



Tucker

ENERGY SERVICES

COMPOSITE LOG

Company PICKRELL DRILLING CO., INC. Well HUSON TRUST "C" #1 Field MESSENGER County KINGMAN State KANSAS Country USA API No. 15-095-22295-00-00		File No : DEN-59069 Company : PICKRELL DRILLING CO., INC. Well : HUSON TRUST "C" #1 Field : MESSENGER County : KINGMAN State : KANSAS Country : USA API No : 15-095-22295-00-00	
Location : 1980' FSL & 1980' FWL NE SW		LSD : Sect : 12 Twp : 30S Rge : 07W	
Permanent Datum:	GL	Elevations:	Services:
Drilling Measured From:	KB	KB 1443.00	GRT
Log Measured From:	KB	DF 1142.00	CNT
Above Permanent Datum:	10.00 Ft	GL 1433.00	LDT
Date	Jun 25 2015		
Run Number	1		
Depth--Driller	4220.0 Ft		
Depth--Logger	4224.0 Ft		
First Reading	4223.0 Ft		
Last Reading	210.0 Ft		
Casing--Driller	210.0 Ft		
Casing--Logger	210.0 Ft		
Bit Size	7.875 In		
Casing Size	8.625 In		
Hole Fluid Type	GEL/CHEM		
Density	9.2 LBS/GAL		
Fluid Loss	12.4 mL/30min		
PH/Viscosity	9.5 50.0 SEC/32oz		
Sample Source	MEASURED		
RMF@Measured Temp.	0.400 @ 94 F		
RMF@Measured Temp	0.340 @ 94 F		
RMF@Measured Temp.	0.460 @ 94 F		
Source RMF/RMC	CALCULATED/CALCULATED		
RM@BHT	0.326 @ 117 F		
Time Circulation Stopped	Jun 25 2015 14:00		
Max Recorded Temp.	117 F		
Equipment/Base	TRK 129 DENTON, TX		
Recorded By	Z. HICKMAN		
Witnessed By	A. YOUNG		

The customer is hereby warned that by providing the log data herein, T. E. S. does not agree to provide any interpretation of log data, conversion of log data to physical rock parameters or recommendations. T. E. S. does not guarantee or warrant either expressly or impliedly, the accuracy of any interpretation of log data, conversion of log data to physical rock parameters or recommendations which may be given by T. E. S. personnel. Any interpretation, conversion or recommendation is not part of the consideration for the agreement between the parties and is not part of any part of the charge by T. E. S. for its services. Any user of the log data is warned that said user is not entitled to rely on interpretations, conversions or recommendations as aforesaid.

Bitsize Intervals		Casing Strings			
Size (In)	Bottom (Ft)	Size (In)	Weight (Lbs)	Bottom (Ft)	Top (Ft)
7.875	4220.00	8.625	24.00	0.00	0.00

Run Number	1	
Date	Jun 25 2015	
Date/Time On Bottom	Jun 25 2015 18:00	
Depth to Fluid	0.0 Ft	
Salinity	10500.000 Mg/L	
RMF@BHT	0.277 @ 117 F	
RMC@BHT	0.375 @ 117 F	

Run Number 1

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.

BOREHOLE RUGOSITY AND CHLORIDE LEVELS AFFECTED TOOL READINGS

POROSITY DETAIL PRESENTED FROM TD TO 2800'

GRT: GRP

CNT: PHIN, CLCNIN

LDT: LDENN, PECL, LCORN, PORL, CLLDIN

MLT: MSCLPIN, NOR_RF, INV_RF

PIT: ILD, ILM, SFLAEC, SPU, CIRD

THANK YOU FOR USING TUCKER WIRELINE SERVICES!

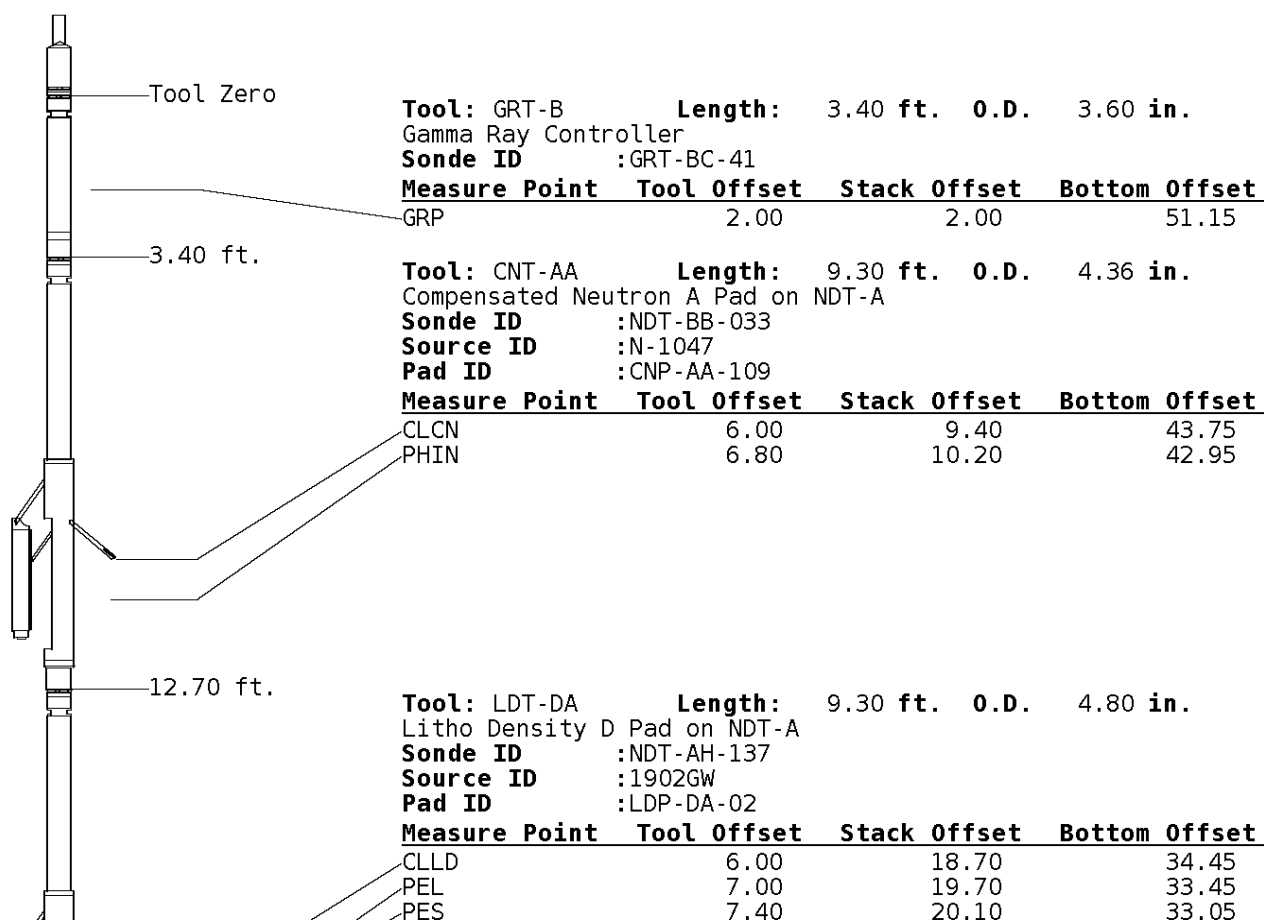
OPERATORS:

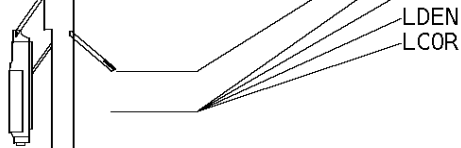
B. RICKARD

B. GOODE

Tool String Schematic

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



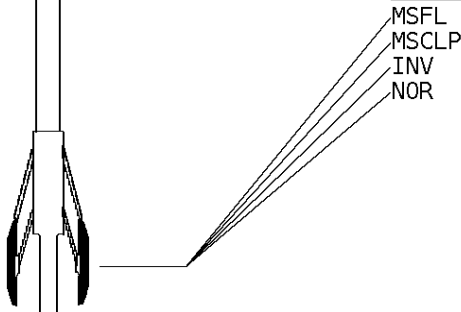


7.20	19.90	33.25
7.20	19.90	33.25

22.00 ft.

Tool: MST-DA **Length:** 9.66 ft. **O.D.** 6.00 in.
 Micro Spherically Focused (IC)
Sonde ID :MST-DA-29

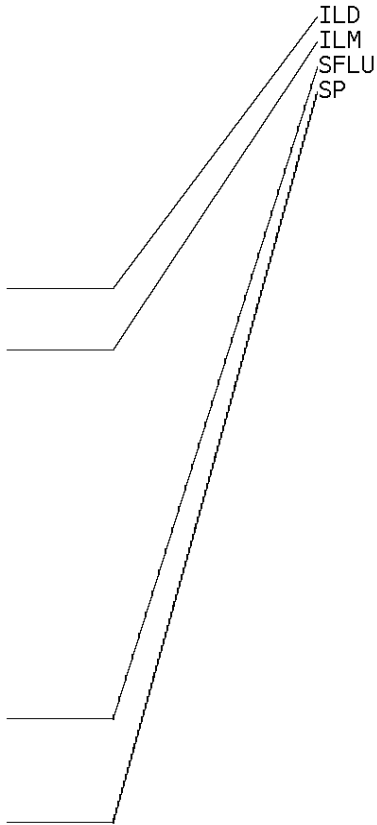
Measure Point	Tool Offset	Stack Offset	Bottom Offset
MSFL	7.60	29.60	23.55
MSCLP	7.60	29.60	23.55
INV	7.60	29.60	23.55
NOR	7.60	29.60	23.55



31.66 ft.

Tool: PIT-CA **Length:** 21.49 ft. **O.D.** 3.62 in.
 Phased Dual Induction w/ RM & D
Sonde ID :PIT-AB-16

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



LWT 53.15 ft.

