

**Weatherford****COMPENSATED SONIC
WITH INTEGRATED TRANSIT TIME**

COMPANY				GRAND MESA OPERATING COMPANY			
WELL				GLENNIS 4-27			
FIELD				WILDCAT			
PROVINCE/COUNTY				GOVE			
COUNTRY/STATE				U.S.A. / KANSAS			
LOCATION				757' FNL & 2013' FEL			
SEC	TWP	RGE	Other Services		MAI/MFE		
27	13S	31W	MPD/MDN				
API Number		15-063-22054		MML			
Permit Number							
Permanent Datum GL, Elevation 2860 feet							
Log Measured From KB							
Drilling Measured From KB							
Date	12-NOV-2012						
Run Number	ONE						
Service Order	3538947						
Depth Driller	4630.00						
Depth Logger	4630.00						
First Reading	4617.00						
Last Reading	219.00						
Casing Driller	220.00						
Casing Logger	219.00						
Bit Size	7.875						
Hole Fluid Type	CHEMICAL						
Density / Viscosity	9.30 lb/USg		54.00 CP				
PH / Fluid Loss	10.00		10.00				
Sample Source	FLOWLINE						
Rm @ Measured Temp	1.29 @ 64.0						
Rmf @ Measured Temp	1.03 @ 64.0						
Rmc @ Measured Temp	1.55 @ 64.0						
Source Rmf / Rmc	CALC	CALC					
Rm @ BHT	0.72 @120.0		ohm-m				
Time Since Circulation	6 HOURS						
Max Recorded Temp	120.00						
Equipment / Base	13057		LIB				
Recorded By	ADAM SILL						
Witnessed By	KENT MATSON						
JOB #	LB12-296						

BOREHOLE RECORD

Last Edited: 12-NOV-2012 01:36

Bit Size inches	Depth From feet	Depth To feet
7.875	211.00	4630.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	211.00	24.00

REMARKS

- SOFTWARE ISSUE: WLS 13.04.8492.
- MCG, MML, MDN, MPD, MFE, MSS, MAI RAN 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: 1893 CU. FT.
- ANNULAR HOLE VOLUME WITH 5.5 INCH PRODUCTION CASING FROM TD TO 3630 FEET: 235 CU. FT.

- SERVICE ORDER # 3538947.
- RIG: MURFIN #24.
- ENGINEER: A. SILL.
- OPERATOR(S): B. REEVES.

All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions in our price schedule.

↓

5 INCH MAIN

↓

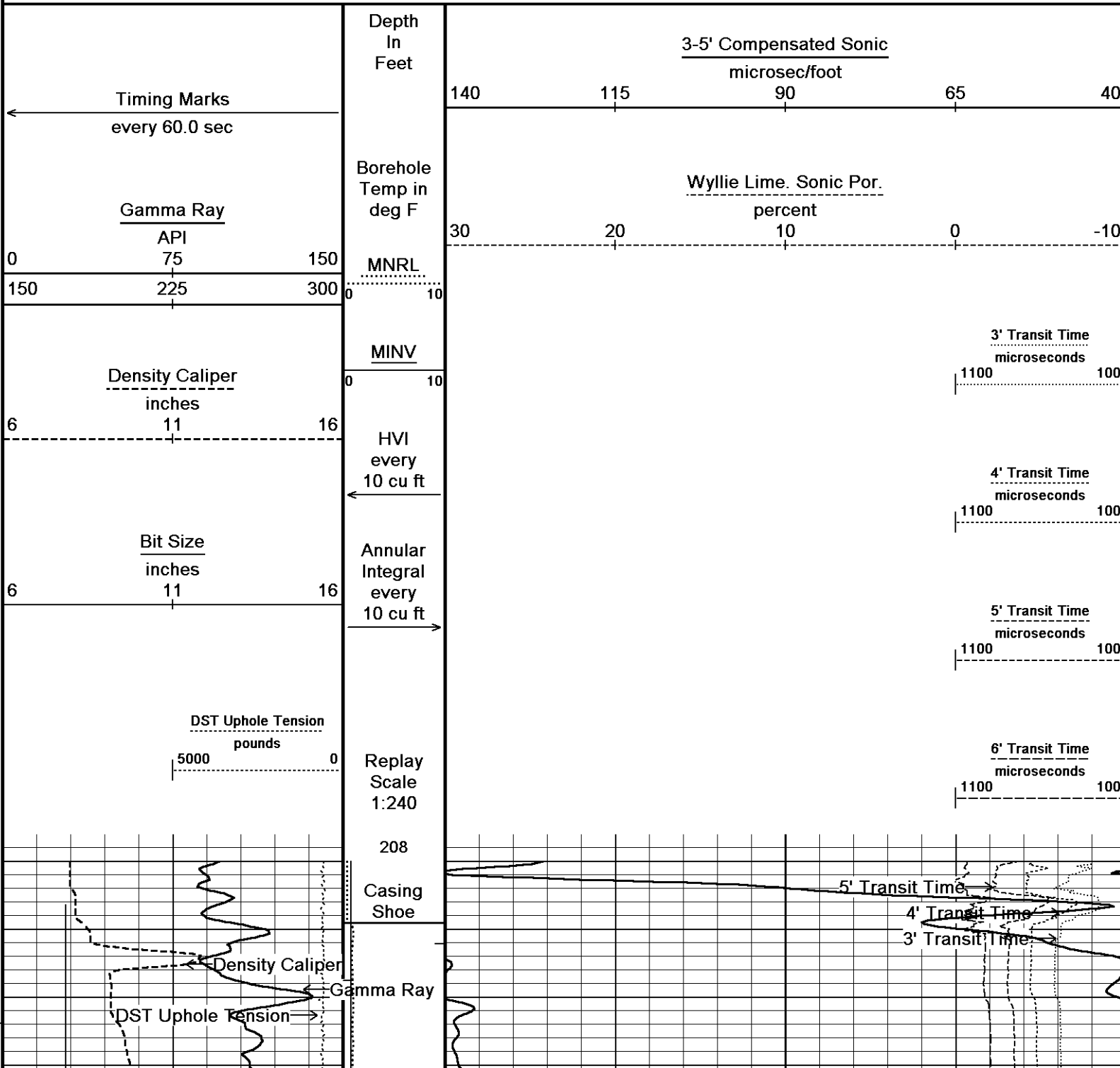
Depth Based Data - Maximum Sampling Increment 10.0cm

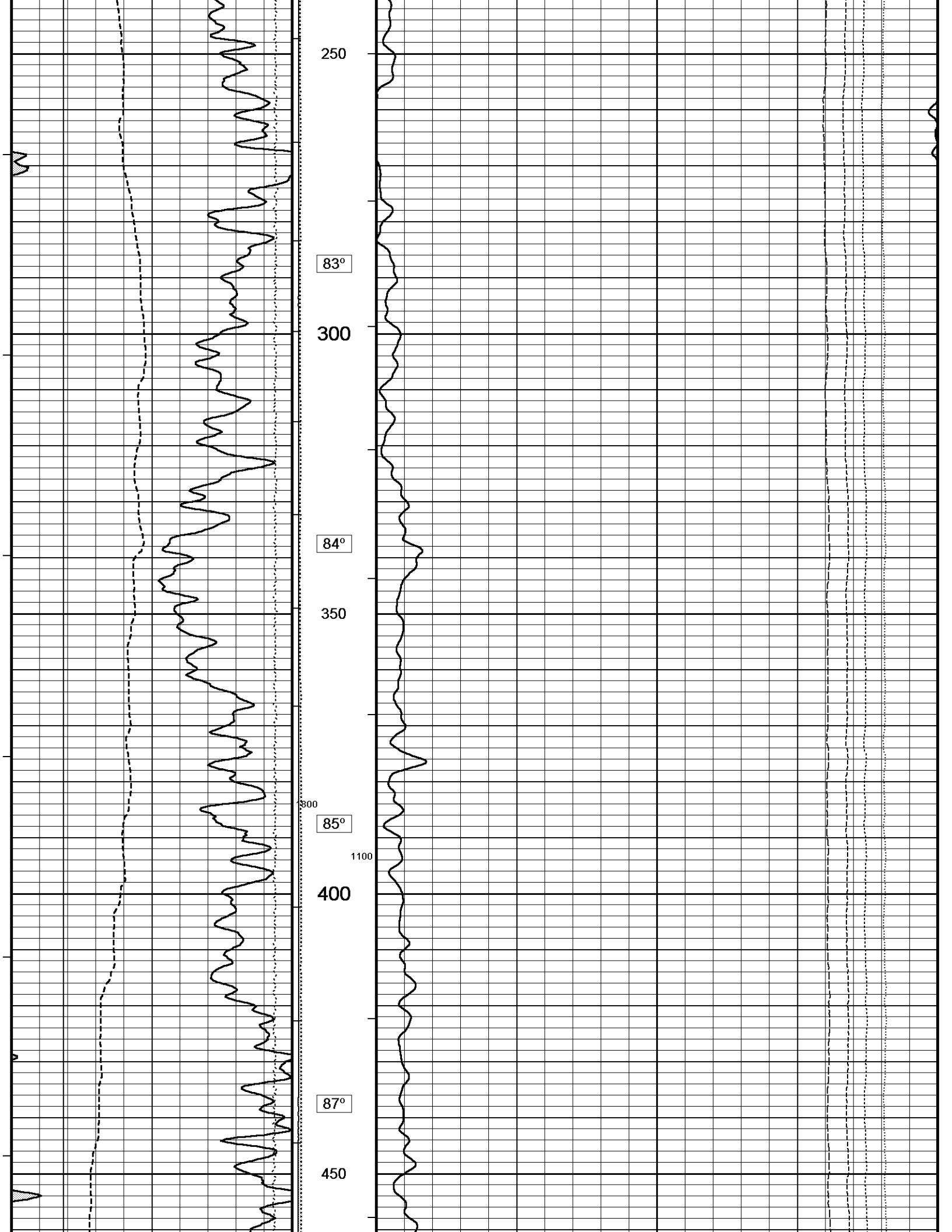
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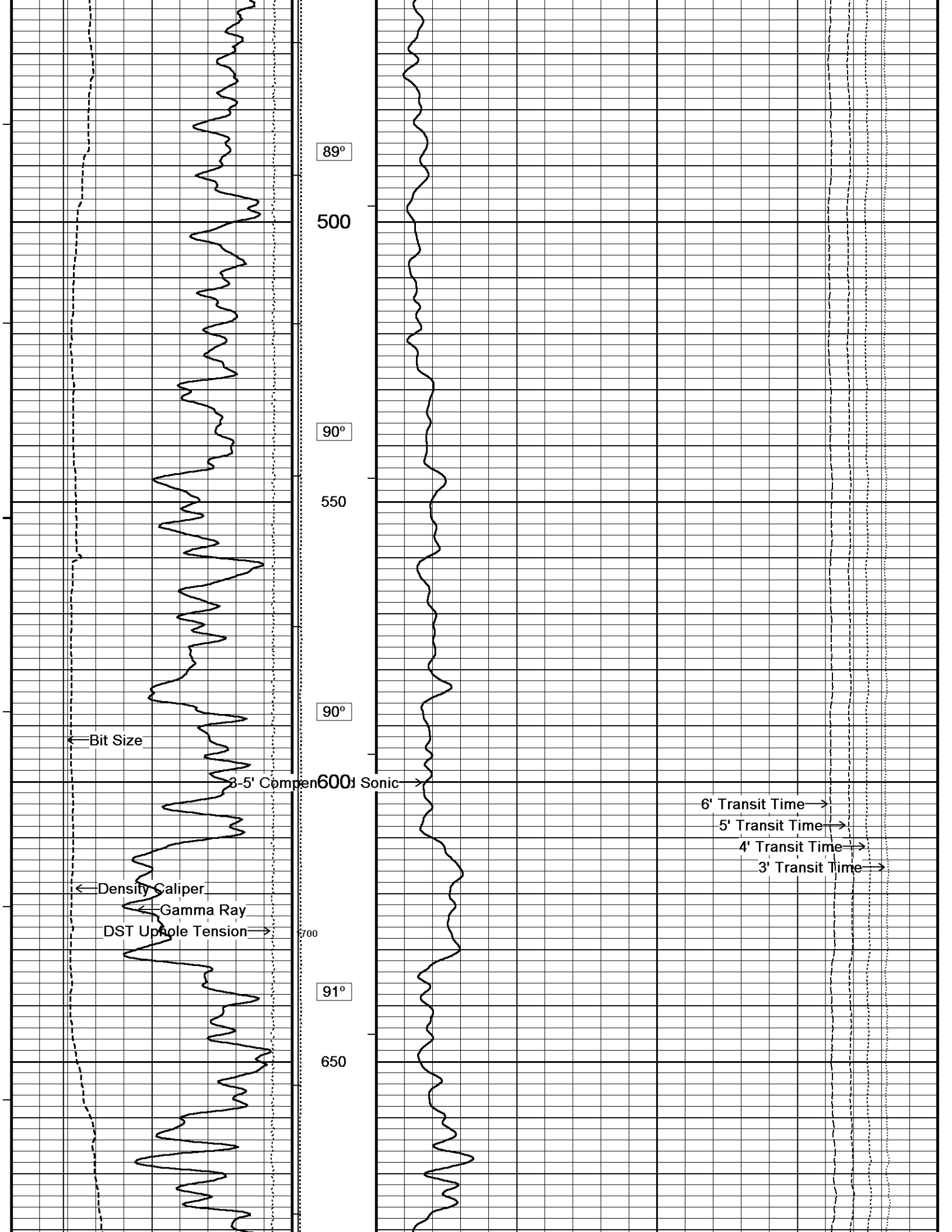
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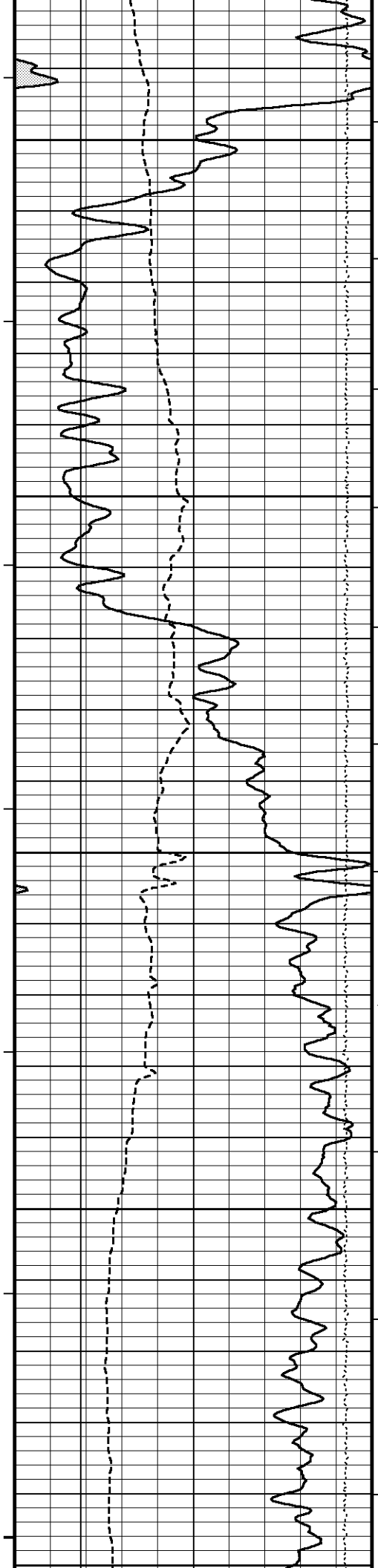
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System Versions: Logged with 13.04.8492 Plotted with 13.04.8492

