



Weatherford

**COMPENSATED SONIC
WITH INTEGRATED TRANSIT TIME**

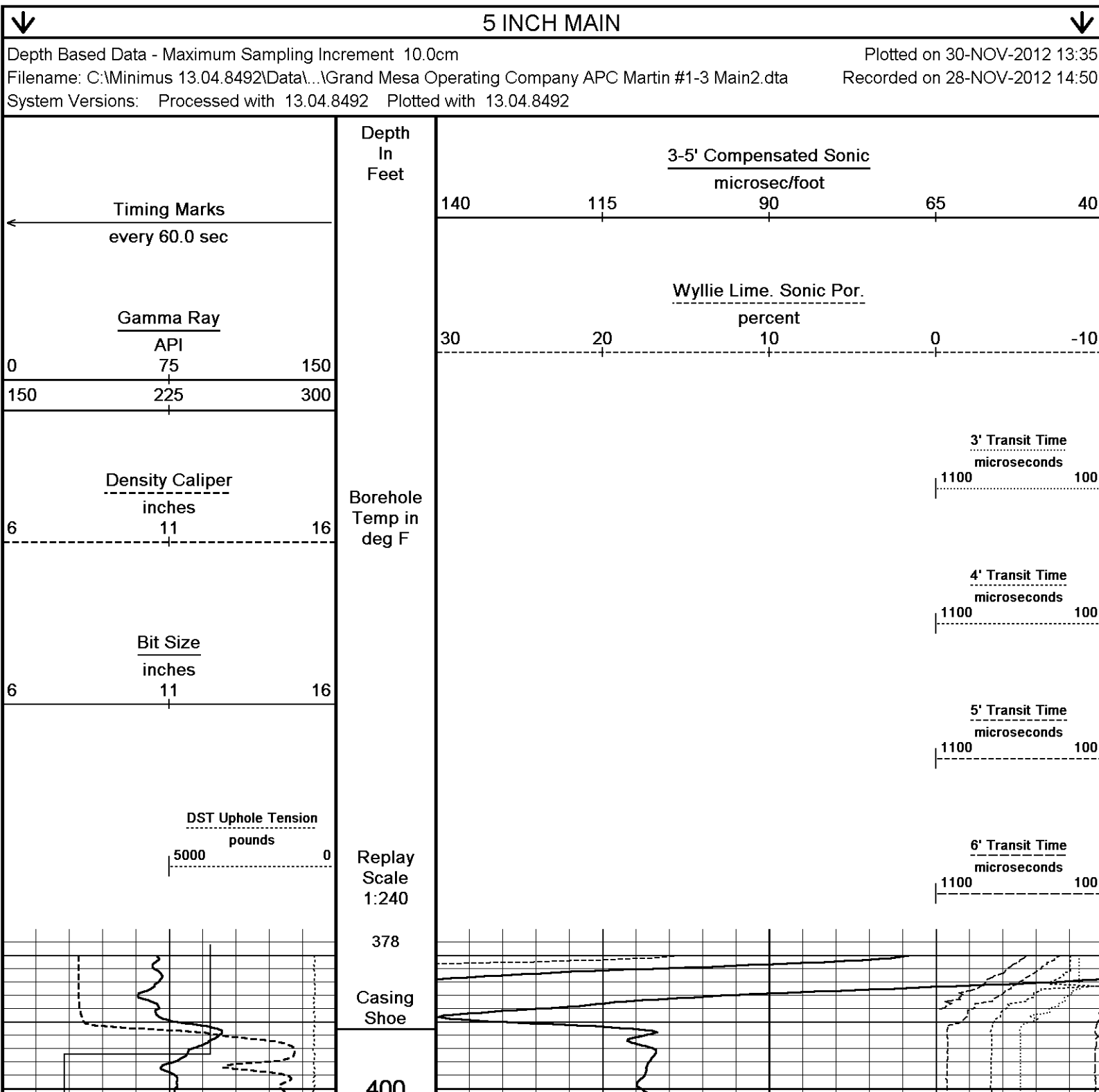
COMPANY				GRAND MESA OPERATING COMPANY			
WELL				APC MARTIN #1-3			
FIELD				WILDCAT			
PROVINCE/COUNTY				LINCOLN			
COUNTRY/STATE				U.S.A. / COLORADO			
LOCATION				1743' FSL & 1539' FEL			
SEC	TWP	RGE	Other Services		MPD/MDN		
3	10S	55W	MAI/MFE				
API Number		05-073-06488-00		MML			
Permit Number							
Permanent Datum GL, Elevation 5237 feet							
Log Measured From KB							
Drilling Measured From KB							
Date	28-NOV-2012				Elevations: KB 5250.00 DF 5248.00 GL 5237.00		
Run Number	ONE						
Service Order	3537785						
Depth Driller	7900.00				feet		
Depth Logger	7901.00				feet		
First Reading	7888.00				feet		
Last Reading	391.00				feet		
Casing Driller	395.00				feet		
Casing Logger	391.00				inches		
Bit Size	7.875						
Hole Fluid Type	CHEMICAL				lb/USg		
Density / Viscosity	9.40 lb/USg				76.00 CP		
PH / Fluid Loss	10.00				10.00		
Sample Source	FLOWLINE						
Rm @ Measured Temp	1.22 @ 96.0				ohm-m		
Rmf @ Measured Temp	0.98 @ 96.0				ohm-m		
Rmc @ Measured Temp	1.46 @ 96.0				ohm-m		
Source Rmf / Rmc	CALC		CALC				
Rm @ BHT	0.71 @169.0				ohm-m		
Time Since Circulation	5 HOURS						
Max Recorded Temp	169.00				deg F		
Equipment / Base	13096		LIB				
Recorded By	ADAM SILL						
Witnessed By	BOB SCHRIEBER						
JOB #	LB12-313						

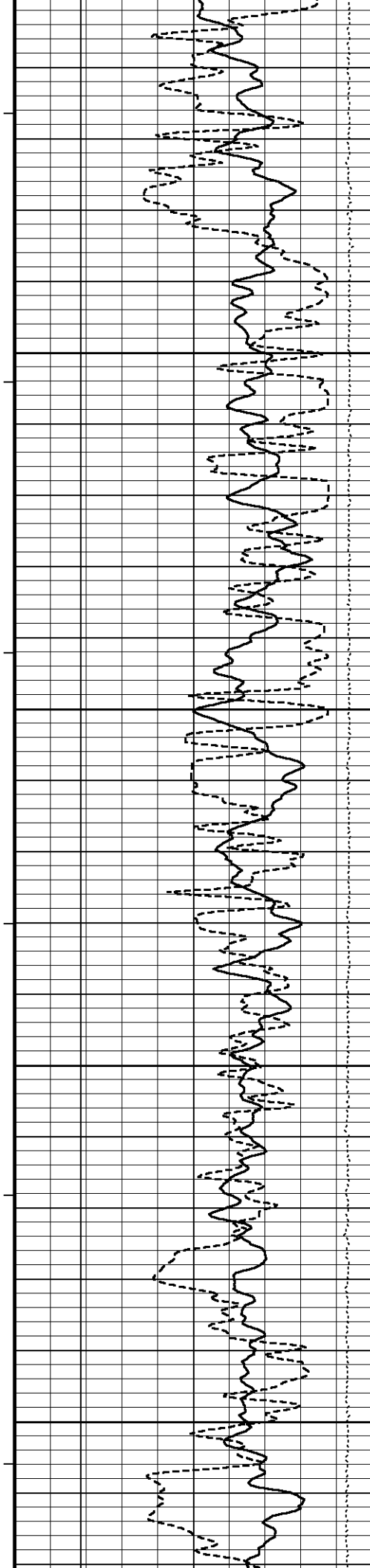
BOREHOLE RECORD			Last Edited: 28-NOV-2012 11:53	
Bit Size inches	Depth From feet		Depth To feet	
17.500	0.00		80.00	
12.250	80.00		395.00	
7.875	395.00		7900.00	
CASING RECORD				
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
CONDUCT	13.375	0.00	80.00	48.00
SURFACE	8.625	0.00	395.00	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: 2643 CU FT

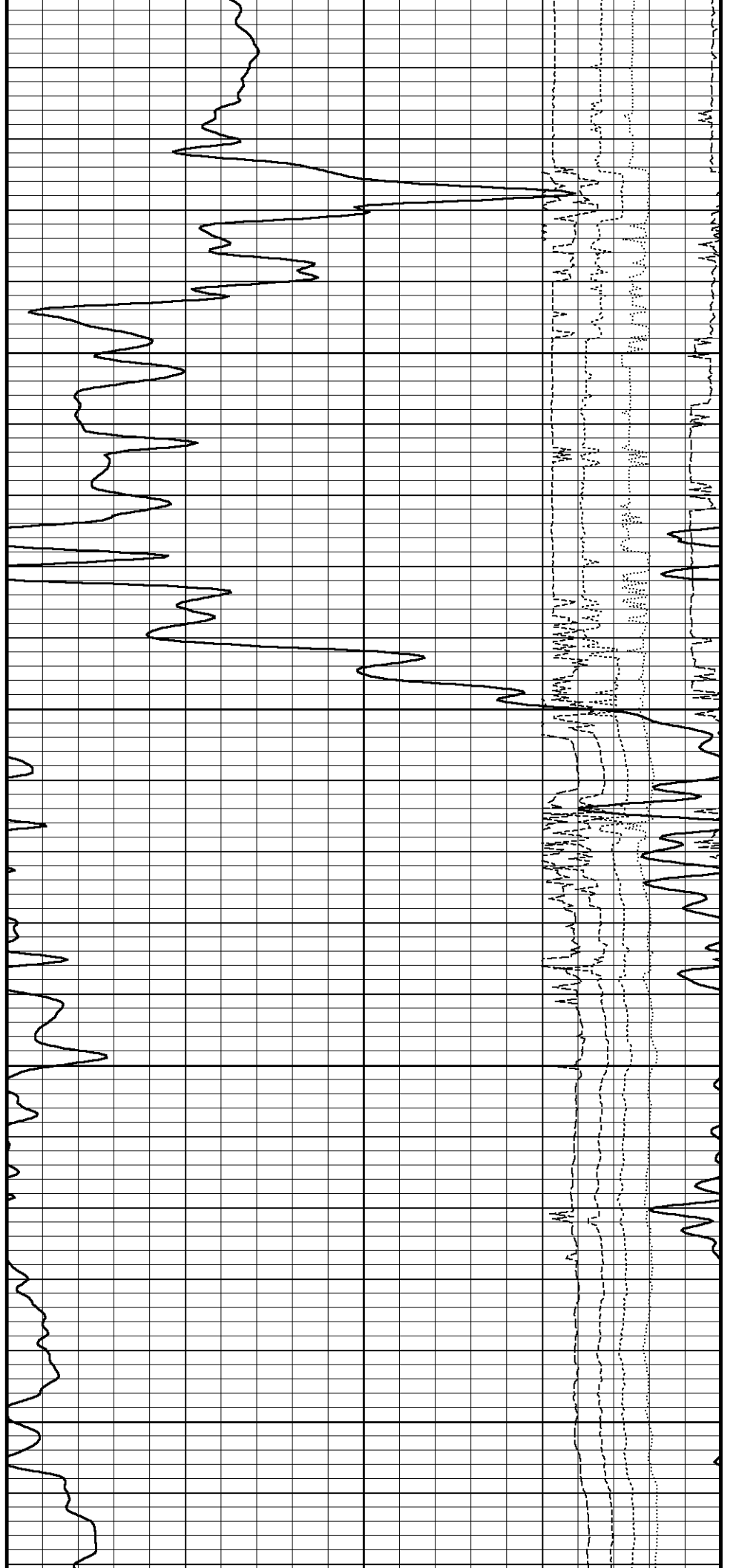
- TOTAL HOLE VOLUME FROM TD TO SURFACE CASING: 3643 CU. FT.
- ANNULAR HOLE VOLUME WITH 5.5 INCH CASING FROM TD TO 3000 FT: 962 CU. FT.
- SERVICE ORDER # 3537785.
- RIG: MURFIN #25.
- ENGINEER: A. SILL.
- OPERATOR(S): N. ADAME, R. VENEGAS.

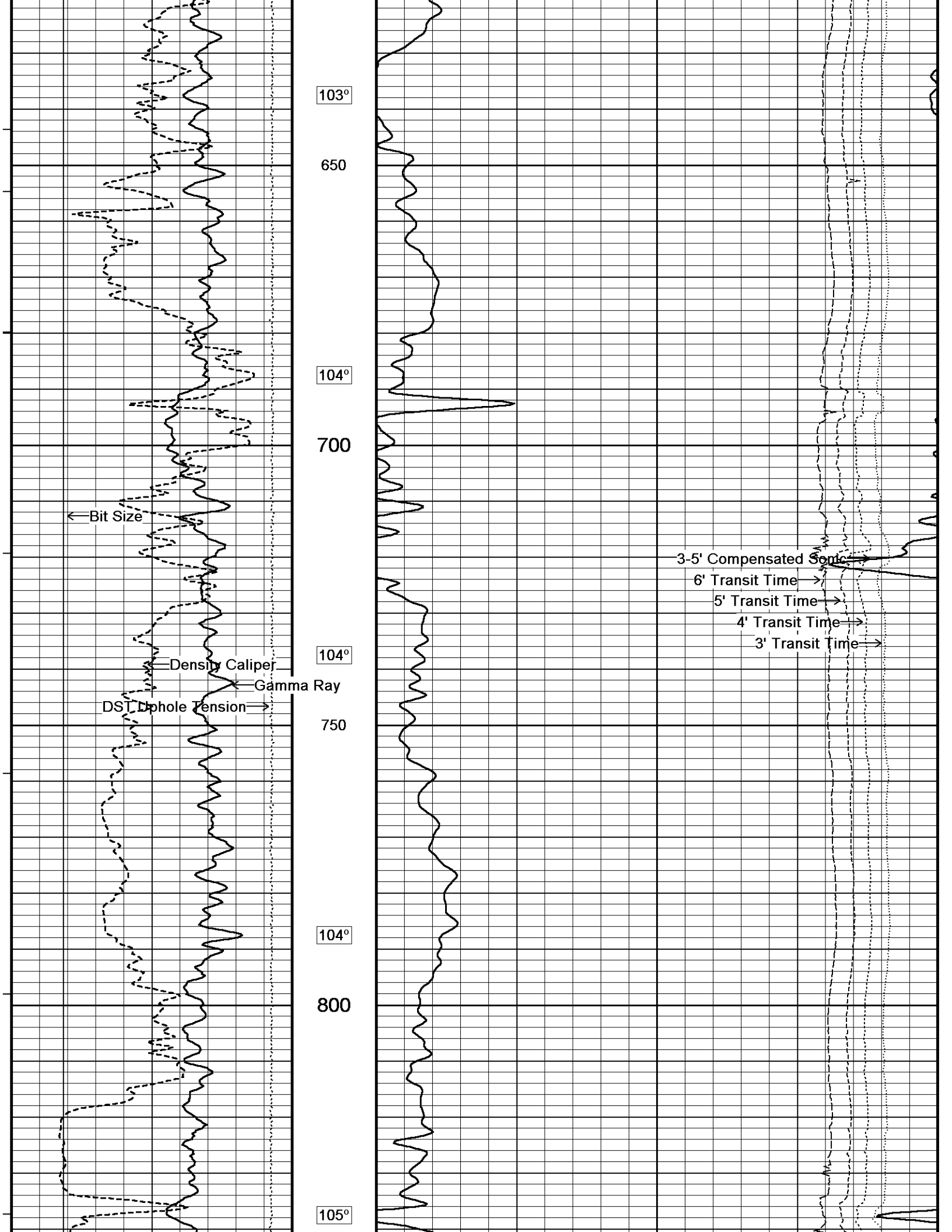
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs, 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.

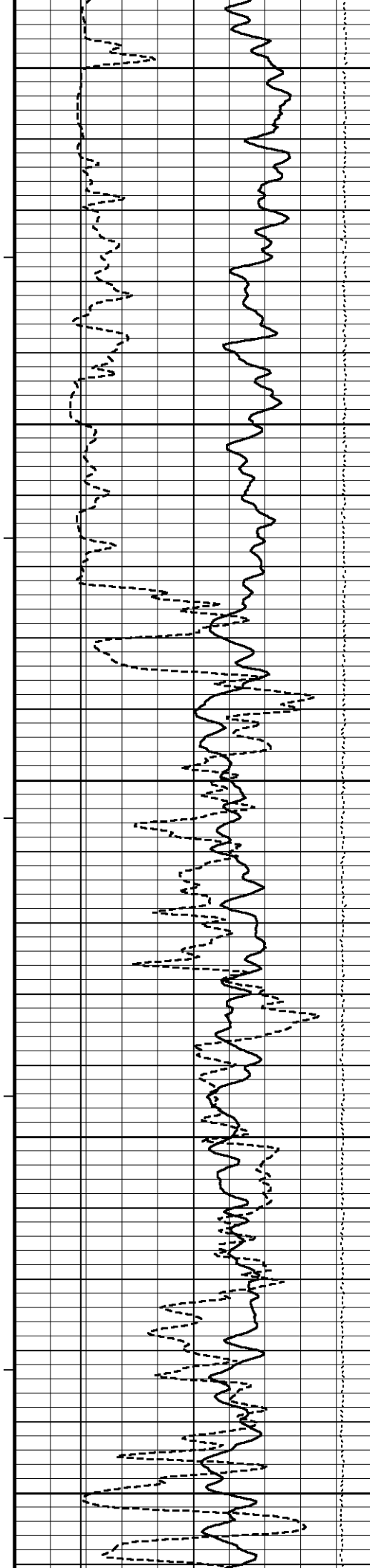




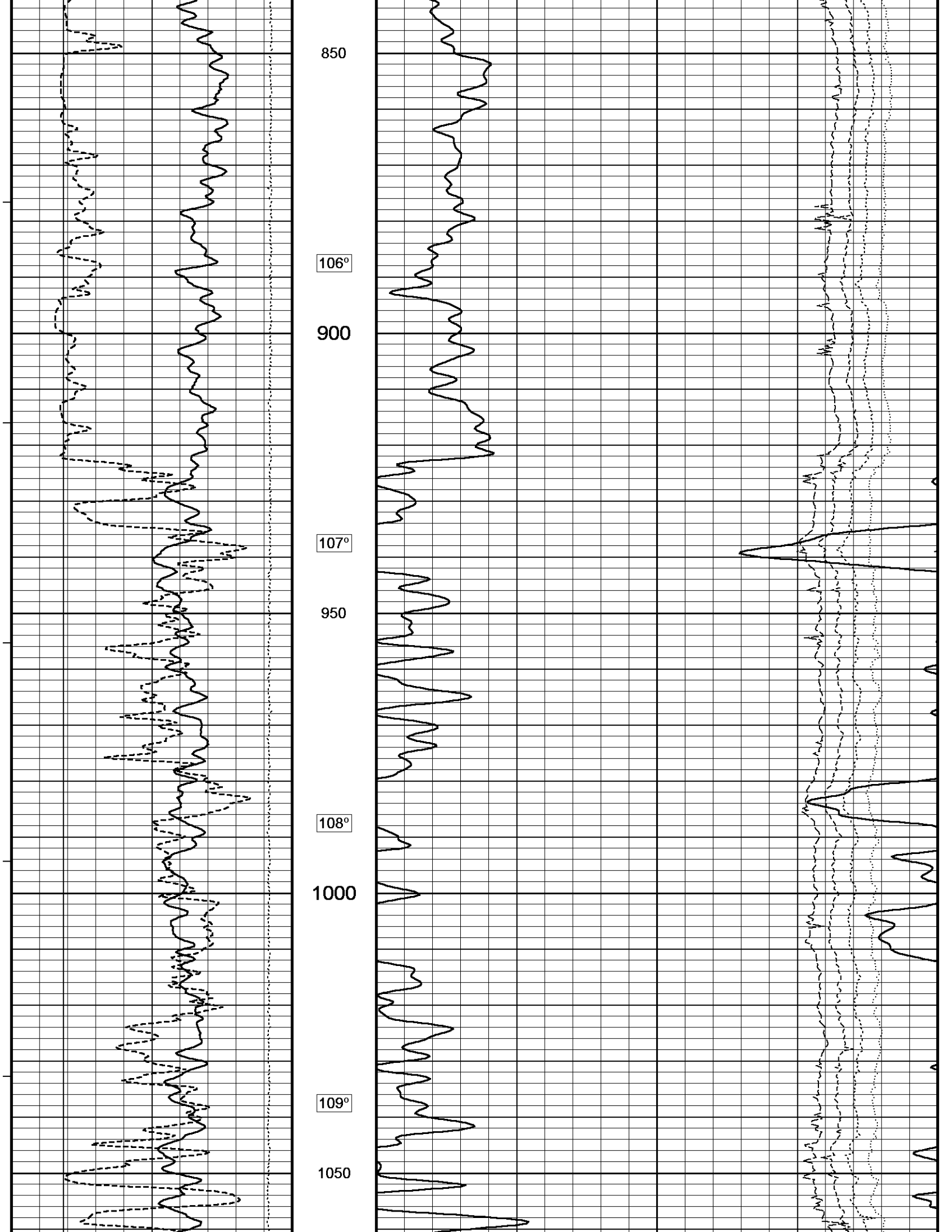
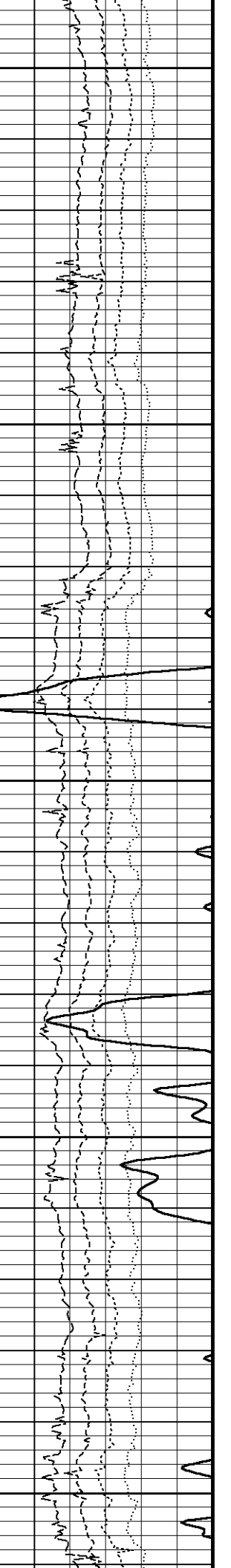
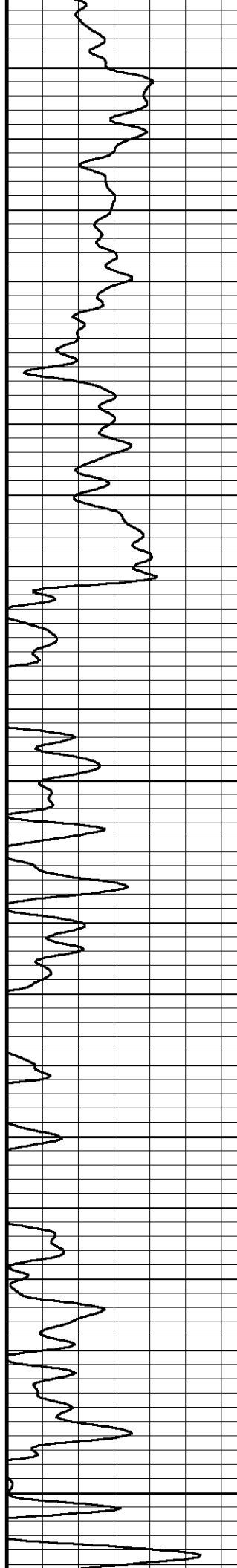
400
102°
450
102°
500
102°
550
102°
600

