



Tucker
ENERGY SERVICES

COMPENSATED NEUTRON
PEL DENSITY MICRO LOG

Company ROADRUNNER ENERGY Well FULSOM #2-7 Field N/A County COWLEY State KANSAS Country USA API No. 15-035-24401		File No : TUL-56966 Company : ROADRUNNER ENERGY Well : FULSOM #2-7 Field : N/A County : COWLEY State : KANSAS Country : USA API No : 15-035-24401	
Location : 770' FNL & 2010' FWL NW SE NE NW		LSD : Sect : 7 Twp : 35S Rge : 8E	
Permanent Datum:	GL	Elevations:	Services:
Drilling Measured From:	KB	KB 1082.00	CNT
Log Measured From:	KB	DF 1081.00	LDT
Above Permanent Datum:	7.00 Ft	GL 1075.00	MLT
Date	2012-06-02		
Run Number	1		
Depth--Driller	2709.0 Ft		
Depth--Logger	2708.0 Ft		
First Reading	2684.0 Ft		
Last Reading	472.0 Ft		
Casing--Driller	472.0 Ft		
Casing--Logger	472.0 Ft		
Bit Size	7.875 In		
Casing Size	8.625 In		
Hole Fluid Type	WBM		
Density	9.1 LBS/GAL		
Fluid Loss	8.2 CC		
PH/Viscosity	10.0 42.0 SEC		
Sample Source	MEASURED		
RM@Measured Temp.	0.850 @ 50 F		
RMF@Measured Temp	0.722 @ 50 F		
RMC@Measured Temp.	0.977 @ 50 F		
Source RMF/RMC	CALCULATED/CALCULATED		
RM@BHT	0.431 @ 110 F		
Time Circulation Stopped	110 F		
Max Recorded Temp.	TRUCK 119 TULSA		
Equipment/Base	S. DAVIS		
Recorded By	D. CLAY / G. FRIEDEL		
Witnessed By			

The customer is hereby warned that by providing the log data herein, T. E. S. does not agree to provide any interpretation of log data, conversion of log data to physical rock parameters or recommendations. T. E. 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. E. 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. E. 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	2709.00	8.625	30.00	477.00

Run Number	1	
Date	2012-06-02	
Date/Time On Bottom	2012-06-02 07:45	
Depth to Fluid	0.0 Ft	
Salinity	0.000 PPM	
RMF@BHT	0.350 @ 110 F	
RMC@BHT	0.474 @ 110 F	

Run Number 1

Comments

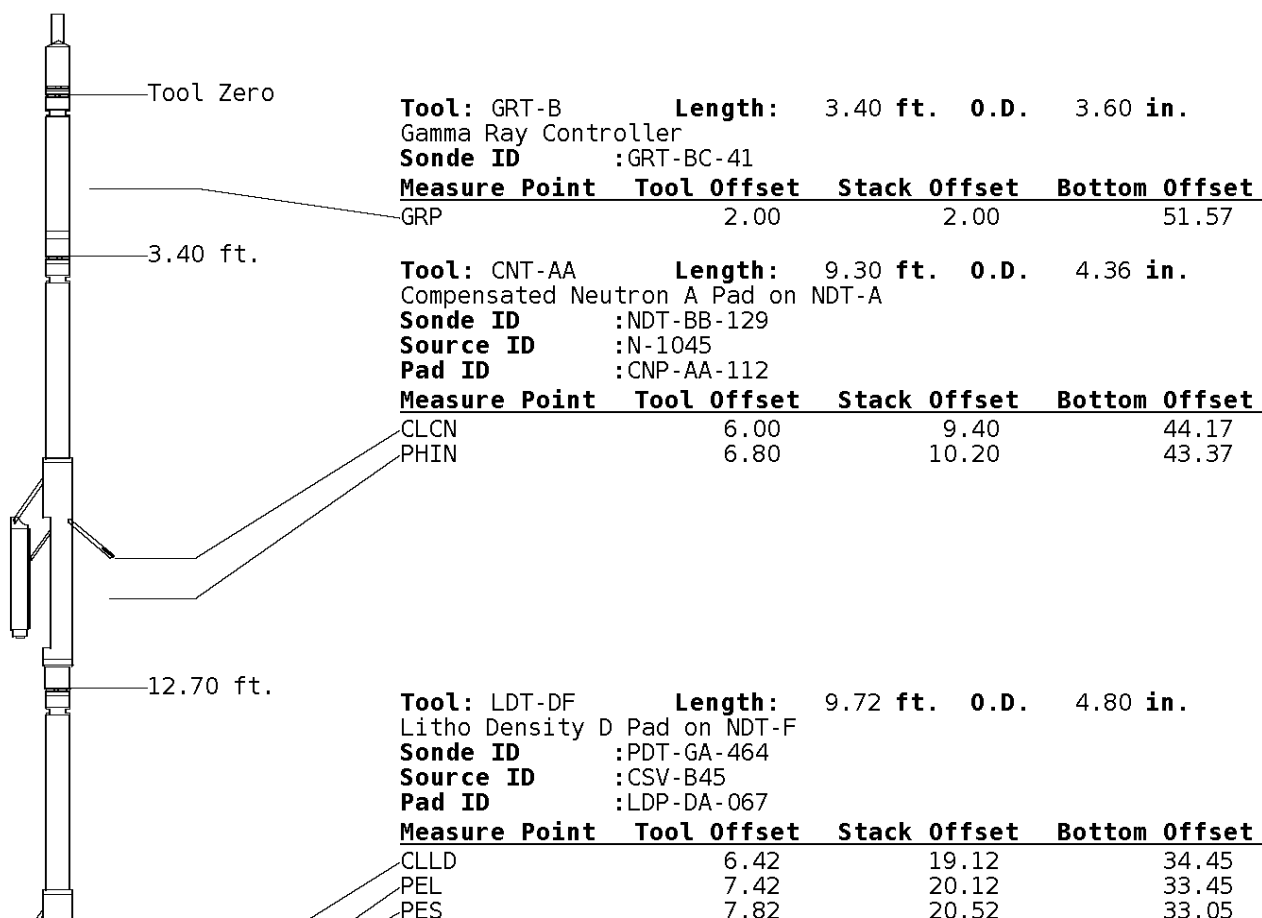
ALL PRESENTATIONS AS PER CUSTOMER REQUEST
 GRT, CNT, LDT, MLT AND PIT RUN IN COMBINATION.
 CALIPERS ORIENTED ON X-Y AXIS.
 2.71 G/CC USED TO CALCULATED POROSITY.
 ANNULAR HOLE VOLUME CALCULATED UISING 5.50" PRODUCTION CASING.
 PHIN IS CALIPER CORRECTED.

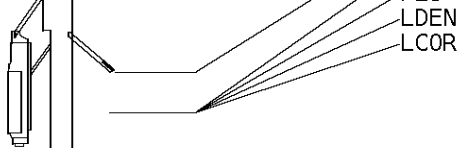
GRT: GRP.
 CNT: PHINLS, CLCNIN.
 LDT: PORLLS, LCORN, PECLN, LDENN, CLLDIN.
 MLT: NOR_RF, INV_RF, MSCLPIN.
 PIT: ILD, ILM, SPU, CIRD, SFLAEC.

OPERATORS:
 J.THOMAS
 N. BURDEN

Tool String Schematic

Total Tool Length - 53.57 ft.
Maximum Outside diameter - 6.00 in.
Net Weight in Air - 943.00 lbs.



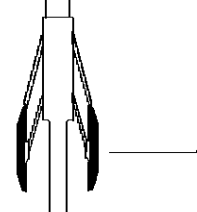


LDEN	7.62	20.32	33.25
LCOR	7.62	20.32	33.25

22.42 ft.

Tool: MST-DA **Length:** 9.66 ft. **O.D.** 6.00 in.
 Micro Spherically Focused (IC)
Sonde ID :MLT-DA-21

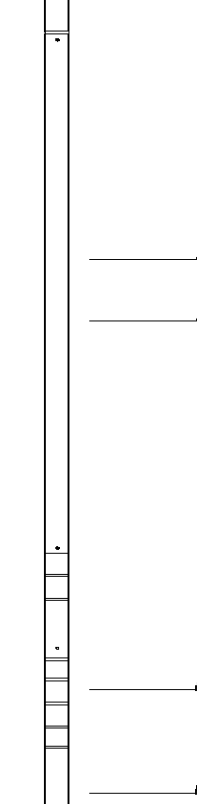
Measure Point	Tool Offset	Stack Offset	Bottom Offset
MSFL	7.60	30.02	23.55
MSCLP	7.60	30.02	23.55
INV	7.60	30.02	23.55
NOR	7.60	30.02	23.55



32.08 ft.

Tool: PIT-CA **Length:** 21.49 ft. **O.D.** 3.62 in.
 Phased Dual Induction w/ RM & D
Sonde ID :PIT-AC-22

Measure Point	Tool Offset	Stack Offset	Bottom Offset
ILD	8.92	41.00	12.56
ILM	10.10	42.18	11.39
SFLU	17.49	49.57	4.00
SP	20.60	52.68	0.88



LWT 53.57 ft.

Well File: rd-rnr-ful-2-7-mstk-dip-jun-2

Scale: 1:240

Segment: V1.D1.S5 MN

Acquired: 2012-06/02 07:52 3.2.0-10932

Reference: 0

Processed: 2012-06/02 08:48 3.2.0-10932

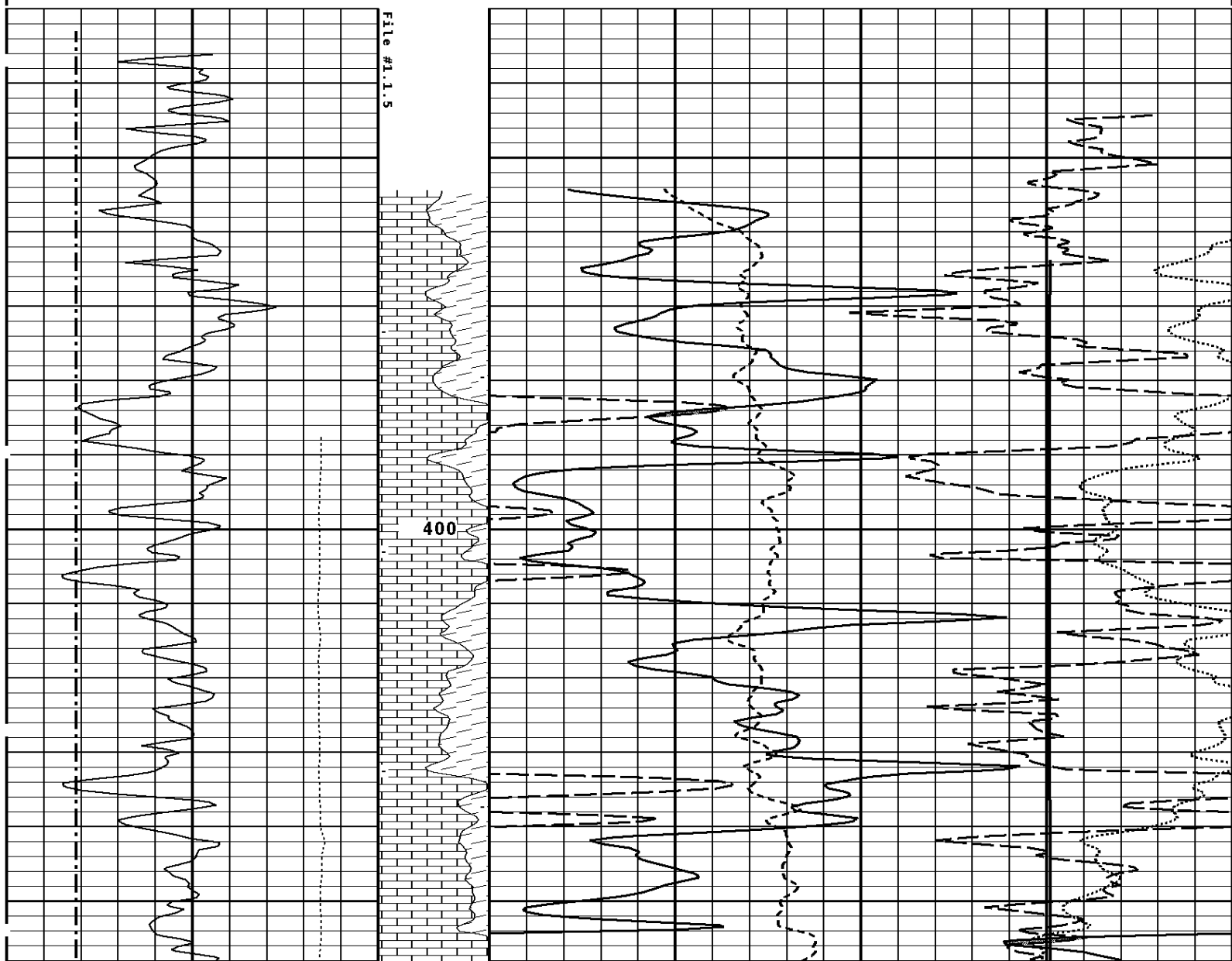
**CALIPER MICRO
INCHES (IN)**

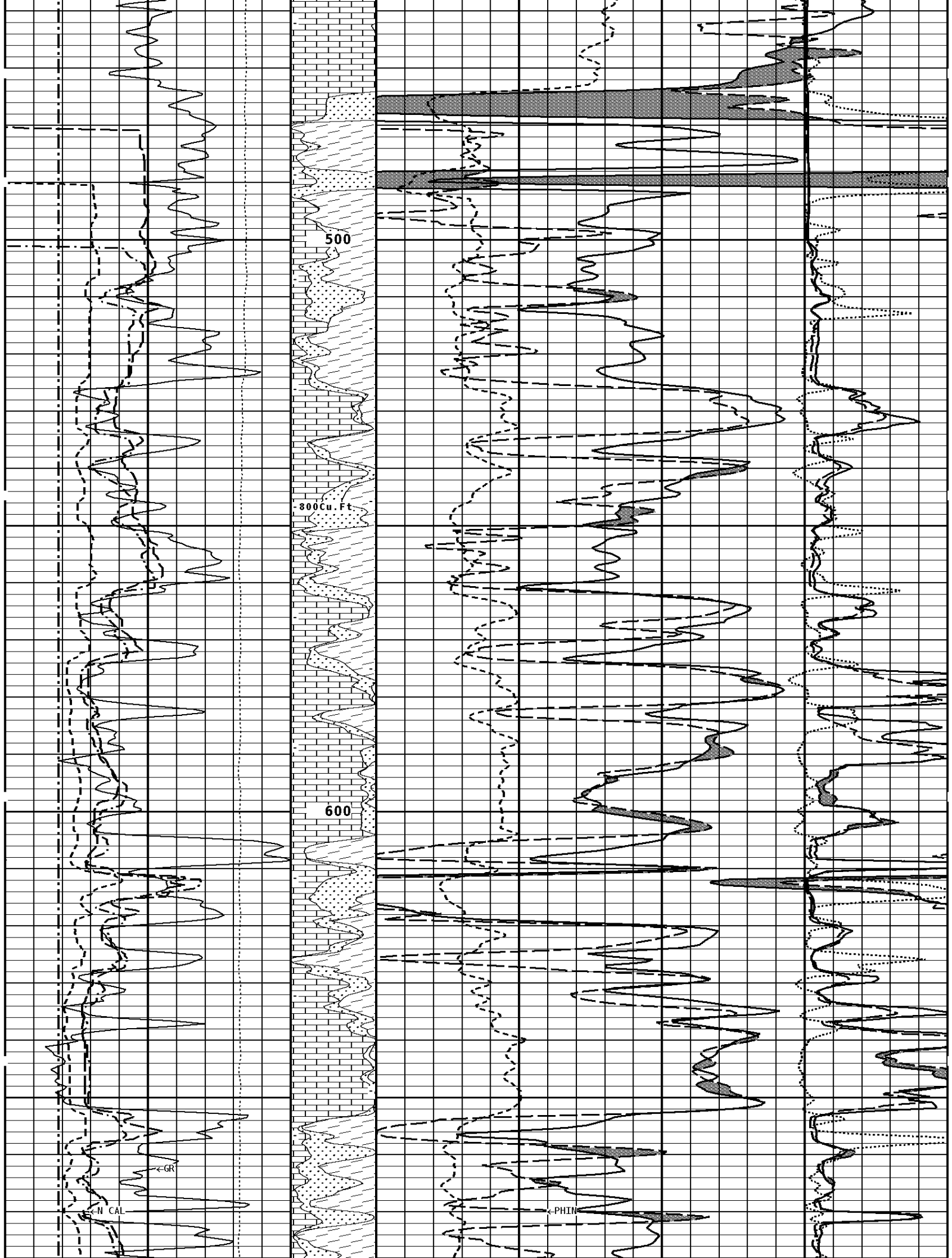
16	26
6	16

**TENSION
LBS**

**MICRO-INVERSE
OHMM**

10000	0			0	40
BIT SIZE INCHES (IN)	6	16	Volume Dolo/Shale	MICRO-NORMAL OHMM	
				0	40
DENSITY (X) CALIPER INCHES (IN)	16	26	Volume Quartz	PE CROSS-SECTION BARNs/ELECTRON	DENSITY CORRECTION G/CC
6	16	16		0	10
				-0.25	0.25
NEUTRON (Y) CALIPER INCHES (IN)	16	26	Volume Calcite	NEUTRON POROSITY PERCENT (LIMESTONE MATRIX)	
6	16	16		70	30
				30	-10
GAMMA RAY API UNITS	150	300	- BHV AHV - CU. FT	DENSITY POROSITY PERCENT (2.71 g/cc)	
0		150		70	30
				30	-10
				-10	-50
1:240 MAIN SECTION					





