Tucker ENERGY SERVICES

COMPOSITE LOG

Company ENTRANSCO ENERGY LLC
Well T. WIEBE #31-1
Field HAZLETT
County BUTLER
State KANSAS
Country USA
API No. 15-015-24106-0000

File No : TUL-62033
Company : ENTRANSCO ENERGY LLC
Well : T. WIEBE #31-1
Field : HAZLETT
County : BUTLER
State : KANSAS
Country : USA
API No : 15-015-24106-0000

Location :
4620' FSL & 460' FEL
W/2 E/2 NE NE

LSD : **Sect :** **Twp :** **Rge :**

Permanent Datum:	GL	**Elevations:**		**Services:**	
Drilling Measured From:	KB	**KB**	1467.00 Ft	CNT	PIT
Log Measured From:	KB	**DF**	1466.00 Ft	LDT	
Above Permanent Datum:	6.00 Ft	**GL**	1461.00 Ft	MLT	

Date	09-22-2018						
Run Number	1						
Depth--Driller	2610.0	Ft					
Depth--Logger	2610.0	Ft					
First Reading	2610.0	Ft					
Last Reading	209.0	Ft					
Casing--Driller	209.0	Ft					
Casing--Logger	209.0	Ft					
Bit Size	7.875	In					
Casing Size	8.625	In					
Hole Fluid Type	WBM						
Density	0.0						
Fluid Loss	0.0						
PH/Viscosity	0.0	0.0					
Sample Source	MESURED						
RM@Measured Temp.	2.000	@ 70 F					
RMF@Measured Temp	1.600	@ 70 F					
RMC@Measured Temp.	2.400	@ 70 F					
Source RMF/RMC	CALCULATED	CALCULATED					
RM@BHT	1.440	@ 100 F					
Time Circulation Stopped	09-22-2018 11:00						
Max Recorded Temp.	100	F					
Equipment/Base	1022	TULSA, OK					
Recorded By	SHELDON TYLER						
Witnessed By	RAY GILBERT						

Bitsize Intervals

Size (In)	Bottom (Ft)
7.875	2610.00

Casing Strings

Size (In)	Weight (Lbs)	Bottom (Ft)	Top (Ft)
8.625	32.00	209.00	0.00

Run Number	1
Date	09-22-2018
Date/Time On Bottom	09-22-2018 14:00
Depth to Fluid	0.0 Ft
Salinity	0.000
RMF@BHT	1.150 @ 100 F
RMC@BHT	1.730 @ 100 F

Run Number 1

Comments

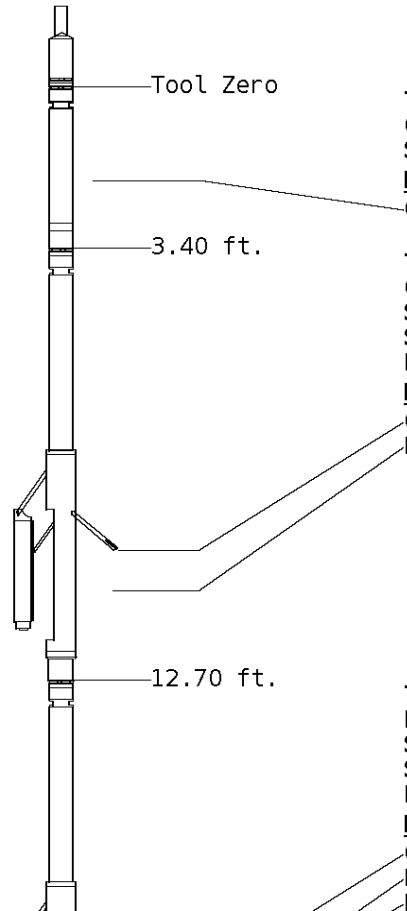
ALL PRESENTATIONS AS PER CUSTOMER REQUEST
GRT, CNT, LDT, MLT AND PIT RUN IN COMBINATION
CALIPERS ORIENTED ON X-Y AXIS
2.71 G/CC USED TO CALCULATE POROSITY
ANNULAR HOLE VOLUME CALCULATED USING 5.5" PRODUCTION CASING
PHIN IS CALIPER CORRECTED

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:
B.BAILEY
R.NITZ

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-14

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

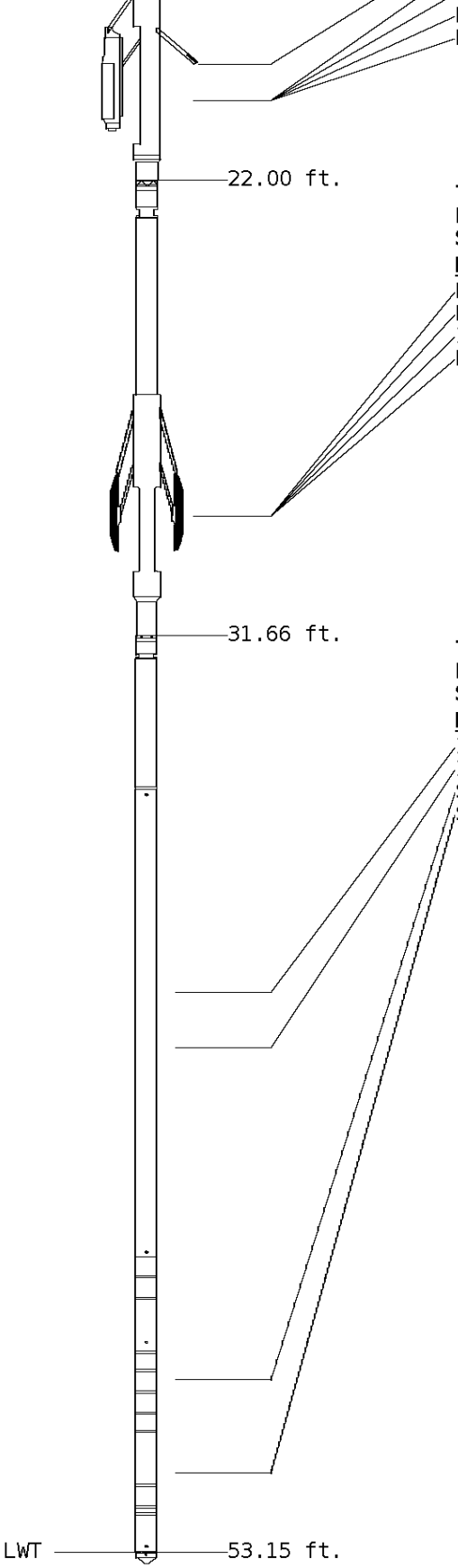
Tool: CNT-AA **Length:** 9.30 **ft.** **O.D.** 4.36 **in.**
Compensated Neutron A Pad on NDT-A
Sonde ID :NDT-BB-033
Source ID :N-1044
Pad ID :CNP-AA-121

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-466
Source ID :63558B
Pad ID :LDP-DA-41

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)
Sonde ID :MST-DA-021

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-069

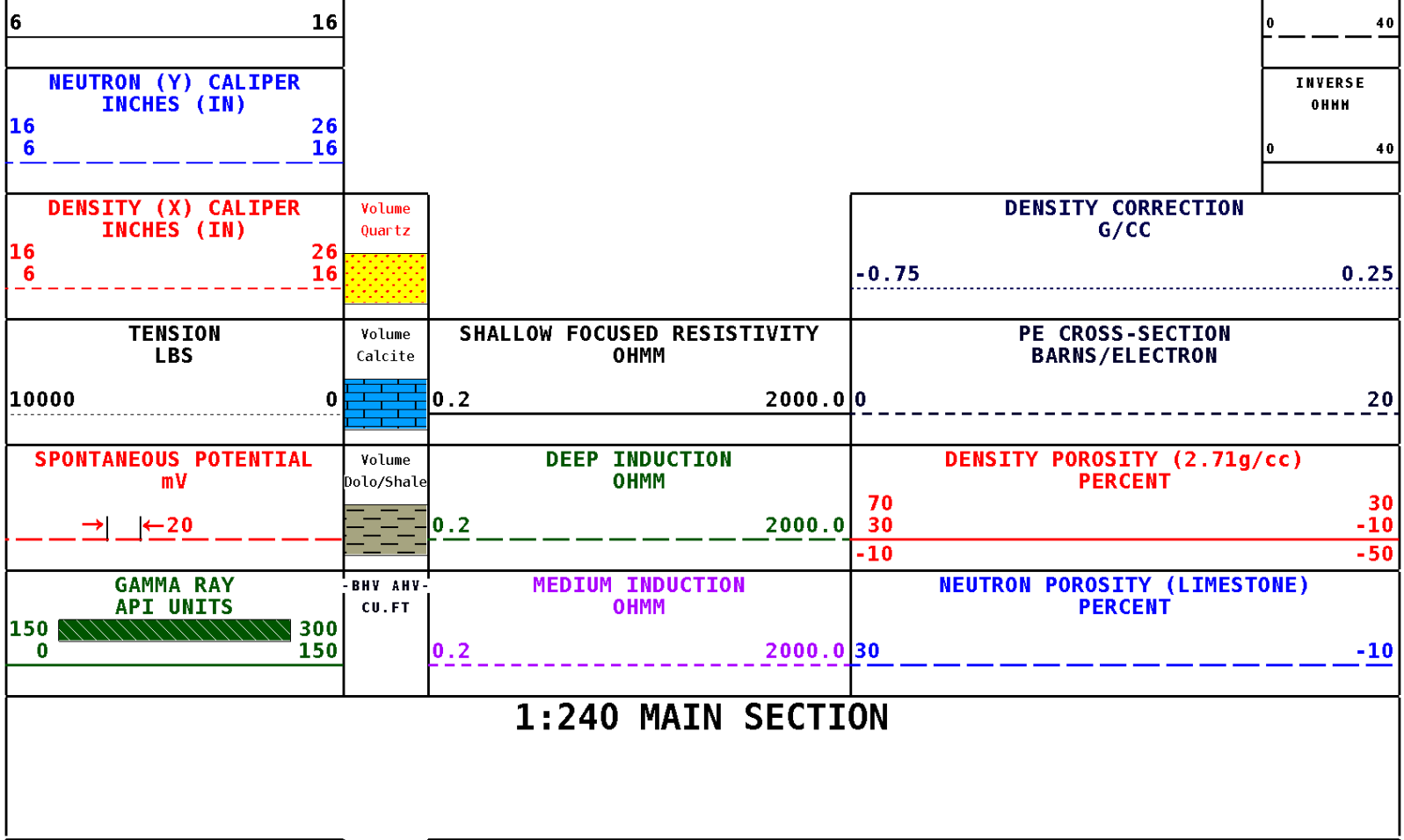
Measure Point	Tool Offset	Stack Offset	Bottom Offset
ILD	8.92	40.58	12.56
ILM	10.10	41.76	11.39
SFLU	17.49	49.15	4.00
SP	20.60	52.26	0.88

