

Company: ENCANA OIL & GAS (USA) INC

Well: SG 8507D-23 (L24 496)

Field: STORY GULCH

County: GARFIELD

State: COLORADO

SLIM CEMENT MAPPING LOG	
CBL-VDL	
GAMMA RAY-CCL	
SHL: 925 FWL & 1658 FSL BHL: 1818 FEL & 2274 FNL	Elev.: K.B. 8210.00 ft G.L. 8180.00 ft D.F. 8209.00 ft
Permanent Datum: _____ Log Measured From: KELLY BUSHING Drilling Measured From: KELLY BUSHING	Elev.: 8180.00 ft 30.00 ft above Perm. Datum
API Serial No. 05-045-21164-000C	Section 24 Township 4S Range 96W

PVT DATA			
Oil Density	Run 1	Run 2	Run 3
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	5-Sep-2013
Run Number	1
Depth Driller	12868 ft
Schlumberger Depth	12598 ft
Bottom Log Interval	12589 ft
Top Log Interval	170 ft
Casing Fluid Type	FRESH WATER
Salinity	
Density	8.4 lbm/gal
Fluid Level	170 ft
BIT/CASING/TUBING STRING	
Bit Size	7.875 in
From	9574 ft
To	12868 ft
Casing/Tubing Size	4.500 in
Weight	11.6 lbm/ft
Grade	
From	30 ft
To	12665 ft
Maximum Recorded Temperatures	280 degF
Logger On Bottom	5-Sep-2013 23:00
Unit Number	391 GRAND JUNCTION
Recorded By	KIRSTIE BUNTING
Witnessed By	JOHN MILLER

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 OS1: NONE OS2: OS3: OS4: 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: 22:15	
TIME AT BOTTOM: 23:00	
EXIT TIME: 02:00	

MAX RECORDED TEMPERATURE: 280 DEGF	
MAX RECORDED PRESSURE: 5018 PSIA	
SHORT JOINTS: 7986 FT & 11143 FT	
MAIN PASS LOGGED UNDER ZERO SURFACE PRESSURE	
EXPECTED CBL AMP IN FREE PIPE = 80MV	
CREW: KBUNTING WAZIZ KJOHNS KBOZARTH	
THANK YOU FOR CHOOSING E&P WIRELINE. A SCHLUMBERGER COMPANY	

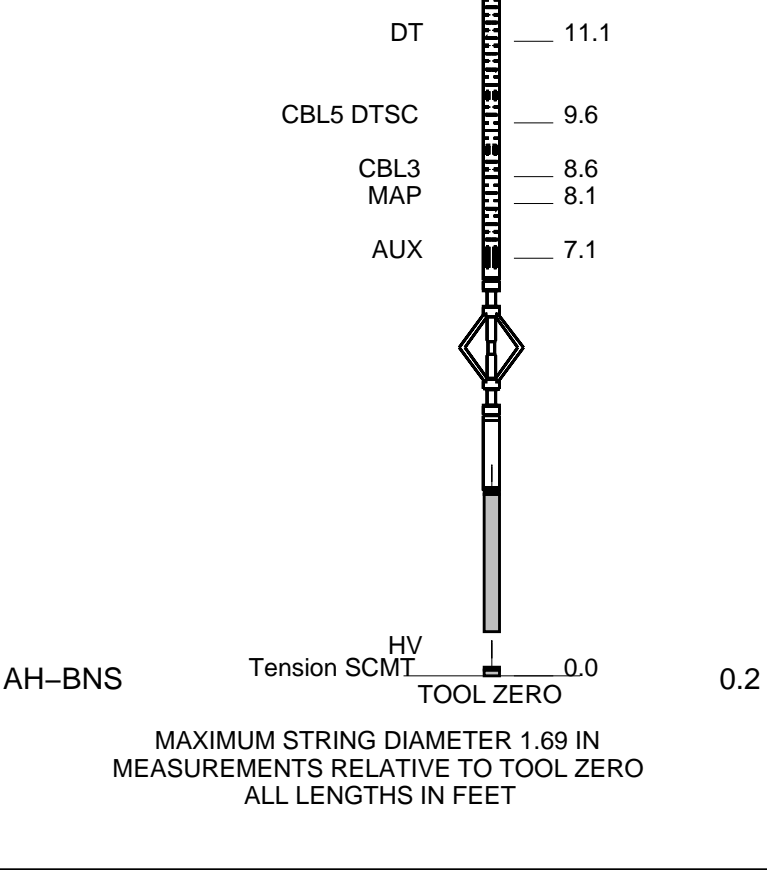
RUN 1 SERVICE ORDER #: CGF9-00125 PROGRAM VERSION: 19C0-187 FLUID LEVEL: 170 ft			RUN 2 SERVICE ORDER #: PROGRAM VERSION: FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

[illegible]

RUN 1		RUN 2	
1	2	1	2
3	4	3	4
5	6	5	6
7	8	7	8
9	10	9	10
11	12	11	12
13	14	13	14
15	16	15	16
17	18	17	18
19	20	19	20
21	22	21	22
23	24	23	24
25	26	25	26
27	28	27	28
29	30	29	30
31	32	31	32
33	34	33	34
35	36	35	36
37	38	37	38
39	40	39	40
41	42	41	42
43	44	43	44
45	46	45	46
47	48	47	48
49	50	49	50
51	52	51	52
53	54	53	54
55	56	55	56
57	58	57	58
59	60	59	60
61	62	61	62
63	64	63	64
65	66	65	66
67	68	67	68
69	70	69	70
71	72	71	72
73	74	73	74
75	76	75	76
77	78	77	78
79	80	79	80
81	82	81	82
83	84	83	84
85	86	85	86
87	88	87	88
89	90	89	90
91	92	91	92
93	94	93	94
95	96	95	96
97	98	97	98
99	100	99	100

SURFACE EQUIPMENT	
WITM-A PSC_16MHZ	

DOWNHOLE EQUIPMENT			
MH-22 MH-22			30.3
AH-38	Detail MT TelStatus CTEM		28.7
PSPT		28.4	28.4
PSC-A PSPT-B 928 PSTC-A PBMS-B CQG_F_Mano RTD_Thermometer GR CCL PBMS	GR	24.7	
	Well_Temp CQG Manom CCL	21.7 21.3 20.9	
	PBMS PSTC	20.2	
SCMT-CB SCMC-CA 8248 SECH-CA CMIR-AG SCMS-CB 8179 SCMX-CA			20.2



Schlumberger

MAIN PASS CBL VDL

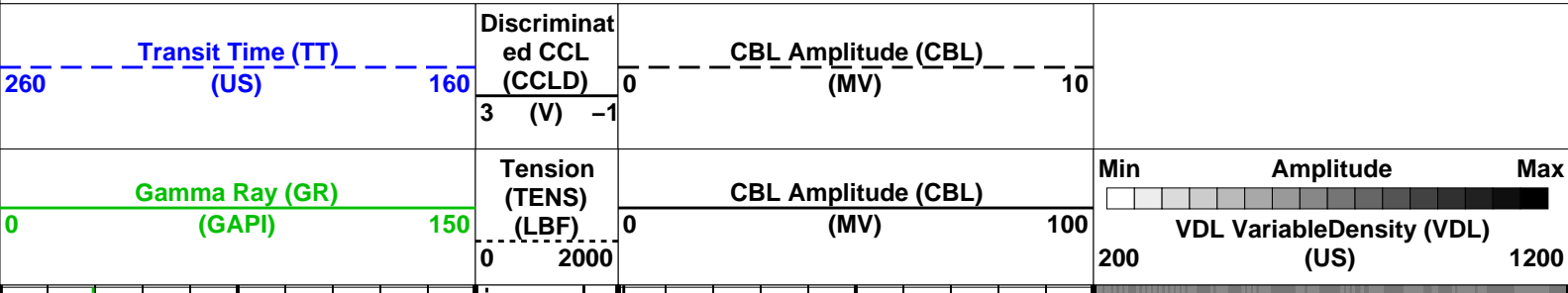
MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC Well: SG 8507D-23 (L24 496)

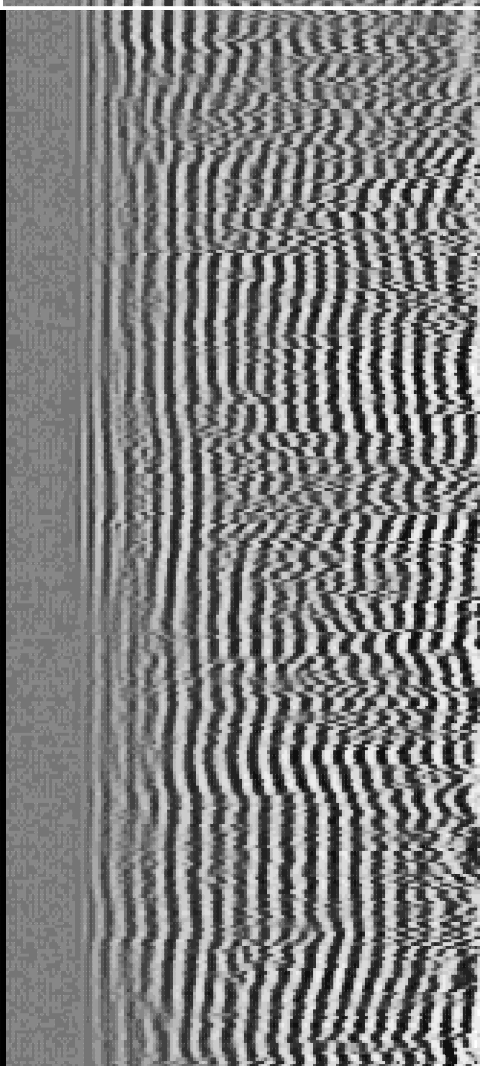
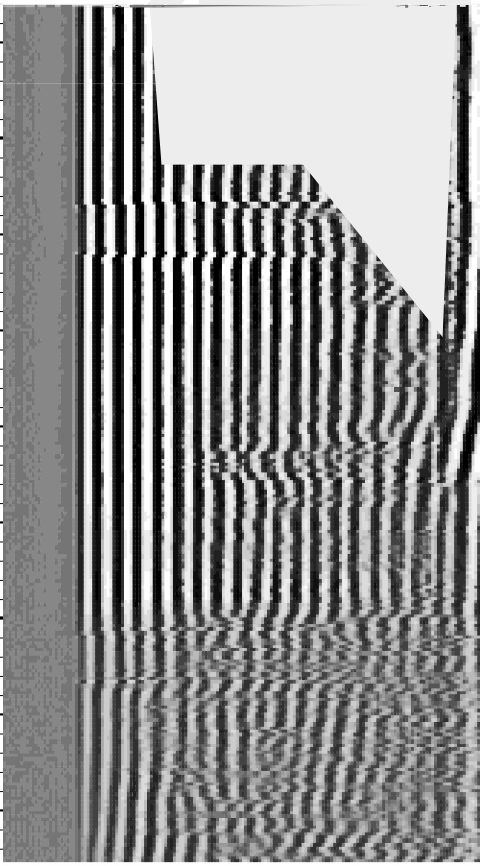
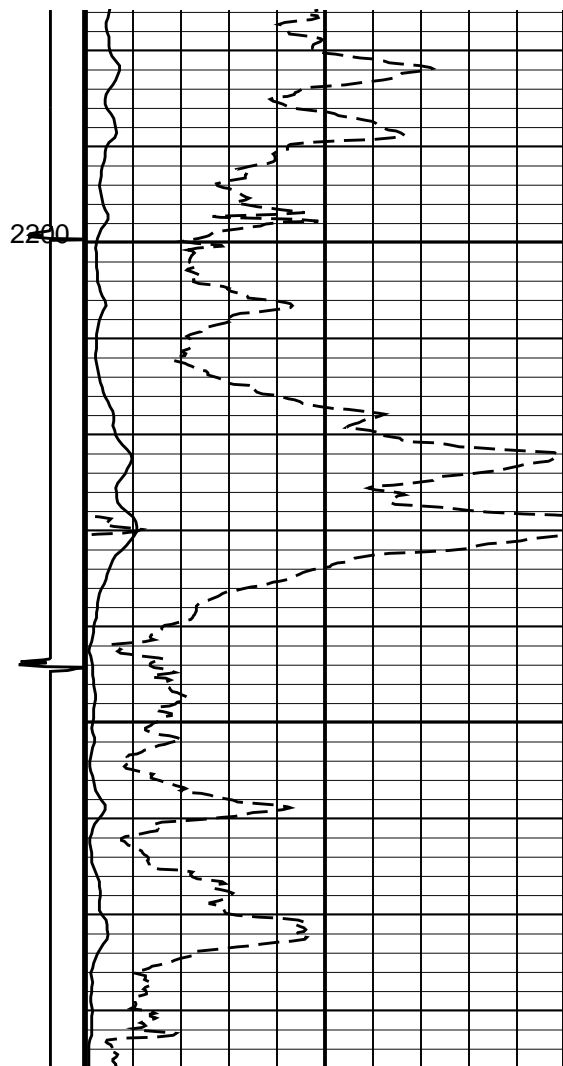
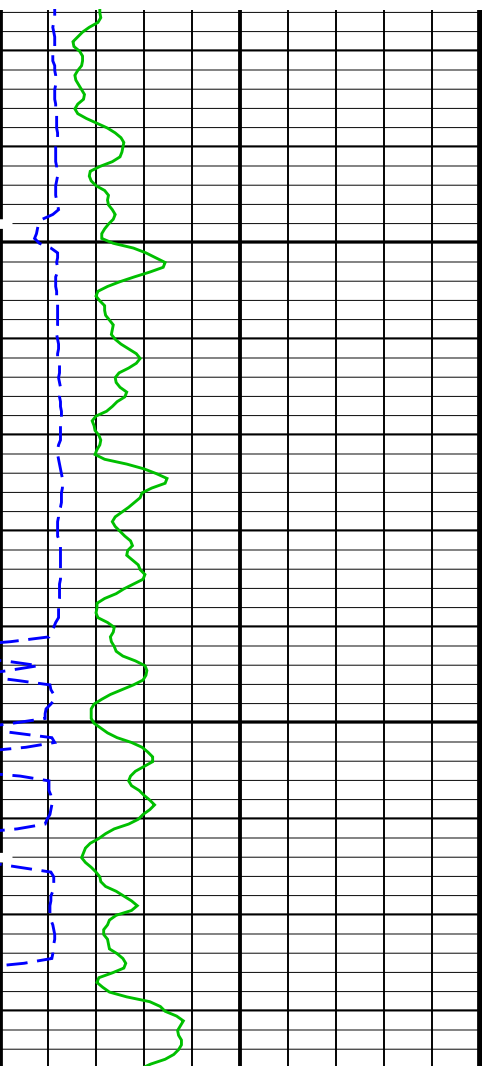
Input DLIS Files						
DEFAULT	SCMT_PSP_045LUP	FN:42	PRODUCER	05-Sep-2013 23:00	12610.5 FT	99.0 FT
Output DLIS Files						
DEFAULT	SCMT_PSP_048PUP	FN:45	PRODUCER	06-Sep-2013 02:18	12616.5 FT	83.5 FT

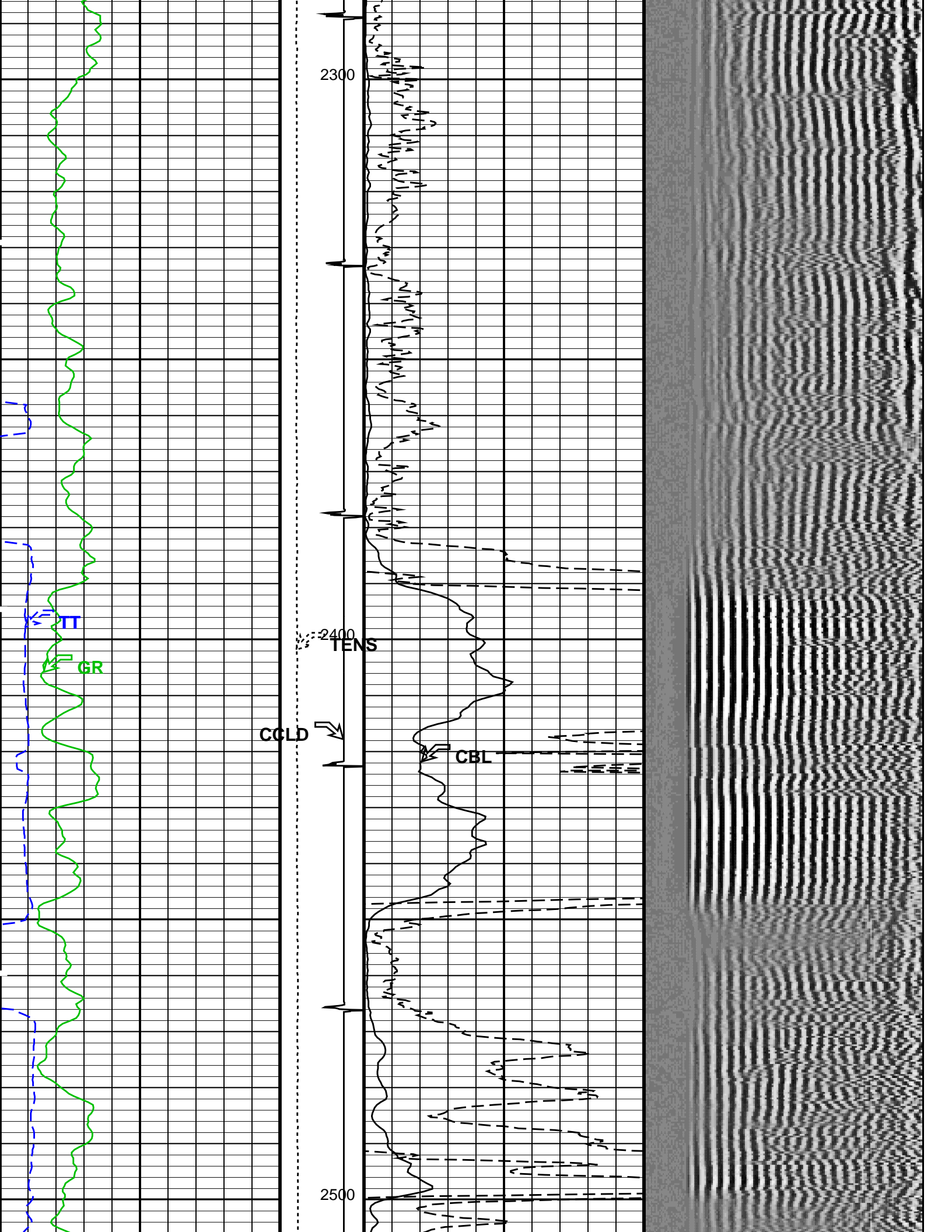
OP System Version: 19C0-187			
SCMT-CB	SRPC-5214-H2-2012-OP1	PSPT	SRPC-5214-H2-2012-OP1