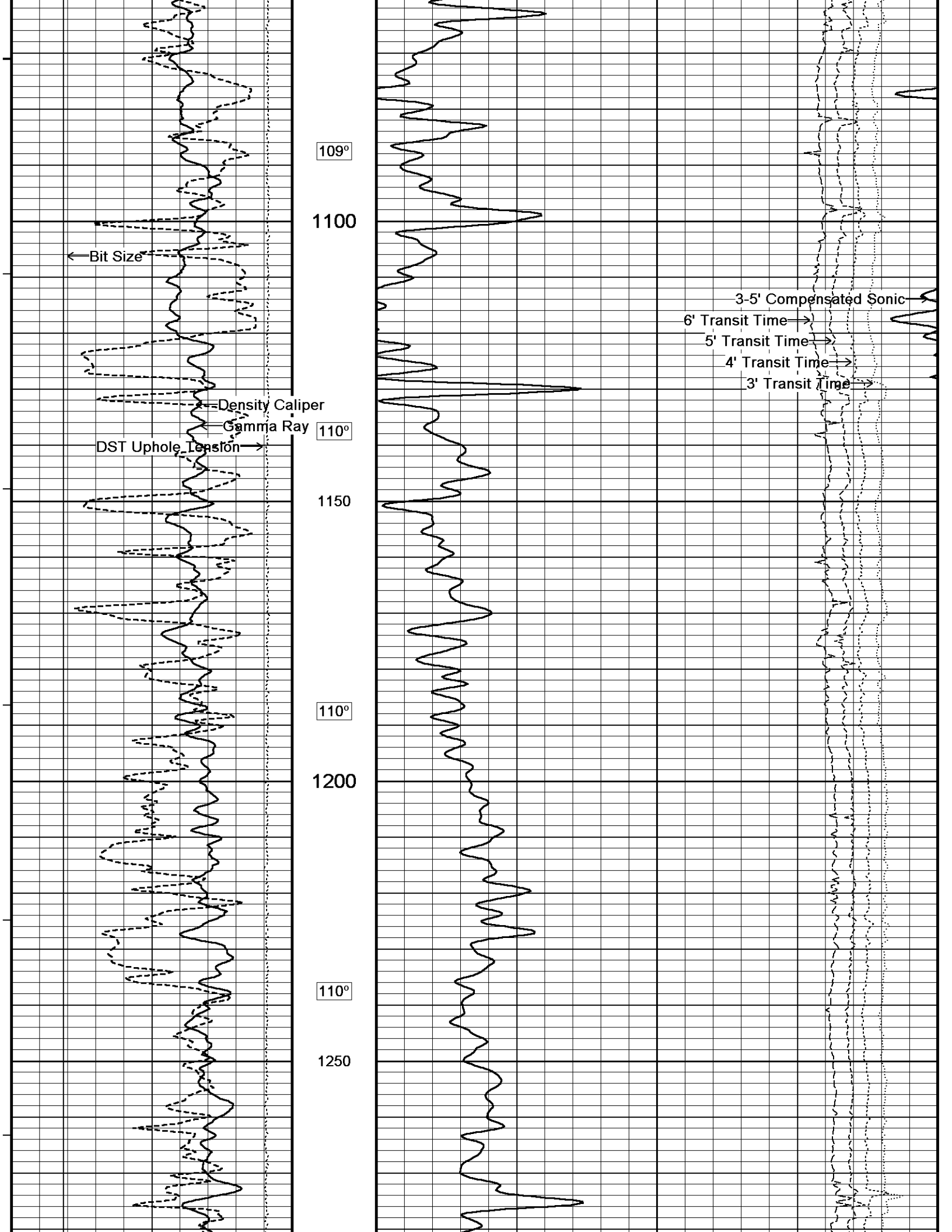


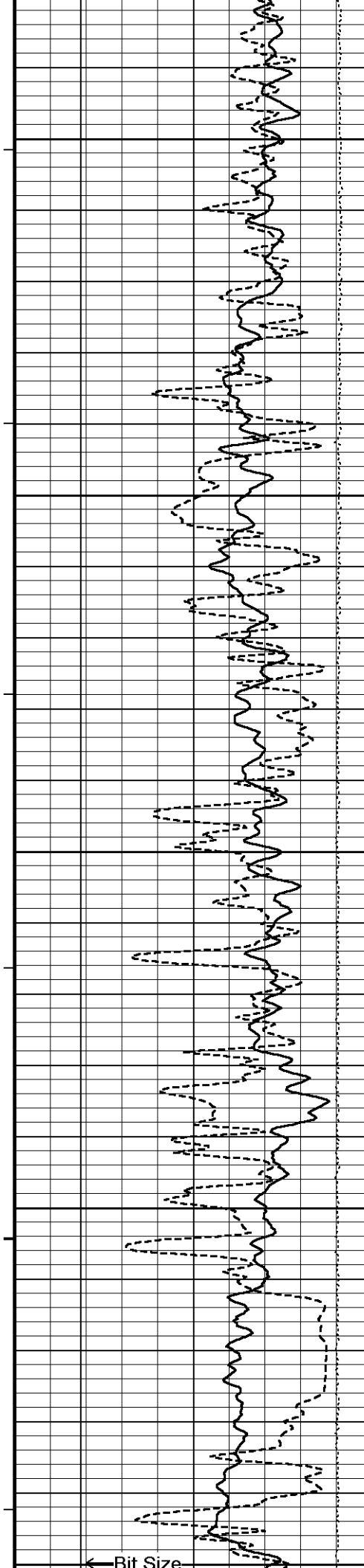




850
106°
900
107°
950
108°
1000
109°
1050







110°

1300

111°

1350

111°

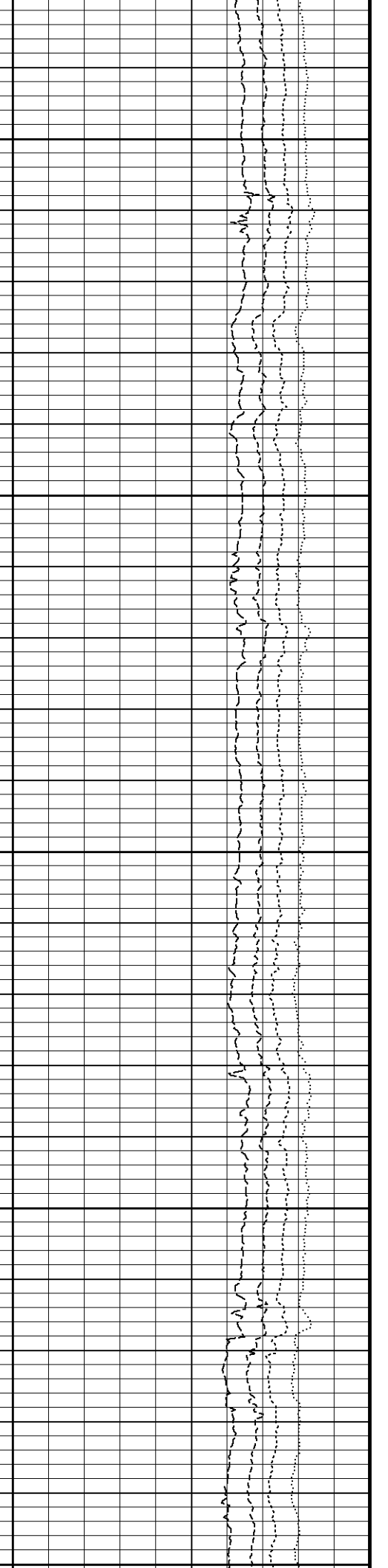
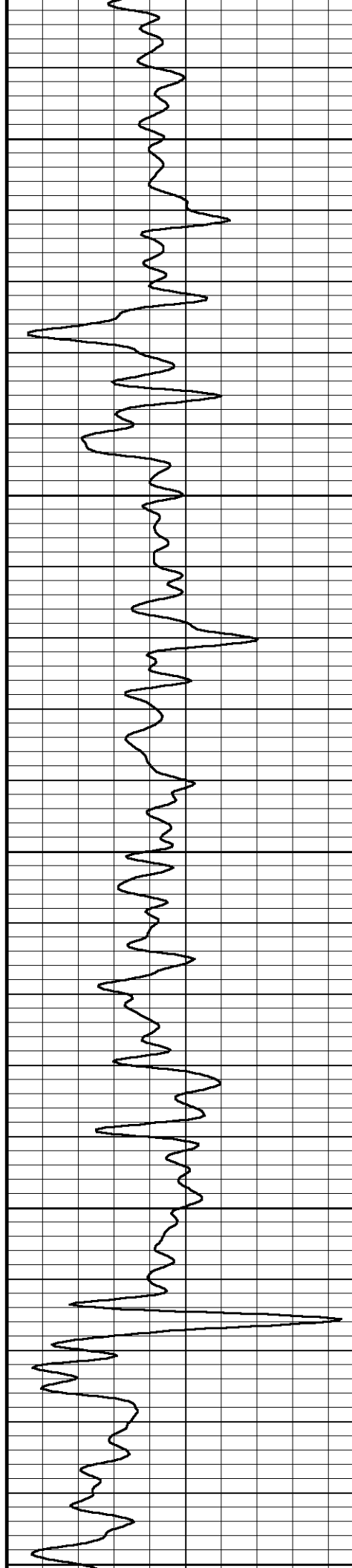
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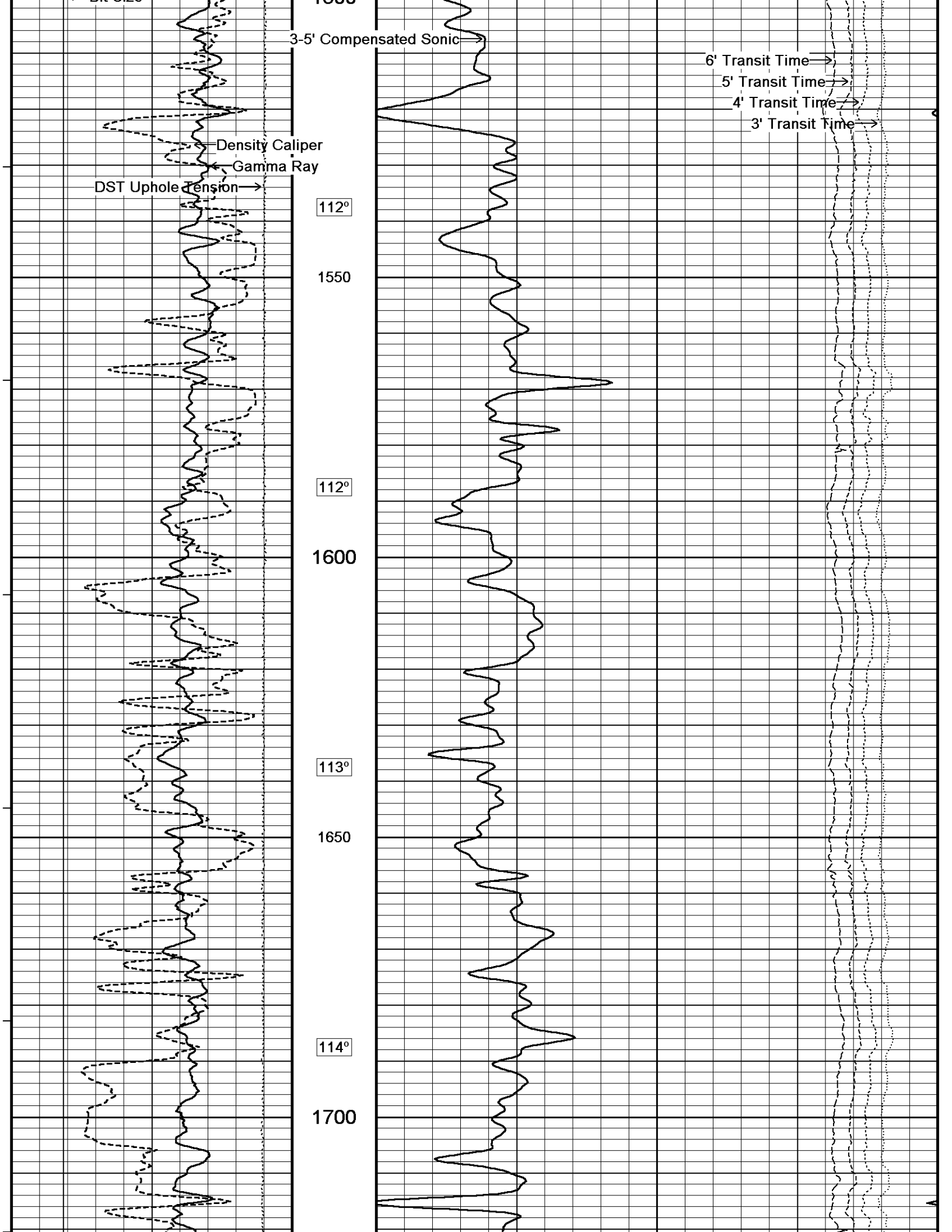
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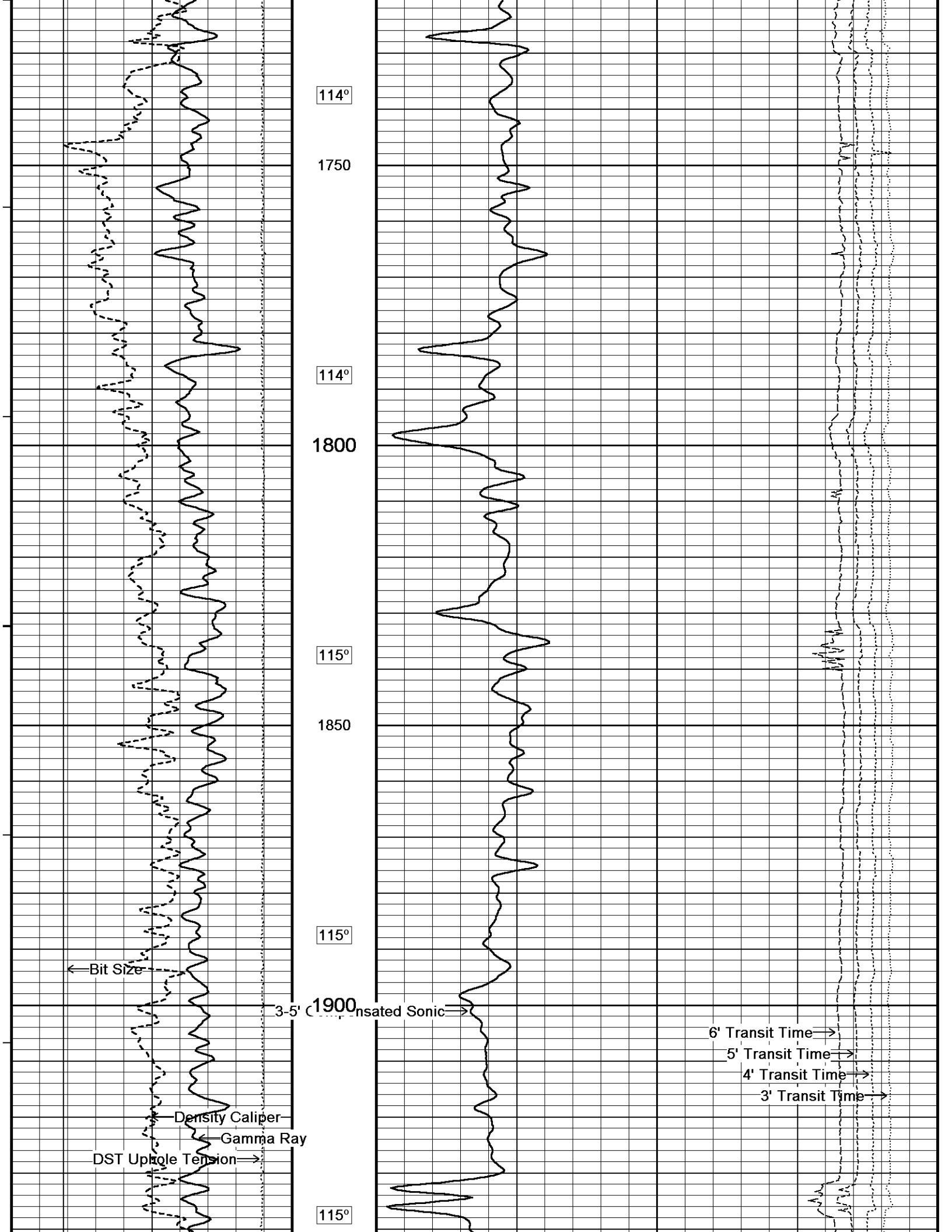
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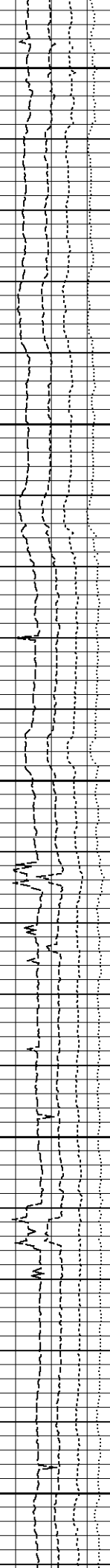
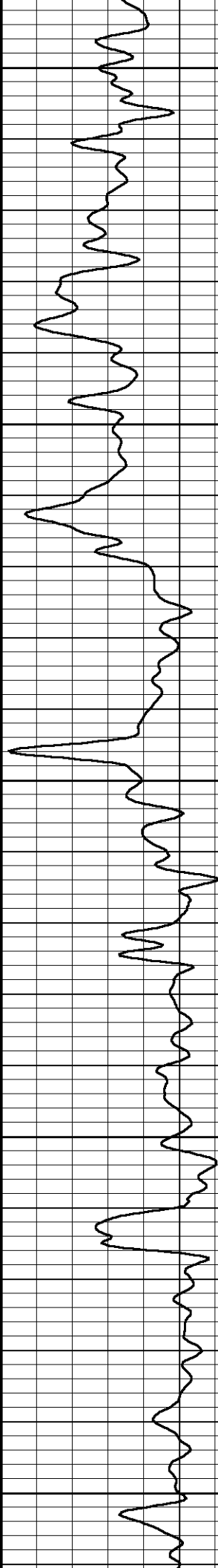
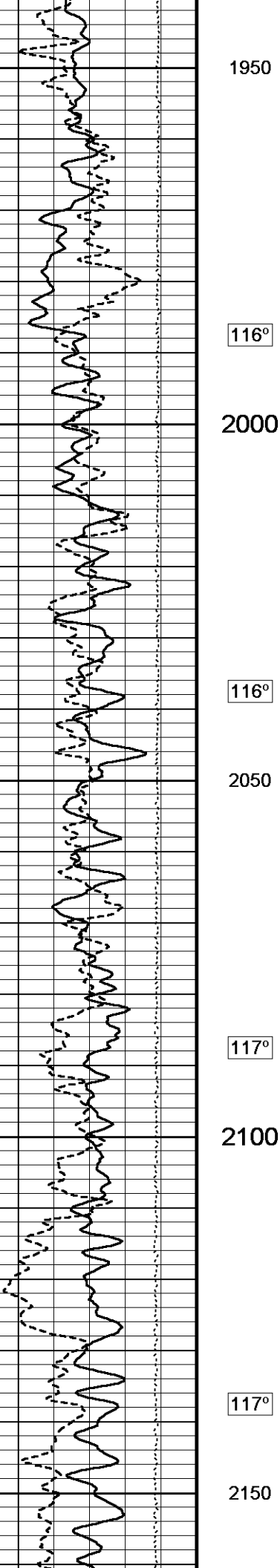
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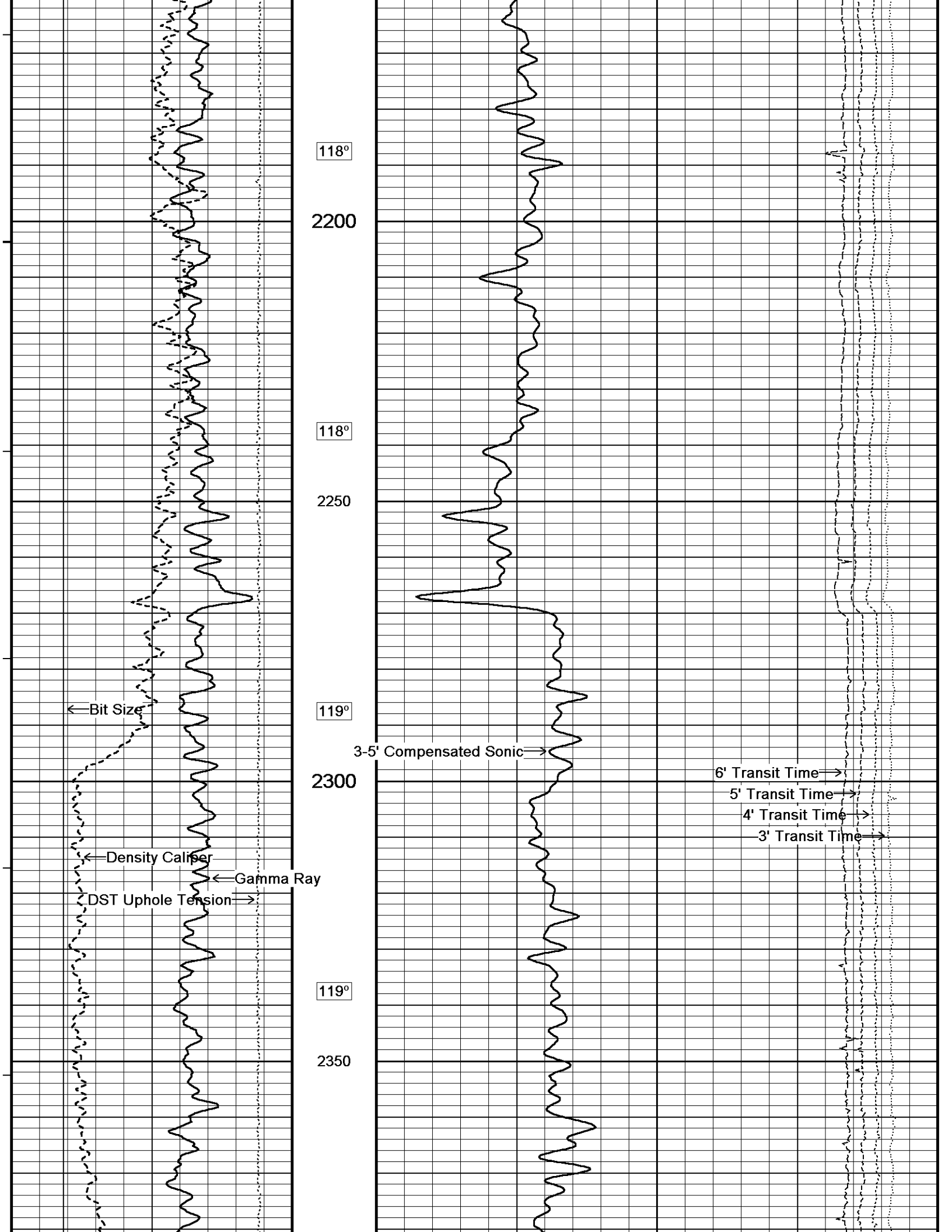
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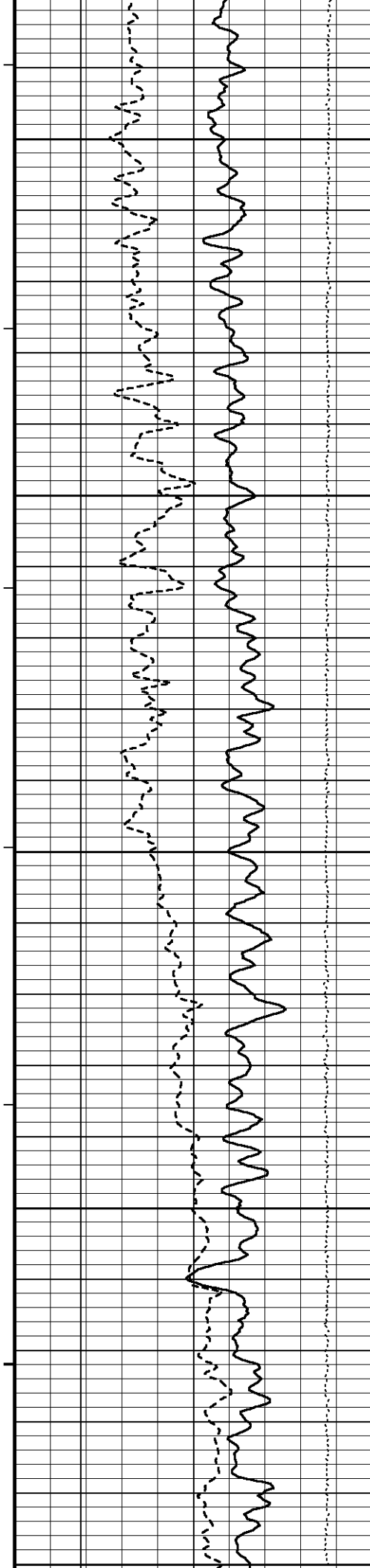