Well File: PICKRELL_HUSON_1_JUNE_25_MSTK

Scale: 1:240

Format: COMSAT

Segment: V1.D1.S6 MAIN

Acquired: 2015-06/25 18:05 3.4.0-13284

Reference: 0

Processed: 2015-06/25 19:25 3.4.0-13284

**CALIPER MICRO
INCHES (IN)**

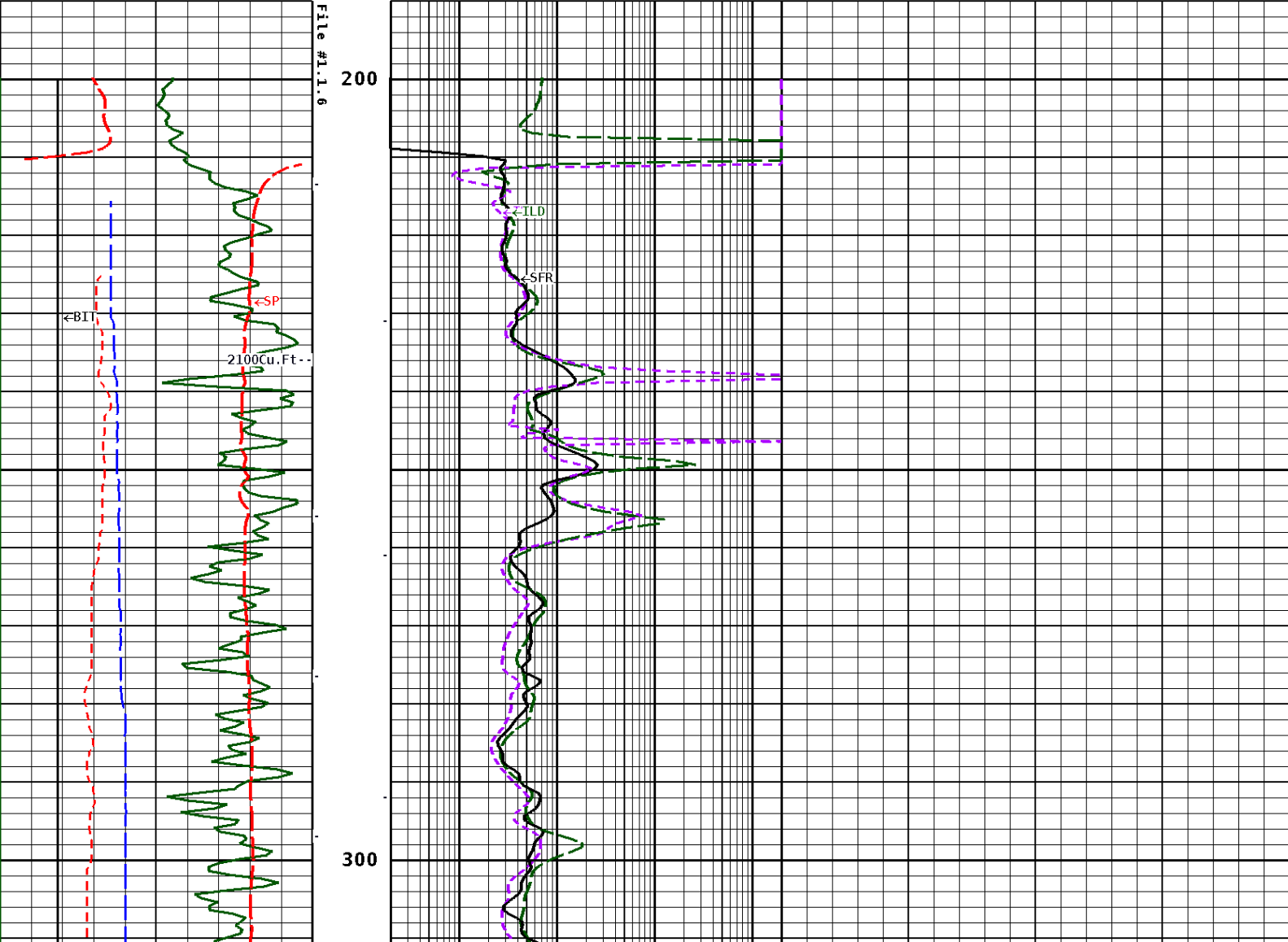
16	26
6	16

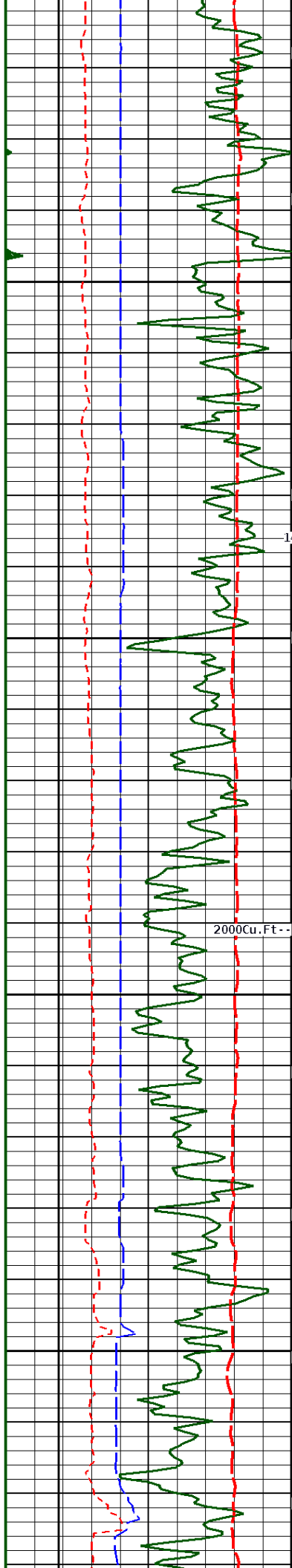
**BIT SIZE
INCHES (IN)**

**NORMAL
OHMM**

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

1:240 MAIN SECTION



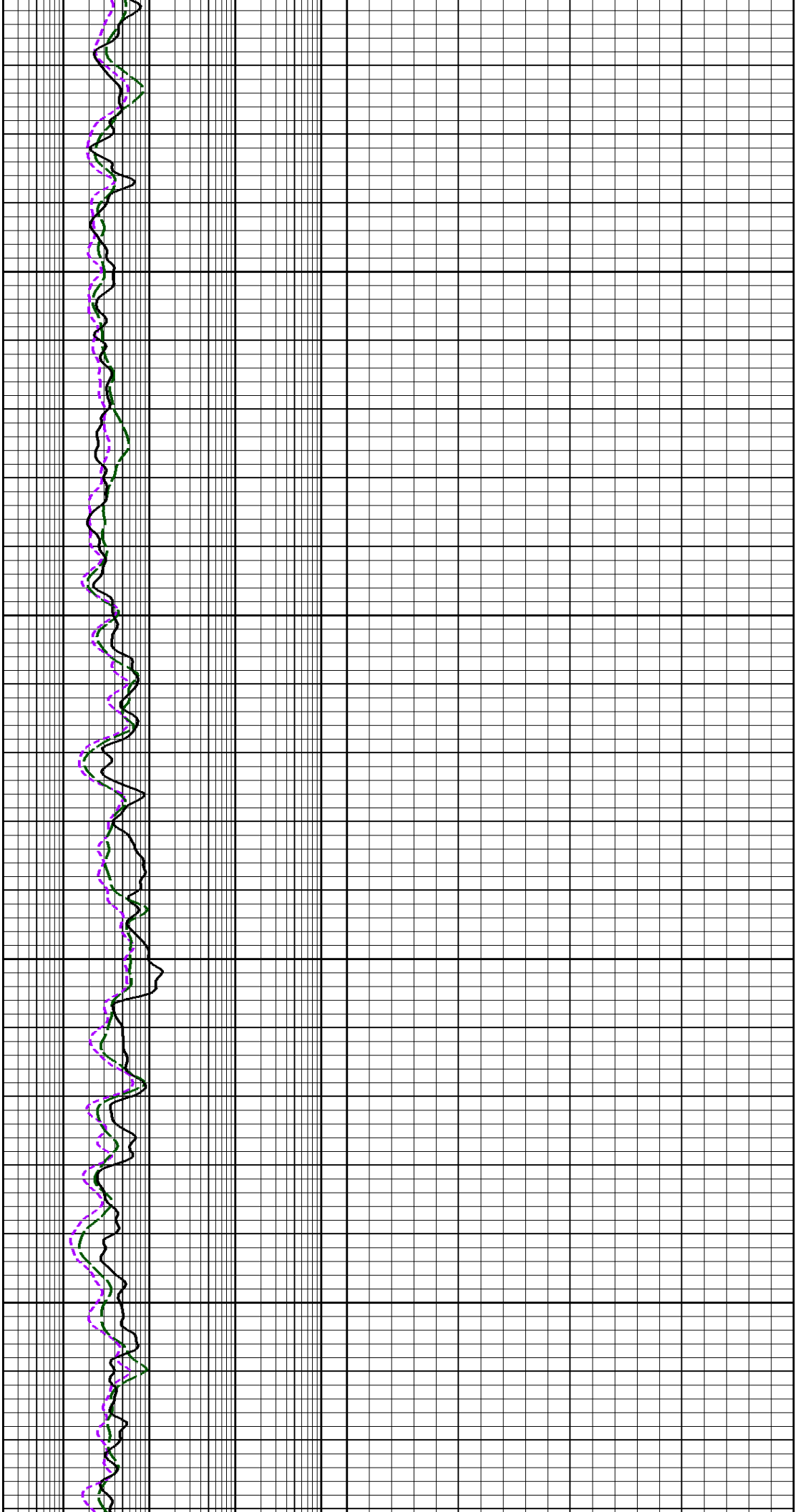


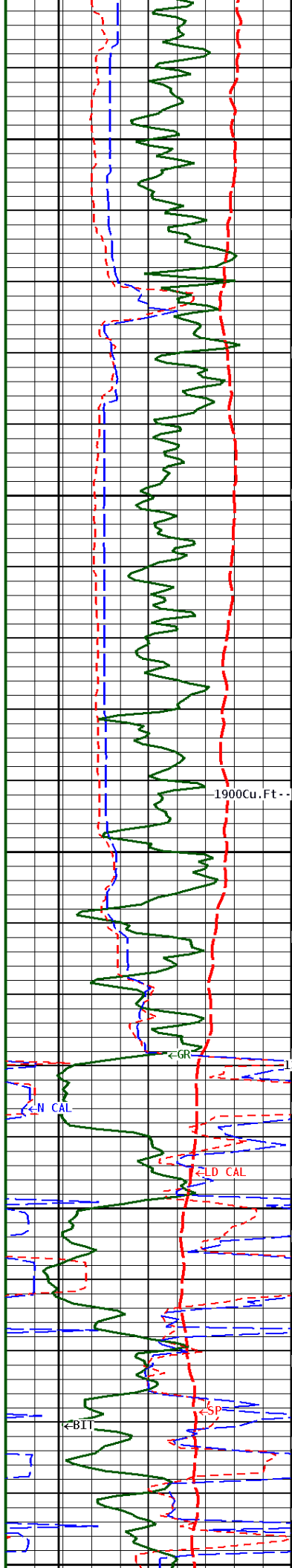
1400Cu.Ft--

400

2000Cu.Ft--

500

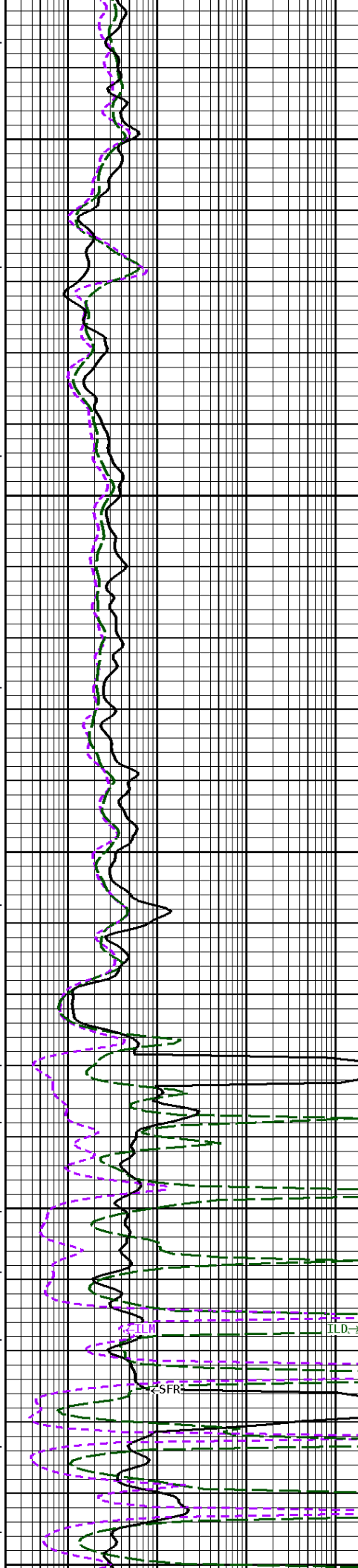




600

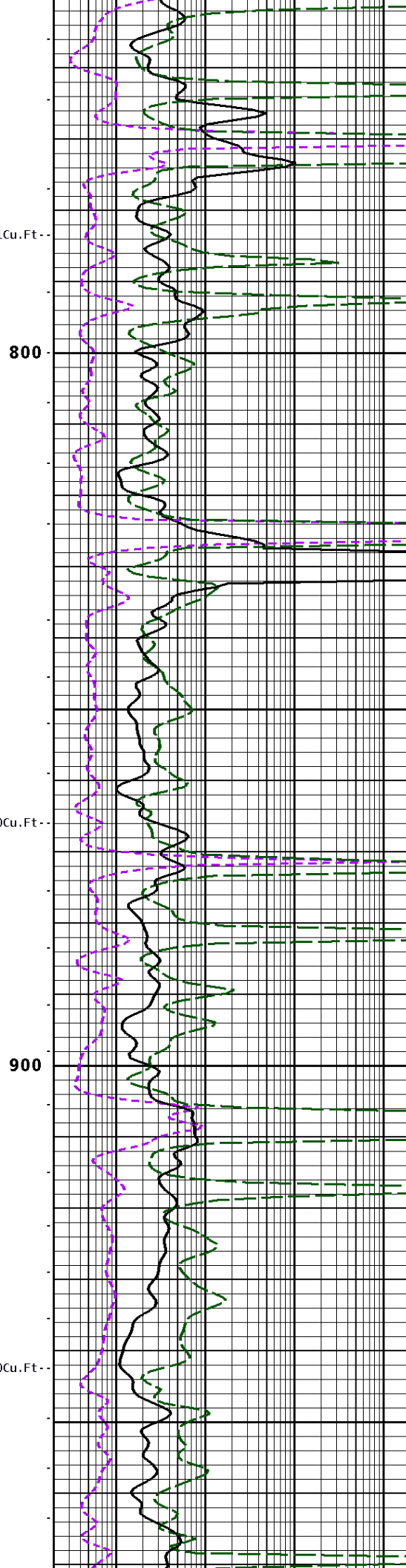
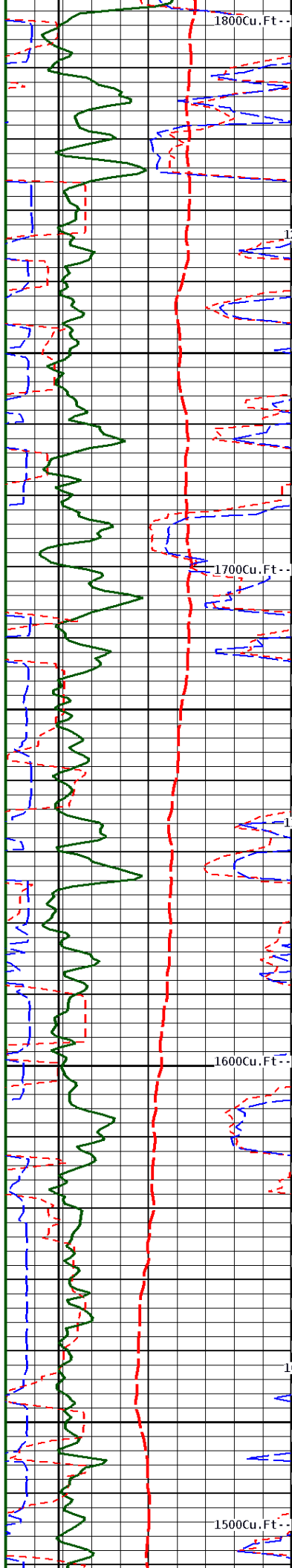
1300 Cu.Ft.

