Weatherford®

MICRO RESISTIVITY LOG

COMPANY	SHORELINE ENERGY PARTNERS, LLC.
WELL	SEIFERT 1-27
FIELD	WILDCAT
PROVINCE/COUNTY	HARPER
COUNTRY/STATE	U.S.A. / KANSAS
LOCATION	115' FNL & 150' FWL

40 Years of Wireline 1970 2010

SEC	TWP	RGE
27	34S	5W

API Number 15-077-21753
Permit Number

Other Services
MFE/MAI
SON
MPD/ MDN

Permanent Datum G.L., Elevation 1206 feet
Log Measured From K.B. @ 10 FEET above Permanent Datum
Drilling Measured From K.B.

Elevations:	feet
KB	1216.00
DF	1214.00
GL	1206.00

Date	28-SEP-2011			
Run Number	ONE			
Depth Driller	5355.00	feet		
Depth Logger	5352.00	feet		
First Reading	5306.00	feet		
Last Reading	3800.00	feet		
Casing Driller	350.00	feet		
Casing Logger	348.00	feet		
Bit Size	7.785	inches		
Hole Fluid Type	GEL			
Density / Viscosity	9.00 lb/USg	67.00 CP		
PH / Fluid Loss	9.00	13.80 ml/30Min		
Sample Source	MUD PIT			
Rm @ Measured Temp	1.50 @ 82.0	ohm-m		
Rmf @ Measured Temp	1.20 @ 82.0	ohm-m		
Rmc @ Measured Temp	1.80 @ 82.0	ohm-m		
Source Rmf / Rmc	CALC	CALC		
Rm @ BHT	0.89 @137.0	ohm-m		
Time Since Circulation	6 HOURS			
Max Recorded Temp	137.00	deg F		
Equipment Name	COMPACT			
Equipment / Base	13226	OKC		
Recorded By	B. ALLEN			
Witnessed By	C. PARKER		H. LEWIS	

BOREHOLE RECORD

Last Edited: 28-SEP-2011 18:33

Bit Size inches	Depth From feet	Depth To feet
7.875	350.00	5355.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	350.00	29.00

REMARKS

TOOLS RAN: SHA, MCG, MML, MDN, MPD, MFE, MAI RAN IN COMBINATION

HARDWARE: MAI: TWO 0.5 INCH STANDOFFS USED.
MDN: DUAL NEUTRON BOW SPRINGS USED.
MPD: 8 INCH PROFILE PLATE 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 3300' = 950 CU.FT.
ANNULAR HOLE VOLUME WITH 5.5 INCH PRODUCTION CASING FROM TD TO 3300' = 610 CU.FT.

SERVICE ORDER # 3534146
RIG: LANDMARK DRILLING #6

ENGINEER: B. ALLEN

OPERATOR(S): R. POGUE

OPERATOR(S): R. POOLE

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.

5 INCH MAIN LOG

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 29-SEP-2011 08:14
Filename: C:\Users\garcianr\AppData\Local\Temp\Weatherford PreView\0\SEIFERT 1-27_003.dta
Recorded on 28-SEP-2011 18:24
System Versions: Logged with 11.02.2782 Plotted with 12.01.3513

