

# Tucker

ENERGY SERVICES

COMPENSATED NEUTRON

PEL DENSITY LOG

**Company** RUNNING FOXES PETROLEUM, INC  
**Well** DICKERSON #15-22 SWD  
**Field**  
**Country** ALLEN  
**State** KANSAS  
**Country** USA  
**API No.** 015-001-30348-00-00

**File No** : TUL-57733  
**Company** : RUNNING FOXES PETROLEUM, INC  
**Well** : DICKERSON #15-22 SWD  
**Field** :  
**Country** : ALLEN  
**State** : KANSAS  
**Country** : USA  
**API No** : 015-001-30348-00-00

**Location** :  
 125' FSL & 2180' FEL

**LSD** : **Sect** : 22 **Twp** : 24S **Rge** : 21E

Date	Run Number	Depth--Driller	Depth--Logger	First Reading	Last Reading	Casing--Driller	Casing--Logger	Bit Size	Casing Size	Hole Fluid Type	Density	Fluid Loss	PH/Viscosity	Sample Source	RM@Measured Temp.	RMF@Measured Temp	RMC@Measured Temp.	Source RMF/RMC	RM@BHT	Time Circulation Stopped	Max Recorded Temp.	Equipment/Base	Recorded By	Witnessed By	
2012-04-04	1	1450.0	1445.0	1444.0	20.0	20.0	20.0	7.875	8.625	WATER	0.0	0.0	0.0	MEASURED	5.000 @ 82 F	4.000 @ 82 F	6.000 @ 82 F	CALCULATED/CALCULATED	4.315 @ 95 F	2012-04-04 10:00	95	TRK-125	TULSA	R AUSTIN	C. COUNTS
		Elevations:		KB 0.00		DF 0.00		GL 1092.00		Services:		CNT		LDT		PIT									

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	1450.00	8.625	32.00	20.00

Run Number	1		
Date	2012-04-04		
Date/Time On Bottom	2012-04-04 14:30		
Depth to Fluid	402.0	Ft	
Salinity	0.000	PPM	
RMF@BHT	3.452	@ 95	F
RMC@BHT	5.178	@ 95	F

Run Number 1

Comments

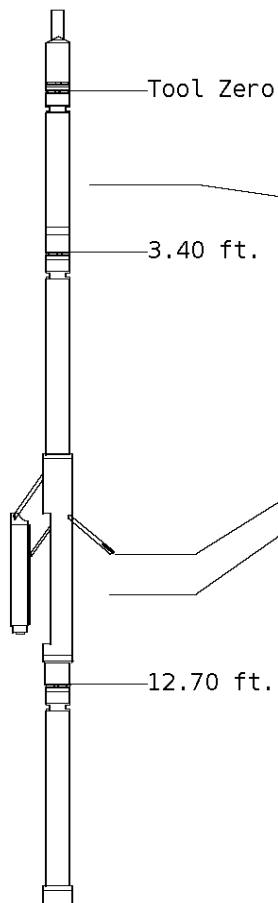
ALL PRESENTATIONS AS PER CUSTOMER REQUEST  
 GRT, CNT, LDT, AND PIT RUN IN COMBINATION.  
 CALIPERS ORIENTED ON X-Y AXIS.  
 2.71 G/CC USED TO CALCULATED POROSITY.  
 ANNULAR HOLE VOLUME CALCULATED USING 5.500" PRODUCTION CASING.

GRT: GRP.  
 CNT: PHIN, CLCNIN  
 LDT: PORL, LCORN, PECLN, LDENN, PORLLS, CLLDIN.  
 PIT: ILD, ILM, SPU, SFLAEC

OPERATORS:  
 M.BURKE

### Tool String Schematic

**Total Tool Length** - 43.49 ft.  
**Maximum Outside diameter** - 4.80 in.  
**Net Weight in Air** - 743.00 lbs.



**Tool:** GRT-B      **Length:** 3.40 ft.    **O.D.** 3.60 in.  
 Gamma Ray Controller

**Sonde ID** :GRT-BB-109

Measure Point	Tool Offset	Stack Offset	Bottom Offset
GRP	2.00	2.00	41.49

**Tool:** CNT-AA      **Length:** 9.30 ft.    **O.D.** 4.36 in.  
 Compensated Neutron A Pad on NDT-A

**Sonde ID** :NDT-BB-123

**Source ID** :N-1045

**Pad ID** :CNP-AA-102

Measure Point	Tool Offset	Stack Offset	Bottom Offset
CLCN	6.00	9.40	34.09
PHIN	6.80	10.20	33.29

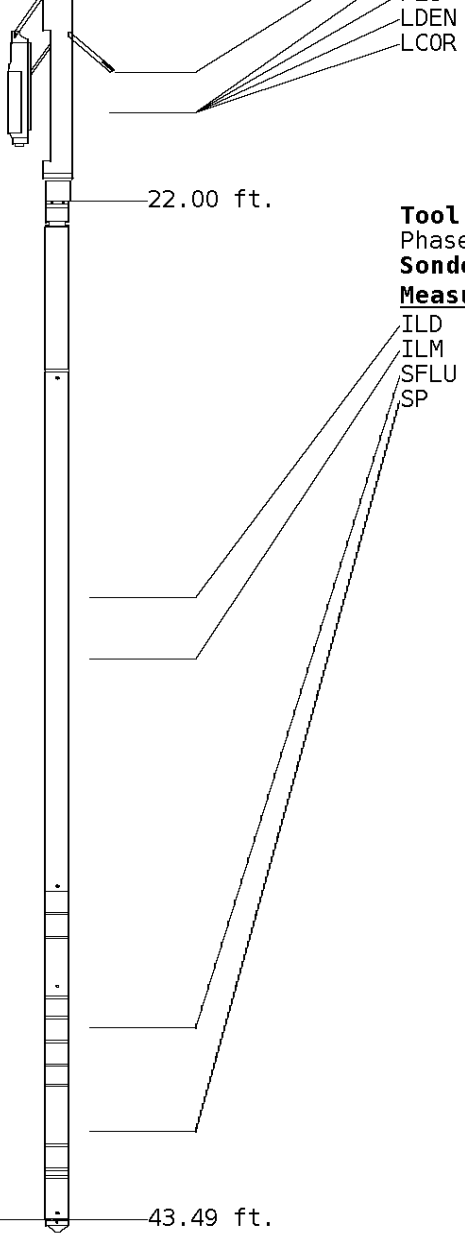
**Tool:** LDT-DA      **Length:** 9.30 ft.    **O.D.** 4.80 in.  
 Litho Density D Pad on NDT-A

**Sonde ID** :NDT-BB-139

**Source ID** :CSV\_B45

**Pad ID** :LDP\_DA\_35

Measure Point	Tool Offset	Stack Offset	Bottom Offset
CLLD	6.00	18.70	24.79
PEL	7.00	19.70	23.79
PES	7.40	20.10	23.39



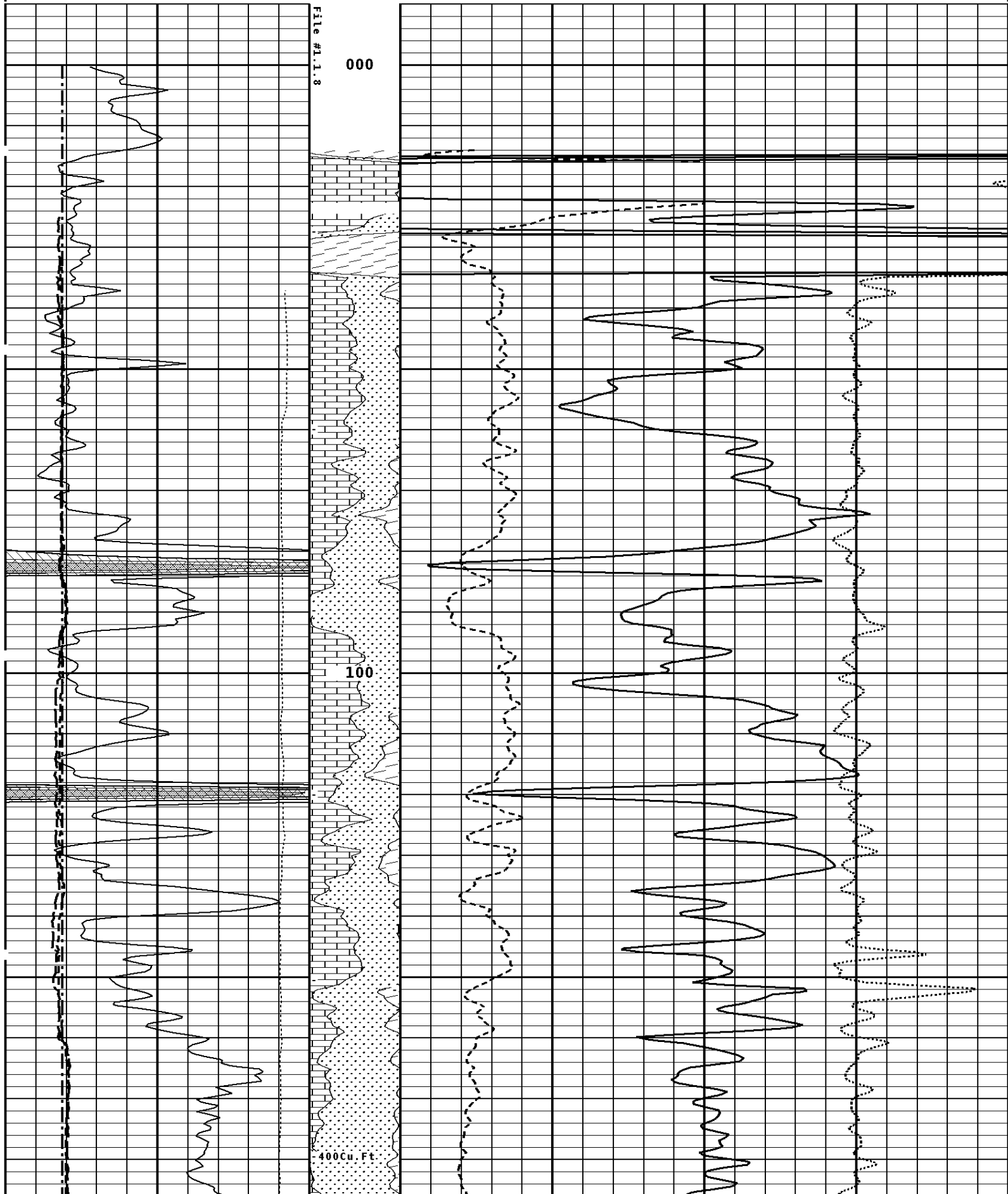
**Tool:** PIT-CA      **Length:** 21.49 ft.    **O.D.** 3.62 in.  
**Phased Dual Induction w/ RM & D**  
**Sonde ID** :PIT-BA-20

Measure Point	Tool Offset	Stack Offset	Bottom Offset
ILD	8.92	30.92	12.56
ILM	10.10	32.10	11.39
SFLU	17.49	39.49	4.00
SP	20.60	42.60	0.88