Well File: ENTRANSCO_TIEBE_31-1_SEPT22_MSTK **Scale:** 1:240 **Format:** COMSAT
Segment: V1.D1.S5 Reprocess of MAIN **Acquired:** 2018-09/22 13:58 3.4.0-13841
Reference: 0 **Processed:** 2018-09/22 14:46 3.4.0-13841

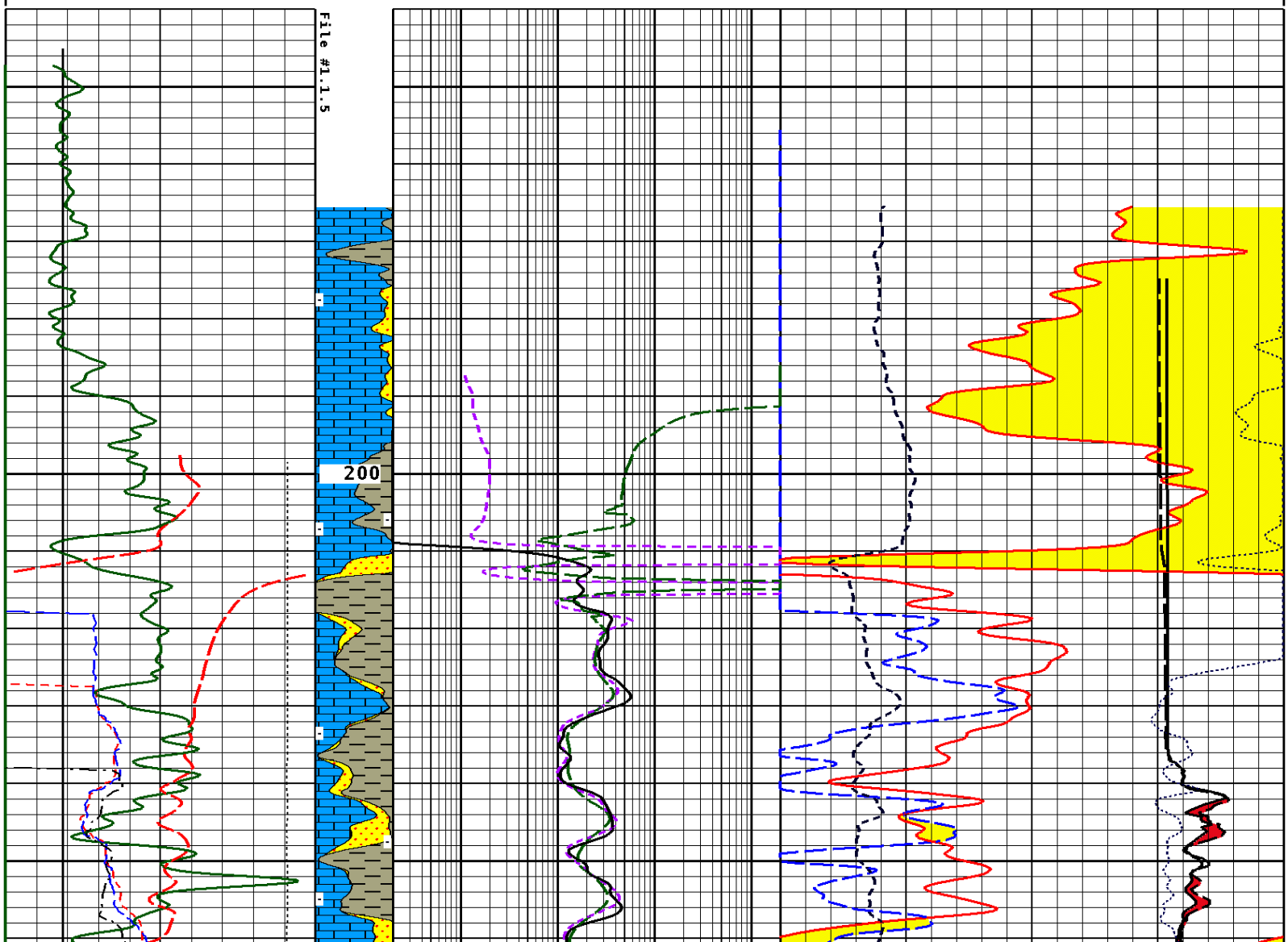
CALIPER MICRO
INCHES (IN)
16 **26**
6 **16**

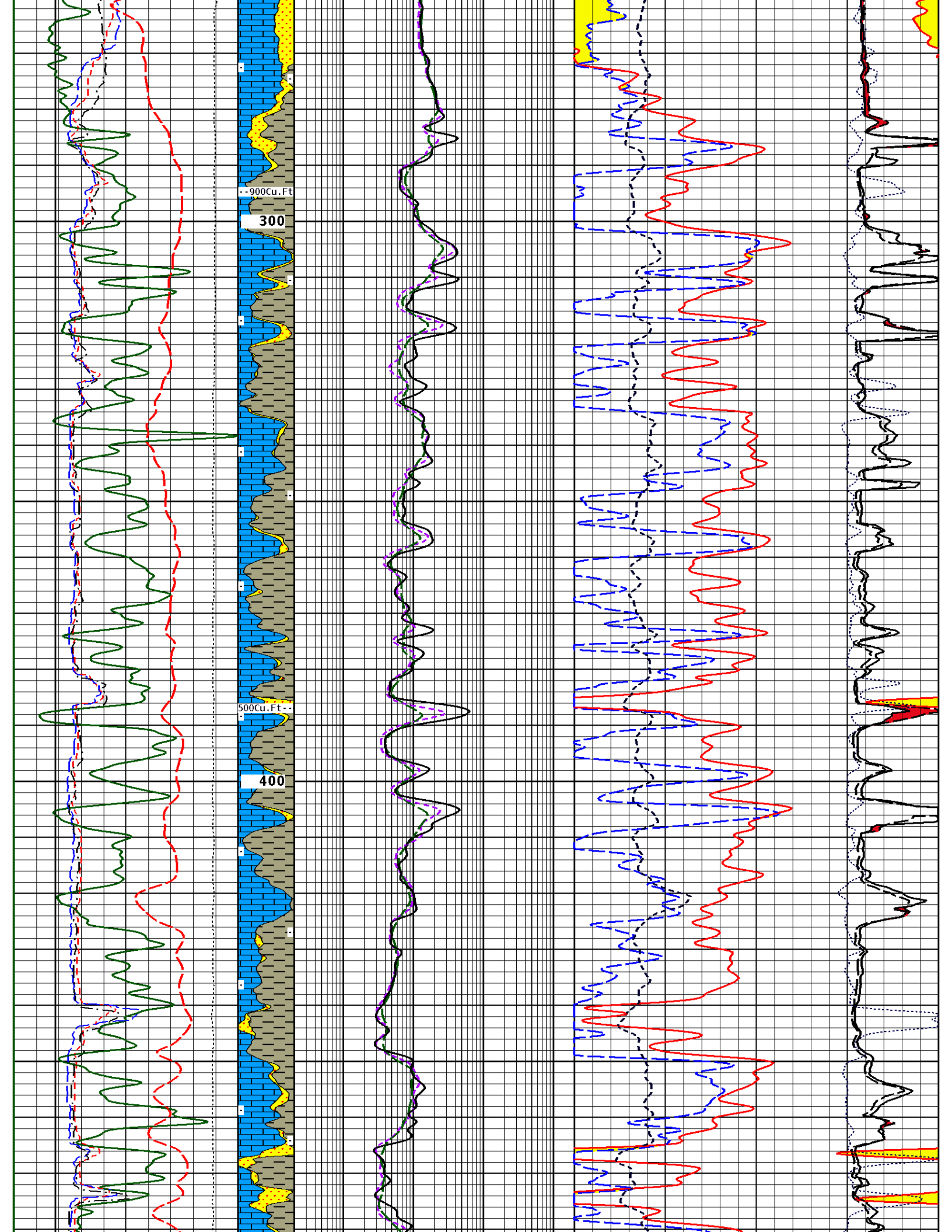
BIT SIZE
INCHES (IN)

