

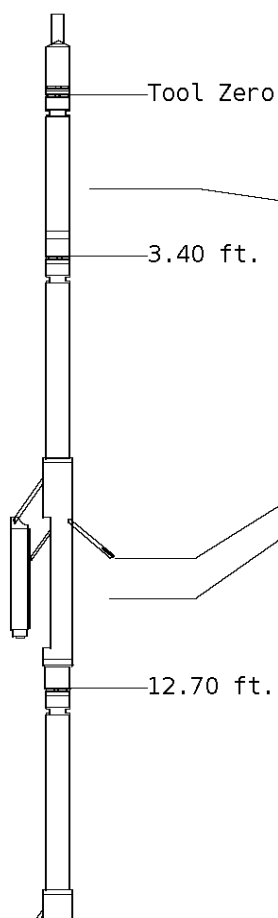
ALL PRESENTATIONS AS PER CUSTOMER REQUEST
 GRT, CNT, LDT, MLT AND PIT RUN IN COMBINATION
 CALIPERS ORIENTED ON X-Y AXIS
 2.71 G/CC USED TO CALCULATE POROSITY
 ANNULAR HOLE VOLUME CALCULATED USING 4.5" PRODUCTION CASING
 PHIN IS CALIPER CORRECTED
 NO REPEAT DUE TO CALIPERS FAILED TO CLOSE AFTER REPEAT, LOGGED OUT

GRT: GRP, GRX
 CNT: PHIN, CLCNIN, PHXN
 LDT: PORL, LCORN, PECLN, LDENN, PORLLS, CLLDIN, PRXL, PECLX, LDENNX, LCORX
 MLT: NOR_RF, INV_RF, MSCLPIN
 PIT: ILD, ILM, SPU, SFLAEC, CIRD

OPERATORS:
 J.OFFIEGBU
 R.FRANKLIN

Tool String Schematic

Total Tool Length - 53.15 ft.
Maximum Outside diameter - 6.00 in.
Net Weight in Air - 943.00 lbs.



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

Sonde ID :GRT-BA-017

Measure Point	Tool Offset	Stack Offset	Bottom Offset
GRP	2.00	2.00	51.15

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

Sonde ID :NDT-BB-122

Source ID :N-1044

Pad ID :CNP-AA-115

Measure Point	Tool Offset	Stack Offset	Bottom Offset
CLCN	6.00	9.40	43.75
PHIN	6.80	10.20	42.95

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

Sonde ID :NDT-CA-137

Source ID :CSV-587

Pad ID :LDP-DA-47

Measure Point	Tool Offset	Stack Offset	Bottom Offset
CLLD	6.00	18.70	34.45
PEL	7.00	19.70	33.45
PES	7.40	20.10	33.05



7.20 19.90 33.25
 7.20 19.90 33.25

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	29.60	23.55
MSCLP	7.60	29.60	23.55
INV	7.60	29.60	23.55
NOR	7.60	29.60	23.55

Tool: PIT-CA **Length:** 21.49 ft. **O.D.** 3.62 in.
 Phased Dual Induction w/ RM & D
Sonde ID :PIT-CA-062

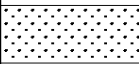
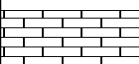
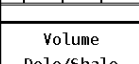
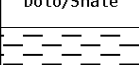

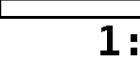
Measure Point	Tool Offset	Stack Offset	Bottom Offset
ILD	8.92	40.58	12.56
ILM	10.10	41.76	11.39
SFLU	17.49	49.15	4.00
SP	20.60	52.26	0.88

Well File: PICKRELL_HIGGINS_K_3_JAN16_MSTK **Scale:** 1:240 **Format:** NLD-240
Segment: V1.D1.S7_FINAL **Acquired:** Not Available
Reference: 0 **Processed:** Not Available

