

Tucker

WIRELINER SERVICES

COMPENSATED NEUTRON

PEL DENSITY LOG

Company LB EXPLORATION INC. Well WOLKINS #15-1 Field MEDICINE LODGE-BOGGS County BARBER State KANSAS Country USA API No. 15-007-23860-00-00		File No : TUL-57682 Company : LB EXPLORATION INC. Well : WOLKINS #15-1 Field : MEDICINE LODGE-BOGGS County : BARBER State : KANSAS Country : USA API No : 15-007-23860-00-00	
Location : 660' FSL & 330' FEL E2 SE SE		LSD : Sect : 15 Twp : 33S Rge : 13W	
Permanent Datum:	GL	Elevations:	Services:
Drilling Measured From:	KB	KB 1612.00	SGT
Log Measured From:	KB	DF 1611.00	CNT
Above Permanent Datum:	13.00 Ft	GL 1599.00	LDT
Date	04-11-2012		
Run Number	1		
Depth--Driller	5150.0	Ft	
Depth--Logger	5150.0	Ft	
First Reading	5103.0	Ft	
Last Reading	2500.0	Ft	
Casing--Driller	356.0	Ft	
Casing--Logger	355.0	Ft	
Bit Size	7.875	In	
Casing Size	8.625	In	
Hole Fluid Type	WBM		
Density	9.5	LBS/GAL	
Fluid Loss	22.0	CC	
PH/Viscosity	8.0	58.0 SEC	
Sample Source	MEASURED		
RMF@Measured Temp.	0.450	@ 68 F	
RMF@Measured Temp	0.380	@ 68 F	
RMF@Measured Temp.	0.520	@ 68 F	
Source RMF/RMC	CALCULATED/CALCULATED		
RM@BHT	0.230	@ 138 F	
Time Circulation Stopped			
Max Recorded Temp.	138	F	
Equipment/Base	123	TULSA	
Recorded By	R. FRANKLIN, S. DAVIS		
Witnessed By	S. PETERMANN		

The customer is hereby warned that by providing the log data herein, T. W. S. does not agree to provide any interpretation of log data, conversion of log data to physical rock parameters or recommendations. T. W. S. does not guarantee or warrant either expressly or impliedly, the accuracy of any interpretation of log data, conversion of log data to physical rock parameters or recommendations which may be given by T. W. S. personnel. Any interpretation, conversion or recommendation is not part of the consideration for the agreement between the parties and is not part of any part of the charge by T. W. S. for its services. Any user of the log data is warned that said user is not entitled to rely on interpretations, conversions or recommendations as aforesaid.

Bitsize Intervals		Casing Strings		
Size (In)	Bottom (Ft)	Size (In)	Weight (Lbs)	Bottom (Ft)
7.875	5150.00	8.625	32.00	356.00

Run Number	1	
Date	04-11-2012	
Date/Time On Bottom	04-11-2012 15:15	
Depth to Fluid	0.0 Ft	
Salinity	0.000 PPM	
RMF@BHT	0.190 @ 138 F	
RMC@BHT	0.270 @ 138 F	

Run Number 1

Comments

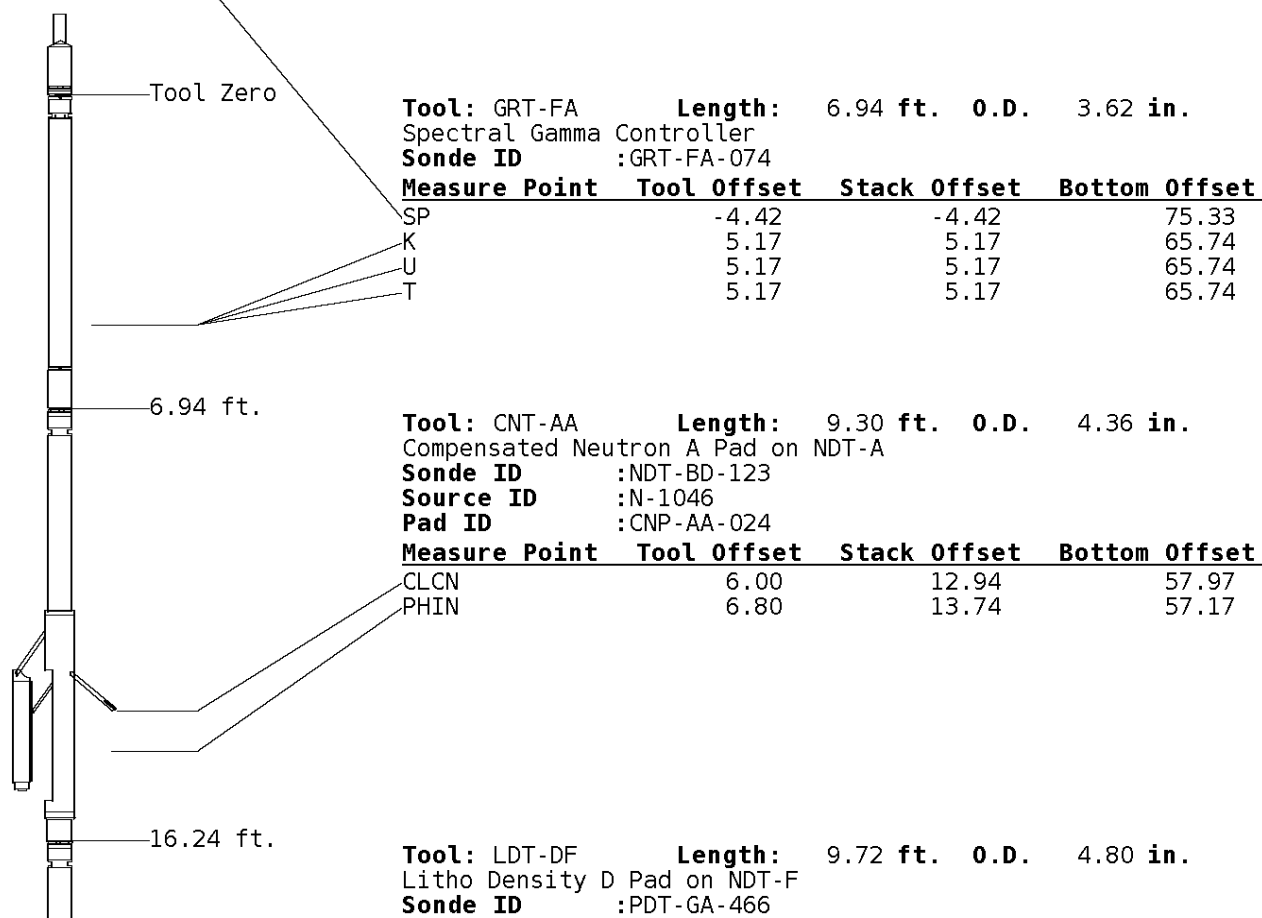
ALL PRESENTATIONS AS PER CUSTOMER REQUEST.
 SGT, CNT, LDT, MLT, CST, AND PIT RUN IN COMBINATION.
 CALIPERS ORIENTED ON X-Y AXIS.
 2.71 G/CC USED TO CALCULATED POROSITY.
 ANNULAR HOLE VOLUME CALCULATED USING 5.50" PRODUCTION CASING.
 PHIN IS CALIPER CORRECETD.

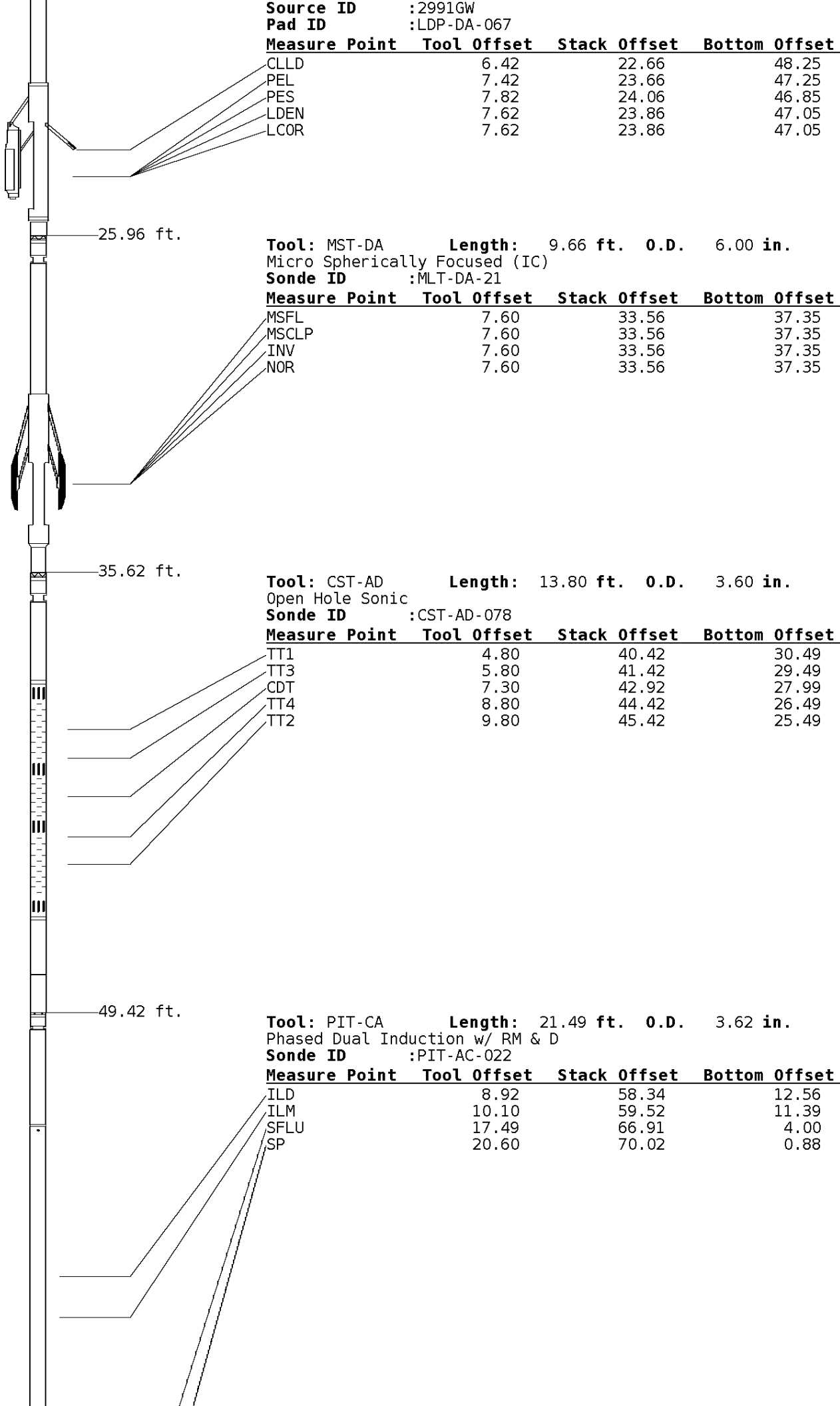
GRT: GRP, GRX, UFGRP, S-KK, S-TK, S-UK.
 CNT: PHIN, CLCNIN, PHXN,
 LDT: PORL, PXRL, LCORN, LCORNX, PECLN, PECLNX, LDENN, LDENNX, PORLLS, CLLDIN.
 MLT: NOR_RF, INV_RF, MSCLPIN.
 CST: PORL, CDTF, ITT, TT1PF, TT2PF, TT3PF, TT4PF.
 PIT: ILD, ILM, SPU, SFLAEC.

OPERATORS:
 N. LOYD
 B. STEPHENS

Tool String Schematic

Total Tool Length - 70.91 ft.
Maximum Outside diameter - 6.00 in.
Net Weight in Air - 1202.00 lbs.





LWT 70.91 ft.

Well File: LBE WOL 15-1 APR 11 SGTQUINT

Scale: 1:240

Segment: V1.D1.S5 MAIN

Acquired: 2012-04/11 15:34 3.2.0-10367

Reference: 0

Processed: 2012-04/11 19:08 3.2.0-10367

TENSION
LBS

10000 0

BIT SIZE
INCHES (IN)

6 16

DENSITY (X) CALIPER
INCHES (IN)

16 26
6 16

Volume
Quartz

PE CROSS-SECTION
BARNS/ELECTRON

DENSITY CORRECTION
G/CC

0 10 -0.25 0.25

NEUTRON (Y) CALIPER
INCHES (IN)

16 26
6 16

Volume
Calcite

NEUTRON POROSITY
PERCENT (LIMESTONE MATRIX)

70 30
30 -10
-10 -50

GAMMA RAY
API UNITS

150 300
0 150

Volume
Dolo/Shale

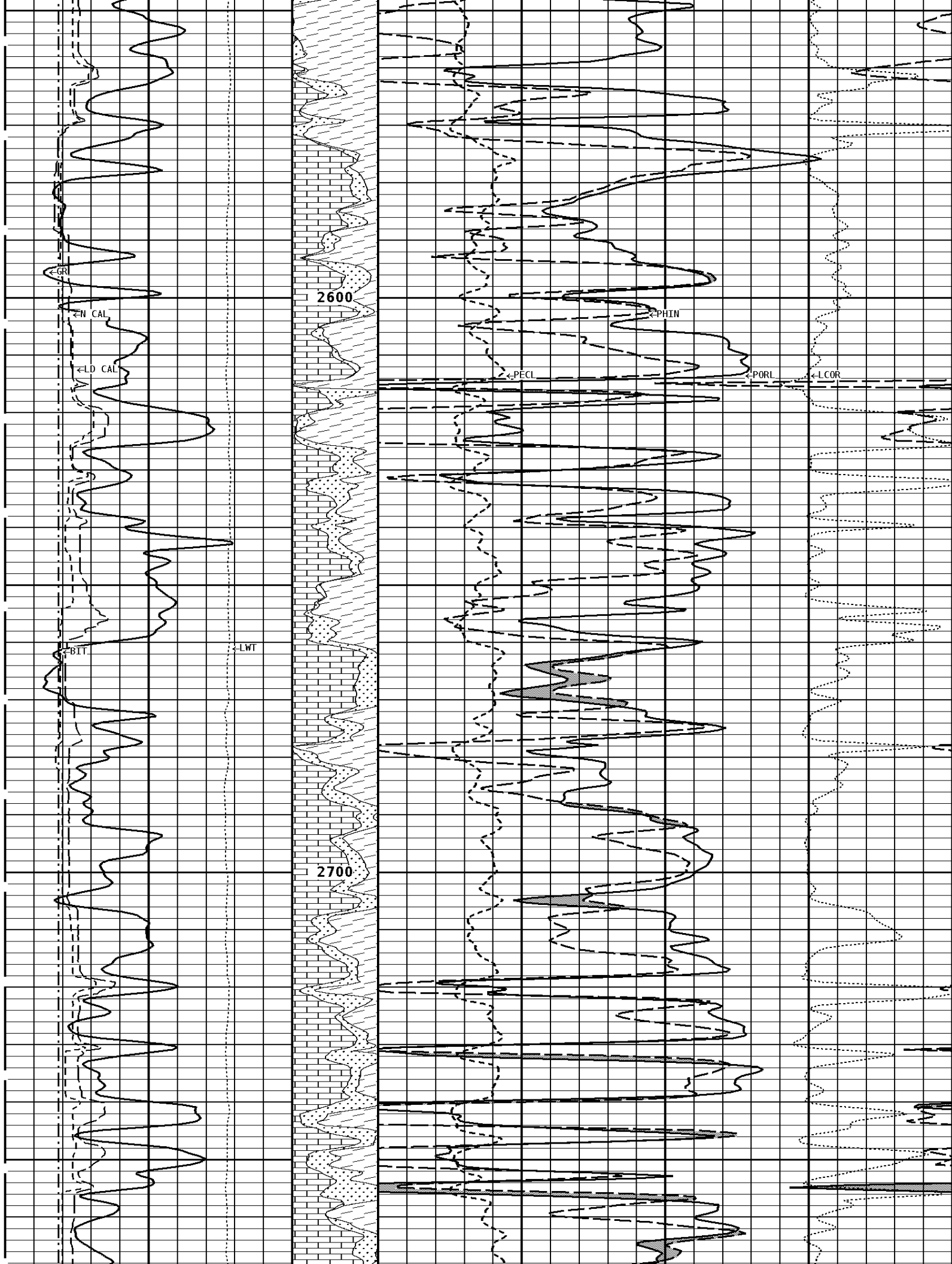
DENSITY POROSITY
PERCENT (2.71 g/cc)

