



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1074228  
OIL & GAS CONSERVATION DIVISION

Form ACO-1  
August 2013

Form must be Typed  
Form must be Signed  
All blanks must be Filled

WELL COMPLETION FORM  
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Address 1: \_\_\_\_\_

Address 2: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ + \_\_\_\_\_

Contact Person: \_\_\_\_\_

Phone: ( \_\_\_\_\_ ) \_\_\_\_\_

CONTRACTOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Wellsite Geologist: \_\_\_\_\_

Purchaser: \_\_\_\_\_

Designate Type of Completion:

- New Well       Re-Entry       Workover
- Oil       WSW       SWD       SIOW
- Gas       D&A       ENHR       SIGW
- OG       GSW       Temp. Abd.
- CM (Coal Bed Methane)
- Cathodic       Other (Core, Expl., etc.): \_\_\_\_\_

If Workover/Re-entry: Old Well Info as follows:

Operator: \_\_\_\_\_

Well Name: \_\_\_\_\_

Original Comp. Date: \_\_\_\_\_ Original Total Depth: \_\_\_\_\_

- Deepening       Re-perf.       Conv. to ENHR       Conv. to SWD
- Plug Back       Conv. to GSW       Conv. to Producer
- Commingled      Permit #: \_\_\_\_\_
- Dual Completion      Permit #: \_\_\_\_\_
- SWD      Permit #: \_\_\_\_\_
- ENHR      Permit #: \_\_\_\_\_
- GSW      Permit #: \_\_\_\_\_

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
-----------------------------------	-----------------	---

API No. 15 - \_\_\_\_\_

Spot Description: \_\_\_\_\_

\_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

\_\_\_\_\_ Feet from  North /  South Line of Section

\_\_\_\_\_ Feet from  East /  West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE       NW       SE       SW

GPS Location: Lat: \_\_\_\_\_, Long: \_\_\_\_\_  
(e.g. xx.xxxxx)      (e.g. -xxx.xxxxx)

Datum:  NAD27       NAD83       WGS84

County: \_\_\_\_\_

Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Field Name: \_\_\_\_\_

Producing Formation: \_\_\_\_\_

Elevation: Ground: \_\_\_\_\_ Kelly Bushing: \_\_\_\_\_

Total Vertical Depth: \_\_\_\_\_ Plug Back Total Depth: \_\_\_\_\_

Amount of Surface Pipe Set and Cemented at: \_\_\_\_\_ Feet

Multiple Stage Cementing Collar Used?  Yes  No

If yes, show depth set: \_\_\_\_\_ Feet

If Alternate II completion, cement circulated from: \_\_\_\_\_

feet depth to: \_\_\_\_\_ w/ \_\_\_\_\_ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: \_\_\_\_\_ ppm Fluid volume: \_\_\_\_\_ bbls

Dewatering method used: \_\_\_\_\_

Location of fluid disposal if hauled offsite:

Operator Name: \_\_\_\_\_

Lease Name: \_\_\_\_\_ License #: \_\_\_\_\_

Quarter \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

County: \_\_\_\_\_ Permit #: \_\_\_\_\_

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

- Confidentiality Requested  
Date: \_\_\_\_\_
- Confidential Release Date: \_\_\_\_\_
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT  I  II  III Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

1074228

Operator Name: \_\_\_\_\_ Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West County: \_\_\_\_\_

**INSTRUCTIONS:** Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken <i>(Attach Additional Sheets)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Log	Formation (Top), Depth and Datum	<input type="checkbox"/> Sample
Samples Sent to Geological Survey	<input type="checkbox"/> Yes <input type="checkbox"/> No	Name	Top	Datum
Cores Taken	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Electric Log Run	<input type="checkbox"/> Yes <input type="checkbox"/> No			
List All E. Logs Run:				

CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate				
<input type="checkbox"/> Protect Casing				
<input type="checkbox"/> Plug Back TD				
<input type="checkbox"/> Plug Off Zone				

Did you perform a hydraulic fracturing treatment on this well?  Yes  No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons?  Yes  No *(If No, skip question 3)*

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry?  Yes  No *(If No, fill out Page Three of the ACO-1)*

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i>	Depth

TUBING RECORD:      Size: \_\_\_\_\_ Set At: \_\_\_\_\_ Packer At: \_\_\_\_\_ Liner Run:  Yes  No

Date of First, Resumed Production, SWD or ENHR: \_\_\_\_\_ Producing Method:  
 Flowing  Pumping  Gas Lift  Other *(Explain)* \_\_\_\_\_

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

<b>DISPOSITION OF GAS:</b> <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	<b>METHOD OF COMPLETION:</b> <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____	<b>PRODUCTION INTERVAL:</b> _____ _____
--	--	---

# ALLIED CEMENTING CO., LLC. 037762

Federal Tax I.D.# 20-5975804

REMIT TO P.O. BOX 31  
RUSSELL, KANSAS 67665

SERVICE POINT:  
Medford

DATE <u>11-15-11</u>	SEC. <u>17</u>	TWP. <u>34s</u>	RANGE <u>14w</u>	CALLED OUT	ON LOCATION	JOB START <u>4:00pm</u>	JOB FINISH <u>5:00pm</u>	
LEASE <u>Z-Bar</u>	WELL # <u>17-6</u>		LOCATION <u>Actual, 4 1/4 E, 1/2 N, 2 E</u>	COUNTY <u>Barber</u>	STATE <u>KS</u>			
OLD OR <input checked="" type="radio"/> NEW (Circle one)			<u>3/4 N, 1/2 E smts</u>					

CONTRACTOR Southwind Drilling  
 TYPE OF JOB Scraper  
 HOLE SIZE 12 1/4 T.D. 920'  
 CASING SIZE 8 5/8 DEPTH 921'  
 TUBING SIZE DEPTH  
 DRILL PIPE DEPTH  
 TOOL DEPTH  
 PRES. MAX 900 psi MINIMUM  
 MEAS. LINE SHOE JOINT 40'  
 CEMENT LEFT IN CSG. 40'  
 PERFS.  
 DISPLACEMENT 56 1/2 bbls H<sub>2</sub>O

OWNER M+M Exploration

CEMENT  
 AMOUNT ORDERED  
250 sacks 65.35 16 1/2 gal + 37.00 + 1/4" floreal  
150 sacks A + 37.00 + 2 1/2 gal

EQUIPMENT

PUMP TRUCK CEMENTER Matt Thimmesch  
 # 471/302 HELPER Ron Gittley  
 BULK TRUCK  
 # 367/290 DRIVER Kevin W. (G. B.)  
 BULK TRUCK  
 # DRIVER

COMMON 150 SACKS	@ 16.25	2437.50
POZMIX	@	
GEL 3 SACKS	@ 21.25	63.75
CHLORIDE 13 SACKS	@ 58.20	756.60
ASC	@	
All Type 1-A 250 sacks	@ 15.00	3750.00
Floreal 63 pounds	@ 2.70	170.10
	@	
	@	
	@	
	@	
	@	
HANDLING 416	@ 2.25	936.00
MILEAGE 416 x .11 x 40		1830.40
TOTAL		<u>8994.35</u>

REMARKS:  
Back on pump ball through  
pump 3 bbls H<sub>2</sub>O ahead  
Mix 250sks lead cement  
mix 150sks tail cement shut down Release plug  
drop 56 1/2 bbls H<sub>2</sub>O bump plug Scooper to 900 psi  
plus held.  
Cement did not circulate.

CHARGE TO: M+M Exploration  
 STREET \_\_\_\_\_  
 CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

SERVICE

DEPTH OF JOB <u>920'</u>		
PUMP TRUCK CHARGE		1125.00
EXTRA FOOTAGE <u>620'</u> @ .95		589.00
MILEAGE <u>80</u> @ 7.00		560.00
MANIFOLD @ 250		250.00
Light Vehicle <u>80</u> @ 4.00		320.00
	@	
TOTAL		<u>2844.00</u>

85% PLUG & FLOAT EQUIPMENT

1-AFU insert	@ 382	382
1-Rubber plug	@ 112	112
1-Basket	@ 478	478
	@	
	@	
TOTAL		<u>972</u>

To Allied Cementing Co., LLC.  
 You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

PRINTED NAME Alan Vratil  
 SIGNATURE Alan Vratil

SALES TAX (If Any) \_\_\_\_\_  
 TOTAL CHARGES \$13,760.35  
 DISCOUNT 20% IF PAID IN 30 DAYS  
Net \$11,008.28



Customer <i>ALUM EXPLORATION</i>		Lease No.		Date	
Lease <i>2-BAR</i>		Well # <i>17-6</i>		<i>11-23-11</i>	
Field Order # <i>5060</i>	Station <i>PRATT KS</i>	Casing <i>4 1/2</i>	Depth <i>5050'</i>	County <i>BARBER</i>	State <i>KS</i>
Type Job <i>NEW 4 1/2 LONG STRING</i>			Formation	Legal Description <i>17-34-14</i>	

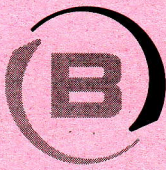
PIPE DATA		PERFORATING DATA		FLUID USED		TREATMENT RESUME		
Casing Size <i>4 1/2</i>	Tubing Size	Shots/Ft		Acid		RATE	PRESS	ISIP
Depth <i>5050</i>	Depth	From	To	Pre Pad		Max		5 Min.
Volume <i>27 1/2</i>	Volume	From	To	Pad		Min		10 Min.
Max Press <i>1800</i>	Max Press	From	To	Frac		Avg		15 Min.
Well Connection <i>PC</i>	Annulus Vol.	From	To			HHP Used		Annulus Pressure
Plug Depth <i>3008</i>	Packer Depth	From	To	Flush		Gas Volume		Total Load

Customer Representative	Station Manager <i>DAVE SCOTT</i>	Treater <i>Robert J. ...</i>
-------------------------	-----------------------------------	------------------------------

