



Weatherford

**COMPOSITE
LOG**

COMPANY										TAOS RESOURCES OPERATING COMPANY											
WELL										WMU #27											
FIELD										MADDIX NORTH											
PROVINCE/COUNTY										COWLEY											
COUNTRY/STATE										U.S.A / KANSAS											
LOCATION										2475' FSL & 1485' FWL SW-SW-SE-NW											
SEC 2		TWP 33S		RGE 5E		Other Services										SGS					
						MAI/MFE															
						MML															
						MSS															
API Number										15-035-24576										MSS	
Permanent Datum GL, Elevation										1279 feet											
Log Measured From										KB										Elevations: feet	
Drilling Measured From										KB										KB 1289.00	
																				DF 1288.00	
																				GL 1279.00	
Date										9-JUN-2014											
Run Number										ONE											
Service Order										5820-89503700											
Depth Driller										3620.00										feet	
Depth Logger										3615.00										feet	
First Reading										3612.00										feet	
Last Reading										248.00										feet	
Casing Driller										250.00										feet	
Casing Logger										248.00										feet	
Bit Size										7.875										inches	
Hole Fluid Type										WBM											
Density / Viscosity										9.40		lb/USg		45.00		sec/qt					
PH / Fluid Loss										9.50				8.80		ml/30Min					
Sample Source										MUD TANK											
Rm @ Measured Temp										2.10		@ 69.0		ohm-m							
Rmf @ Measured Temp										1.68		@ 69.0		ohm-m							
Rmc @ Measured Temp										2.52		@ 69.0		ohm-m							
Source Rmf / Rmc										CALC				CALC							
Rm @ BHT										1.28		@115.0		ohm-m							
Time Since Circulation										4 HOURS											
Max Recorded Temp										120.00				deg F							
Equipment / Base										13026				OKC							
Recorded By										L.HEATON											
Witnessed By										MARYAM NASIZADEH											
SALES										B. CONCHEWSKI											

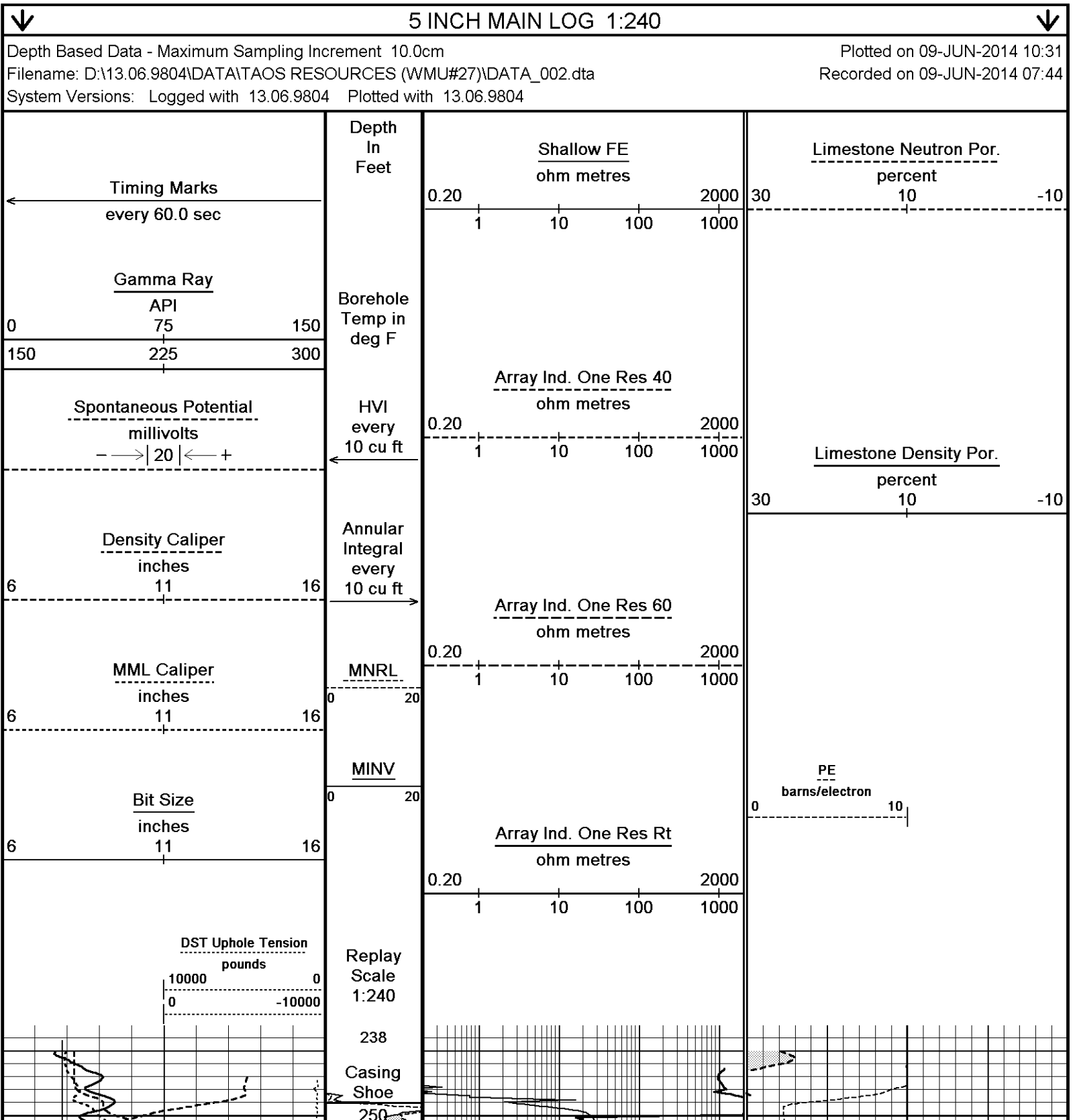
BOREHOLE RECORD					Last Edited: 09-JUN-2014 06:35
Bit Size inches		Depth From feet		Depth To feet	
7.875		251.00		3620.00	
CASING RECORD					
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft	
SURFACE	8.625	0.00	251.00	36.00	

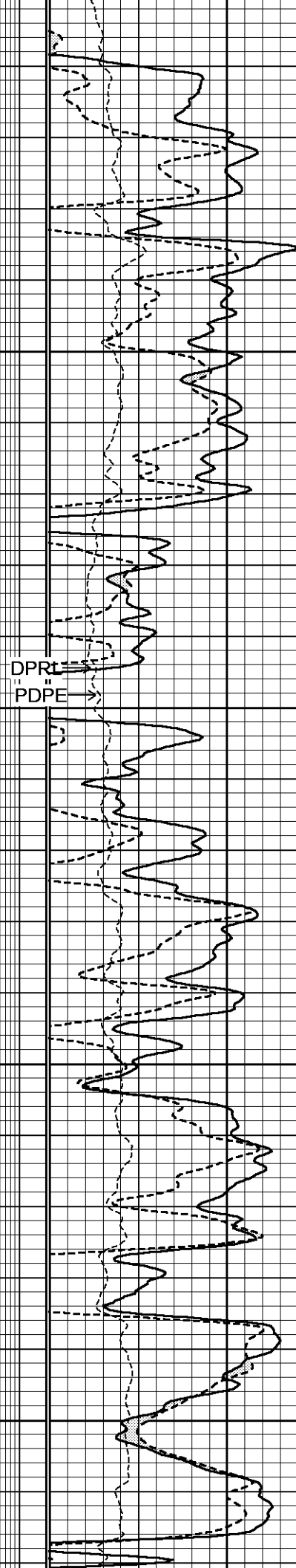
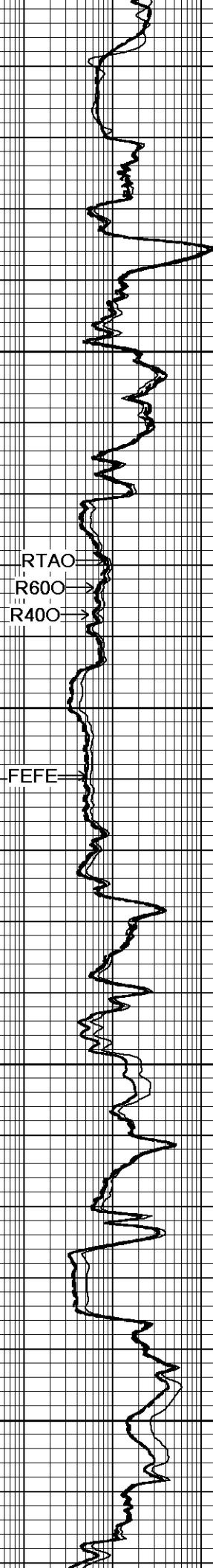
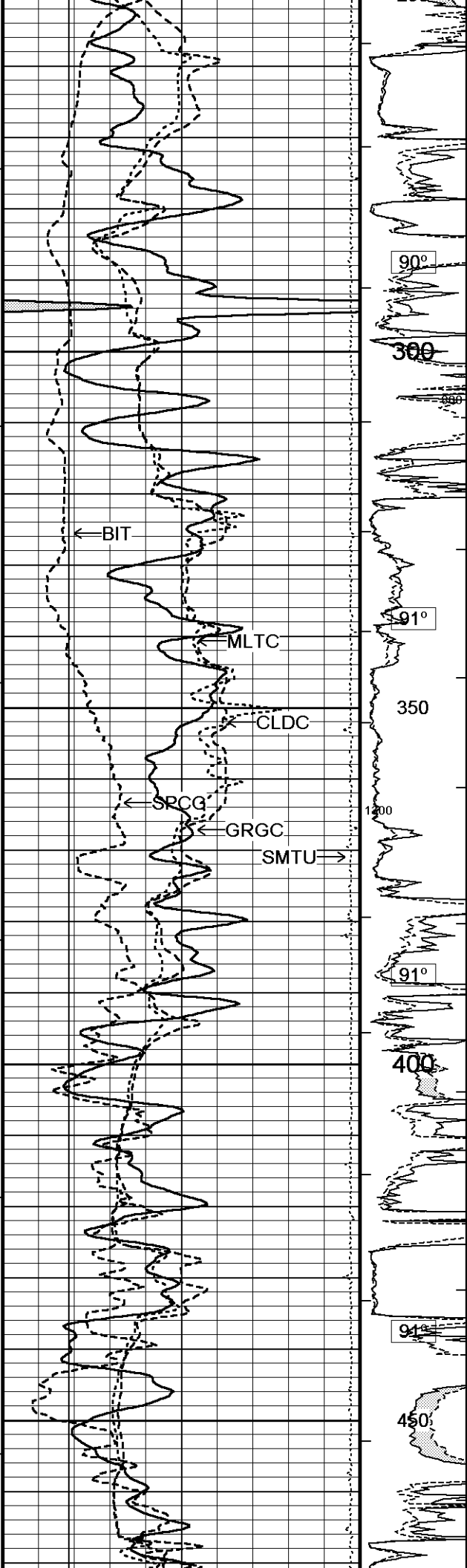
REMARKS
TOOLS RAN: MCG, SGS, MMR, MDN, MPD, MFE, MSS, MAI RAN IN COMBINATION
HARDWARE: MAI: TWO 0.5 INCH STANDOFFS USED. MFE: ONE 0.5 INCH STANDOFF USED. MDN: DUAL NEUTRON BOW SPRINGS USED. MPD: 8 INCH PROFILE PLATE USED. MSS: THREE 0.5 INCH STANDOFFS USED.
2.71 G/CC DENSITY MATRIX USED TO CALCULATE POROSITY. ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.
TOTAL HOLE VOLUME FROM TD TO SURFACE CASING = 830 CU.FT. ANNULAR HOLE VOLUME WITH 5.5 INCH PRODUCTION CASING FROM TD TO SURFACE CASING =1380 CU.FT.
FIELD TICKET NUMBER:5820-89503700
RIG: VAI #4

