STEP energy services

COMPENSATED NEUTRON

PEL DENSITY LOG

Company TRANS PACIFIC OIL CORPORATIC
Well FLAX A #1-16
Field RANSOM NORTHWEST
County NESS
State KANSAS
Country USA
API No. 15-135-26082-00-00

File No : HAYS-70363
Company : TRANS PACIFIC OIL CORPORATION
Well : FLAX A #1-16
Field : RANSOM NORTHWEST
County : NESS
State : KANSAS
Country : USA
API No : 15-135-26082-00-00

Location :
2310' FNL & 2970' FEL
SE SE NW

LSD : **Sect :** 16 **Twp :** 16S **Rge :** 24W

Permanent Datum:	GL	**Elevations:**		**Services:**	
Drilling Measured From:	KB	**KB**	2537.00 Ft	GRT	MLT
Log Measured From:	KB	**DF**	2535.00 Ft	CNT	PIT
Above Permanent Datum:	7.00 Ft	**GL**	2530.00 Ft	LDT	

Date	10-01-2019						
Run Number	1						
Depth--Driller	4610.0	Ft					
Depth--Logger	4604.0	Ft					
First Reading	4571.0	Ft					
Last Reading	3600.0	Ft					
Casing--Driller	264.0	Ft					
Casing--Logger	264.0	Ft					
Bit Size	7.875	In					
Casing Size	8.625	In					
Hole Fluid Type	WBM						
Density	9.4	lb/gal					
Fluid Loss	8.0	ml/30min					
PH/Viscosity	10.0	60.0 sec					
Sample Source	MEASURED						
RM@Measured Temp.	0.700	@ 75 F					
RMF@Measured Temp	0.600	@ 75 F					
RMC@Measured Temp.	0.810	@ 75 F					
Source RMF/RMC	CALCULATED	CALCULATED					
RM@BHT	0.450	@ 120 F					
Time Circulation Stopped							
Max Recorded Temp.	120	F					
Equipment/Base	TRK 137	HAYS					
Recorded By	R. FRANKLIN						
Witnessed By	N. HIXON						

Bitsize Intervals

Size (In)	Bottom (Ft)
7.875	4604.00

Casing Strings

Size (In)	Weight (Lbs)	Bottom (Ft)	Top (Ft)
8.625	0.00	264.00	0.00

Run Number	1		
Date	10-01-2019		
Date/Time On Bottom	10-01-2019 13:15		
Depth to Fluid	0.0	Ft	
Salinity	3100.000	ppm	
RMF@BHT	0.380	@ 120 F	
RMC@BHT	0.520	@ 120 F	

Run Number 1

Comments

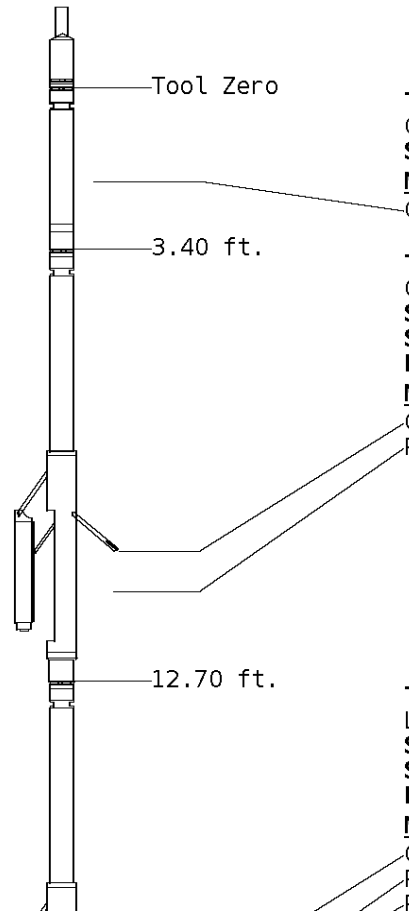
ALL PRESENTATION PER CUSTOMER REQUEST
GRT,CNT,LDT,MLT,PIT RUN IN COMBINATION
CALIPERS ORIENTED ON X-Y AXIS
2.71 G/CC USED TO CALCULATE POROSITY
ANNULAR & BOREHOLE VOLUME CALCULATED USING 5.5 PRODUCTION CASING
PHIN IS CALIPER CORRECTED
DETAIL IS PRESENTED FROM TD TO SCG
ANHYRITE DETAIL PRESENTED FROM 1950' TO 1850'

GRT; GRP,
CNT; PHIN, CLCNIN
LDT; PORL, LCORN, PECLN, LDENN, CLLDIN
MLT; NOR_RF, INV_RF, MSCLPIN.
PIT; ILD, ILM, SPU, SFLAEC, CIRD

OPERATORS;
D. LEGLEITER
D. RAGSDALE
J. VAUGHN
R. NITZ

Tool String Schematic

Total Tool Length - 54.51 **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-BC-038

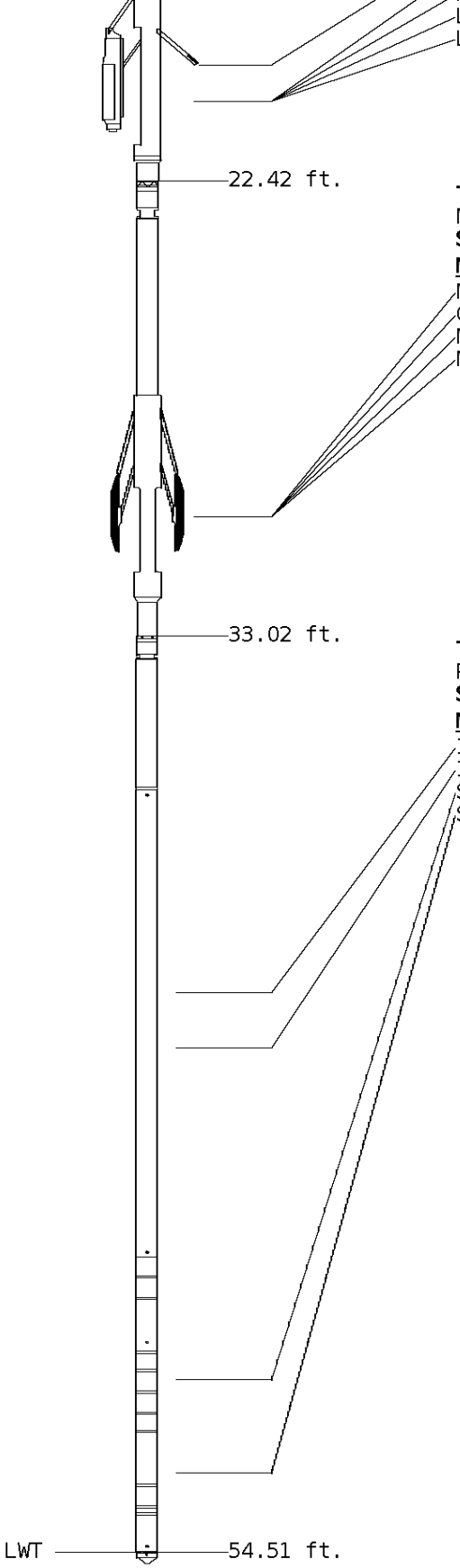
Measure Point	Tool Offset	Stack Offset	Bottom Offset
GRP	2.00	2.00	52.51