120°

2400

120°

2450

120°

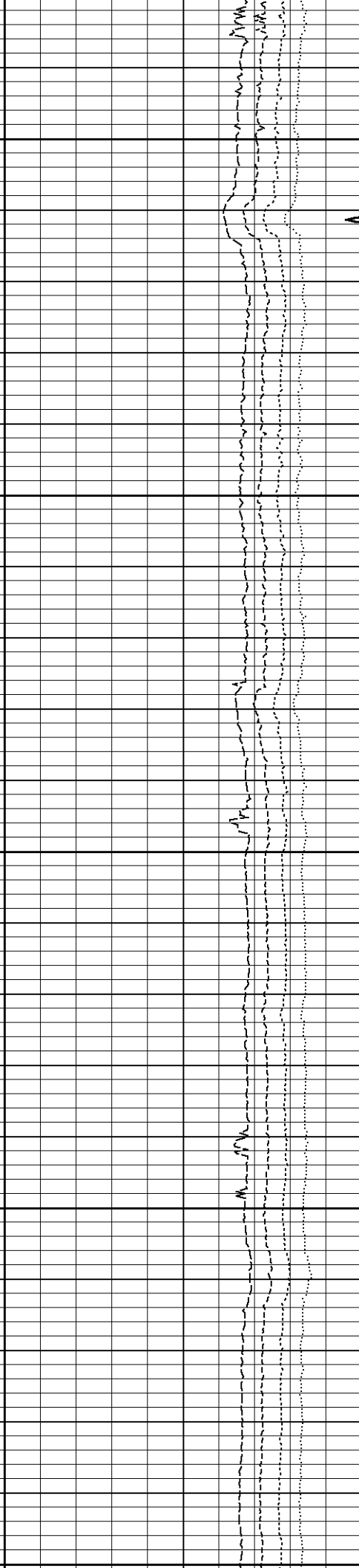
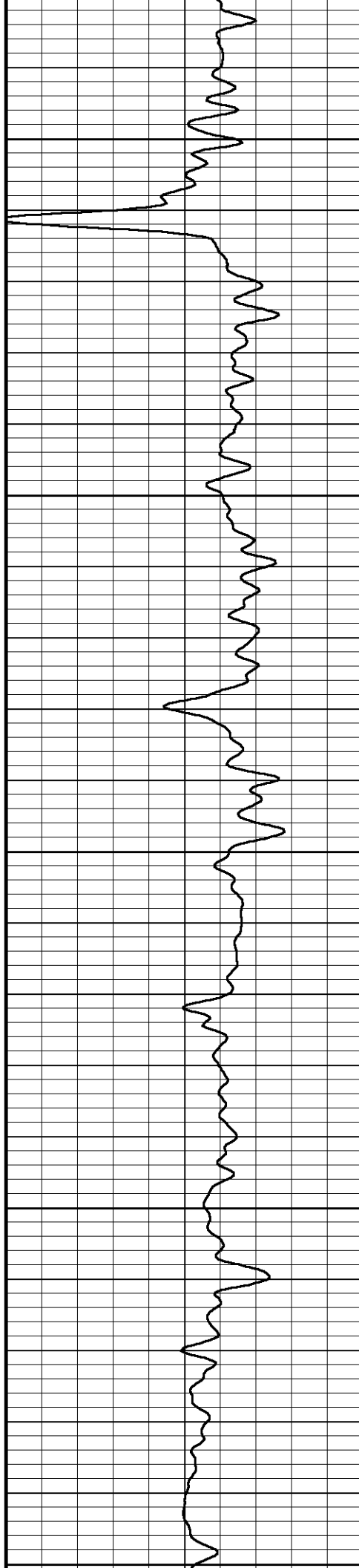
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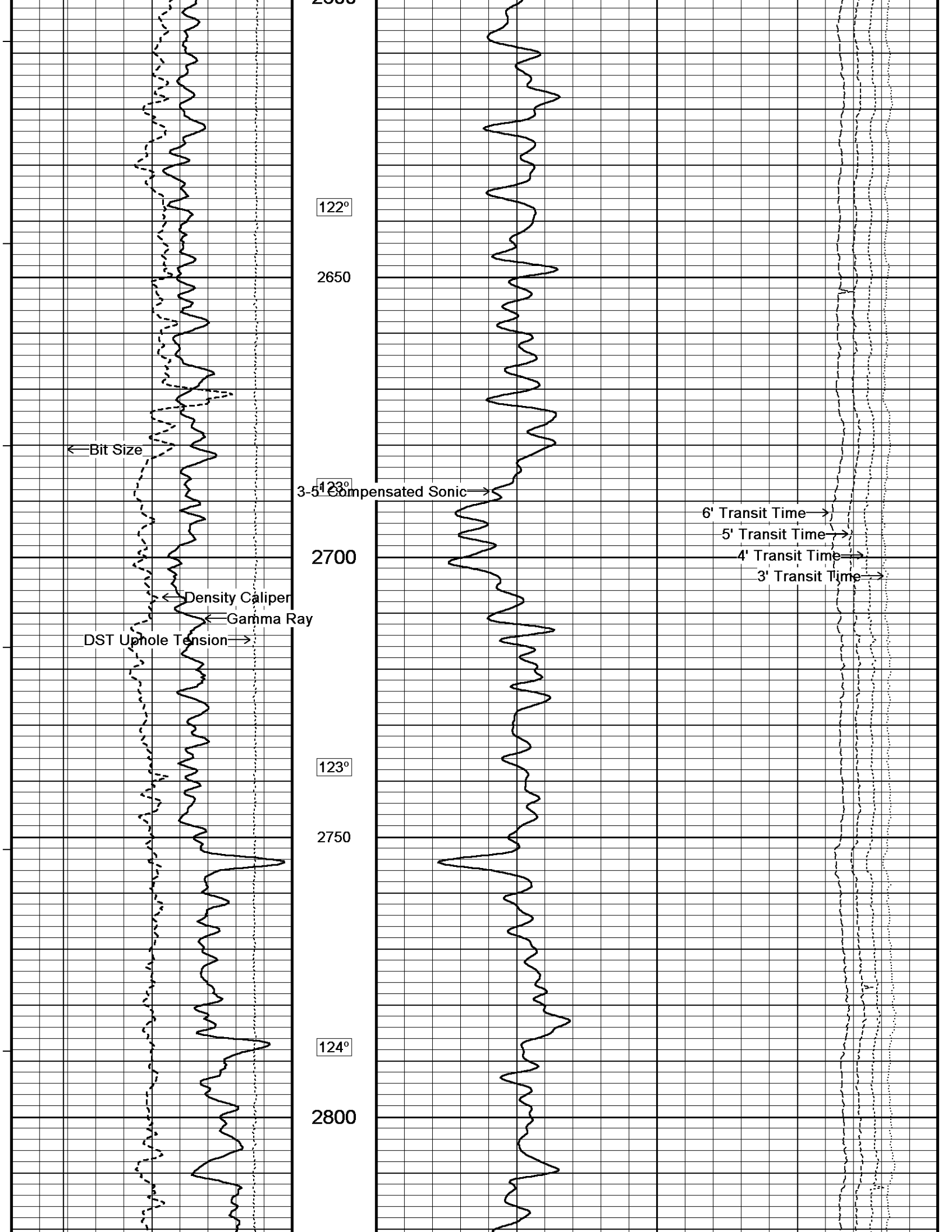
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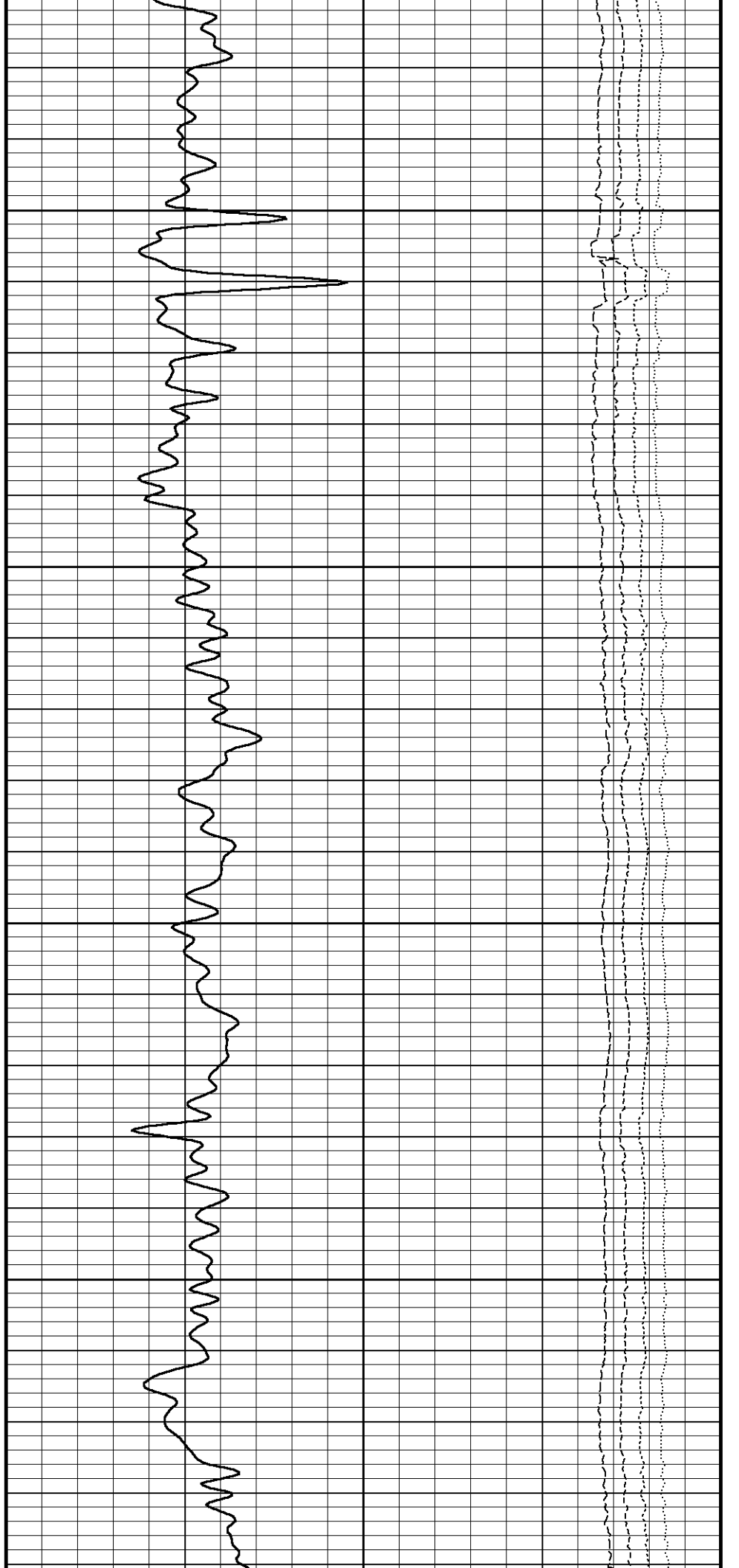
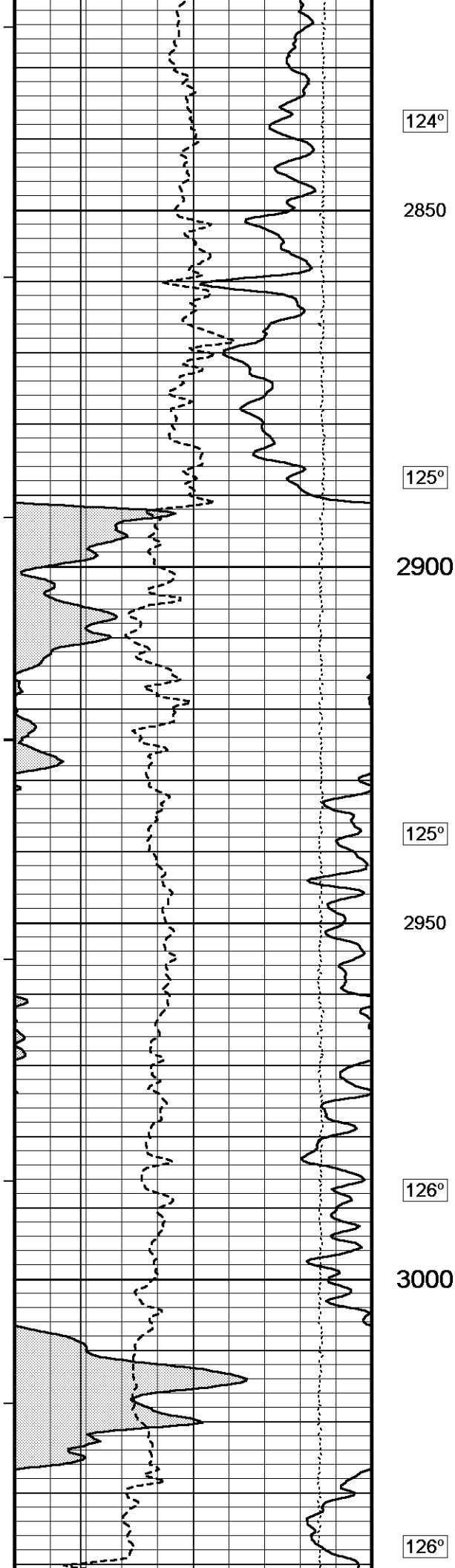
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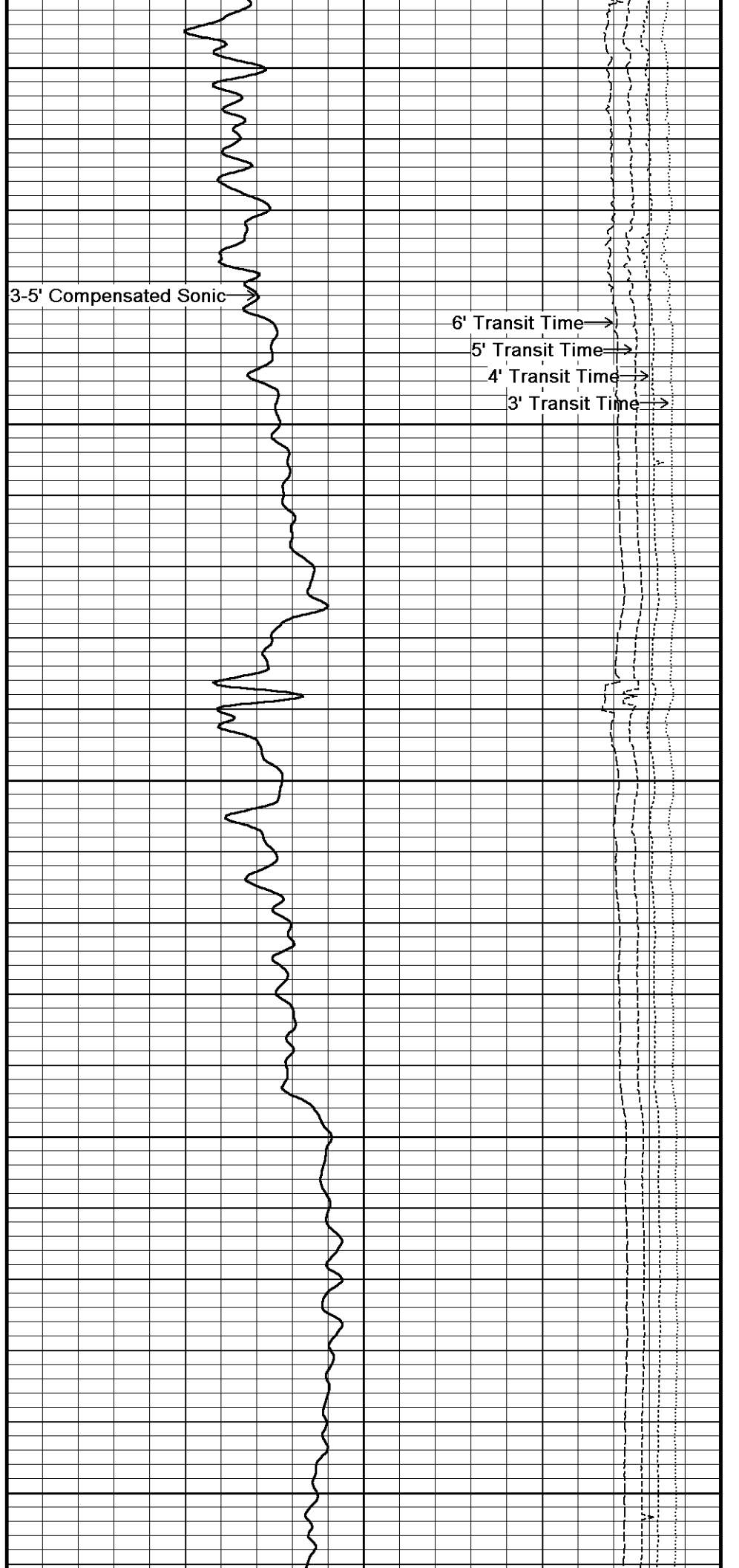
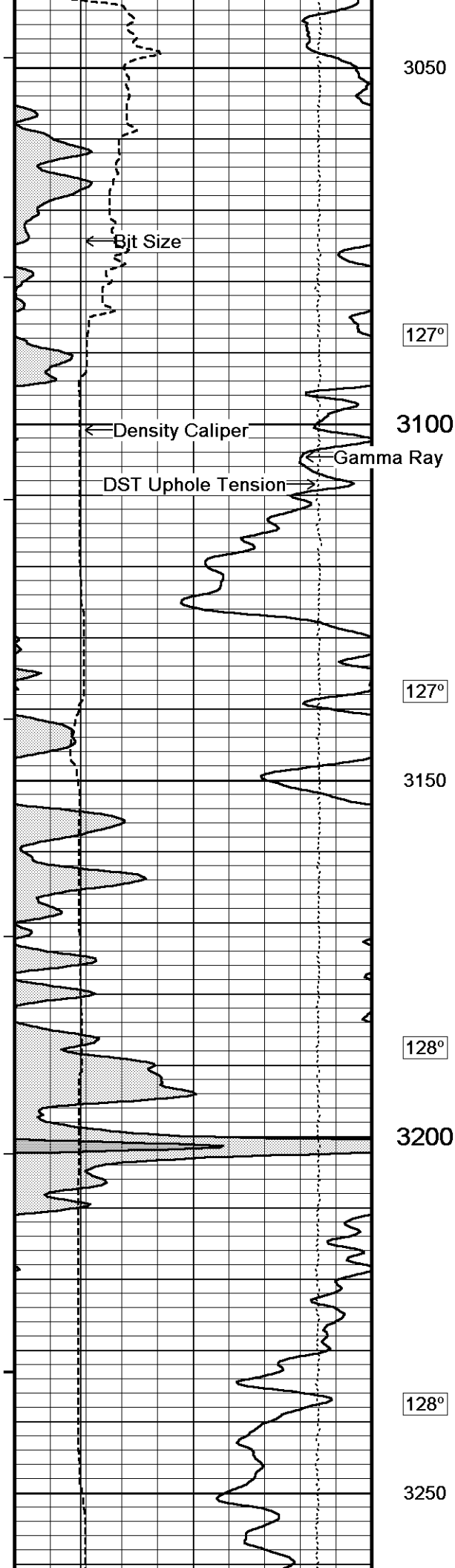
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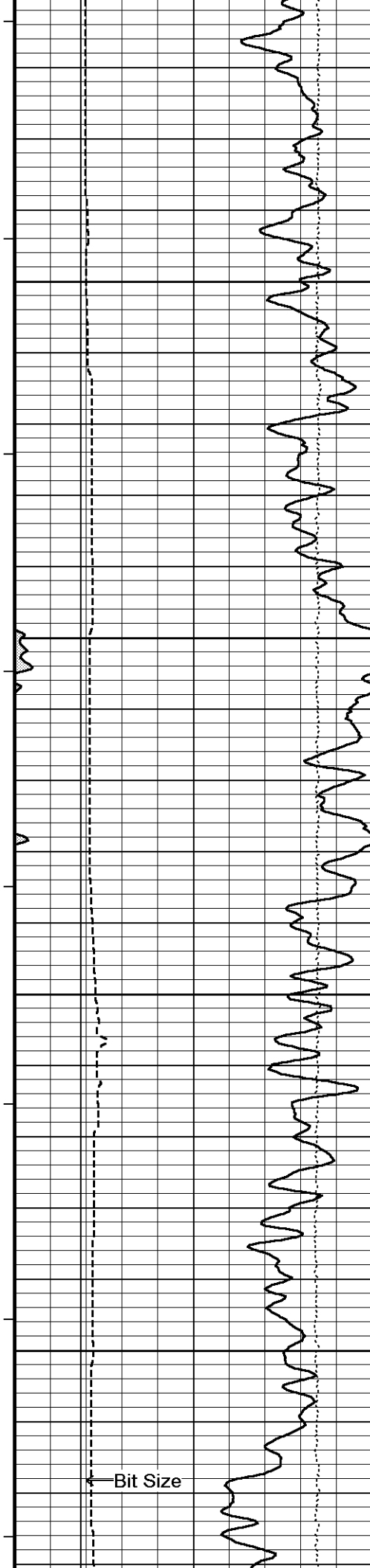
2600











129°

3300

129°

3350

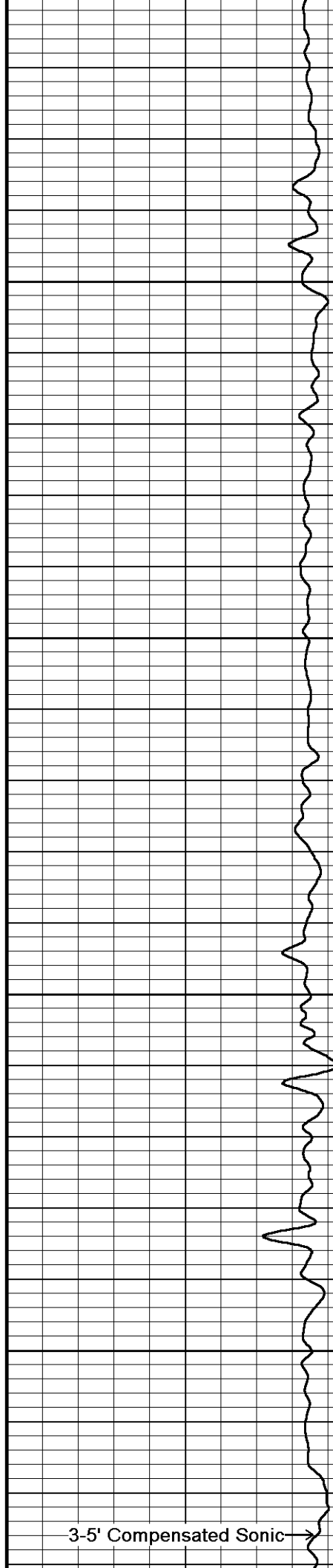
130°

3400

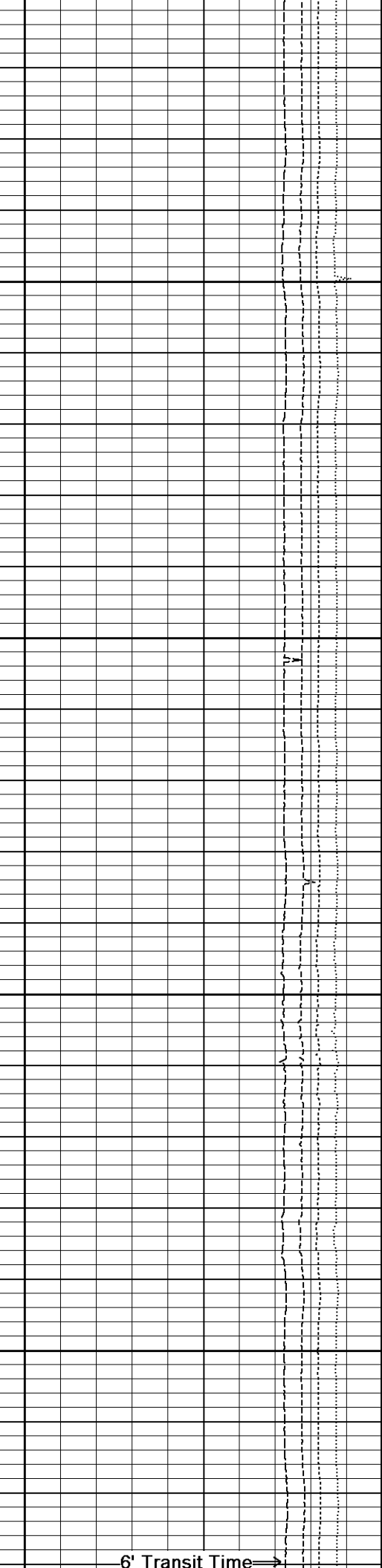
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3450

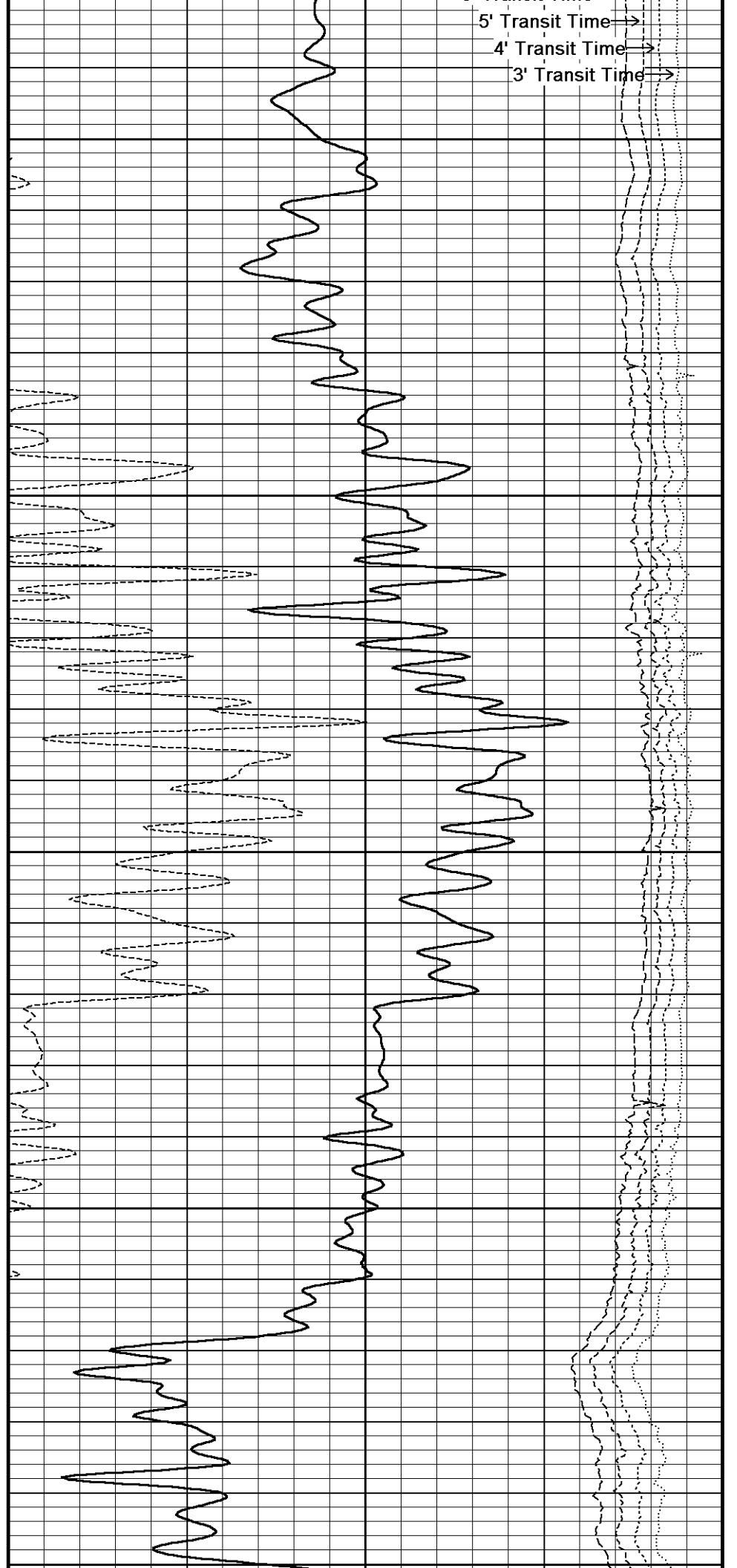
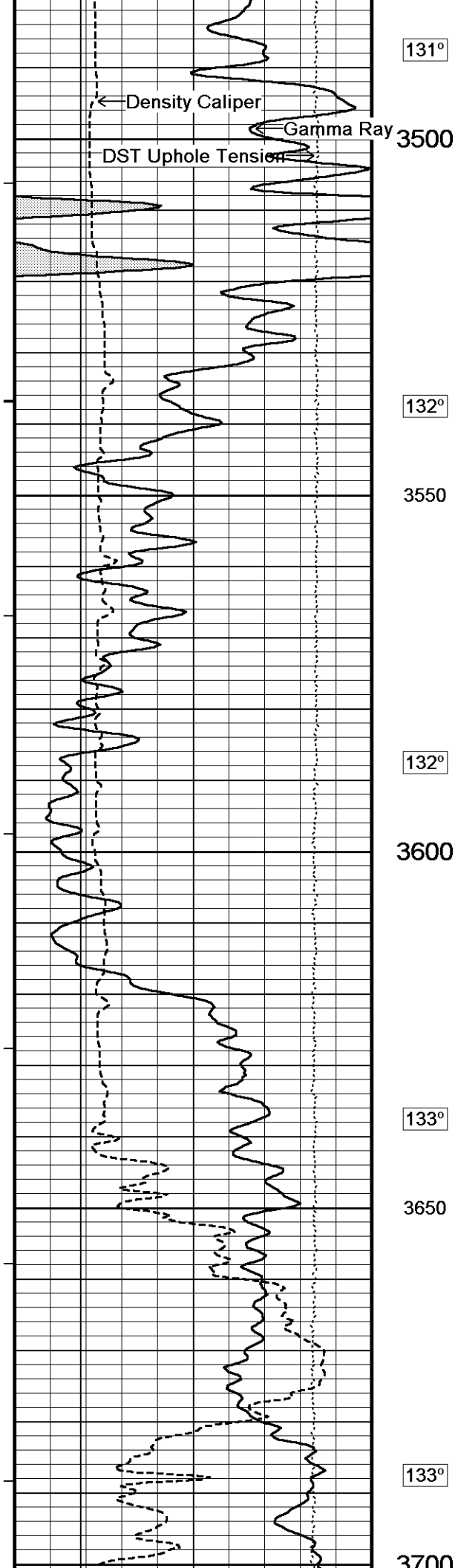
Bit Size

