

Schlumberger

Company: ENCANA OIL & GAS (USA) INC.

Well: DW 8609C-28 (P28496)

Field: Double Willow

County: Garfield State: Colorado

SLIM CEMENT MAPPING TOOL
CBL - VDL
GAMMA RAY - CCL

COUNTY: Garfield	
FIELD: Double Willow	
LOCATION: SHL: 712 FSL 452 FEL	
WELL: DW 8609C-28 (P28496)	
COMPANY: ENCANA OIL & GAS (USA) INC.	
LOCATION	SHL: 712 FSL 452 FEL
	BHL: 2185 FSL 1307 FEL
PERMANENT DATUM:	Elev.: K.B. 7813.00 ft
	B.H.L. 2185 FSL 1307 FEL
LOG MEASURED FROM:	G.L. 7791.00 ft
	D.F. 7813.00 ft
GROUND LEVEL	Elev.: 7791.00 ft
	22.00 ft above Perm. Datum
Drilling Measured From: KELLY BUSHING	
API Serial No. 05-045-20802-00	
Section 28	Township 4S
Range 96W	

Logging Date	10-Jul-2012
Run Number	1
Depth Driller	11211 ft
Schlumberger Depth	11119 ft
Bottom Log Interval	11110 ft
Top Log Interval	200 ft
Casing Fluid Type	FRESH WATER
Salinity	
Density	8.6 lbm/gal
Fluid Level	22 ft
BIT/CASING/TUBING STRING	
Bit Size	7.875 in
From	0 ft
To	11211 ft
Casing/Tubing Size	4.500 in
Weight	11.6 lbm/ft
Grade	P-110
From	0 ft
To	11178 ft
Maximum Recorded Temperatures	282 degF
Logger On Bottom	10-Jul-2012
Time	9:50
Unit Number	391
Location	Grand Junction
Recorded By	Kristie Bunting
Witnessed By	Scott Pitt

PVT DATA		
Oil Density	Run 1	Run 2
Water Salinity		
Gas Gravity		
Bo		
Bw		
1/Bq		
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		
Time		
Unit Number		
Location		
Recorded By		
Witnessed By		

DEPTH SUMMARY LISTING

Date Created: 10-JUL-2012 13:51:17

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW-B	Type:	OMTD-B/A	Type:	1-25ZT
Serial Number:	5873	Serial Number:	5006	Serial Number:	391
Calibration Date:	20-DEC-2011	Calibration Date:	21-JUN-2012	Length:	24000 FT
Calibrator Serial Number:	33	Calibrator Serial Number:	174878	Conveyance Method: Wireline Rig Type: LAND	
Calibration Cable Type:	1-25ZT	Number of Calibration Points:	10		
Wheel Correction 1:	-3	Calibration RMS:	15		
Wheel Correction 2:	-3	Calibration Peak Error:	9		

Depth Control Parameters

Log Sequence: First Log In the Well

Rig Up Length At Surface: 200.00 FT

Rig Up Length At Bottom: 200.00 FT

Rig Up Length Correction: 0.00 FT

Stretch Correction: 0.00 FT

Tool Zero Check At Surface: 0.00 FT

Depth Control Remarks

1. ALL SCHLUMBERGER DEPTH PROCEDURES USED
2. PRIMARY DEPTH CONTROL: IDW
3. SECONDARY DEPTH CONTROL: DRUM COUNTER (SWPT)
- 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

FIRST RUN IN HOLE CORRELATED TO DOWN LOG

TOOL RAN AS PER TOOL SKETCH

ENTRANCE TIME: 9:00

TIME AT BOTTOM: 8:50

EXIT TIME: 13:45

TOTAL DEPTH = 11119 FT

REMARKS: RUN NUMBER 2

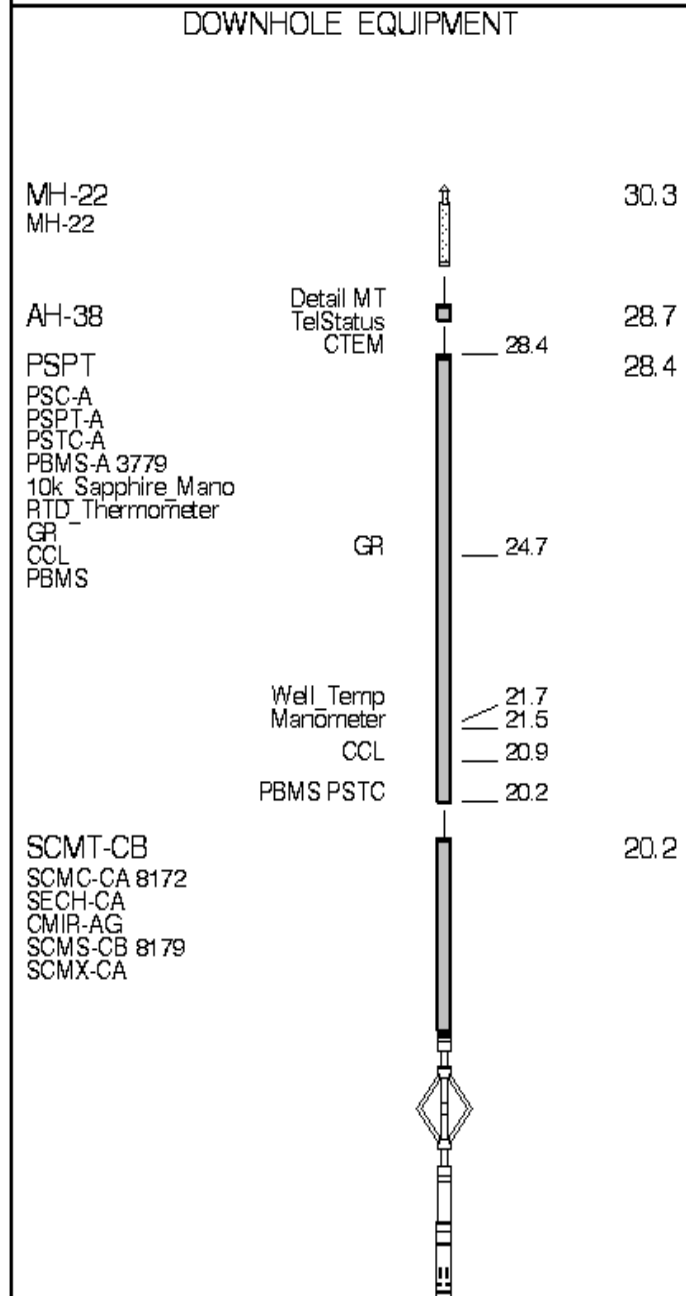
ESTIMATED TOP OF CEMENT = 600 FT	
MAX RECORDED TEMPERATURE = 282 DEGF	
MAX RECORDED PRESSURE = 4614 PSIA	
STRETCH CORRECTION = 6 FT	
CBAF = 1.1	
CYCLE SKIPPING DUE TO GOOD BOND	
EXPECTED FREE PIPE AMPLITUDE 80 MV	
MAIN PASS RAN WITH ZERO SURFACE PRESSURE	

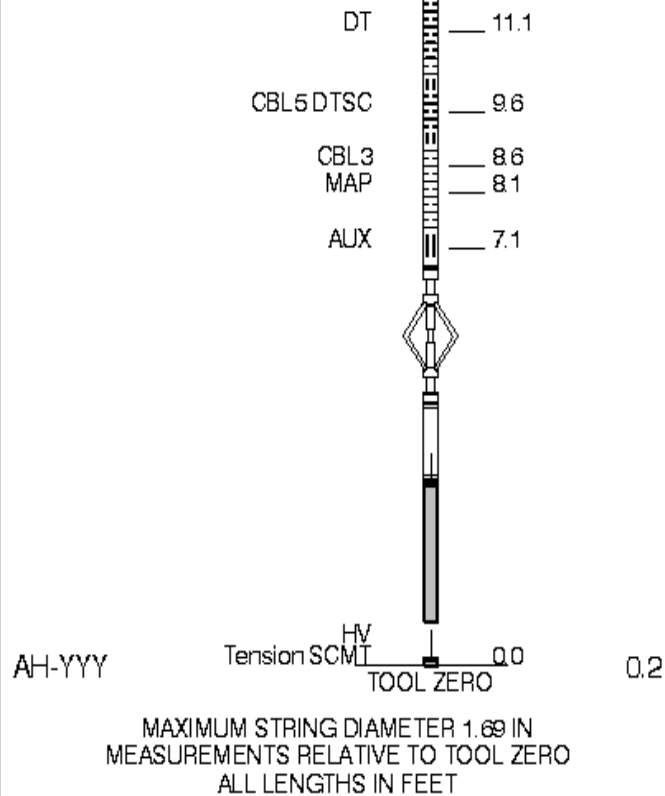
THANK YOU FOR CHOOSING SCHLUMBERGER!

RUN 1			RUN 2		
SERVICE ORDER #:			SERVICE ORDER #:		
PROGRAM VERSION:			PROGRAM VERSION:		
FLUID LEVEL:			FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

RUN 1	RUN 2
SURFACE EQUIPMENT	
WITM-A PSC_16MHZ	





Schlumberger

MAIN PASS CBL VDL

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC.

Well: DW 8609C-28 (P28496)

Input DLIS Files

DEFAULT	Splice_SCMT_PSP_005CUP	FN:1	PRODUCER	10-Jul-2012 13:04	11125.0 FT	194.2 FT
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Output DLIS Files

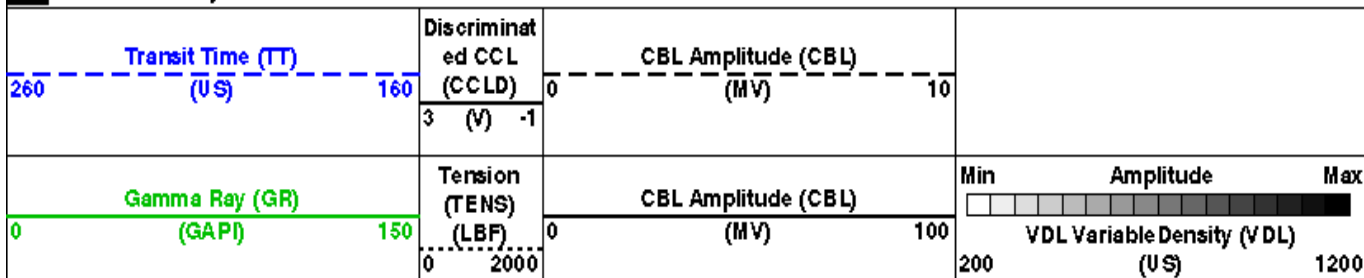
DEFAULT	SCMT_PSP_010PUP	FN:8	PRODUCER	10-Jul-2012 13:37	11131.0 FT	200.5 FT
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OP System Version: 19C0-187

SCMT-CB	SRPC-5095-H2-2011-OP19	PSPT	19C0-187
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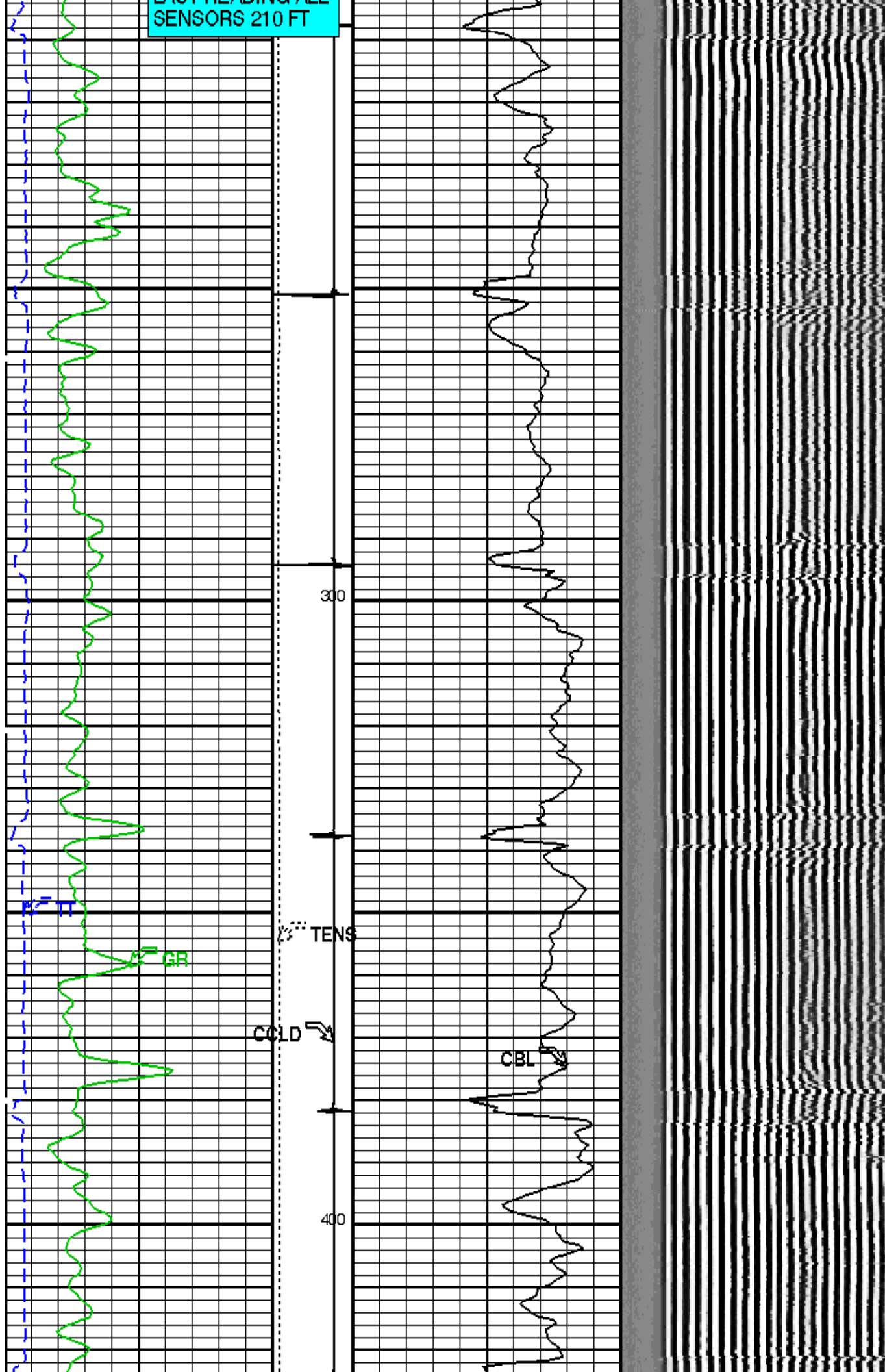
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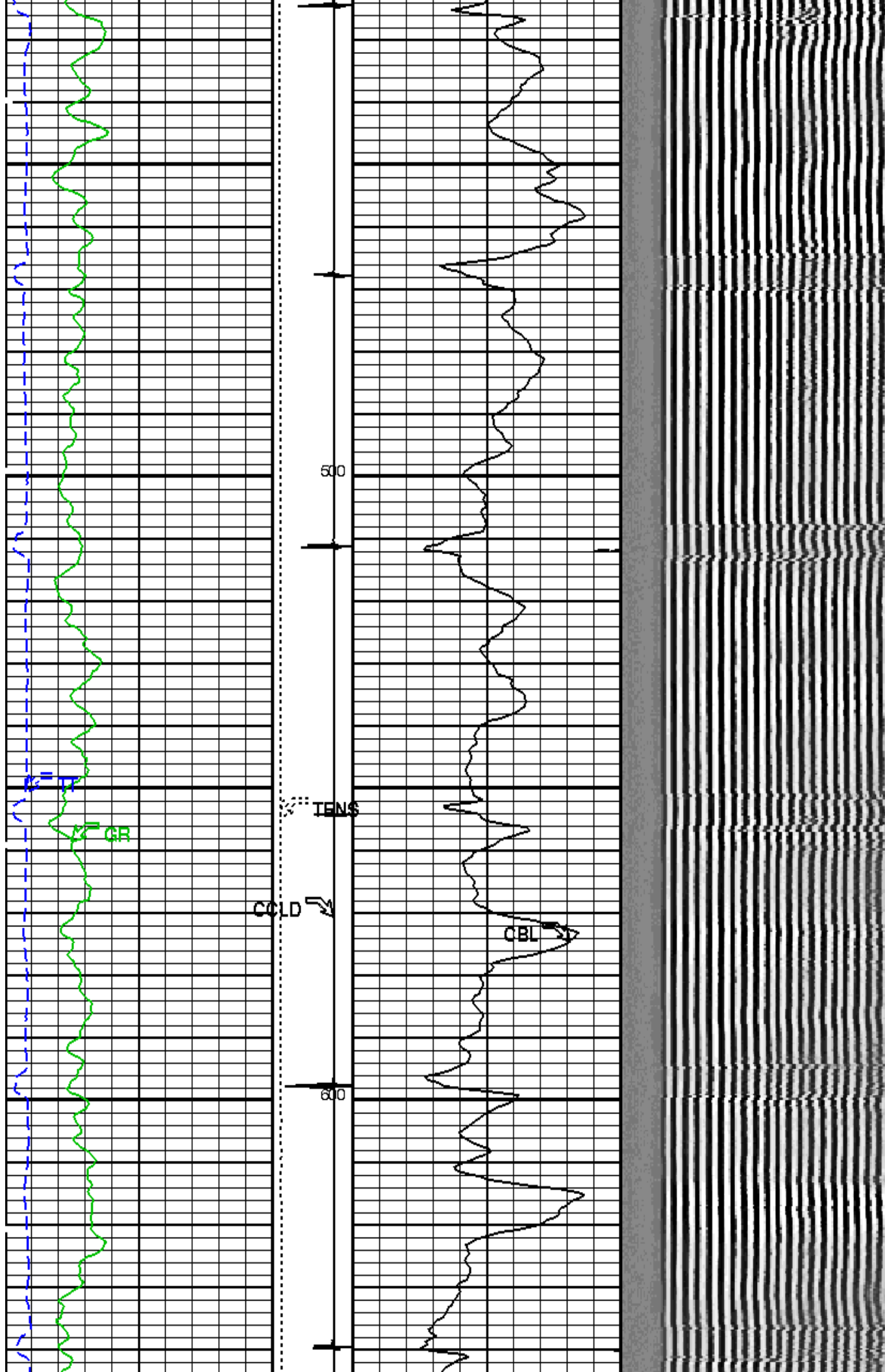
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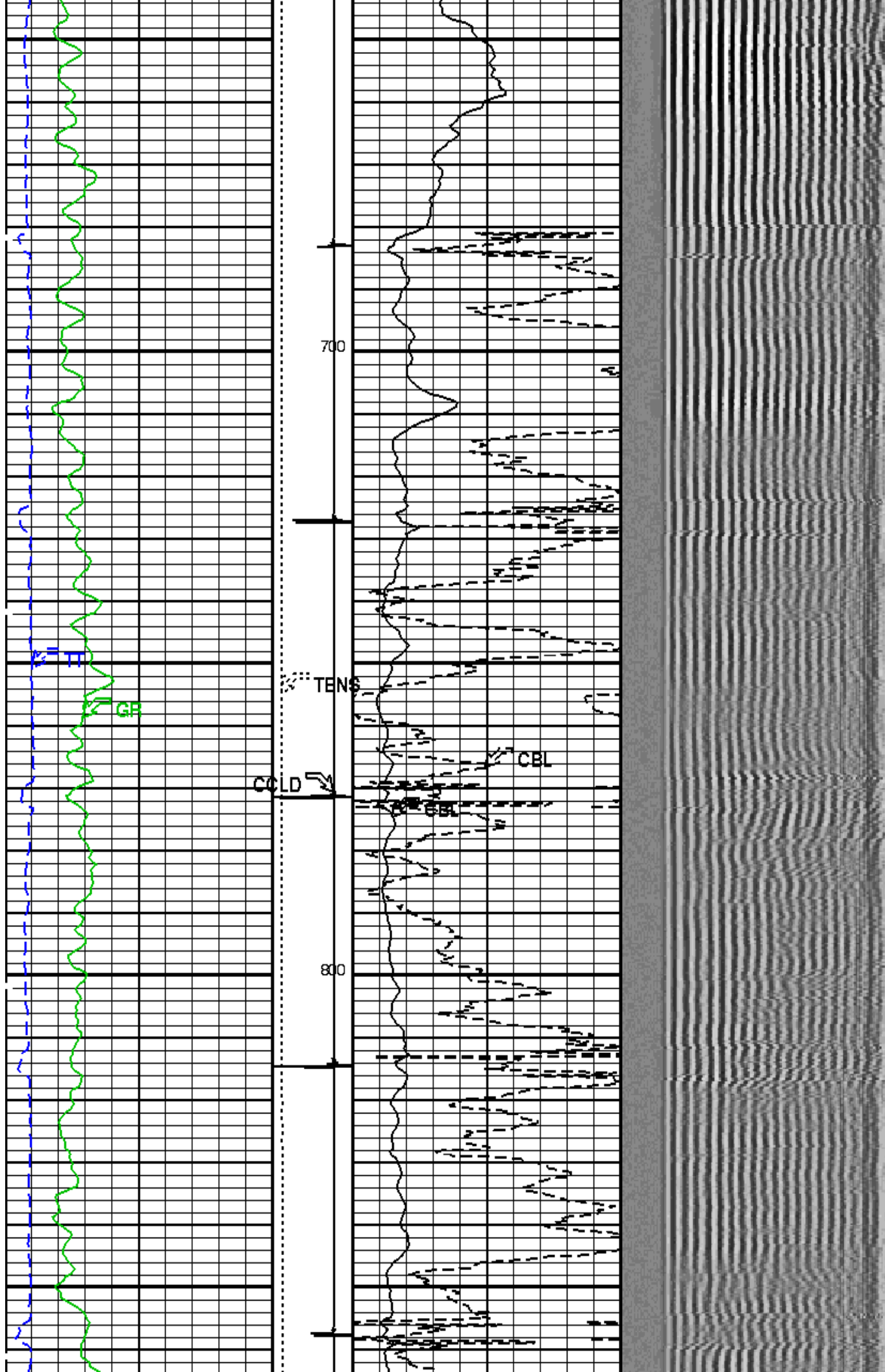


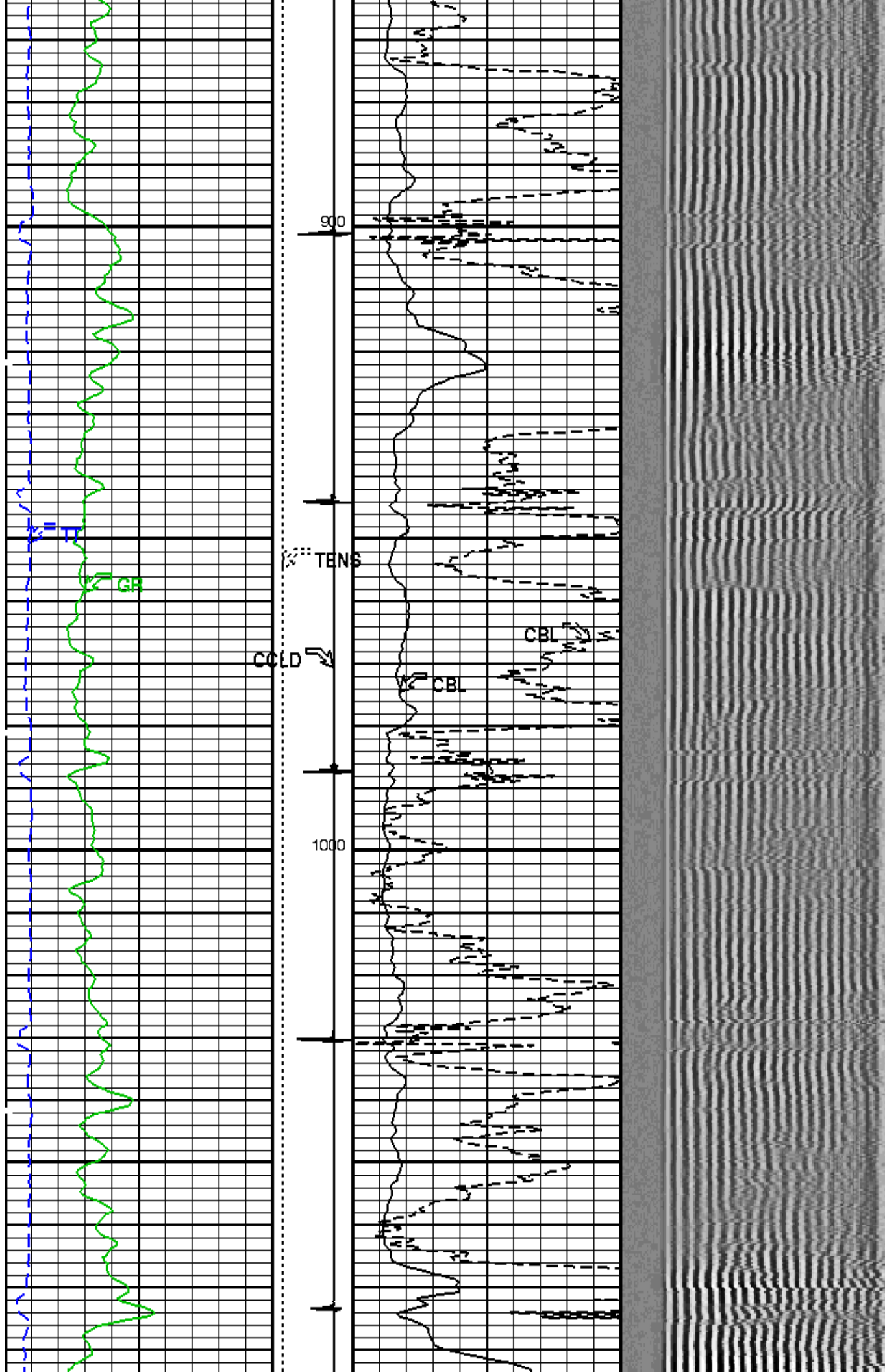
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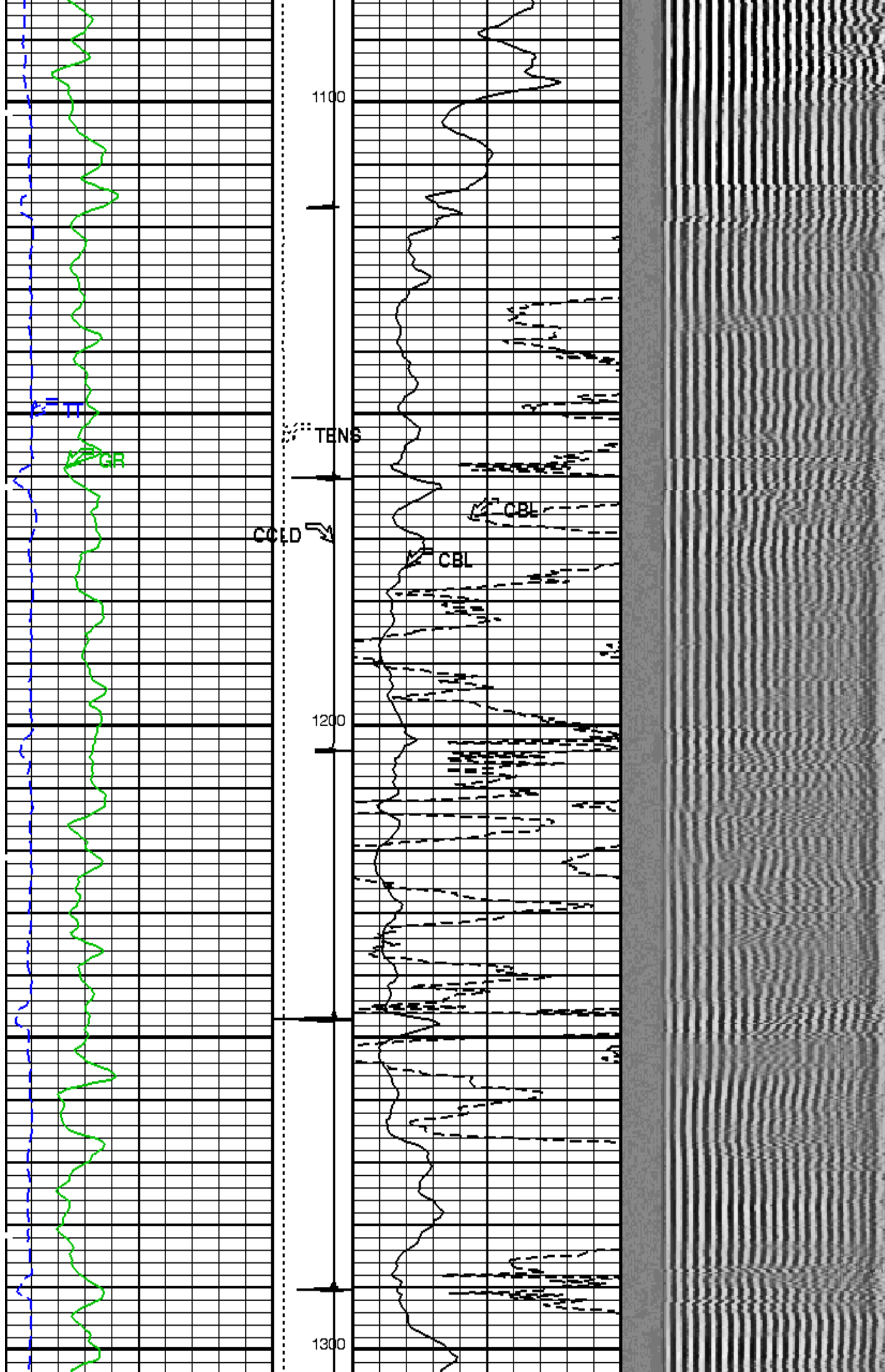
LAST READING ALL
SENSORS 210 FT