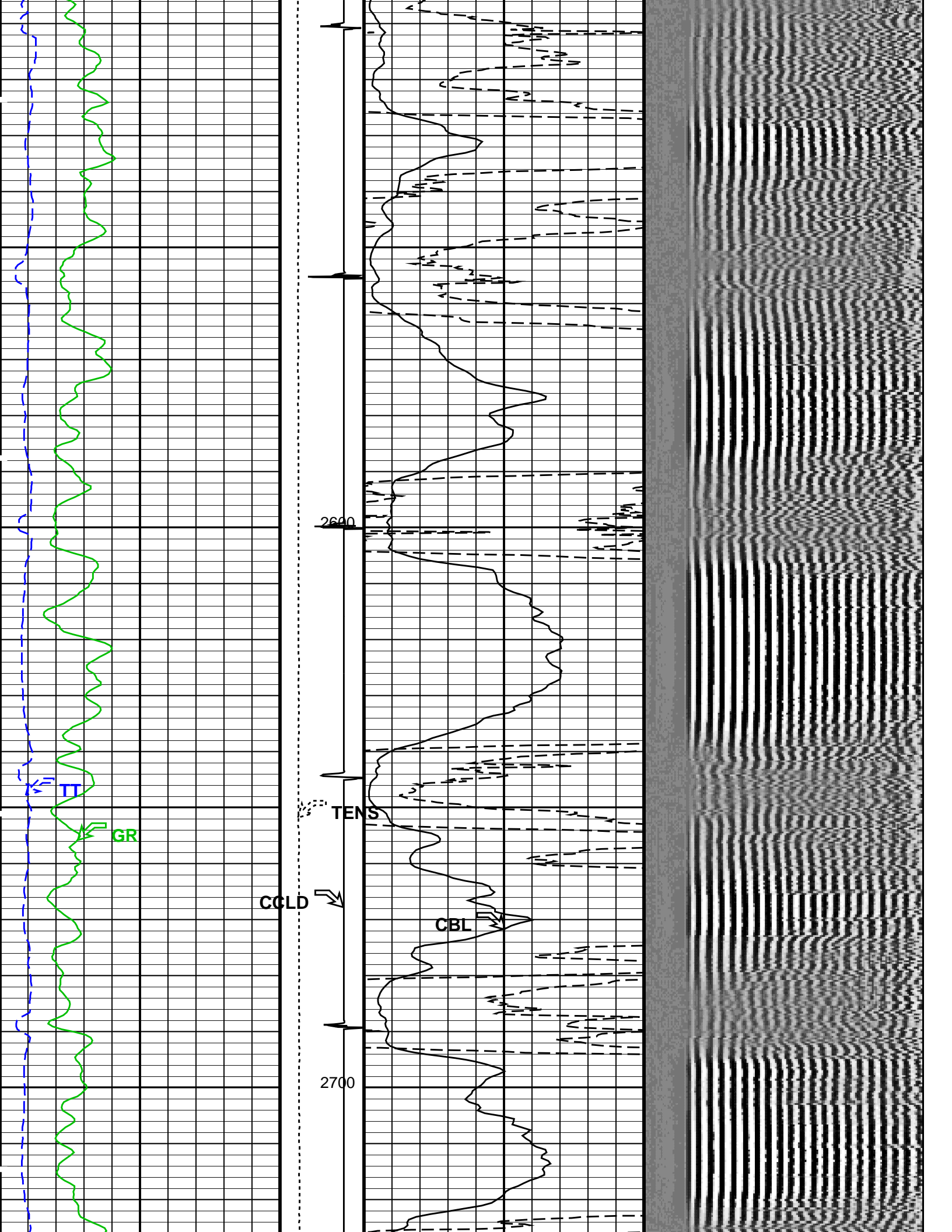
PIP SUMMARY

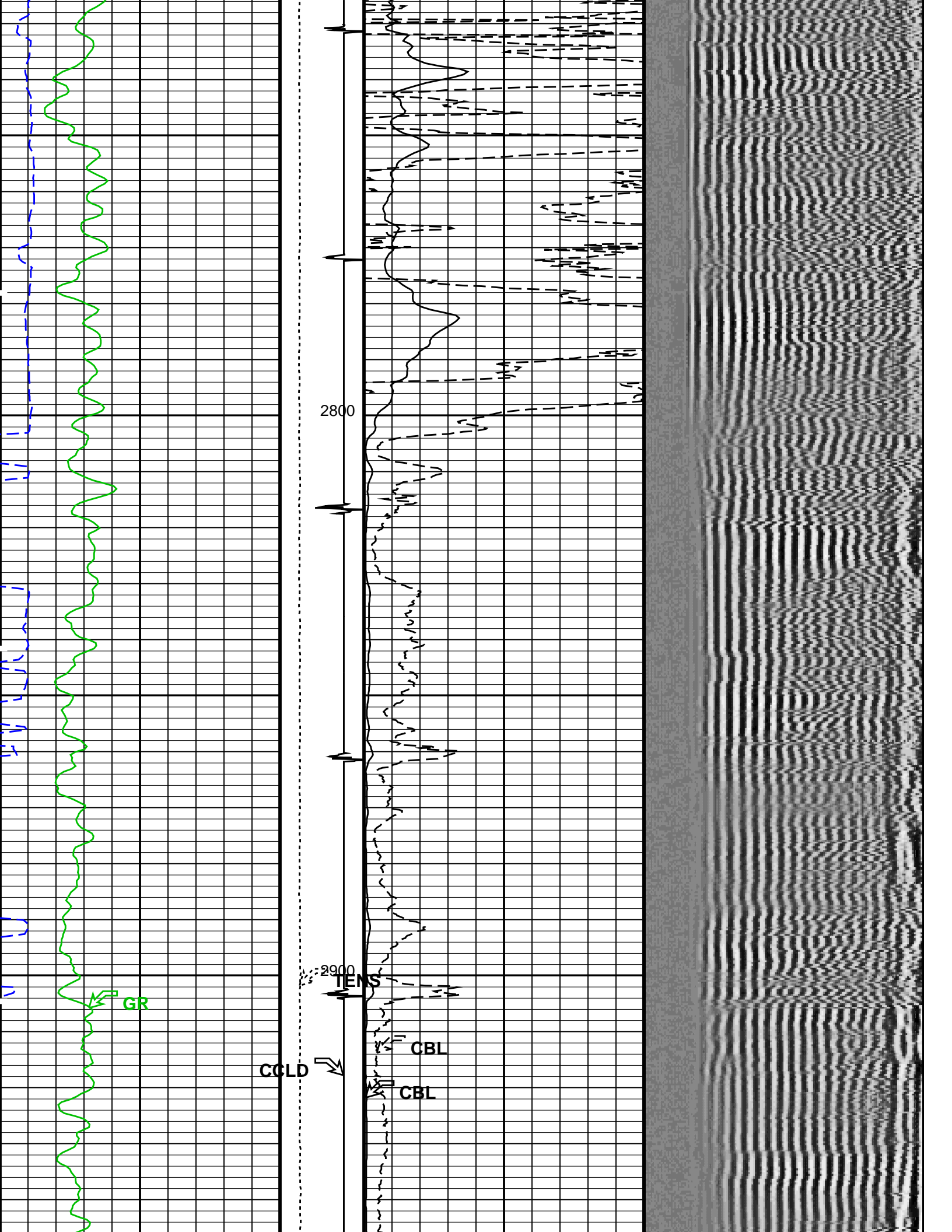


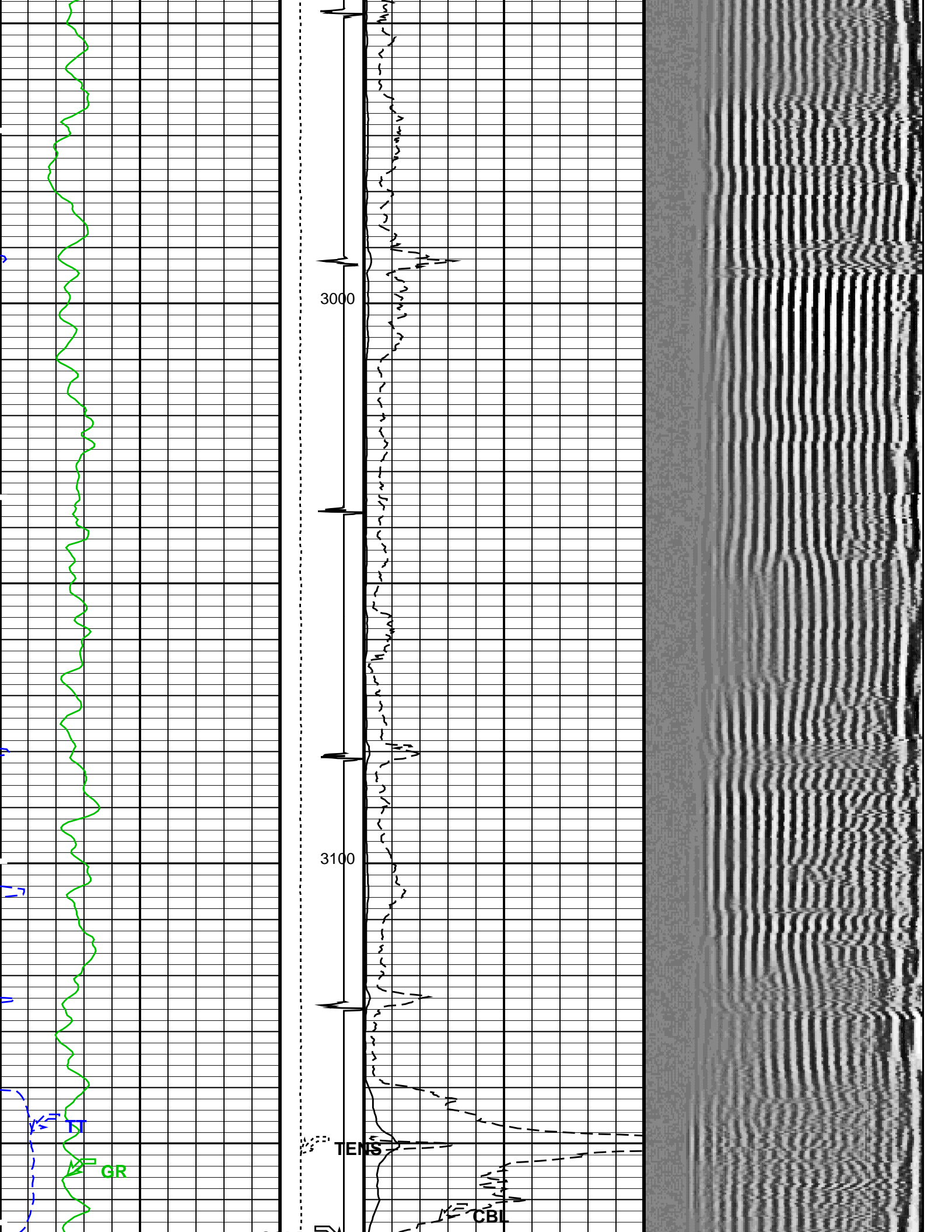


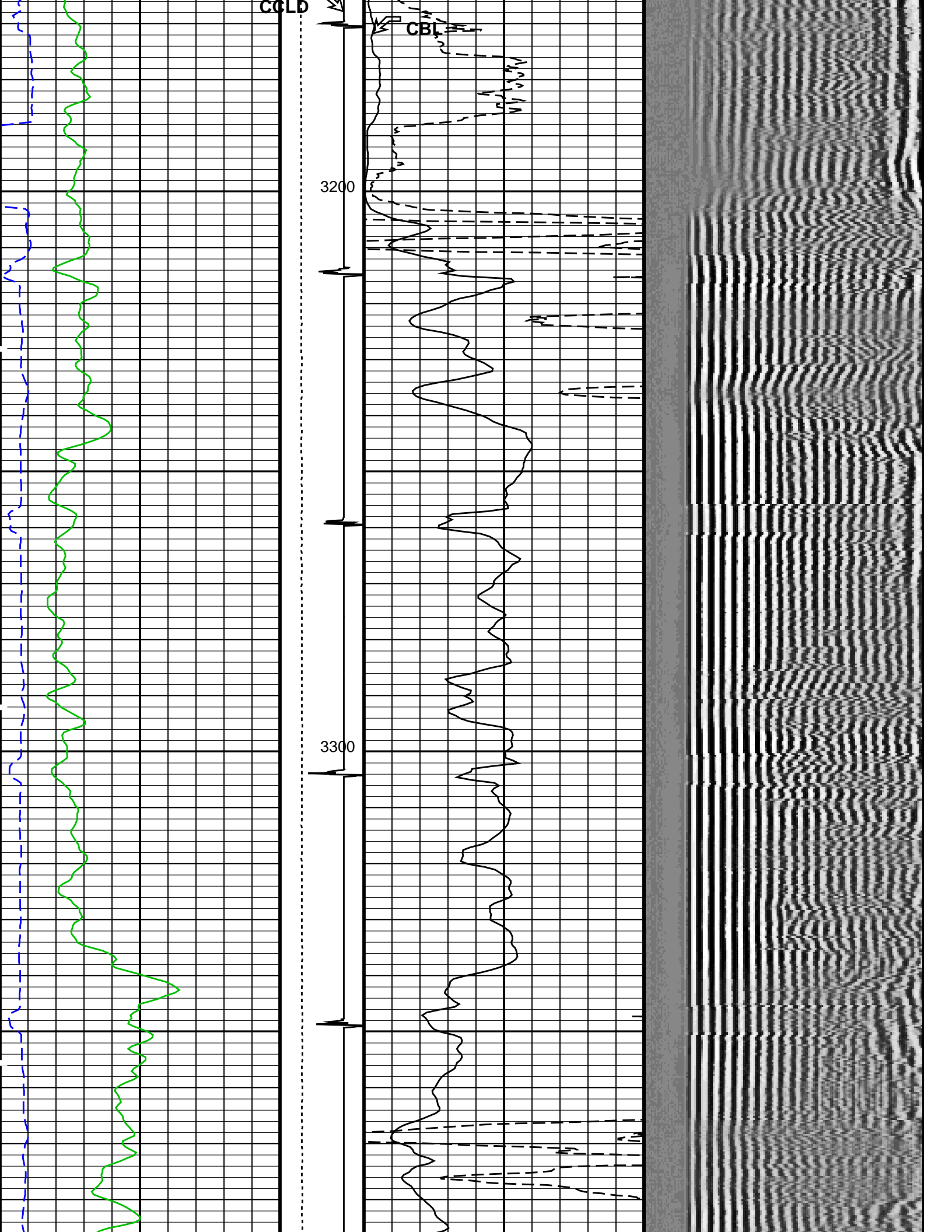


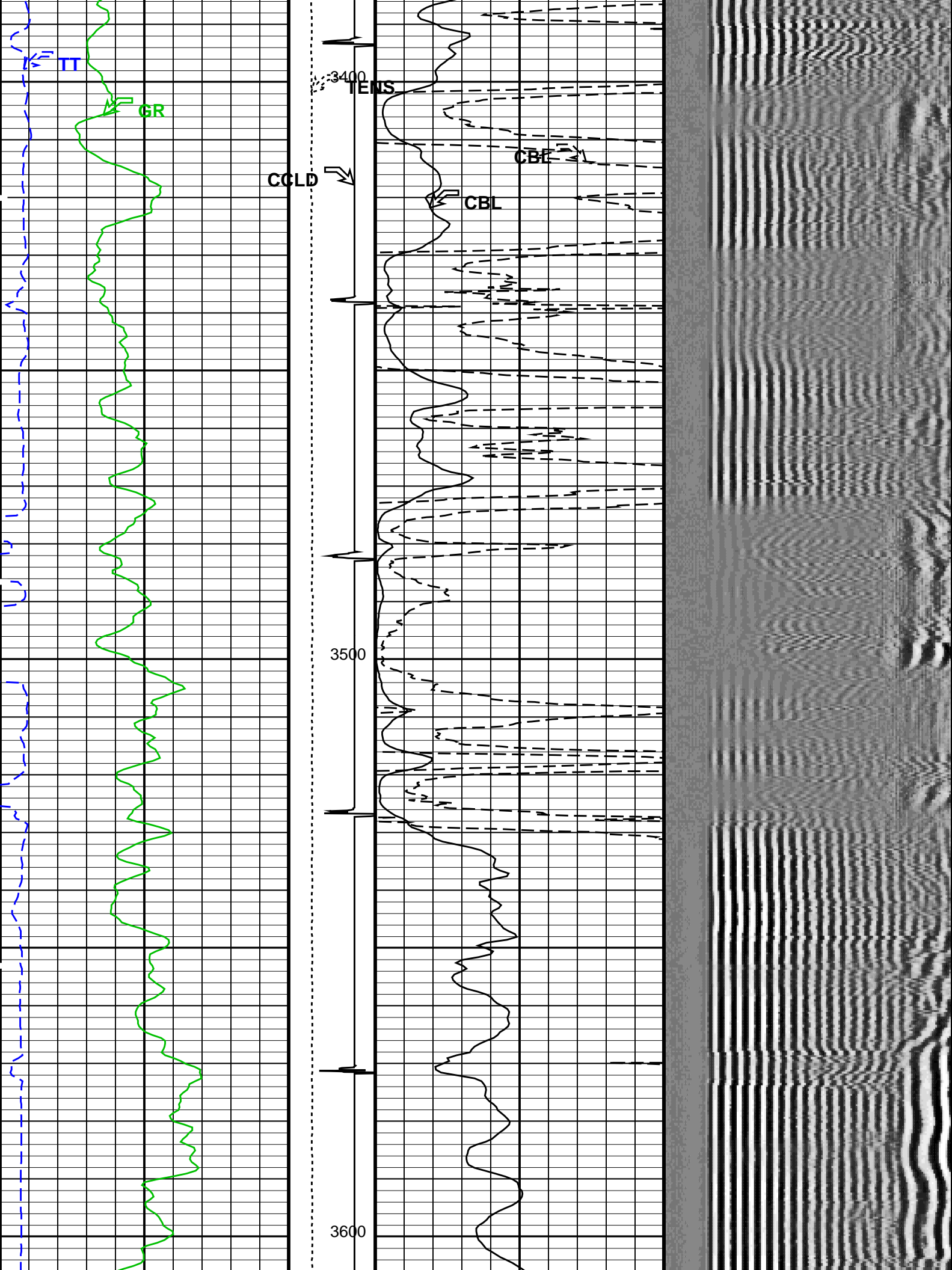


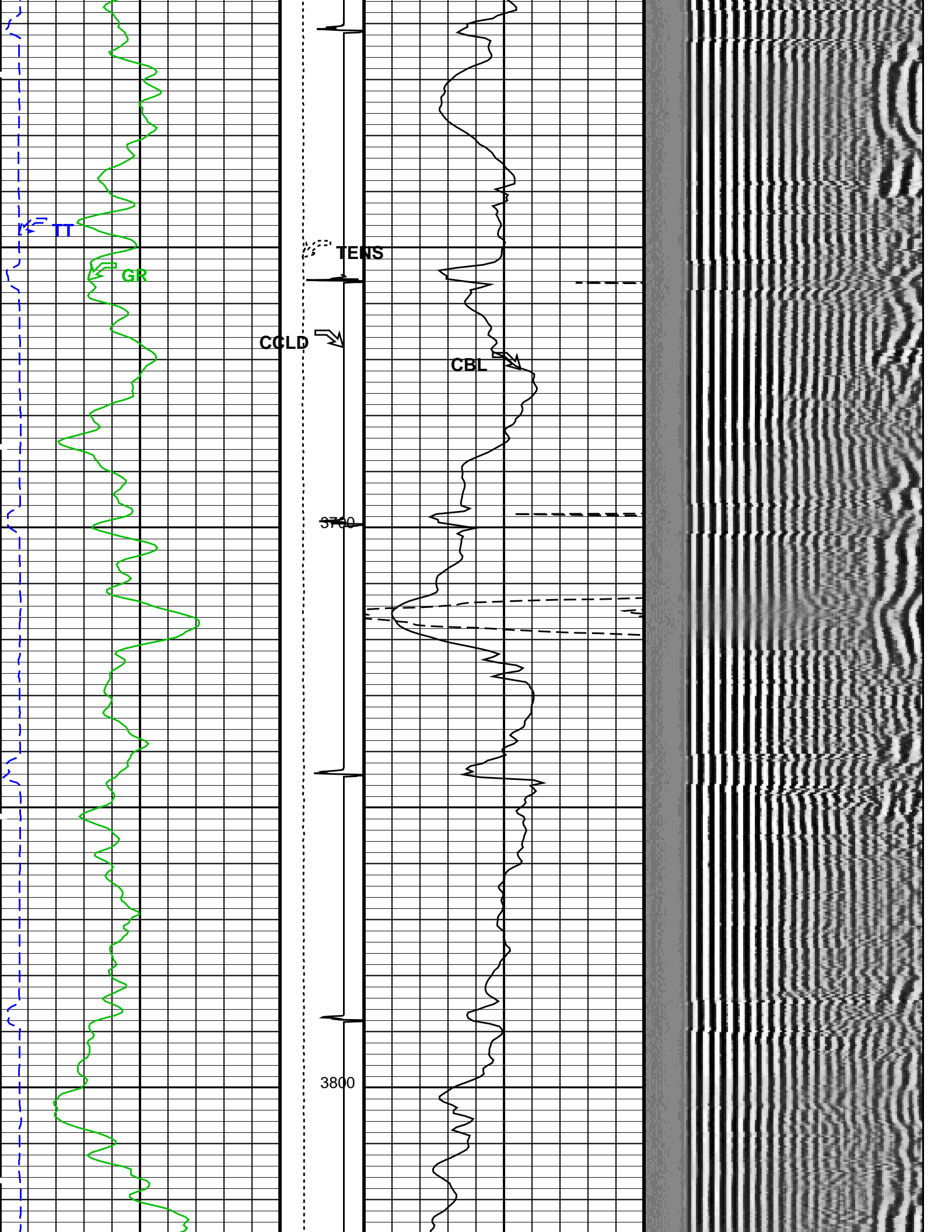


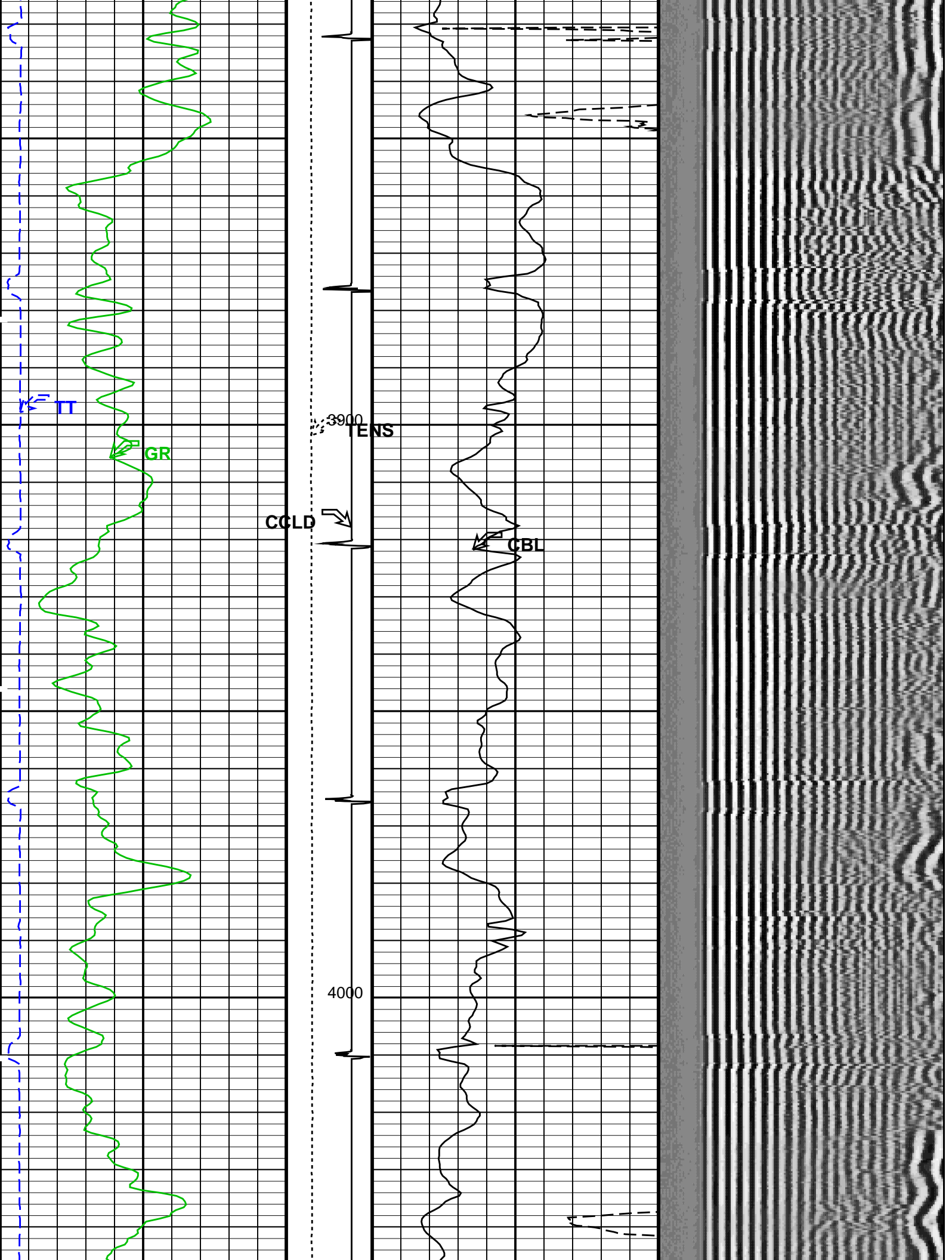


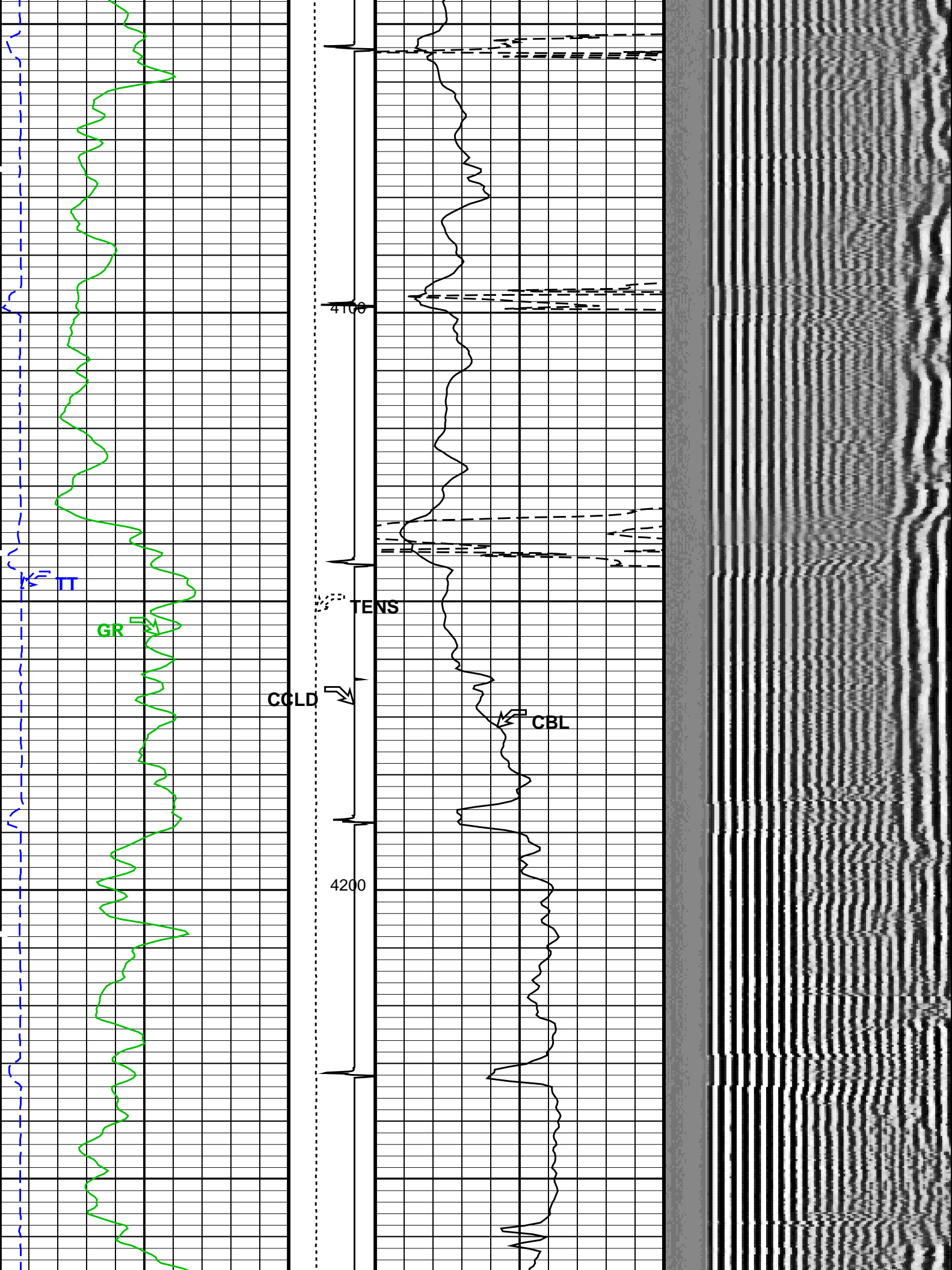


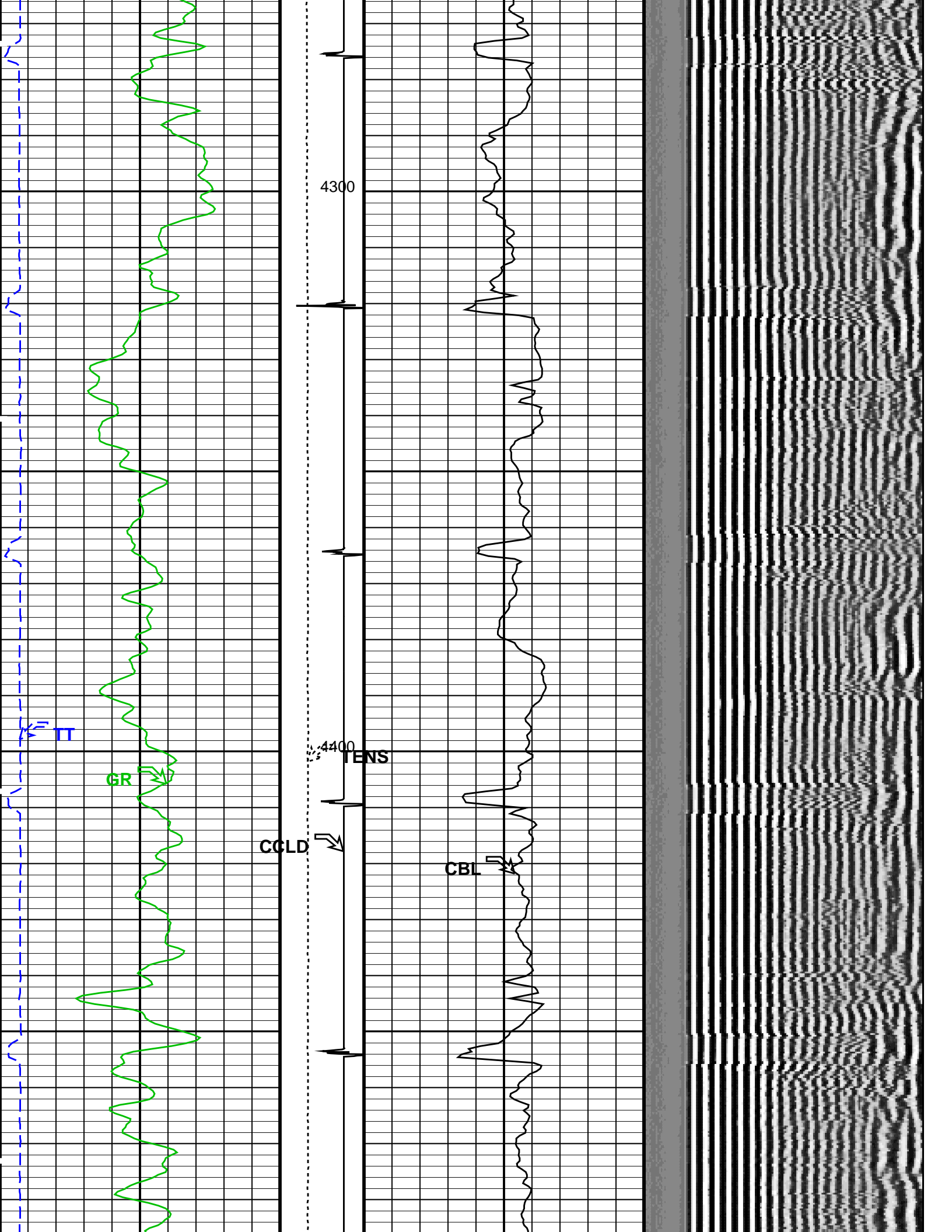