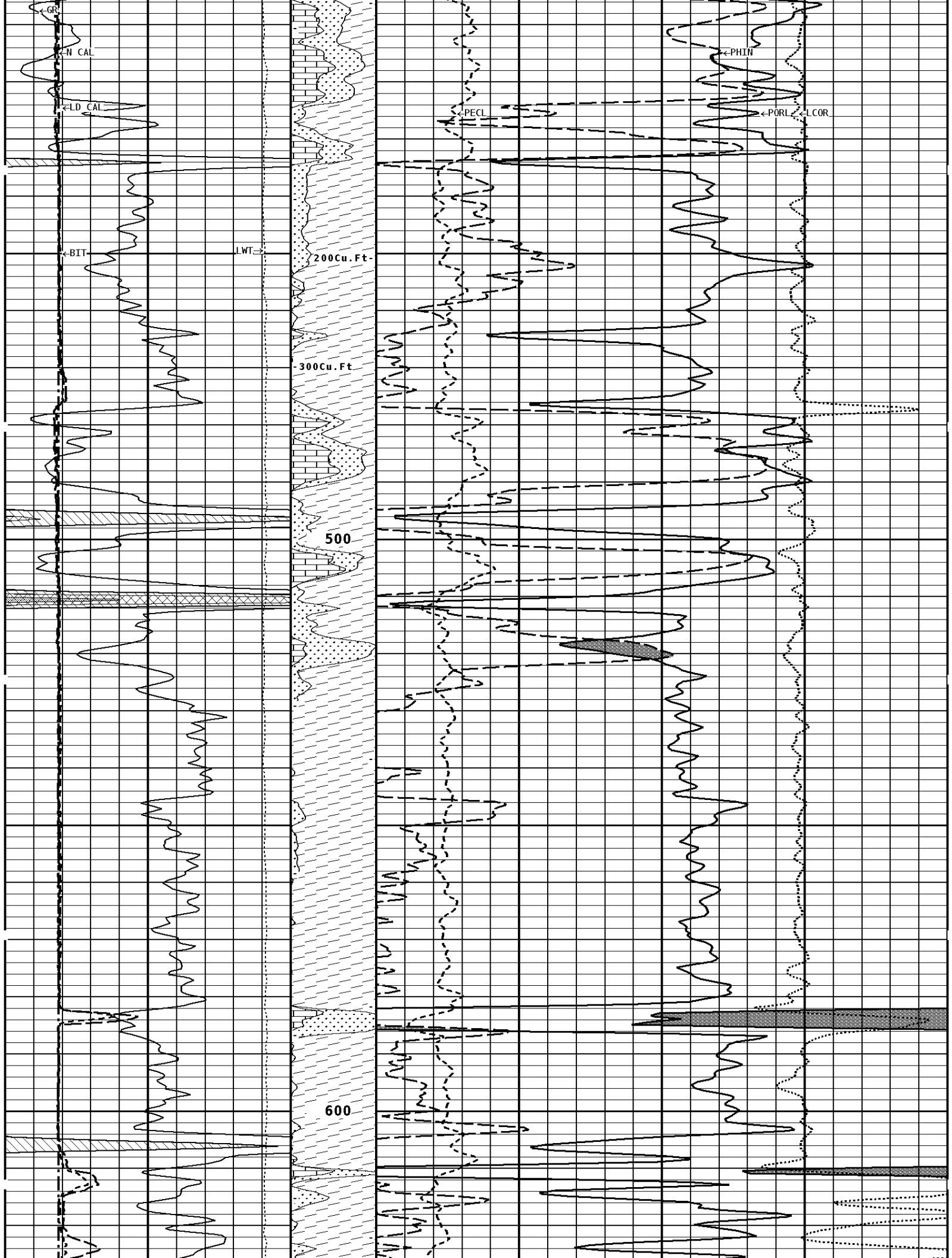
**Well File:** RFP\_DICKERSON-15-22-SWD\_APR4\_STK      **Scale:** 1:240  
**Segment:** V1.D1.S8 Reprocess of MAIN SECTION      **Acquired:** 2012-04/04 15:35 3.2.0-10801  
**Reference:** 0      **Processed:** 2012-04/04 17:03 3.2.0-10801

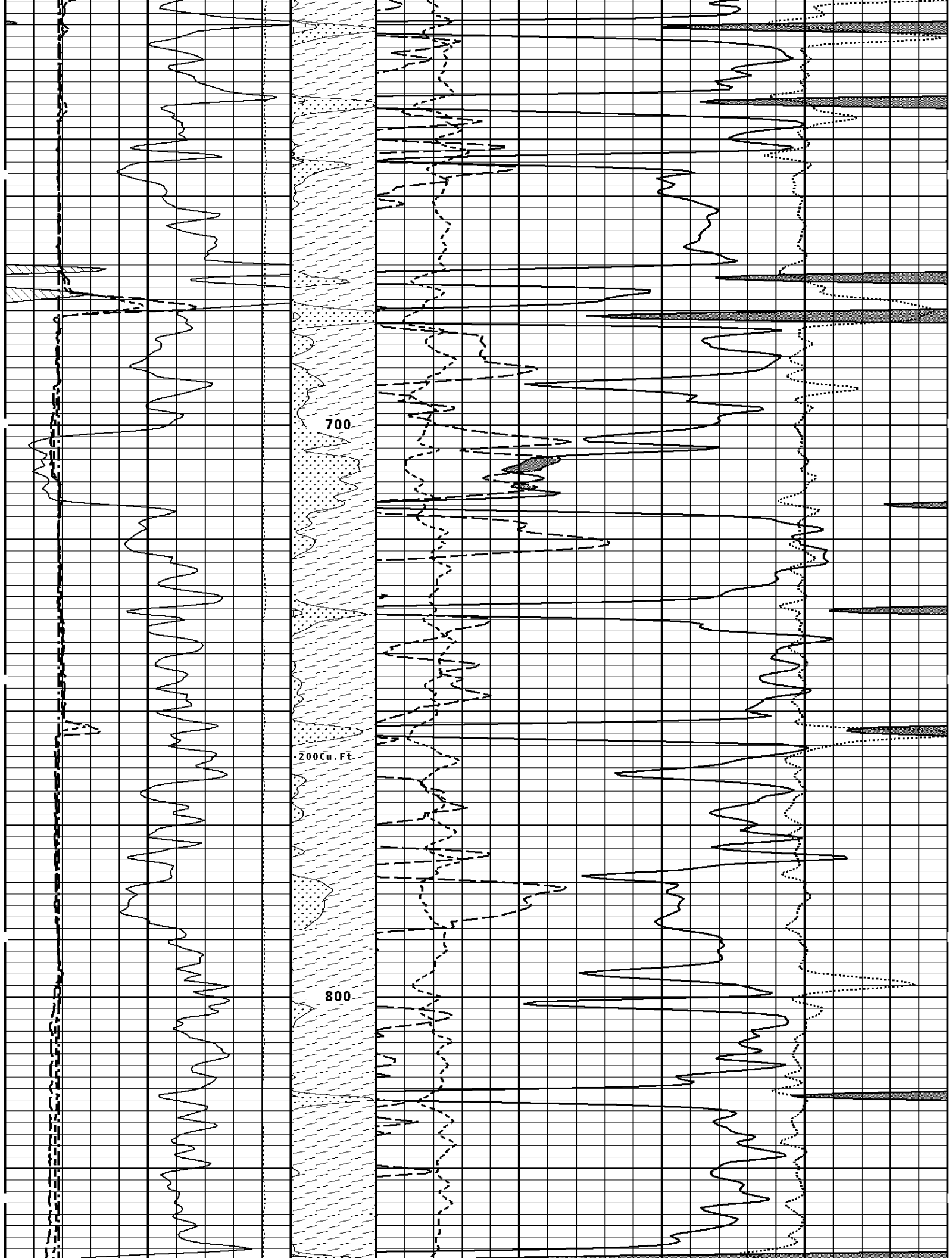
<b>TENSION LBS</b>			
10000	0		
<b>BIT SIZE INCHES (IN)</b>		Volume Dolo/Shale	
6	16		
<b>DENSITY (X) CALIPER INCHES (IN)</b>		Volume Quartz	<b>PE CROSS-SECTION BARNs/ELECTRON</b>
16	26		<b>DENSITY CORRECTION G/CC</b>
6	16	0	10 -0.25 0.25
<b>NEUTRON (Y) CALIPER INCHES (IN)</b>		Volume Calcite	<b>NEUTRON POROSITY PERCENT (LIMESTONE MATRIX)</b>
16	26		
6	16	30	-10
<b>GAMMA RAY API UNITS</b>		- BHV AHV - CU. FT	<b>DENSITY POROSITY PERCENT (2.71 g/cc)</b>
200	400		
0	200	70	30
		30	-10
		-10	-50

