

Company: ENCANA OIL & GAS (USA) INC

Well: HAGEN FEDERAL 22-4C (PC22)

Field: SOUTH PARACHUTE

County: GARFIELD State: COLORADO

SLIM CEMENT MAPPING LOG
CBL-VDL
GAMMA RAY-CCL

County: GARFIELD
Field: SOUTH PARACHUTE
Location: SHL: 596 FNL & 1751 FWL
Well: HAGEN FEDERAL 22-4C (PC22)
Company: ENCANA OIL & GAS (USA) INC

County:		GARFIELD		SHL: 596 FNL & 1751 FWL		Elev.: K.B. 6543.00 ft			
Field:		SOUTH PARACHUTE		BHL: 796 FNL & 331 FWL		G.L. 6521.00 ft			
Location:		SHL: 596 FNL & 1751 FWL				D.F. 6542.00 ft			
Well:		HAGEN FEDERAL							
Company:		ENCANA OIL & GAS							
Logging Date		LOCATION				Elev.: 6521.00 ft			
		Permanent Datum:		GROUND LEVEL		22.00 ft above Perm. Datum			
		Log Measured From:		KELLY BUSHING					
		Drilling Measured From:		KELLY BUSHING					
Run Number		API Serial No. 05-045-22006-0C		Section 22		Township 7S		Range 95W	
Depth Driller				7907 ft					
Schlumberger Depth				7825 ft					
Bottom Log Interval				7816 ft					
Top Log Interval				50 ft					
Casing Fluid Type				FRESH WATER					
Salinity									
Density				8.4 lbm/gal					
Fluid Level				50 ft					
BIT/CASING/TUBING STRING									
Bit Size				8.750 in					
From				22 ft					
To				7907 ft					
Casing/Tubing Size				4.500 in					
Weight				11.6 lbm/ft					
Grade				S-80					
From				22 ft					
To				7886 ft					
Maximum Recorded Temperatures				216 degF					
Logger On Bottom				14-Sep-2013				15:30	
Unit Number		Location		338		GRAND JUNCTION			
Recorded By				KIRSTIE BUNTING					
Witnessed By				JIM DYKEMAN					

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				
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-AUG-2013 11:54:57

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW-JB	Type:	CMTD-B/A	Type:	1-25ZT
Serial Number:	6349	Serial Number:	3421	Serial Number:	112136
Calibration Date:	7-31-2013	Calibration Date:	14-AUG-201	Length:	19000 FT
Calibrator Serial Number:		Calibrator Serial Number:	174878		
Calibration Cable Type:	1-25ZT	Number of Calibration Points:	10	Conveyance Method:	Wireline
Wheel Correction 1:	-5	Calibration RMS:	3	Rig Type:	LAND
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 PROCEDURES USED
2. IDW USED AS PRIMARY DEPTH REFERENCE
3. SPWT 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 PEX RUN ON JULY 25	
TOOL RAN AS PER TOOL SKETCH	
ENTRANCE: 15:00	
TIME ON BOTTOM: 15:30	
EXIT: 17:45	

MAXIMUM RECORDED TEMPERATURE: 216 DEGF	
MAXIMUM RECORDED PRESSURE: 3238 PSIA	
SHORT JOINTS: 5448 FT & 6484 FT	
MAIN PASS LOGGED UNDER ZERO SURFACE PRESSURE	
EXPECTED CBL AMPLITUDE IN FREE PIPE IS 80MV	
CREW: KBUNTING, KJOHNS, JMANN	
THANK YOU FOR CHOOSING E&P WIRELINE, A SCHLUMBERGER COMPANY	

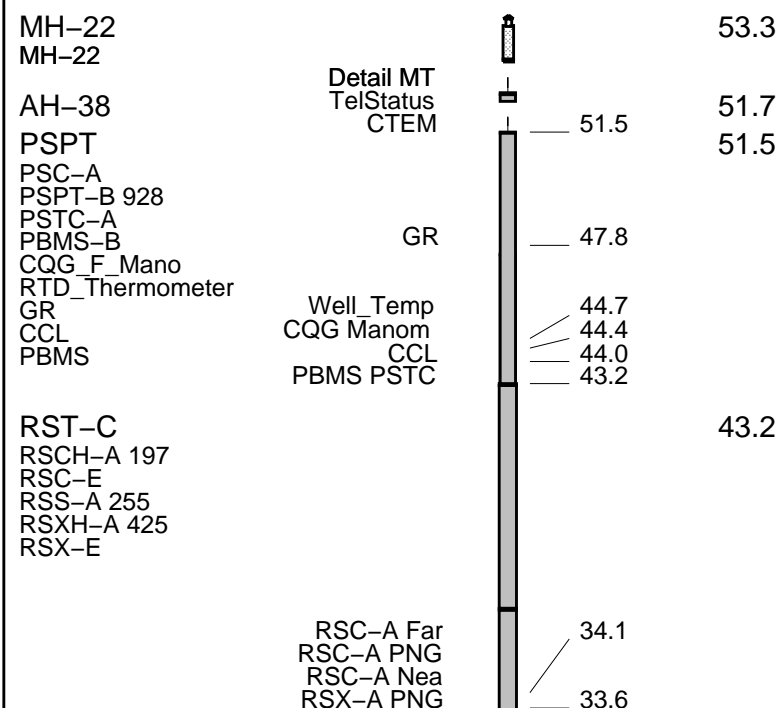
RUN 1 SERVICE ORDER #: CGF9-00140 PROGRAM VERSION: 19C0-187 FLUID LEVEL: 50 ft			RUN 2 SERVICE ORDER #: PROGRAM VERSION: FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

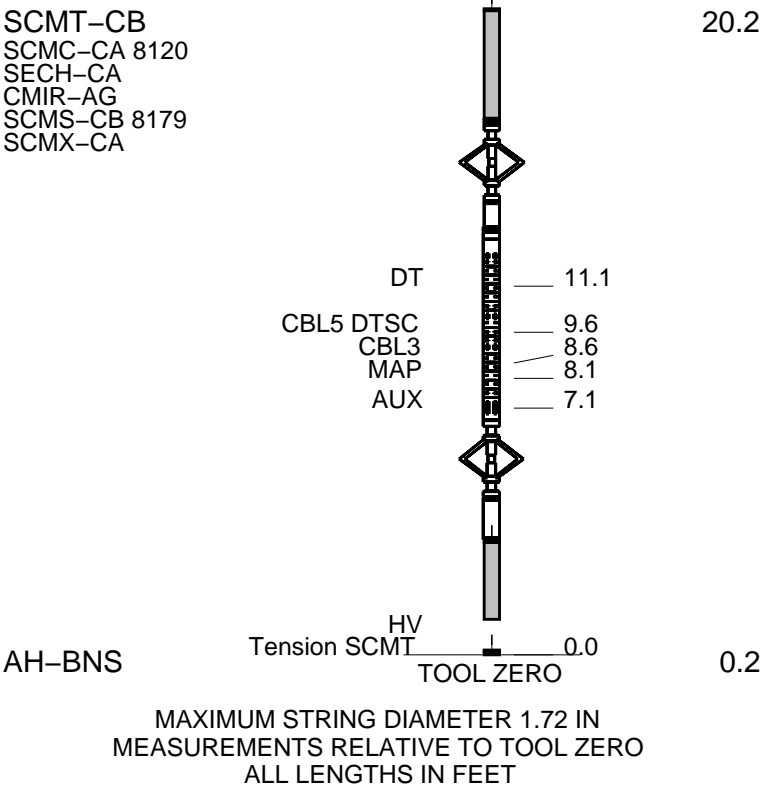
EQUIPMENT	DESCRIPTION

	RUN 1	RUN 2
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11	1	1
12	1	1
13	1	1
14	1	1
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91	1	1
92	1	1
93	1	1
94	1	1
95	1	1
96	1	1
97	1	1
98	1	1
99	1	1
100	1	1

SURFACE EQUIPMENT	
WITM-A PSC_16MHZ	

DOWNHOLE EQUIPMENT





Schlumberger

MAIN PASS CBL VDL

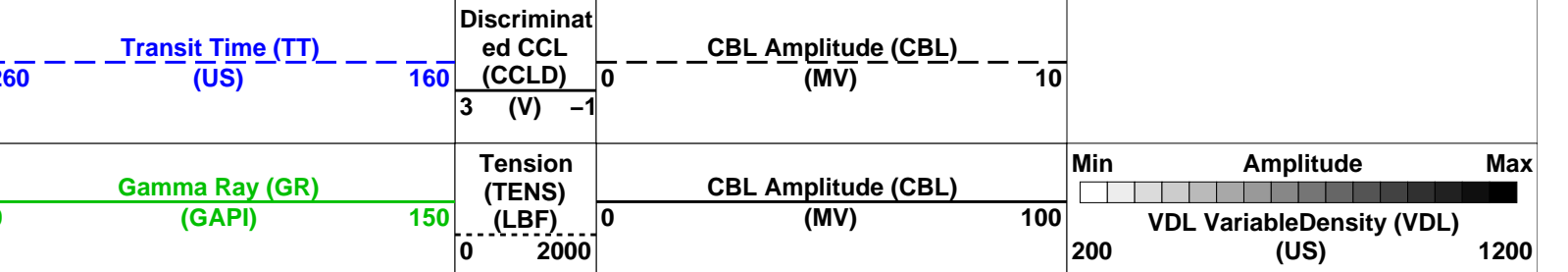
MAXIS Field Log

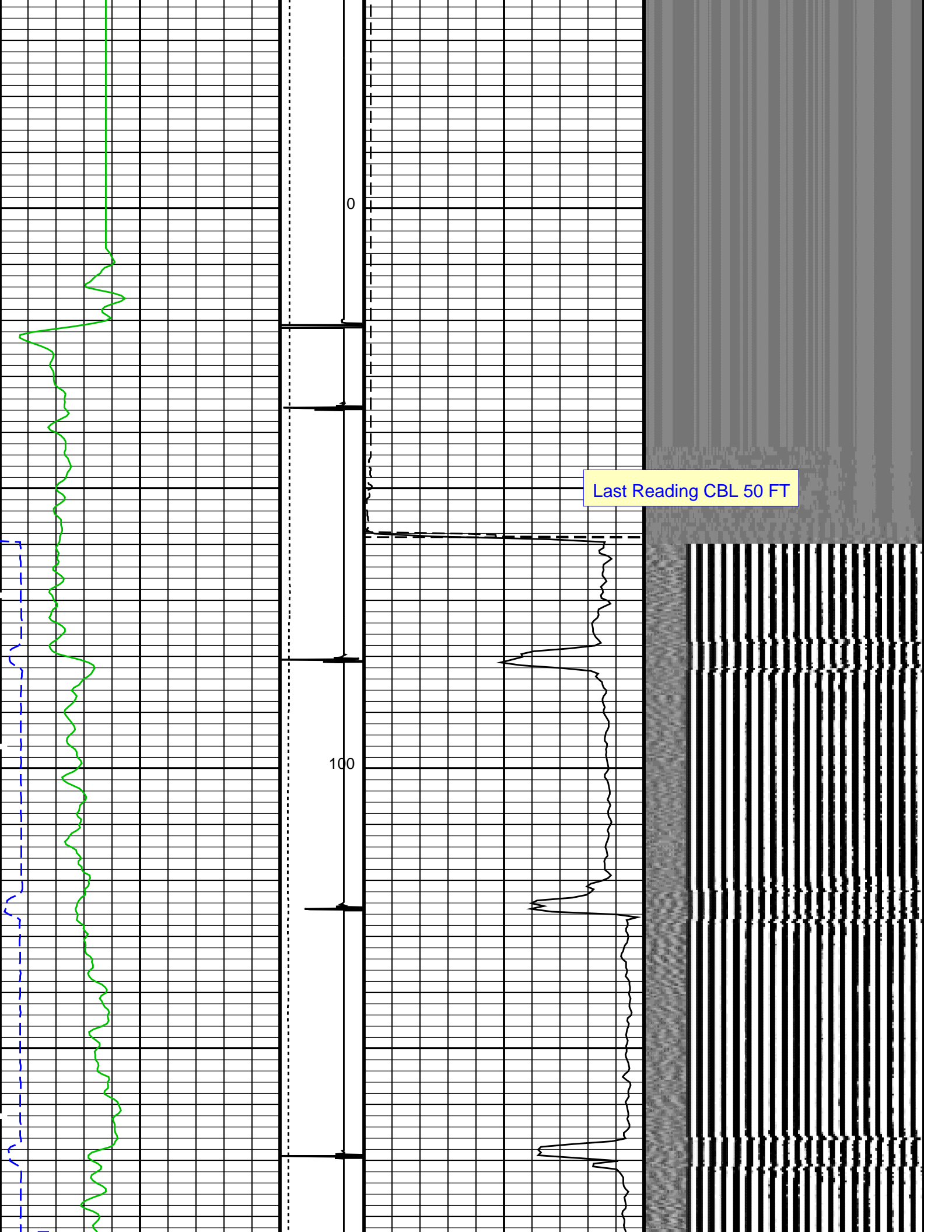
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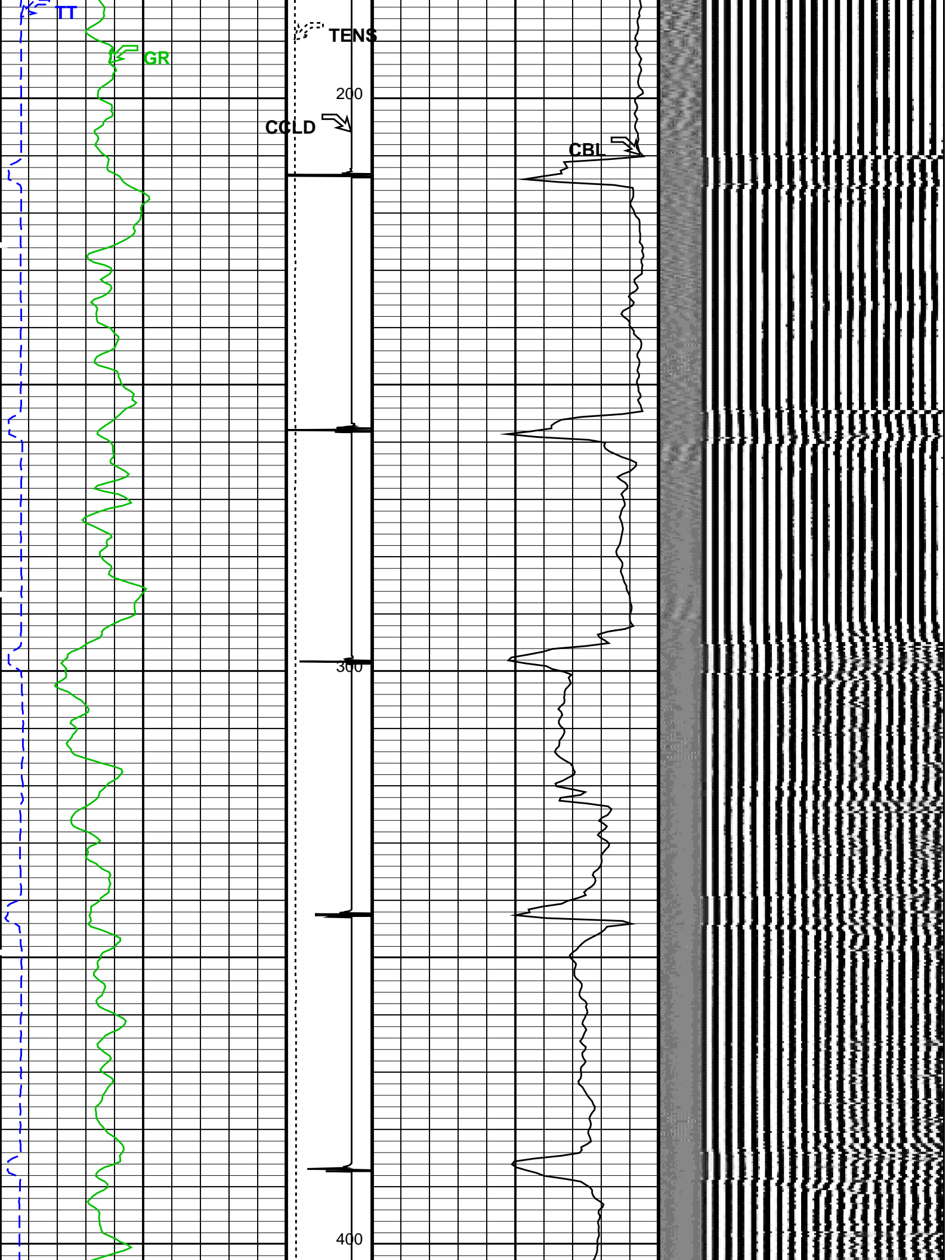
Input DLIS Files						
DEFAULT	SCMT_RST_PSP_065LUP	FN:61	PRODUCER	14-Sep-2013 15:38	7828.5 FT	2.5 FT
Output DLIS Files						
DEFAULT	SCMT_RST_PSP_068PUP	FN:64	PRODUCER	14-Sep-2013 17:44	7832.5 FT	-38.0 FT
OP System Version: 19C0-187						
SCMT-CB	19C0-187	RST-C		19C0-187		
PSPT	19C0-187					