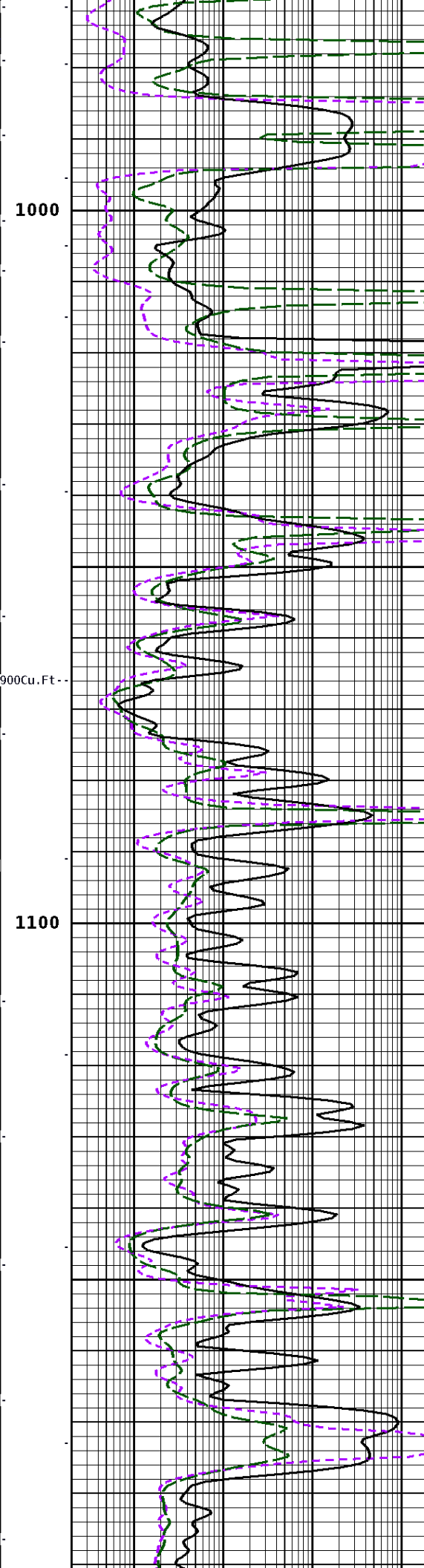
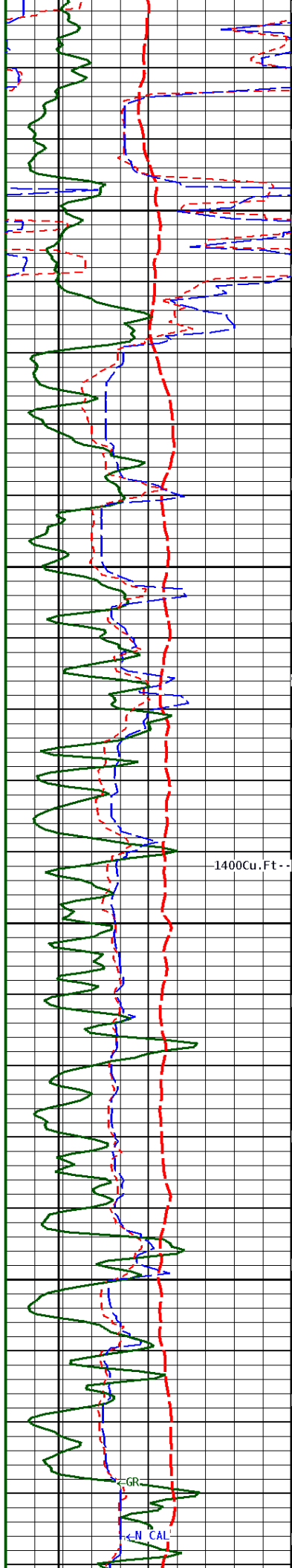
700

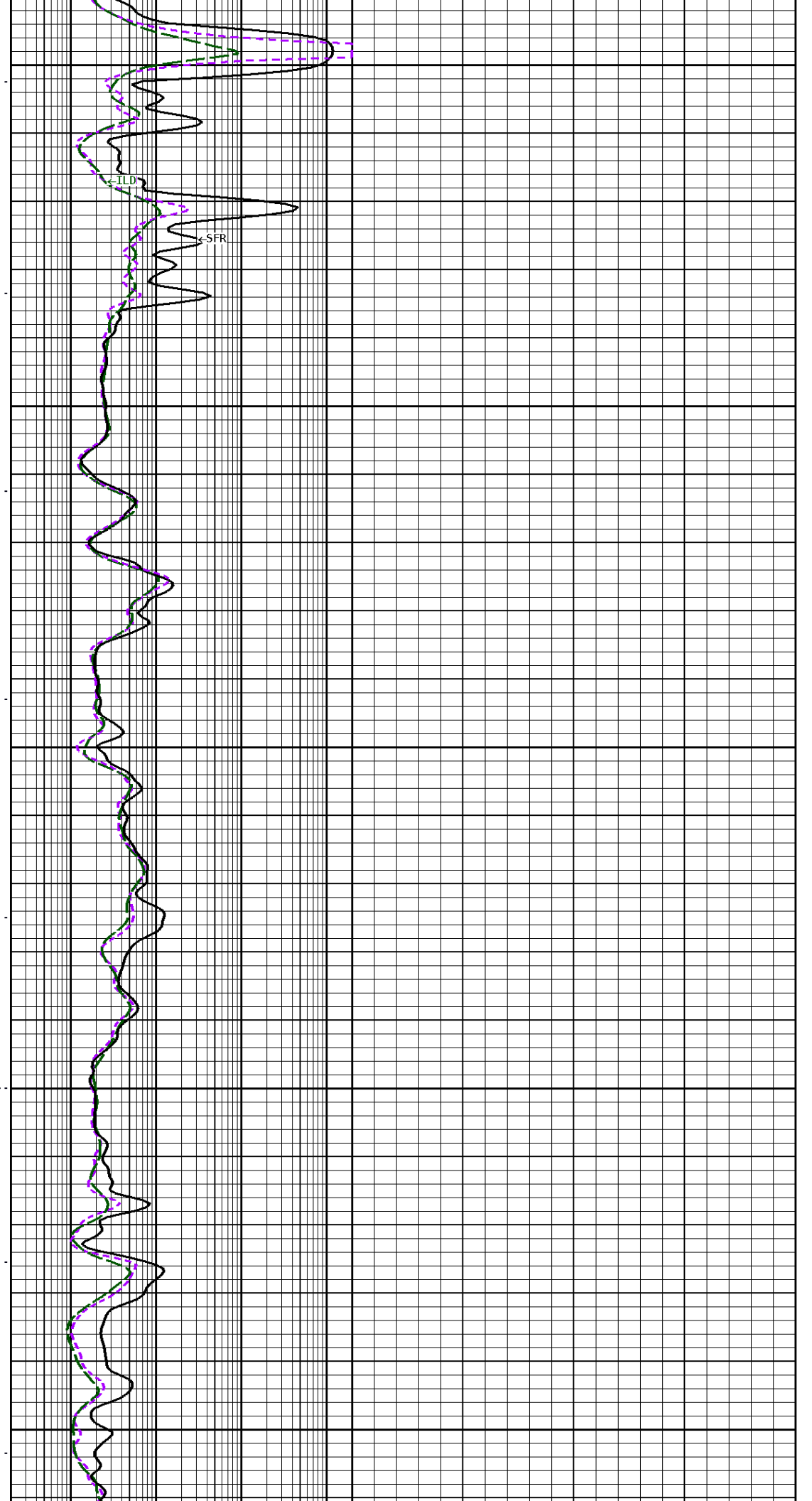
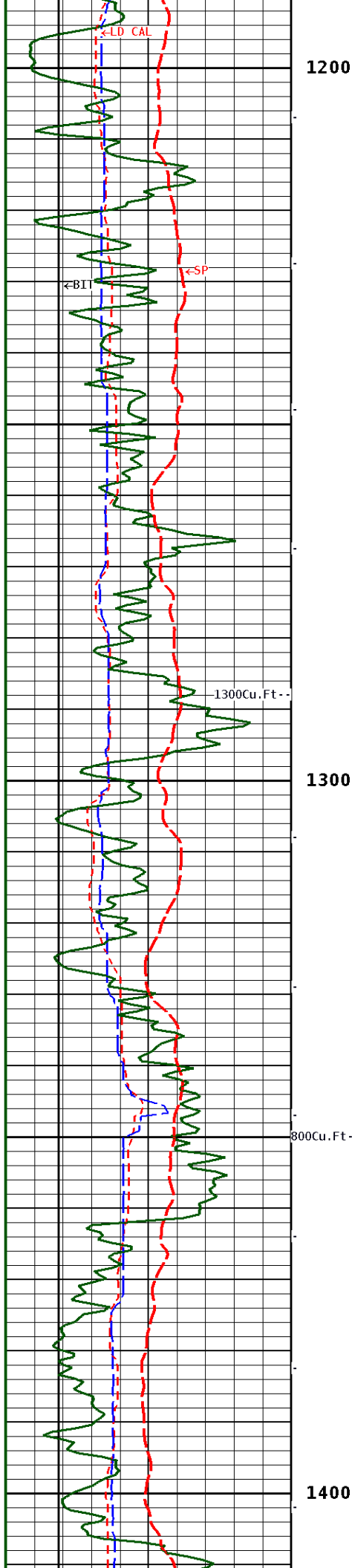


