Tucker ENERGY SERVICES

COMPOSITE LOG

Company ENTRANSCO ENERGY, LLC
Well T. WIEBE INJ 30-1
Field HAZLETT
County BUTLER
State KANSAS
Country USA
API No. 15-015-24102

File No : TUL-61365
Company : ENTRANSCO ENERGY, LLC
Well : T. WIEBE INJ 30-1
Field : HAZLETT
County : BUTLER
State : KANSAS
Country : USA
API No : 15-015-24102

Location :
1650' FSL & 825' FEL
E2 SW NE SE

LSD : **Sect :** 30 **Twp :** 23S **Rge :** 5E

Permanent Datum:	GL	**Elevations:**		**Services:**	
Drilling Measured From:	KB	**KB**	1476.00 Ft	CNT	PIT
Log Measured From:	KB	**DF**	1475.00 Ft	LDT	
Above Permanent Datum:	6.00 Ft	**GL**	1470.00 Ft	MLT	

Date	09-07-2018			
Run Number	0			
Depth--Driller	2600.0 Ft			
Depth--Logger	2600.0 Ft			
First Reading	2599.0 Ft			
Last Reading	218.0 Ft			
Casing--Driller	211.0 Ft			
Casing--Logger	218.0 Ft			
Bit Size	7.875 In			
Casing Size	8.625 In			
Hole Fluid Type	WBM			
Density	9.0			
Fluid Loss	0.0			
PH/Viscosity	0.0	48.0		
Sample Source	CALCULATED			
RM@Measured Temp.	2.000 @ 76 F			
RMF@Measured Temp	1.700 @ 76 F			
RMC@Measured Temp.	2.300 @ 76 F			
Source RMF/RMC	MEASURED	MEASURED		
RM@BHT	1.420 @ 110 F			
Time Circulation Stopped	09-07-2018 2:00 pm			
Max Recorded Temp.	110 F			
Equipment/Base	TRK-126	TULSA		
Recorded By	B.BAILEY			
Witnessed By	R.GILBERT, J.KITCHEL			

Bitsize Intervals

Size (In)	Bottom (Ft)
7.875	2600.00

Casing Strings

Size (In)	Weight (Lbs)	Bottom (Ft)	Top (Ft)
8.625	17.00	211.00	0.00

Run Number	0		
Date	09-07-2018		
Date/Time On Bottom	09-07-2018 5:48 pm		
Depth to Fluid	0.0 Ft		
Salinity	0.000		
RMF@BHT	1.210 @ 110 F		
RMC@BHT	1.630 @ 110 F		

Run Number 0

Comments

ALL PRESENTATIONS AS PER CUSTOMER REQUEST.

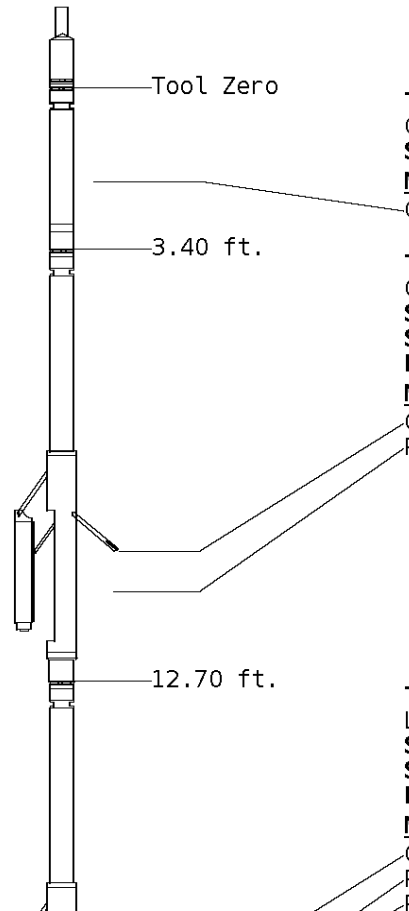
GRT, CNT, LDT, MLT & PIT RUN IN COMBINATION.
2.71 G/CC DENSITY MATRIX USED TO CALCULATED DENSITY POROSITY.
5.50" PRODUCTION CASING USED TO CALCULATED ANNULAR HOLE VOLUME.
CALIPERS ORIENTED 90 DEGREES OUT OF PHASE.
NO STANDOFF DEPLOYED ON PIT TOOL.
PHIN IS CALIPER CORRECTED.

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

OPERATORS:
R.NITZ
K.WARREN

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-BB-009

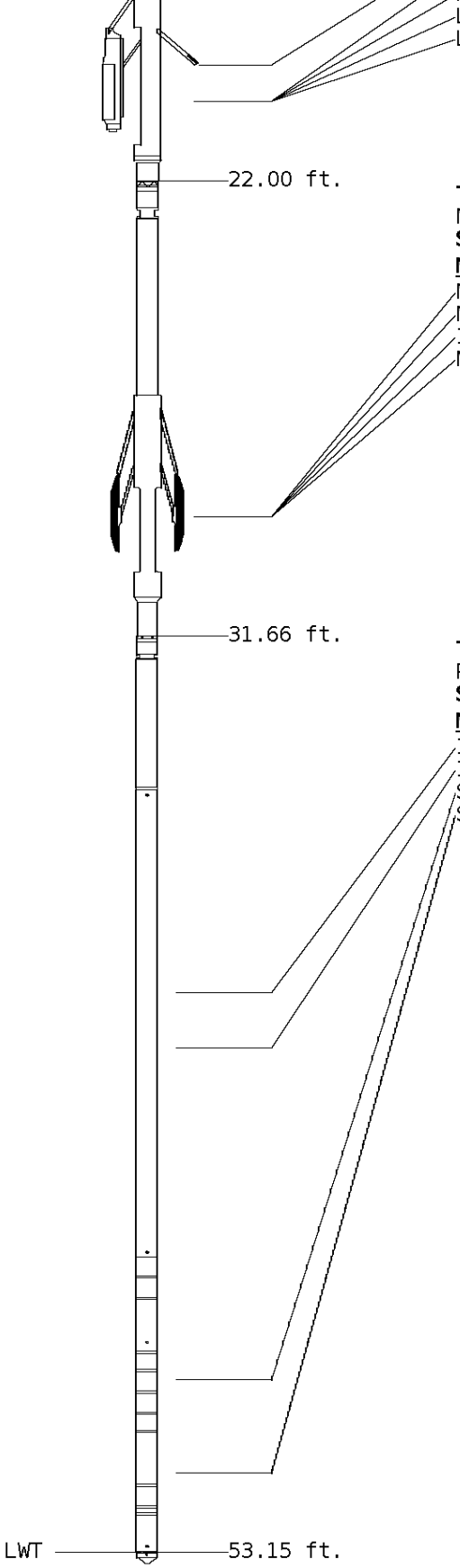
Measure Point	Tool Offset	Stack Offset	Bottom Offset
GRP	2.00	2.00	51.15

Tool: CNT-AA **Length:** 9.30 **ft.** **O.D.** 4.36 **in.**
Compensated Neutron A Pad on NDT-A
Sonde ID :NDT-BB-103
Source ID :N-1045
Pad ID :CNP-AA-116-

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 :PDT-GA-426
Source ID :2991GW
Pad ID :LDP-DA-066

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



LDEN	7.20	19.90	33.25
LCOR	7.20	19.90	33.25

Tool: MST-DA **Length:** 9.66 **ft.** **O.D.** 6.00 **in.**
Micro Spherically Focused (IC,D)
Sonde ID :MST-DA-28

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-AC-043

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: entransco_energy_t-wiebe-inj_30-1_sept_7_mst **Scale:** 1:240 **Format:** COMSAT
Segment: V1.D1.S5 Reprocess MAIN **Acquired:** 2018-09/07 18:28 3.4.0-13756
Reference: 0 **Processed:** 2018-09/07 19:18 3.4.0-13756