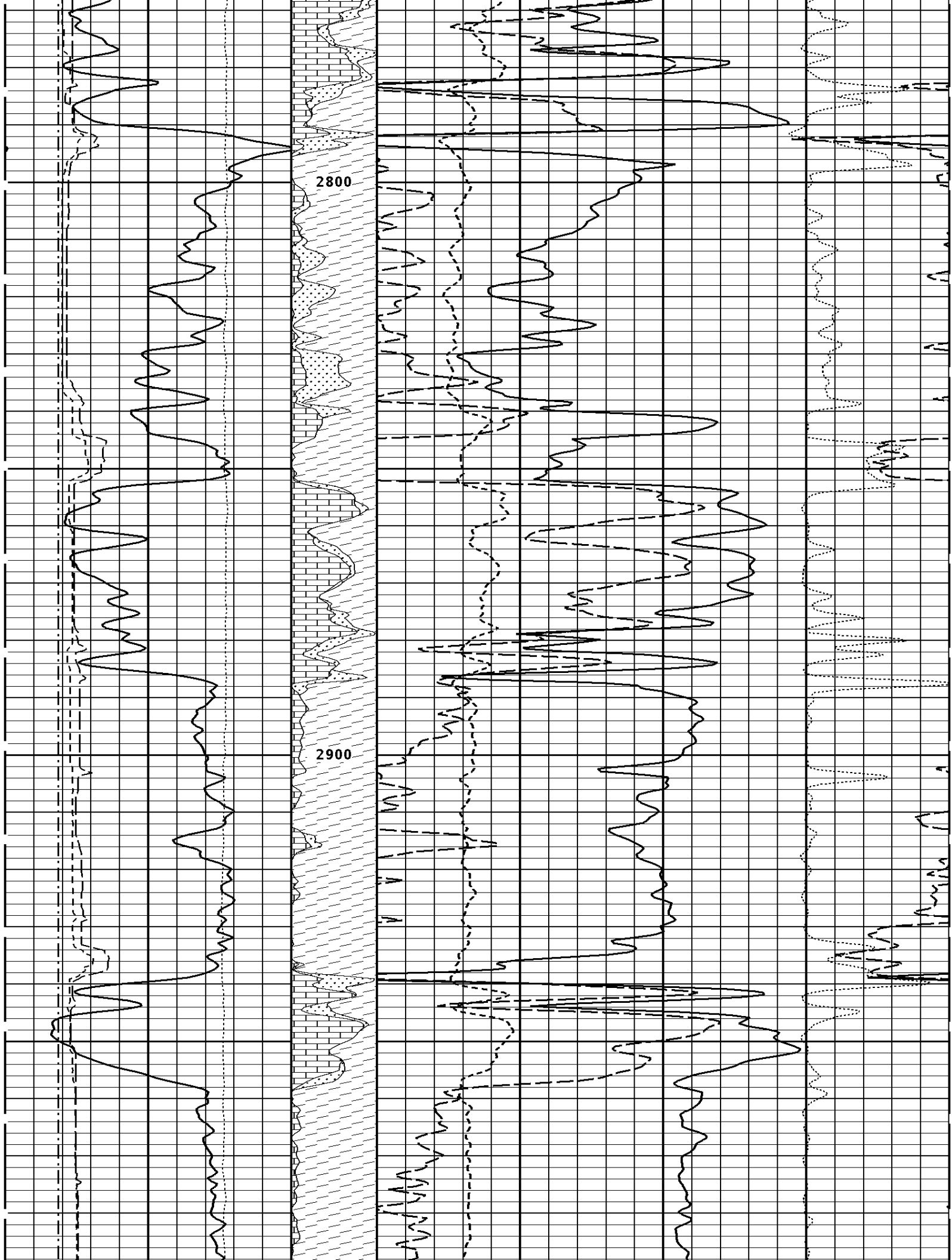
70 30
30 -10
-10 -50

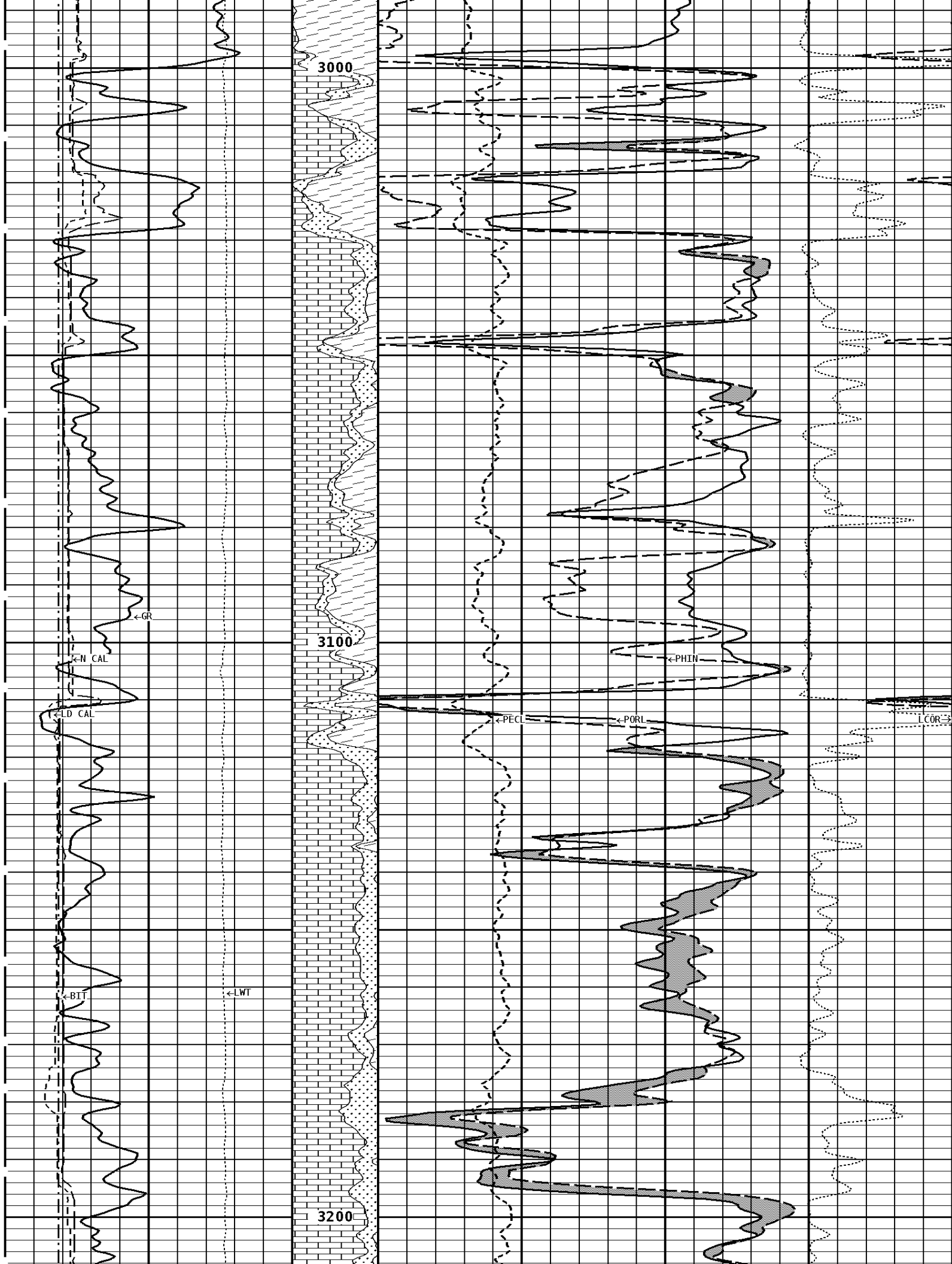
1:240 MAIN SECTION

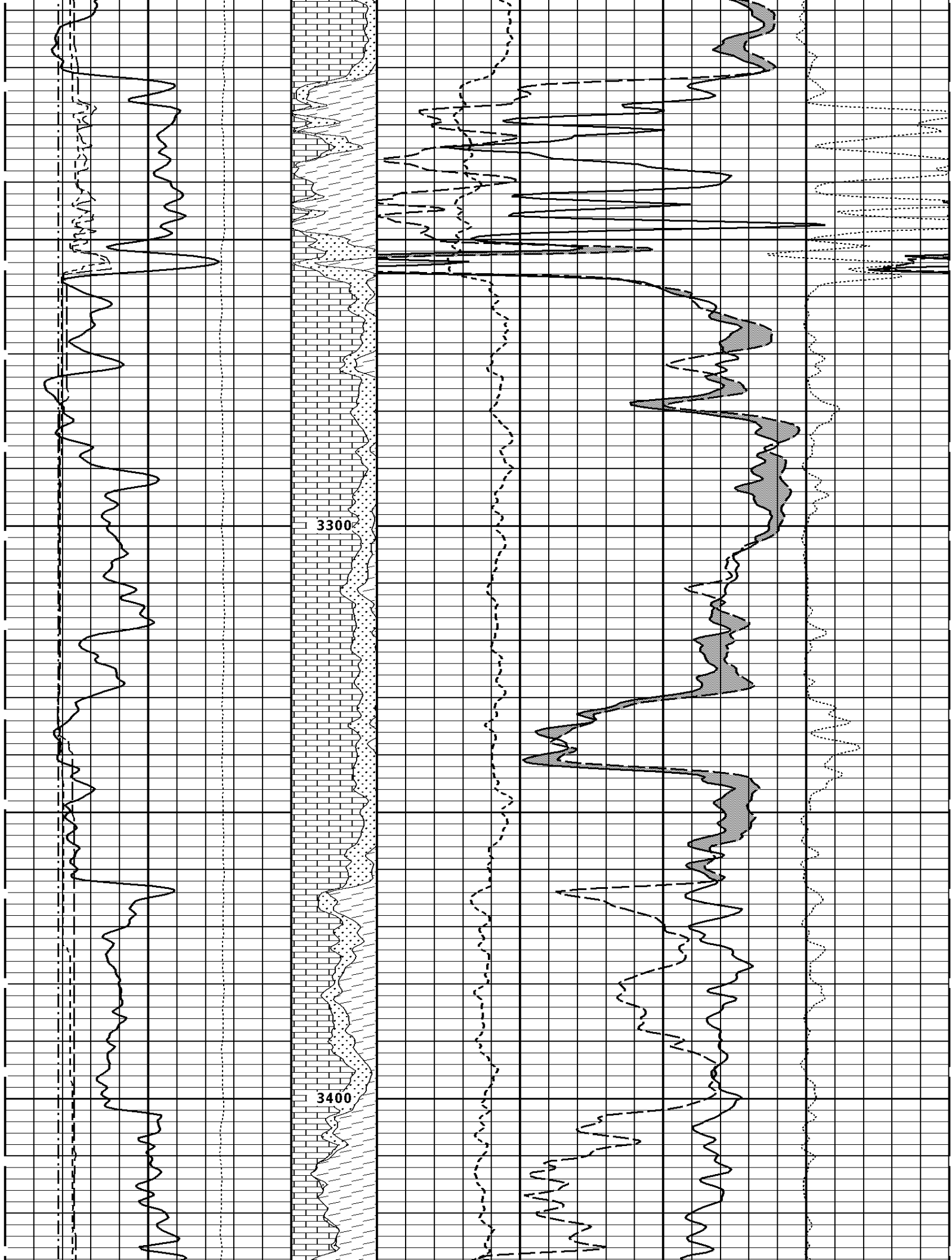
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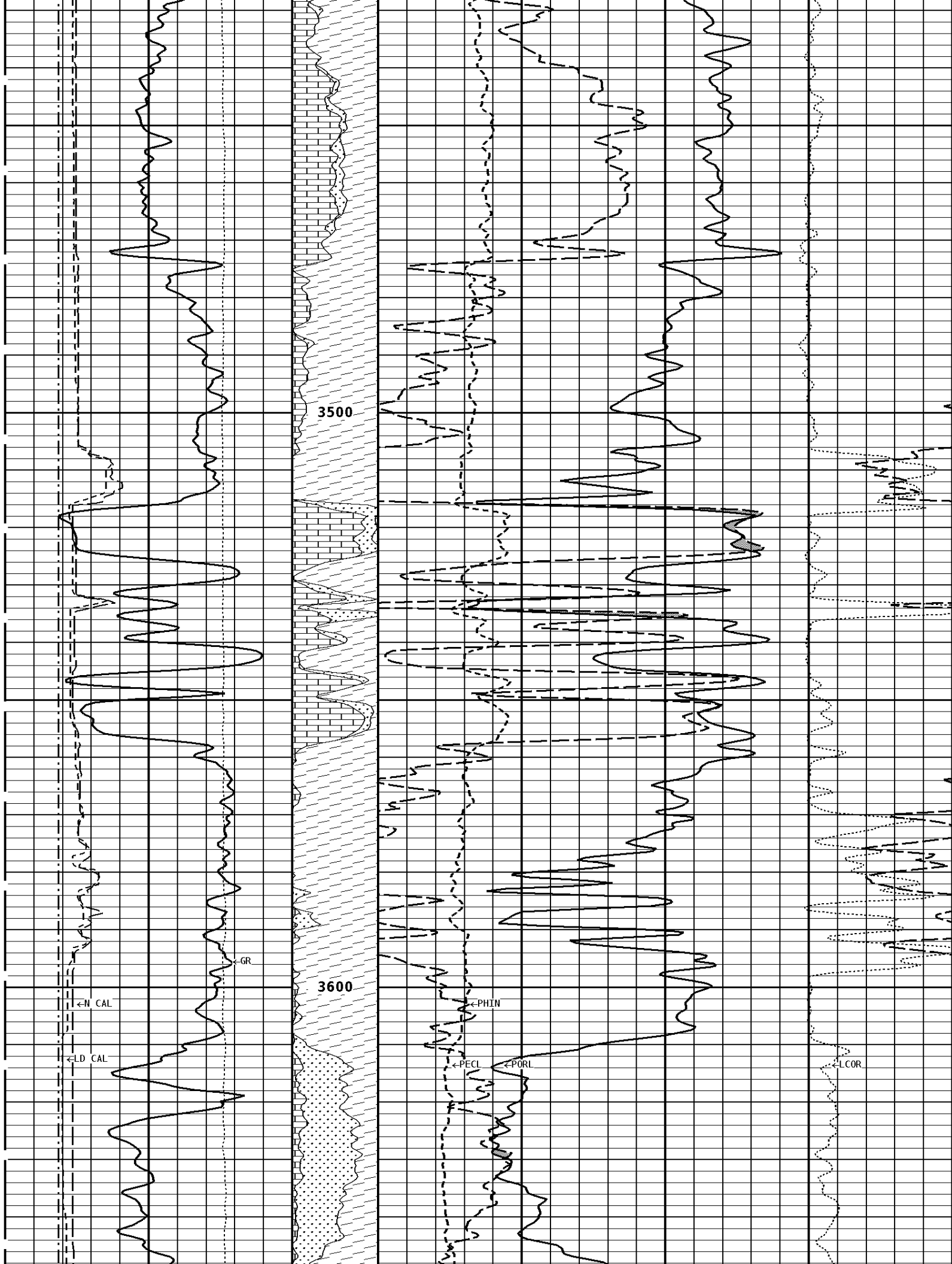
2500