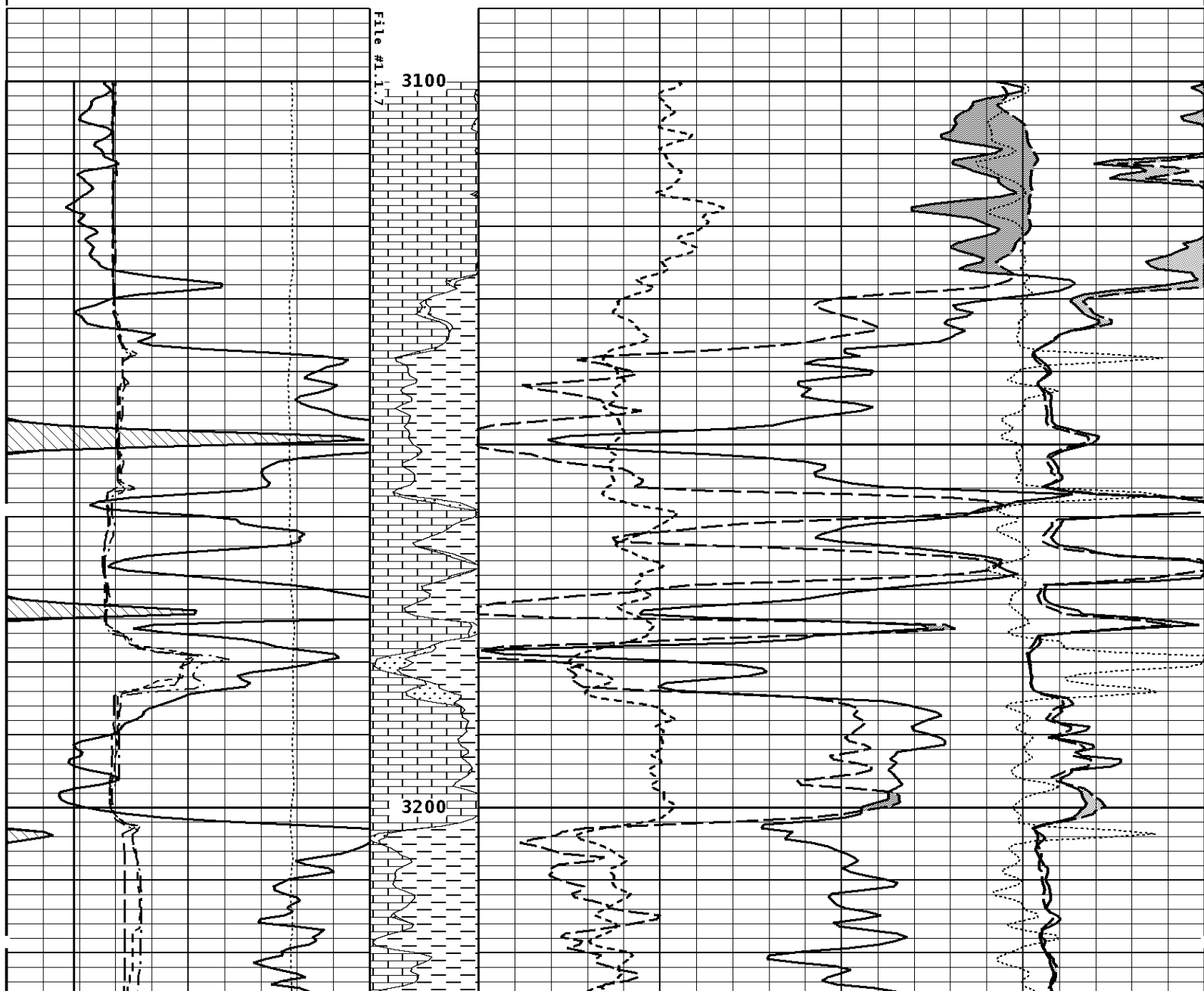
CALIPER MICRO INCHES (IN)	
16	26
6	16

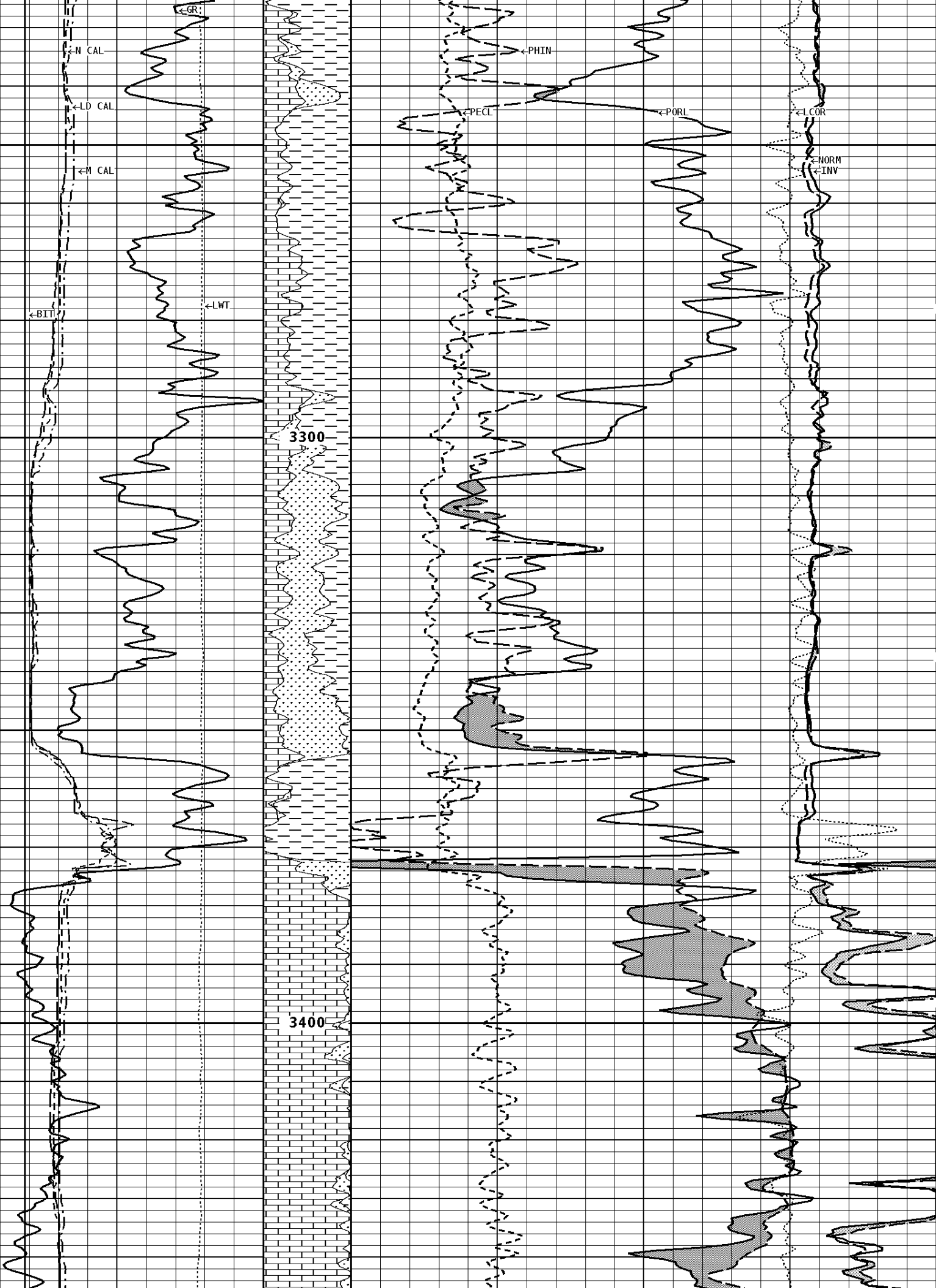
BIT SIZE INCHES (IN)

