Tucker WIRELINE SERVICES

COMPENSATED NEUTRON

PEL DENSITY LOG

Company RUNNING FOXES PETROLEUM
Well LIN LEA #7-12
Field WILDCAT
County LINN
State KANSAS
Country USA
API No. 15-107-24521

File No : TUL-57531
Company : RUNNING FOXES PETROLEUM
Well : LIN LEA #7-12
Field : WILDCAT
County : LINN
State : KANSAS
Country : USA
API No : 15-107-24521

Location :
1980' FEL & 1980' FNL
SW NE

LSD : **Sect :** 12 **Twp :** 23S **Rge :** 23E

Permanent Datum:	GL		**Elevations:**			**Services:**
Drilling Measured From:	GL		**KB**	0.00	Ft	CNT
Log Measured From:	GL		**DF**	0.00	Ft	LDT
Above Permanent Datum:	0.00	Ft	**GL**	913.00	Ft	PIT

Date	Oct 04 2011						
Run Number	1						
Depth--Driller	662.0	Ft					
Depth--Logger	660.0	Ft					
First Reading	637.0	Ft					
Last Reading	20.0	Ft					
Casing--Driller	20.0	Ft					
Casing--Logger	20.0	Ft					
Bit Size	6.750	In					
Casing Size	8.625	In					
Hole Fluid Type	NATIVE / FRESH						
Density	0.0	LBS/GAL					
Fluid Loss	0.0	CC					
PH/Viscosity	0.0	0.0 SEC					
Sample Source	MEASURED						
RM@Measured Temp.	10.000 @ 65	F					
RMF@Measured Temp	8.000 @ 65	F					
RMC@Measured Temp.	12.000 @ 65	F					
Source RMF/RMC	CALCULATED	CALCULATED					
RM@BHT	7.920 @ 82	F					
Time Circulation Stopped							
Max Recorded Temp.	82	F					
Equipment/Base	TRK123	TULSA					
Recorded By	S. DAVIS / R. AUSTIN						
Witnessed By	A. GREENE						

Bitsize Intervals

Size (In)	Bottom (Ft)
6.750	662.00

Casing Strings

Size (In)	Weight (Lbs)	Bottom (Ft)
8.625	20.00	20.00

Run Number	1	
Date	Oct 04 2011	
Date/Time On Bottom	Oct 04 2011 09:30	
Depth to Fluid	60.0 Ft	
Salinity	0.000 PPM	
RMF@BHT	6.340 @ 82 F	
RMC@BHT	9.510 @ 82 F	

Run Number 1

Comments

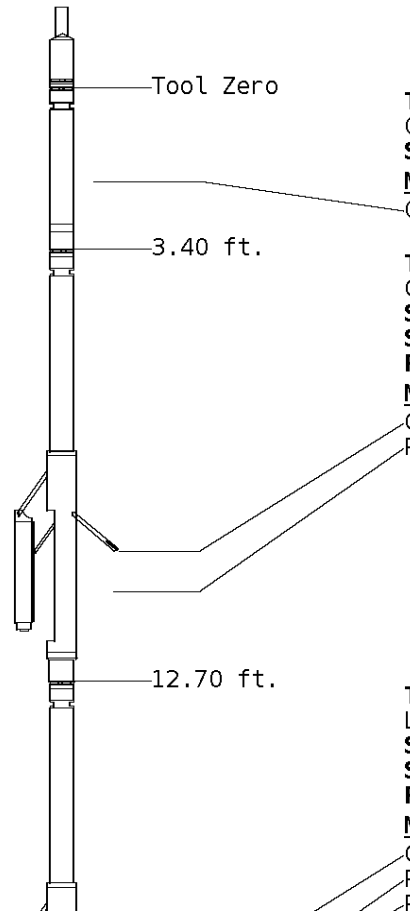
ALL PRESENTATIONS AS PER CUSTOMER REQUEST.
GRT, CNT, LDT, AND PIT RUN IN COMBINATION.
CALIPERS ORIENTED ON X-Y AXIS.
2.71 G/CC USED TO CALCULATED POROSITY.
ANNULAR HOLE VOLUME CALCULATED UISING 4.0" PRODUCTION CASING.

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

OPERATORS:
J.THOMAS
S. DAVIS
T. HOBBS

Tool String Schematic

Total Tool Length - 43.91 **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-BC-41

Measure Point	Tool Offset	Stack Offset	Bottom Offset
GRP	2.00	2.00	41.91

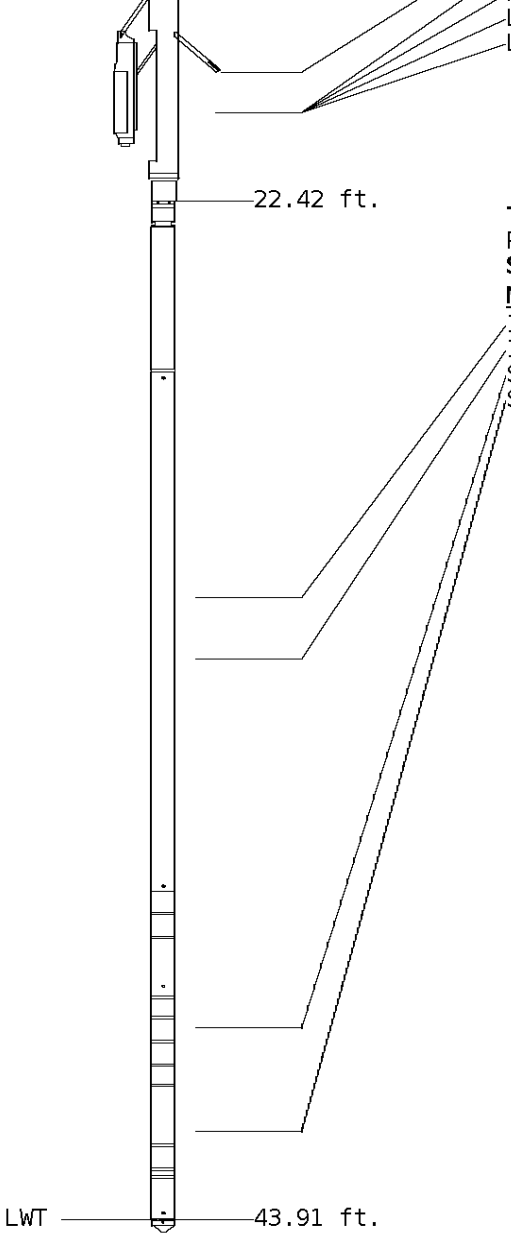
Tool: CNT-AA **Length:** 9.30 **ft.** **O.D.** 4.36 **in.**
Compensated Neutron A Pad on NDT-A
Sonde ID :NDT-BB-129
Source ID :N-1046
Pad ID :CNP-AA-112

