Weatherford®

COMPENSATED SONIC WITH INTEGRATED TRANSIT TIME

COMPANY	McCOY PETROLEUM CORPORATION
WELL	THOMAS & REED FARMS 'A' #1-21
FIELD	WILDCAT
PROVINCE/COUNTY	GRAY
COUNTRY/STATE	U.S.A. / KANSAS
LOCATION	660' FNL & 1980' FWL

SEC 21	TWP 29S	RGE 28W	Other Services
Latitude			MAI/MFE MPD/MDN
Longitude			MML
API Number	15-069-20499		

Permanent Datum GL, Elevation 2728 feet
Log Measured From KB, 11.00 feet above Permanent Datum
Drilling Measured From KB

Elevations:	feet
KB	2739.00
DF	2737.00
GL	2728.00

Date	18-MAR-2017			
Run Number	ONE			
Service Order	4558-177026132			
Depth Driller	6500.00	feet		
Depth Logger	6495.00	feet		
First Reading	6482.00	feet		
Last Reading	1685.00	feet		
Casing Driller	1690.00	feet		
Casing Logger	1685.00	feet		
Bit Size	7.875	inches		
Hole Fluid Type	CHEMICAL			
Density / Viscosity	9.00 lb/USg		55.00 CP	
PH / Fluid Loss	9.50		8.00 ml/30Min	
Sample Source	FLOWLINE			
Rm @ Measured Temp	1.03 @ 75.0	ohm-m		
Rmf @ Measured Temp	0.82 @ 75.0	ohm-m		
Rmc @ Measured Temp	1.24 @ 75.0	ohm-m		
Source Rmf / Rmc	CALC		CALC	
Rm @ BHT	0.63 @123.0	ohm-m		
Time Since Circulation	5 HOURS			
Max Recorded Temp	123.00	deg F		
Equipment / Base	13096		OKC	
Recorded By	ADAM SILL			
Witnessed By	ZACH WIELE			

BOREHOLE RECORD

Last Edited: 18-MAR-2017 10:18

Bit Size inches	Depth From feet	Depth To feet
7.875	1695.00	6500.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	1695.00	24.00

REMARKS

- SOFTWARE ISSUE: WLS 16.05.4955.

- 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: 1752 CU.FT.

- ANNULAR HOLE VOLUME WITH 4.5 INCH PRODUCTION CASING FROM TD TO 2700 FEET: 869 CU.FT.

- RIG: STERLING #4.

- ENGINEER: A. SILL.

- OPERATOR: B. TOVAR.

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.

5 INCH MAIN

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 18-MAR-2017 20:48

Filename: C:\Minimus 16.05.4955\Data\McCoy Tho...\McCoy Thomas & Reed Farms 'A' #1-21_003.dta — Recorded on 18-MAR-2017 16:25

System Versions: Logged with 16.05.4955 Plotted with 16.05.4955

Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150
150 225 300

Density Caliper
inches
6 11 16

Bit Size
inches
6 11 16

DST Uphole Tension
pounds
5000 0

Depth in Feet

Borehole Temp in deg F

Replay Scale

Compensated Density
grams/cc
2 2.25 2.50 2.75 3

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

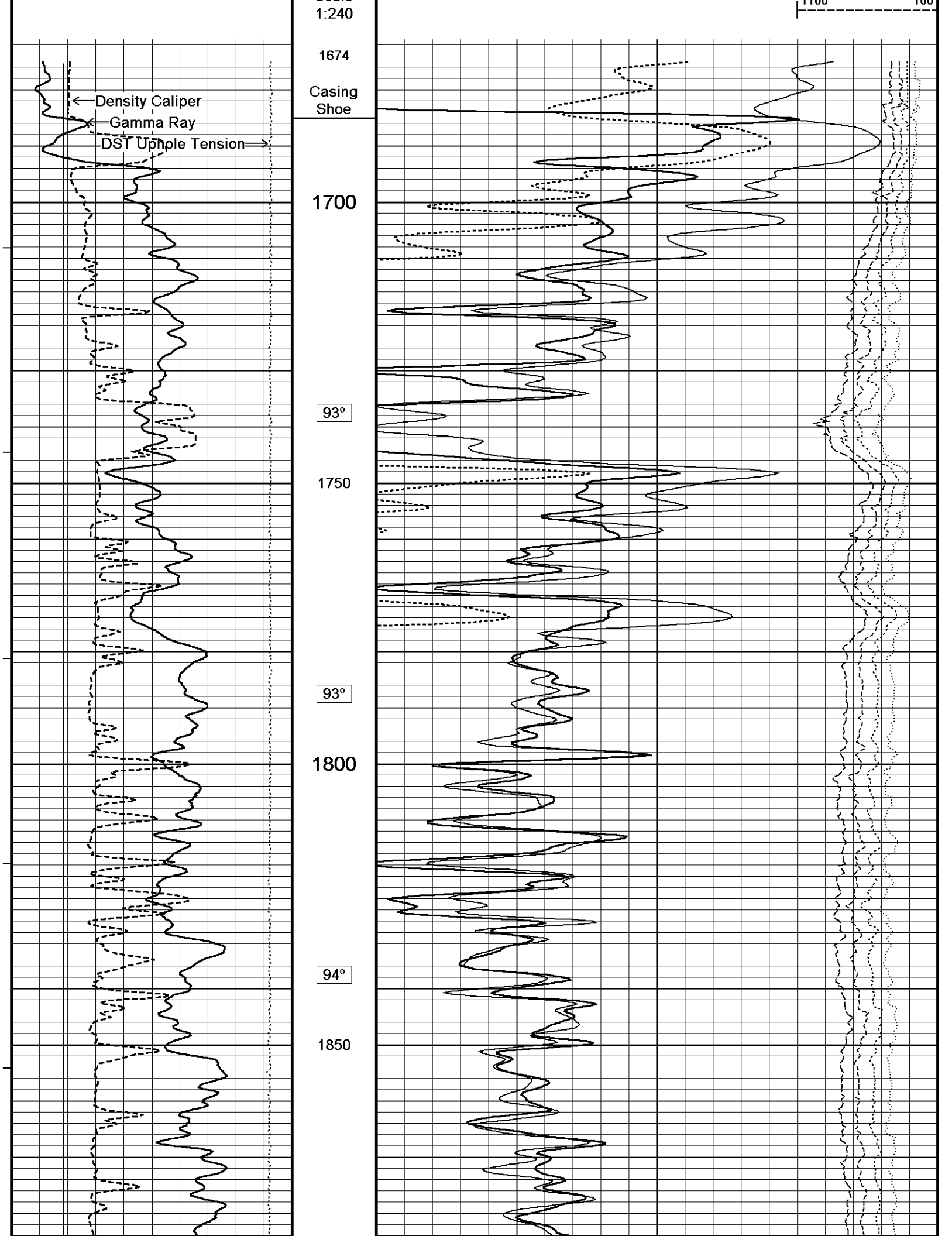
Wyllie Lime. Sonic Por.
percent
30 20 10 0 -10