LD CAL

MIC-CAL

BLT

LWT

700

400Cu.Ft

700Cu.Ft

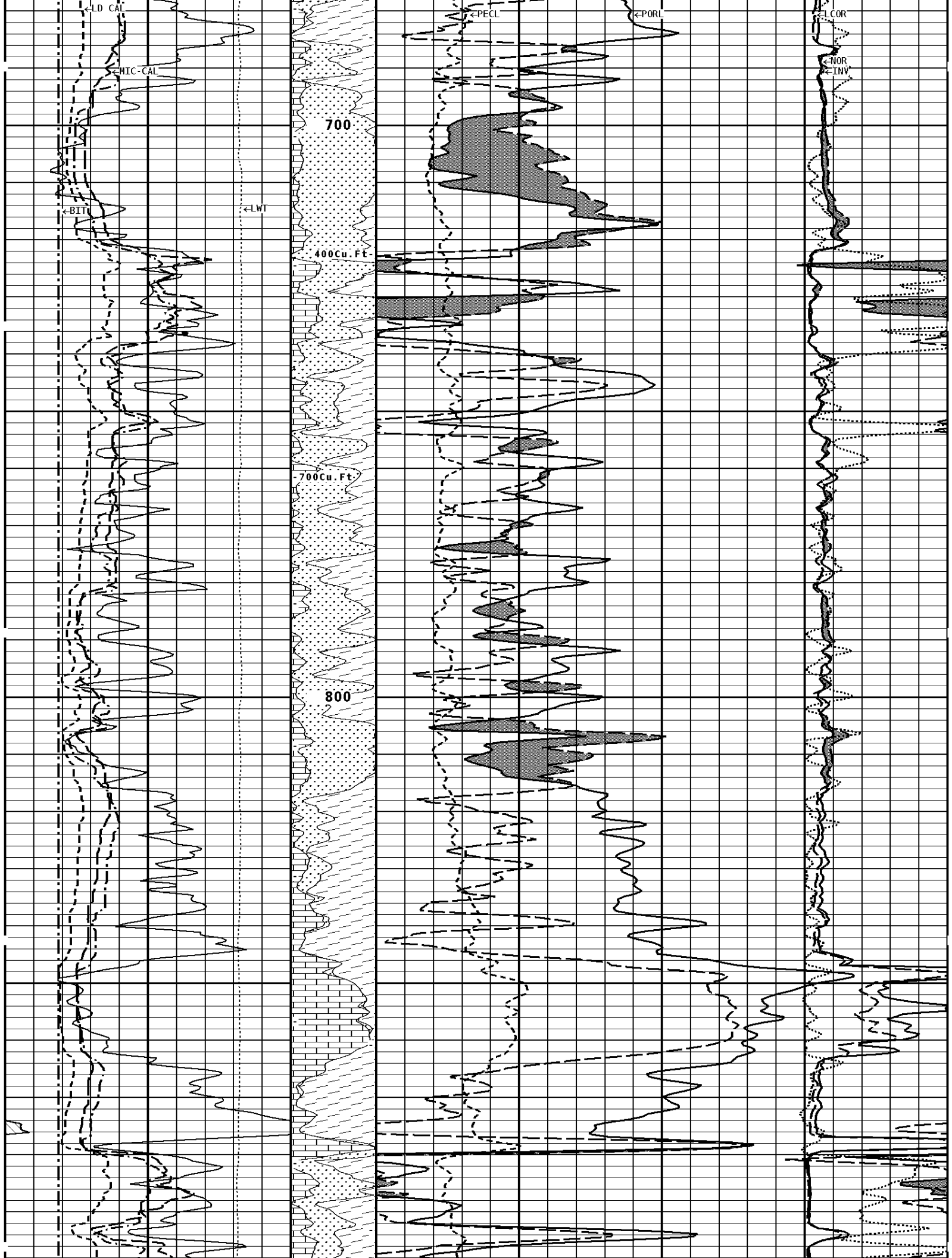
800

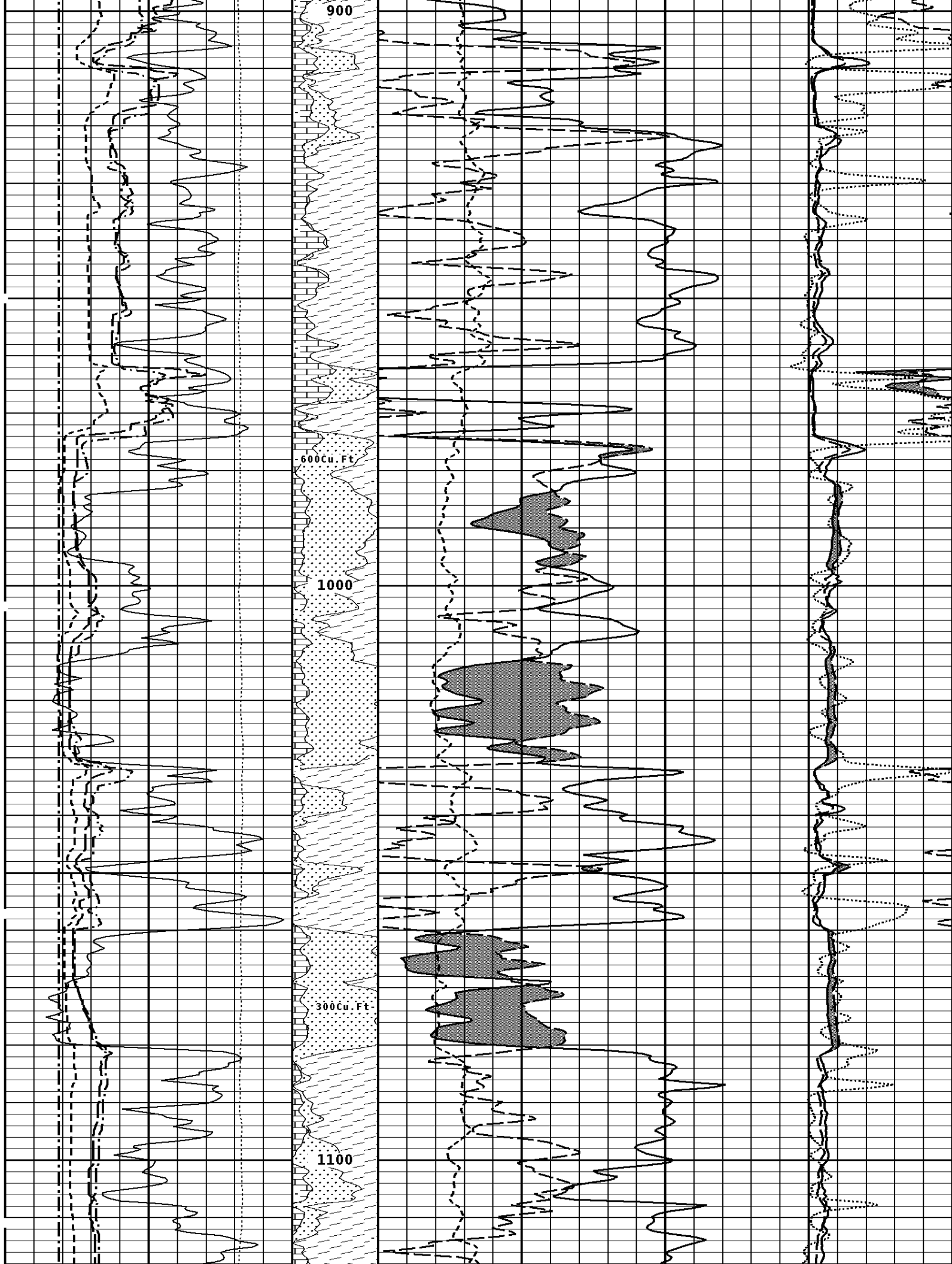
PECL

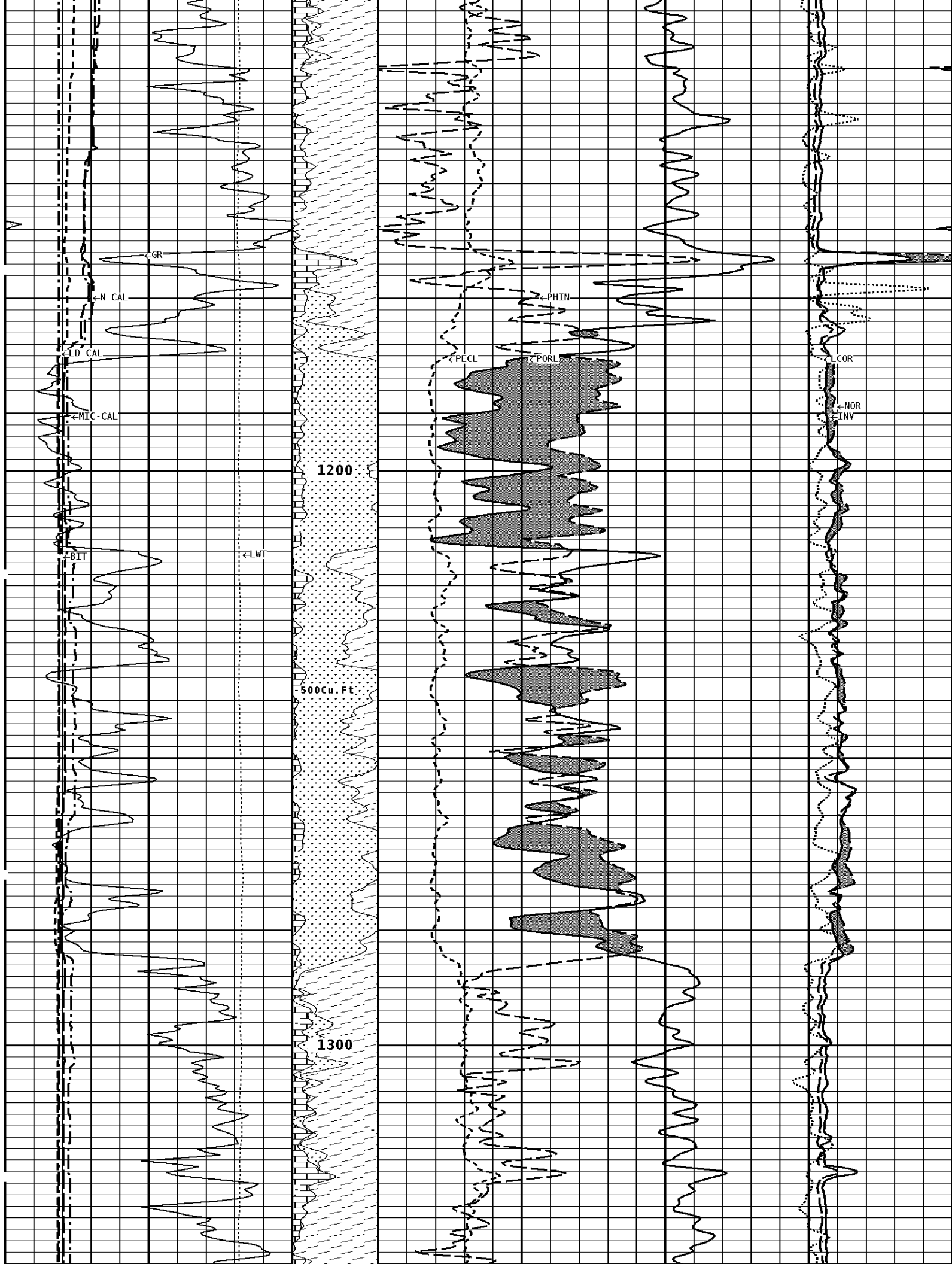
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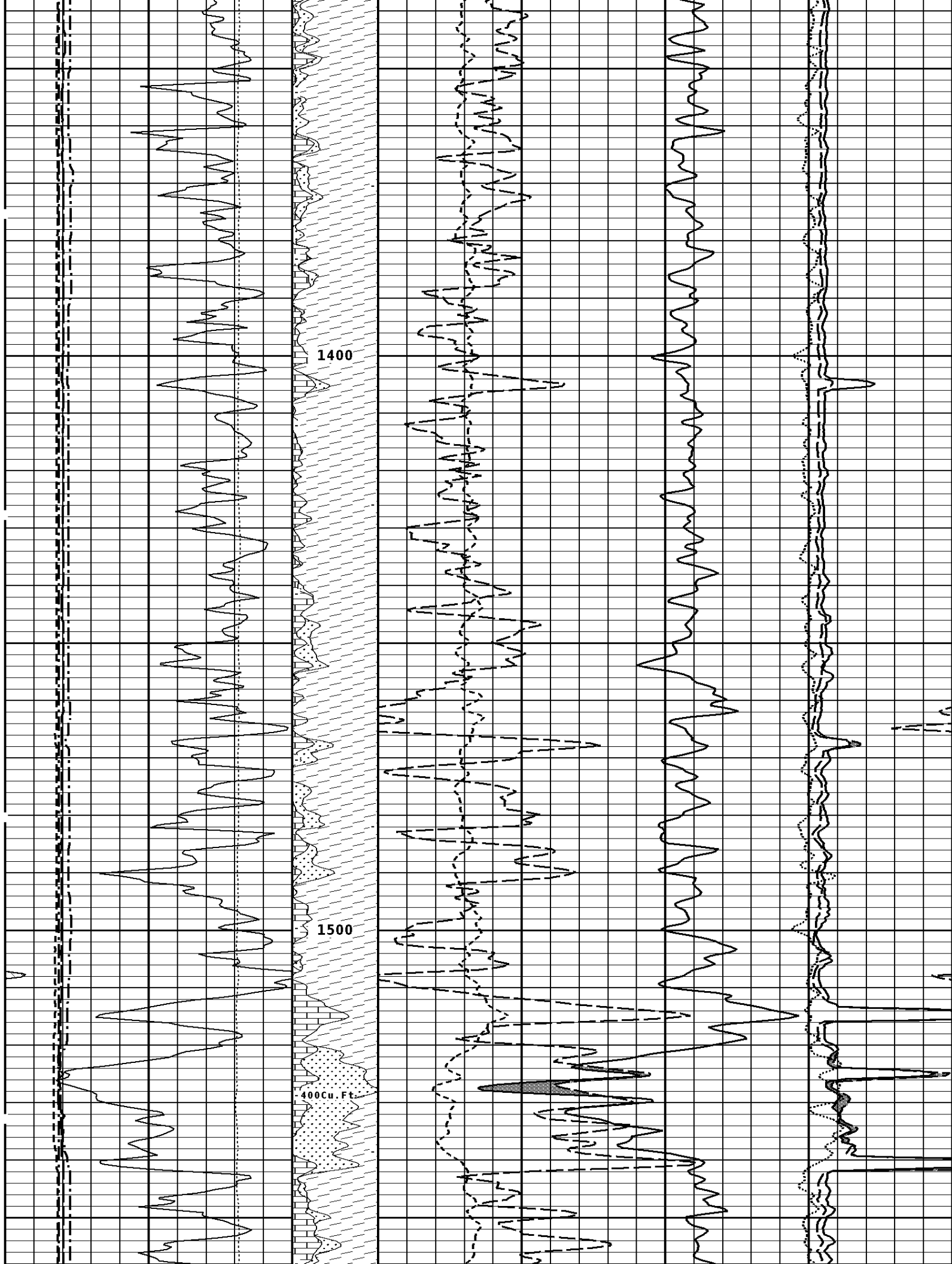
ELCOR