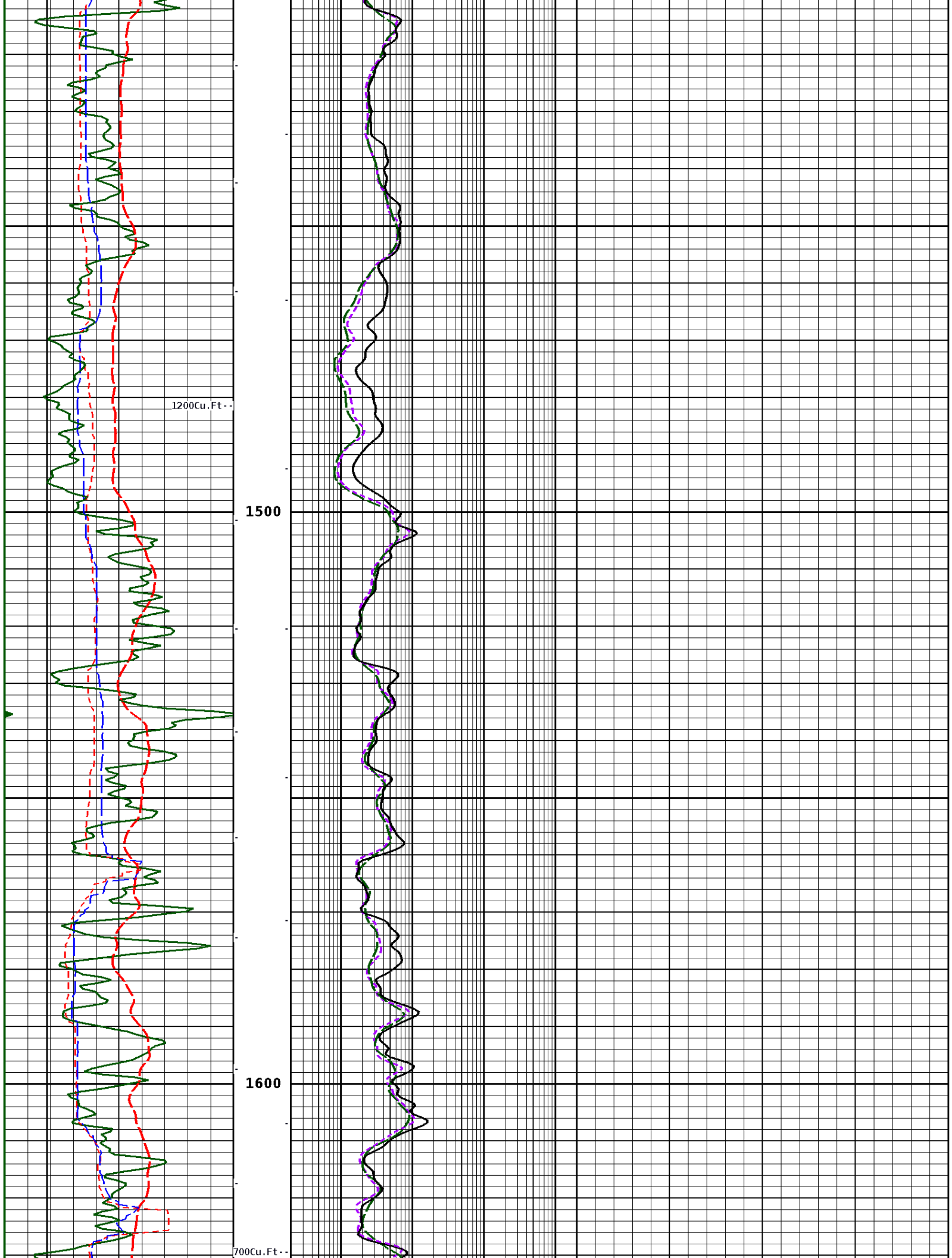
ILD-2

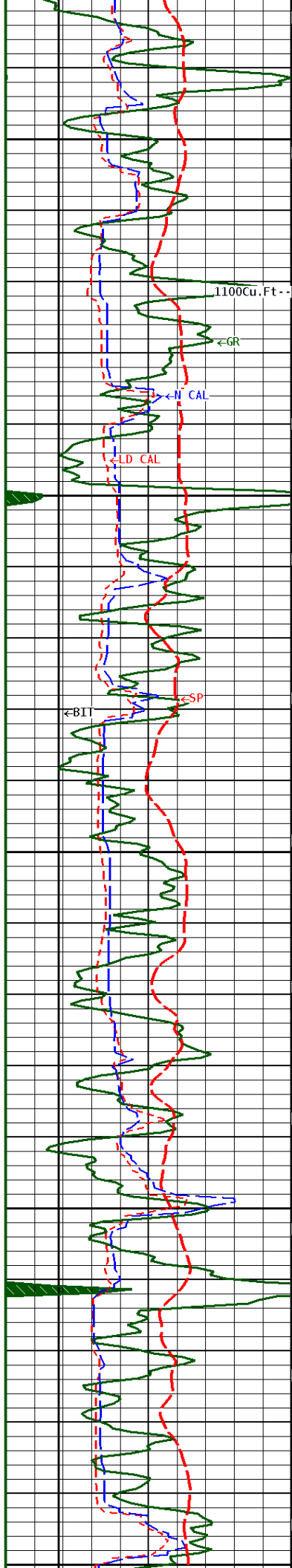
SFR





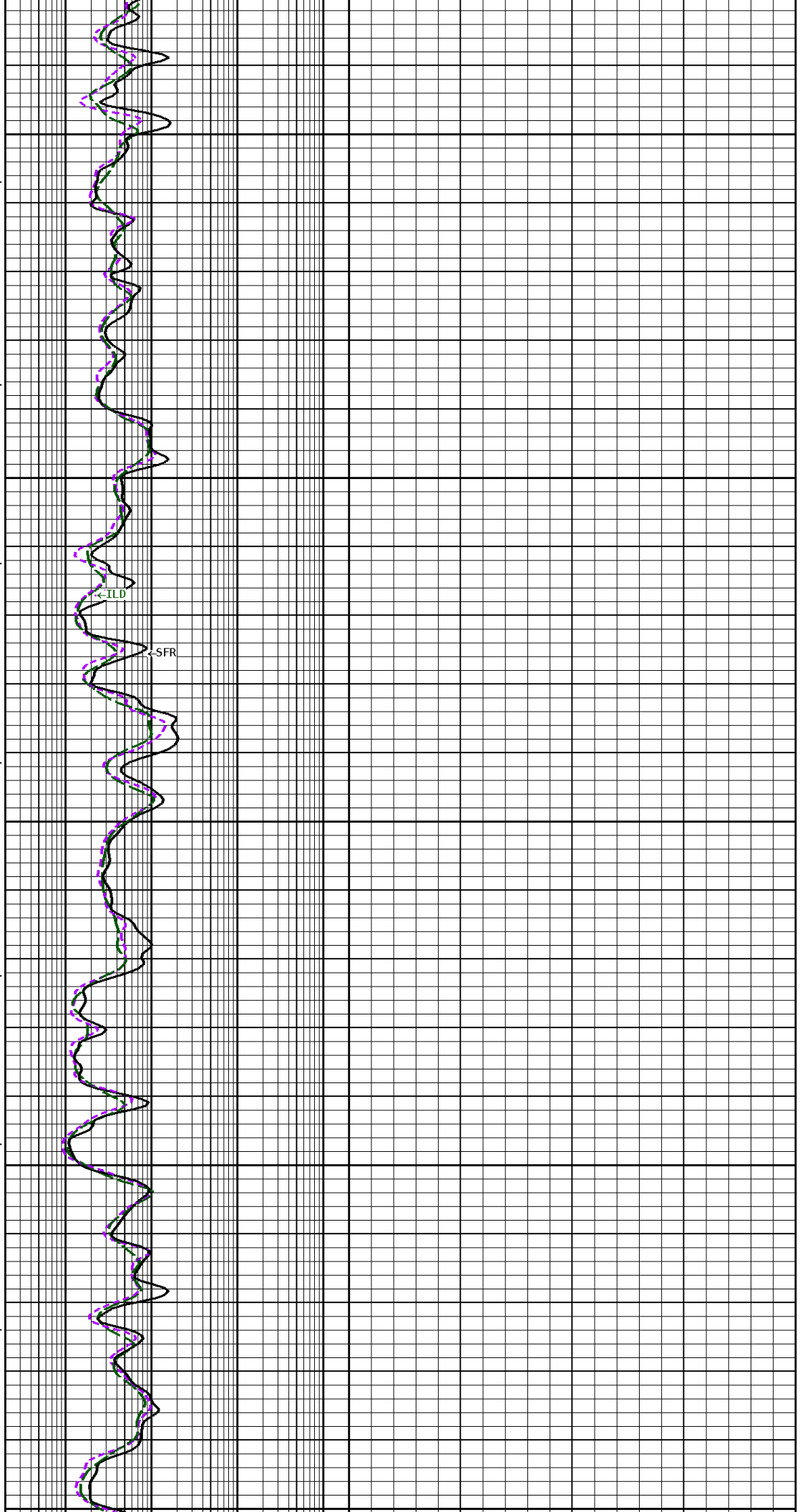


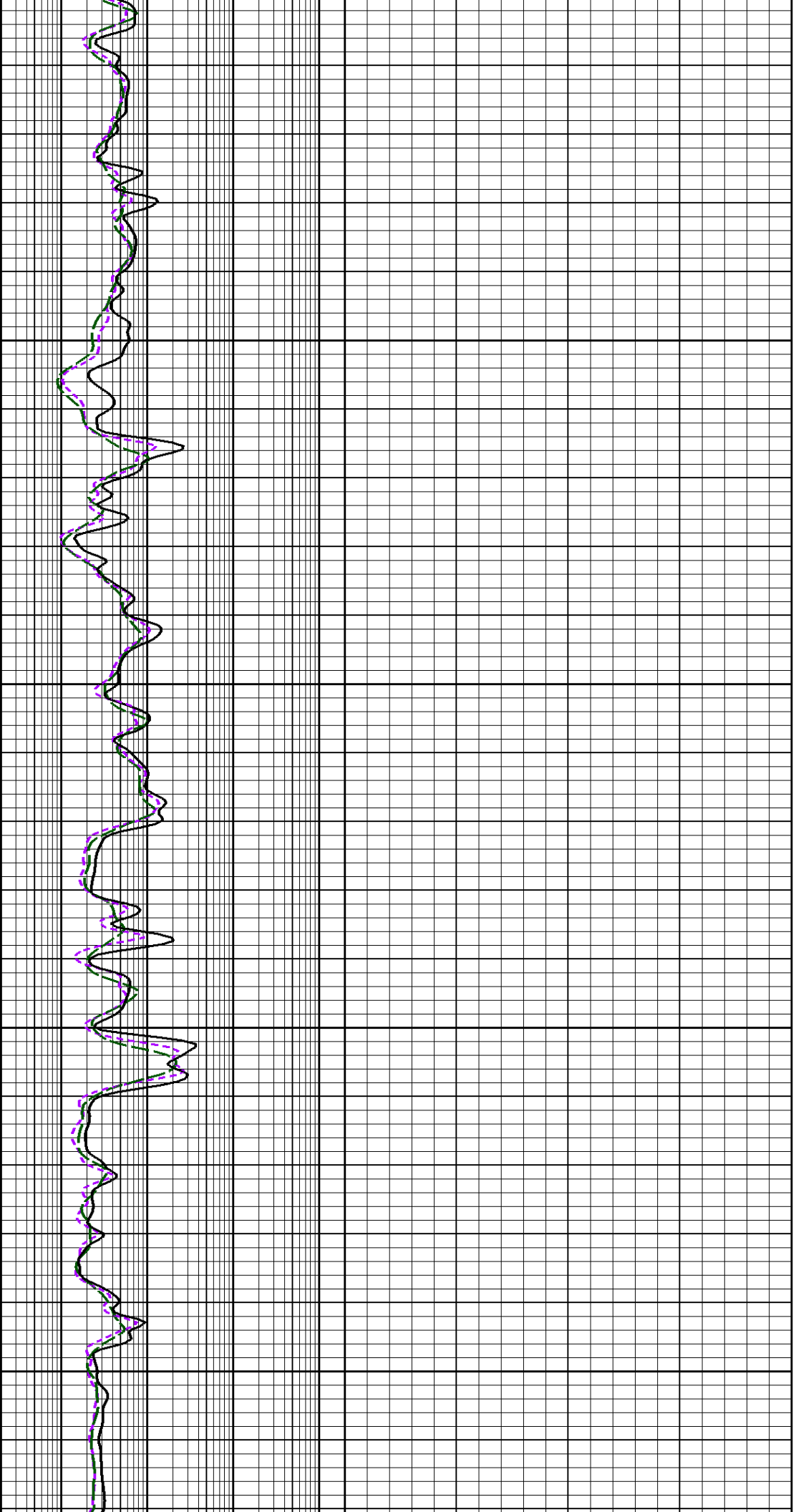
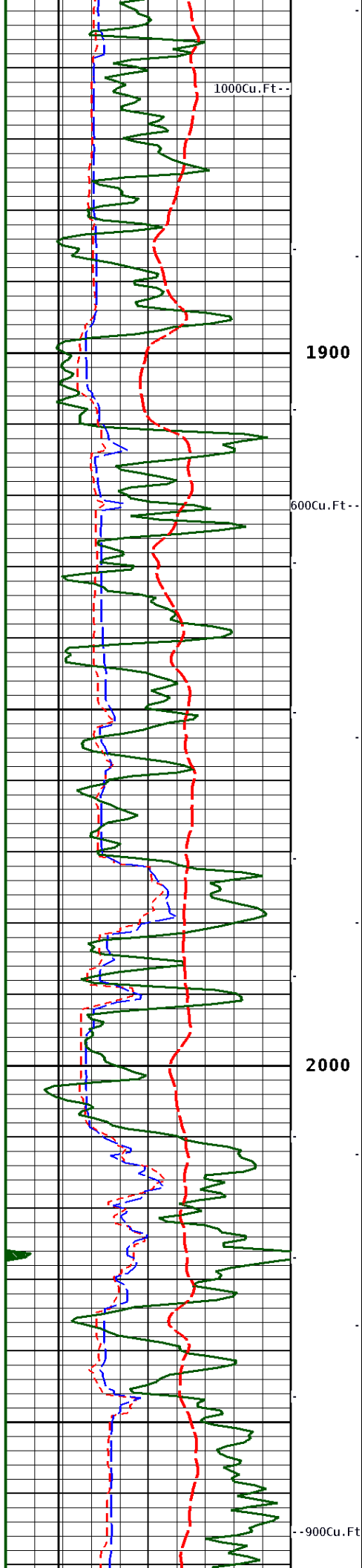