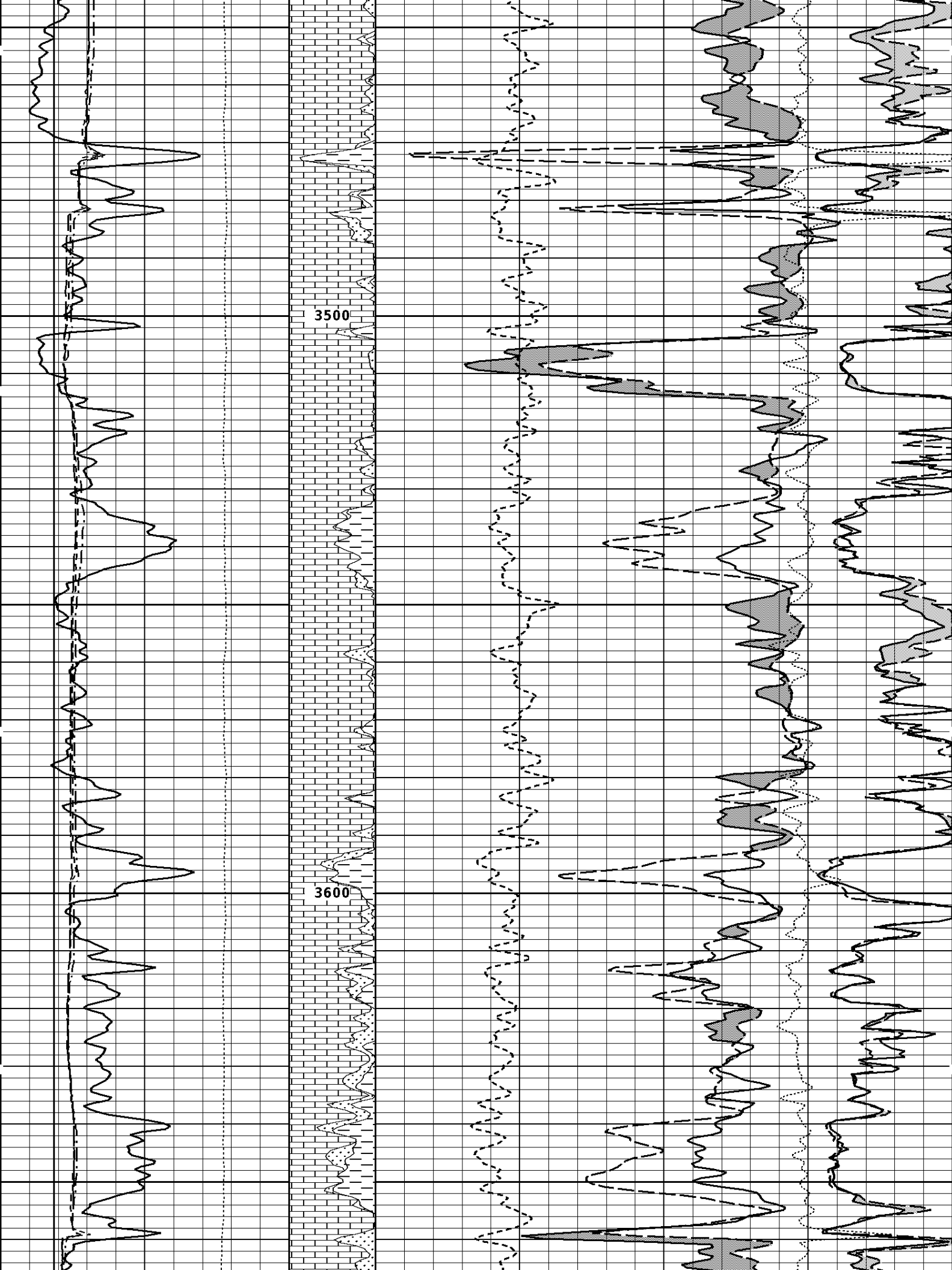
NORMAL
OHMH

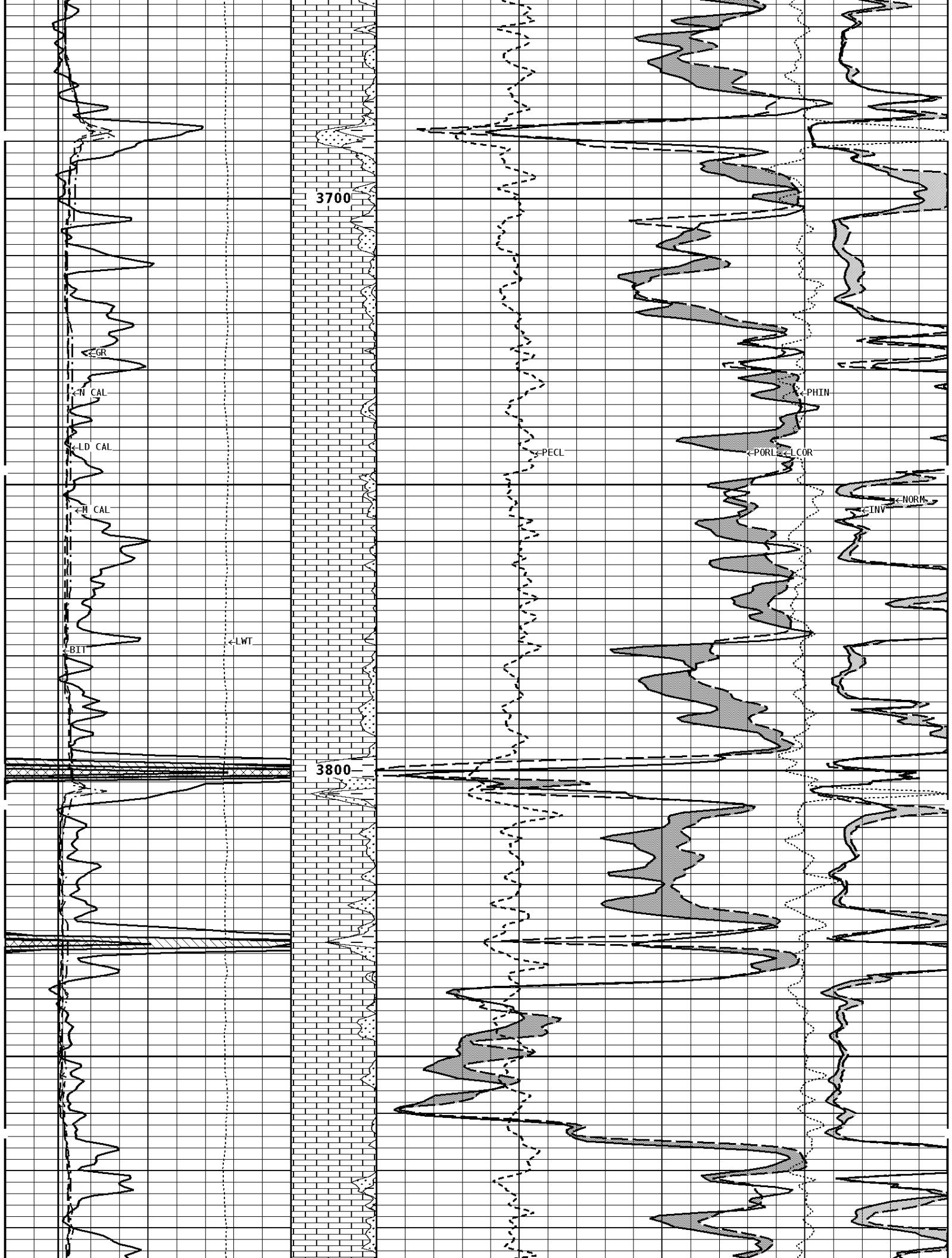
6	16				0	40
NEUTRON (Y) CALIPER INCHES (IN)					INVERSE OHM	
16	26				0	40
6	16					
DENSITY (X) CALIPER INCHES (IN)		Volume Quartz	PE CROSS-SECTION BARN/ELECTRON	DENSITY CORRECTION G/CC		
16	26					
6	16		0	10	-0.25	0.25
TENSION LBS		Volume Calcite	DENSITY POROSITY (2.71g/cc) PERCENT			
10000	0		70			30
			30			-10
			-10			-50
GAMMA RAY API UNITS		Volume Dolo/Shale	NEUTRON POROSITY (LIMESTONE) PERCENT			
150	300		30			-10
0	150					

