



Weatherford[®]

COMPOSITE LOG

COMPANY **TAOS RESOURCES OPERATING CO.**
 WELL **WEST MADDIX UNIT #16**
 FIELD **WILDCAT**
 PROVINCE/COUNTY **COWLEY**
 COUNTRY/STATE **USA / KANSAS**
 LOCATION **165' FNL & 2390' FEL**
NW-NW-NW-NE

SEC **15** TWP **33S** RGE **5E** Other Services **NONE**
 API Number **15-035-24536**
 Permit Number
 Permanent Datum GL, Elevation 1251 feet
 Log Measured From **KB**
 Drilling Measured From **KB**

Date	28-OCT-2013	Elevations:	
Run Number	ONE	KB	1259.00
Service Order	3542075	DF	1257.00
Depth Driller	3650.00	GL	1251.00
Depth Logger	3653.00		
First Reading	3650.00		
Last Reading	231.00		
Casing Driller	233.00		
Casing Logger	231.00		
Bit Size	7.875		
Hole Fluid Type	CHEMICAL		
Density / Viscosity	9.40 lb/USg	50.00 CP	
PH / Fluid Loss	9.50	9.20 ml/30Min	
Sample Source	MUD PIT		
Rm @ Measured Temp	1.40 @ 86.0	ohm-m	
Rmf @ Measured Temp	1.12 @ 86.0	ohm-m	
Rmc @ Measured Temp	1.68 @ 86.0	ohm-m	
Source Rmf / Rmc	CALC	CALC	
Rm @ BHT	1.067 @ 114.0	ohm-m	
Time Since Circulation	3 HOURS		
Max Recorded Temp	115.00	deg F	
Equipment / Base	13379	OKC	
Recorded By	RUSSELL POGUE		JUSTIN HICKS
Witnessed By	STEVE BALL		

BOREHOLE RECORD

Last Edited: 28-OCT-2013 13:52

Bit Size inches	Depth From feet	Depth To feet
7.875	233.00	3650.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	233.00	36.00

REMARKS

WLS 13.04.8723

DEPTH CONTROL: CALIBRATED MEASURING WHEEL.

TOOLS RAN: MCG, MMR, MDN, MPD, MFE, MSS, MAI RAN IN COMBINATION.

HARDWARE:
 MAI: TWO 0.5 INCH STANDOFFS USED.
 MFE: ONE 0.5 INCH STANDOFF USED.
 MDN: DUAL NEUTRON BOW SPRINGS USED.
 MPD: 8 INCH PROFILE PLATE USED.
 MSS: THREE 0.5 INCH STANDOFFS USED.

2.71G/CC DENSITY MATRIX USED TO CALCULATE POROSITY.
 ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.

TOTAL HOLE VOLUME FROM TD TO SURFACE CASING = 1492 CU.FT.
 ANNULAR HOLE VOLUME WITH 5.5 INCH PRODUCTION CASING FROM TD TO SURFACE = 933 CU.FT.

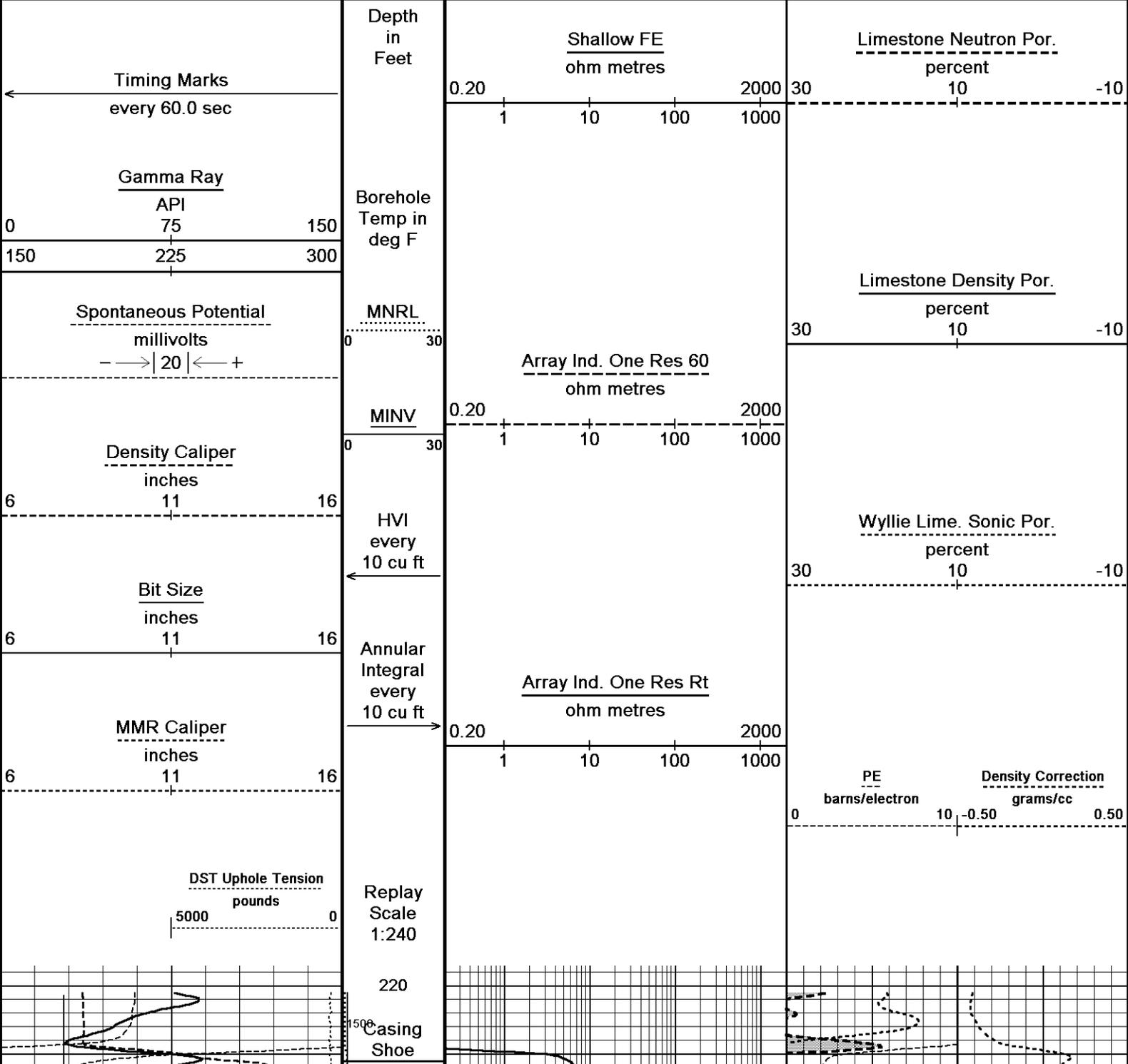
OPERATOR: RICK ROLLANS

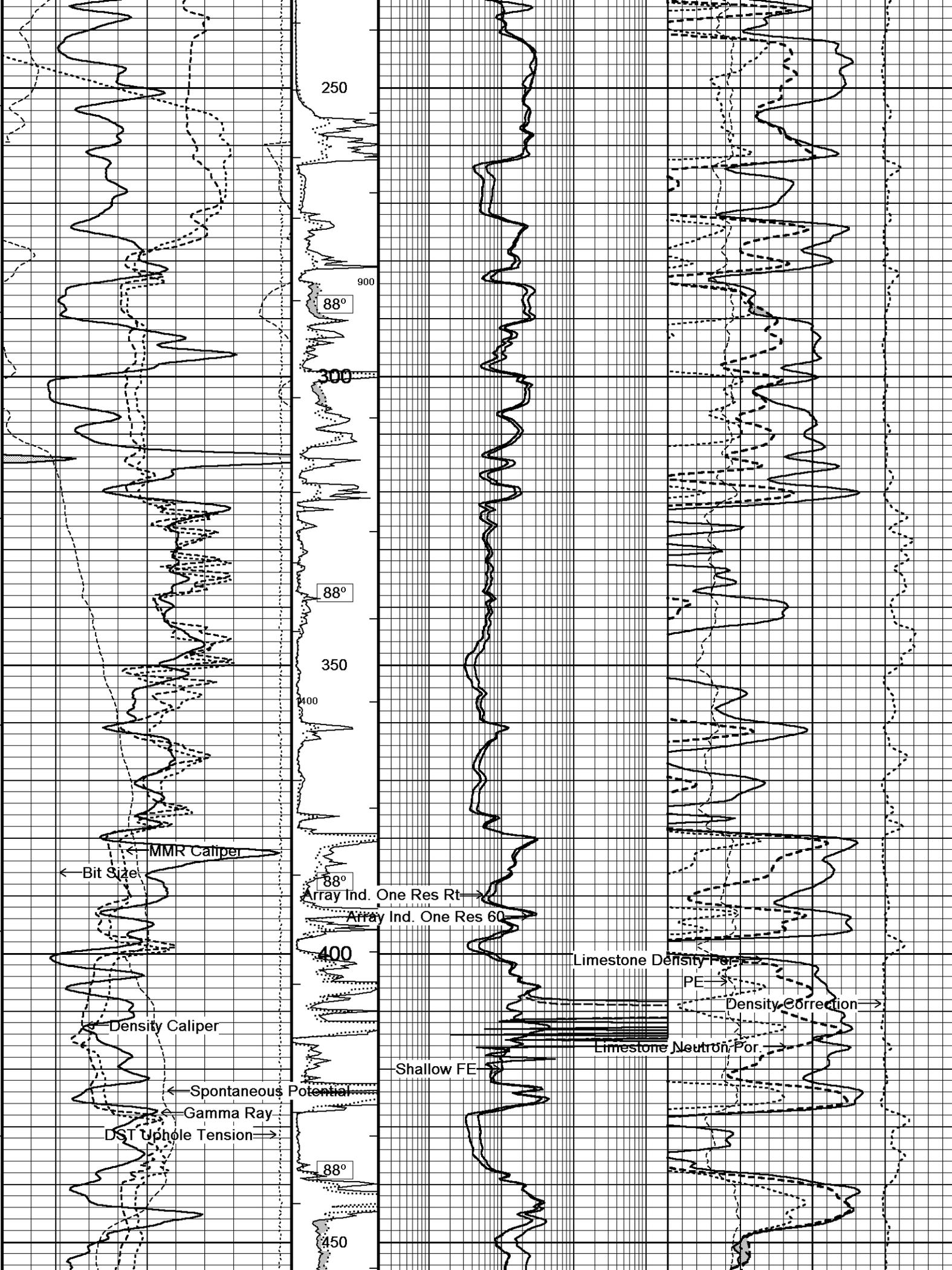
SERVICE ORDER # 3542075

RIG: FOSSIL DRILLING #2

All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any losses, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions in our price schedule.

5 INCH MAIN
Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 28-OCT-2013 22:43
Filename: C:\Program Files\Weatherford\WLS 13.04\DATA\TAOS (WEST MADDIX U...)\DATA_003.dta
Recorded on 28-OCT-2013 17:20
System Versions: Logged with 13.04.8723 Processed with 13.04.8723 Plotted with 13.04.8723





250

900

88°

300

88°

350

400

88°

400

88°

450

← Bit Size

← MMR Caliper

← Density Caliper

← Spontaneous Potential

← Gamma Ray

← DST Uphole Tension

Array Ind. One Res Rt →

Array Ind. One Res 60 →

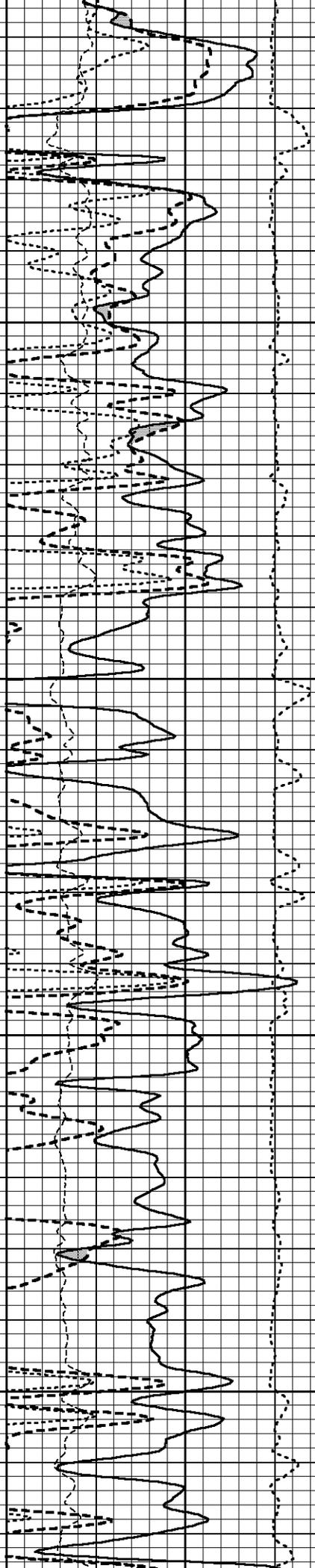
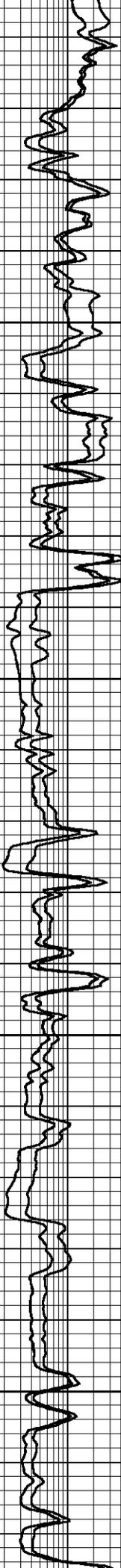
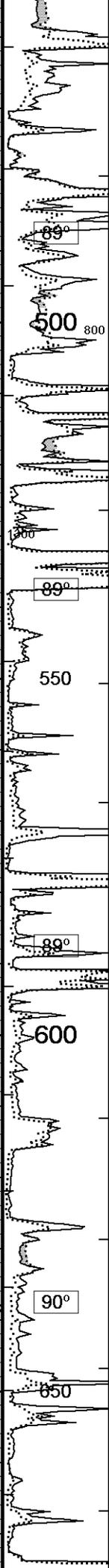
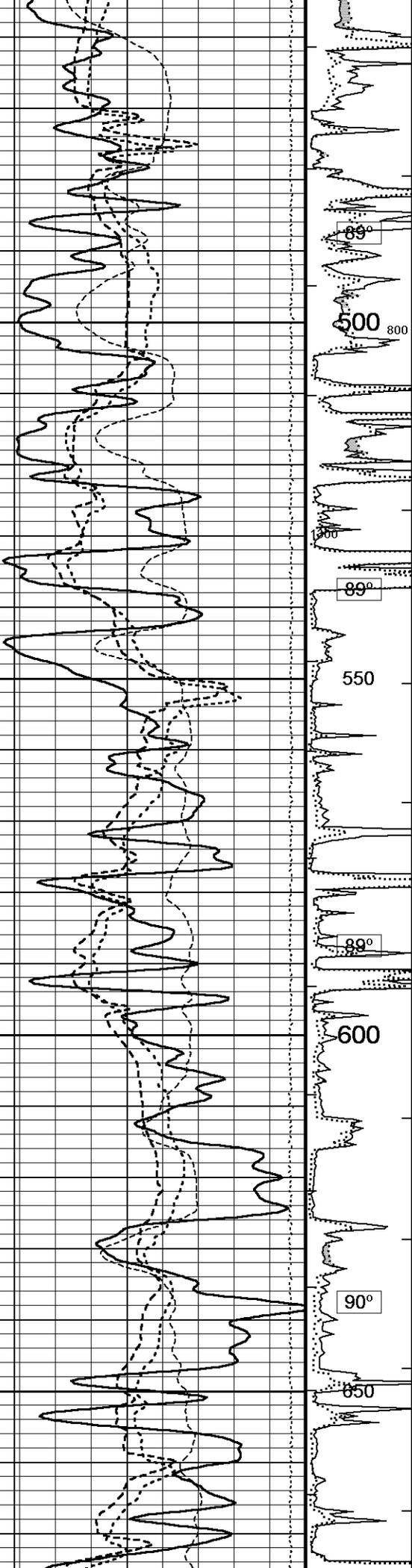
Shallow FE

