E&P Wireline

Company: **Cascade Petroleum LLC**

Well: **State 16−11S−55W−02**
Field: **Wildcat**
County: **Lincoln** State: **Colorado**

County: Lincoln
Field: Wildcat
Location: SWSW Sec 16 T11S, R55W
Well: State 16−11S−55W−02
Company: Cascade Petroleum LLC

Cement Bond Log
CCL − GR

LOCATION

SWSW Sec 16 T11S, R55W
660 FSL X 660 FWL

Elev.: K.B. 5331.00 ft
G.L. 5314.00 ft
D.F. 5333.00 ft

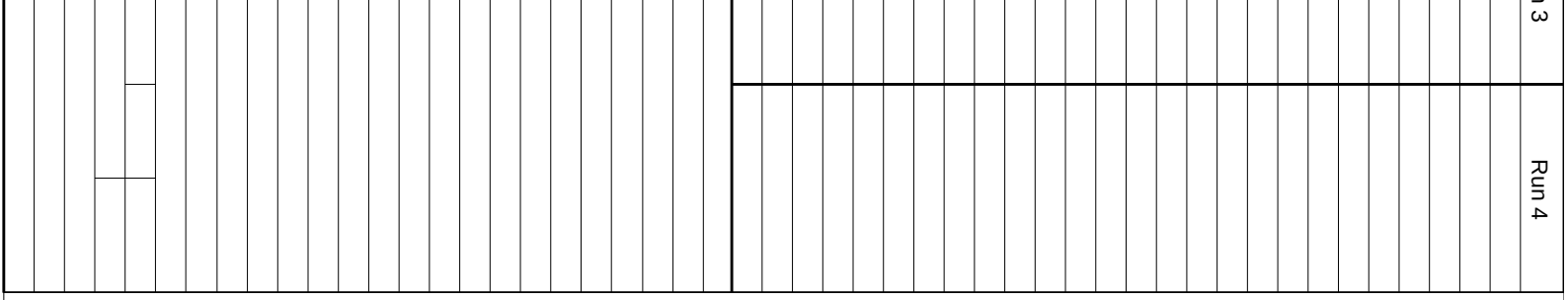
Permanent Datum: Ground Level Elev.: 5314.00 ft
Log Measured From: Kelly Bushing 17.00 ft above Perm. Datum
Drilling Measured From: Kelly Bushing

API Serial No.	Section	Township	Range
05−073−06501−0000	16	11S	55W

		Run 1	Run 2	Run
PVT DATA	Oil Density			
	Water Salinity			
	Gas Gravity			
	Bo			
	Bw			
	1/Bg			
	Bubble Point Pressure			
	Bubble Point Temperature			
	Solution GOR			
	Maximum Deviation			
	CEMENTING DATA			
	Primary/Squeeze	Primary		
	Casing String No			
	Lead Cement Type			
	Volume			
	Density			
	Water Loss			
	Additives			
	Tail Cement Type			
	Volume			
	Density			
	Water Loss			
	Additives			
	Expected Cement Top			

Logging Date		13−Mar−2013						
Run Number		1						
Depth Driller		8173 ft						
Schlumberger Depth		8055 ft						
Bottom Log Interval		8055 ft						
Top Log Interval		3600 ft						
Casing Fluid Type		Water Based Mud						
Salinity								
Density		8.6 lbm/gal						
Fluid Level		0 ft						
BIT/CASING/TUBING STRING								
Bit Size		7.875 in						
From								
To								
Casing/Tubing Size		5.500 in						
Weight		17 lbm/ft						
Grade		N−80						
From		0 ft						
To		8173 ft						
Maximum Recorded Temperatures		195 degF						
Logger On Bottom	Time	13−Mar−2013	14:00					
Unit Number	Location	383	Fort Morgan					
Recorded By		Christopher Ryan Parent						
Witnessed By		Brad Bivens						

		Run 1	Run 2	Run
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: 13−MAR−2013 10:32:34

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW−B	Type:	CMTD−C	Type:	1−25P
Serial Number:	6220	Serial Number:	1084	Serial Number:	383
Calibration Date:	05−Dec−2011	Calibration Date:	24−Jan−2013	Length:	24000 FT
Calibrator Serial Number:	33	Calibrator Serial Number:	787135		
Calibration Cable Type:	1−25P	Number of Calibration Points:	10	Conveyance Method:	Wireline
Wheel Correction 1:	−3	Calibration RMS:		Rig Type:	LAND
Wheel Correction 2:	−4	Calibration Peak Error:			

Depth Control Parameters

Log Sequence: Subsequent Log In the Well

Reference Log Name: Spectral Gamma Ray
Reference Log Run Number: 1
Reference Log Date: 07−Mar−2013

Depth Control Remarks

1.
2.
3.
4.
5.
6.

OTHER SERVICES1	OTHER SERVICES2
OS1: RST Sigma	OS1:
OS2:	OS2:
OS3:	OS3:
OS4:	OS4:
OS5:	OS5:

REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
1. CBL ran to 3400FT.	
2. Tied into GR peaks at 7510FT & 7580FT from reference log.	
3. Max recorded temp of 195DEGF .	
4. Max recorded pressure of 3891PSI.	
5. Tagged bottom at ~8055FT.	
6. Log ran under no surface induced pressure.	
7. Estimated top of cement: 3900FT.	

Your crew today has been Christopher Parent, Shelby Langford, and Mark Hoffman.

Thank you for choosing E&P Wireline.

We appreciate your business.

RUN 1		RUN 2	
SERVICE ORDER #:	BYKM−00085	SERVICE ORDER #:	
PROGRAM VERSION:	19C2−270	PROGRAM VERSION:	
FLUID LEVEL:	0 ft	FLUID LEVEL:	

LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

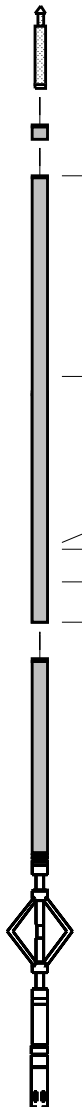
EQUIPMENT DESCRIPTION

RUN 1 RUN 2

SURFACE EQUIPMENT

WITM−A
PSC_16MHZ

DOWNHOLE EQUIPMENT

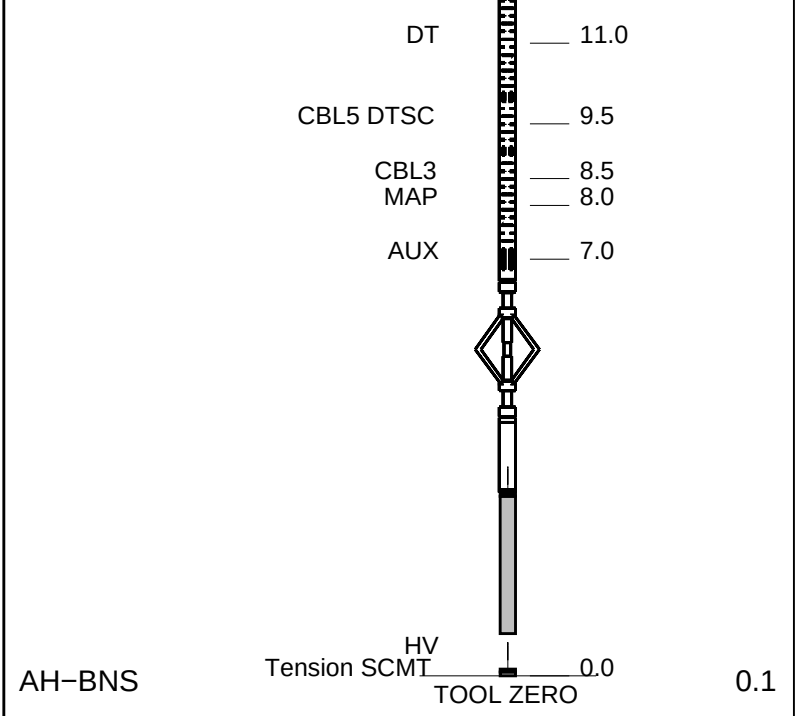


MH−22
MH−22

AH−38

PSPT
PSC−A
PSPT−A 1765
PSTC−A 1747
PBMS−A 1814
10k_Sapphire_Mano
RTD_Thermometer
GR
CCL
PBMS

SCMT−CB
SCMC−CA 8129
SECH−CA 8129
CMIR−AG
SCMS−CB 8258
SCMX−CA 8213



AH−BNS

0.1

MAXIMUM STRING DIAMETER 1.69 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN FEET

Schlumberger

Main Pass
0 PSI

MAXIS Field Log

Company: Cascade Petroleum LLC **Well: State 16−11S−55W−0**

Input DLIS Files

DEFAULT	**SCMT_PSP_033LUP**	**FN:44**	**PRODUCER**	**13−Mar−2013 14:17**	**8070.0 FT**	**3413.5 FT**

Output DLIS Files

DEFAULT	**SCMT_PSP_036PUP**	**FN:50**	**PRODUCER**	**13−Mar−2013 15:30**	**8071.5 FT**	**3386.5 FT**
CLIENT	**SCMT_PSP_036PUC**	**FN:51**	**CUSTOMER**	**13−Mar−2013 15:30**	**8071.5 FT**	**3386.5 FT**

OP System Version: 19C2−270

SCMT−CB	**19C2−270**	**PSPT**	**19C2−270**

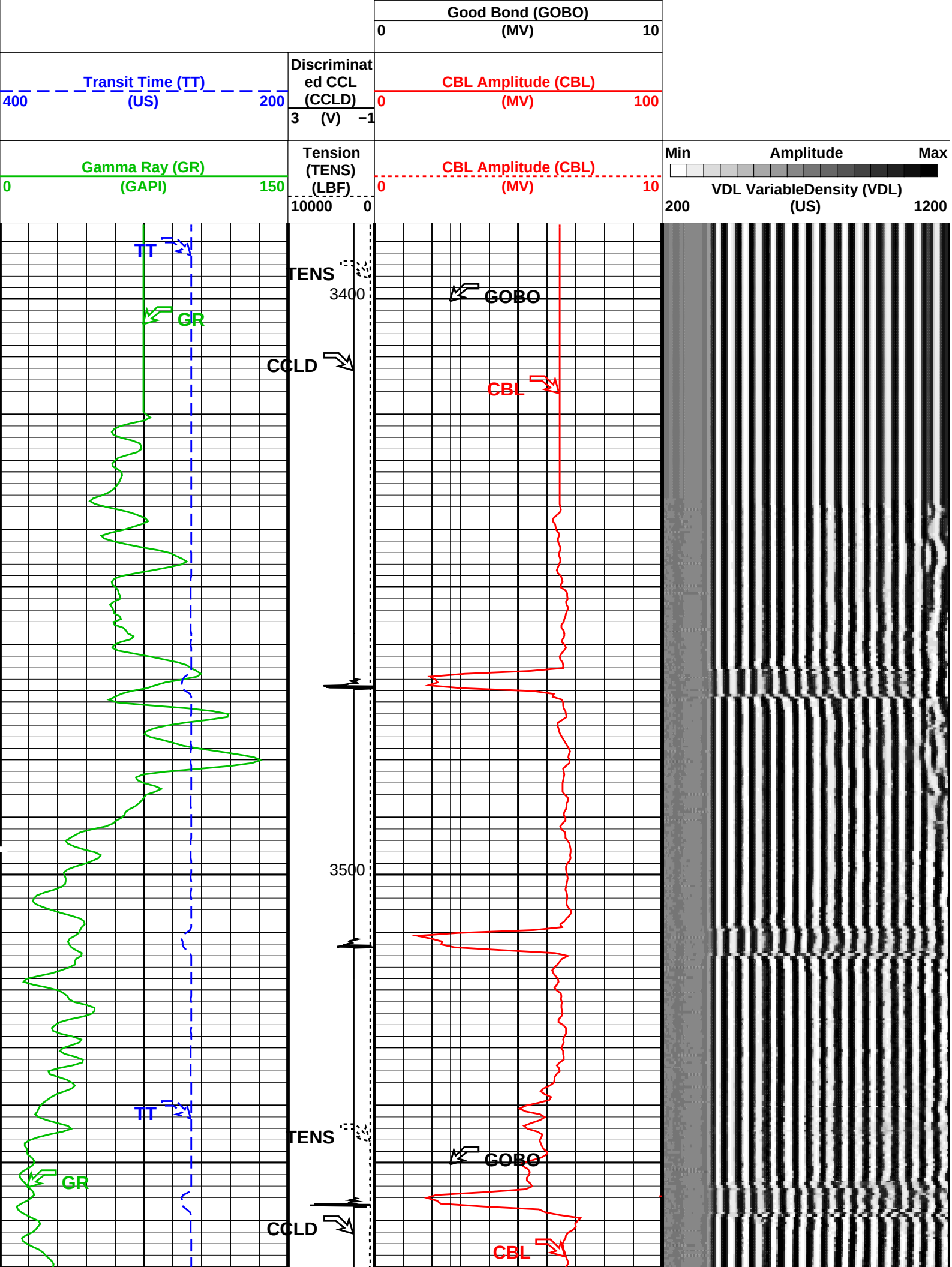
Changed Parameter Summary

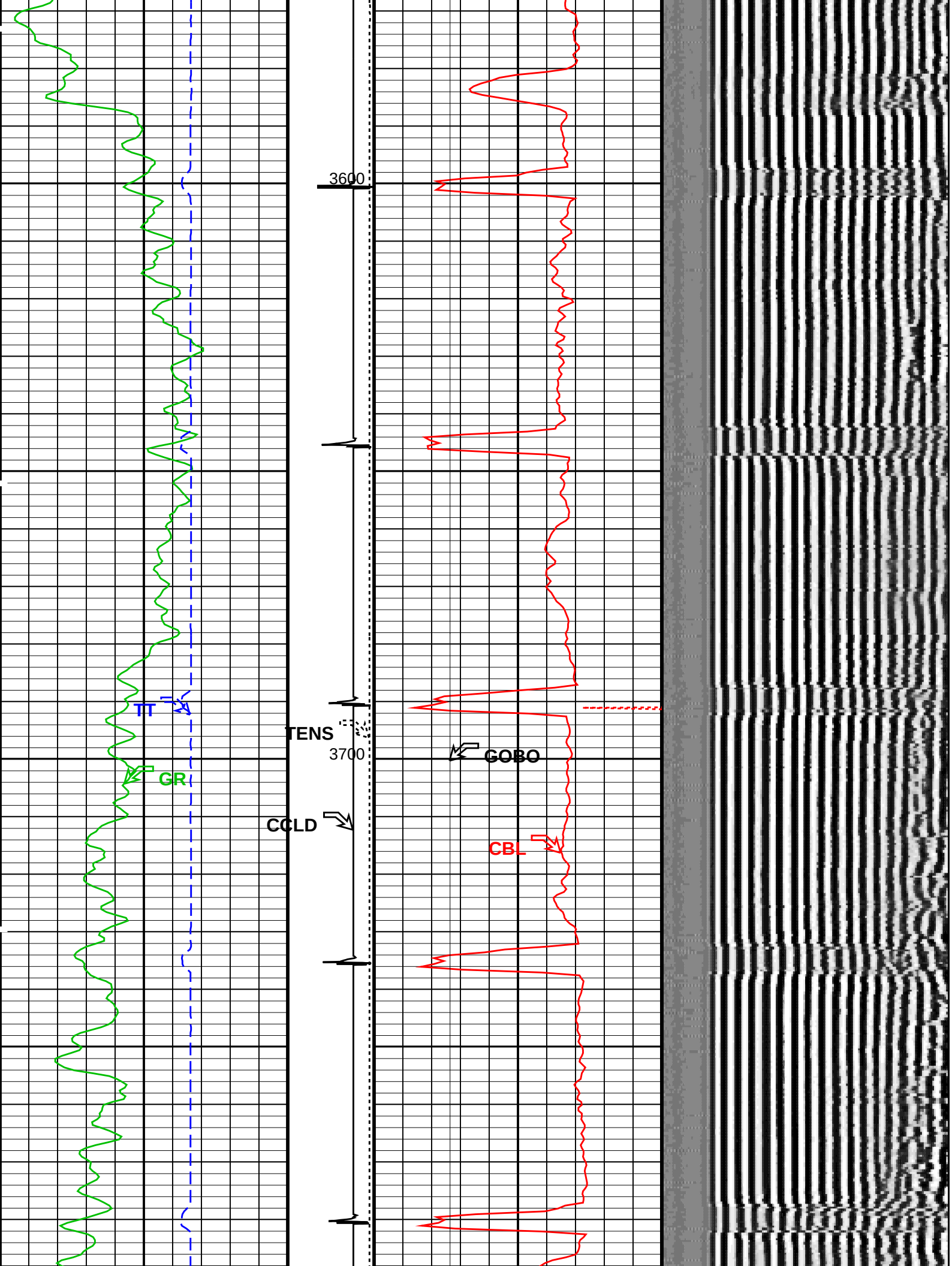
DLIS Name	New Value	Previous Value	Depth & Time
ZCMT	**3.7 MRAY**	**2.8 MRAY**	**8071.5 15:30:17**

