



Weatherford

**COMPACT PHOTO DENSITY
COMPENSATED NEUTRON
MICRORESISTIVITY LOG**

COMPANY		GRAND MESA OPERATING COMPANY			
WELL		FULSOM 1-34			
FIELD		WILDCAT			
PROVINCE/COUNTY		MARION			
COUNTRY/STATE		U.S.A. / KANSAS			
LOCATION		664' FNL & 1980' FWL			
SEC 34	TWP 22S	RGE 05E	Other Services		MSS
Latitude	38.098411	MAI/MFE			
Longitude	-96.870502				
API Number	15-115-21495				
Permanent Datum GL, Elevation 1487 feet					Elevations:
Log Measured From KB					KB 1499.00
Drilling Measured From KB @ 12 feet					DF 1497.00
Date	10-JUL-2015				GL 1487.00
Run Number	ONE				
Service Order	7577-123648841				
Depth Driller	2570.00	feet			
Depth Logger	2571.00	feet			
First Reading	2539.00	feet			
Last Reading	1700.00	feet			
Casing Driller	222.00	feet			
Casing Logger	223.00	feet			
Bit Size	7.875	inches			
Hole Fluid Type	WBM				
Density / Viscosity	9.30 lb/USg	50.00 CP			
PH / Fluid Loss	9.00	0.00 ml/30Min			
Sample Source	MUD TANK				
Rm @ Measured Temp	2.30 @ 75.0	ohm-m			
Rmf @ Measured Temp	1.84 @ 75.0	ohm-m			
Rmc @ Measured Temp	2.75 @ 75.0	ohm-m			
Source Rmf / Rmc	CALC	CALC			
Rm @ BHT	1.85 @ 94.0	ohm-m			
Time Since Circulation	4 HOURS				
Max Recorded Temp	94.00	deg F			
Equipment / Base	13244	LIB			
Recorded By	JEFFREY RANDLE				
Witnessed By	STEVE CARL				
JOB #	LB15-099				

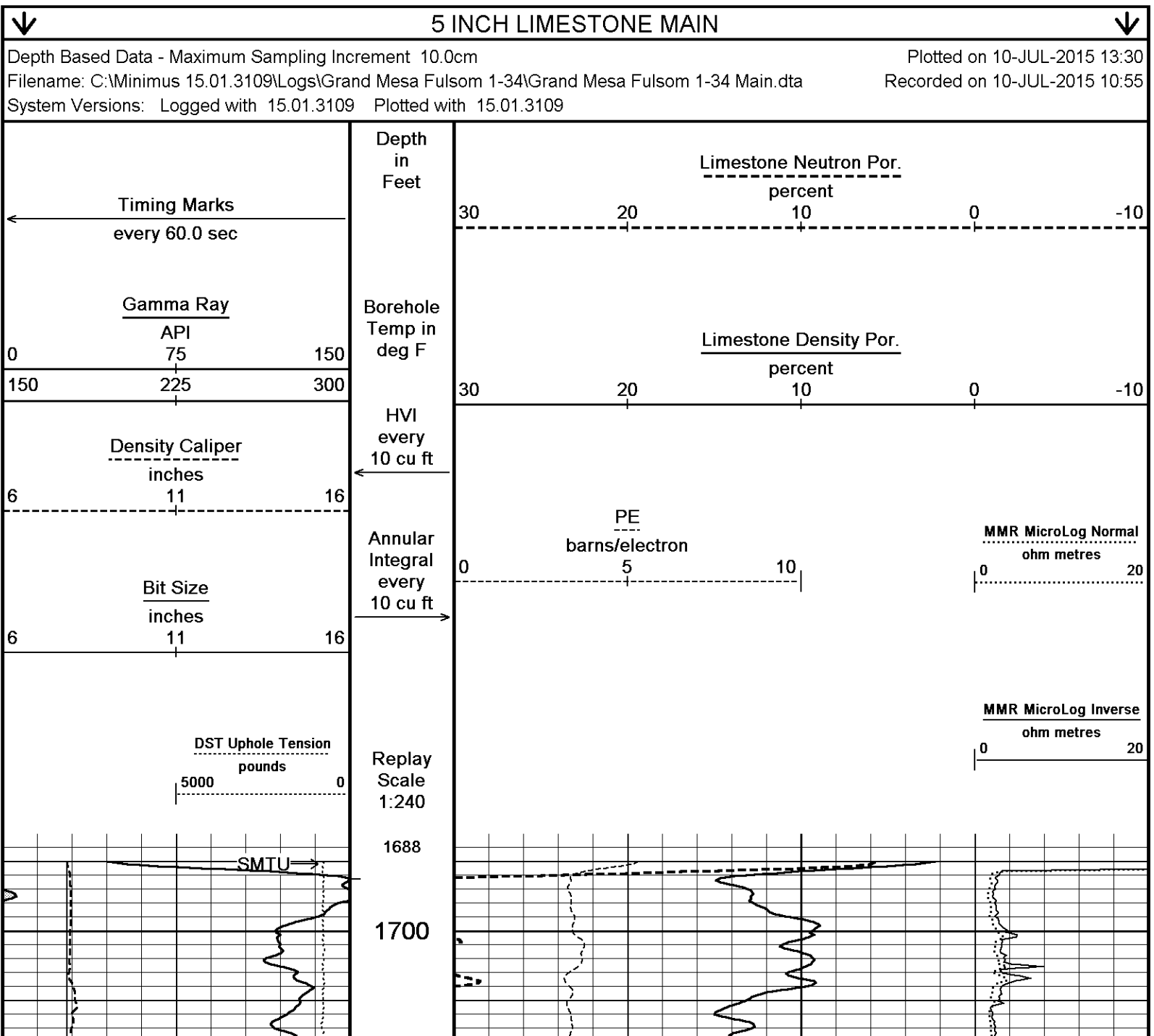
BOREHOLE RECORD					Last Edited: 10-JUL-2015 10:21
Bit Size inches		Depth From feet		Depth To feet	
12.250		0.00		228.00	
7.875		228.00		2570.00	
CASING RECORD					
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft	
SURFACE	8.625	0.00	222.00	24.00	

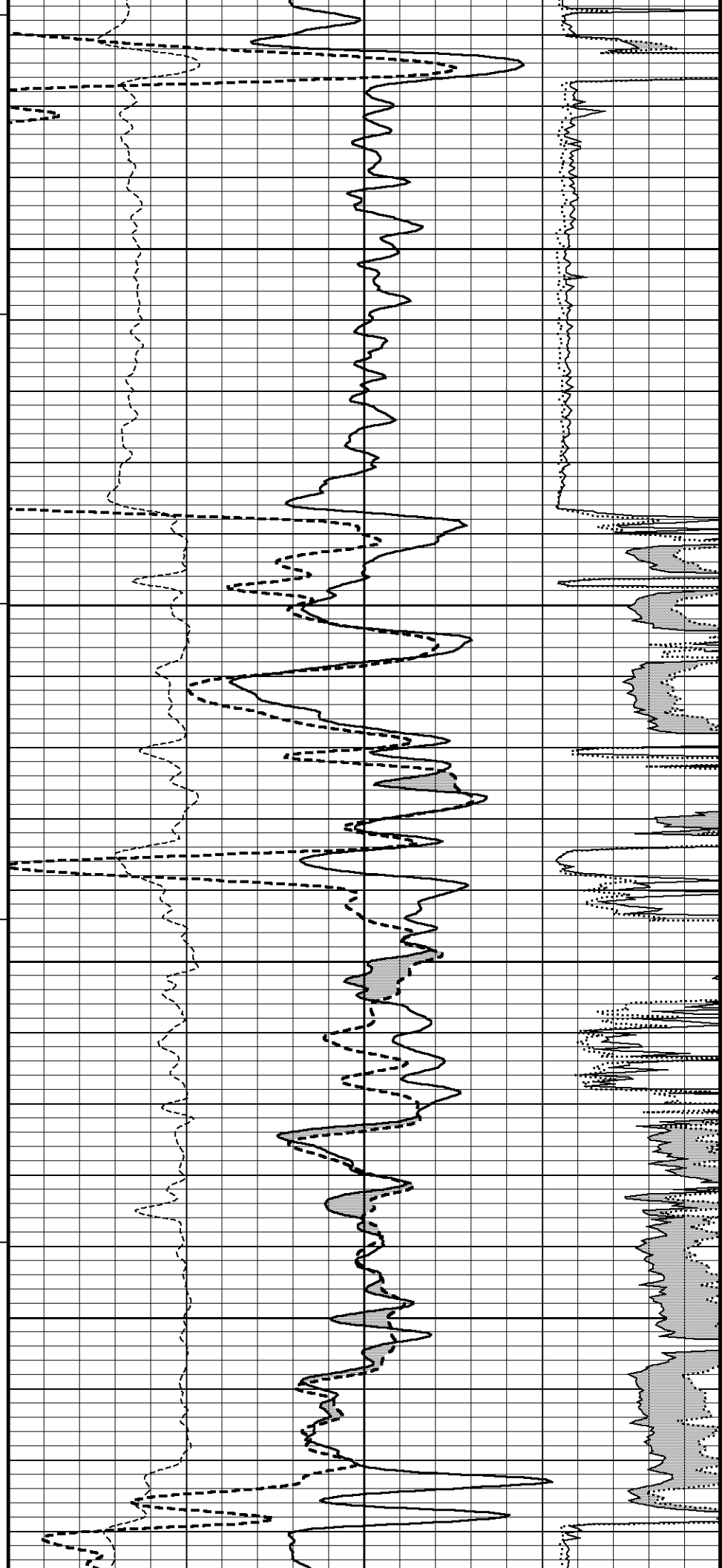
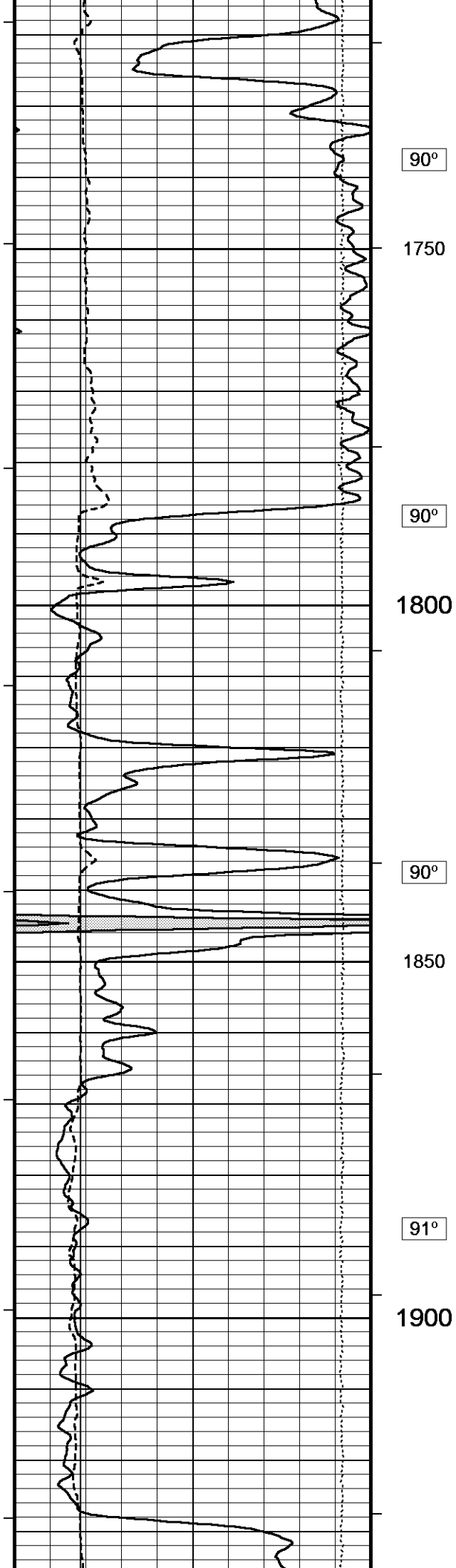
REMARKS
- SOFTWARE ISSUE: WLS 15.01.3109.
- RUN ONE: MCG, MML, MDN, MPD, MFE, MSS, MAI RUN IN COMBINATION. - HARDWARE: DUAL BOWSPRING USED ON MDN. 0.5 INCH STANDOFF USED ON MFE. TWO 0.5 INCH STANDOFFS USED ON MSS. 0.5 INCH STANDOFF USED ON MAI.
- 2.71 G/CC LIMESTONE DENSITY MATRIX USED TO CALCULATE POROSITY.
- BOREHOLE RUGOSITY, TIGHT PULLS, AND WASHOUTS WILL AFFECT DATA QUALITY.
- ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.
- TOTAL HOLE VOLUME FROM TD TO SURFACE CASING: 809 CU.FT.
- ANNULAR HOLE VOLUME WITH 4.5 INCH PRODUCTION CASING FROM TD TO SURFACE CASING: 552 CU.FT.