Measure Point	Tool Offset	Stack Offset	Bottom Offset
CLCN	6.00	9.40	34.51
PHIN	6.80	10.20	33.71

Tool: LDT-DF **Length:** 9.72 **ft.** **O.D.** 4.80 **in.**
Litho Density D Pad on NDT-F
Sonde ID :PDT-GA-464
Source ID :2991GW
Pad ID :LDP-DA-066

Measure Point	Tool Offset	Stack Offset	Bottom Offset
CLLD	6.42	19.12	24.79
PEL	7.42	20.12	23.79
PES	7.82	20.52	23.39

LDEN	7.62	20.32	23.59
LCOR	7.62	20.32	23.59



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	31.34	12.56
ILM	10.10	32.52	11.39
SFLU	17.49	39.91	4.00
SP	20.60	43.02	0.88

Well File: lin_lea_7-12_oct_4_11Stk **Scale:** 1:240
Segment: V1.D1.S5 MN **Acquired:** 2011-10/04 09:31 3.2.0-9963
Reference: 0 **Processed:** 2011-10/04 09:57 3.2.0-9963

TENSION
LBS
10000 — 0

BIT SIZE
INCHES (IN)
4 — 14

DENSITY (X) CALIPER
INCHES (IN)
14 — 24
4 — 14

Volume
Quartz

PE CROSS-SECTION
BARNS/ELECTRON
0 — 10

DENSITY CORRECTION
G/CC
-0.25 — 0.25

NEUTRON (Y) CALIPER
INCHES (IN)
14 — 24
4 — 14

Volume
Calcite

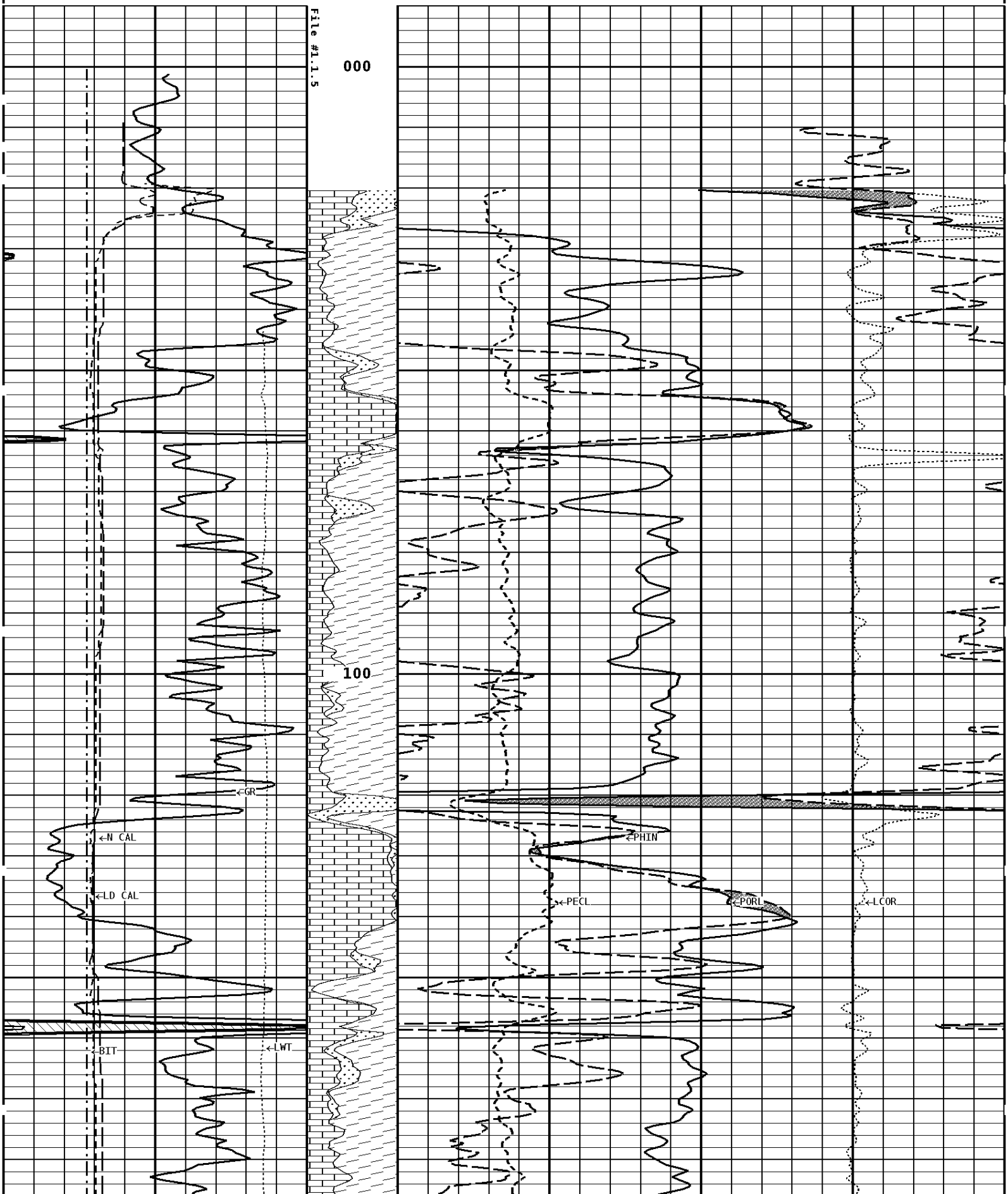
NEUTRON POROSITY
PERCENT (LIMESTONE MATRIX)
70 — 30
30 — -10
-10 — -50