Tool: CNT-AA **Length:** 9.30 **ft.** **O.D.** 4.36 **in.**
Compensated Neutron A Pad on NDT-A
Sonde ID :NDT-AF-104
Source ID :N-1104
Pad ID :CNP-AE-41

Measure Point	Tool Offset	Stack Offset	Bottom Offset
CLCN	6.00	9.40	45.11
PHIN	6.80	10.20	44.31

Tool: LDT-DF **Length:** 9.72 **ft.** **O.D.** 4.80 **in.**
Litho Density D Pad on NDT-F
Sonde ID :NDT-FA-404
Source ID :1637GW
Pad ID :LDP-DA-062

Measure Point	Tool Offset	Stack Offset	Bottom Offset
CLLD	6.42	19.12	35.39
PEL	7.42	20.12	34.39
PES	7.82	20.52	33.99



LDEN	7.62	20.32	34.19
LCOR	7.62	20.32	34.19

Tool: MLT-AB **Length:** 10.60 **ft.** **O.D.** 6.00 **in.**
Micro Log Tool
Sonde ID :MLT-012

Measure Point	Tool Offset	Stack Offset	Bottom Offset
MSFL	8.90	31.32	23.19
CLMR	7.60	30.02	24.49
MSFN	8.90	31.32	23.19
MSFI	8.90	31.32	23.19

Tool: PIT-CA **Length:** 21.49 **ft.** **O.D.** 3.62 **in.**
Phased Dual Induction w/ RM & D
Sonde ID :PIT-AC-043

Measure Point	Tool Offset	Stack Offset	Bottom Offset
ILD	8.92	41.94	12.56
ILM	10.10	43.12	11.39
SFLU	17.49	50.51	4.00
SP	20.60	53.62	0.88

Well File: TRANS-PACIFIC_FLAX_A_1-16_OCT_1_MSTK **Scale:** 1:240 **Format:** NLD-240
Segment: V1.D1.S6 MAIN **Acquired:** 2019-10/01 13:25 3.4.1-13972
Reference: 0 **Processed:** 2019-10/01 14:46 3.4.1-13972

BIT SIZE
INCHES (IN)

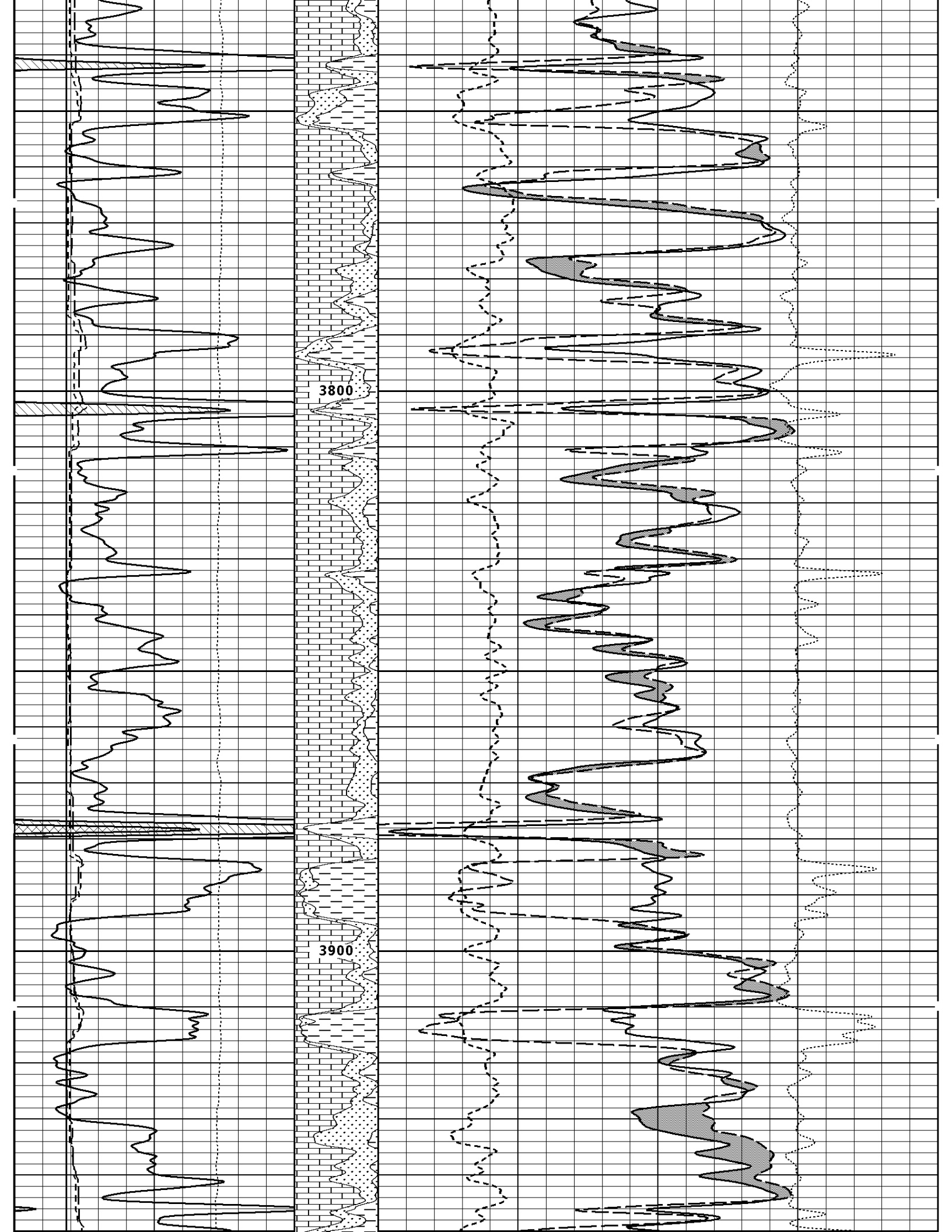
6 **16**

NEUTRON (Y) CALIPER
INCHES (IN)