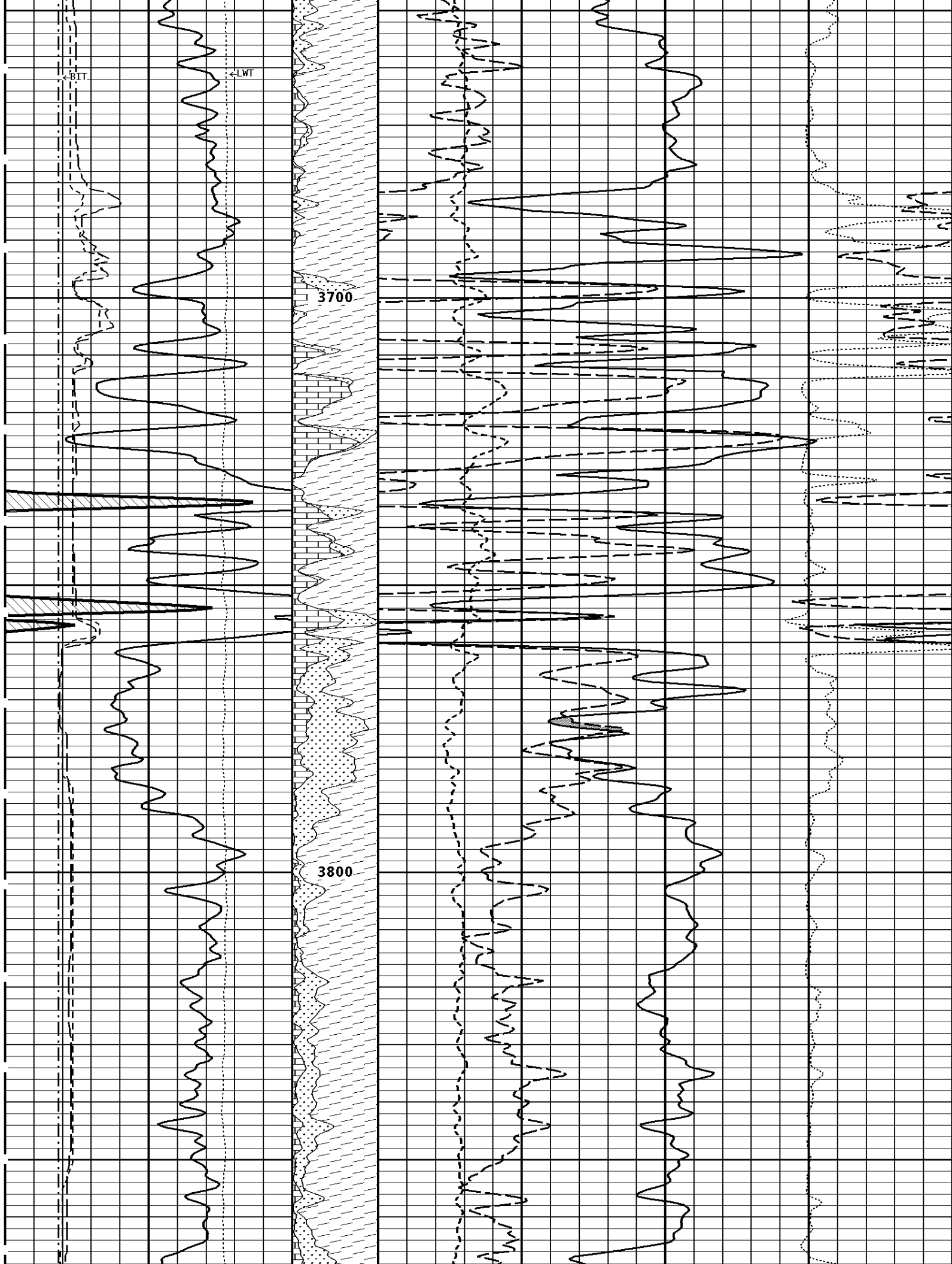


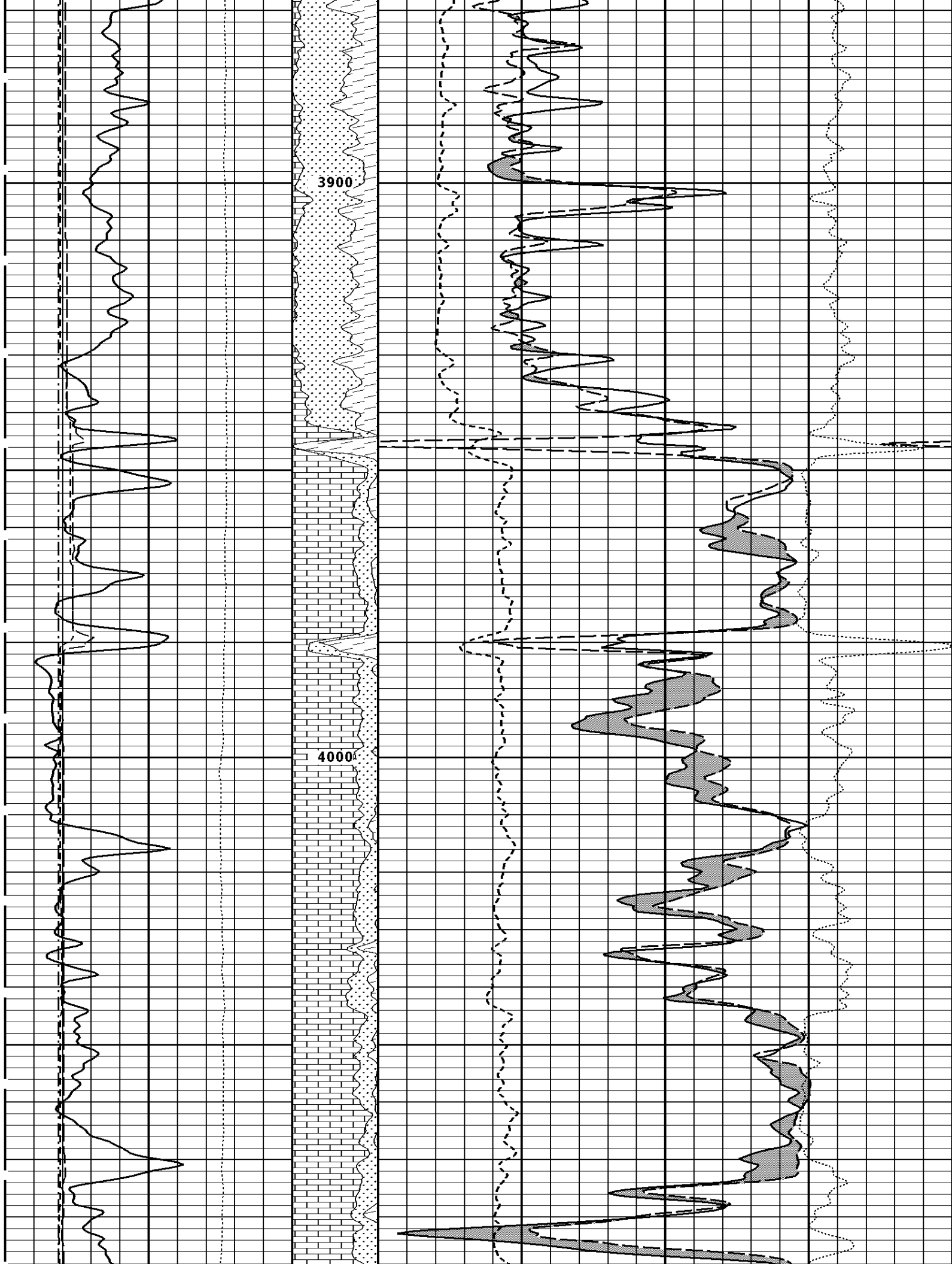


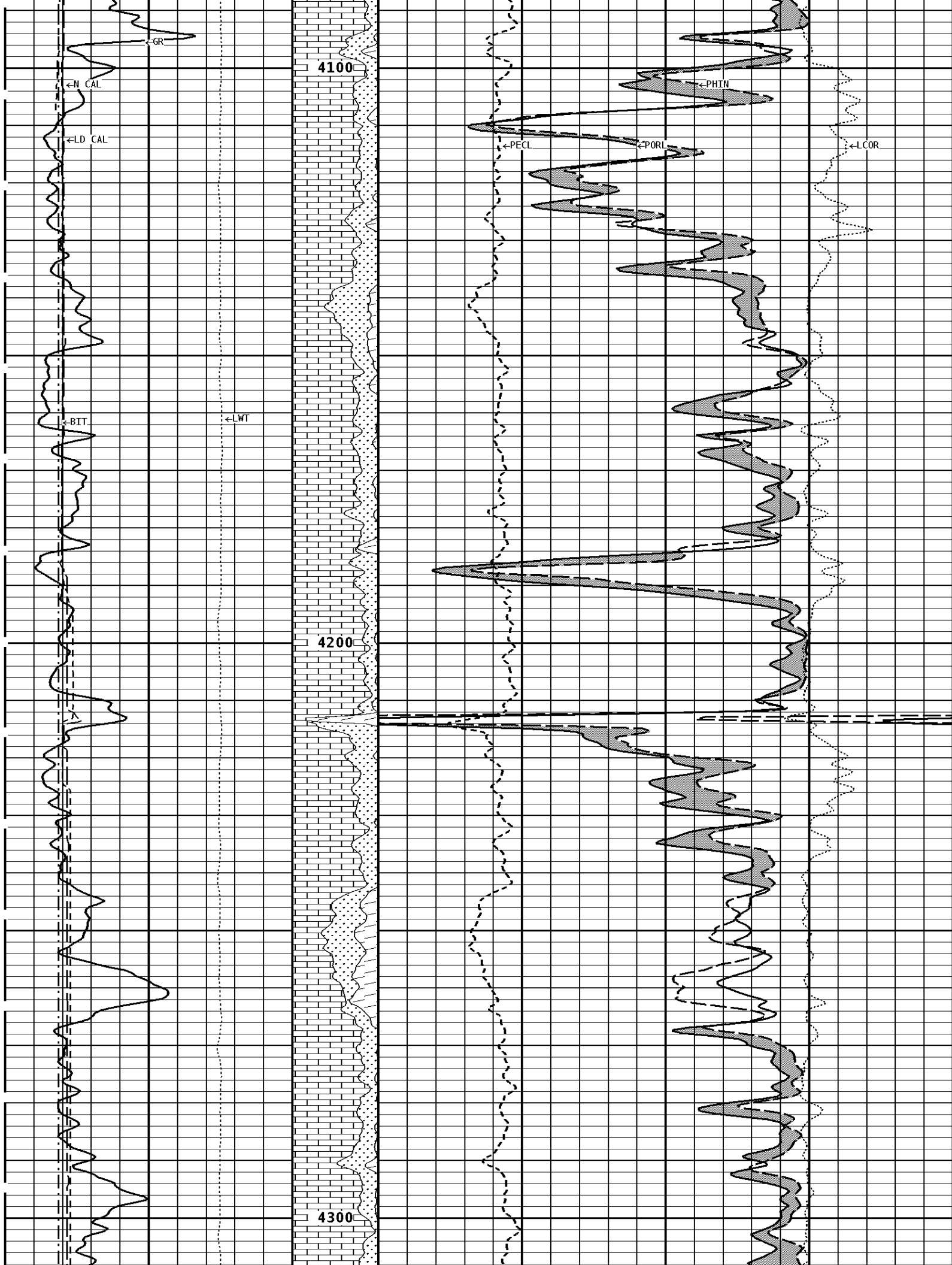


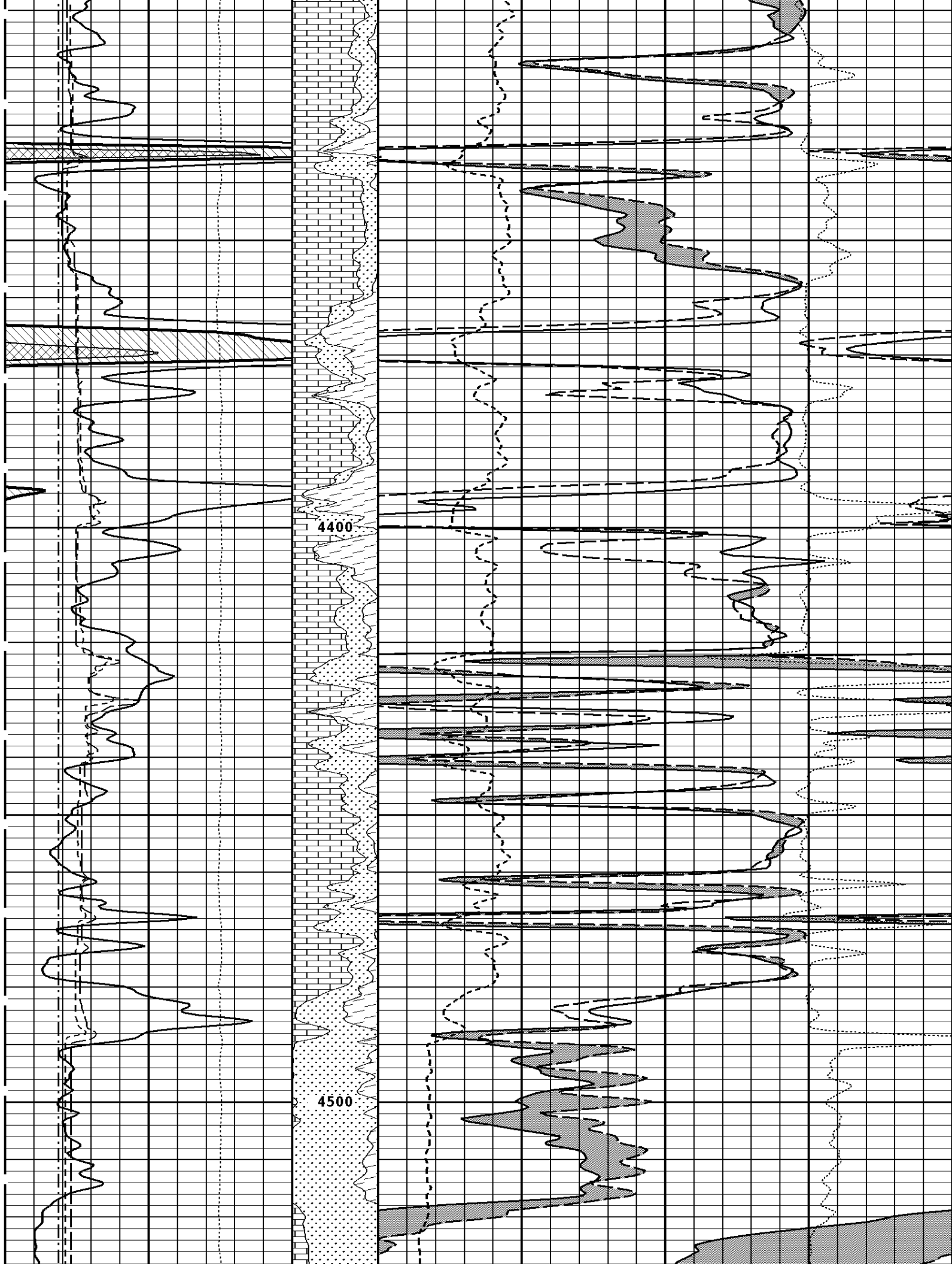


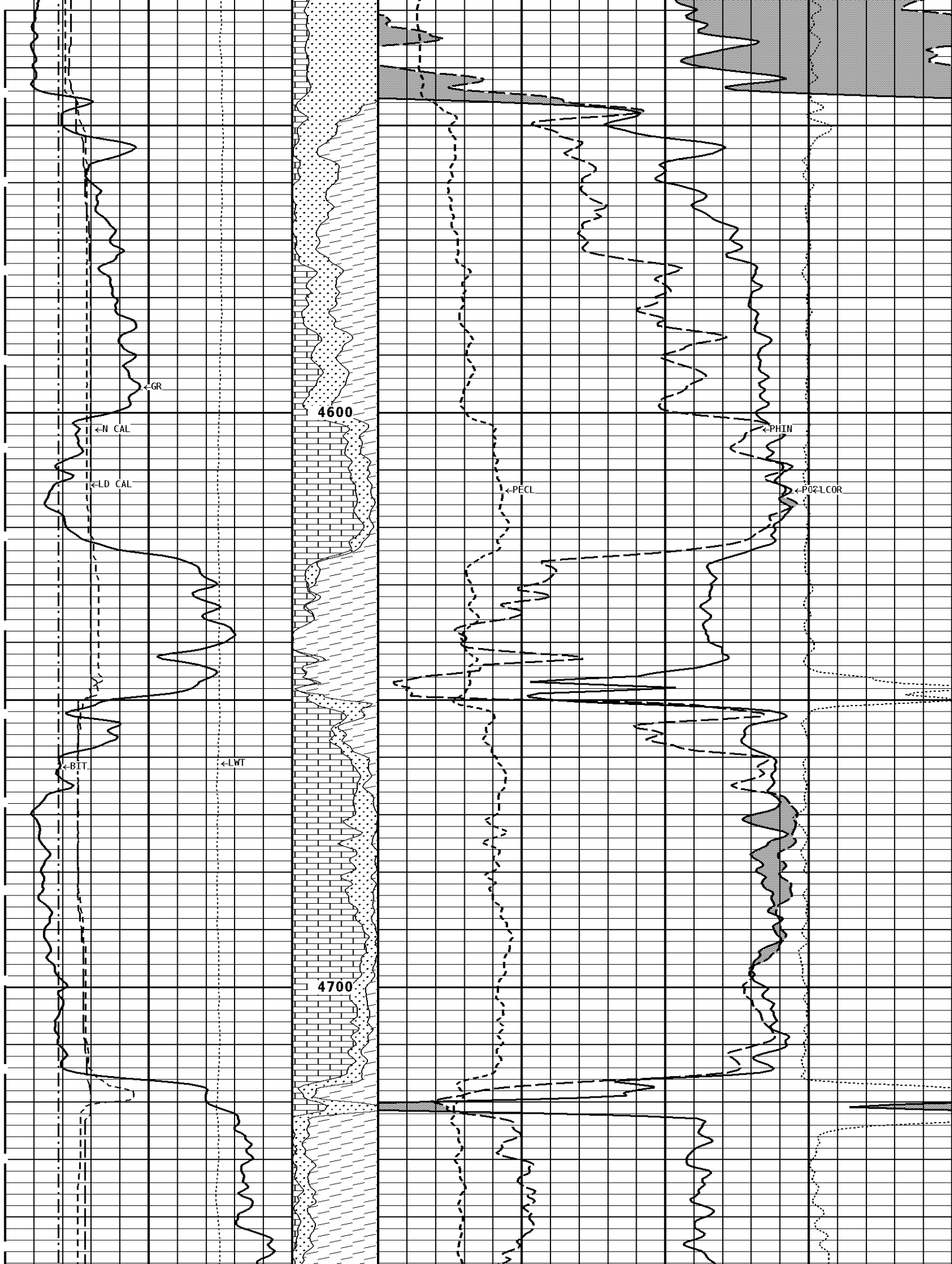


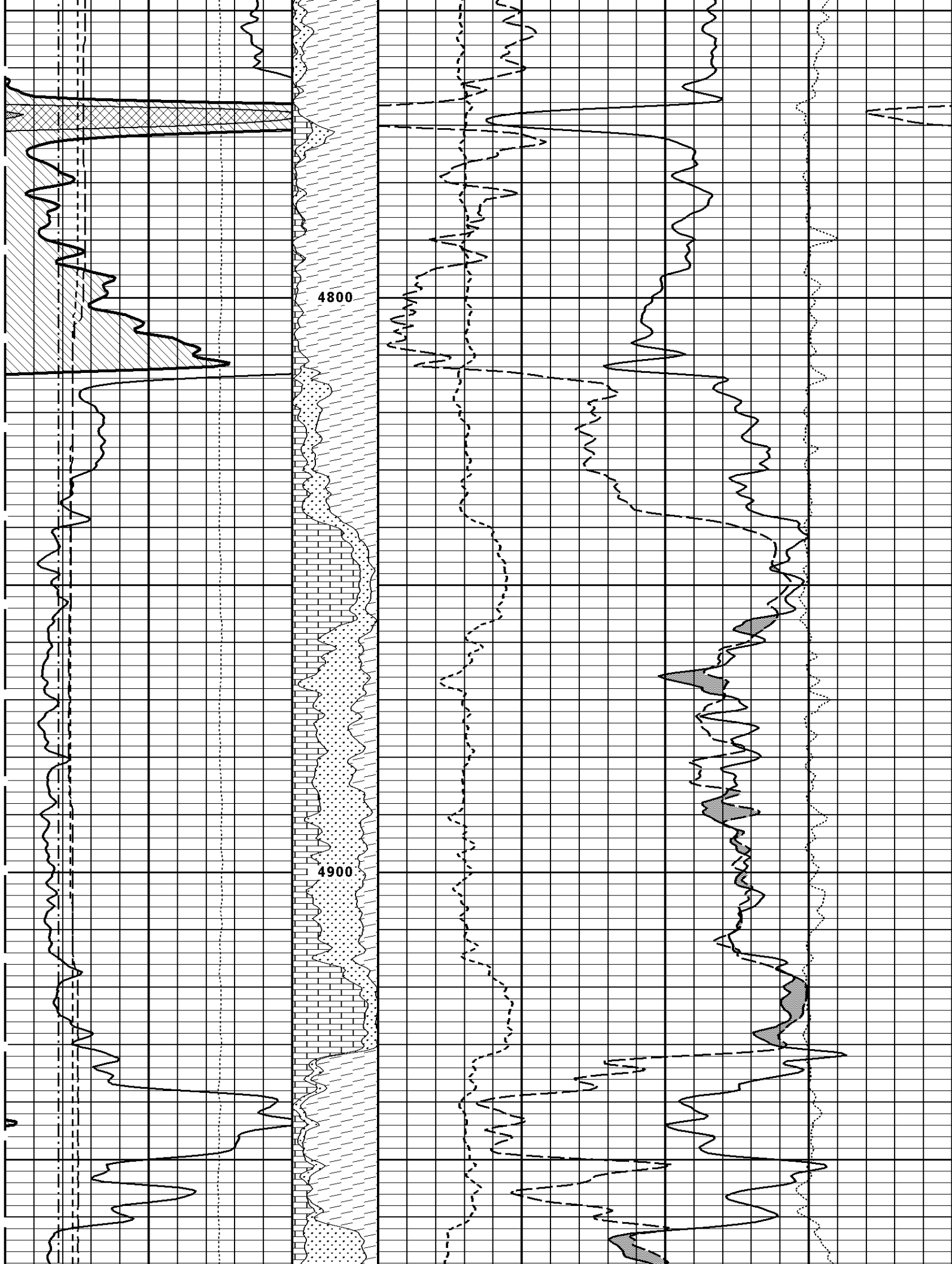


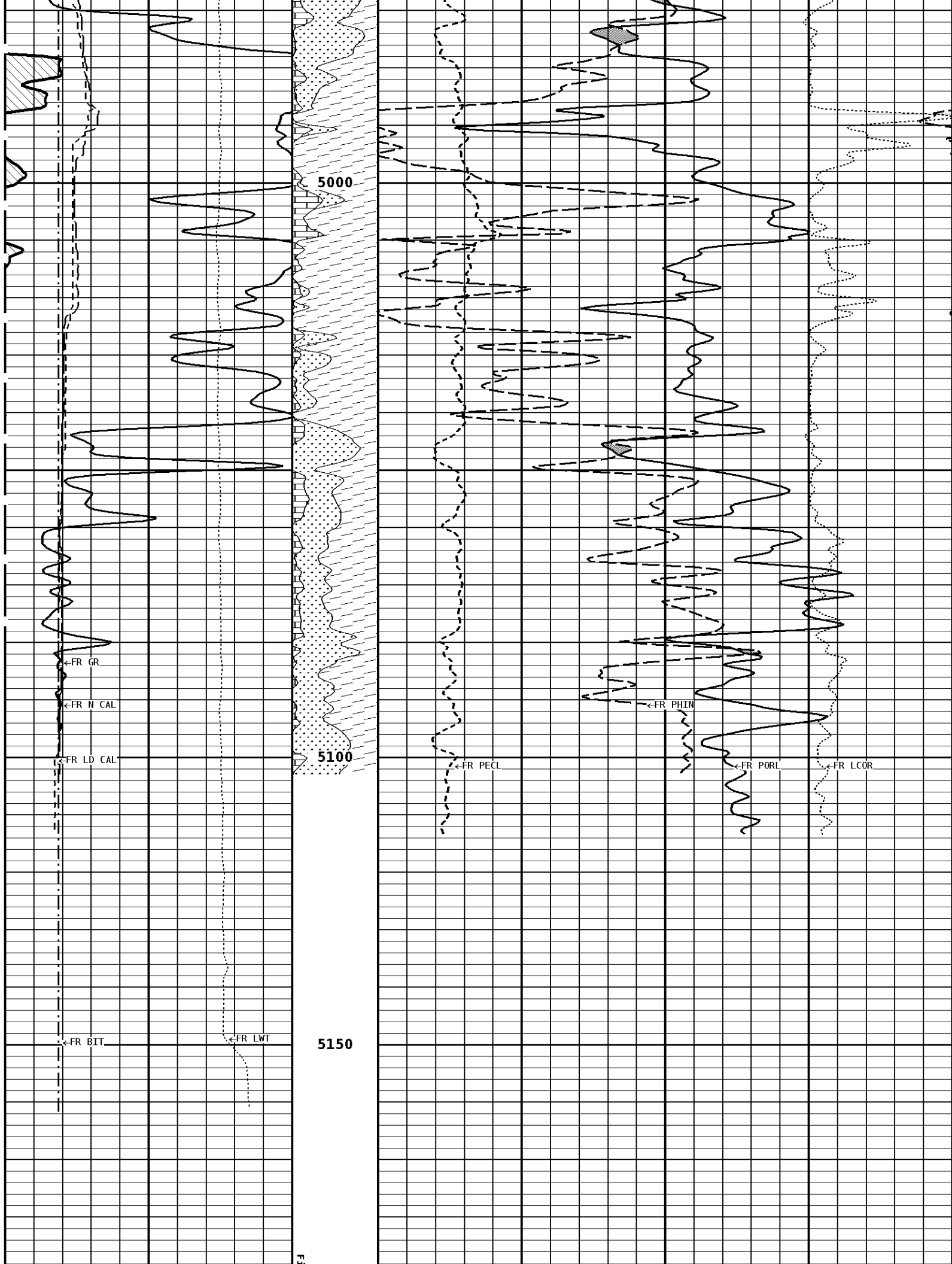












[illegible][illegible]

1:240 MAIN SECTION

GAMMA RAY API UNITS 150 300 0150		Volume Dolo/Shale 	DENSITY POROSITY PERCENT (2.71 g/cc) 70 30 -10-50	
NEUTRON (Y) CALIPER INCHES (IN) 16 6 2616		Volume Calcite 	NEUTRON POROSITY PERCENT (LIMESTONE MATRIX) 70 30 -10-50	
DENSITY (X) CALIPER INCHES (IN) 16 6 2616		Volume Quartz 	PE CROSS-SECTION BARNs/ELECTRON 0 10 -0.250.25	DENSITY CORRECTION G/CC -0.25 0.25
BIT SIZE INCHES (IN) 6 16				
TENSION LBS 10000 0				

*** Borehole Zone Factors ***

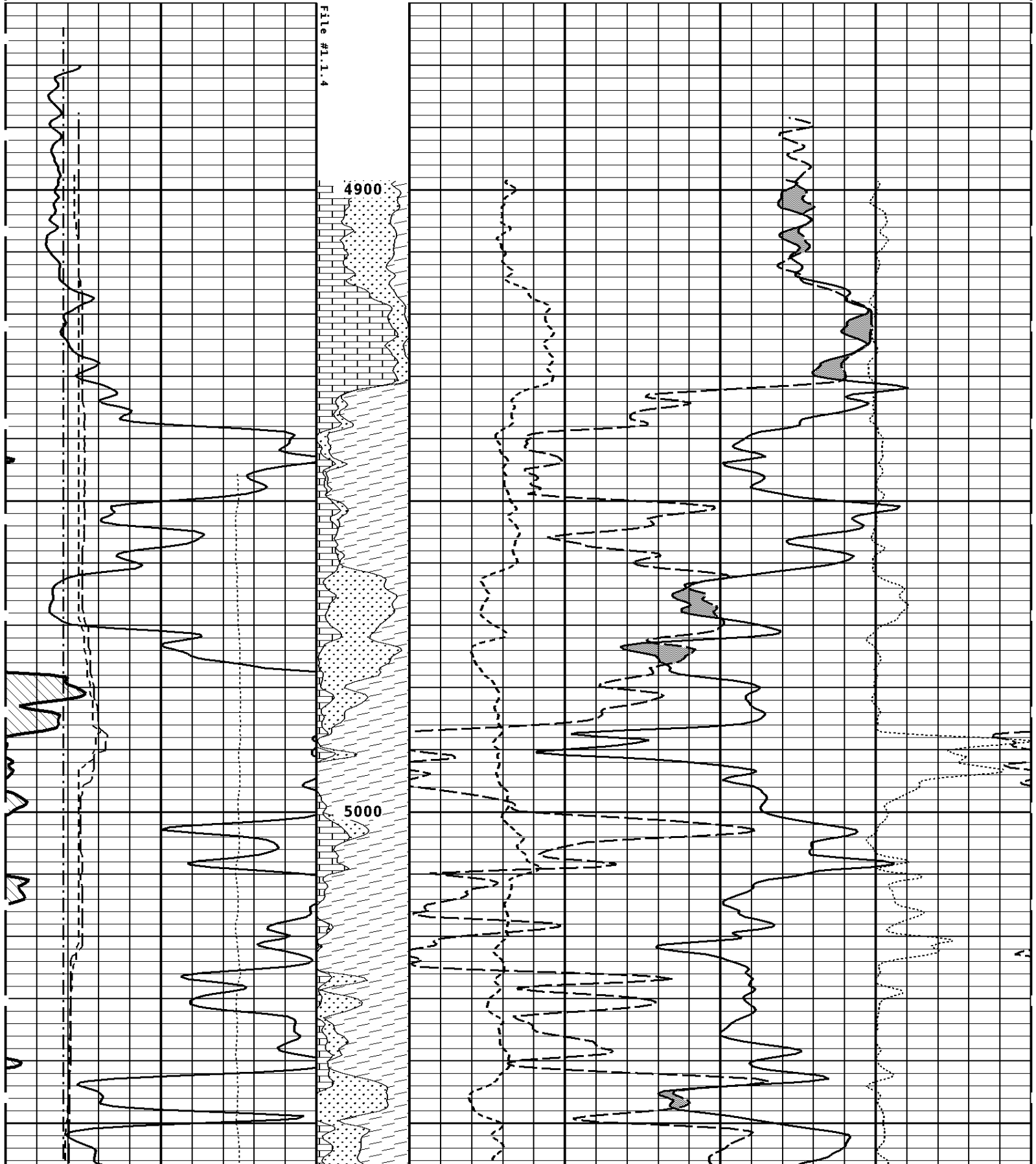
Zone 1 99999.0 to 0.0 Feet		
Matrix Density_____	2.71	g/cc
Fluid Density_____	1.00	g/cc
Formation Matrix_____	Limestone	
Drill Bit Size_____	7.875	in
Casing Diameter_____	5.500	in
Casing Correction (PHI N)_____	Disable	