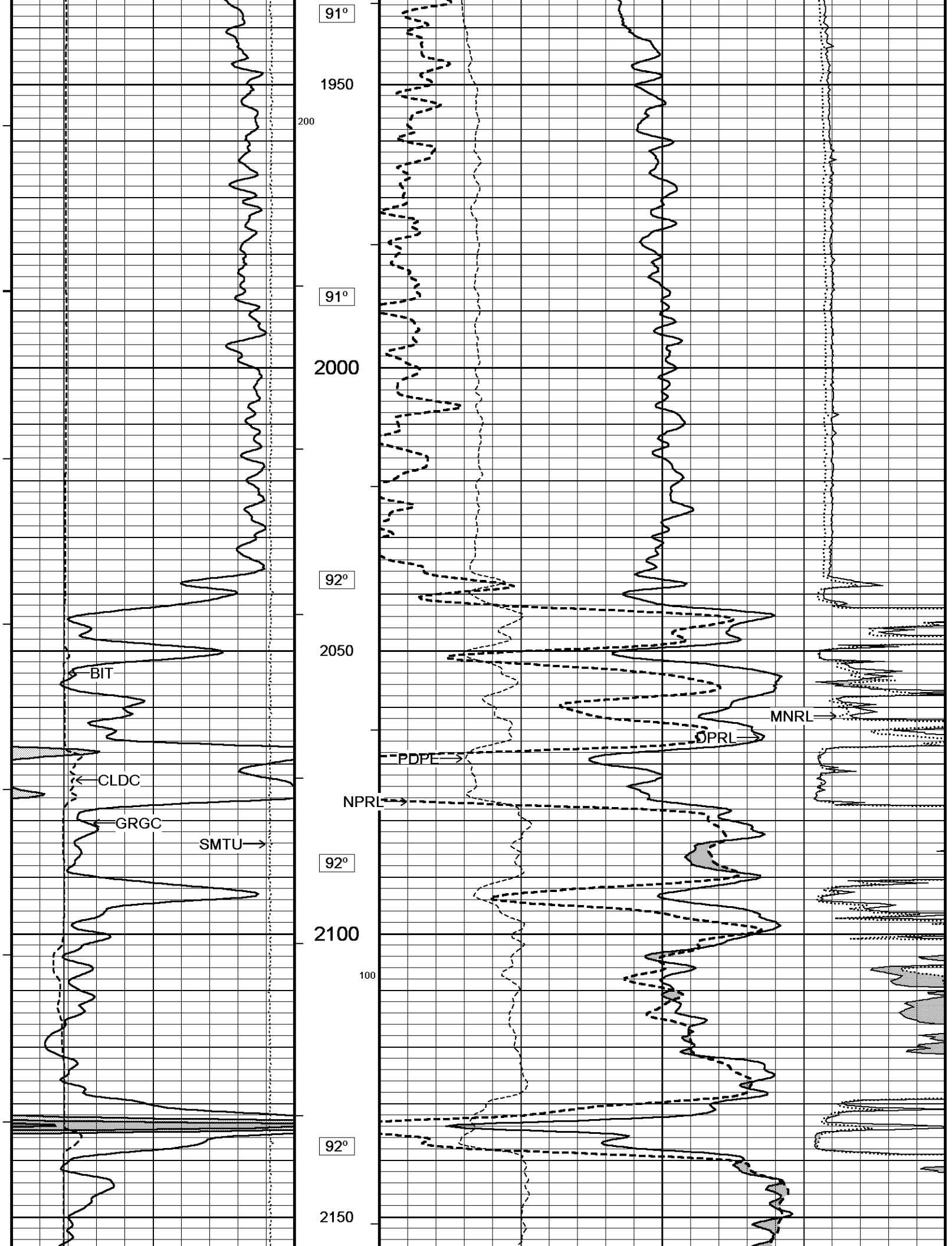
ANNULAR HOLE VOLUME WITH 5 INCH ROSS LOGGING CASING FROM TD TO CASING CASE 002 C.C.F.T.

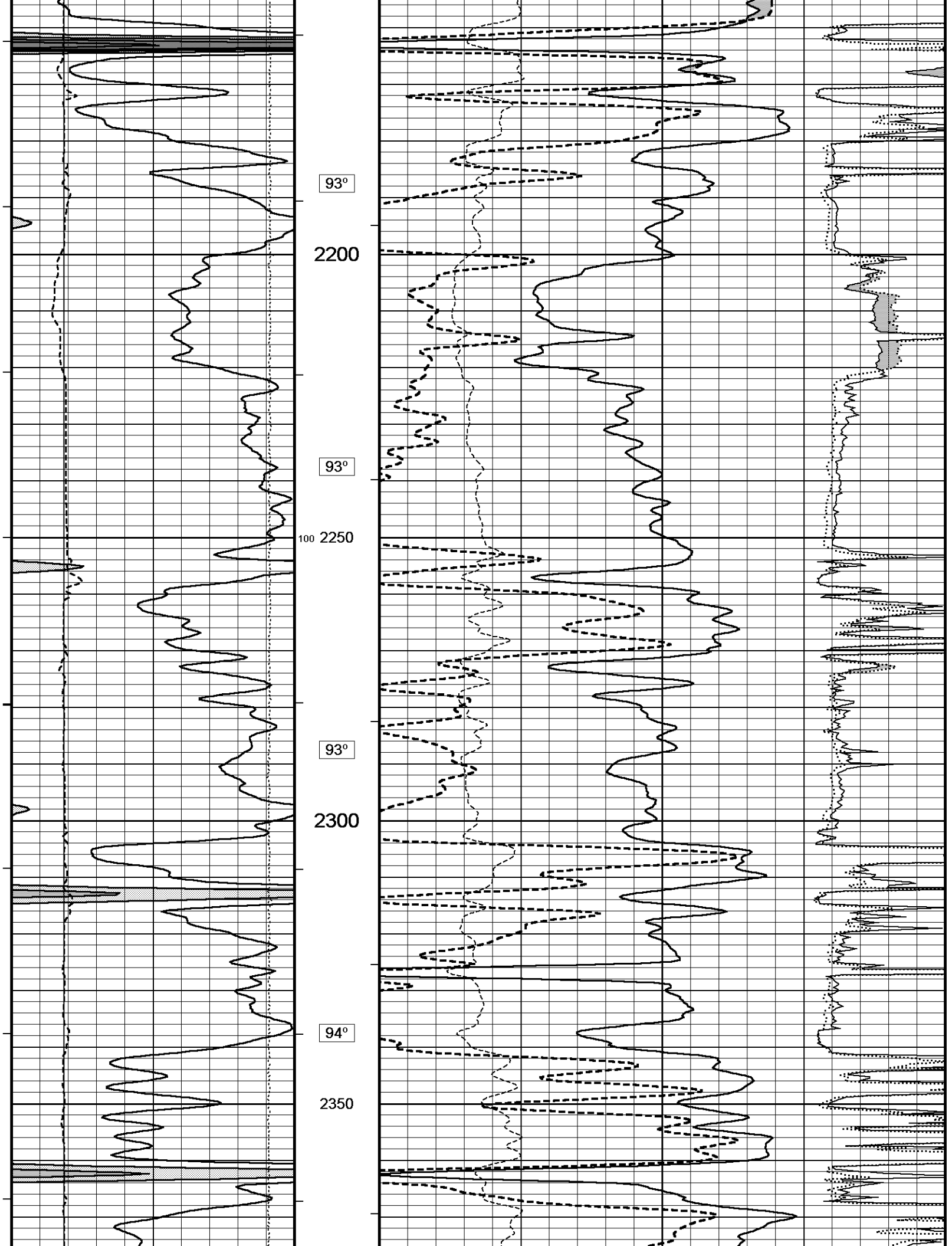
- RIG: SUMMIT DRILLING #1.
- ENGINEER: JEFFREY RANDLE.
- OPERATOR: NICHOLAS ADAME.

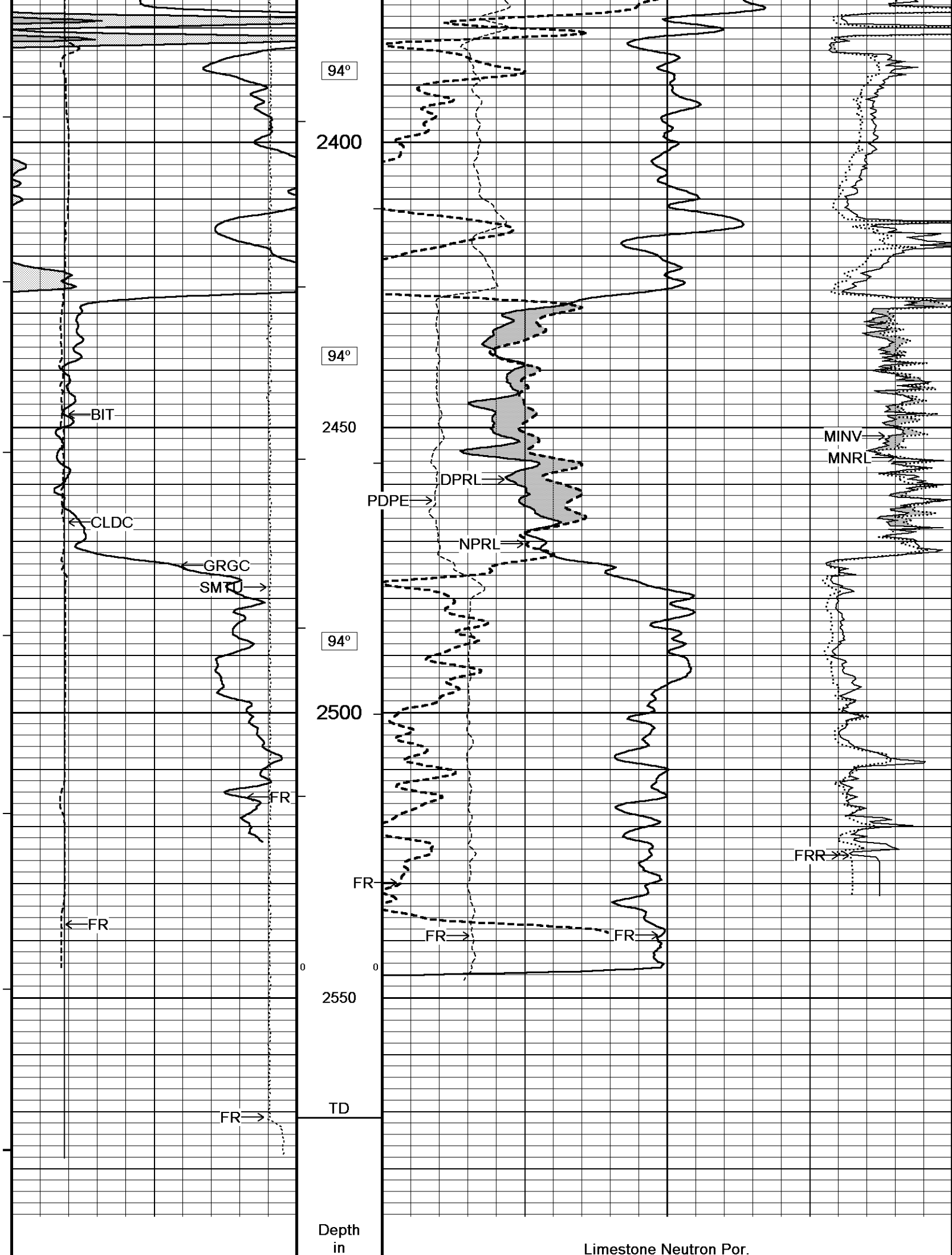
In interpreting, communicating or providing information and/or making recommendations, either written or oral, as to logs or test or other data, type or amount of material, or Work or other service to be furnished, or manner of performance, or in predicting results to be obtained, the Contractor will give the Company the benefit of the Contractor's best judgment based on its experience and will perform all such Work in a good and workmanlike manner. Any interpretation of test or other data, and any recommendation or reservoir description based upon such interpretations, are opinions based upon inferences from measurements and empirical relationships and assumptions, which inferences and assumptions are not infallible, and with respect to which professional engineers and analysts may differ. ACCORDINGLY ANY INTERPRETATION OR RECOMMENDATION RESULTING FROM THE SERVICES WILL BE AT THE SOLE RISK OF THE COMPANY, AND THE CONTRACTOR CANNOT AND DOES NOT WARRANT THE ACCURACY, CORRECTNESS OR COMPLETENESS OF ANY SUCH INTERPRETATION OR RECOMMENDATION, WHICH INTERPRETATIONS AND RECOMMENDATIONS SHOULD NOT, THEREFORE, UNDER ANY CIRCUMSTANCES BE RELIED UPON AS THE SOLE OR MAIN BASIS FOR ANY DRILLING, COMPLETION, WELL TREATMENT, PRODUCTION OR FINANCIAL DECISION, OR ANY PROCEDURE INVOLVING ANY RISK TO THE SAFETY OF ANY DRILLING ACTIVITY, DRILLING RIG OR ITS CREW OR ANY OTHER INDIVIDUAL. THE COMPANY HAS FULL RESPONSIBILITY FOR ALL DECISIONS CONCERNING THE SERVICES.