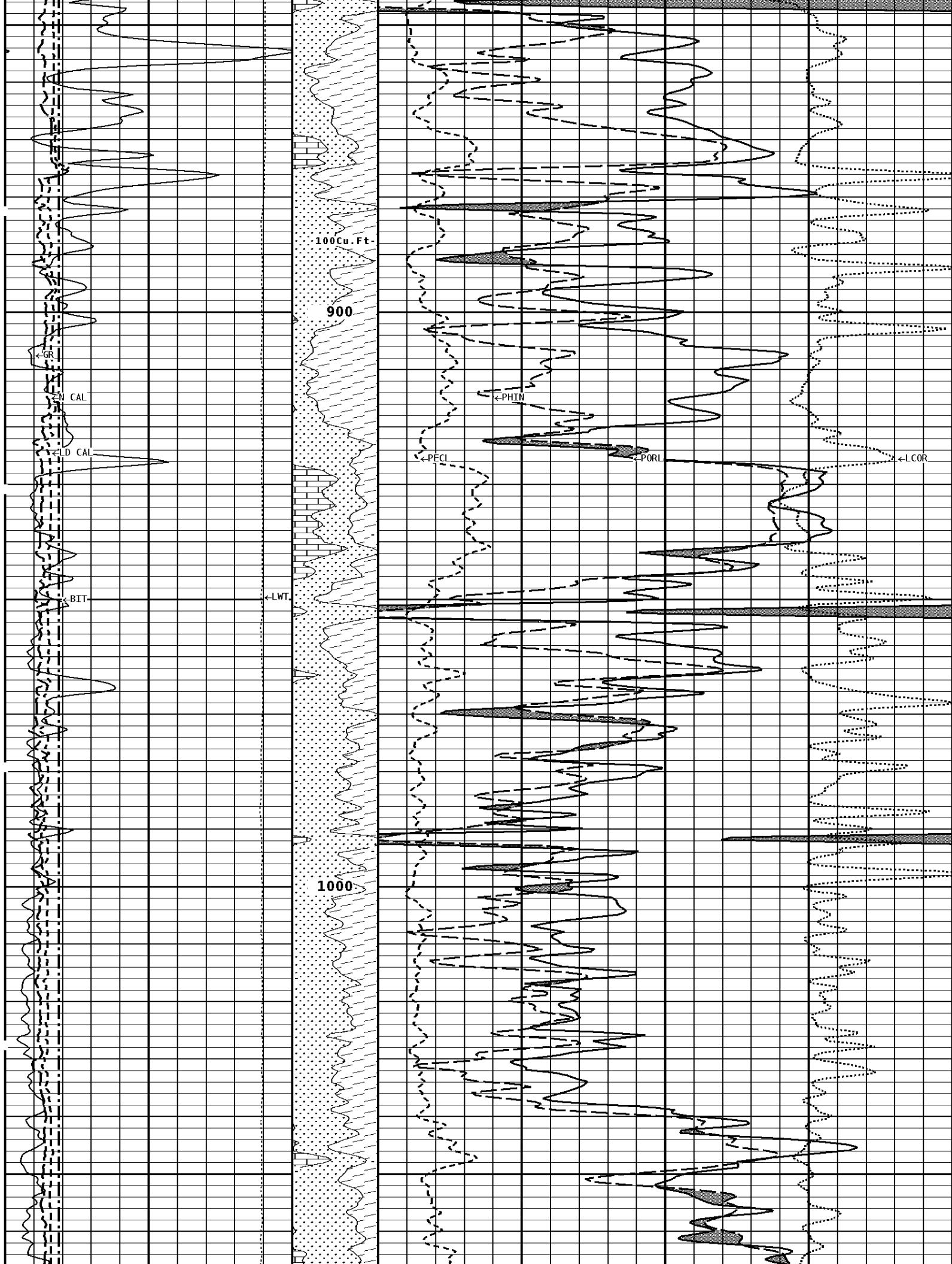
# 1:240 MAIN SECTION



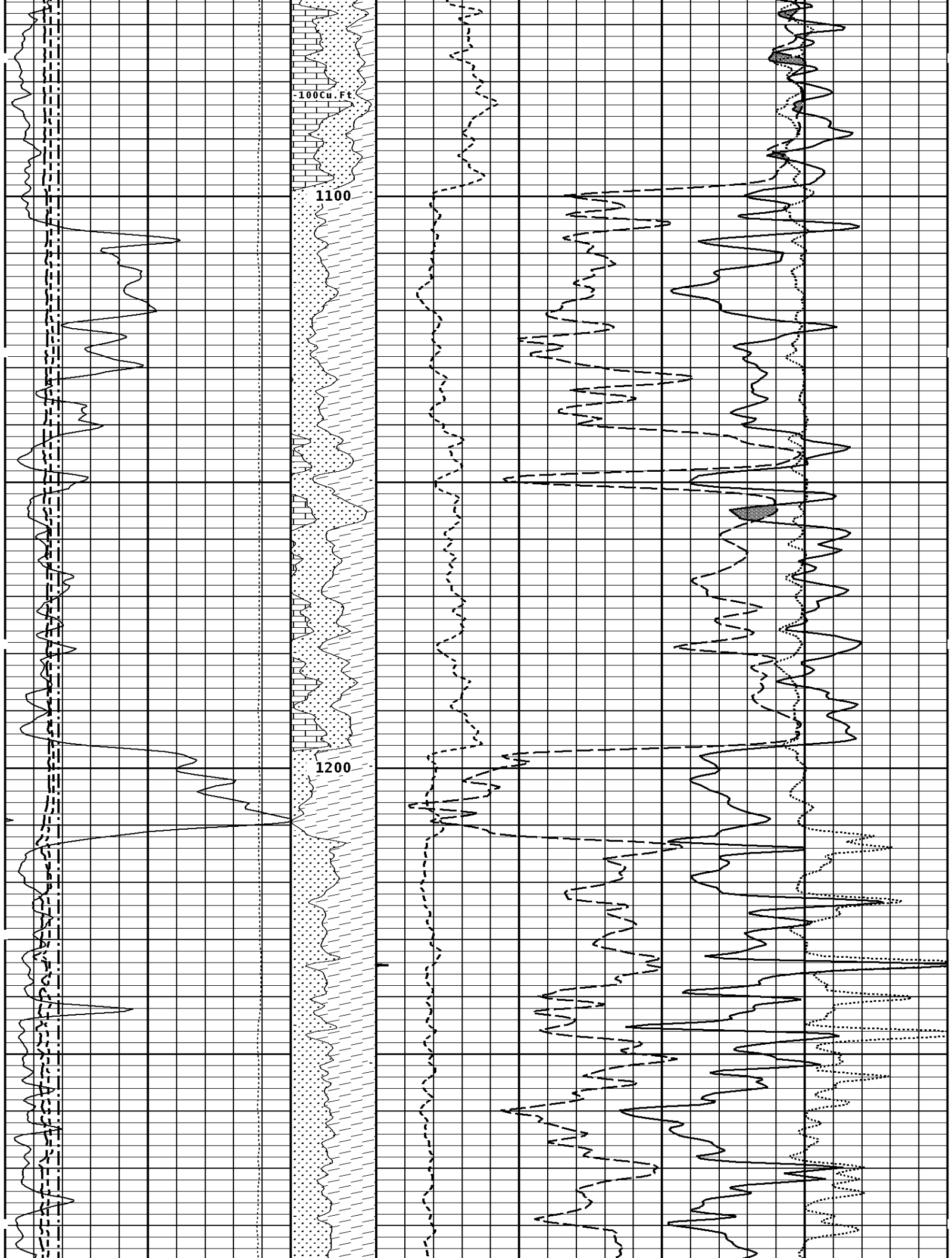


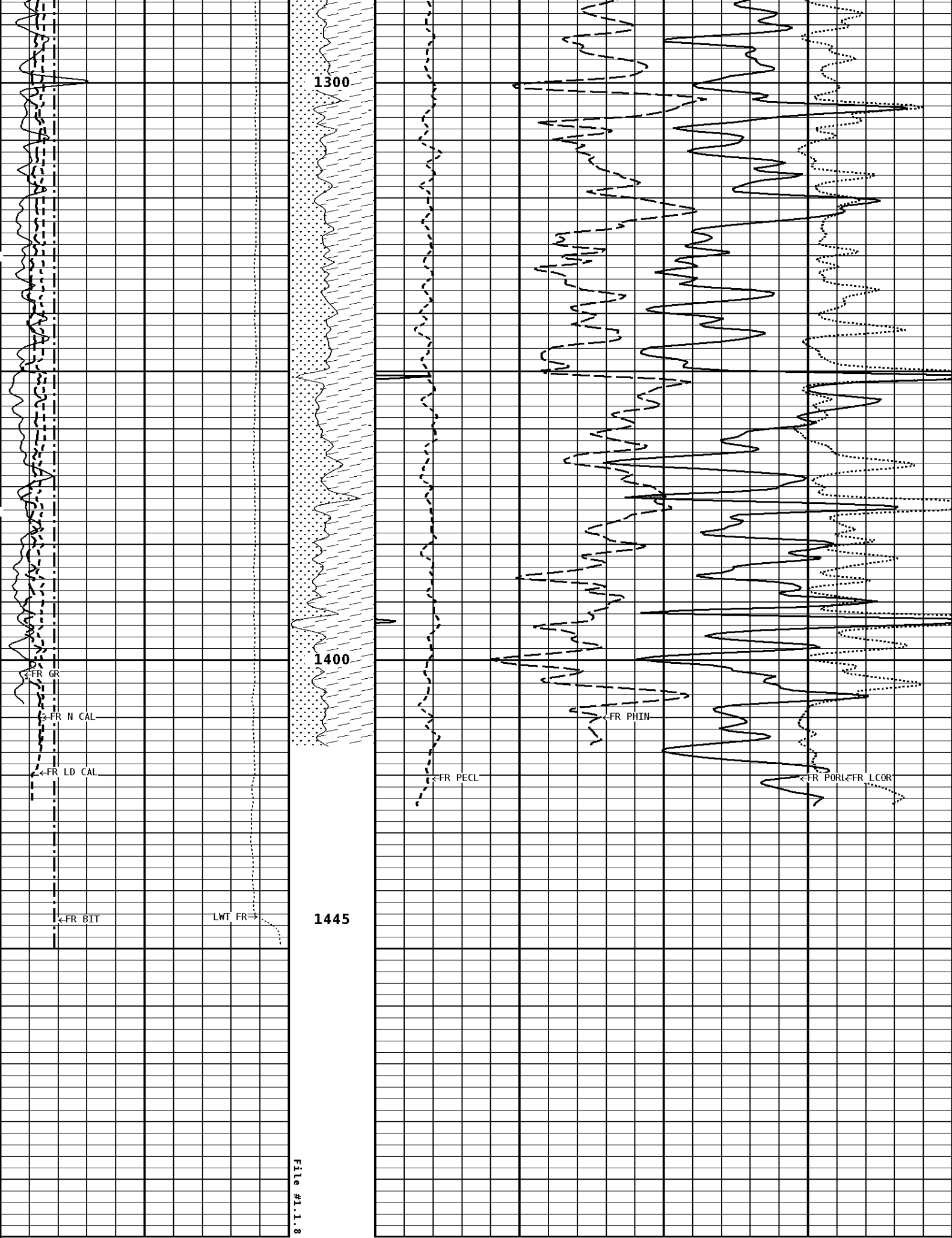







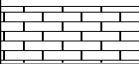
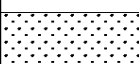







File #1.1.8

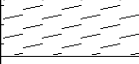


1:240 MAIN SECTION

<b>GAMMA RAY API UNITS</b> 		- BHV AHV - CU. FT	<b>DENSITY POROSITY PERCENT (2.71 g/cc)</b>	
200 0	400 200		70 30	30 -10
			-10	-50
<b>NEUTRON (Y) CALIPER INCHES (IN)</b>		Volume Calcite	<b>NEUTRON POROSITY PERCENT (LIMESTONE MATRIX)</b>	
16 6	26 16		30	-10
-----		-----	-----	-----
<b>DENSITY (X) CALIPER INCHES (IN)</b>		Volume Quartz	<b>PE CROSS-SECTION BARNS/ELECTRON</b>	<b>DENSITY CORRECTION G/CC</b>
16 6	26 16		0	10 -0.25
-----		-----	-----	-----
<b>BIT SIZE INCHES (IN)</b>		Volume Dolo/Shale		
6	16			
-----		-----		
<b>TENSION LBS</b>				
10000	0			
-----				

**\* Borehole Zone Factors \***

<b>Zone 1 99999.0 to 0.0 Feet</b>	
Matrix Density _____	2.71 g/cc
Fluid Density _____	1.00 g/cc
Formation Matrix _____	Limestone
Drill Bit Size _____	7.875 in
Casing Diameter _____	4.500 in
Casing Correction (PHI N) _____	Disable

<b>Well File:</b> RFP_DICKERSON-15-22-SWD APR4 STK	<b>Scale:</b> 1:240
<b>Segment:</b> V1.D1.S4 REPROCESS OF REPEAT SECTION	<b>Acquired:</b> 2012-04/04 14:31 3.2.0-10801
<b>Reference:</b> 0	<b>Processed:</b> 2012-04/04 16:42 3.2.0-10801

<b>TENSION LBS</b>				
10000	0			
-----				
<b>BIT SIZE INCHES (IN)</b>		Volume Dolo/Shale		
6	16			
-----		-----		
<b>DENSITY (X) CALIPER INCHES (IN)</b>		Volume Quartz	<b>PE CROSS-SECTION BARNS/ELECTRON</b>	<b>DENSITY CORRECTION G/CC</b>
16 6	26 16		0	10 -0.25
-----		-----	-----	-----
<b>NEUTRON (Y) CALIPER INCHES (IN)</b>		Volume Calcite	<b>NEUTRON POROSITY PERCENT (LIMESTONE MATRIX)</b>	
16 6	26 16		30	-10
-----		-----	-----	-----
<b>GAMMA RAY API UNITS</b>		- BHV AHV - CU. FT	<b>DENSITY POROSITY PERCENT (2.71 g/cc)</b>	
200 0	400 200		70 30	30 -10
			-10	-50