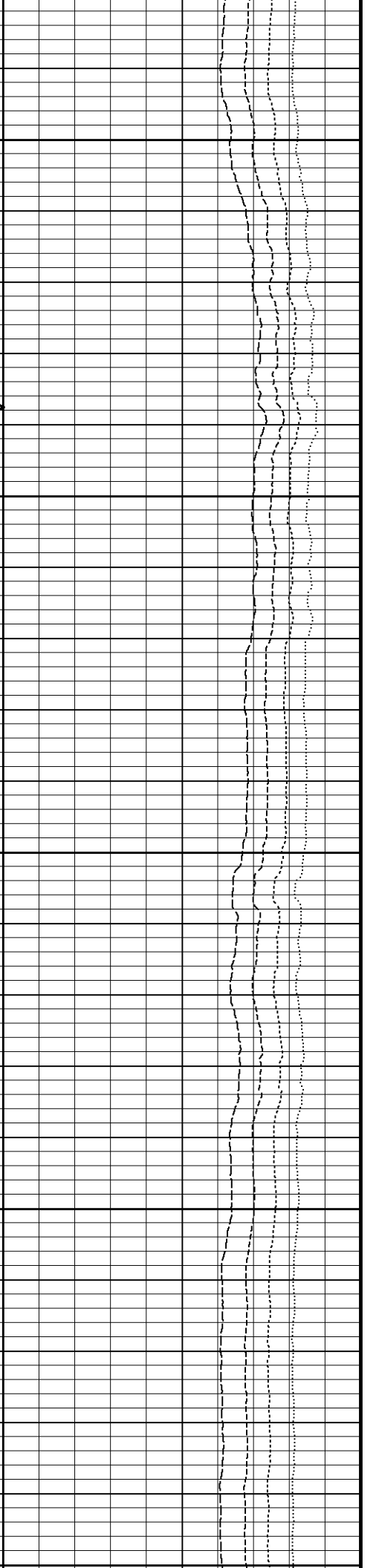
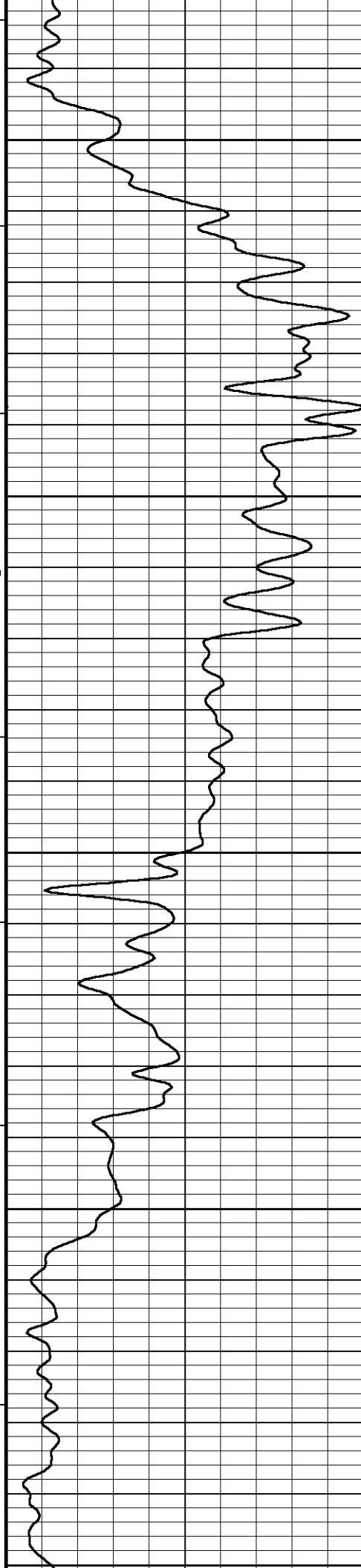


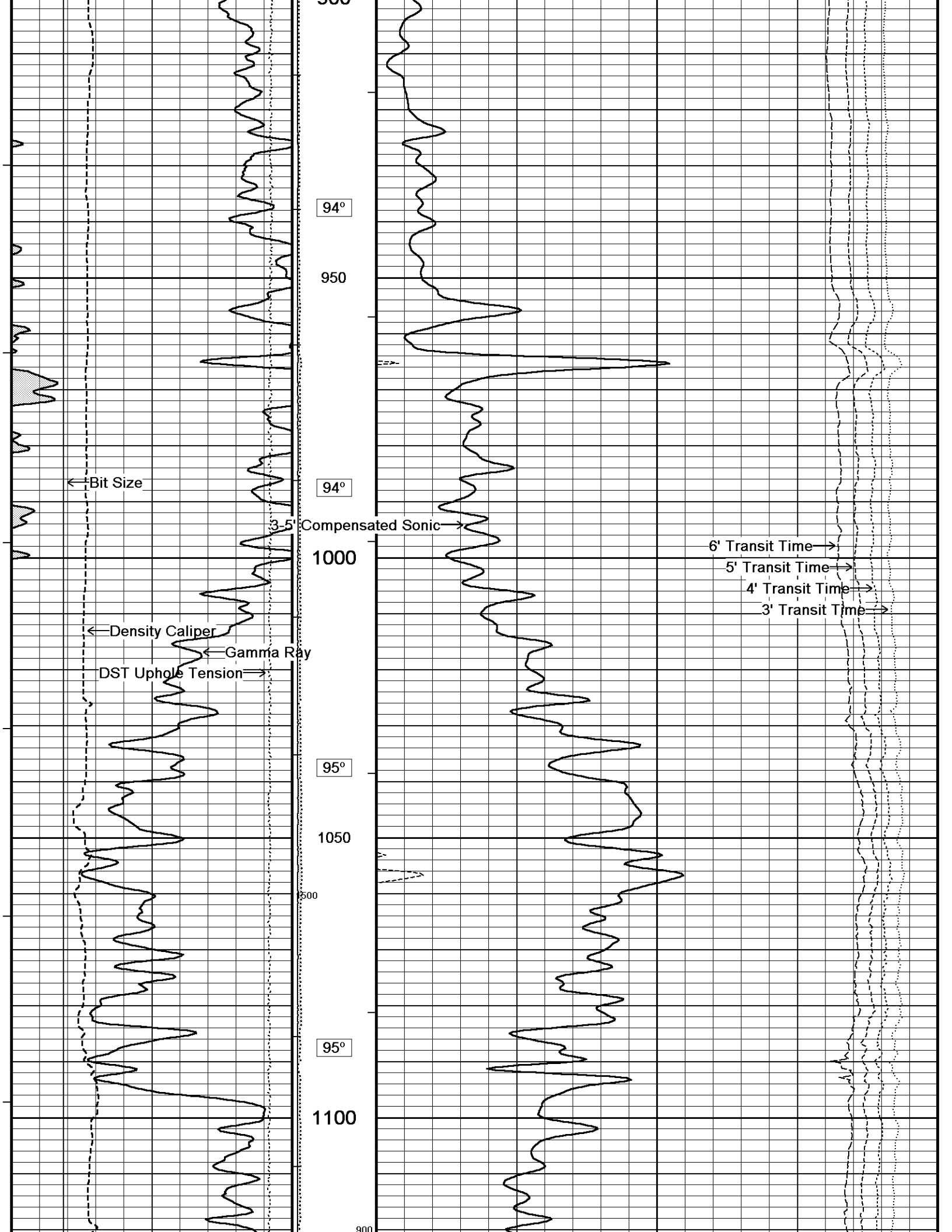


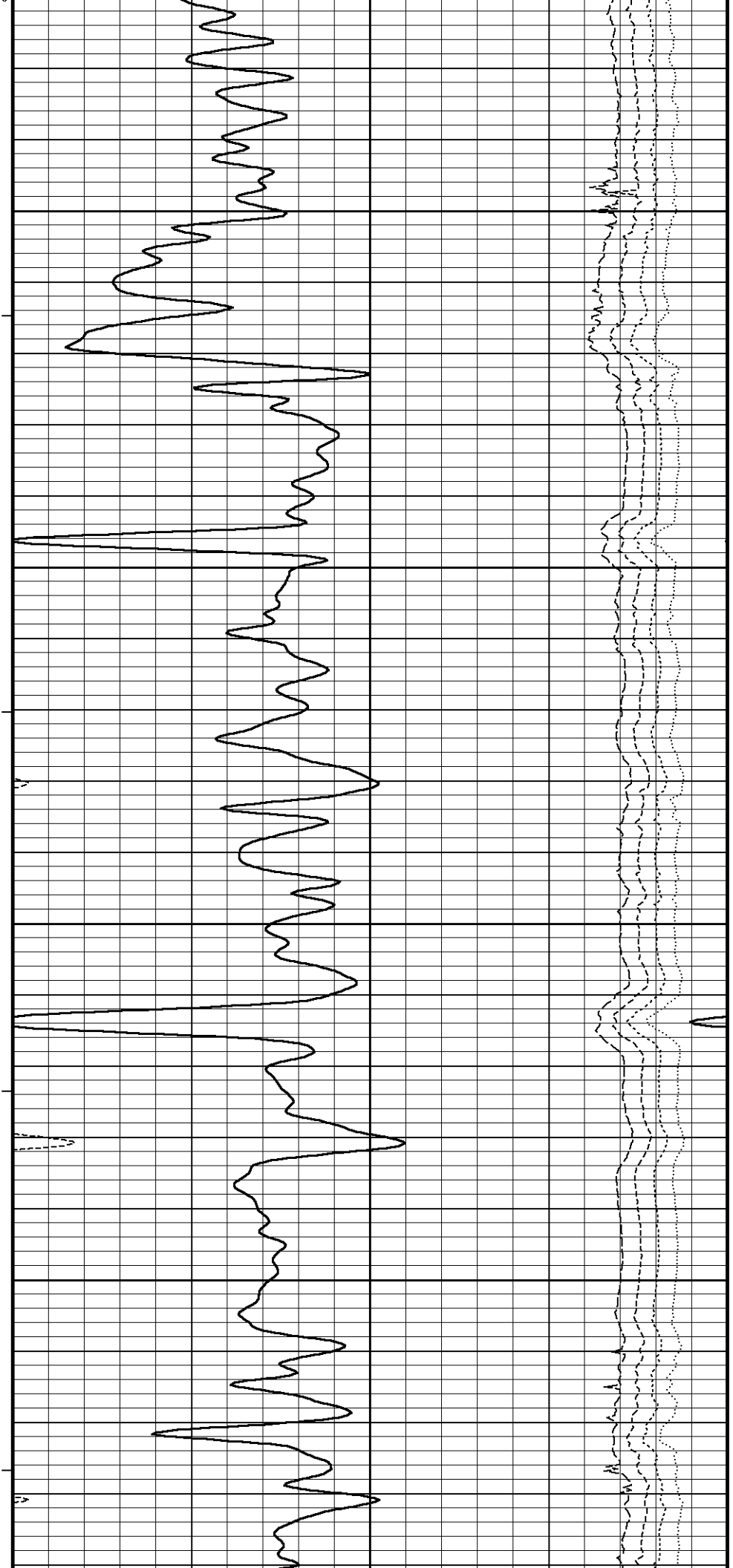
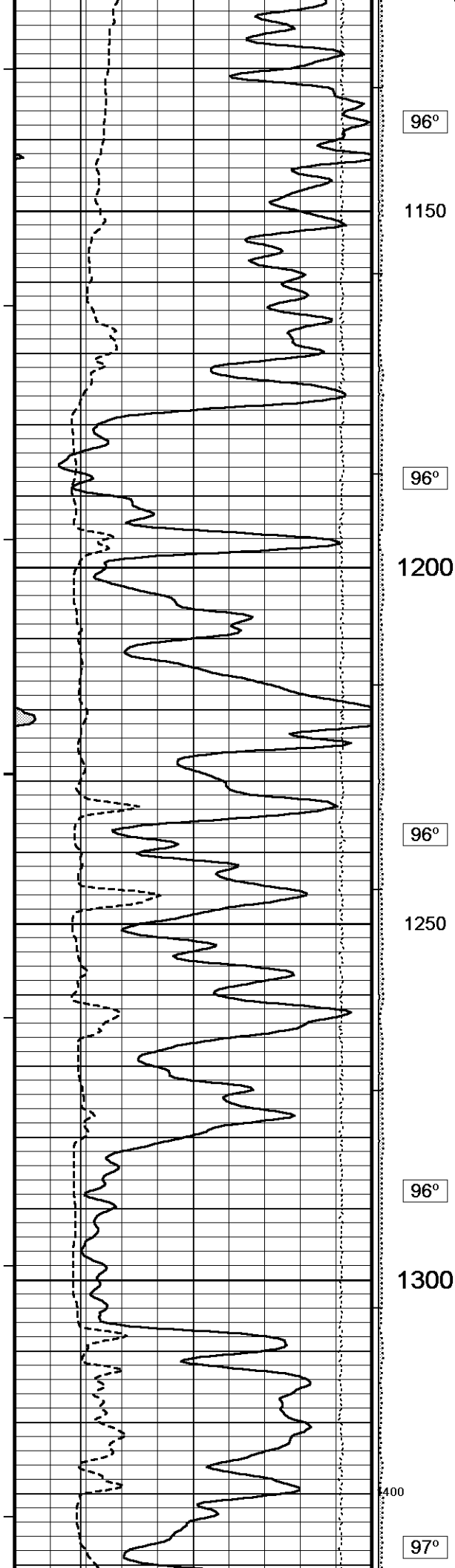


