



Weatherford

**COMPENSATED NEUTRON
SONIC POROSITY
OVERLAY**

COMPANY				SHAKESPEARE OIL CO., INC.			
WELL				ORTEGA #1-25			
FIELD				WILDCAT			
PROVINCE/COUNTY				SCOTT			
COUNTRY/STATE				U.S.A. / KANSAS			
LOCATION				2000' FNL & 2287' FEL			
SEC	TWP	RGE	Other Services				
25	16S	34W					
API Number		15-171-21017					
Permit Number							
Permanent Datum GL, Elevation 3095 feet							
Log Measured From KB							
Drilling Measured From KB							
Date	24-FEB-2014				Elevations:		
Run Number	ONE				KB	3105.00	
Service Order	4558-80419553				DF	3103.00	
Depth Driller	4870.00				feet	3095.00	
Depth Logger	4868.00				feet		
First Reading	4855.00				feet		
Last Reading	3800.00				feet		
Casing Driller	265.00				feet		
Casing Logger	263.00				feet		
Bit Size	7.875				inches		
Hole Fluid Type	CHEMICAL						
Density / Viscosity	9.20 lb/USg				58.00 CP		
PH / Fluid Loss	10.50				10.00 ml/30Min		
Sample Source	FLOWLINE						
Rm @ Measured Temp	0.41 @ 76.0				ohm-m		
Rmf @ Measured Temp	0.33 @ 76.0				ohm-m		
Rmc @ Measured Temp	0.49 @ 76.0				ohm-m		
Source Rmf / Rmc	CALC				CALC		
Rm @ BHT	0.29 @109.0				ohm-m		
Time Since Circulation	5 HOURS						
Max Recorded Temp	109.00				deg F		
Equipment / Base	13057				LIB		
Recorded By	ADAM SILL					JEFFREY RANDLE	
Witnessed By	TIM PRIEST						
JOB #	LB14-053						

BOREHOLE RECORD					Last Edited: 24-FEB-2014 07:27
Bit Size inches		Depth From feet		Depth To feet	
7.875		265.00		4870.00	
CASING RECORD					
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft	
SURFACE	8.625	0.00	265.00	24.00	

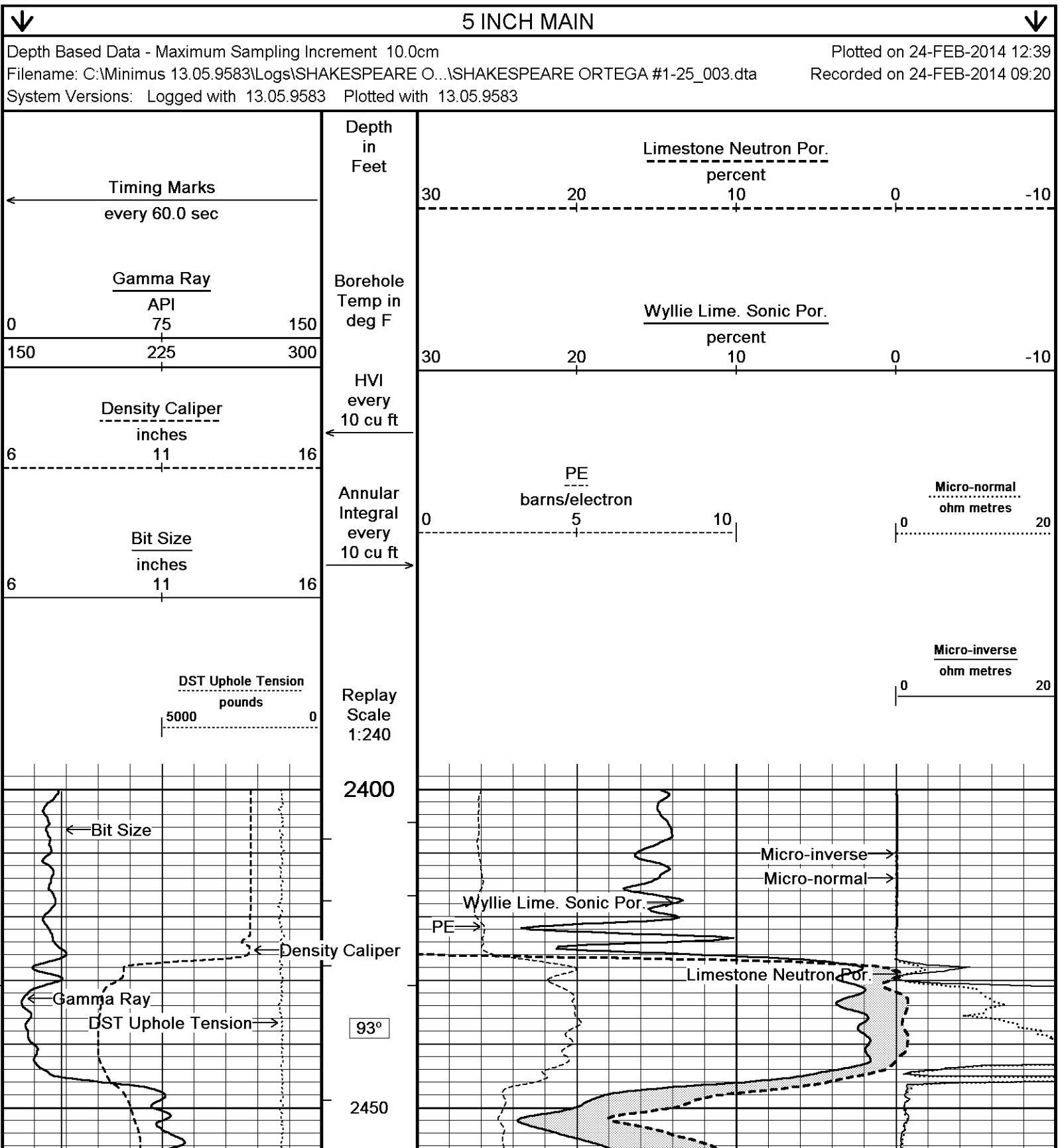
REMARKS
- SOFTWARE ISSUE: WLS 13.05.9583.
- RUN 1: MCG, MML, MDN, MPD, MFE, MSS, MAI RUN IN COMBINATION. - HARDWARE: DUAL ECCENTRALISER USED ON MDN 0.5 INCH STANDOFF USED ON MFE. TWO 0.5 INCH STANDOFFS USED ON MSS. 0.5 INCH STANDOFF USED ON MAI.
- 2.71 G/CC LIMESTONE DENSITY MATRIX USED TO CALCULATE 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: 2253 CU. FT.
- ANNULAR HOLE VOLUME WITH 5.5 INCH PRODUCTION CASING FROM TD TO 3800 FEET: 212 CU. FT.