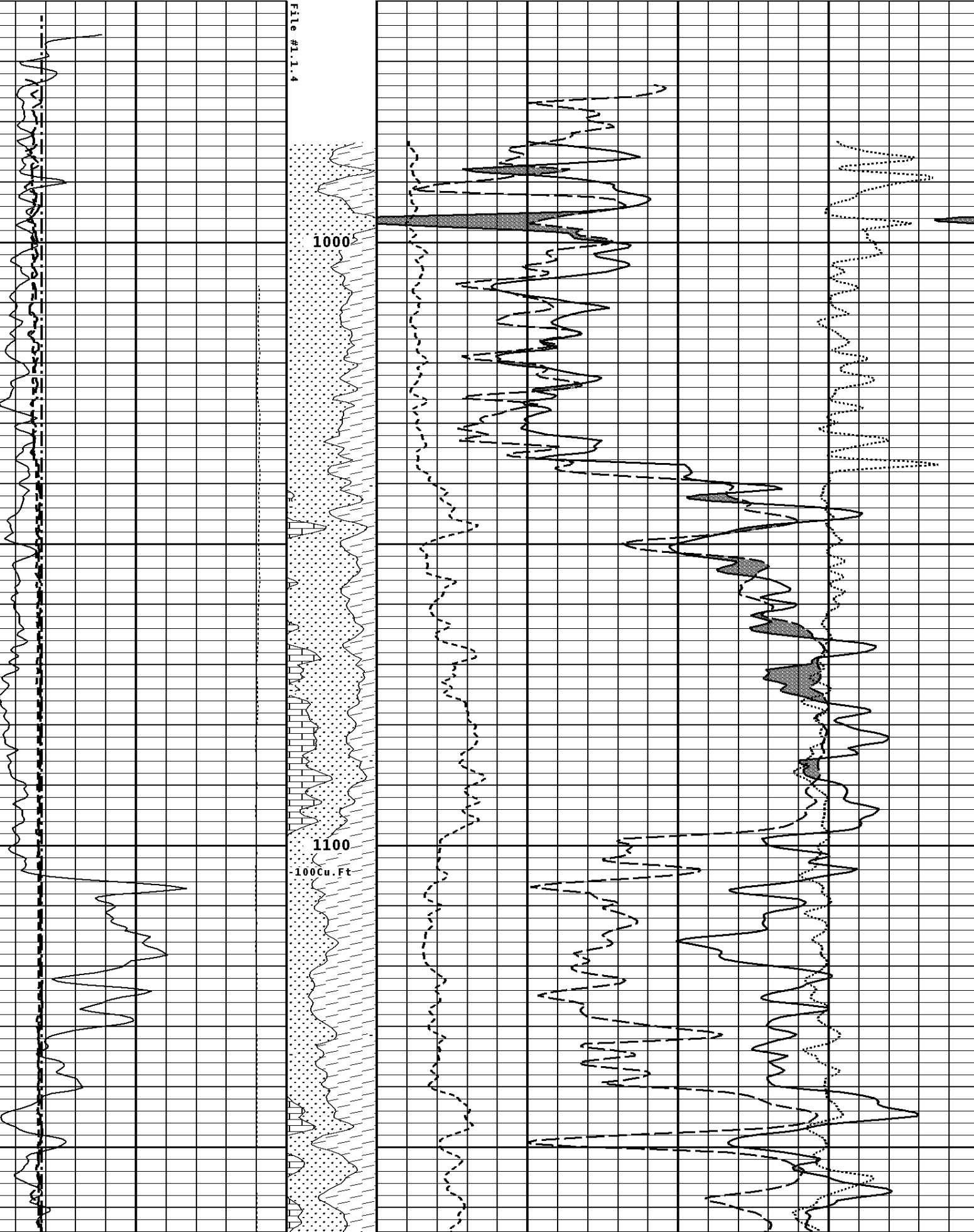
**1:240 REPEAT SECTION**

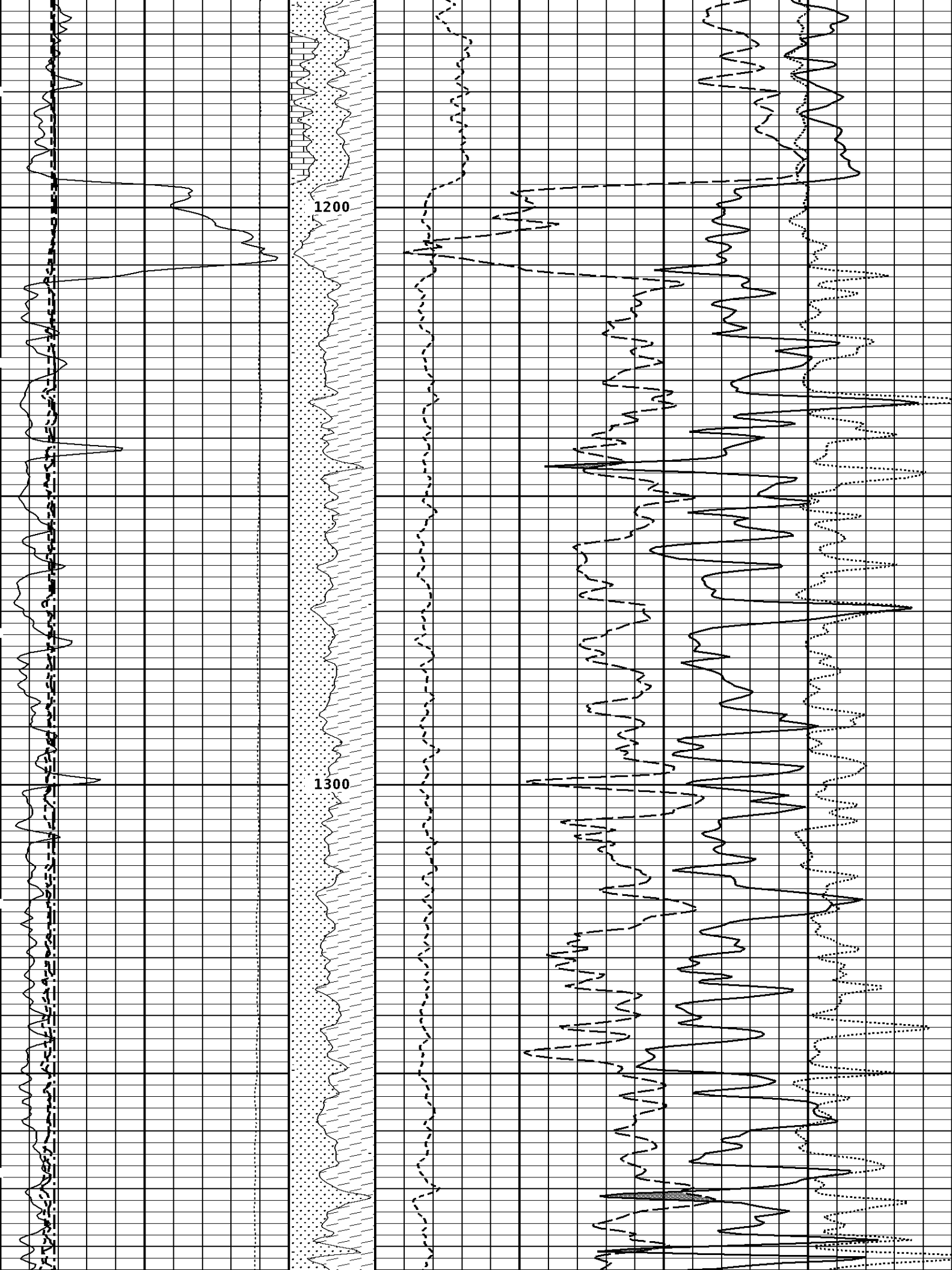
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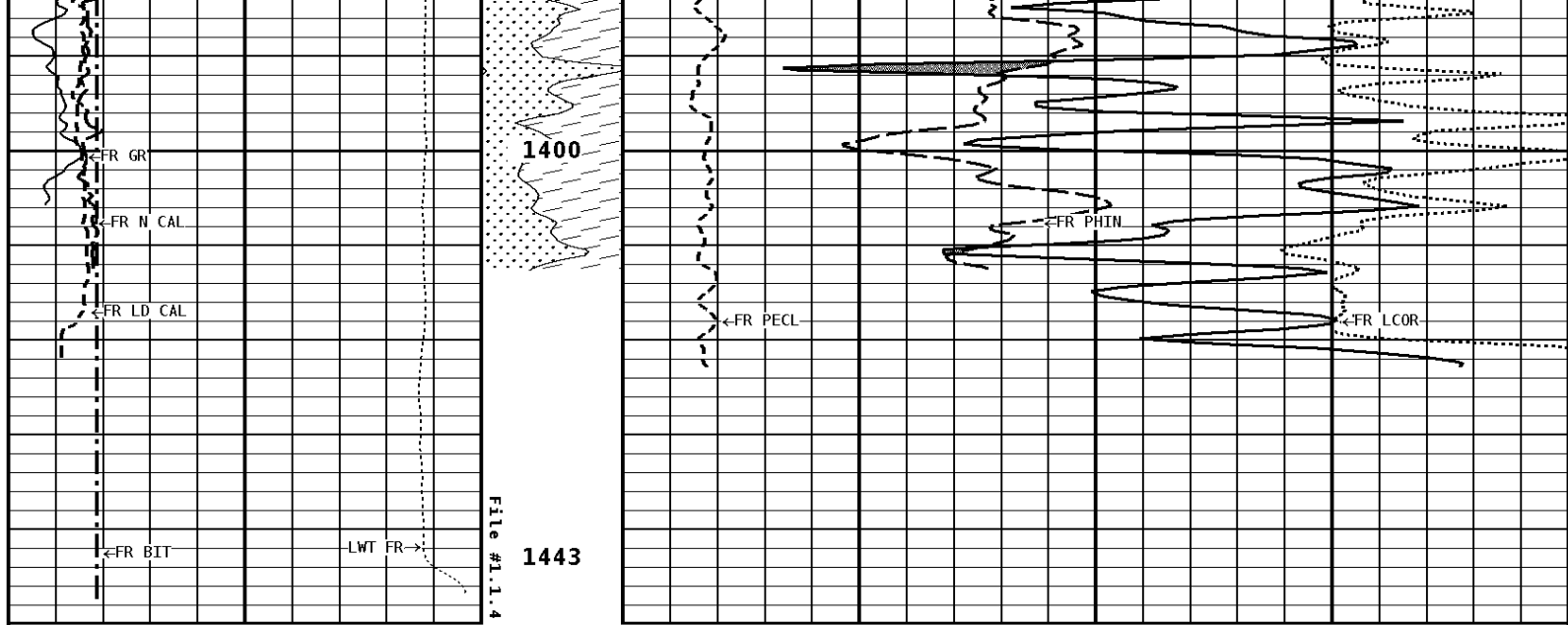
1000

