

Company: ENCANA OIL & GAS (USA) INC

Well: ENCANA FEDERAL 24-10D (K19CNE)

Field: MAMM CREEK

County: GARFIELD

State: COLORADO

County: GARFIELD

Field: MAMM CREEK

Location: SHL: 2330 FSL & 1760 FEL

Well: ENCANA FEDERAL 24-10D (K19CNE)

Company: ENCANA OIL & GAS (USA) INC

SLIM CEMENT MAPPING LOG

CBL – VDL

GAMMA RAY – CCL

SHL: 2330 FSL & 1760 FEL

BHL: 1855 FSL & 1760 FEL

Elev.: K.B. 5668.00 ft

G.L. 5666.00 ft

D.F. 5666.00 ft

Permanent Datum: _____

GROUND LEVEL _____

Elev.: 5666.00 ft _____

Log Measured From: _____

KELLY BUSHING _____

22.00 ft above Perm. Datum

Drilling Measured From: _____

KELLY BUSHING _____

API Serial No. 05-045-20778-0C

Section 19

Township 6S

Range 92W

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 1-May-2013

Run Number 1

Depth Driller 8285 ft

Schlumberger Depth 8180 ft

Bottom Log Interval 8171 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 7.875 in

From 6444 ft

To 8285 ft

Casing/Tubing Size 4.500 in

Weight 11.6 lbm/ft

Grade

From 22 ft

To 8265 ft

Maximum Recorded Temperatures 217 degF

Logger On Bottom 1-May-2013

Unit Number 391

Location GRAND JUNCTION

Recorded By JASON BARRY

Witnessed By EUGENE

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						
Location						
Recorded By						
Witnessed By						

DEPTH SUMMARY LISTING

Date Created: 30-APR-2013 11:07:37

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:	30-APR-201	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:	7		
Wheel Correction 2:	-4	Calibration Peak Error:	15		

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	OTHER SERVICES2
OS1: RESERVOIR SATURATION	OS1:
OS2: LOG	OS2:
OS3: SIGMA MODE	OS3:
OS4:	OS4:
OS5:	OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
FIRST RUN IN HOLE CORRELATED TO DOWNLOG	
TOOL RAN AS PER TOOL SKETCH	
ENTRANCE TIME: 16:15	
TIME ON BOTTOM: 16:45	
EXIT TIME: 19:00	

MAX RECORDED TEMPERATURE: 217 DEGF	
MAX RECORDED PRESSURE: 3249 PSIA	
SHORT JOINTS: 6010 FT & 6998 FT	
MAIN PASS LOGGED UNDER ZERO SURFACE PRESSURE	
EXPECTED CBL AMP IN FREE PIPE = 80MV	
CREW: J BARRY, K BUNTING, K JOHNS, K BOZARTH, T LEGGITT	
THANK YOU FOR CHOOSING E&P WIRELINE, A SCHLUMBERGER COMPANY	

RUN 1 SERVICE ORDER #: C920-00070 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

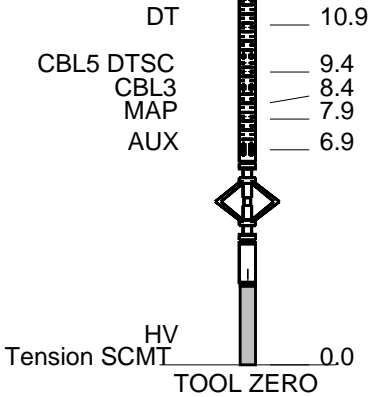
	RUN 1	RUN 2
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2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
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9	1	1
10	1	1
11	1	1
12	1	1
13	1	1
14	1	1
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98	1	1
99	1	1
100	1	1

SURFACE EQUIPMENT	
WITM-A PSC_16MHZ	

DOWNHOLE EQUIPMENT			
MH-22			53.2
MH-22			
	Detail MT		
AH-38	TelStatus		51.6
	CTEM	51.3	
PSPT			51.3
PSC-A			
PSPT-B 928			
PSTC-A			
PBMS-B	GR	47.6	
CQG_F_Mano			
RTD_Thermometer			
GR	Well_Temp	44.5	
CCL	CQG Manom	44.2	
PBMS	CCL	43.8	
	PBMS PSTC	43.0	
RST-C			43.0
RSCH-A 469			
RSC-E			
RSS-A 255			
RSXH-A 493			
RSX-E			
	RSC-A Far	33.9	
	RSC-A PNG		
	RSC-A Nea		
	RSX-A PNG	33.4	

SCMT-CB
SCMC-CA 8317
SECH-CA
CMIR-AG
SCMS-CB 8303
SCMX-CA

20.0



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



MAIN PASS CBL VDL

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC Well: ENCANA FEDERAL 24-10D (K19CNE)

Input DLIS Files

DEFAULT SCMT_RST_PSP_013LUP FN:12 PRODUCER 01-May-2013 16:45 8188.5 FT 2.5 FT

Output DLIS Files

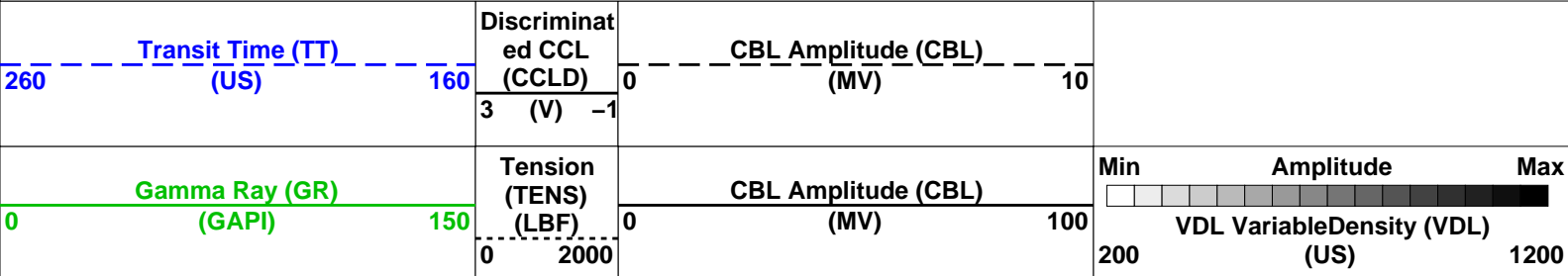
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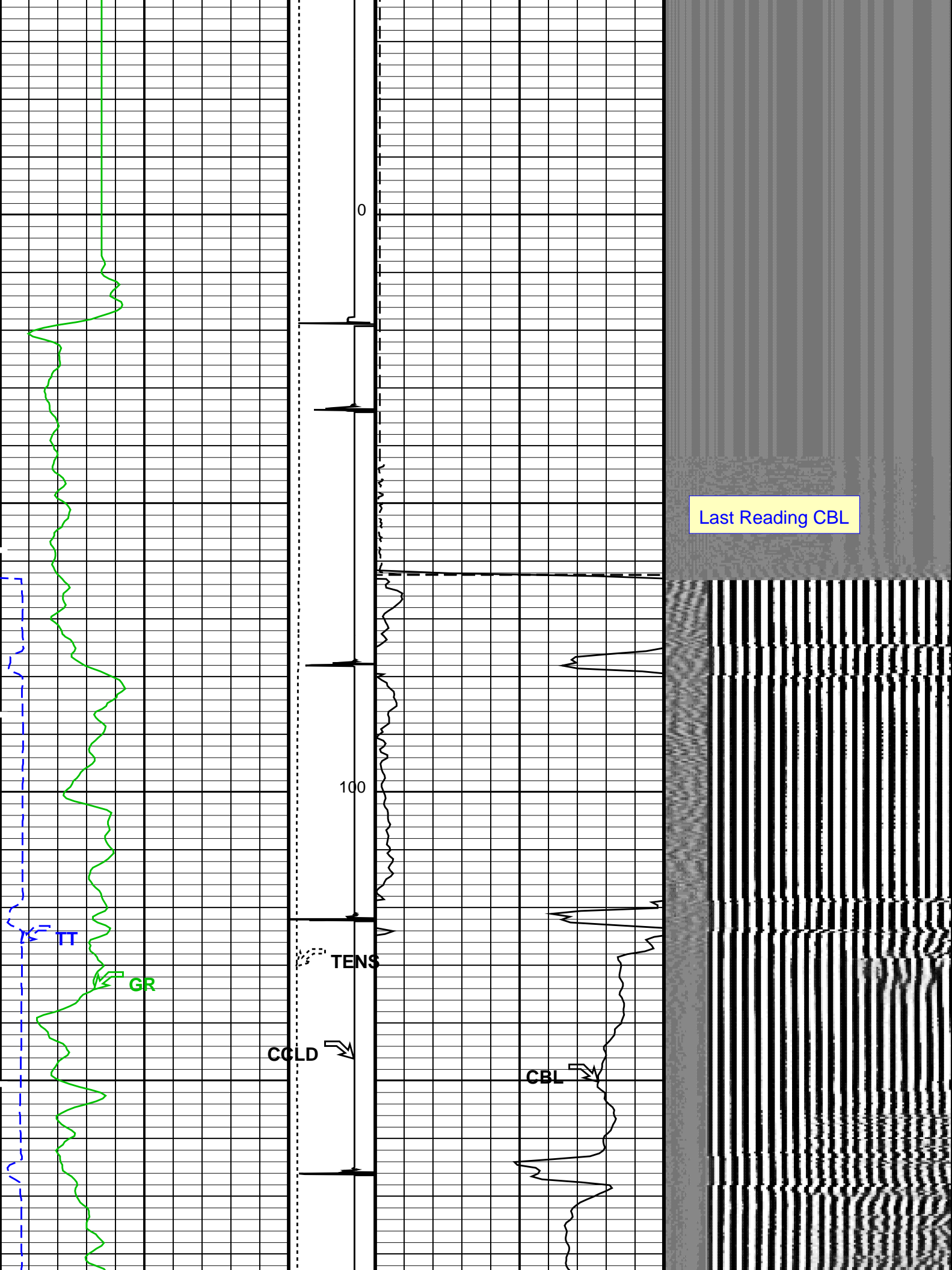
OP System Version: 19C0-187

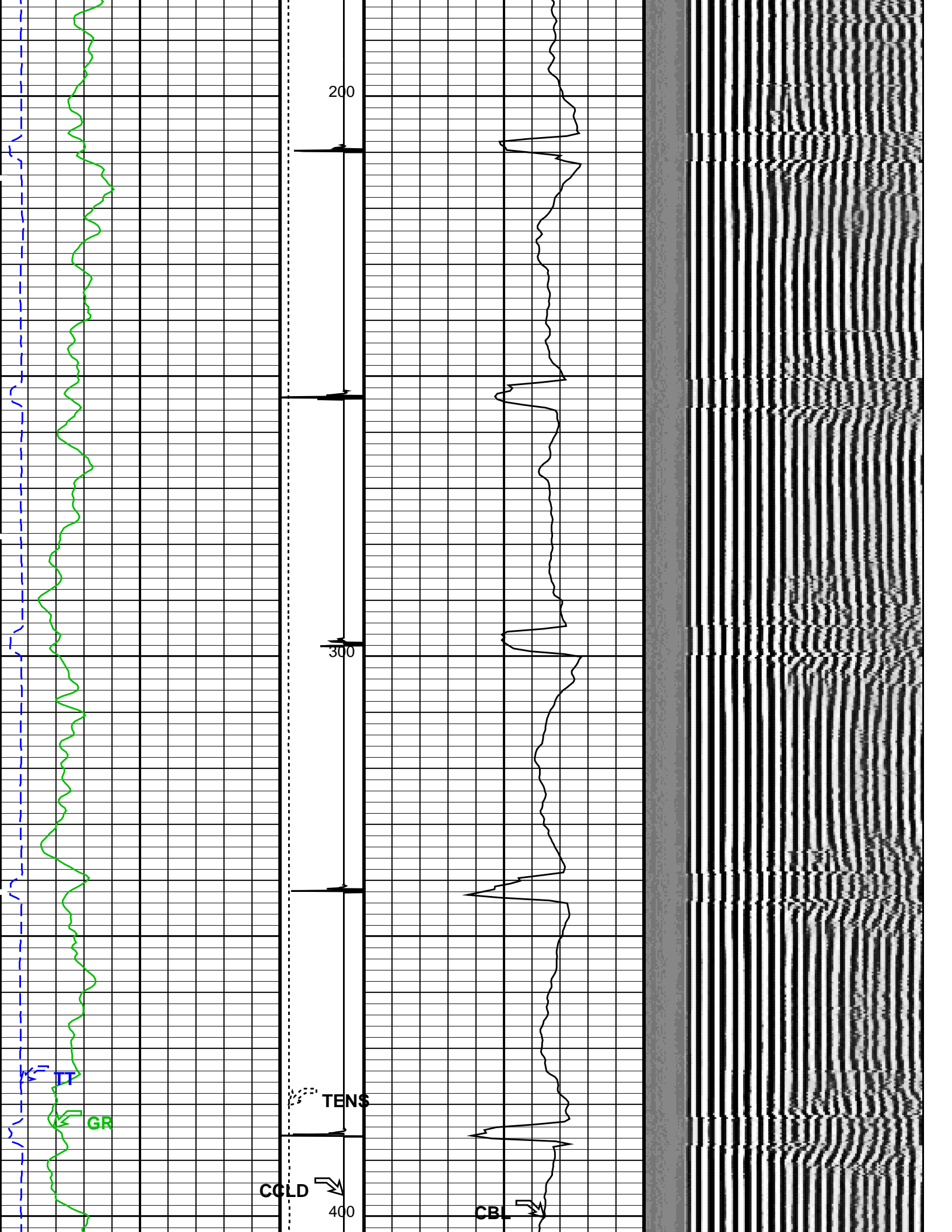
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PSPT SRPC-5214-H2-2012-OP1