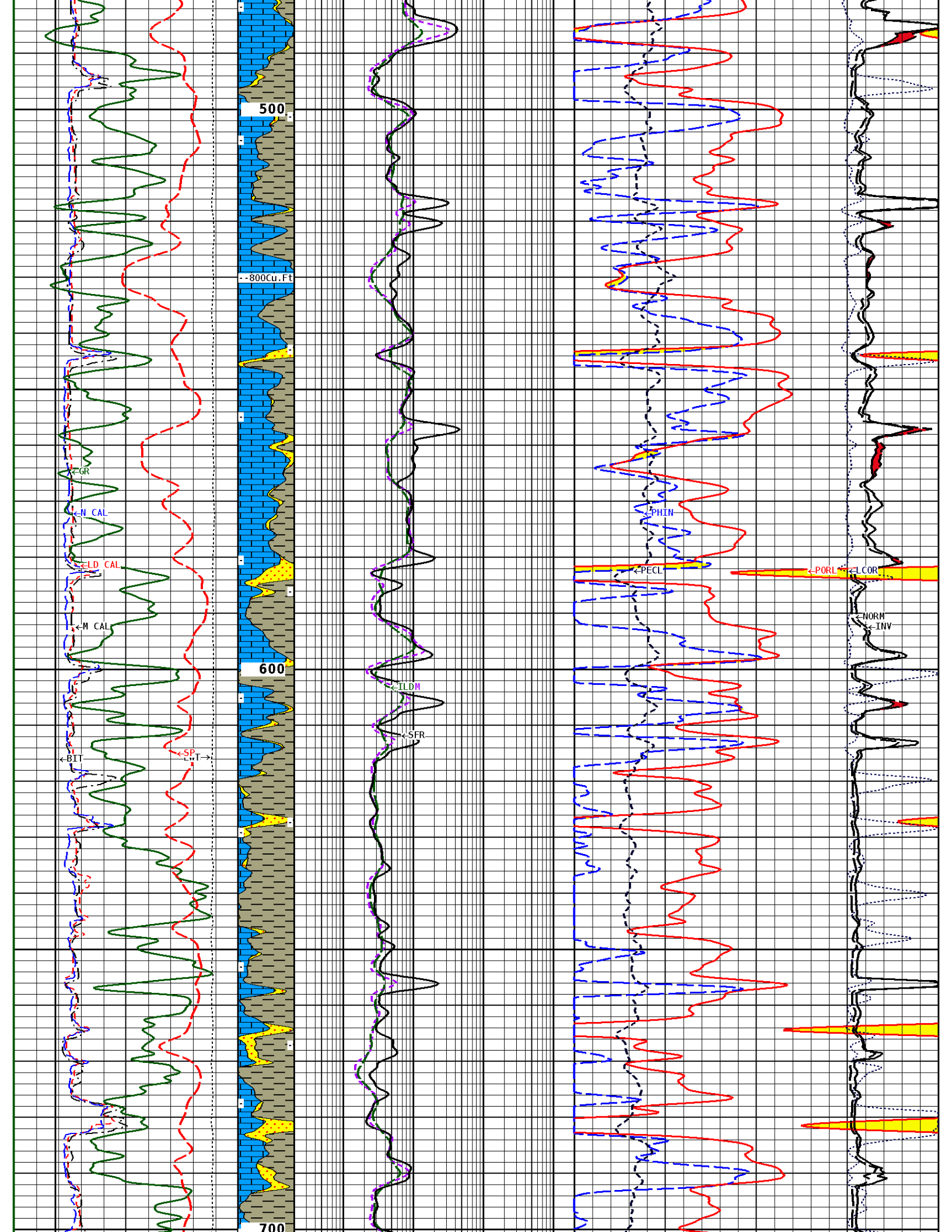
NORMAL
OHMM

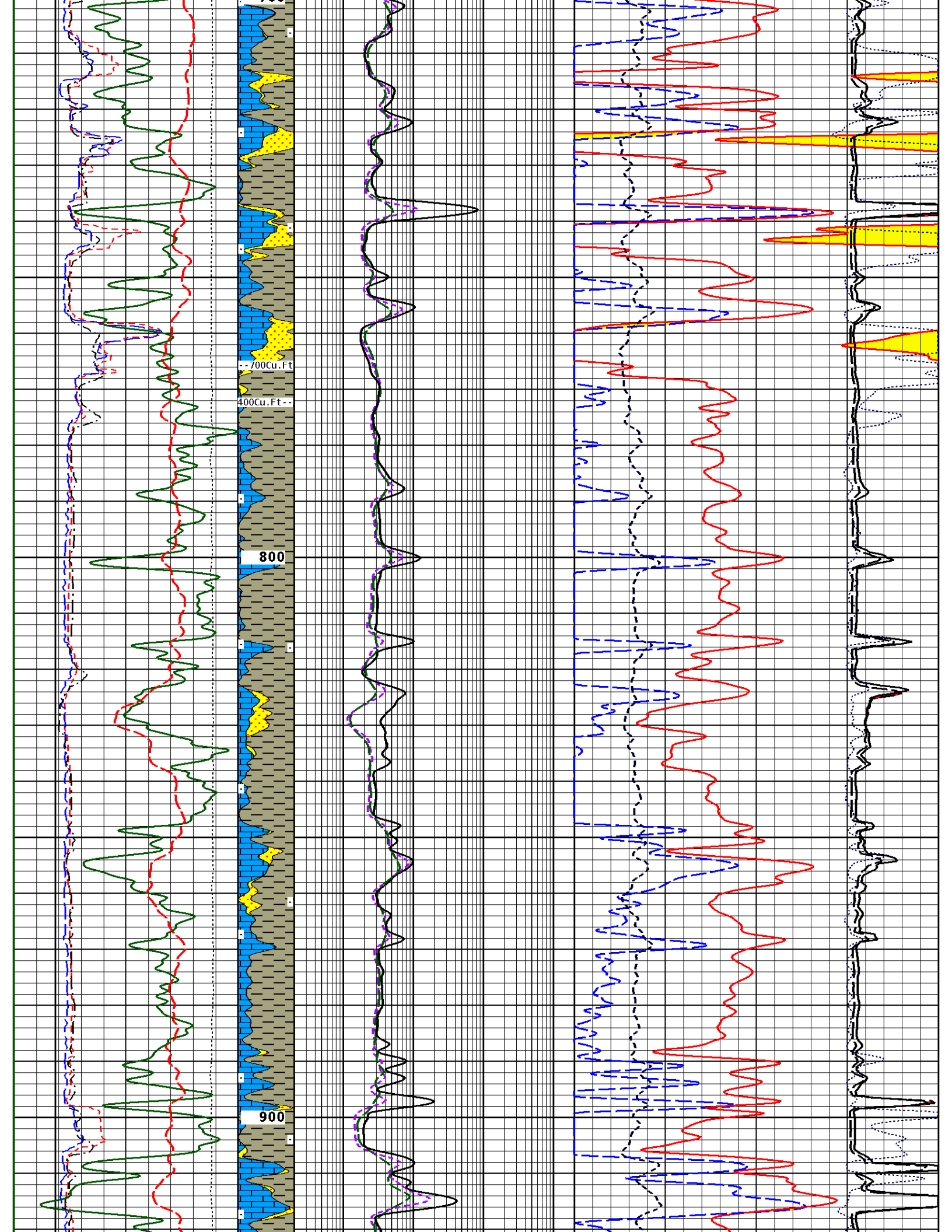


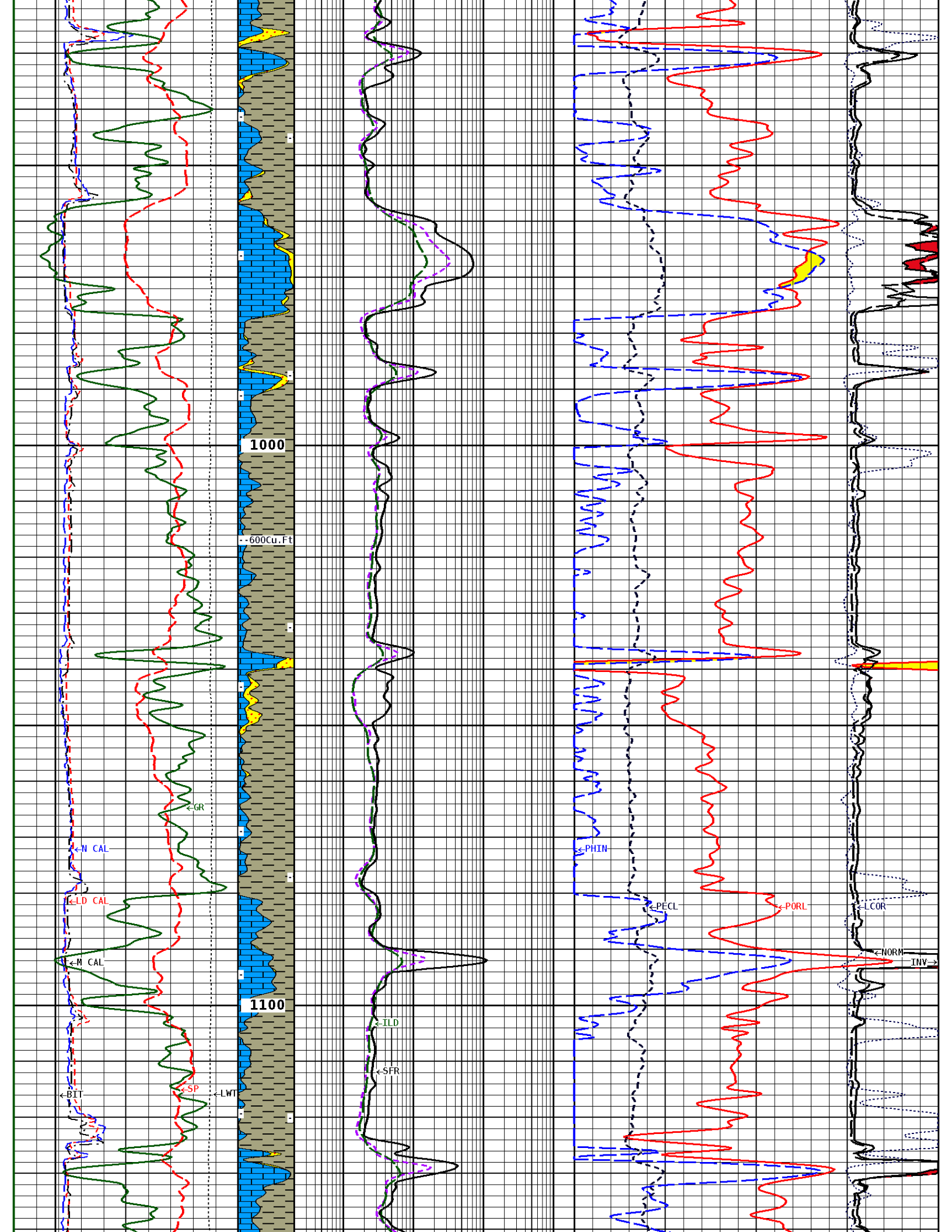
1:240 MAIN SECTION

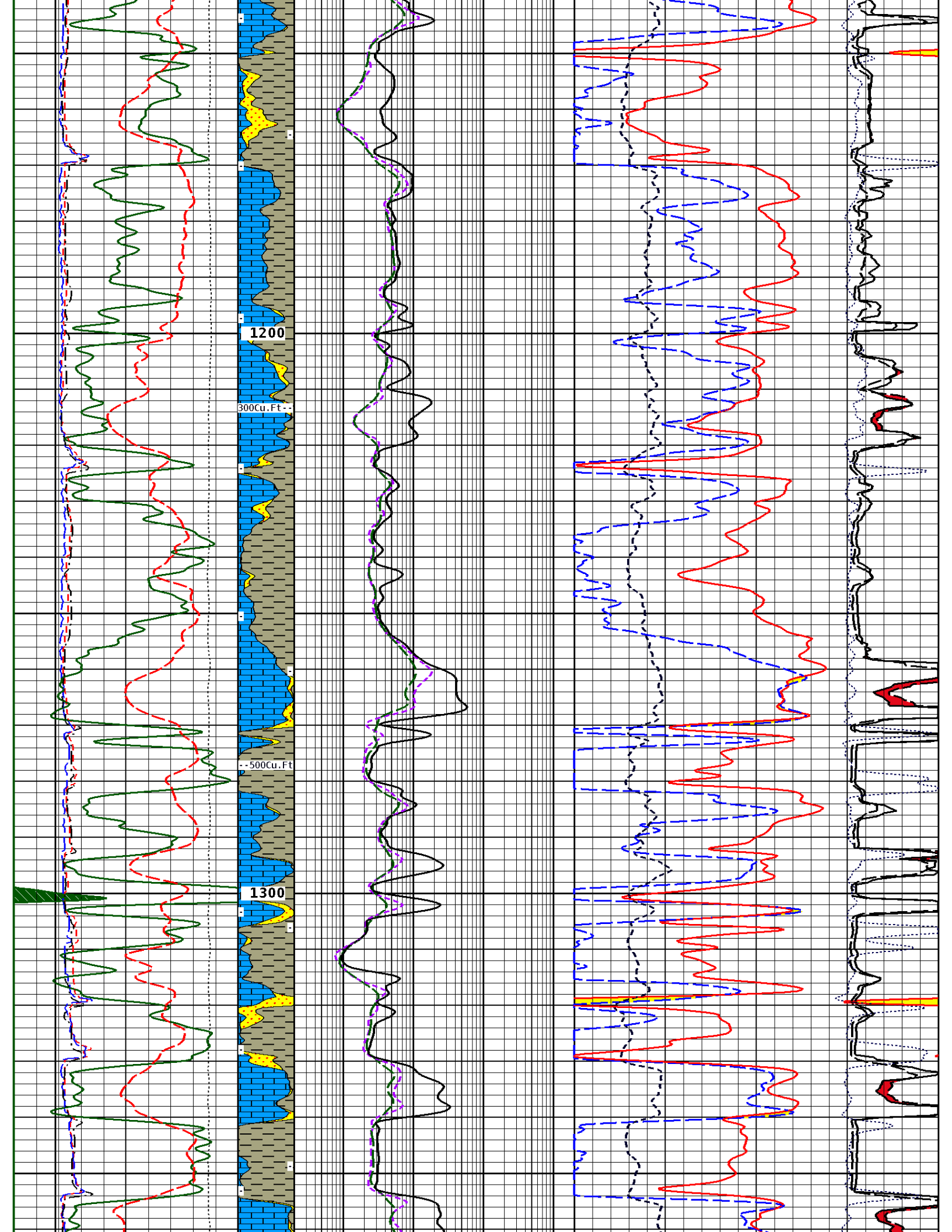


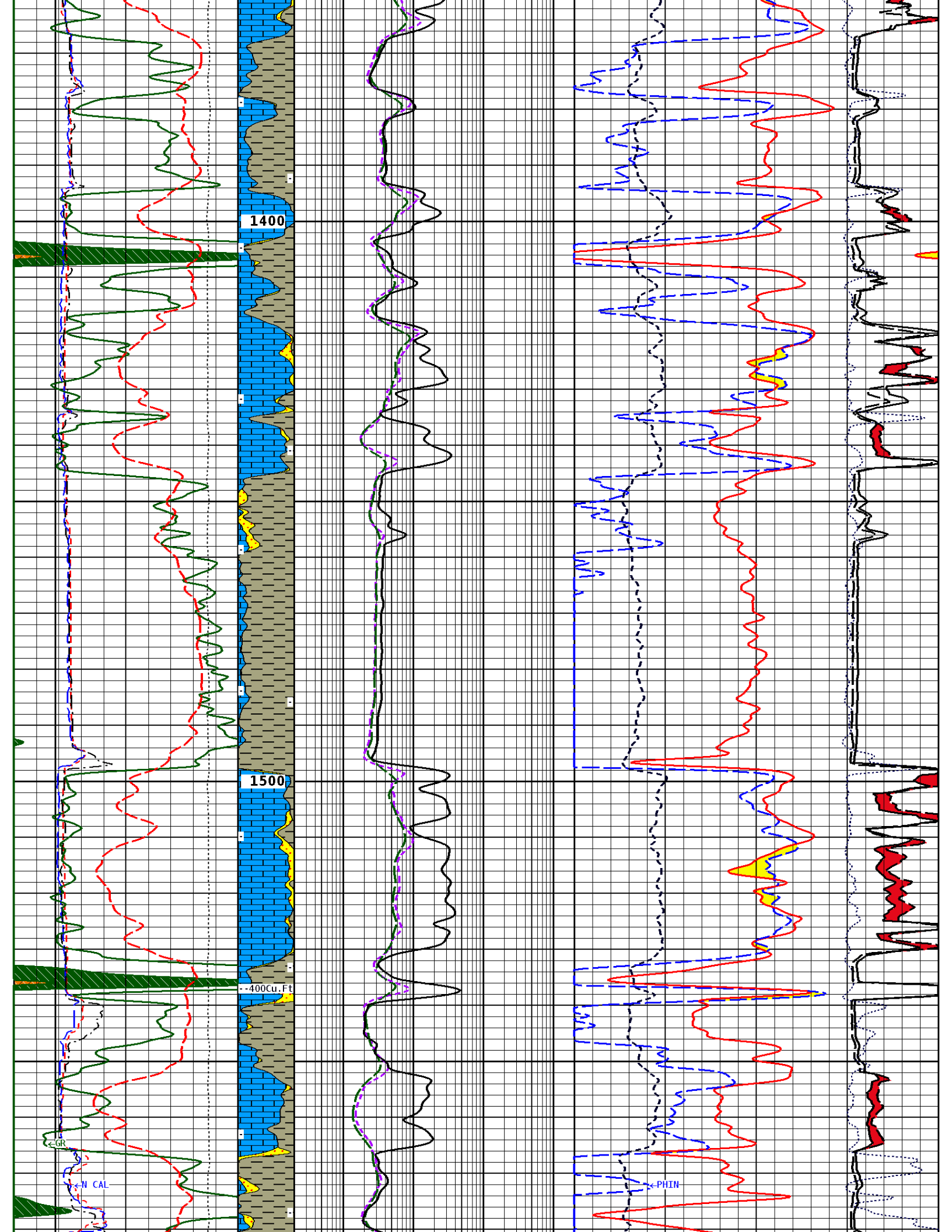

900Cu.Ft
300
500Cu.Ft
400

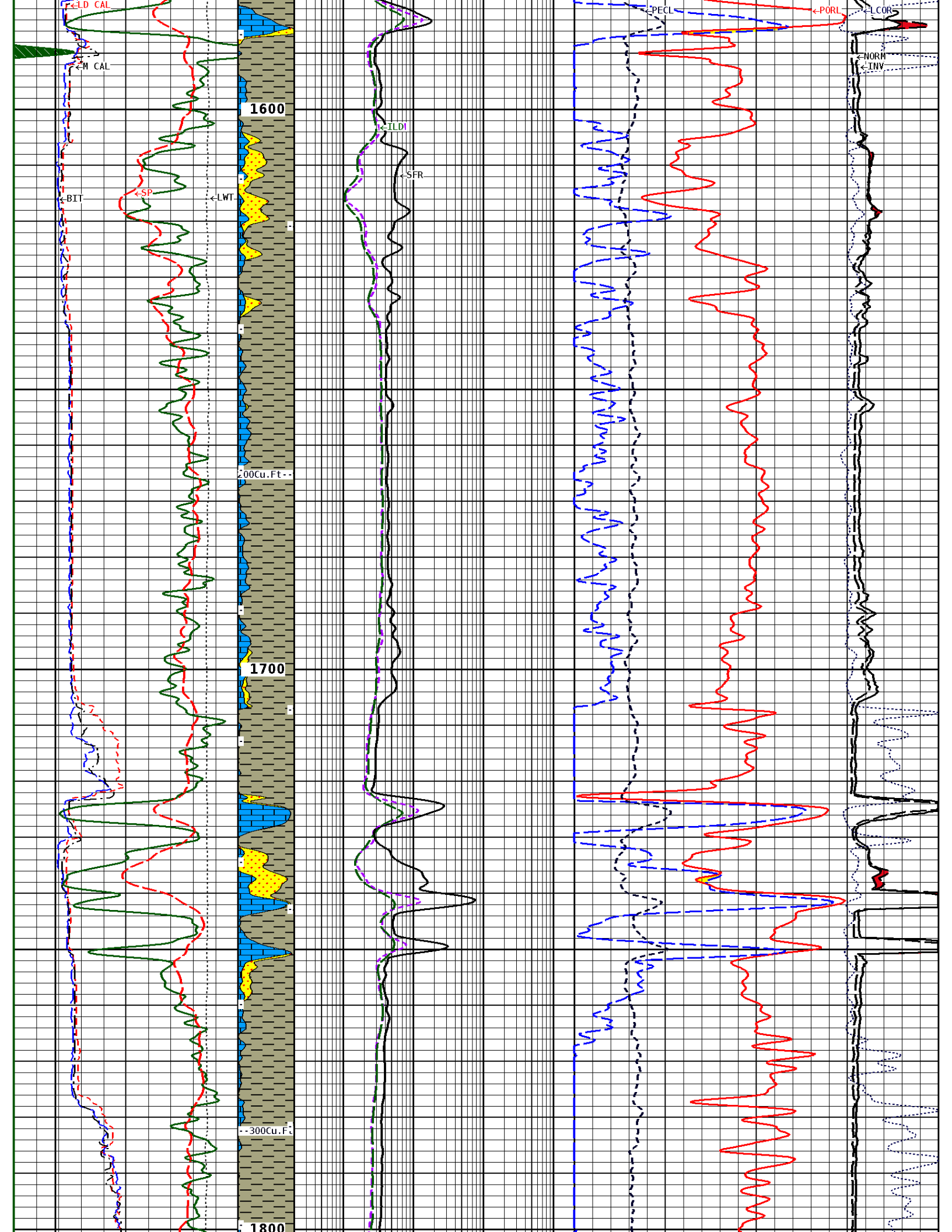

500
--800Cu.Ft
←GR
←N CAL
←LD CAL
←M CAL
600
←BIT
←SP
←T→
←TLDM
←SFR
←PHIN
←PECL
←PORL
←LCOR
←NORM
←INV
700

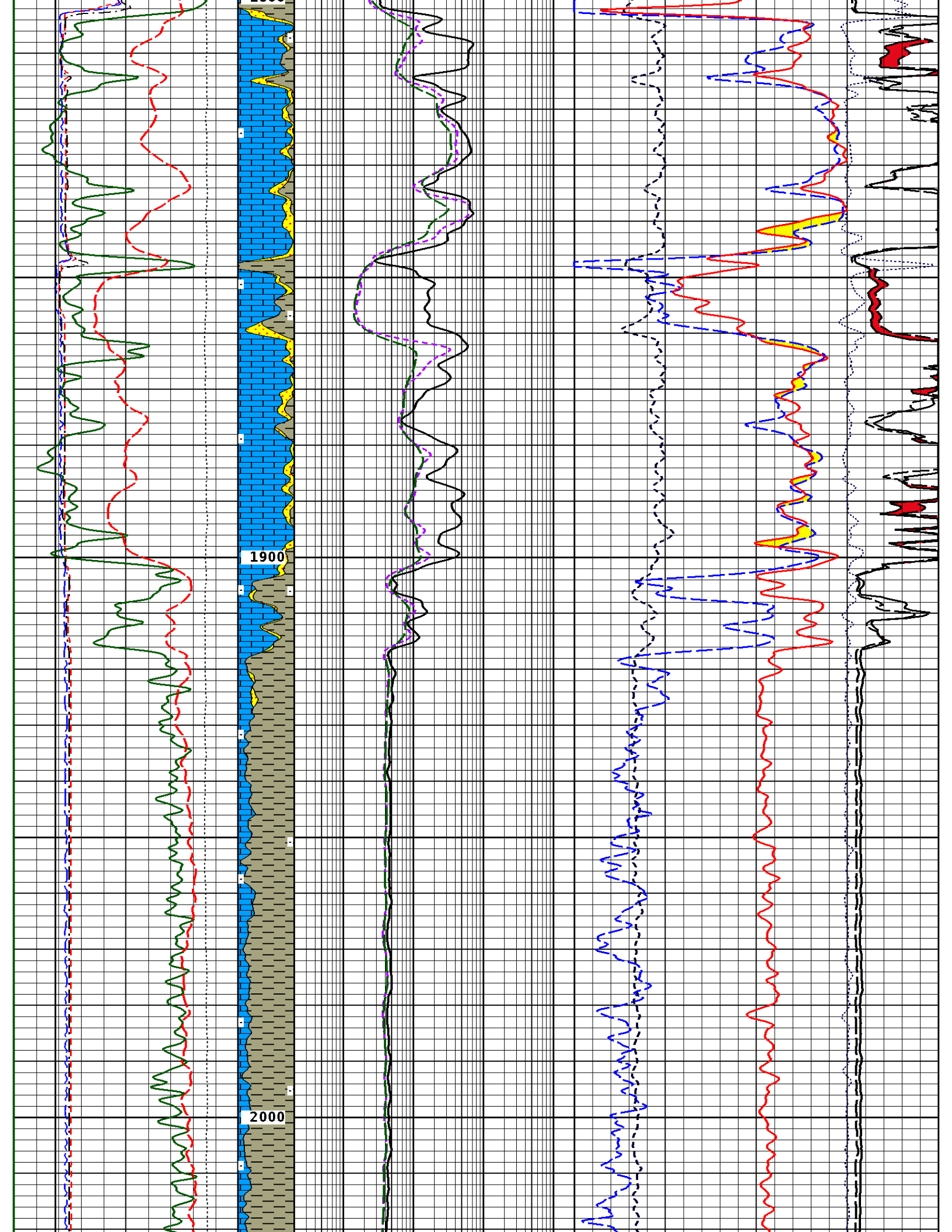

700Cu.Ft
400Cu.Ft
800
900

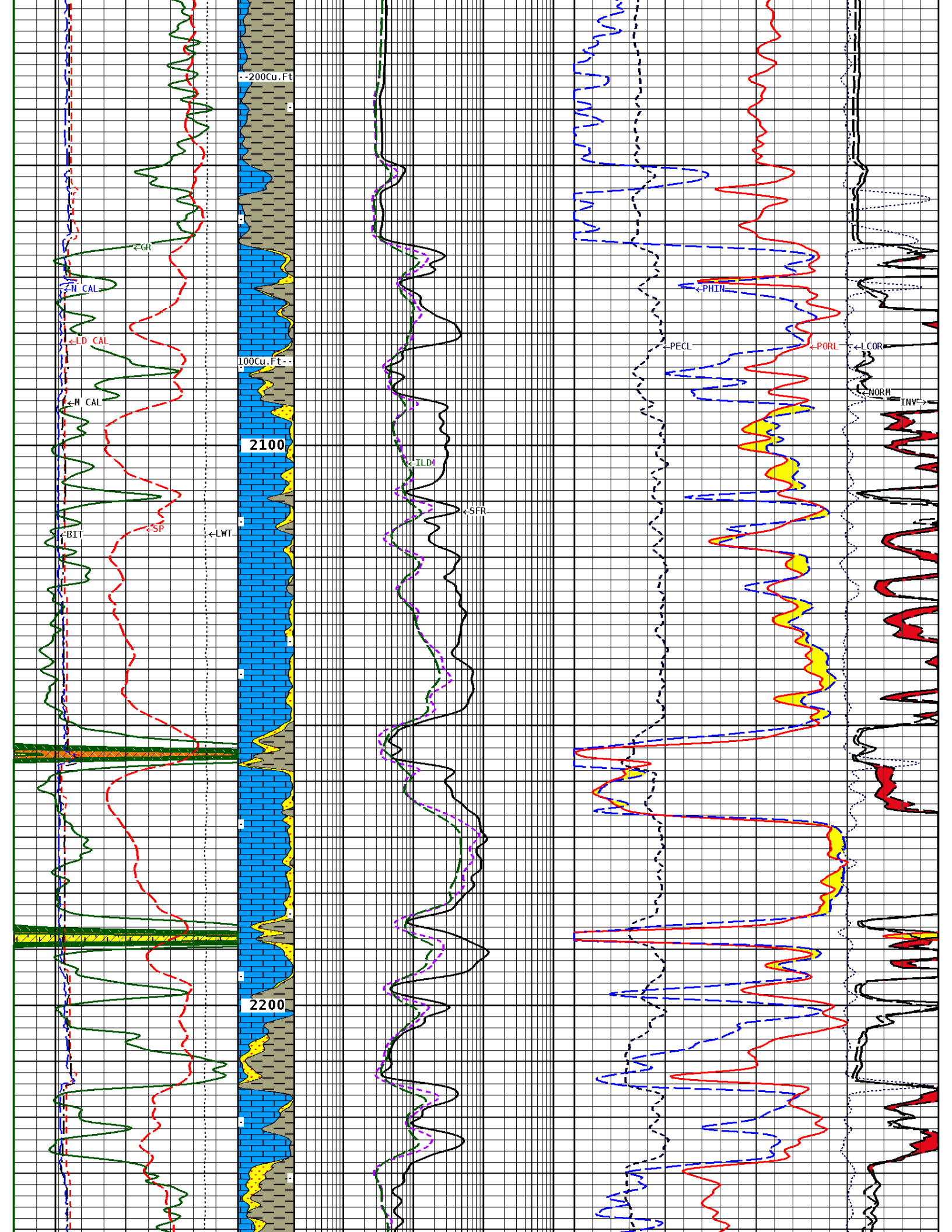

1000
600Cu.Ft
1100
←GR
←N CAL
←LD CAL
←M CAL
←BIT
←SP
←LWT
←ILD
←SFR
←PHIN
←PECL
←PORL
←LCOR
←NORM
INV→

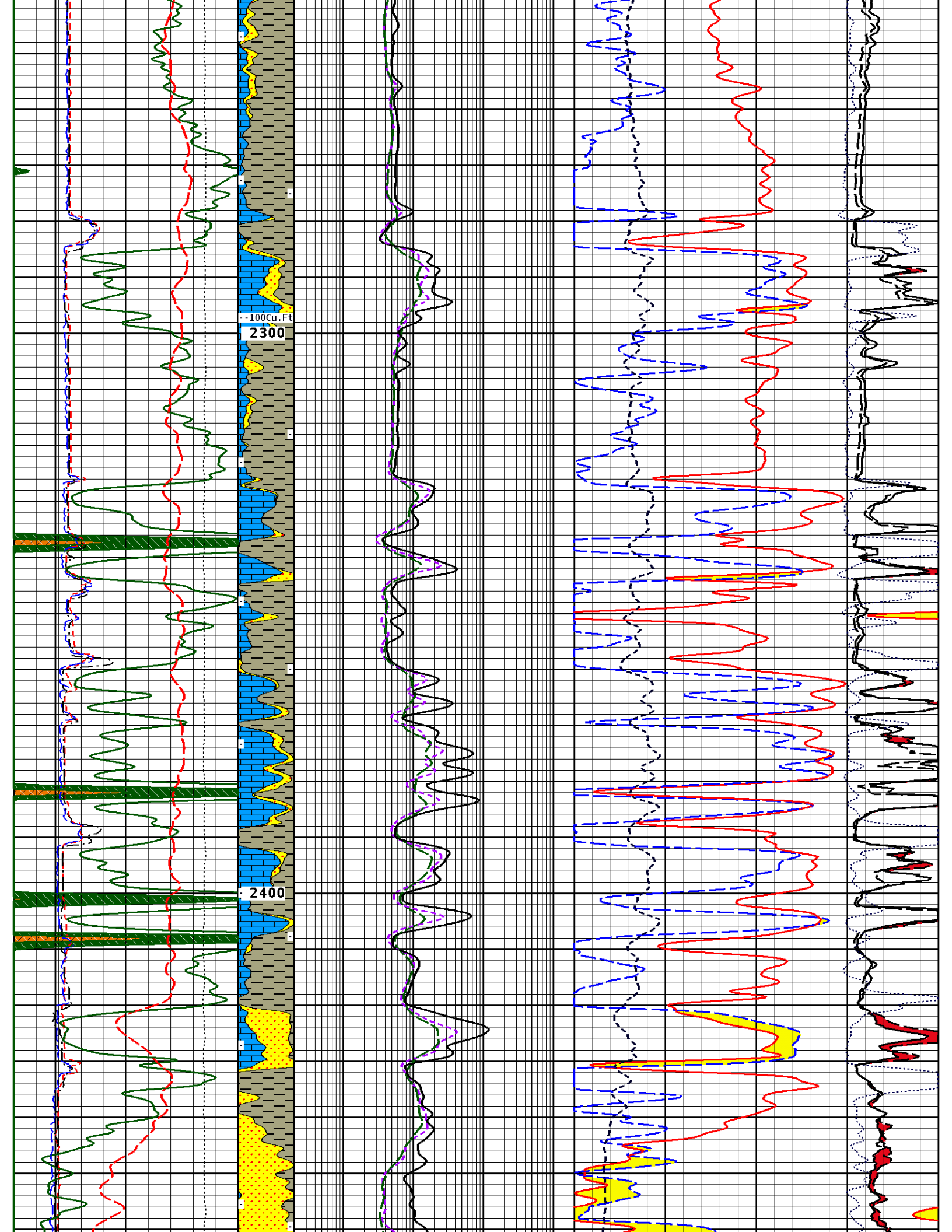

1200
300Cu.Ft
500Cu.Ft
1300

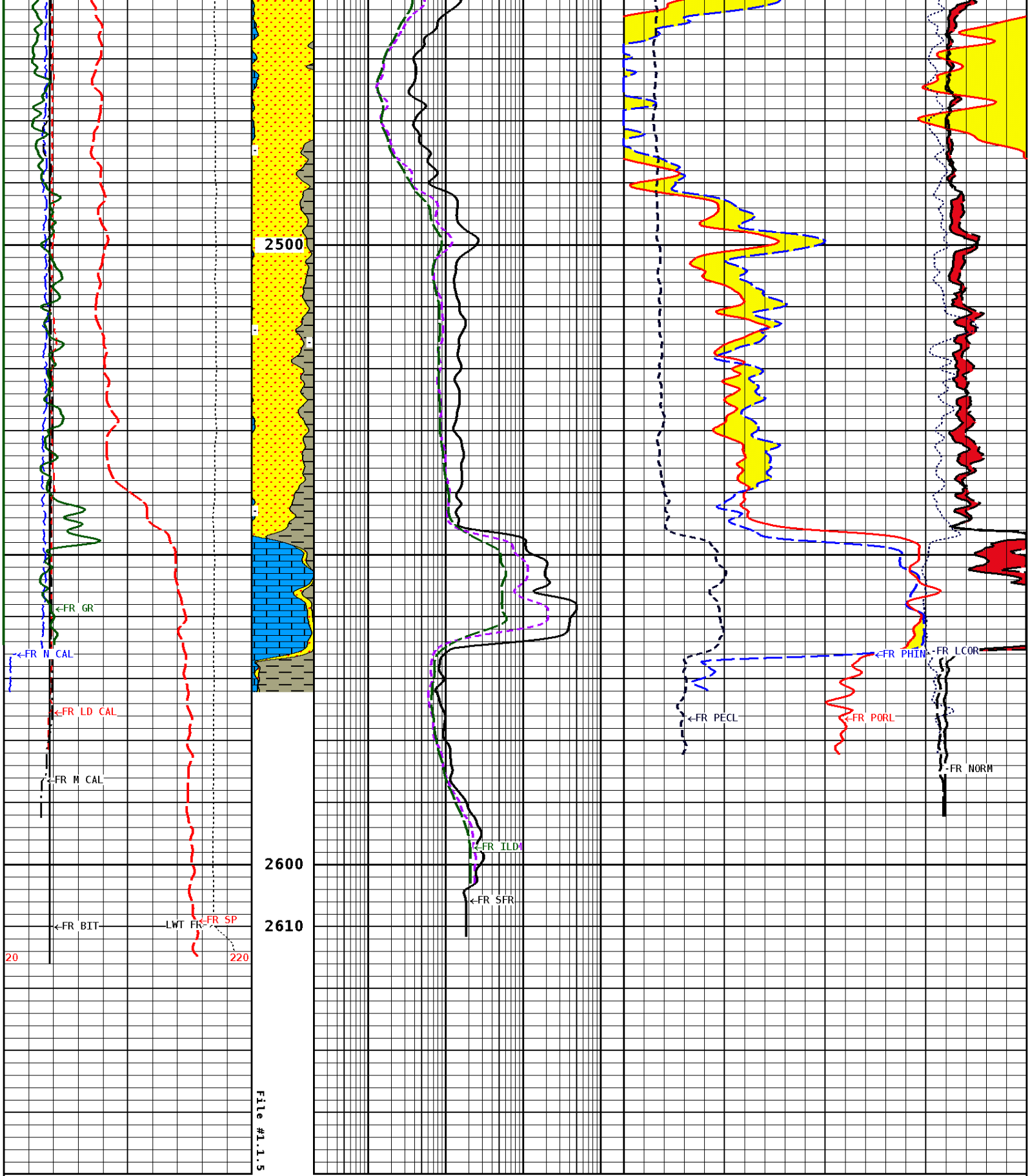

1400
1500
--400Cu.Ft
<-GR
-N CAL-
<-PHIN


LD CAL
M CAL
BIT
SP
LWT
1600
200Cu.Ft
1700
300Cu.Ft
1800
ILDI
SFR
PECL
PORL
LCOR
NORM
INV


1900
2000

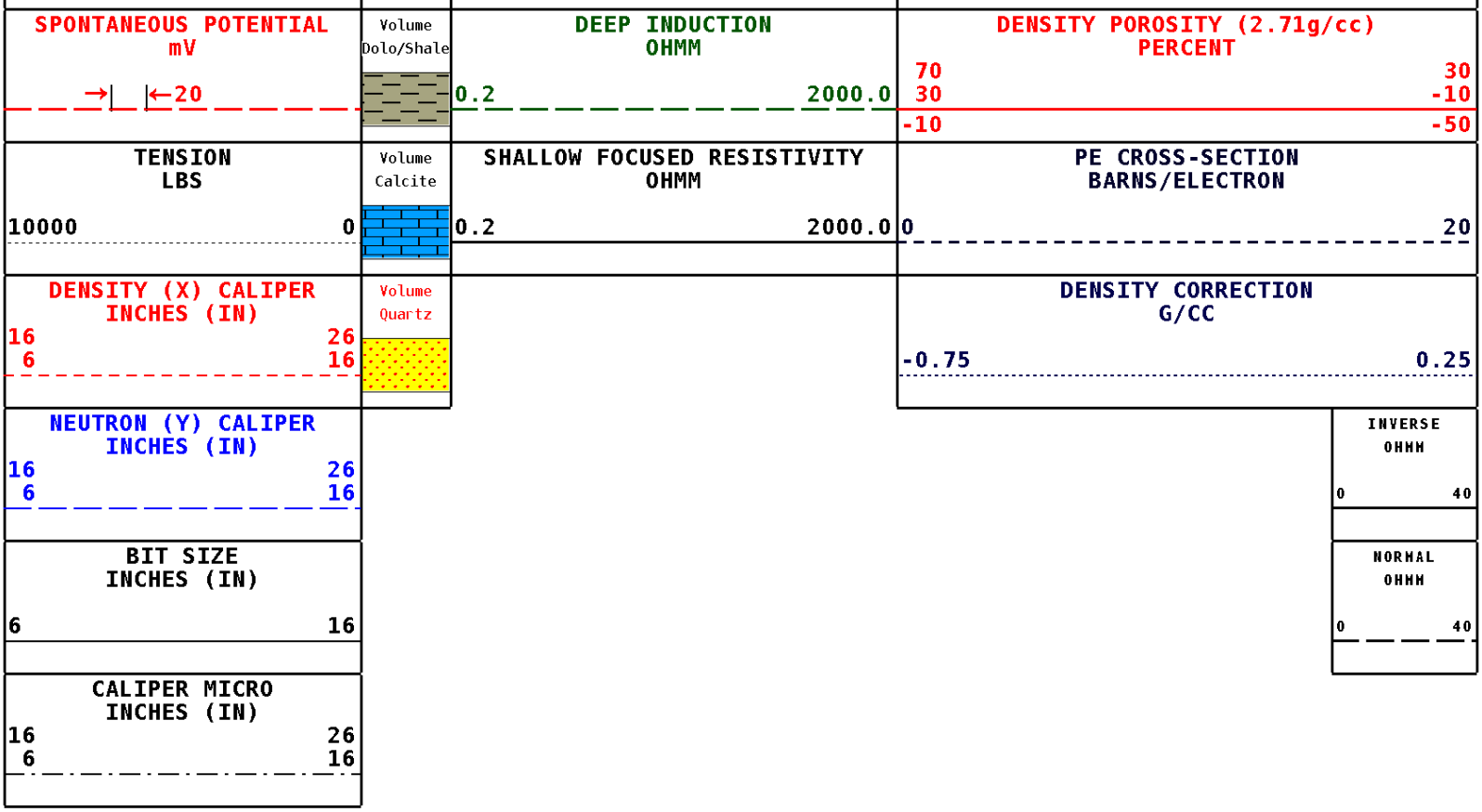

--200Cu.Ft
100Cu.Ft--
GR
N CAL
LD CAL
M CAL
BIT
SP
LWT
2100
2200