Service Units	<i>37900</i>	<i>33708</i>	<i>20920</i>	<i>19931</i>	<i>17862</i>				
Driver Names	<i>Collins</i>	<i>Mason</i>	<i>Phillips</i>						

Time	Casing Pressure	Tubing Pressure	Bbls. Pumped	Rate	Service Log
<i>4:45 AM</i>					<i>on loc. softy meety</i>
					<i>run 121 4 1/2 10.5 csg</i>
					<i>cut 4235 2 1/4 1416 mark 7</i>
<i>8:50</i>					<i>csamp on bottom</i>
<i>9:00</i>					<i>Hook Dip csg csg</i>
<i>9:40</i>	<i>150</i>		<i>7</i>	<i>3</i>	<i>st scrubber cut @ 12.5 mfg</i>
			<i>61</i>	<i>5</i>	<i>st 4 1/2 cut 225 dk @ 15 mfg</i>
					<i>cut mixed shut down. with pump loss</i>
					<i>Release Plug</i>
	<i>200</i>			<i>6</i>	<i>st Deep</i>
	<i>400</i>		<i>44</i>		<i>let R</i>
	<i>600</i>			<i>4</i>	<i>Slow Rate</i>
<i>10:15</i>	<i>1800</i>		<i>27.5</i>		<i>plug down</i>
			<i>7</i>		<i>plug R14 w/30 dk</i>
			<i>9</i>		<i>plug R14 w/30 dk</i>
					<i>1500 Sample</i>
					<i>Thank you</i>





**BASIC**<sup>SM</sup>  
ENERGY SERVICES  
PRESSURE PUMPING & WIRELINE

10244 NE Hwy. 61  
P.O. Box 8613  
Pratt, Kansas 67124  
Phone 620-672-1201

FIELD SERVICE TICKET  
1718 05060 A

DATE \_\_\_\_\_ TICKET NO. \_\_\_\_\_

DATE OF JOB <b>11-23-11</b>		DISTRICT <b>Pratt</b>		NEW WELL <input checked="" type="checkbox"/> OLD WELL <input type="checkbox"/> PROD <input type="checkbox"/> INJ <input type="checkbox"/> WDW <input type="checkbox"/> CUSTOMER ORDER NO.:					
CUSTOMER <b>M &amp; M EXPLORATION INC</b>		LEASE <b>Z-Bar</b>		17-6 WELL NO.					
ADDRESS		COUNTY <b>Barber</b>		STATE <b>KS</b>					
CITY		STATE <b>KS</b>		SERVICE CREW <b>Melson Phye Sullivan</b>					
AUTHORIZED BY		JOB TYPE: <b>CNW 4" casing</b>							
EQUIPMENT#	HRS	EQUIPMENT#	HRS	EQUIPMENT#	HRS	TRUCK CALLED	DATE	AM	TIME
<b>3370S 20920</b>	<b>40</b>	<b>mi</b>					<b>11-23-11</b>	<b>AM</b>	<b>11:21</b>
<b>19531 19862</b>	<b>40</b>	<b>mi</b>					<b>11-24-11</b>	<b>AM</b>	<b>4:45</b>
<b>37900</b>							<b>11-24-11</b>	<b>AM</b>	<b>9:40</b>
							<b>11-24-11</b>	<b>AM</b>	<b>10:25</b>
							<b>11-24-11</b>	<b>AM</b>	<b>11:00</b>
						MILES FROM STATION TO WELL	<b>69</b>		

CONTRACT CONDITIONS: (This contract must be signed before the job is commenced or merchandise is delivered).

The undersigned is authorized to execute this contract as an agent of the customer. As such, the undersigned agrees and acknowledges that this contract for services, materials, products, and/or supplies includes all of and only those terms and conditions appearing on the front and back of this document. No additional or substitute terms and/or conditions shall become a part of this contract without the written consent of an officer of Basic Energy Services LP.

SIGNED: *[Signature]*  
(WELL OWNER, OPERATOR, CONTRACTOR OR AGENT)

ITEM/PRICE REF. NO.	MATERIAL, EQUIPMENT AND SERVICES USED	UNIT	QUANTITY	UNIT PRICE	\$ AMOUNT
CP 105	AA2 cement	SK	300		
CC 102	celluloflabe	lb	75		
CC 111	SALT	lb	1631		
CC 113	GYPsum	lb	1910		
CC 129	FLA-322	lb	226		
CC 207	GILsonite	lb	1500		
CF 606	Latch Down PLYG d BASTLE	eq	1		
CF 1250	Auto Full shoe	eq	1		
CF 1650	TurboLiZ er	eq	8		
CF 1900	BASSET	eq	1		
C 704	CLay Max	gal	4		
E 100	Pickup mileage	Mi	65		
E 101	Heavy mileage	Mi	130		
E 113	Bulk Delivery	TM	917		
CE 205	DEPTH charge	4hr	1		
CE 240	MIXING charge	SK	300		
CE 54	PLYG container	Job	1		
S 003	Supervisor	eq	1		

SUB TOTAL **14,187.73**

SERVICE & EQUIPMENT %TAX ON \$  
MATERIALS %TAX ON \$

TOTAL

*Thank you*

CHEMICAL / ACID DATA:			

SERVICE REPRESENTATIVE *[Signature]*

THE ABOVE MATERIAL AND SERVICE ORDERED BY CUSTOMER AND RECEIVED BY: *[Signature]*

(WELL OWNER OPERATOR CONTRACTOR OR AGENT)

FIELD SERVICE ORDER NO.



**BIG BUCKETS RATHOLE DRILLING**

P.O. Box 5252

Enid, Oklahoma 73702

Phone (580) 233-9850

Fax (580) 233-4588

No 4791

Date 11/10/11

ORDERED BY

*Allen Kratil*

Bill To *M&M Exploration*

Lease *Z Bar 17-6*

Address \_\_\_\_\_

Legal *Sec 17-345-14W*

County *Barber KS*

Rig *Southwind Dwy #70*

DESCRIPTION		AMOUNT	
Furnish Men & Equipment To	<i>Drill Cellar @ 43 ft of 30" hole &amp; remove dirt off loc.</i>		
Materials Furnished	<i>40 ft. of 20" pipe - 4 1/2 yds of 8 sk gssmt 5 of 60" timber</i>	<i>6500</i>	<i>00</i>
Operator <i>Ben Whittington</i>	Approved By _____	Total	<i>6500</i> <i>00</i>

STATE TAX 4.50% 0.00

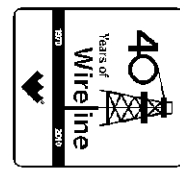
We appreciate your business! **Total** \$6,500.00



# Weatherford

## ARRAY INDUCTION SHALLOW FOCUSED ELECTRIC LOG

COMPANY **M&M EXPLORATION, INC.**  
 WELL **Z-BAR #17-6**  
 FIELD **AETNA NE**  
 PROVINCE/COUNTY **BARBER**  
 COUNTRY/STATE **U.S.A. / KANSAS**  
 LOCATION **1955' FNL & 1895' FWL  
NW/4**



SEC 17	TWP 34S	RGE 14W	Other Services MPD/MDN	MML	Elevations: KB 1657.00 DF 1655.00 GL 1645.00
API Number	15-007-23791		Permanent Datum G.L., Elevation 1645 feet		
Permit Number	Drilling Measured From K.B.				
Run Number	22-NOV-2011				
Depth Driller	ONE				
Depth Logger	5050.00 feet				
First Reading	5047.00 feet				
Last Reading	921.00 feet				
Casing Driller	920.00 feet				
Casing Logger	921.00 feet				
Bit Size	7.875 inches				
Hole Fluid Type	CHEMICAL				
Density / Viscosity	9.00 lb/USg		45.00 CP		
PH / Fluid Loss	10.50		8.00 ml/30Min		
Sample Source	FLOWLINE				
Rm @ Measured Temp	0.85 @ 76.0 ohm-m				
Rmf @ Measured Temp	0.68 @ 76.0 ohm-m				
Rmc @ Measured Temp	1.02 @ 76.0 ohm-m				
Source Rmf / Rmc	CALC		CALC		
Rm @ BHT	0.58 @ 111.0		ohm-m		
Time Since Circulation	4 HOURS				
Max Recorded Temp	111.00		deg F		
Equipment Name	COMPACT				
Equipment / Base	13025		LIB		
Recorded By	L. SCOTT				
Witnessed By	BETH BROCK				
S.O.# / JOB#	3531207				LB11-298

### BOREHOLE RECORD

Last Edited: 22-NOV-2011 14:21

Bit Size inches	Depth From feet	Depth To feet
7.875	921.00	5050.00

### CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	921.00	24.00

### REMARKS

Tools Used: MPD, MCG, MDN, MFE, MAI, MML  
 Hardware: MPD: 8 inch profile plate used. MAI and MFE: 0.5 Inch standoffs used. MDN: Dual Bowspring used.  
 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.  
 Annular volume with 4.5 inch production casing = 280 cu. ft.  
 Service order #3531207  
 Rig: Southwind #70  
 Engineer(s): L. Scott  
 Operator(s): M. Stegman

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.