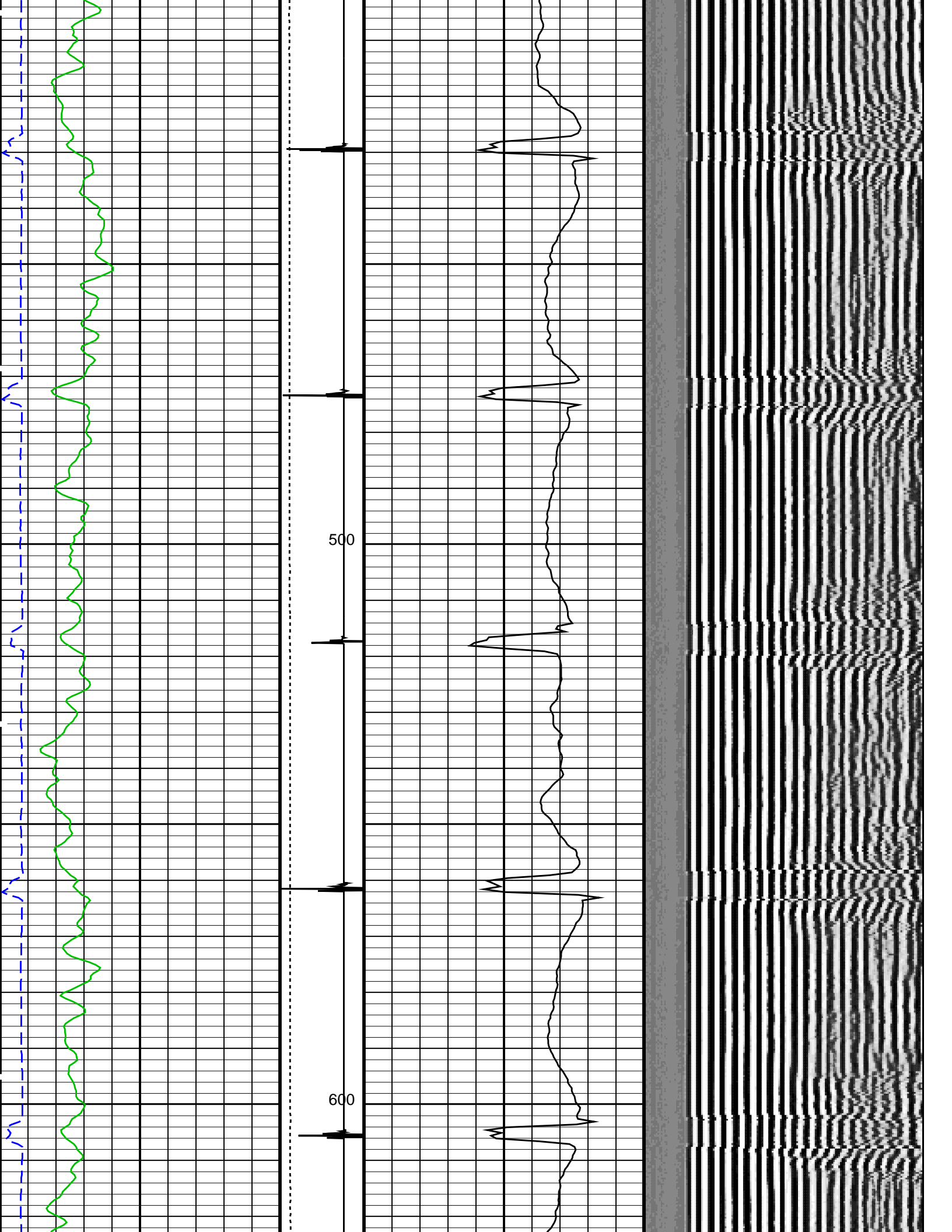
PIP SUMMARY

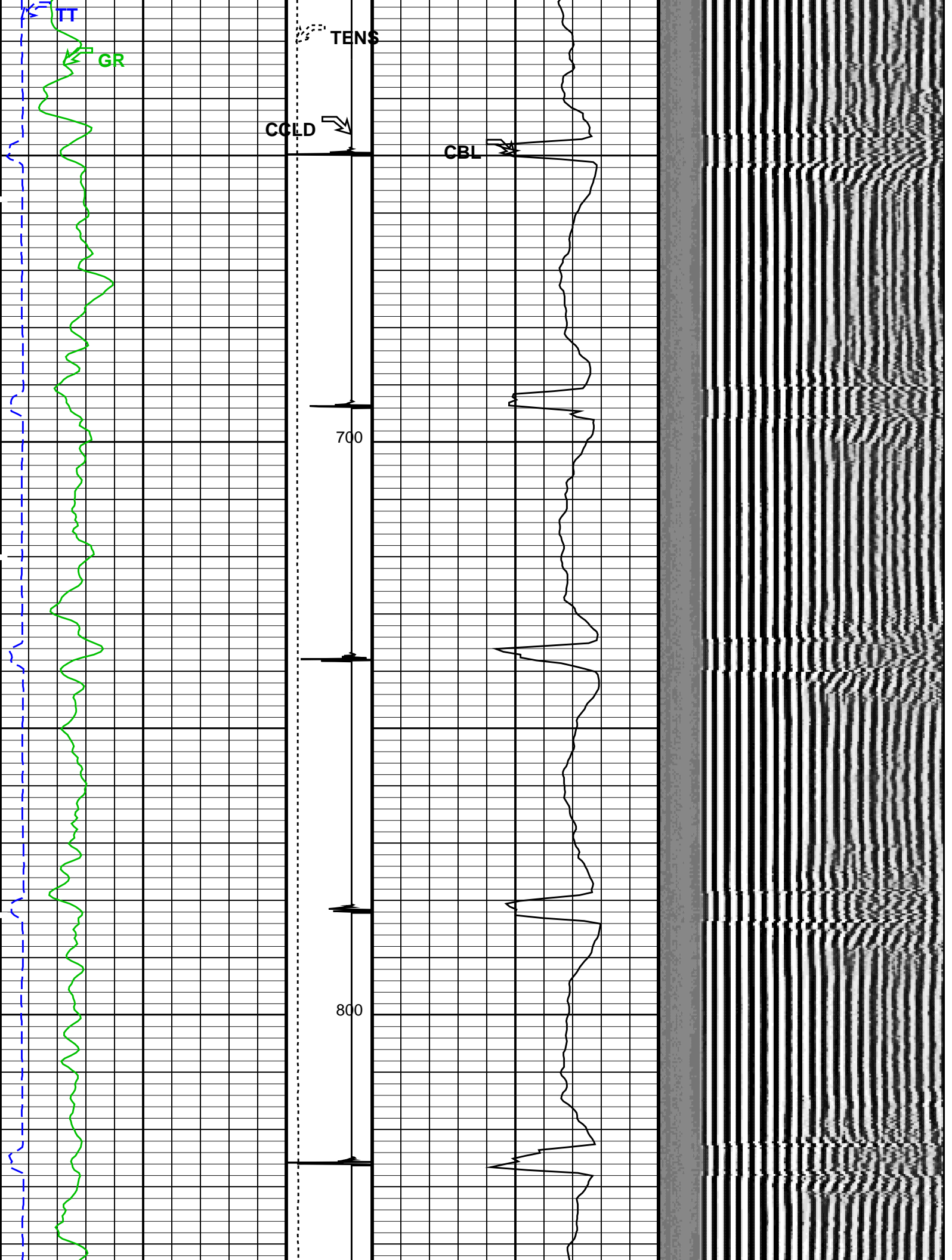
Time Mark Every 60 S

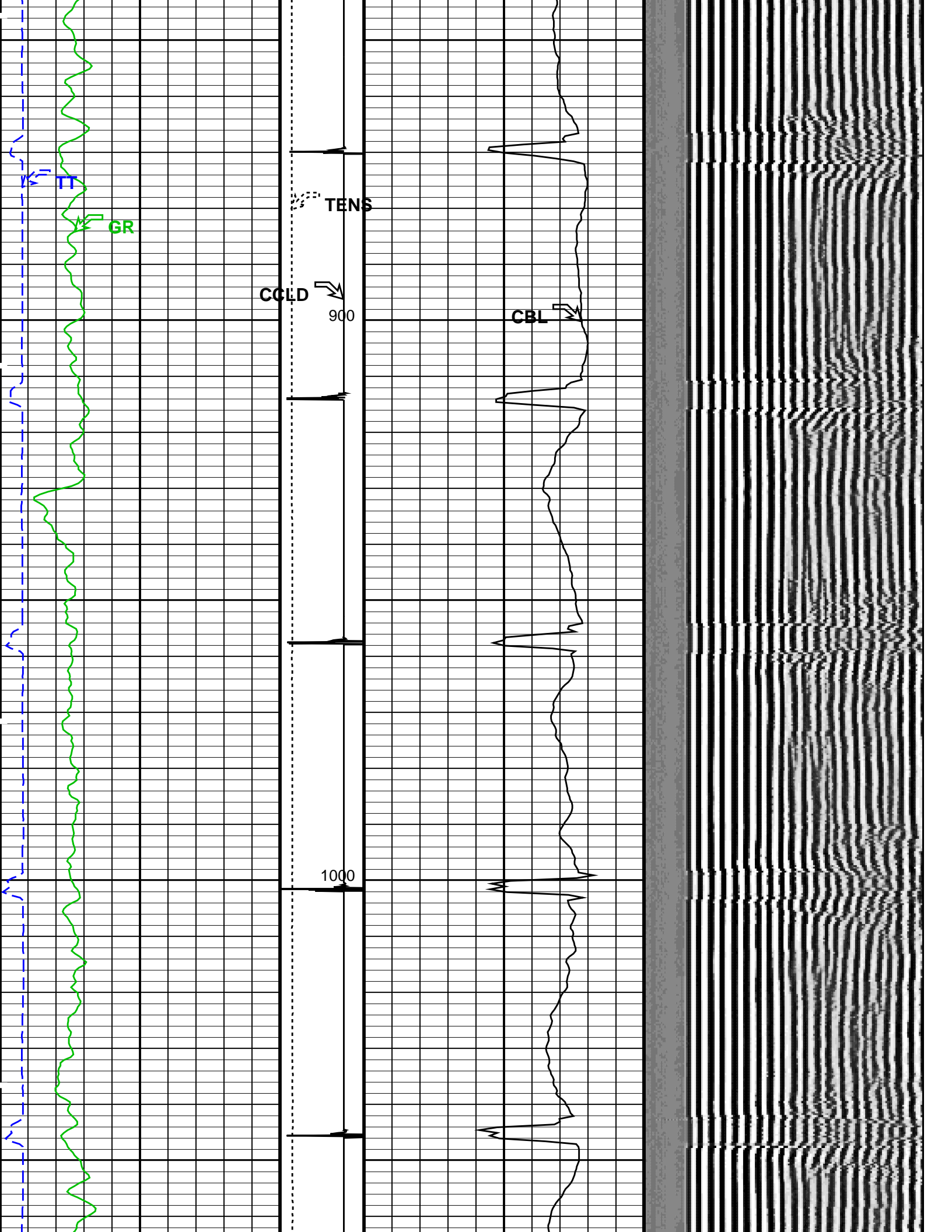


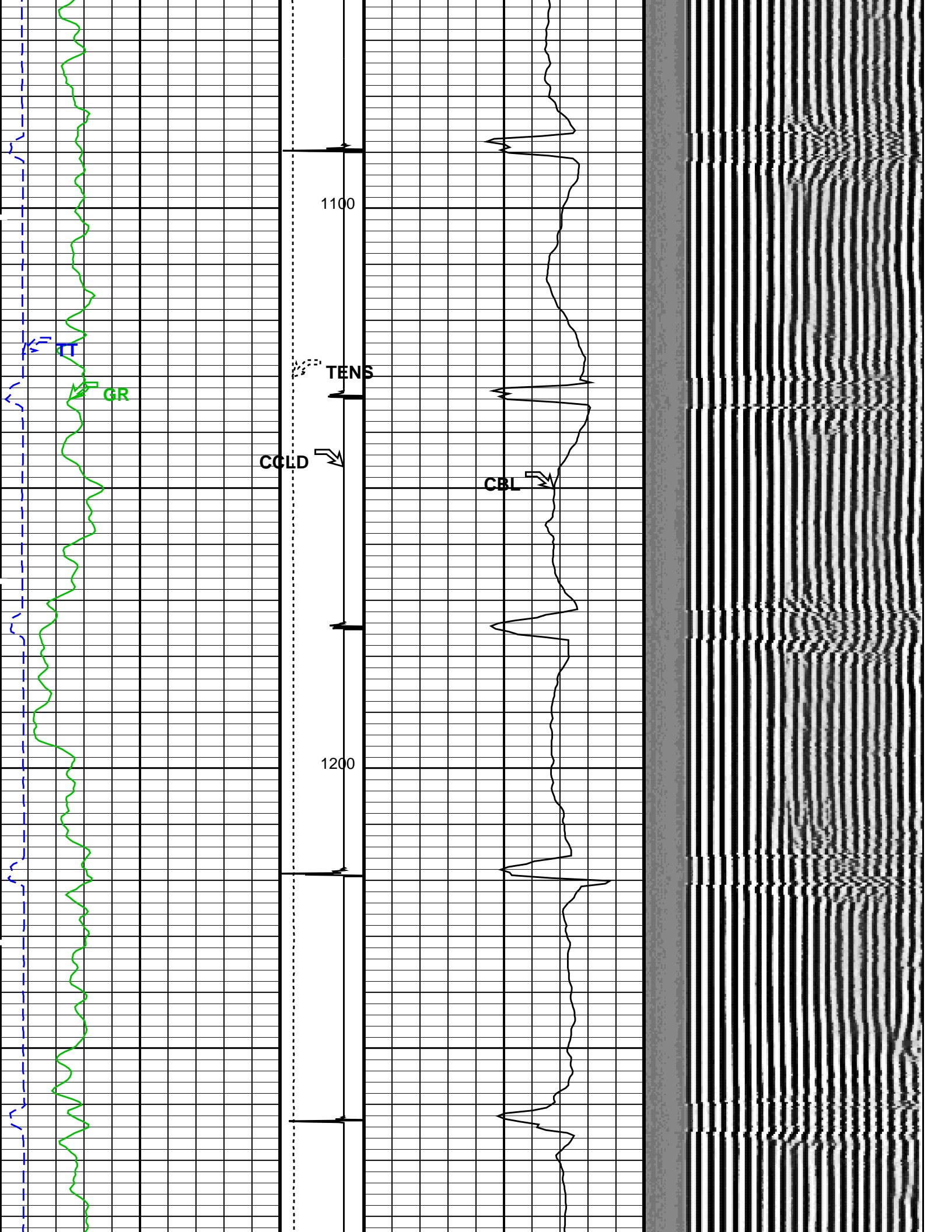


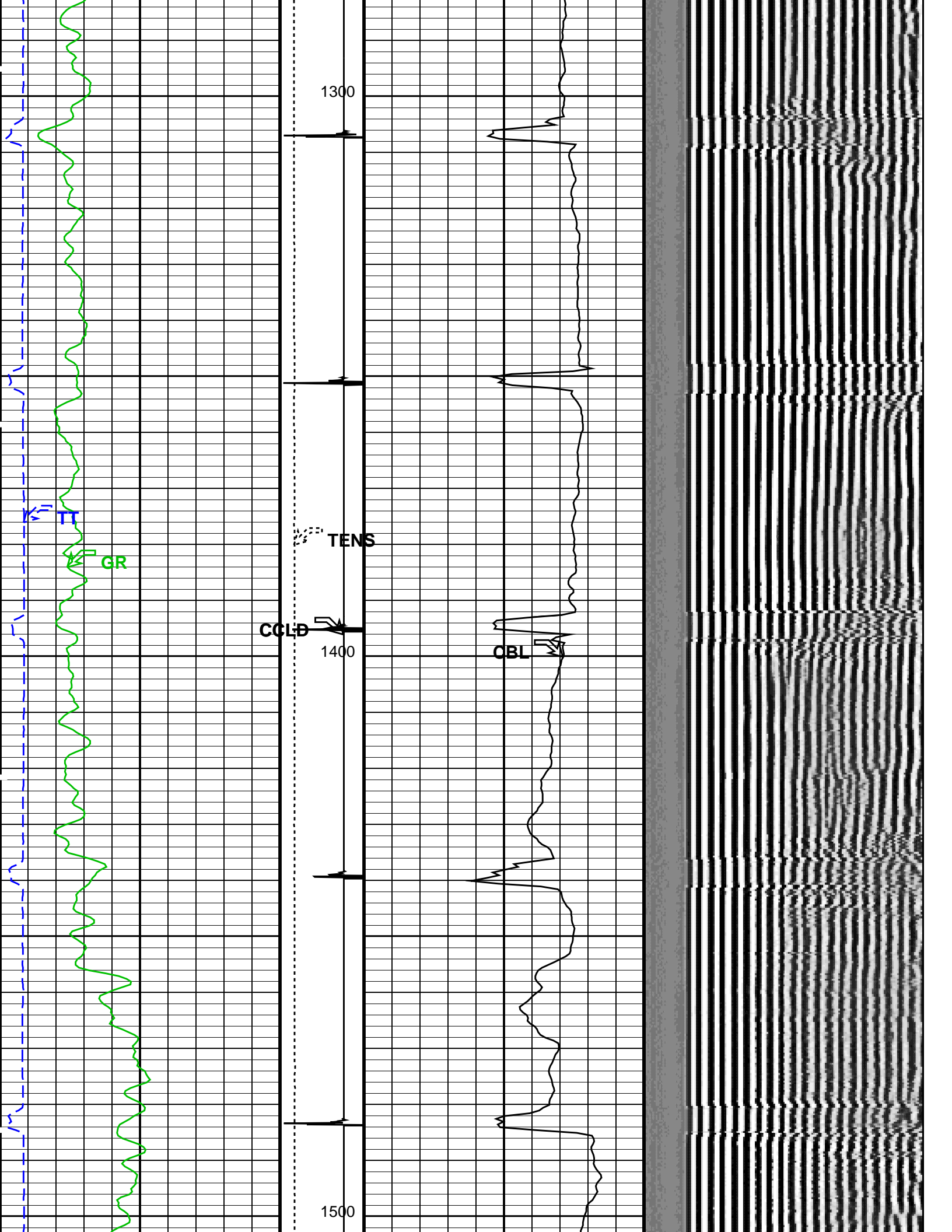


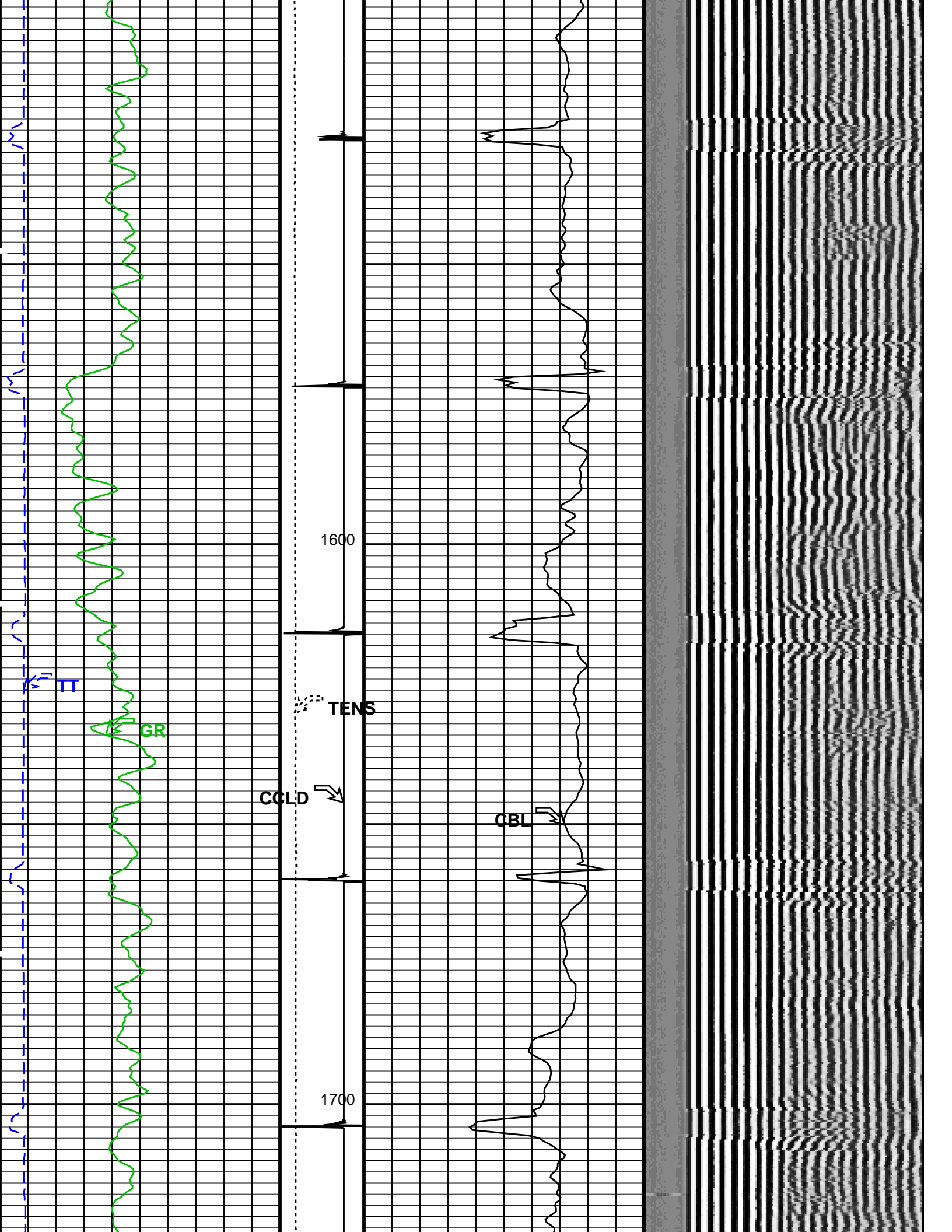