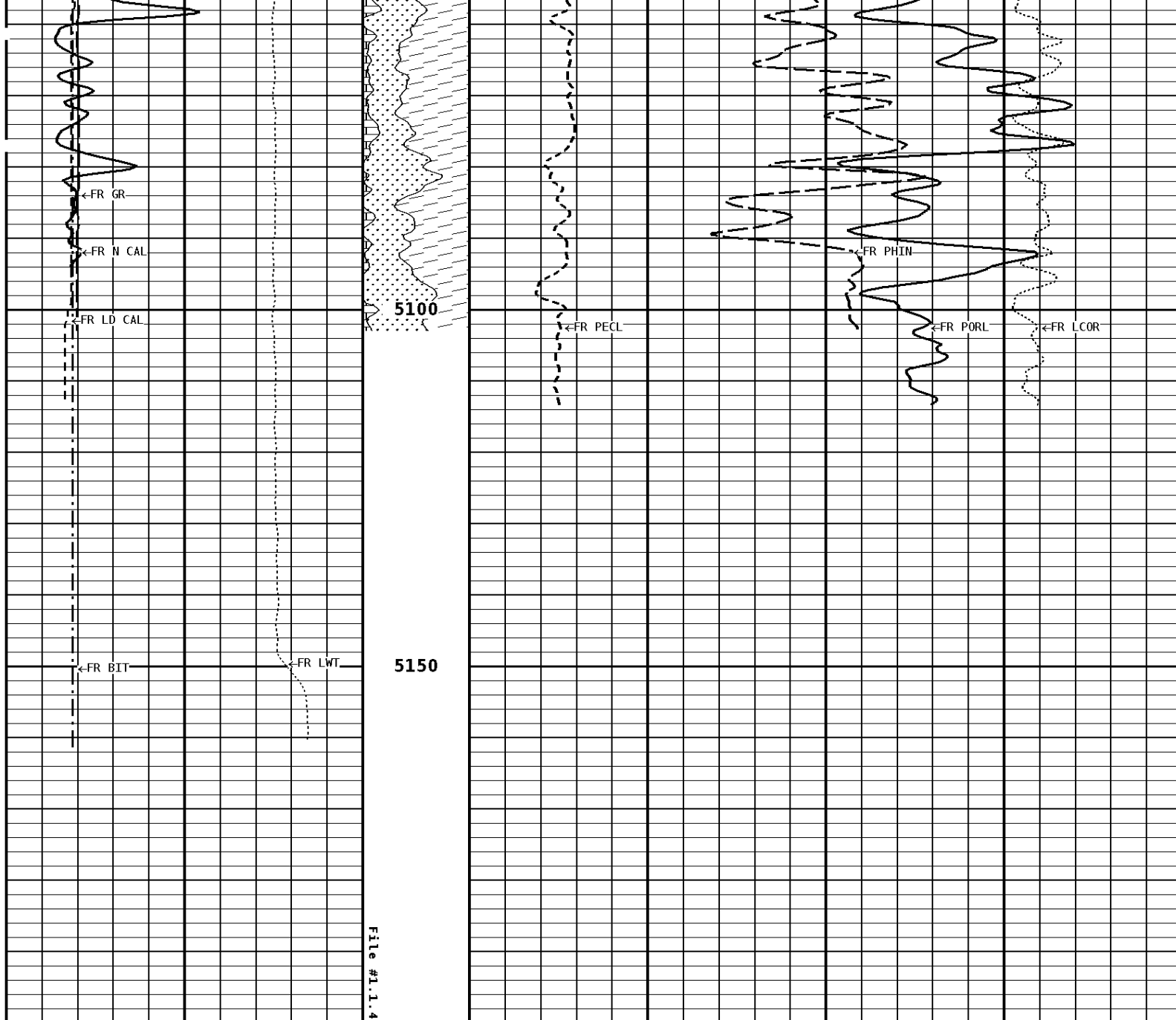
Well File: LBE_WOL_15-1_APR_11_SGTQUINT	Scale: 1:240
Segment: V1.D1.S4 REPEAT	Acquired: 2012-04/11 15:14 3.2.0-10367
Reference: 0	Processed: 2012-04/11 19:08 3.2.0-10367

TENSION LBS			
10000	0		
BIT SIZE INCHES (IN)			
6	16		
DENSITY (X) CALIPER INCHES (IN)		Volume Quartz	PE CROSS-SECTION BARNs/ELECTRON
16	26		DENSITY CORRECTION G/CC
6	16	0	10 -0.25 0.25
NEUTRON (Y) CALIPER INCHES (IN)		Volume Calcite	NEUTRON POROSITY PERCENT (LIMESTONE MATRIX)
16	26		30
6	16	70	-10
		30	-50
GAMMA RAY API UNITS		Volume Dolo/Shale	DENSITY POROSITY PERCENT (2.71 g/cc)

150	300	70	30
0	150	30	-10
		-10	-50

1:240 REPEAT SECTION





1:240 REPEAT SECTION

GAMMA RAY API UNITS		Volume Dolo/Shale	DENSITY POROSITY PERCENT (2.71 g/cc)	
150	300		70	30
0	150		30	-10
			-10	-50
NEUTRON (Y) CALIPER INCHES (IN)		Volume Calcite	NEUTRON POROSITY PERCENT (LIMESTONE MATRIX)	
16	26		70	30
6	16		30	-10
			-10	-50
DENSITY (X) CALIPER INCHES (IN)		Volume Quartz	PE CROSS-SECTION BARN/ELECTRON	DENSITY CORRECTION G/CC
16	26		0	10 -0.25
6	16			0.25
BIT SIZE INCHES (IN)				