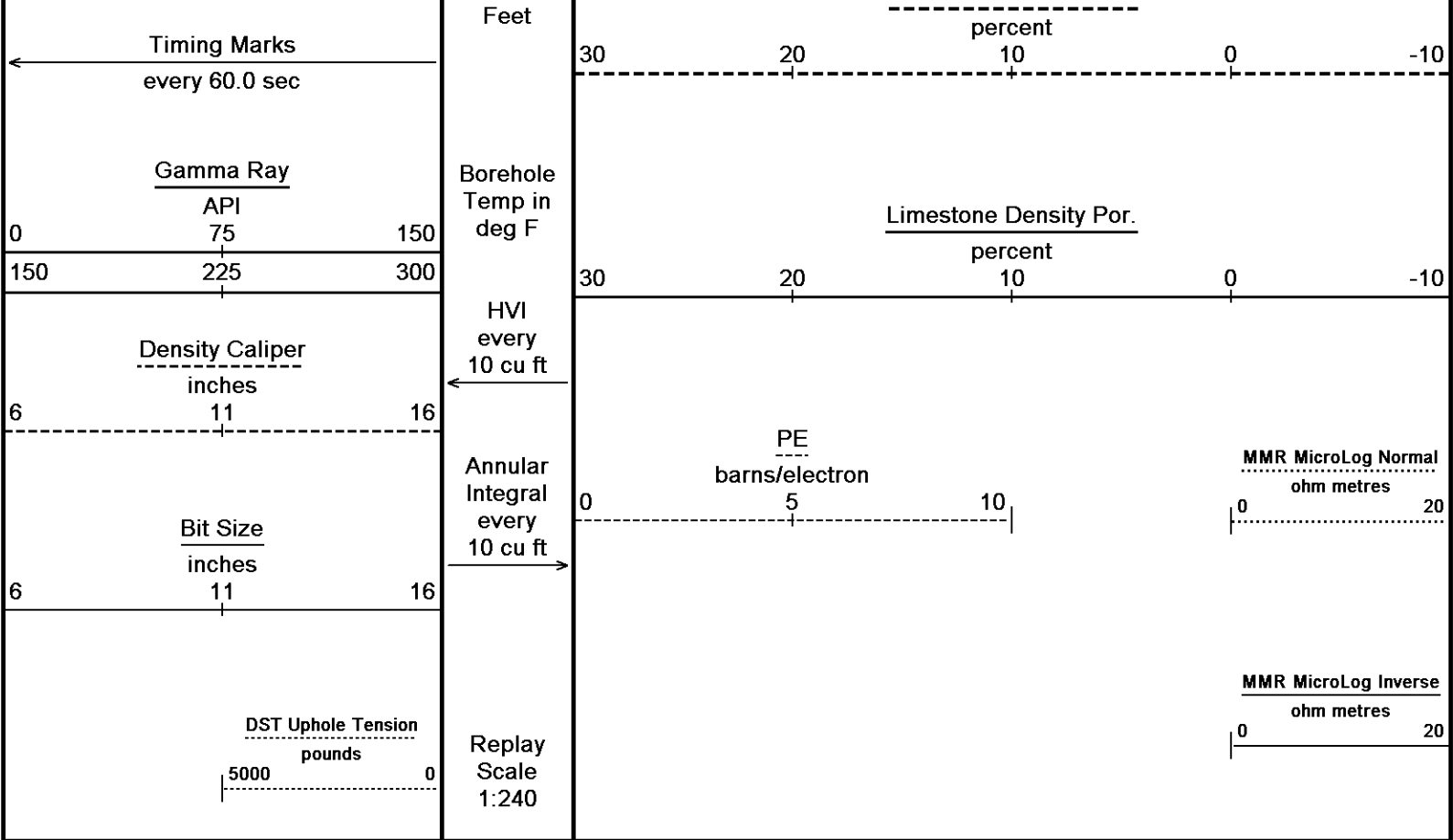












Depth Based Data - Maximum Sampling Increment 10.0cm

Plotted on 10-JUL-2015 13:30

Filename: C:\Minimus 15.01.3109\Logs\Grand Mesa Fulsom 1-34\Grand Mesa Fulsom 1-34 Main.dta

Recorded on 10-JUL-2015 10:55

System Versions: Logged with 15.01.3109 Plotted with 15.01.3109

↑

5 INCH LIMESTONE MAIN

↑

↓

REPEAT SECTION

↓

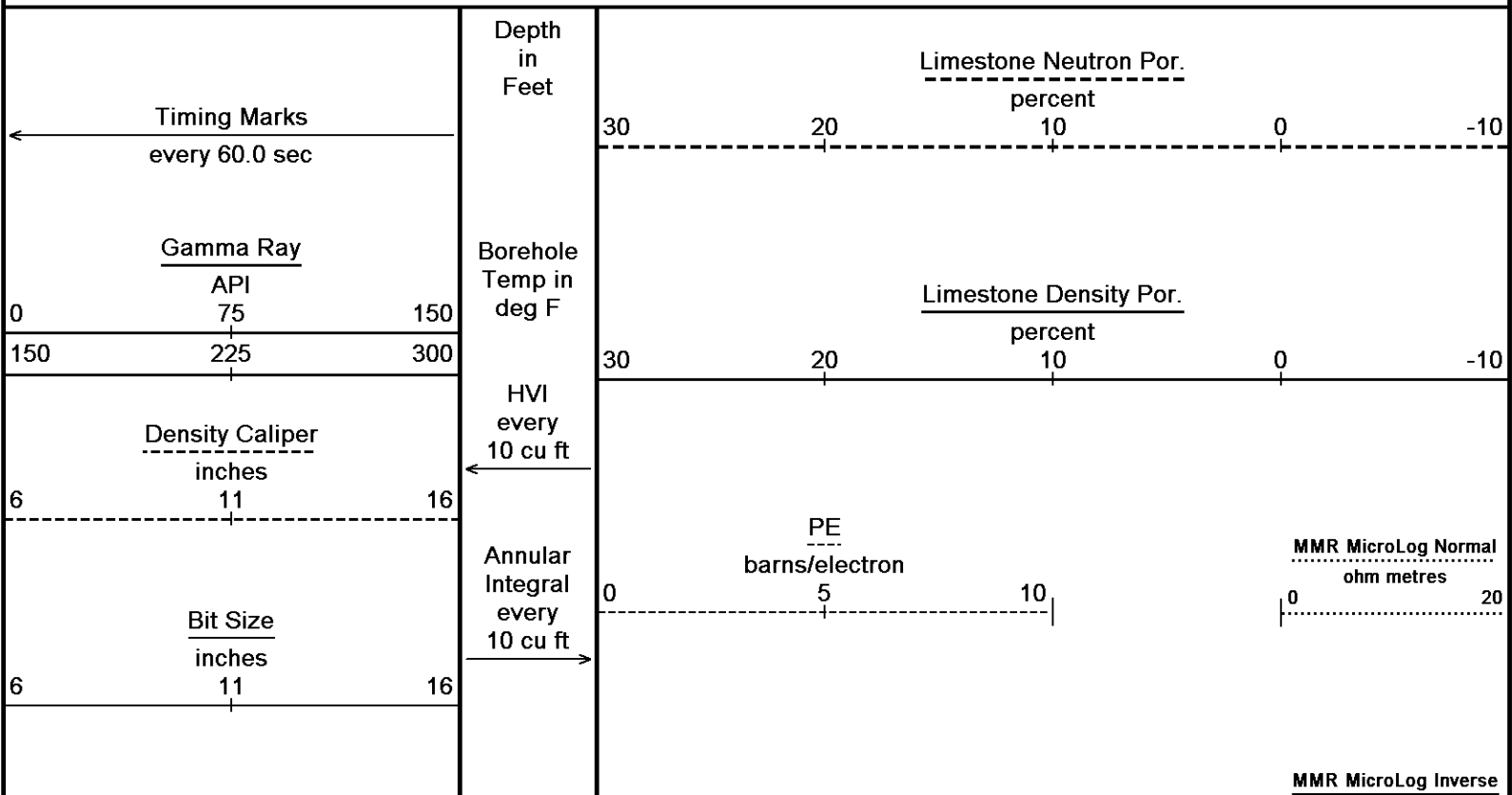
Depth Based Data - Maximum Sampling Increment 10.0cm

Plotted on 10-JUL-2015 13:30

Filename: C:\Minimus 15.01.3109\Logs\Grand Mesa Fulsom 1-34\Grand Mesa Fulsom 1-34 Repeat.dta

Recorded on 10-JUL-2015 10:36

System Versions: Logged with 15.01.3109 Plotted with 15.01.3109

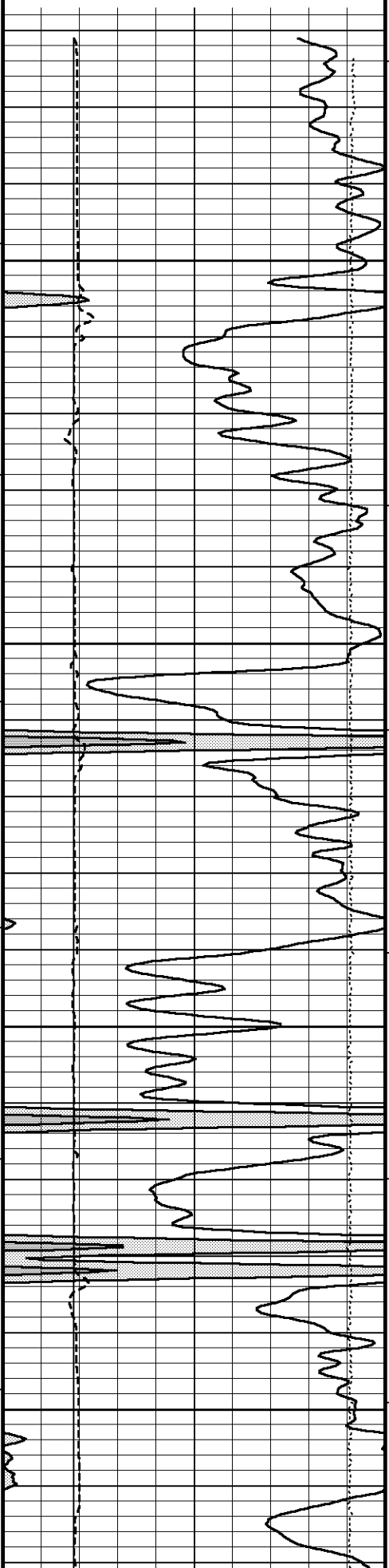


DST Uphole Tension
pounds

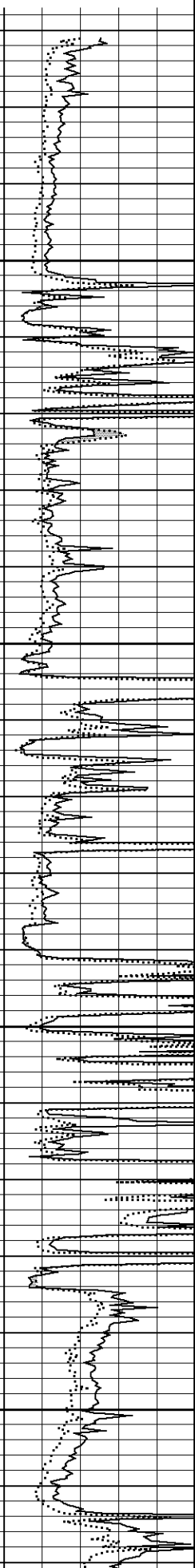
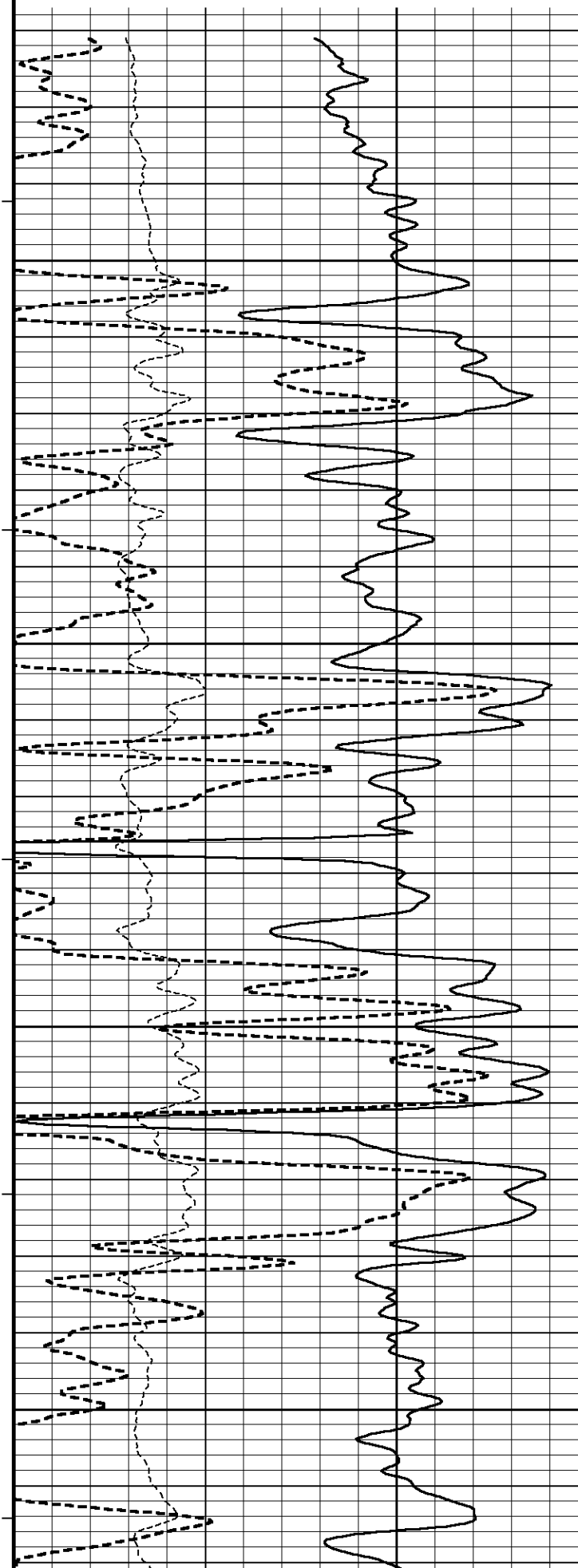
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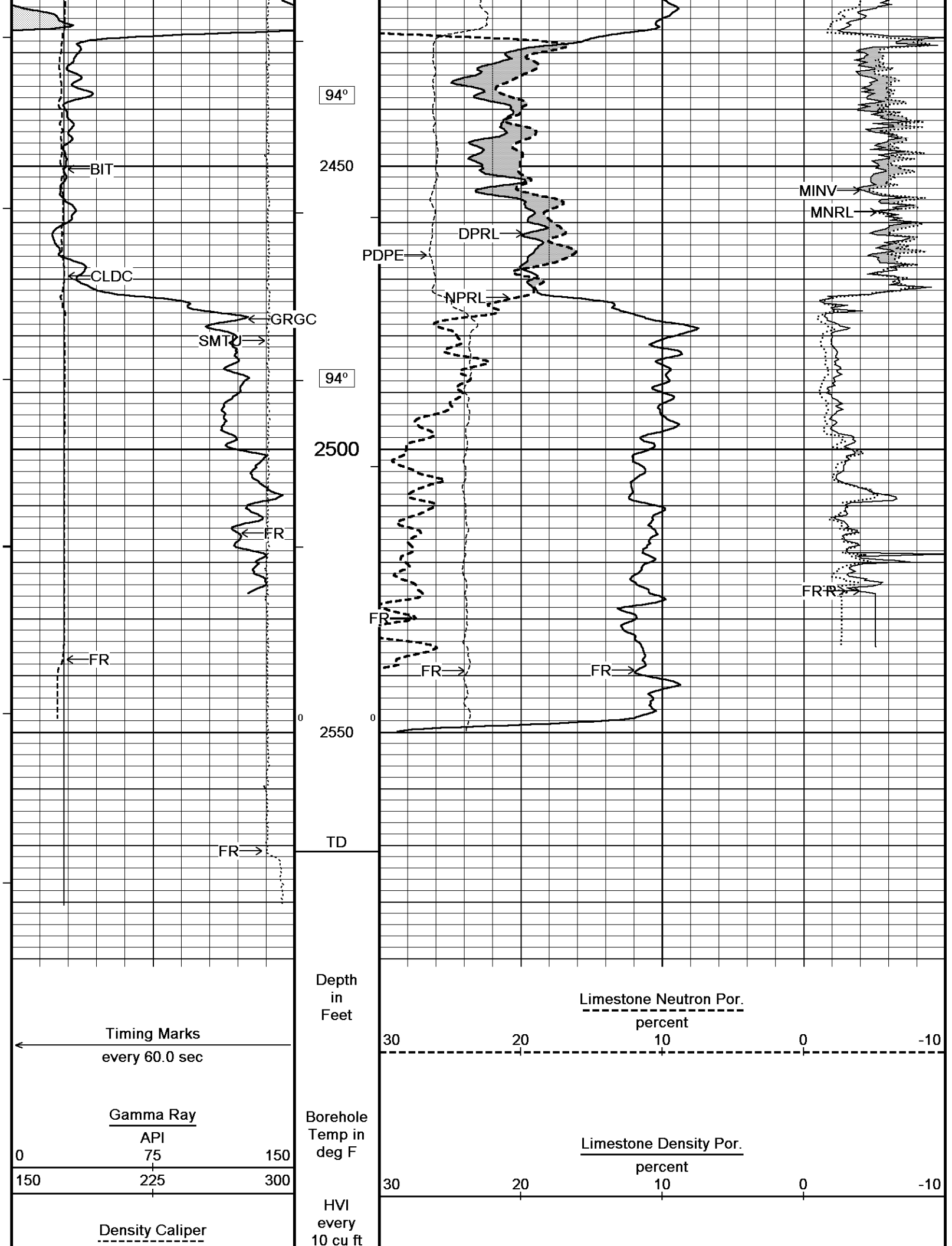
Replay
Scale
1:240

