



Weatherford

**COMPENSATED SONIC
WITH INTEGRATED TRANSIT TIME**

COMPANY	RED OAK ENERGY, INC.			
WELL	ST-SI UNIT #1-30			
FIELD	WILDCAT			
PROVINCE/COUNTY	SCOTT			
COUNTRY/STATE	U.S.A. / KANSAS			
LOCATION	199' FNL & 2284' FWL			
SEC 30	TWP 17S	RGE 33W	Other Services	
Latitude			MDN/MPD	MAI/MFE
Longitude			MML	
API Number	15-171-21168			
Permanent Datum GL, Elevation	3083 feet			Elevations: KB 3088.00 DF 3087.00 GL 3083.00
Log Measured From	KB			
Drilling Measured From	KB @ 5 feet			
Date	07-JUL-2016			
Run Number	ONE			
Service Order	7577-155028408			
Depth Driller	4929.00			feet
Depth Logger	4928.00			feet
First Reading	4911.00			feet
Last Reading	260.00			feet
Casing Driller	261.00			feet
Casing Logger	260.00			feet
Bit Size	7.875			inches
Hole Fluid Type	CHEMICAL			
Density / Viscosity	9.20 lb/USg			53.00 CP
PH / Fluid Loss	10.00			8.00 ml/30Min
Sample Source	FLOW LINE			
Rm @ Measured Temp	0.54 @ 75.0			ohm-m
Rmf @ Measured Temp	0.43 @ 75.0			ohm-m
Rmc @ Measured Temp	0.64 @ 75.0			ohm-m
Source Rmf / Rmc	CALC	CALC		
Rm @ BHT	0.34 @123.0			ohm-m
Time Since Circulation	3 HOURS			
Max Recorded Temp	123.00			deg F
Equipment / Base	13096			OKC
Recorded By	JEFFREY RANDLE			
Witnessed By	SEAN DEENIHAN			

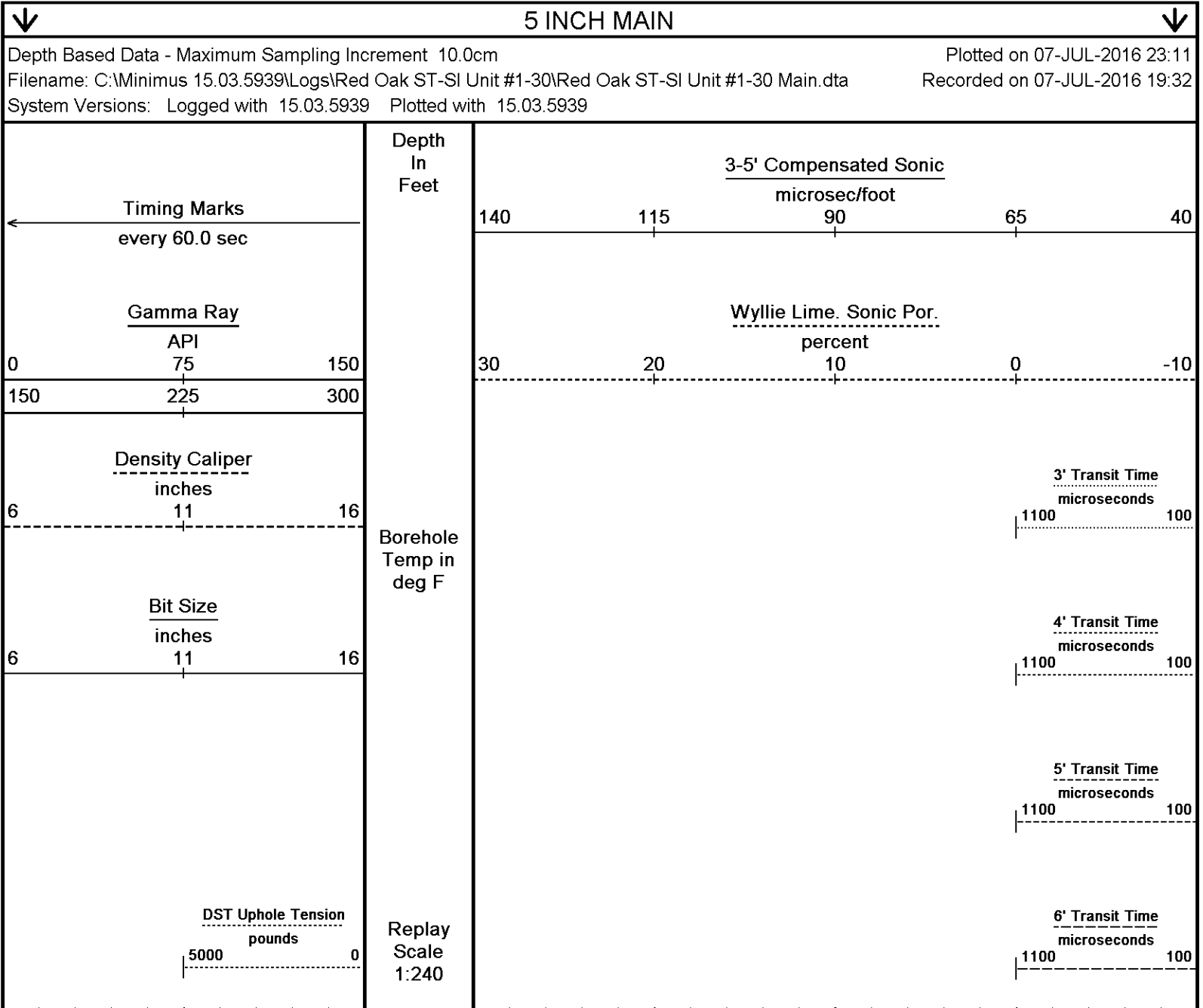
BOREHOLE RECORD					Last Edited: 07-JUL-2016 18:30
Bit Size inches		Depth From feet		Depth To feet	
12.250		0.00		270.00	
7.875		270.00		4929.00	
CASING RECORD					
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft	
SURFACE	8.625	0.00	261.00	24.00	

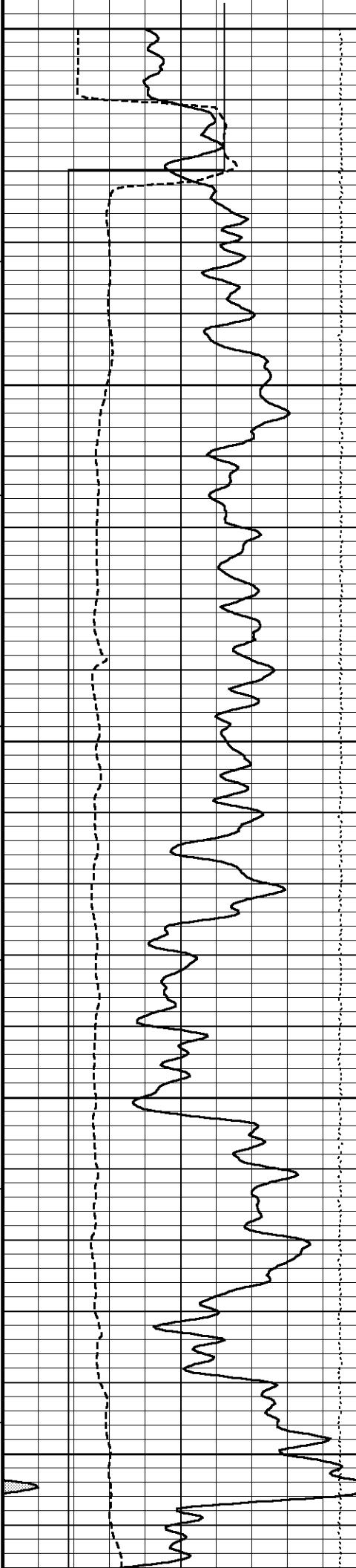
REMARKS
- SOFTWARE ISSUE: WLS 15.03.5939.
- RUN ONE: MCG, MML, MDN, MPD, MFE, MSS, MAI RUN IN COMBINATION. - HARDWARE: DUAL BOWSPRING USED ON MDN. 0.5 INCH STANDOFF USED ON MFE. TWO 0.5 INCH STANDOFFS USED ON MSS. 0.5 INCH STANDOFF USED ON MAI.
- 2.71 G/CC LIMESTONE DENSITY MATRIX USED TO CALCULATE POROSITY.
- 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: 2447 CU.FT.
- ANNULAR HOLE VOLUME WITH 5.5 INCH PRODUCTION CASING FROM TD TO SURFACE CASING: 1689 CU.FT.

ANNULAR HOLE VOLUME WITH 0.5 INCH REDUCTION GRADING FROM TD TO SURFACE GRADING: 1555 CU.F.T.

- MUD PROPERTIES: LCM: 2#
CI-: 6200 PPM
- RIG: WW DRILLING RIG #2.
- ENGINEER: J. RANDLE.
- OPERATOR: J. LaPOINT.

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.





250
Casing
Shoe

97°

300

97°

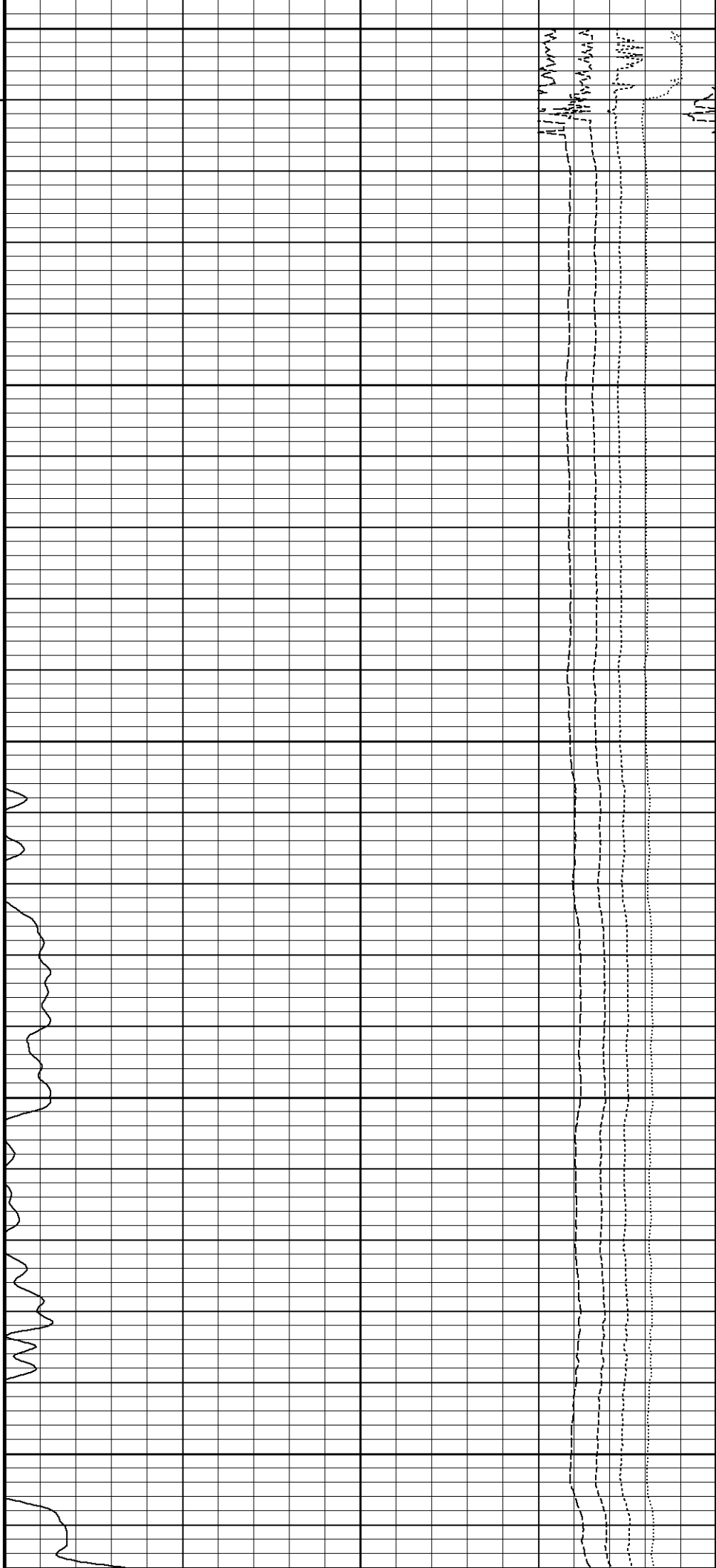
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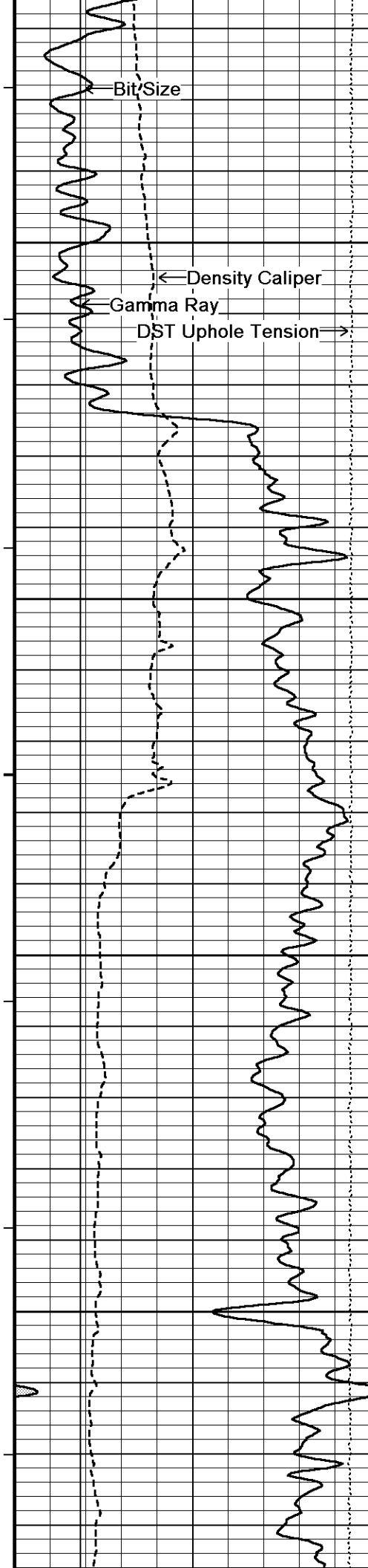
97°