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
10000 0

Depth in Feet

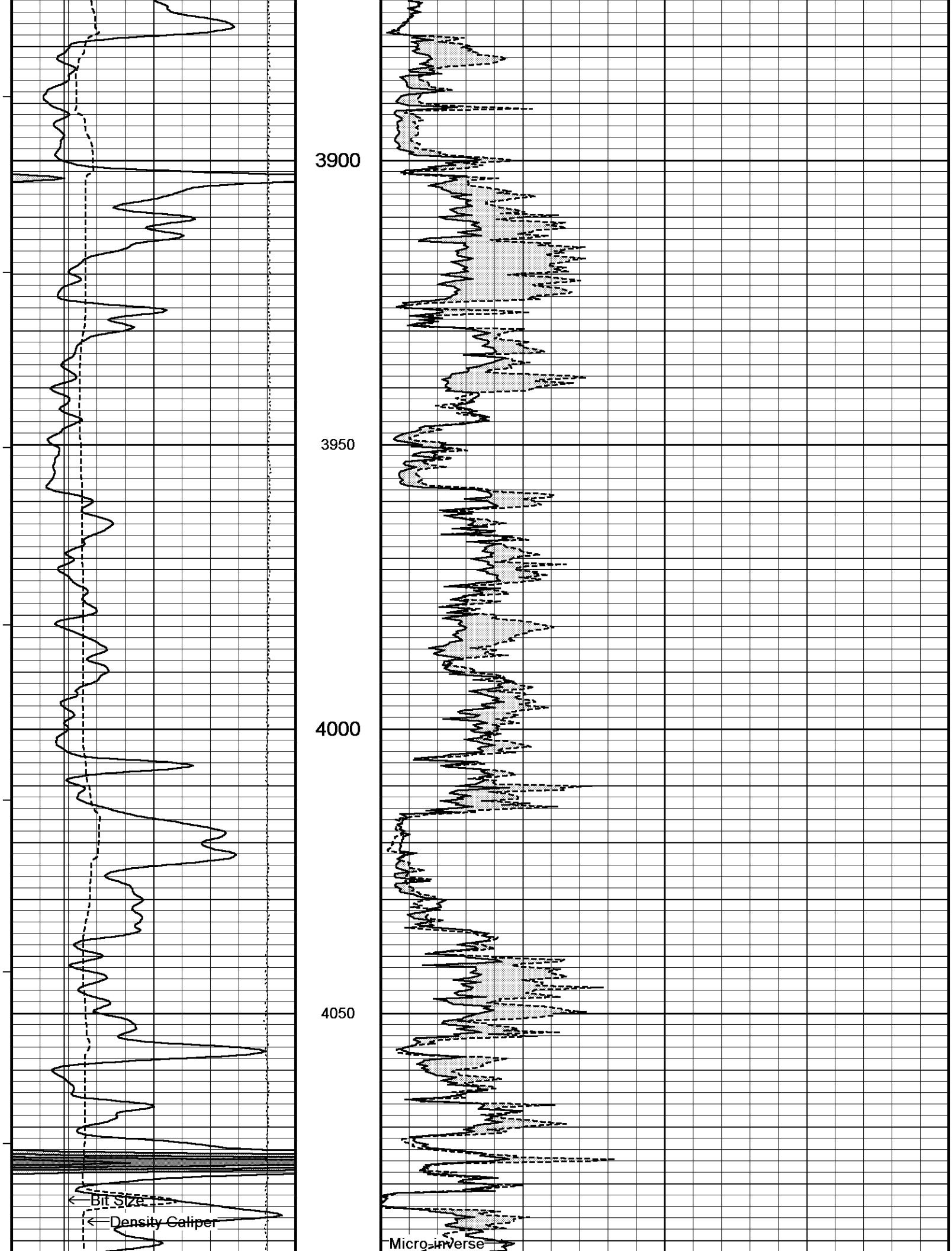
Replay Scale 1:240

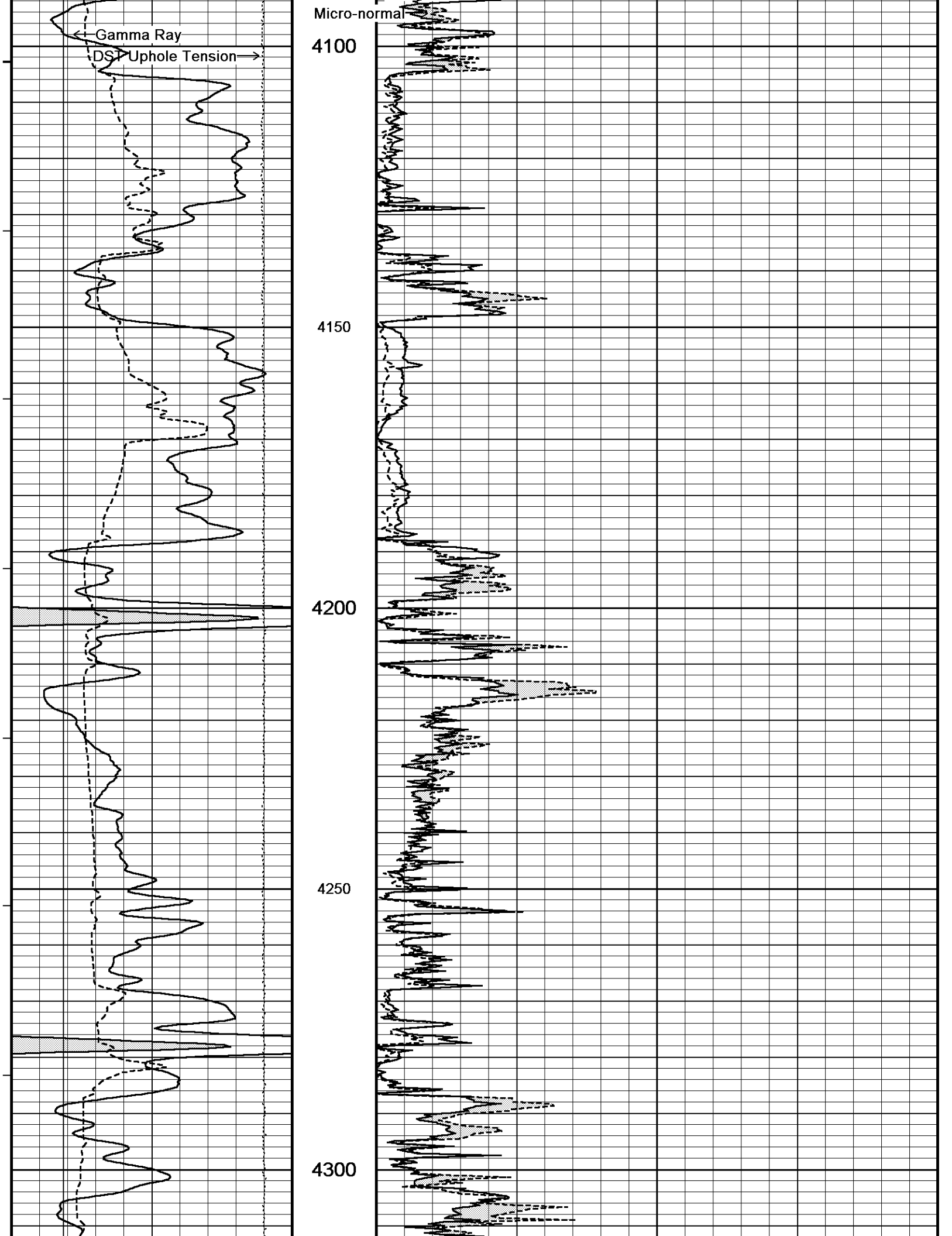
3800

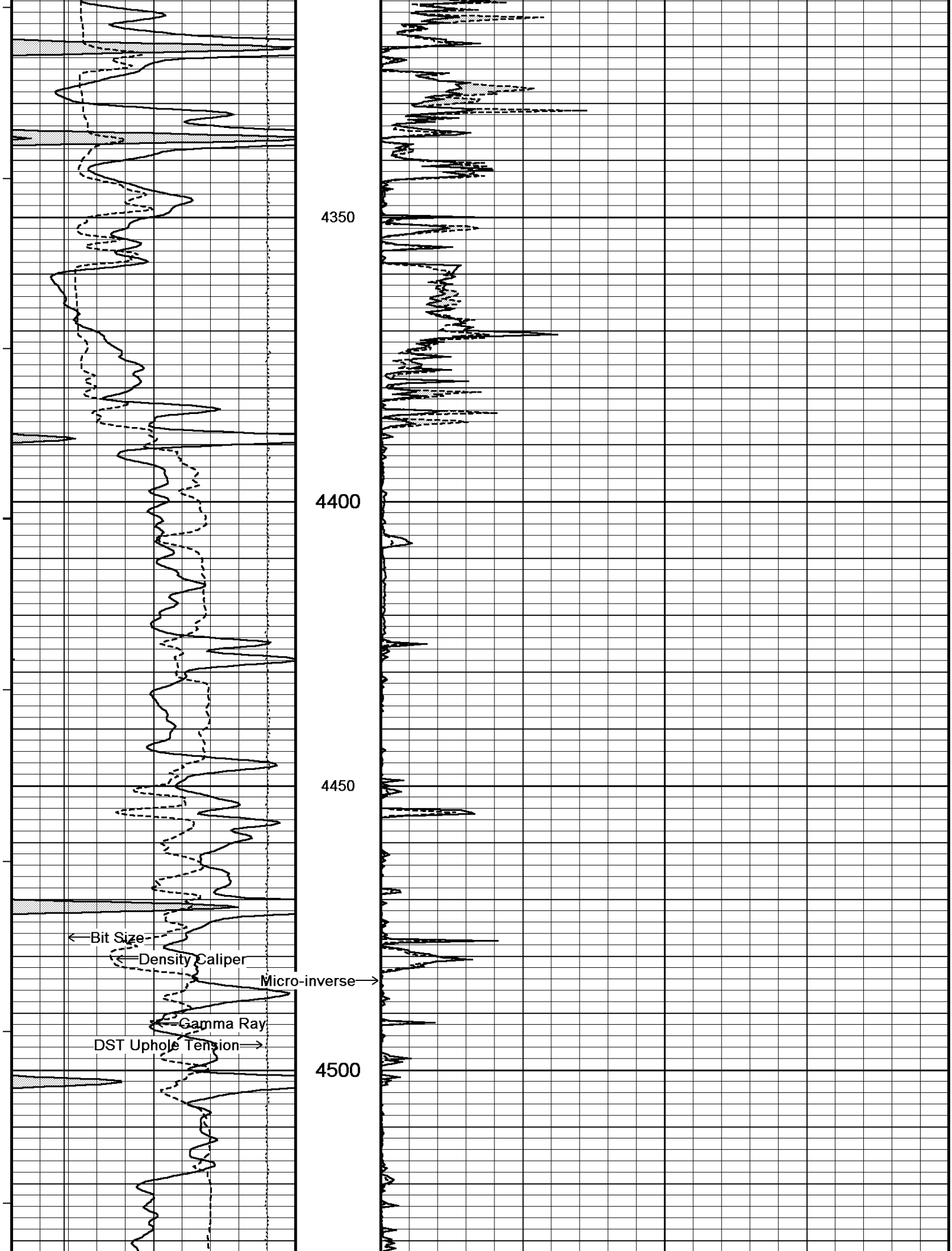