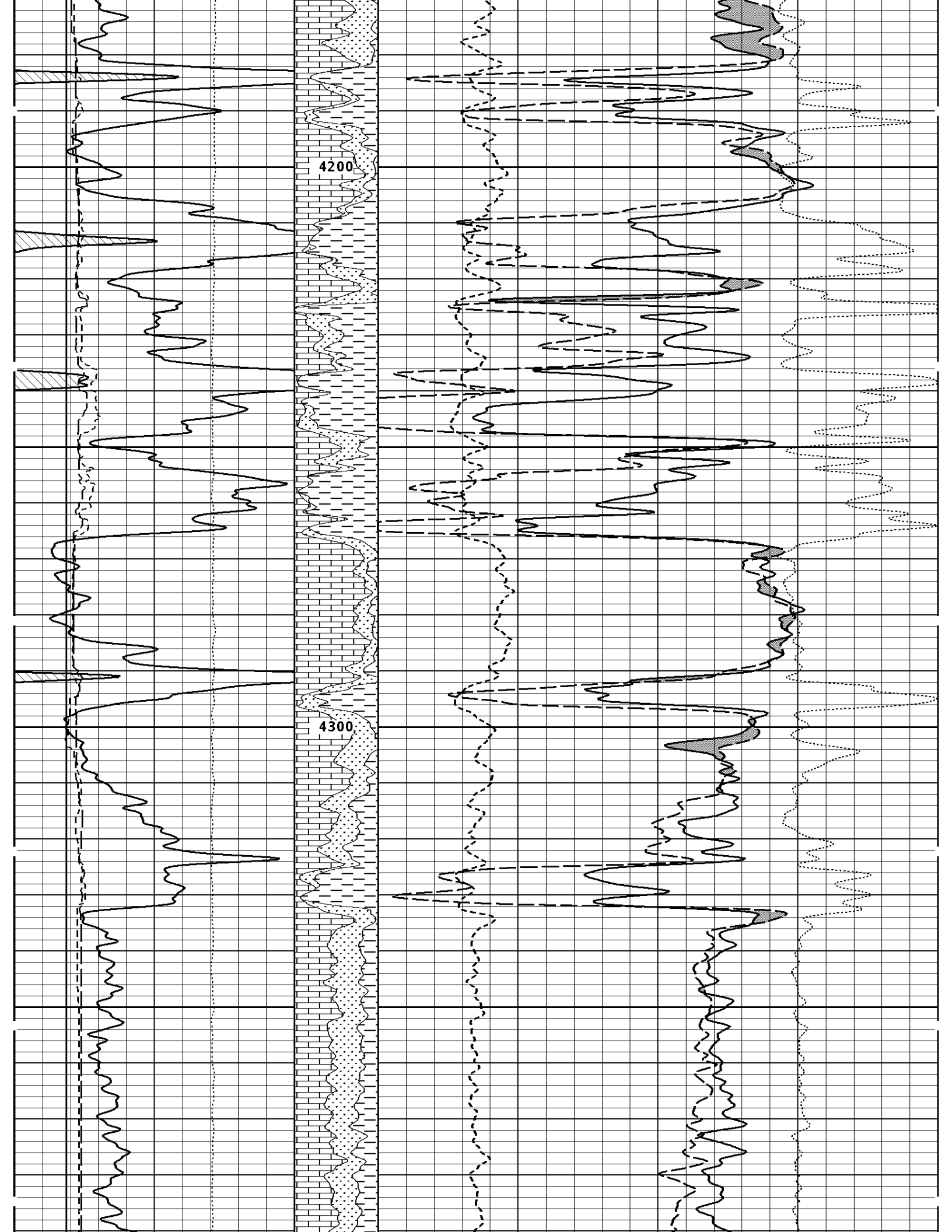
16 **26**

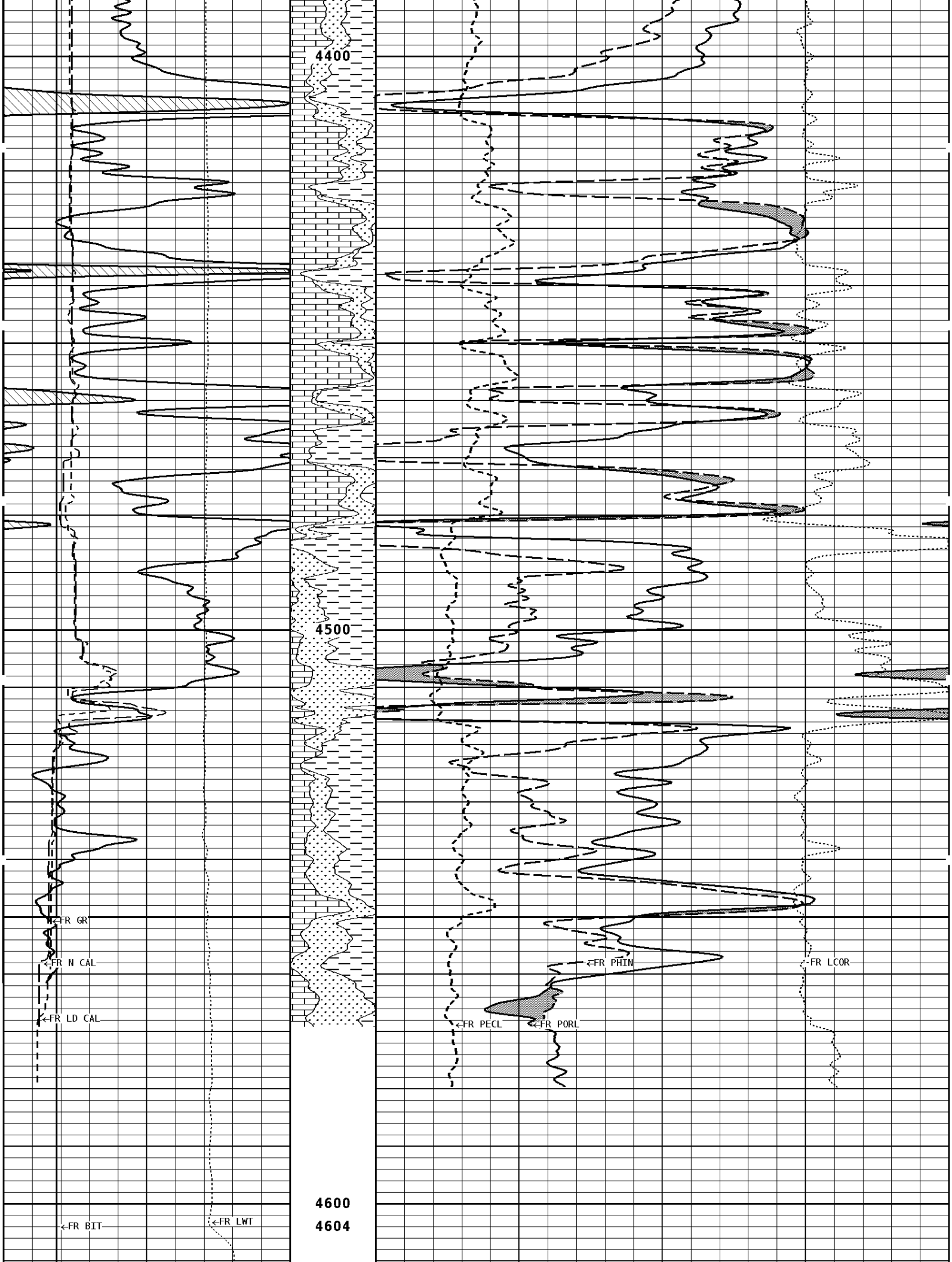
DENSITY (X) CALIPER INCHES (IN) 16 — 26 6 — 16	Volume Quartz	PE CROSS-SECTION BARNS/ELECTRON 0 — 10	DENSITY CORRECTION G/CC -0.25 — 0.25
TENSION LBS 10000 — 0	Volume Calcite	DENSITY POROSITY (2.71g/cc) PERCENT 70 — 30 30 — -10 -10 — -50	
GAMMA RAY API UNITS 150 — 300 0 — 150	Volume Dolo/Shale	NEUTRON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