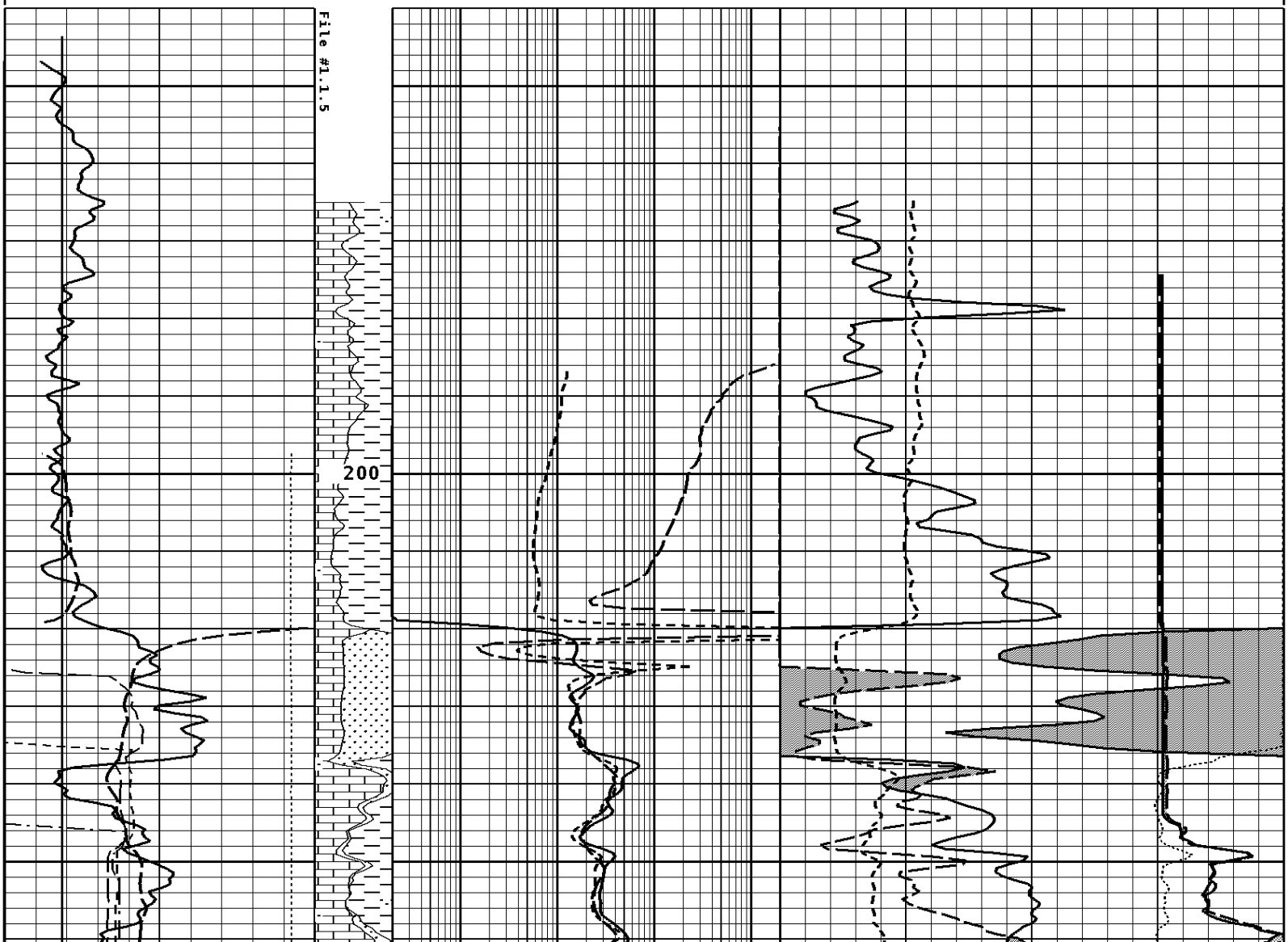
CALIPER MICRO
INCHES (IN)
16 26
6 16

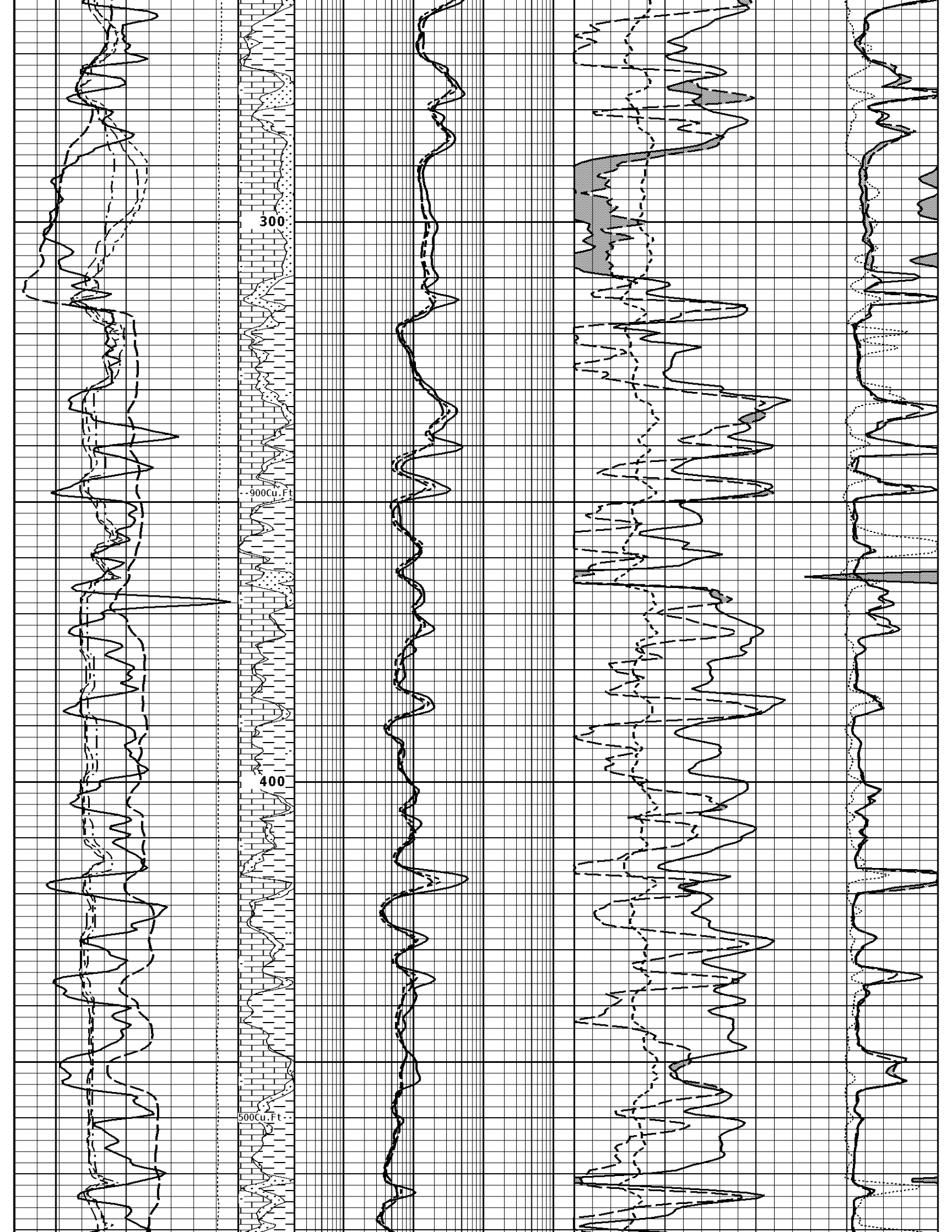
BIT SIZE
INCHES (IN)

