Schlumberger

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

Well: **SHIDELER 30−7A (O19EB)**
Field: **MAMM CREEK**
County: **GARFIELD** State: **COLORADO**

# SLIM CEMENT MAPPING LOG
## CBL−VDL
## GR−CCL

County: GARFIELD
Field: MAMM CREEK
Location: SHL: 584 FSL & 1637 FEL
Well: SHIDELER 30−7A (O19EB)
Company: ENCANA OIL & GAS (USA) INC

LOCATION

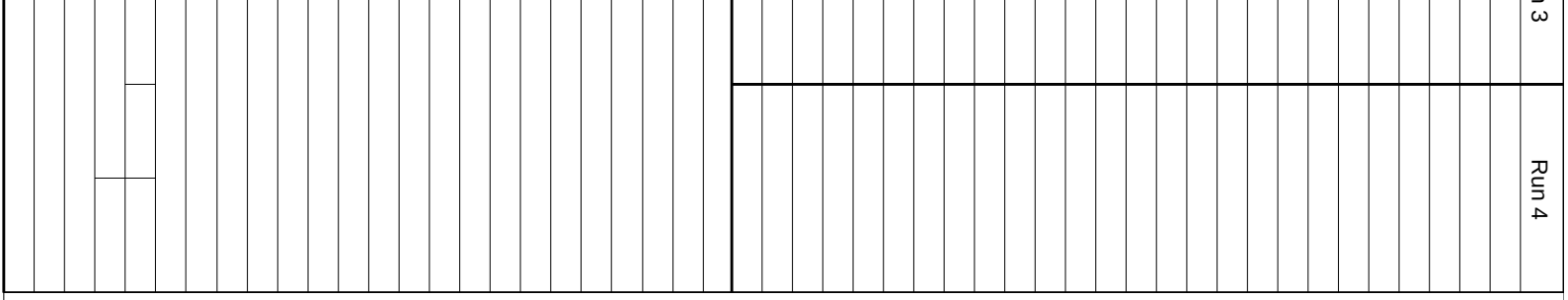
SHL: 584 FSL & 1637 FEL
BHL: 1735 FNL & 1074 FEL

Elev.: K.B. 6531.00 ft
G.L. 6509.00 ft
D.F. 6530.00 ft

Permanent Datum: GROUND LEVEL Elev.: 6509.00 ft
Log Measured From: KELLY BUSHING 22.00 ft above Perm. Datum
Drilling Measured From: KELLY BUSHING

| API Serial No. | Section | Township | Range |
|---|---|---|---|
| 05−045−21839−0000 | 19 | 7S | 92W |

| | | 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 | 28−Apr−2013 | | |
| | Run Number | 1 | | |
| | Depth Driller | 8257 ft | | |
| | Schlumberger Depth | 8159 ft | | |
| | Bottom Log Interval | 8150 ft | | |
| | Top Log Interval | 60 ft | | |
| | Casing Fluid Type | FRESH WATER | | |
| | Salinity | | | |
| | Density | 8.4 lbm/gal | | |
| | Fluid Level | 60 ft | | |
| | BIT/CASING/TUBING STRING | | | |
| | Bit Size | 7.875 in | | |
| | From | 6059 ft | | |
| | To | 8257 ft | | |
| | Casing/Tubing Size | 4.500 in | | |
| | Weight | 11.6 lbm/ft | | |
| | Grade | | | |
| | From | 22 ft | | |
| | To | 8224 ft | | |
| | Maximum Recorded Temperatures | 227 degF | | |
| | Logger On Bottom | 28−Apr−2013 | Time 13:15 | |
| | Unit Number | 391 | Location GRAND JUNCTION | |
| | Recorded By | KIRSTIE BUNTING | | |
| | Witnessed By | BILLY MYERS | | |
| | 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: 14−MAR−2013 10:41:08

## Depth System Equipment

| Depth Measuring Device | | Tension Device | | Logging Cable | |
|---|---|---|---|---|---|
| Type: | IDW−B | Type: | CMTD−B/A | Type: | 1−25ZT |
| Serial Number: | 6214 | Serial Number: | 3421 | Serial Number: | 112136 |
| Calibration Date: | 24−APR−2012 | Calibration Date: | 20−FEB−201 | Length: | 19500 FT |
| Calibrator Serial Number: | | Calibrator Serial Number: | 174878 | | |
| Calibration Cable Type: | 1−25ZT | Number of Calibration Points: | 10 | Conveyance Method: | Wireline |
| Wheel Correction 1: | −3 | Calibration RMS: | 4 | 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 POLICIES APPLIED
2. IDW USED AS PRIMARY DEPTH REFERENCE
3. SWPT DRUM COUNTER USED AS SECONDARY DEPTH REFERENCE
4.
5.
6.



| 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 DOWN LOG | |
| TOOL RAN AS PER TOOL SKETCH | |
| | |
| MAXIMUM RECORDED TEMPERATURE= 227 DEGF | |
| MAXIMUM RECORDED PRESSURE= 3207 PSIA | |
| | |
| ENTRANCE TIME= 12:45 | |

TIME ON BOTTOM= 13:15

EXIT TIME= 15:30

SHORT JOINTS: 5796 FT & 6785 FT

MAIN PASS LOGGED WITH ZERO SURFACE PRESSURE

EXPECTED CBL AMPLITUDE IN FREE PIPE IS 80MV

THANK YOU FOR CHOOSING E&P WIRELINE, A SCHLUMBERGR COMPANY

CREW: KBUNTING JBARRY KJOHNS JMANN

| RUN 1 | | RUN 2 | |
|---|---|---|---|
| SERVICE ORDER #: | CGF9−00050 | SERVICE ORDER #: | |
| PROGRAM VERSION: | 19C0−187 | PROGRAM VERSION: | |
| FLUID LEVEL: | 60 ft | FLUID LEVEL: | |

| LOGGED INTERVAL | START | STOP | LOGGED INTERVAL | START | STOP |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

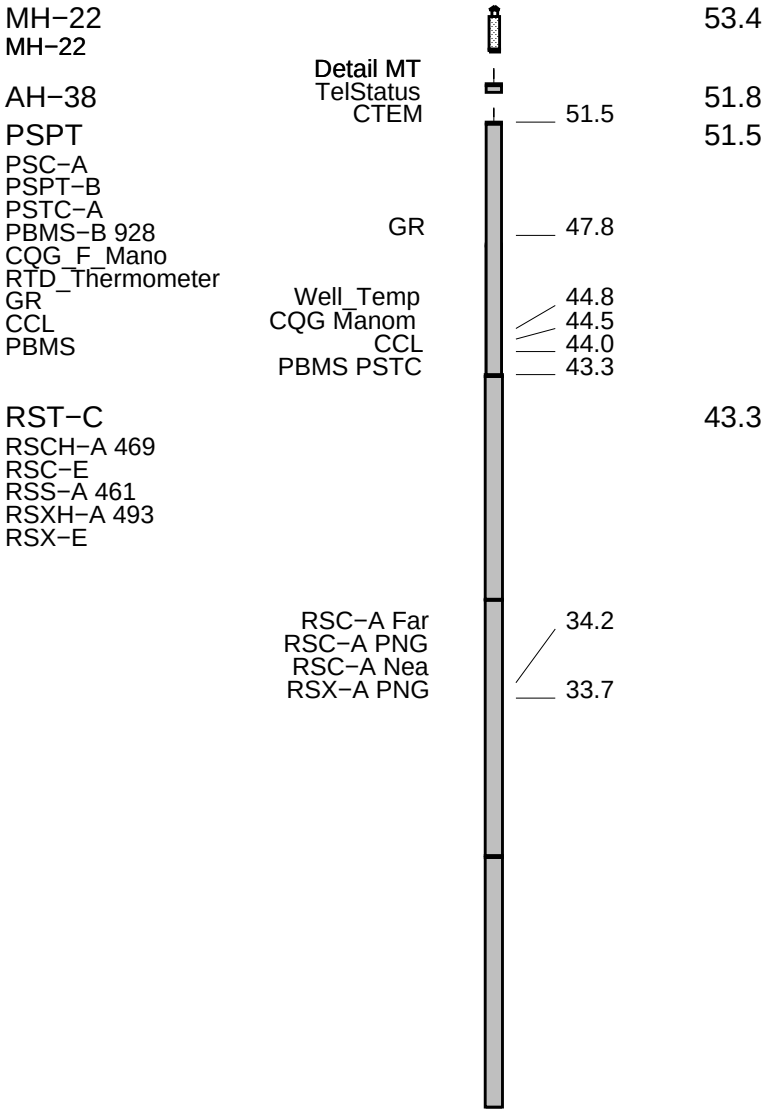
# EQUIPMENT DESCRIPTION

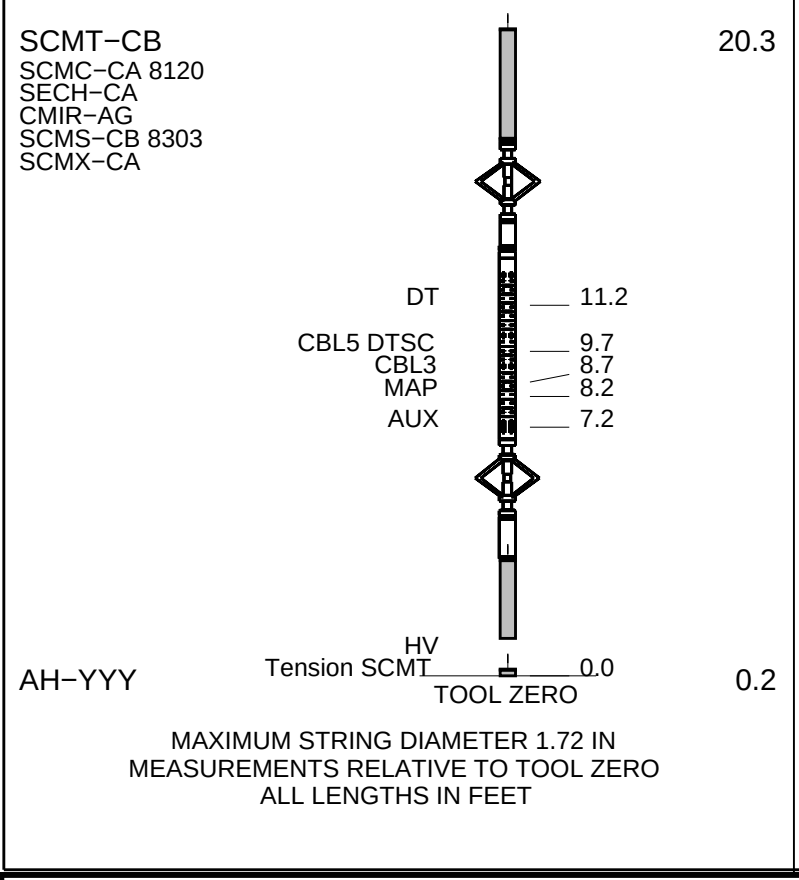
RUN 1 RUN 2

## SURFACE EQUIPMENT

WITM−A
PSC_16MHZ

## DOWNHOLE EQUIPMENT






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

Schlumberger

# MAIN PASS CBL VDL

MAXIS Field Log

**Company: ENCANA OIL & GAS (USA) INC** **Well: SHIDELER 30−7A (O19EB)**

## Input DLIS Files

| | | | | | | |
|---|---|---|---|---|---|---|
| **DEFAULT** | **SCMT_RST_PSP_075LUP** | **FN:73** | **PRODUCER** | **28−Apr−2013 13:13** | **8171.5 FT** | **10.5 FT** |

## Output DLIS Files

| | | | | | | |
|---|---|---|---|---|---|---|
| **DEFAULT** | **SCMT_RST_PSP_079PUP** | **FN:77** | **PRODUCER** | **28−Apr−2013 15:26** | **8176.5 FT** | **−36.5 FT** |

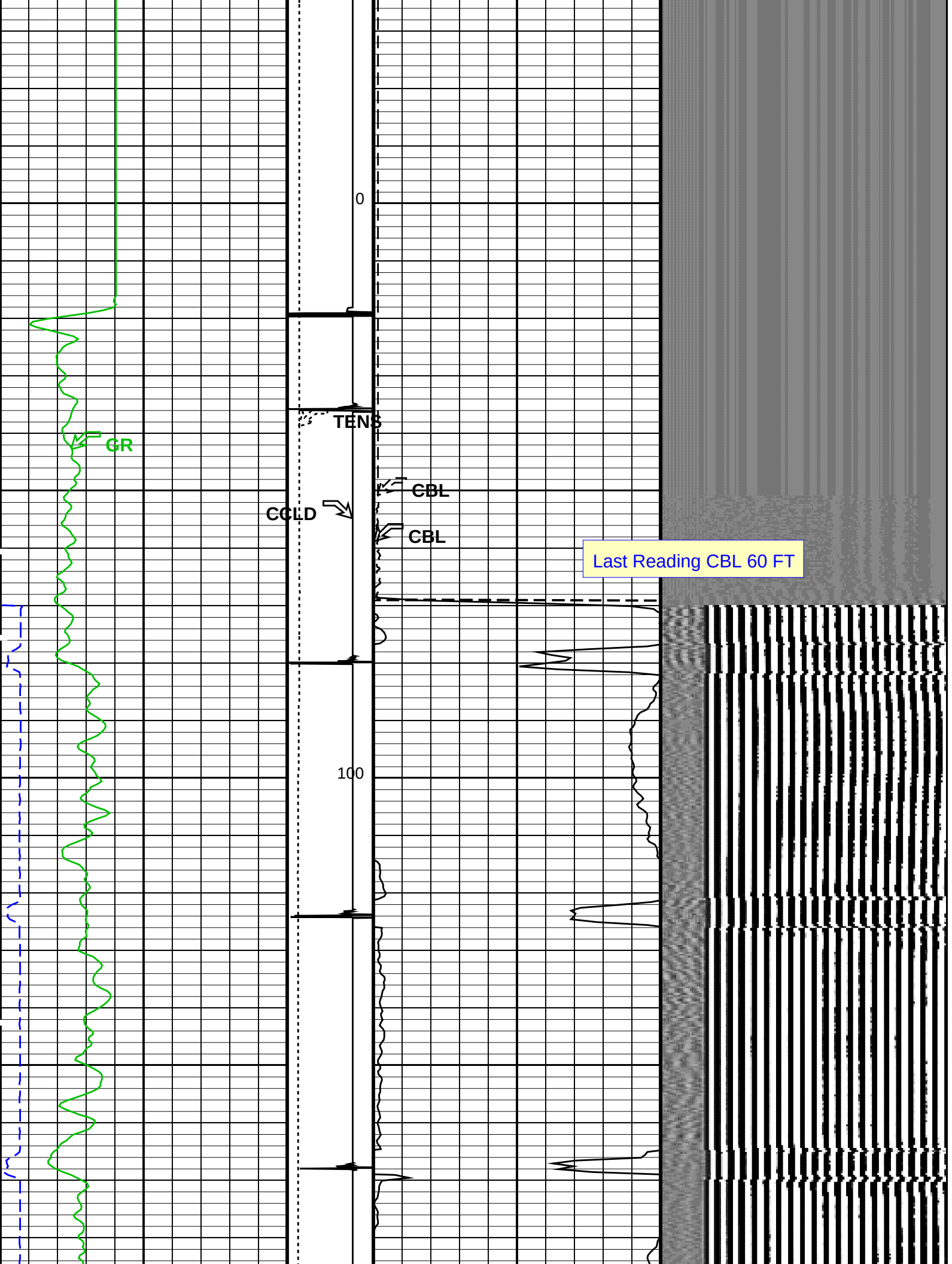
## OP System Version: 19C0−187

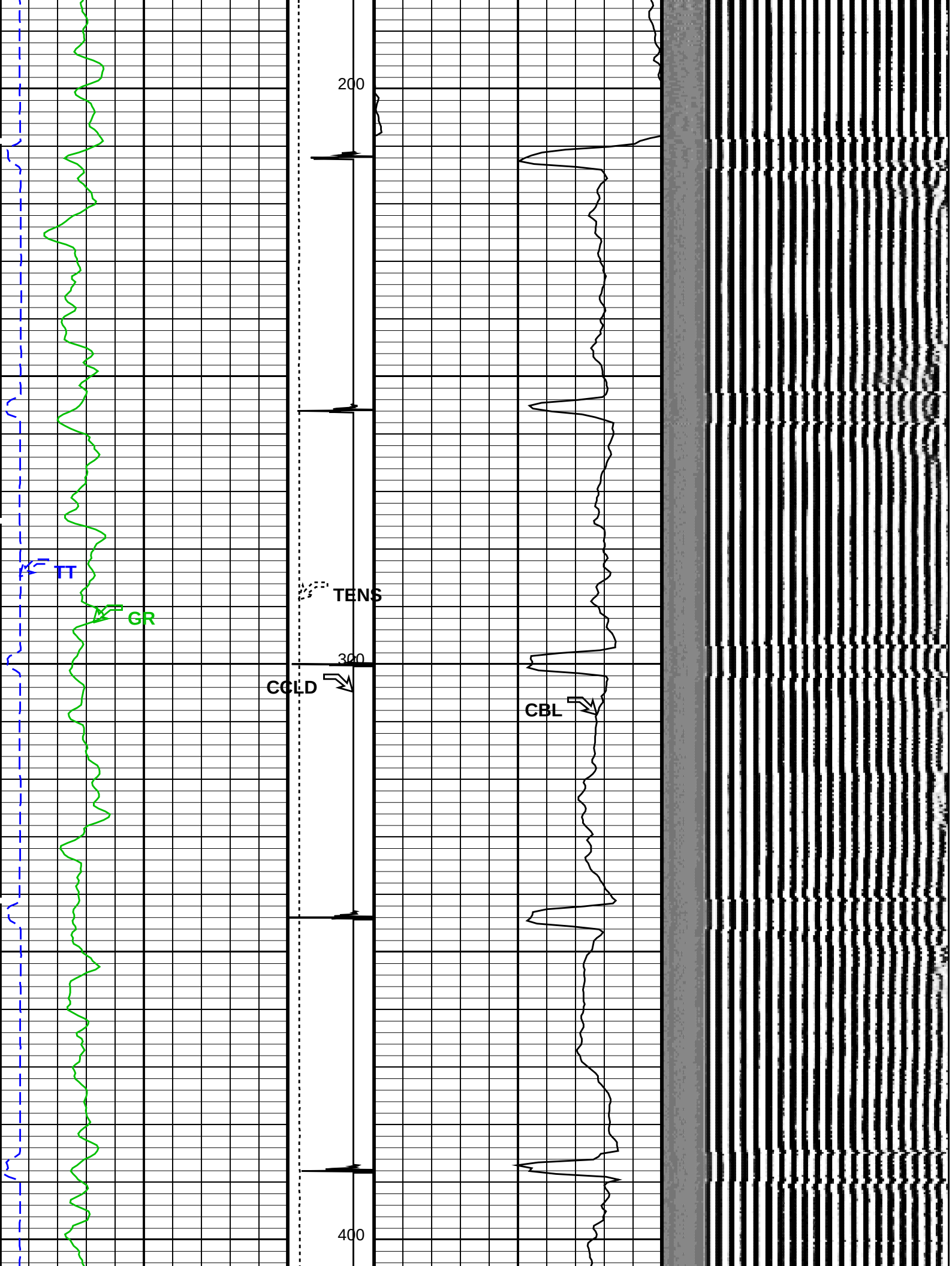
| | | | |
|---|---|---|---|
| **SCMT−CB** | **SRPC−5214−H2−2012−OP1** | **RST−C** | **SRPC−5214−H2−2012−OP1** |
| **PSPT** | **SRPC−5214−H2−2012−OP1** | | |