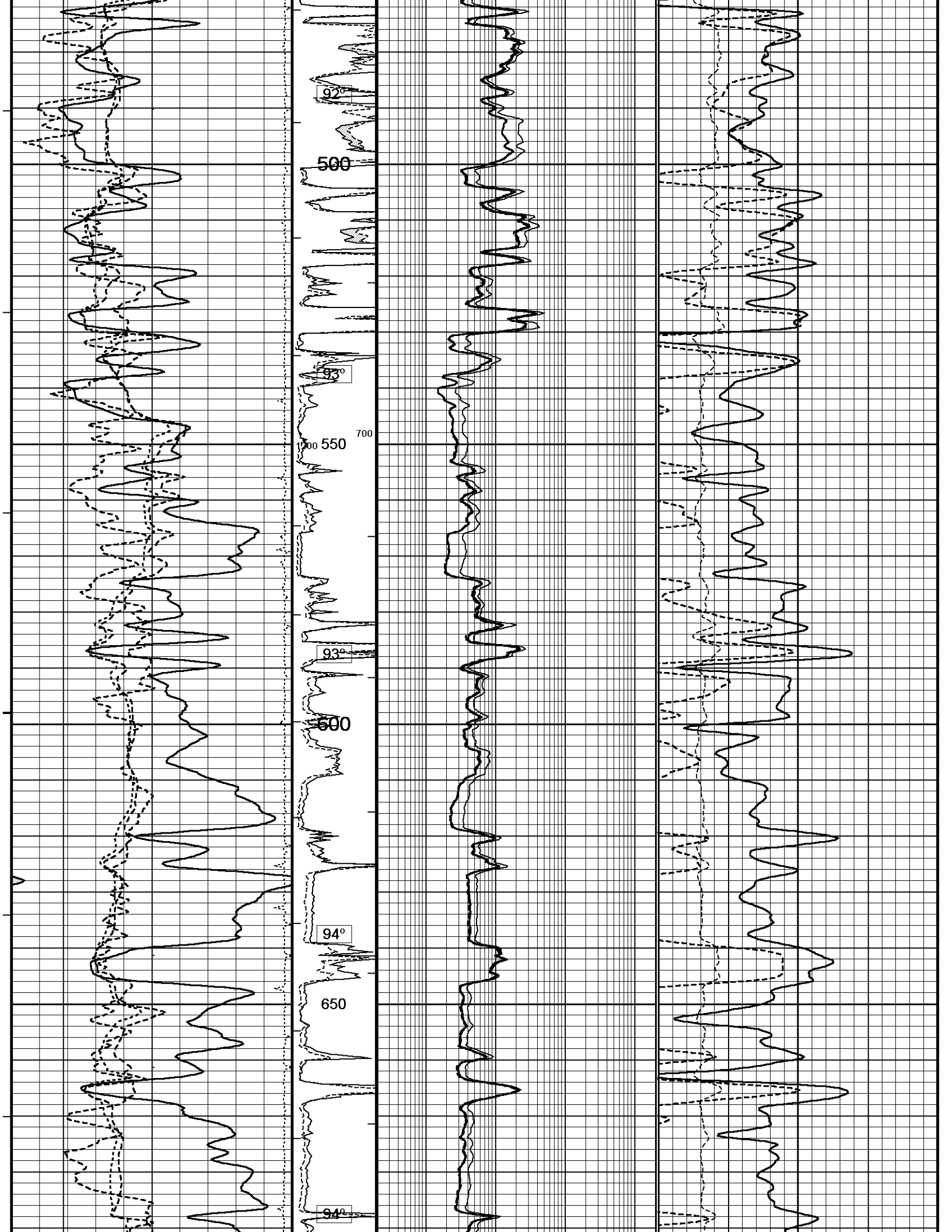
OPERATOR(S): JEFF HILL

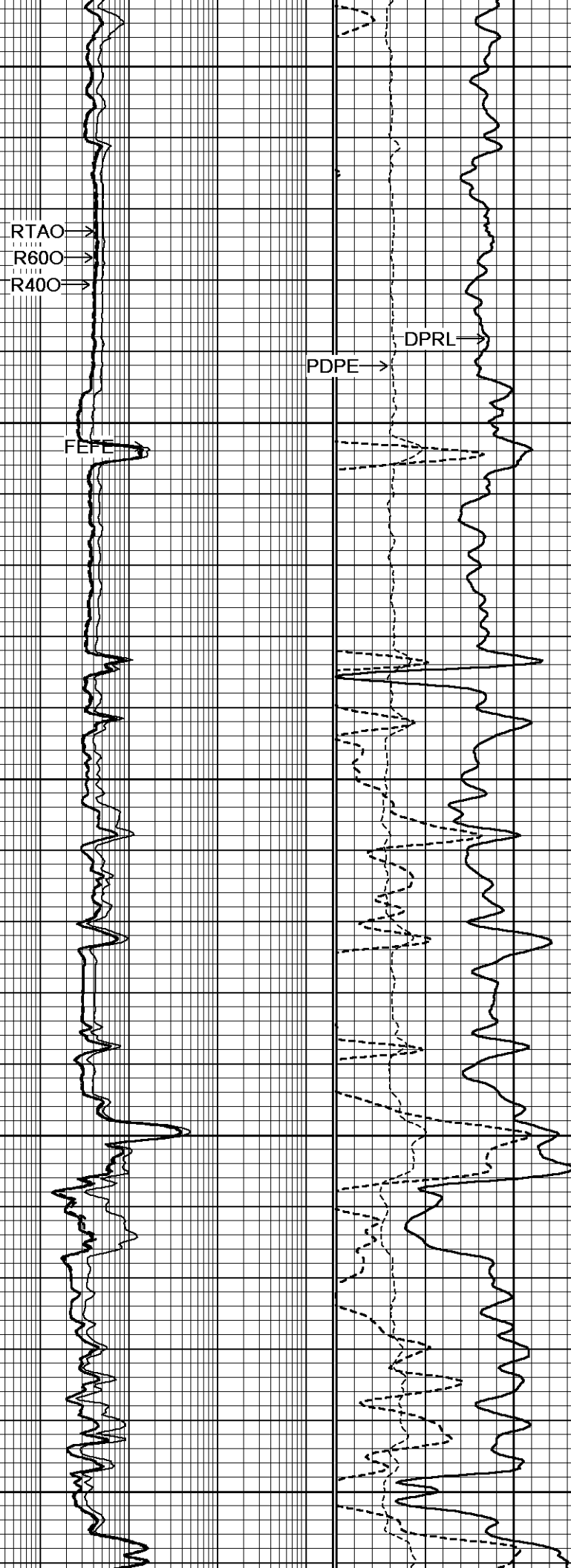
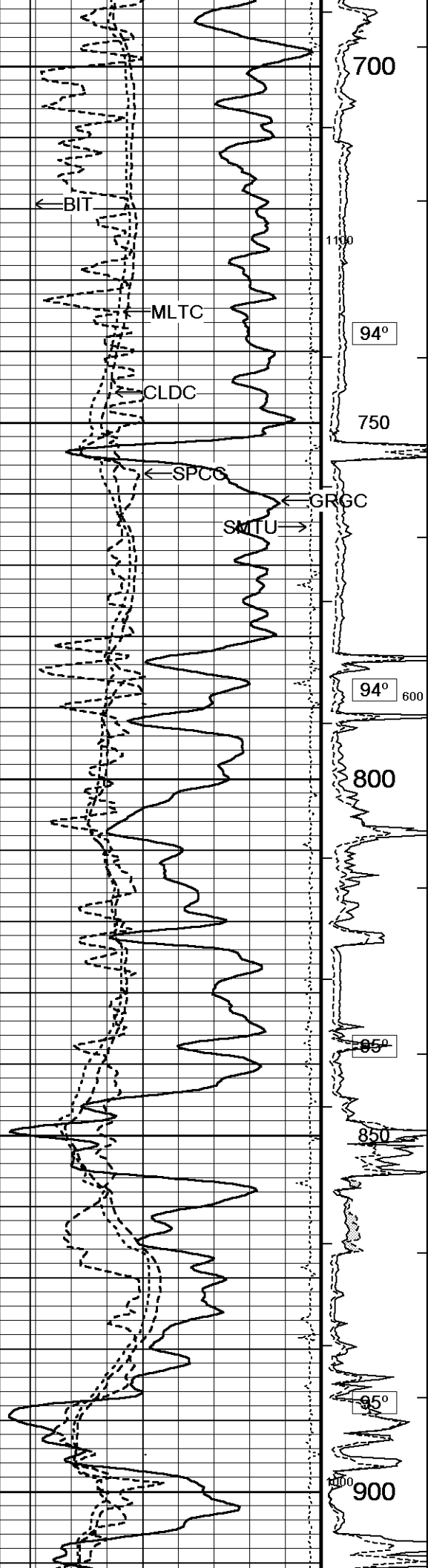
HOLE WASHOUTS AND RUGOSITY WILL AFFECT LOG QUALITY AND REPEATABILITY.
* SP CURVE IS BEING AFFECTED BY NEARBY WELDING CAUSING SPIKES **

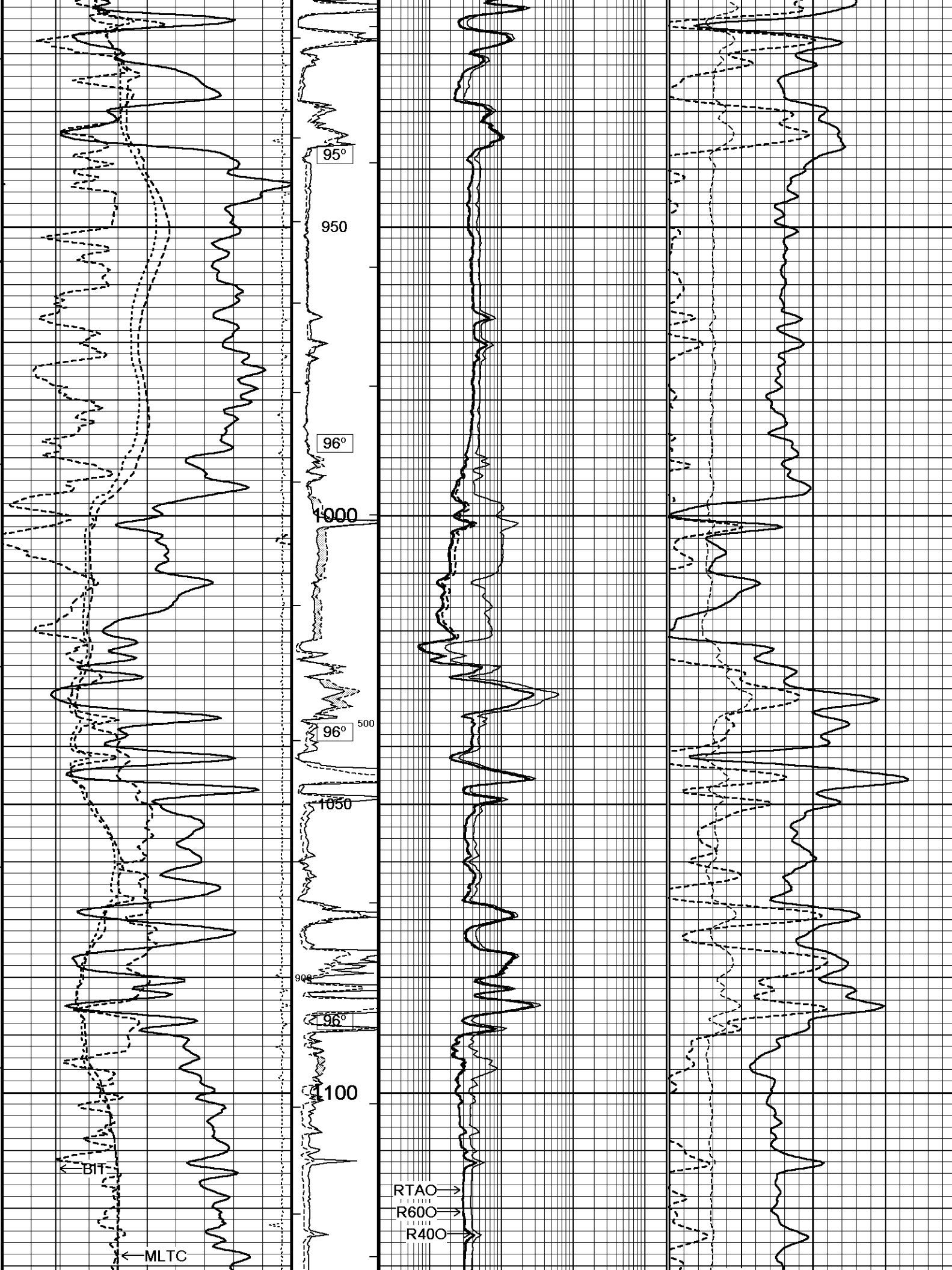
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs,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

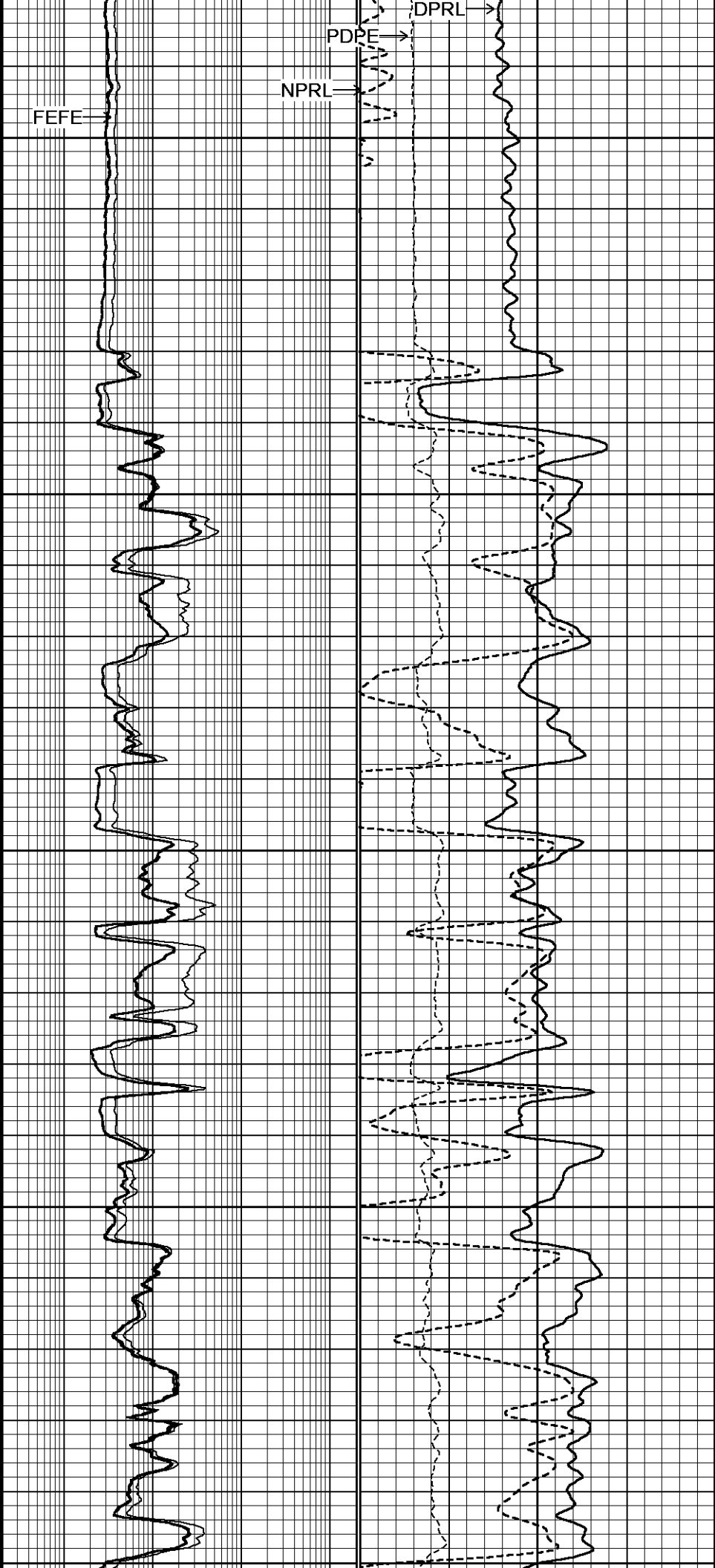
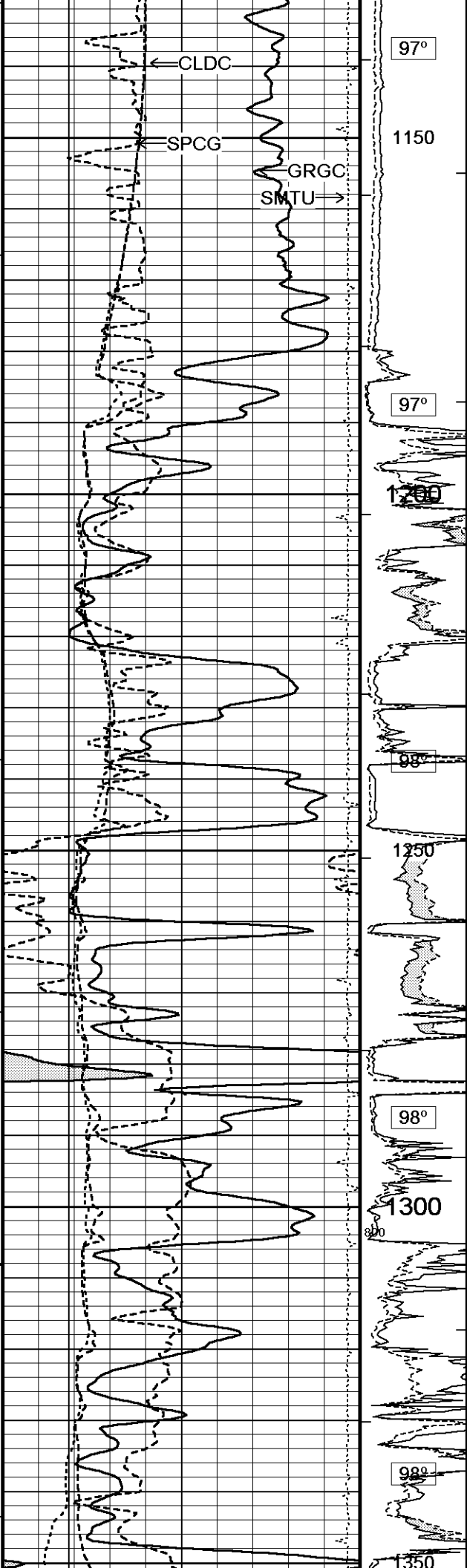