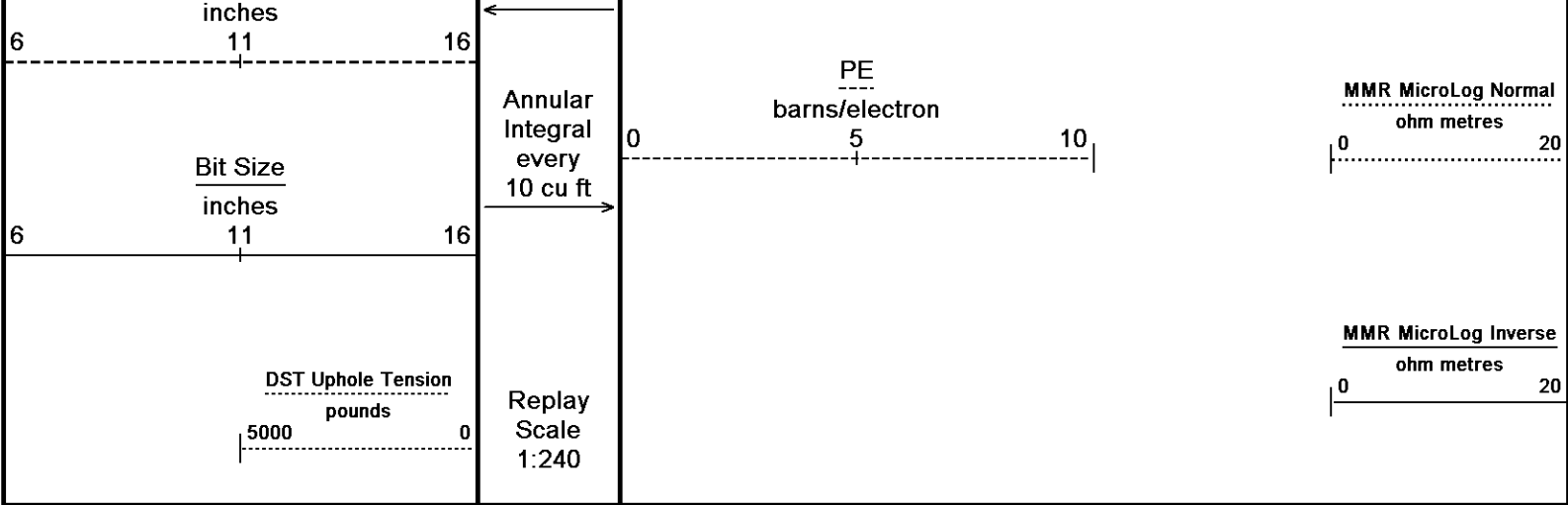
0 ohm metres 20



2220
2250
100
93°
2300
93°
2350
94°
2400



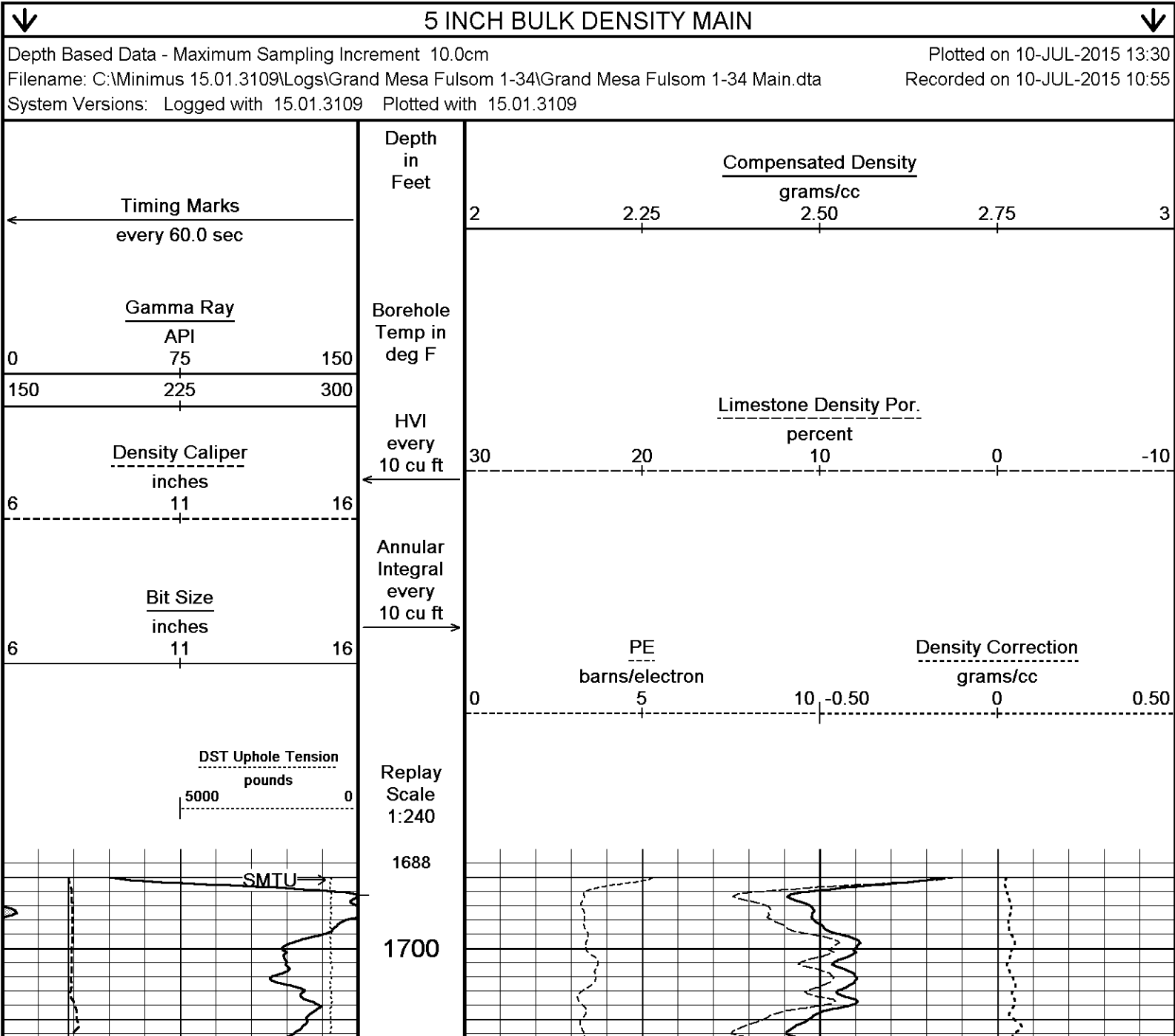


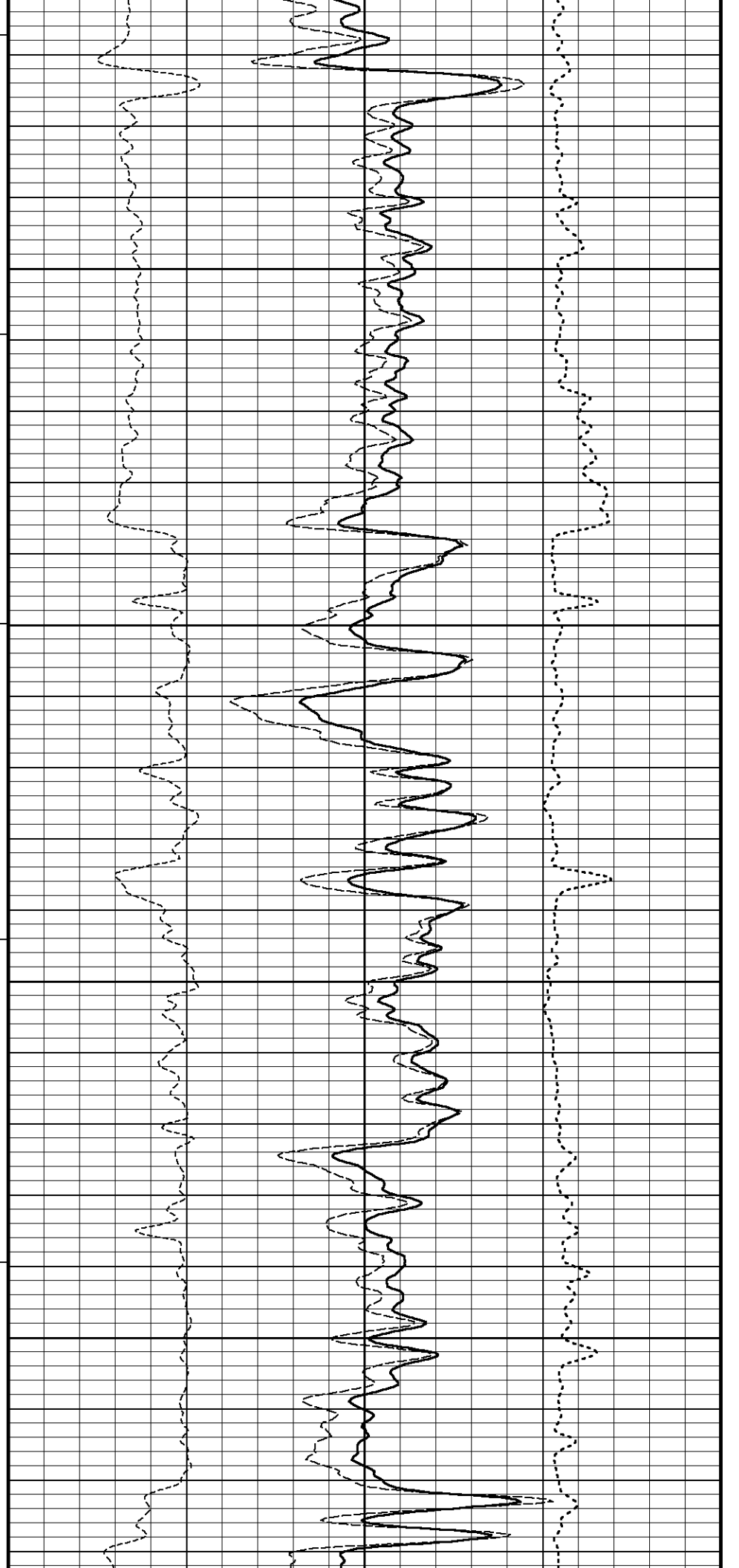
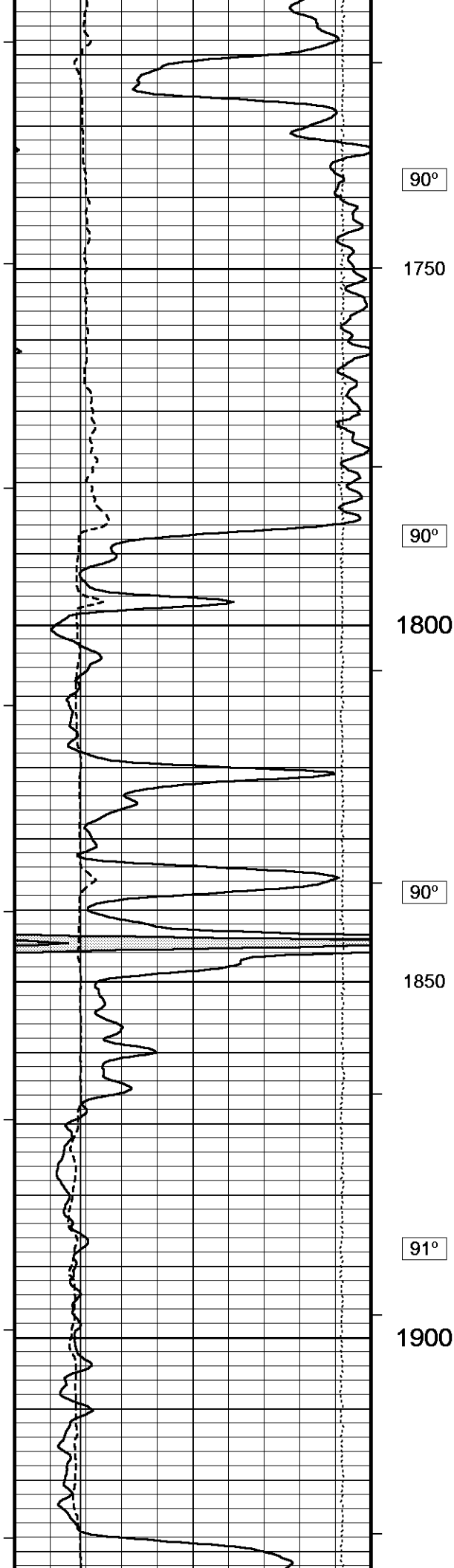