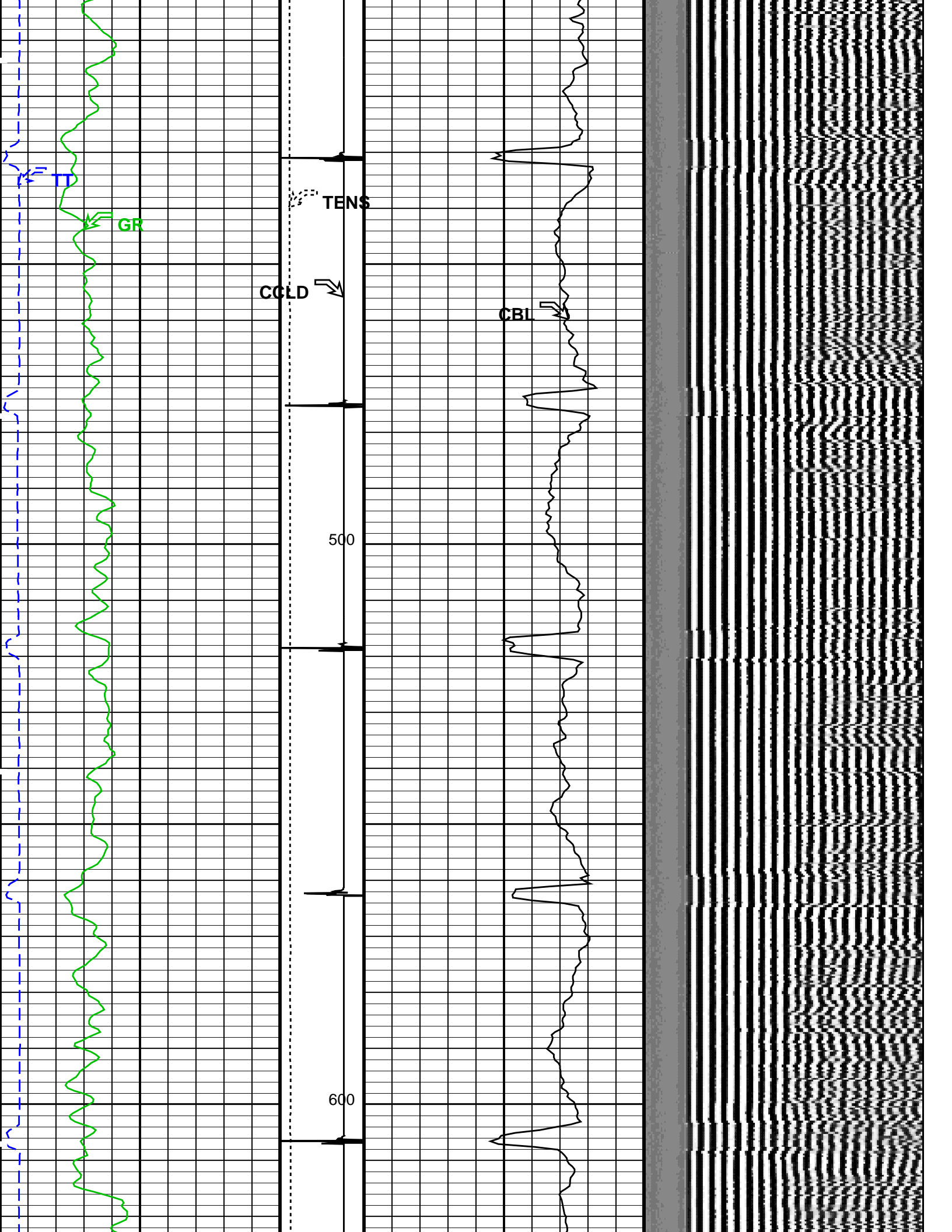
PIP SUMMARY

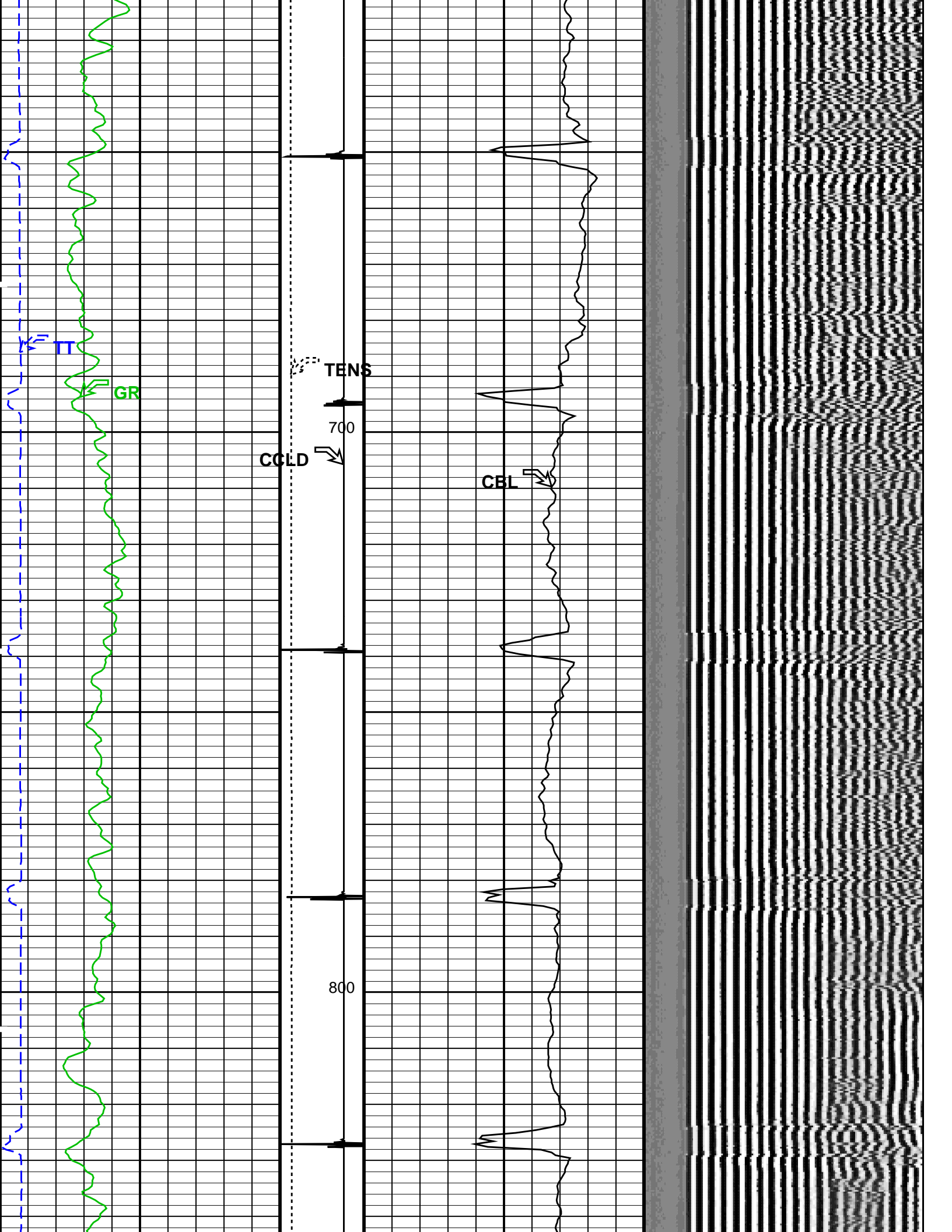
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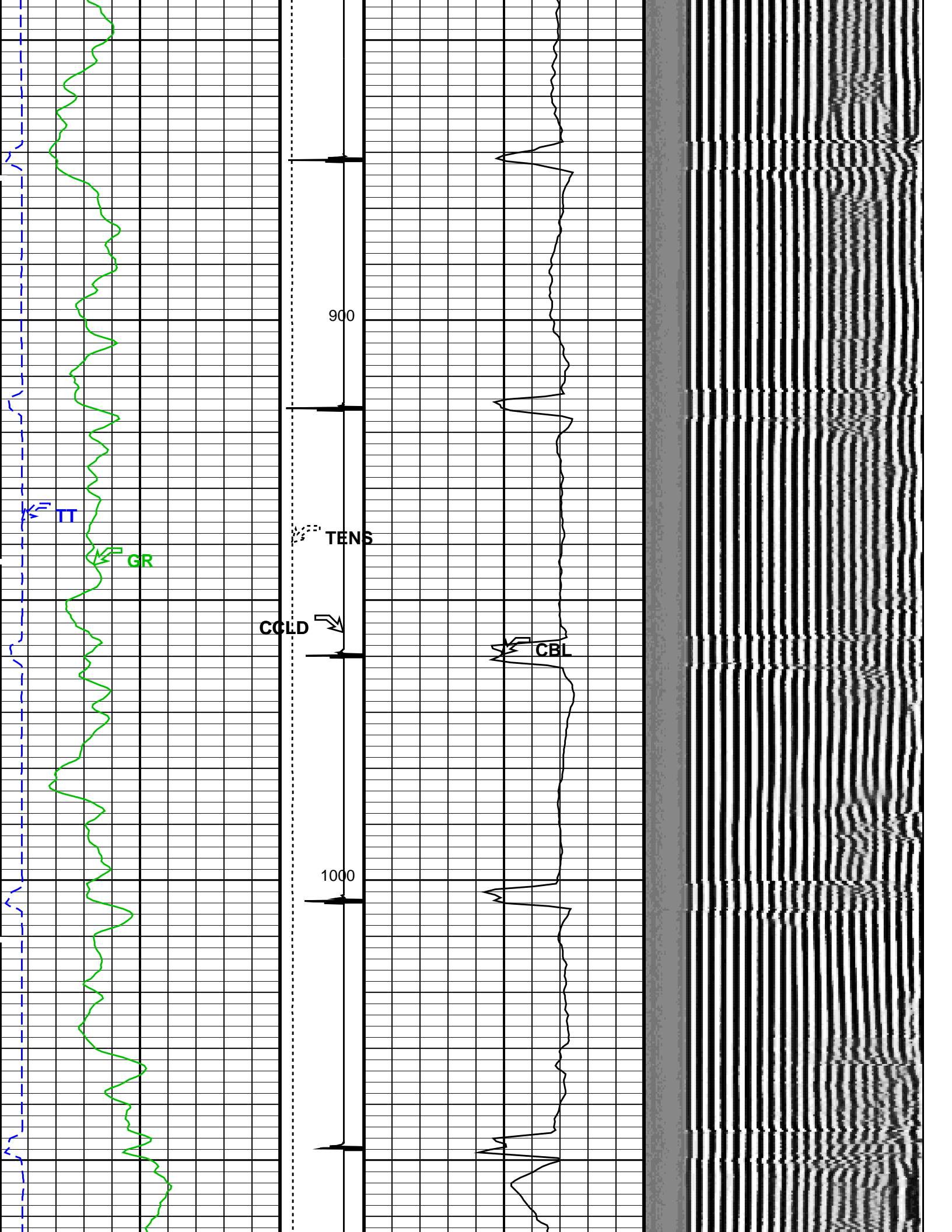