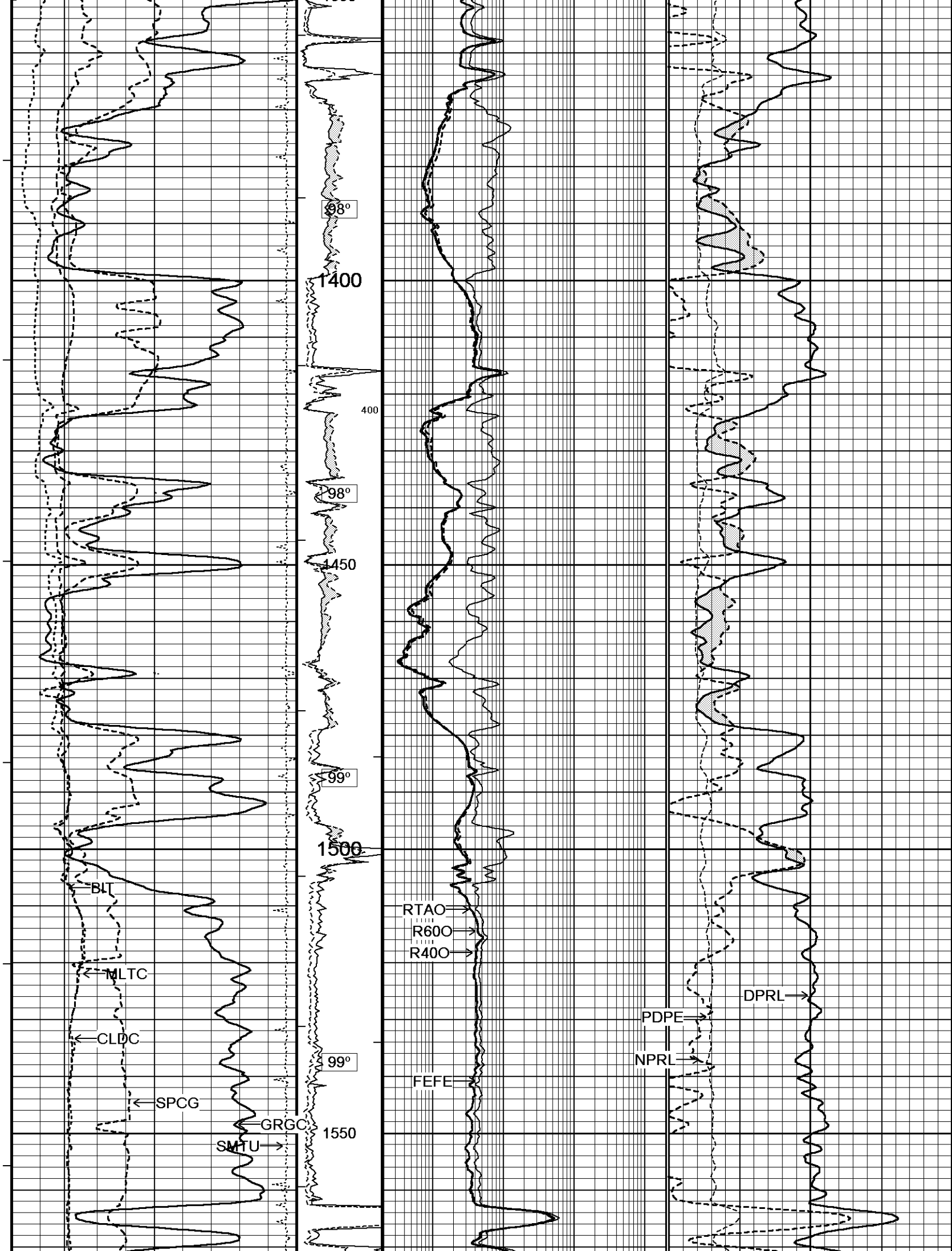


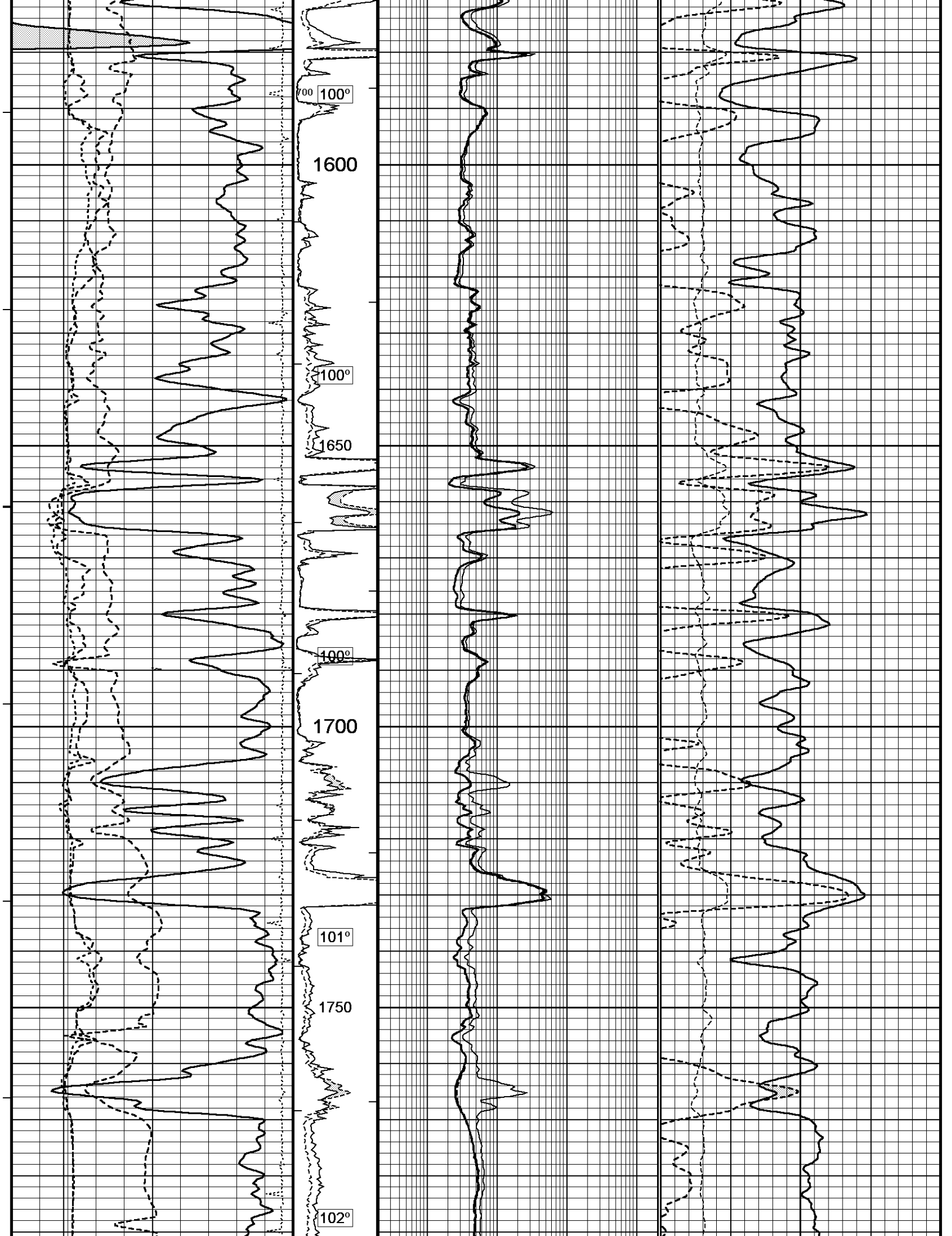


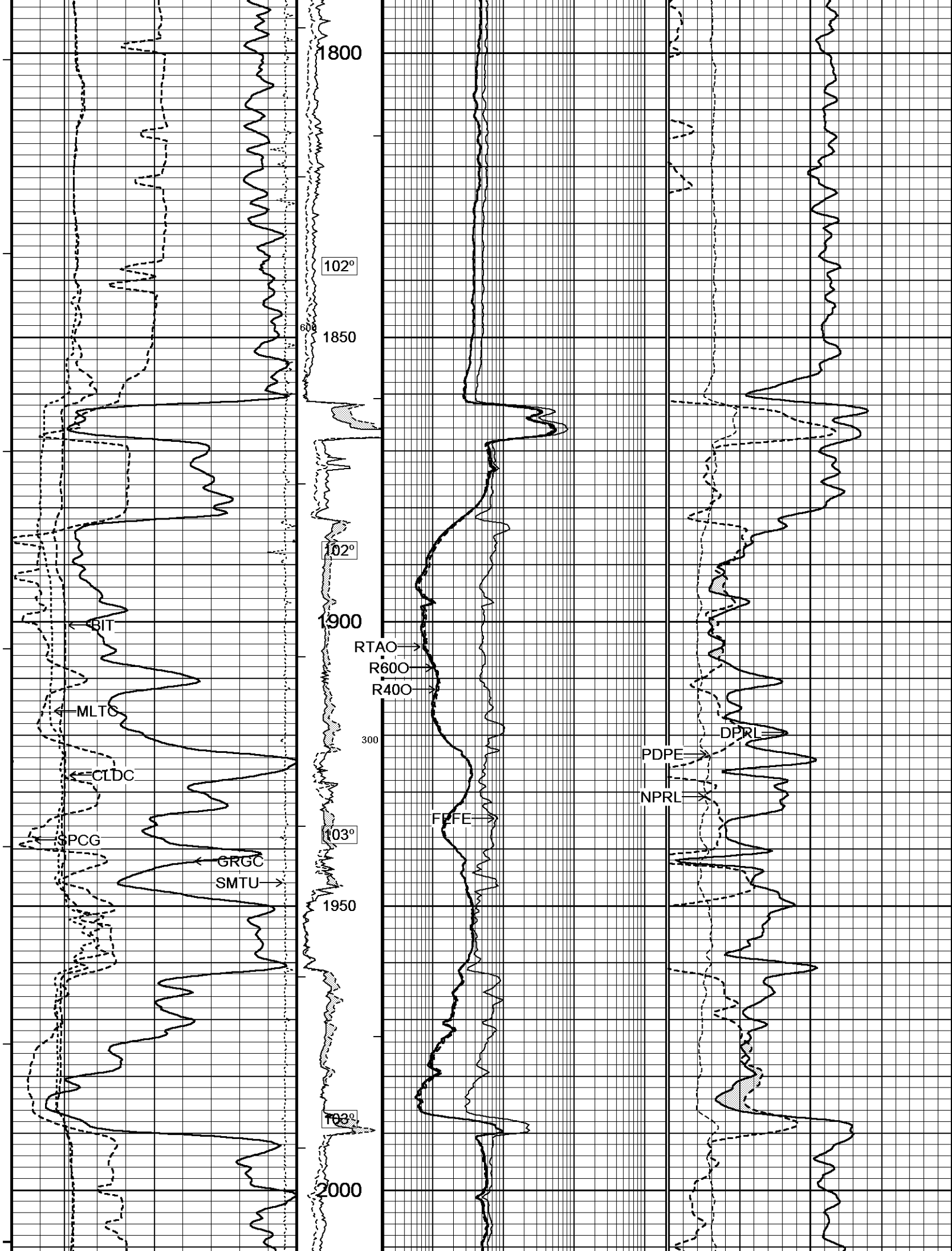


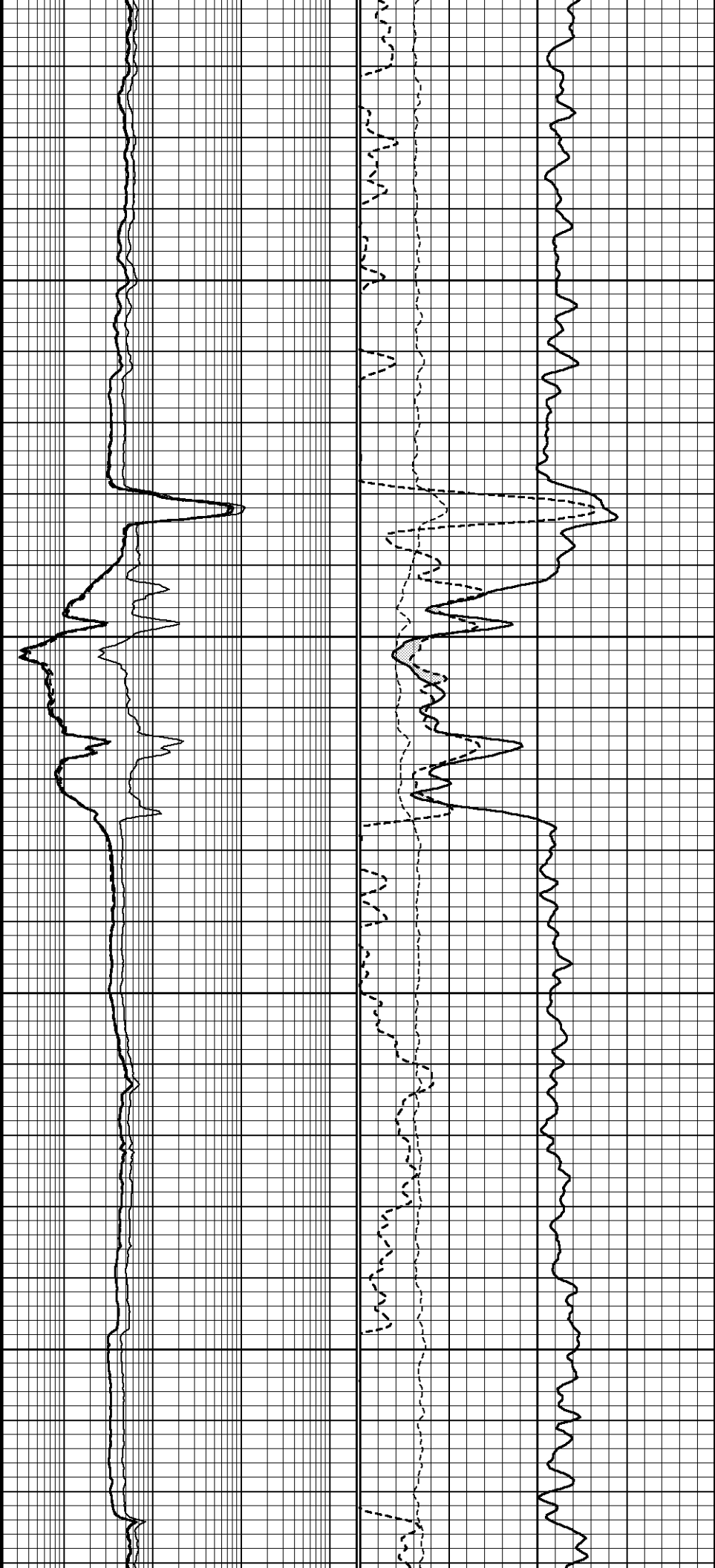
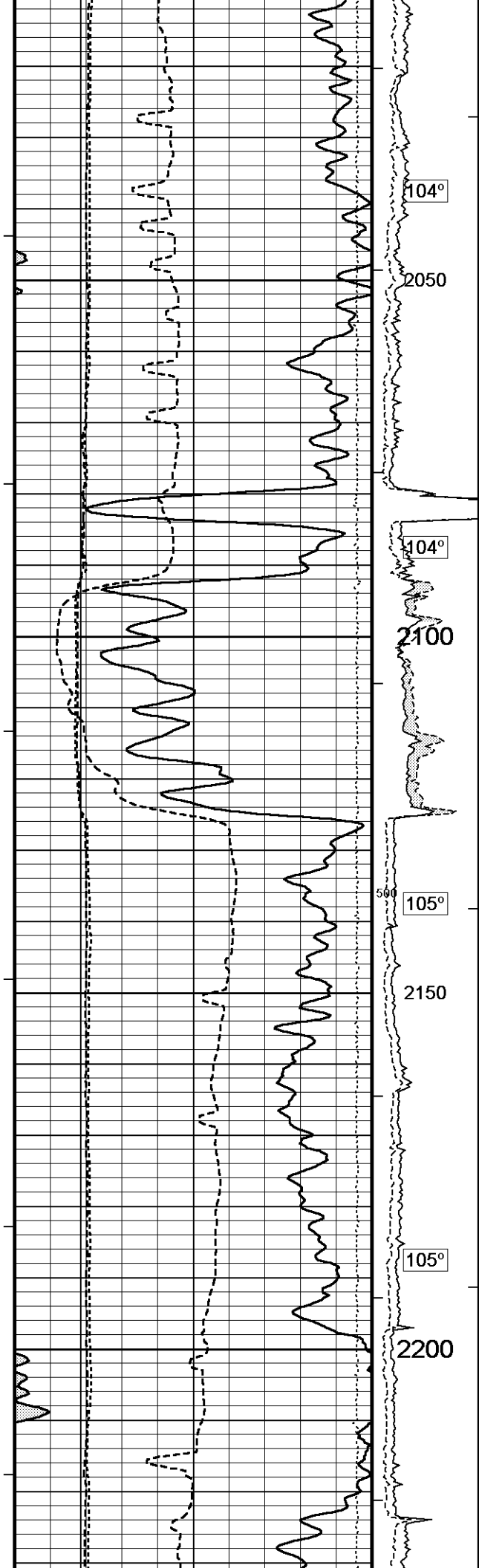