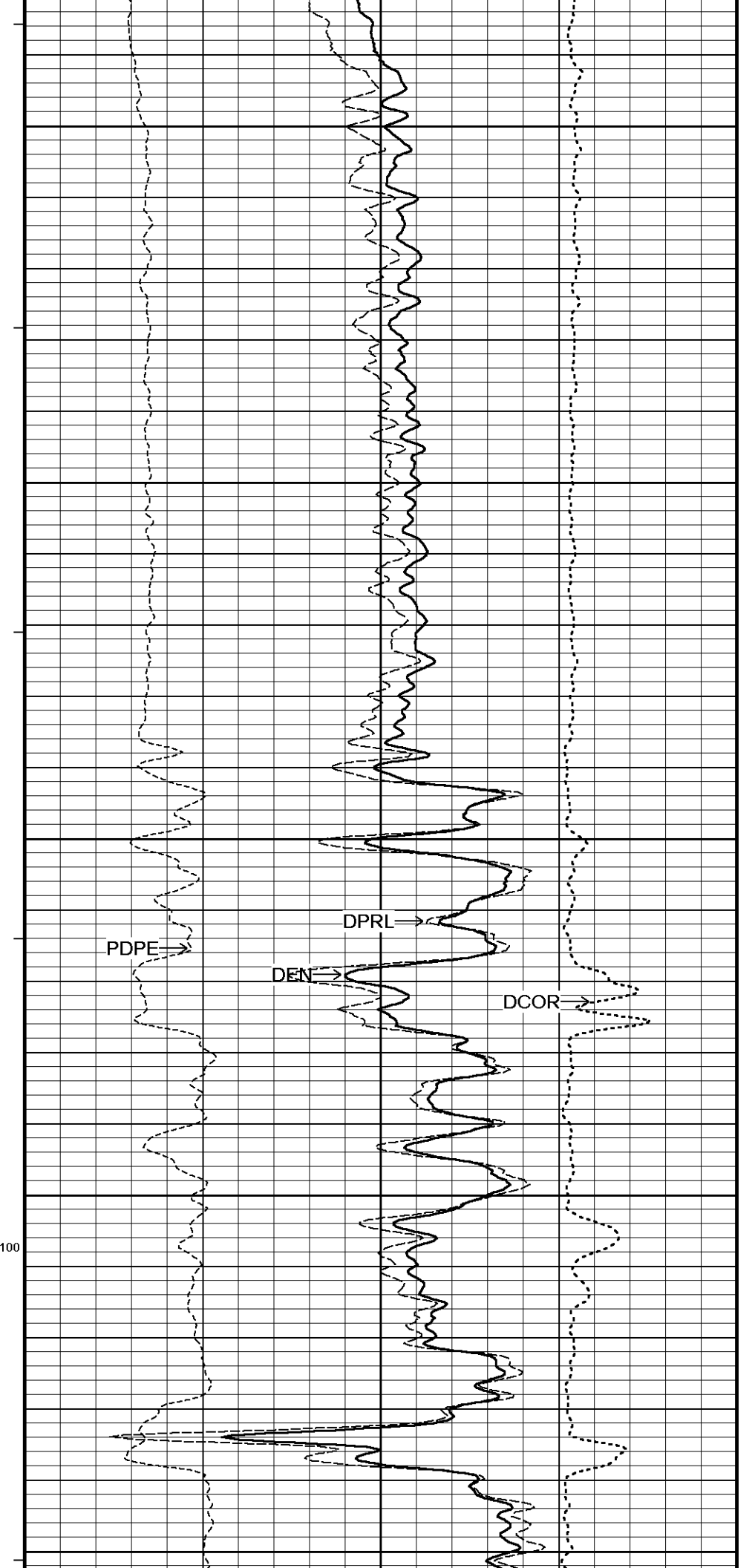
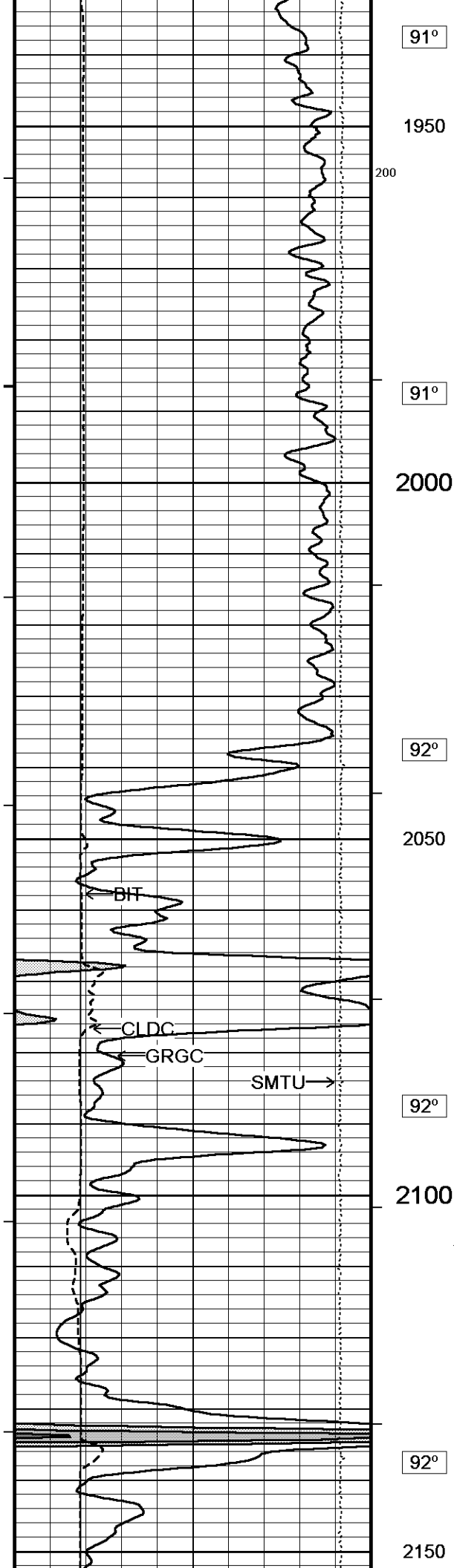
Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus 15.01.3109\Logs\Grand Mesa Fulsom 1-34\Grand Mesa Fulsom 1-34 Repeat.dta
System Versions: Logged with 15.01.3109 Plotted with 15.01.3109

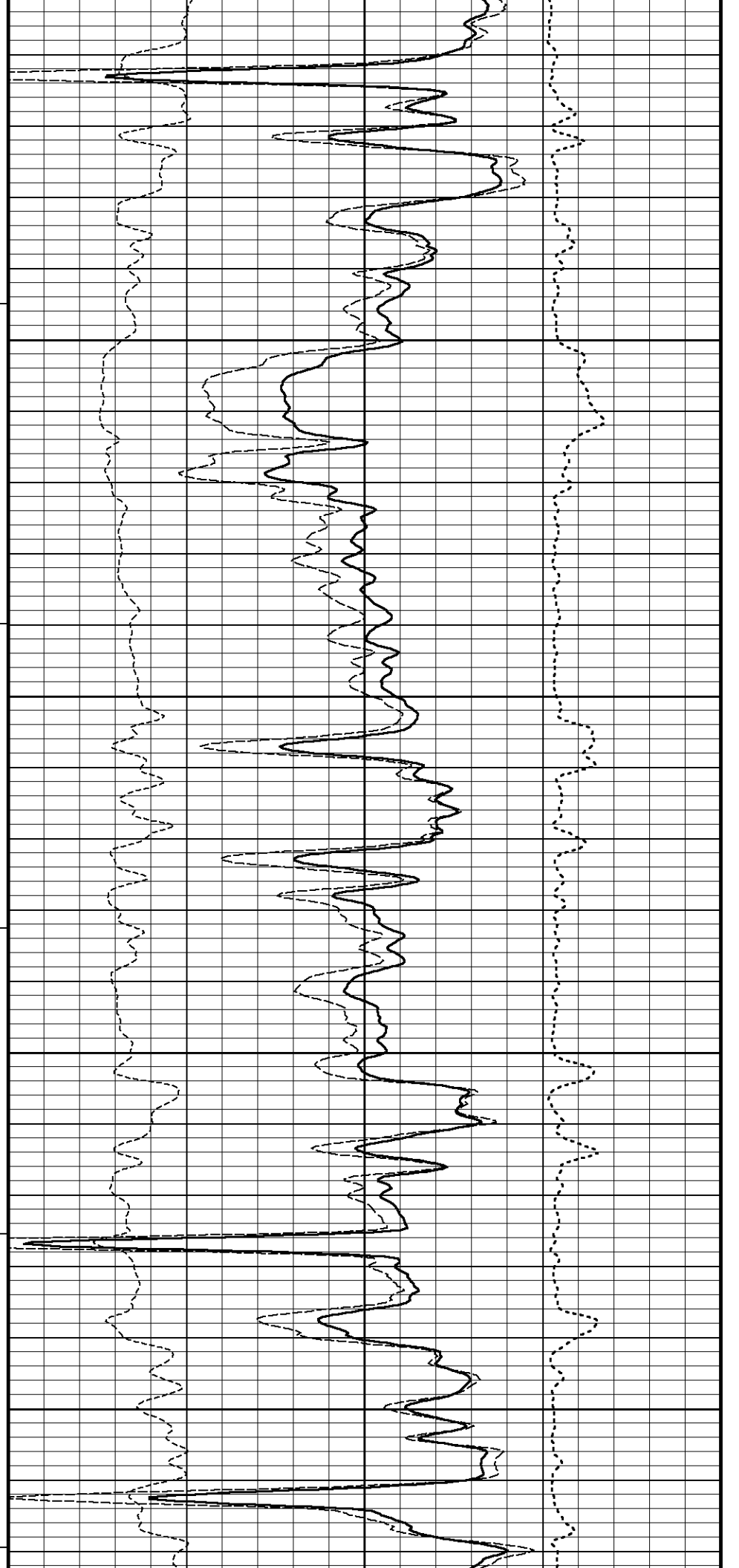
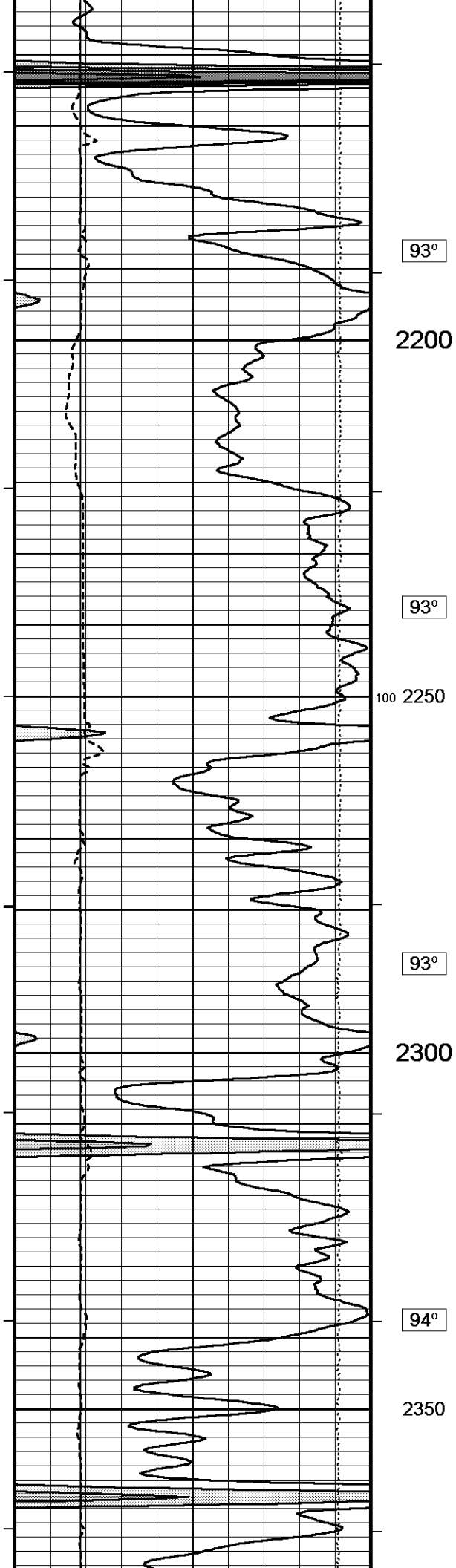
Plotted on 10-JUL-2015 13:30
Recorded on 10-JUL-2015 10:36