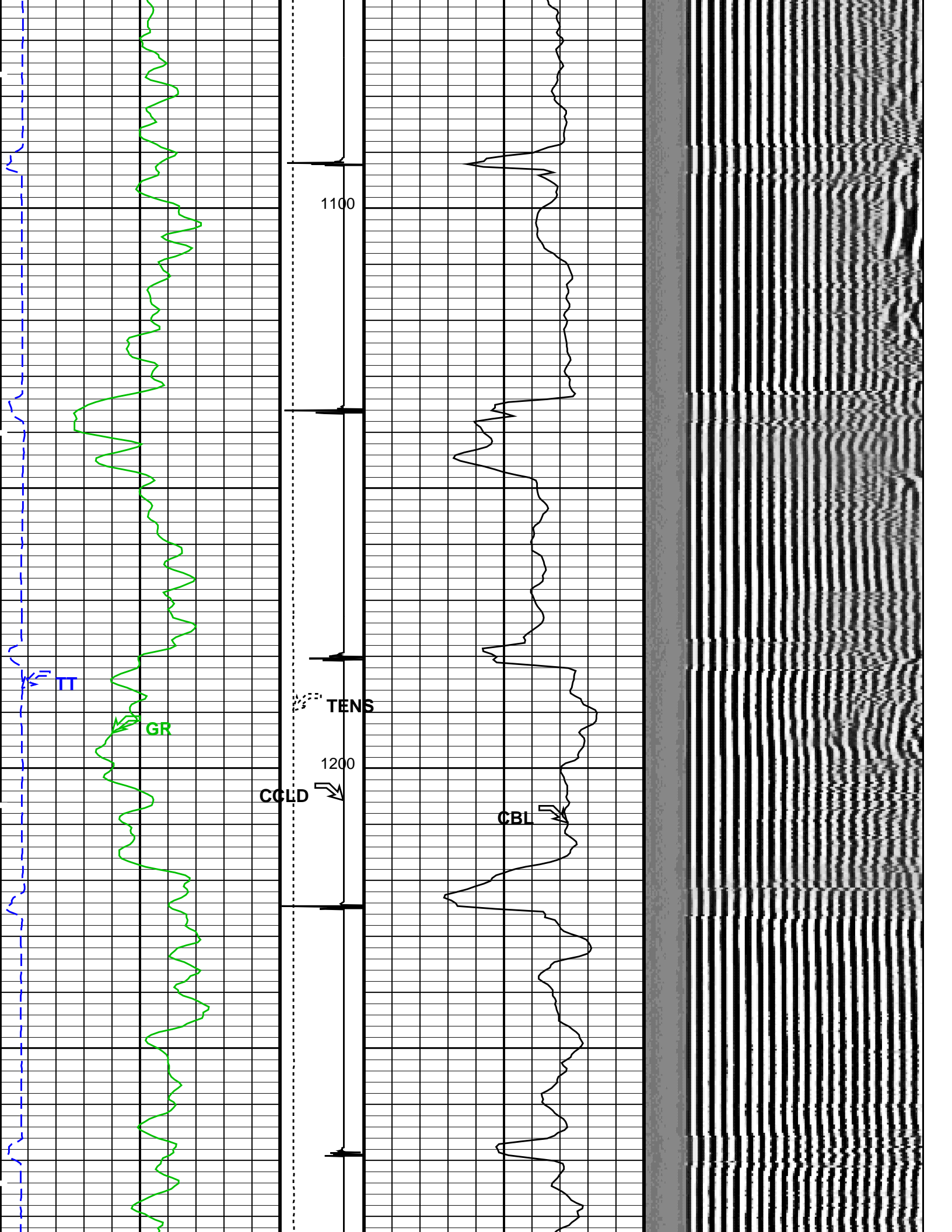


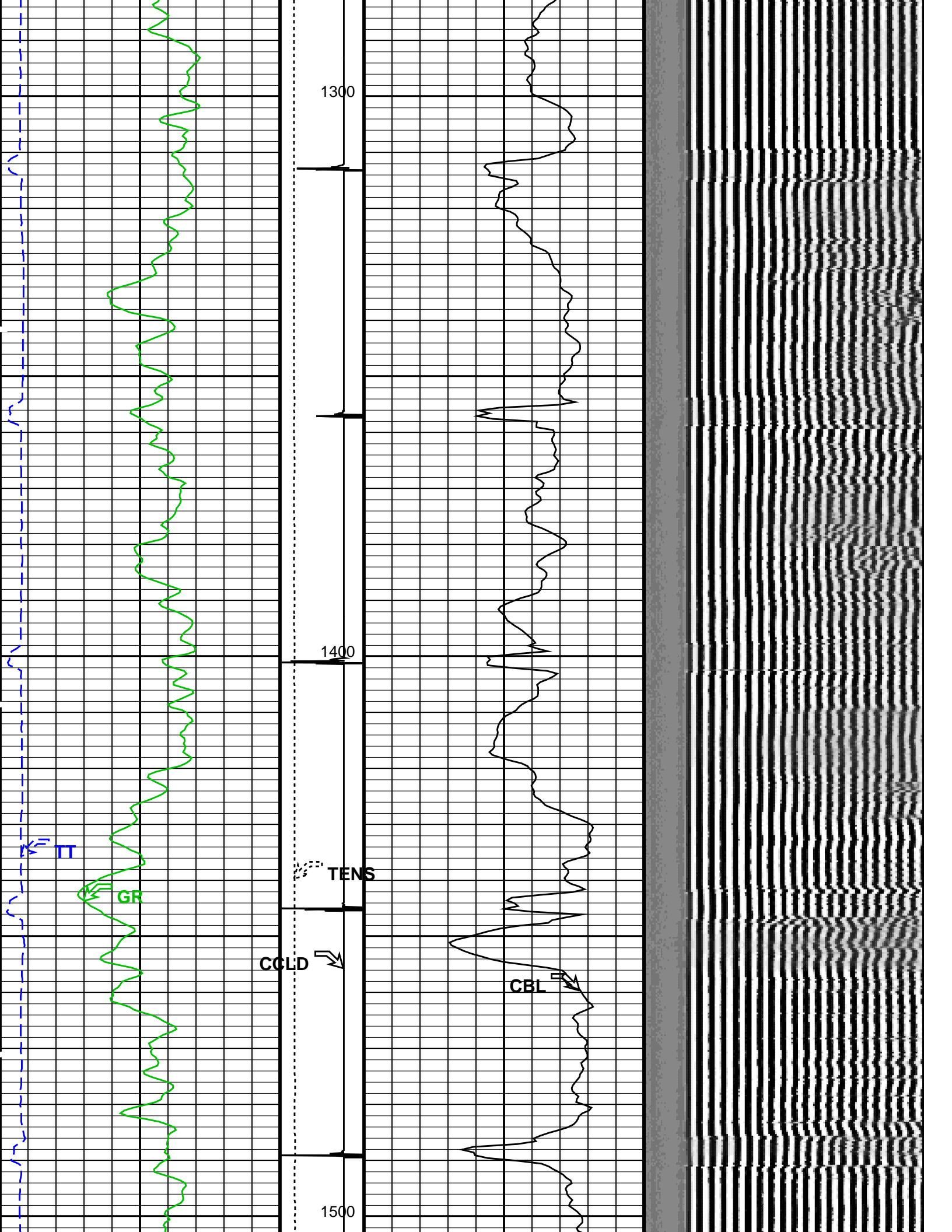


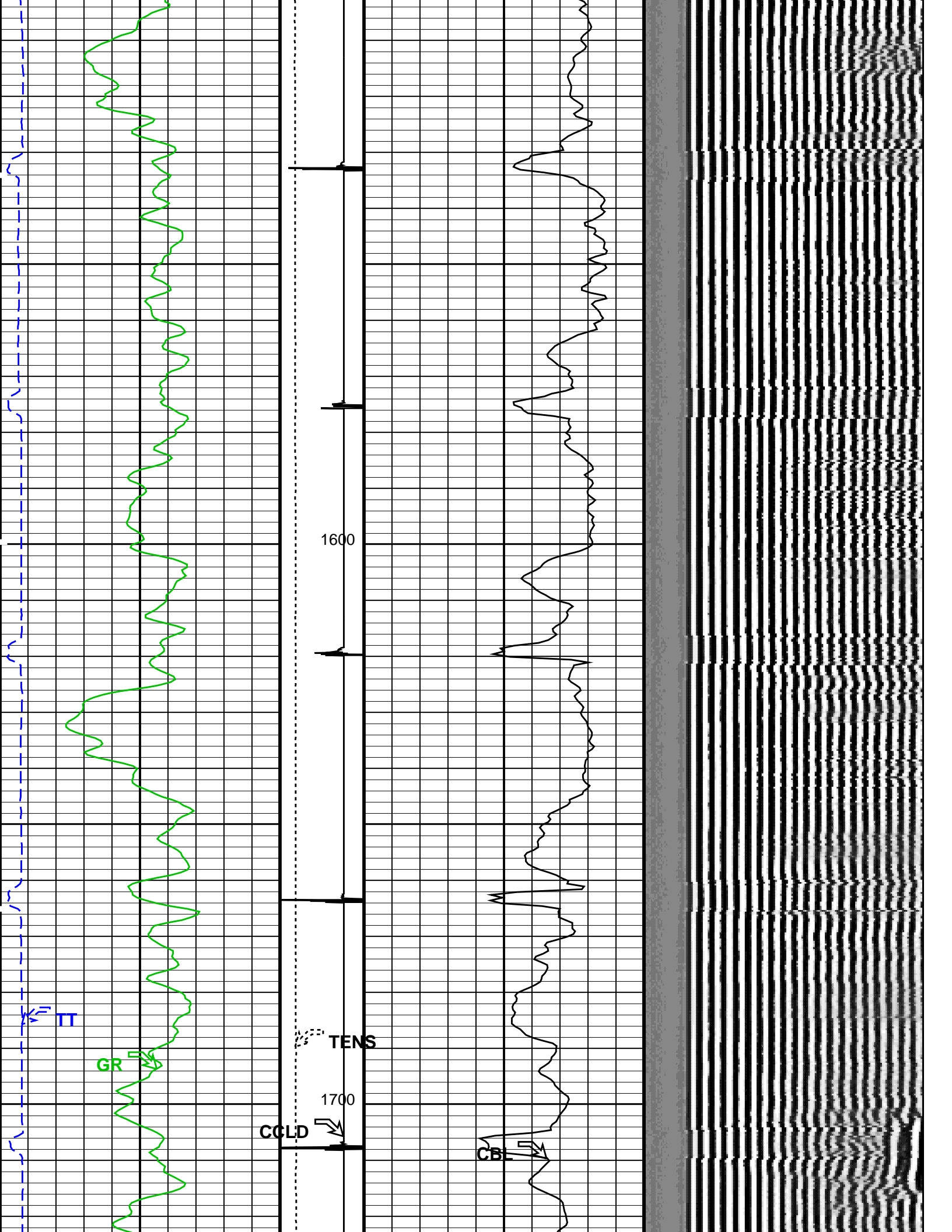


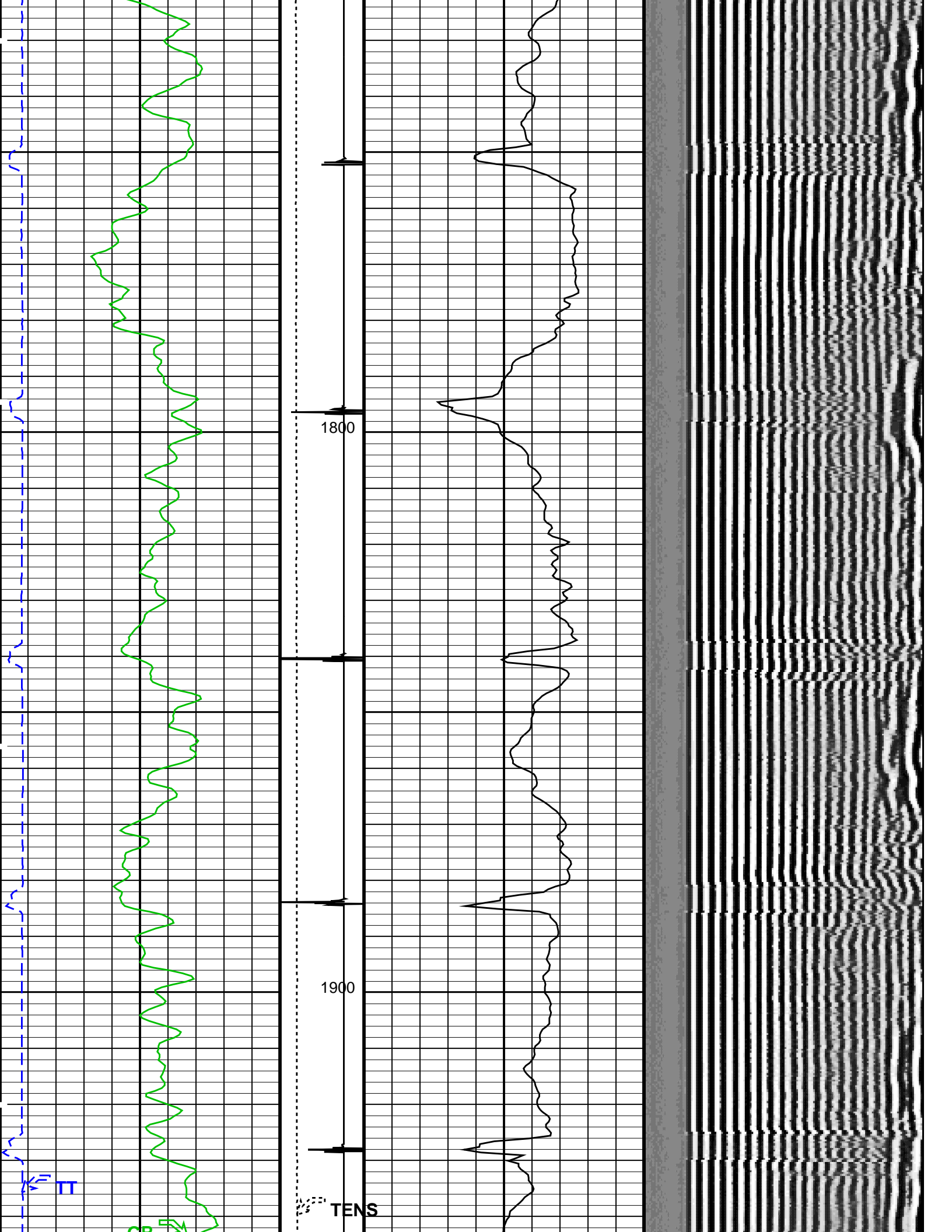


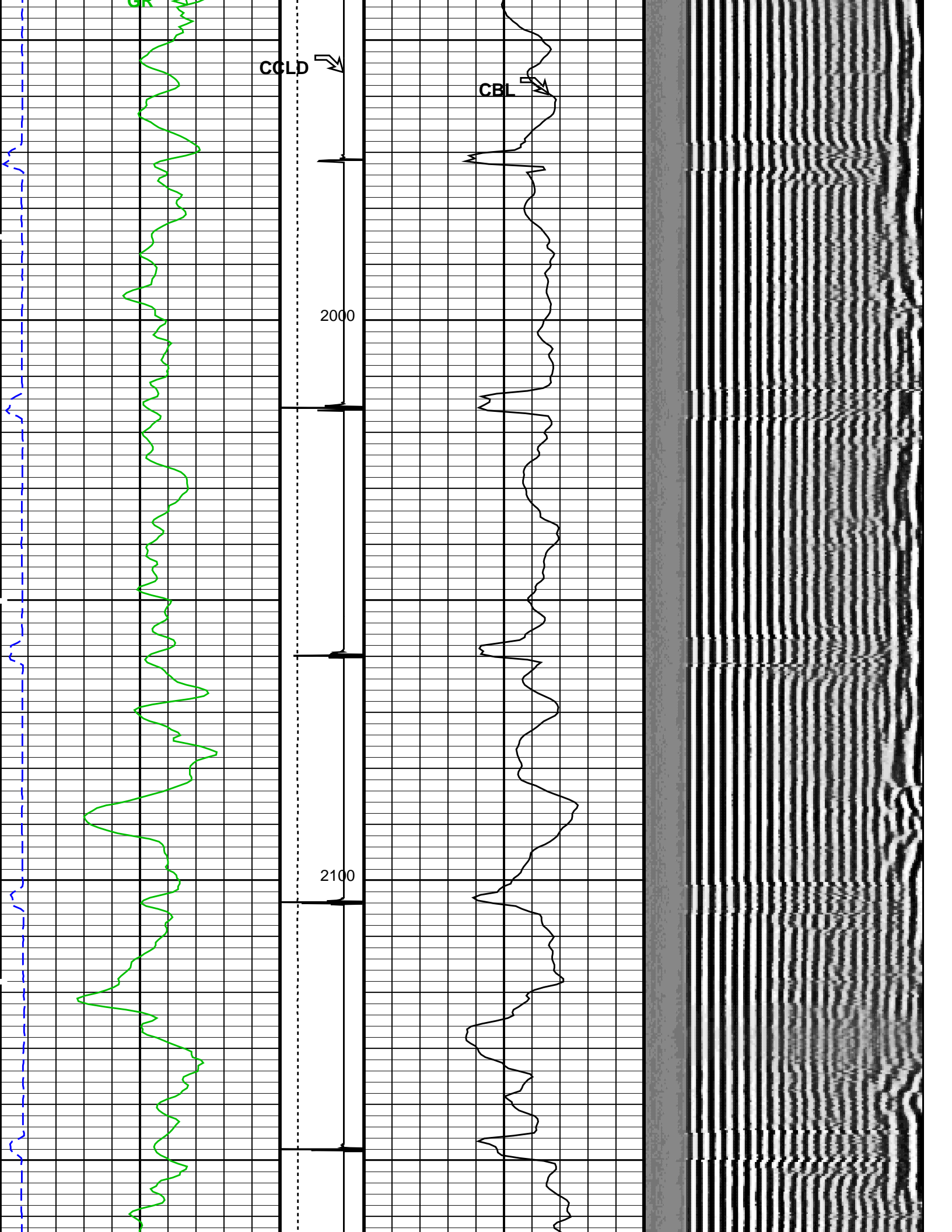


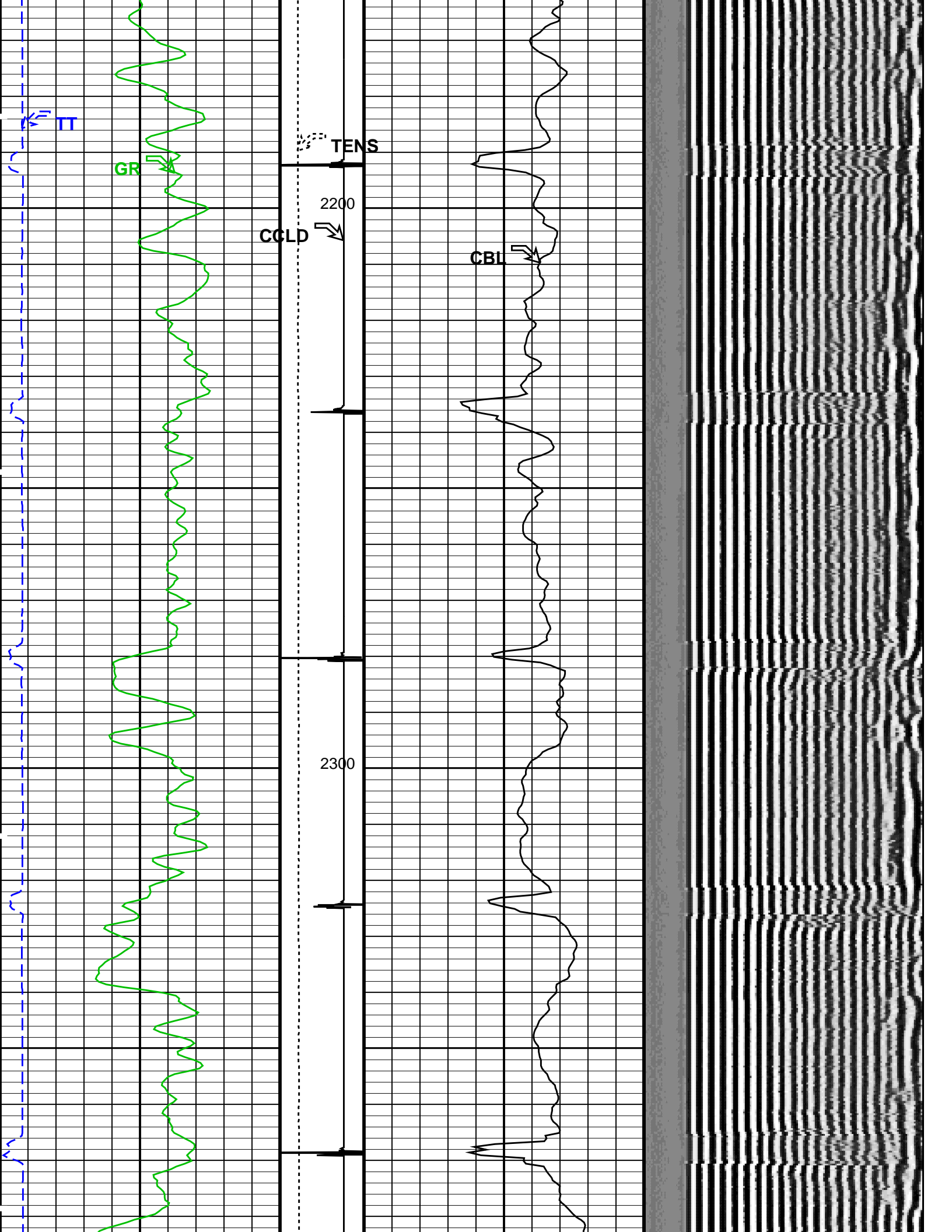