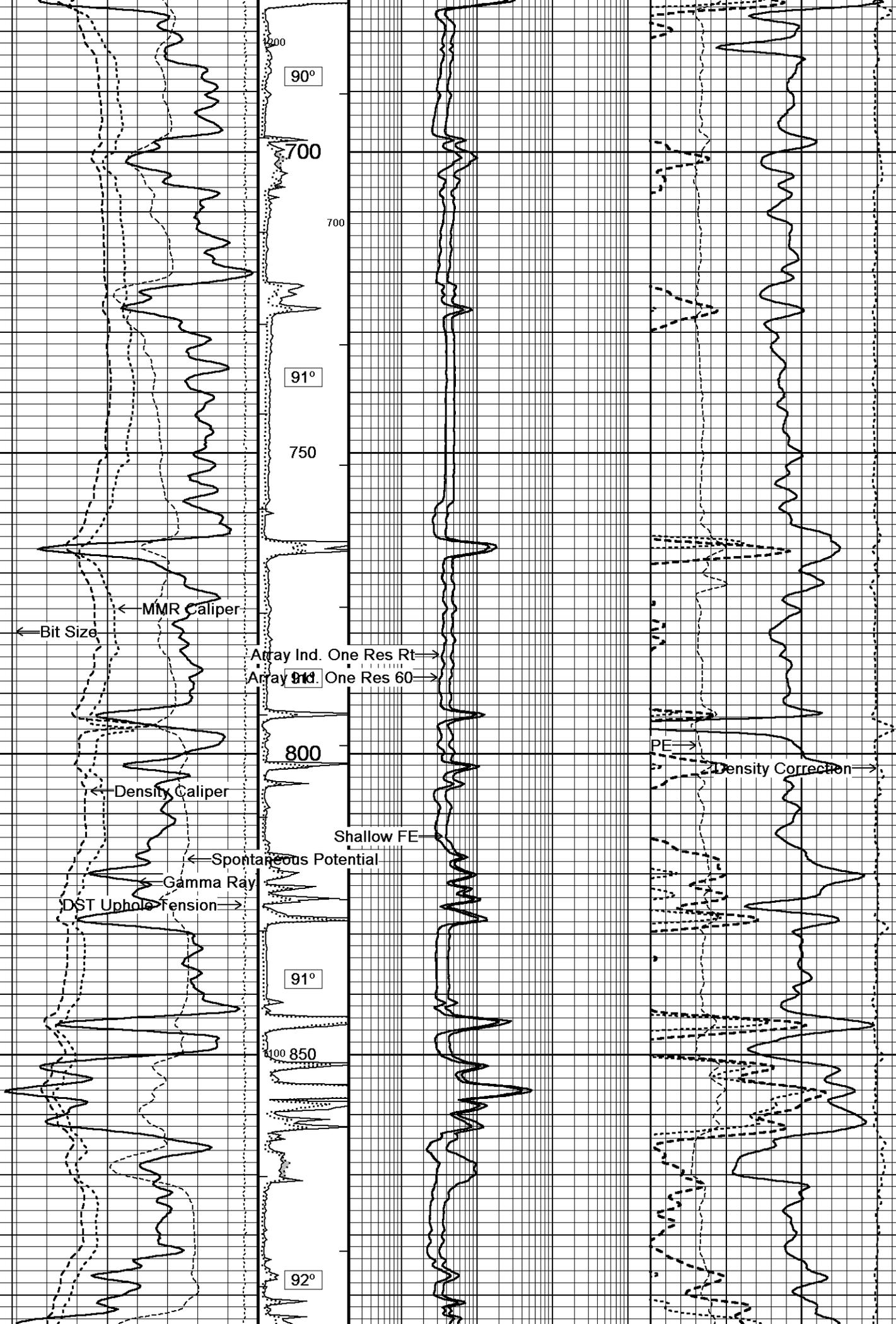
Limestone Density Por. →

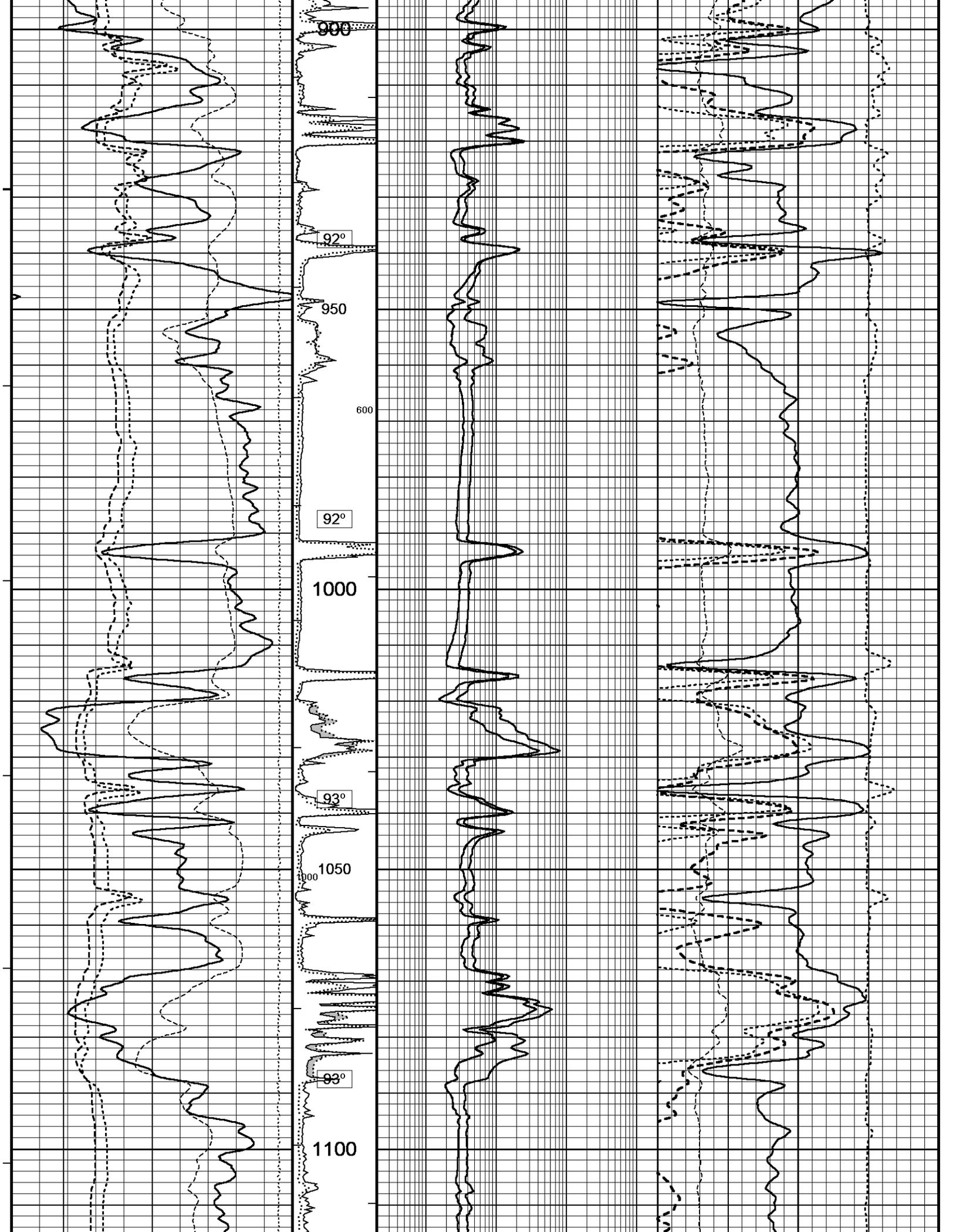
PE →

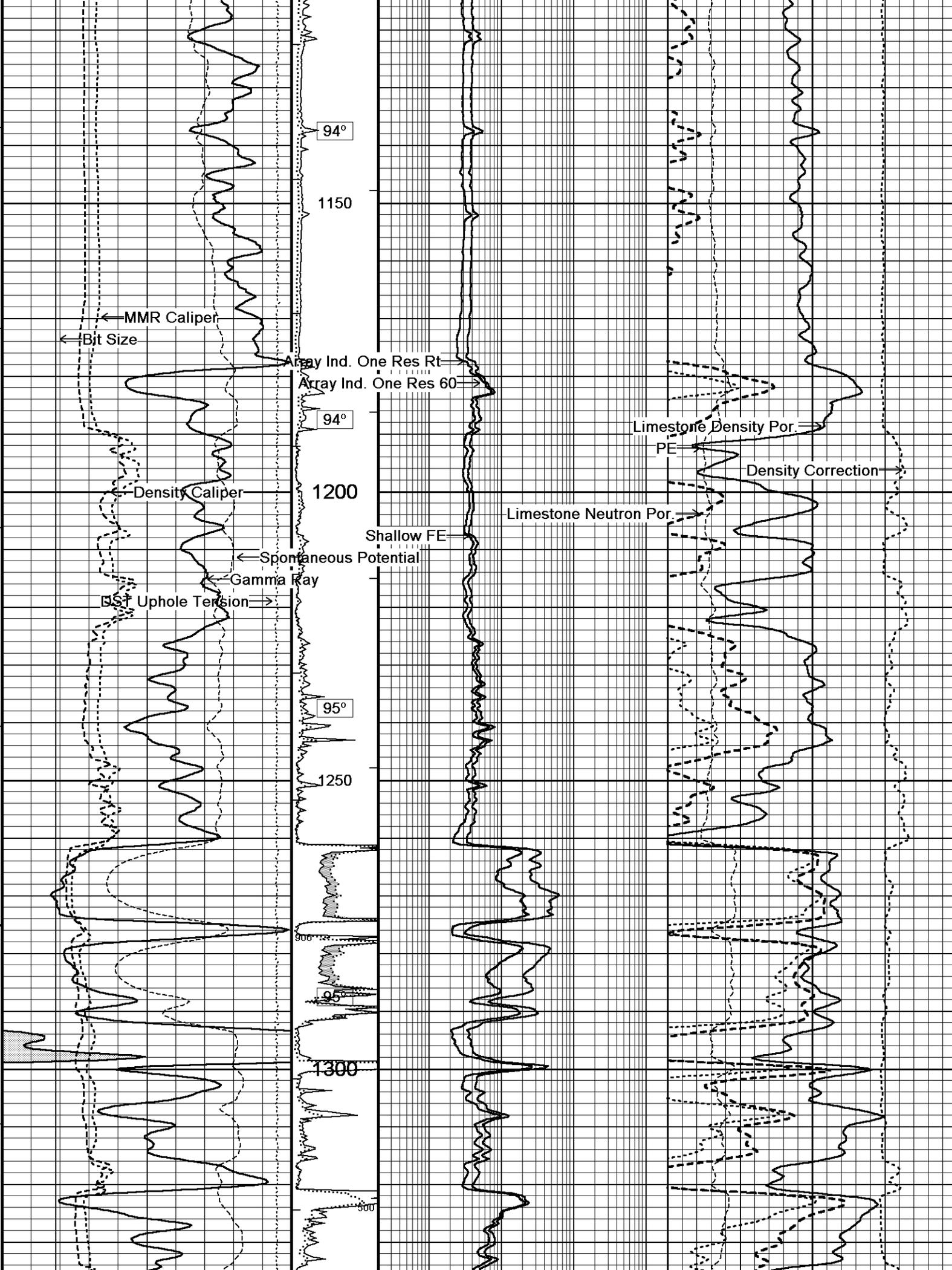
Density Correction →

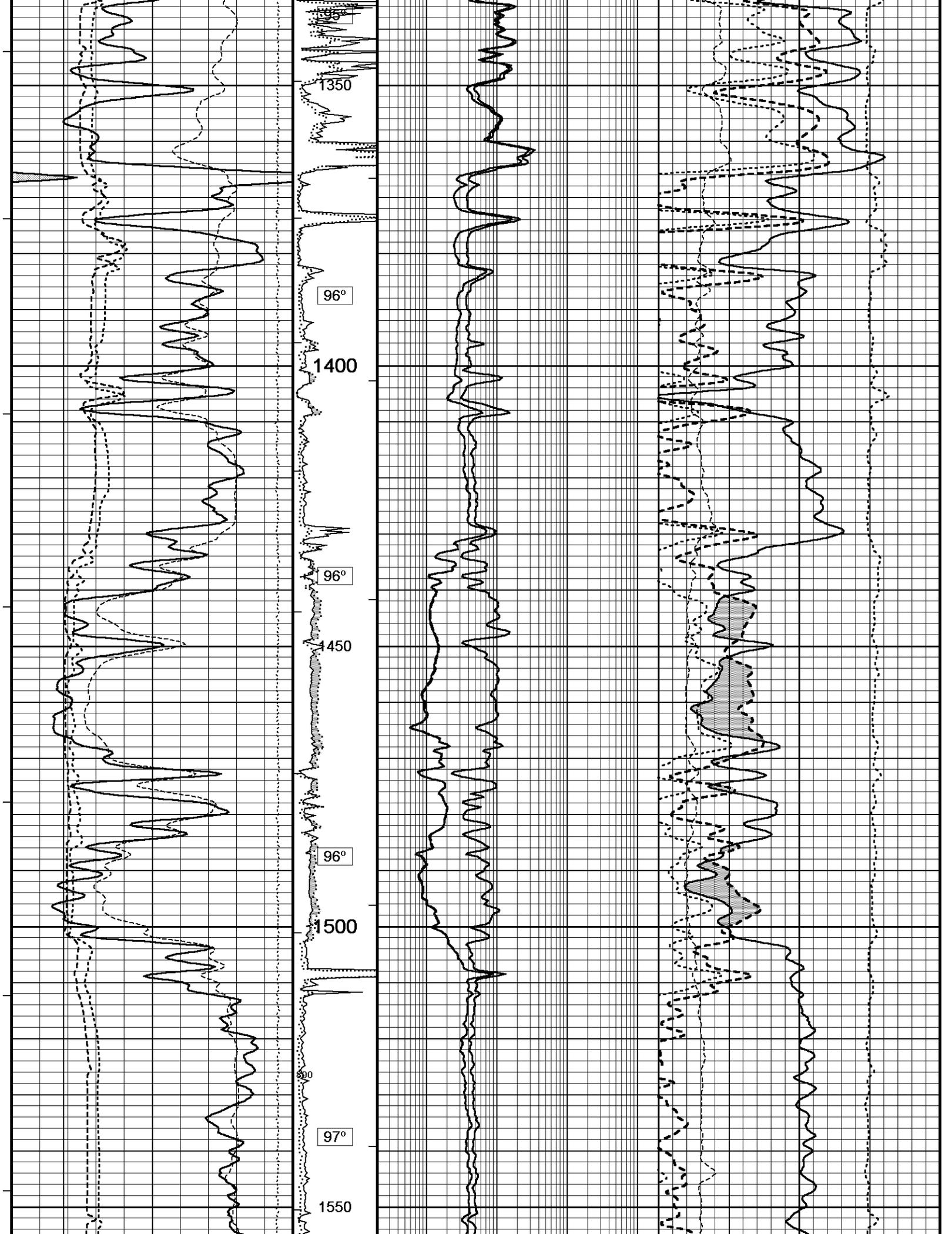
Limestone Neutron Por. →

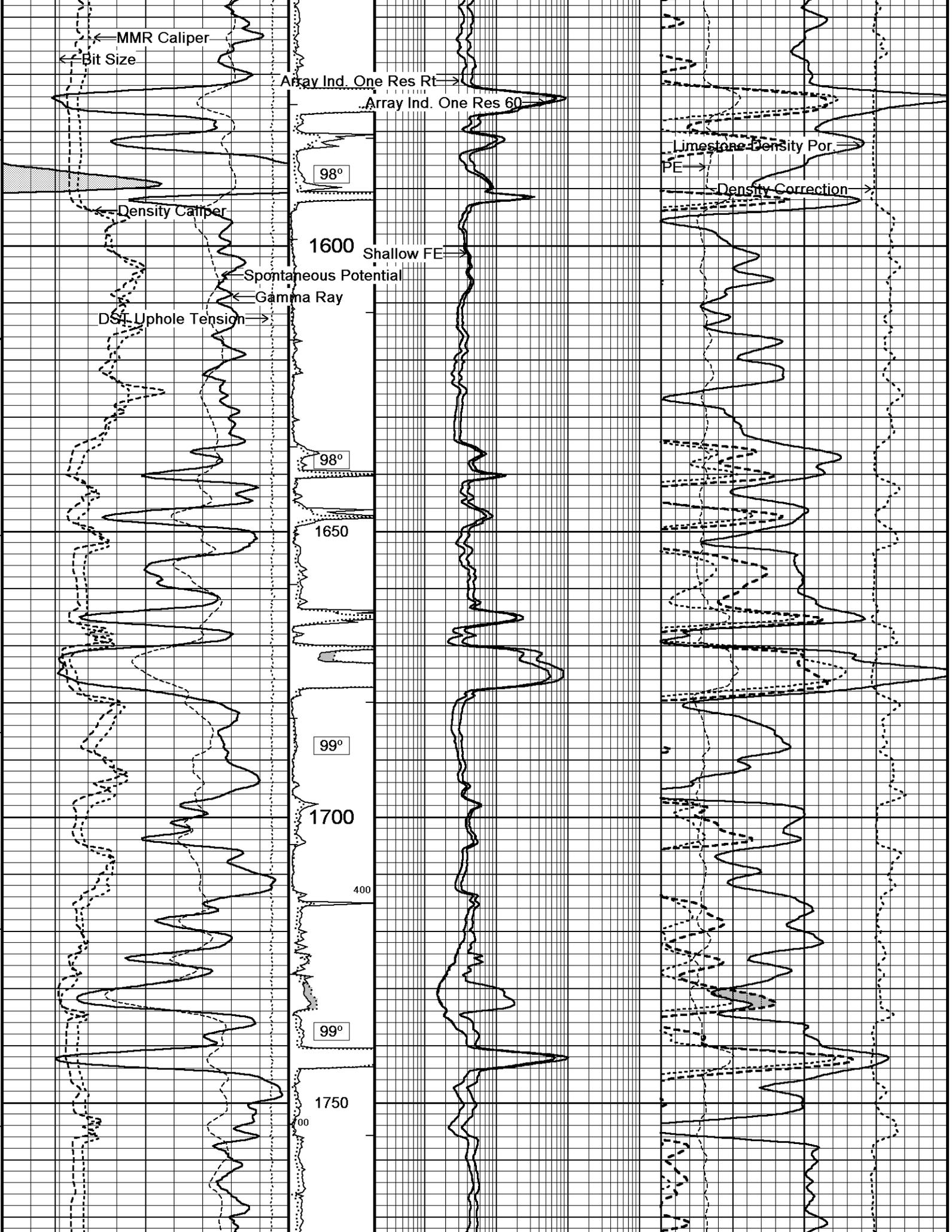