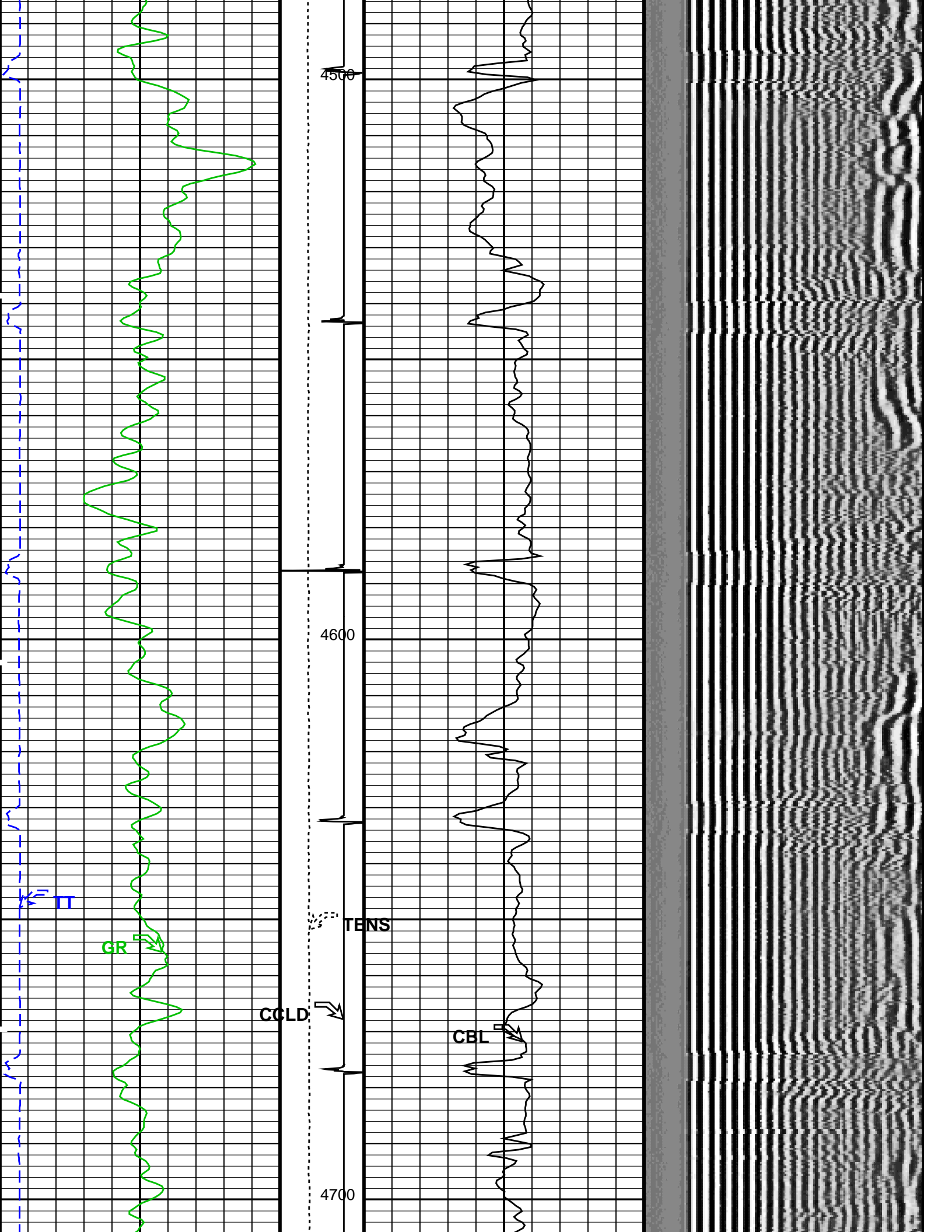


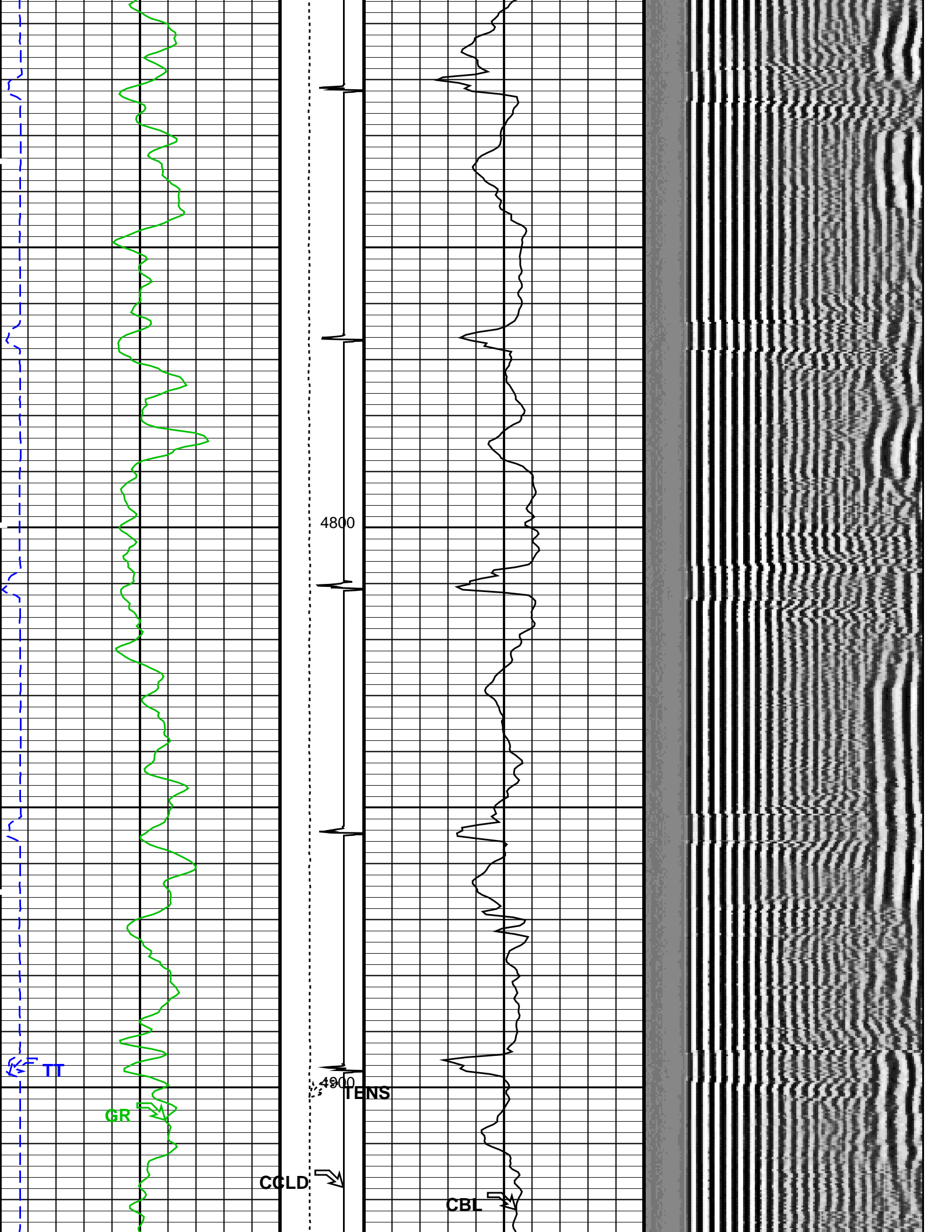


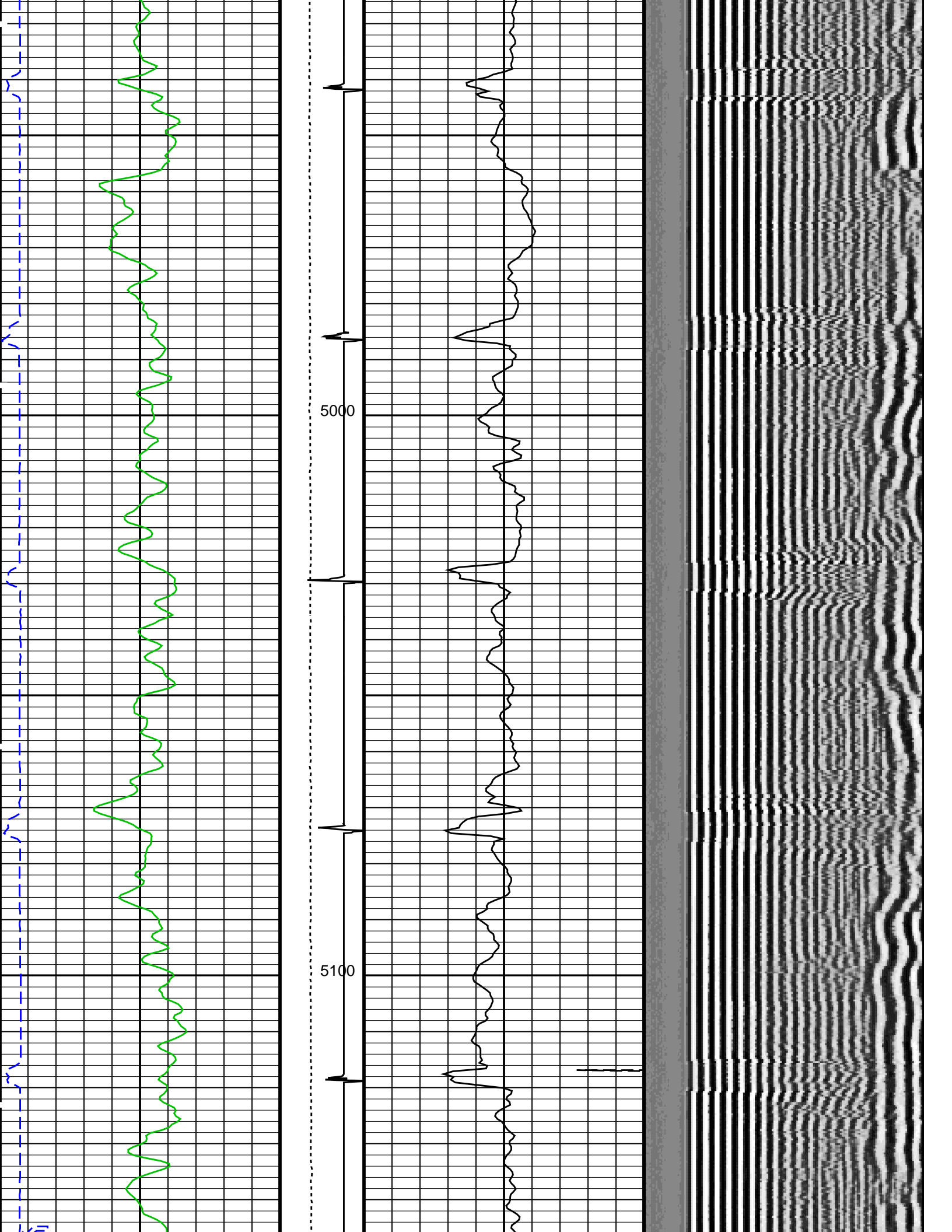


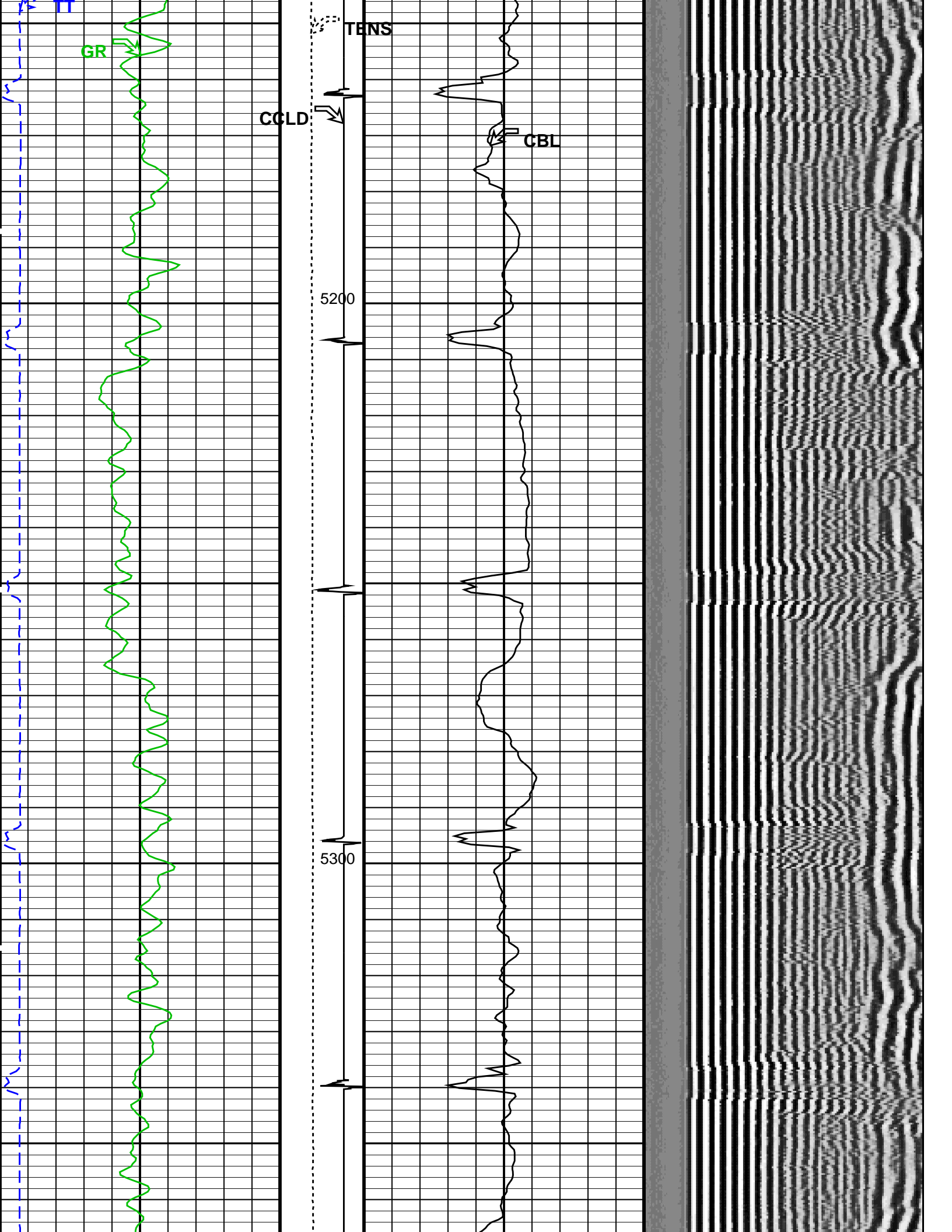


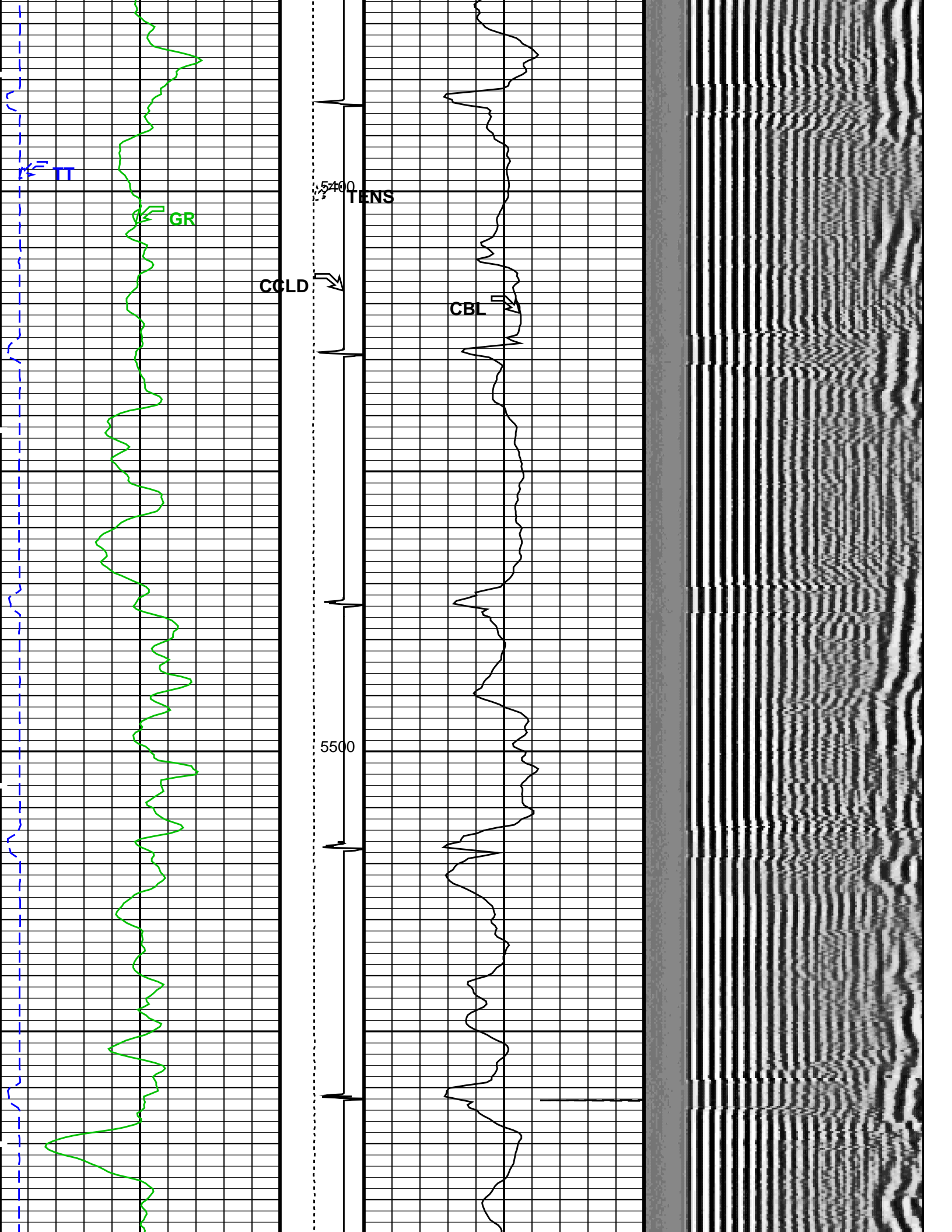


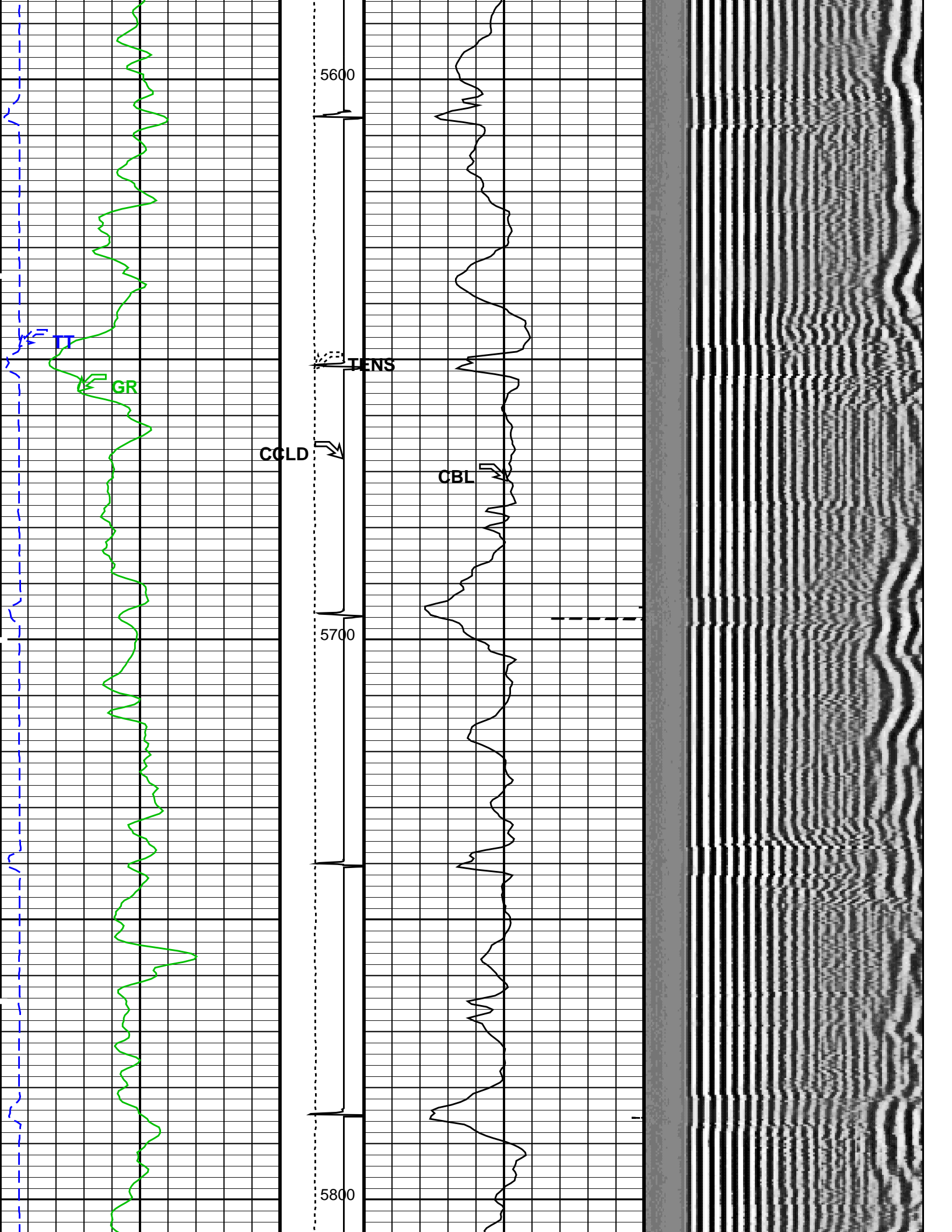


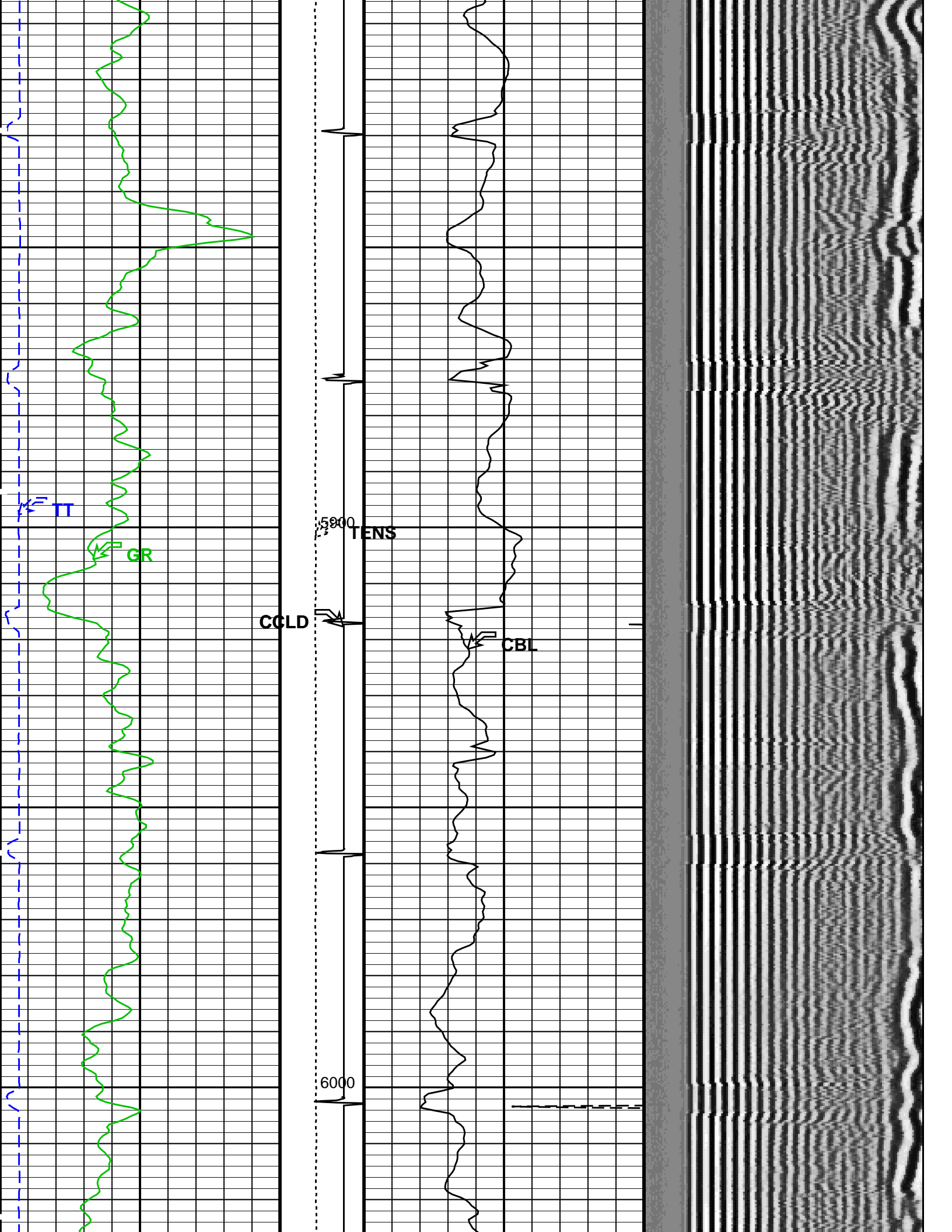


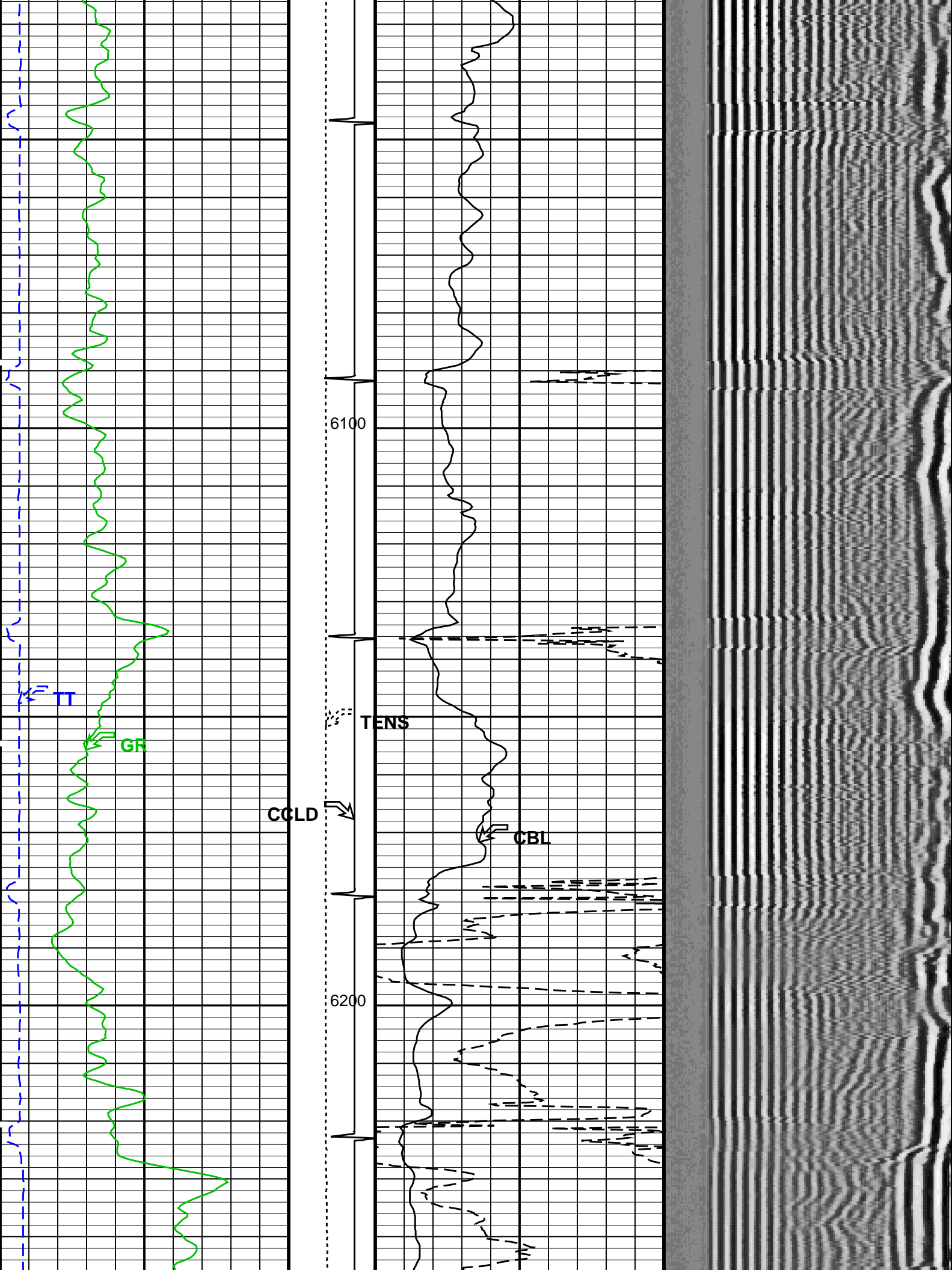


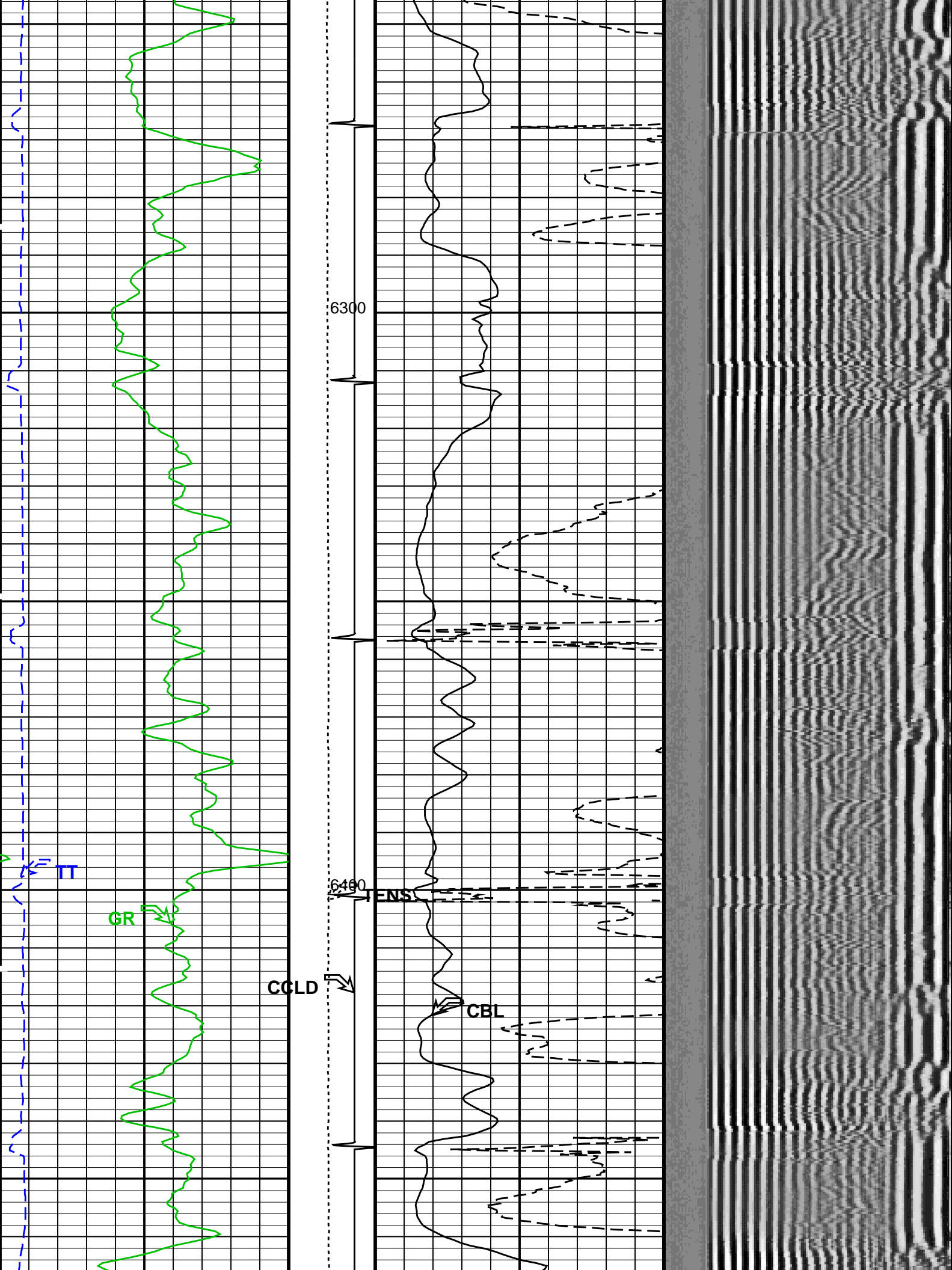