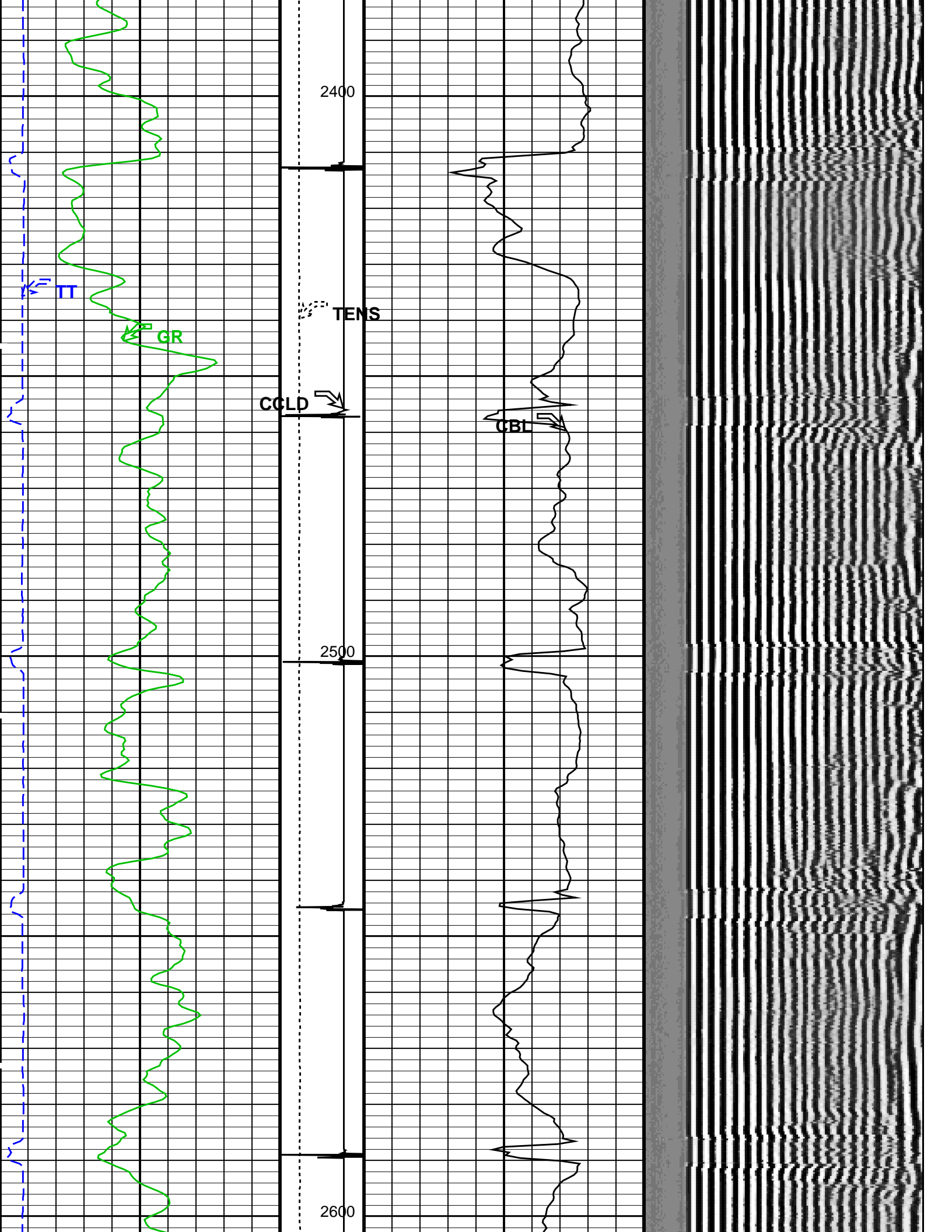


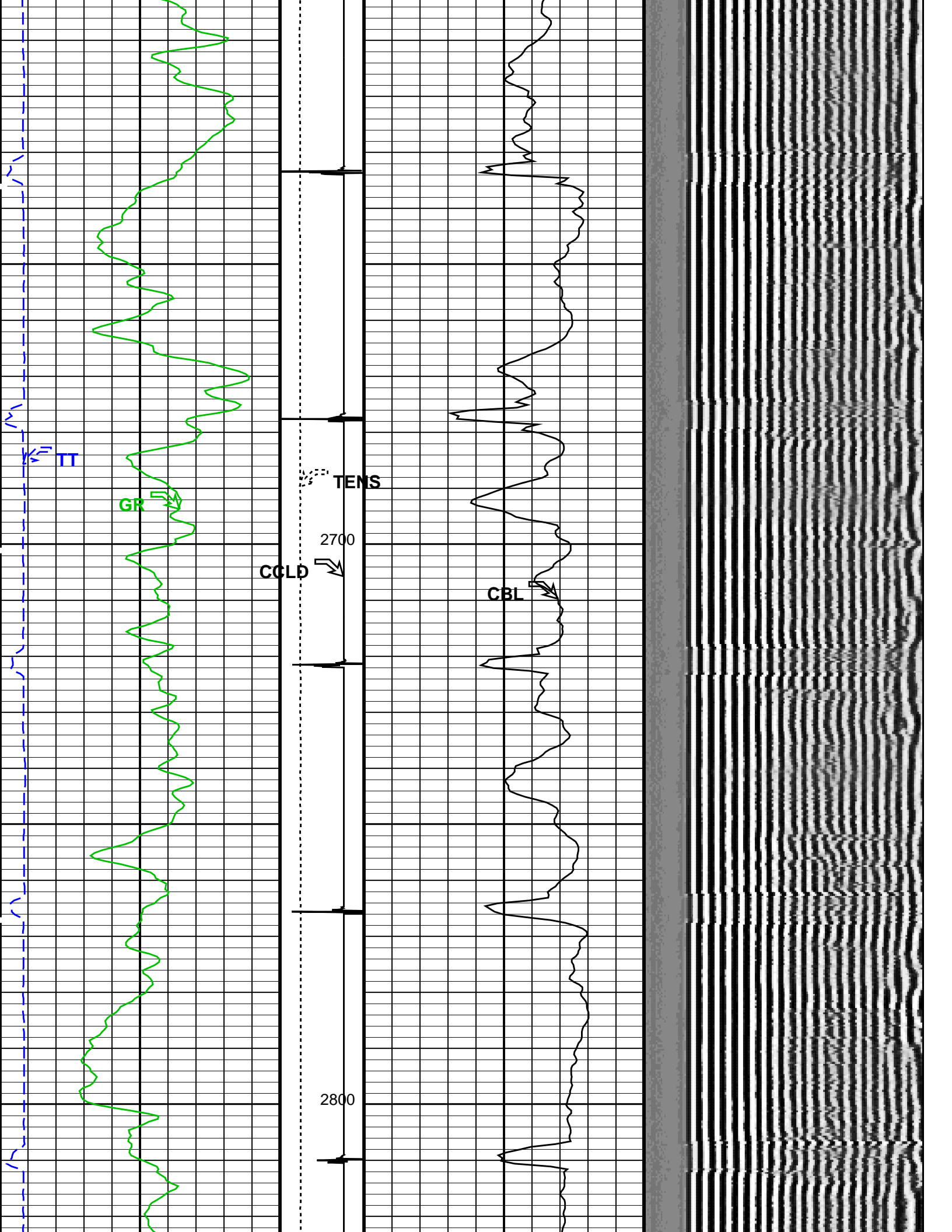


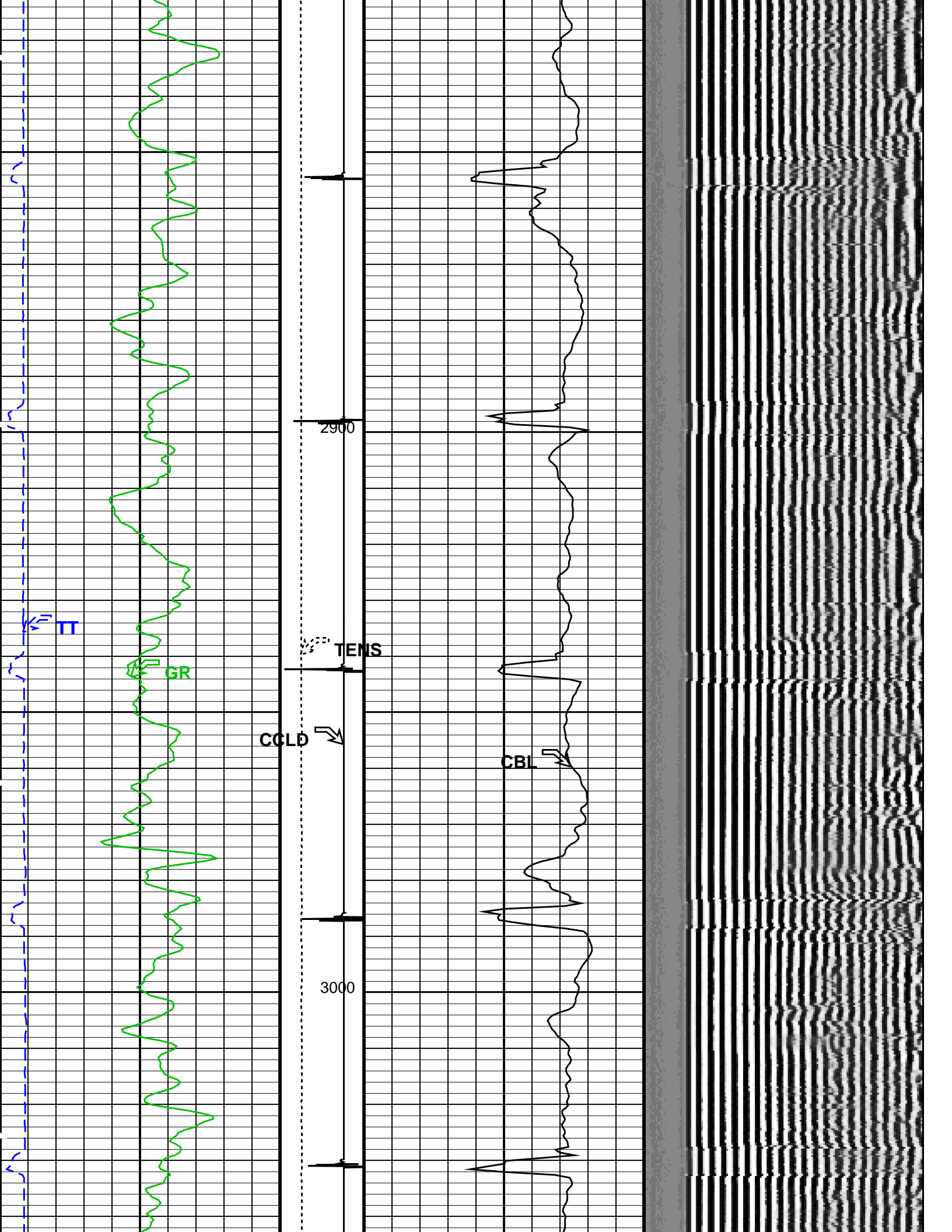


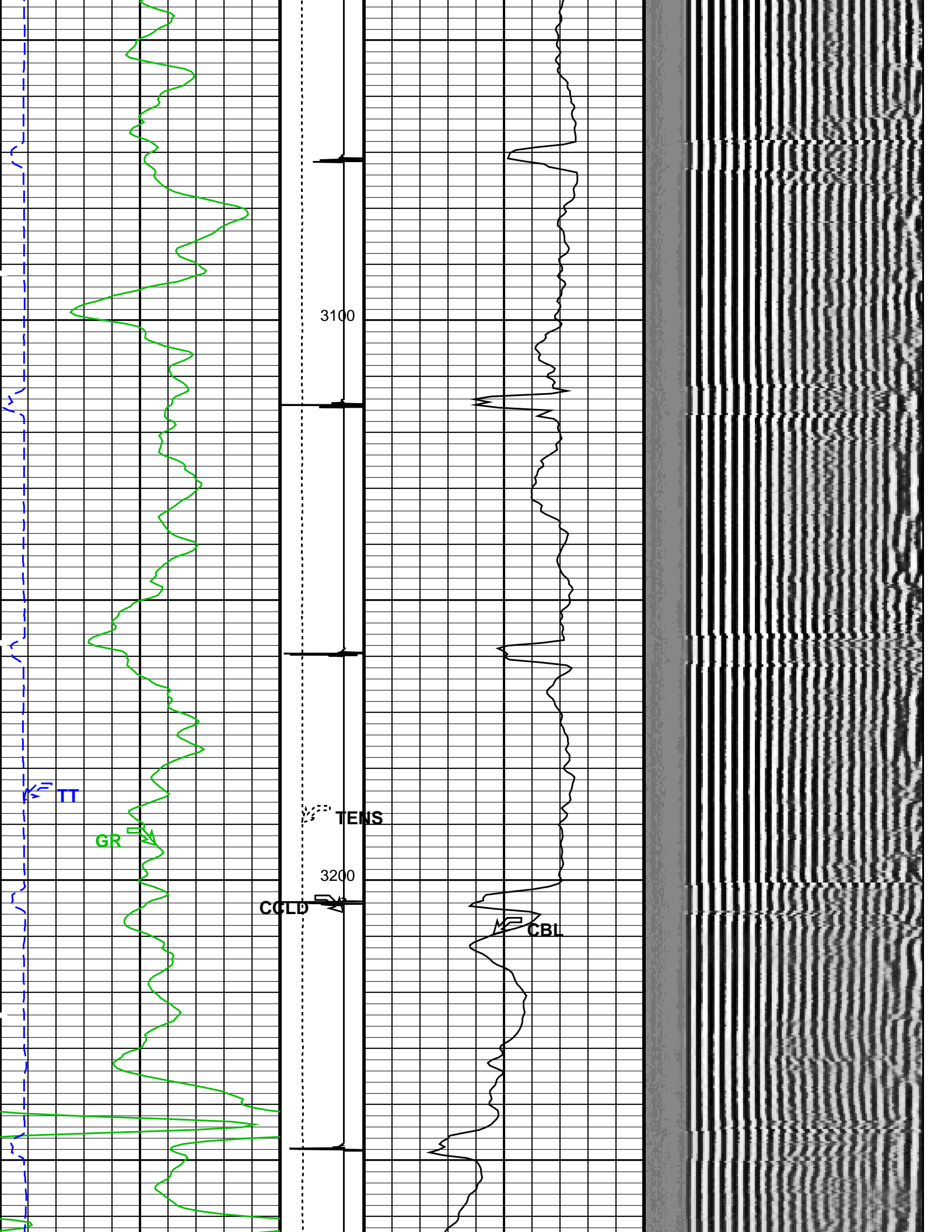


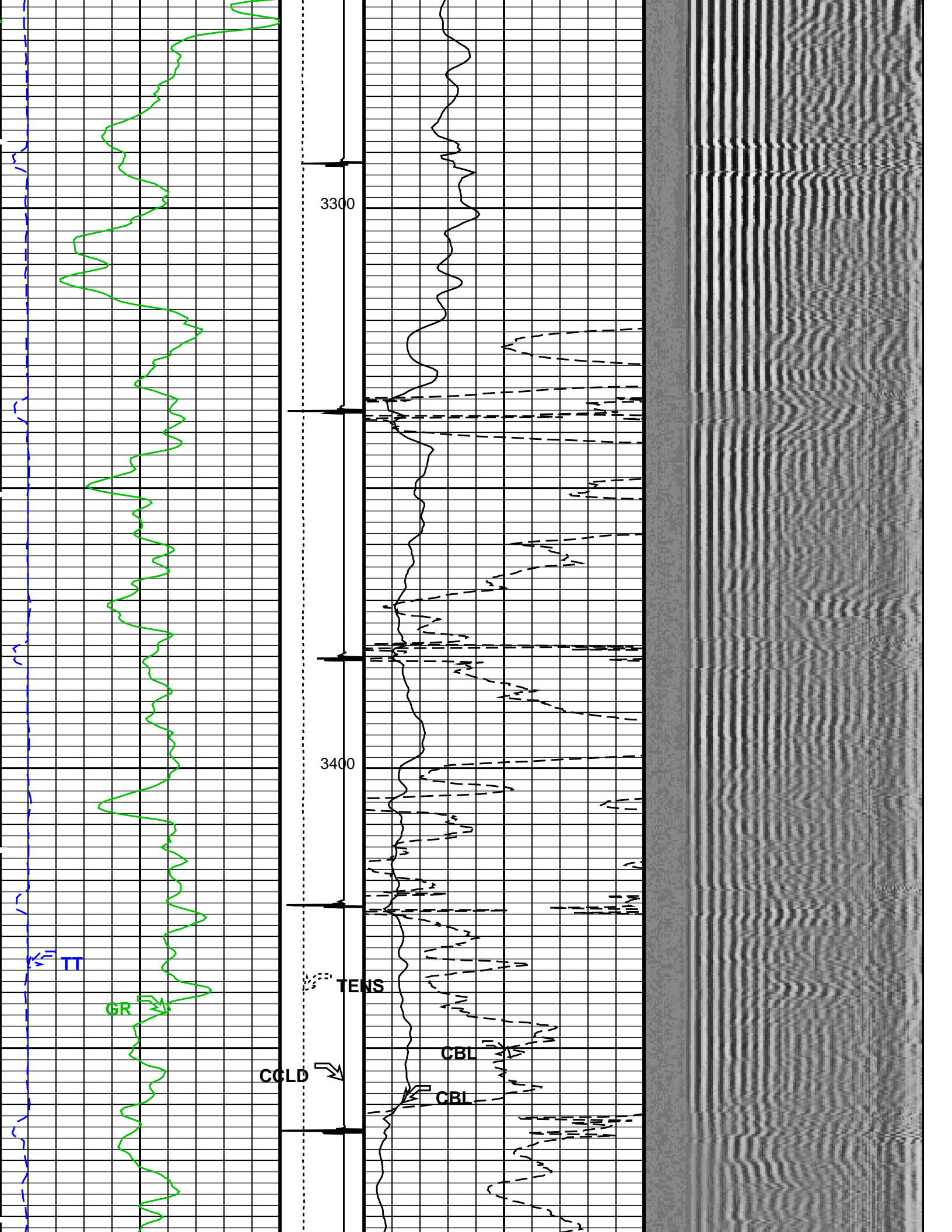


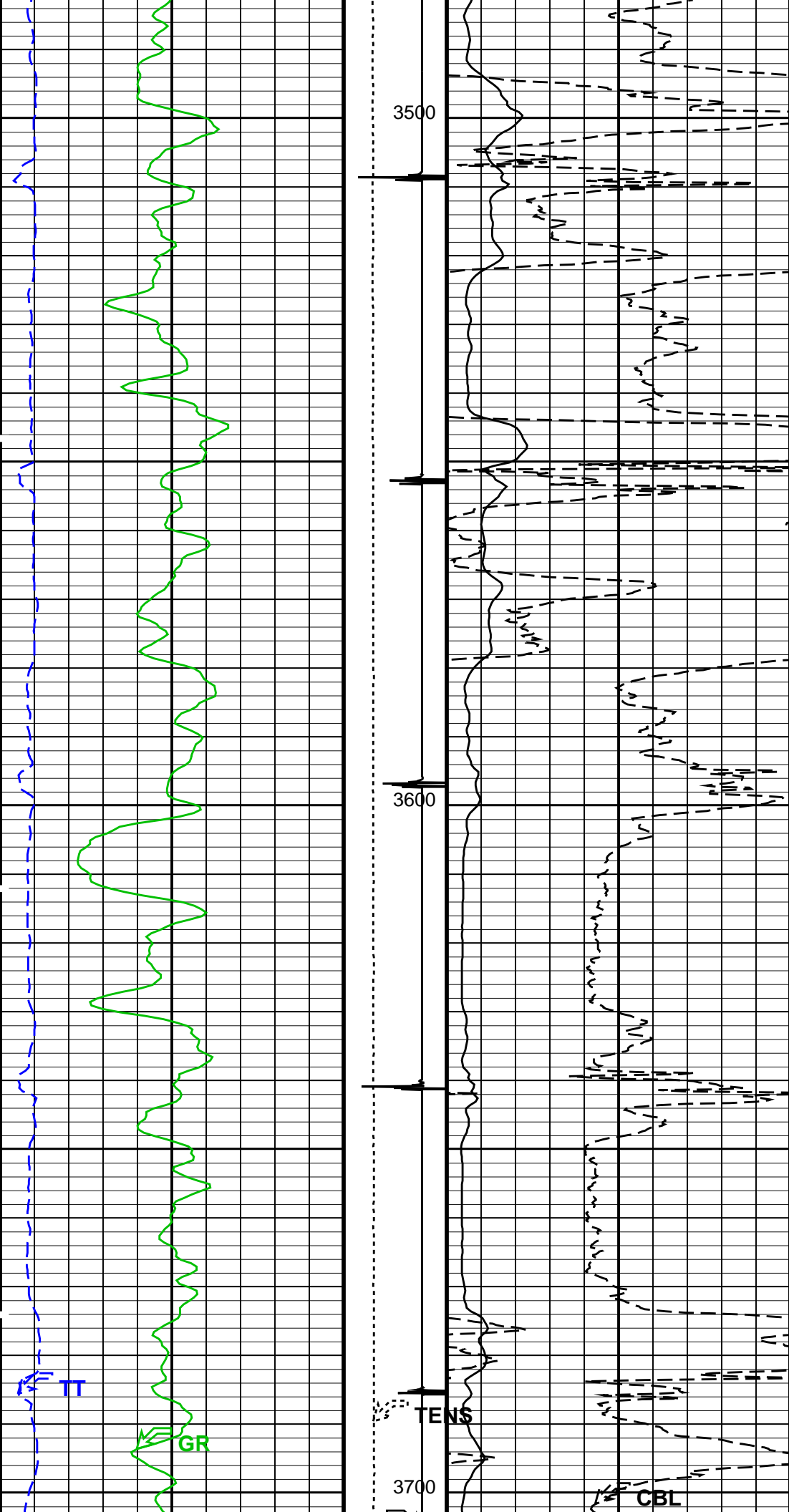


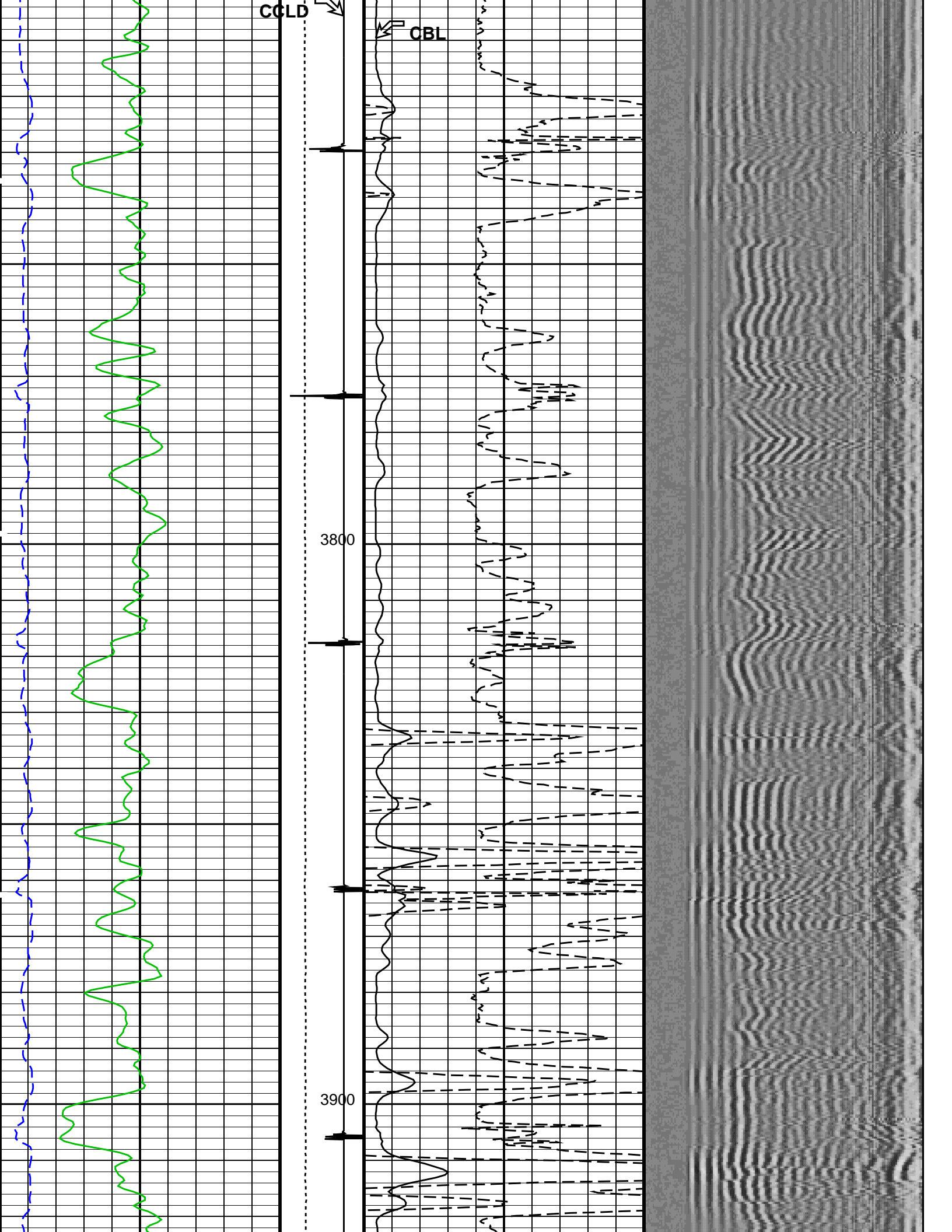