3850

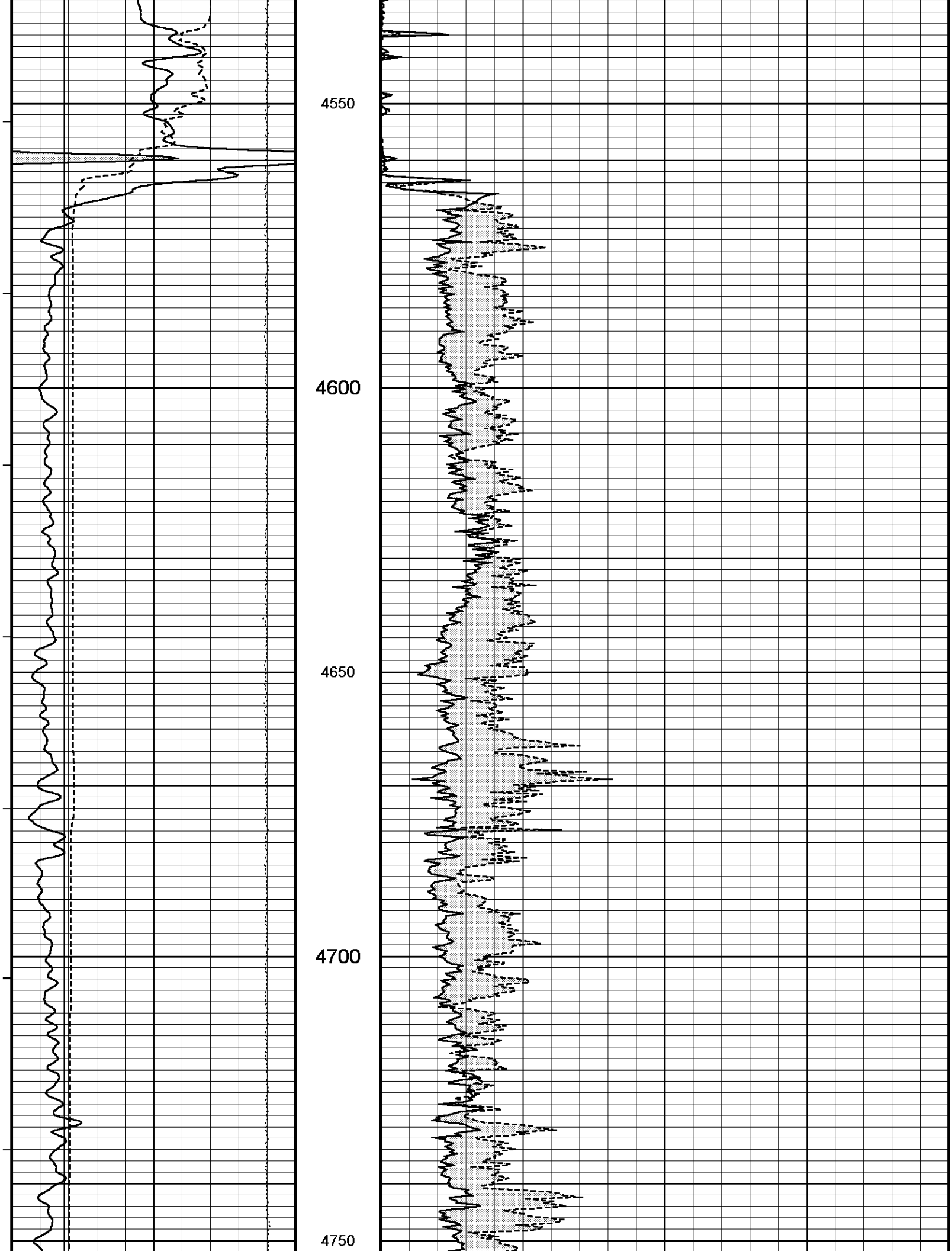
Micro-normal
ohm metres
0 5 10 15 20

Micro-inverse
ohm metres
0 5 10 15 20


3900
3950
4000
4050
Bit Size
Density Caliper
Micro-inverse


Micro-normal
Gamma Ray