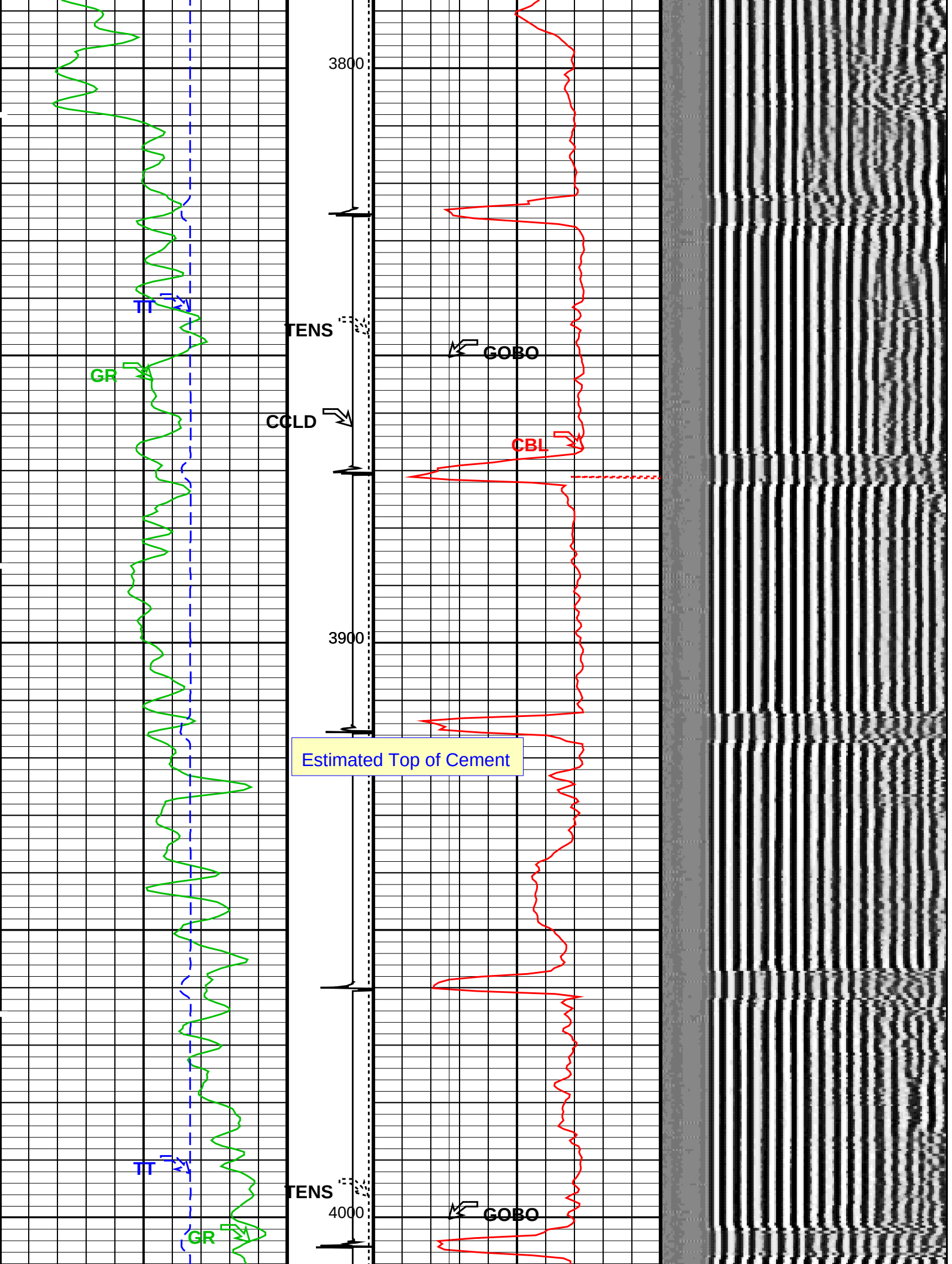
PIP SUMMARY

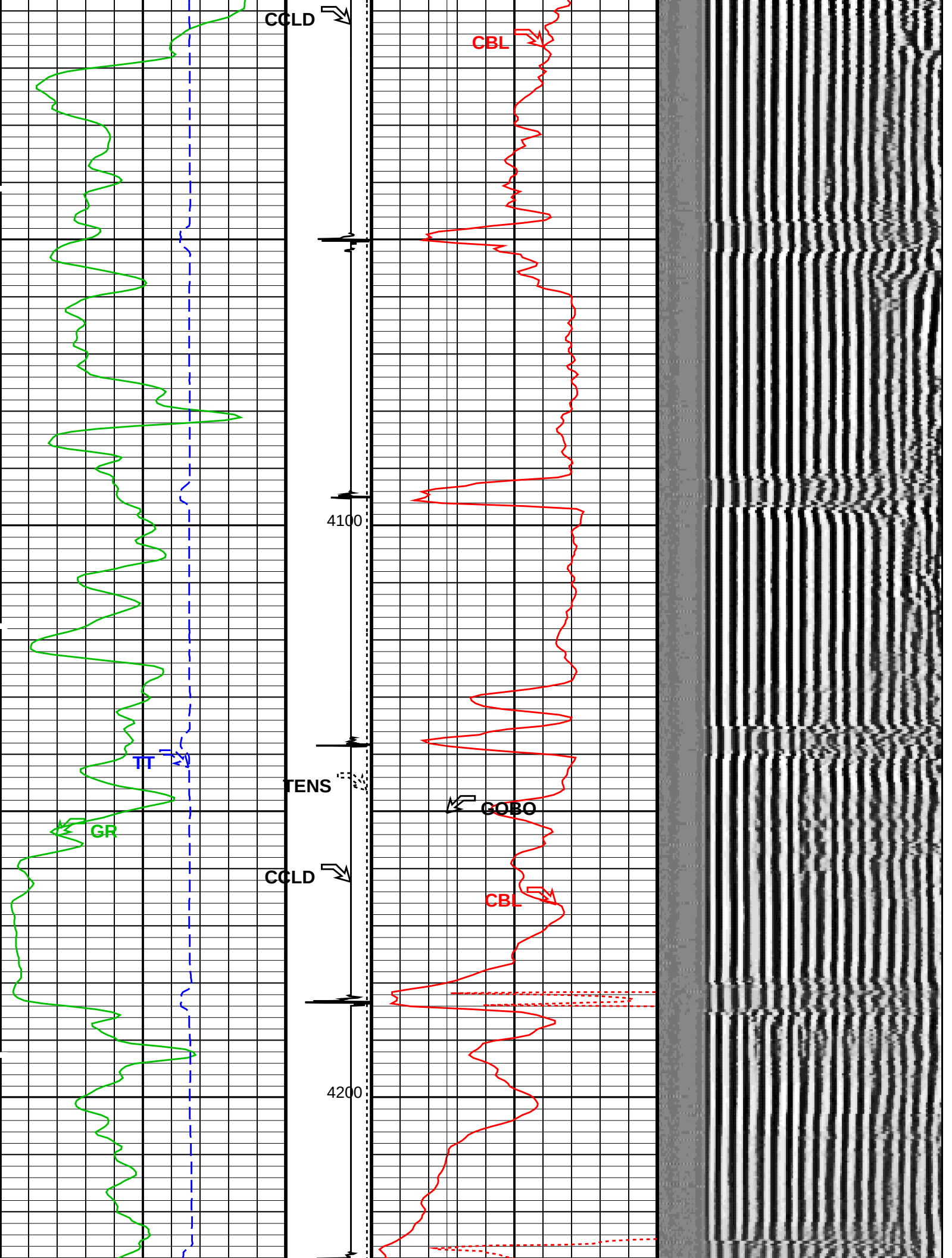
Time Mark Every 60 S

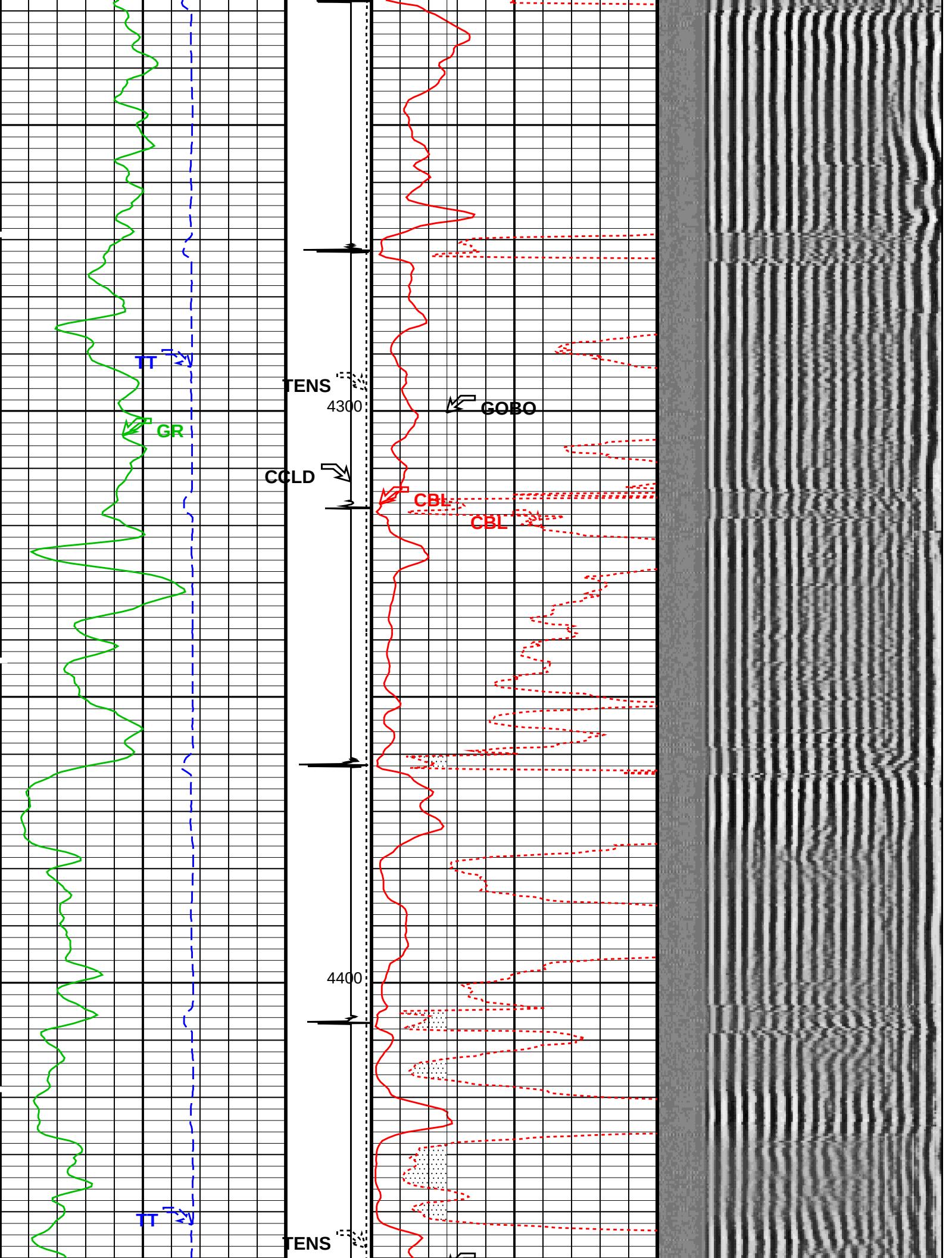
GoodBond
From ACBL to GOBO

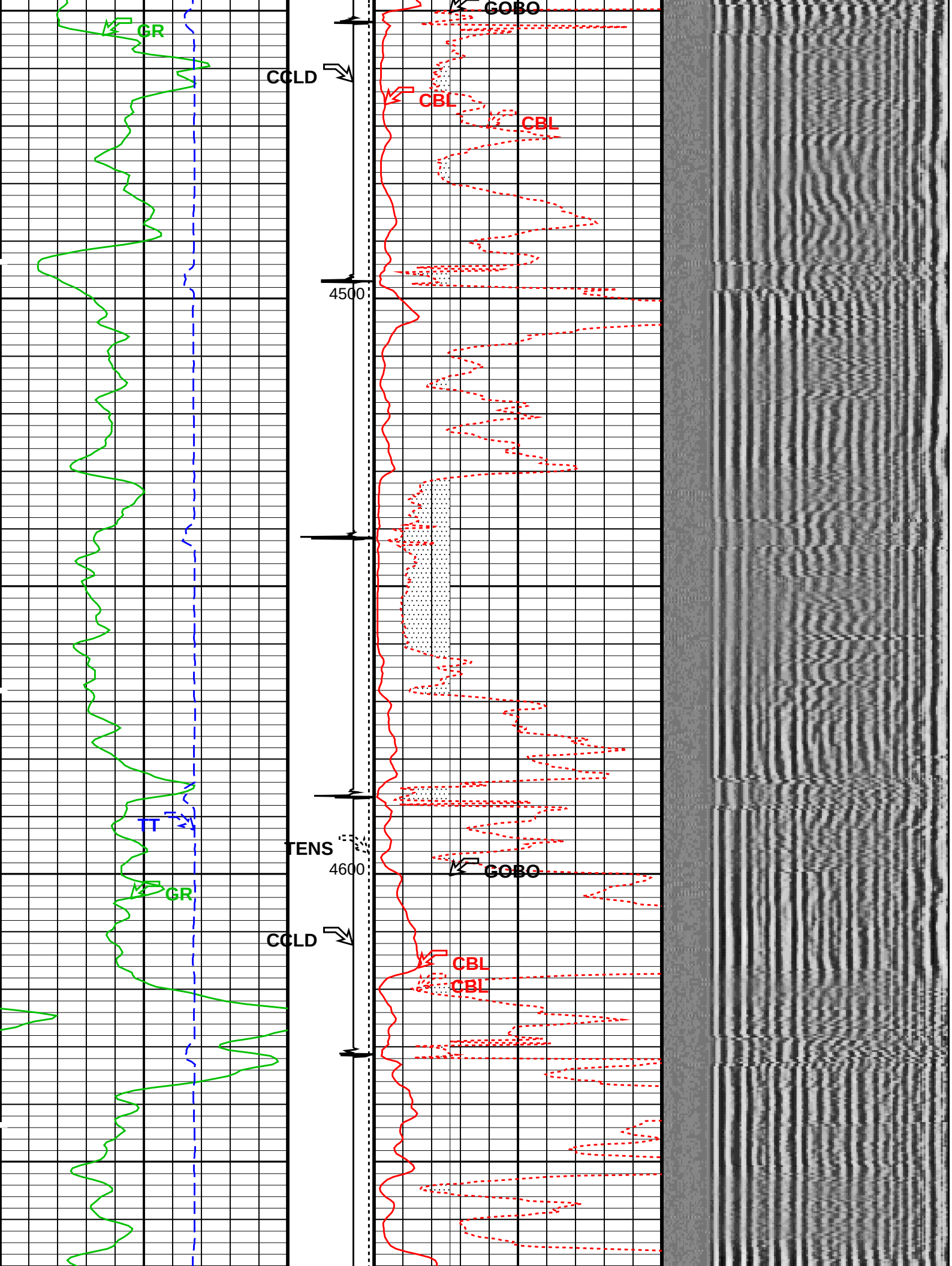

Good Bond (GOBO)
0 (MV) 10
Transit Time (TT)
400 (US) 200
Discriminated CCL (CCLD)
3 (V) −1
CBL Amplitude (CBL)
0 (MV) 100
Gamma Ray (GR)
0 (GAPI) 150
Tension (TENS) (LBF)
10000 0
CBL Amplitude (CBL)
0 (MV) 10
Min Amplitude Max
VDL VariableDensity (VDL)
200 (US) 1200
TT
GR
TENS
3400
GOBO
CCLD
CBL
3500
TT
GR
TENS
GOBO
CCLD
CBL