2 INCH MAIN

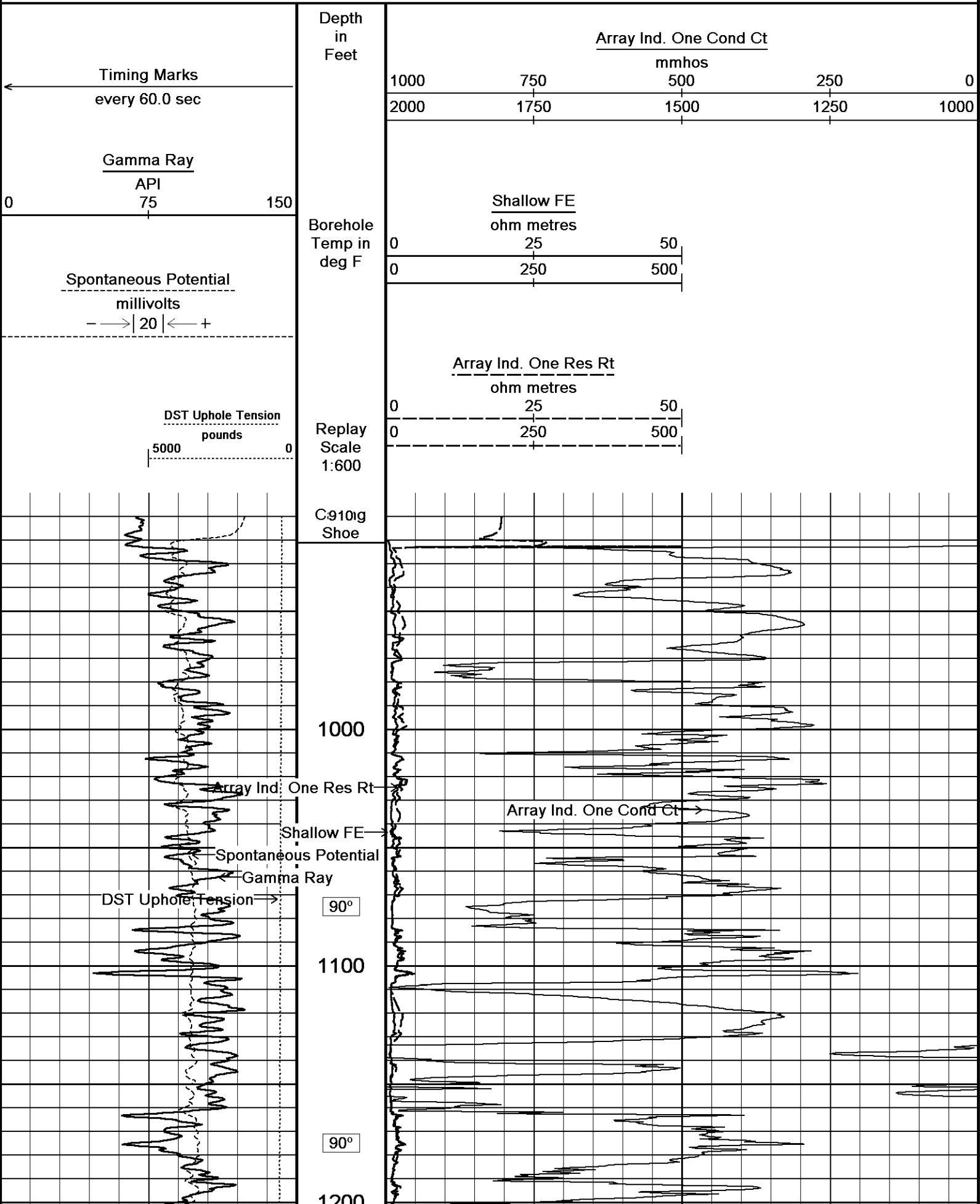
Depth Based Data - Maximum Sampling Increment 10.0cm

Plotted on 22-NOV-2011 16:52

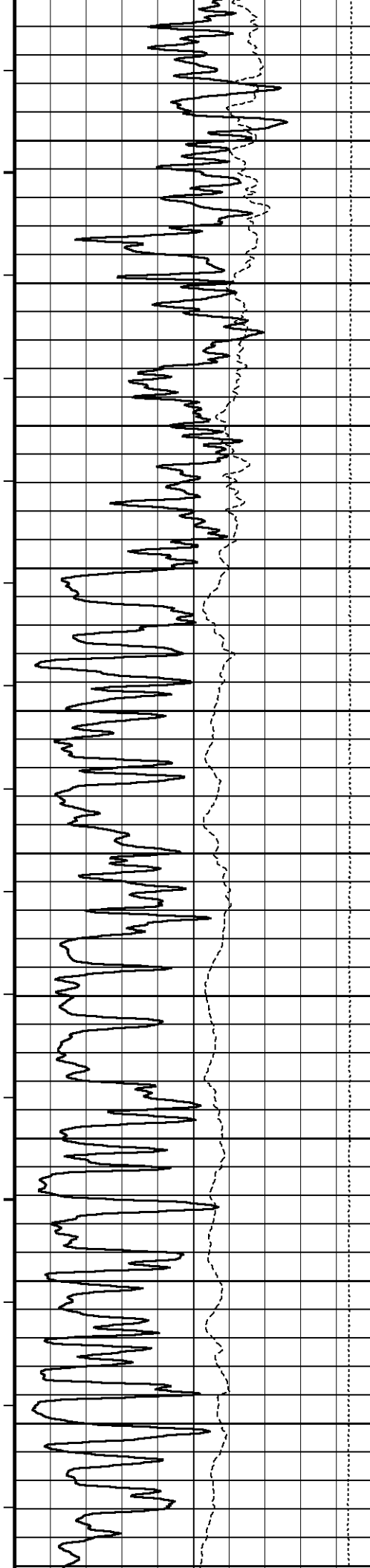
Filename: C:\Minimus 11.03.4044\Data\M&M Z-Bar 17-6\M&M Z-Bar 17-6\_002.dta

