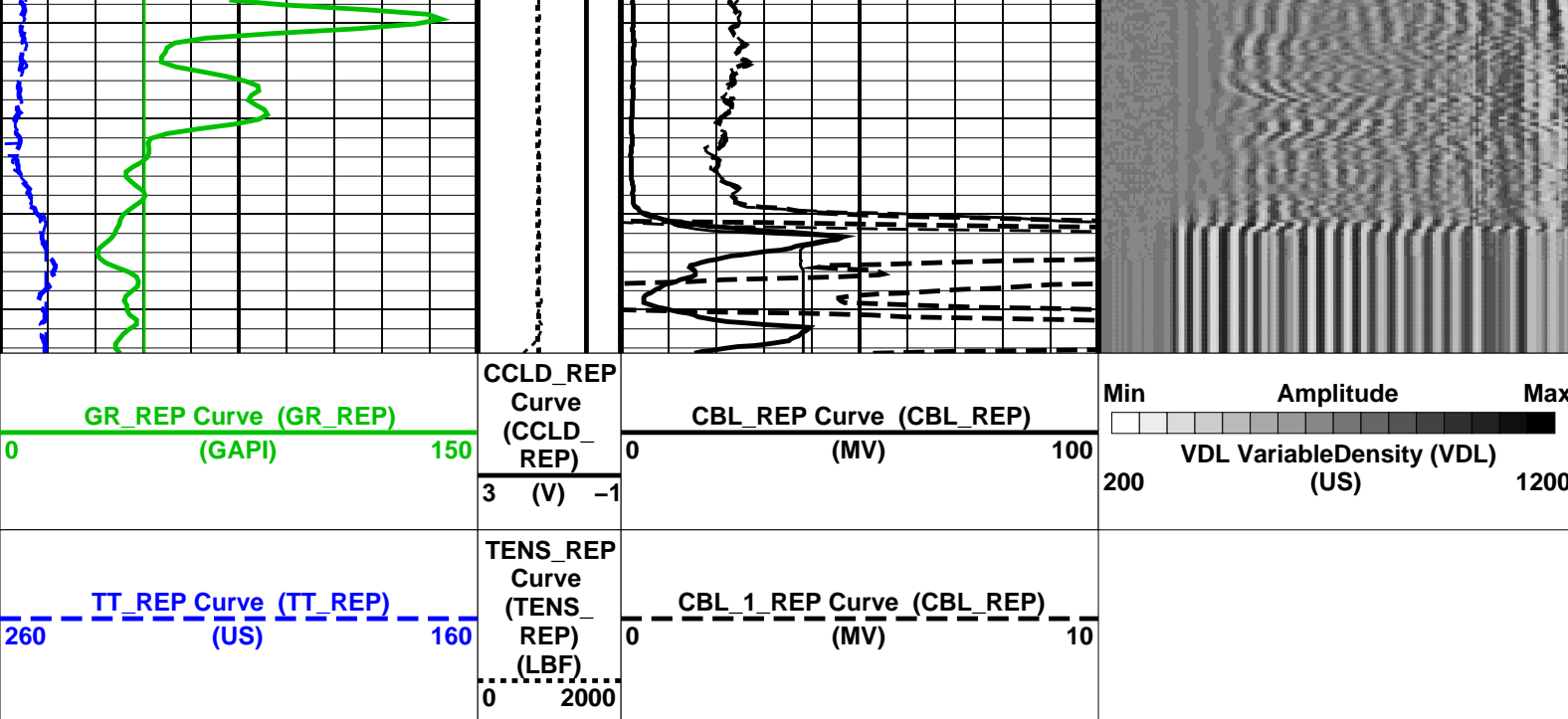
SCMT-CB	SRPC-5214-H2-2012-OP1	RST-C	SRPC-5214-H2-2012-OP1
PSPT	SRPC-5214-H2-2012-OP1		

PIP SUMMARY

☒ Time Mark Every 60 S







PIP SUMMARY

Time Mark Every 60 S

Format: CBL_VDL_REP Vertical Scale: 5" per 100'

Graphics File Created: 30-Mar-2013 02:05

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 8179

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)

Date of Master Calibration 2-JAN-2013

CBL Correction Factor 0.0710826

MAP 1 Correction Factor 0.103584

MAP 2 Correction Factor 0.0974321

MAP 3 Correction Factor 0.0970306

MAP 4 Correction Factor 0.107300

MAP 5 Correction Factor 0.113090

MAP 6 Correction Factor 0.0923740

MAP 7 Correction Factor 0.0954019

MAP 8 Correction Factor 0.0947290

Before Calibration (Adjustment)