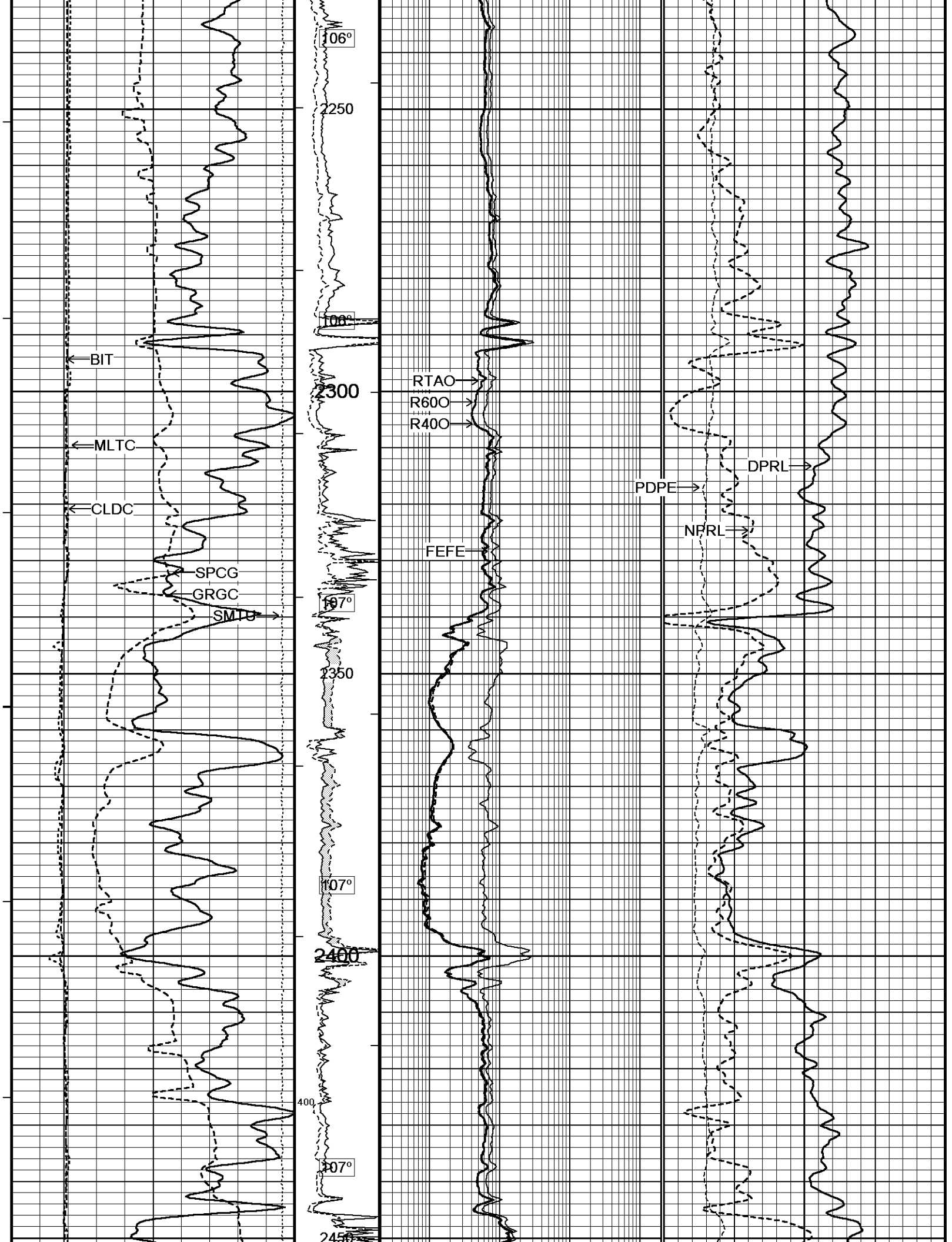


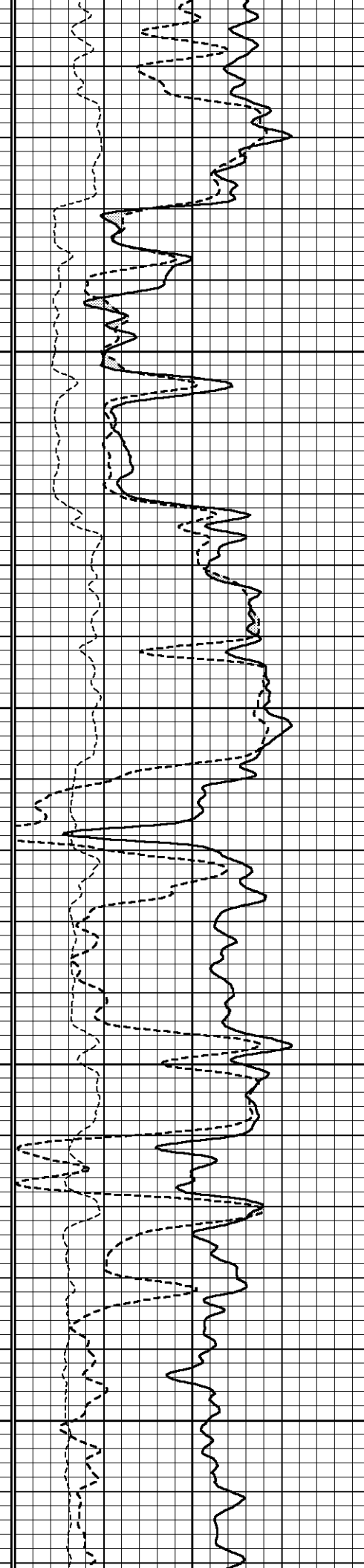
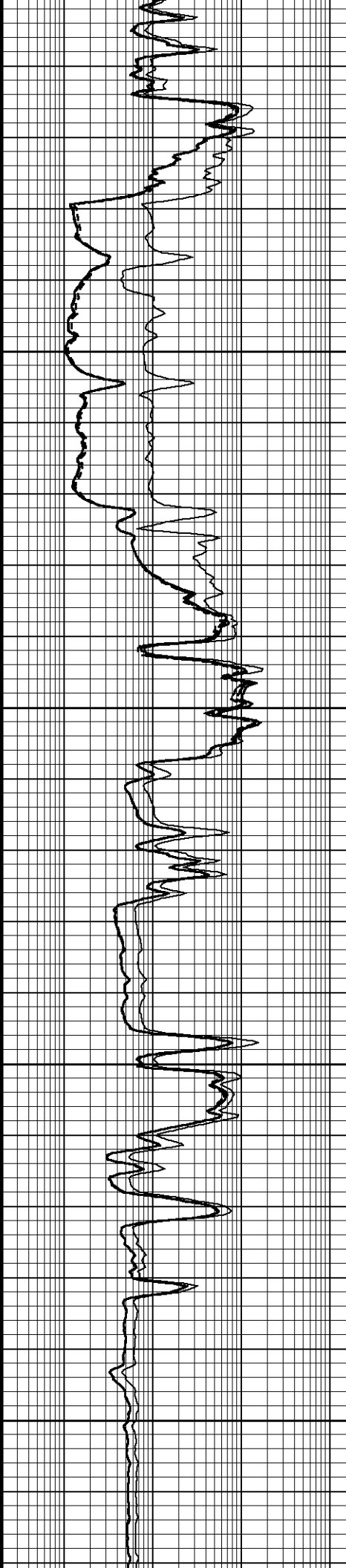
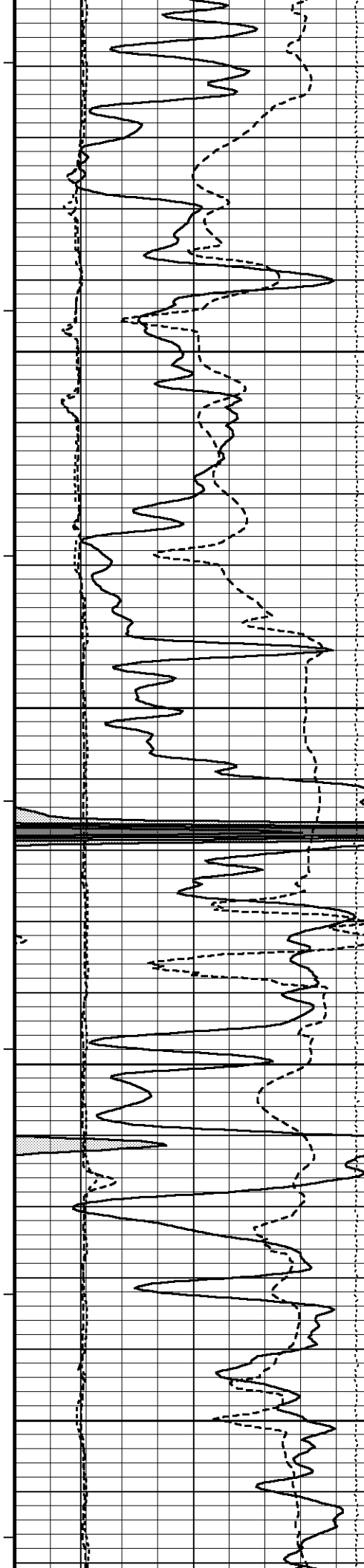