Recorded on 22-NOV-2011 14:38

System Versions: Logged with 11.03.4044 Plotted with 11.03.4044







1200

91°

1300

91°

1400

92°

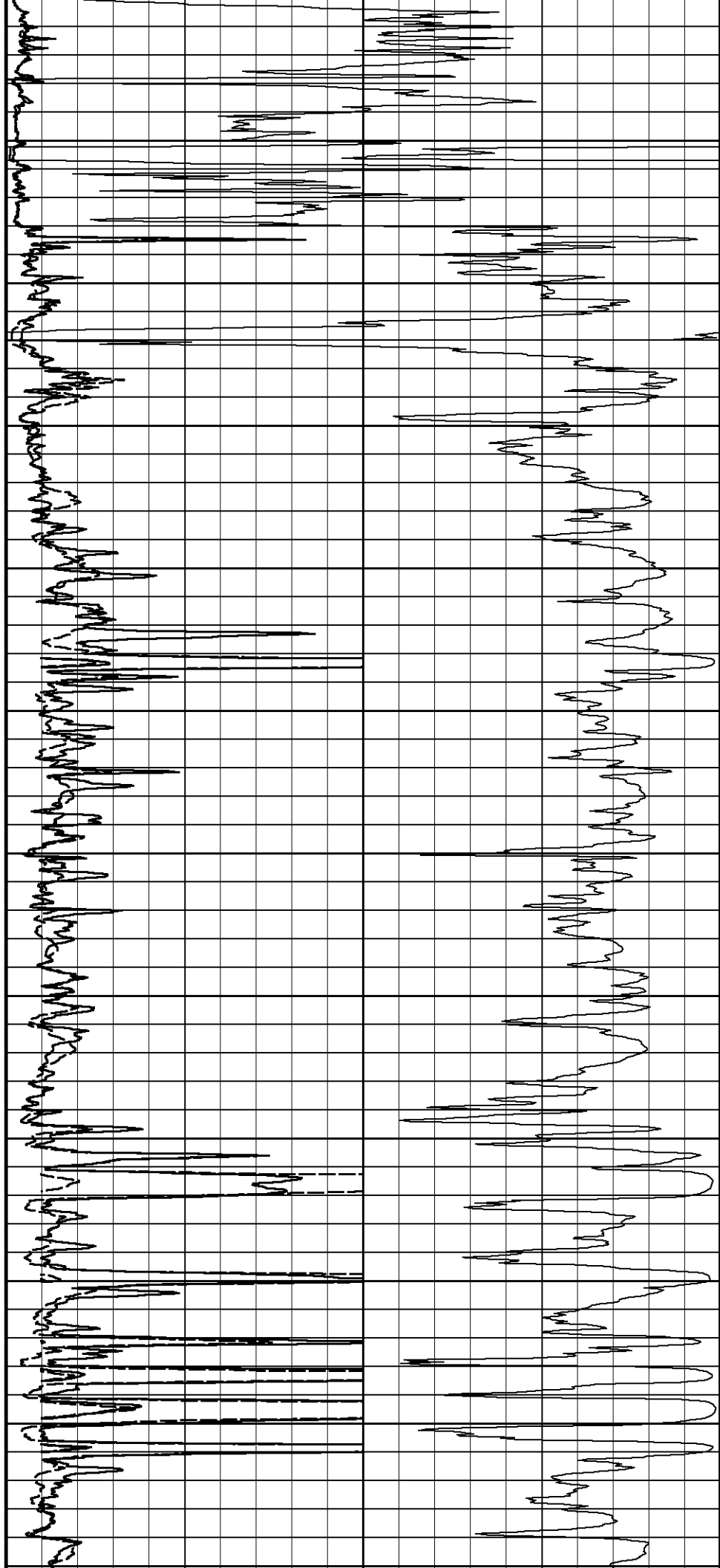
1500

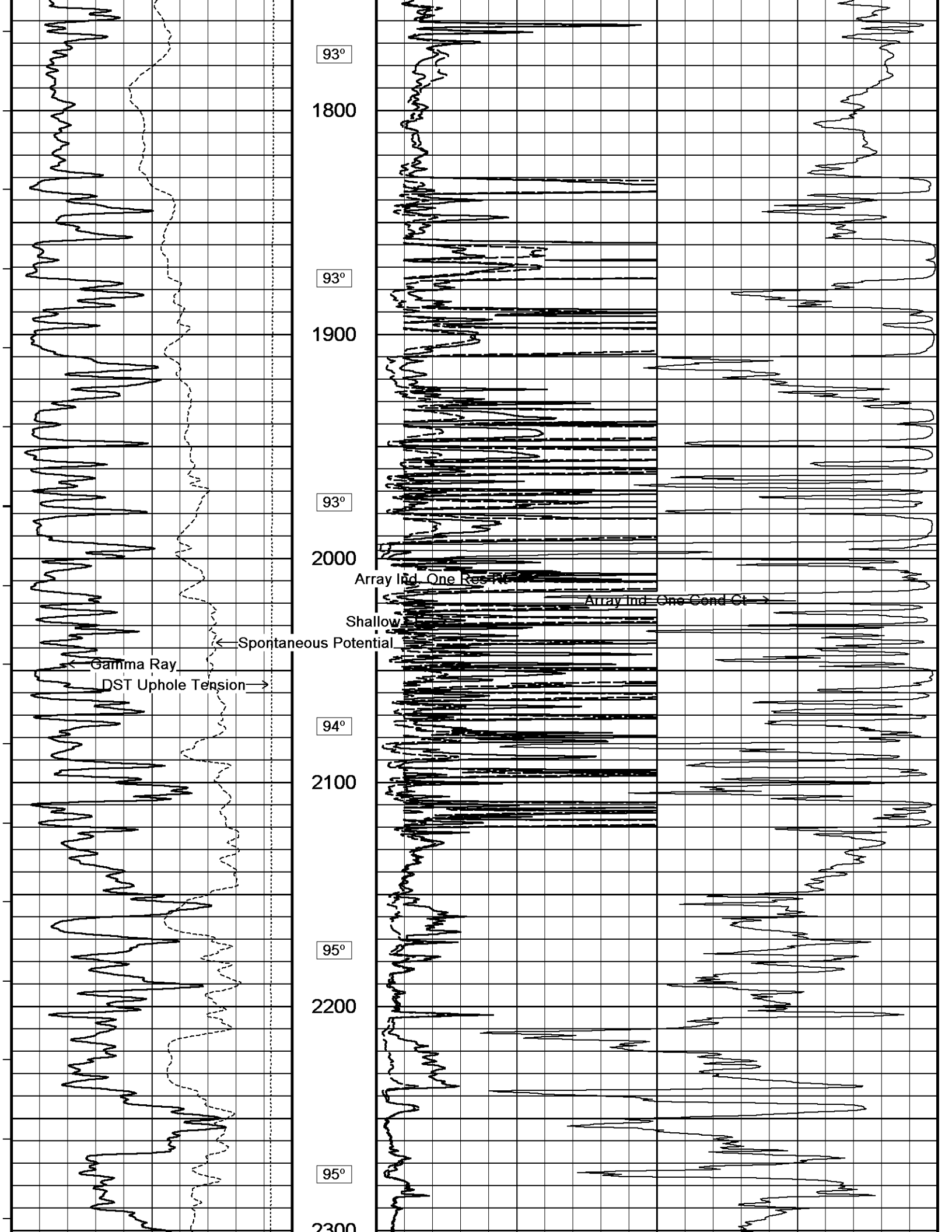
92°

1600

93°

1700





93°

1800

93°

1900

93°

2000

Array Ind. One Res Rt

Array Ind. One Cond Ct

Shallow

← Spontaneous Potential

← Gamma Ray

