



Weatherford

**COMPENSATED SONIC
WITH INTEGRATED TRANSIT TIME**

COMPANY **RED OAK ENERGY INC.**
 WELL **ROHLEDER TRUST #1-35**
 FIELD **WILDCAT**
 PROVINCE/COUNTY **LOGAN**
 COUNTRY/STATE **U.S.A / KANSAS**
 LOCATION **680' FNL & 2280' FEL
NE SW NW NE**

SEC 35 TWP 11S RGE 32W Other Services: MML
 API Number 15-109-21228 MML MA/ MFE
 Permit Number
 Permanent Datum GL, Elevation 3035 feet
 Log Measured From KB
 Drilling Measured From KB AT 11 FEET

Date	19-FEB-2014	Elevations:	KB 3046.00 DF 3044.00 GL 3035.00
Run Number	ONE		
Service Order	7036-80000256		
Depth Driller	4745.00	feet	
Depth Logger	4745.00	feet	
First Reading	4732.04	feet	
Last Reading	267.00	feet	
Casing Driller	267.00	feet	
Casing Logger	267.00	feet	
Bit Size	7.875	inches	
Hole Fluid Type	CHEMICAL		
Density / Viscosity	9.30 lb/USg	57.00 CP	
PH / Fluid Loss	10.50	6.40 ml/30Min	
Sample Source	MUD PIT		
Rm @ Measured Temp	1.38 @ 75.0	ohm-m	
Rmf @ Measured Temp	1.10 @ 75.0	ohm-m	
Rmc @ Measured Temp	1.66 @ 75.0	ohm-m	
Source Rmf / Rmc	CALC	CALC	
Rm @ BHT	0.93 @ 113.0	ohm-m	
Time Since Circulation	5 HOURS		
Max Recorded Temp	114.00	deg F	
Equipment / Base	13096	LIB	
Recorded By	DEREK CARTER		
Witnessed By	PAT DEENIHAN	BEN WELDIN	
JOB #	LB14-048		

BOREHOLE RECORD

Last Edited: 19-FEB-2014 10:21

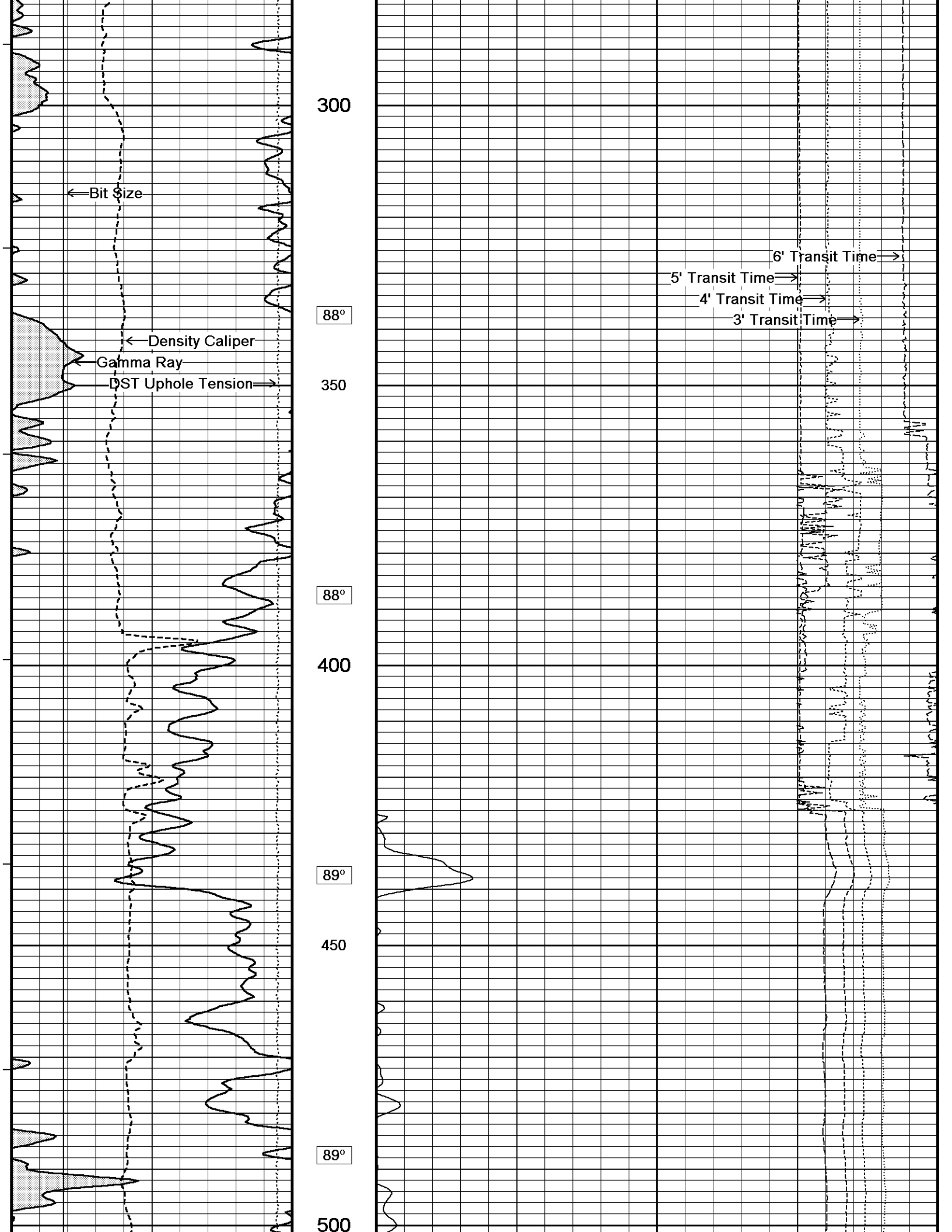
Bit Size inches	Depth From feet	Depth To feet
7.875	267.00	4745.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	267.00	24.00

REMARKS

- SOFTWARE ISSUE: WLS 13.05.9583
- TOOLS: MCG, MML, MDN, MPD, MFE, MSS, MAI RUN IN COMBINATION
- HARDWARE:
 - MDN: DUAL BOWSPRING ECCENTRALIZER
 - MFE: 1 X 0.5 INCH STANDOFF
 - MSS: 2 X 0.5 INCH STANDOFF
 - MAI: 2 X 0.5 INCH STANDOFF
- 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: 1820 CU. FT



300

← Bit Size

88°

5' Transit Time →

6' Transit Time →

4' Transit Time →

3' Transit Time →

← Density Caliper

Gamma Ray

DST Uphole Tension →

350

88°

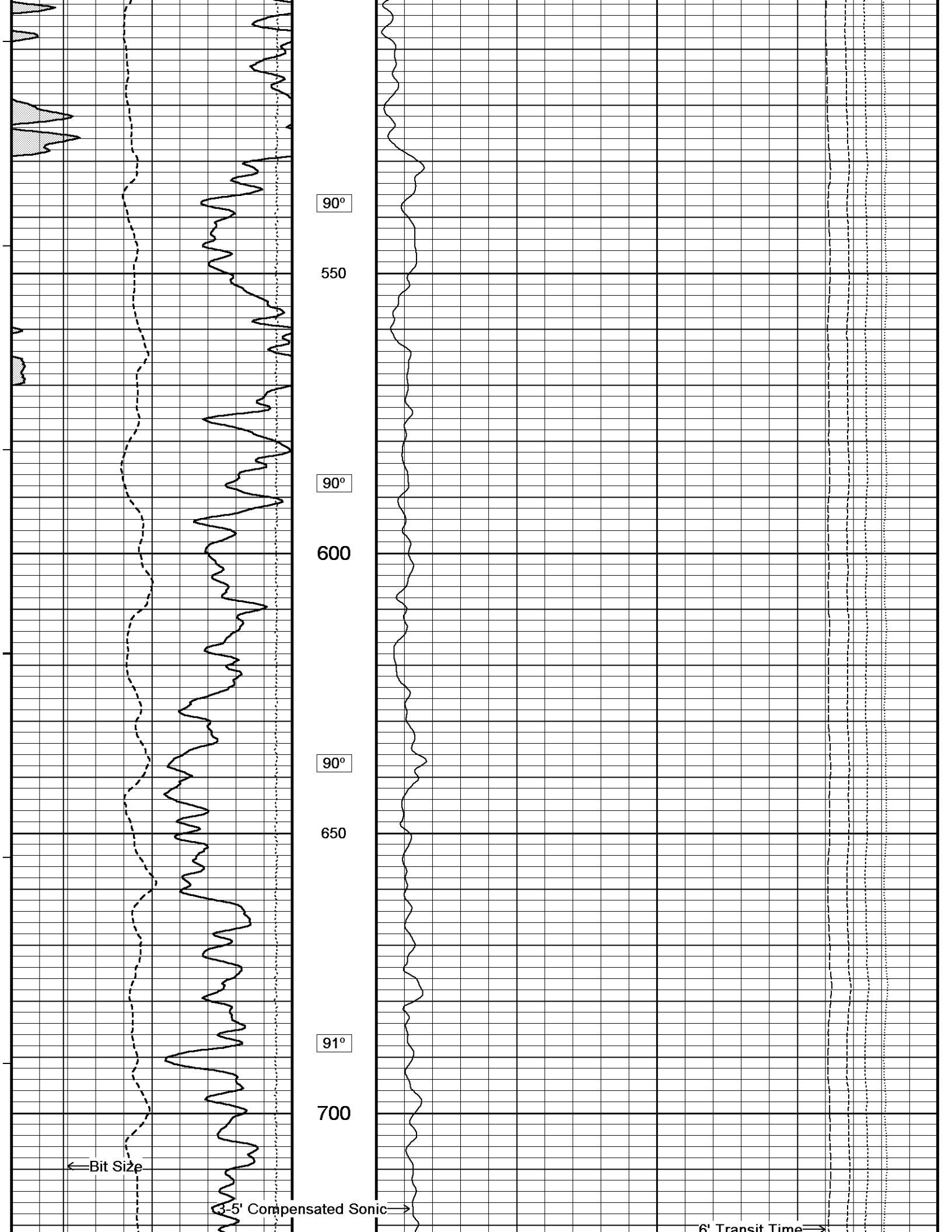
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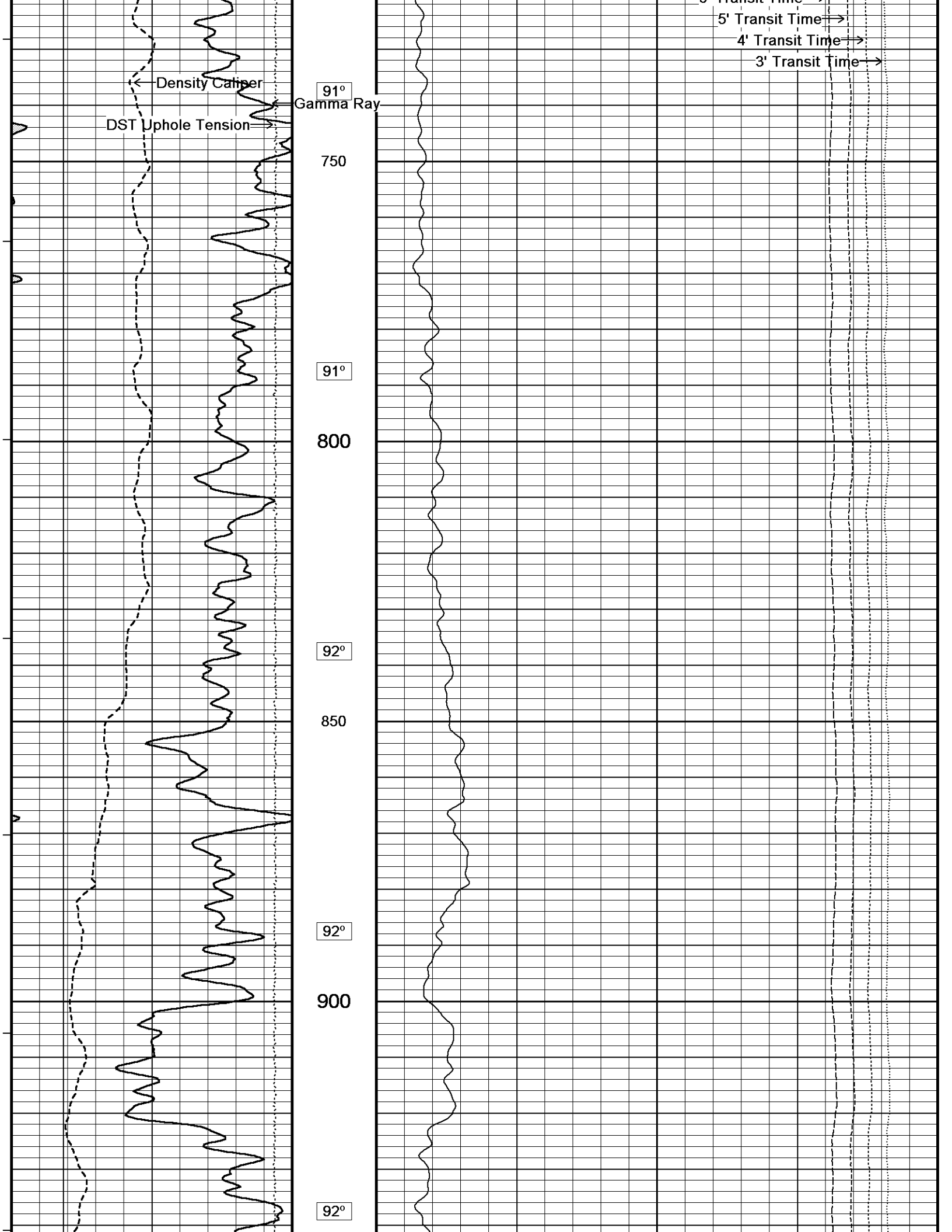
89°

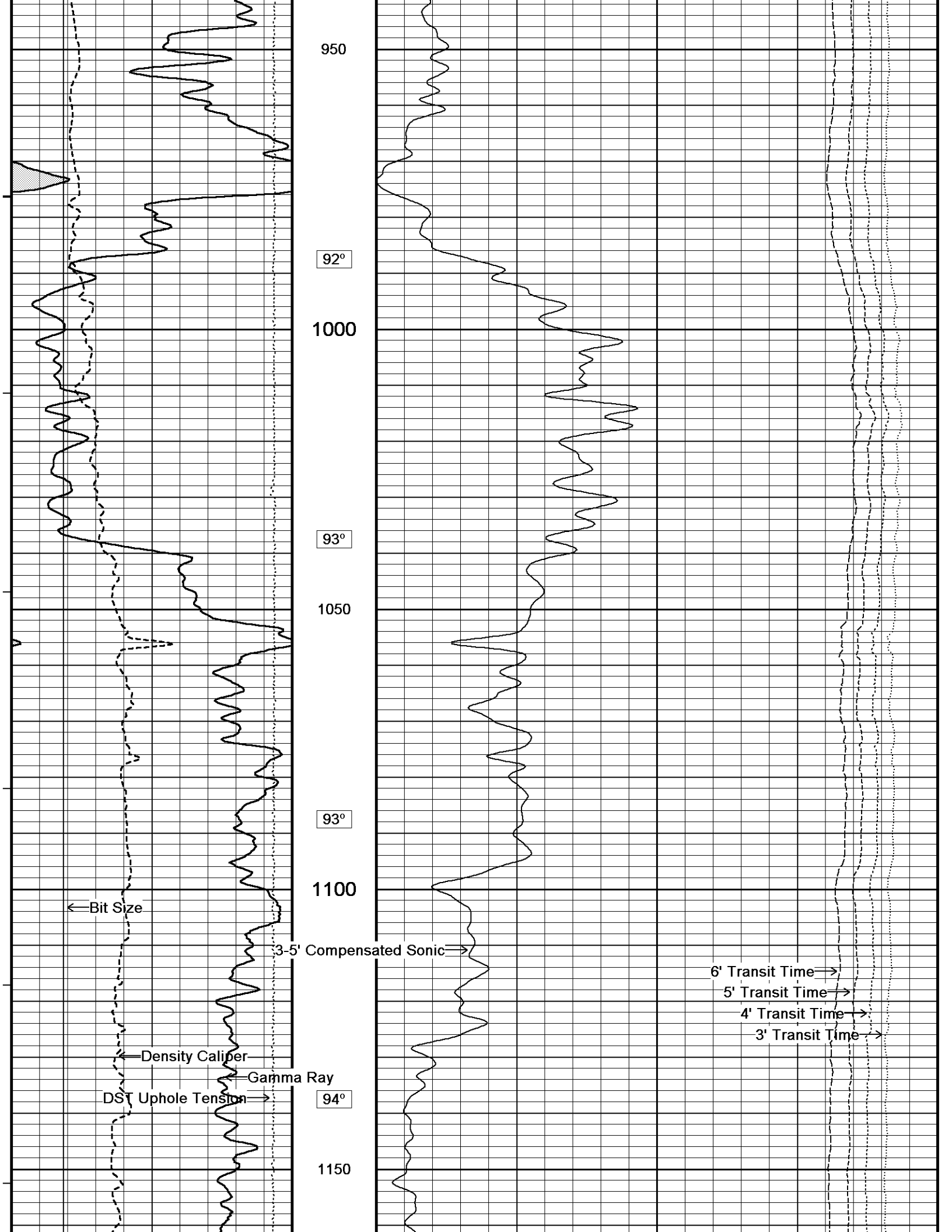
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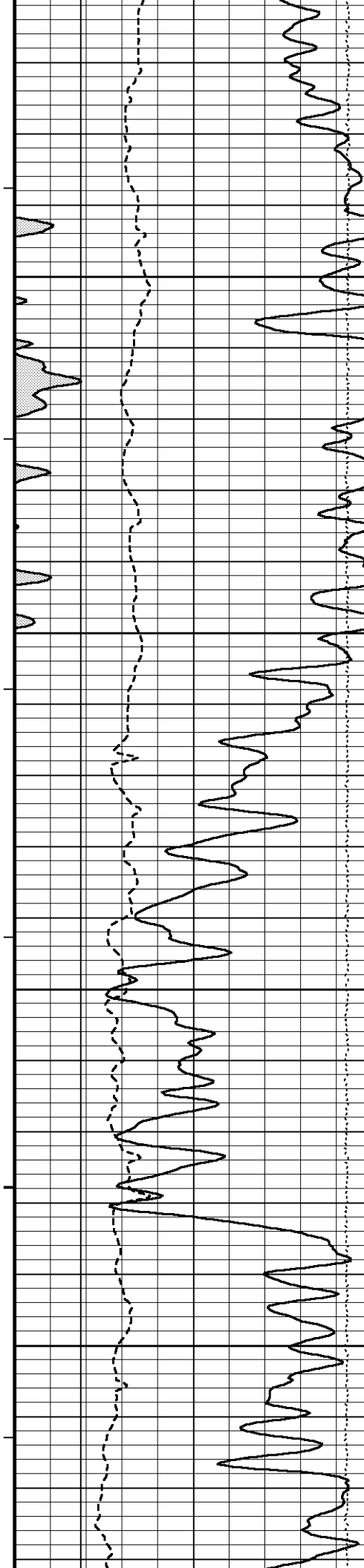
89°