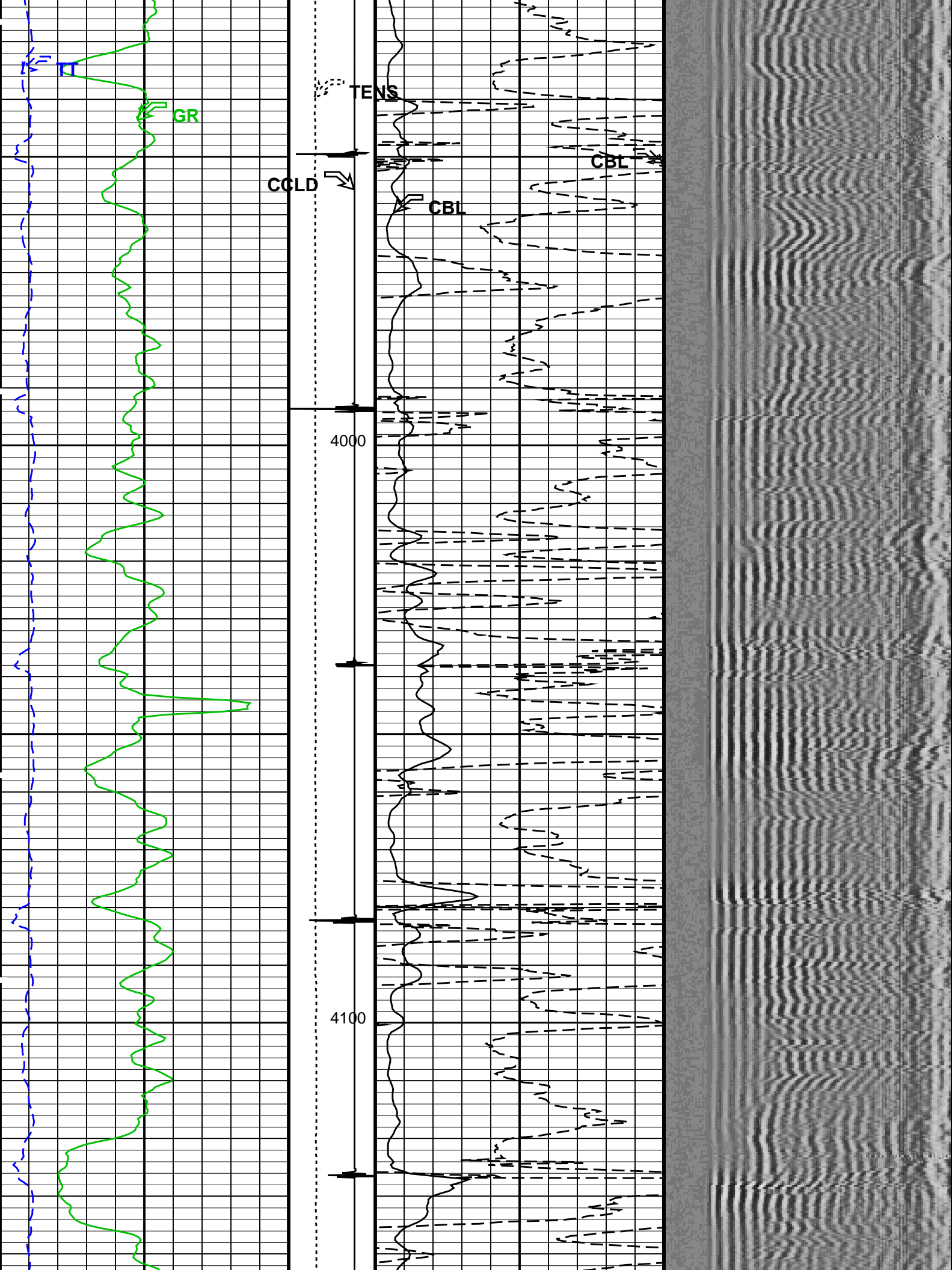


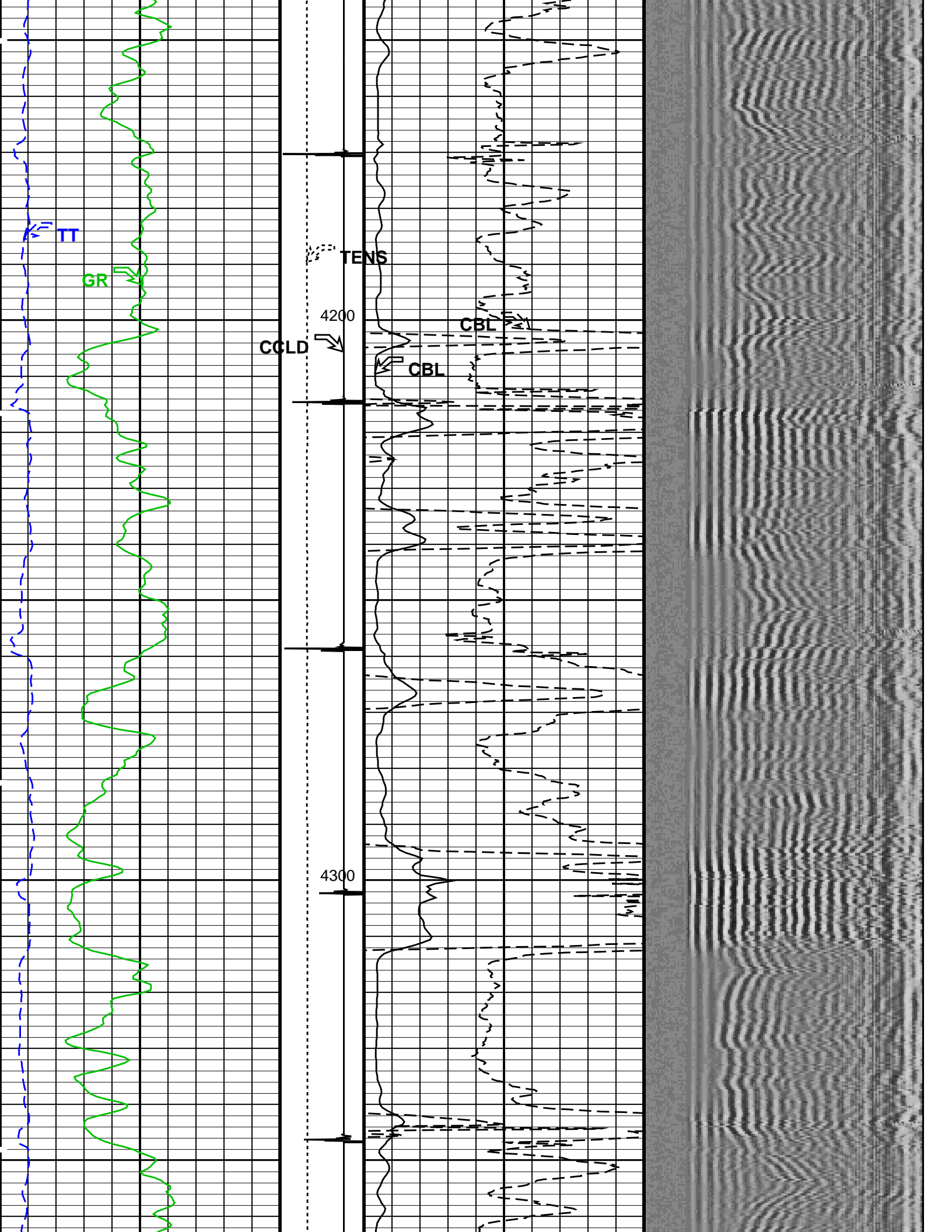


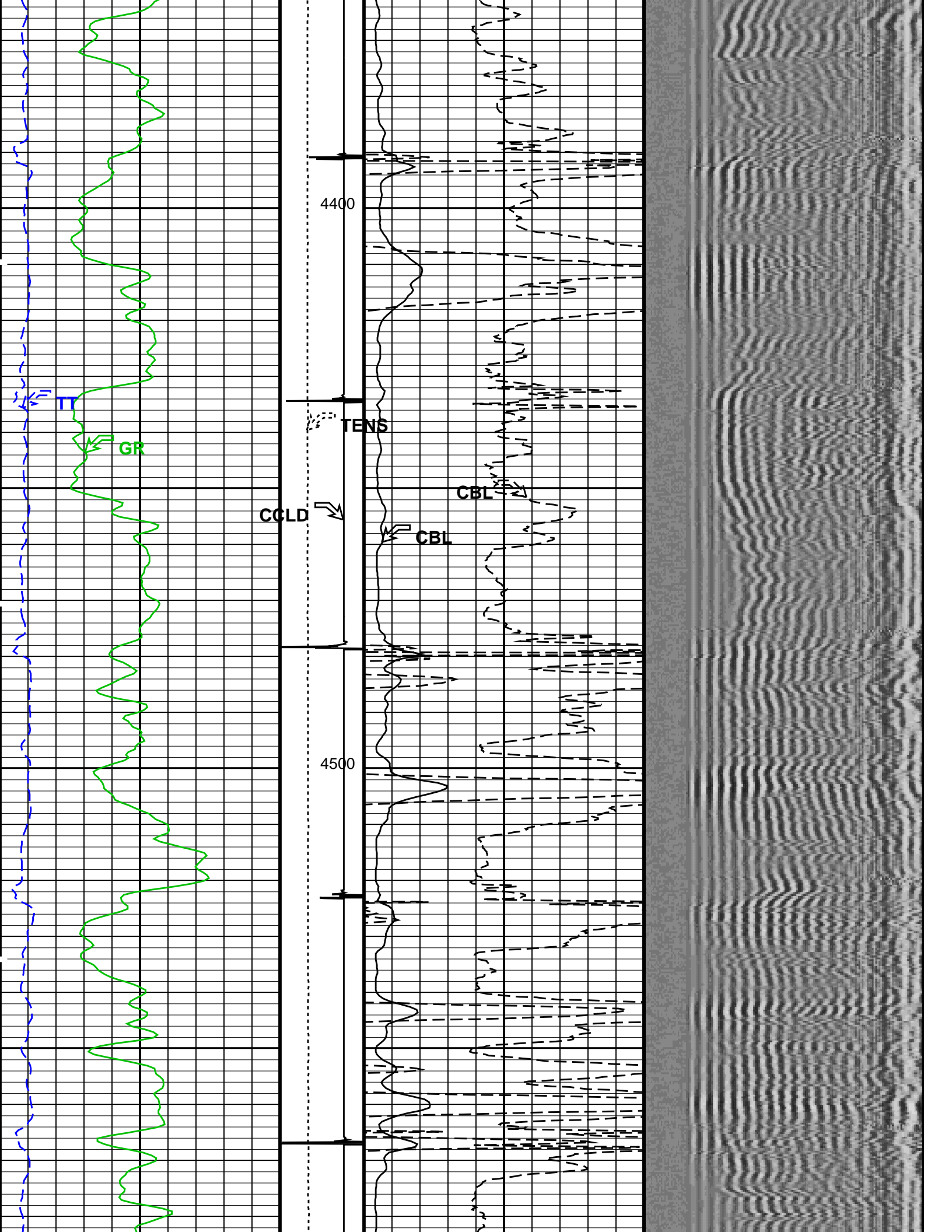


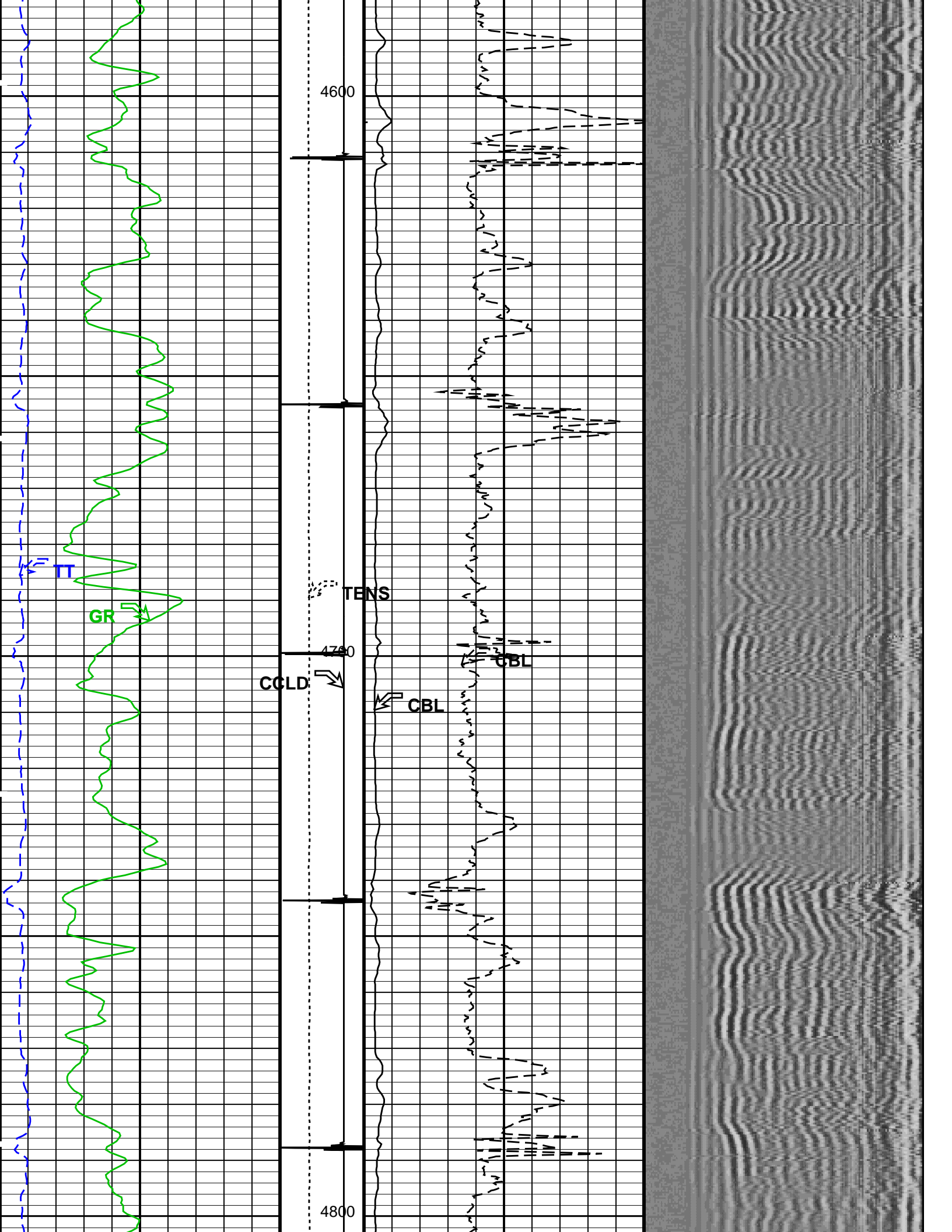


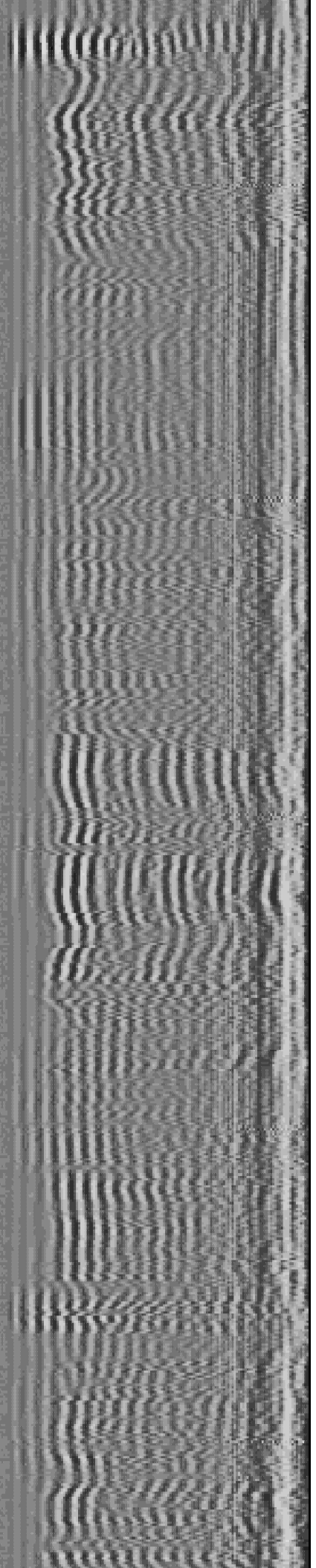
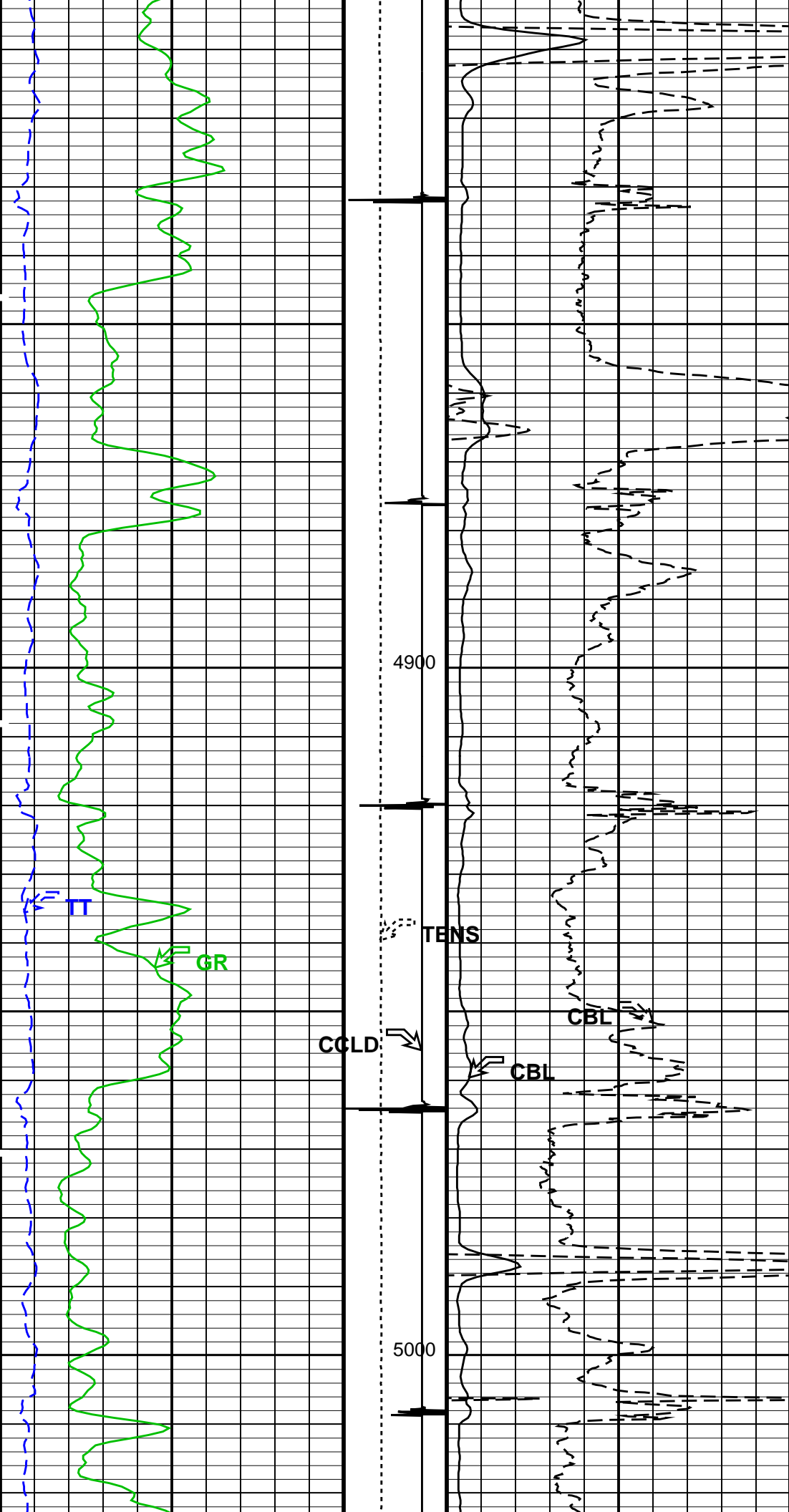