DST Uphole Tension
4100
4150
4200
4250
4300


4350
4400
4450
4500
←Bit Size
←Density Caliper
Micro-inverse→
←Gamma Ray
DST Uphole Tension→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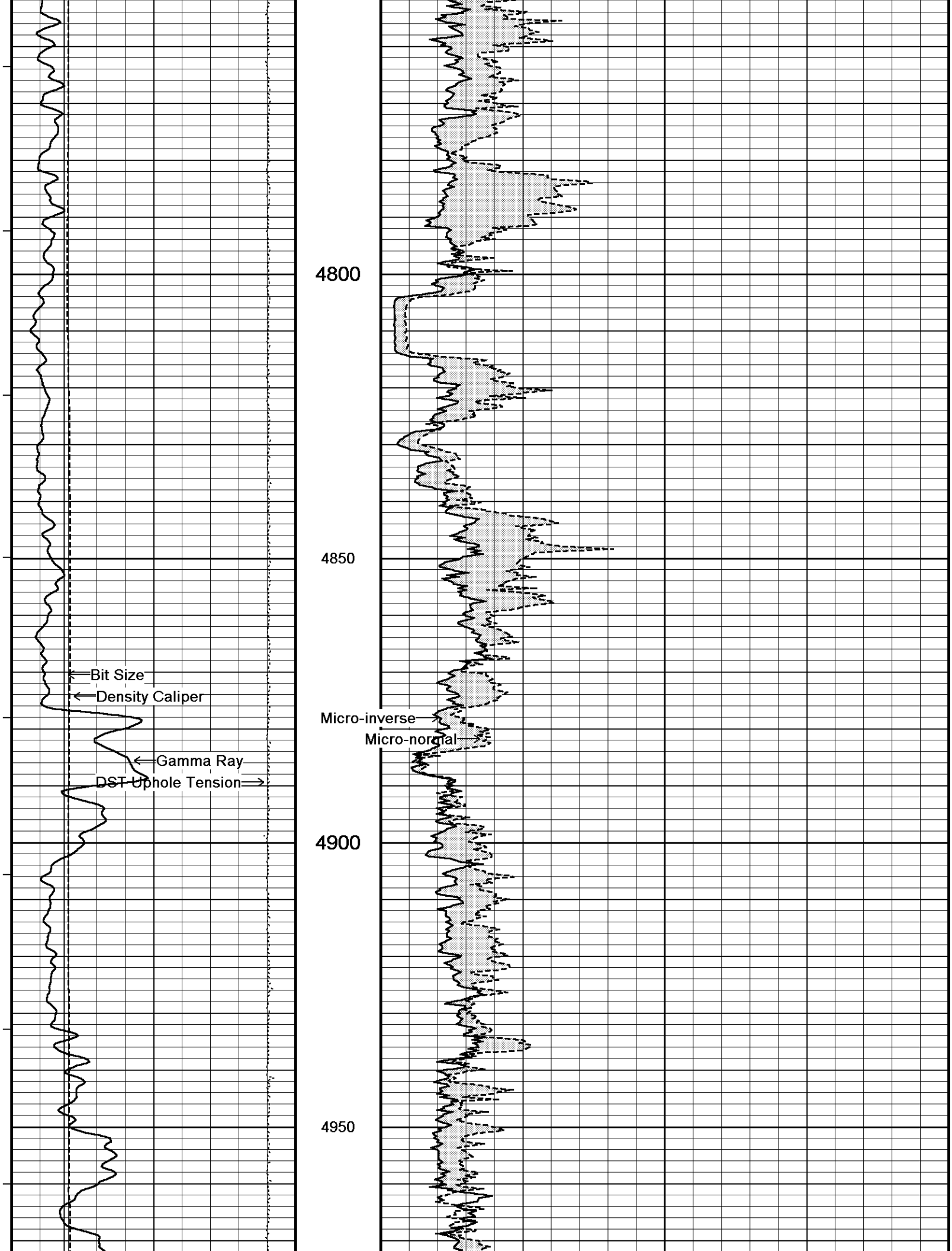