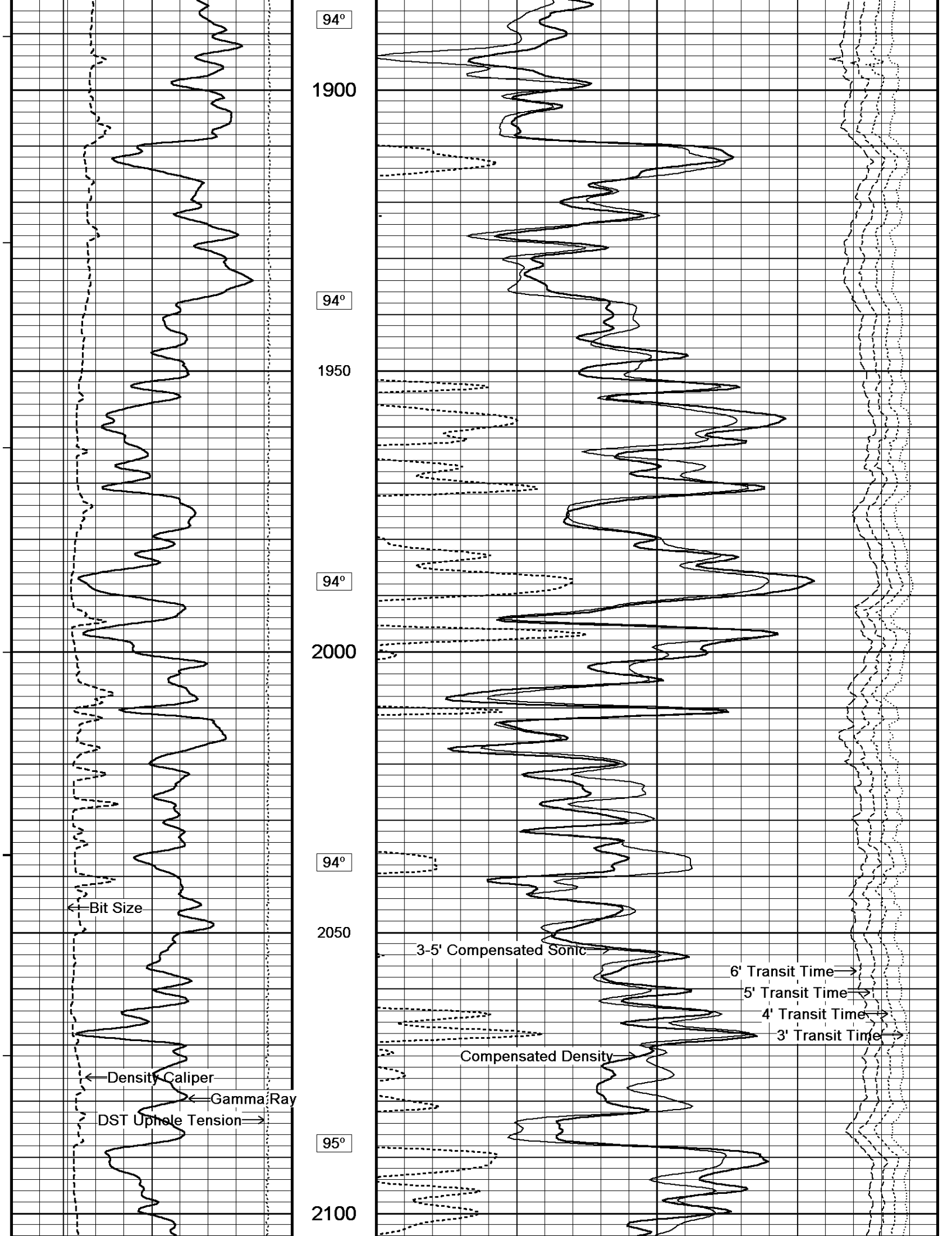
3' Transit Time
microseconds
1100 100

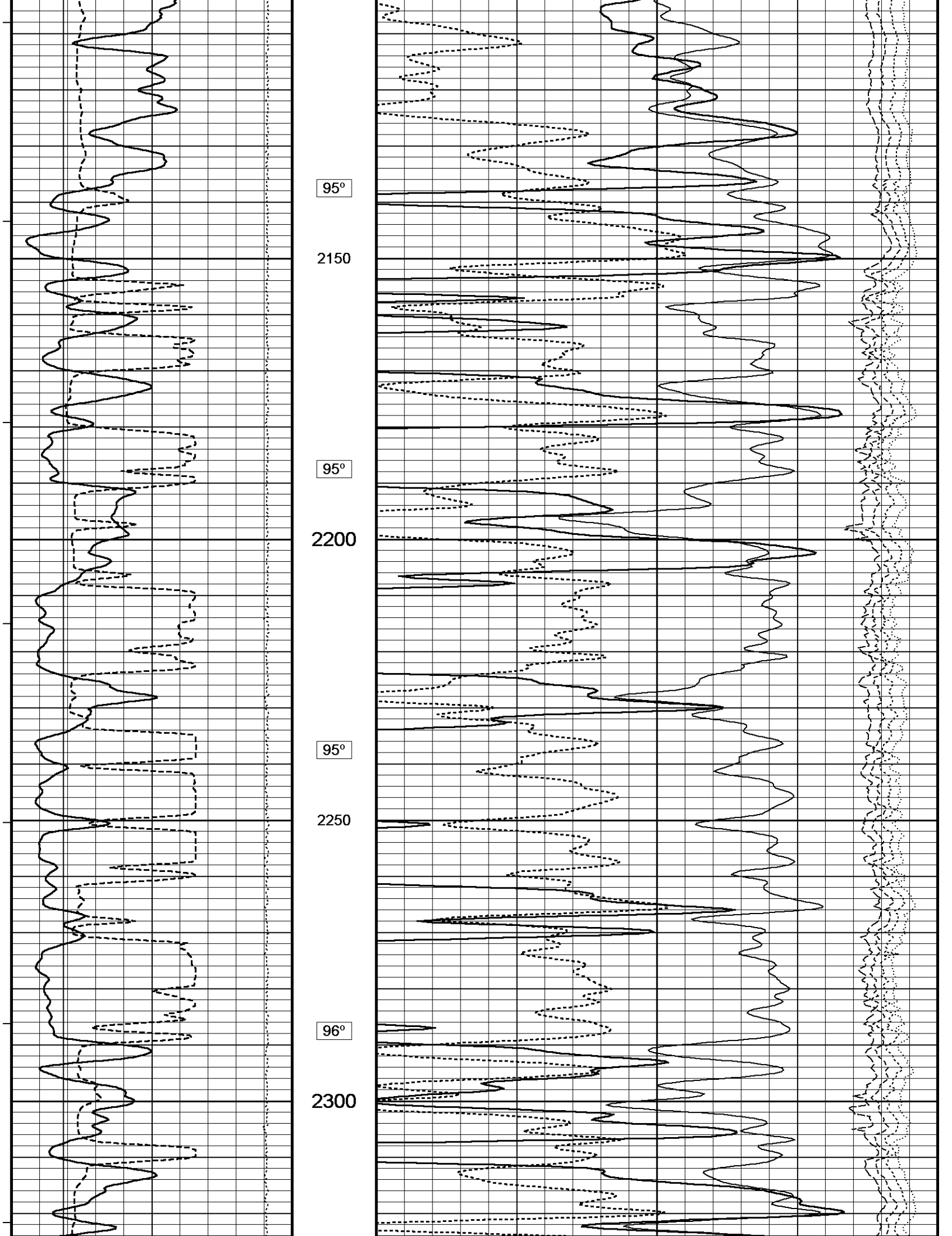
4' Transit Time
microseconds
1100 100

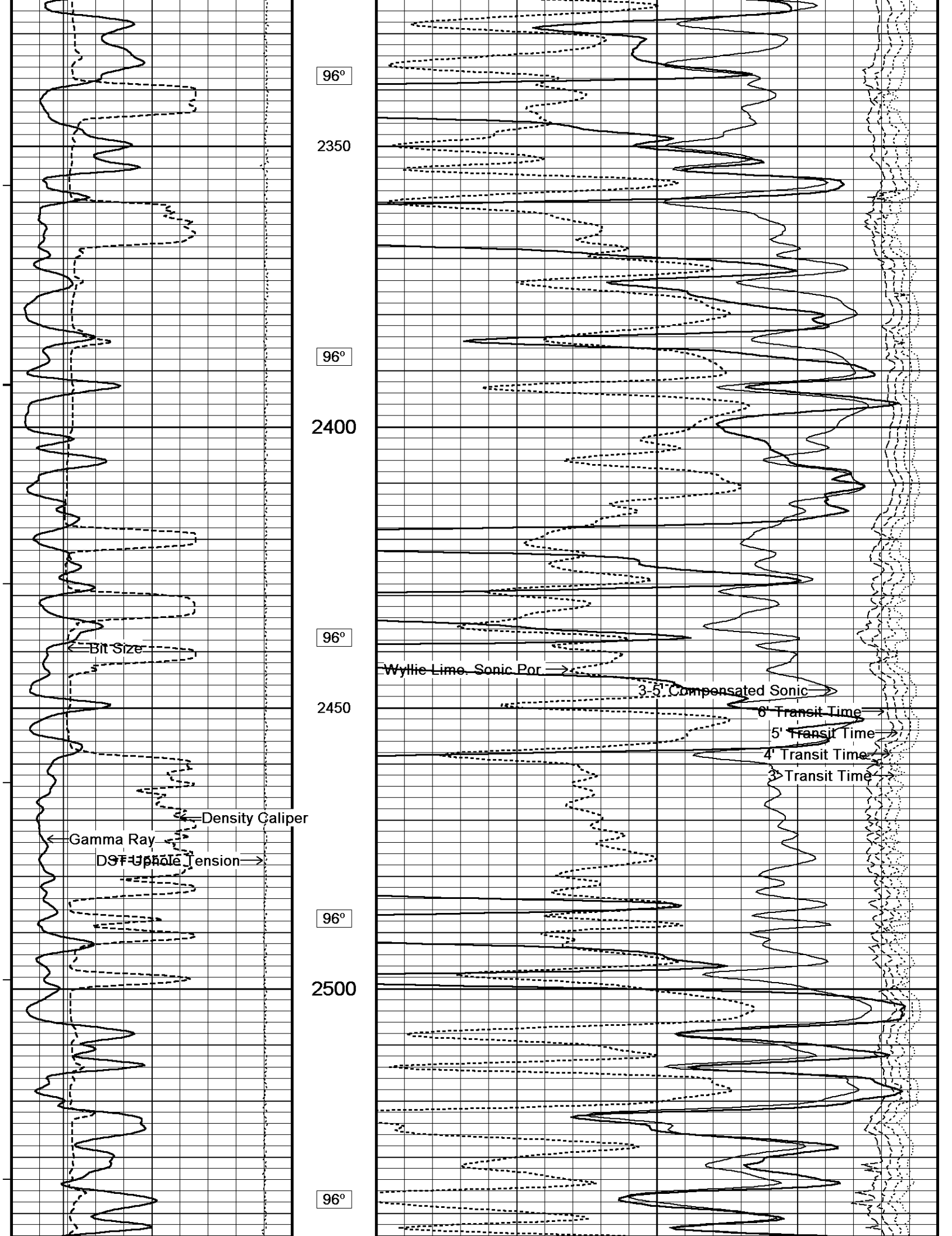
5' Transit Time
microseconds
1100 100

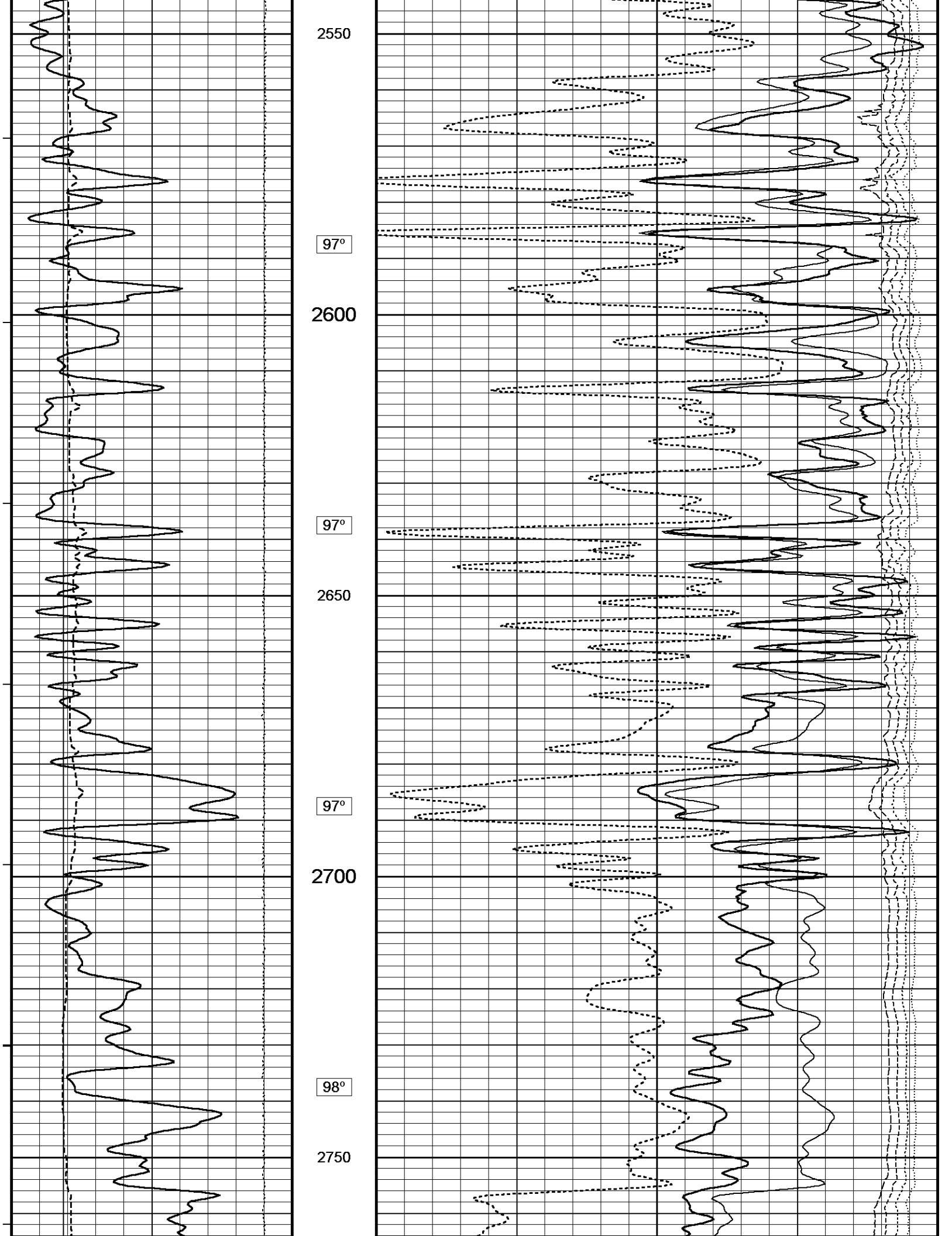
6' Transit Time
microseconds
1100 100

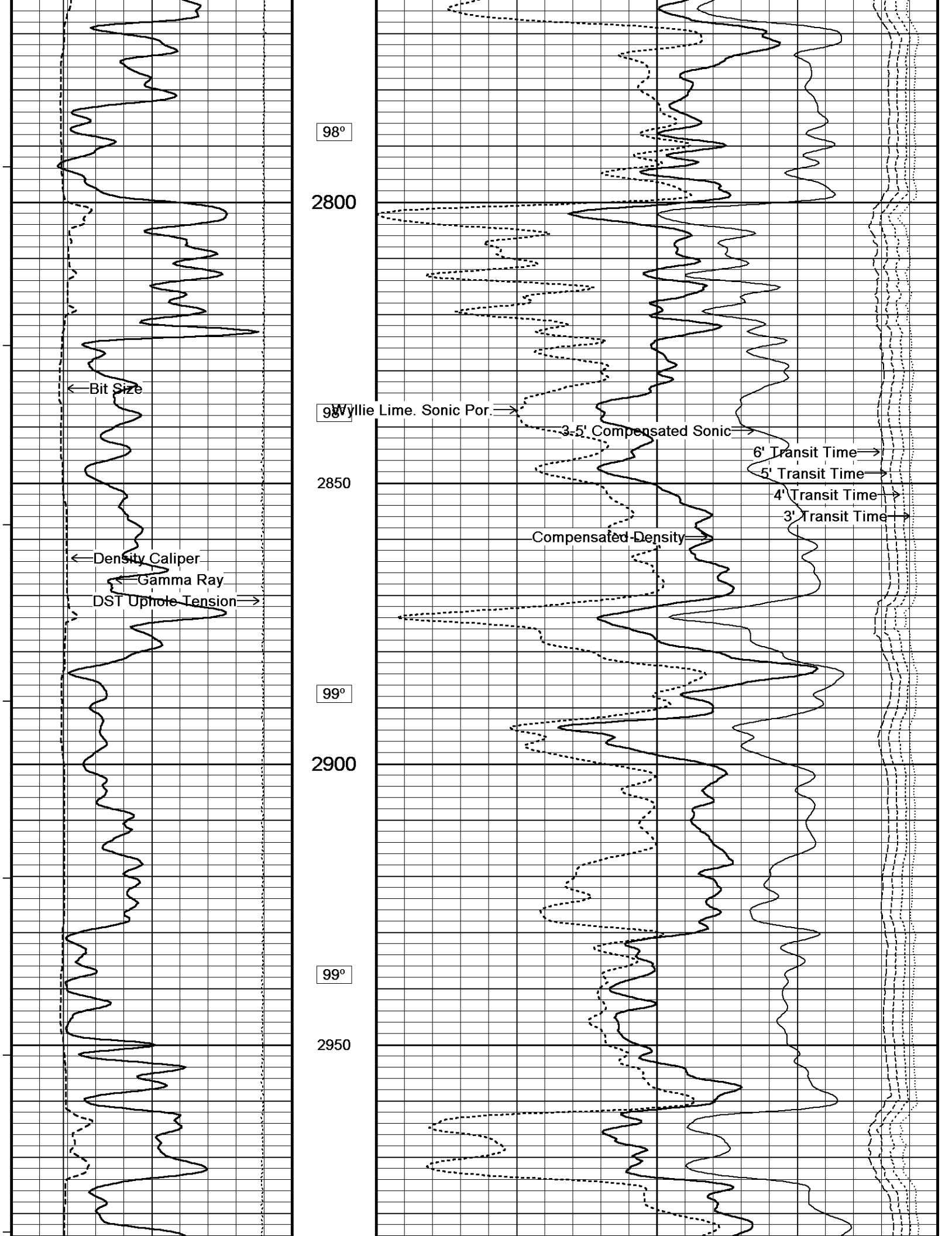

1:240
1674
Casing Shoe
Density Caliper
Gamma Ray
DST Uphole Tension
1700
93°
1750
93°
1800
94°
1850

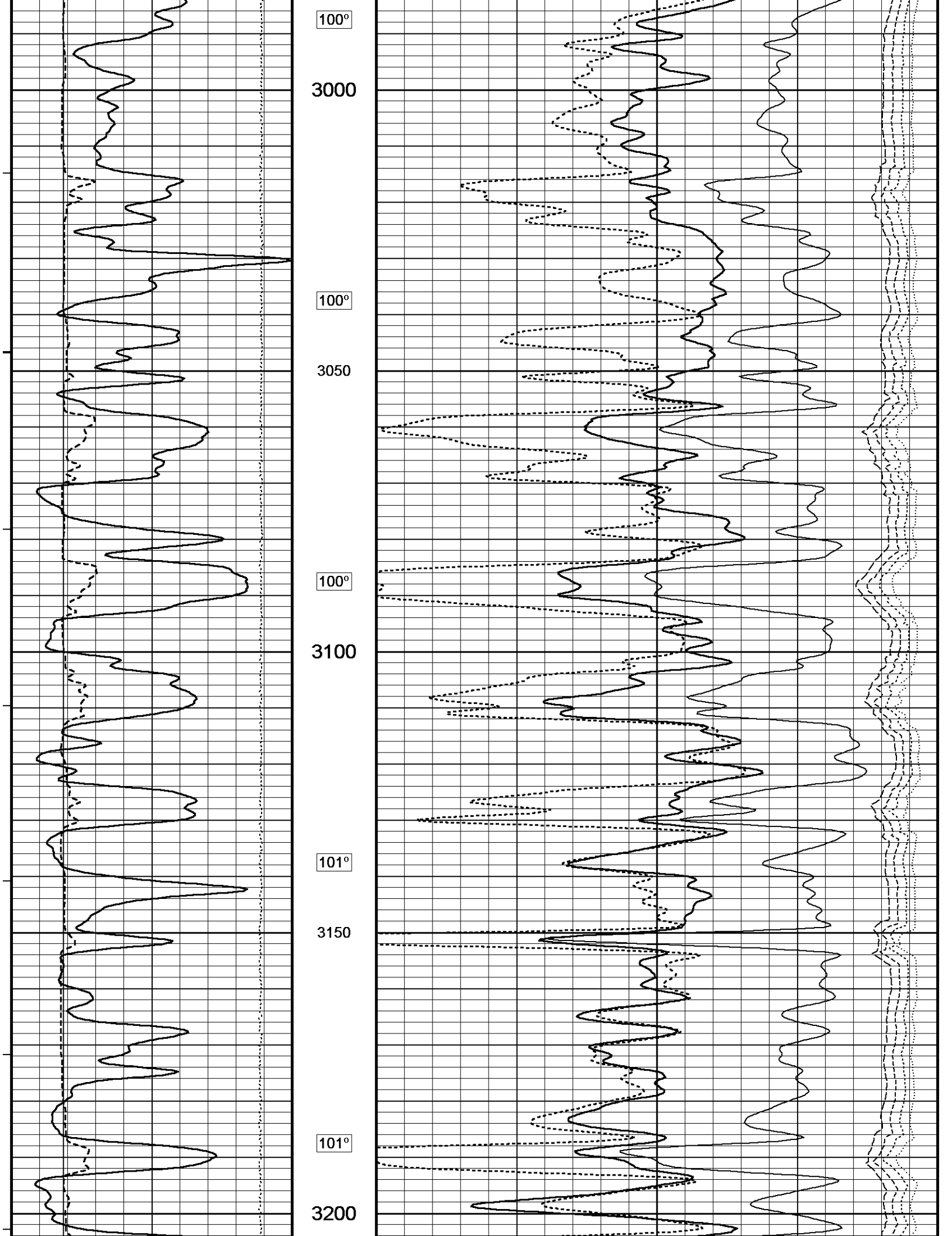

94°
1900
94°
1950
94°
2000
94°
2050
95°
2100
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
Compensated Density