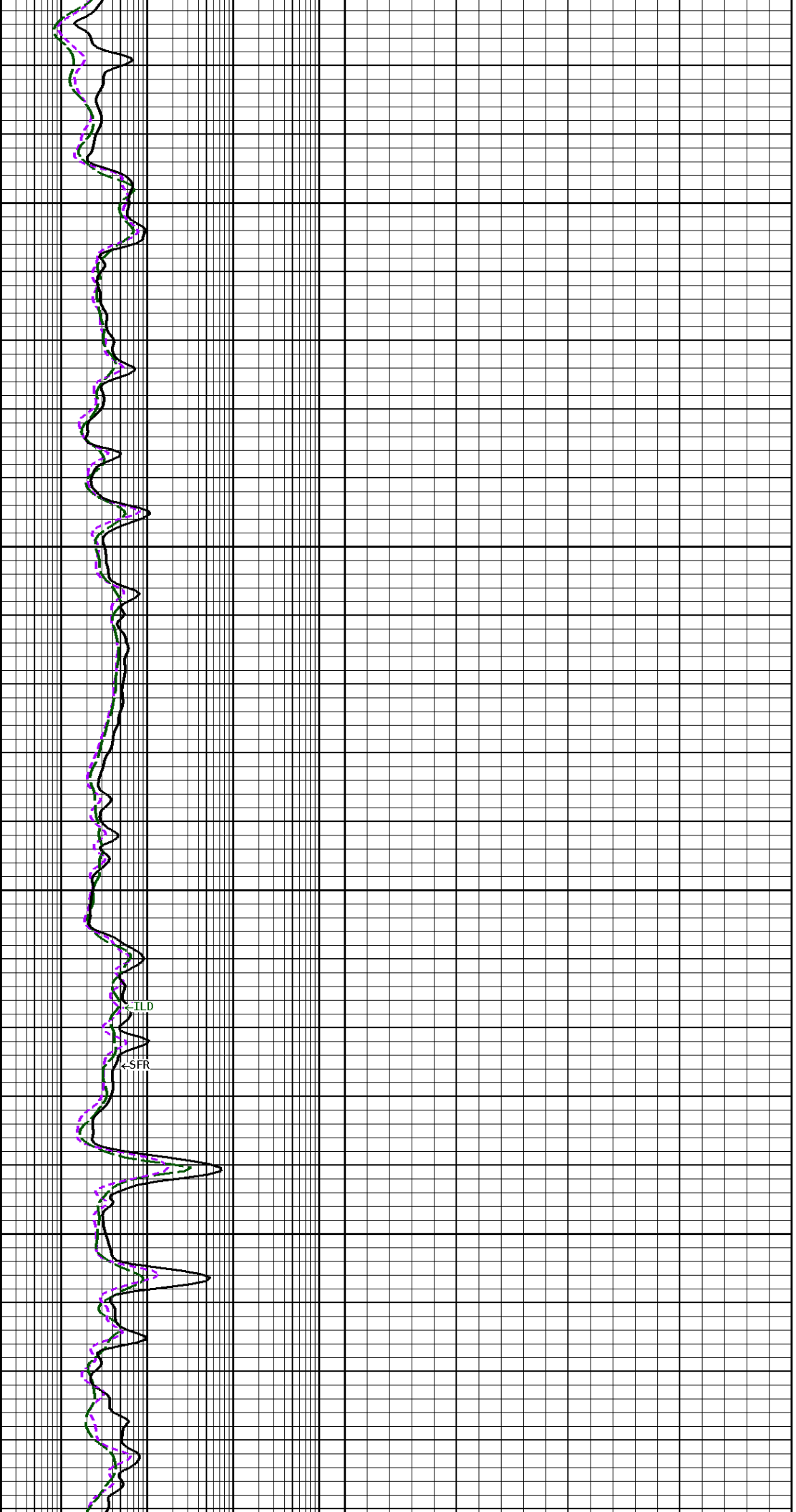
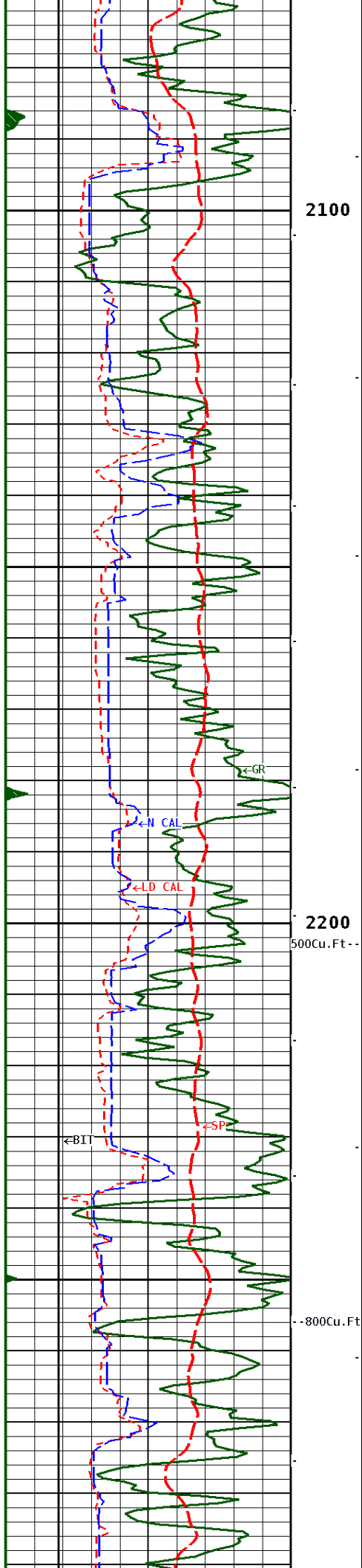


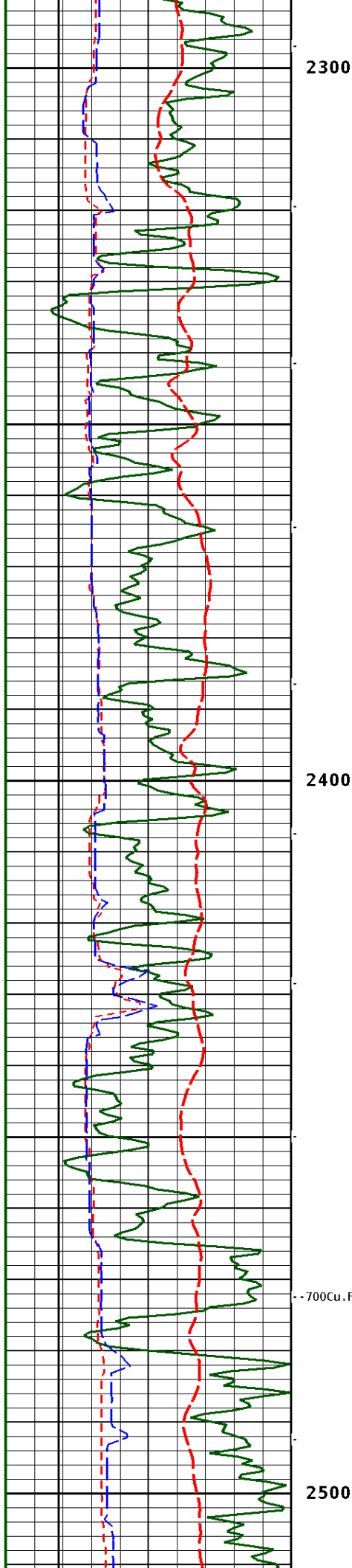
1700

1800

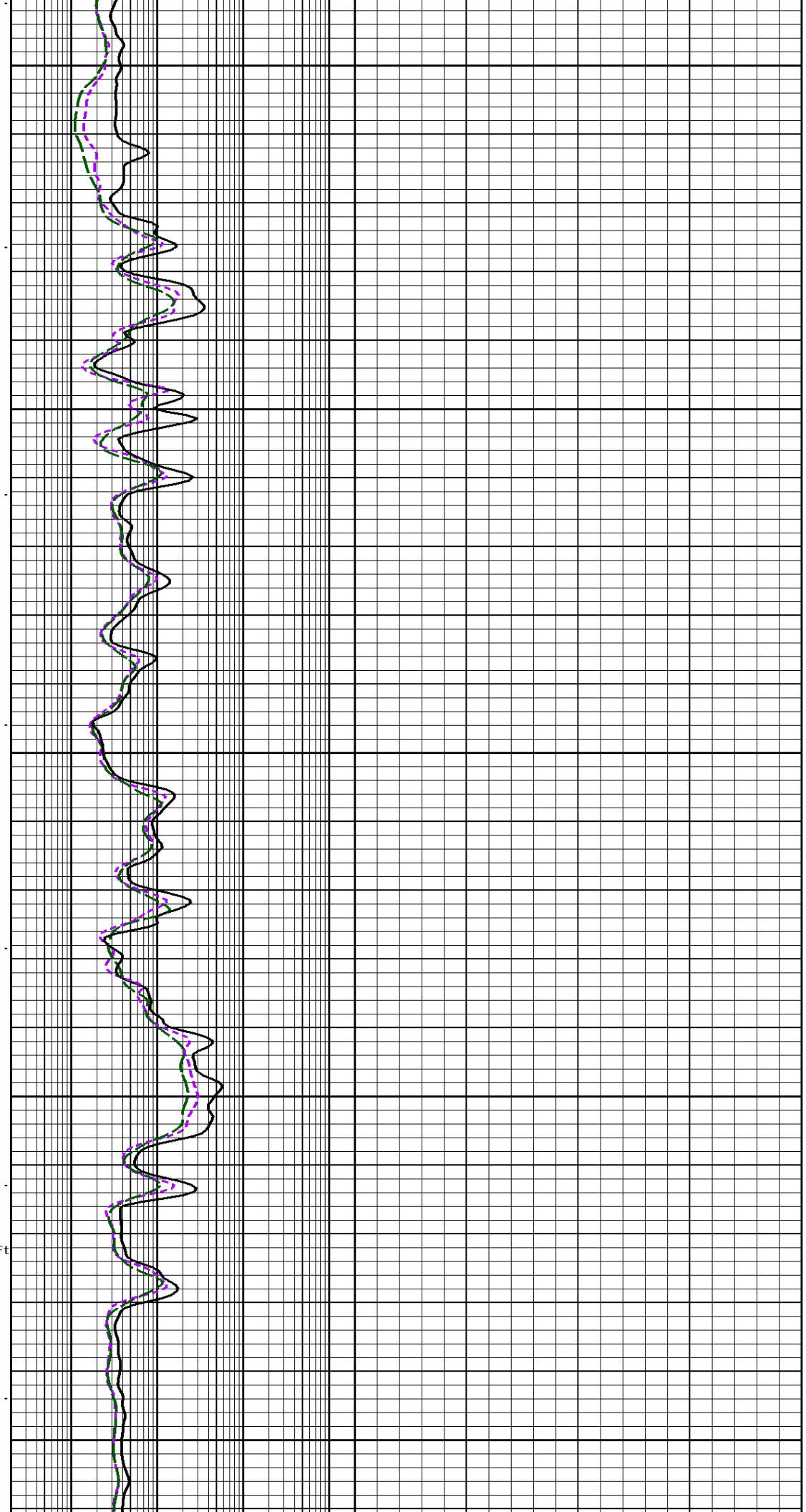


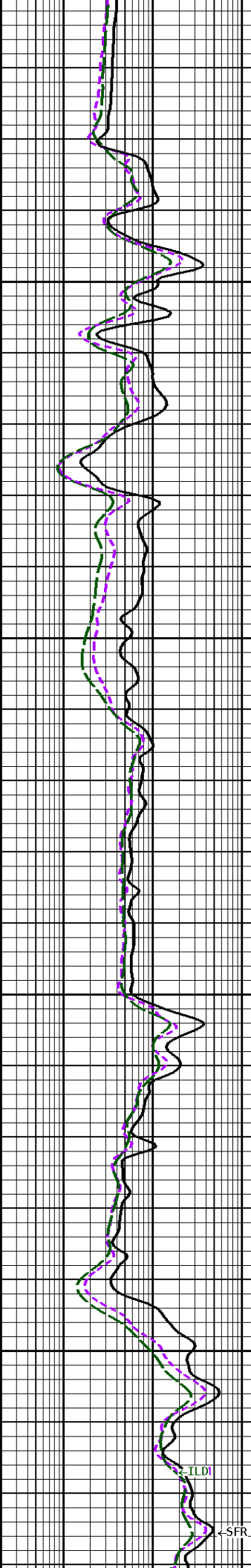
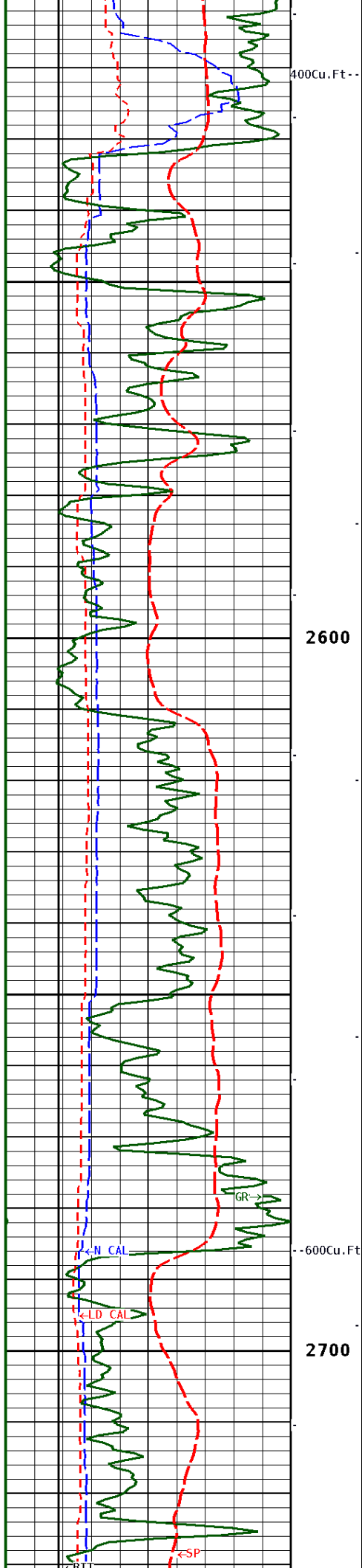