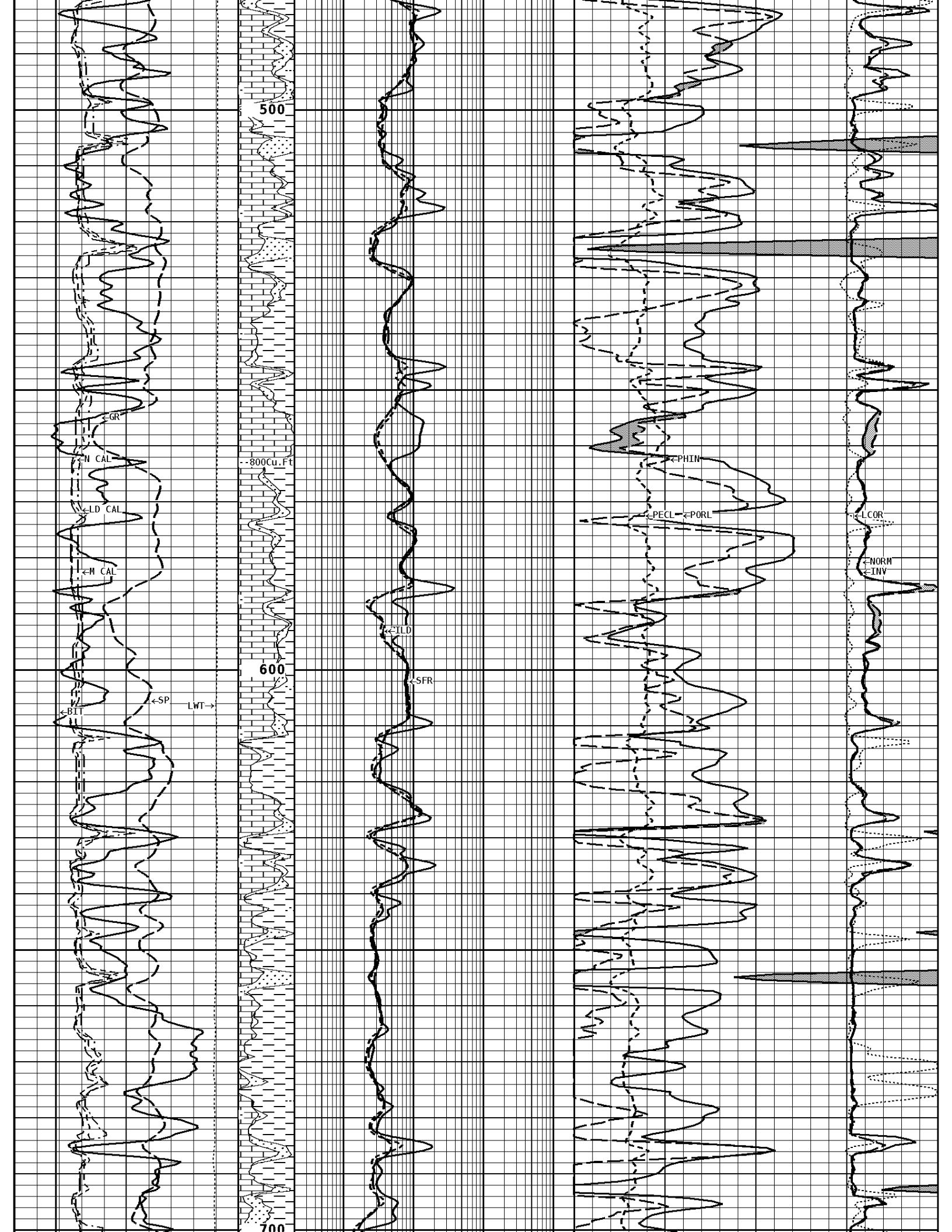
NORMAL
OHMM

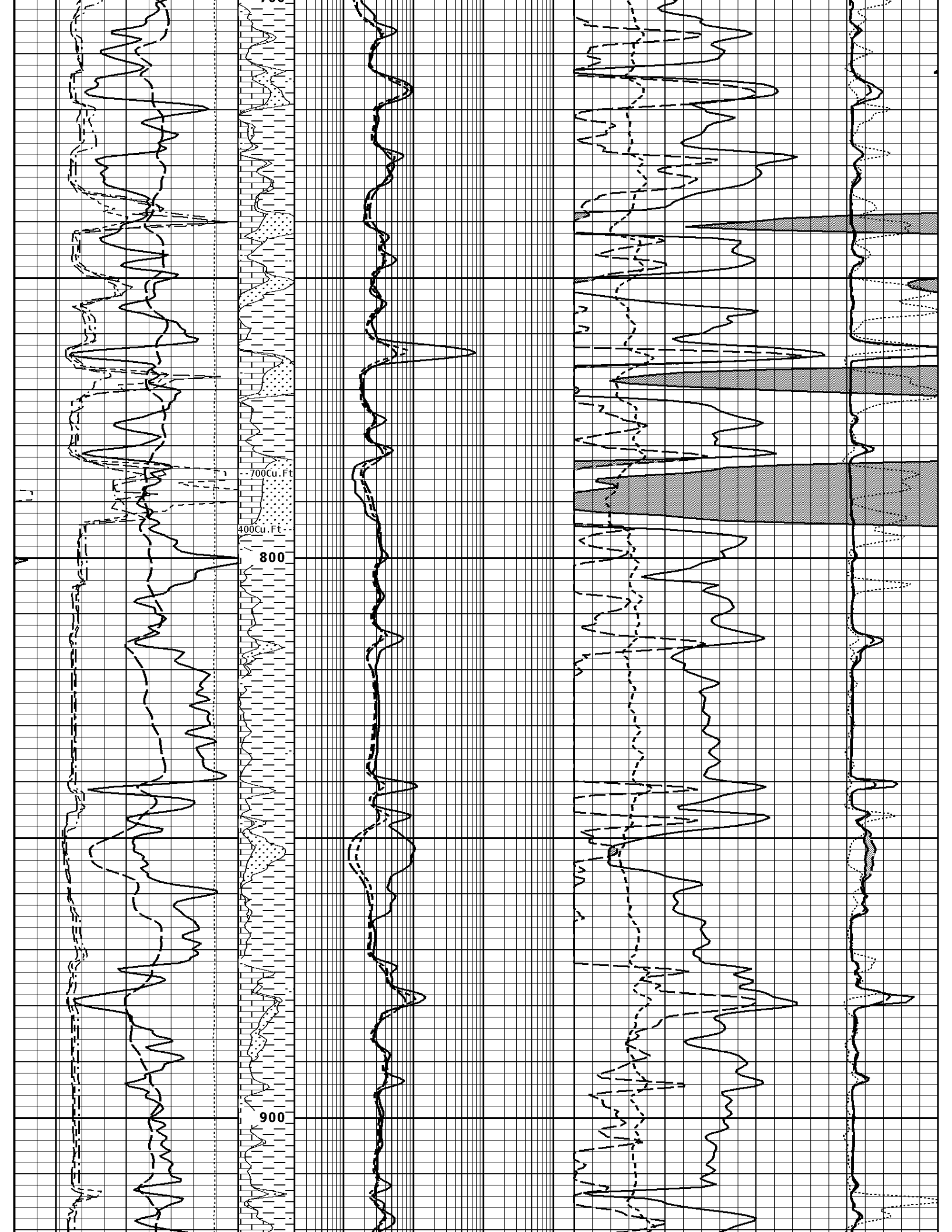
6 16			0 40
NEUTRON (Y) CALIPER INCHES (IN) 16 26 6 16			INVERSE OHMM 0 40
DENSITY (X) CALIPER INCHES (IN) 16 26 6 16	Volume Quartz		DENSITY CORRECTION G/CC -0.75 0.25
TENSION LBS 10000 0	Volume Calcite	SHALLOW FOCUSED RESISTIVITY OHMM 0.2 2000.0	PE CROSS-SECTION BARNS/ELECTRON 0 20
SPONTANEOUS POTENTIAL mV →| |←20	Volume Dolo/Shale	DEEP INDUCTION OHMM 0.2 2000.0	DENSITY POROSITY (2.71g/cc) PERCENT 70 30 30 -10 -10 -50
GAMMA RAY API UNITS 150 300 0 150	-BHV AHV- CU.FT	MEDIUM INDUCTION OHMM 0.2 2000.0	NEUTRON POROSITY (LIMESTONE) PERCENT 30 -10