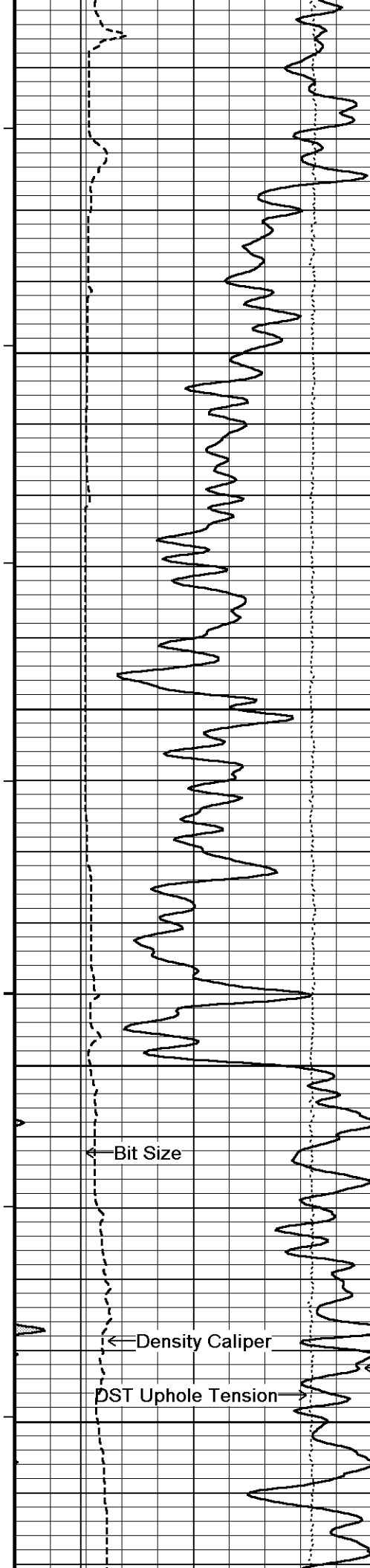


3-5' Compensated Sonic

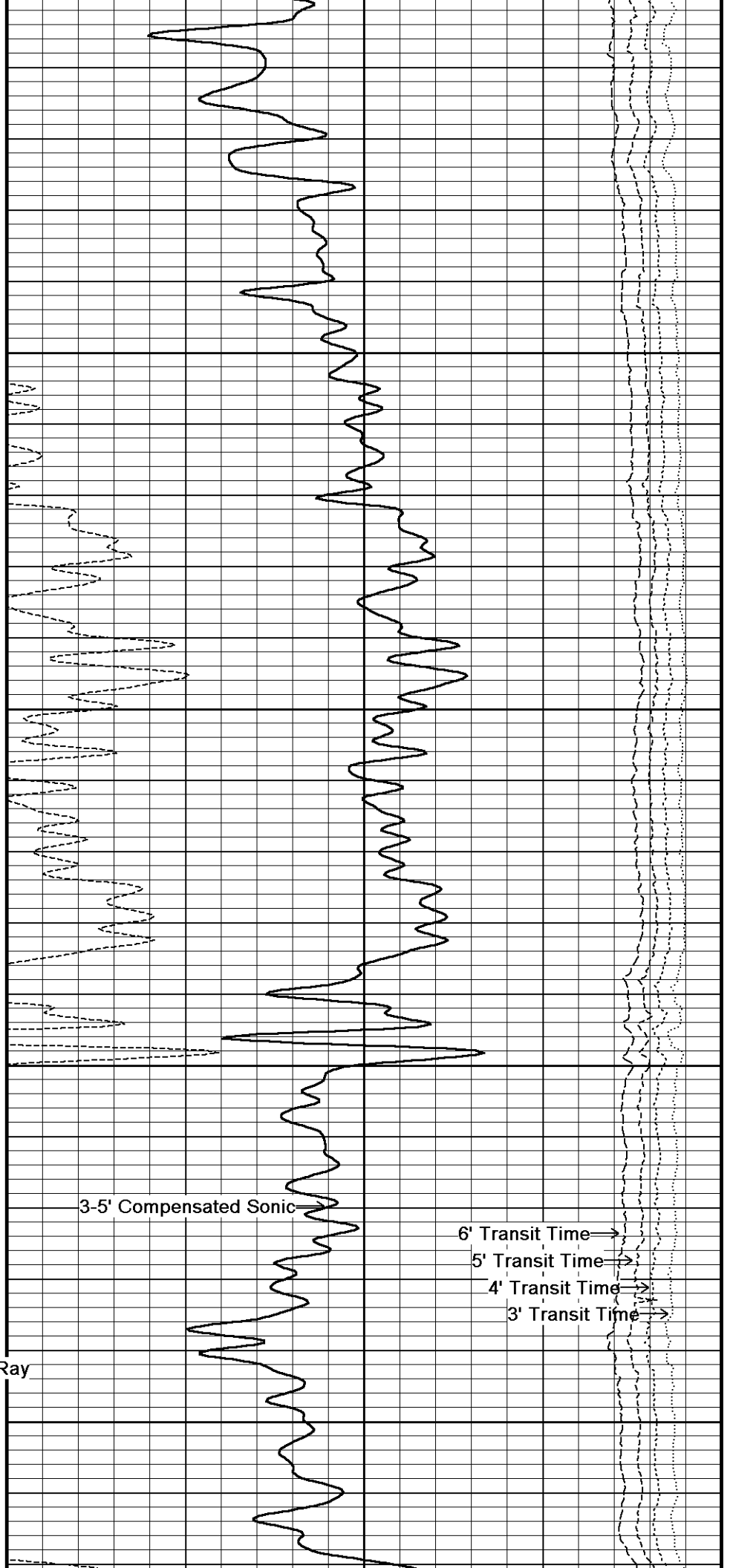


6' Transit Time





3780
134°
3750
134°
3800
135°
3850
135°
3900



Bit Size

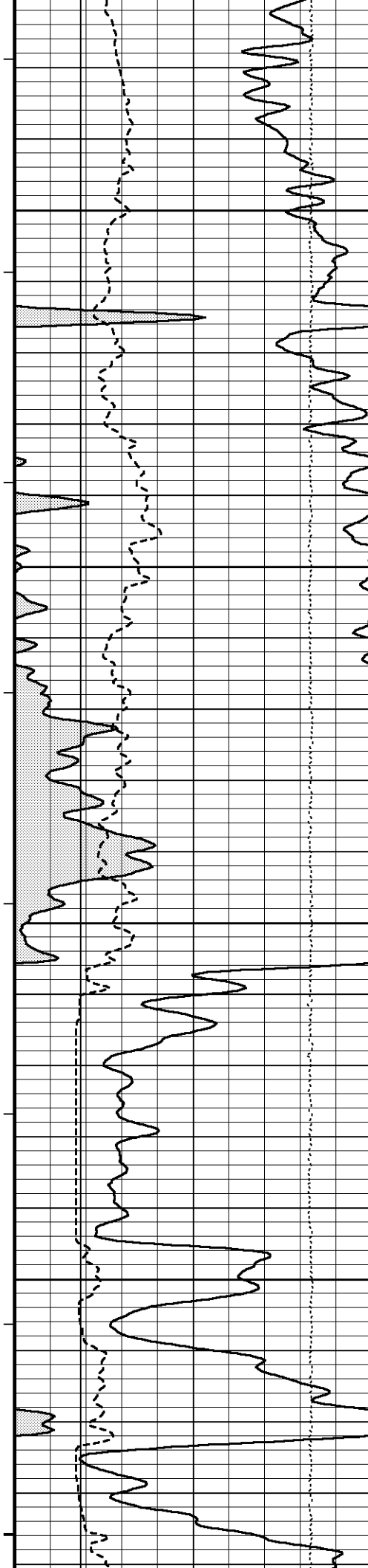
Density Caliper

DST Uphole Tension

Gamma Ray

3-5' Compensated Sonic

6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time



136°

3950

136°

4000

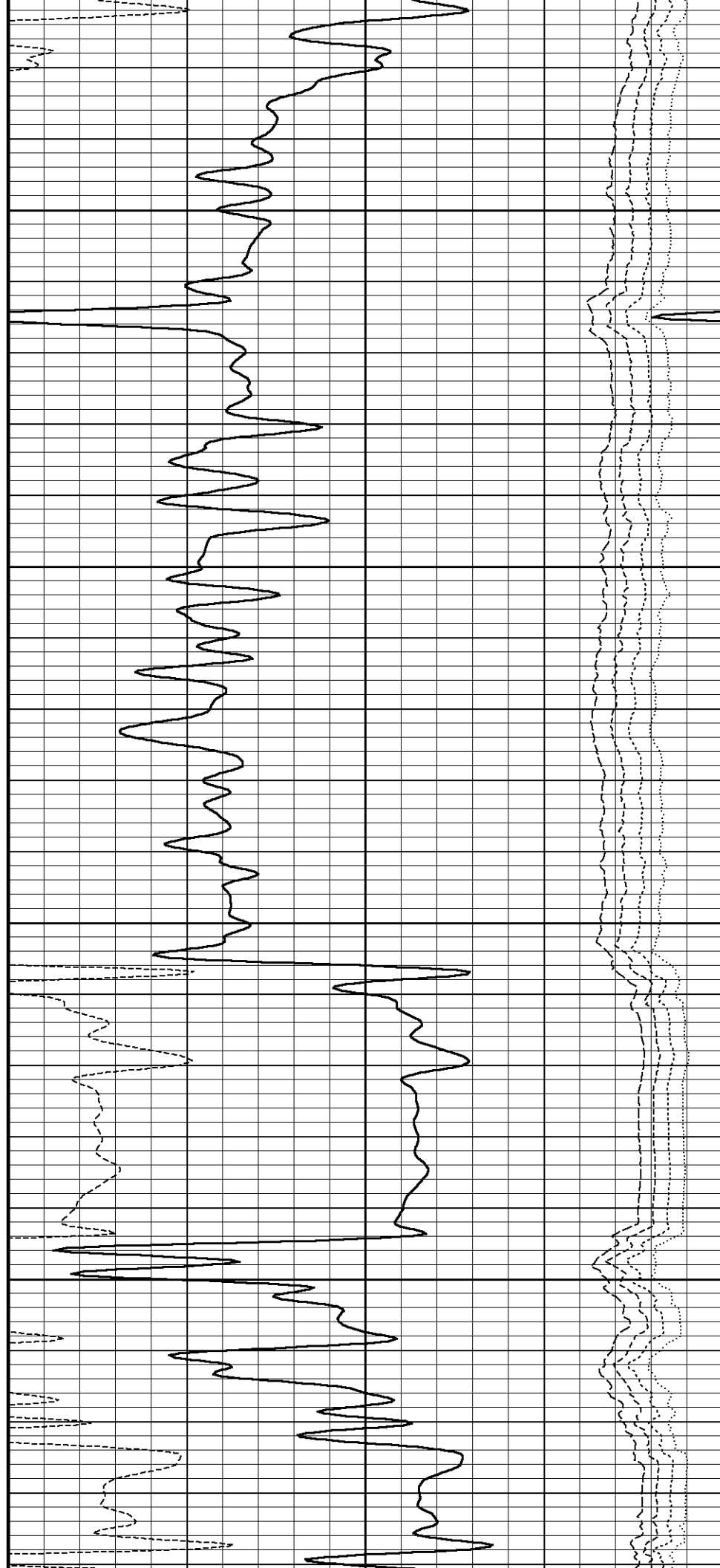
137°

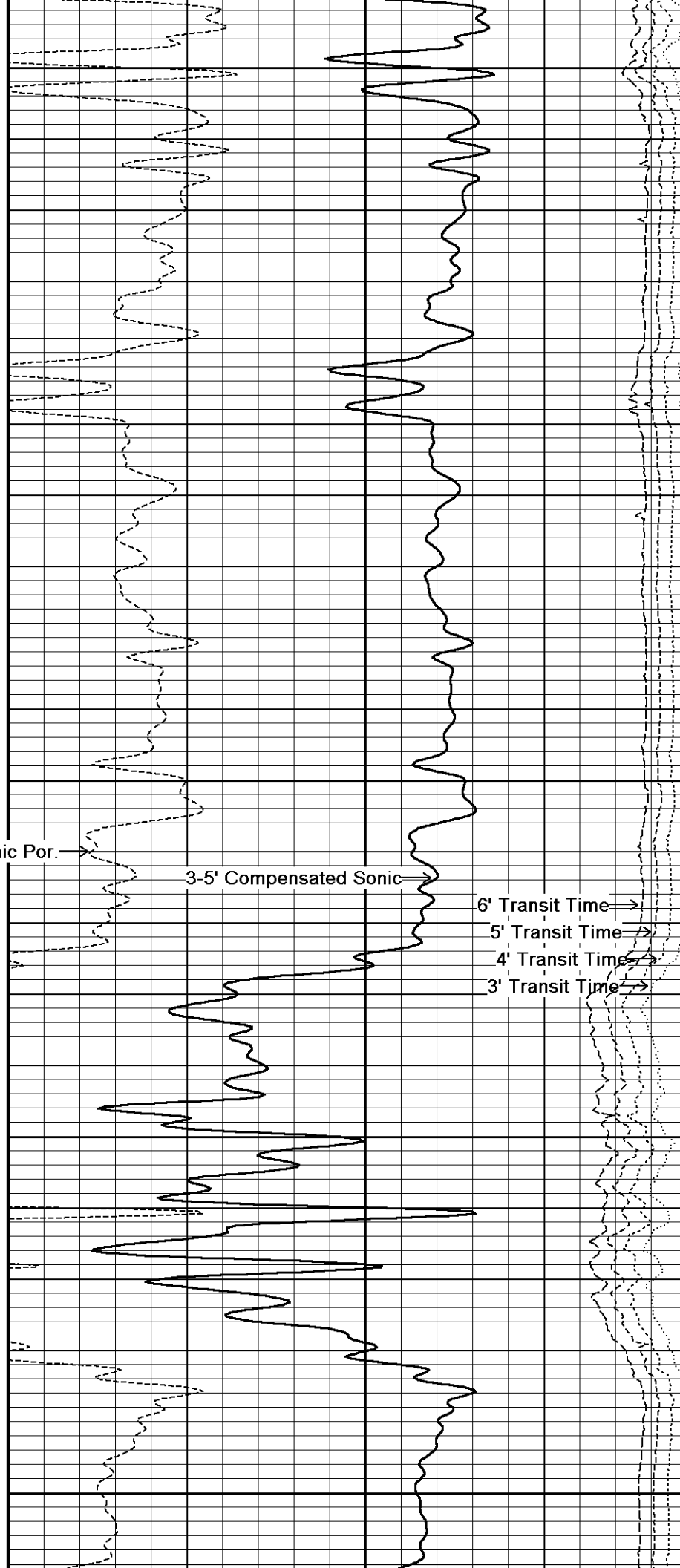
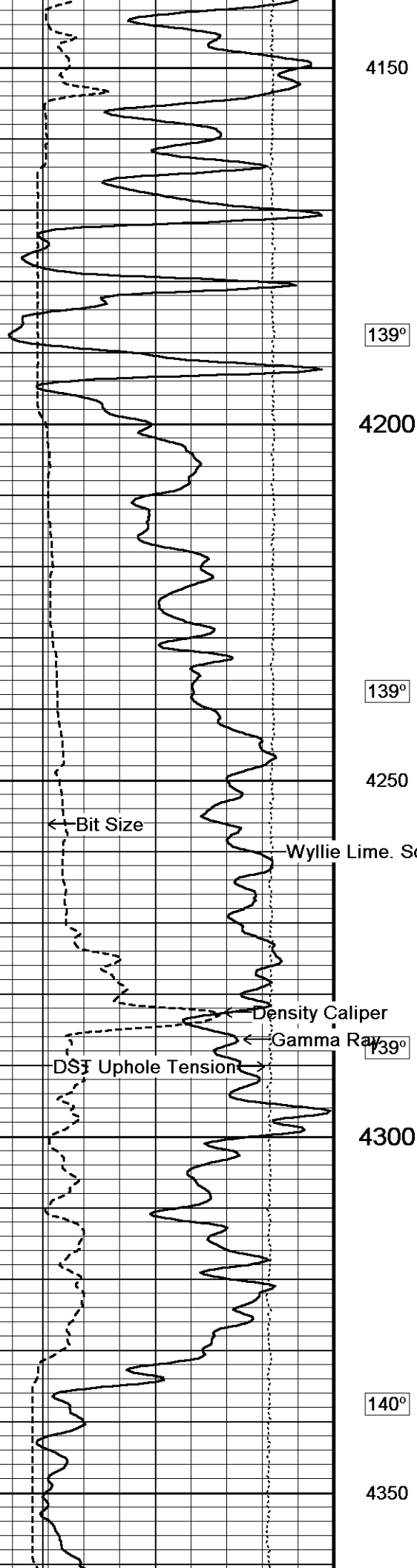
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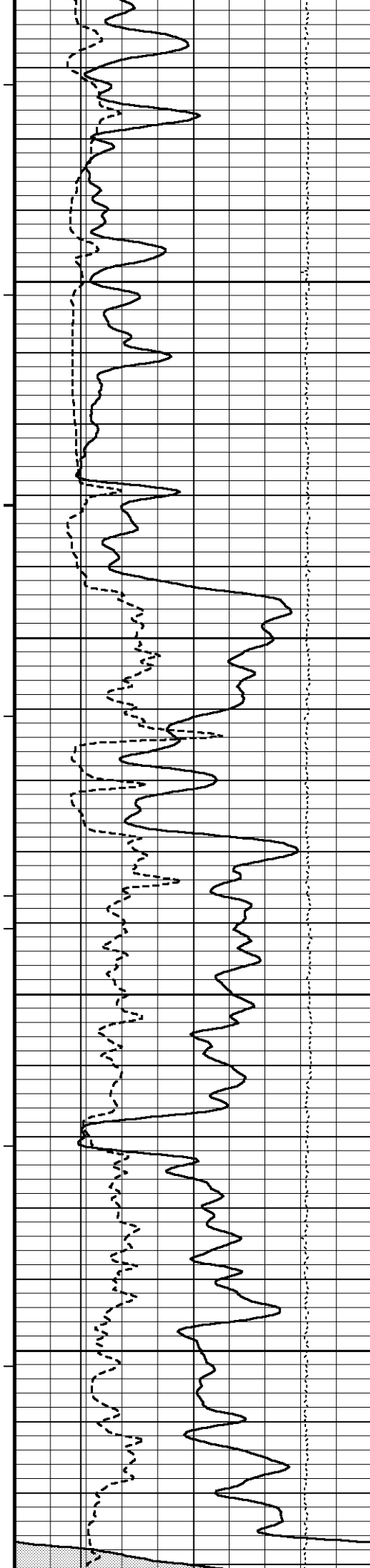
138°

4100

138°







140°

4400

140°

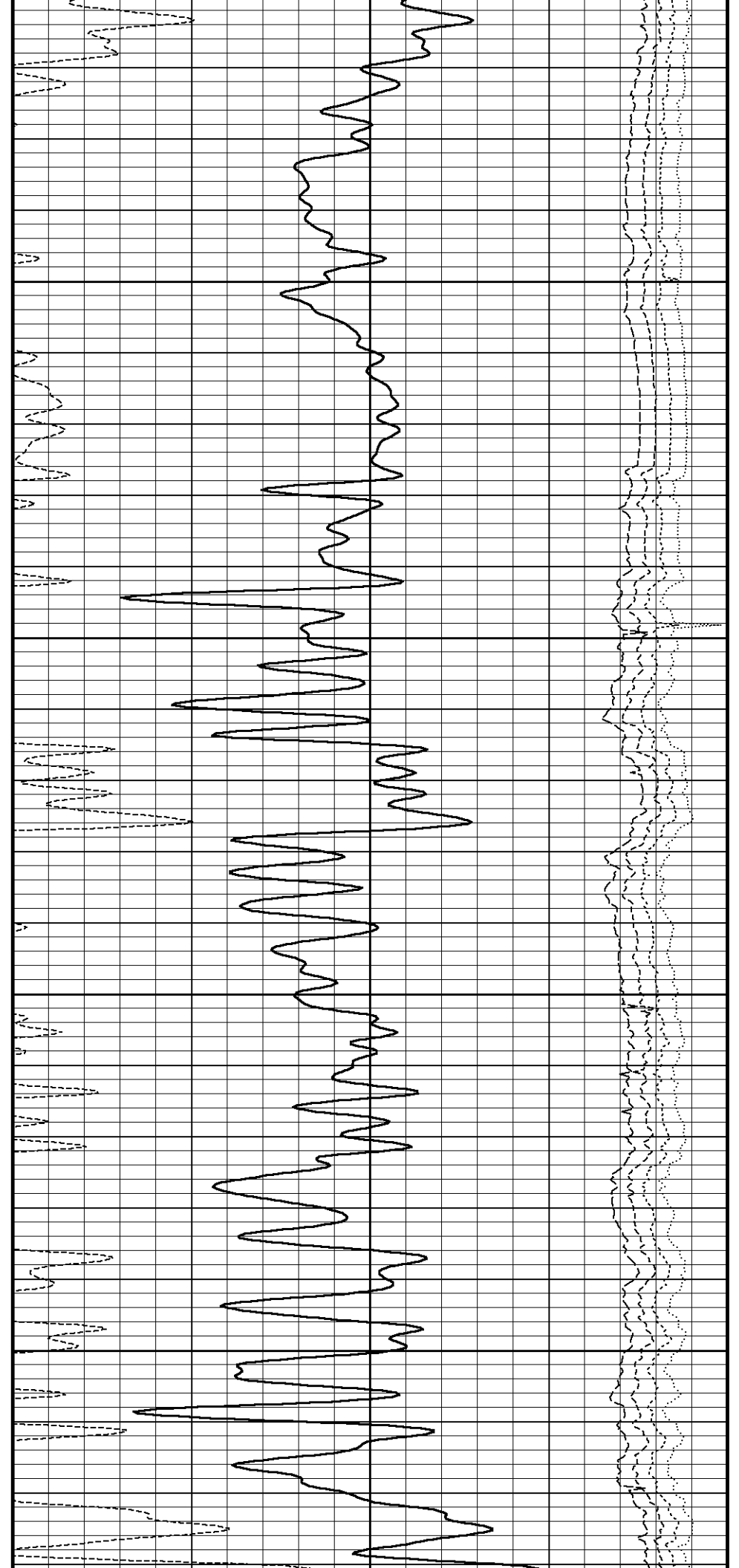
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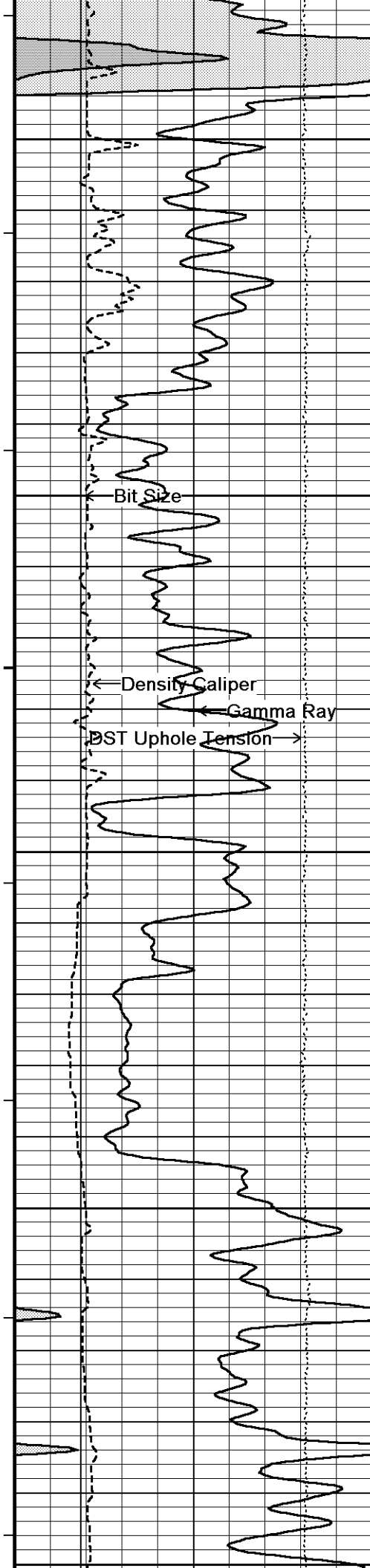
141°

4500

141°

4550





142°

4600

143°

4650

143°

4700

143°

4750

143°

4800

Wyllie Lime. Sonic Por. →

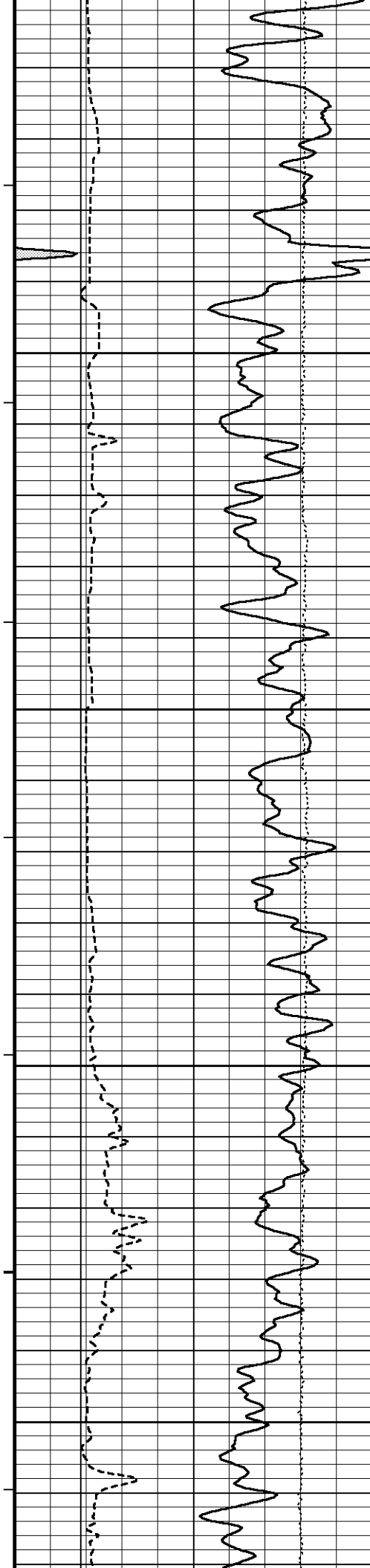
3-5" Compensated Sonic →

6" Transit Time →

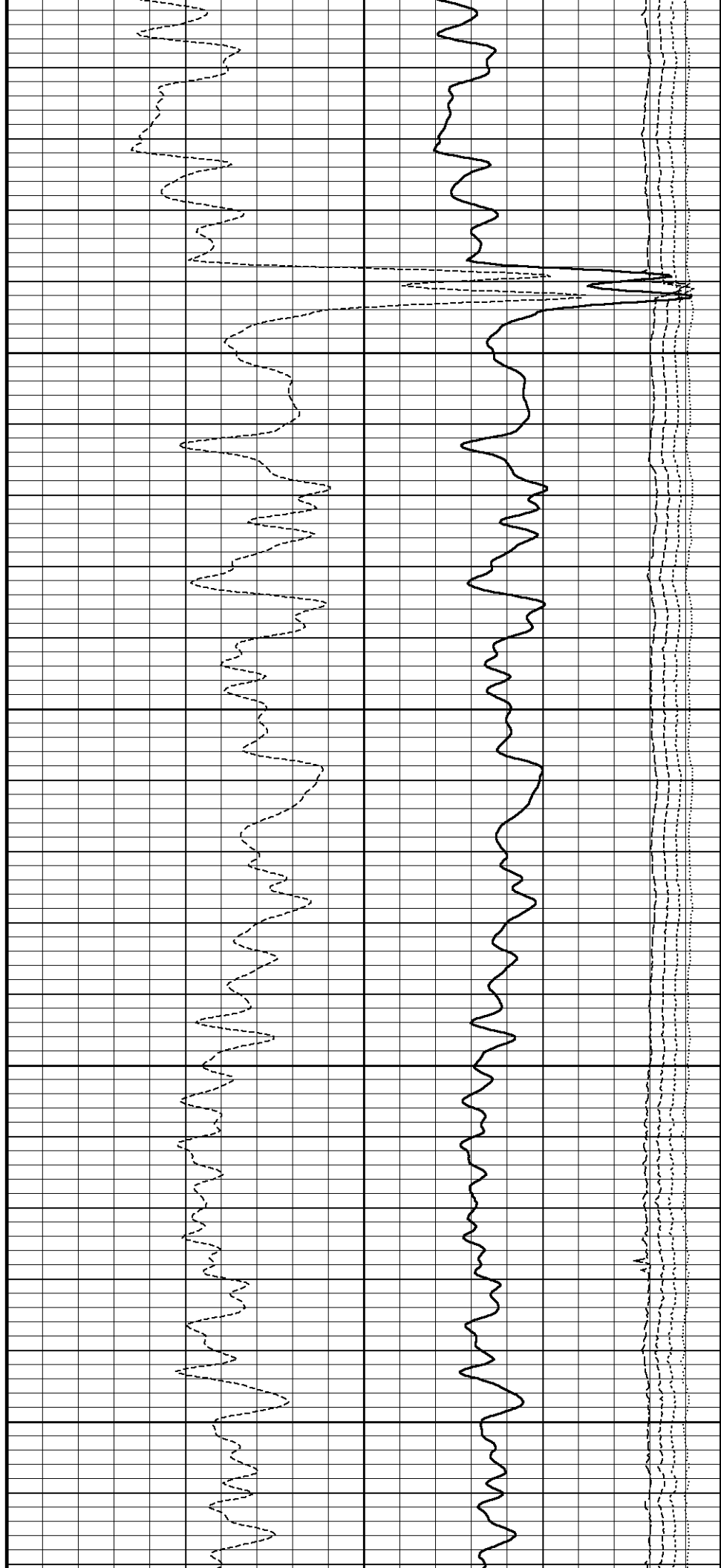
5" Transit Time →

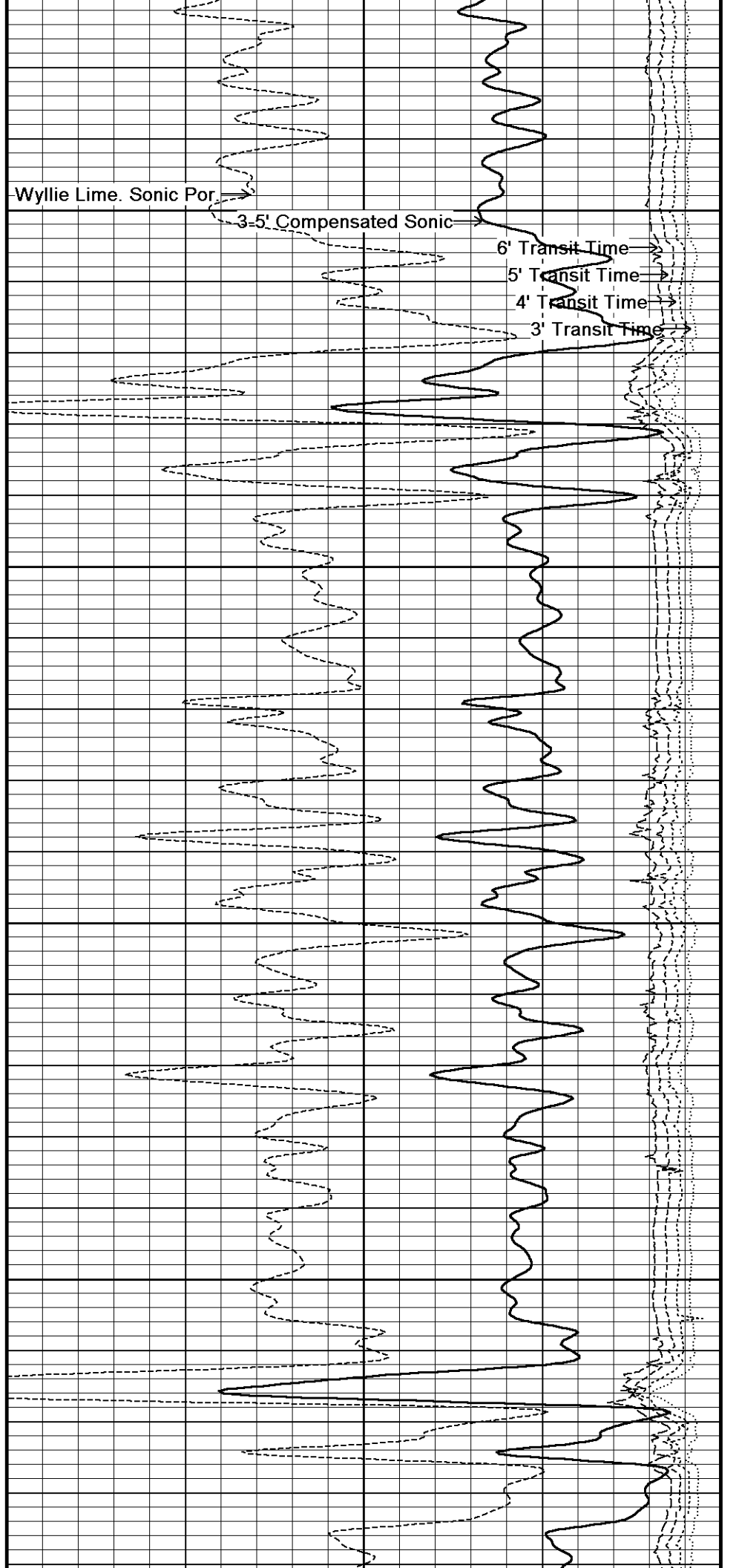
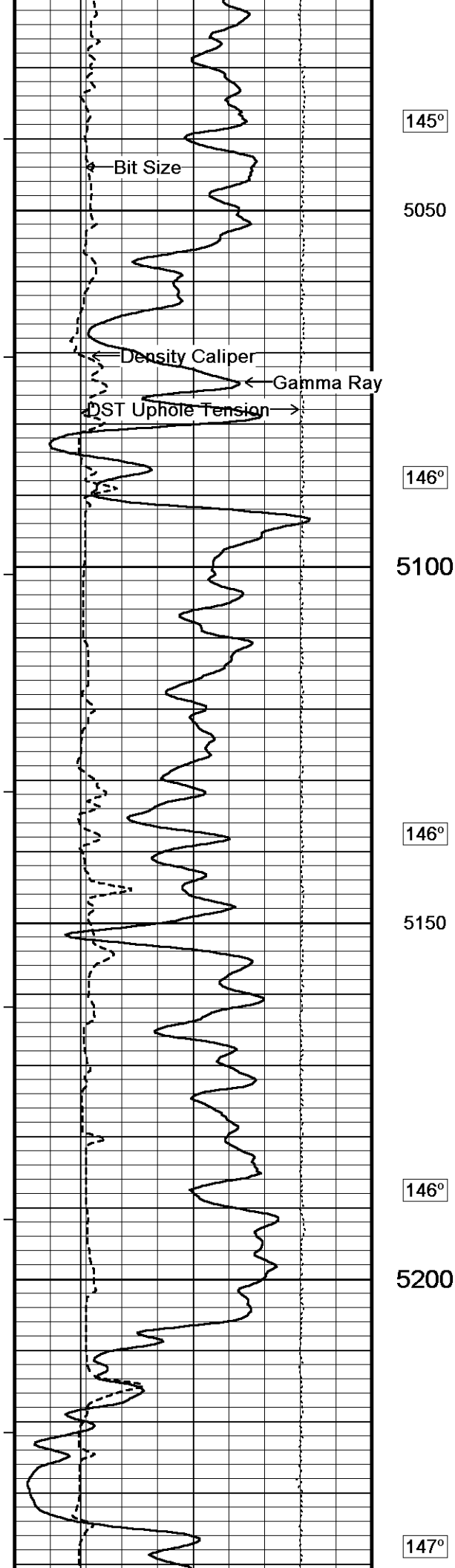
4" Transit Time →