400

97°

450





97°

500

97°

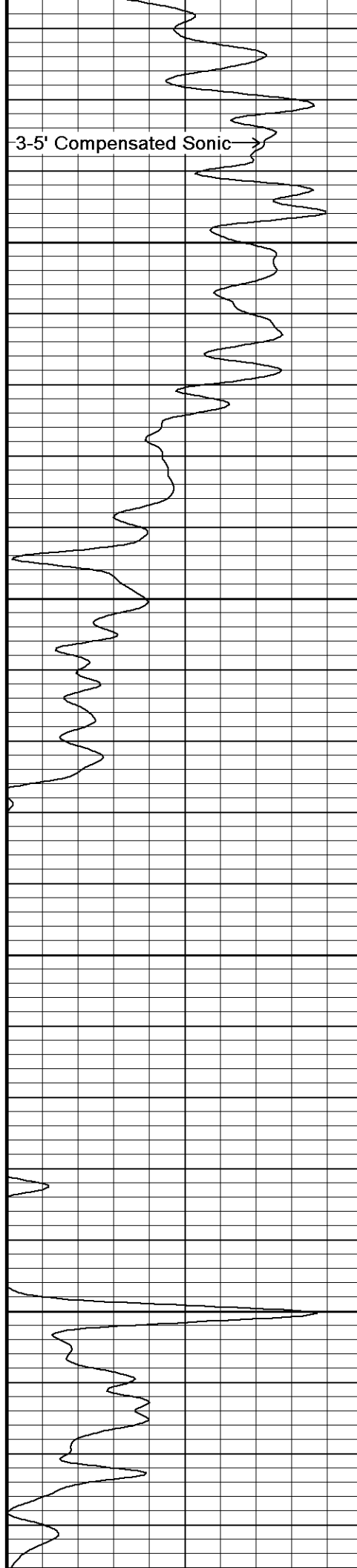
550

98°

600

98°

650

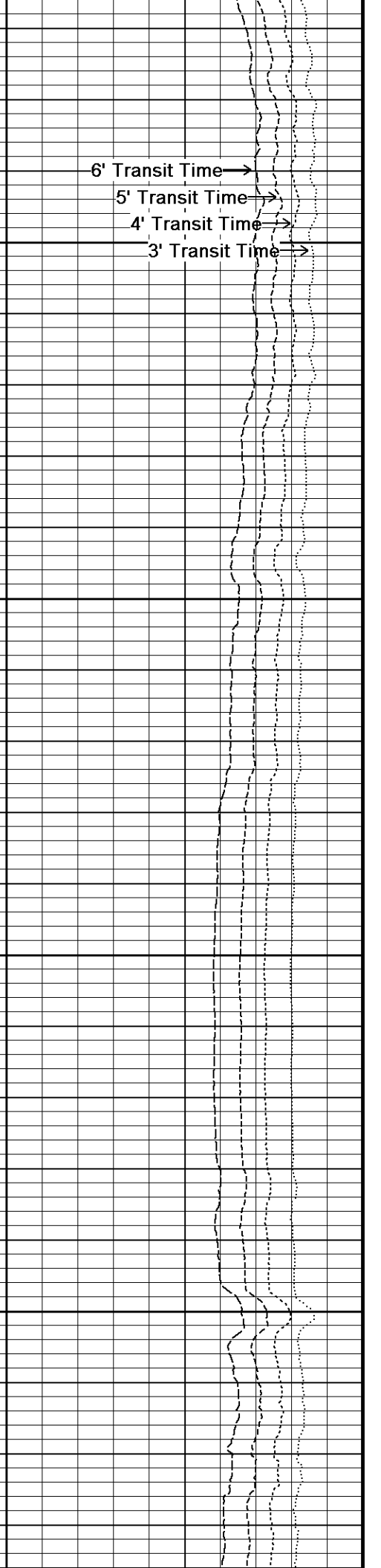


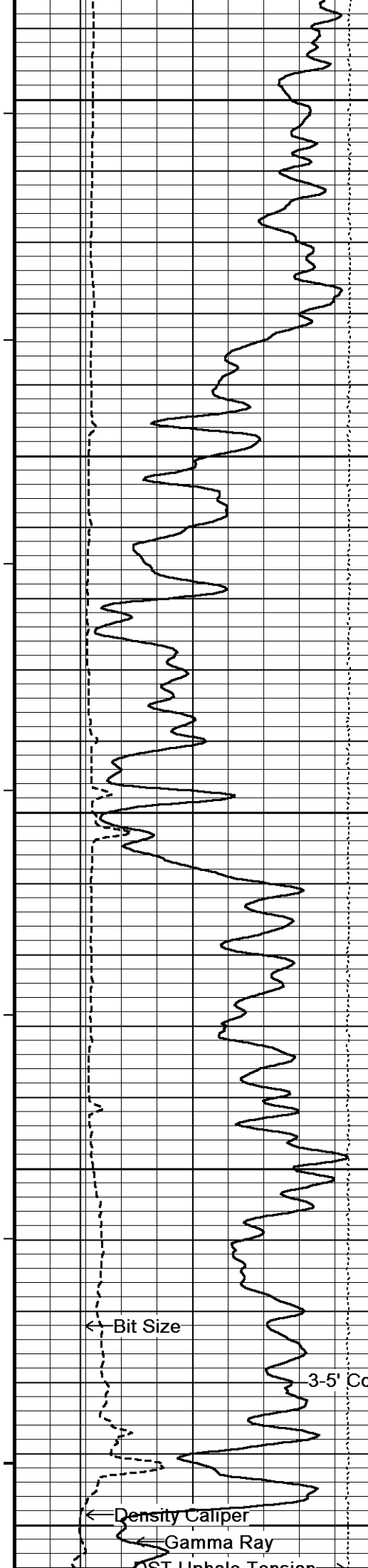
6' Transit Time →

5' Transit Time →

4' Transit Time →

3' Transit Time →





98°

700

99°

750

99°

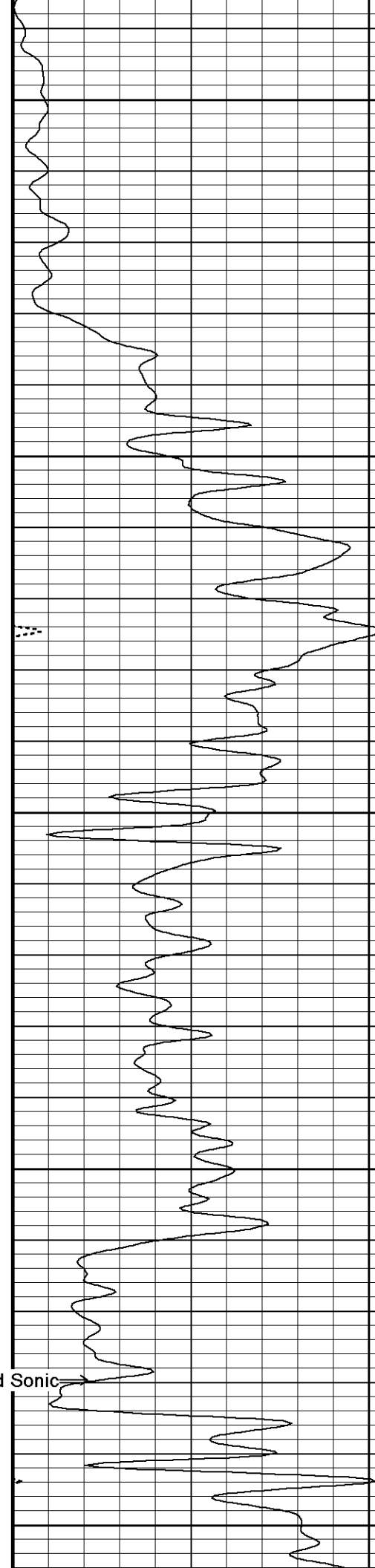
800

99°

850

100°

900

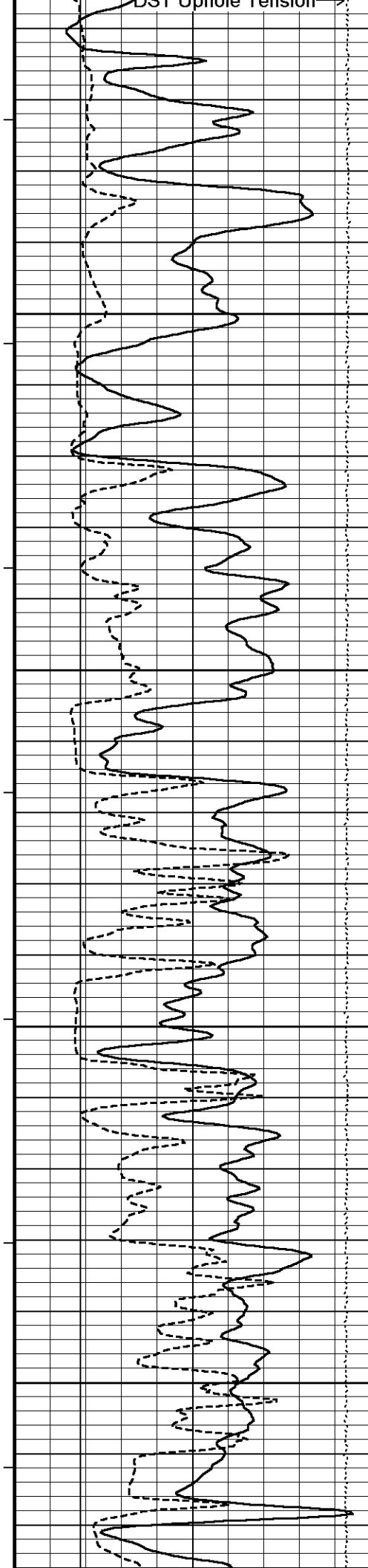


6' Transit Time

5' Transit Time

4' Transit Time

3' Transit Time



100°

950

100°

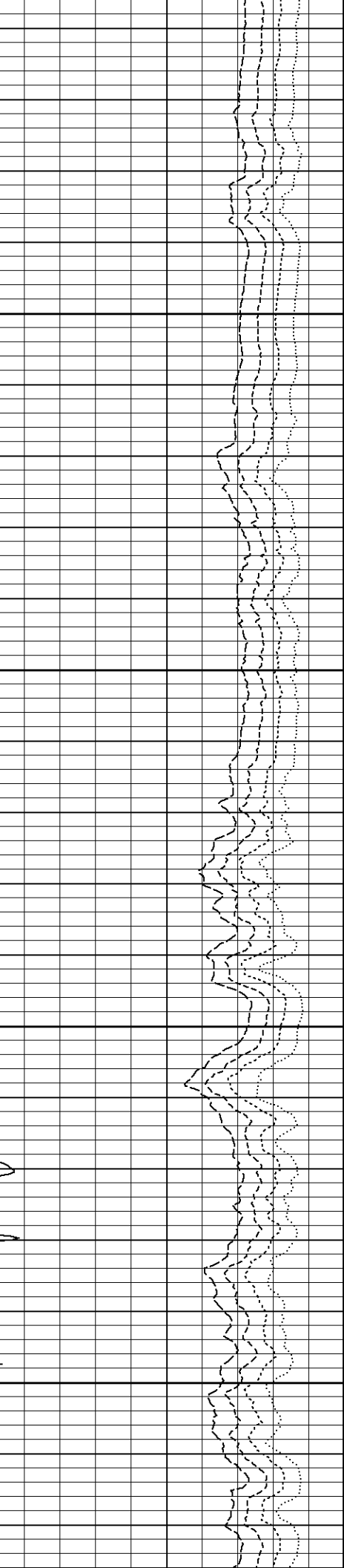
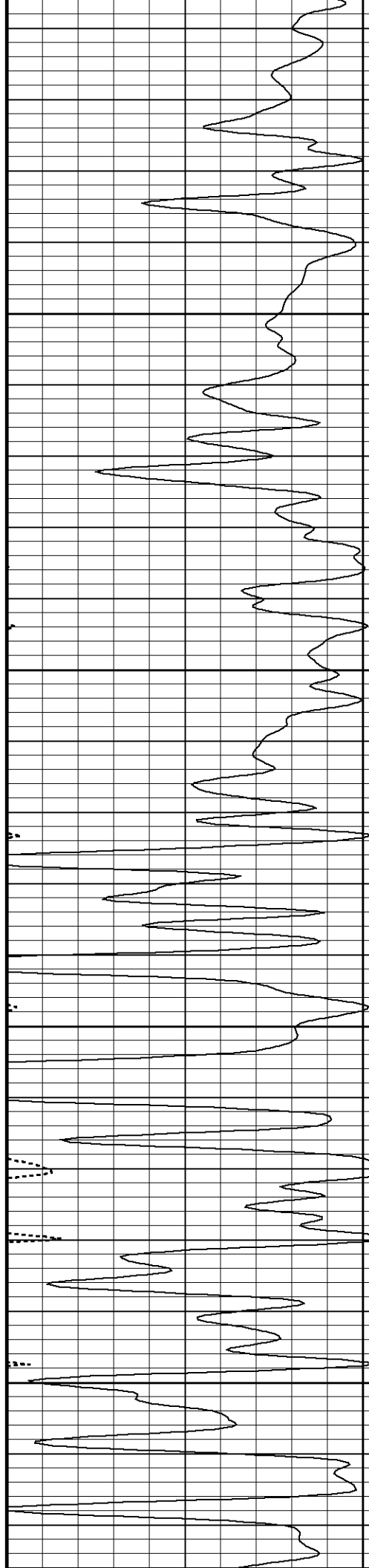
1000