6	16
TENSION LBS	
10000	0

* Borehole Zone Factors *

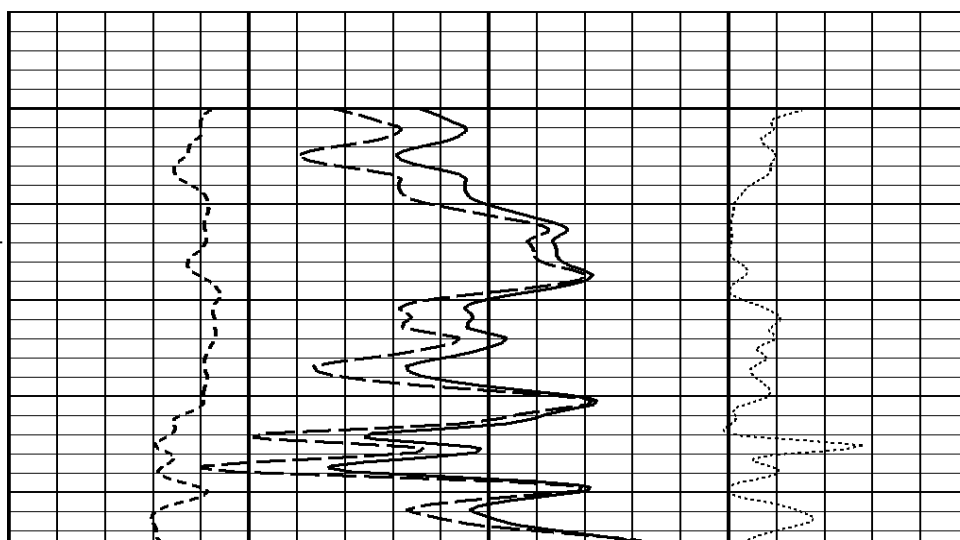
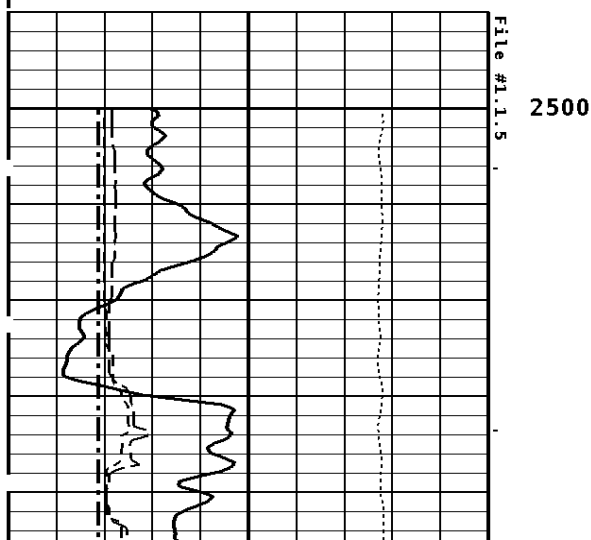
Zone 1 99999.0 to 0.0 Feet	
Matrix Density _____	2.71 g/cc
Fluid Density _____	1.00 g/cc
Formation Matrix _____	Limestone
Drill Bit Size _____	7.875 in
Casing Diameter _____	5.500 in
Casing Correction (PHI N) _____	Disable

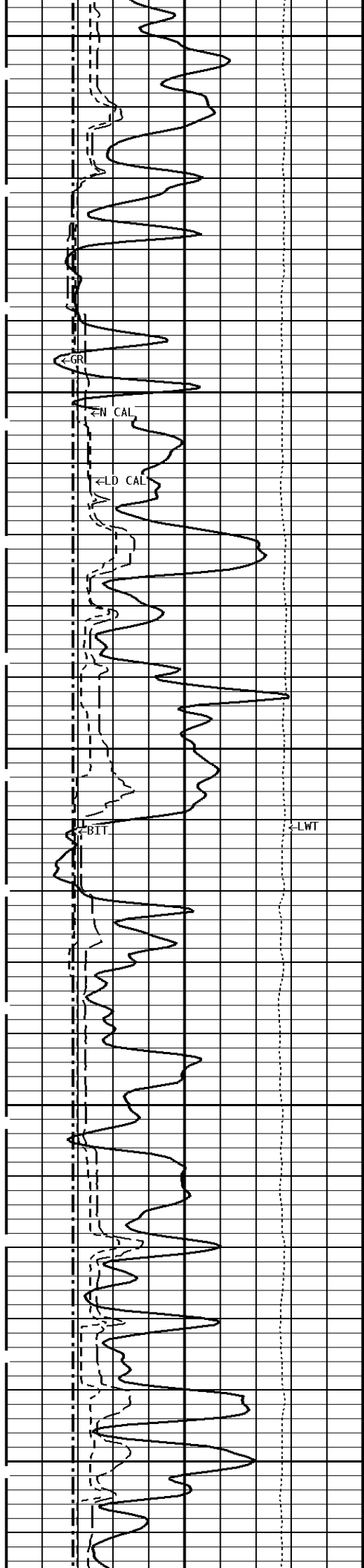
Well File: LBE WOL 15-1 APR 11_SGTQUINT	Scale: 1:240
Segment: V1.D1.S5 MAIN	Acquired: 2012-04/11 15:34 3.2.0-10367
Reference: 0	Processed: 2012-04/11 19:08 3.2.0-10367

TENSION LBS	
10000	0
BIT SIZE INCHES (IN)	
6	16
DENSITY (X) CALIPER INCHES (IN)	
16	26
6	16
NEUTRON (Y) CALIPER INCHES (IN)	
16	26
6	16
GAMMA RAY API UNITS	
150	300
0	150

PE CROSS-SECTION BARNs/ELECTRON		DENSITY CORRECTION G/CC	
0	10	-0.25	0.25
DENSITY POROSITY PERCENT (2.71 g/cc)			
70			30
30			-10
-10			-50
COMPENSATED BULK DENSITY G/CC			
3.0			4.0
2.0			3.0
1.0			2.0