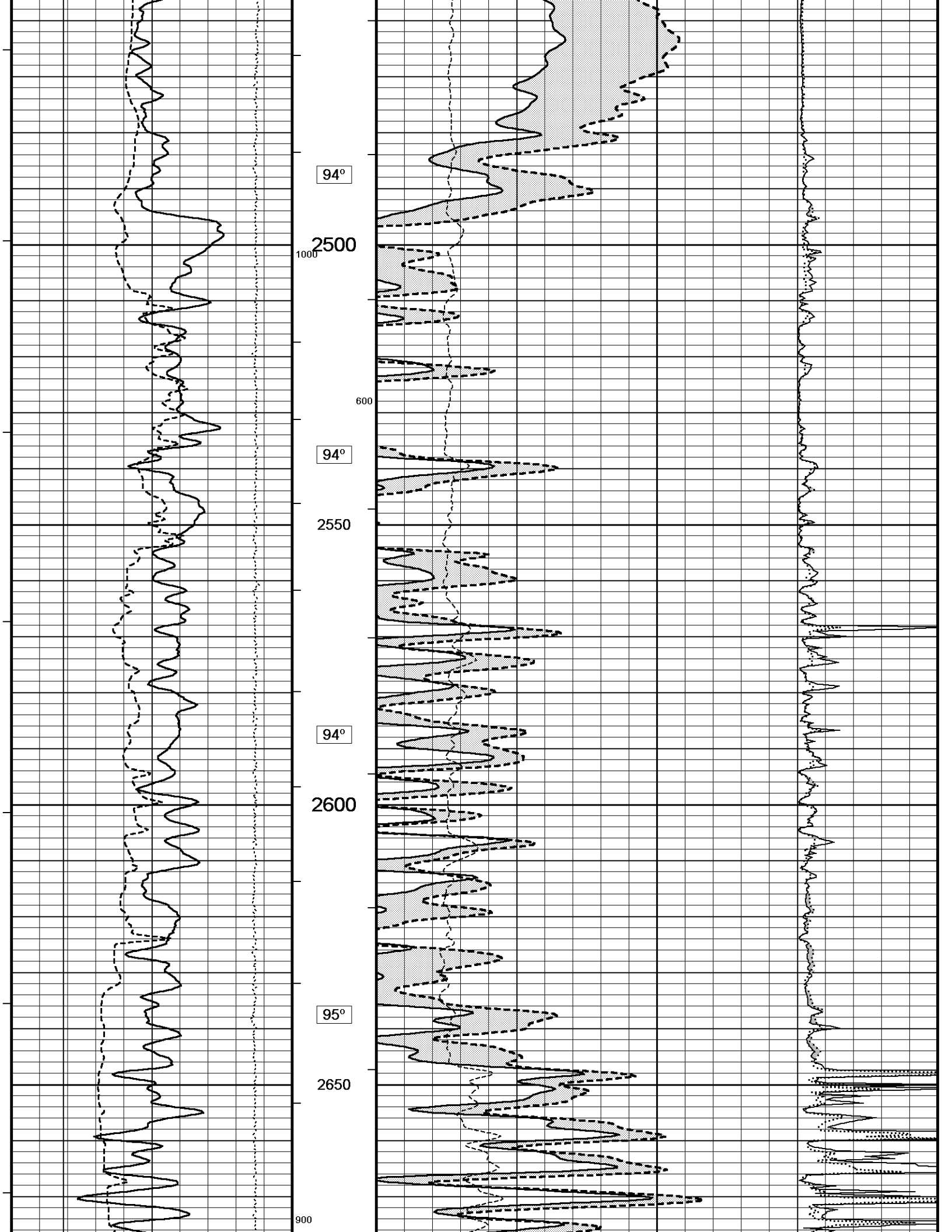
- RIG: HD DRILLING #2

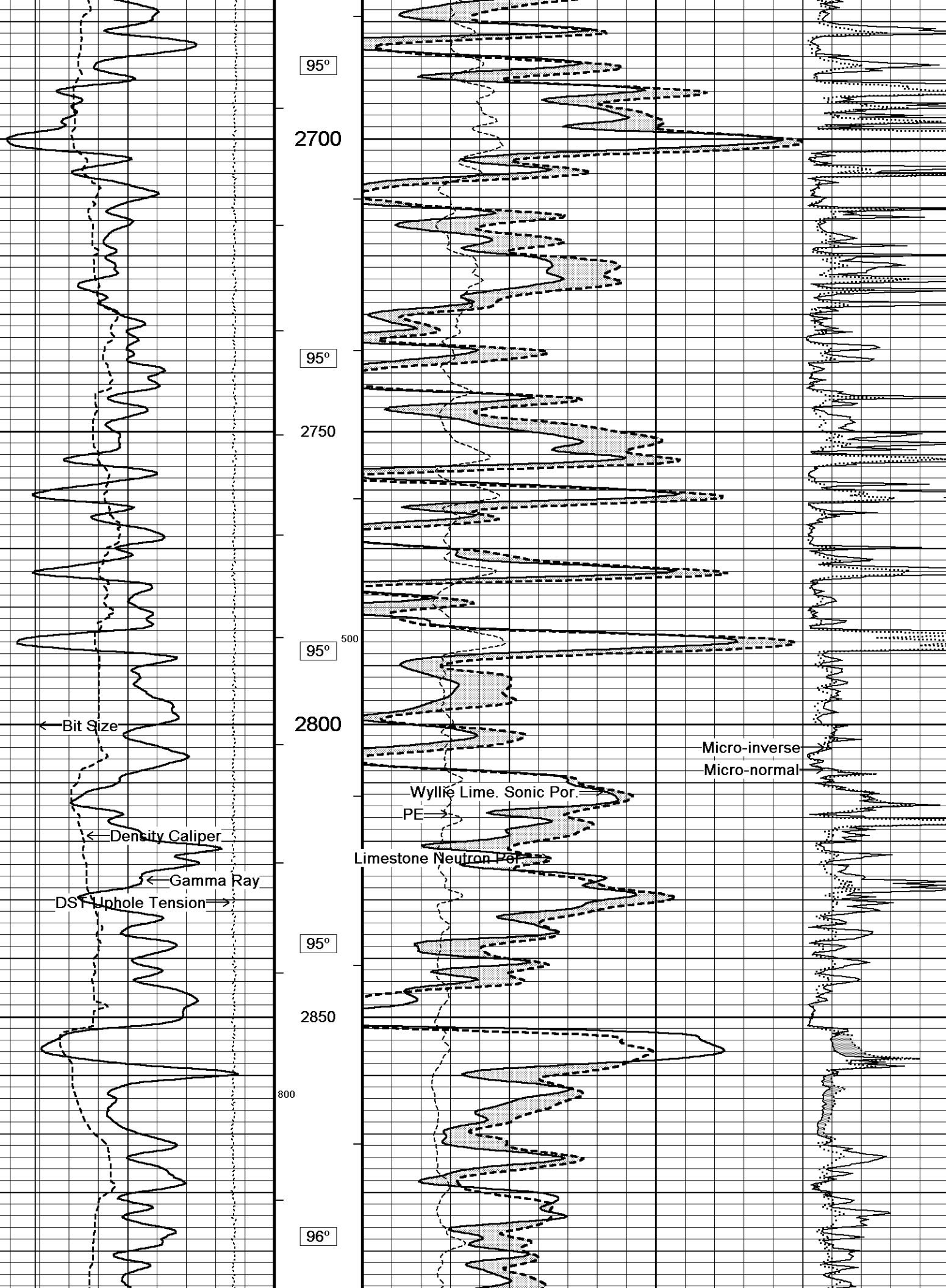
- ENGINEER: A. SILL, J. RANDLE.

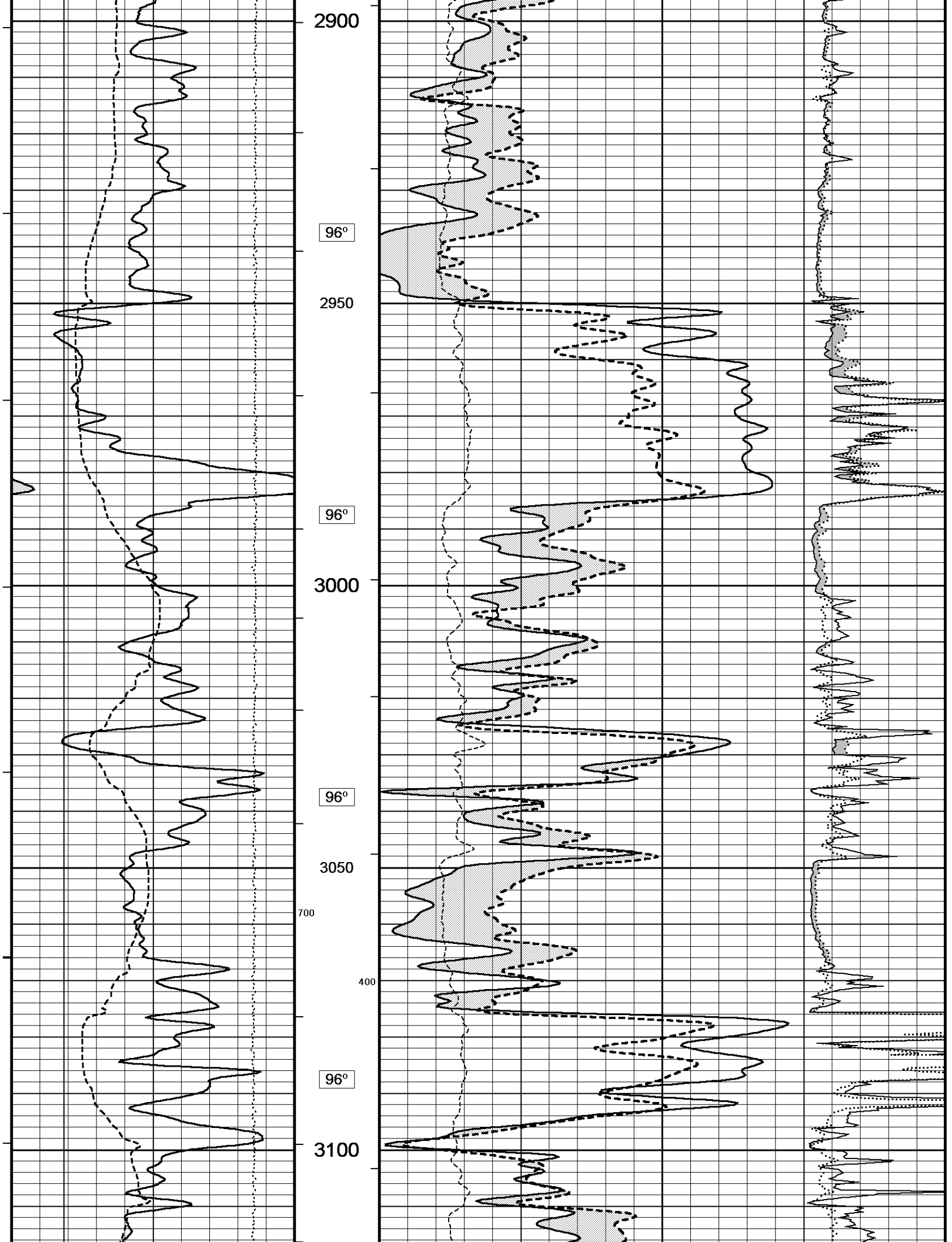
- OPERATOR(S): K. RINEHART.