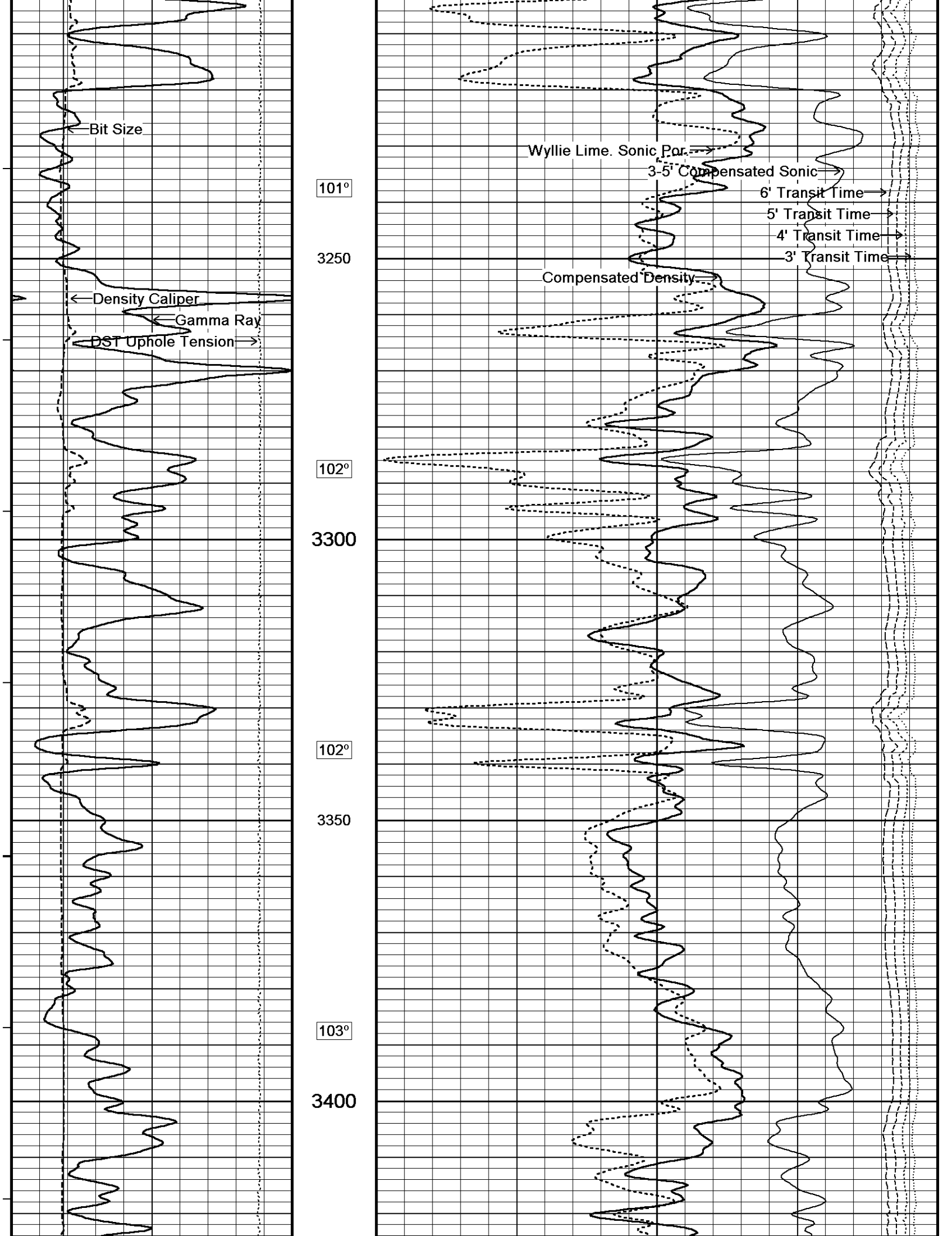

95°
2150
95°
2200
95°
2250
96°
2300

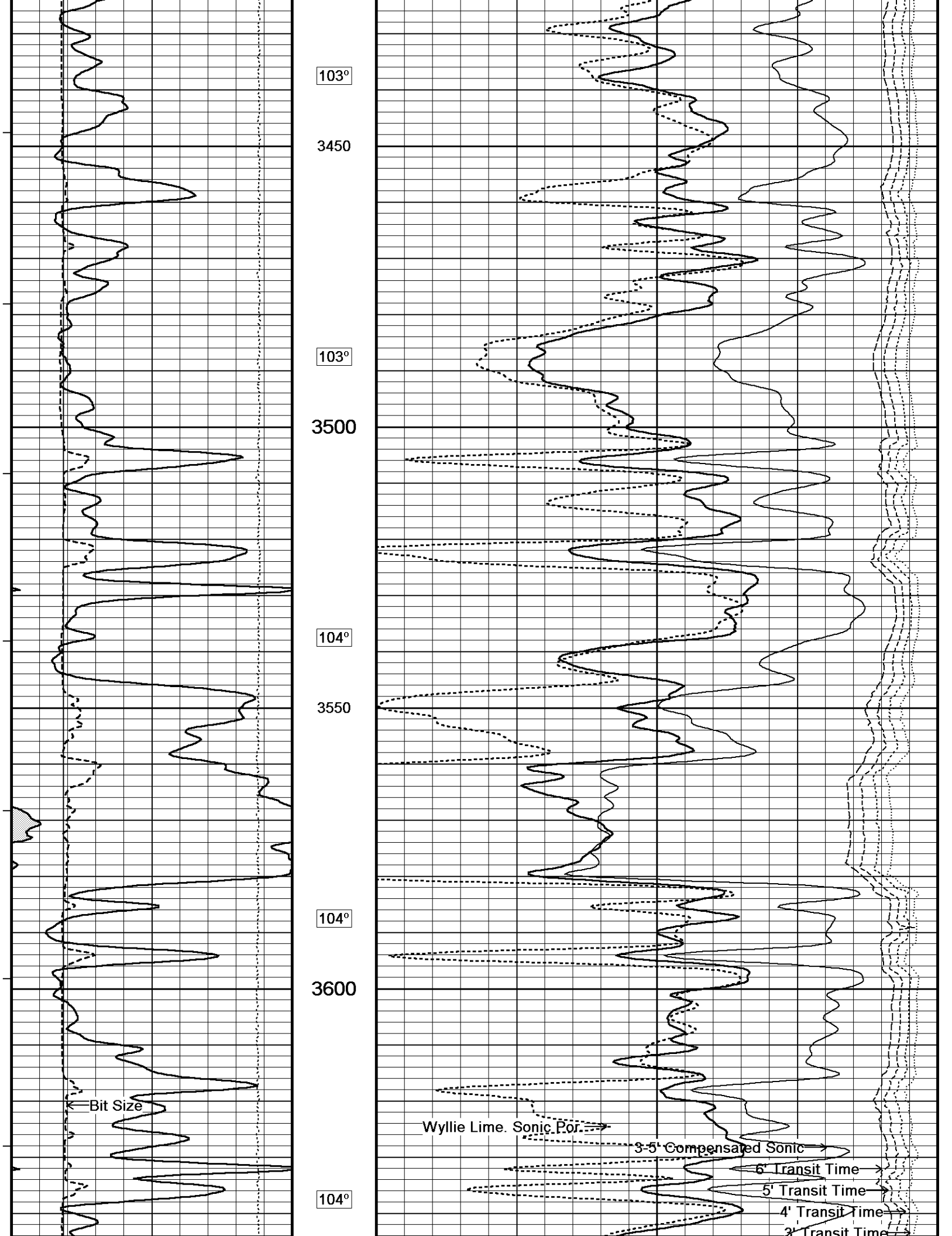

96°
2350
96°
2400
96°
Bit Size
Wyllie Lime. Sonic Por
3-5' Compensated Sonic
2450
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
Density Caliper
Gamma Ray
DST Uphole Tension
96°
2500
96°

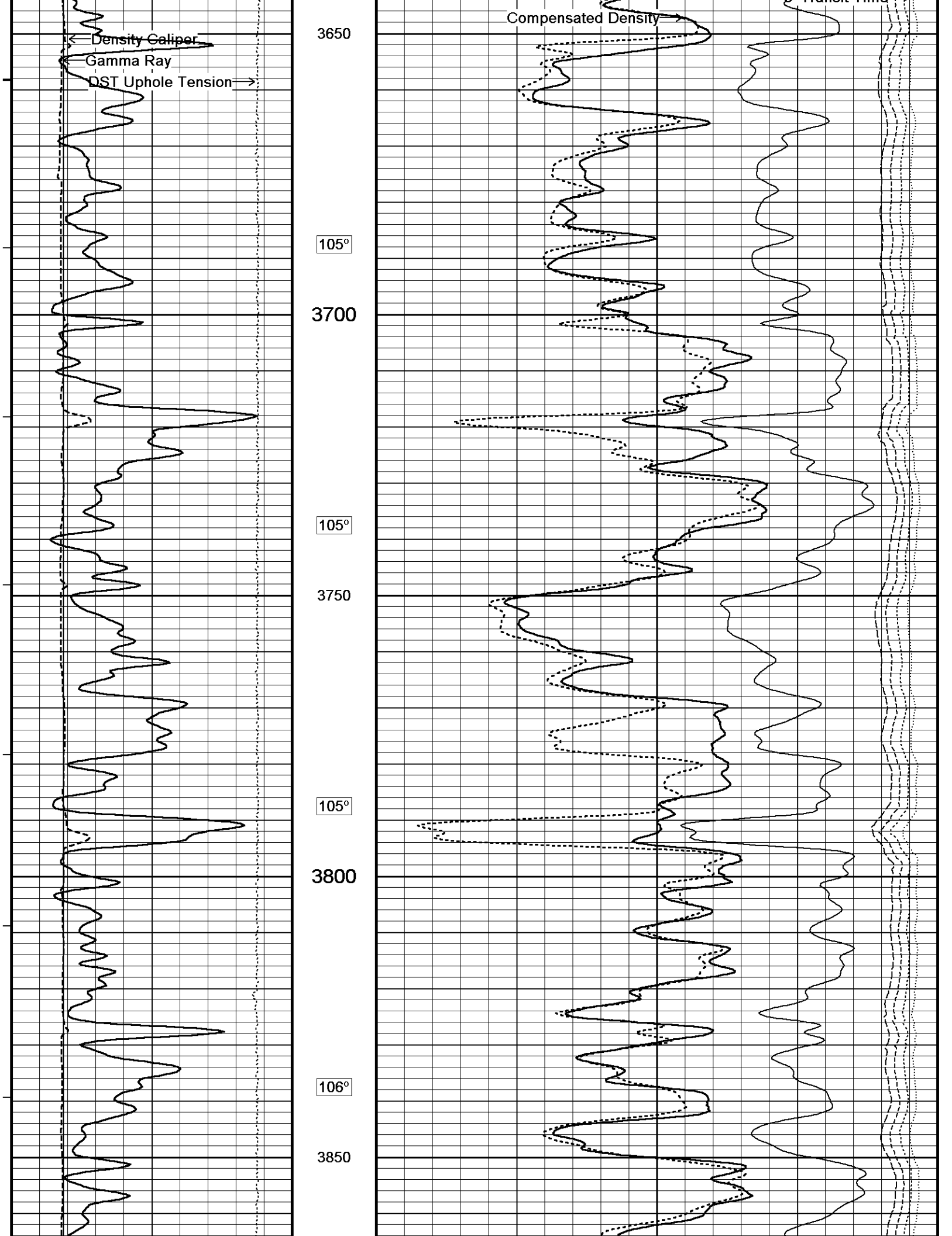

2550
97°
2600
97°
2650
97°
2700
98°
2750

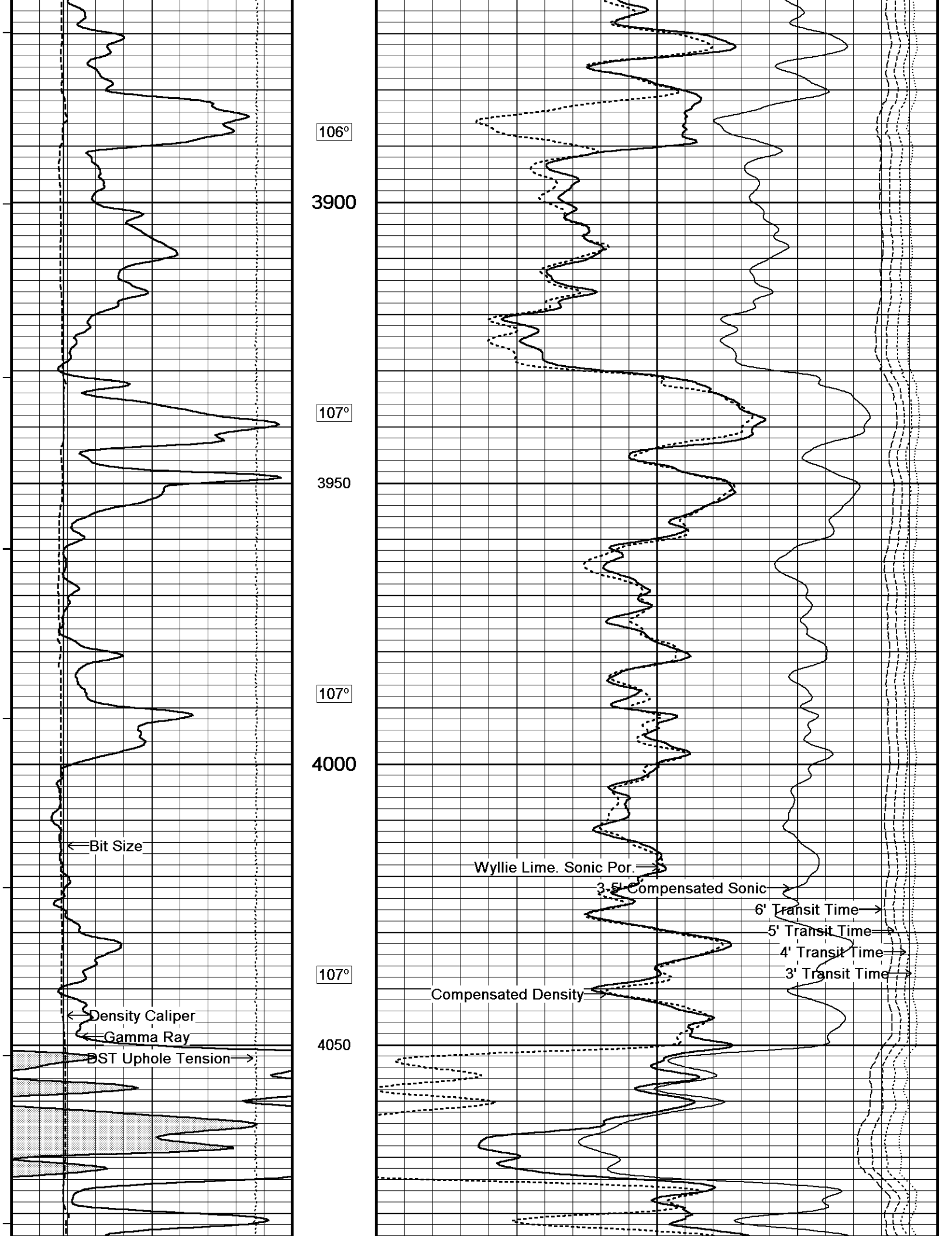

98°
2800
Bit Size
98°
Wyllie Lime. Sonic Por.
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
2850
Compensated Density
Density Caliper
Gamma Ray
DST Uphole Tension
99°
2900
99°
2950