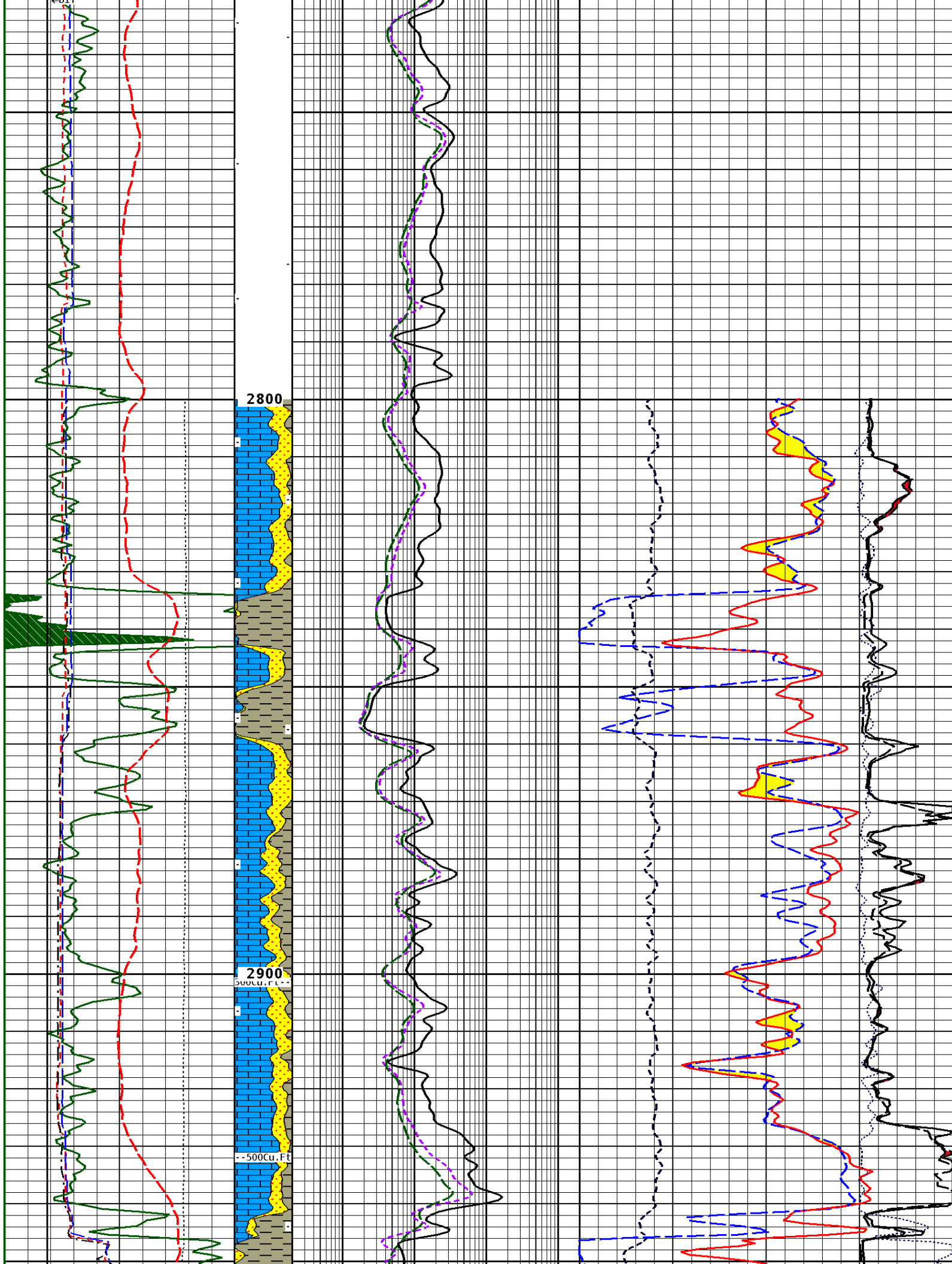


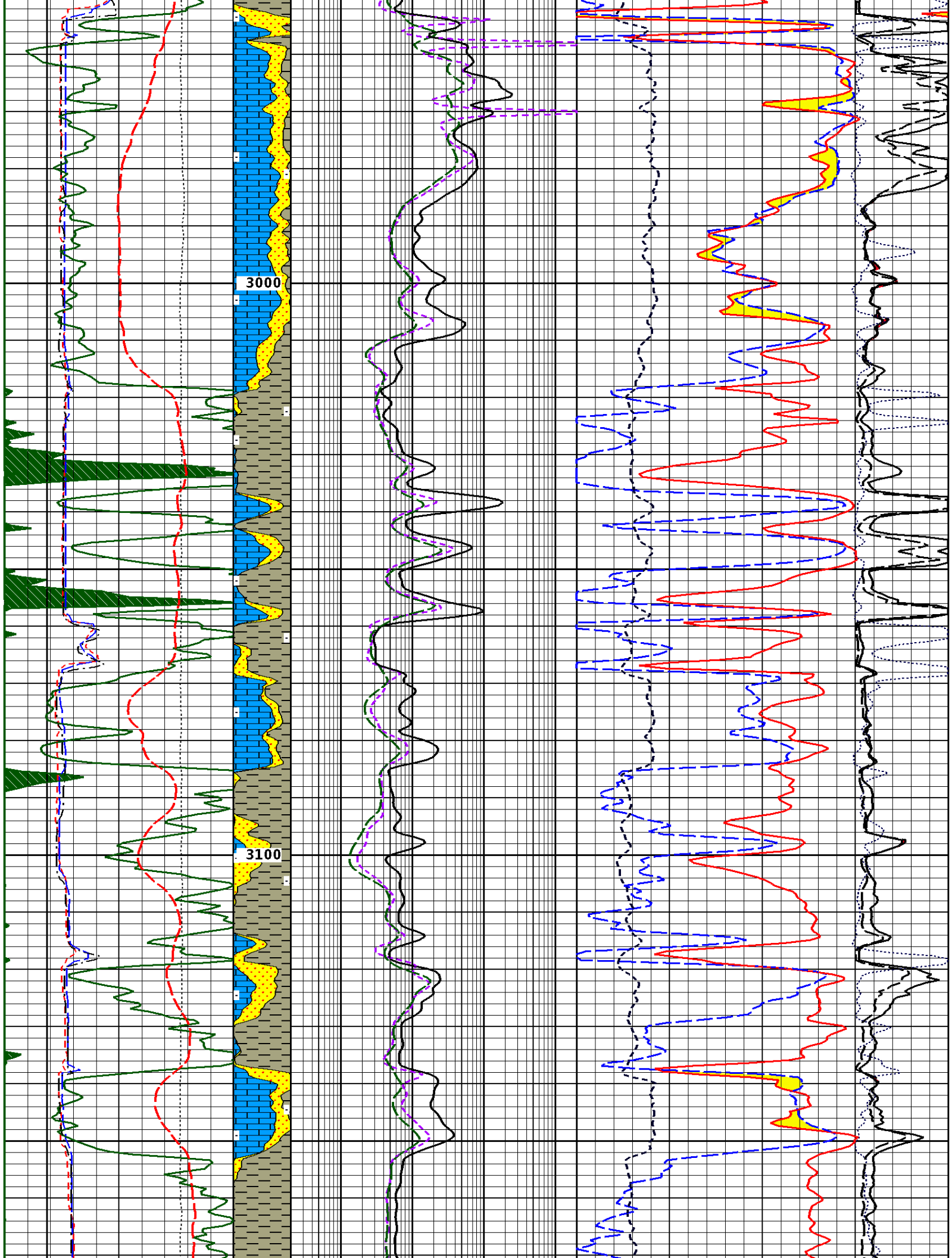


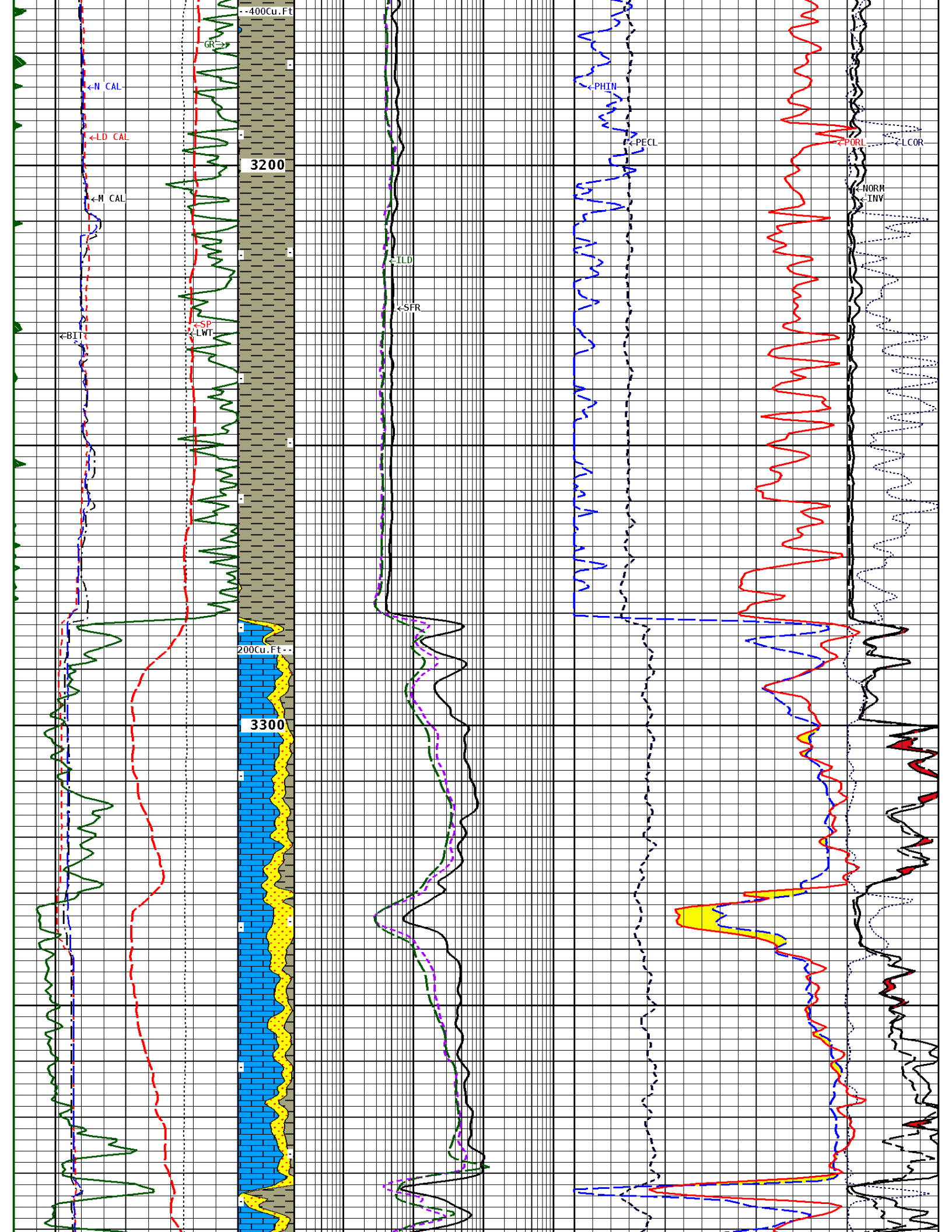
--700Cu.Ft