108°

2500

108°

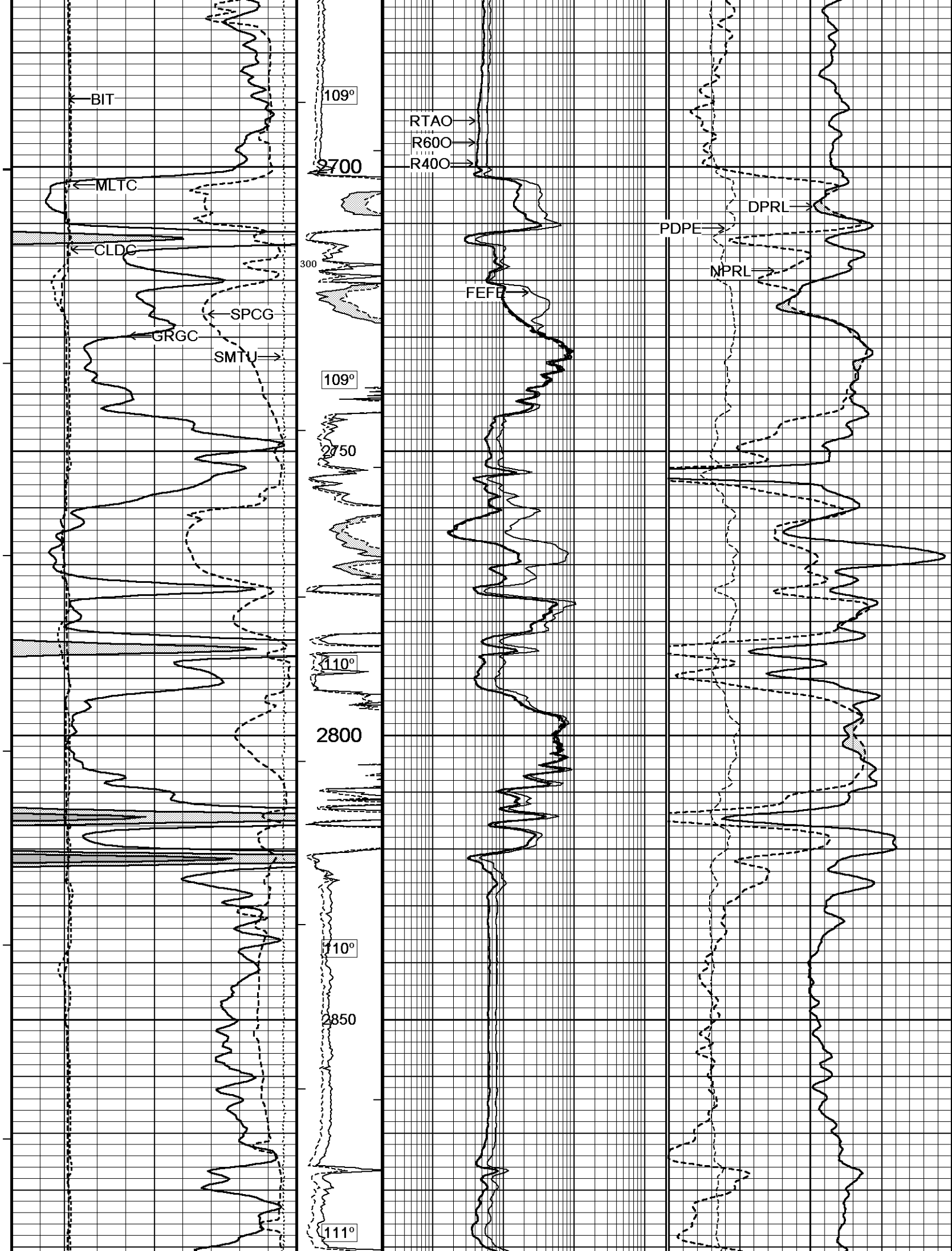
2550

108°

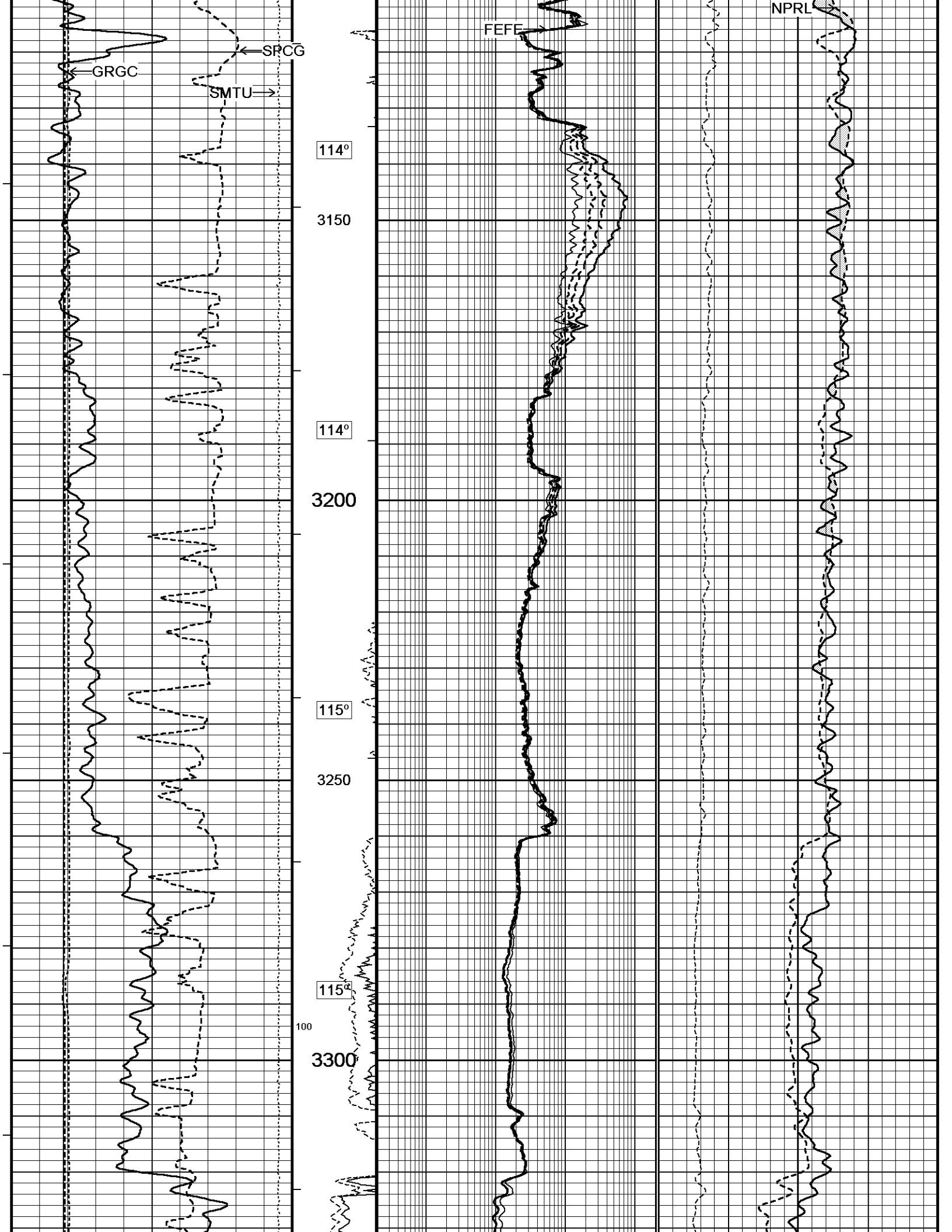
2600

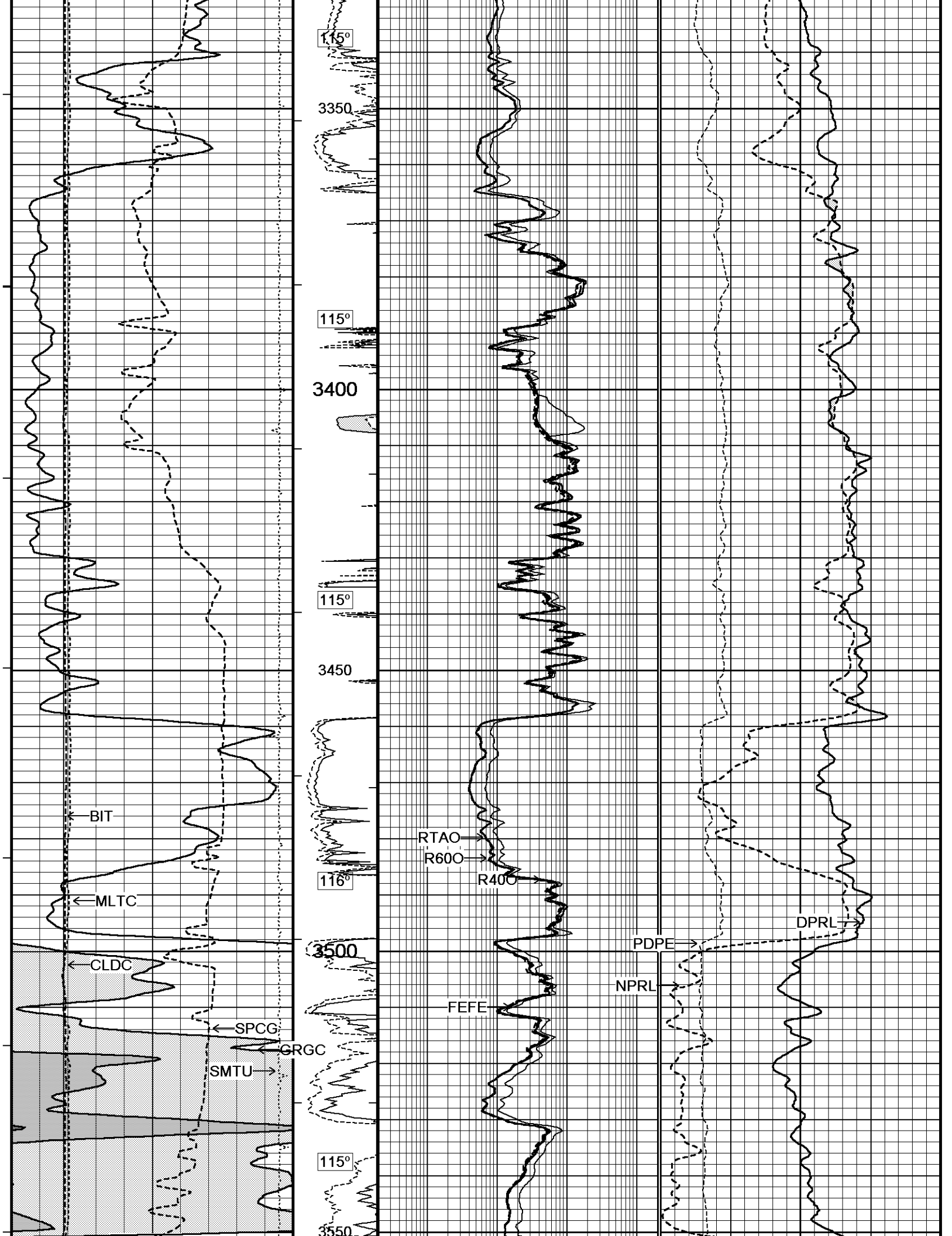
109°

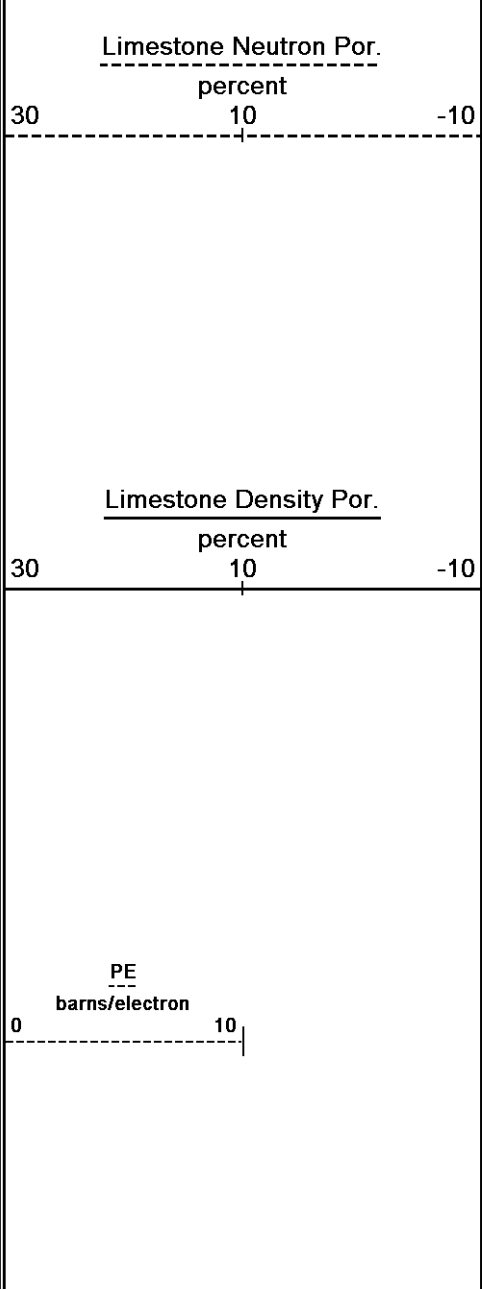
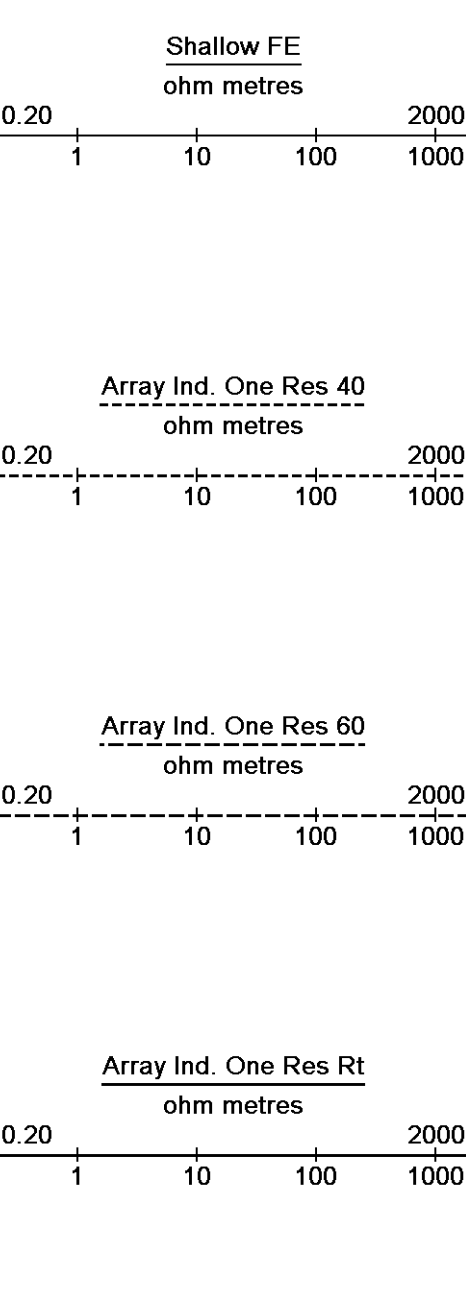
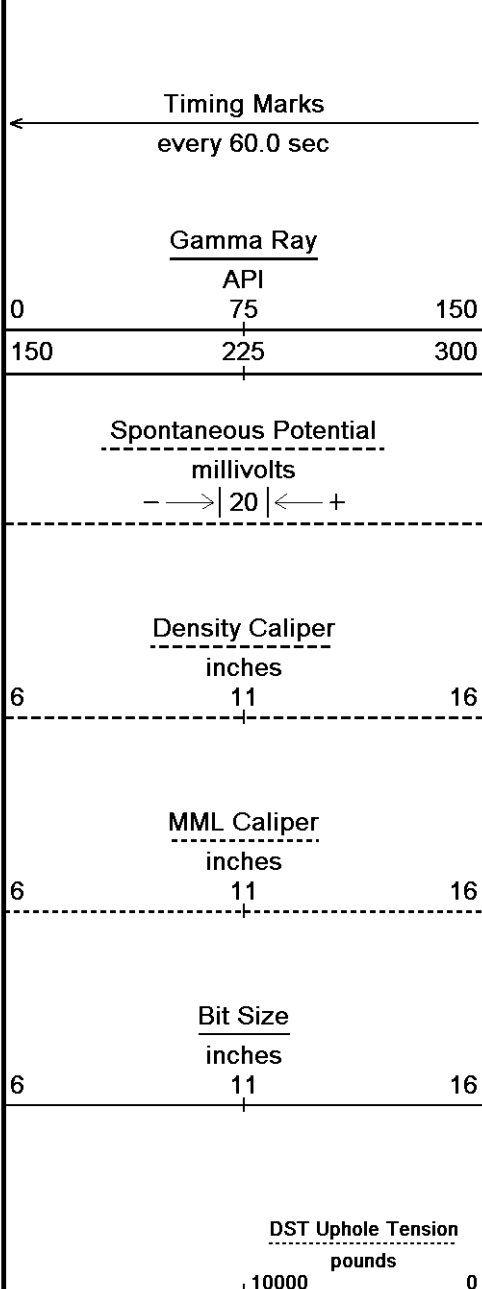
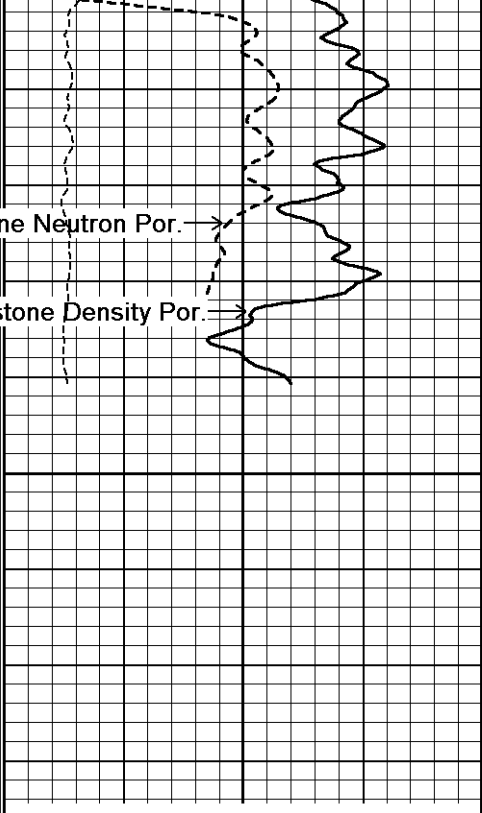
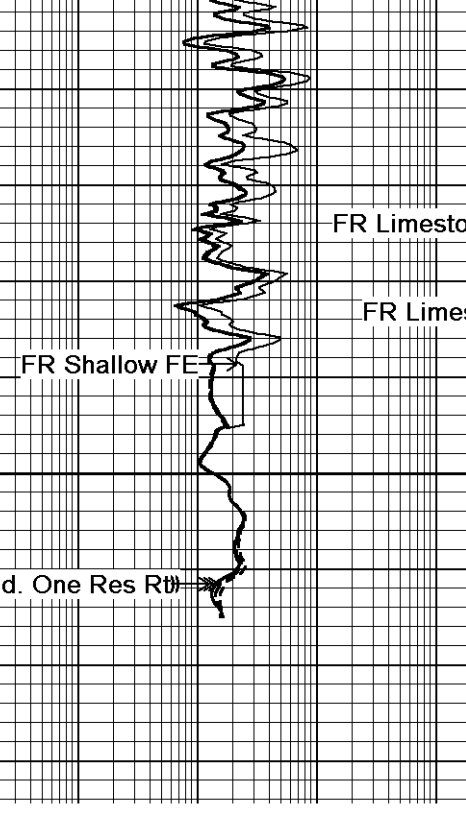
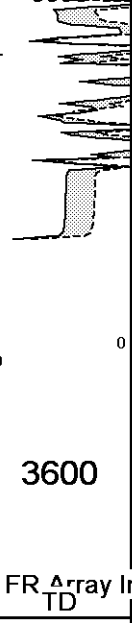
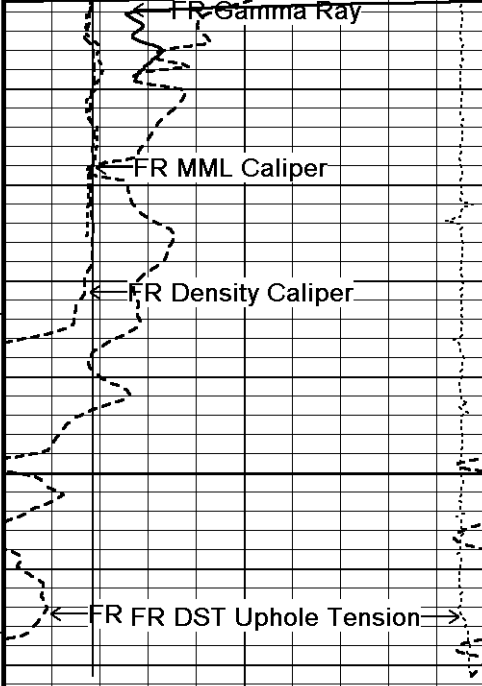
2650











0 -10000 1:240

Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: D:\13.06.9804\DATA\TAOS RESOURCES (WMU#27)\DATA_002.dta
System Versions: Logged with 13.06.9804 Plotted with 13.06.9804

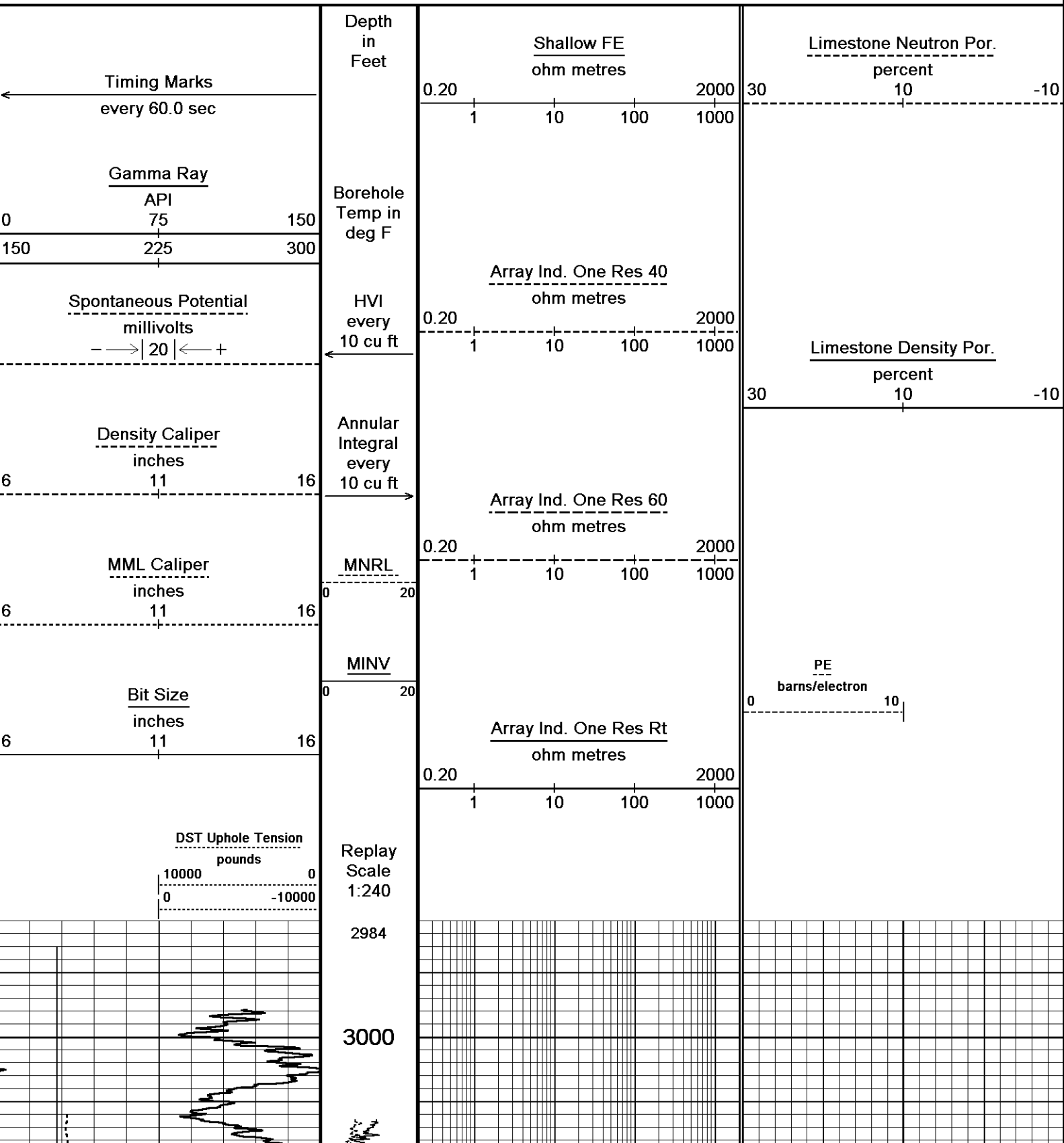
Plotted on 09-JUN-2014 10:31
Recorded on 09-JUN-2014 07:44

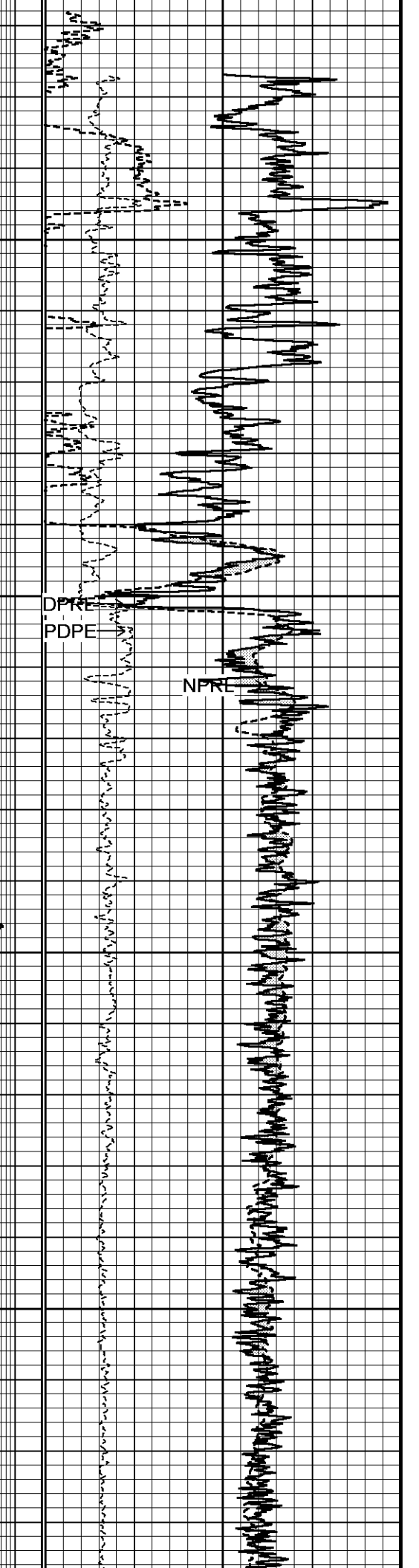
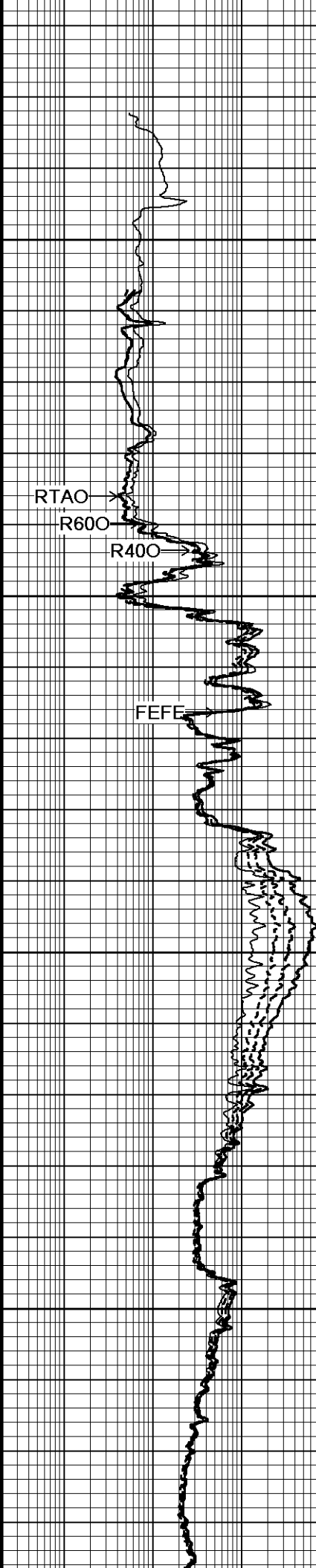
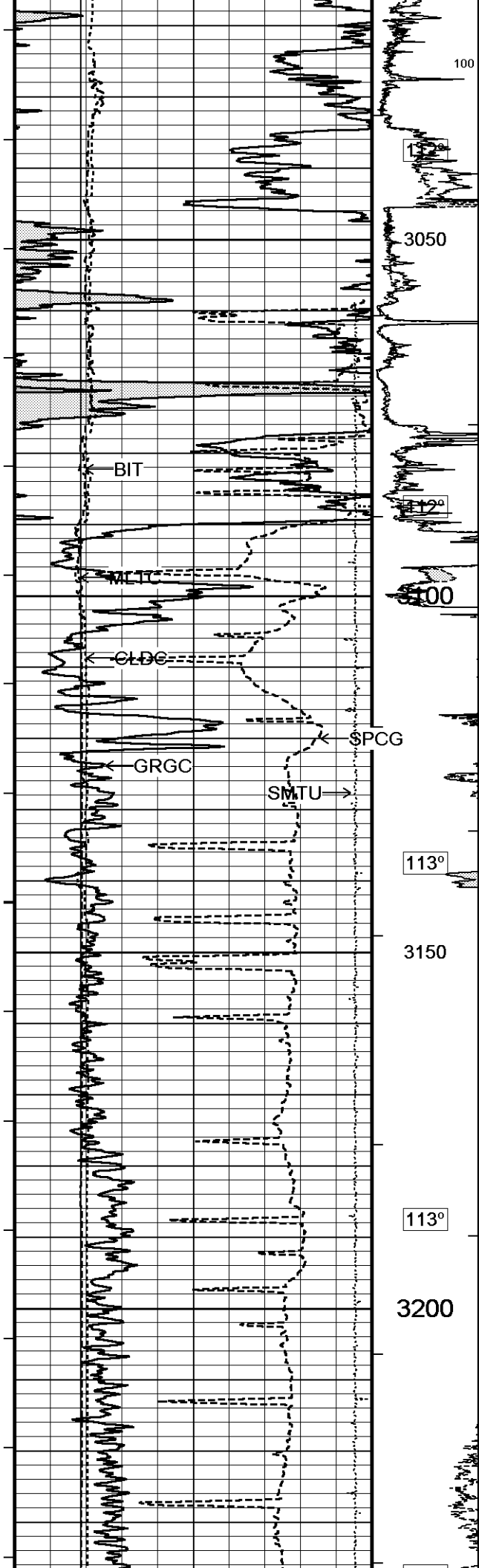
5 INCH MAIN LOG 1:240