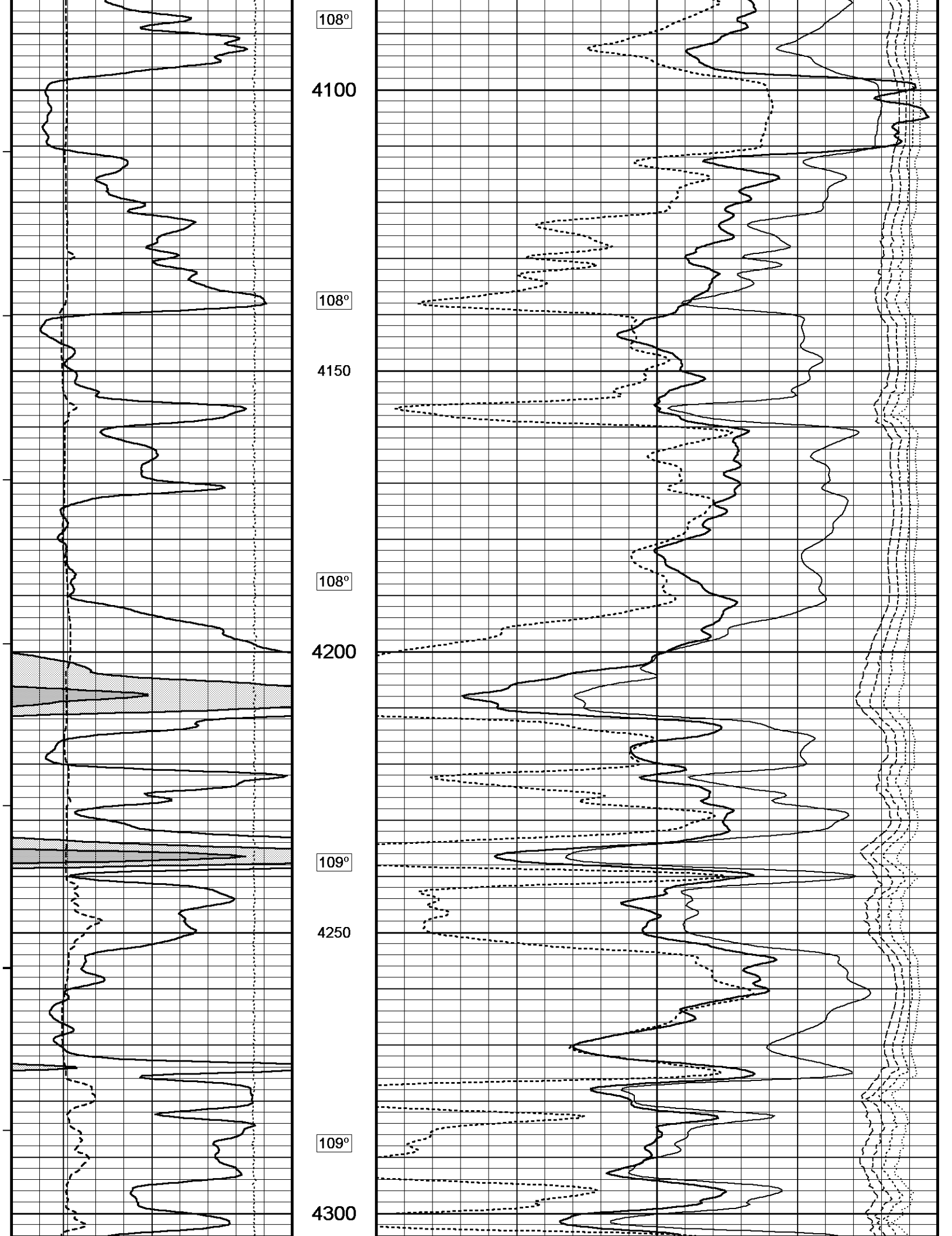

100°
3000
100°
3050
100°
3100
101°
3150
101°
3200

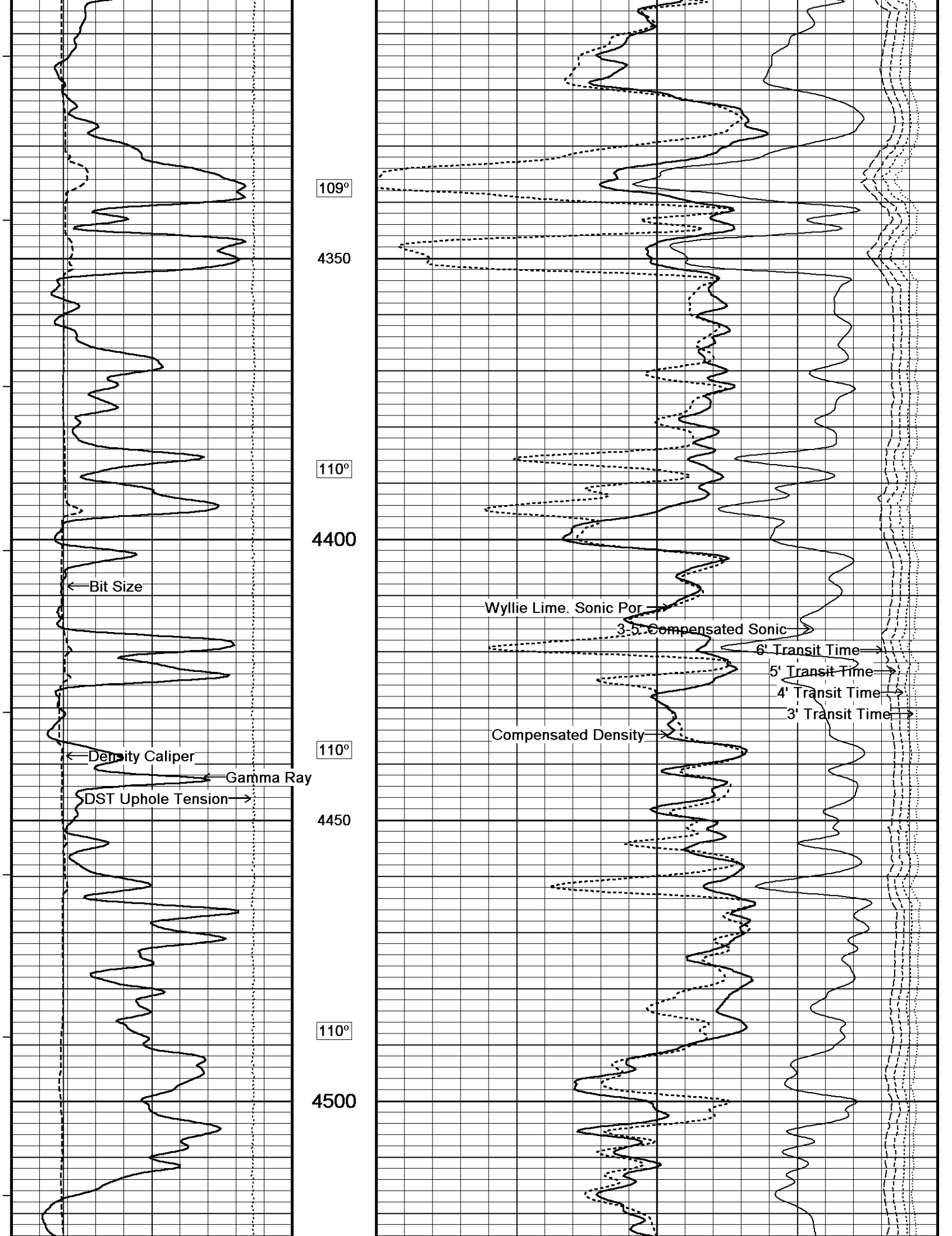

Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
101°
3250
102°
3300
102°
3350
103°
3400
Wyllie Lime. Sonic Por.
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
Compensated Density

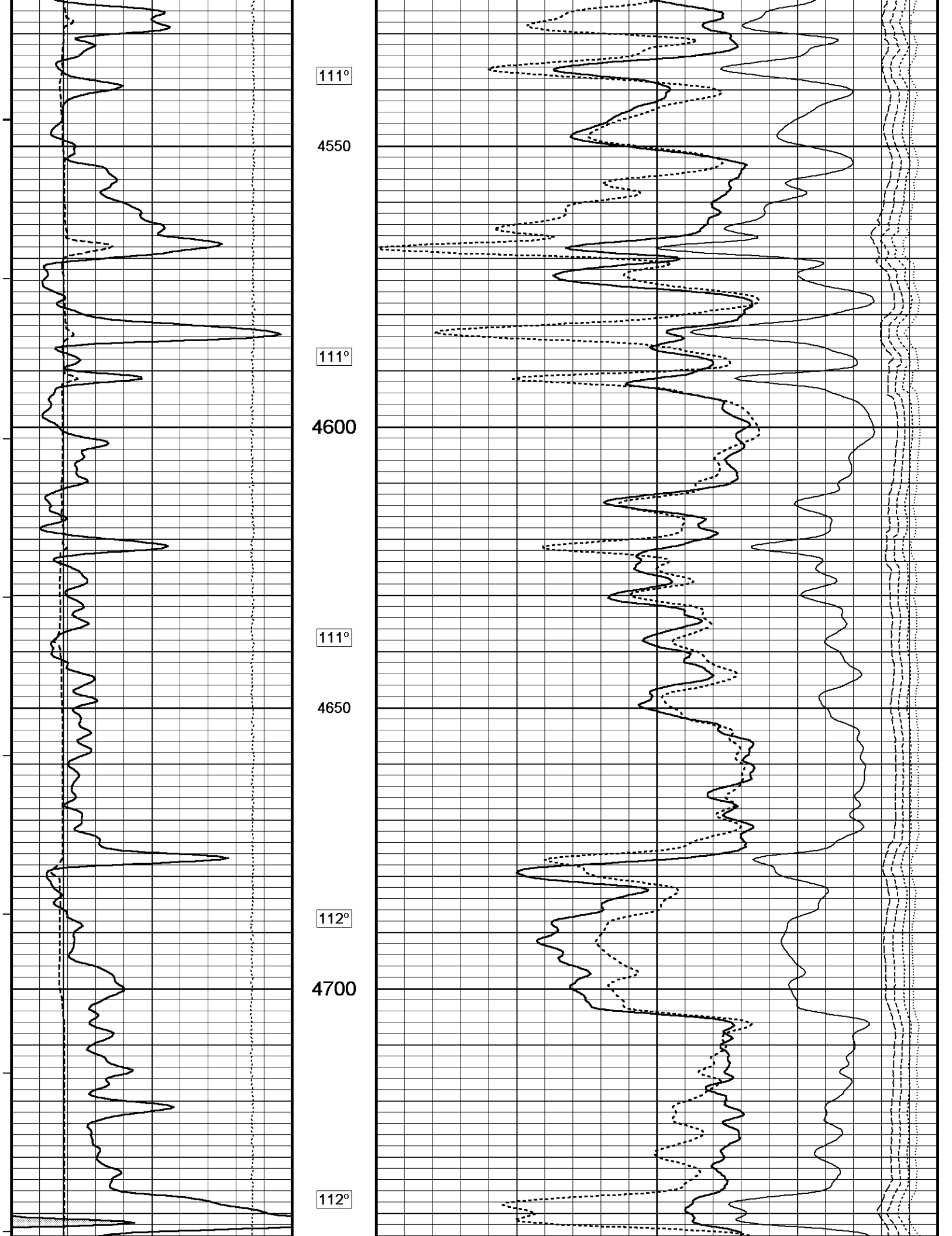

103°
3450
103°
3500
104°
3550
104°
3600
104°
Bit Size
Wyllie Lime. Sonic Por.
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time

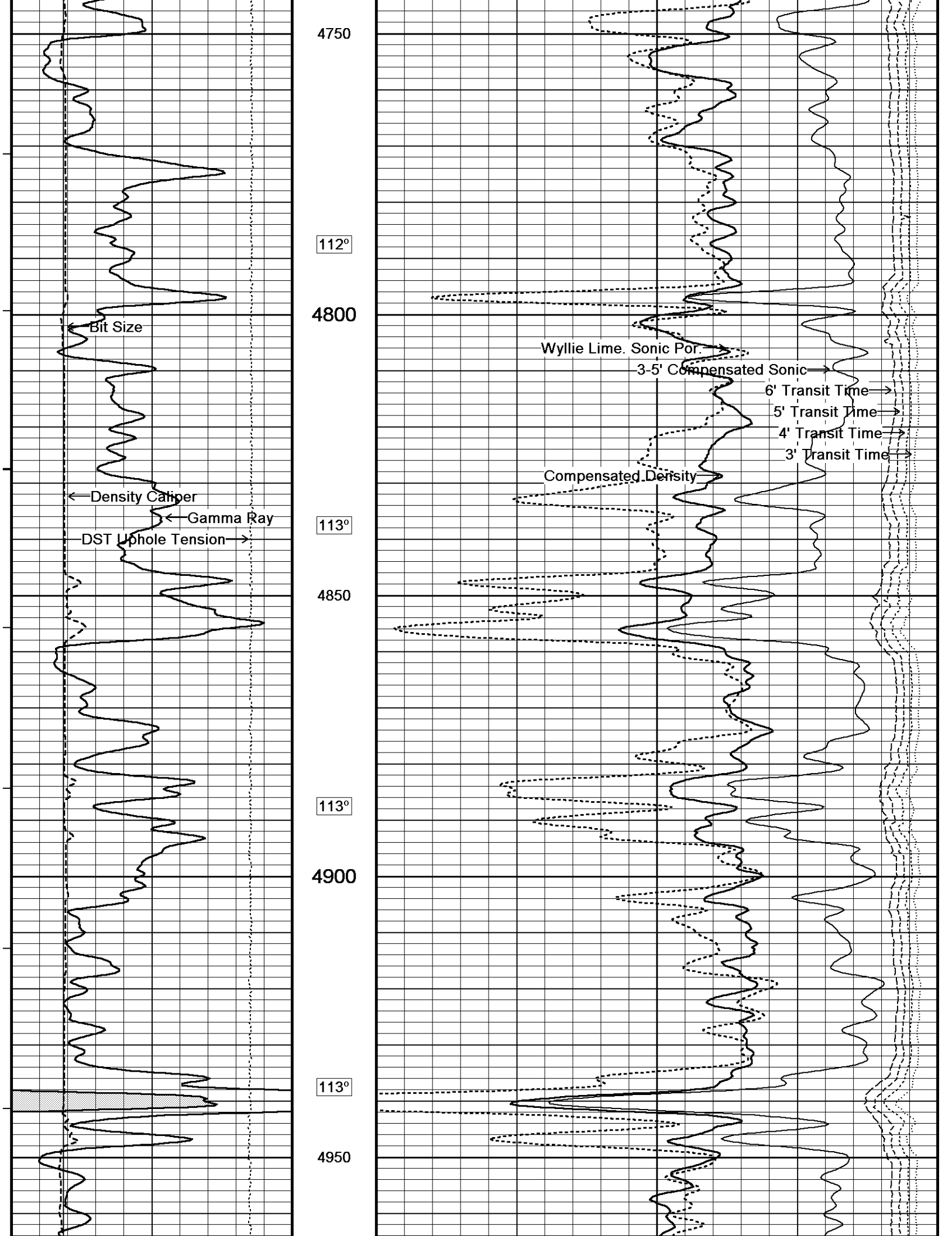

Density Caliper
Gamma Ray
DST Uphole Tension
Compensated Density
3650
105°
3700
105°
3750
105°
3800
106°
3850