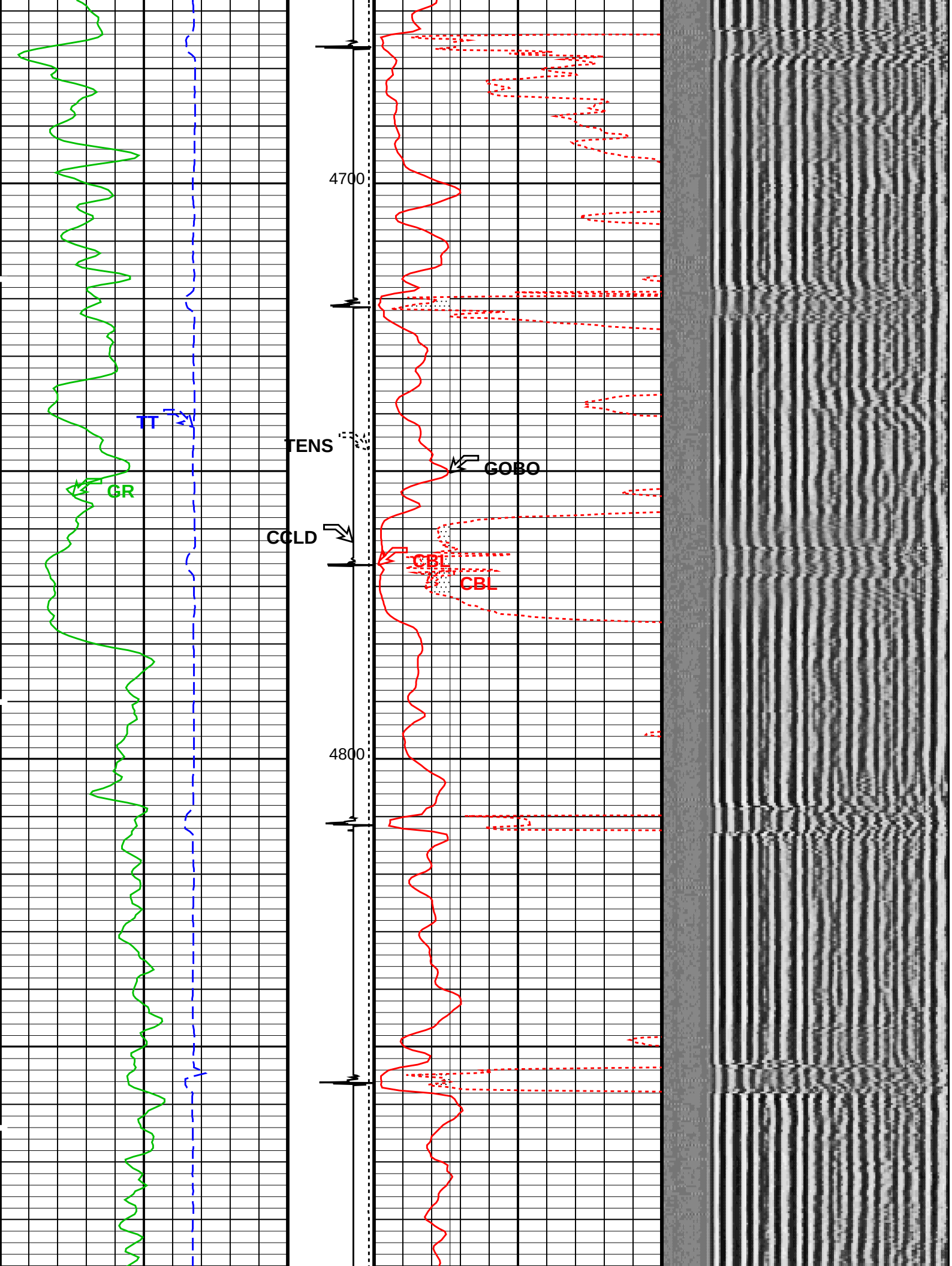

3600
TT
TENS
3700
GOBO
GR
CCLD
CBL

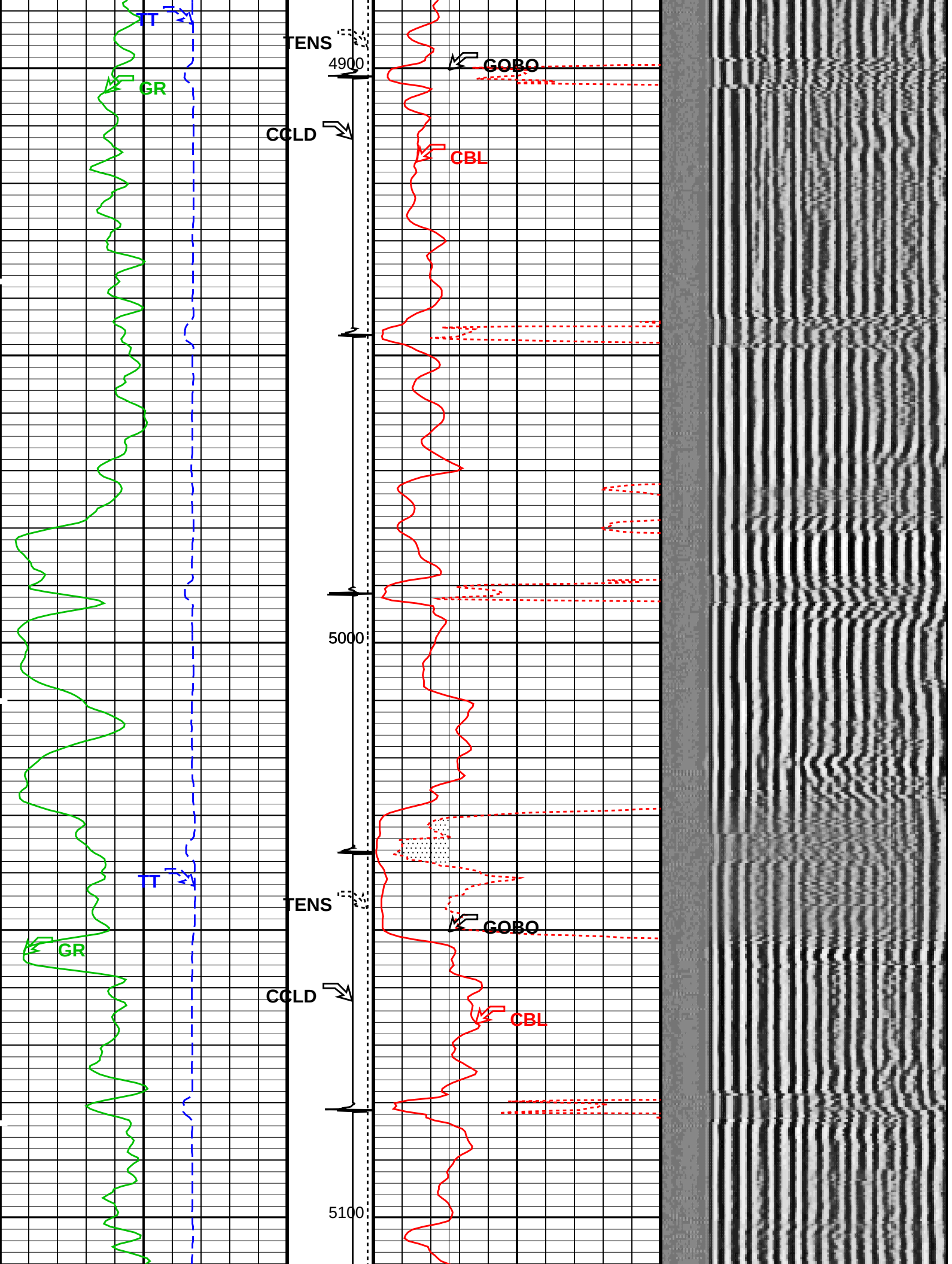

3800
TT
TENS
GOBO
GR
CCLD
CBL
3900
Estimated Top of Cement
TT
TENS
4000
GOBO
GR

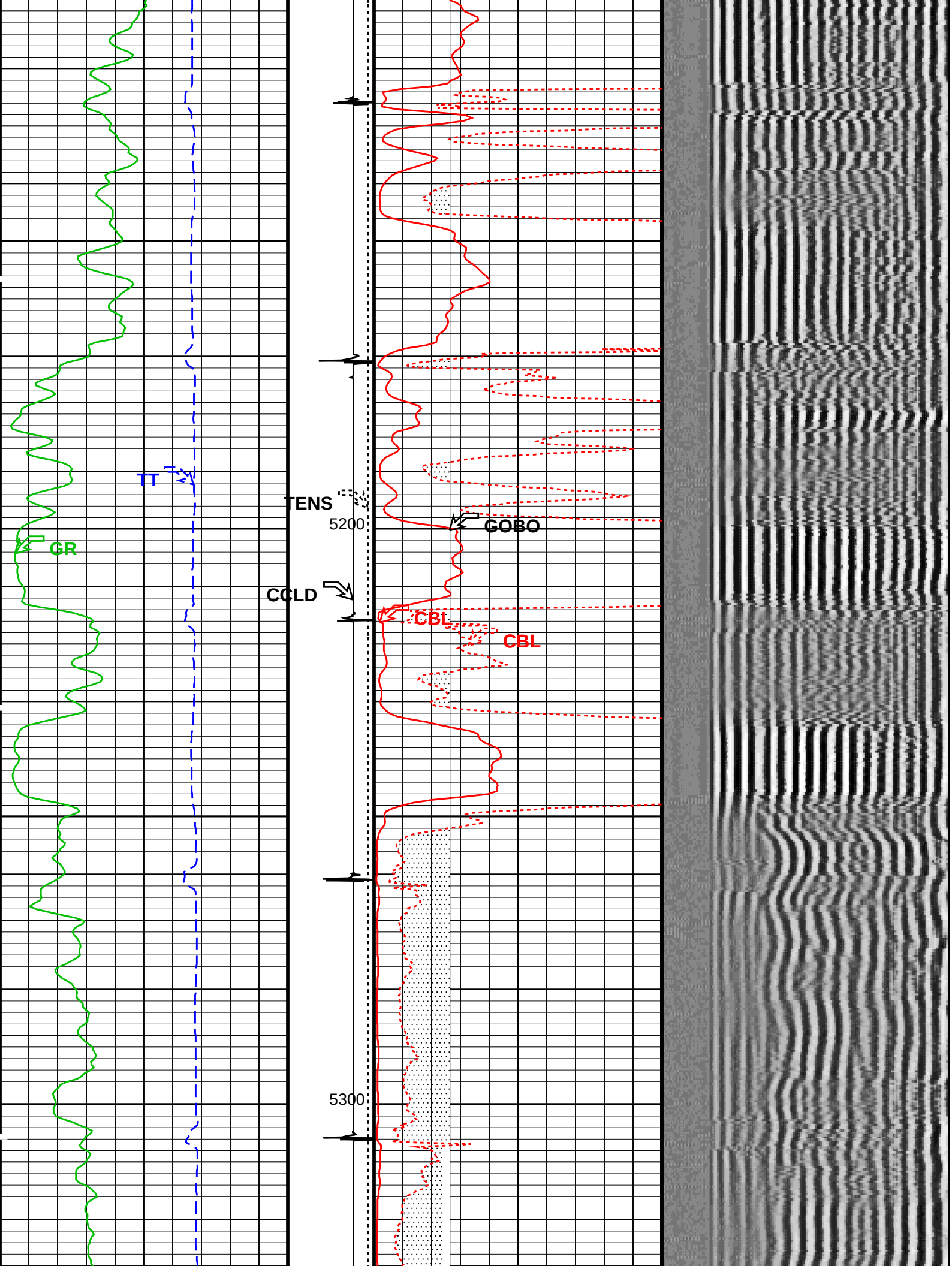

CCLD
CBL
4100
TT
TENS
GOBO
GR
CCLD
CBL
4200

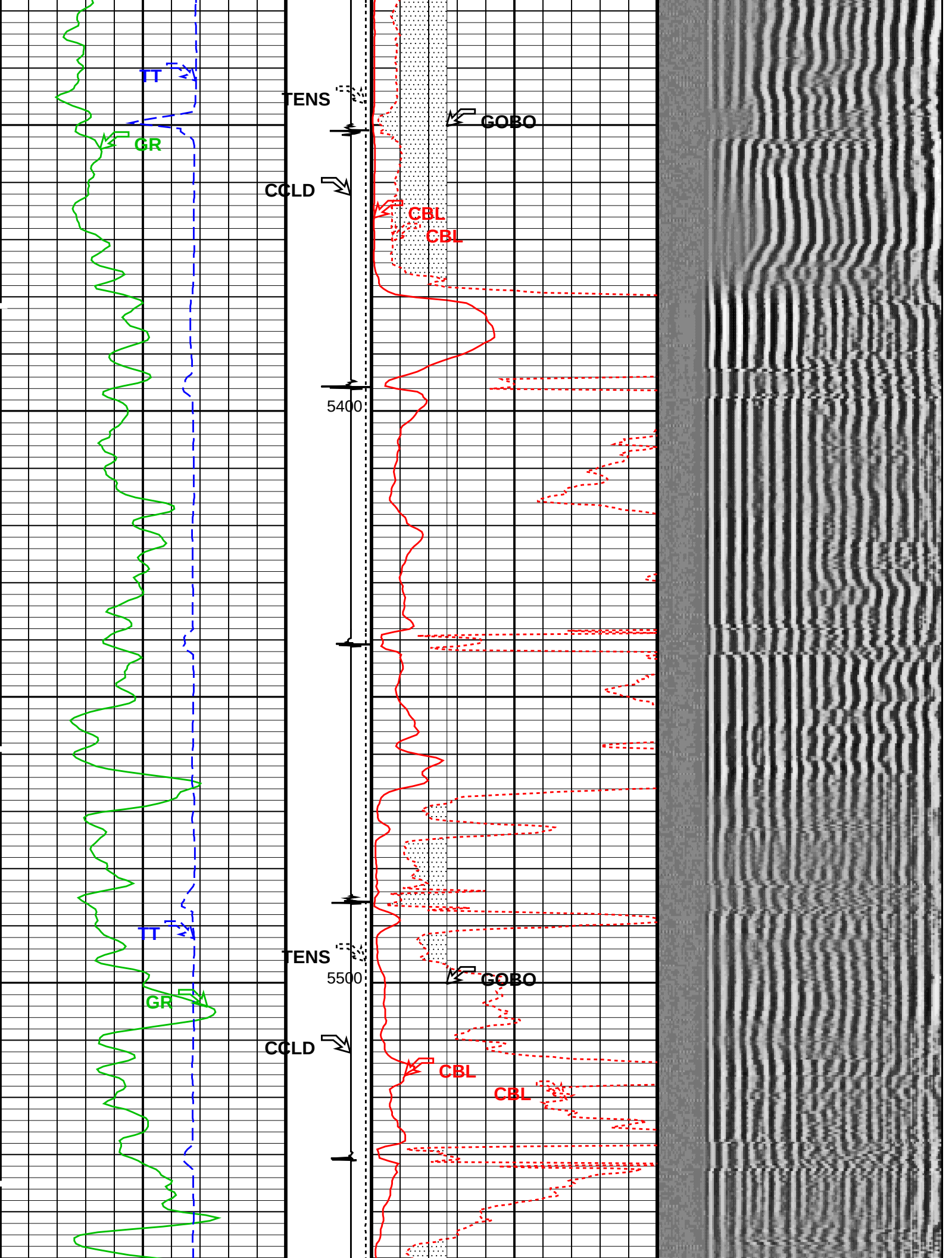

TT
GR
TENS
4300
GOBO
CCLD
CBL
CBL
4400
TT
TENS

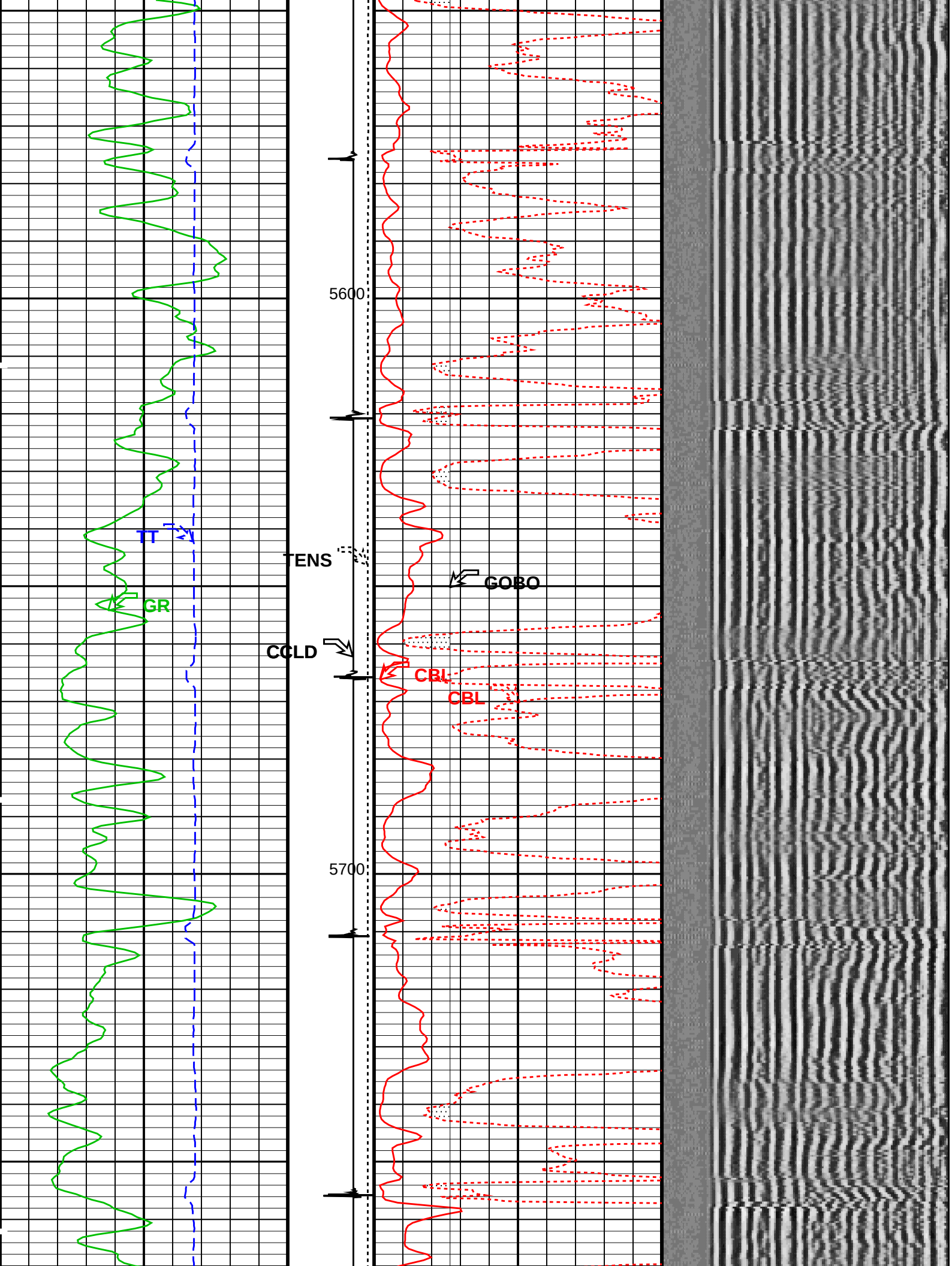

GR
CCLD
COBO
CBL
CBL
4500
TT
TENS
4600
GR
COBO
CCLD
CBL
CBL

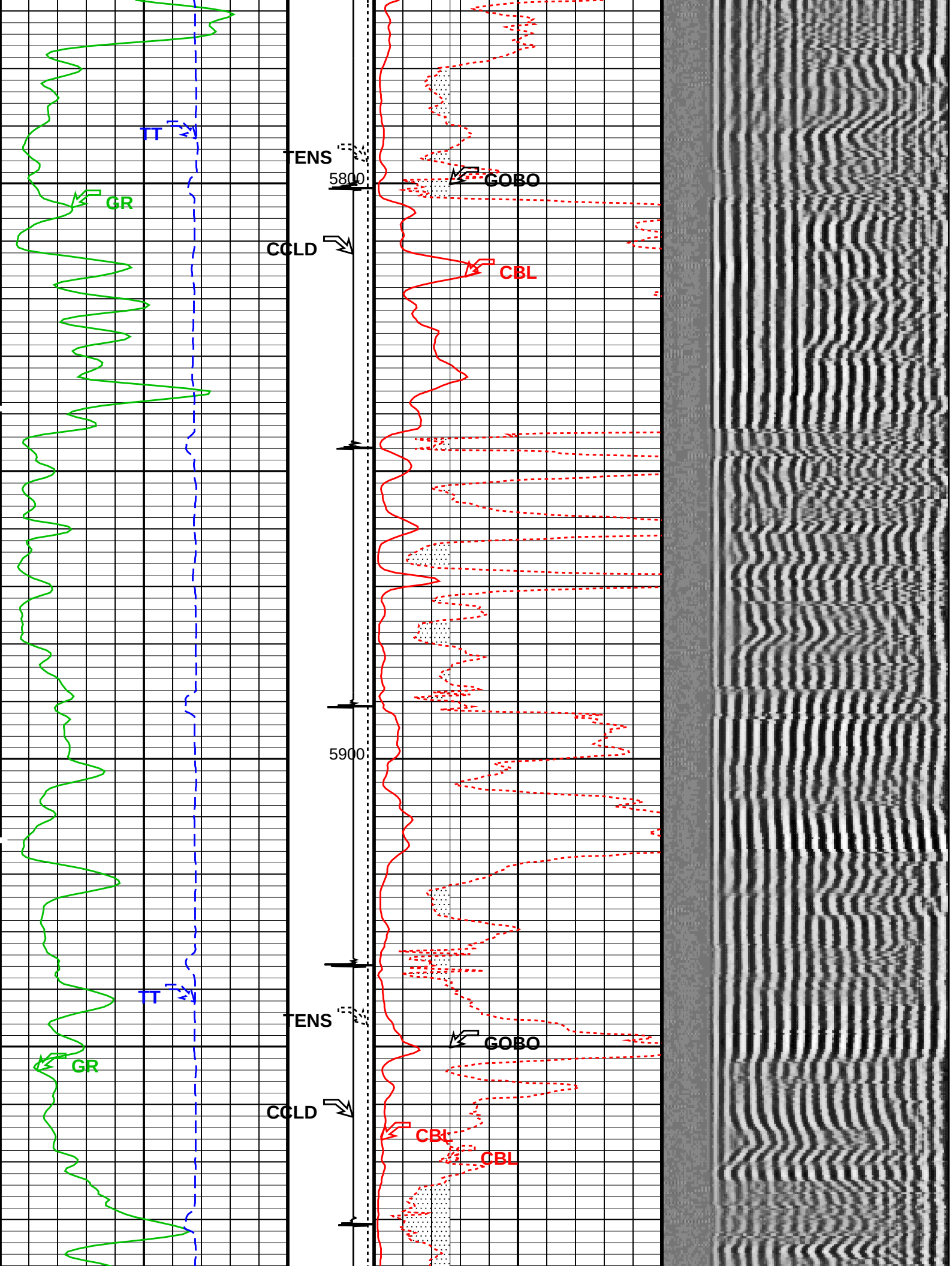

4700
TT
TENS
GOBO
GR
CCLD
CBL
CBL
4800

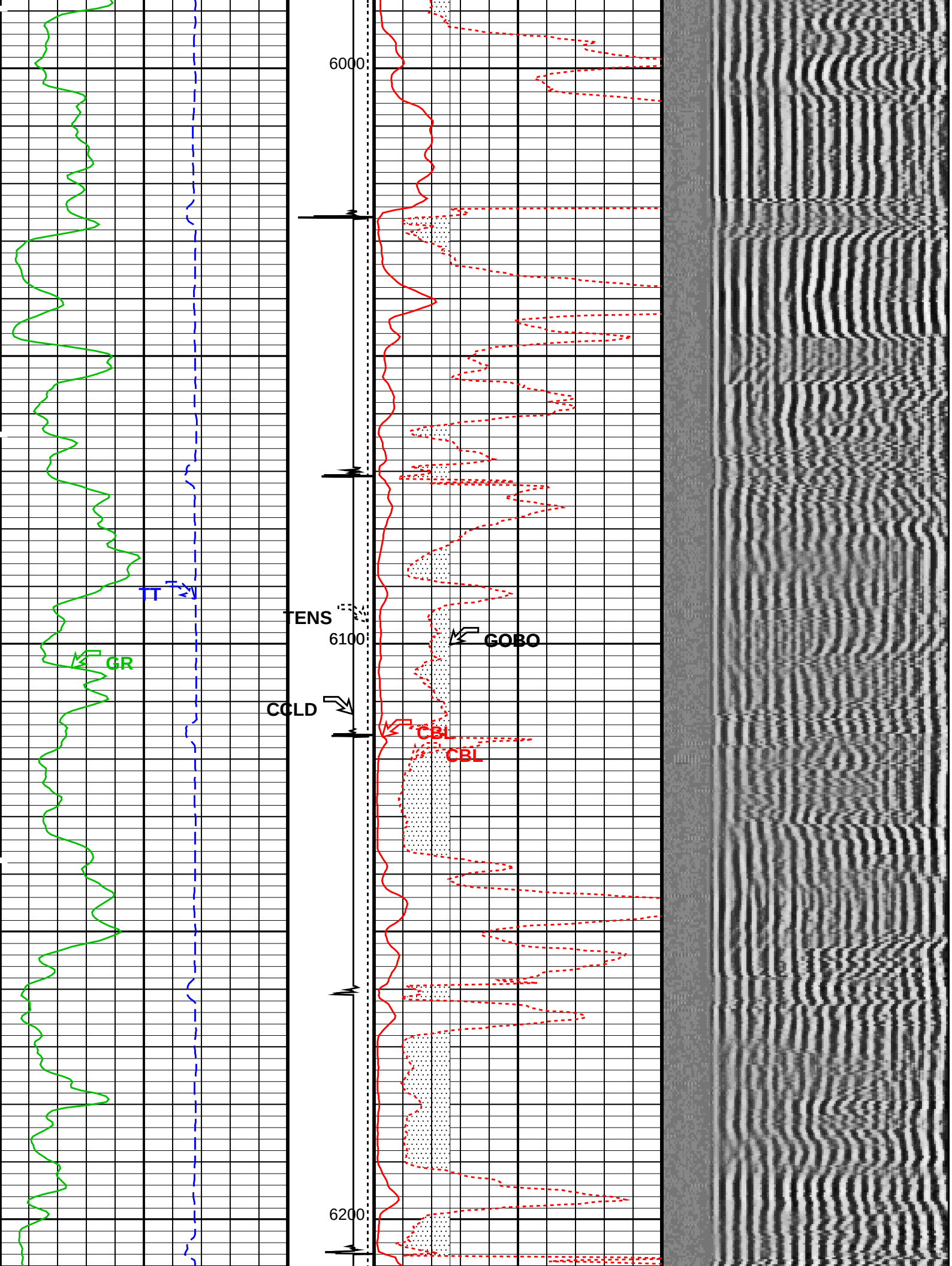

TT
GR
TENS
4900
GOBO
CCLD
CBL
5000
TT
GR
TENS
GOBO
CCLD
CBL
5100

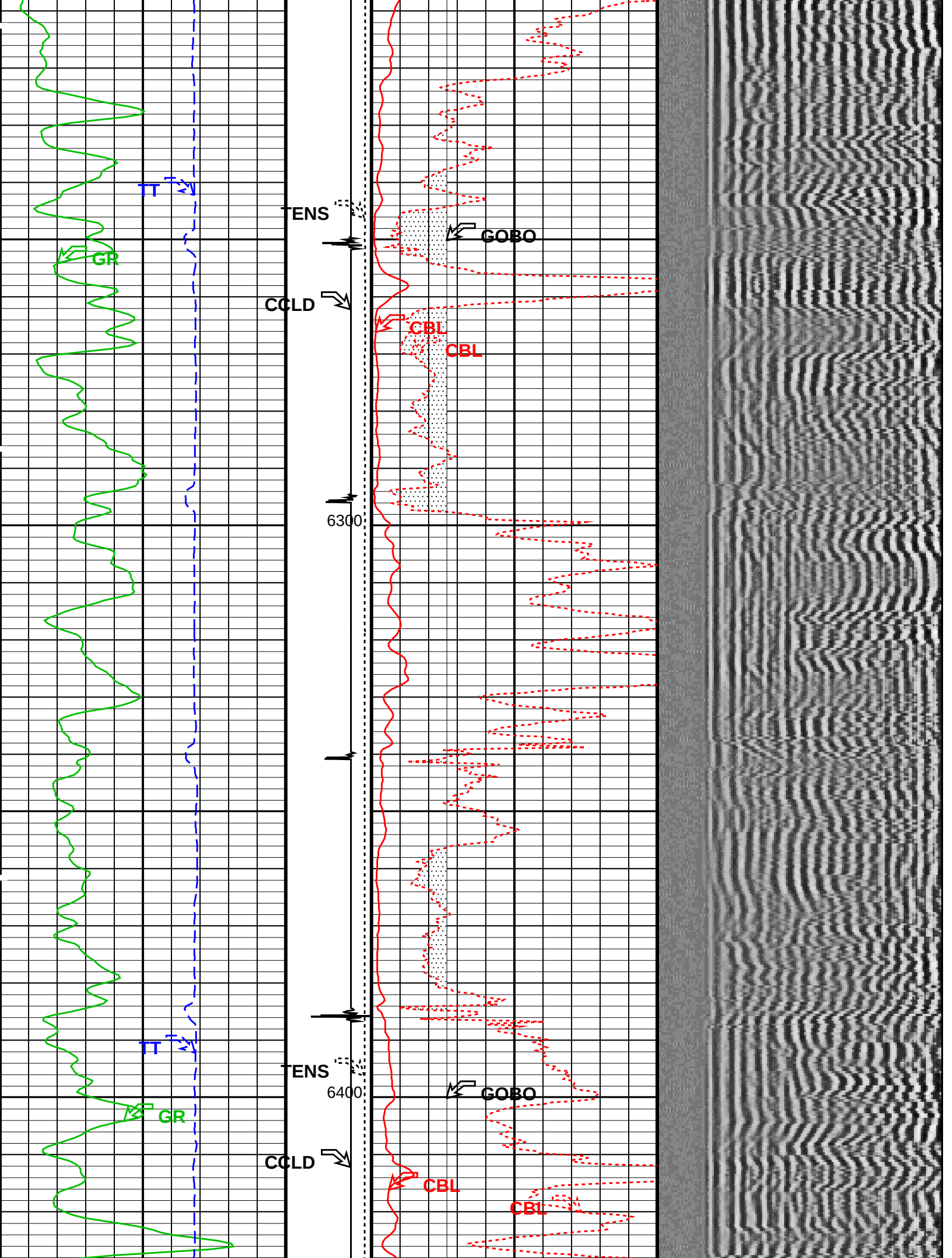

TT
TENS
5200
GOBO
GR
CCLD
CBL
CBL
5300

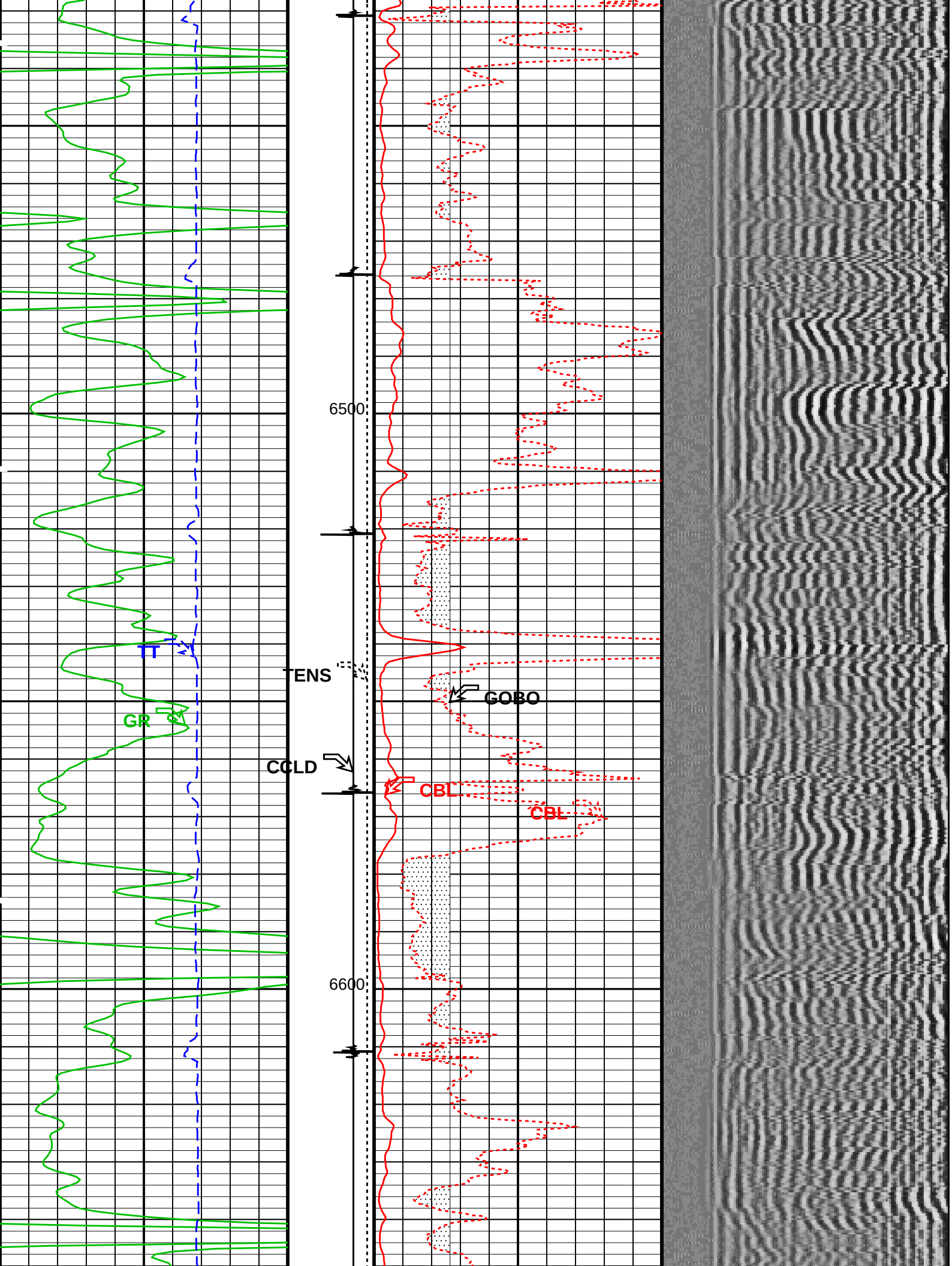

TT
GR
TENS
GOBO
CCLD
CBL
CBL
5400
TT
TENS
5500
GOBO
GR
CCLD
CBL
CBL

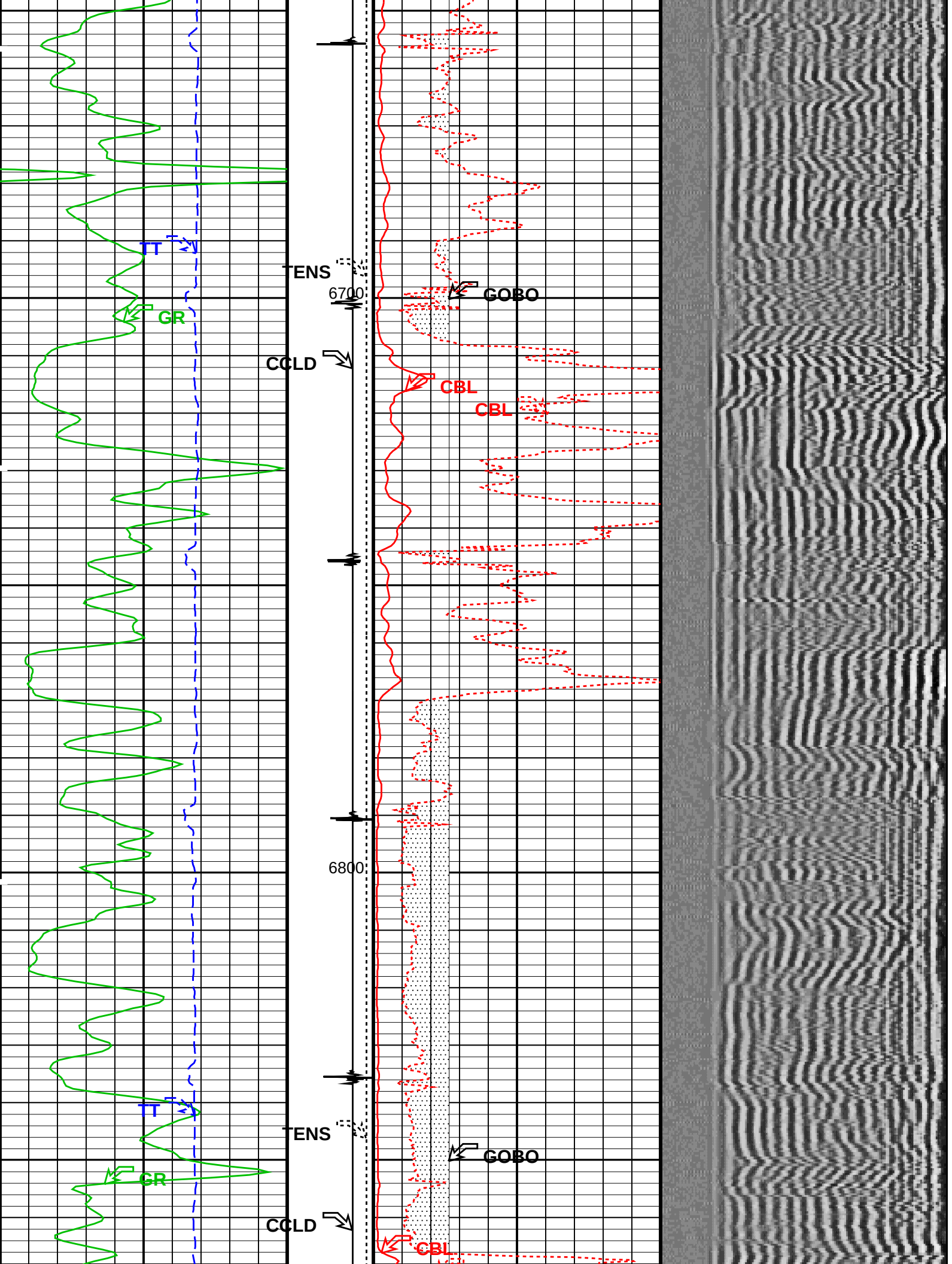

5600
5700
TT
TENS
GOBO
GR
CCLD
CBL
CBL

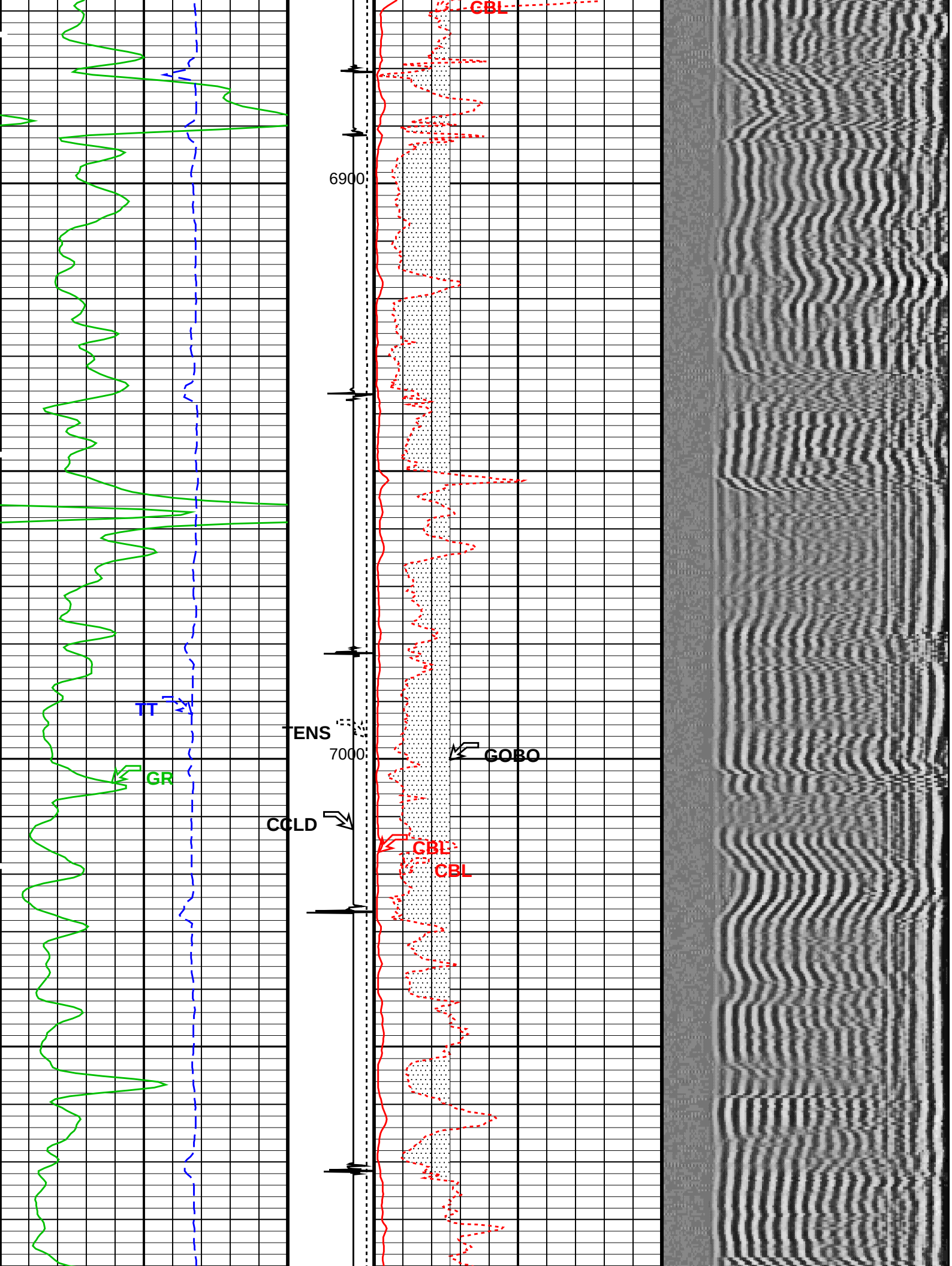

TT
TENS
5800
GOBO
GR
CCLD
CBL
5900
TT
TENS
GOBO
GR
CCLD
CBL
CBL

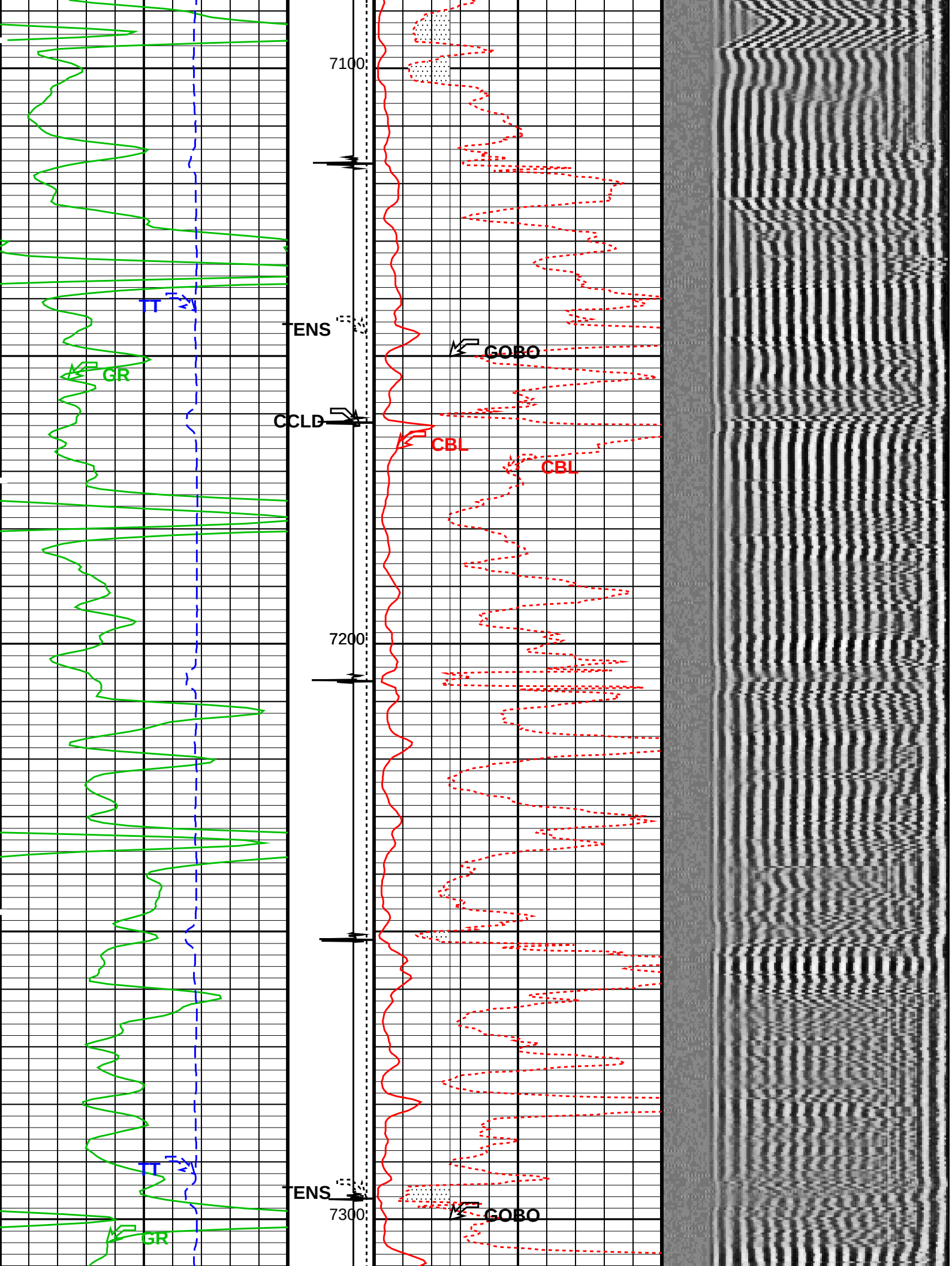

6000
TT
TENS
6100
GOBO
GR
CCLD
CBL
CBL
6200

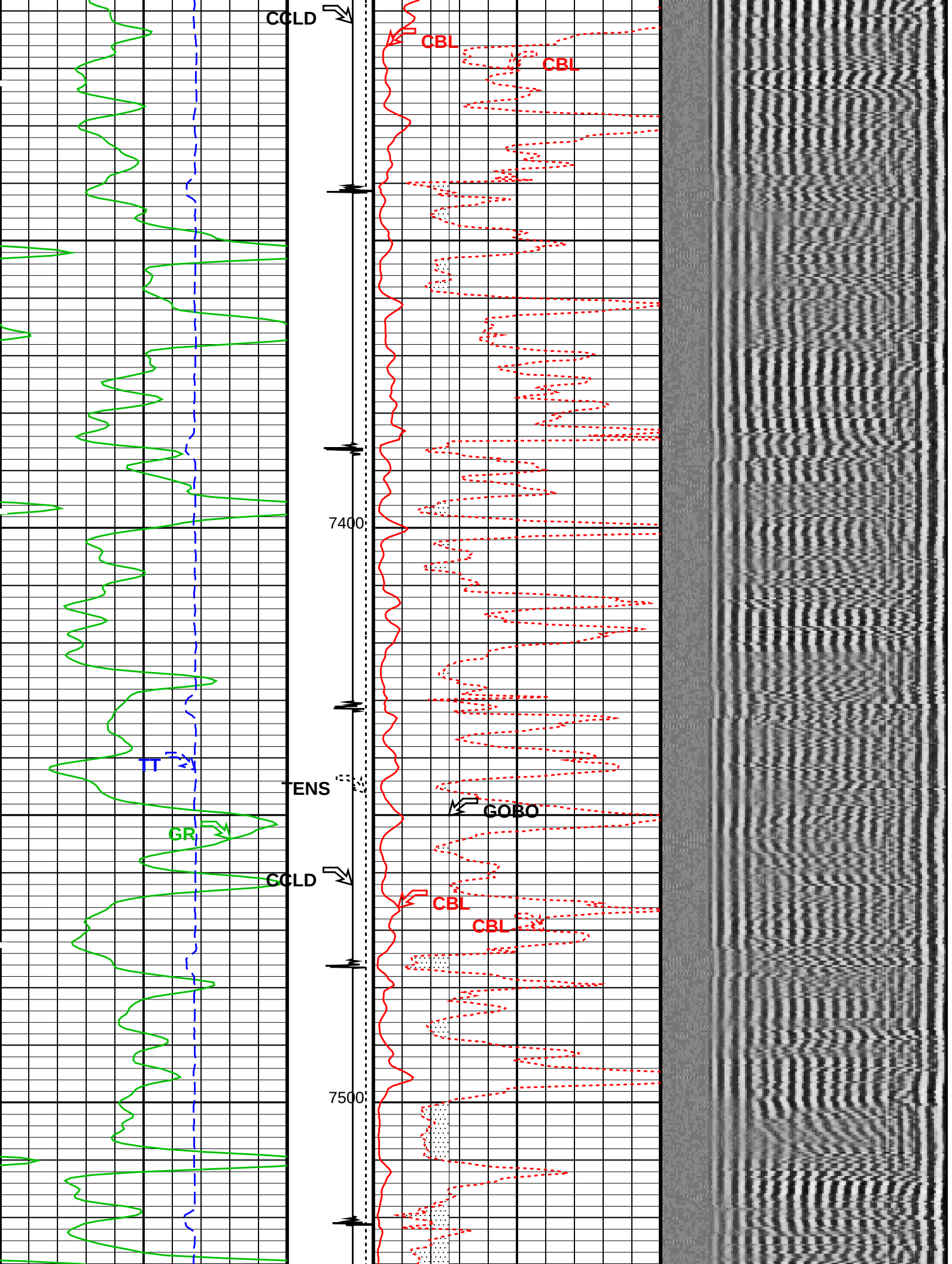

TT
TENS
GOBO
GR
CCLD
CBL