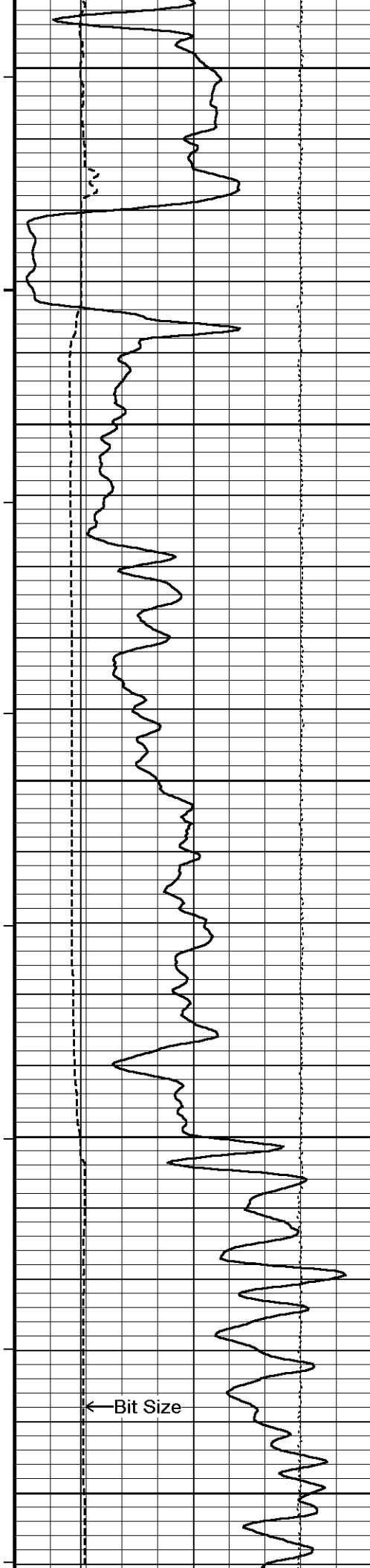
3" Transit Time →



4880
144°
4850
144°
4900
145°
4950
145°
5000







5250

147°

5300

147°

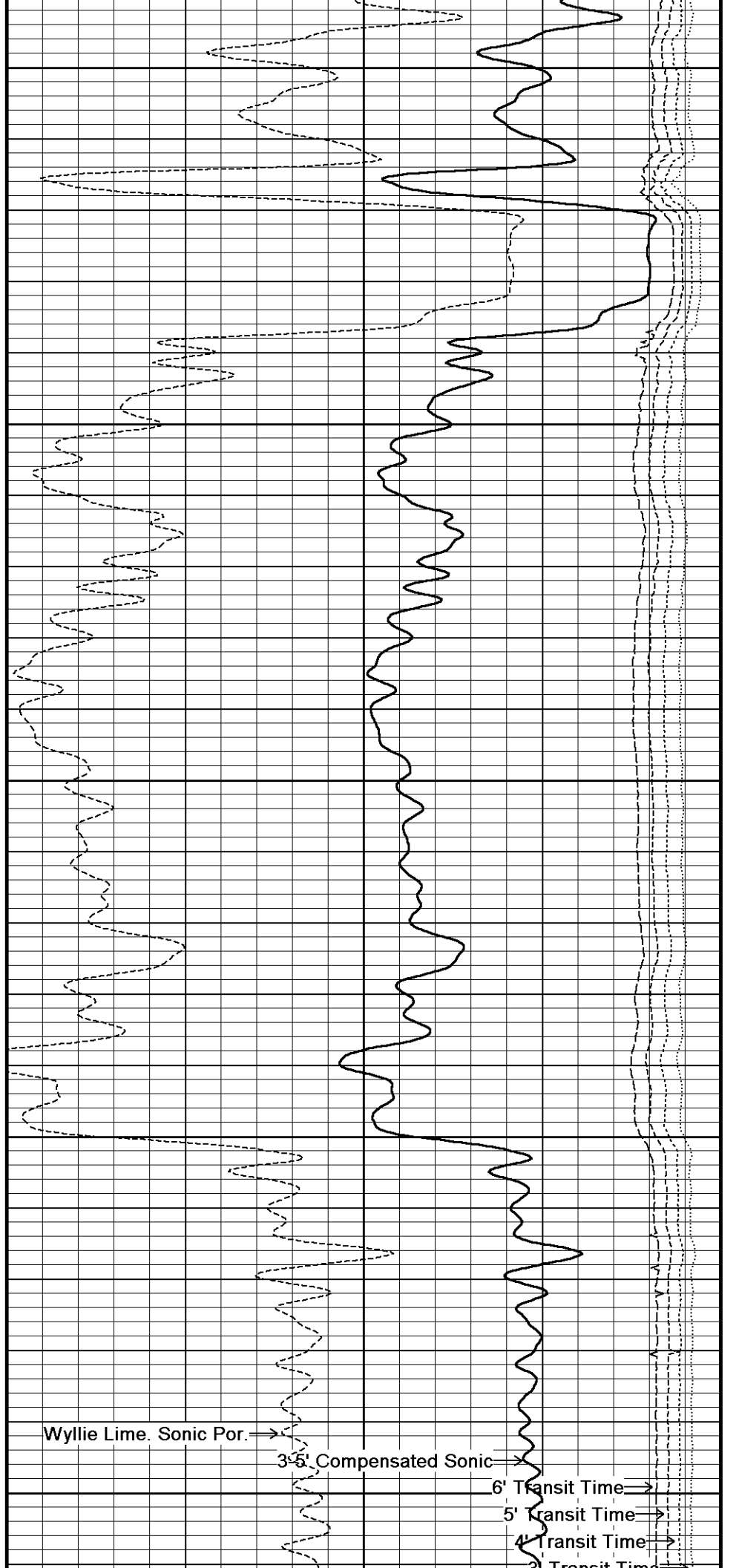
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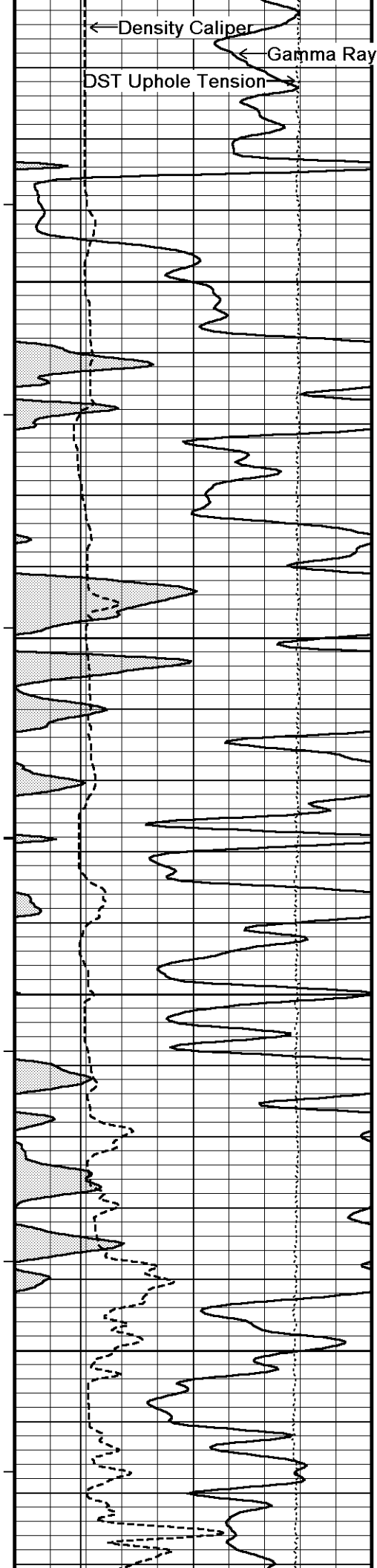
148°

5400

148°

5450





148°

5500

148°

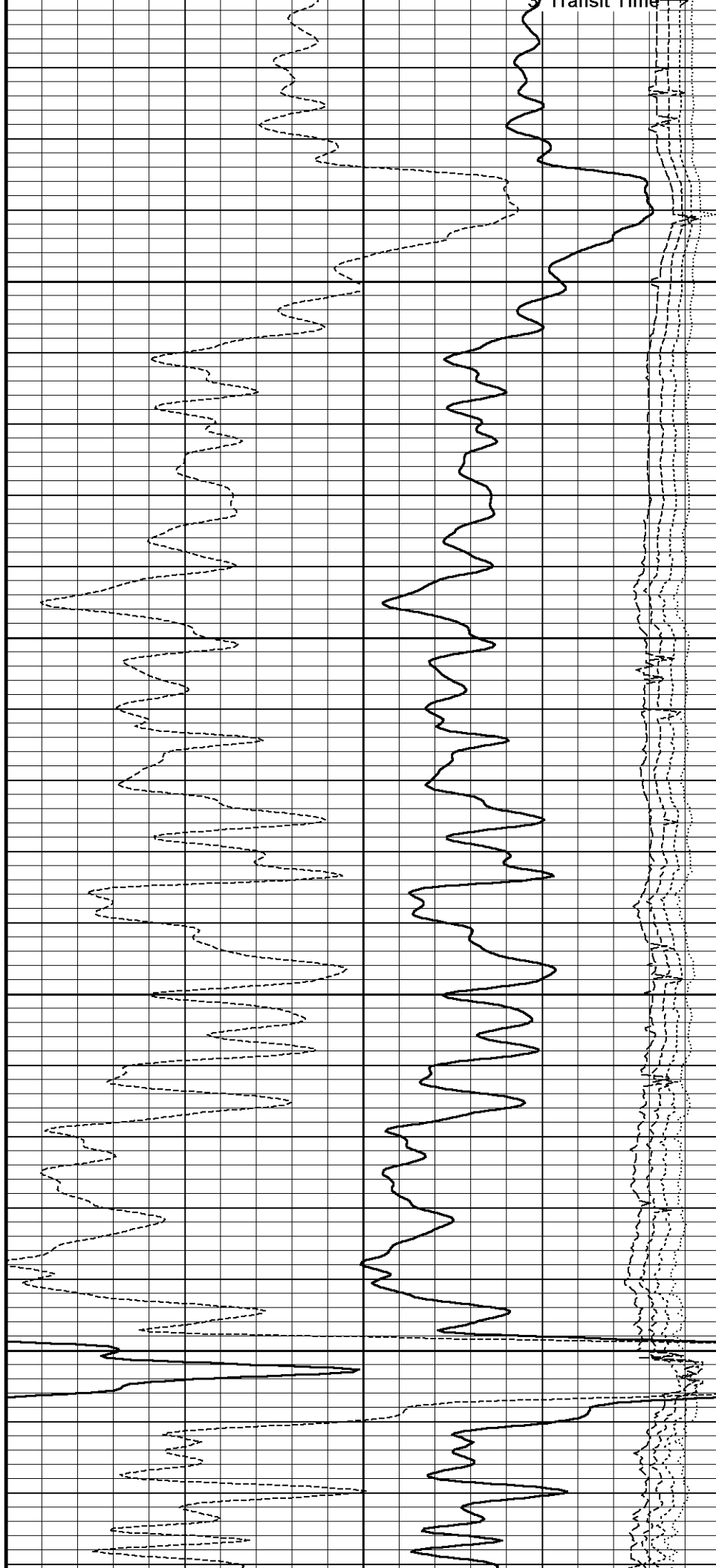
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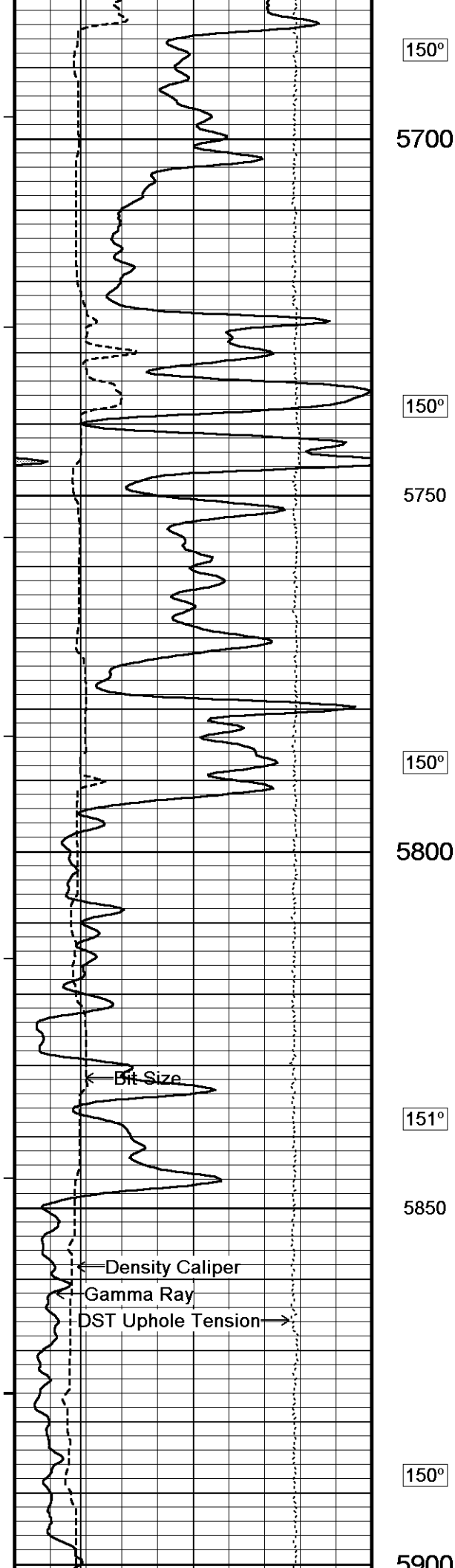
148°

5600

149°

5650





150°

5700

150°

5750

150°

5800

151°

5850

150°

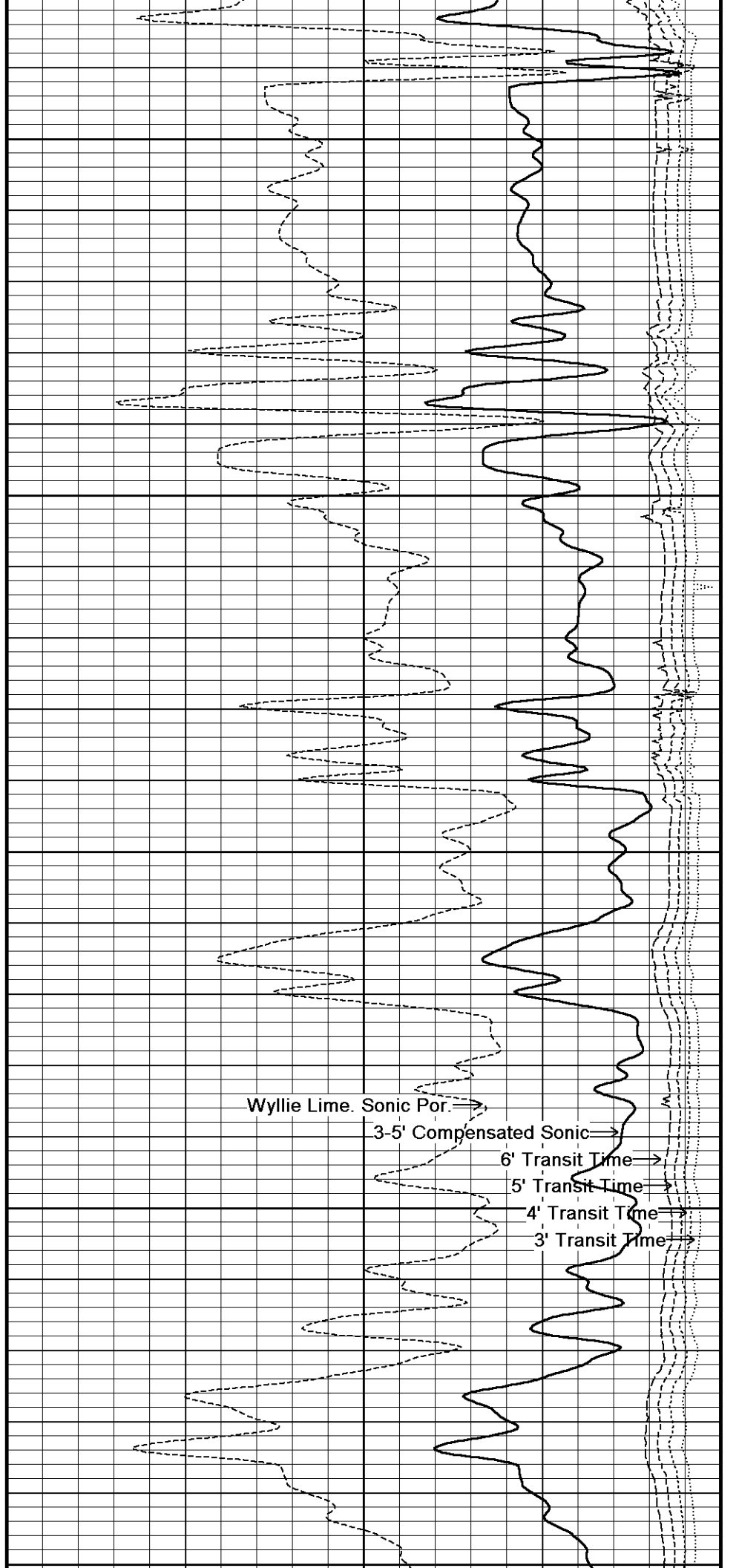
5900

← Bit Size

← Density Caliper

← Gamma Ray

← DST Uphole Tension →



Wyllie Lime. Sonic Por. →

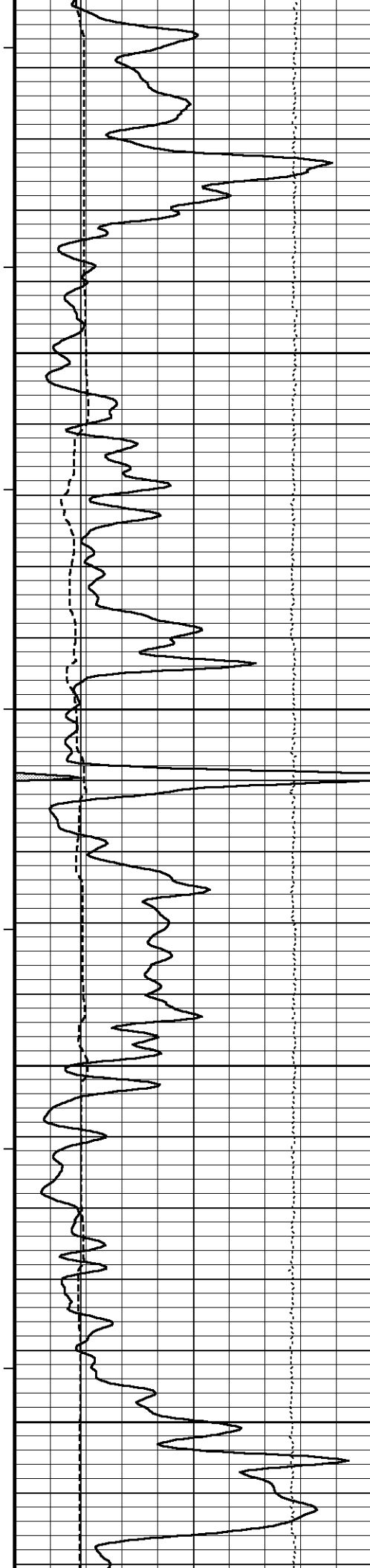
3-5' Compensated Sonic →

6' Transit Time →

5' Transit Time →

4' Transit Time →

3' Transit Time →



6080

151°

5950

152°

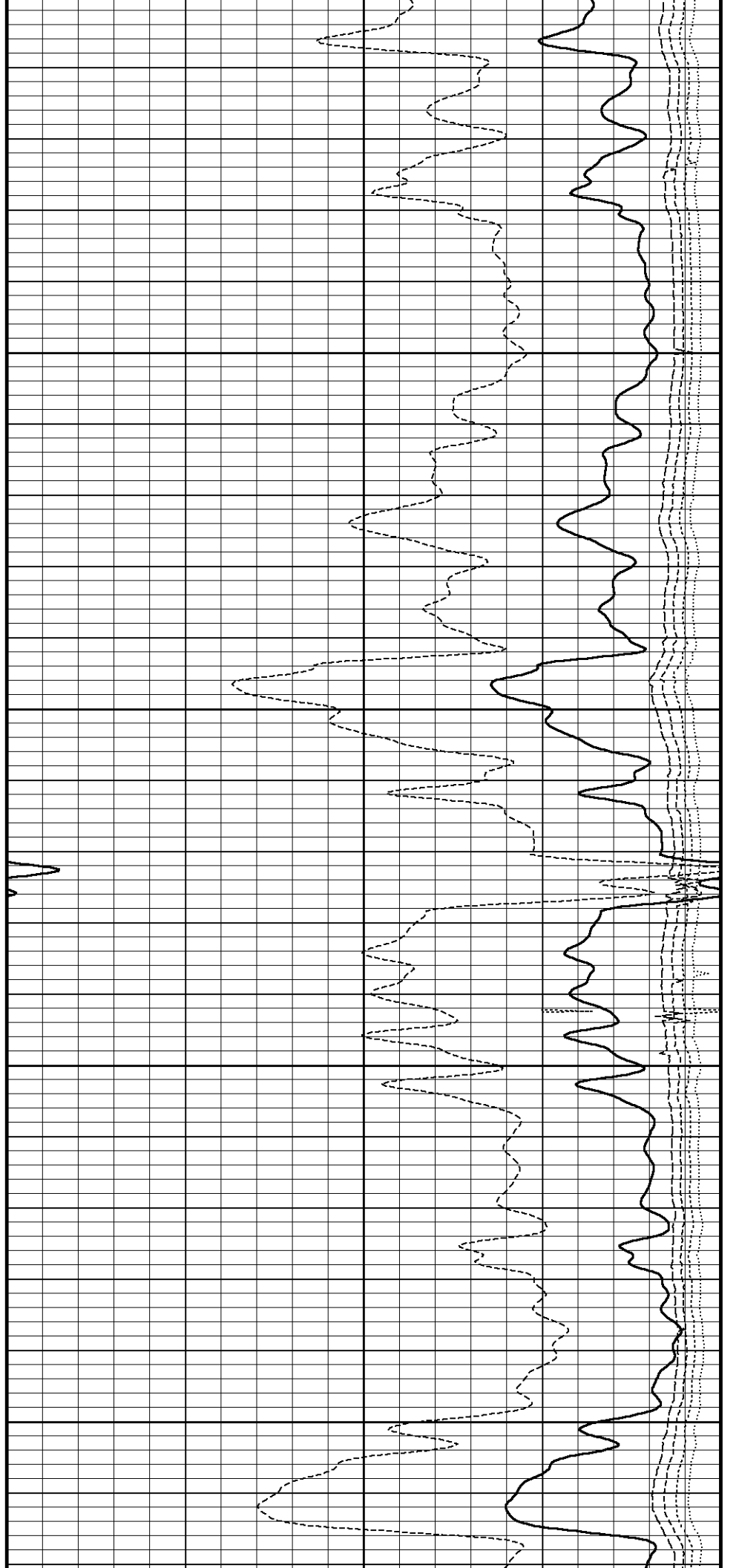
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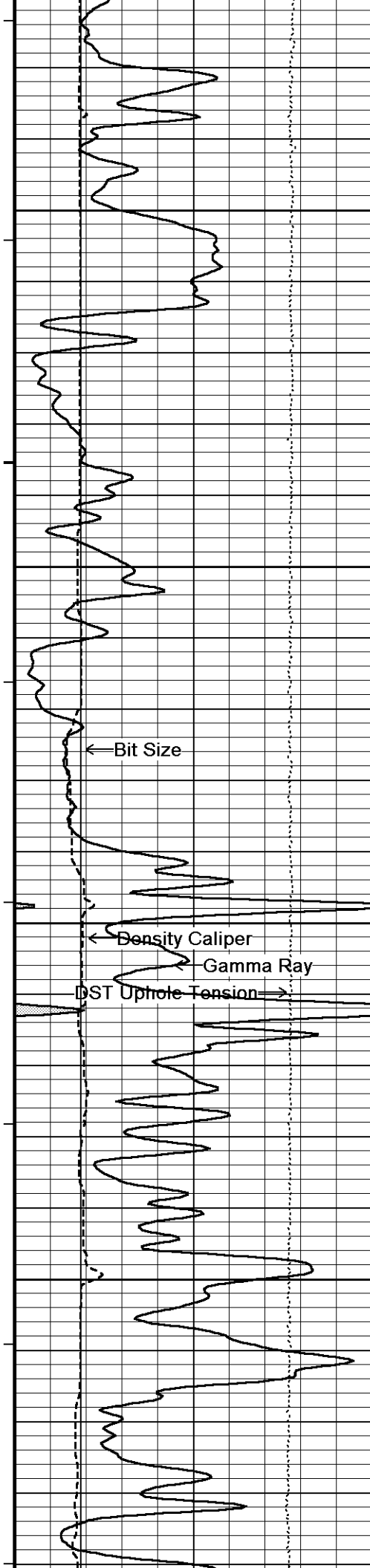
152°

6050

152°

6100





152°

6150

152°

6200

152°

6250

152°

6300

152°

← Bit Size

← Density Caliper

← Gamma Ray

DST Uphole Tension →

Wyllie Lime. Sonic Por. →

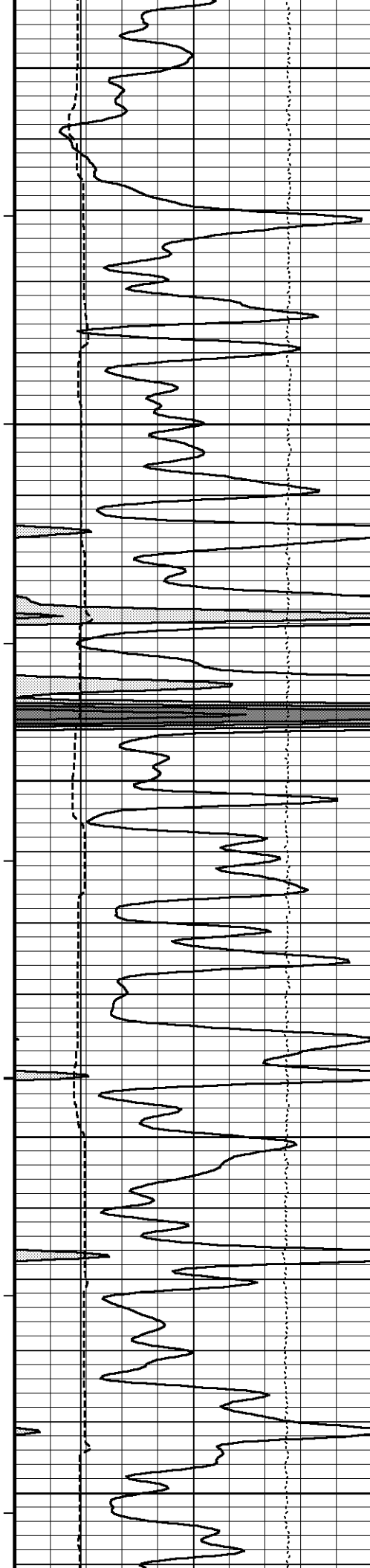
3-5' Compensated Sonic →

6' Transit Time →

5' Transit Time →

4' Transit Time →

3' Transit Time →



6350

152°

6400

152°

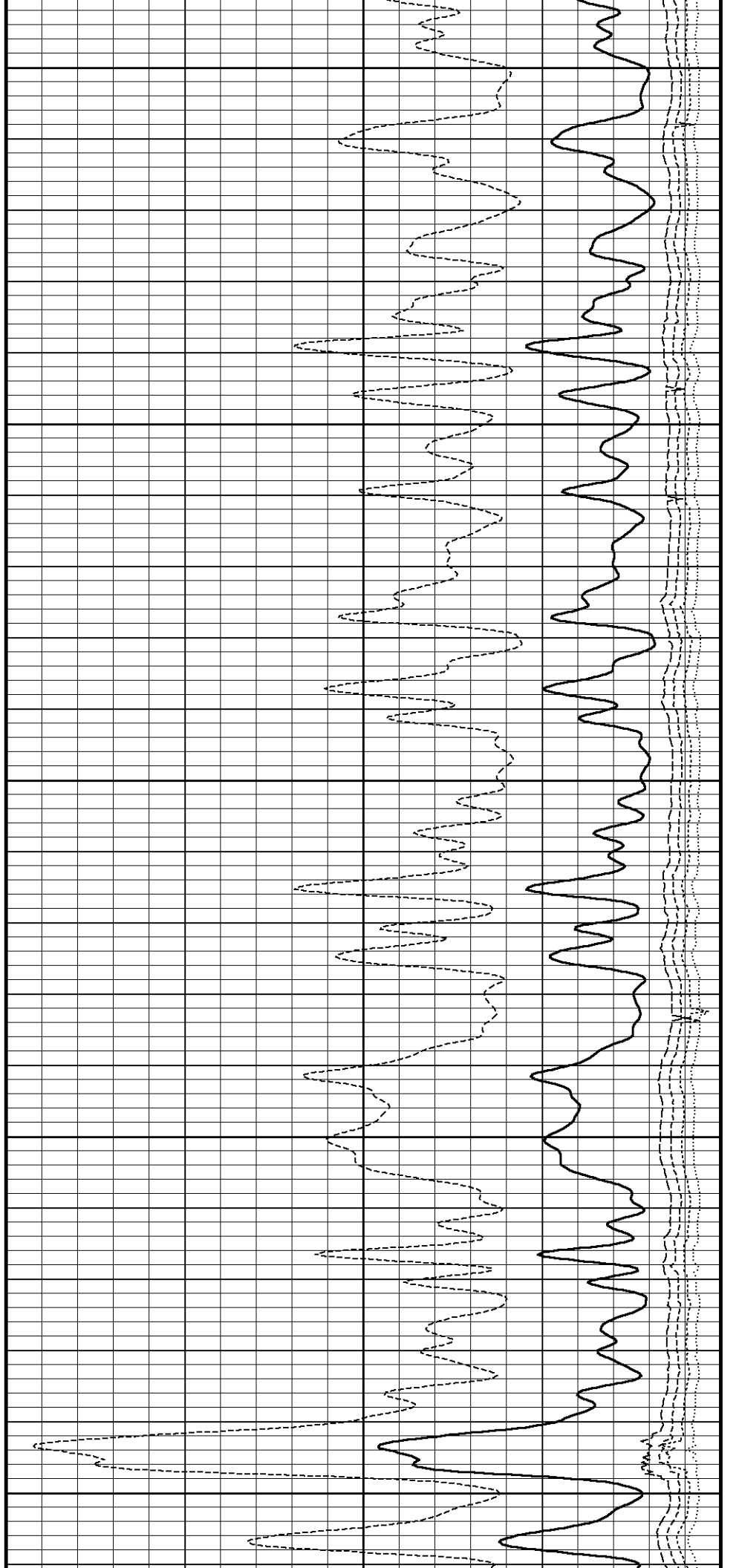
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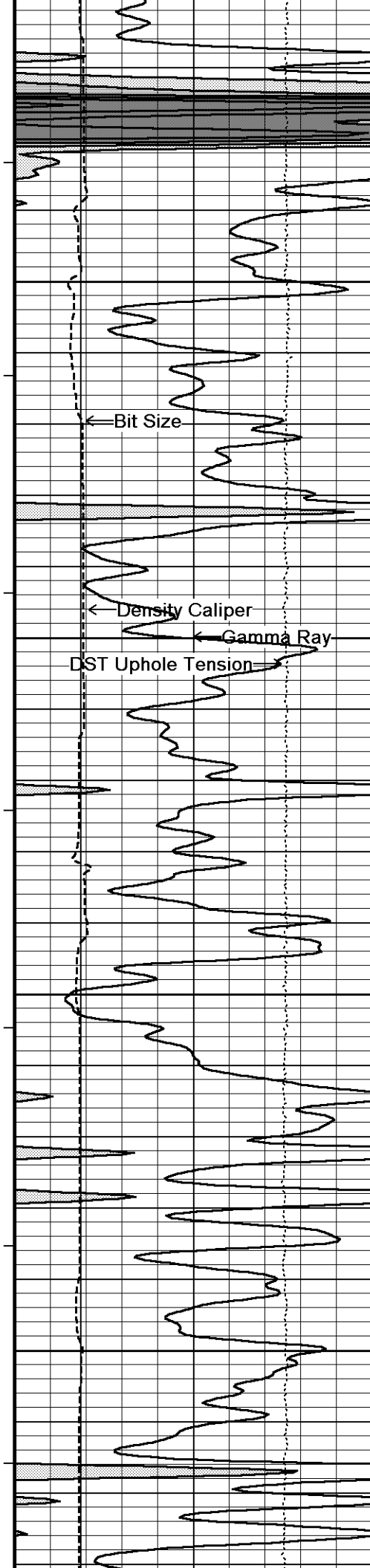
153°