CBL Adjustment Factor (CBAF) 1.0

MAP Adjustment Factor (MPAF) 1.0

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	
CMTG	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	1.0	FT
DORL	Depth Offset for Repeat Analysis	0.0	FT
PP	Playback Processing	RECOMPUTE	
TD	Total Depth	8018	FT

Input DLIS Files

DEFAULT	SCMT_RST_PSP_020LUP	FN:19	PRODUCER	29-Mar-2013 23:31	5843.5 FT	5526.0 FT
DEFAULT	SCMT_RST_PSP_025PUP	FN:24	PRODUCER	30-Mar-2013 01:57	8025.0 FT	-24.0 FT

Output DLIS Files

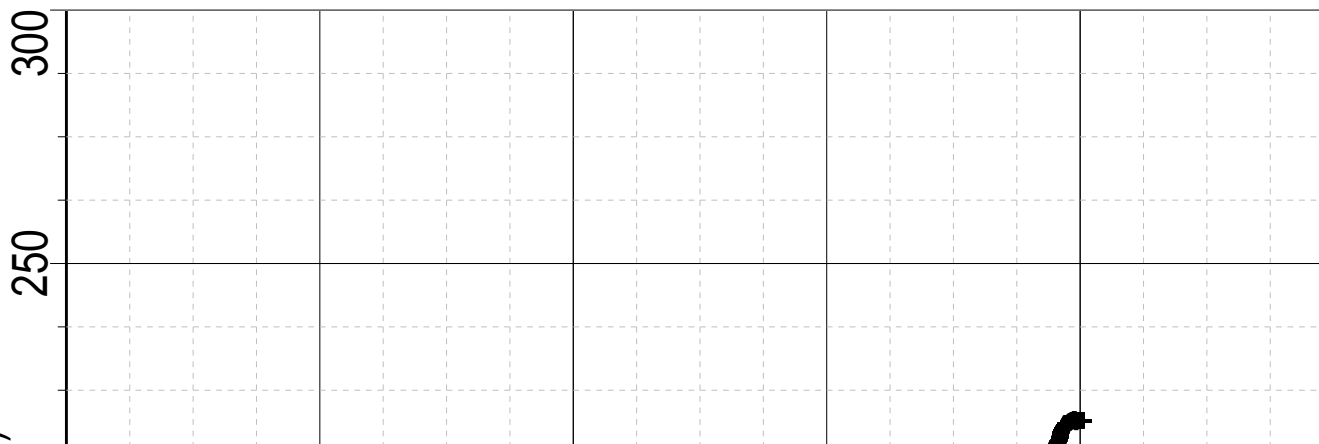
DEFAULT	SCMT_RST_PSP_026PUP	FN:25	PRODUCER	30-Mar-2013 02:05
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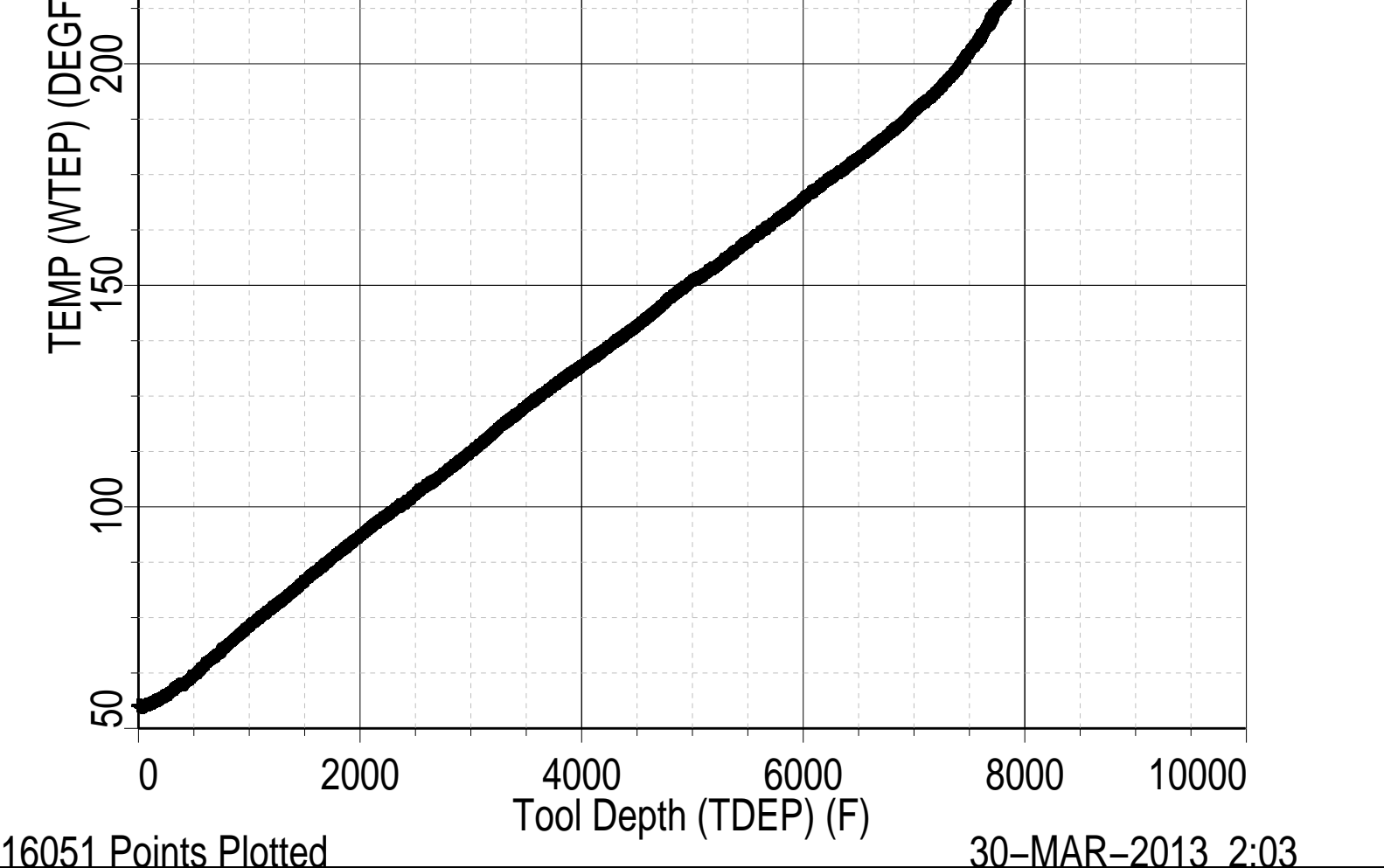
Schlumberger