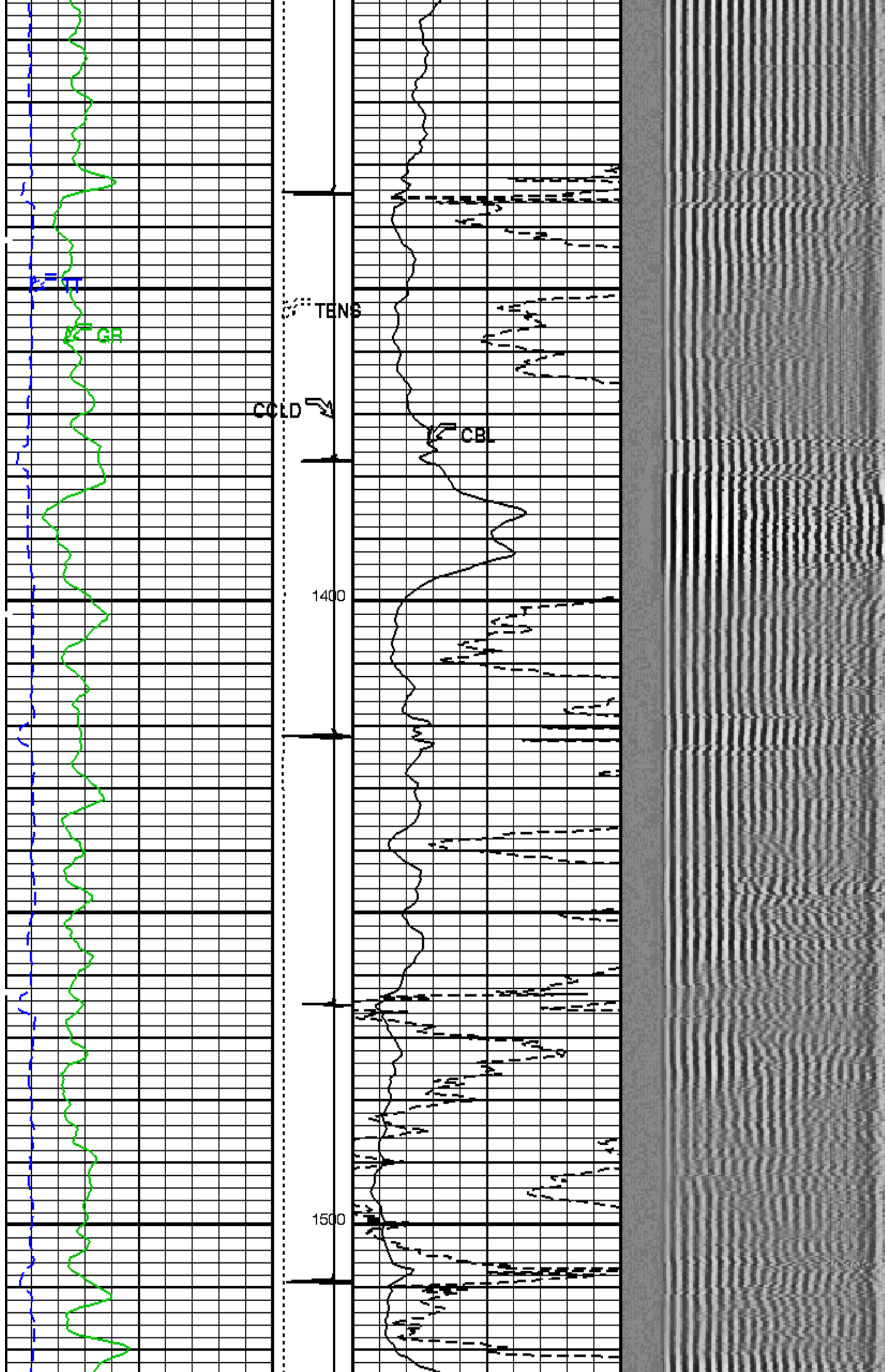


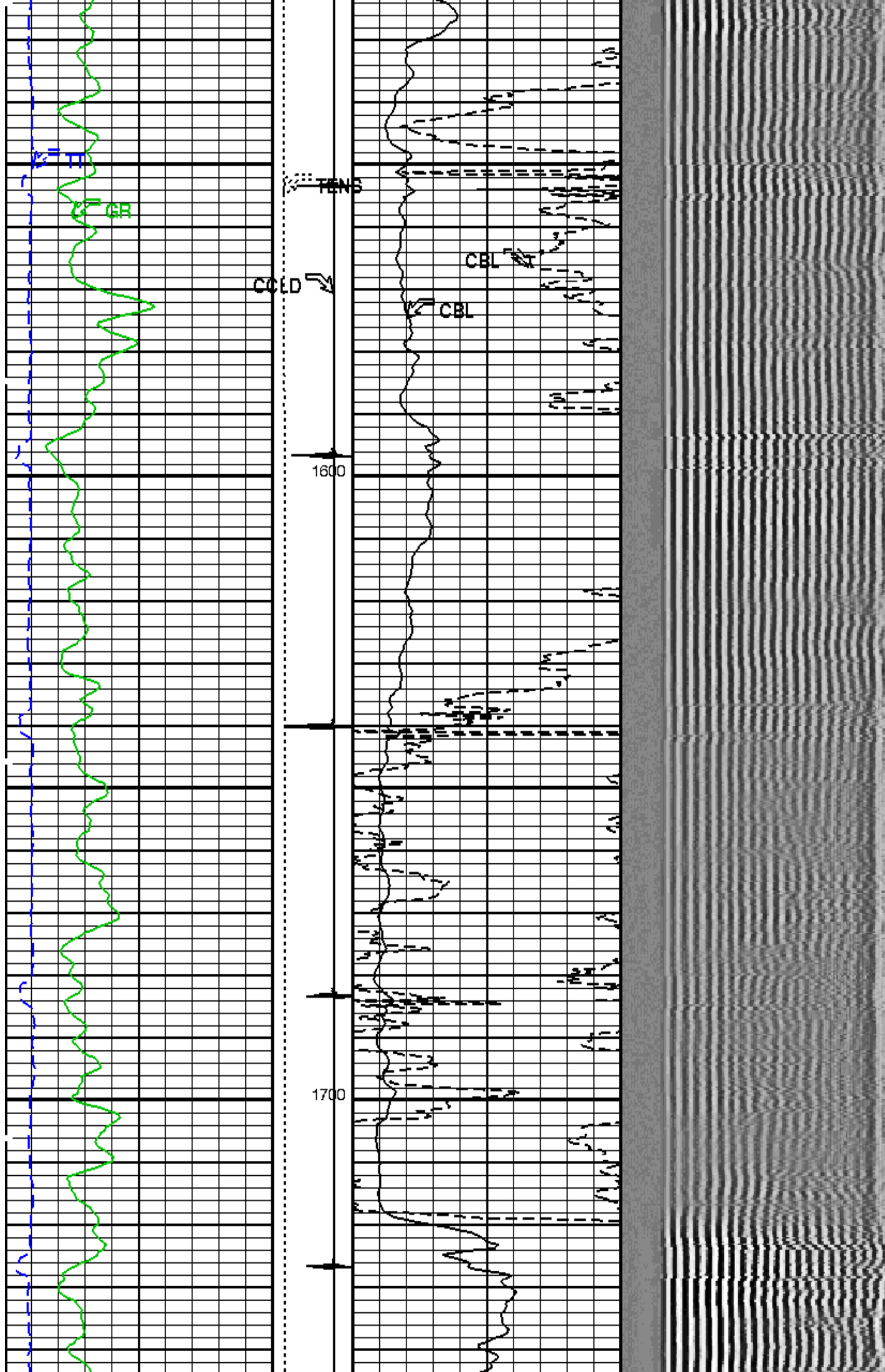


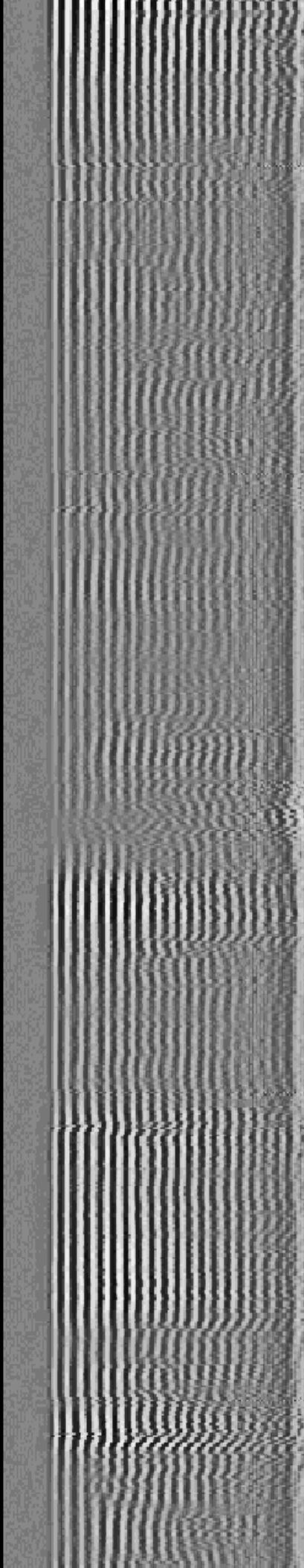
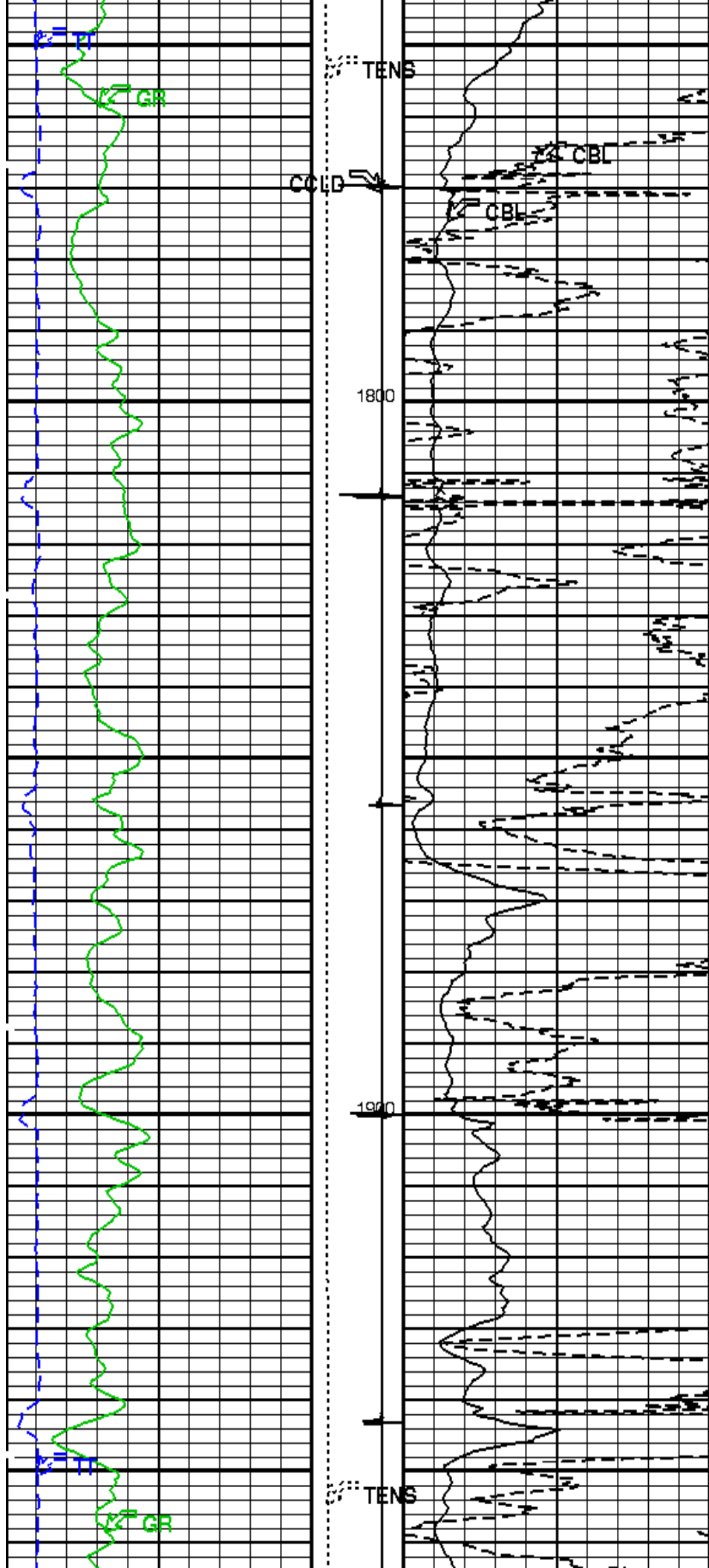