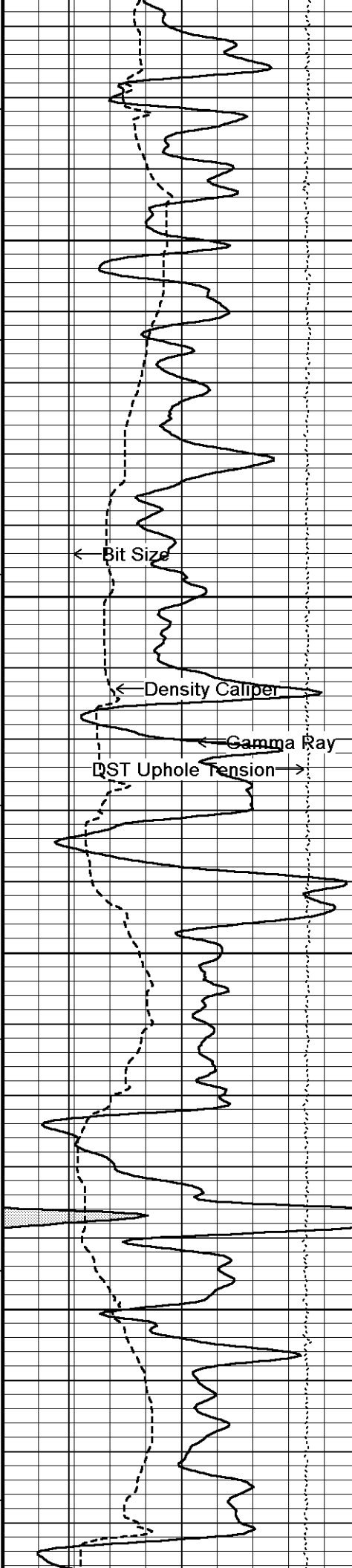
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs, 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.











97°

3150

97°

3200

Wyllie Lime. Sonic Por.

PE

Limestone Neutron Por.