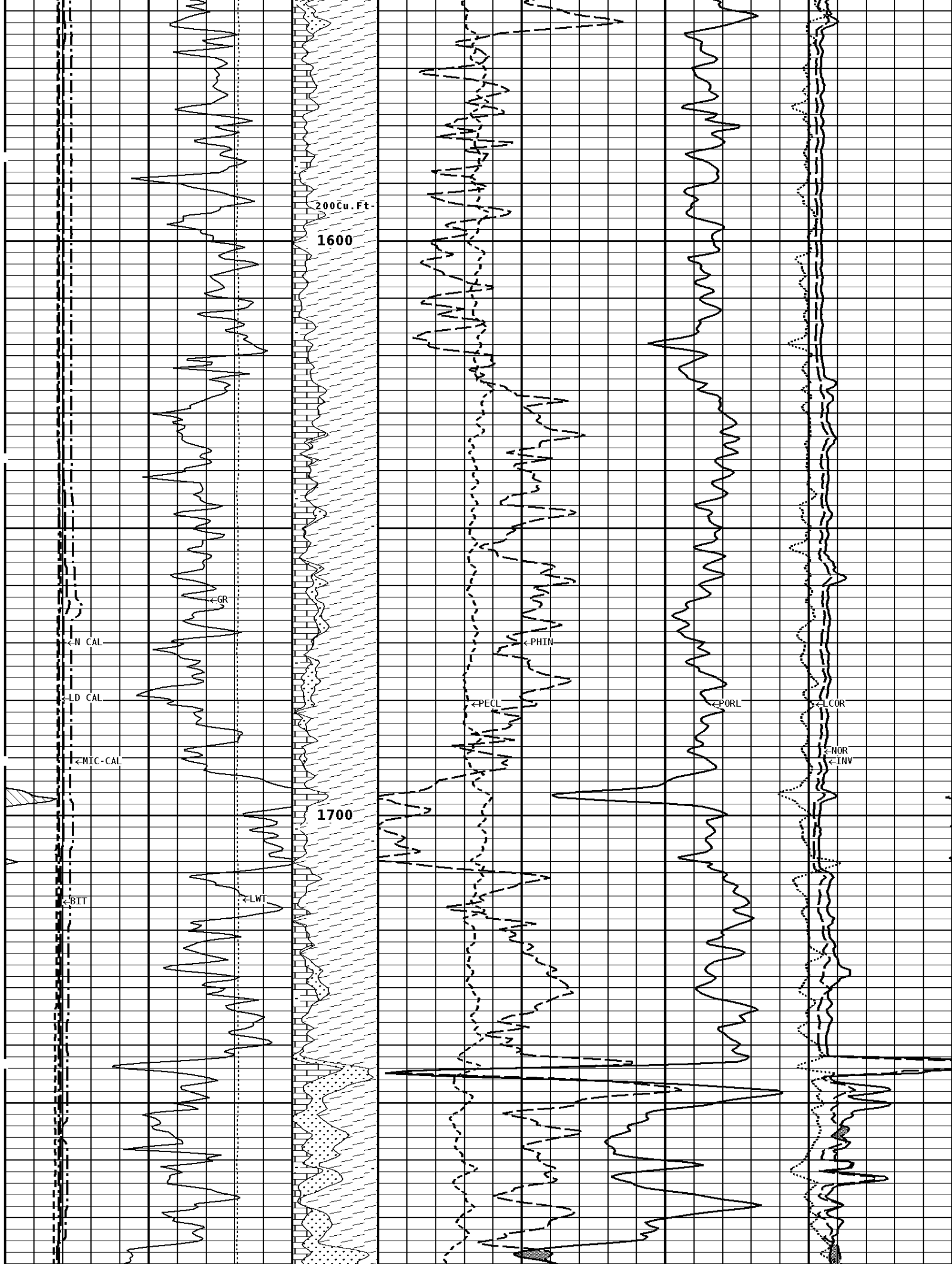
NOR
INV

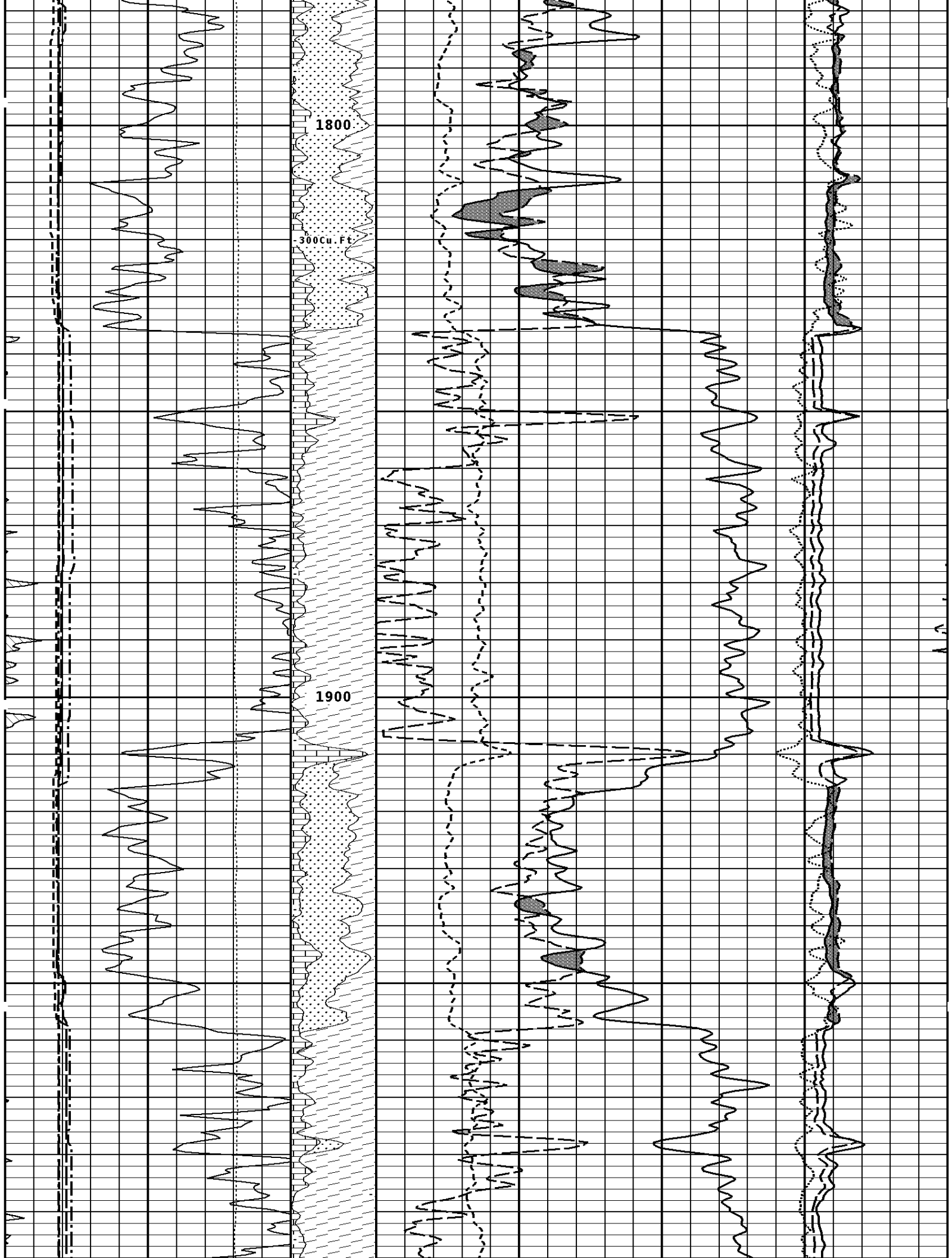


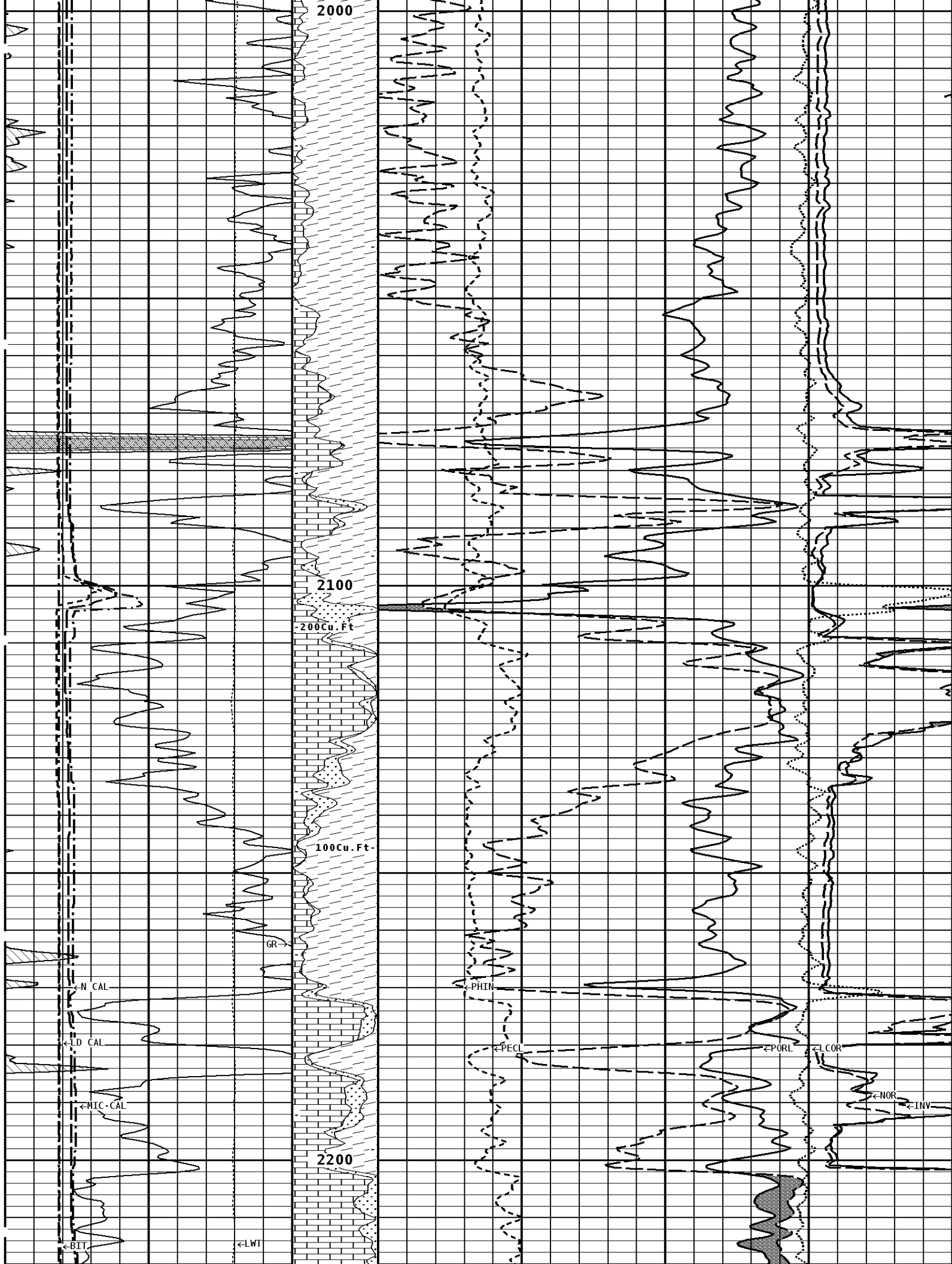


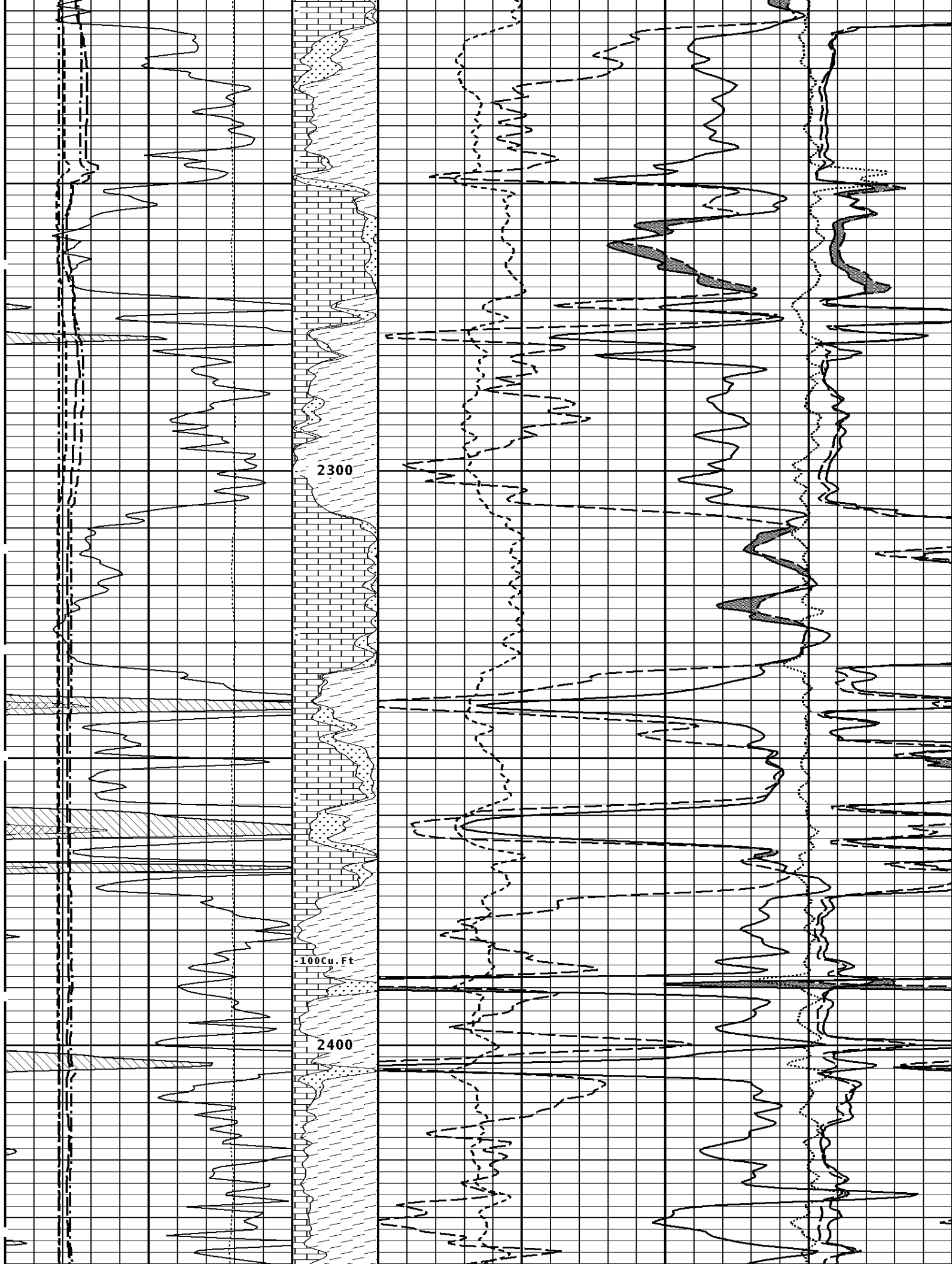


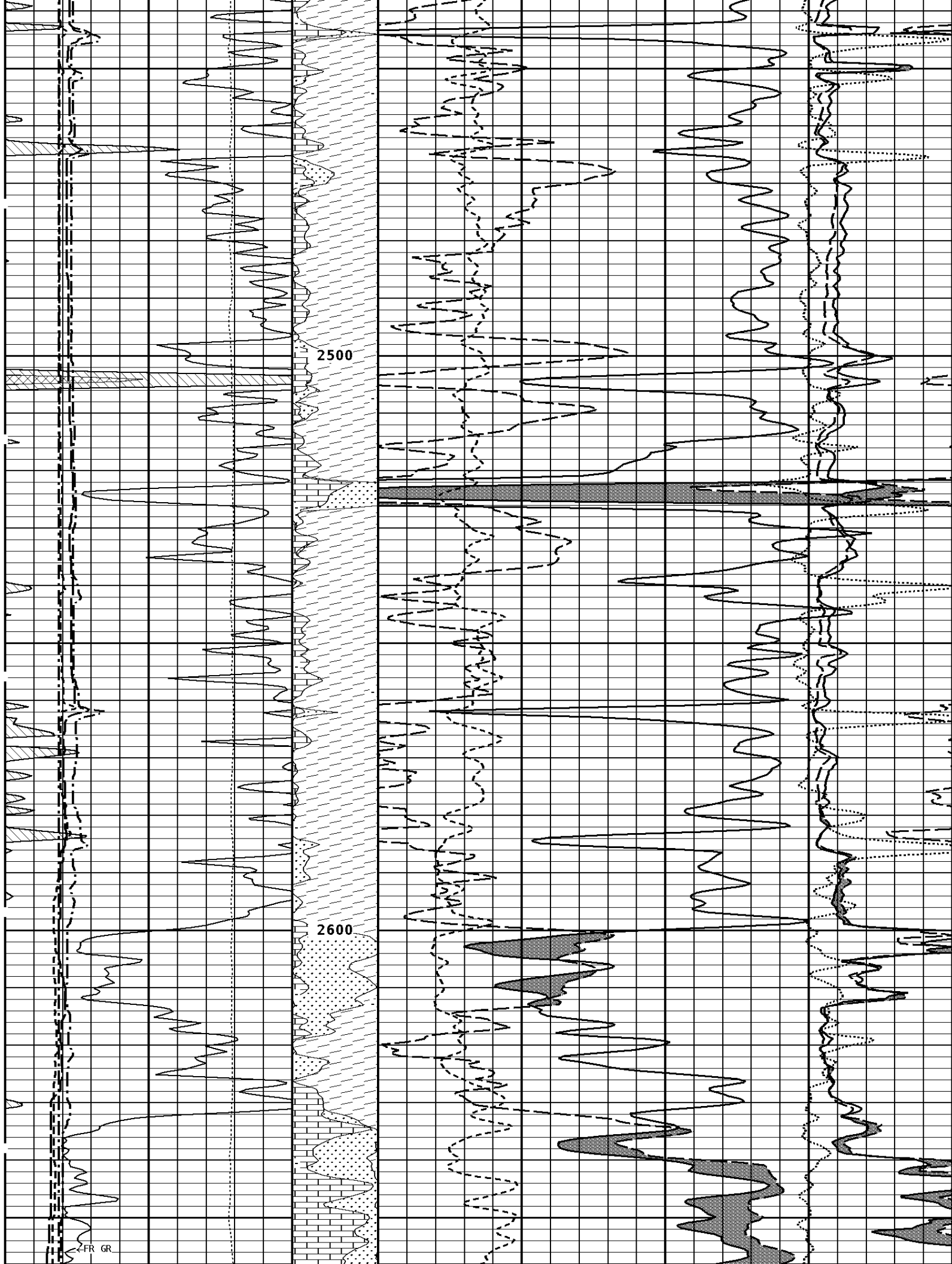


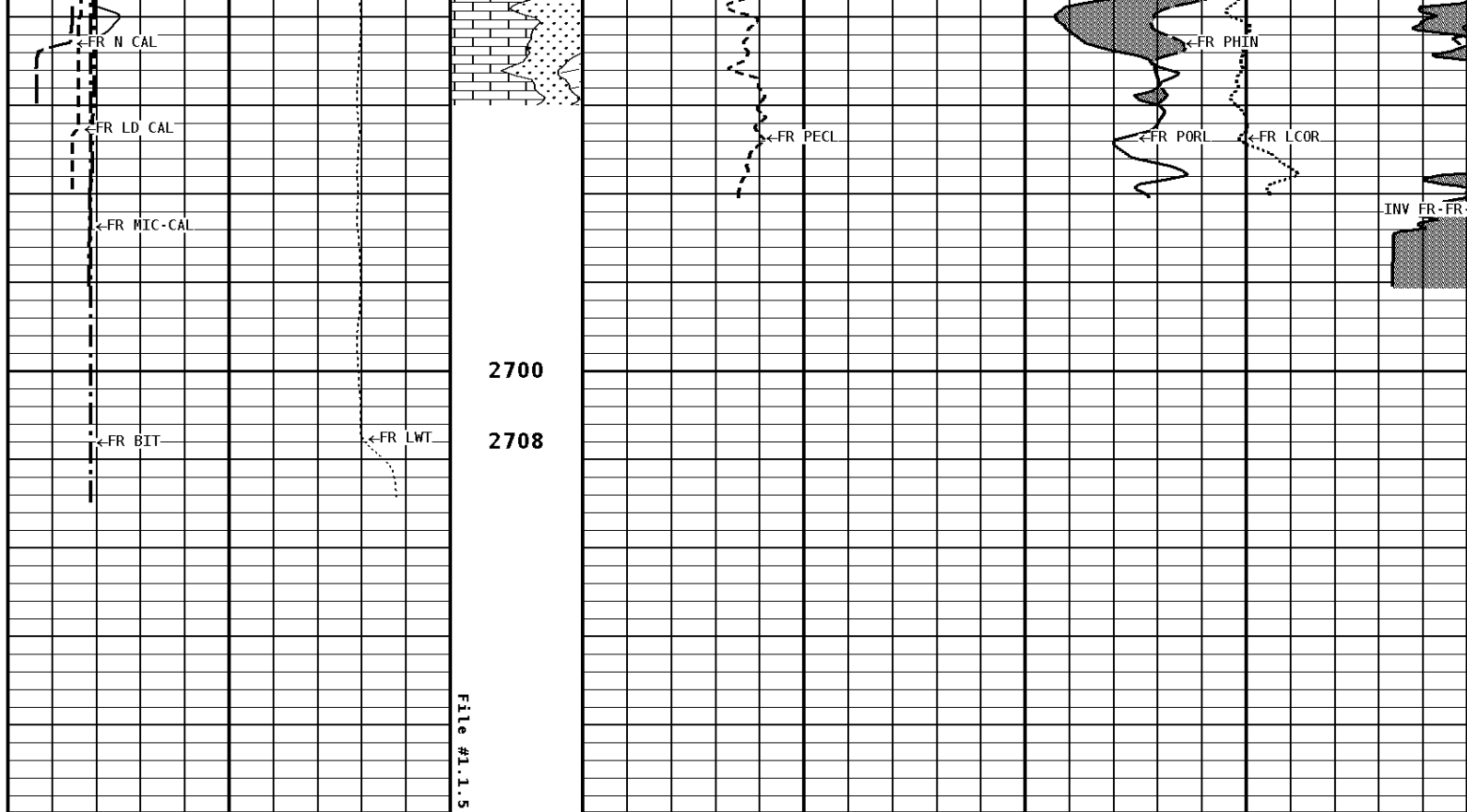


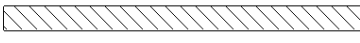










GAMMA RAY API UNITS 150 0  300 0 150		- BHV AHV - CU. FT 70 30 -10		DENSITY POROSITY PERCENT (2.71 g/cc) 30 -10 -50	
NEUTRON (Y) CALIPER INCHES (IN) 16 6 26 16		Volume Calcite 70 30		NEUTRON POROSITY PERCENT (LIMESTONE MATRIX) 30 -10	
DENSITY (X) CALIPER INCHES (IN) 16 6 26 16		Volume Quartz 0 10		PE CROSS-SECTION BARN/ ELECTRON -0.25 0.25	
BIT SIZE INCHES (IN) 6 16		Volume Dolo/Shale 0 40		MICRO-NORMAL OHMM 0 40	
TENSION LBS 10000 0				MICRO-INVERSE OHMM 0 40	
CALIPER MICRO INCHES (IN) 16 6 26 16					

* 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: rd-rnr-ful-2-7-mstk-dip-jun-2

Scale: 1:240

Segment: V1.D1.S4 RP

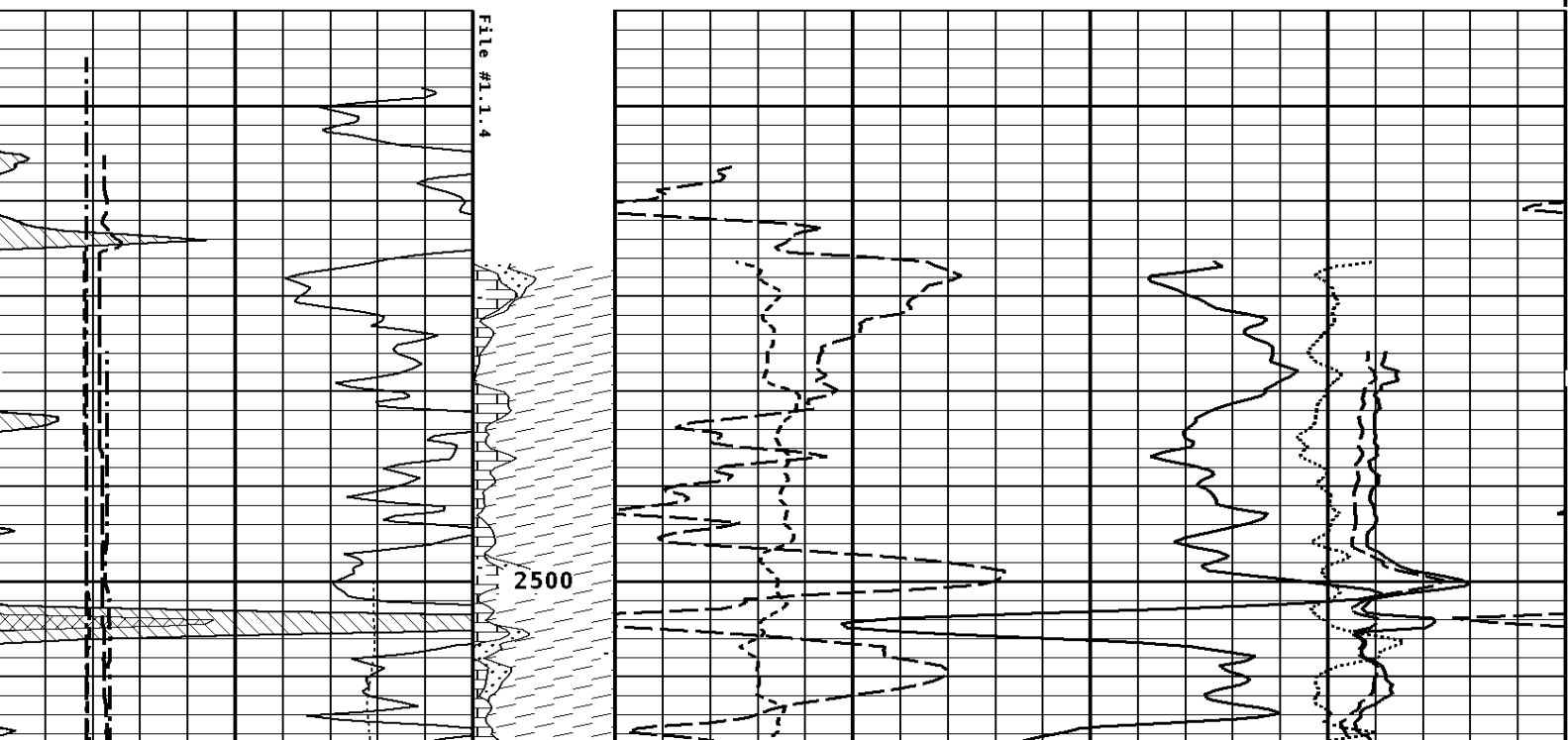
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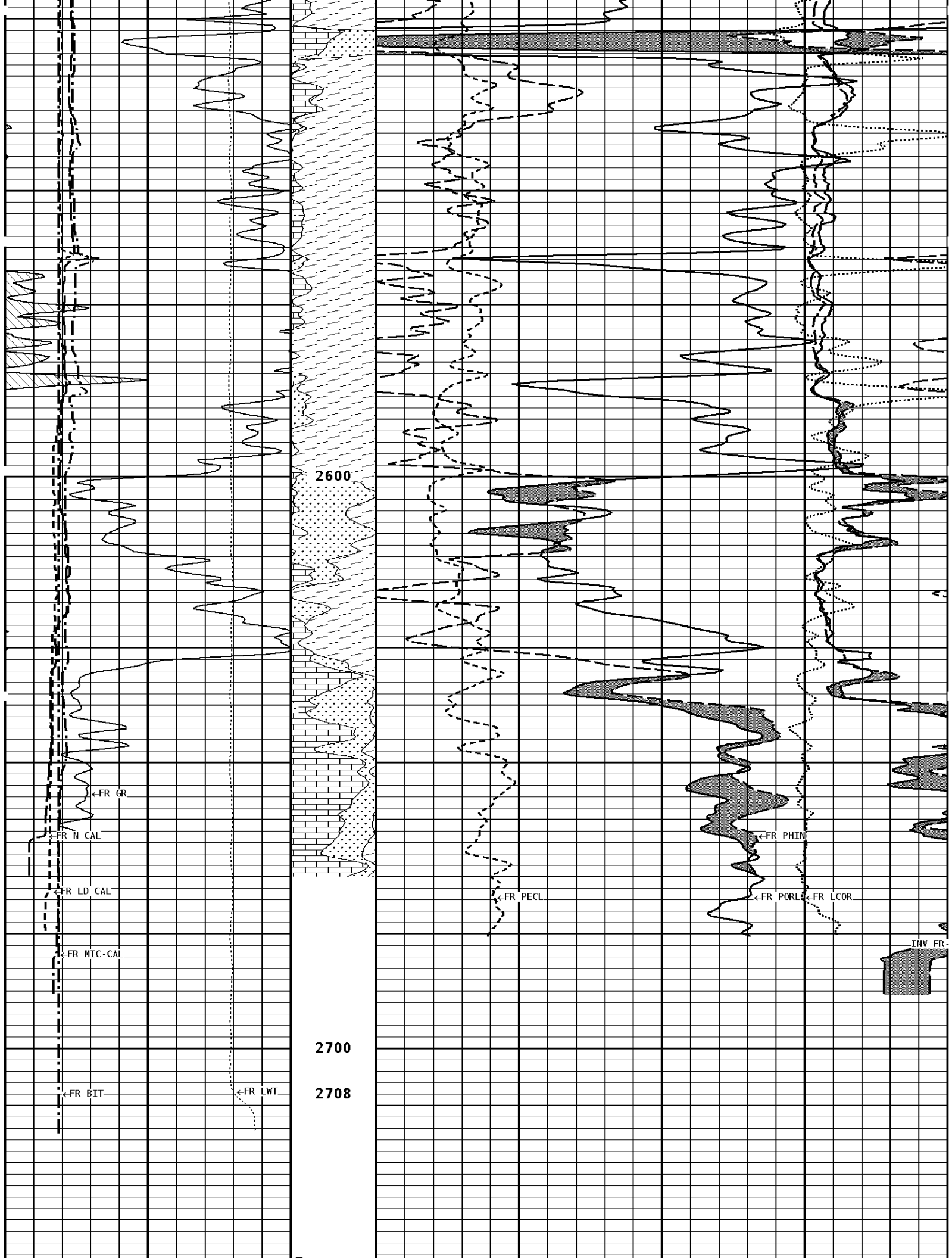
Reference: 0