ILD
SFR
PHIN
PECL
PORL
LCOR
NORM
INV


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

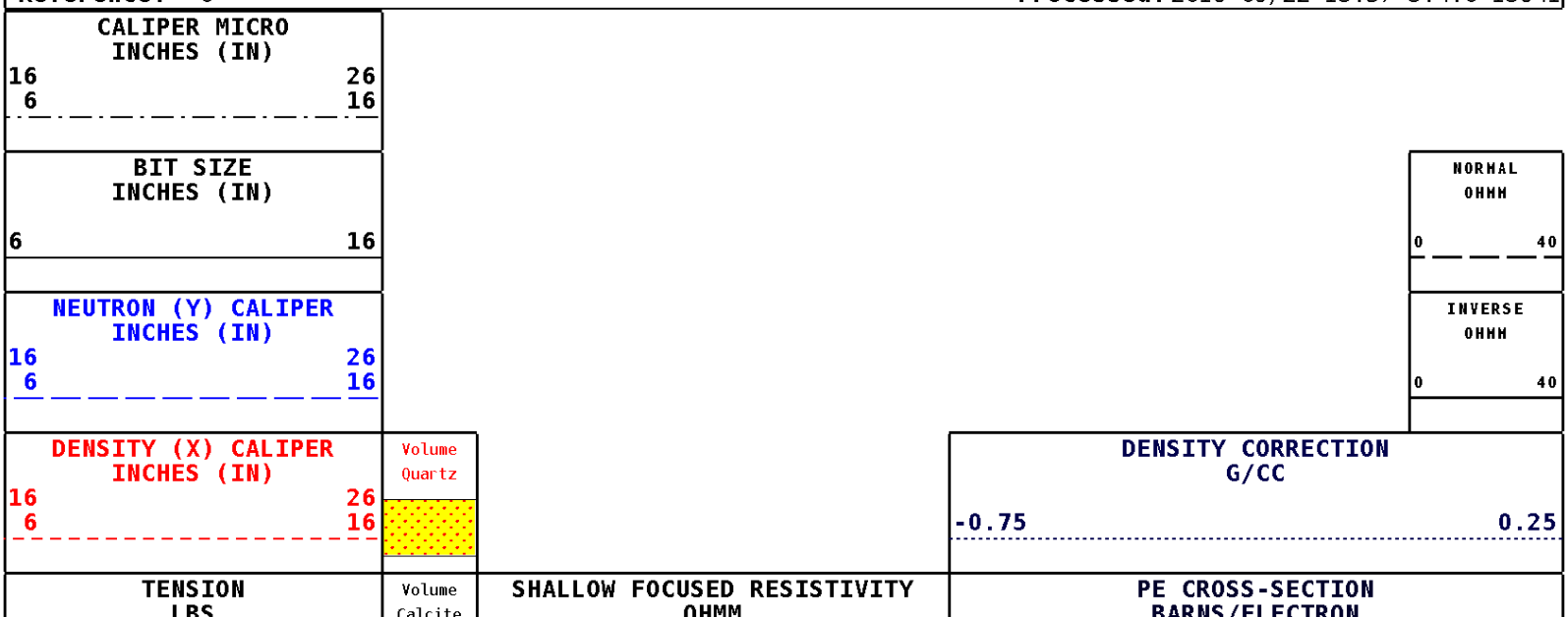


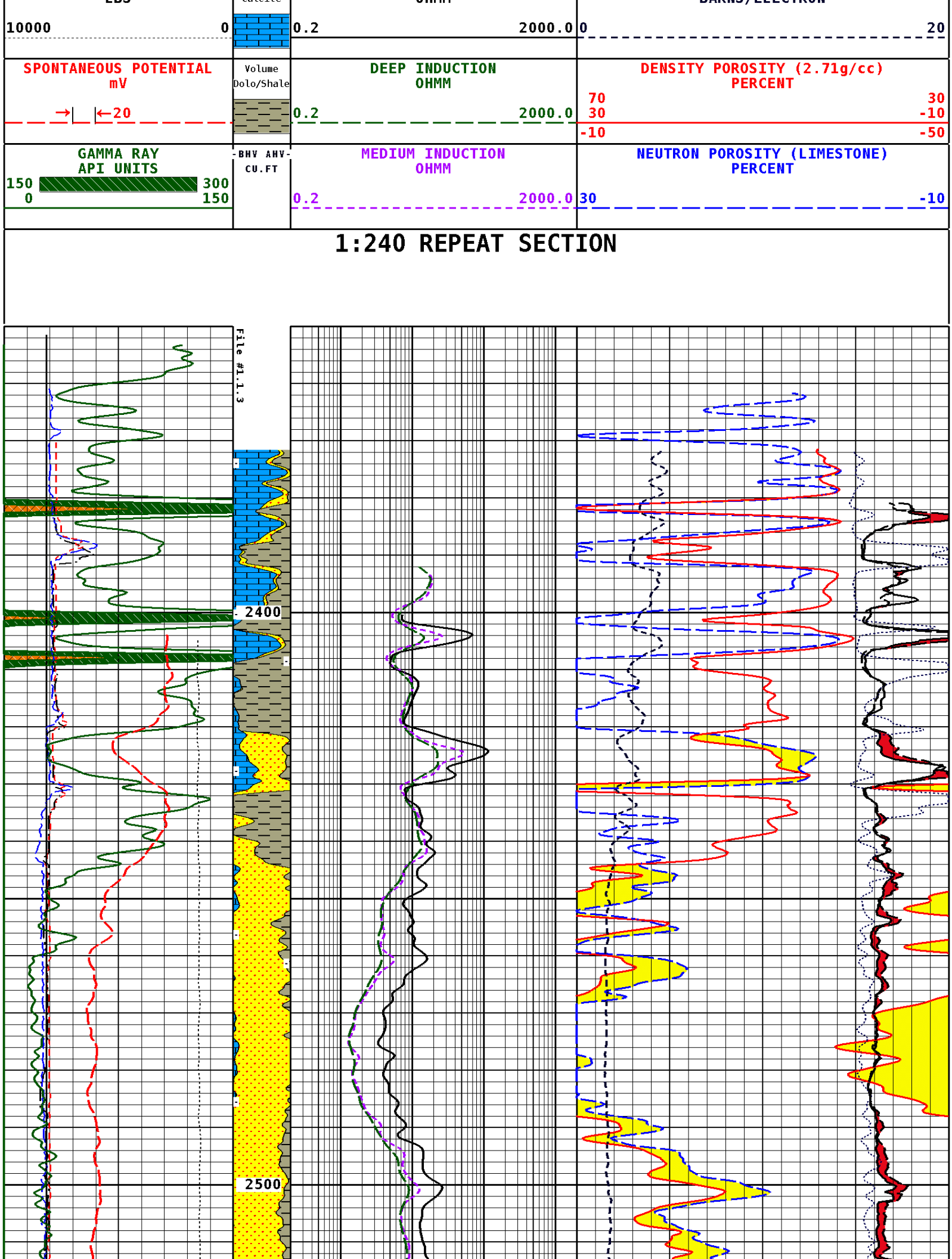
* Borehole Zone Factors *

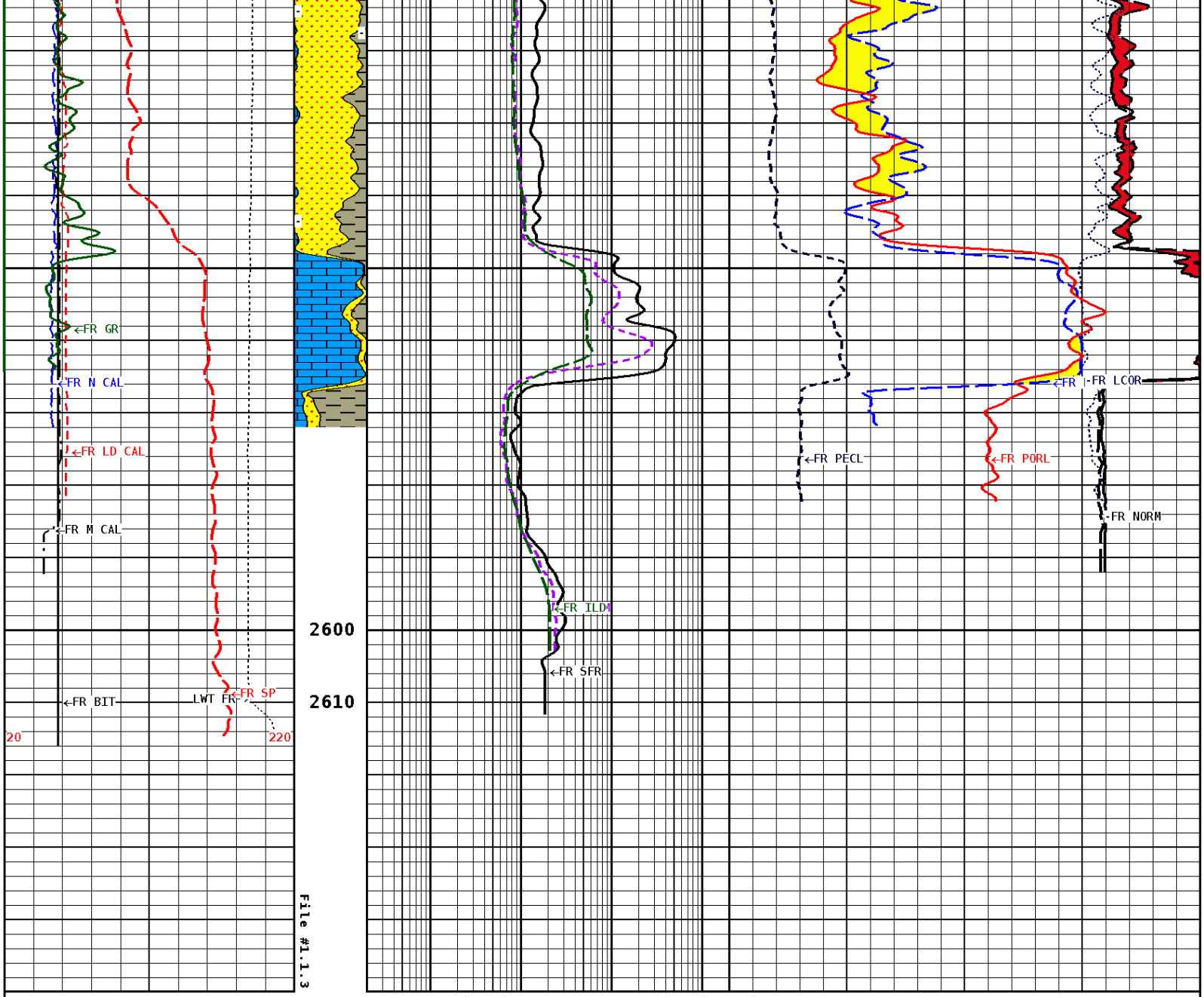
Zone 1 99999.0 to 0.0 Feet

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	2610.000	ft
Borehole Temperature	100.0	degF
Temperature Gradient	1.00	DFHF
Resistivity Of Mud	2.000	ohmm
MSTNG Normal Correction	0.00	ohmm
MSTNG Inverse Correction	2.00	ohmm

Well File: ENTRANSCO_TIEBE_31-1_SEPT22_MSTK **Scale:** 1:240 **Format:** COMSAT
Segment: V1.D1.S3 Reprocess of REPEAT **Acquired:** 2018-09/22 13:49 3.4.0-13841
Reference: 0 **Processed:** 2018-09/22 13:57 3.4.0-13841




10000
0
0.2
2000.0
0
20
SPONTANEOUS POTENTIAL
mV
20
Volume
Dolo/Shale
DEEP INDUCTION
OHMM
0.2
2000.0
DENSITY POROSITY (2.71g/cc)
PERCENT
70
30
-10
30
-10
-50
GAMMA RAY
API UNITS
150
0
300
150
-BHV AHV-
CU.FT
MEDIUM INDUCTION
OHMM
0.2
2000.0
NEUTRON POROSITY (LIMESTONE)
PERCENT