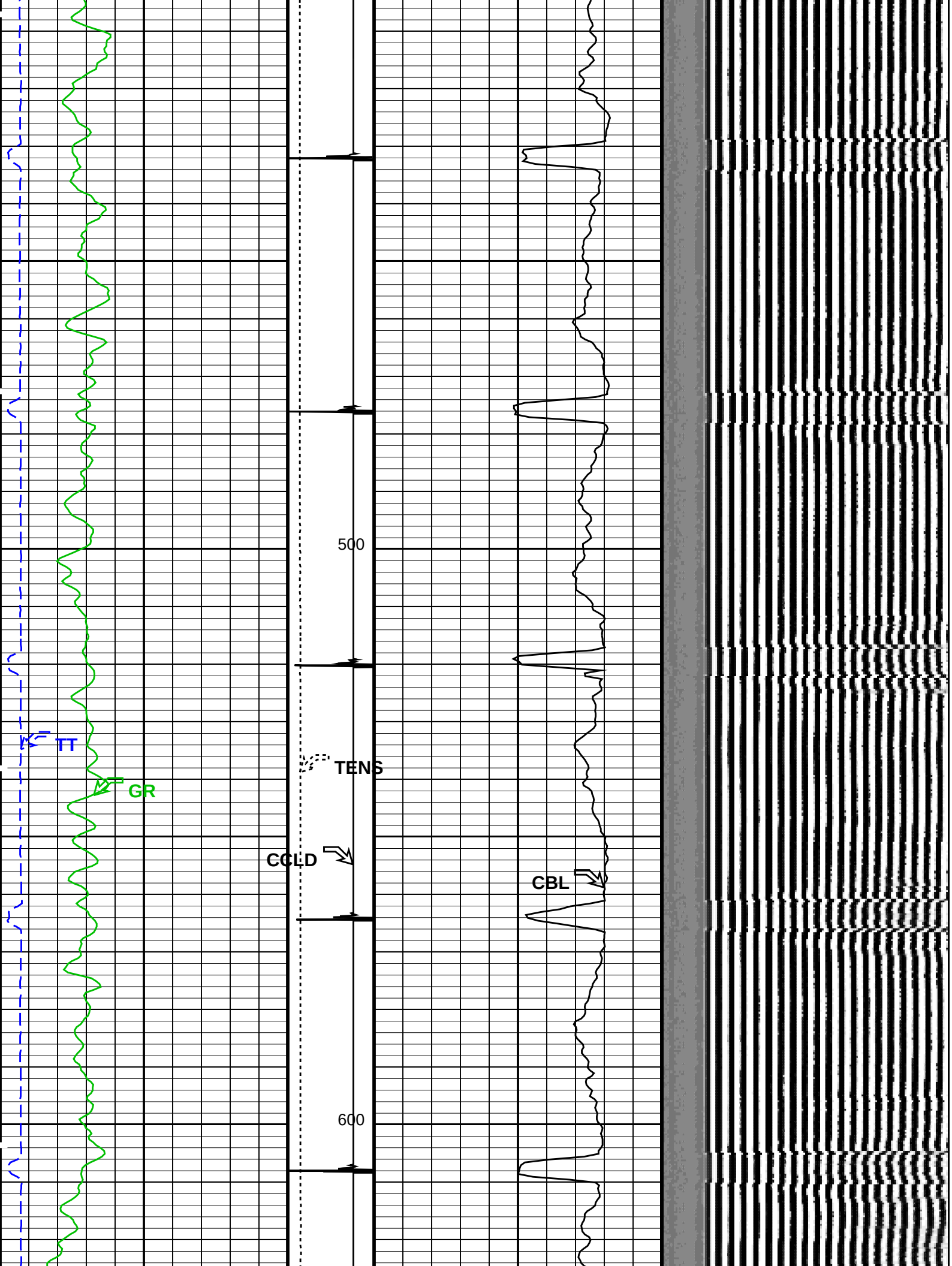
**PIP SUMMARY**

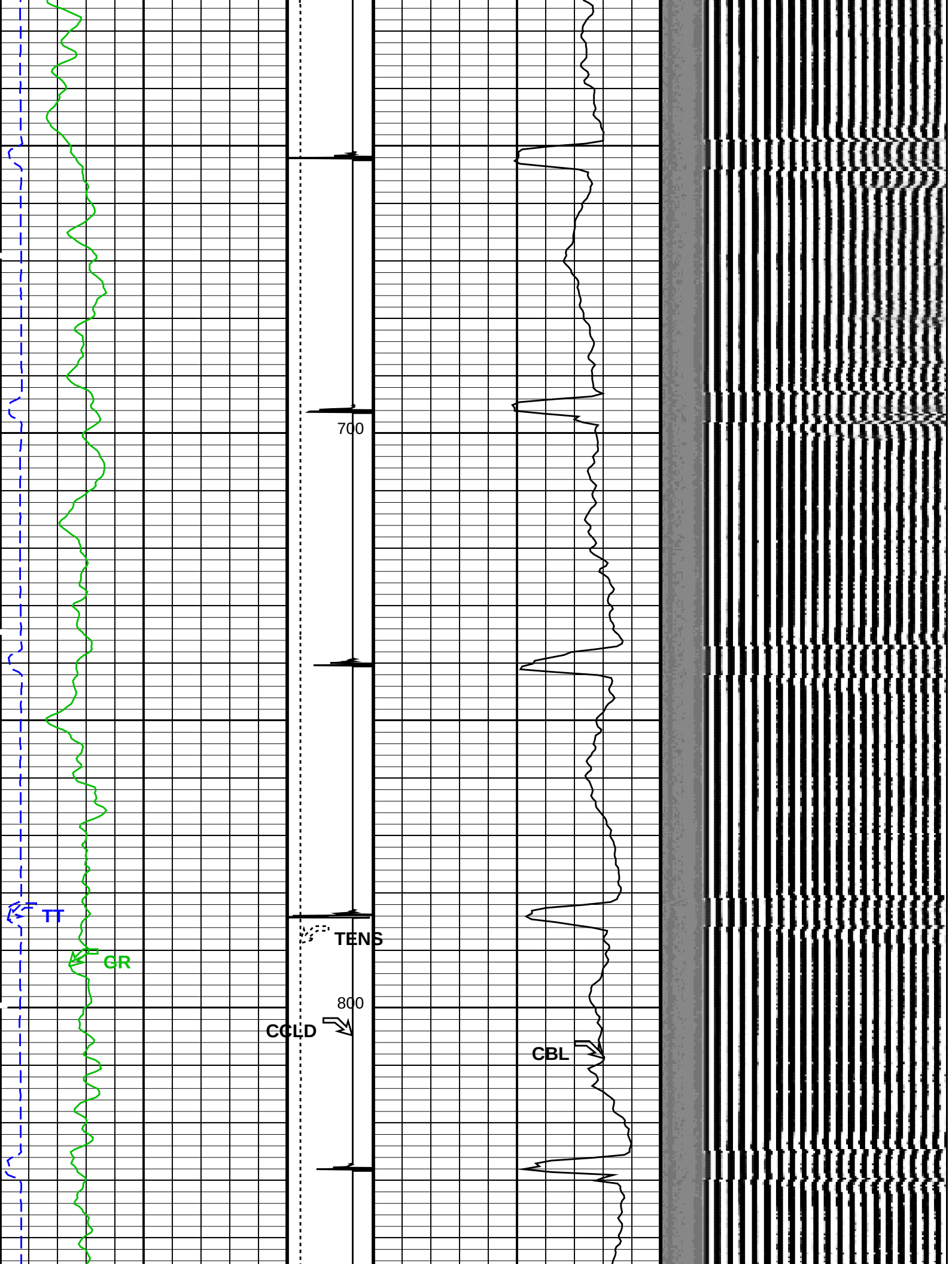
**Time Mark Every 60 S**

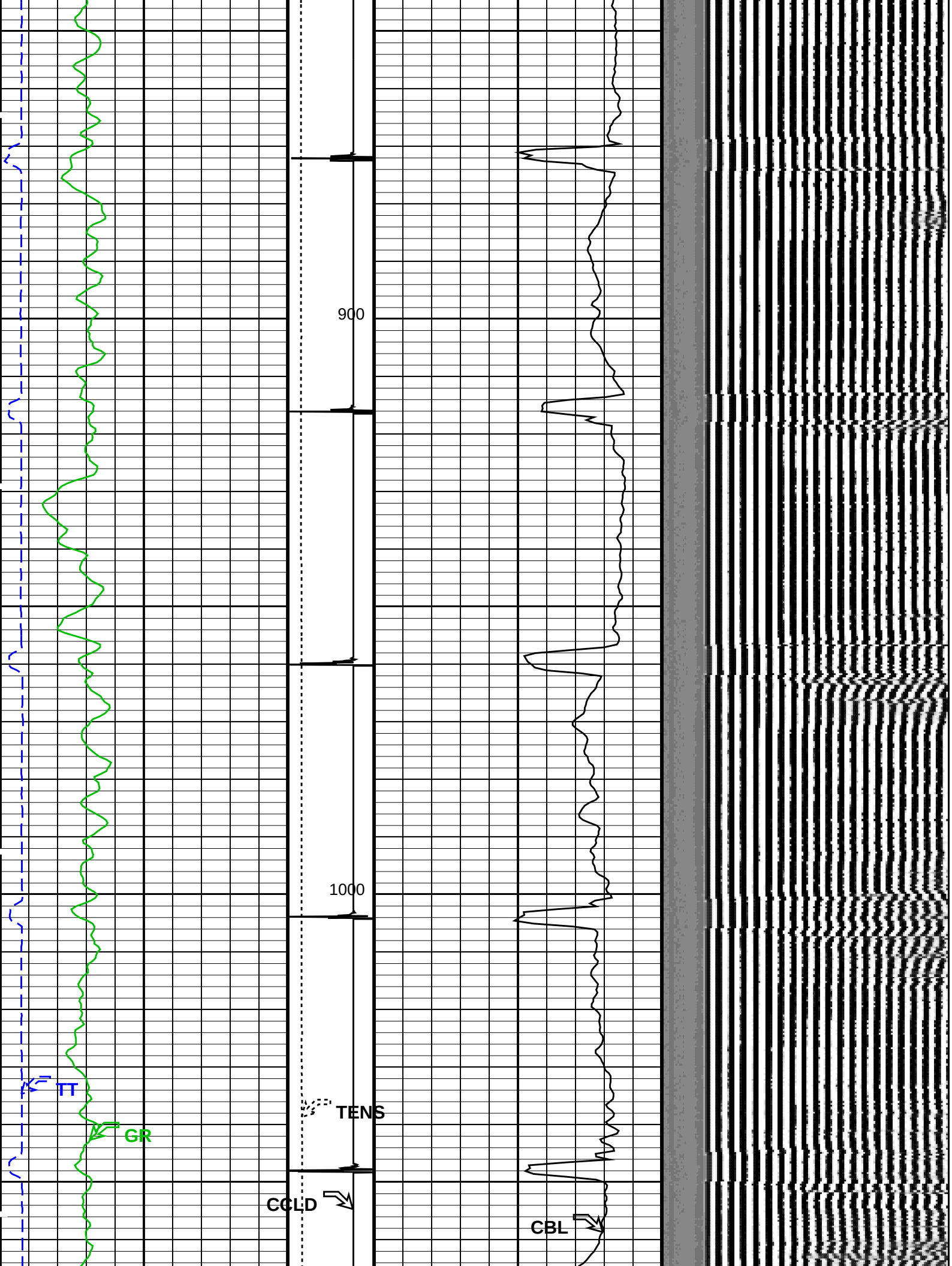
| | | |
|---|---|---|
| **Transit Time (TT)** 260 (US) 160 | **Discriminated CCL (CCLD)** 3 (V) −1 | **CBL Amplitude (CBL)** 0 (MV) 10 |
| **Gamma Ray (GR)** 0 (GAPI) 150 | **Tension (TENS)** (LBF) 0 2000 | **CBL Amplitude (CBL)** 0 (MV) 100 |
| | | **Min Amplitude Max** **VDL VariableDensity (VDL)**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