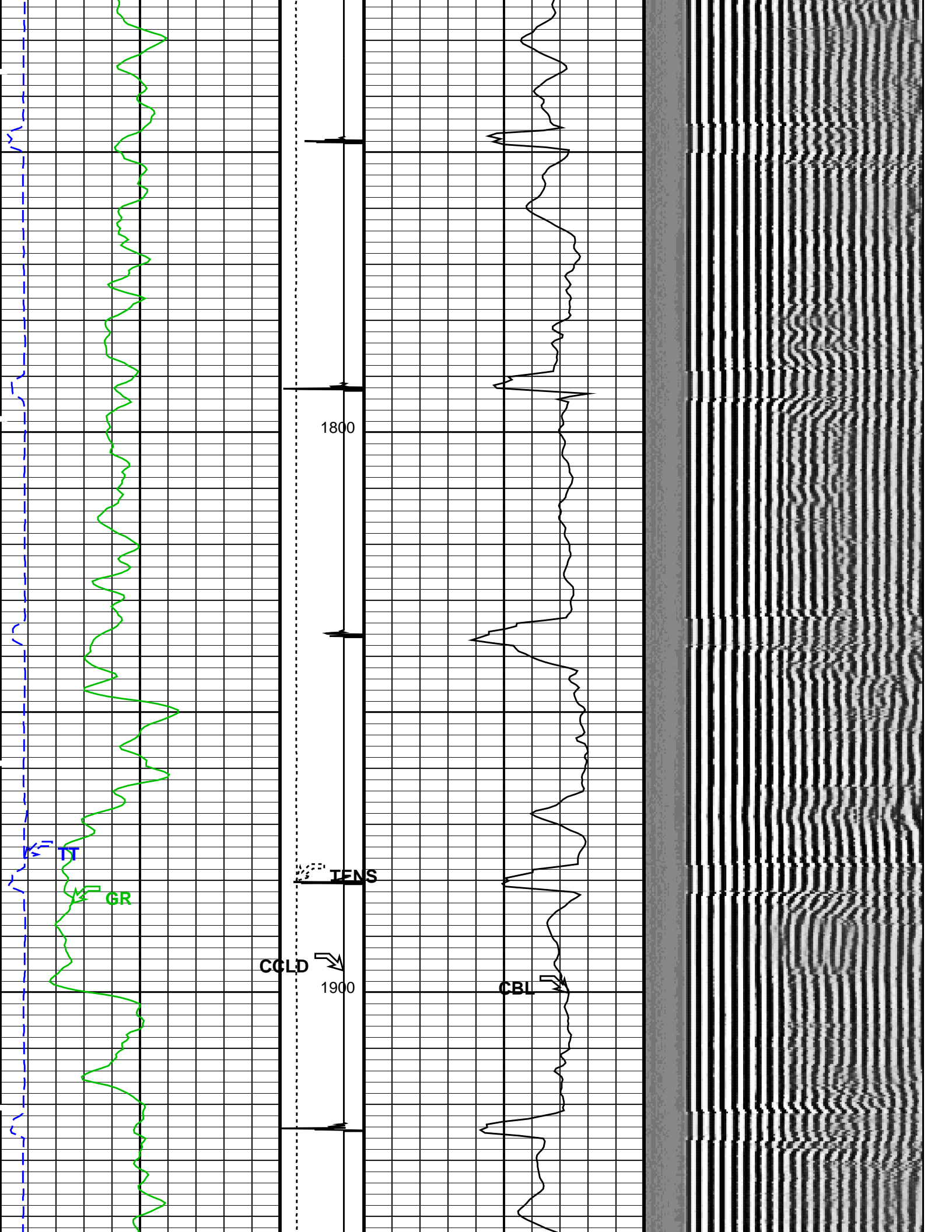


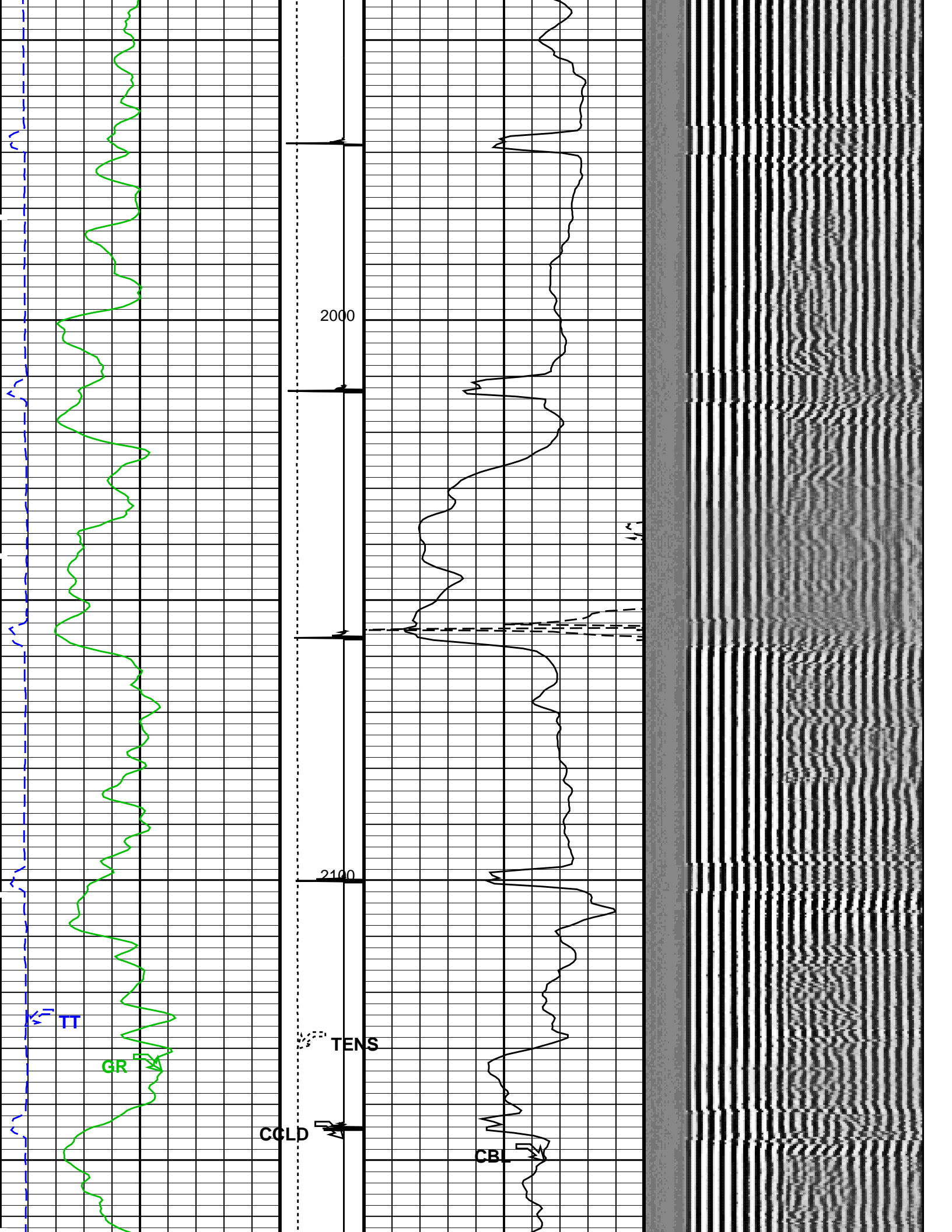


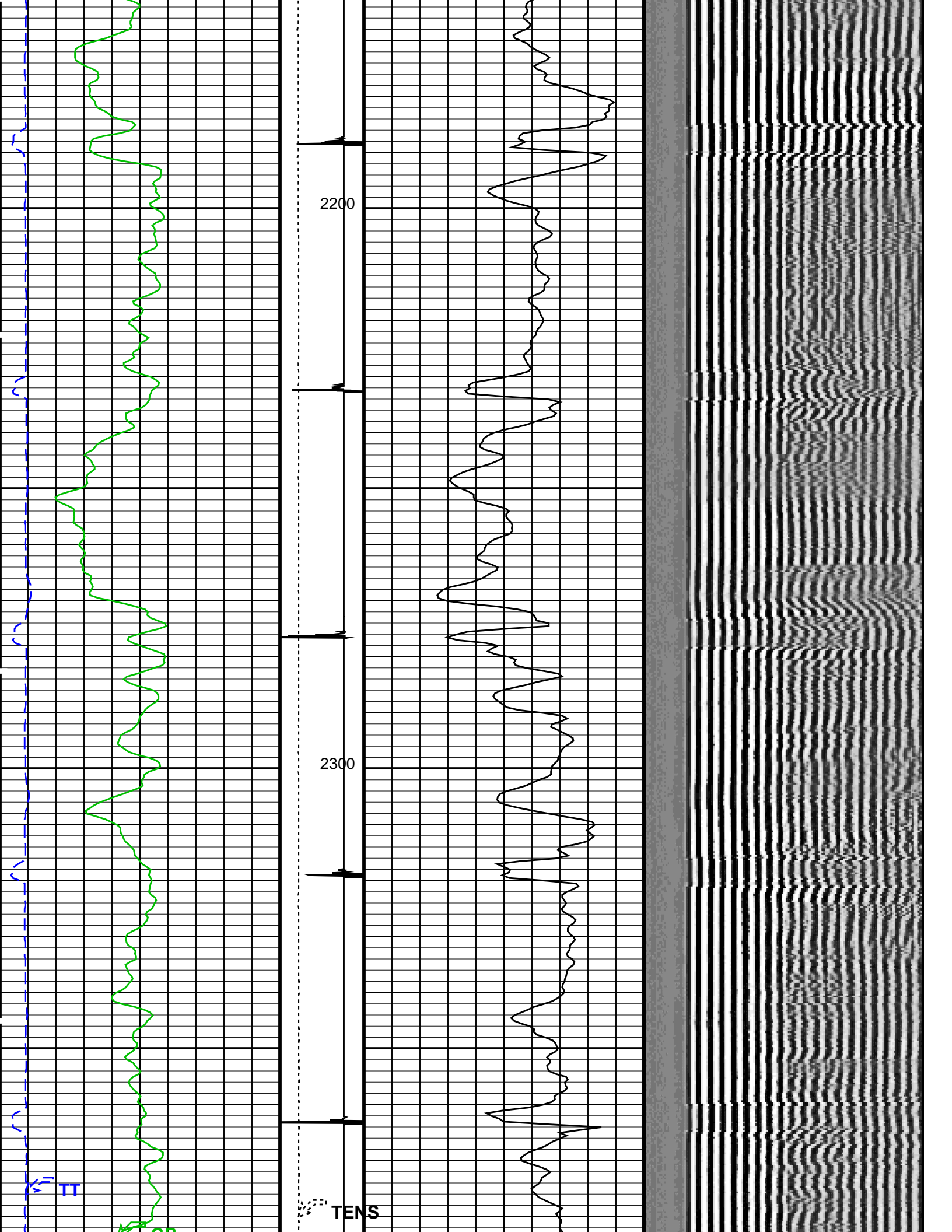


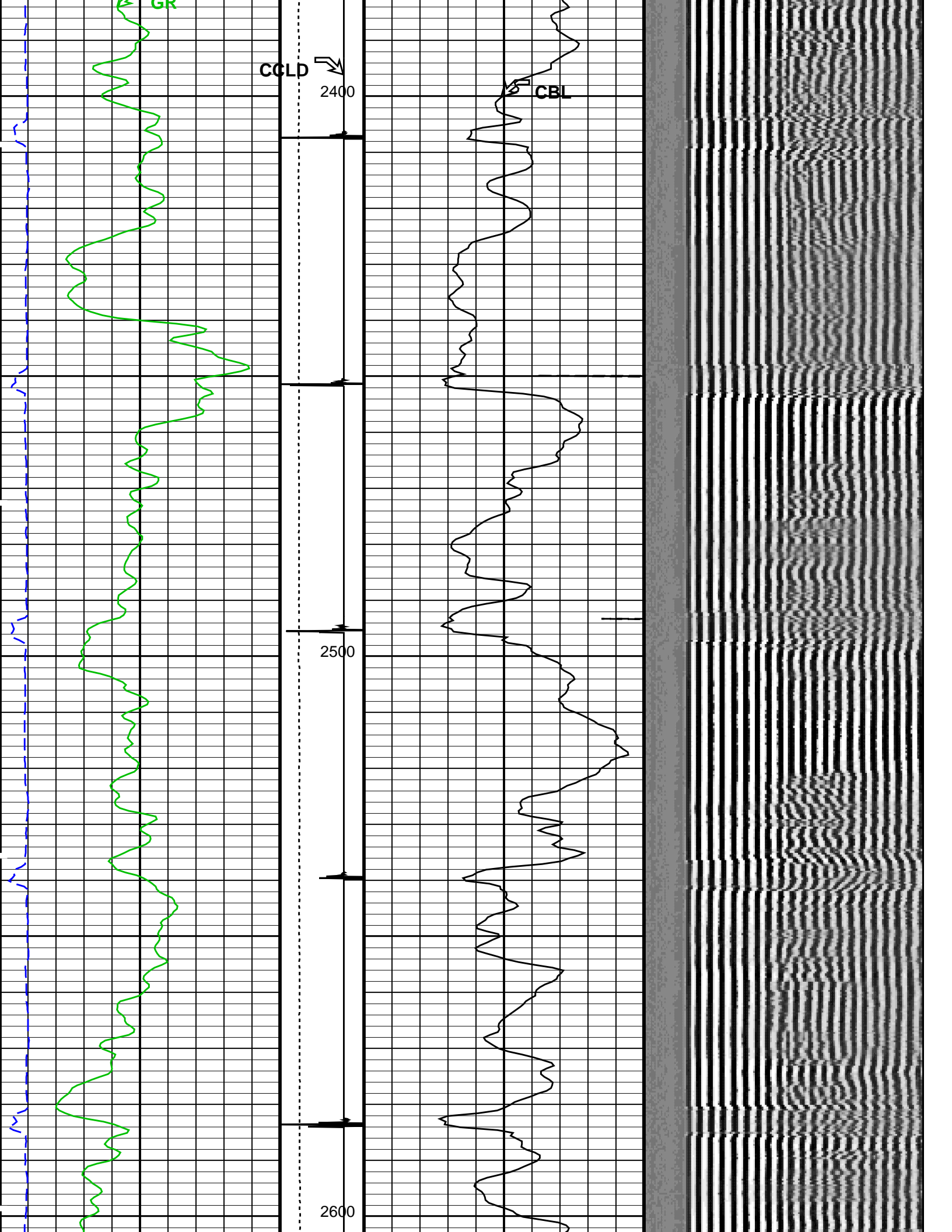


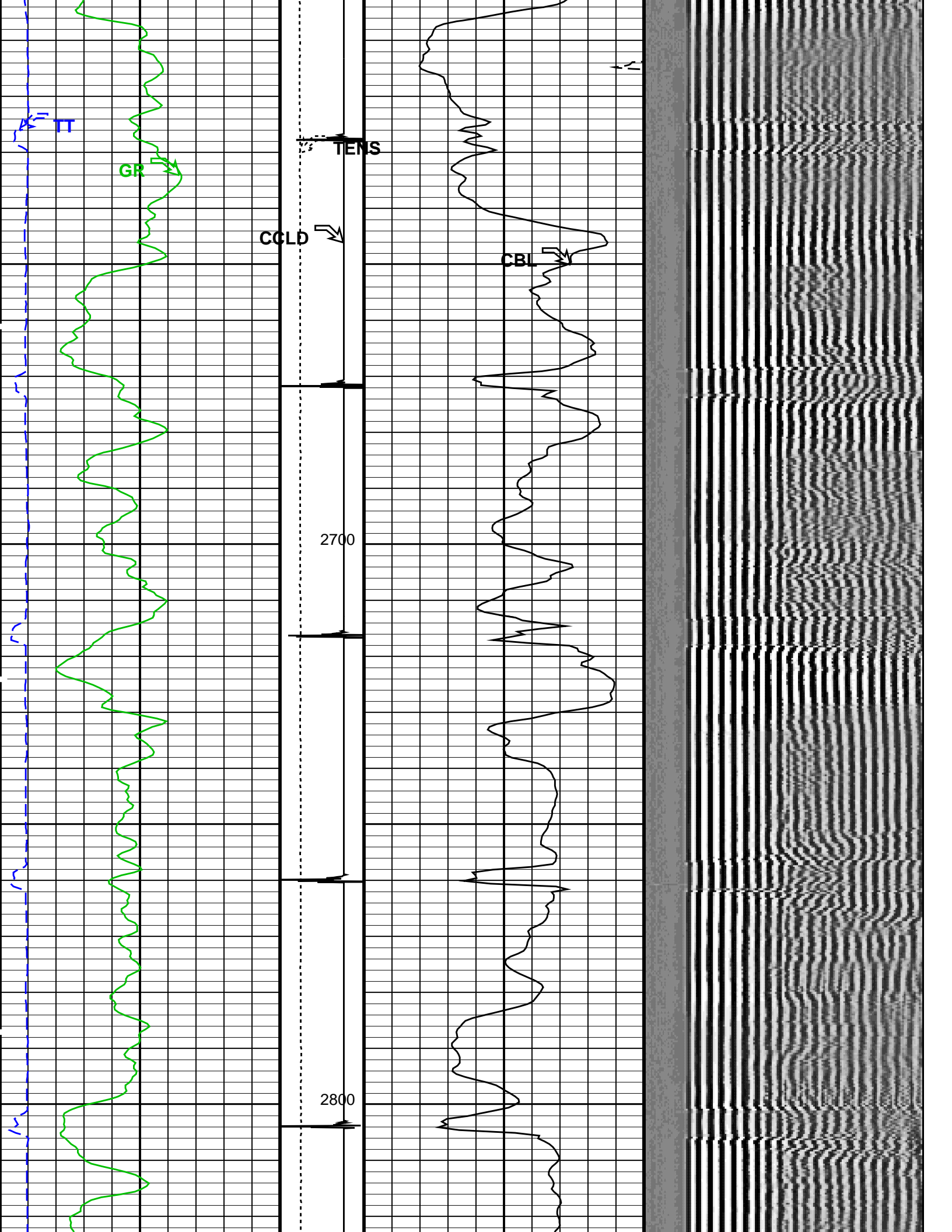


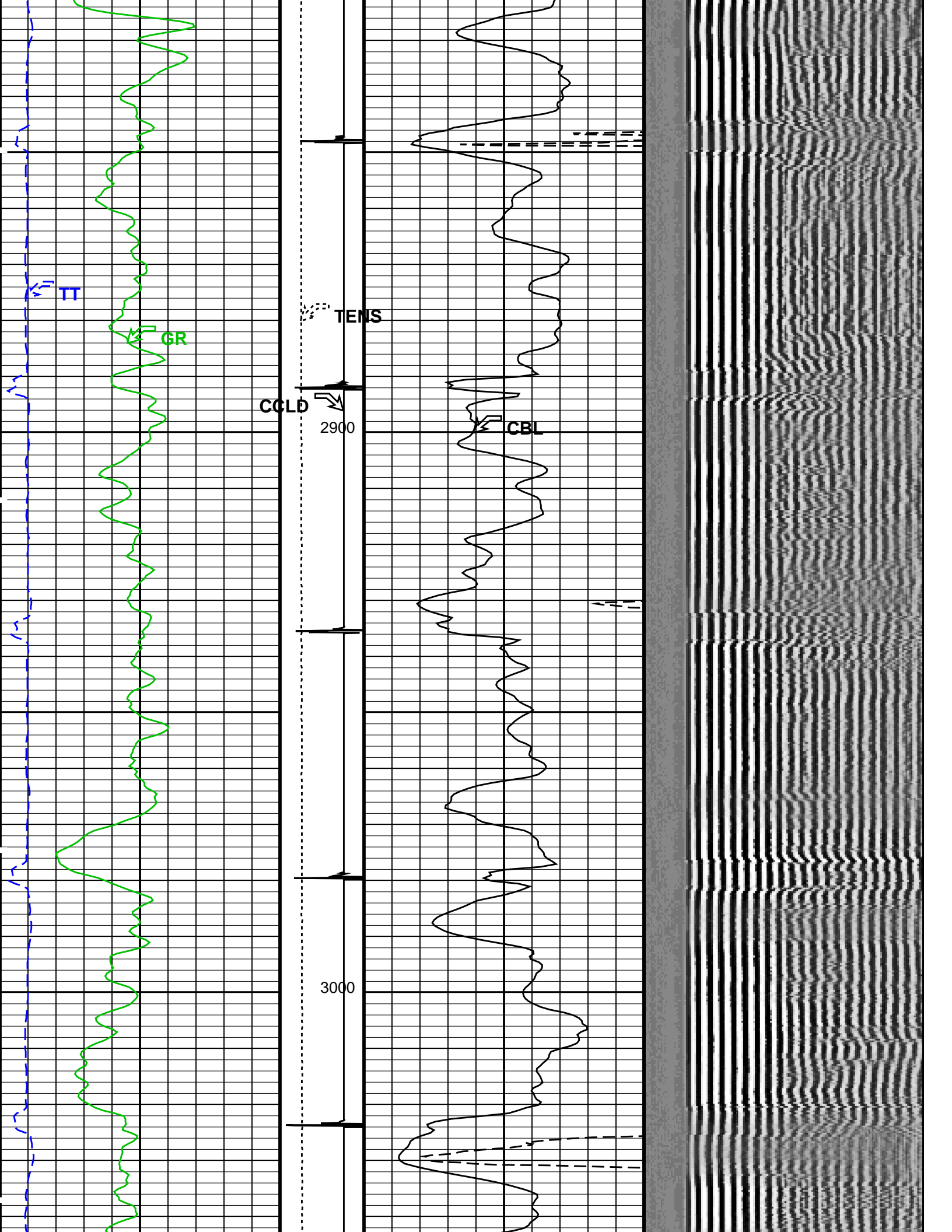