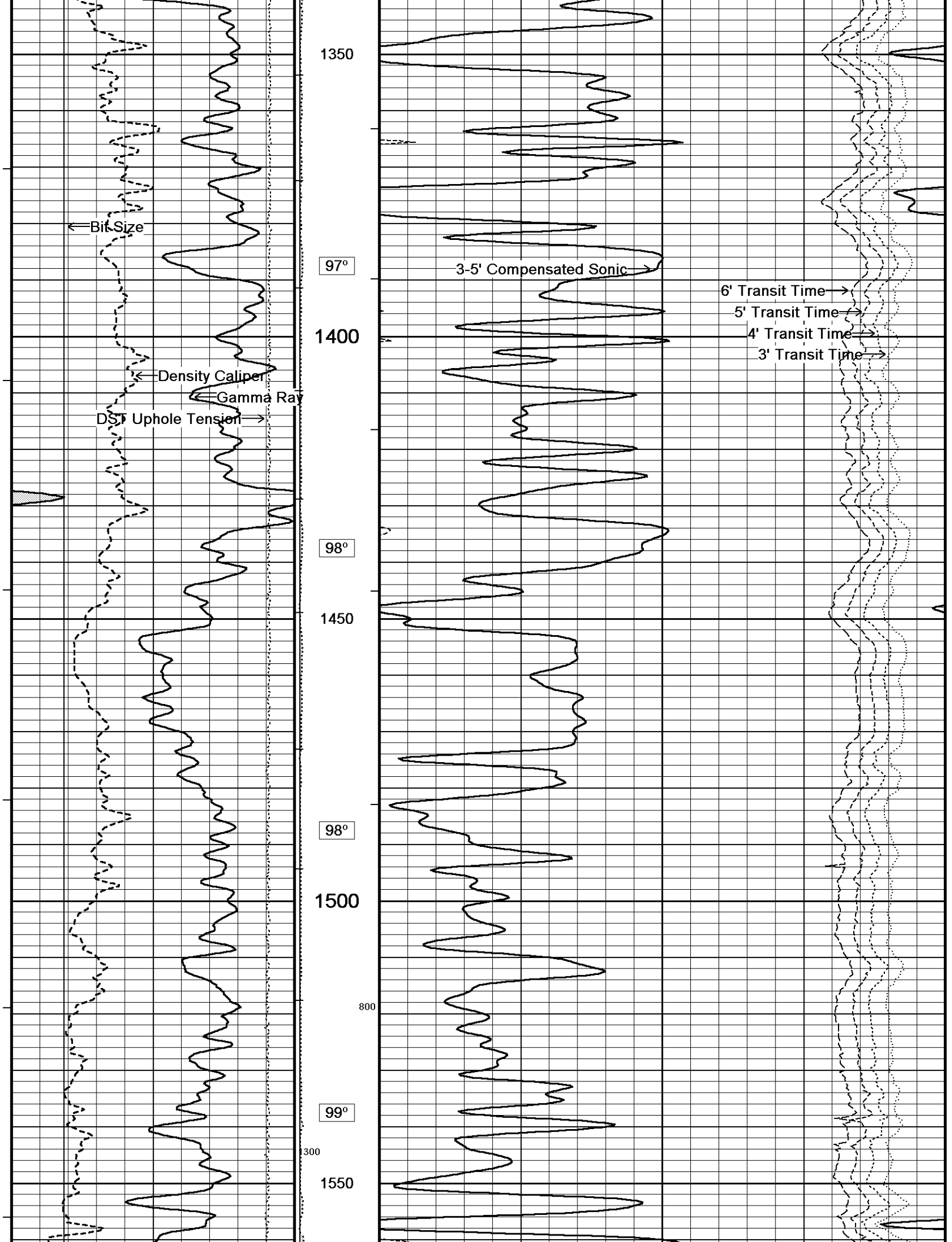


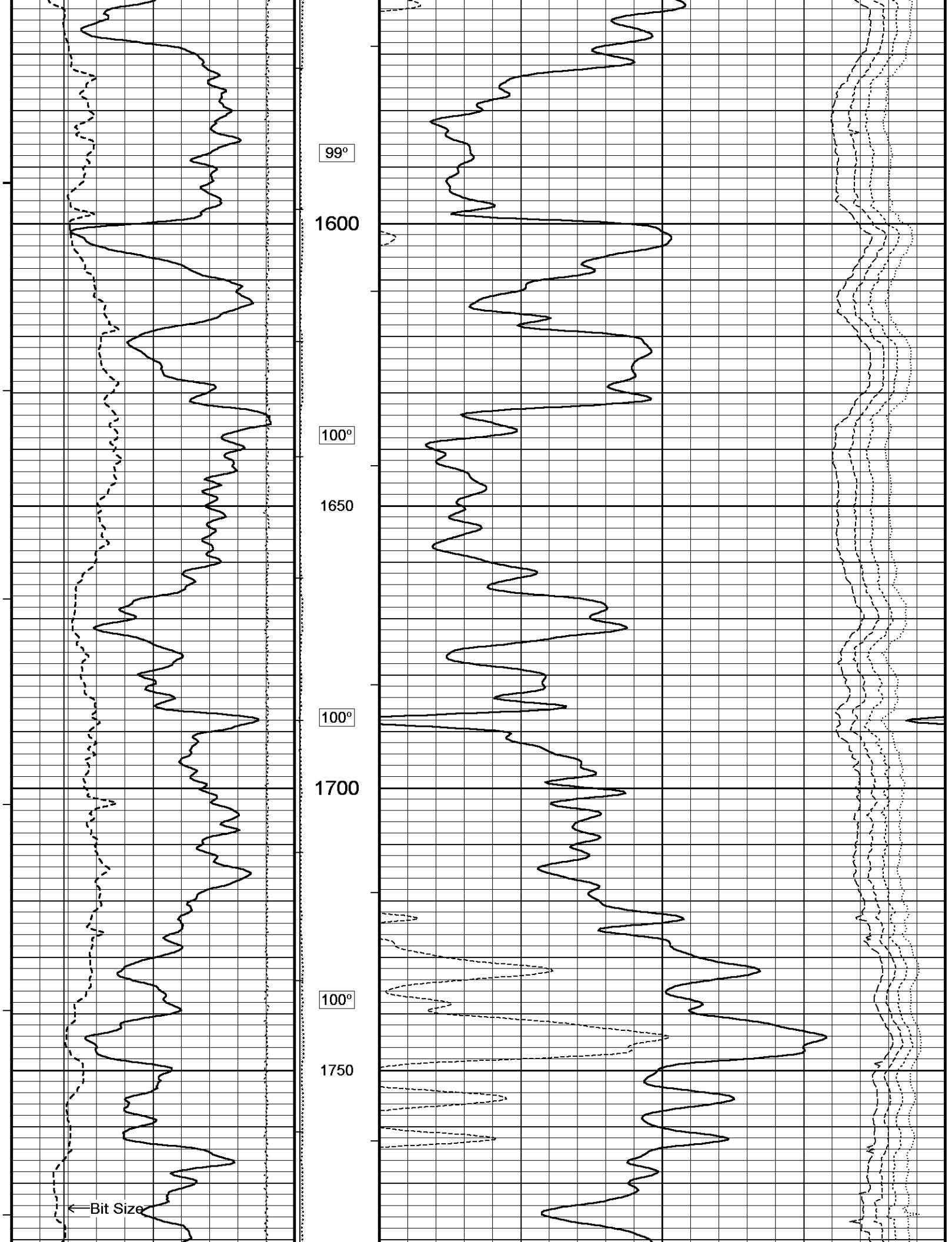
91°
700
91°
750
1000
92°
800
600
93°
850
93°
900

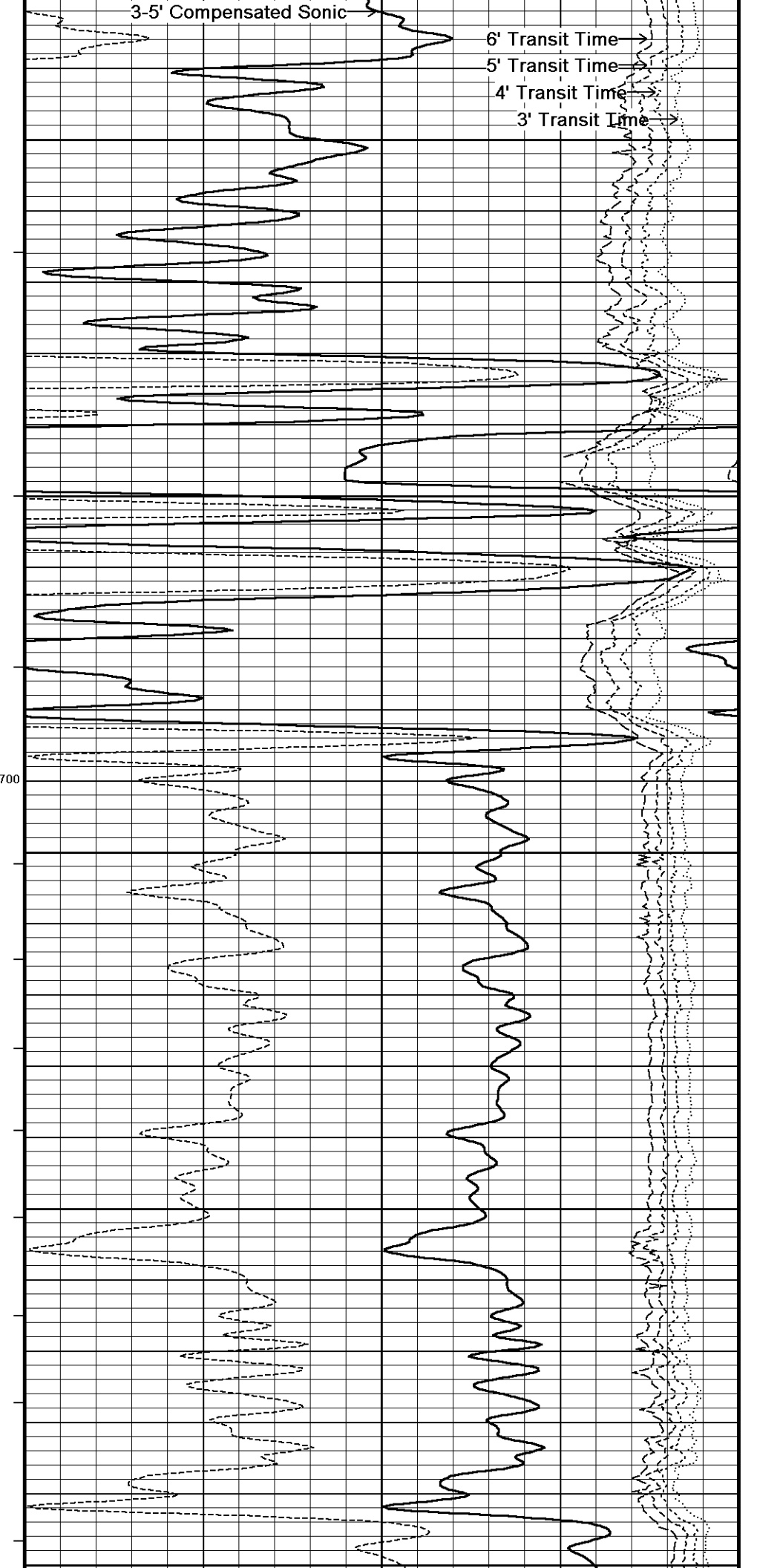
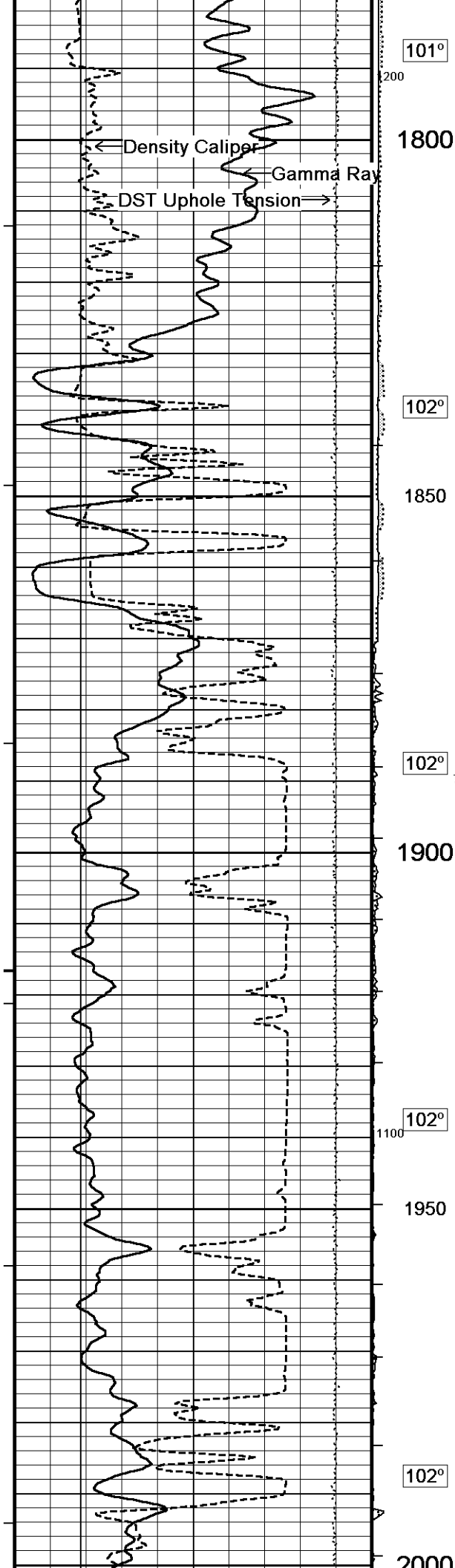