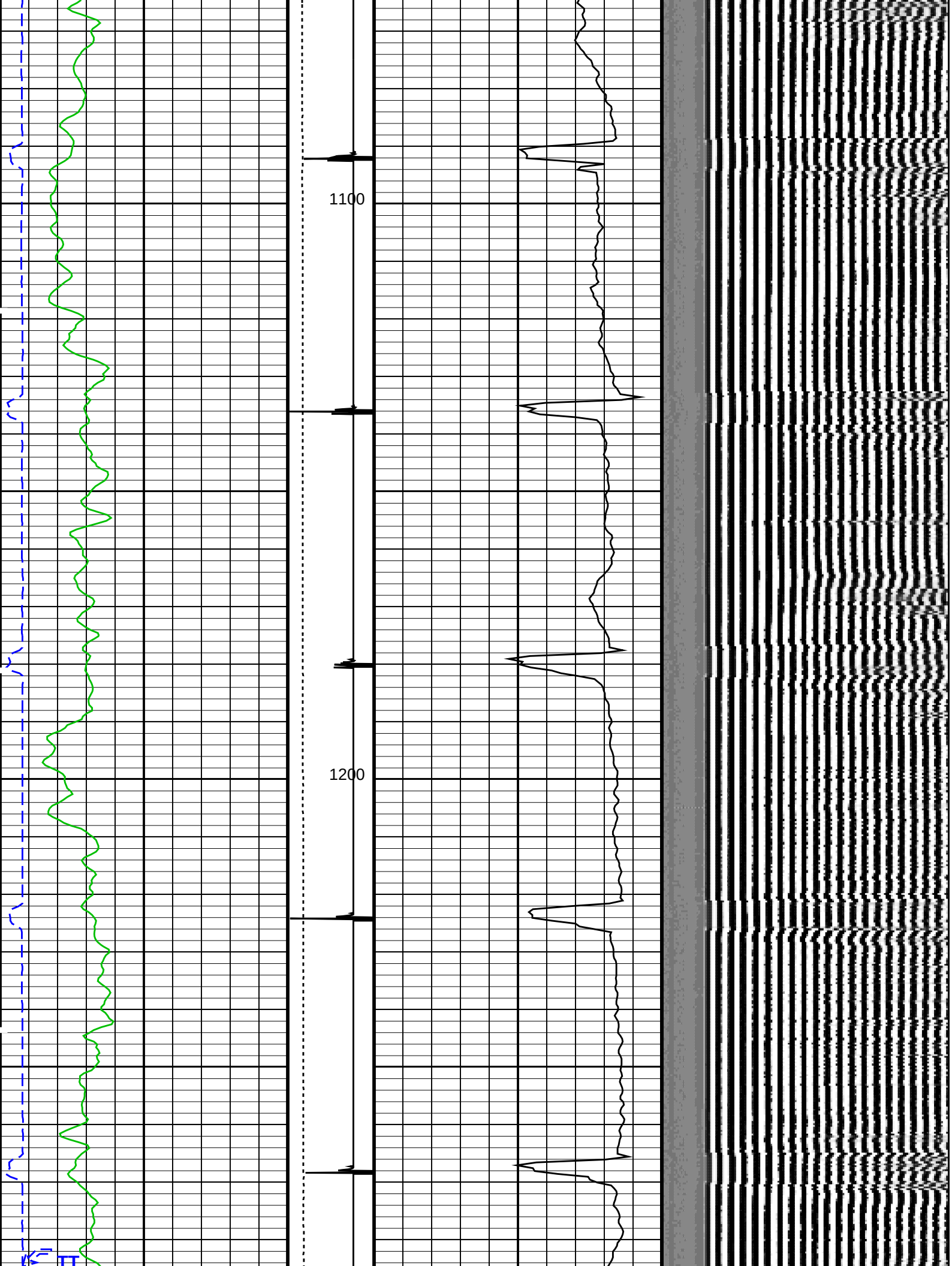

0
100
TENS
GR
CBL
CCLD
CBL
Last Reading CBL 60 FT

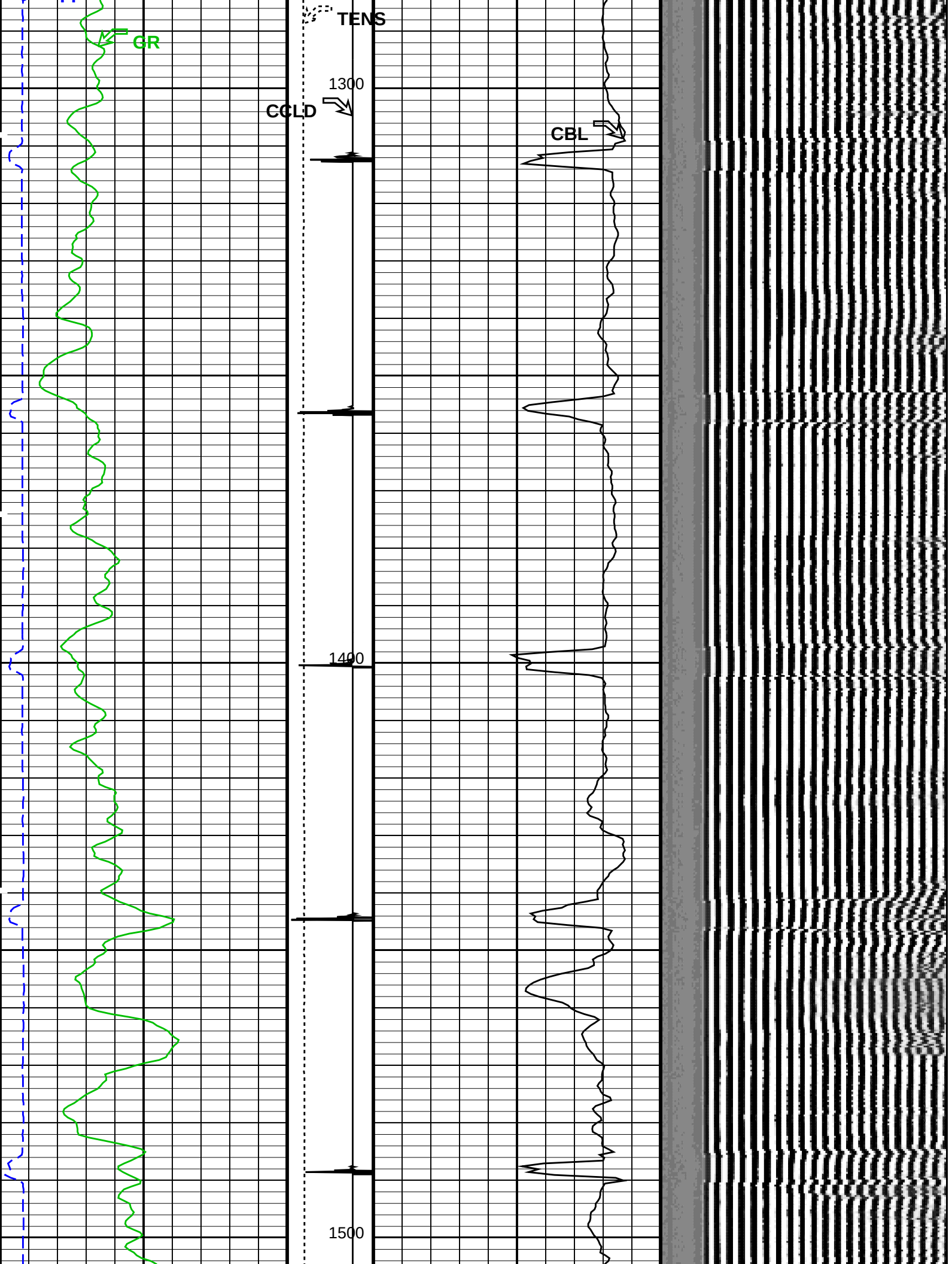

200
TT
GR
TENS
300
CCLD
CBL
400

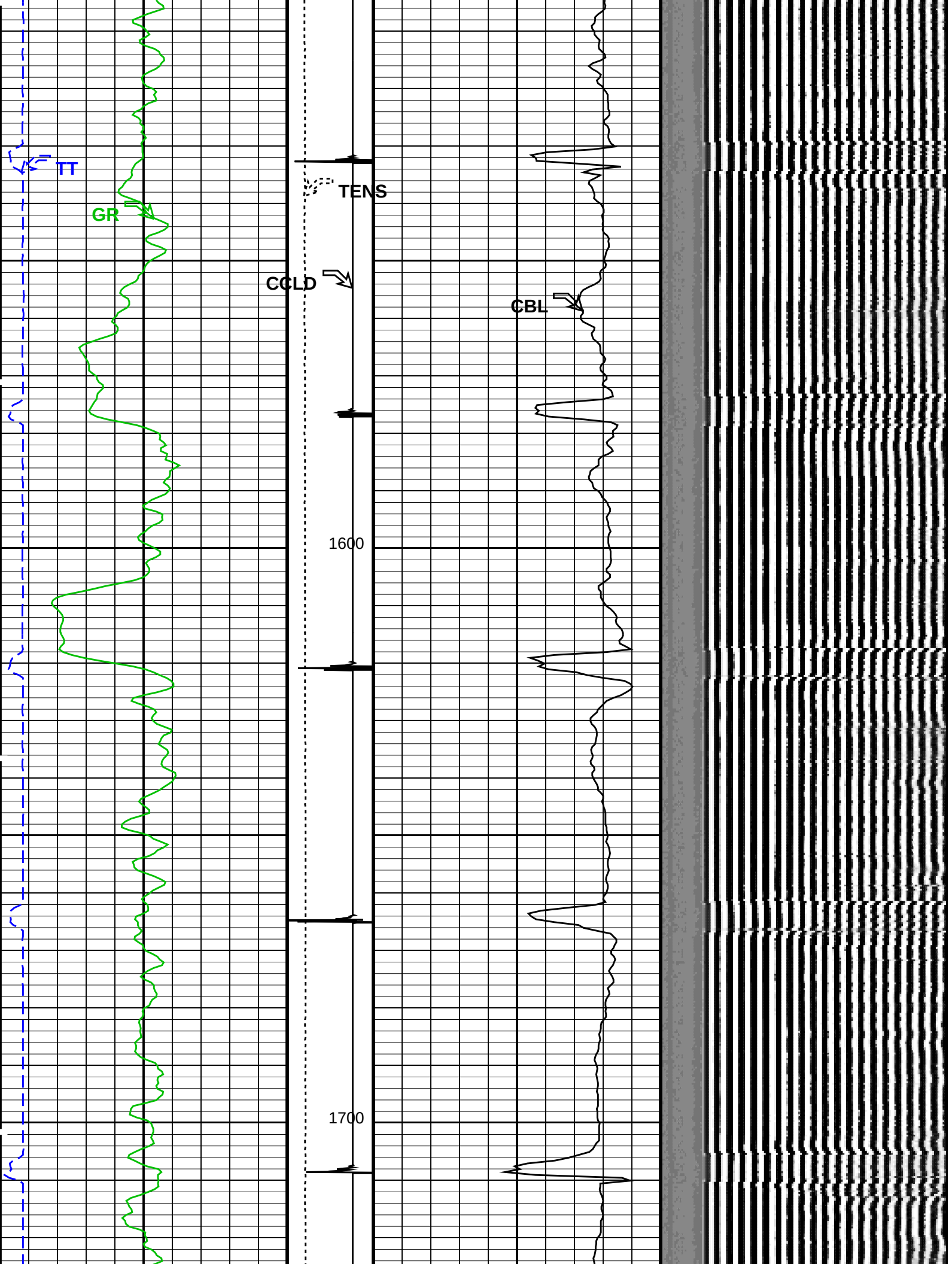

500
600
TT
GR
TENS
CCLD
CBL

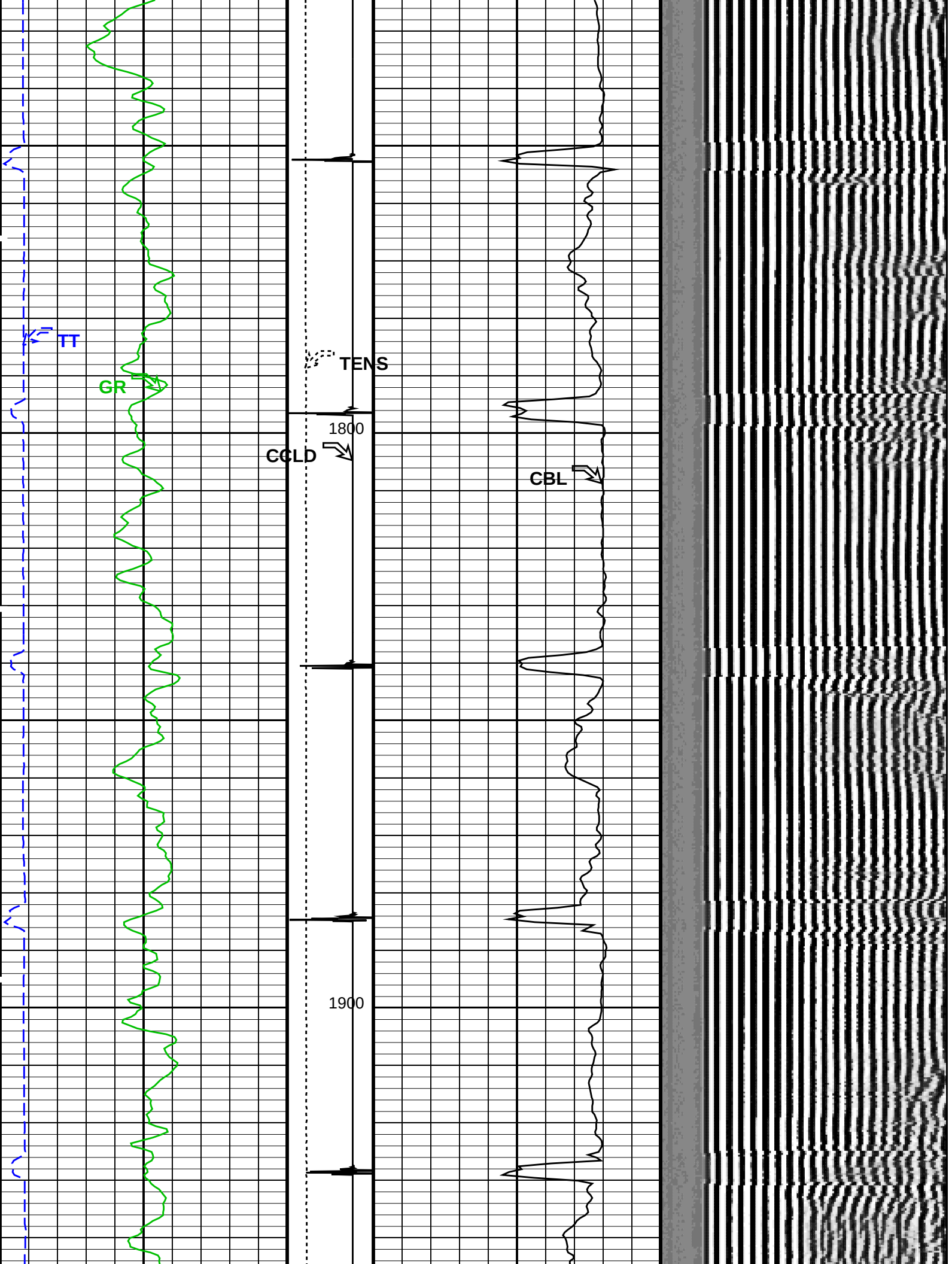

700
TT
GR
TENS
800
CCLD
CBL

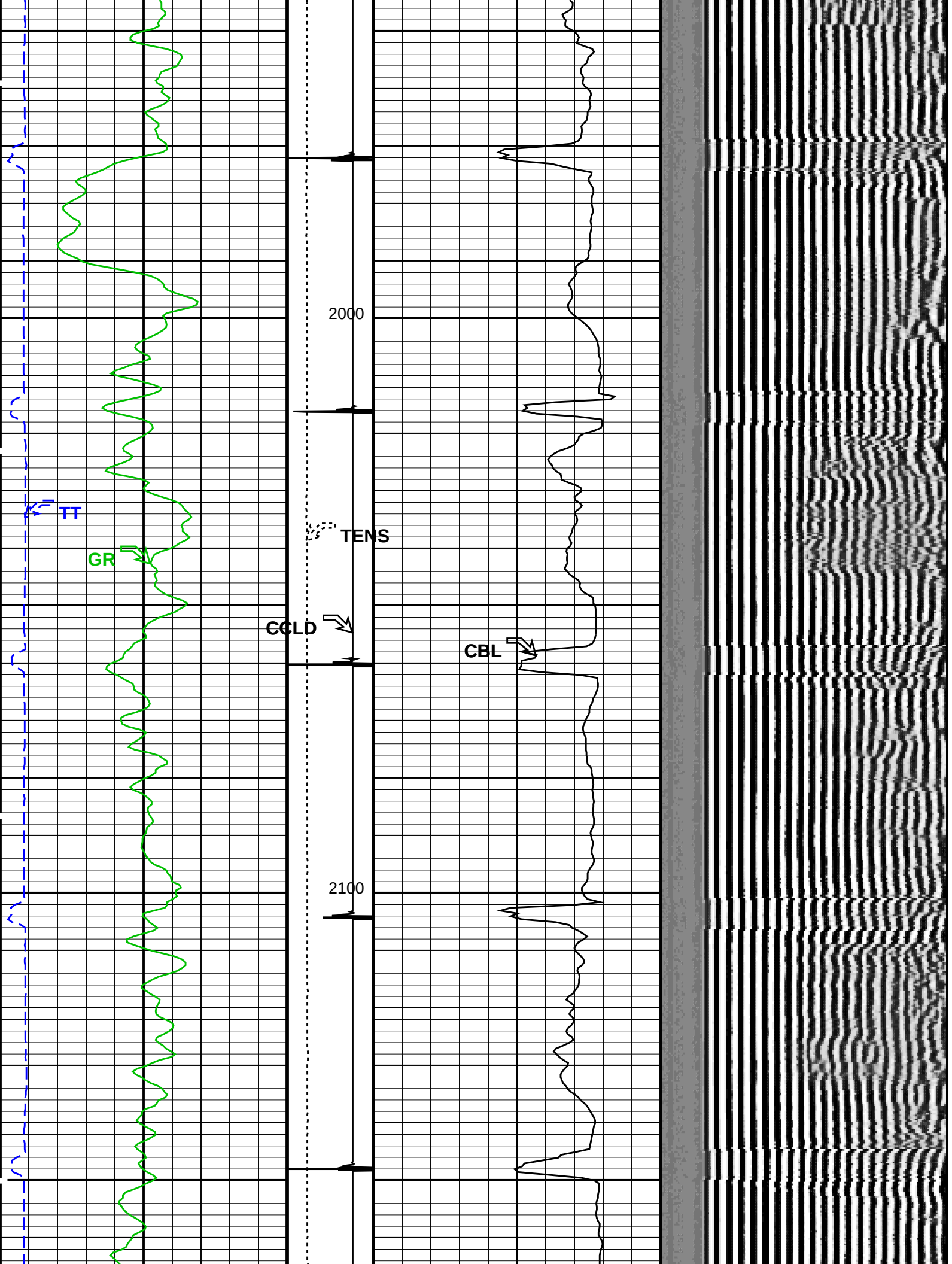

900
1000
TT
GR
TENS
CCLD
CBL

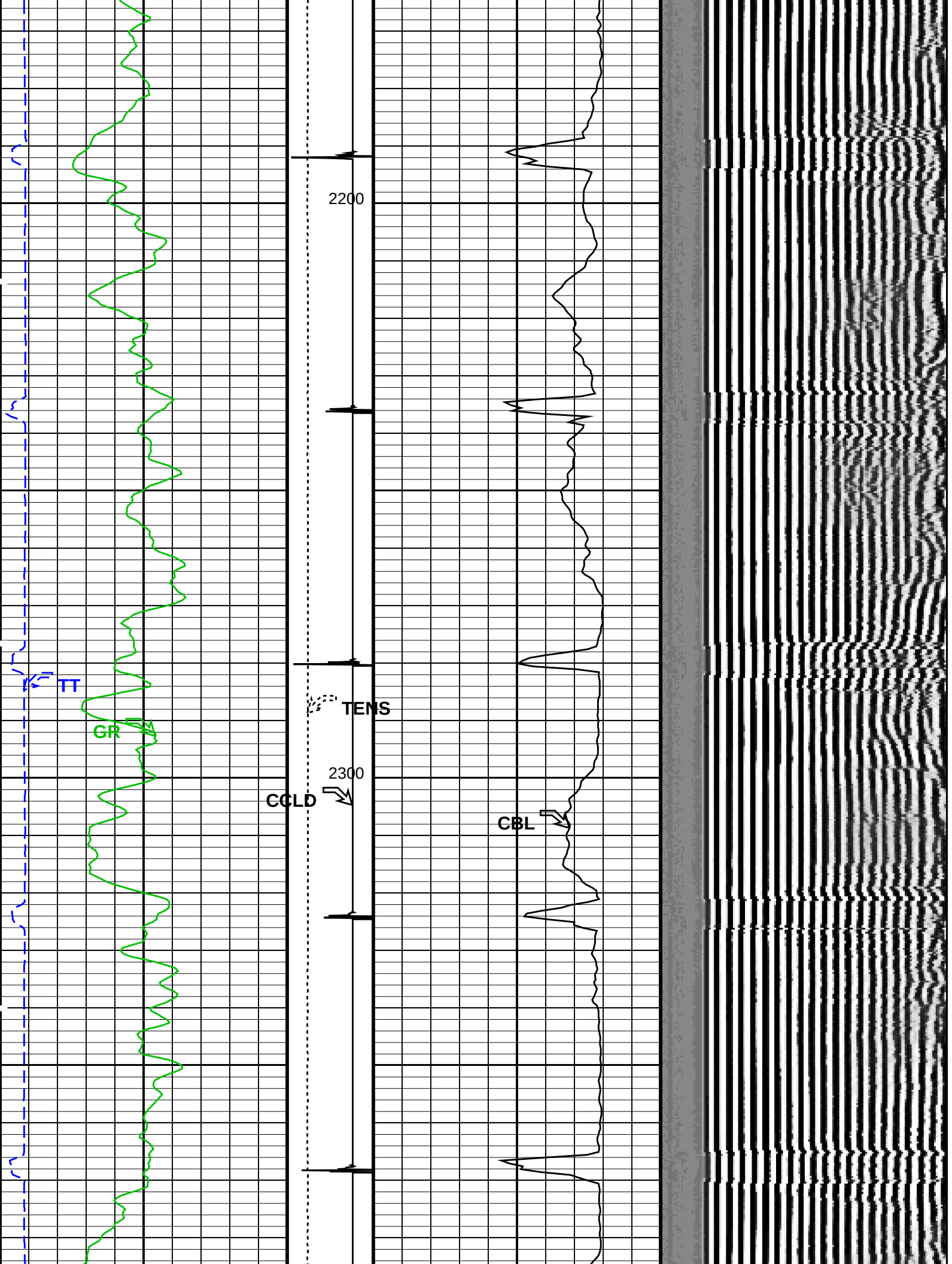

1100
1200

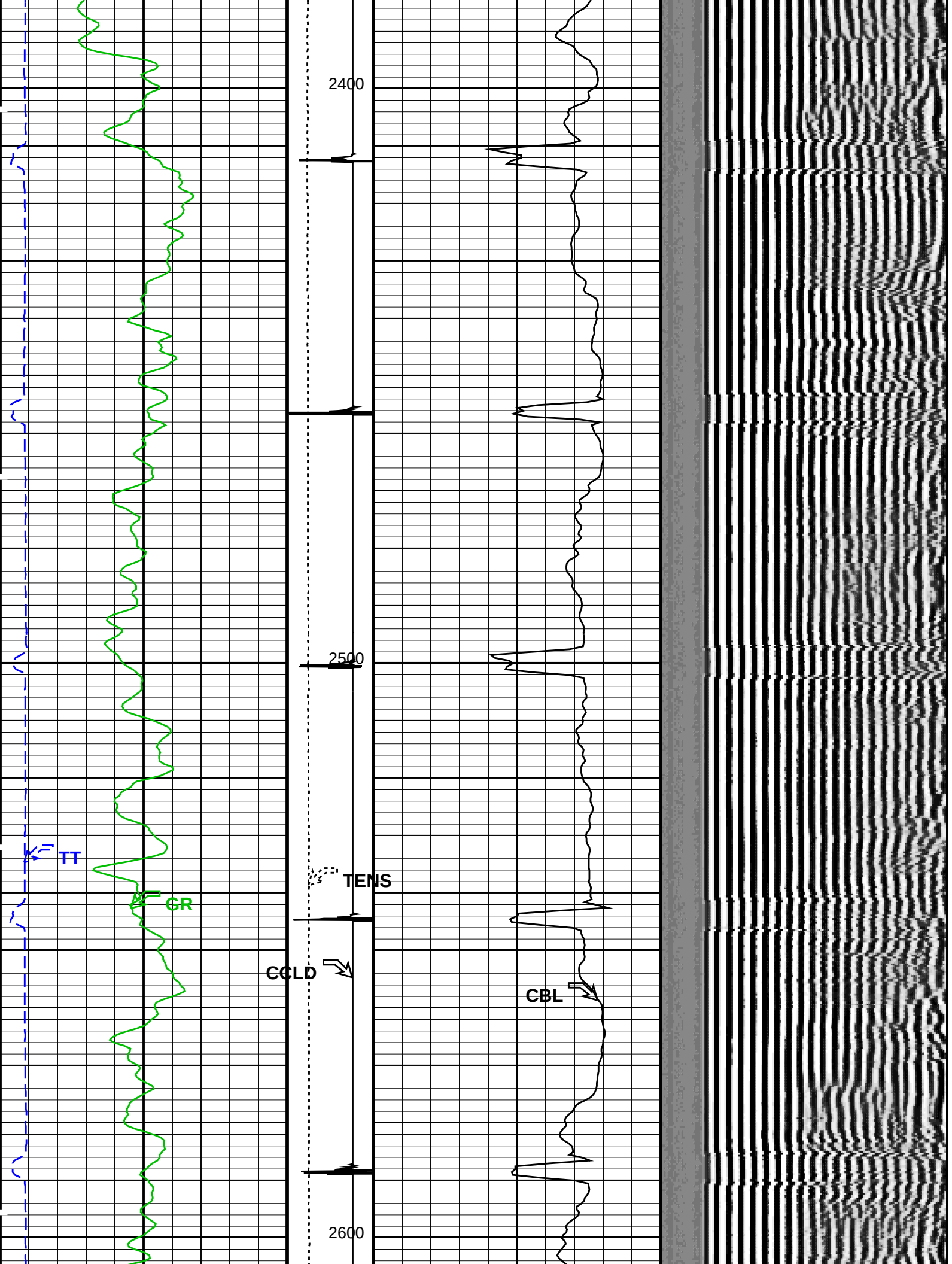

TENS
GR
1300
CCLD
CBL
1400
1500

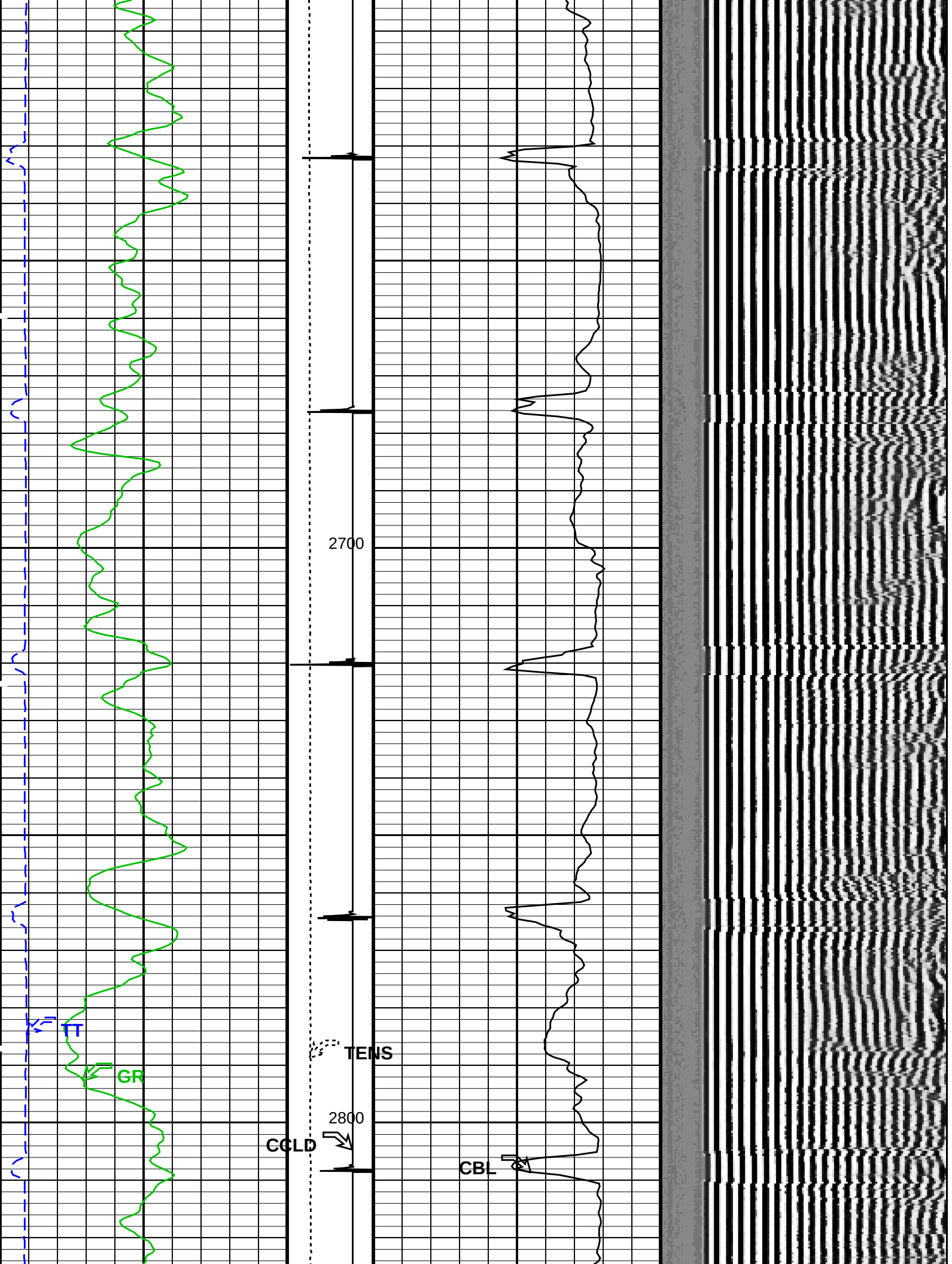

TT
GR
TENS
CCLD
CBL
1600
1700

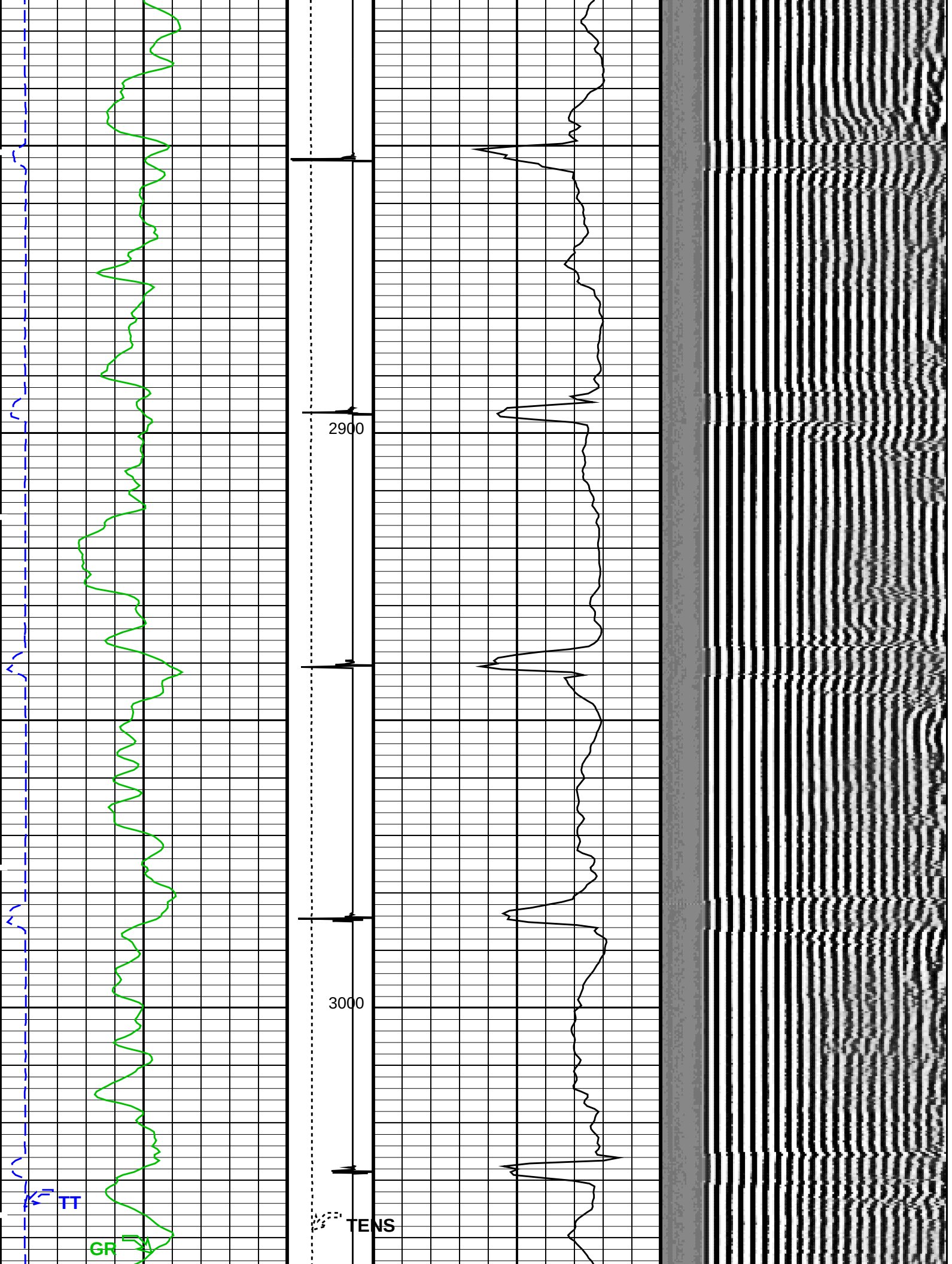

TT
GR
TENS
1800
CCLD
CBL
1900

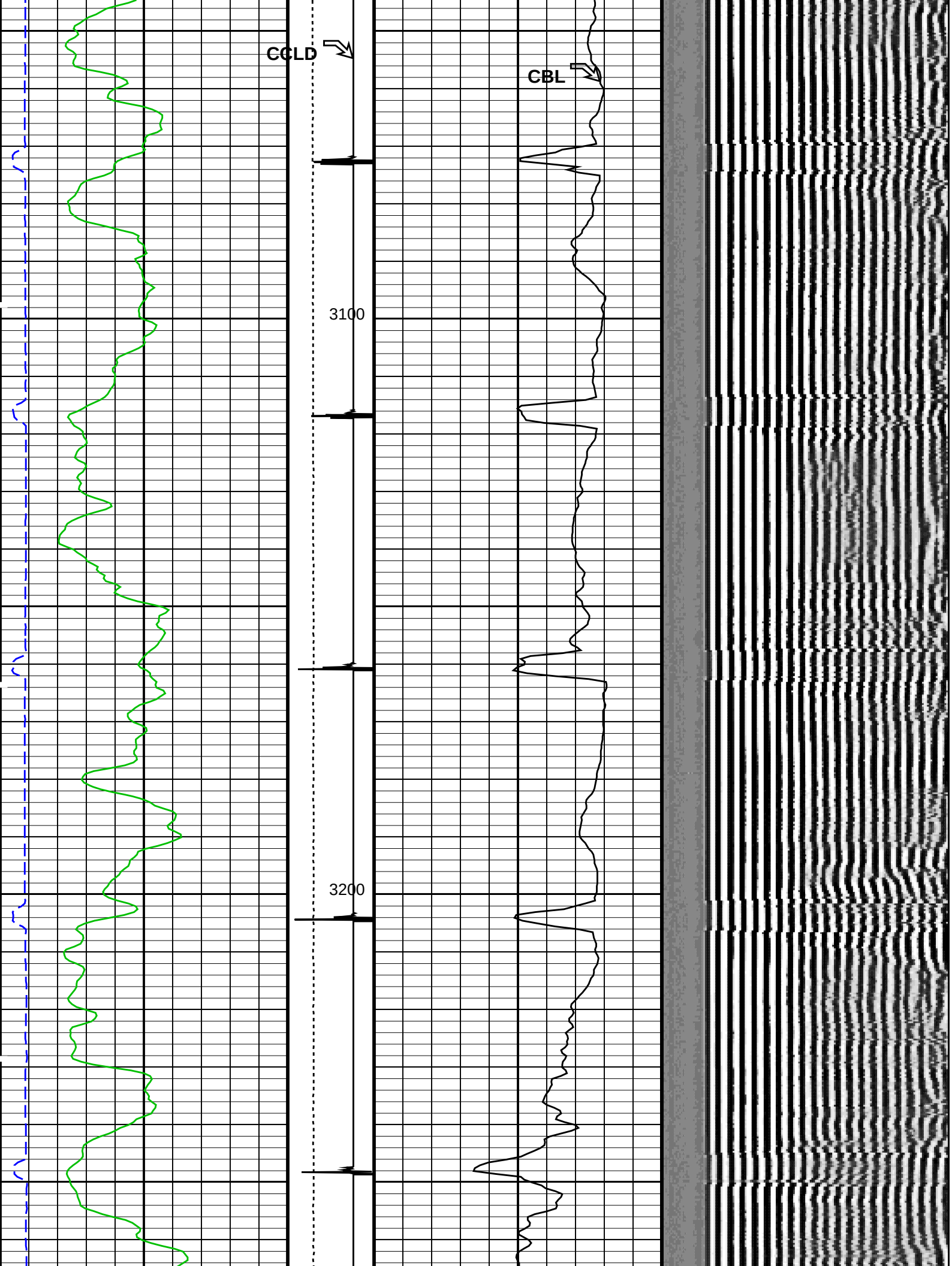

2000
TT
TENS
GR
CCLD
CBL
2100

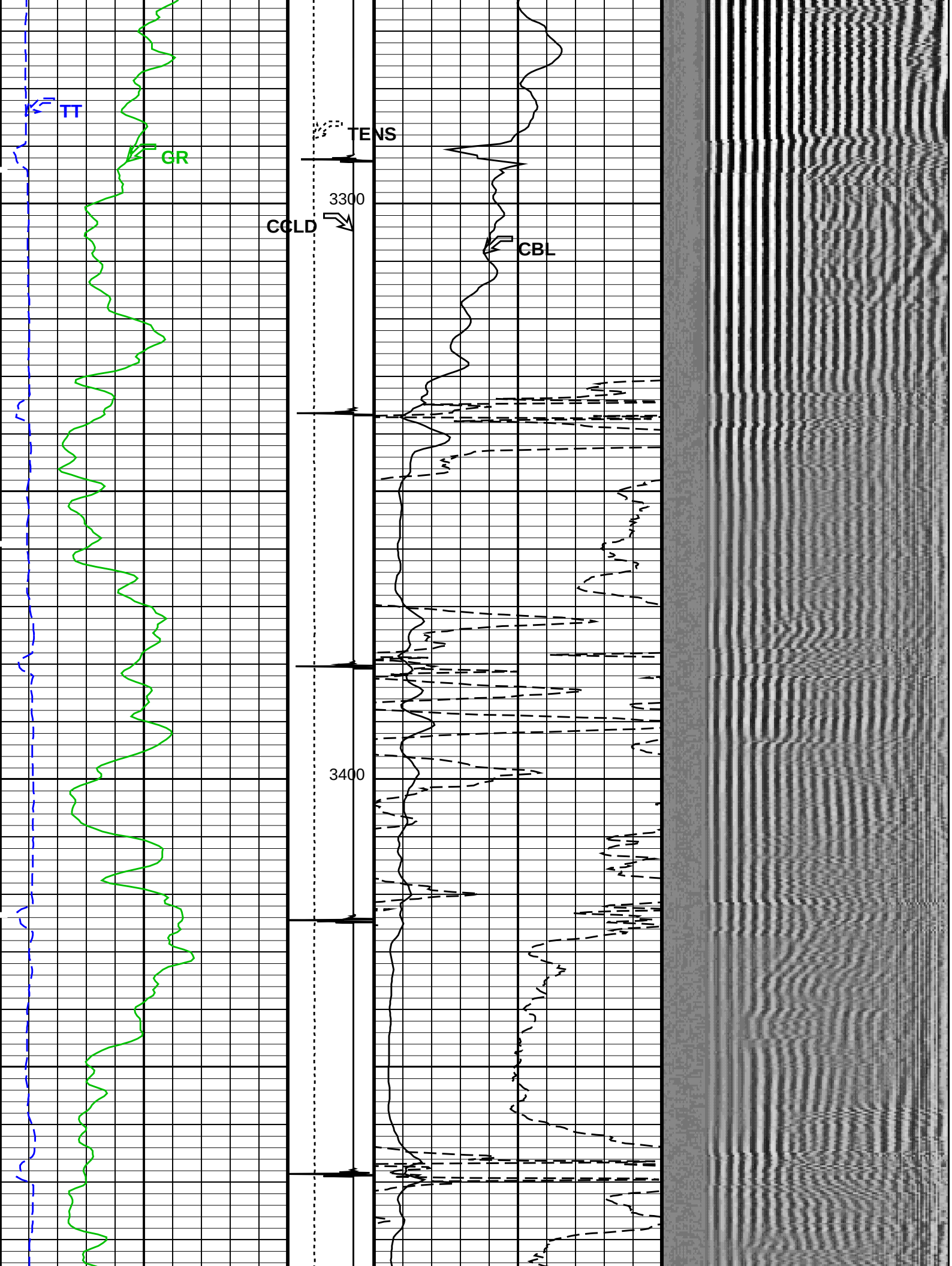

2200
TT
TENS
GR
2300
CCLD
CBL

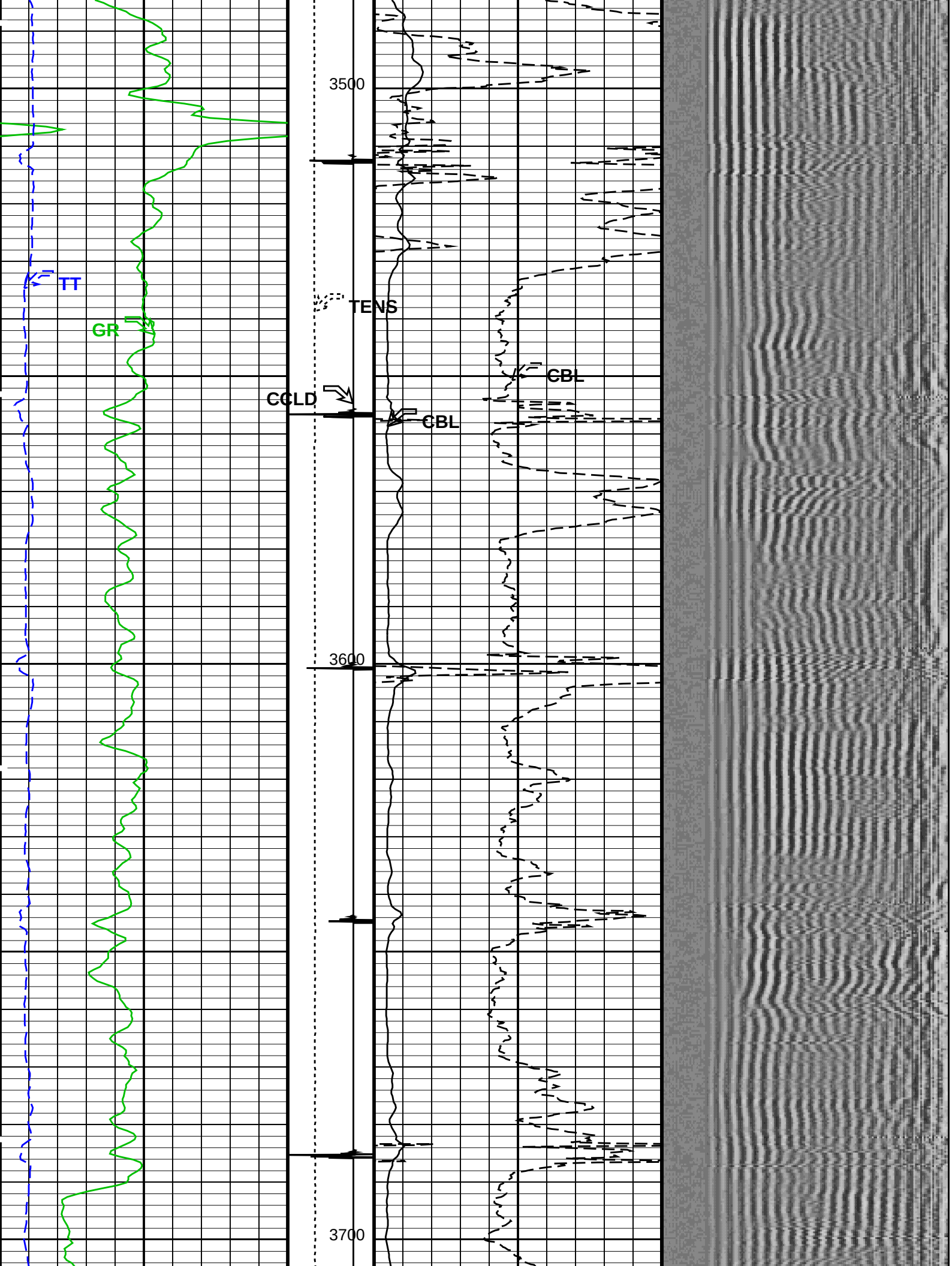

2400
2500
2600
TT
GR
TENS
CCLD
CBL

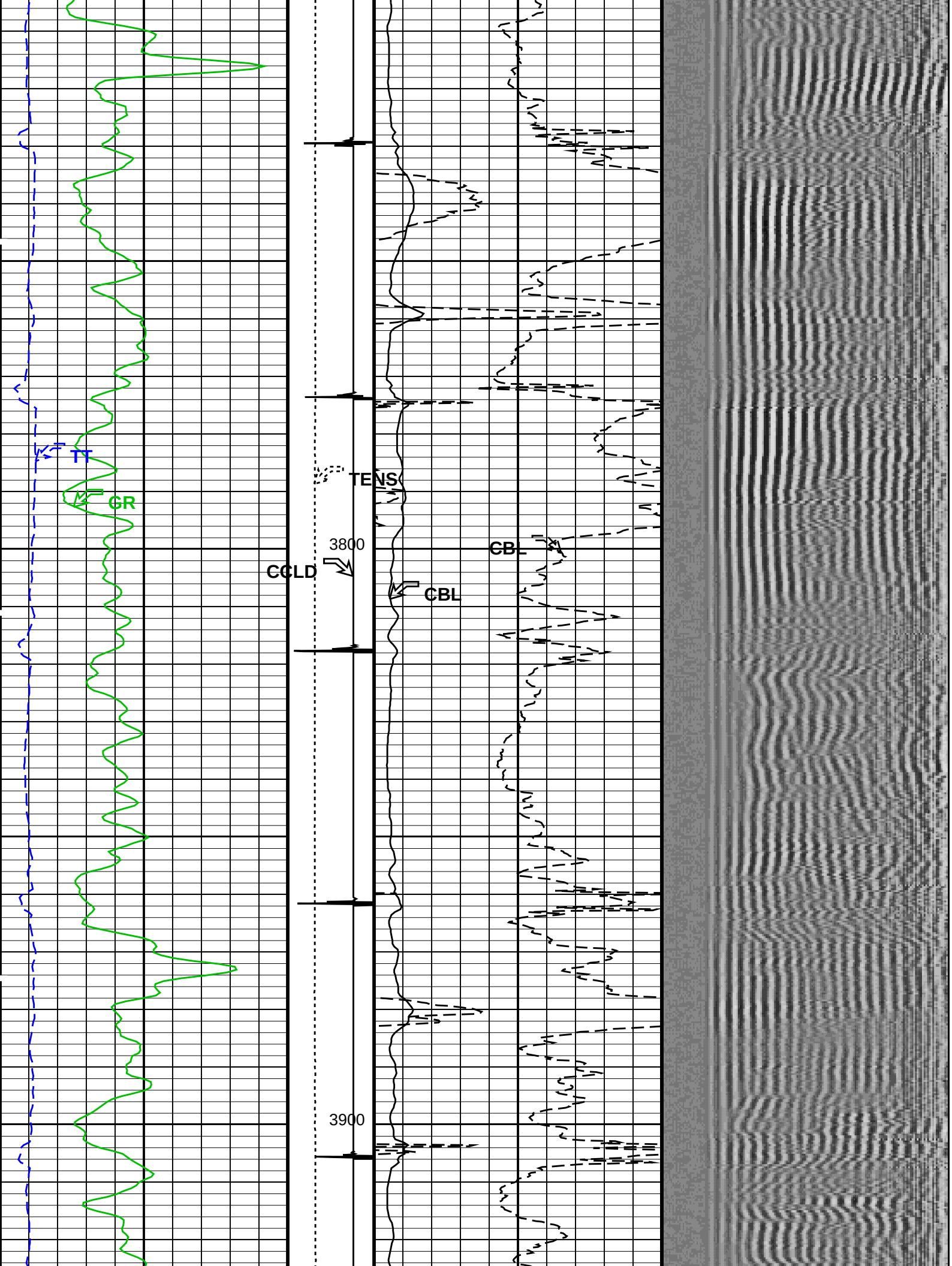

2700
TT
GR
TENS
2800
CCLD
CBL

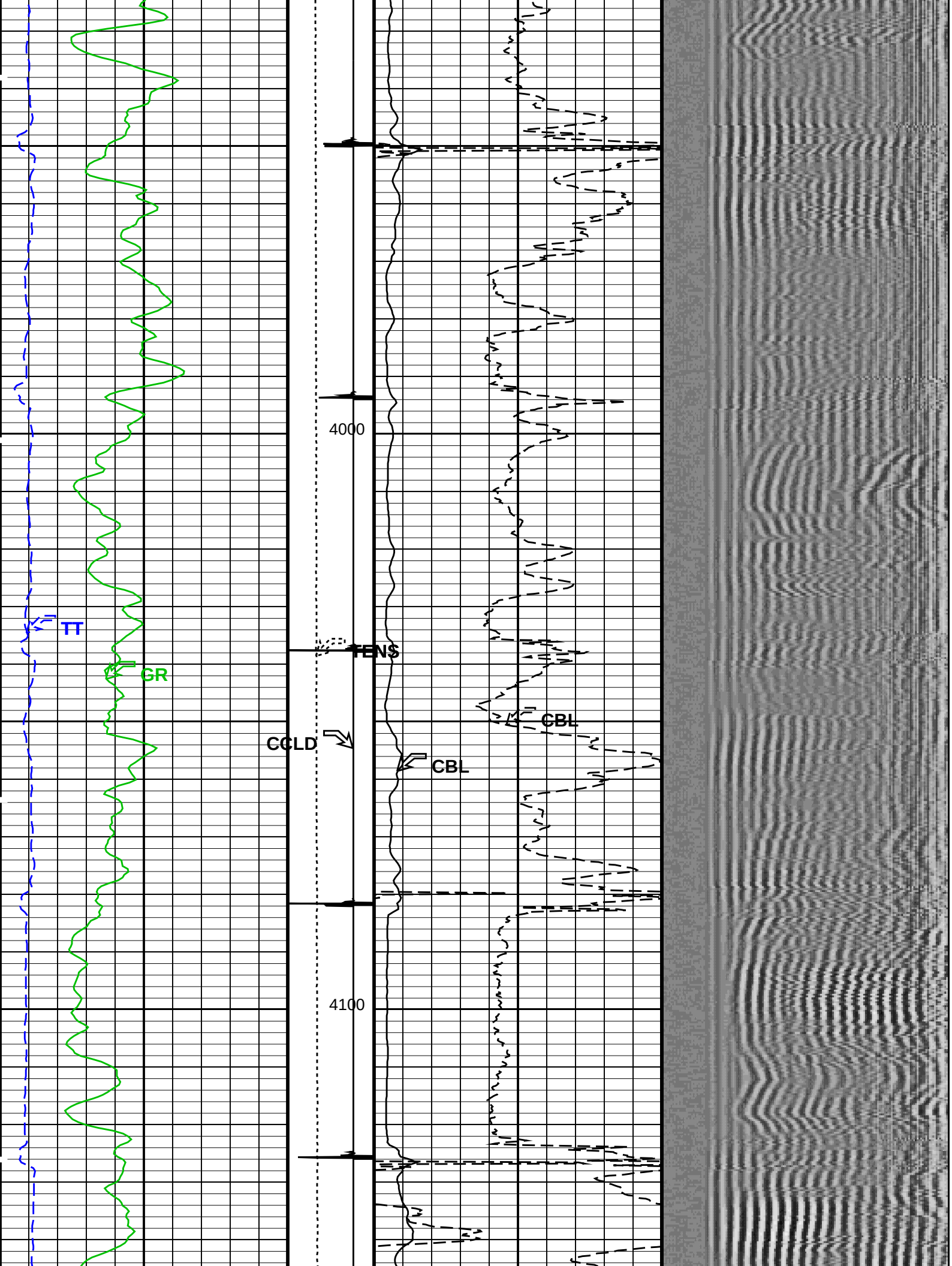

2900
3000
TT
GR
TENS

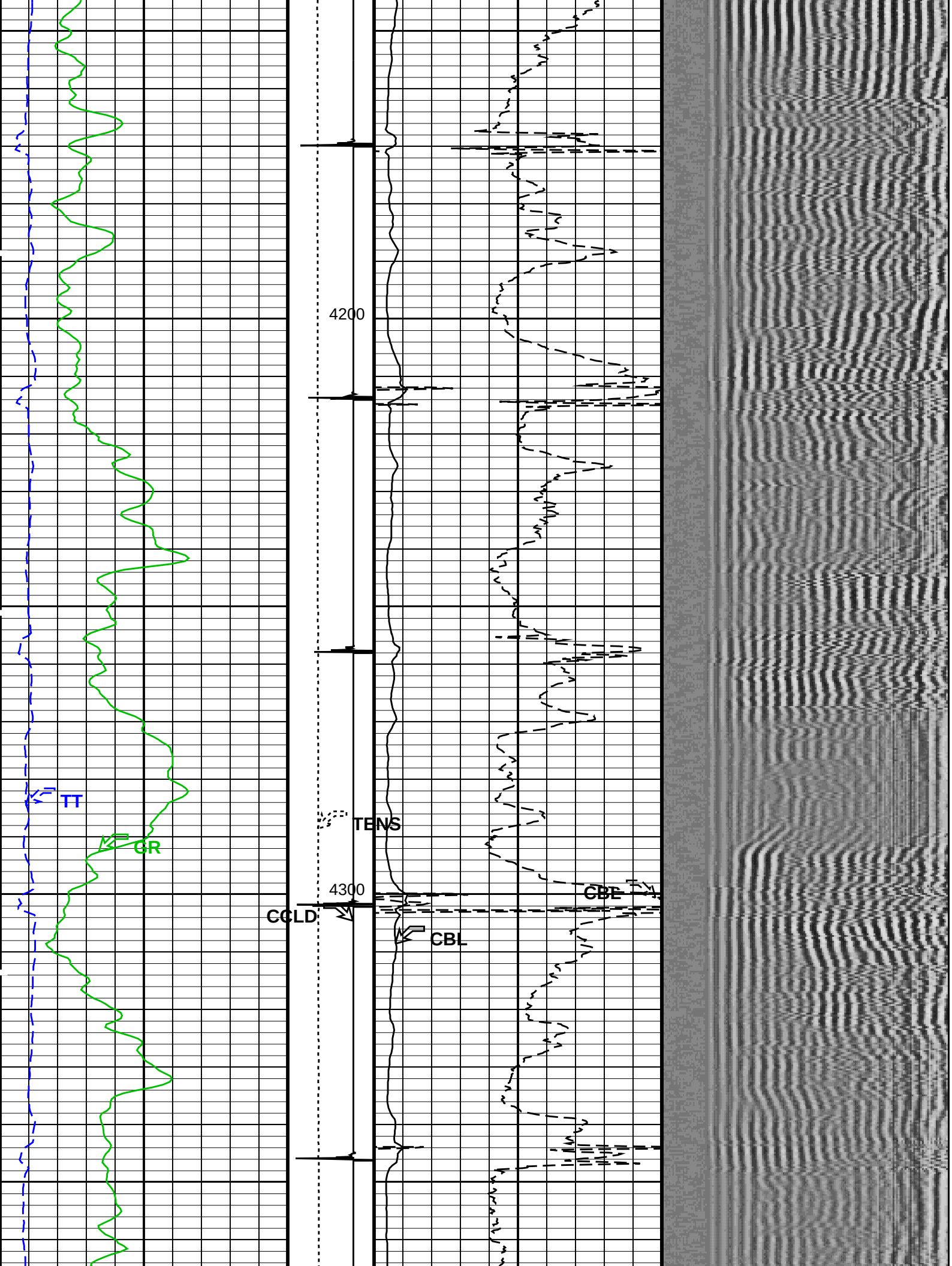

CCLD
CBL
3100
3200

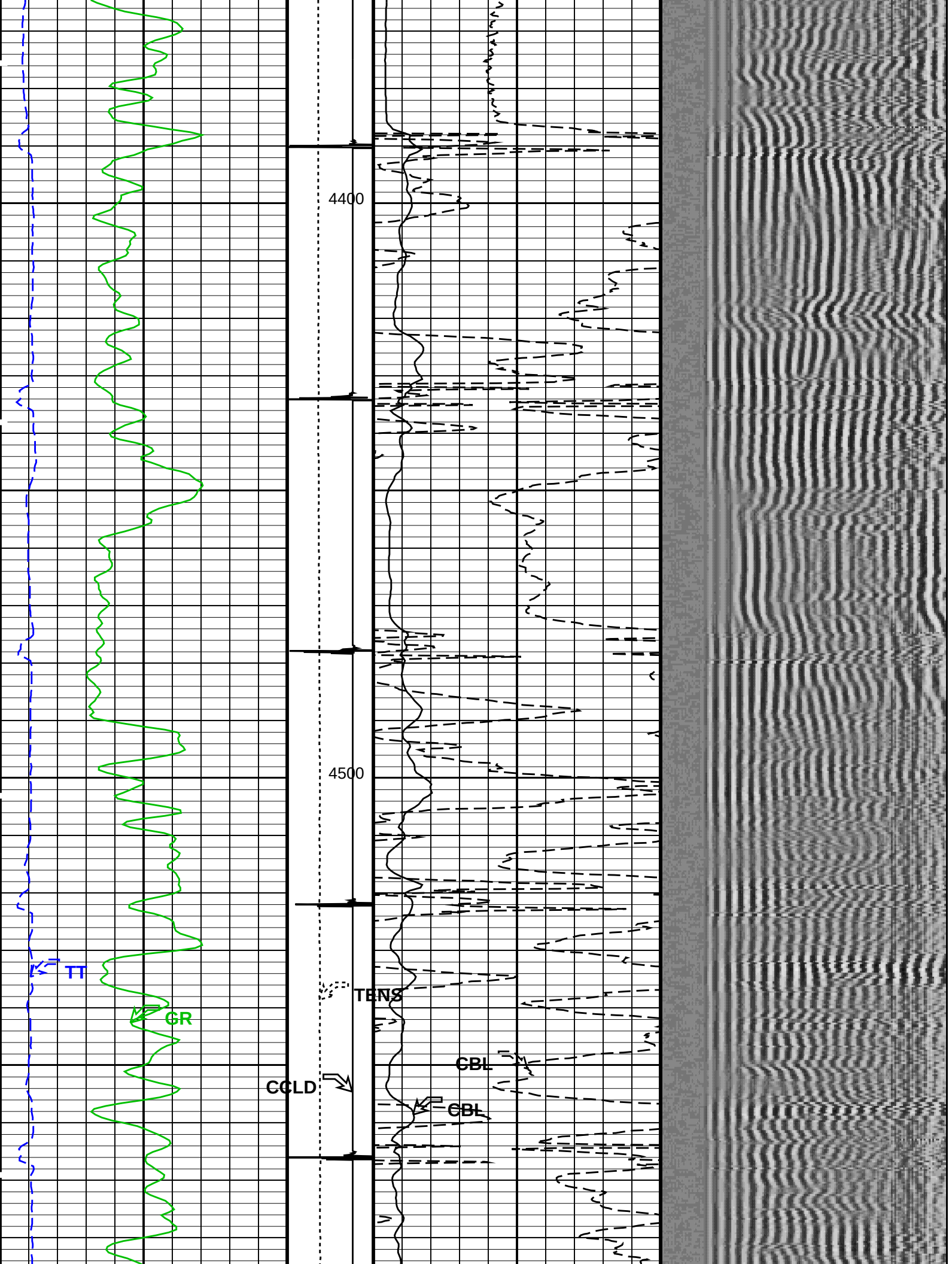

TT
GR
TENS