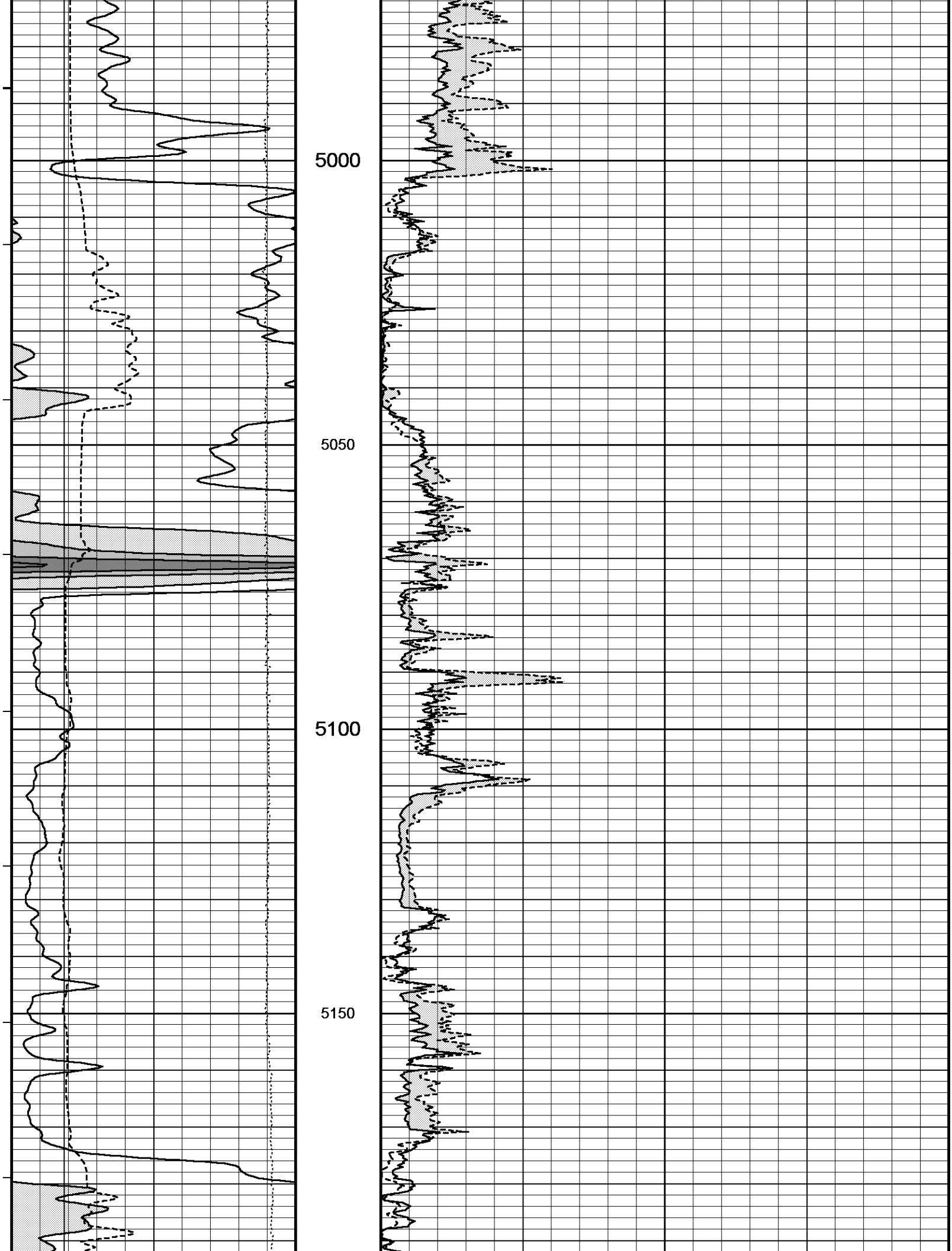
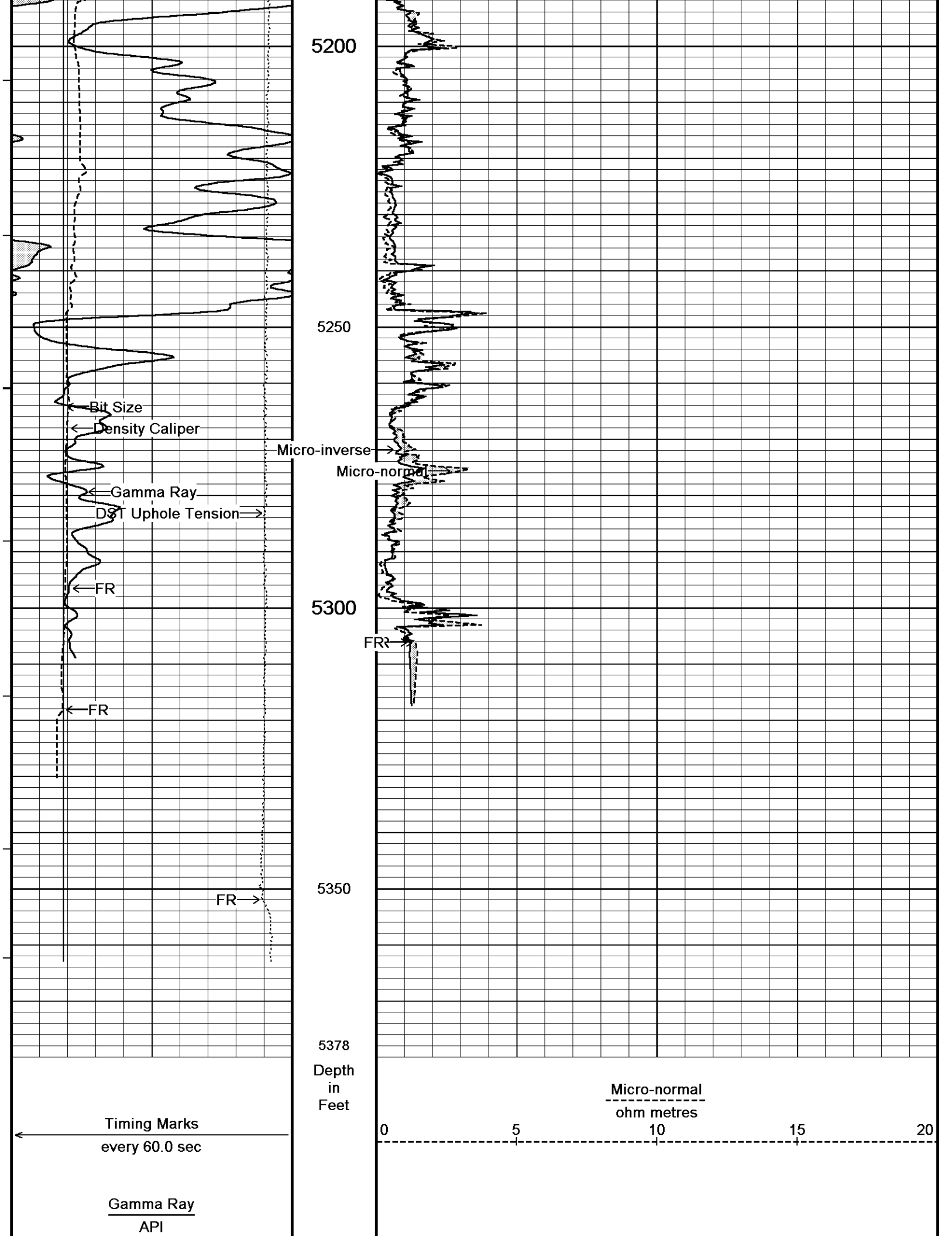
4600
4650
4700
4750


4800
4850
4900
4950
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
Micro-inverse
Micro-normal