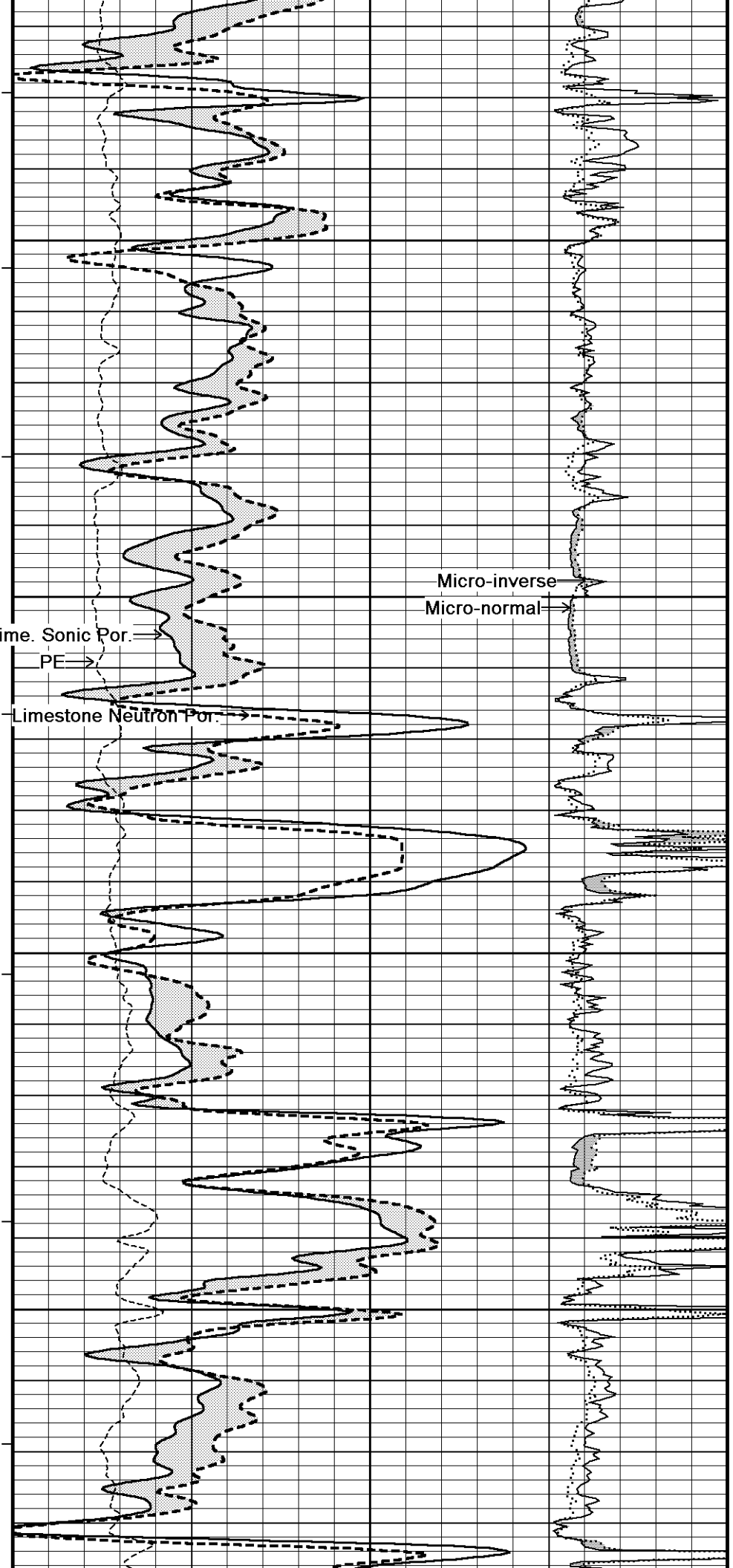
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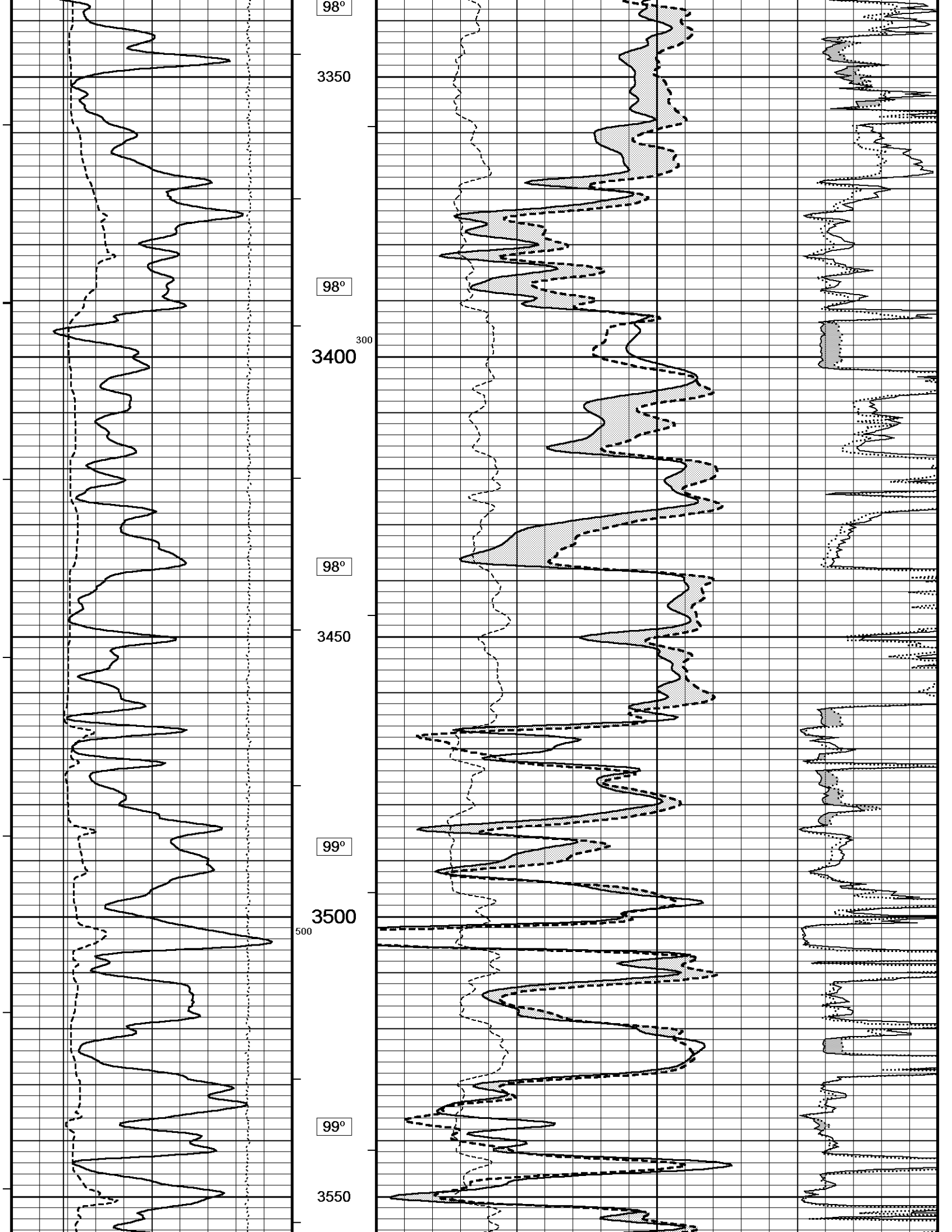
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