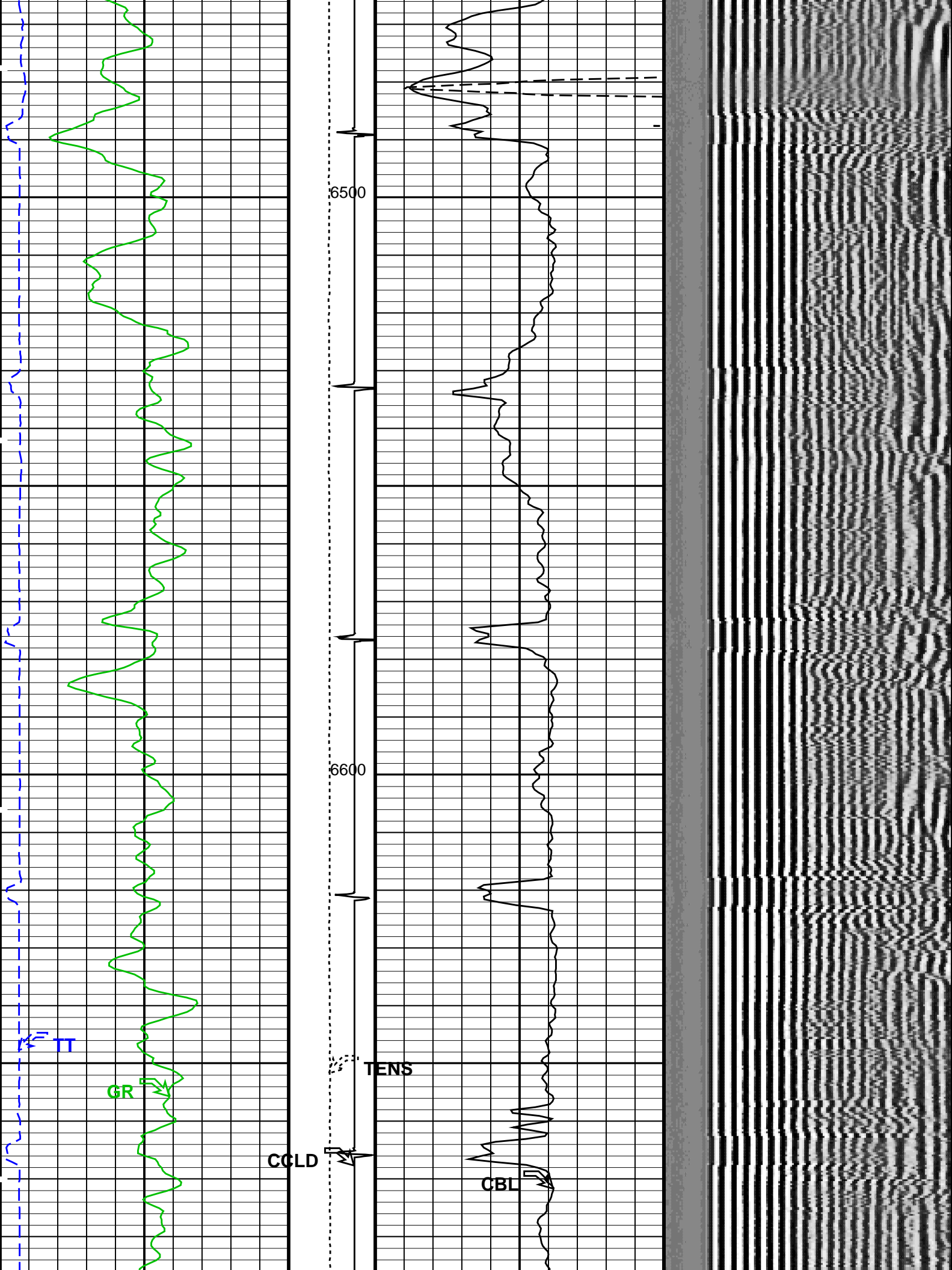


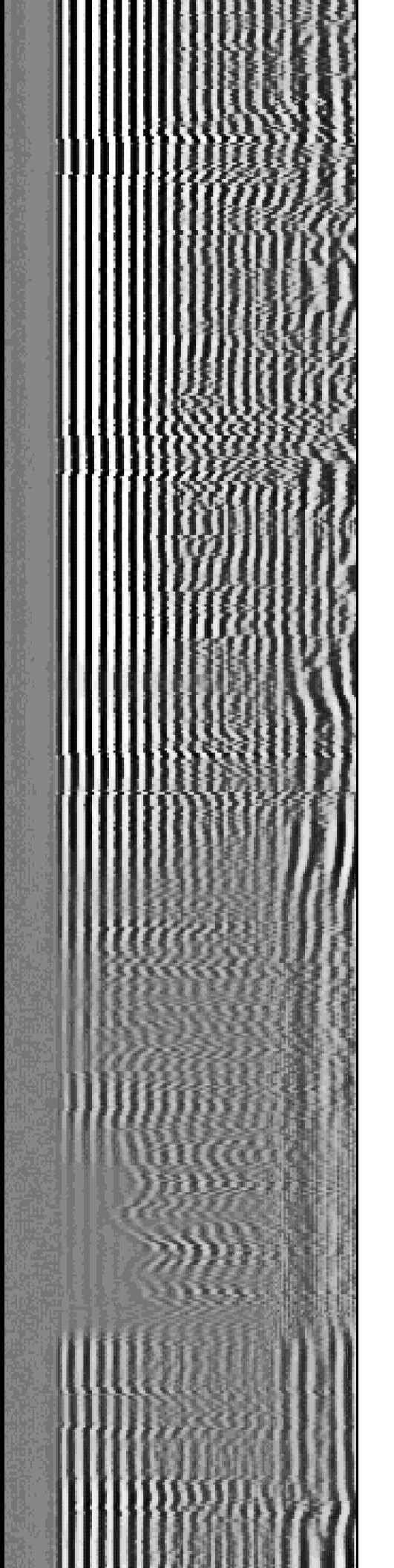
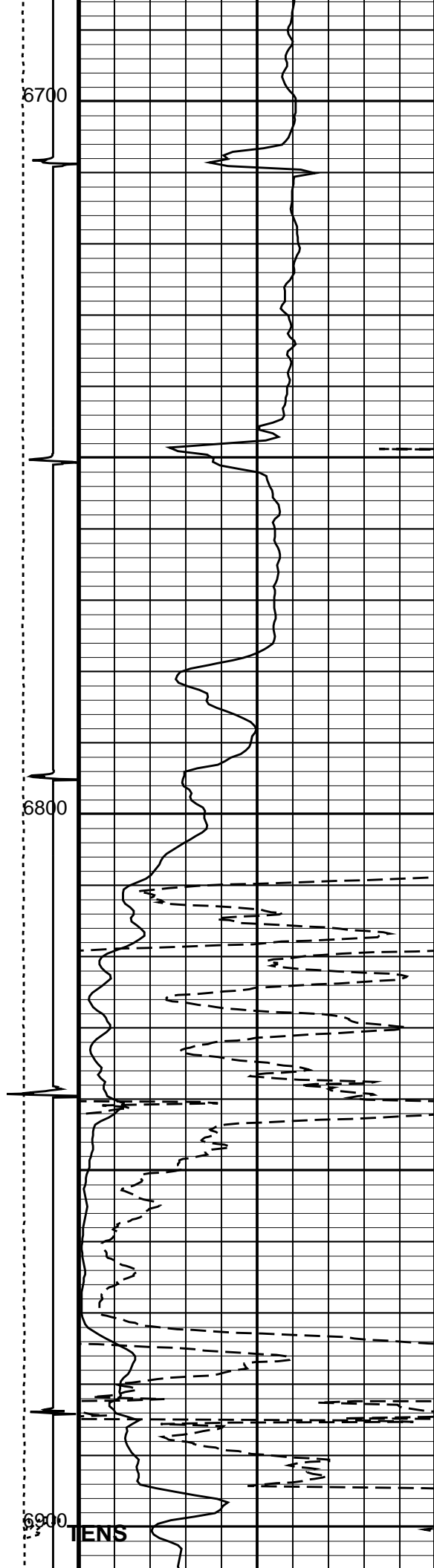
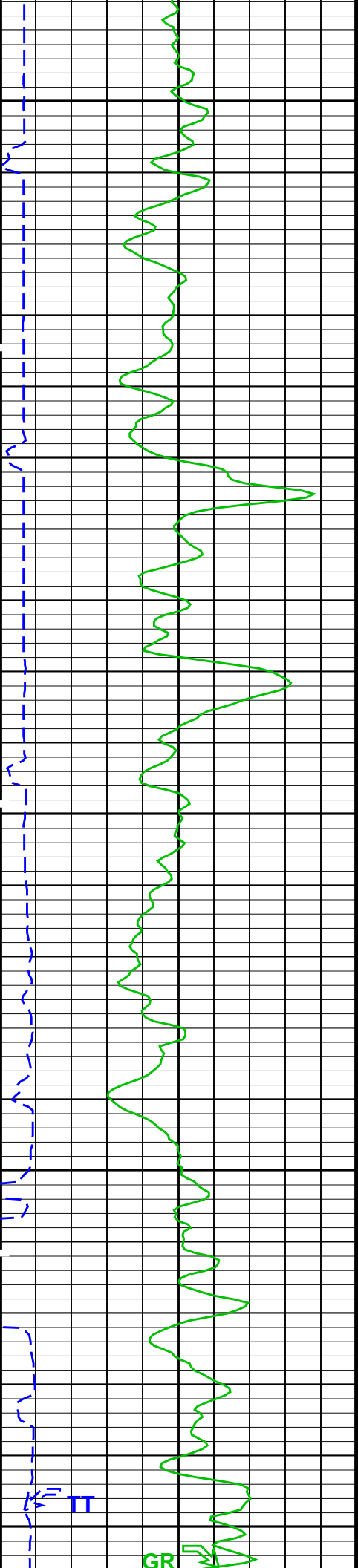


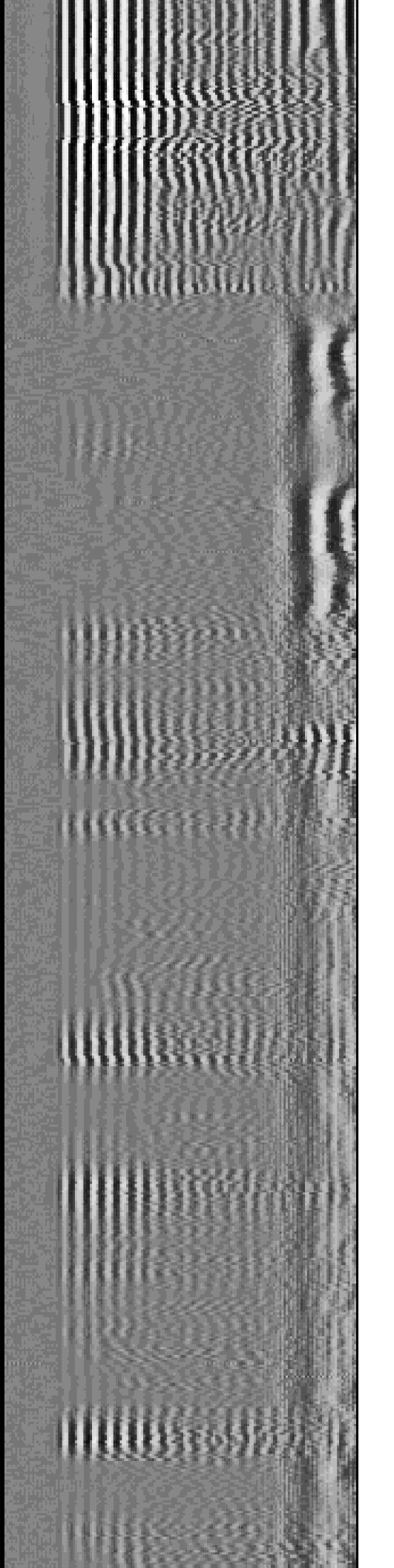
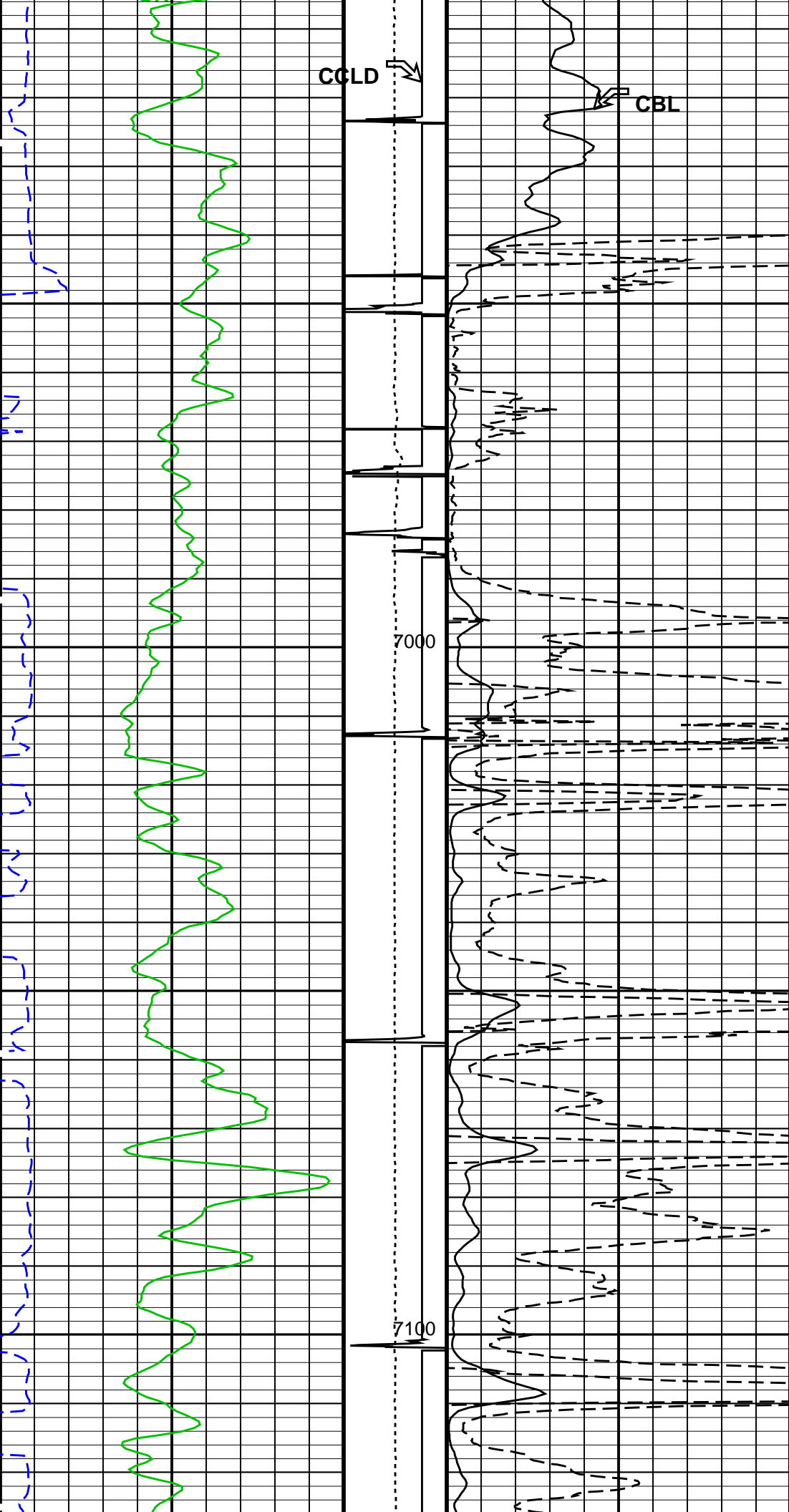


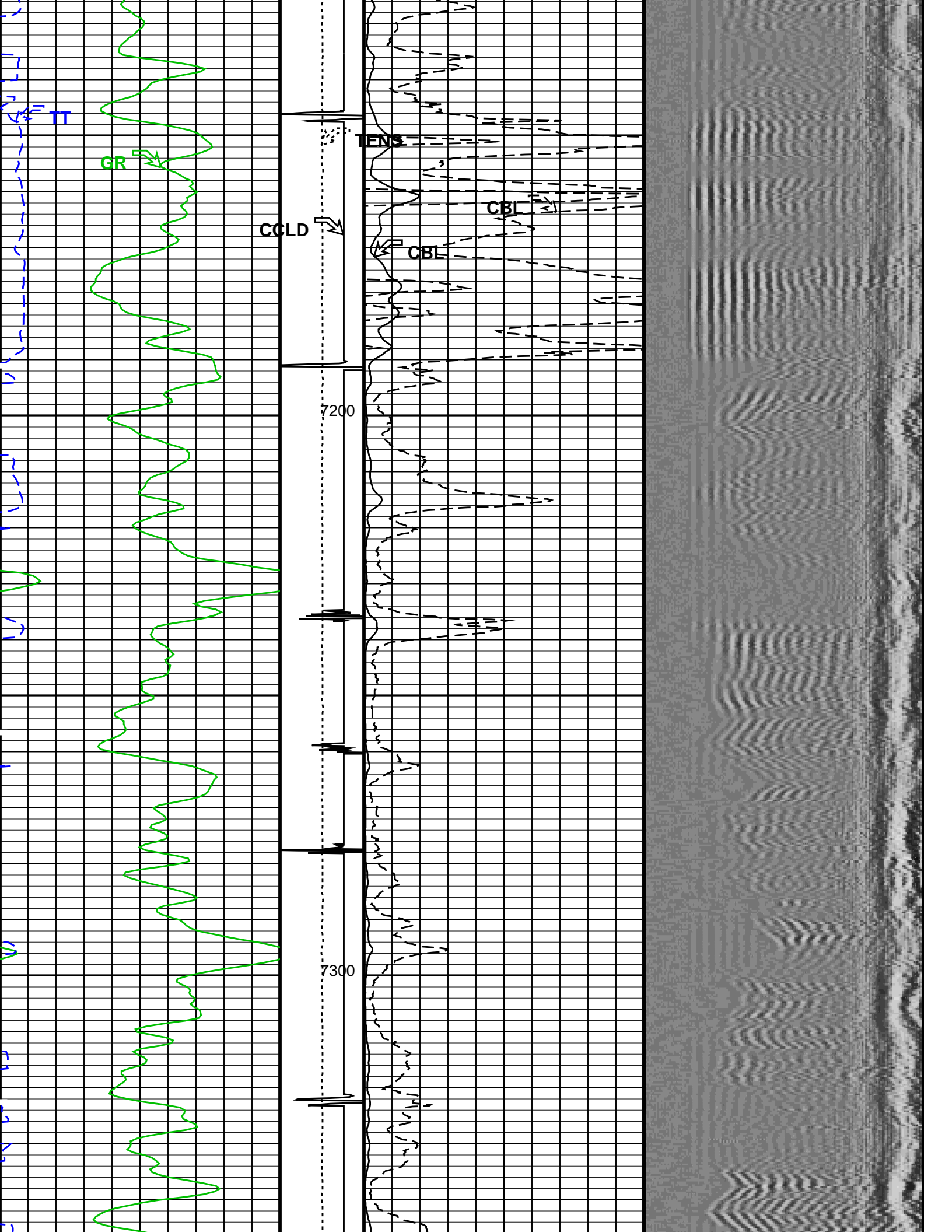


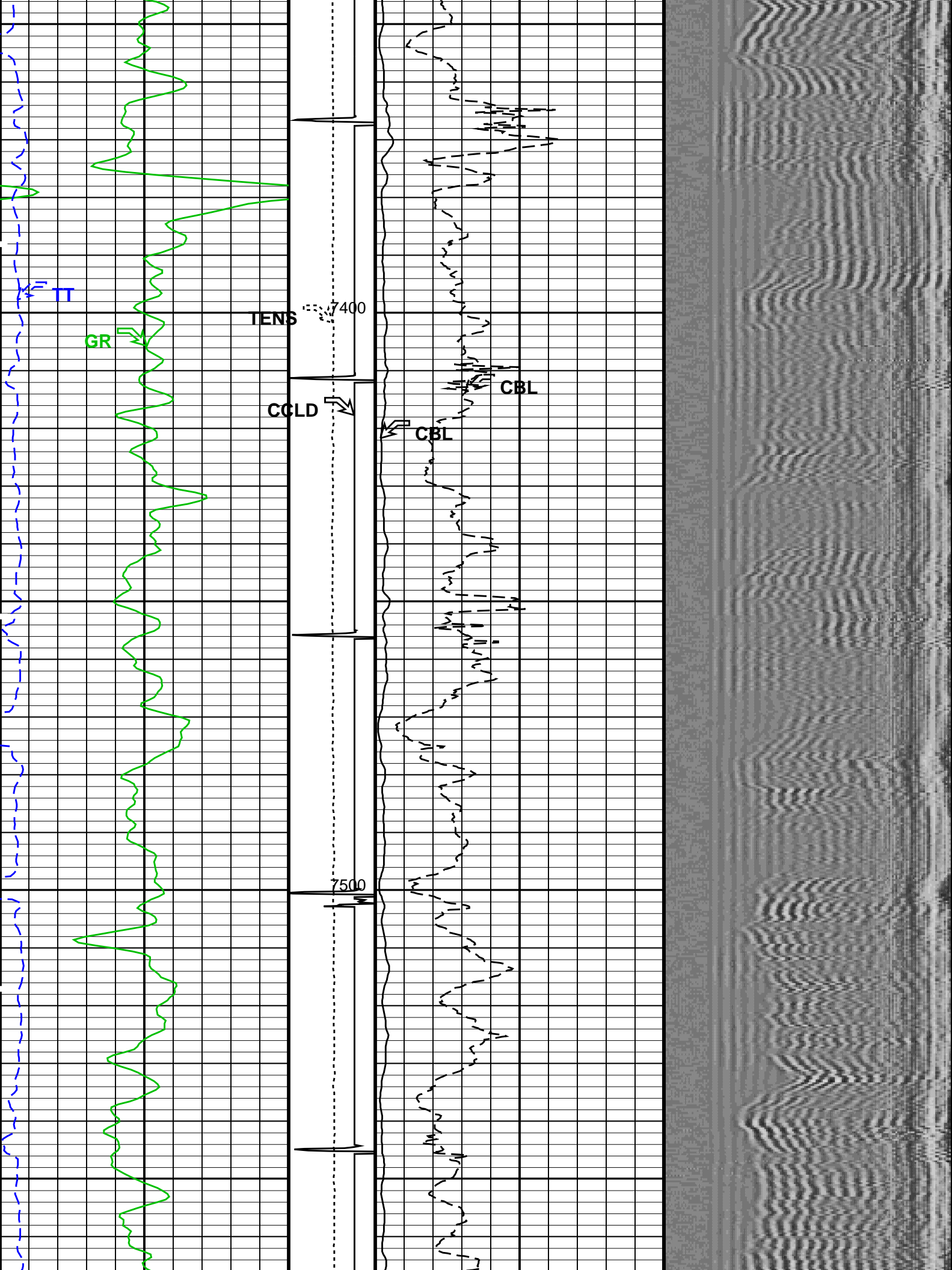


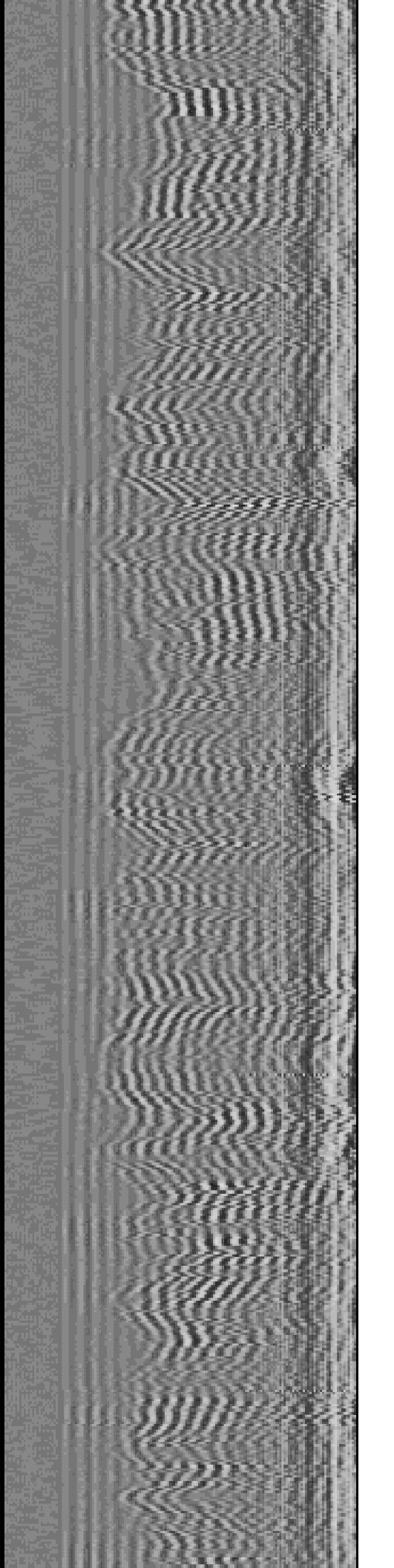
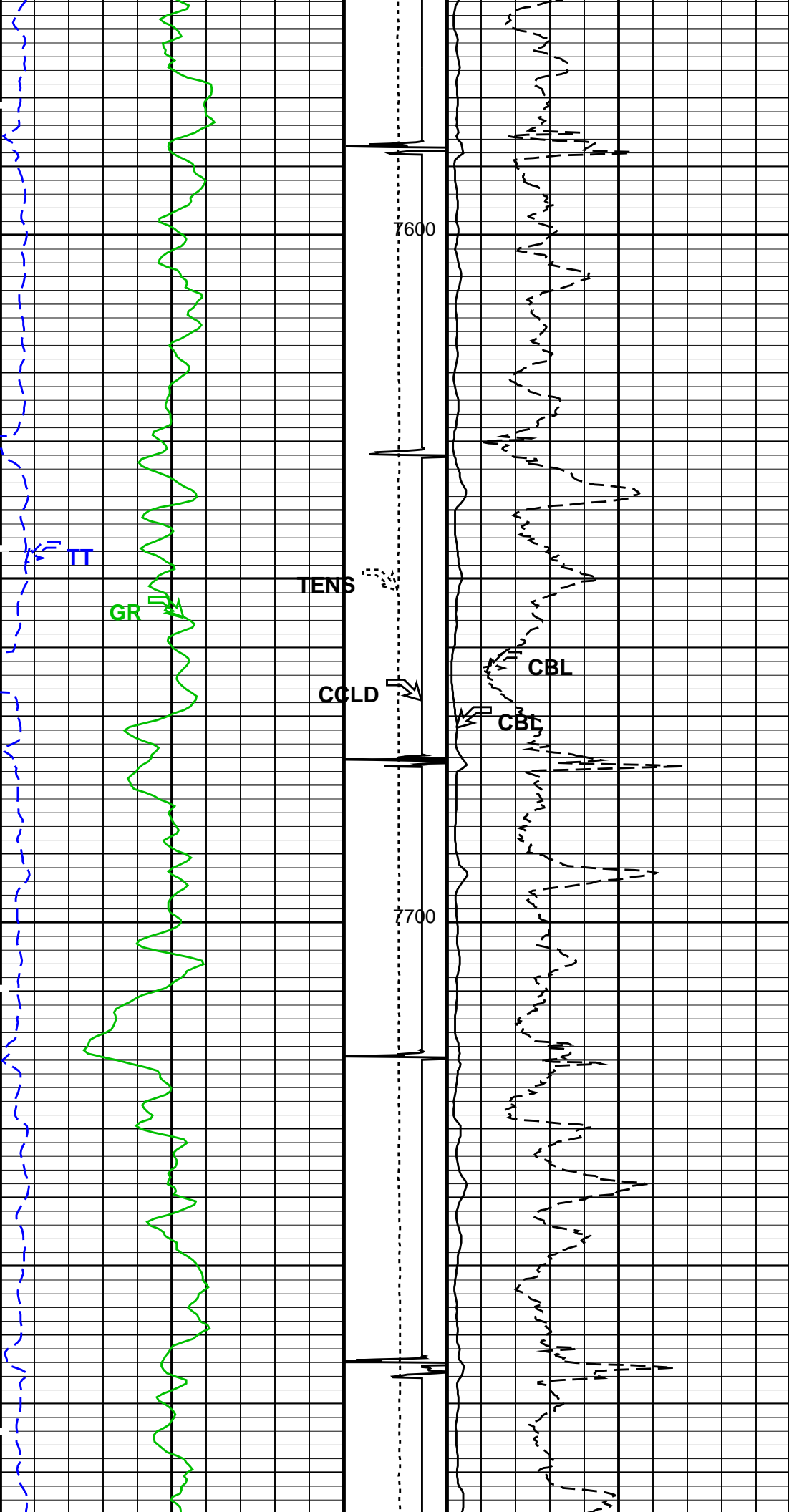