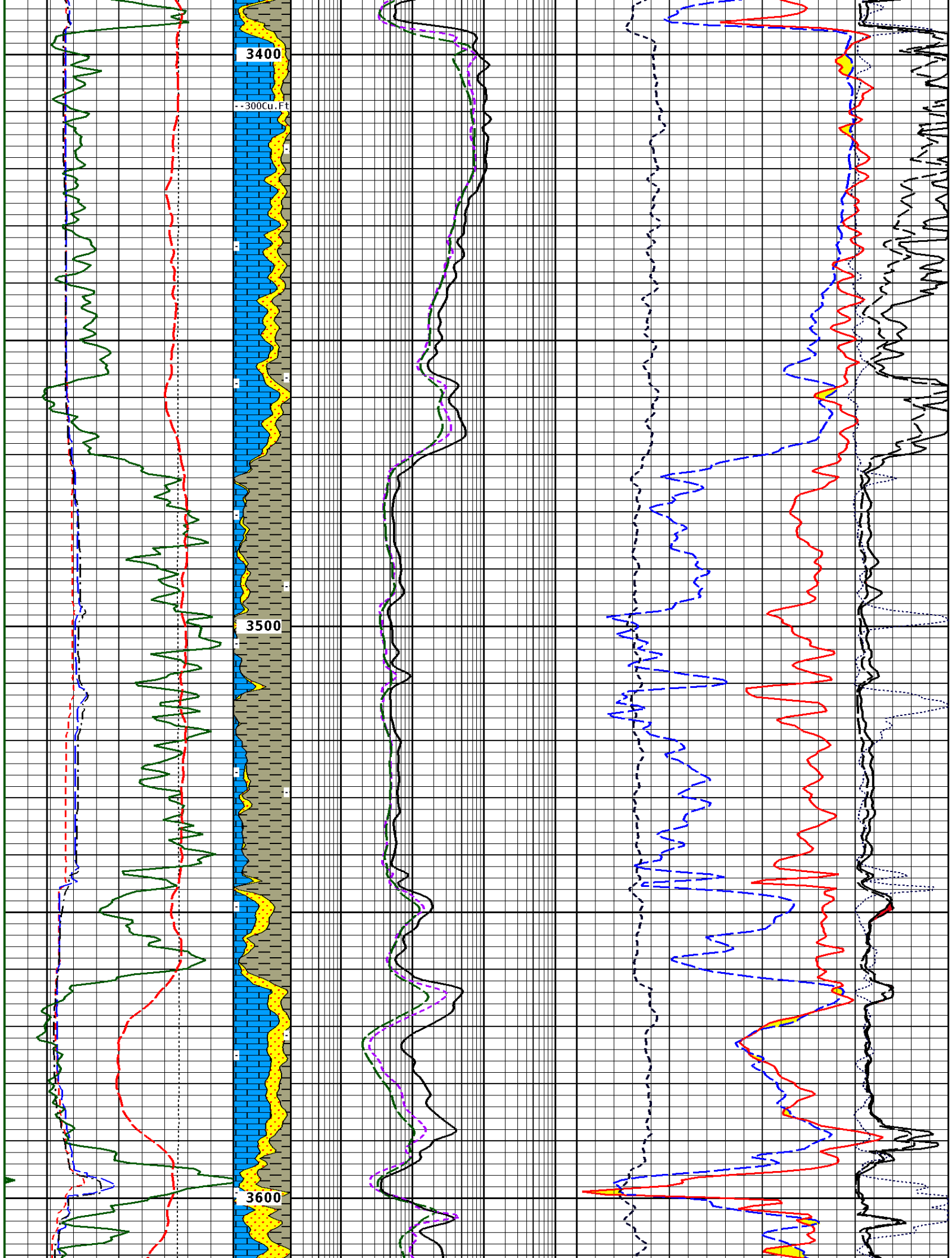


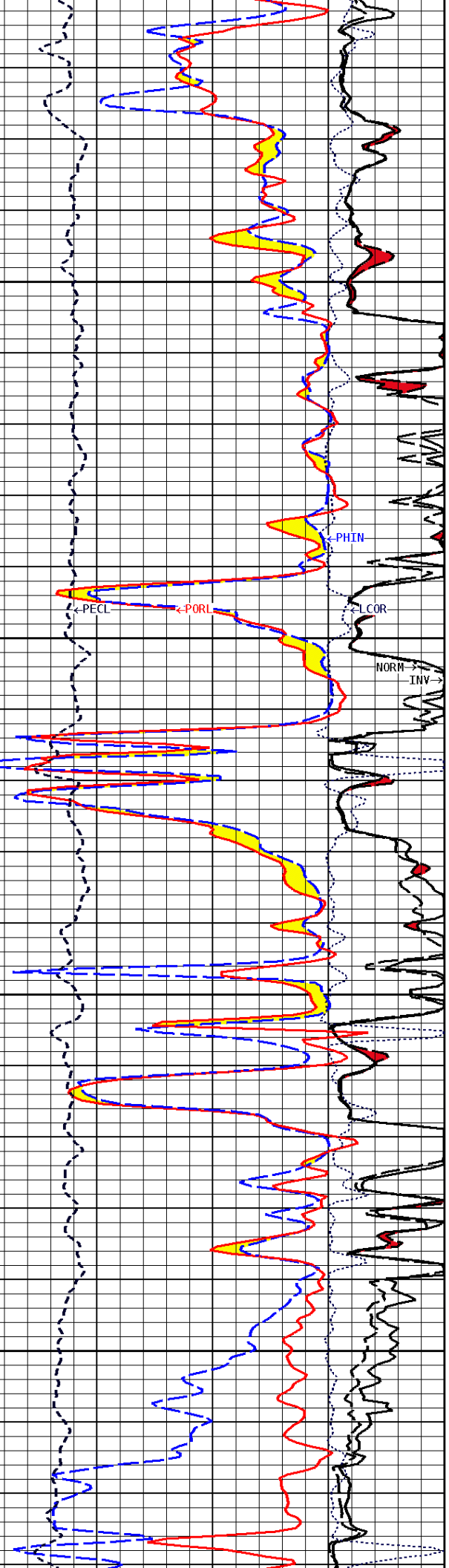
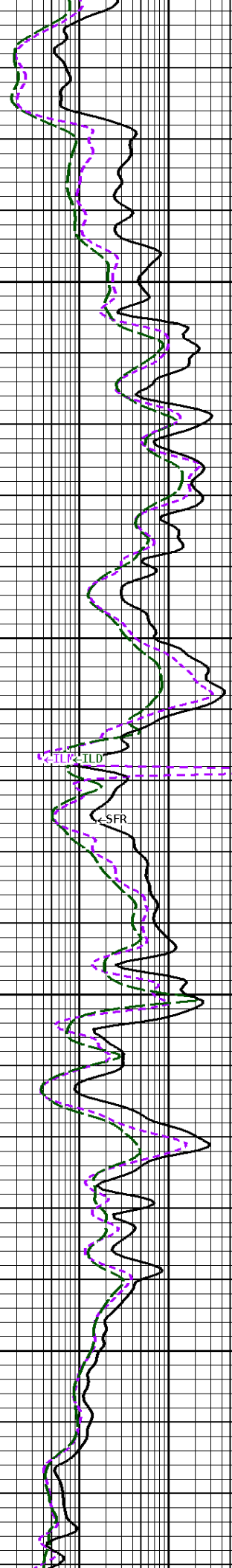
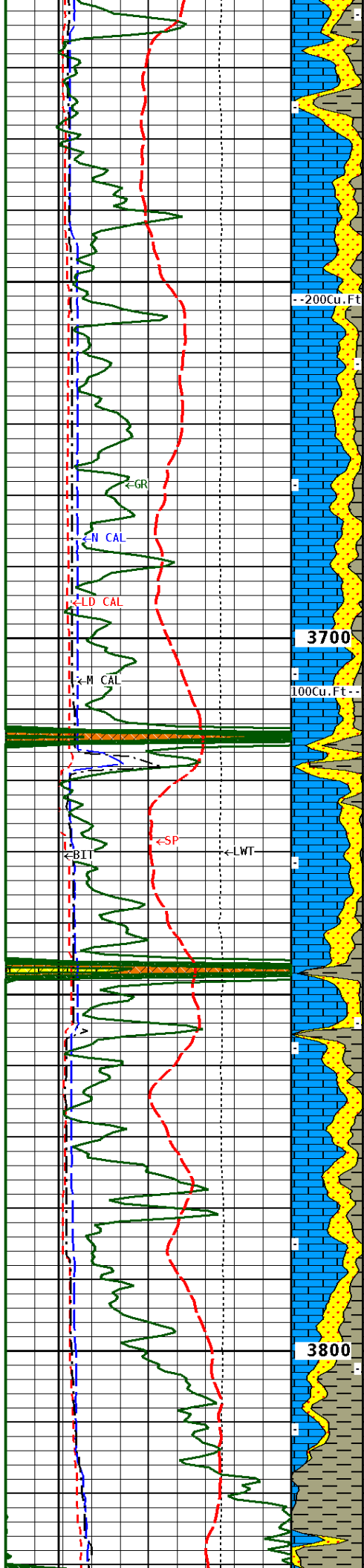