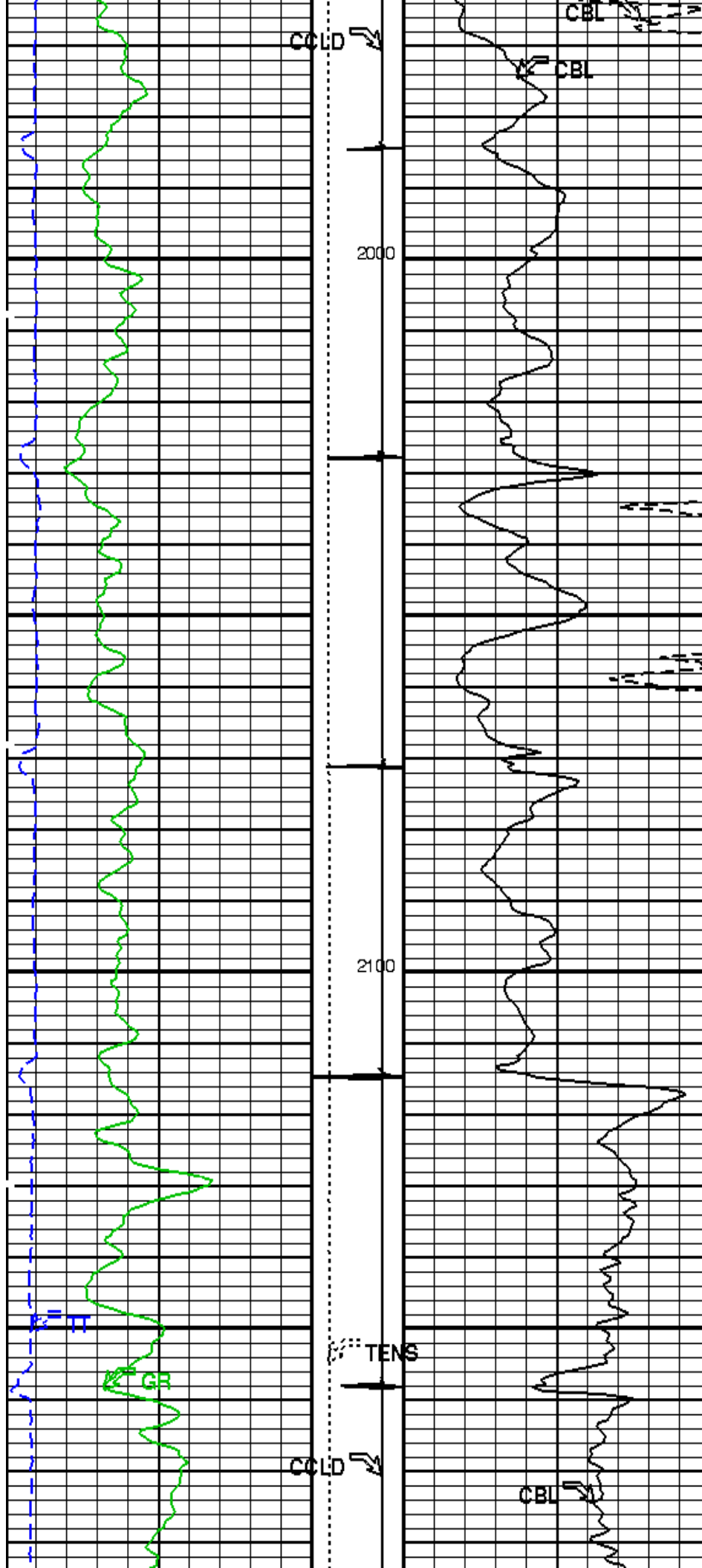


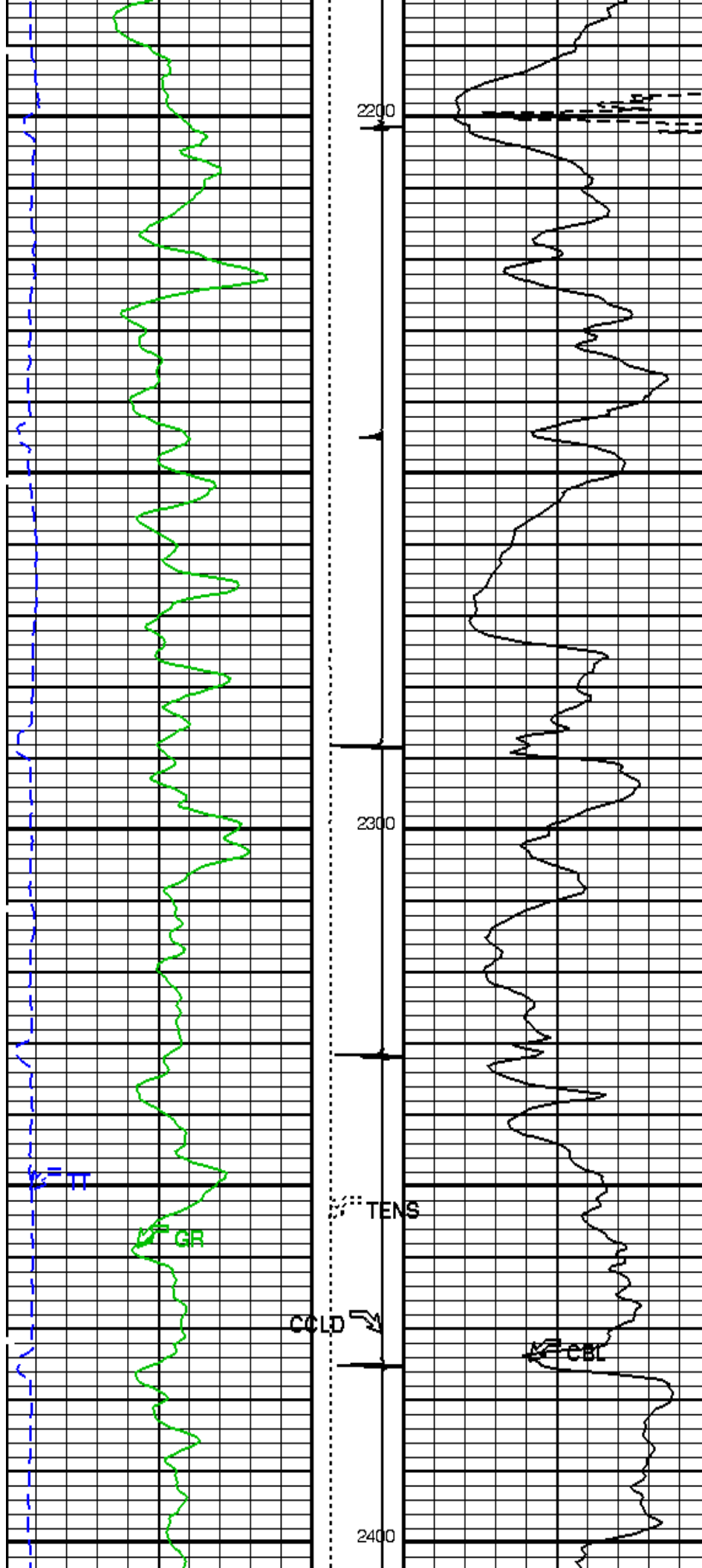


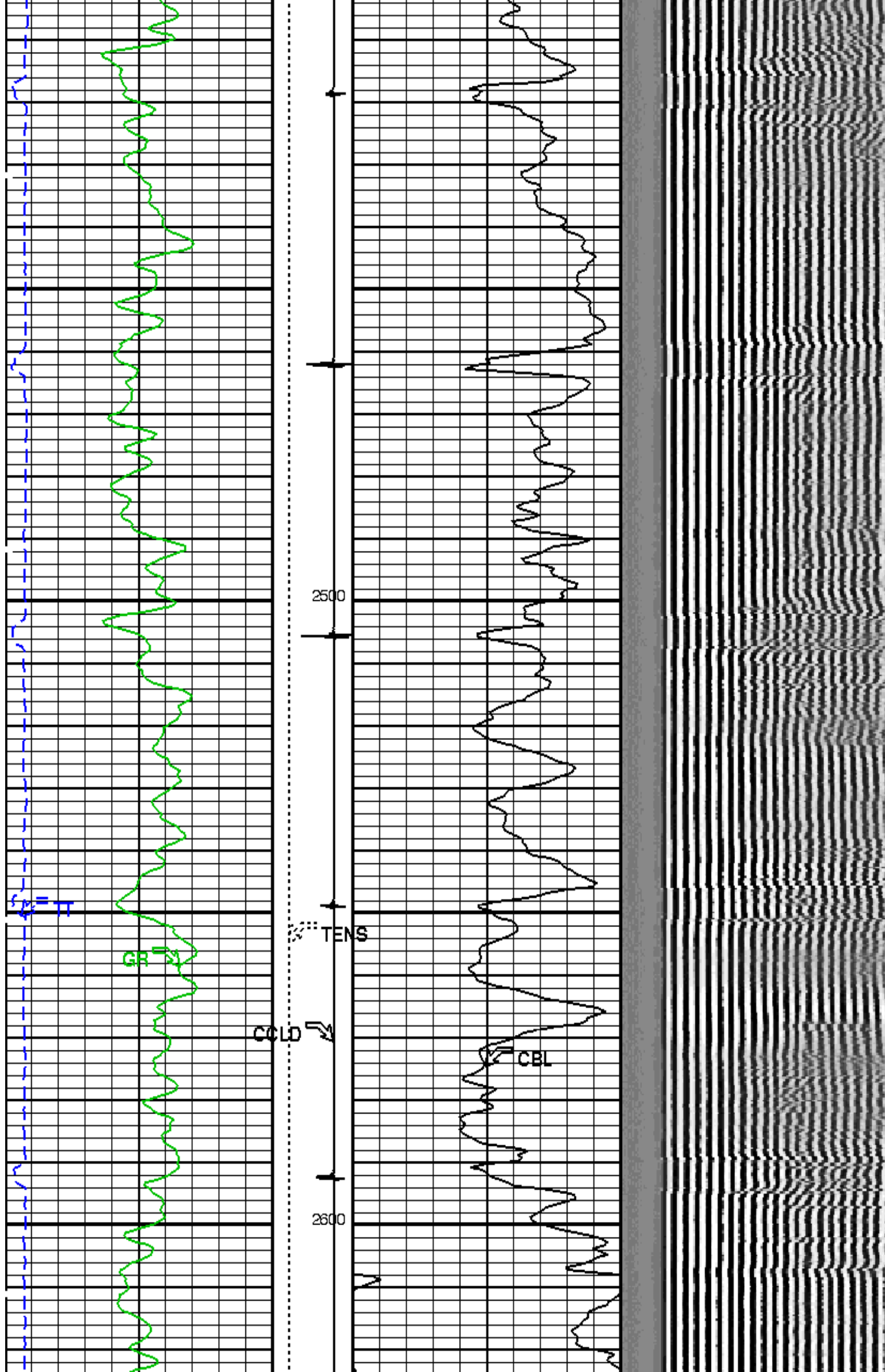


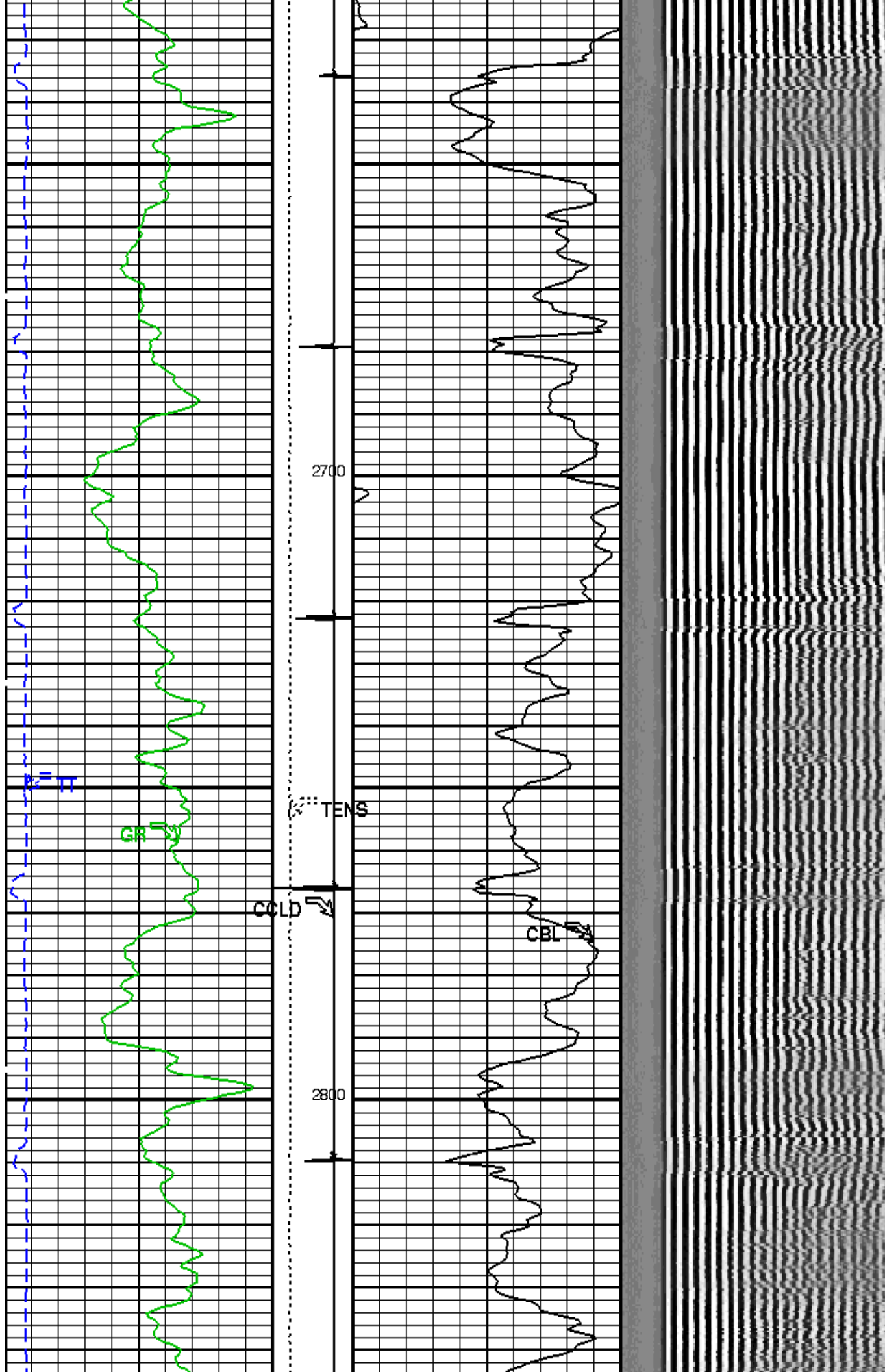


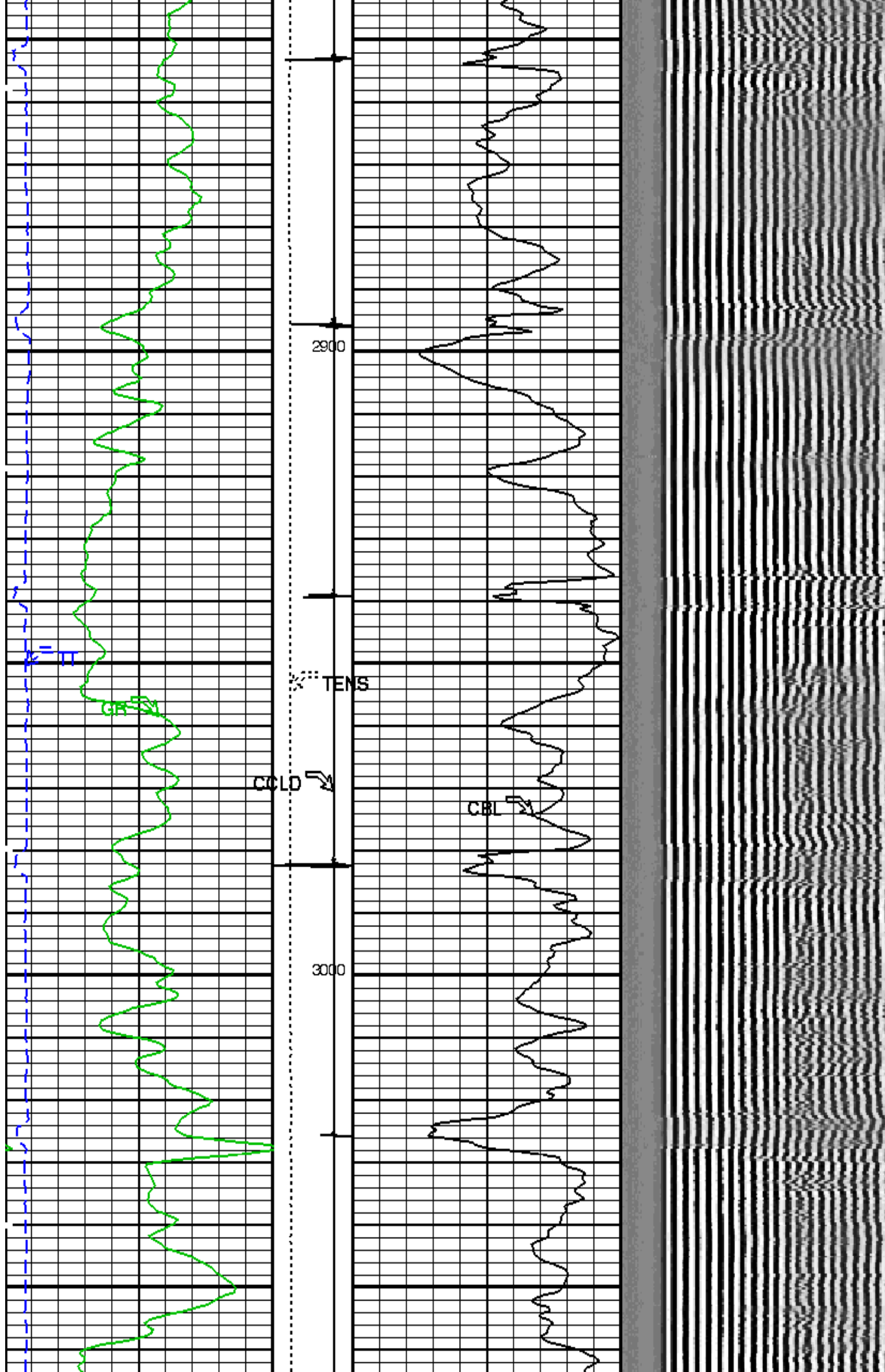


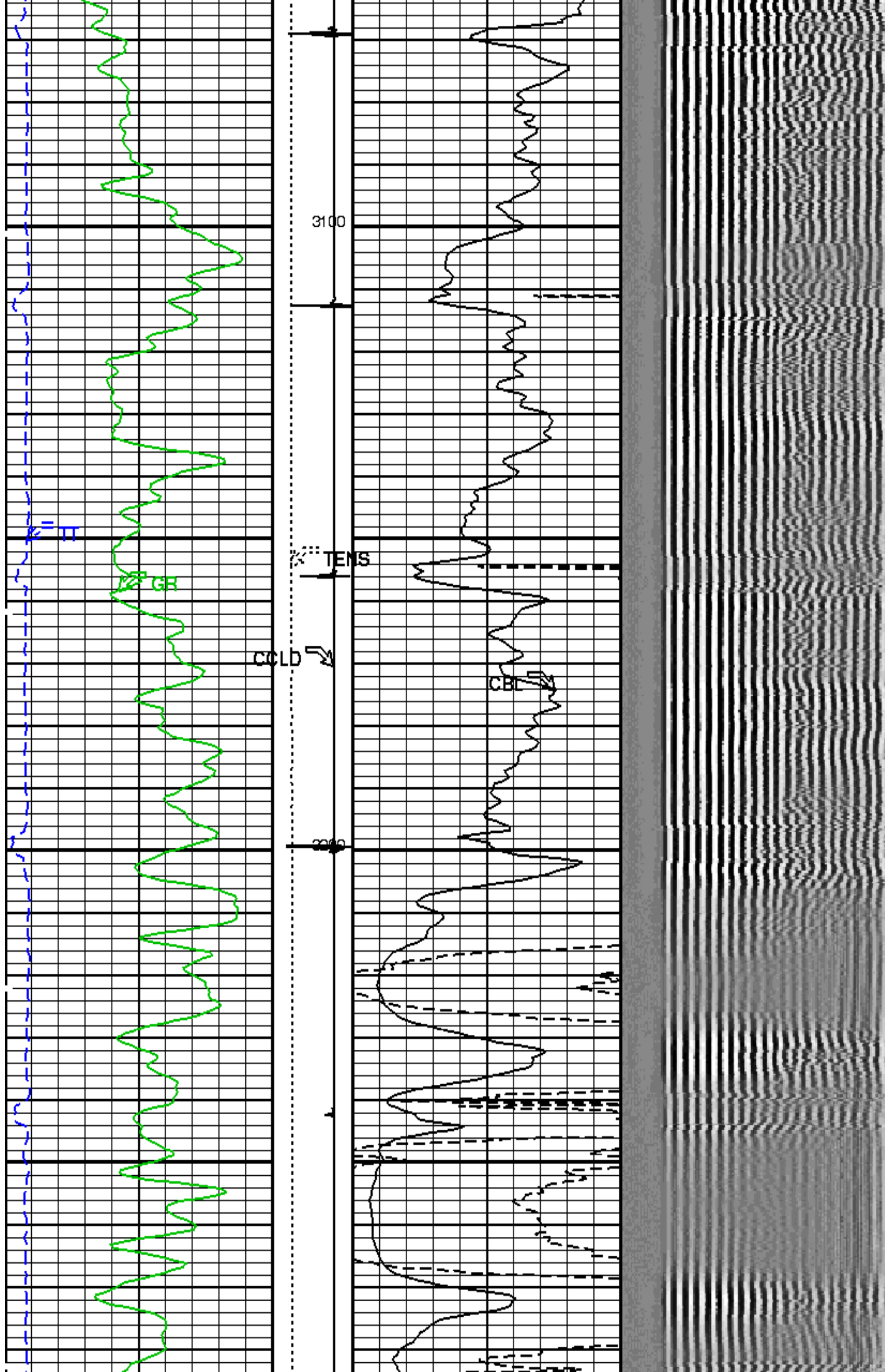


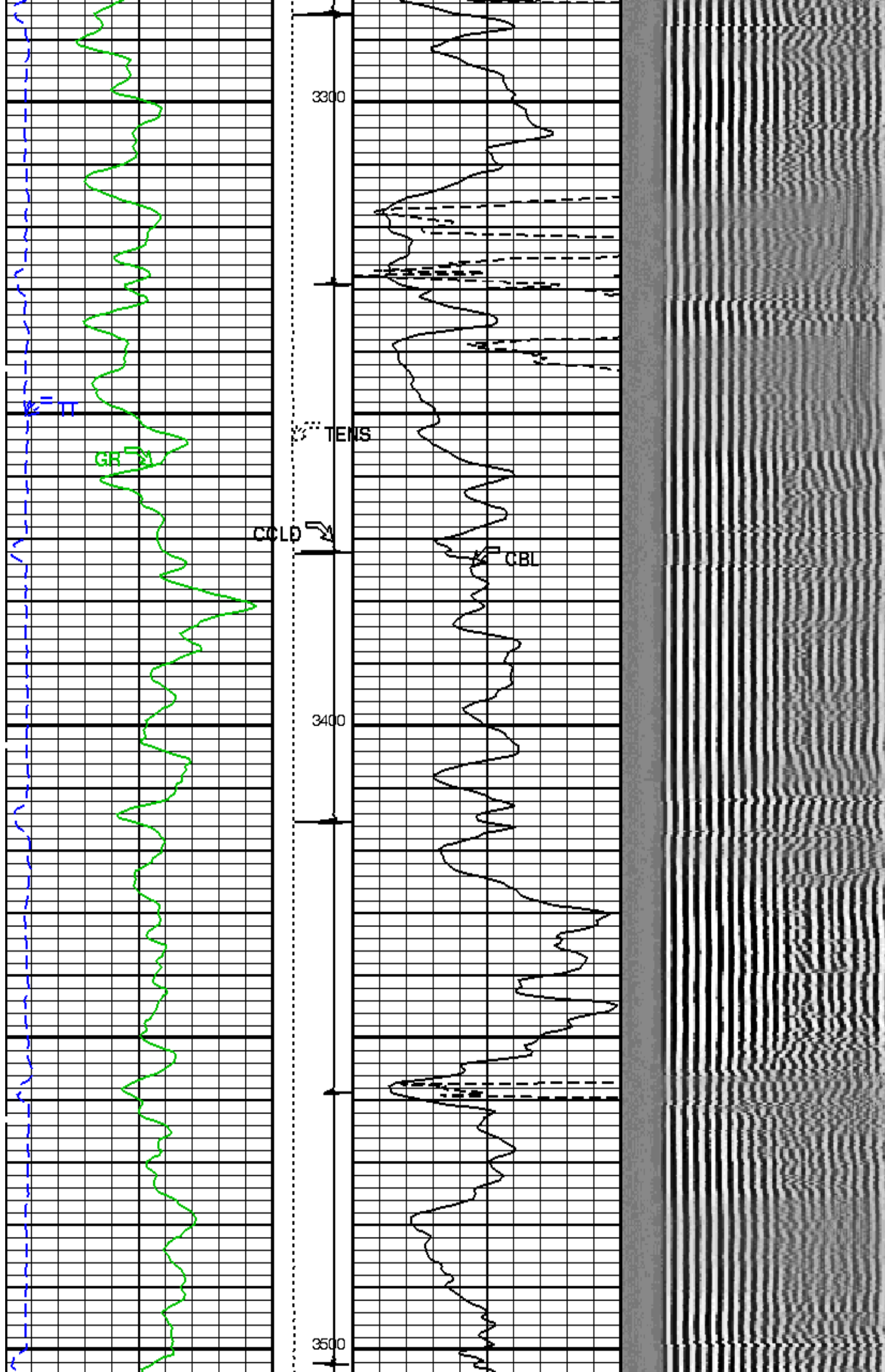


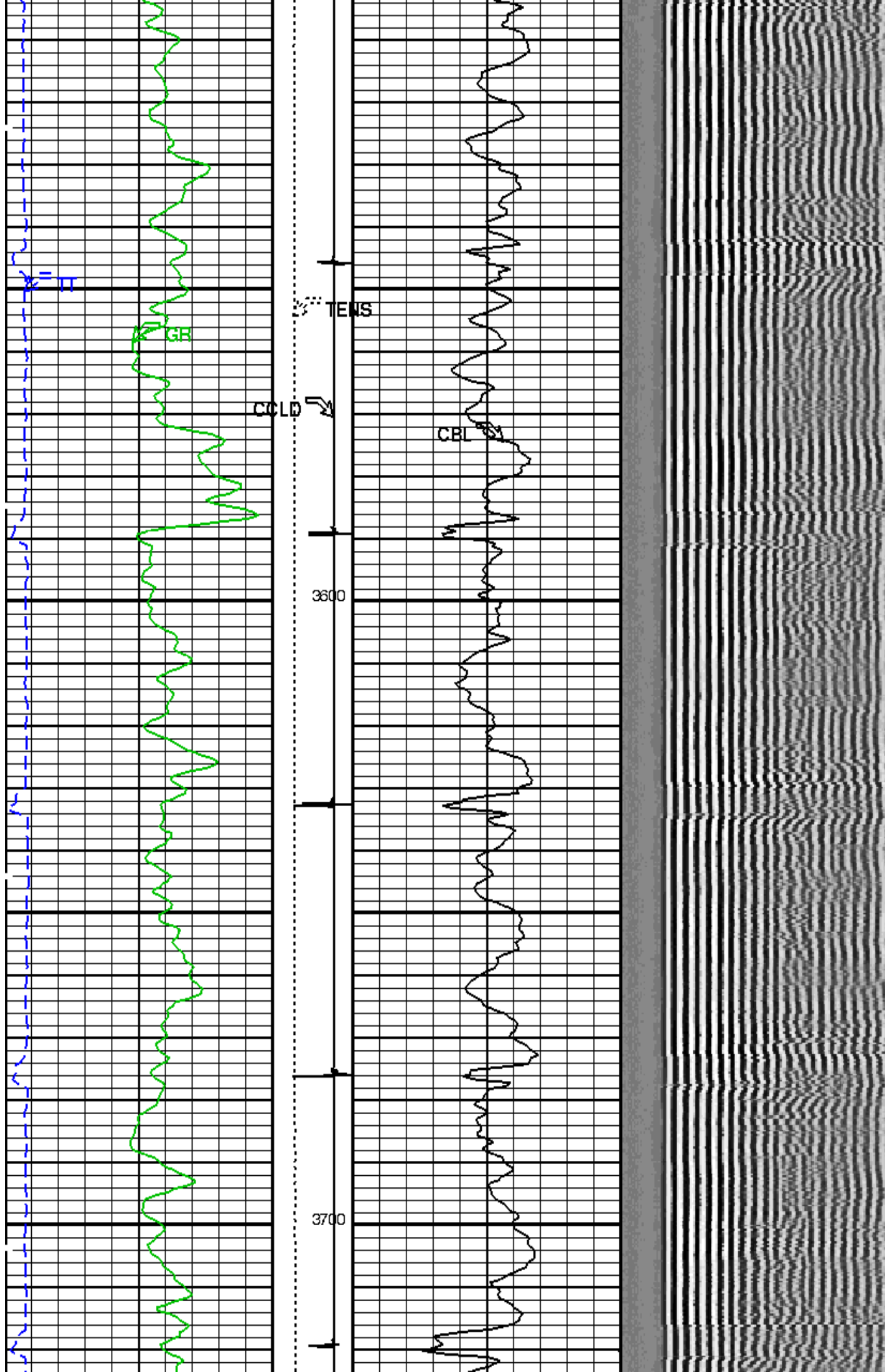


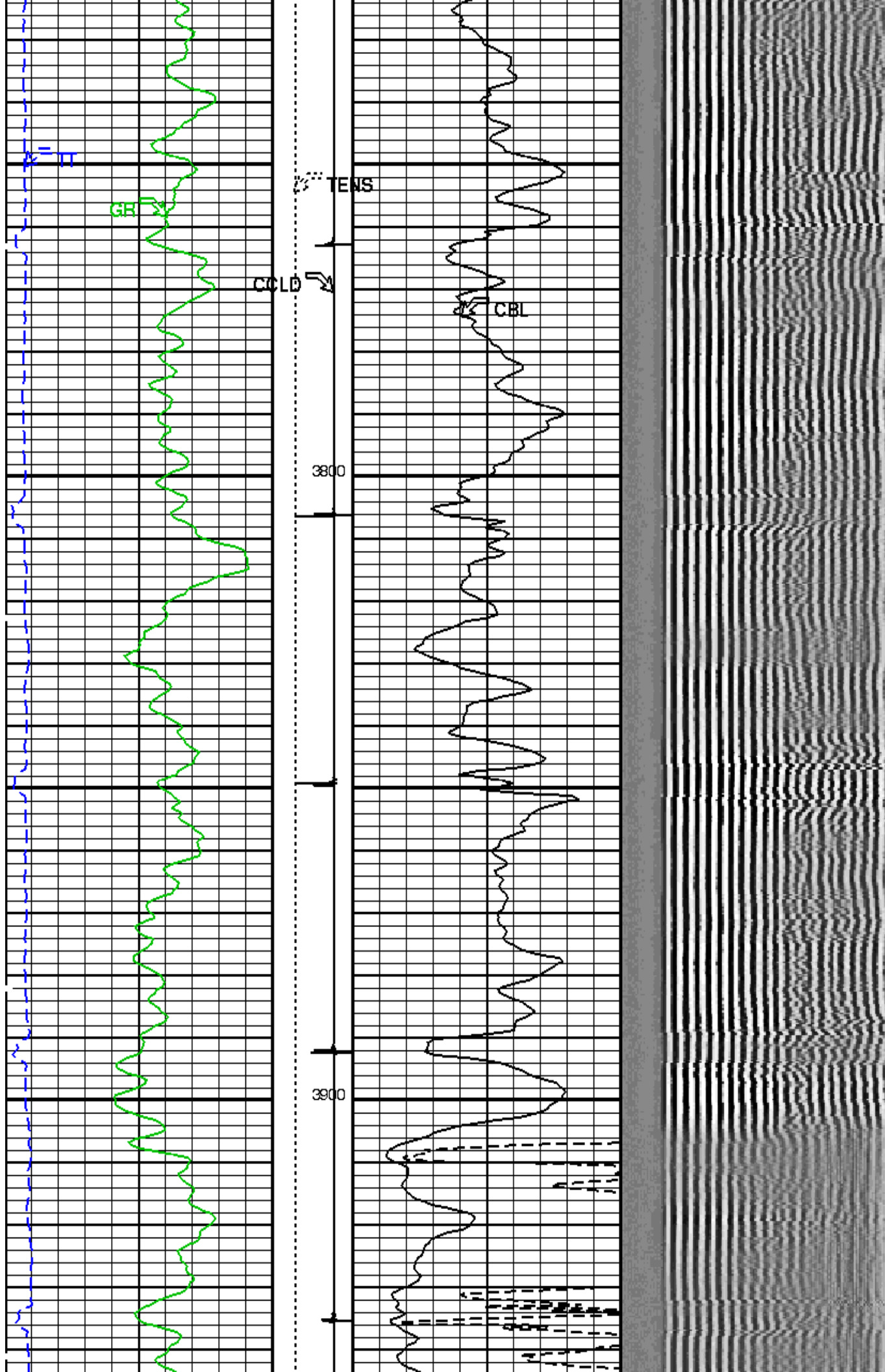


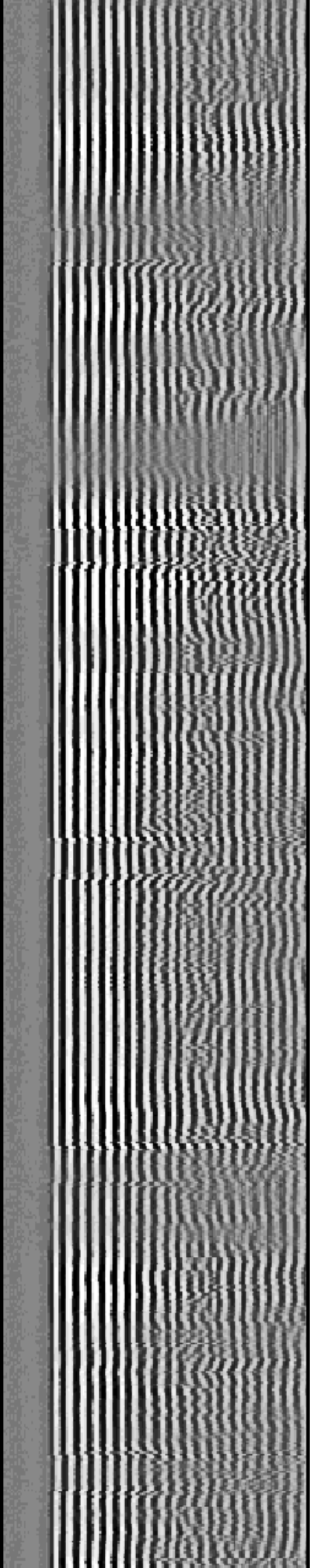
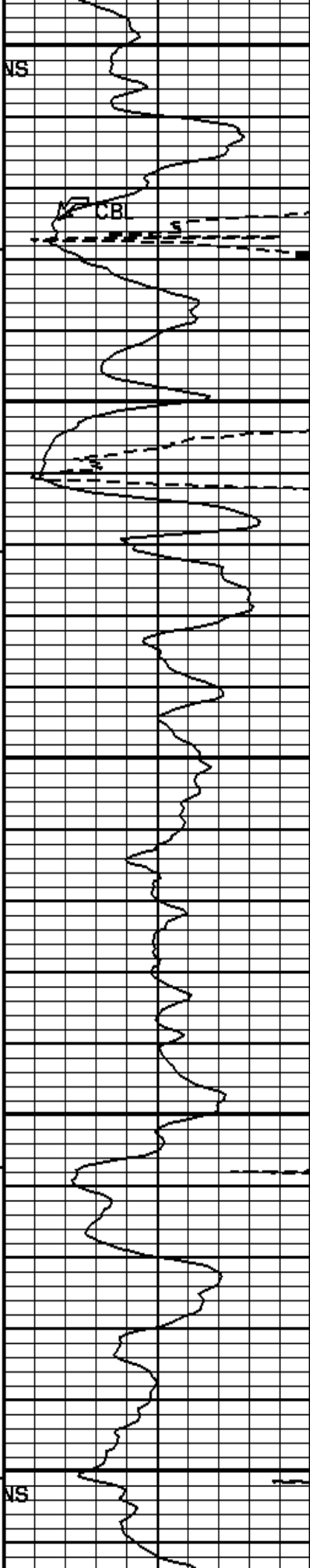
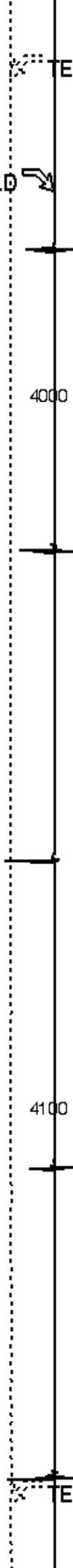
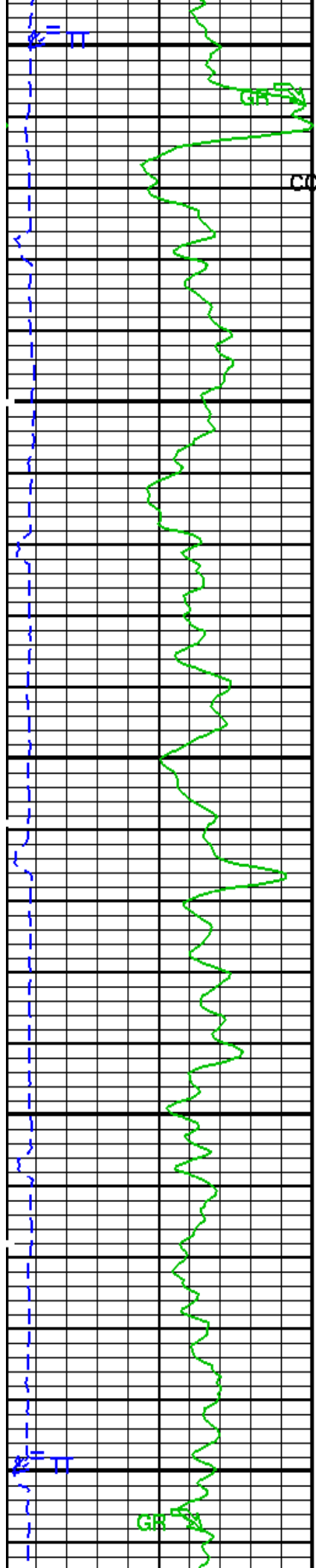