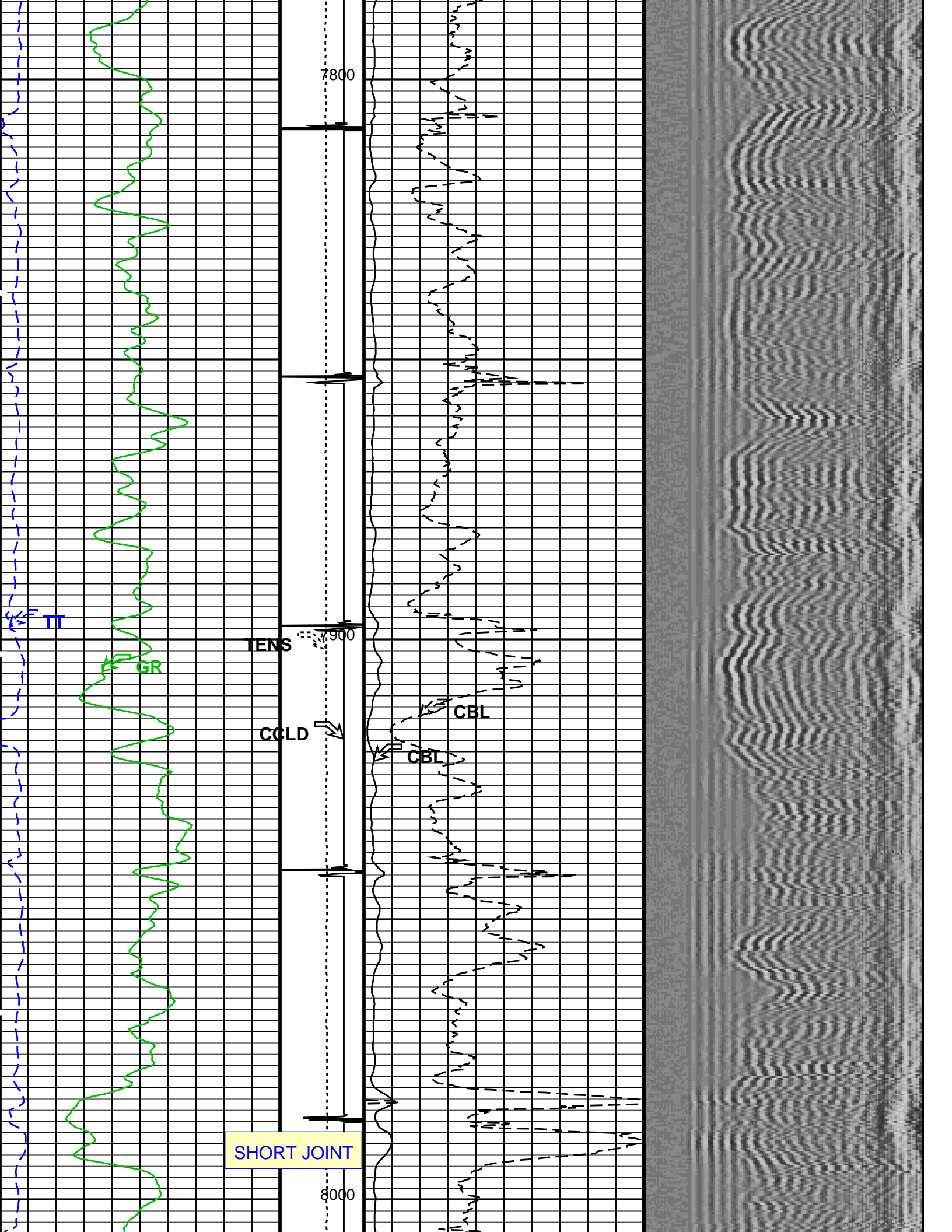


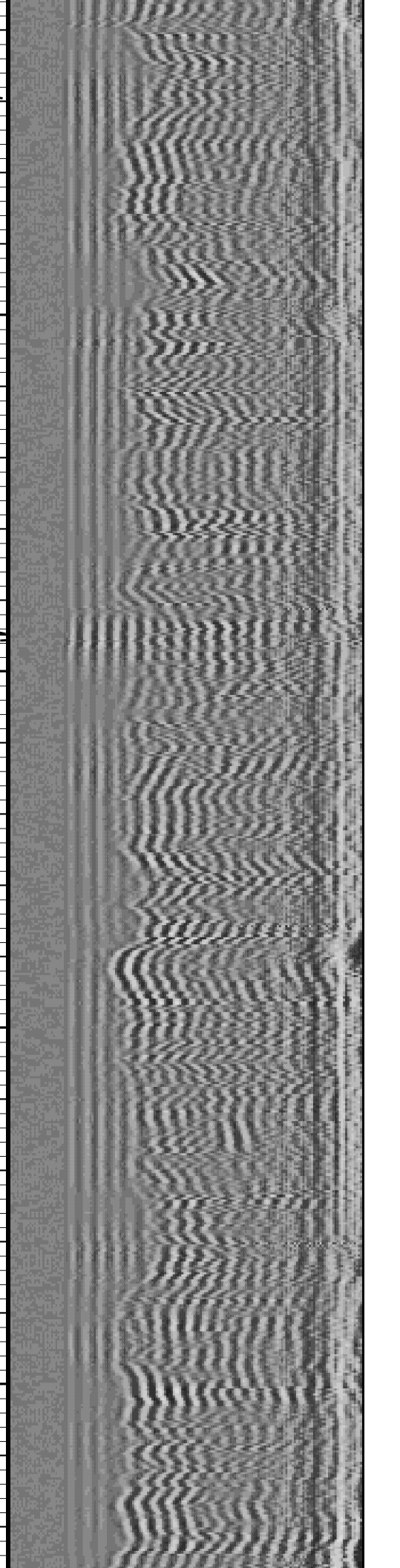
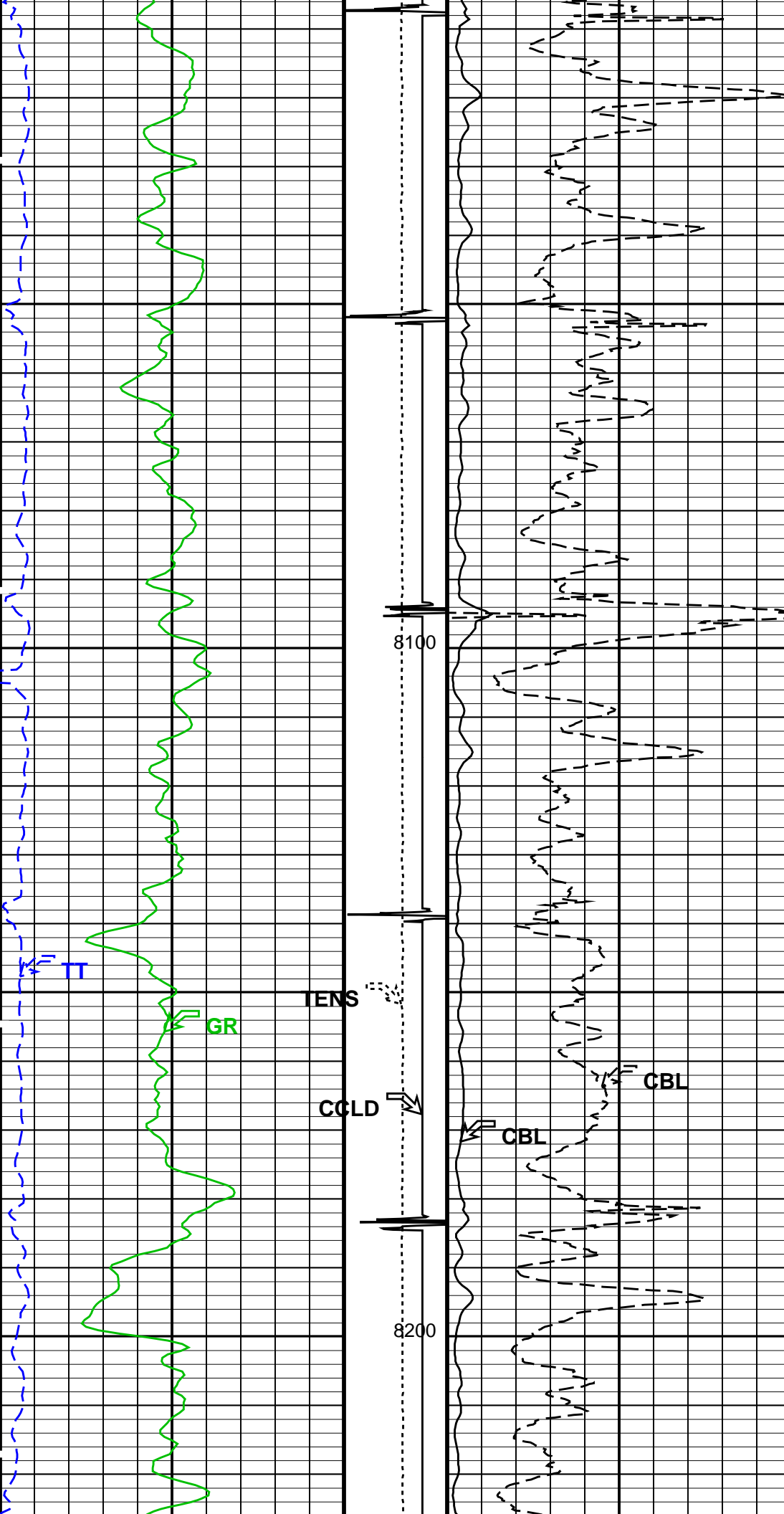


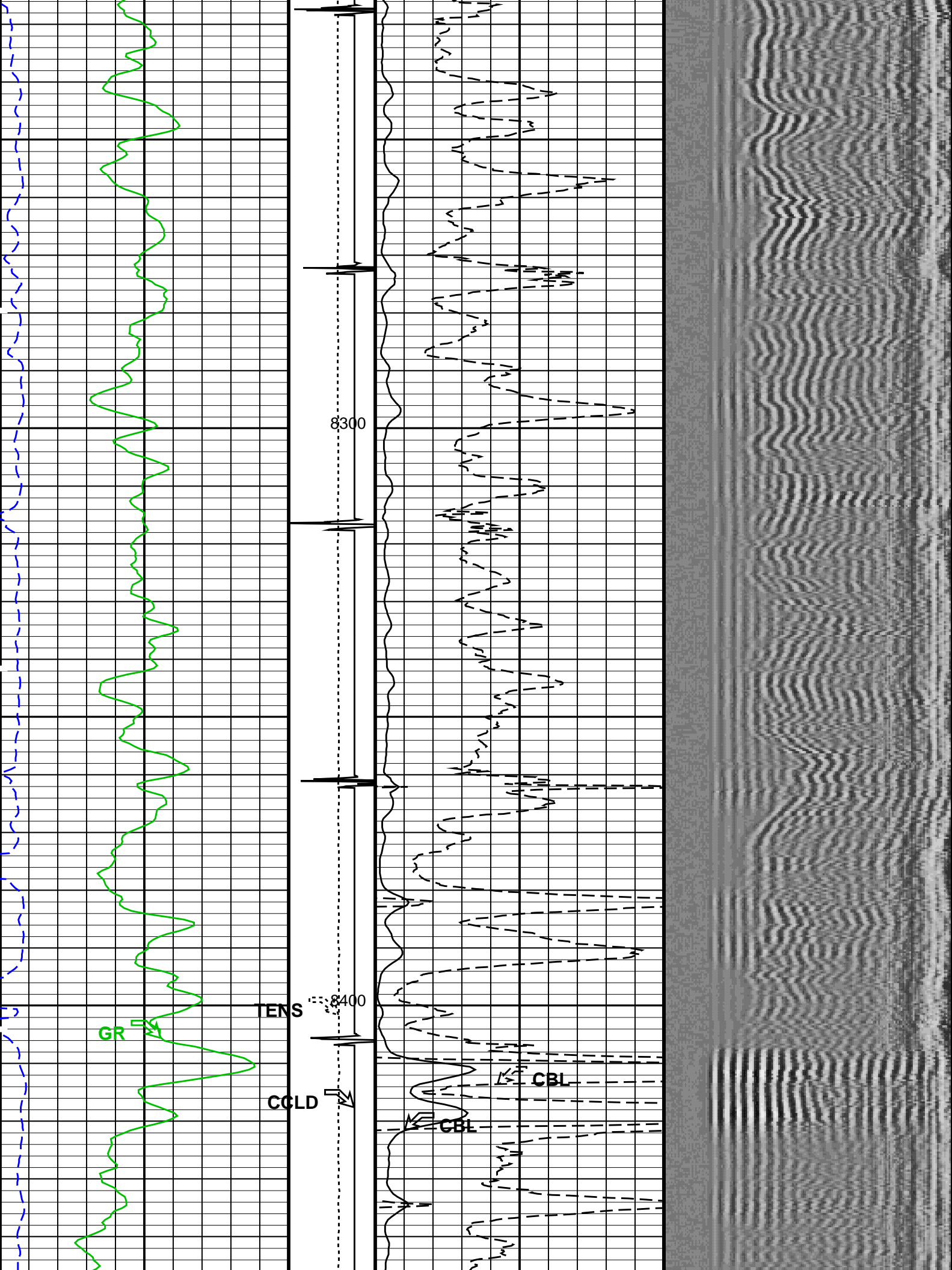


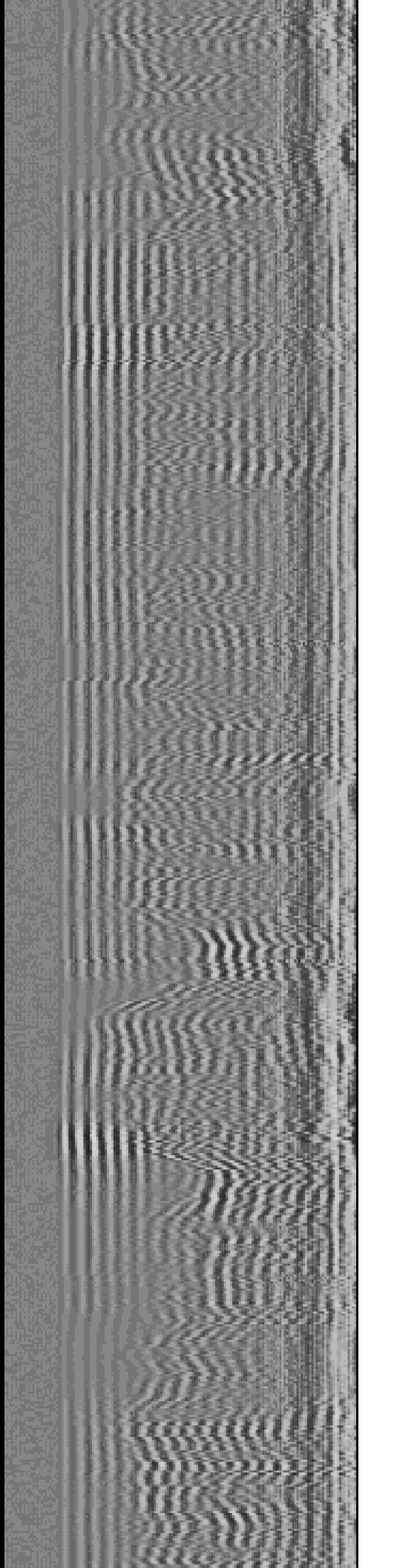
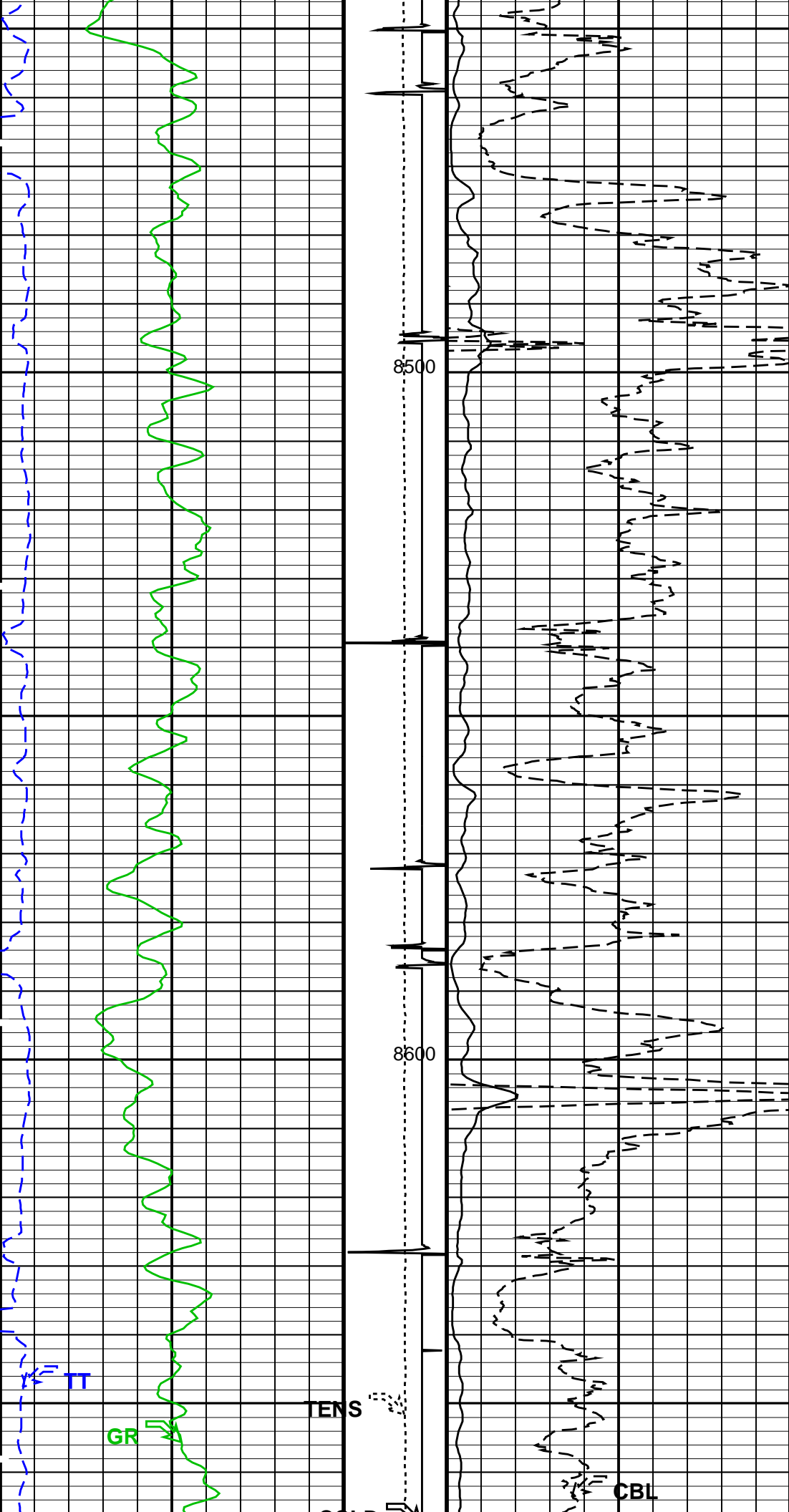