CBL
6300
TT
TENS
6400
GOBO
GR
CCLD
CBL
CBL

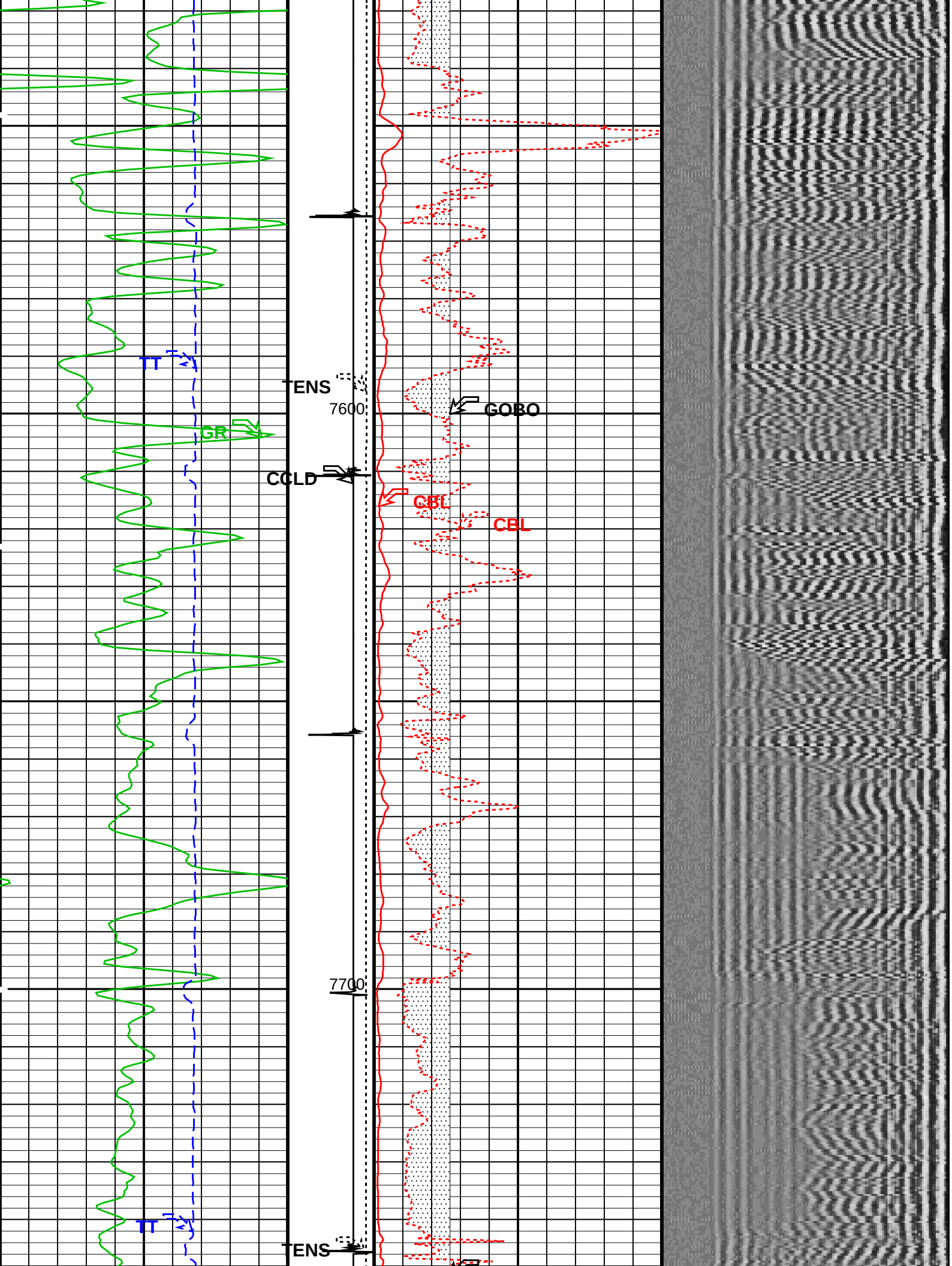

6500
6600
TT
GR
TENS
GOBO
CCLD
CBL
CBL

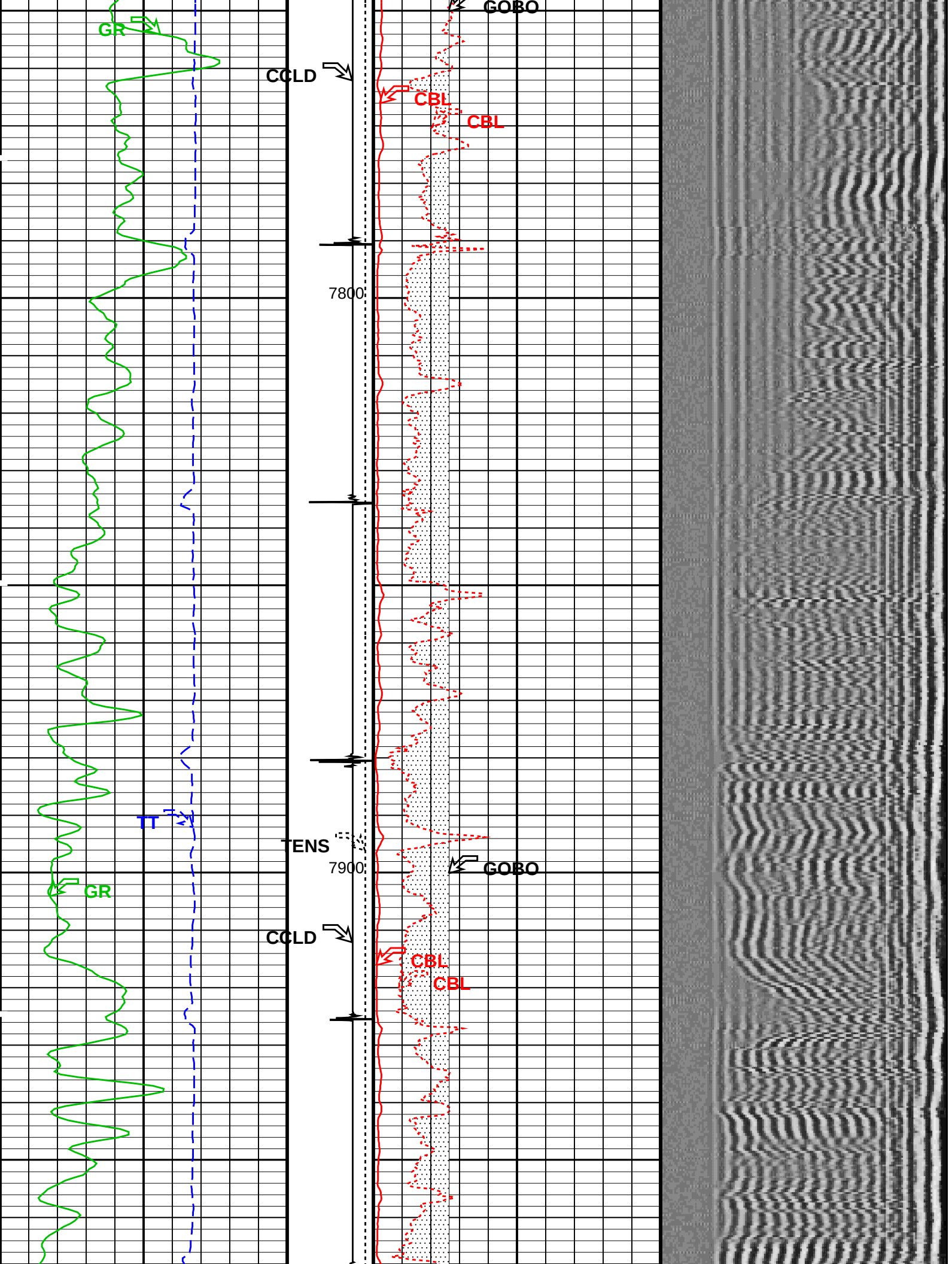

TT
TENS
6700
GOBO
GR
CCLD
CBL
CBL
6800
TT
TENS
GOBO
GR
CCLD
CBL

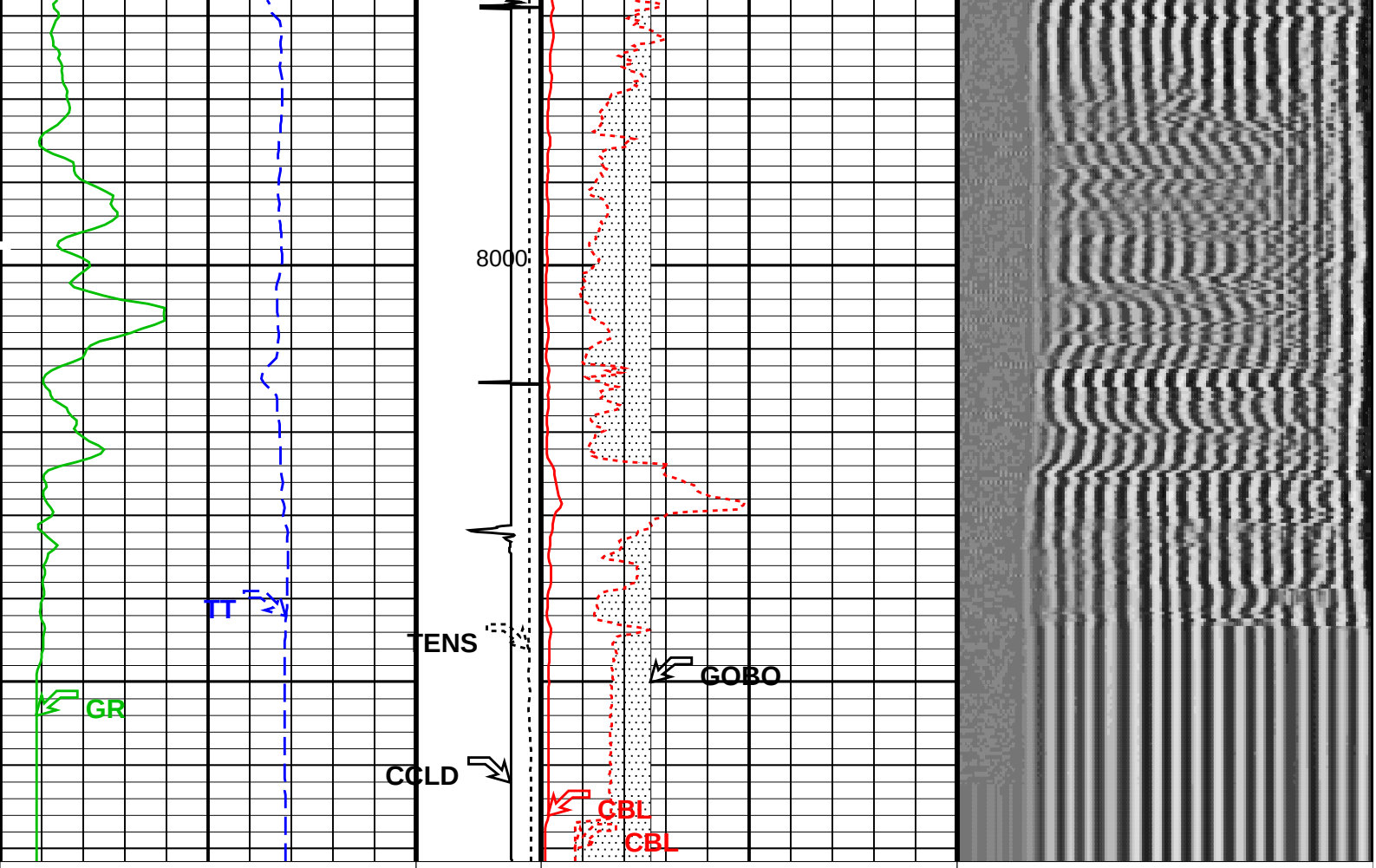

CBL
6900
TT
TENS
7000
GOBO
GR
CCLD
GBL
CBL


7100
TT
TENS
GR
COBO
CCLD
CBL
CBL
7200
TT
TENS
7300
GR
COBO


CCLD
CBL
CBL
7400
TT
TENS
GOBO
GR
CCLD
CBL
CBL
7500


TT
TENS
7600
GOBO
GR
CCLD
CBL
CBL
7700
TT
TENS


GR
CCLD
CBL
CBL
GOBO
7800
TT
TENS
7900
GOBO
GR
CCLD
CBL
CBL



Gamma Ray (GR)	Tension (TENS) (LBF)	CBL Amplitude (CBL)	VDL VariableDensity (VDL)
0 (GAPI) 150	10000 0	0 (MV) 10	Min Amplitude Max 200 (US) 1200
Transit Time (TT)	**Discriminated CCL (CCLD)**	**CBL Amplitude (CBL)**	
400 (US) 200	3 (V) −1	0 (MV) 100	
		Good Bond (GOBO)	
		0 (MV) 10	
		GoodBond From ACBL to GOBO	

PIP SUMMARY

Time Mark Every 60 S

Format: CBL_VDL_ONLY Vertical Scale: 5" per 100' Graphics File Created: 13−Mar−2013 15:30

OP System Version: 19C2−270

SCMT−CB 19C2−270 PSPT 19C2−270

<<<SCMT Cement Evaluation Information Summary>>>

Sonde Serial Number	SCMS−CB 8258		
Current Casing Size	5.50000 IN		
Casing Weight	17.0 LB/F		