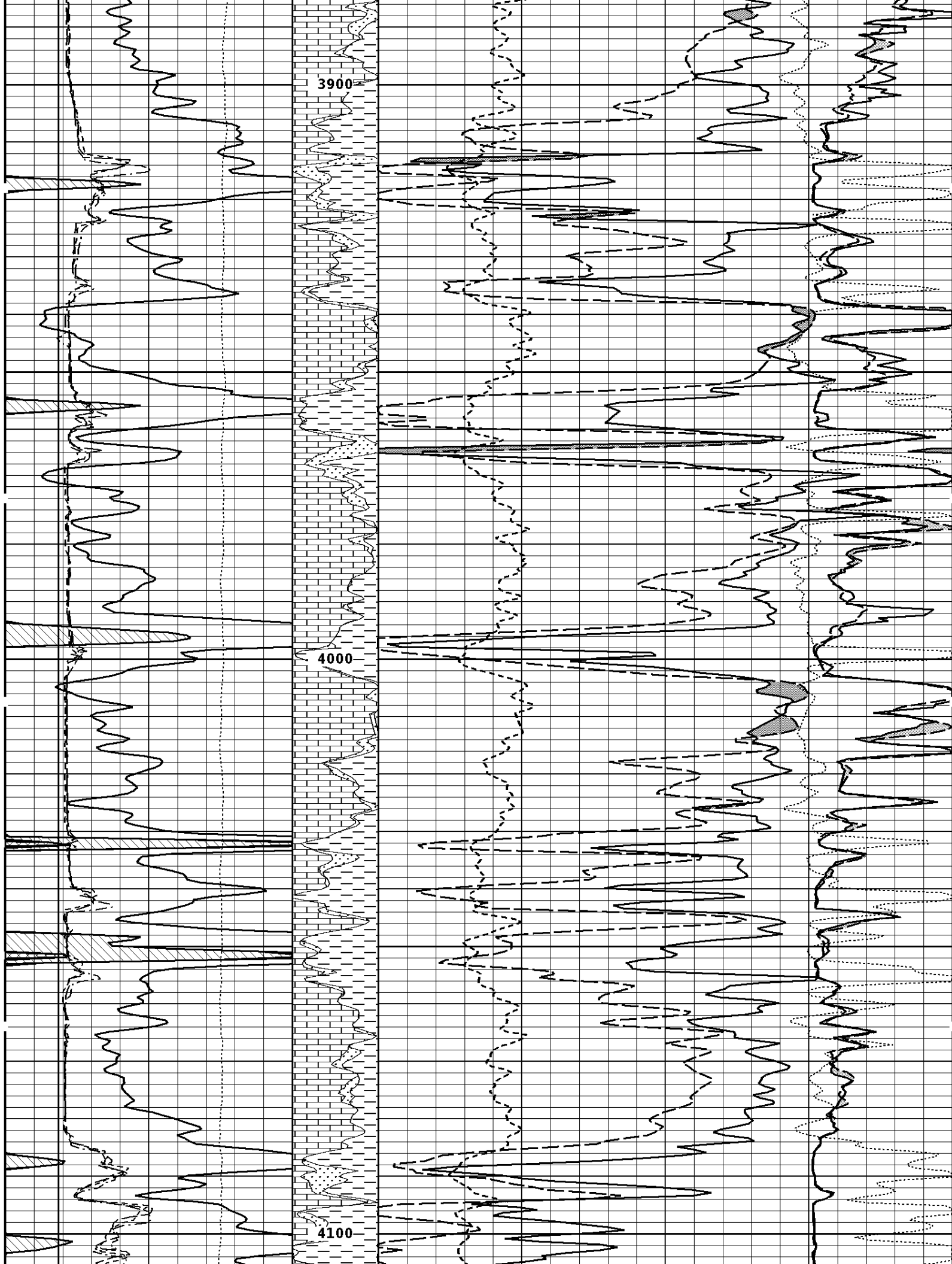
1:240 MAIN SECTION

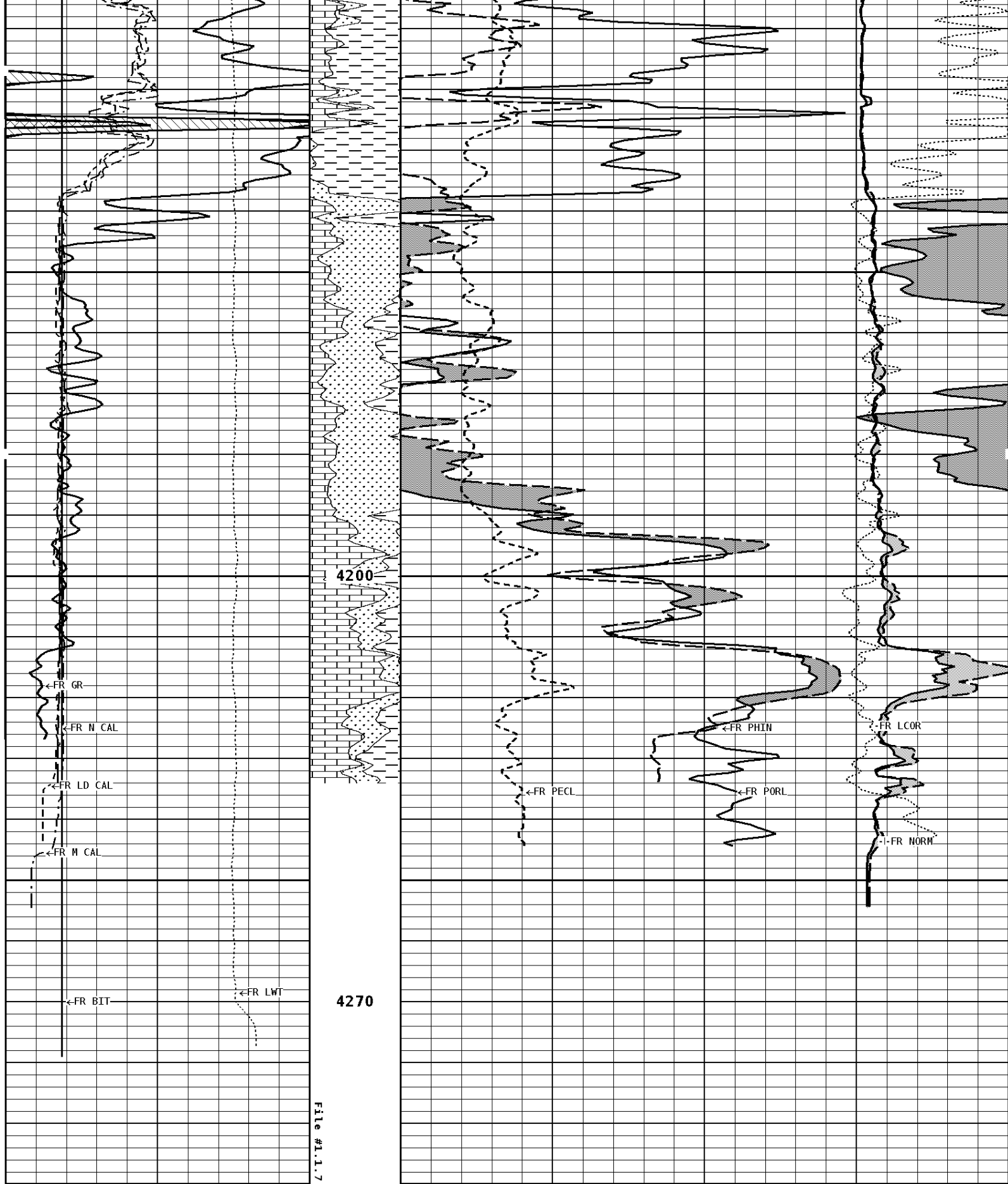




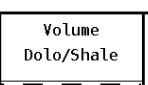


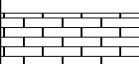
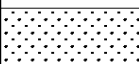






1:240 MAIN SECTION

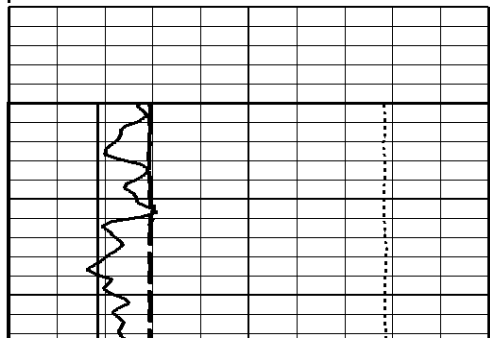


0	150		30		-10
TENSION LBS		Volume Calcite	DENSITY POROSITY (2.71g/cc) PERCENT		
10000	0		70		30
			30		-10
			-10		-50
DENSITY (X) CALIPER INCHES (IN)		Volume Quartz	PE CROSS-SECTION BARN/ELECTRON		DENSITY CORRECTION G/CC
16	26		0	10	-0.25
6	16				0.25
NEUTRON (Y) CALIPER INCHES (IN)					INVERSE OHM
16	26				0
6	16				40
BIT SIZE INCHES (IN)					NORMAL OHM
6	16				0
CALIPER MICRO INCHES (IN)					40
16	26				
6	16				

Well File: PICKRELL HIGGINS K 3 JAN16 MSTK Scale: 1:240 Format: LDT-240
 Segment: V1.D1.S7 FINAL Acquired: Not Available
 Reference: 0 Processed: Not Available

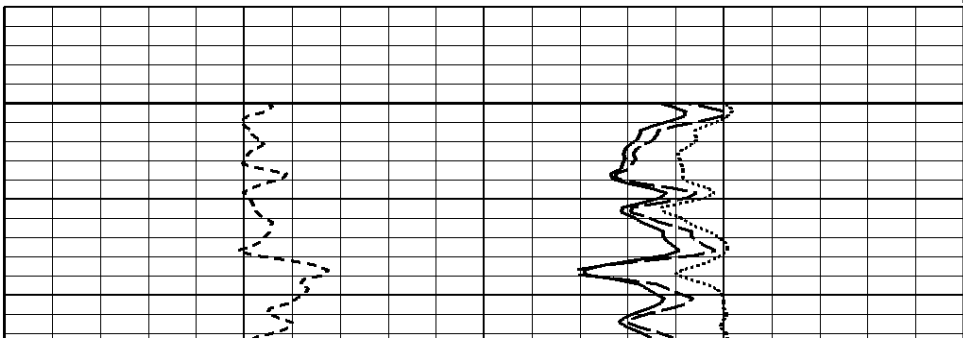
BIT SIZE INCHES (IN)					
6	16				
NEUTRON (Y) CALIPER INCHES (IN)					
16	26				
6	16				
DENSITY (X) CALIPER INCHES (IN)		PE CROSS-SECTION BARN/ELECTRON		DENSITY CORRECTION G/CC	
16	26	0	10	-0.25	0.25
6	16				
TENSION LBS		COMPENSATED BULK DENSITY G/CC			
10000	0	3.0	4.0		
		2.0	3.0		
		1.0	2.0		
GAMMA RAY API UNITS		- BHV AHV - CU. FT	DENSITY POROSITY (2.71g/cc) PERCENT		
150	300		70		30
0	150		30		-10
			-10		-50