500









94°

1200

94°

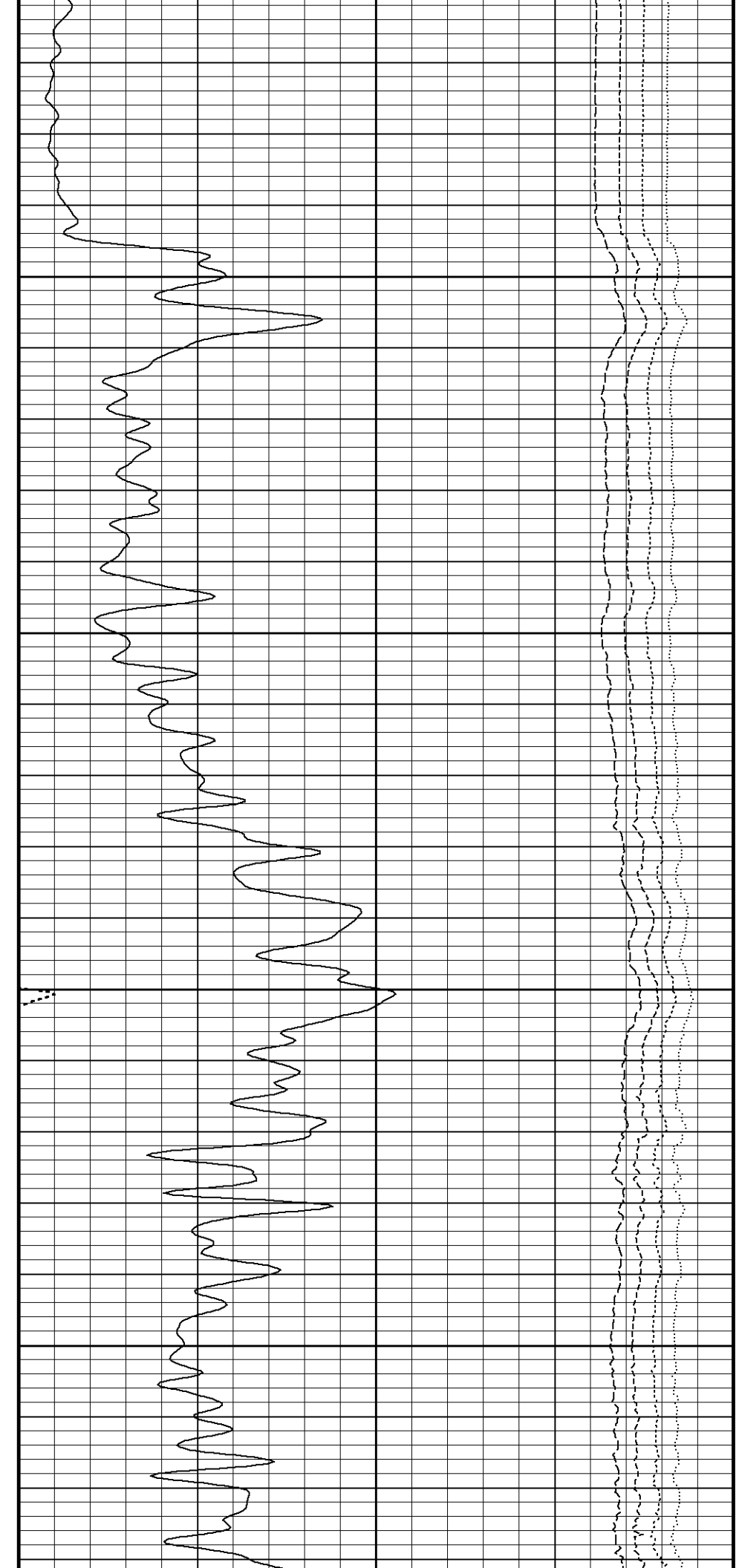
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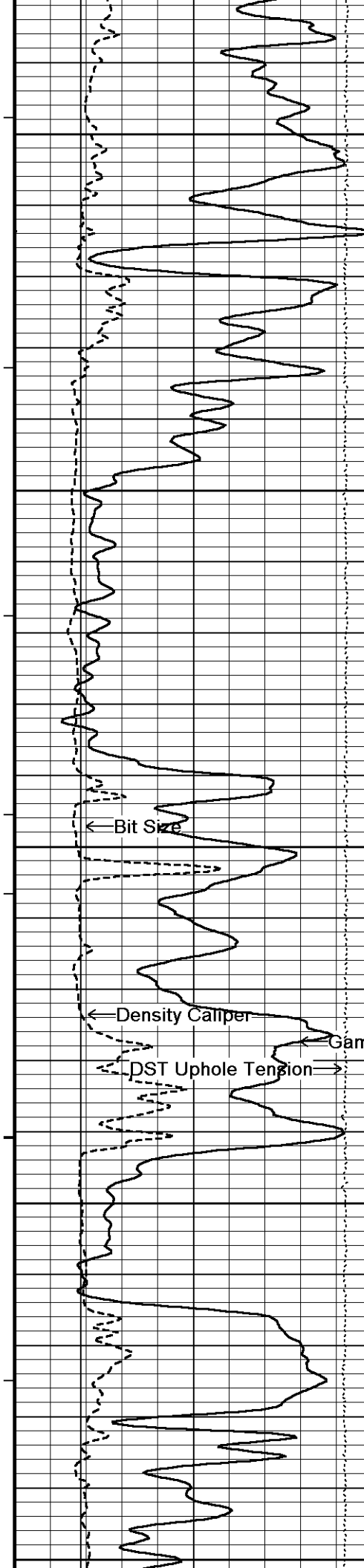
95°

1300

95°

1350





95°

1400

95°

1450

96°

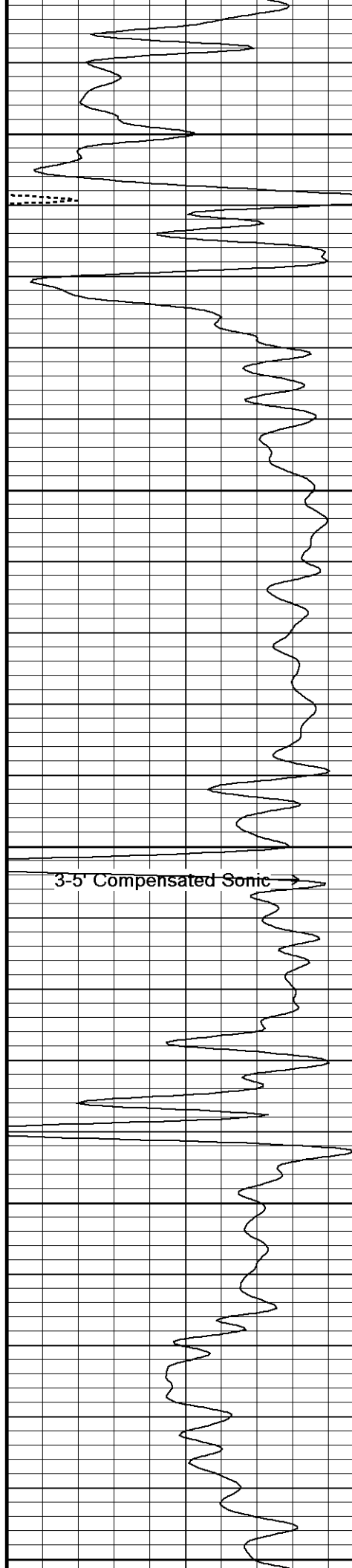
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96°

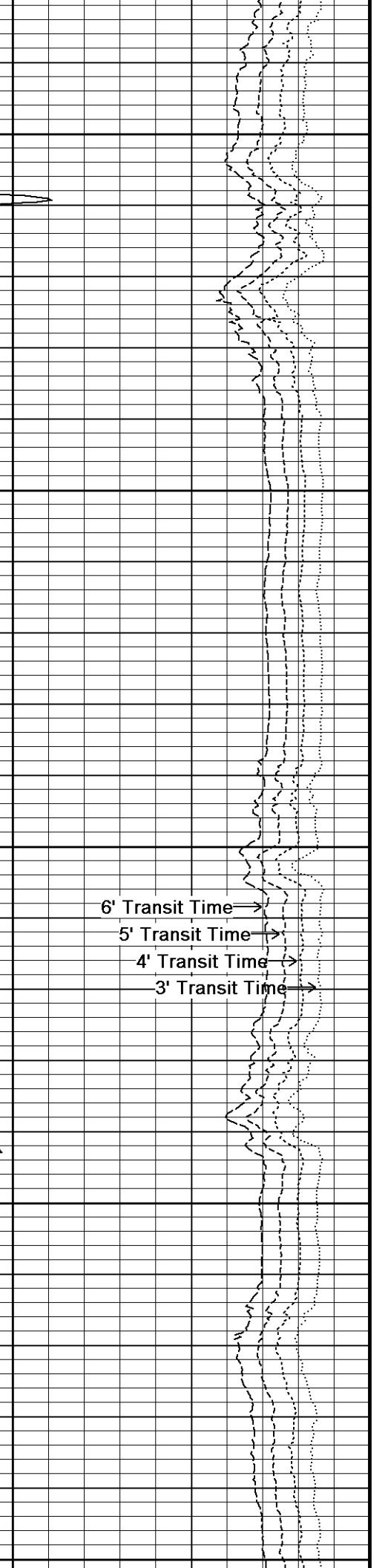
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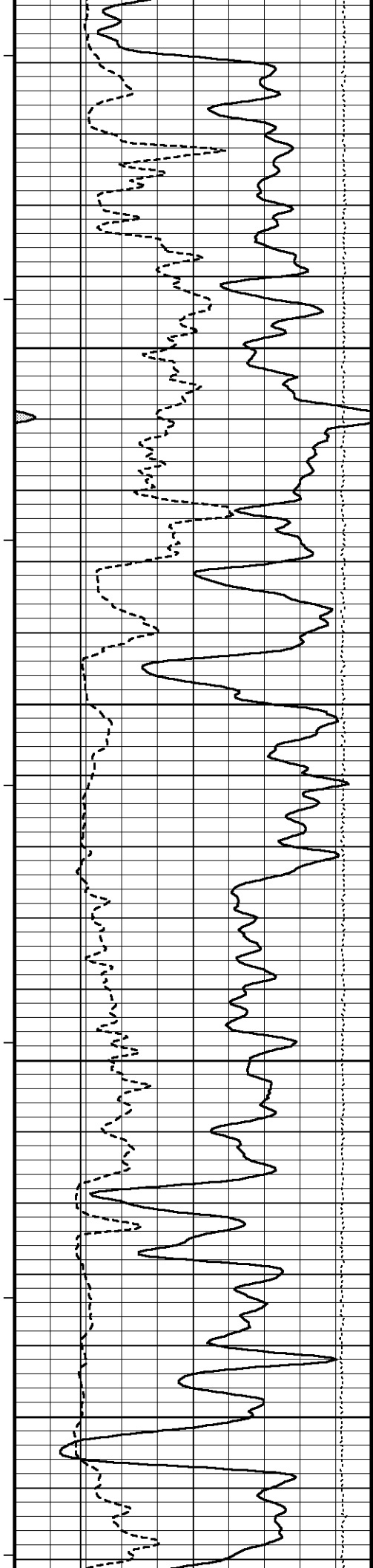
96°

