

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

COMPANY										CHOLLA PRODUCTION, LLC.									
WELL										R&R DUMLER #1-21									
FIELD										WILDCAT									
PROVINCE/COUNTY										HODGEMAN									
COUNTRY/STATE										U.S.A. / KANSAS									
LOCATION										1110' FSL & 655' FWL									
SEC 21		TWP 21S		RGE 26W		Other Services				MPD/MDN									
Latitude						MAI/MFE													
Longitude						MML													
API Number		15-083-21939																	
Permanent Datum GL, Elevation 2469 feet																			
Log Measured From KB, 5.00 feet above Permanent Datum																			
Drilling Measured From KB																			
Date		25-JUL-2017								Elevations:		feet							
Run Number		ONE								KB		2474.00							
Service Order		4558-188222573								DF		2472.00							
Depth Driller		4920.00				feet				GL		2469.00							
Depth Logger		4919.00				feet													
First Reading		4906.00				feet													
Last Reading		261.00				feet													
Casing Driller		261.00				feet													
Casing Logger		261.00				feet													
Bit Size		7.875				inches													
Hole Fluid Type		CHEMICAL																	
Density / Viscosity		9.50		lb/USg		48.00		CP											
PH / Fluid Loss		10.50		8.00		ml/30Min													
Sample Source		FLOWLINE																	
Rm @ Measured Temp		0.77 @ 75.0				ohm-m													
Rmf @ Measured Temp		0.62 @ 75.0				ohm-m													
Rmc @ Measured Temp		0.92 @ 75.0				ohm-m													
Source Rmf / Rmc		CALC		CALC															
Rm @ BHT		0.49 @119.0		ohm-m															
Time Since Circulation		5 HOURS																	
Max Recorded Temp		119.00				deg F													
Equipment / Base		13096		LIB															
Recorded By		ADAM SILL																	
Witnessed By		CLAYTON ERICKSON																	

BOREHOLE RECORD

Last Edited: 25-JUL-2017 18:58

Bit Size inches	Depth From feet	Depth To feet
7.875	261.00	4920.00

CASING RECORD

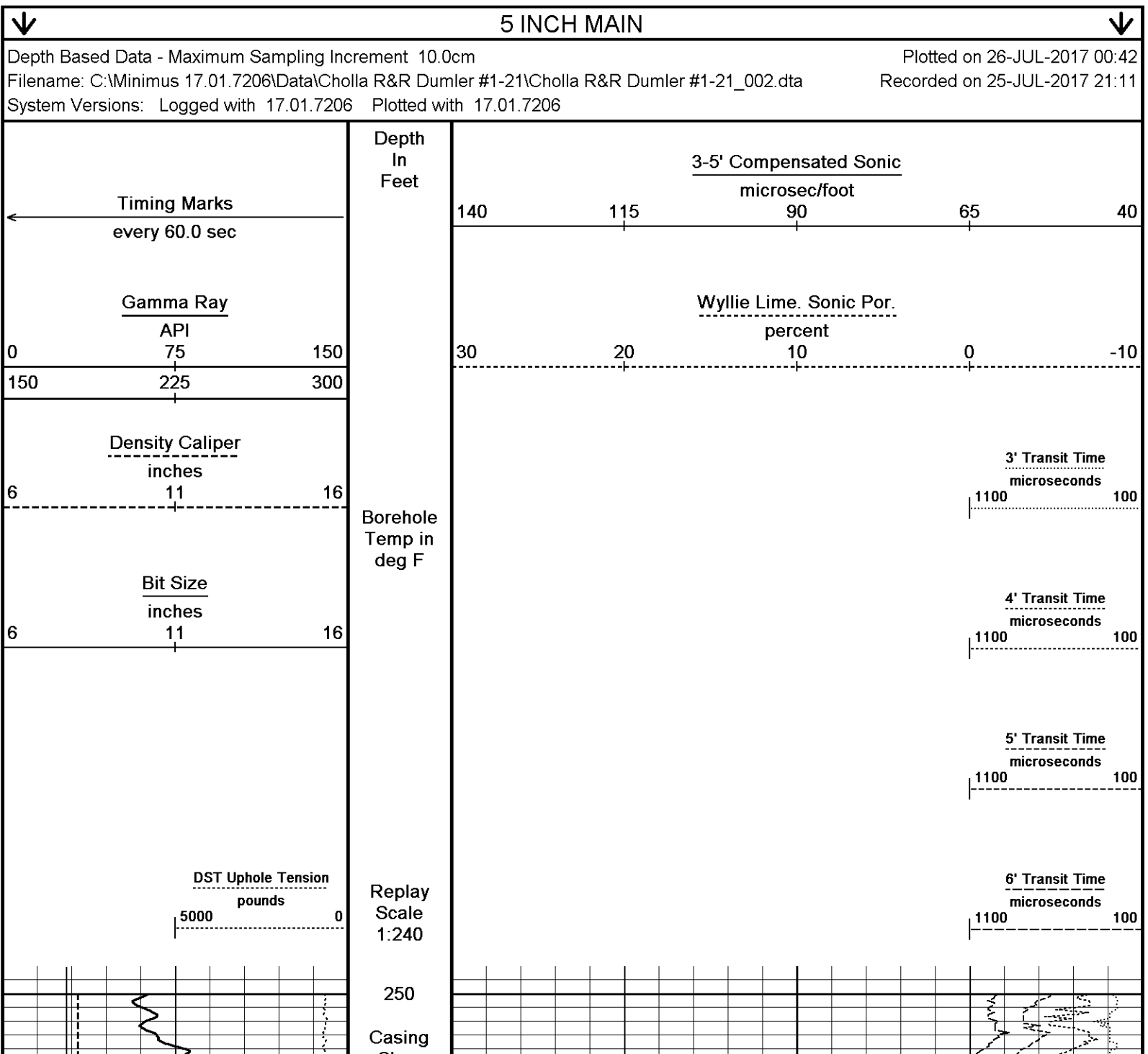
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	261.00	24.00

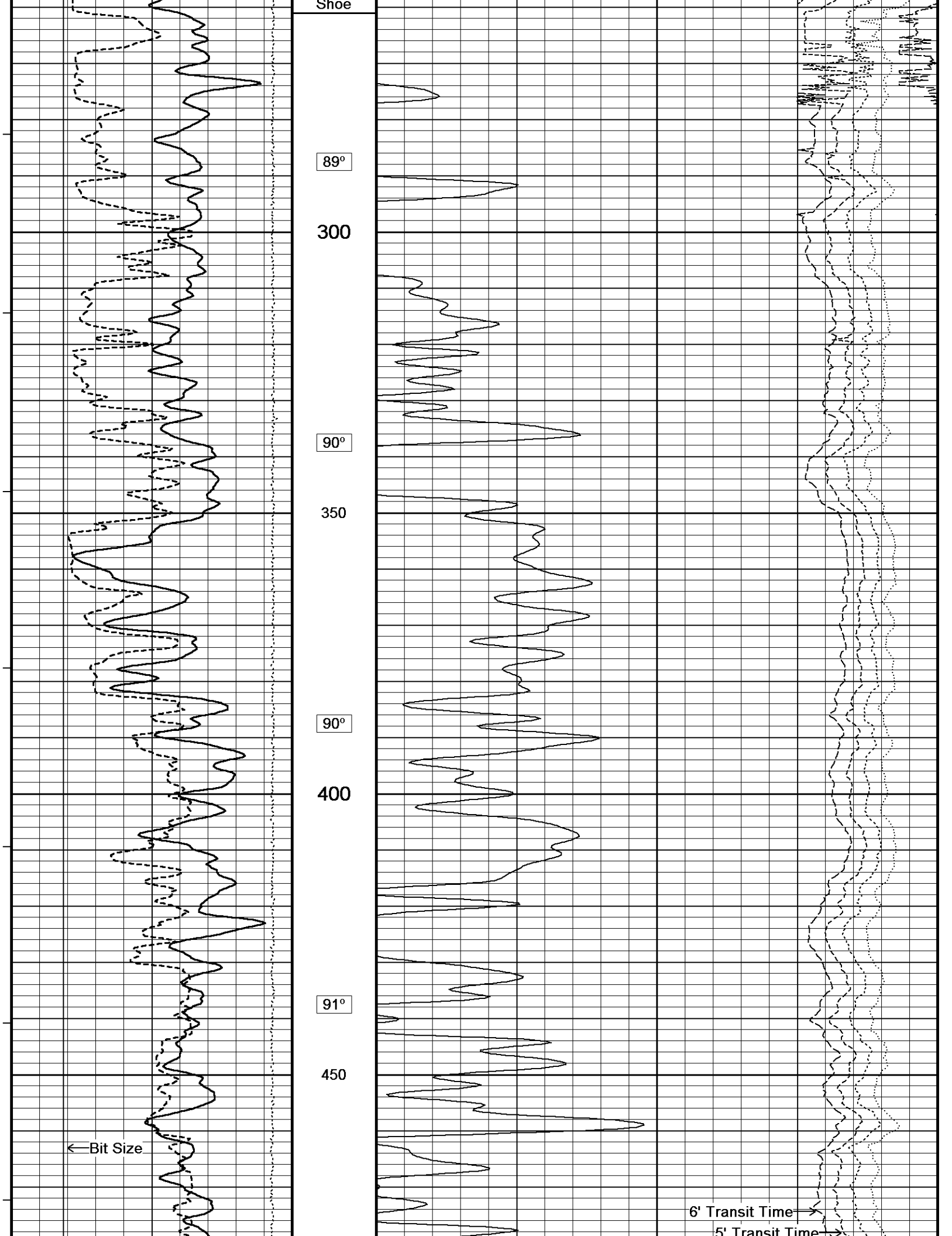
REMARKS

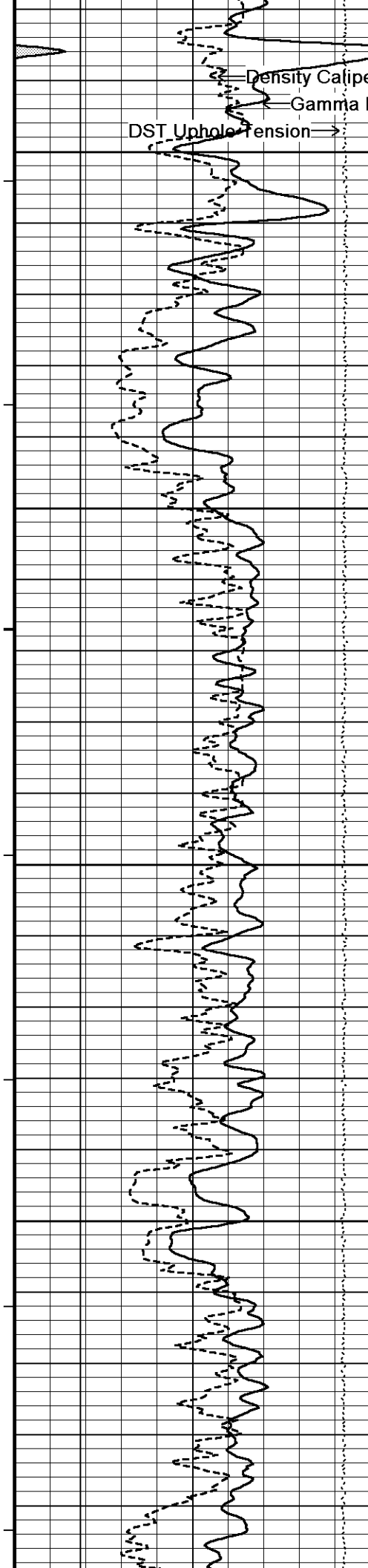
- SOFTWARE ISSUE: WLS 17.01.7206.
- RUN ONE: MCG, MML, MDN, MPD, MFE, MSS, MAI RUN IN COMBINATION.
 - HARDWARE: DUAL BOWSPRING USED ON MDN.
 - 0.5 INCH STANDOFF USED ON MFE.
 - TWO 0.5 INCH STANDOFFS USED ON MSS.
 - 0.5 INCH STANDOFF USED ON MAI.
- 2.71 G/CC LIMESTONE DENSITY MATRIX USED TO CALCULATE 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: 2110 CU.FT.
- ANNULAR HOLE VOLUME WITH 5.5 INCH PRODUCTION CASING FROM TD TO 3200 FEET: 348 CU.FT.

- RIG: WW DRILLING #8.
- ENGINEER: A. SILL.
- OPERATOR: B. TOVAR, C. BAKER.

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.







91°

500

91°

550

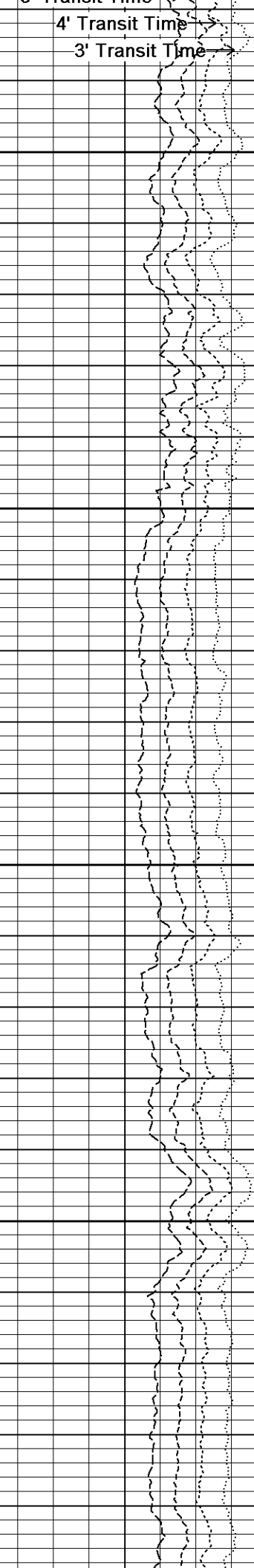
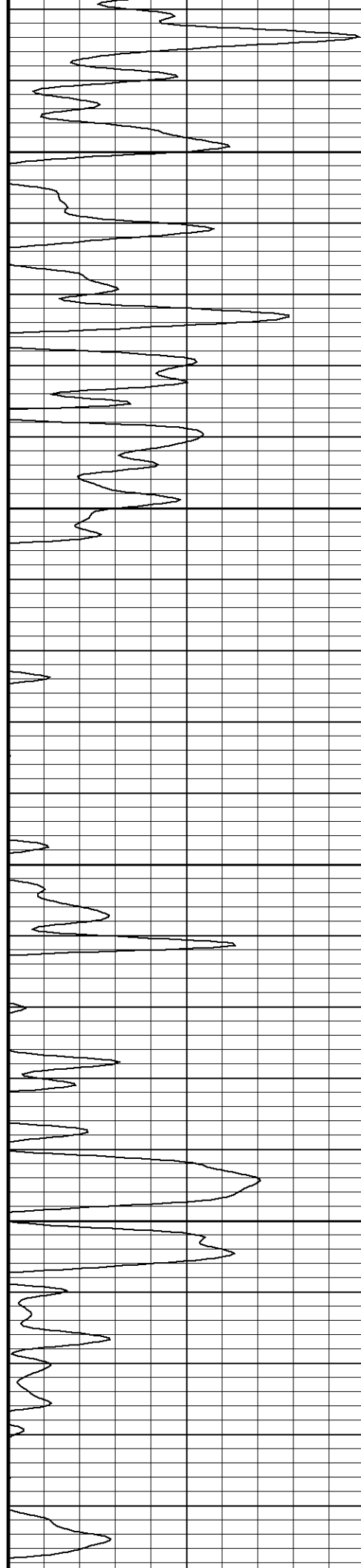
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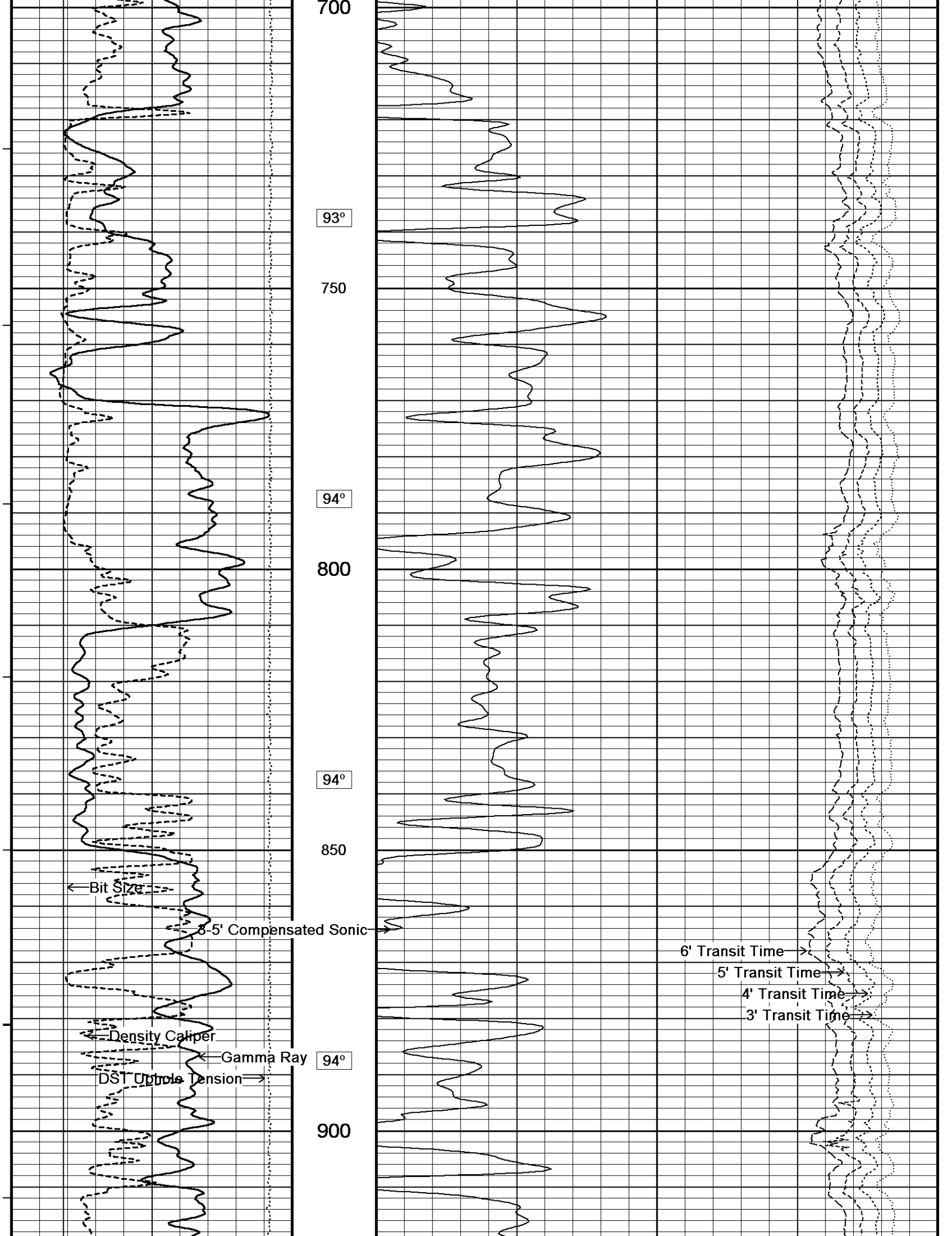
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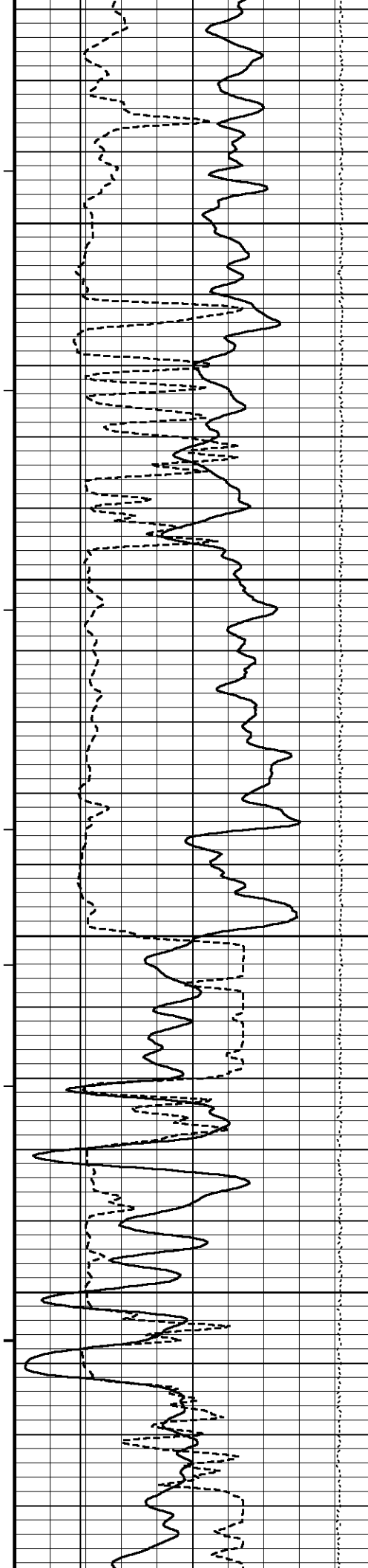
93°