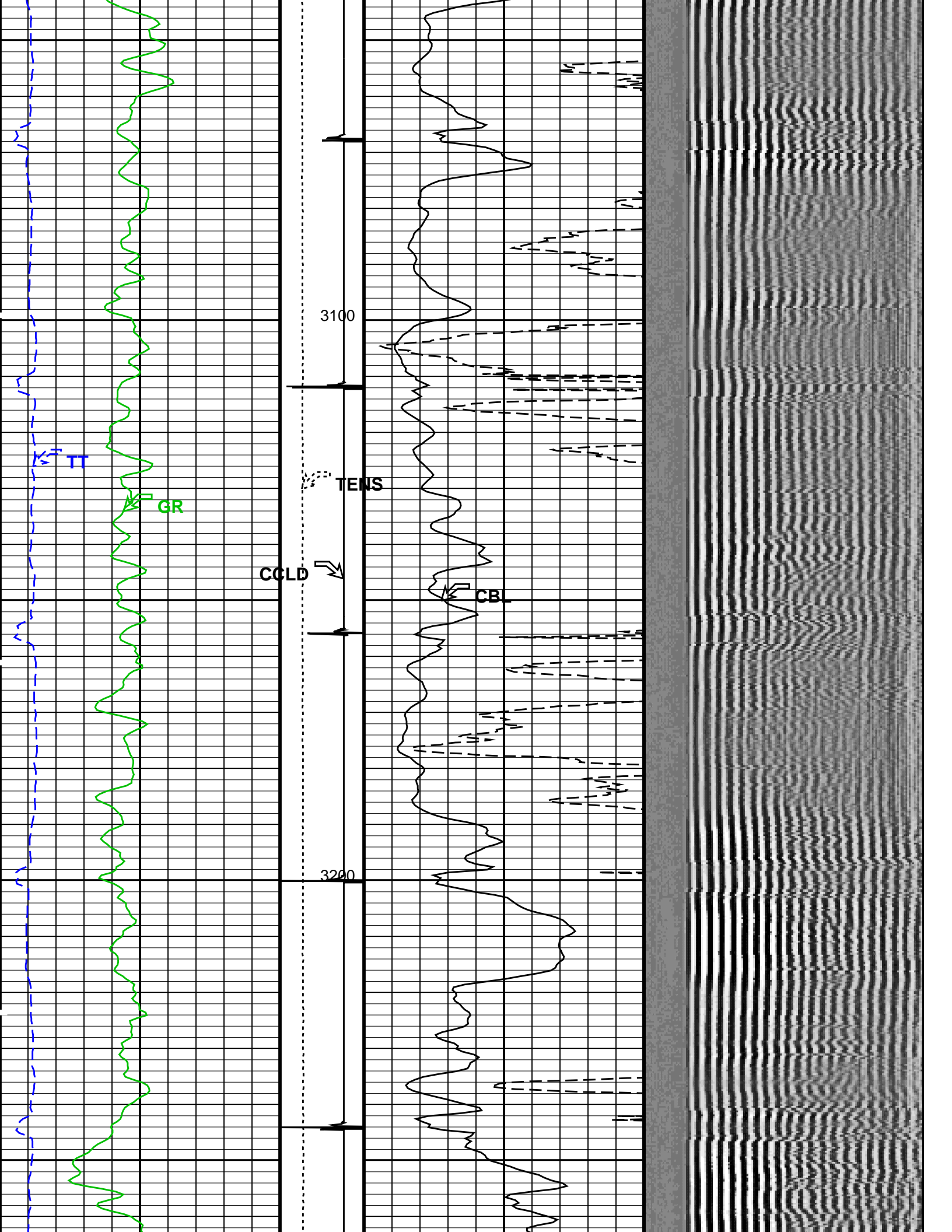


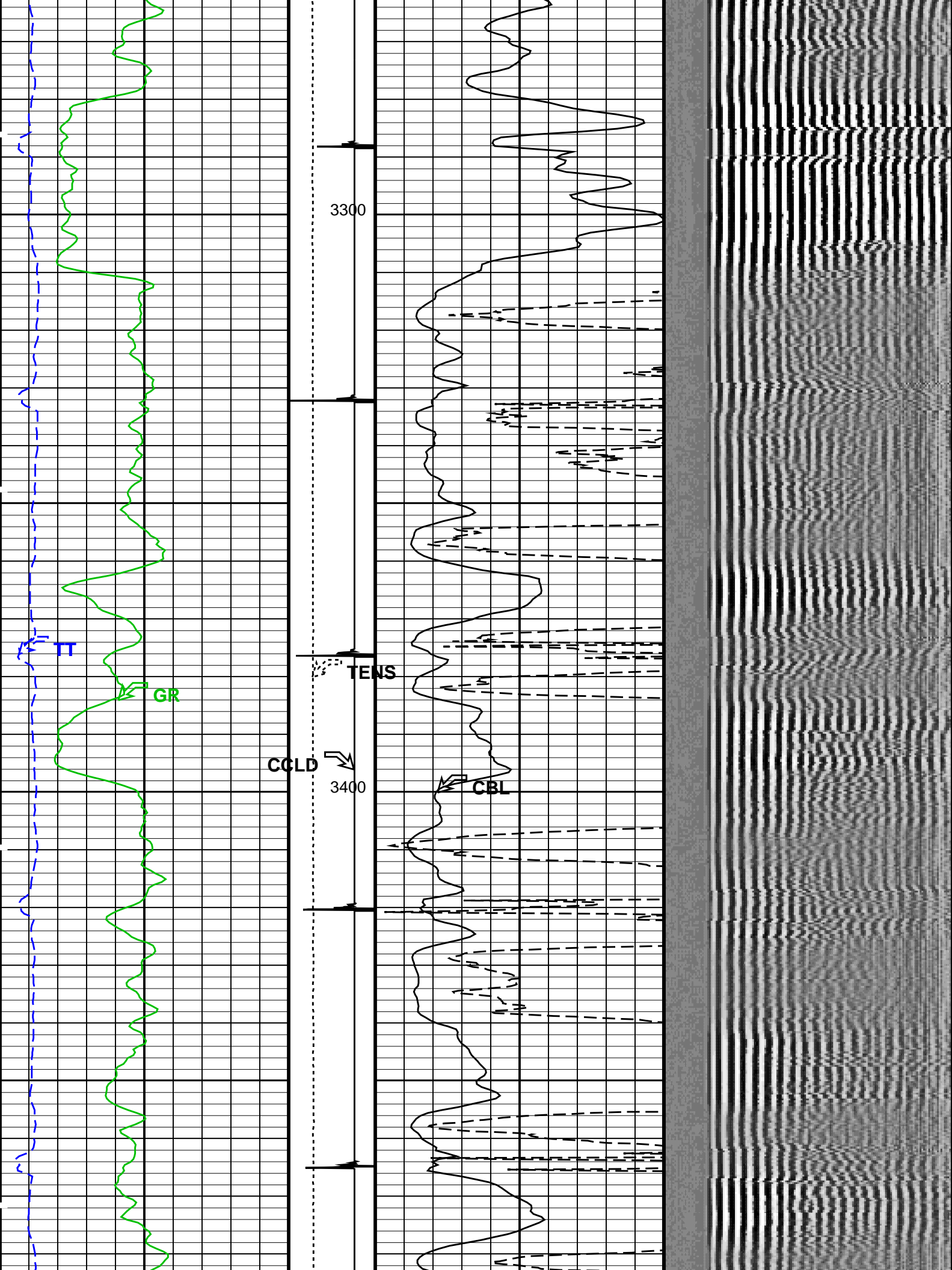


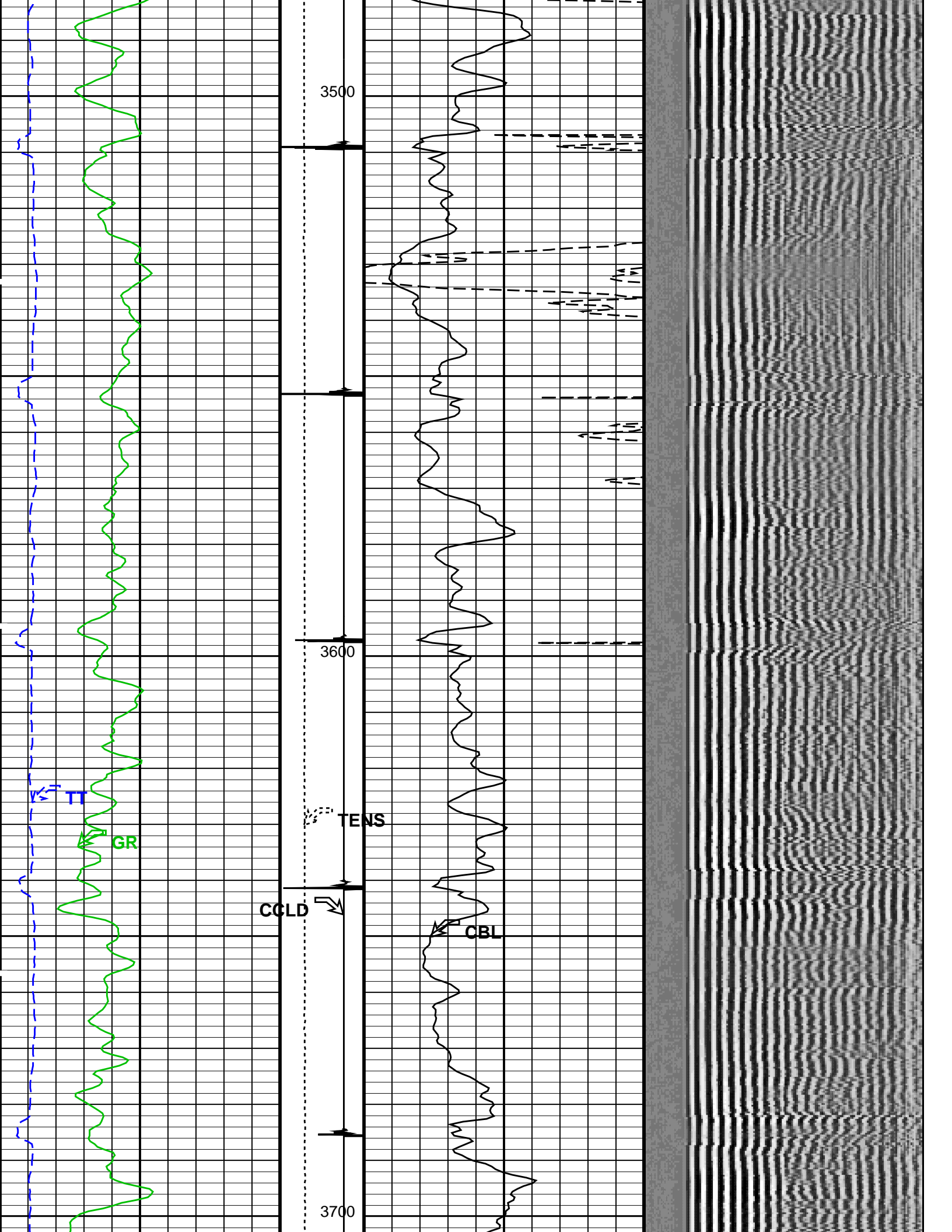


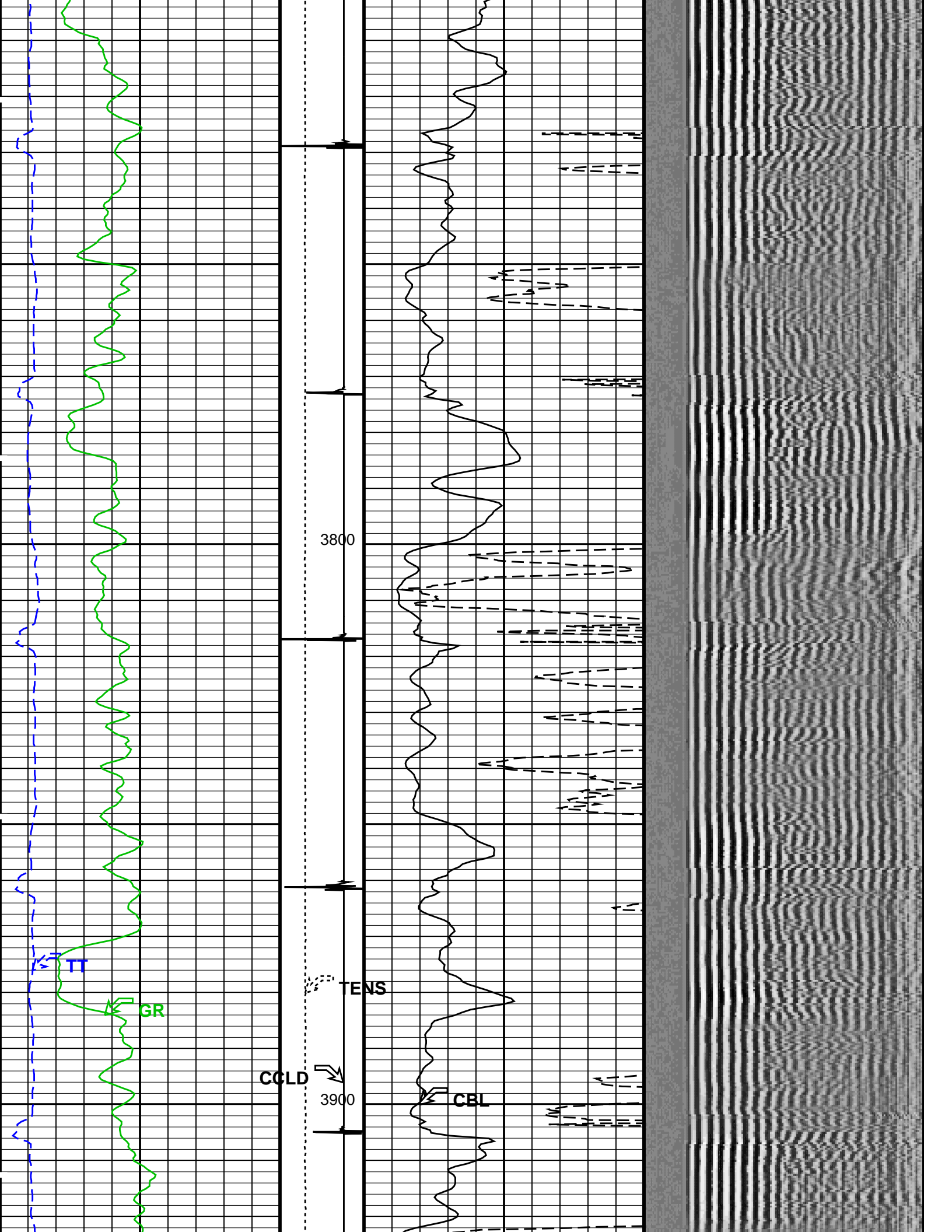


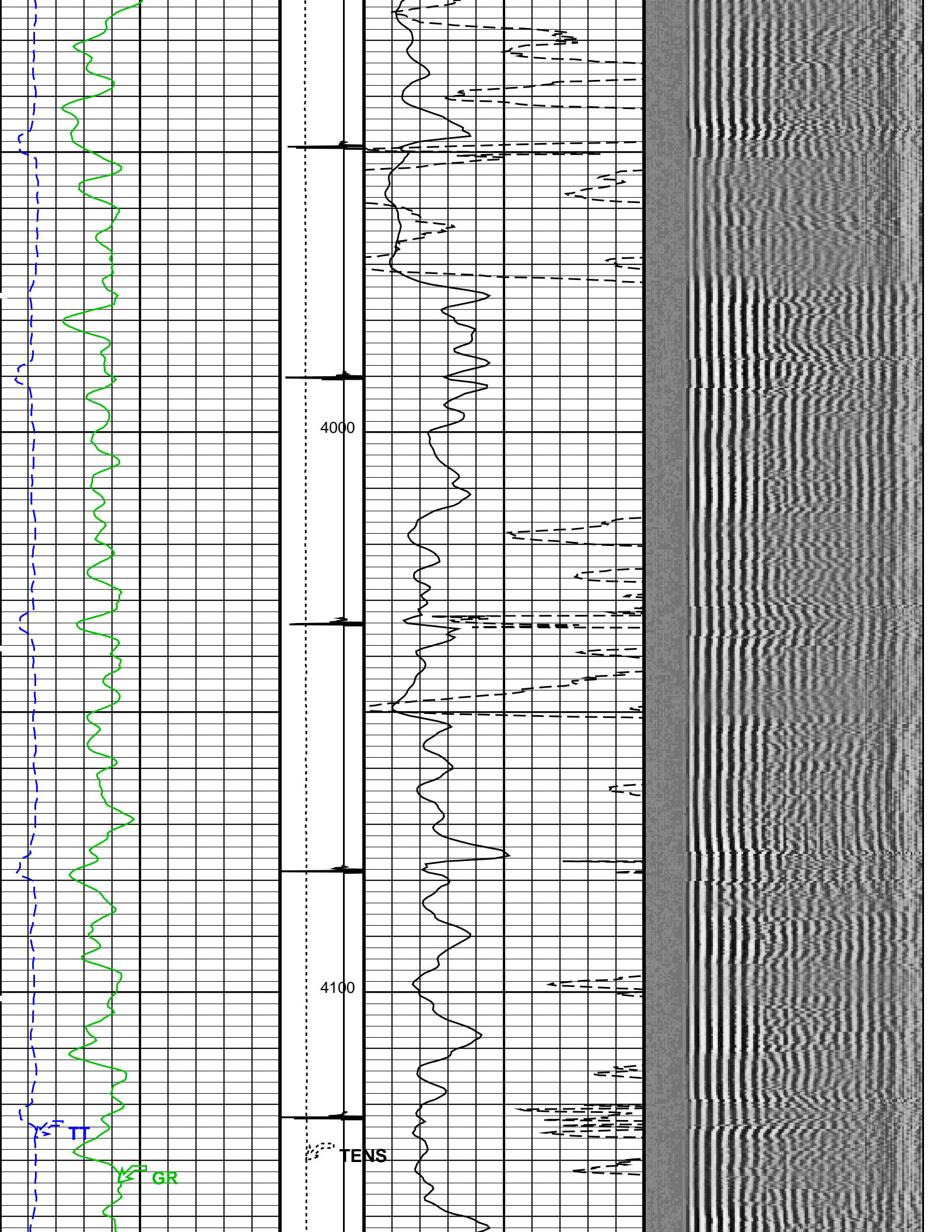


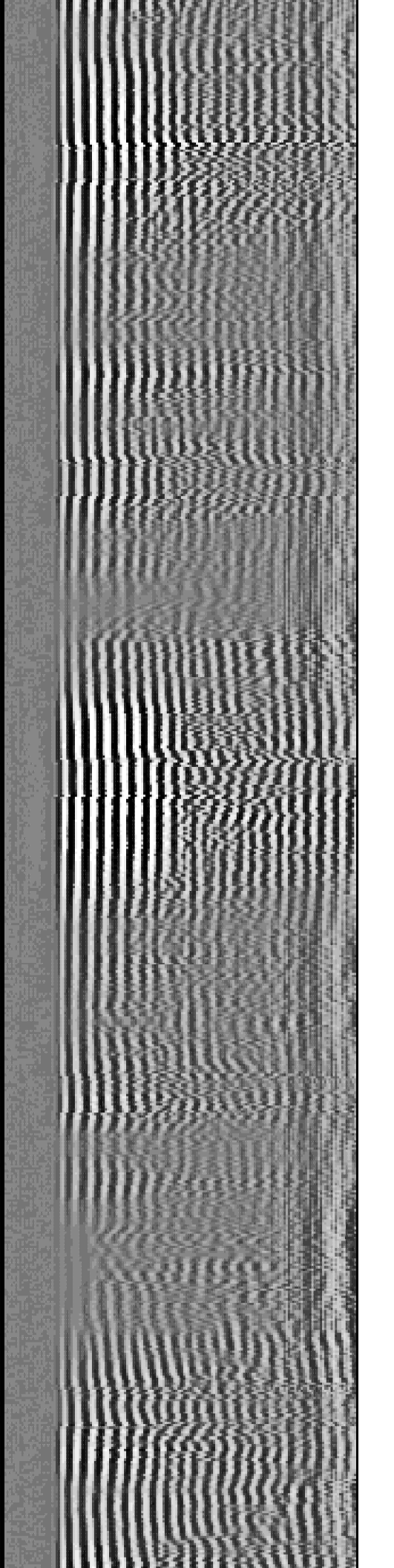
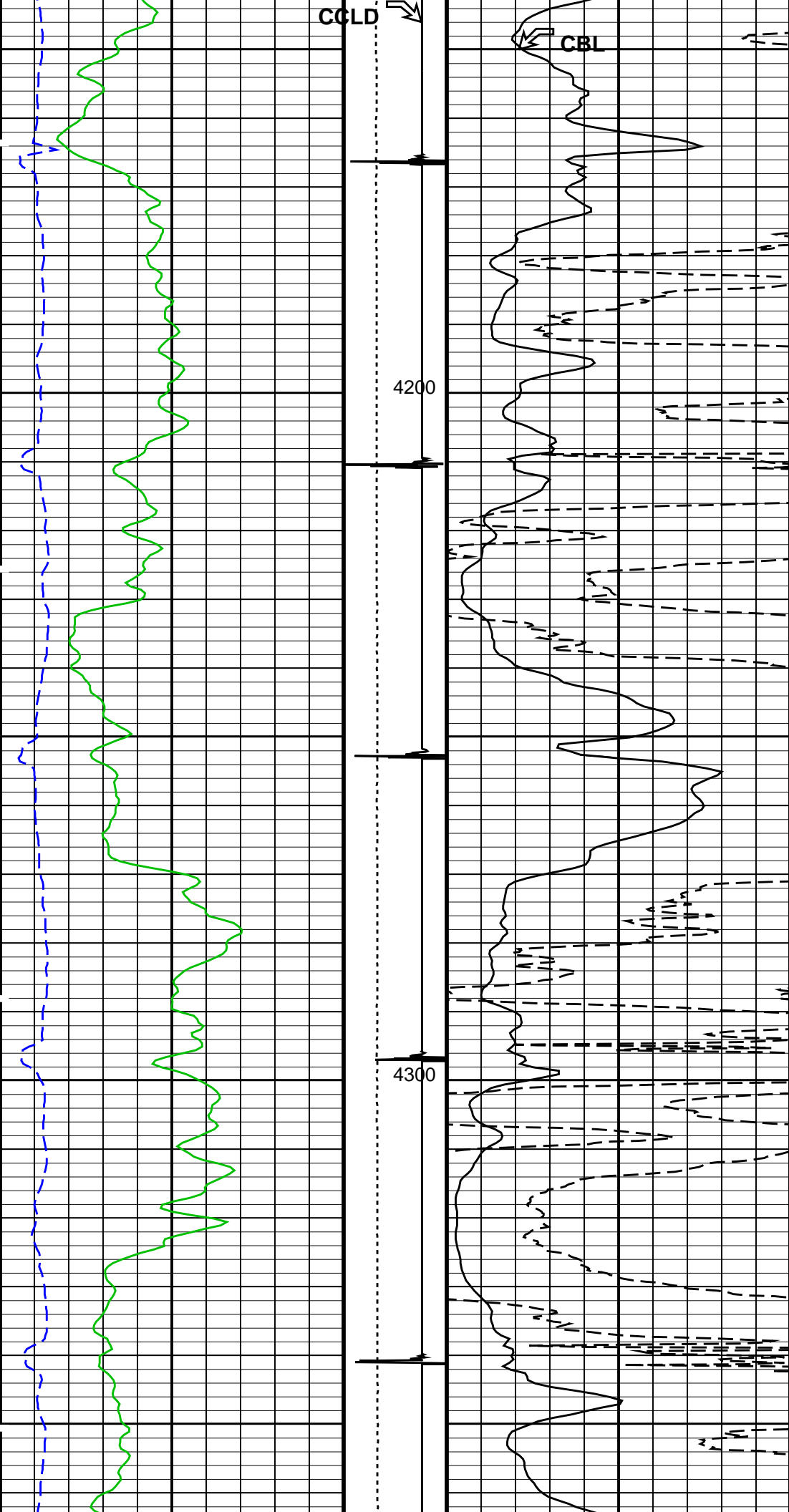