← MMR Caliper
← Bit Size

Array Ind. One Res Rt →
Array Ind. One Res 60 →

98°

Limestone Density Por →
FE →
Density Correction →

← Density Caliper

1600 Shallow FE →

← Spontaneous Potential
← Gamma Ray

DST Uphole Tension →

98°

1650

99°

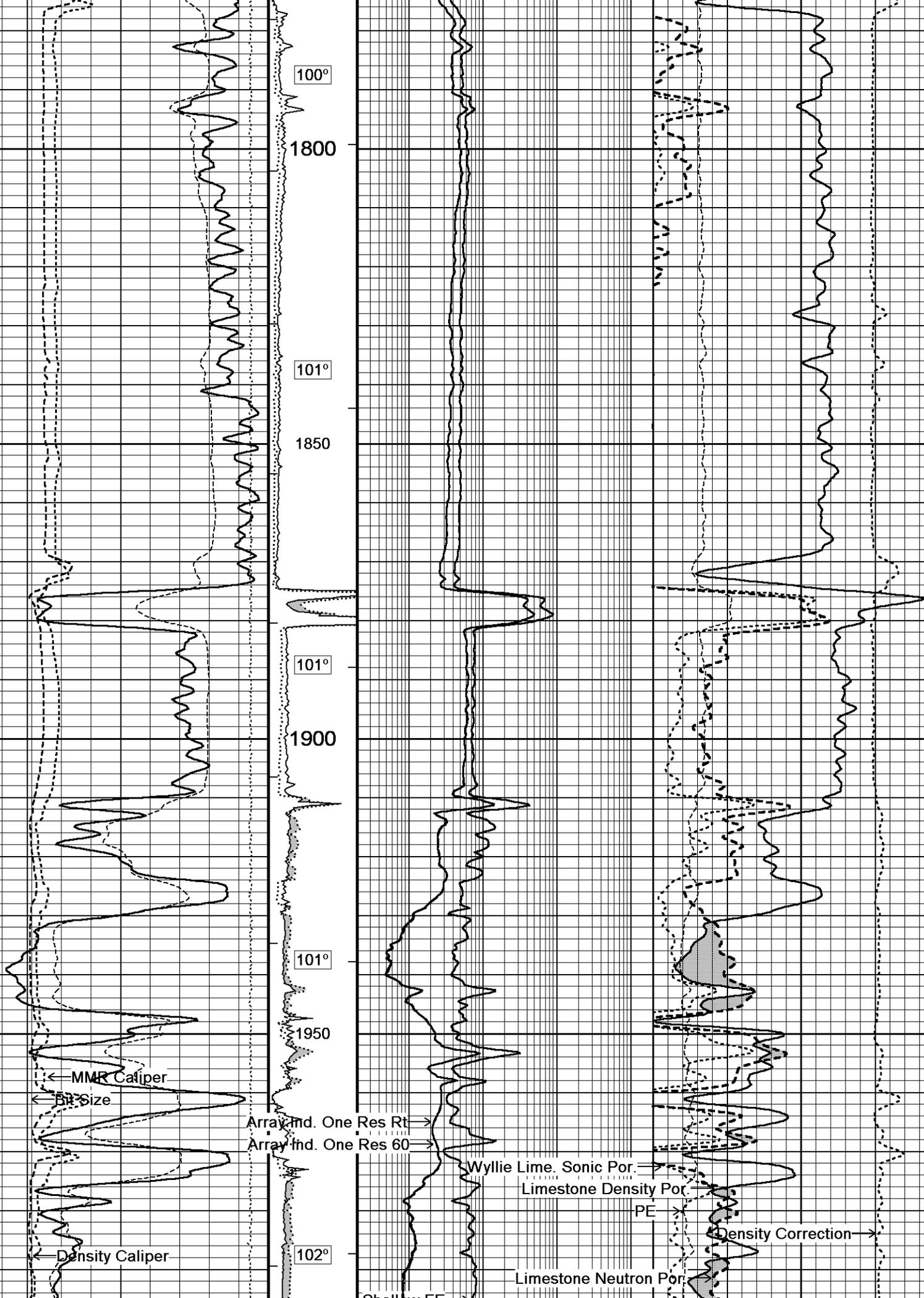