5000
5050
5100
5150


5200
5250
5300
5350
5378
Bit Size
Density Caliper
Micro-inverse
Micro-normal
Gamma Ray
DST Uphole Tension
FR
FR
FR
FR
Depth
in
Feet
Timing Marks
every 60.0 sec
Gamma Ray
API
Micro-normal
ohm metres
0
5
10
15
20

0 75 150

150 225 300

Density Caliper
inches
6 11 16

Bit Size
inches
6 11 16

DST Uphole Tension
pounds
10000 0

Replay Scale 1:240

Micro-inverse
ohm metres
0 5 10 15 20

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 29-SEP-2011 08:14
Filename: C:\Users\garcianr\AppData\Local\Temp\Weatherford PreView\0\SEIFERT 1-27_003.dta — Recorded on 28-SEP-2011 18:24
System Versions: Logged with 11.02.2782 Plotted with 12.01.3513

5 INCH MAIN LOG

5 INCH REPEAT

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 29-SEP-2011 08:14
Filename: C:\Users\garcianr\AppData\Local\Temp\Weatherford PreView\0\SEIFERT 1-27_002.dta — Recorded on 28-SEP-2011 18:07
System Versions: Logged with 11.02.2782 Plotted with 12.01.3513

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
10000 0

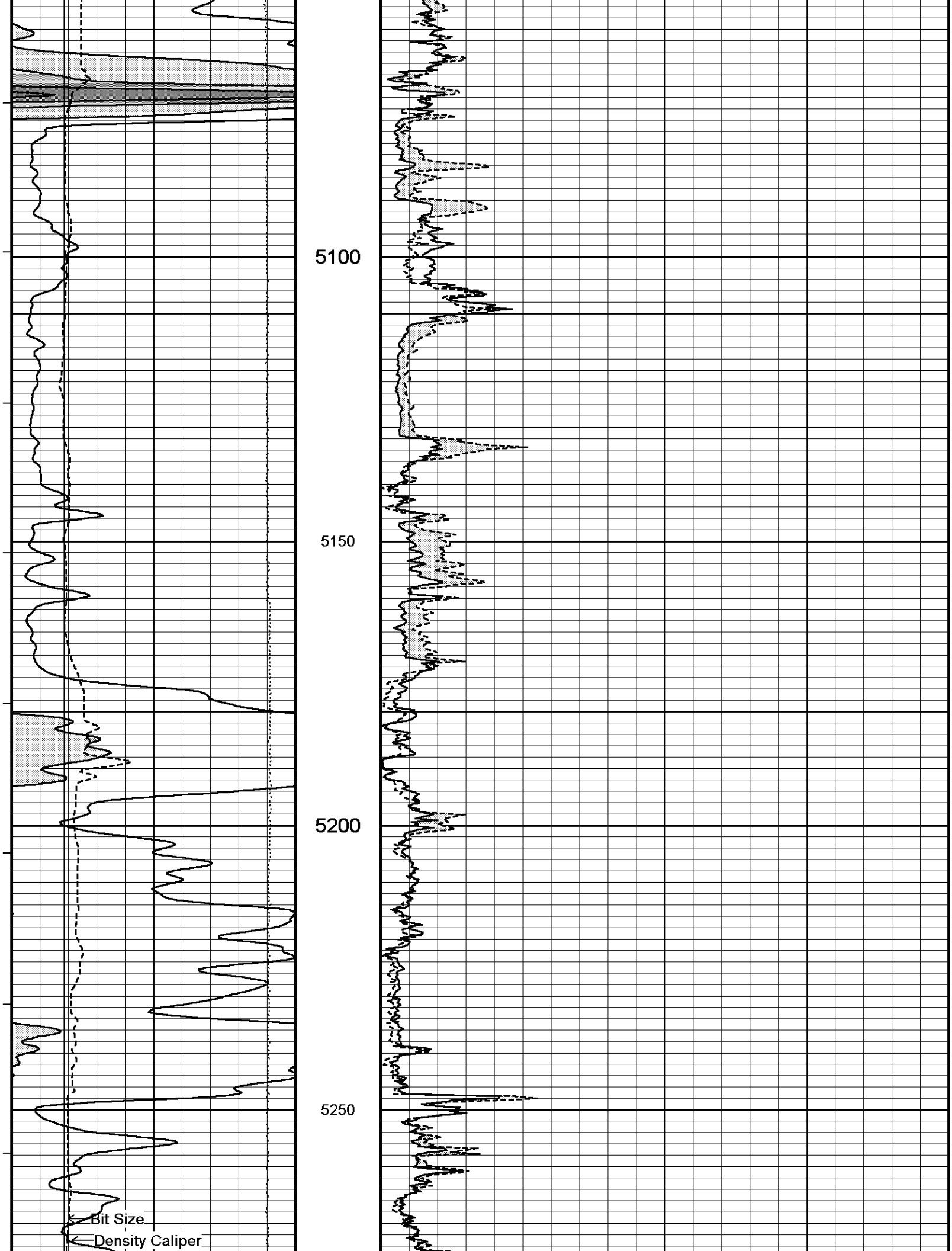
Depth in Feet

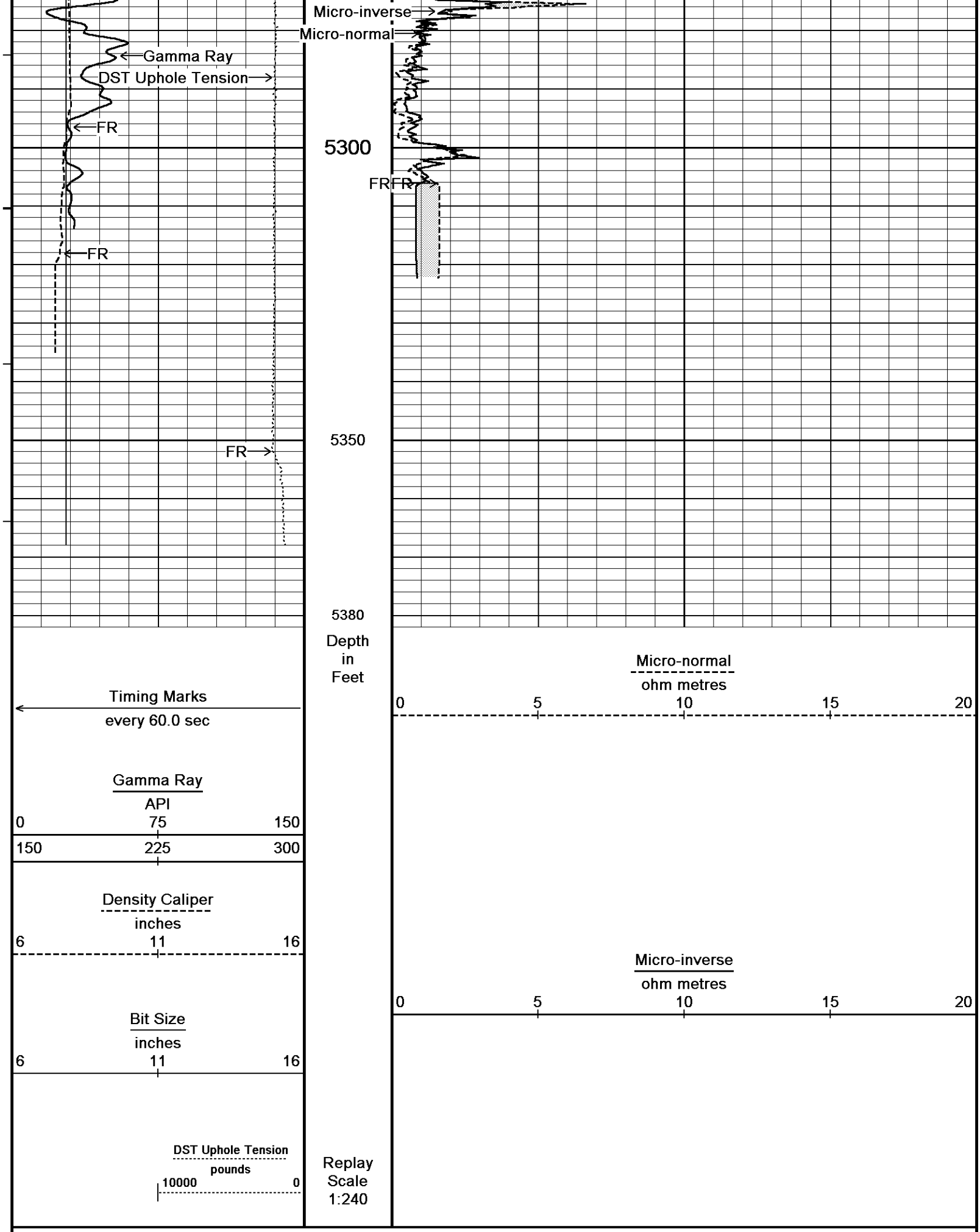
Replay Scale 1:240

Micro-normal
ohm metres
0 5 10 15 20

Micro-inverse
ohm metres
0 5 10 15 20

5050


5100
5150
5200
5250
Bit Size
Density Caliper



Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 29-SEP-2011 08:14
Filename: C:\Users\garcianr\AppData\Local\Temp\Weatherford PreView\0\SEIFERT 1-27_002.dta
Recorded on 28-SEP-2011 18:07
System Versions: Logged with 11.02.2782 Plotted with 12.01.3513

5 INCH REPEAT

BEFORE SURVEY CALIBRATION

C:\Users\garcianr\AppData\Local\Temp\Weatherford PreView\0\SEIFERT 1-27.dta

General Constants All 000

Last Edited on 28-SEP-2011 18:30

General Parameters		
Mud Resistivity	1.500	ohm-metres
Mud Resistivity Temperature	82.000	degrees F
Water Level	0.000	feet
Density/Neutron 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	Limestone Density Por.	