DST Uphole Tension →

94°

2100

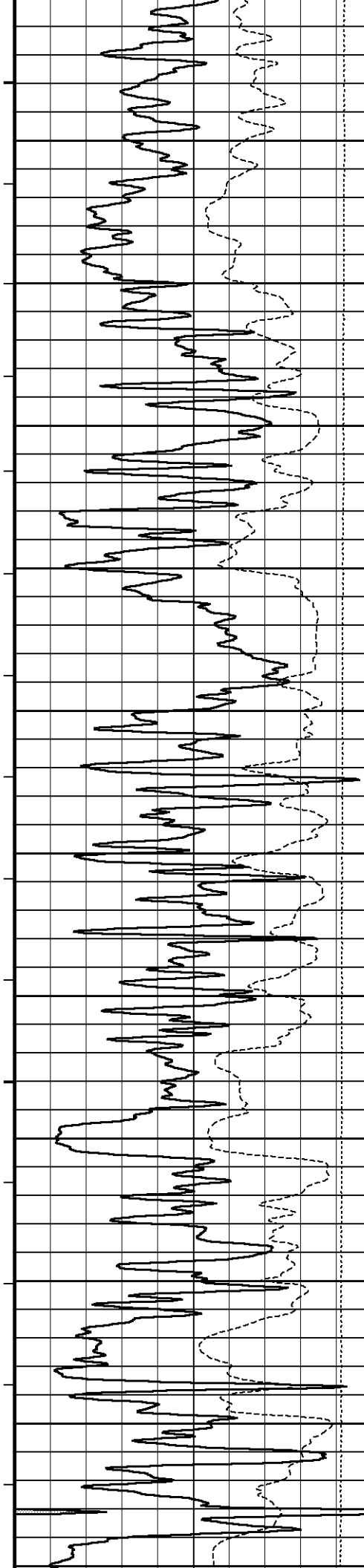
95°

2200

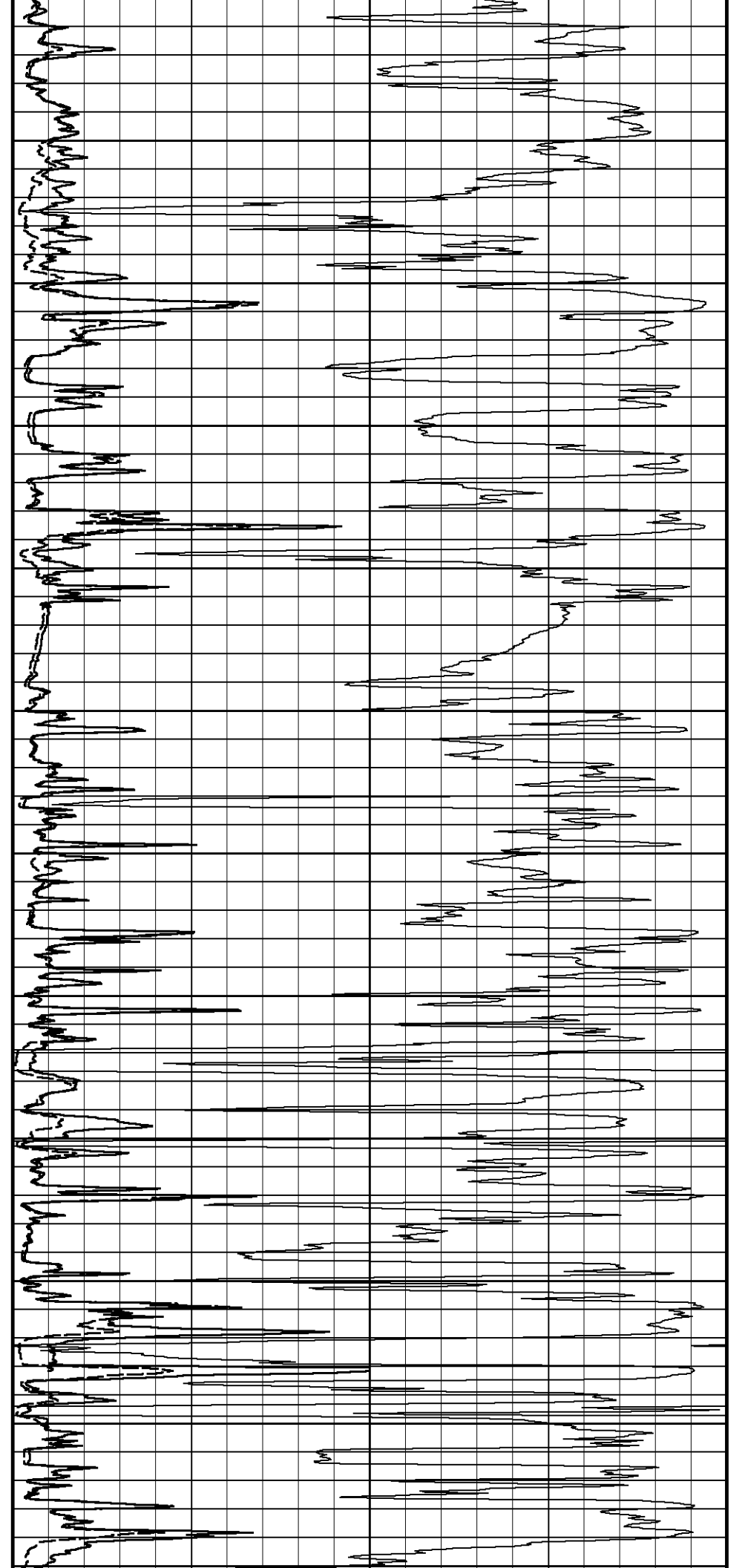
95°

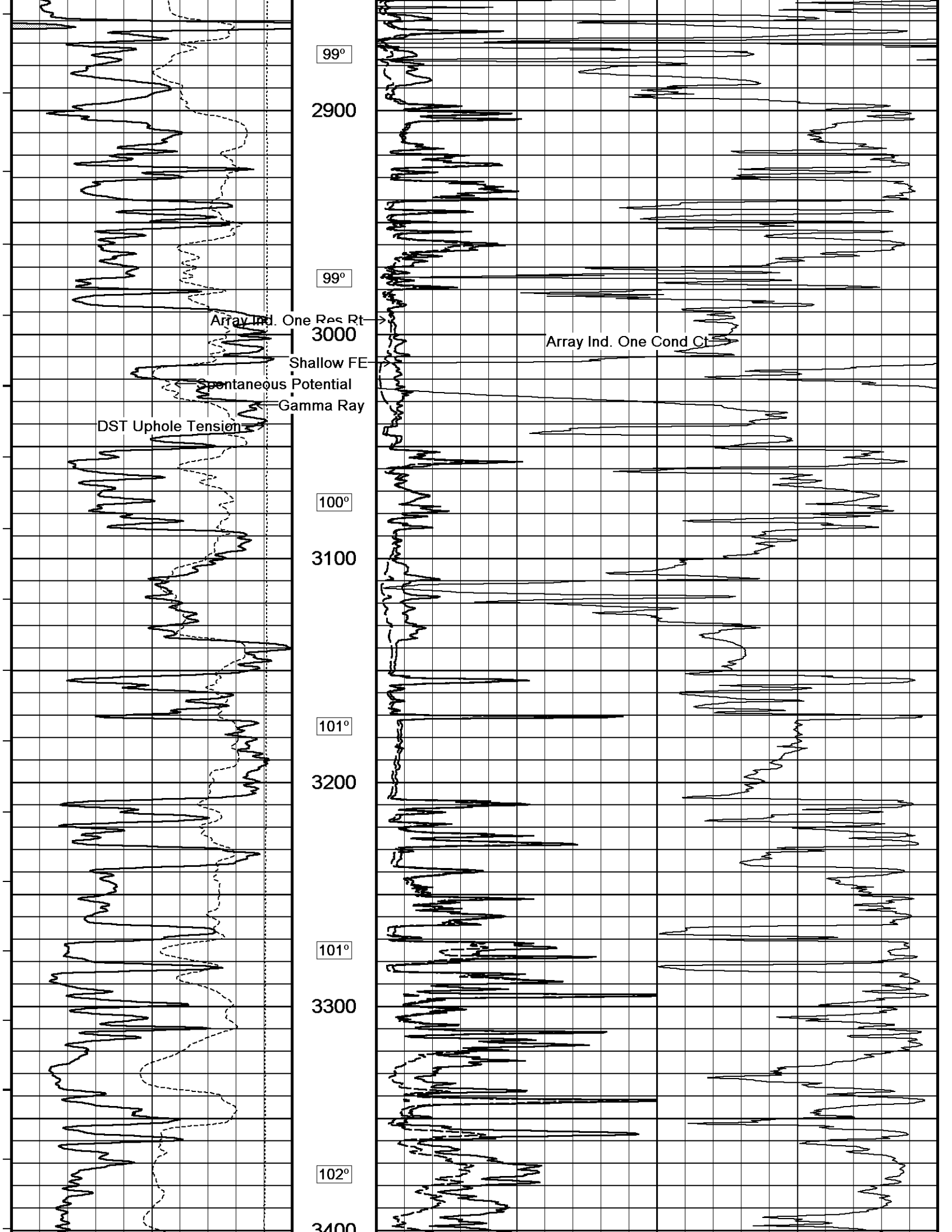
2300



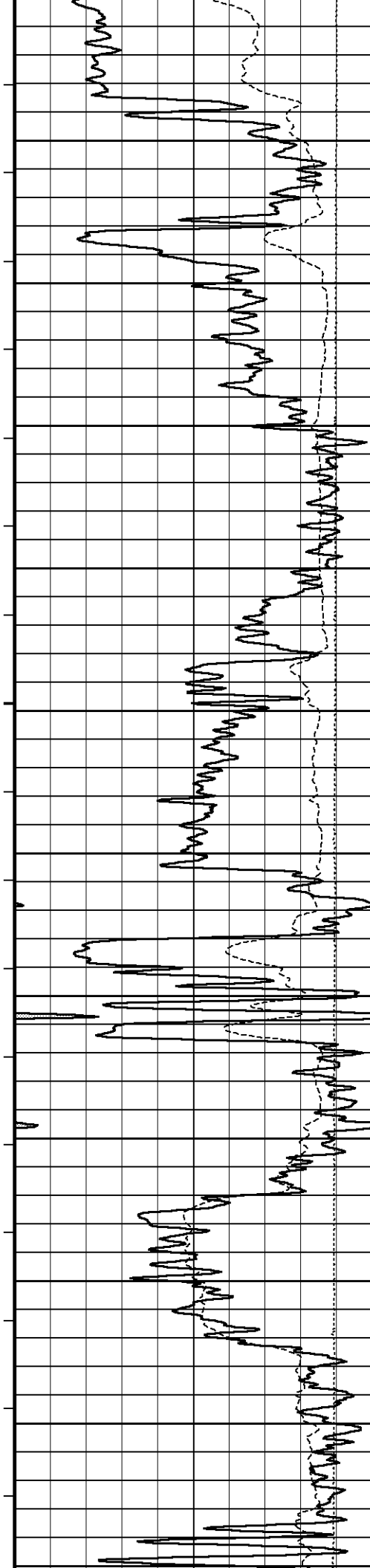


2300  
96°  
2400  
97°  
2500  
97°  
2600  
98°  
2700  
98°  
2800

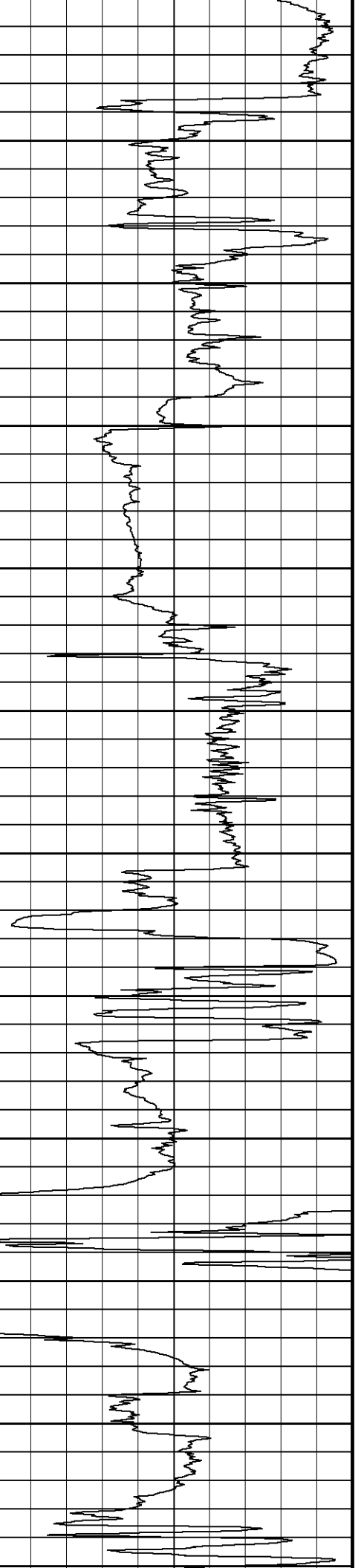
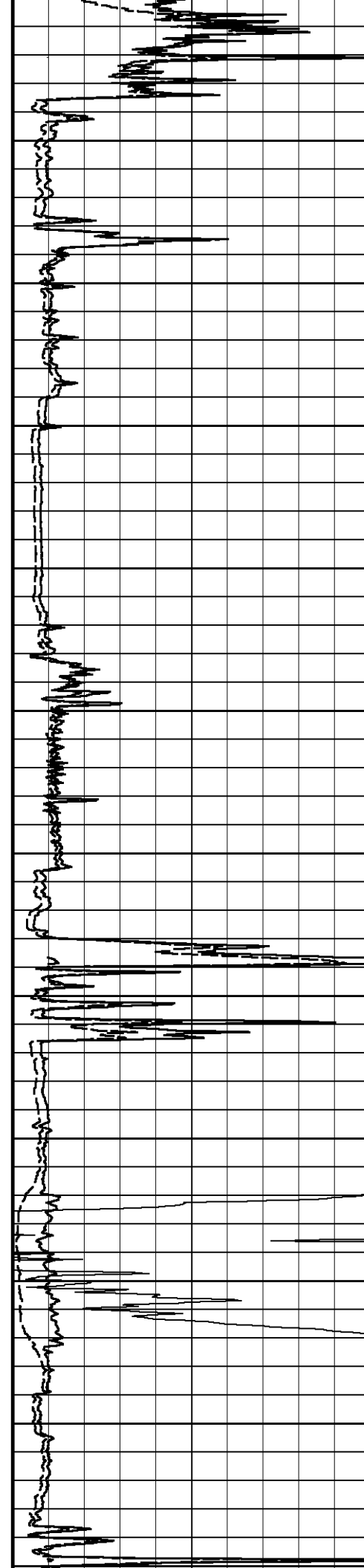