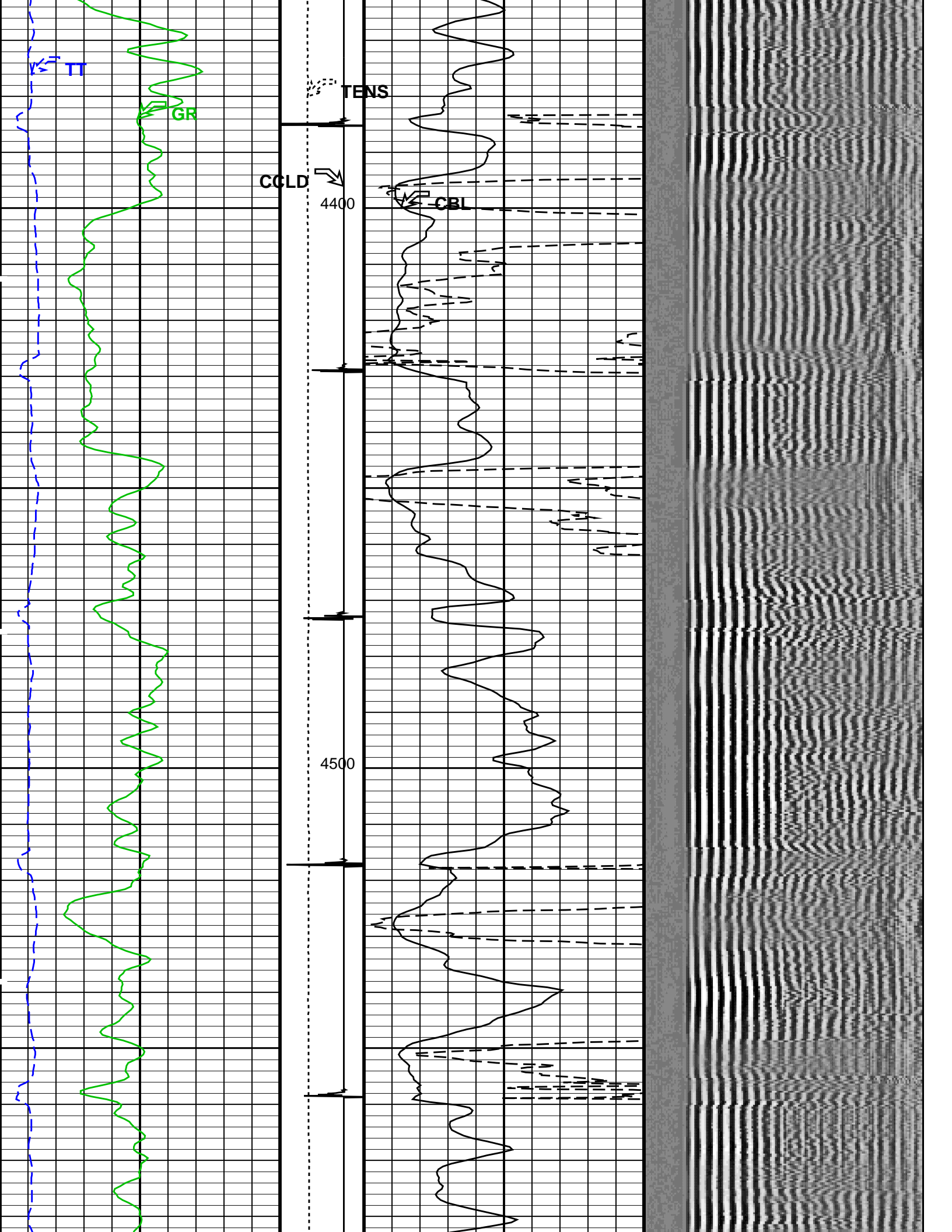


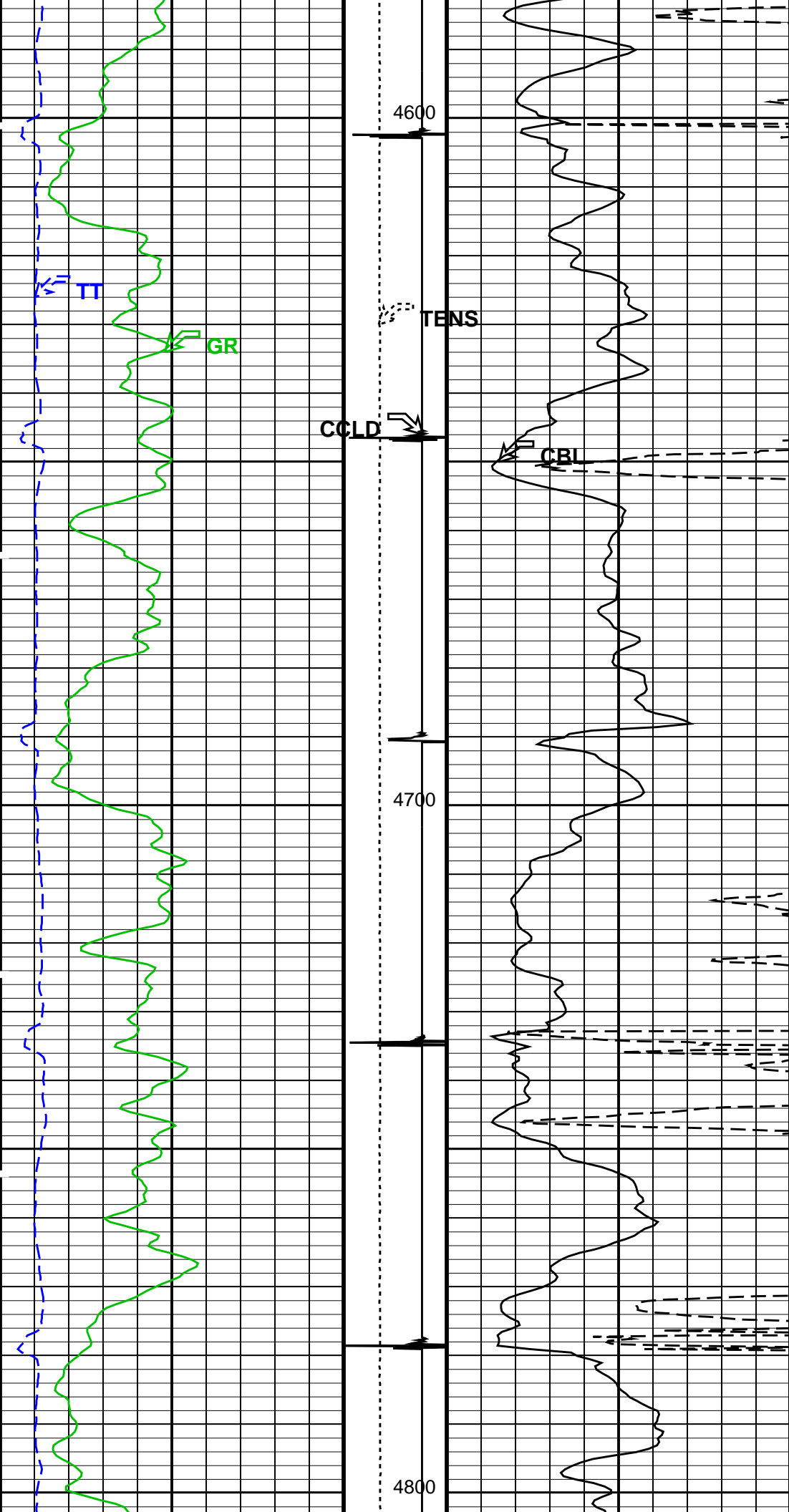


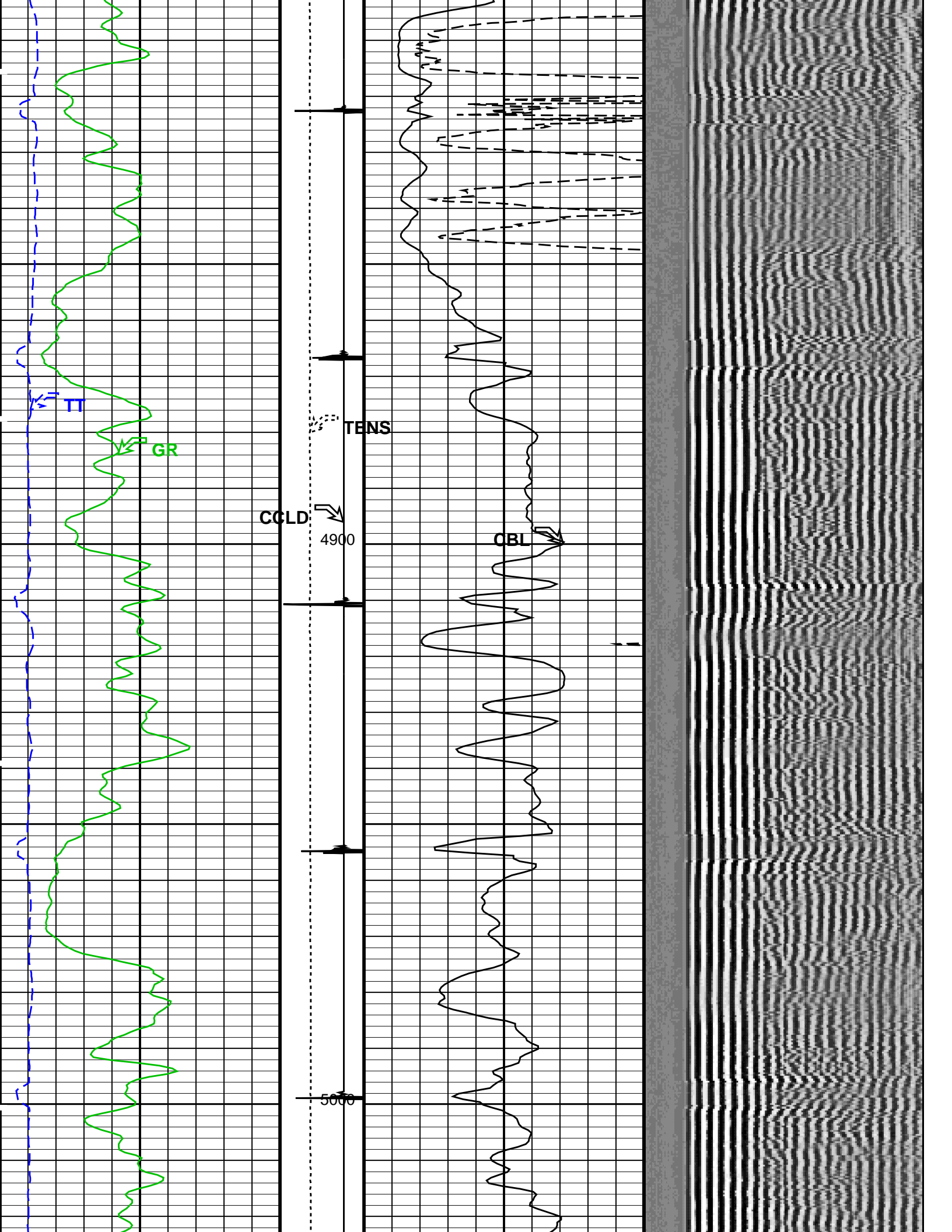


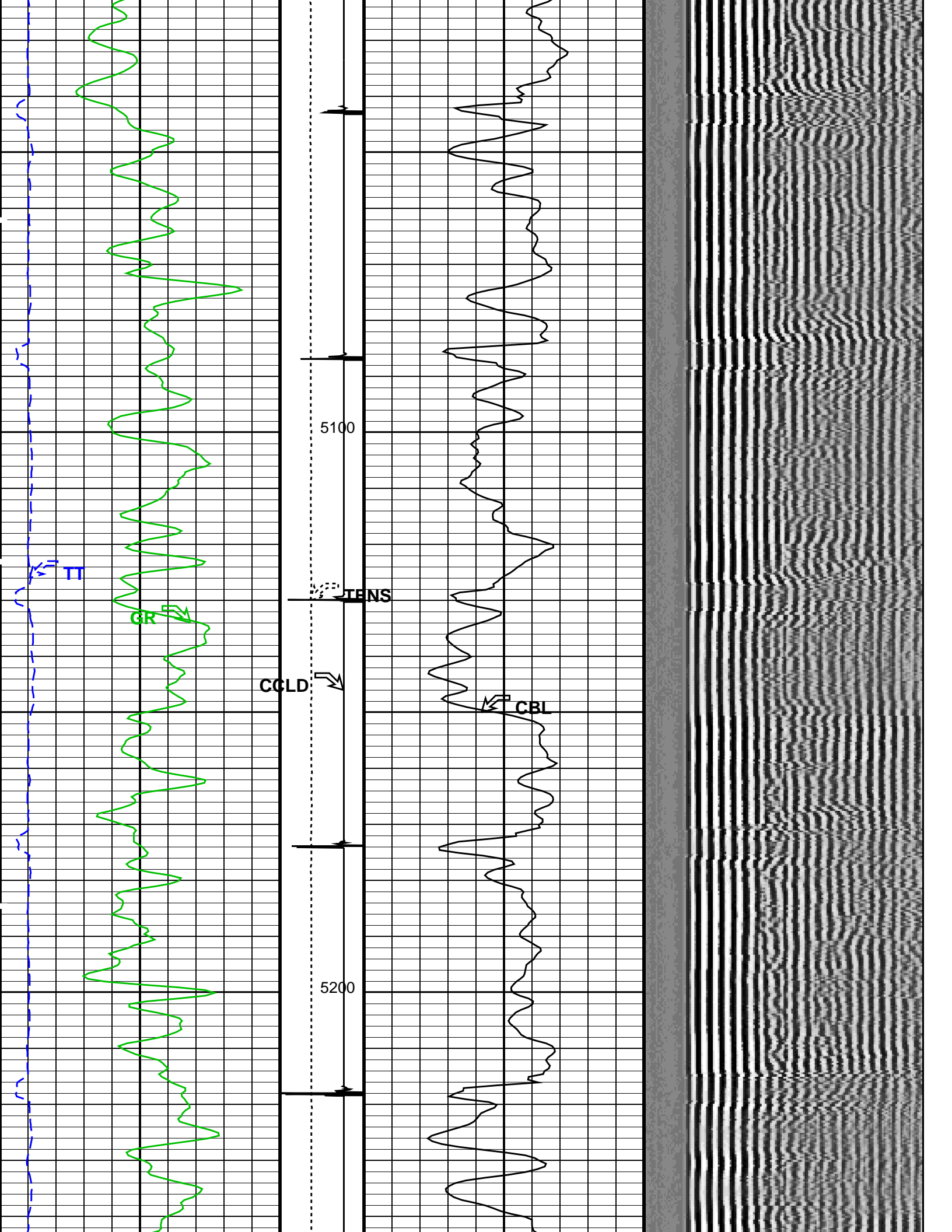


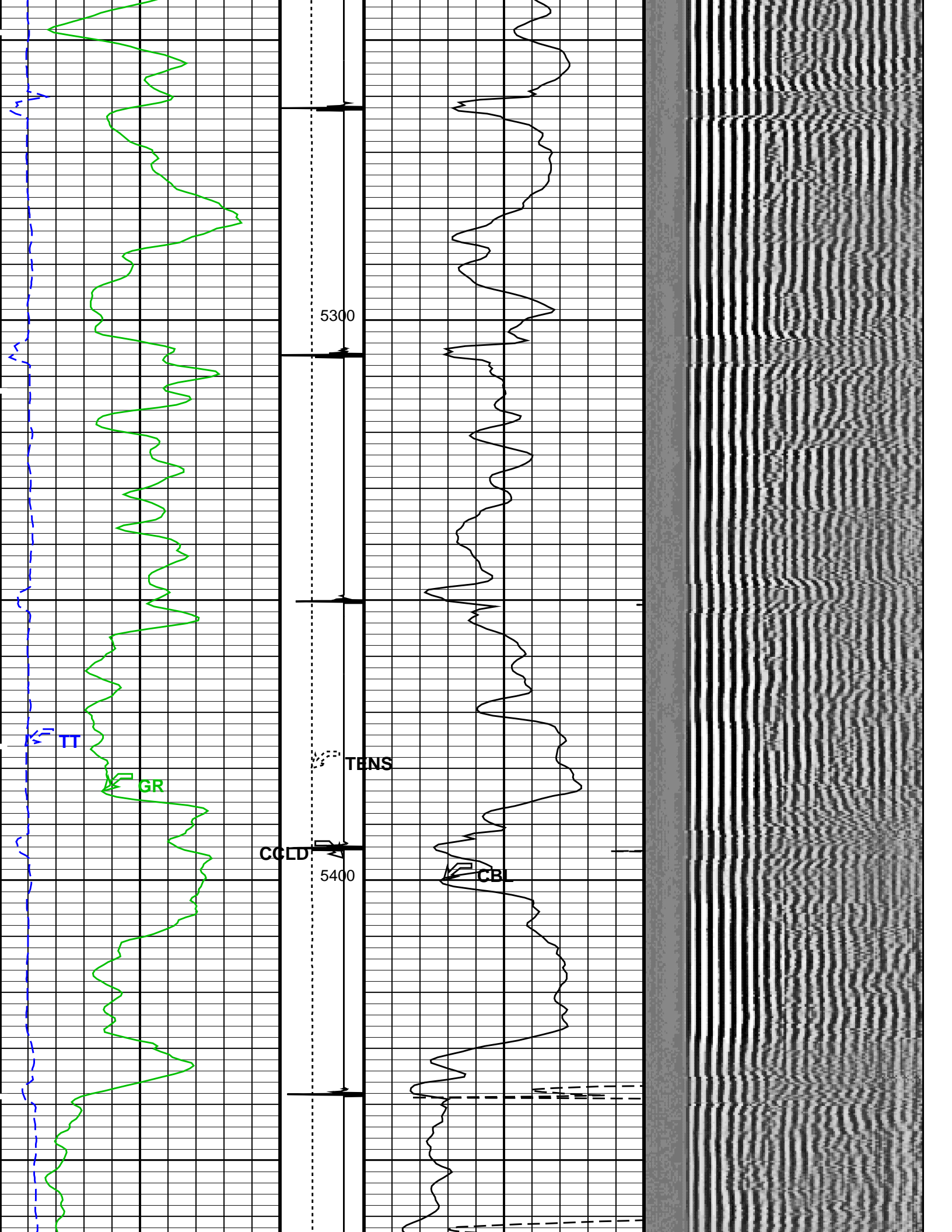