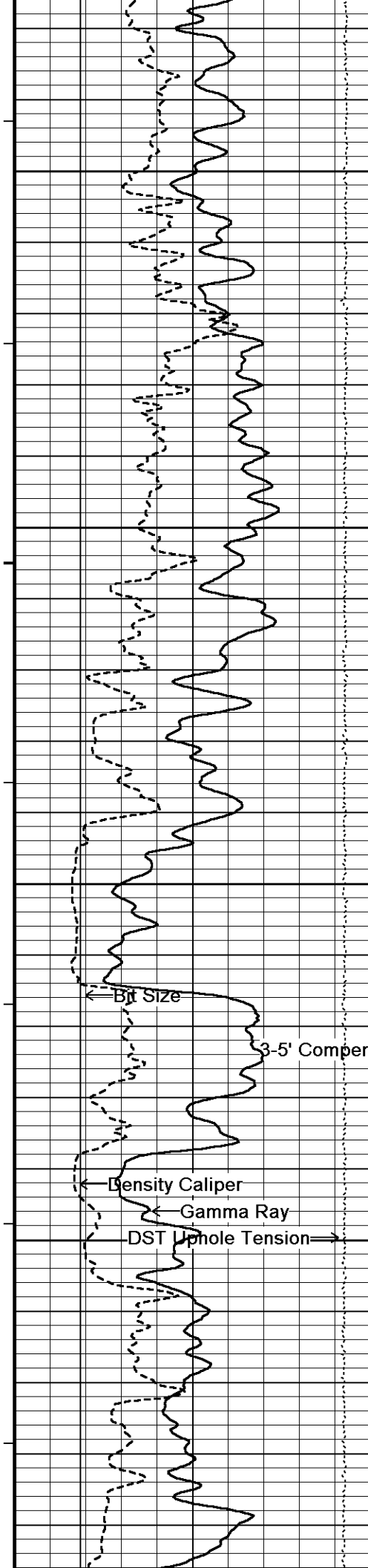
101°

1050

101°

1100





101°

1150

102°

1200

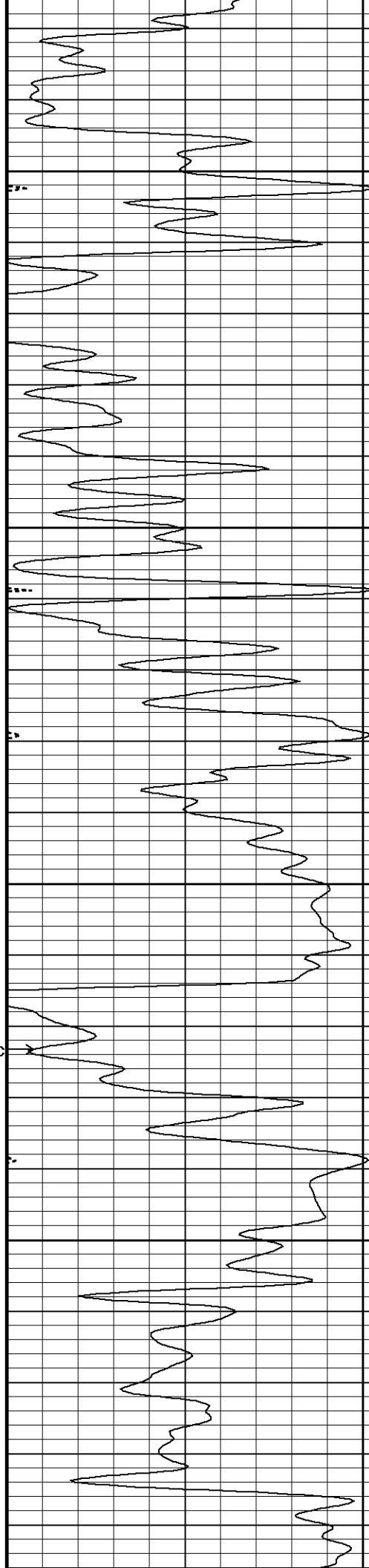
102°

1250

102°

1300

103°

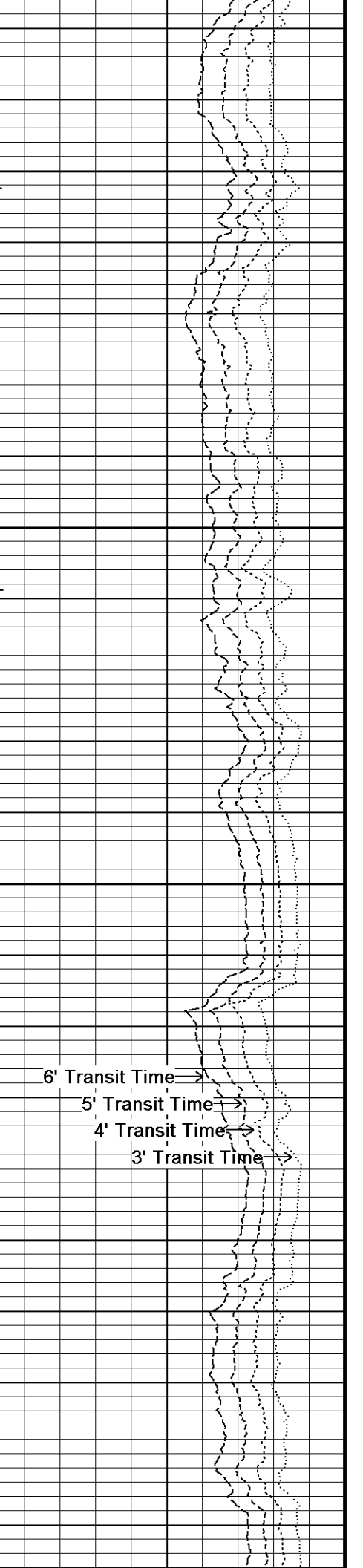


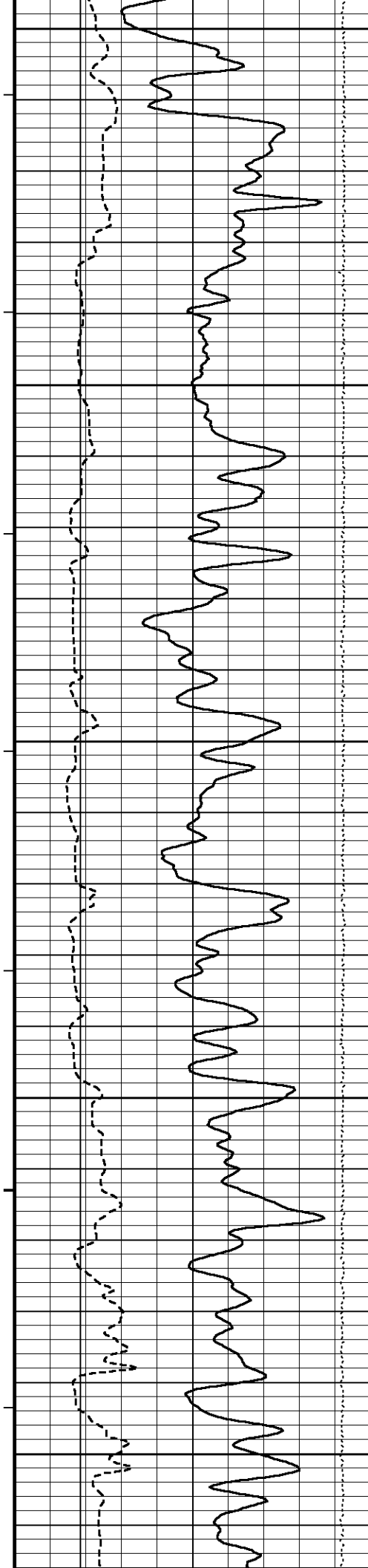
6' Transit Time →

5' Transit Time →

4' Transit Time →

3' Transit Time →





1350

103°

1400

103°

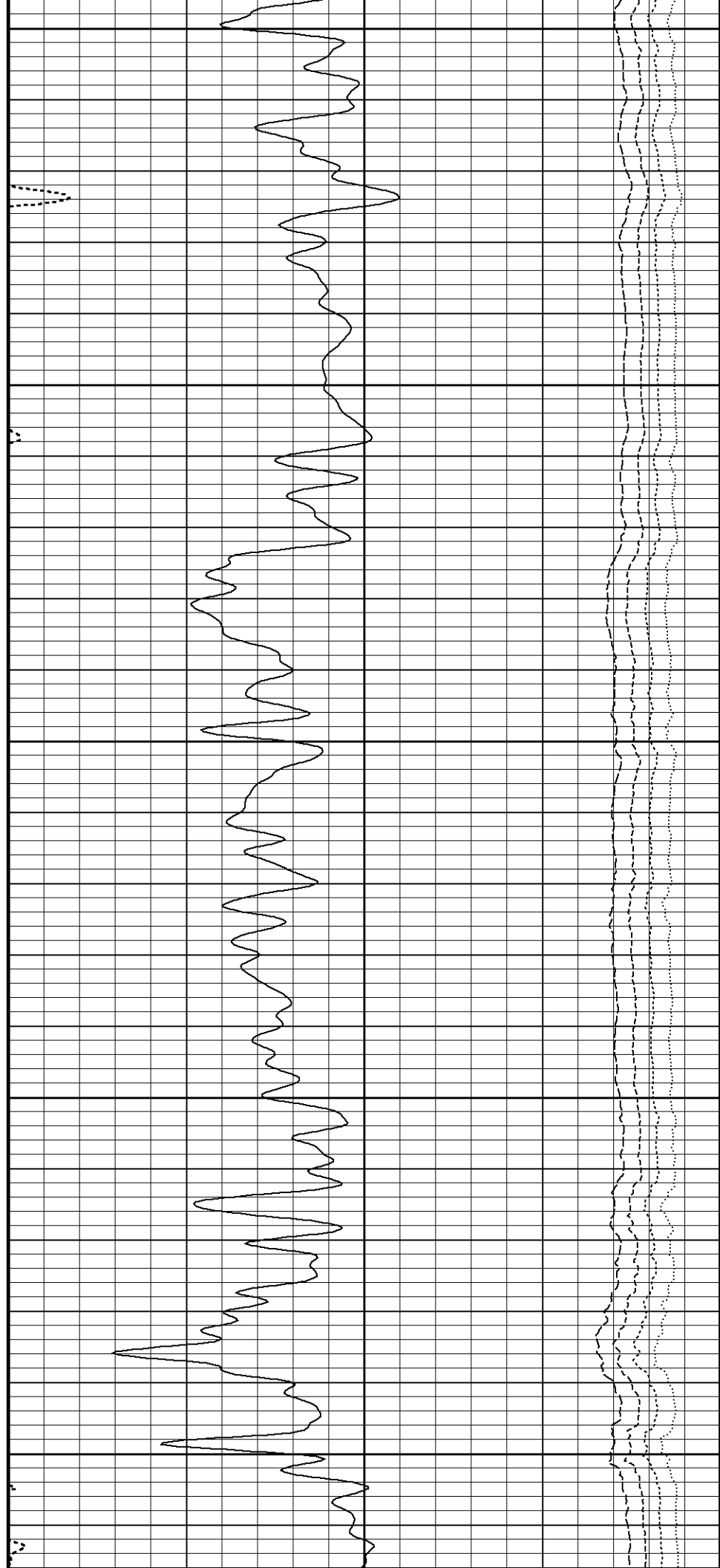
1450

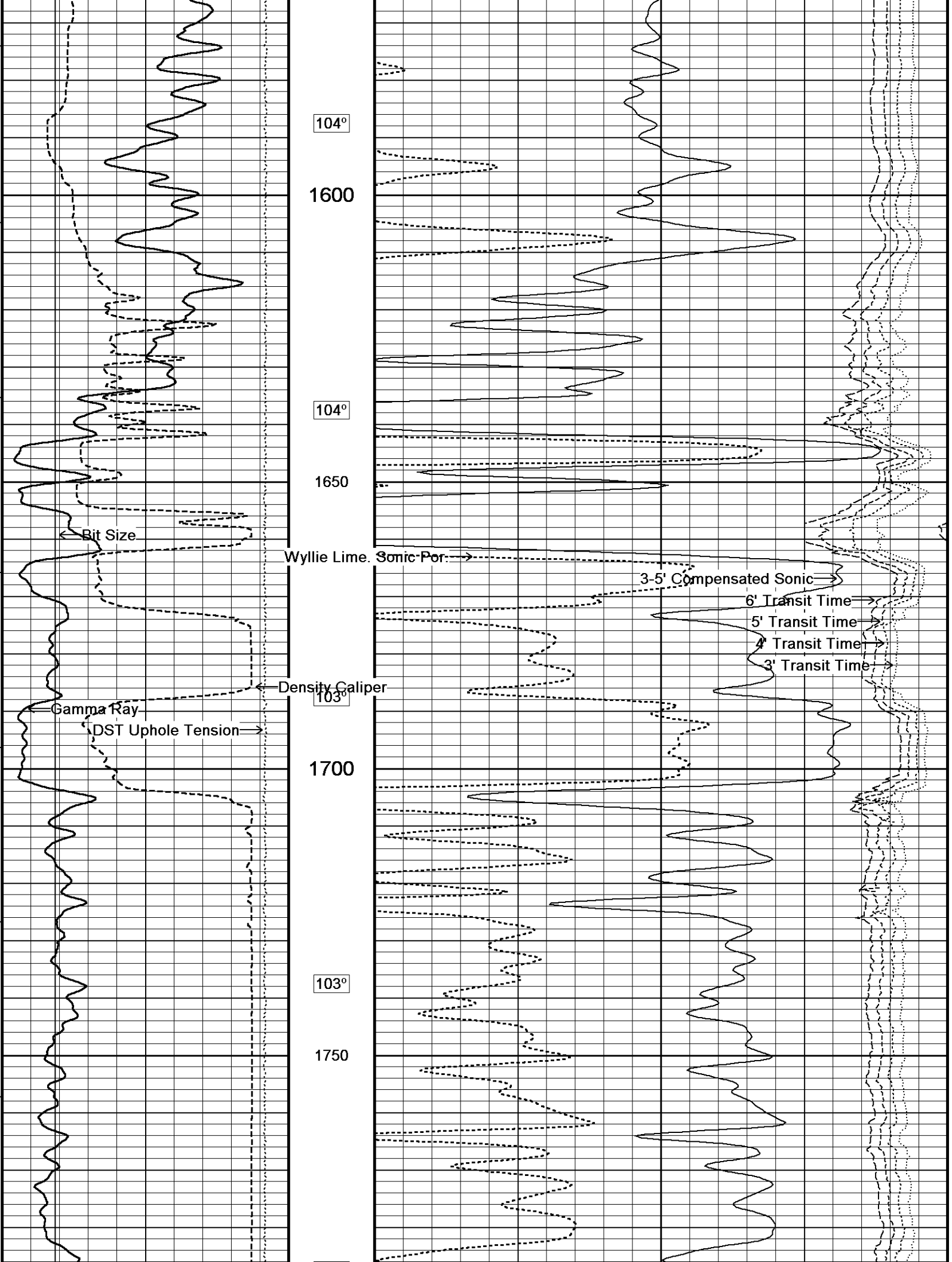
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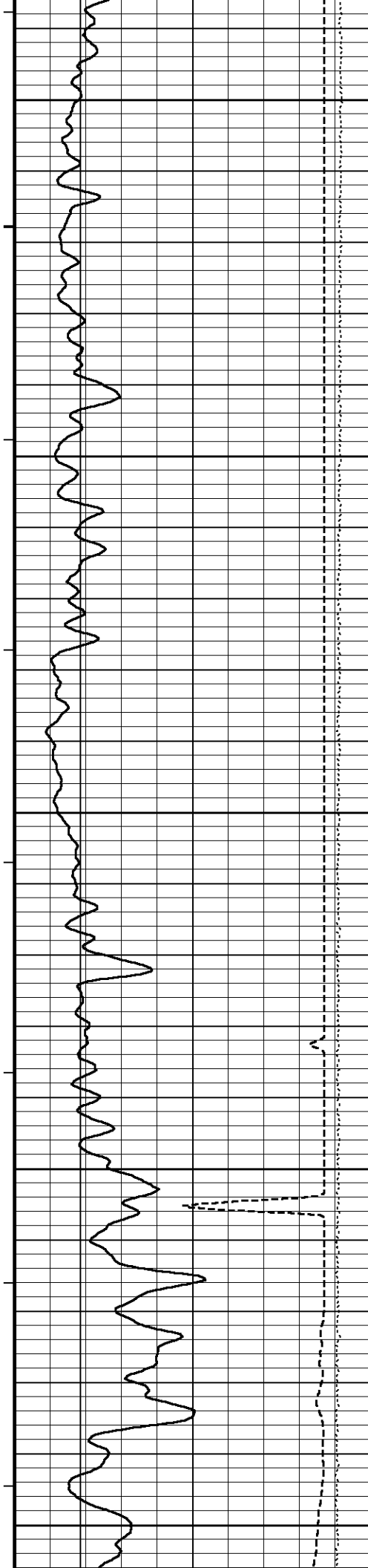
1500

104°

1550







103°

1800

103°

1850

103°

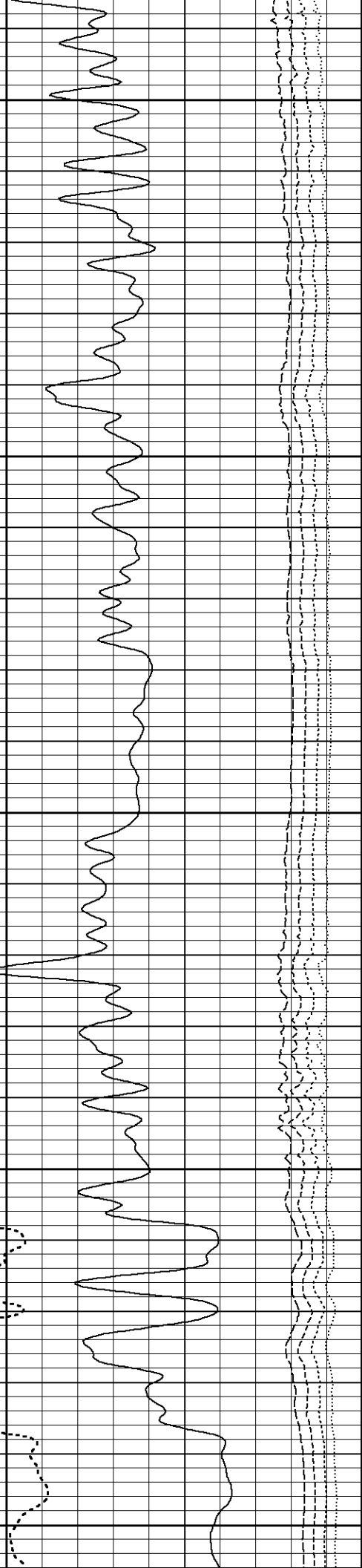
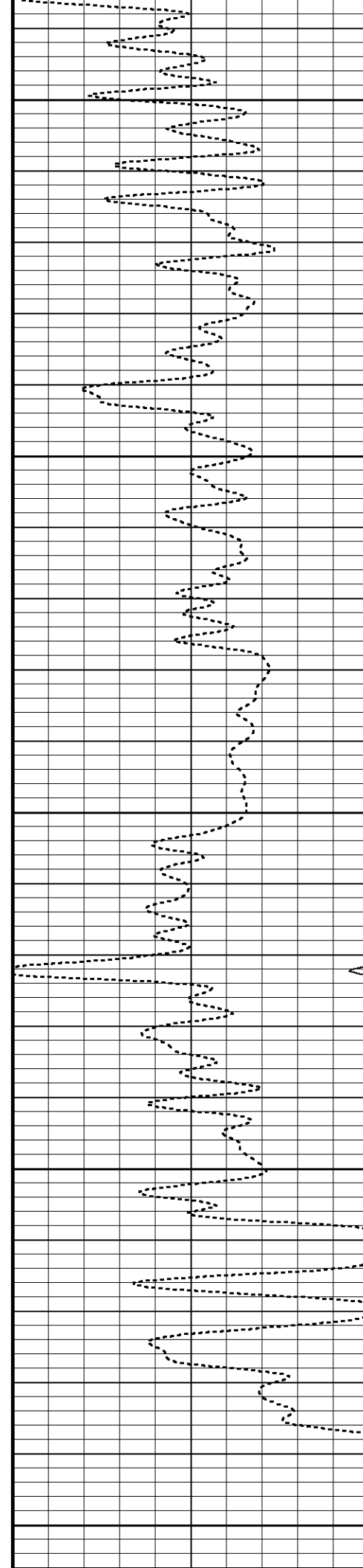
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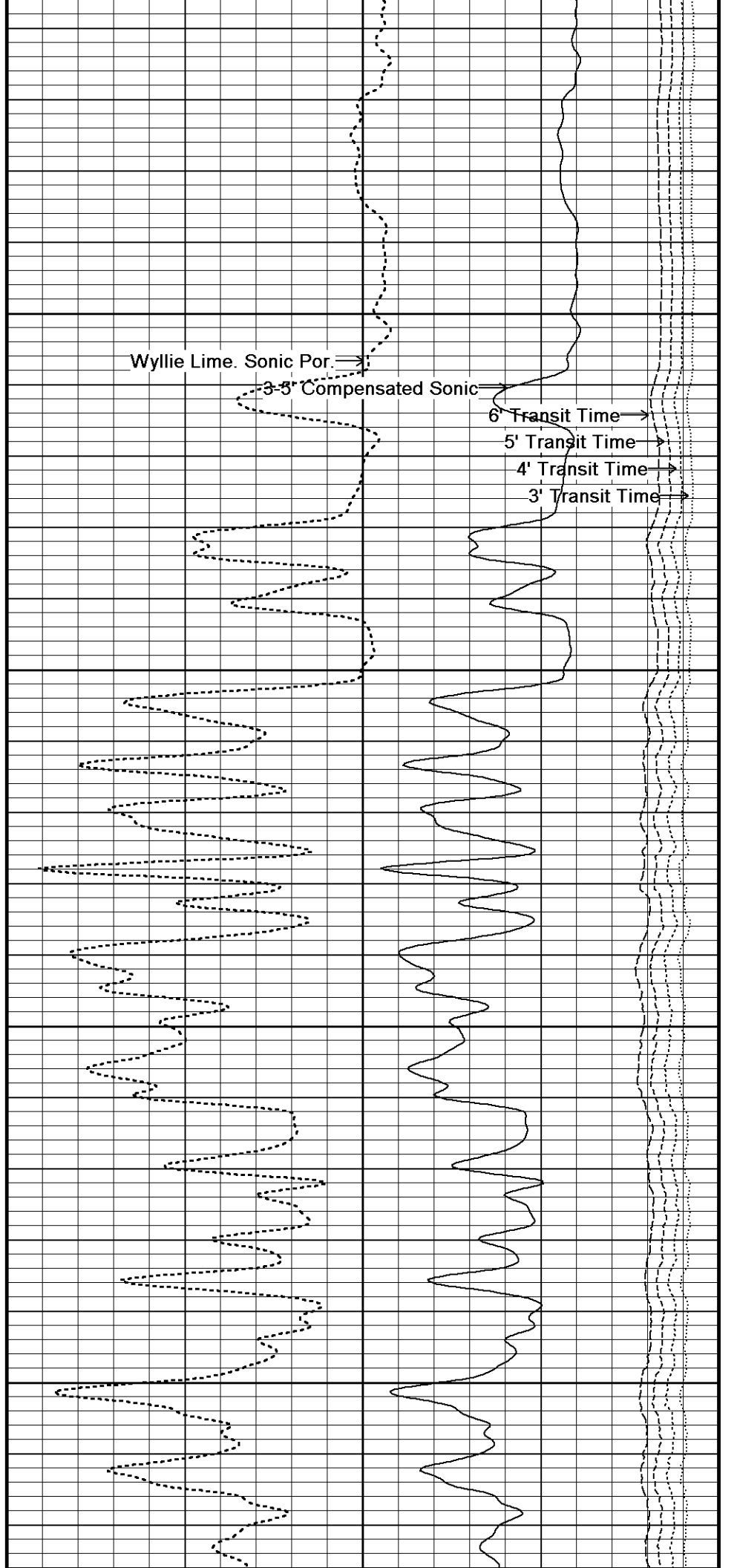
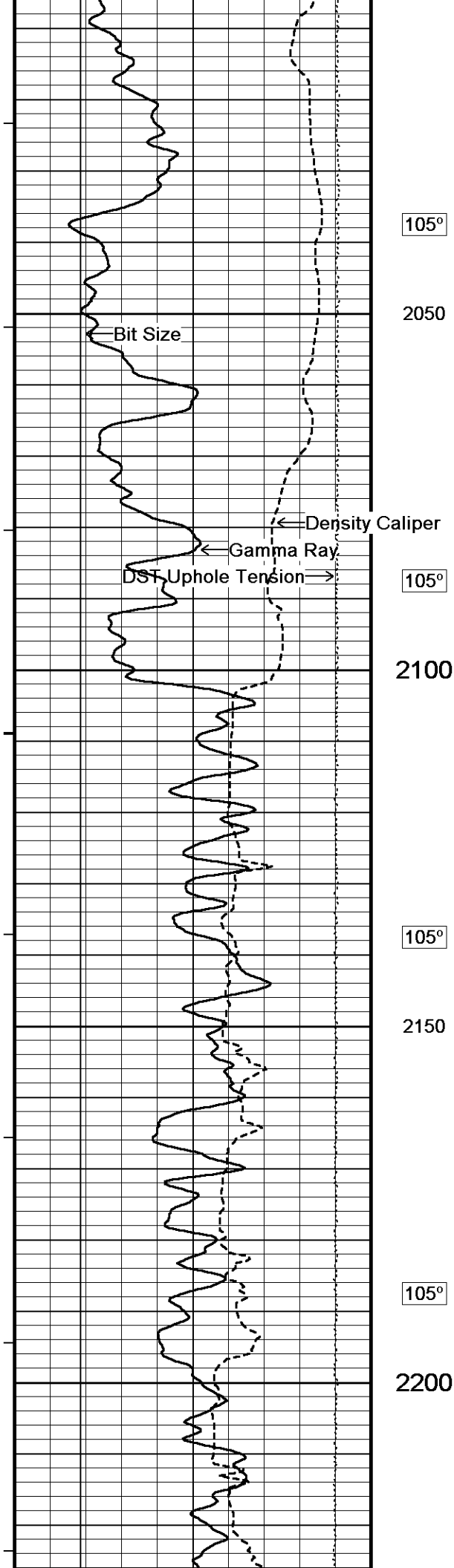
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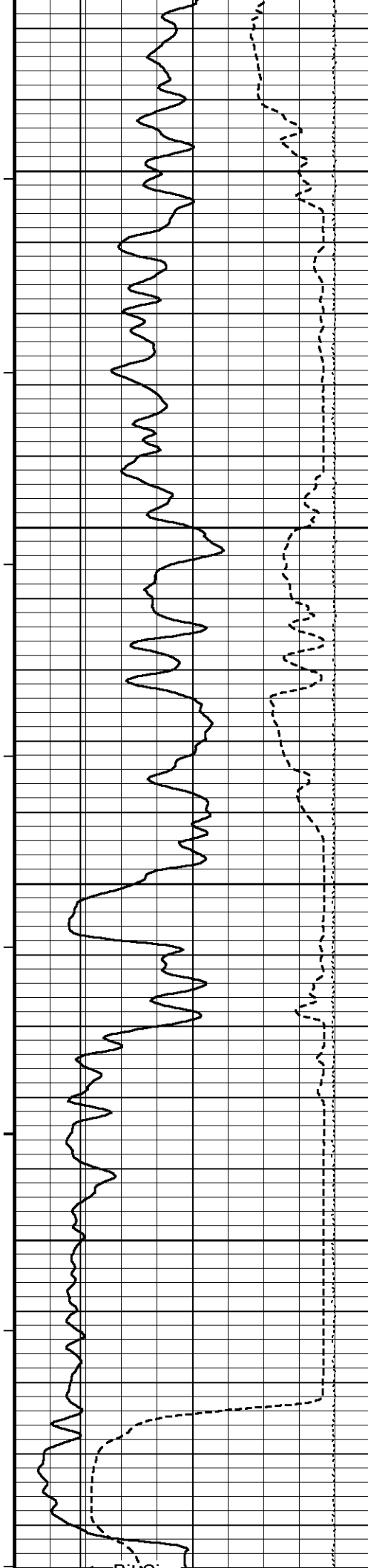
1950