Processed: 2012-06/02 08:47 3.2.0-10932

CALIPER MICRO INCHES (IN)					
16	26				
6	16				
TENSION LBS					
10000	0				
BIT SIZE INCHES (IN)		Volume Dolo/Shale			
6	16				
DENSITY (X) CALIPER INCHES (IN)		Volume Quartz	PE CROSS-SECTION BARN/ ELECTRON	DENSITY CORRECTION G/CC	
16	26				
6	16		0	10	-0.25
NEUTRON (Y) CALIPER INCHES (IN)		Volume Calcite	NEUTRON POROSITY PERCENT (LIMESTONE MATRIX)		
16	26		70	30	
6	16		30	-10	
GAMMA RAY API UNITS		- BHV AHV - CU. FT	DENSITY POROSITY PERCENT (2.71 g/cc)		
150	300		70	30	
0	150		30	-10	
			-10	-50	

1:240 REPEAT SECTION





2600

2700

2708

←FR GR

←FR N CAL

←FR LD CAL

←FR MIC-CAL

←FR BIT

←FR LWT

←FR PECL

←FR PHIN

←FR PORL

←FR LCOR

INV FR

File #1.1.4

1:240 REPEAT SECTION

GAMMA RAY API UNITS		- BHV AHV - CU. FT	DENSITY POROSITY PERCENT (2.71 g/cc)	
150 0	300 150		70 30	30 -10
			-10	-50
NEUTRON (Y) CALIPER INCHES (IN)		Volume Calcite	NEUTRON POROSITY PERCENT (LIMESTONE MATRIX)	
16 6	26 16		70 30	30 -10
DENSITY (X) CALIPER INCHES (IN)		Volume Quartz	PE CROSS-SECTION BARNs/ELECTRON	DENSITY CORRECTION G/CC
16 6	26 16		010	-0.250.25
BIT SIZE INCHES (IN)		Volume Dolo/Shale	MICRO-NORMAL OHMM	
6	16		040	
TENSION LBS			MICRO-INVERSE OHMM	
10000	0		040	
CALIPER MICRO INCHES (IN)				
16 6	26 16			

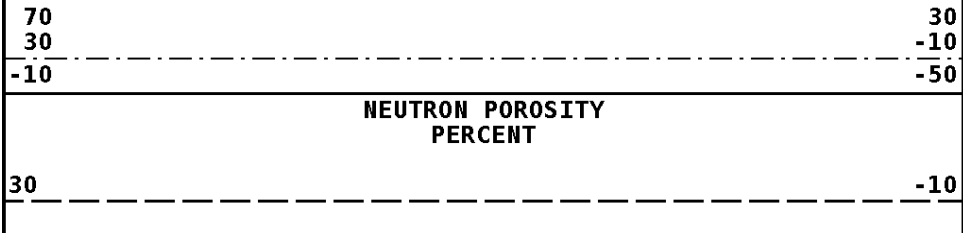
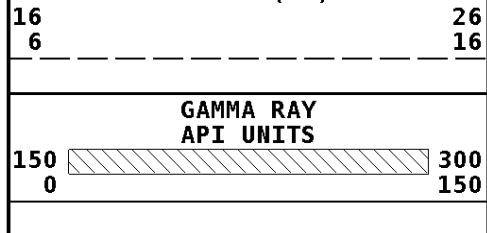
* Borehole Zone Factors *

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	

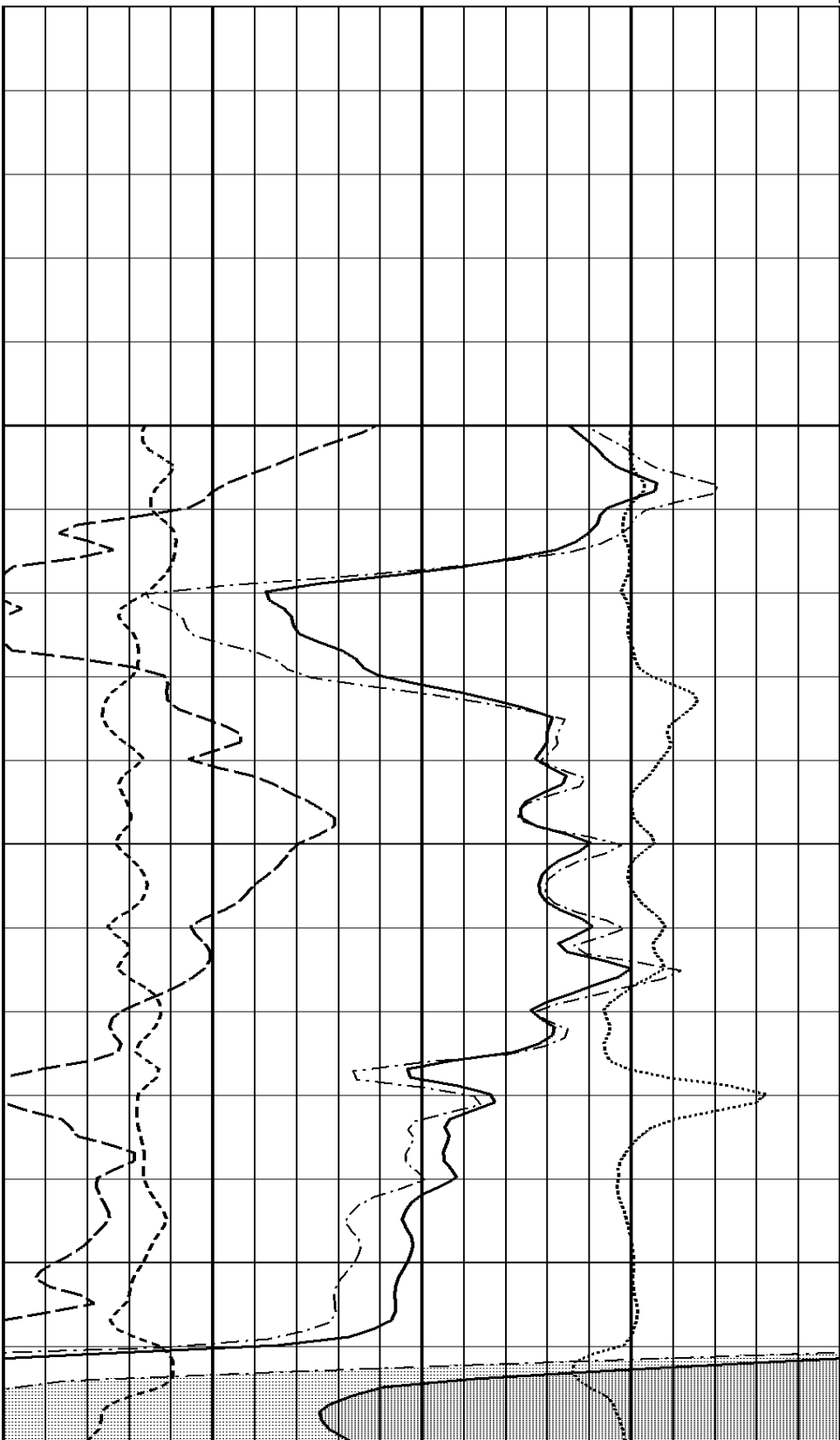
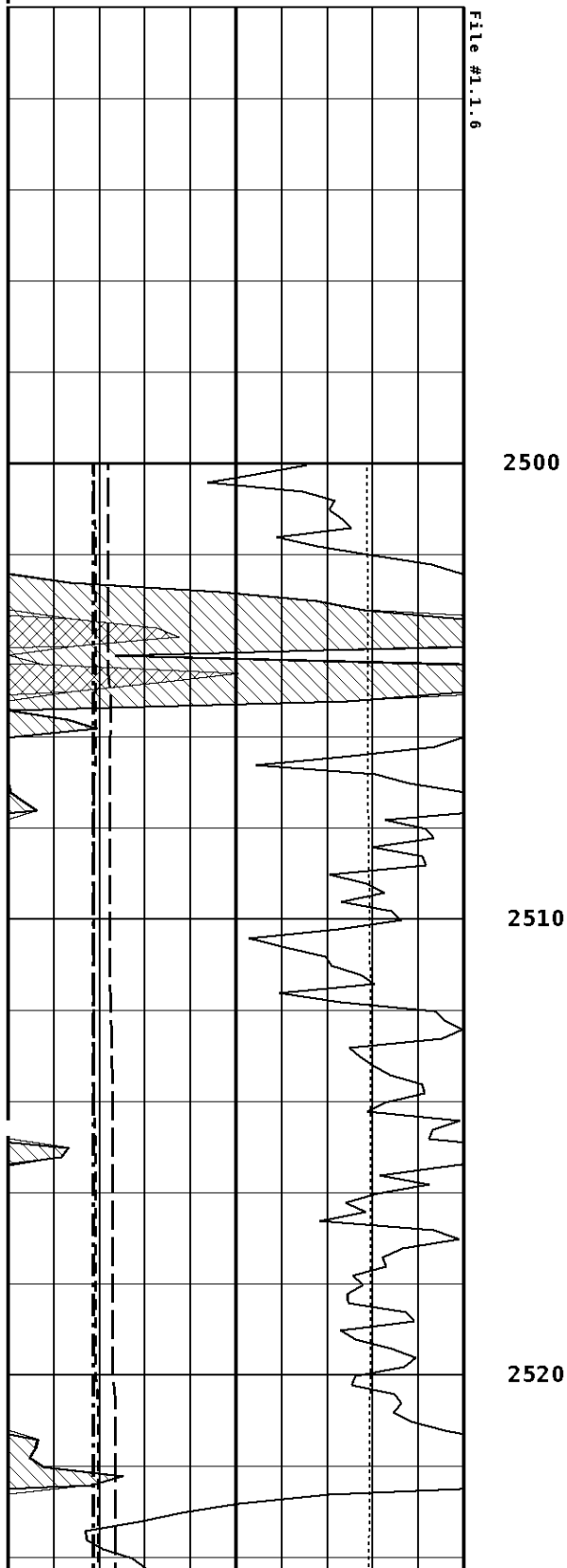
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Segment:	V1.D1.S6 HIRES	Acquired:	2012-06/02 07:52 3.2.0-10932
Reference:	0	Processed:	2012-06/02 09:20 3.2.0-10932

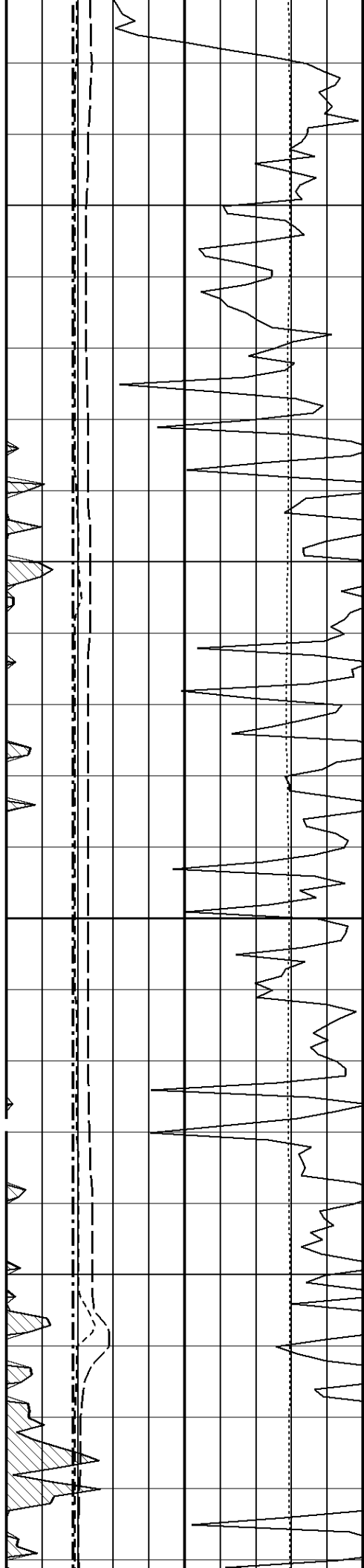
TENSION LBS	
10000	0
BIT SIZE INCHES (IN)	
6	16
DENSITY (X) CALIPER INCHES (IN)	
16	26
6	16
NEUTRON (Y) CALIPER INCHES (IN)	

PE CROSS-SECTION BARNs/ELECTRON		DENSITY CORRECTION G/CC	
0	10	-0.25	0.25
COMPENSATED BULK DENSITY G/CC			
3.0	4.0		
2.0	3.0		
1.0	2.0		
DENSITY POROSITY PERCENT			



1:48 HIGH RESOLUTION



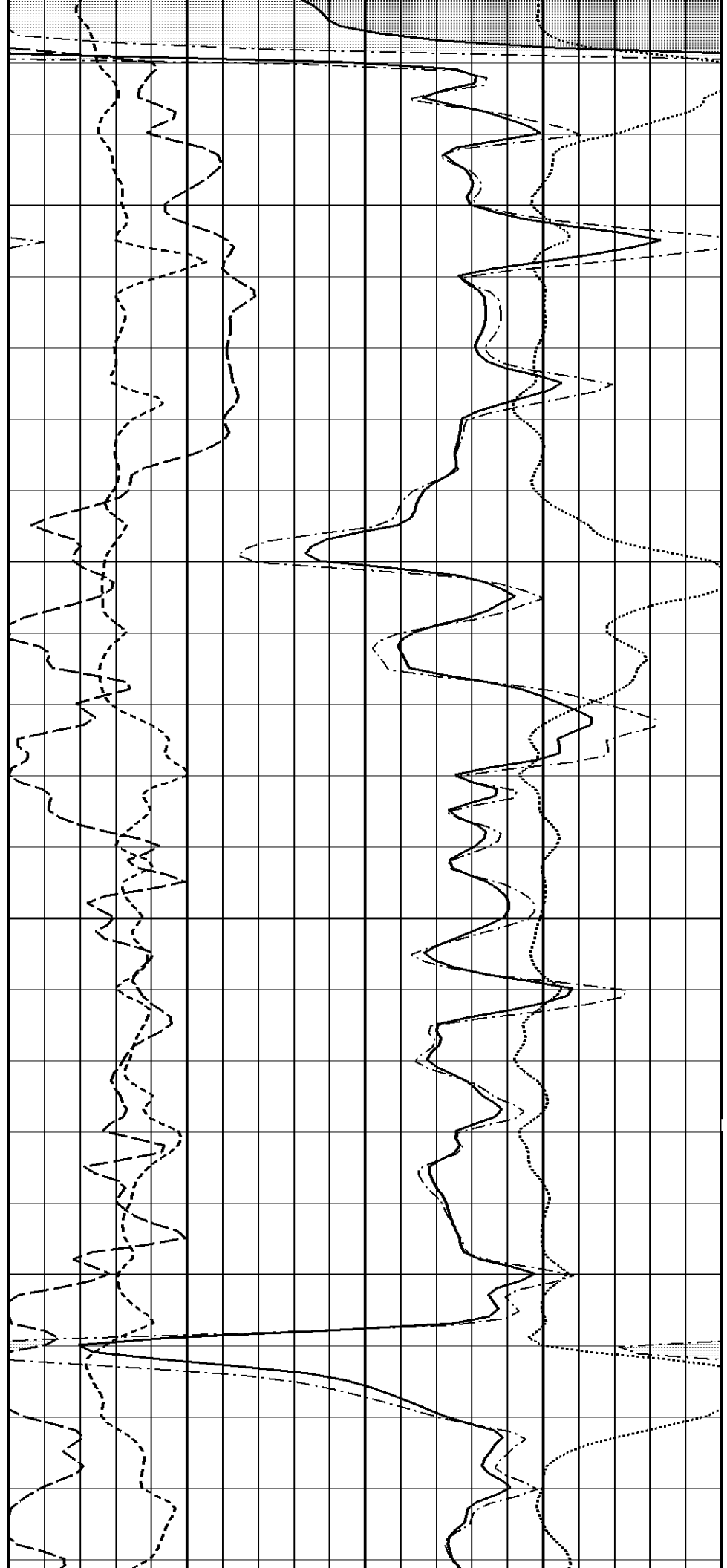


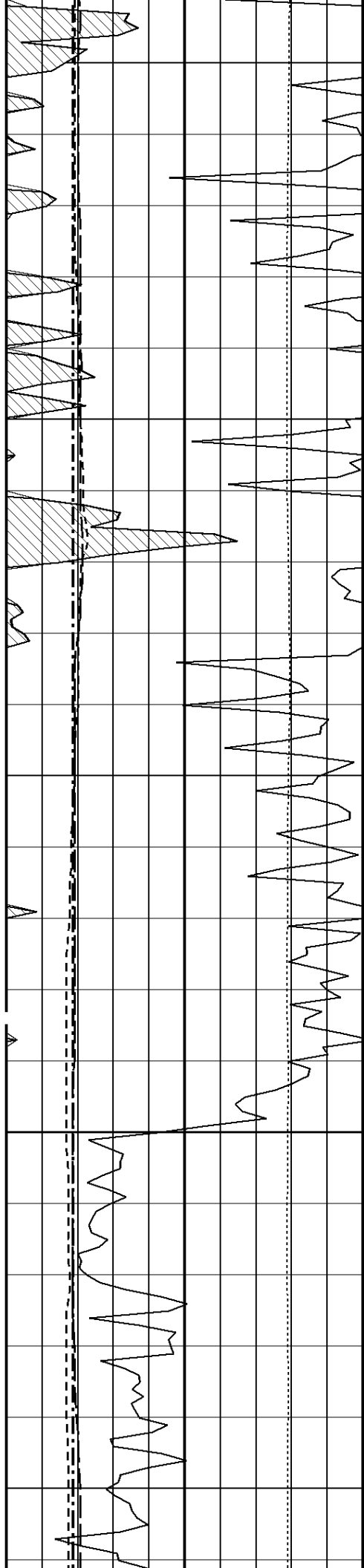
2530

2540

2550

2560





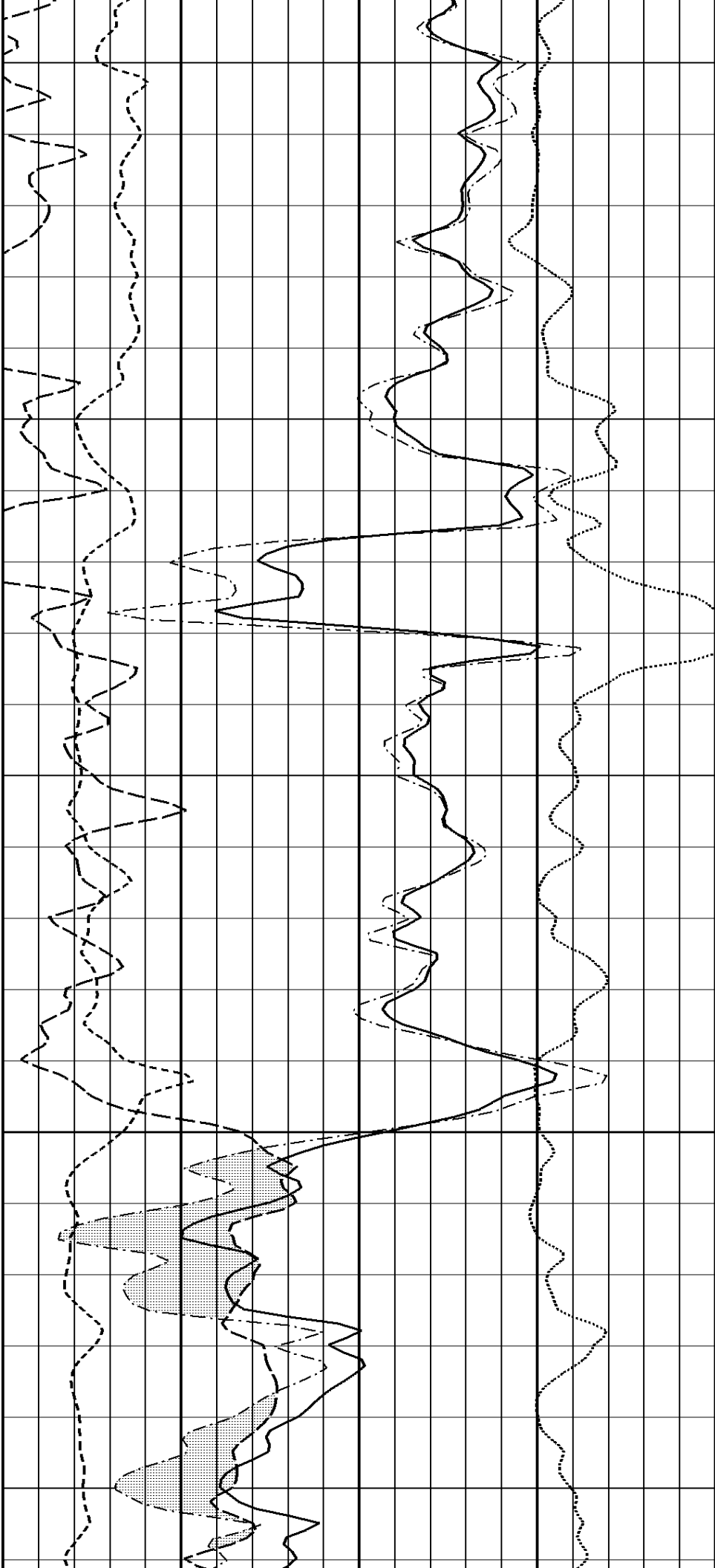
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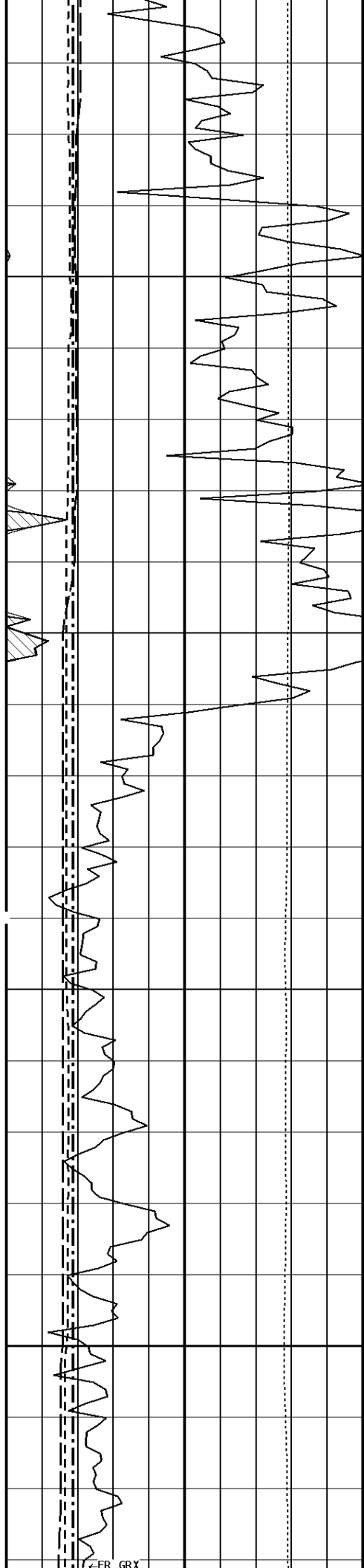
2580