30
-10
1:240 REPEAT SECTION
File #1.1.3
2400
2500



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 **INCHES (IN)** 16 26 6 16	Volume Quartz		**DENSITY CORRECTION** **G/CC** -0.75 0.25
NEUTRON (Y) CALIPER **INCHES (IN)**			INVERSE OHMM

16 26
6 16

BIT SIZE
INCHES (IN)

6 16

CALIPER MICRO
INCHES (IN)

16 26
6 16

0 40

NORMAL
OHMM

0 40

* 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	2610.000	ft
Borehole Temperature	100.0	degF
Temperature Gradient	1.00	DFHF
Resistivity Of Mud	2.000	ohmm
MSTNG Normal Correction	0.00	ohmm
MSTNG Inverse Correction	2.00	ohmm

* Calibration Summary *

Shop Calibration
GRT-B

Performed : 18-SEP-2018 Time : 09:32
Sensor Suite : GR-GR5 ID : GRT-BA-14

	Measured Background	Measured Jig	Units	Calibrated Jig	Units
GR	42	309	CPS	160	GRAPI

Shop Calibration
CNT-AA

Performed : 18-SEP-2018 Time : 10:29
Sensor Suite : CALI-BCN ID : NDT-BB-033

	Jig - Measured Ring#1	Jig - Measured Ring#2	Jig - Calibrated Ring#1	Jig - Calibrated Ring#2	Units