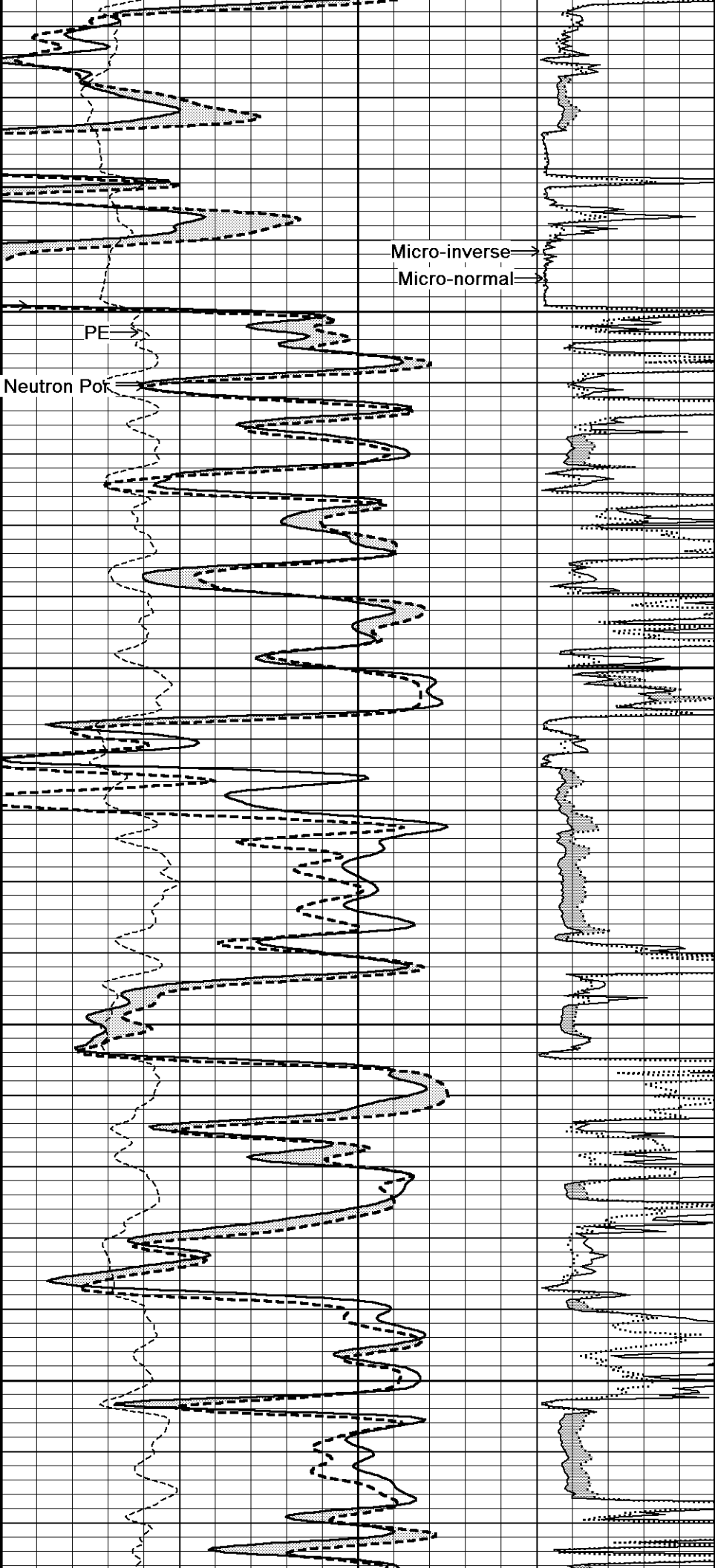
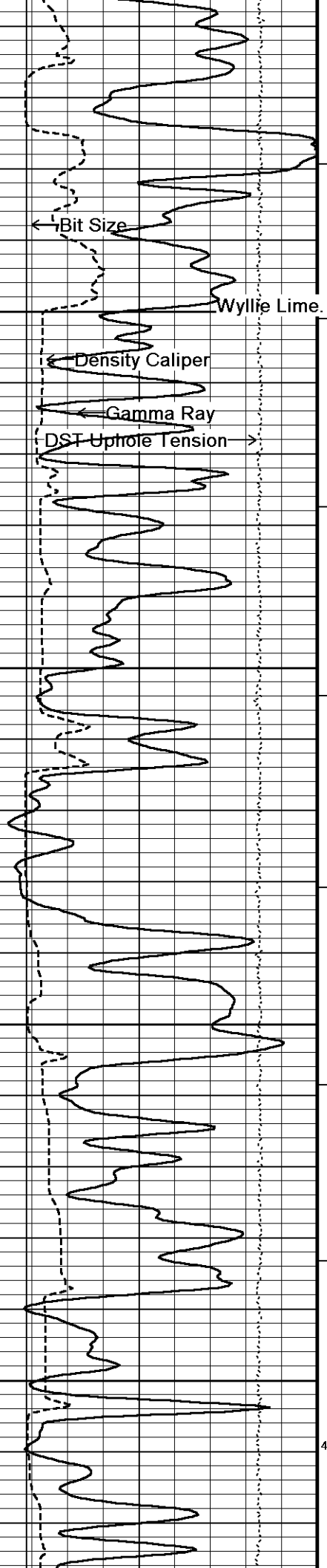
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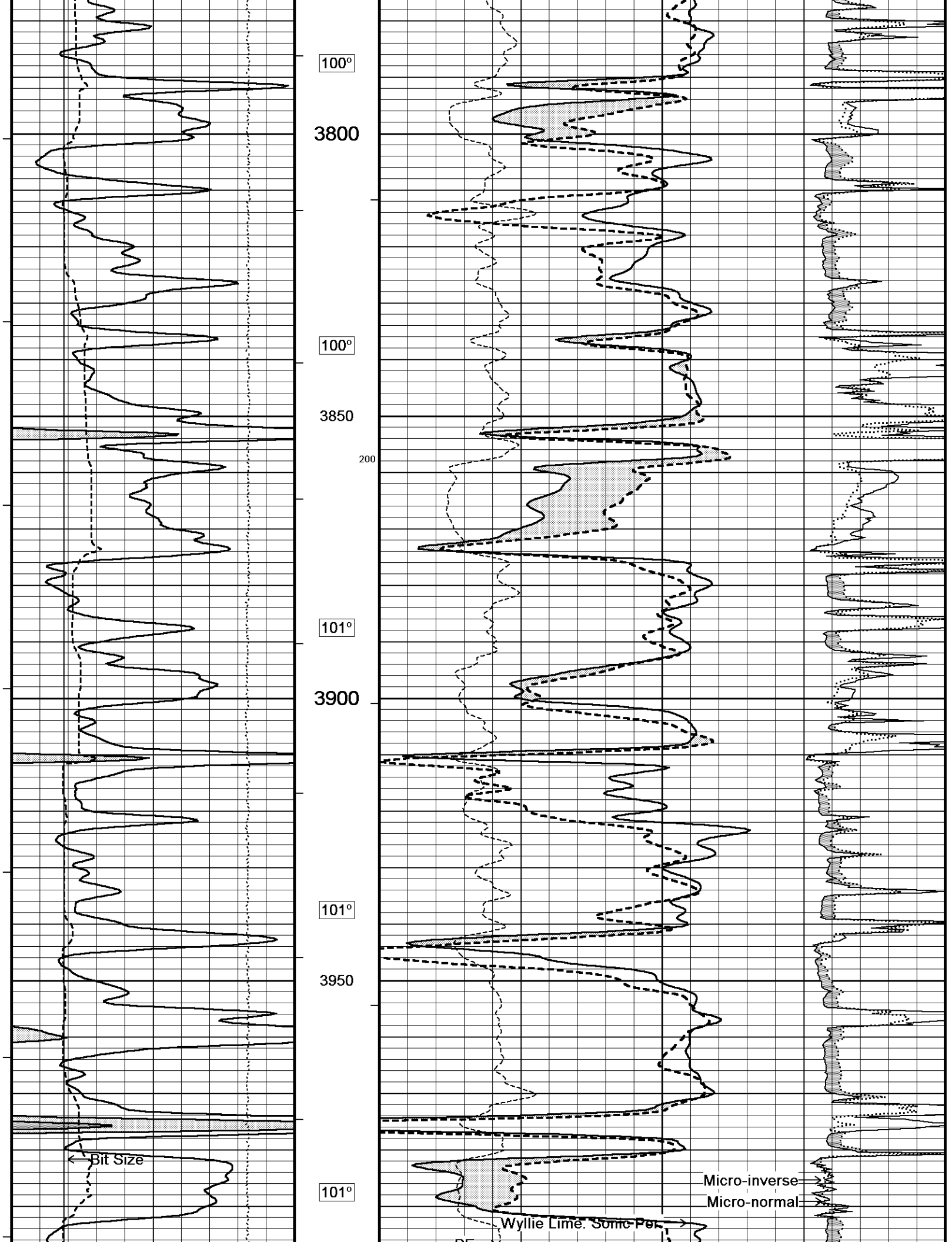