3300
CCLD
CBL
3400

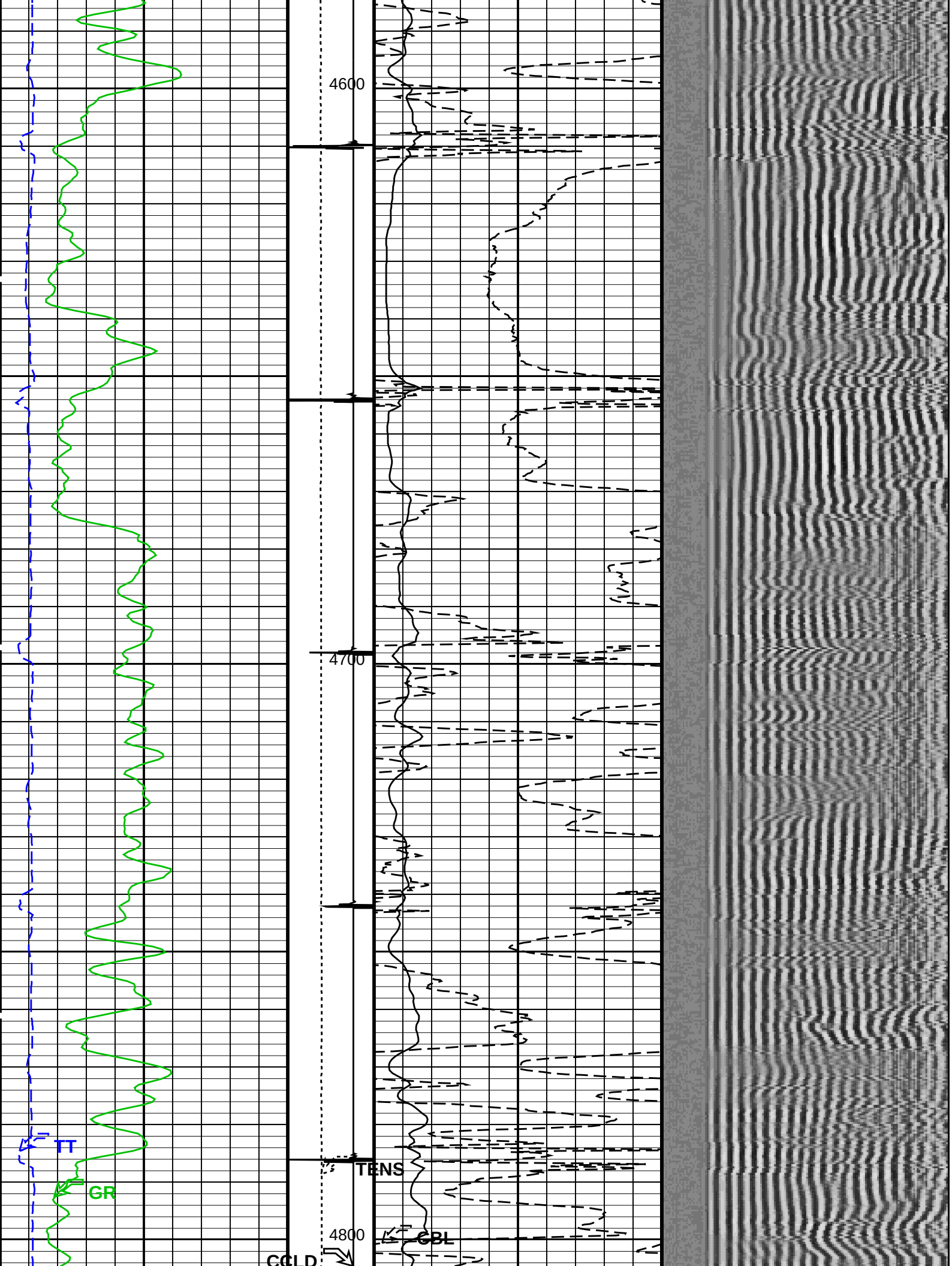

3500
TT
TENS
GR
CBL
CCLD
CBL
3600
3700

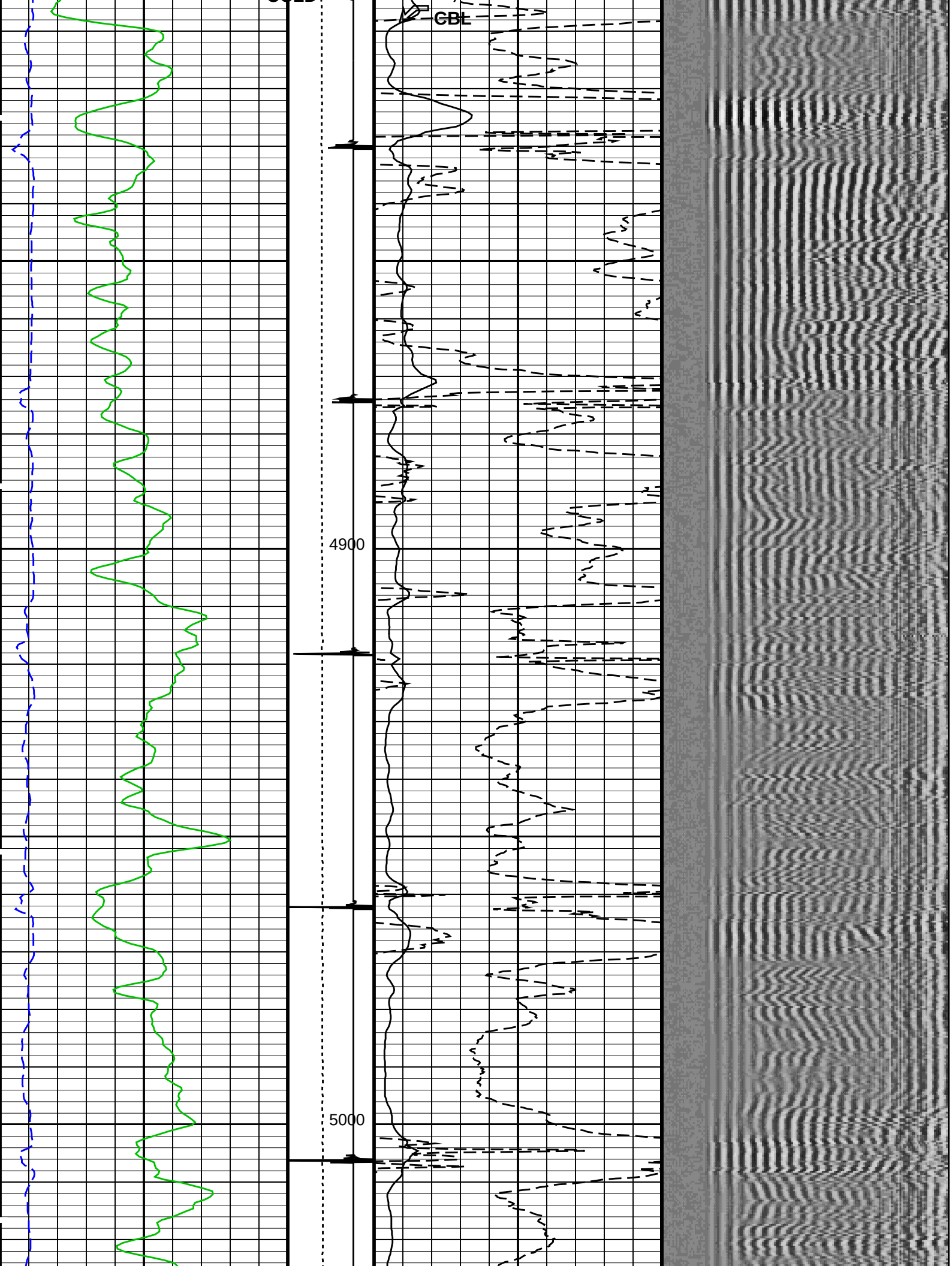

TT
GR
TENS
3800
CCLD
CBL
CBL
3900

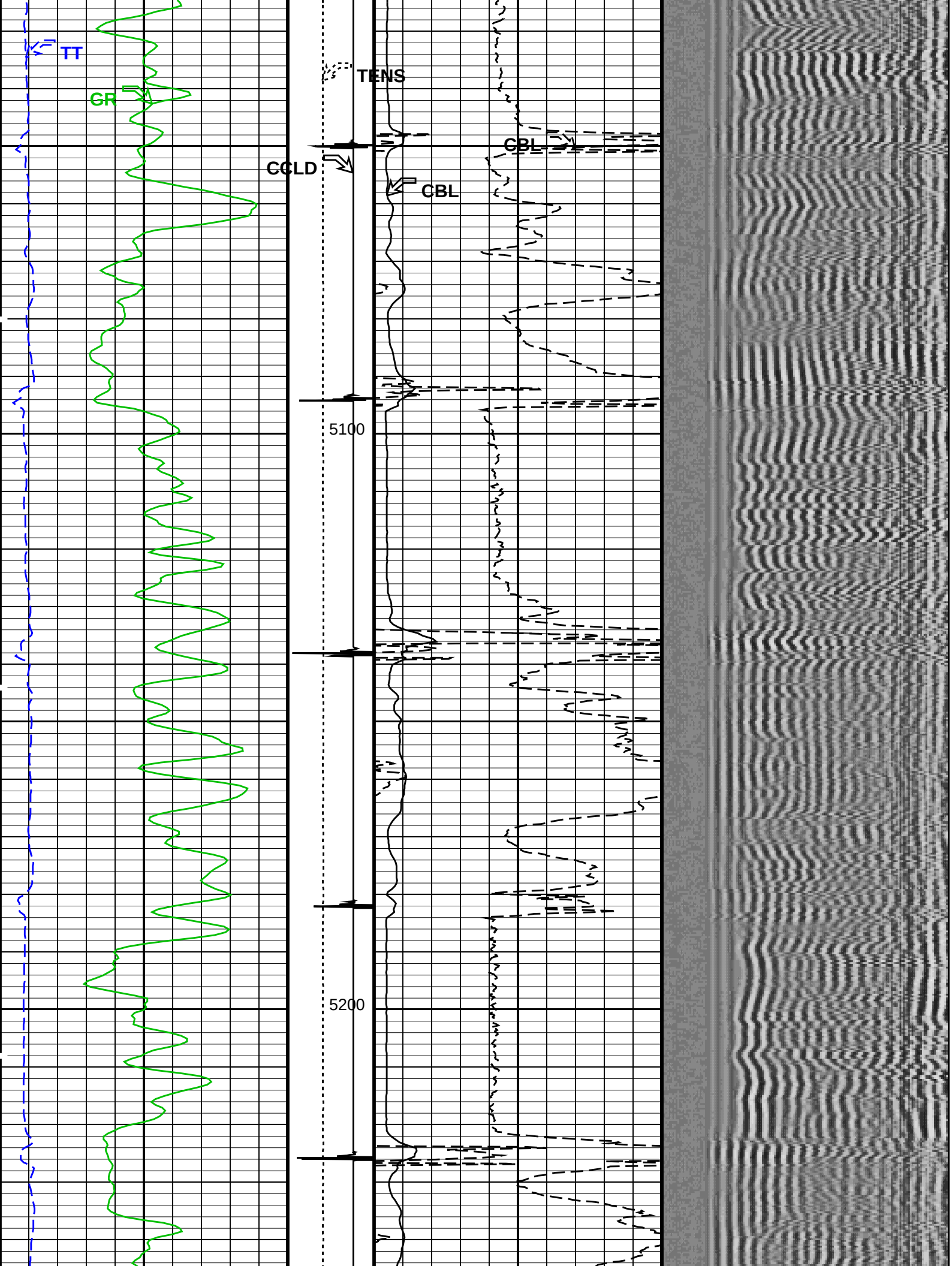

TT
GR
TENS
CCLD
CBL
CBL
4000
4100

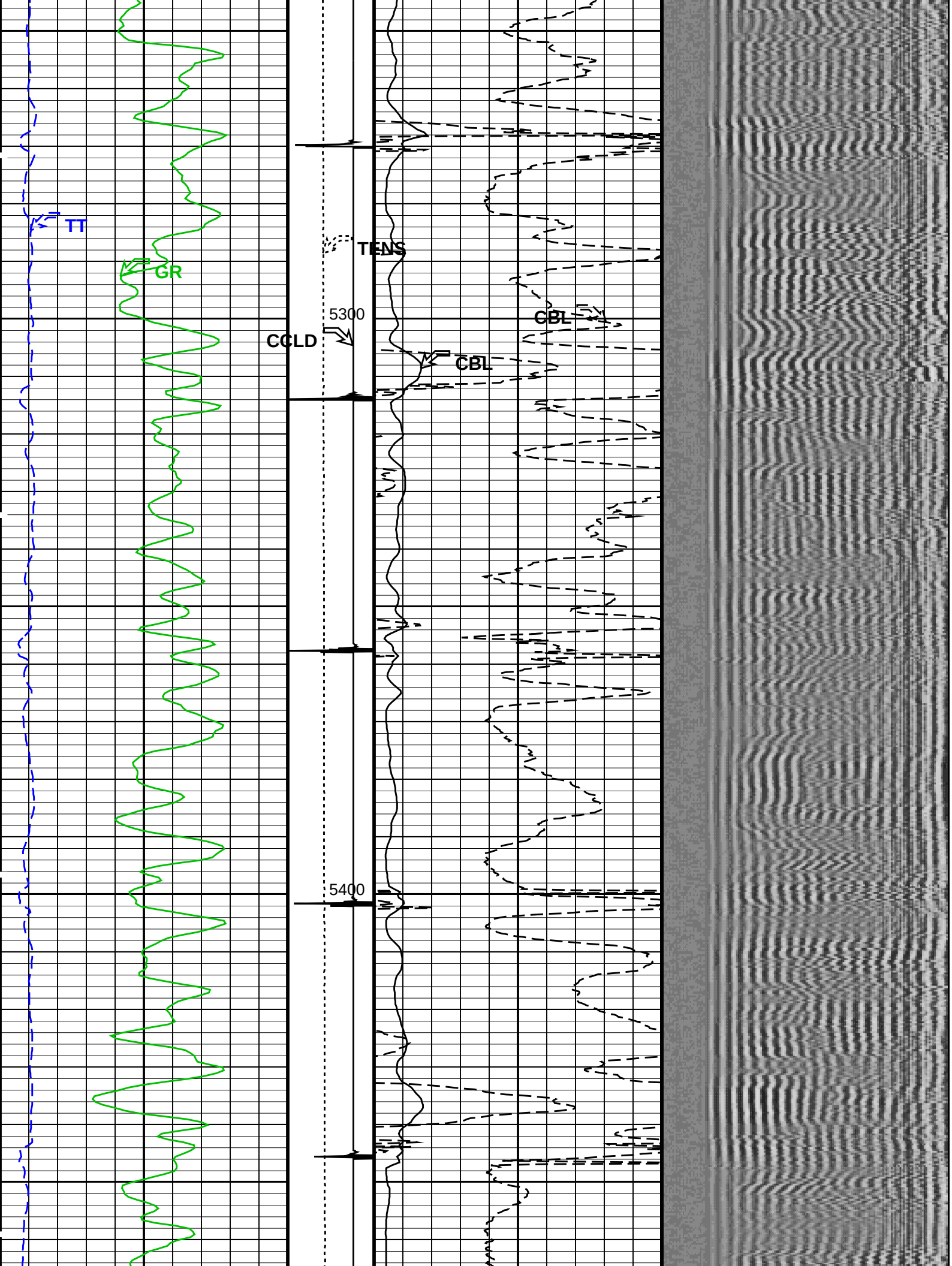

4200
TT
GR
TENS
4300
CCLD
CBL
CBL

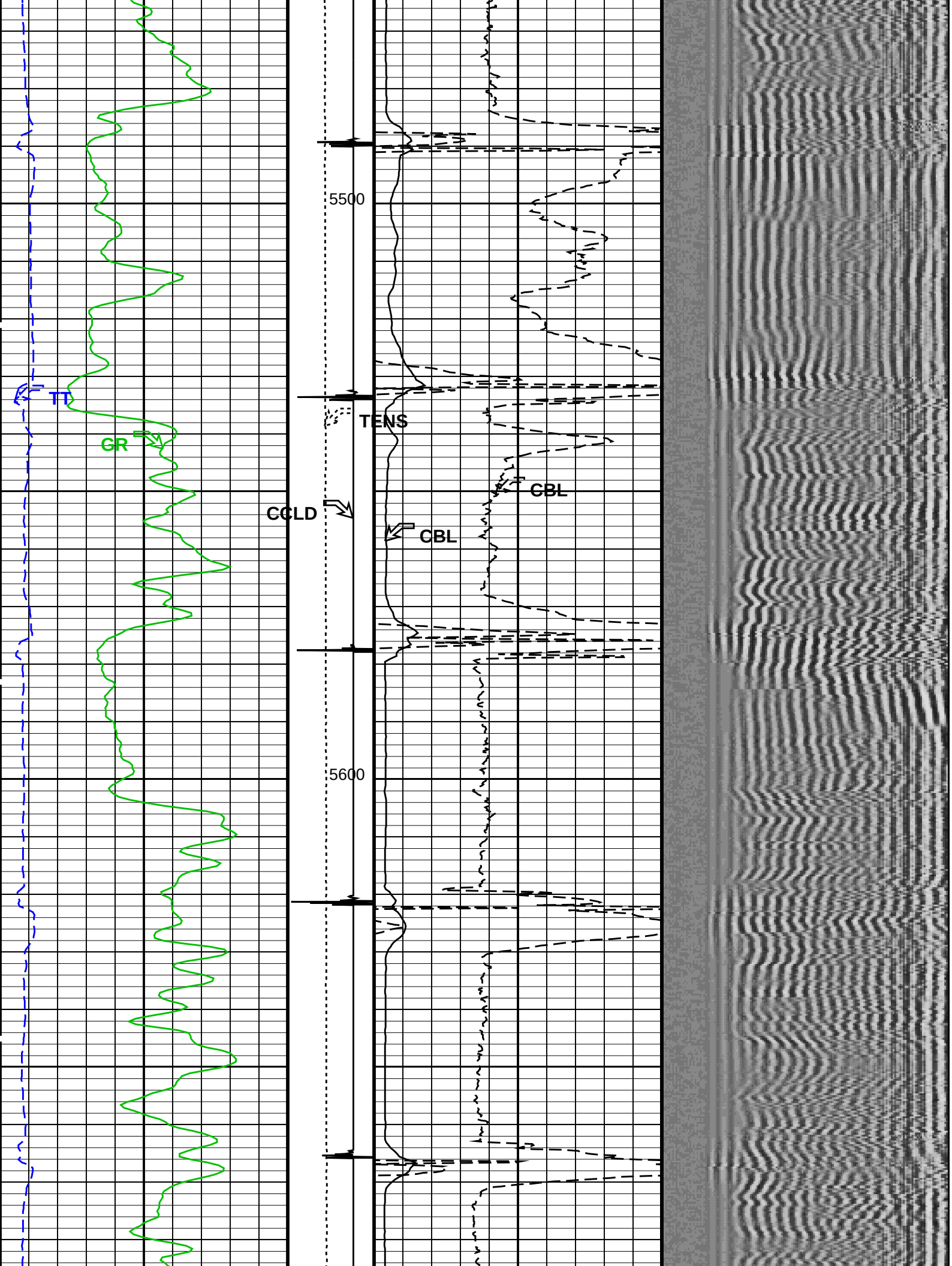

4400
4500
TT
GR
TENS
CCLD
CBL
CBL

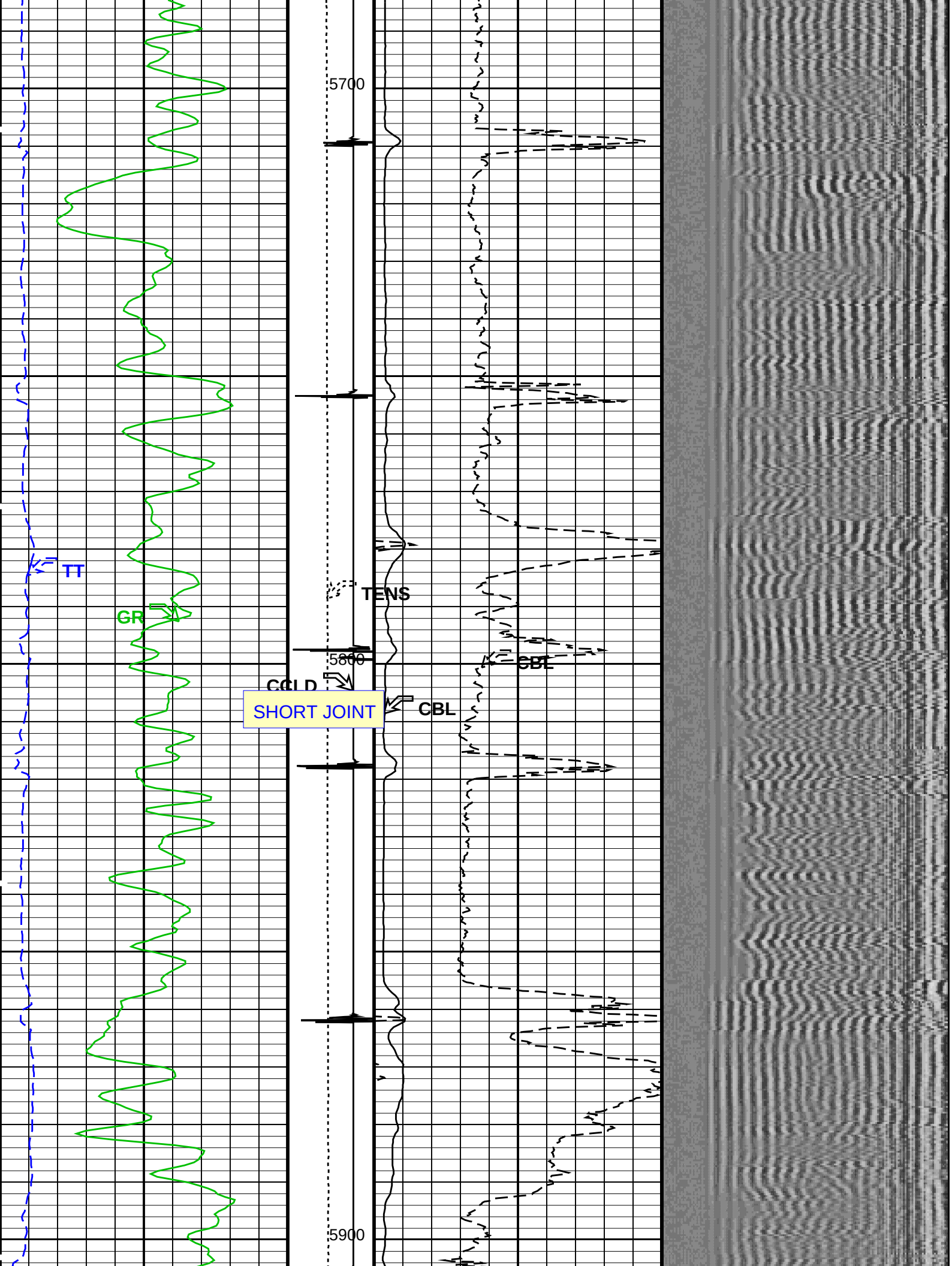

4600
4700
4800
TT
GR
TENS
GBL
CCLD

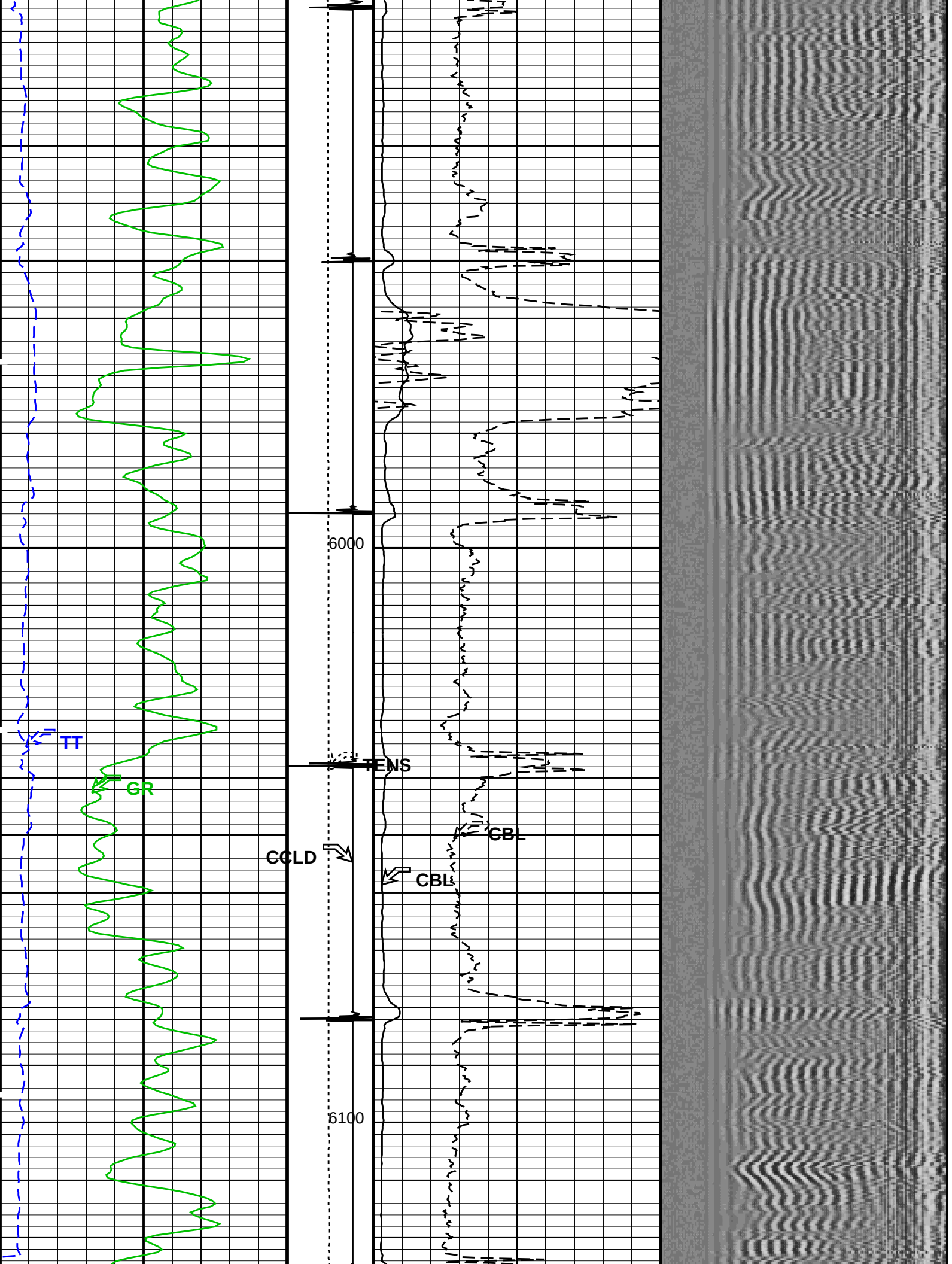

CBL
4900
5000

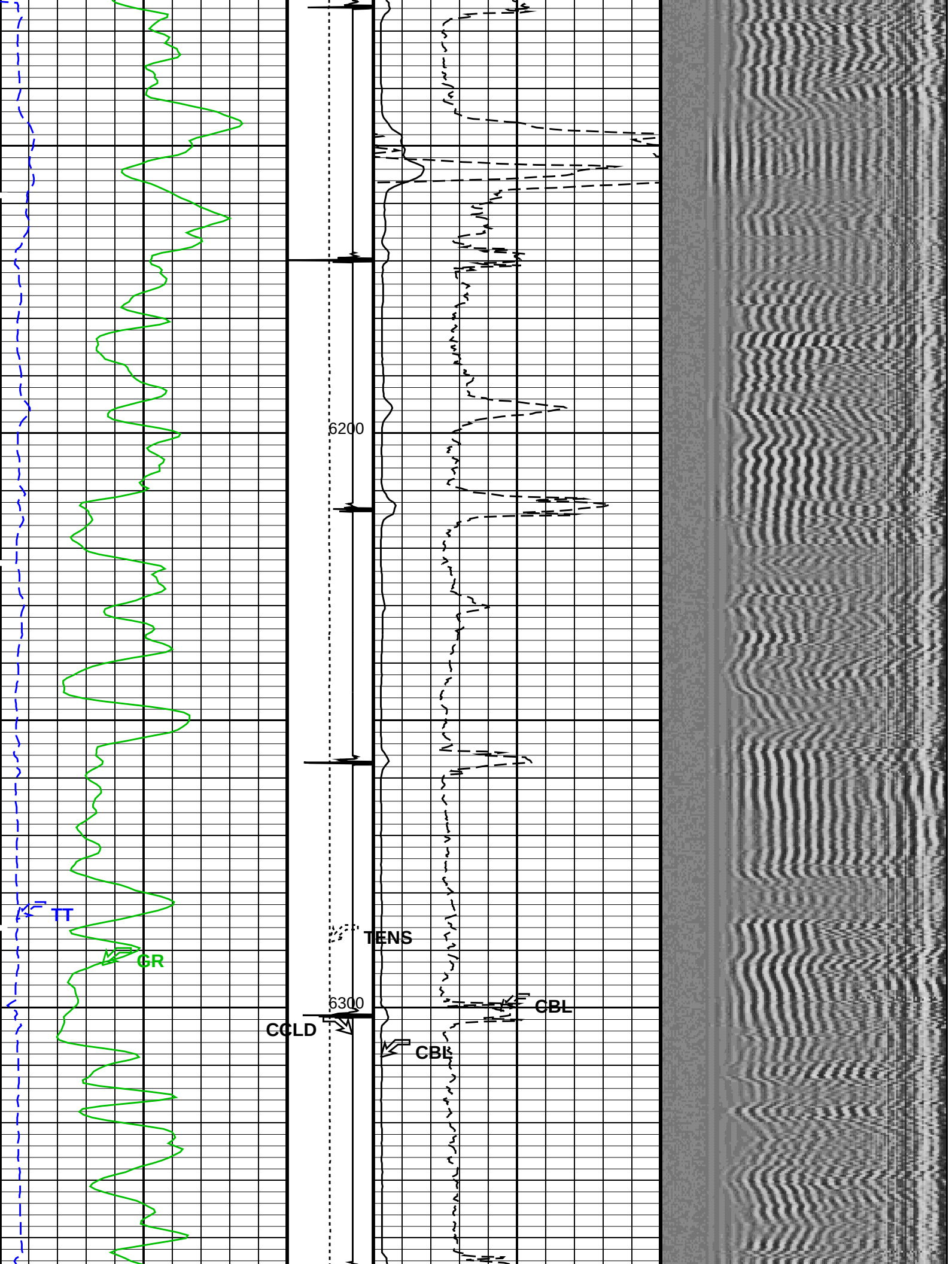

TT
GR
TENS
CCLD
CBL
CBL
5100
5200

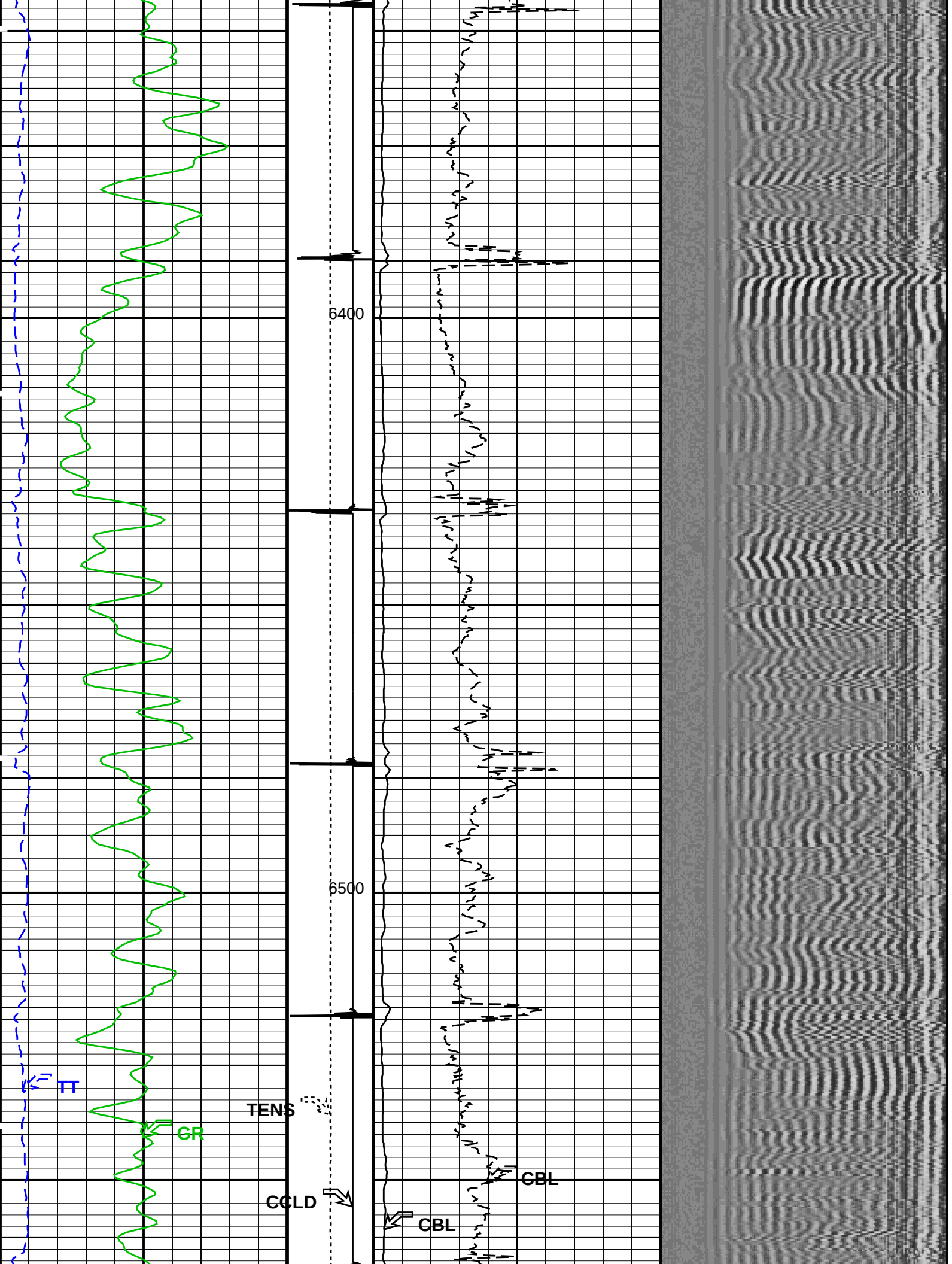

TT
GR
TENS
5300
CCLD
CBL
CBL
5400

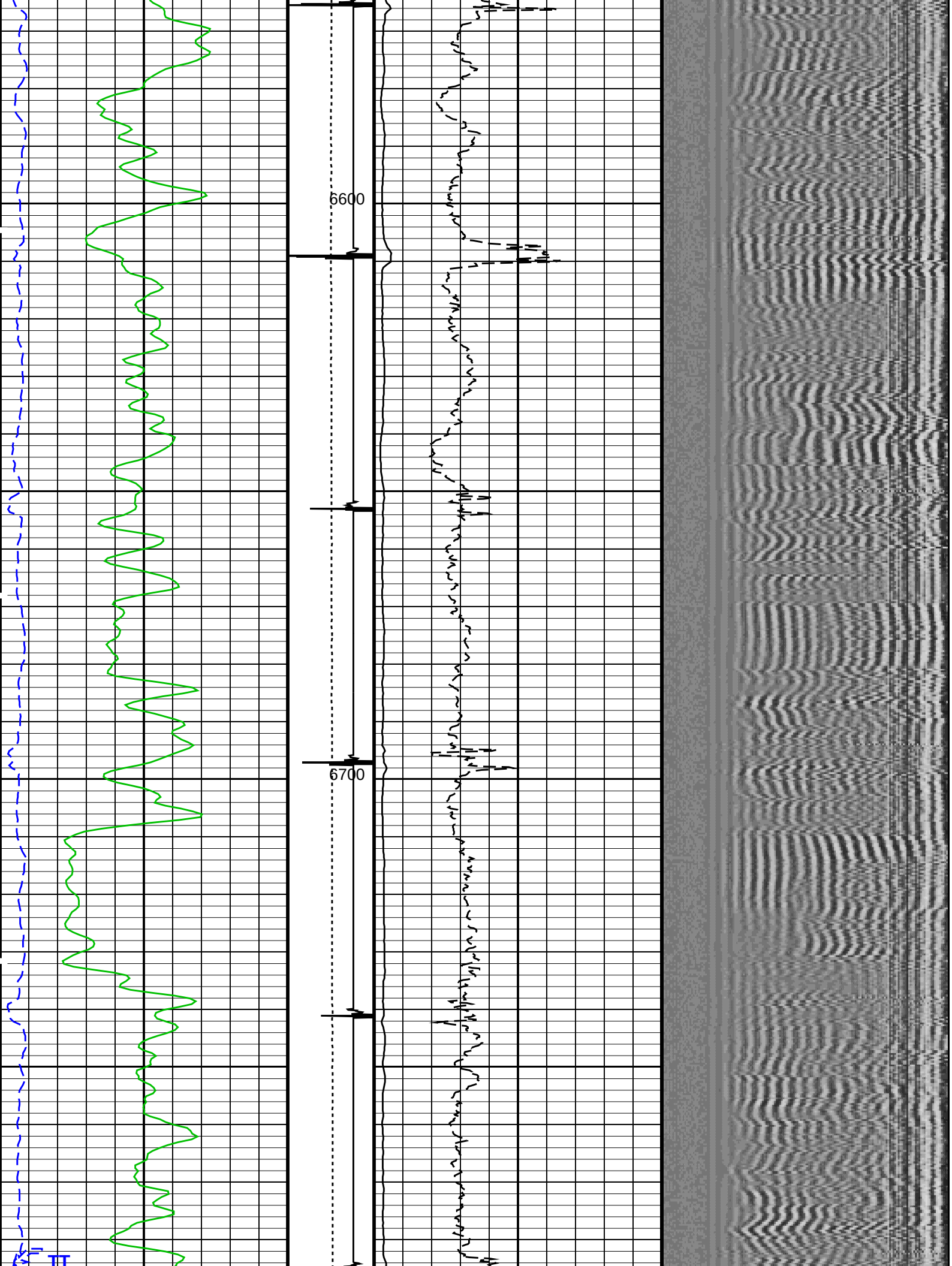

5500
TT
TENS
GR
CBL
CCLD
CBL
5600

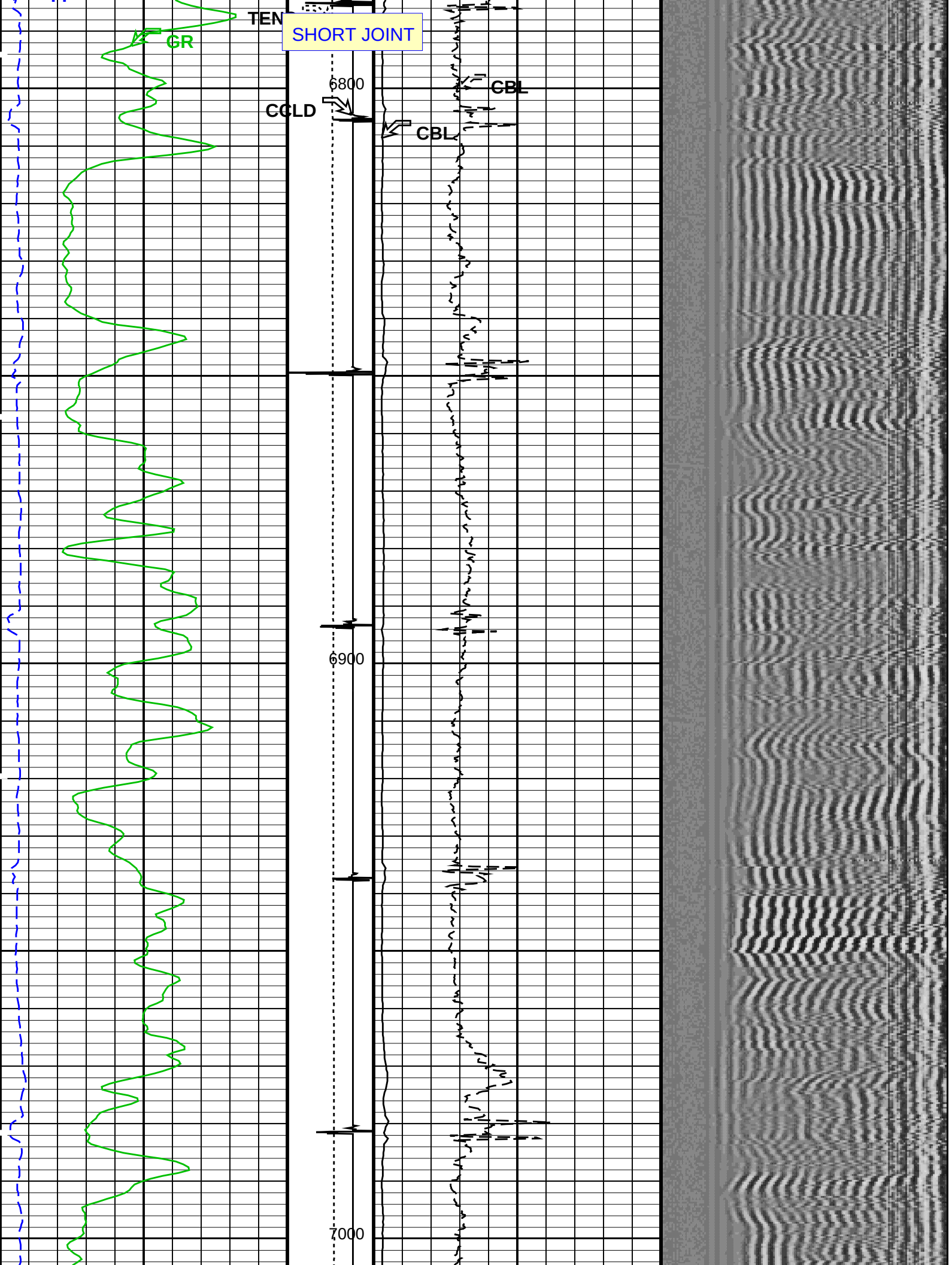

5700
TT
TENS
GR
5800
CBL
CCLD
SHORT JOINT
CBL
5900

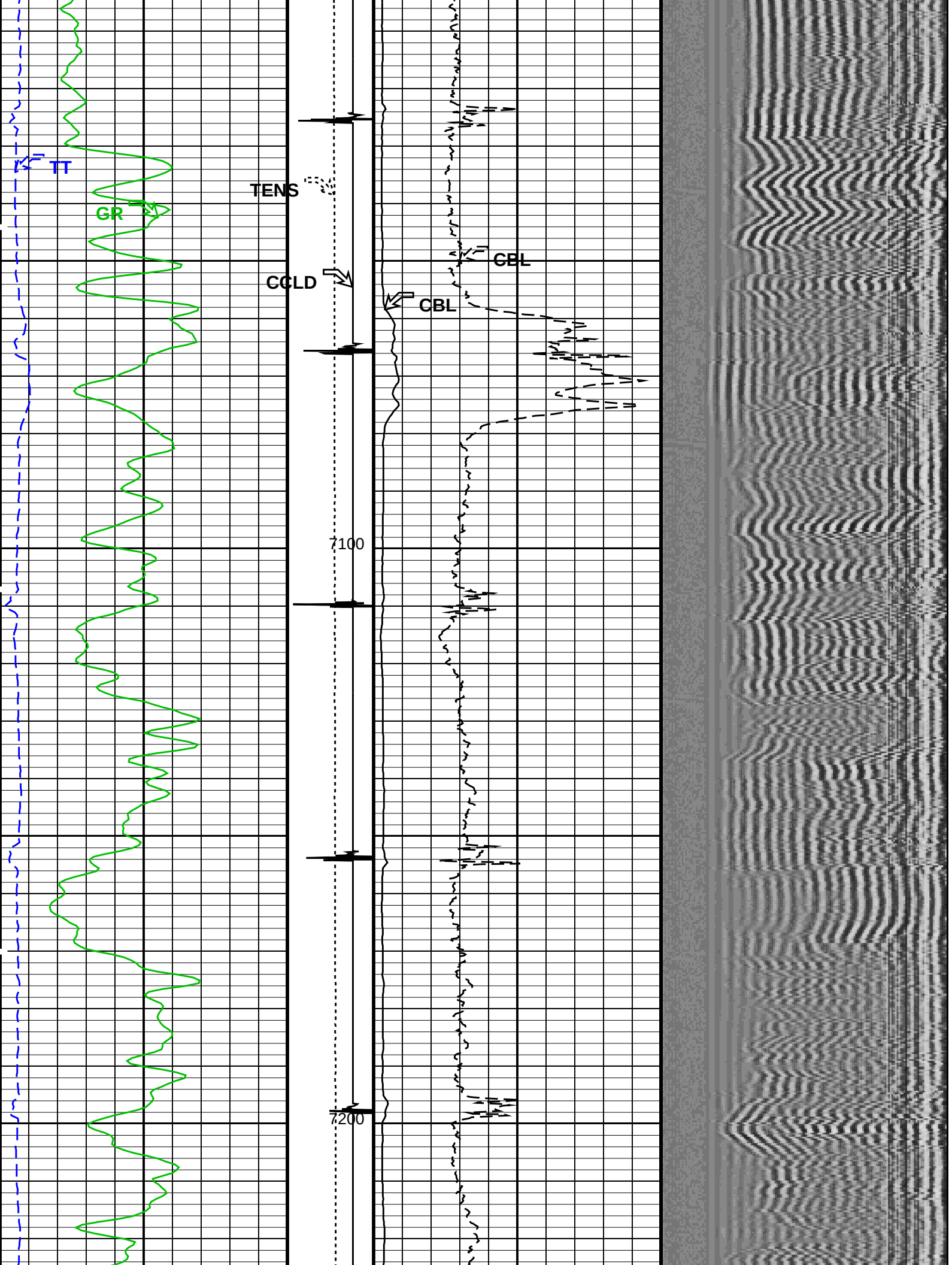

TT
GR
TENS
CCLD
CBL
CBL
6000
6100

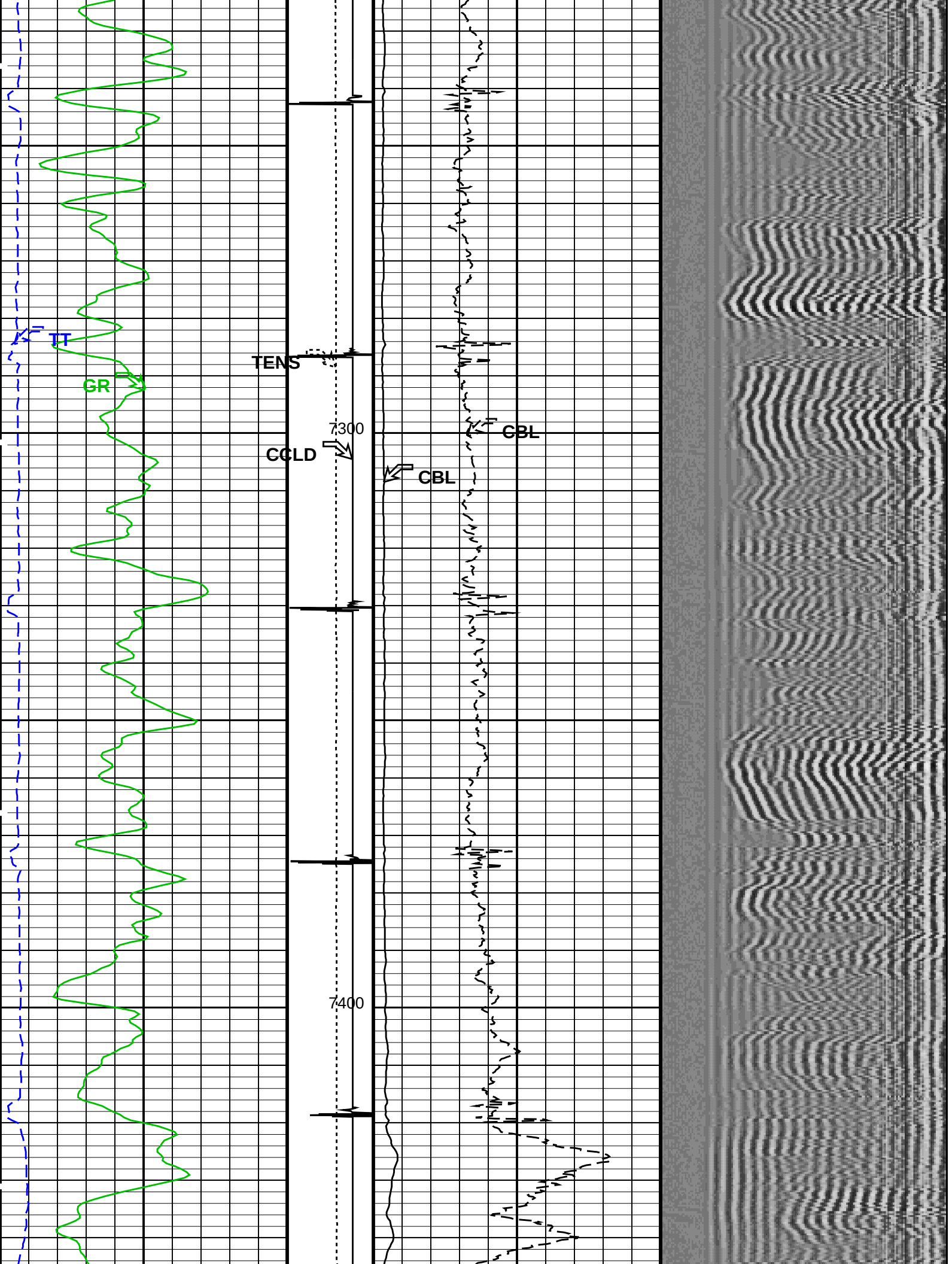

6200
6300
TT
GR
TENS
CCLD
CBL
CBL

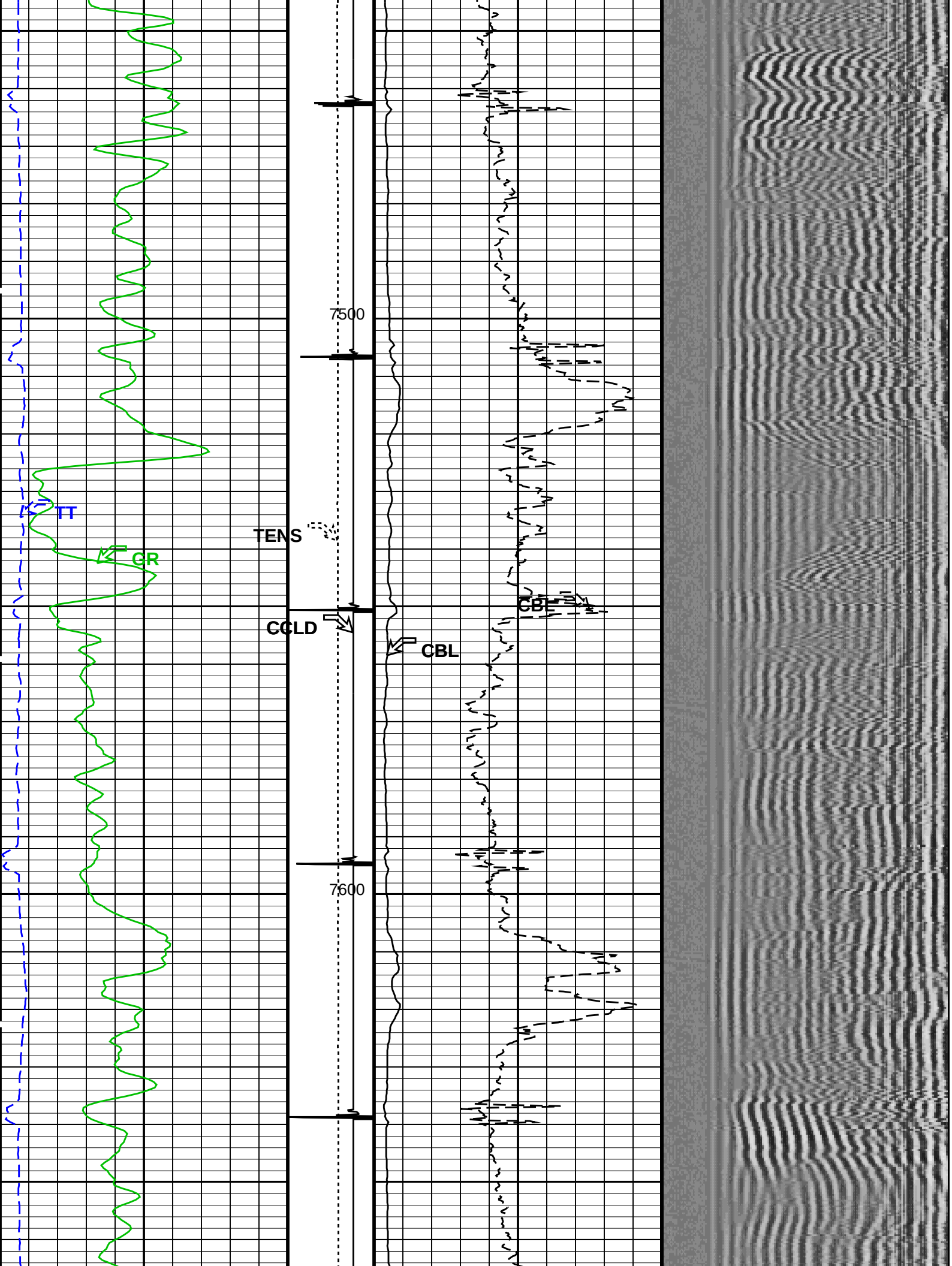

6400
6500
TT
GR
TENS
CCLD
CBL
CBL

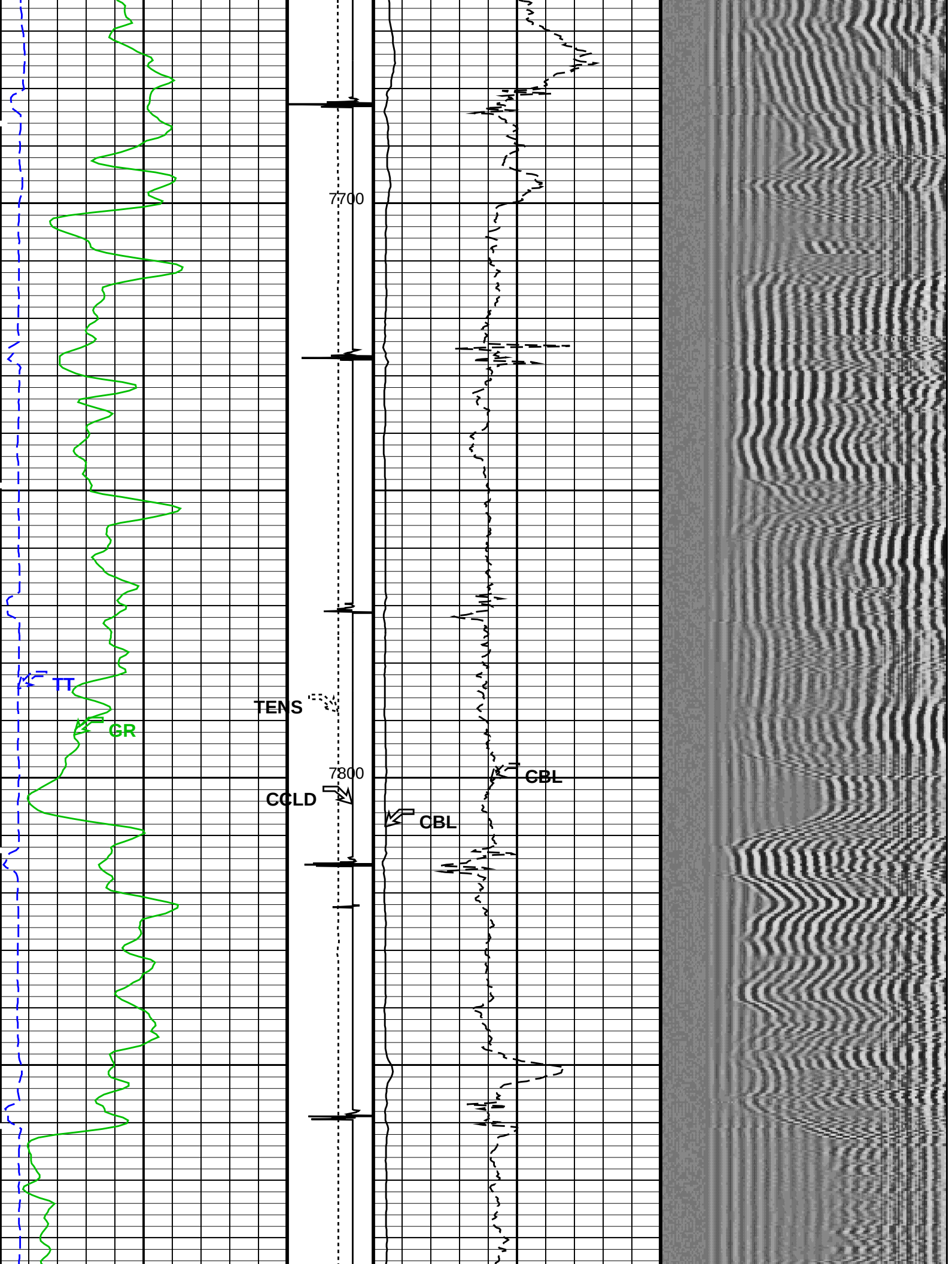