Expected CBL Amplitude in Free Pipe Section	71 MV	Minimum Sonic Amplitude	1.14425 MV (100% Cement) 2.61257 MV (80% Cement)
		MAP Minimum Sonic Amplitude	7.26080 MV (100% Cement) 12.2684 MV (80% Cement)

Master Calibration (Normalization)		Before Calibration (Adjustment)	
Date of Master Calibration	1−AUG−2012		
CBL Correction Factor	0.0712122	CBL Adjustment Factor (CBAF)	1.0
MAP 1 Correction Factor	0.0973827	MAP Adjustment Factor (MPAF)	1.0
MAP 2 Correction Factor	0.101954		
MAP 3 Correction Factor	0.100504		
MAP 4 Correction Factor	0.106228		
MAP 5 Correction Factor	0.113710		
MAP 6 Correction Factor	0.102595		
MAP 7 Correction Factor	0.119115		
MAP 8 Correction Factor	0.104243		

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	243.137	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	357.137	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	71	MV
CMCF	CBL Cement Type Compensation Factor	0.107868	
CMTC	SCMT Slow Channel Multiplexer Mode	SCAN	
CMTM	SCMT Operating Mode	LOG	
CSCS	SCMT Slow Channel Index	VCC	
CTHI	Casing Thickness	0.306128	IN
DTF	Delta−T Fluid	204.5	US/F
FATT	Acoustic Attenuation due to Fluid	0	DB/F
FCF	CBL Fluid Compensation Factor	0.97682	
GOBO	Good Bond	2.61257	MV