**1:240 MAIN SECTION
BULK DENSITY**

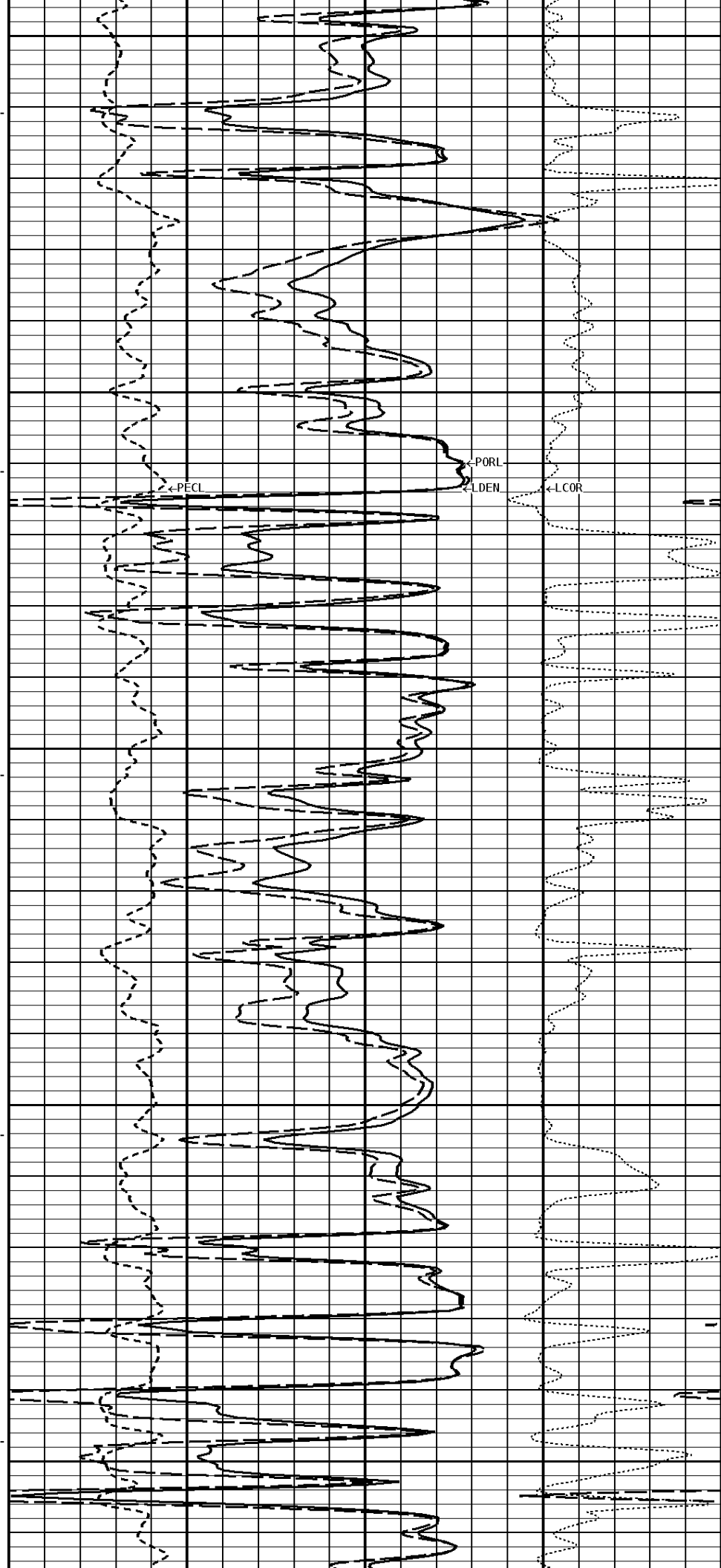


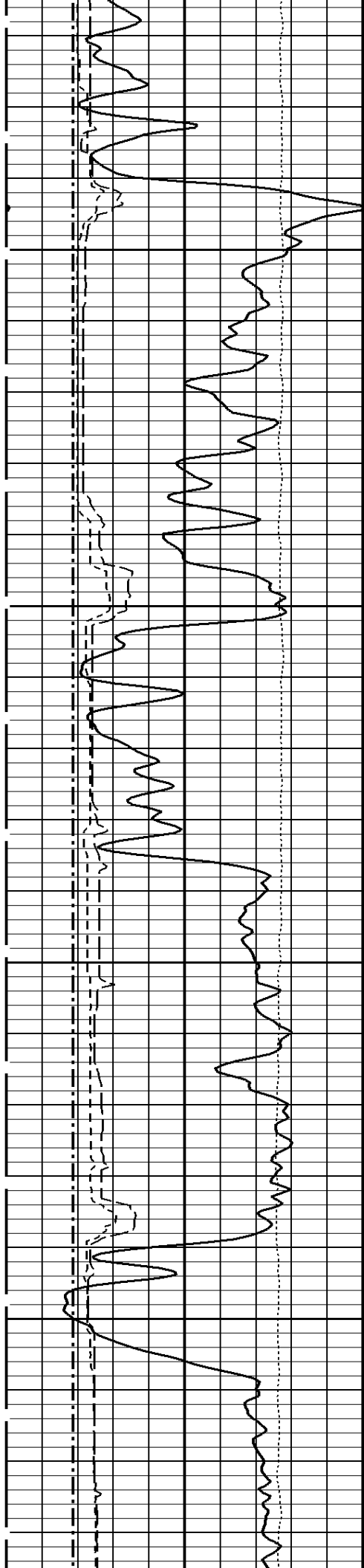


2600

2700

--900Cu.Ft

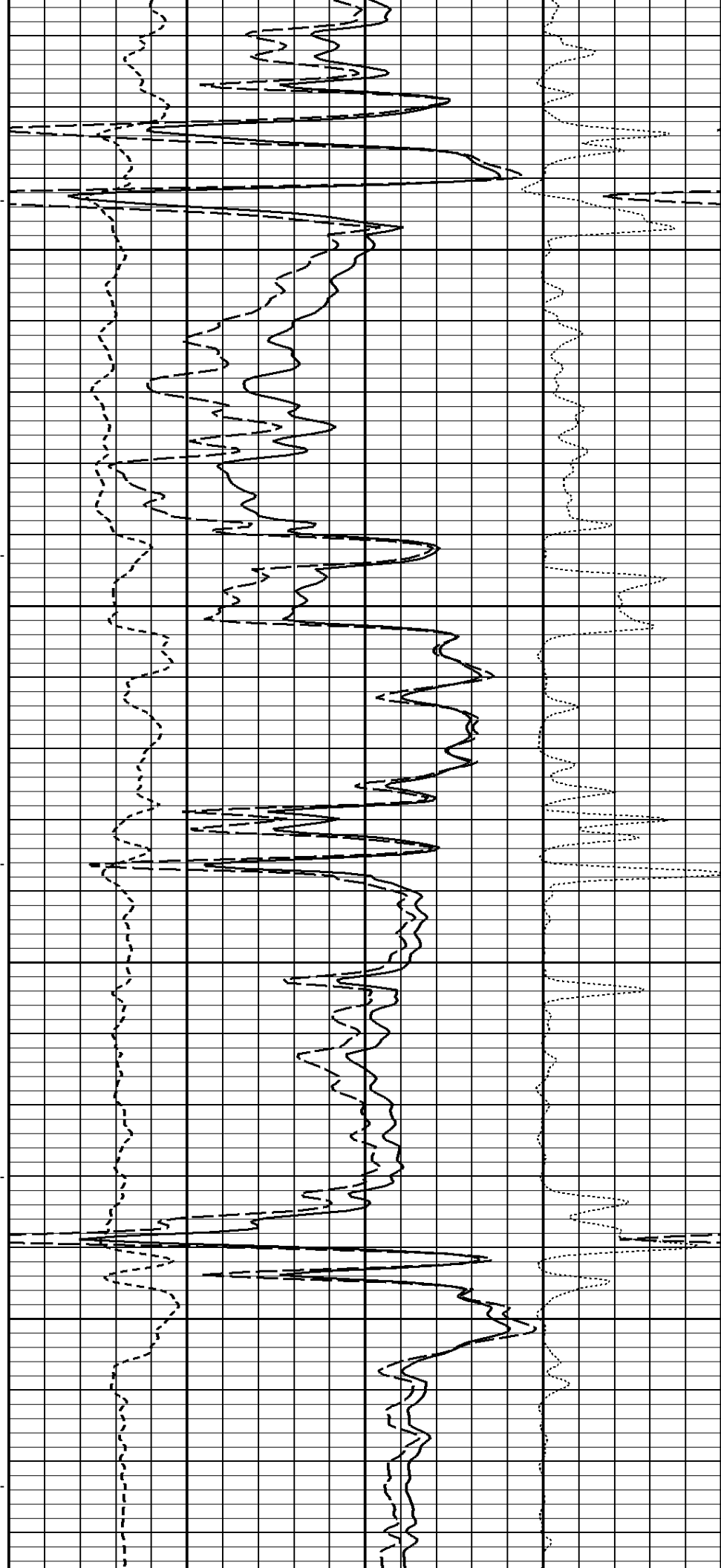




500 Cu. Ft.

2800

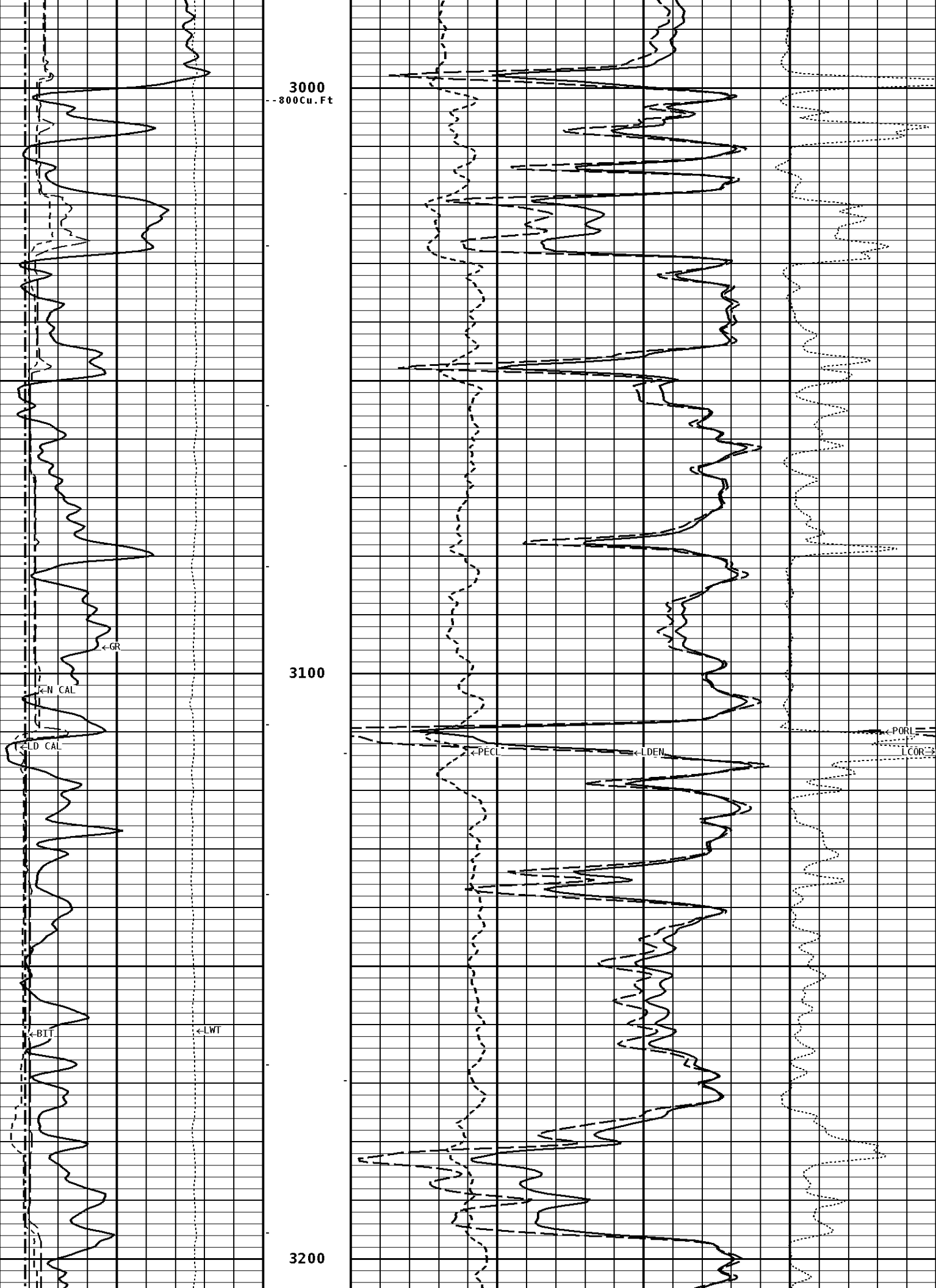
2900

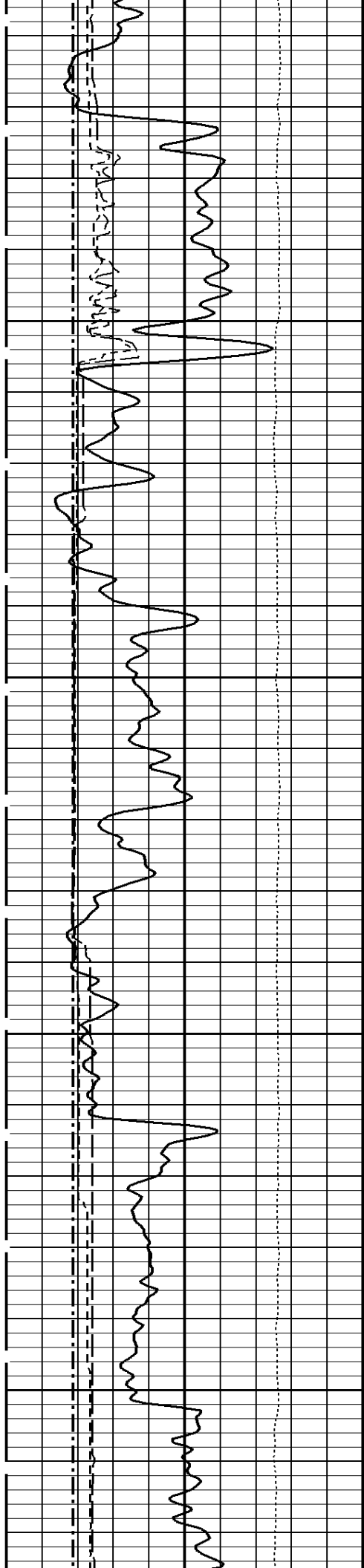


3000
800Cu. Ft

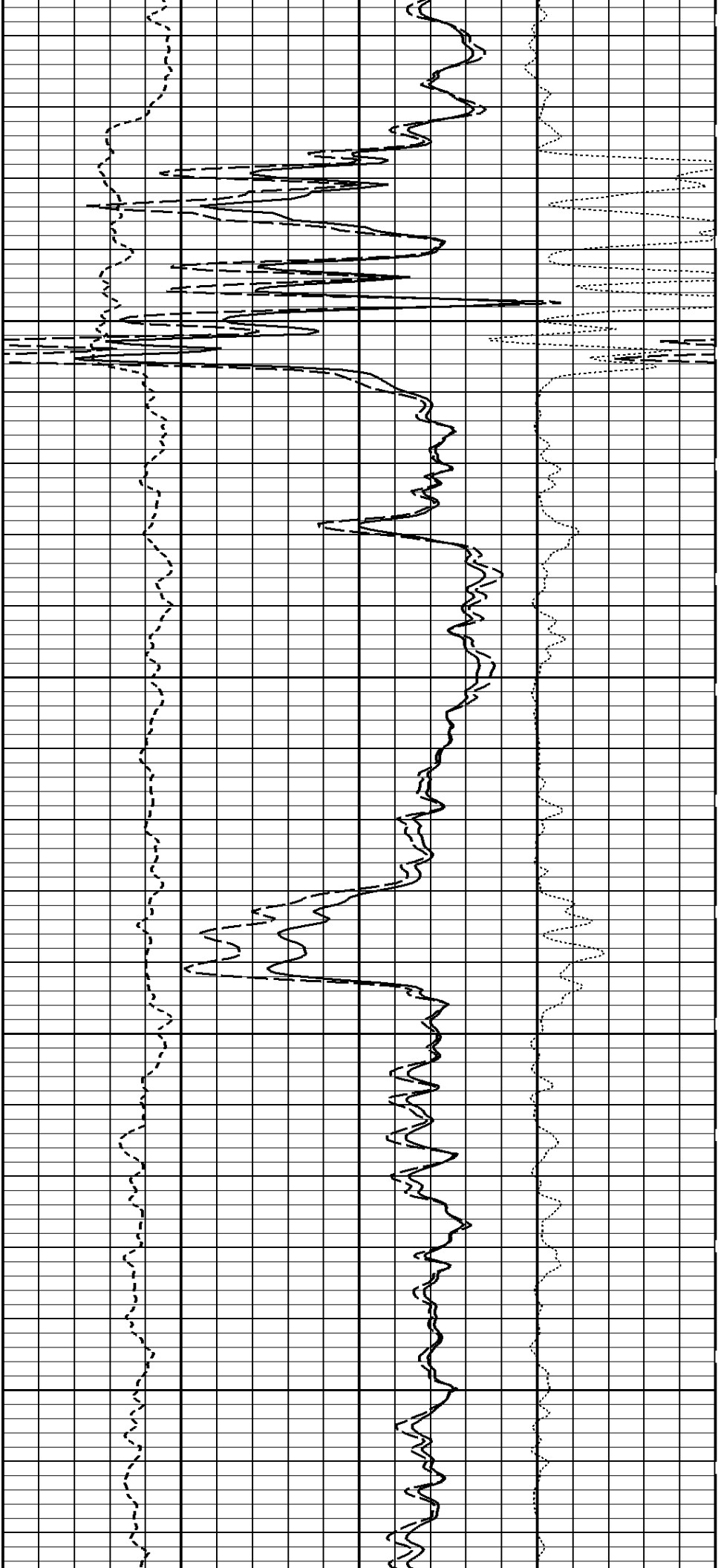
3100

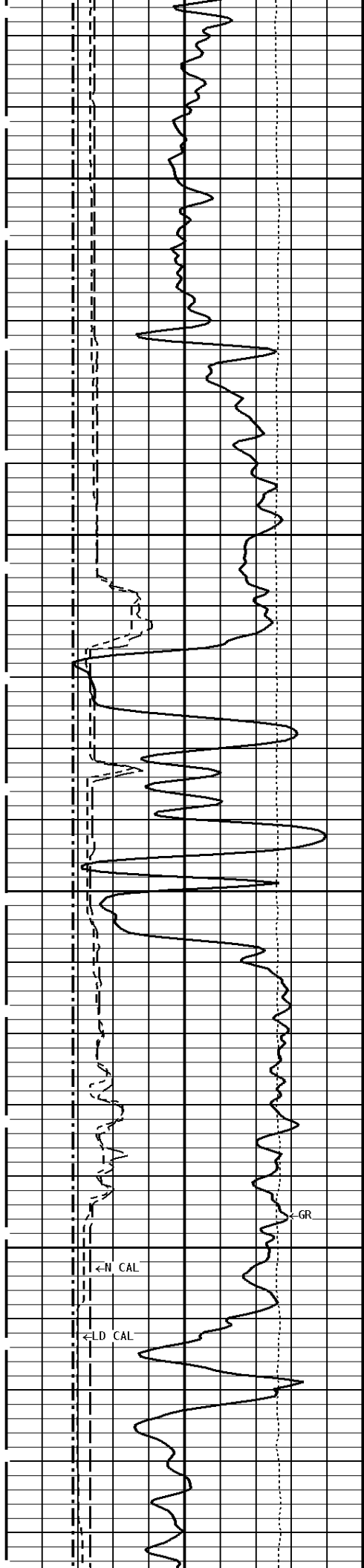
3200





400Cu.Ft--
--700Cu.Ft
3300
3400

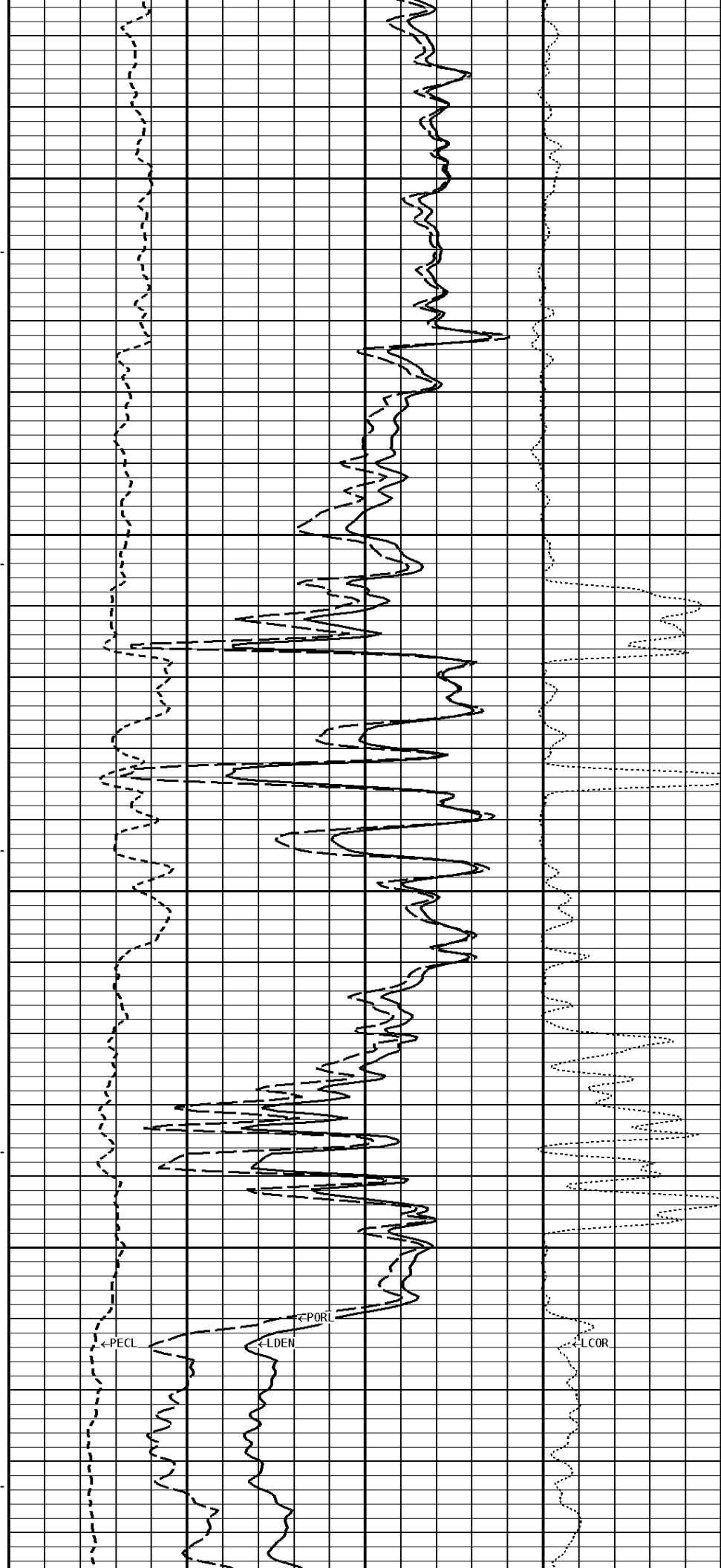


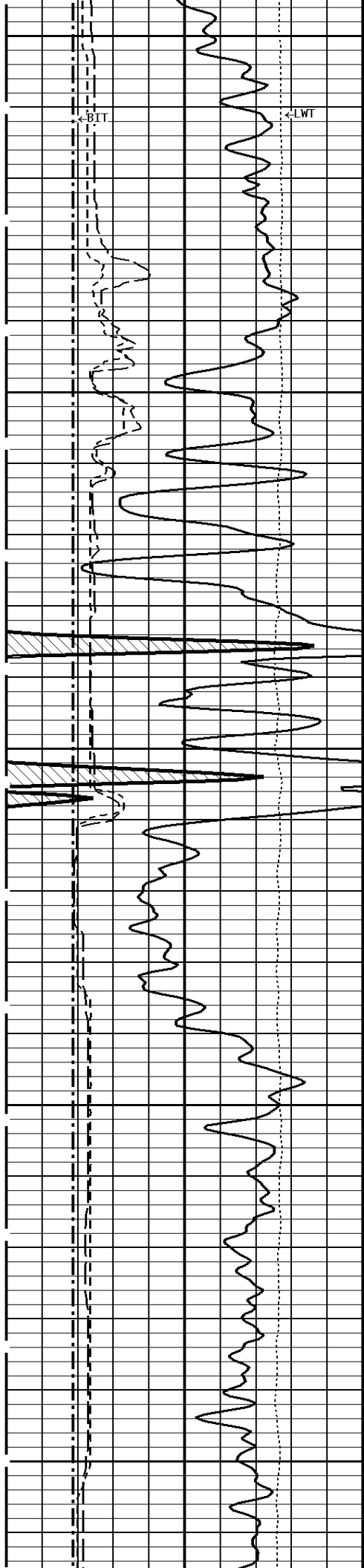


3500

--600Cu. Ft

3600



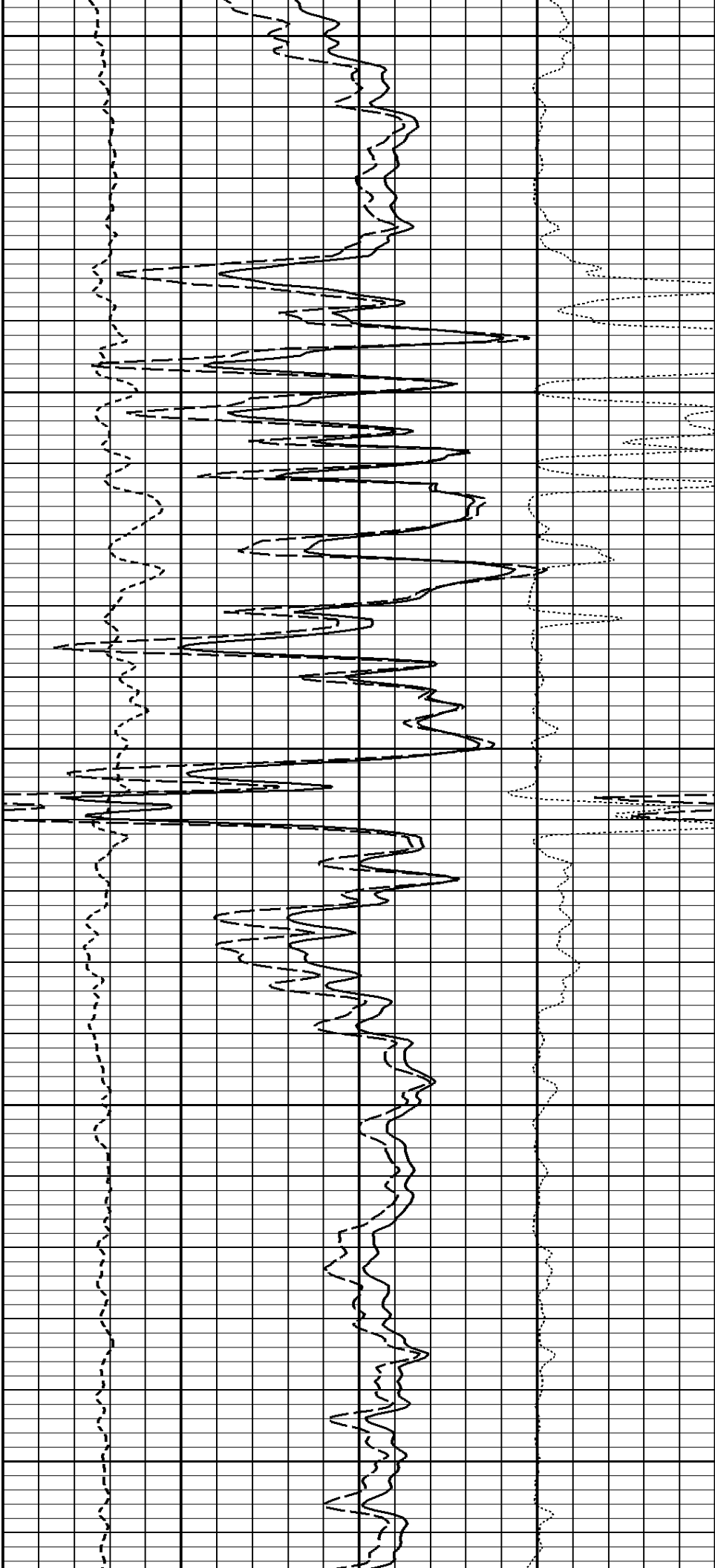


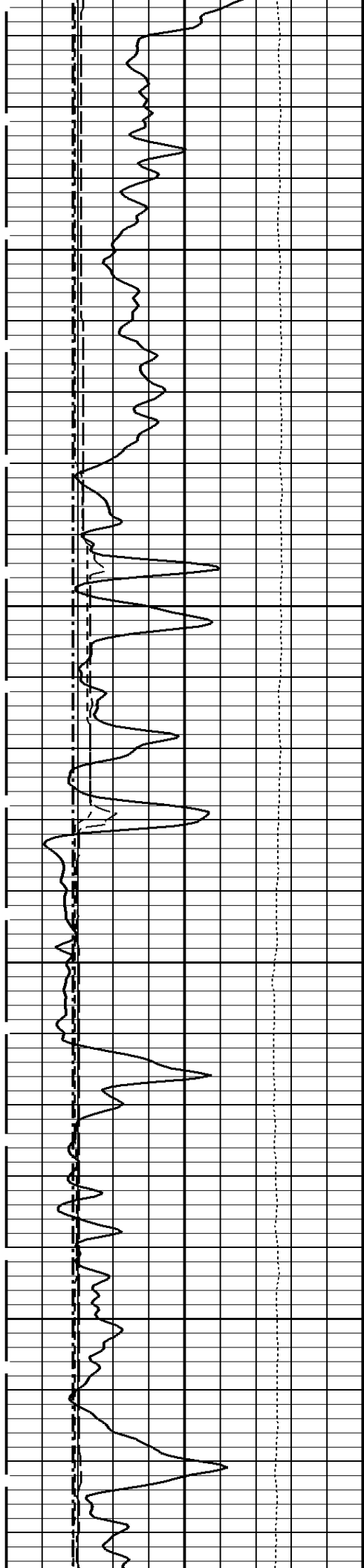
3700

300 Cu. Ft.

500 Cu. Ft.

3800

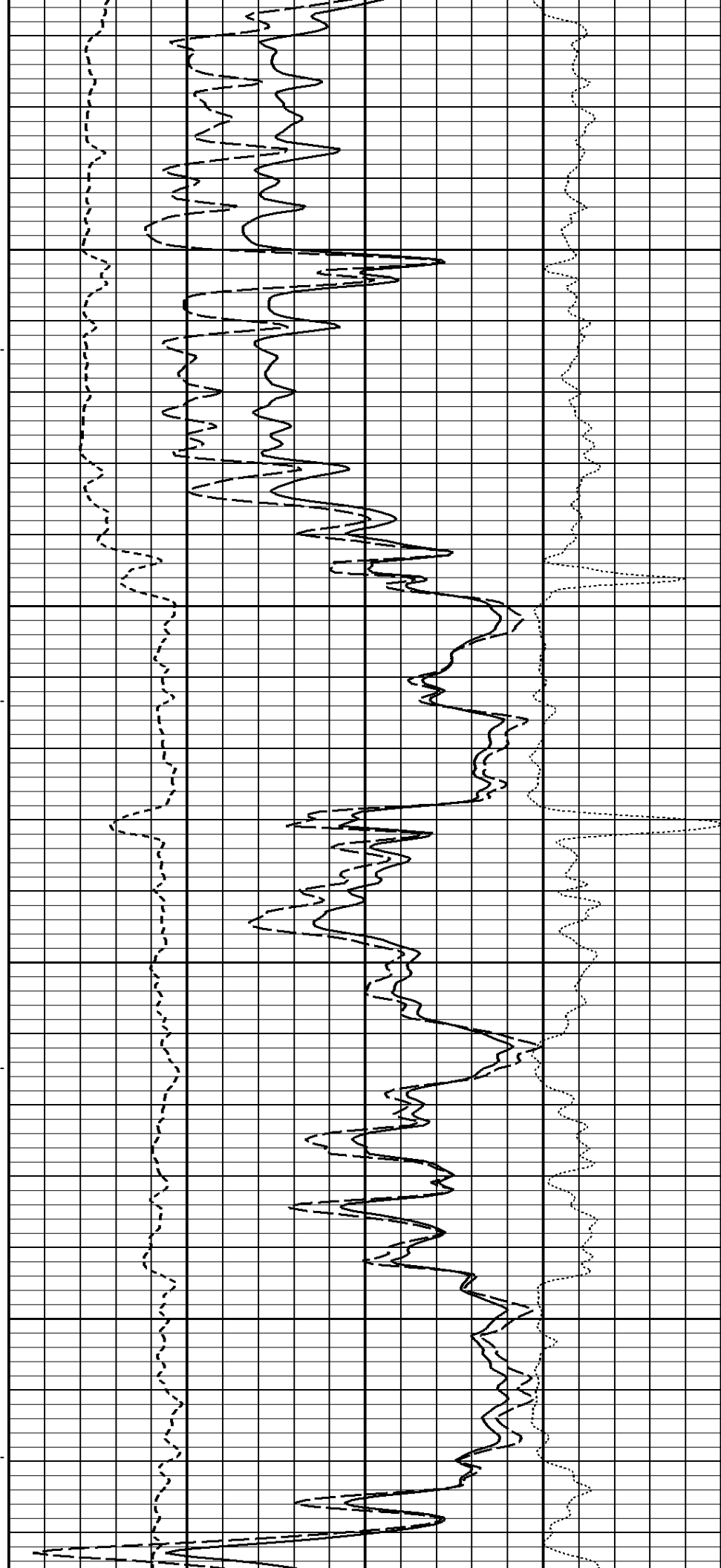


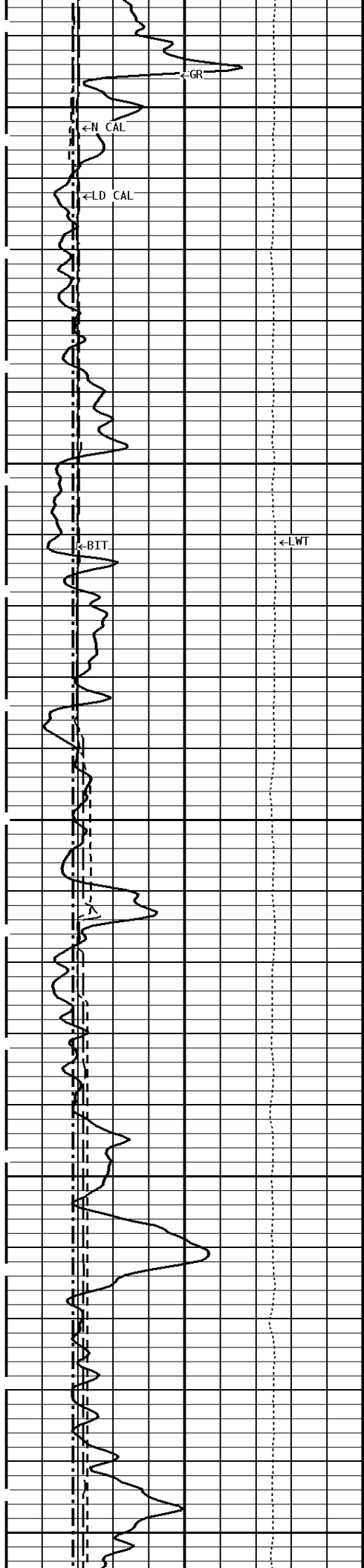


3900

4000

-- 400 Cu. Ft



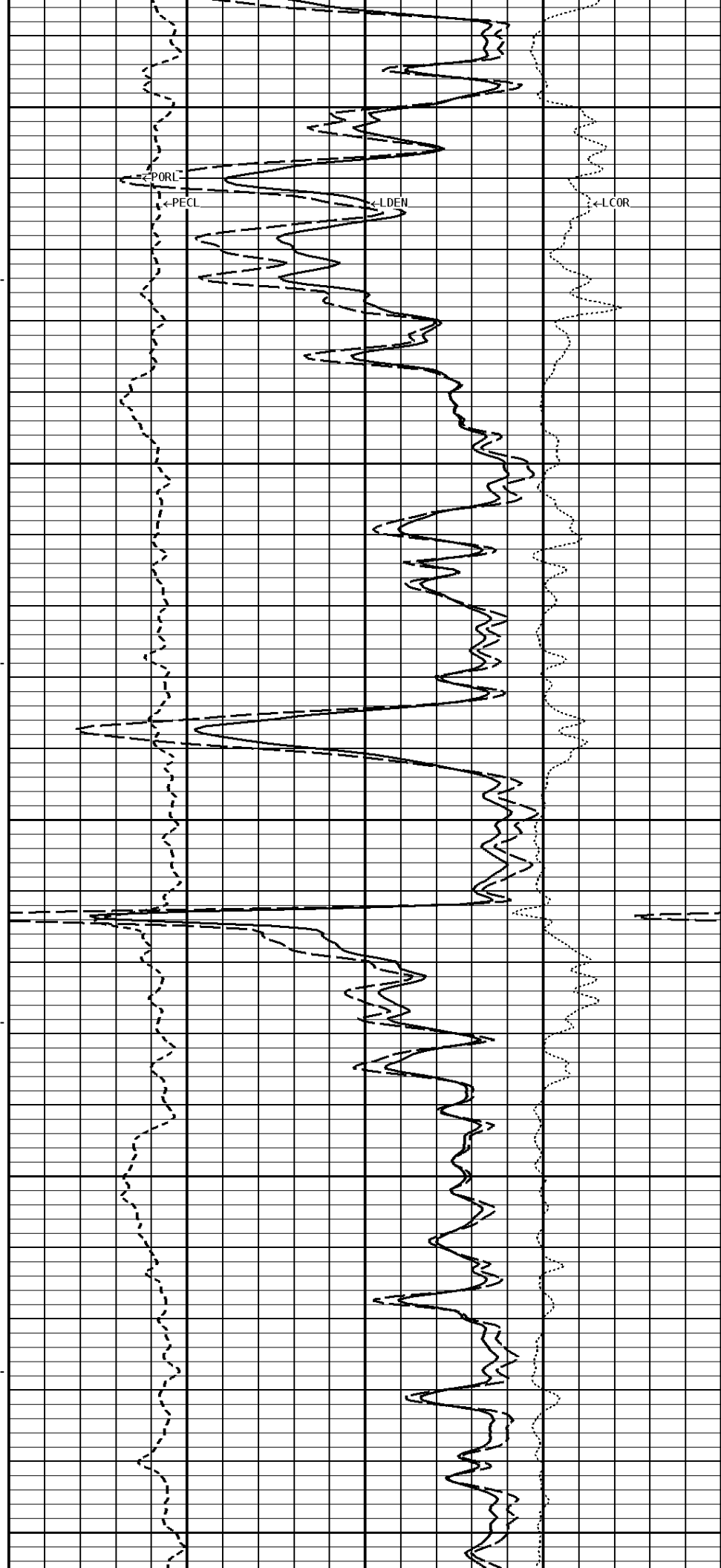


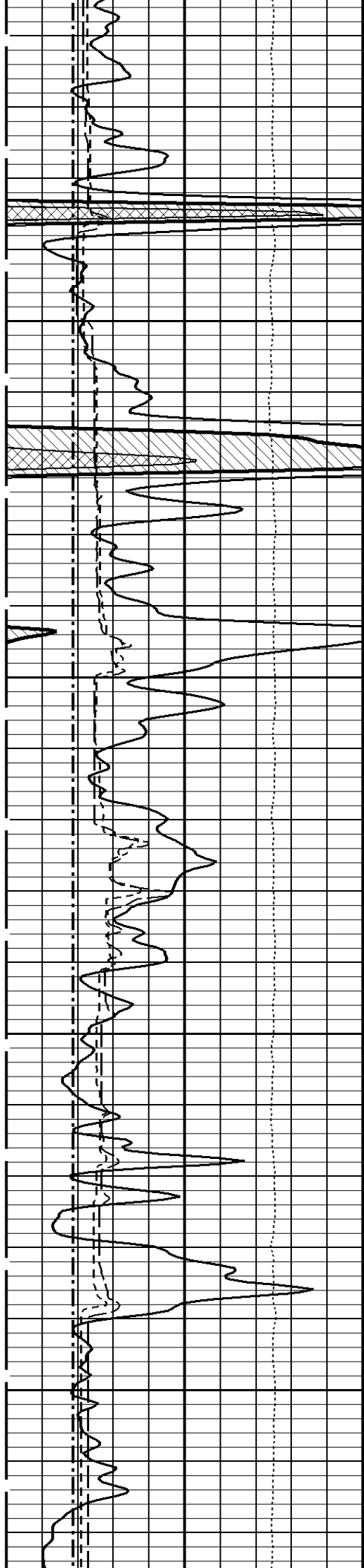
4100

4200

200Cu.Ft--

4300

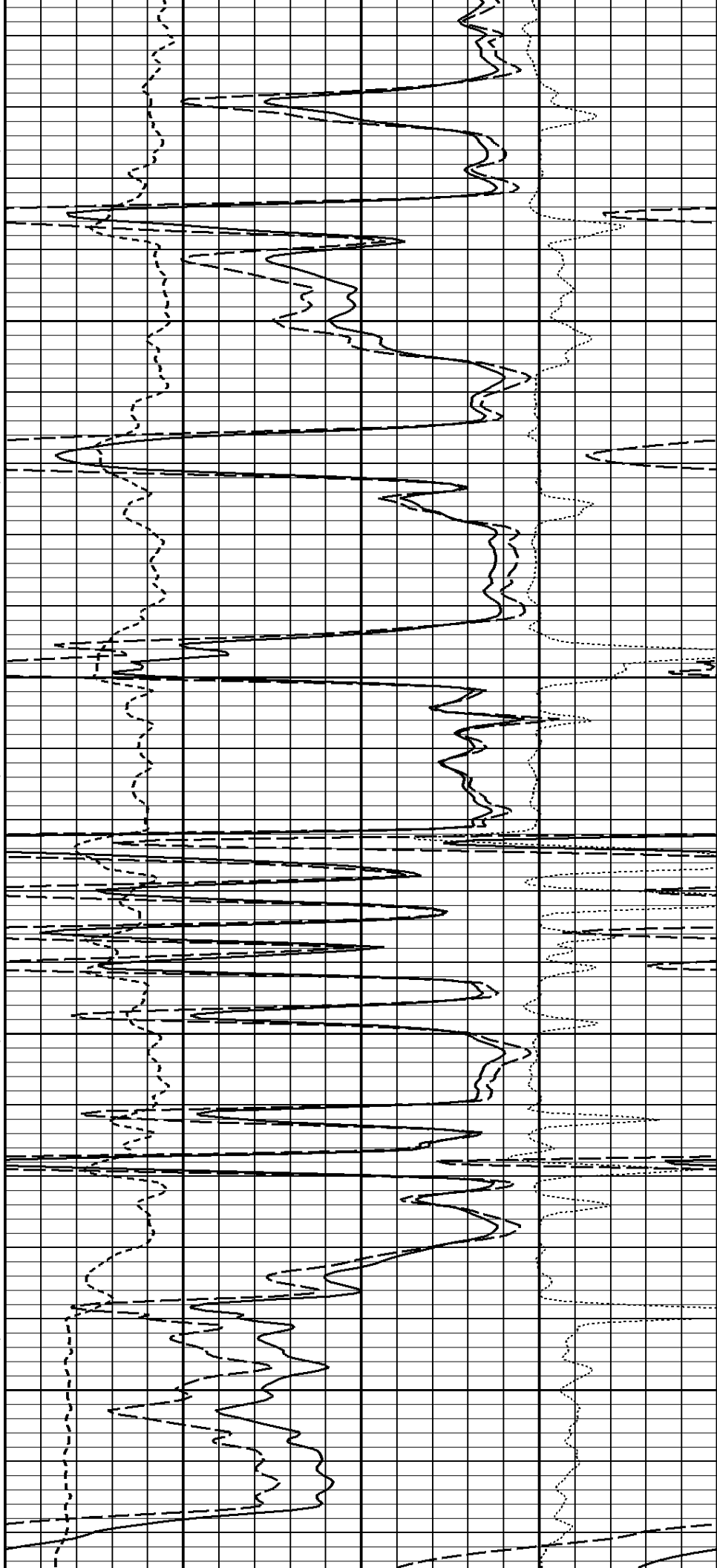


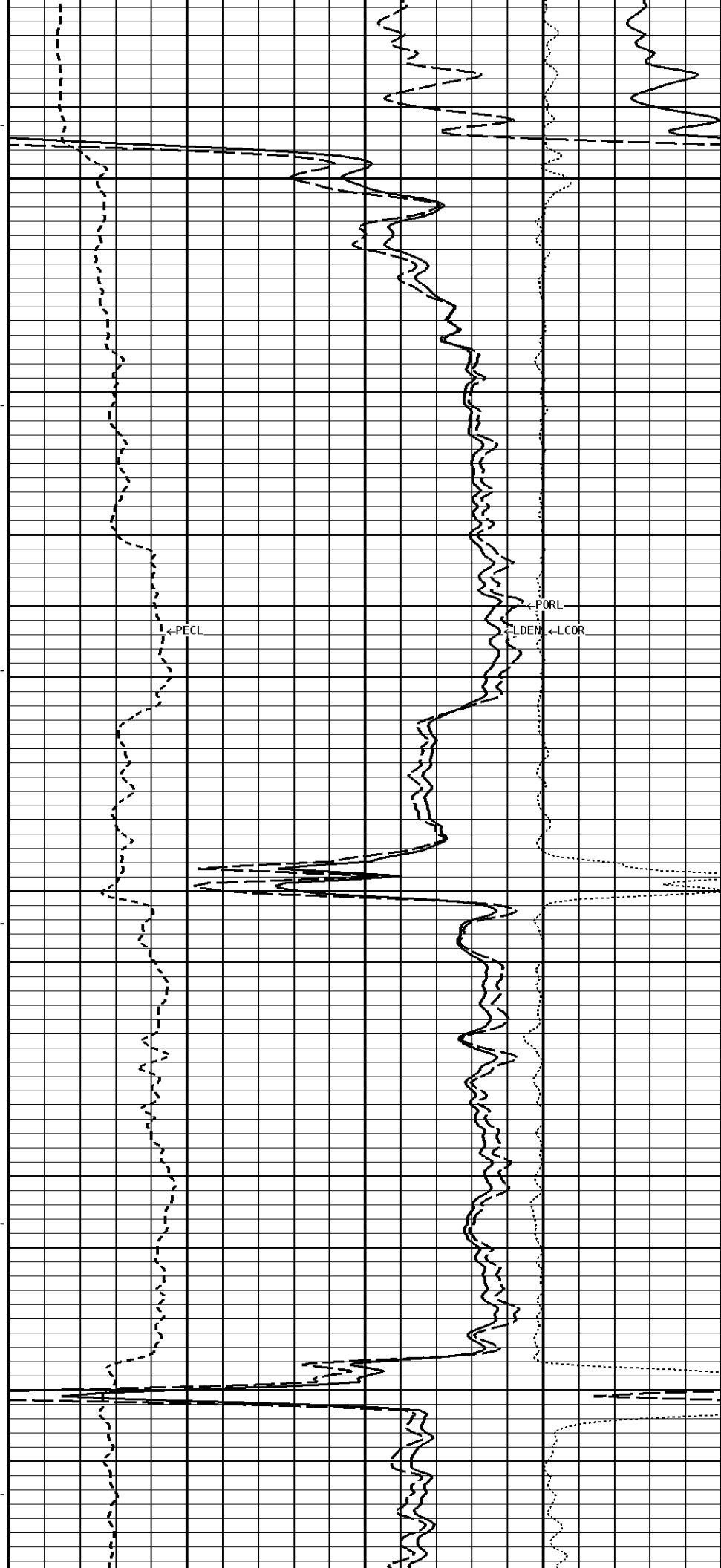
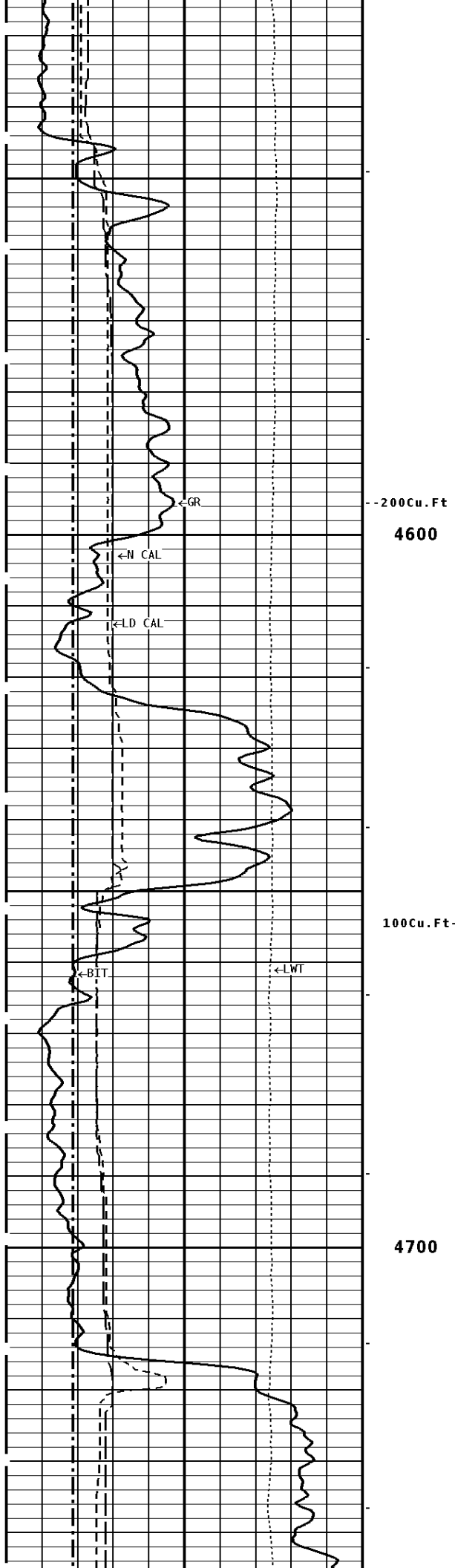


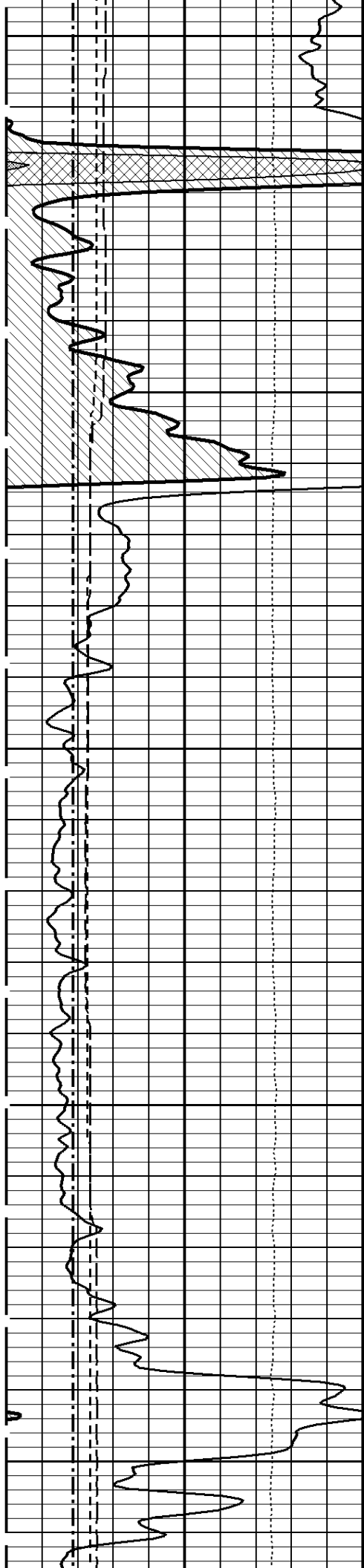