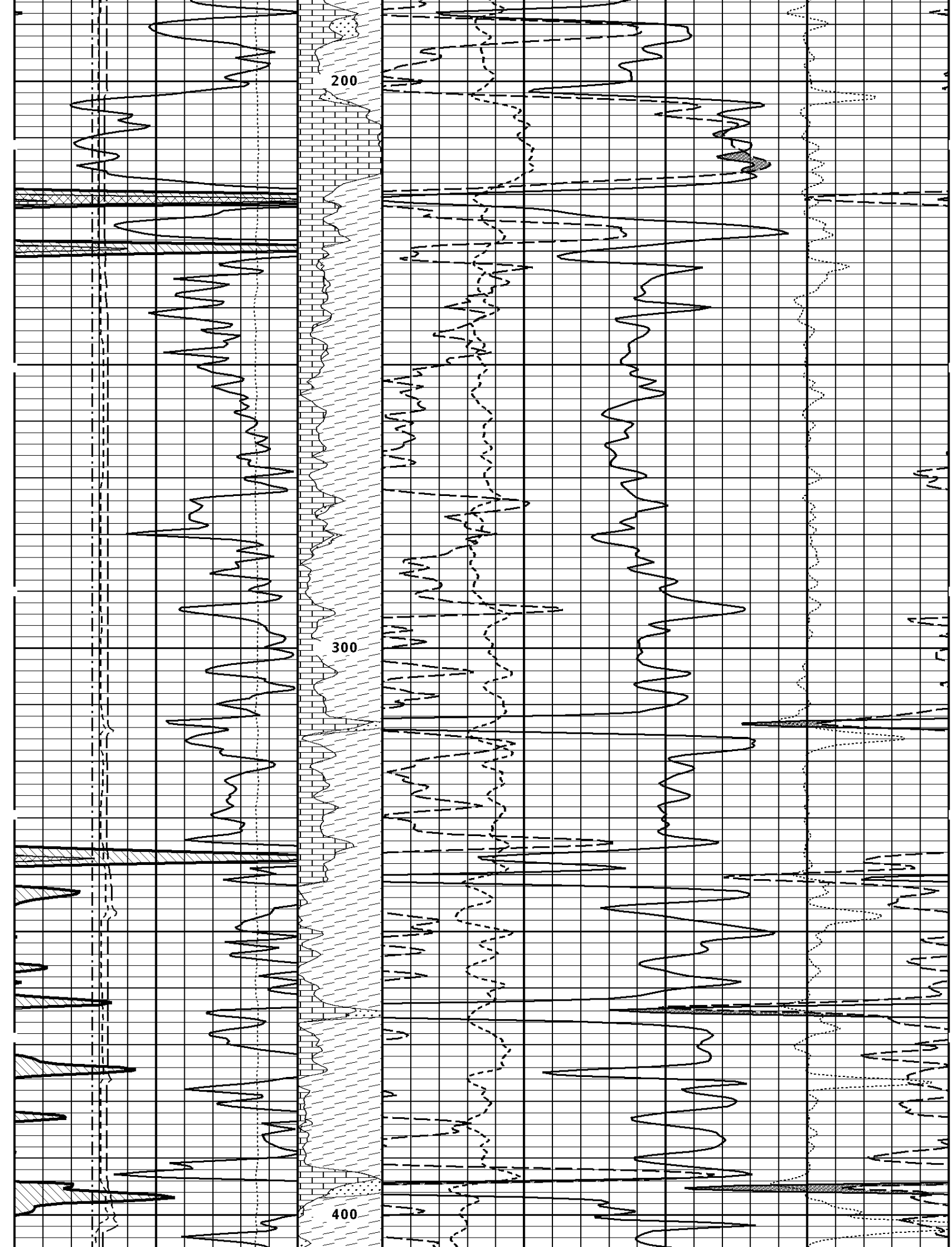
GAMMA RAY
API UNITS
150 — 300
0 — 150

Volume
Dolo/Shale

DENSITY POROSITY
PERCENT (2.71 g/cc)
70 — 30
30 — -10
-10 — -50

1:240 MAIN SECTION

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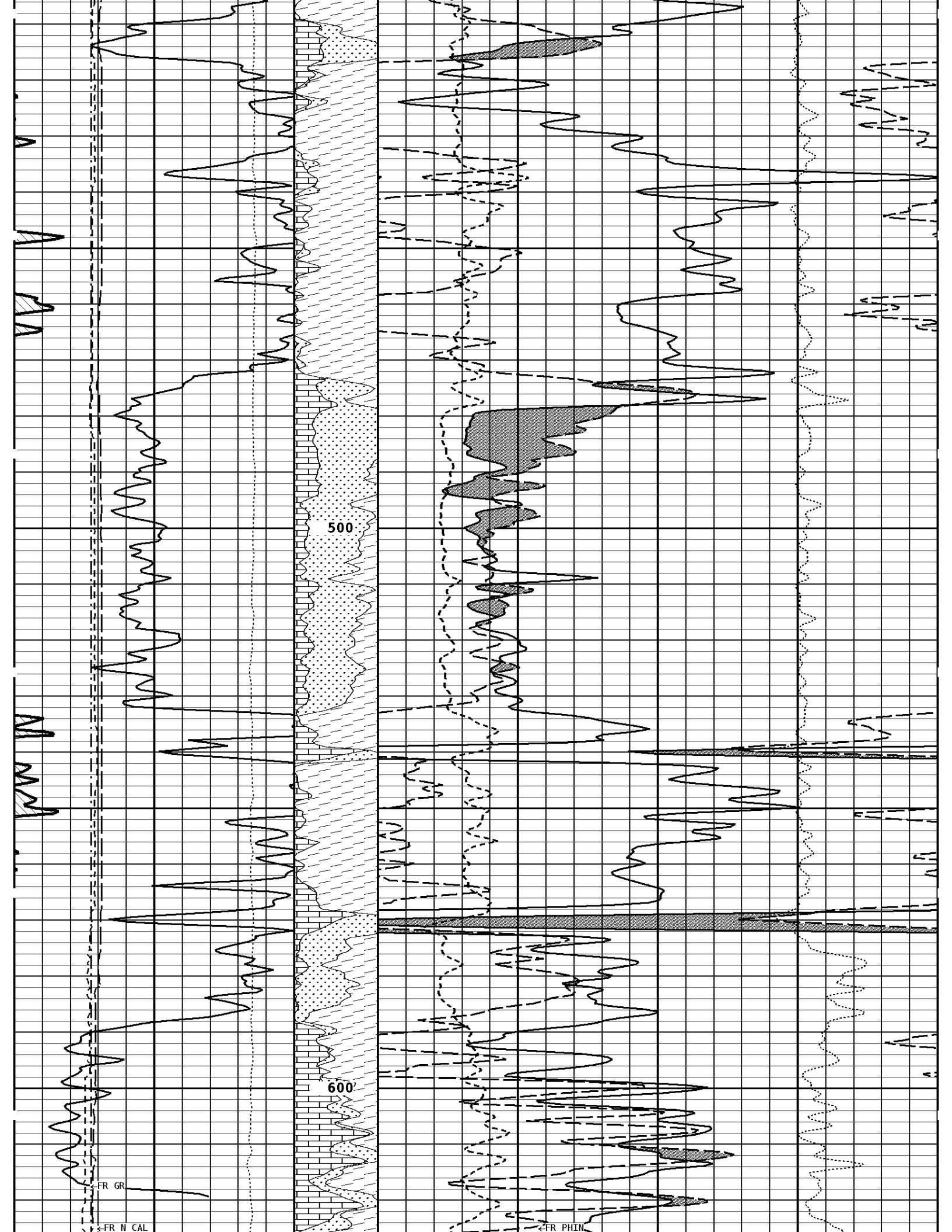
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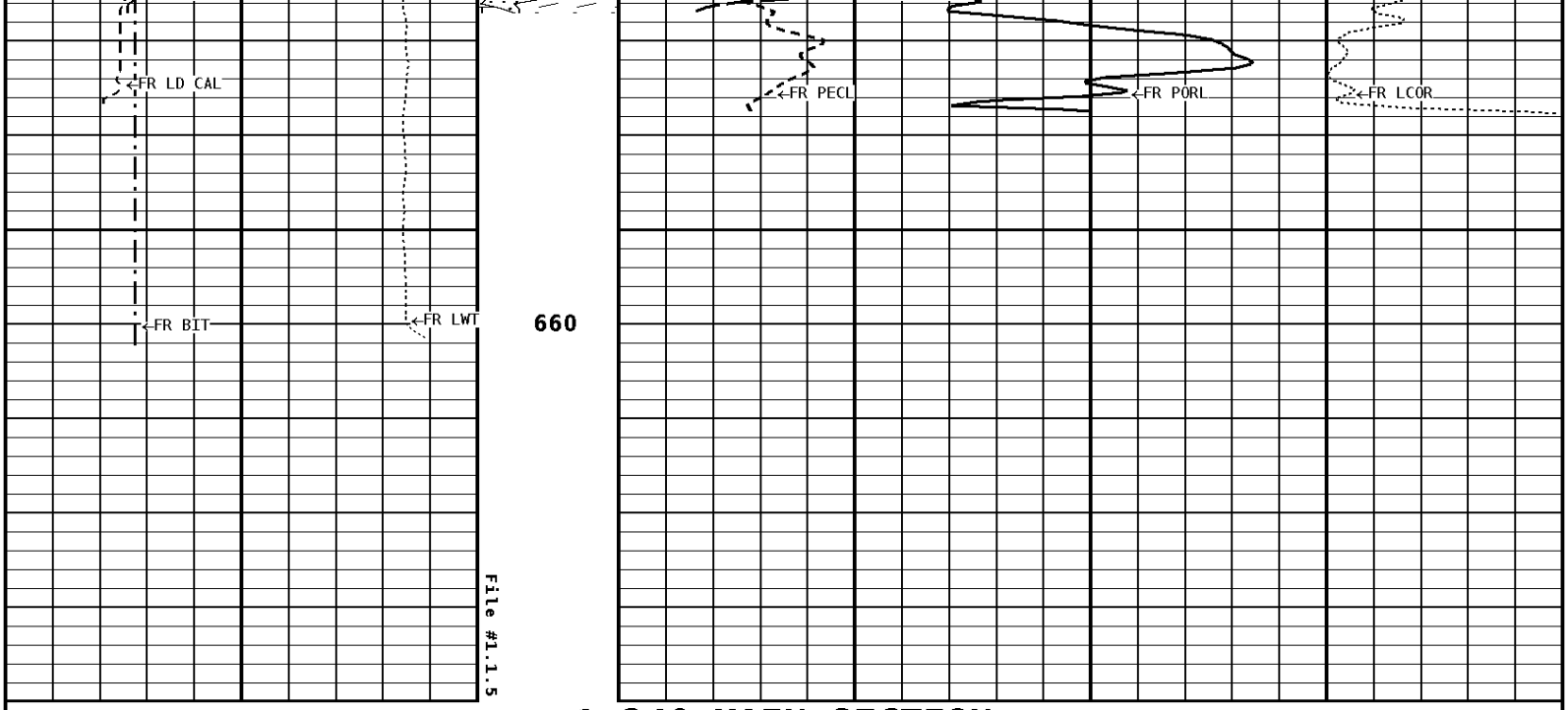
FR PHIN



1:240 MAIN 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)
14 — 24		70 — 30
4 — 14		30 — -10
		-10 — -50

DENSITY (X) CALIPER INCHES (IN)	Volume Quartz	PE CROSS-SECTION BARNS/ELECTRON	DENSITY CORRECTION G/CC
14 — 24		0 — 10	-0.25 — 0.25
4 — 14			

BIT SIZE INCHES (IN)
4 — 14

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	6.750	in
Casing Diameter	8.625	in
Casing Correction (PHI N)	Disable	

Well File: lin_lea_7-12_oct_4_11Stk
Segment: V1.D1.S4 RP
Reference: 0

Scale: 1:240
Acquired: 2011-10/04 09:20 3.2.0-9963
Processed: 2011-10/04 09:57 3.2.0-9963

TENSION

LBS

10000 0

BIT SIZE
INCHES (IN)

4 14

DENSITY (X) CALIPER
INCHES (IN)

14 24
4 14

Volume
Quartz

PE CROSS-SECTION
BARNS/ELECTRON

0 10

DENSITY CORRECTION
G/CC

-0.25 0.25

NEUTRON (Y) CALIPER
INCHES (IN)

14 24
4 14

Volume
Calcite

NEUTRON POROSITY
PERCENT (LIMESTONE MATRIX)