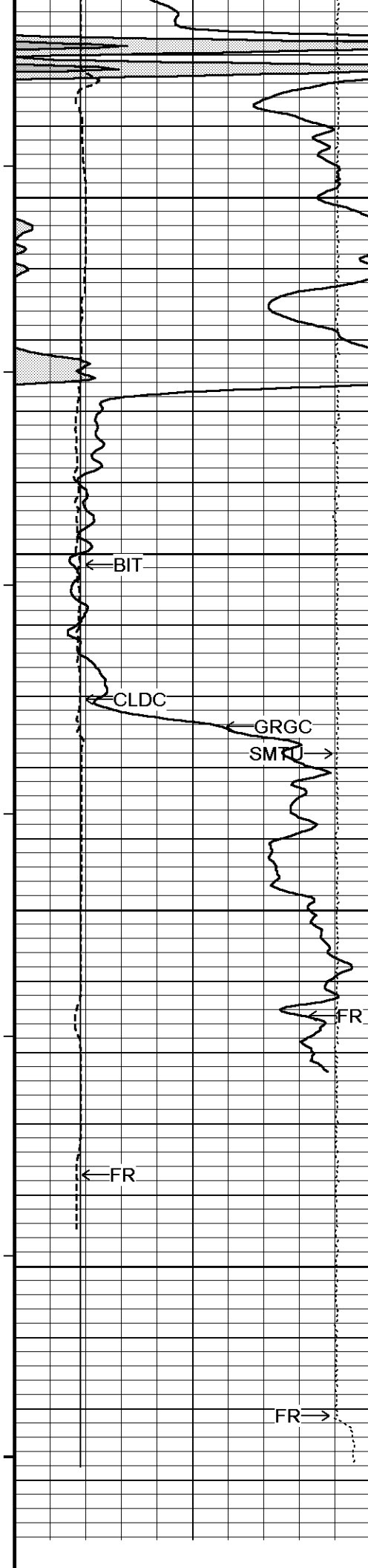
↑ REPEAT SECTION ↑



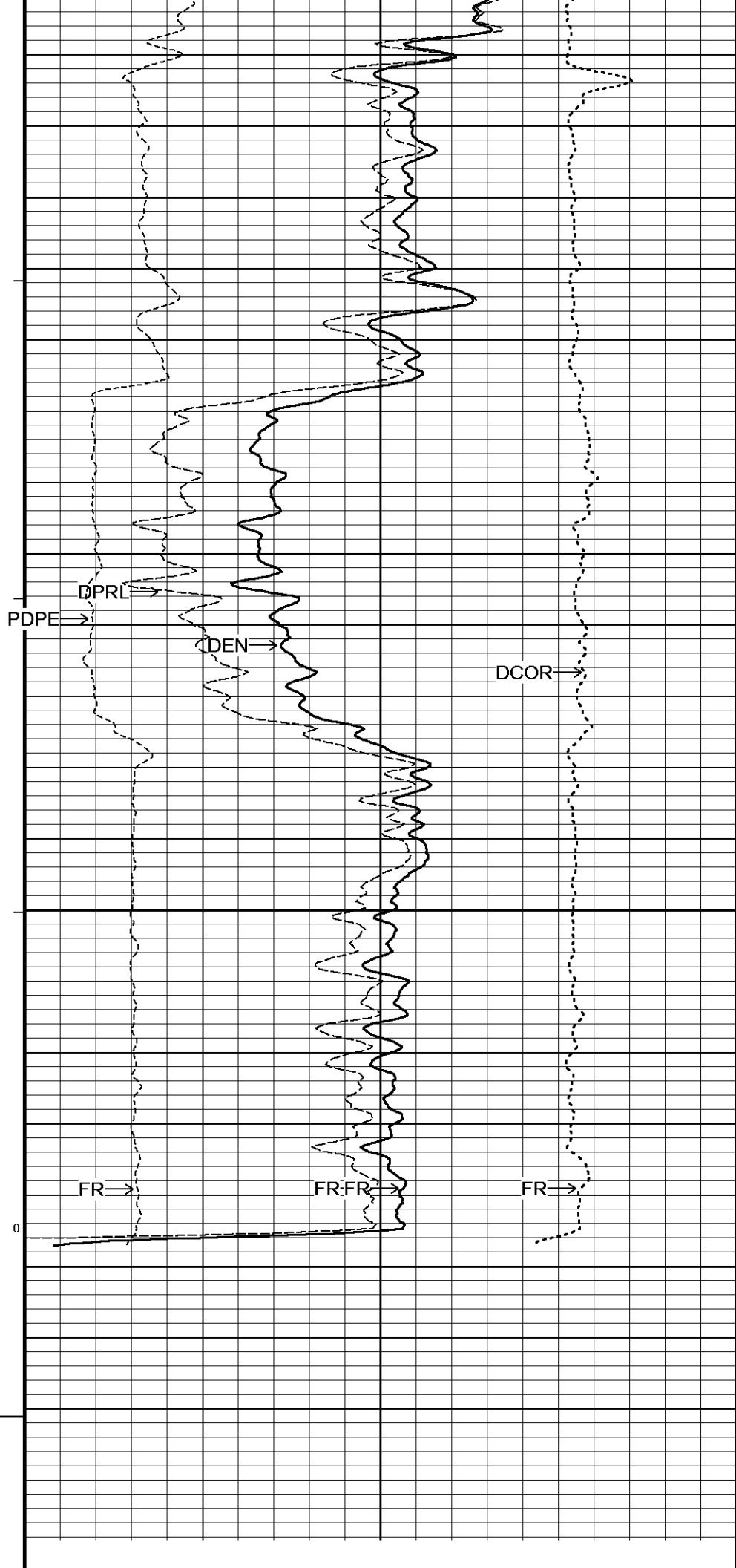


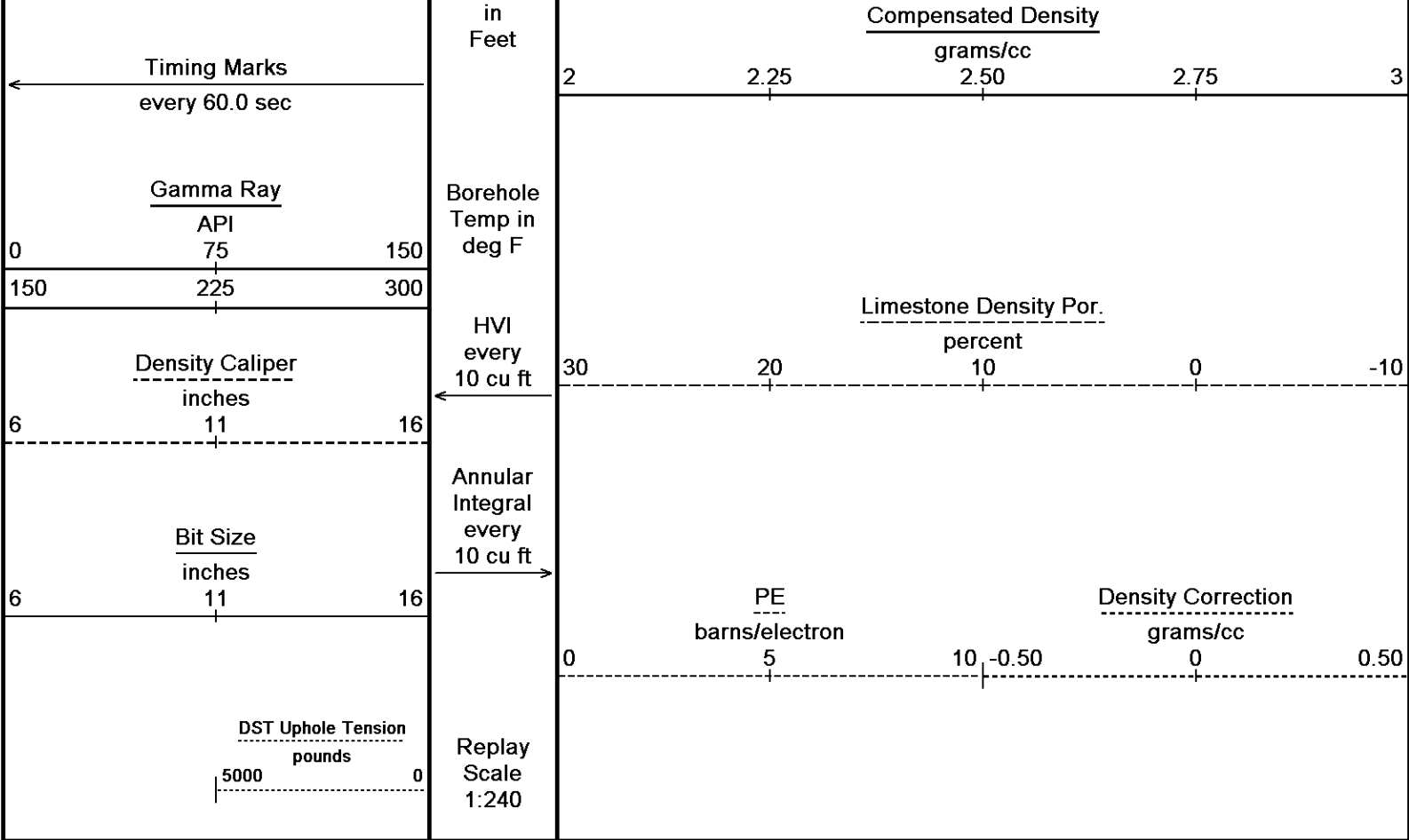






94°
2400
94°
2450
94°
2500
0
2550
TD
Depth



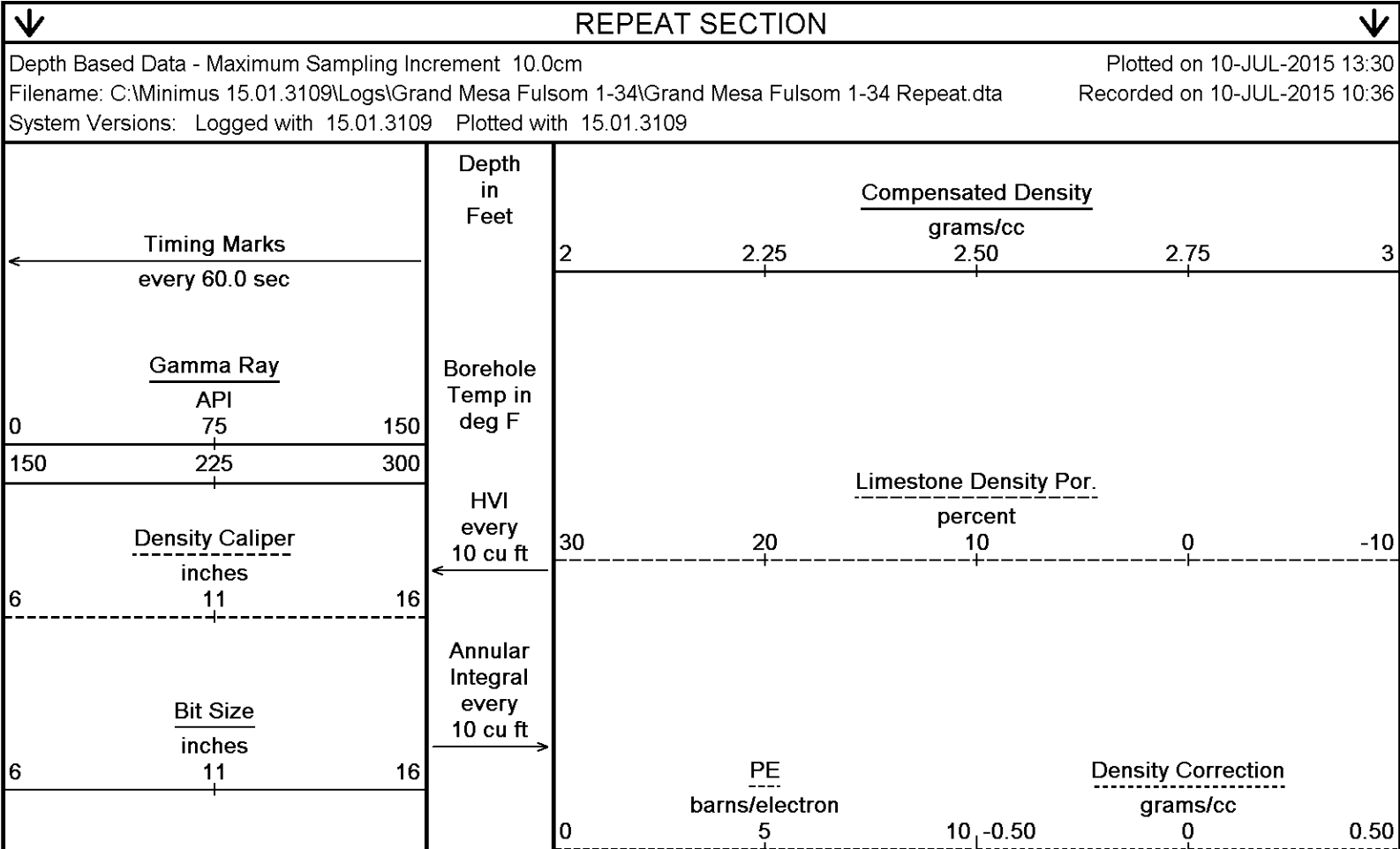


Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 10-JUL-2015 13:30

Filename: C:\Minimus 15.01.3109\Logs\Grand Mesa Fulsom 1-34\Grand Mesa Fulsom 1-34 Main.dta Recorded on 10-JUL-2015 10:55