--300Cu.Ft

4400

4500



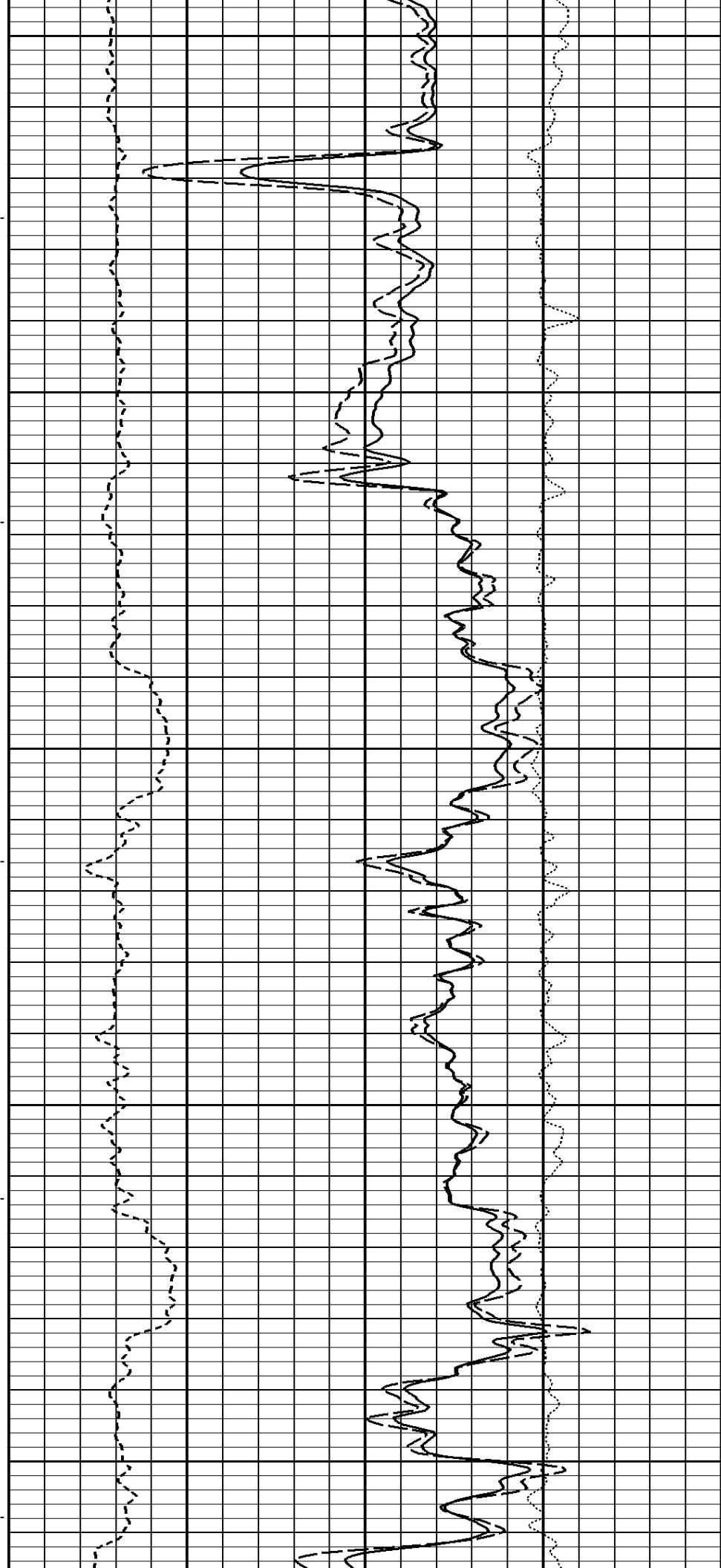


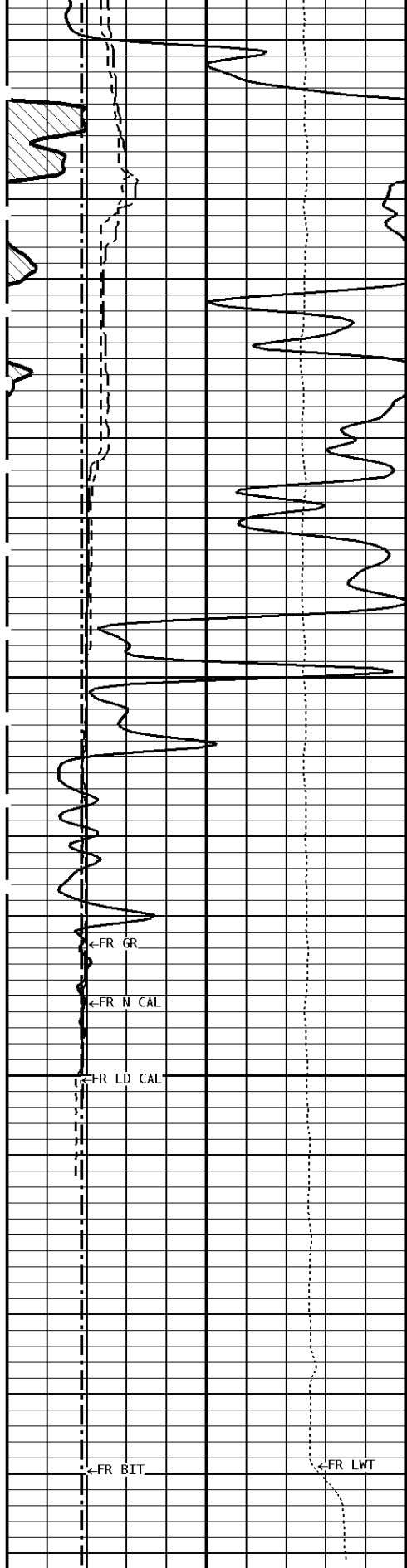


4800

--100Cu. Ft

4900

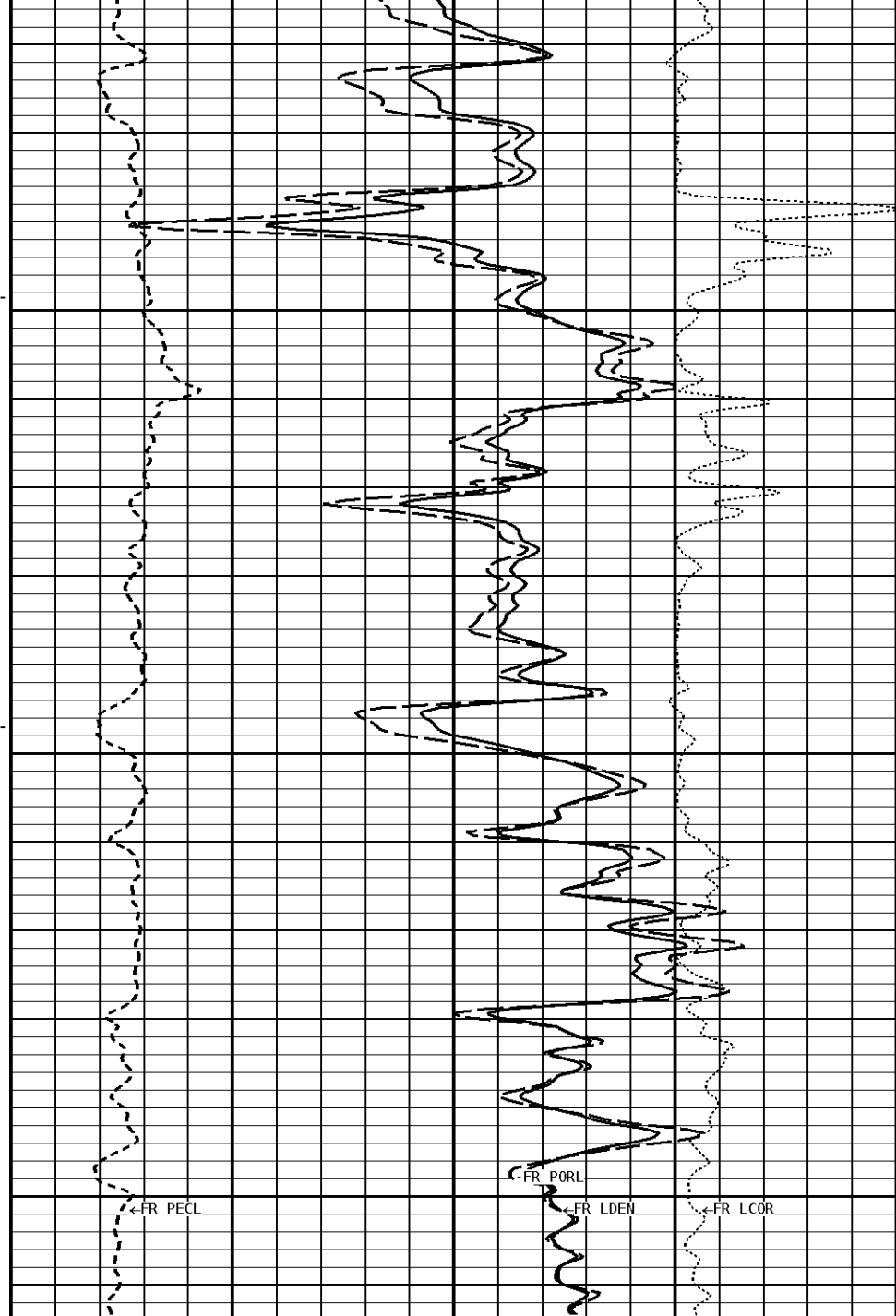




5000

5100

5150



1:240 MAIN SECTION BULK DENSITY

GAMMA RAY API UNITS		- BHV AHV - CU.FT	COMPENSATED BULK DENSITY G/CC	
150 0	300 150		3.0 2.0 1.0	4.0 3.0 2.0
NEUTRON (Y) CALIPER INCHES (IN)			DENSITY POROSITY PERCENT (2.71 g/cc)	
16 6	26 16		70 30 -10	30 -10 -50
-----			-----	
DENSITY (X) CALIPER INCHES (IN)			PE CROSS-SECTION BARNs/ELECTRON	
16 6	26 16		DENSITY CORRECTION G/CC	
-----			-----	
BIT SIZE INCHES (IN)				
6	16			

TENSION LBS				
10000	0			

* Borehole Zone Factors *

Zone 1 99999.0 to 0.0 Feet			
Matrix Density	_____	2.71	g/cc
Fluid Density	_____	1.00	g/cc
Formation Matrix	_____	Limestone	
Drill Bit Size	_____	7.875	in
Casing Diameter	_____	5.500	in
Casing Correction (PHI N)	_____	Disable	

* Calibration Summary *

Shop Calibration CNT-AA					
Performed : 26-JAN-2012			Time : 10:38		
Sensor Suite : CALI-BCN			ID : NDT-BD-123		
Jig - Measured		Jig - Calibrated		Units	