650

93°







95°

950

95°

1000

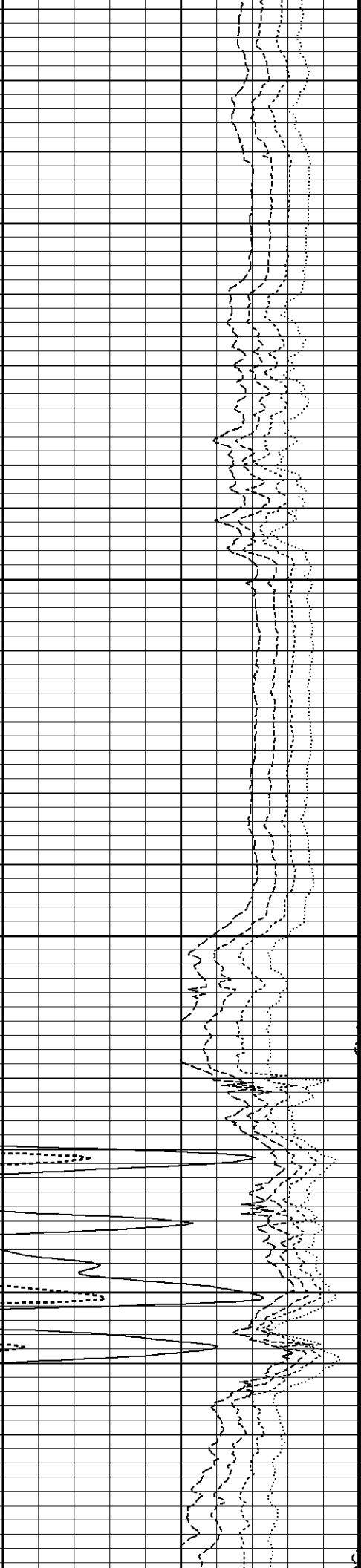
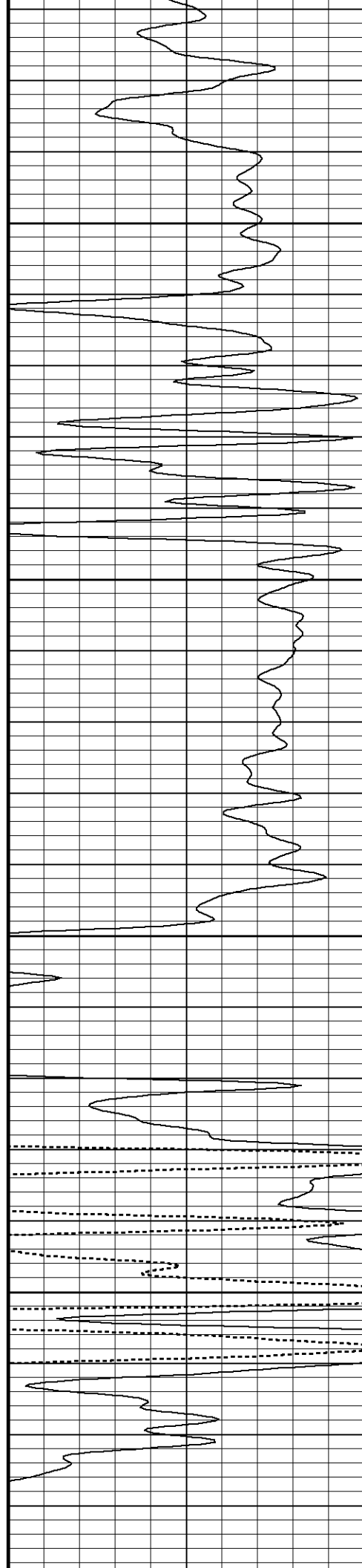
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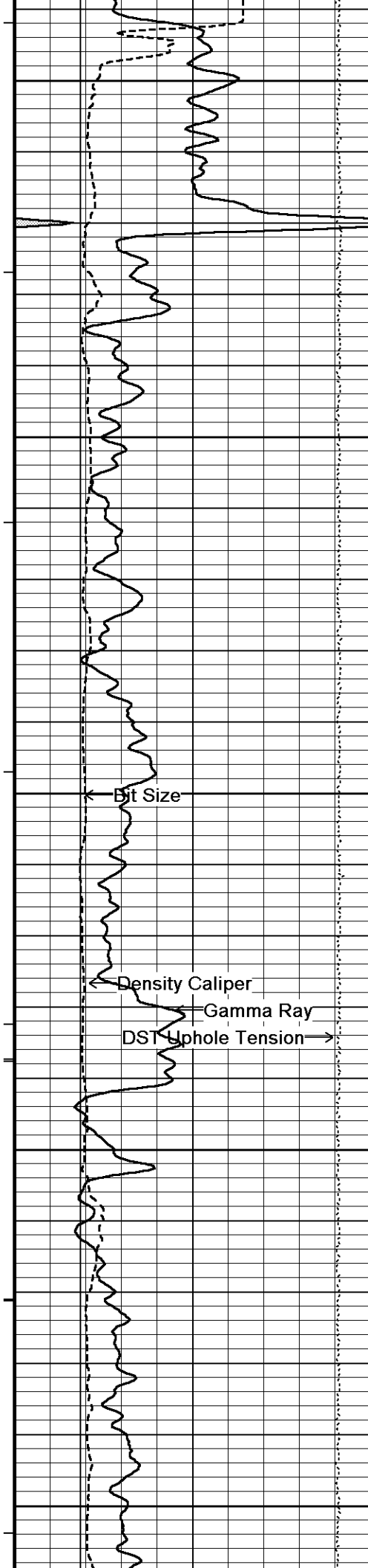
1050

95°

1100

95°





1150

94°

1200

94°

1250

3-5' Compensated Sonic

6' Transit Time

5' Transit Time

4' Transit Time

3' Transit Time

Density Caliper

Gamma Ray

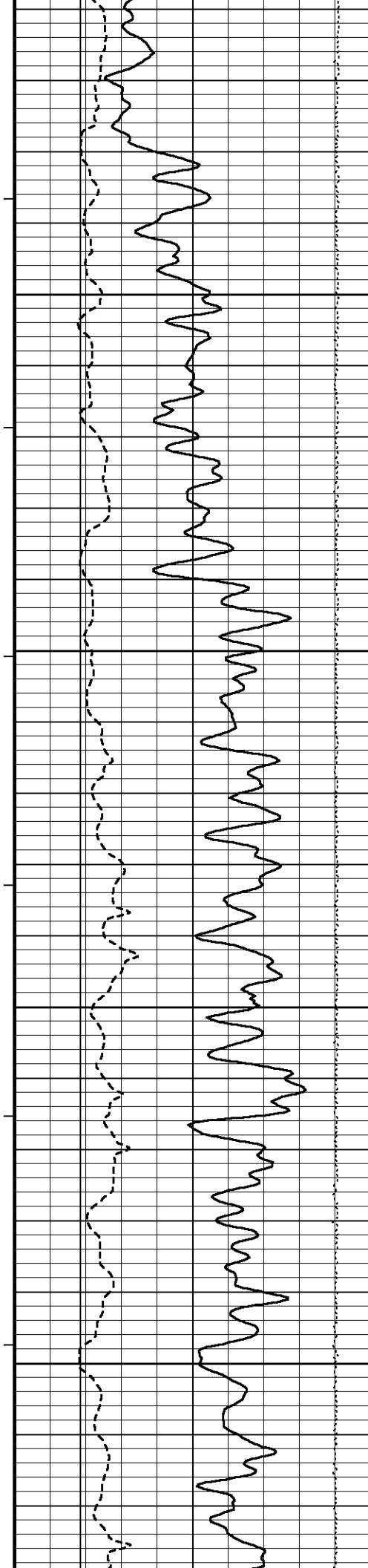
DST Uphole Tension

95°

1300

95°

1350



96°

1400

96°

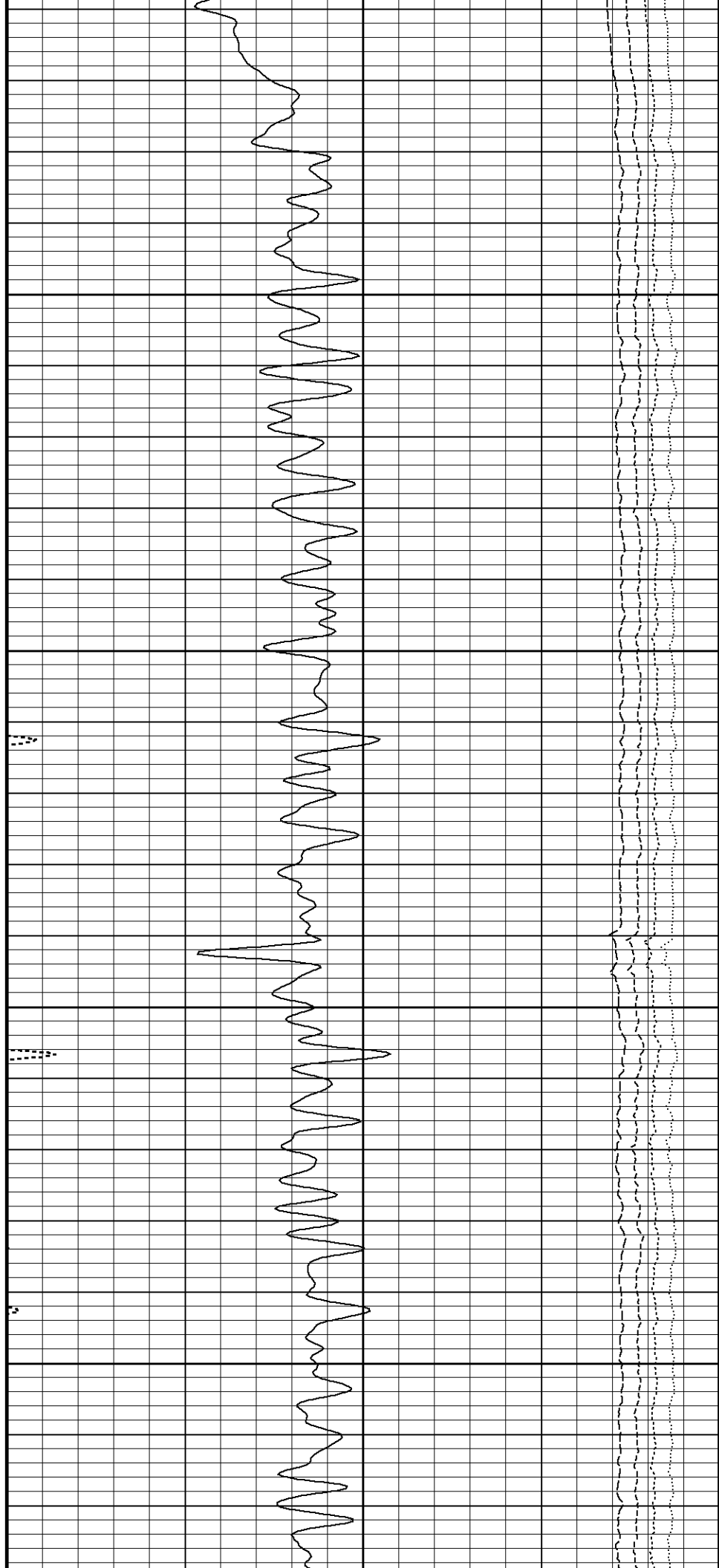
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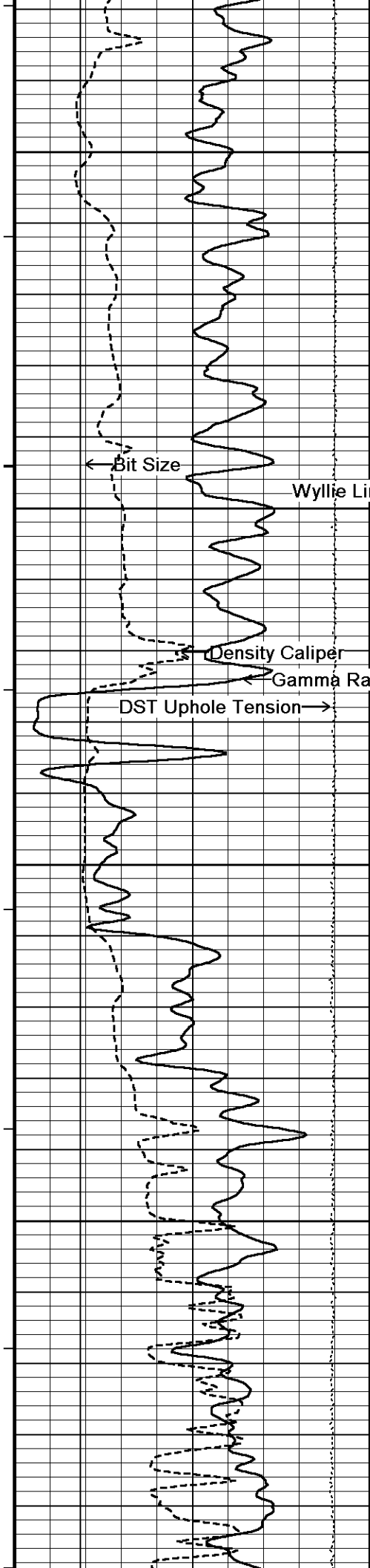
97°