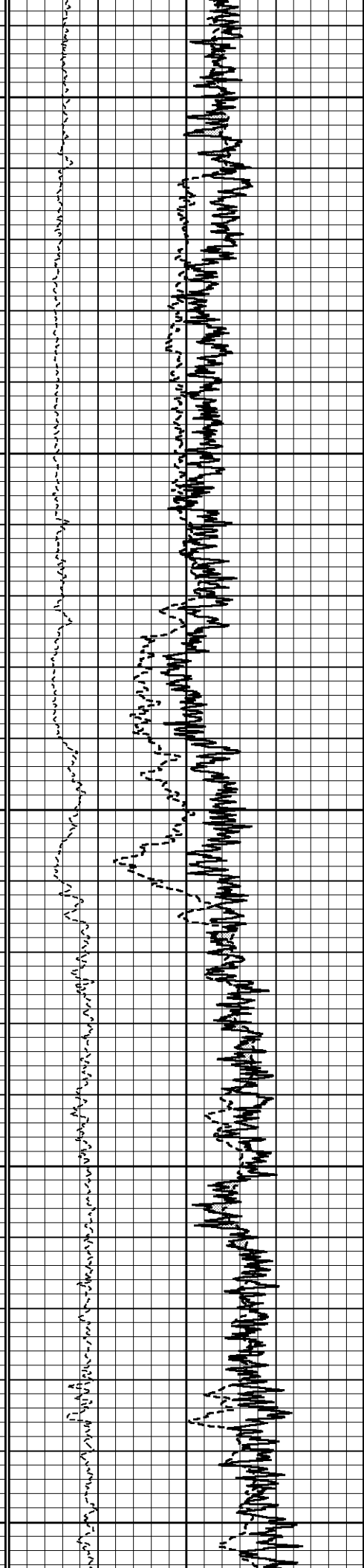
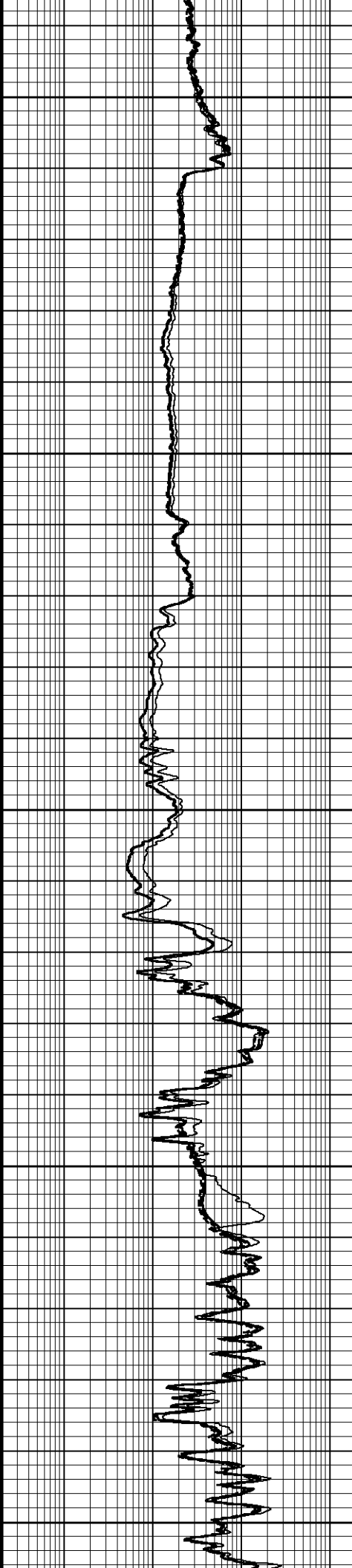
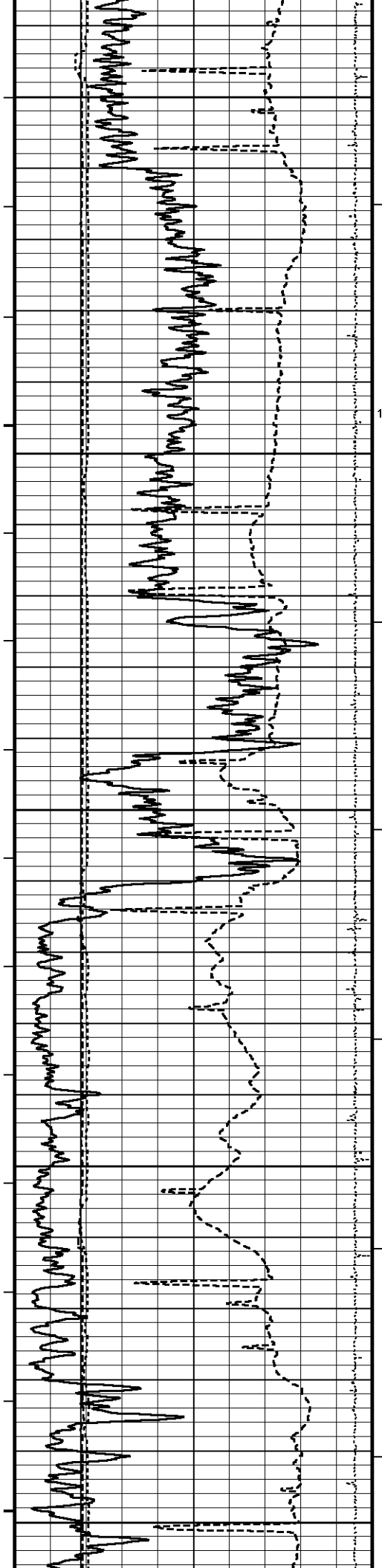
10 INCH HIGH RESOLUTION LOG 1:240

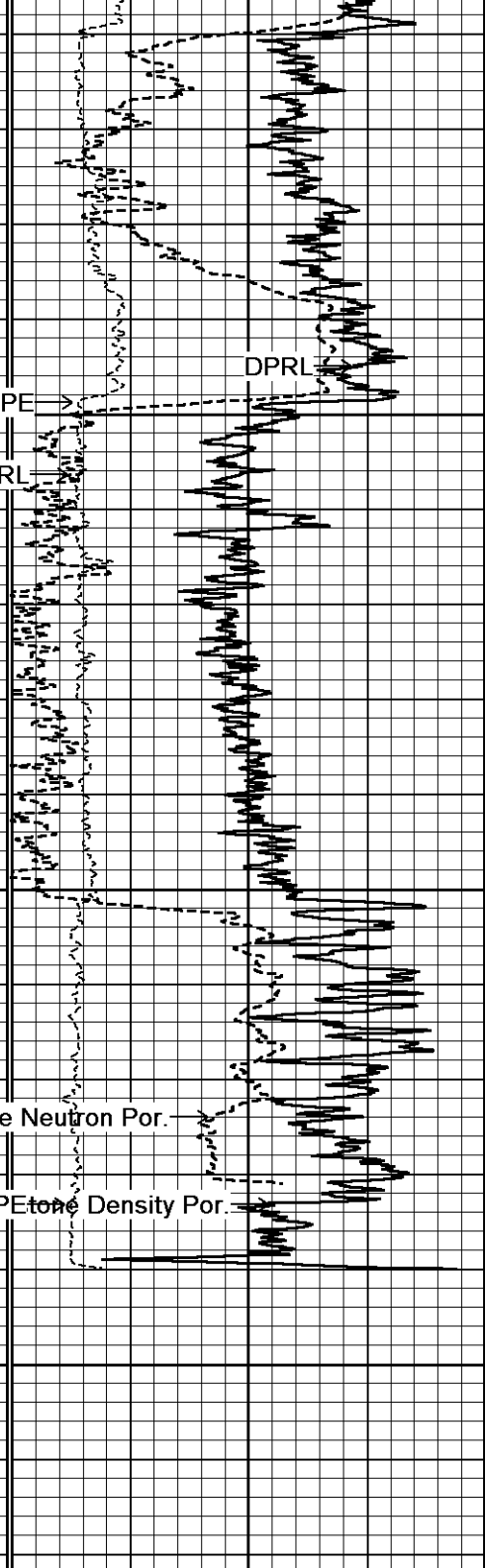
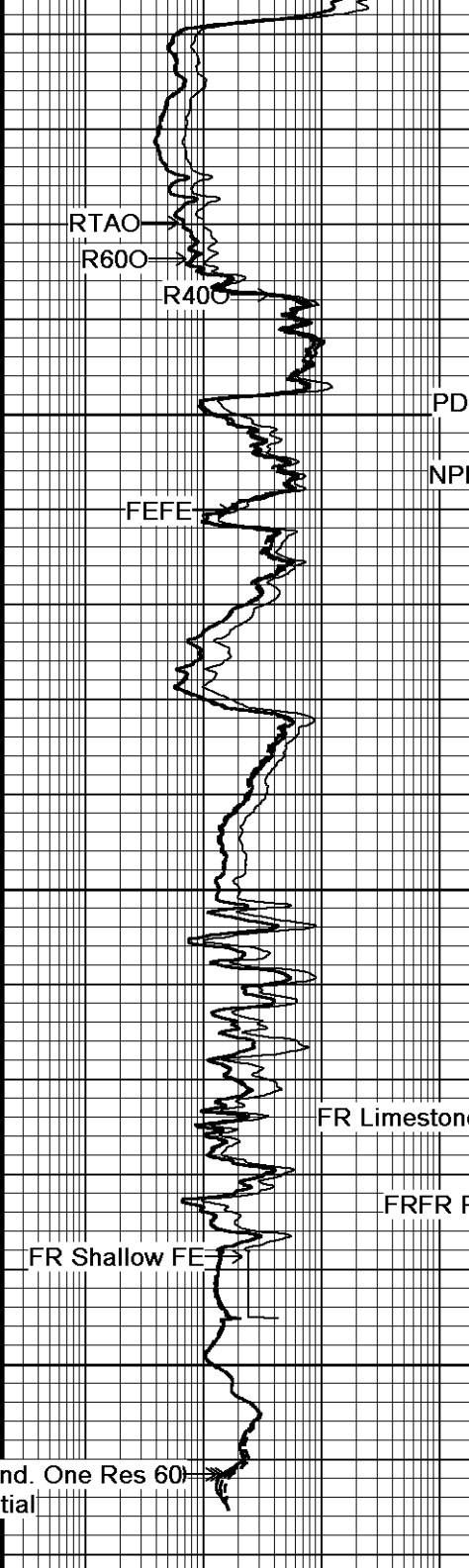
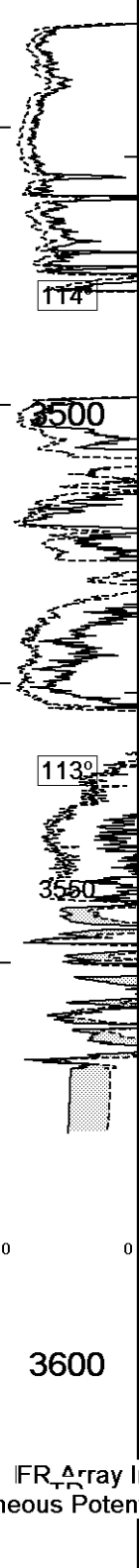
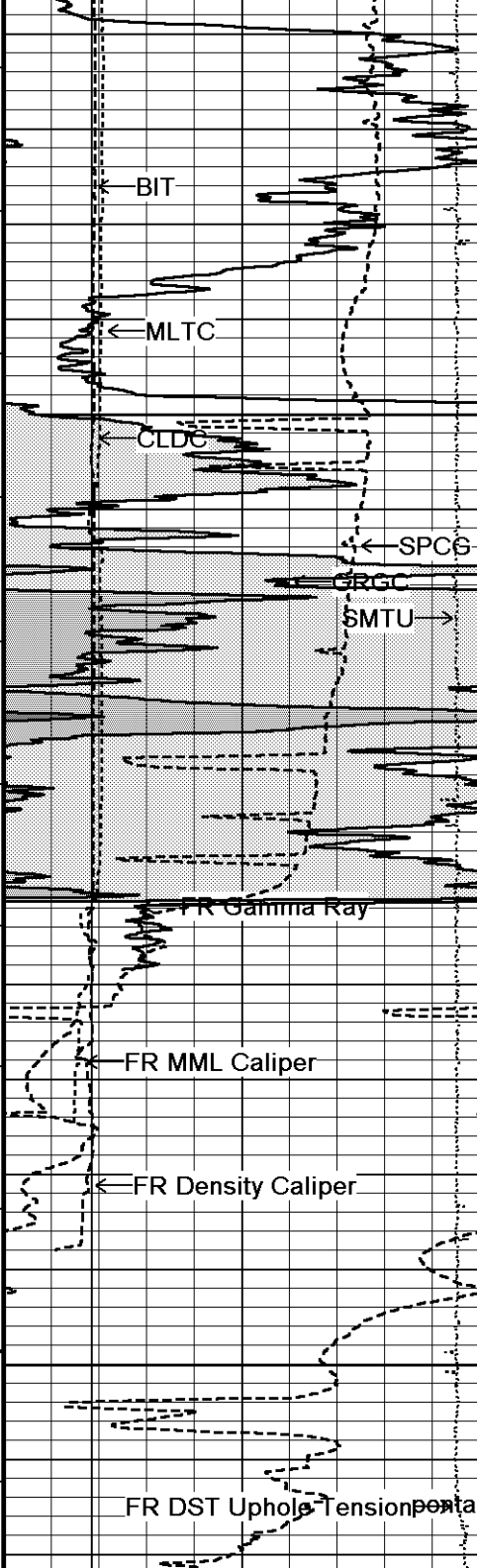
Depth Based Data - Maximum Sampling Increment 2.5cm
Filename: D:\13.06.9804\DATA\TAOS RESOURCES (WMU#27)\DATA_001.dta
System Versions: Logged with 13.06.9804 Plotted with 13.06.9804