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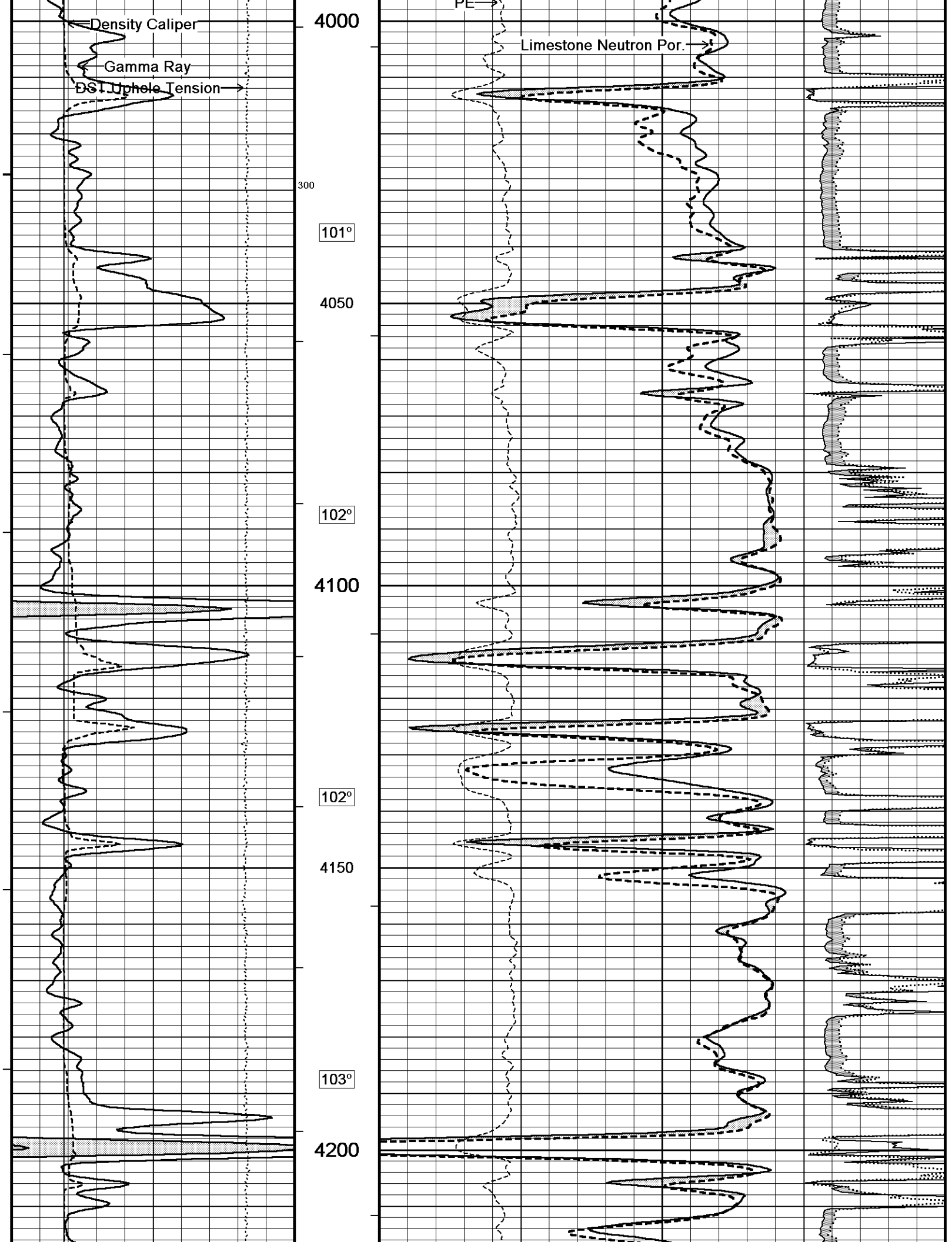
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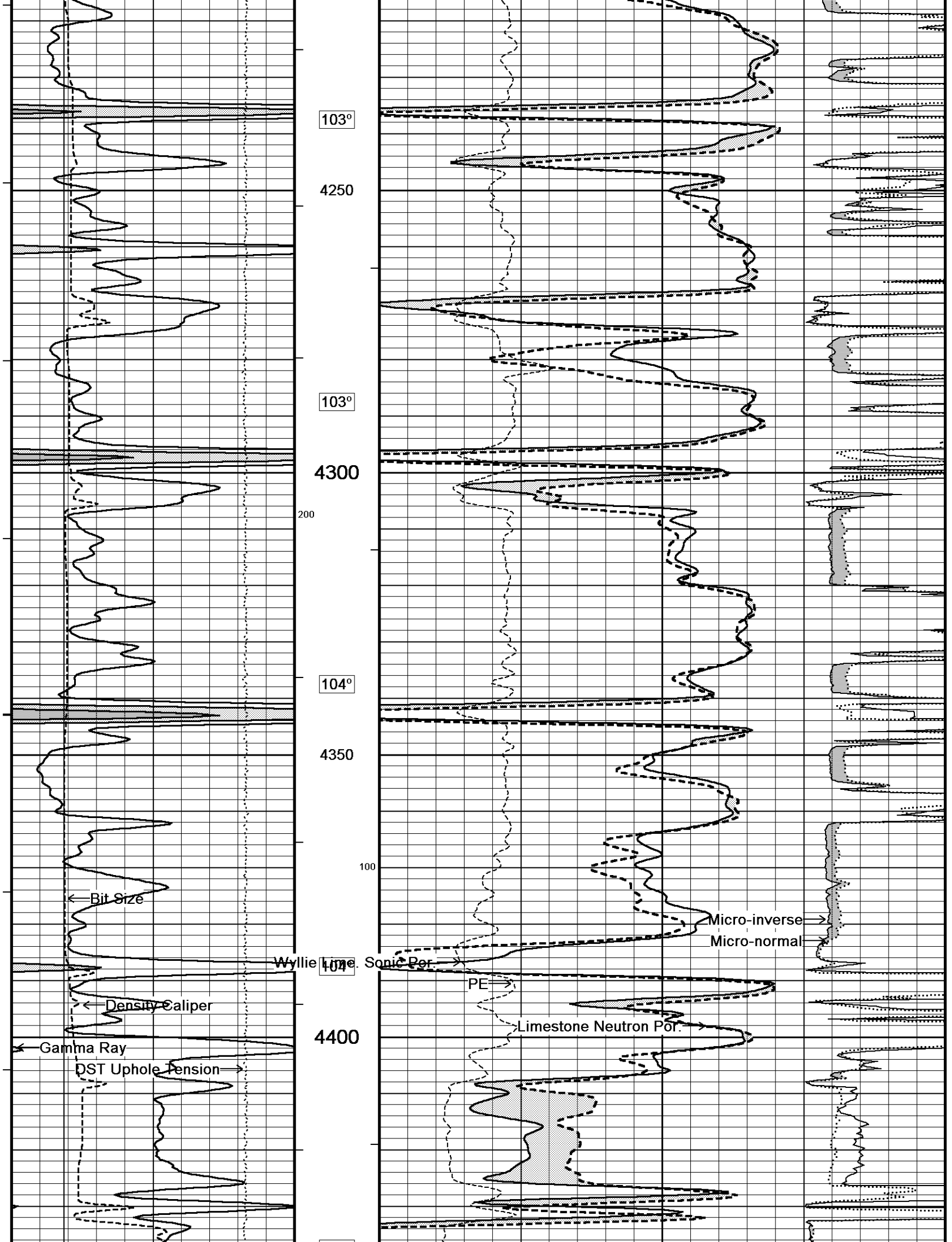