1700

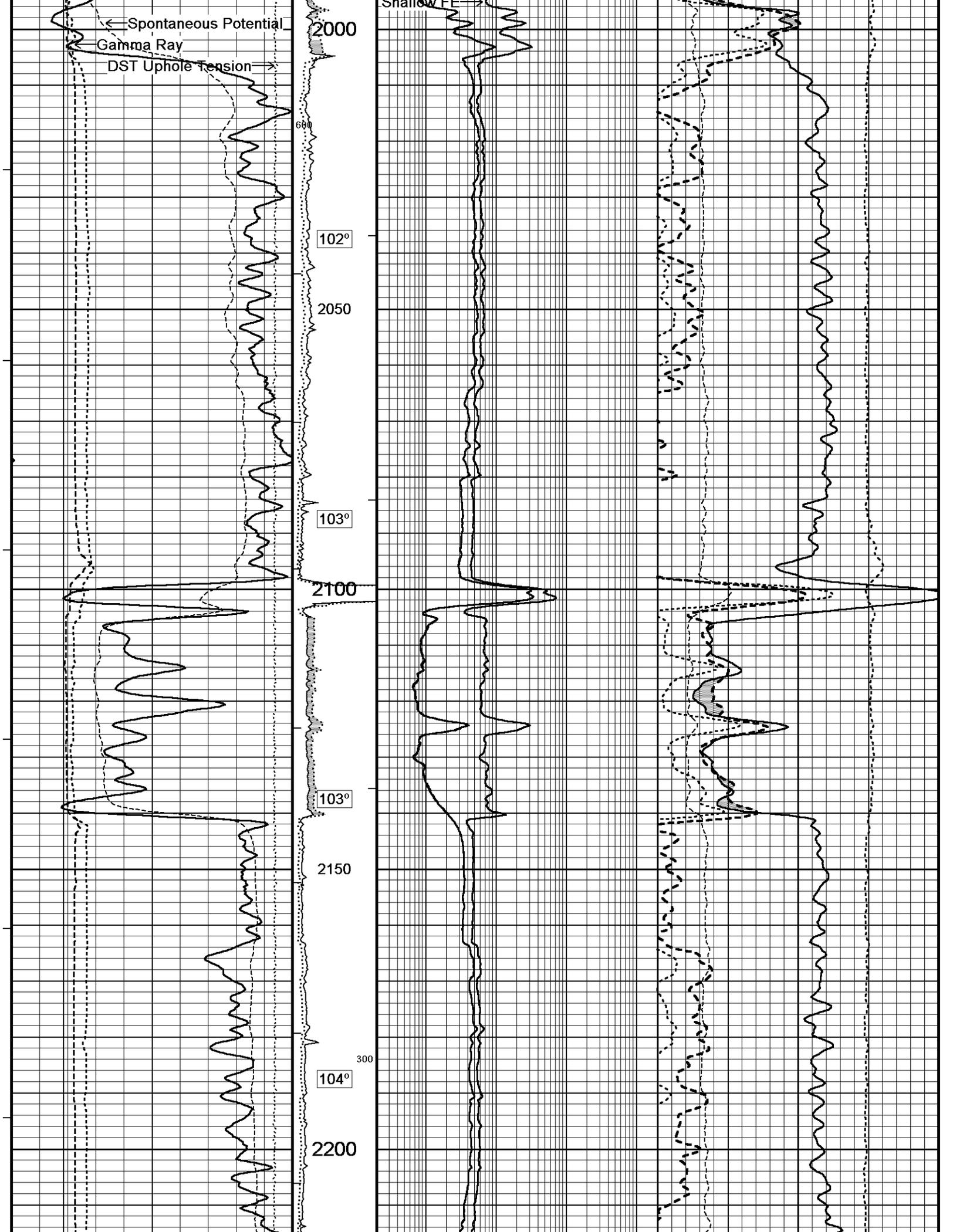
400

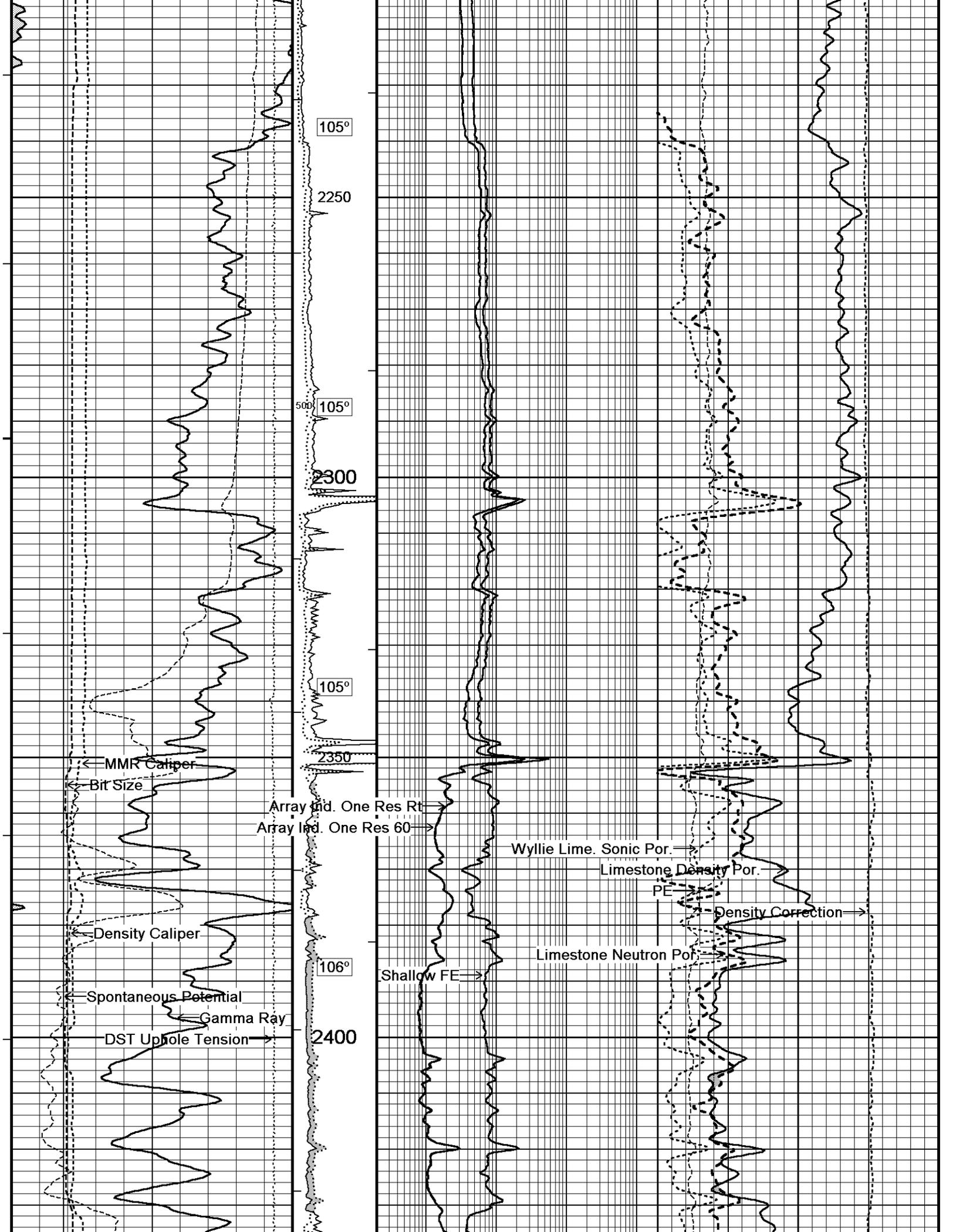
99°

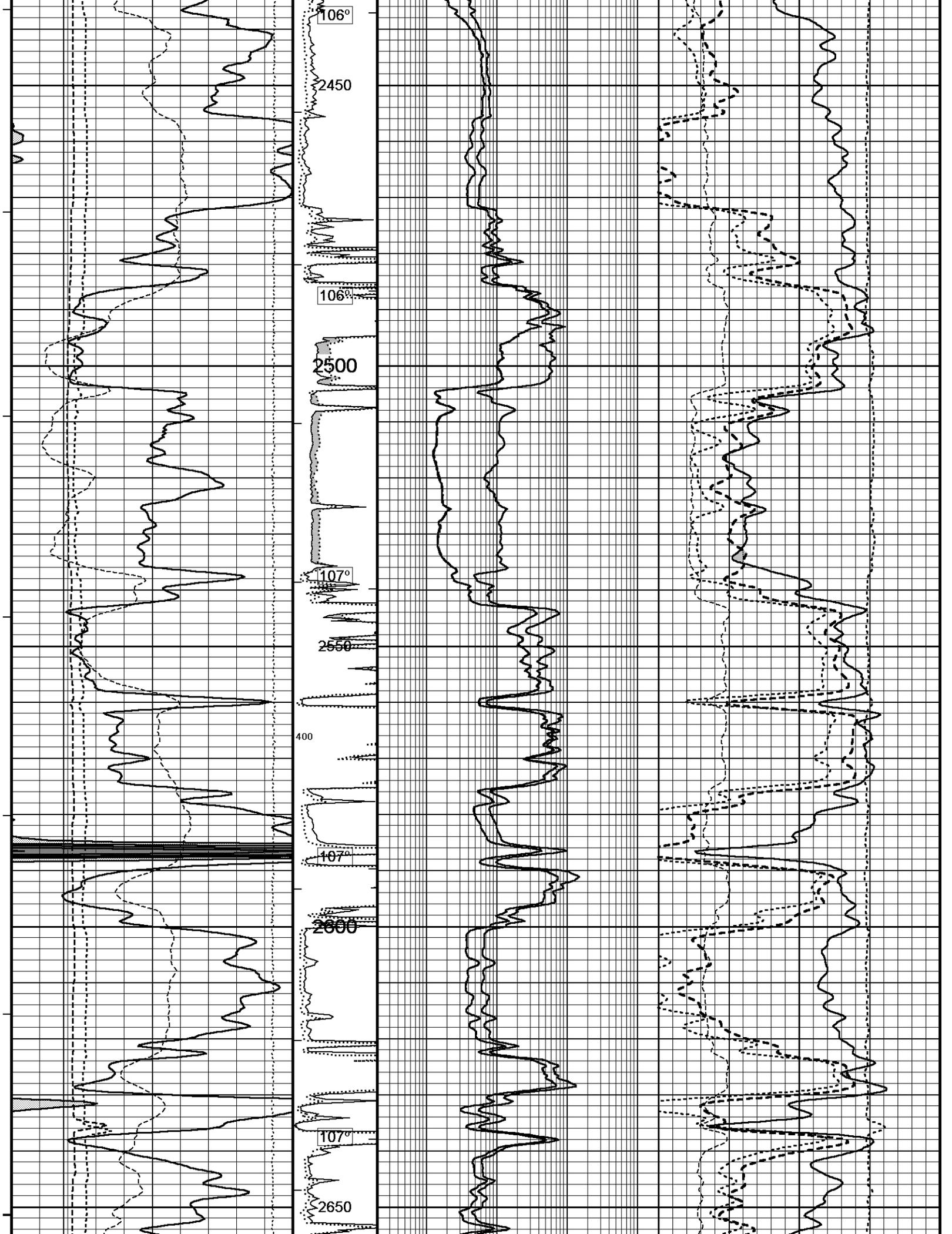
1750

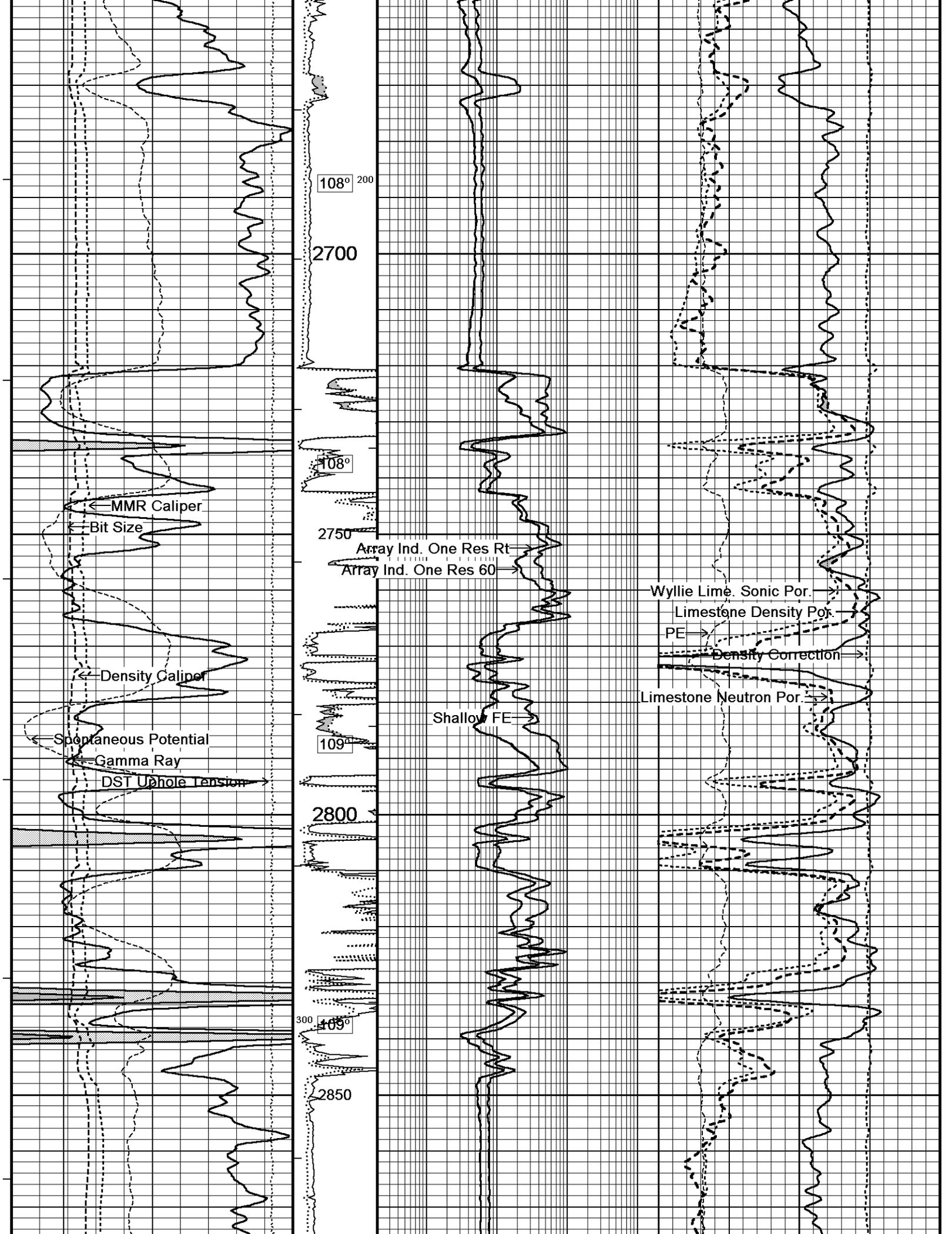
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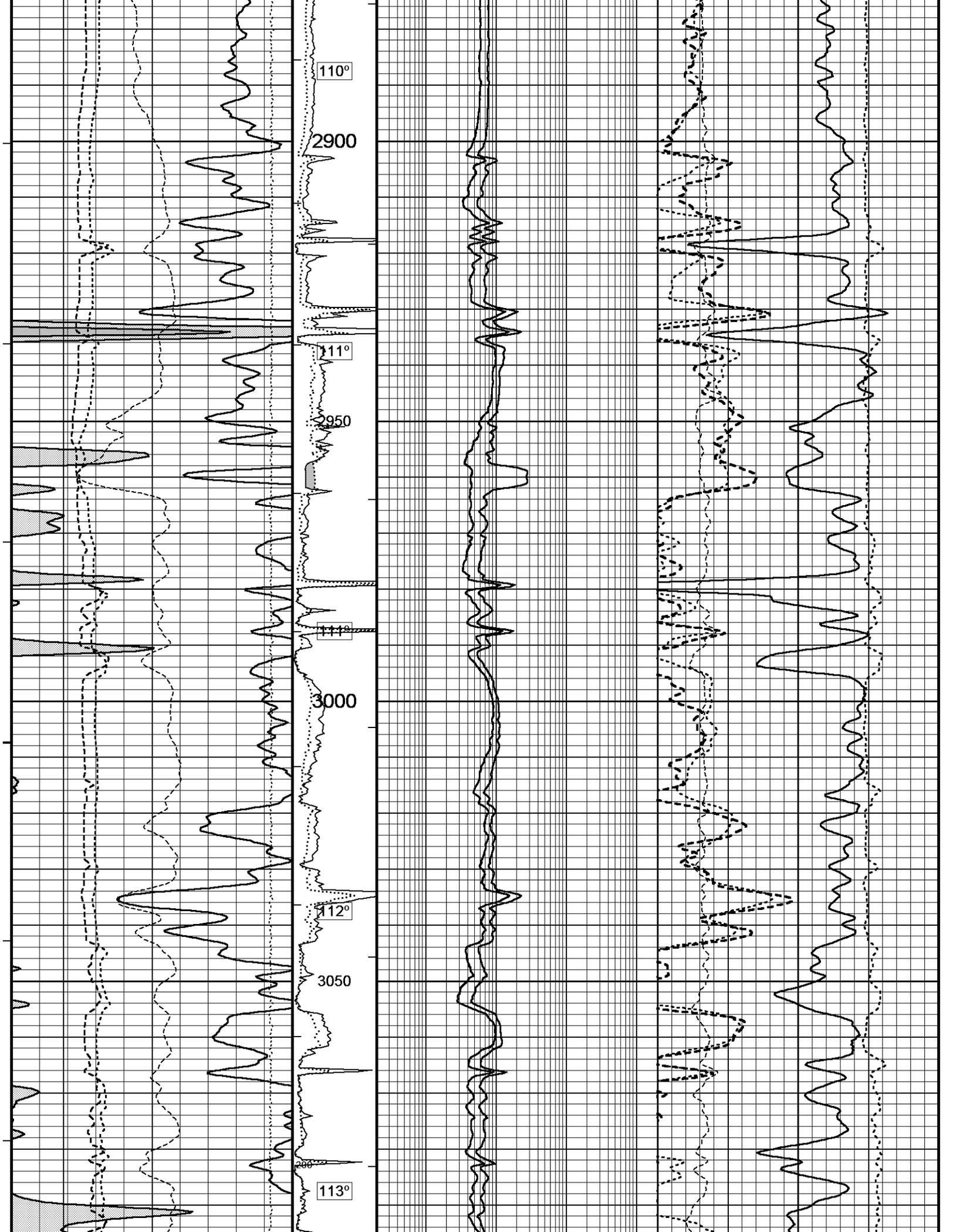