MAPD	SCMT MAP Peak Detection Mode	PEAK	
MAPG	SCMT MAP Peak Detection T0_Delay and Noise Gate	186.137	US
MAPT	SCMT MAP Fixed Threshold Level	30	MV
MATT	Maximum Attenuation	6.79489	DB/F
MCCF	MAP Cement Type Compensation Factor	0.242968	
MCI	Minimum Cemented Interval for Isolation	4.75	FT
MMSA	MAP Minimum Sonic Amplitude	7.2608	MV
MSA	Minimum Sonic Amplitude	1.14425	MV
PEDE	Peak Detection On/Off Switch in Playback	OFF	
VDLG	VDL Manual Gain	5	
ZCMT	Acoustic Impedance of Cement	2.8	MRAY
	System and Miscellaneous		
CWEI	Casing Weight	17.00	LB/F
DFD	Drilling Fluid Density	8.60	LB/G
DO	Depth Offset for Playback	1.6	FT
DORL	Depth Offset for Repeat Analysis	1.6	FT
PP	Playback Processing	NORMAL	
TD	Total Depth	8050	FT

Input DLIS Files

DEFAULT	SCMT_PSP_033LUP	FN:44	PRODUCER	13−Mar−2013 14:17	8070.0 FT	3413.5 FT

Output DLIS Files

DEFAULT	SCMT_PSP_036PUP	FN:50	PRODUCER	13−Mar−2013 15:30
CLIENT	SCMT_PSP_036PUC	FN:51	CUSTOMER	13−Mar−2013 15:30

Schlumberger

Repeat Pass
0 PSI

Company: Cascade Petroleum LLC **Well: State 16−11S−55W−0**

Input DLIS Files

DEFAULT	SCMT_PSP_033LUP	FN:44	PRODUCER	13−Mar−2013 14:17	8070.0 FT	3413.5 FT
DEFAULT	SCMT_PSP_031LUP	FN:40	PRODUCER	13−Mar−2013 14:08	8063.5 FT	7706.0 FT