104°

2000







106°

2250

107°

2300

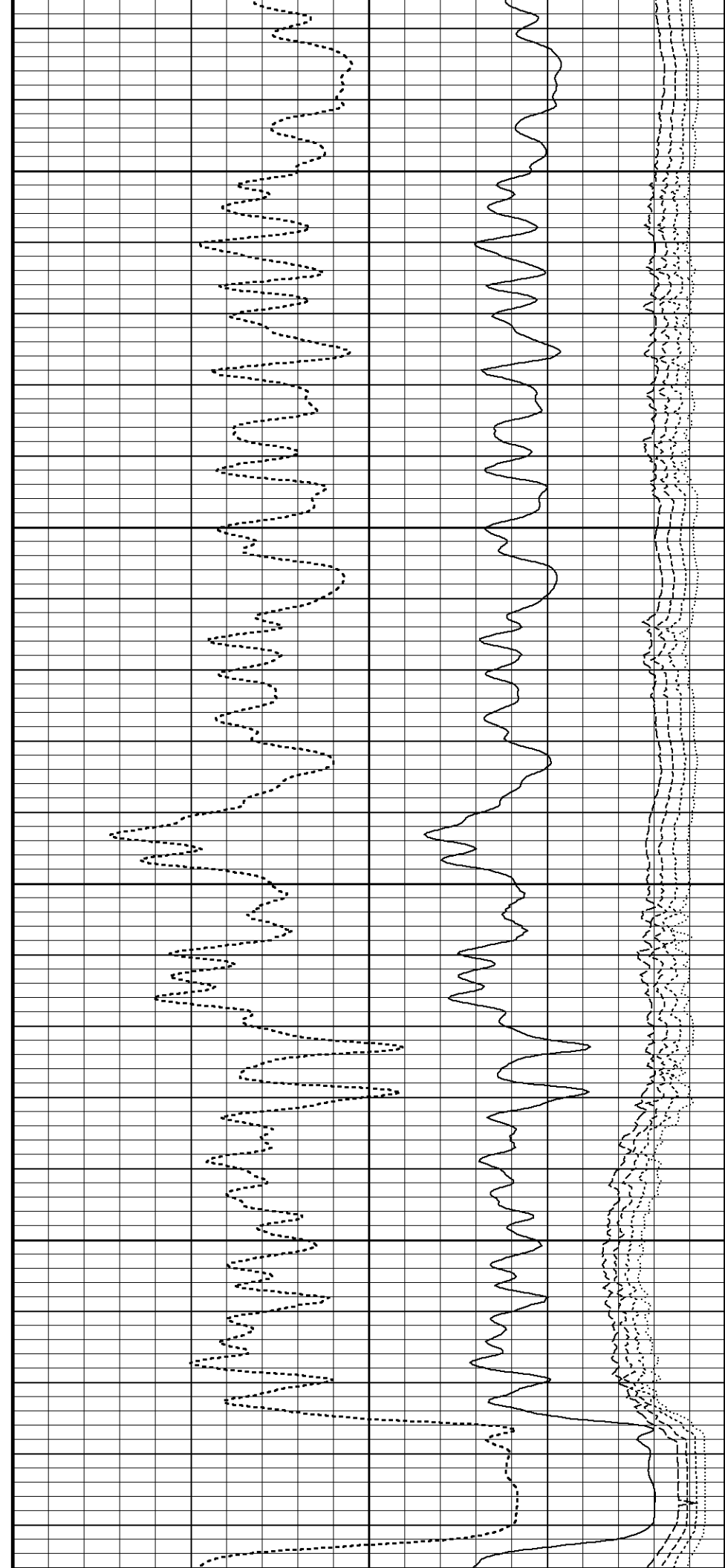
108°

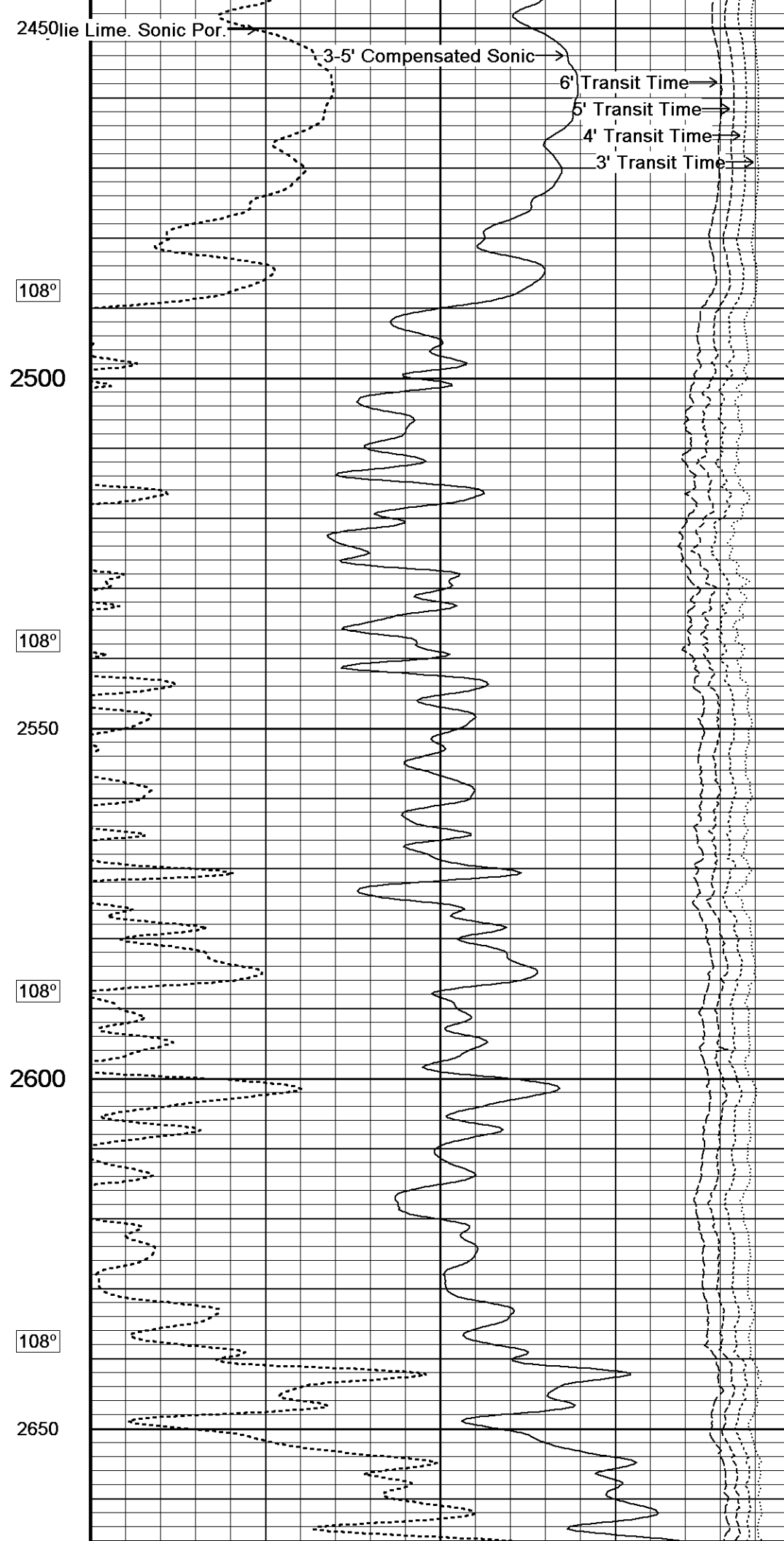
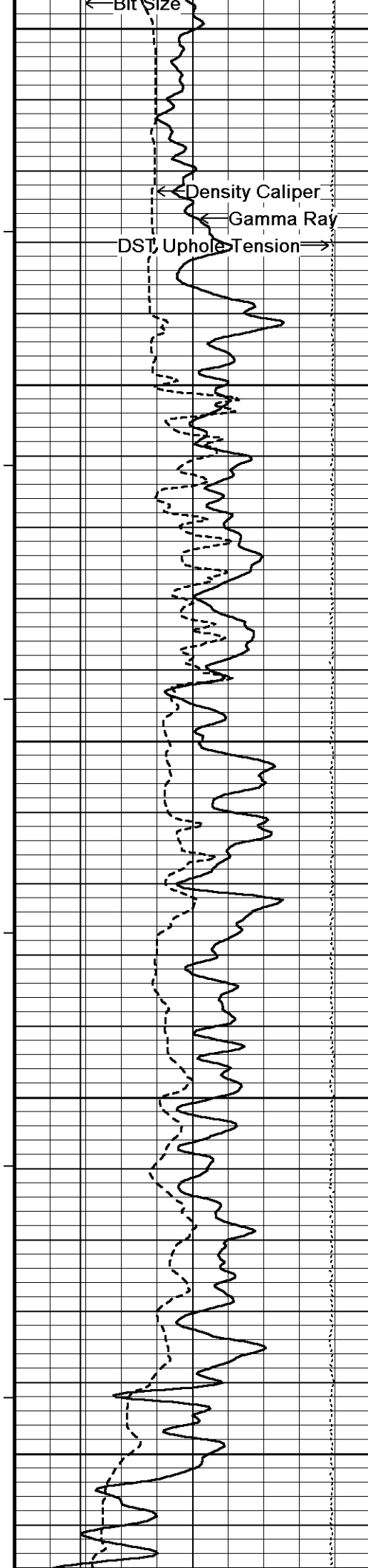
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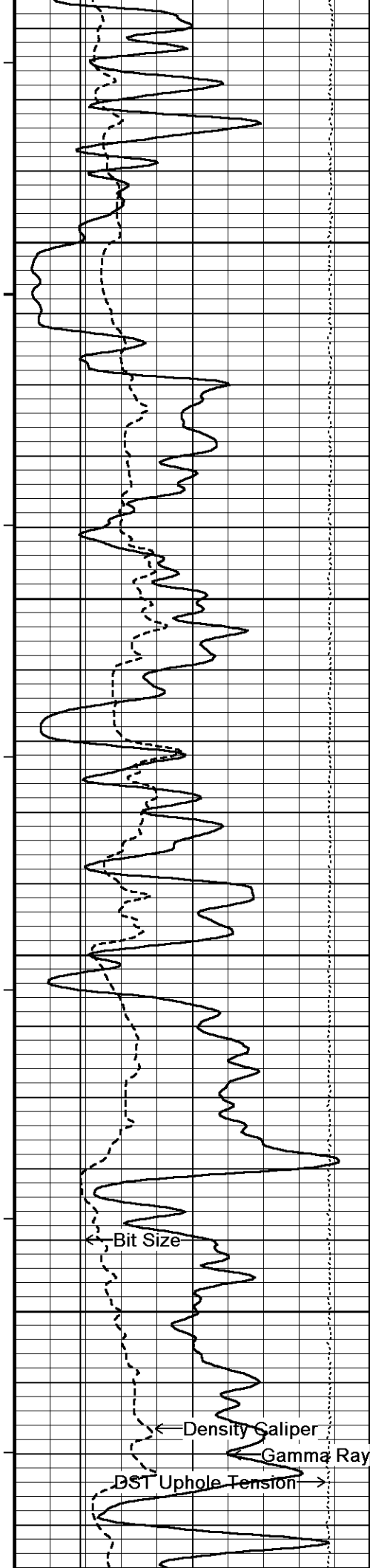
108°