70 30
30 -10
-10 -50

GAMMA RAY
API UNITS

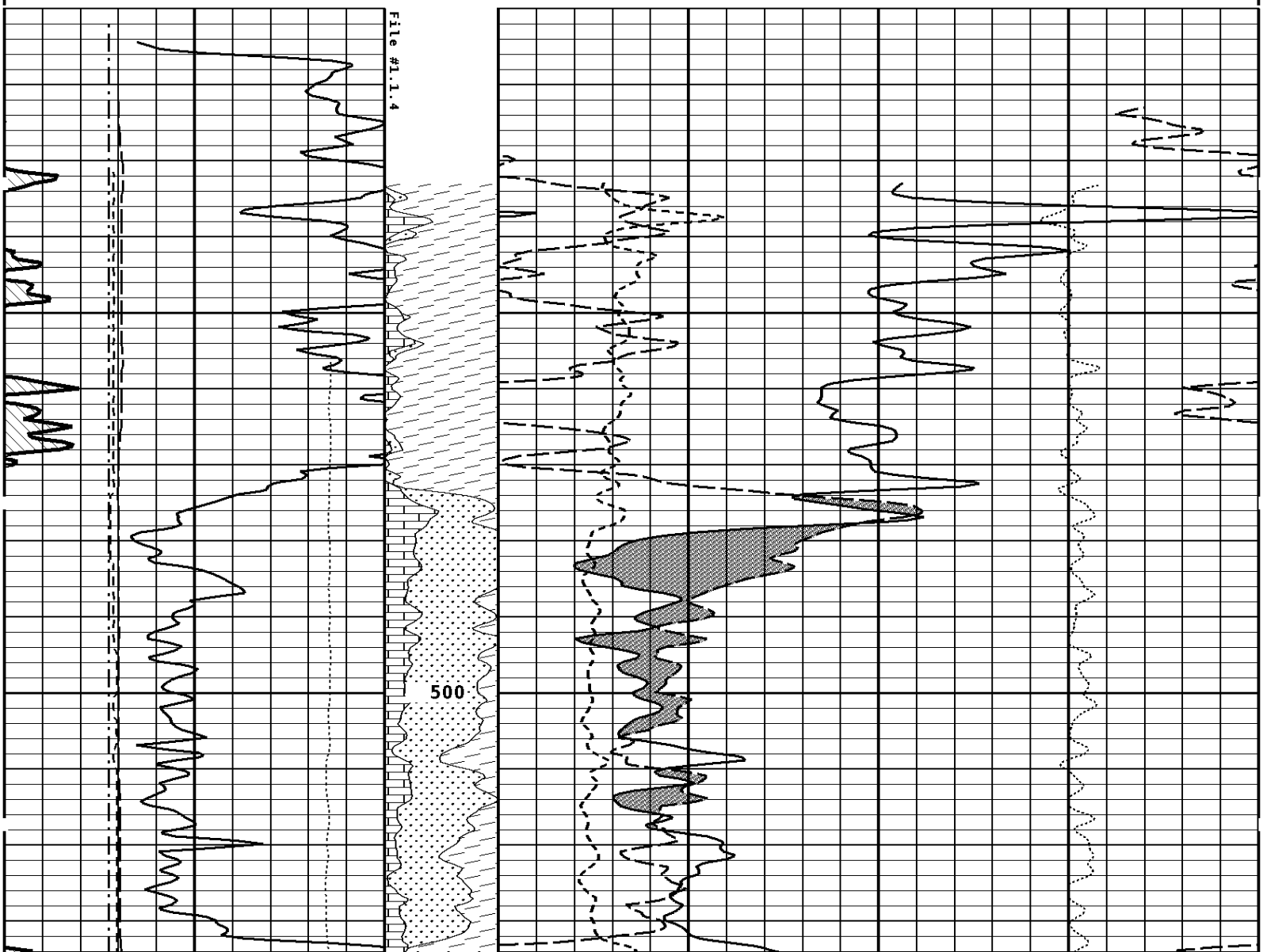
150 300
0 150

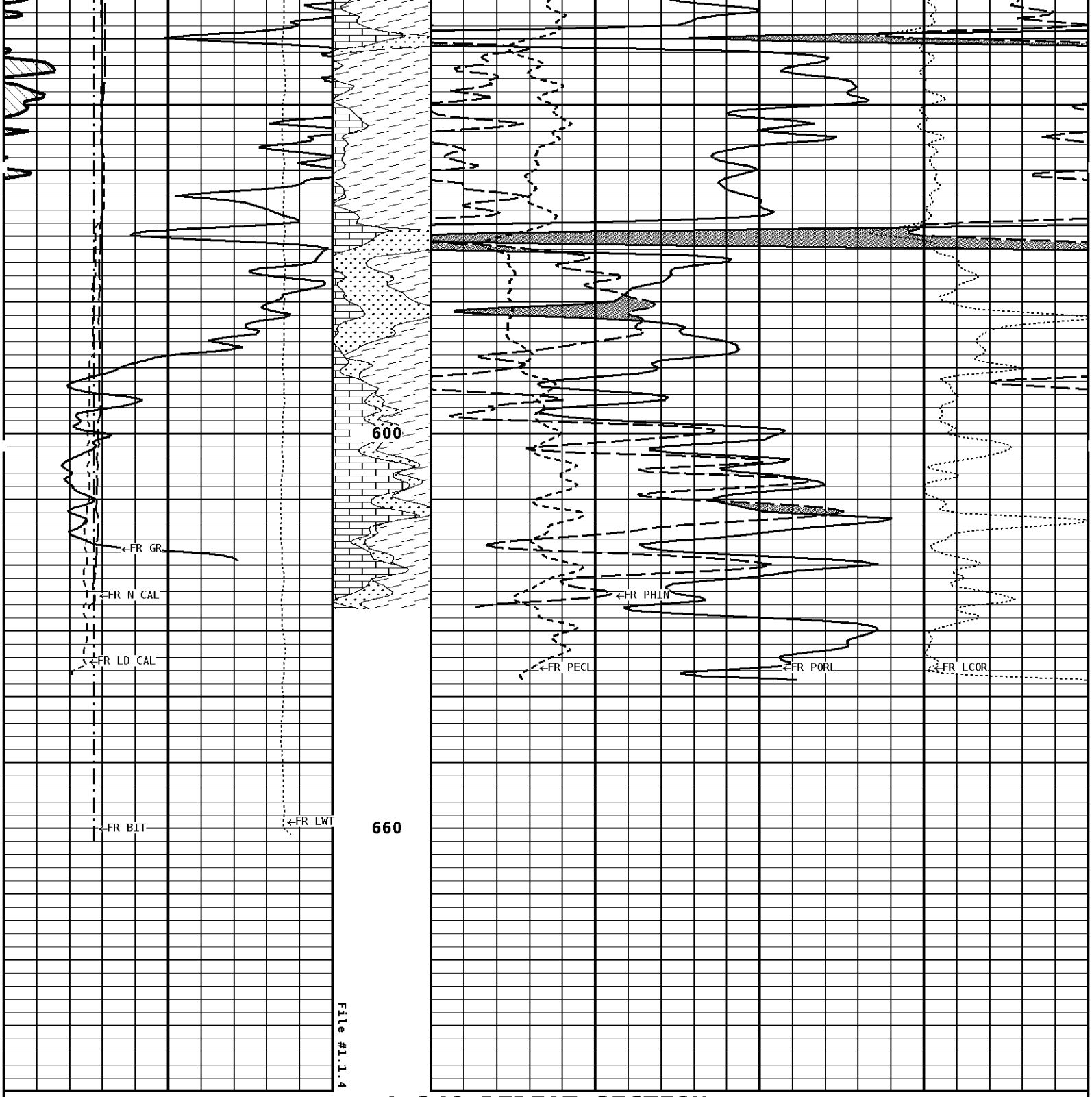
Volume
Dolo/Shale

DENSITY POROSITY
PERCENT (2.71 g/cc)

70 30
30 -10
-10 -50

1:240 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)**
14 24		70 30
4 14		30 -10
		-10 -50

DENSITY (X) CALIPER INCHES (IN)	Volume Quartz	PE CROSS-SECTION BARNS/ELECTRON	DENSITY CORRECTION G/CC
14 24 / 4 14		0 10	-0.25 0.25

BIT SIZE INCHES (IN)
4 14

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	6.750	in