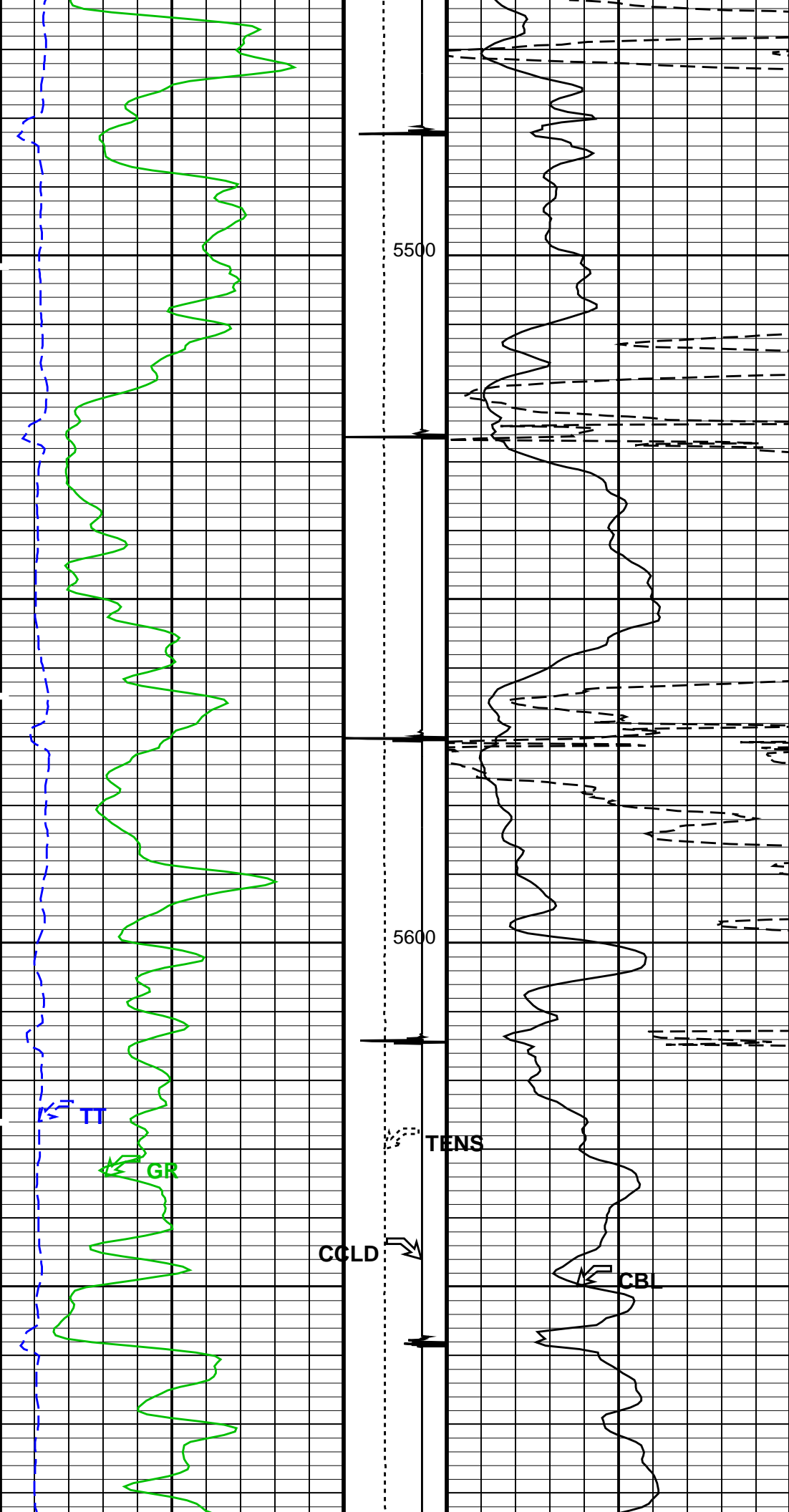


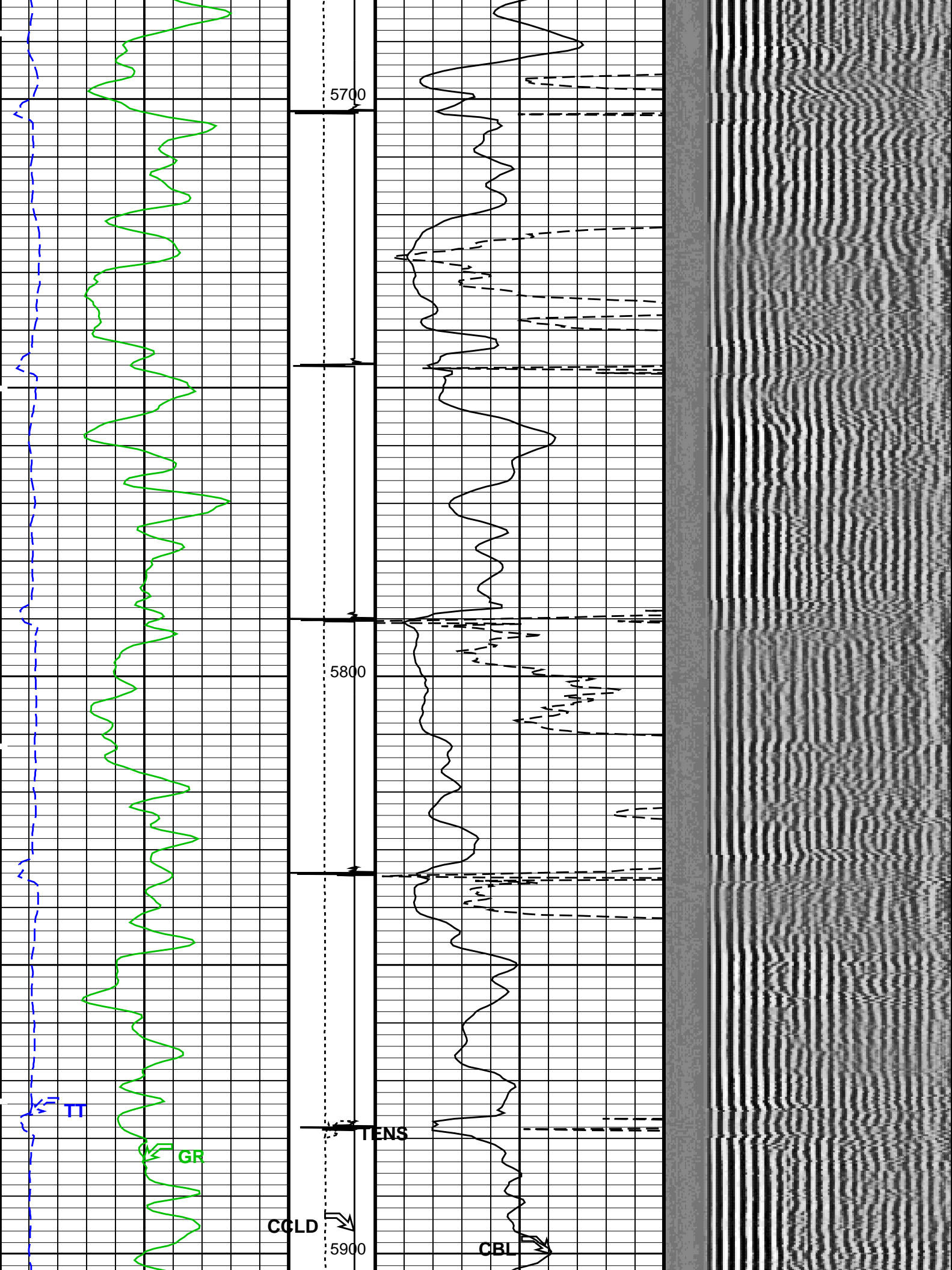


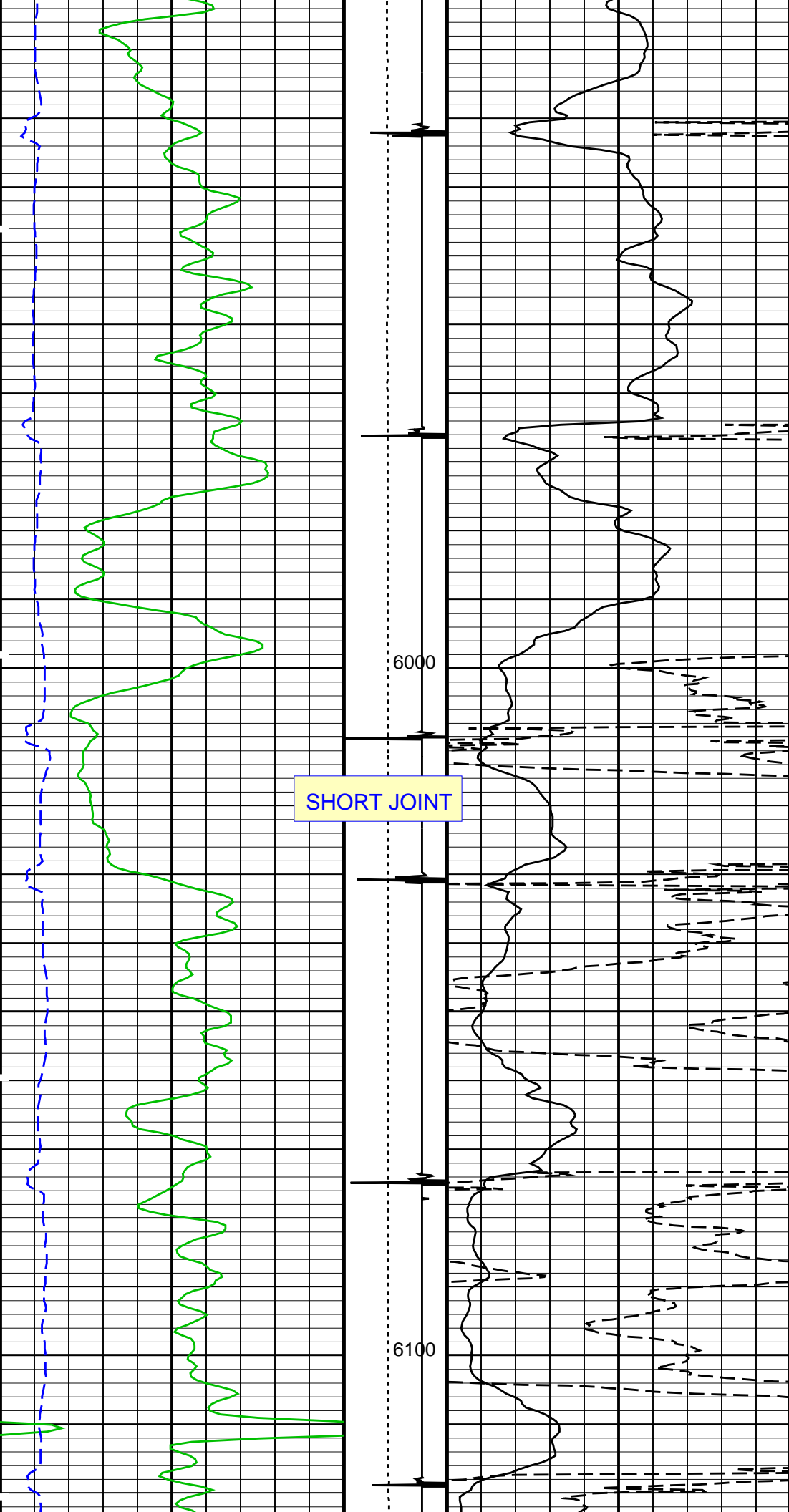


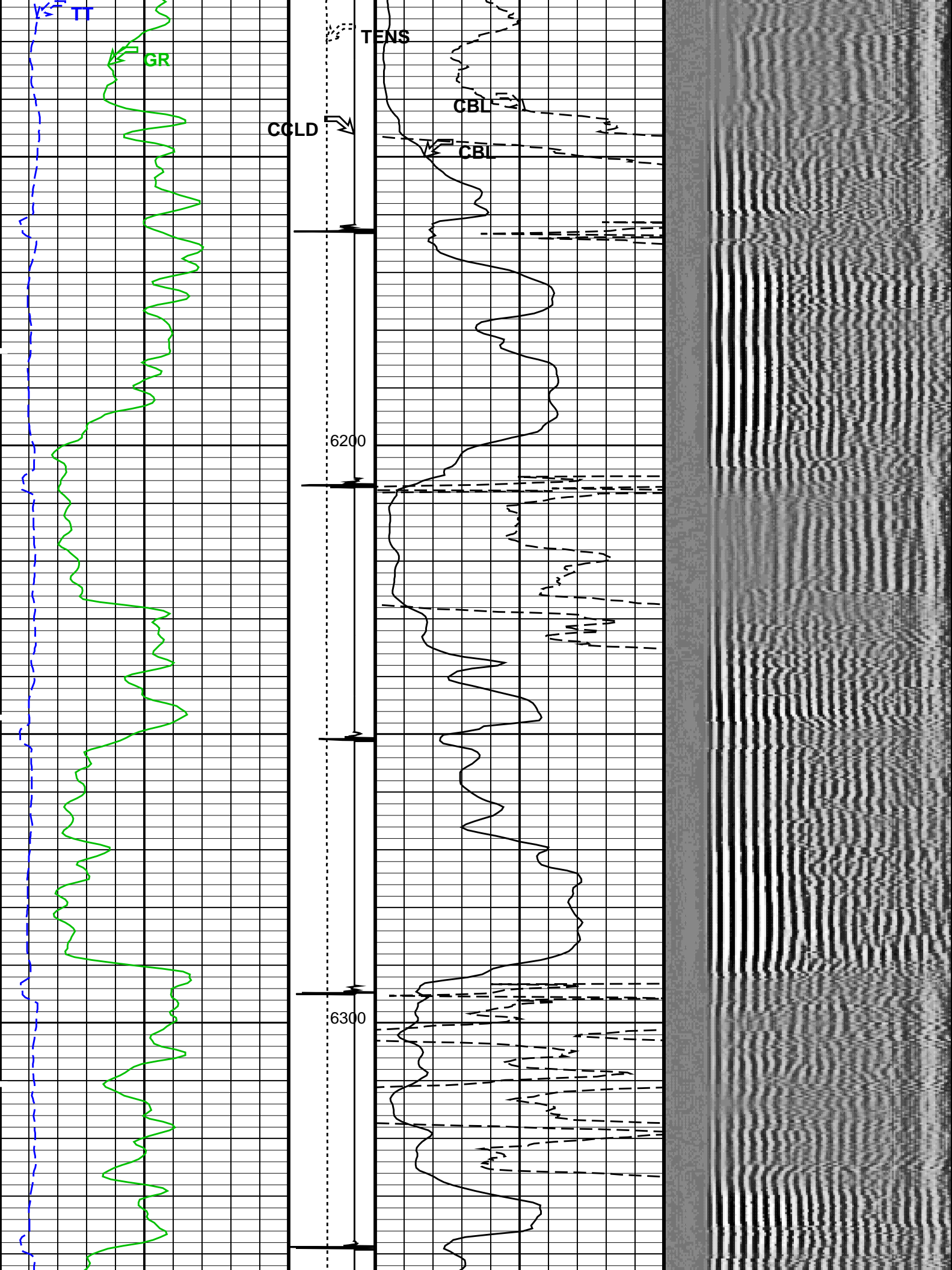


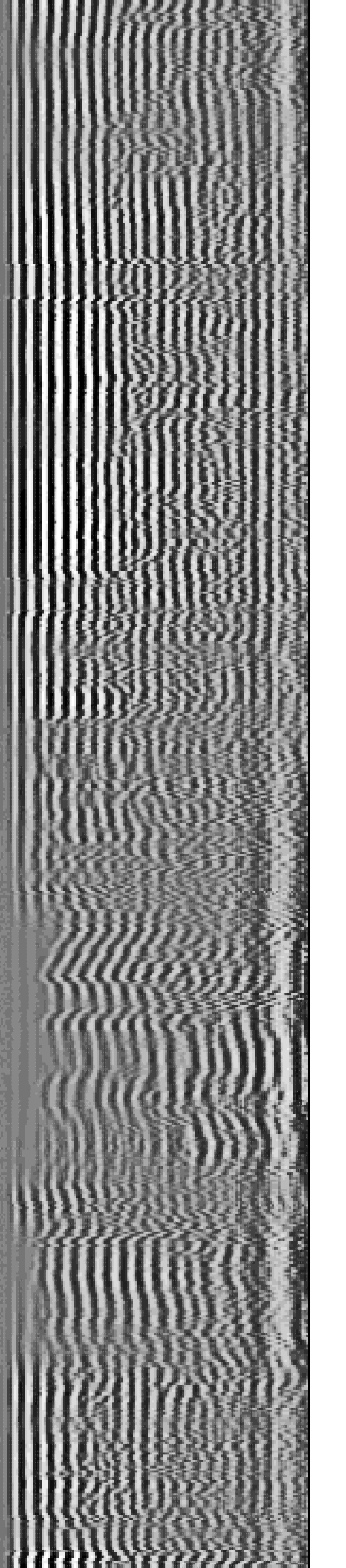
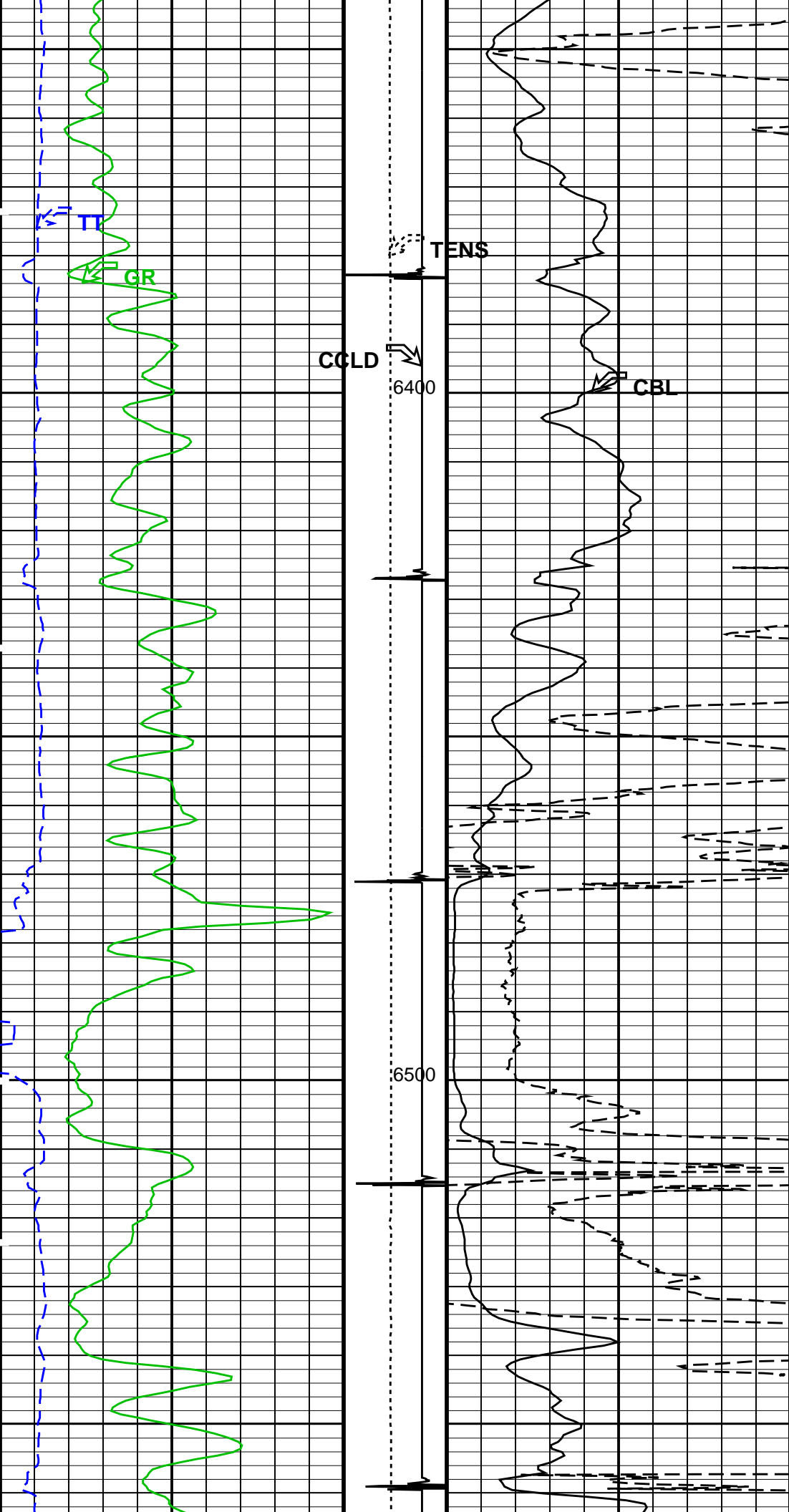