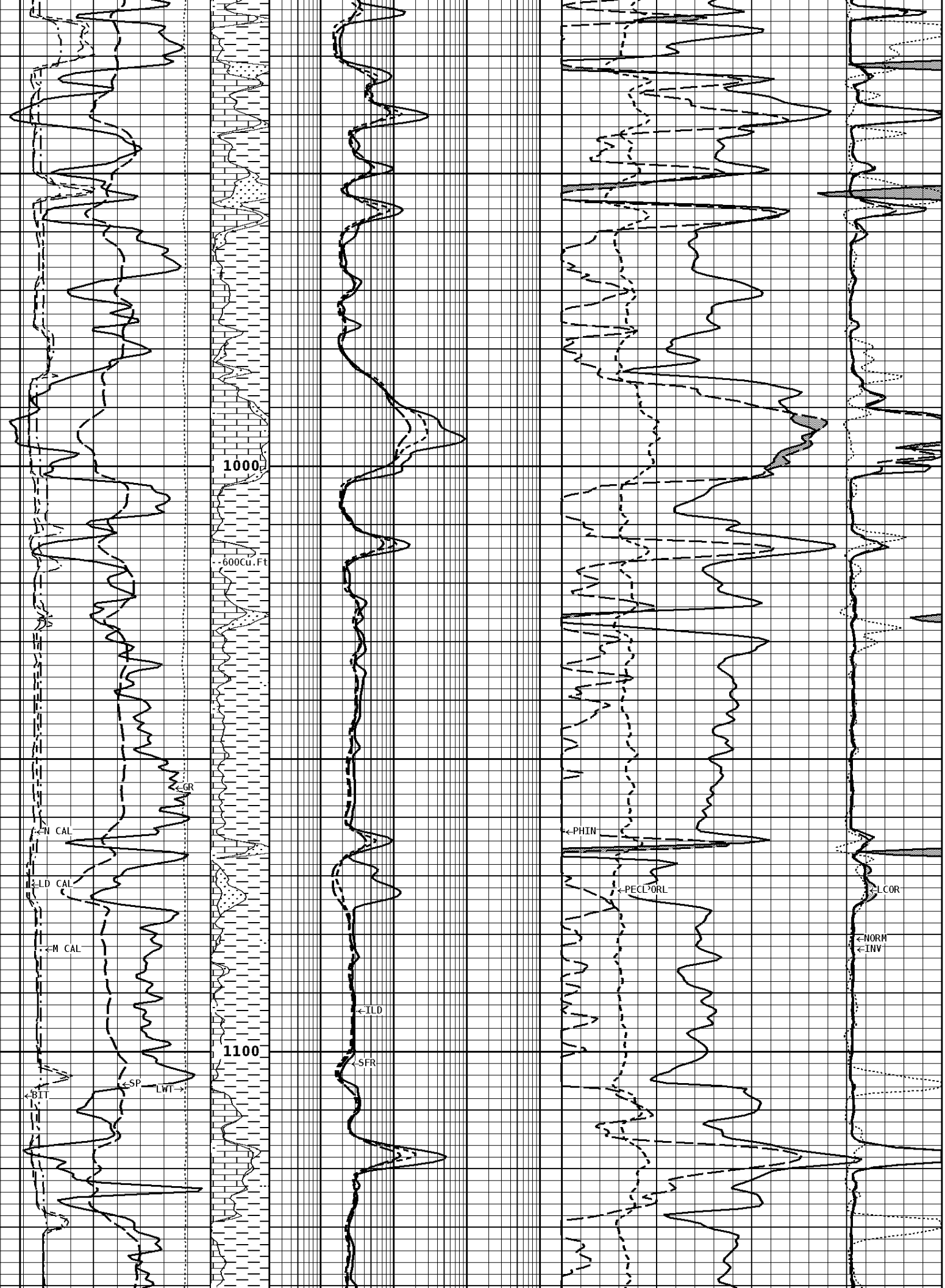
1:240 MAIN SECTION

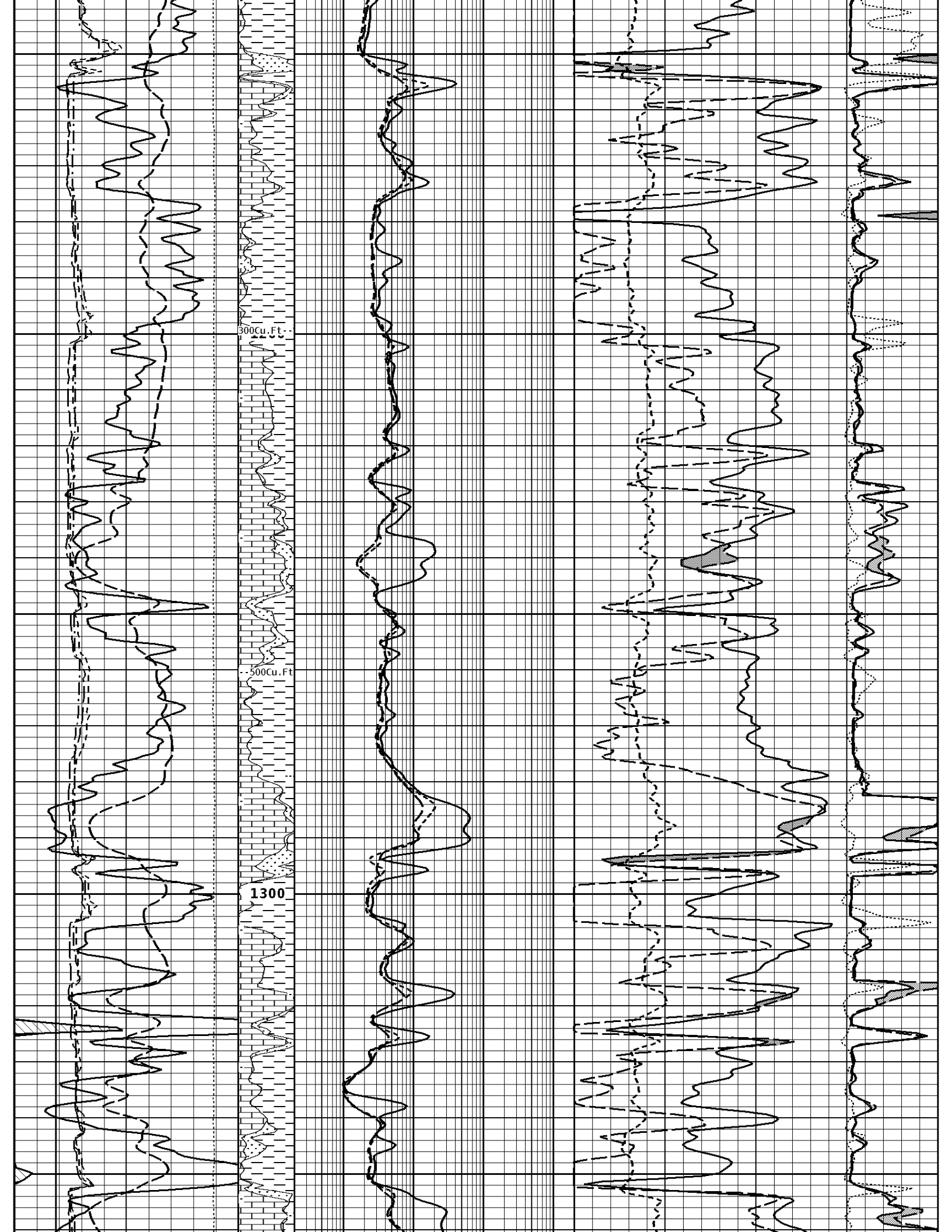


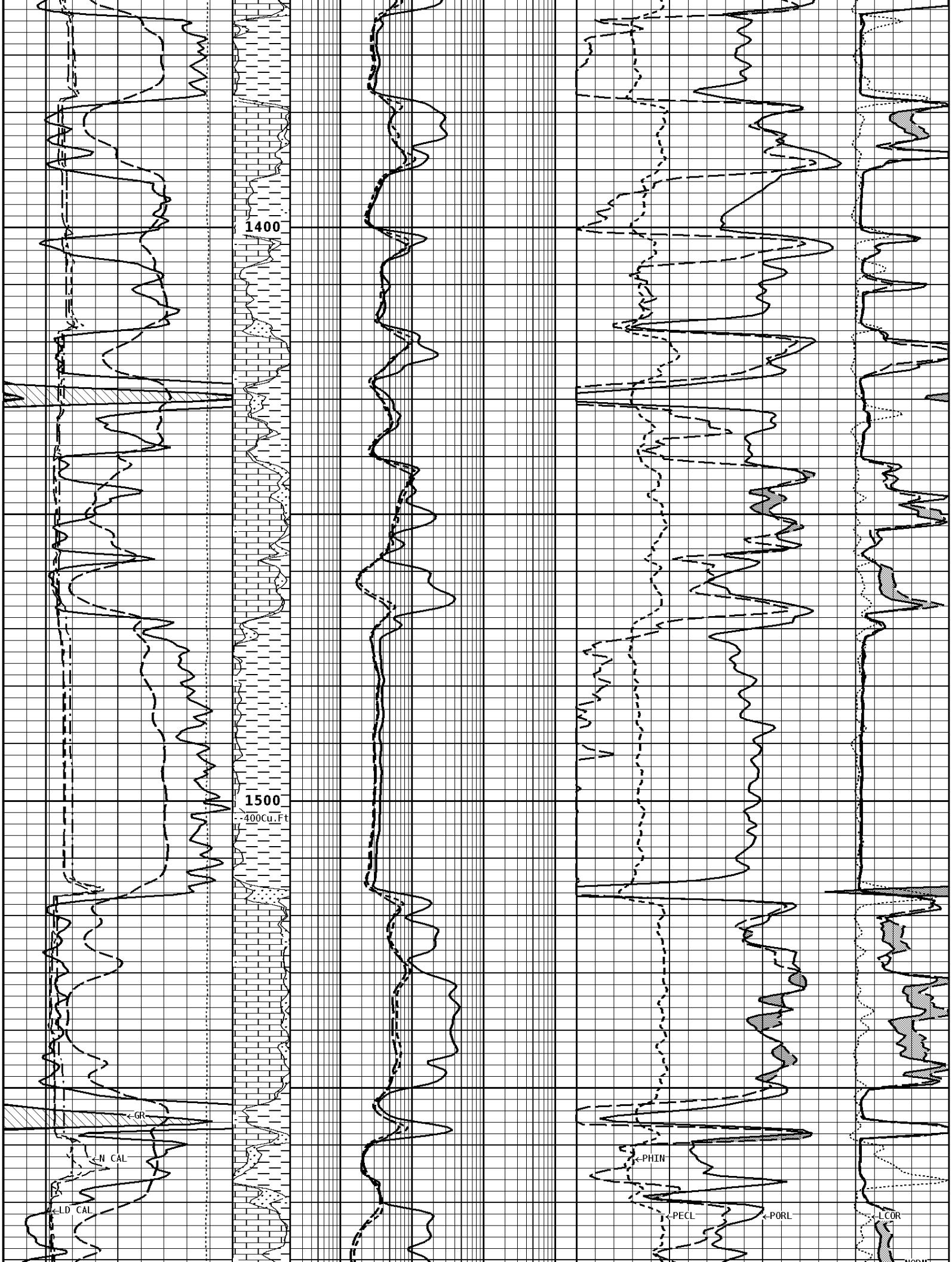

300
900Cu.Ft
400
500Cu.Ft

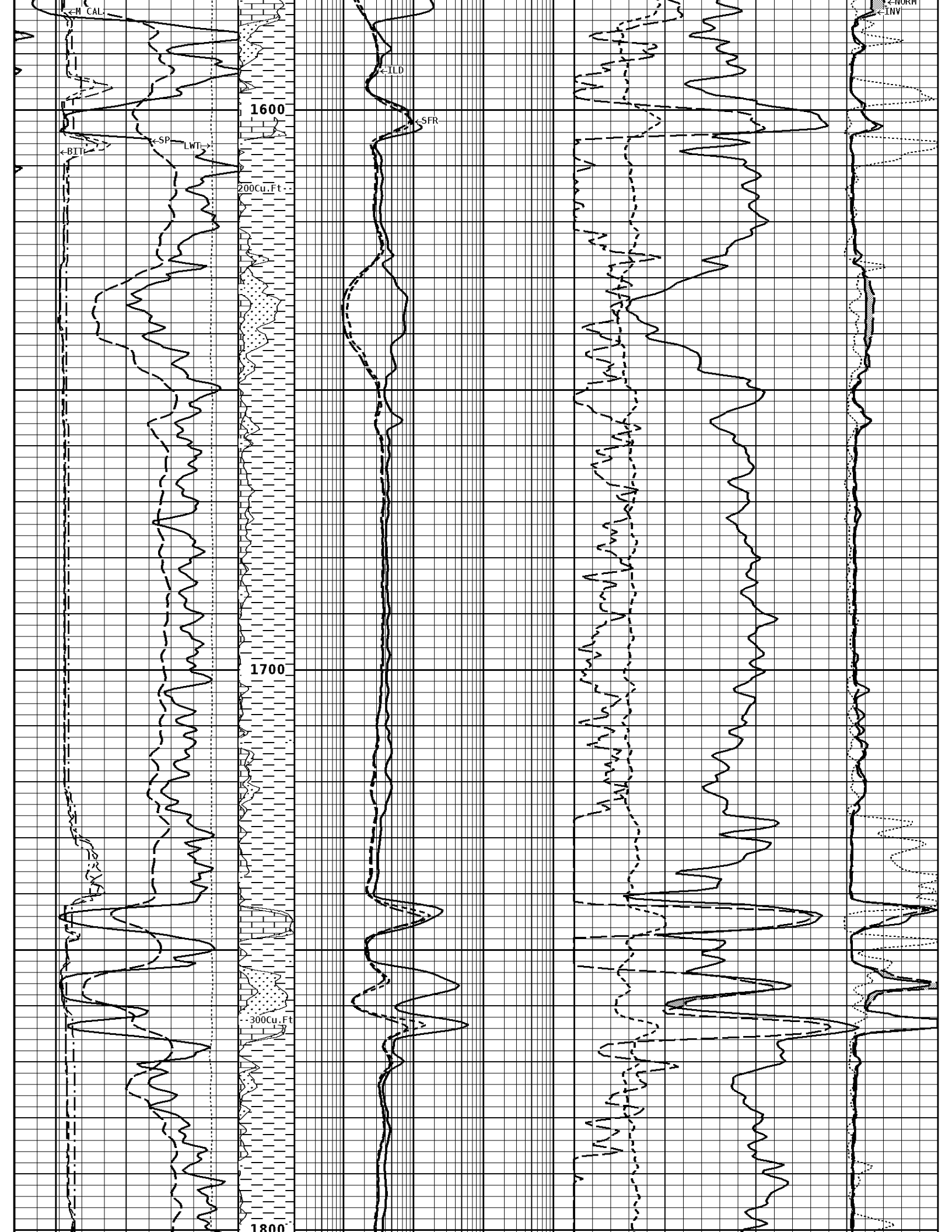

500
GR
N CAL
800Cu.Ft
LD CAL
M CAL
ILD
600
SFR
SP
BIT
LWT
PHIN
PECL
PORL
LCOR
NORM
INV
700

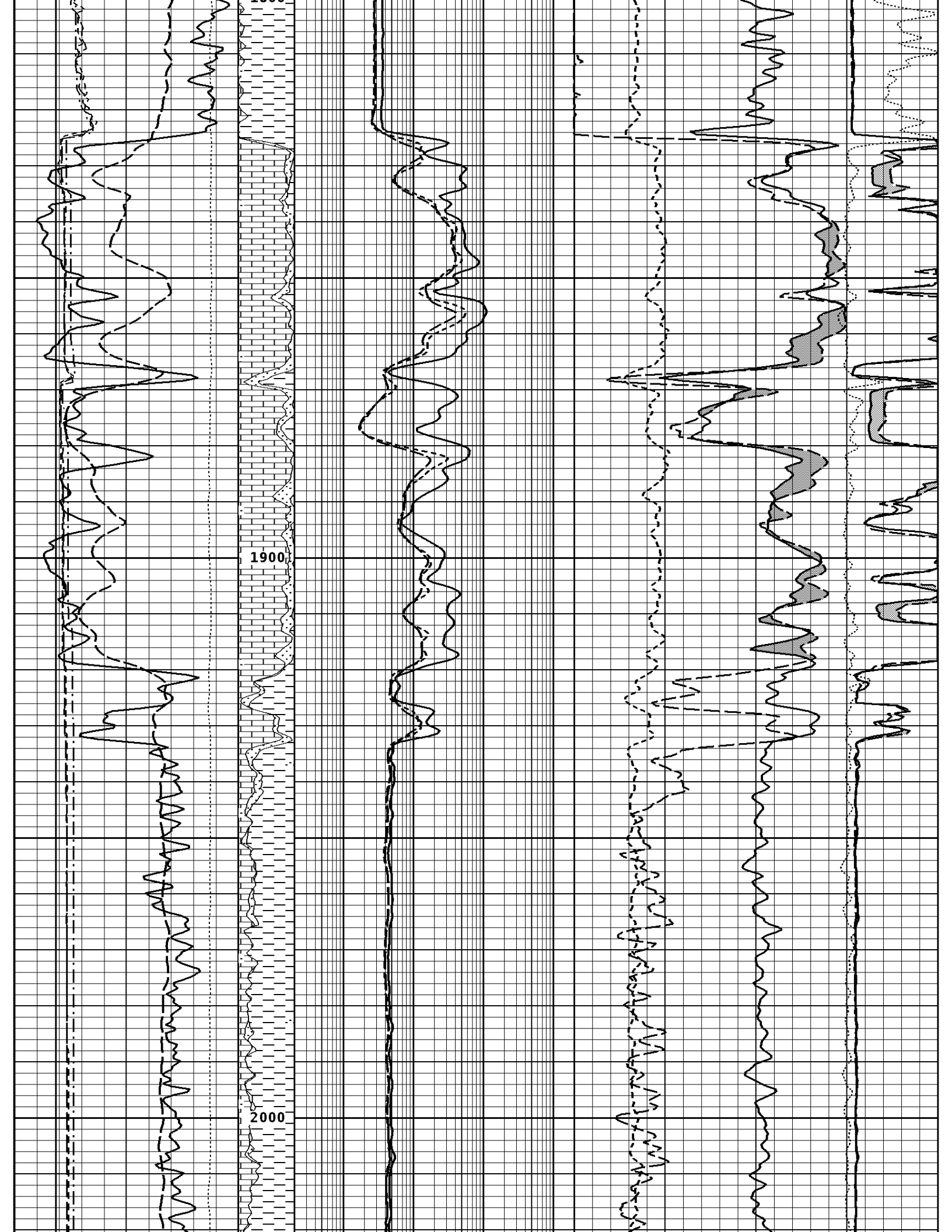

700Cu.Ft