Plotted on 09-JUN-2014 10:31
Recorded on 09-JUN-2014 07:02







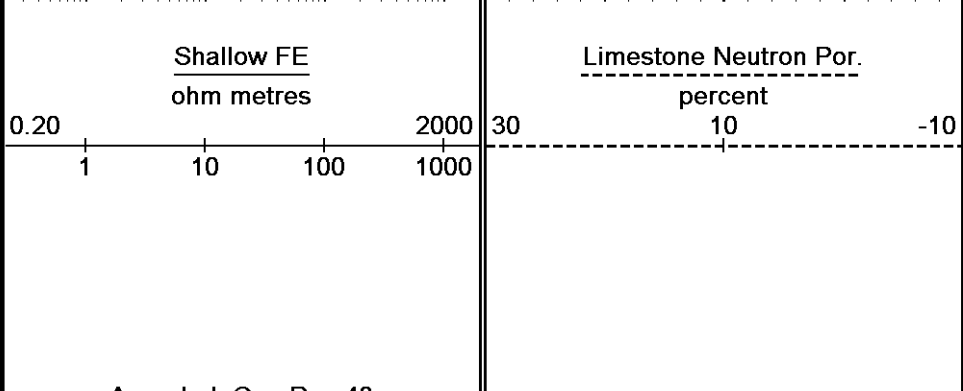


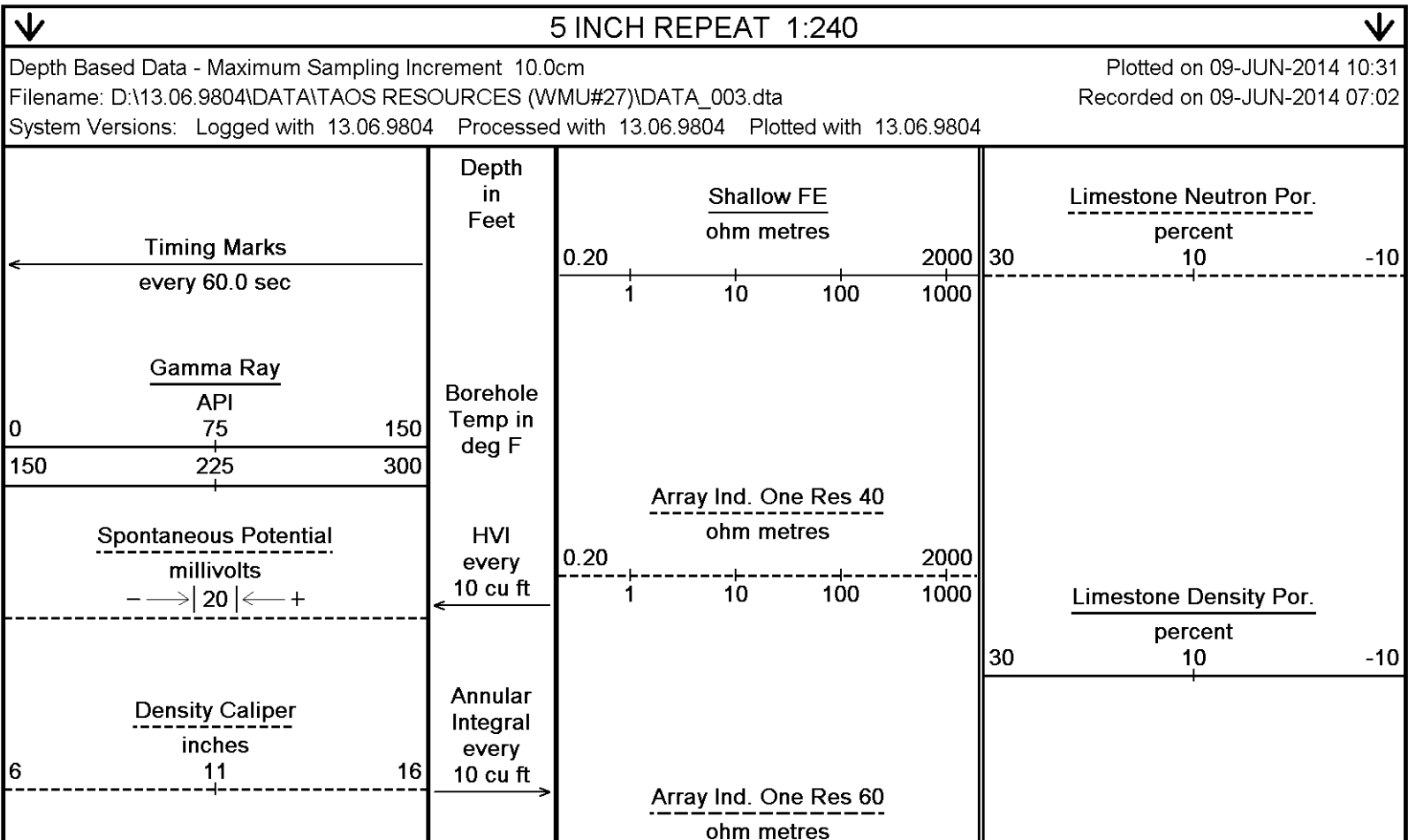
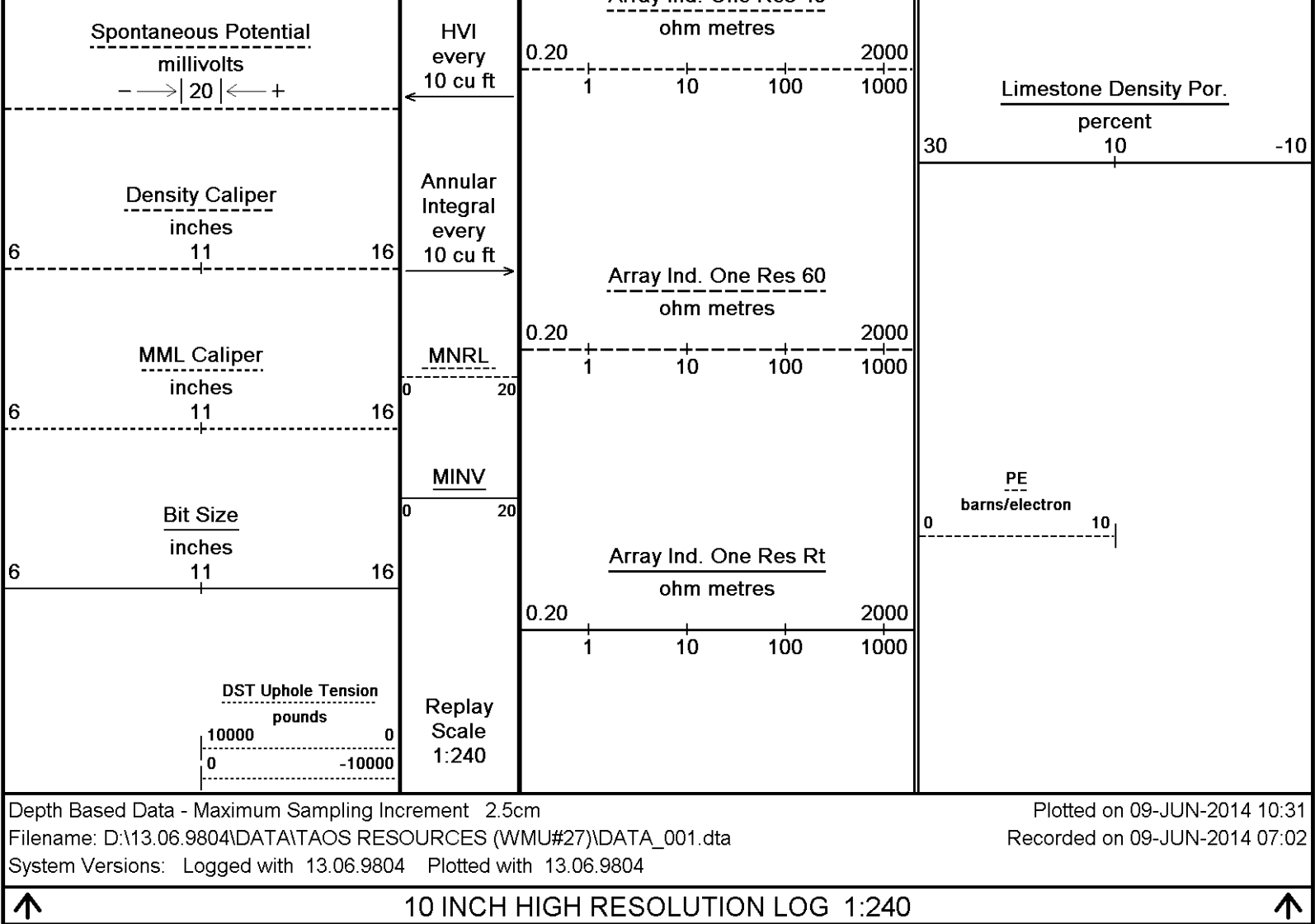
Timing Marks
every 60.0 sec

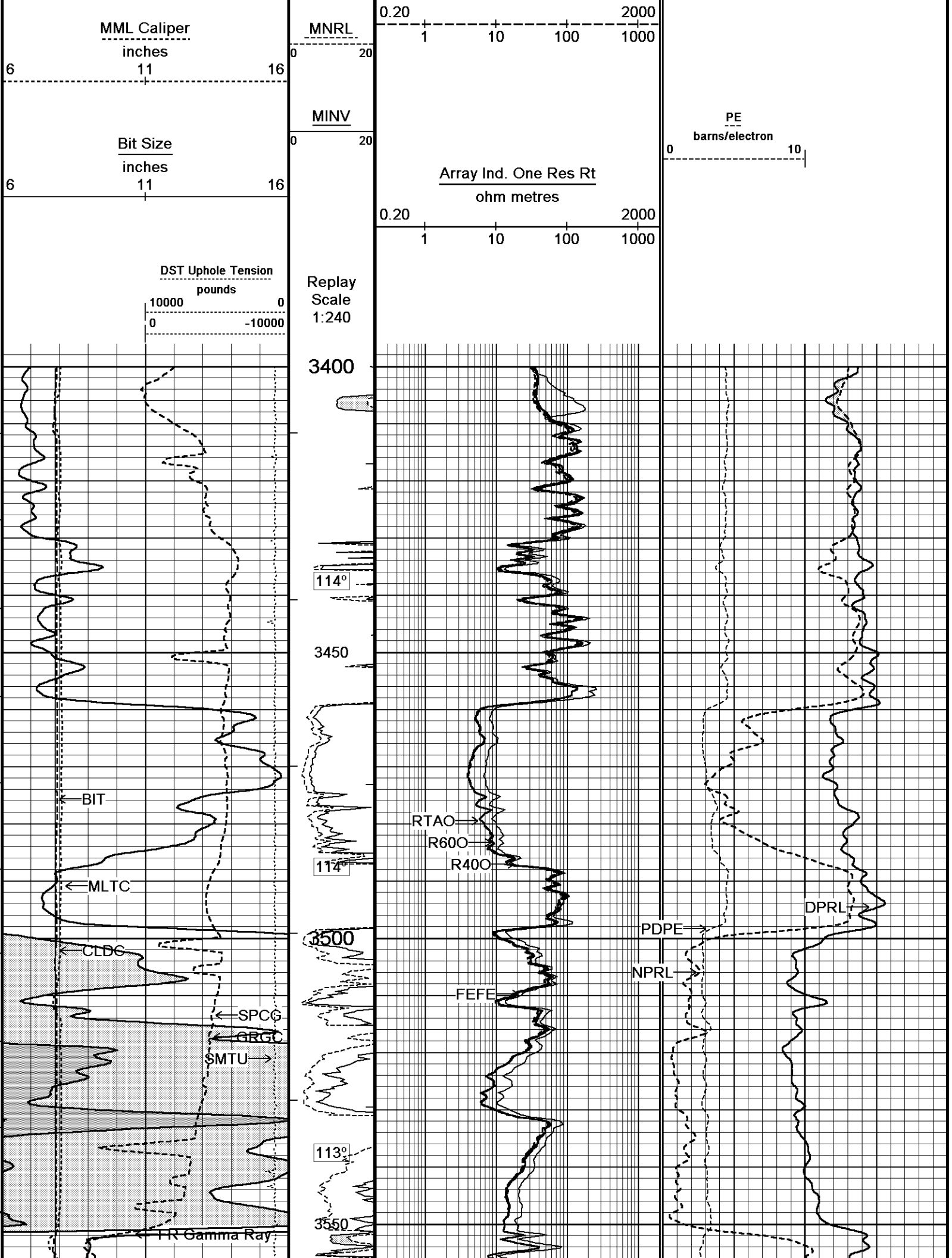
Gamma Ray			
API			
0	75	150	
150	225	300	

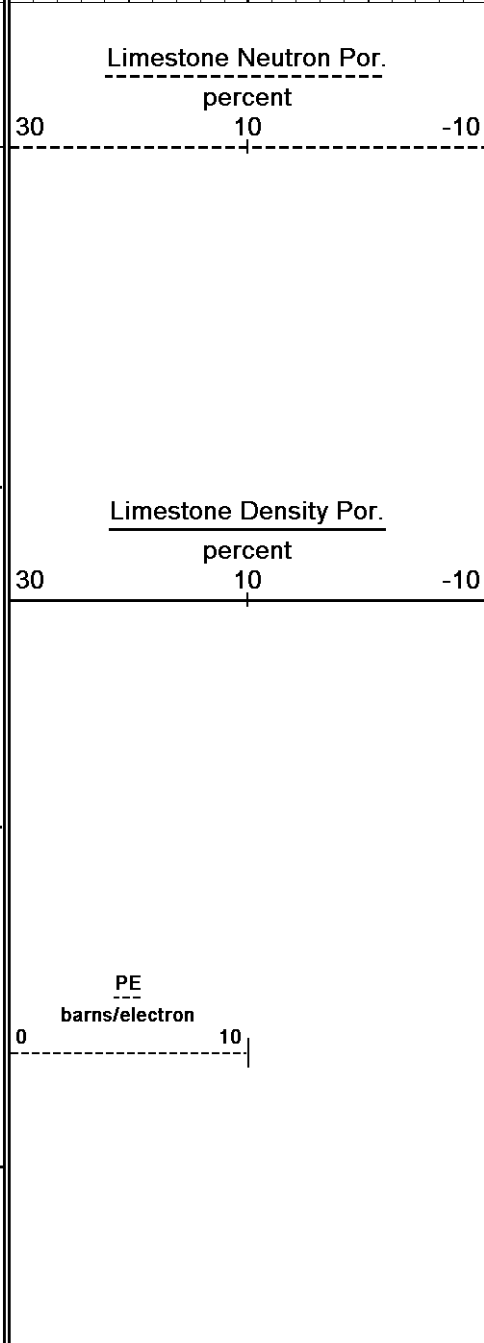
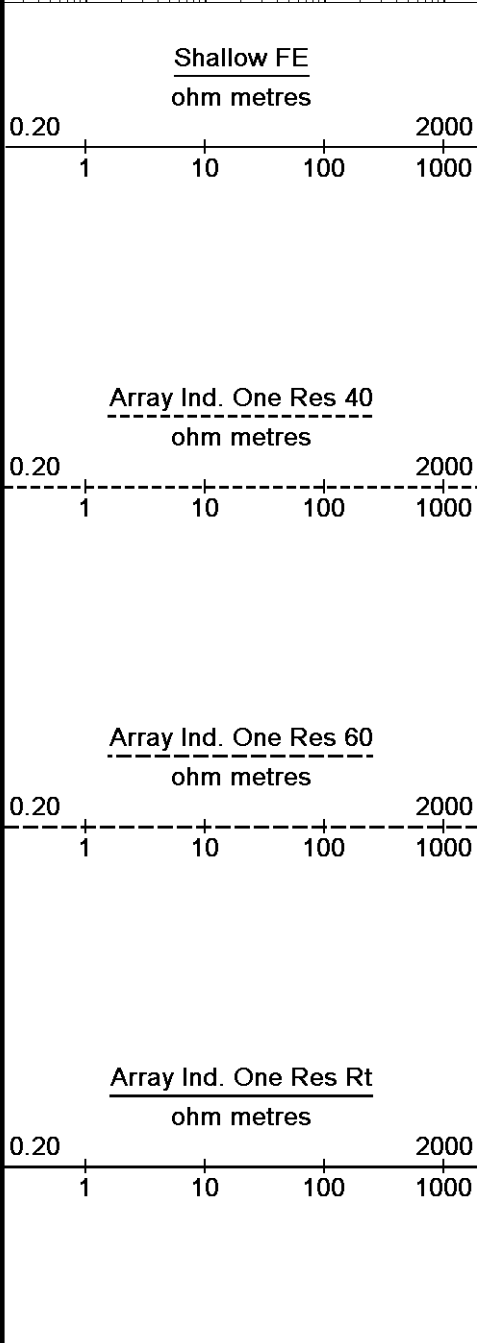
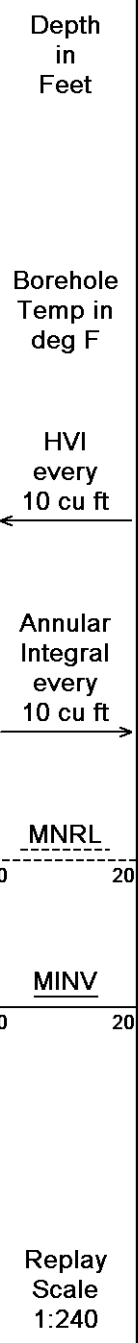
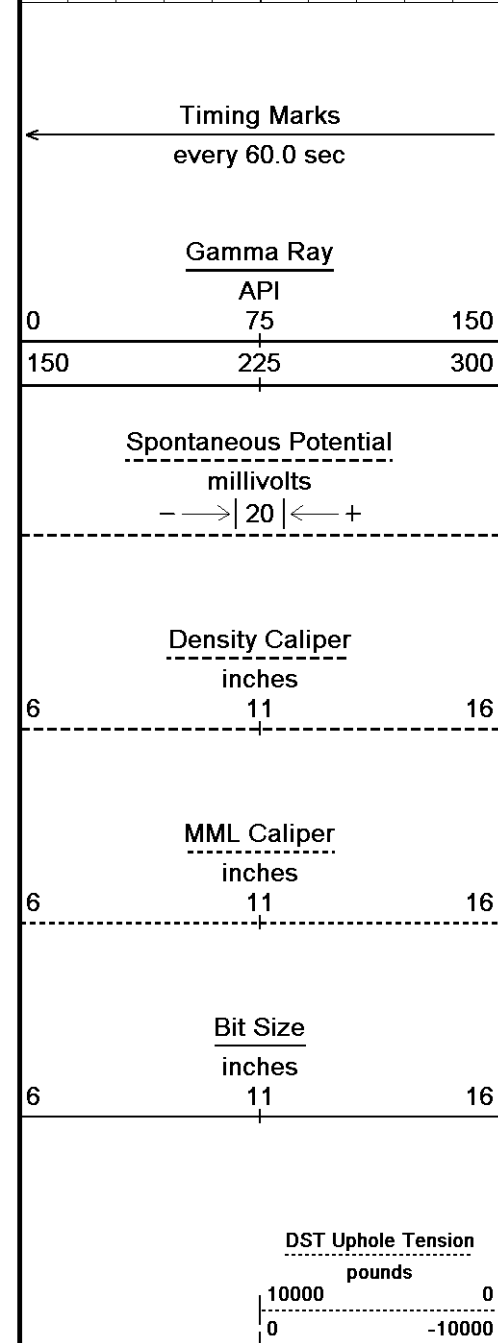
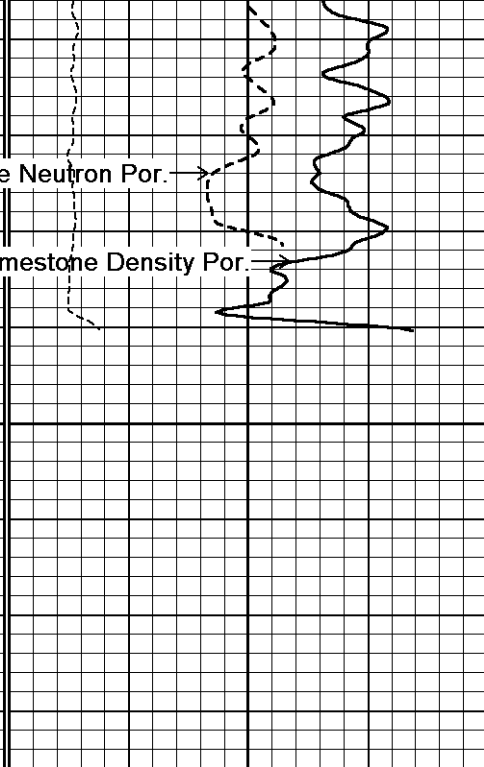
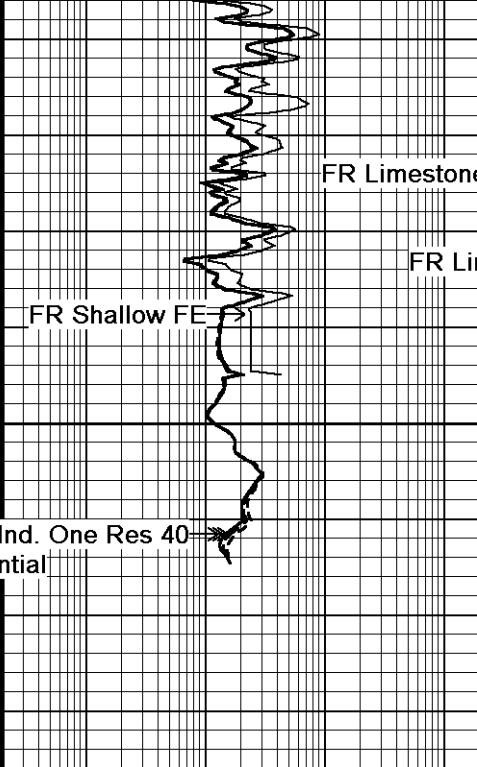
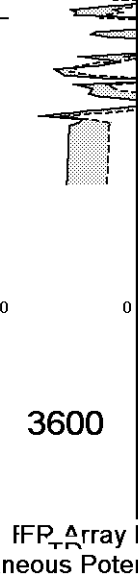
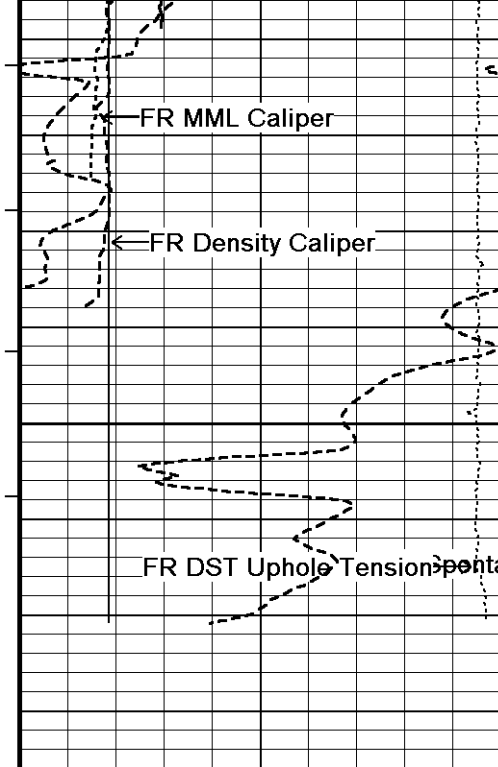
Depth
in
Feet