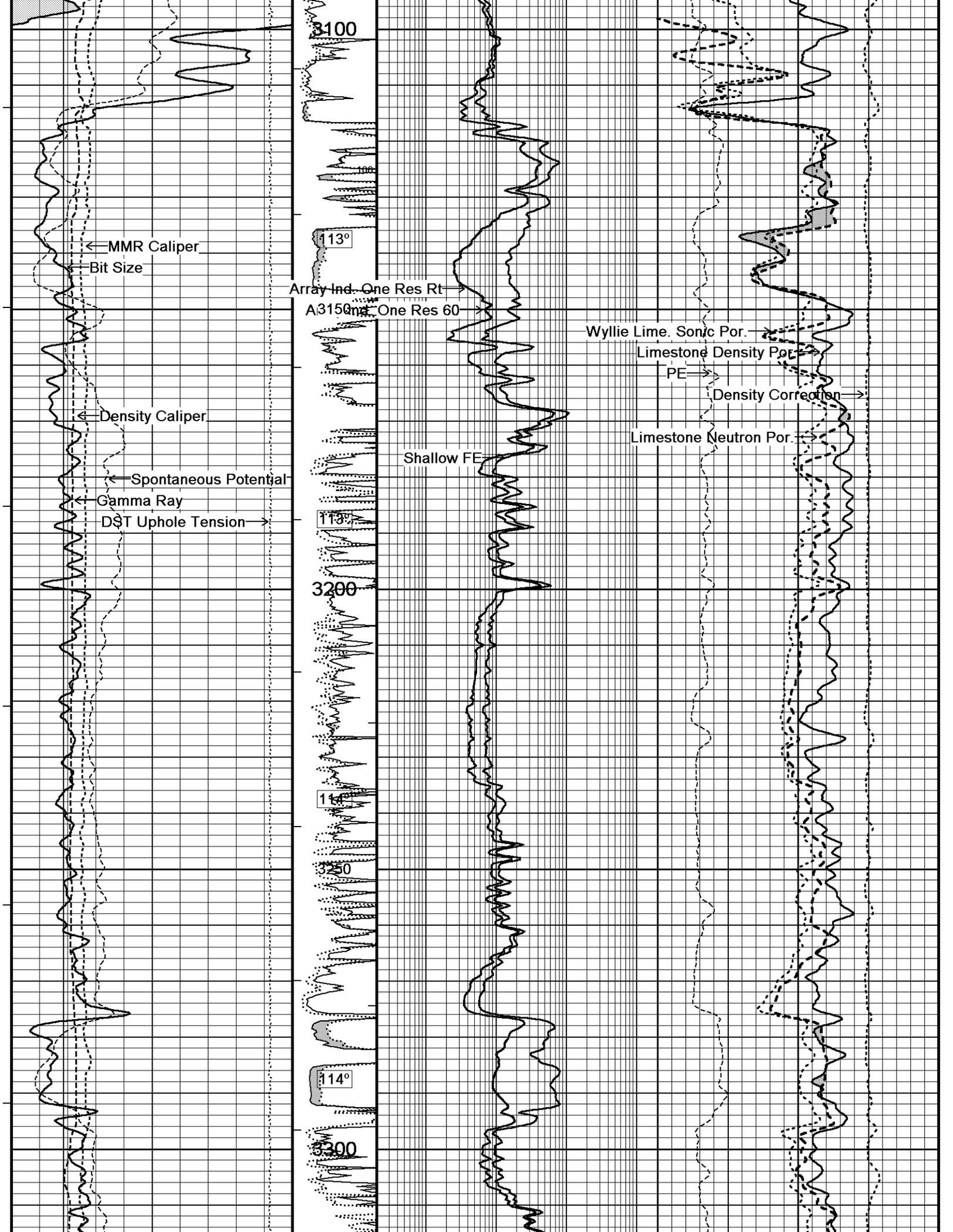


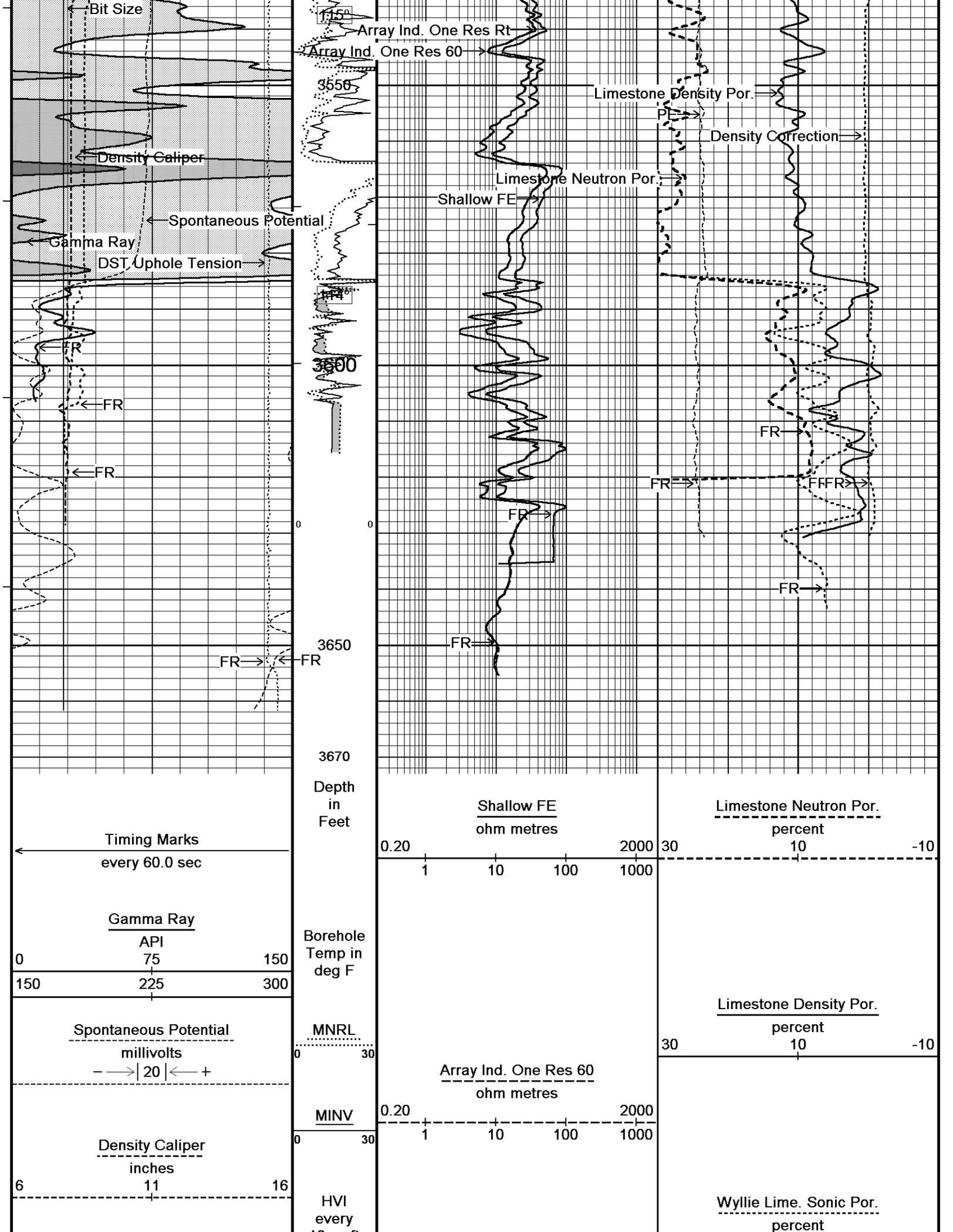


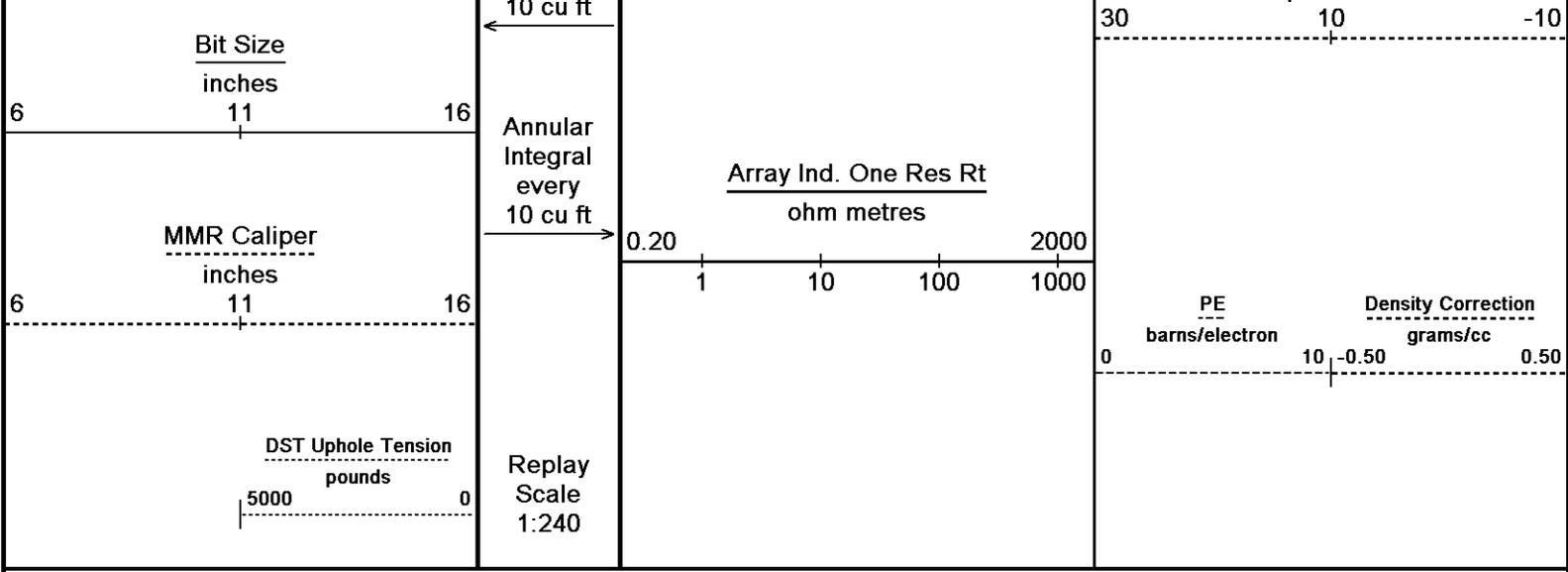










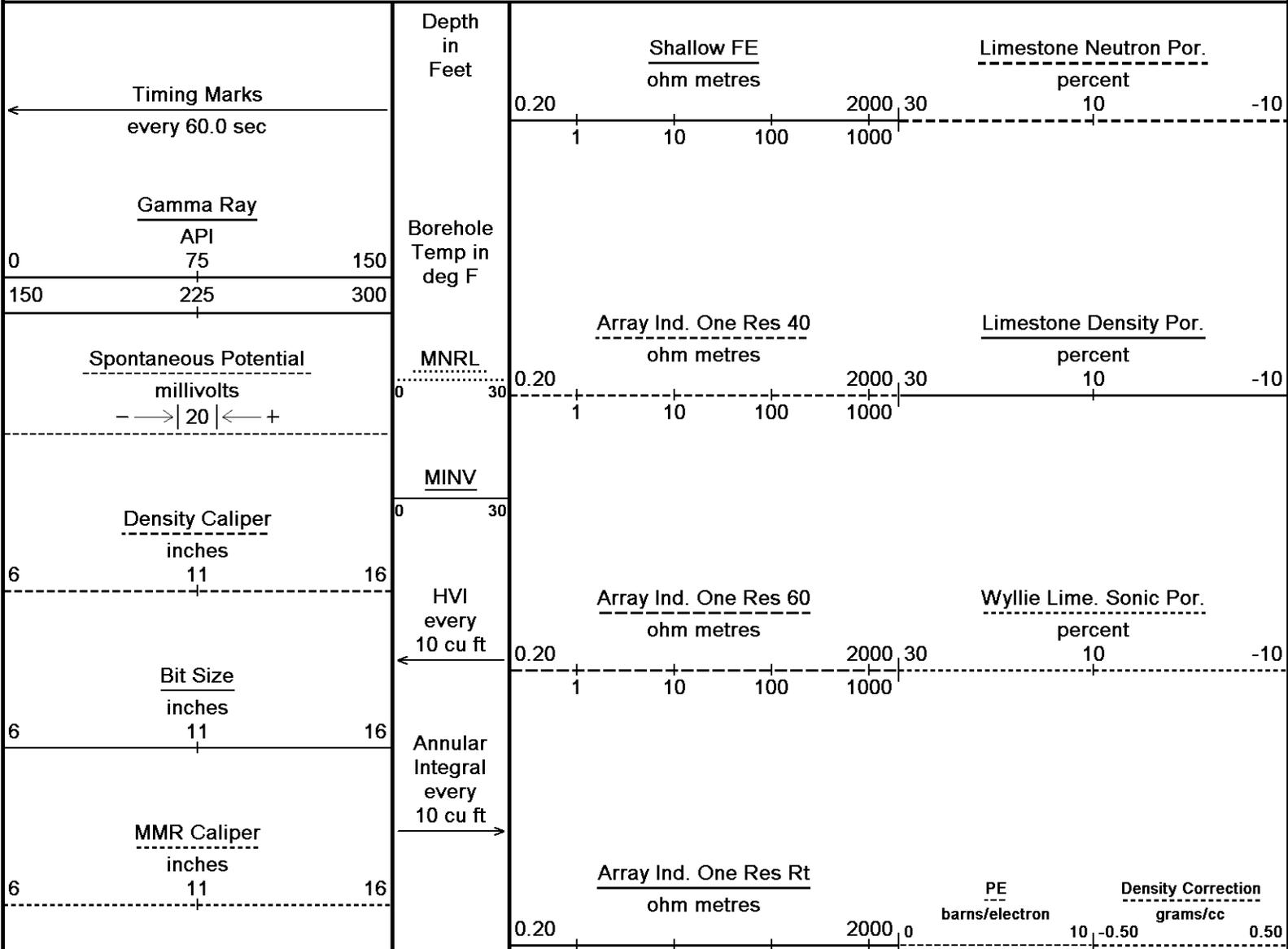


Depth Based Data - Maximum Sampling Increment 10.0cm
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5 INCH MAIN

10 INCH HI-RES

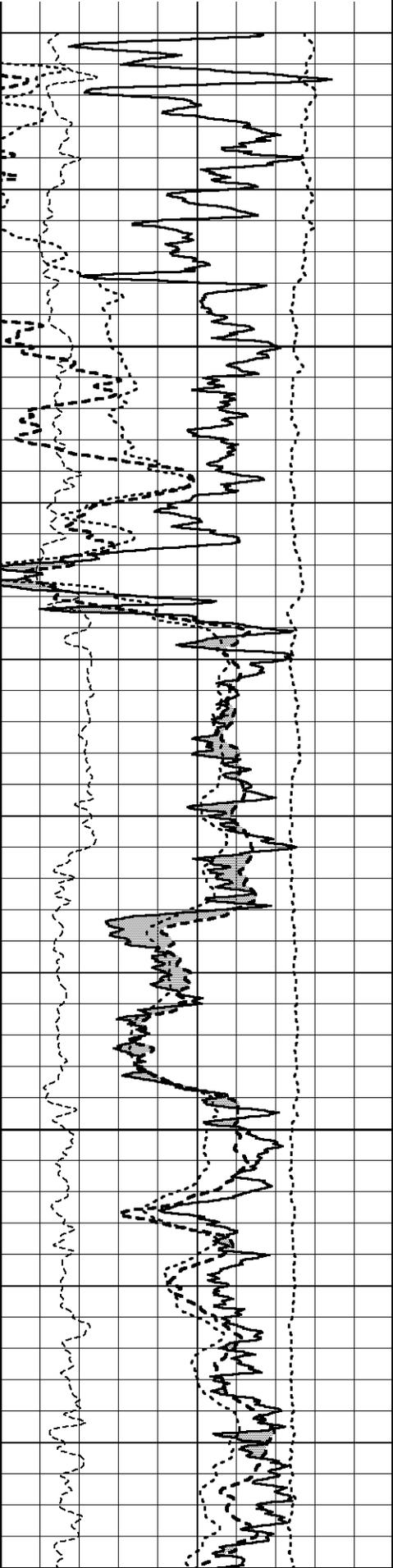
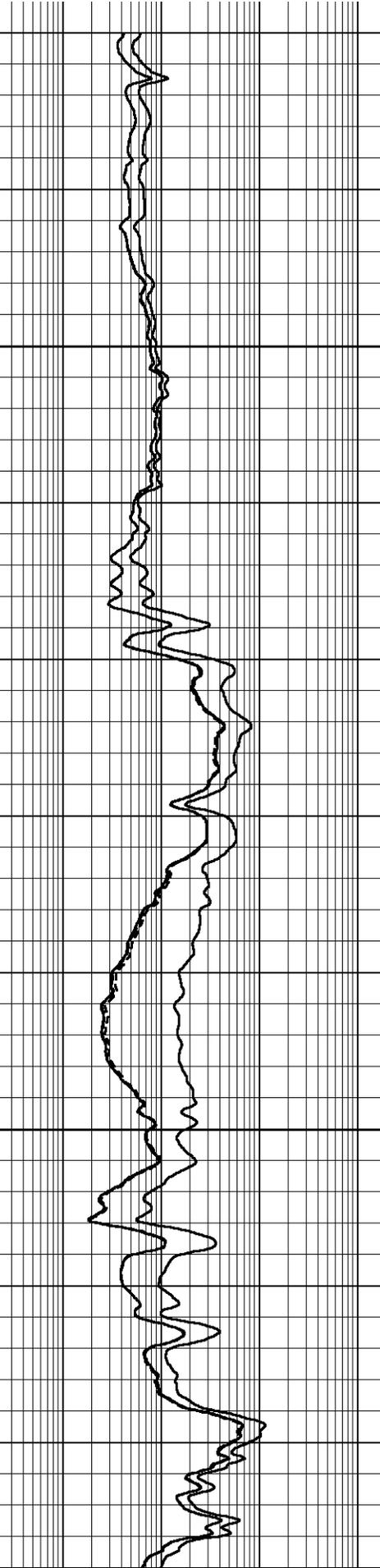
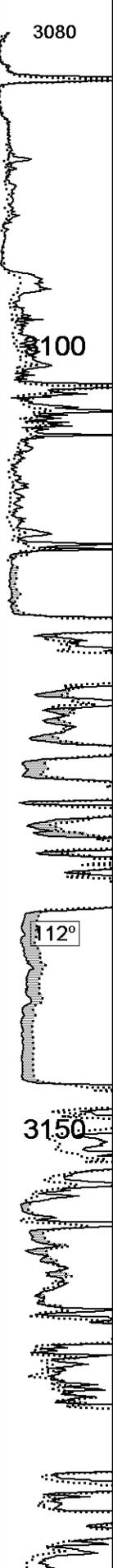
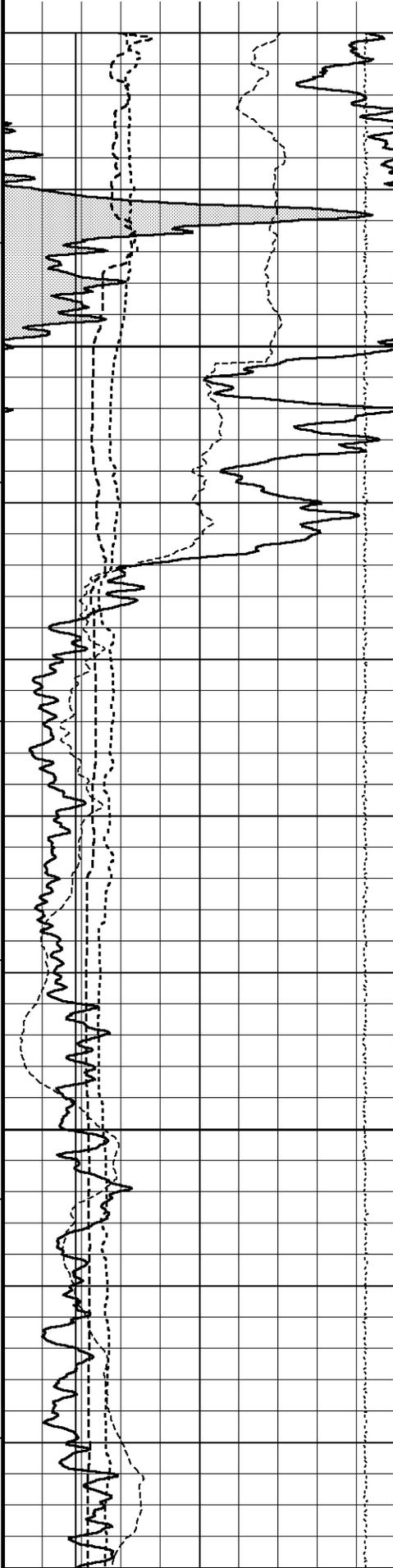
Depth Based Data - Maximum Sampling Increment 2.5cm
 Plotted on 28-OCT-2013 22:43
 Filename: C:\Program Files\Weatherford\WLS 13.04\DATA\TAOS (WEST MADDIX U...)\DATA_002.dta
 Recorded on 28-OCT-2013 16:32
 System Versions: Logged with 13.04.8723 Processed with 13.04.8723 Plotted with 13.04.8723