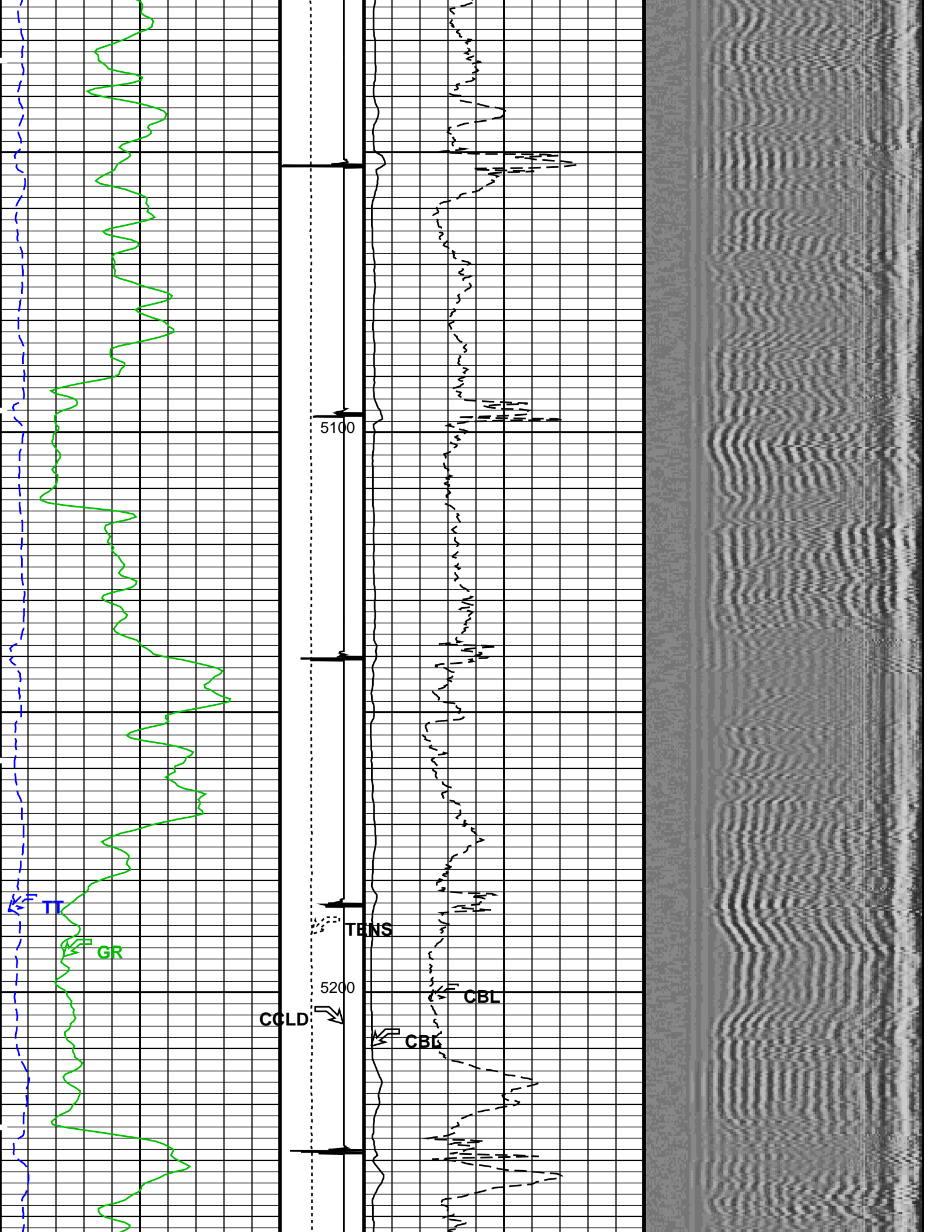


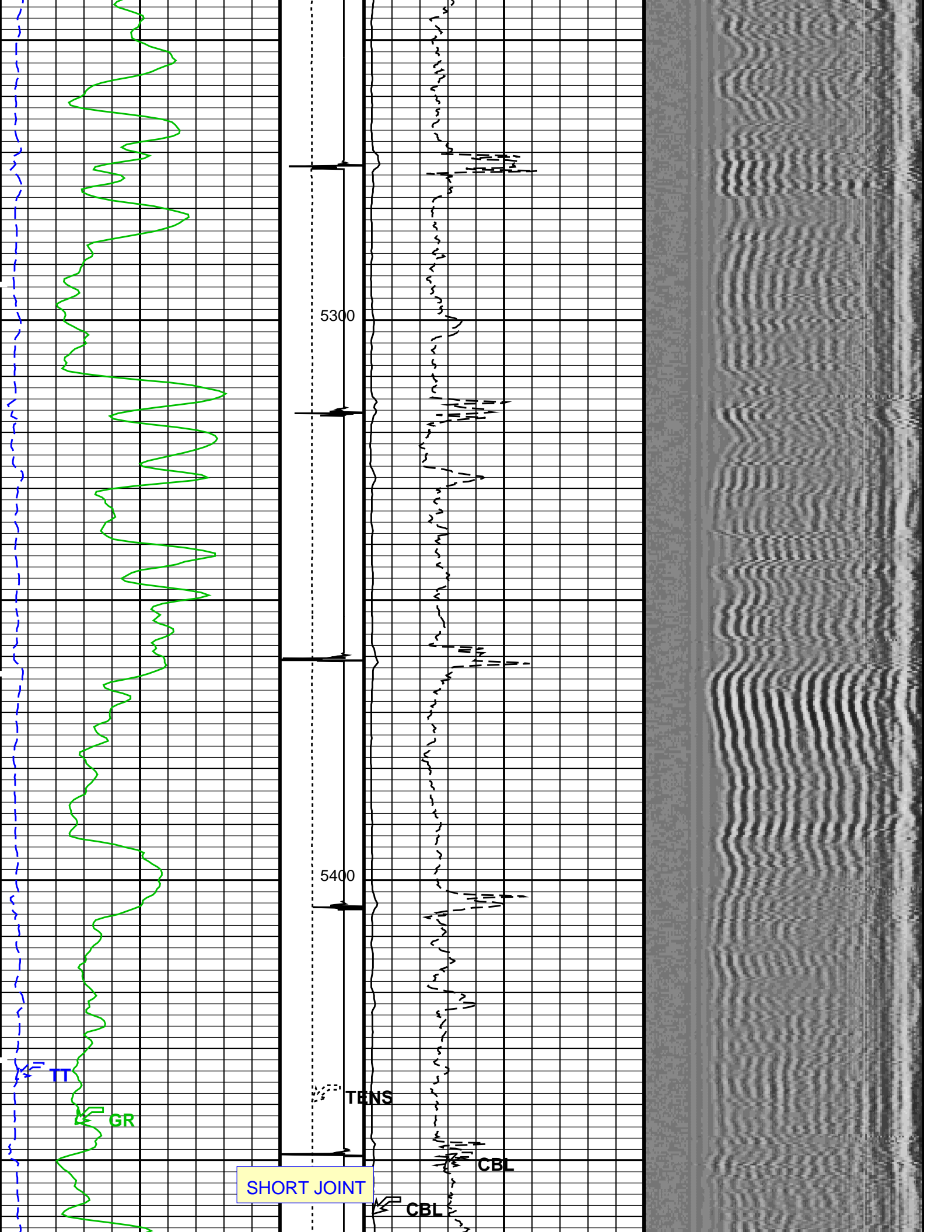


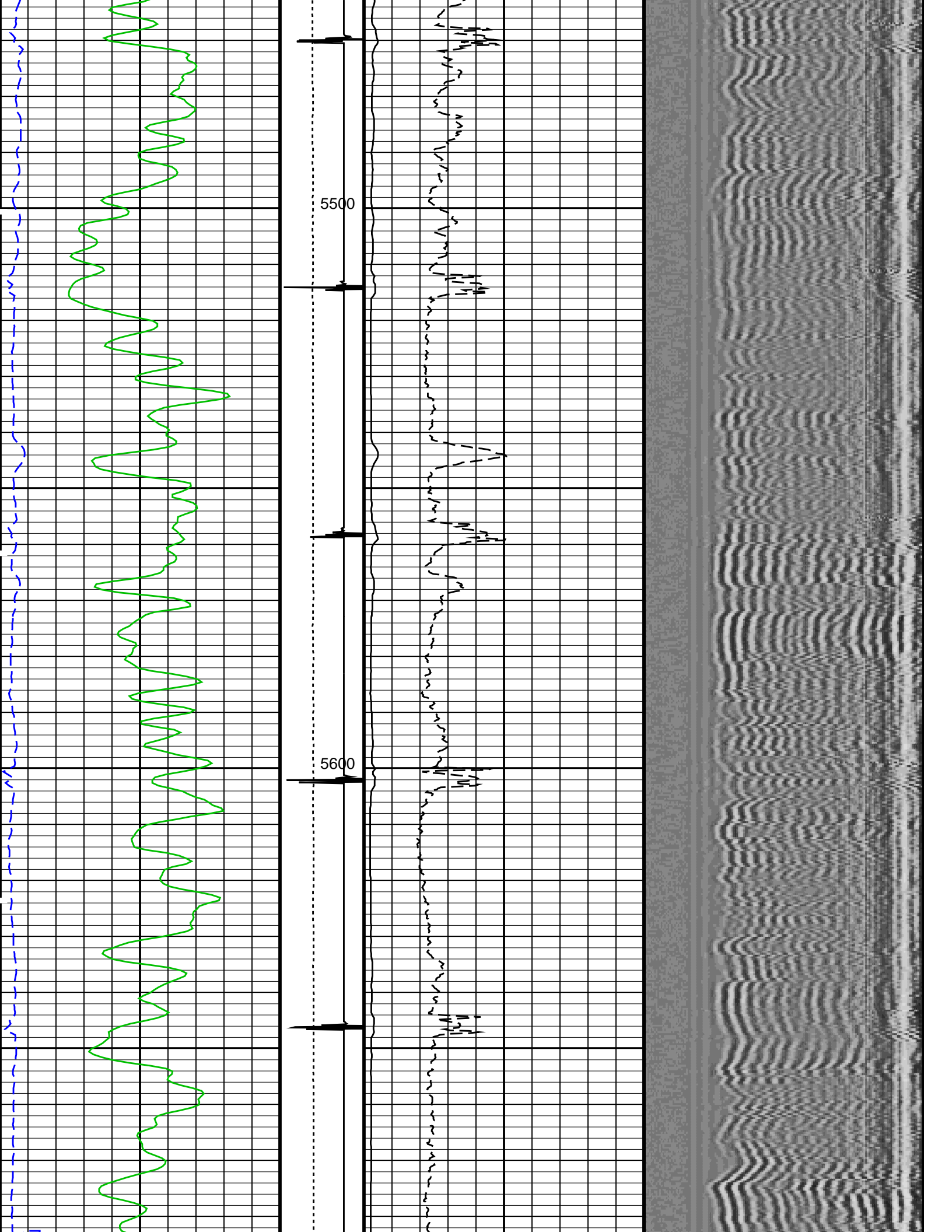


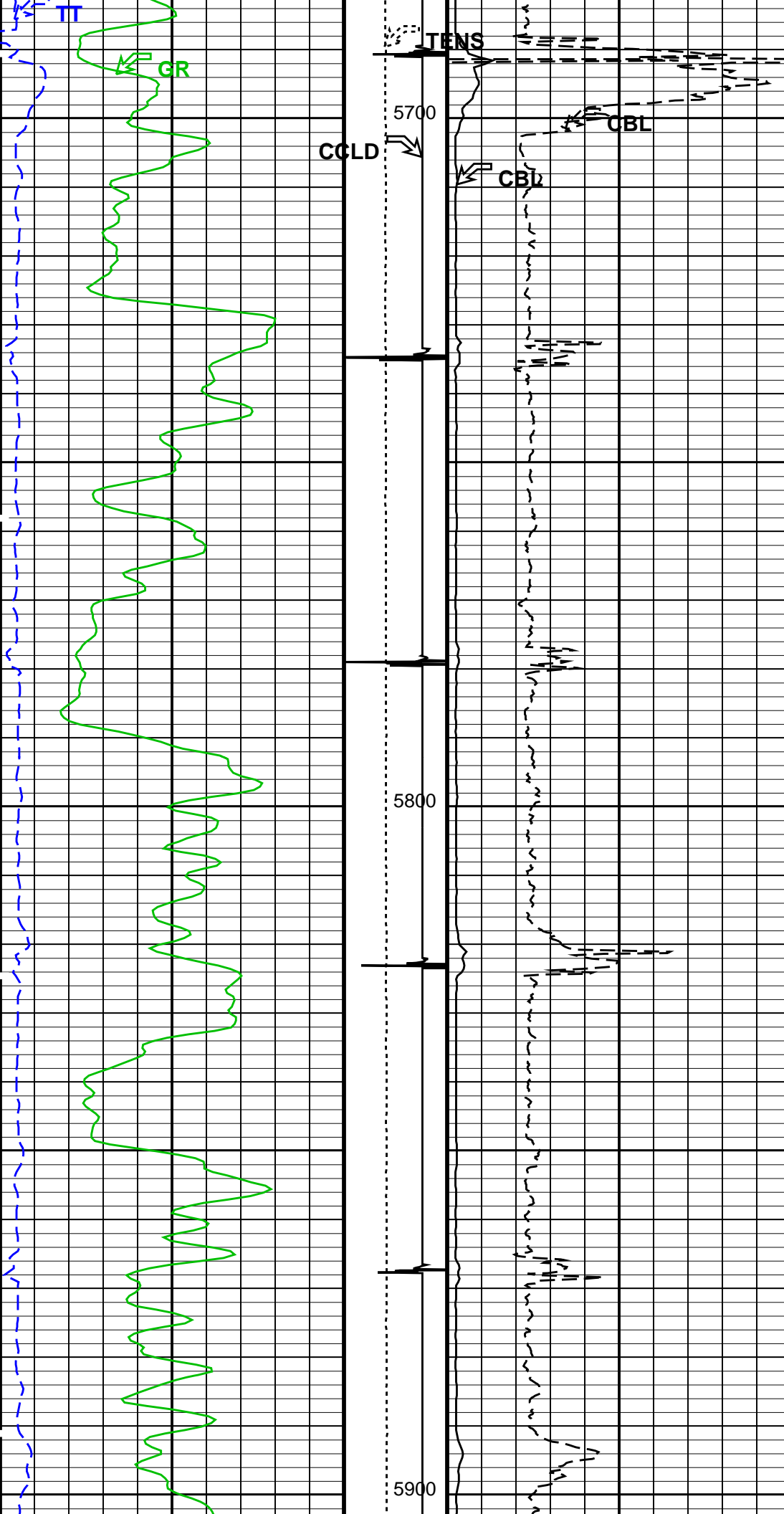


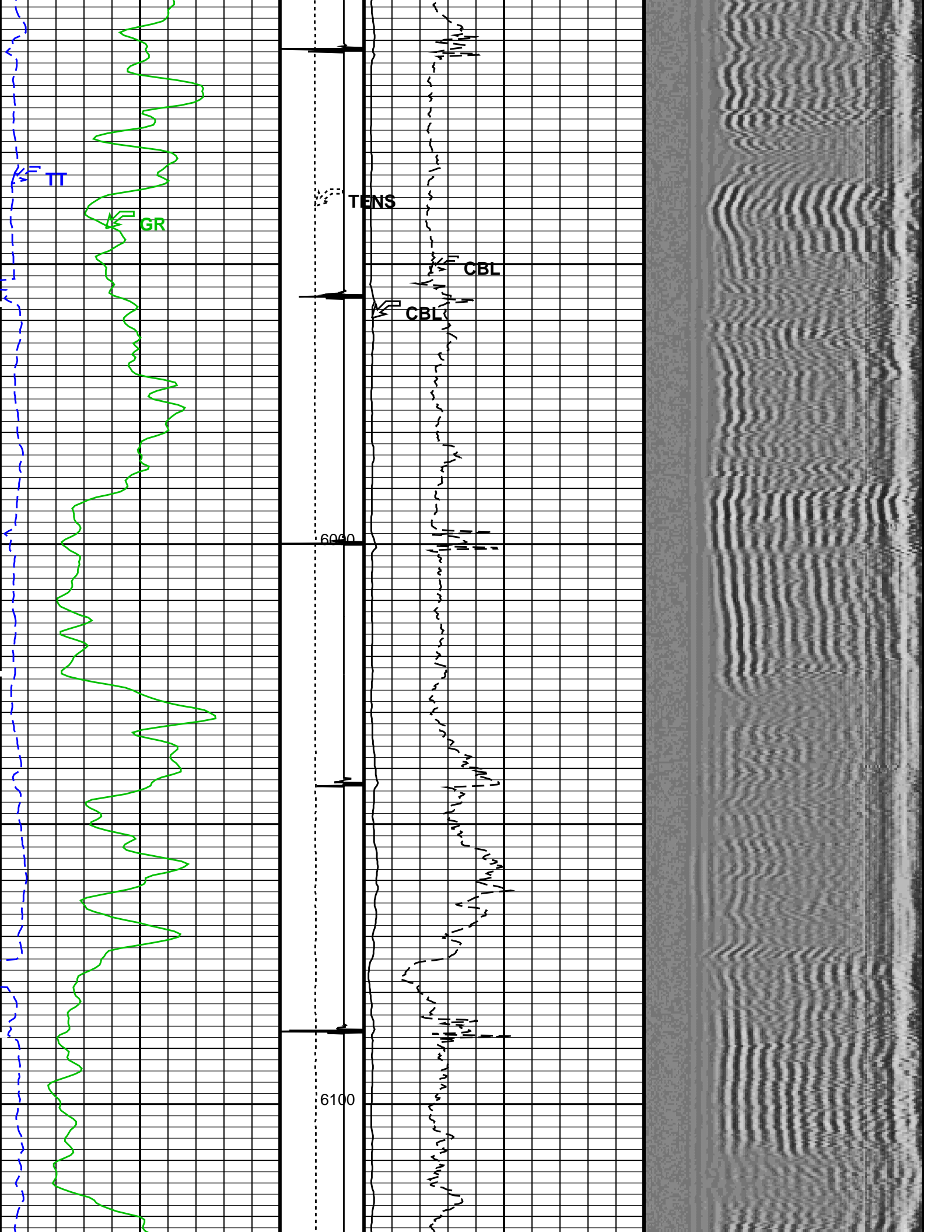


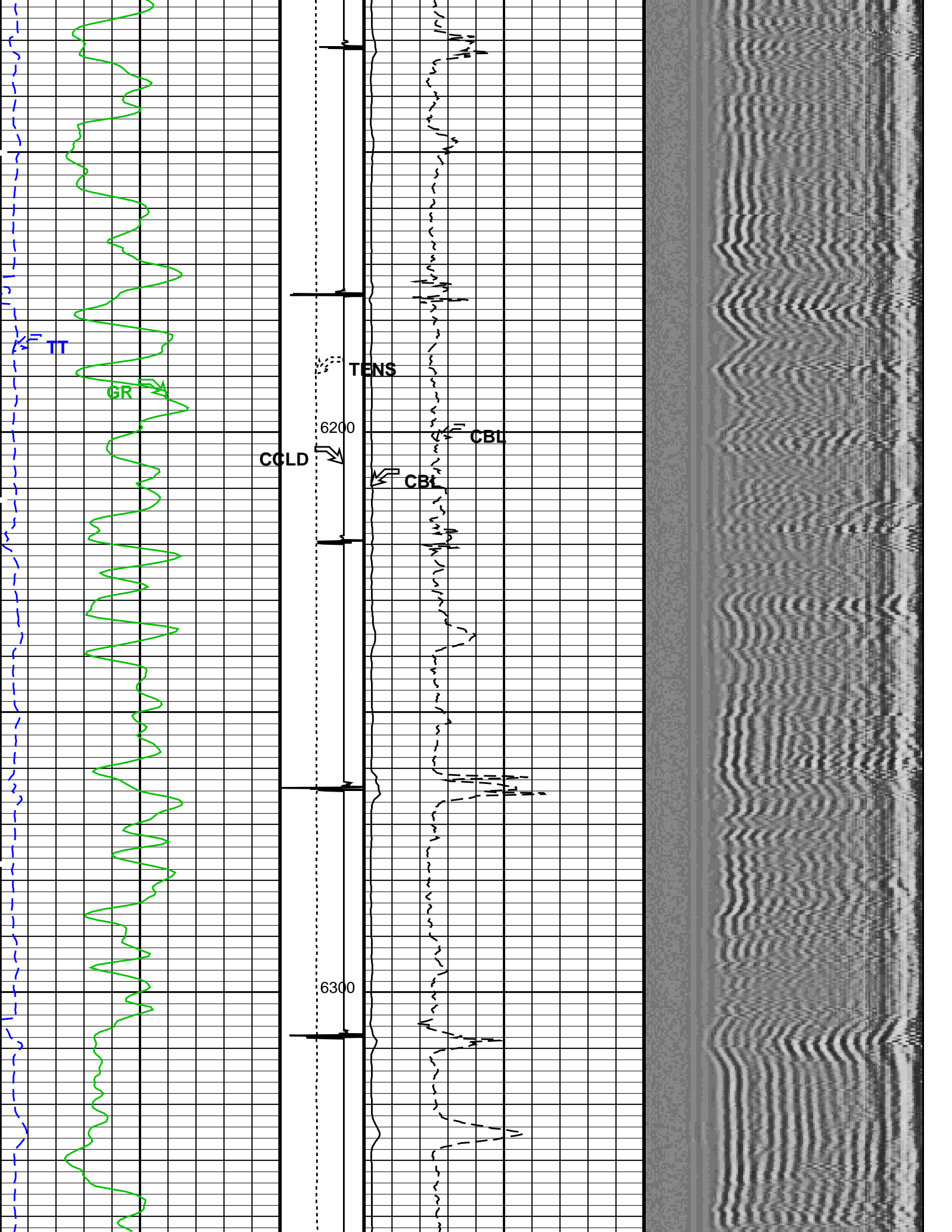


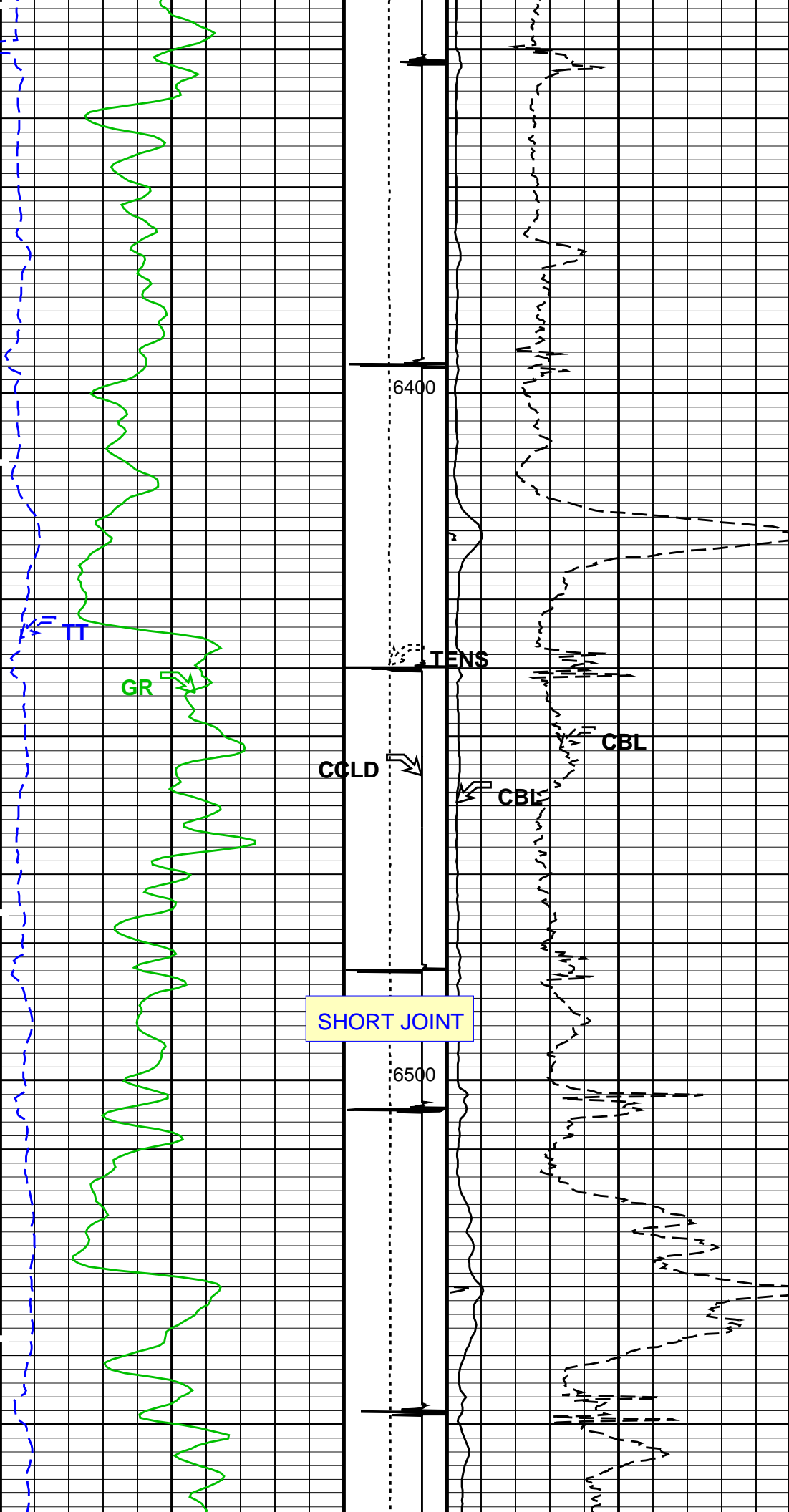


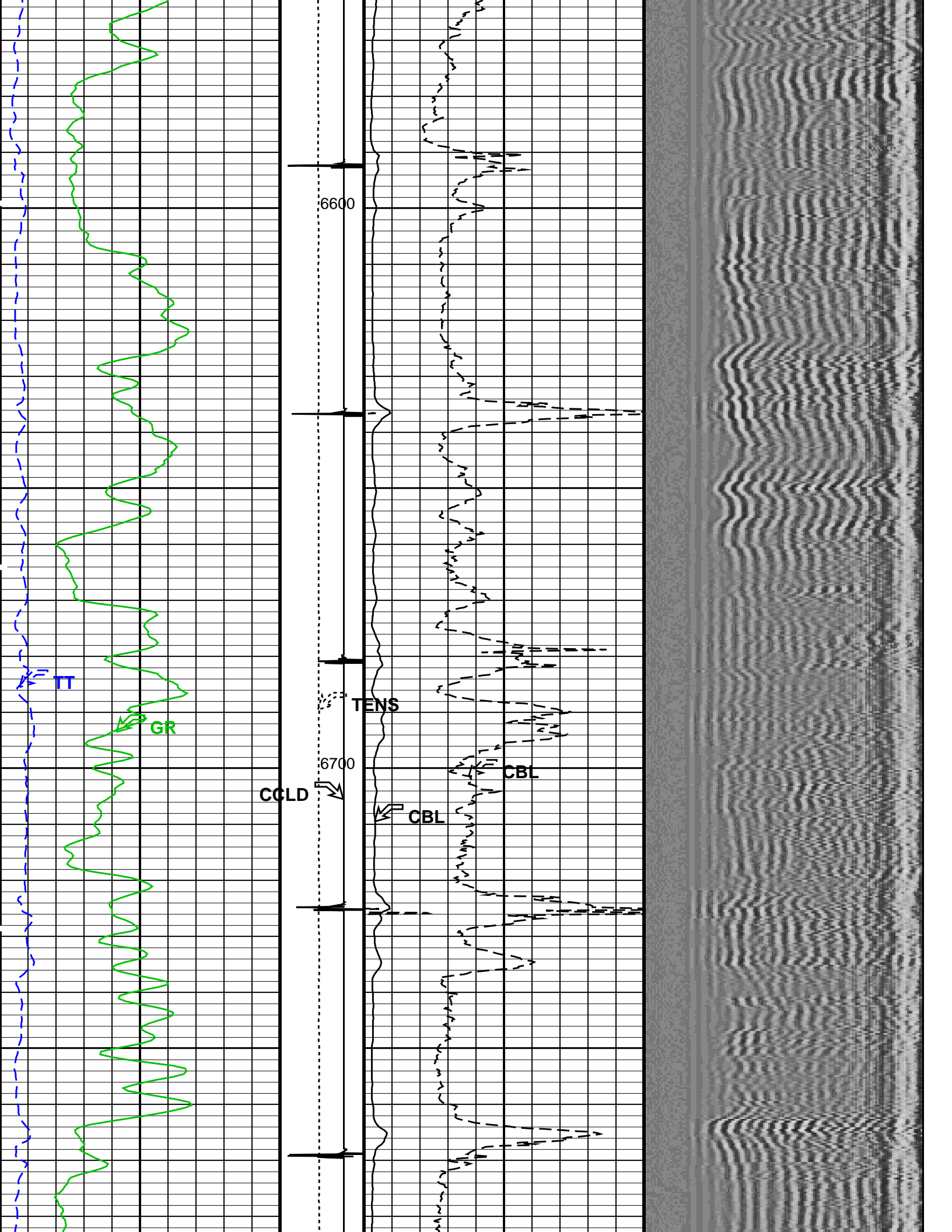


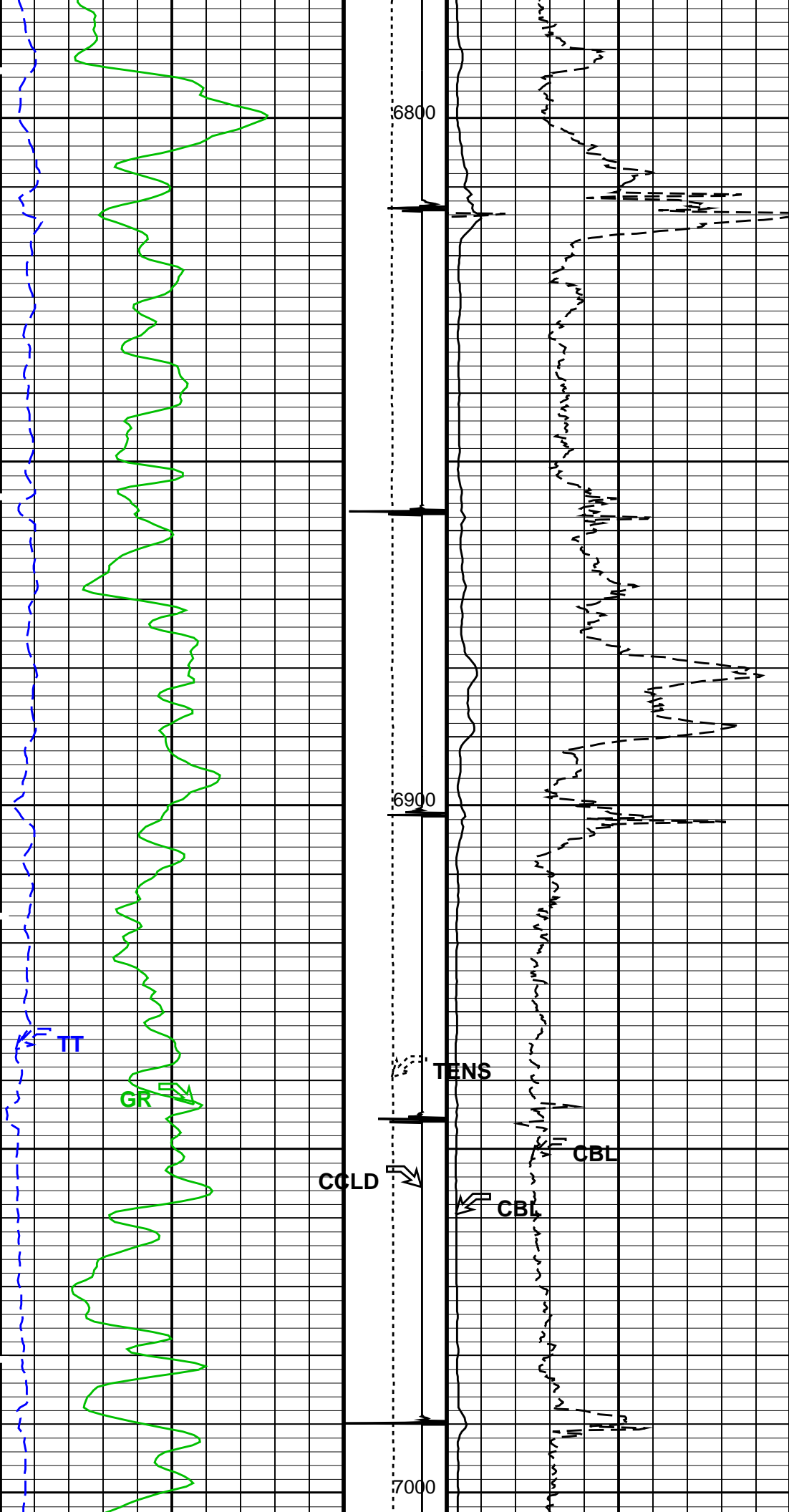


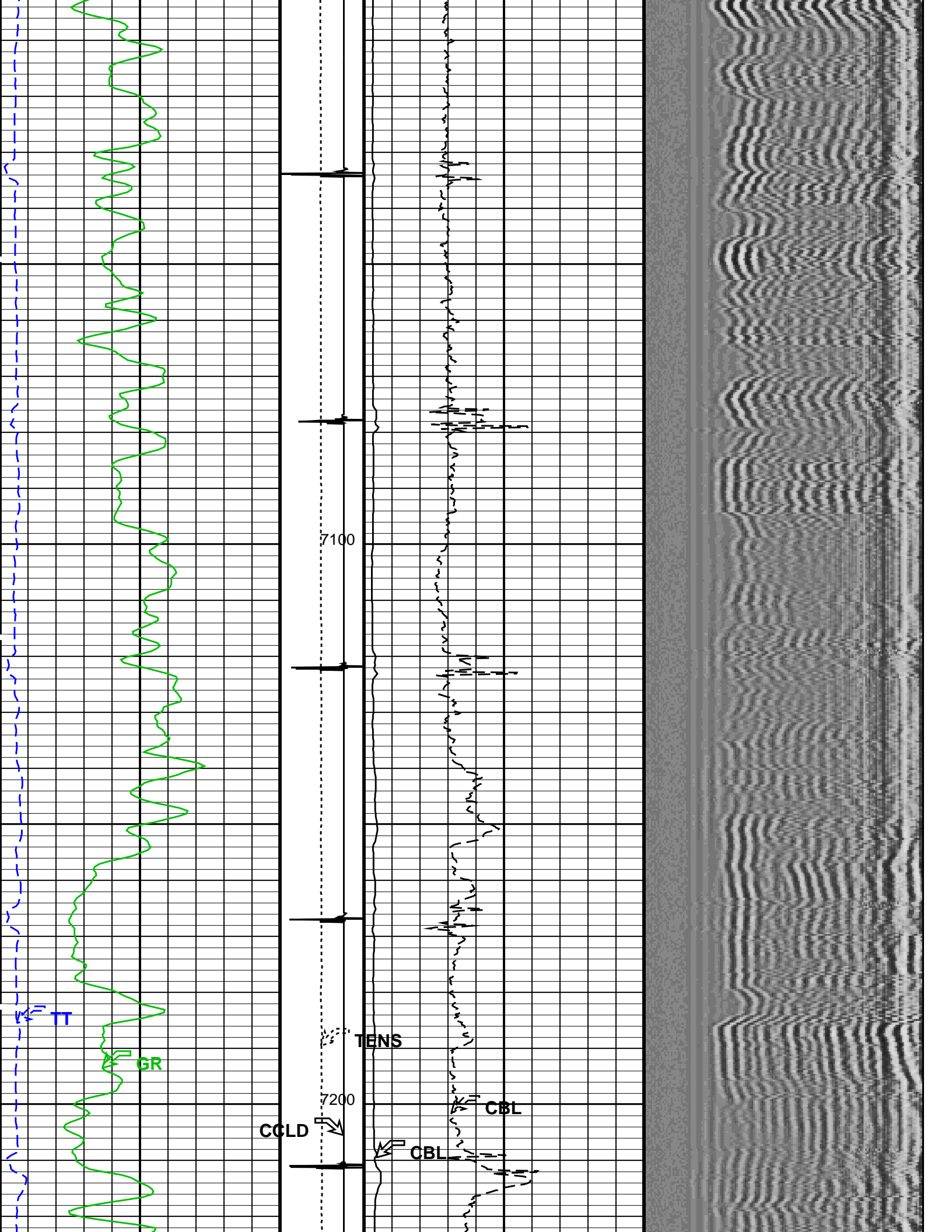


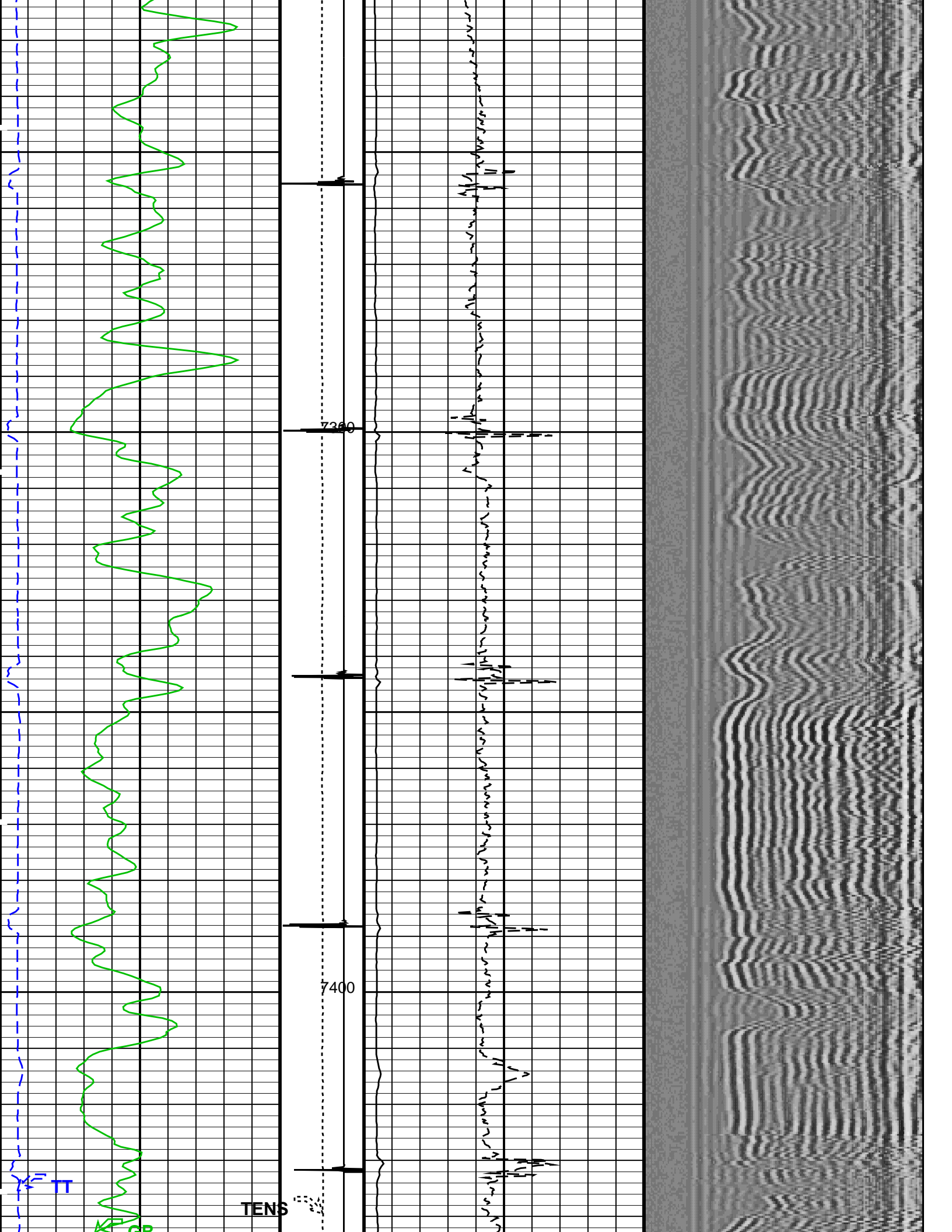