2400

108°







109°

2700

109°

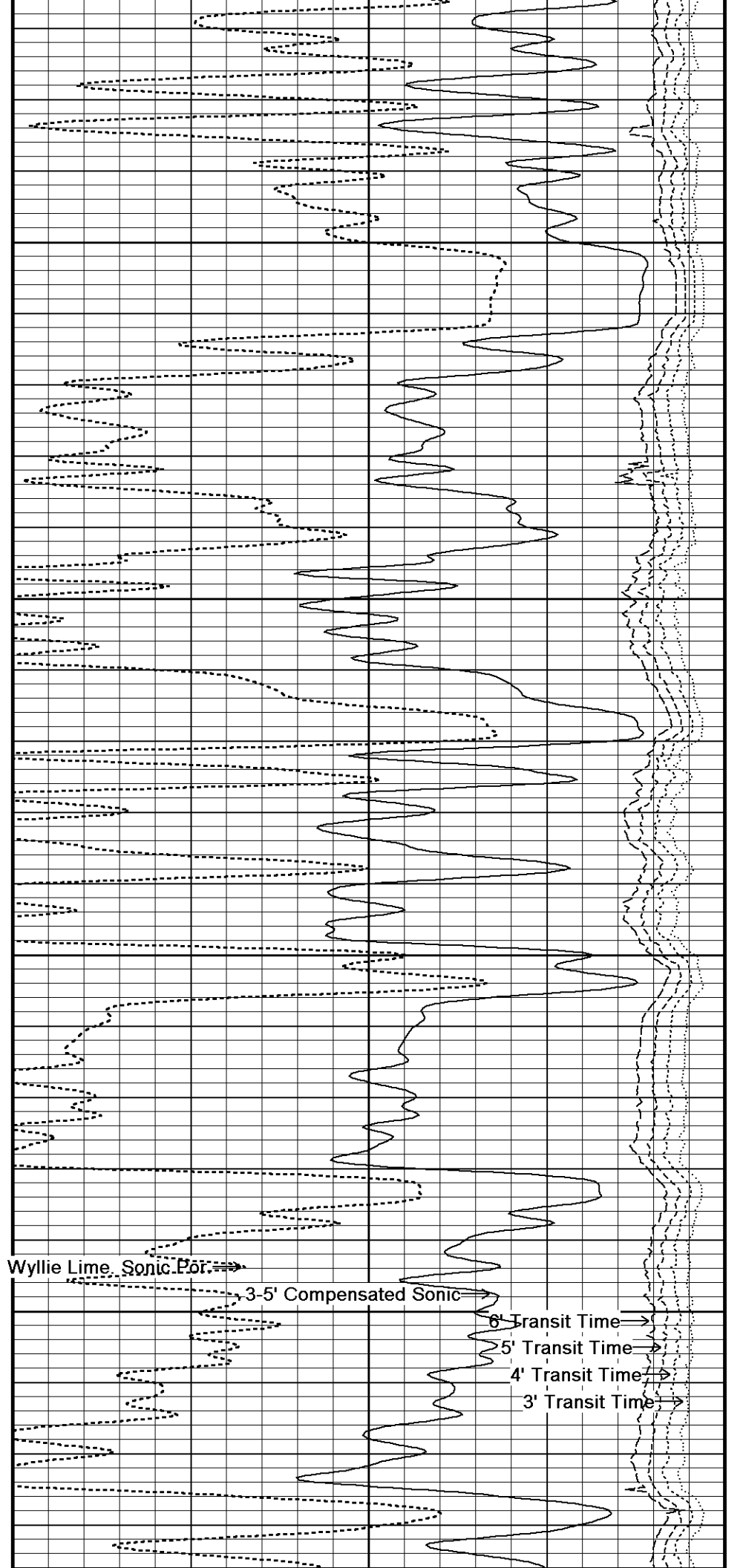
2750

110°

2800

110°

2850



Wyllie Lime Sonic Por. →

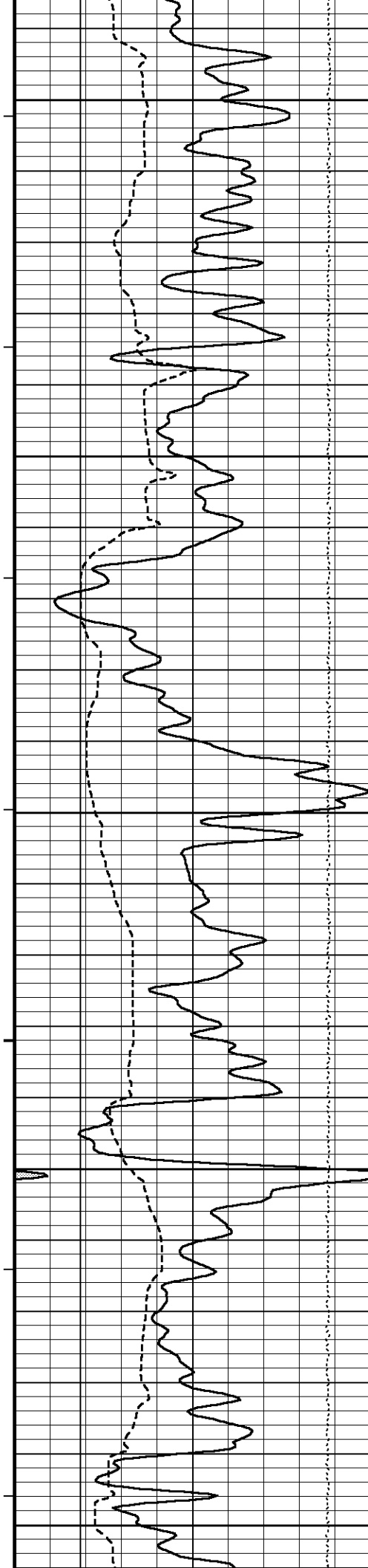
3-5' Compensated Sonic →

6' Transit Time →

5' Transit Time →

4' Transit Time →

3' Transit Time →



110°

2900

110°

2950

110°

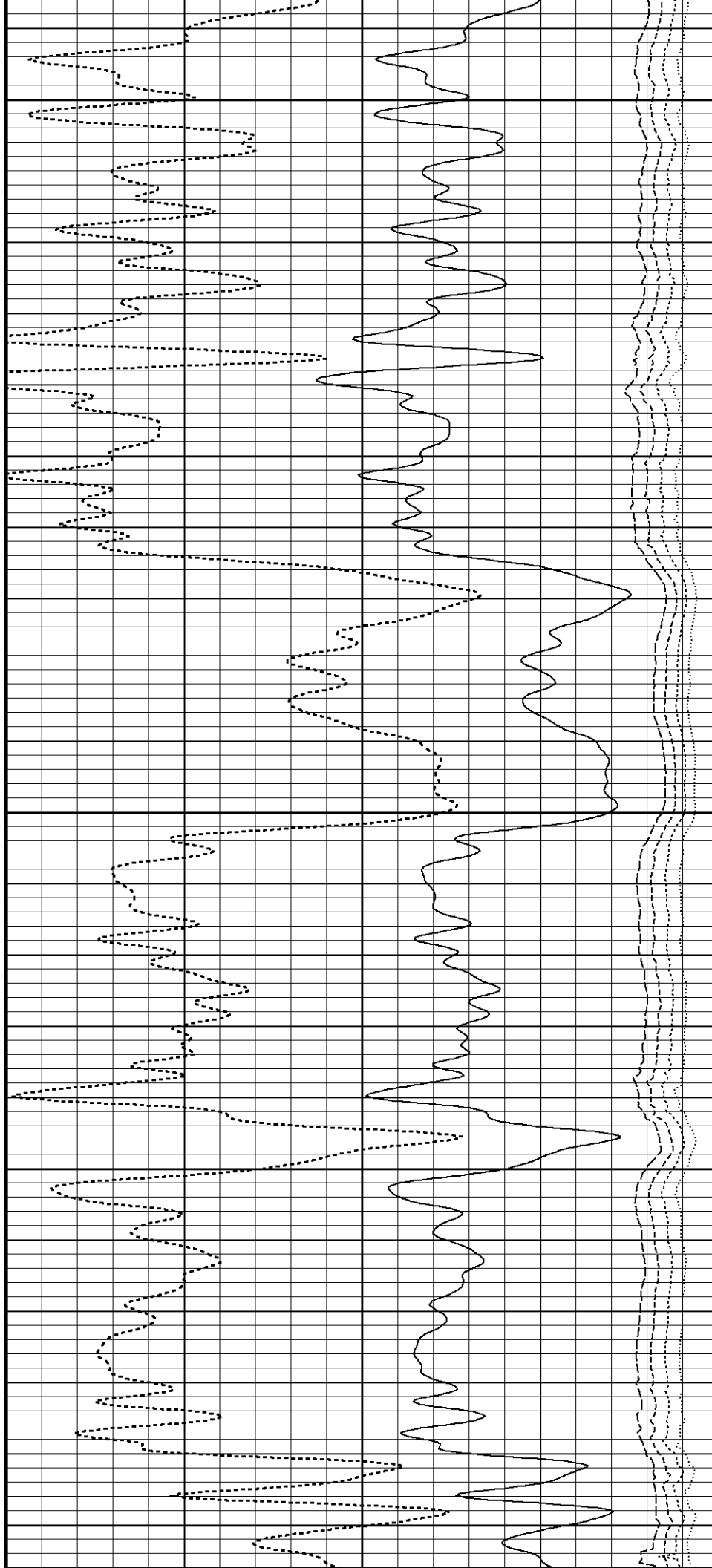
3000

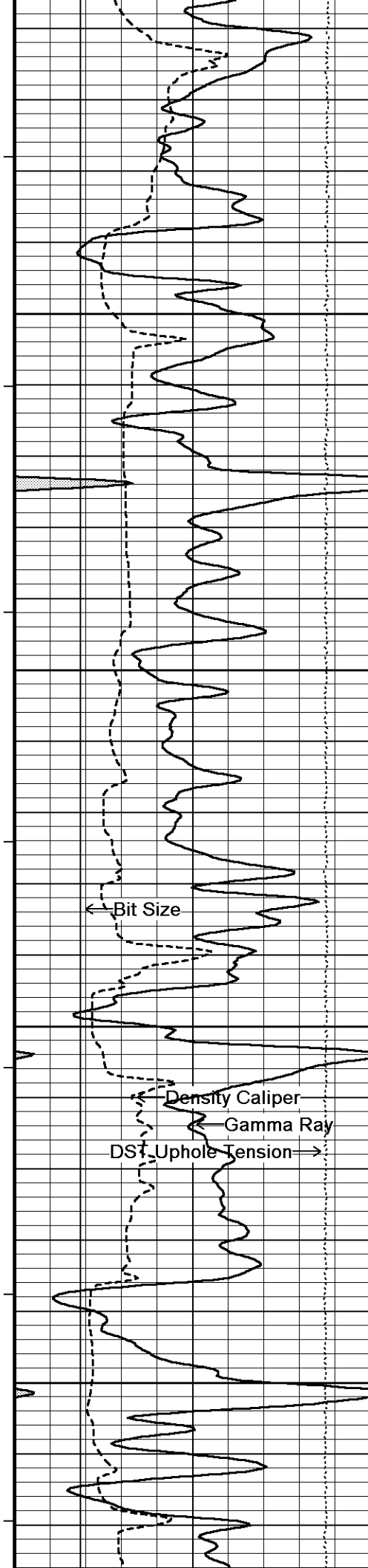
111°

3050

111°

3100





111°

3150

111°

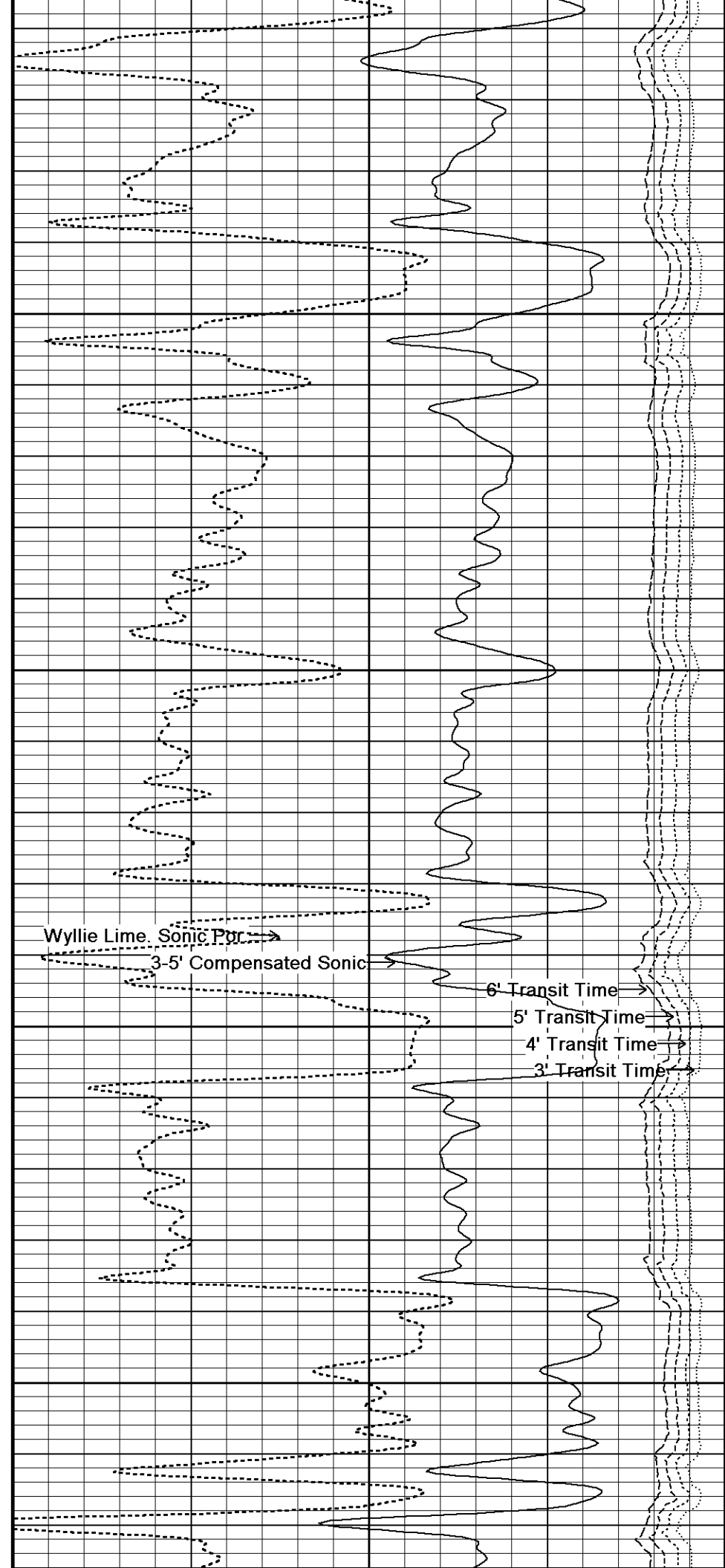
3200

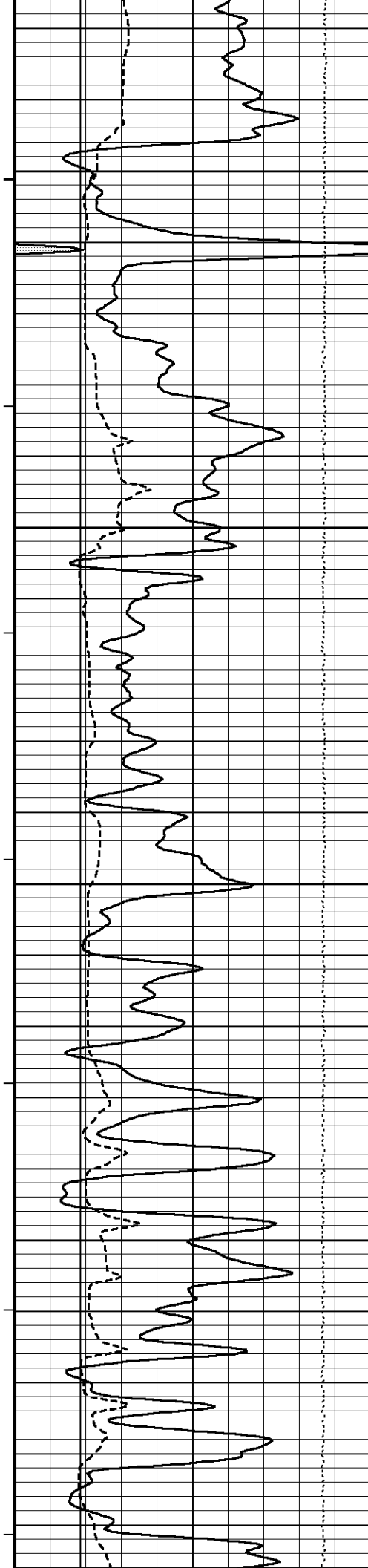