Casing Diameter	8.625	in
Casing Correction (PHI N)	Disable	

Well File: lin_lea_7-12_oct_4_11Stk **Scale:** 1:240
Segment: V1.D1.S5 MN **Acquired:** 2011-10/04 09:31 3.2.0-9963
Reference: 0 **Processed:** 2011-10/04 09:57 3.2.0-9963

TENSION LBS
10000 0

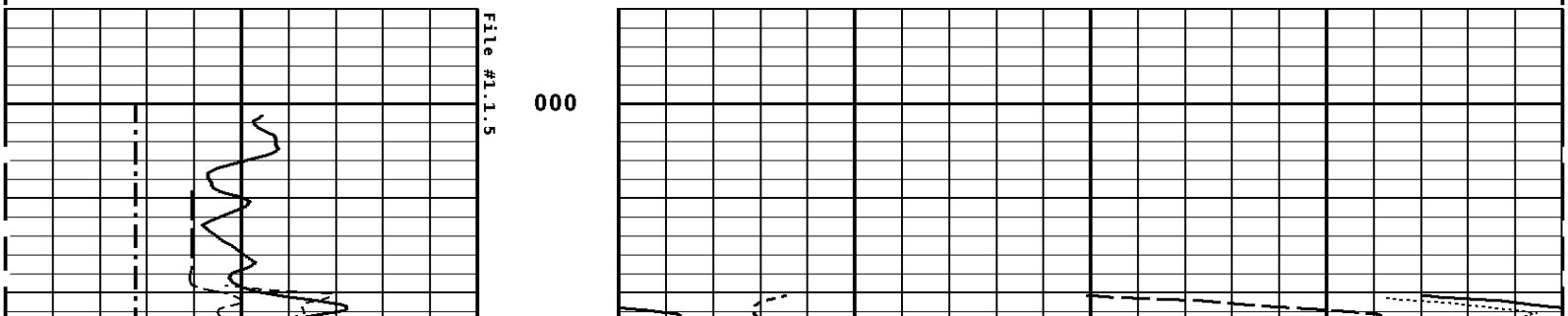
BIT SIZE INCHES (IN)
4 14

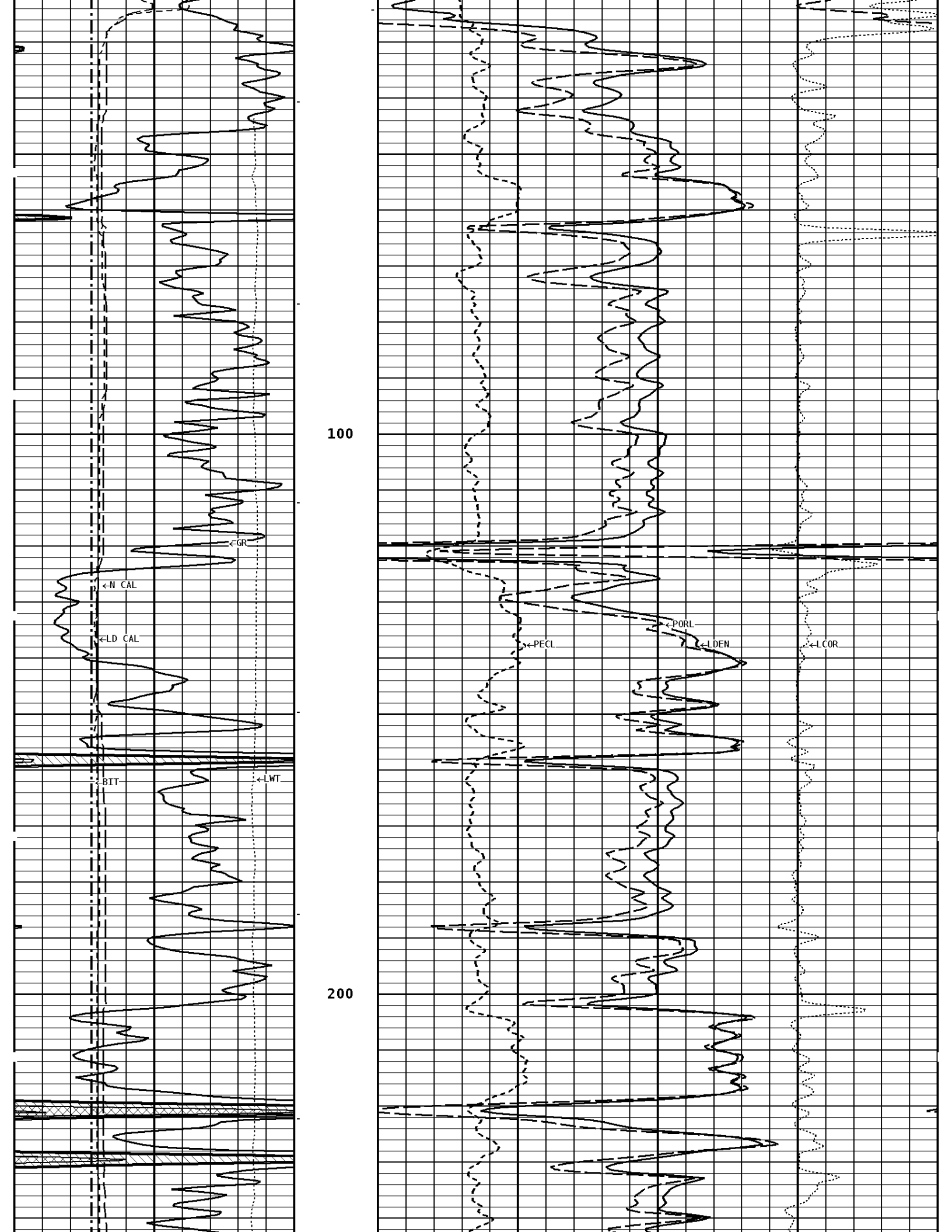
DENSITY (X) CALIPER INCHES (IN)	PE CROSS-SECTION BARNS/ELECTRON	DENSITY CORRECTION G/CC
14 24 / 4 14	0 10	-0.25 0.25