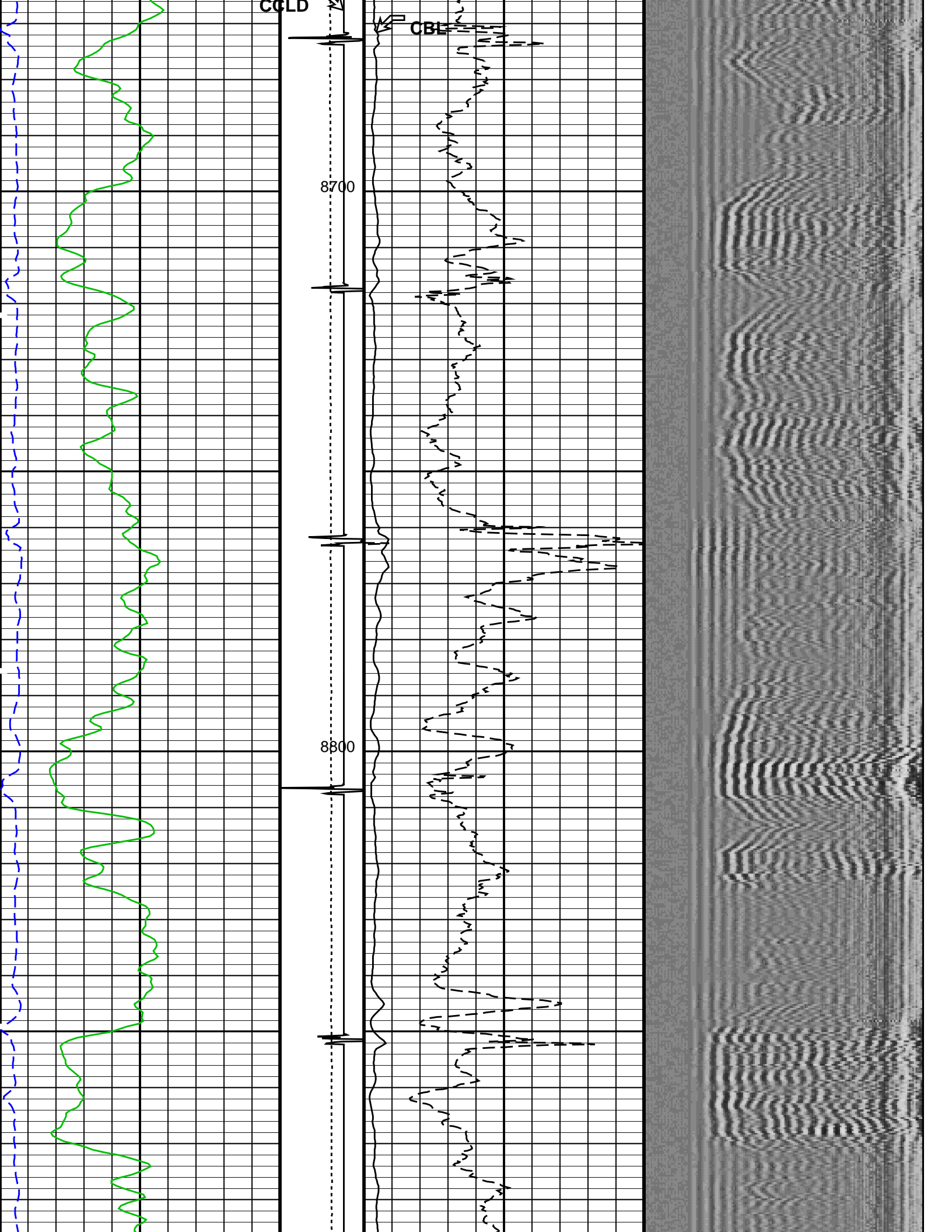


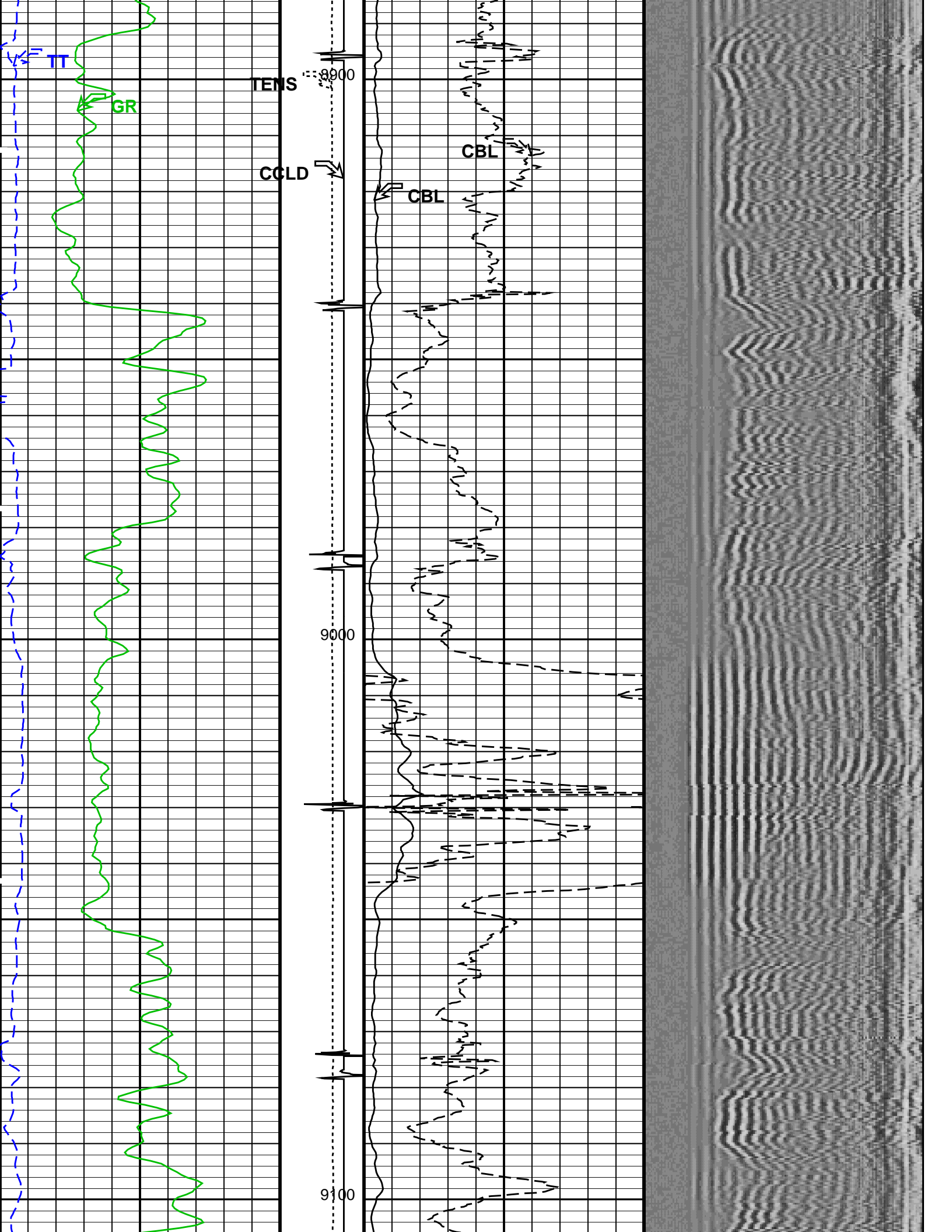


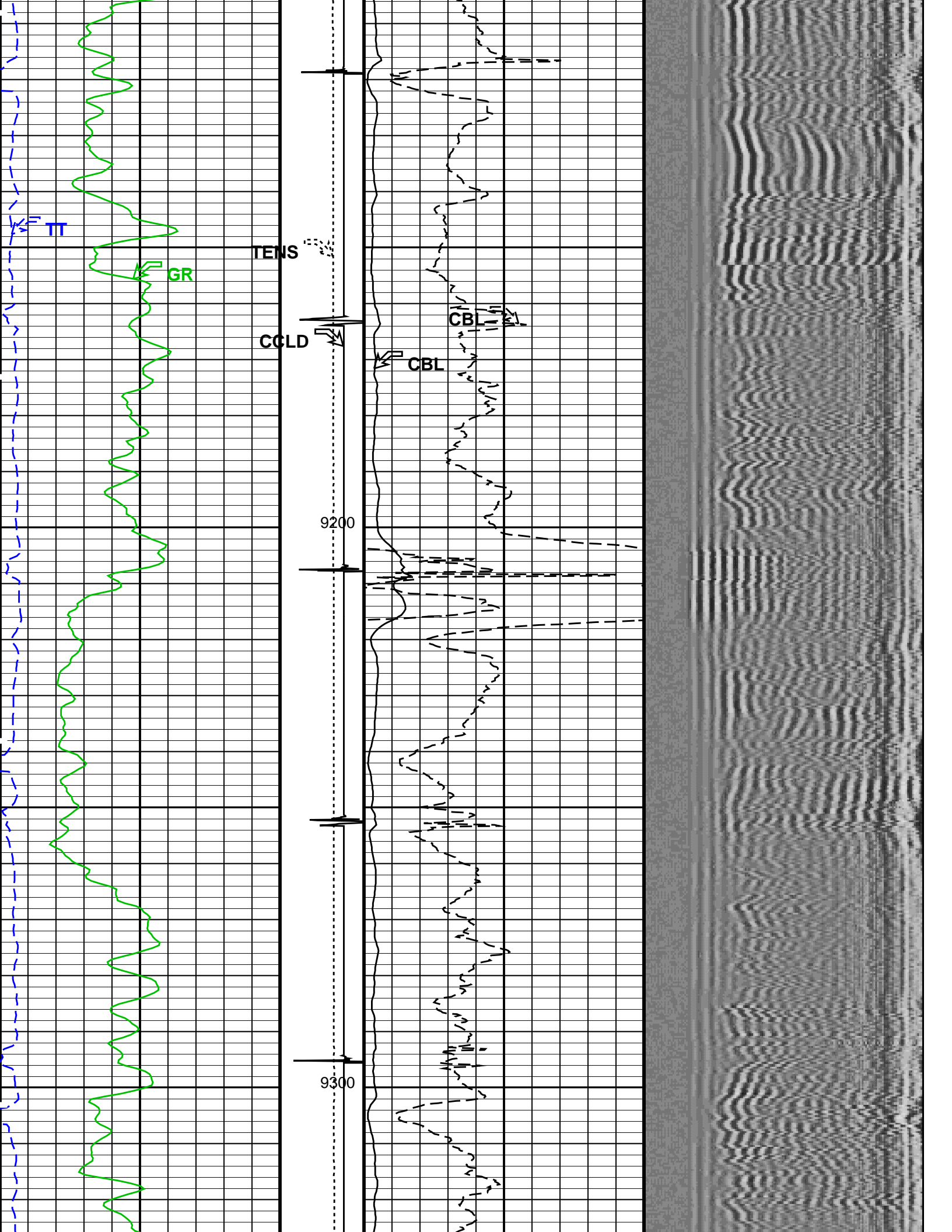


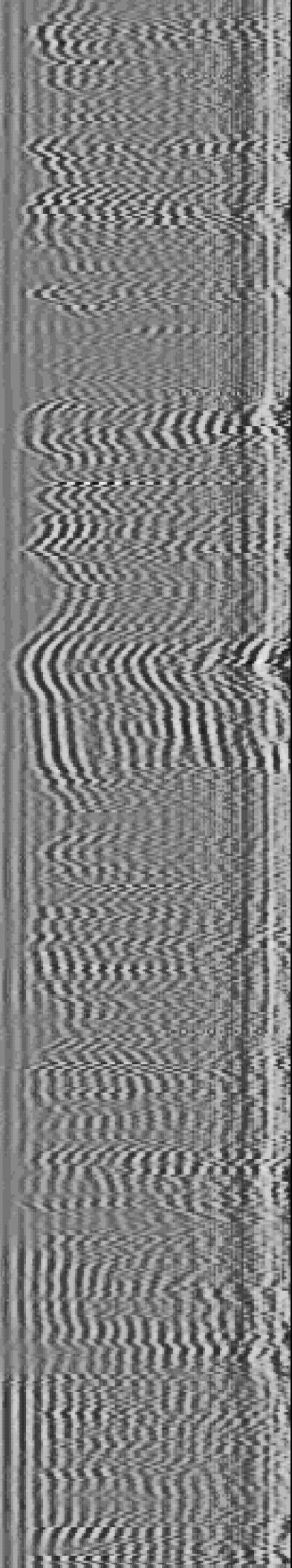
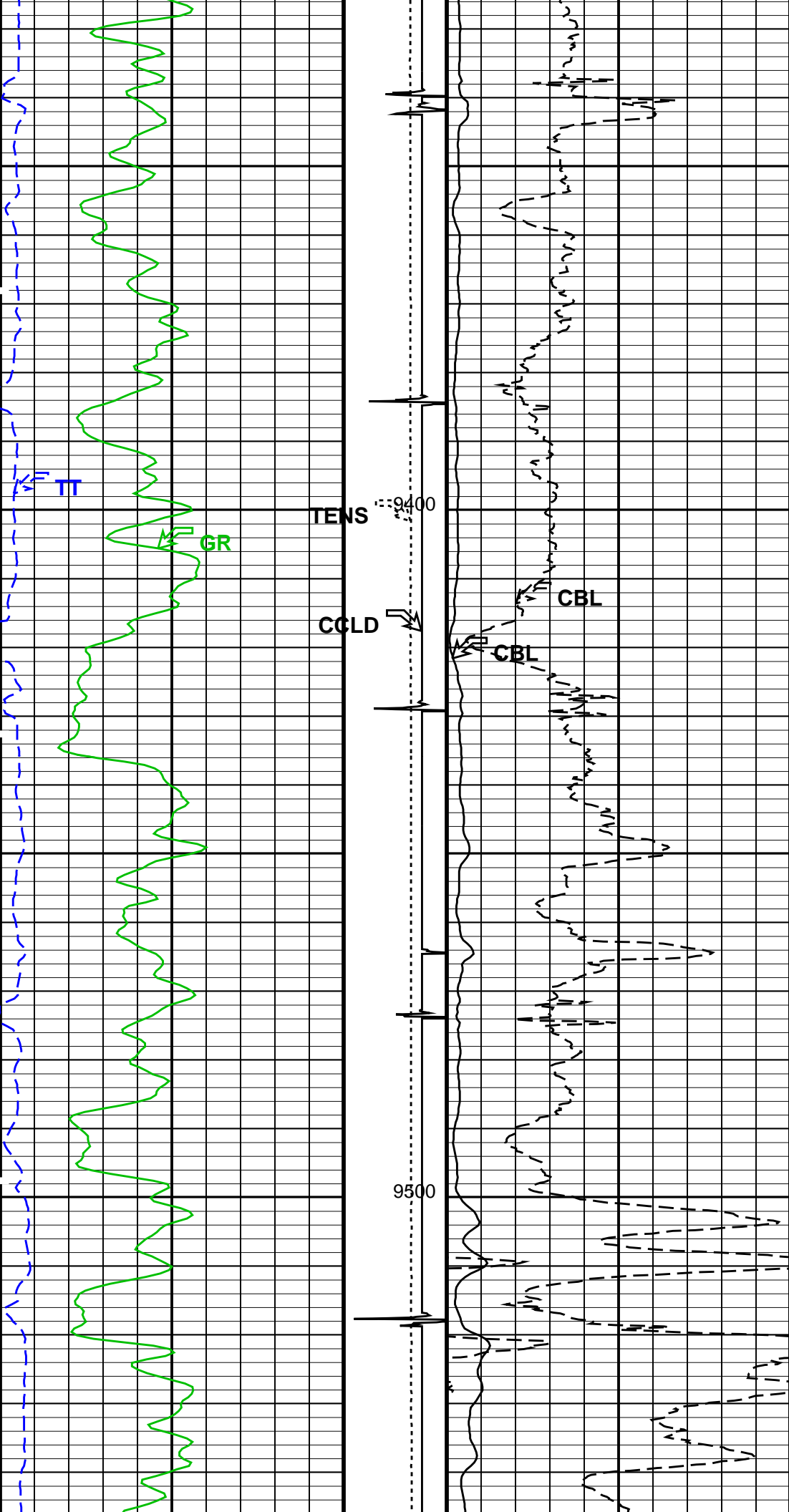