6600
6700

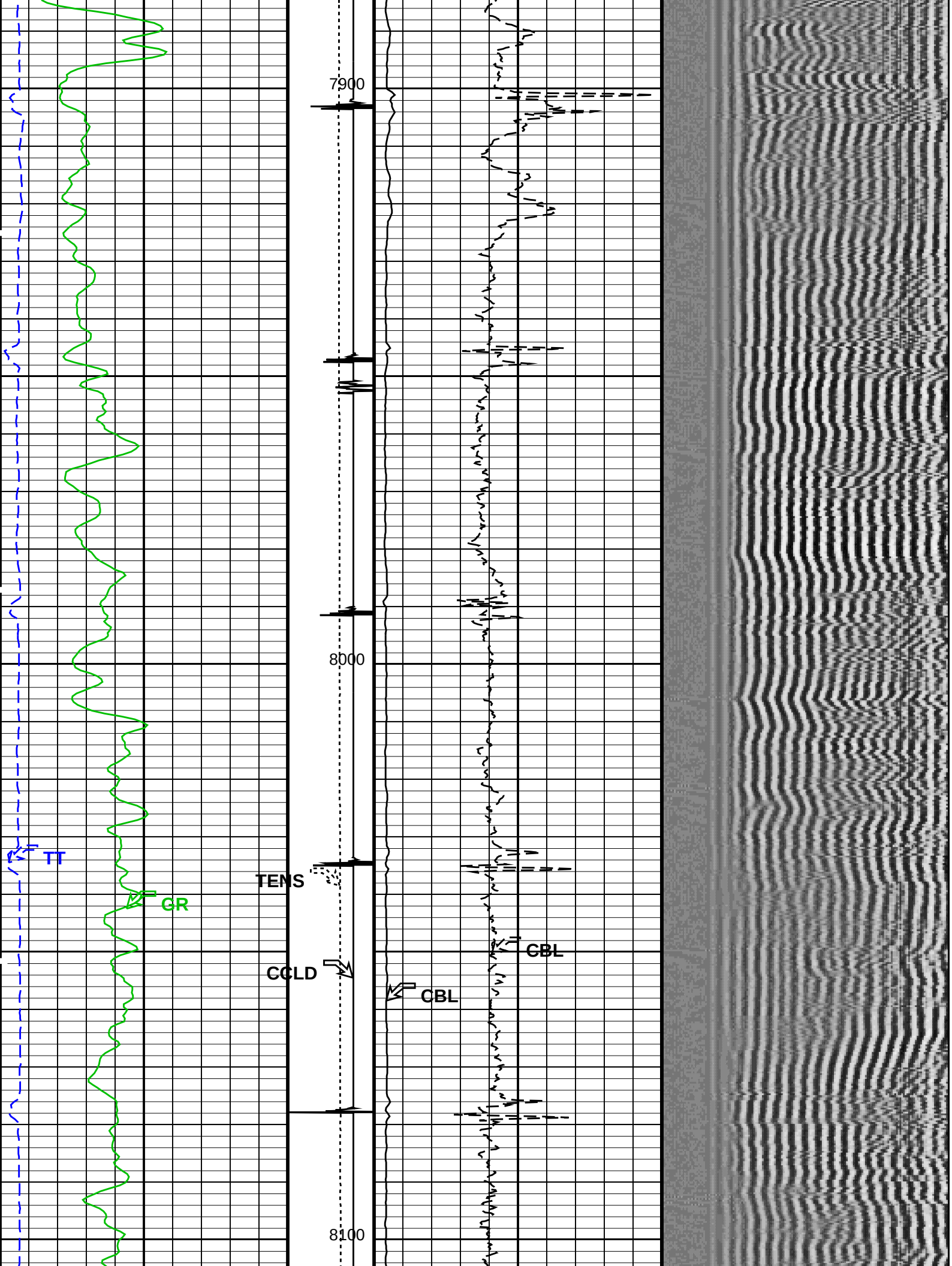

TEN
SHORT JOINT
GR
6800
CBL
CCLD
CBL
6900
7000

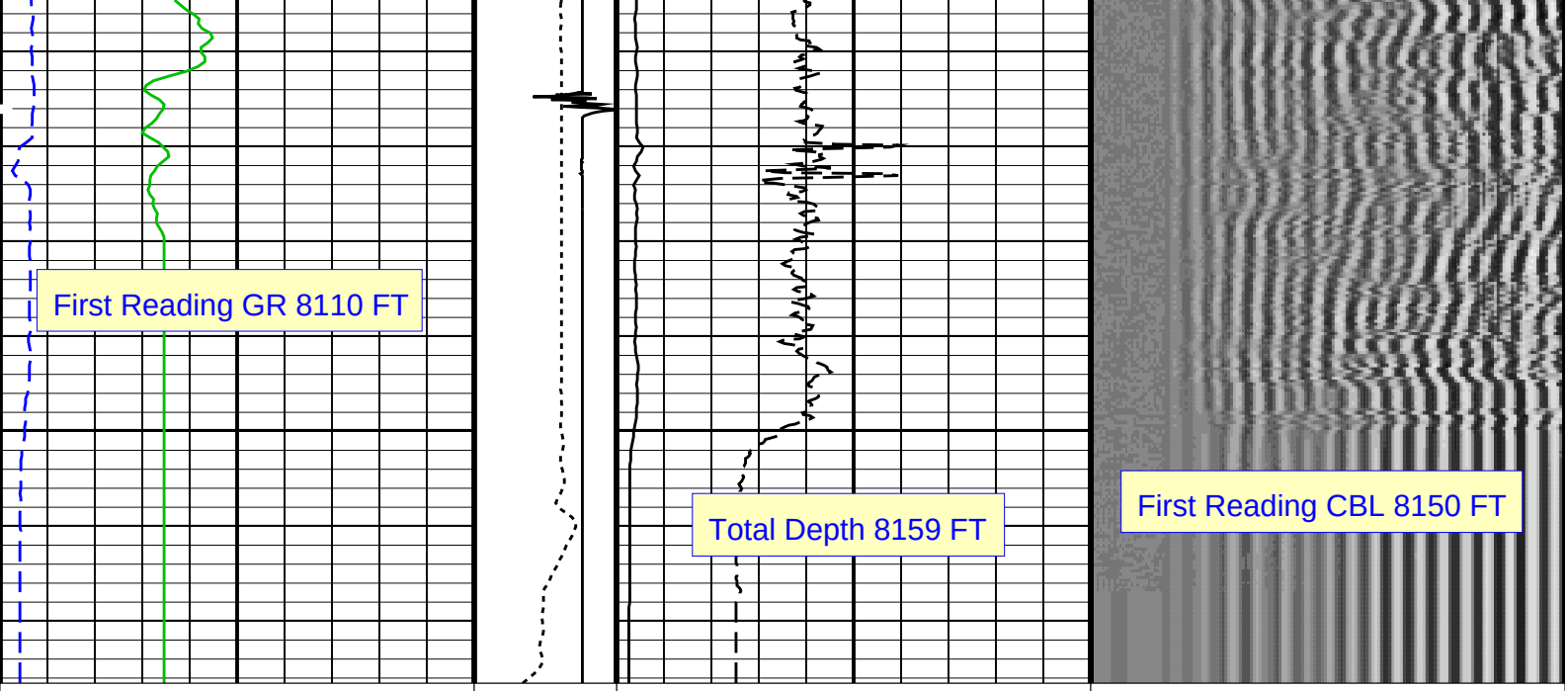

TT
GR
TENS
CCLD
CBL
CBL
7100
7200


TT
GR
TENS
7300
CCLD
CBL
CBL
7400


7500
TT
TENS
GR
CBL
CCLD
CBL
7600


7700
TT
GR
TENS
7800
CCLD
CBL
CBL


7900
8000
8100
TT
GR
TENS
CCLD
CBL
CBL




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

PIP SUMMARY

Time Mark Every 60 S

Format: CBL_VDL Vertical Scale: 5" per 100' Graphics File Created: 28−Apr−2013 15:26

## OP System Version: 19C0−187

| | | | |
|---|---|---|---|
| SCMT−CB | SRPC−5214−H2−2012−OP1 | RST−C | SRPC−5214−H2−2012−OP1 |
| PSPT | SRPC−5214−H2−2012−OP1 | | |

<<<SCMT Cement Evaluation Information Summary>>>

| | | | |
|---|---|---|---|
| Sonde Serial Number | SCMS−CB 8303 | | |
| Current Casing Size | 4.50000 IN | | |
| Casing Weight | 11.6000 LB/F | | |
| Expected CBL Amplitude in Free Pipe Section | 80 MV | Minimum Sonic Amplitude | 0.579149 MV (100% Cement)<br>1.55185 MV (80% Cement) |
| | | MAP Minimum Sonic Amplitude | 4.32284 MV (100% Cement)<br>8.10244 MV (80% Cement) |