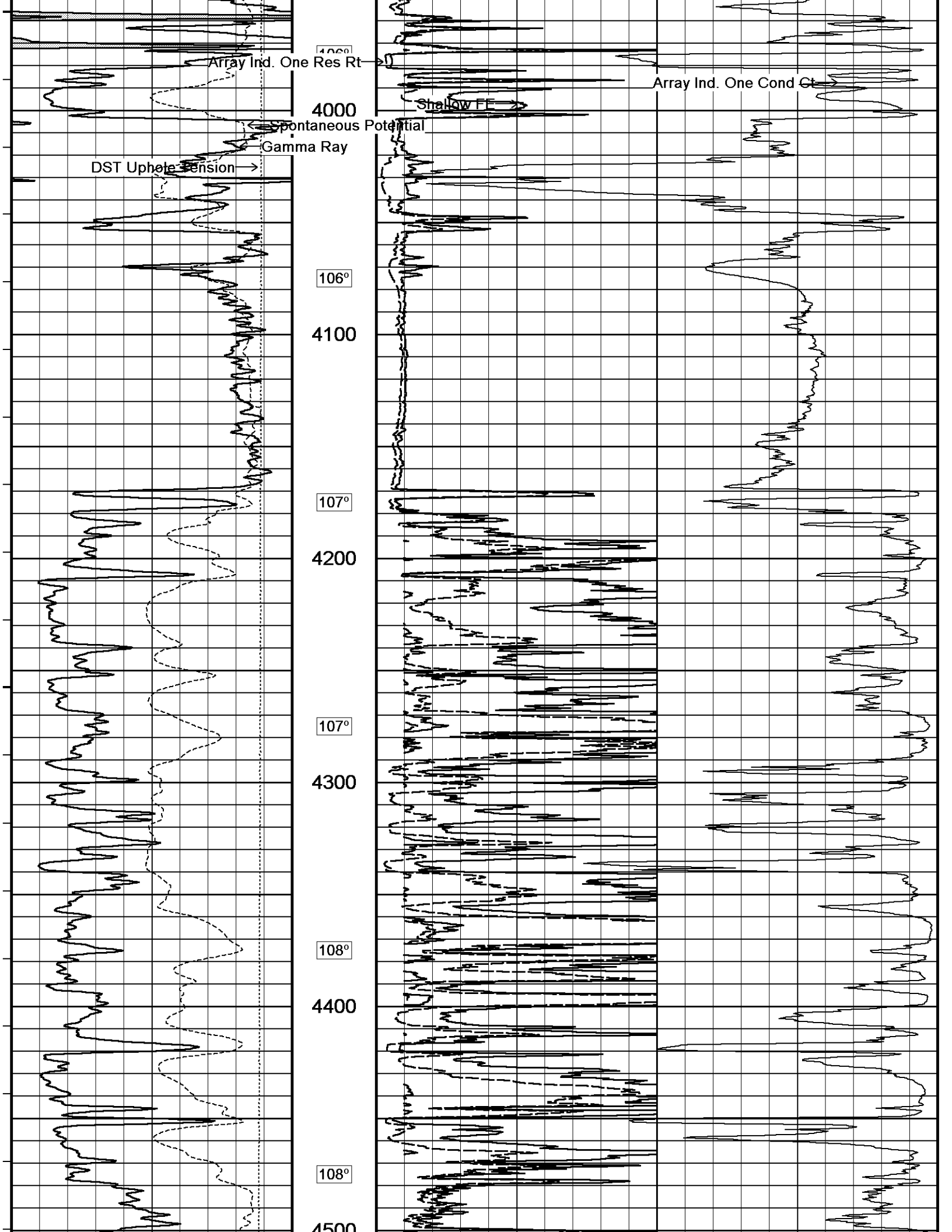




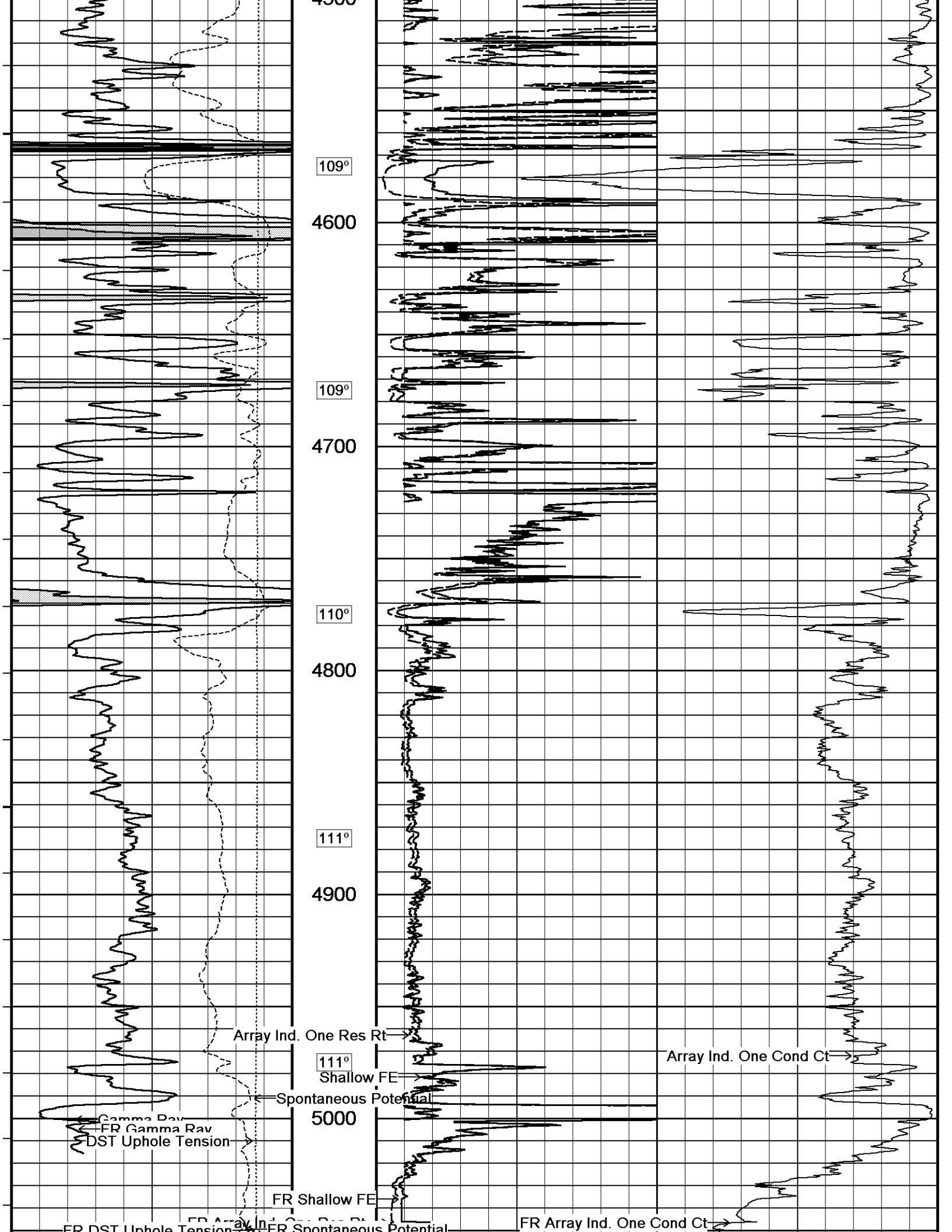


3400  
102°  
3500  
103°  
3600  
104°  
3700  
105°  
3800  
105°  
3900









109°

4600

109°

4700

110°

4800

111°

4900

111°

5000

Array Ind. One Res Rt

Shallow FE

Spontaneous Potential

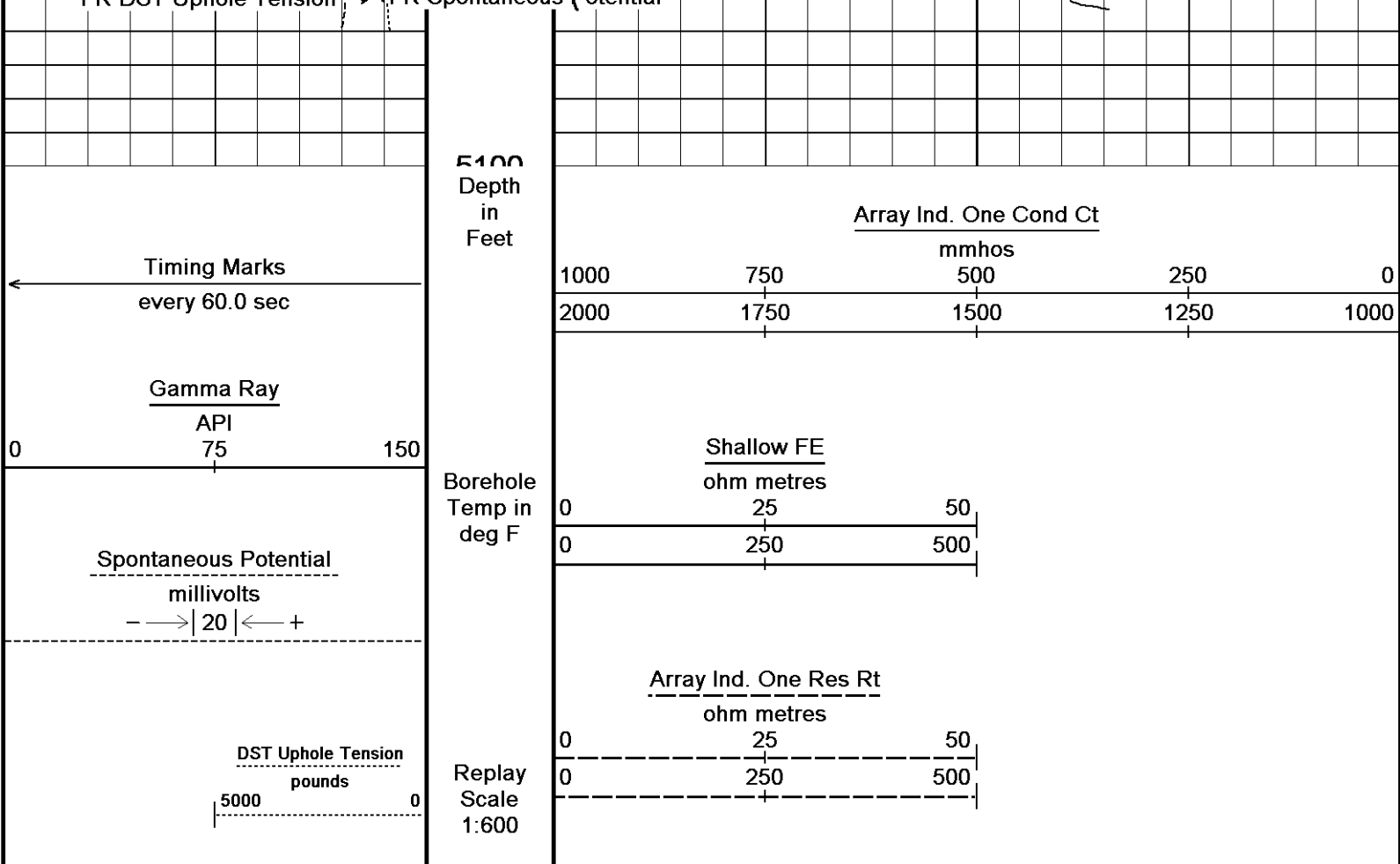
FR Shallow FE

Array Ind. One Cond Ct

FR Array Ind. One Cond Ct

Gamma Ray  
ER Gamma Ray  
DST Uphole Tension