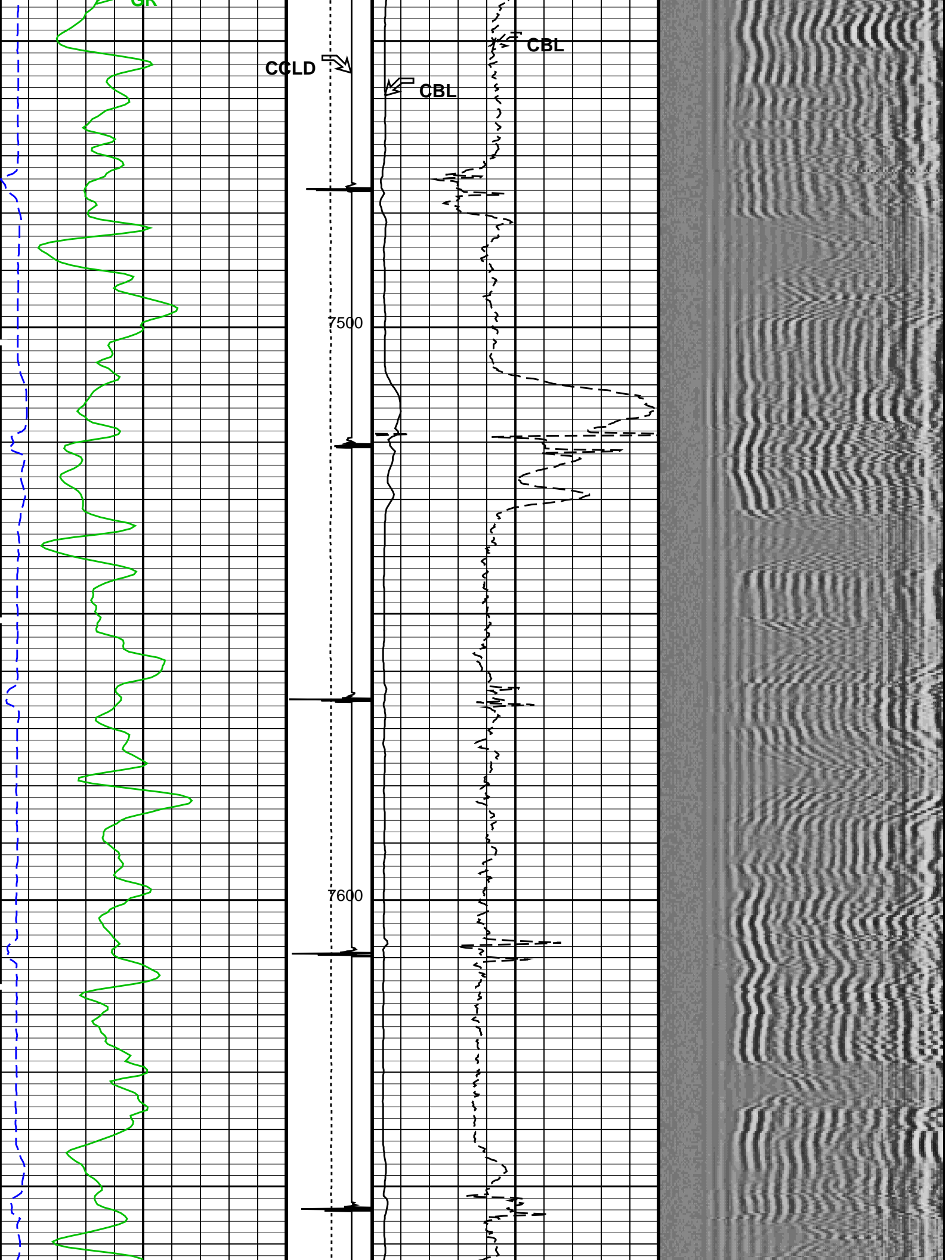


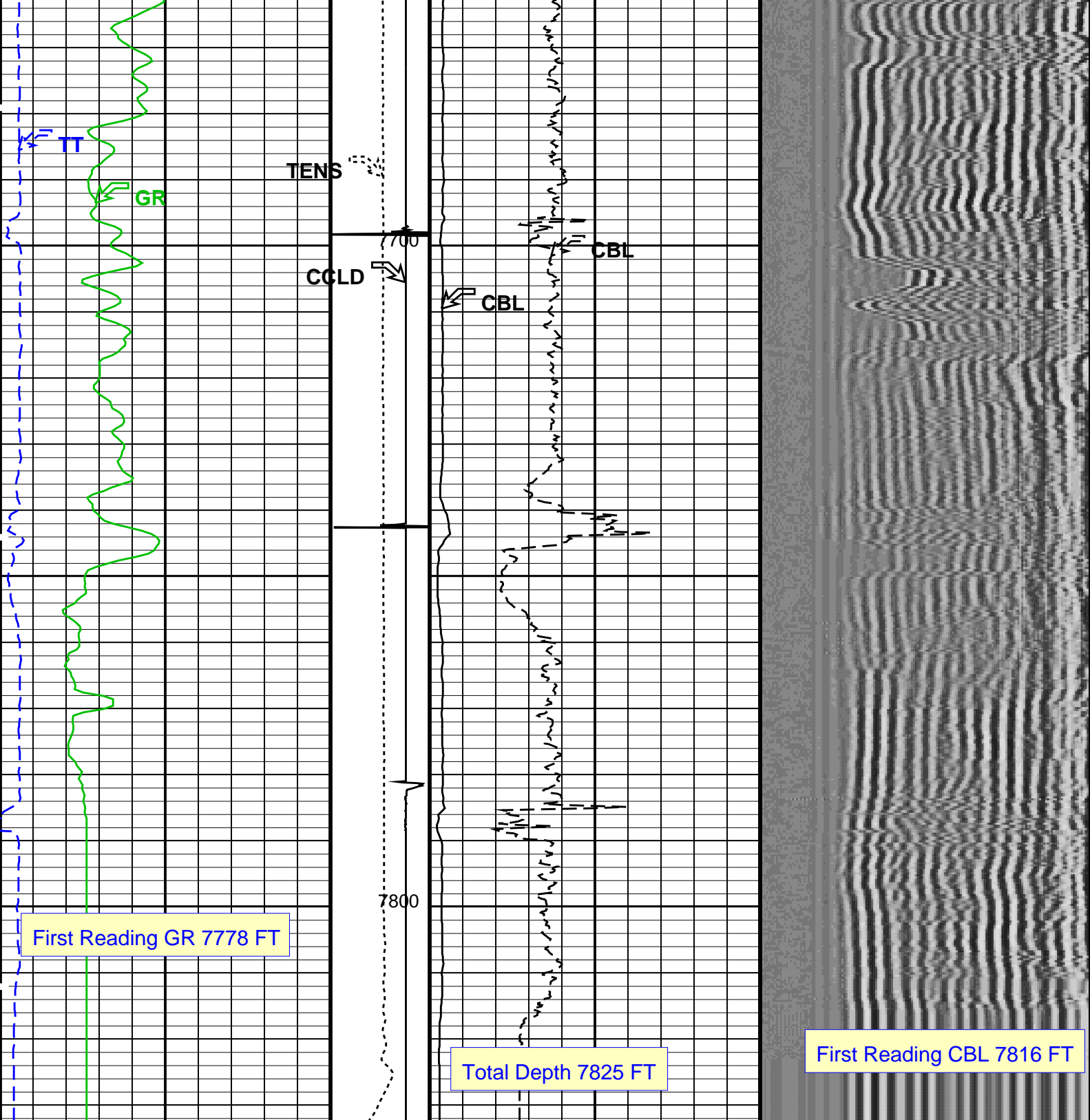












<p>Gamma Ray (GR) (GAPI)</p> <p>0 150</p>	<p>Tension (TENS) (LBF)</p> <p>0 2000</p>	<p>CBL Amplitude (CBL) (MV)</p> <p>0 100</p>	<p>Min Amplitude Max</p> <p>VDL Variable Density (VDL) (US)</p> <p>200 1200</p>
<p>Transit Time (TT) (US)</p> <p>260 160</p>	<p>Discriminat ed CCL (CCLD)</p> <p>3 (V) -1</p>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