CL # 1	9.9	14.8	6.0	12.0	IN.

Performed : 18-Sep-2018 Time : 10:20
Sensor Suite : BHC NEUT ID : CNP-AA-121
Source ID : N-1044

	Tank Measured	Tank Calibrated	Verification Jig	Units
N/F	3.9714	3.6893	3.6783	
Porosity	25.0	20.5	20.3	%

Shop Calibration
LDT-DA

Performed : 18-SEP-2018 Time : 09:17
Sensor Suite : CALI-LTH ID : PDT-GA-466

	Jig - Measured Ring#1	Jig - Measured Ring#2	Jig - Calibrated Ring#1	Jig - Calibrated Ring#2	Units
CL # 1	7.9	11.6	6.0	12.0	IN.

Performed : 18-Sep-2018 Time : 09:31
Sensor Suite : BHCPELNG ID : LDP-DA-41
Source ID : 63558B

	Short Space BKGD	Short Space Al	Short Space Mg	Short Space Al+Fe	Units
LSW1	62	1171	1880	770	CPS
LSW2	67	1406	2233	1019	CPS
LSW3	253	3293	5307	2831	CPS
LSW4	308	2922	4231	2609	CPS

LSW4	308	2922	4231	2609	CPS
LSW5	28	58	67	54	CPS
LSW6	81	86	86	86	CPS
LSW7	49	56	56	57	CPS
LSW8	1	4	5	4	CPS
QS	0.246	0.215	0.206	0.202	
PES			2.778	5.967	
SSDN		2.600	1.680		G/CC

Long Space

	BKGD	Al	Mg	Al+Fe	Units
LLW1	92	1323	5348	810	CPS
LLW2	102	2426	9409	1769	CPS