400Cu.Ft
800
900

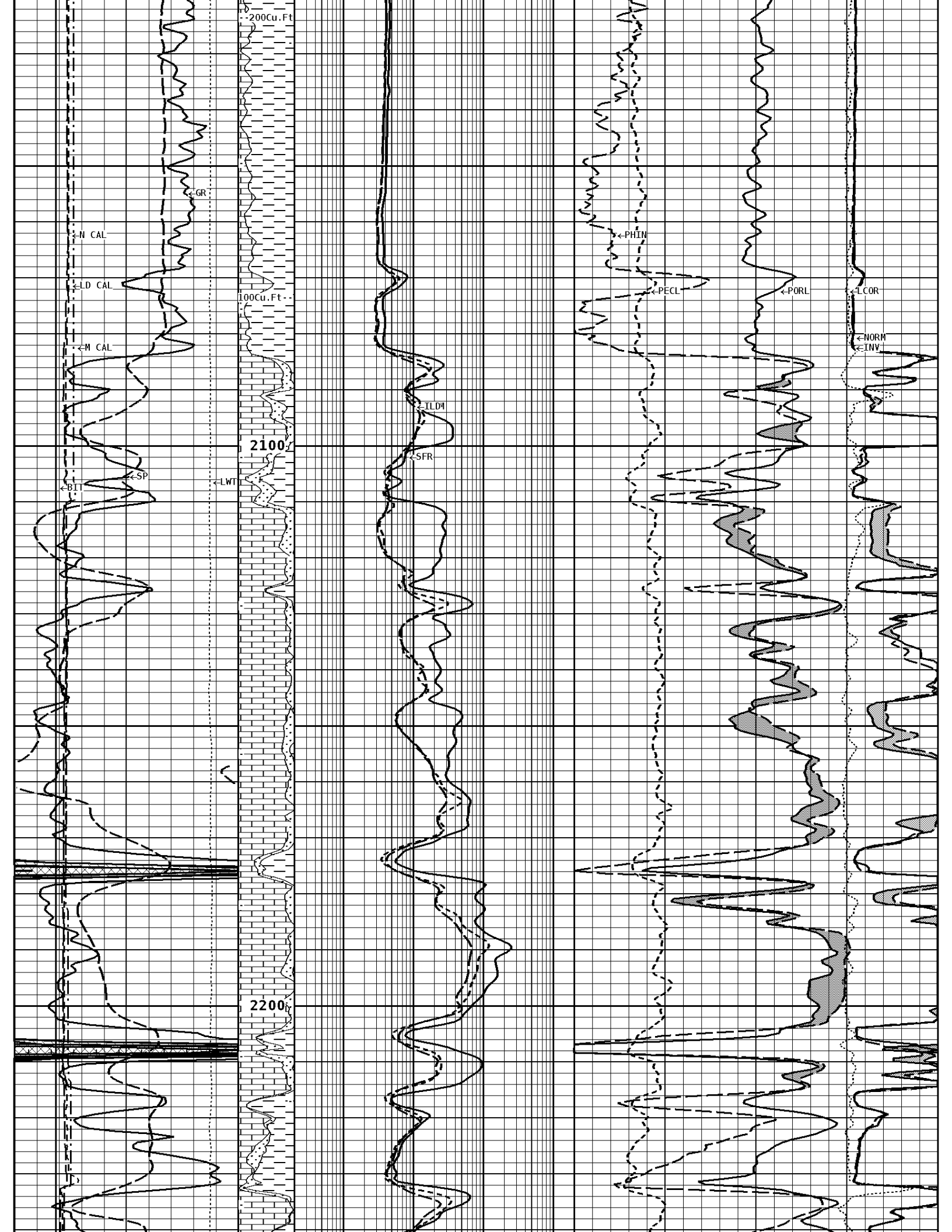

1000
600Cu.Ft
←GR
←N CAL
←LD CAL
←M CAL
←ILD
1100
←SFR
←SP
LWT→
←BIT
←PHIN
←PECL ORL
←LCOR
←NORM
←INV

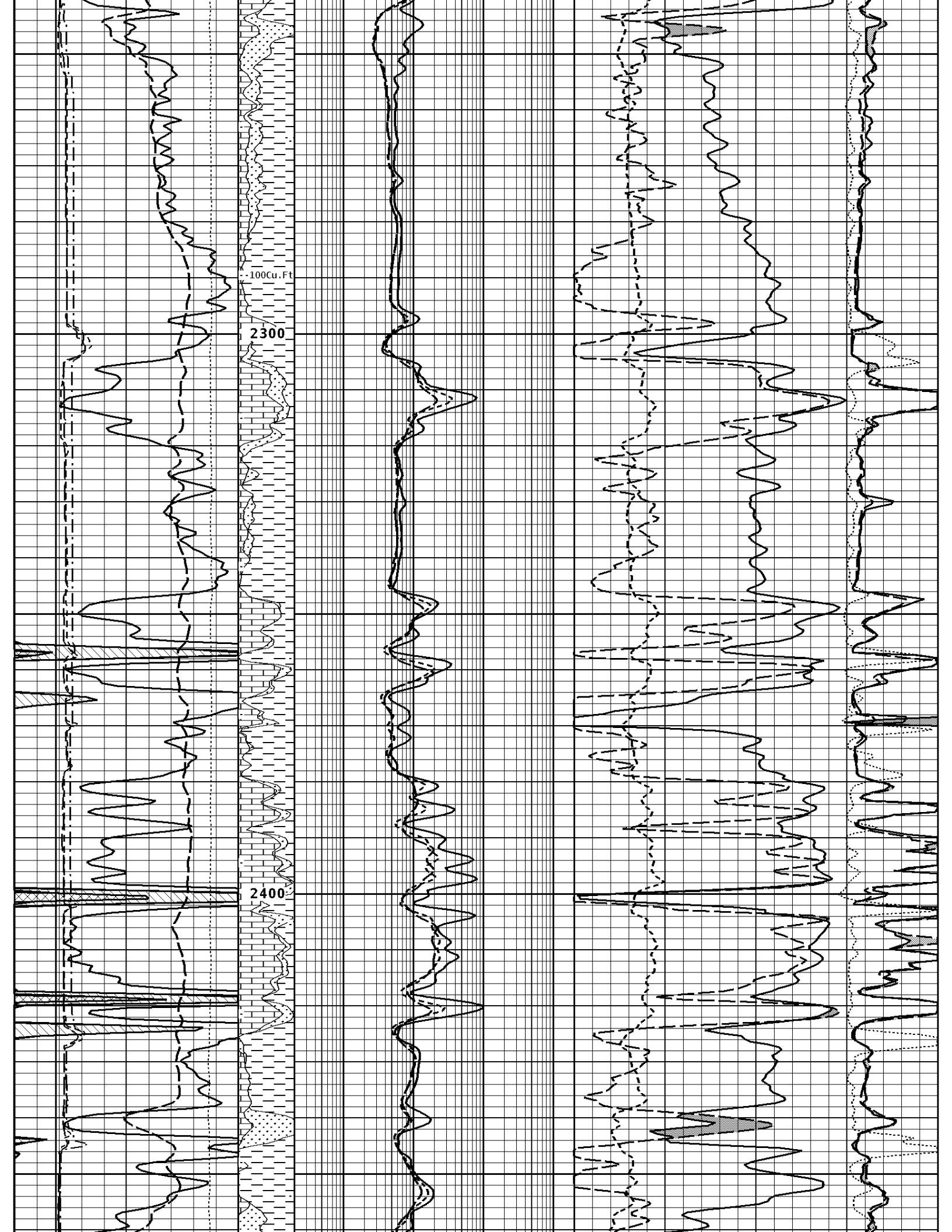

300Cu.Ft
500Cu.Ft
1300

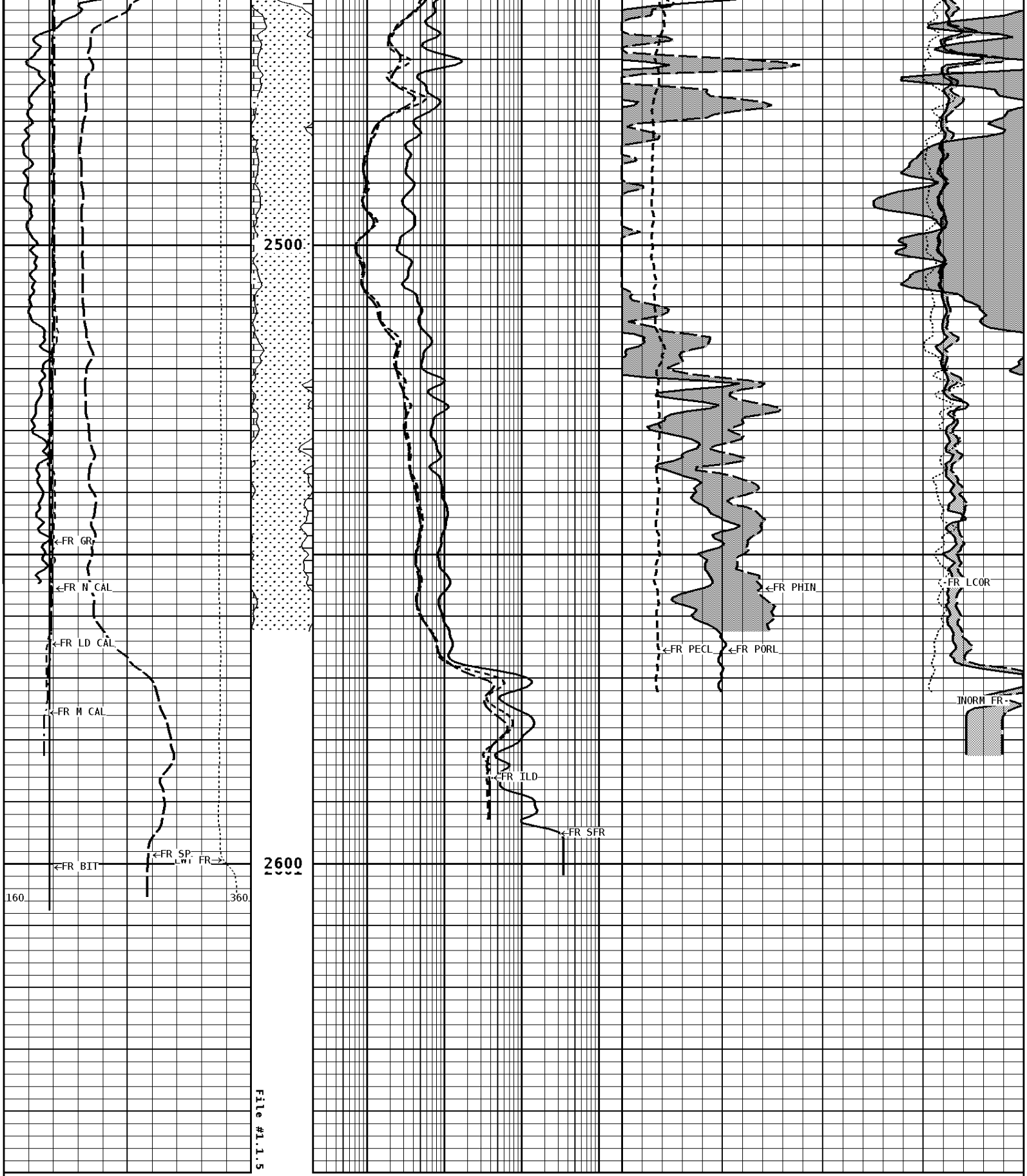

1400
1500
400Cu.Ft
←GR
←N CAL
←LD CAL
←PHIN
←PECL
←PORL
←LCOR


M CAL
BIT
SP
LWT
1600
200Cu.Ft