1600



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





97°

1650

97°

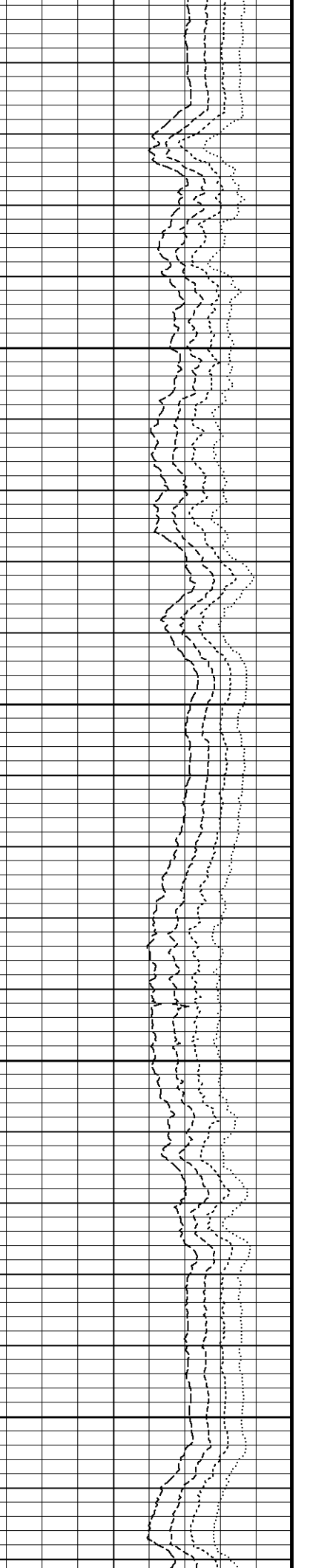
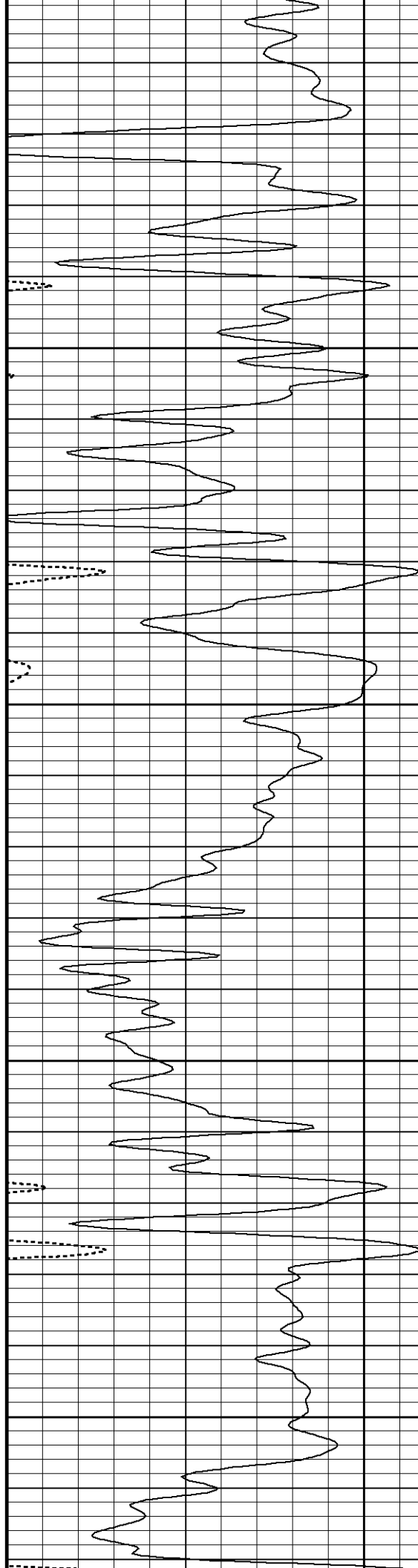
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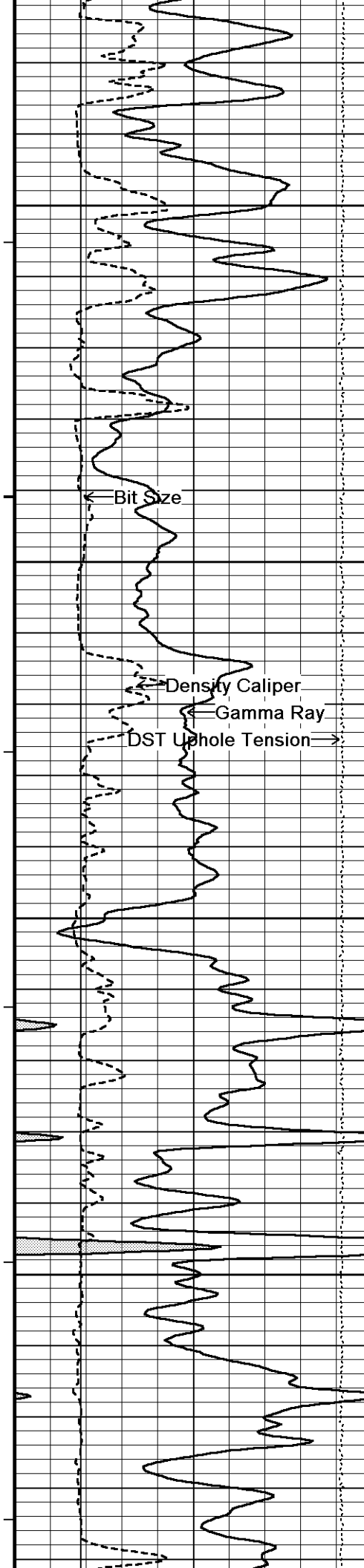
97°