6500

153°

6550





153°

6600

154°

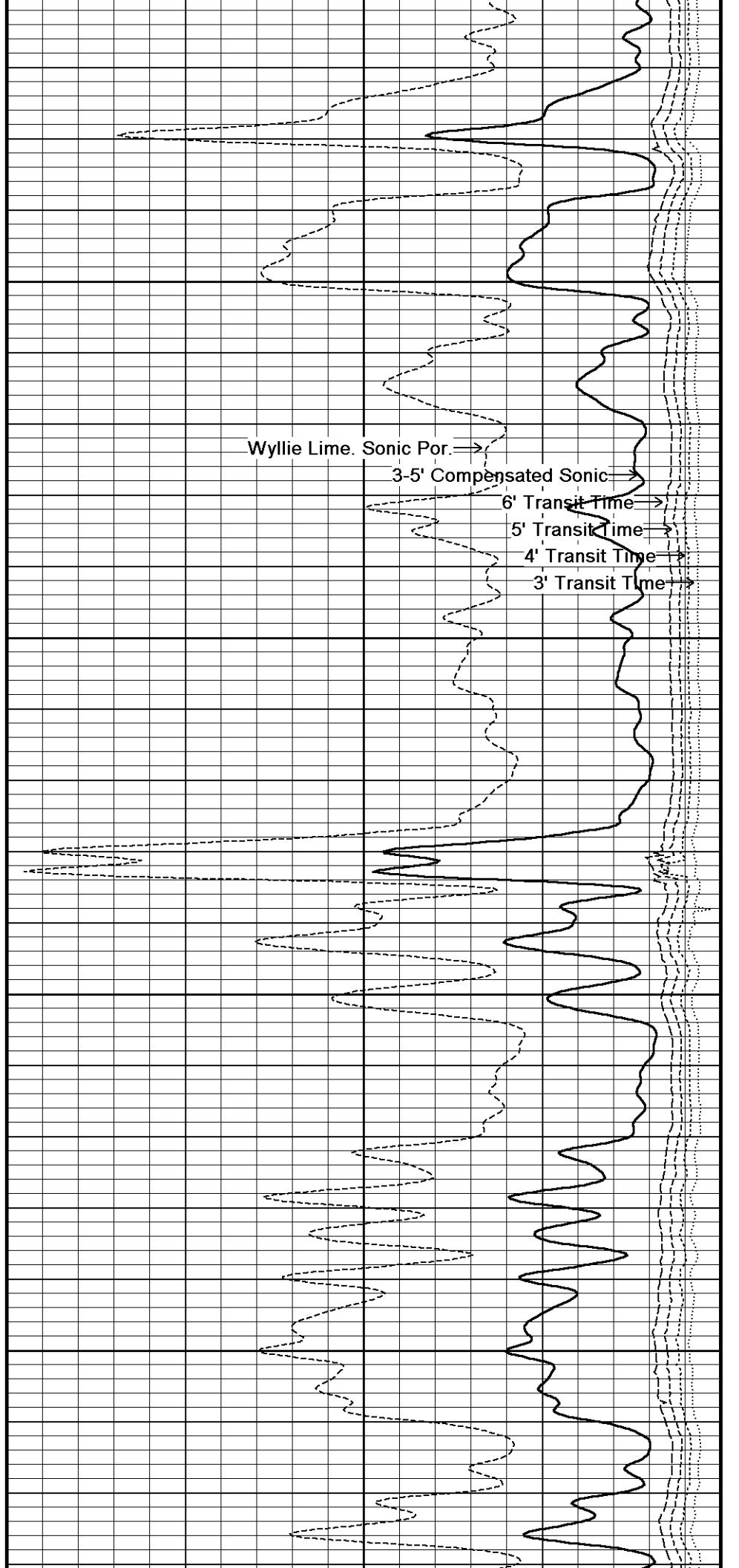
6650

154°

6700

154°

6750



Wyllie Lime. Sonic Por. →

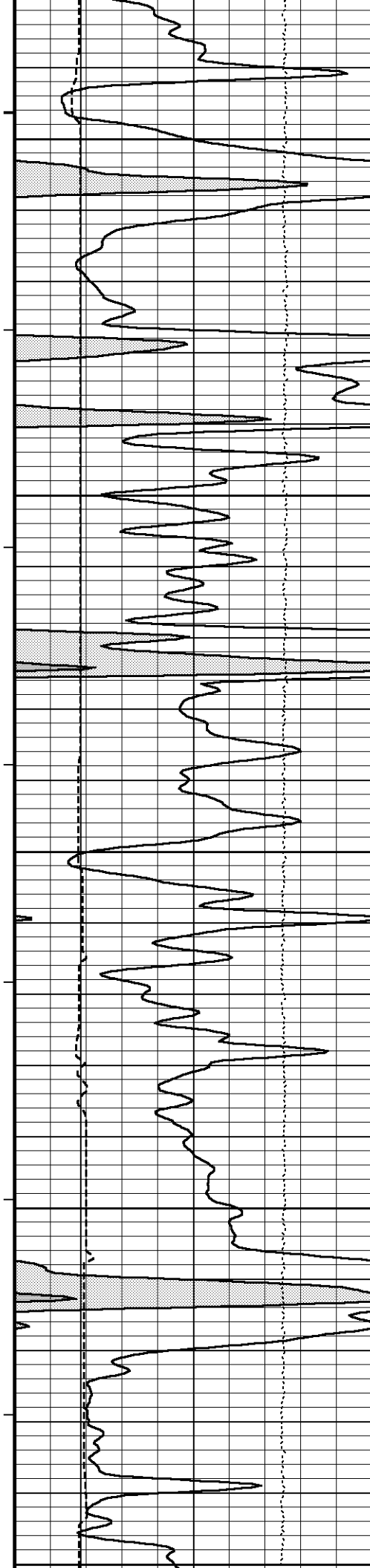
3-5' Compensated Sonic →

6' Transit Time →

5' Transit Time →

4' Transit Time →

3' Transit Time →



155°

6800

155°

6850

155°

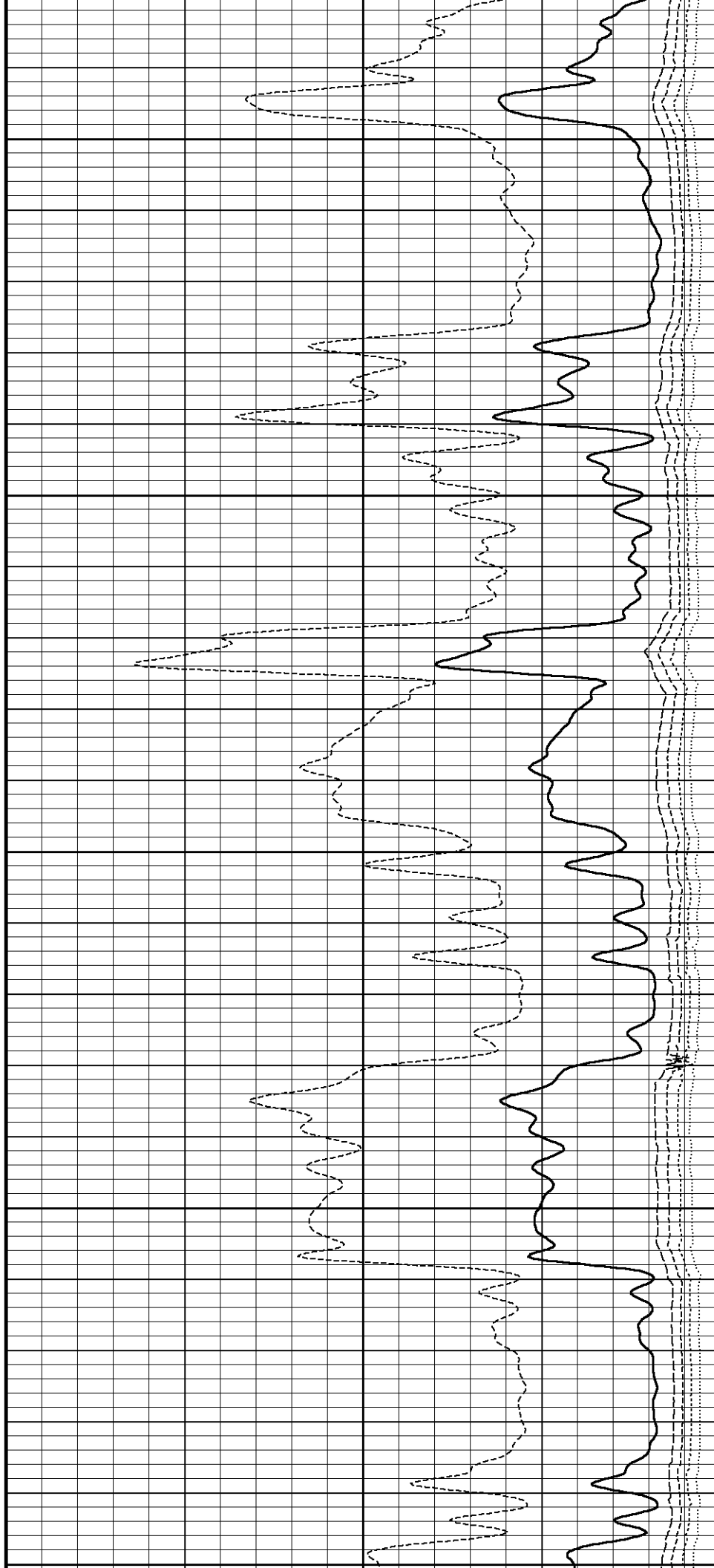
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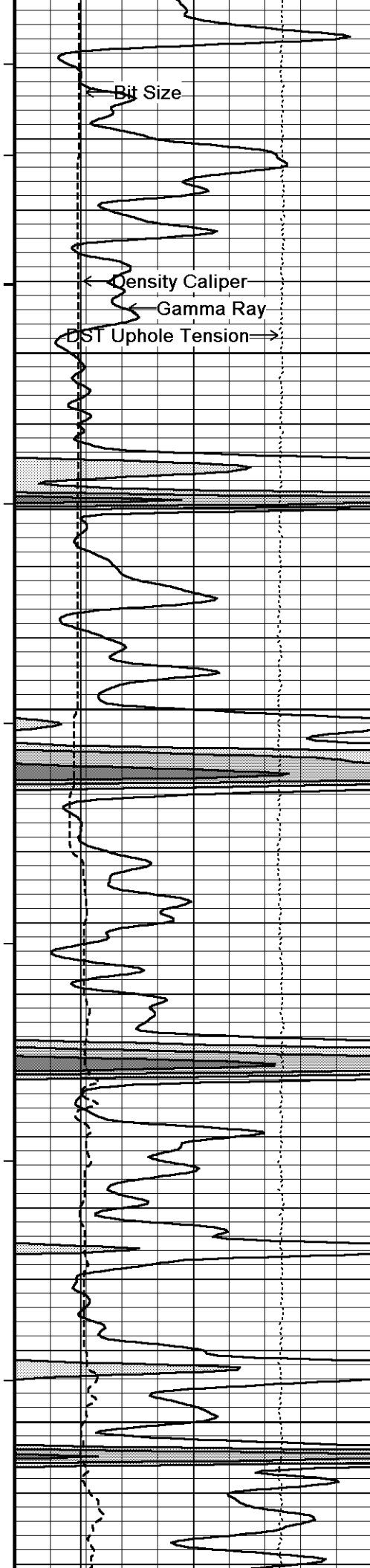
156°

6950

156°

7000





7000

156°

7050

156°

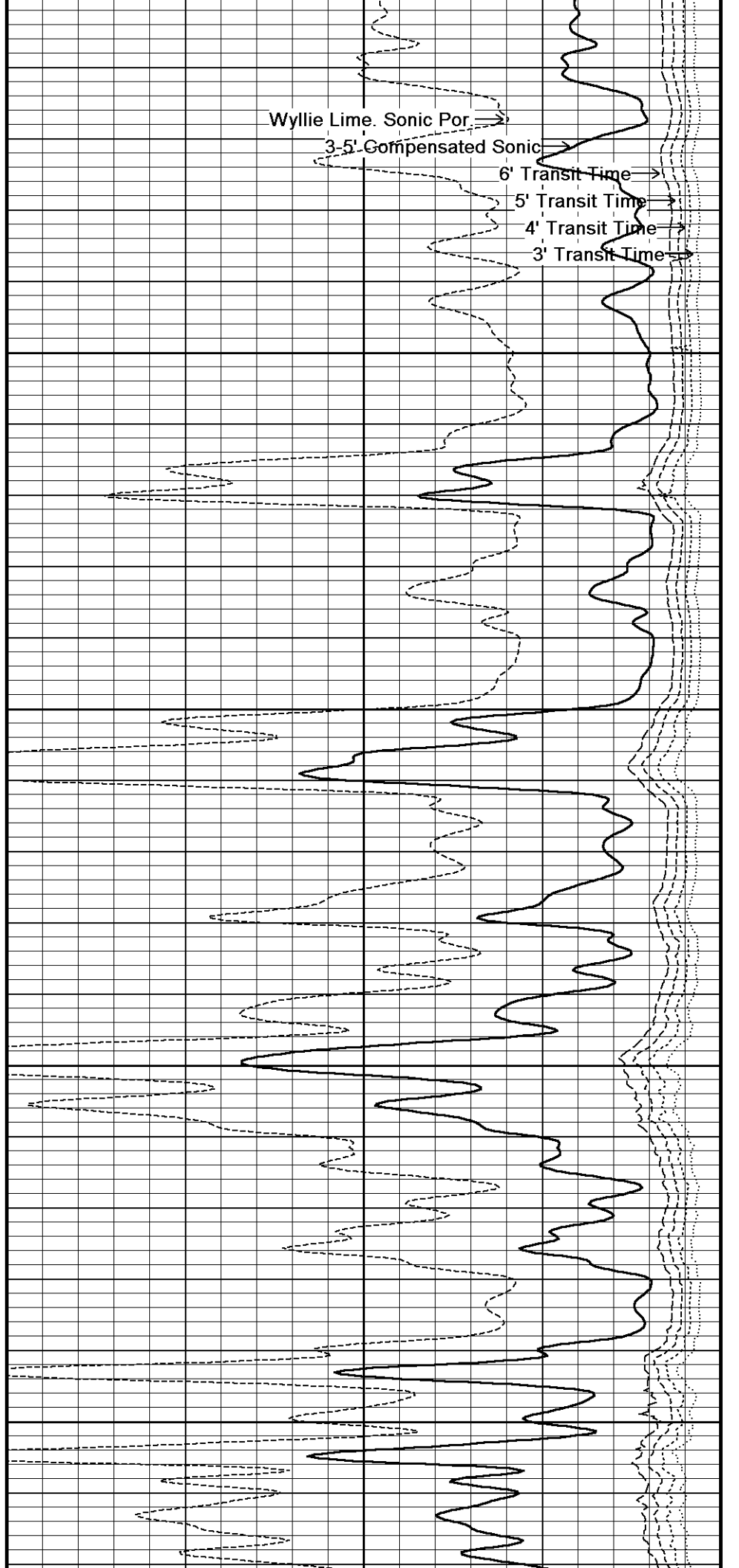
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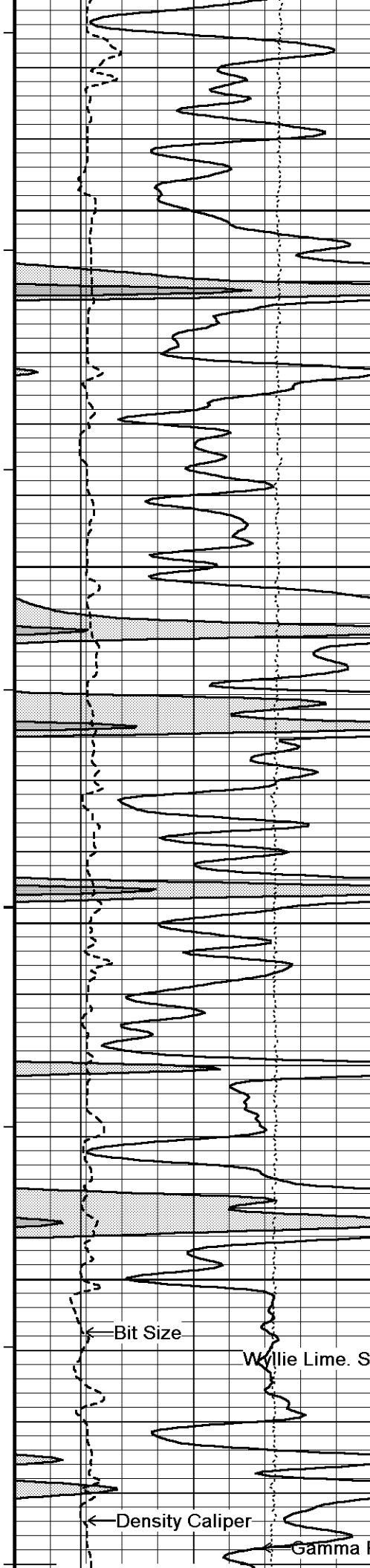
157°

7150

158°

7200





158°

7250

159°

7300

159°

7350

159°

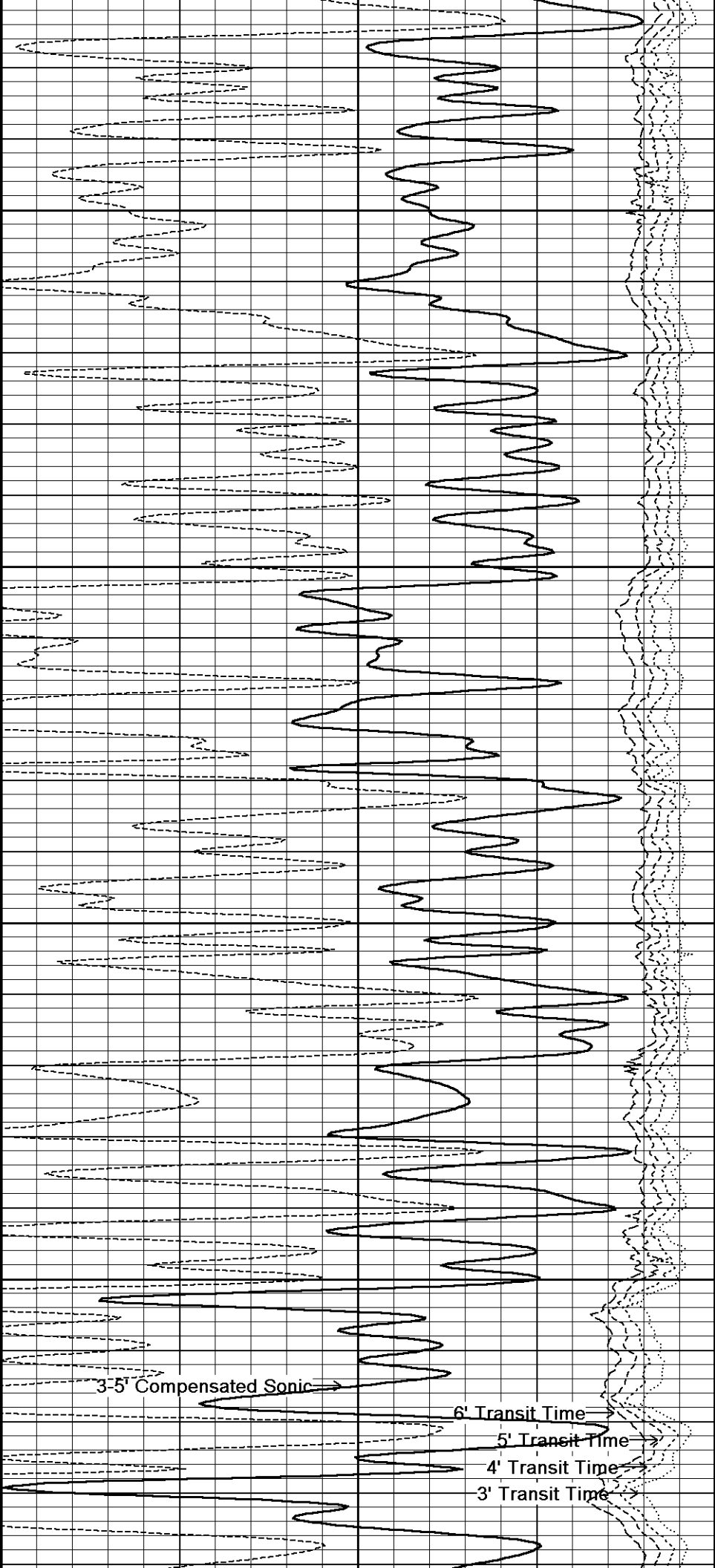
7400

Bit Size

Wyllie Lime. Sonic Por. →

Density Caliper

Gamma Ray 159°



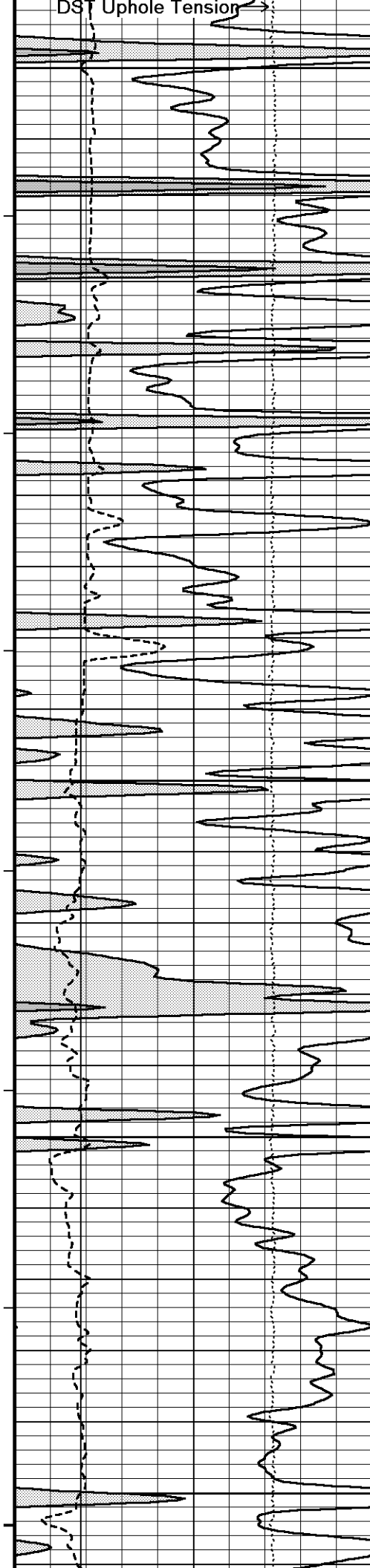
3-5' Compensated Sonic →

6' Transit Time →

5' Transit Time →

4' Transit Time →

3' Transit Time →



7450

160°

7500

161°

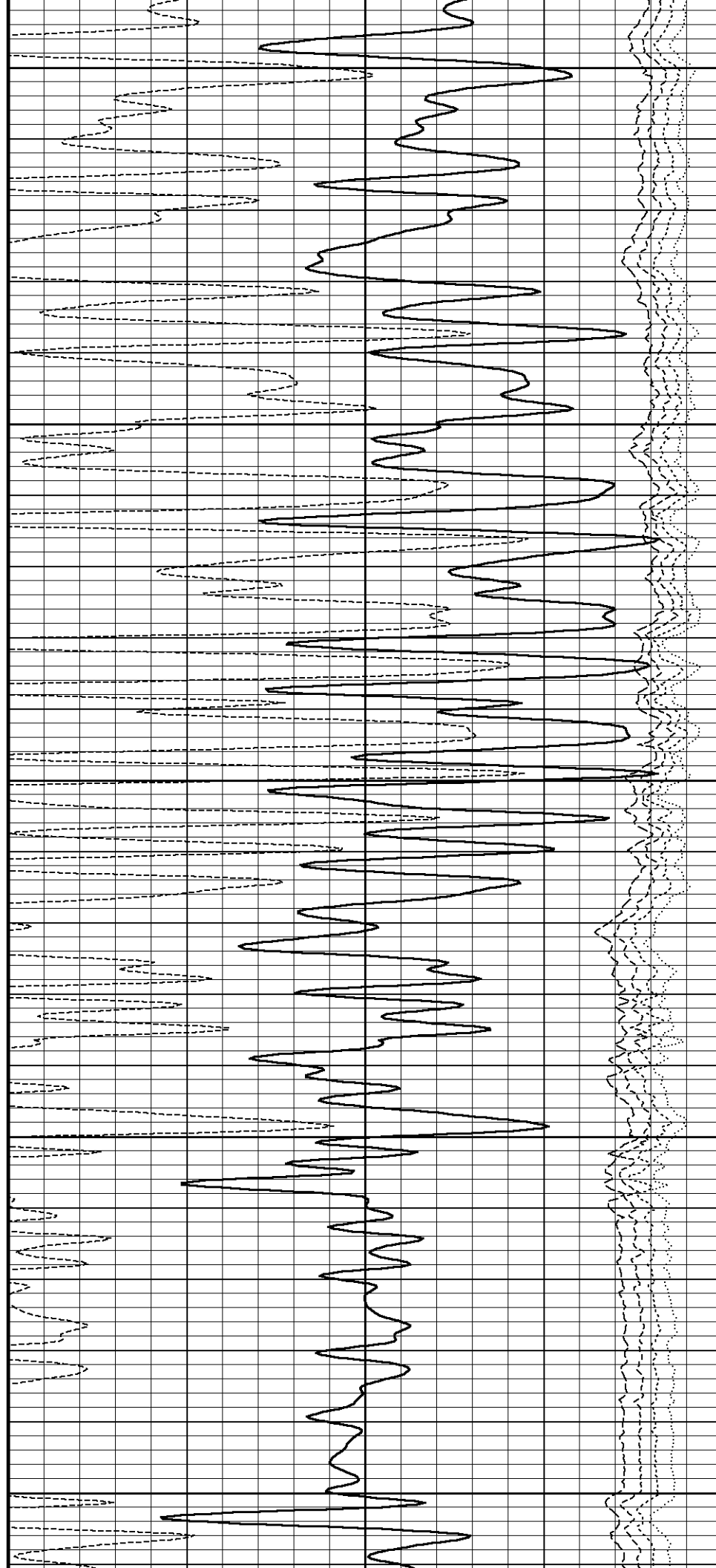
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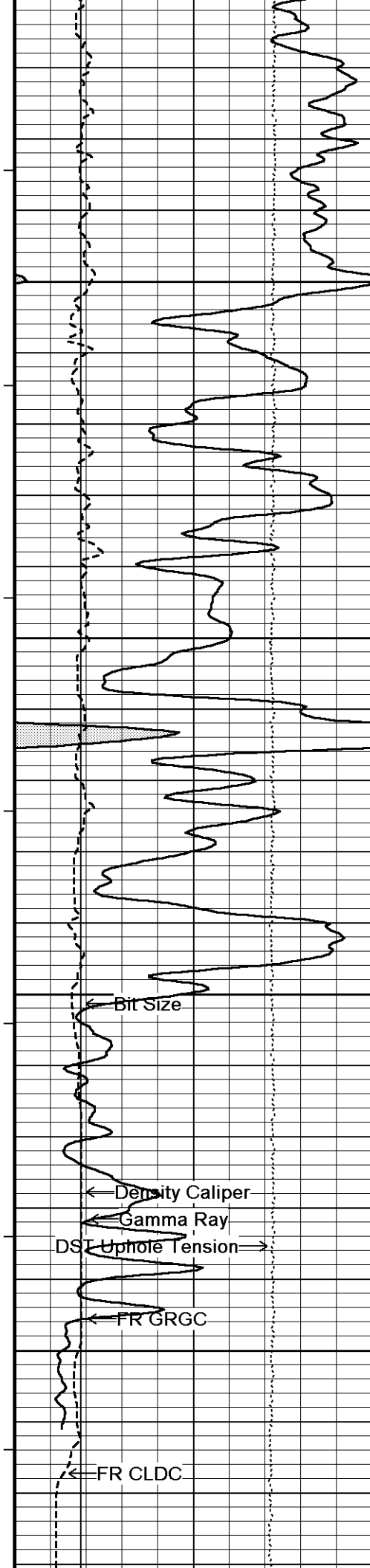
161°