2590

2600

2610



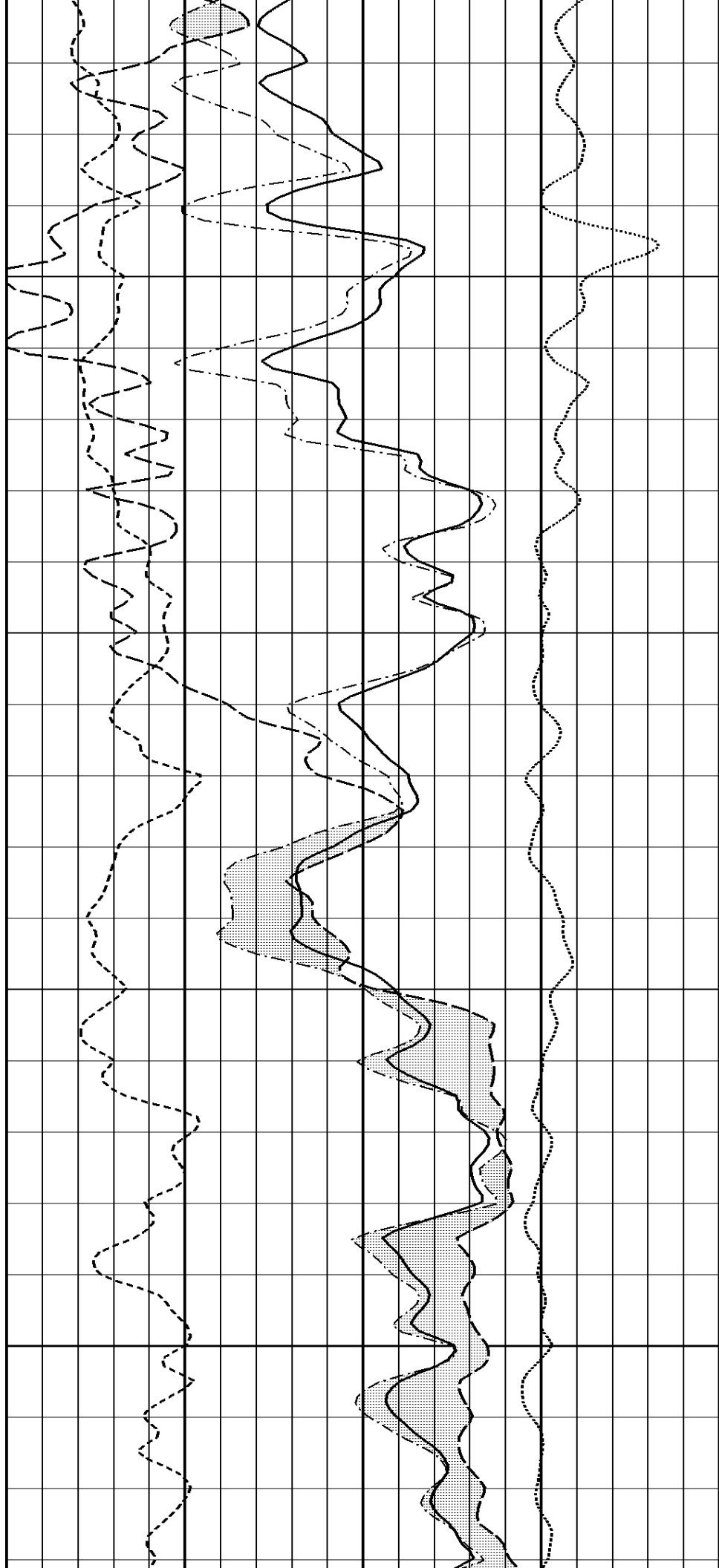


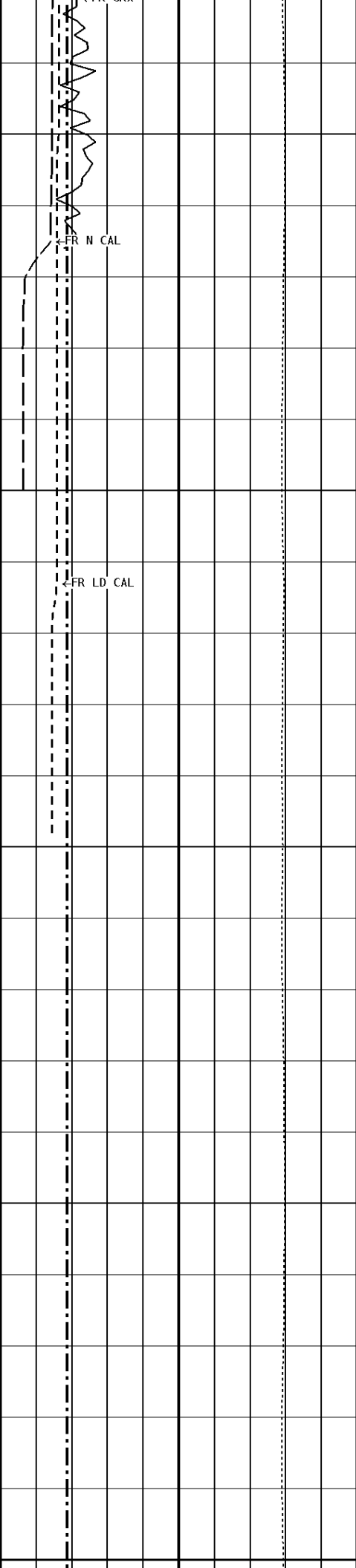
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2630

2640

2650





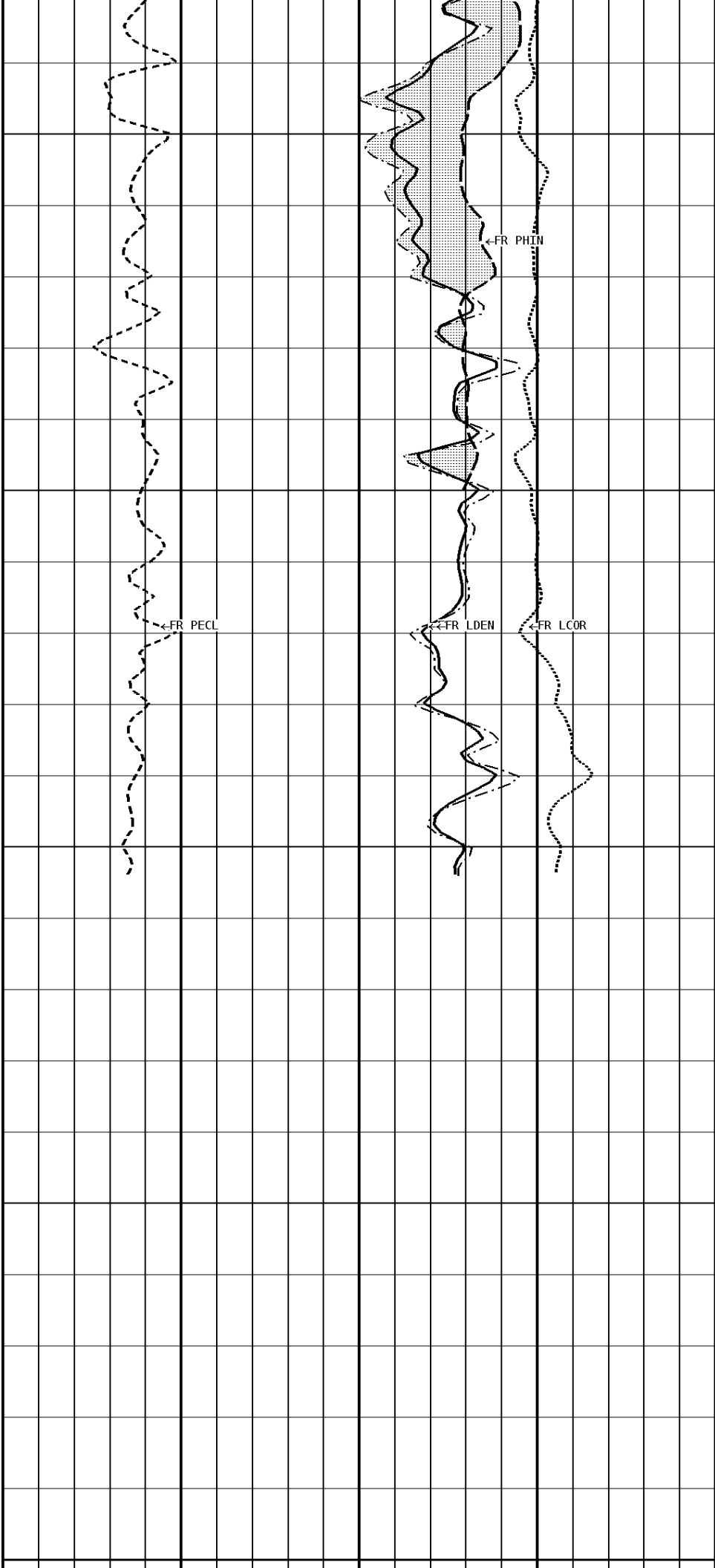
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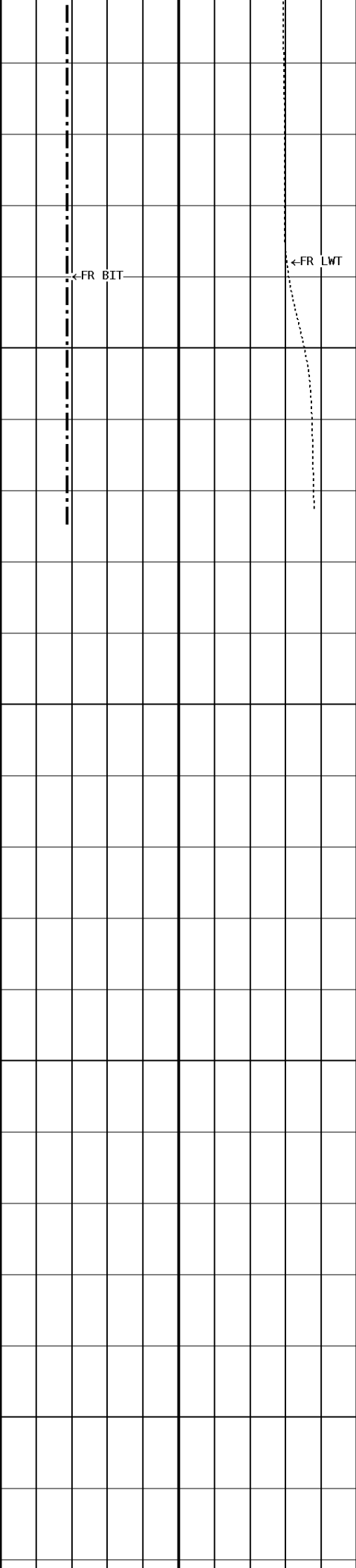
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2680

2690

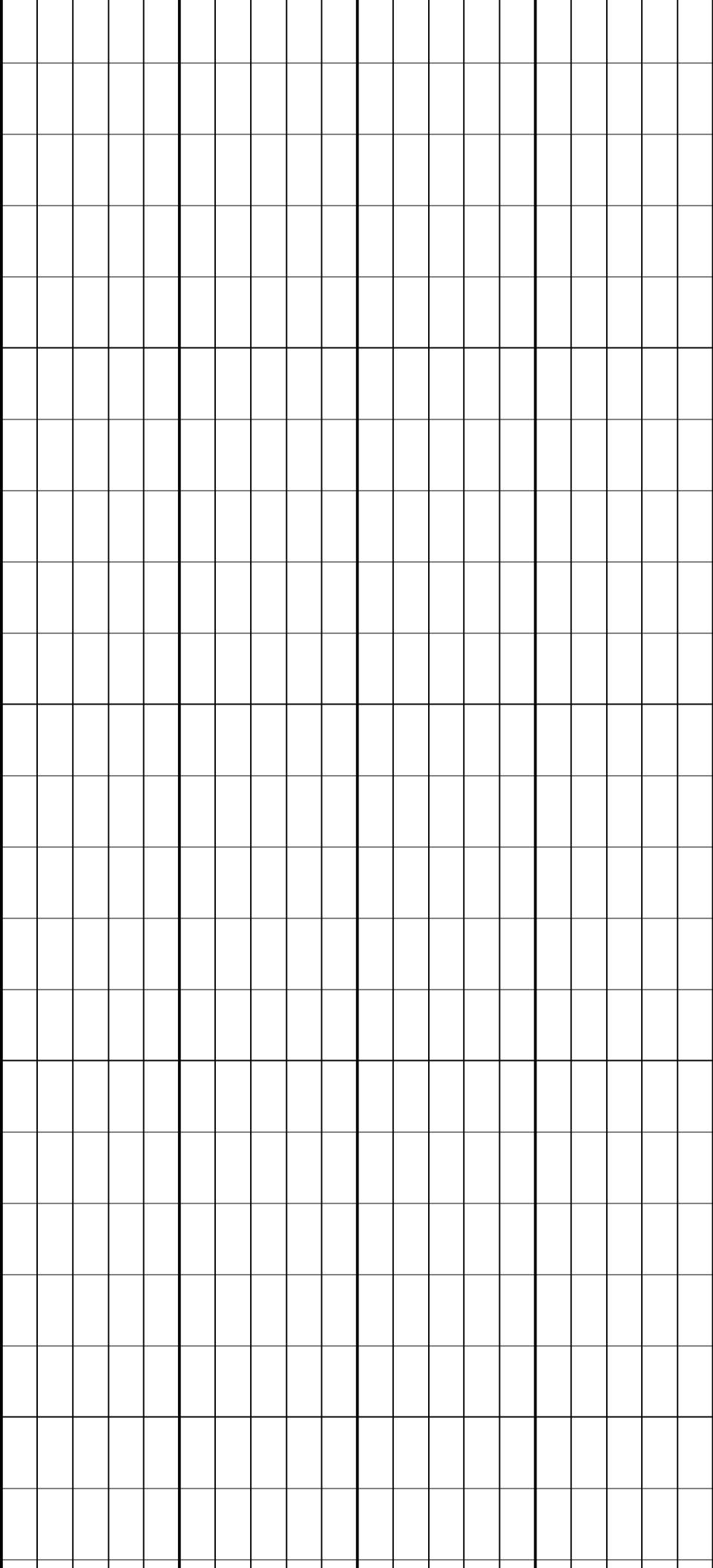
2700





2708

2710



File #1.1.6

1:48 HIGH RESOLUTION

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

NEUTRON POROSITY PERCENT	
30	-10
DENSITY POROSITY PERCENT	
70 30	30 -10
-10	-50
COMPENSATED BULK DENSITY G/CC	
3.0 2.0	4.0 3.0
1.0	2.0
PE CROSS-SECTION BARN/ ELECTRON	DENSITY CORRECTION G/CC
0	10 -0.25 0.25

* Borehole Zone Factors *

Zone 1 99999.0 to 0.0 Feet	
Fluid Density	1.00 g/cc
Drill Bit Size	7.875 in
Casing Diameter	5.500 in
Casing Thickness	0.250 in
Casing Correction (PHI N)	Disable

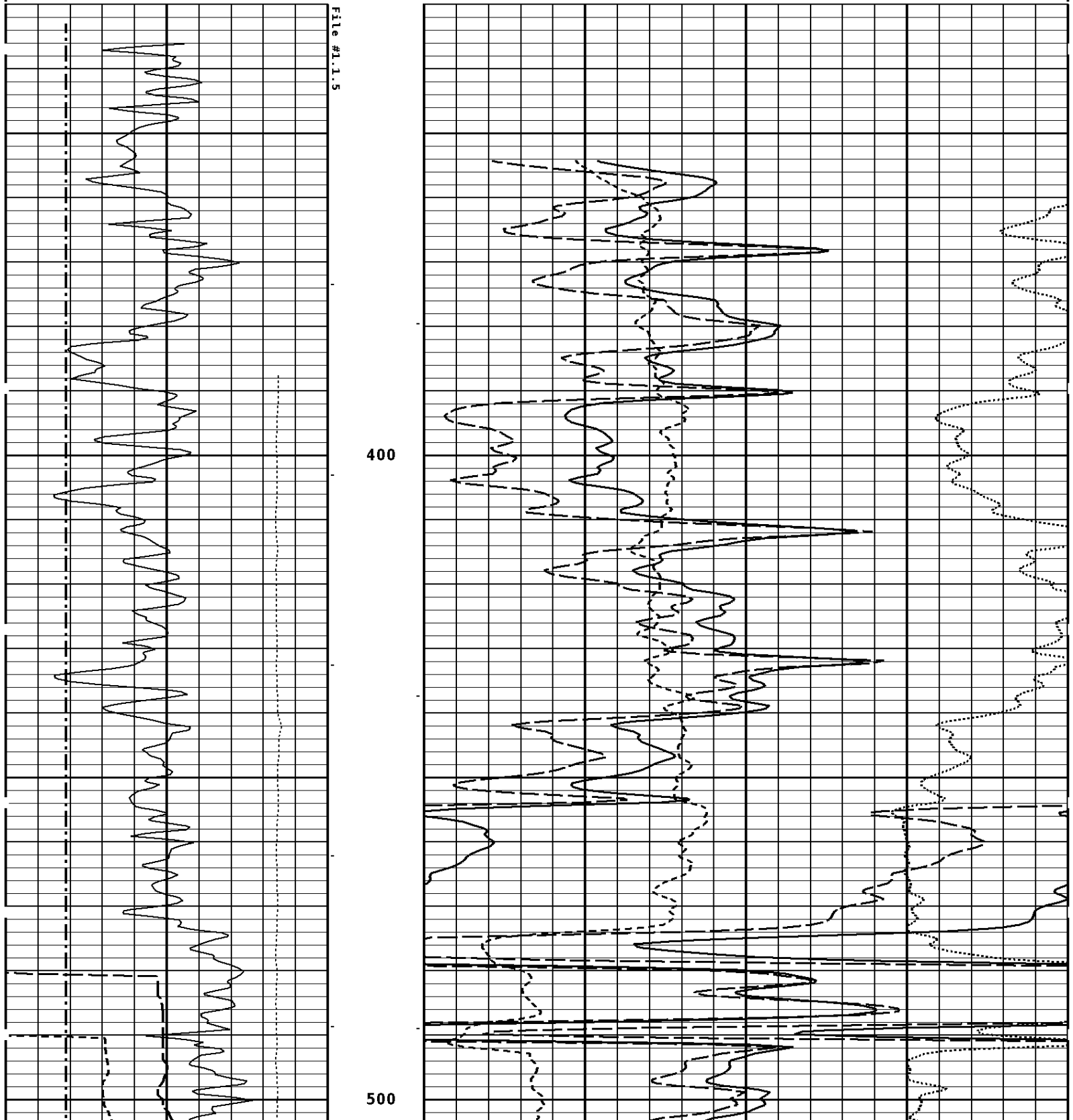
Well File: rd-rnr-ful-2-7-mstk-dip-jun-2	Scale: 1:240
Segment: V1.D1.S5 MN	Acquired: 2012-06/02 07:52 3.2.0-10932
Reference: 0	Processed: 2012-06/02 08:48 3.2.0-10932