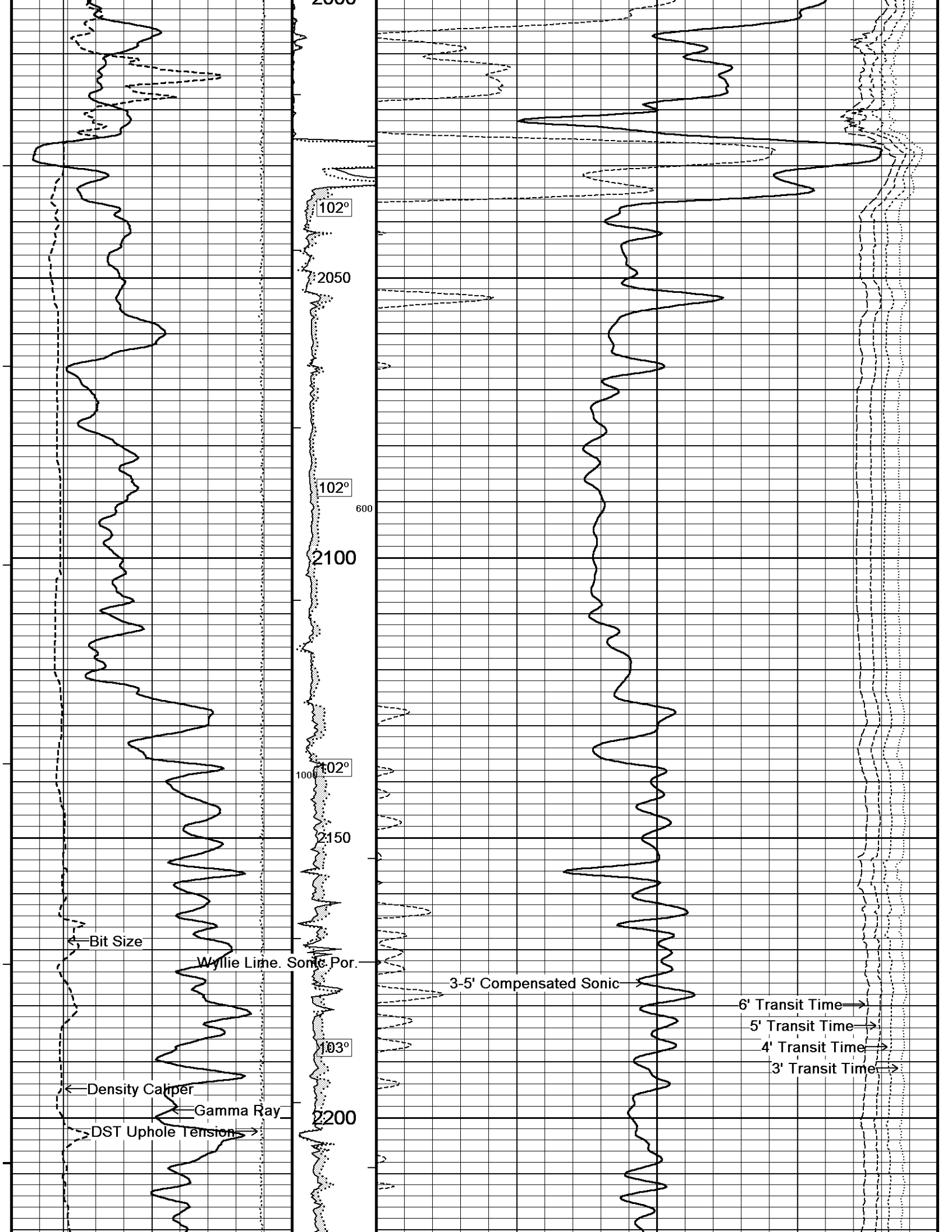


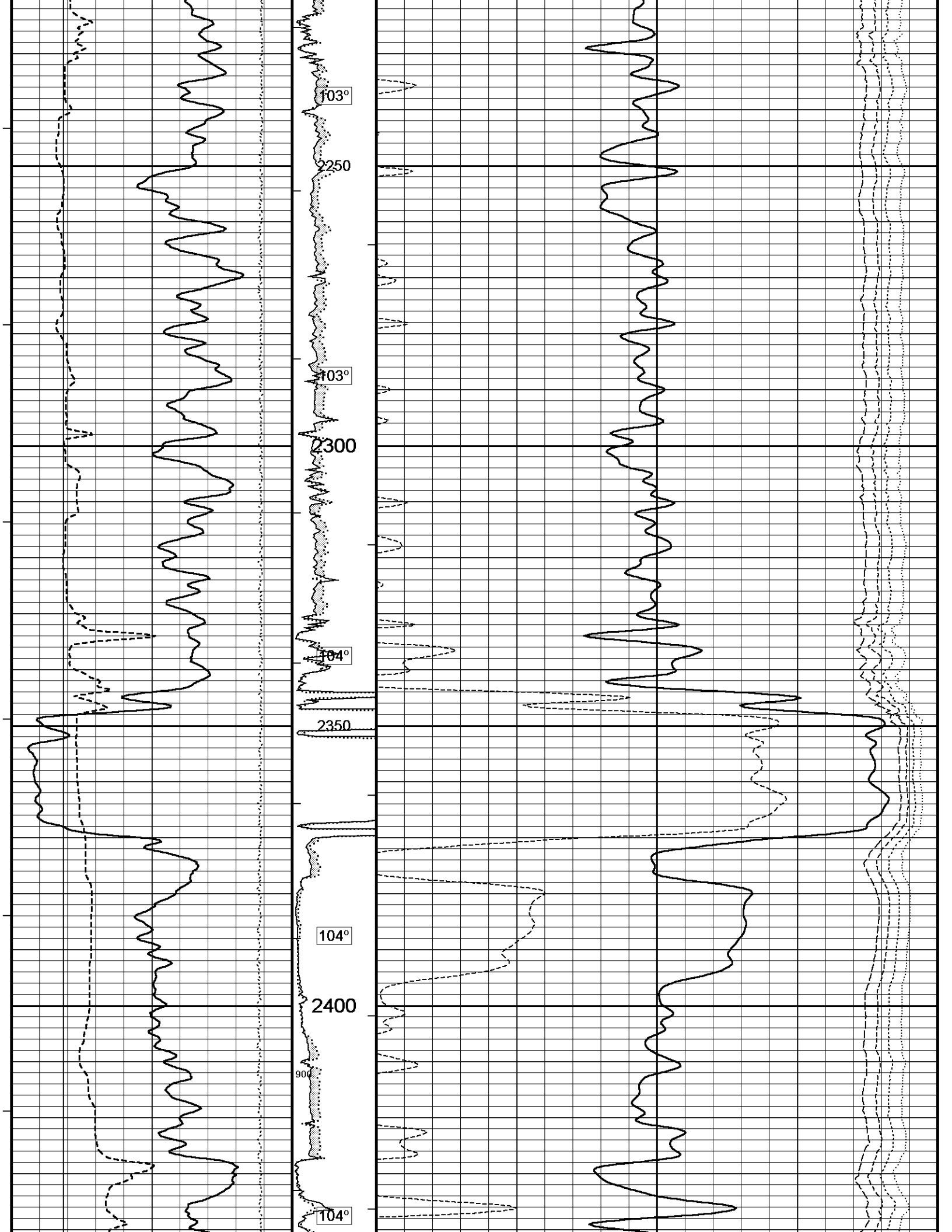


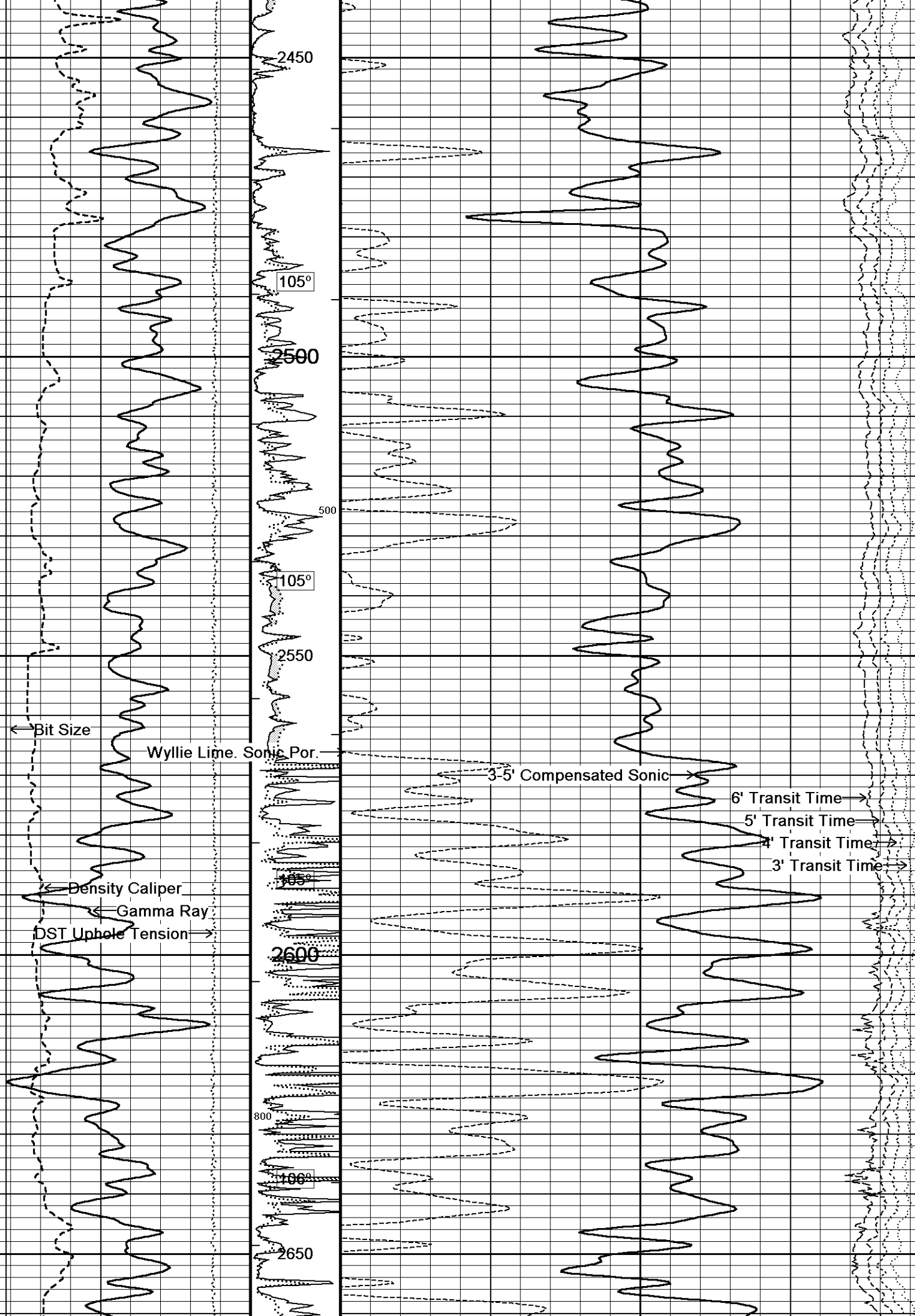


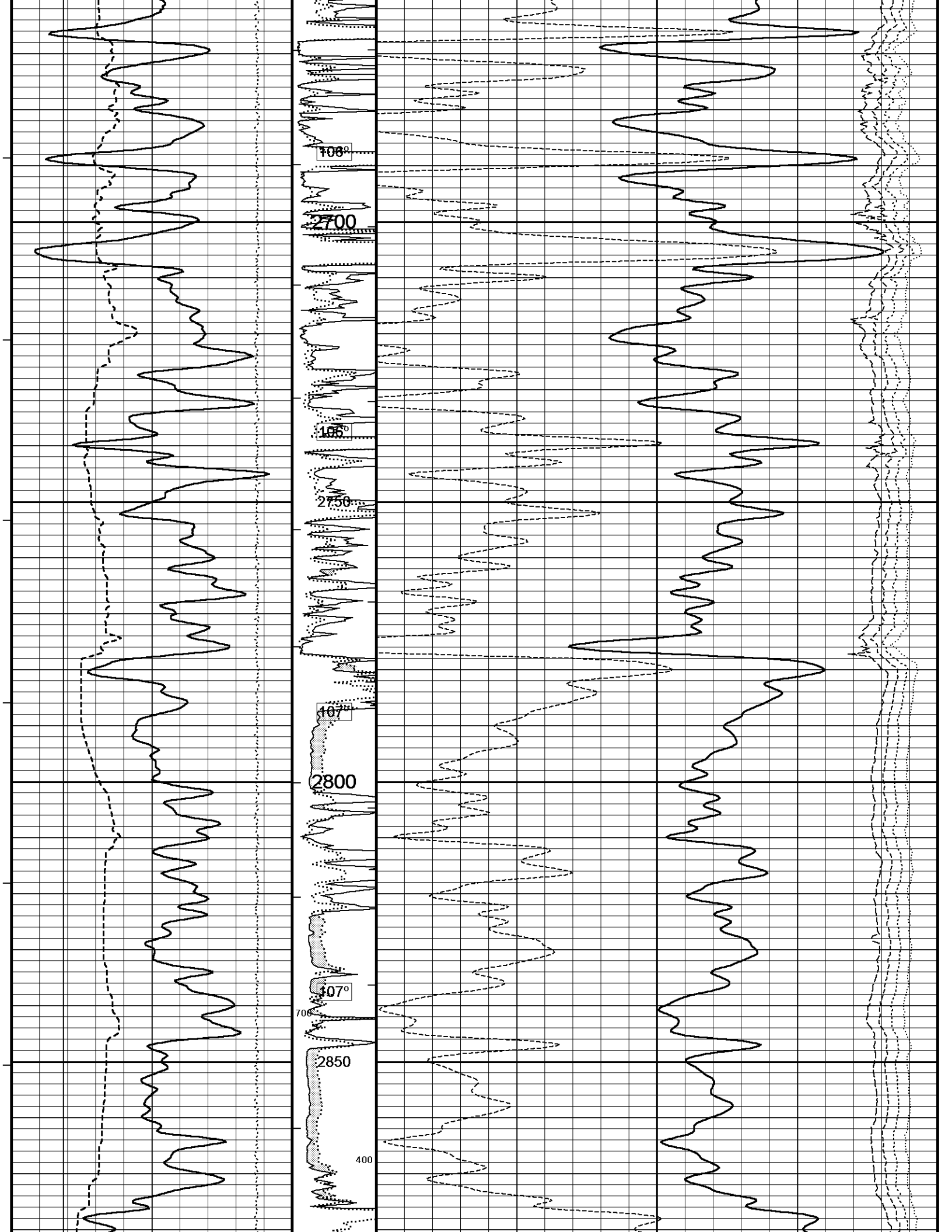