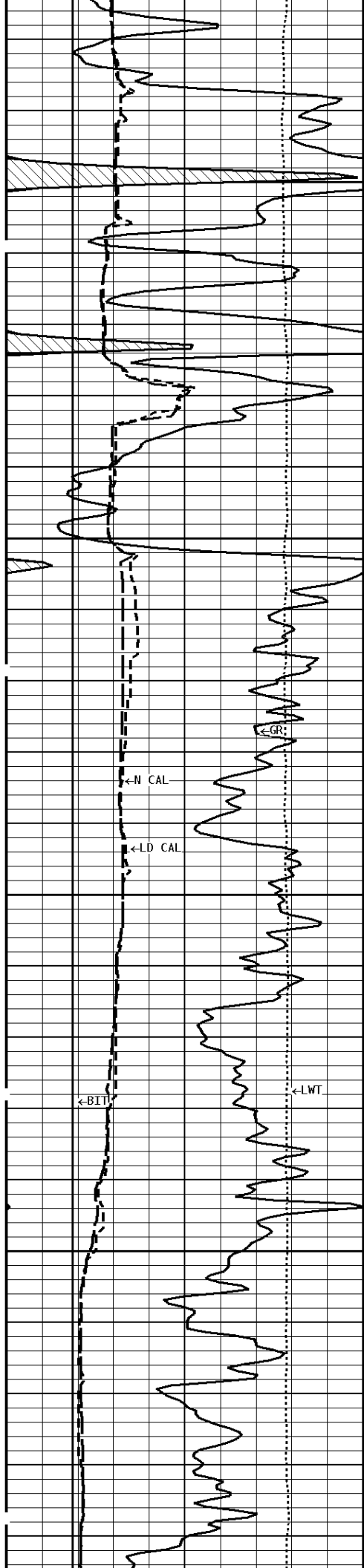
1:240 MAIN SECTION
BULK DENSITY



File #1.1.7

3100



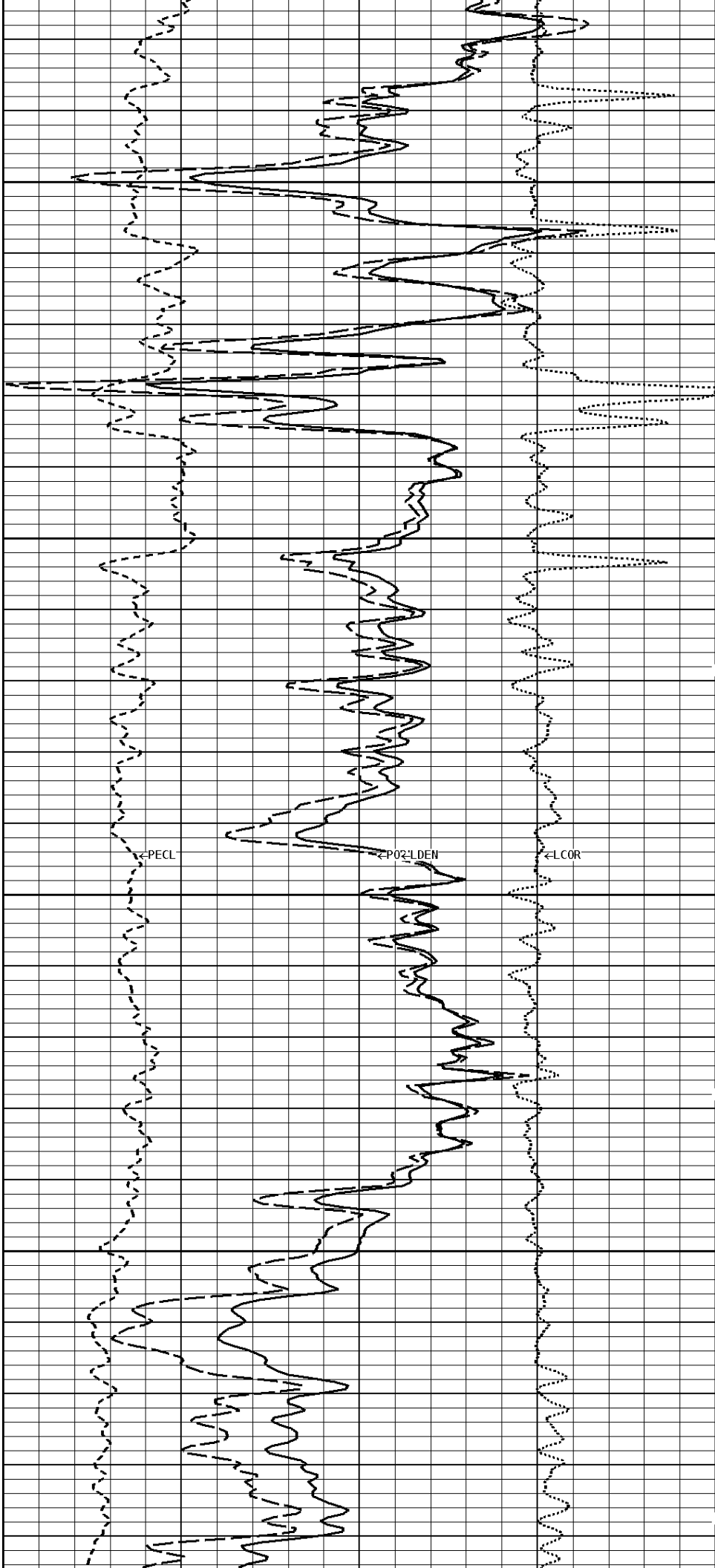


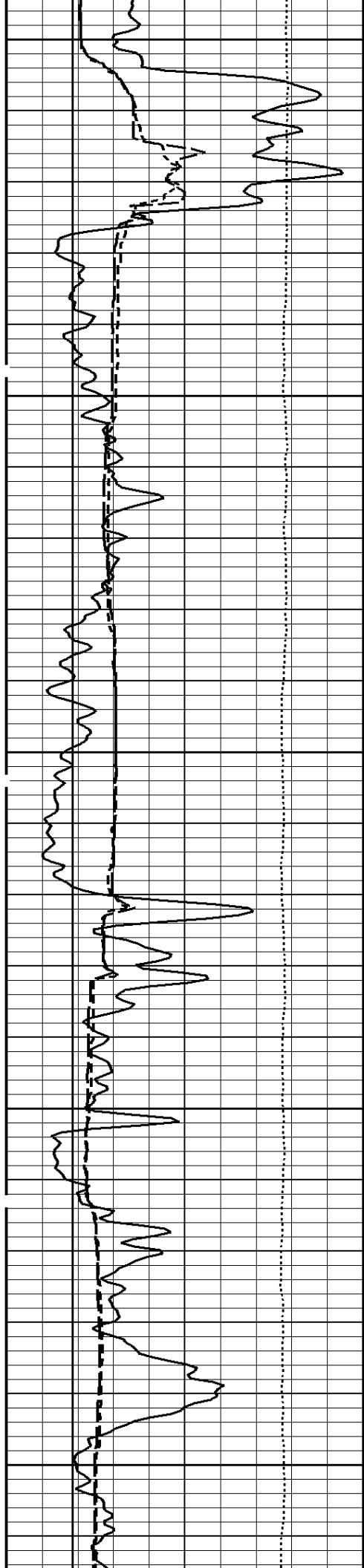
300Cu.Ft

3200

400Cu.Ft

3300

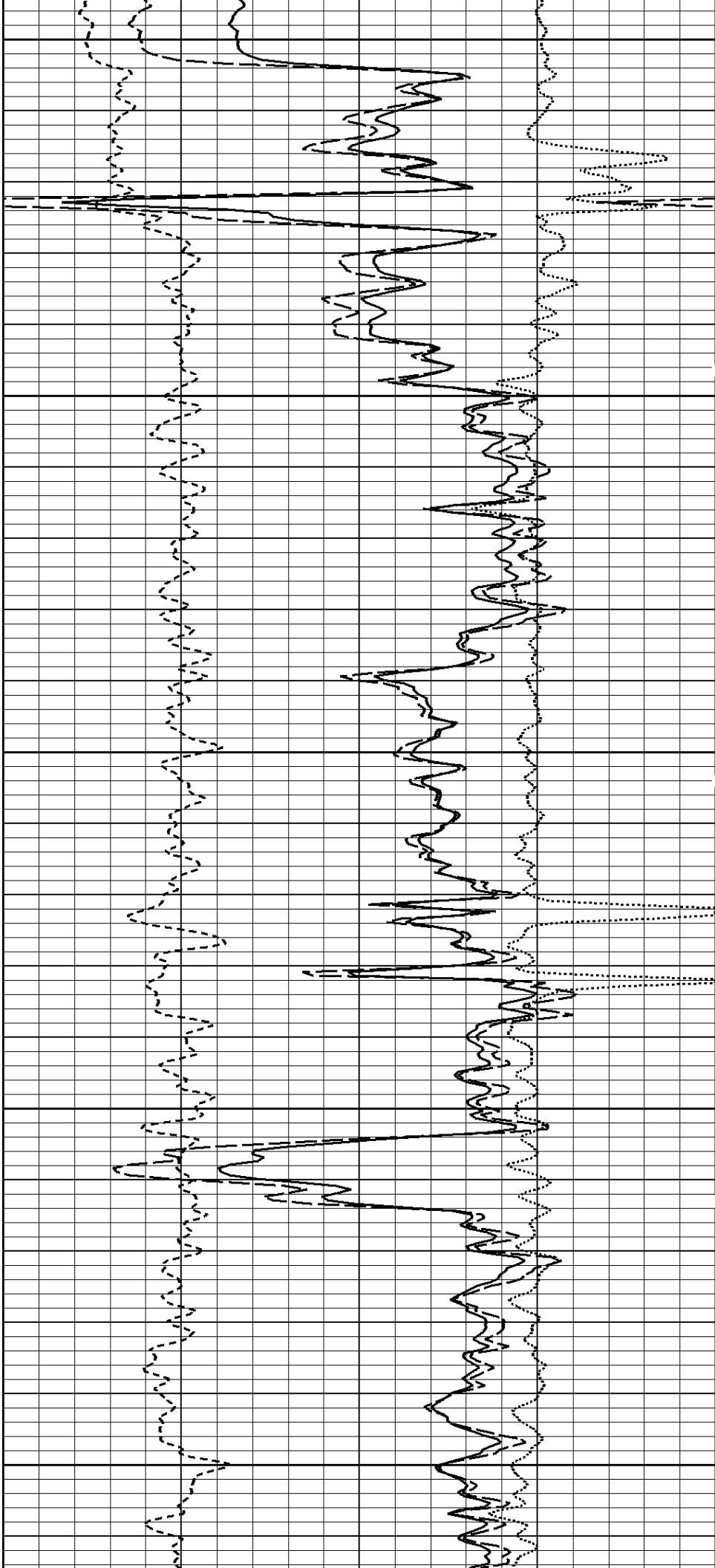