CL # 1	Ring#1	Ring#2	Ring#1	Ring#2	IN.
	6.5	11.5	6.0	12.0	
Shop Calibration LDT-DF					
Performed : 26-OCT-2011			Time : 09:52		
Sensor Suite : CALI-LTH			ID : PDT-GA-466		
Jig - Measured		Jig - Calibrated		Units	
	Ring#1	Ring#2	Ring#1	Ring#2	
N/F	3.8829	3.6893	3.6889		
Porosity	23.6	20.5	20.5		%

CL # 1	Ring#1 8.7	Ring#2 12.0	Ring#1 6.0	Ring#2 12.0	IN.
Performed : 25-Jan-2012			Time : 11:26		
Sensor Suite : BHCPELNG			ID : LDP-DA-067		
Source ID : 2991GW					
Short Space					
	BKGD	Al	Mg	Al+Fe	Units
LSW1	65	1156	1881	748	CPS
LSW2	71	1352	2166	967	CPS
LSW3	259	3083	4989	2607	CPS
LSW4	316	2838	4180	2501	CPS
LSW5	39	70	79	66	CPS
LSW6	73	80	78	79	CPS
LSW7	54	57	58	56	CPS
LSW8	7	9	11	9	CPS
QS	0.148	0.172	0.149	0.168	
PES			2.778	5.967	
SSDN		2.600	1.680		G/CC
Long Space					
	BKGD	Al	Mg	Al+Fe	Units
LLW1	93	1346	5490	813	CPS
LLW2	104	2407	9385	1742	CPS
LLW3	401	4286	16345	3711	CPS
LLW4	515	2008	6544	1816	CPS
LLW5	57	68	133	67	CPS
LLW6	171	164	159	169	CPS
LLW7	108	104	99	103	CPS
LLW8	3	6	18	6	CPS
QL	0.227	0.223	0.231	0.240	
PEL			2.697	5.458	
LSDN		2.600	1.680		G/CC