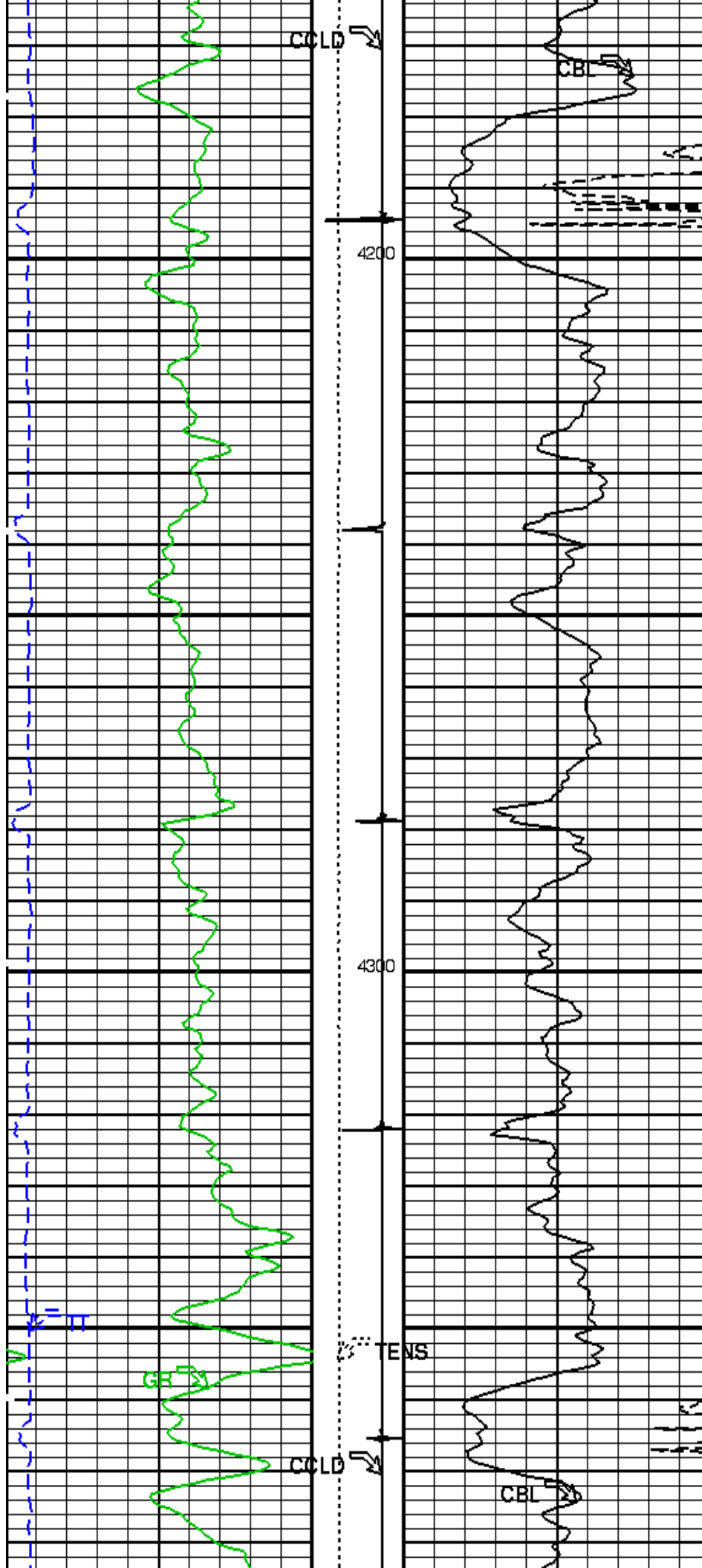


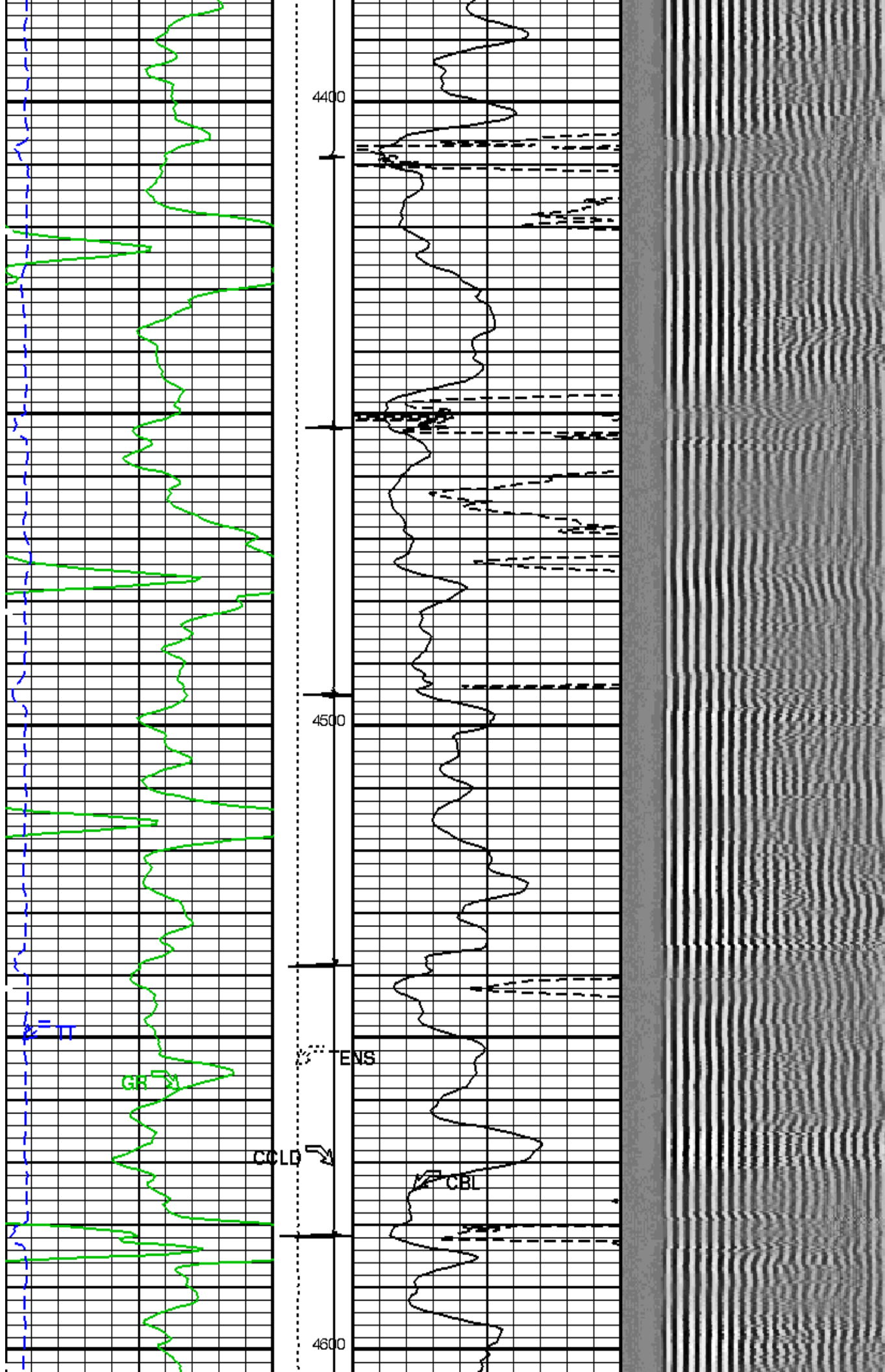


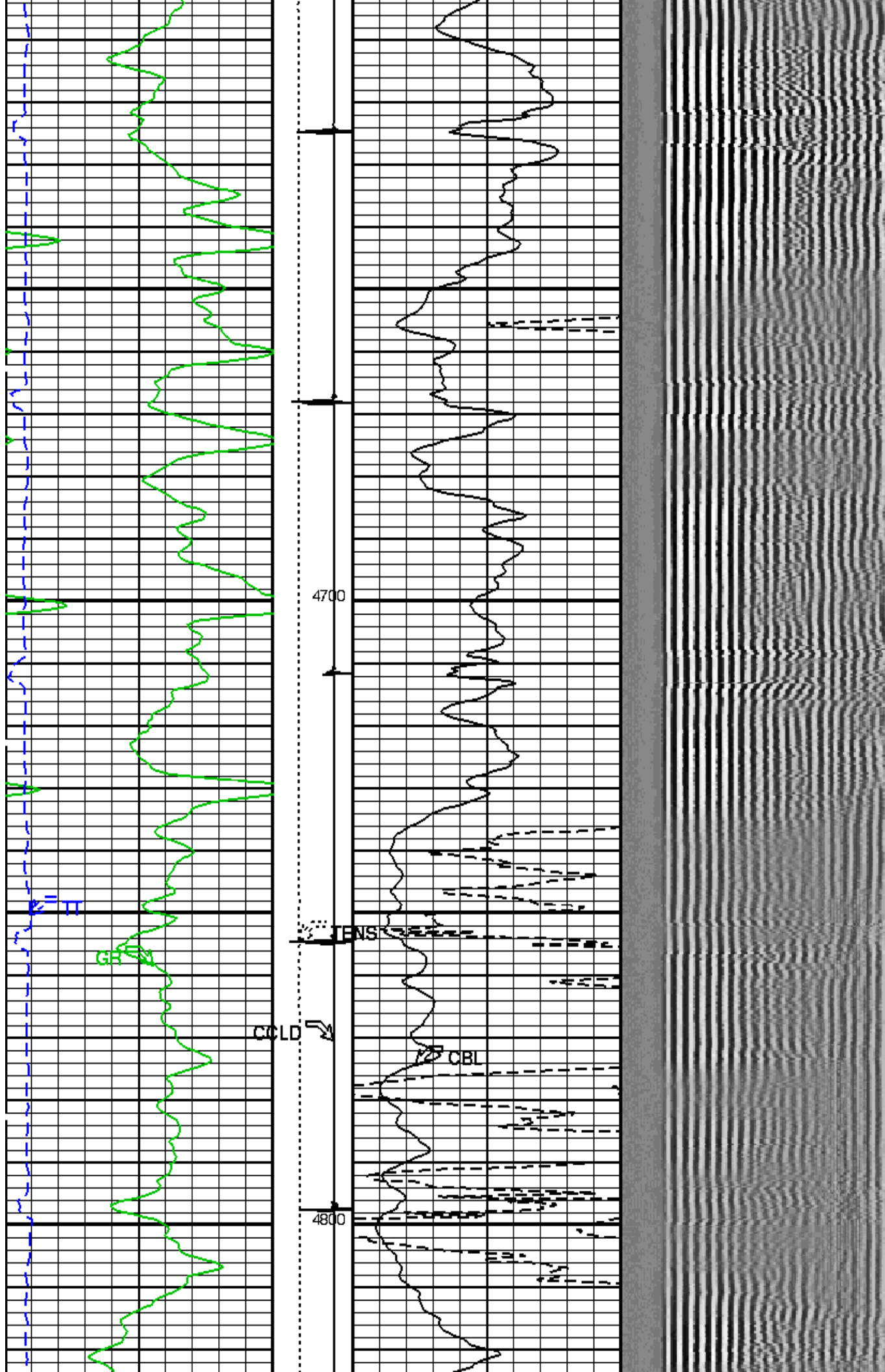


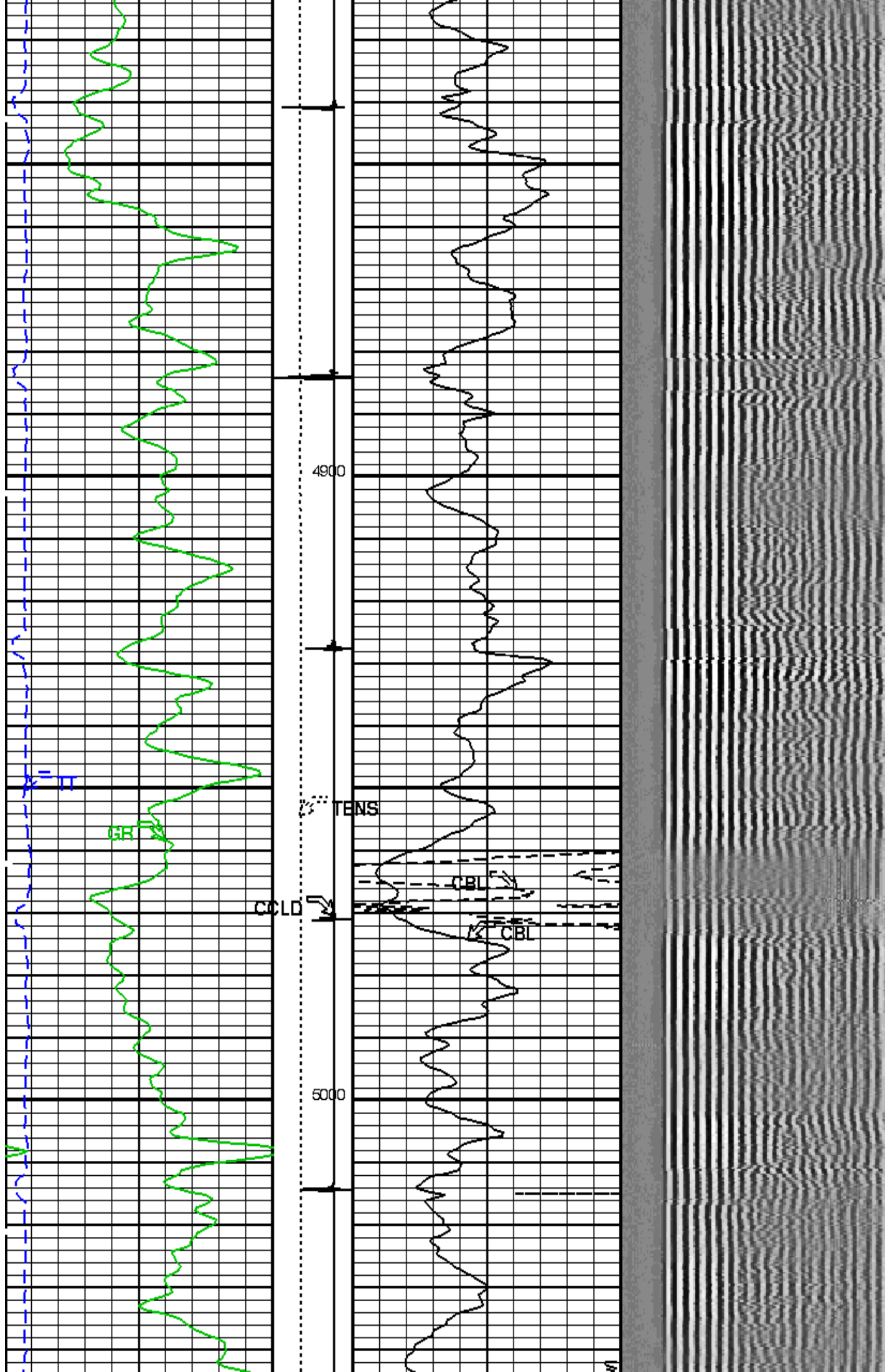


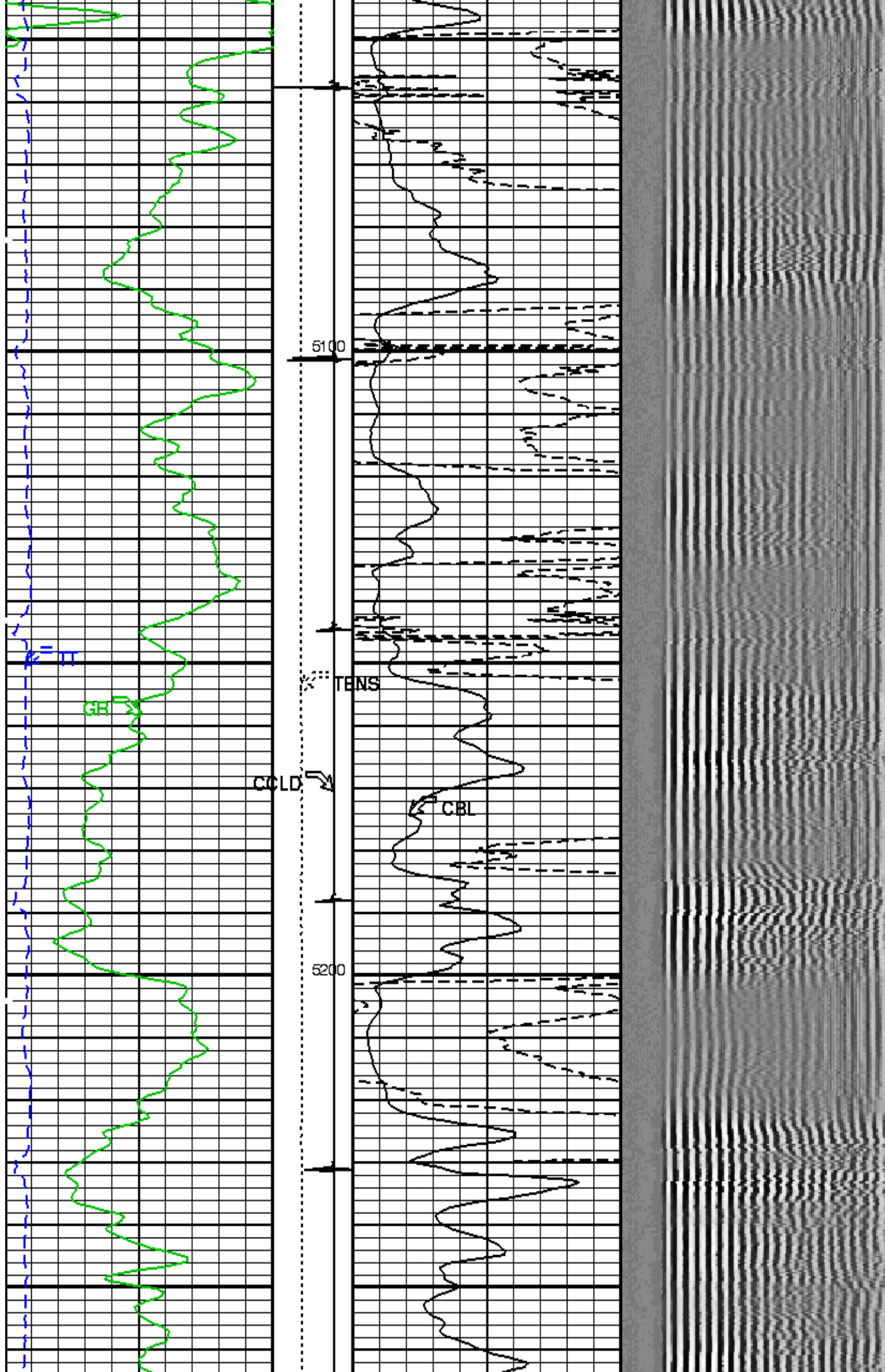


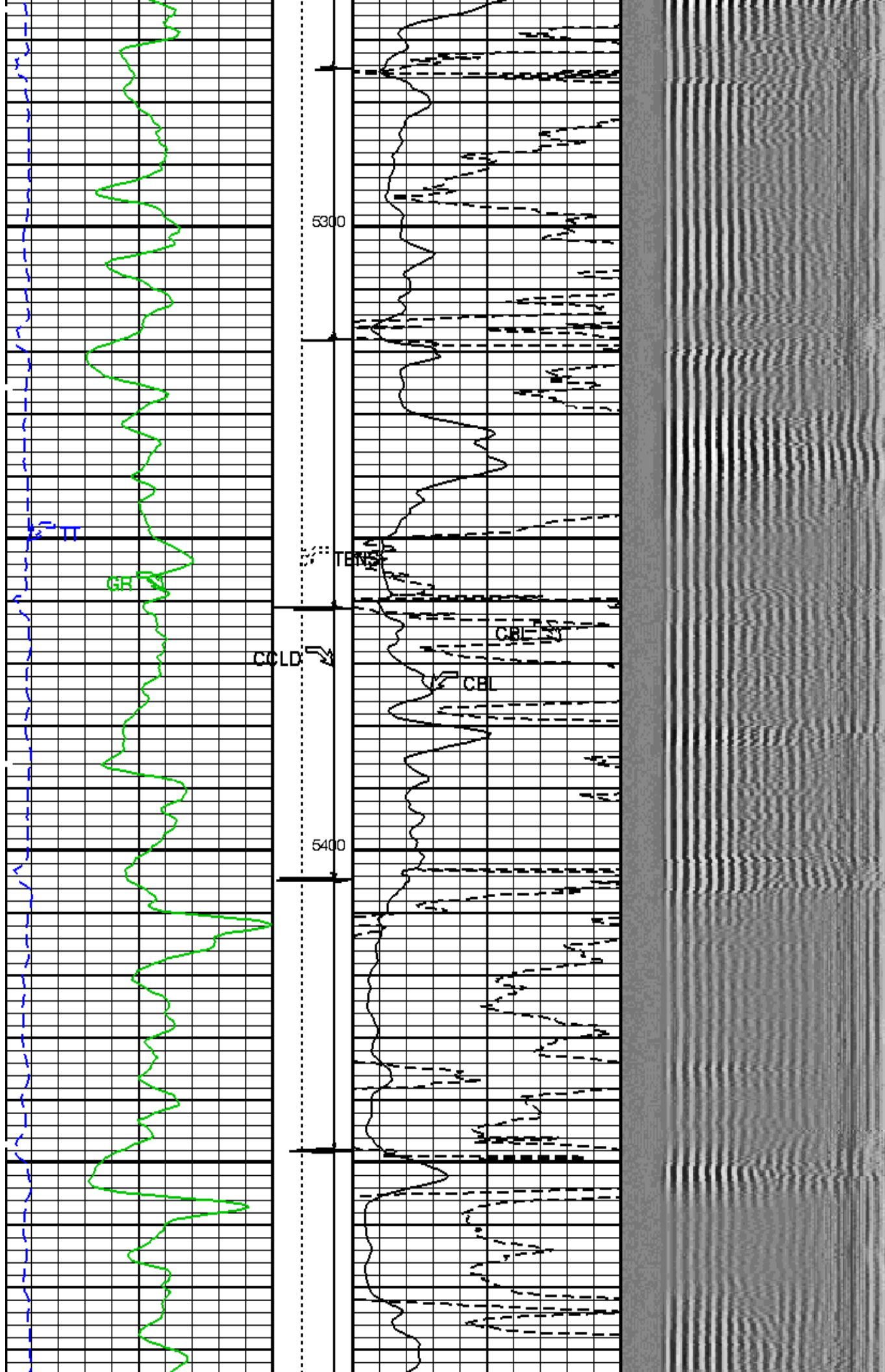


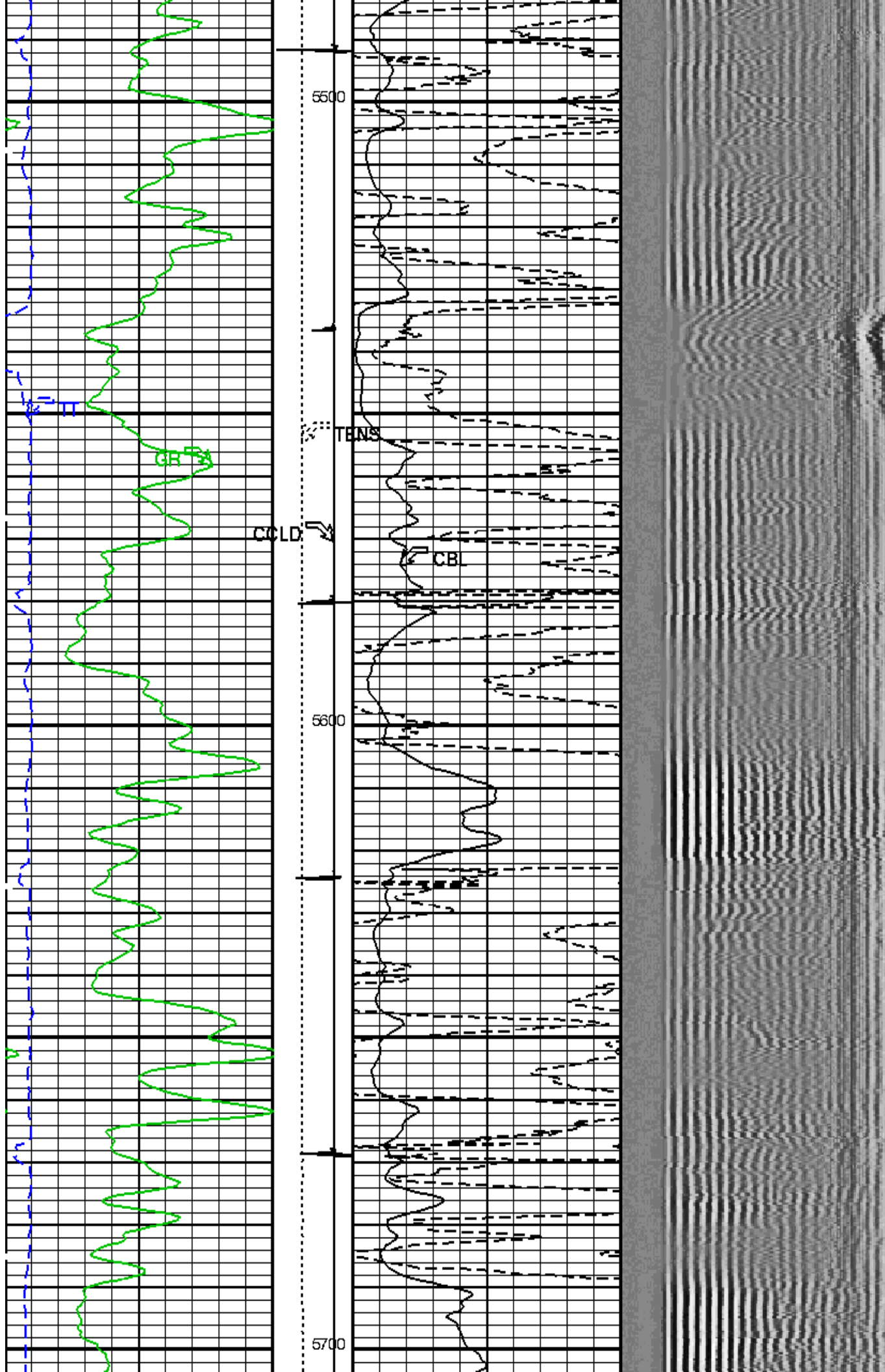


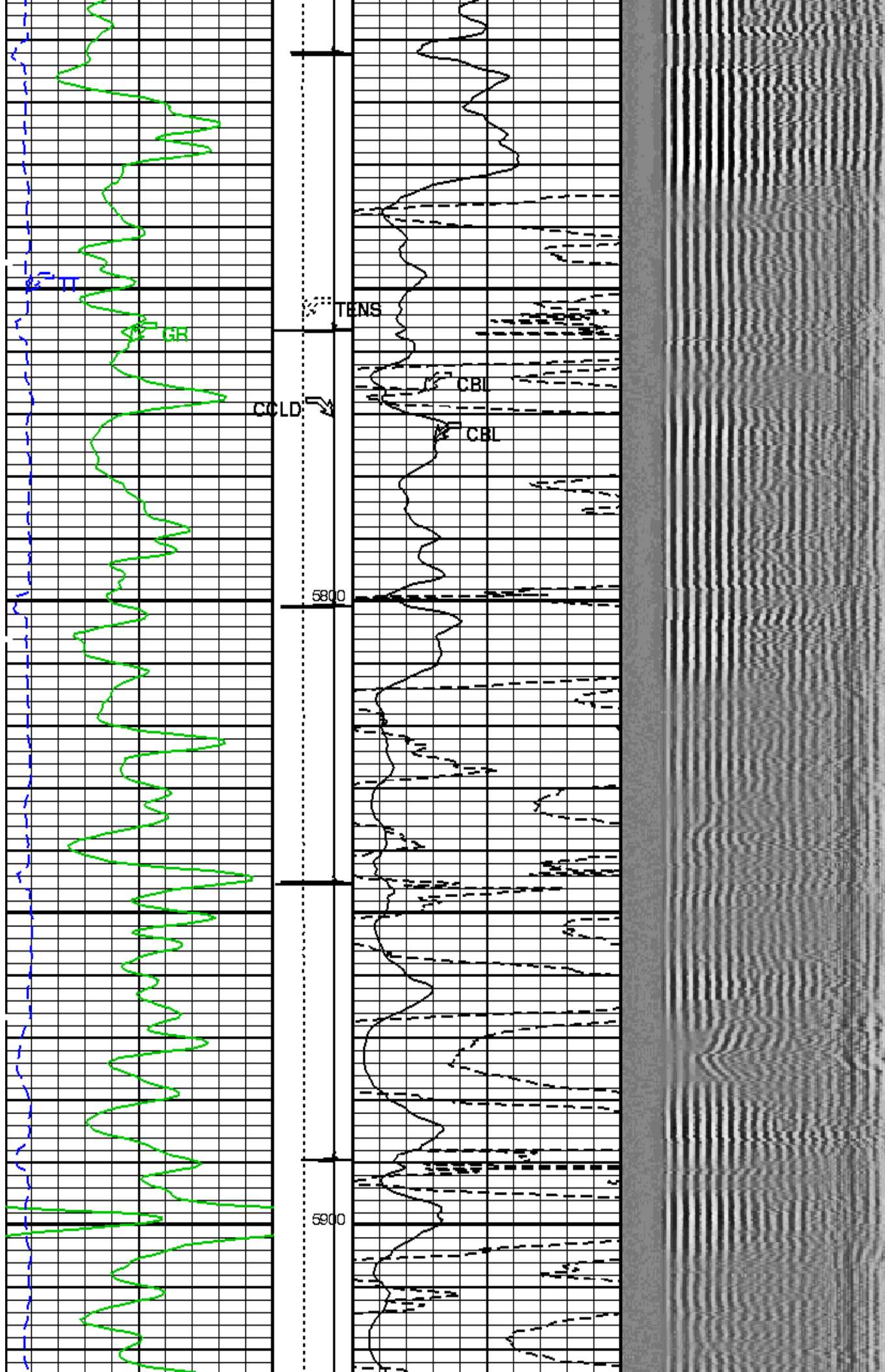


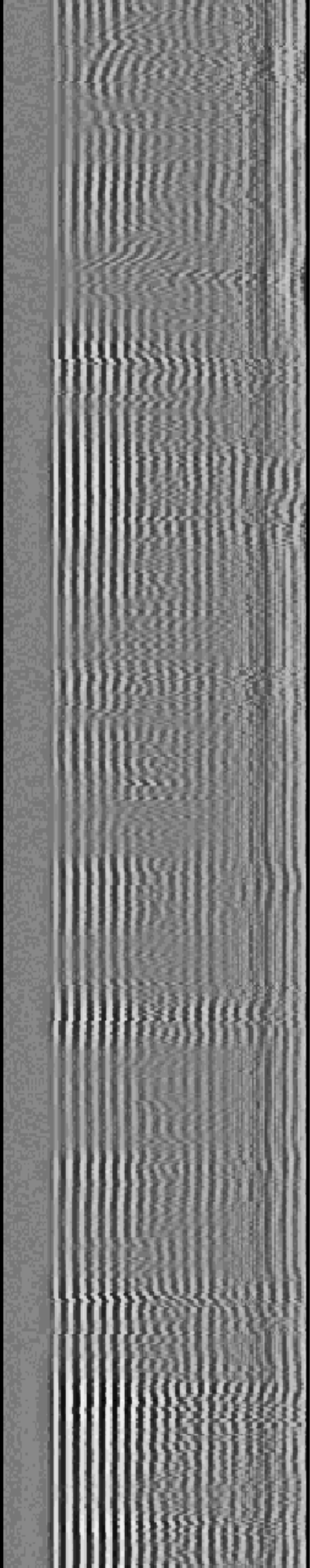
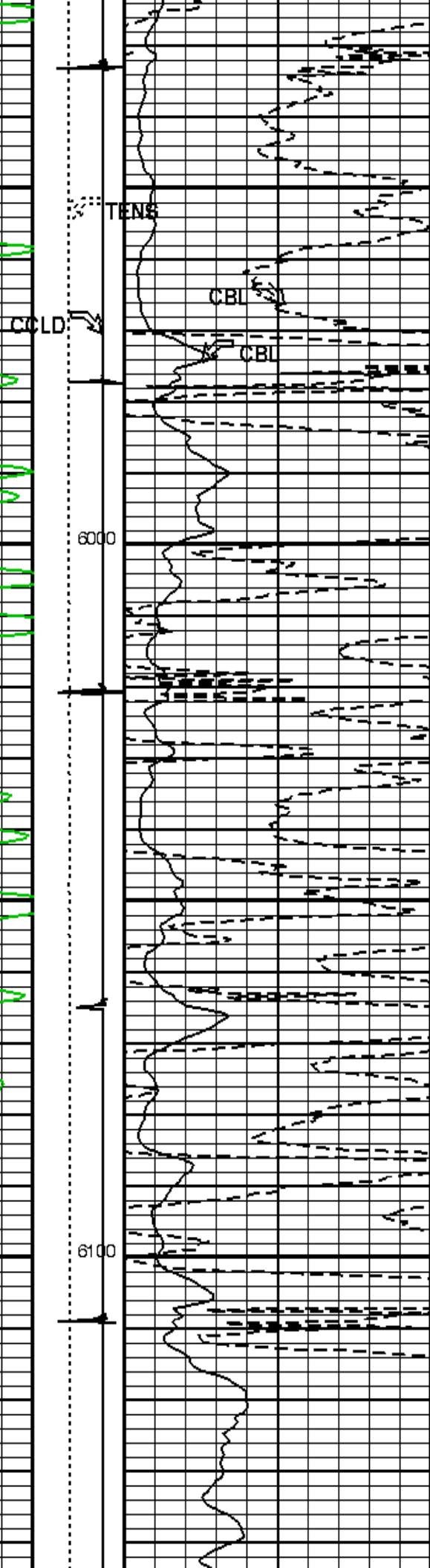
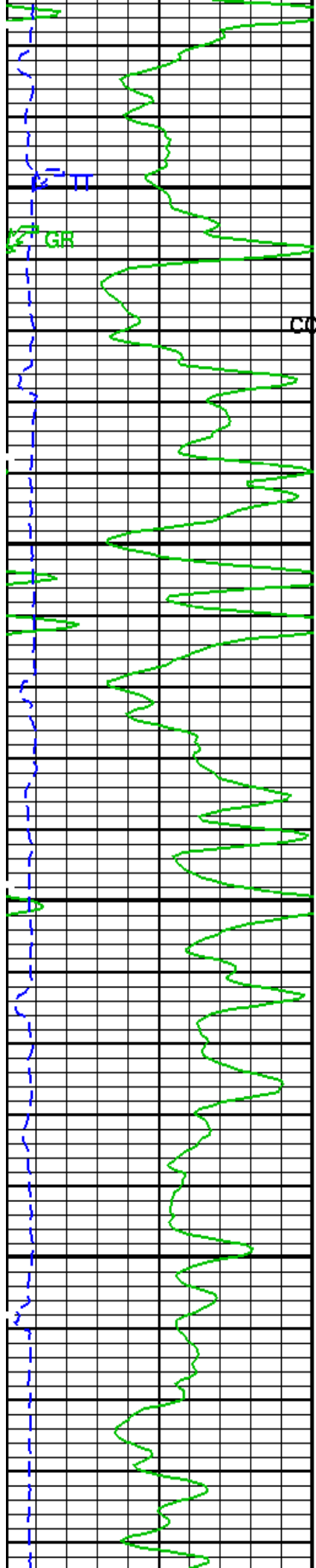