1500

97°

1550





97°

1600

98°

Wyllie Lime. Sonic Ppr. →

1650

3-5' Compensated Sonic →

6' Transit Time →

5' Transit Time →

4' Transit Time →

3' Transit Time →

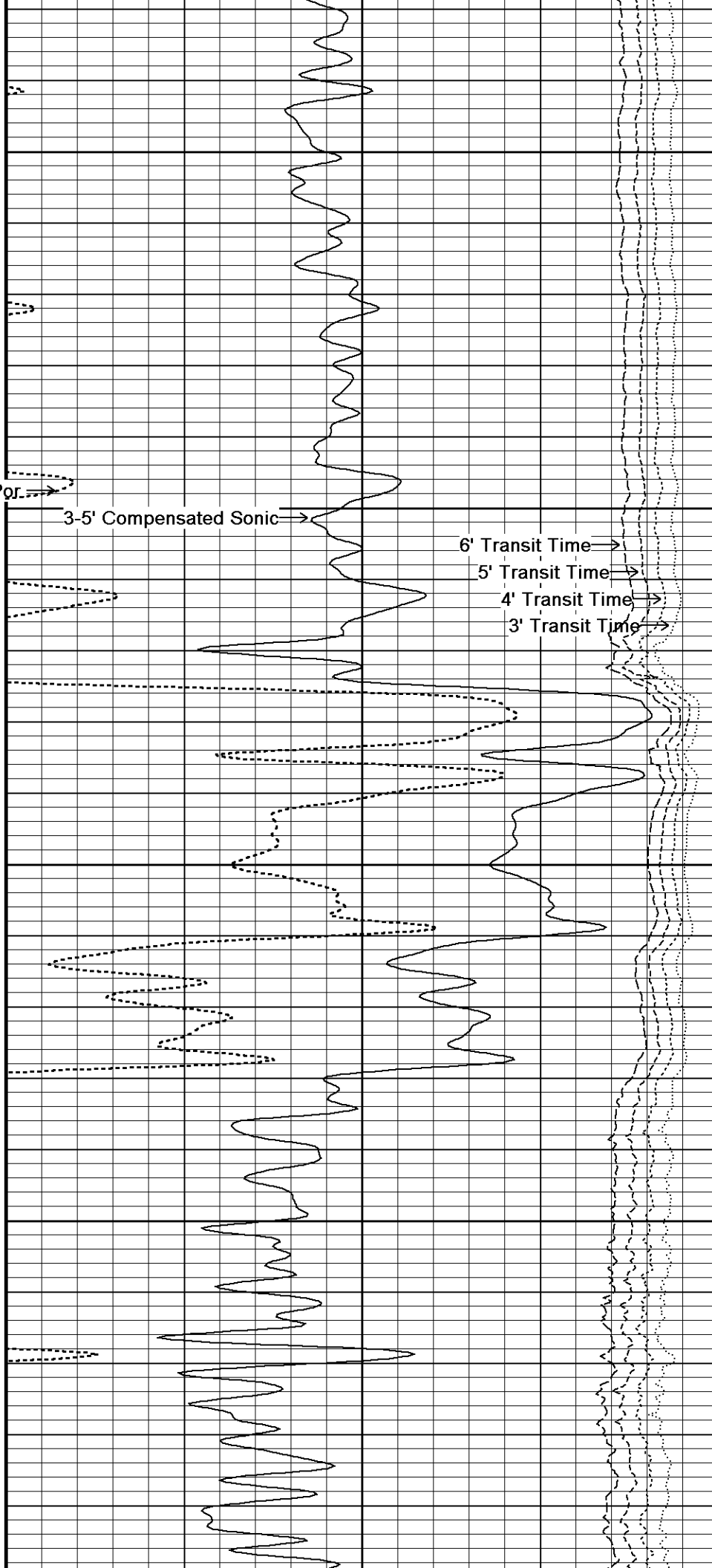
98°

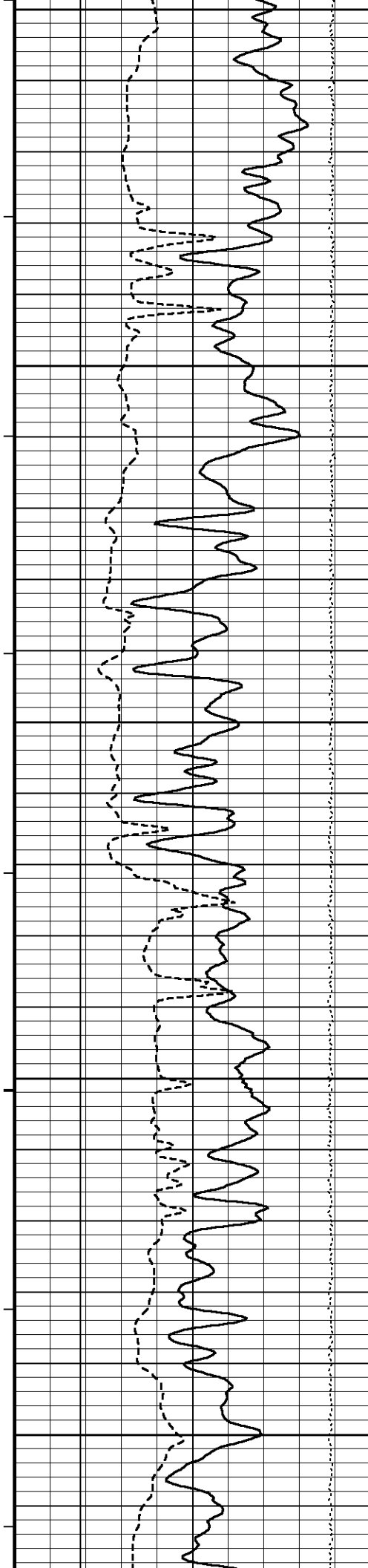
1700

98°

1750

99°





1800

99°

1850

99°

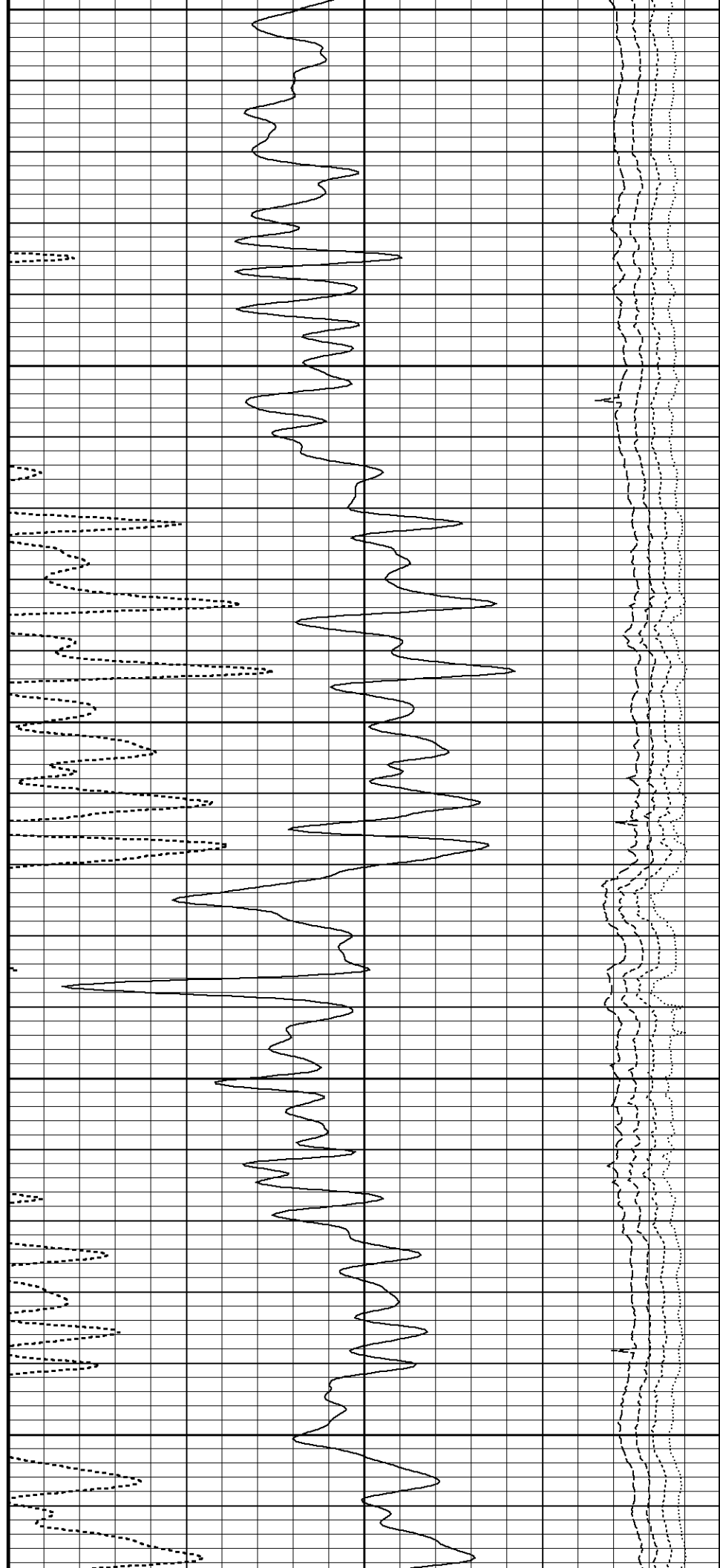
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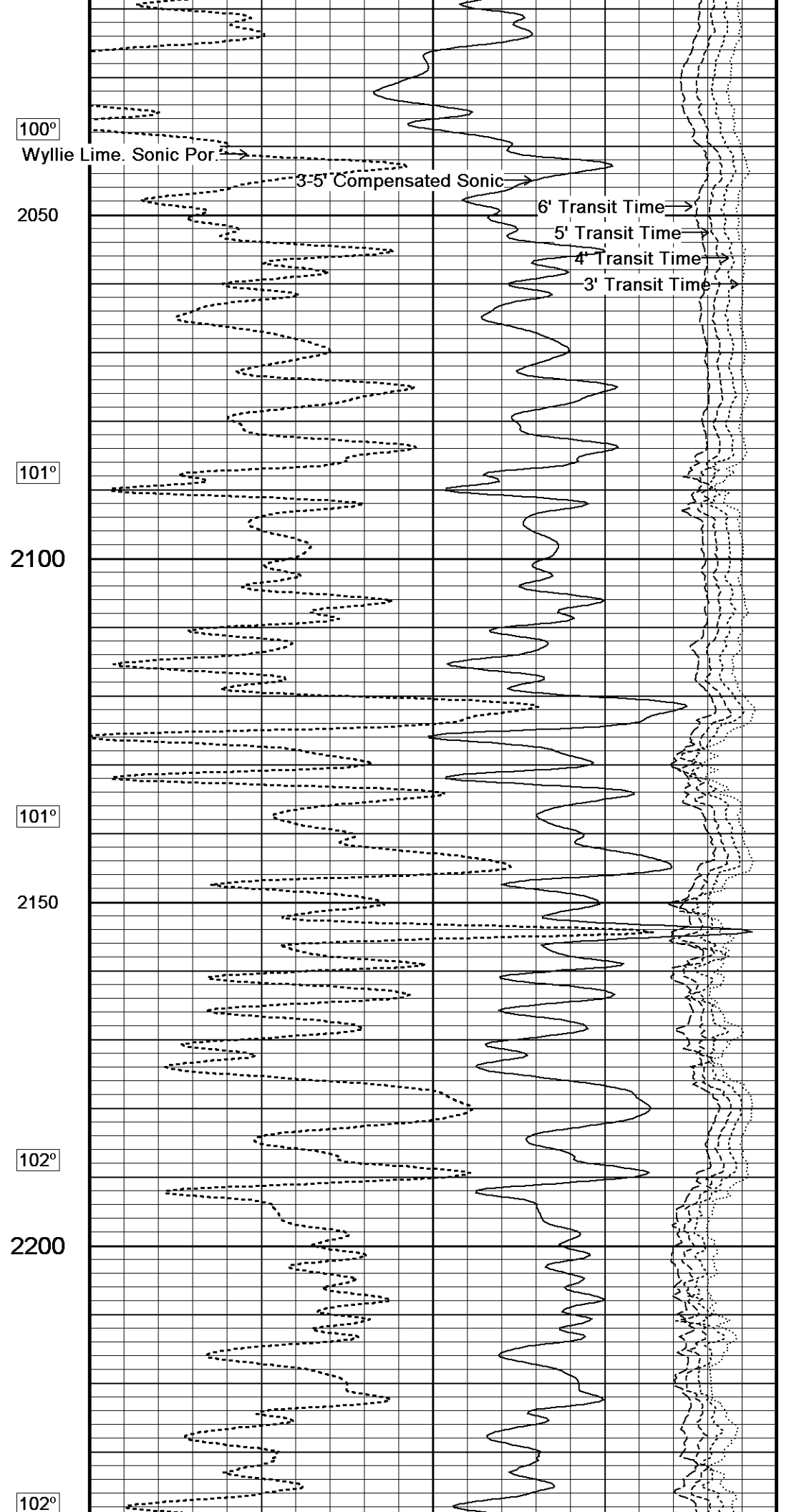
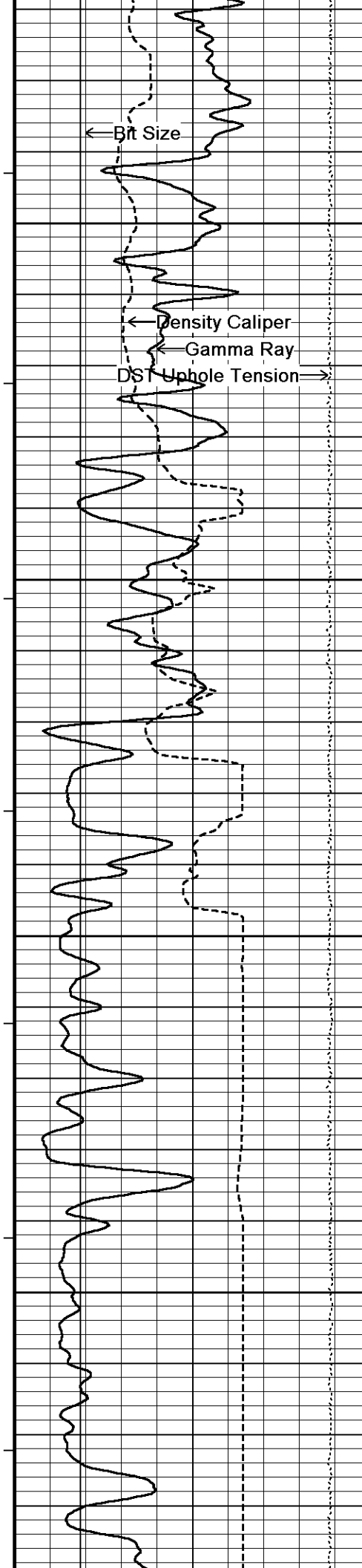
100°

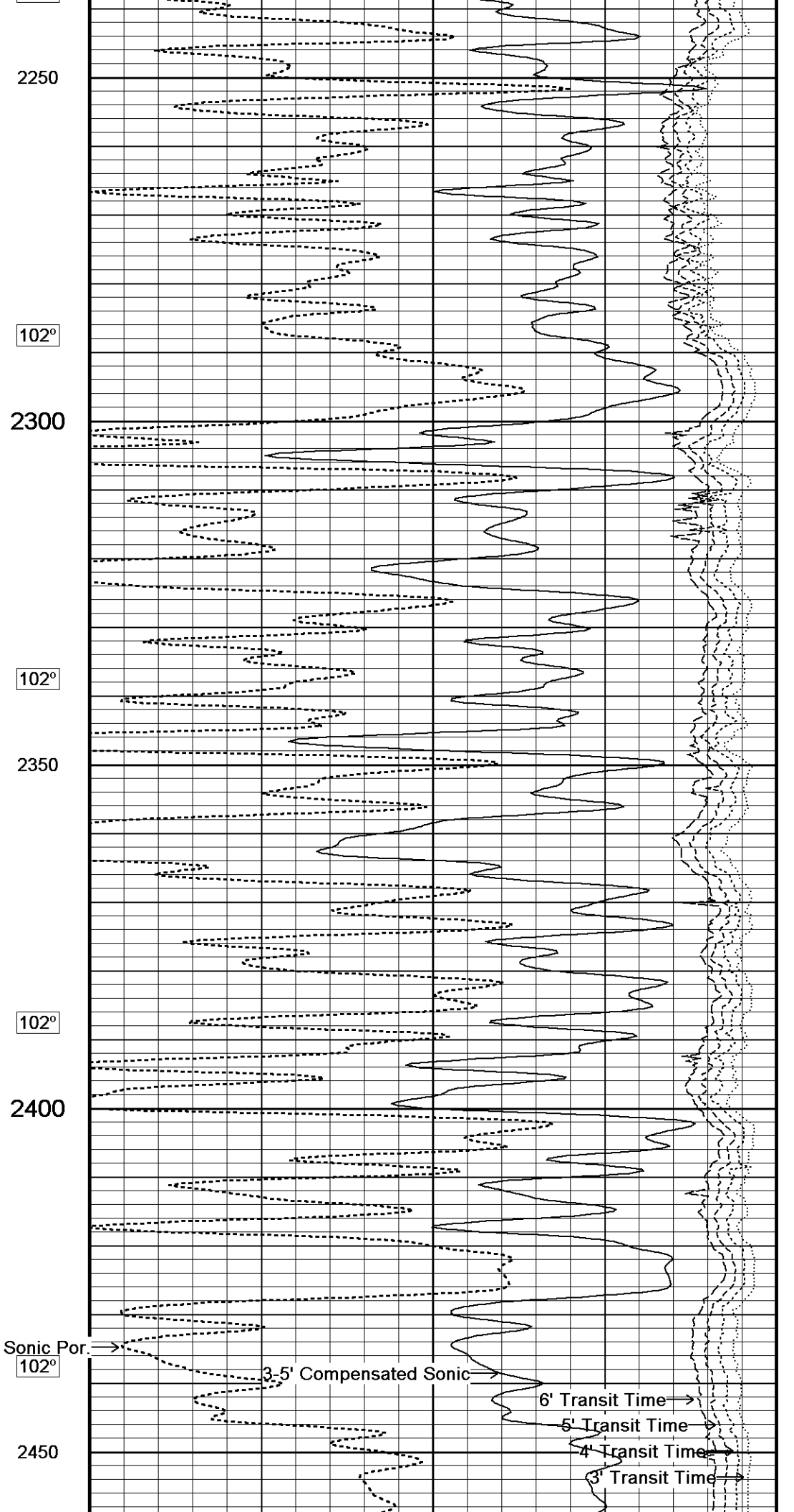
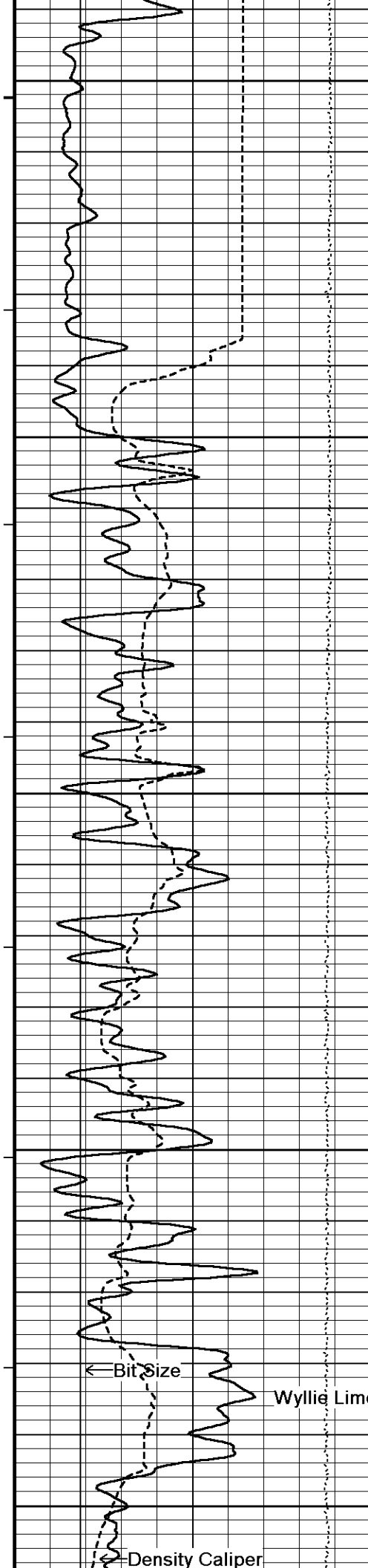
1950

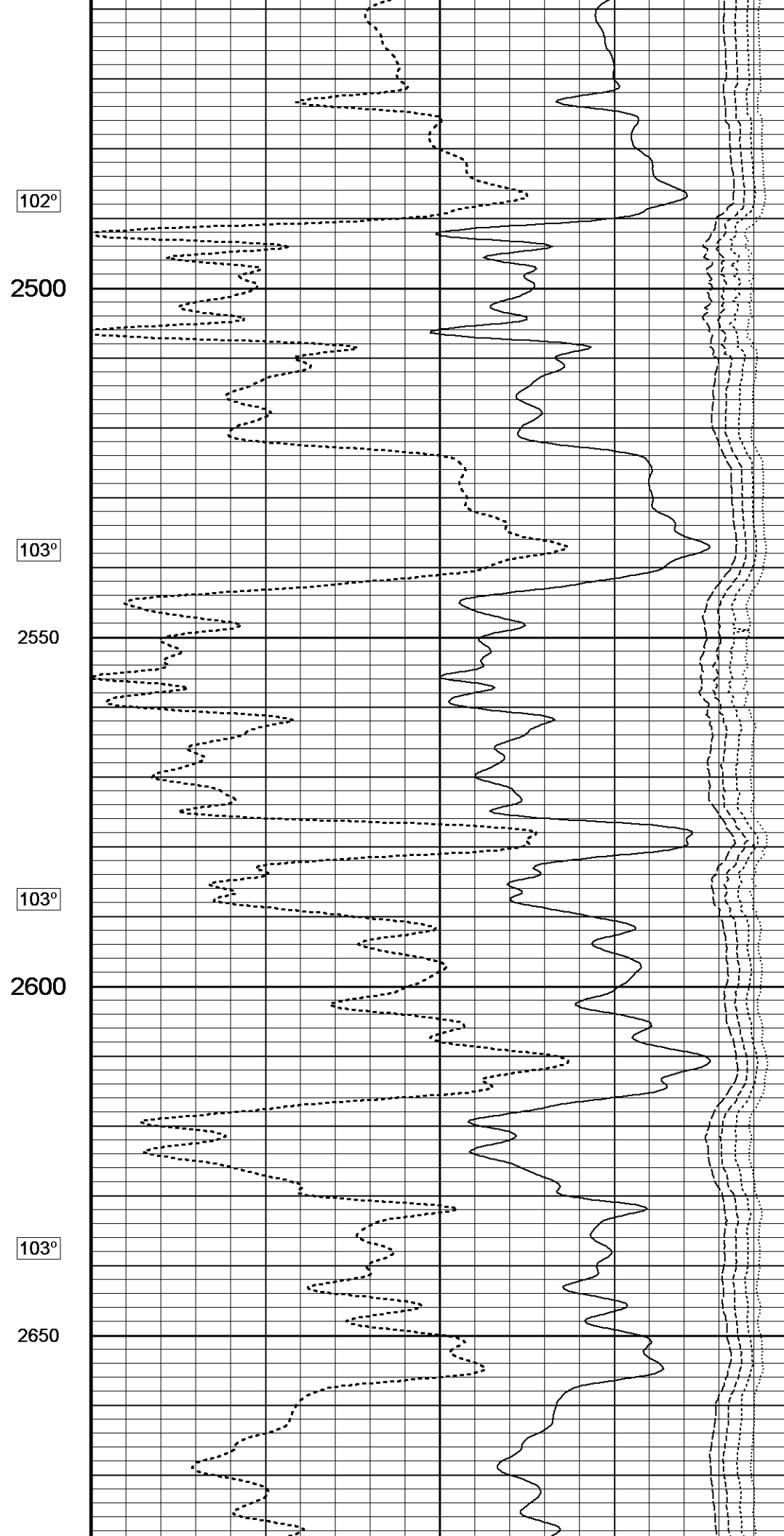
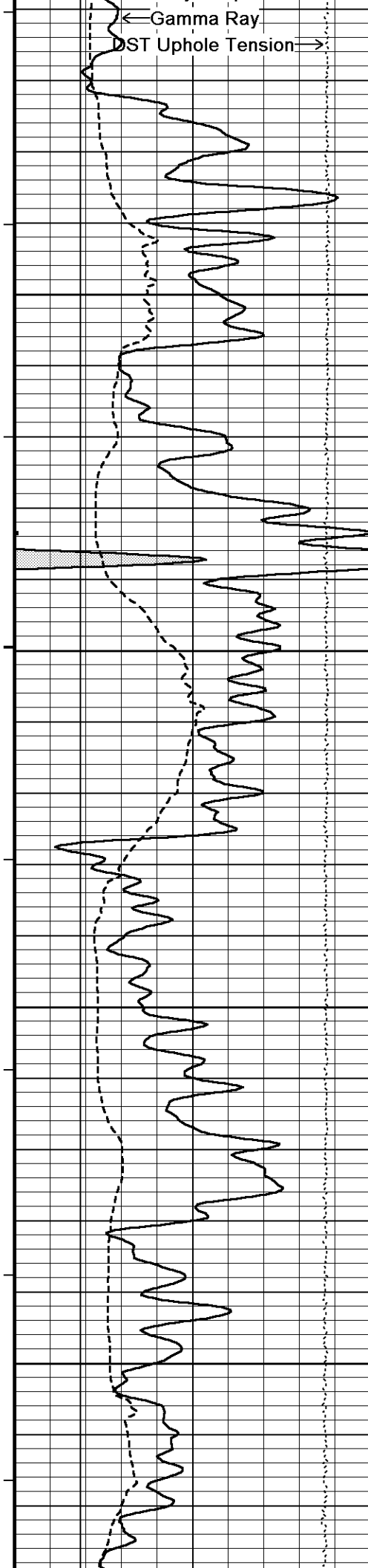
100°