LLW3	381	4576	17282	3970	CPS
LLW4	502	2119	6924	1927	CPS
LLW5	58	72	143	68	CPS
LLW6	158	153	147	153	CPS
LLW7	102	101	96	100	CPS
LLW8	4	8	20	7	CPS
QL	0.215	0.205	0.208	0.209	
PEL			2.697	5.458	
LSDN		2.600	1.680		G/CC

Shop Calibration
MST-DA

Performed : 09-FEB-2018 Time : 11:28
Sensor Suite : CALI-MSN ID : MST-DA-021

	Jig - Measured		Jig - Calibrated		Units
	Ring#1	Ring#2	Ring#1	Ring#2	
CL # 1	8.2	12.5	6.0	12.0	IN.

Performed : 09-FEB-2018 Time : 11:11
Sensor Suite : MSTDA-NI ID : MST-DA-021

Internal

	Measured			Calibrated		
	Zero	Reference	Units	Zero	Reference	Units
INV-V	0.0	30239.2		0.00	1546.00	MV
NOR-V	3.9	30805.8		0.00	1646.00	MV
IN-C	0.0	29403.5		0.00	15.46	UA
INV-R					32.34	OHMM
NOR-R					58.67	OHMM

Shop Calibration
PIT-CA

Performed : 02-Mar-2018 Time : 10:18
Sensor Suite : P-IND-T ID : PIT-CA-069

Medium

	Measured		Calibrated		
	R	X	R	X	Units
Air	130175	131167	-0.0	-0.0	MMHOS
Zero	131071	131067	42.2	-8.2	MMHOS
Reference	249263	248373	5042.2	4991.8	MMHOS