Resistivity used	Array Ind. One Res Rt	
RWA Constant A	0.610	
RWA Constant M	2.150	

Down-hole Tension Calibration SMS 0

Field Calibration on 10-SEP-2011 14:39

Reading No	Measured	Calibrated (lbs)
1	14299.72	0.00
2	15662.60	358.00

Gamma Calibration MCG-D.A 328

Field Calibration on 28-SEP-2011 17:04

	Measured	Calibrated (API)
Background	42	29
Calibrator (Gross)	1361	926
Calibrator (Net)	1319	897

Gamma Constants MCG-D.A 328

Last Edited on 28-SEP-2011 17:04

Gamma Calibrator Number	13226	
Mud Density	1.08	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm

SP Calibration MCG-D.A 328

Field Calibration on 28-SEP-2011 17:04

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

High Resolution Temperature Calibration MCG-D.A 328

Field Calibration on 28-SEP-2011 17:04

	Measured	Calibrated(Deg F)
Lower	50.00	50.00
Upper	150.00	150.00

High Resolution Temperature Constants MCG-D.A 328

Last Edited on

Pre-filter Length	11

Micro Normal and Micro Inverse Calibration MML-A 13

Base Calibration on 22-SEP-2011 17:10
Field Check on 28-SEP-2011 17:04

Base Calibration

	Measured		Calibrated (ohm-m)	
Channel	Resistor 1	Resistor 2	Resistor 1	Resistor 2
Micro Normal	12.3	58.0	2.6	12.8
Micro Inverse	16.4	77.4	1.7	8.4

Channel	Base Check (ohm-m)	Field Check (ohm-m)
Micro Normal	33.6	33.6
Micro Inverse	16.6	16.6

Micro Normal and Micro Inverse Constants MML-A 13

Last Edited on 28-SEP-2011 17:04

Pad Type	8-12 in Soft Rubber Inflatable 006-9011-159	
Micro Normal K Factor	0.5110	
Micro Inverse K Factor	0.3380	
Standoff Offset	N/A	inches

Caliper Calibration MML-A 13

Base Calibration on 22-SEP-2011 16:35
Field Calibration on 28-SEP-2011 18:18

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	13606	5.98
2	16663	7.98
3	20008	9.95
4	23797	12.01
5	0	0.00
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
8.30	8.10