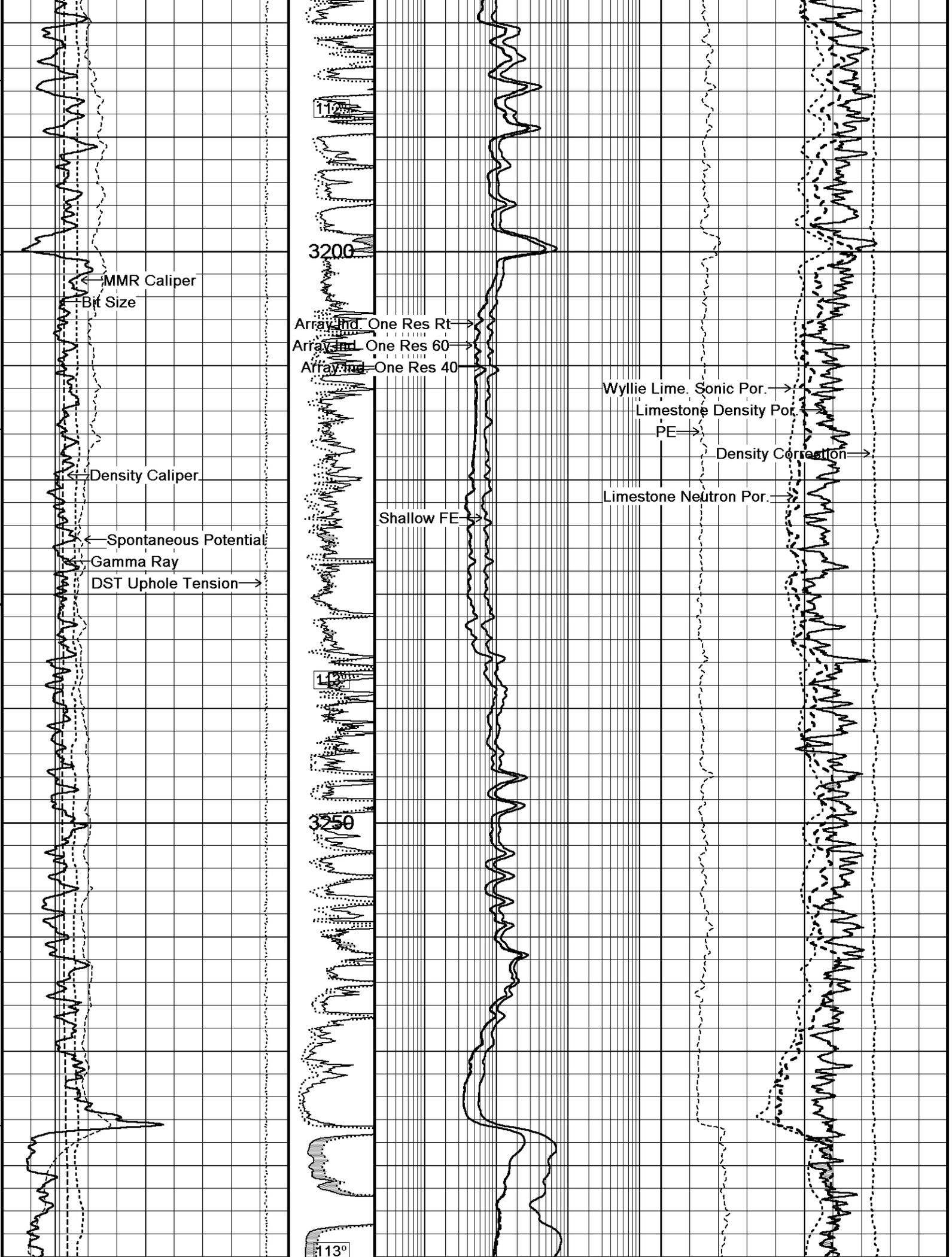
1 10 100 1000

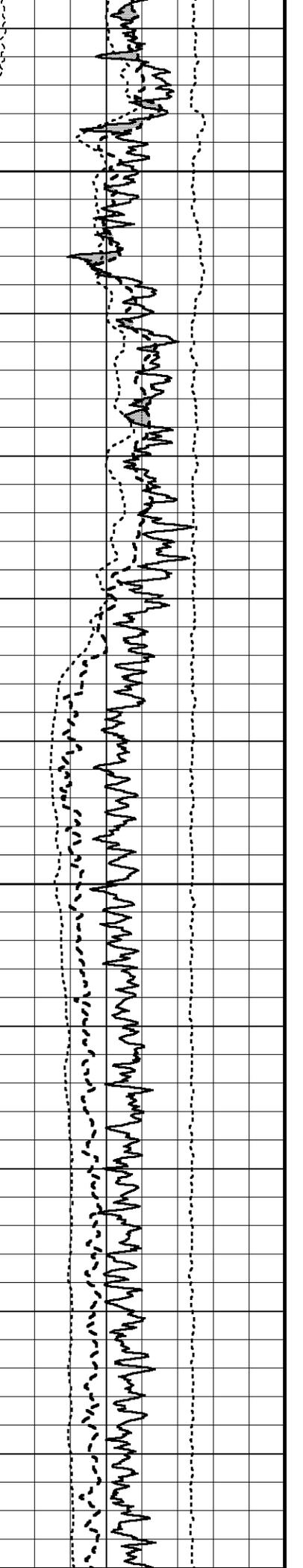
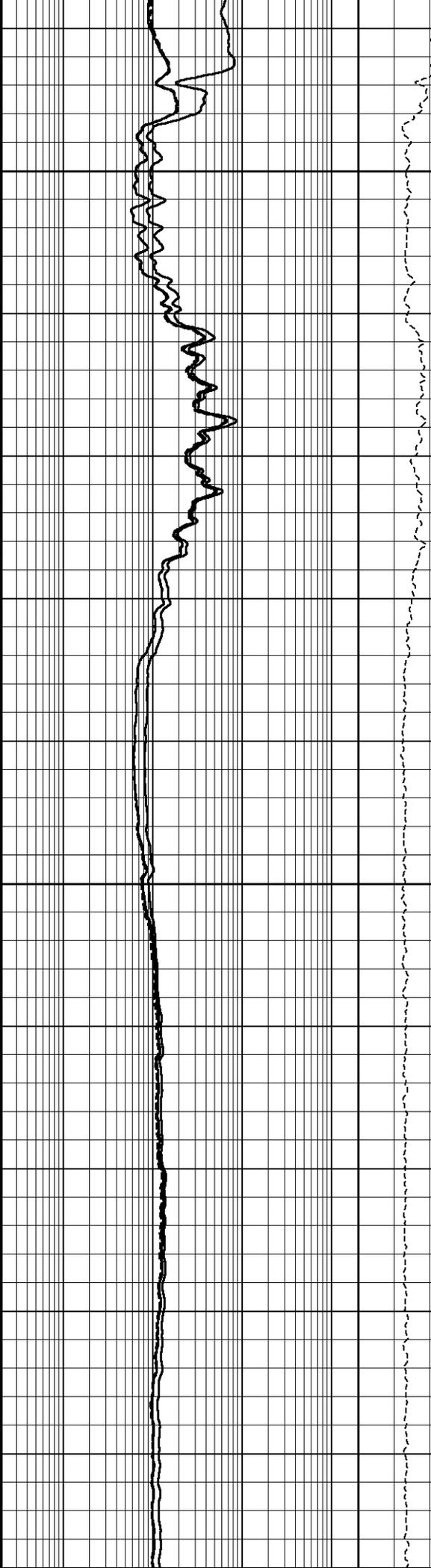
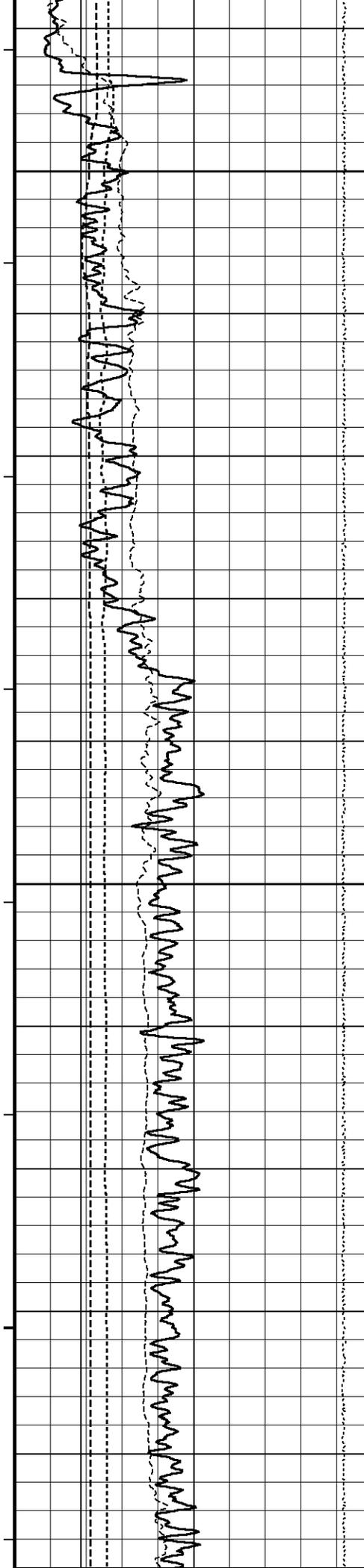
DST Uphole Tension
pounds
5000 0

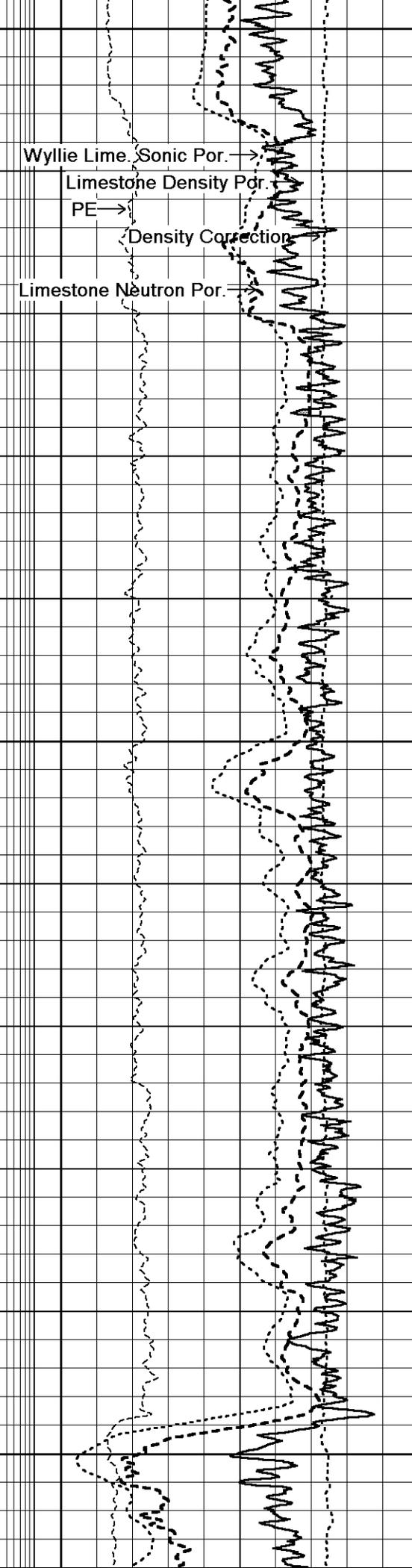
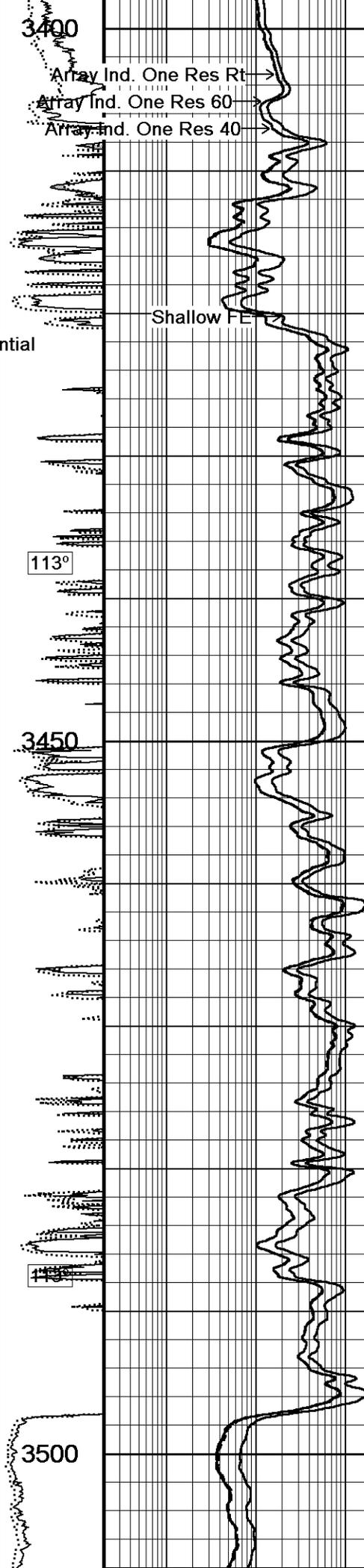
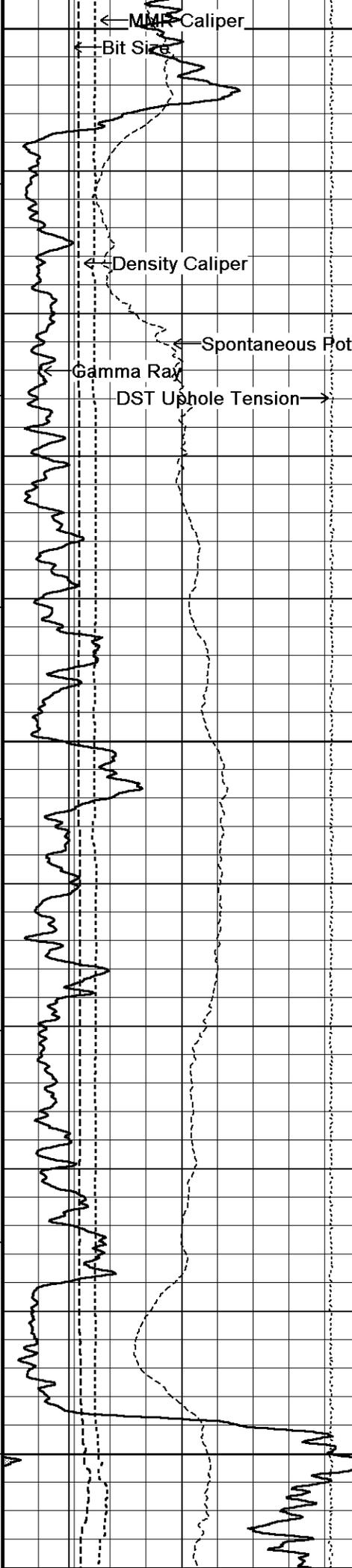
Replay
Scale
1:120