1:240 MAIN SECTION


3800
3900


4000
GR
N CAL
LD CAL
PHIN
PECL
PORL
LCOR
4100
BIT
LWT


4200
4300


4400
4500
4600
4604
FR GR
FR N CAL
FR LD CAL
FR BIT
FR LWT
FR PHIN
FR LCOR
FR PECL
FR PORL

File #1.1.6

1:240 MAIN SECTION

GAMMA RAY API UNITS	Volume Dolo/Shale	NEUTRON POROSITY (LIMESTONE) PERCENT
150 — 300 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 BARNS/ELECTRON	DENSITY CORRECTION G/CC
16 — 26 6 — 16		0 — 10	-0.25 — 0.25

NEUTRON (Y) CALIPER INCHES (IN)
16 — 26 6 — 16

BIT SIZE INCHES (IN)
6 — 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 Thickness	0.250	in
Casing Correction (PHI N)	Disable	

Well File: TRANS-PACIFIC_FLAX_A_1-16_OCT_1_MSTK **Scale:** 1:240 **Format:** NLD-240
Segment: V1.D1.S7 REPEAT **Acquired:** 2019-10/01 13:08 3.4.1-13972
Reference: 0 **Processed:** 2019-10/01 14:45 3.4.1-13972

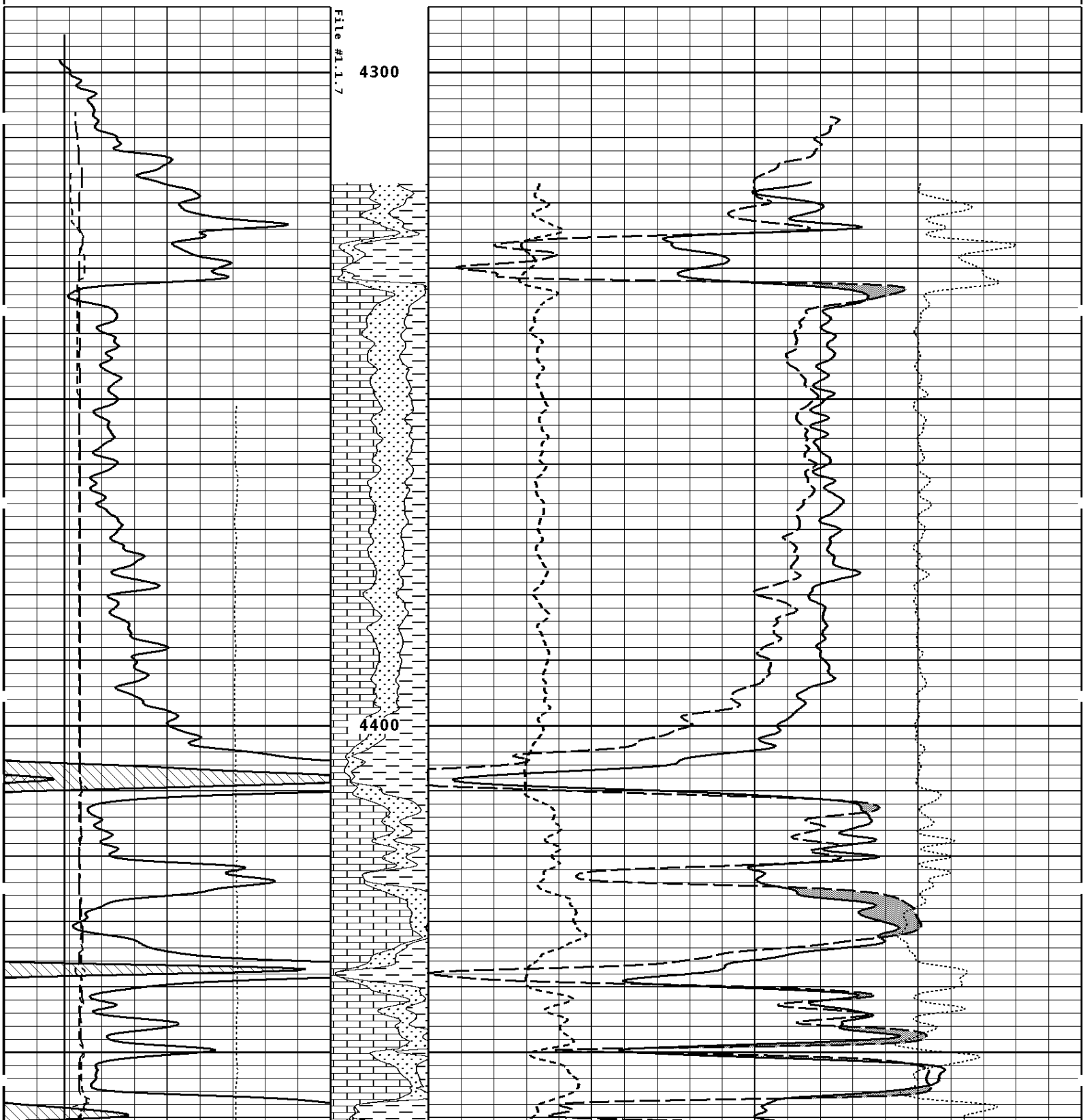
BIT SIZE INCHES (IN)
6 — 16

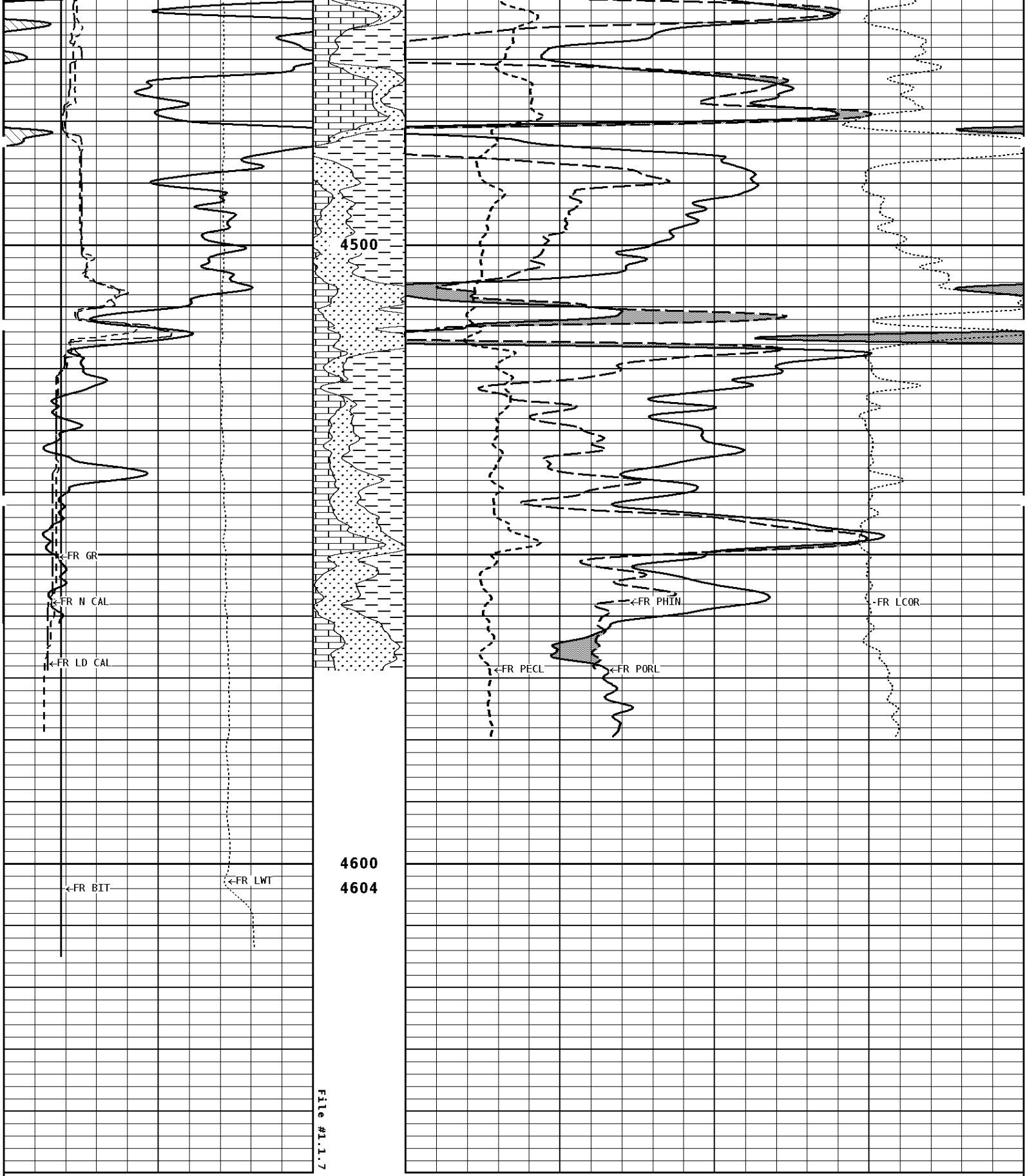
NEUTRON (Y) CALIPER INCHES (IN)
16 — 26 6 — 16