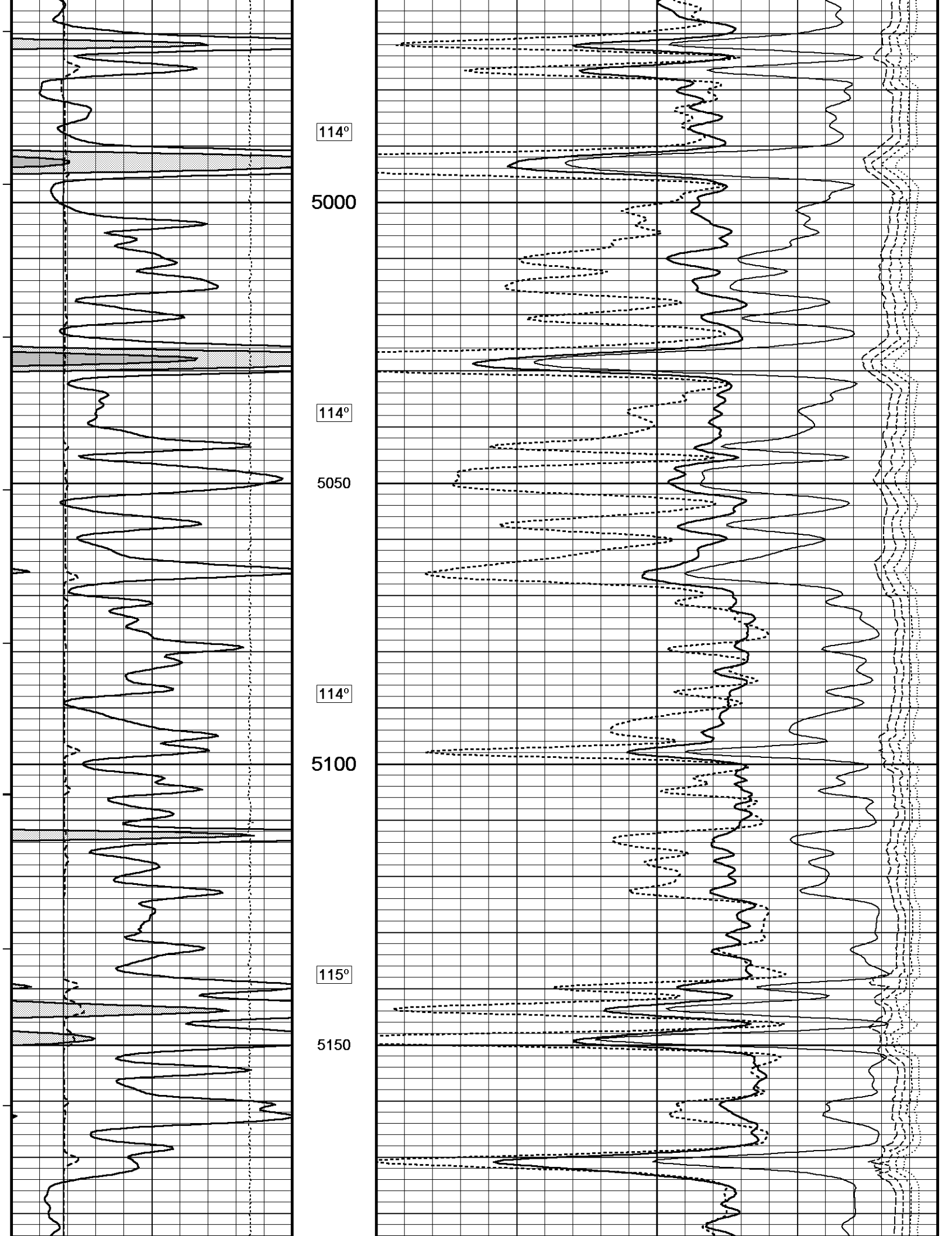

106°
3900
107°
3950
107°
4000
107°
4050
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
Wyllie Lime. Sonic Por.
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
Compensated Density

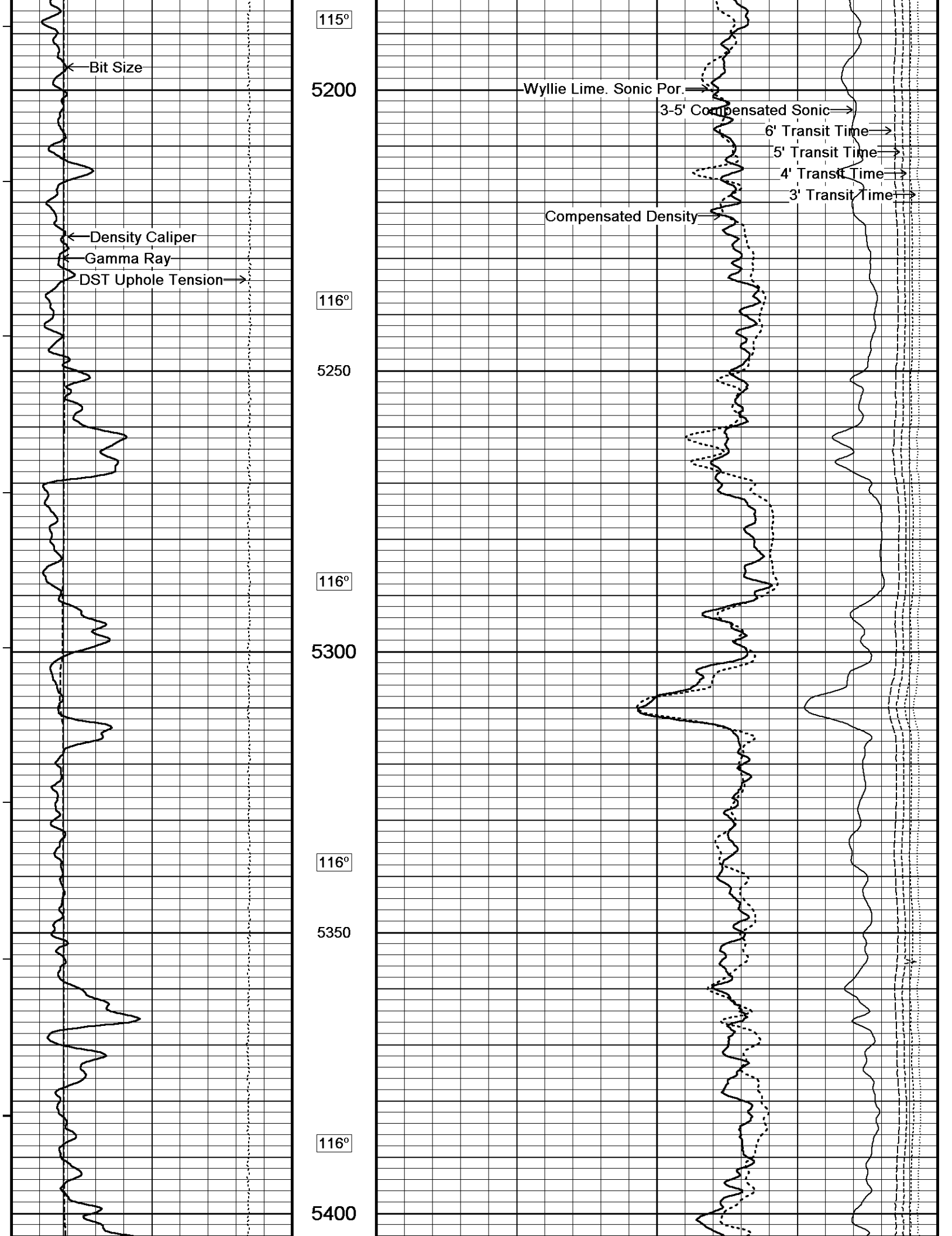

108°
4100
108°
4150
108°
4200
109°
4250
109°
4300

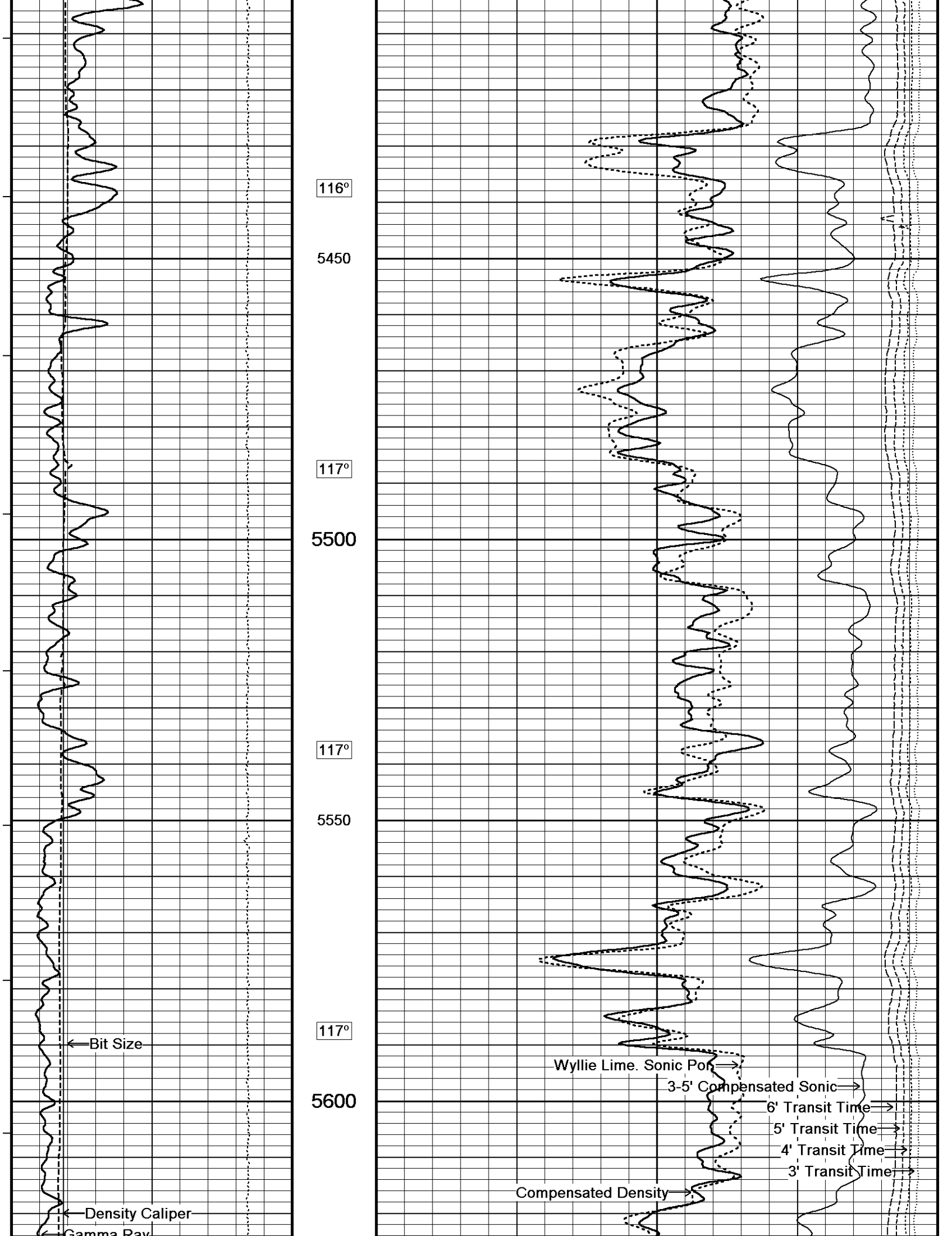

109°
4350
110°
4400
Bit Size
Wyllie Lime. Sonic Por
3-5 Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
Compensated Density
110°
Density Caliper
Gamma Ray
DST Uphole Tension
4450
110°
4500