1100

100Cu.Ft







**1:240 REPEAT SECTION**

<b>GAMMA RAY</b> <b>API UNITS</b> 200  400 0 200		<b>- BHV AHV -</b> <b>CU. FT</b> 70 30 -10		<b>DENSITY POROSITY</b> <b>PERCENT (2.71 g/cc)</b> 30 -10 -50	
<b>NEUTRON (Y) CALIPER</b> <b>INCHES (IN)</b> 16 6 ----- 26 16		<b>Volume</b> <b>Calcite</b>  30		<b>NEUTRON POROSITY</b> <b>PERCENT (LIMESTONE MATRIX)</b> ----- -10	
<b>DENSITY (X) CALIPER</b> <b>INCHES (IN)</b> 16 6 ----- 26 16		<b>Volume</b> <b>Quartz</b>  0		<b>PE CROSS-SECTION</b> <b>BARNS/ELECTRON</b> ----- 10	
<b>BIT SIZE</b> <b>INCHES (IN)</b> 6 ----- 16		<b>Volume</b> <b>Dolo/Shale</b>  ----- 16		<b>DENSITY CORRECTION</b> <b>G/CC</b> ----- -0.25 ----- 0.25	
<b>TENSION</b> <b>LBS</b> 10000 ----- 0					

**\* Borehole Zone Factors \***

<b>Zone 1 99999.0 to 0.0 Feet</b>		
Matrix Density	_____	2.71 g/cc
Fluid Density	_____	1.00 g/cc
Formation Matrix	_____	Limestone
Drill Bit Size	_____	7.875 in
Casing Diameter	_____	4.500 in
Casing Correction (PHI N)	_____	Disable

<b>Well File:</b> RFP_DICKERSON-15-22-SWD_APR4_STK	<b>Scale:</b> 1:240
<b>Segment:</b> V1.D1.S8 Reprocess of MAIN SECTION	<b>Acquired:</b> 2012-04/04 15:35 3.2.0-10801
<b>Reference:</b> 0	<b>Processed:</b> 2012-04/04 17:03 3.2.0-10801

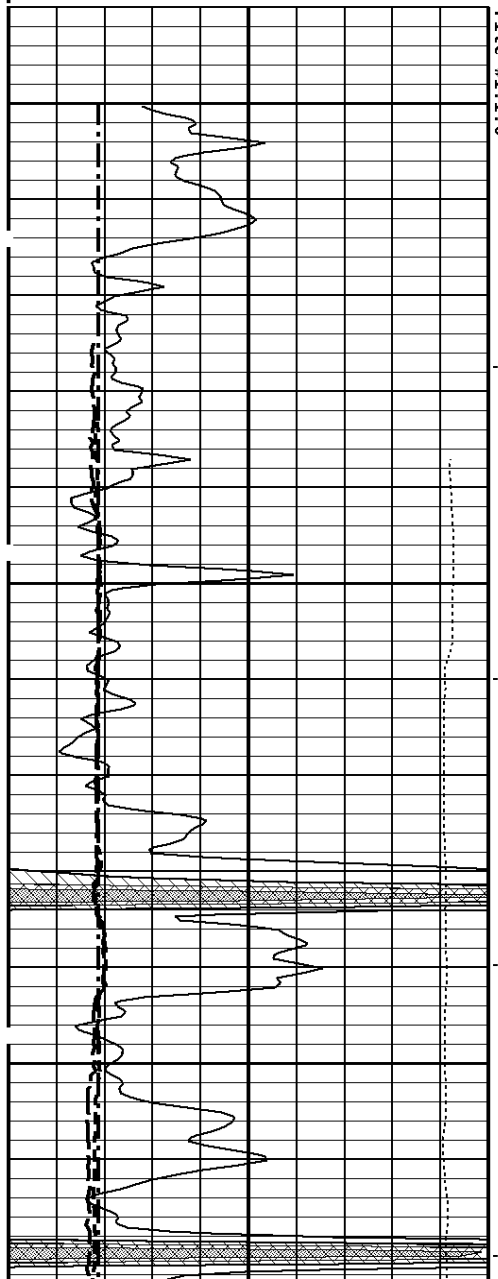
<b>TENSION</b> <b>LBS</b>	
10000	0

<b>BIT SIZE INCHES (IN)</b>	
6	16
-----	
<b>DENSITY (X) CALIPER INCHES (IN)</b>	
16	26
6	16
-----	
<b>NEUTRON (Y) CALIPER INCHES (IN)</b>	
16	26
6	16
-----	
<b>GAMMA RAY API UNITS</b>	
200	400
0	200