DENSITY (X) CALIPER INCHES (IN)	Volume Quartz	PE CROSS-SECTION BARNS/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 / 0 — 150		30 — -10

1:240 REPEAT SECTION





1:240 REPEAT SECTION

GAMMA RAY API UNITS	Volume Dolo/Shale	NEUTRON POROSITY (LIMESTONE) PERCENT
150 300		30 -10
0 150		

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 BARNS/ELECTRON	DENSITY CORRECTION G/CC
16 — 26 6 — 16		0 — 10	-0.25 — 0.25

NEUTRON (Y) CALIPER INCHES (IN)
16 — 26 6 — 16

BIT SIZE INCHES (IN)
6 — 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 Thickness	0.250	in
Casing Correction (PHI N)	Disable	

Well File: TRANS-PACIFIC_FLAX_A_1-16_OCT_1_MSTK **Scale:** 1:240 **Format:** LDT-240
Segment: V1.D1.S6 MAIN **Acquired:** 2019-10/01 13:25 3.4.1-13972
Reference: 0 **Processed:** 2019-10/01 14:46 3.4.1-13972

BIT SIZE INCHES (IN)
6 — 16

NEUTRON (Y) CALIPER INCHES (IN)
16 — 26 6 — 16

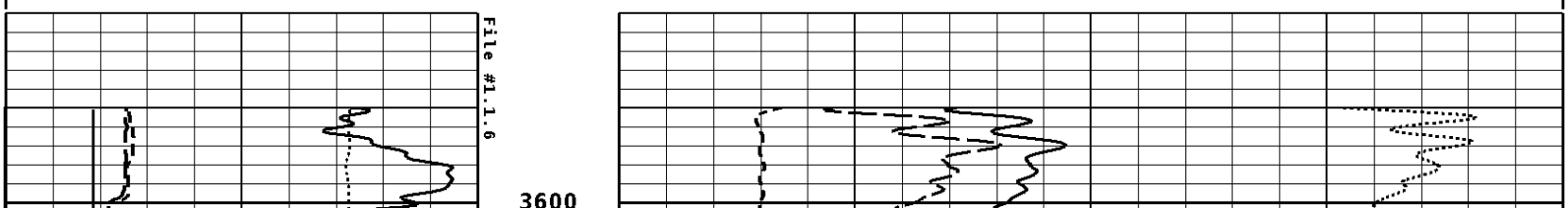
DENSITY (X) CALIPER INCHES (IN)	PE CROSS-SECTION BARNS/ELECTRON	DENSITY CORRECTION G/CC
16 — 26 6 — 16	0 — 10	-0.25 — 0.25