1750

98°

1800





98°

1850

98°

1900

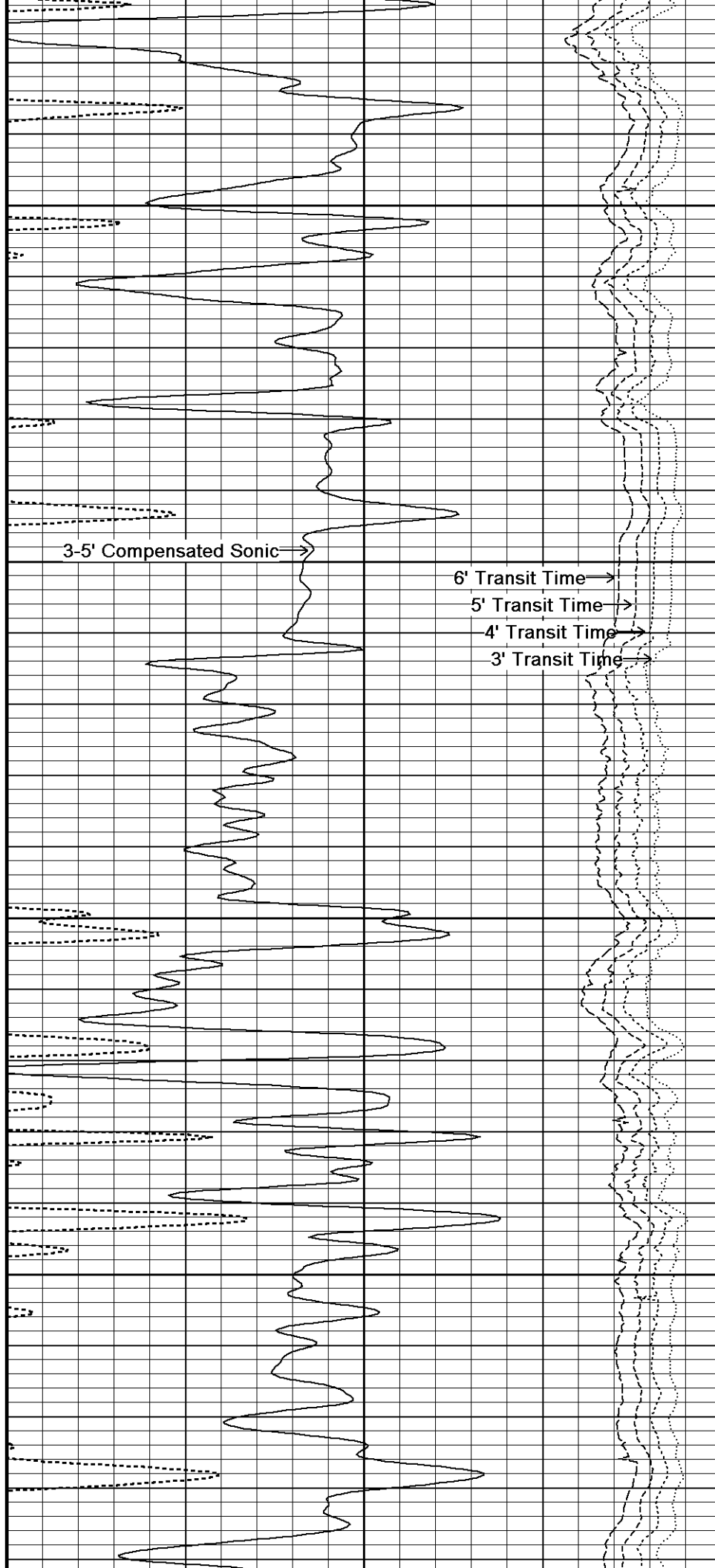
99°

1950

99°

2000

99°



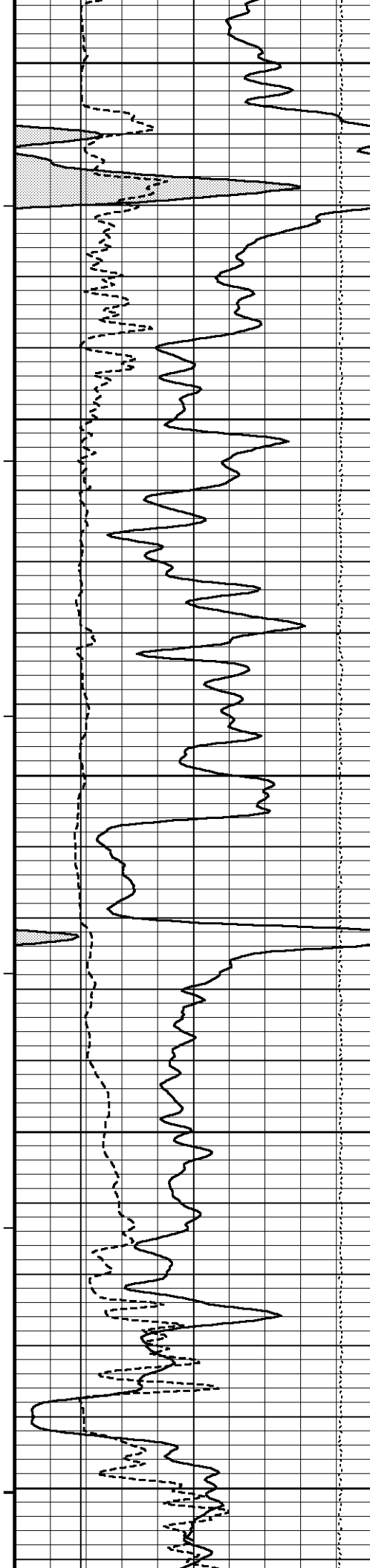
3-5' Compensated Sonic

6' Transit Time

5' Transit Time

4' Transit Time

3' Transit Time



2050

99°

2100

100°

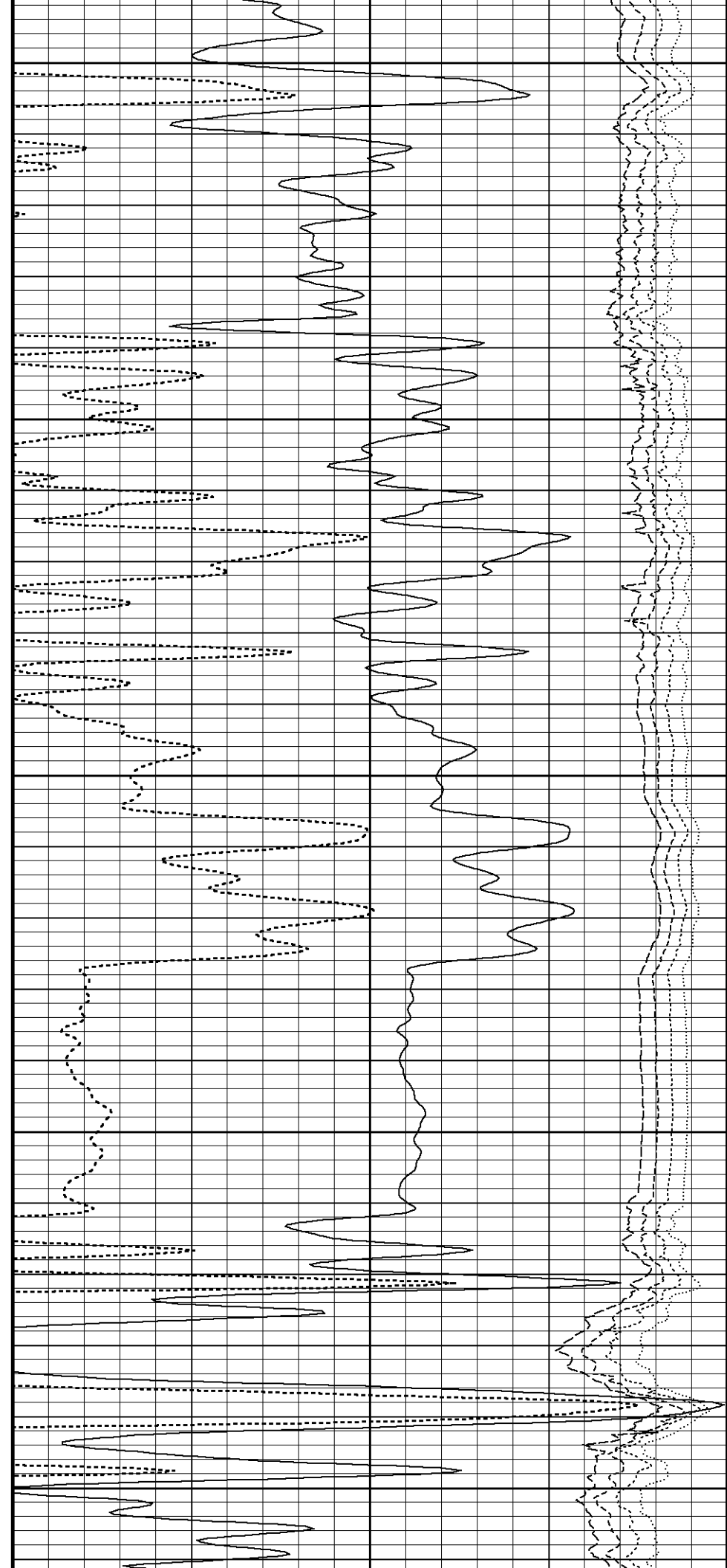
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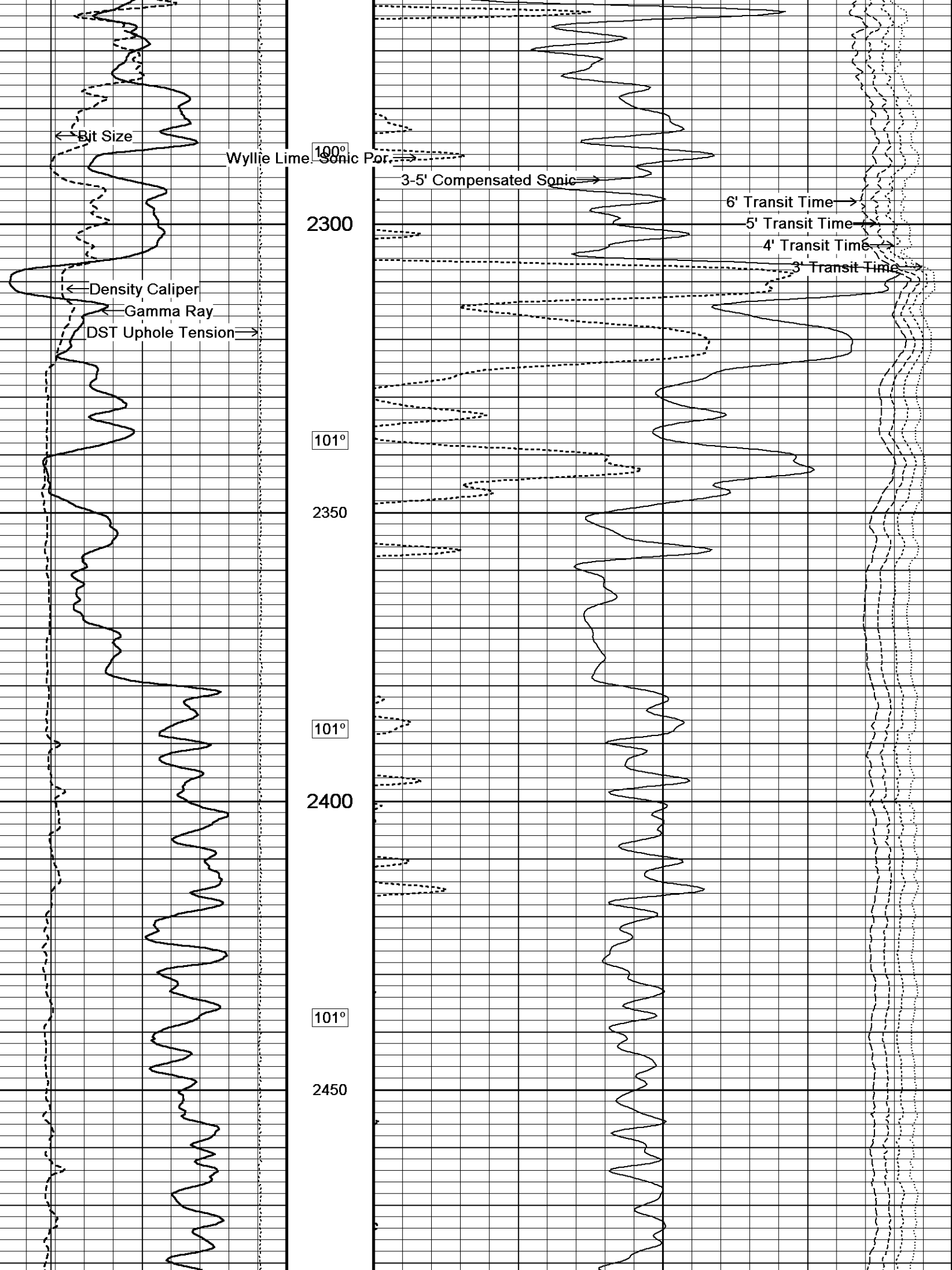
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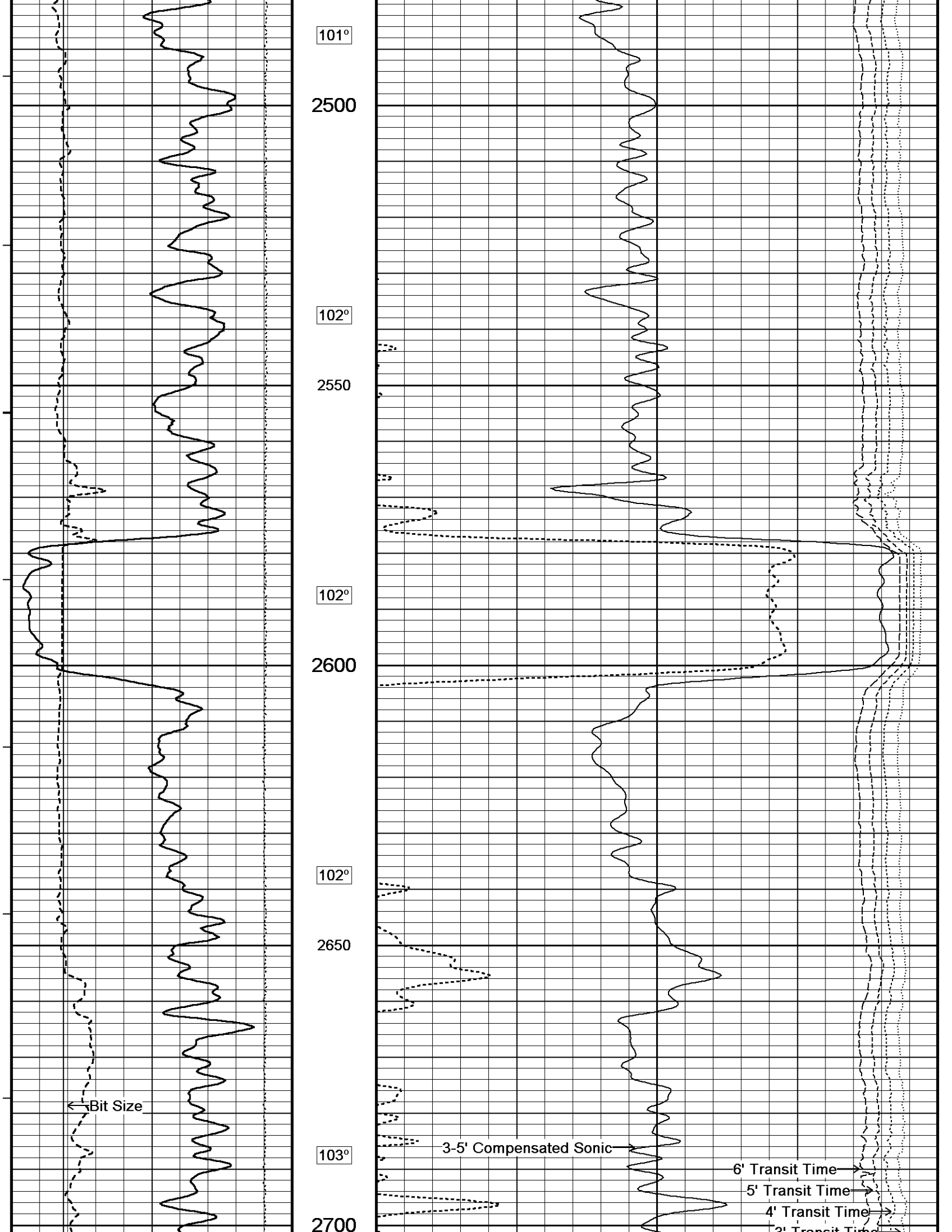
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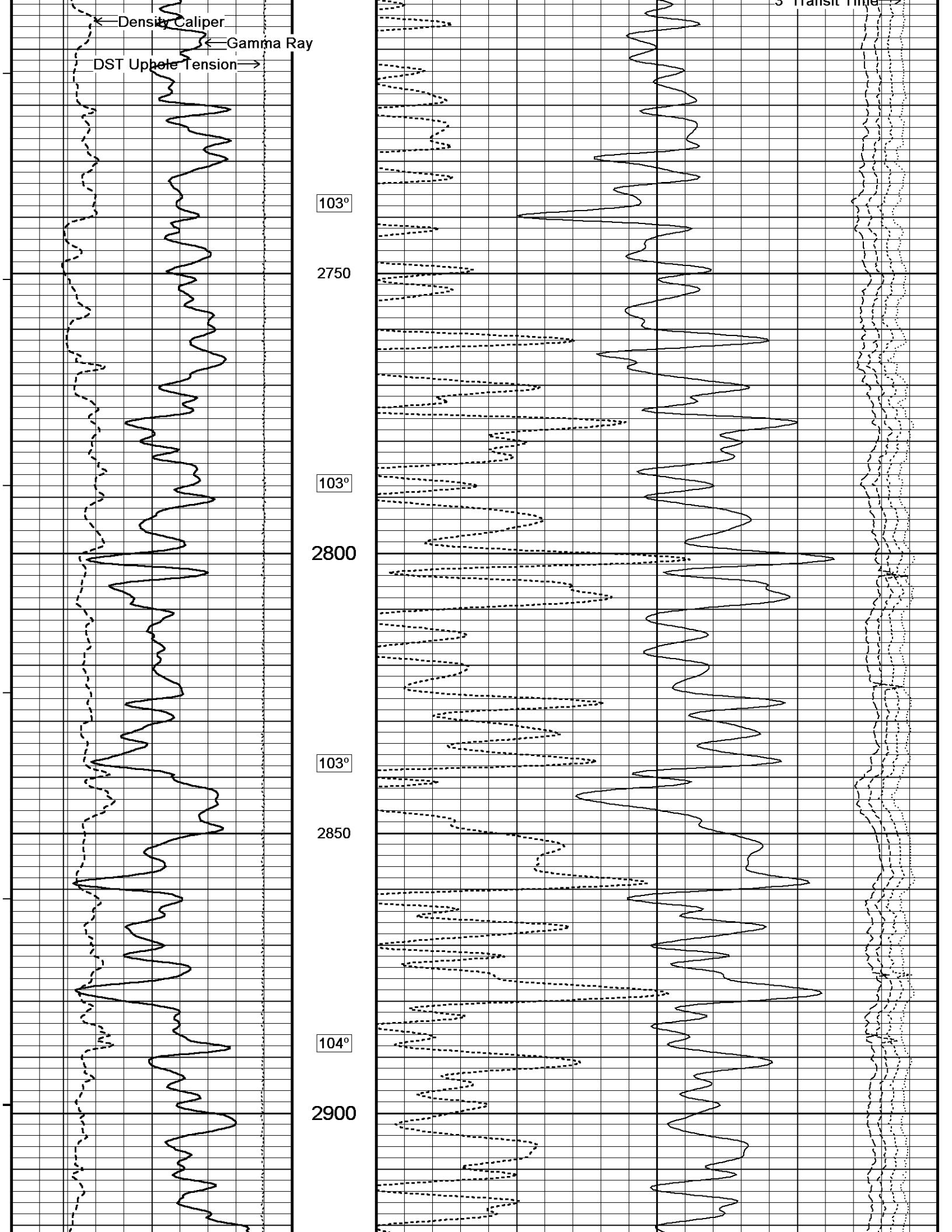
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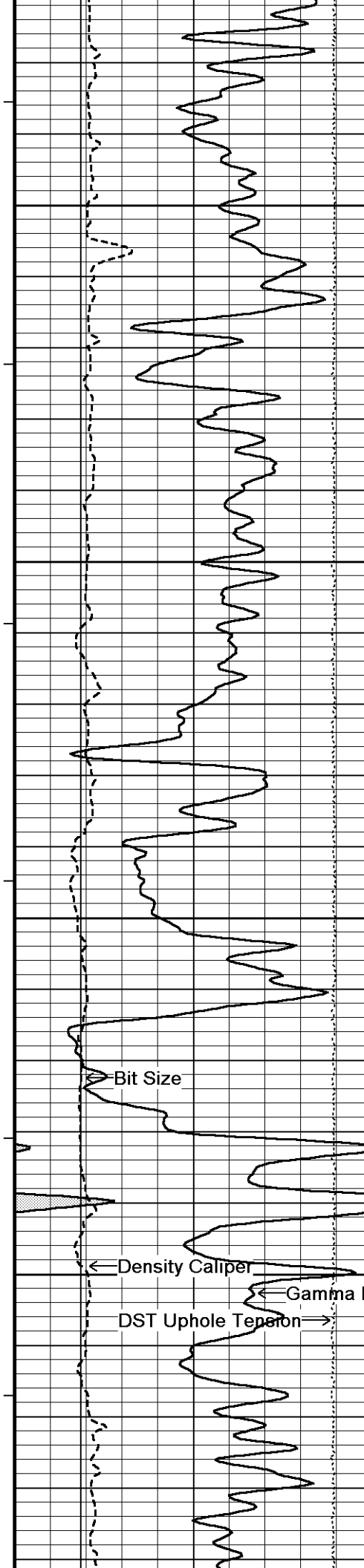
2250











104°

2950

104°

3000

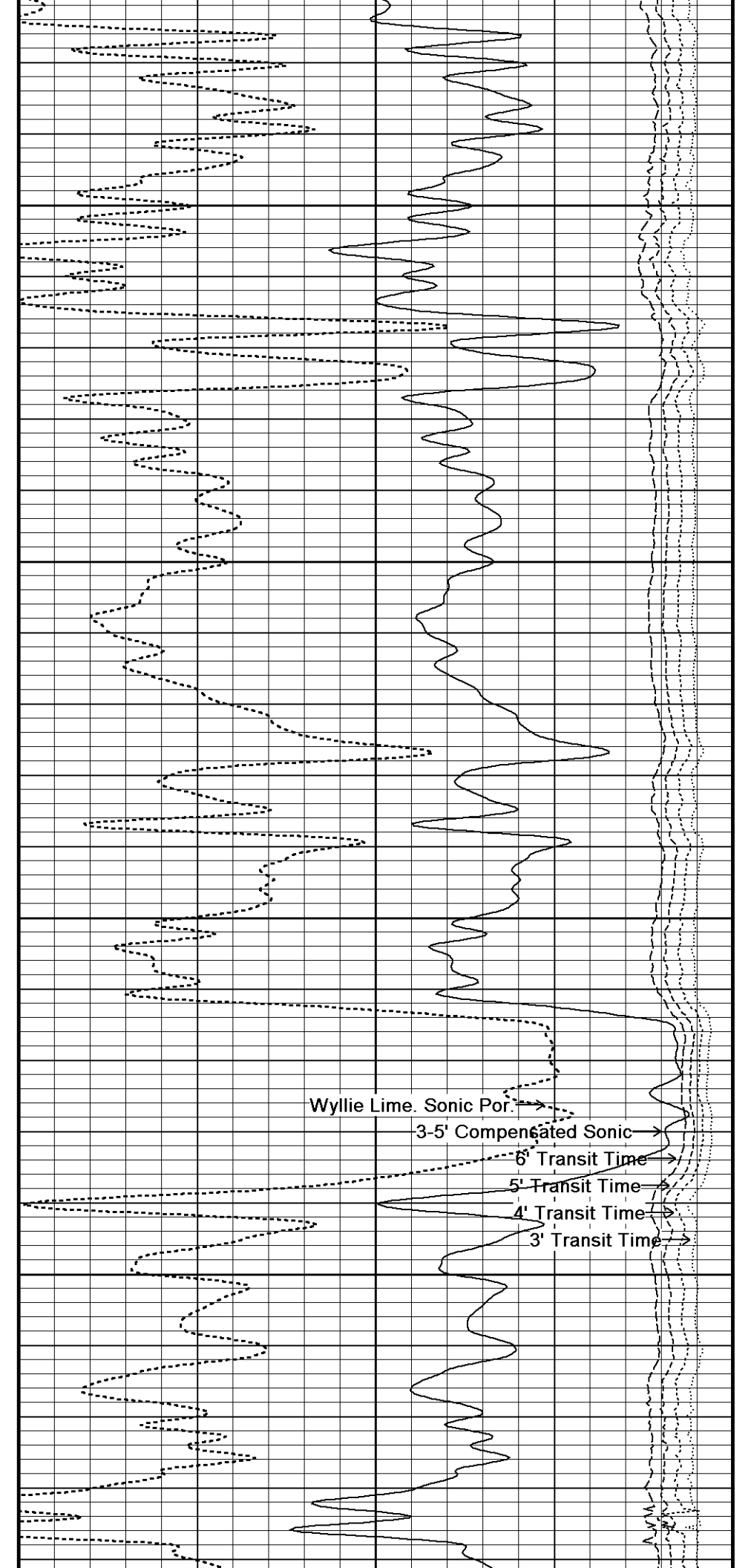
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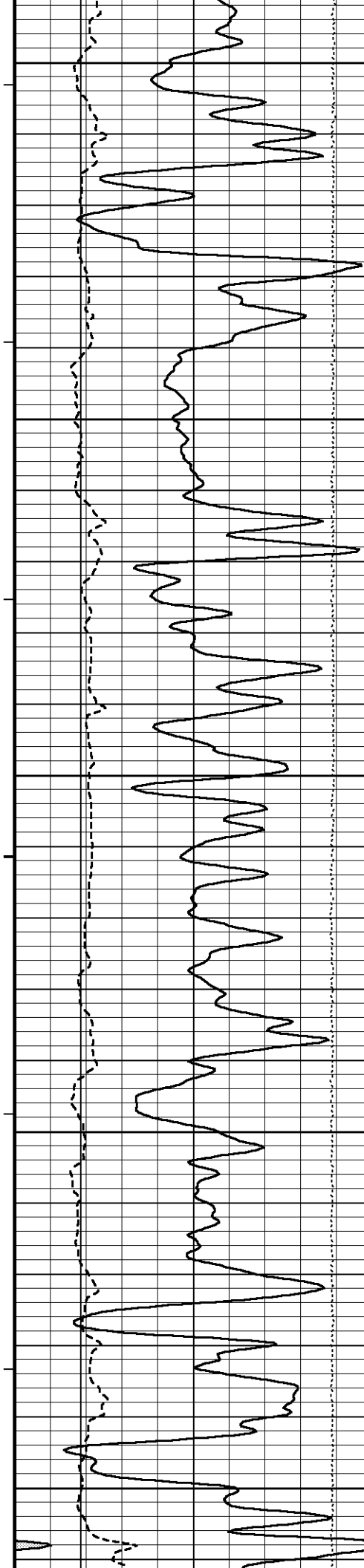
3050