Borehole
Temp in
deg F









↑	5 INCH REPEAT 1:240	↑
---	---------------------	---

BEFORE SURVEY CALIBRATION D:\13.06.9804\DATA\TAOS RESOURCES (WMU#27)\DATA.dta

General Constants All 000		Last Edited on 09-JUN-2014,06:35
General Parameters		
Mud Resistivity	2.100	ohm-metres
Mud Resistivity Temperature	69.000	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	Density Caliper	
Rwa Parameters		
Porosity used	Limestone Density Por.	
Resistivity used	Array Ind. One Res Rt	
RWA Constant A	0.610	
RWA Constant M	2.150	
SW/APOR Tool Source	0.000	

Down-hole Tension Calibration SMS 0		Field Calibration on 11-MAY-2014 05:04
Reading No	Measured	Calibrated (lbs)
1	14333.61	0.00
2	14375.40	302.00

High Resolution Temperature Calibration MCG-D.K 475		Field Calibration on 26-APR-2014,10:32
	Measured	Calibrated(Deg F)
Lower	50.00	50.00
Upper	100.00	100.00

High Resolution Temperature Constants MCG-D.K 475		Last Edited on 26-APR-2014,10:32
Pre-filter Length	11	

SP Calibration MCG-D.K 475		Field Calibration on 26-APR-2014,10:32
	Measured	Calibrated (mV)
Reference 1	100.0	100.0
Reference 2	-100.0	-100.0

Gamma Calibration MCG-D.K 475		Field Calibration on 08-JUN-2014,17:28
	Measured	Calibrated (API)
Background	36	25
Calibrator (Gross)	1058	721
Calibrator (Net)	1022	696

Gamma Constants MCG-D.K 475		Last Edited on 09-JUN-2014,06:36
Gamma Calibrator Number	36	
Mud Density	1.13	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 Normal and Micro Inverse Calibration MML-A 7	Base Calibration on 12-MAR-2014 13:49
---	---------------------------------------

Base Calibration

Channel	Measured		Calibrated (ohm-m)	
	Resistor 1	Resistor 2	Resistor 1	Resistor 2
Micro Normal	12.1	59.6	5.0	25.0
Micro Inverse	15.6	77.8	5.0	25.0
Channel	Base Check (ohm-m)		Field Check (ohm-m)	
Micro Normal	63.5		63.5	
Micro Inverse	48.6		48.6	

Micro Normal and Micro Inverse Constants MML-A 7

Last Edited on 08-JUN-2014,17:14

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	N/A inches			

Caliper Calibration MML-A 7

Base Calibration on 12-MAR-2014 14:05

Field Calibration on 26-APR-2014,10:33

Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	14367	5.96
2	17548	7.97
3	20740	9.84
4	24637	11.91
5	0	0.00
6	N/A	N/A
Field Calibration		
	Measured Caliper (in)	Actual Caliper (in)
	9.81	9.84

Neutron Calibration MDN-C.A 460

Base Calibration on 12-MAY-2014 09:00

Field Check on 08-JUN-2014,17:28

Base Calibration					
Ratio	Measured		Calibrated (cps)		Ratio
	Near	Far	Near	Far	
	3014	93	3714	110	
	32.513		33.764		
Field Calibrator at Base					
Ratio			Calibrated (cps)		Ratio
			2359	3502	
			0.674		
Field Check					
Ratio			Calibrated (cps)		Ratio
			2350	3509	
			0.670		

Neutron Constants MDN-C.A 460

Last Edited on 08-JUN-2014,17:27

Neutron Source Id	P14043B	
Neutron Jig Number	N639	
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	Constant Value	
Formation Fluid Salinity	0.00	kppm
Barite Mud Correction	Not Applied	

FE Calibration MFE-A.A 54

Base Calibration on 12-MAY-2014 09:34

Field Check on 08-JUN-2014 17:24

Base Calibration

Base Calibration	Measured	Calibrated (ohm-m)
Reference 1	9.8	1.3
Reference 2	967.7	126.8
Base Check		282.4
Field Check		282.5

FE Constants MFE-A.A 54

Last Edited on 08-JUN-2014,17:22

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-C.K 336

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'	N/A	N/A	N/A	N/A	N/A
4'	N/A	N/A	N/A	N/A	N/A
5'	N/A	N/A	N/A	N/A	N/A
6'	N/A	N/A	N/A	N/A	N/A

Processed Fixed Gate Parameters

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

High Resolution Temperature Calibration MAI-A.A 102

Field Calibration on 09-APR-2014,22:06

	Measured	Calibrated(Deg F)
Lower	50.00	50.00
Upper	100.00	100.00

High Resolution Temperature Constants MAI-A.A 102

Last Edited on 09-APR-2014,22:16

Pre-filter Length 11

Induction Calibration MAI-A.A 102

Base Calibration on 18-MAR-2014,09:37

Field Check on 08-JUN-2014 17:27

Base Calibration

Test Loop Calibration

Channel	Measured		Calibrated (mmho/m)	
	Low	High	Low	High
1	18.0	481.9	9.3	966.2
2	6.6	378.8	7.6	821.4
3	4.0	256.0	5.2	566.0
4	3.8	134.5	2.6	279.2

Array Temperature 86.5 Deg F

Channel	Base Check (mmho/m)		Field Check (mmho/m)	
	Low	High	Low	High
1			12.3	3810.2
2			30.1	3604.5
3			28.5	3132.2
4			16.1	2100.6
Deep			14.5	2019.3
Medium			45.1	4178.8
Shallow			48.7	5350.8

Array Temperature 80.0 Deg F

Induction Constants MAI-A.A 102

Last Edited on 08-JUN-2014,17:25

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	6.0000		
Stand-off Fin Angle	60.00	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	

Caliper Calibration MPD-A.A 11

Base Calibration on 21-APR-2014 10:42
Field Calibration on 11-MAY-2014 00:45

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	19600	3.98
2	29656	5.98
3	39776	7.97
4	49377	9.84
5	60416	11.91
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
7.89	7.97

Photo Density Calibration MPD-A.A 11

Base Calibration on 21-APR-2014 10:27
Field Check on 08-JUN-2014 17:22

Density Calibration

Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	47839	25404	59869	31110
Reference 2	19923	2423	24557	2522

Field Check at Base

1160.9 1245.5

Field Check

1151.5 1244.1

PE Calibration

Base Calibration	Measured		Calibrated
	WS	WH	Ratio
Background	211	1037	
Reference 1	17508	47664	0.371
Reference 2	5284	19791	0.271

Field Check at Base

210.6 1037.5

Field Check

210.2 1029.9

Density Constants MPD-A.A 11

Last Edited on 08-JUN-2014,21:22

Density Source Id	263	
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

Spectral Gamma Calibration SGS-E.J 131						Base Calibration on 11-SEP-2013 10:27 Field Calibration on 11-SEP-2013 10:00	
Base Calibration							
Potassium Calibrator							
	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5		
Background	77.6	27.1	3.1	0.9	1.5		
Calibrator (Gross)	202.6	110.6	26.3	0.8	1.4		
Calibrator (Net)	125.0	83.5	23.2	-0.1	-0.0		
	K %	U ppm	Th ppm				
Concentrations	5.8	0.0	0.0				
Uranium Calibrator							
	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5		
Background	77.6	27.1	3.1	0.9	1.5		
Calibrator (Gross)	526.2	185.8	15.9	10.3	4.7		
Calibrator (Net)	448.5	158.7	12.8	9.3	3.2		
	K %	U ppm	Th ppm				
Concentrations	0.0	14.8	0.0				
Thorium Calibrator							
	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5		
Background	77.6	27.1	3.1	0.9	1.5		
Calibrator (Gross)	394.6	144.2	11.6	6.3	15.8		
Calibrator (Net)	316.9	117.1	8.5	5.4	14.4		
	K %	U ppm	Th ppm				
Concentrations	0.0	0.0	44.3				
Mixture Calibrator							
	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5		
Background	77.6	27.1	3.1	0.9	1.5		
Calibrator (Gross)	937.8	380.4	48.6	15.2	18.3		
Calibrator (Net)	860.2	353.3	45.5	14.3	16.9		
Field Calibration							
Gamma Ray							
	Measured		Calibrated (API)				
Background	115		22				
Calibrator (Gross)	1406		272				
Calibrator (Net)	1290		250				
Mixture Calibrator							
	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5		
Background	77.6	27.1	3.1	0.9	1.5		
Calibrator (Gross)	937.8	380.4	48.6	15.2	18.3		
Calibrator (Net)	860.2	353.3	45.5	14.3	16.9		

Spectral Gamma Constants SGS-E.J 131			Last Edited on 09-JUN-2014,06:36
Background Calibrator Number	496		
Mixture Calibrator Number	525		
Potassium Calibrator Number	499		
Uranium Calibrator Number	505		
Thorium Calibrator Number	502		
Mud Density	1.13	gm/cc	
Caliper Source for Processing	Bit Size		
Tool Position	Centred		
Concentration of KCl		kppm	
K Mud Type	Chloride		
K Mud Concentration	0.00	%	

DOWNHOLE EQUIPMENT

D:\13.06.9804\DATA\TAOS RESOURCES (WMU#27)\DATA_002.dta

Compact Comms Gamma
MCG-D.K 475 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Spectral Gamma Ray Sub
SGS-E.J 131 LG: 7.78 ft WT: 105.8 lb OD: 3.54 in

Compact Micro-log
MML-A 7 LG: 7.97 ft WT: 81.6 lb OD: 2.24 in

Compact Neutron
MDN-C.A 460 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

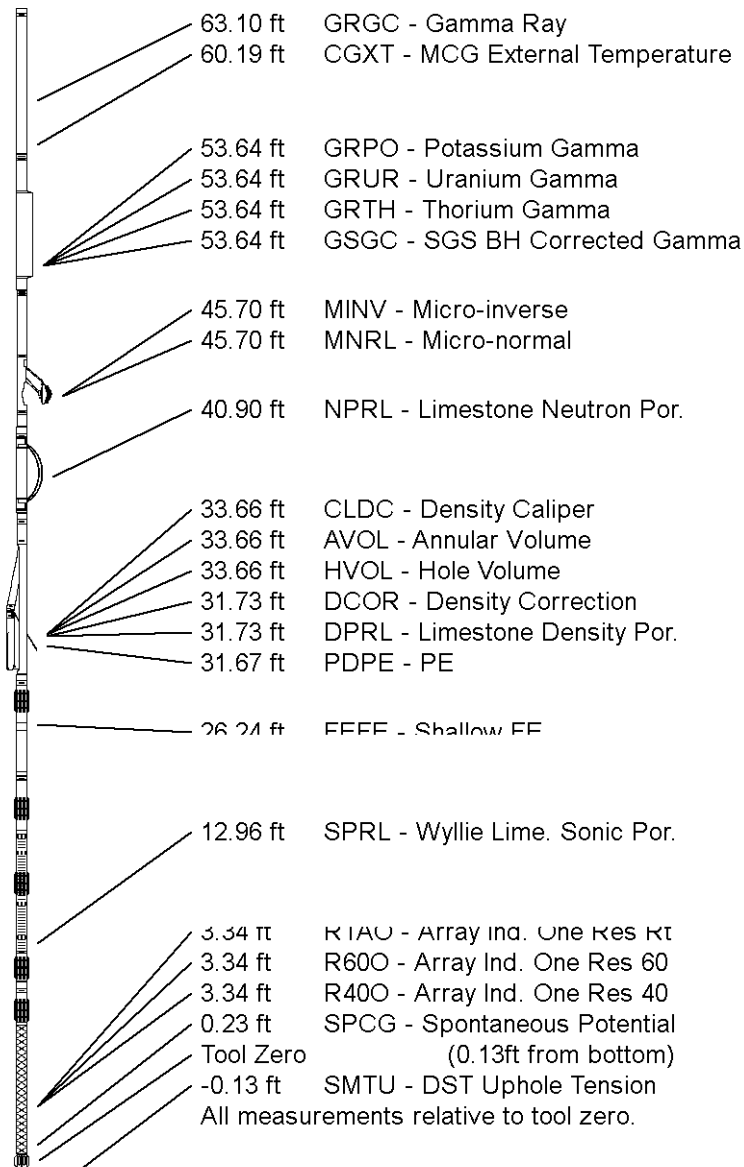
Compact Density/Caliper
MPD-A.A 11 LG: 9.53 ft WT: 90.4 lb OD: 2.45 in

Compact Focussed Electric
MFE-A.A 54 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

Compact Sonic
MSS-C.K 336 LG: 12.52 ft WT: 72.8 lb OD: 2.24 in

Compact Induction
MAI-A.A 102 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 68.39 ft Weight: 562.2 lb



COMPANY

TAOS RESOURCES OPERATING COMPANY

WELL

WMU #27

FIELD

MADDIX NORTH

PROVINCE/COUNTY

COWLEY

COUNTRY/STATE

U.S.A / KANSAS

Elevation Kelly Bushing	1289.00	feet
Elevation Drill Floor	1288.00	feet
Elevation Ground Level	1279.00	feet

First Reading	3612.00	feet
Depth Driller	3620.00	feet
Depth Logger	3615.00	feet



COMPOSITE

LOG

Weatherford®