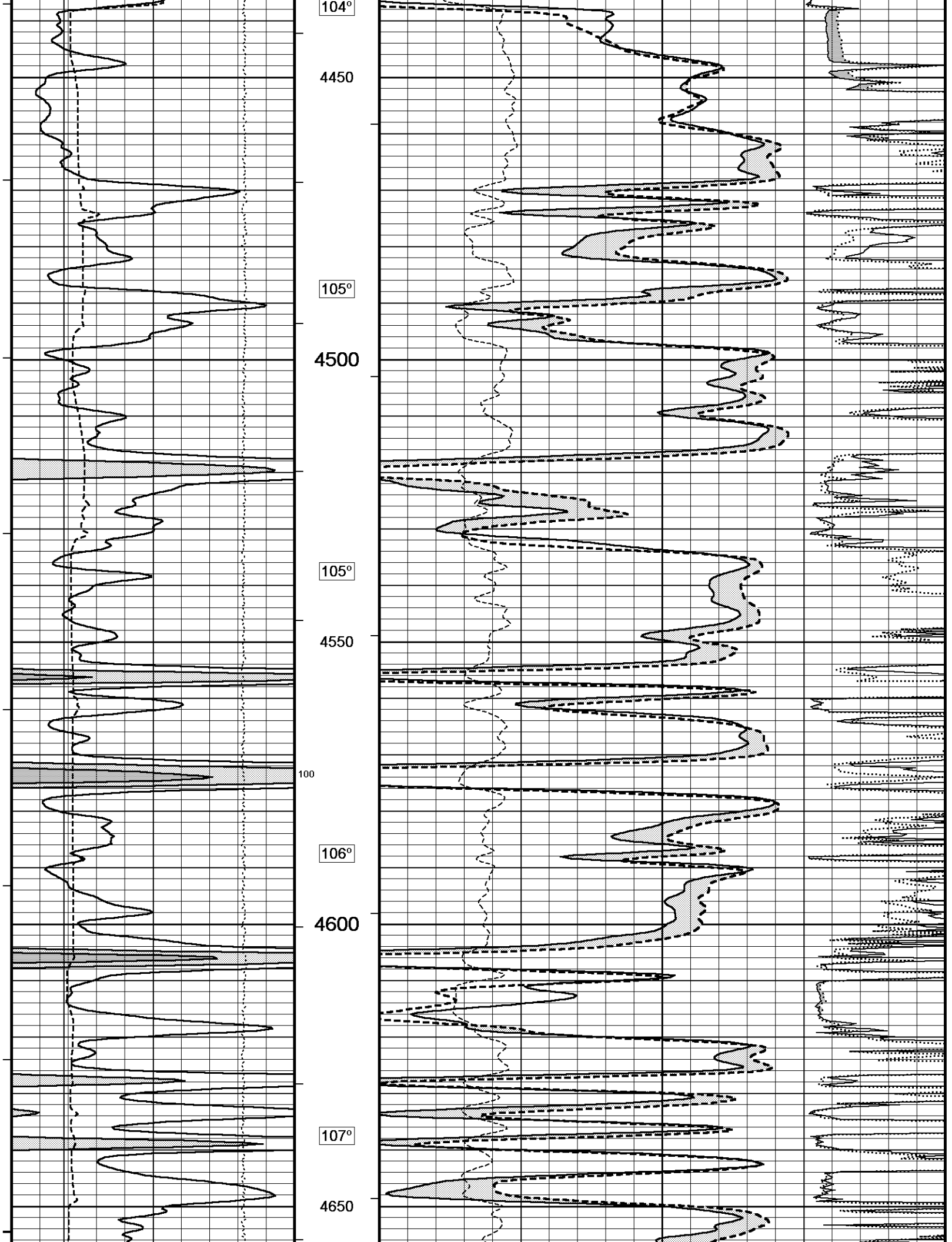


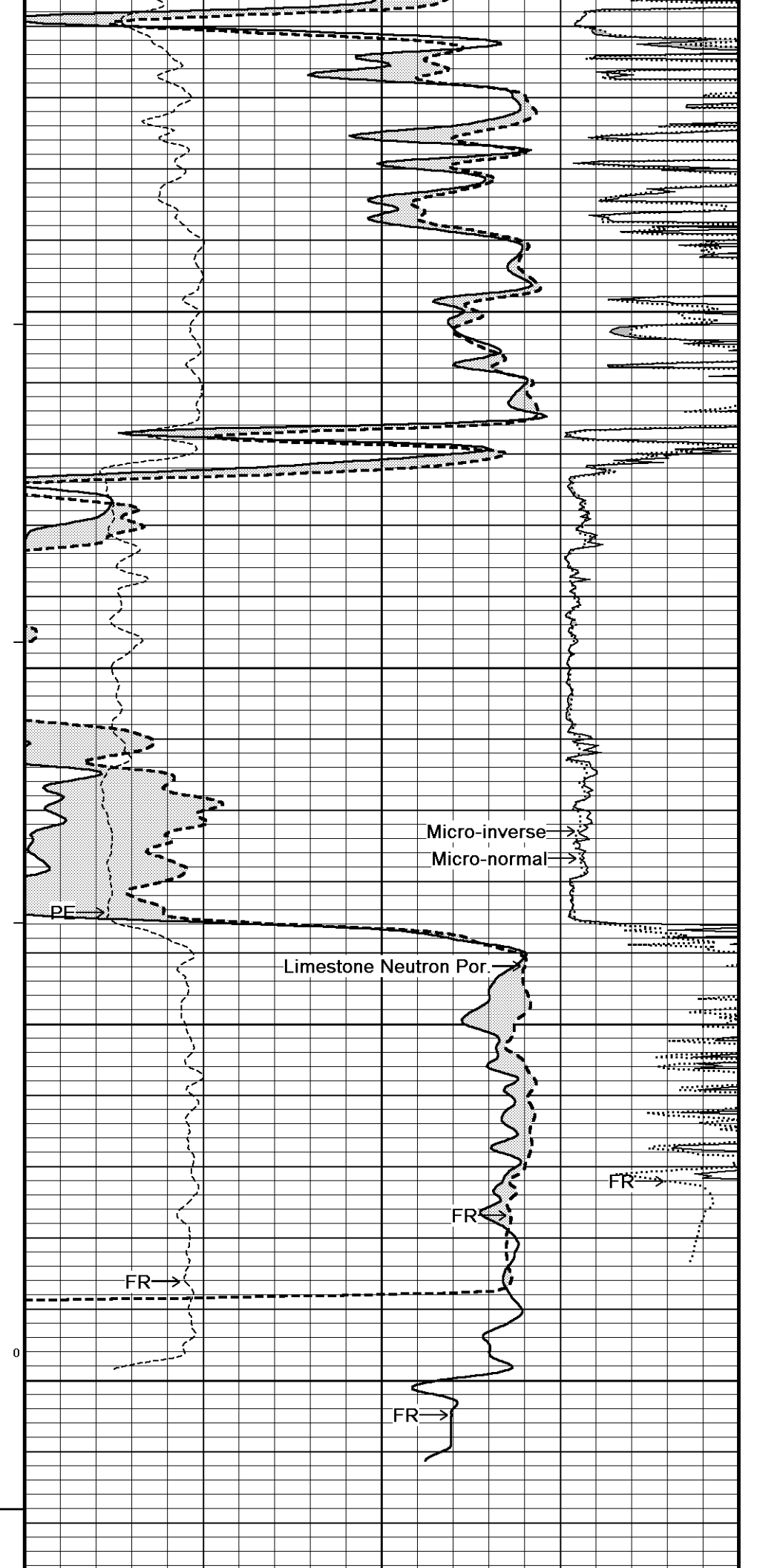
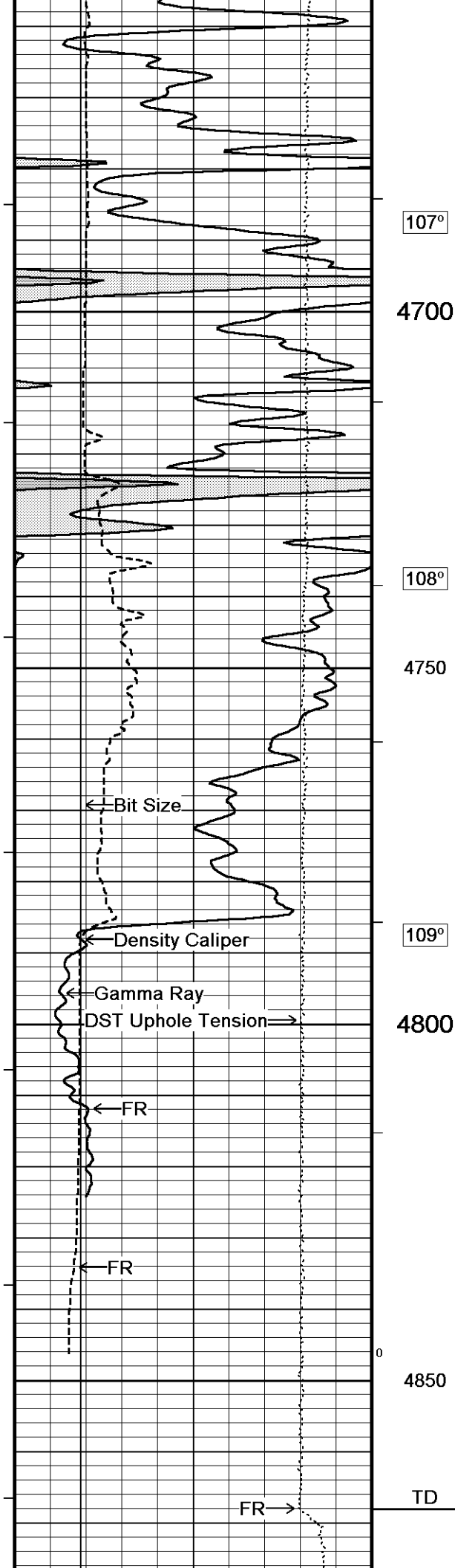












Reading No	Measured	Calibrated (lbs)	Field Calibration on 19-JAN-2014 09:34
1	15482.72	0.00	
2	16610.36	408.00	

High Resolution Temperature Calibration MCG-C 84			Field Calibration on 21-AUG-2013,11:52
	Measured	Calibrated(Deg F)	
Lower	11.00	11.00	
Upper	111.00	111.00	

High Resolution Temperature Constants MCG-C 84			Last Edited on 21-AUG-2013,11:52
Pre-filter Length	11		

SP Calibration MCG-C 84			Field Calibration on 21-AUG-2013 12:25
	Measured	Calibrated (mV)	
Reference 1	105.4	100.7	
Reference 2	-96.3	-100.8	

Gamma Calibration MCG-C 84			Field Calibration on 20-FEB-2014 09:39
	Measured	Calibrated (API)	
Background	65	44	
Calibrator (Gross)	1143	769	
Calibrator (Net)	1078	725	

Gamma Constants MCG-C 84			Last Edited on 24-FEB-2014,07:21
Gamma Calibrator Number	GRC38		
Mud Density	1.10	gm/cc	
Caliper Source for Processing	Density Caliper		
Tool Position	Eccentred		
Concentration of KCl		kppm	
K Mud Type	Chloride		
K Mud Concentration	0.00	%	

Micro Laterolog Calibration MMR-A 11			Base Calibration on 31-DEC-1999 00:00
Base Calibration			Field Check on 31-DEC-1999 00:00
	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-A 11			Last Edited on
Pad Type	6 in Solid Nylon B23059		
Micro Laterolog K Factor	0.0128		
Standoff Offset	0.0000	inches	
Mudcake Thickness Correction Constants			
Mud Cake Source	Constant Value		
Mud Cake Thickness	0.4000	inches	
Mud Cake Thickness Caliper			
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.	MCG External Temperature		

Caliper Calibration MMR-A 11			Base Calibration on 20-JAN-2014 14:07
Base Calibration			Field Calibration on 20-FEB-2014 09:23
Reading No	Measured	Calibrator Size (in)	
1	14089	5.98	
2	17229	7.97	
3	20490	9.86	
4	24430	11.92	
5	0	0.00	
6	N/A	N/A	

Field Calibration	Measured Caliper (in) 7.99	Actual Caliper (in) 7.97	
Micro Normal and Micro Inverse Calibration MMR-A 11			Base Calibration on 20-JAN-2014 13:46 Field Check on 20-FEB-2014 09:28
Base Calibration			
Channel	Resistor 1	Measured Resistor 2	Calibrated (ohm-m) Resistor 1 Resistor 2
Micro Normal	12.2	59.7	5.0 25.0
Micro Inverse	15.5	77.5	5.0 25.0
Channel	Base Check (ohm-m)		Field Check (ohm-m)
Micro Normal	76.5		76.5
Micro Inverse	58.7		58.7
Micro Normal and Micro Inverse Constants MMR-A 11			Last Edited on 18-APR-2013,13:52
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.B 65			Base Calibration on 20-JAN-2014 15:06 Field Check on 20-FEB-2014 09:43
Base Calibration			
	Near	Measured Far	Calibrated (cps) Near Far
	2981	92	3714 110
Ratio	32.404		33.764
Field Calibrator at Base		Calibrated (cps)	
		1702	2459
Ratio	0.692		
Field Check		Calibrated (cps)	
		1709	2452
Ratio	0.689		
Neutron Constants MDN-A.B 65			Last Edited on 24-FEB-2014,07:20
Neutron Source Id	PN-521		
Neutron Jig Number	5824NE		
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	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 17-JAN-2014 13:04 Field Check on 20-FEB-2014 09:16
Base Calibration			
	Measured	Calibrated (ohm-m)	
Reference 1	9.9	1.3	
Reference 2	962.7	126.8	
Base Check	281.7		
Field Check	282.0		
FE Constants MFE-B.J 352			Last Edited on 24-FEB-2014,07:20