7600

161°

7650





164°

7700

166°

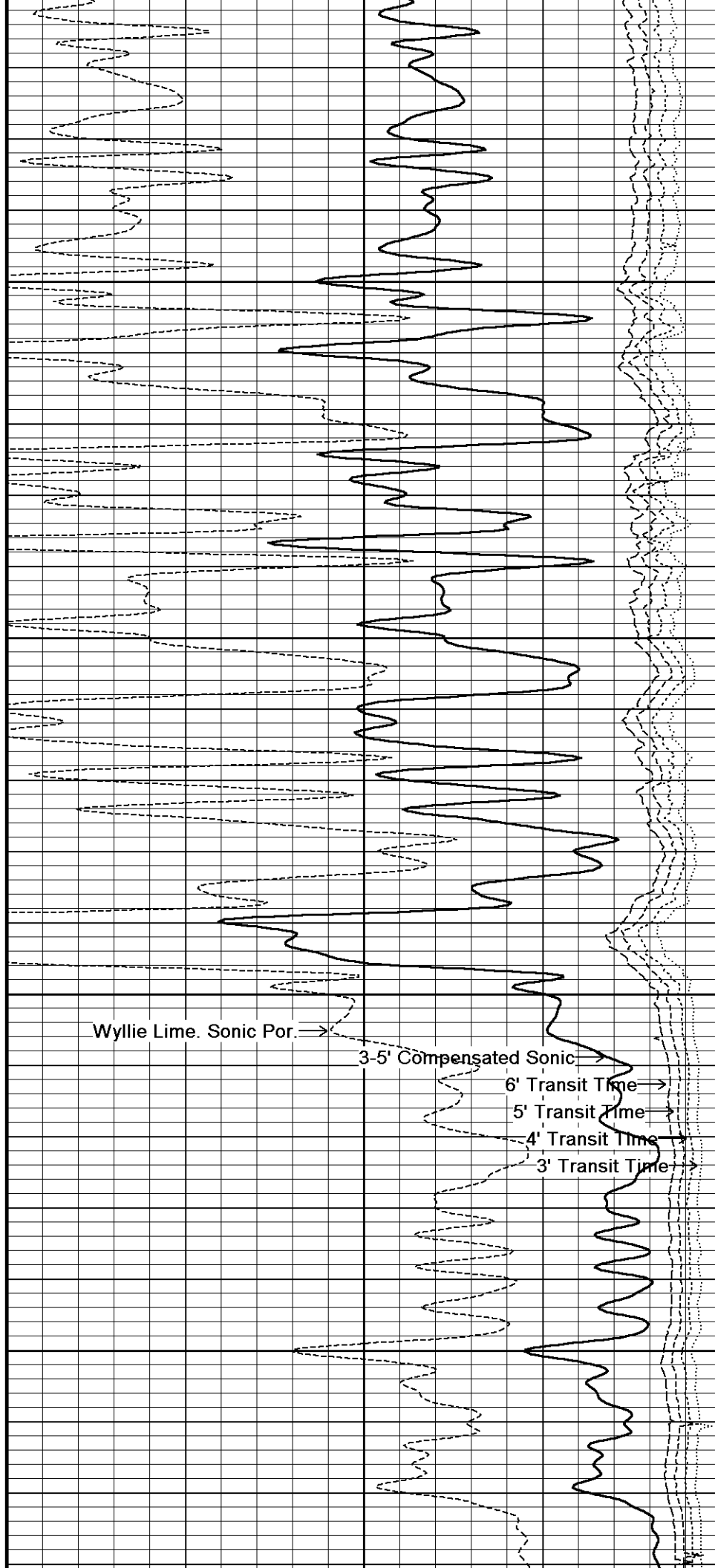
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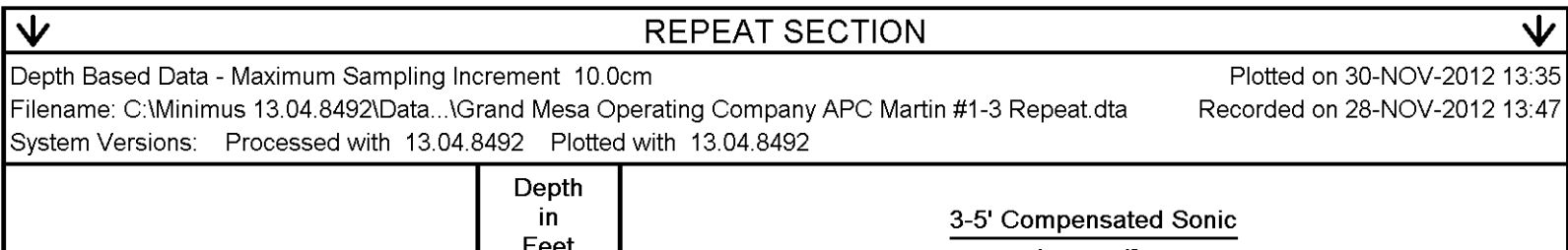
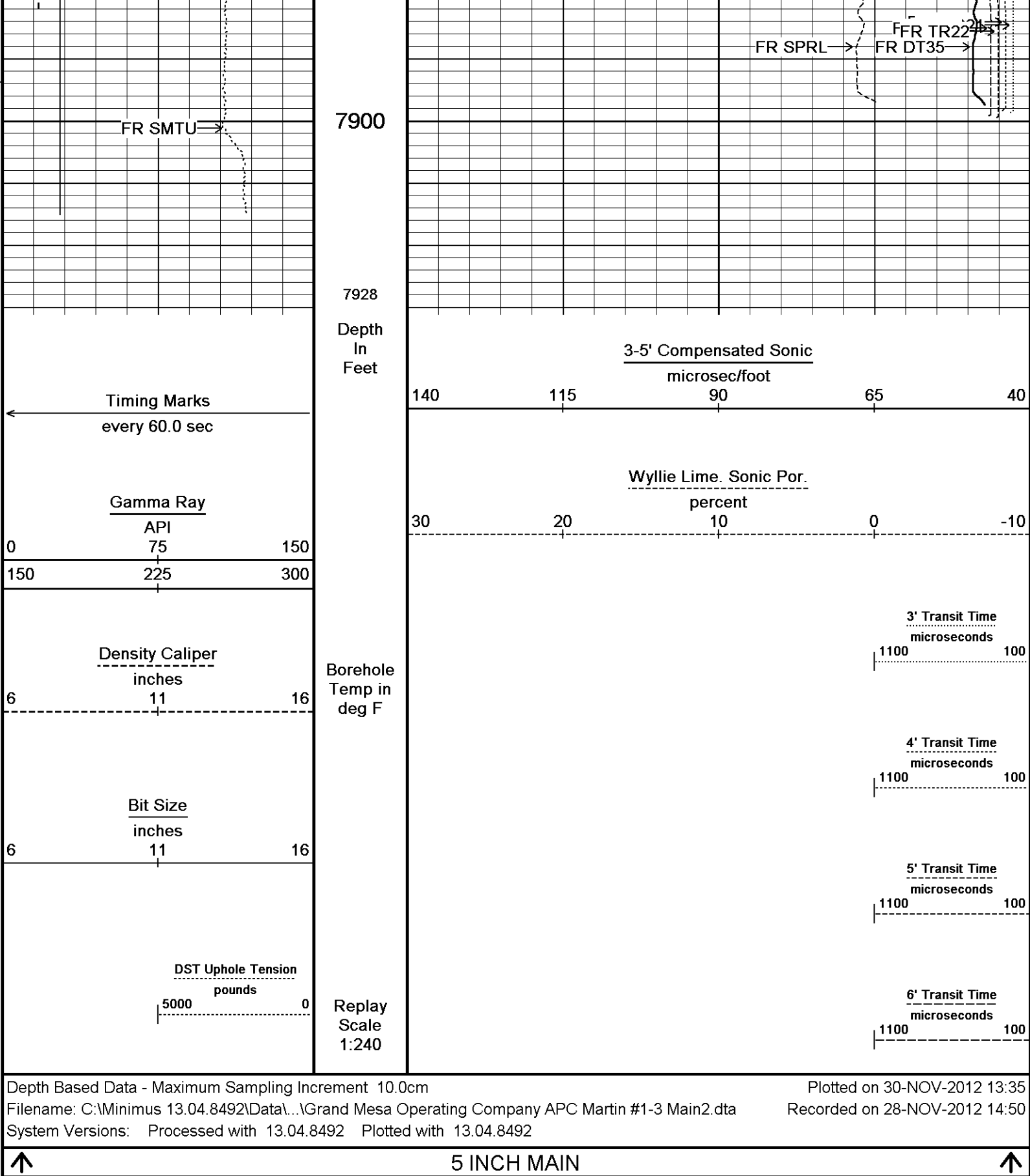
169°

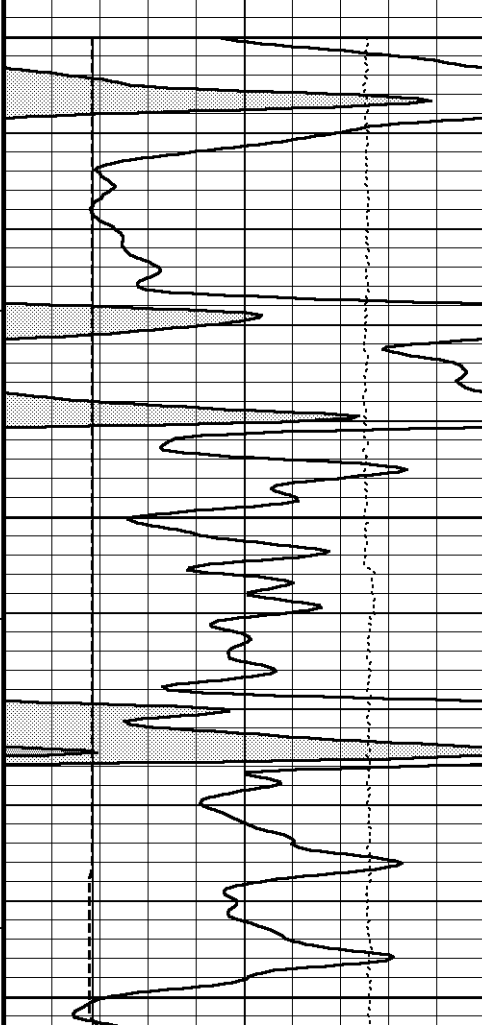
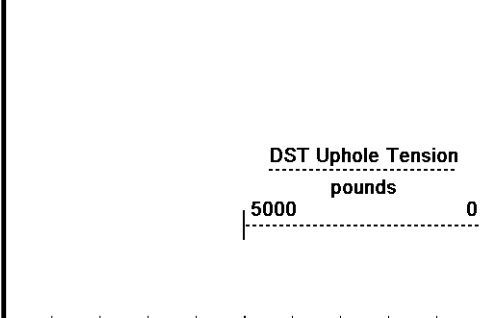
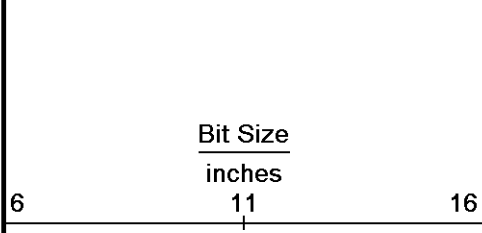
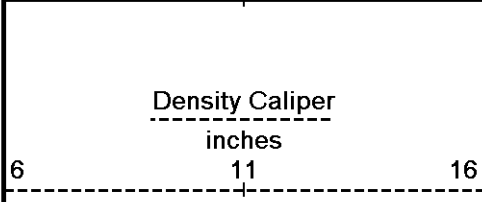
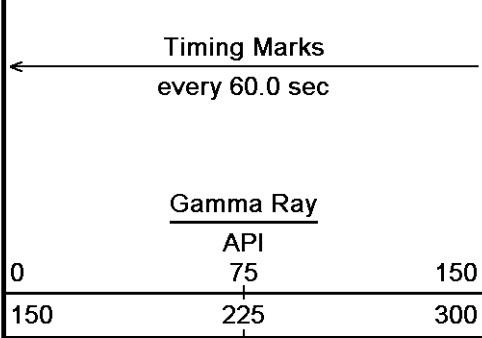
7800

169°

7850







Feet

Borehole
Temp in
deg F

Replay
Scale
1:240

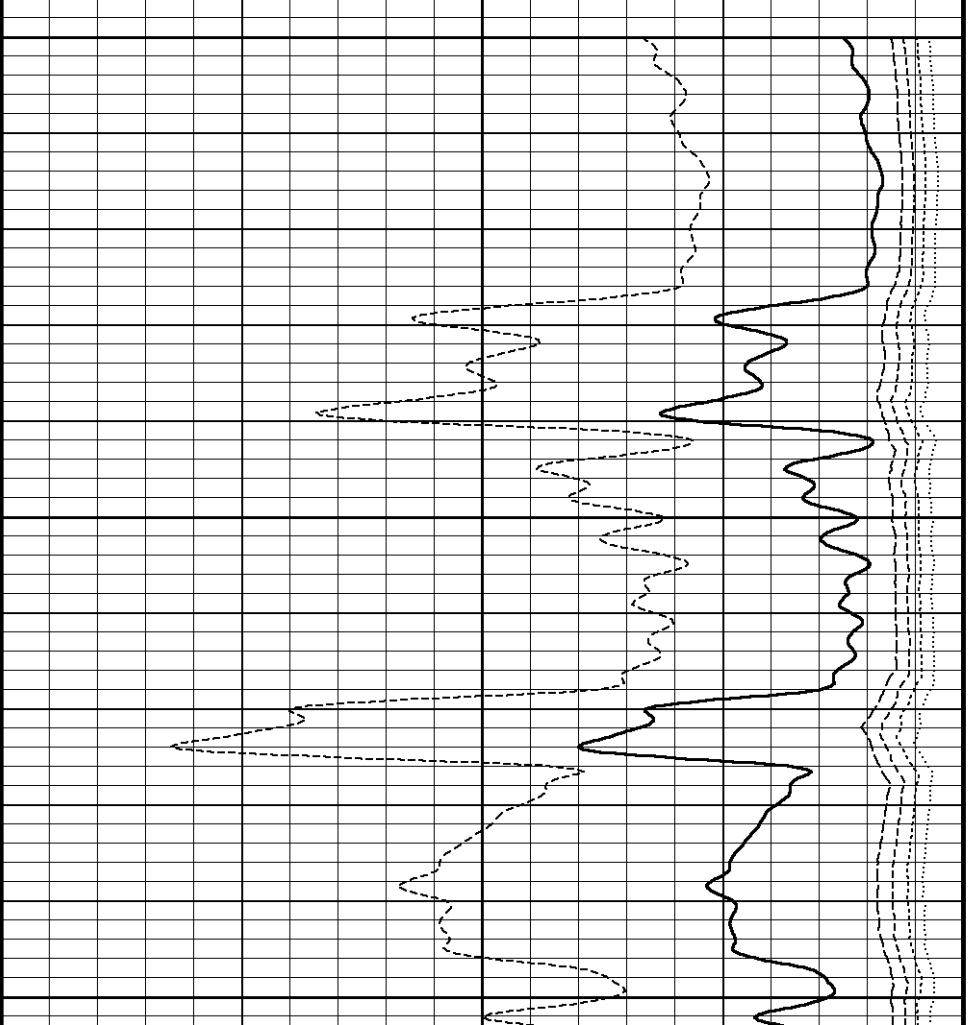
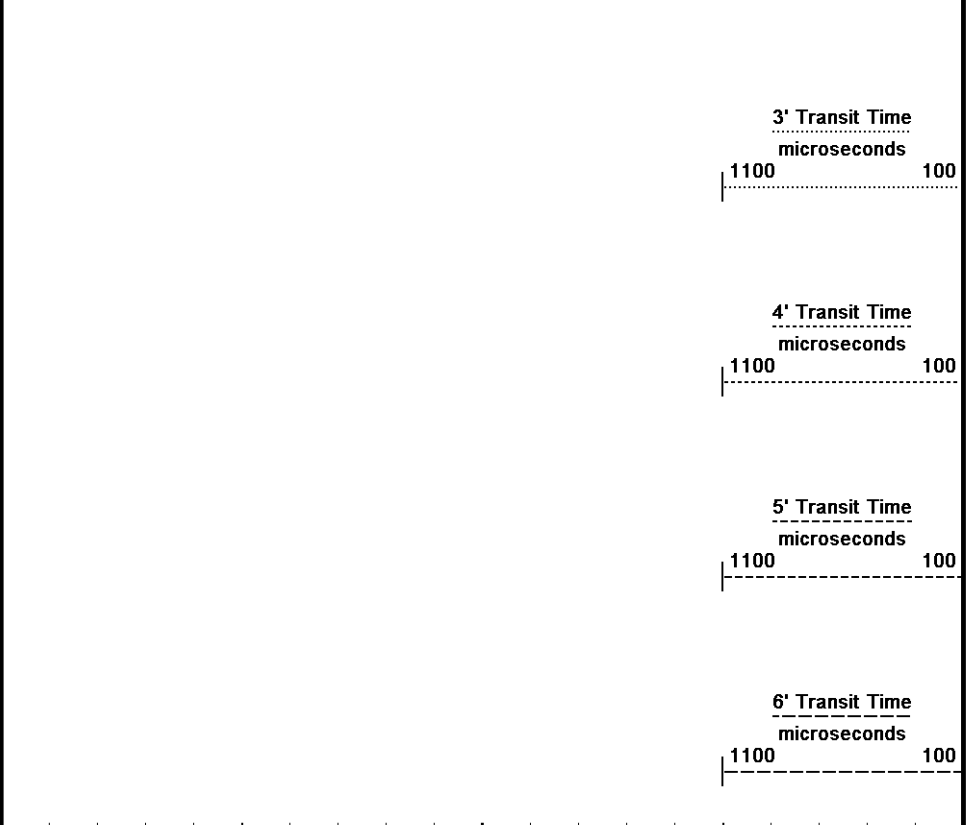
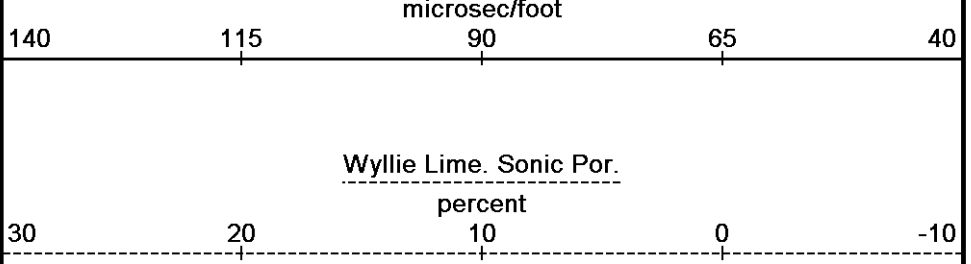
6800

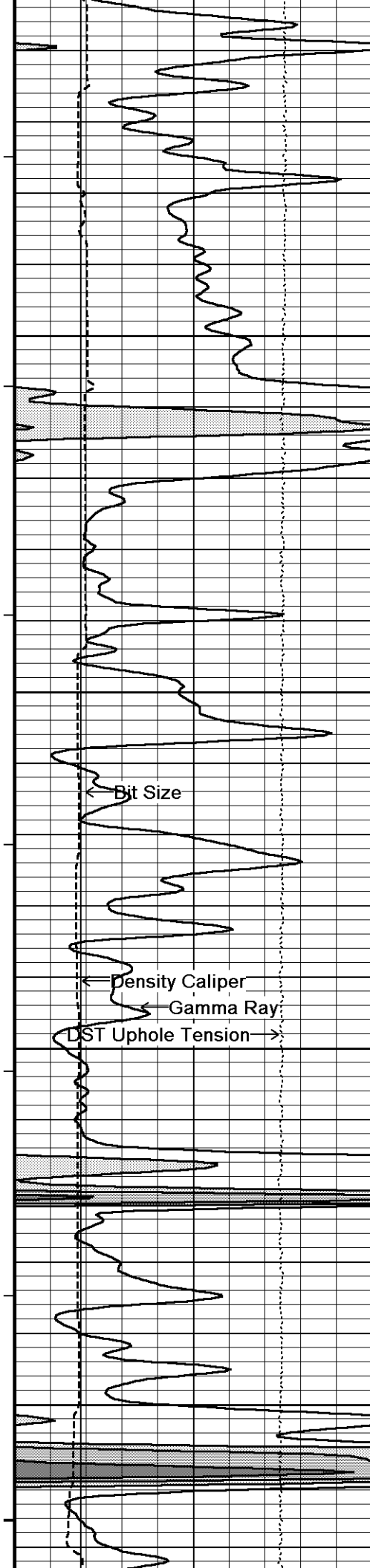
154°

6850

154°

6900





154°

6950

154°

7000

Bit Size

Density Caliper

Gamma Ray

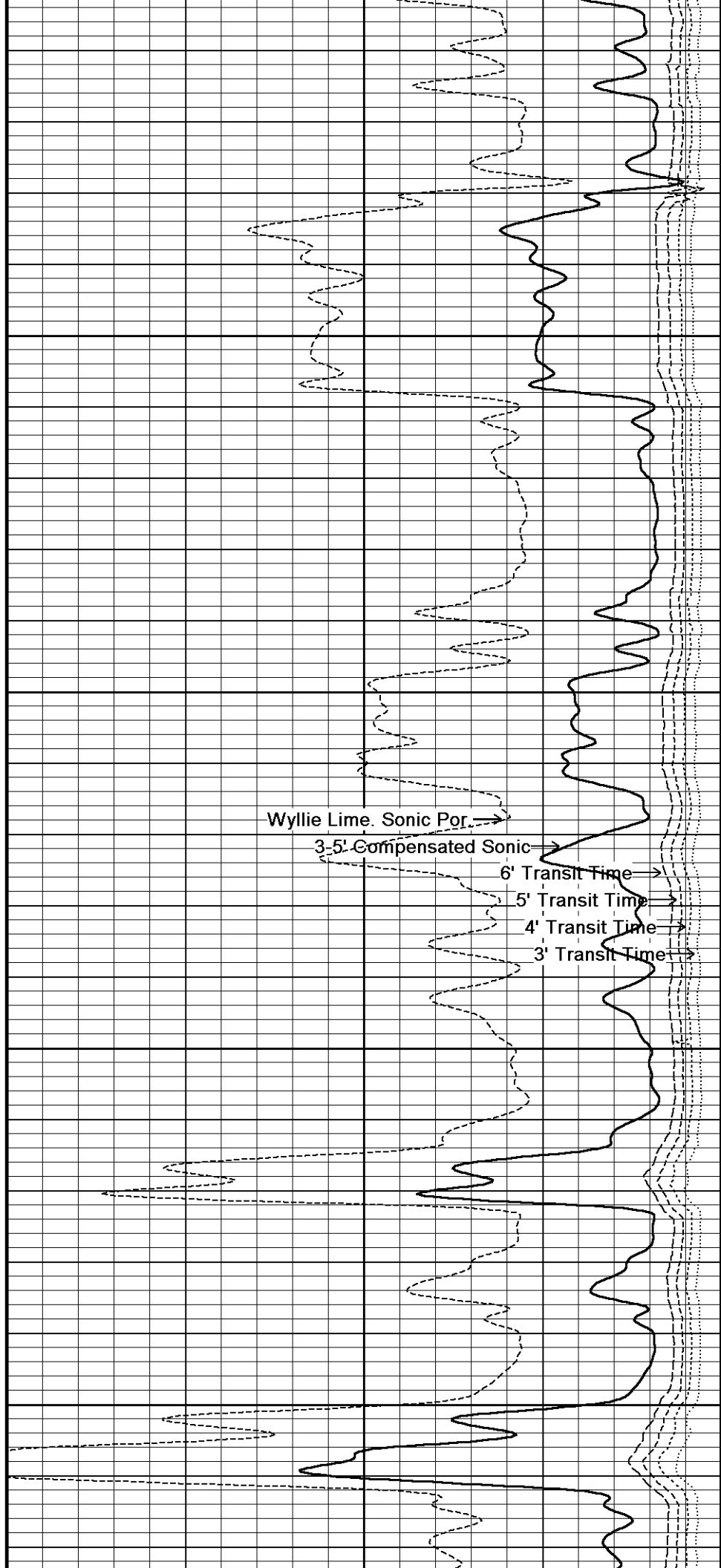
DST Uphole Tension

154°

7050

153°

7100



Wyllie Lime. Sonic Por.