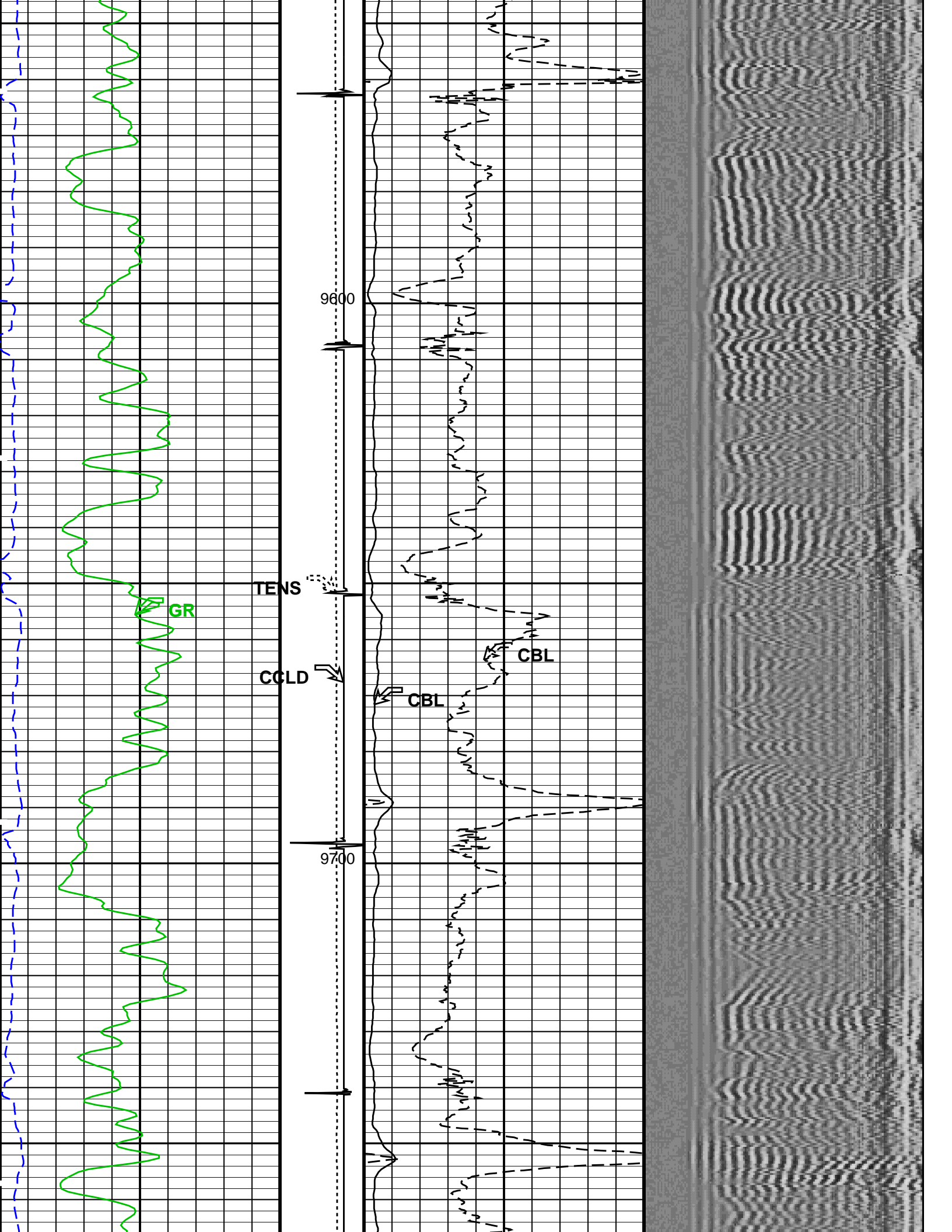


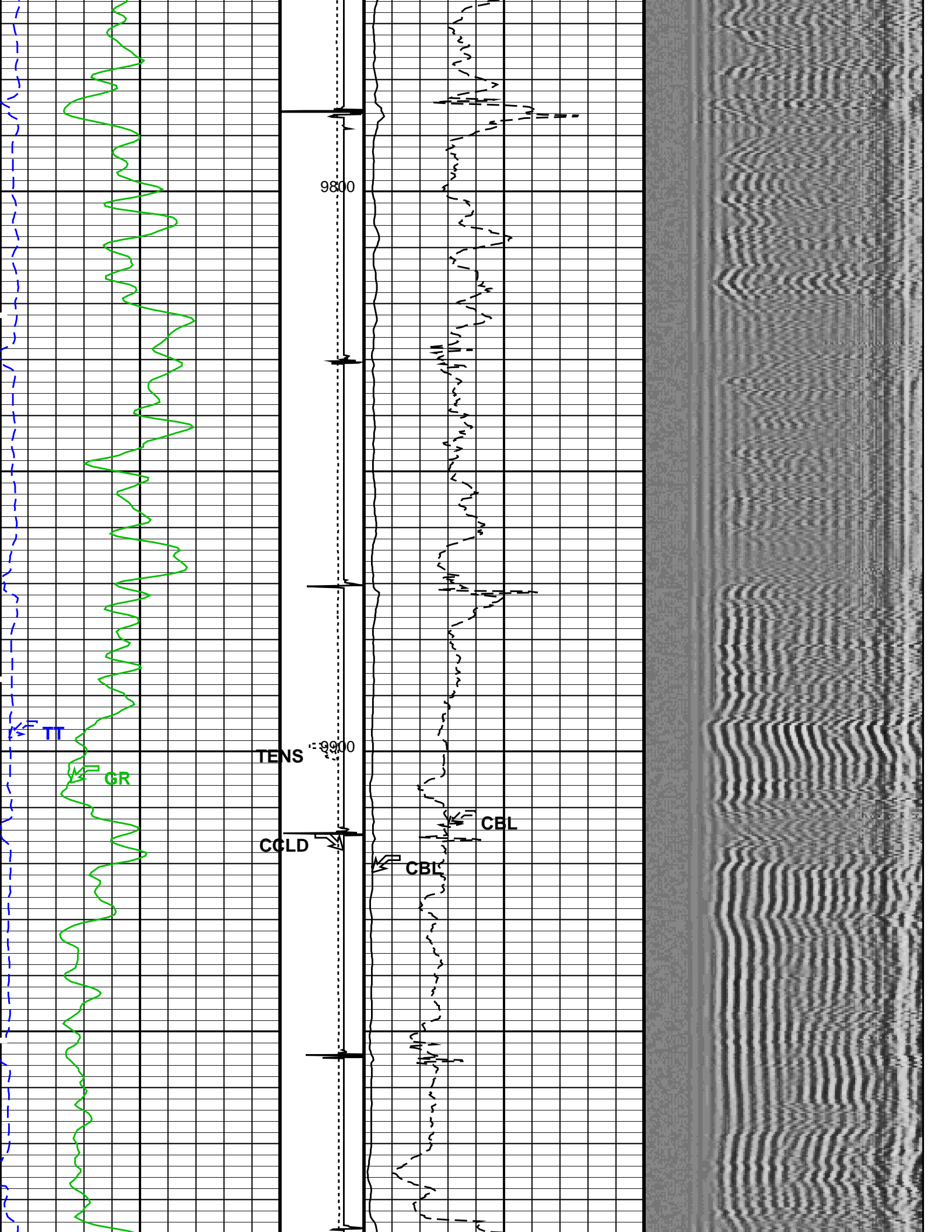


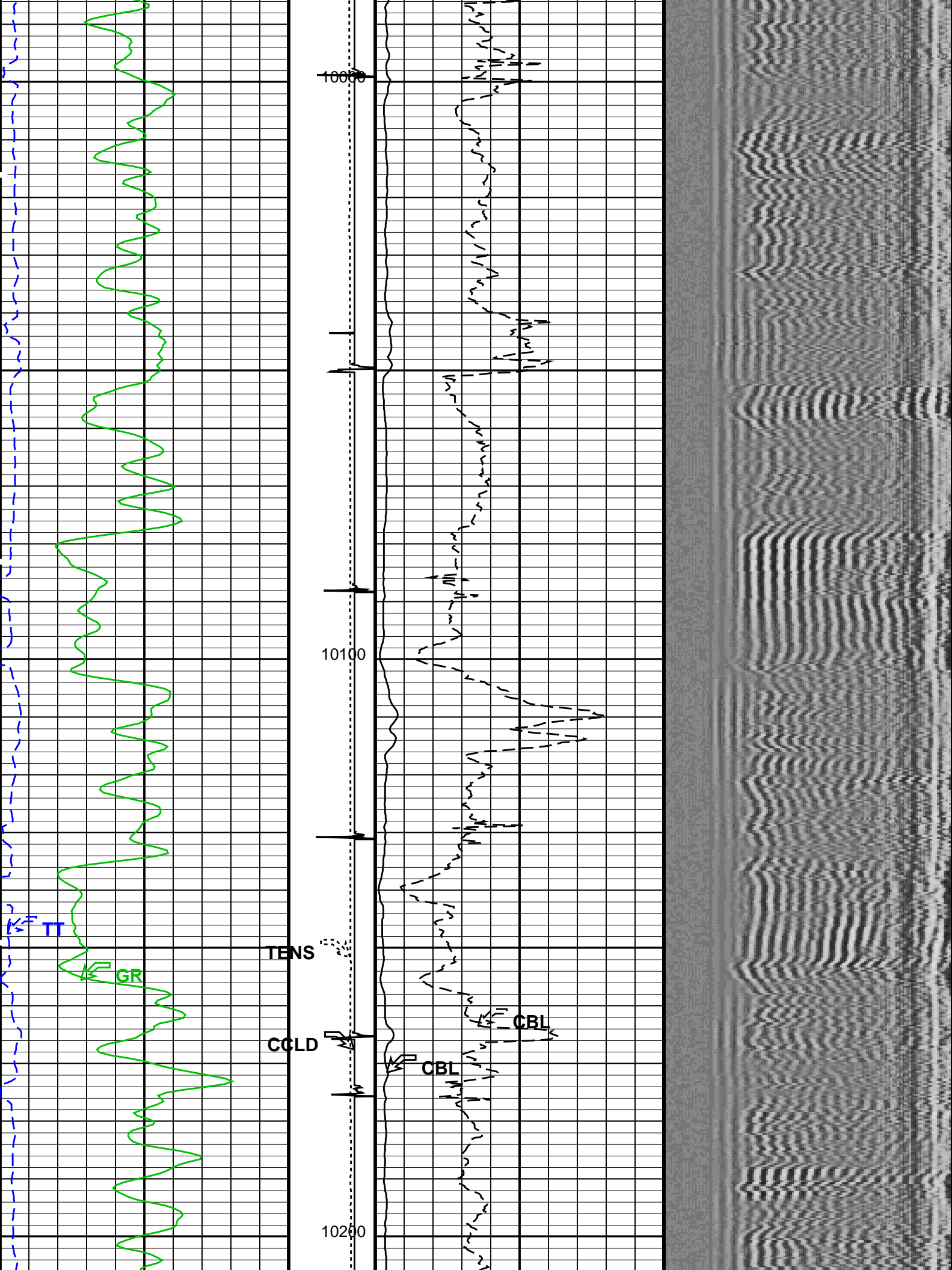


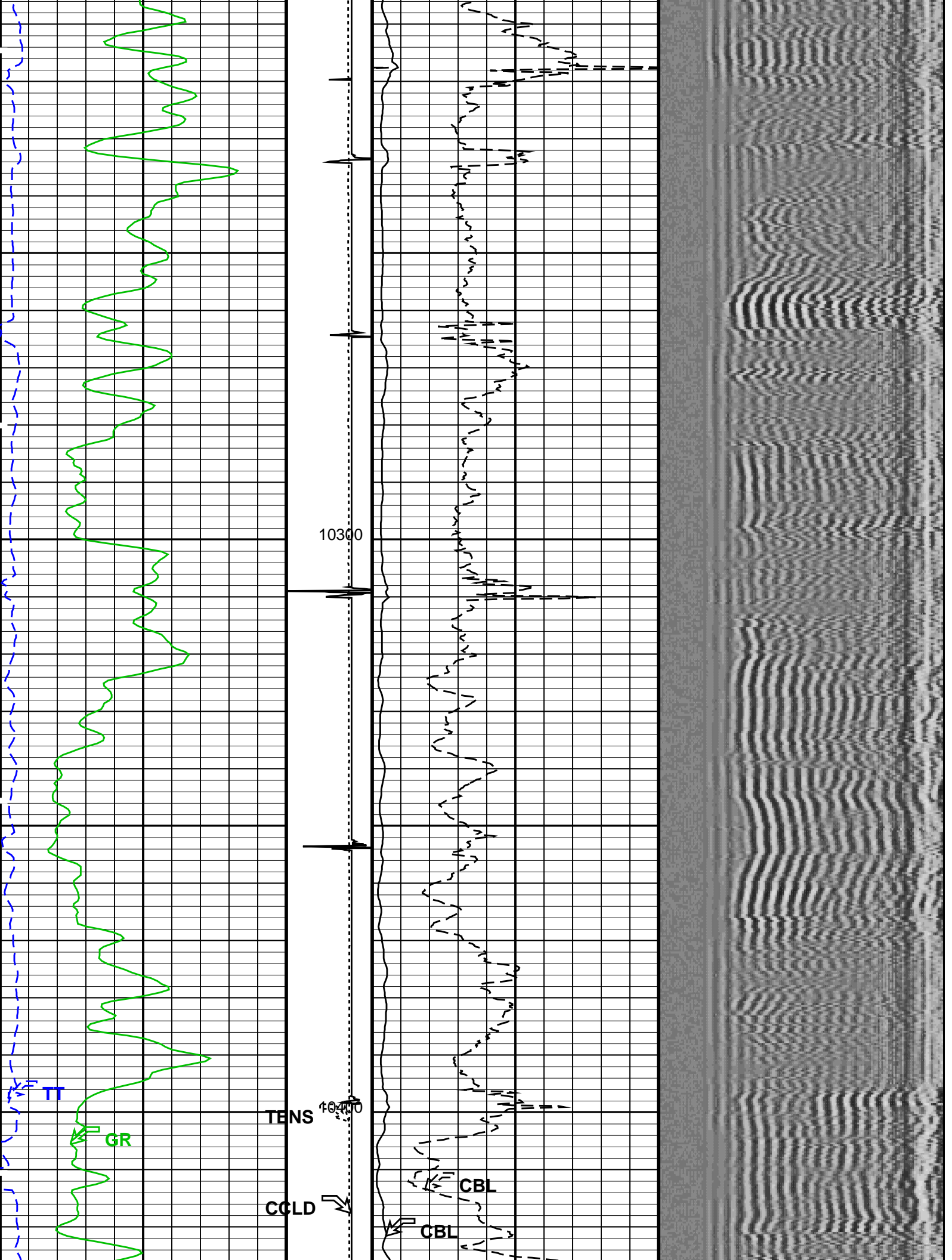


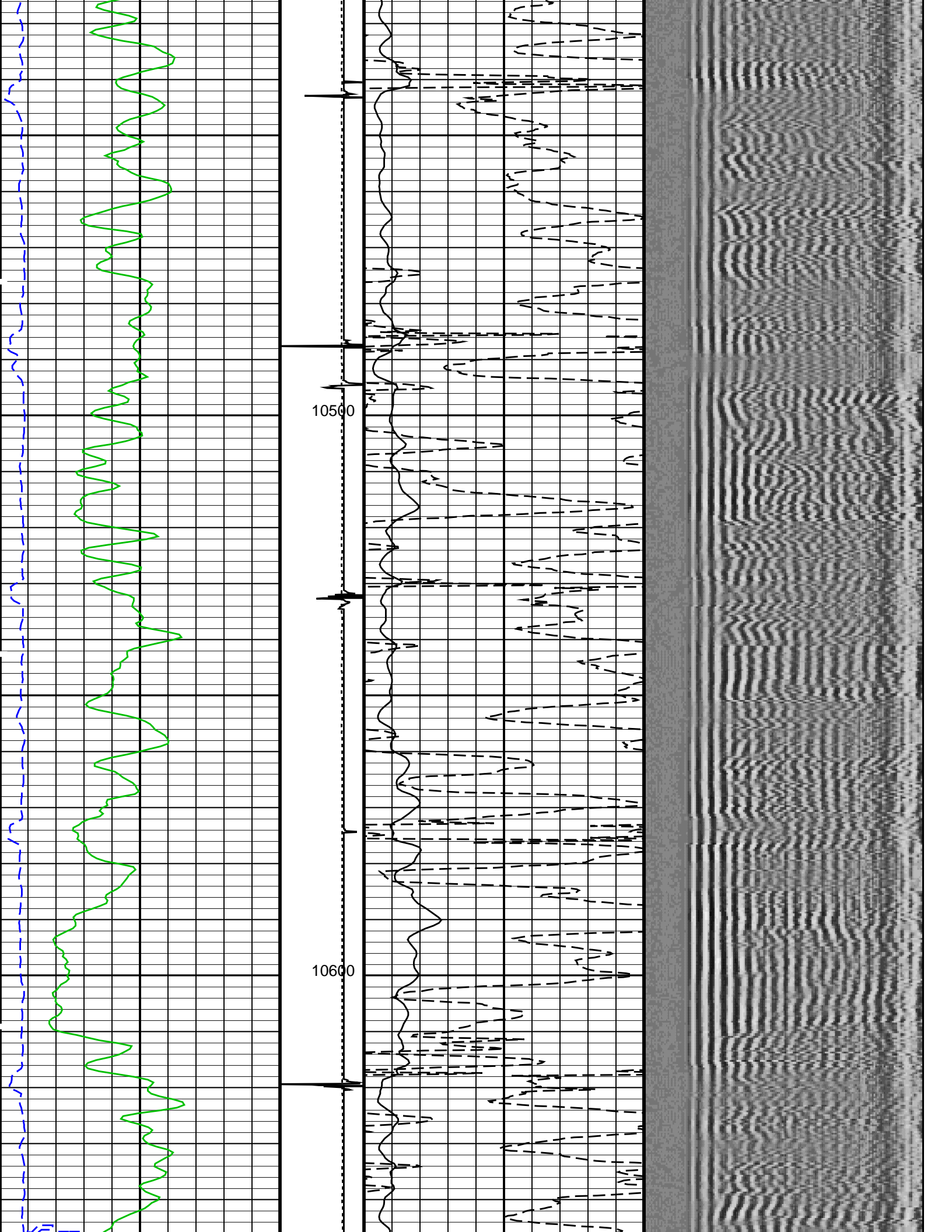


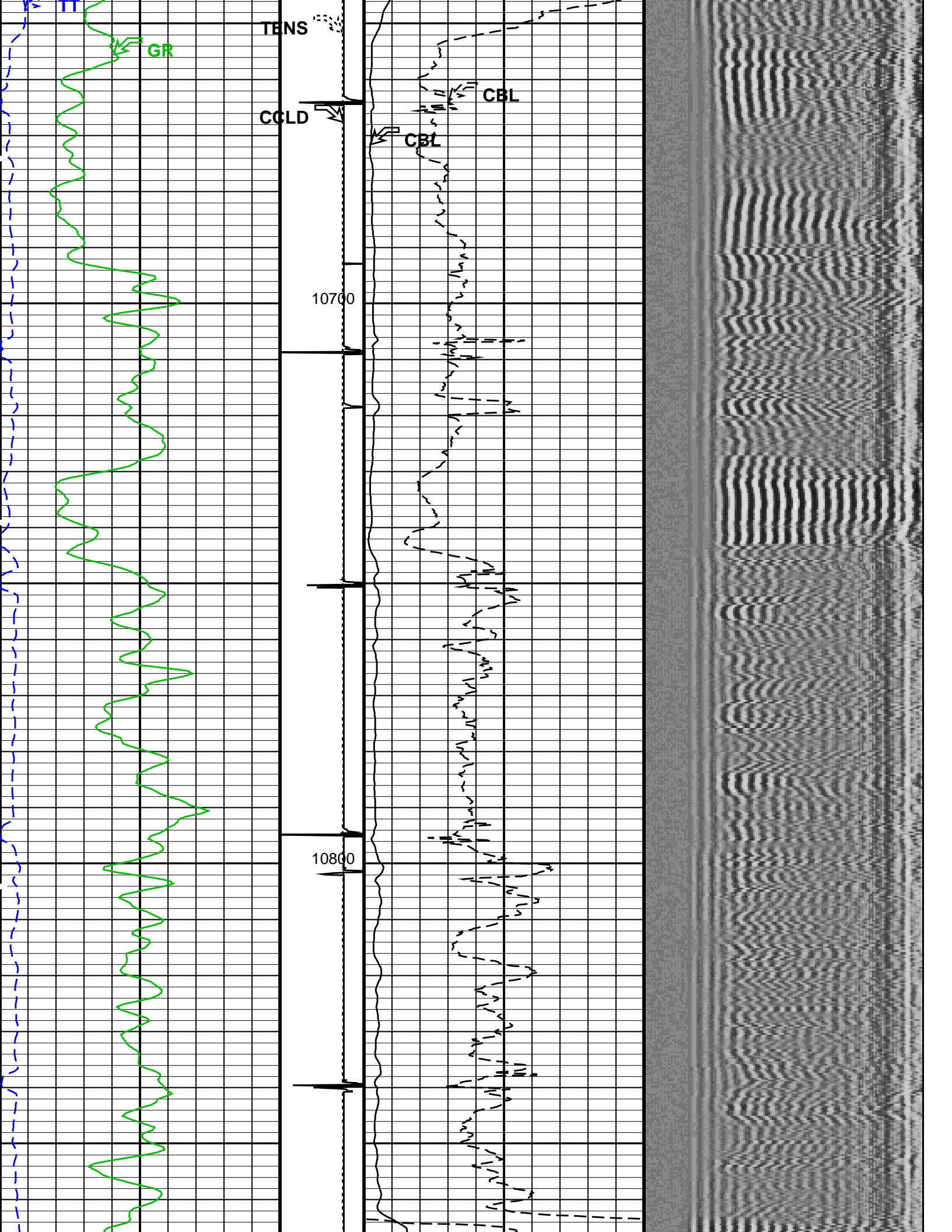


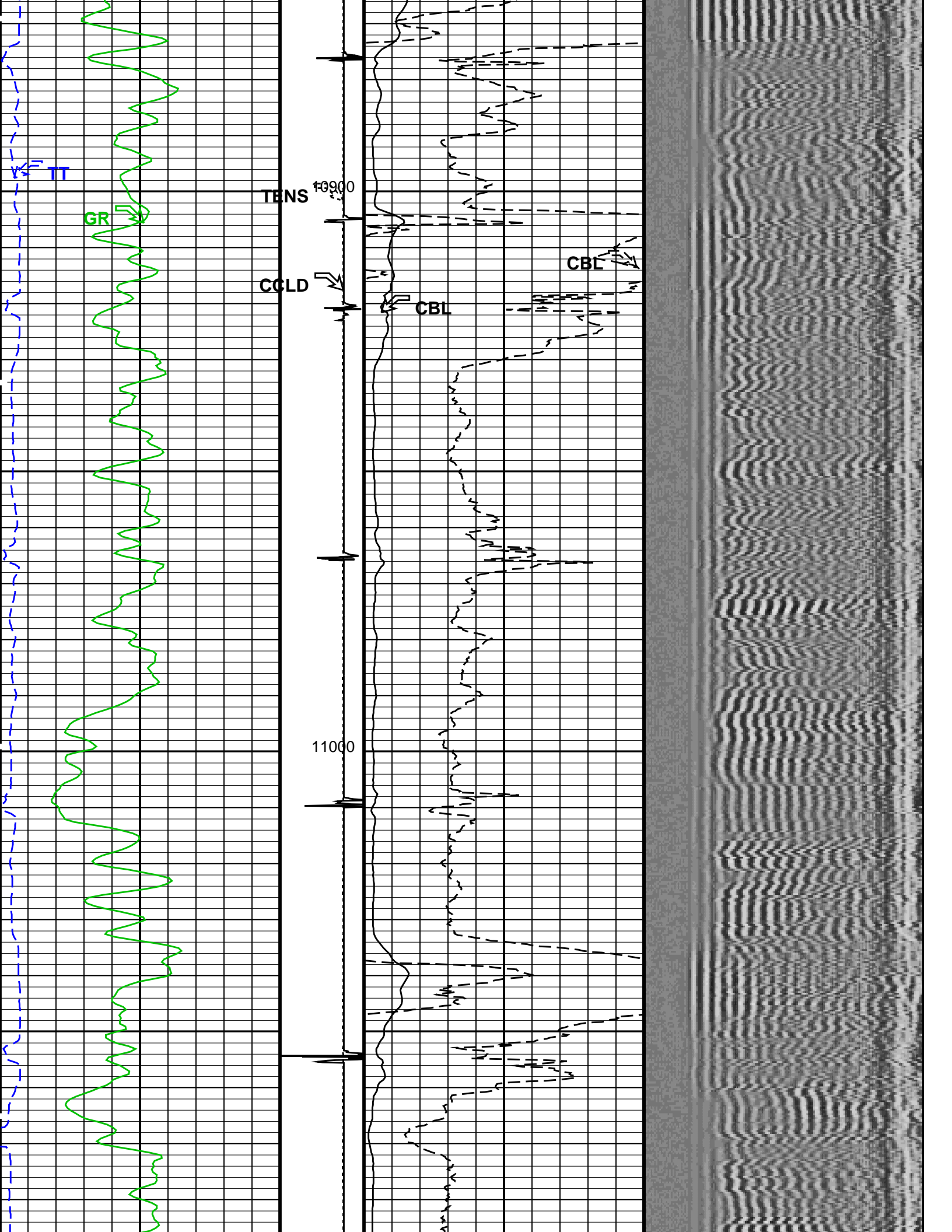


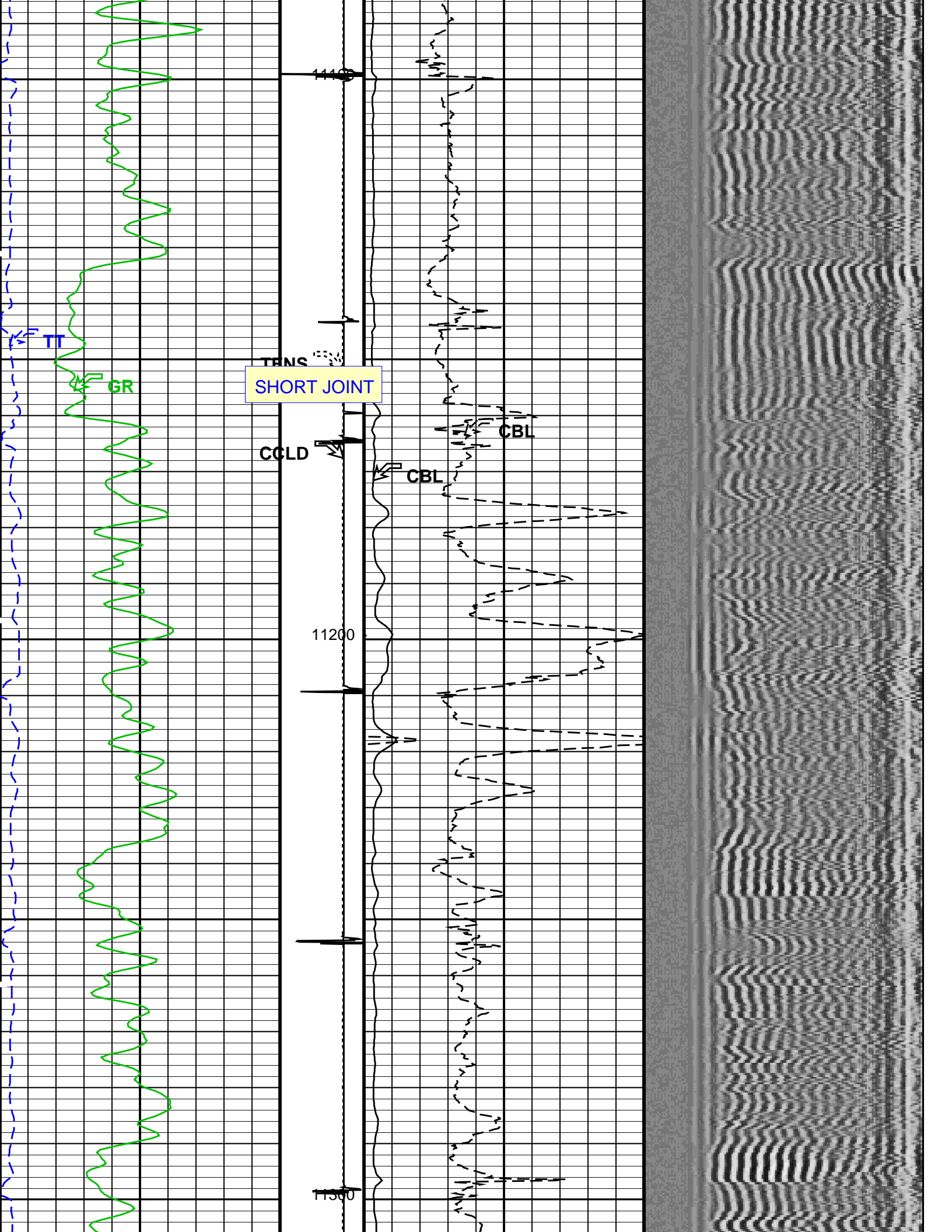


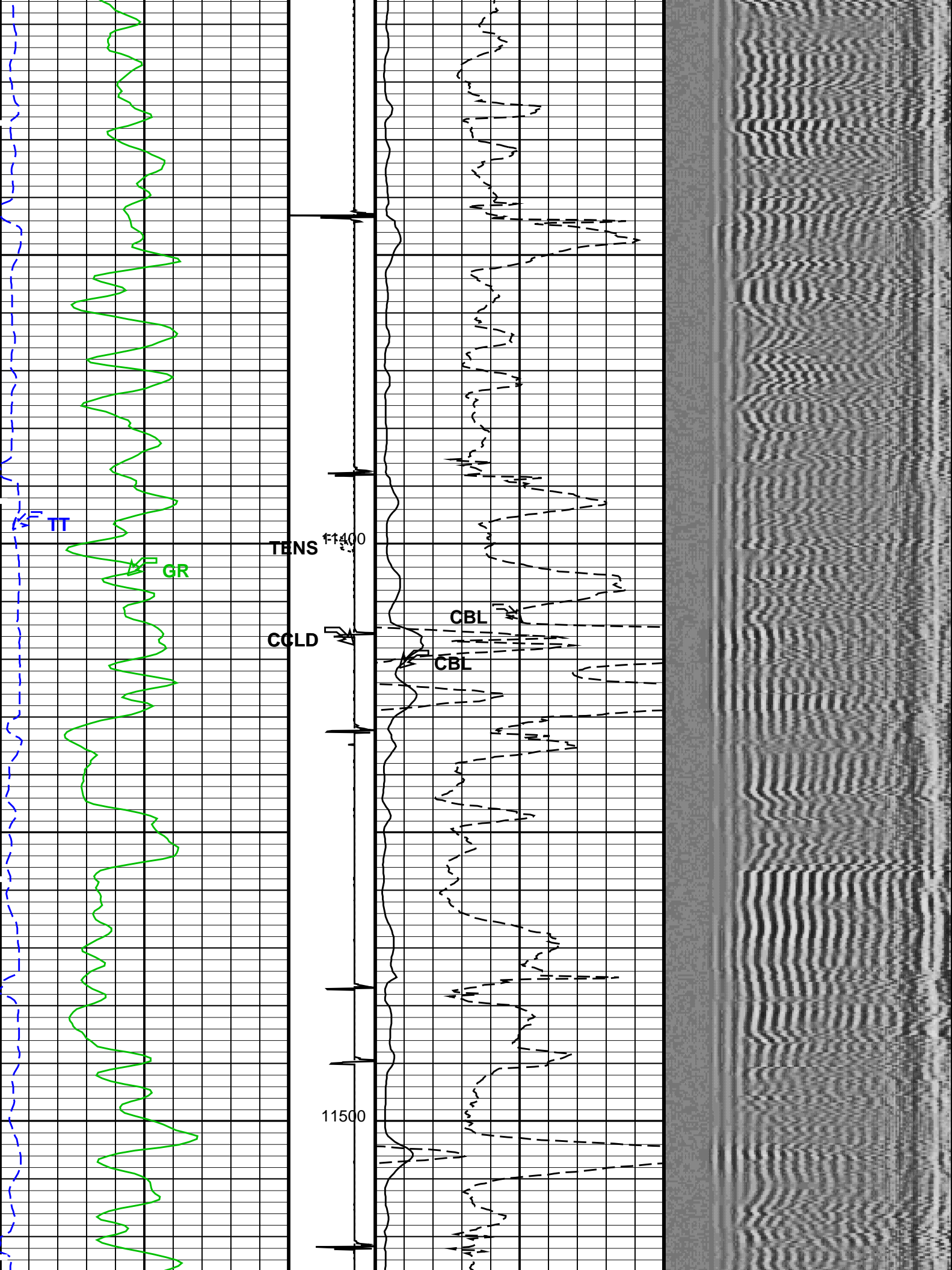


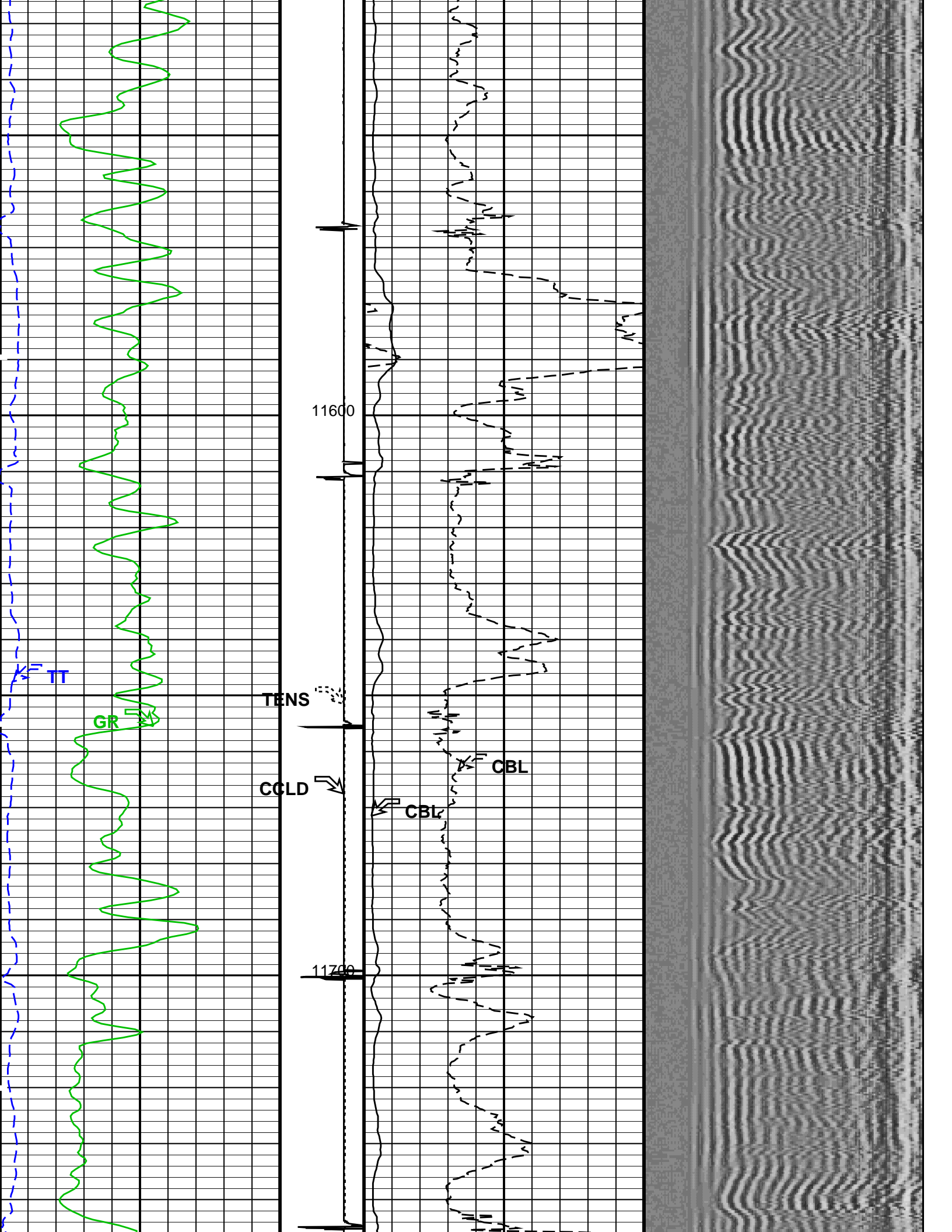


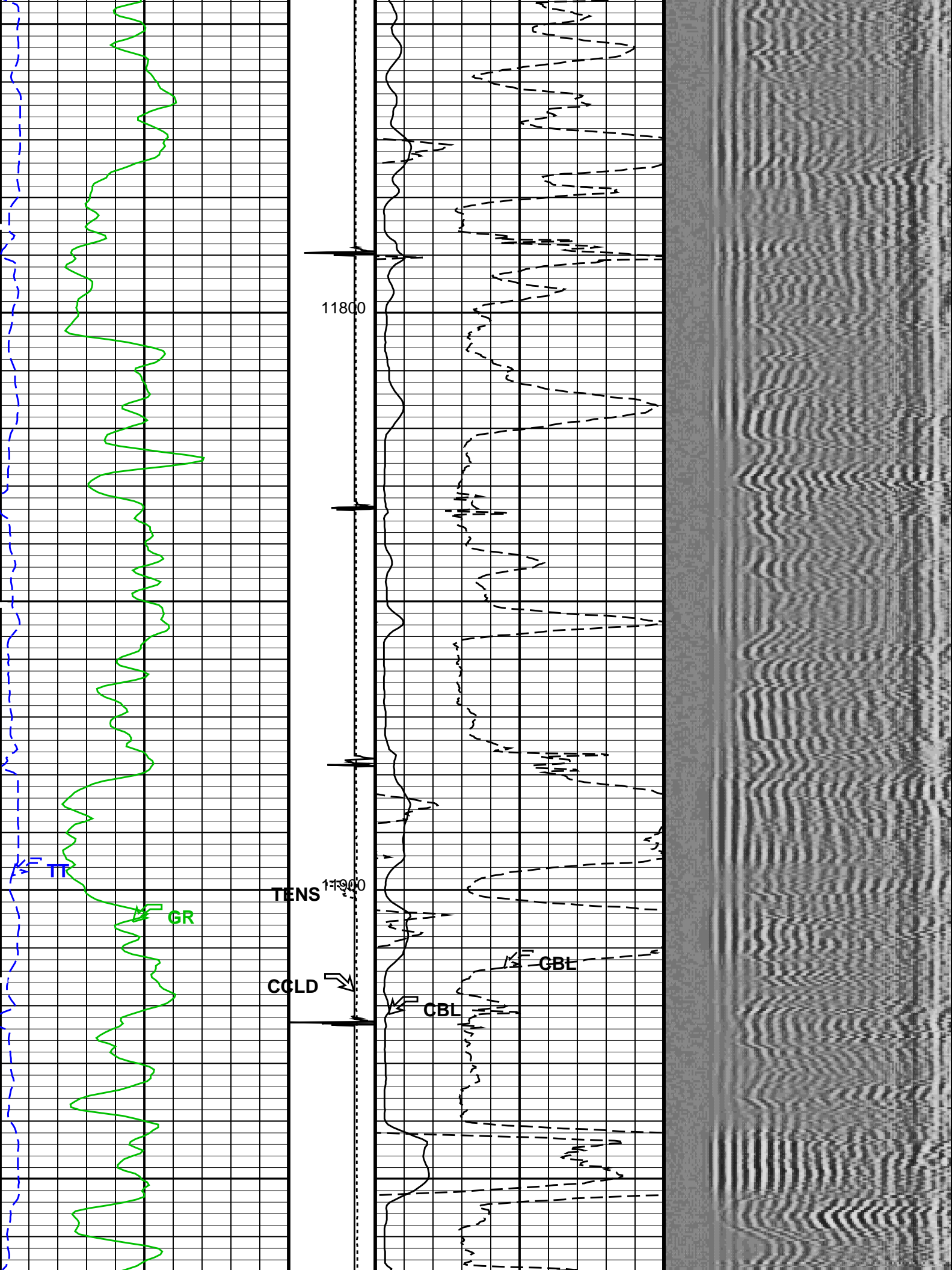


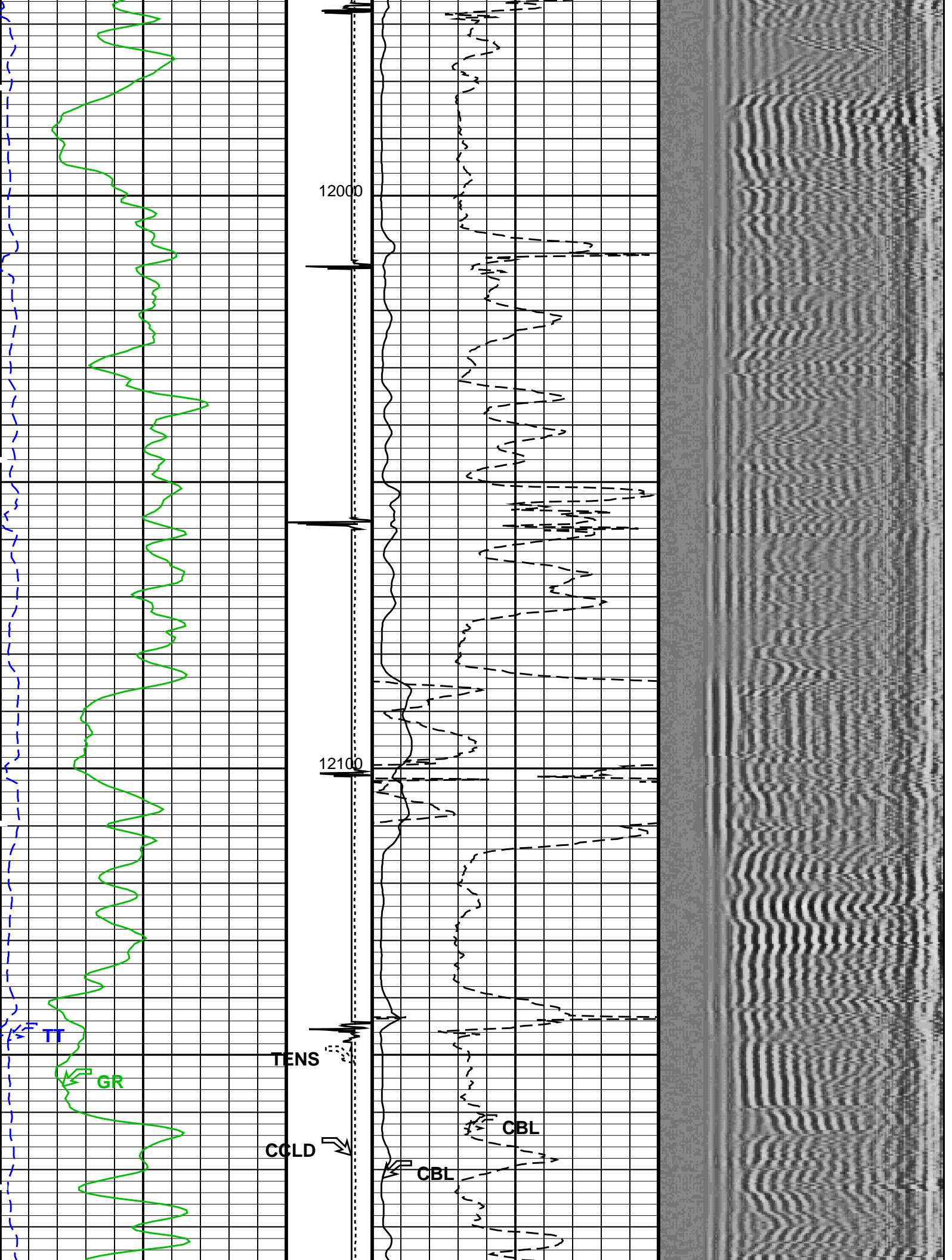


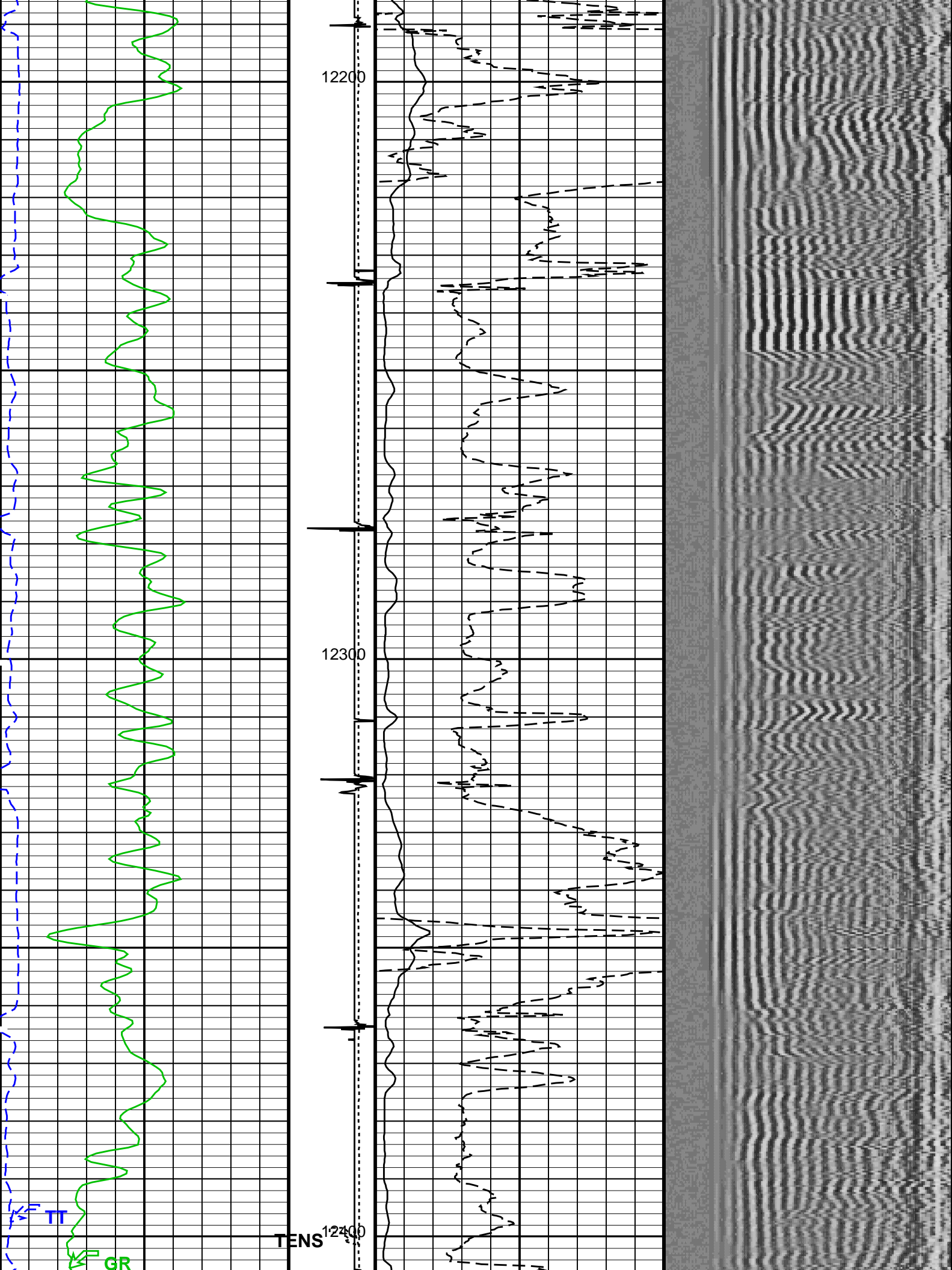


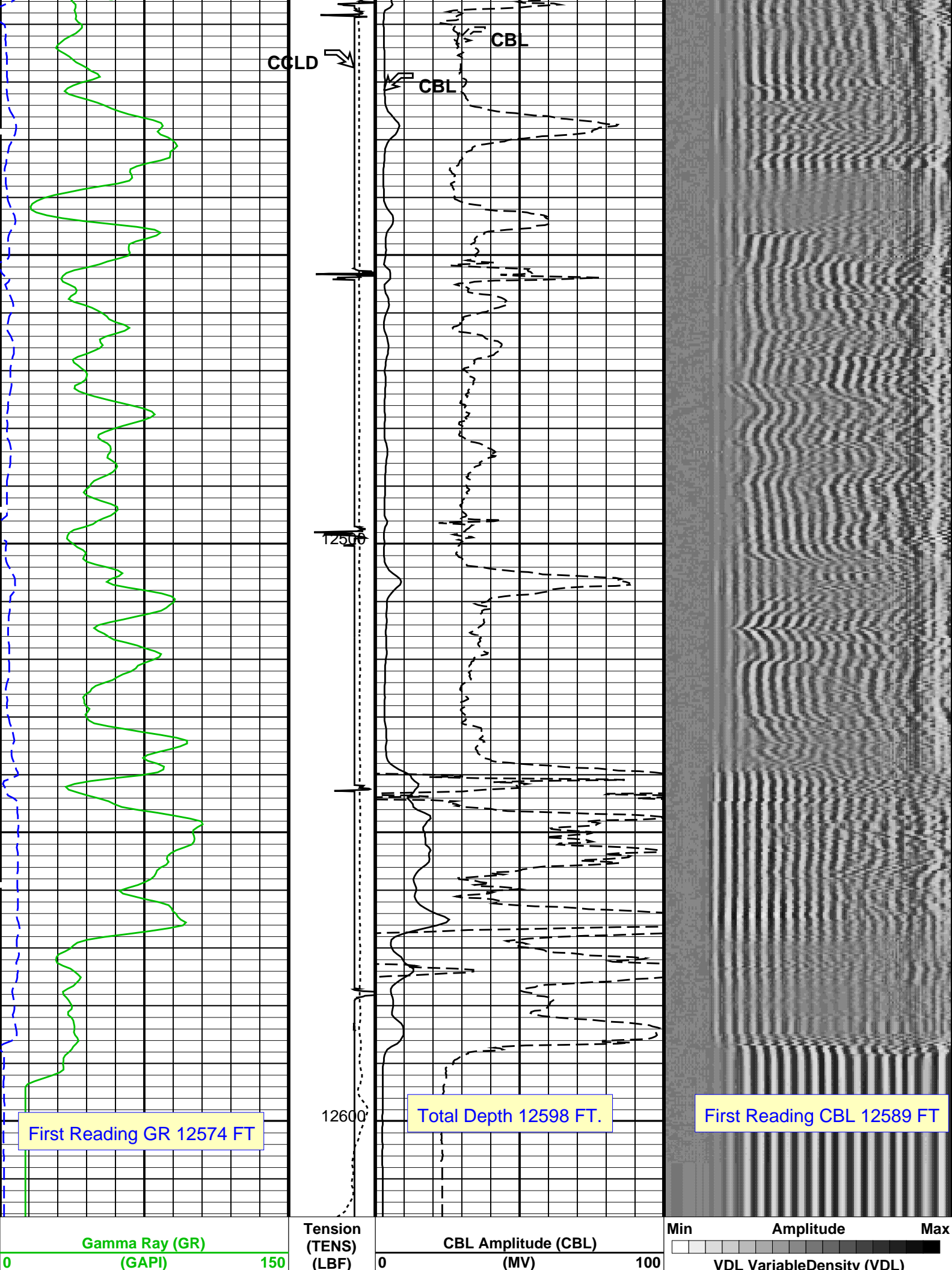












		0	2000			200	(US)	1200
		Discriminat						
		ed CCL						
		(CCLD)						
		3 (V)	-1					

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
DFD	Drilling Fluid Density	8.40	LB/G
DO	Depth Offset for Playback	6.0	FT
PP	Playback Processing	RECOMPUTE	
TD	Total Depth	12598	FT

Input DLIS Files

DEFAULT SCMT_PSP_045LUP FN:42 PRODUCER 05-Sep-2013 23:00 12610.5 FT 99.0 FT

Output DLIS Files

DEFAULT SCMT_PSP_048PUP FN:45 PRODUCER 06-Sep-2013 02:18



REPEAT ANALYSIS CBL VDL

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC Well: SG 8507D-23 (L24 496)

Input DLIS Files

DEFAULT SCMT_PSP_043LUP FN:40 PRODUCER 05-Sep-2013 22:40 8104.5 FT 7815.0 FT
DEFAULT SCMT_PSP_048PUP FN:45 PRODUCER 06-Sep-2013 02:18 12616.5 FT 83.5 FT

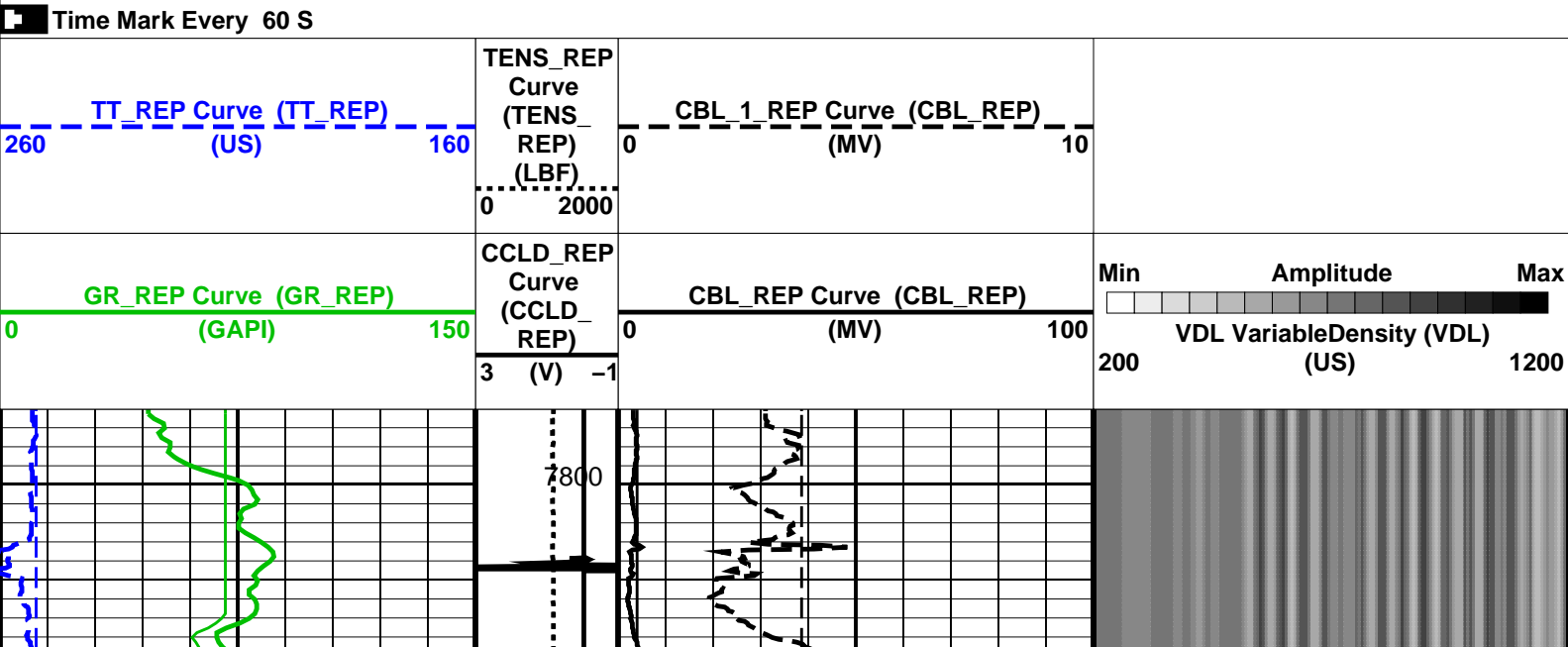
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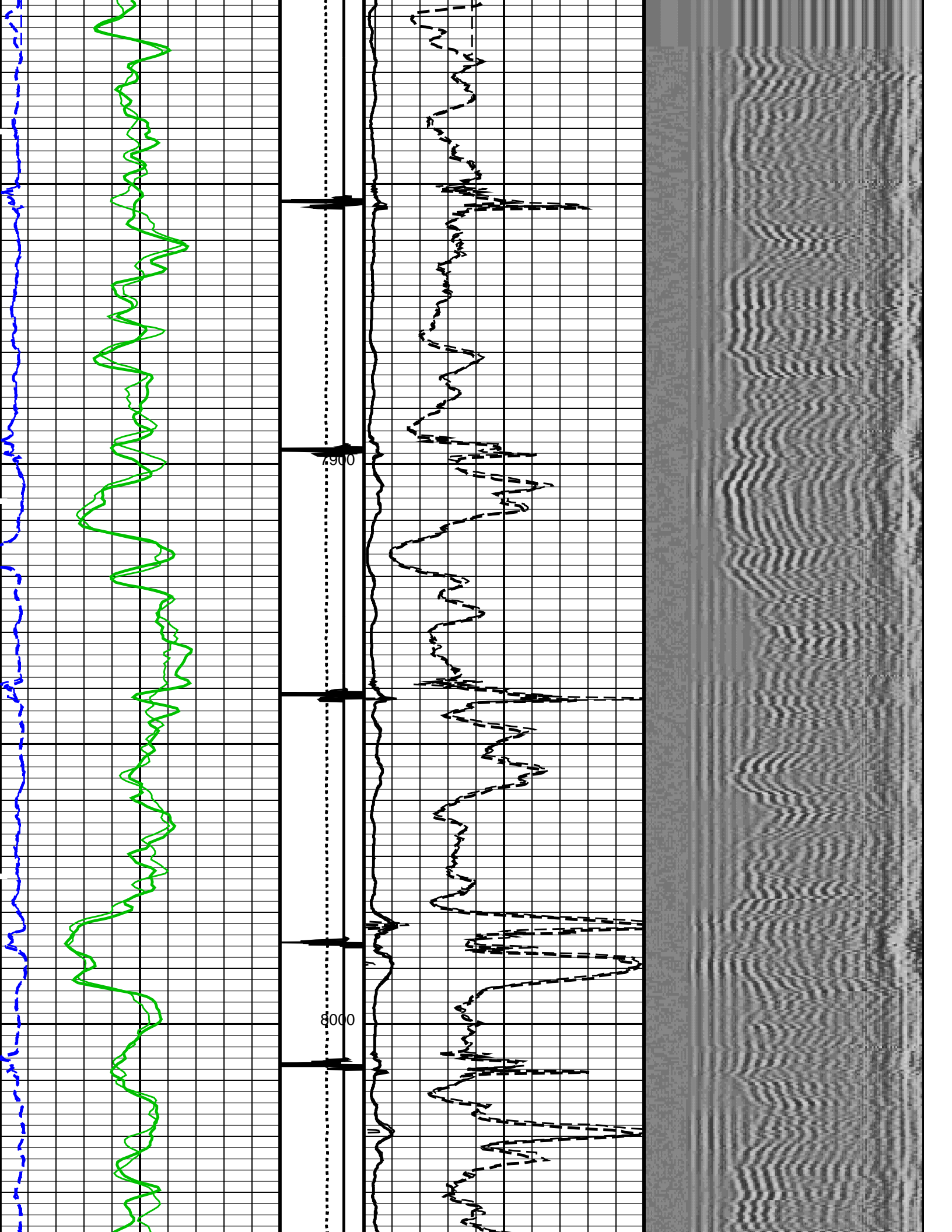
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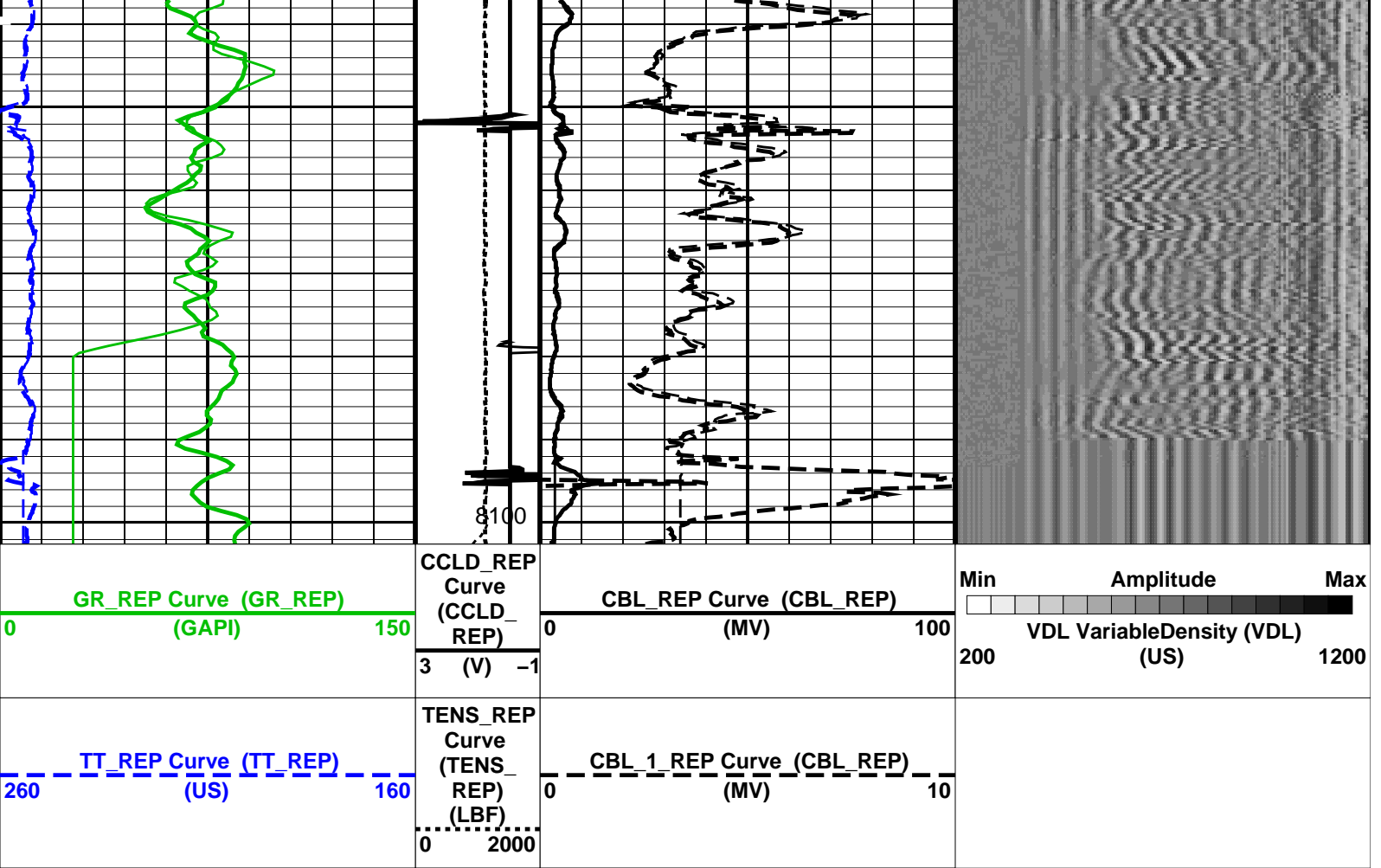
OP System Version: 19C0-187

SCMT-CB SRPC-5214-H2-2012-OP1! PSPT SRPC-5214-H2-2012-OP1!

PIP SUMMARY







PIP SUMMARY

Time Mark Every 60 S

Format: CBL_VDL_REP Vertical Scale: 5" per 100'

Graphics File Created: 06-Sep-2013 02:26

OP System Version: 19C0-187

SCMT-CB 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
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) 0.750000

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
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	12598	FT

Input DLIS Files

DEFAULT	SCMT_PSP_043LUP	FN:40	PRODUCER	05-Sep-2013 22:40	8104.5 FT	7815.0 FT
DEFAULT	SCMT_PSP_048PUP	FN:45	PRODUCER	06-Sep-2013 02:18	12616.5 FT	83.5 FT

Output DLIS Files

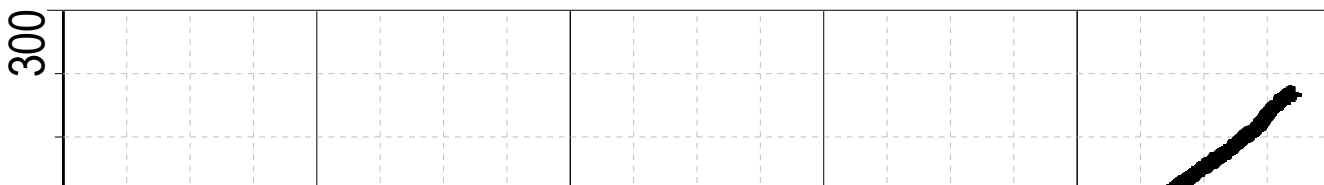
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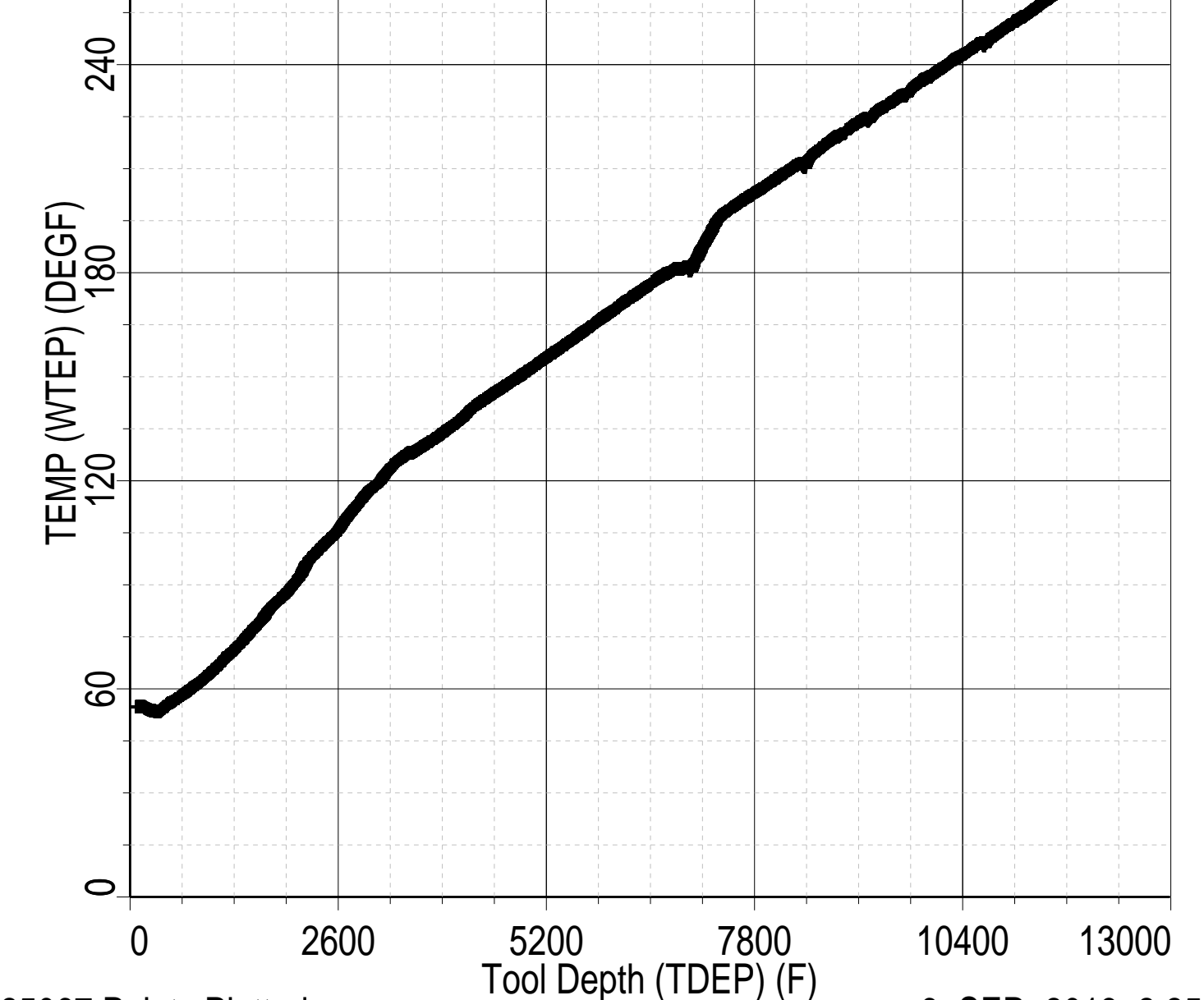