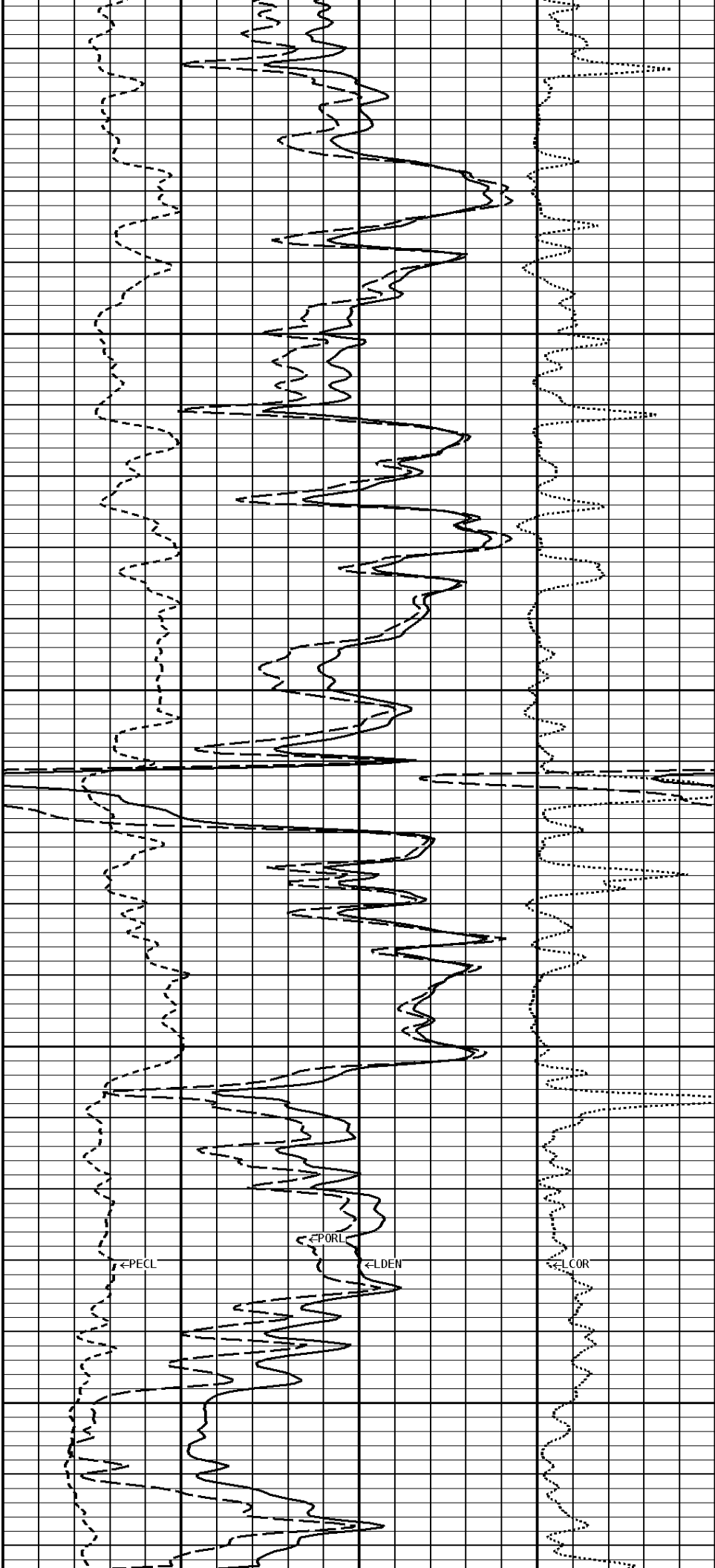
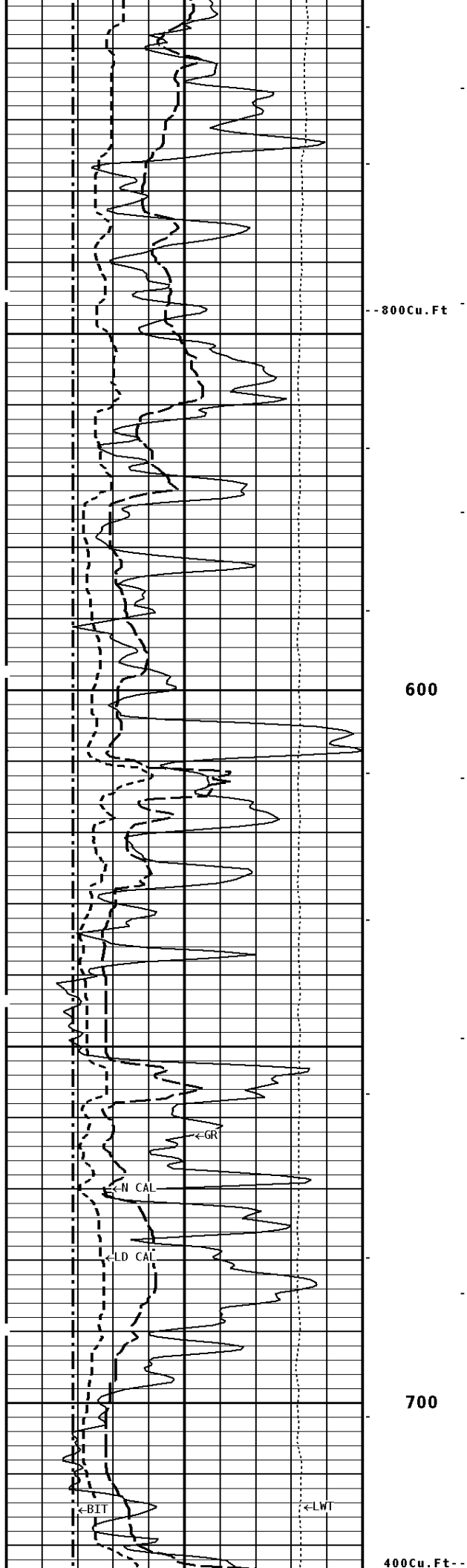
TENSION LBS	
10000	0
BIT SIZE INCHES (IN)	
6	16
DENSITY (X) CALIPER INCHES (IN)	
16 6	26 16
NEUTRON (Y) CALIPER INCHES (IN)	
16	26

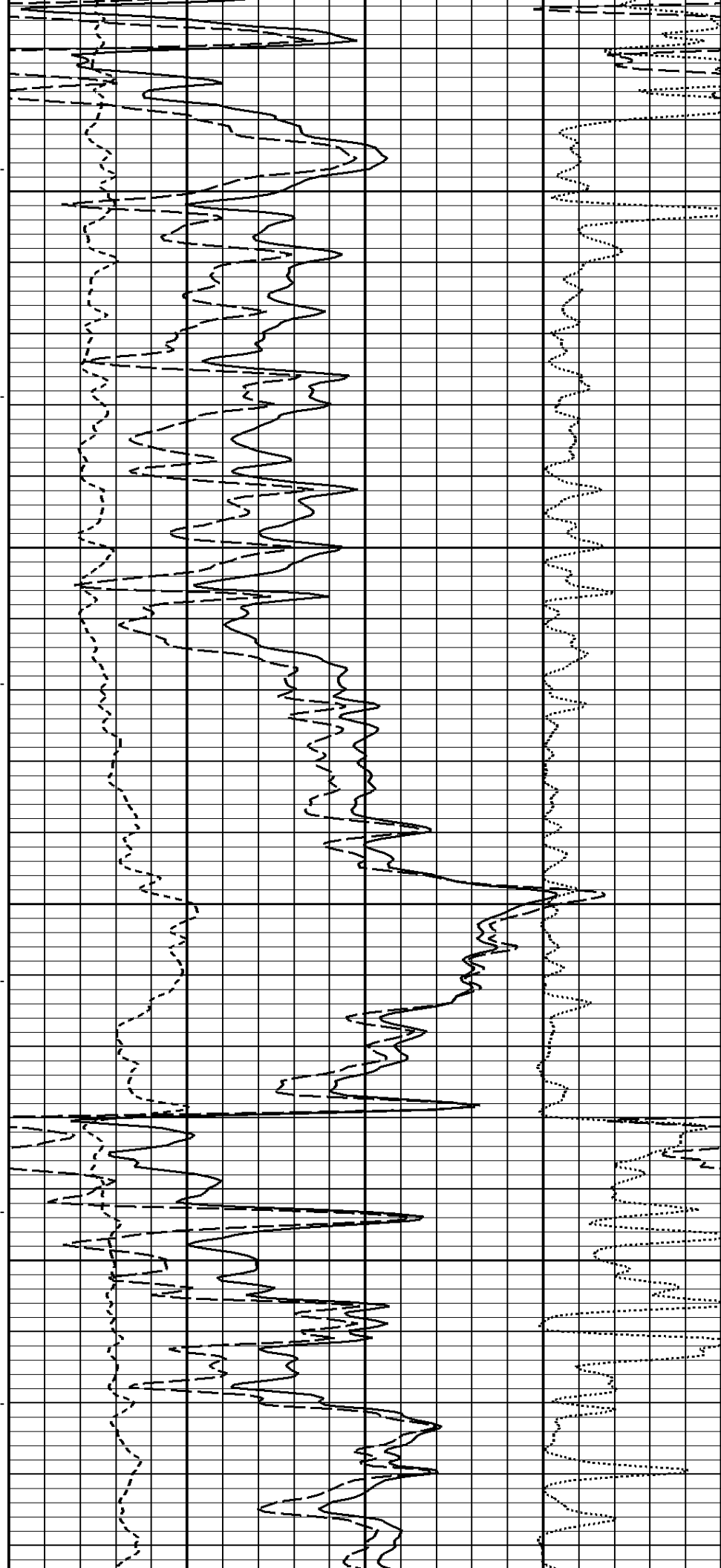
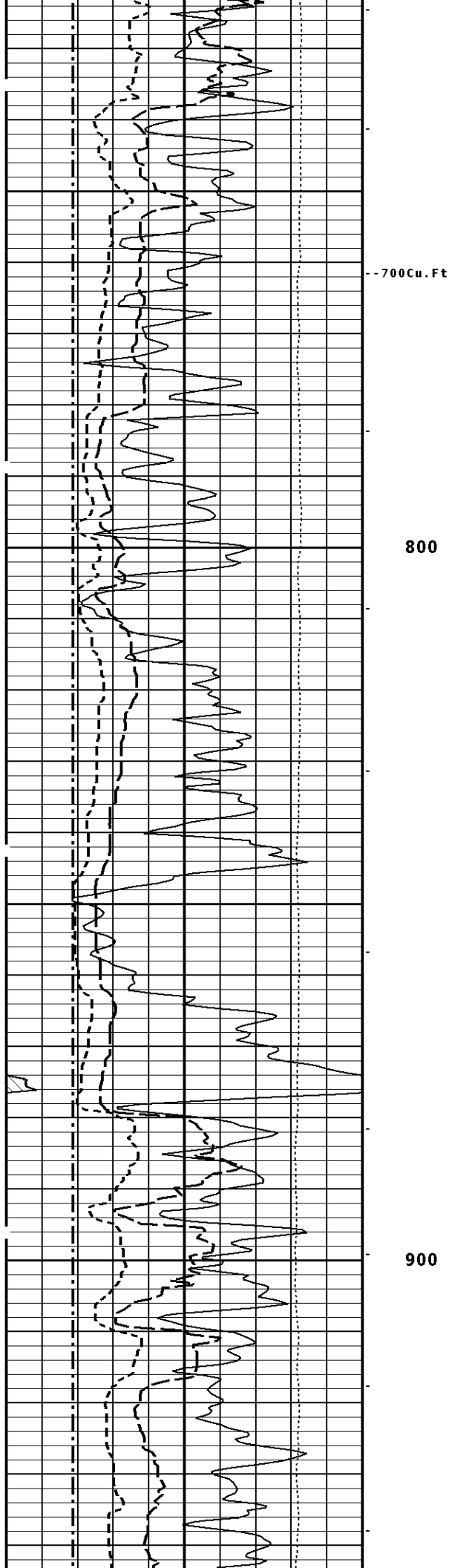
PE CROSS-SECTION BARN/ ELECTRON	DENSITY CORRECTION G/CC
0	10 -0.25 0.25
DENSITY POROSITY PERCENT (2.71 g/cc)	
70	30

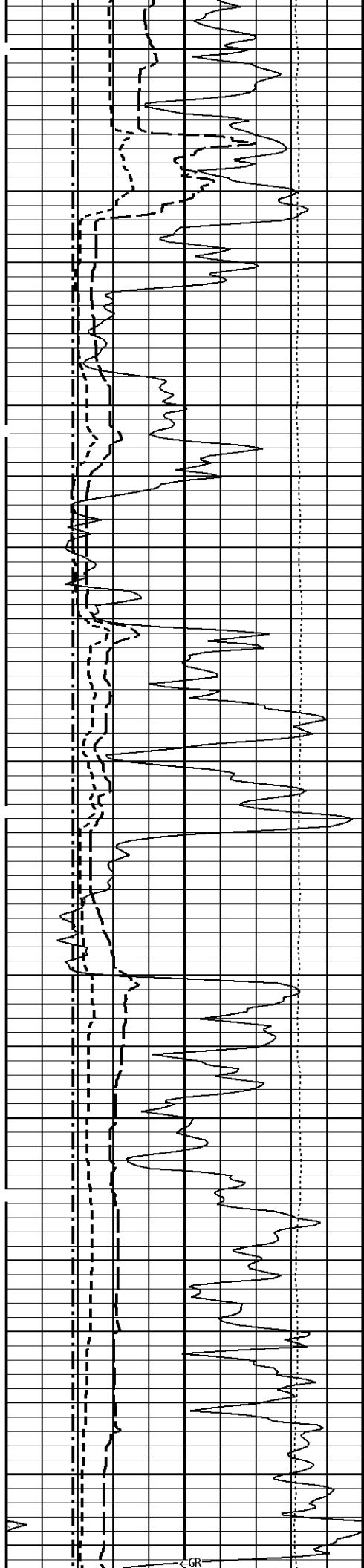
16	28	30	30	50
6	16	-10	-10	-50
GAMMA RAY API UNITS		- BHV AHV - CU. FT	COMPENSATED BULK DENSITY G/CC	
150	300		3.0	4.0
0	150		2.0	3.0
			1.0	2.0

1:240 MAIN SECTION
BULK DENSITY







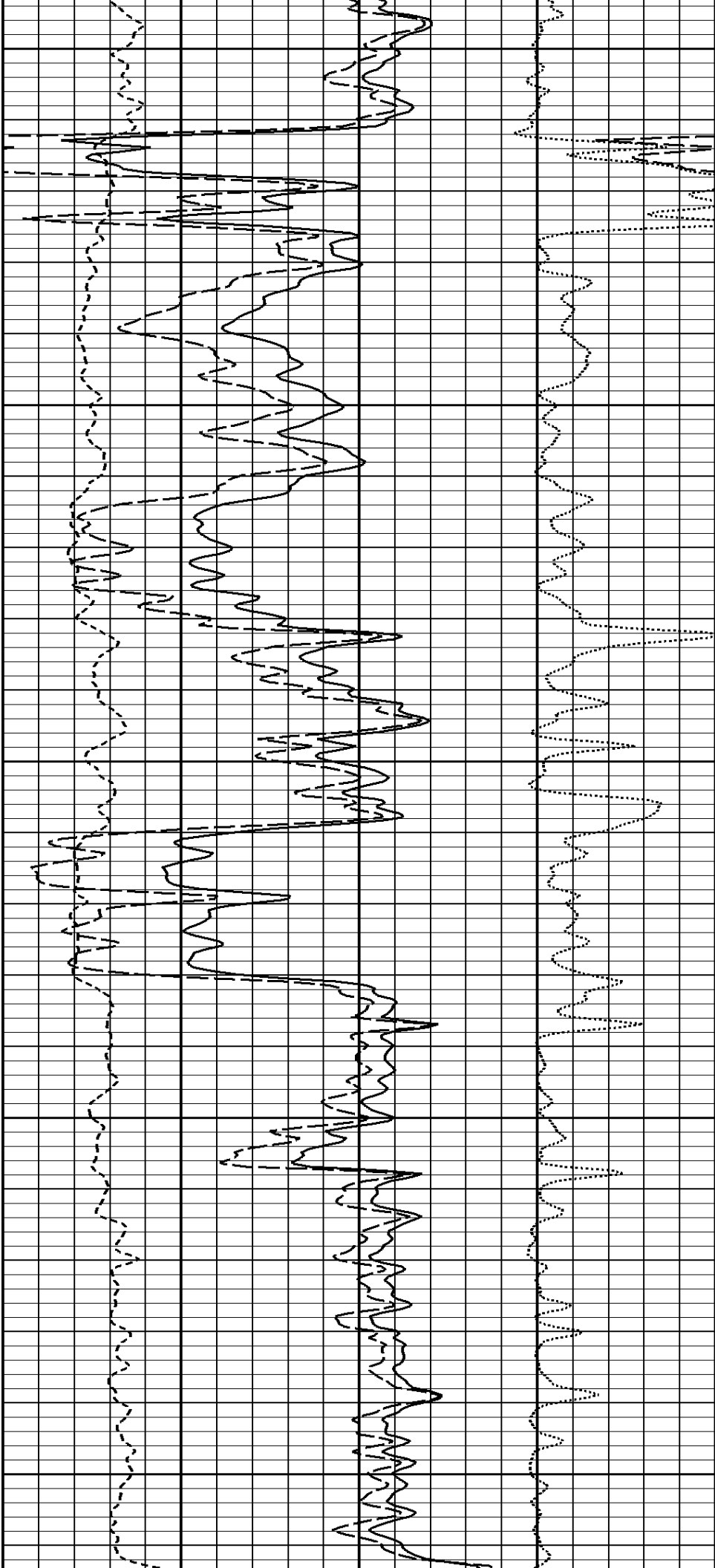


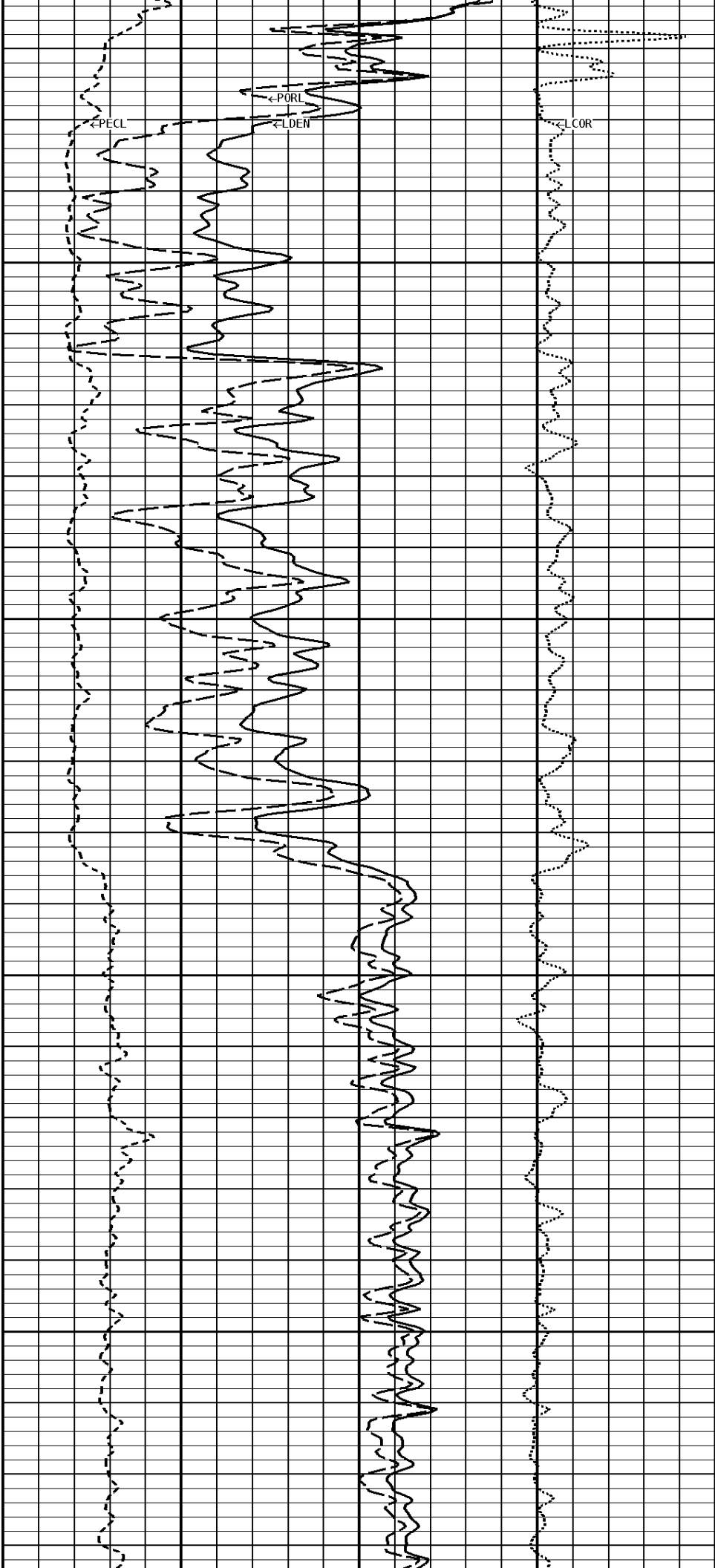
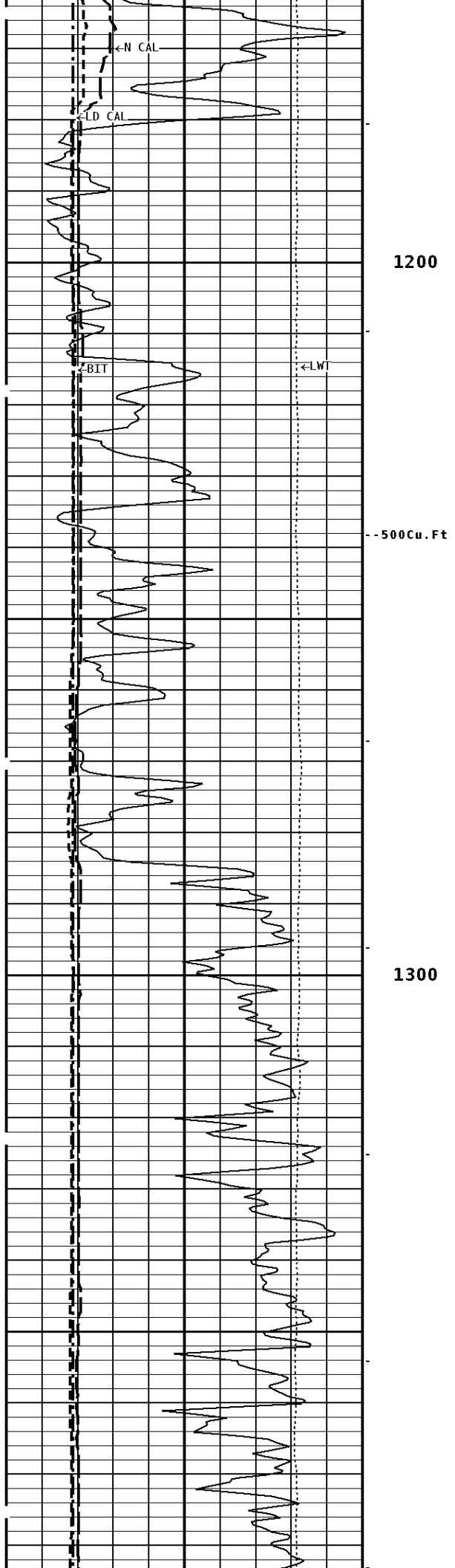
--600Cu.Ft--