NEUTRON (Y) CALIPER INCHES (IN)	DENSITY POROSITY PERCENT (2.71 g/cc)
14 24 / 4 14	70 30 / 30 -10 / -10 -50

GAMMA RAY API UNITS	-BHV AHV- CU.FT	COMPENSATED BULK DENSITY G/CC
150 300 / 0 150		3.0 4.0 / 2.0 3.0 / 1.0 2.0

1:240 MAIN SECTION
BULK DENSITY

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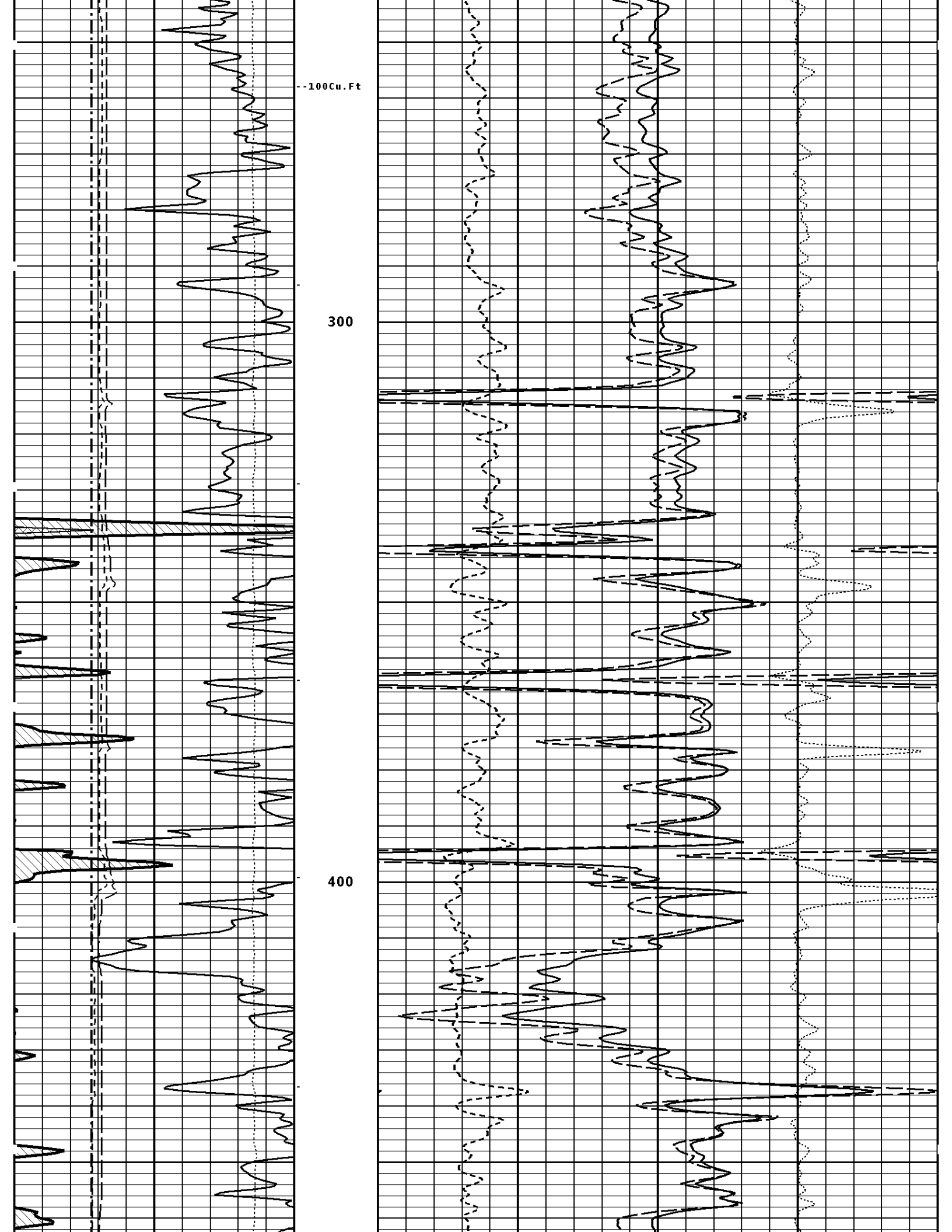
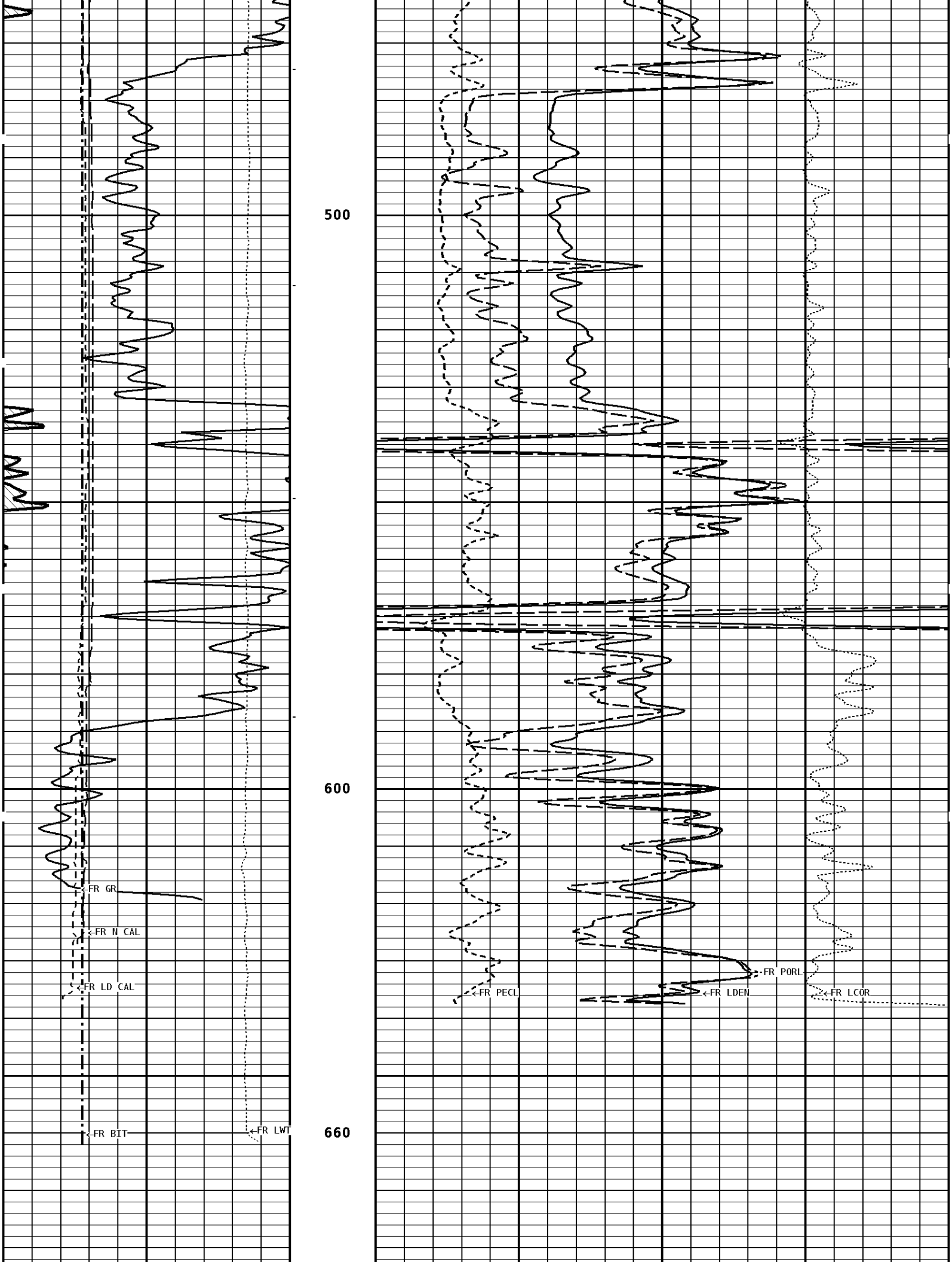
←N CAL
←LD CAL
BIT
←LWT
←PORL
←PECL
←LDEN
←LCOR