3400

--300Cu.Ft--

200Cu.Ft--





3600

3700

200Cu.Ft

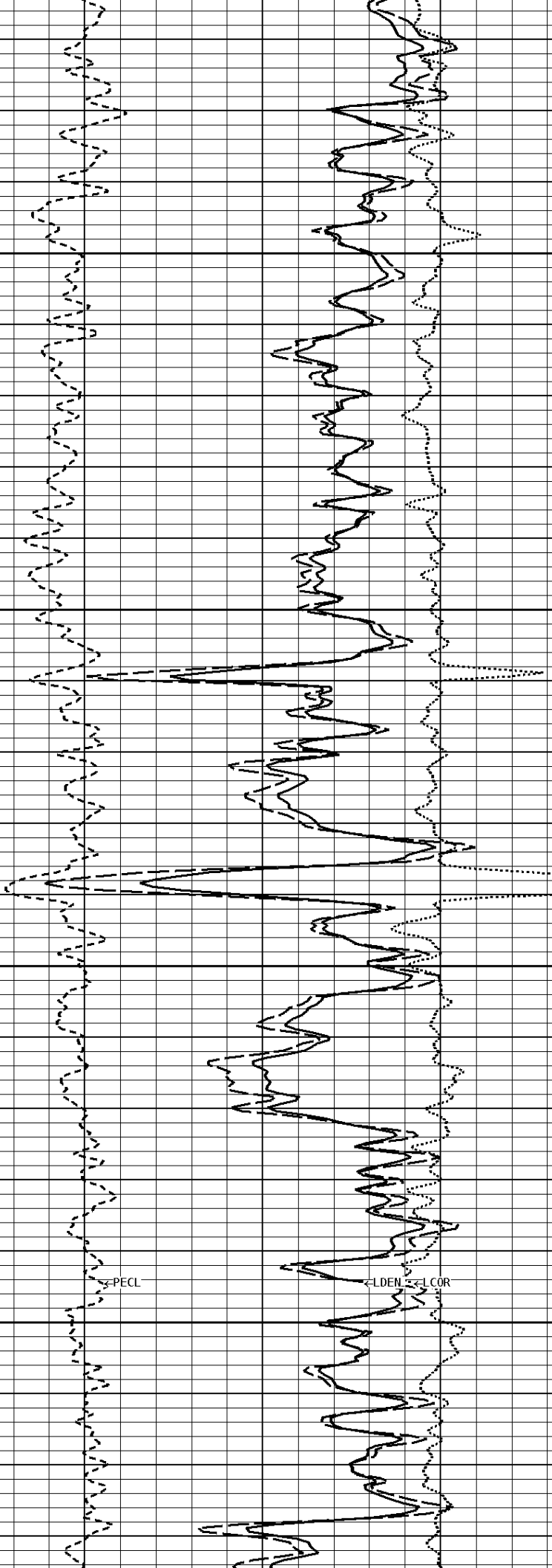
← GR

← N CAL

← LD CAL

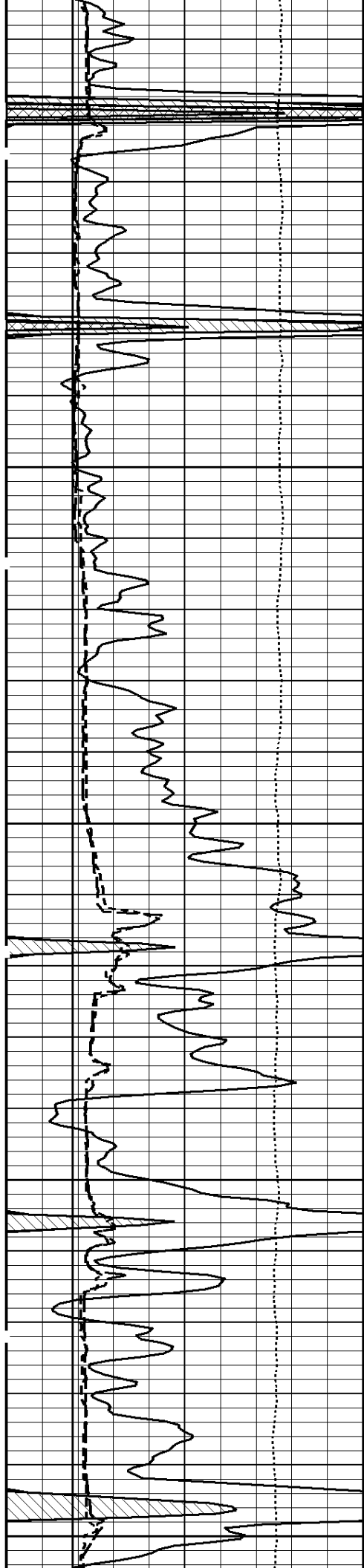
← BIT

← LWT



← PECL

← LDEN ← LGR



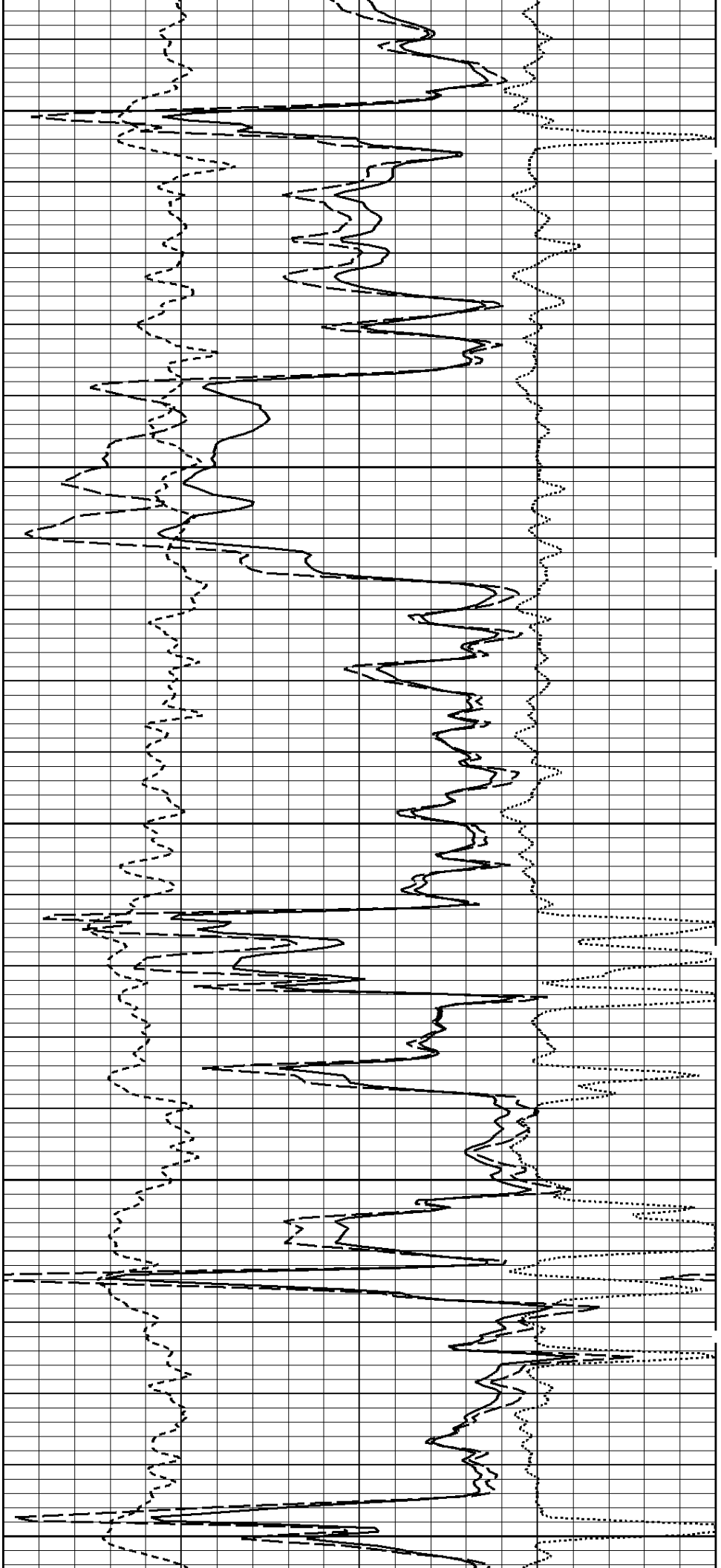