| Master Calibration (Normalization) | | Before Calibration (Adjustment) | |
| Date of Master Calibration | 7−SEP−2012 | | |
| CBL Correction Factor | 0.0756720 | CBL Adjustment Factor (CBAF) | 0.900000 |
| MAP 1 Correction Factor | 0.136845 | MAP Adjustment Factor (MPAF) | 1.0 |
| MAP 2 Correction Factor | 0.165126 | | |
| MAP 3 Correction Factor | 0.125717 | | |
| MAP 4 Correction Factor | 0.196395 | | |
| MAP 5 Correction Factor | 0.147692 | | |
| MAP 6 Correction Factor | 0.128887 | | |
| MAP 7 Correction Factor | 0.150775 | | |
| MAP 8 Correction Factor | 0.144577 | | |

## Parameters

| DLIS Name | Description | Value | |
|---|---|---|---|
| | SCMT−CB: Slim Cement Mapping Tool, 1−11/16 OD | | |
| BILI | Bond Index Level for Zone Isolation | 0.8 | |
| CB3D | SCMT CBL 3 ft Peak Detection Mode | PEAK | |
| CB3G | SCMT CBL 3 ft Peak Detection T0_Delay and Noise Gate | 224.559 | US |
| CB3T | SCMT CBL 3 ft Fixed Threshold Level | 20 | MV |
| CB5D | SCMT CBL 5 ft Peak Detection Mode | PEAK | |
| CB5G | SCMT CBL 5 ft Peak Detection T0_Delay and Noise Gate | 338.559 | US |
| CB5T | SCMT CBL 5 ft Fixed Threshold Level | 20 | MV |