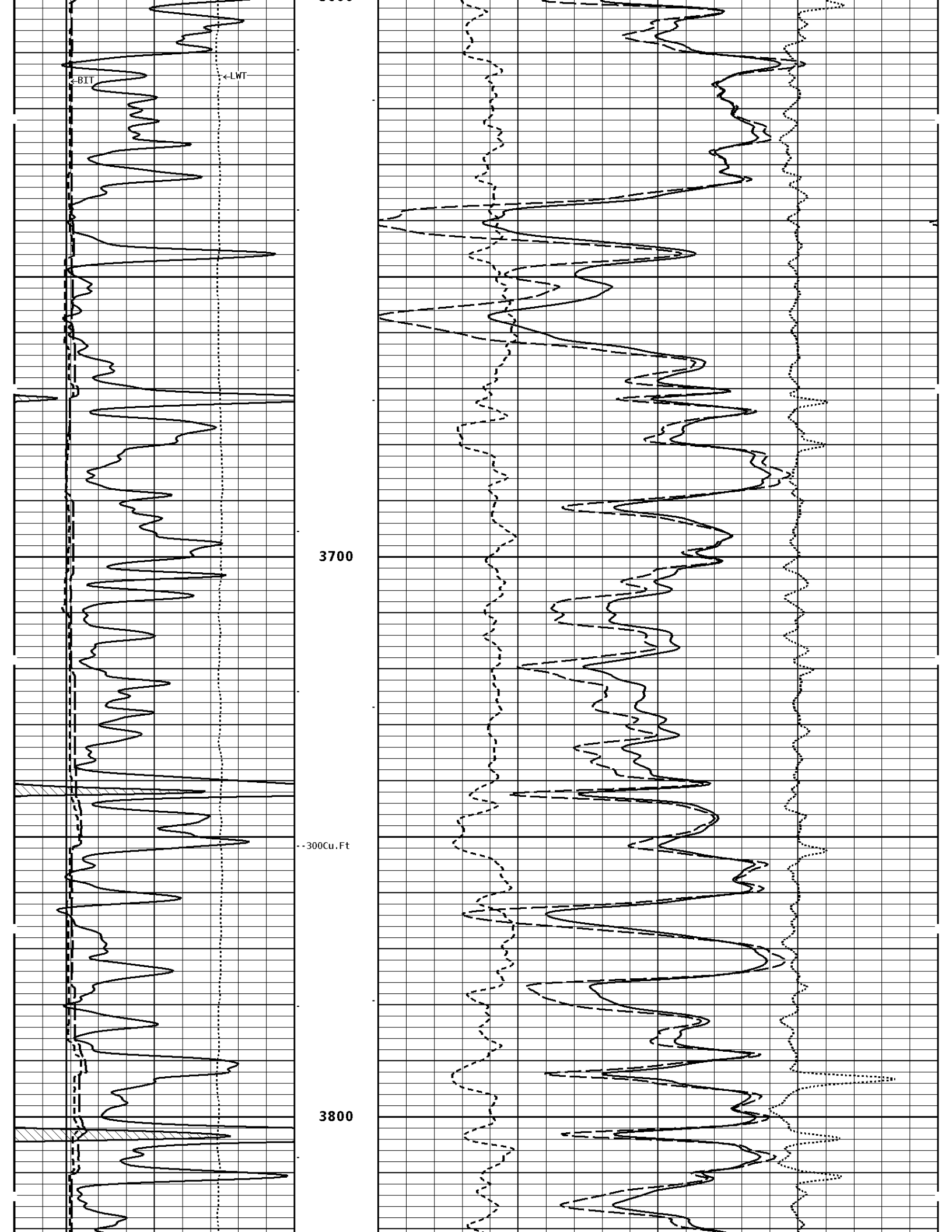
TENSION LBS	COMPENSATED BULK DENSITY G/CC
10000 — 0	3.0 — 4.0 2.0 — 3.0 1.0 — 2.0

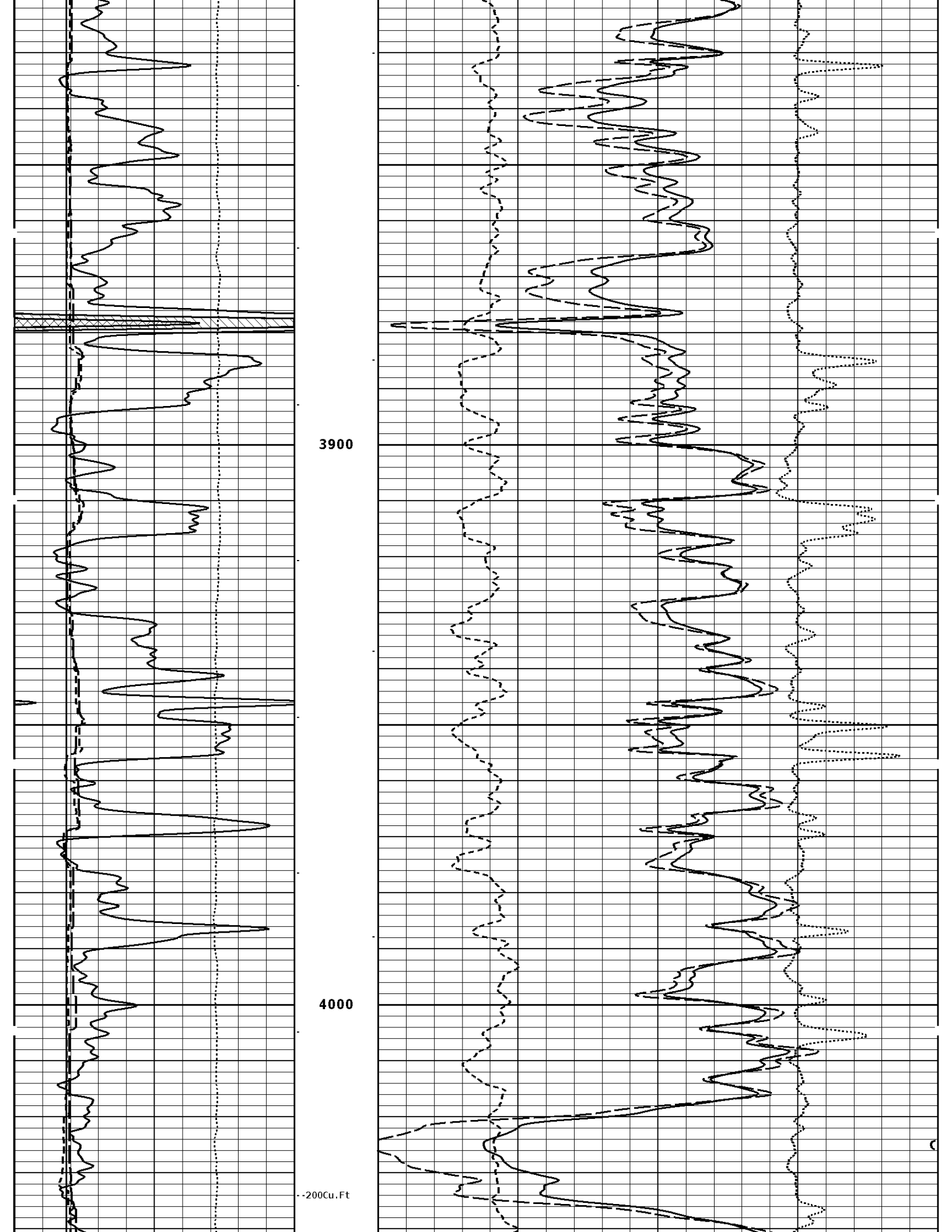
GAMMA RAY API UNITS	-BHV AHV- CU.FT	DENSITY POROSITY (2.71g/cc) PERCENT
150 — 300 0 — 150		70 — 30 30 — -10 -10 — -50