Schlumberger

TEMPERATURE PLOT

MAXIS Field Log

Index: 12616.5 – 83.5 FT





25067 Points Plotted

6-SEP-2013 2:25

Schlumberger

PBMS COEFFICIENTS

MAXIS Field Log

Client: ENCANA OIL & GAS (USA) INC
Field: STORY GULCH
Well: SG 8507D-23 (L24 496)
Run date: 5-Sep-2013

Tool: PSP
Sub Type: PBMS
Sensor: GR

PBMS Gamma Ray

Sonde Serial NB

Sensor Serial NB

Calib Date ddmmyy

RESISTORS FOR GR SENSOR N.33223, TOOL PBMS-BA0928. SENSOR S/N:

33223

090800

Calib Date ddmmyy 000000
Matrix Size 12
Coeff CRC CFE2

GR HV Rt

Rt**0

Rt**1

Rt**0

+.182000000000e+04

+.332000000000e+04

Client: ENCANA OIL & GAS (USA) INC
Field: STORY GULCH
Well: SG 8507D-23 (L24 496)
Run date: 5-Sep-2013

Tool: PSP
Sub Type: PBMS
Sensor: WellTemp RTD

PBMS RTD Well Thermometer

Sonde Serial NB
Sensor Serial NB 928
Calib Date ddmmyy 280612
Matrix Size 16
Coeff CRC A24E

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

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

PBMS Quartz Gauge type F

Sonde Serial NB

Sensor Serial NB

Calib Date ddmmyy

Matrix Size

Coeff CRC

928

280612

66

9DC3

COEFFICIENTS FOR CQG PBMS-B.928 S/N:

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	+1.14322792679E-12	+1.153807711176E-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	+3.10874009898E+05	+2.88920923041E-02	+6.97940727038E-06
	(Fb'-Fc')**3	(Fb'-Fc')**4	(Fb'-Fc')**5
(Fb'-Fc')**0	-.657432344763E-10	-.412920638782E-15	+2.13369826099E-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	+1.15369519827E+03	-.565338877075E-02	-.333717531829E-07
	(Fb'-Fc')**3	(Fb'-Fc')**4	(Fb'-Fc')**5
(Fb'-Fc')**0	-.124387135327E-12	+7.13102327208E-16	-.316084316842E-20

MAXIS Field Log

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

Primary Equipment:



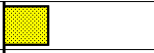
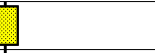





Slim Cement Mapping Xmitter Electronics	SCMX – CA	8251
Slim Cement Mapping Sonde	SCMS – CB	8179
Slim Cement Mapping Cartridge	SCMC – CA	8121

Auxiliary Equipment:

Slim Electronics Cartridge Housing	SECH – CA	8120
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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		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: **SG 8507D–23 (L24 496)**Field: **STORY GULCH**County: **GARFIELD**State: **COLORADO**

SLIM CEMENT MAPPING LOG

CBL–VDL

GAMMA RAY CCI