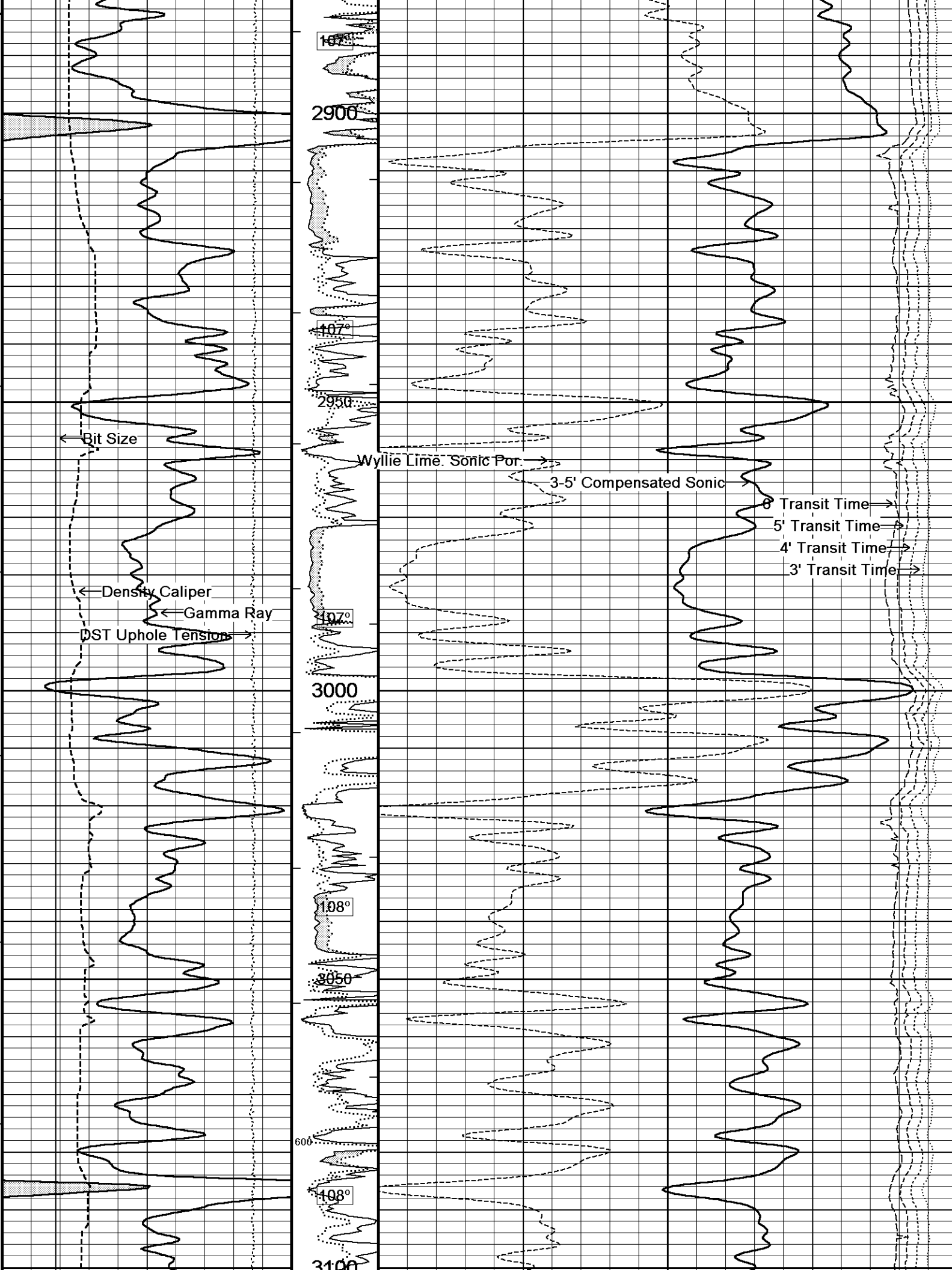


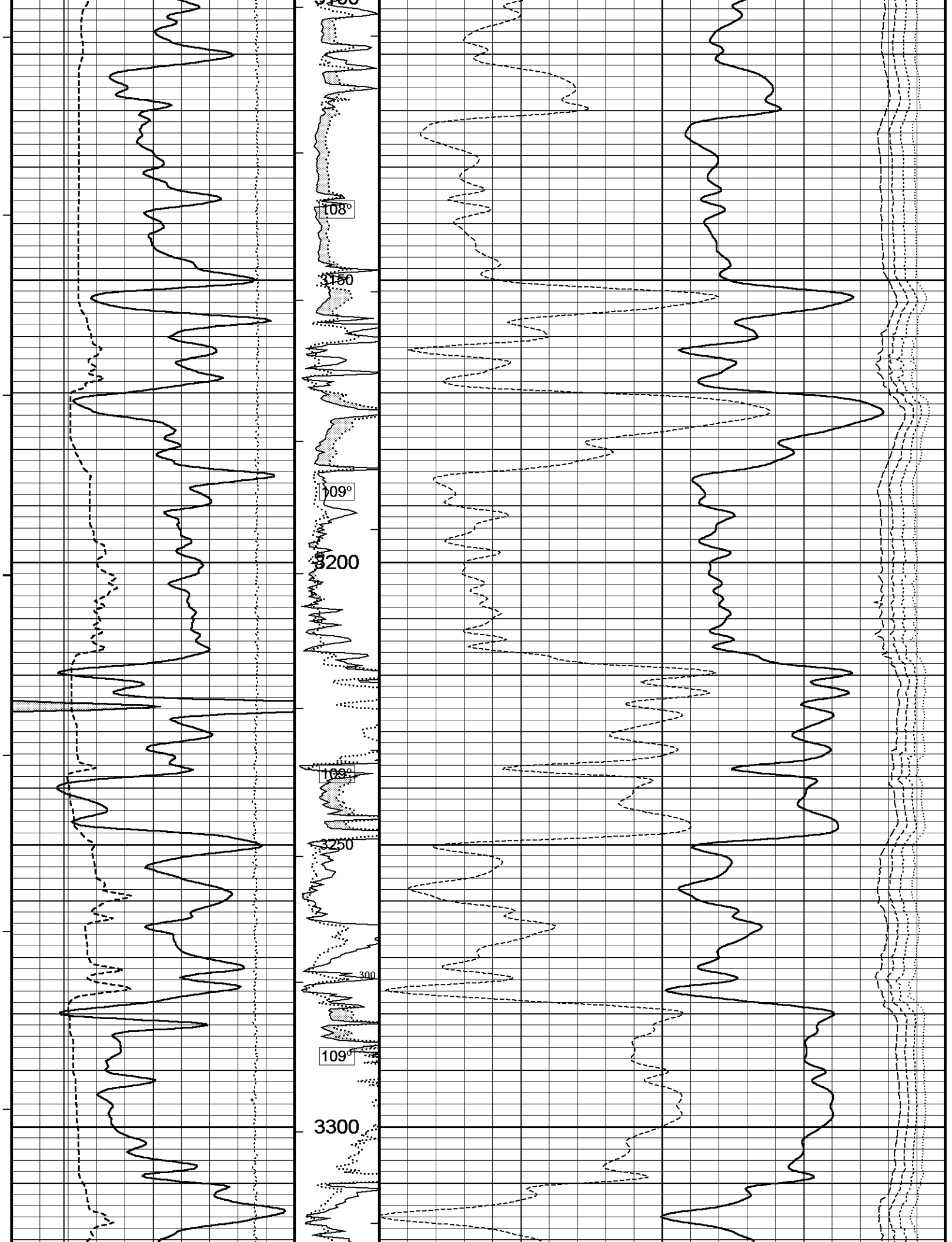


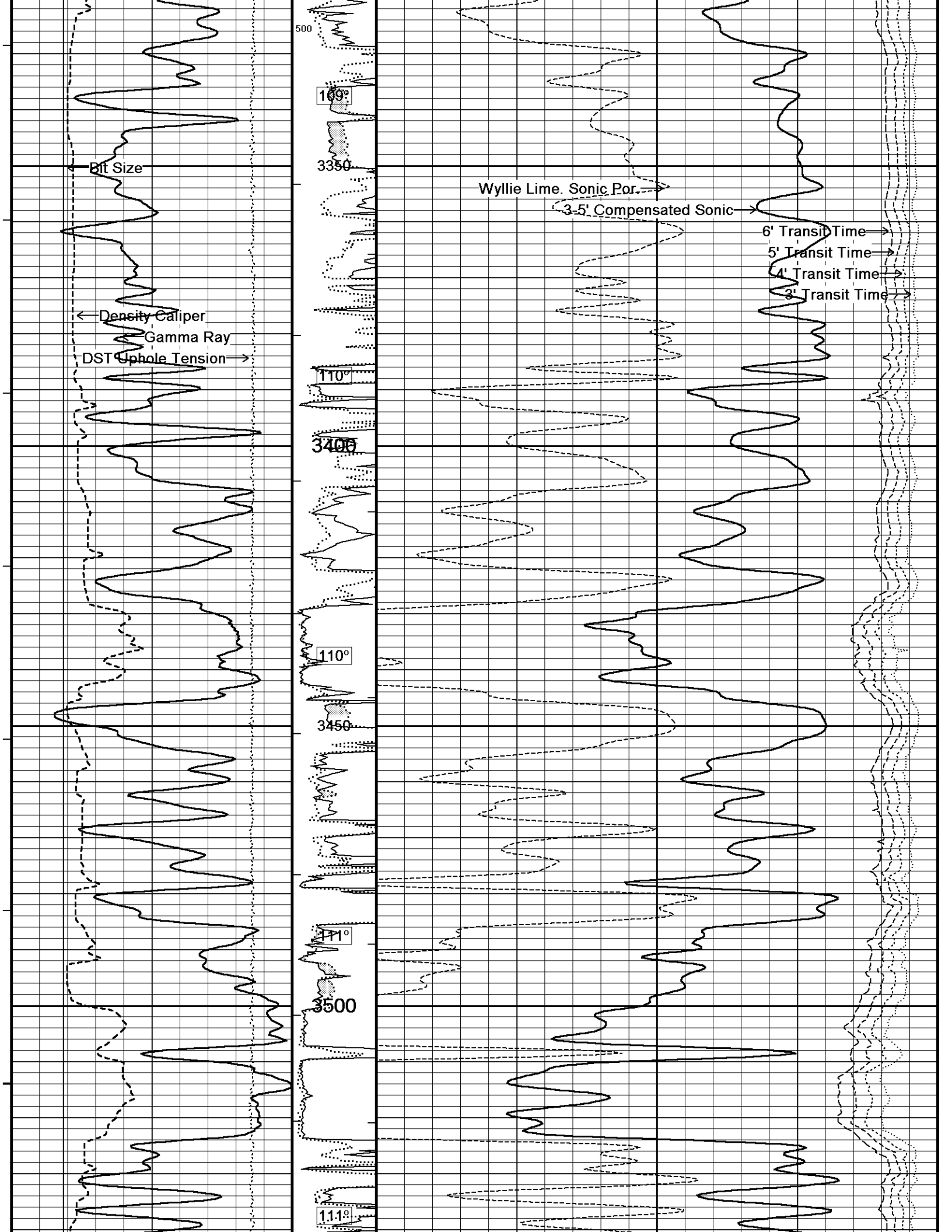


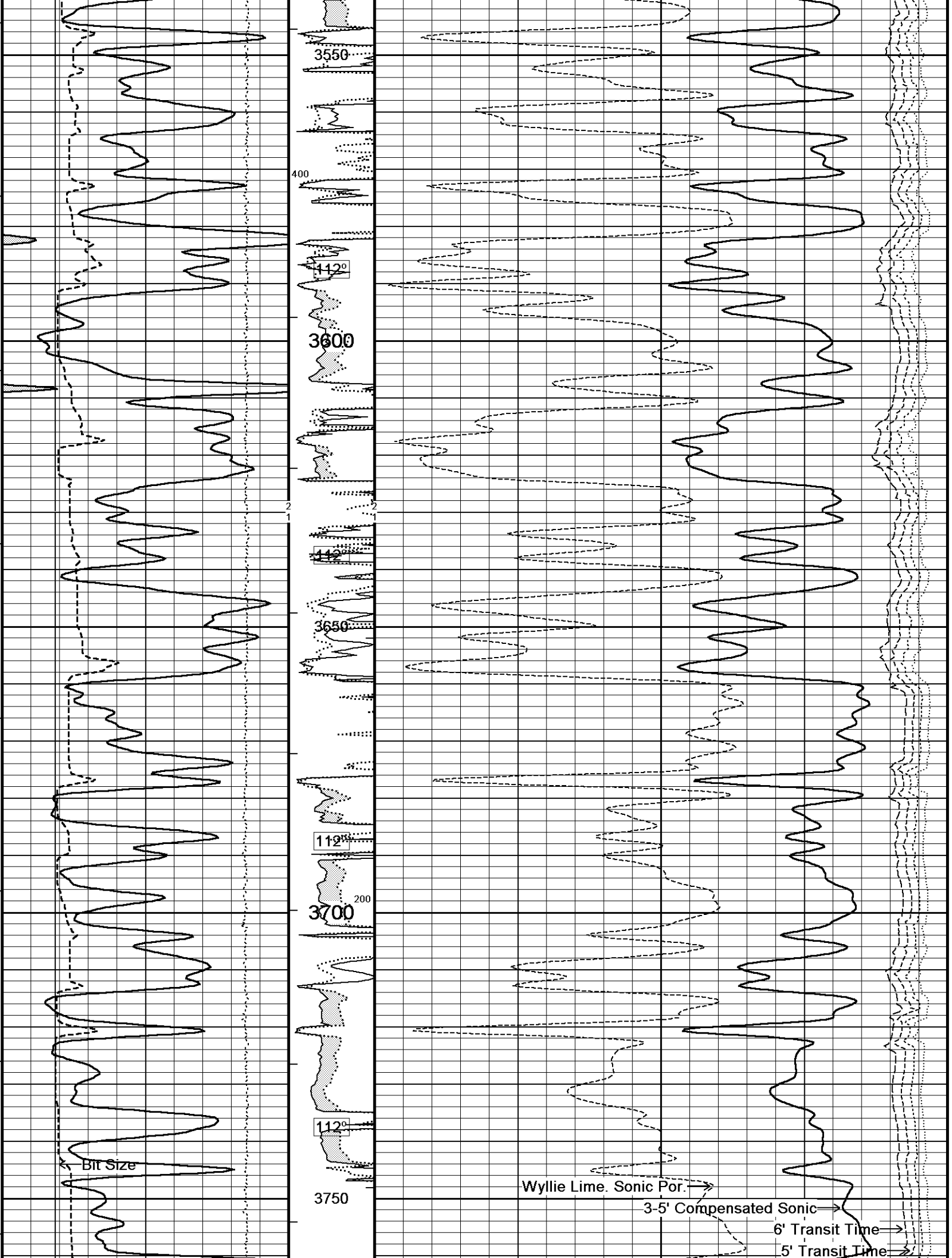


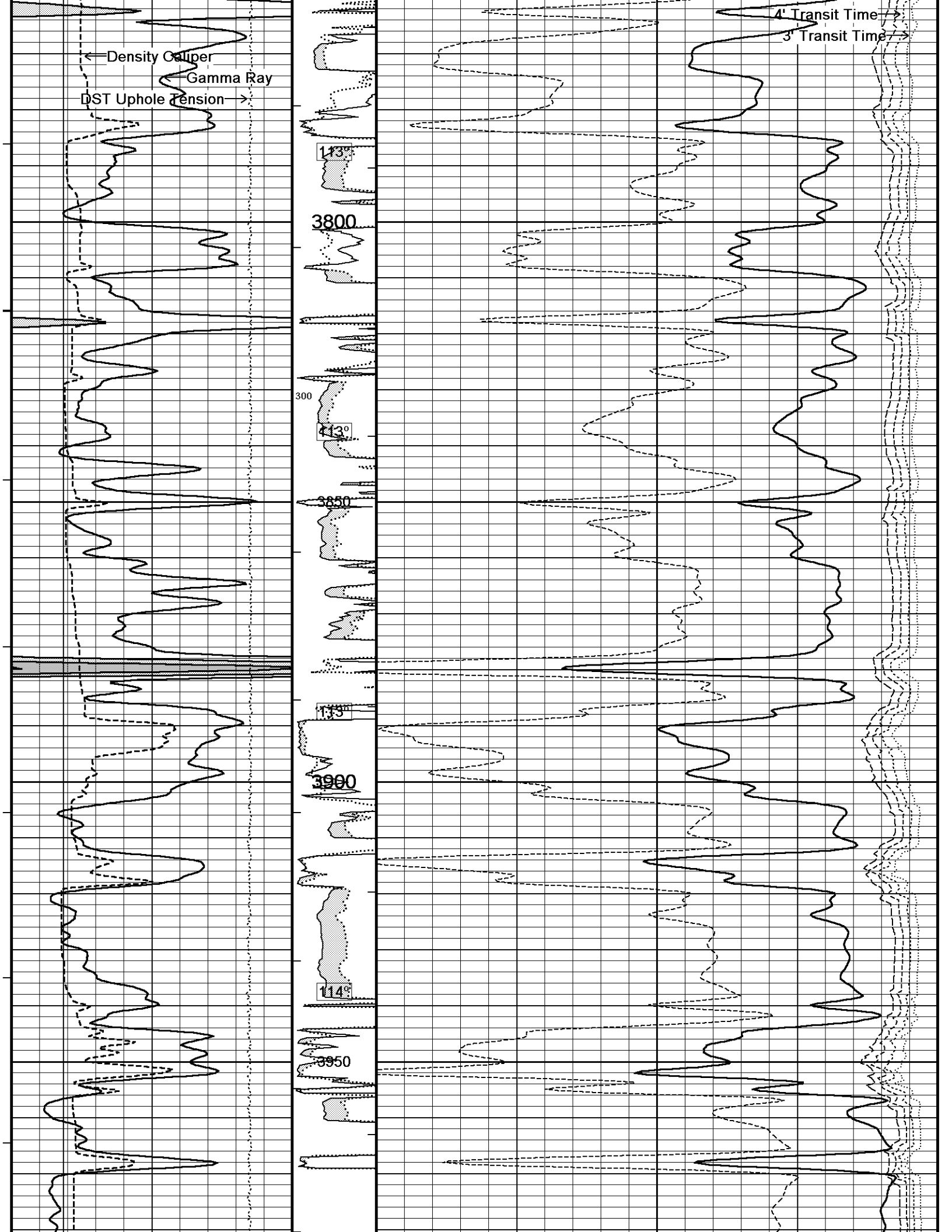