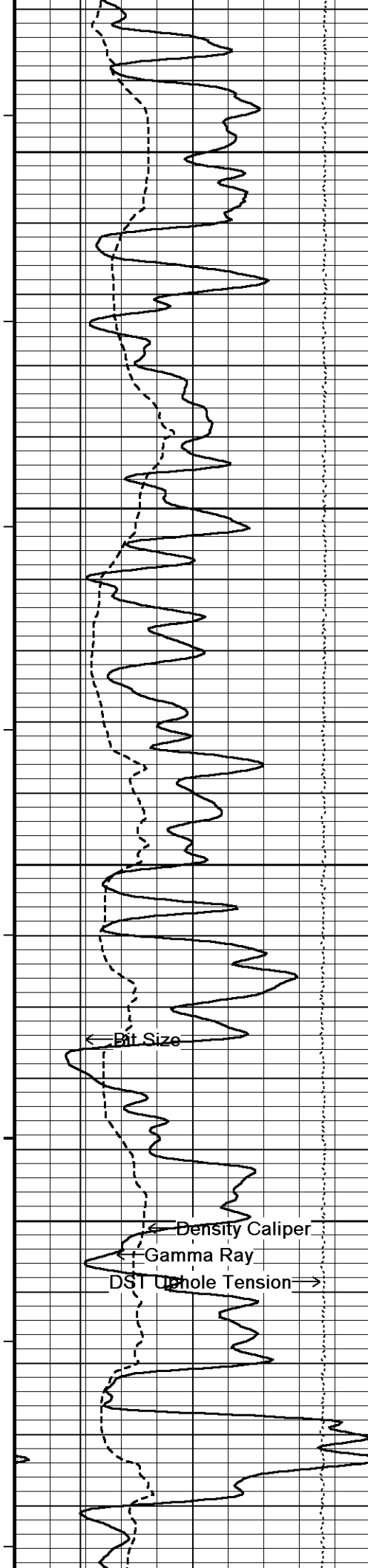
2000











104°

2700

104°

2750

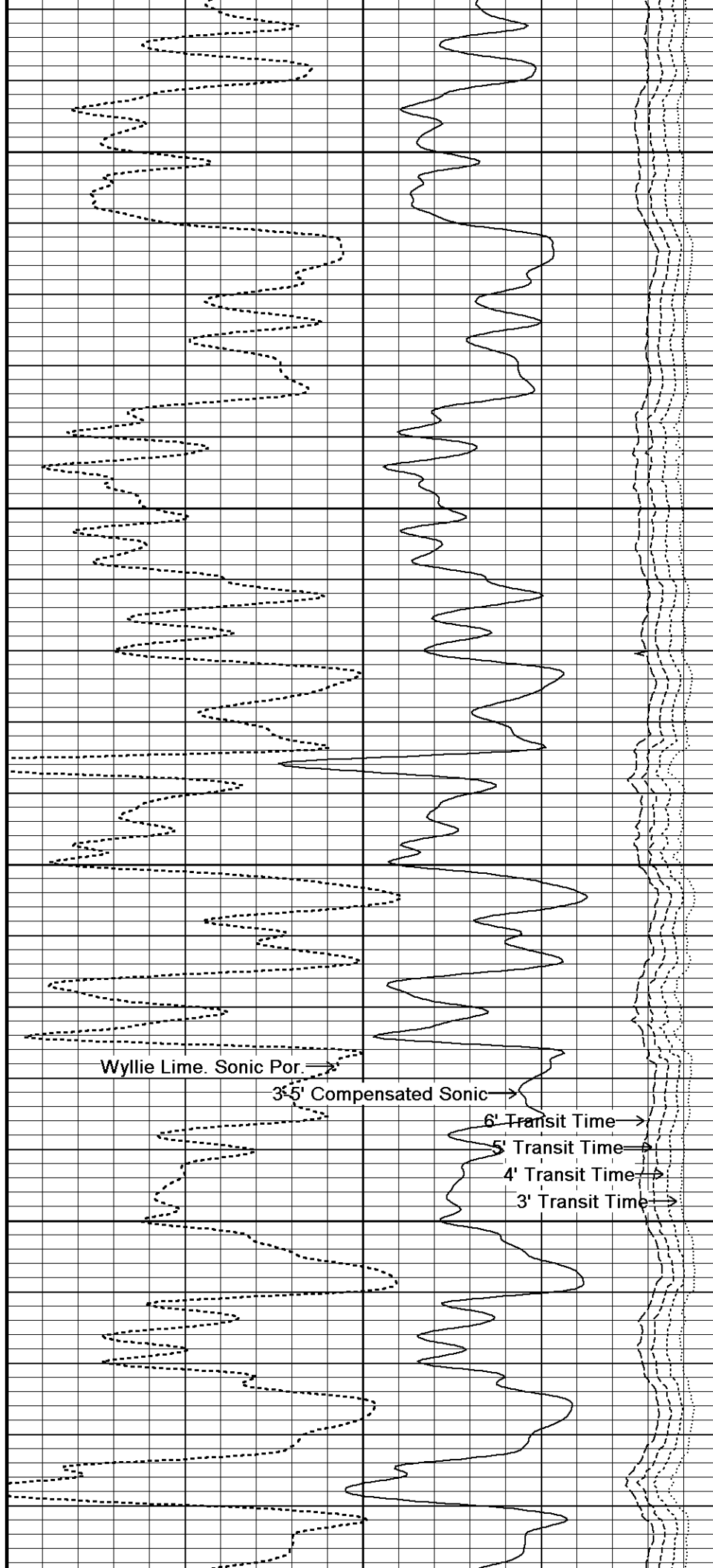
105°

2800

105°

2850

105°



Wyllie Lime. Sonic Por. →

3-5' Compensated Sonic →

6' Transit Time →

5' Transit Time →

4' Transit Time →

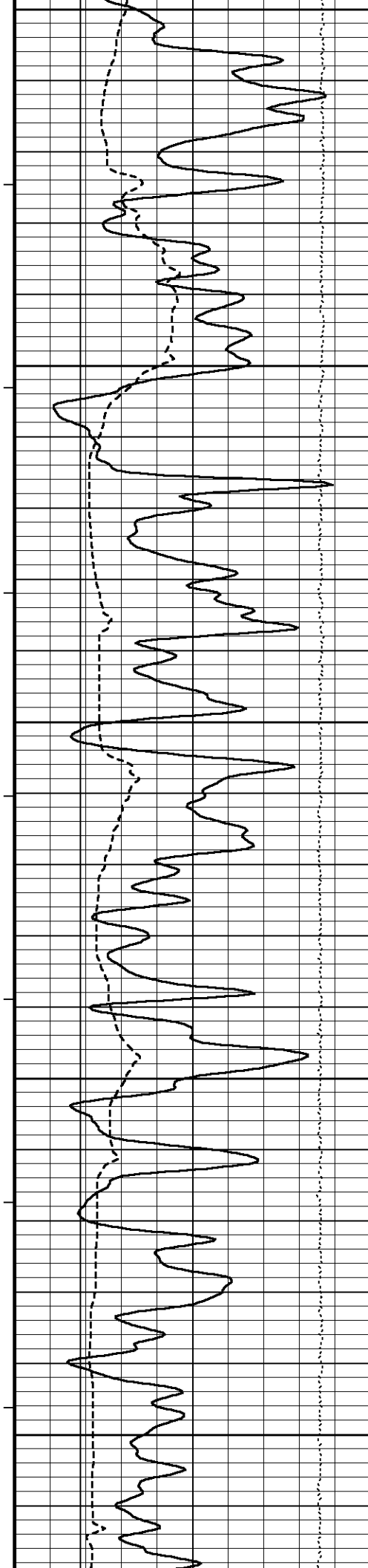
3' Transit Time →

← Bit Size

← Density Caliper

← Gamma Ray

DST Uphole Tension →



2900

106°

2950

106°

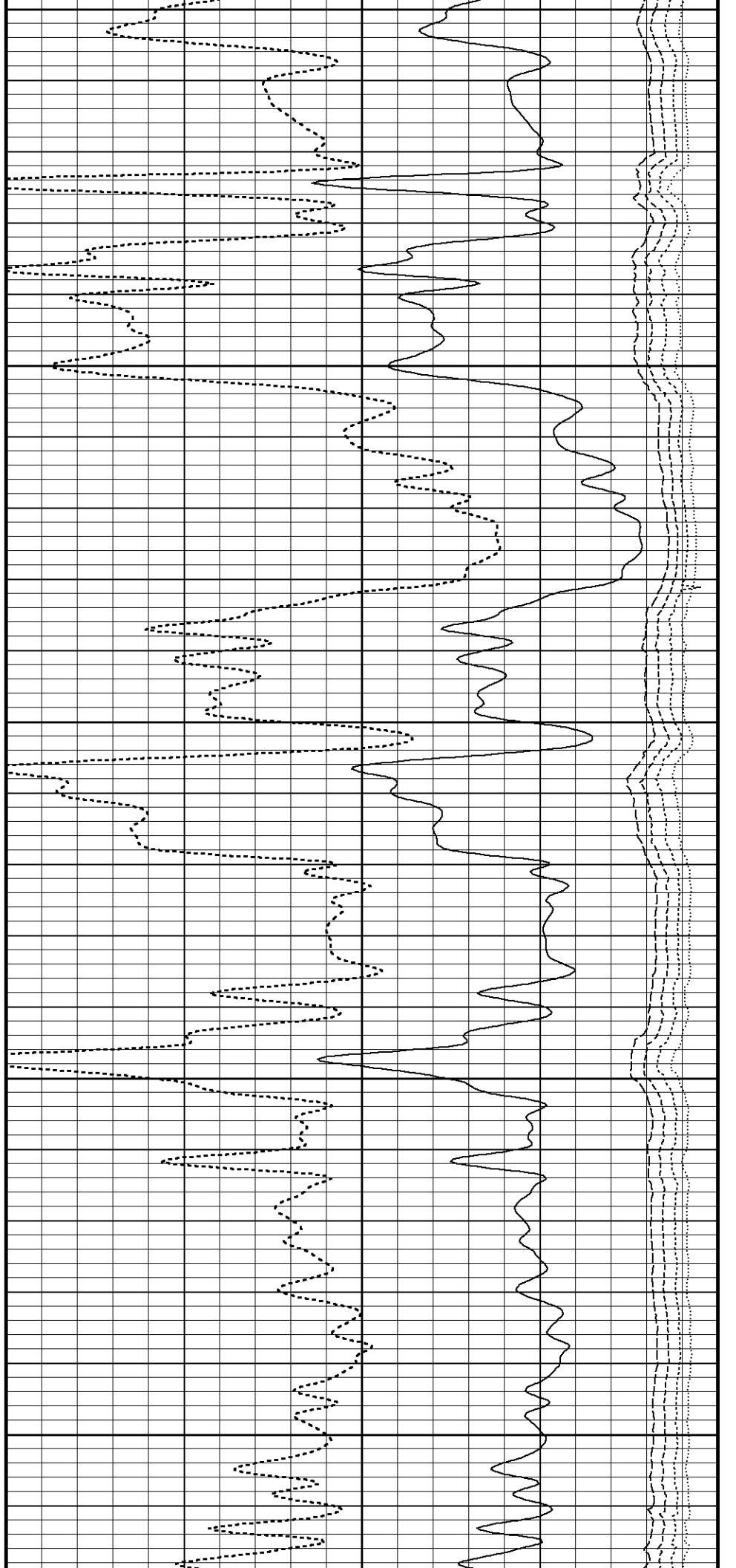
3000

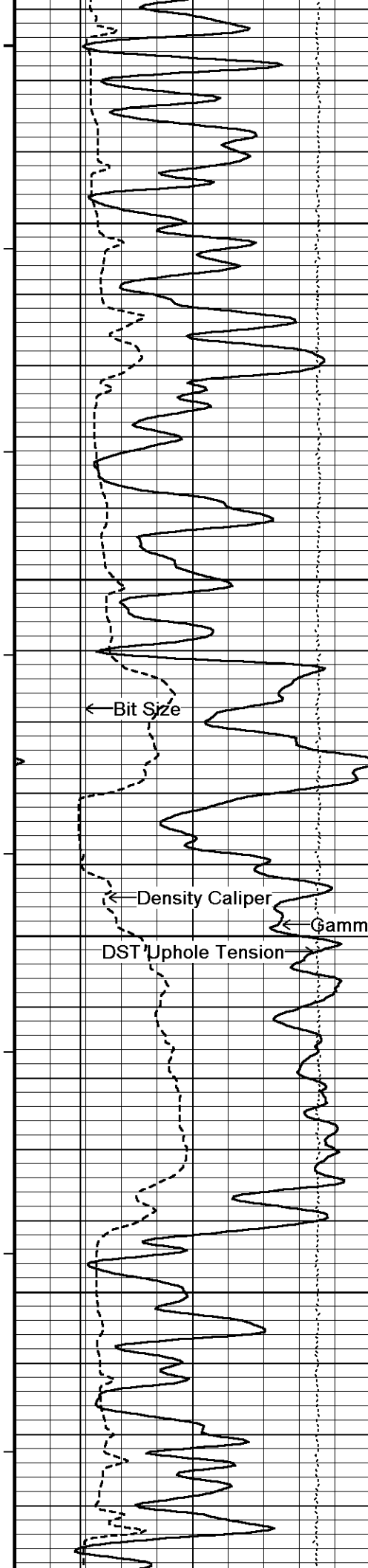
106°

3050

106°

3100





107°

3150

107°

3200

108°

3250

108°

3300

108°

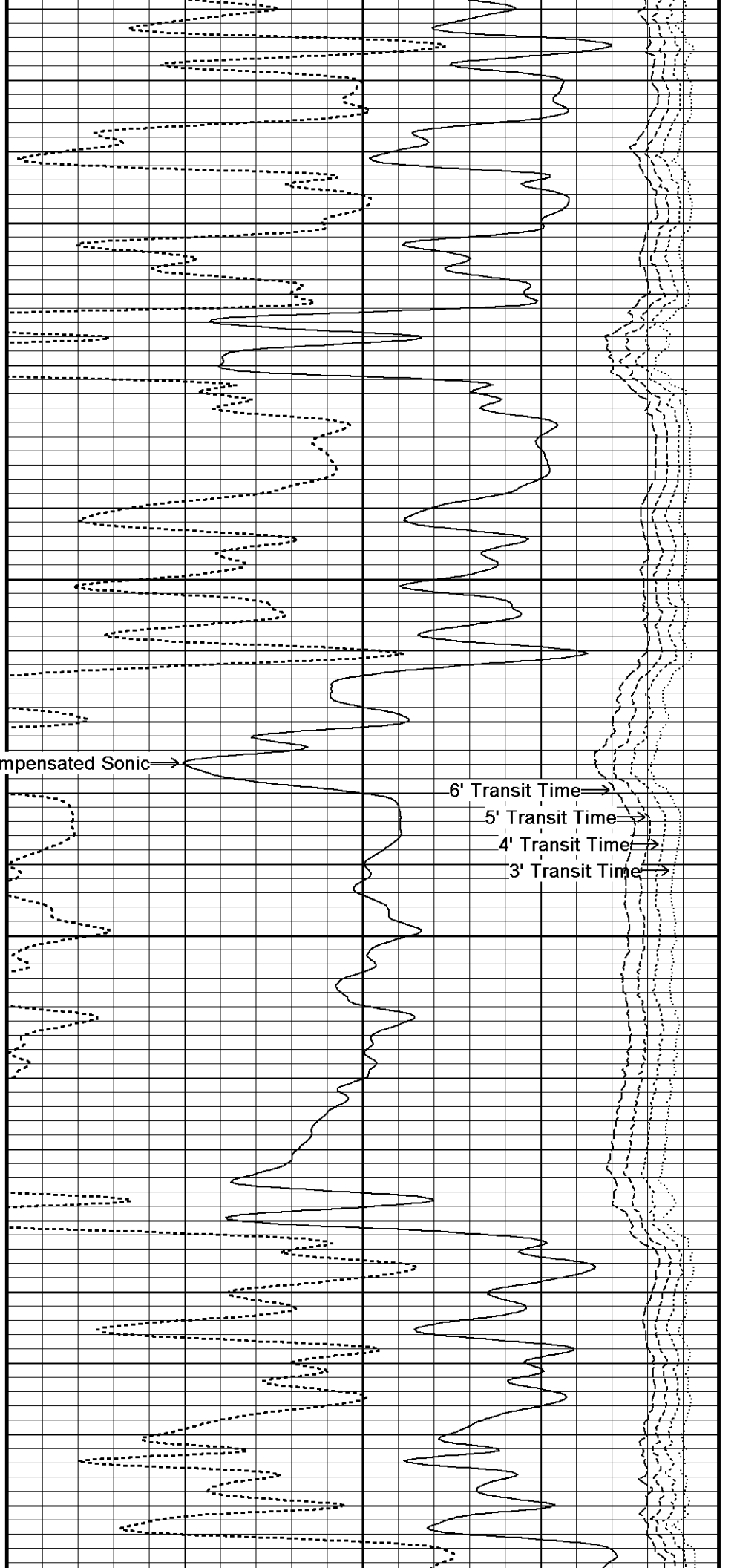
3-5' Compensated Sonic

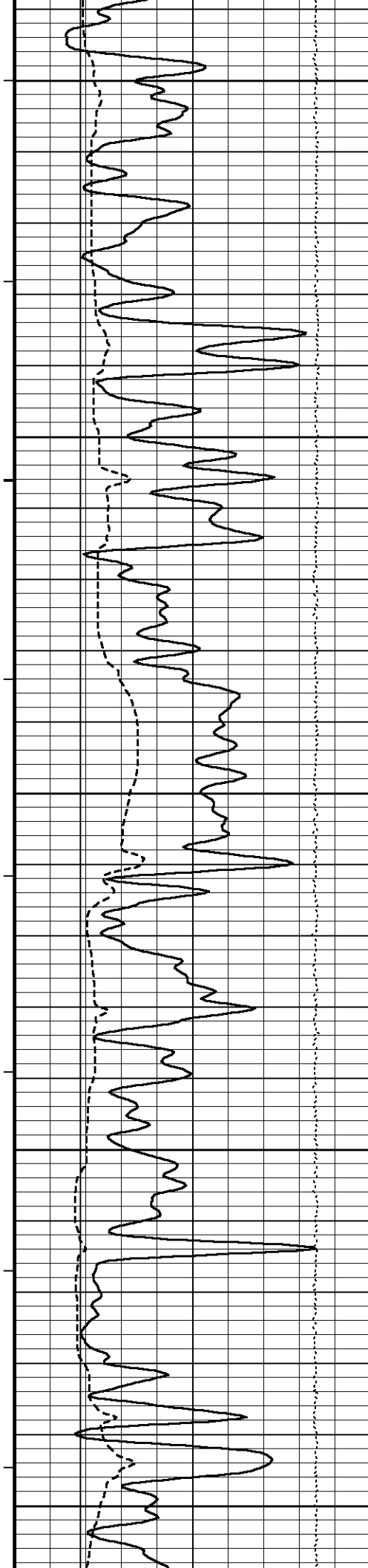
6' Transit Time

5' Transit Time

4' Transit Time

3' Transit Time





3350

109°

3400