104°

3100

105°





3150

105°

3200

105°

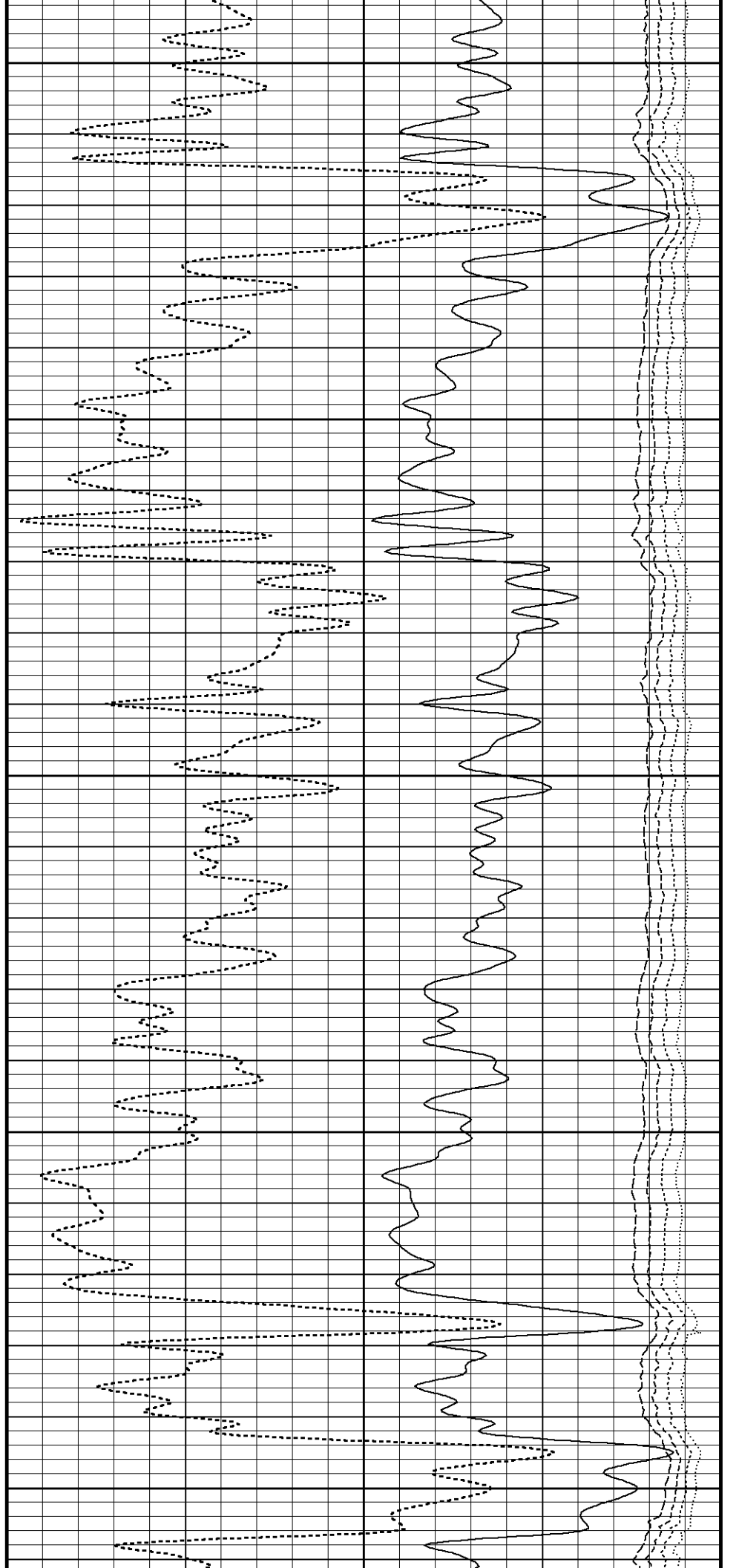
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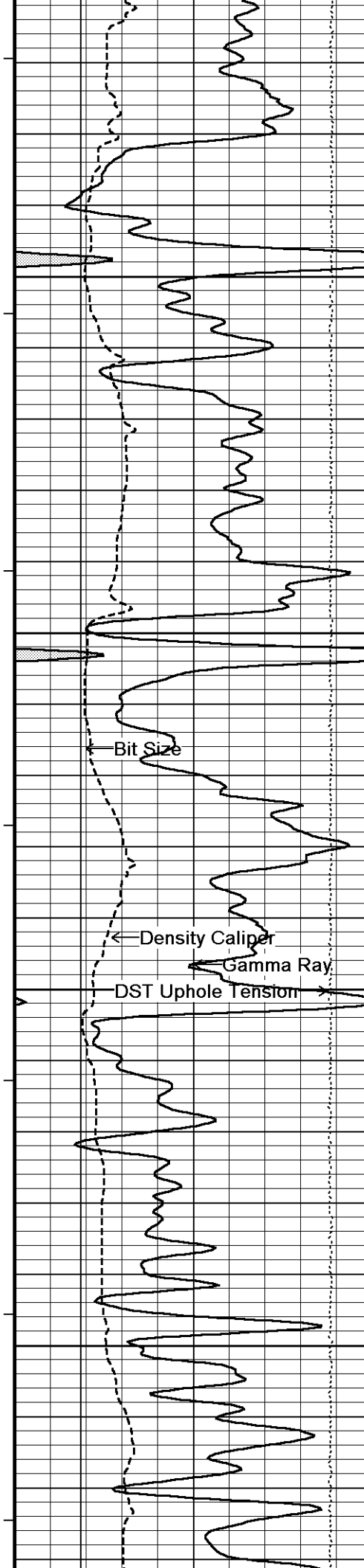
105°

3300

106°

3350





106°

3400

106°

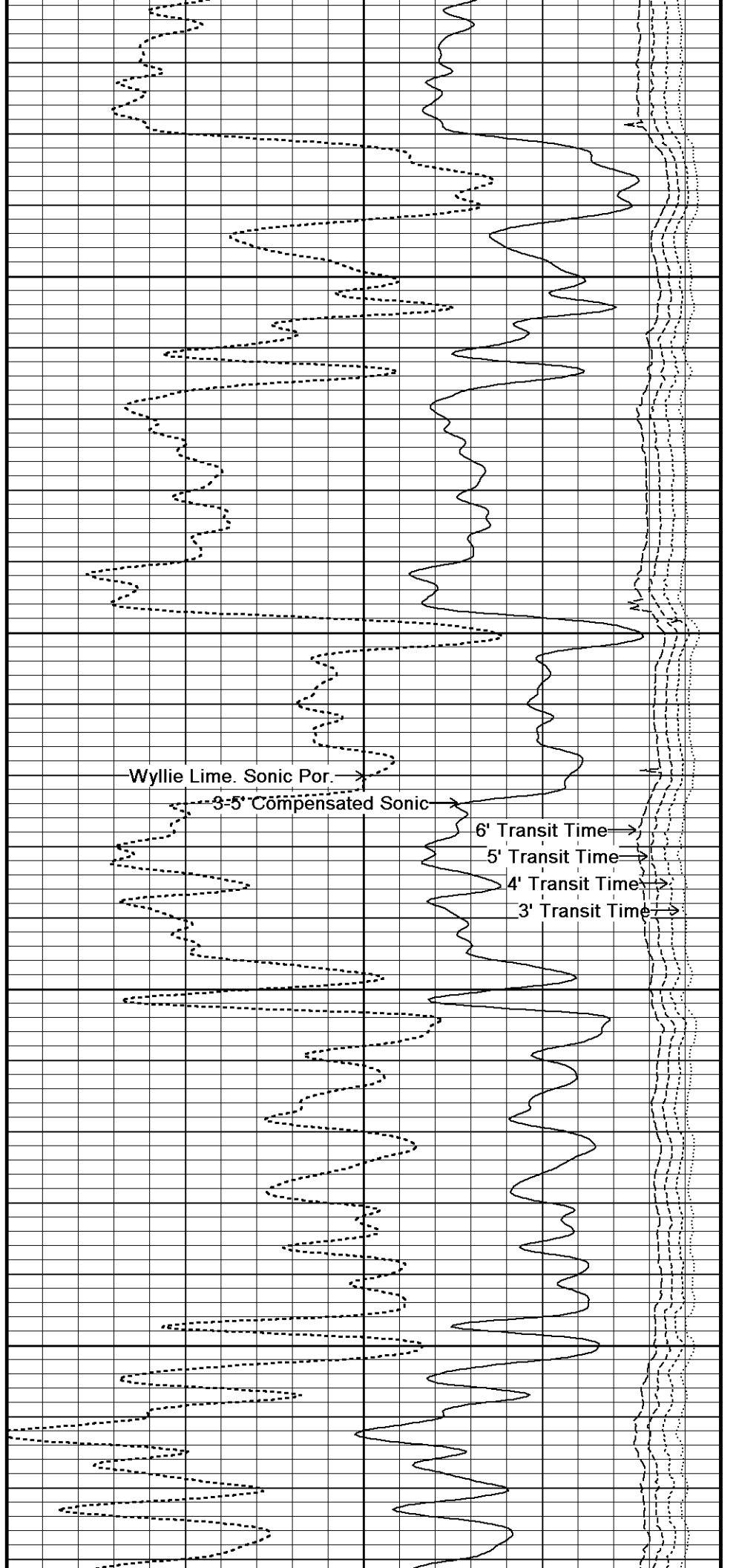
3450

106°

3500

106°

3550



Wyllie Lime. Sonic Por.

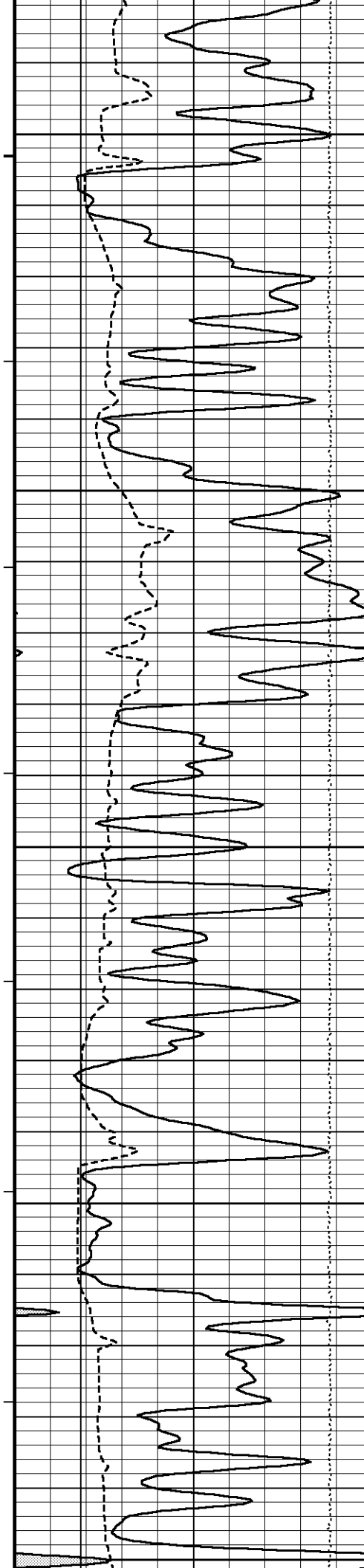
3-5' Compensated Sonic

6' Transit Time

5' Transit Time

4' Transit Time

3' Transit Time



107°

3600

107°

3650

107°

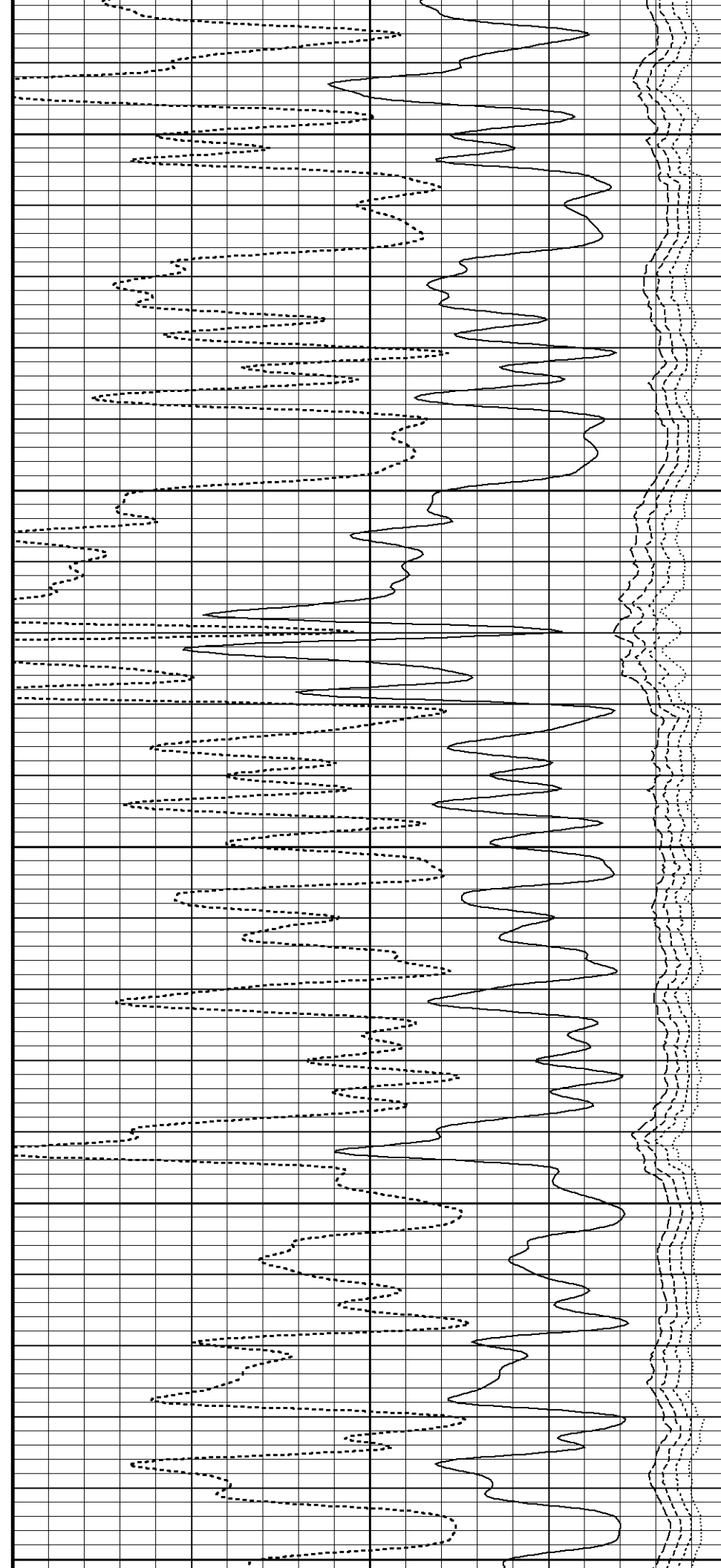
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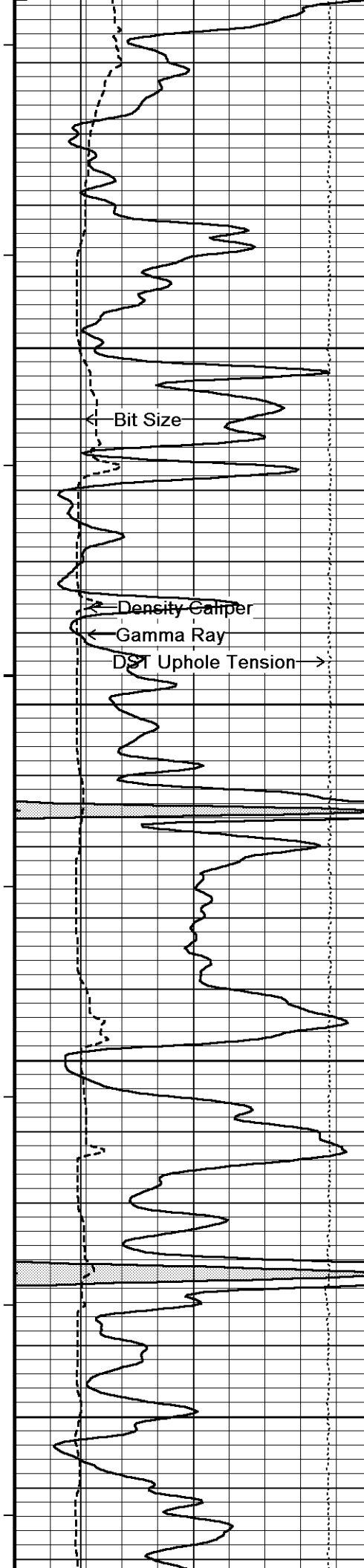
107°