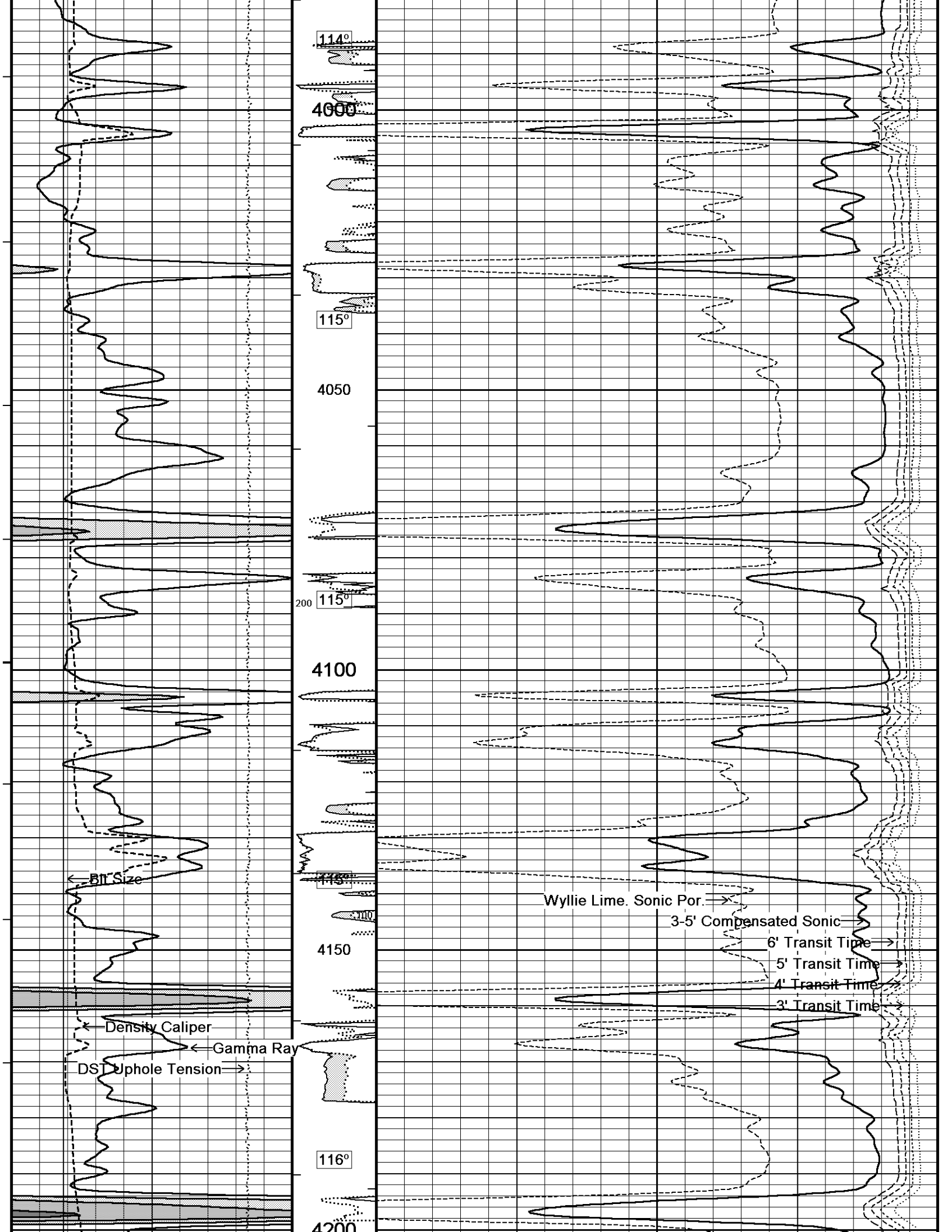


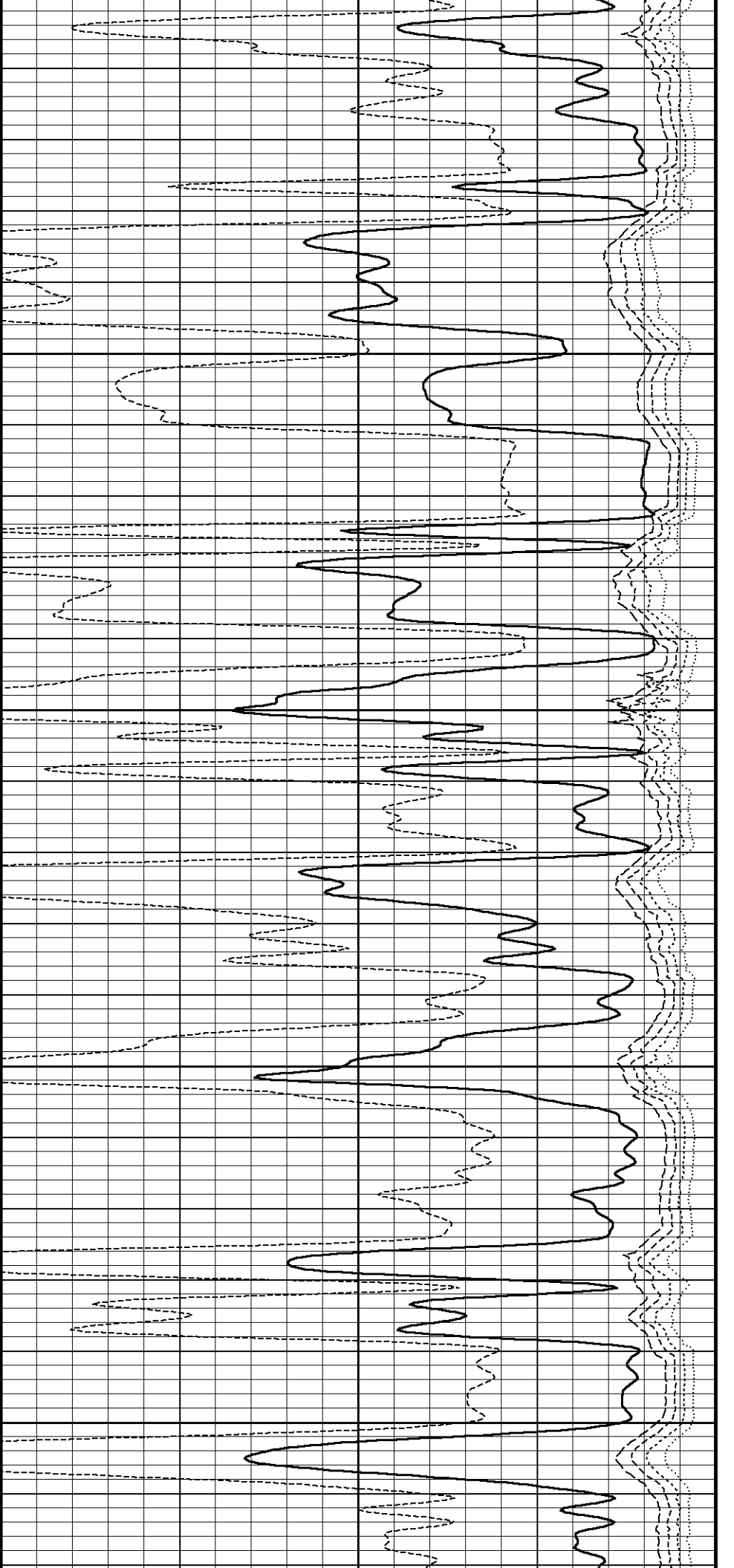
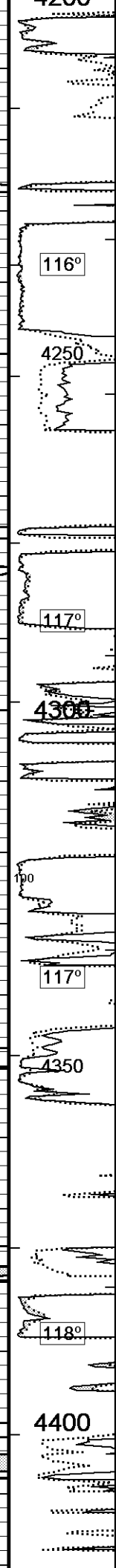
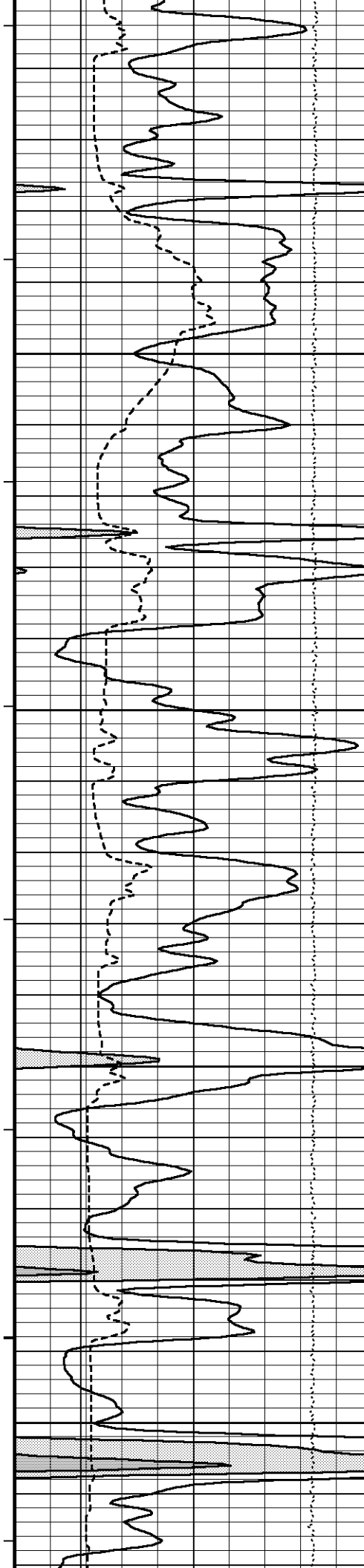