Neutron Calibration MDN-A.A 10

Base Calibration on 12-MAY-2011 19:29
Field Check on 28-SEP-2011 17:04

Base Calibration

	Measured		Calibrated (cps)	
	Near	Far	Near	Far
	3130	98	3714	110
Ratio	31.818		33.764	

Field Calibrator at Base

	Calibrated (cps)	
	1248	1792
Ratio	0.696	

Field Check

	Calibrated (cps)	
	1248	1792
Ratio	0.696	

Neutron Constants MDN-A.A 10

Last Edited on 28-SEP-2011 17:04

Neutron Source Id	P14033B	
Neutron Jig Number	13226	
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	None	
Temperature	N/A	degrees F
Mud Salinity	0.00	kppm
Formation Fluid Salinity Source	Constant Value	
Formation Fluid Salinity	0.00	kppm
Barite Mud Correction	Not Applied	

FE Calibration MFE-A.A 65

Base Calibration on 10-AUG-2011 15:44
Field Check on 28-SEP-2011 17:05

Base Calibration

	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	961.4	126.8
Base Check		280.8
Field Check		280.8

FE Constants MFE-A.A 65

Last Edited on 28-SEP-2011 17:05

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 101

Last Edited on 28-SEP-2011 17:05

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)	Depth (ft)
N/A	N/A	N/A	
N/A	N/A	N/A	0.00
N/A	N/A	N/A	0.00
N/A	N/A	N/A	0.00
N/A	N/A	N/A	0.00
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	N/A
Sonic 2 Despiker	N/A	N/A

Induction Calibration MAI-B.J 393

Base Calibration on 22-SEP-2010 10:00
Field Check on 28-SEP-2011 17:05

Base Calibration

Test Loop Calibration	Measured		Calibrated (mmho/m)	
Channel	Low	High	Low	High
1	17.4	474.6	9.3	966.2
2	6.5	382.5	7.6	821.4
3	3.5	251.8	5.2	566.0
4	2.1	131.0	2.6	279.2
Array Temperature		74.1	Deg F	

Channel	Base Check (mmho/m)		Field Check (mmho/m)		
	Low	High	Low	High	
1	0.0	0.0	16.2	3824.1	
2	0.0	0.0	31.7	3523.5	
3	0.0	0.0	31.1	3140.9	
4	0.0	0.0	20.8	2111.9	
Deep	0.0	0.0	19.9	2110.3	
Medium	0.0	0.0	44.9	4139.0	
Shallow	0.0	0.0	46.1	5104.5	
Array Temperature		0.0		95.0	Deg F

Induction Constants MAI-B.J 393

Last Edited on 28-SEP-2011 17:06

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	

High Resolution Temperature Calibration MAI-B.J 393

Field Calibration on 28-SEP-2011 17:06

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

High Resolution Temperature Constants MAI-B.J 393

Last Edited on

Pre-filter Length	11

Caliper Calibration MRD-A-3

Base Calibration on 10-AUG-2011 16:37

Caliper Calibration MPD-A 3

Base Calibration on 10-AUG-2011 16:37
Field Calibration on 28-SEP-2011 18:19

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	20208	3.98
2	28784	5.95
3	37424	7.97
4	45392	9.84
5	54503	11.91
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
8.43	8.10

Photo Density Calibration MPD-A 3

Base Calibration on 21-SEP-2011 15:08
Field Check on 28-SEP-2011 17:05

Density Calibration

Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	47357	25239	60364	31945
Reference 2	20102	2812	25079	2547

Field Check at Base

1315.7	1670.4

Field Check

1315.7	1670.4

PE Calibration

Base Calibration	Measured			Calibrated
	WS	WH	Ratio	Ratio
Background	242	1164		
Reference 1	19956	47156	0.429	0.399
Reference 2	5535	19946	0.282	0.273

Field Check at Base

241.8	1163.6

Field Check

241.8	1163.6

Density Constants MPD-A 3

Last Edited on 28-SEP-2011 17:05

Density Source Id	260	
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	1.08	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	

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:\Users\gerajanr\AppData\Local\Temp\Weatherford PreView\0\SEIFERT 1-27.dta

SHA-F Compact Swivel Head Adaptor
SHA-F 45 LG: 2.74 ft WT: 26.5 lb OD: 2.24 in

Compact Comms Gamma
MCG-D.A 328 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Micro-log
MML-A 13 LG: 7.97 ft WT: 81.6 lb OD: 2.24 in

Compact Neutron
MDN-A.A 10 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Density/Caliper
MPD-A 3 LG: 9.53 ft WT: 90.4 lb OD: 2.45 in

Compact Focussed Electric
MFE-A.A 65 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

Compact Sonic
MSS-A.A 101 LG: 12.52 ft WT: 72.8 lb OD: 2.24 in

Compact Induction
MAI-B.J 393 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 63.35 ft Weight: 482.8 lb

55.32 ft	GRGC - Gamma Ray
52.42 ft	CGXT - MCG External Temperature
45.70 ft	MNRL - Micro-normal
45.70 ft	MINV - Micro-inverse
46.69 ft	MLTC - MML Caliper
40.90 ft	NPRL - Limestone Neutron Por.
33.66 ft	CLDC - Density Caliper
31.73 ft	DPRL - Limestone Density Por.
31.73 ft	DEN - Compensated Density
31.73 ft	DCOR - Density Correction
31.67 ft	PDPE - PE
26.24 ft	FEFE - Shallow FE
12.96 ft	DT35 - 3-5' Compensated Sonic
12.96 ft	SHRL - Limestone H-R Sonic Por.
3.34 ft	R40O - Array Ind. One Res 40
3.34 ft	RTAO - Array Ind. One Res Rt
3.34 ft	R60O - Array Ind. One Res 60
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	SHORELINE ENERGY PARTNERS, LLC.
WELL	SEIFERT 1-27
FIELD	WILDCAT
PROVINCE/COUNTY	HARPER
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	1216.00	feet	First Reading	5306.00	feet
Elevation Drill Floor	1214.00	feet	Depth Driller	5355.00	feet
Elevation Ground Level	1206.00	feet	Depth Logger	5352.00	feet

Weatherford®

MICRO RESISTIVITY LOG

40 Years of Wireline 1970 2010