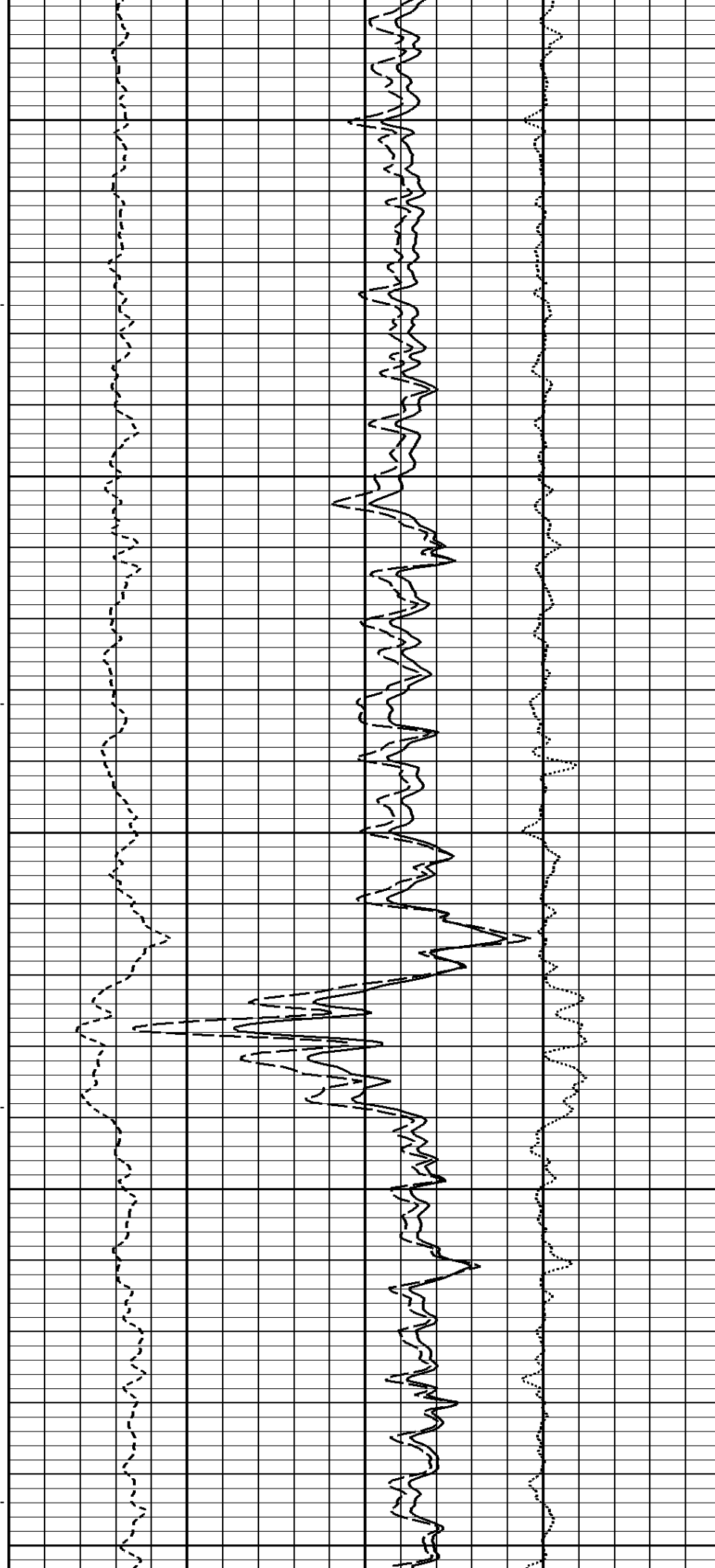
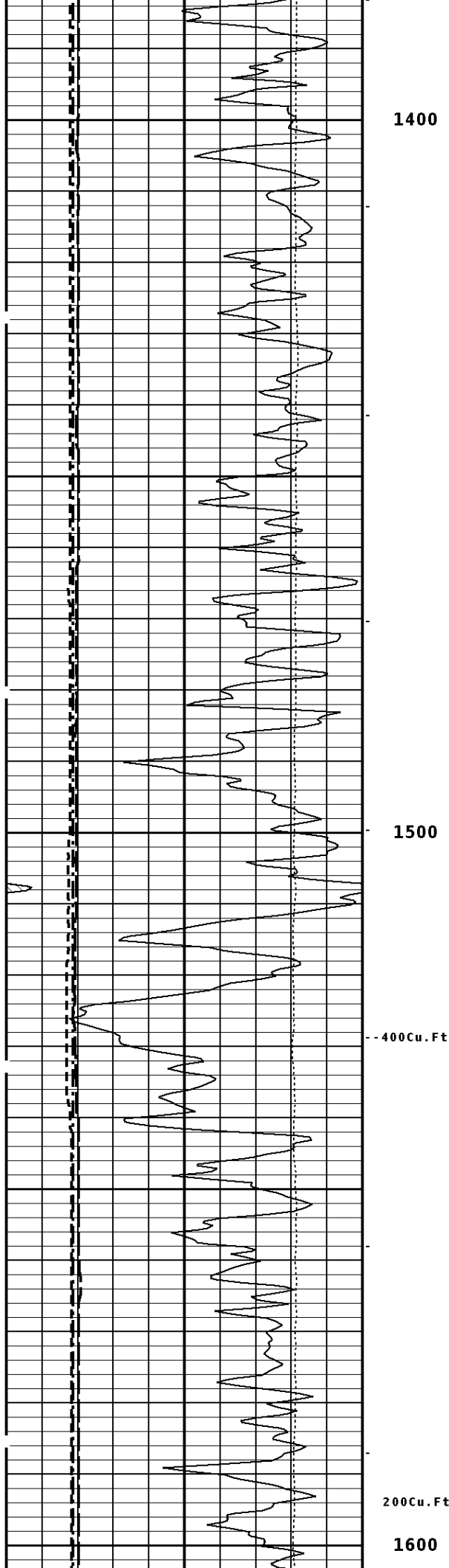
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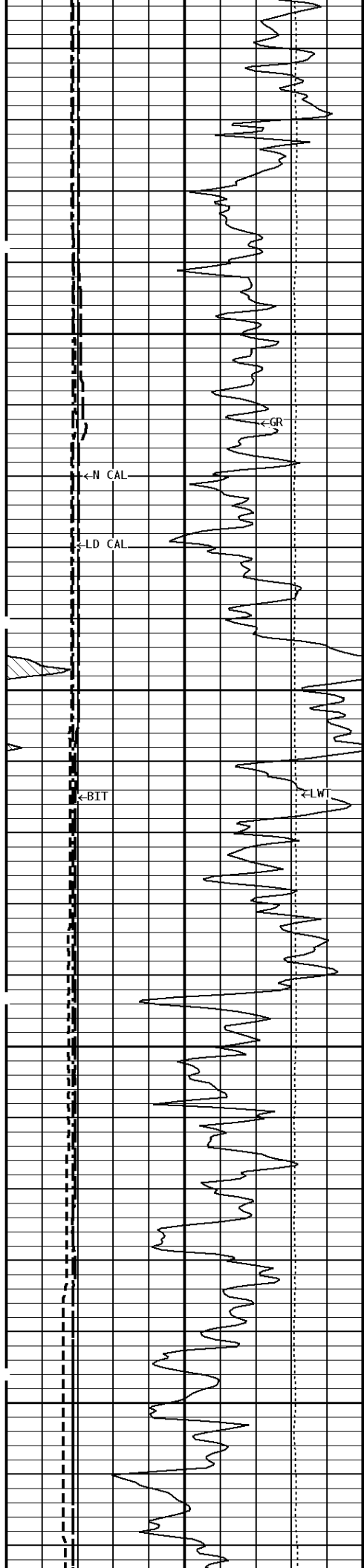
300Cu.Ft--