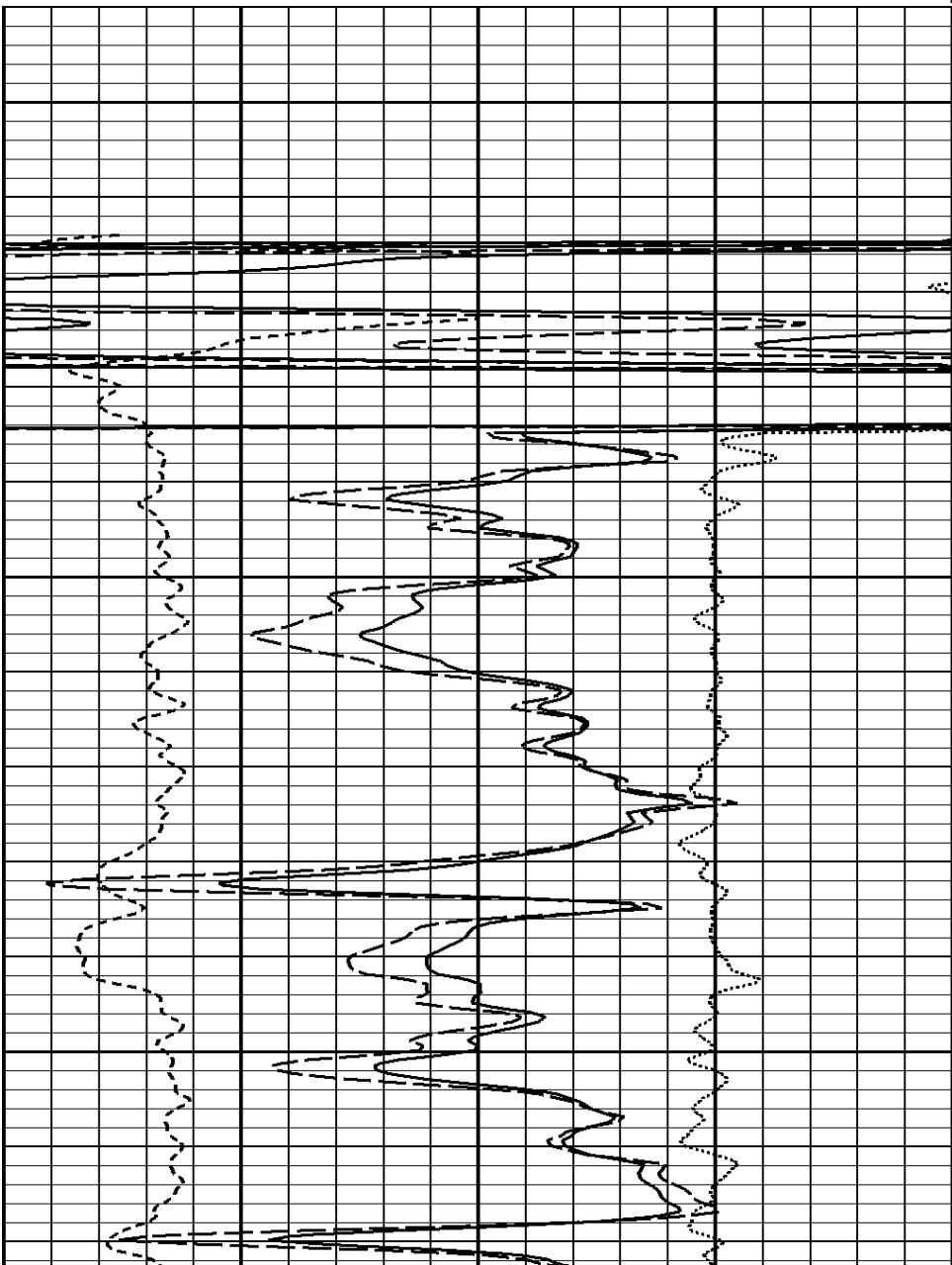
- BHV AHV -  
CU. FT

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

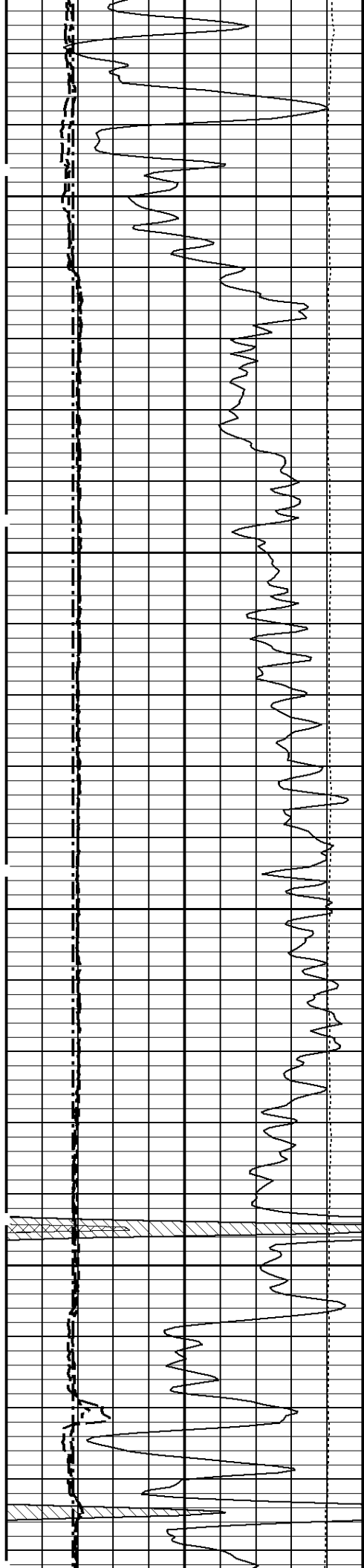
**1:240 MAIN SECTION  
BULK DENSITY**



000



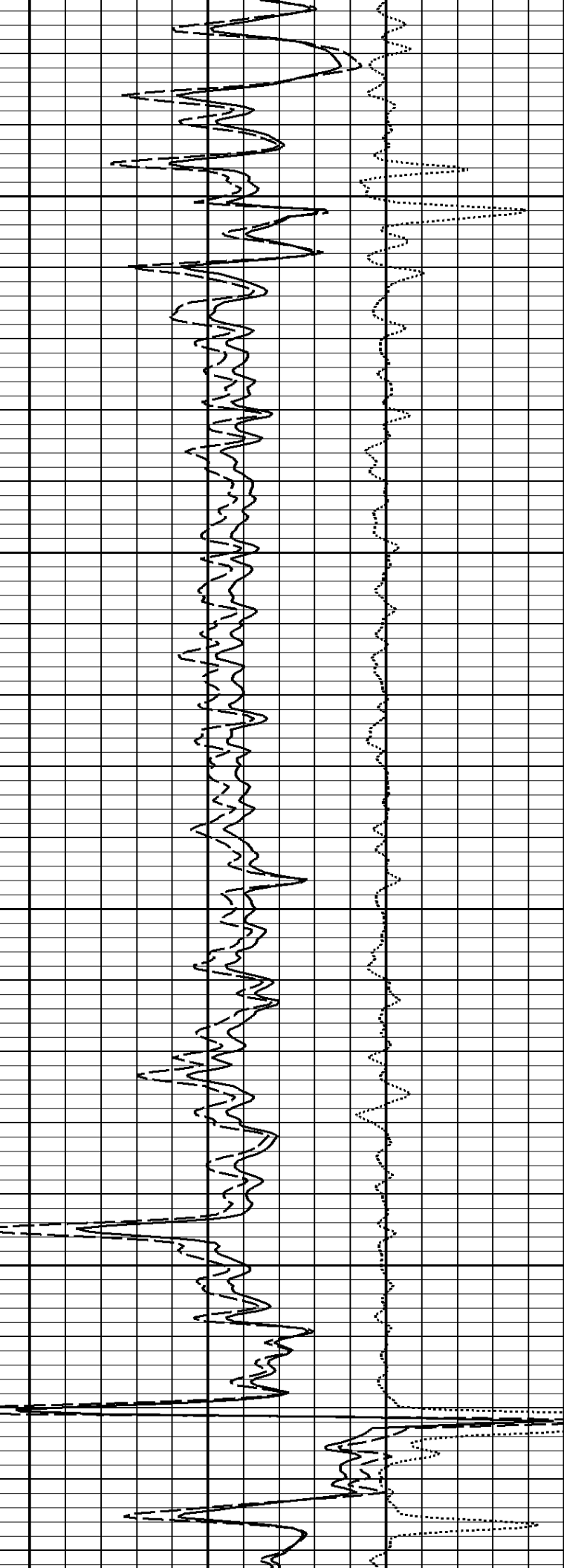
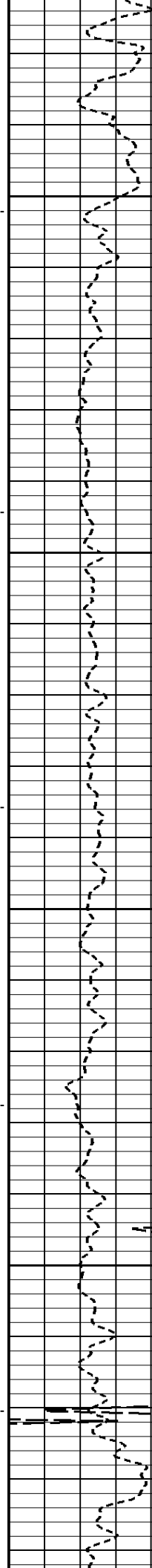
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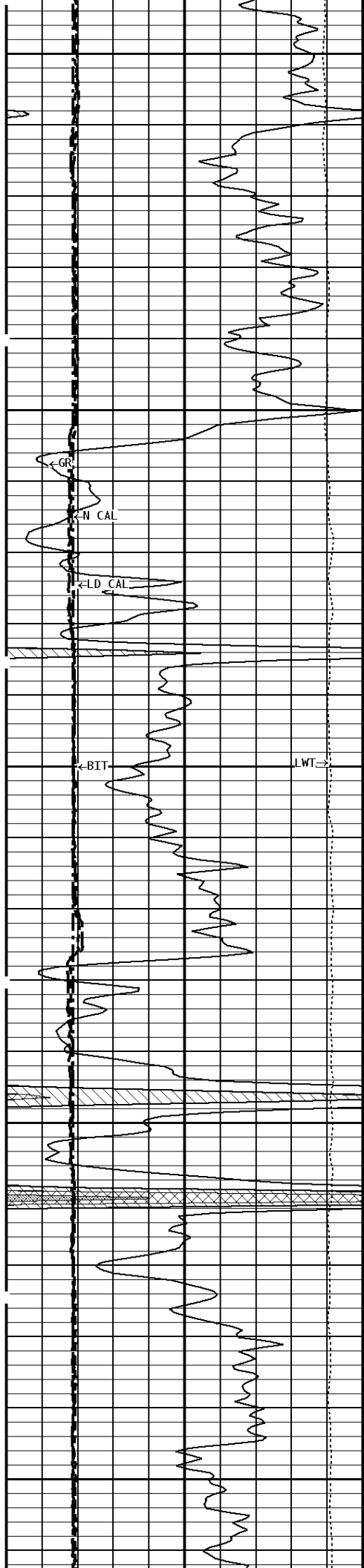
400 Cu. Ft

200

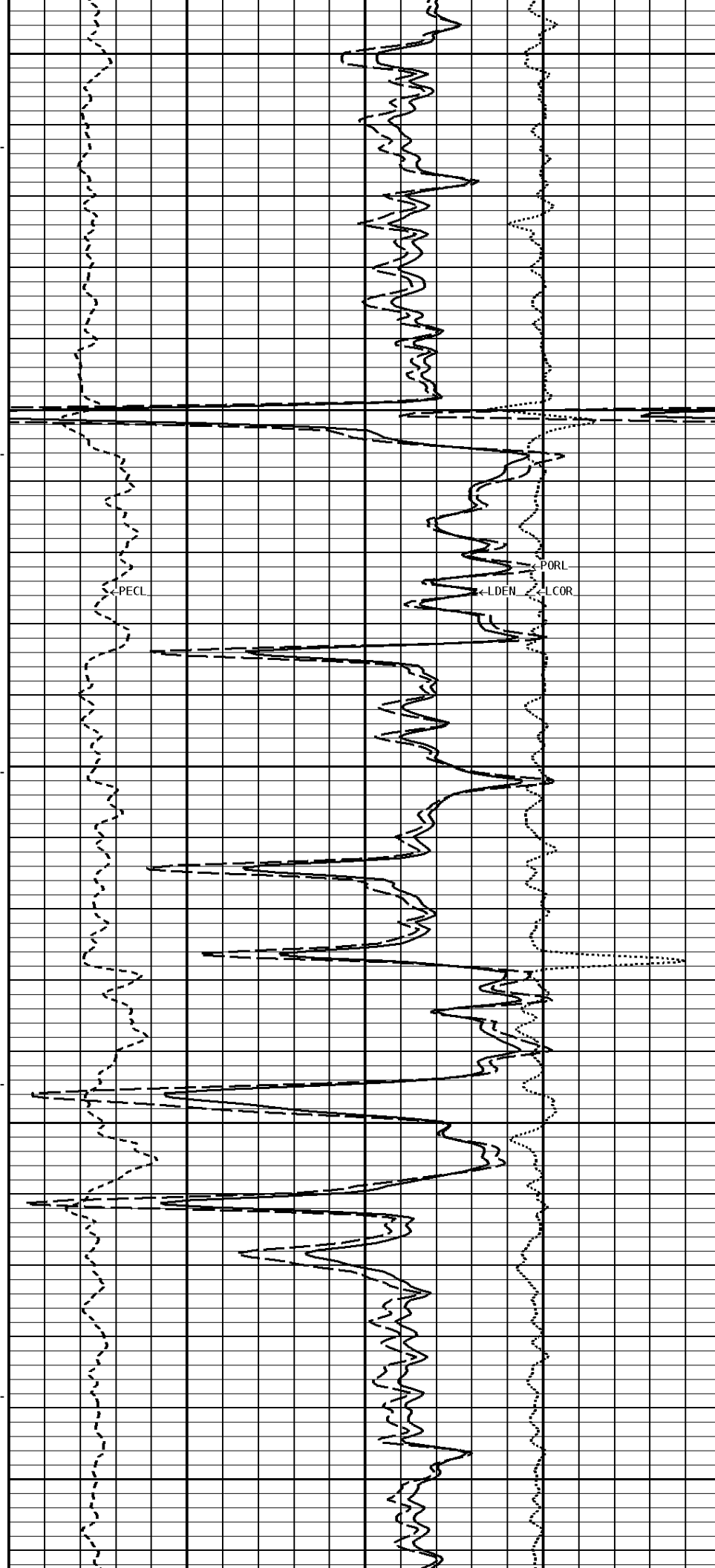
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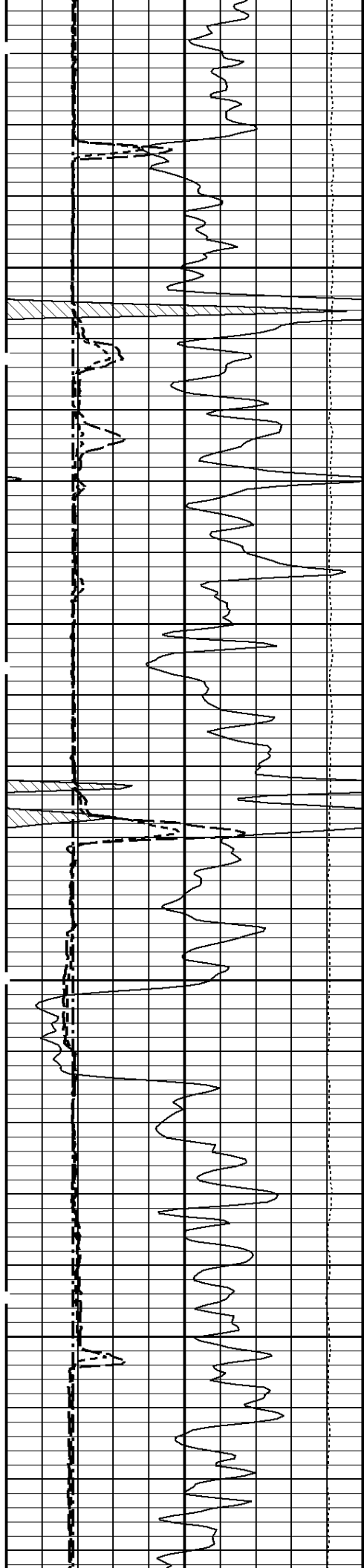