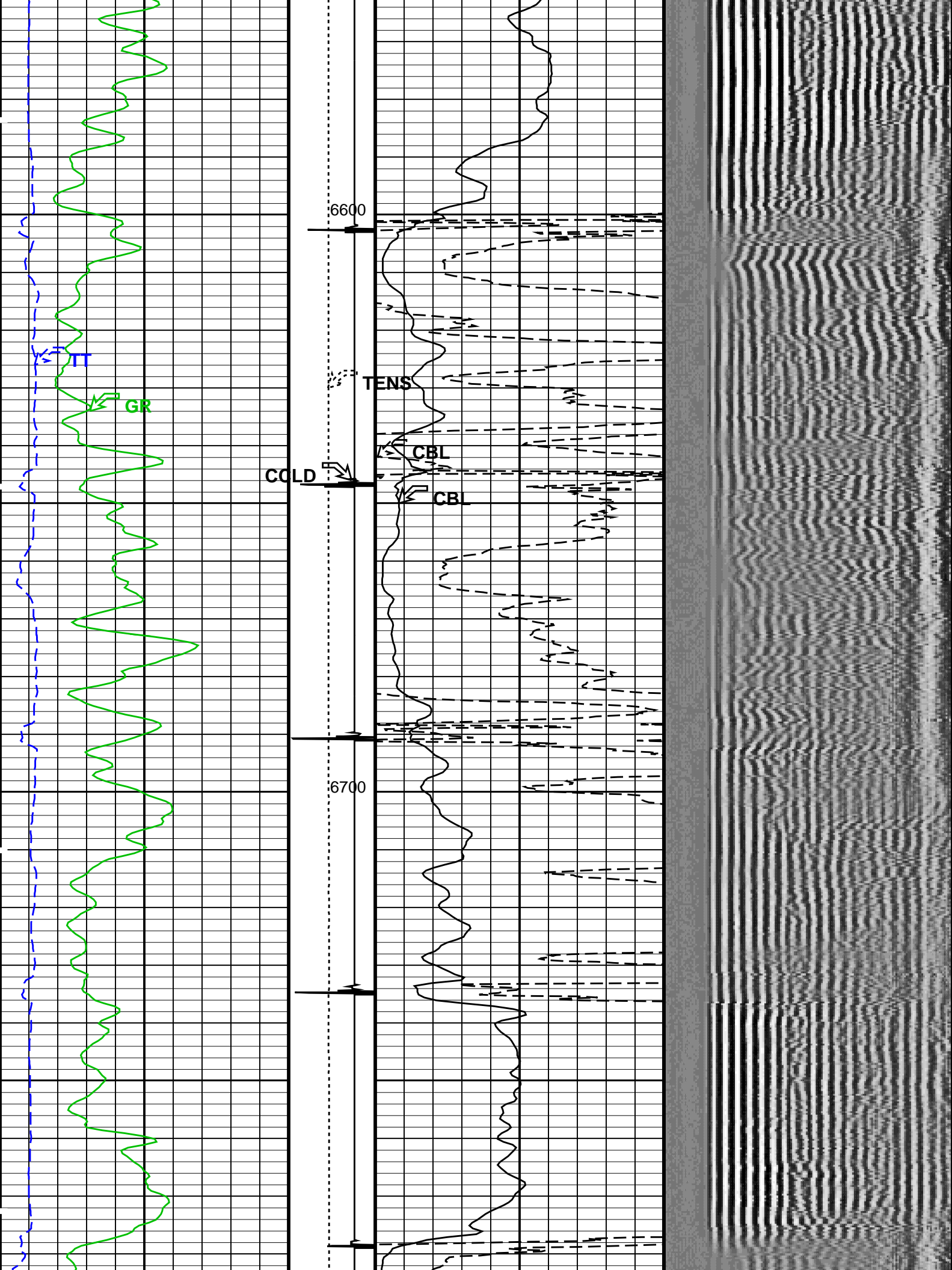


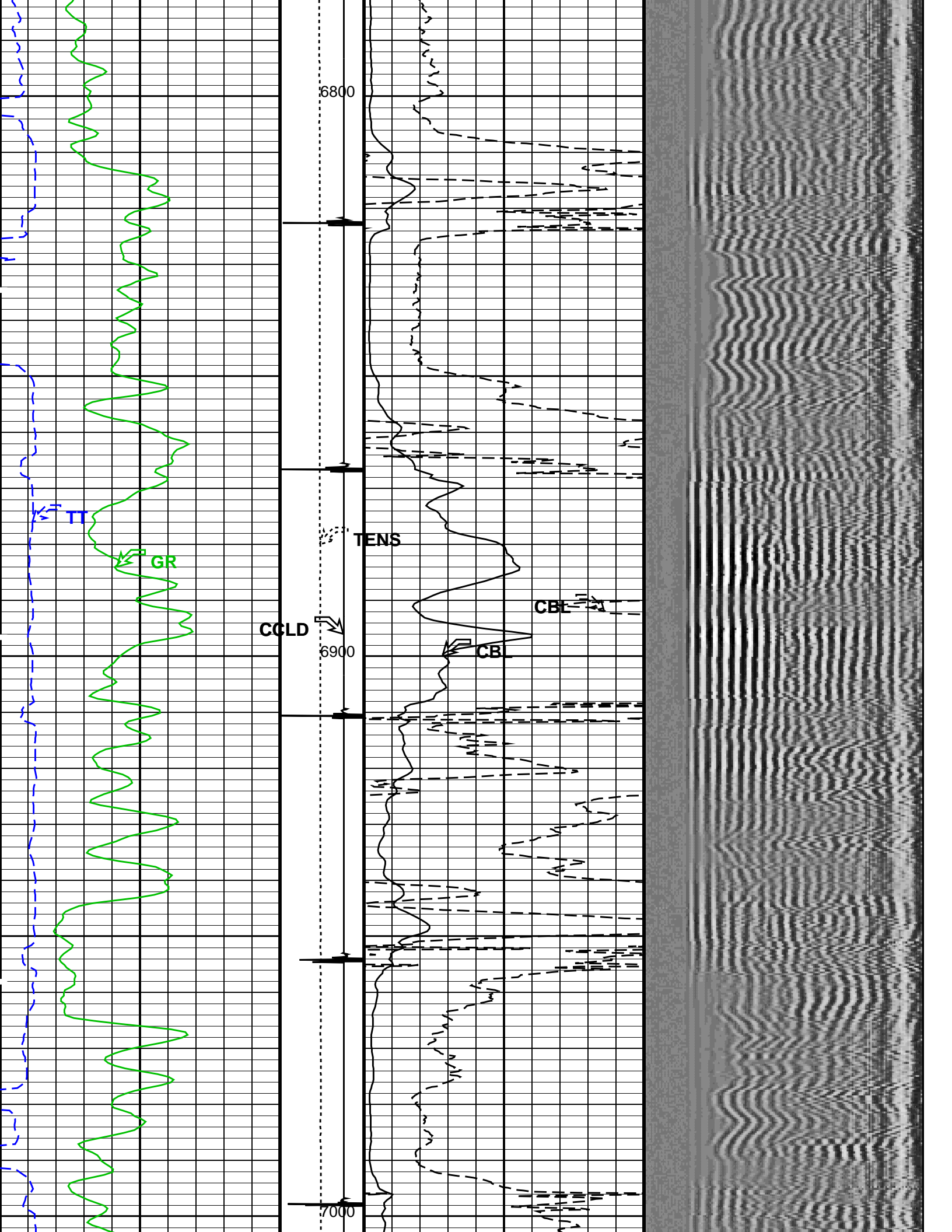




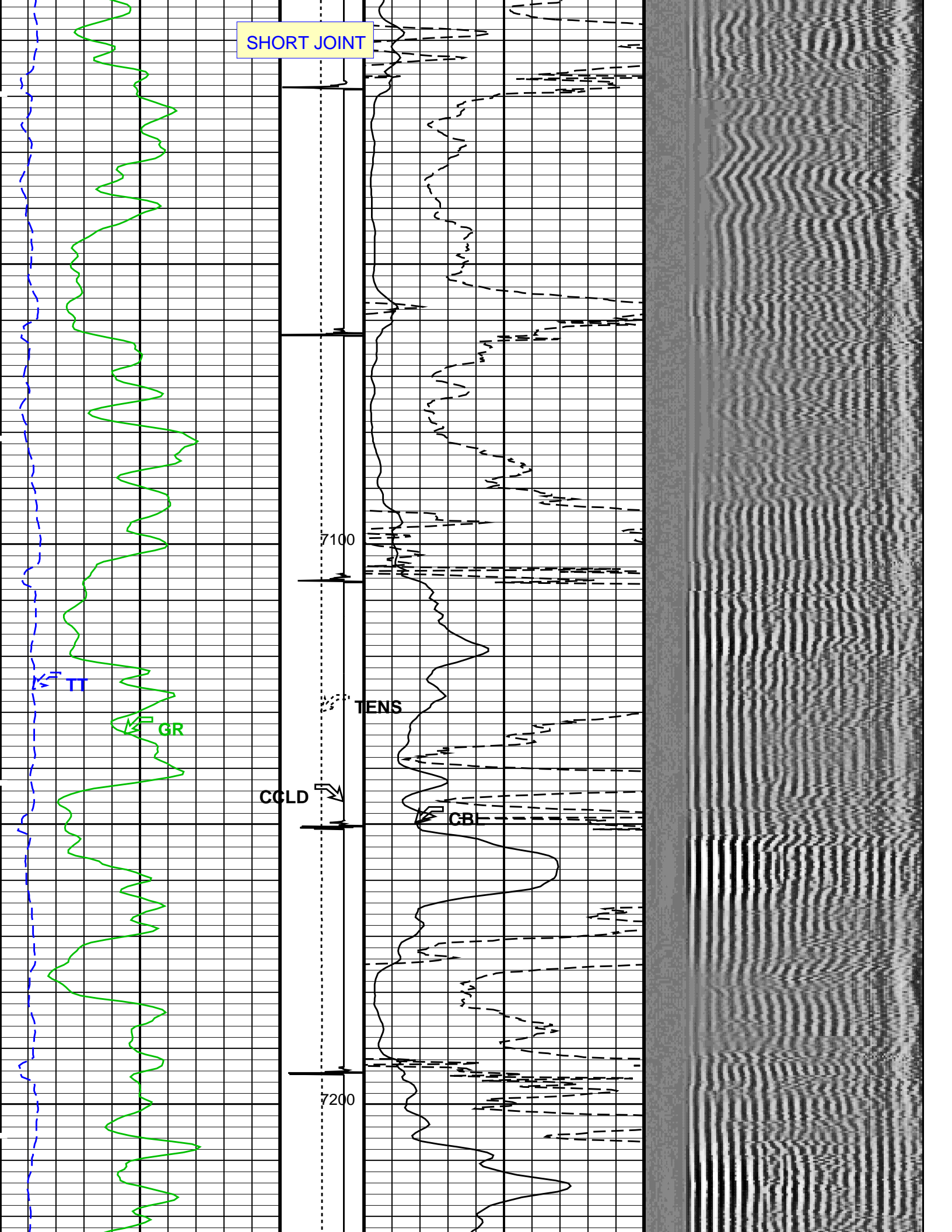


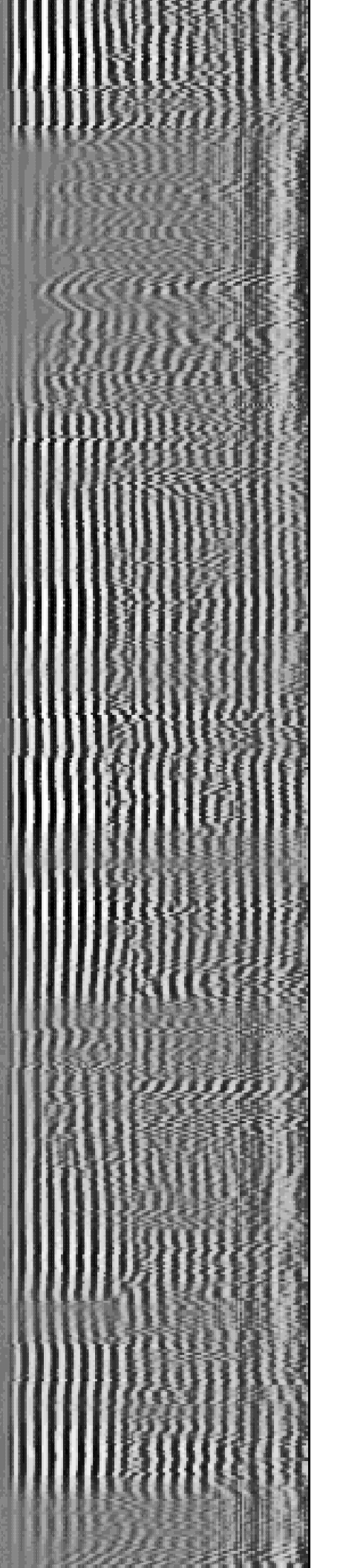
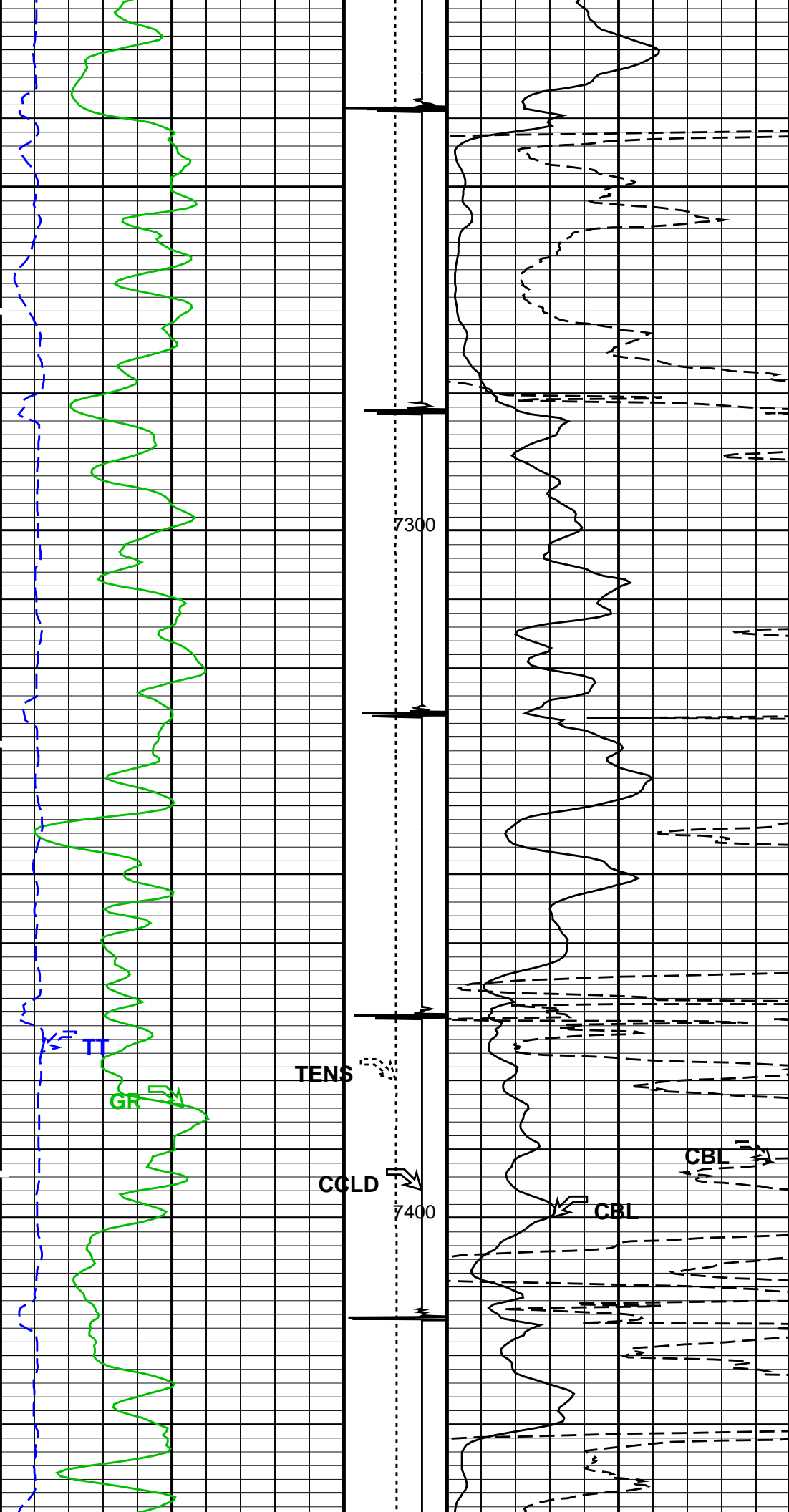


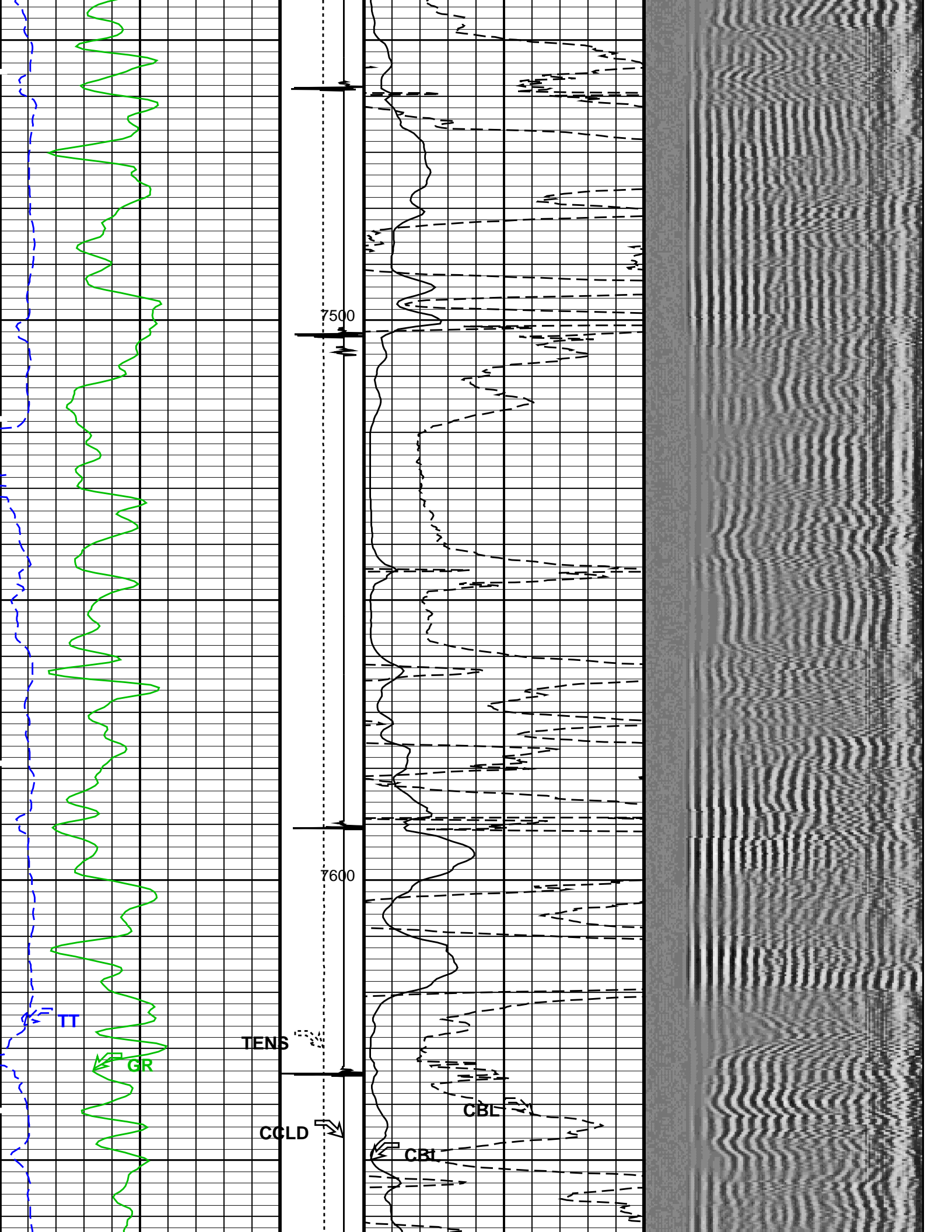


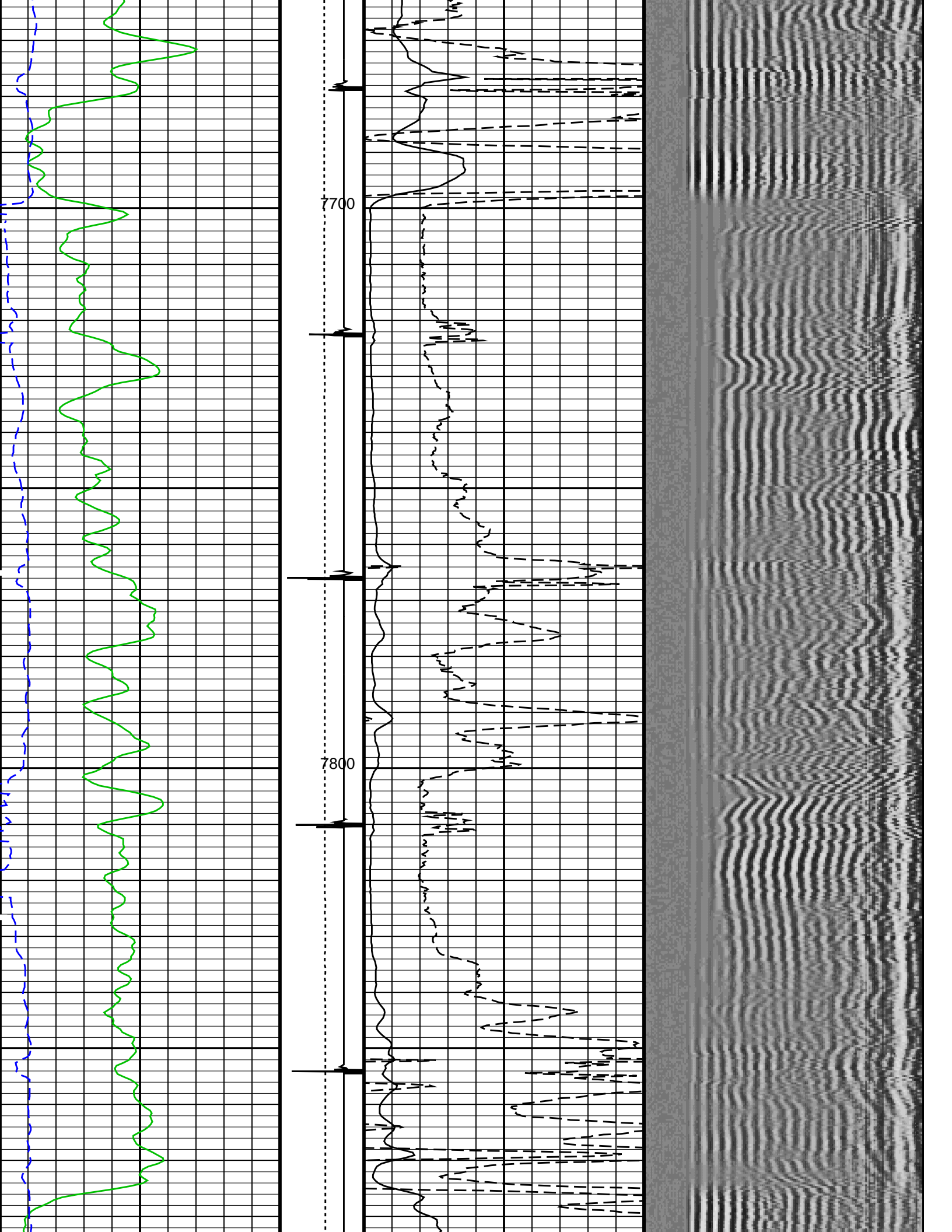


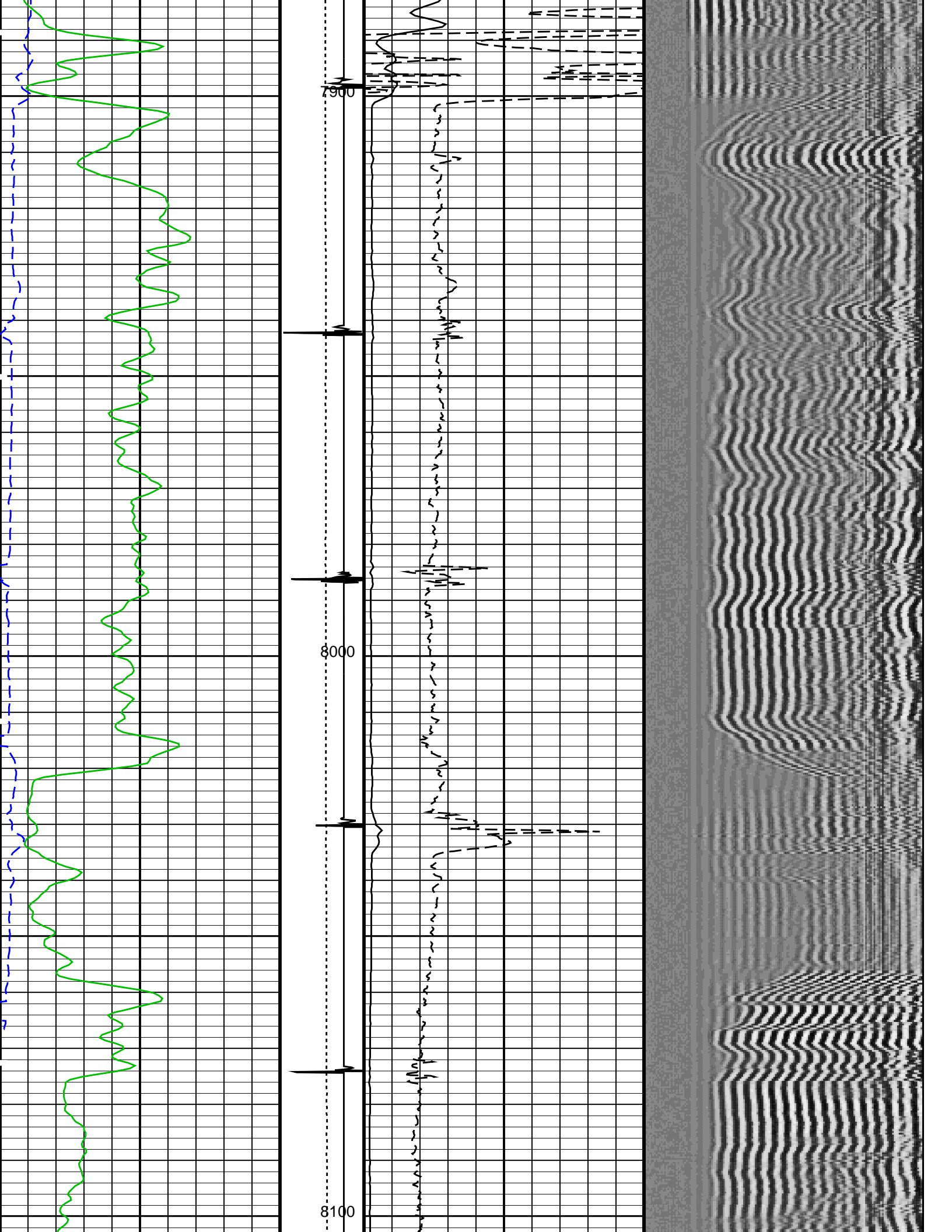
SHORT JOINT

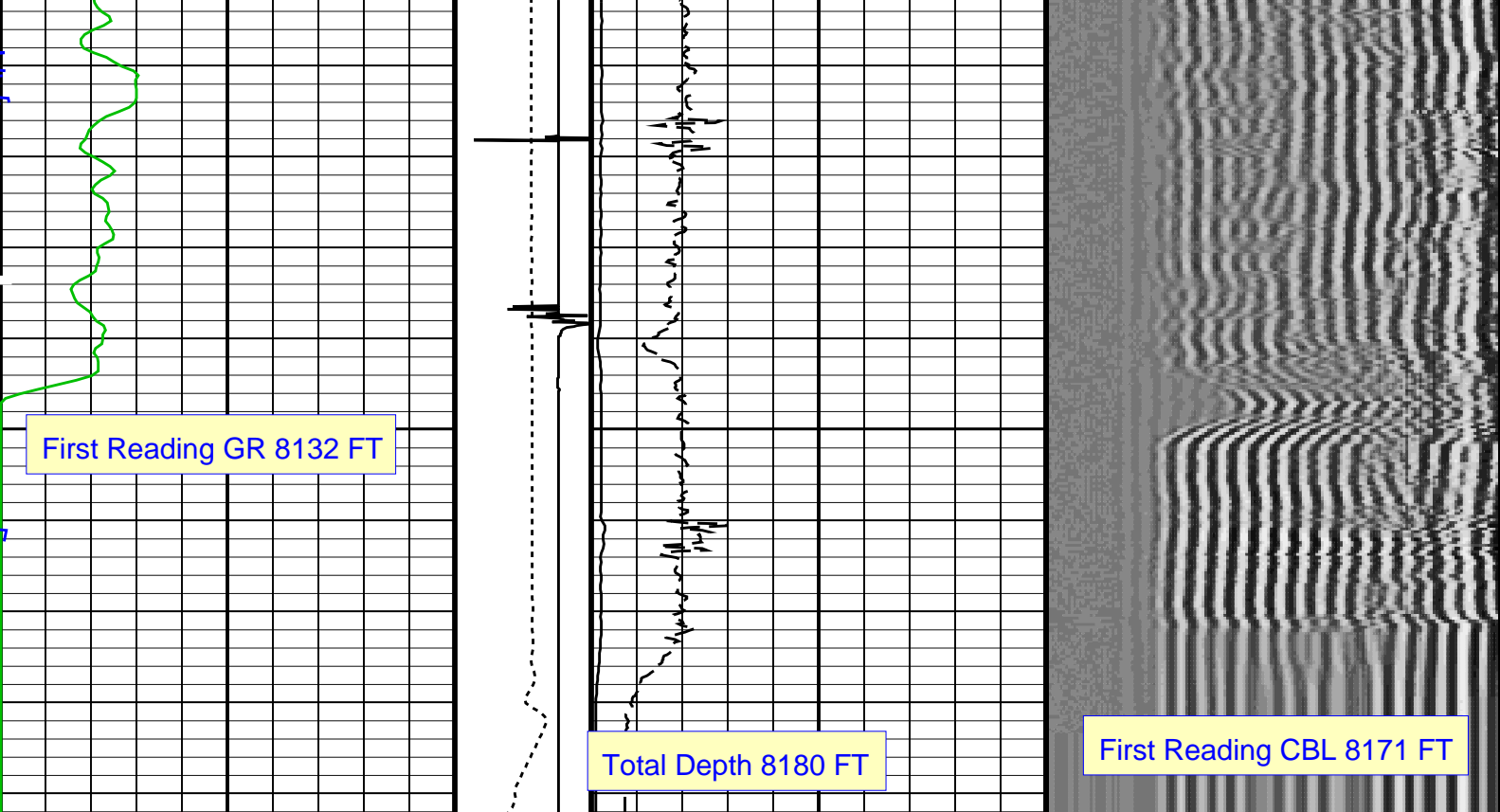












Gamma Ray (GR) (GAPI)	Tension (TENS) (LBF)	CBL Amplitude (CBL) (MV)	Min	Amplitude	Max
0	0	0	200	VDL Variable Density (VDL) (US)	1200
150	2000	100			
Transit Time (TT) (US)	Discriminated CCL (CCLD)	CBL Amplitude (CBL) (MV)			
260	3 (V) -1	0			
160		10			