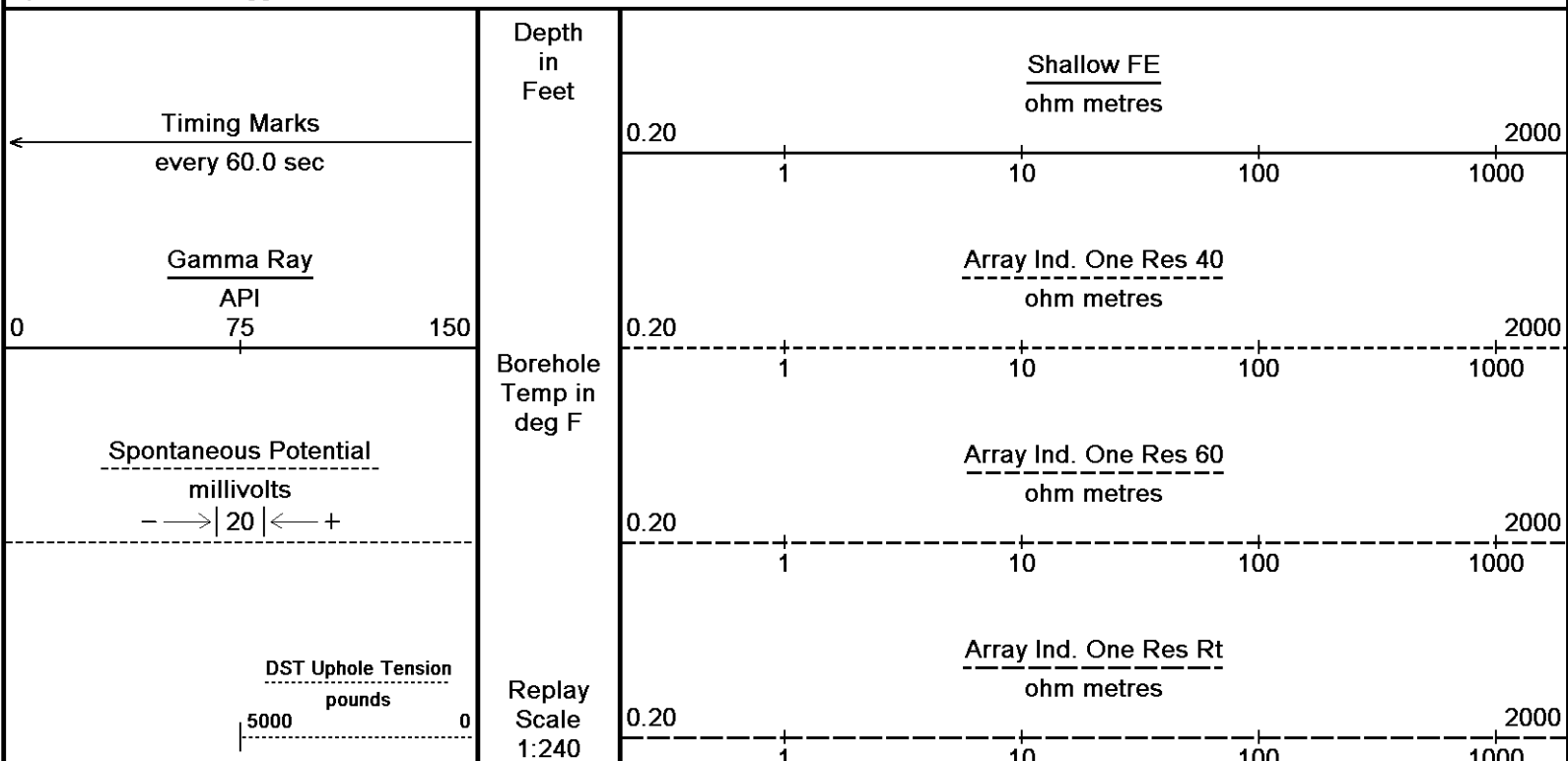
FR DST Uphole Tension  
FR Array Ind. One Res Rt  
FR Spontaneous Potential



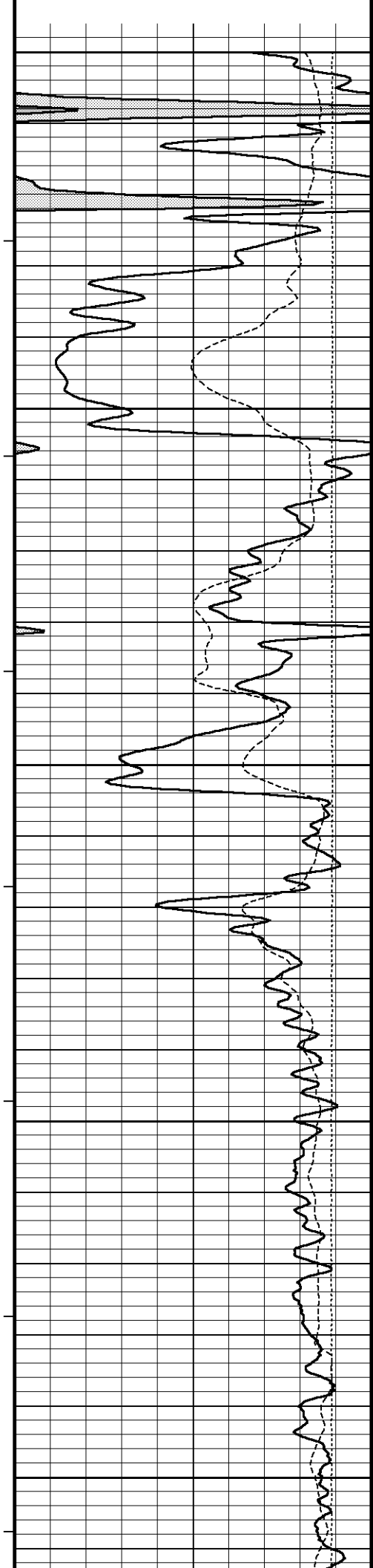
↑ 2 INCH MAIN ↑

↓ 5 INCH MAIN ↓

Depth Based Data - Maximum Sampling Increment 10.0cm  
 Plotted on 22-NOV-2011 16:52  
 Filename: C:\Minimus 11.03.4044\Data\M&M Z-Bar 17-6\M&M Z-Bar 17-6\_002.dta  
 Recorded on 22-NOV-2011 14:38  
 System Versions: Logged with 11.03.4044 Plotted with 11.03.4044