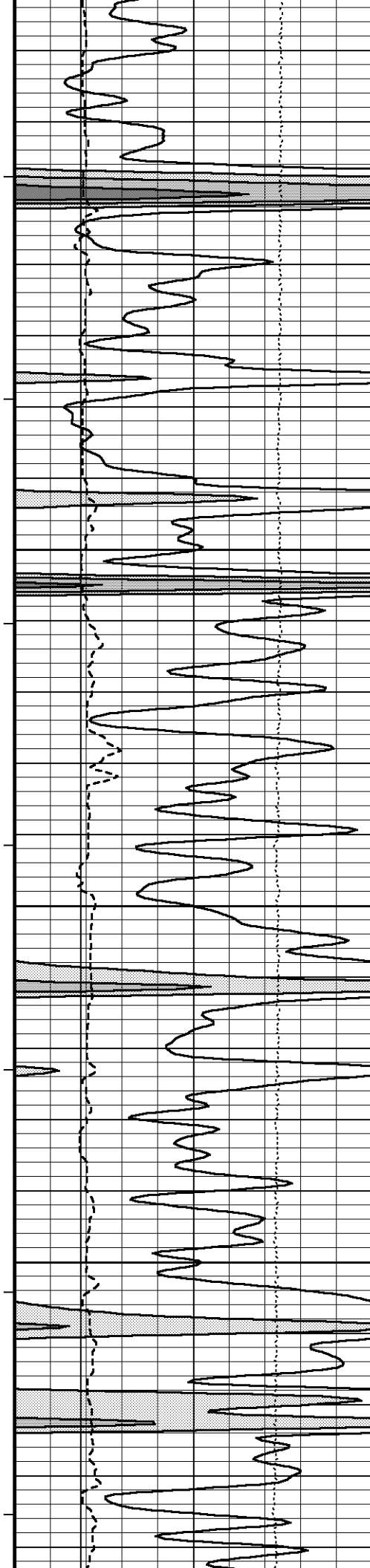
3-5' Compensated Sonic

6' Transit Time

5' Transit Time

4' Transit Time

3' Transit Time



154°

7150

155°

7200

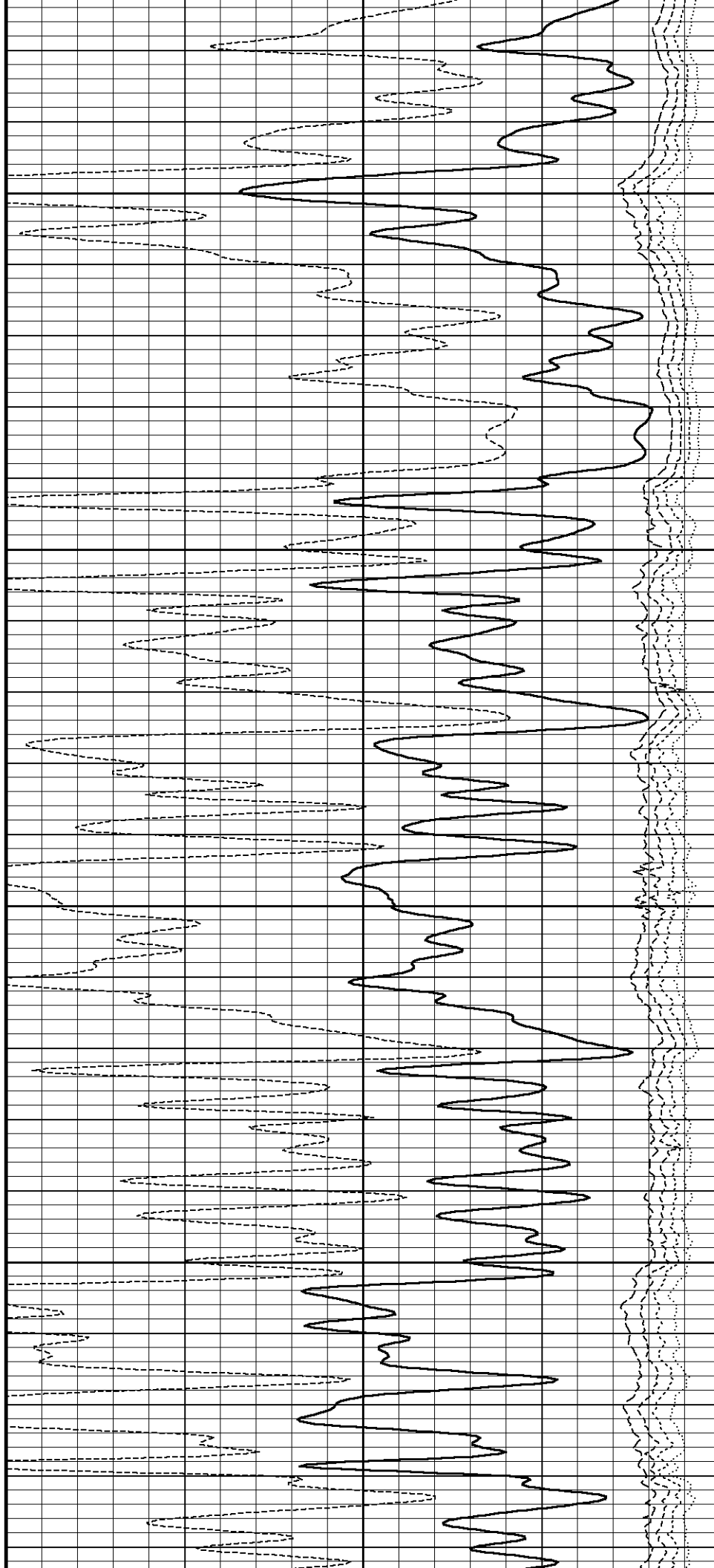
156°

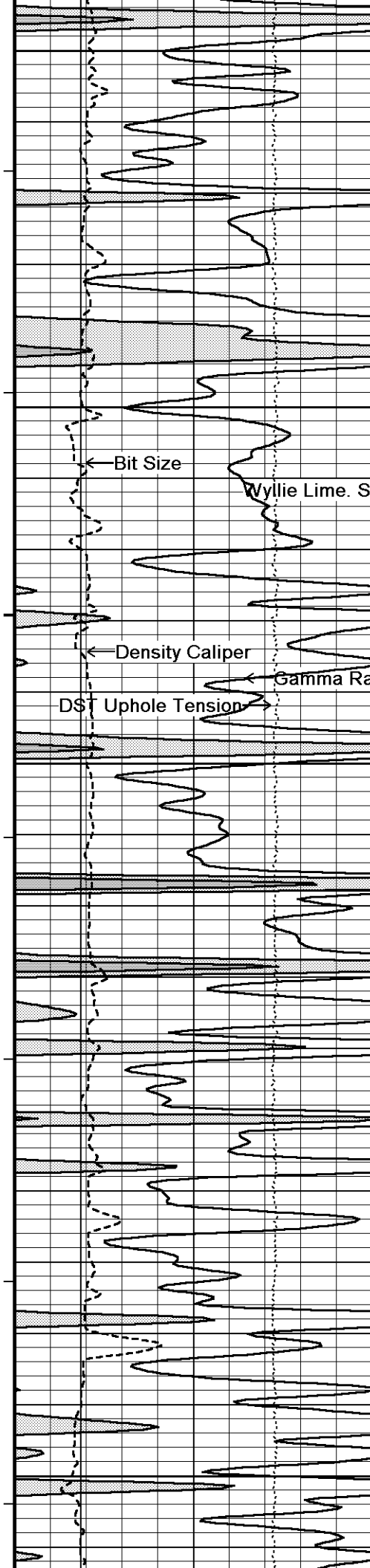
7250

156°

7300

156°





7350

156°

7400

156°

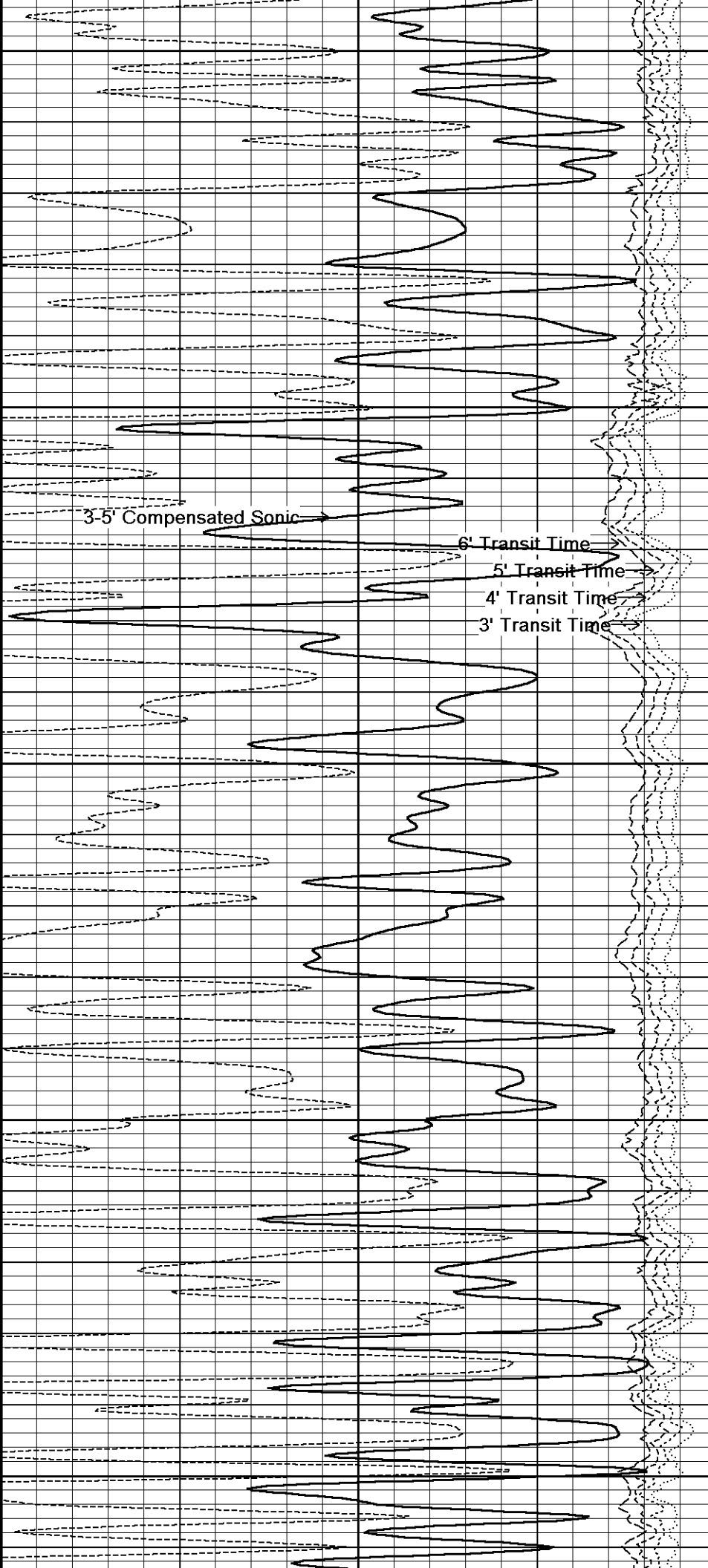
7450

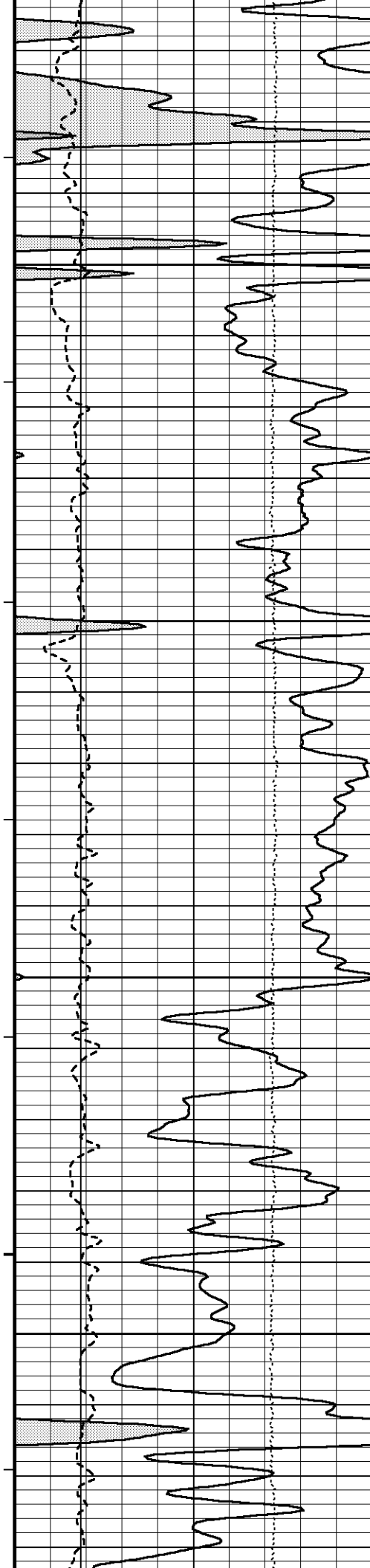
156°

7500

157°

7550





157°

7600

157°

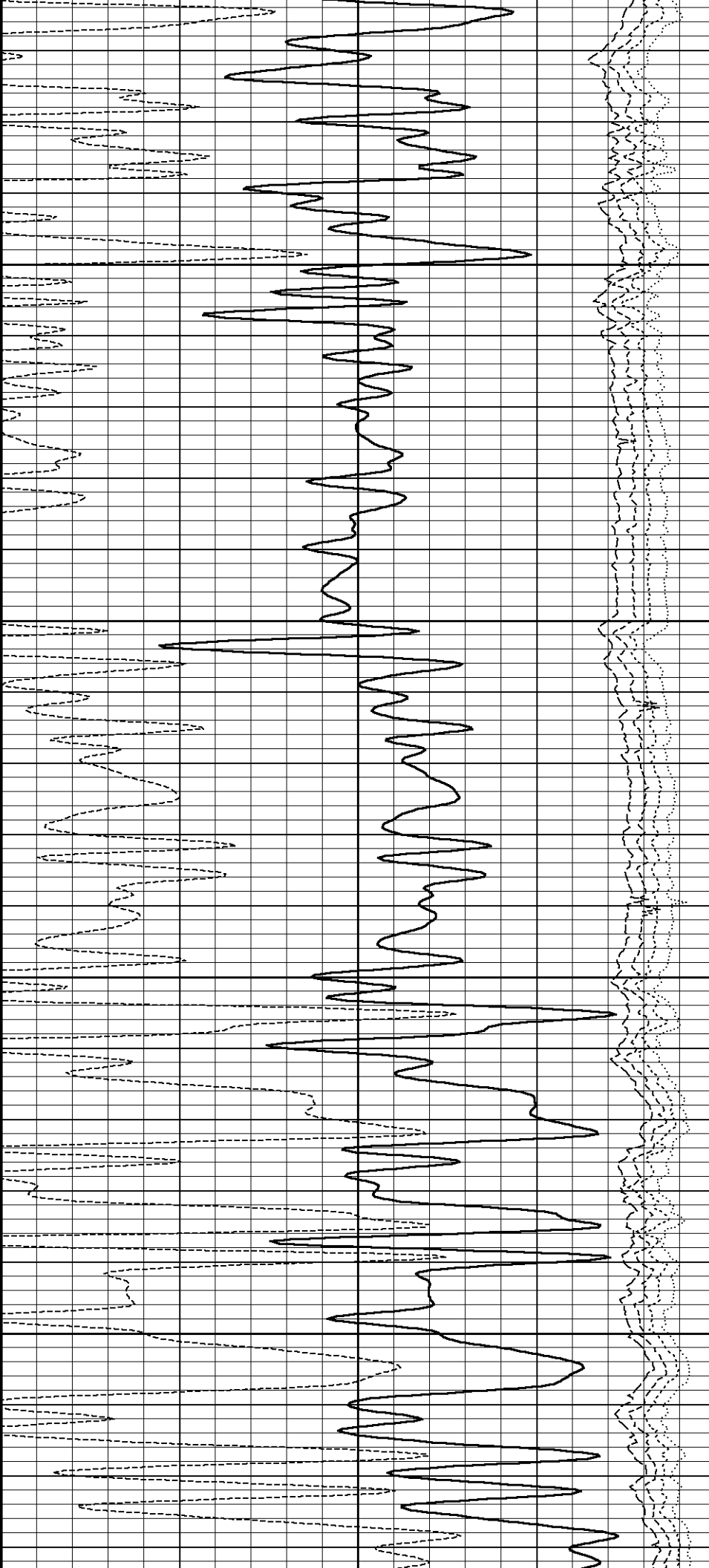
7650

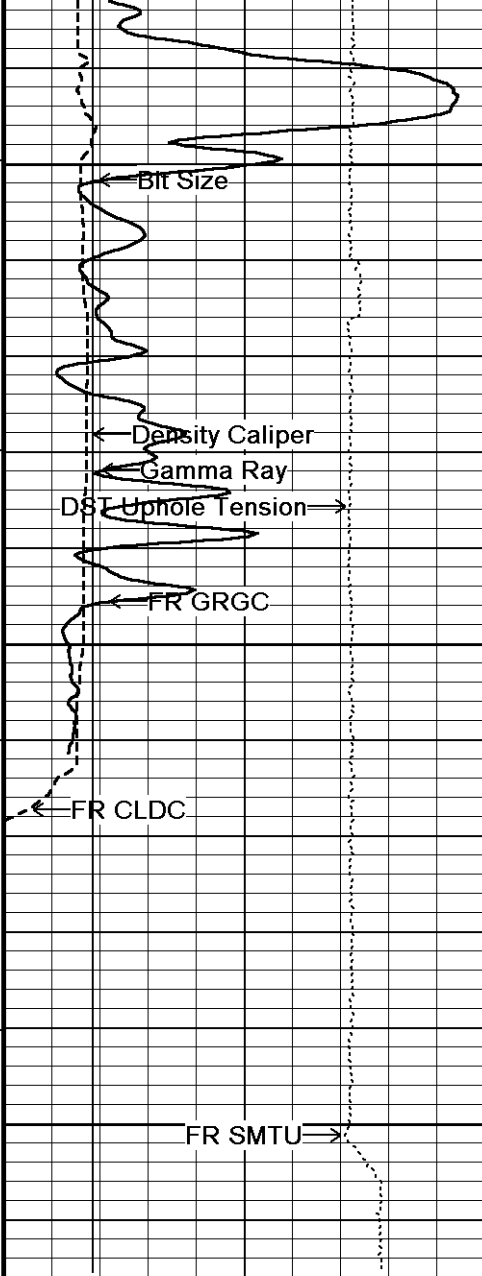
159°

7700

162°

7750





164°

7800

164°

7850

7900

7926

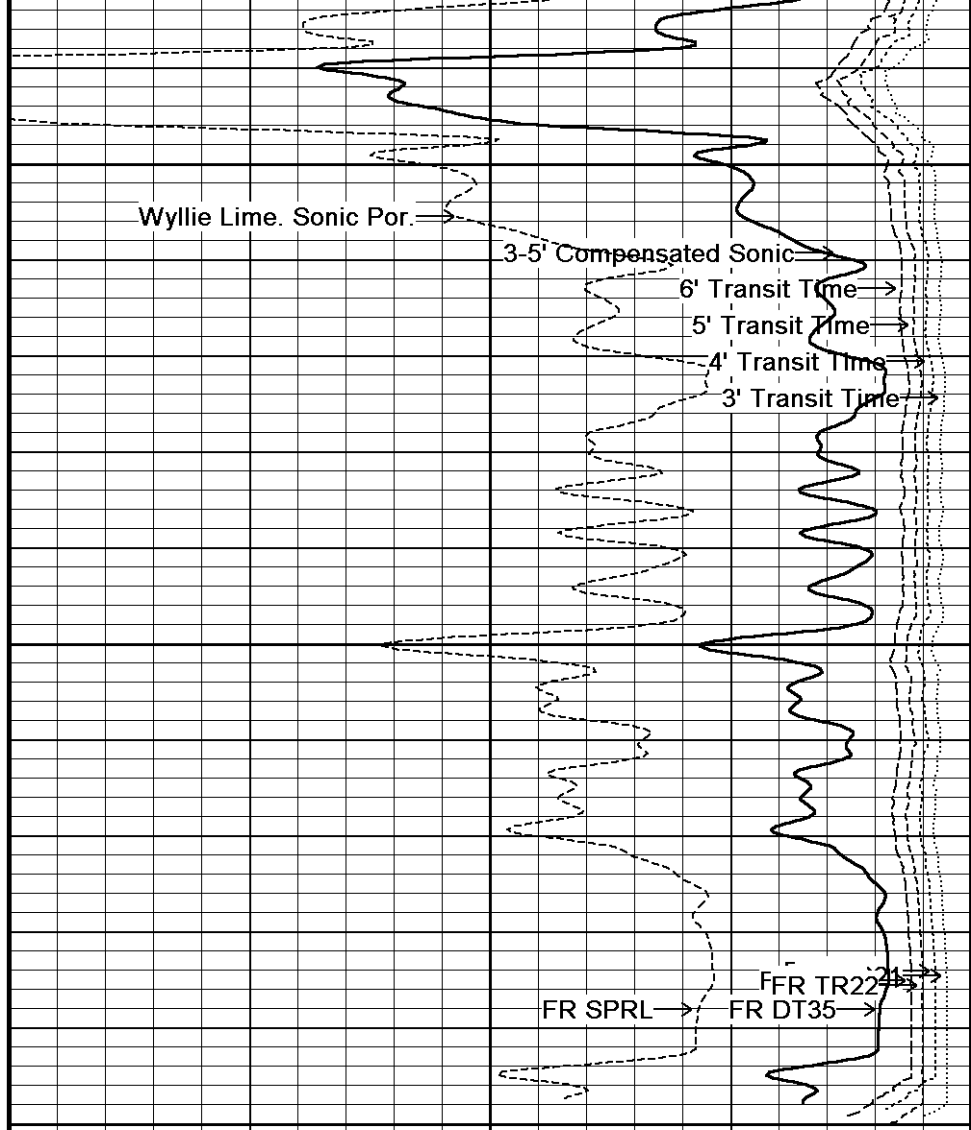
Depth
in
Feet

Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150
150 225 300

Density Caliper
inches
6 11 16

Borehole
Temp in
deg F

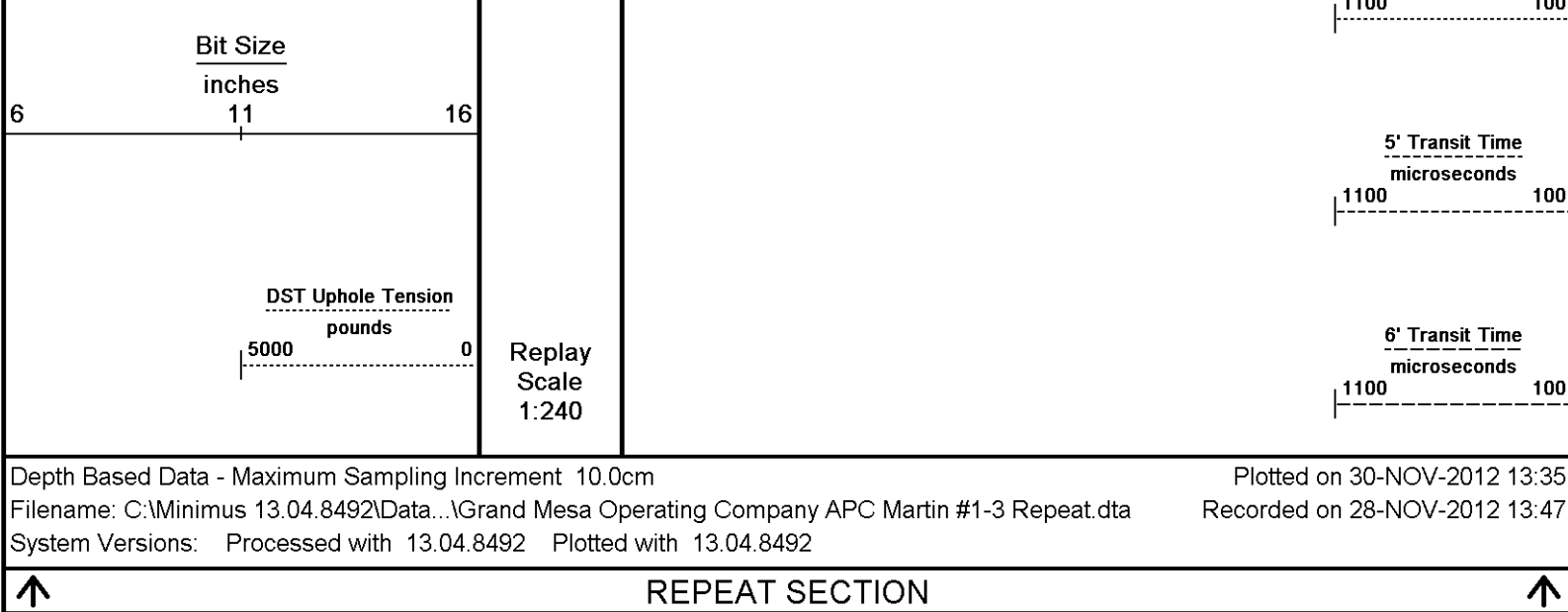


3-5' Compensated Sonic
microsec/foot
140 115 90 65 40

Wyllie Lime. Sonic Por.
percent
30 20 10 0 -10

3' Transit Time
microseconds
1100 100

4' Transit Time
microseconds
1100 100



BEFORE SURVEY CALIBRATION C:\Minimus 13.04.8492\Data\Grand Mesa Operating Company APC ...Grand Mesa Operating Company APC Martin #1-3 Main2.dta

General Constants All 000			Last Edited on 28-NOV-2012,19:26
General Parameters			
Mud Resistivity	1.220	ohm-metres	
Mud Resistivity Temperature	96.000	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	1.000		
RWA Constant M	2.000		

High Resolution Temperature Calibration MCG-D.K 442		Field Calibration on 08-NOV-2012,09:48	
	Measured	Calibrated(Deg F)	
Lower	50.00	50.00	
Upper	100.00	100.00	

High Resolution Temperature Constants MCG-D.K 442		Last Edited on 08-NOV-2012,09:48	
Pre-filter Length	11		

Gamma Calibration MCG-D.K 442		Field Calibration on 27-NOV-2012 16:06	
	Measured	Calibrated (API)	
Background	70	47	
Calibrator (Gross)	1147	772	
Calibrator (Net)	1077	725	

Gamma Constants MCG-D.K 442		Last Edited on 28-NOV-2012,11:55	
Gamma Calibrator Number	GRC38		
Mud Density	1.13	gm/cc	
Caliper Source for Processing	Density Caliper		
Tool Position	Eccentred		
Concentration of KCl	0.00	kppm	

Sonic Constants MSS-A A 126		Last Edited on 27-NOV-2012 22:18	
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DOWNHOLE EQUIPMENT

C:\Minimus 13.04.8492\Data\Grand Mesa Operating Company APC ...Grand Mesa Operating Company APC Martin #1-3 Main2.dta

Compact Comms Gamma
MCG-D.K 442 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Micro-log
MML-A 16 LG: 7.97 ft WT: 81.6 lb OD: 2.24 in

Compact Neutron
MDN-A.B 66 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

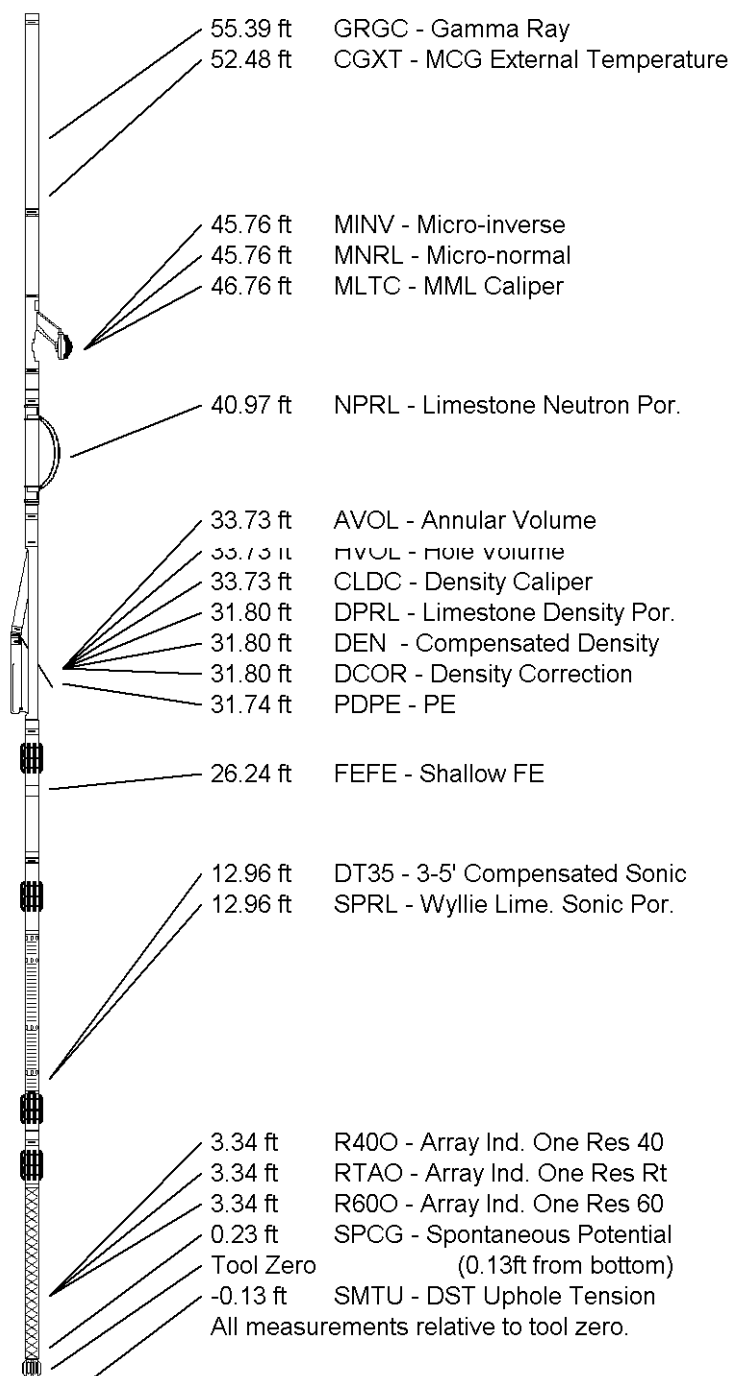
Compact Density/Caliper
MPD-B 64 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

Compact Focussed Electric
MFE-B.J 353 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 167 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 60.68 ft Weight: 456.4 lb



COMPANY

GRAND MESA OPERATING COMPANY

WELL

APC MARTIN #1-3

FIELD

WILDCAT

PROVINCE/COUNTY

LINCOLN

COUNTRY/STATE

U.S.A. / COLORADO

Elevation Kelly Bushing	5250.00	feet
Elevation Drill Floor	5248.00	feet
Elevation Ground Level	5237.00	feet

First Reading	7888.00	feet
Depth Driller	7900.00	feet
Depth Logger	7901.00	feet



The Weatherford logo, featuring the word "Weatherford" in a bold, sans-serif font, with a registered trademark symbol (®) to the upper right of the "d".

Weatherford®

COMPENSATED SONIC
WITH INTEGRATED TRANSIT TIME