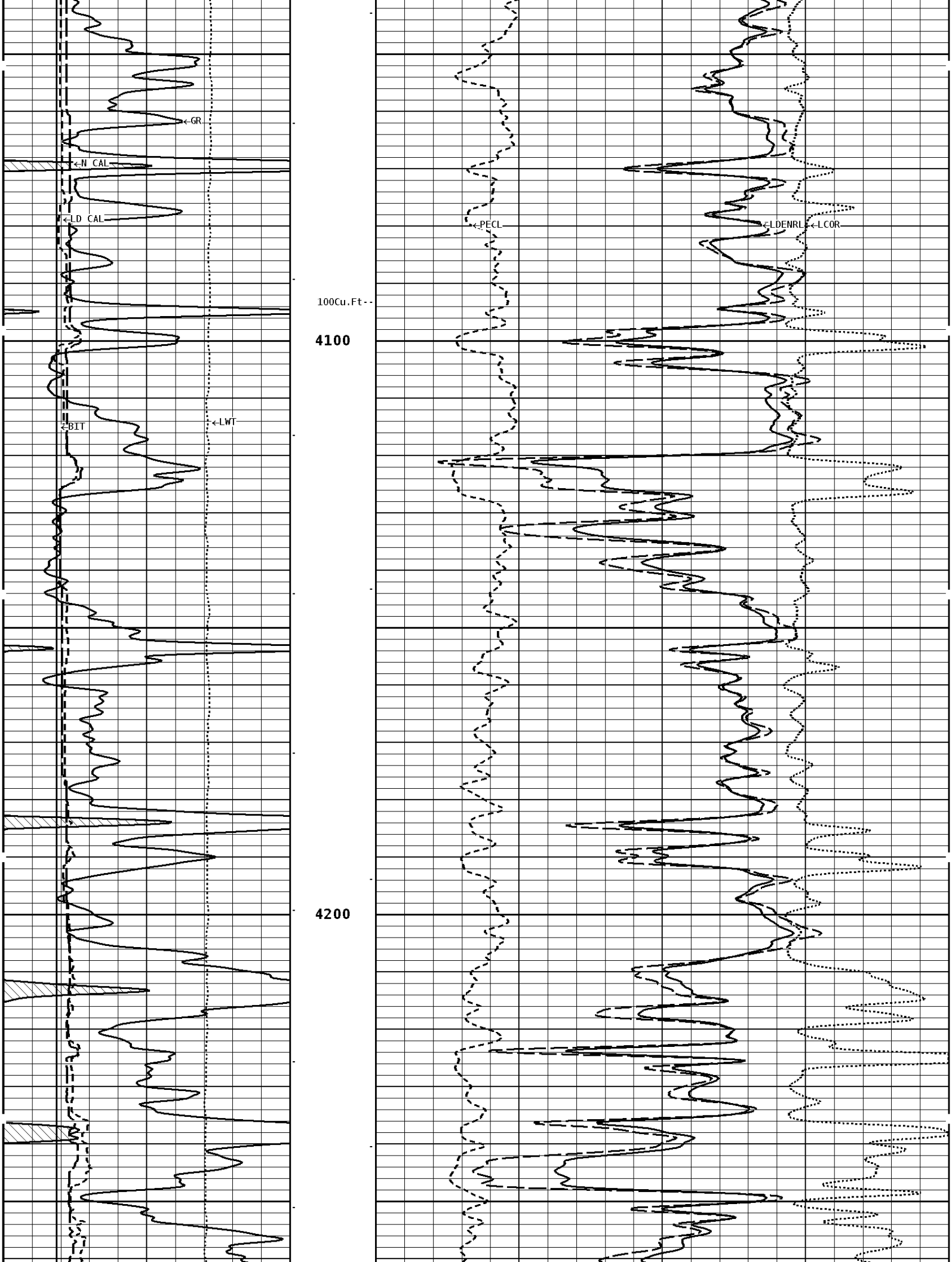
1:240 MAIN SECTION

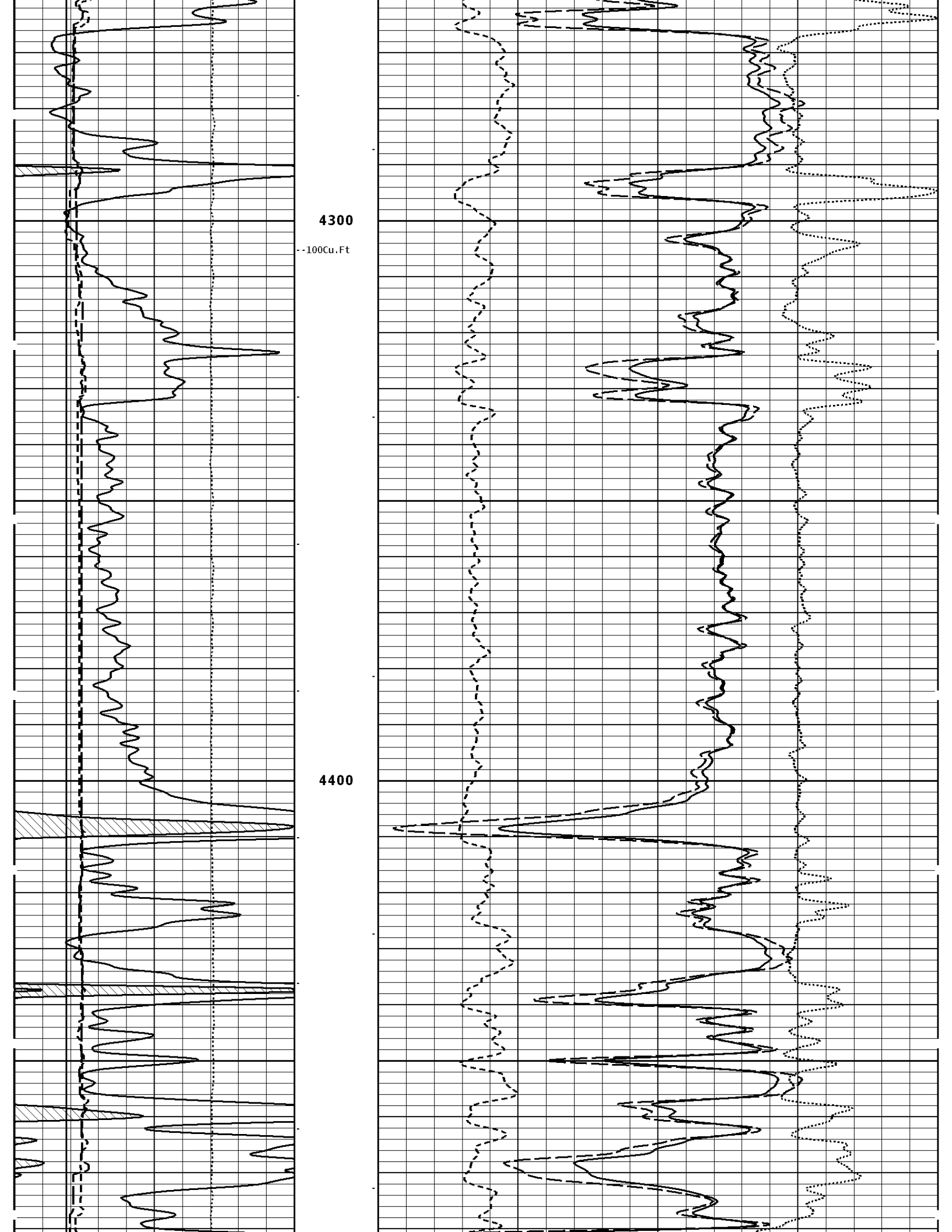
BULK DENSITY

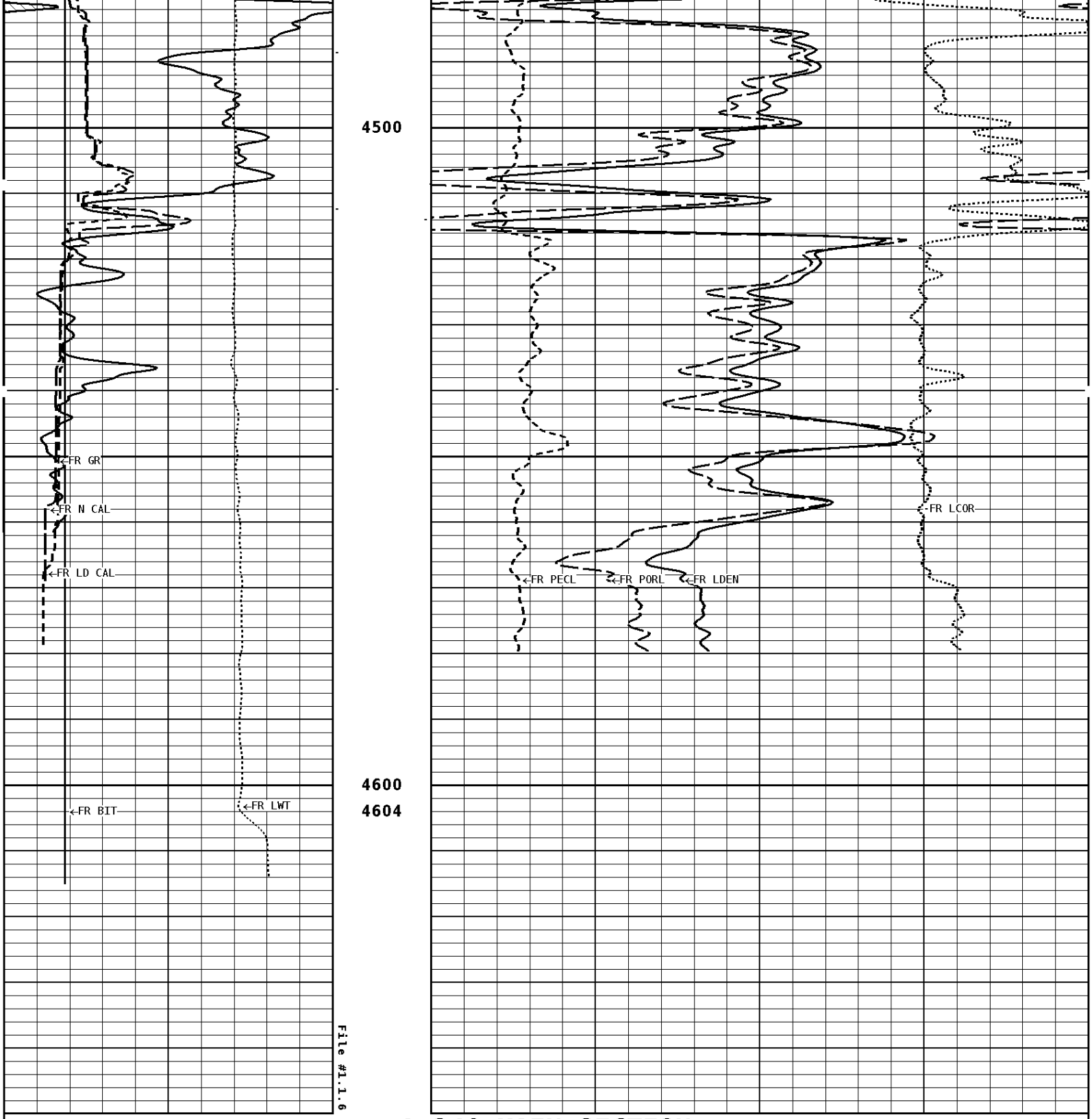



←BIT
←LWT
3700
--300Cu.Ft
3800


3900
4000
--200Cu.Ft


GR
N CAL
LD CAL
100Cu.Ft
PECL
LDENRL
LCOR
4100
BIT
LWT
4200


4300
--100Cu.Ft
4400



1:240 MAIN SECTION

BULK DENSITY

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

INCHES (IN)	
16	26
6	16

BARNS/ELECTRON	G/CC
0	10
	-0.25
	0.25

NEUTRON (Y) CALIPER INCHES (IN)	
16	26
6	16

BIT SIZE INCHES (IN)	
6	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	

* Calibration Summary *

Shop Calibration
GRT-B

Performed : 24-JUN-2019 Time : 12:20
Sensor Suite : GR-GR5 ID : GRT-BC-038

	Measured Background	Measured Jig	Units	Calibrated Jig	Units
GR	36	266	CPS	160	GRAPI

Shop Calibration
CNT-AA

Performed : 03-Jun-2019 Time : 11:06
Sensor Suite : CALI-BCN ID : NDT-AF-104

	Jig - Measured Ring#1	Jig - Measured Ring#2	Jig - Calibrated Ring#1	Jig - Calibrated Ring#2	Units
CL # 1	8.3	13.2	6.0	12.0	IN.

Performed : 18-SEP-2019 Time : 16:10
Sensor Suite : BHC NEUT ID : CNP-AE-41
Source ID : N-1104

	Tank Measured	Tank Calibrated	Verification Jig	Units