Loop	129045	219221	3705.4	3800.9	MMHOS
Sonde Error			0.4	-8.2	MMHOS
Cond			5042.2	4991.8	MMHOS

Deep

	Measured		Calibrated		
	R	X	R	X	Units
Air	128286	131989	0.0	0.0	MMHOS
Zero	131062	131069	56.4	-22.2	MMHOS
Reference	234731	233611	2056.4	1977.8	MMHOS
Loop	127367	223347	1764.1	1799.6	MMHOS
Sonde Error			-1.4	-7.2	MMHOS
Cond			2056.4	1977.8	MMHOS

Temperature

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

Performed : 02-Mar-2018 Time : 10:08
Sensor Suite : SFL ID : PIT-CA-069

Internal

	Measured		Calibrated		
	Zero	Reference	Zero	Reference	Units
Im	32769.8	49558.8	0.0	7028.0	uA
Ib	32765.9	49862.4	0.0	1750.0	mA
MOM1	32785.1	59407.5	0.0	175.0	mV
Equivalent SFL				43.97	OHMM

Performed : 02-Mar-2018 Time : 10:05
Sensor Suite : P-SP ID : PIT-CA-069

Internal

Measured		Calibrated		
Zero	Reference	Zero	Reference	Units
32793.5	58829.7	0.0	1000.0	mV

Tucker ENERGY SERVICES

Company: ENTRANSCO ENERGY LLC

Well: T. WIEBE #31-1

Location: 4620' FSL & 460' FEL

Logged: 09-22-2018

K.B. Elev: 1467.0 Ft