109°

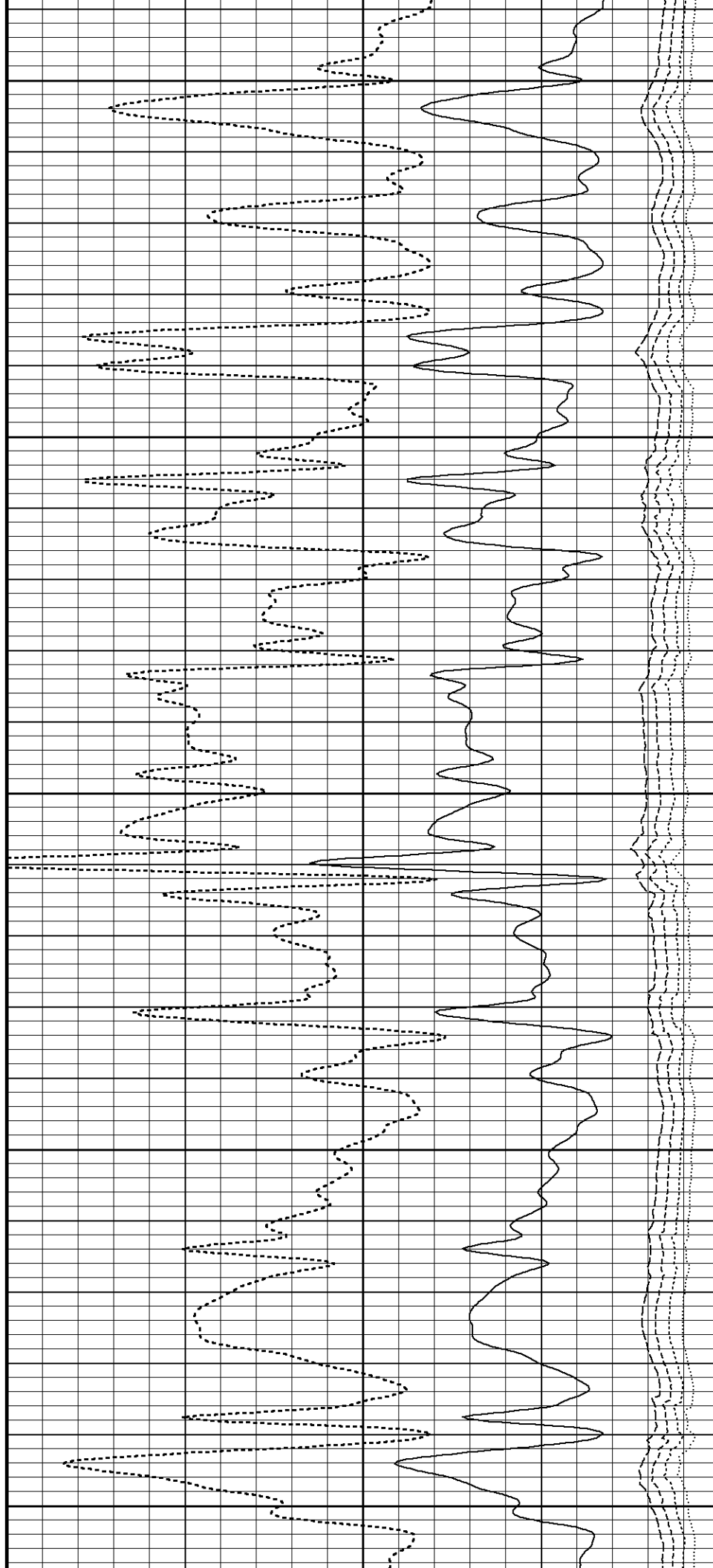
3450

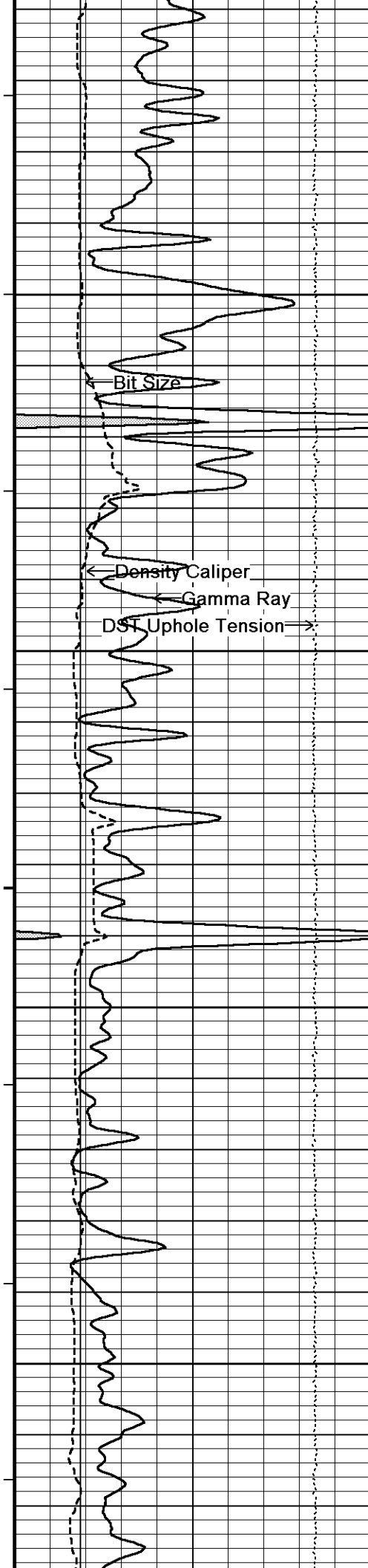
109°

3500

110°

3550





110°

3600

Bit Size

Wyllie Lime. Sonic Por. →

3.5' Compensated Sonic →

6' Transit Time →

5' Transit Time →

4' Transit Time →

3' Transit Time →

Density Caliper

Gamma Ray

DST Uphole Tension →

111°

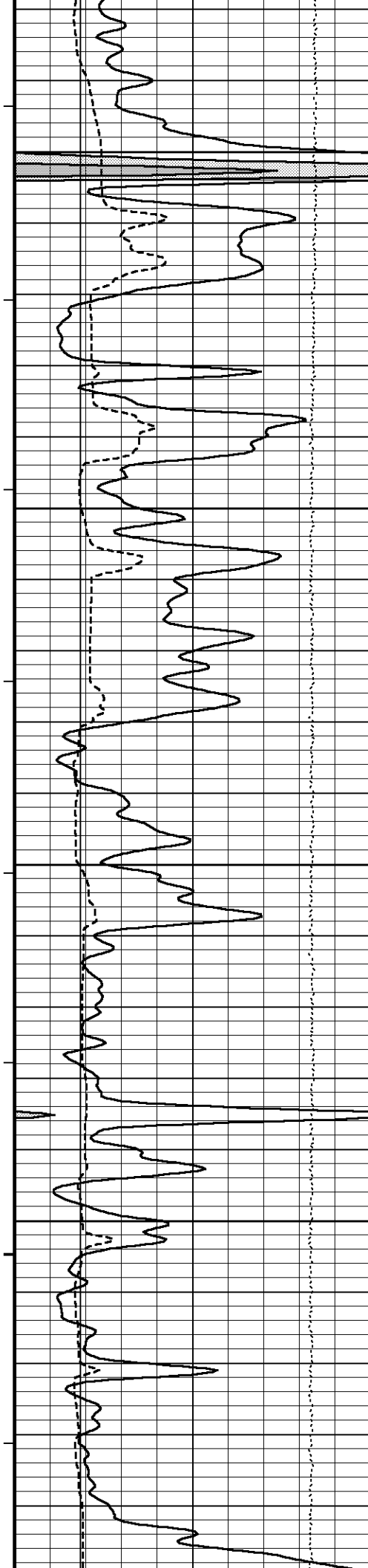
3650

111°

3700

111°

3750



111°

3800

112°

3850

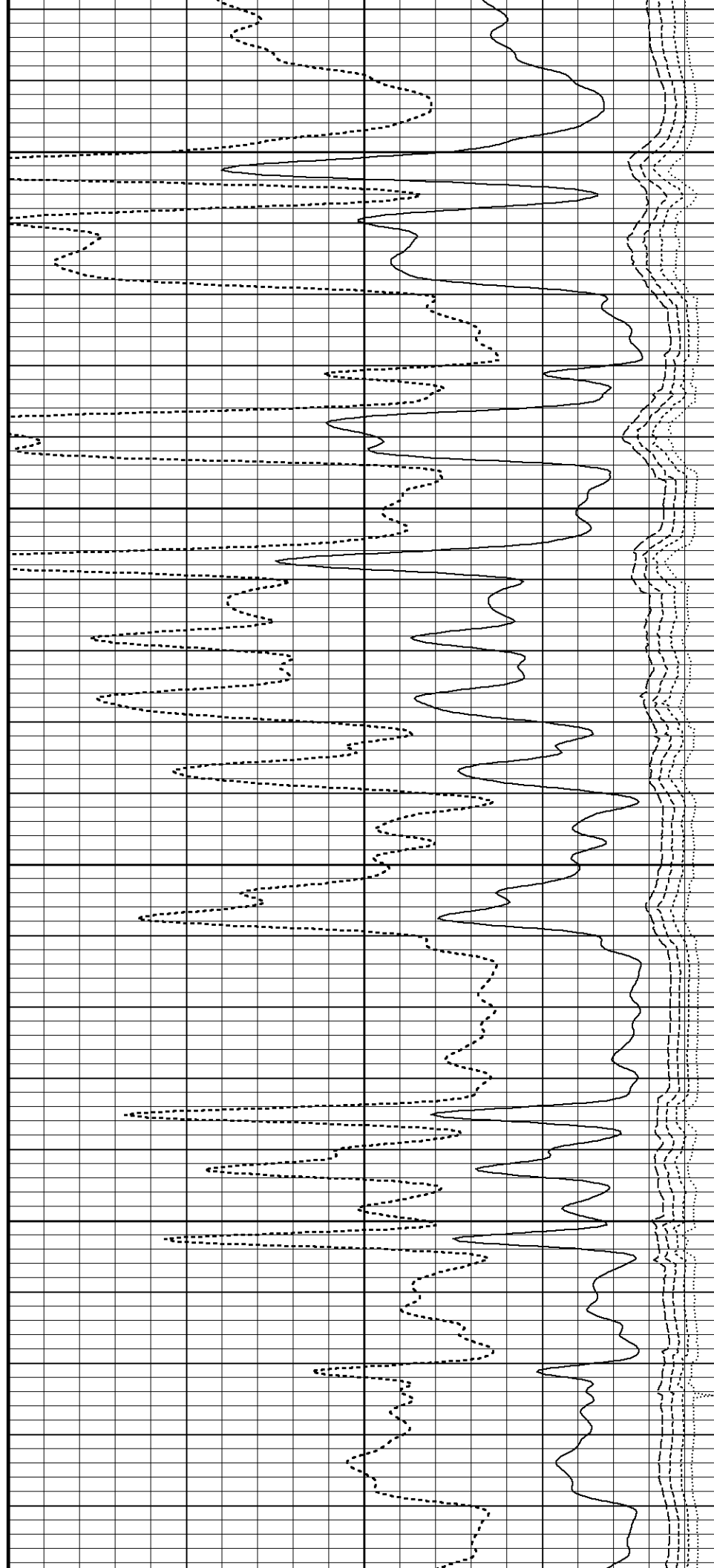
112°

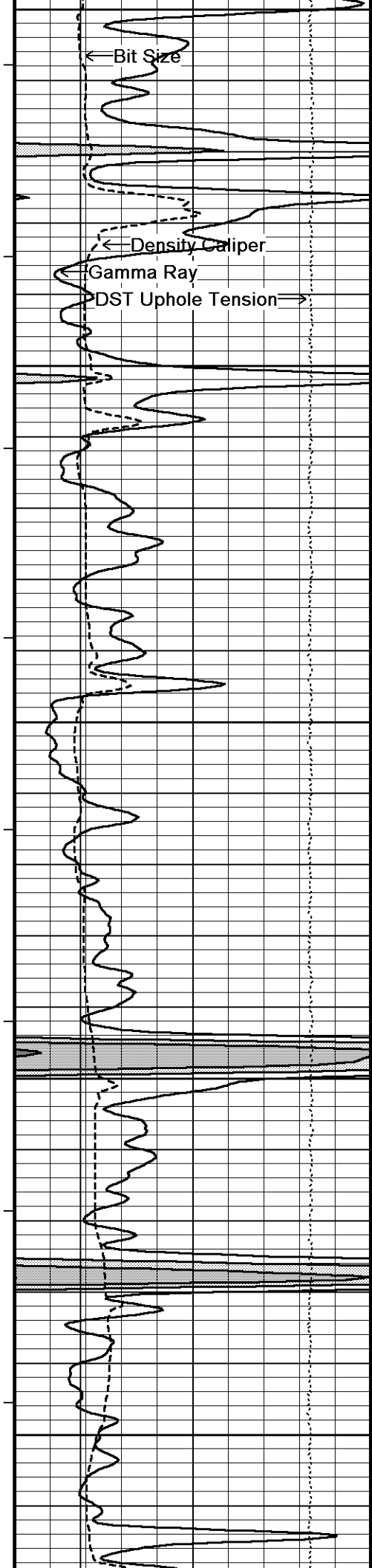
3900

112°

3950

113°





4000

113°

4050

114°

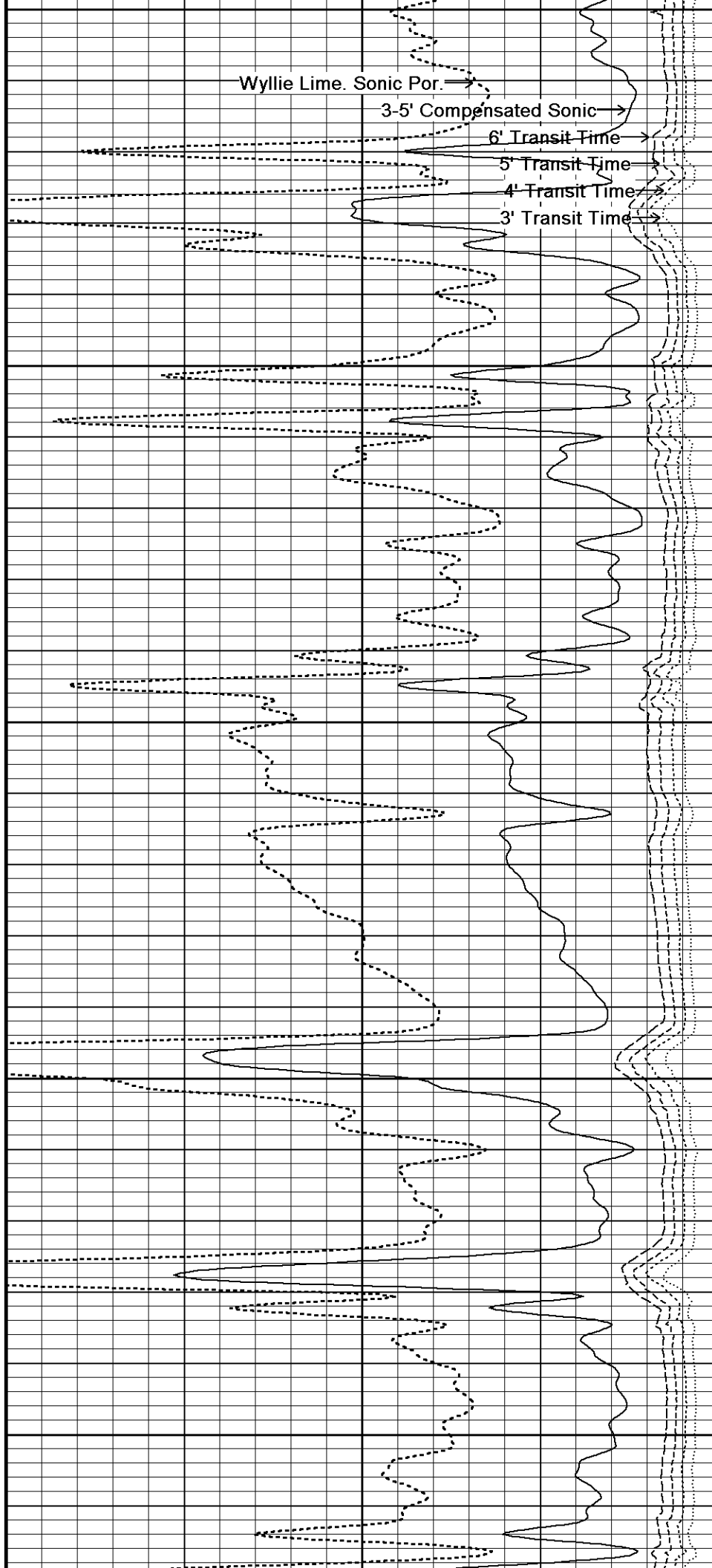
4100

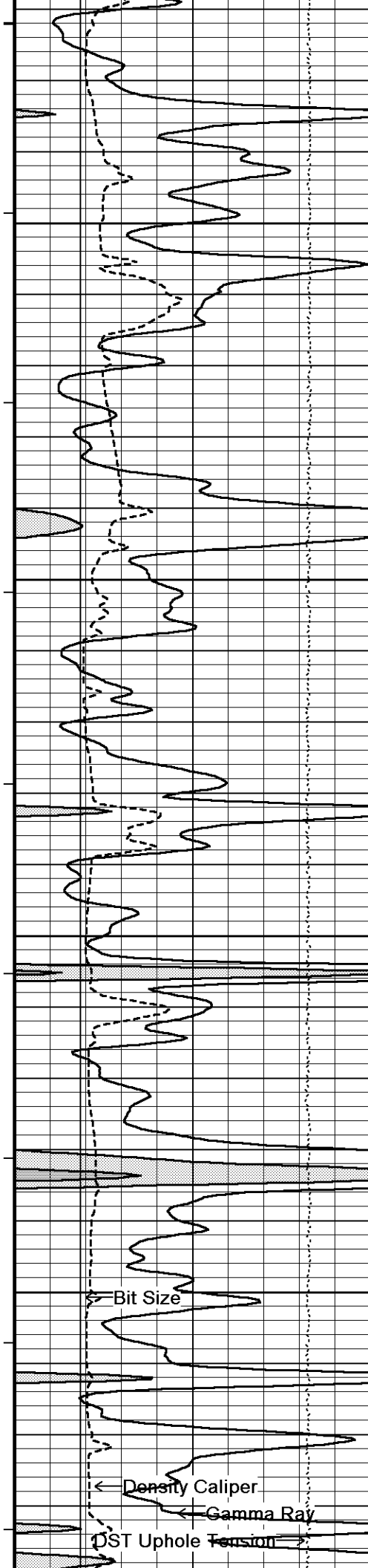
114°

4150

114°

4200





114°

4250

115°

4300

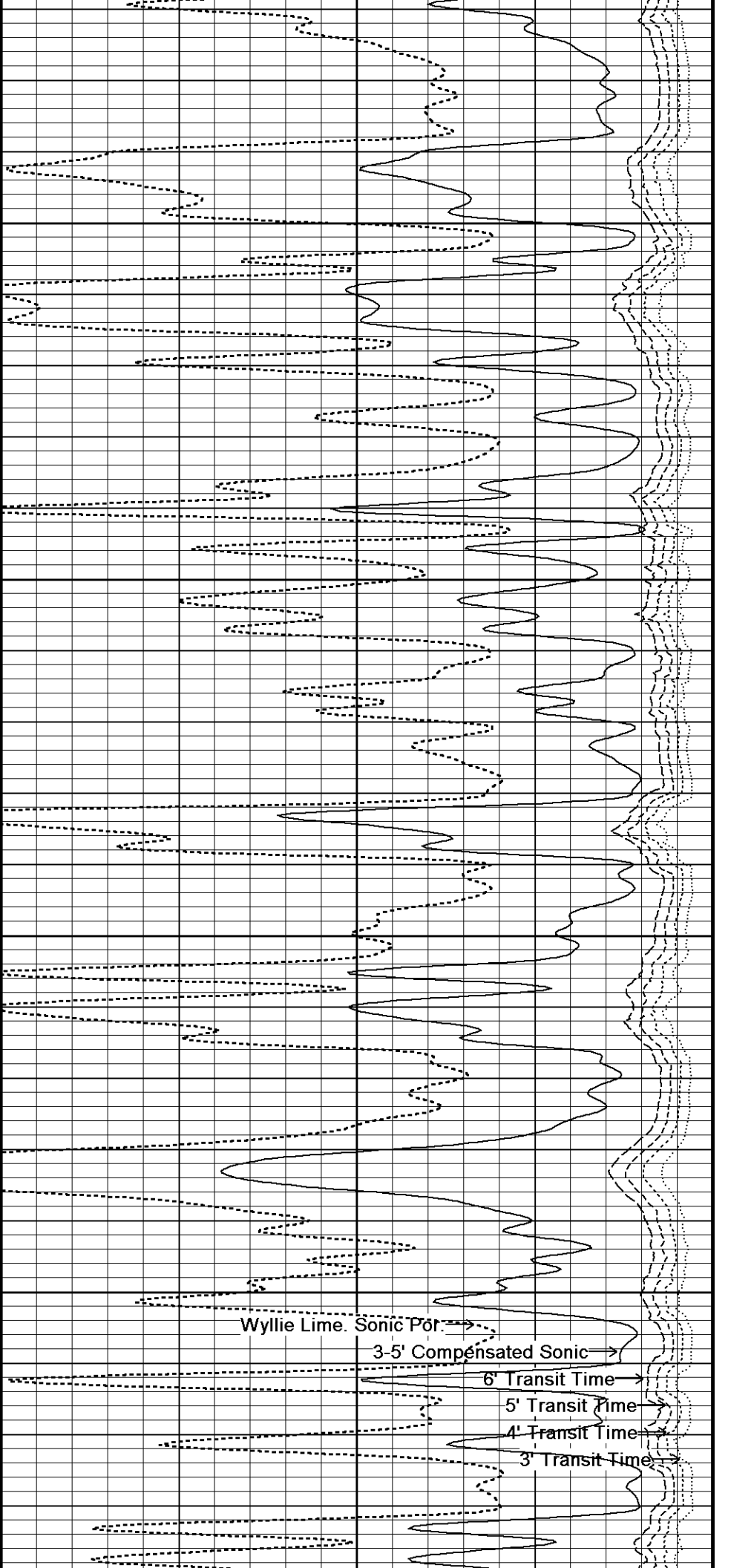
116°

4350

116°

4400

116°