ILD
SFR
NORM
INV
1700
300Cu.Ft
1800


1900
2000

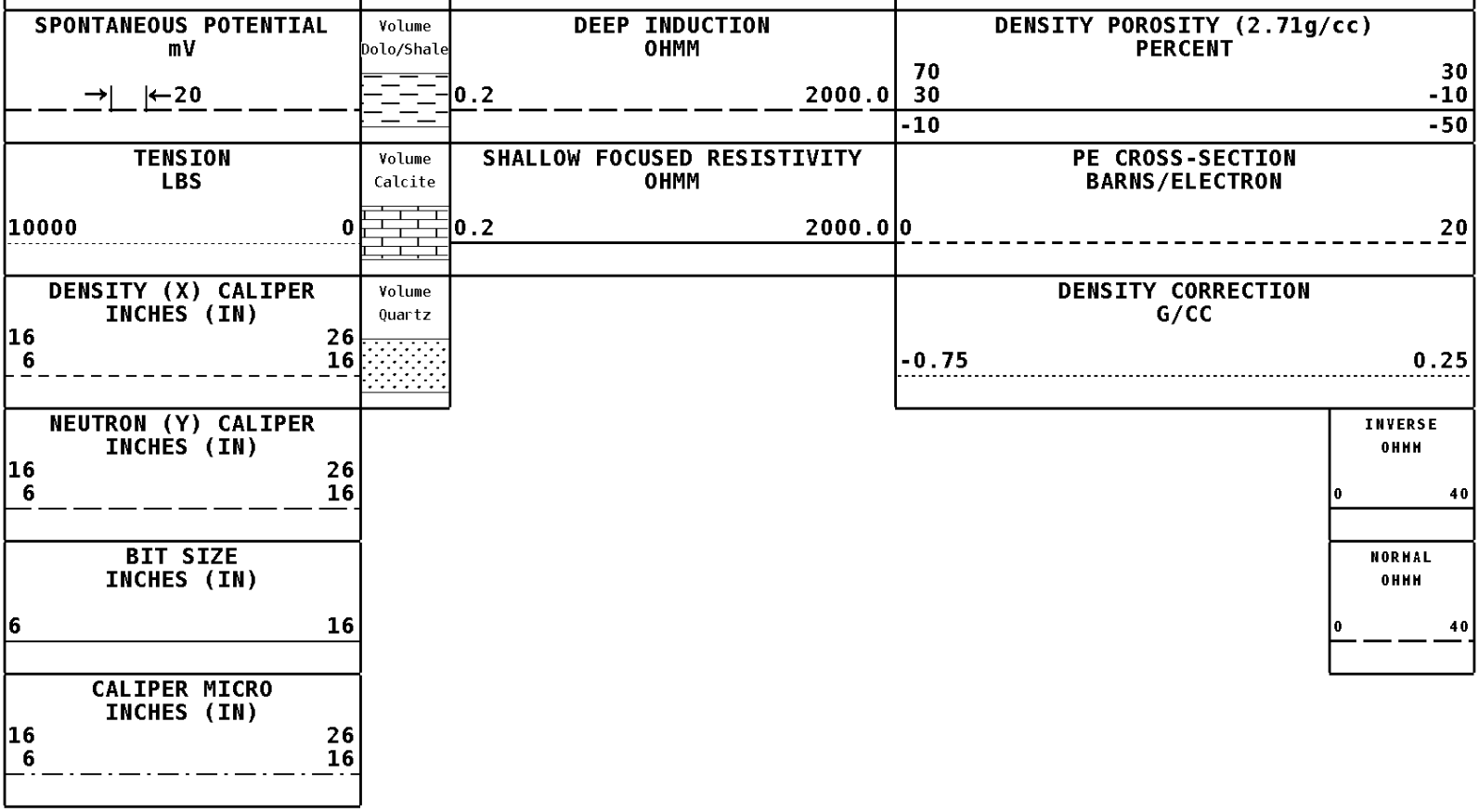

200Cu.Ft
GR
N CAL
LD CAL
100Cu.Ft
M CAL
2100
SP
BIT
LWT
2200
ILDM
SFR
PHIN
PECL
PORL
LCOR
NORM
INV


-100Cu.Ft
2300
2400



1:240 MAIN SECTION

GAMMA RAY API UNITS	BHV AHV CU.FT	MEDIUM INDUCTION OHMM	NEUTRON POROSITY (LIMESTONE) PERCENT
150 0 300 150		0.2 2000.0	30 -10