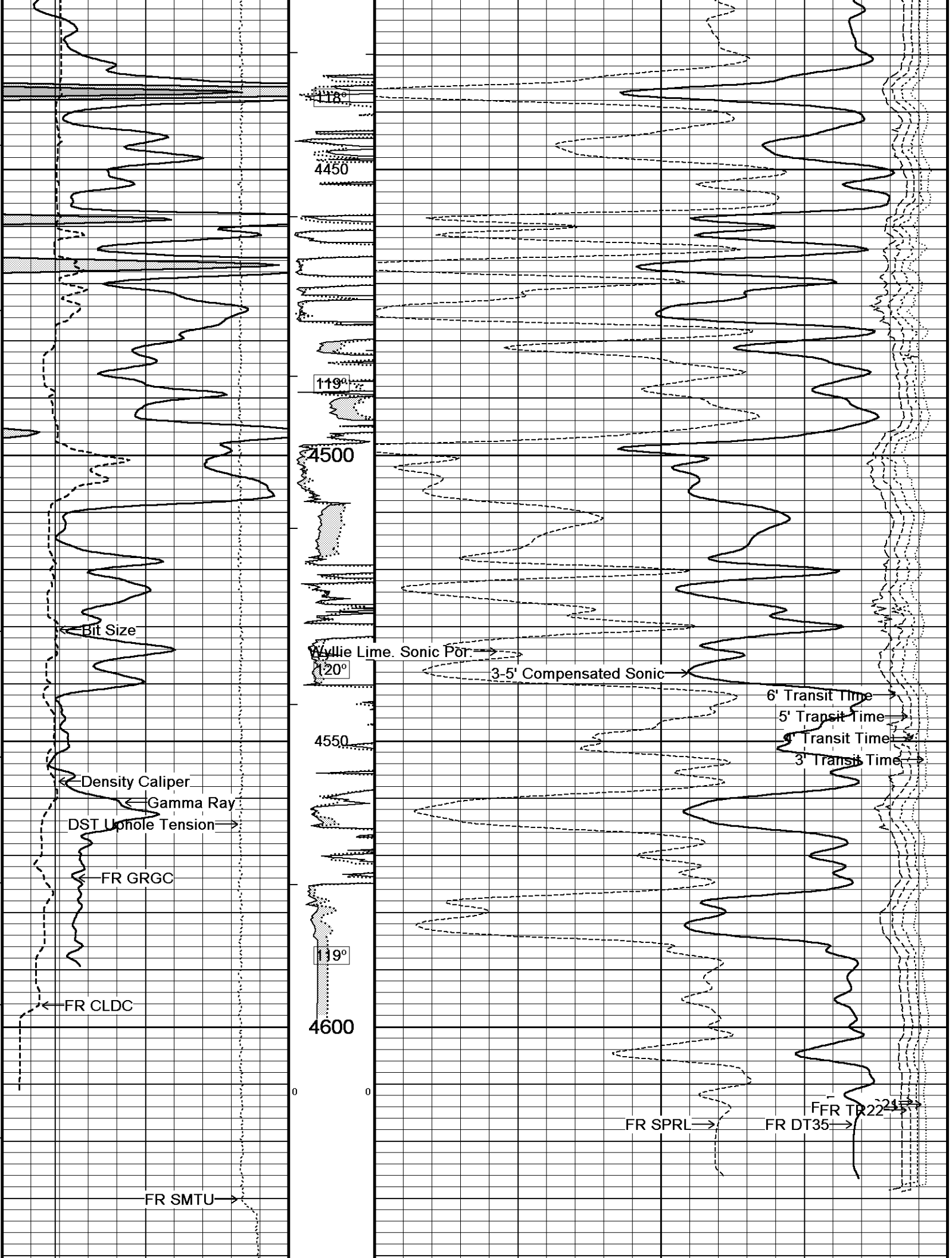


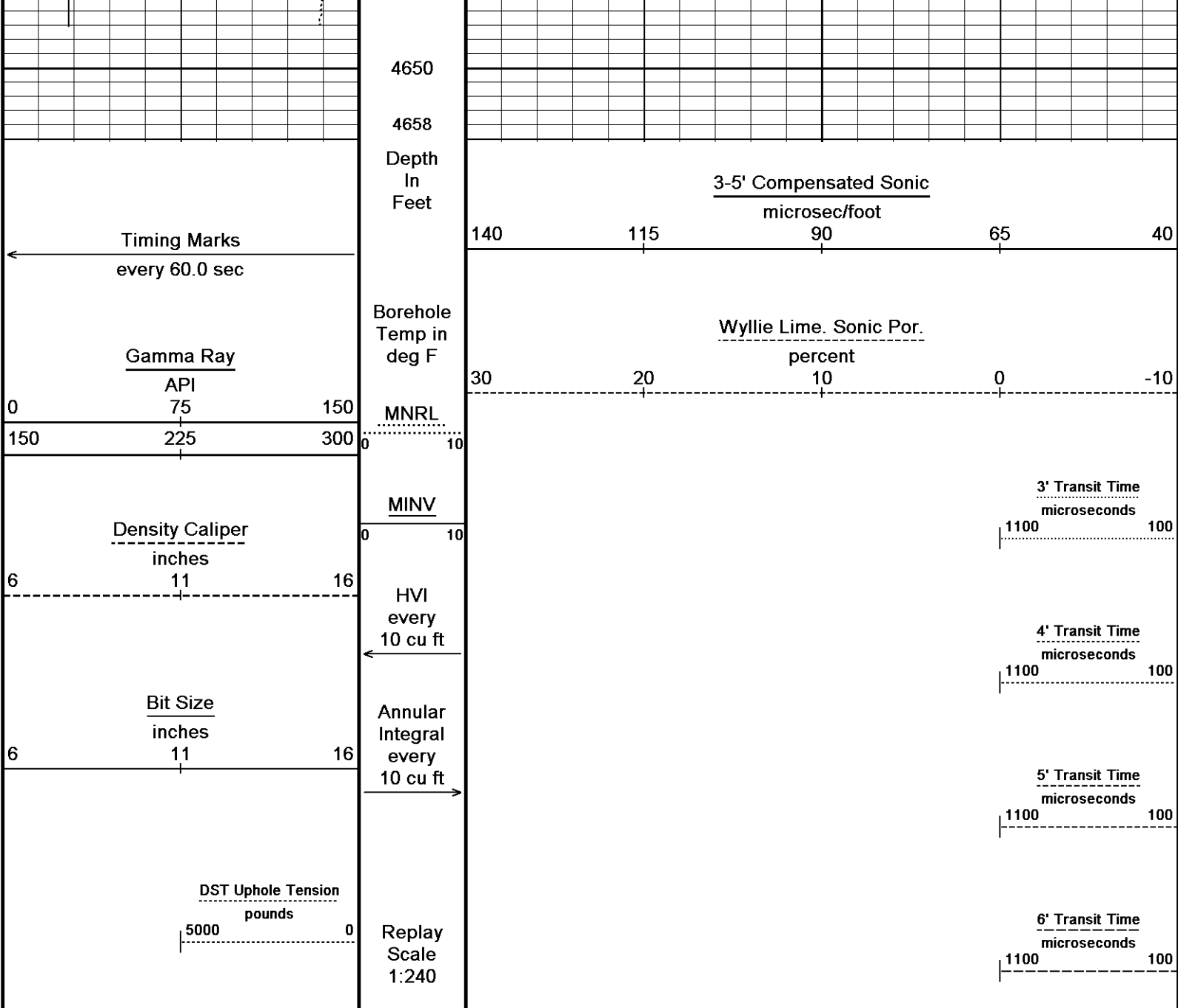








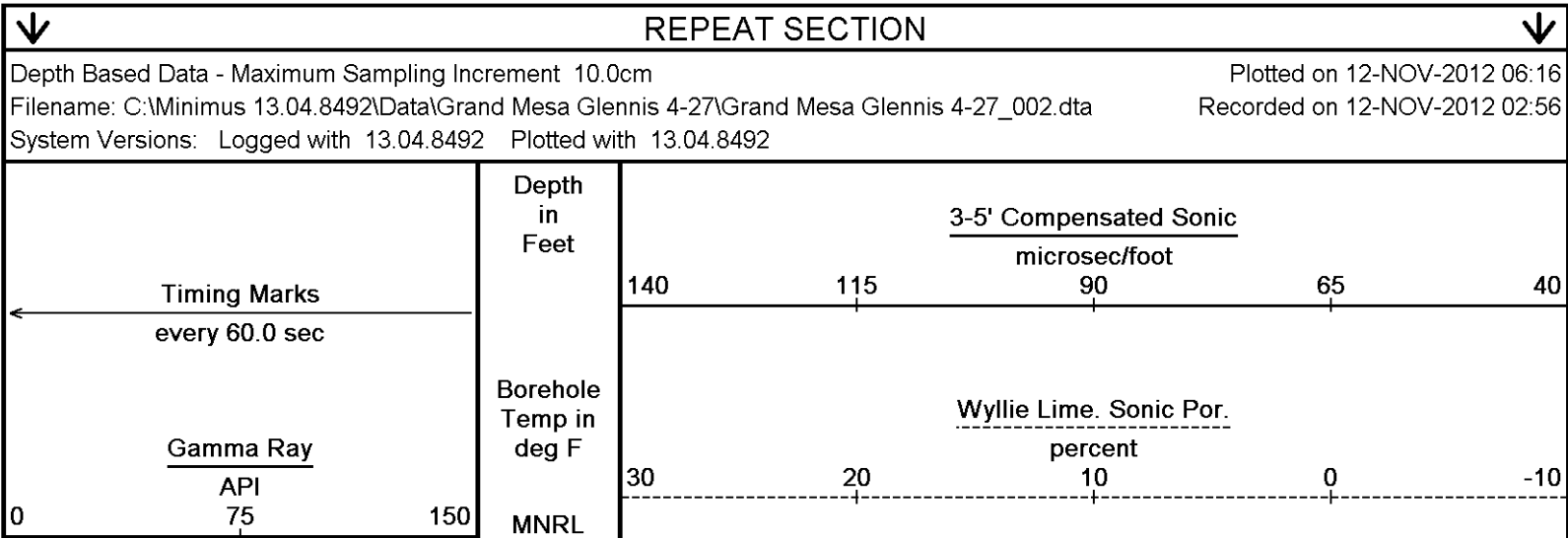


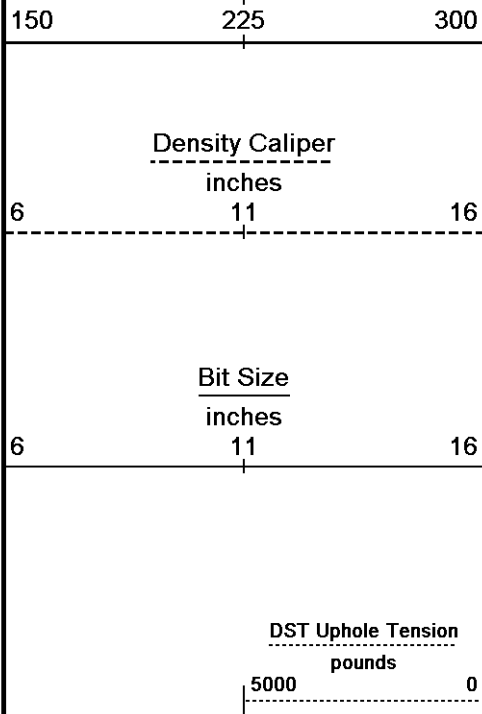


Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus 13.04.8492\Data\Grand Mesa Glennis 4-27\Grand Mesa Glennis 4-27_003.dta
System Versions: Logged with 13.04.8492 Plotted with 13.04.8492

Plotted on 12-NOV-2012 06:16
Recorded on 12-NOV-2012 03:30

↑ 5 INCH MAIN ↑





0 10

MINV

0 10

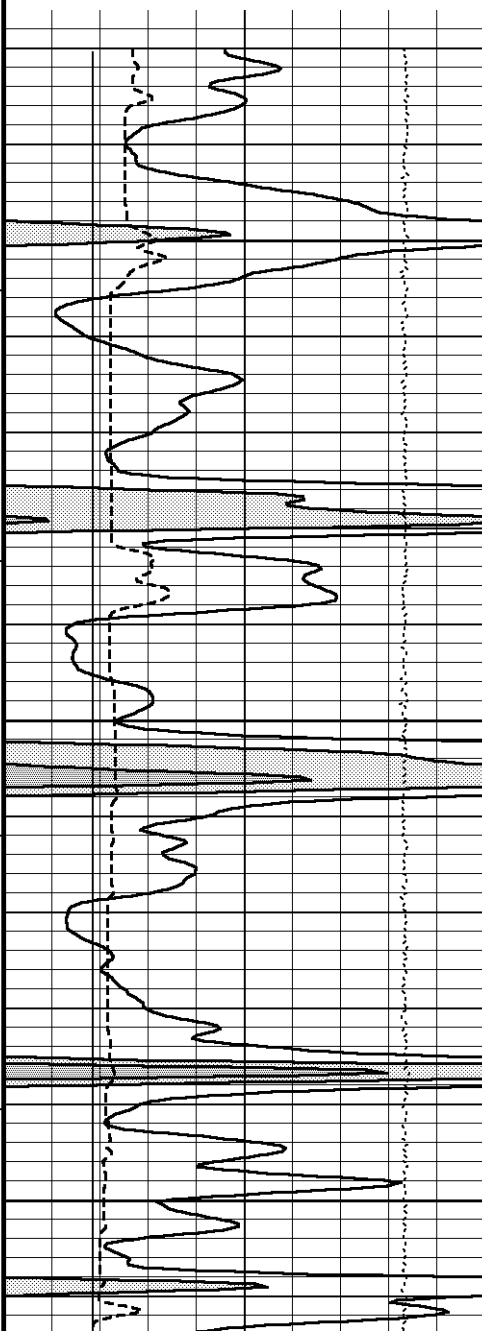
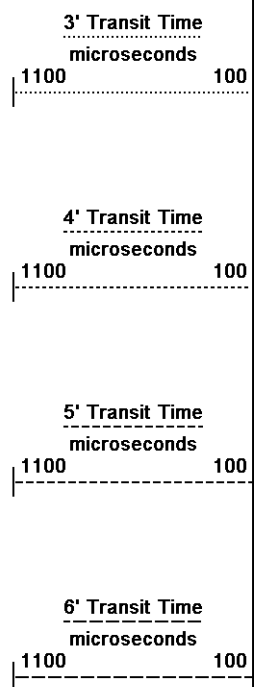
HVI
every
10 cu ft