112°

3250

112°

3300





112°

3350

113°

3400

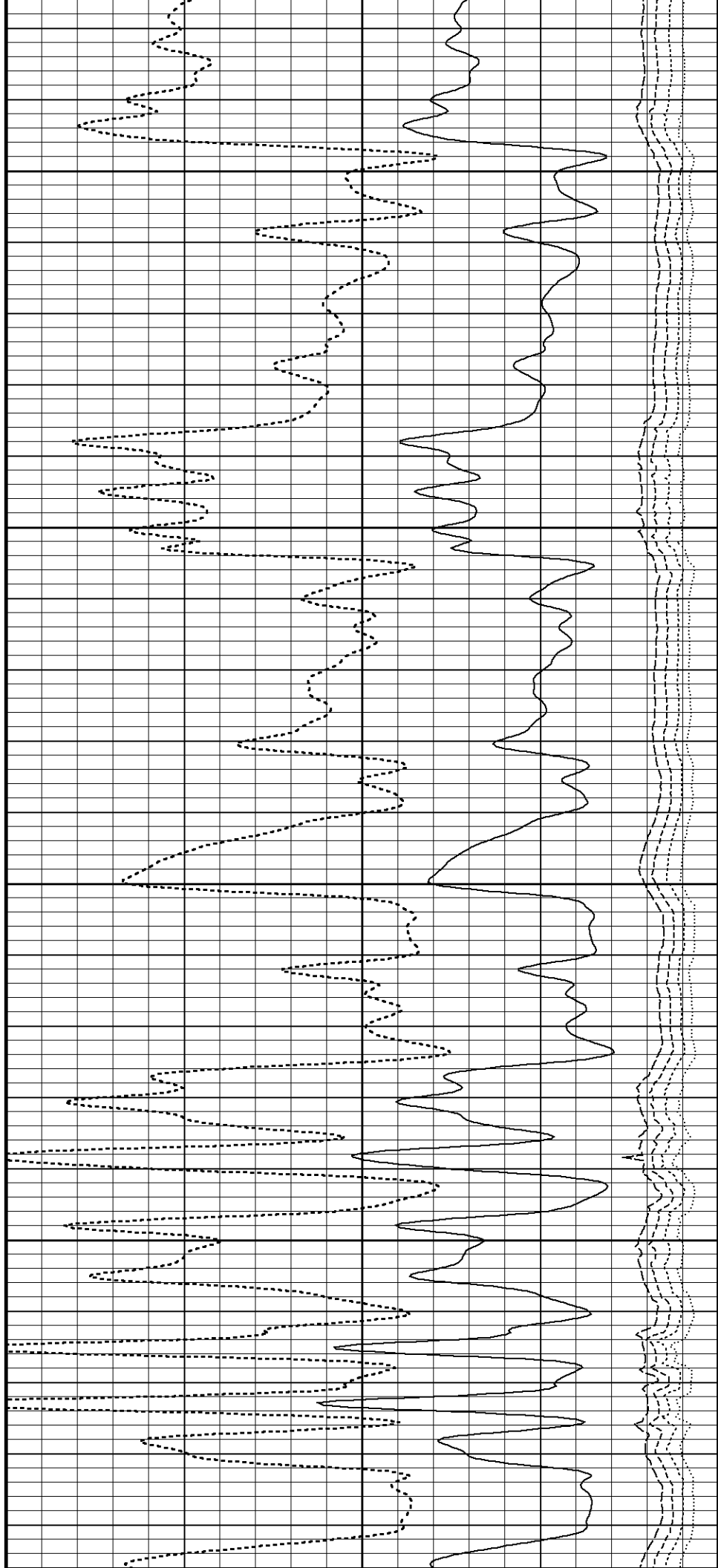
113°

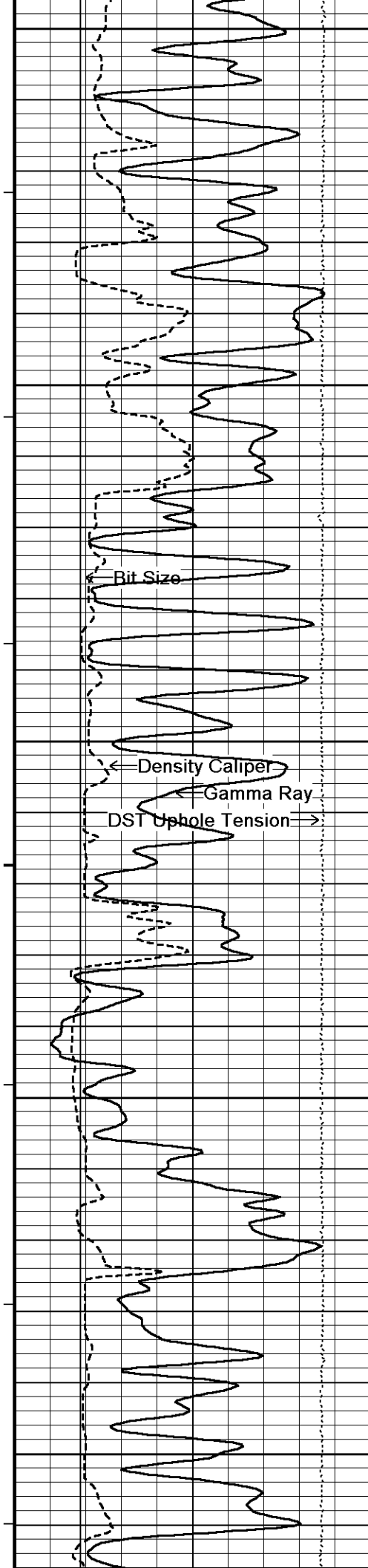
3450

113°

3500

113°





3550

114°

3600

114°

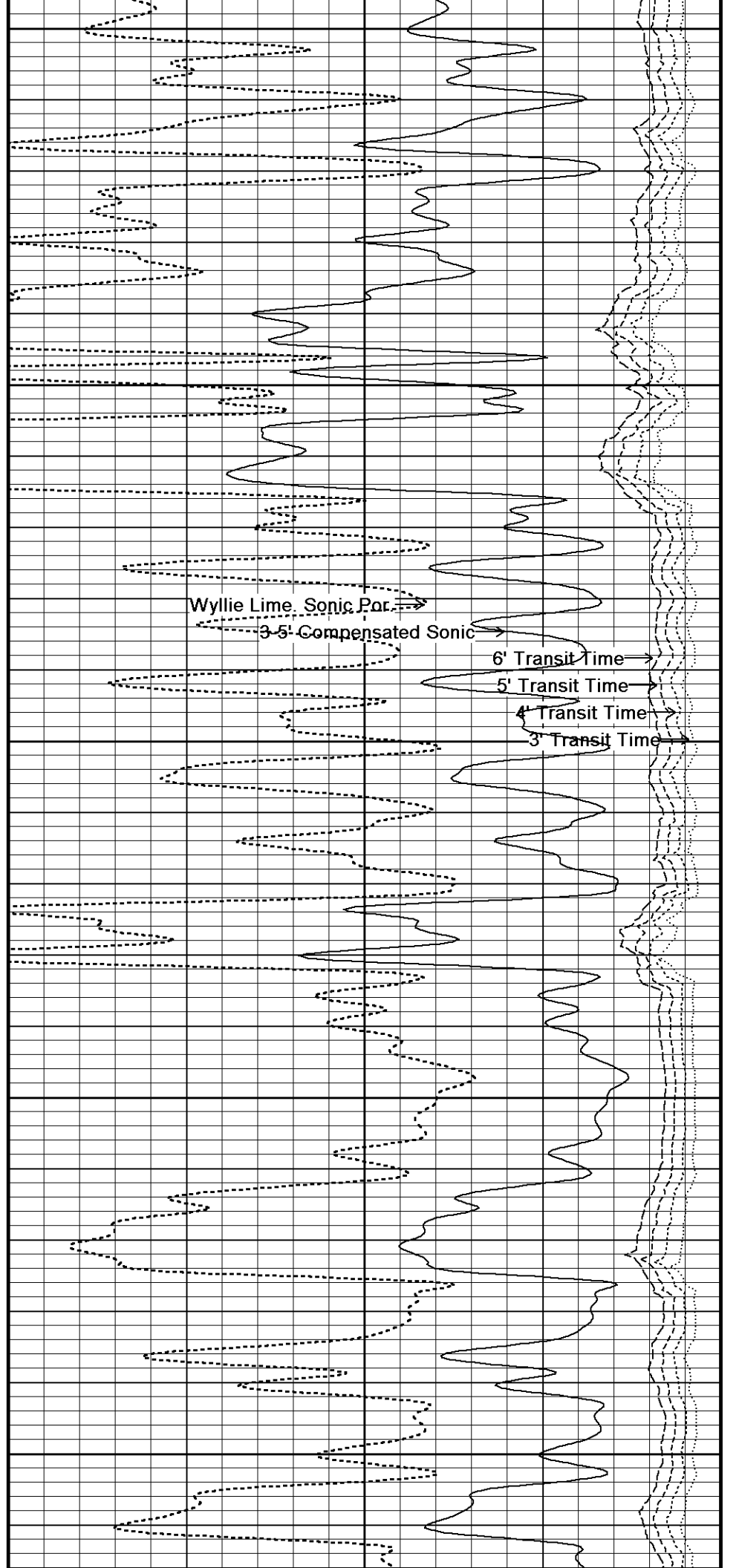
3650

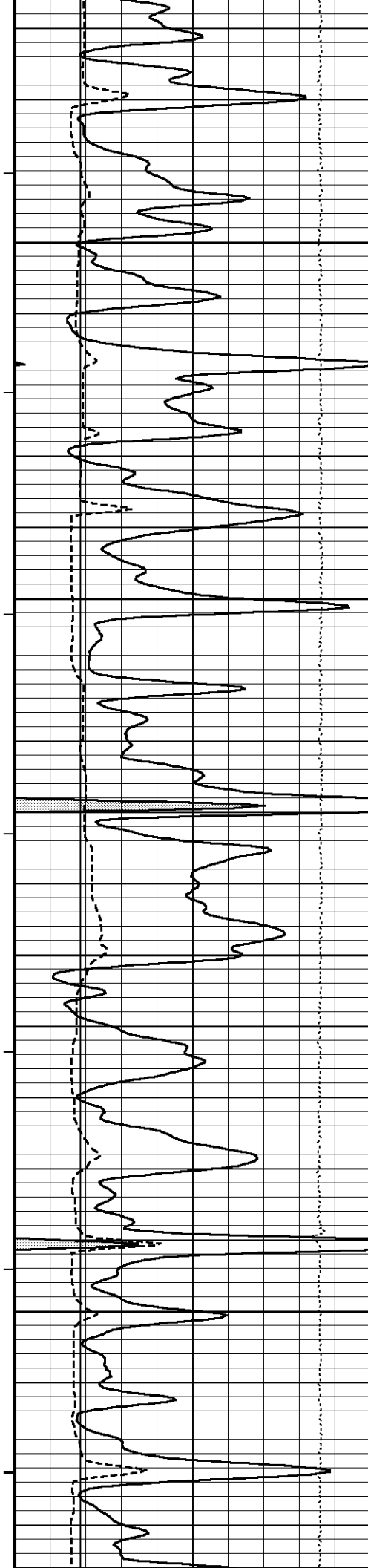
114°

3700

115°

3750





115°

3800

115°

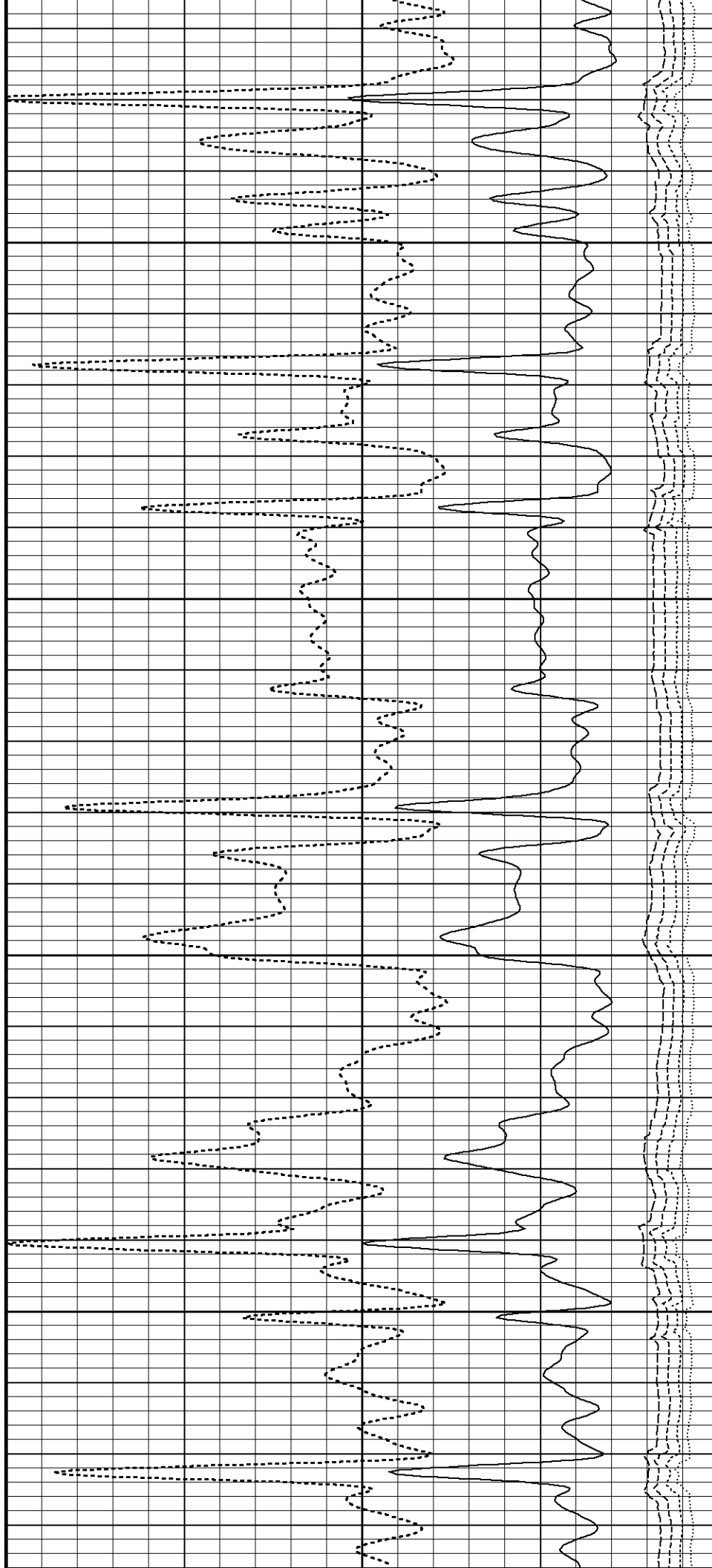
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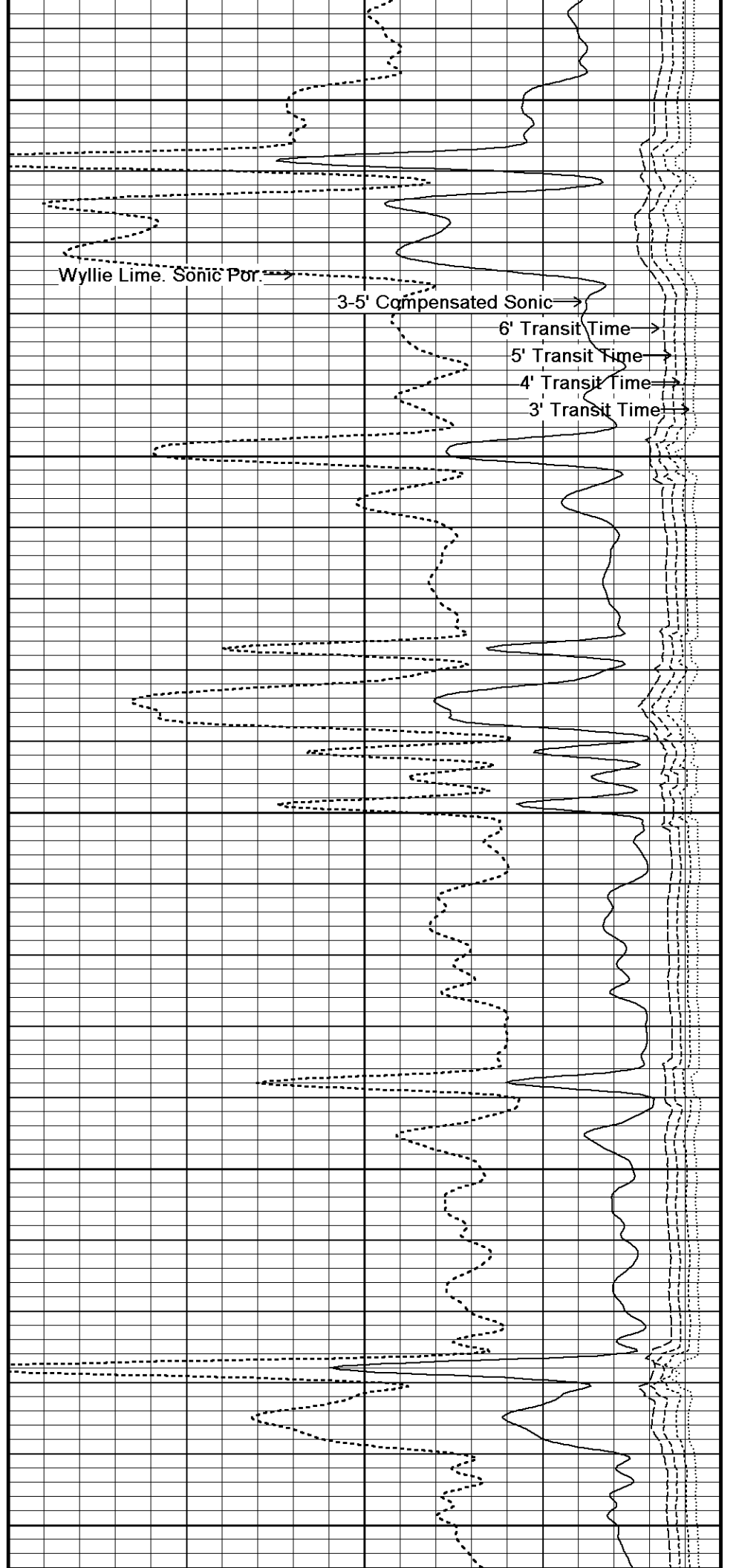
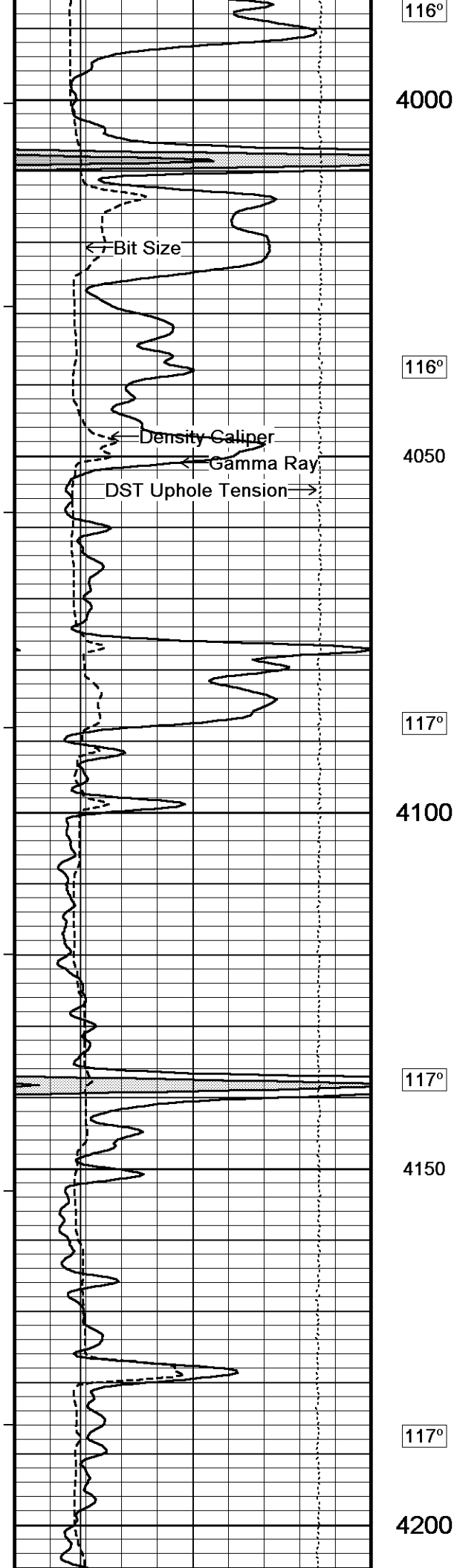
116°