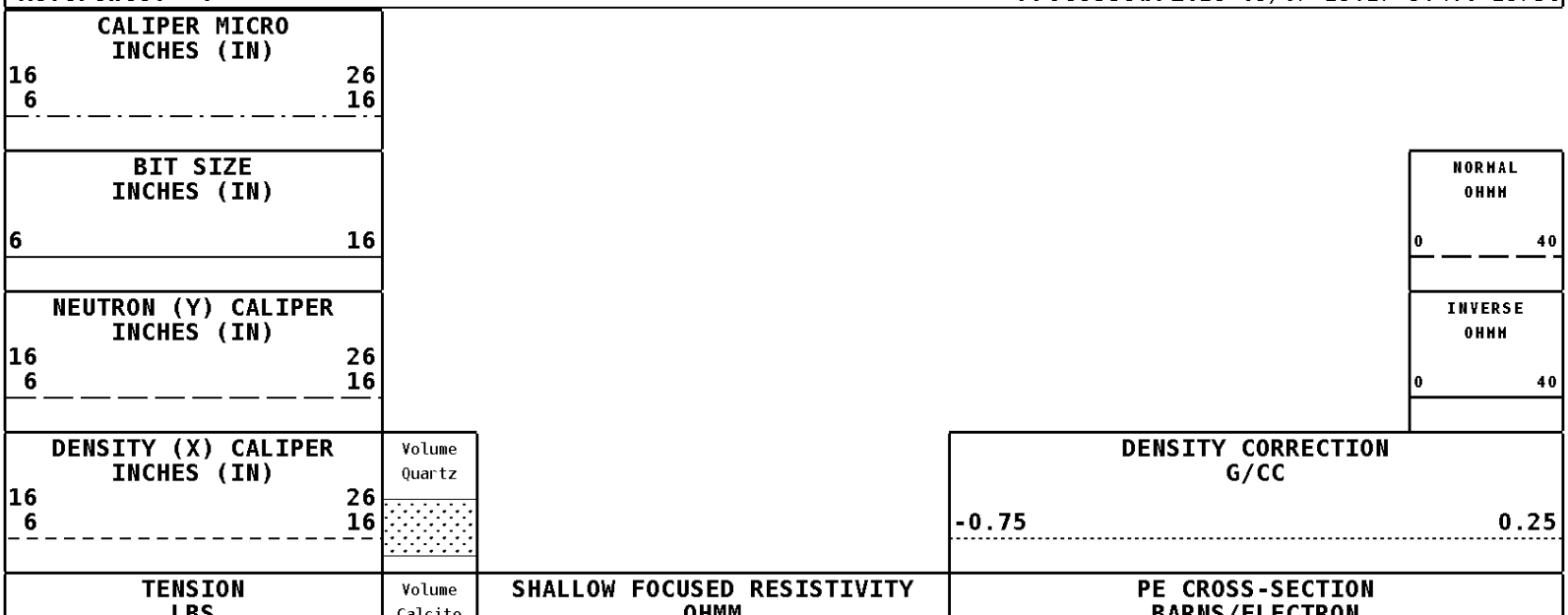


*** Borehole Zone Factors ***

Zone 1 99999.0 to 0.0 Feet

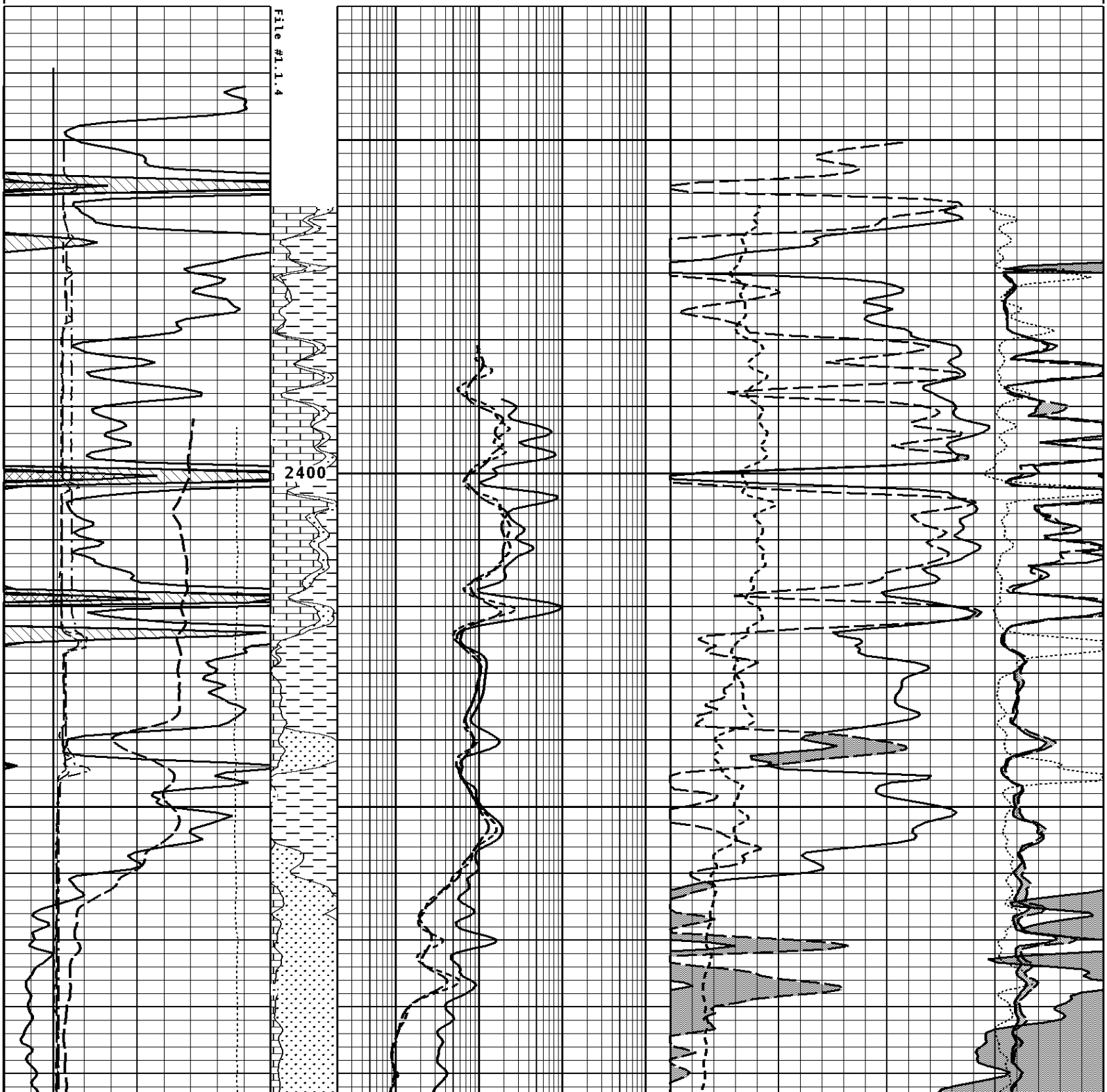
Matrix Density	2.71	g/cc
Fluid Density	1.00	g/cc
Formation Matrix	Limestone	
Drill Bit Size	7.875	in
Casing Diameter	5.500	in
Casing Thickness	0.250	in
Casing Correction (PHI N)	Disable	
Hole Substance	Fluid	
BHT Depth	2600.000	ft
Borehole Temperature	76.0	degF
Temperature Gradient	1.00	DFHF
Resistivity Of Mud	2.000	ohmm
MSTNG Normal Correction	0.00	ohmm
MSTNG Inverse Correction	0.00	ohmm