N/F	3.7537	3.6893	3.6964	
Porosity	21.5	20.5	20.6	%

Shop Calibration
LDT-DF

Performed : 03-Jun-2019 Time : 14:53
Sensor Suite : CALI-LTH ID : NDT-FA-404

	Jig - Measured Ring#1	Jig - Measured Ring#2	Jig - Calibrated Ring#1	Jig - Calibrated Ring#2	Units
CL # 1	8.3	13.2	6.0	12.0	IN.

Performed : 18-SEP-2019 Time : 12:05
Sensor Suite : BHCPELNG ID : LDP-DA-062
Source ID : 1637GW

		Short Space			
	BKGD	Al	Mg	Al+Fe	Units
LSW1	65	1048	1693	671	CPS
LSW2	68	1209	1923	869	CPS
LSW3	248	2723	4386	2317	CPS
LSW4	304	2339	3355	2060	CPS
LSW5	27	46	51	43	CPS
LSW6	87	88	86	86	CPS
LSW7	51	56	57	57	CPS
LSW8	1	3	4	3	CPS
QS	0.261	0.222	0.203	0.205	
PES			2.778	5.967	
SSDN		2.600	1.680		G/CC

SSDN		2.600	1.680		G/CC

Long Space

	BKGD	Al	Mg	Al+Fe	Units
LLW1	96	1171	4837	704	CPS
LLW2	106	2047	8062	1488	CPS
LLW3	404	3698	14047	3196	CPS
LLW4	517	1760	5509	1595	CPS
LLW5	59	67	114	66	CPS
LLW6	161	160	148	159	CPS
LLW7	108	104	99	106	CPS
LLW8	4	7	17	6	CPS
QL	0.195	0.215	0.198	0.198	
PEL			2.697	5.458	
LSDN		2.600	1.680		G/CC

STEP energy services

Company: TRANS PACIFIC OIL CORPORATION

Well: FLAX A #1-16

Location: 2310' FNL & 2970' FEL

Logged: 10-01-2019

K.B. Elev: 2537.0 Ft