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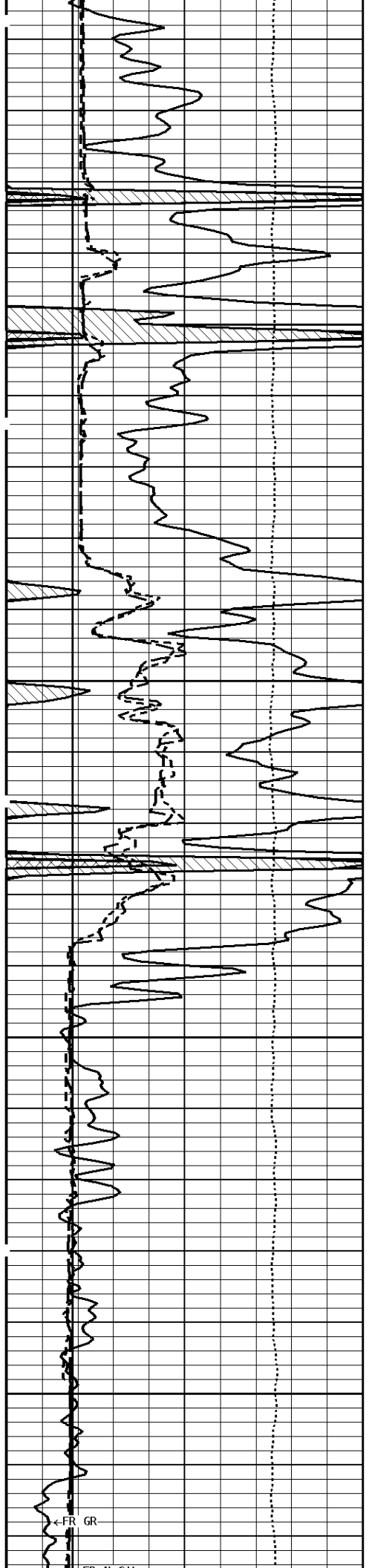
100Cu.Ft.

3900

100Cu.Ft

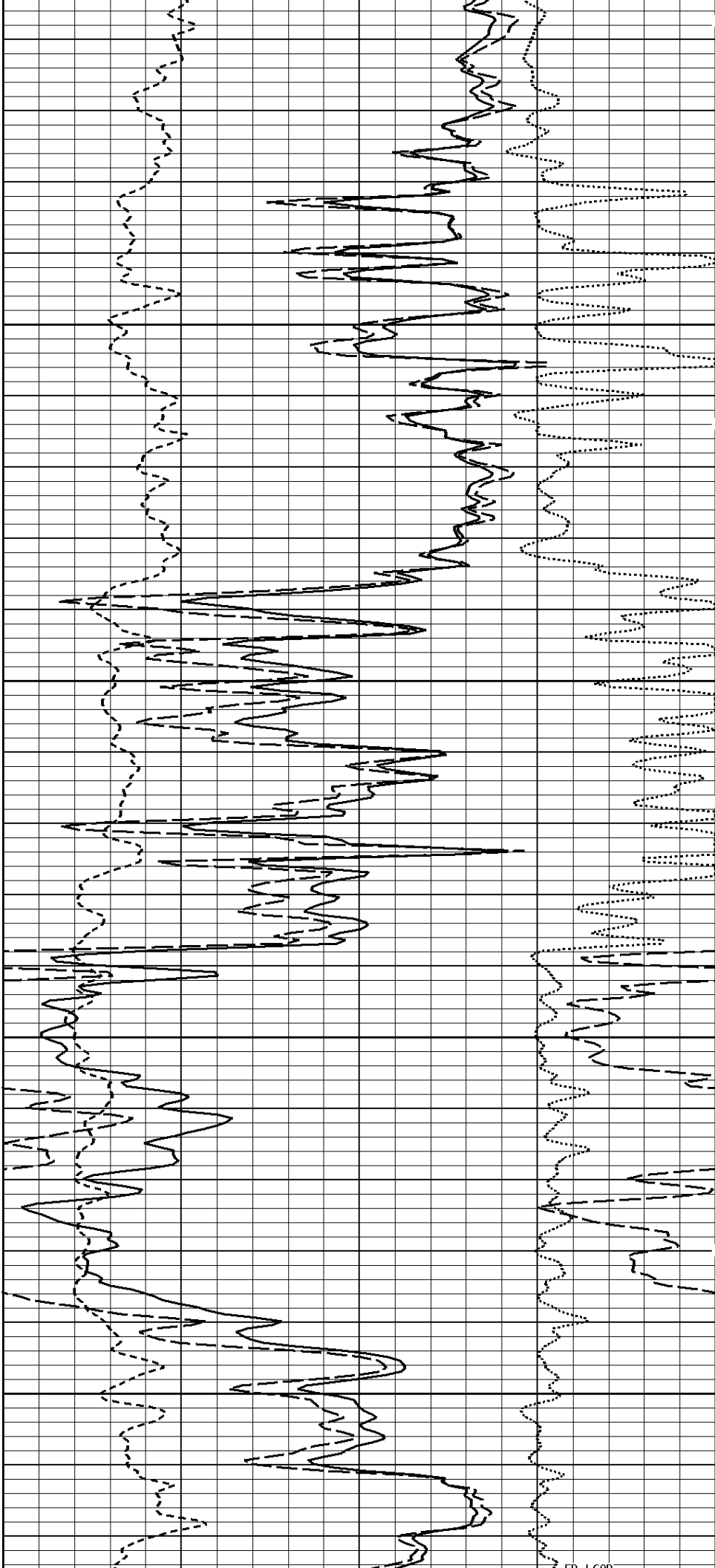
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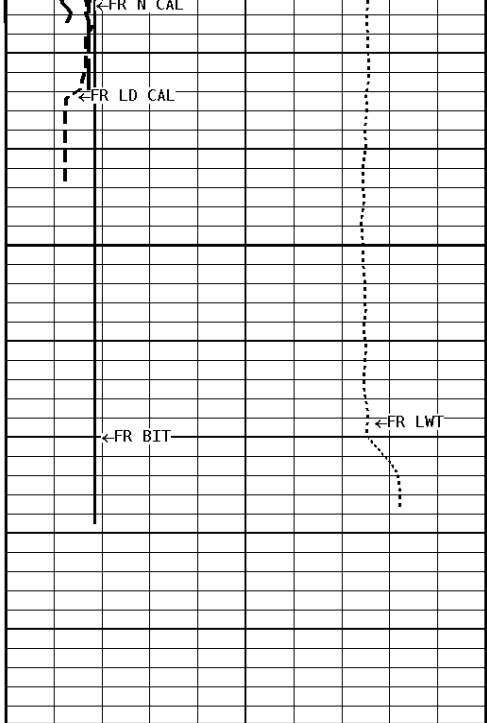