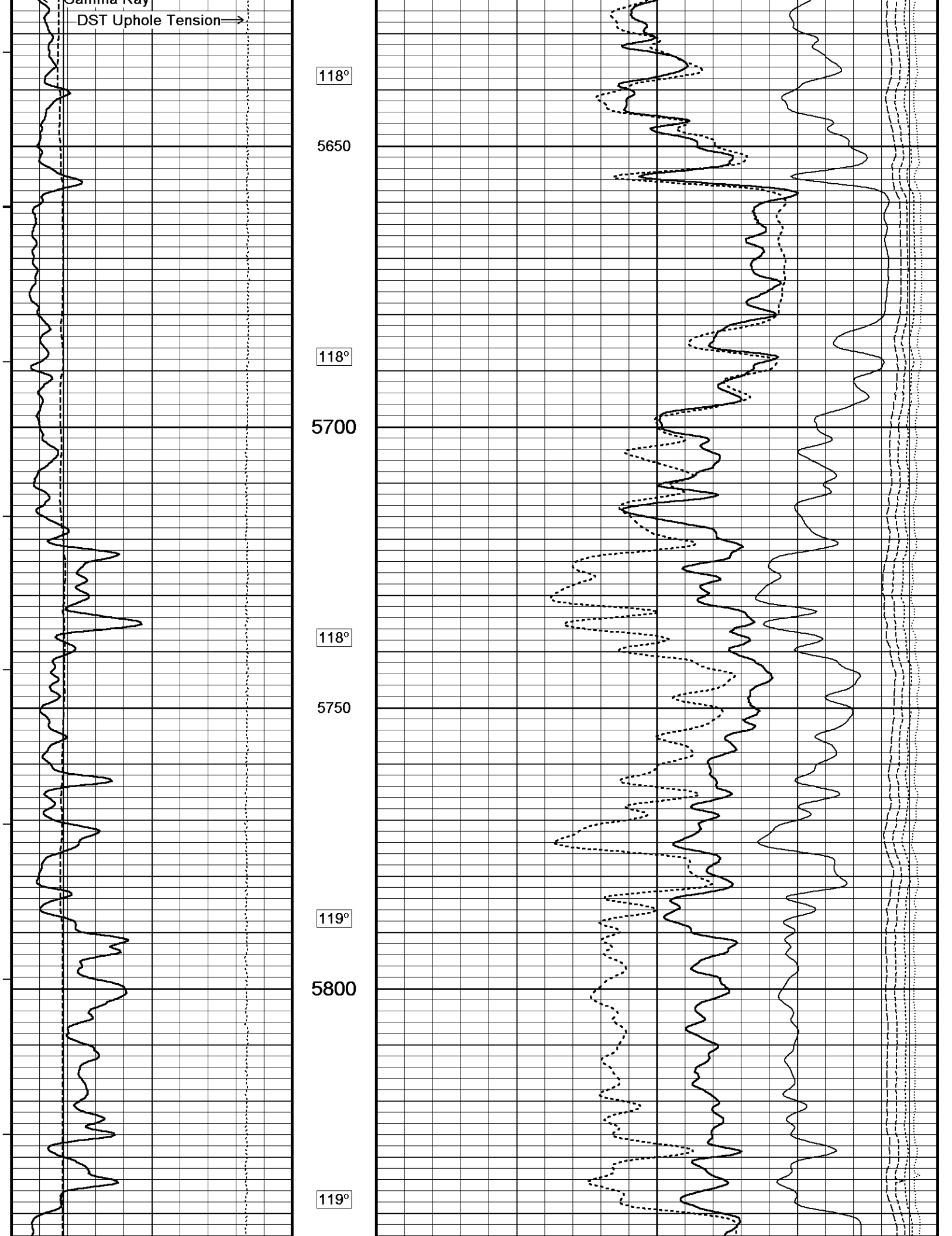

111°
4550
111°
4600
111°
4650
112°
4700
112°

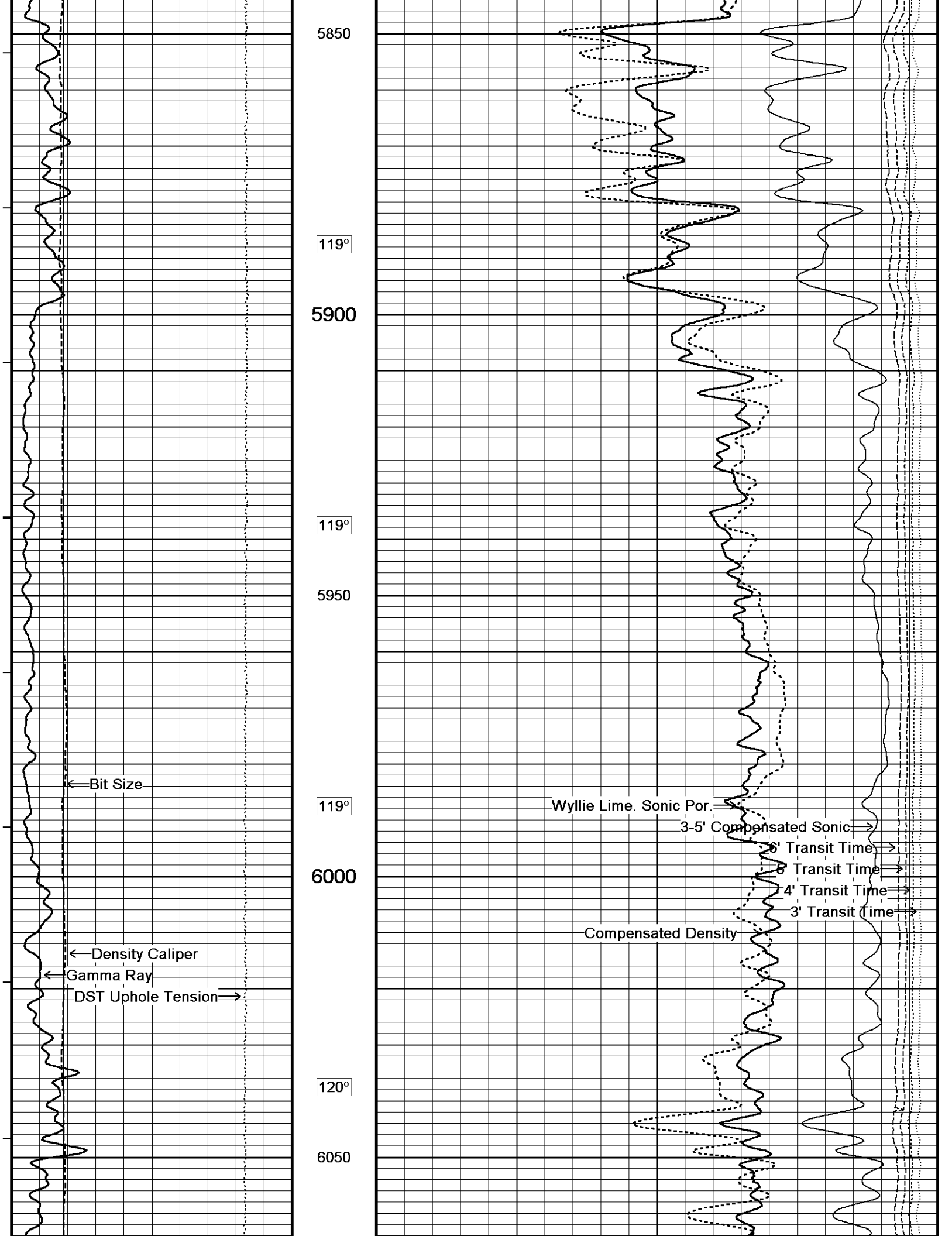

4750
112°
4800
Bit Size
Wyllie Lime. Sonic Por
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
Compensated Density
Density Caliper
Gamma Ray
DST Uphole Tension
113°
4850
113°
4900
113°
4950

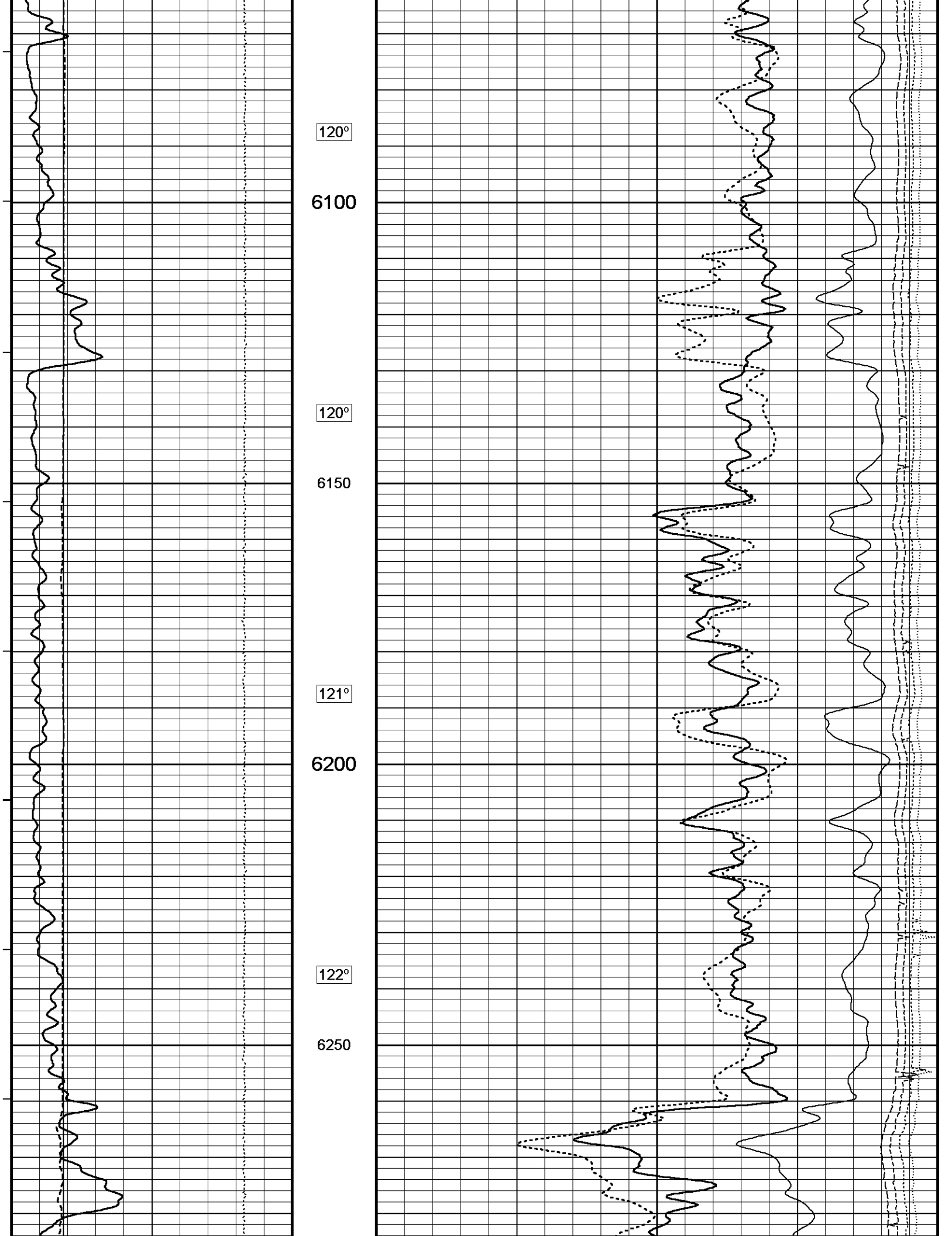

114°
5000
114°
5050
114°
5100
115°
5150

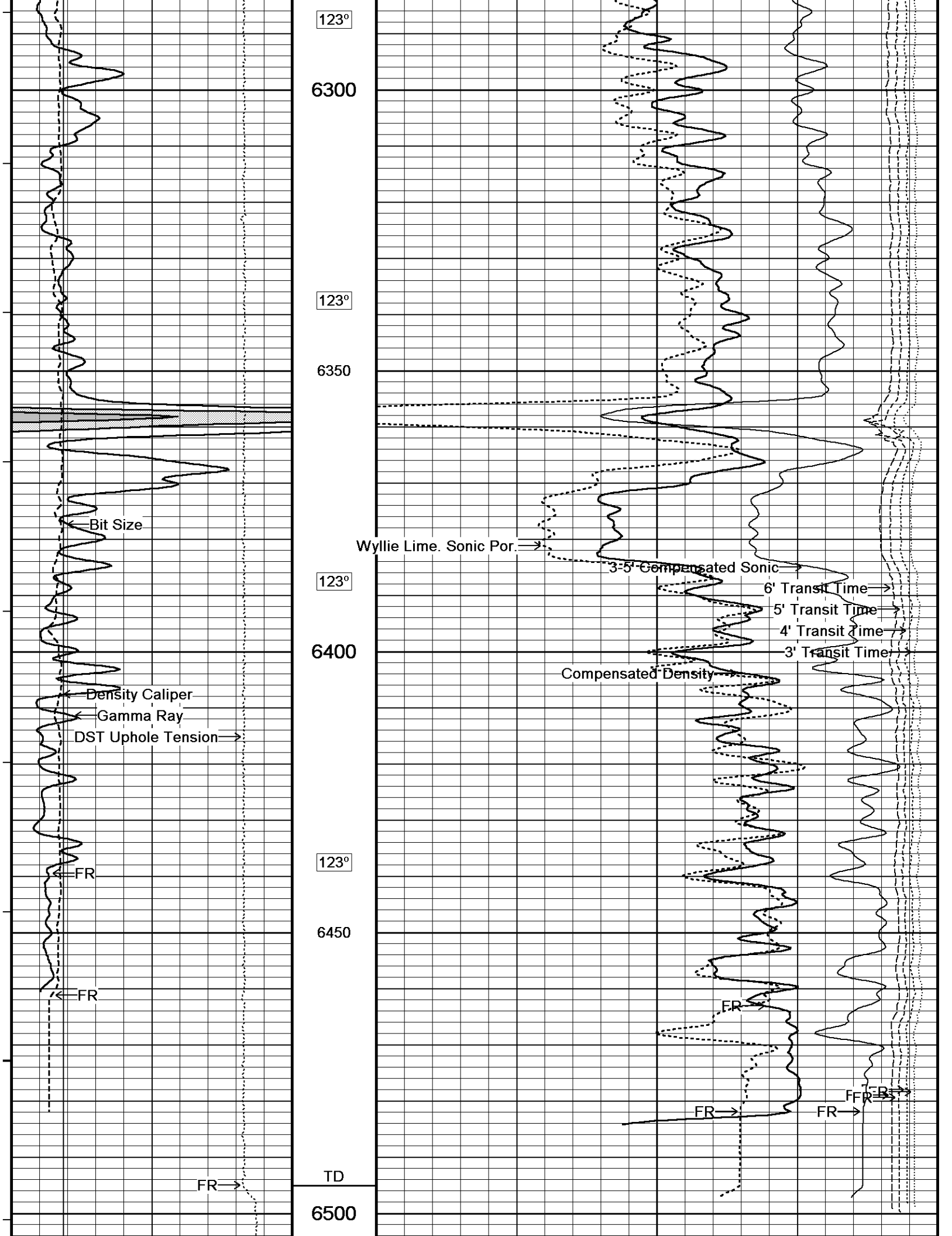

115°
Bit Size
5200
Wyllie Lime. Sonic Por.
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
Compensated Density
Density Caliper
Gamma Ray
DST Uphole Tension
116°
5250
116°
5300
116°
5350
116°
5400

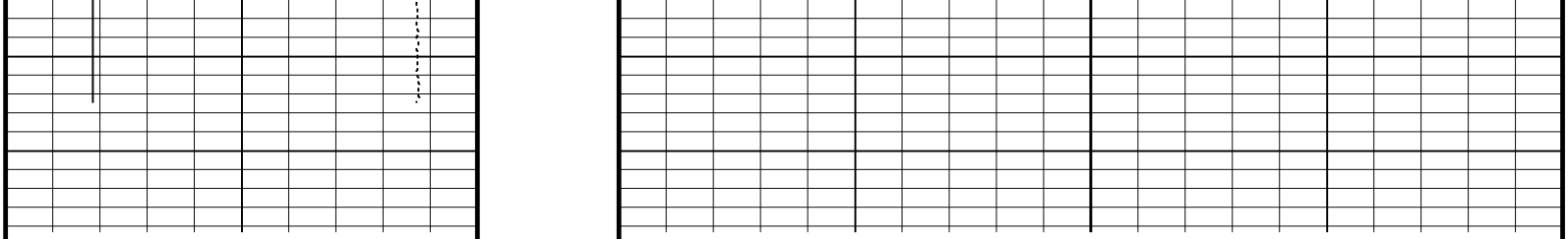

116°
5450
117°
5500
117°
5550
117°
5600
Bit Size
Density Caliper
Gamma Ray
Wyllie Lime. Sonic Por
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
Compensated Density


Gamma Ray
DST Uphole Tension
118°
5650
118°
5700
118°
5750
119°
5800
119°


5850
119°
5900
119°
5950
119°
6000
120°
6050
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
Wyllie Lime. Sonic Por.
3-5' Compensated Sonic
Transit Time
Transit Time
4' Transit Time
3' Transit Time
Compensated Density


120°
6100
120°
6150
121°
6200
122°
6250


123°
6300
123°
6350
Bit Size
Wyllie Lime. Sonic Por.
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
123°
6400
Compensated Density
Density Caliper
Gamma Ray
DST Uphole Tension
FR
123°
6450
FR
FR
FR
FR
FR
FR
TD
6500



Depth in Feet

Compensated Density
grams/cc
2 2.25 2.50 2.75 3

Timing Marks
every 60.0 sec

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

Gamma Ray
API
0 75 150
150 225 300

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

Density Caliper
inches
6 11 16

Borehole Temp in deg F

3' Transit Time
microseconds
1100 100

Bit Size
inches
6 11 16

4' Transit Time
microseconds
1100 100

5' Transit Time
microseconds
1100 100

DST Uphole Tension
pounds
5000 0

Replay Scale 1:240

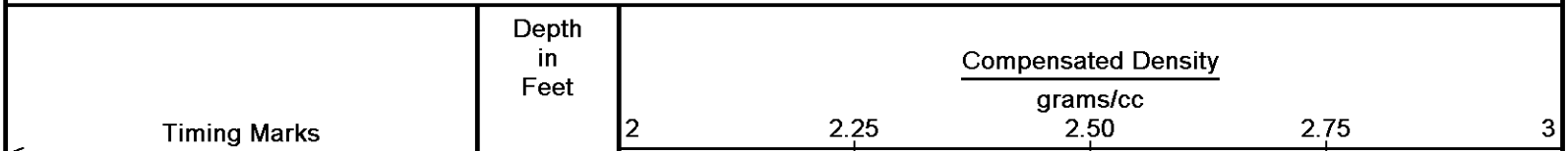
6' Transit Time
microseconds
1100 100

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 18-MAR-2017 20:48
Filename: C:\Minimus 16.05.4955\Data\McCoy Tho...\McCoy Thomas & Reed Farms 'A' #1-21_003.dta — Recorded on 18-MAR-2017 16:25
System Versions: Logged with 16.05.4955 Plotted with 16.05.4955

5 INCH MAIN

REPEAT SECTION

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 18-MAR-2017 20:48
Filename: C:\Minimus 16.05.4955\Data\McCoy Tho...\McCoy Thomas & Reed Farms 'A' #1-21_002.dta — Recorded on 18-MAR-2017 15:48
System Versions: Logged with 16.05.4955 Plotted with 16.05.4955