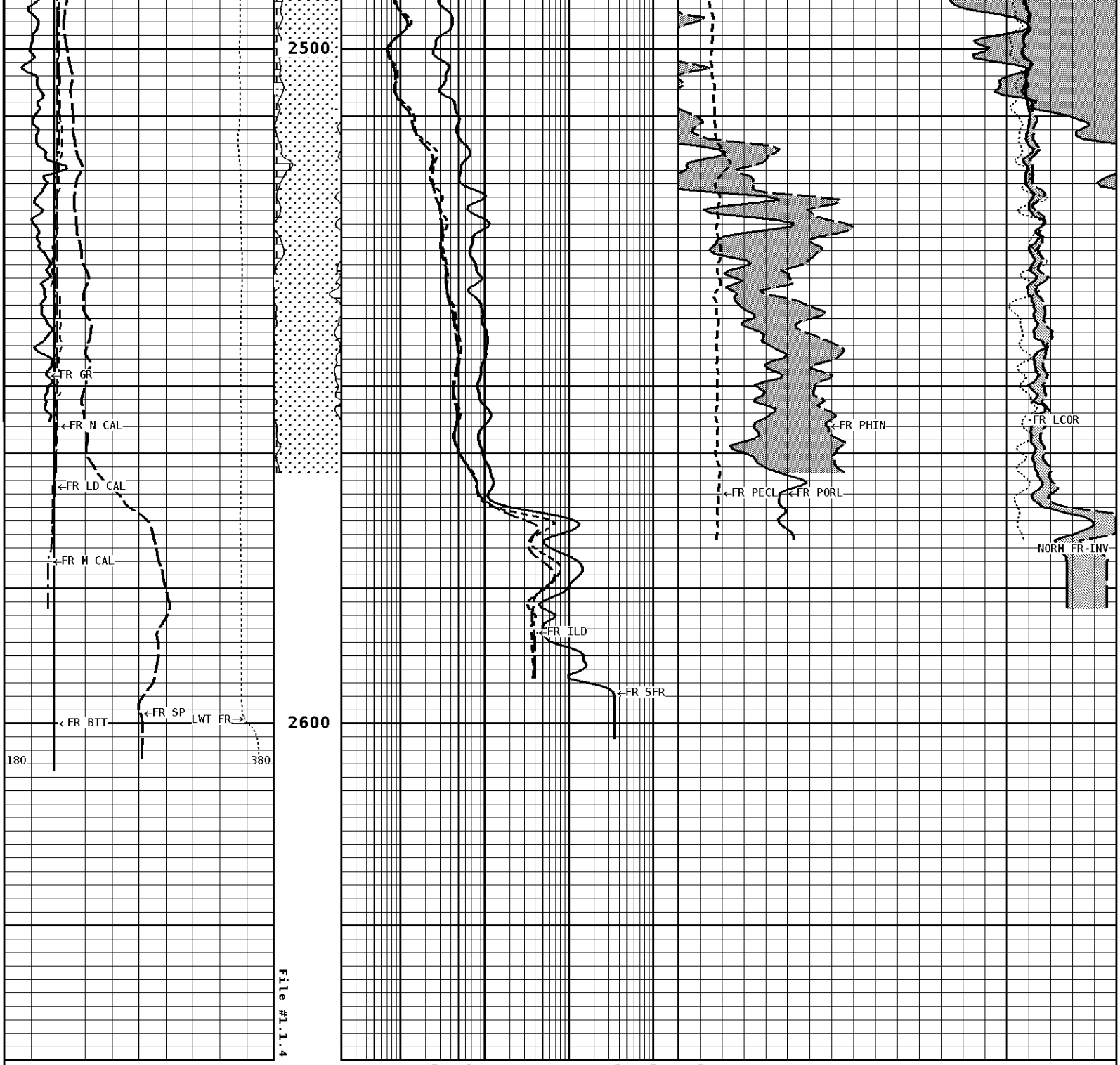
Well File: entransco_energy_t-wiebe-inj_30-1_sept_7_mst **Scale:** 1:240 **Format:** COMSAT
Segment: V1.D1.S4 Reprocess REPEAT **Acquired:** 2018-09/07 18:18 3.4.0-13756
Reference: 0 **Processed:** 2018-09/07 19:17 3.4.0-13756



LBS 10000 0	Calcite	OHMM 0.2 2000.0	BARNS/ELECTRON 0 20
SPONTANEOUS POTENTIAL mV →| |←20	Volume Dolo/Shale	DEEP INDUCTION OHMM 0.2 2000.0	DENSITY POROSITY (2.71g/cc) PERCENT 70 30 30 -10 -10 -50
GAMMA RAY API UNITS 150 300 0 150	-BHV AHV- CU.FT	MEDIUM INDUCTION OHMM 0.2 2000.0	NEUTRON POROSITY (LIMESTONE) PERCENT 30 -10

1:240 REPEAT SECTION





1:240 REPEAT SECTION

GAMMA RAY API UNITS 150 300 0 150	-BHV AHV- CU.FT	MEDIUM INDUCTION OHMM 0.2 2000.0	NEUTRON POROSITY (LIMESTONE) PERCENT 30 -10
SPONTANEOUS POTENTIAL mV → ←20	Volume Dolo/Shale	DEEP INDUCTION OHMM 0.2 2000.0	DENSITY POROSITY (2.71g/cc) PERCENT 70 30 30 -10 -10 -50
TENSION LBS 10000 0	Volume Calcite	SHALLOW FOCUSED RESISTIVITY OHMM 0.2 2000.0	PE CROSS-SECTION BARNS/ELECTRON 0 20
DENSITY (X) CALIPER			DENSITY CORRECTION

DENSITY (X) CALIPER
INCHES (IN)
16 26
6 16

Volume
Quartz

DENSITY CORRECTION
G/CC
-0.75 0.25

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

INVERSE
OHMM
0 40

BIT SIZE
INCHES (IN)
6 16

NORMAL
OHMM
0 40

CALIPER MICRO
INCHES (IN)
16 26
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	
Hole Substance	Fluid	
BHT Depth	2600.000	ft
Borehole Temperature	76.0	degF
Temperature Gradient	1.00	DFHF
Resistivity Of Mud	2.000	ohmm
MSTNG Normal Correction	0.00	ohmm
MSTNG Inverse Correction	0.00	ohmm

* Calibration Summary *

Shop Calibration
GRT-B

Performed : 08-Feb-2018 Time : 13:47
Sensor Suite : GR-GR5 ID : GRT-BB-009

	Measured Background	Measured Jig	Units	Calibrated Jig	Units
GR	58	336	CPS	160	GRAPI

Shop Calibration
CNT-AA

Performed : 08-FEB-2018 Time : 12:46
Sensor Suite : CALI-BCN ID : NDT-BB-103

	Jig - Measured Ring#1	Jig - Measured Ring#2	Jig - Calibrated Ring#1	Jig - Calibrated Ring#2	Units
CL # 1	9.2	14.1	6.0	12.0	IN.

Performed : 12-Jul-2018 Time : 10:47
Sensor Suite : BHC NEUT ID : CNP-AA-116-
Source ID : N-1045

	Tank Measured	Tank Calibrated	Verification Jig	Units
N/F	3.8584	3.6893	3.6914	
Porosity	23.2	20.5	20.5	%

Shop Calibration
LDT-DA

Performed : 12-JAN-2018 Time : 13:36
Sensor Suite : CALI-LTH ID : PDT-GA-426

	Jig - Measured Ring#1	Jig - Measured Ring#2	Jig - Calibrated Ring#1	Jig - Calibrated Ring#2	Units
CL # 1	6.7	10.9	6.0	12.0	IN.

Performed : 08-Aug-2018 Time : 15:27
Sensor Suite : BHCPELNG ID : LDP-DA-066

Source ID : 2991GW

Short Space

	BKGD	Al	Mg	Al+Fe	Units
LSW1	58	930	1517	613	CPS
LSW2	63	1120	1814	813	CPS
LSW3	232	2624	4292	2249	CPS
LSW4	284	2345	3422	2085	CPS
LSW5	28	50	54	46	CPS
LSW6	77	80	80	81	CPS
LSW7	49	53	52	52	CPS
LSW8	2	3	4	3	CPS
QS	0.220	0.202	0.217	0.215	
PES			2.778	5.967	
SSDN		2.600	1.680		G/CC

Long Space

	BKGD	Al	Mg	Al+Fe	Units
LLW1	90	1010	4192	616	CPS
LLW2	97	1895	7649	1374	CPS
LLW3	374	3566	13872	3098	CPS
LLW4	474	1701	5502	1561	CPS
LLW5	51	61	106	60	CPS
LLW6	156	150	145	152	CPS
LLW7	98	94	95	96	CPS
LLW8	3	5	15	5	CPS
QL	0.228	0.231	0.208	0.229	
PEL			2.697	5.458	
LSDN		2.600	1.680		G/CC

Shop Calibration
MST-DA

Performed : 08-FEB-2018 Time : 14:08
Sensor Suite : CALI-MSN ID : MST-DA-28

	Jig - Measured		Jig - Calibrated		Units
	Ring#1	Ring#2	Ring#1	Ring#2	
CL # 1	7.2	11.5	6.0	12.0	IN.

Performed : 08-Feb-2018 Time : 14:10
Sensor Suite : MSTDA-NI ID : MST-DA-28

Internal

	Measured			Calibrated		
	Zero	Reference	Units	Zero	Reference	Units
INV-V	220.3	30274.2		0.00	1546.00	MV
NOR-V	157.0	30095.7		0.00	1546.00	MV
IN-C	154.4	30428.2		0.00	15.46	UA
INV-R					32.34	OHMM
NOR-R					55.11	OHMM

Shop Calibration
PIT-CA

Performed : 02-MAR-2018 Time : 11:27
Sensor Suite : P-IND-T ID : PIT-AC-043

Medium

	Measured		Calibrated		
	R	X	R	X	Units
Air	131492	129685	0.0	0.0	MMHOS
Zero	131066	131062	-18.1	59.6	MMHOS
Reference	244915	244454	4981.9	5059.6	MMHOS
Loop	130404	210498	3515.7	3611.2	MMHOS
Sonde Error			-0.5	-1.7	MMHOS
Cond			4981.9	5059.6	MMHOS

Deep

	Measured		Calibrated		
	R	X	R	X	Units
Air	131939	129230	0.0	-0.0	MMHOS
Zero	131079	131067	-15.6	35.3	MMHOS
Reference	220620	224092	1984.4	2035.3	MMHOS
Loop	129308	206166	1595.4	1712.8	MMHOS
Sonde Error			-0.6	-7.8	MMHOS
Cond			1984.4	2035.3	MMHOS

Temperature

	Measured		Calibrated		
	Low	High	Low	High	Units
	16980.0	56920.0	70.0	350.0	DEGF

Performed : 02-Mar-2018 Time : 11:18
Sensor Suite : SFL ID : PIT-AC-043

Internal

	Measured		Calibrated		
	Zero	Reference	Zero	Reference	Units
Im	32805.1	49015.6	0.0	7028.0	uA
Ib	32766.6	49693.1	0.0	1750.0	mA
MOM1	32710.5	56307.5	0.0	175.0	mV
Equivalent SFL				43.97	OHMM

Performed : 02-Mar-2018 Time : 11:16
Sensor Suite : P-SP ID : PIT-AC-043

Internal

	Measured		Calibrated		
	Zero	Reference	Zero	Reference	Units
	32774.5	58935.9	0.0	1000.0	mV

Tucker ENERGY SERVICES

Company: ENTRANSCO ENERGY, LLC

Well: T. WIEBE INJ 30-1

Location: 1650' FSL & 825' FEL

Logged: 09-07-2018

K.B. Elev: 1476.0 Ft