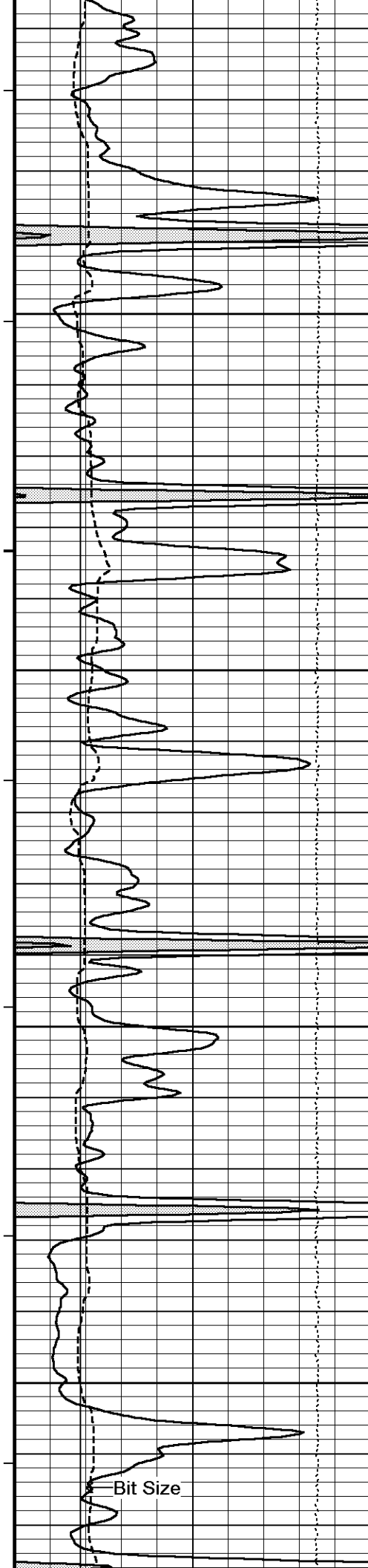
3900

116°

3950







117°

4250

117°

4300

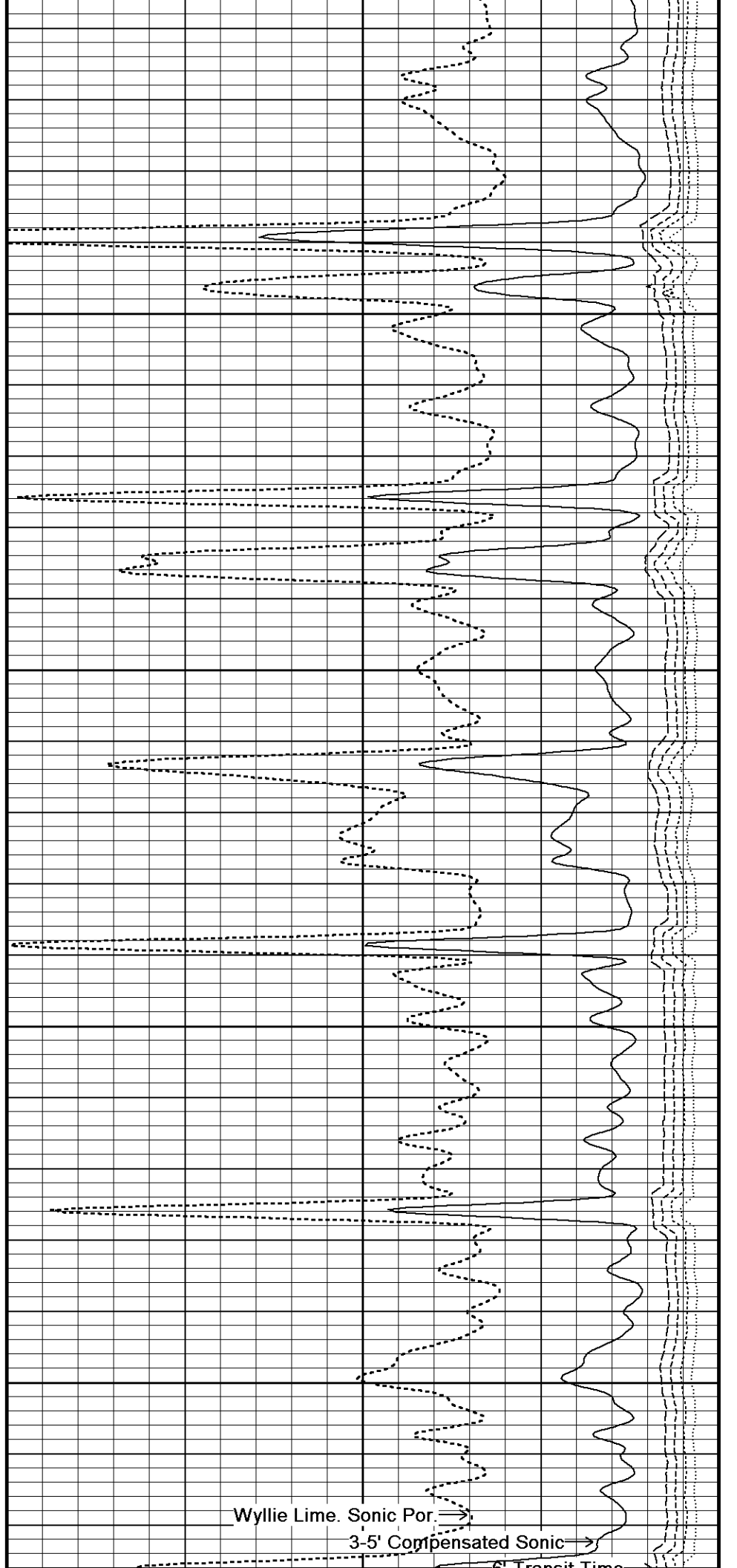
117°

4350

118°

4400

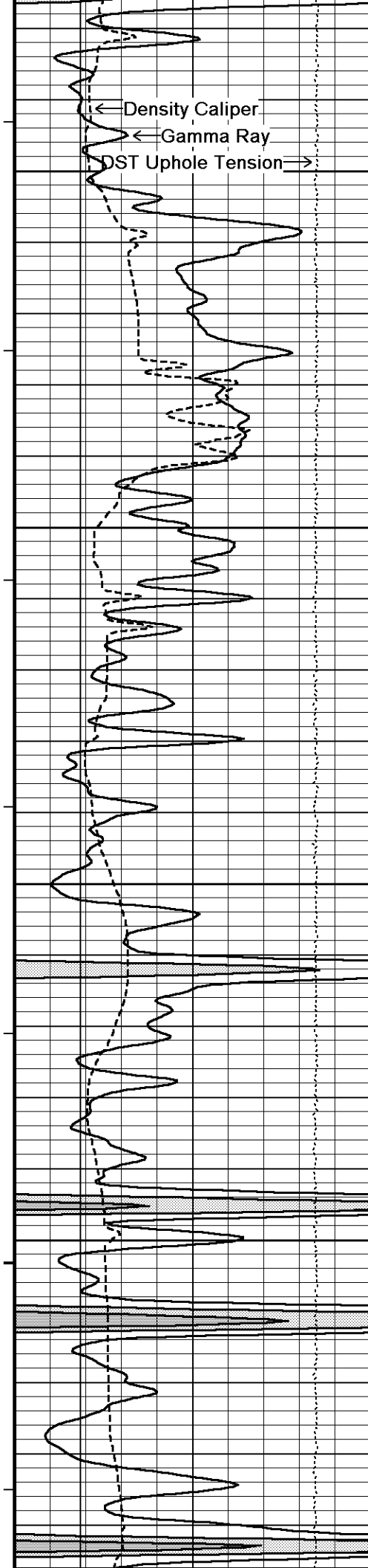
Bit Size



Wyllie Lime. Sonic Por. →

3-5' Compensated Sonic →

6' Transit Time



118°

4450

119°

4500

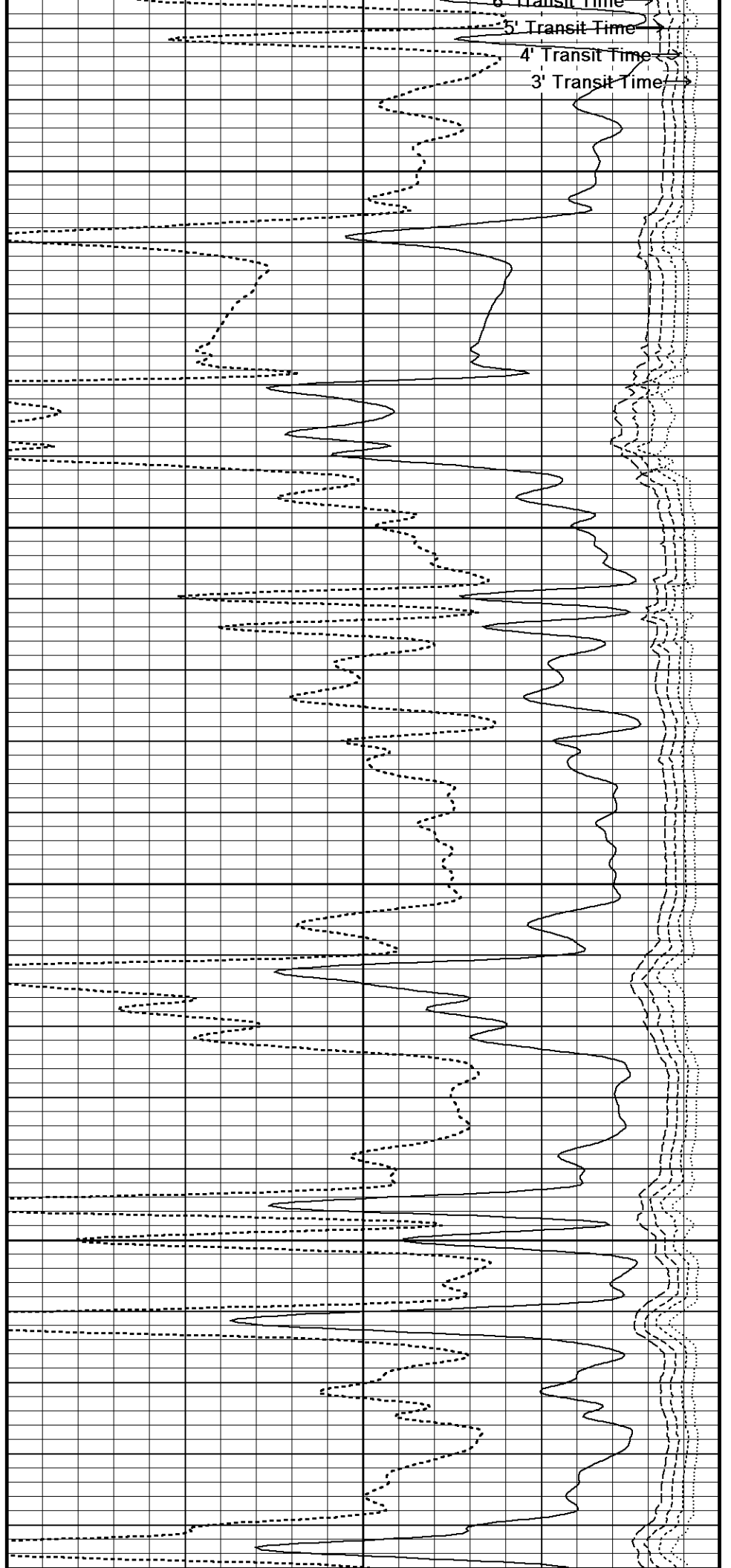
120°

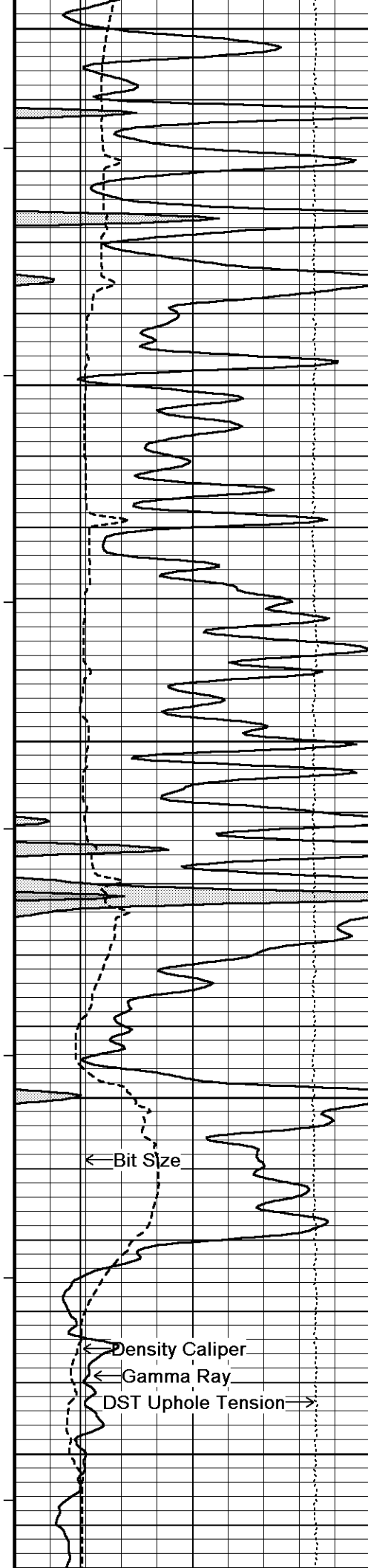
4550

120°

4600

121°





4650

121°

4700

122°

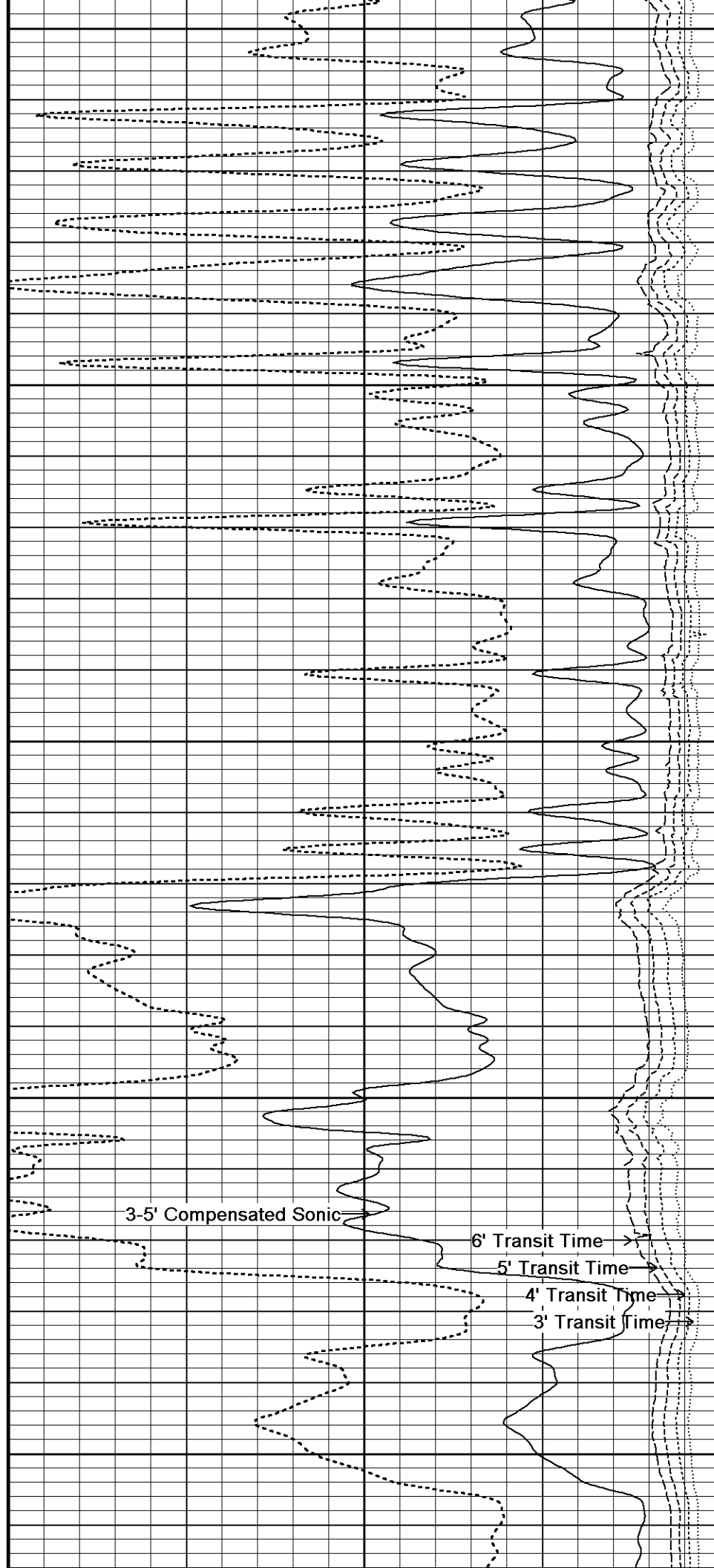
4750

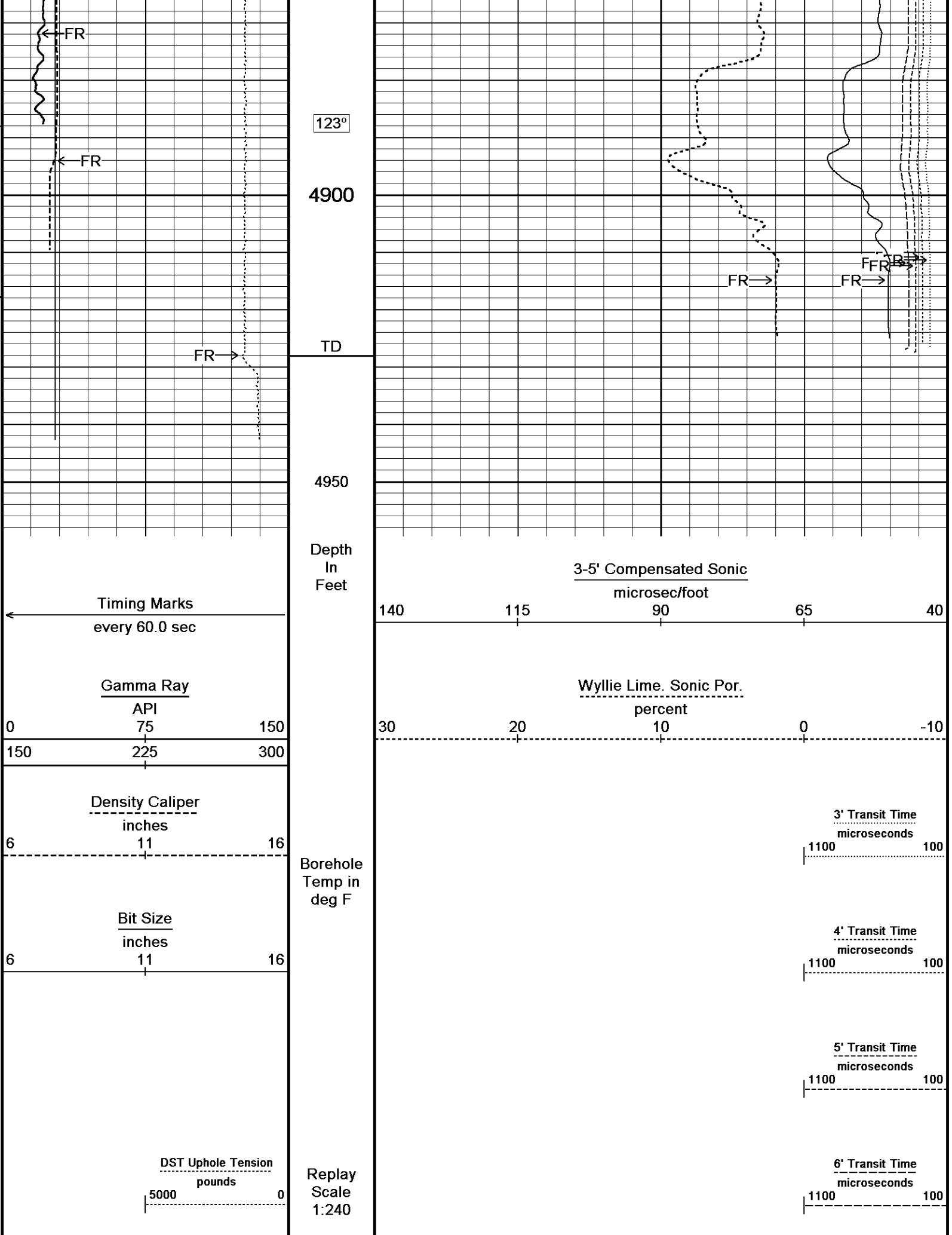
122°

4800

123°

4850





↑

5 INCH MAIN

↑

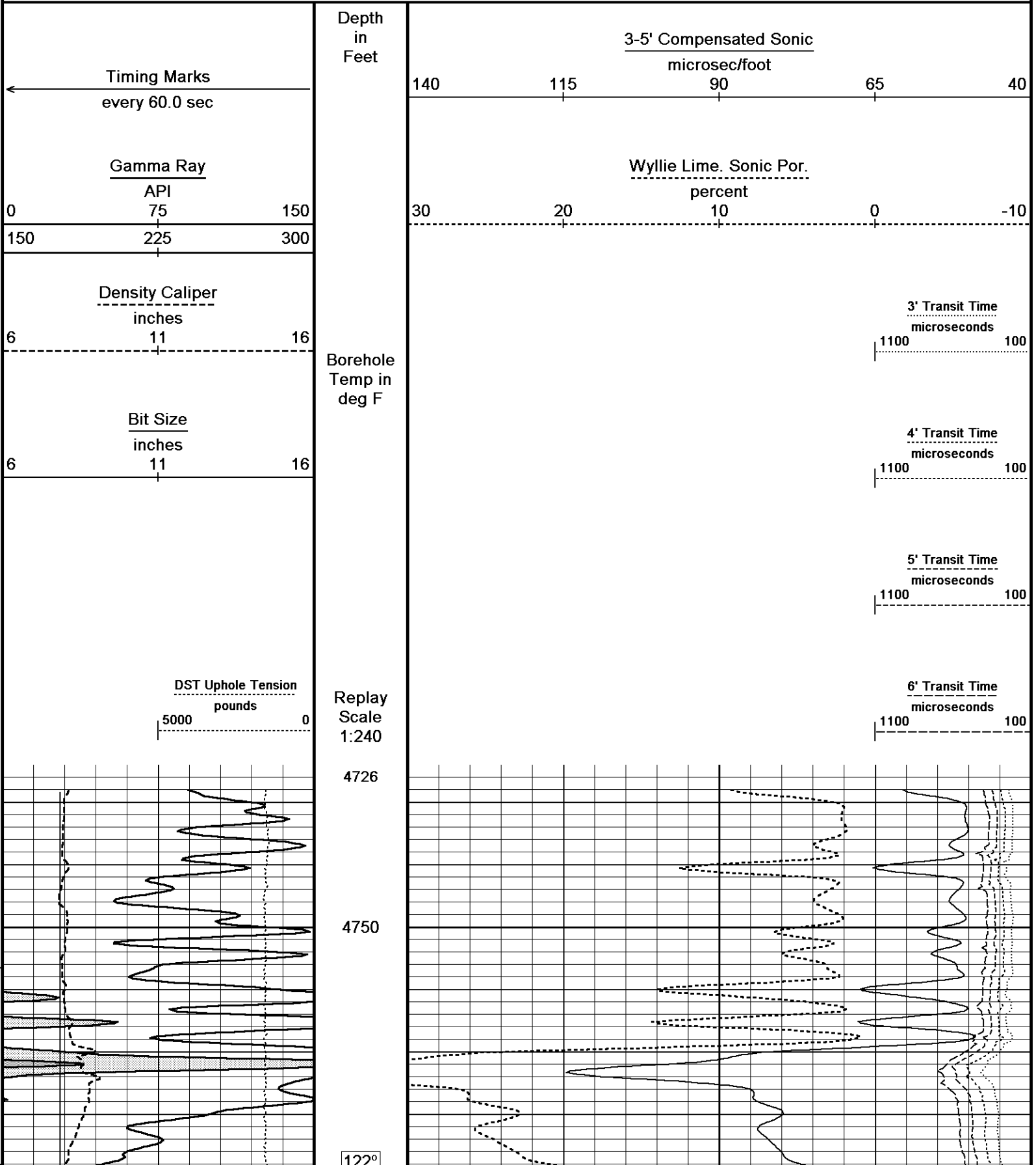
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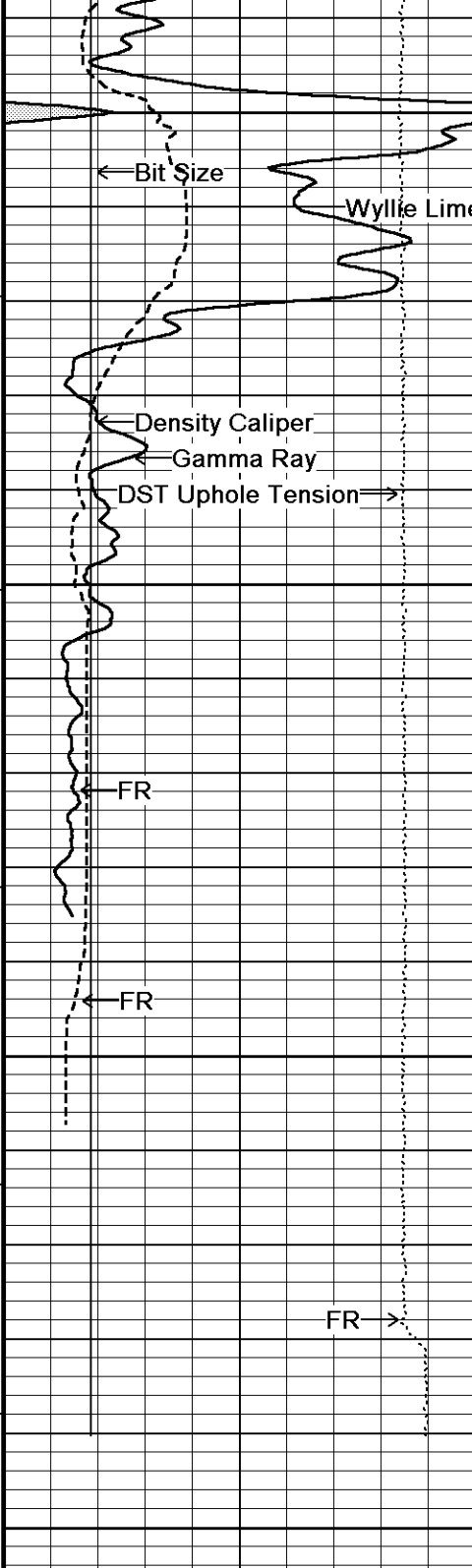
REPEAT SECTION

↓

Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus 15.03.5939\Logs\Red Oak ST-SI Unit #1-30\Red Oak ST-SI Unit #1-30 Repeat.dta
System Versions: Logged with 15.03.5939 Plotted with 15.03.5939

Plotted on 07-JUL-2016 23:11
Recorded on 07-JUL-2016 19:14





4800

122°

4850

4900

TD

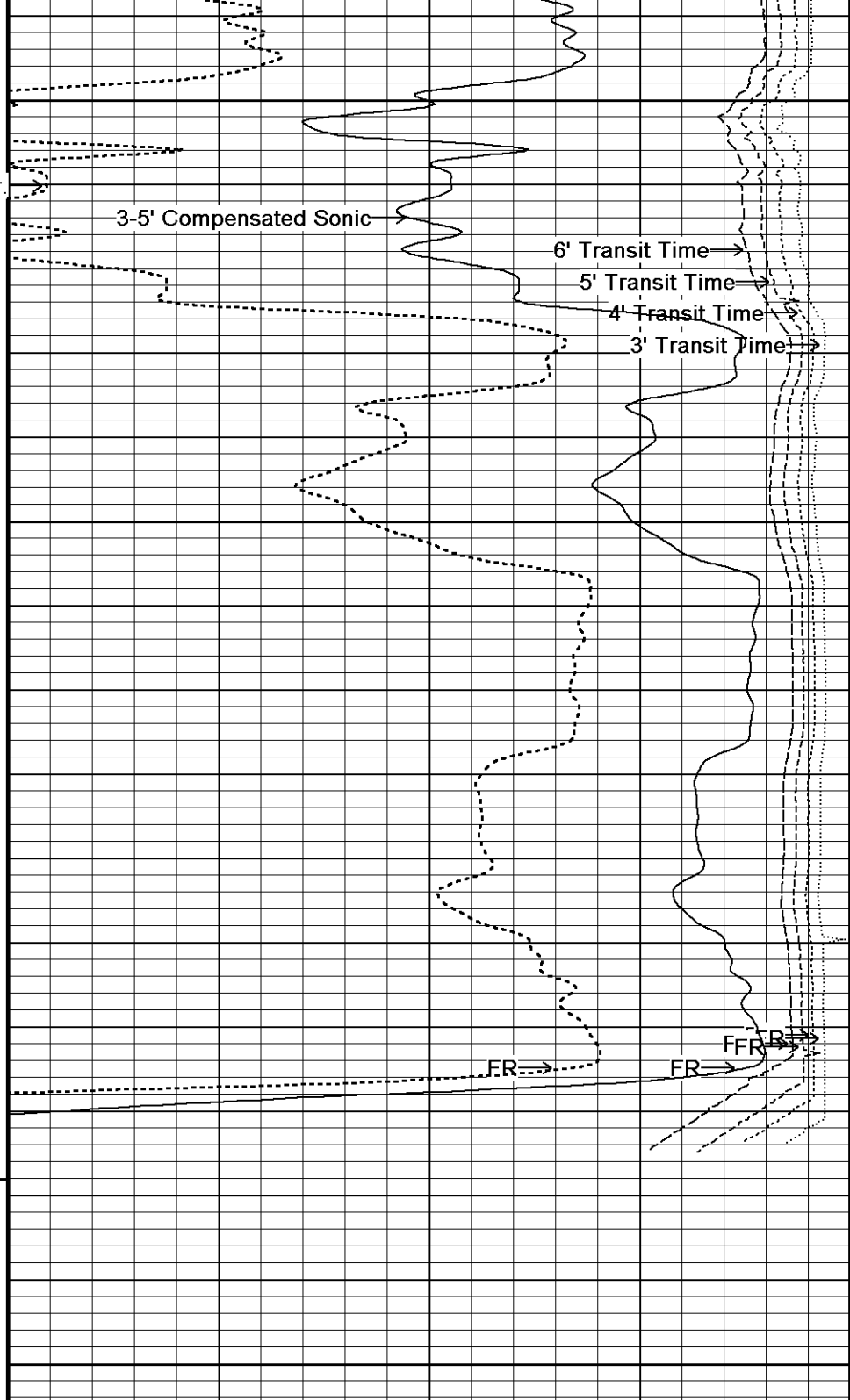
4950

Depth
in
Feet

Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150
150 225 300

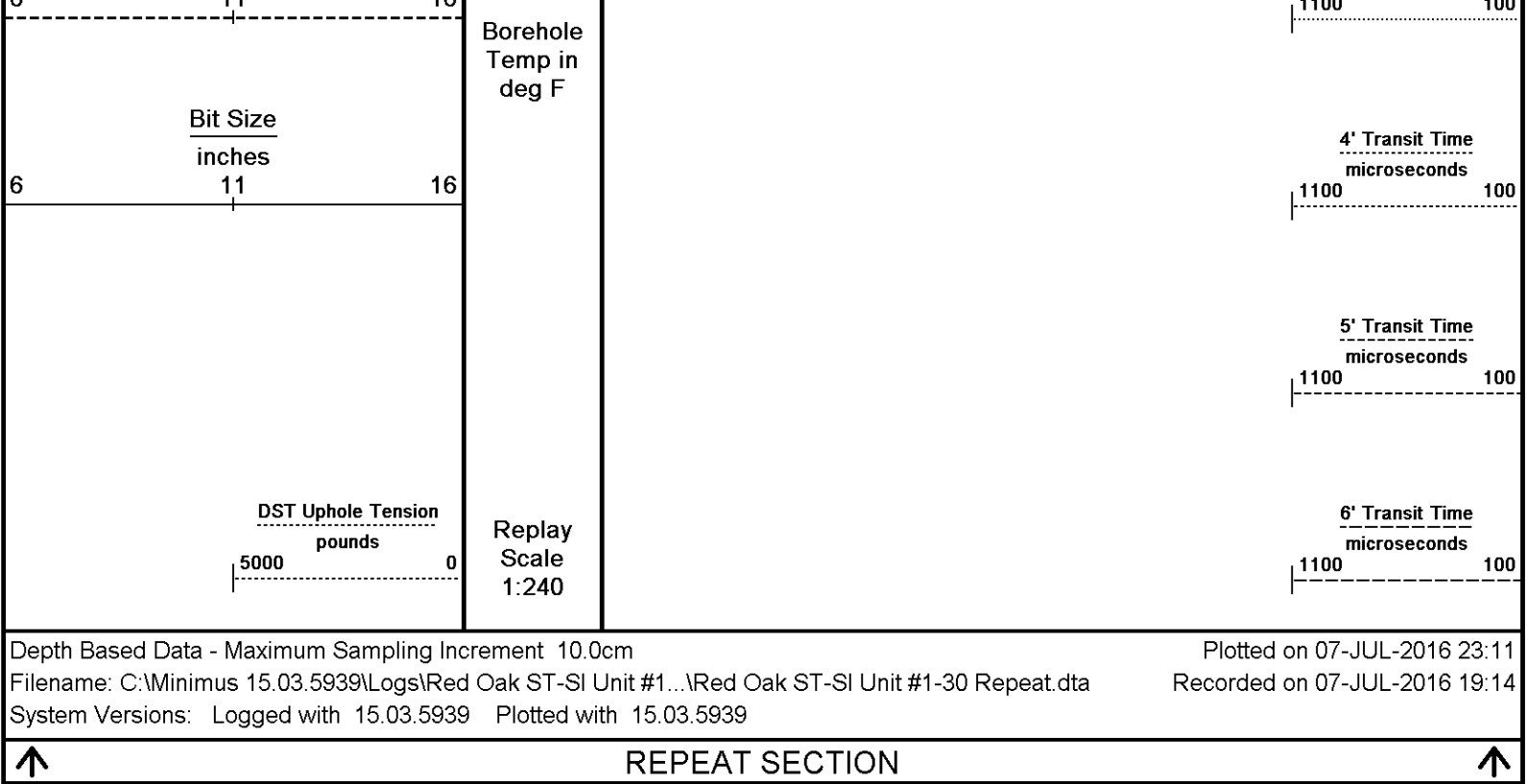
Density Caliper
inches
6 11 16



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 1000 900 800 700 600 500 400 300 200 100