Depth in Feet

Compensated Density
grams/cc
2 2.25 2.50 2.75 3

Timing Marks

every 60.0 sec

Gamma Ray
API
0 75 150
150 225 300

Density Caliper
inches
6 11 16

Bit Size
inches
6 11 16

DST Uphole Tension
pounds
5000 0

Borehole Temp in deg F

Replay Scale 1:240

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

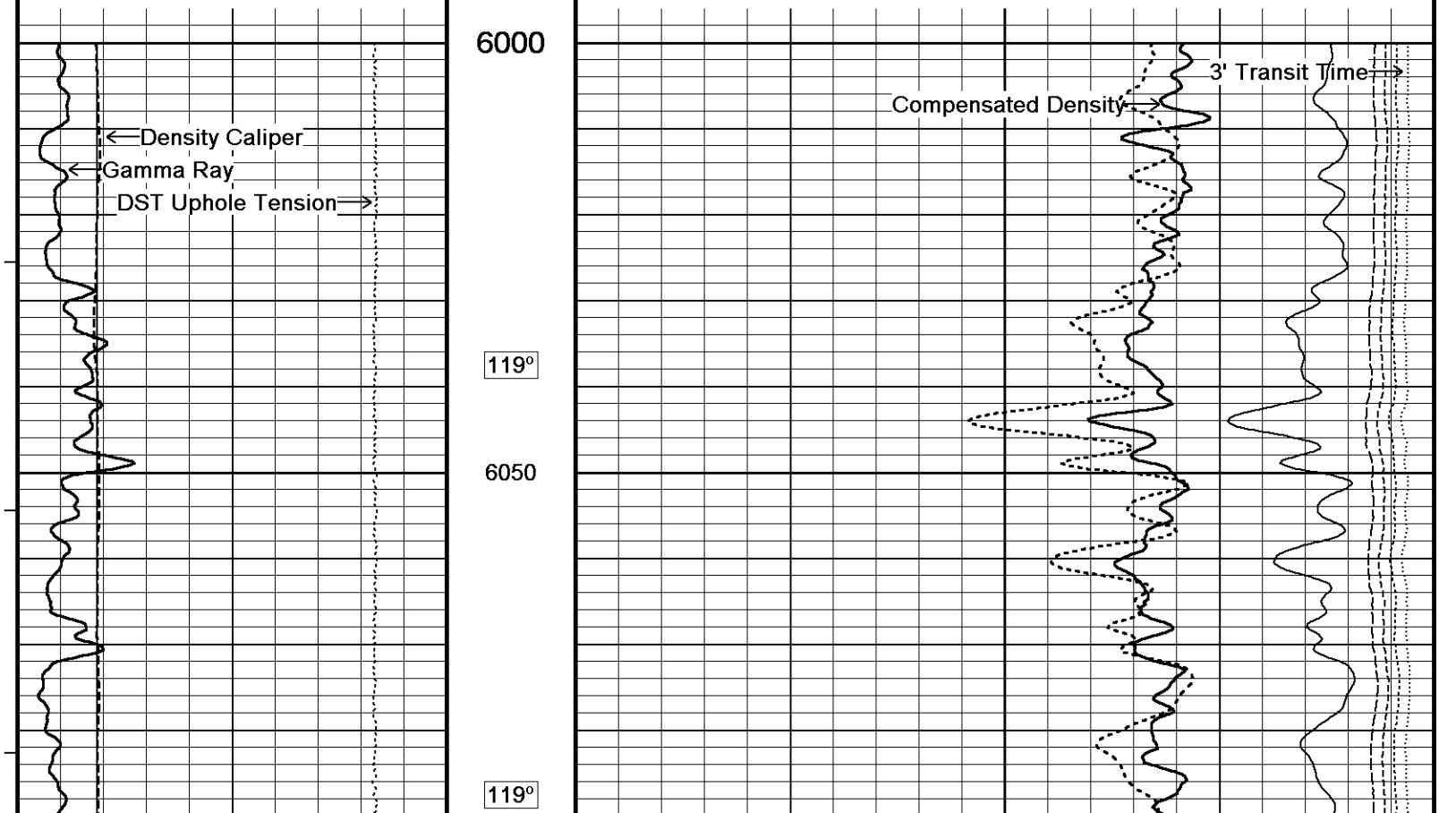
Wyllie Lime. Sonic Por.
percent
30 20 10 0 -10

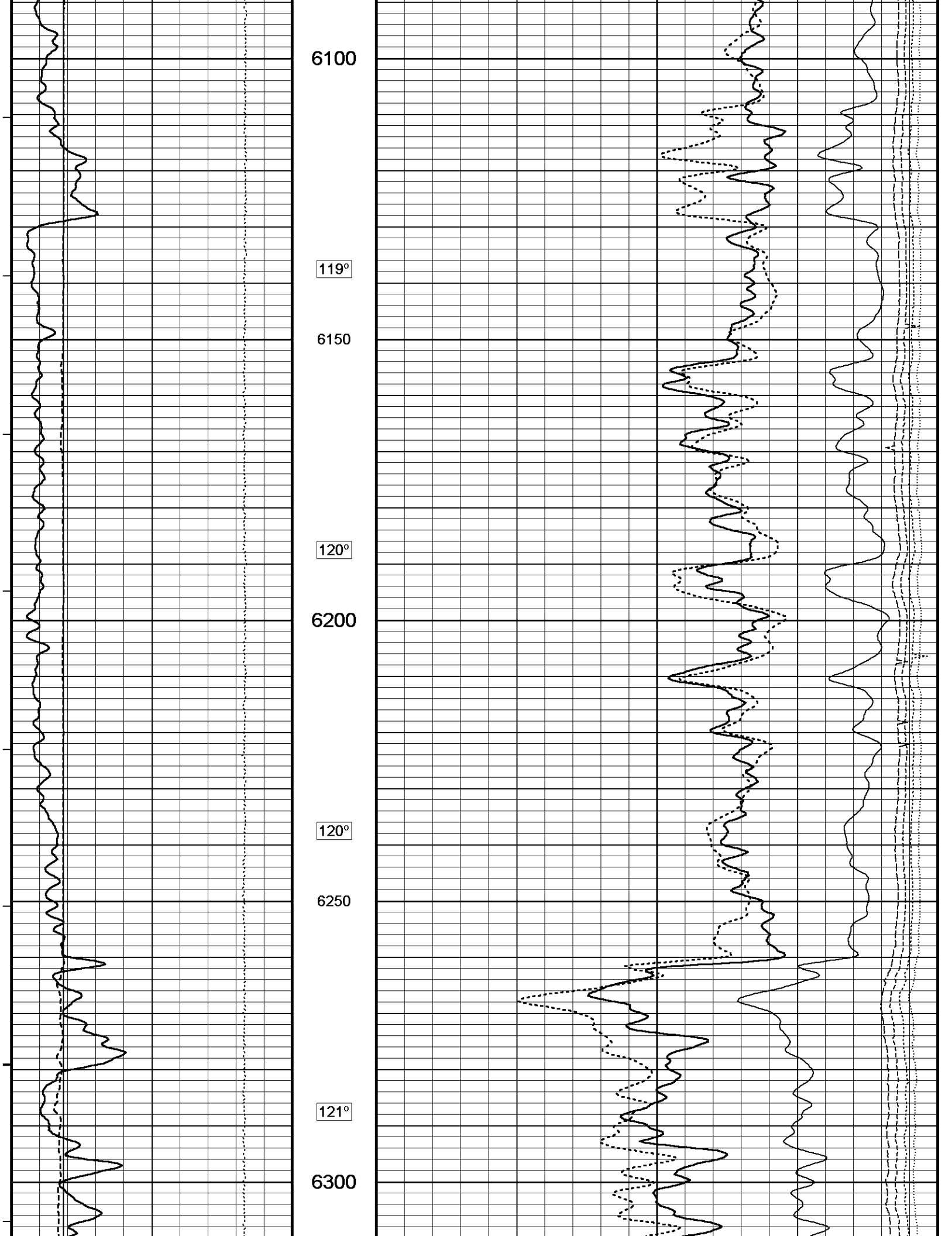
3' Transit Time
microseconds
1100 100

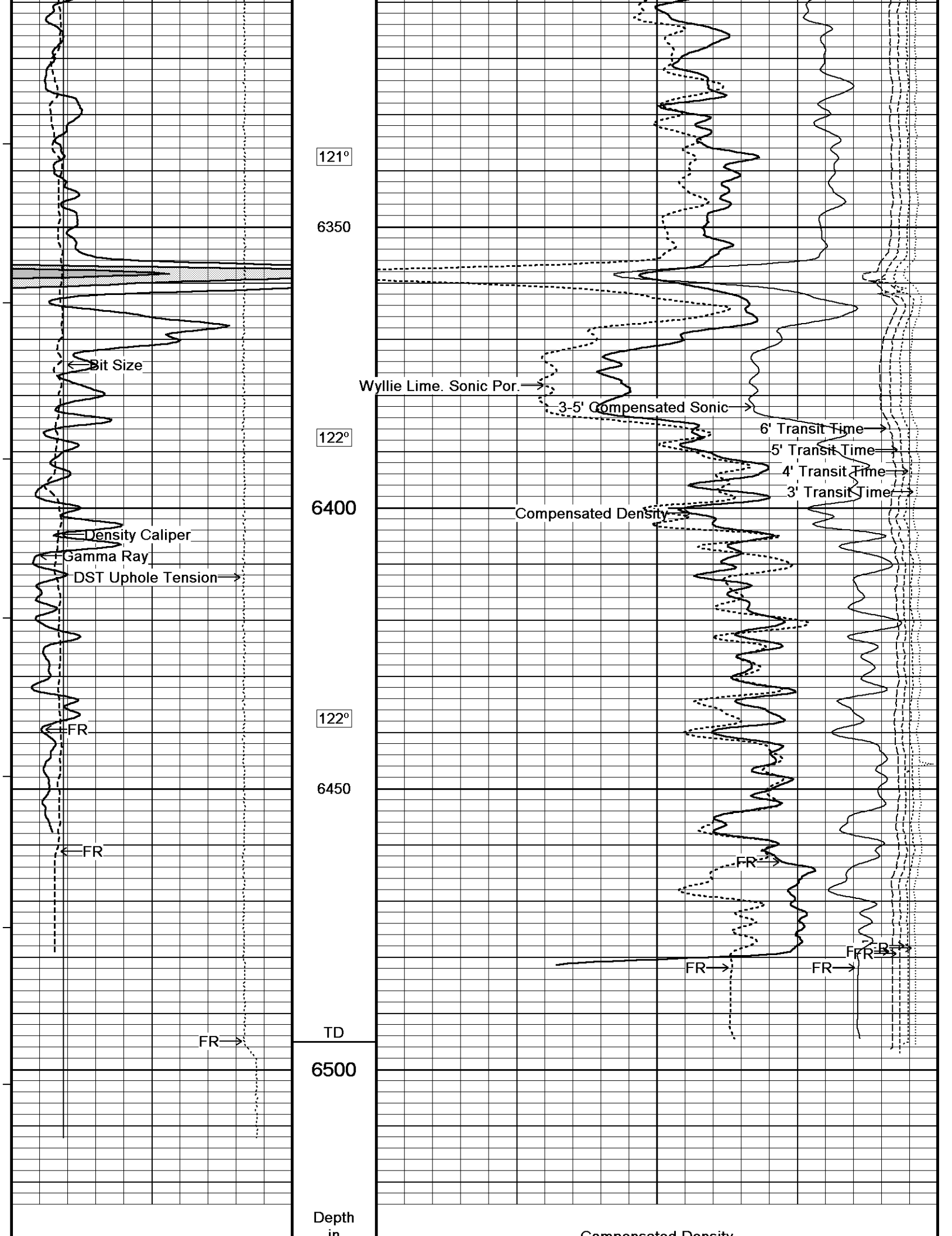
4' Transit Time
microseconds
1100 100

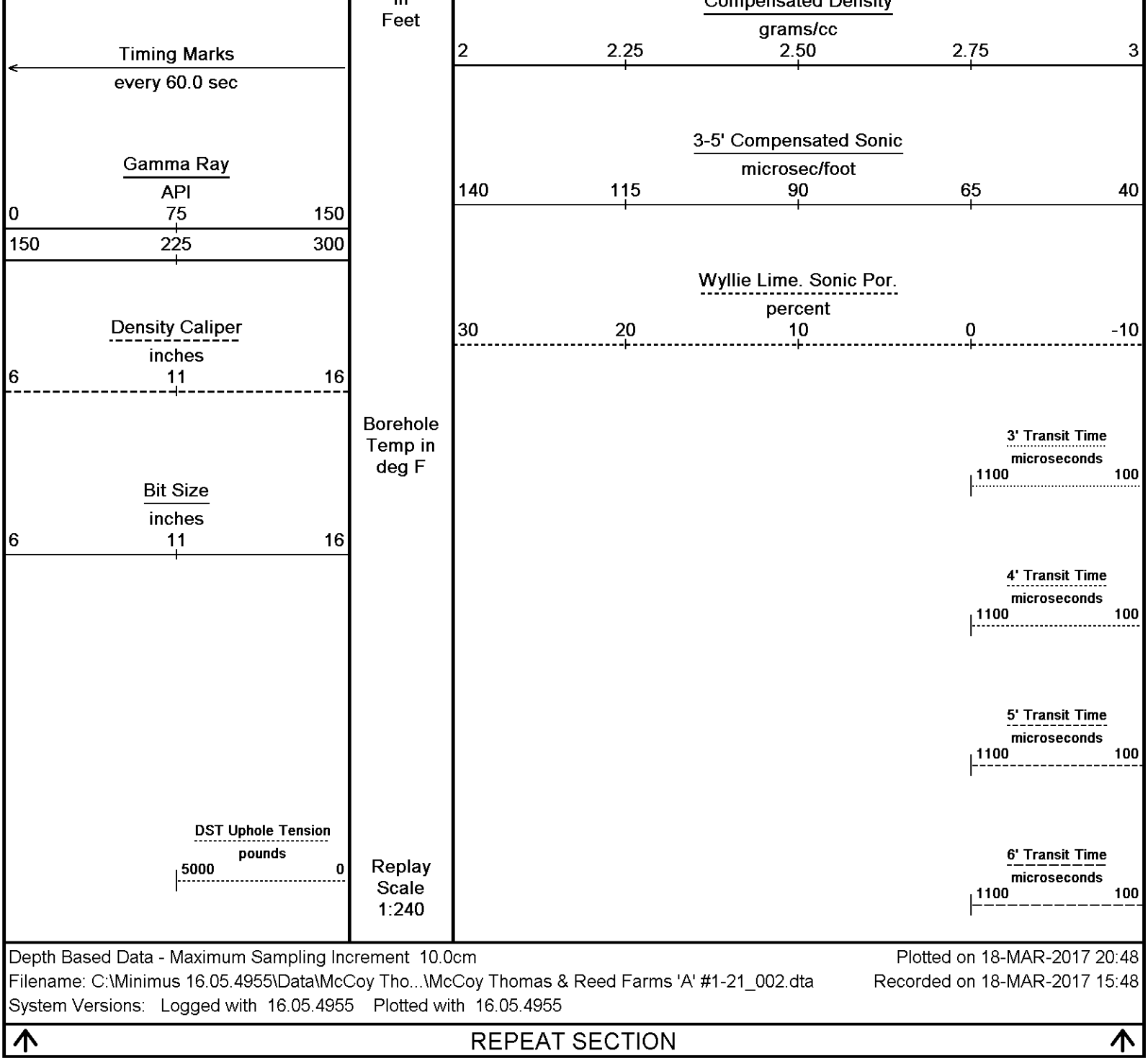
5' Transit Time
microseconds
1100 100

6' Transit Time
microseconds
1100 100




6100
119°
6150
120°
6200
120°
6250
121°
6300


121°
6350
122°
6400
122°
6450
TD
6500
Depth
in
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
FR
FR
FR
Wyllie Lime. Sonic Por.
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
Compensated Density
FR
FR
FR
FR
FR
Compensated Density



Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 18-MAR-2017 20:48

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System Versions: Logged with 16.05.4955 Plotted with 16.05.4955

REPEAT SECTION

BEFORE SURVEY CALIBRATION

C:\Minimus 16.05.4955\Data\McCoy Thomas & Reed Farms 'A' #1-21\McCoy Thomas & Reed Farms 'A' #1-21_002.dta

General Constants All 000 — Last Edited on 18-MAR-2017,15:11

General Parameters		
Mud Resistivity	1.030	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	4.500	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 12-MAR-2017 14:30

Reading No	Measured	Calibrated (lbs)
1	16170.41	0.00
2	17035.71	470.00

Gamma Calibration MCG-C 84

Field Calibration on 18-MAR-2017 07:26

	Measured	Calibrated (API)
Background	113	78
Calibrator (Gross)	777	534
Calibrator (Net)	664	456

Gamma Calibration Tolerances MCG-C 84

Ratio 1.456 (1.40 – 1.475 – 1.55) Counts/API

Gamma Constants MCG-C 84

Last Edited on 18-MAR-2017,10:21

Gamma Calibrator Number	MCGGRCC141	
GRC-M Calibrator Jig in Use?	NO	
Inactive Background Jig in Use?	NO	
Mud Density	1.08	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 09-MAR-2017 17:03

	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 09-MAR-2017,16:16

	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

Caliper Calibration MML-A 7

Base Calibration on 06-MAR-2017 15:09
Field Calibration on 18-MAR-2017 14:37

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	14079	5.98
2	17378	7.97
3	20596	9.86
4	24537	11.92
5	0	0.00
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
8.02	8.10

Caliper Calibration Tolerances MML-A 7

Short Arm Field Cal. 8.02 (7.90 – 8.10 – 8.30) in

Micro Normal and Micro Inverse Calibration MML-A 7

Base Calibration on 06-MAR-2017 15:18
Field Check on 18-MAR-2017 14:40

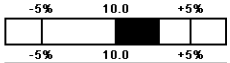
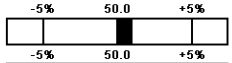
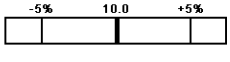
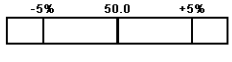
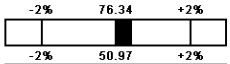
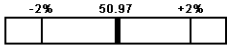
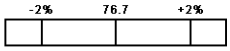
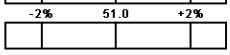
Base Calibration

Channel	Measured Resistor 1	Measured Resistor 2	Calibrated (ohm-m) Resistor 1	Calibrated (ohm-m) Resistor 2

Micro Normal	10.3	50.5	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	76.7	76.7
Micro Inverse	51.0	51.0

Micro Normal & Micro Inverse Calibration Tolerance MML-A 7

Micro Normal Res. 1	10.3		ohm	Micro Normal Res. 2	50.5	 ohm
Micro Inverse Res. 1	10.0		ohm	Micro Inverse Res. 2	50.1	 ohm
Micro Normal Base Check	76.7		ohm-m			
Micro Inverse Base Check	51.0		ohm-m			
Micro Normal Field Check	76.7		ohm-m			
Micro Inverse Field Check	51.0		ohm-m			

Micro Normal and Micro Inverse Constants MML-A 7

Last Edited on 18-MAR-2017,14:38

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

Neutron Calibration MDN-A.B 114

Base Calibration on 07-MAR-2017 19:13
Field Check on 18-MAR-2017 07:31

Base Calibration

	Measured		Calibrated (cps)	
	Near	Far	Near	Far
	3042	94	3714	110
Ratio	32.298		33.764	

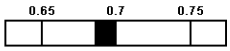
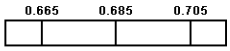
Field Calibrator at Base

	Calibrated (cps)	
	2149	3135
Ratio	0.685	

Field Check

	Calibrated (cps)	
	2144	3130
Ratio	0.685	

Neutron Calibration Tolerances MDN-A.B 114

Ratio	32.298		
Base Check	0.685		
Field Check	0.685		

Neutron Constants MDN-A.B 114

Last Edited on 18-MAR-2017,14:40

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-A.A 135

Base Calibration on 06-MAR-2017 14:24
Field Check on 18-MAR-2017 14:22

Base Calibration

	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	963.7	126.8
Base Check		281.0
Field Check		280.9

FE Calibration Tolerances MFE-A.A 135

Reference 2	963.7	-3% 980.0 +3%	ohm
Base Check	281.0	-2% 277.0 +2%	ohm-m
Field Check	280.9	-2% 281.0 +2%	ohm-m

FE Constants MFE-A.A 135

Last Edited on 18-MAR-2017,14:21

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: Constant Temperature	
Temp. for Rm Corr.	N/A	

Sonic Constants MSS-A.A 55

Last Edited on 18-MAR-2017,10:20

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	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	N/A

Induction Calibration MAI-A.A 111

Base Calibration on 07-MAR-2017 11:32
Field Check on 18-MAR-2017 14:36

Base Calibration

Test Loop Calibration

Channel	Measured Low	Measured High	Calibrated (mmho/m) Low	Calibrated (mmho/m) 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) Low	Base Check (mmho/m) High	Field Check (mmho/m) Low	Field Check (mmho/m) High
1	12.0	3868.2	16.1	3871.1
2	29.7	3524.8	32.3	3525.1
3	29.0	3018.9	31.1	3018.6
4	19.1	2056.7	20.4	2056.5
Deep	17.6	1960.5	19.1	1960.2
Medium	43.0	3973.6	45.5	3972.7
Shallow	44.3	5227.8	48.0	5228.5
Array Temperature		64.6	91.6	Deg F

Induction Calibration Tolerances MAI-A.A 111

Low Conductivity 1	17.6	13.0 / 17.0 / 21.0	mmho/m	High Conductivity 1	473.6	430.0 / 475.0 / 520.0 mmho/m
Low Conductivity 2	6.4	4.5 / 6.0 / 7.5	mmho/m	High Conductivity 2	385.9	345.0 / 385.0 / 425.0 mmho/m
Low Conductivity 3	3.2	1.0 / 3.5 / 6.0	mmho/m	High Conductivity 3	264.0	240.0 / 260.0 / 280.0 mmho/m
Low Conductivity 4	2.1	0.0 / 2.0 / 4.0	mmho/m	High Conductivity 4	135.5	120.0 / 135.0 / 150.0 mmho/m
Background Vx 1	0.0	-110.0 / -32.5 / 45.0	mmho/m	Phase Check Loop 1	0.0	-2.0 / 0.0 / 2.0 %
Background Vx 2	0.0	-35.0 / 20.0 / 75.0	mmho/m	Phase Check Loop 2	0.0	-2.0 / 0.0 / 2.0 %
Background Vx 3	0.0	-60.0 / 2.5 / 65.0	mmho/m	Phase Check Loop 3	0.0	-2.0 / 0.0 / 2.0 %
Background Vx 4	0.0	-50.0 / -17.5 / 15.0	mmho/m	Phase Check Loop 4	0.0	-2.0 / 0.0 / 2.0 %

Induction Constants MAI-A.A 111

Last Edited on 18-MAR-2017,14:34

Induction Model	RtAP-WBM	
Borehole Correction Constants		
Tool Centred	No	
Hole Size Source	Density Caliper	
Hole Size Constant Value	N/A	inches
Stand-off Type	Fins	
Stand-off	0.50	inches
Number of Fins on Stand-off	8.0000	
Stand-off Fin Angle	45.00	degrees
Stand-off Fin Width	0.5000	inches
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

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 09-MAR-2017,23:45

	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

Caliper Calibration MPD-C.A 216

Base Calibration on 05-MAR-2017 15:58
Field Calibration on 18-MAR-2017 14:33

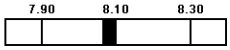
Base Calibration

Reading No	Measured	Calibrator Size (in)
1	17457	3.99
2	27664	5.98
3	37745	7.97
4	47504	9.86
5	58688	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
8.06	8.10

Caliper Calibration Tolerances MPD-C.A 216

Short Arm Field Cal. 8.06 

in

Photo Density Calibration MPD-C.A 216

Base Calibration on 05-MAR-2017 16:29
Field Check on 18-MAR-2017 14:21

Density Calibration

Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Background	1036	1224		
Reference 1	51866	24752	59556	30836
Reference 2	20639	2335	24941	2541

Field Check at Base

1035.7	1223.7

Field Check

1037.3	1227.7

PE Calibration

Base Calibration

	WS	Measured WH	Ratio	Calibrated Ratio
Background	191	930		
Reference 1	21544	51698	0.421	0.371
Reference 2	5964	20523	0.295	0.272

Field Check at Base

190.5	930.0

Field Check

189.8	933.1

Photo Density Calibration Tolerances MPD-C.A 216

Near Density Ratio	2.59	-5% 2.52 +5%	Far Density Ratio	21.17	-5% 21.00 +5%
PE Calibration	0.117	0.089 0.110 0.131			
Near Den. Field Check	1037.3	-3% 1035.7 +3%	Far Den. Field Check	1227.7	-3% 1223.7 +3%
PE WS Field Check	189.8	-6% 190.5 +6%	PE WH Field Check	933.1	-6% 930.0 +6%

Density Constants MPD-C.A 216

Last Edited on 18-MAR-2017,14:21

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	1.08	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	
Precision Enhanced Density Processing	Not Applied	

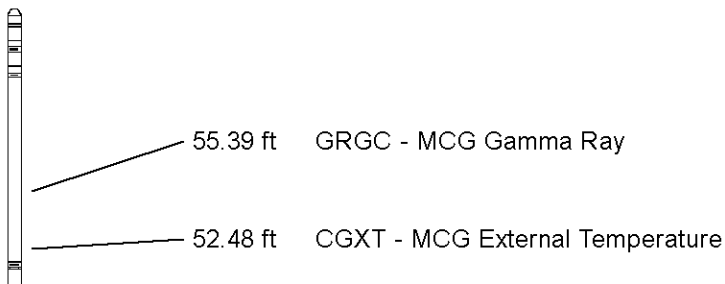
Matrix Density (gm/cc)	Depth (ft)
2.71	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00

DOWNHOLE EQUIPMENT

C:\Minimus 16.05.4955\Data\McCoy Thomas & Reed Farms 'A' #1-21\McCoy Thomas & Reed Farms 'A' #1-21_002.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

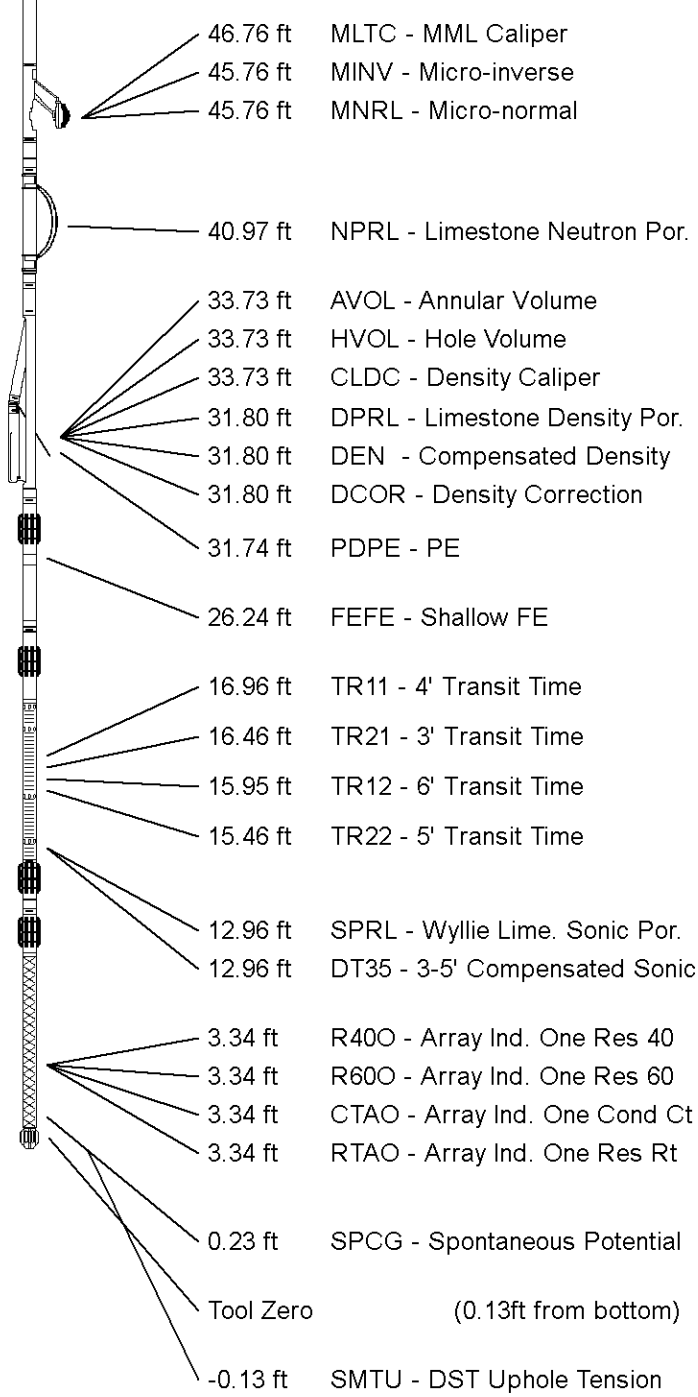
Compact Density/Caliper
MPD-C.A 216 LG: 9.59 ft WT: 90.4 lb OD: 2.449 in

Compact Focussed Electric
MFE-A.A 135 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



46.76 ft	MLTC - MML Caliper
45.76 ft	MINV - Micro-inverse
45.76 ft	MNRL - Micro-normal
40.97 ft	NPRL - Limestone Neutron Por.
33.73 ft	AVOL - Annular Volume
33.73 ft	HVOL - Hole Volume
33.73 ft	CLDC - Density Caliper
31.80 ft	DPRL - Limestone Density Por.
31.80 ft	DEN - Compensated Density
31.80 ft	DCOR - Density Correction
31.74 ft	PDPE - PE
26.24 ft	FEFE - Shallow FE
16.96 ft	TR11 - 4' Transit Time
16.46 ft	TR21 - 3' Transit Time
15.95 ft	TR12 - 6' Transit Time
15.46 ft	TR22 - 5' Transit Time
12.96 ft	SPRL - Wyllie Lime. Sonic Por.
12.96 ft	DT35 - 3-5' Compensated Sonic
3.34 ft	R40O - Array Ind. One Res 40
3.34 ft	R60O - Array Ind. One Res 60
3.34 ft	CTAO - Array Ind. One Cond Ct
3.34 ft	RTAO - Array Ind. One Res Rt
0.23 ft	SPCG - Spontaneous Potential
Tool Zero	(0.13ft from bottom)
-0.13 ft	SMTU - DST Uphole Tension

All measurements relative to tool zero.

COMPANY	McCOY PETROLEUM CORPORATION
WELL	THOMAS & REED FARMS 'A' #1-21
FIELD	WILDCAT
PROVINCE/COUNTY	GRAY
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	2739	feet	First Reading	6482.00	feet
Elevation Drill Floor	2737	feet	Depth Driller	6500.00	feet
Elevation Ground Level	2728	feet	Depth Logger	6495.00	feet

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