Output DLIS Files

DEFAULT	SCMT_PSP_036PUP	FN:50	PRODUCER	13−Mar−2013 15:30		
CLIENT	SCMT_PSP_036PUC	FN:51	CUSTOMER	13−Mar−2013 15:30		

OP System Version: 19C2−270

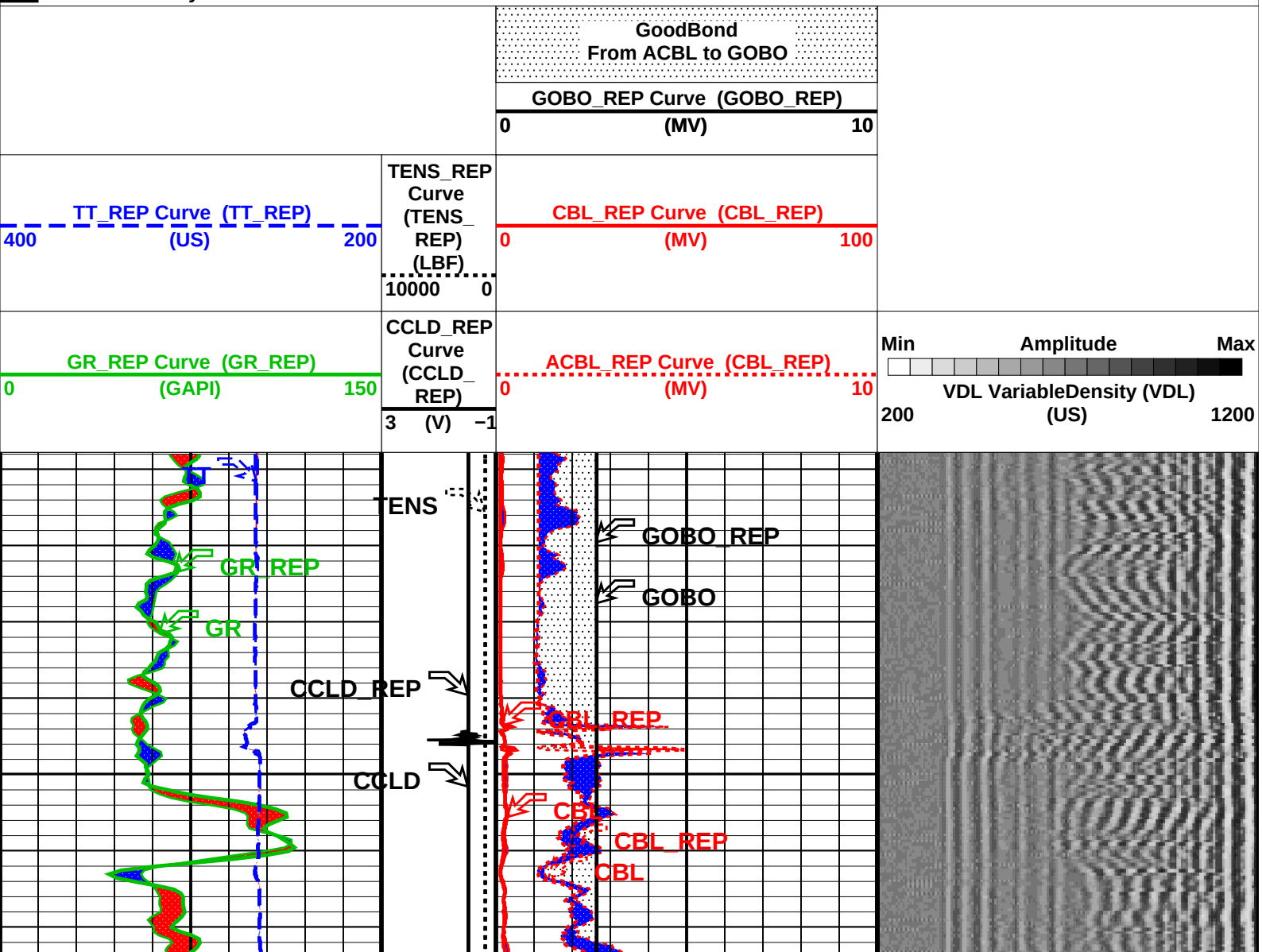
SCMT−CB	19C2−270	PSPT	19C2−270

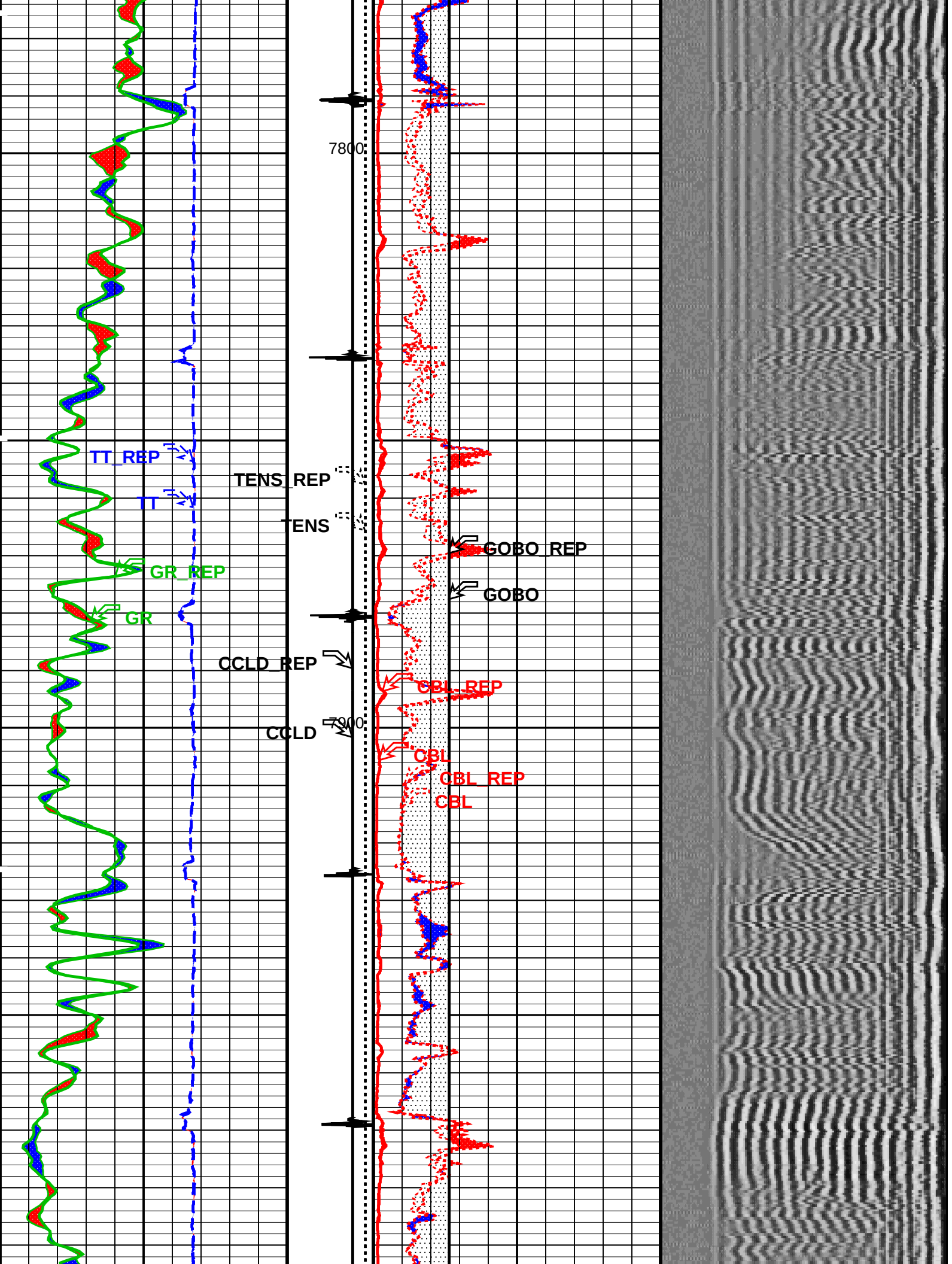
Changed Parameter Summary

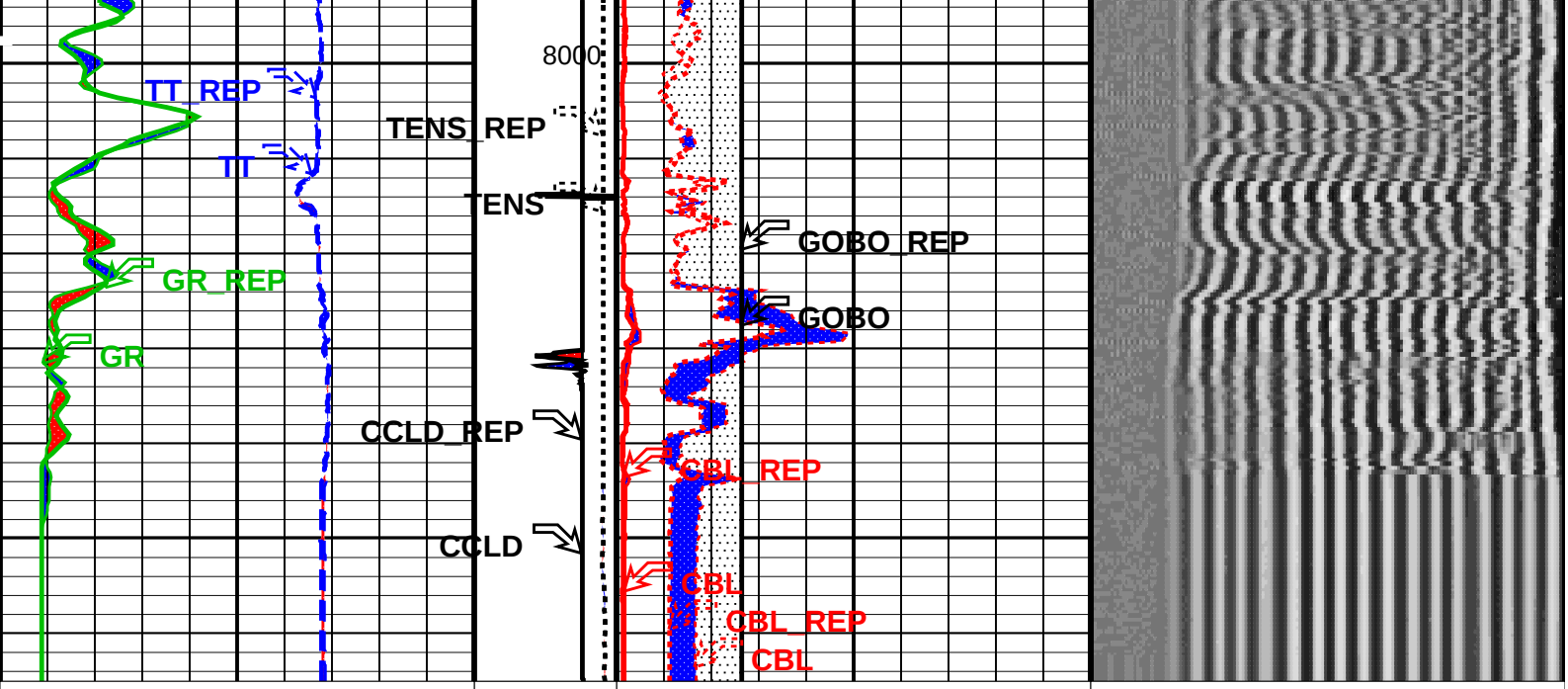
DLIS Name	New Value	Previous Value	Depth & Time
ZCMT	3.7 MRAY	2.8 MRAY	8071.5 15:30:17

PIP SUMMARY

Time Mark Every 60 S




7800
TT_REP
TT
GR_REP
GR
TENS_REP
TENS
GOBO_REP
GOBO
CCLD_REP
CCLD
7900
CBL_REP
CBL
CBL_REP
CBL



GR_REP Curve (GR_REP)
0 (GAPI) 150

CCLD_REP Curve (CCLD_REP)
3 (V) −1

ACBL_REP Curve (CBL_REP)
0 (MV) 10

Min Amplitude Max
VDL VariableDensity (VDL)
200 (US) 1200

TT_REP Curve (TT_REP)
400 (US) 200

TENS_REP Curve (TENS_REP) (LBF)
10000 0

CBL_REP Curve (CBL_REP)
0 (MV) 100

GOBO_REP Curve (GOBO_REP)
0 (MV) 10

GoodBond
From ACBL to GOBO

PIP SUMMARY

Time Mark Every 60 S

Format: CBL_VDL_ONLY_REP Vertical Scale: 5" per 100' Graphics File Created: 13−Mar−2013 15:30

OP System Version: 19C2−270

SCMT−CB 19C2−270 PSPT 19C2−270

<<<SCMT Cement Evaluation Information Summary>>>

Sonde Serial Number	SCMS−CB 8258		
Current Casing Size	5.50000 IN		
Casing Weight	17.0 LB/F		
Expected CBL Amplitude in Free Pipe Section	71 MV	Minimum Sonic Amplitude	1.14425 MV (100% Cement) 2.61257 MV (80% Cement)
		MAP Minimum Sonic Amplitude	7.26080 MV (100% Cement) 12.2684 MV (80% Cement)
Master Calibration (Normalization)		Before Calibration (Adjustment)	
Date of Master Calibration	1−AUG−2012		
CBL Correction Factor	0.0712122	CBL Adjustment Factor (CBAF)	1.0
MAP 1 Correction Factor	0.0973827	MAP Adjustment Factor (MPAF)	1.0
MAP 2 Correction Factor	0.101954		

MAP 3 Correction Factor	0.100504
MAP 4 Correction Factor	0.106228
MAP 5 Correction Factor	0.113710
MAP 6 Correction Factor	0.102595
MAP 7 Correction Factor	0.119115
MAP 8 Correction Factor	0.104243

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	243.137	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	357.137	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	71	MV
CMCF	CBL Cement Type Compensation Factor	0.107868	
CMTC	SCMT Slow Channel Multiplexer Mode	SCAN	
CMTM	SCMT Operating Mode	LOG	
CSCS	SCMT Slow Channel Index	VCC	
CTHI	Casing Thickness	0.306128	IN
DTF	Delta−T Fluid	204.5	US/F
FATT	Acoustic Attenuation due to Fluid	0	DB/F
FCF	CBL Fluid Compensation Factor	0.97682	
GOBO	Good Bond	2.61257	MV
MAPD	SCMT MAP Peak Detection Mode	PEAK	
MAPG	SCMT MAP Peak Detection T0_Delay and Noise Gate	186.137	US
MAPT	SCMT MAP Fixed Threshold Level	30	MV
MATT	Maximum Attenuation	6.79489	DB/F
MCCF	MAP Cement Type Compensation Factor	0.242968	
MCI	Minimum Cemented Interval for Isolation	4.75	FT
MMSA	MAP Minimum Sonic Amplitude	7.2608	MV
MSA	Minimum Sonic Amplitude	1.14425	MV
PEDE	Peak Detection On/Off Switch in Playback	OFF	
VDLG	VDL Manual Gain	5	
ZCMT	Acoustic Impedance of Cement	2.8	MRAY
	System and Miscellaneous		
CWEI	Casing Weight	17.00	LB/F
DFD	Drilling Fluid Density	8.60	LB/G
DO	Depth Offset for Playback	1.6	FT
DORL	Depth Offset for Repeat Analysis	1.6	FT
PP	Playback Processing	NORMAL	
TD	Total Depth	8050	FT

Input DLIS Files

DEFAULT	SCMT_PSP_033LUP	FN:44	PRODUCER	13−Mar−2013 14:17	8070.0 FT	3413.5 FT
DEFAULT	SCMT_PSP_031LUP	FN:40	PRODUCER	13−Mar−2013 14:08	8063.5 FT	7706.0 FT

Output DLIS Files

DEFAULT	SCMT_PSP_036PUP	FN:50	PRODUCER	13−Mar−2013 15:30
CLIENT	SCMT_PSP_036PUC	FN:51	CUSTOMER	13−Mar−2013 15:30

Schlumberger

Calibrations

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

Primary Equipment:		
Slim Cement Mapping Xmitter Electronics	SCMX − CA	8213
Slim Cement Mapping Sonde	SCMS − CB	8258
Slim Cement Mapping Cartridge	SCMC − CA	8129
Auxiliary Equipment:		
Slim Electronics Cartridge Housing	SECH − CA	8129

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