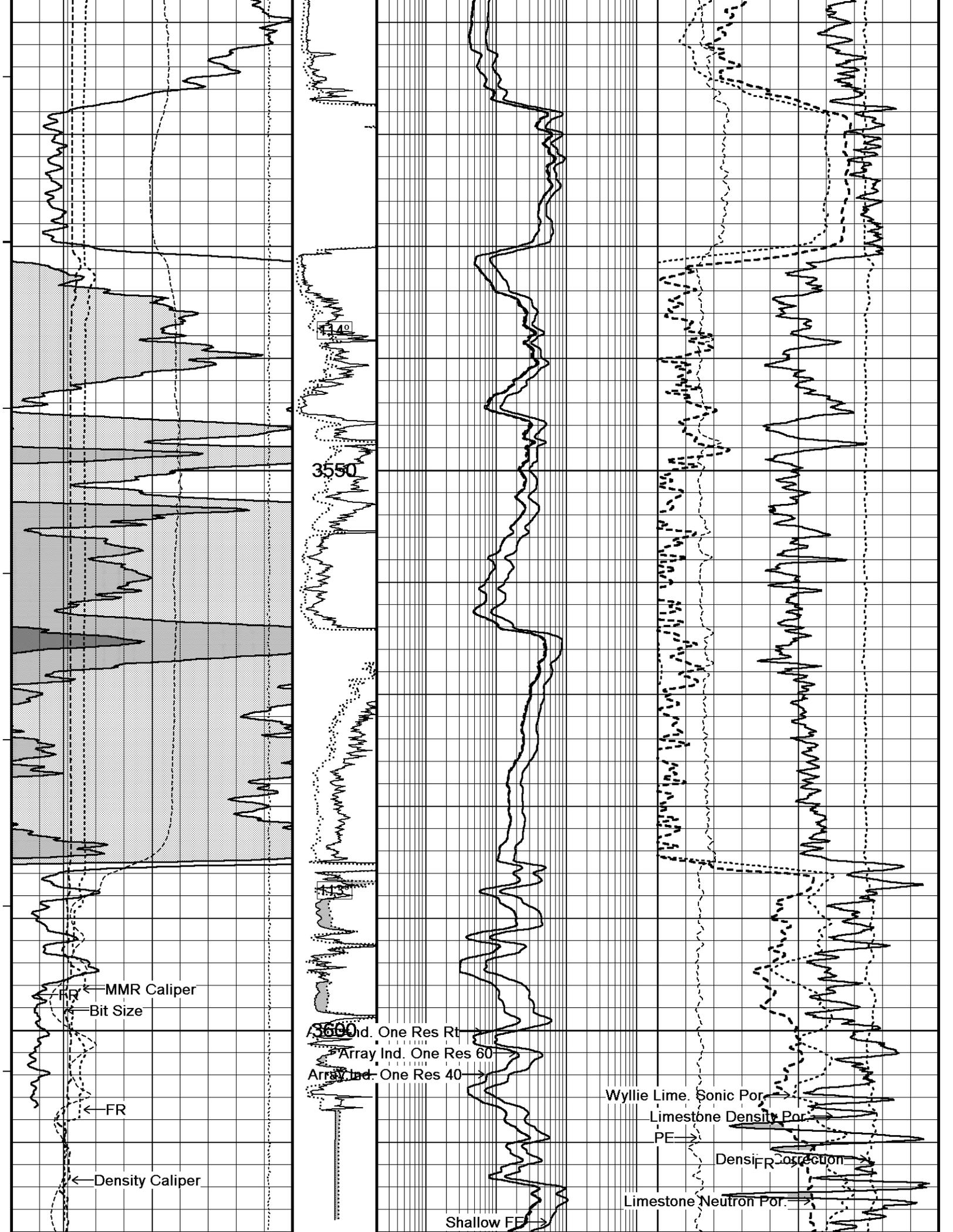


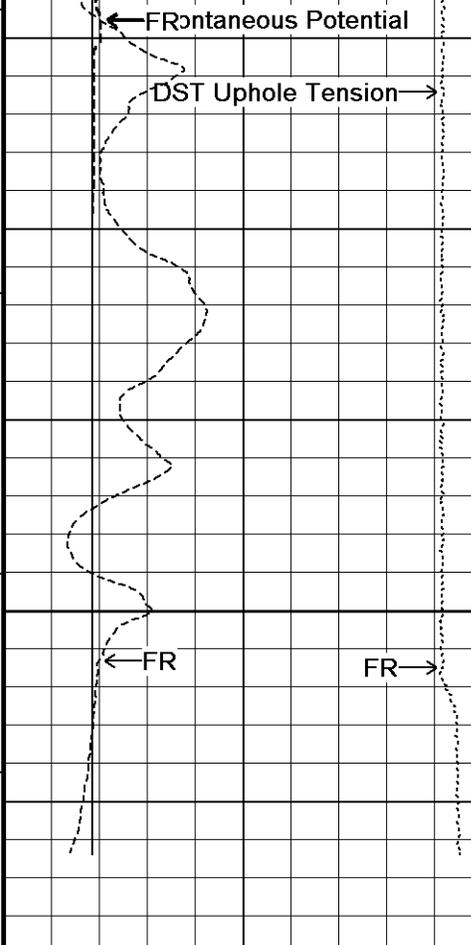
112°











3650

3666

Depth in Feet

Timing Marks every 60.0 sec

Gamma Ray			
API			
0	75	150	
150	225	300	

Spontaneous Potential millivolts
 --> | 20 | <-- +

Density Caliper inches
 6 11 16

Bit Size inches
 6 11 16

MMR Caliper inches
 6 11 16

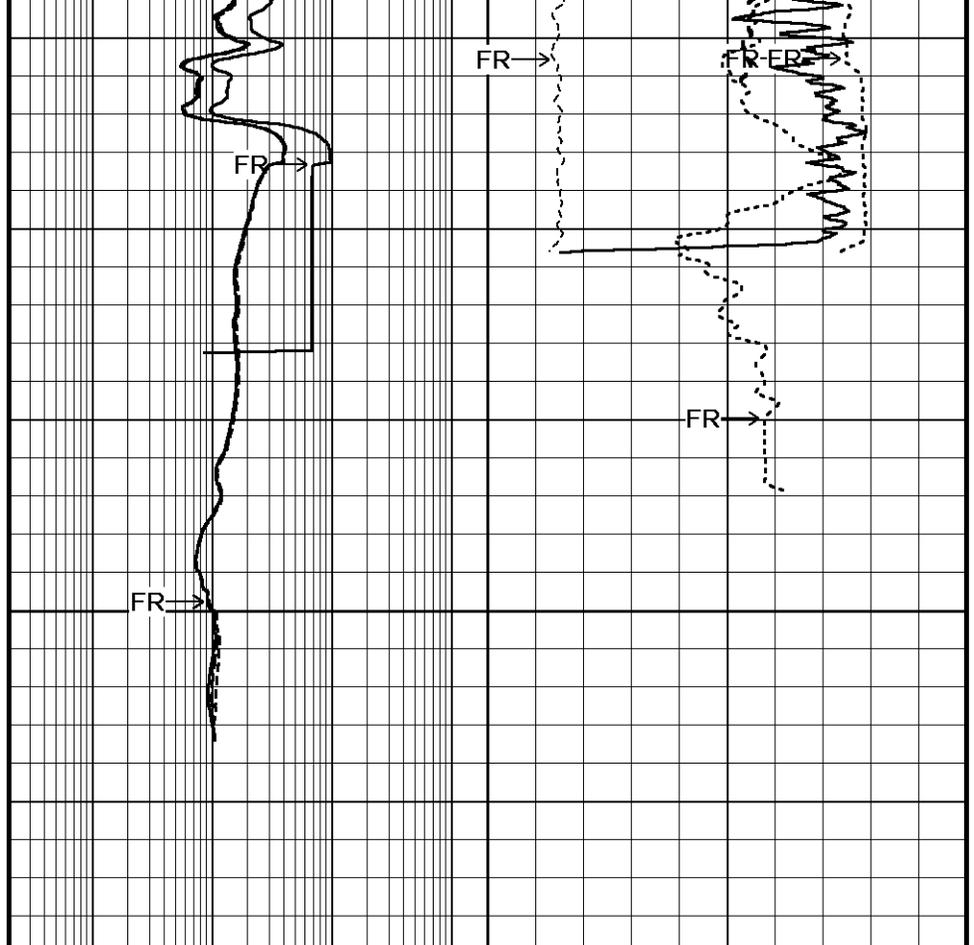
Borehole Temp in deg F

MNRL 0 30

MINV 0 30

HVI every 10 cu ft

Annular Integral every 10 cu ft



Shallow FE ohm metres
 0.20 1 10 100 1000 2000 30

Limestone Neutron Por. percent
 10 -10

Array Ind. One Res 40 ohm metres
 0.20 1 10 100 1000 2000 30

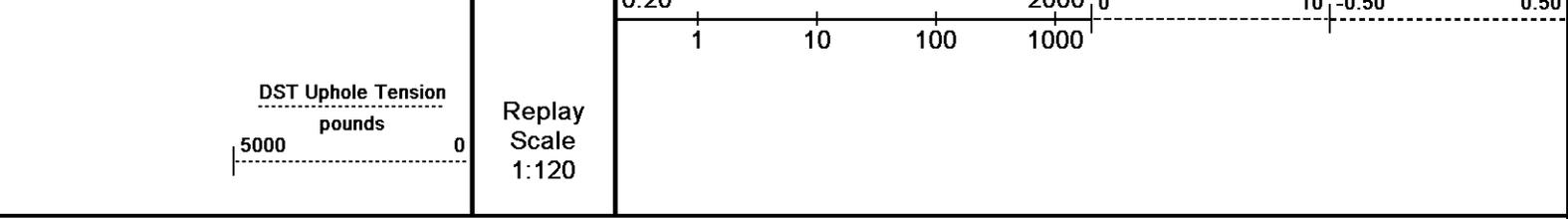
Limestone Density Por. percent
 10 -10

Array Ind. One Res 60 ohm metres
 0.20 1 10 100 1000 2000 30

Wyllie Lime. Sonic Por. percent
 10 -10

Array Ind. One Res Rt ohm metres
 0.20 1 10 100 1000 2000 30

PE barns/electron
 Density Correction grams/cc

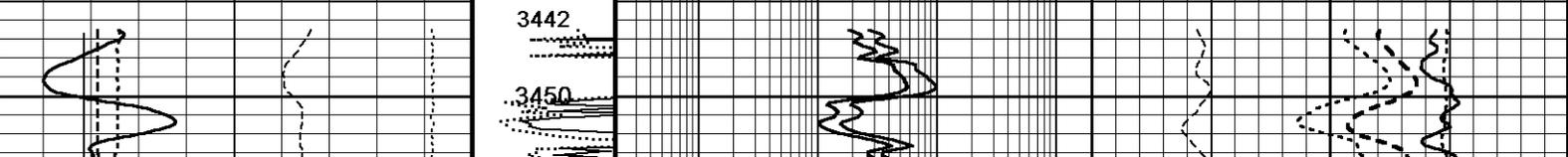
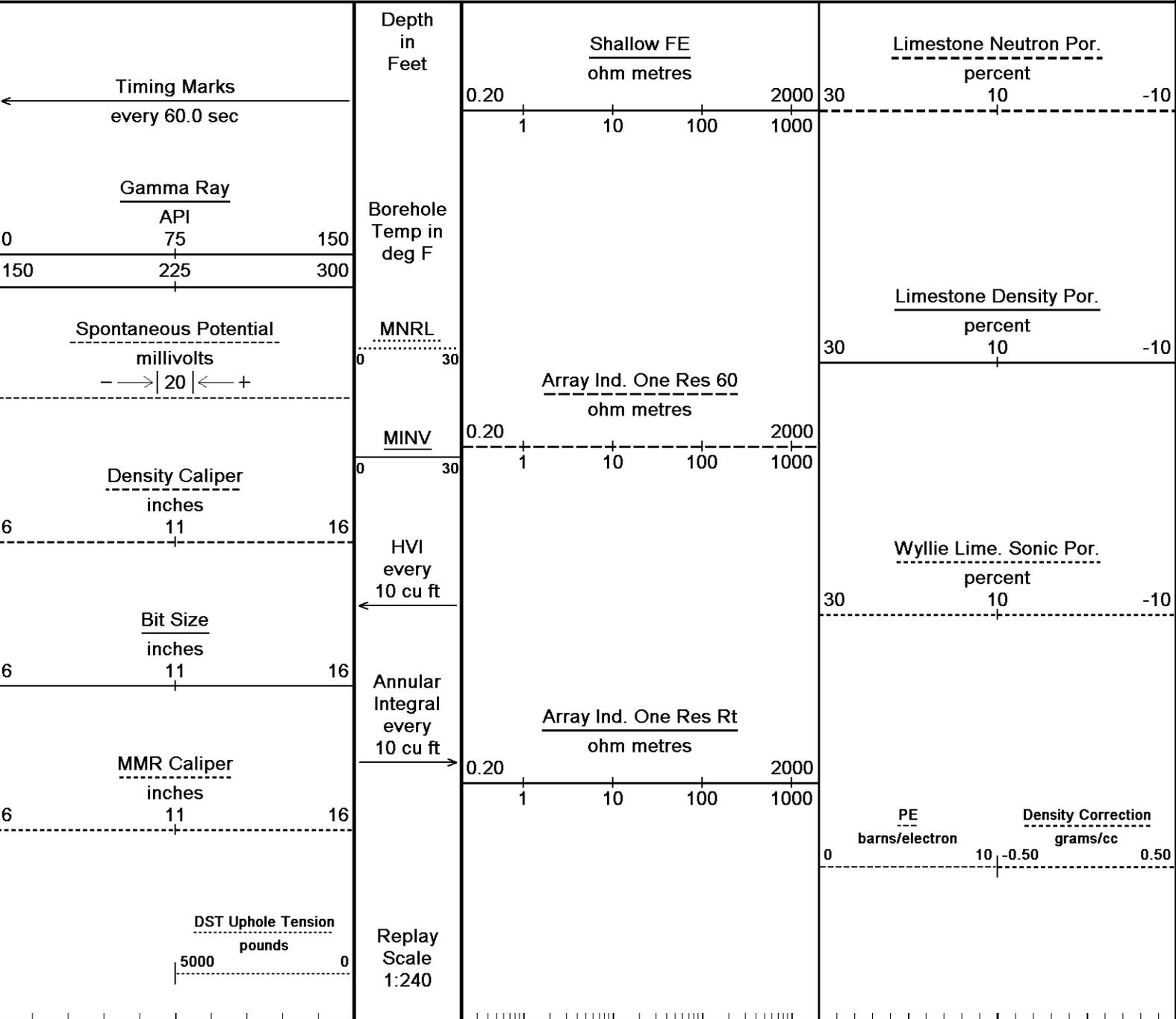


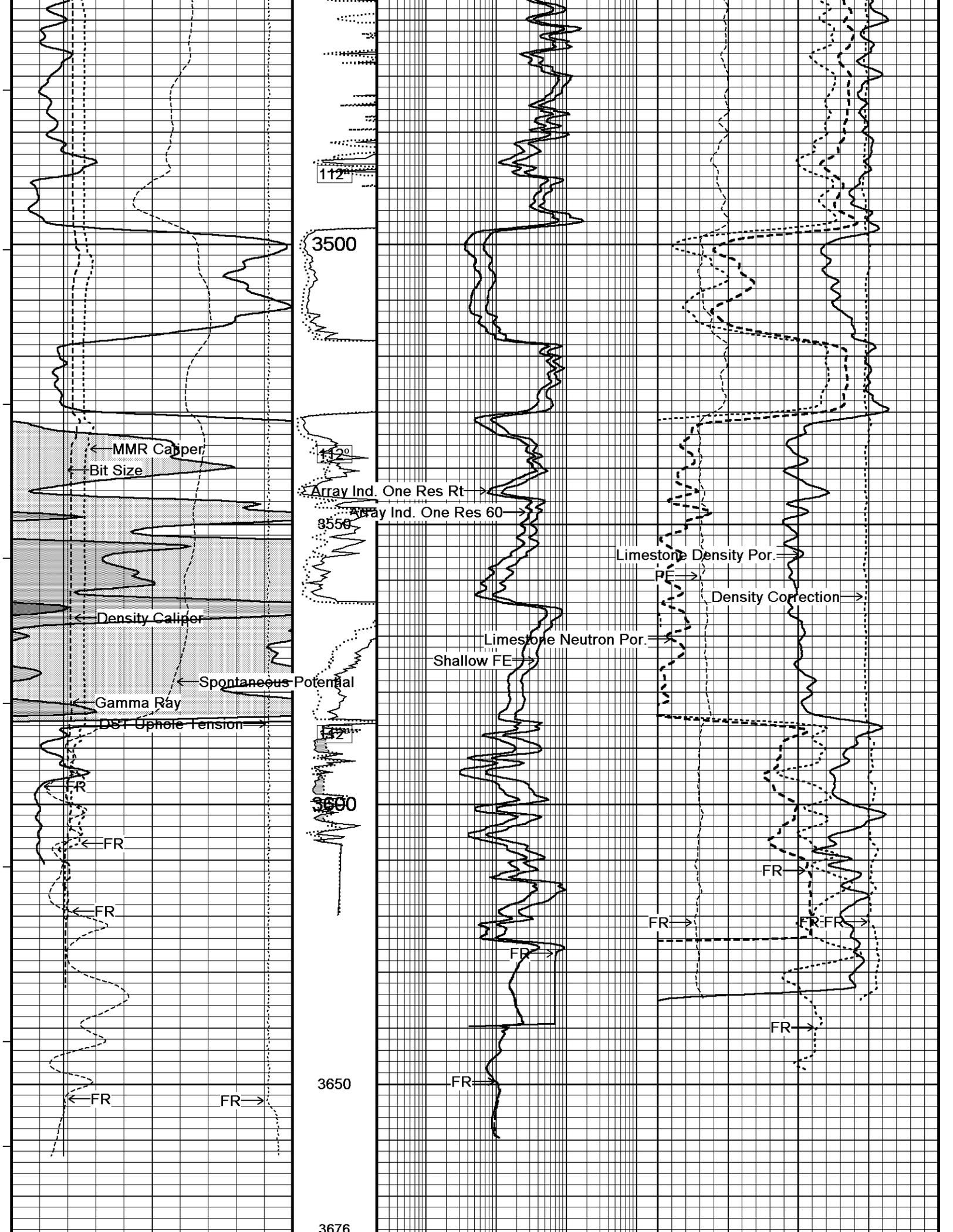
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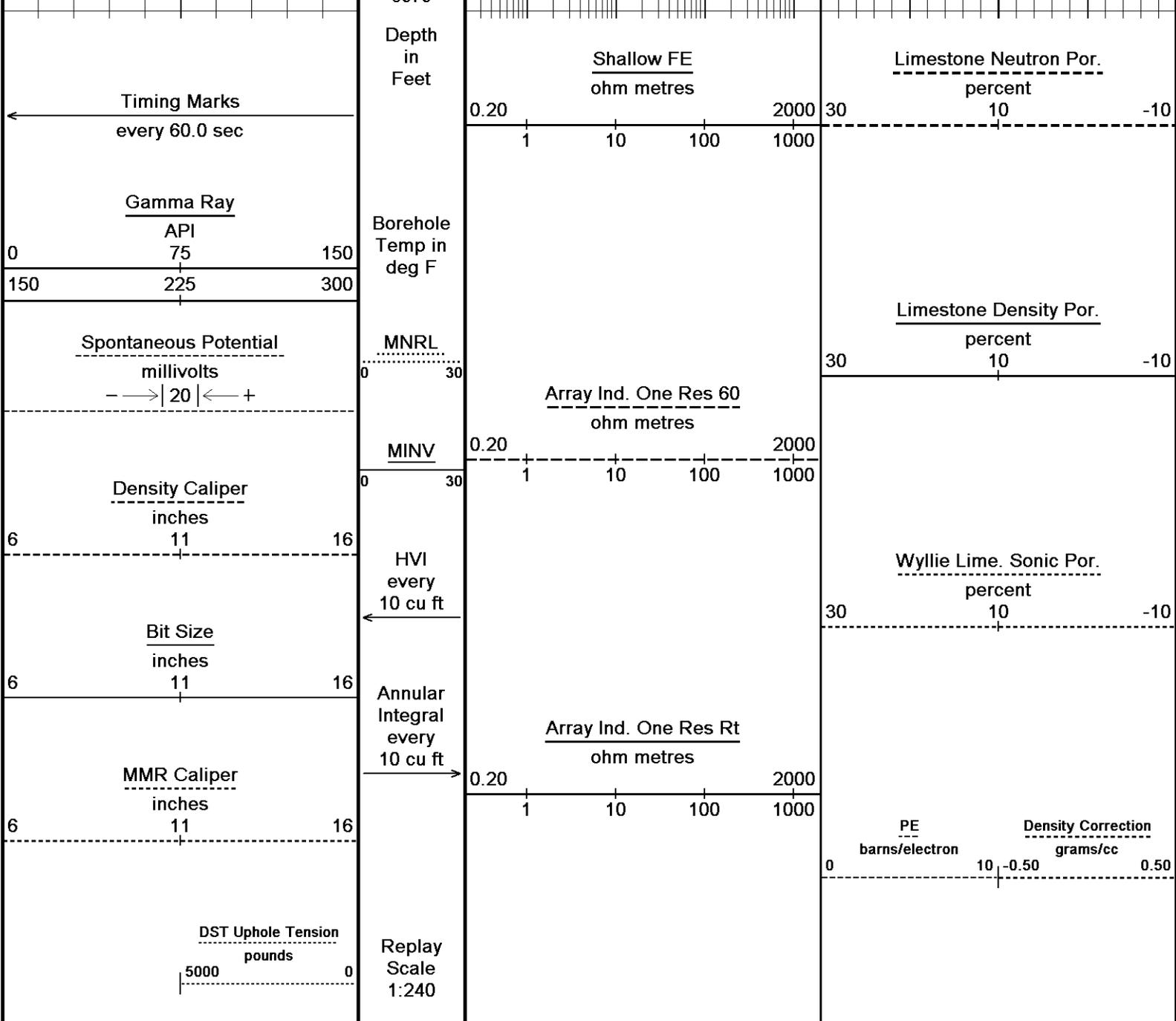
↑ 10 INCH HI-RES ↑