3750

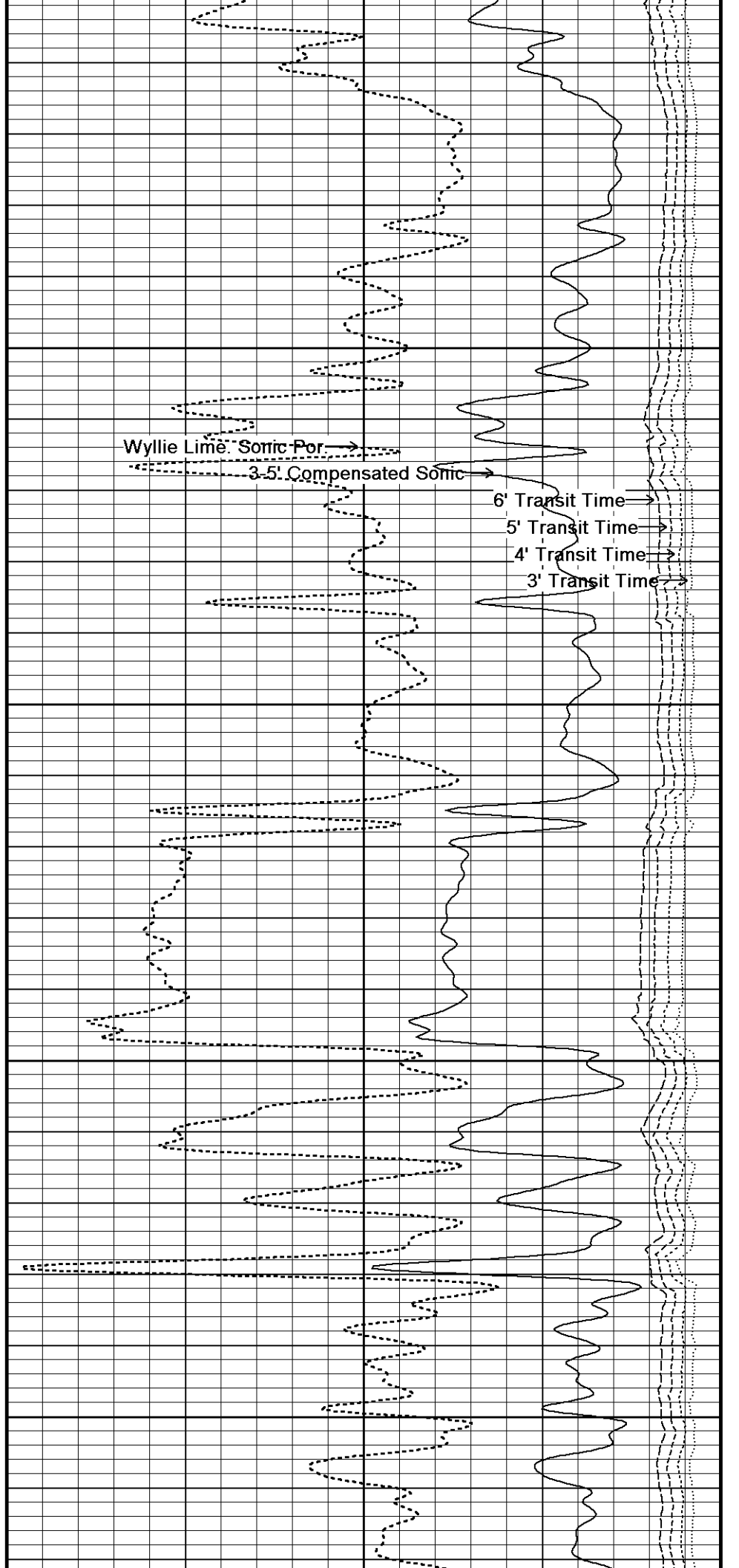
108°

3800

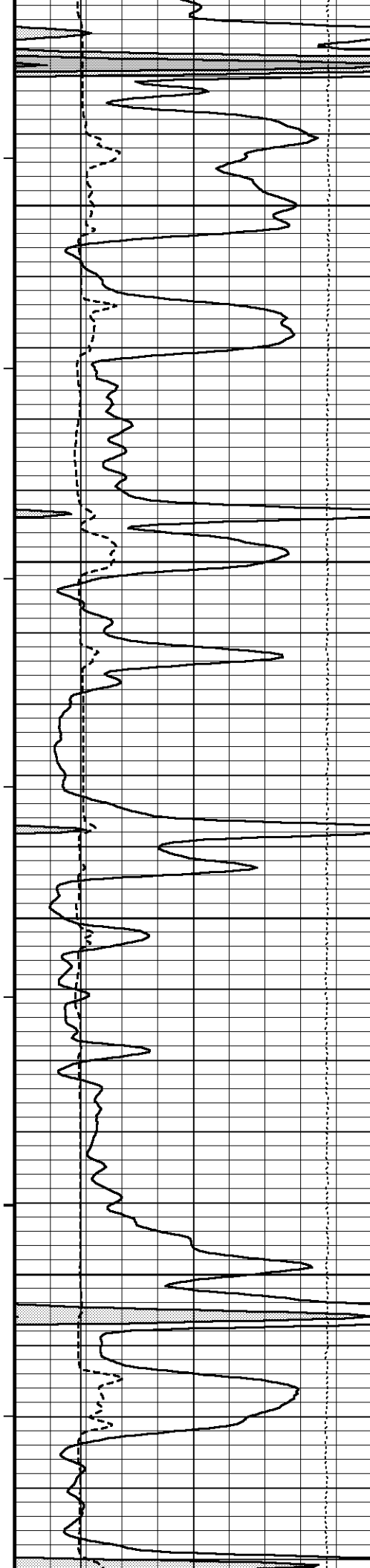




108°
3850
108°
3900
108°
3950
109°
4000



Wyllie Lime Sonic Por. →
3-5' Compensated Sonic →
6' Transit Time →
5' Transit Time →
4' Transit Time →
3' Transit Time →



109°

4050

109°

4100

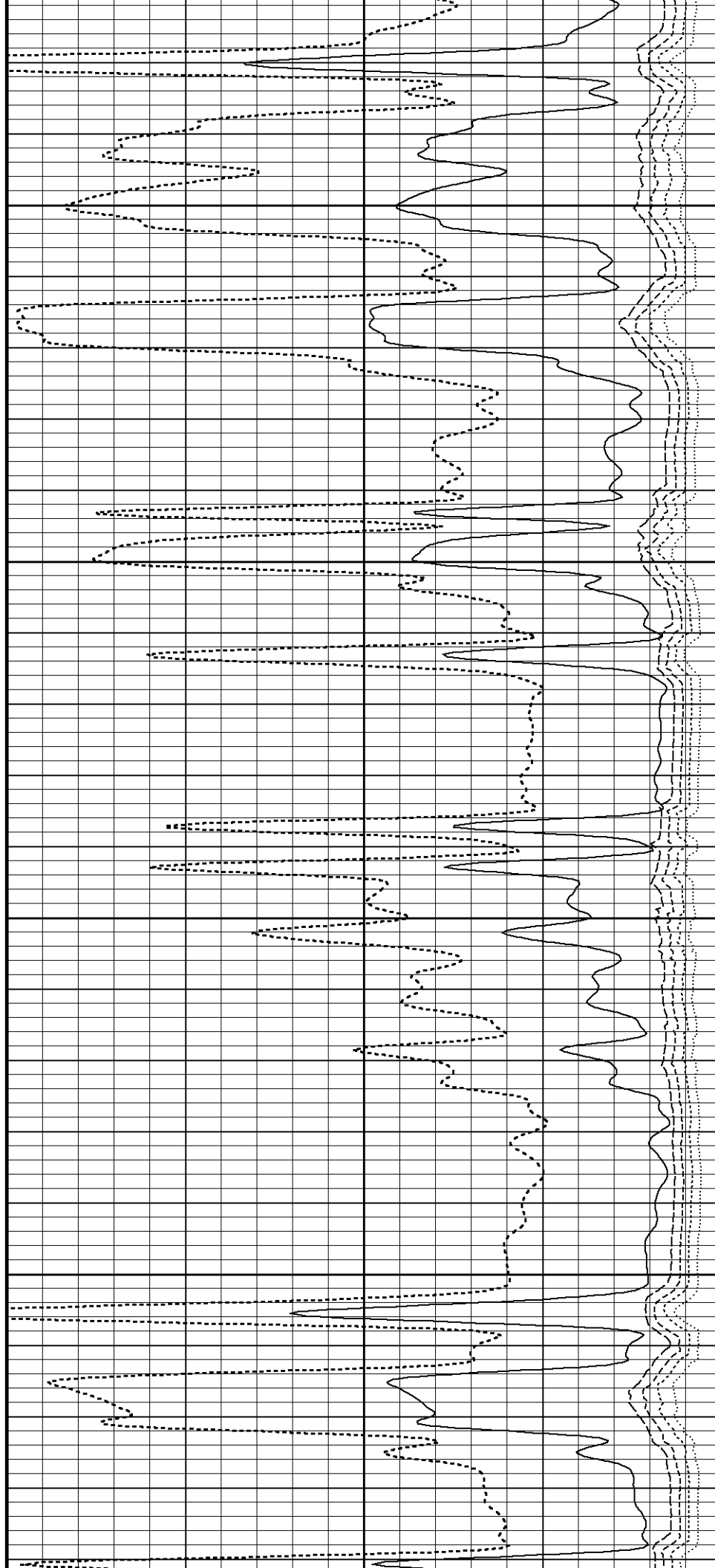
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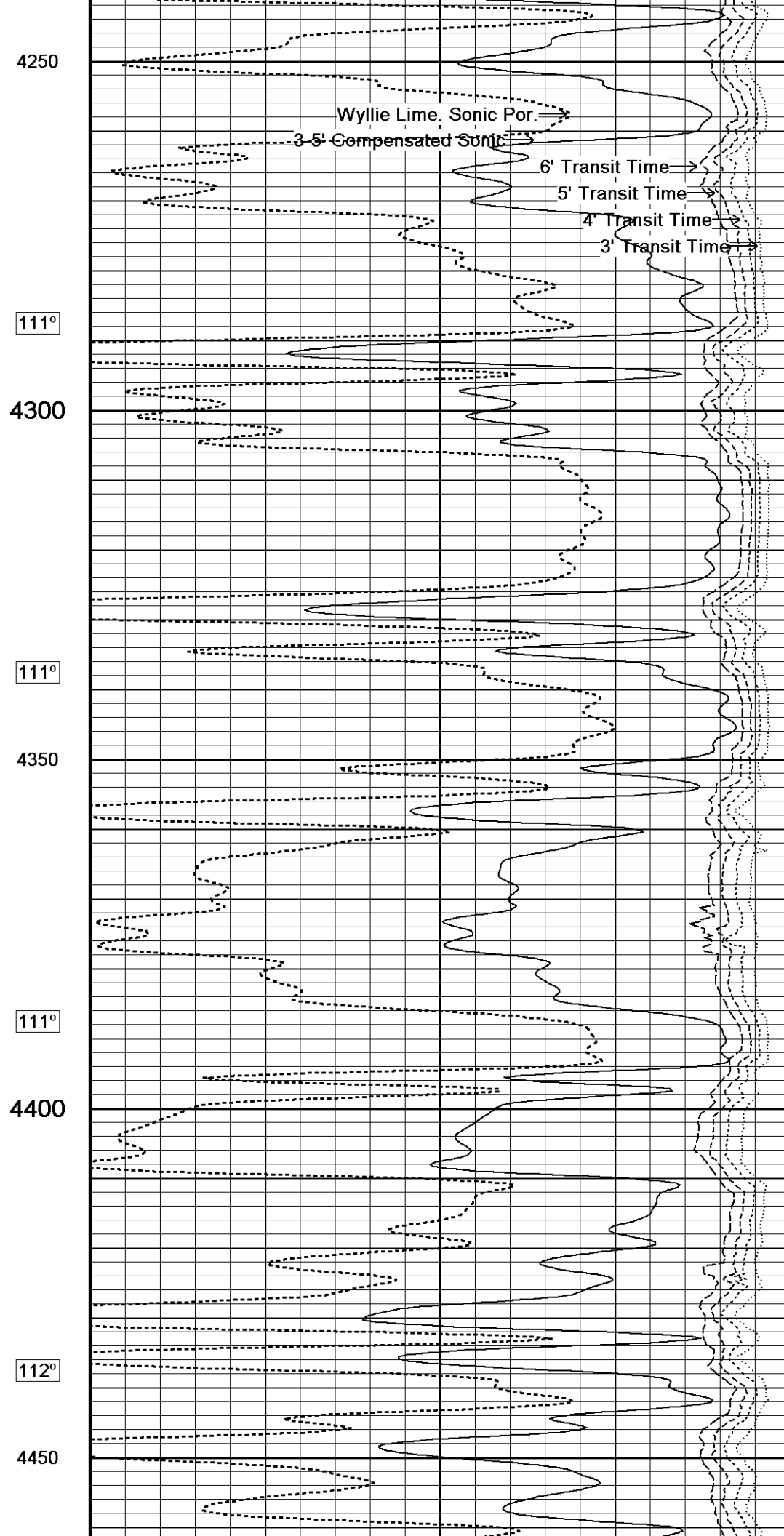
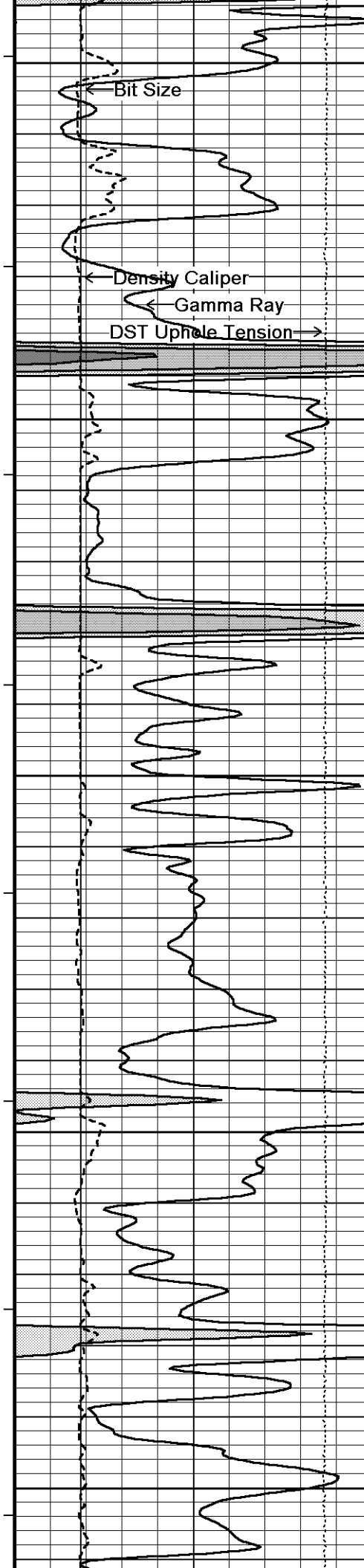
4150