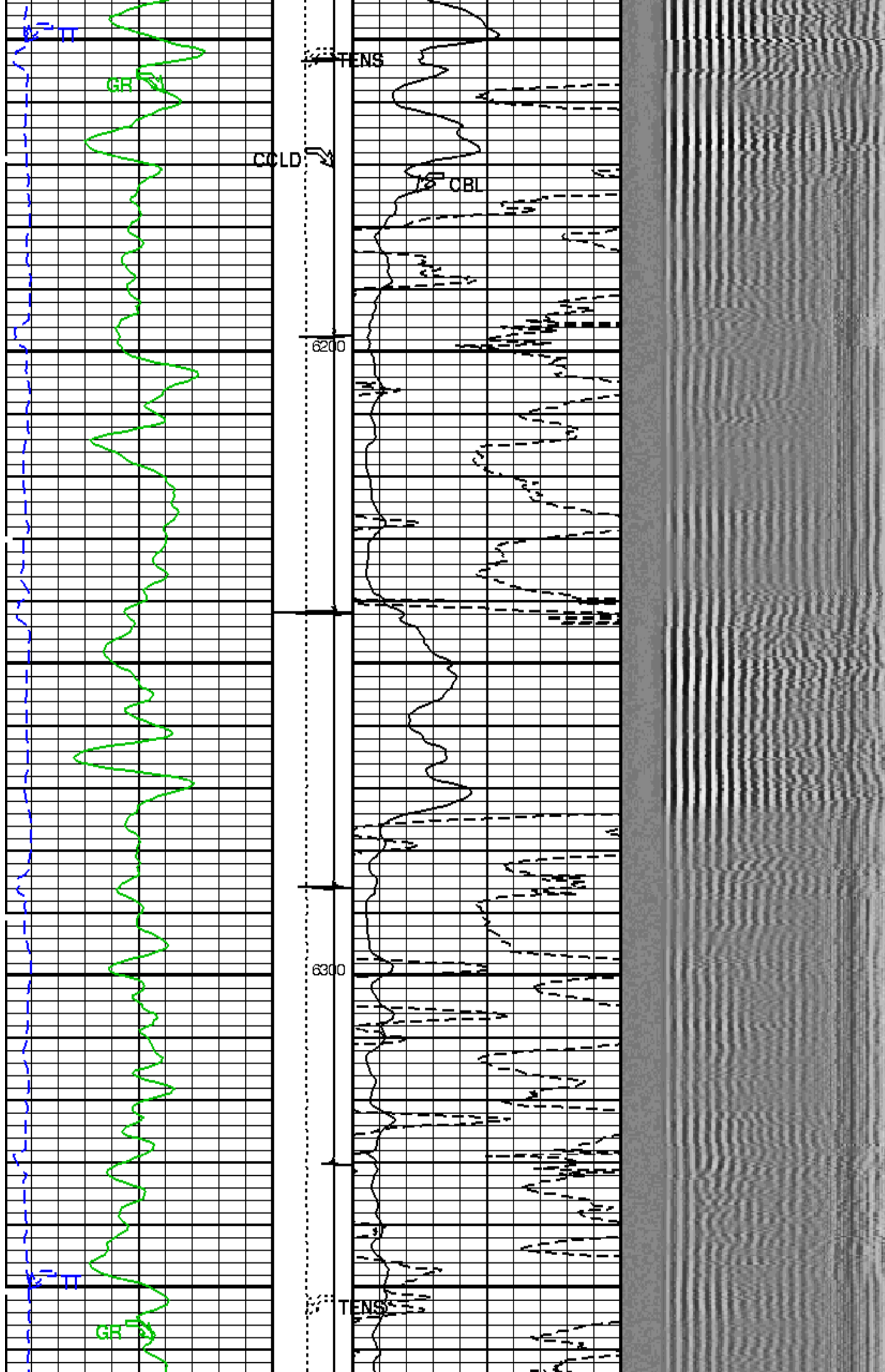


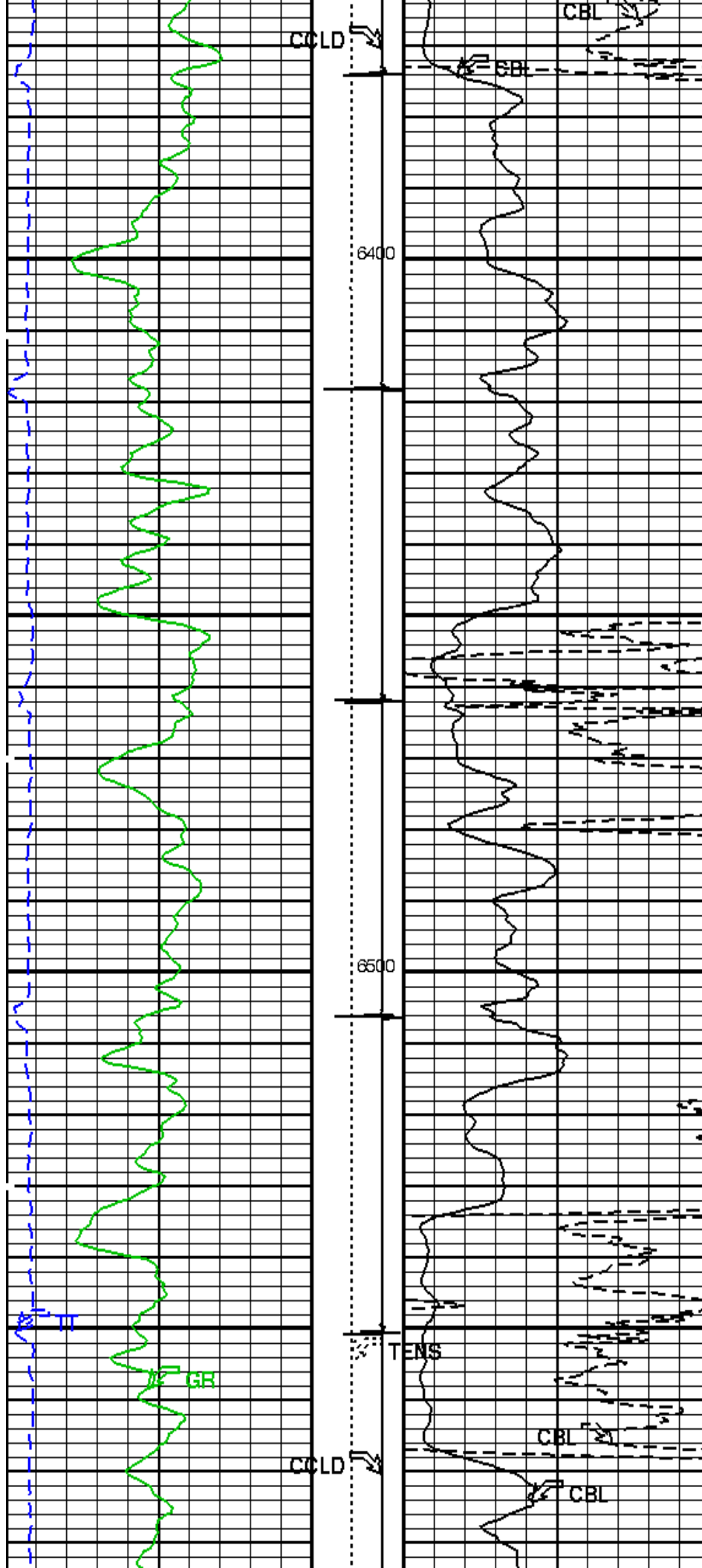


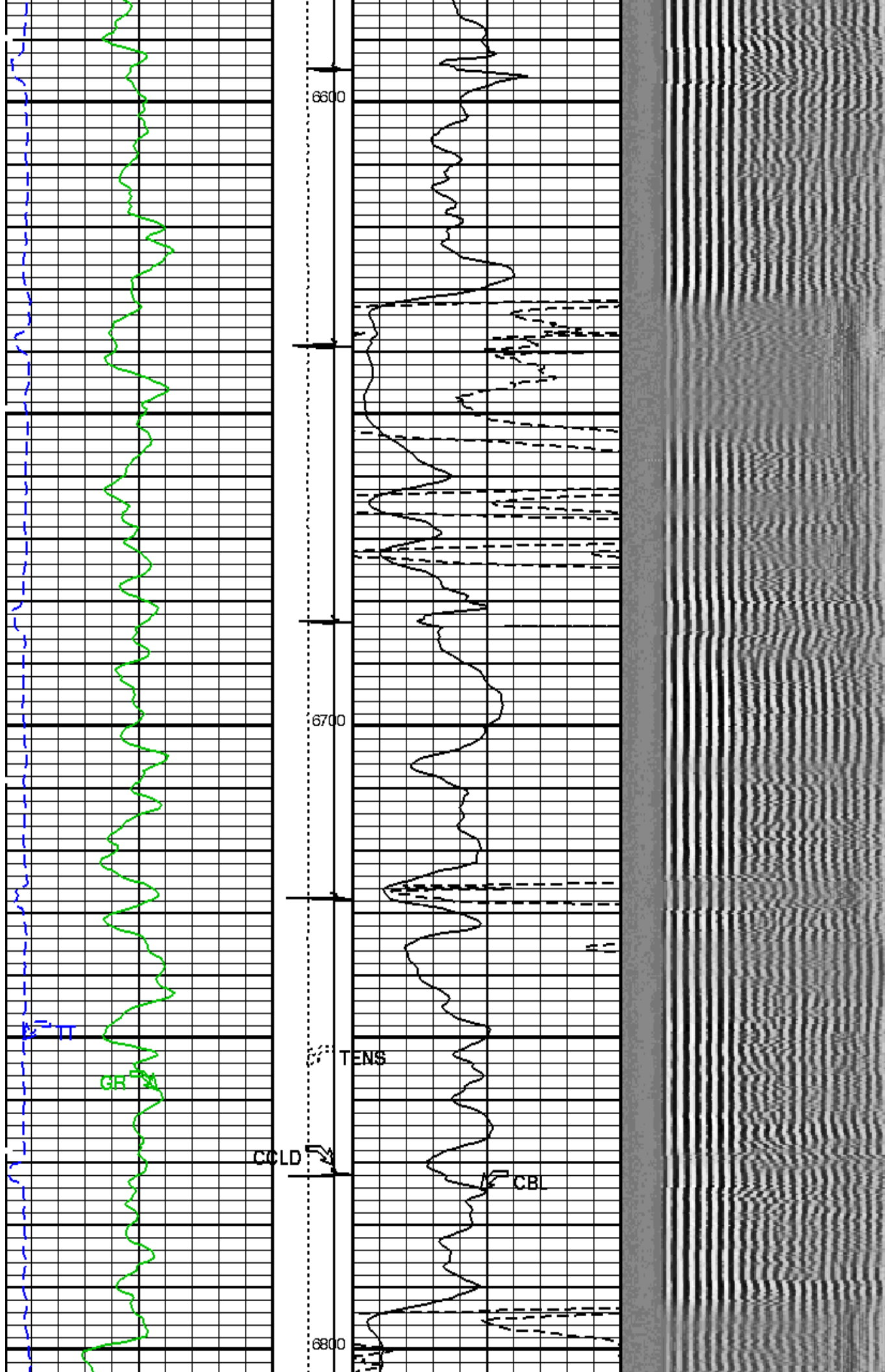


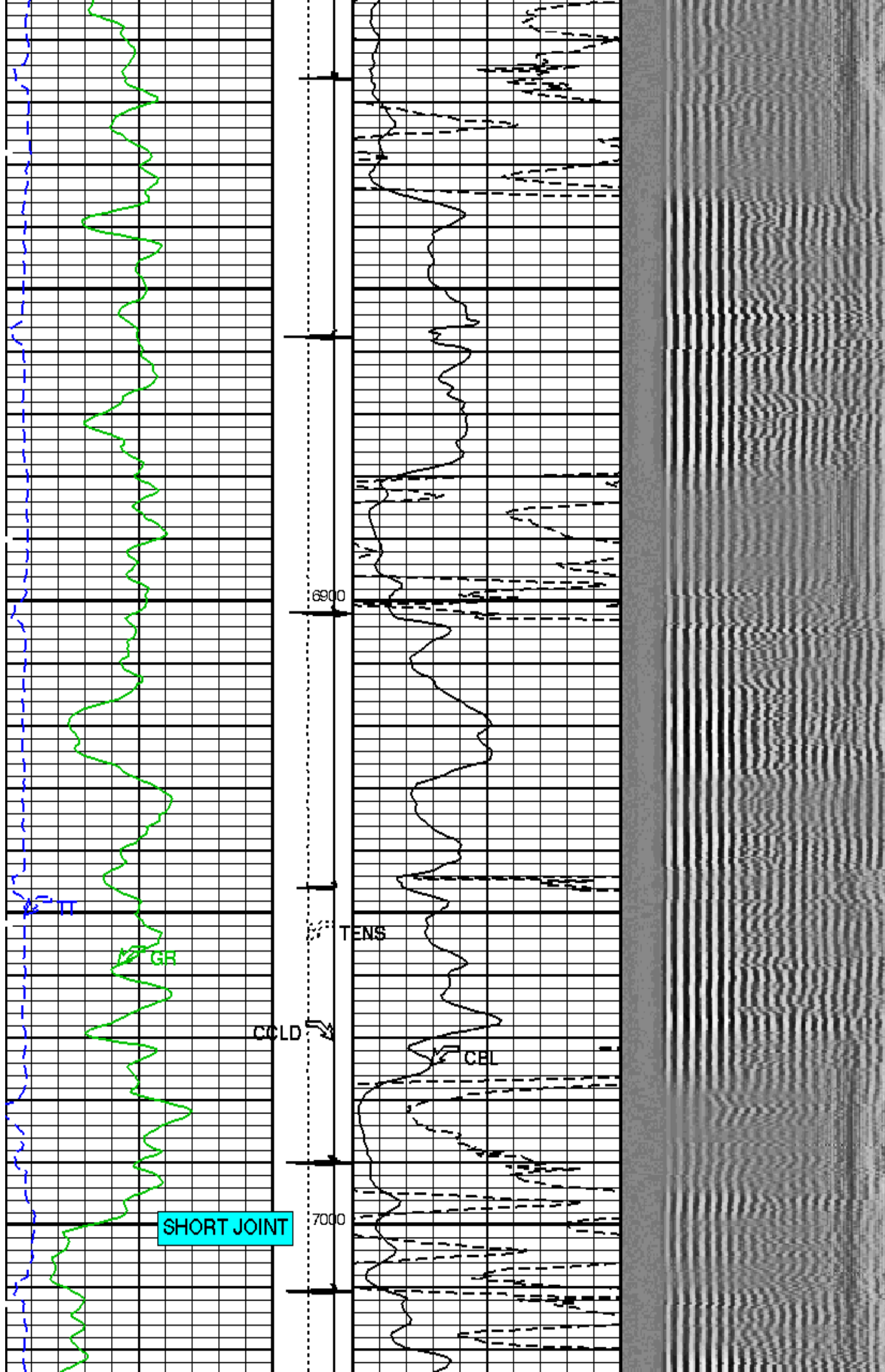


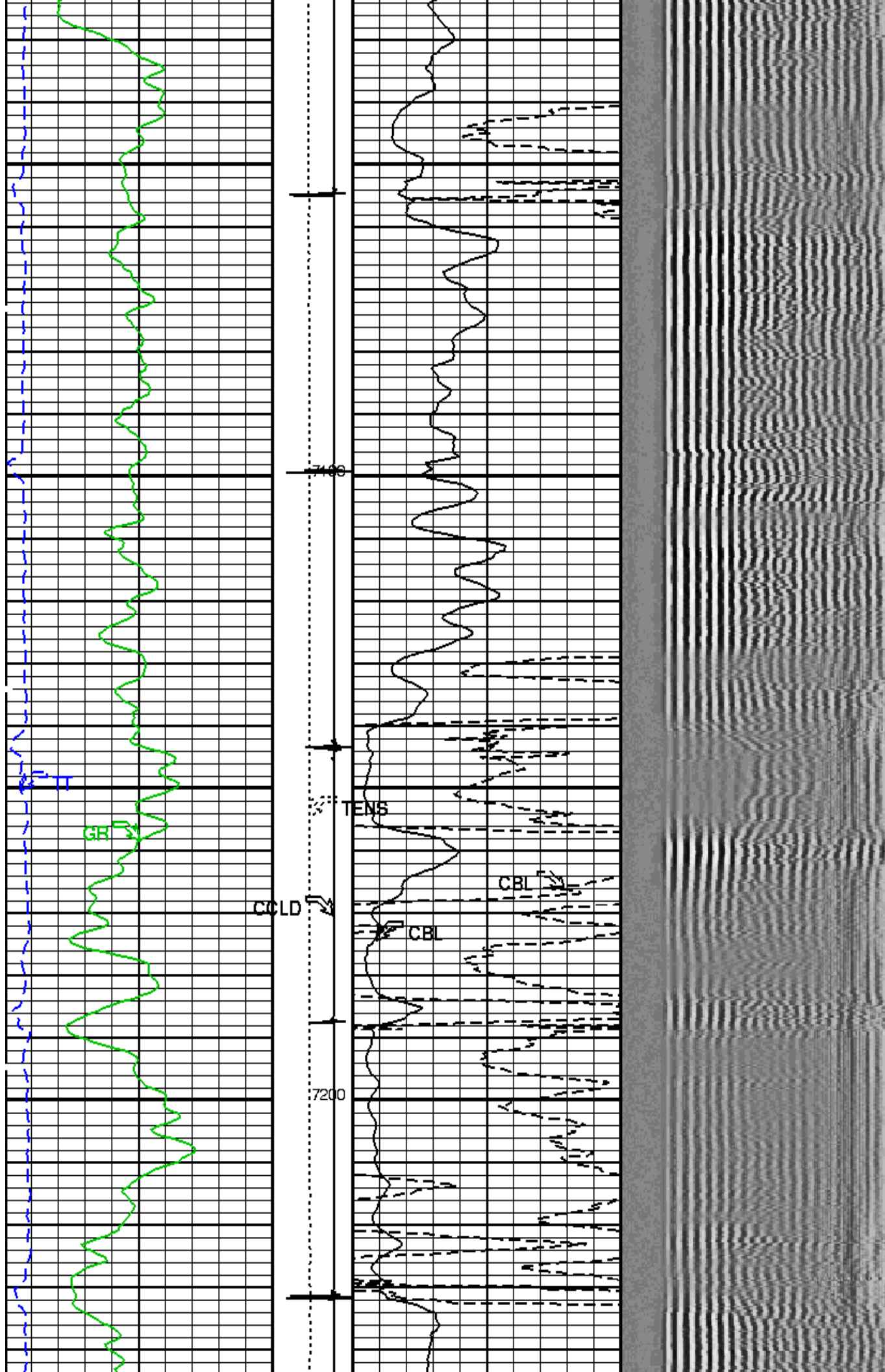


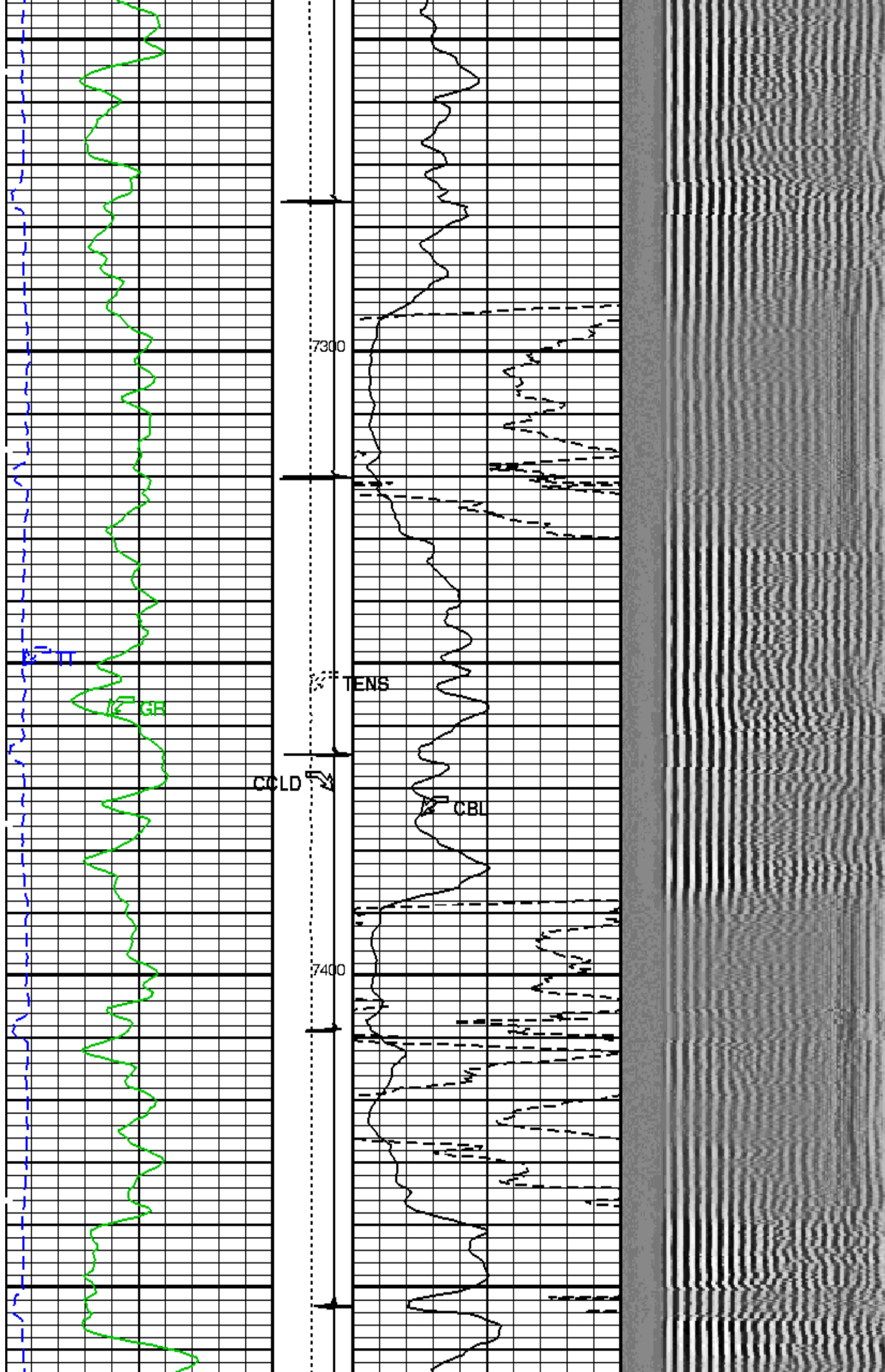


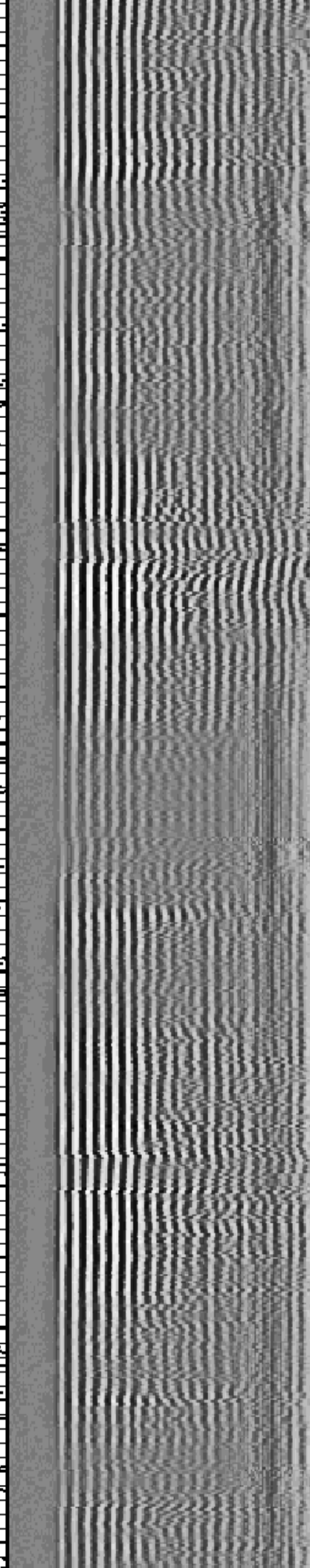
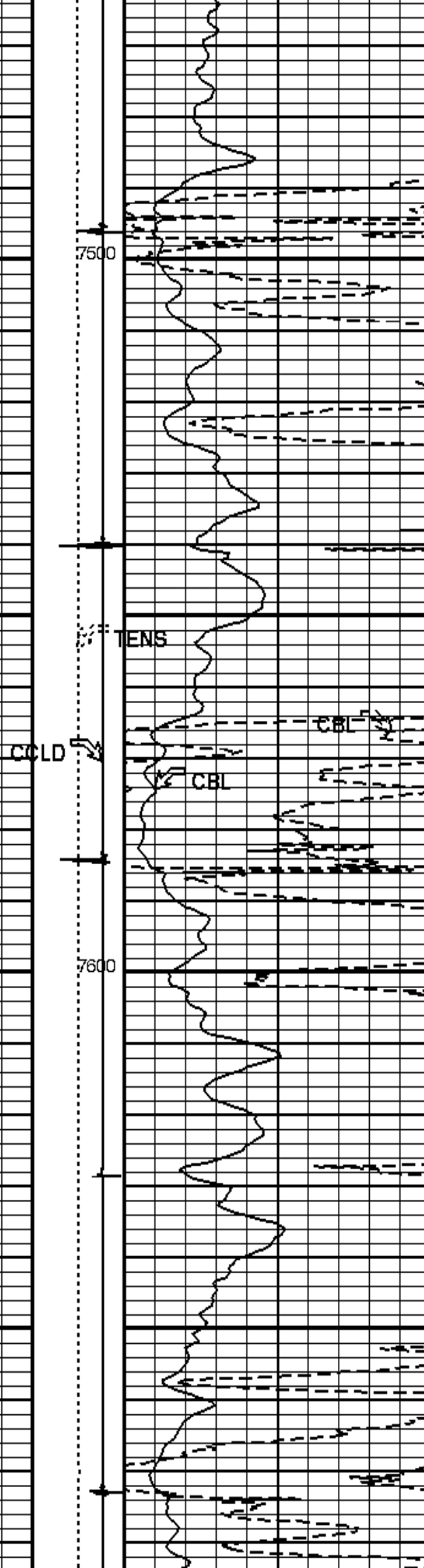
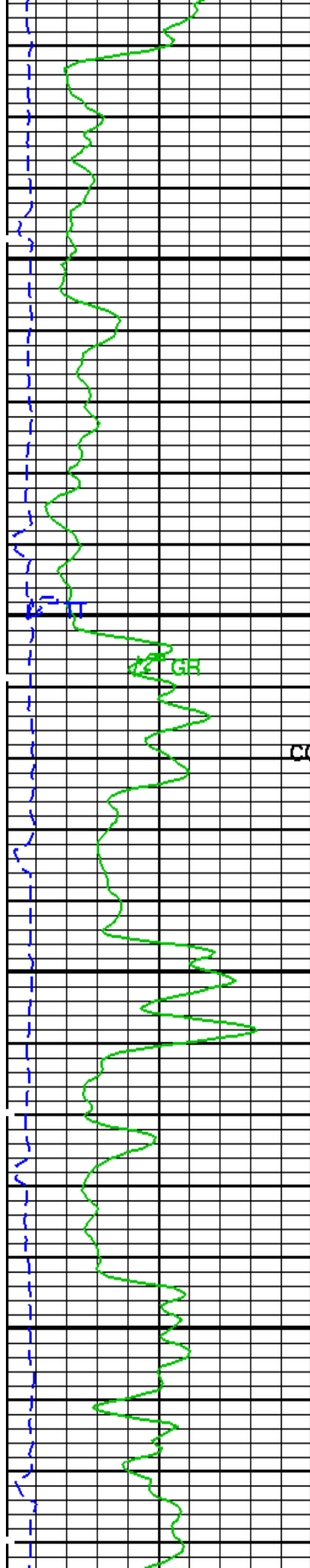