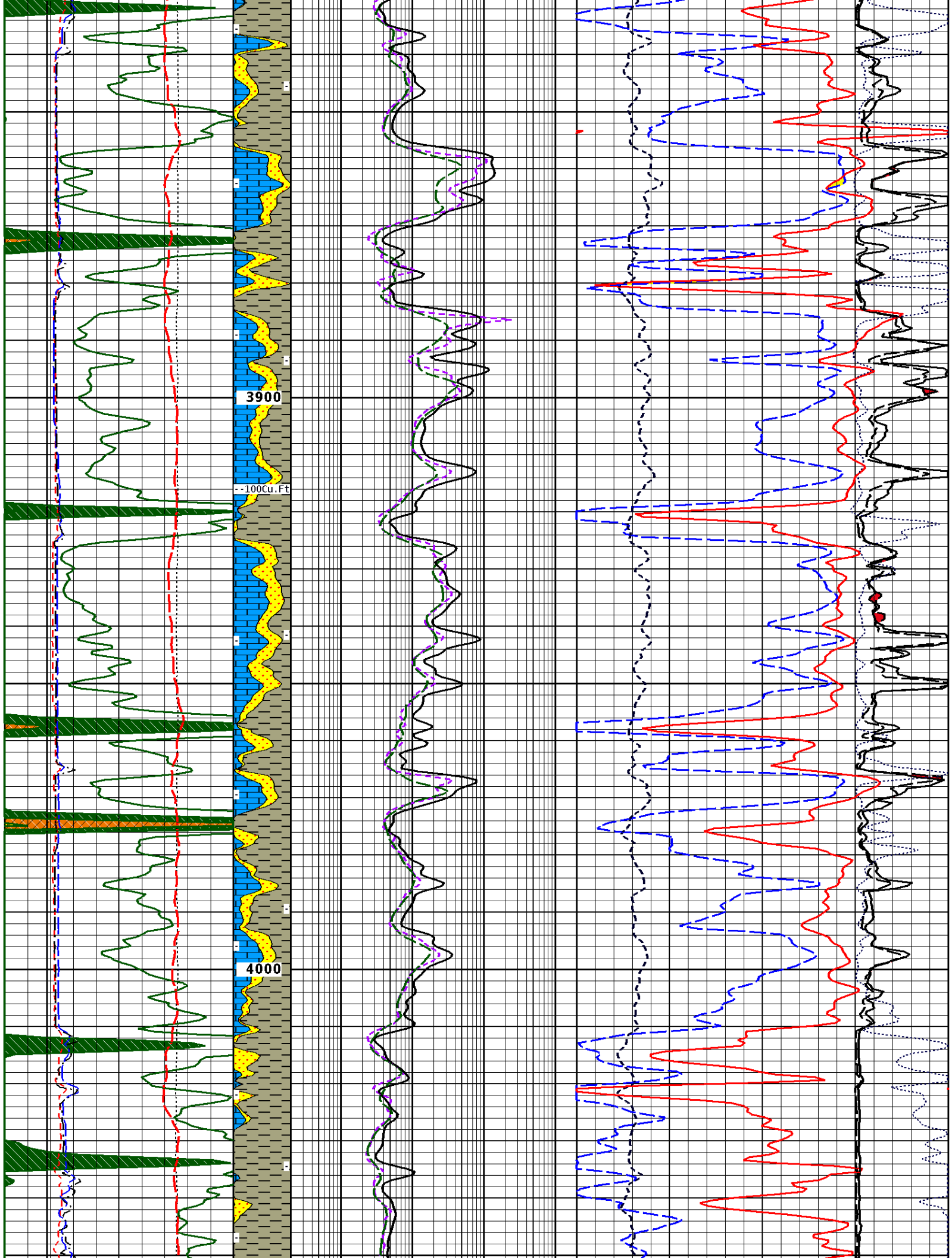


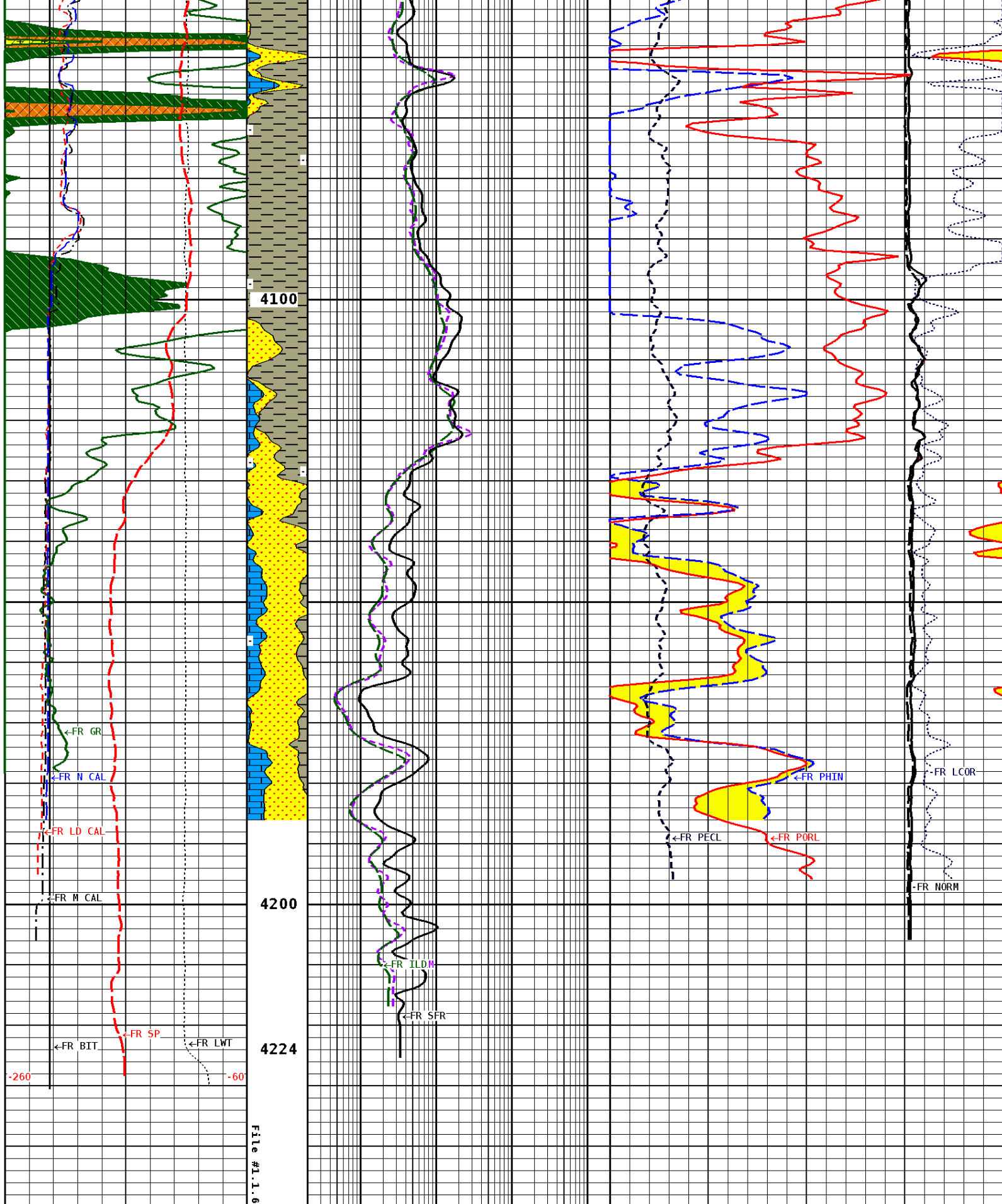












GAMMA RAY
SDT UNITS

BHV ANV

MEDIUM INDUCTION
OHMM

NEUTRON POROSITY (LIMESTONE)
PERCENT

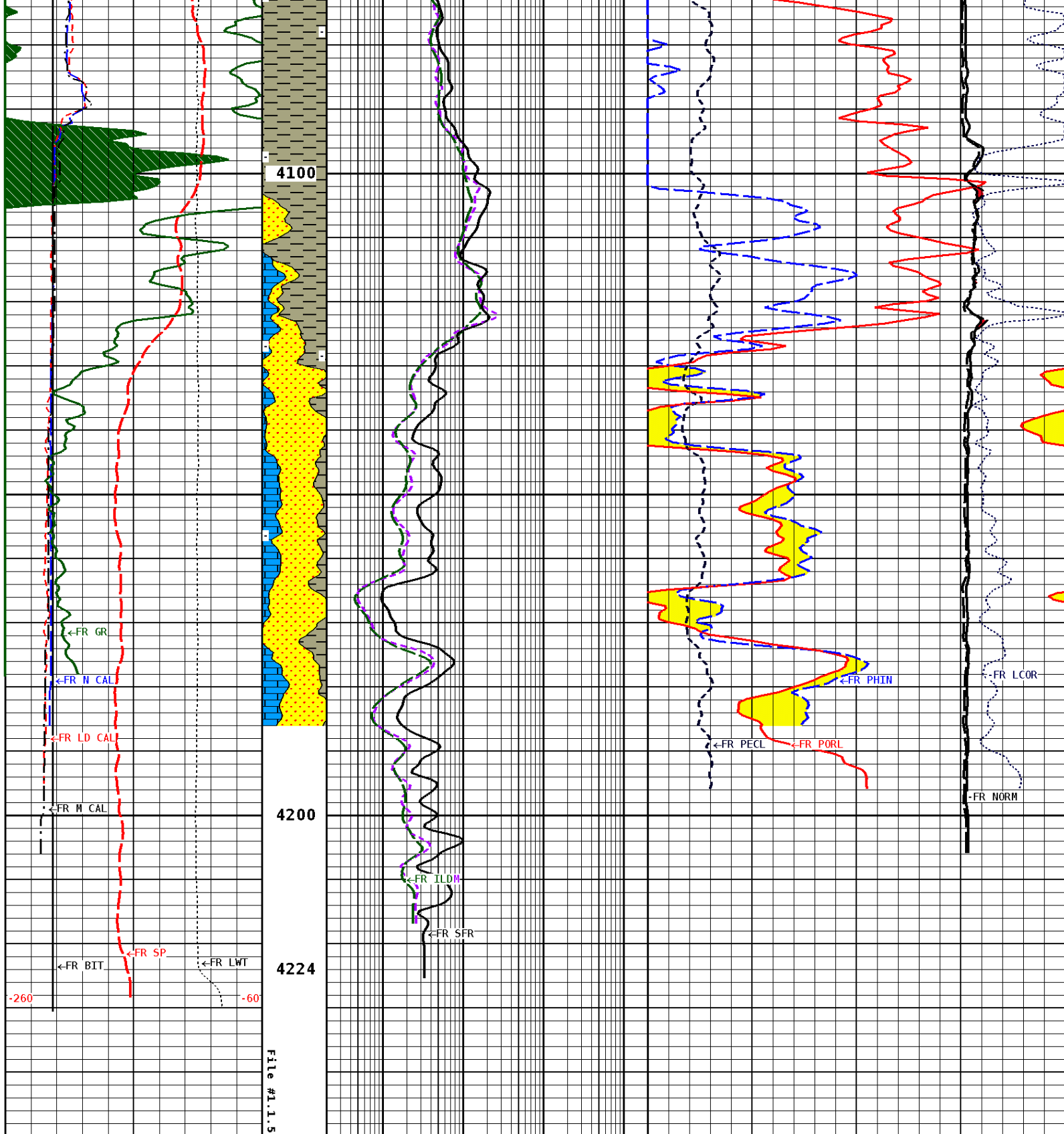
API UNITS		CO.FT	OHMM		PERCENT	
150		300	0.2	2000.0	30	-10
0		150				
SPONTANEOUS POTENTIAL mV		Volume Dolo/Shale	DEEP INDUCTION OHMM		DENSITY POROSITY (2.71g/cc) PERCENT	
→ ← 20			0.2	2000.0	70	30
					30	-10
					-10	-50
TENSION LBS		Volume Calcite	SHALLOW FOCUSED RESISTIVITY OHMM		PE CROSS-SECTION BARNs/ELECTRON	
10000	0		0.2	2000.0	0	20
DENSITY (X) CALIPER INCHES (IN)		Volume Quartz			DENSITY CORRECTION G/CC	
16	26					
6	16				-0.75	0.25
NEUTRON (Y) CALIPER INCHES (IN)					INVERSE OHMM	
16	26				0	40
6	16					
BIT SIZE INCHES (IN)					NORMAL OHMM	
6	16				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	4224.000	ft
Borehole Temperature	117.0	degF
Temperature Gradient	1.00	DFHF
Resistivity Of Mud	0.400	ohm/m
MSTNG Normal Correction	-0.50	ohm/m
MSTNG Inverse Correction	1.00	ohm/m

Well File: PICKRELL HUSON 1 JUNE 25 MSTK	Scale: 1:240	Format: COMSAT
Segment: V1.D1.S5 REPEAT	Acquired: 2015-06/25 17:50 3.4.0-13284	
Reference: 0	Processed: 2015-06/25 19:25 3.4.0-13284	

CALIPER MICRO INCHES (IN)		Volume Quartz	DENSITY CORRECTION G/CC	
16	26		0.75	0.25
6	16			
BIT SIZE INCHES (IN)				
6	16			
NEUTRON (Y) CALIPER INCHES (IN)				
16	26			
6	16			
DENSITY (X) CALIPER INCHES (IN)				
16	26			
6	16			



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
SPONTANEOUS POTENTIAL mV → ←20	Volume Dolo/Shale	DEEP INDUCTION OHMM 0.2 2000.0	DENSITY POROSITY (2.71g/cc) PERCENT 70 30 -10

TENSION LBS		Volume Calcite	SHALLOW FOCUSED RESISTIVITY OHMM		-10	-50	
10000	0		0.2	2000.0	0	20	
DENSITY (X) CALIPER INCHES (IN)		Volume Quartz			DENSITY CORRECTION G/CC		
16	26				-0.75	0.25	
6	16						
NEUTRON (Y) CALIPER INCHES (IN)					INVERSE OHMM		
16	26				0		40
6	16						
BIT SIZE INCHES (IN)					NORMAL OHMM		
6	16				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			4224.000			ft
Borehole Temperature			117.0			degF
Temperature Gradient			1.00			DFHF
Resistivity Of Mud			0.400			ohm/m
MSTNG Normal Correction			-0.50			ohm/m
MSTNG Inverse Correction			1.00			ohm/m

*** Calibration Summary ***

Shop Calibration						
GRT-B						
Performed : 06-May-2015			Time : 11:35			
Sensor Suite : GR-GR5			ID : GRT-BC-41			
	Measured	Units	Calibrated	Units		
	Background	Jig	Jig			
GR	43	271	CPS	165	GRAPI	

Shop Calibration						
CNT-AA						
Performed : 06-MAY-2015			Time : 11:24			
Sensor Suite : CALI-BCN			ID : NDT-BB-033			
	Jig - Measured		Jig - Calibrated		Units	
	Ring#1	Ring#2	Ring#1	Ring#2		
CL # 1	9.2	14.3	6.0	12.0	IN.	

Performed : 06-May-2015			Time : 10:38			
Sensor Suite : BHC NEUT			ID : CNP-AA-109			
Source ID : N-1047						
	Tank	Verification	Units			
	Measured	Calibrated	Jig			
N/F	3.7044	3.6760	3.6709			
Porosity	20.7	20.3	20.2	%		

Shop Calibration						
LDT-DA						
Performed : 23-Jun-2015			Time : 17:27			

Sensor Suite : CALI-LTH			ID : NDT-AH-137		
	Jig - Measured		Jig - Calibrated		Units
	Ring#1	Ring#2	Ring#1	Ring#2	
CL # 1	8.6	12.5	6.0	12.0	IN.
Performed : 05-May-2015			Time : 10:52		
Sensor Suite : BHCPELNG			ID : LDP-DA-02		
Source ID : 1902GW					
Short Space					
	BKGD	Al	Mg	Al+Fe	Units
LSW1	63	921	1512	596	CPS
LSW2	67	1118	1830	789	CPS
LSW3	255	2657	4371	2286	CPS
LSW4	329	2448	3602	2182	CPS
LSW5	31	54	60	51	CPS
LSW6	86	88	89	88	CPS
LSW7	54	57	57	59	CPS
LSW8	1	4	5	3	CPS
QS	0.225	0.212	0.224	0.198	
PES			2.778	5.967	
SSDN		2.600	1.680		G/CC
Long Space					
	BKGD	Al	Mg	Al+Fe	Units
LLW1	100	1164	4904	702	CPS
LLW2	106	2104	8512	1513	CPS
LLW3	406	3827	14786	3343	CPS
LLW4	533	1848	5890	1705	CPS
LLW5	58	68	121	67	CPS
LLW6	172	166	158	169	CPS
LLW7	108	107	100	106	CPS
LLW8	3	7	17	6	CPS
QL	0.228	0.217	0.224	0.227	
PEL			2.697	5.458	
LSDN		2.600	1.680		G/CC

Shop Calibration					
MST-DA					
Performed : 06-MAY-2015			Time : 11:48		
Sensor Suite : CALI-MSN			ID : MST-DA-29		
	Jig - Measured		Jig - Calibrated		Units
	Ring#1	Ring#2	Ring#1	Ring#2	
CL # 1	8.1	12.7	6.0	12.0	IN.
Performed : 06-MAY-2015			Time : 11:49		
Sensor Suite : MSTDA-NI			ID : MST-DA-29		
	Internal				
	Measured		Calibrated		
	Zero	Reference	Zero	Reference	Units
INV-V	0.0	29663.8	0.00	1846.00	MV
NOR-V	7.4	29969.4	0.00	1446.00	MV
IN-C	0.0	60291.2	0.00	15.46	UA
INV-R				38.62	OHMM
NOR-R				51.54	OHMM

Shop Calibration					
PIT-CA					
Performed : 04-MAY-2015			Time : 14:15		
Sensor Suite : P-IND-T			ID : PIT-AB-16		
Medium					
	Measured		Calibrated		
	R	X	R	X	Units
Air	130882	130493	0.6	1.8	MMHOS
Zero	131064	131064	8.9	19.9	MMHOS
Reference	248542	248861	5008.9	5019.9	MMHOS
Loop	128625	216514	3555.8	3749.1	MMHOS
Sonde Error			-3.9	-7.3	MMHOS
Cond			5008.9	5019.9	MMHOS
Deep					
	Measured		Calibrated		
	R	X	R	X	Units
Air	128669	131412	0.5	0.6	MMHOS
Zero	131070	131069	50.6	-10.9	MMHOS
Reference	230754	231619	2050.6	1989.1	MMHOS
Loop	126064	218351	1677.5	1782.2	MMHOS
Sonde Error			-2.2	-7.1	MMHOS
Cond			2050.6	1989.1	MMHOS

Temperature					
Measured			Calibrated		Units
Low	High		Low	High	
16980.0	56920.0		70.0	350.0	DEGF
Performed : 04-May-2015			Time : 14:02		
Sensor Suite : SFL			ID : PIT-AB-16		
Internal					
Measured			Calibrated		Units
Zero	Reference		Zero	Reference	
Im	32761.4	49779.9	0.0	7028.0	uA
Ib	32771.3	48991.0	0.0	1750.0	mA
MOM1	32793.0	57437.7	0.0	175.0	mV
Equivalent SFL				43.97	OHMM
Performed : 04-May-2015			Time : 14:00		
Sensor Suite : P-SP			ID : PIT-AB-16		
Internal					
Measured			Calibrated		Units
Zero	Reference		Zero	Reference	
32790.0	58957.1		0.0	1000.0	mV



Company: PICKRELL DRILLING CO., INC.

Well: HUSON TRUST "C" #1

Location: 1980' FSL & 1980' FWL

Logged: Jun 25 2015

K.B. Elev: 1443.0 Ft