110°

4200

110°





4250

111°

4300

111°

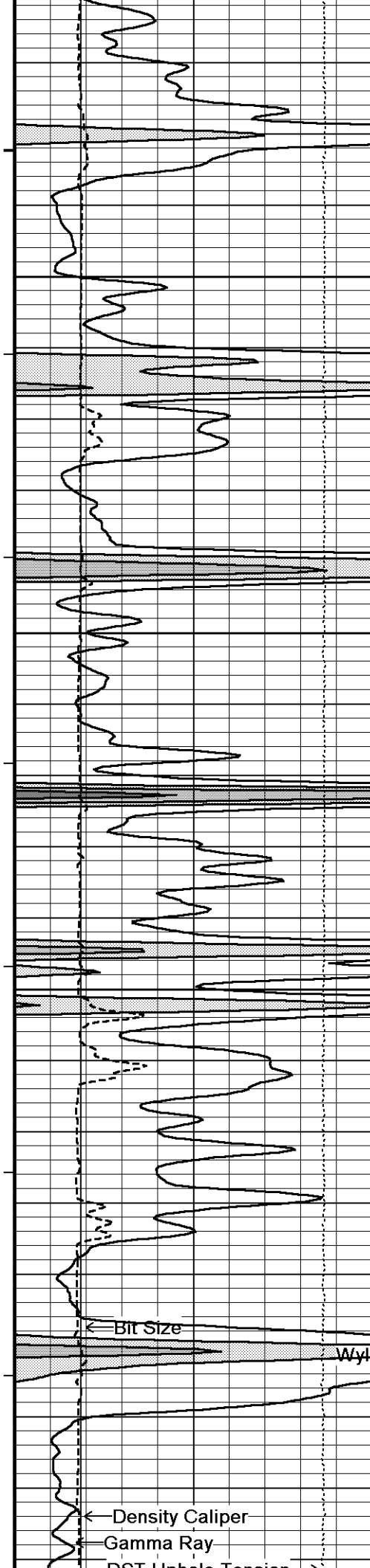
4350

111°

4400

112°

4450



113°

4500

113°

4550

113°

4600

114°

4650

Wyllie Lime. Sonic Por. →

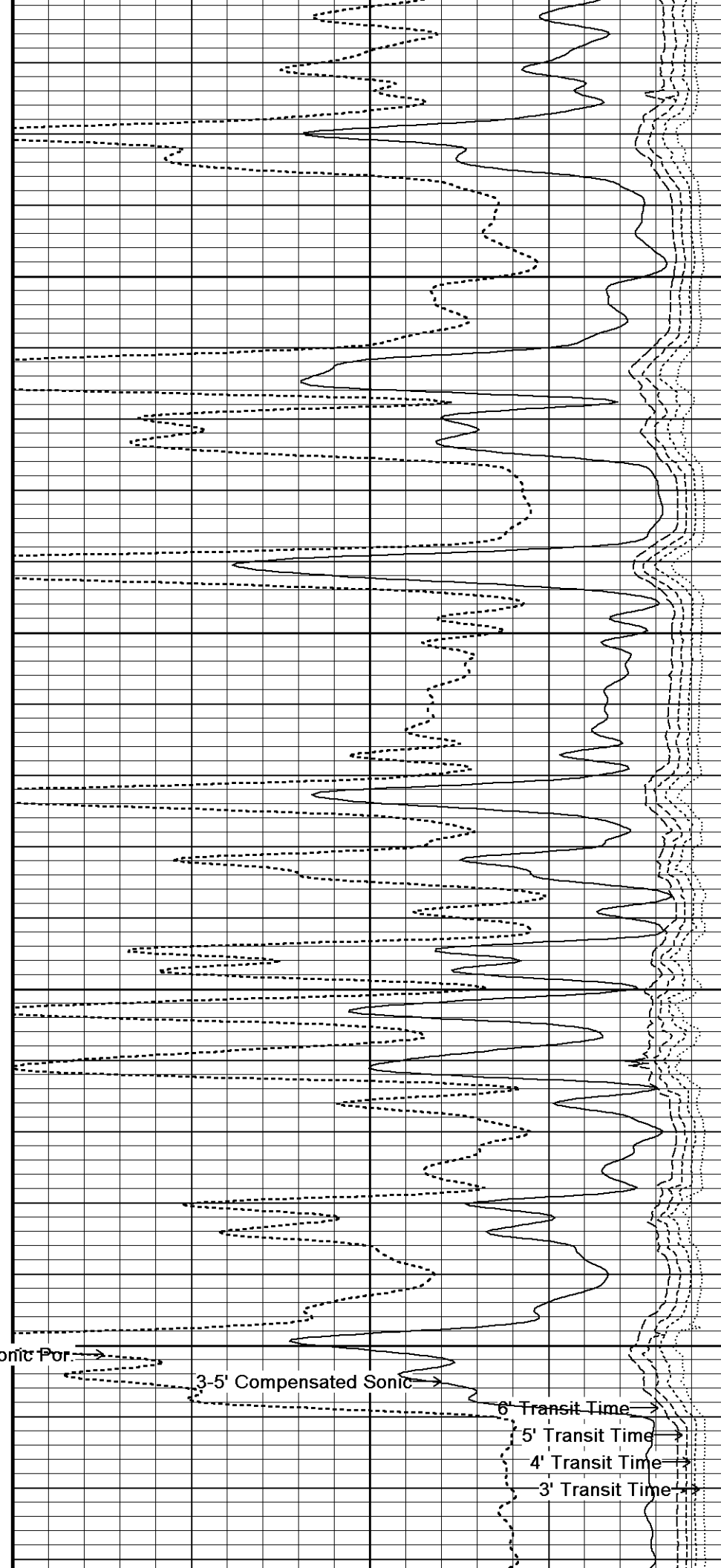
3-5' Compensated Sonic →

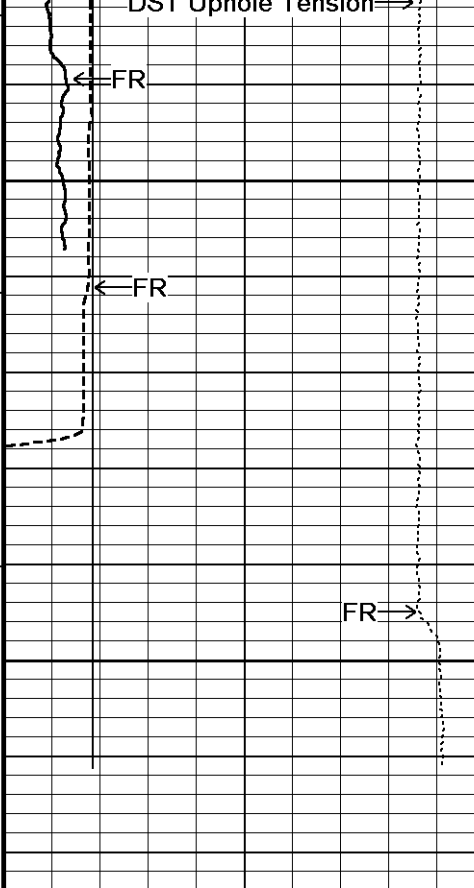
6' Transit Time →

5' Transit Time →

4' Transit Time →

3' Transit Time →





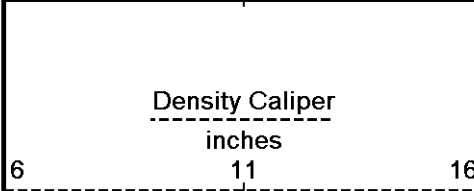
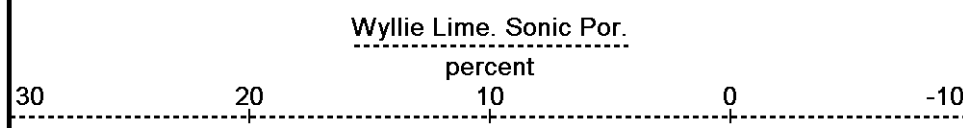
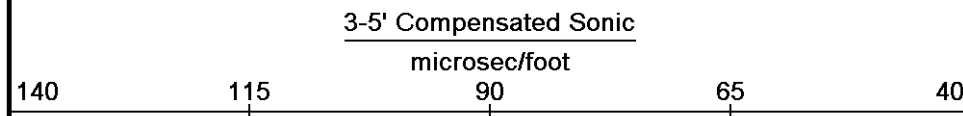
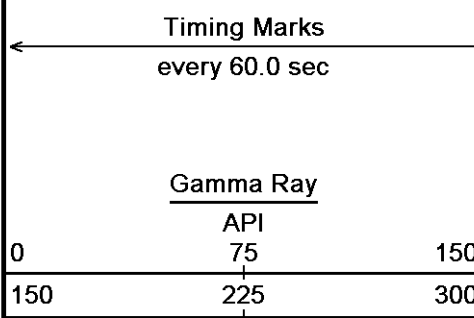
113°

4700

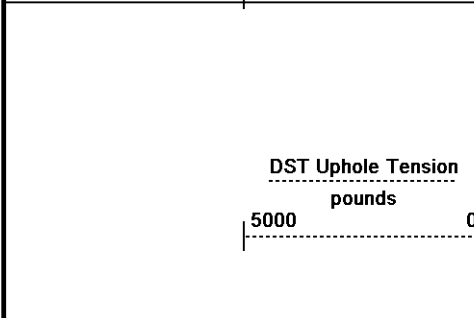
4750

4772

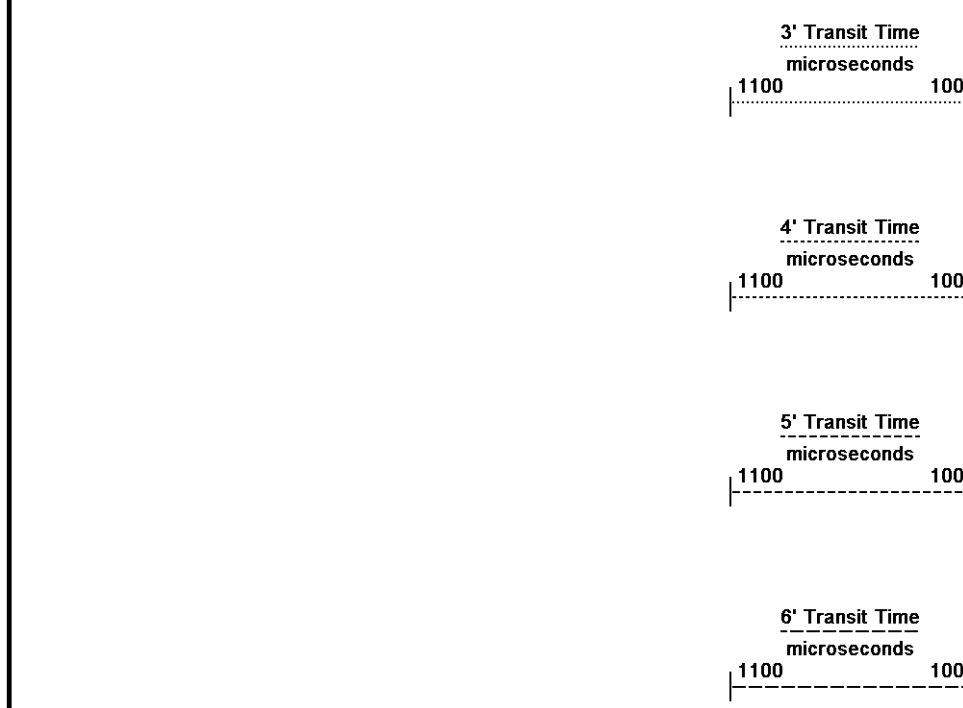
Depth
In
Feet



Borehole
Temp in
deg F



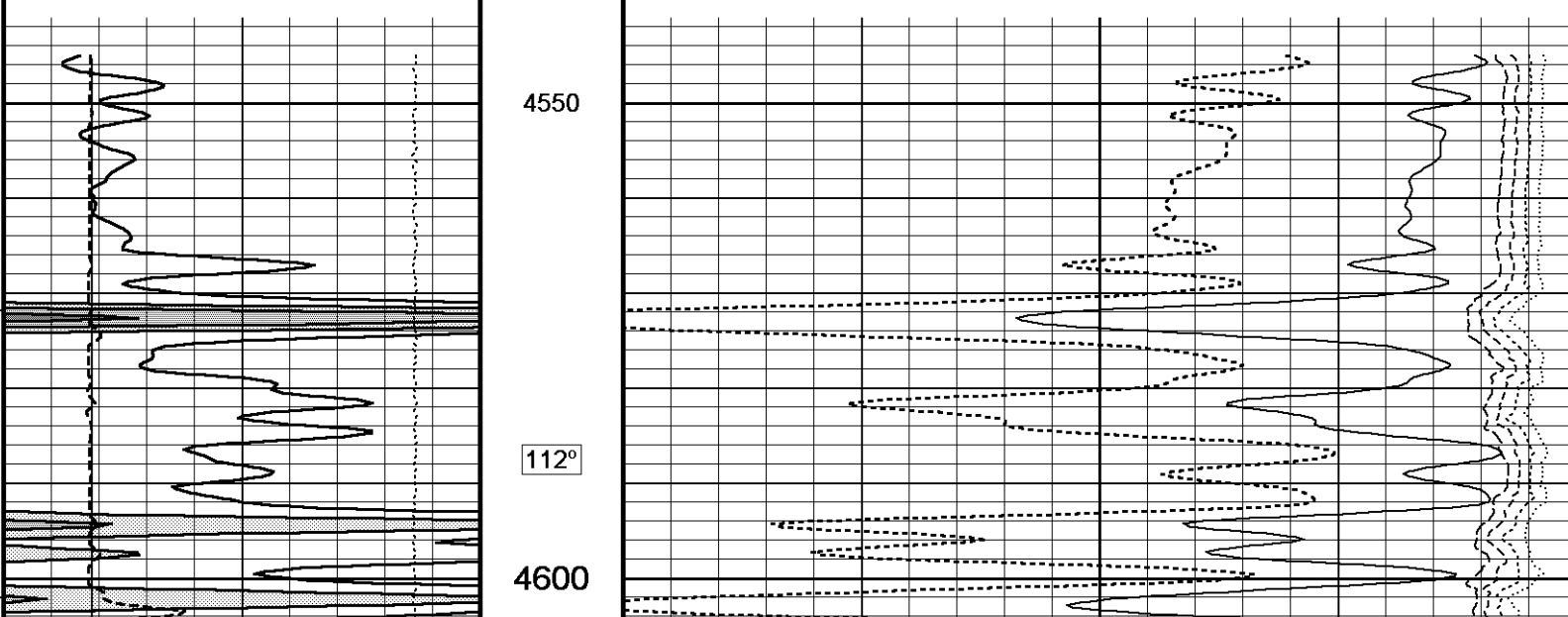
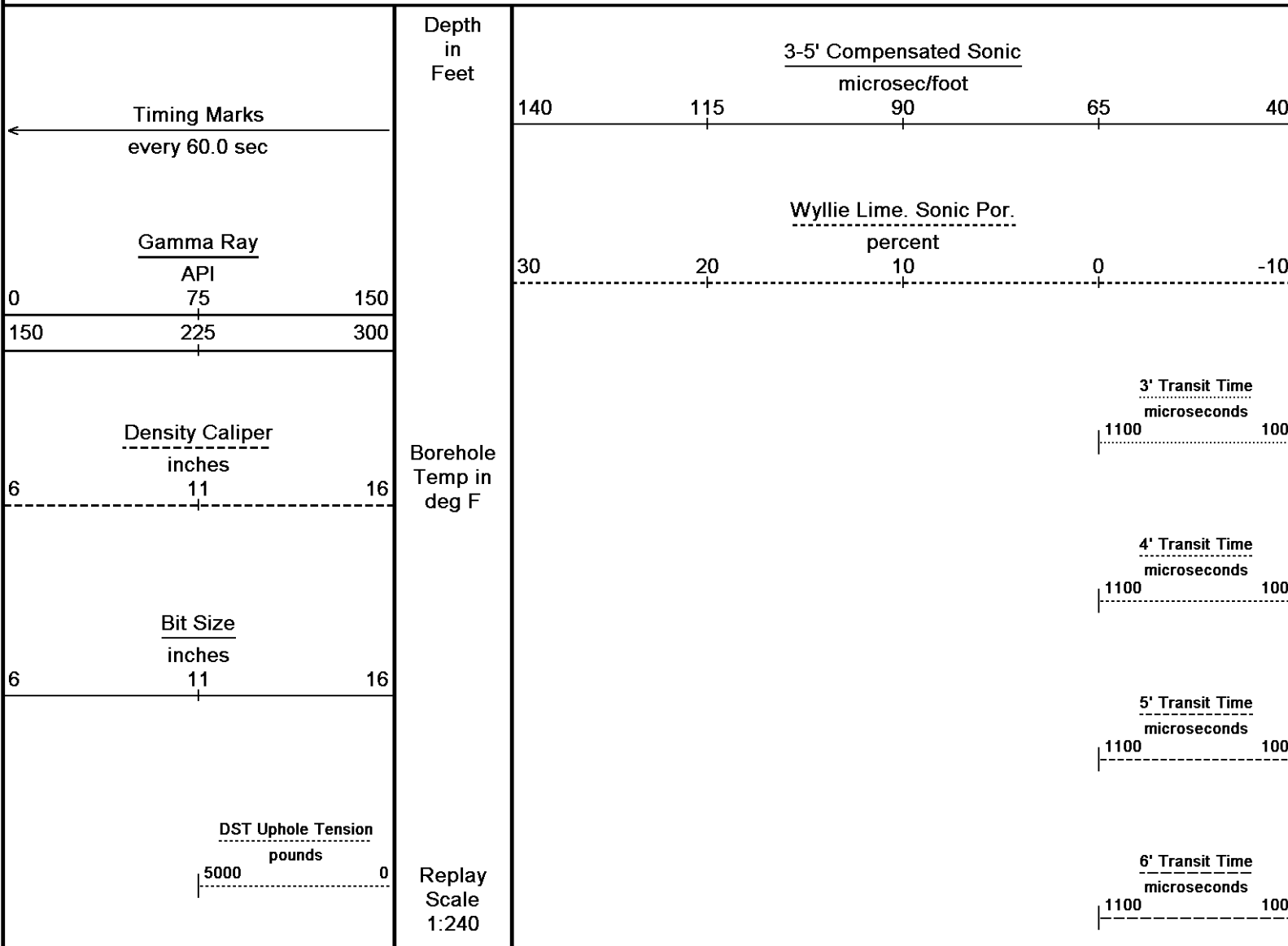
Replay
Scale
1:240

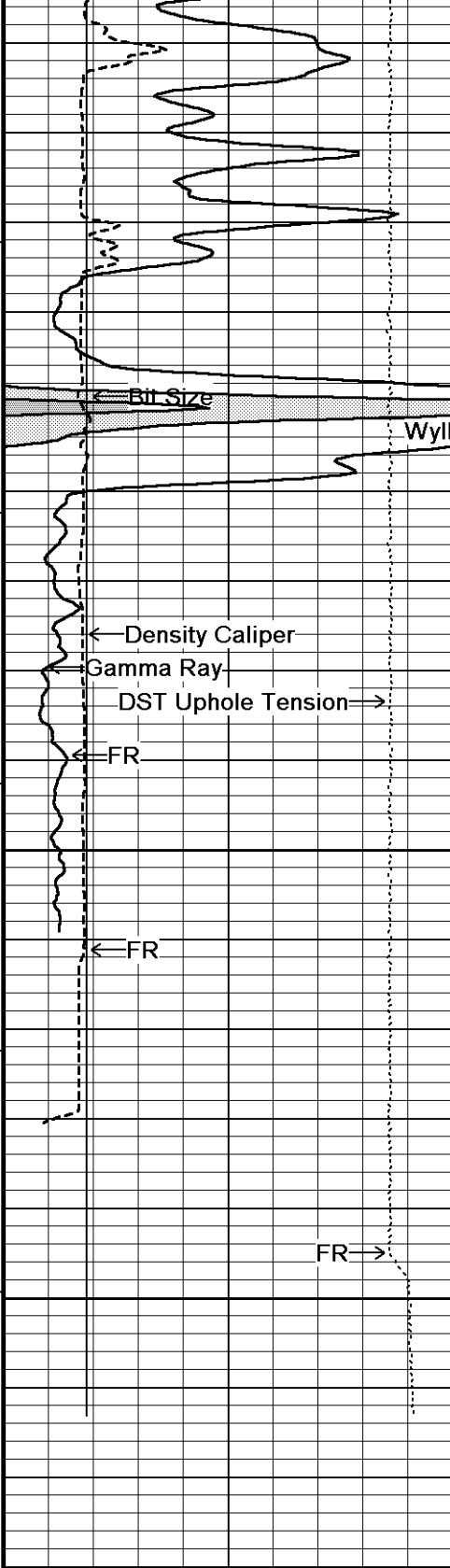


5 INCH MAIN

REPEAT SECTION

Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 19-FEB-2014 16:35
 Filename: C:\Minimus 13.05.9583\Log\Red Oak...\Red Oak Energy Inc Rohleder Trust #1-35 Repeat.dta Recorded on 19-FEB-2014 12:55
 System Versions: Logged with 13.05.9583 Plotted with 13.05.9583