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	0.5	inches

Sonic Constants MSS-A.A 126

Last Edited on 24-FEB-2014,07:20

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

Full Waveform Parameters

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

High Resolution Temperature Calibration MAI-A.A 45

Field Calibration on 29-OCT-2013,14:20

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

High Resolution Temperature Constants MAI-A.A 45	Last Edited on 29-OCT-2013,14:20
Pre-filter Length	11

Induction Calibration MAI-A.A 45				Base Calibration on 21-MAY-2013,16:47	
				Field Check on 20-FEB-2014 09:15	
Base Calibration					
Test Loop Calibration		Measured		Calibrated (mmho/m)	
Channel	Low	High	Low	High	
1	14.4	472.6	9.3	966.2	
2	5.7	374.0	7.6	821.4	
3	3.4	261.2	5.2	566.0	
4	2.5	133.9	2.6	279.2	
Array Temperature		0.0	Deg F		
Channel	Base Check (mmho/m)		Field Check (mmho/m)		
	Low	High	Low	High	
1			18.6	3850.3	
2			31.8	3628.6	
3			28.8	3048.7	
4			18.4	2078.7	
Deep			16.1	1910.7	
Medium			42.7	4059.7	
Shallow			49.8	5482.0	
Array Temperature			60.1	Deg F	

Induction Constants MAI-A.A 45		Last Edited on 24-FEB-2014,07:24	
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		0.50	inches
Number of Fins on Stand-off		8.0000	
Stand-off Fin Angle		45.00	degrees
Stand-off Fin Width		0.5000	inches
Borehole Corr. Rm Source		Temperature Corr	
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
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-B 31	Base Calibration on 20-JAN-2014 16:43
	Field Check on 20-FEB-2014 09:22

Density Calibration**Base Calibration**

	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	43628	22294	59556	30836
Reference 2	17956	1856	24941	2541

Field Check at Base

665.1	818.8
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Field Check

664.6	820.3
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PE Calibration**Base Calibration**

	WS	Measured		Calibrated	
		WH	Ratio	Ratio	
Background	124	593			
Reference 1	17926	43516	0.415	0.371	
Reference 2	5248	17873	0.297	0.272	

Field Check at Base

123.9	593.3
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Field Check

121.9	588.3
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Density Constants MPD-B 31

Last Edited on 24-FEB-2014,07:20

Density Source Id	254
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

Caliper Calibration MPD-B 31

Base Calibration on 24-FEB-2014 03:42

Field Calibration on 24-FEB-2014 03:43

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	18272	3.99
2	26496	5.98
3	35155	7.97
4	43472	9.86
5	52816	11.92
6	N/A	N/A

Field Calibration

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

DOWNHOLE EQUIPMENT

C:\Minimus 13.05.9583\Logs\SHAKESPEARE ORTEGA #1-25\SHAKESPEARE ORTEGA #1-25_002.dta

3/8" Triple Cone Cable Head (MCB C A)
MCB-C.A 5 LG: 1.58 ft WT: 15.4 lb OD: 2.24 in

Compact Comms Gamma
MCG-C 84 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Micro-Resistivity
MMR-A 11 LG: 8.59 ft WT: 81.6 lb OD: 4.88 in

Compact Neutron
MDN-A.B 65 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

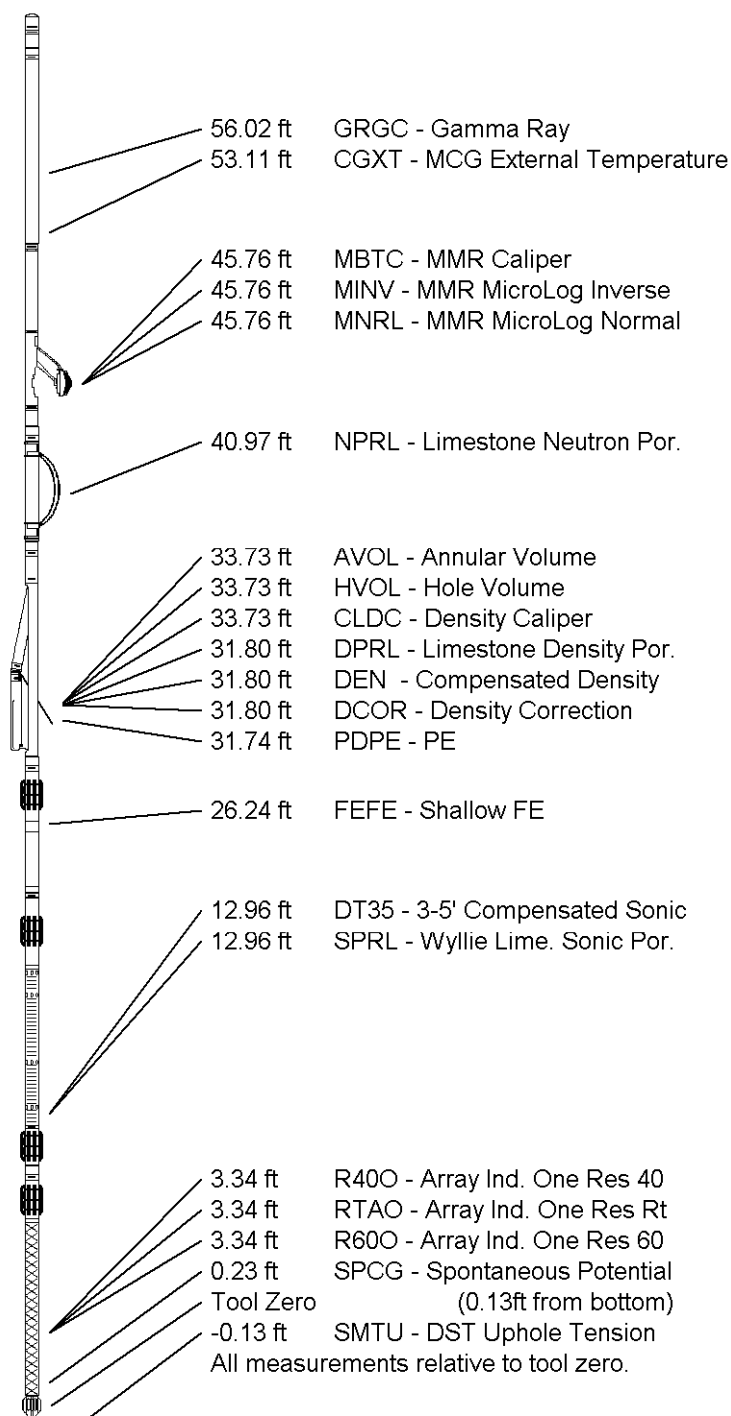
Compact Density/Caliper
MPD-B 31 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

Compact Focussed Electric
MFE-B.J 352 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

Compact Sonic
MSS-A.A 126 LG: 12.52 ft WT: 72.8 lb OD: 2.24 in

Compact Induction
MAI-A.A 45 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 62.88 ft Weight: 471.8 lb



COMPANY	SHAKESPEARE OIL CO., INC.
WELL	ORTEGA #1-25
FIELD	WILDCAT
PROVINCE/COUNTY	SCOTT
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	3105.00	feet	First Reading	4855.00	feet
Elevation Drill Floor	3103.00	feet	Depth Driller	4870.00	feet
Elevation Ground Level	3095.00	feet	Depth Logger	4868.00	feet



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SONIC POROSITY
OVERLAY