1100





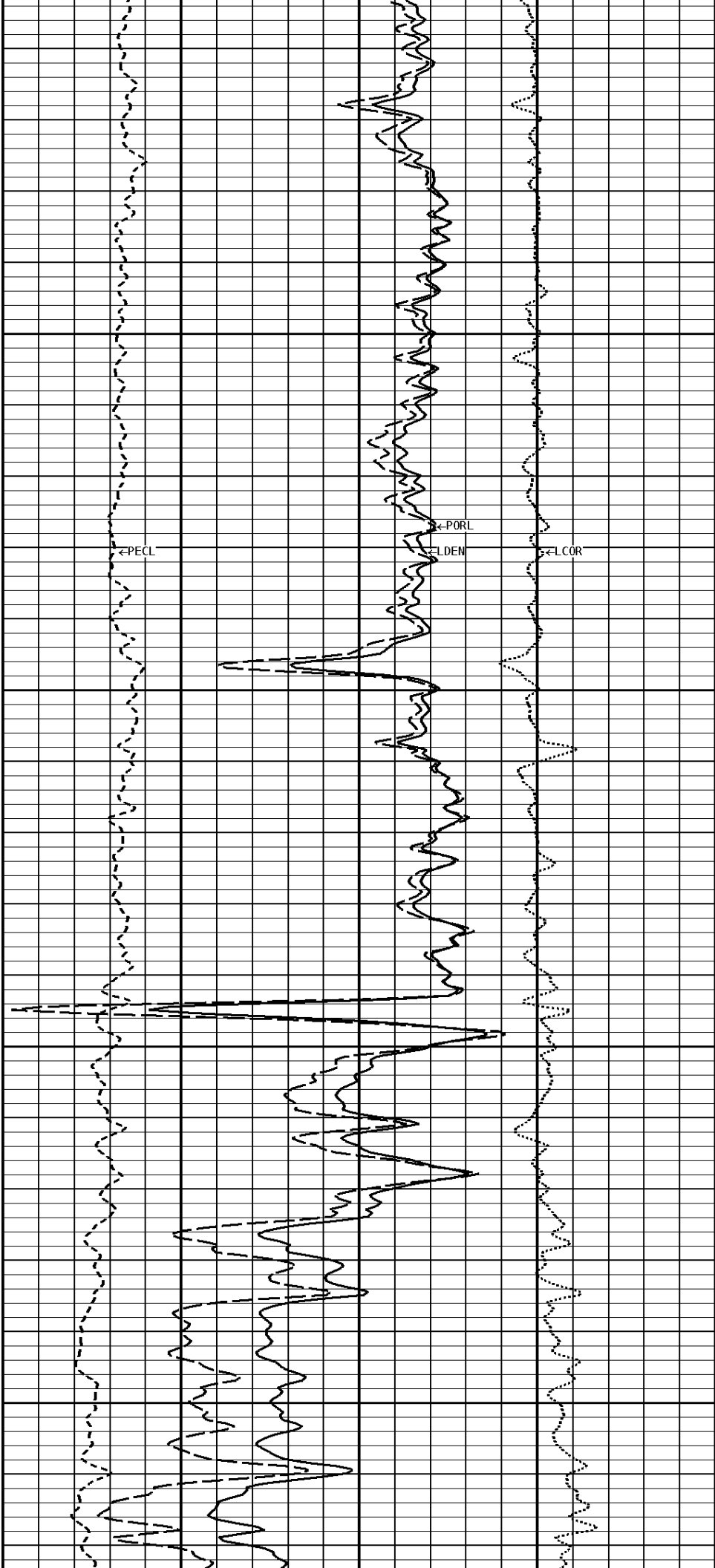


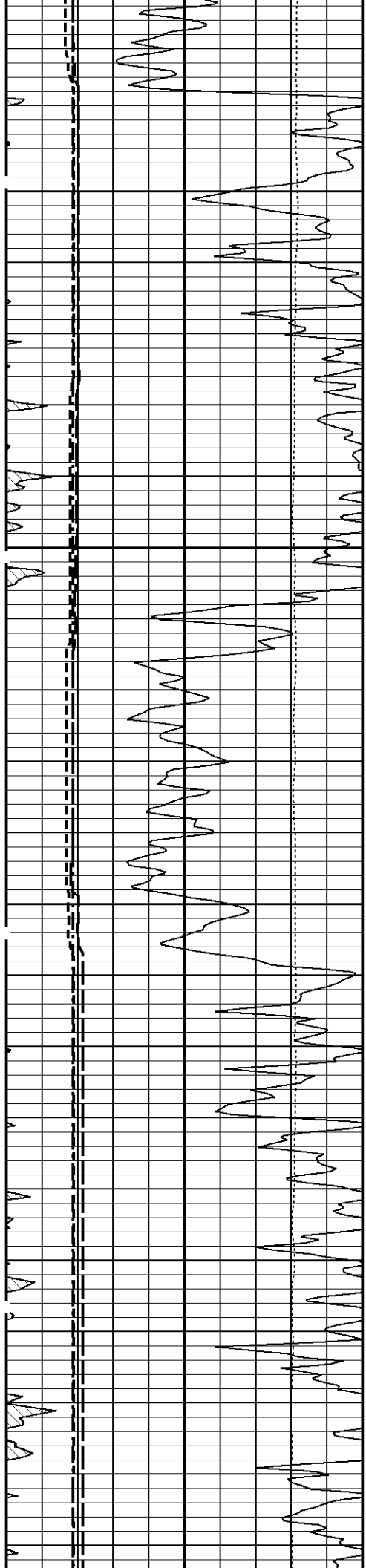


1700

1800

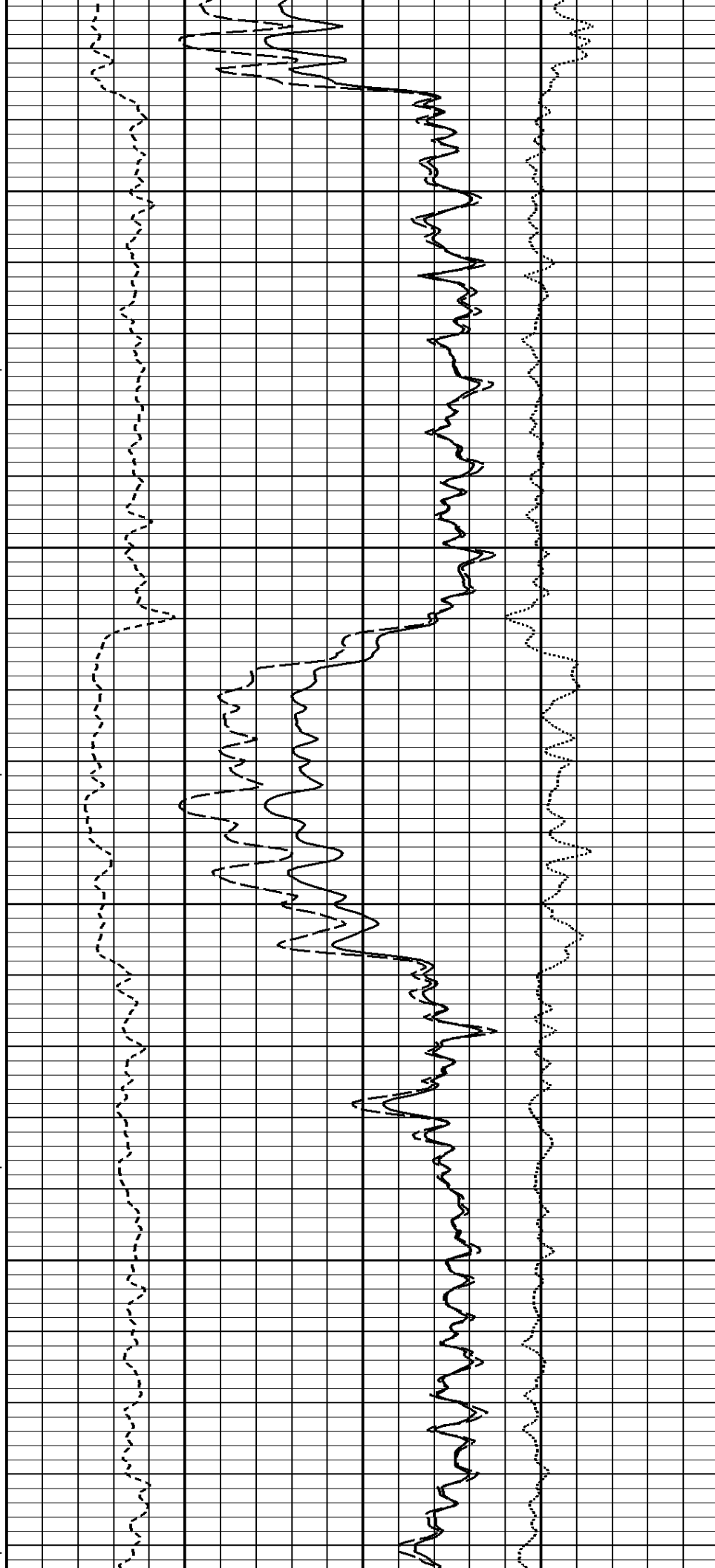
300 Cu. Ft

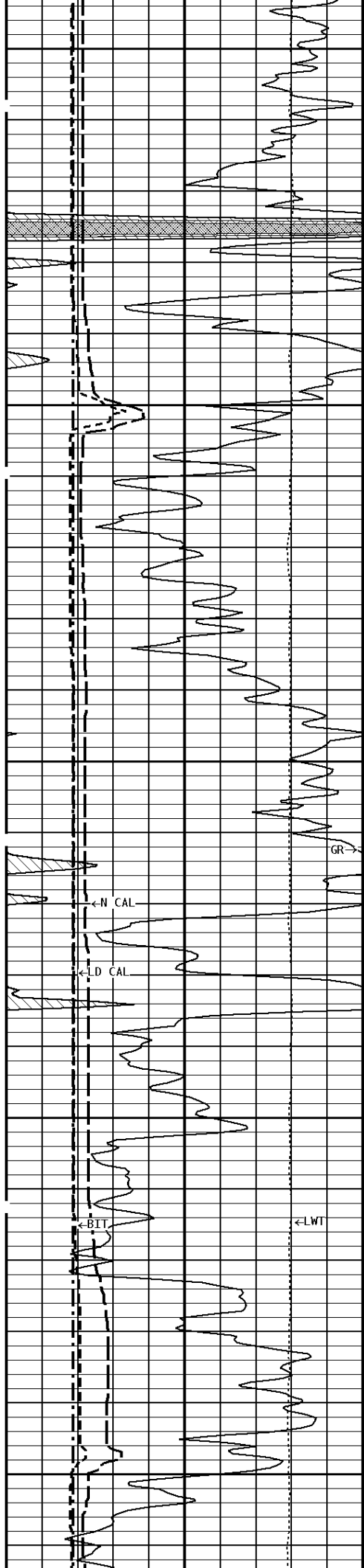




1900

2000





2100

--200Cu.Ft--

100Cu.Ft--

GR

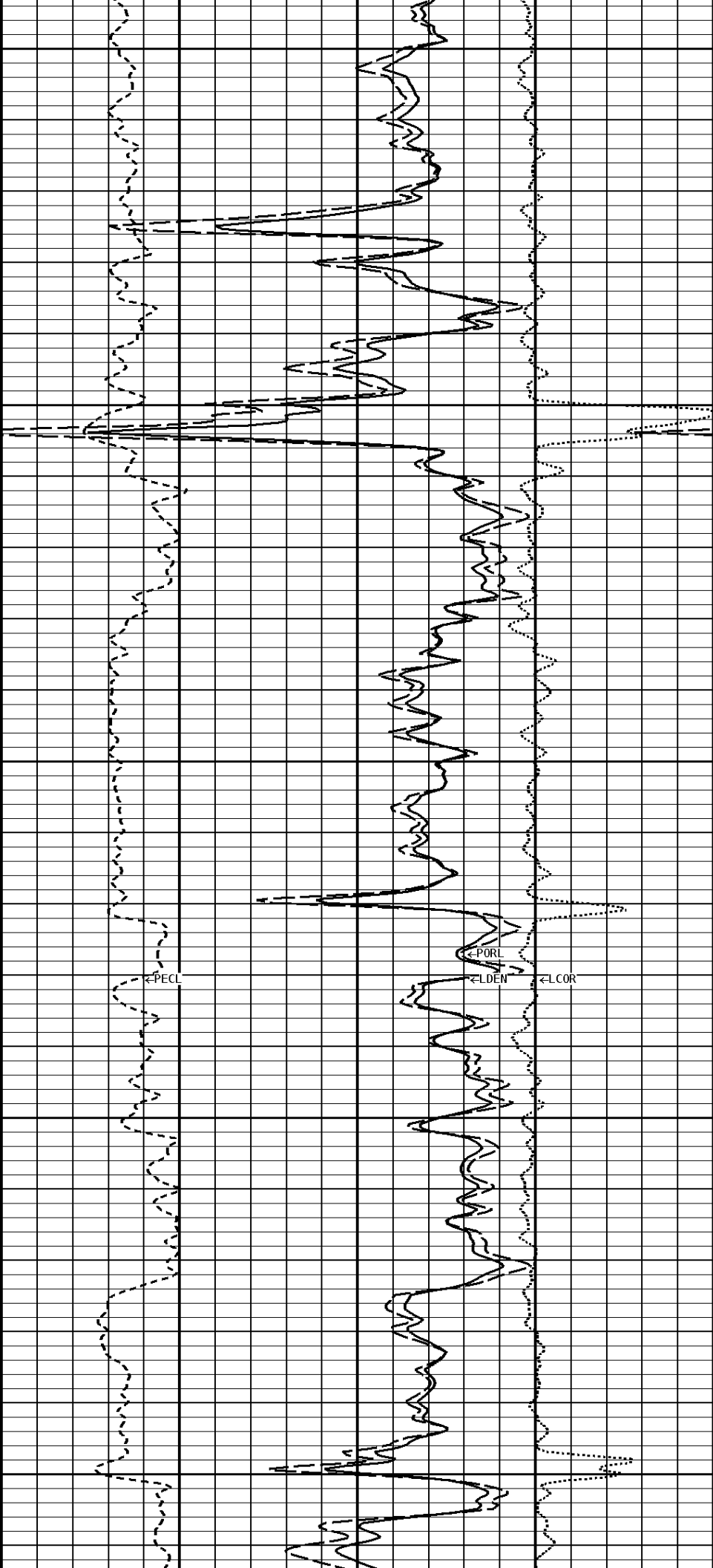
N CAL

LD CAL

BIT

LWT

2200

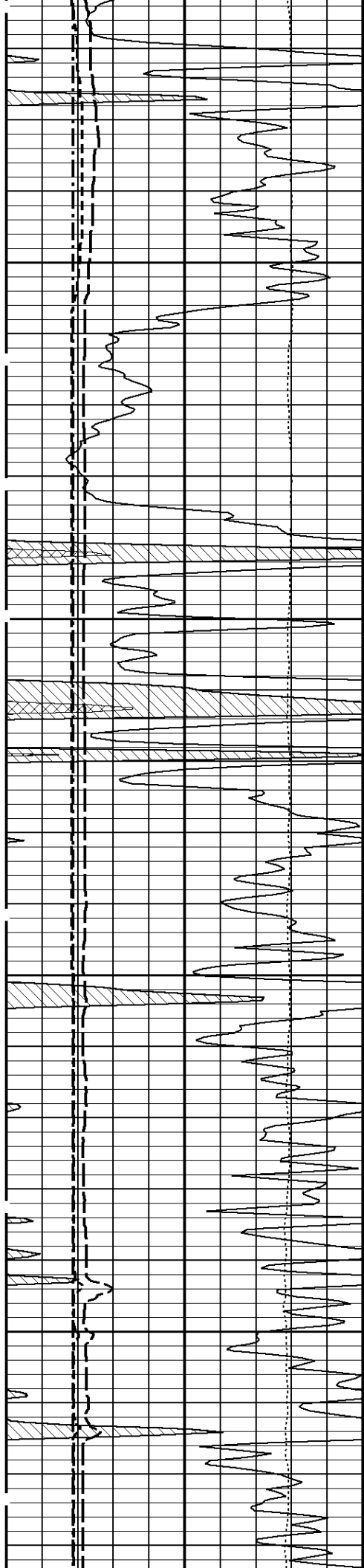


PECL

PORL

LDEN

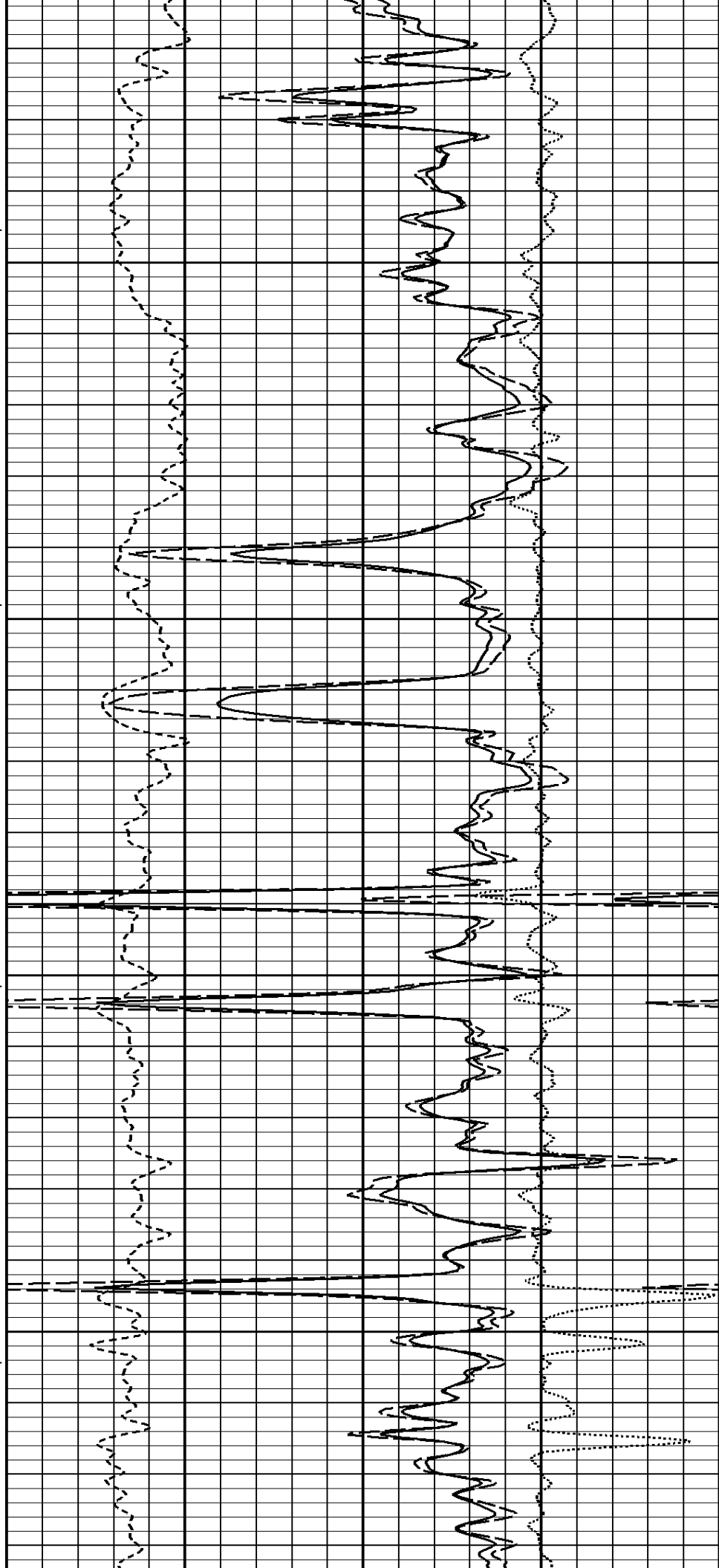
L COR

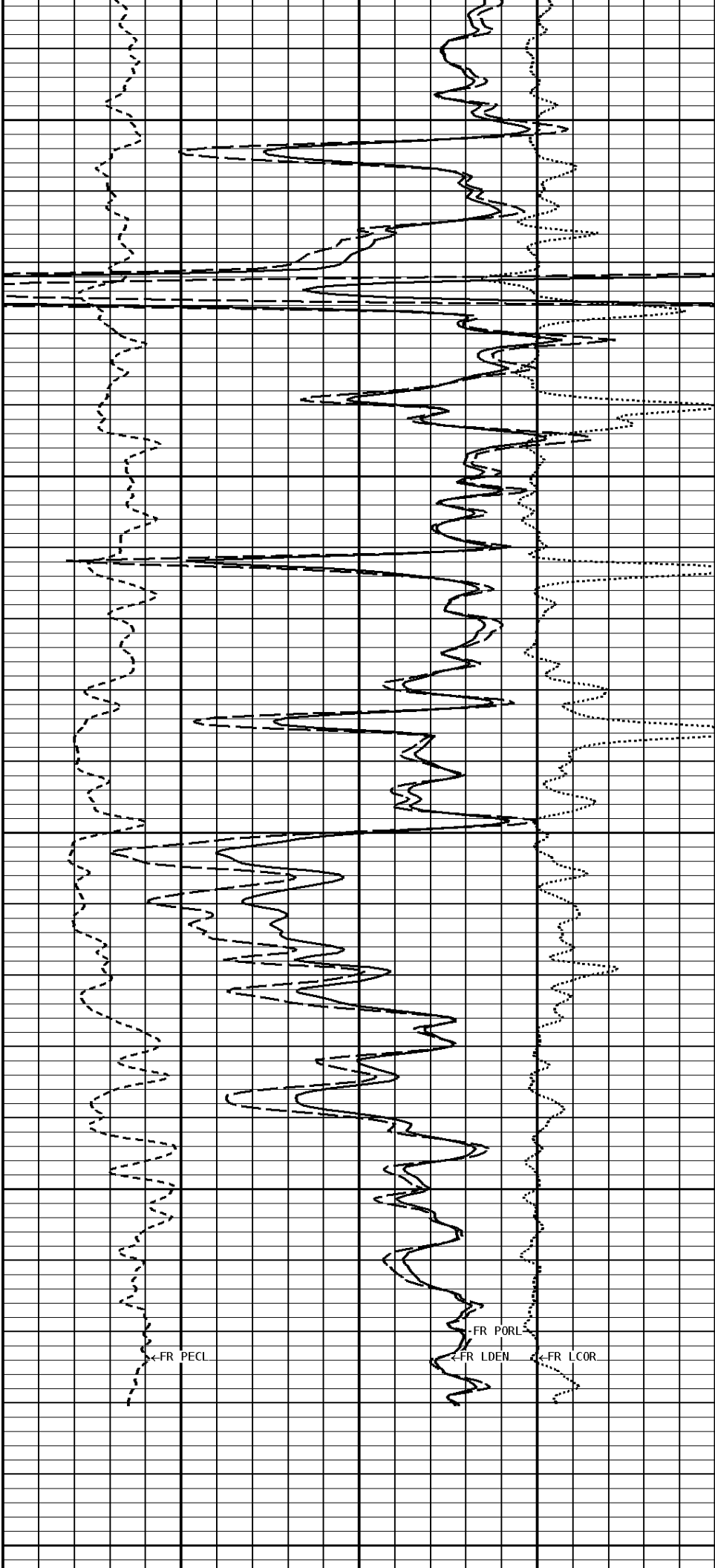
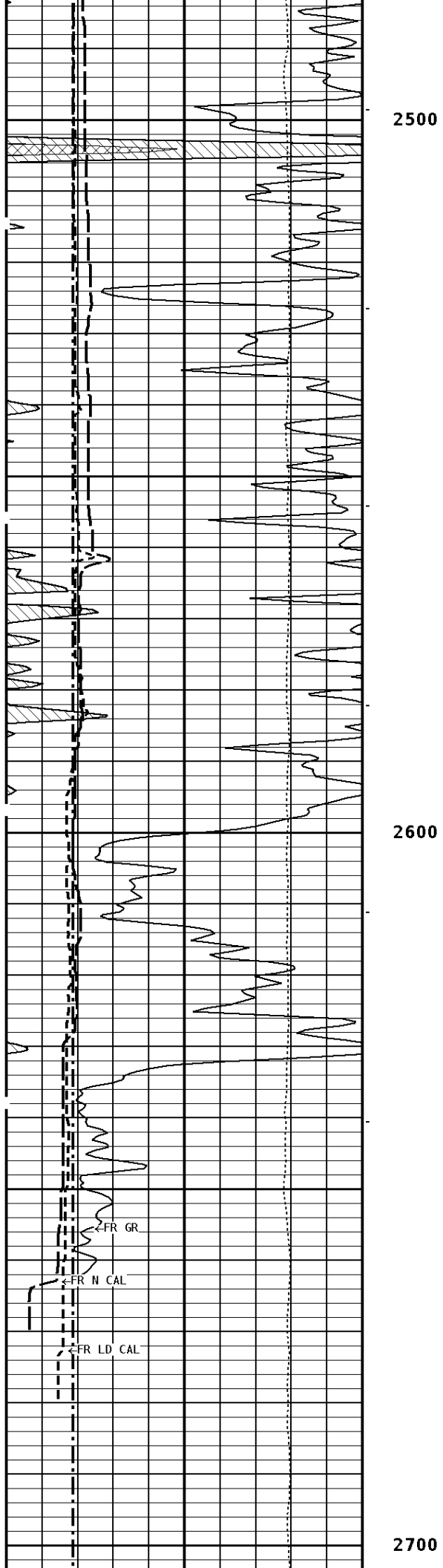


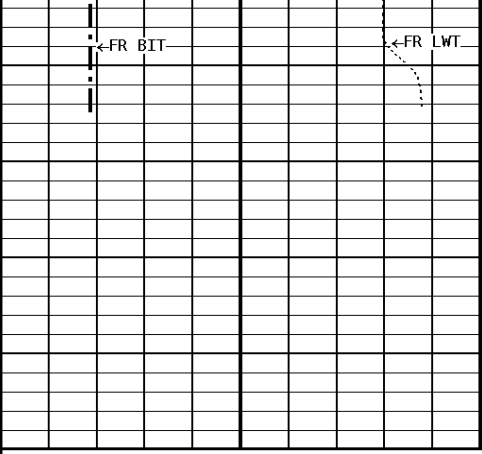
2300

--100Cu. Ft

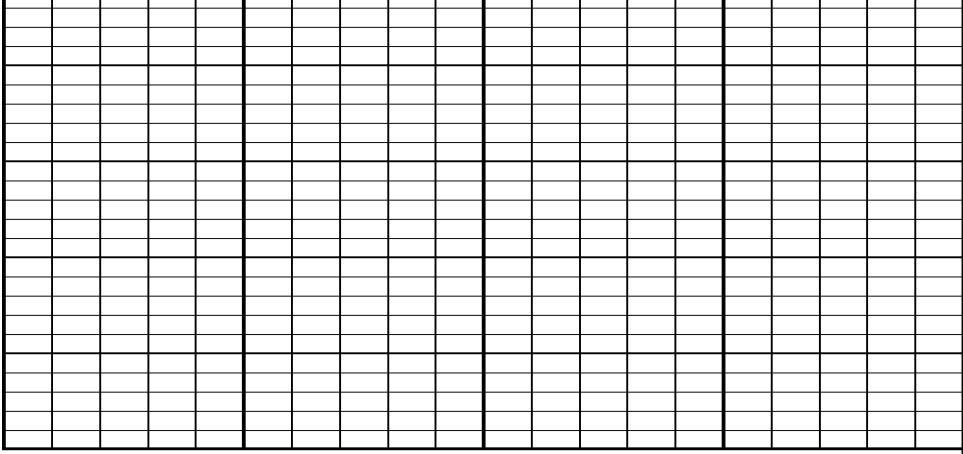
2400







2708



1:240 MAIN SECTION
BULK DENSITY

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

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

* 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 GRT-B					
Performed : 04-APR-2011			Time : 19:28		
Sensor Suite : GR-GR5			ID : GRT-BC-41		
	Measured	Units	Calibrated	Units	
	Background	Jig	Jig		
GR	46	346	CPS	175	GRAPI
Shop Calibration CNT-AA					
Performed : 02-NOV-2011			Time : 12:06		
Sensor Suite : GR-GR5					

Sensor Suite : CALI-BCN				ID : NDI-BB-129	
CL # 1	Jig - Measured		Jig - Calibrated		Units
	Ring#1	Ring#2	Ring#1	Ring#2	
	9.0	14.0	6.0	12.0	IN.
Performed : 17-May-2012			Time : 13:18		
Sensor Suite : BHC NEUT			ID : CNP-AA-112		
Source ID : N-1045					
N/F	Tank		Verification		Units
	Measured	Calibrated	Jig		
Porosity	4.0675	3.6893	3.6921		%
	26.7	20.5	20.5		
Shop Calibration					
LDT-DF					
Performed : 01-MAR-2011			Time : 04:24		
Sensor Suite : CALI-LTH			ID : PDT-GA-464		
CL # 1	Jig - Measured		Jig - Calibrated		Units
	Ring#1	Ring#2	Ring#1	Ring#2	
	7.3	13.3	6.0	12.0	IN.
Performed : 17-May-2012			Time : 10:51		
Sensor Suite : BHCPELNG			ID : LDP-DA-067		
Source ID : CSV-B45					
Short Space					
	BKGD	Al	Mg	Al+Fe	Units
LSW1	65	919	1491	593	CPS
LSW2	70	1027	1644	747	CPS
LSW3	256	2342	3792	1992	CPS
LSW4	308	2114	3072	1858	CPS
LSW5	42	61	63	58	CPS
LSW6	70	73	73	73	CPS
LSW7	52	55	55	54	CPS
LSW8	9	10	11	10	CPS
QS	0.144	0.134	0.137	0.144	
PES			2.778	5.967	
SSDN		2.600	1.680		G/CC
Long Space					
	BKGD	Al	Mg	Al+Fe	Units
LLW1	94	1117	4649	667	CPS
LLW2	103	1826	7322	1336	CPS
LLW3	397	3225	12338	2778	CPS
LLW4	503	1553	4739	1418	CPS
LLW5	54	62	97	61	CPS
LLW6	172	169	157	166	CPS
LLW7	105	103	100	105	CPS
LLW8	3	5	14	5	CPS
QL	0.243	0.241	0.221	0.226	
PEL			2.697	5.458	
LSDN		2.600	1.680		G/CC
Shop Calibration					
MST-DA					
Performed : 02-NOV-2011			Time : 12:14		
Sensor Suite : CALI-MSN			ID : MLT-DA-21		
CL # 1	Jig - Measured		Jig - Calibrated		Units
	Ring#1	Ring#2	Ring#1	Ring#2	
	6.5	11.1	6.0	12.0	IN.
Performed : 27-SEP-2011			Time : 23:19		
Sensor Suite : MSTDA-NI			ID : MLT-DA-21		
Internal					
	Measured		Calibrated		
	Zero	Reference	Zero	Reference	Units
INV-V	0.0	29798.9	0.00	1546.00	MV
NOR-V	5.3	30095.1	0.00	1546.00	MV
IN-C	0.0	60566.2	0.00	15.46	UA
INV-R				32.34	OHMM
NOR-R				55.11	OHMM
Performed : 27-SEP-2011			Time : 23:19		
Sensor Suite : MSTDAMSF			ID : MLT-DA-21		
Internal					
	Measured		Calibrated		
	Zero	Reference	Zero	Reference	Units
MSFC	15.0	42144.9	0.00	1522.00	UA

MSFB	29116.0	30973.0	0.00	1522.00	MA
MOM1	0.0	43106.2	0.00	1522.00	MV
MSFRA				43.30	OHMM