←

Annular
Integral
every
10 cu ft

→

Replay
Scale
1:240



4328

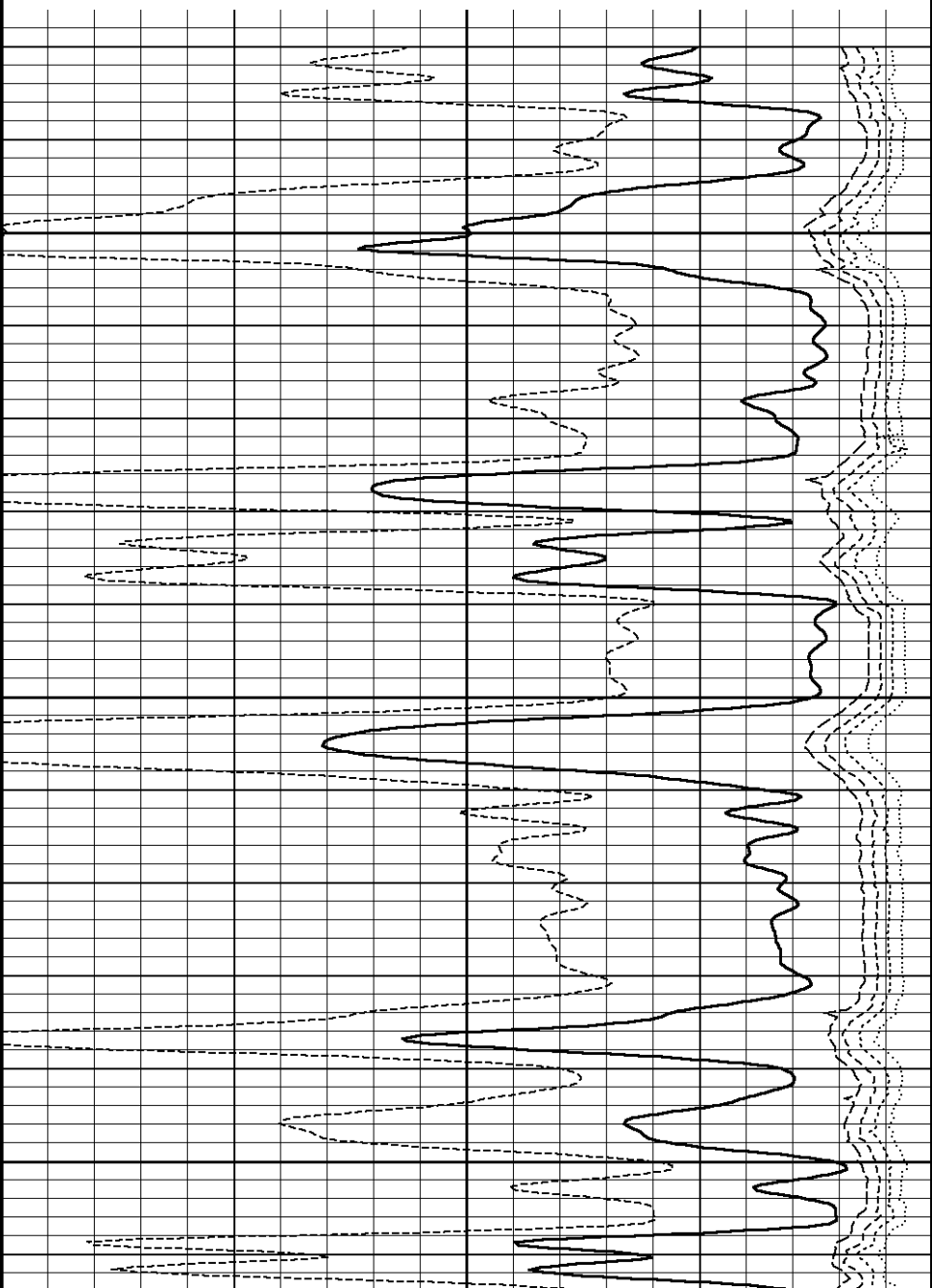
4350

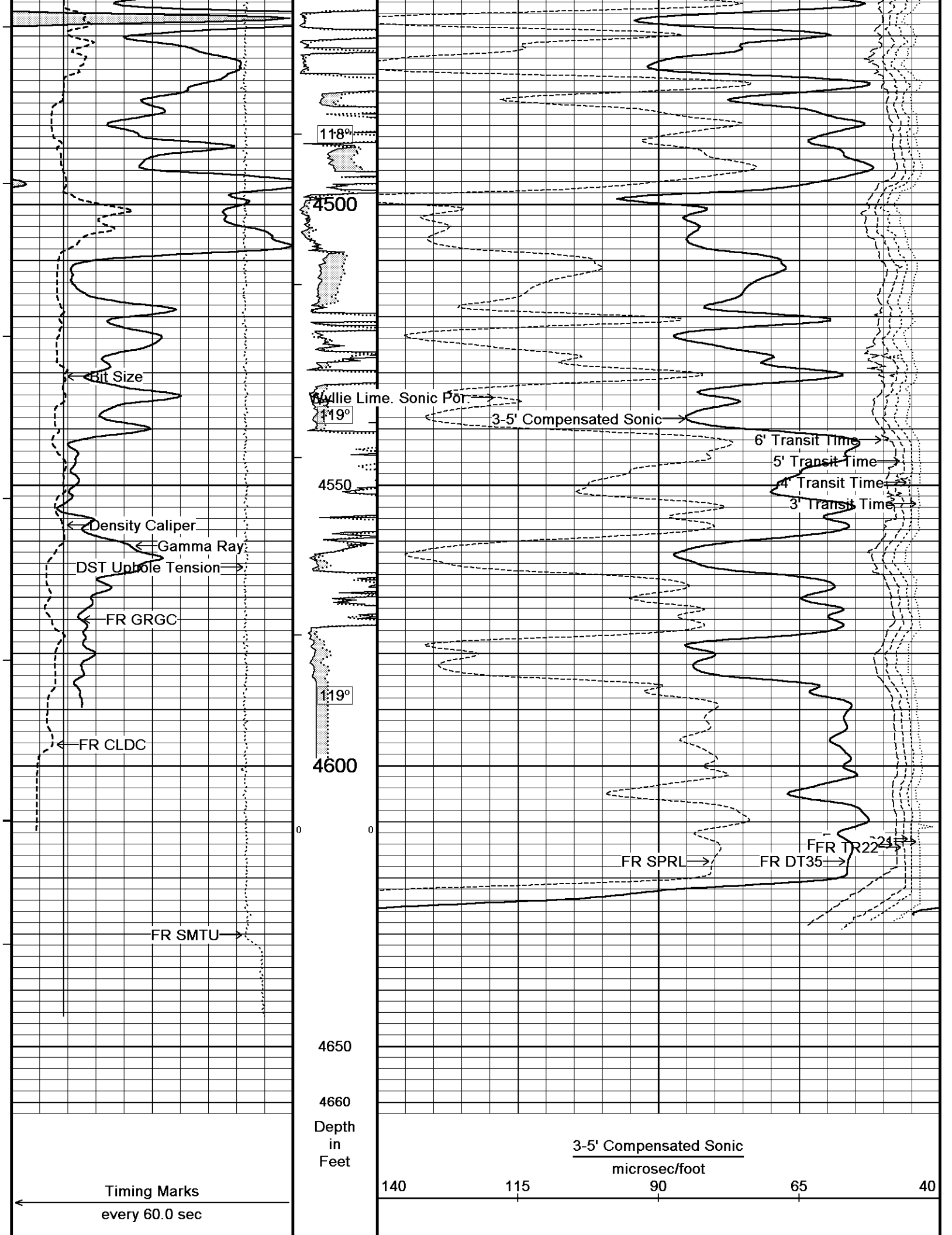
117°

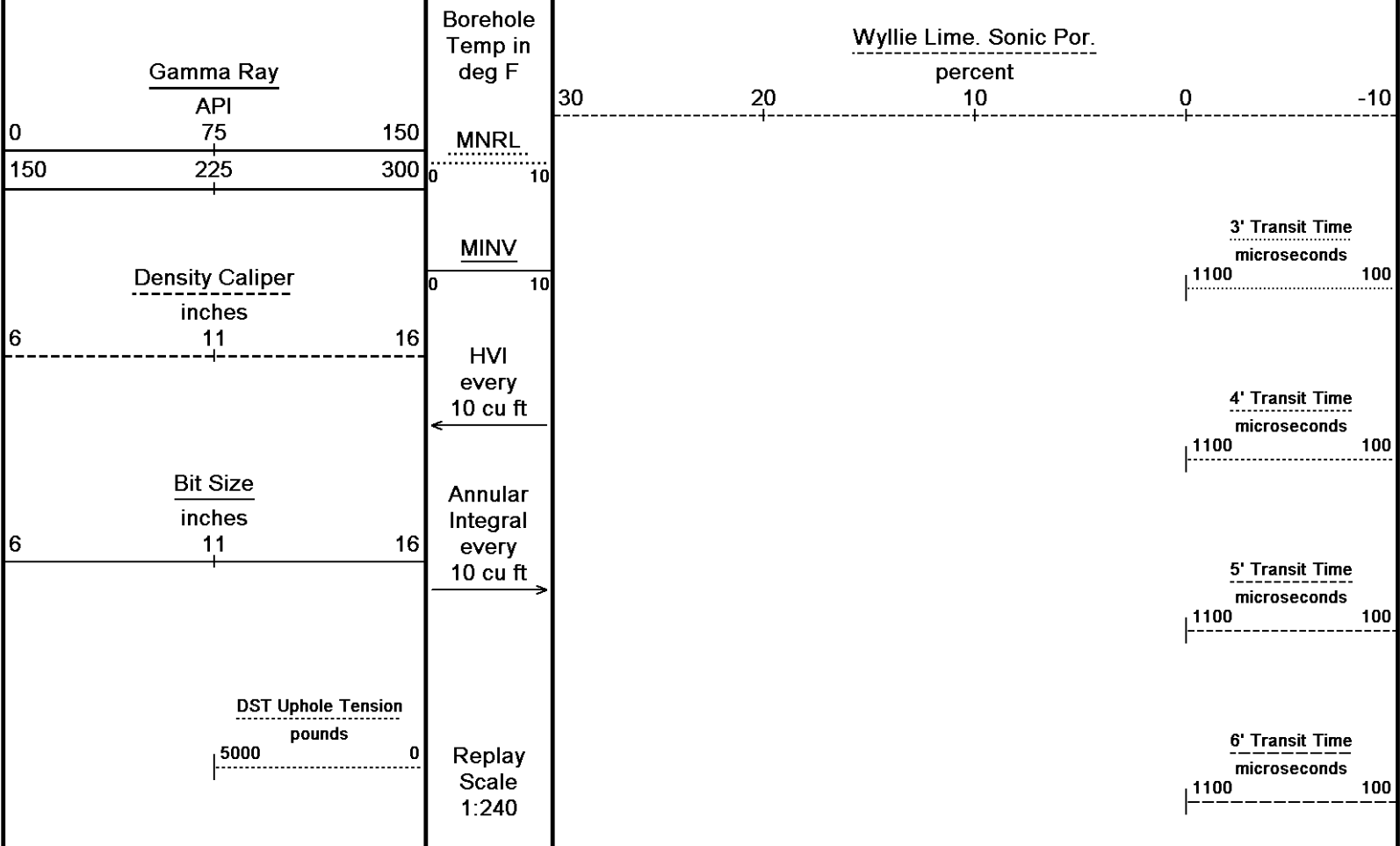
4400

117°

4450







Depth Based Data - Maximum Sampling Increment 10.0cm
 Plotted on 12-NOV-2012 06:16
 Filename: C:\Minimus 13.04.8492\Data\Grand Mesa Glennis 4-27\Grand Mesa Glennis 4-27_002.dta
 Recorded on 12-NOV-2012 02:56
 System Versions: Logged with 13.04.8492 Plotted with 13.04.8492

↑ REPEAT SECTION ↑

BEFORE SURVEY CALIBRATION		
C:\Minimus 13.04.8492\Data\Grand Mesa Glennis 4-27\Grand Mesa Glennis 4-27_003.dta		
General Constants All 000		Last Edited on 12-NOV-2012,02:08
General Parameters		
Mud Resistivity	1.290	ohm-metres
Mud Resistivity Temperature	64.000	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	5.500	inches
Caliper for Differential Caliper	Density Caliper	
Rwa Parameters		
Porosity used	Base Density Porosity	
Resistivity used	Array Ind. Four Res Rt	
RWA Constant A	0.610	
RWA Constant M	2.150	
Gamma Calibration MCG-C 208		Field Calibration on 07-NOV-2012 10:08
	Measured	Calibrated (API)
Background	75	55
Calibrator (Gross)	1067	780
Calibrator (Net)	992	725
Gamma Constants MCG-C 208		Last Edited on 08-NOV-2012 06:36

Gamma Constants MCG-C 208							Last Edited on 05-NOV-2012,00:30
Gamma Calibrator Number	GR38						
Mud Density	1.12	gm/cc					
Caliper Source for Processing	Density Caliper						
Tool Position	Eccentred						
Concentration of KCl	0.00	kppm					
High Resolution Temperature Calibration MCG-C 208							Field Calibration on 05-NOV-2012,14:26
	Measured	Calibrated(Deg F)					
Lower	50.00	50.00					
Upper	75.00	75.00					
High Resolution Temperature Constants MCG-C 208							Last Edited on 05-NOV-2012,14:25
Pre-filter Length	11						
Sonic Constants MSS-A.A 126							Last Edited on 12-NOV-2012,02:09
Maximum Boundary Contrast	100.00	micro-sec/ft					
Fluid Transit Time	189.00	micro-sec/ft					
Limestone Transit Time	47.50	micro-sec/ft					
Sandstone Transit Time	55.50	micro-sec/ft					
Dolomite Transit Time	43.50	micro-sec/ft					
Sonic used for Porosities	3-5' Compensated						
Correction for Sonde Skew	Applied						
Cycle Stretch Algorithm	Applied						
MN3FT	0.00	micro-sec					
MX3FT	1500.00	micro-sec					
Hunt-Raymer Constant	83.13	micro-sec/ft					
Sonde Mode	Compensated						
Hole Type	Open Hole						
Sonde Parameters							
	Measured	Calibrated					
Offset	0.0000	0.0000					
Free Pipe	0.0000						
Peak Amplitude Source							
Waveform	Start Time (micro-sec)	Width (micro-sec)	Pre Gain	Start Gain	Discriminator (mV)		
3'	N/A	N/A	N/A	N/A	N/A		
4'	N/A	N/A	N/A	N/A	N/A		
5'	N/A	N/A	N/A	N/A	N/A		
6'	N/A	N/A	N/A	N/A	N/A		
Processed Fixed Gate Parameters							
Waveform Used For Processing	N/A						
Start Time (micro-sec)	End Time (micro-sec)	Discriminator (mV)	Depth (ft)				
0.00	0.00	0.00	0.00				
0.00	0.00	0.00	0.00				
0.00	0.00	0.00	0.00				
0.00	0.00	0.00	0.00				
0.00	0.00	0.00	0.00				
Full Waveform Parameters							
Use 3' Waveform to derive TR	No						
Use 4' Waveform to derive TR	No						
Use 5' Waveform to derive TR	No						
Use 6' Waveform to derive TR	No						
3' Waveform Discriminator Level	0.30	mV					
4' Waveform Discriminator Level	0.30	mV					
5' Waveform Discriminator Level	0.15	mV					
6' Waveform Discriminator Level	0.15	mV					
3' Waveform Filter							
4' Waveform Filter							
5' Waveform Filter							
6' Waveform Filter							
Sample Rate Level	0.50						

Semblance Level	0.50	
Semblance Window Width	120.00	micro-sec
Sonic 1 Despiker	100.00	micro-sec/ft
Sonic 2 Despiker	100.00	micro-sec/ft

Micro Normal and Micro Inverse Calibration MMR-A 11

Base Calibration on 05-NOV-2012 14:07

Field Check on 07-NOV-2012 10:04

Base Calibration

Channel	Measured		Calibrated (ohm-m)	
	Resistor 1	Resistor 2	Resistor 1	Resistor 2
Micro Normal	12.3	59.4	5.0	25.0
Micro Inverse	15.5	77.2	5.0	25.0

Channel	Base Check (ohm-m)	Field Check (ohm-m)
Micro Normal	77.0	77.0
Micro Inverse	59.0	59.0

Micro Normal and Micro Inverse Constants MMR-A 11

Last Edited on 05-NOV-2012,13:54

Pad Type	8-12 in Soft Rubber Inflatable 006-9011-159		
Micro Normal K Factor	1.0000		
Micro Inverse K Factor	1.0000		
Standoff Offset	0.0000	inches	

Caliper Calibration MPD-B 31

Base Calibration on 05-NOV-2012 10:35

Field Calibration on 07-NOV-2012 09:55

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	18880	3.99
2	27744	5.98
3	36416	7.97
4	44768	9.86
5	54080	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
5.88	5.98

DOWNHOLE EQUIPMENT

C:\Minimus 13.04.8492\Data\Grand Mesa Glennis 4-27\Grand Mesa Glennis 4-27_003.dta

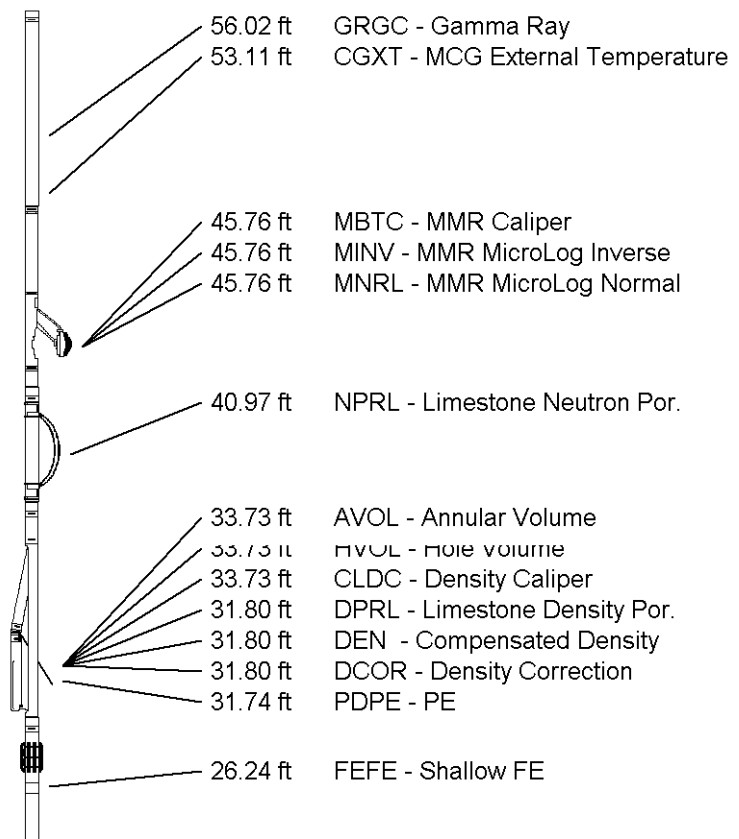
Compact Comms Gamma
MCG-C 208 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Micro-Resistivity
MMR-A 11 LG: 8.59 ft WT: 81.6 lb OD: 4.88 in

Compact Neutron
MDN-A.B 65 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Density/Caliper
MPD-B 31 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

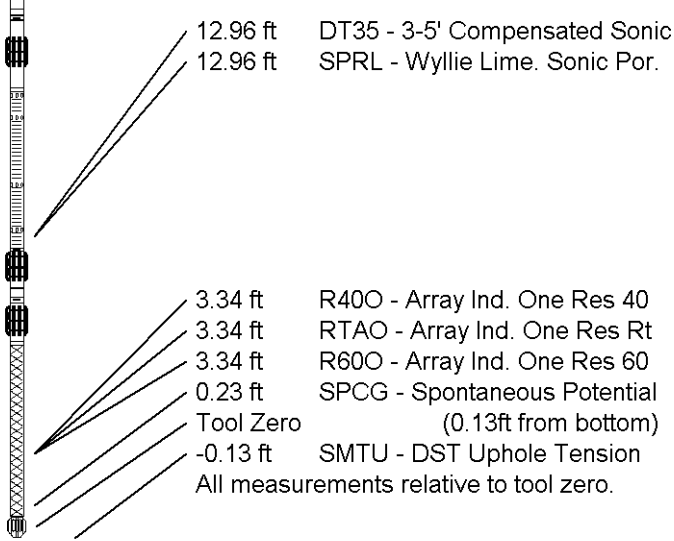
Compact Focussed Electric
MFE-B.J 352 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in



Compact Sonic
MSS-A.A 126 LG: 12.52 ft WT: 72.8 lb OD: 2.24 in

Compact Induction
MAI-A.A 45 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 61.30 ft Weight: 456.4 lb



COMPANY	GRAND MESA OPERATING COMPANY
WELL	GLENNIS 4-27
FIELD	WILDCAT
PROVINCE/COUNTY	GOVE
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	2865.00	feet	First Reading	4617.00	feet
Elevation Drill Floor	2863.00	feet	Depth Driller	4630.00	feet
Elevation Ground Level	2860.00	feet	Depth Logger	4630.00	feet



Weatherford®

COMPENSATED SONIC
WITH INTEGRATED TRANSIT TIME