| CBLG | CBL Gate Width | 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 | | |
| CWEI | Casing Weight | 11.60 | LB/F |
| DFD | Drilling Fluid Density | 8.40 | LB/G |
| DO | Depth Offset for Playback | 5.0 | FT |
| PP | Playback Processing | RECOMPUTE | |
| TD | Total Depth | 8159 | FT |

## Input DLIS Files

| | | | | | | |
|---|---|---|---|---|---|---|
| DEFAULT | SCMT_RST_PSP_075LUP | FN:73 | PRODUCER | 28−Apr−2013 13:13 | 8171.5 FT | 10.5 FT |

## Output DLIS Files

| | | | | |
|---|---|---|---|---|
| DEFAULT | SCMT_RST_PSP_079PUP | FN:77 | PRODUCER | 28−Apr−2013 15:26 |

Schlumberger

# REPEAT ANALYSIS CBL VDL

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC

Well: SHIDELER 30−7A (O19EB)

## Input DLIS Files

| | | | | | | |
|---|---|---|---|---|---|---|
| DEFAULT | SCMT_RST_PSP_073LUP | FN:71 | PRODUCER | 28−Apr−2013 12:57 | 6000.5 FT | 5579.0 FT |
| DEFAULT | SCMT_RST_PSP_079PUP | FN:77 | PRODUCER | 28−Apr−2013 15:26 | 8176.5 FT | −36.5 FT |

## Output DLIS Files

| | | | | | | |
|---|---|---|---|---|---|---|
| DEFAULT | SCMT_RST_PSP_080PUP | FN:78 | PRODUCER | 28−Apr−2013 15:34 | 6001.5 FT | 5528.0 FT |