Master		1232
500.0 (Minimum)	1075 (Nominal)	1650 (Maximum)

Phase	MAP 2 Amplitude Plus MV	Value
Master		1177
500.0 (Minimum)	1075 (Nominal)	1650 (Maximum)

Phase	MAP 3 Amplitude Plus MV	Value
Master		1194
500.0 (Minimum)	1075 (Nominal)	1650 (Maximum)

Phase	MAP 4 Amplitude Plus MV	Value
Master		1130
500.0 (Minimum)	1075 (Nominal)	1650 (Maximum)

Phase	MAP 5 Amplitude Plus MV	Value
Master		1055
500.0 (Minimum)	1075 (Nominal)	1650 (Maximum)

Phase	MAP 6 Amplitude Plus MV	Value
Master		1170
500.0 (Minimum)	1075 (Nominal)	1650 (Maximum)

Phase	MAP 7 Amplitude Plus MV	Value
Master		1007
500.0 (Minimum)	1075 (Nominal)	1650 (Maximum)

Phase	MAP 8 Amplitude Plus MV	Value
Master		1151
500.0 (Minimum)	1075 (Nominal)	1650 (Maximum)

Phase	CBL Amplitude Plus MV	Value
Master		1348
1000 (Minimum)	1350 (Nominal)	1700 (Maximum)

Master: 1−Aug−2012 14:37

Client:	**Cascade Petroleum LLC**	**Tool:**	**PSP**
Field:	**Wildcat**	**Sub Type:**	**PBMS**
Well:	**State 16−11S−55W−02**	**Sensor:**	**Clock Model**
Run date:	**13−Mar−2013**		

PBMS Digitalization Clock	
Sonde Serial NB	
Sensor Serial NB	**1814**
Calib Date ddmmyy	**110302**
Matrix Size	**16**
Coeff CRC	**57FB**

Clock Coeff

	Temp0**	**Temp**1**	**Temp**2**
Temp0**	**−.278669829802E+03**	**+.206462481394E+01**	**−.200507522376E+00**

	Temp**3	Temp**4	Temp**5
Temp**0	+.155313739686E−02	−.281738273771E−06	0.0

Client:	Cascade Petroleum LLC
Field:	Wildcat
Well:	State 16−11S−55W−02
Run date:	13−Mar−2013
Tool:	PSP
Sub Type:	PBMS
Sensor:	Sapphire

PBMS Sapphire 10kPsi Gauge

Sonde Serial NB	COEFFICIENTS FOR SAPPHIRE PBMS−A.1814 S/N:
Sensor Serial NB	1814
Calib Date ddmmyy	110302
Matrix Size	66
Coeff CRC	AE02

Pres Coeff

	Tt**0	Tt**1	Tt**2
Tp**0	−.308953940890E+05	+.223047702735E+05	−.713154026131E+04
Tp**1	+.227089761470E+05	−.158157409157E+05	+.520051556745E+04
Tp**2	−.206216623257E+03	+.838339315475E+02	−.906461429479E+01
Tp**3	+.319488728163E+01	−.715783601545E+00	0.0
Tp**4	0.0	0.0	0.0
Tp**5	0.0	0.0	0.0

	Tt**3	Tt**4	Tt**5
Tp**0	+.108808096586E+04	−.648431252497E+02	0.0
Tp**1	−.813784851935E+03	+.496980689771E+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	**1814**
Calib Date ddmmyy	**110302**
Matrix Size	**66**
Coeff CRC	**5582**

Temp Coeff

	Tp**0	Tp**1	Tp**2
Tt0**	+.222234281547E+04	−.153153479852E+01	−.173545070280E+01
Tt1**	−.138182033329E+04	+.305081197614E+01	+.426915224573E+00
Tt2**	+.302356244254E+03	−.108612322954E+01	−.427426491089E−01
Tt3**	−.233607410950E+02	+.117972171386E+00	0.0
Tt4**	0.0	0.0	0.0
Tt5**	0.0	0.0	0.0

	Tp**3	Tp**4	Tp**5
Tt0**	+.357829782963E+00	−.410666492778E−01	0.0
Tt1**	−.368532159901E−01	+.479386351224E−02	0.0
Tt2**	0.0	0.0	0.0
Tt3**	0.0	0.0	0.0
Tt4**	0.0	0.0	0.0
Tt5**	0.0	0.0	0.0

Client: Cascade Petroleum LLC
Field: Wildcat
Well: State 16−11S−55W−02
Run date: 13−Mar−2013

Tool: PSP
Sub Type: PBMS
Sensor: GR

PBMS Gamma Ray

Sonde Serial NB	**RESISTORS FOR GR SENSOR N.33422,TOOL PBMS−AA1814. SENSOR S/N:**
Sensor Serial NB	**33422**
Calib Date ddmmyy	**141101**
Matrix Size	**12**
Coeff CRC	**B632**

GR HV Rt

	Rt**0	Rt**1
Rt0**	+.150000000000e+04	+.384000000000e+04

Client:	**Cascade Petroleum LLC**	**Tool:**	**PSP**
Field:	**Wildcat**	**Sub Type:**	**PBMS**
Well:	**State 16−11S−55W−02**	**Sensor:**	**WellTemp RTD**
Run date:	**13−Mar−2013**		

PBMS RTD Well Thermometer

Sonde Serial NB	**COEFFICIENTS FOR RTD THERMOMETER PBMS−A.1814 S/N:**
Sensor Serial NB	**1814**
Calib Date ddmmyy	**110302**
Matrix Size	**16**
Coeff CRC	**BB41**

WTemp Coeff

	Tt0**	**Tt**1**	**Tt**2**
Tt0**	**+.166216935849E+03**	**−.442983636935E+03**	**+.222536735195E+03**

	Tt3**	**Tt**4**	**Tt**5**
Tt0**	**−.393638959762E+02**	**+.262167857726E+01**	**0.0**

Company: **Cascade Petroleum LLC**

Well: **State 16−11S−55W−02**
Field: **Wildcat**
County: **Lincoln**
State: **Colorado**

E&P Wireline

Cement Bond Log
CCL − GR