113°

4650

Wyllie Lime. Sonic Por. →

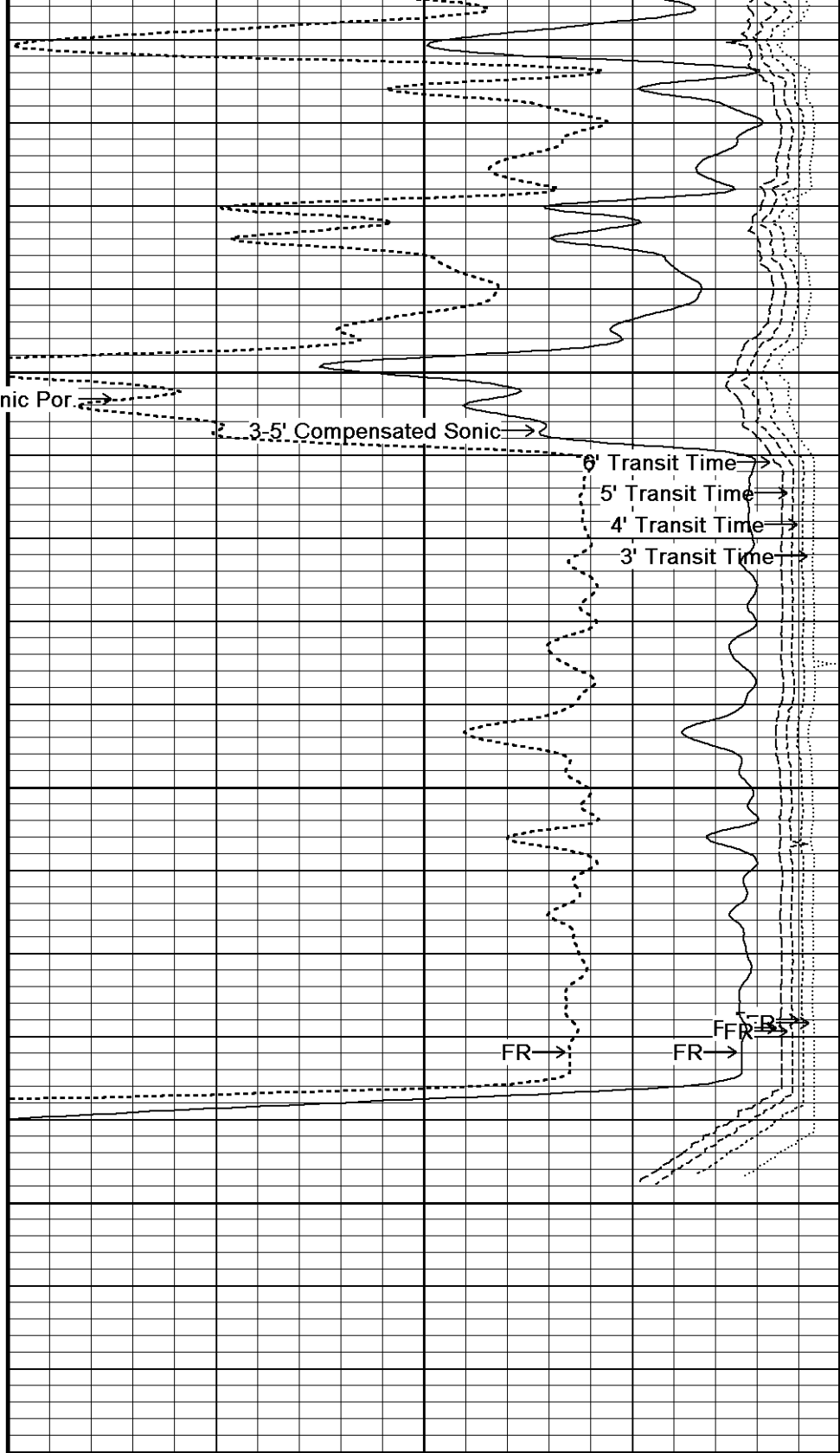
113°

4700

4750

4778

Depth
in
Feet



← Timing Marks
every 60.0 sec

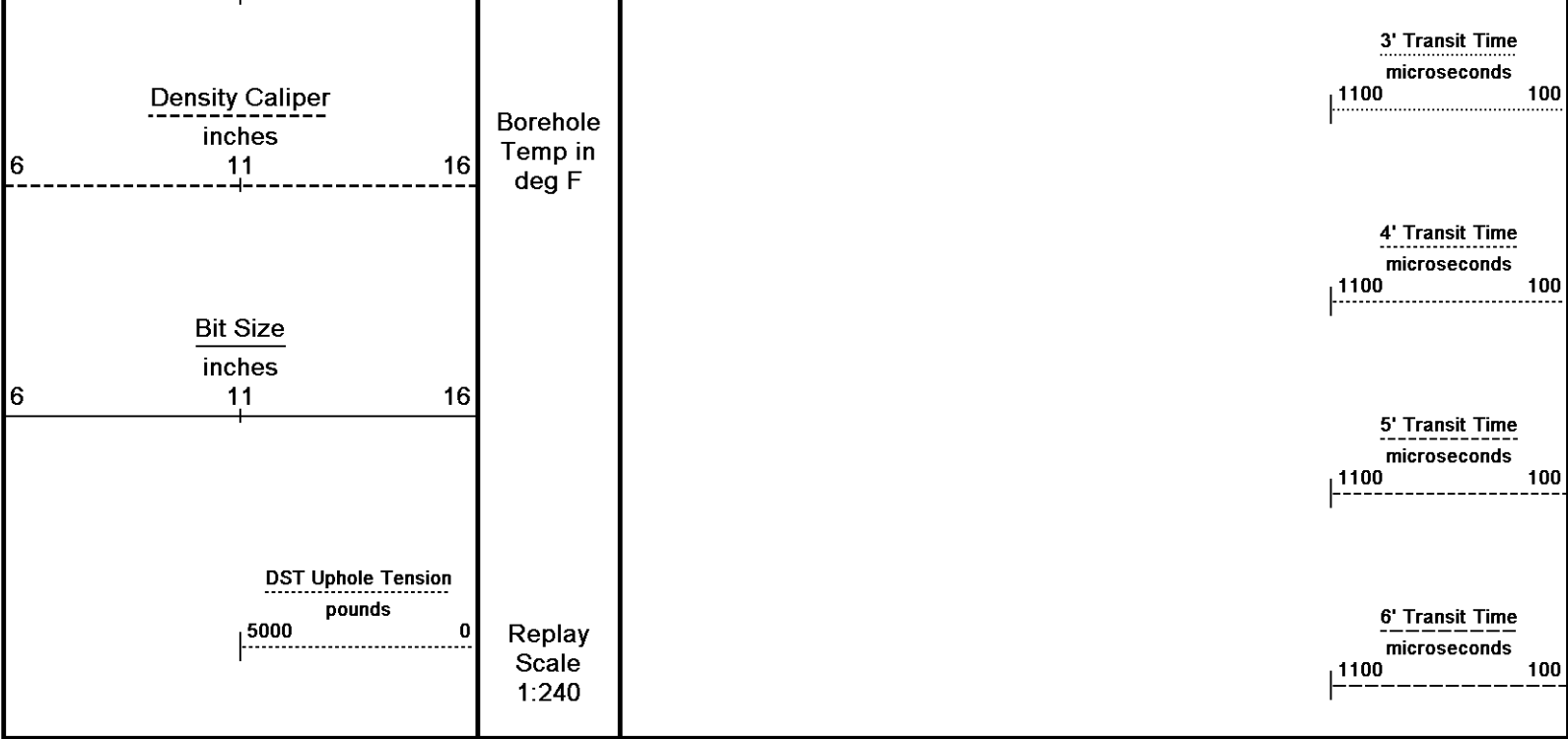
Gamma Ray		
API		
0	75	150
150	225	300

140 115 90 65 40

3-5' Compensated Sonic
microsec/foot

30 20 10 0 -10

Wyllie Lime. Sonic Por.
percent



Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 19-FEB-2014 16:35
 Filename: C:\Minimus 13.05.9583\Log\Red Oak...\Red Oak Energy Inc Rohleder Trust #1-35 Repeat.dta Recorded on 19-FEB-2014 12:55
 System Versions: Logged with 13.05.9583 Plotted with 13.05.9583

↑ REPEAT SECTION ↑

BEFORE SURVEY CALIBRATION

C:\Minimus 13.05.9583\Log\Red Oak Energy Inc Rohleder Trust #1-35\Red Oak Energy Inc Rohleder Trust #1-35 Main.dta

General Constants All 000		Last Edited on 19-FEB-2014,11:57
General Parameters		
Mud Resistivity	1.380	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	5.500	inches
Caliper for Differential Caliper	None	
Rwa Parameters		
Porosity used	Crossplot Porosity	
Resistivity used	Array Ind. One Res Rt	
RWA Constant A	1.000	
RWA Constant M	2.000	
SW/APOR Tool Source	0.000	

Gamma Calibration MCG-D.K 442		Field Calibration on 01-FEB-2014 12:49
	Measured	Calibrated (API)
Background	73	51
Calibrator (Gross)	1112	776
Calibrator (Net)	1039	725

Gamma Constants MCG-D.K 442		Last Edited on 19-FEB-2014,10:28
Gamma Calibrator Number	GC38	
Mud Density	1.12	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl		kppm

K Mud Type Chloride
 K Mud Concentration 0.00 %

High Resolution Temperature Calibration MCG-D.K 442

Field Calibration on 01-FEB-2014,22:32

	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 01-FEB-2014,22:32

Pre-filter Length 11

Sonic Constants MSS-C.K 330

Last Edited on 12-FEB-2014,16:21

Maximum Boundary Contrast	100.00	micro-sec/ft
Fluid Transit Time	189.00	micro-sec/ft
Limestone Transit Time	47.60	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 Sonic	
Correction for Sonde Skew	Applied	
Cycle Stretch Algorithm	Applied	
MN3FT	N/A	micro-sec
MX3FT	N/A	micro-sec
Hunt-Raymer Constant	83.13	micro-sec/ft

Sonde Mode Compensated
 Hole Type Open Hole

Sonde Parameters

	Measured	Calibrated
Offset	N/A	0.0000
Free Pipe	N/A	N/A
Peak Amplitude Source		N/A

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)	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A

Full Waveform Parameters

Use 3' Waveform to derive TR	N/A
Use 4' Waveform to derive TR	N/A
Use 5' Waveform to derive TR	N/A
Use 6' Waveform to derive TR	N/A
3' Waveform Discriminator Level	N/A mV
4' Waveform Discriminator Level	N/A mV
5' Waveform Discriminator Level	N/A mV
6' Waveform Discriminator Level	N/A mV
3' Waveform Filter	N/A
4' Waveform Filter	N/A
5' Waveform Filter	N/A
6' Waveform Filter	N/A
Semblance Level	N/A
Semblance Window Width	N/A micro-sec
Sonic 1 Despiker	N/A N/A
Sonic 2 Despiker	N/A N/A

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	16224	3.99
2	26272	5.98
3	36224	7.97
4	46048	9.86
5	57264	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
7.98	7.97

DOWNHOLE EQUIPMENT

C:\Minimus 13.05.9583\Log\Red Oak Energy Inc Rohleder Trust #1-35\Red Oak Energy Inc Rohleder Trust #1-35 Main.dta

3/8" Triple Cone Cable Head (MCB C A)

MCB-C.A 5 LG: 1.58 ft WT: 15.4 lb OD: 2.24 in

Compact Comms Gamma

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

Compact Micro-log

MML-A 3 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-C.A 216 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

Compact Focused Electric

MFE-A.A 135 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

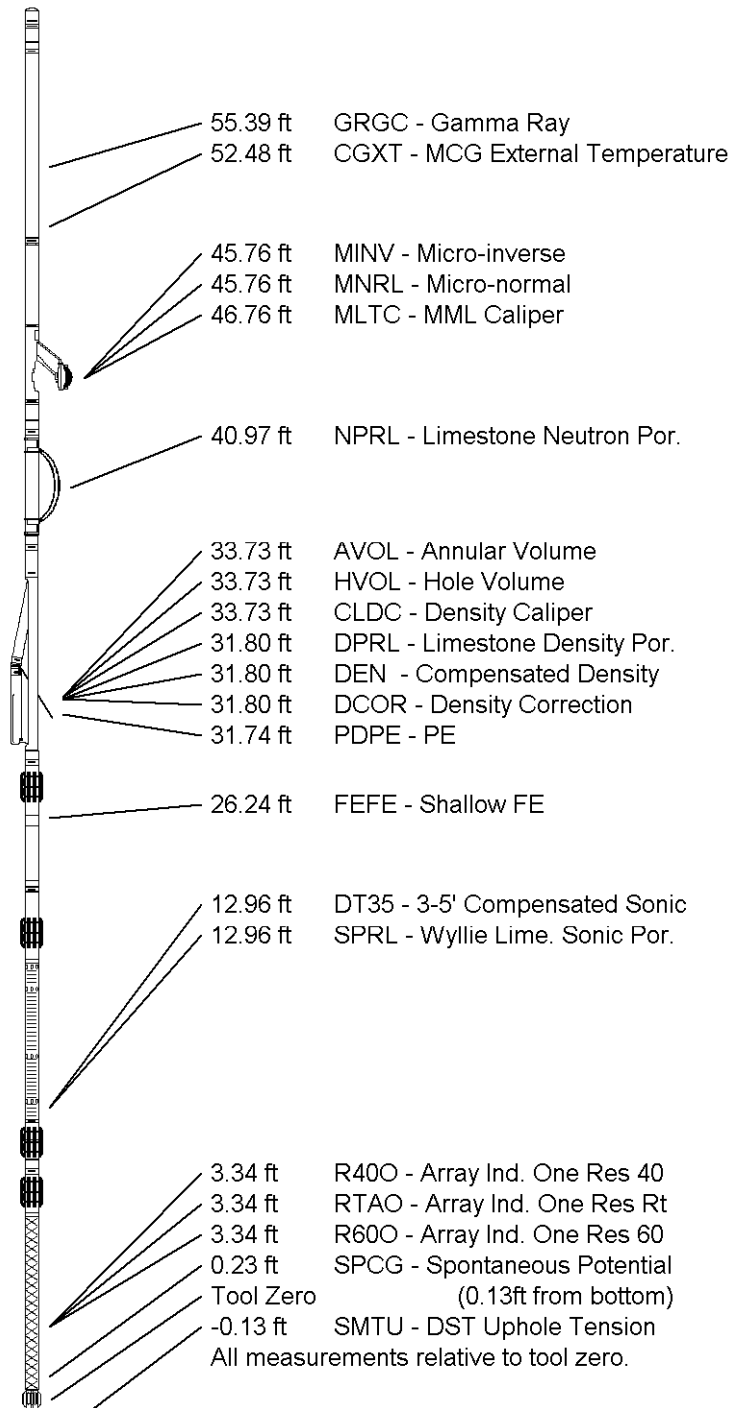
Compact Sonic

MSS-C.K 330 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: 62.25 ft Weight: 471.8 lb



COMPANY RED OAK ENERGY INC.
WELL ROHLER TRUST #1-35
FIELD WILDCAT
PROVINCE/COUNTY LOGAN
COUNTRY/STATE U.S.A / KANSAS

Elevation Kelly Bushing	3046.00	feet	First Reading	4732.04	feet
Elevation Drill Floor	3044.00	feet	Depth Driller	4745.00	feet
Elevation Ground Level	3035.00	feet	Depth Logger	4745.00	feet



Weatherford[®]

COMPENSATED SONIC
WITH INTEGRATED TRANSIT TIME