↓ REPEAT SECTION ↓

Depth Based Data - Maximum Sampling Increment 10.0cm
 Plotted on 28-OCT-2013 22:43
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 Recorded on 28-OCT-2013 16:18
 System Versions: Logged with 13.04.8723 Processed with 13.04.8723 Plotted with 13.04.8723







Depth Based Data - Maximum Sampling Increment 10.0cm
 Plotted on 28-OCT-2013 22:43
 Filename: C:\Program Files\Weatherford\WLS 13.04\DATA\TAOS (WEST MADDIX U...)\DATA_001.dta
 Recorded on 28-OCT-2013 16:18
 System Versions: Logged with 13.04.8723 Processed with 13.04.8723 Plotted with 13.04.8723

↑ REPEAT SECTION ↑

BEFORE SURVEY CALIBRATION
 C:\Program Files\Weatherford\WLS 13.04\DATA\TAOS (WEST MADDIX UNIT #16)\DATA_003.dta

General Constants All 000 Last Edited on 28-OCT-2013,19:47

General Parameters
 Mud Resistivity 1.400 ohm-metres
 Mud Resistivity Temperature 86.000 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. Four Res Rt
RWA Constant A	0.610
RWA Constant M	2.150

Gamma Calibration MCG-C 86

Field Calibration on 28-OCT-2013 08:53

	Measured	Calibrated (API)
Background	33	23
Calibrator (Gross)	1042	719
Calibrator (Net)	1008	696

Gamma Constants MCG-C 86

Last Edited on 28-OCT-2013,13:59

Gamma Calibrator Number	36	
Mud Density	1.13	gm/cc
Caliper Source for Processing	Bit Size	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm

SP Calibration MCG-C 86

Field Calibration on 28-OCT-2013,22:07

	Measured	Calibrated (mV)
Reference 1	100.0	100.0
Reference 2	-100.0	-100.0

High Resolution Temperature Calibration MCG-C 86

Field Calibration on 28-OCT-2013,08:54

	Measured	Calibrated(Deg F)
Lower	0.00	0.00
Upper	0.00	0.00

High Resolution Temperature Constants MCG-C 86

Last Edited on 28-OCT-2013,08:54

Pre-filter Length 11

Micro Laterolog Calibration MMR-C.A 245

Base Calibration on
Field Check on

Base Calibration				
	Measured	Calibrated (ohm-m)		
	Ref 1	Ref 2	Ref 1	Ref 2
	0.0	0.0	0.0	0.0
	Base Check (ohm-m)	Field Check (ohm-m)		
	0.0	0.0		

Micro Laterolog Constants MMR-C.A 245

Last Edited on 14-OCT-2013,10:29

Pad Type	8 in Profile, 3.5 in OD B32583
Micro Laterolog K Factor	0.0165
Standoff Offset	0.0000 inches
Mudcake Thickness Correction Constants	
Mud Cake Source	Constant Value
Mud Cake Thickness	0.4000 inches
Mud Cake Thickness Caliper	N/A
Mud Cake Resistivity	0.1500 ohm-m
Mud Cake Resistivity Temp.	68.00 Deg F
Mud Cake Resistivity Source	Constant Value
Temp. Source Rmc Correc.	N/A

Caliper Calibration MMR-C.A 245

Base Calibration on 26-SEP-2013,11:16
Field Calibration on 28-OCT-2013,08:55

Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	13709	5.96
2	16753	7.97
3	19761	9.84
4	23179	11.91
5	0	0.00
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
9.28	9.84

Micro Normal and Micro Inverse Calibration MMR-C.A 245

Base Calibration on 26-SEP-2013,11:17
Field Check on 28-OCT-2013 08:55

Base Calibration

Channel	Measured		Calibrated (ohm-m)	
	Resistor 1	Resistor 2	Resistor 1	Resistor 2
Micro Normal	11.9	59.8	5.0	25.0
Micro Inverse	15.6	77.3	5.0	25.0

Channel	Base Check (ohm-m)	Field Check (ohm-m)
Micro Normal	76.1	76.1
Micro Inverse	58.9	58.9

Micro Normal and Micro Inverse Constants MMR-C.A 245

Last Edited on 06-SEP-2013,16:14

Pad Type 8-12 in Soft Rubber Inflatable 006-9011-159

Micro Normal K Factor	1.0000
Micro Inverse K Factor	1.0000
Standoff Offset	0.0000 inches

Neutron Calibration MDN-A.A 11

Base Calibration on 15-OCT-2013 10:17
Field Check on 28-OCT-2013,13:29

Base Calibration

Ratio	Measured		Calibrated (cps)	
	Near	Far	Near	Far
	3430	106	3714	110
	32.349		33.764	

Field Calibrator at Base	Calibrated (cps)
Ratio	2162 3072
	0.704

Field Check	Calibrated (cps)
Ratio	2141 3036
	0.705

Neutron Constants MDN-A.A 11

Last Edited on 28-OCT-2013,13:29

Neutron Source Id	N1054
Neutron Jig Number	036
Epithermal Neutron	No
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	Constant Value
Formation Pressure	0.00 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 20

Base Calibration on 11-SEP-2013,15:53
Field Check on 28-OCT-2013 08:56

Base Calibration

Reference	Measured	Calibrated (ohm-m)
	Reference 1	9.9
Reference 2	973.1	126.8
Base Check		281.1
Field Check		281.2

FE Constants MFE-A.A 20

Last Edited on 28-OCT-2013,08:55

Running Mode	No Sleeve	
MFE K Factor	0.1268	
Caliper Source for FE correction	Density Caliper	
Caliper Value for FE correction	N/A	inches
Rm Source for FE correction	Temperature Corr	
Temp. for Rm Corr.	MCG External Temperature	
Stand-off	0.0	inches

Sonic Constants MSS-C.A 147

Last Edited on

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	
Correction for Sonde Skew	Applied	
Cycle Stretch Algorithm	Applied	
MN3FT	0.00	micro-sec
MX3FT	1500.00	micro-sec
Hunt-Raymer Constant	83.13	micro-sec/ft

Sonde Mode	Compensated
Hole Type	Open Hole

Sonde Parameters

	Measured	Calibrated
Offset	0.0000	0.0000
Free Pipe	0.0000	

Peak Amplitude Source

Waveform	Start Time (micro-sec)	Width (micro-sec)	Pre Gain	Start Gain	Discriminator (mV)
3'					
4'					
5'					
6'					

Processed Fixed Gate Parameters

Waveform Used For Processing	N/A			
Start Time (micro-sec)	End Time (micro-sec)	Discriminator (mV)	Depth (m)	
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	0.00	0.00	0.00	

Full Waveform Parameters

Use 3' Waveform to derive TR	No
Use 4' Waveform to derive TR	No
Use 5' Waveform to derive TR	No
Use 6' Waveform to derive TR	No
3' Waveform Discriminator Level	0.30 mV
4' Waveform Discriminator Level	0.30 mV
5' Waveform Discriminator Level	0.15 mV
6' Waveform Discriminator Level	0.15 mV
3' Waveform Filter	
4' Waveform Filter	
5' Waveform Filter	
6' Waveform Filter	

Semblance Level	0.50
Semblance Window Width	120.00 micro-sec
Sonic 1 Despiker	100.00 micro-sec/ft
Sonic 2 Despiker	100.00 micro-sec/ft

Induction Calibration MAI-A.A 169

Base Calibration on 04-SEP-2013,22:49
Field Check on 28-OCT-2013 09:00

Base Calibration	
Test Loop Calibration	Measured Calibrated (mmho/m)

Test Loop Calibration		Measured		Calibrated (mmho/m)	
Channel	Low	High	Low	High	
1	17.8	485.7	9.3	966.2	
2	6.3	393.9	7.6	821.4	
3	3.5	265.5	5.2	566.0	
4	2.3	135.1	2.6	279.2	
Array Temperature		75.2		Deg F	
Channel	Base Check (mmho/m)		Field Check (mmho/m)		
	Low	High	Low	High	
1			11.1	3765.4	
2			29.0	3447.3	
3			27.9	3001.3	
4			18.5	2065.5	
Deep			16.7	2001.9	
Medium			41.5	3922.2	
Shallow			43.7	5033.0	
Array Temperature				63.3	Deg F

Induction Constants MAI-A.A 169				Last Edited on 28-OCT-2013,13:57	
Induction Model		RtAP-WBM			
Caliper for Borehole Corr.		Density Caliper			
Hole Size for Borehole Correction		N/A		inches	
Tool Centred		No			
Stand-off Type		Fins			
Stand-off		0.00		inches	
Number of Fins on Stand-off		0.0000			
Stand-off Fin Angle		0.00		degrees	
Stand-off Fin Width		0.0000		inches	
Borehole Corr. Rm Source		Temperature Corr			
Temp. for Rm Corr.		Borehole Temp. Unfilt.			
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	
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 169				Field Calibration on 18-OCT-2013,08:46	
	Measured		Calibrated(Deg F)		
Lower	50.00		50.00		
Upper	100.00		100.00		

High Resolution Temperature Constants MAI-A.A 169				Last Edited on 18-OCT-2013,08:46	
Pre-filter Length		11			

Caliper Calibration MPD-B 120				Base Calibration on 11-SEP-2013 17:09	
				Field Calibration on 28-OCT-2013 13:29	

Base Calibration		Measured	Calibrator Size (in)
Reading No			
1		18976	3.98
2		27600	5.96
3		36269	7.97
4		44720	9.84
5		54240	11.91
6		N/A	N/A

Field Calibration	Measured Caliper (in)	Actual Caliper (in)
	7.92	7.97

Photo Density Calibration MPD-B 120 Base Calibration on 11-SEP-2013 16:50
Field Check on 28-OCT-2013, 13:29

Density Calibration		Measured		Calibrated (sdu)	
Base Calibration		Near	Far	Near	Far
Reference 1	57527	28805	59869	31110	
Reference 2	23364	2568	24557	2522	
Field Check at Base		996.5	1249.7		
Field Check		995.4	1246.4		

PE Calibration		Measured		Calibrated
Base Calibration		WS	WH	Ratio
Background	176	870		
Reference 1	20680	57341	0.363	0.369
Reference 2	5905	23227	0.256	0.271
Field Check at Base		176.1	869.9	
Field Check		175.8	870.0	

Density Constants MPD-B 120 Last Edited on 28-OCT-2013, 13:54

Density Source Id	P56135B
Nylon Calibrator Number	633
Aluminium Calibrator Number	633
Density Shoe Profile	8 inch
Caliper Source for Processing	Density Caliper
PE Correction to Density	Not Applied
Mud Density	1.13 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

DOWNHOLE EQUIPMENT

Compact Comms Gamma
MCG-C 86 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Micro-Resistivity
MMR-C.A 245 LG: 8.59 ft WT: 81.6 lb OD: 4.88 in

Compact Neutron
MDN-A.A 11 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

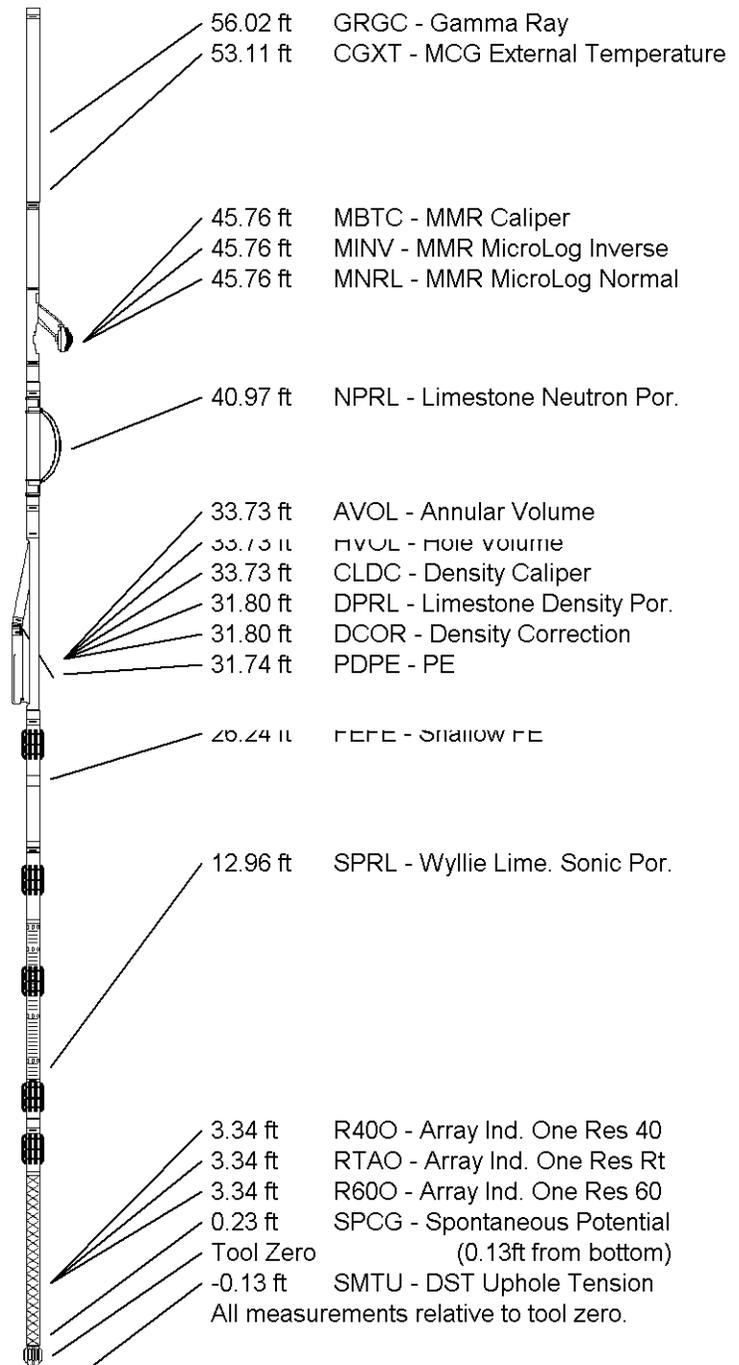
Compact Density/Caliper
MPD-B 120 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

Compact Focused Electric
MFE-A.A 20 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

Compact Sonic
MSS-C.A 147 LG: 12.52 ft WT: 72.8 lb OD: 2.24 in

Compact Induction
MAI-A.A 169 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 61.30 ft Weight: 456.4 lb



COMPANY TAOS RESOURCES OPERATING CO.
WELL WEST MADDIX UNIT #16
FIELD WILDCAT
PROVINCE/COUNTY COWLEY
COUNTRY/STATE USA / KANSAS

Elevation Kelly Bushing	1259.00	feet	First Reading	3650.00	feet
Elevation Drill Floor	1257.00	feet	Depth Driller	3650.00	feet
Elevation Ground Level	1251.00	feet	Depth Logger	3653.00	feet



Weatherford[®]

COMPOSITE LOG