4100

4200

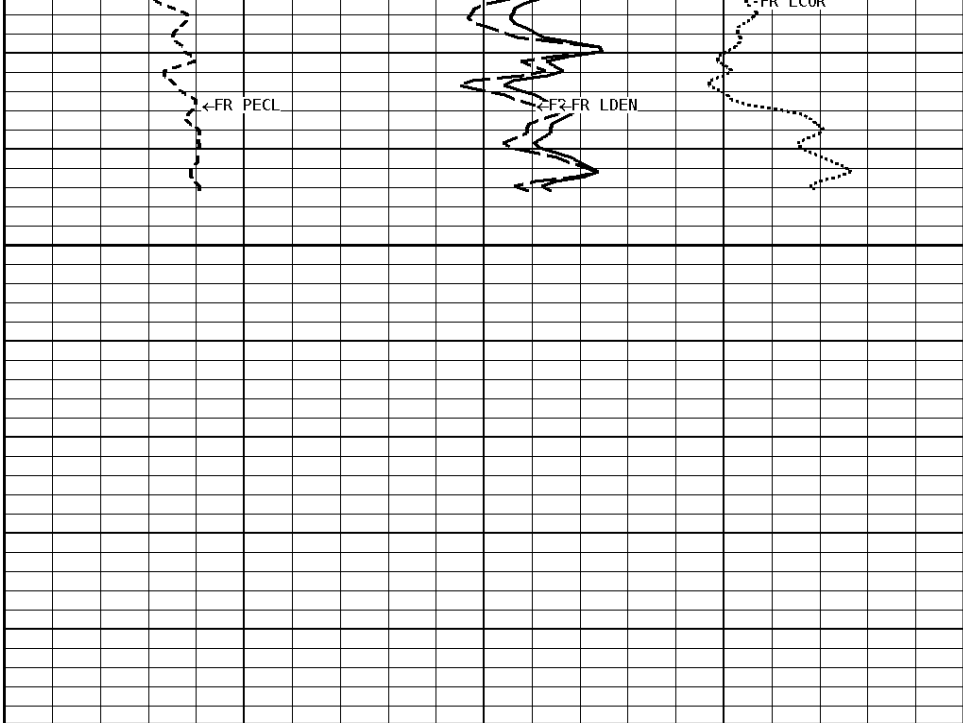


←FR GR



4270

File #1.1.7



1:240 MAIN SECTION
BULK DENSITY

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

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

* Calibration Summary *

Shop Calibration					
GRT-B					
Performed : 02-Jan-2015			Time : 13:01		
Sensor Suite : GR-GR5			ID : GRT-BA-017		
	Measured	Units	Calibrated	Units	
GR	Background	Jig	Jig	GR-API	
	61	378	175		
	CPS				
Shop Calibration					
CNT-AA					
Performed : 02-Jan-2015			Time : 13:12		
Sensor Suite : CALI-BCN			ID : NDT-BB-122		
	Jig - Measured	Jig - Calibrated	Units		
	Ring#1	Ring#2	Ring#1	Ring#2	

CL # 1 9.0 13.7 6.0 12.0 IN.

Performed : 02-Jan-2015 Time : 12:24
 Sensor Suite : BHC NEUT ID : CNP-AA-115
 Source ID : N-1044

	Measured	Tank Calibrated	Verification Jig	Units
N/F	3.9759	3.6893	3.7035	
Porosity	25.1	20.5	20.7	%

Shop Calibration
LDT-DA

Performed : 02-Jan-2015 Time : 13:15
 Sensor Suite : CALI-LTH ID : NDT-CA-137

CL #	Ring#1	Ring#2	Ring#1	Ring#2	Units
1	8.0	12.1	6.0	12.0	IN.

Performed : 02-Jan-2015 Time : 11:25
 Sensor Suite : BHCPENGL ID : LDP-DA-47
 Source ID : CSV-587

Short Space

	BKGD	Al	Mg	Al+Fe	Units
LSW1	68	337	520	251	CPS
LSW2	74	437	683	335	CPS
LSW3	271	1186	1829	1026	CPS
LSW4	332	1159	1586	1032	CPS
LSW5	38	47	48	46	CPS
LSW6	79	79	77	79	CPS
LSW7	55	56	55	57	CPS
LSW8	6	6	7	6	CPS
QS	0.180	0.174	0.161	0.164	
PES			2.778	5.967	
SSDN		2.600	1.680		G/CC

Long Space

	BKGD	Al	Mg	Al+Fe	Units
LLW1	101	432	1697	290	CPS
LLW2	109	797	3263	584	CPS
LLW3	431	1764	6350	1536	CPS
LLW4	570	1113	2785	1032	CPS
LLW5	63	68	80	66	CPS
LLW6	179	178	175	178	CPS
LLW7	114	114	109	115	CPS
LLW8	3	5	9	5	CPS
QL	0.221	0.219	0.234	0.217	
PEL			2.697	5.458	
LSDN		2.600	1.680		G/CC

Shop Calibration
MST-DA

Performed : 04-DEC-2014 Time : 14:45
 Sensor Suite : CALI-MSN ID : MLT-DA-21

CL #	Ring#1	Ring#2	Ring#1	Ring#2	Units
1	7.9	12.3	6.0	12.0	IN.

Performed : 04-DEC-2014 Time : 02:18
 Sensor Suite : MSTDA-NI ID : MLT-DA-21

Internal

	Zero	Measured Reference	Units	Zero	Calibrated Reference	Units
INV-V	0.0	29815.7		0.00	1746.00	MV
NOR-V	49.2	30179.6		0.00	1546.00	MV
IN-C	0.0	60547.2		0.00	15.46	UA
INV-R					36.53	OHMM
NOR-R					55.11	OHMM

Performed : 04-NOV-2014 Time : 14:46
 Sensor Suite : MSTDAMSF ID : MLT-DA-21

Internal

	Zero	Measured Reference	Units	Zero	Calibrated Reference	Units
MSFC	16.0	42149.4		0.00	1522.00	UA
MSFB	32723.0	54933.0		0.00	1522.00	MA
MOM1	0.0	43079.5		0.00	1522.00	MV
MSFRA					43.30	OHMM



Tucker
ENERGY SERVICES

Company: PICKRELL DRILLING COMPANY, INC.

Well: HIGGINS K #3

Location: 1320' FNL & 2310' FWL

Logged: 01-15-2015

K.B. Elev: 1504.0 Ft