Wyllie Lime. Sonic Por. →

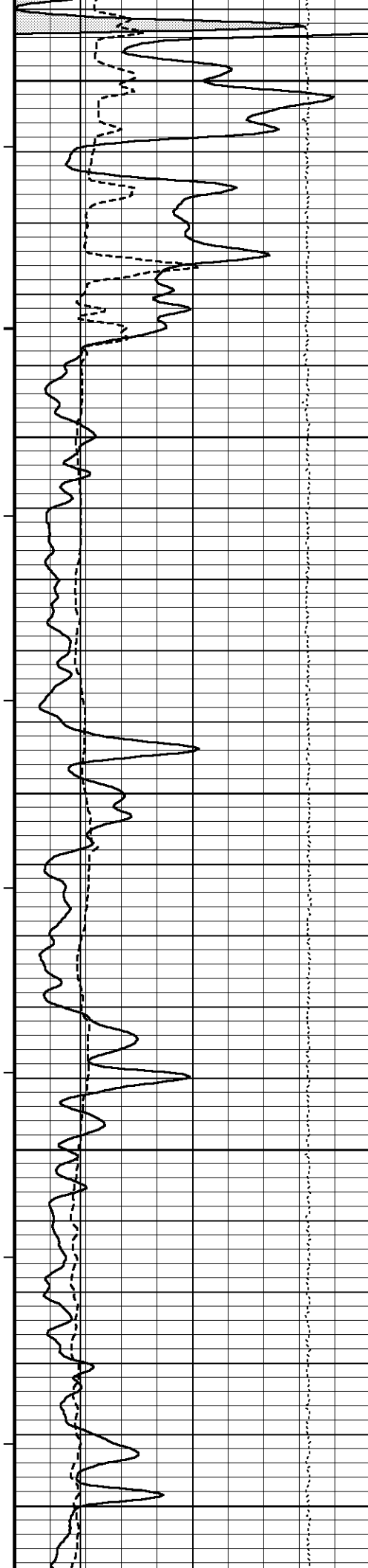
3-5' Compensated Sonic →

6' Transit Time →

5' Transit Time →

4' Transit Time →

3' Transit Time →



4450

117°

4500

117°

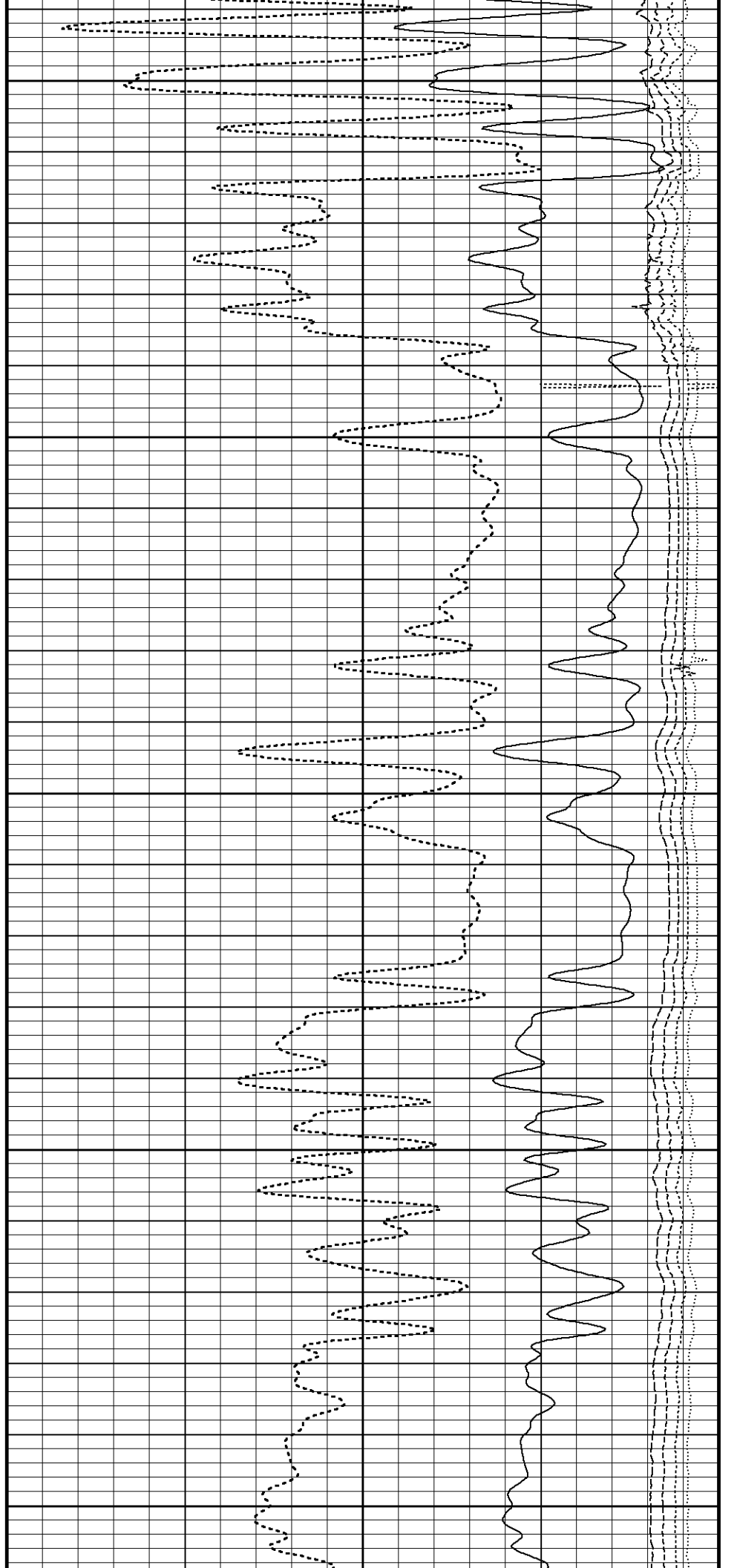
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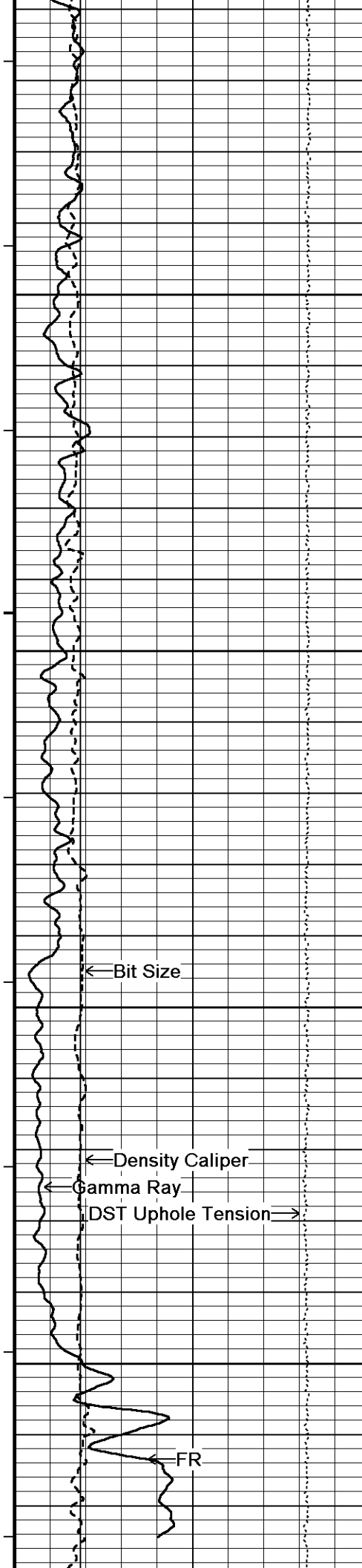
118°

4600

118°

4650





119°

4700

119°

4750

119°

4800

118°

4850

Wyllie Lime. Sonic Por. →

3-5' Compensated Sonic →

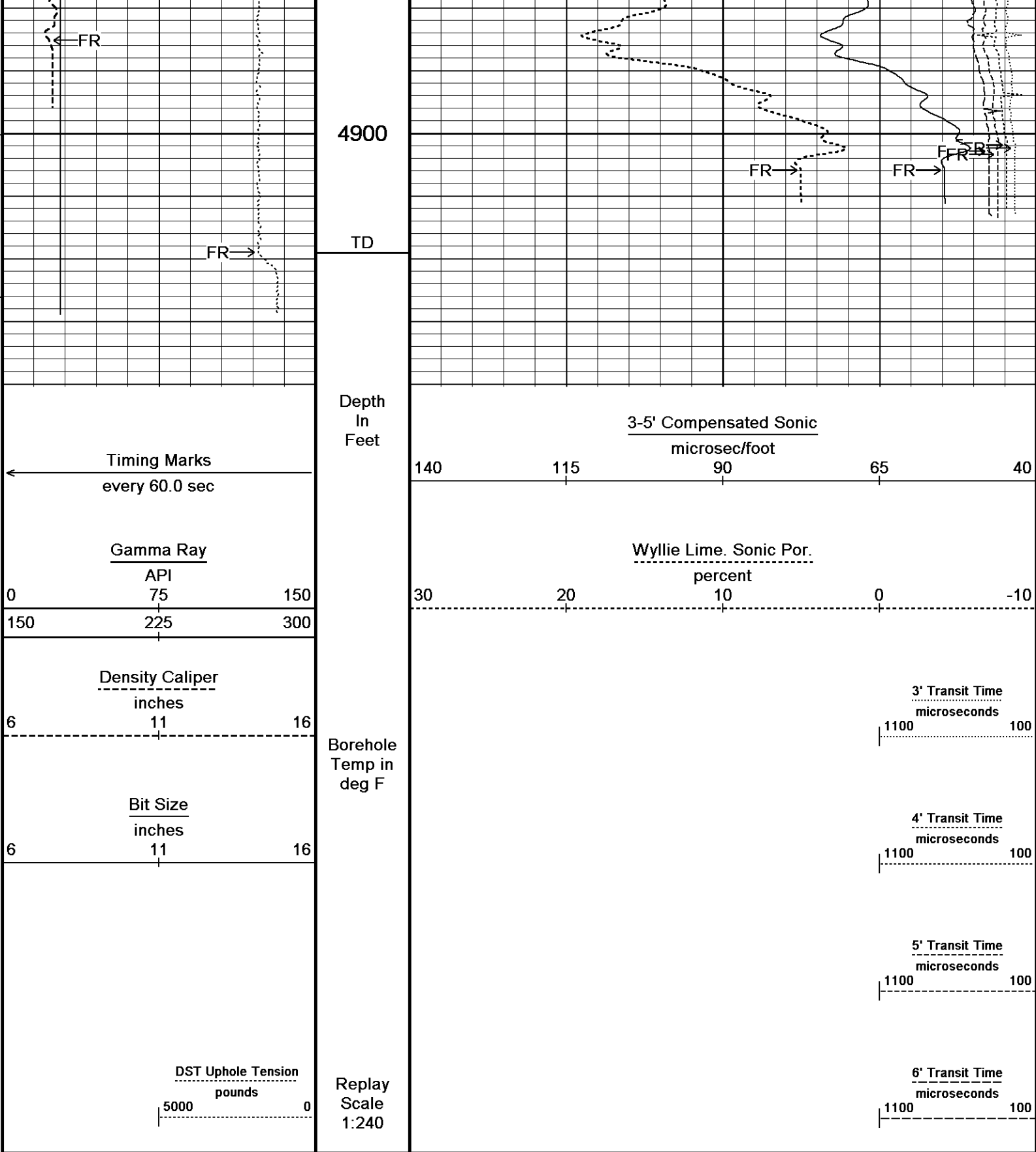
6' Transit Time →

5' Transit Time →

4' Transit Time →

3' Transit Time →

FR

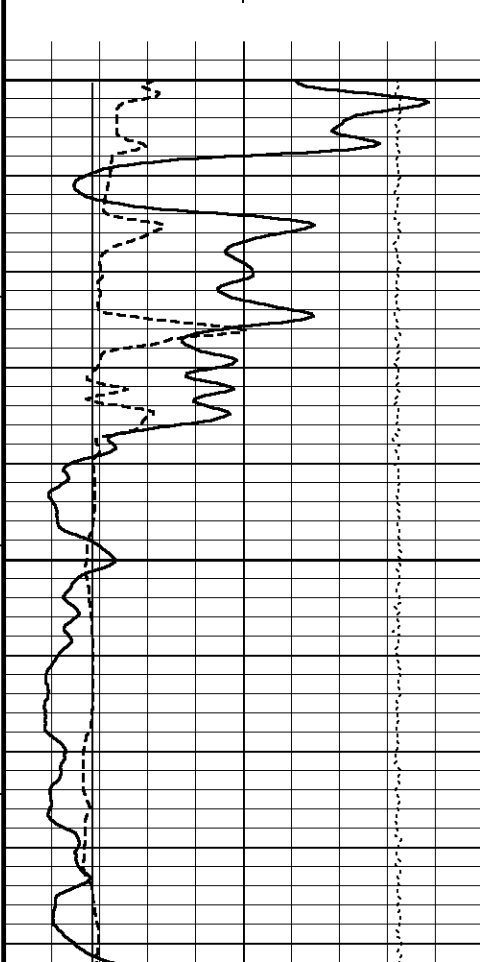
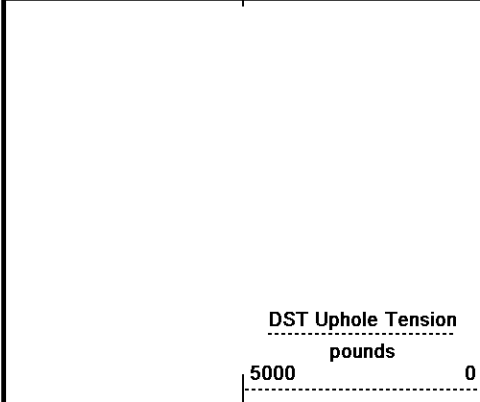
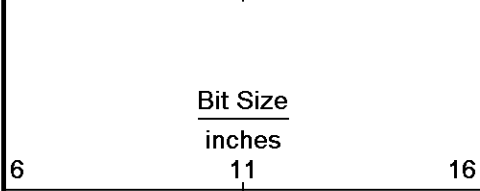
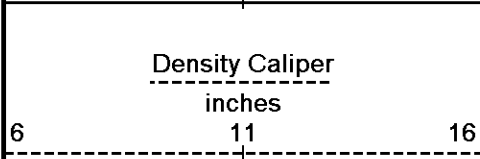
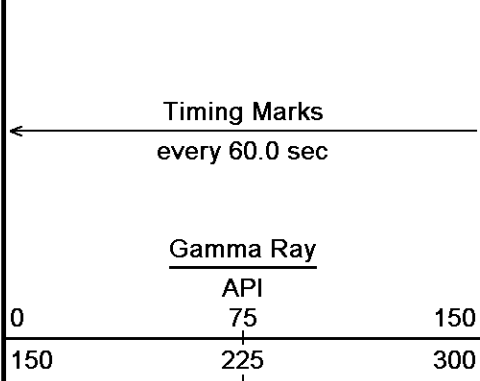


Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus 17.01.7206\Data\Cholla R&R Dumler #1-21\Cholla R&R Dumler #1-21_002.dta
System Versions: Logged with 17.01.7206 Plotted with 17.01.7206

5 INCH MAIN

REPEAT SECTION

Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus 17.01.7206\Data\Cholla R&R Dumler #1-21\Cholla R&R Dumler #1-21_001.dta
System Versions: Logged with 17.01.7206 Plotted with 17.01.7206



Depth
in
Feet

Borehole
Temp in
deg F

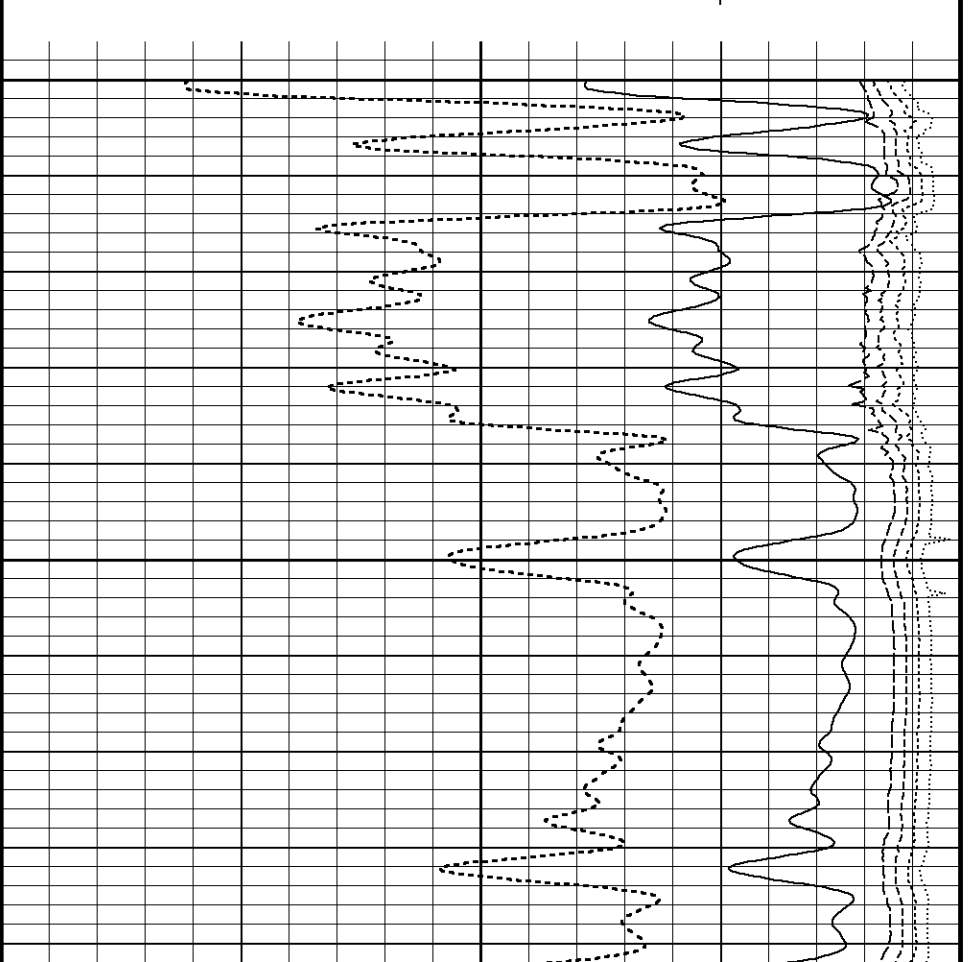
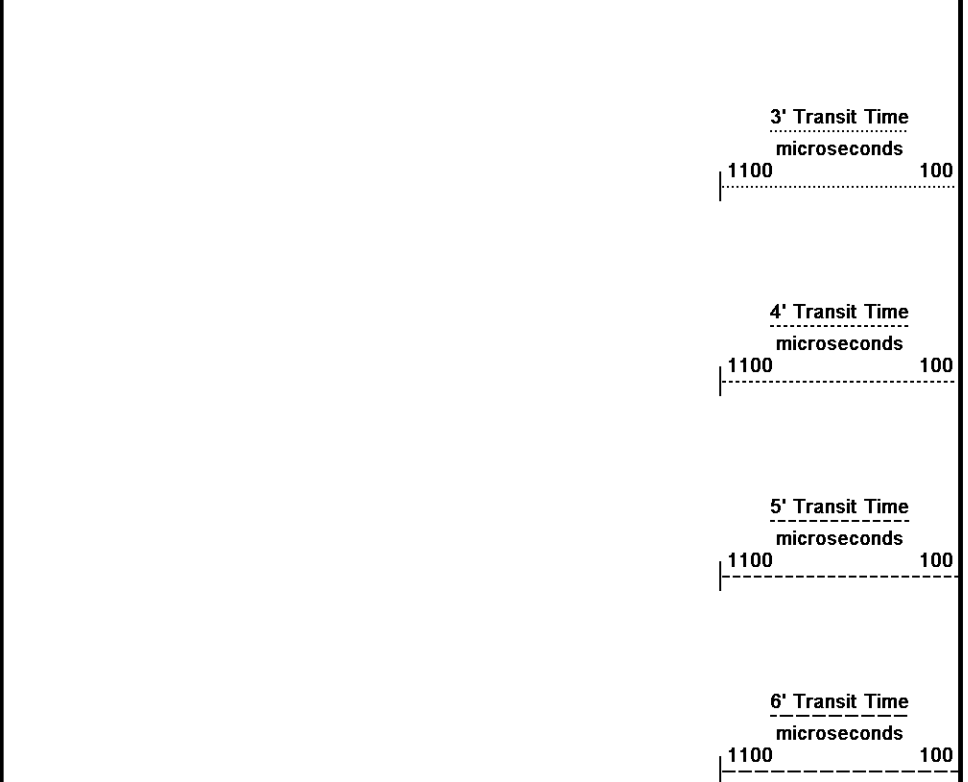
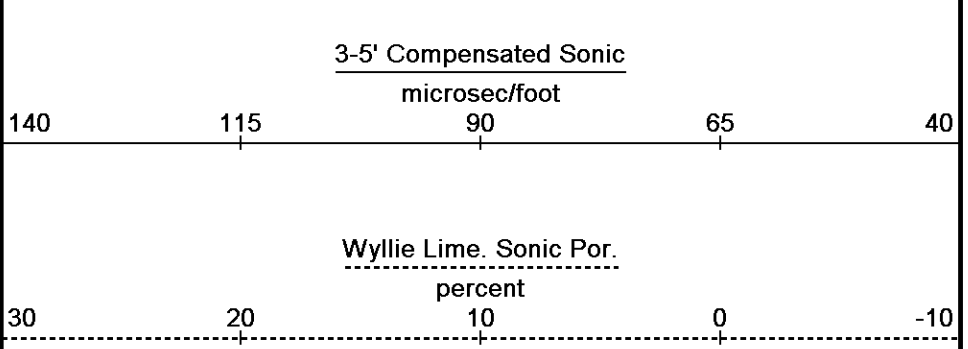
Replay
Scale
1:240

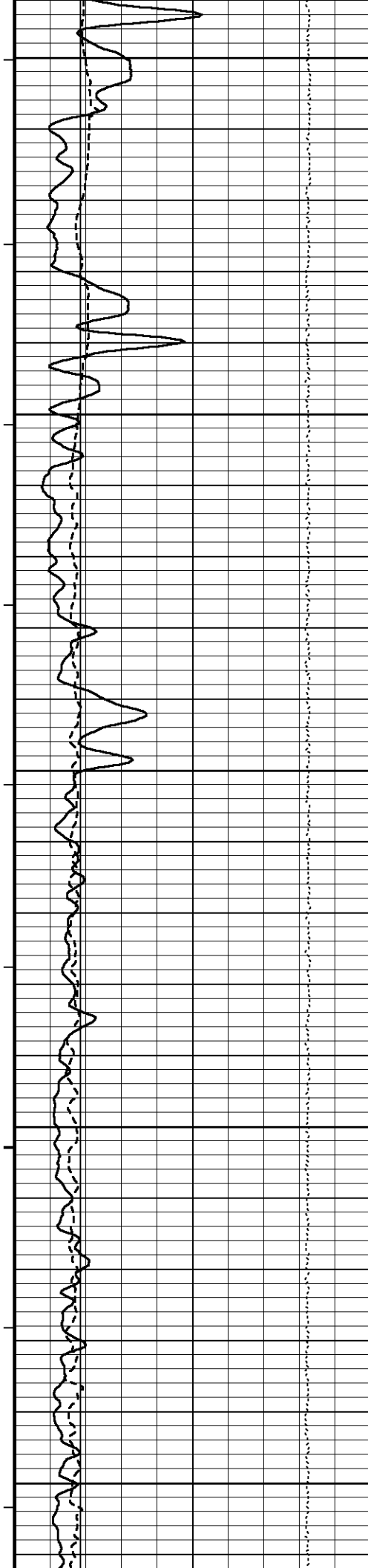
4450

116°

4500

116°





4550

117°

4600

118°

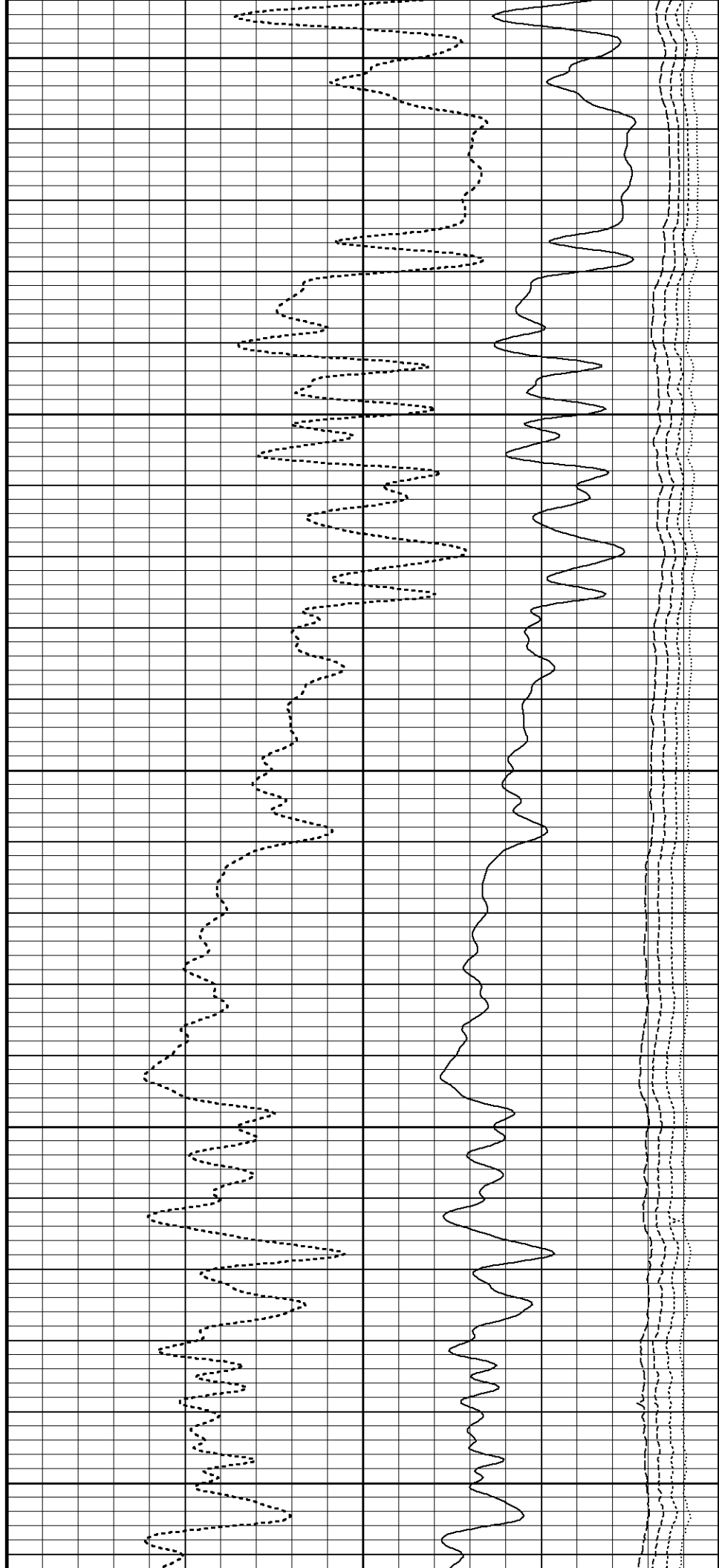
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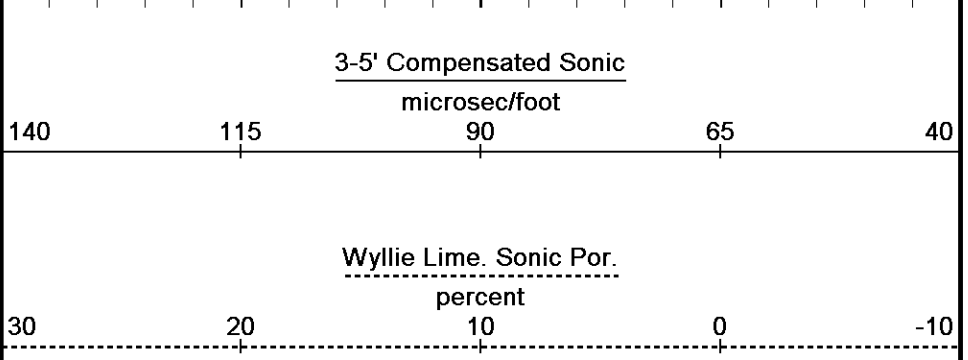
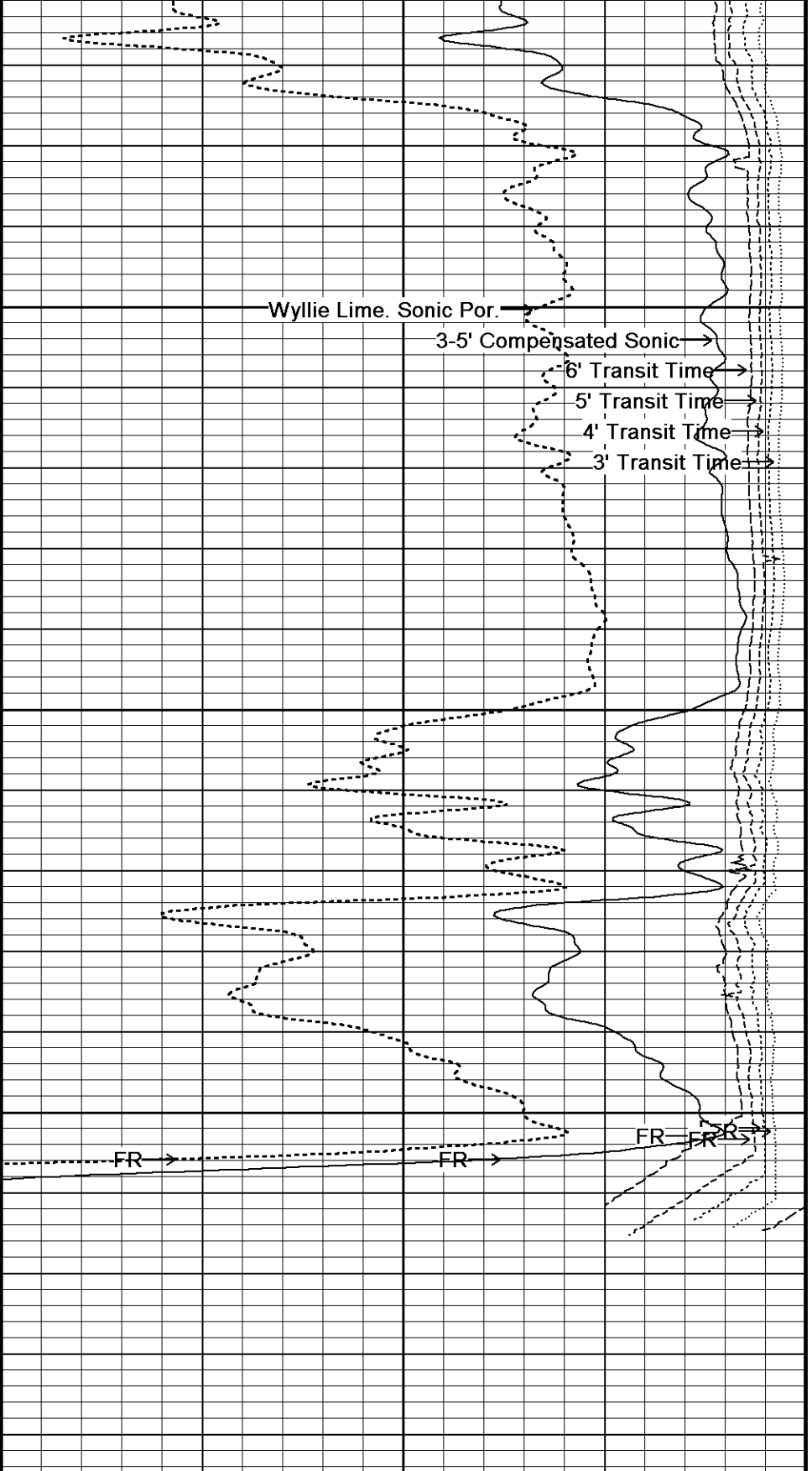
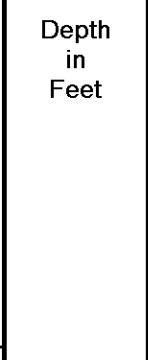
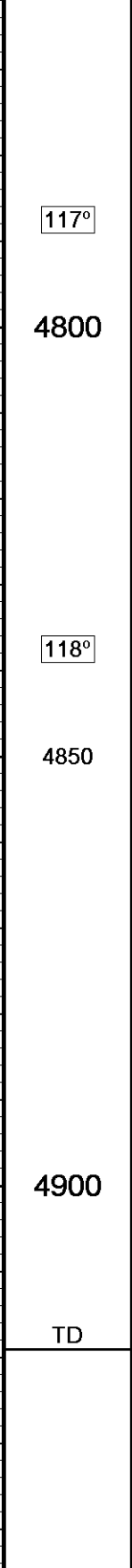
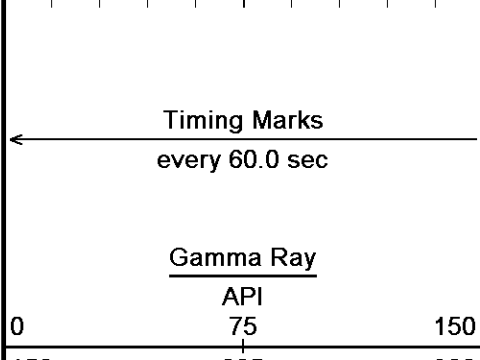
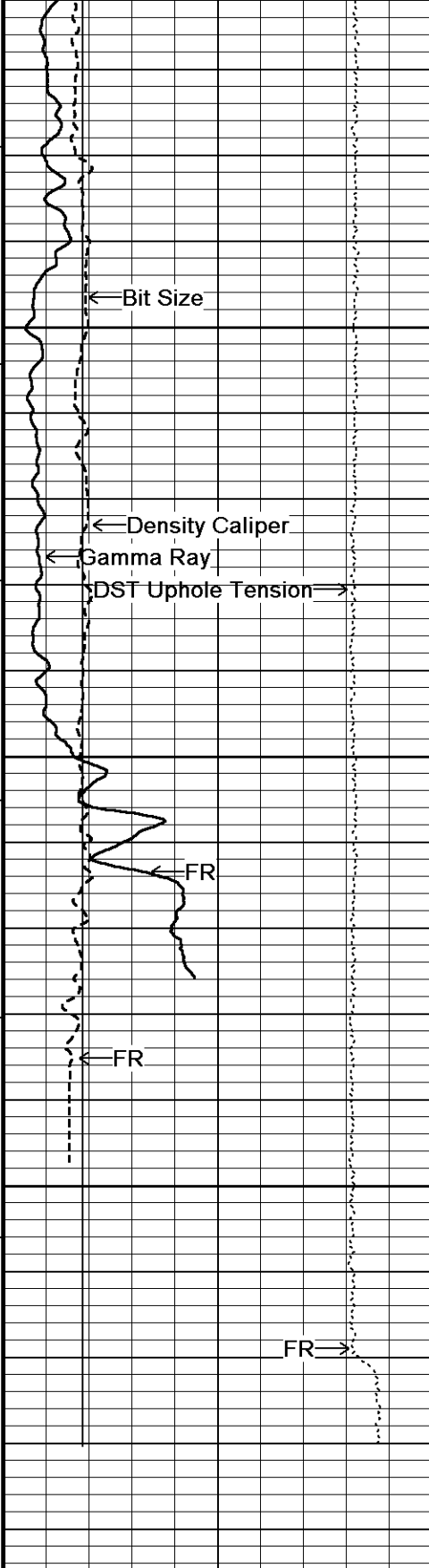
117°