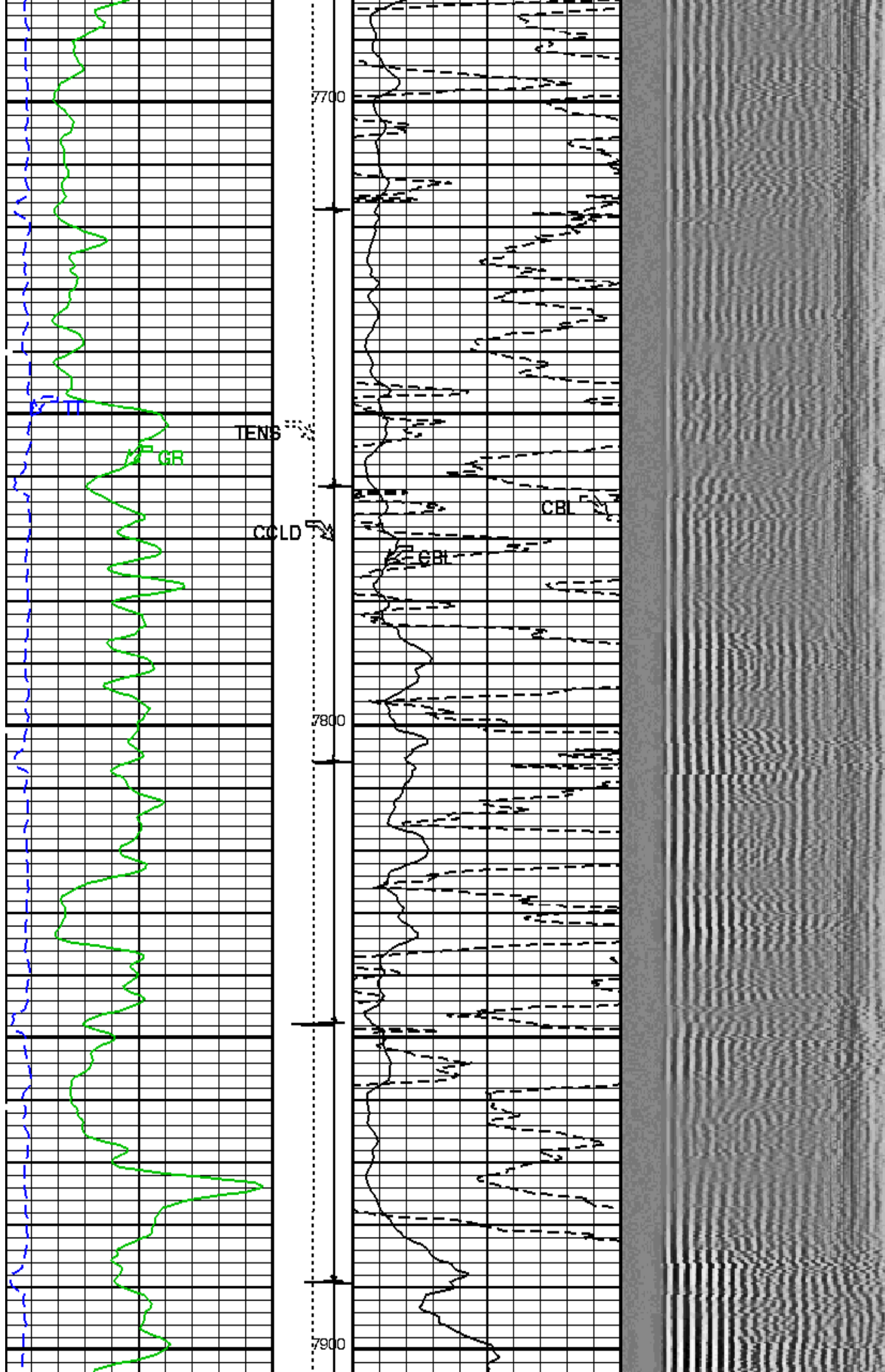


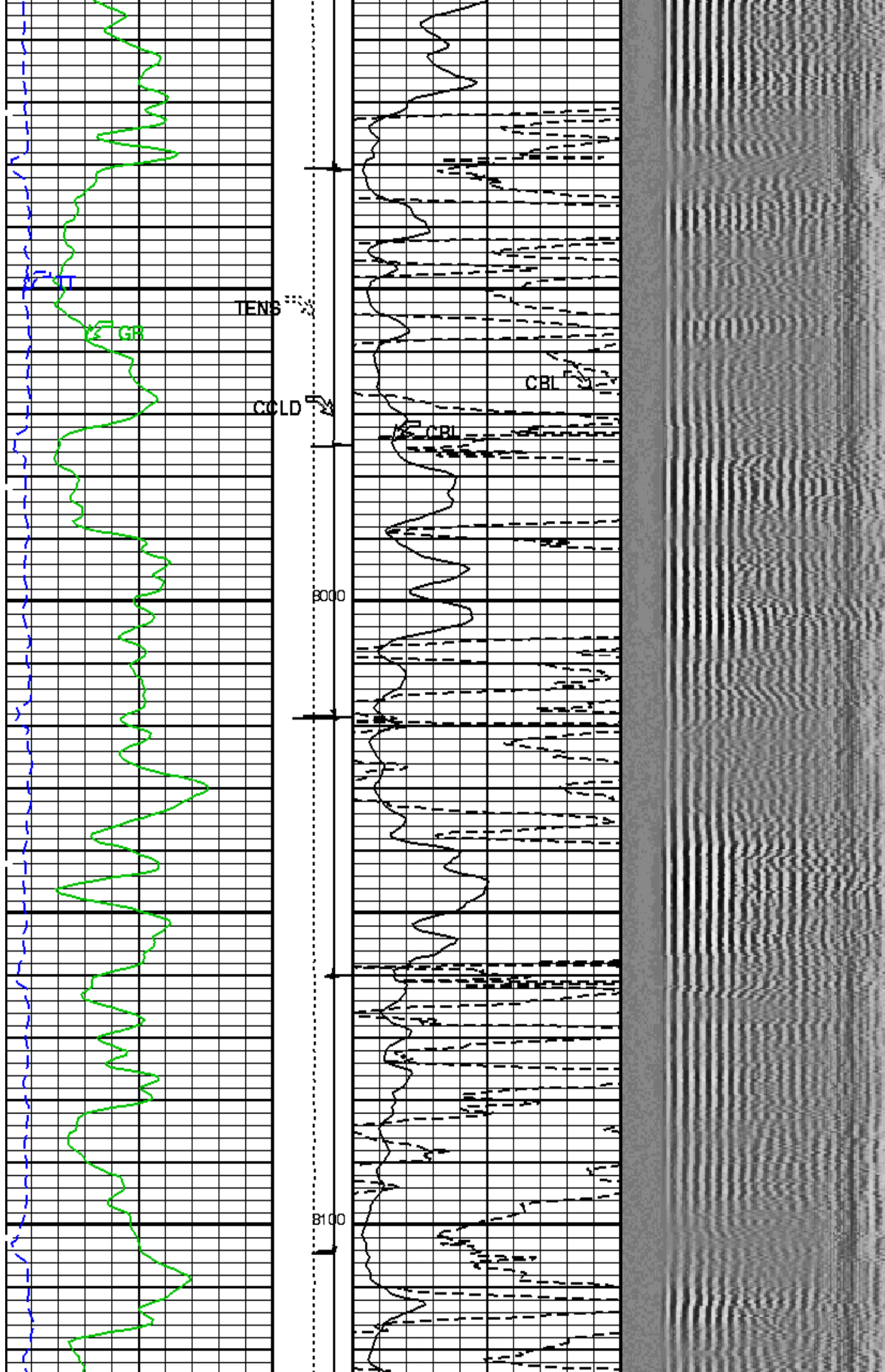


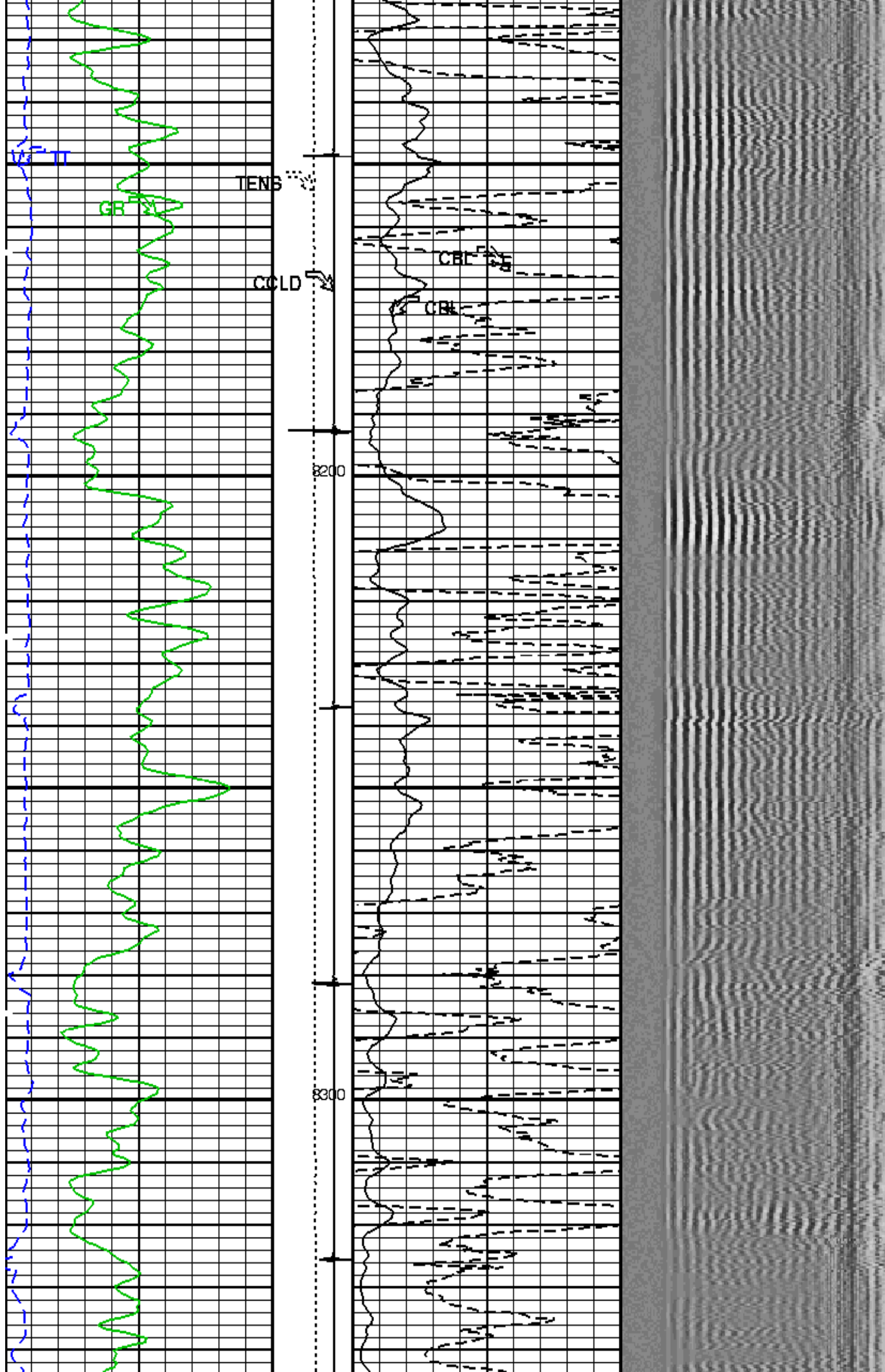


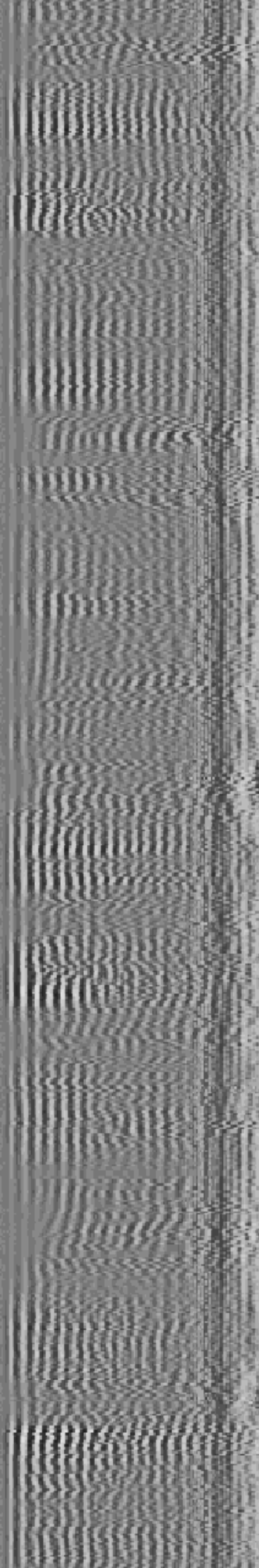
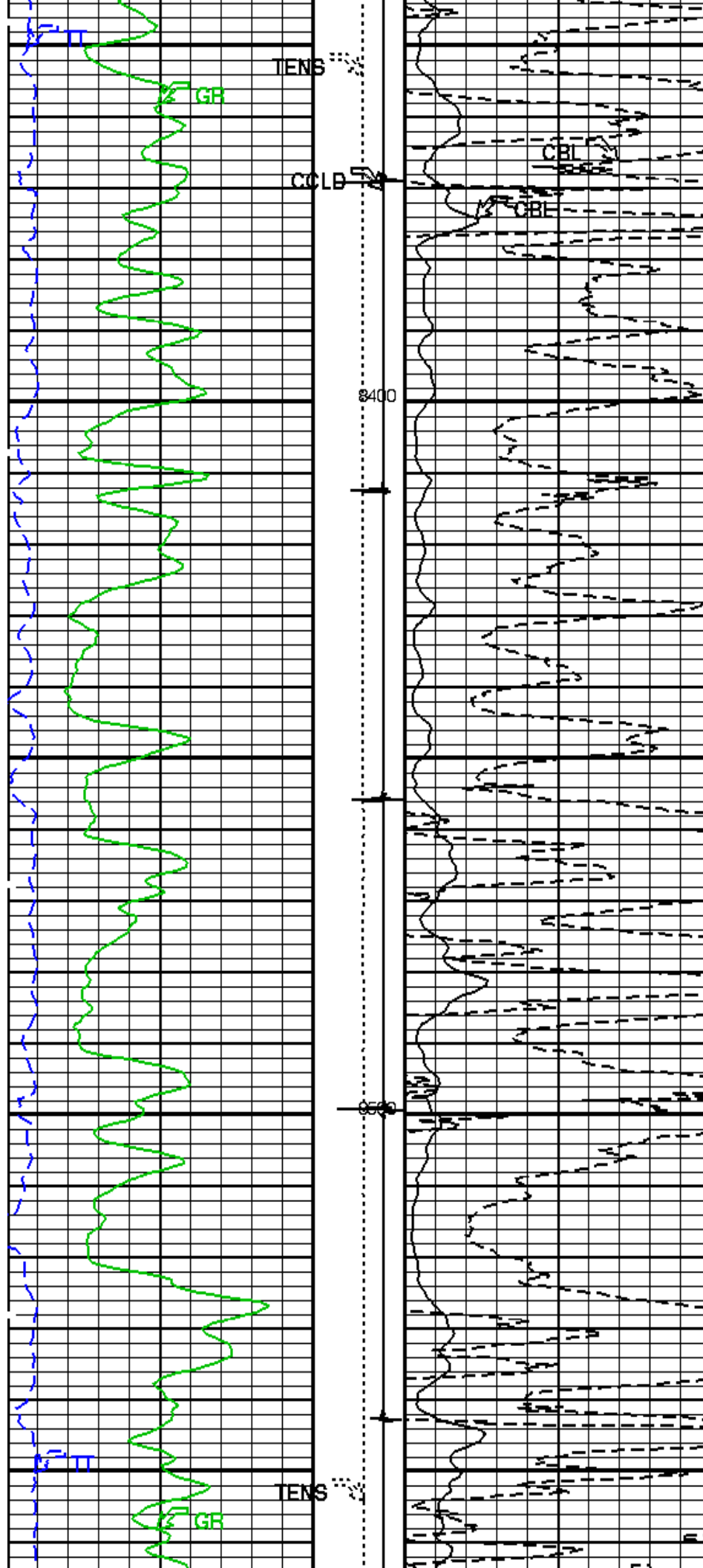


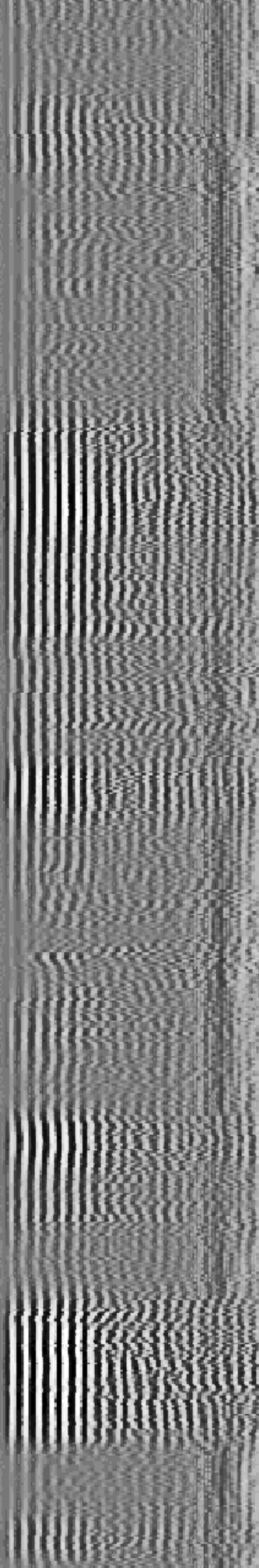
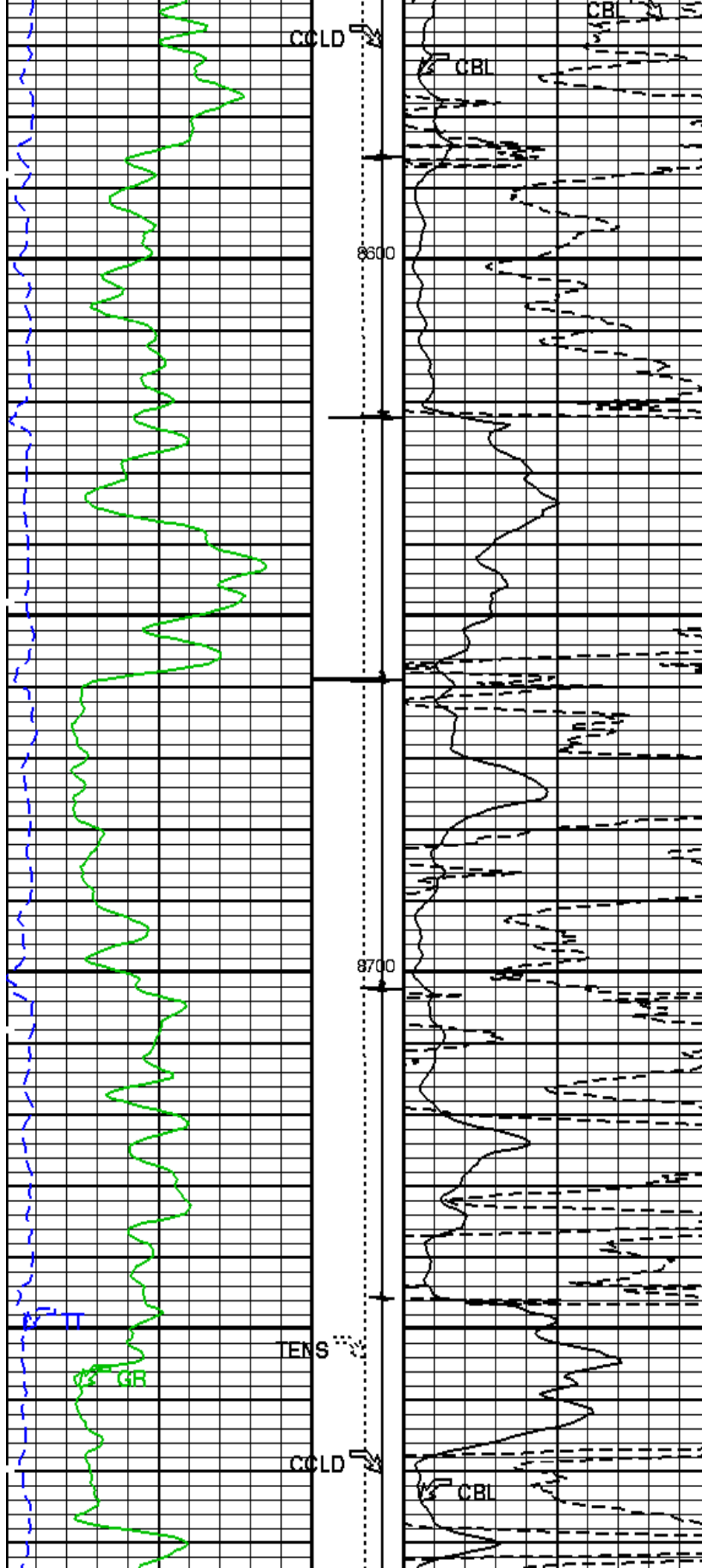


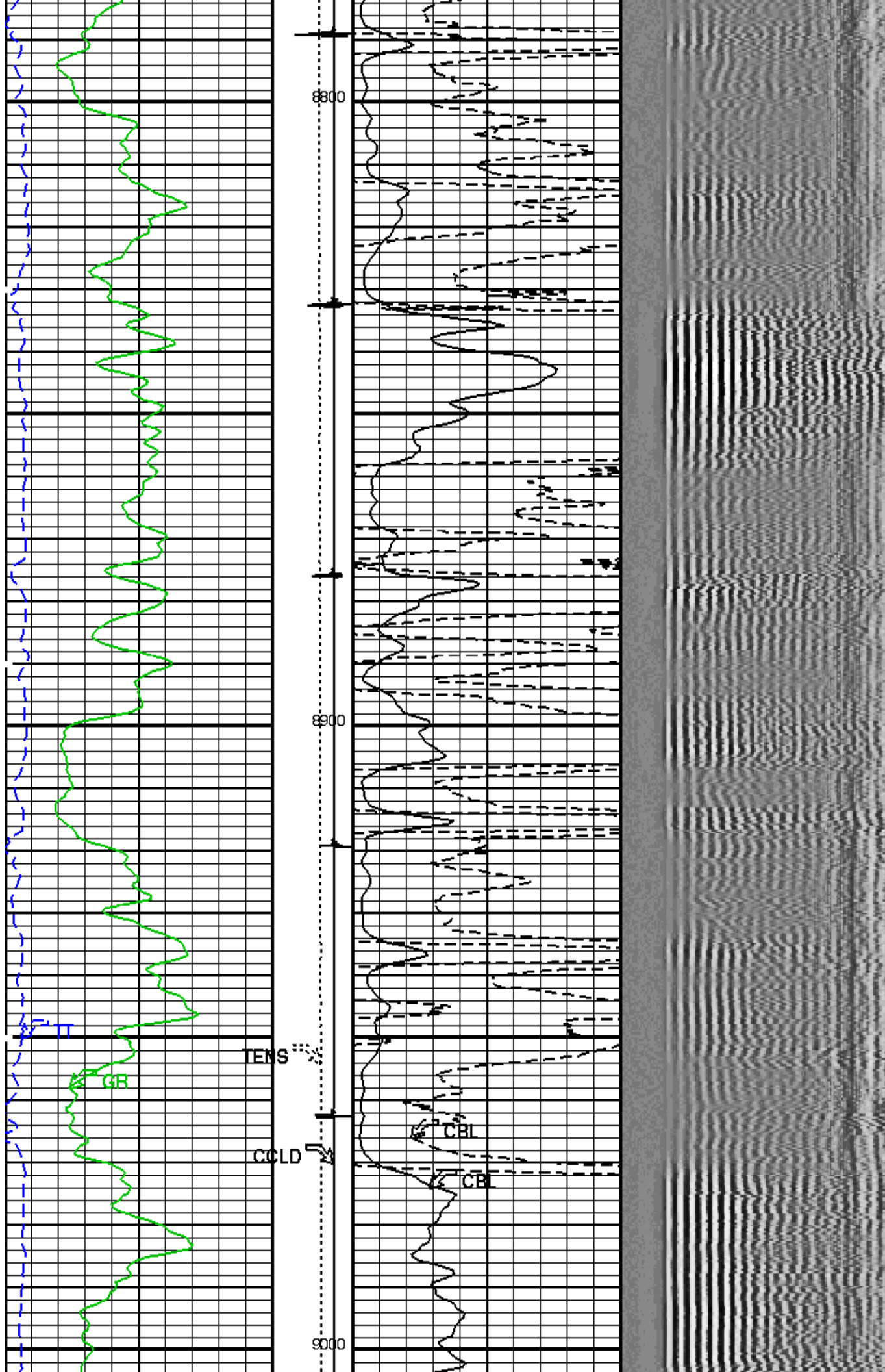


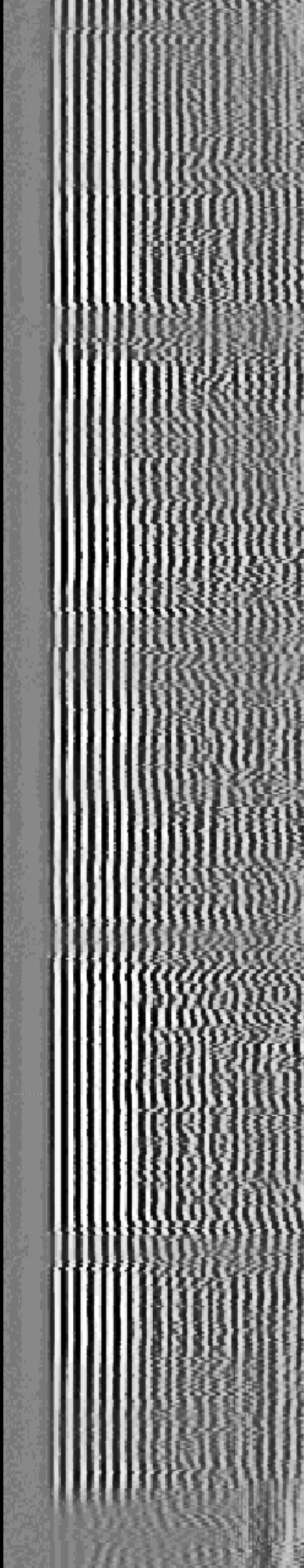
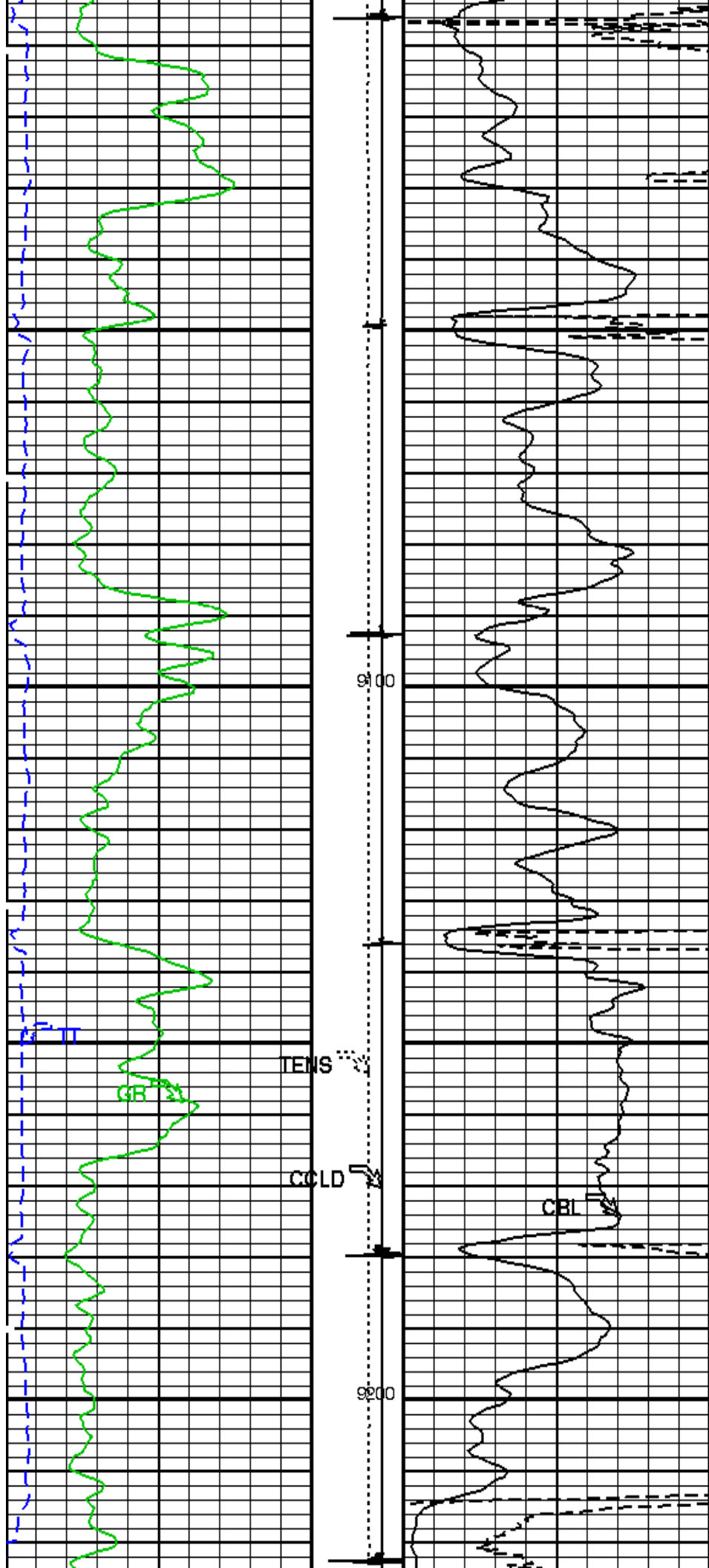