BEFORE SURVEY CALIBRATION				C:\Minimus 15.03.5939\Logs\Red Oak ST-SI Unit #1-30\Red Oak ST-SI Unit #1-30 Repeat.dta
General Constants All 000			Last Edited on 07-JUL-2016,18:00	
General Parameters				
Mud Resistivity	0.540	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	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			
Down-hole Tension Calibration SMS 0			Field Calibration on 07-JUL-2016 18:22	
Reading No	Measured	Calibrated (lbs)		
1	1056.01	0.00		
2	-1326.30	480.60		
Gamma Calibration MCG-C 84			Field Calibration on 07-JUL-2016 14:26	
	Measured	Calibrated (API)		
Background	70	46		
Calibrator (Gross)	759	502		
Calibrator (Net)	689	456		
Gamma Calibration Tolerances MCG-C 84				
Ratio	1.511	1.401.4751.55	Counts/API	

Gamma Constants MCG-C 84

Gamma Calibrator Number	MCGGRCC141	
GRC-M Calibrator Jig in Use?	NO	
Inactive Background Jig in Use?	NO	
Mud Density	1.10	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Potassium Equivalence	Chloride	
K Mud Concentration	0.00	%

SP Calibration MCG-C 84

	Measured	Calibrated (mV)
Reference 1	104.6	100.1
Reference 2	-95.7	-98.8

Field Calibration on 07-JUL-2016 14:15

High Resolution Temperature Calibration MCG-C 84

	Measured	Calibrated(Deg F)
Lower	50.00	50.00
Upper	75.00	75.00

Field Calibration on 22-JUL-2014,11:40

High Resolution Temperature Constants MCG-C 84

Pre-filter Length	11
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Last Edited on 09-SEP-2014,02:23

Micro Normal and Micro Inverse Calibration MMR-C.A 247

Base Calibration on 22-MAY-2016 16:59

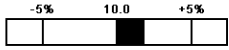
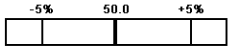
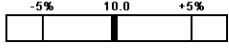
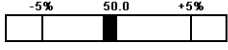
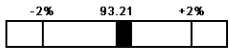
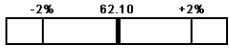
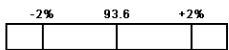
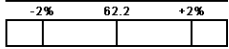
Field Check on 07-JUL-2016 13:49

Base Calibration

	Measured		Calibrated (ohm-m)	
Channel	Resistor 1	Resistor 2	Resistor 1	Resistor 2
Micro Normal	10.2	49.9	5.1	25.6
Micro Inverse	10.0	49.5	3.4	16.9

Channel	Base Check (ohm-m)	Field Check (ohm-m)
Micro Normal	93.6	93.6
Micro Inverse	62.2	62.2

Micro Normal & Micro Inverse Calibration Tolerance MMR-C.A 247

Micro Normal Res. 1	10.2		ohm	Micro Normal Res. 2	49.9		ohm
Micro Inverse Res. 1	10.0		ohm	Micro Inverse Res. 2	49.5		ohm
Micro Normal Base Check	93.6		ohm-m				
Micro Inverse Base Check	62.2		ohm-m				
Micro Normal Field Check	93.6		ohm-m				
Micro Inverse Field Check	62.2		ohm-m				

Micro Normal and Micro Inverse Constants MMR-C.A 247

Last Edited on 26-JUN-2016,15:44

Pad Type	8-12 in Soft Rubber Inflatable 006-9011-159
Micro Normal K Factor	0.5110
Micro Inverse K Factor	0.3380
Standoff Offset	0.0000 inches

Caliper Calibration MMR-C.A 247

Base Calibration on 22-MAY-2016 16:40

Field Calibration on 07-JUL-2016 13:51

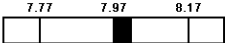
Base Calibration

Reading No	Measured	Calibrator Size (in)
1	14762	5.98
2	18067	7.97
3	21325	9.86
4	25277	11.92
5	0	0.00
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
8.02	7.97

Caliper Calibration Tolerances MMR-C.A 247

Short Arm Field Cal. 8.02  in

Micro-Resistivity Caliper Constants MMR-C.A 247

Last Edited on

Sonde Configuration Resistivity Mode

Neutron Calibration MDN-A.B 66

Base Calibration on 22-MAY-2016,18:15

Field Check on 07-JUL-2016 14:30

Base Calibration

	Measured		Calibrated (cps)	
	Near	Far	Near	Far
Ratio	3116	97	3714	110
	32.277		33.764	

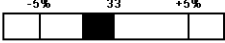
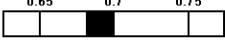
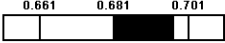
Field Calibrator at Base

	Calibrated (cps)
Ratio	2061 3028
	0.681

Field Check

	Calibrated (cps)
Ratio	2133 3061
	0.697

Neutron Calibration Tolerances MDN-A.B 66

Ratio 32.277 Base Check 0.681 Field Check 0.697 

Neutron Constants MDN-A.B 66

Last Edited on 07-JUL-2016,14:26

Neutron Source Id	P0204NN	
Neutron Jig Number	NJ5736	
Air Hole Processing	Legacy	
Caliper Source for Processing	Density Caliper	
Stand-off	0.00	inches
Mud Density	1.00	gm/cc
Limestone Sigma	7.10	cu
Sandstone Sigma	4.26	cu
Dolomite Sigma	4.70	cu
Formation Pressure Source	None	
Formation Pressure	N/A	kpsi
Temperature Source	Constant Value	
Temperature	68.00	degrees F
Mud Salinity	0.00	kppm
Salinity Correction	Not Applied	
Formation Fluid Salinity Source	None	
Formation Fluid Salinity	N/A	kppm
Barite Mud Correction	Not Applied	

FE Calibration MFE-B.J 352

Base Calibration on 22-MAY-2016 16:12

Field Check on 07-JUL-2016 13:47

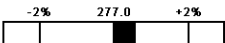
Base Calibration

	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	972.3	126.8

Base Check 278.7

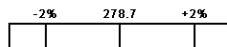
Field Check 278.7

FE Calibration Tolerances MFE-B.J 352

Reference 2 972.3  ohmBase Check 278.7  ohm-m

Field Check

278.7



ohm-m

FE Constants MFE-B.J 352

Last Edited on 07-JUL-2016,13:46

Running Mode No Sleeve
MFE K Factor 0.1268

Borehole Correction Constants

Sonde Position 0.5 inches
Hole Size Source Density Caliper
Hole Size Constant Value N/A inches
Rm Source Global Value: Temperature Corrected
Temp. for Rm Corr. MCG External Temperature

Sonic Constants MSS-A.A 55

Last Edited on 07-JUL-2016,13:42

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 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)	Depth (ft)	
N/A	N/A	N/A	0.00	
N/A	N/A	N/A	0.00	
N/A	N/A	N/A	0.00	
N/A	N/A	N/A	0.00	
N/A	N/A	N/A	0.00	

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

Compliance Window Width	N/A	micro-sec
Sonic 1 Despiker	N/A	N/A
Sonic 2 Despiker	N/A	N/A

Induction Calibration MAI-A.A 111

Base Calibration on 05-AUG-2014,09:34

Field Check on 07-JUL-2016 13:46

Base Calibration

Test Loop Calibration

Channel	Measured		Calibrated (mmho/m)	
	Low	High	Low	High
1	17.6	473.6	9.3	966.2
2	6.4	385.9	7.6	821.4
3	3.2	264.0	5.2	566.0
4	2.1	135.5	2.6	279.2

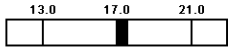
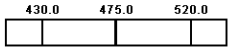
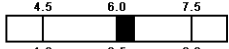
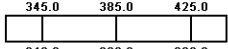
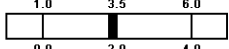
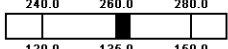
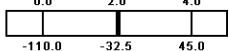
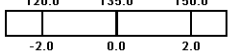
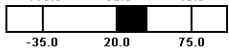
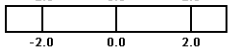
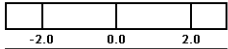
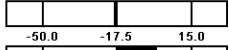
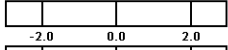
Array Temperature 23.0 Deg F

Test Loop Calibration Verified 22-MAY-2016,17:59

Channel	Base Check (mmho/m)		Field Check (mmho/m)	
	Low	High	Low	High
1	12.1	3873.0	10.7	3867.6
2	29.8	3528.1	27.7	3522.3
3	29.1	3021.3	27.2	3016.2
4	19.1	2058.5	17.8	2055.0
Deep	17.7	1962.1	16.5	1958.8
Medium	43.1	3976.4	40.4	3969.4
Shallow	44.4	5232.7	41.4	5224.1

Array Temperature 65.8 87.7 Deg F

Induction Calibration Tolerances MAI-A.A 111

Low Conductivity 1	17.6		mmho/m	High Conductivity 1	473.6		mmho/m
Low Conductivity 2	6.4		mmho/m	High Conductivity 2	385.9		mmho/m
Low Conductivity 3	3.2		mmho/m	High Conductivity 3	264.0		mmho/m
Low Conductivity 4	2.1		mmho/m	High Conductivity 4	135.5		mmho/m
Background Vx 1	0.0		mmho/m	Phase Check Loop 1	0.0		%
Background Vx 2	0.0		mmho/m	Phase Check Loop 2	0.0		%
Background Vx 3	0.0		mmho/m	Phase Check Loop 3	0.0		%
Background Vx 4	0.0		mmho/m	Phase Check Loop 4	0.0		%

Induction Constants MAI-A.A 111

Last Edited on 07-JUL-2016,13:43

Induction Model

RtAP-WBM

Borehole Correction Constants

Tool Centred	No
Hole Size Source	Density Caliper
Hole Size Constant Value	N/A
Stand-off Type	Fins
Stand-off	0.50
Number of Fins on Stand-off	8.0000
Stand-off Fin Angle	45.00
Stand-off Fin Width	0.5000
Rm Source	Global Value: Temperature Corrected
Temp. for Rm Corr.	MCG External Temperature

Squasher Start 0.0020 mhos/metre
Squasher Offset N/A mhos/metre

Borehole Normalisation

DRM1	0.0000	DRC1	0.0000
DRM2	0.0000	DRC2	0.0000
MRM1	0.0000	MRC1	0.0000
MRM2	0.0000	MRC2	0.0000
SRM1	0.0000	SRC1	0.0000
SRM2	0.0000	SRC2	0.0000

Calibration Site Corrections

Calibration Site Corrections		
Channel 1	0.00	mmhos/metre
Channel 2	0.00	mmhos/metre
Channel 3	0.00	mmhos/metre
Channel 4	0.00	mmhos/metre

Symmetrised Receiver Gains

Receiver 1	1.00
Receiver 2	1.00
Receiver 3	1.00
Receiver 4	1.00

Apparent Porosity and Water Saturation Constants

Archie Constant (A)	1.00	
Cementation Exponent (M)	2.00	
Saturation Exponent (N)	2.00	
Saturation of Water for Apor	100.00	percent
Resistivity of Water for Apor and Sw	0.05	ohm-m
Resistivity of Mud Filtrate for Sw	0.00	ohm-m
Source for Rt	0.00	
Source for Rxo	0.00	

High Resolution Temperature Calibration MAI-A.A 111

Field Calibration on 24-NOV-2014,10:23

	Measured	Calibrated(Deg F)
Lower	10.00	10.00
Upper	100.00	100.00

High Resolution Temperature Constants MAI-A.A 111

Last Edited on 26-JUN-2014,15:06

Pre-filter Length	11
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Photo Density Calibration MPD-B 104

Base Calibration on 22-MAY-2016 17:45

Field Check on 07-JUL-2016 13:57

Density Calibration

Base Calibration

	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Background	1148	1338		
Reference 1	49789	23977	59556	30836
Reference 2	20127	2423	24941	2541

Field Check at Base

1148.2 1337.6

Field Check

1146.2 1331.8

PE Calibration

Base Calibration

	WS	Measured	Ratio	Calibrated
		WH		Ratio
Background	211	1025		
Reference 1	20854	49612	0.425	0.371
Reference 2	5819	19993	0.296	0.272

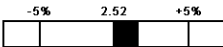
Field Check at Base

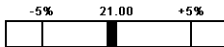
211.2 1025.1

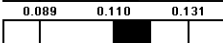
Field Check

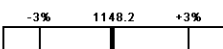
210.6 1022.8

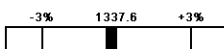
Photo Density Calibration Tolerances MPD-B 104

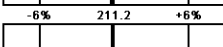
Near Density Ratio 2.56 

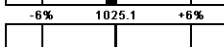
Far Density Ratio 20.85 

PE Calibration 0.121 

Near Den. Field Check 1146.2 

Far Den. Field Check 1331.8 

PE WS Field Check 210.6 

PE WH Field Check 1022.8 

Density Constants MPD-B 104

Last Edited on 07-JUL-2016,17:59

Density Source Id P50557B

Density Source ID	1000070	
Nylon Calibrator Number	DNCE695	
Aluminium Calibrator Number	DACD698	
Density Shoe Profile	8 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.10	gm/cc
Mud Density Z/A Multiplier	1.11	
Mud Filtrate Density	1.00	gm/cc
Dry Hole Mud Filtrate Density	1.00	gm/cc
DNCT	0.00	gm/cc
CRCT	0.00	gm/cc
Density Z/A Correction	Hybrid	

Matrix Density (gm/cc)	Depth (ft)
2.71	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

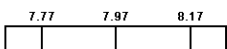
Caliper Calibration MPD-B 104

Base Calibration on 22-MAY-2016 17:26
Field Calibration on 07-JUL-2016 13:58

Base Calibration	Measured	Calibrator Size (in)
Reading No		
1	13598	3.99
2	22432	5.98
3	31029	7.97
4	39246	9.86
5	48339	11.92
6	N/A	N/A

Field Calibration	Measured Caliper (in)	Actual Caliper (in)
	7.97	7.97

Caliper Calibration Tolerances MPD-B 104

Short Arm Field Cal. 7.97  in

DOWNHOLE EQUIPMENT

C:\Minimus 15.03.5939\Logs\Red Oak ST-SI Unit #1-30\Red Oak ST-SI Unit #1-30 Repeat.dta

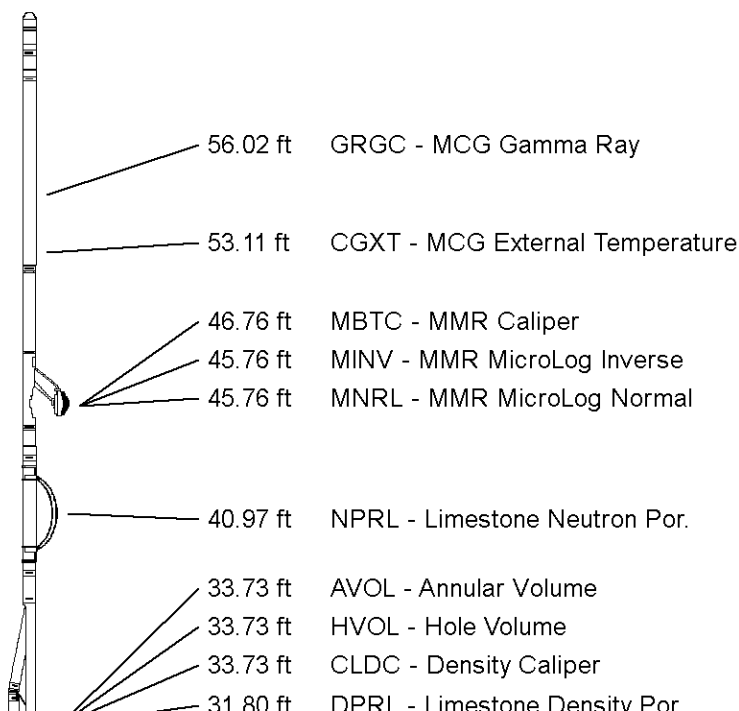
Cablehead, 11 pin
CBH-CA 155 LG: 2.40 ft WT: 24.3 lb OD: 2.244 in

Compact Comms Gamma
MCG-C 84 LG: 8.70 ft WT: 63.9 lb OD: 2.244 in

Compact Micro-Resistivity
MMR-C.A 247 LG: 8.59 ft WT: 81.6 lb OD: 4.882 in

Compact Neutron
MDN-A.B 66 LG: 5.04 ft WT: 50.7 lb OD: 2.244 in

Compact Density/Caliper
MPD-B 104 LG: 9.59 ft WT: 90.4 lb OD: 2.449 in

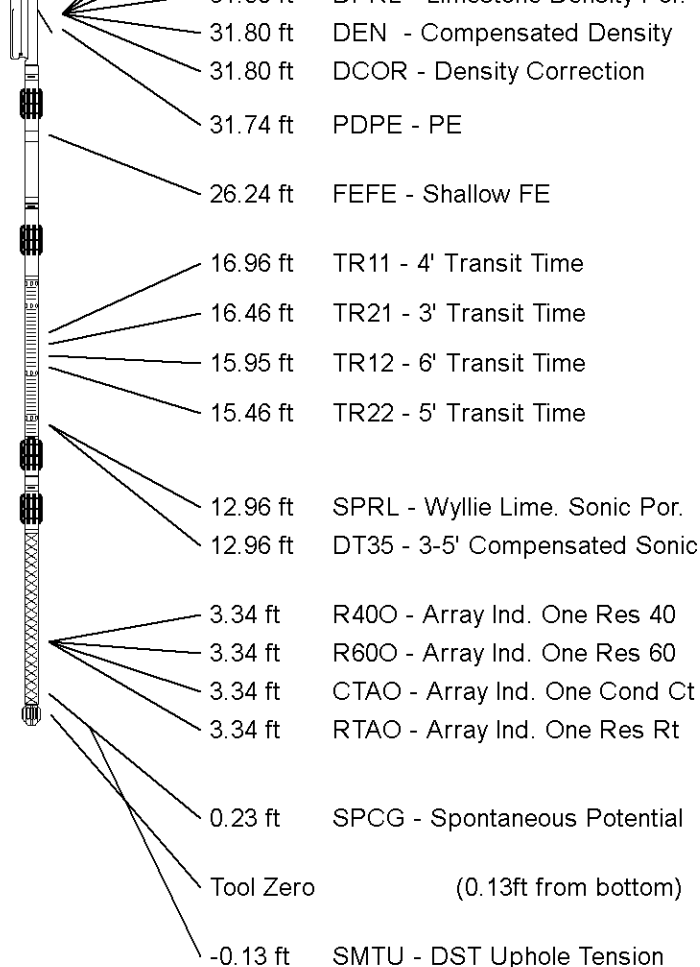


Compact Focussed Electric
MFE-B.J 352 LG: 6.05 ft WT: 48.5 lb OD: 2.244 in

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

Compact Induction
MAI-A.A 111 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	RED OAK ENERGY, INC.
WELL	ST-SI UNIT #1-30
FIELD	WILDCAT
PROVINCE/COUNTY	SCOTT
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	3088.00	feet	First Reading	4911.00	feet
Elevation Drill Floor	3087.00	feet	Depth Driller	4929.00	feet
Elevation Ground Level	3083.00	feet	Depth Logger	4928.00	feet



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WITH INTEGRATED TRANSIT TIME