400  
200 Cu. Ft.  
300 Cu. Ft.  
500



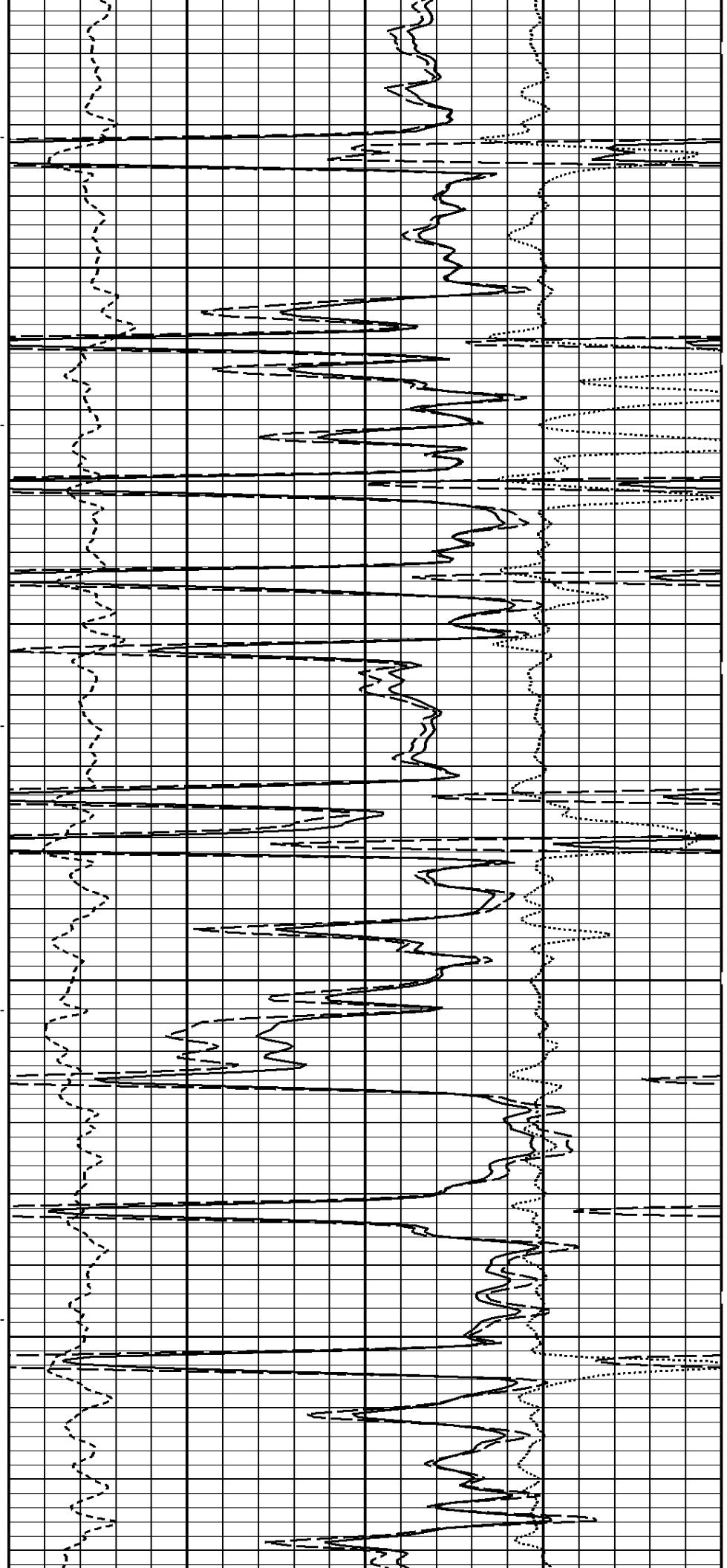
PECL  
L DEN  
PORL  
L COR



600

700

-200Cu. Ft

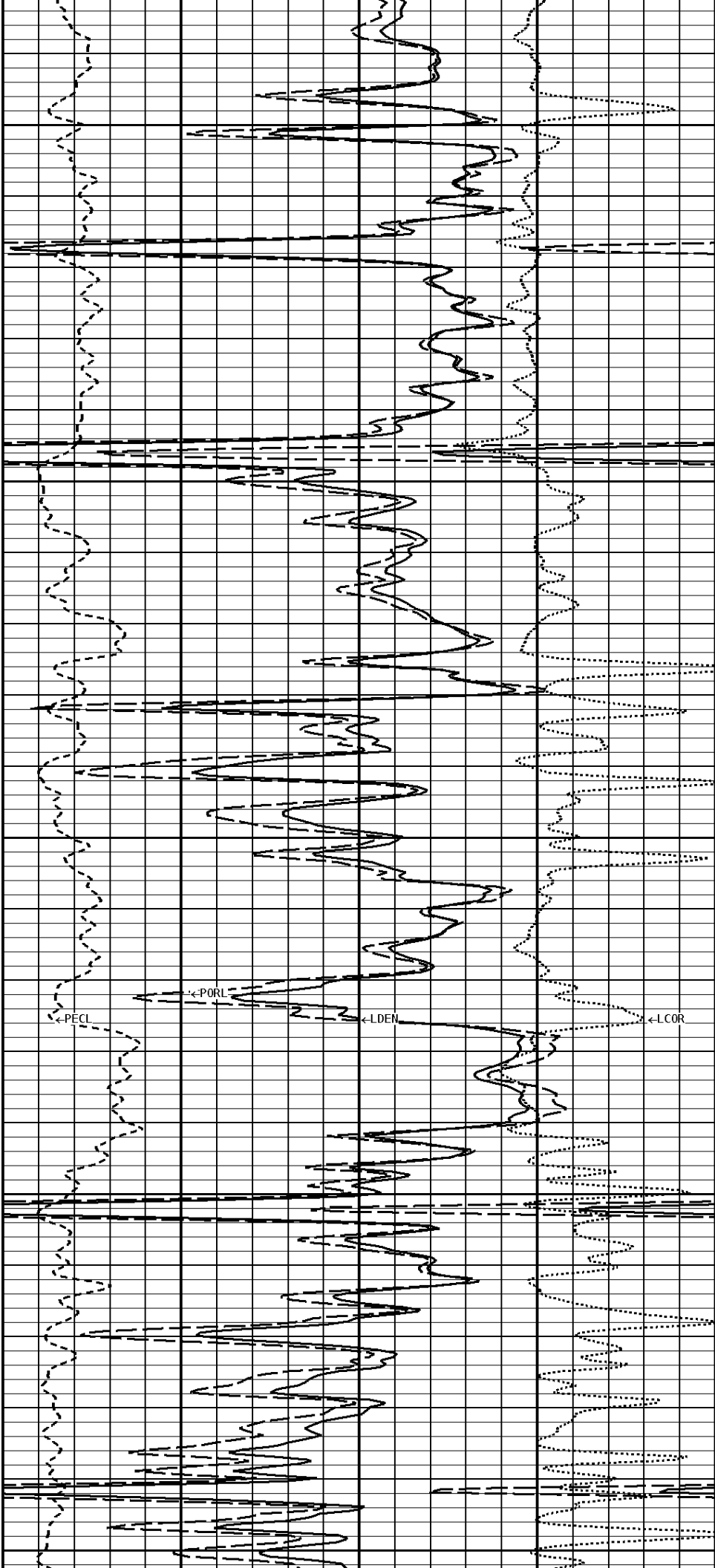


800

100 Cu. Ft.

900

1000

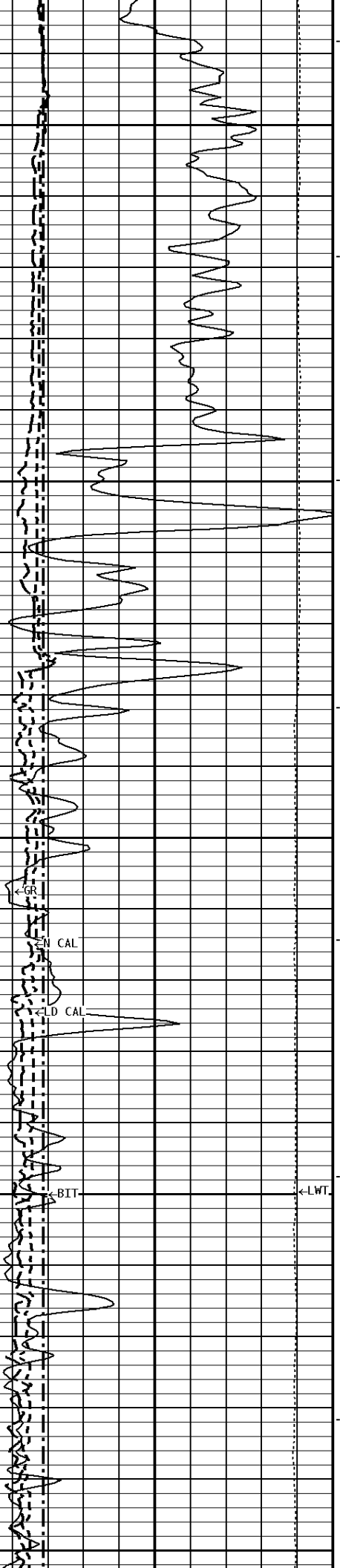


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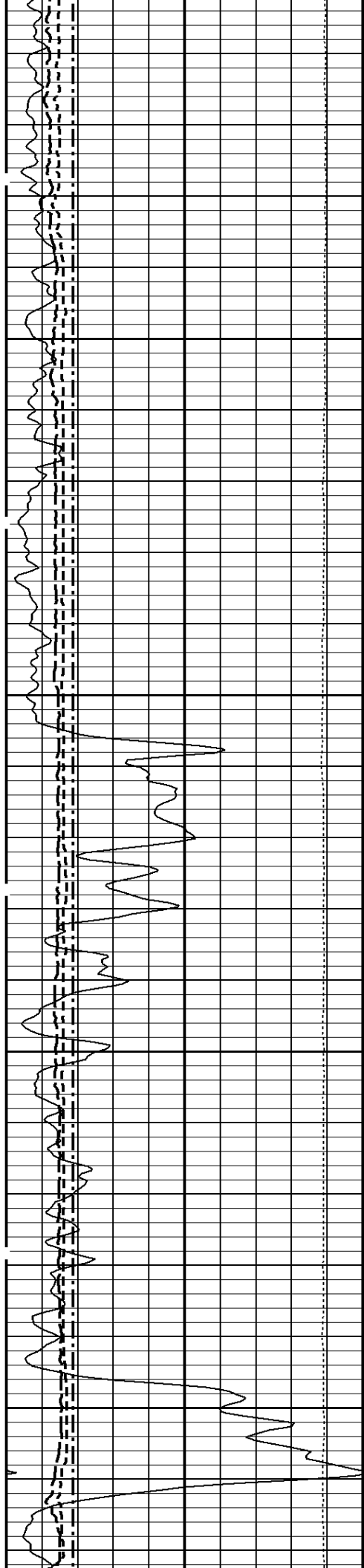
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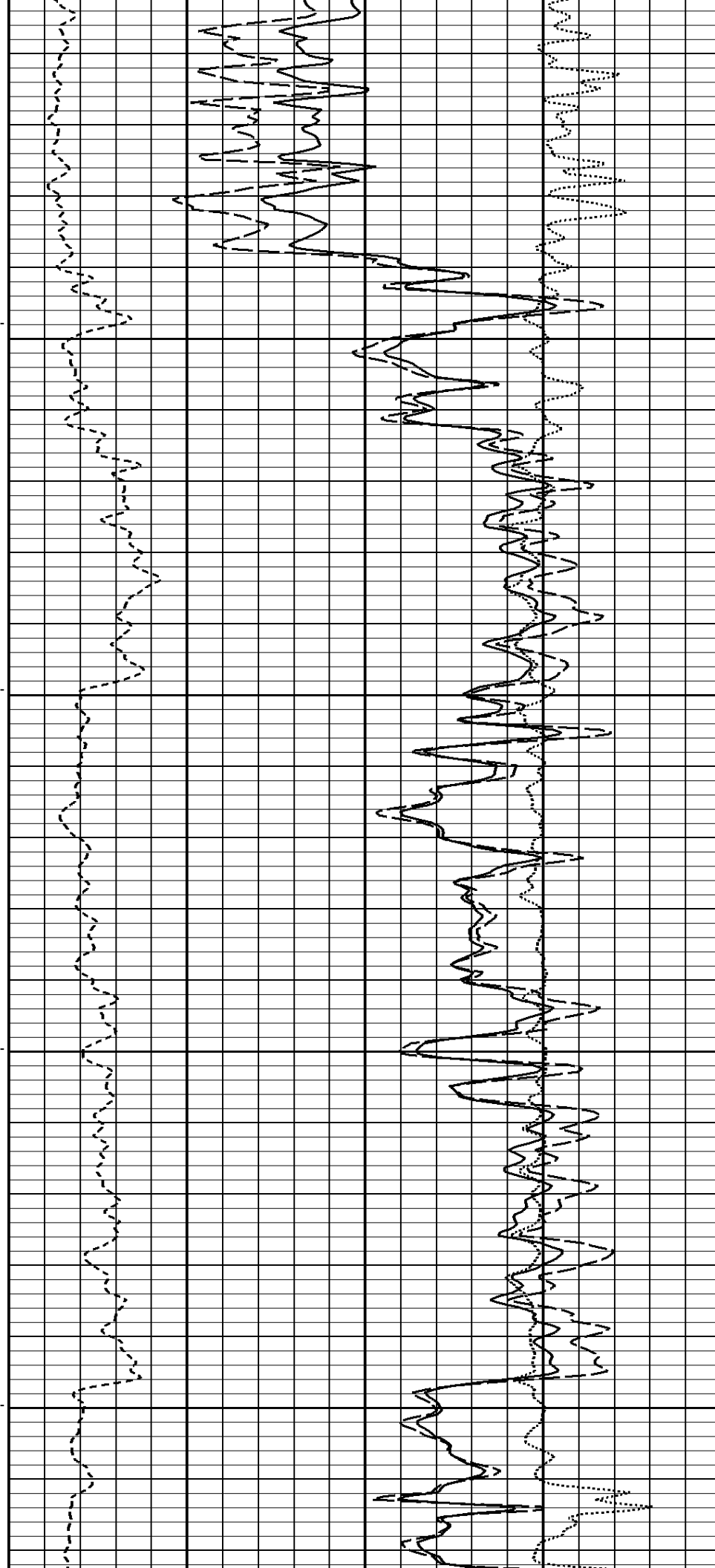
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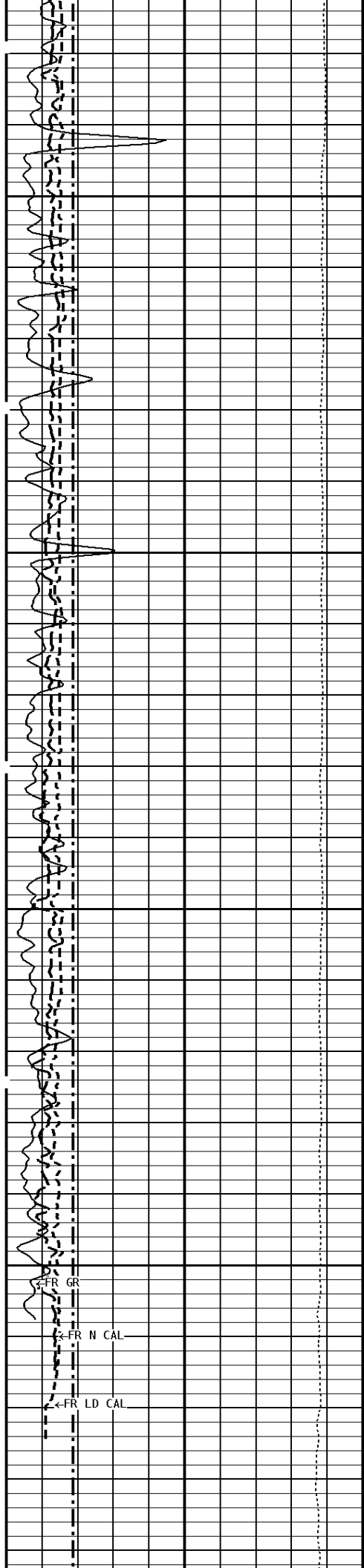