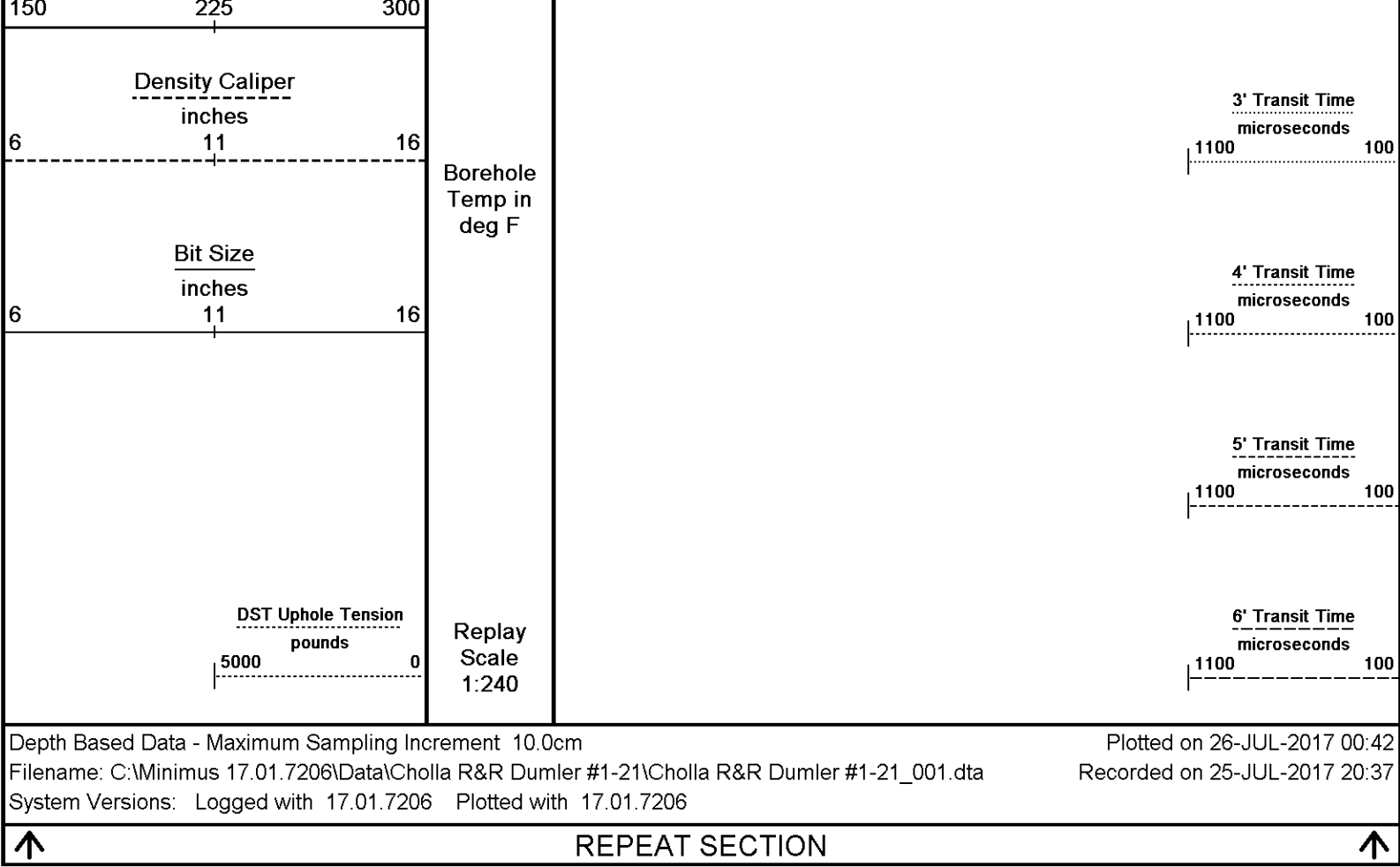
4700

117°

4750







BEFORE SURVEY CALIBRATION			
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General Constants All 000		Last Edited on 25-JUL-2017,20:06	
General Parameters			
Mud Resistivity	0.770	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	Base Density Porosity		
Resistivity used	Array Ind. One Res Rt		
RWA Constant A	0.620		
RWA Constant M	2.150		
SW/APOR Tool Source	0.000		
Down-hole Tension Calibration SMS 0		Field Calibration on 21-JUL-2017 22:14	
Reading No	Measured	Calibrated (lbs)	
1	14039.09	0.00	
2	14869.52	481.00	
Gamma Calibration MCG-C 84		Field Calibration on 24-JUL-2017 07:22	
	Measured	Calibrated (API)	
Background	107	74	
Calibrator (Gross)	771	530	
Calibrator (Net)	664	450	

Gamma Calibration Tolerances MCG-C 84

Ratio 1.456  Counts/API

Gamma Constants MCG-C 84

Last Edited on 25-JUL-2017,19:02

Gamma Calibrator Number MCGGRCC141
 GRC-M Calibrator Jig in Use? NO
 Inactive Background Jig in Use? NO
 Mud Density 1.14 gm/cc
 Caliper Source for Processing Density Caliper
 Tool Position Eccentred
 Potassium Equivalence Chloride
 K Mud Concentration 0.00 %

SP Calibration MCG-C 84

Field Calibration on 03-JUL-2017,10:23

	Measured	Calibrated (mV)
Reference 1	104.4	100.1
Reference 2	-95.8	-100.1

High Resolution Temperature Calibration MCG-C 84

Field Calibration on 03-JUL-2017,10:23

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

High Resolution Temperature Constants MCG-C 84

Last Edited on 09-SEP-2014,02:23

Pre-filter Length 11

Micro Normal and Micro Inverse Calibration MML-A 7

Base Calibration on 21-JUL-2017,09:26

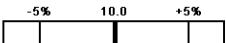
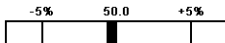
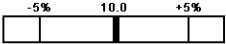
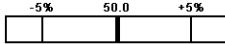
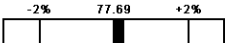
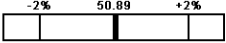
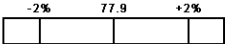
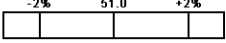
Field Check on 25-JUL-2017 19:55

Base Calibration

Channel	Measured		Calibrated (ohm-m)	
	Resistor 1	Resistor 2	Resistor 1	Resistor 2
Micro Normal	10.0	49.7	5.1	25.6
Micro Inverse	10.0	50.1	3.4	16.9

Channel	Base Check (ohm-m)	Field Check (ohm-m)
Micro Normal	77.9	77.9
Micro Inverse	51.0	51.0

Micro Normal & Micro Inverse Calibration Tolerance MML-A 7

Micro Normal Res. 1	10.0		ohm	Micro Normal Res. 2	49.7		ohm
Micro Inverse Res. 1	10.0		ohm	Micro Inverse Res. 2	50.1		ohm
Micro Normal Base Check	77.9		ohm-m				
Micro Inverse Base Check	51.0		ohm-m				
Micro Normal Field Check	77.9		ohm-m				
Micro Inverse Field Check	51.0		ohm-m				

Micro Normal and Micro Inverse Constants MML-A 7

Last Edited on 25-JUL-2017,19:54

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 N/A inches

Caliper Calibration MML-A 7

Base Calibration on 21-JUL-2017,09:17

Field Calibration on 25-JUL-2017 19:53

Base Calibration

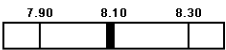
Reading No	Measured	Calibrator Size (in)
1	13752	5.98
2	16863	7.97
3	19899	9.86
4	23808	11.92

5
60
N/A0.00
N/A

Field Calibration

Measured Caliper (in)
8.08Actual Caliper (in)
8.10

Caliper Calibration Tolerances MML-A 7

Short Arm Field Cal. 8.08  in

Neutron Calibration MDN-A.B 114

Base Calibration on 21-JUL-2017,14:44
Field Check on 24-JUL-2017 07:26

Base Calibration

	Measured		Calibrated (cps)	
	Near	Far	Near	Far
Ratio	3156	98	3714	110
	32.298		33.764	

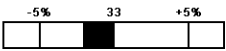
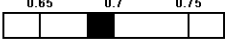
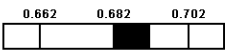
Field Calibrator at Base

	Calibrated (cps)
Ratio	2073 3042
	0.682

Field Check

	Calibrated (cps)
Ratio	2103 3042
	0.691

Neutron Calibration Tolerances MDN-A.B 114

Ratio 32.298 Base Check 0.682 Field Check 0.691 

Neutron Constants MDN-A.B 114

Last Edited on 25-JUL-2017,19:02

Neutron Source Id	P0204NN
Neutron Jig Number	NJ5736
Air Hole Processing	Modified Ratio
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 21-JUL-2017,09:08
Field Check on 25-JUL-2017 19:38

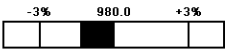
Base Calibration

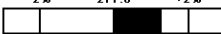
	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	966.4	126.8

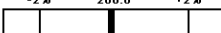
Base Check 280.6

Field Check 280.2

FE Calibration Tolerances MFE-B.J 352

Reference 2 966.4  ohm

Base Check 280.6  ohm-m

Field Check 280.2  ohm-m

FE Constants MFE-B.J 352

Last Edited on 25-JUL-2017,19:37

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 25-JUL-2017,19:01

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)	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
Waveform Discriminator Filter	N/A
Semblance Window Width	N/A micro-sec
Sonic Despiker	N/A

High Resolution Temperature Calibration MAI-A.A 111

Field Calibration on 03-JUL-2017,10:17

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

High Resolution Temperature Constants MAI-A.A 111

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

Pre-filter Length 11

Induction Calibration MAI-A.A 111

Base Calibration on 21-JUL-2017,10:20
Field Check on 25-JUL-2017 19:49

Base Calibration

Test Loop Calibration

Channel	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

Channel	Base Check (mmho/m)	Field Check (mmho/m)
	Low High	Low High
1	13.7 3869.0	16.4 3871.1
2	30.1 3523.0	32.4 3524.7
3	29.2 3017.0	31.2 3018.2
4	19.2 2055.4	20.5 2056.1
Deep	17.8 1959.3	19.2 1960.0
Medium	43.1 3970.5	45.7 3972.2
Shallow	44.9 5225.2	48.2 5227.9

Array Temperature 95.2 97.0 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 25-JUL-2017,20:06

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

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

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	

Photo Density Calibration MPD-C.A 216

Base Calibration on 21-JUL-2017,11:29
Field Check on 25-JUL-2017 19:37

Density Calibration

Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Background	1034	1215		
Reference 1	51875	24845	59556	30836
Reference 2	20527	2316	24941	2541

Field Check at Base

1033.8 1215.4

Field Check

1026.3 1216.8

PE Calibration

Base Calibration	WS	Measured		Calibrated Ratio
		WH	Ratio	
Background	189	925		
Reference 1	21486	51702	0.419	0.371
Reference 2	5928	20410	0.295	0.272

Field Check at Base

189.2 924.8

Field Check

186.9 927.3

Photo Density Calibration Tolerances MPD-C.A 216

Near Density Ratio 2.61

Far Density Ratio 21.48

PE Calibration 0.116

Near Den. Field Check 1026.3

Far Den. Field Check 1216.8

PE WS Field Check 186.9

PE WH Field Check 927.3

Density Constants MPD-C.A 216

Last Edited on 25-JUL-2017,19:49

Density Source Id	P50557B
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	1.14	gm/cc
Mud Density Type		
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	
Precision Enhanced Density Processing	Not Applied	

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

Caliper Calibration MPD-C.A 216

Base Calibration on 21-JUL-2017,11:21
Field Calibration on 25-JUL-2017 19:52

Base Calibration	Measured	Calibrator Size (in)
Reading No		
1	18416	3.99
2	28544	5.98
3	38624	7.97
4	48448	9.86
5	59555	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
8.05	8.10

Caliper Calibration Tolerances MPD-C.A 216

Short Arm Field Cal. 8.05  in

DOWNHOLE EQUIPMENT

C:\Minimus 17.01.7206\Data\Cholla R&R Dumler #1-21\Cholla R&R Dumler #1-21_001.dta

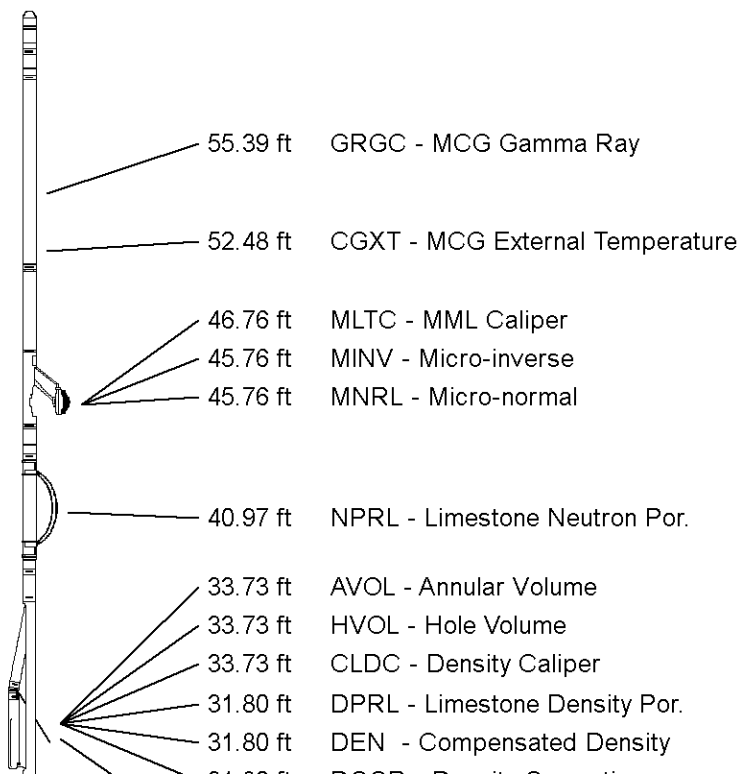
Cablehead, 11 pin
CBH-C 0 LG: 2.40 ft WT: 24.3 lb OD: 2.244 in

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

Compact Micro-log
MML-A 7 LG: 7.97 ft WT: 81.6 lb OD: 2.244 in

Compact Neutron
MDN-A.B 114 LG: 5.04 ft WT: 50.7 lb OD: 2.244 in

Compact Density/Caliper
MPD-C.A 216 LG: 9.59 ft WT: 90.4 lb OD: 2.449 in

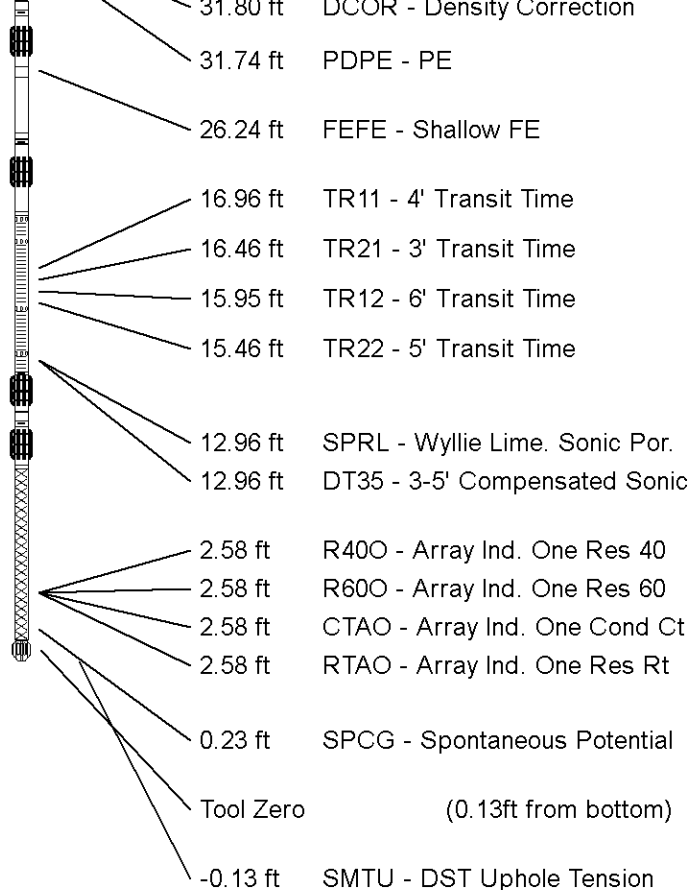


Compact Focussed Electric
MFE-B.J 352 LG: 6.05 ft WT: 48.5 lb OD: 2.244 in

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: 63.07 ft Weight: 480.6 lb



All measurements relative to tool zero.

COMPANY	CHOLLA PRODUCTION, LLC.
WELL	R&R DUMLER #1-21
FIELD	WILDCAT
PROVINCE/COUNTY	HODGEMAN
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	2474	feet	First Reading	4906.00	feet
Elevation Drill Floor	2472	feet	Depth Driller	4920.00	feet
Elevation Ground Level	2469	feet	Depth Logger	4919.00	feet



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