PIP SUMMARY

Time Mark Every 60 S

Format: CBL_VDL Vertical Scale: 5" per 100'

Graphics File Created: 01-May-2013 19:03

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
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 7-SEP-2012

CBL Correction Factor 0.0756720

MAP 1 Correction Factor 0.136845

MAP 2 Correction Factor 0.165126

MAP 3 Correction Factor 0.125717

MAP 4 Correction Factor 0.196395

Before Calibration (Adjustment)

CBL Adjustment Factor (CBAF) 1.0

MAP Adjustment Factor (MPAF) 1.0

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	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
DFD	Drilling Fluid Density	8.40	LB/G
DO	Depth Offset for Playback	4.0	FT
PP	Playback Processing	RECOMPUTE	
TD	Total Depth	8180	FT

Input DLIS Files

DEFAULT	SCMT_RST_PSP_013LUP	FN:12	PRODUCER	01-May-2013 16:45	8188.5 FT	2.5 FT
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Output DLIS Files

DEFAULT	SCMT_RST_PSP_016PUP	FN:15	PRODUCER	01-May-2013 19:03		
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REPEAT ANALYSIS CBL VDL

MAXIS Field Log

Input DLIS Files

DEFAULT	SCMT_RST_PSP_011LUP	FN:10	PRODUCER	01-May-2013 16:26	6143.5 FT	5812.5 FT
DEFAULT	SCMT_RST_PSP_016PUP	FN:15	PRODUCER	01-May-2013 19:03	8192.5 FT	-38.0 FT

Output DLIS Files

DEFAULT

SCMT_RST_PSP_017PUP

FN:16

PRODUCER

01-May-2013 19:12 6145.5 FT

5770.0 FT

OP System Version: 19C0-187

SCMT-CB
PSPT

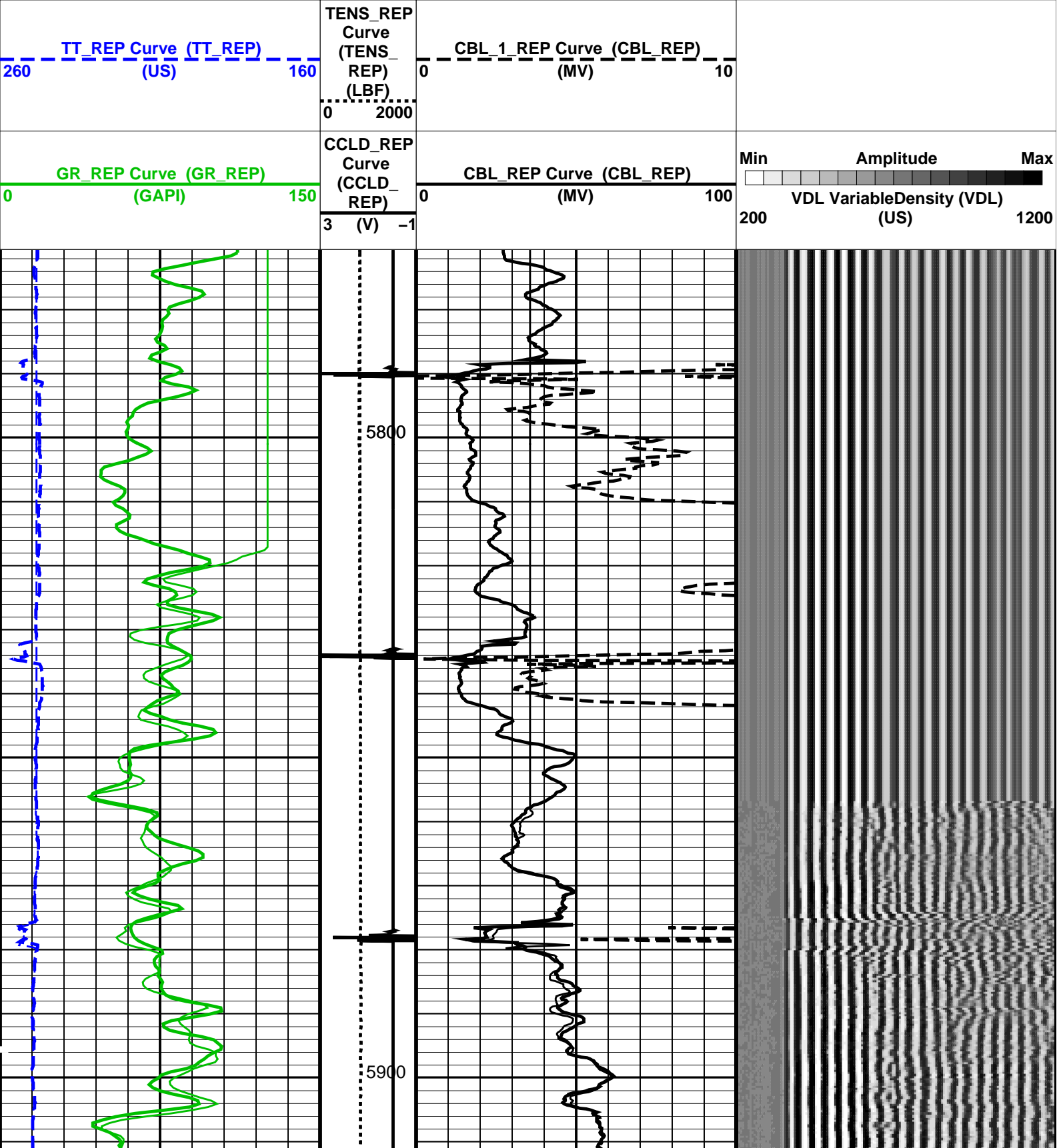
SRPC-5214-H2-2012-OP1!
SRPC-5214-H2-2012-OP1!

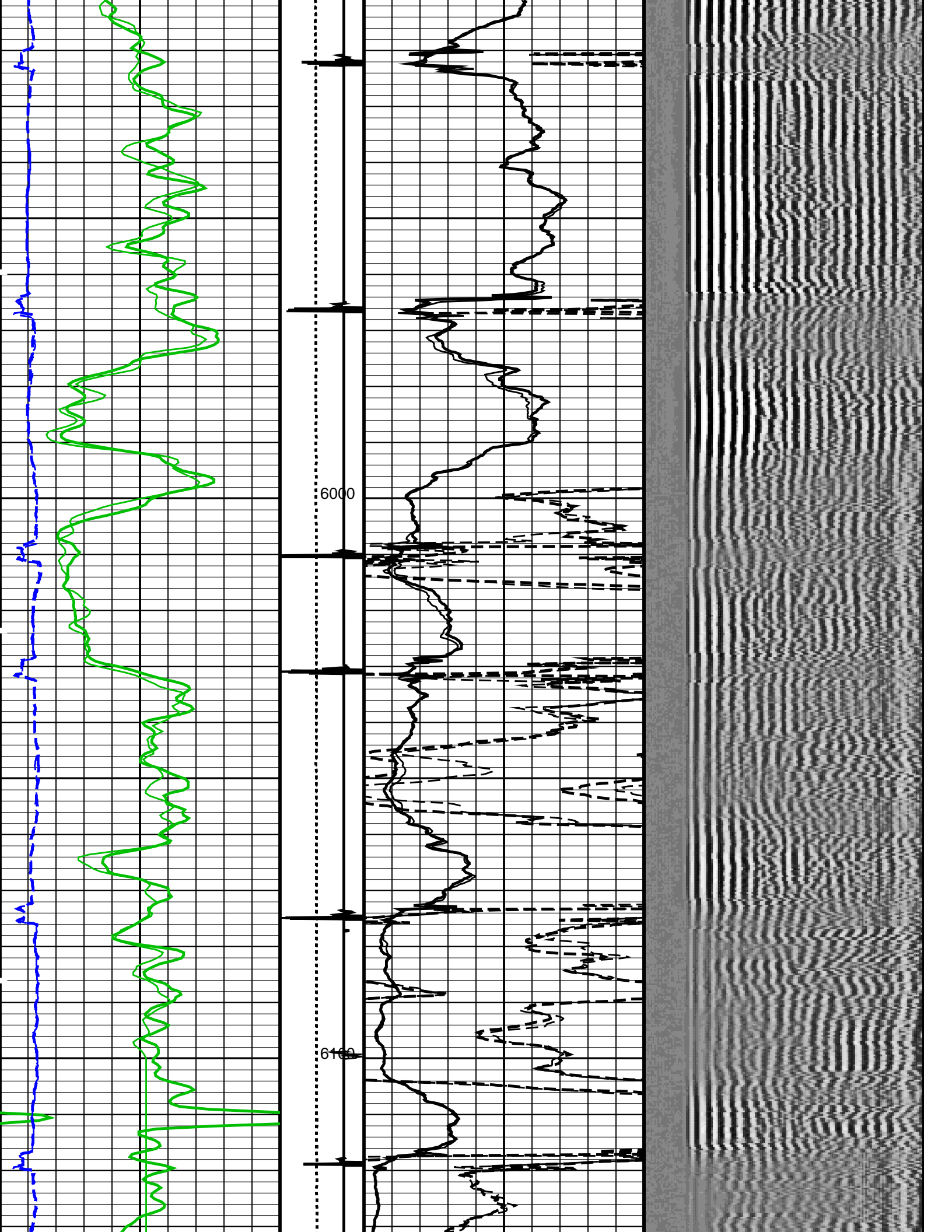
RST-C

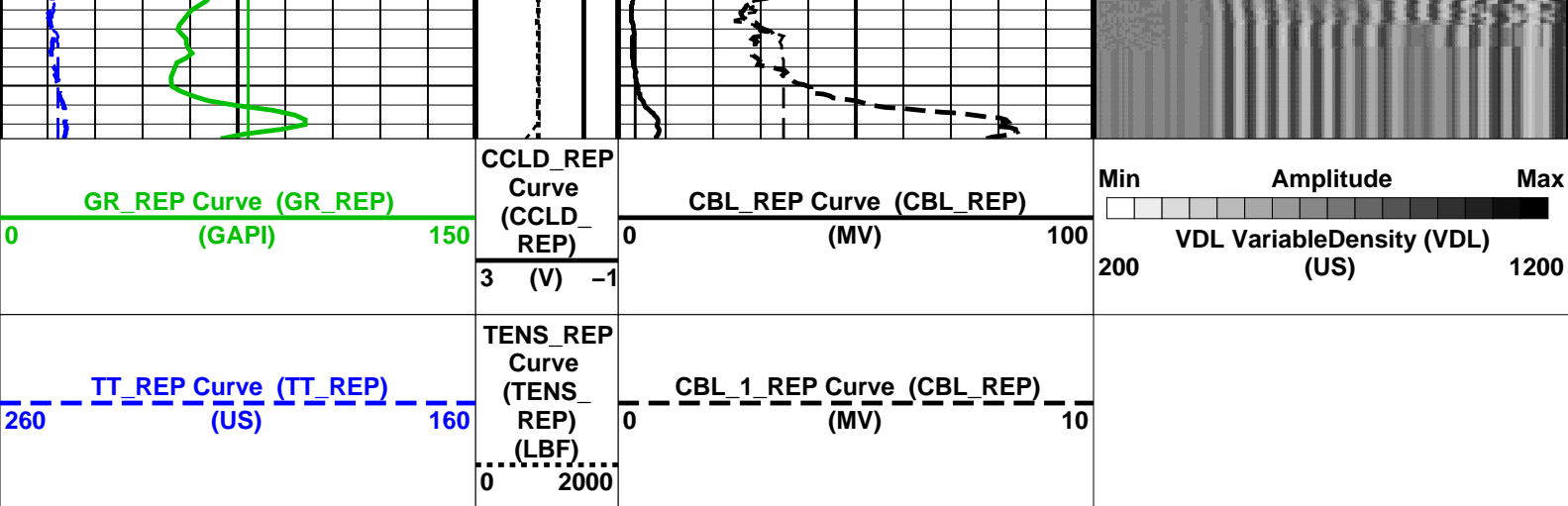
SRPC-5214-H2-2012-OP1!

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: 01-May-2013 19:12

OP System Version: 19C0-187

SCMT-CB SRPC-5214-H2-2012-OP1 RST-C 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 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	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
DFD	Drilling Fluid Density	8.40	LB/G
DO	Depth Offset for Playback	2.0	FT
DORL	Depth Offset for Repeat Analysis	0.0	FT
PP	Playback Processing	RECOMPUTE	
TD	Total Depth	8180	FT

Input DLIS Files

DEFAULT	SCMT_RST_PSP_011LUP	FN:10	PRODUCER	01-May-2013 16:26	6143.5 FT	5812.5 FT
DEFAULT	SCMT_RST_PSP_016PUP	FN:15	PRODUCER	01-May-2013 19:03	8192.5 FT	-38.0 FT

Output DLIS Files

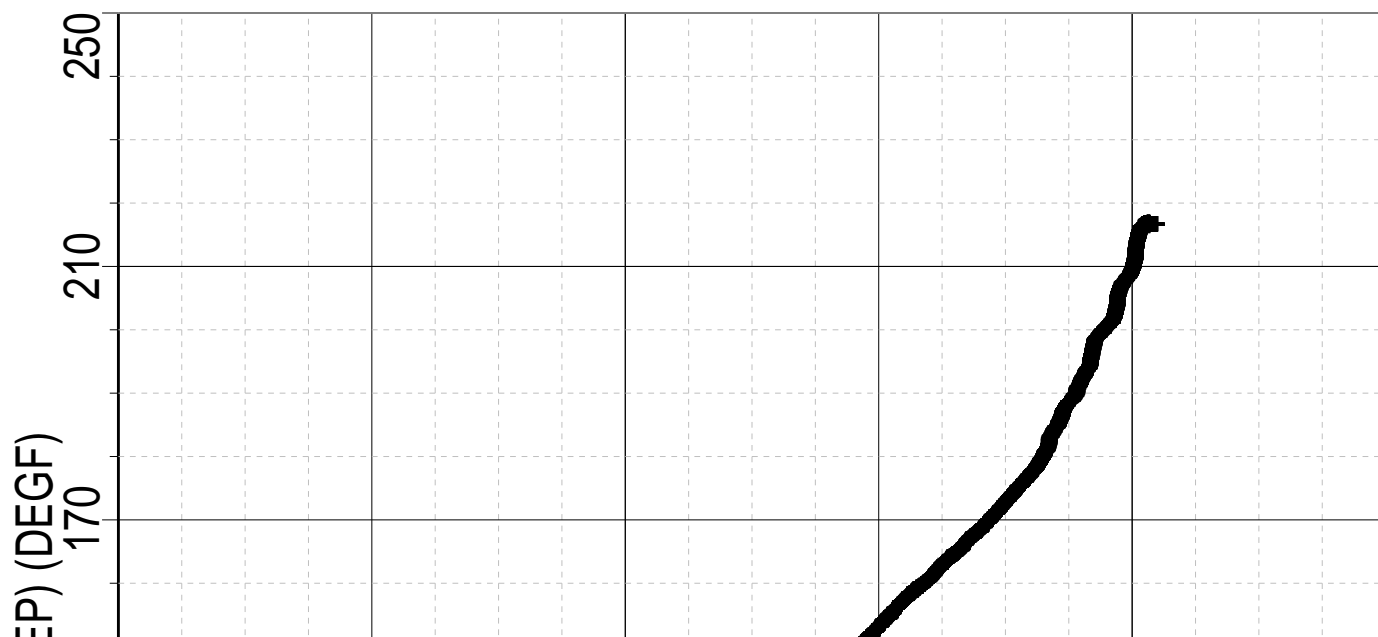
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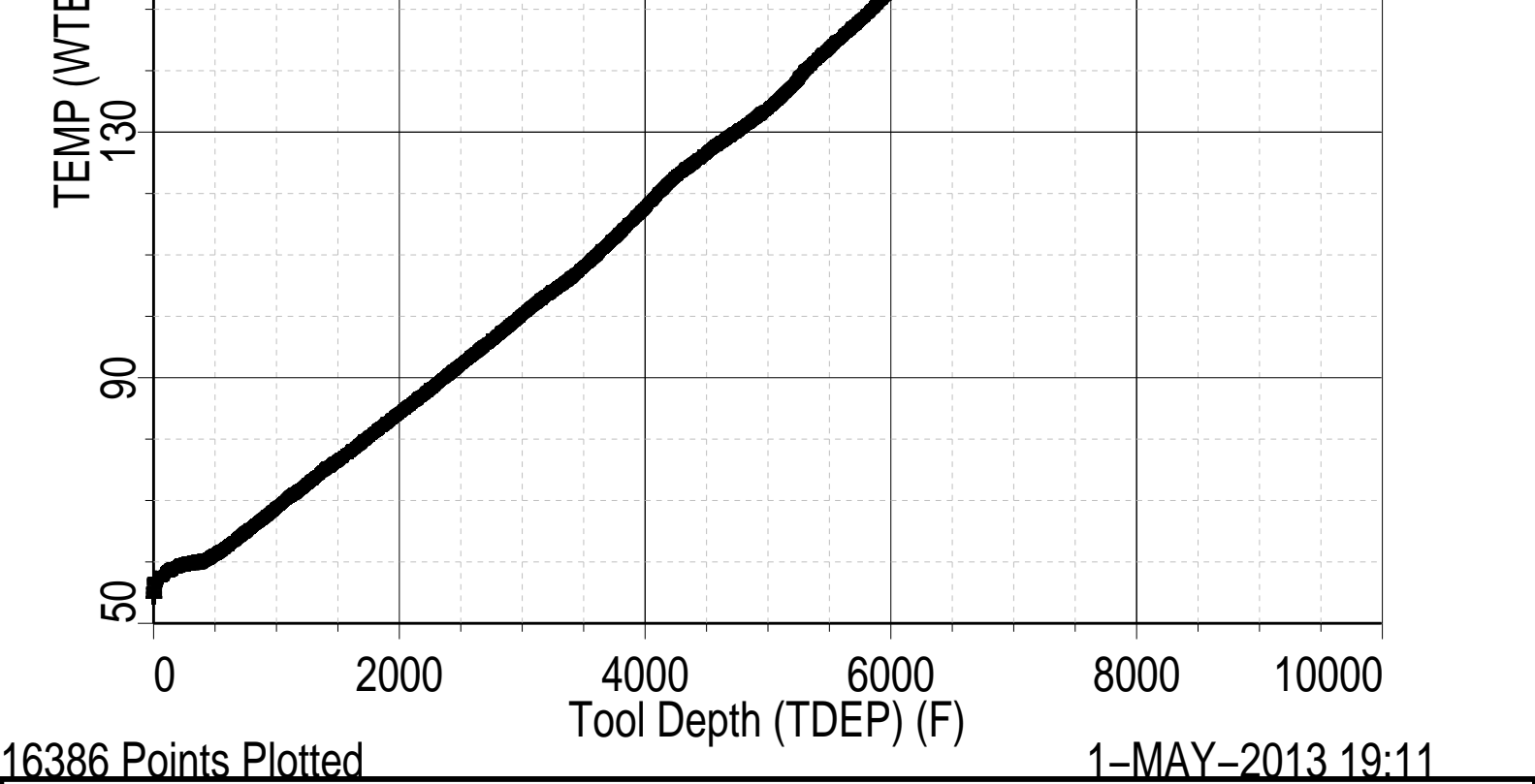
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TEMPERATURE PLOT

MAXIS Field Log

Index: 8192.5 – -38.0 FT





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PBMS COEFFICIENTS

MAXIS Field Log

Client: ENCANA OIL & GAS (USA) INC
Field: MAMM CREEK
Well: ENCANA FEDERAL 24-10D (K19CNE)
Run date: 1-May-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:

MAMM CREEK

Well:

ENCANA FEDERAL 24–10D (K19CNE)

Run date:

1–May–2013

Tool:

PSP

Sub Type:

PBMS

Sensor:

WellTemp RTD

PBMS RTD Well Thermometer

Sonde Serial NB

COEFFICIENTS FOR RTD THERMOMETER PBMS–B.928 S/N:

Sensor Serial NB

928

Calib Date ddmmyy

280612

Matrix Size

16

Coeff CRC

A24E

WTemp Coeff

	Tt**0	Tt**1	Tt**2
Tt**0	–.391987973189E+03	+.191346892512E+03	–.440920753451E+02
	Tt**3	Tt**4	Tt**5
Tt**0	+.957191300908E+01	–.711421725686E+00	0.0

Client:

ENCANA OIL & GAS (USA) INC

Field:

MAMM CREEK

Well:

ENCANA FEDERAL 24–10D (K19CNE)

Run date:

1–May–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

16

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
Coeff CRC 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
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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

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MASTER CALIBRATION










MAXIS Field Log

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

SCMX - CA 8303
SCMS - CB 8120
SCMC - CA

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			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: 7–Sep–2012 16:30							

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

Schlumberger

Well: **ENCANA FEDERAL 24-10D (K19CNE)**

Field: **MAMM CREEK**

County: **GARFIELD**

State: **COLORADO**

SLIM CEMENT MAPPING LOG

CBL - VDL

GAMMA RAY - CCL