TEMPERATURE PLOT

MAXIS Field Log

Index: 8025.0 – -24.0 FT





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PBMS COEFFICIENTS

MAXIS Field Log

Client: ENCANA OIL & GAS (USA) INC
Field: PARACHUTE
Well: FEDERAL 22-13BB (PJ21)
Run date: 30-Mar-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	+1.1820000000000e+04	+3.3320000000000e+04

Client: ENCANA OIL & GAS (USA) INC

Field: PARACHUTE

Well: FEDERAL 22-13BB (PJ21)

Run date: 30-Mar-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: PARACHUTE

Well: FEDERAL 22-13BB (PJ21)

Run date: 30-Mar-2013

Tool: PSP

Sub Type: PBMS

Sensor: CQG

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**4	0.0	0.0	0.0
Fb**5	0.0	0.0	0.0

	Fc**3	Fc**4	Fc**5
Fb**0	+.114322792679E–12	+.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	+.310874009898E+05	+.288920923041E–02	+.697940727038E–06
	(Fb'–Fc')**3	(Fb'–Fc')**4	(Fb'–Fc')**5
(Fb'–Fc')**0	–.657432344763E–10	–.412920638782E–15	+.213369826099E–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	+.115369519827E+03	–.565338877075E–02	–.333717531829E–07
	(Fb'–Fc')**3	(Fb'–Fc')**4	(Fb'–Fc')**5
(Fb'–Fc')**0	–.124387135327E–12	+.713102327208E–16	–.316084316842E–20



MASTER CALIBRATION

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

Primary Equipment:










Slim Cement Mapping Xmitter Electronics
 Slim Cement Mapping Sonde
 Slim Cement Mapping Cartridge

SCMX – CA
 SCMS – CB 8179
 SCMC – CA 8120

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			1158	Master			1232
	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			1237	Master			1118
	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			1061	Master			1299
	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			1258	Master			1267
	500.0 (Minimum)	1075 (Nominal)	1650 (Maximum)		500.0 (Minimum)	1075 (Nominal)	1650 (Maximum)
Phase	CBL Amplitude Plus MV		Value				
Master			1351				
	1000 (Minimum)	1350 (Nominal)	1700 (Maximum)				
Master: 2–Jan–2013 15:55							

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

Schlumberger

Well: **FEDERAL 22–13BB (PJ21)**

Field: **PARACHUTE**

County: **GARFIELD**

State: **COLORADO**

SLIM CEMENT MAPPING LOG
 CBL–VDL
 GR–CCL