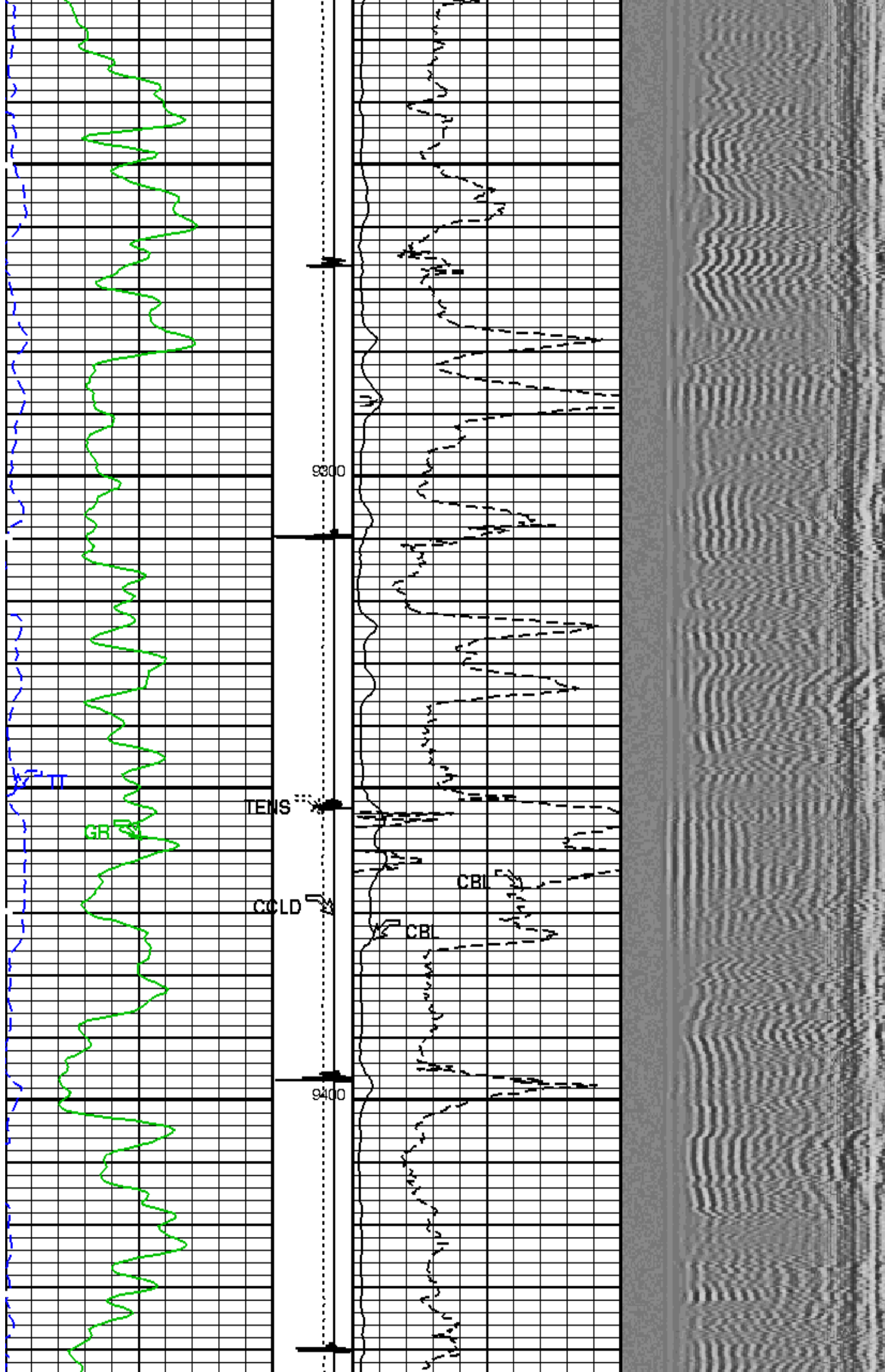


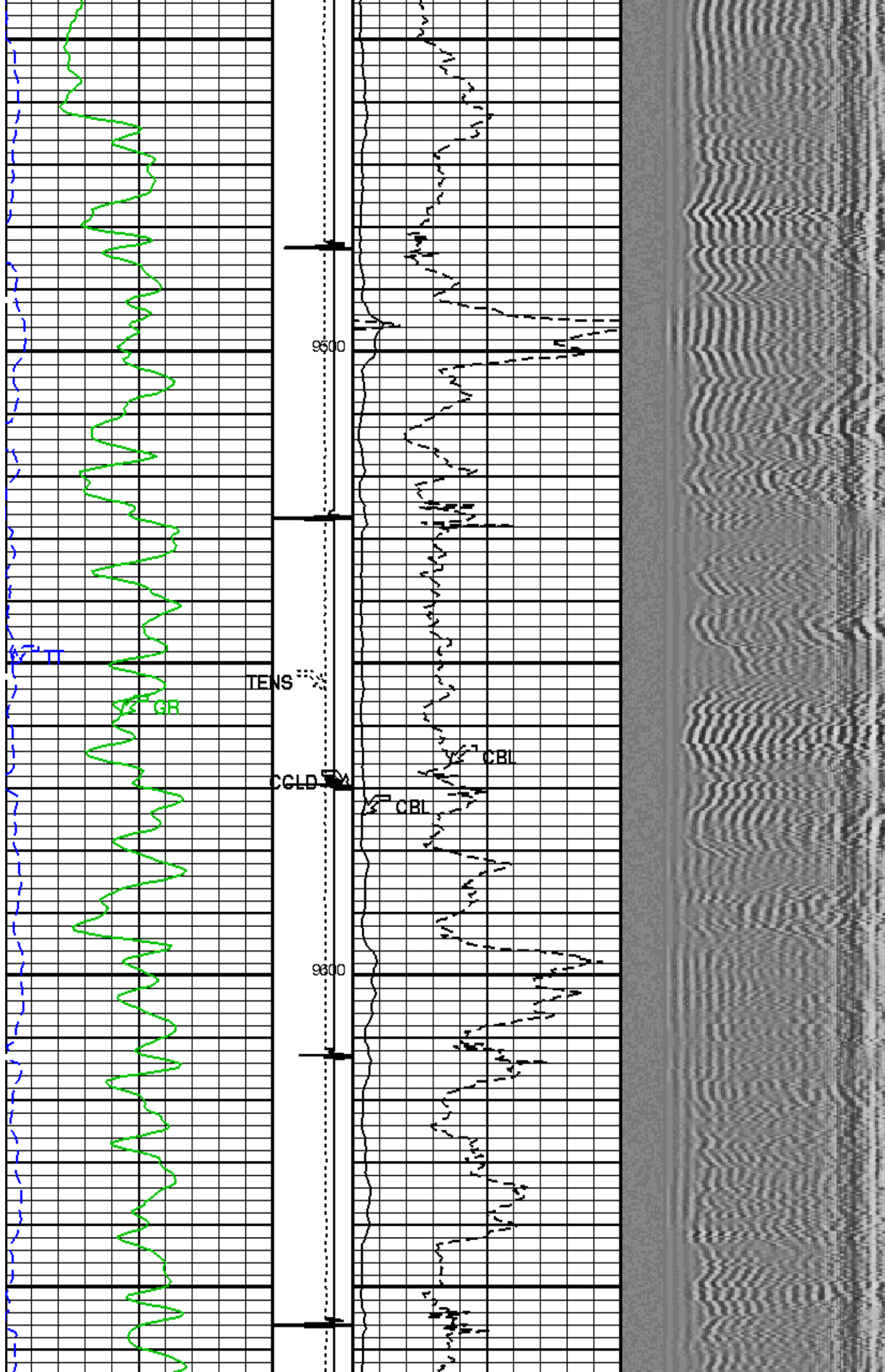




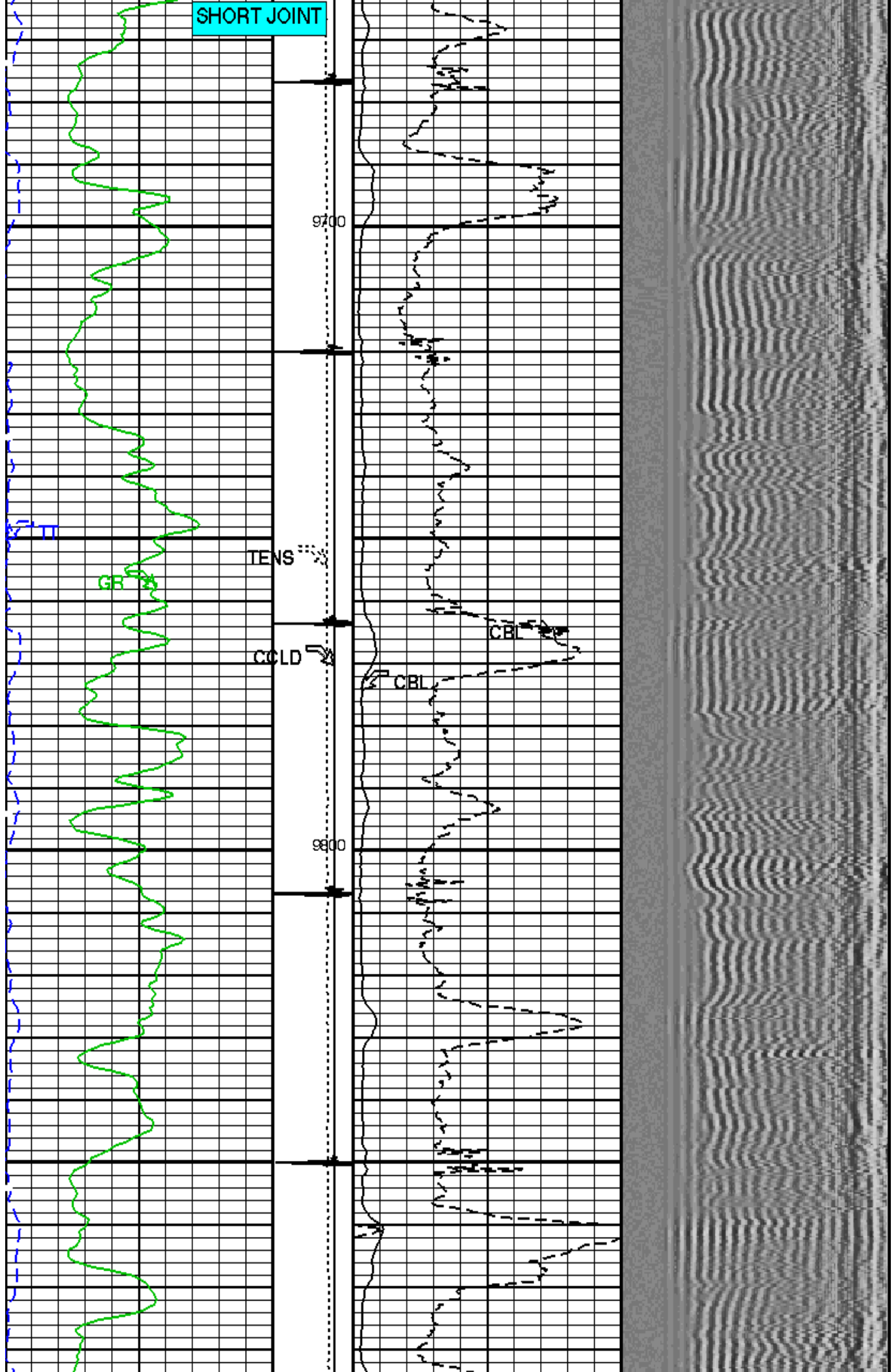


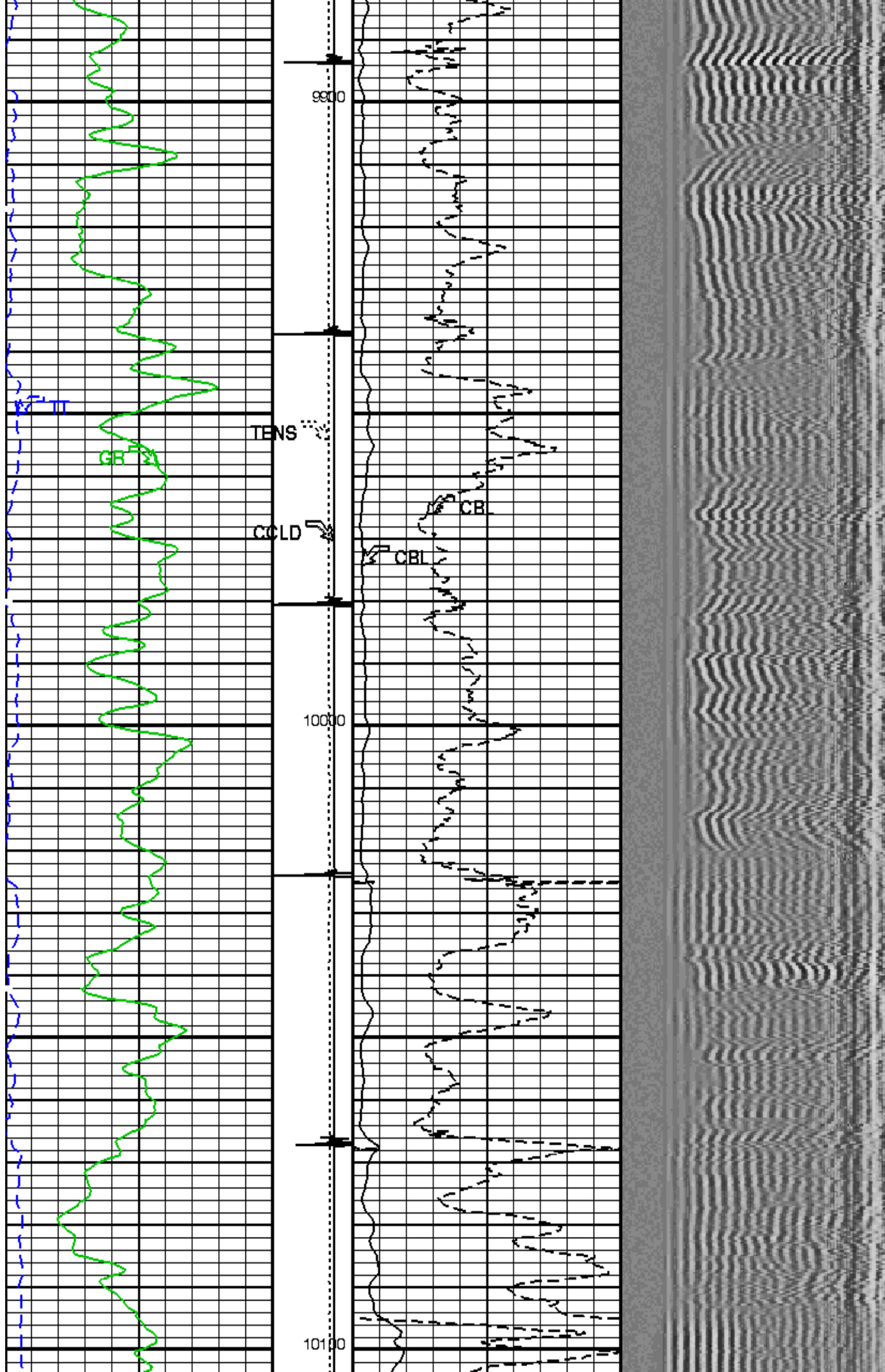


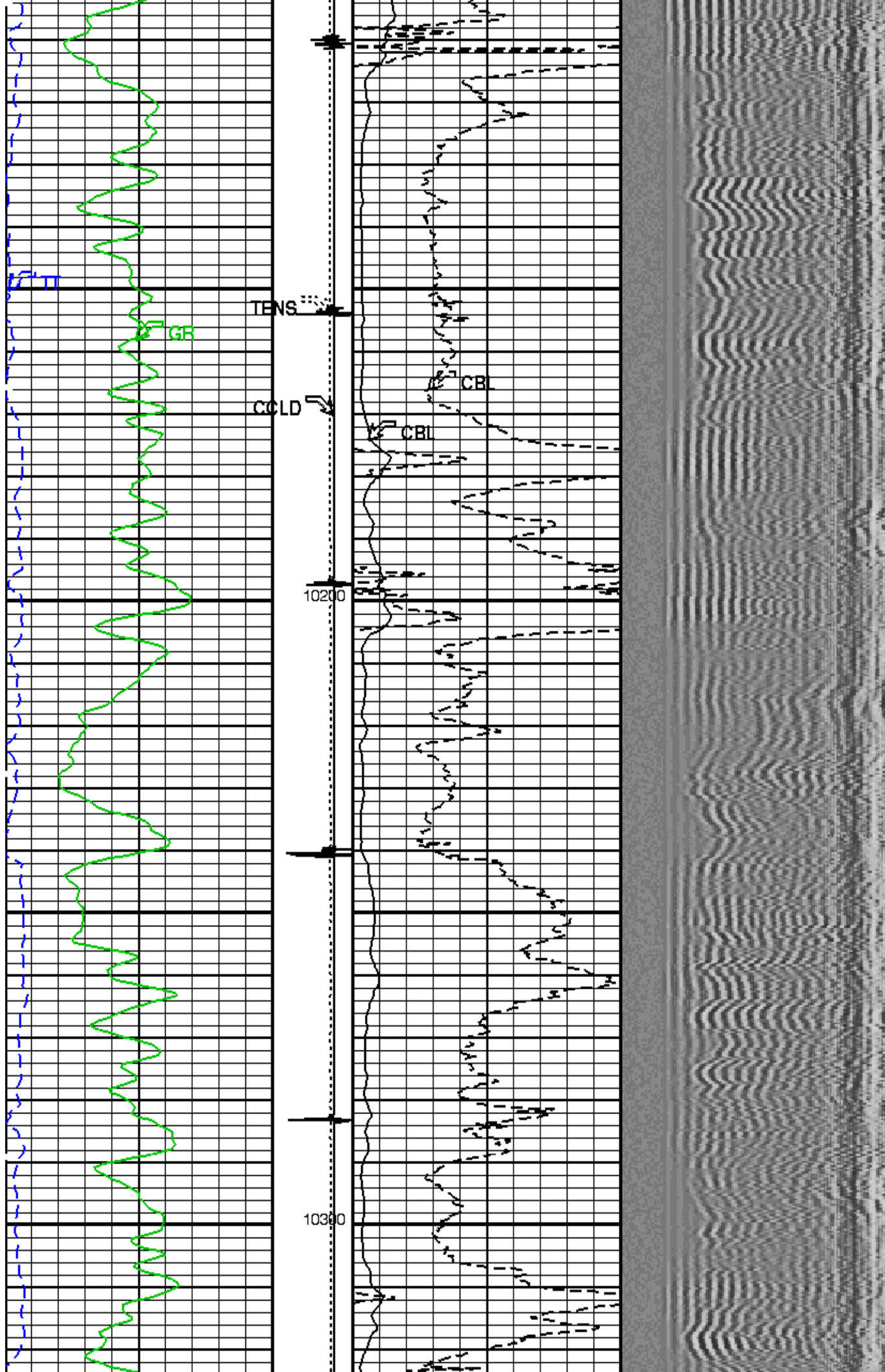


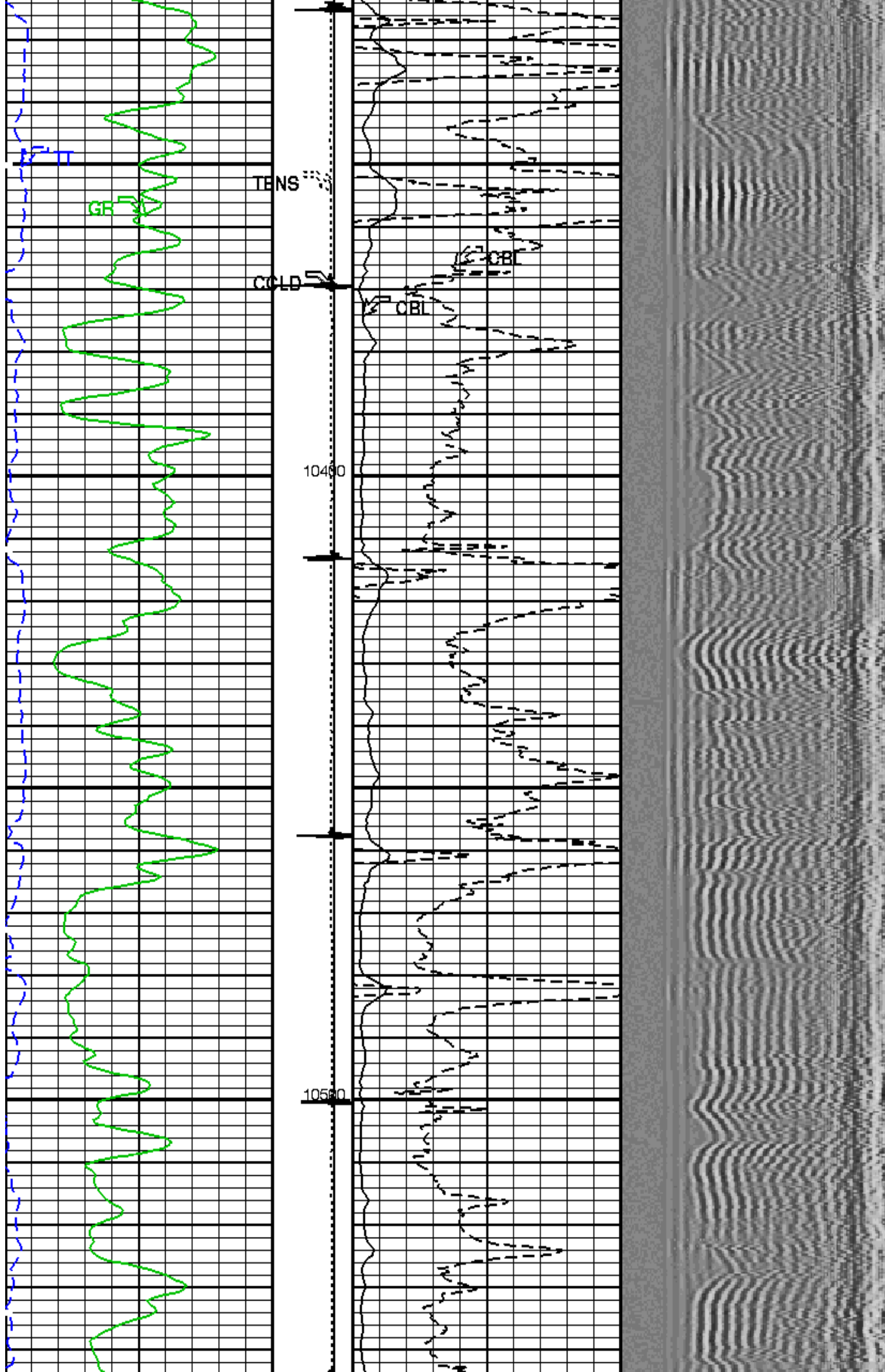


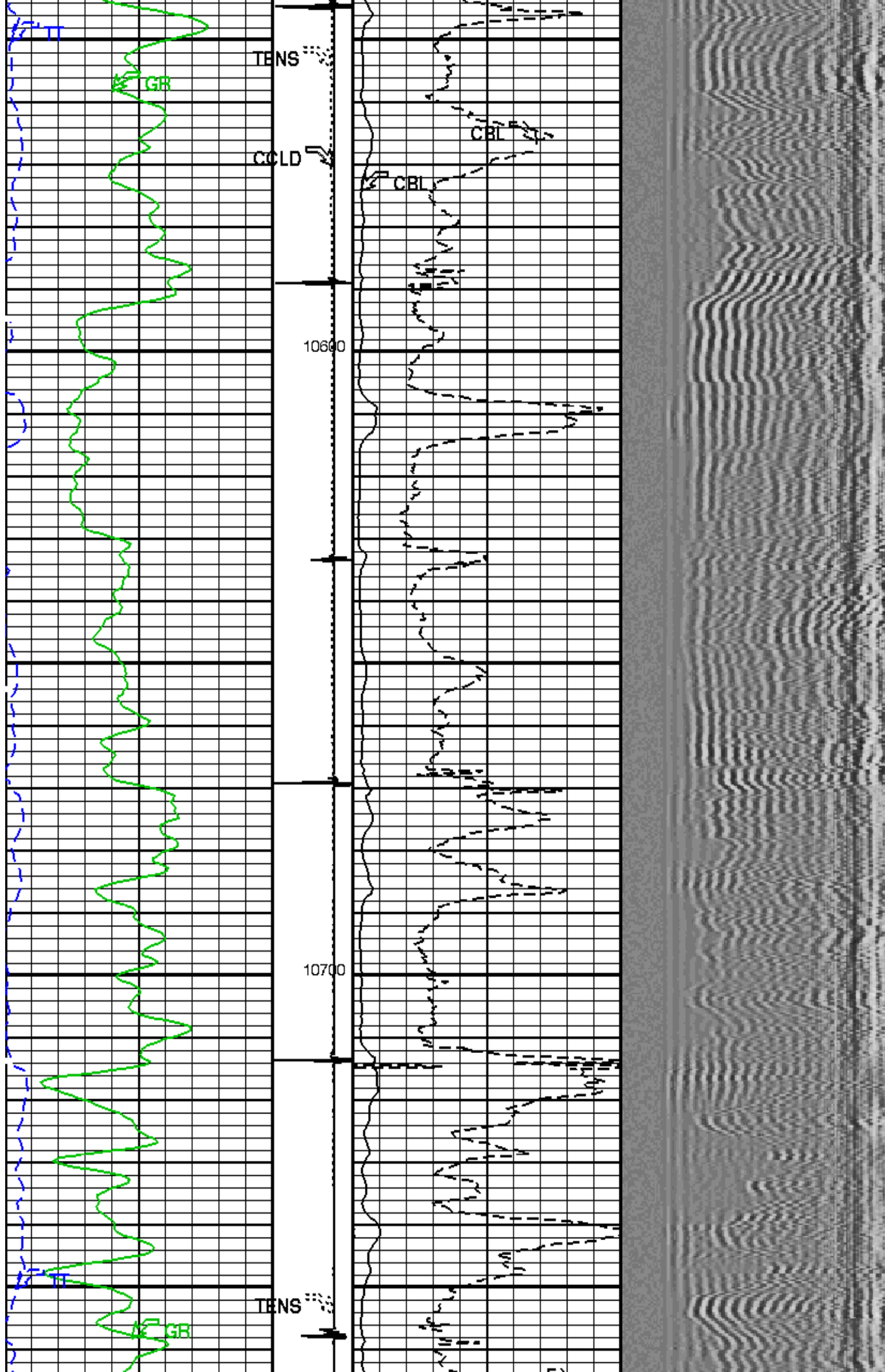
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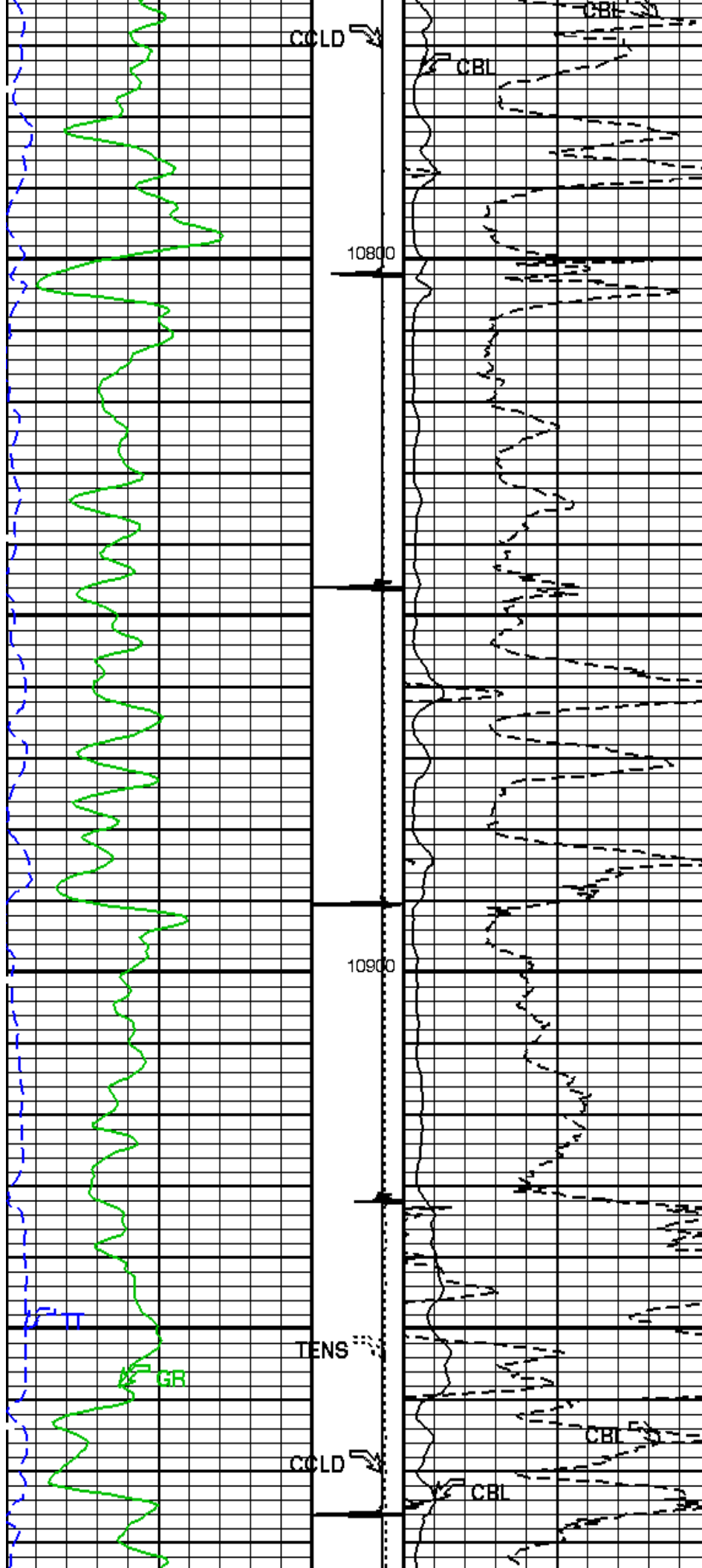