System Versions: Logged with 15.01.3109 Plotted with 15.01.3109

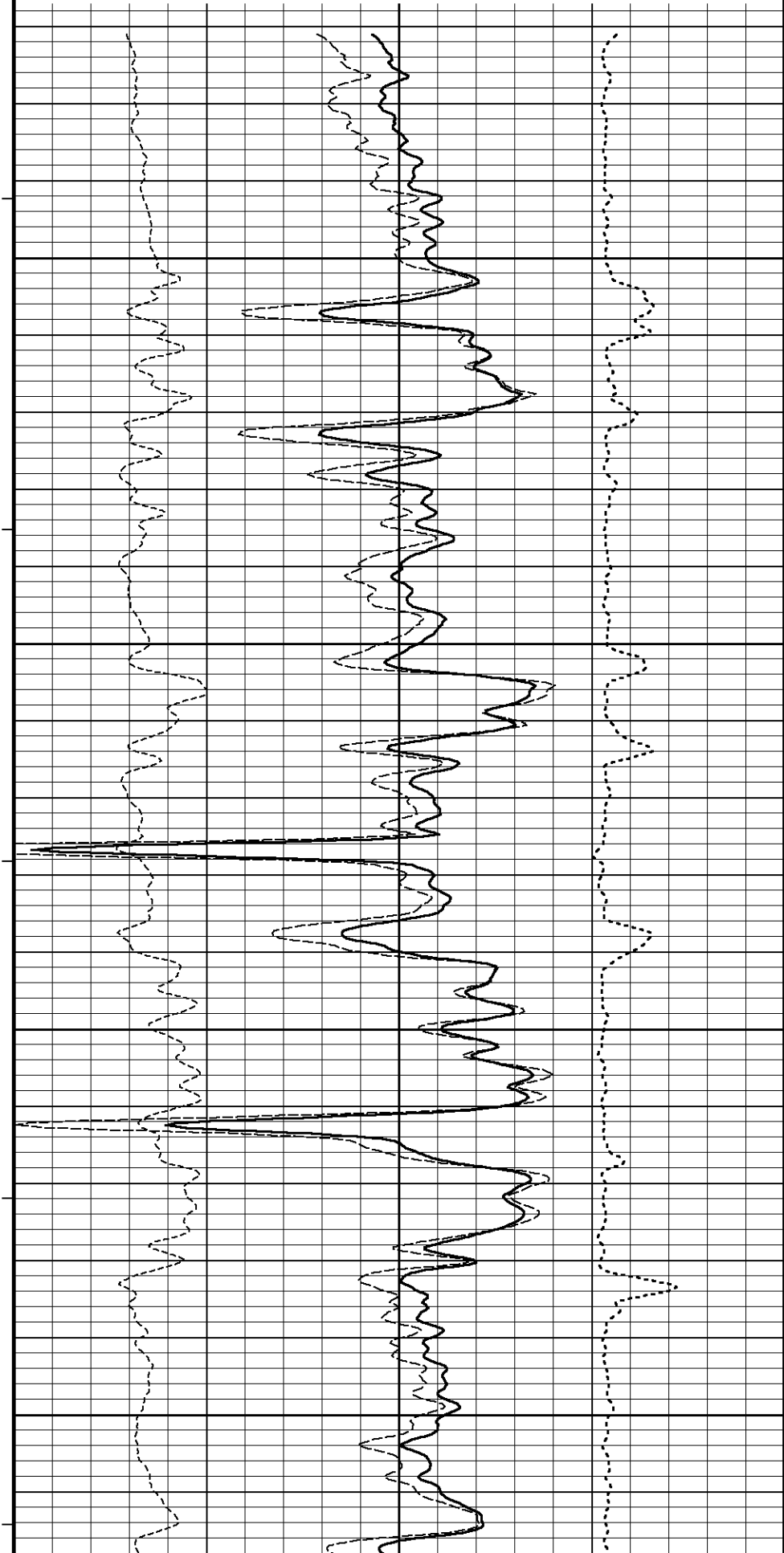
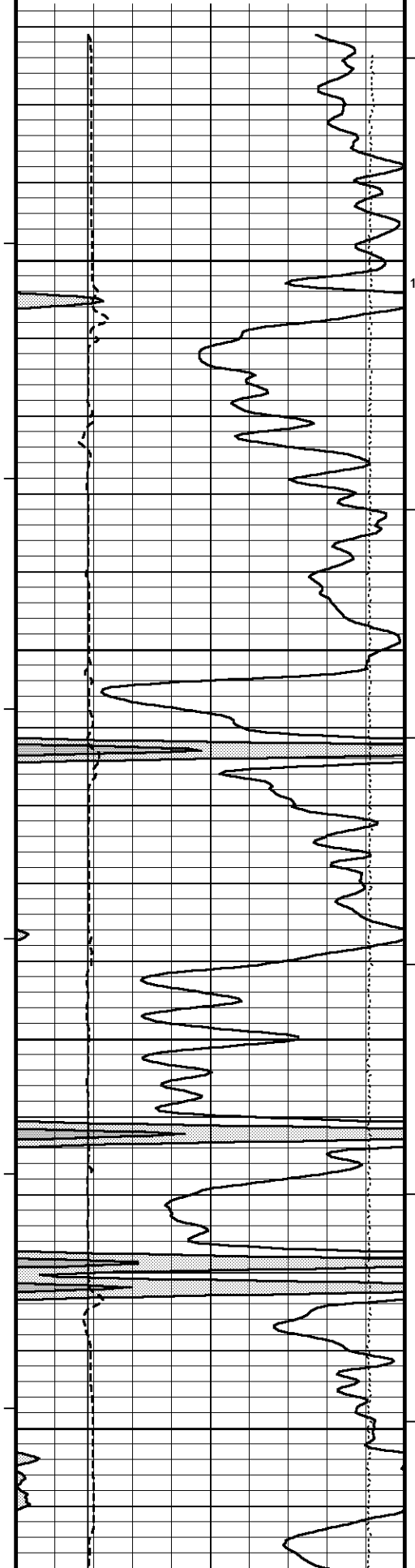
↑ 5 INCH BULK DENSITY MAIN ↑

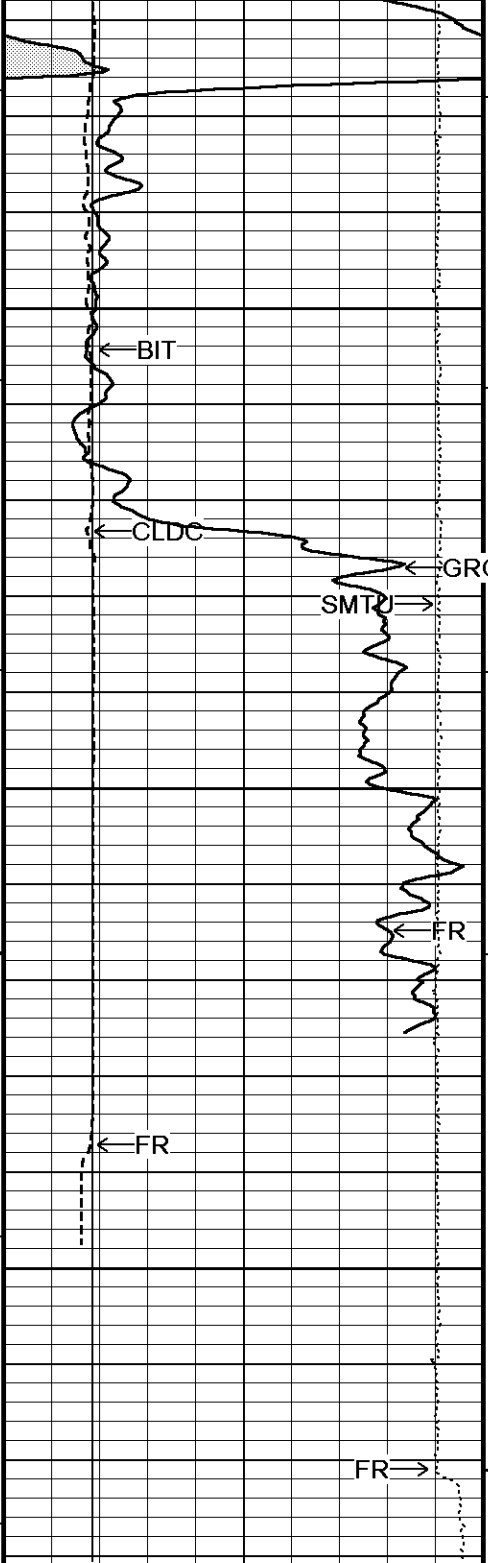


DST Uphole Tension
pounds
5000 0

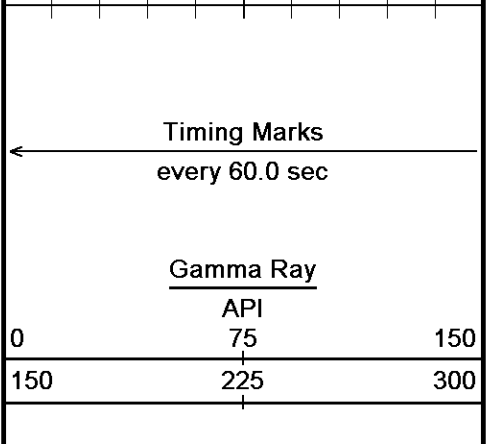
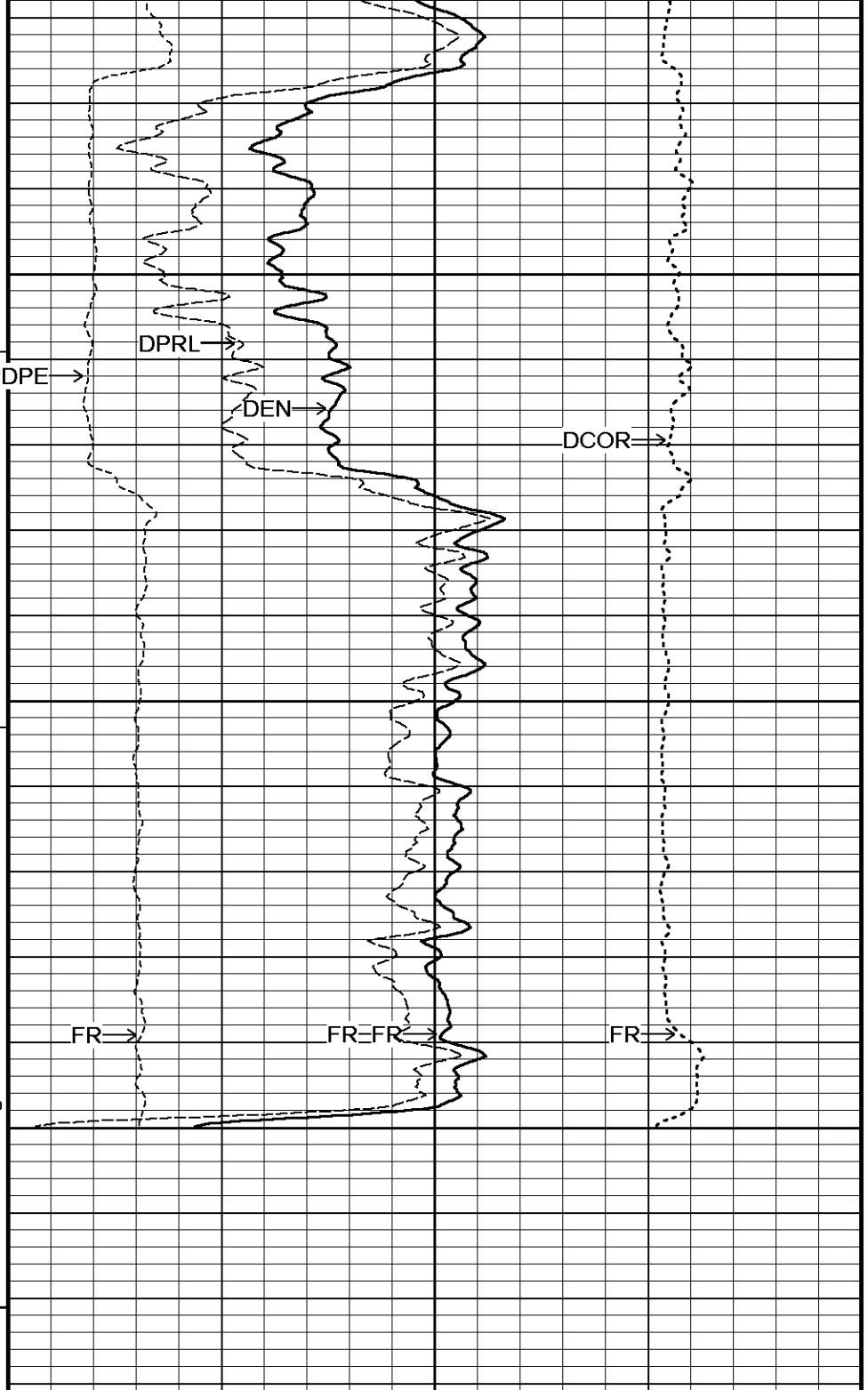
Replay
Scale
1:240