100Cu. Ft

1100

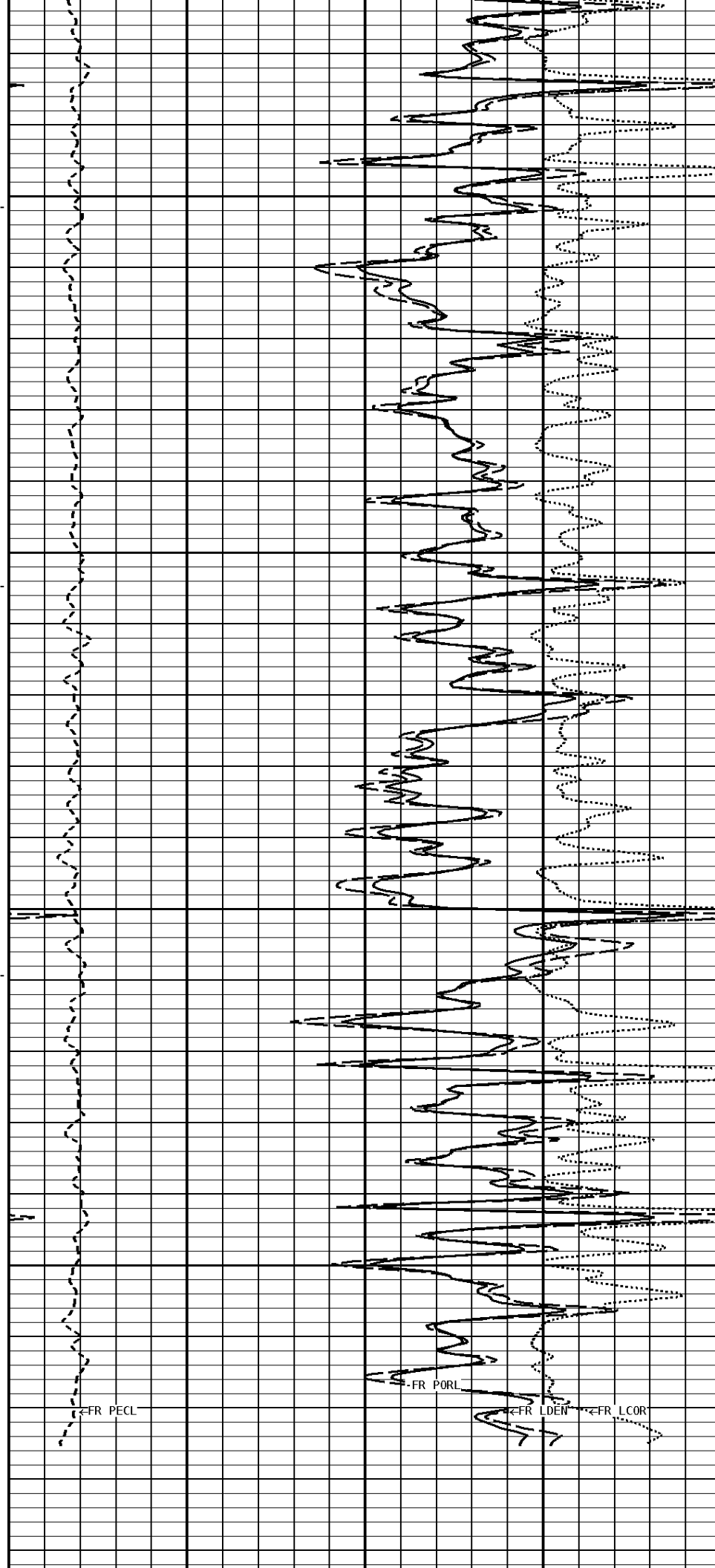
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1300

1400



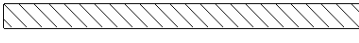
<-FR BIT

LWT FR->

1445

File #1.1.8

### 1:240 MAIN SECTION BULK DENSITY

<b>GAMMA RAY API UNITS</b> 200  400 0 200		- BHV AHV - CU. FT	<b>COMPENSATED BULK DENSITY G/CC</b> 3.0 4.0 2.0 3.0 1.0 2.0	
<b>NEUTRON (Y) CALIPER INCHES (IN)</b> 16 26 6 16			<b>DENSITY POROSITY PERCENT (2.71 g/cc)</b> 70 30 30 -10 -10 -50	
<b>DENSITY (X) CALIPER INCHES (IN)</b> 16 26 6 16			<b>PE CROSS-SECTION BARNS/ELECTRON</b> 0 10	<b>DENSITY CORRECTION G/CC</b> -0.25 0.25
<b>BIT SIZE INCHES (IN)</b> 6 16				
<b>TENSION LBS</b> 10000 0				

**\* Borehole Zone Factors \***

<b>Zone 1 99999.0 to 0.0 Feet</b>		
Matrix Density	_____	2.71 g/cc
Fluid Density	_____	1.00 g/cc
Formation Matrix	_____	Limestone
Drill Bit Size	_____	7.875 in
Casing Diameter	_____	4.500 in
Casing Correction (PHI N)	_____	Disable

**\* Calibration Summary \***

<b>Shop Calibration</b>					
<b>GRT-B</b>					
Performed : 25-Jan-2008			Time : 10:22		
Sensor Suite : GR-GR5			ID : GRT-BB-109		
	Measured	Units	Calibrated	Units	
	Background	Jig	Jig		
GR	48	318	CPS	175	GRAPI

Shop Calibration CNT-AA						
Performed : 24-OCT-2011		Time : 08:41				
Sensor Suite : CALI-BCN		ID : NDT-BB-123				
	Jig - Measured		Jig - Calibrated		Units	
	Ring#1	Ring#2	Ring#1	Ring#2		
CL # 1	5.4	11.4	6.0	12.0	IN.	
Shop Calibration LDT-DA						
Performed : 02-Apr-2012		Time : 16:18				
Sensor Suite : BHC NEUT		ID : CNP-AA-102				
Source ID : N-1045						
	Tank		Verification		Units	
	Measured	Calibrated	Jig			
N/F	3.8108	3.6893	3.6929			
Porosity	22.4	20.5	20.6		%	
Shop Calibration LDT-DA						
Performed : 29-AUG-2011		Time : 17:19				
Sensor Suite : CALI-LTH		ID : NDT-BB-139				
	Jig - Measured		Jig - Calibrated		Units	
	Ring#1	Ring#2	Ring#1	Ring#2		
CL # 1	6.8	12.8	6.0	12.0	IN.	
Performed : 28-Mar-2012		Time : 11:25				
Sensor Suite : BHCPENLNG		ID : LDP_DA_35				
Source ID : CSV_B45						
Short Space						
	BKGD	Al	Mg	Al+Fe	Units	
LSW1	71	844	1345	566	CPS	
LSW2	74	1085	1727	754	CPS	
LSW3	284	2572	4098	2178	CPS	
LSW4	355	2244	3186	1990	CPS	
LSW5	36	55	60	55	CPS	
LSW6	87	89	89	89	CPS	
LSW7	60	61	61	62	CPS	
LSW8	2	4	5	4	CPS	
QS	0.185	0.185	0.188	0.183		
PES			2.778	5.967		
SSDN		2.600	1.680		G/CC	
Long Space						
	BKGD	Al	Mg	Al+Fe	Units	
LLW1	109	834	3278	526	CPS	
LLW2	115	1814	7246	1260	CPS	
LLW3	458	3597	13509	3077	CPS	
LLW4	606	1768	5253	1610	CPS	
LLW5	65	74	111	72	CPS	
LLW6	188	183	174	185	CPS	
LLW7	118	117	110	118	CPS	
LLW8	4	6	16	6	CPS	
QL	0.230	0.220	0.224	0.222		
PEL			2.697	5.458		
LSDN		2.600	1.680		G/CC	



Company: RUNNING FOXES PETROLEUM, INC  
 Well: DICKERSON #15-22 SWD  
 Location: 125' FSL & 2180' FEL  
 Logged: 2012-04-04  
 K.B. Elev: 0.0