PIP SUMMARY

<<<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)	1.0
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	0.924277	
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	7825	FT

Output DLIS Files

DEFAULT SCMT_RST_PSP_068PUP FN:64 PRODUCER 14-Sep-2013 17:44

Schlumberger

REPEAT ANALYSIS CBL VDL

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC

Well: HAGEN FEDERAL 22-4C (PC22)

Input DLIS Files

DEFAULT	SCMT_RST_PSP_063LUP	FN:59	PRODUCER	14-Sep-2013 15:26	5649.5 FT	5335.5 FT
DEFAULT	SCMT_RST_PSP_068PUP	FN:64	PRODUCER	14-Sep-2013 17:44	7832.5 FT	-38.0 FT

Output DLIS Files

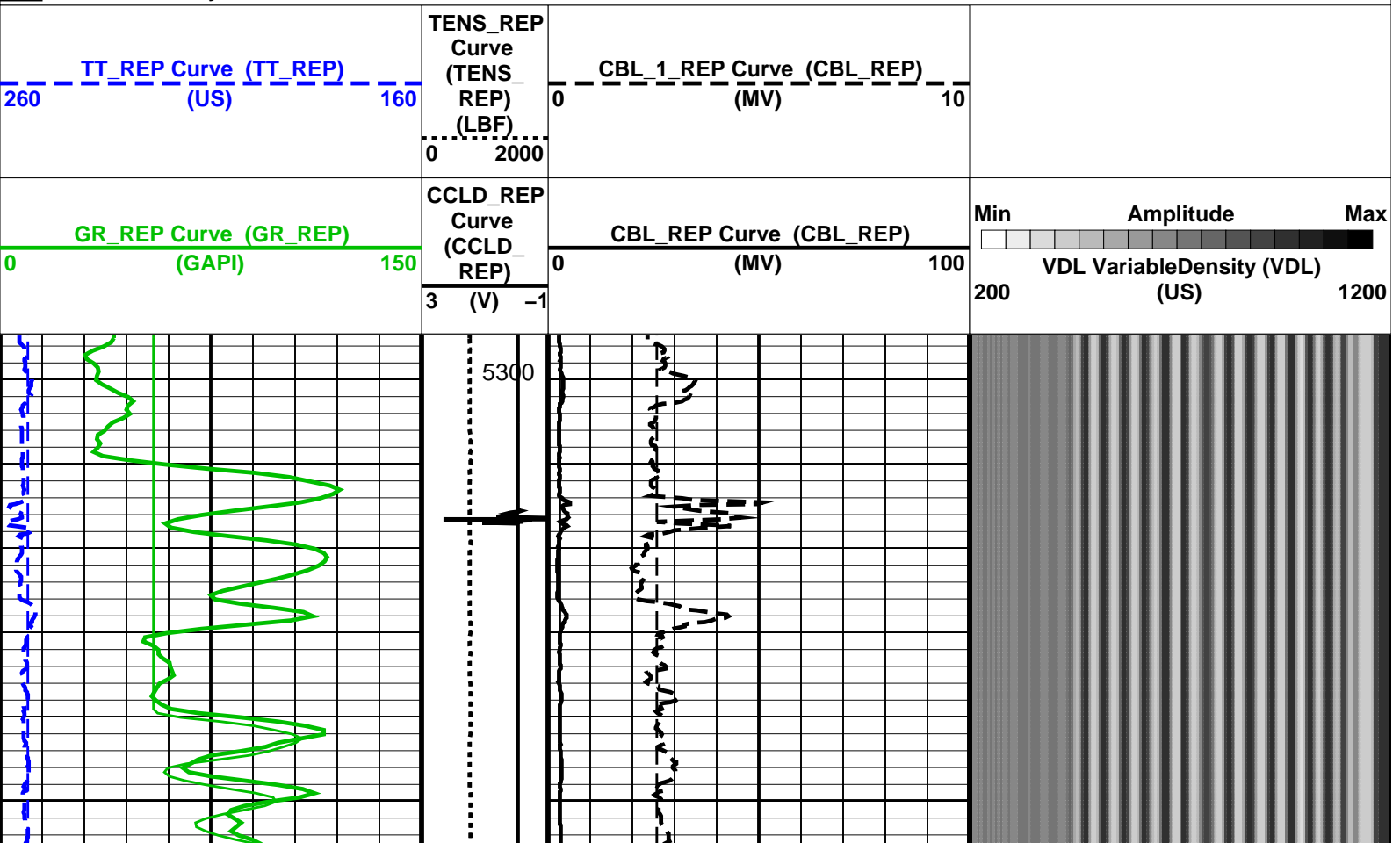
DEFAULT	SCMT_RST_PSP_069PUP	FN:65	PRODUCER	14-Sep-2013 17:50	5652.5 FT	5294.0 FT
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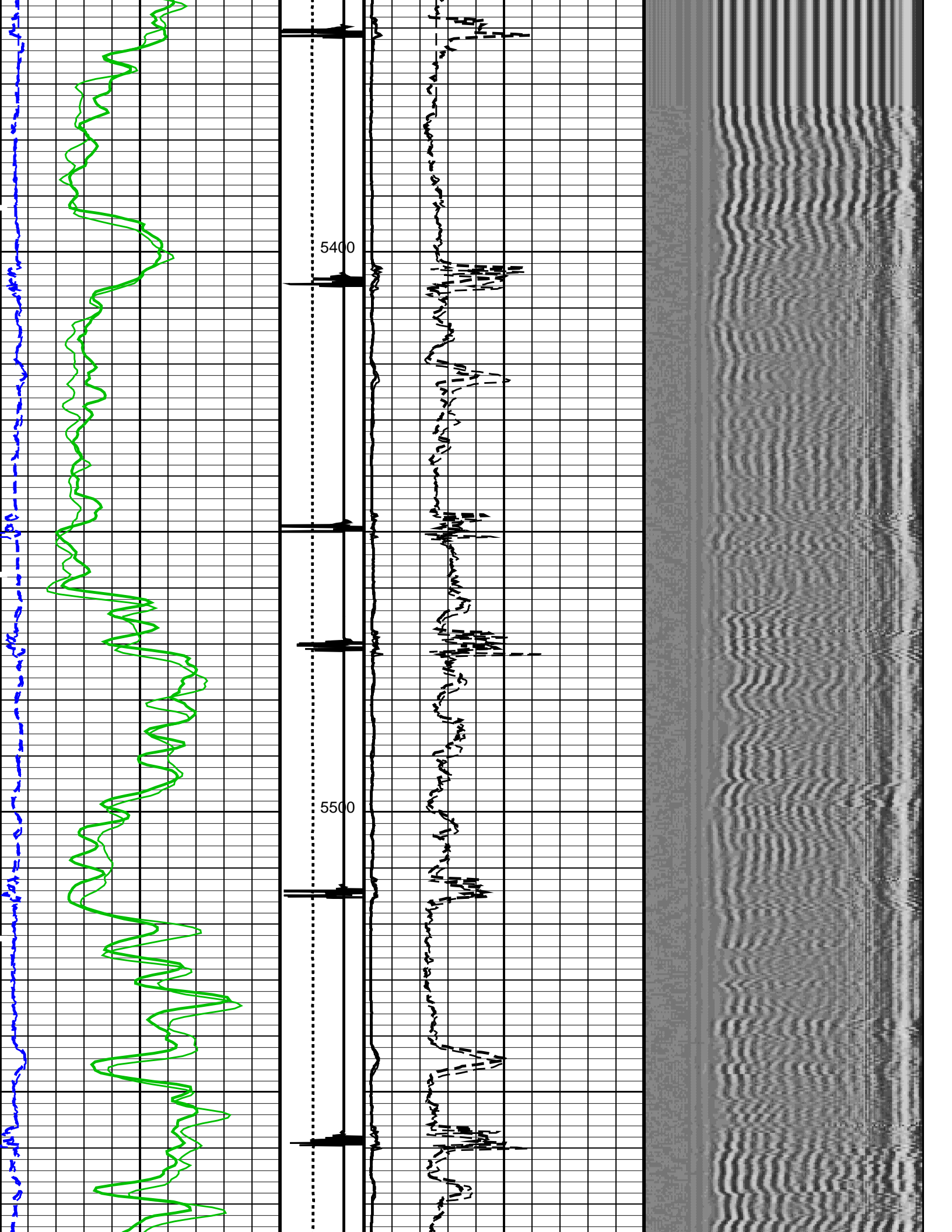
OP System Version: 19C0-187

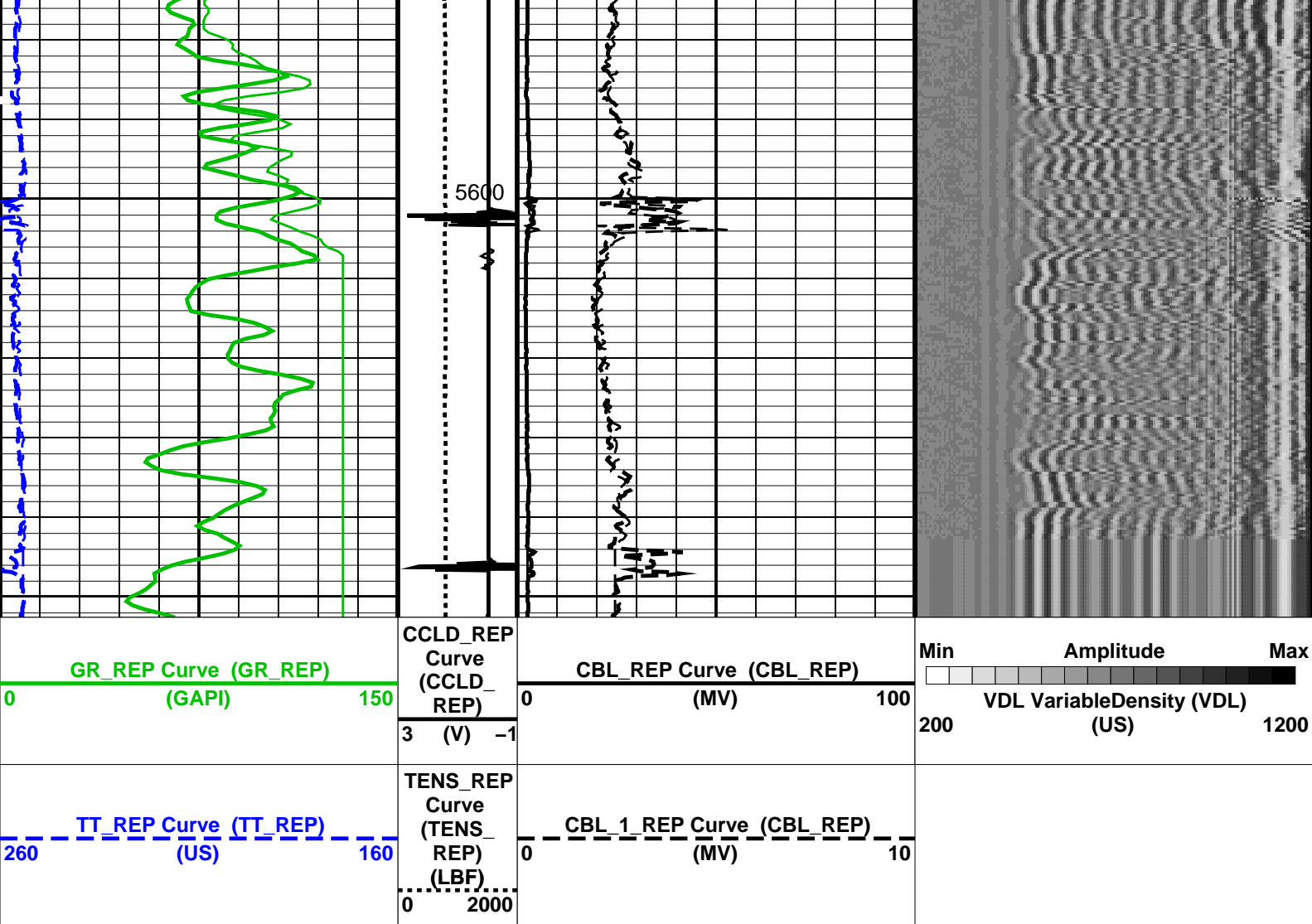
SCMT-CB	19C0-187	RST-C	19C0-187
PSPT	19C0-187		

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: 14-Sep-2013 17:50

OP System Version: 19C0-187

SCMT-CB 19C0-187 RST-C 19C0-187
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) 1.0

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	0.924277	
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	3.0	FT
DORL	Depth Offset for Repeat Analysis	0.0	FT
PP	Playback Processing	RECOMPUTE	
TD	Total Depth	7825	FT

Input DLIS Files

DEFAULT	SCMT_RST_PSP_063LUP	FN:59	PRODUCER	14-Sep-2013 15:26	5649.5 FT	5335.5 FT
DEFAULT	SCMT_RST_PSP_068PUP	FN:64	PRODUCER	14-Sep-2013 17:44	7832.5 FT	-38.0 FT

Output DLIS Files

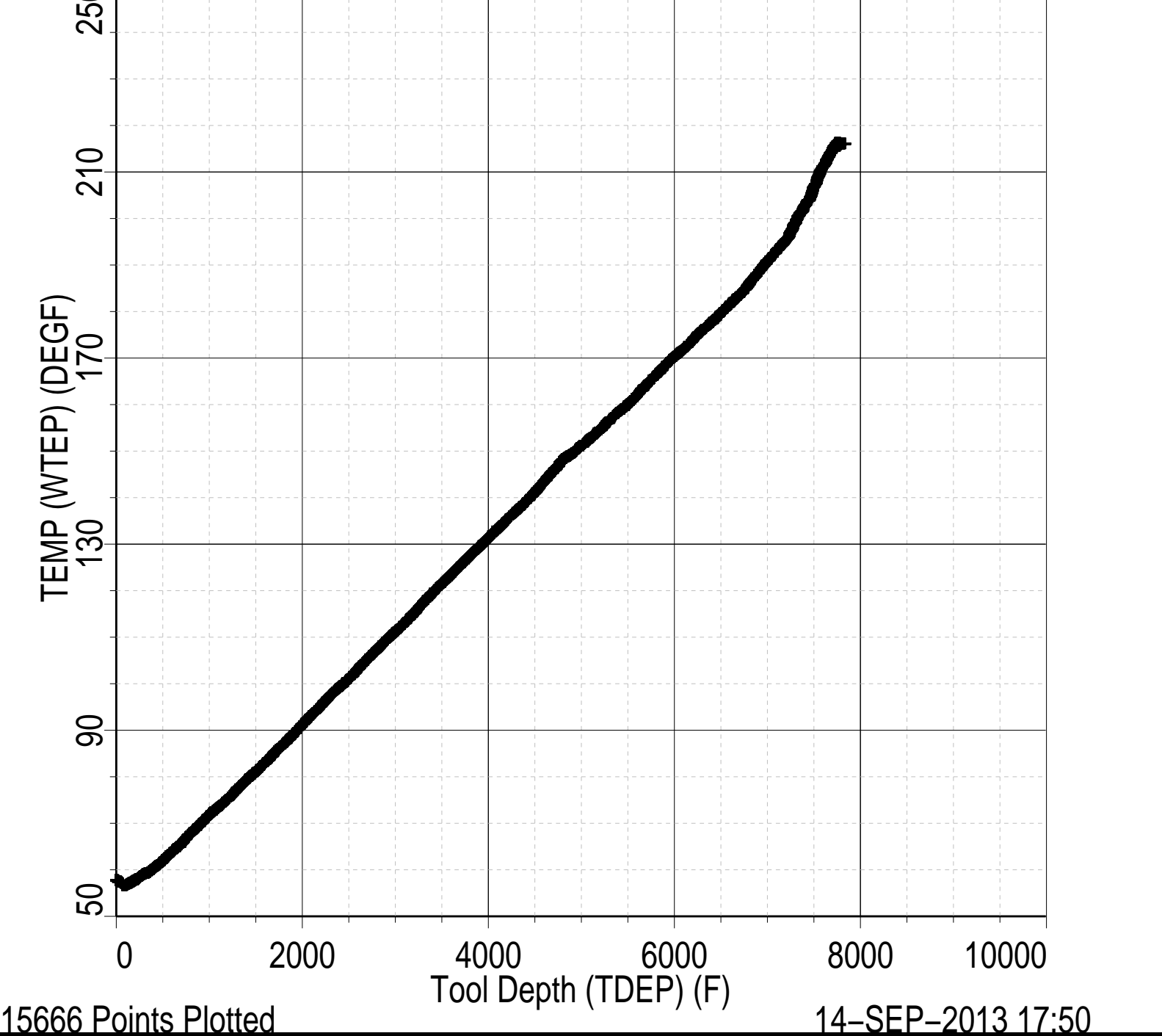
DEFAULT	SCMT_RST_PSP_069PUP	FN:65	PRODUCER	14-Sep-2013 17:50
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Schlumberger

TEMPERATURE PLOT

MAXIS Field Log

Index: 7832.5 – -38.0 FT



Schlumberger

PBMS COEFFICIENTS

MAXIS Field Log

Client: ENCANA OIL & GAS (USA) INC
Field: SOUTH PARACHUTE
Well: HAGEN FEDERAL 22-4C (PC22)
Run date: 14-Sep-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:

Field:

Well:

Run date:

ENCANA OIL & GAS (USA) INC
SOUTH PARACHUTE
HAGEN FEDERAL 22–4C (PC22)
14–Sep–2013

Tool:

Sub Type:

Sensor:

PSP
PBMS
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: SOUTH PARACHUTE

Well: HAGEN FEDERAL 22-4C (PC22)

Run date: 14-Sep-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**1	-.333333140012E-02	+.1027371133340E-07	+.100100400172E-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

MAXIS Field Log

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 8248

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			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: Calibration out of date 6–Mar–2012 15:06							

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



Well: **HAGEN FEDERAL 22–4C (PC22)**

Field: **SOUTH PARACHUTE**

County: **GARFIELD**

State: **COLORADO**

State:

COLORADO

SLIM CEMENT MAPPING LOG

CBL-VDL

GAMMA RAY-CCL