2220
2250
100
93°
2300
93°
2350
94°
2400

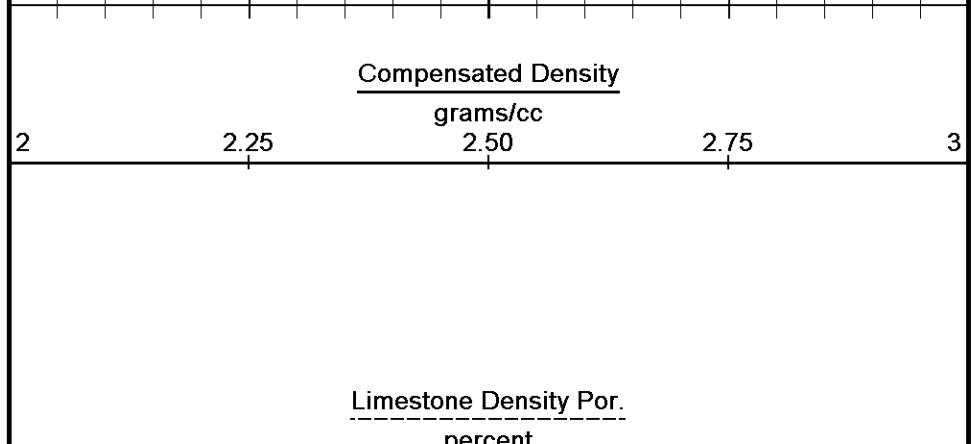


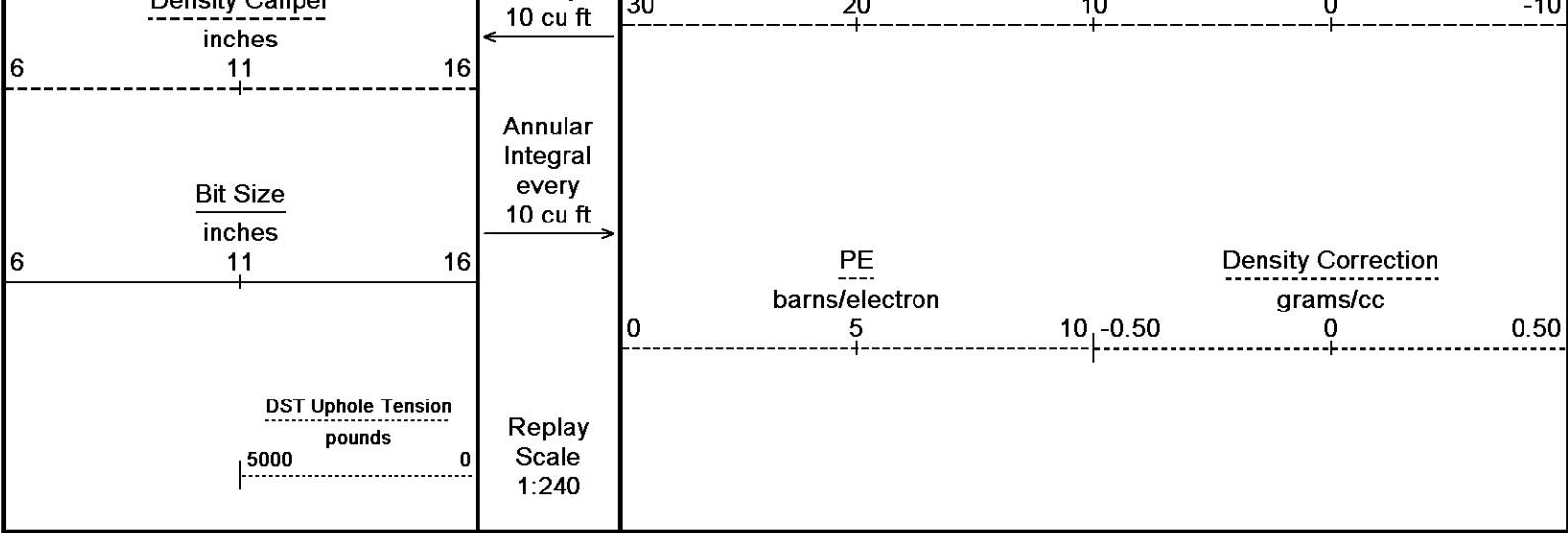


94°
2450
94°
2500
2550
0
TD



Depth in Feet
Borehole Temp in deg F
HVI every





Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus 15.01.3109\Logs\Grand Mesa Fulsom 1-34\Grand Mesa Fulsom 1-34 Repeat.dta
System Versions: Logged with 15.01.3109 Plotted with 15.01.3109

↑ REPEAT SECTION ↑

BEFORE SURVEY CALIBRATION
C:\Minimus 15.01.3109\Logs\Grand Mesa Fulsom 1-34\Grand Mesa Fulsom 1-34 Repeat.dta

General Constants All 000			Last Edited on 10-JUL-2015,10:00
General Parameters			
Mud Resistivity	2.300	ohm-metres	
Mud Resistivity Temperature	75.000	degrees F	
Water Level	0.000	feet	
Borehole Fluid Processing	Wet Hole		
Hole/Annular Volume and Differential Caliper Parameters			
HVOL Method	Single Caliper		
HVOL Caliper 1	Density Caliper		
HVOL Caliper 2	N/A		
Annular Volume Diameter	4.500	inches	
Caliper for Differential Caliper	MMR Caliper		
Rwa Parameters			
Porosity used	Base Density Porosity		
Resistivity used	Array Ind. One Res Rt		
RWA Constant A	0.610		
RWA Constant M	2.150		
SW/APOR Tool Source	0.000		

High Resolution Temperature Calibration MCG-C 208		Field Calibration on 07-JUL-2015,01:05	
	Measured	Calibrated(Deg F)	
Lower	10.00	10.00	
Upper	100.00	100.00	

High Resolution Temperature Constants MCG-C 208		Last Edited on 07-JUL-2015,01:05	
Pre-filter Length	11		

Gamma Calibration MCG-C 208		Field Calibration on 09-JUL-2015 10:38	
	Measured	Calibrated (API)	
Background	66	45	
Calibrator (Gross)	1129	770	
Calibrator (Net)	1063	725	

Gamma Calibration Tolerances MCG-C 208			
Ratio	1.467		Counts/API

0.00
0.00

0.00

Caliper Calibration MPD-B 103

Base Calibration on 29-JUN-2015 11:07

Field Calibration on 09-JUL-2015 10:08

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	14970	3.99
2	25053	5.98
3	34976	7.97
4	44960	9.86
5	56128	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
7.96	7.97

Caliper Calibration Tolerances MPD-B 103

Short Arm Field Cal. 7.96

7.77	7.97	8.17
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 in

DOWNHOLE EQUIPMENT

C:\Minimus 15.01.3109\Logs\Grand Mesa Fulsom 1-34\Grand Mesa Fulsom 1-34 Repeat.dta

CBH-C, Cablehead, 11 pin

CBH-CB 265 LG: 2.40 ft WT: 24.3 lb OD: 2.244 in

Compact Comms Gamma

MCG-C 208 LG: 8.70 ft WT: 63.9 lb OD: 2.244 in

Compact Micro-Resistivity

MMR-C.A 248 LG: 8.59 ft WT: 81.6 lb OD: 4.882 in

Compact Neutron

MDN-B.J 387 LG: 5.04 ft WT: 50.7 lb OD: 2.244 in

Compact Density/Caliper

MPD-B 103 LG: 9.59 ft WT: 90.4 lb OD: 2.449 in

Compact Focussed Electric

MFE-A.A 55 LG: 6.05 ft WT: 48.5 lb OD: 2.244 in

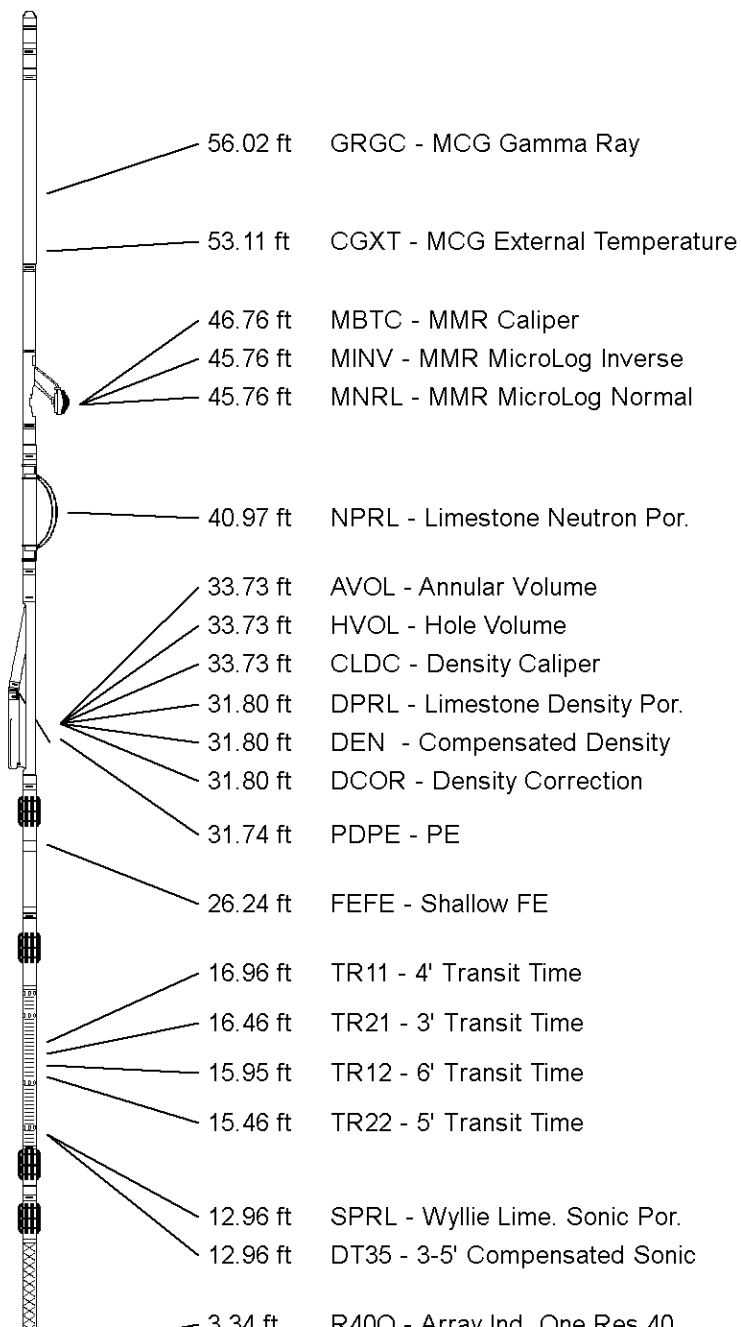
Compact Sonic

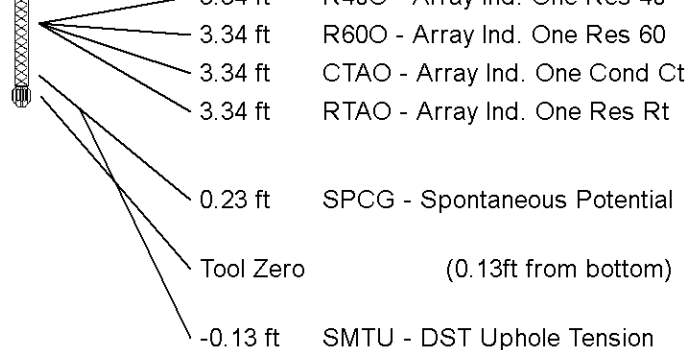
MSS-A.A 55 LG: 12.52 ft WT: 72.8 lb OD: 2.244 in

Compact Induction

MAI-A.A 157 LG: 10.81 ft WT: 48.5 lb OD: 2.244 in

Total Length: 63.70 ft Weight: 480.6 lb





All measurements relative to tool zero.

COMPANY	GRAND MESA OPERATING COMPANY
WELL	FULSOM 1-34
FIELD	WILDCAT
PROVINCE/COUNTY	MARION
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	1499.00	feet	First Reading	2539.00	feet
Elevation Drill Floor	1497.00	feet	Depth Driller	2570.00	feet
Elevation Ground Level	1487.00	feet	Depth Logger	2571.00	feet



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COMPACT PHOTO DENSITY
COMPENSATED NEUTRON
MICRORESISTIVITY LOG