--100Cu.Ft
300
400


500
600
660
FR GR
FR N CAL
FR LD CAL
FR BIT
FR LWT
FR PECL
FR LDEN
FR PORL
FR LCOR

File #1.1.5

1:240 MAIN SECTION
BULK DENSITY

GAMMA RAY API UNITS	-BHV AHV- CU.FT	COMPENSATED BULK DENSITY G/CC
150 300 0 150		3.0 4.0 2.0 3.0 1.0 2.0

NEUTRON (Y) CALIPER INCHES (IN)	DENSITY POROSITY PERCENT (2.71 g/cc)
14 24 4 14	70 30 30 -10 -10 -50

DENSITY (X) CALIPER INCHES (IN)	PE CROSS-SECTION BARNS/ELECTRON	DENSITY CORRECTION G/CC
14 24 4 14	0 10	-0.25 0.25

BIT SIZE INCHES (IN)
4 14

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	6.750	in
Casing Diameter	8.625	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 Background	Measured Jig	Units	Calibrated Jig	Units
GR	46	346	CPS	175	GRAPI

Shop Calibration
CNT-AA

Performed : 18-MAY-2011 Time : 14:07
Sensor Suite : CALI-BCN ID : NDT-BB-129

	Jig - Measured Ring#1	Jig - Measured Ring#2	Jig - Calibrated Ring#1	Jig - Calibrated Ring#2	Units
CL # 1	8.5	16.4	6.0	12.0	IN.

Performed : 29-Aug-2011 Time : 14:03
Sensor Suite : BHC NEUT ID : CNP-AA-112
Source ID : N-1046

	Tank Measured	Tank Calibrated	Verification Jig	Units

	Measured	Calibrated	Jig	
N/F	4.0359	3.6893	3.6953	
Porosity	26.1	20.5	20.6	%

Shop Calibration
LDT-DF

Performed : 26-APR-2011 Time : 13:10
Sensor Suite : CALI-LTH ID : PDT-GA-464

	Jig - Measured		Jig - Calibrated		Units
	Ring#1	Ring#2	Ring#1	Ring#2	
CL # 1	7.0	10.4	6.0	12.0	IN.

Performed : 29-Aug-2011 Time : 10:02
Sensor Suite : BHCPELNG ID : LDP-DA-066
Source ID : 2991GW

Short Space

	BKGD	Al	Mg	Al+Fe	Units
LSW1	68	1145	1862	741	CPS
LSW2	72	1342	2135	975	CPS
LSW3	272	3097	4995	2638	CPS
LSW4	332	2745	3951	2425	CPS
LSW5	32	58	65	55	CPS
LSW6	89	94	92	93	CPS
LSW7	57	61	62	63	CPS
LSW8	2	4	6	4	CPS
QS	0.222	0.209	0.192	0.188	
PES			2.778	5.967	
SSDN		2.600	1.680		G/CC

Long Space

	BKGD	Al	Mg	Al+Fe	Units
LLW1	99	1267	5271	771	CPS
LLW2	117	2259	8880	1658	CPS
LLW3	435	4175	15756	3607	CPS
LLW4	558	1992	6286	1800	CPS
LLW5	59	72	133	70	CPS
LLW6	179	173	165	176	CPS
LLW7	113	110	107	112	CPS
LLW8	3	7	19	6	CPS
QL	0.226	0.223	0.212	0.222	
PEL			2.697	5.458	
LSDN		2.600	1.680		G/CC