## OP System Version: 19C0−187

SCMT−CB SRPC−5214−H2−2012−OP1 RST−C SRPC−5214−H2−2012−OP1
PSPT SRPC−5214−H2−2012−OP1

PIP SUMMARY

Time Mark Every 60 S

TT_REP Curve (TT_REP)
260 (US) 160

TENS_REP Curve (TENS_REP) (LBF)
0 2000

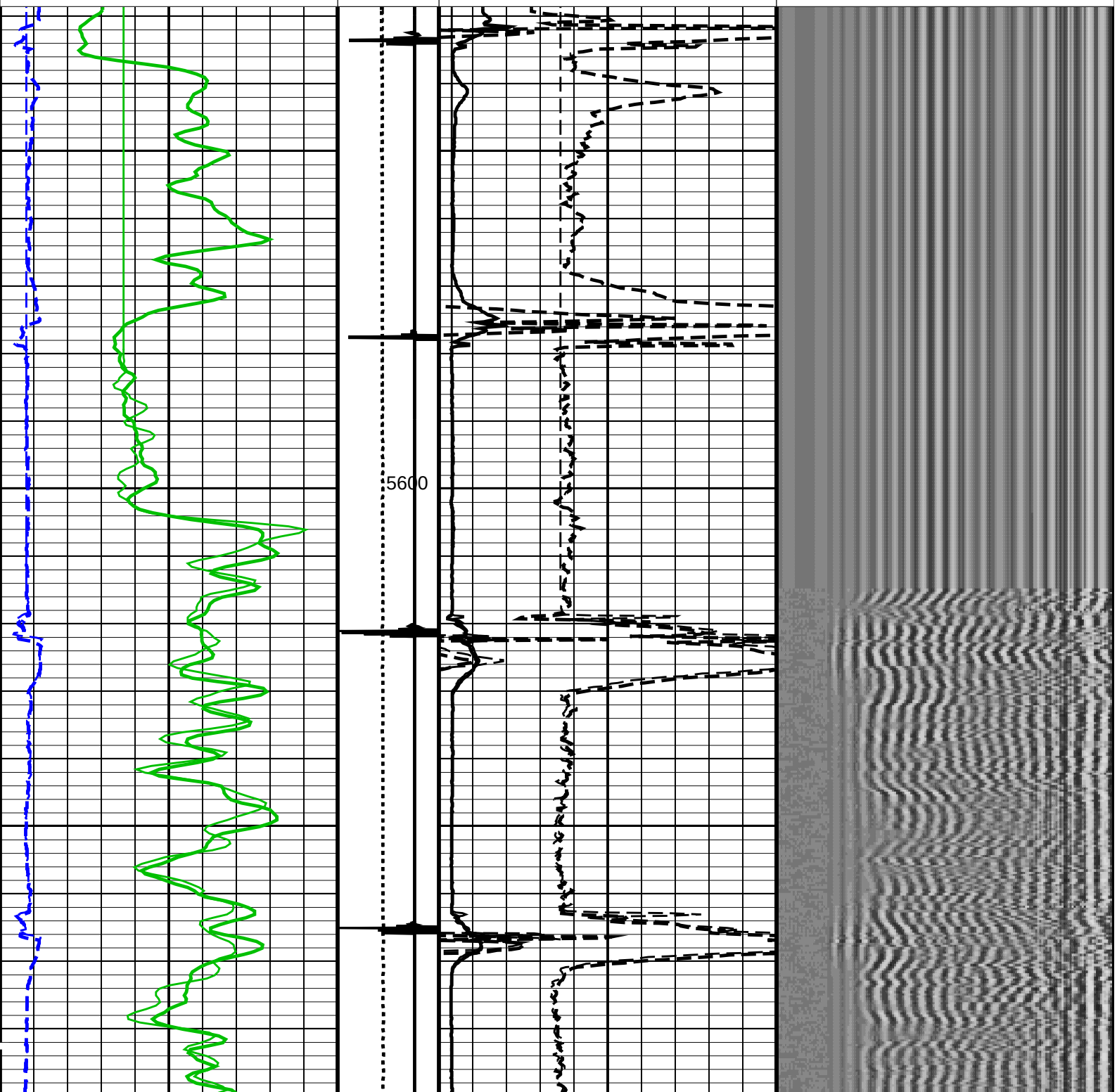
CBL_1_REP Curve (CBL_REP)
0 (MV) 10

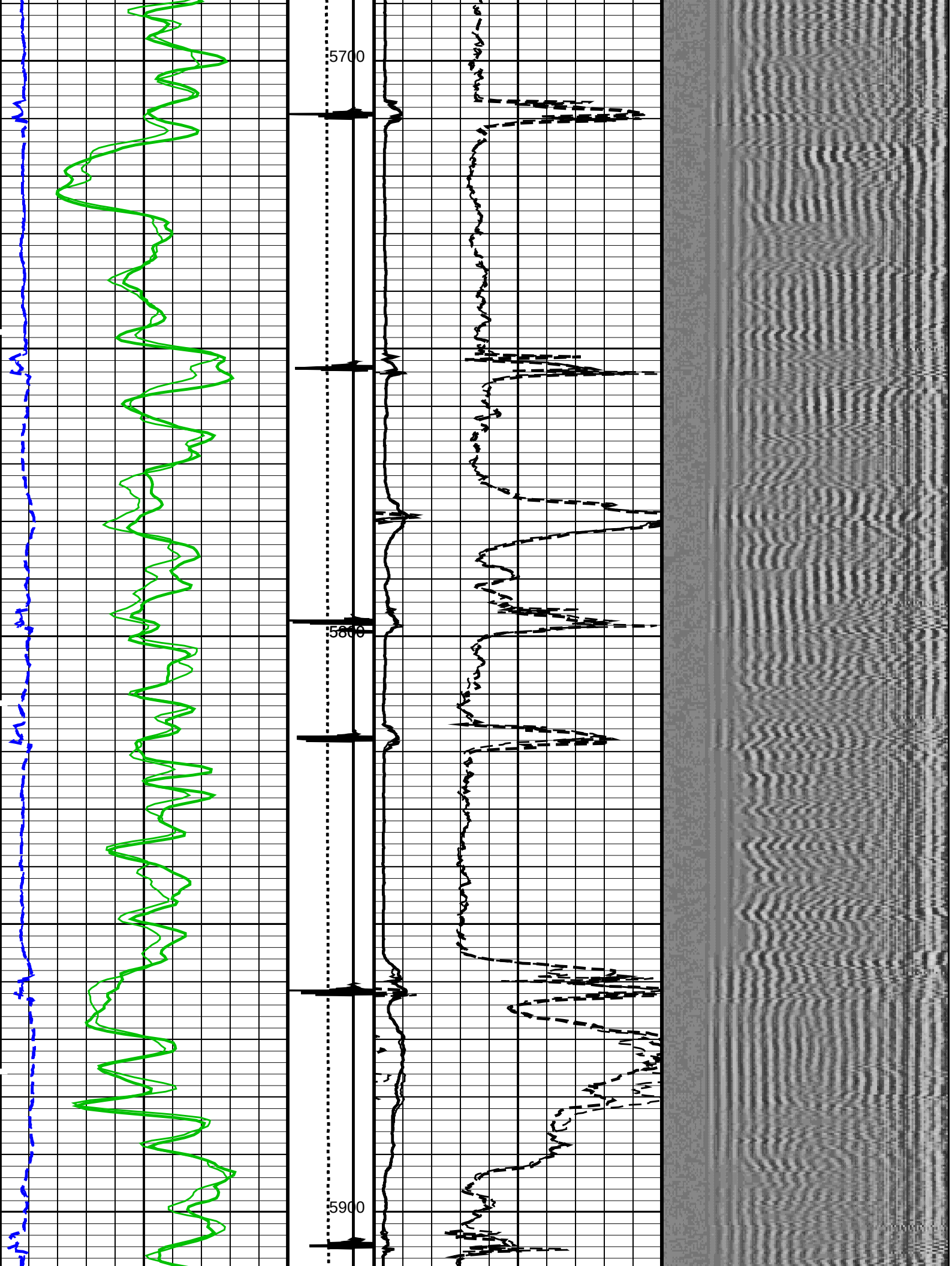
GR_REP Curve (GR_REP)
0 (GAPI) 150

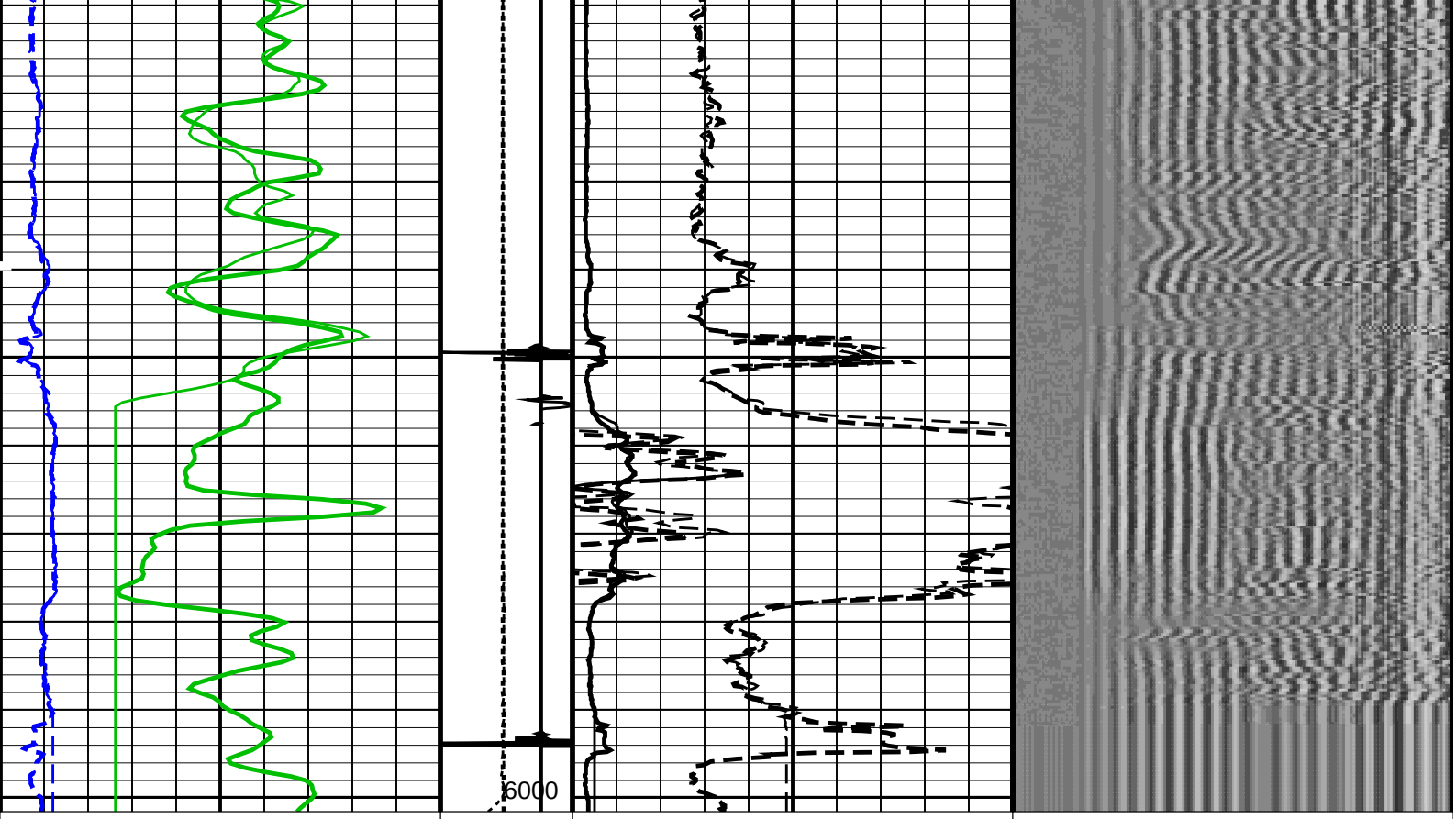
CCLD_REP Curve (CCLD_REP)
3 (V) −1

CBL_REP Curve (CBL_REP)
0 (MV) 100

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




5700
5800
5900




GR_REP Curve (GR_REP)
0 (GAPI) 150

CCLD_REP Curve (CCLD_REP)
3 (V) −1

CBL_REP Curve (CBL_REP)
0 (MV) 100

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

TT_REP Curve (TT_REP)
260 (US) 160

TENS_REP Curve (TENS_REP) (LBF)
0 2000

CBL_1_REP Curve (CBL_REP)
0 (MV) 10

PIP SUMMARY

Time Mark Every 60 S

Format: CBL_VDL_REP Vertical Scale: 5" per 100' Graphics File Created: 28−Apr−2013 15:34

## OP System Version: 19C0−187

| | | | |
|---|---|---|---|
| SCMT−CB | SRPC−5214−H2−2012−OP1 | RST−C | SRPC−5214−H2−2012−OP1 |
| PSPT | SRPC−5214−H2−2012−OP1 | | |

<<<SCMT Cement Evaluation Information Summary>>>

| | | | |
|---|---|---|---|
| Sonde Serial Number | SCMS−CB 8303 | | |
| Current Casing Size | 4.50000 IN | | |
| Casing Weight | 11.6000 LB/F | | |
| Expected CBL Amplitude in Free Pipe Section | 80 MV | Minimum Sonic Amplitude | 0.579149 MV (100% Cement)<br>1.55185 MV (80% Cement) |
| | | MAP Minimum Sonic Amplitude | 4.32284 MV (100% Cement)<br>8.10244 MV (80% Cement) |
| Master Calibration (Normalization) | | Before Calibration (Adjustment) | |
| Date of Master Calibration | 7−SEP−2012 | | |
| CBL Correction Factor | 0.0756720 | CBL Adjustment Factor (CBAF) | 0.900000 |
| MAP 1 Correction Factor | 0.136845 | MAP Adjustment Factor (MPAF) | 1.0 |

| | |
|---|---|
| MAP 2 Correction Factor | 0.165126 |
| MAP 3 Correction Factor | 0.125717 |
| MAP 4 Correction Factor | 0.196395 |
| MAP 5 Correction Factor | 0.147692 |
| MAP 6 Correction Factor | 0.128887 |
| MAP 7 Correction Factor | 0.150775 |
| MAP 8 Correction Factor | 0.144577 |

## Parameters

| DLIS Name | Description | Value | |
|---|---|---|---|
| | SCMT−CB: Slim Cement Mapping Tool, 1−11/16 OD | | |
| BILI | Bond Index Level for Zone Isolation | 0.8 | |
| CB3D | SCMT CBL 3 ft Peak Detection Mode | PEAK | |
| CB3G | SCMT CBL 3 ft Peak Detection T0_Delay and Noise Gate | 224.559 | US |
| CB3T | SCMT CBL 3 ft Fixed Threshold Level | 20 | MV |
| CB5D | SCMT CBL 5 ft Peak Detection Mode | PEAK | |
| CB5G | SCMT CBL 5 ft Peak Detection T0_Delay and Noise Gate | 338.559 | US |
| CB5T | SCMT CBL 5 ft Fixed Threshold Level | 20 | MV |
| CBLG | CBL Gate Width | 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 | | |
| CWEI | Casing Weight | 11.60 | LB/F |
| DFD | Drilling Fluid Density | 8.40 | LB/G |
| DO | Depth Offset for Playback | 1.0 | FT |
| DORL | Depth Offset for Repeat Analysis | 0.0 | FT |
| PP | Playback Processing | RECOMPUTE | |
| TD | Total Depth | 8159 | FT |

## Input DLIS Files

| | | | | | | |
|---|---|---|---|---|---|---|
| DEFAULT | SCMT_RST_PSP_073LUP | FN:71 | PRODUCER | 28−Apr−2013 12:57 | 6000.5 FT | 5579.0 FT |
| DEFAULT | SCMT_RST_PSP_079PUP | FN:77 | PRODUCER | 28−Apr−2013 15:26 | 8176.5 FT | −36.5 FT |

## Output DLIS Files

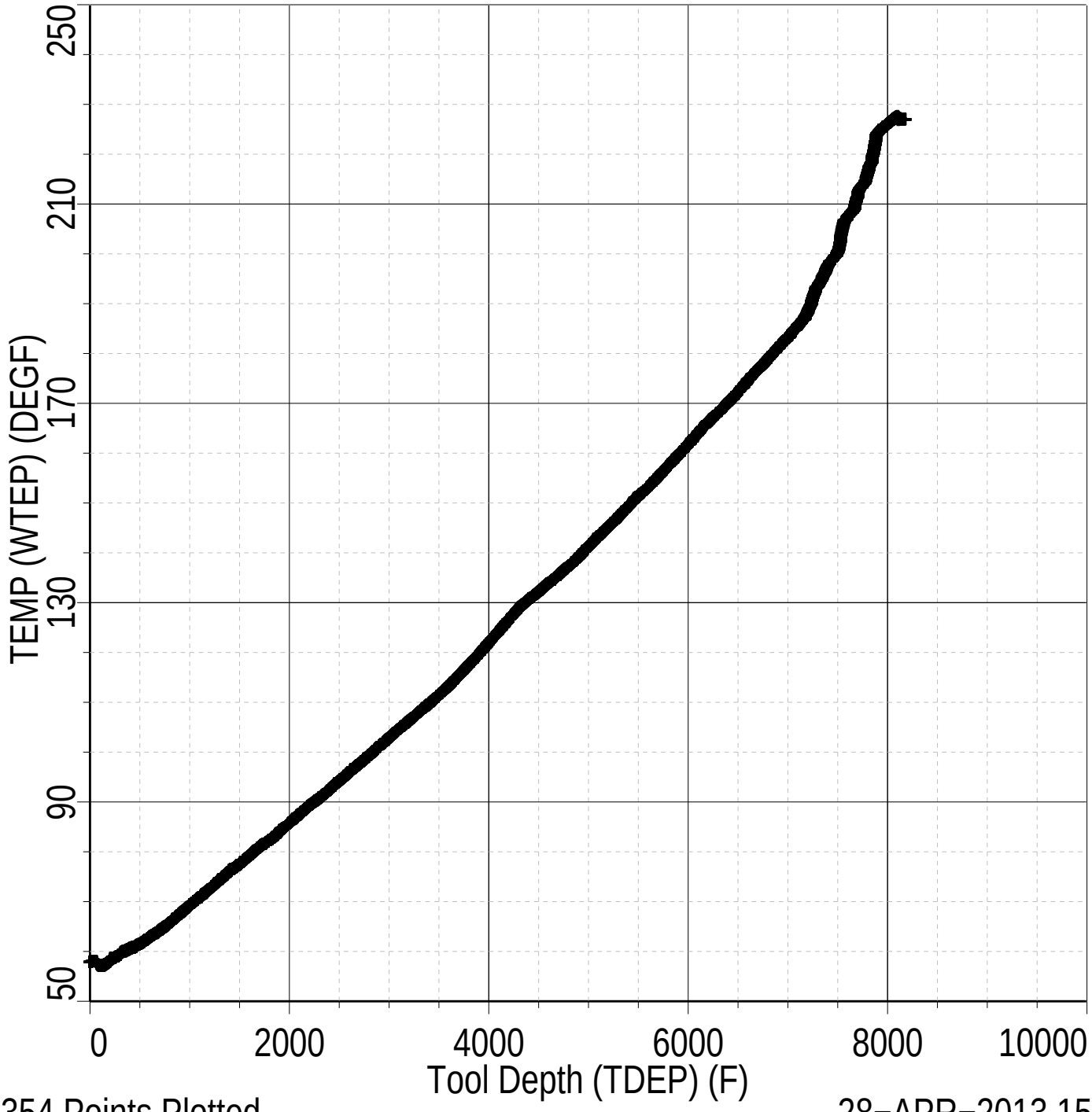
| | | | | |
|---|---|---|---|---|
| DEFAULT | SCMT_RST_PSP_080PUP | FN:78 | PRODUCER | 28−Apr−2013 15:34 |

Schlumberger

# TEMPERATURE PLOT

MAXIS Field Log

Index: 8176.5 – −36.5 FT




16354 Points Plotted

28−APR−2013 15:34

Schlumberger

# PBMS COEFFICIENTS

MAXIS Field Log

| | | | |
|---|---|---|---|
| **Client:** | **ENCANA OIL & GAS (USA) INC** | **Tool:** | **PSP** |
| **Field:** | **MAMM CREEK** | **Sub Type:** | **PBMS** |
| **Well:** | **SHIDELER 30−7A (O19EB)** | **Sensor:** | **GR** |
| **Run date:** | **28−Apr−2013** | | |

**PBMS Gamma Ray**

| | |
|---|---|
| **Sonde Serial NB** | **RESISTORS FOR GR SENSOR N.33223,TOOL PBMS−BA0928. SENSOR S/N:** |
| **Sensor Serial NB** | **33223** |
| **Calib Date ddmmyy** | **090800** |
| **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** | **Tool:** **PSP** |
| **Field:** | **MAMM CREEK** | **Sub Type:** **PBMS** |
| **Well:** | **SHIDELER 30−7A (O19EB)** | **Sensor:** **WellTemp RTD** |
| **Run date:** | **28−Apr−2013** | |

**PBMS RTD Well Thermometer**

| | |
|---|---|
| **Sonde Serial NB** | **COEFFICIENTS FOR RTD THERMOMETER PBMS−B.928 S/N:** |
| **Sensor Serial NB** | **928** |
| **Calib Date ddmmyy** | **280612** |
| **Matrix Size** | **16** |
| **Coeff CRC** | **A24E** |

**WTemp Coeff**

| | Tt**0 | Tt**1 | Tt**2 |
|---|---|---|---|
| **Tt**0** | **−.391987973189E+03** | **+.191346892512E+03** | **−.440920753451E+02** |

| | Tt**3 | Tt**4 | Tt**5 |
|---|---|---|---|
| **Tt**0** | **+.957191300908E+01** | **−.711421725686E+00** | **0.0** |

| | | | |
|---|---|---|---|
| **Client:** | **ENCANA OIL & GAS (USA) INC** | **Tool:** | **PSP** |
| **Field:** | **MAMM CREEK** | **Sub Type:** | **PBMS** |
| **Well:** | **SHIDELER 30−7A (O19EB)** | **Sensor:** | **CQG** |
| **Run date:** | **28−Apr−2013** | | |

**PBMS Quartz Gauge type F**

| | |
|---|---|
| **Sonde Serial NB** | **COEFFICIENTS FOR CQG PBMS−B.928 S/N:** |
| **Sensor Serial NB** | **928** |
| **Calib Date ddmmyy** | **280612** |
| **Matrix Size** | **66** |
| **Coeff CRC** | **9DC3** |

**Pres Coeff**

| | Fb**0 | Fb**1 | Fb**2 |
|---|---|---|---|
| Fc**0 | +.714463802232E+04 | +.183434658655E−01 | −.156620073569E−06 |
| Fc**1 | −.100638308957E+01 | −.119899563644E−04 | −.912155899025E−10 |
| Fc**2 | +.936268101283E−06 | +.423898071451E−10 | +.958076371919E−15 |
| Fc**3 | +.185123362373E−11 | +.203107925433E−15 | 0.0 |
| Fc**4 | 0.0 | 0.0 | 0.0 |
| Fc**5 | 0.0 | 0.0 | 0.0 |

| | Fb**3 | Fb**4 | Fb**5 |
|---|---|---|---|
| Fc**0 | −.746577997611E−10 | −.588773826860E−15 | −.622250441458E−19 |
| Fc**1 | −.120636521092E−15 | +.400325894750E−19 | 0.0 |
| Fc**2 | 0.0 | 0.0 | 0.0 |
| Fc**3 | 0.0 | 0.0 | 0.0 |
| Fc**4 | 0.0 | 0.0 | 0.0 |
| Fc**5 | 0.0 | 0.0 | 0.0 |

**PBMS Quartz Gauge type F**

| | |
|---|---|
| **Sonde Serial NB** | **:** |
| **Sensor Serial NB** | **928** |
| **Calib Date ddmmyy** | **280612** |
| **Matrix Size** | **66** |
| **Coeff CRC** | **283B** |

**Temp Coeff**

| | Fc**0 | Fc**1 | Fc**2 |
|---|---|---|---|

| | Fc**0 | Fc**1 | Fc**2 |
|---|---|---|---|
| Fb**0 | +.117016867873E+03 | −.284359629614E−03 | +.604391180345E−08 |
| Fb**1 | −.598309140812E−02 | +.182731130848E−07 | +.160166486172E−12 |
| Fb**2 | −.307621454576E−07 | +.300601550309E−12 | +.311233548560E−17 |
| Fb**3 | −.419658736767E−12 | +.117473708647E−16 | 0.0 |
| Fb**4 | 0.0 | 0.0 | 0.0 |
| Fb**5 | 0.0 | 0.0 | 0.0 |

| | Fc**3 | Fc**4 | Fc**5 |
|---|---|---|---|
| Fb**0 | +.114322792679E−12 | +.153807711176E−17 | −.736714260866E−21 |
| Fb**1 | −.528037875456E−18 | −.220337637519E−21 | 0.0 |
| Fb**2 | 0.0 | 0.0 | 0.0 |
| Fb**3 | 0.0 | 0.0 | 0.0 |
| Fb**4 | 0.0 | 0.0 | 0.0 |
| Fb**5 | 0.0 | 0.0 | 0.0 |

---

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 |

Schlumberger

# MASTER CALIBRATION

MAXIS Field Log

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 | 8303 |
| Slim Cement Mapping Cartridge | SCMC − CA | 8120 |
| 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 |
|---|---|---|
| Master | | 876.9 |
| 500.0 (Minimum) | 1075 (Nominal) | 1650 (Maximum) |

| Phase | MAP 2 Amplitude Plus MV | Value |
|---|---|---|
| Master | | 726.7 |
| 500.0 (Minimum) | 1075 (Nominal) | 1650 (Maximum) |

| Phase | MAP 3 Amplitude Plus MV | Value |
|---|---|---|
| Master | | 954.5 |
| 500.0 (Minimum) | 1075 (Nominal) | 1650 (Maximum) |

| Phase | MAP 4 Amplitude Plus MV | Value |
|---|---|---|
| Master | | 611.0 |
| 500.0 (Minimum) | 1075 (Nominal) | 1650 (Maximum) |

| Phase | MAP 5 Amplitude Plus MV | Value |
|---|---|---|
| Master | | 812.5 |
| 500.0 (Minimum) | 1075 (Nominal) | 1650 (Maximum) |

| Phase | MAP 6 Amplitude Plus MV | Value |
|---|---|---|
| Master | | 931.0 |
| 500.0 (Minimum) | 1075 (Nominal) | 1650 (Maximum) |

| Phase | MAP 7 Amplitude Plus MV | Value |
|---|---|---|
| Master | | 795.9 |
| 500.0 (Minimum) | 1075 (Nominal) | 1650 (Maximum) |

| Phase | MAP 8 Amplitude Plus MV | Value |
|---|---|---|
| Master | | 830.0 |
| 500.0 (Minimum) | 1075 (Nominal) | 1650 (Maximum) |

| Phase | CBL Amplitude Plus MV | Value |
|---|---|---|
| Master | | 1269 |
| 1000 (Minimum) | 1350 (Nominal) | 1700 (Maximum) |

Master: 7−Sep−2012 16:30

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

Well: **SHIDELER 30−7A (O19EB)**

Schlumberger

| | |
|---|---|
| Field: | **MAMM CREEK** |
| County: | **GARFIELD** |
| State: | **COLORADO** |

SLIM CEMENT MAPPING LOG
CBL−VDL
GR−CCL