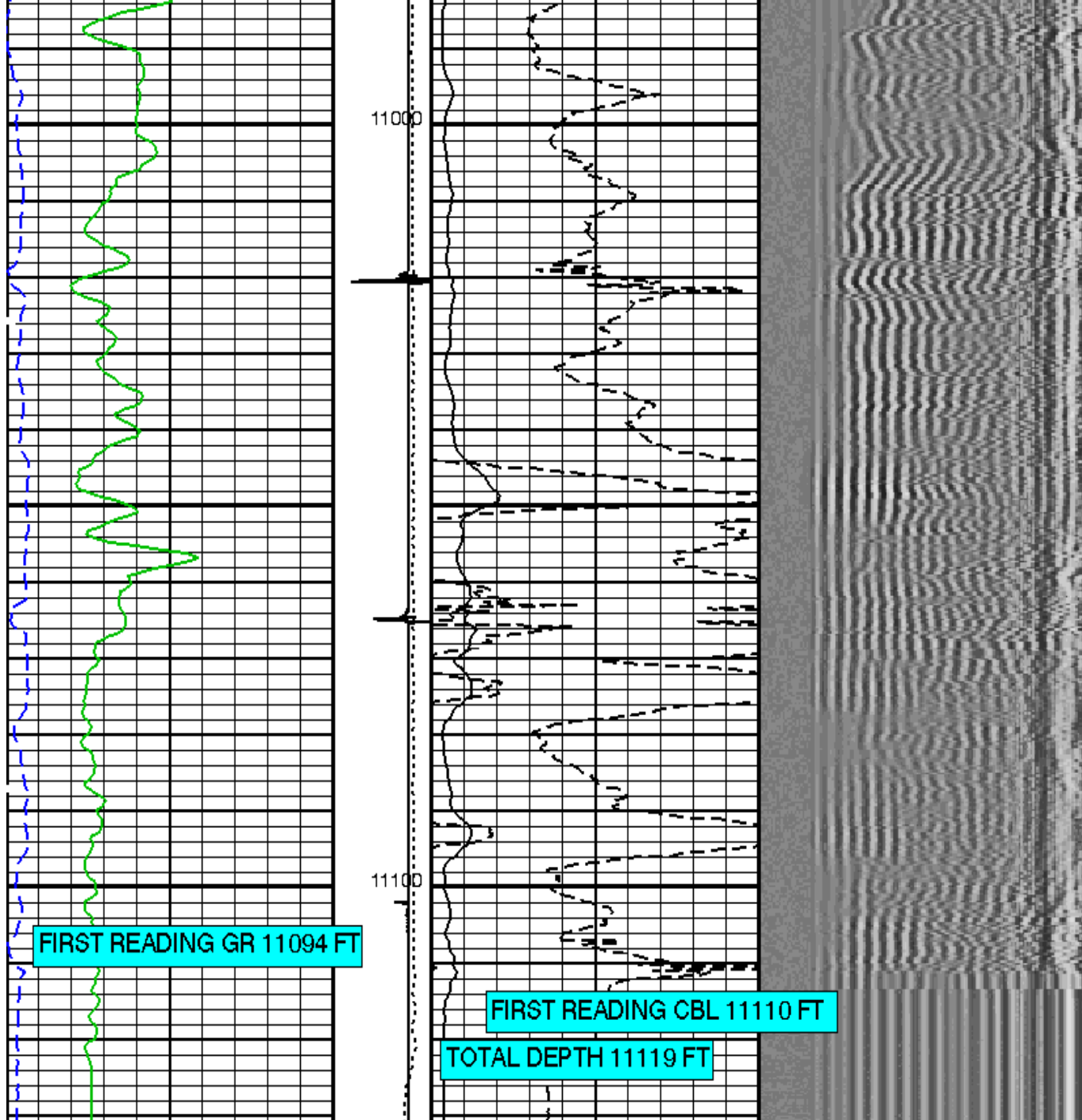












<p>Gamma Ray (GR) (GAPI)</p> <p>0 150</p>	<p>Tension (TENS) (LBF)</p> <p>0 2000</p>	<p>CBL Amplitude (CBL) (MV)</p> <p>0 100</p>	<p>Min Amplitude Max</p> <p>VDL Variable Density (VDL) (US)</p> <p>200 1200</p>
<p>Transit Time (TT) (US)</p> <p>260 160</p>	<p>Discriminat ed CCL (CCLD) (V)</p> <p>3 -1</p>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

PIP SUMMARY

Time Mark Every 60 S

Format: CBL_VDL Vertical Scale: 5" per 100'

Graphics File Created: 10-Jul-2012 13:37

OP System Version: 19C0-187

SCMT-CB SRPC-5095-H2-2011-OP19 PSPT 19C0-187

<<<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	6-MAR-2012		
CBL Correction Factor	0.0704263	CBL Adjustment Factor (CBAF)	1.10000
MAP 1 Correction Factor	0.0993191	MAP Adjustment Factor (MPAF)	1.0
MAP 2 Correction Factor	0.0941329		
MAP 3 Correction Factor	0.101552		
MAP 4 Correction Factor	0.114415		
MAP 5 Correction Factor	0.127992		
MAP 6 Correction Factor	0.121190		
MAP 7 Correction Factor	0.112867		
MAP 8 Correction Factor	0.102913		

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	
CMT C	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	0.902782	
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	8.60	LB/G
DO	Depth Offset for Playback	6.0	FT
DORL	Depth Offset for Repeat Analysis	12.0	FT
PP	Playback Processing	RECOMPUTE	
TD	Total Depth	11119	FT

Input DLIS Files

DEFAULT	Splice_SCMT_PSP_005CUP	FN:1	PRODUCER	10-Jul-2012 13:04	11125.0 FT	194.2 FT
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Output DLIS Files

DEFAULT	SCMT_PSP_010PUP	FN:8	PRODUCER	10-Jul-2012 13:37
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Company: ENCAN OIL & GAS (USA) INC.

Well: DW 8609C-28 (P28496)

Input DLIS Files

DEFAULT	Splice_SCMT_PSP_005CUP	FN:1	PRODUCER	10-Jul-2012 13:04	11125.0 FT	194.2 FT
DEFAULT	SCMT_PSP_007LUP	FN:5	PRODUCER	10-Jul-2012 13:19	7101.0 FT	6792.2 FT

Output DLIS Files

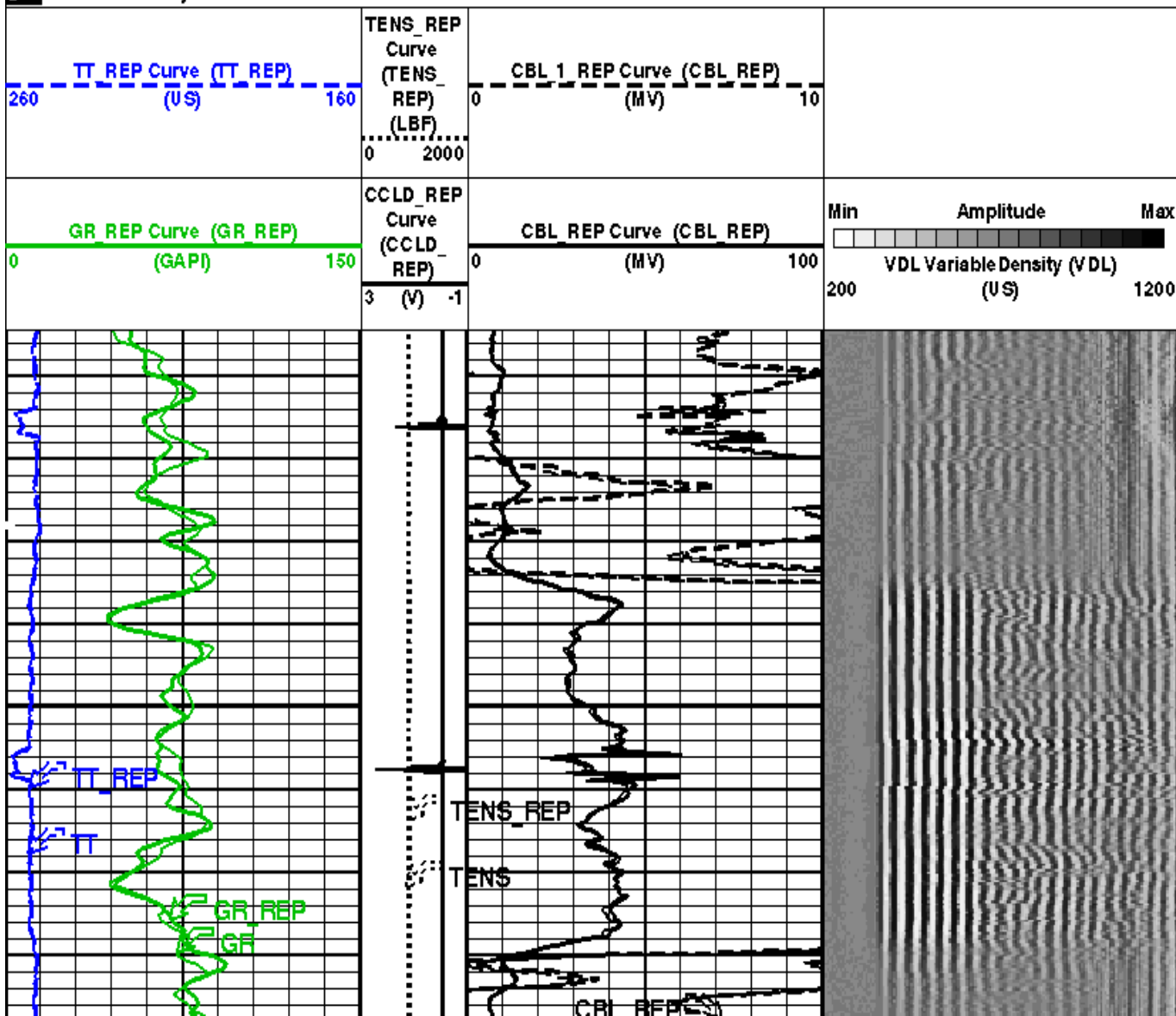
DEFAULT	SCMT_PSP_010PUP	FN:8	PRODUCER	10-Jul-2012 13:37
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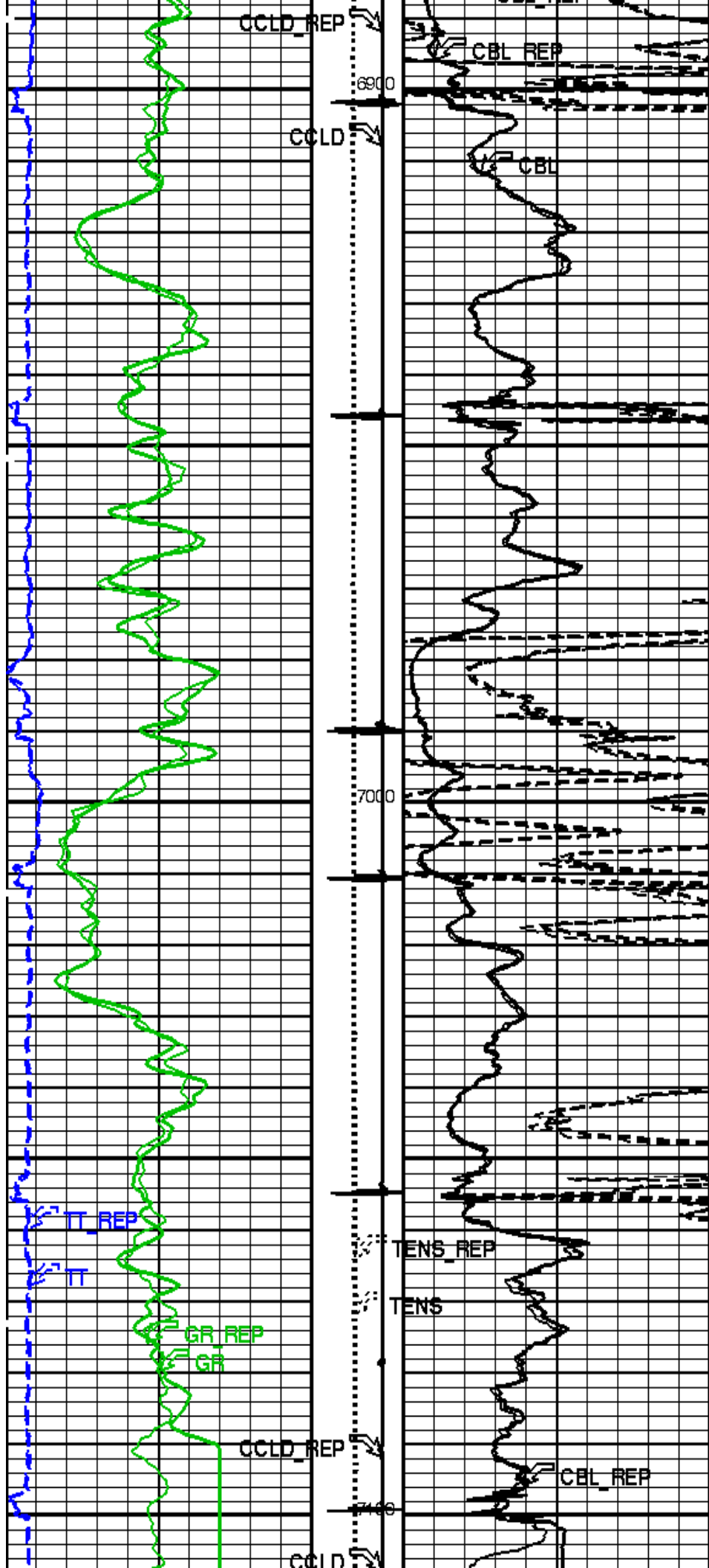
OP System Version: 19C0-187

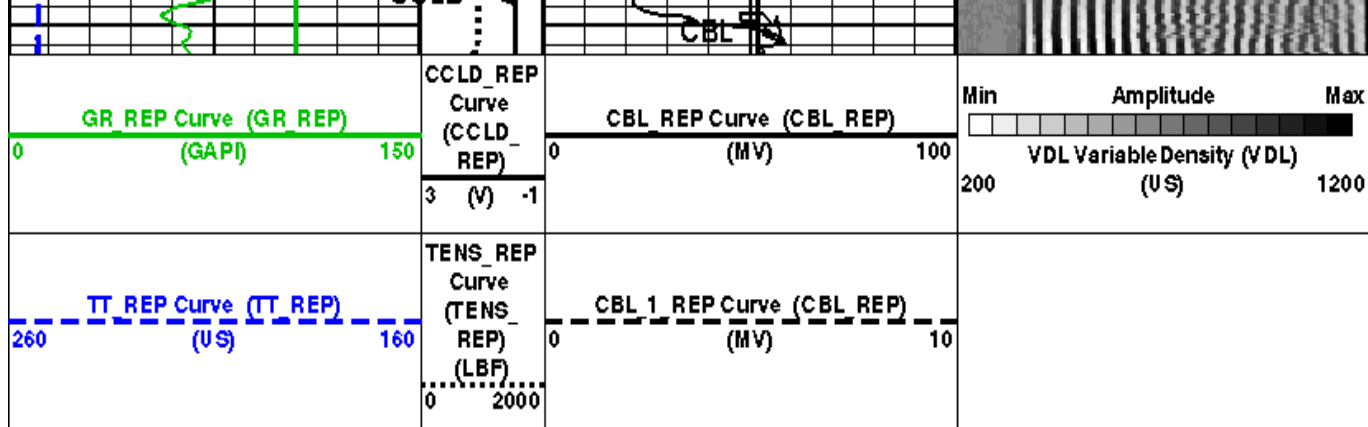
SCMT-CB	SRPC-5095-H2-2011-OP19	PSPT	19C0-187
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PIP SUMMARY

☒ Time Mark Every 60 S







PIP SUMMARY

Time Mark Every 60 S

Format: CBL_VDL_REP Vertical Scale: 5" per 100'

Graphics File Created: 10-Jul-2012 13:37

OP System Version: 19C0-187

SCMT-CB SRPC-5095-H2-2011-OP19 PSPT 19C0-187

<<<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	6-MAR-2012		
CBL Correction Factor	0.0704263	CBL Adjustment Factor (CBAF)	1.10000
MAP 1 Correction Factor	0.0993191	MAP Adjustment Factor (MPAF)	1.0
MAP 2 Correction Factor	0.0941329		
MAP 3 Correction Factor	0.101552		
MAP 4 Correction Factor	0.114415		
MAP 5 Correction Factor	0.127992		
MAP 6 Correction Factor	0.121190		
MAP 7 Correction Factor	0.112867		
MAP 8 Correction Factor	0.102913		

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	0.902782	DEG
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	8.60	LB/G
DO	Depth Offset for Playback	6.0	FT
DORL	Depth Offset for Repeat Analysis	12.0	FT
PP	Playback Processing	RECOMPUTE	
TD	Total Depth	11119	FT

Input DLIS Files

DEFAULT	Splice_SCMT_PSP_005CUP	FN:1	PRODUCER	10-Jul-2012 13:04	11125.0 FT	194.2 FT
DEFAULT	SCMT_PSP_007LUP	FN:5	PRODUCER	10-Jul-2012 13:19	7101.0 FT	6792.2 FT

Output DLIS Files

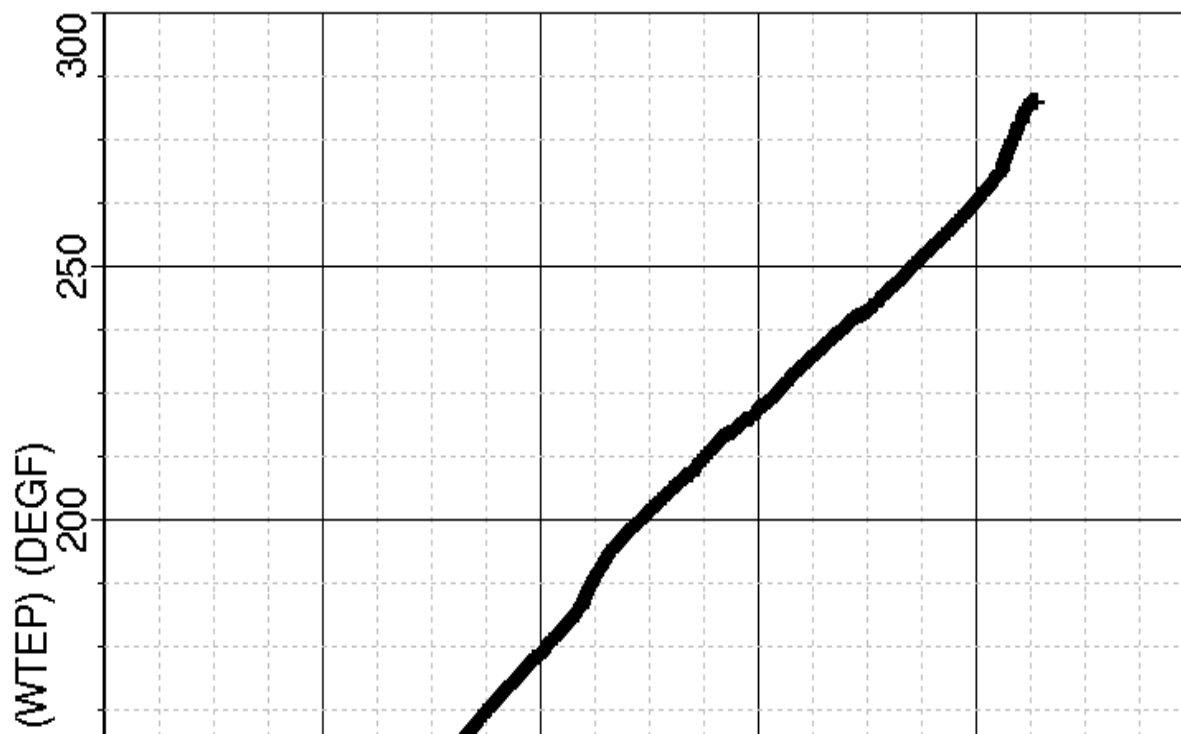
DEFAULT	SCMT_PSP_010PUP	FN:8	PRODUCER	10-Jul-2012 13:37		
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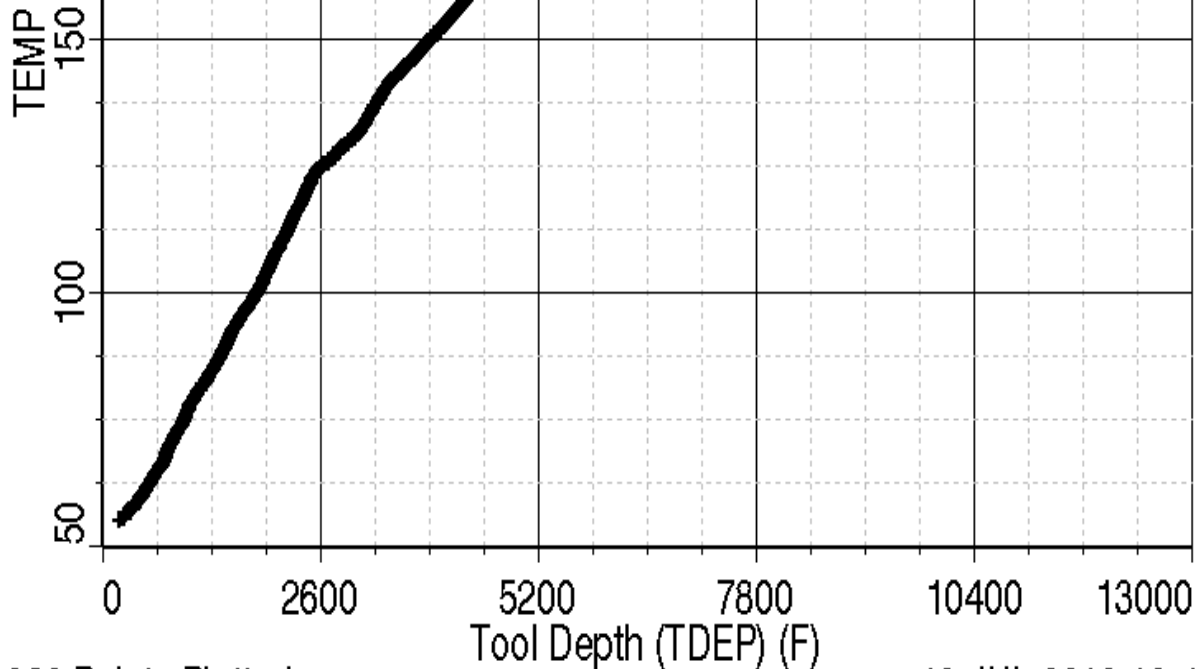
Schlumberger

TEMPERATURE PLOT

MAXIS Field Log

Index: 11131.0 - 200.5 FT





21862 Points Plotted

10-JUL-2012 13:43

Schlumberger

PBMS COEFFICIENTS

MAXIS Field Log

Client:	Tool:	PSP
Field:	Sub Type:	PBMS
Well:	Sensor:	Clock Model
Run date:		

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:	Tool:	PSP
Field:	Sub Type:	PBMS
Well:	Sensor:	Sapphire
Run date:		

PBMS Sapphire 10kPsi Gauge

Sonde Serial NB	COEFFICIENTS FOR SAPPHIRE PBMS-A.3779 S/N:
Sensor Serial NB	3779
Calib Date ddmmyy	090107
Matrix Size	66
Coeff CRC	4C82

Pres Coeff

	π^{**0}	π^{**1}	π^{**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

	π^{**3}	π^{**4}	π^{**5}
Tp^{**0}	+380249508124E+03	-247683004908E+02	0.0
Tp^{**1}	-227135245080E+03	+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	+.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:	Tool:	PSP
Field:	Sub Type:	PBMS
Well:	Sensor:	GR
Run date:		

PBMS Gamma Ray

Sonde Serial NB	RESISTORS FOR GR SENSOR N.34552, TOOL PBMS-AA3779. SENSOR S/N:
Sensor Serial NB	34552
Calib Date ddmmyy	030606
Matrix Size	12
Coeff CRC	3AE5

GR HV Rt

	Rt**0	Rt**1
Rt**0	+.200000000000e+04	+.214000000000e+04

Client:	Tool:	PSP
Field:	Sub Type:	PBMS
Well:	Sensor:	WellTemp RTD
Run date:		

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

	π^{**0}	π^{**1}	π^{**2}
π^{**0}	<div>+ .492135102627E+02</div>	<div>-.278827553804E+03</div>	<div>+ .142867554561E+03</div>
	π^{**3}	π^{**4}	π^{**5}
π^{**0}	<div>-.233378392336E+02</div>	<div>+ .145553494493E+01</div>	<div>0.0</div>



MASTER CALIBRATION

MAXIS Field Log

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
Slim Cement Mapping Tool, 1-11/16 OD Master Calibration - SCMT CBL and MAP Amplitude Normalization in SFT-165/-255							
Master: 6-Mar-2012 15:06							
MAP 1 Amplitude Plus	1075	1208	-	-	-	-	MV
MAP 2 Amplitude Plus	1075	1275	-	-	-	-	MV
MAP 3 Amplitude Plus	1075	1182	-	-	-	-	MV

MAP 4 Amplitude Plus	1075	1049	-	-	-	-	MV
MAP 5 Amplitude Plus	1075	937.6	-	-	-	-	MV
MAP 6 Amplitude Plus	1075	990.2	-	-	-	-	MV
MAP 7 Amplitude Plus	1075	1063	-	-	-	-	MV
MAP 8 Amplitude Plus	1075	1166	-	-	-	-	MV
CBL Amplitude Plus	1350	1363	-	-	-	-	MV

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

Primary Equipment:










Slim Cement Mapping Xmitter Electronics	SCMX - CA	
Slim Cement Mapping Sonde	SCMS - CB	8179
Slim Cement Mapping Cartridge	SCMC - CA	8172

Auxiliary Equipment:

Slim Electronics Cartridge Housing	SECH - CA
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Slim Cement Mapping Tool, 1-11/16 OD Master Calibration

SCMT CBL and MAP Amplitude Normalization in SFT-155/255

Phase	MAP 1 Amplitude Plus MV	Value	Phase	MAP 2 Amplitude Plus MV	Value	
Master		1208	Master		1275	
	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		1182	Master		1049	
	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		937.6	Master		990.2	
	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		1063	Master		1166	
	500.0 (Minimum)	1075 (Nominal)	1650 (Maximum)	500.0 (Minimum)	1075 (Nominal)	1650 (Maximum)
Phase	CBL Amplitude Plus MV	Value				
Master		1363				
	1000 (Minimum)	1350 (Nominal)				1700 (Maximum)
Master: 6-Mar-2012 15:06						

Company: ENCANA OIL & GAS (USA) INC.

Schlumberger

Well: DW 8609C-28 (P28496)

Field: Double Willow

County: Garfield

State: Colorado

SLIM CEMENT MAPPING TOOL

CBL - VDL

GAMMA RAY - CCL