3950

106°

4000

106°

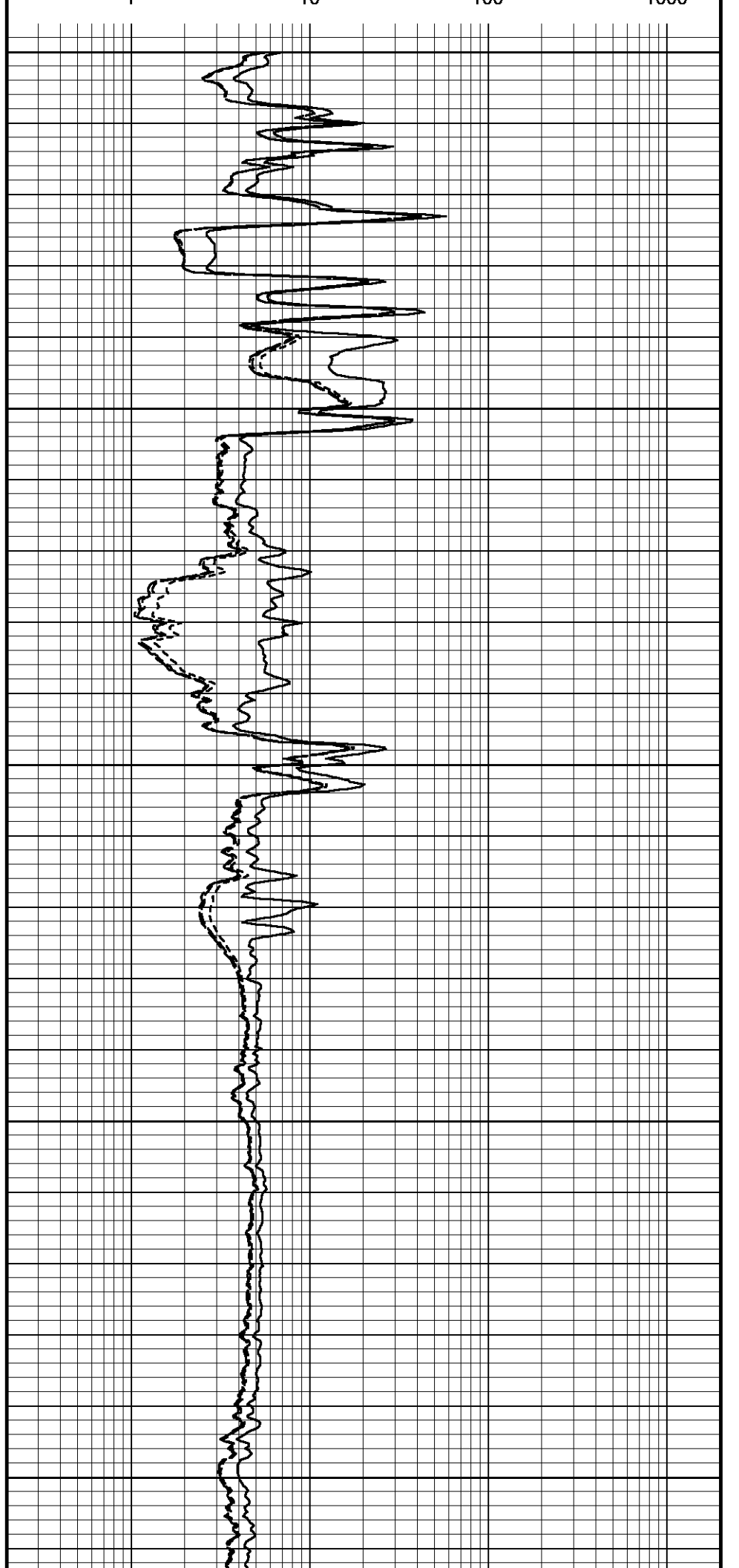
4050

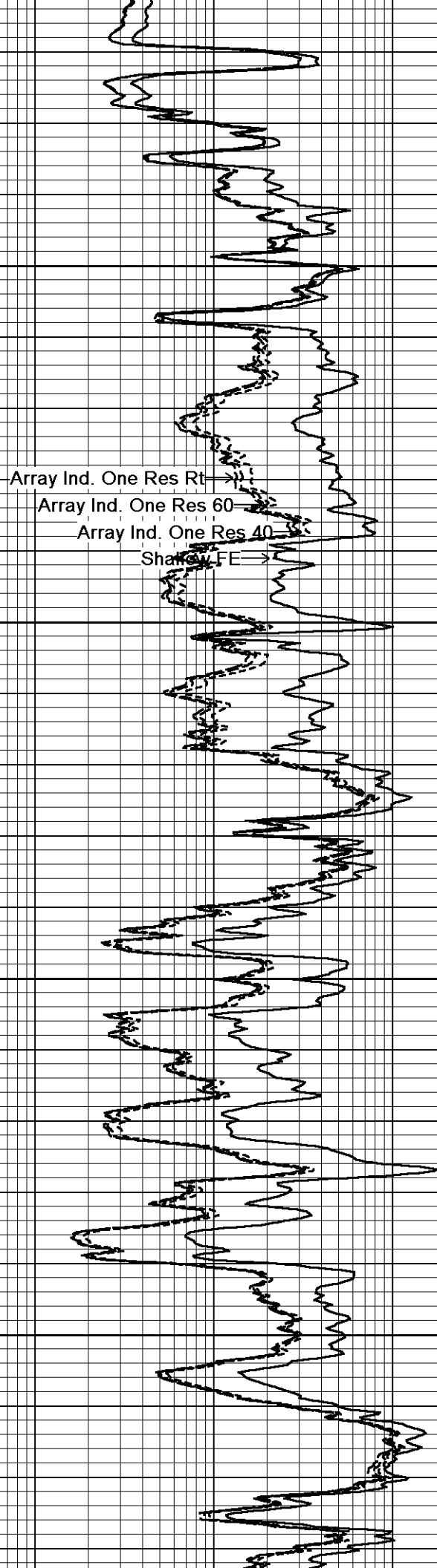
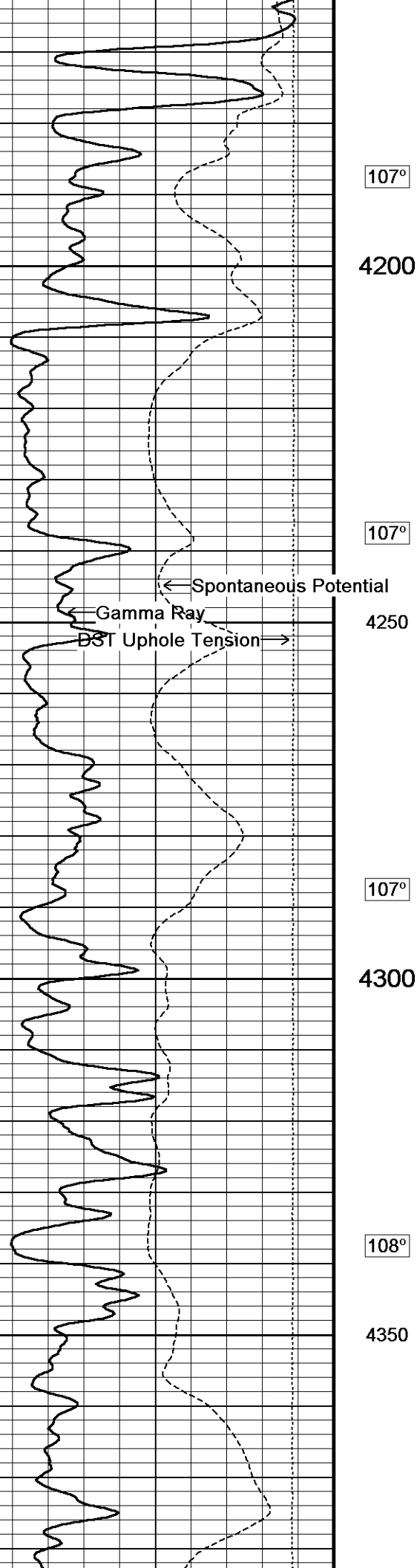
106°

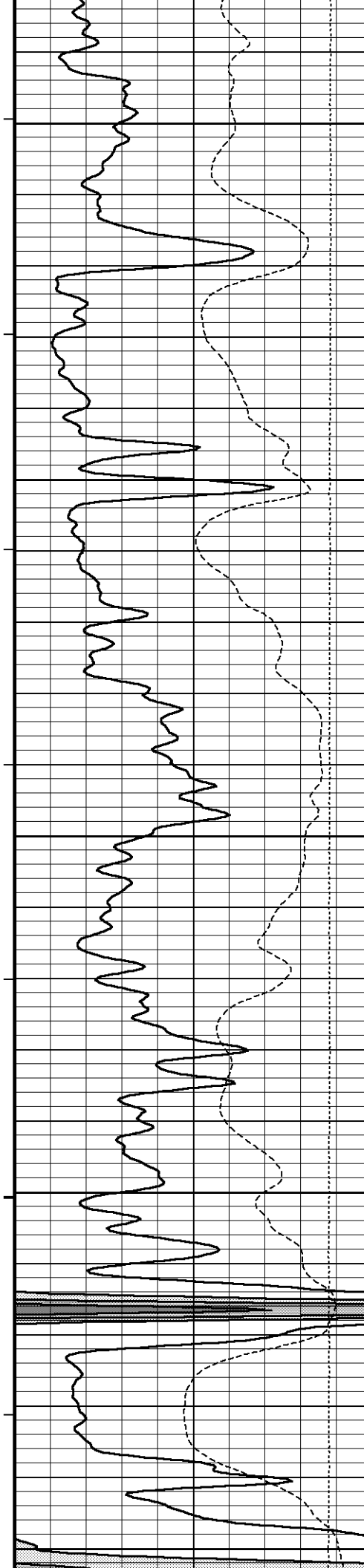
4100

106°

4150







108°

4400

108°

4450

109°

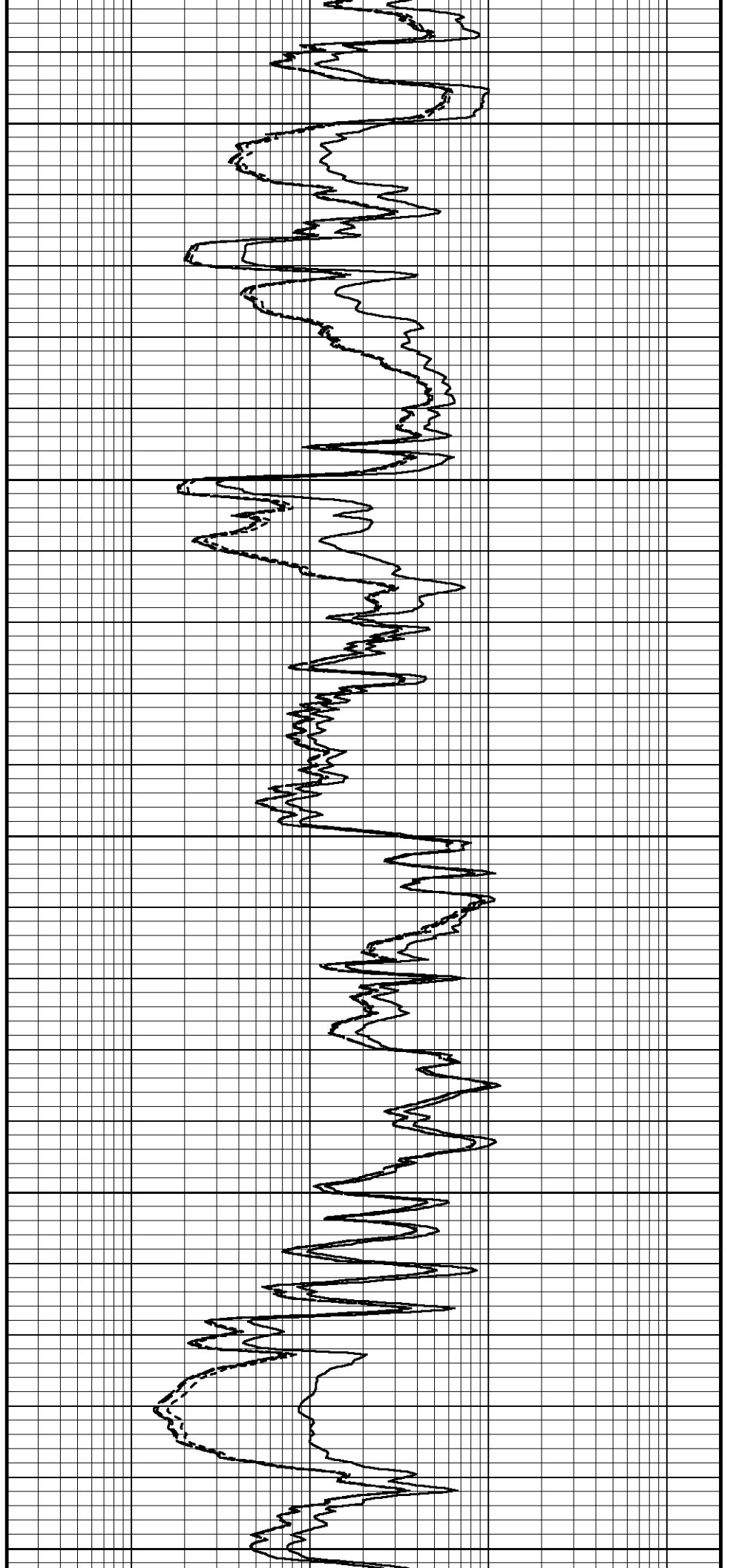
4500

109°

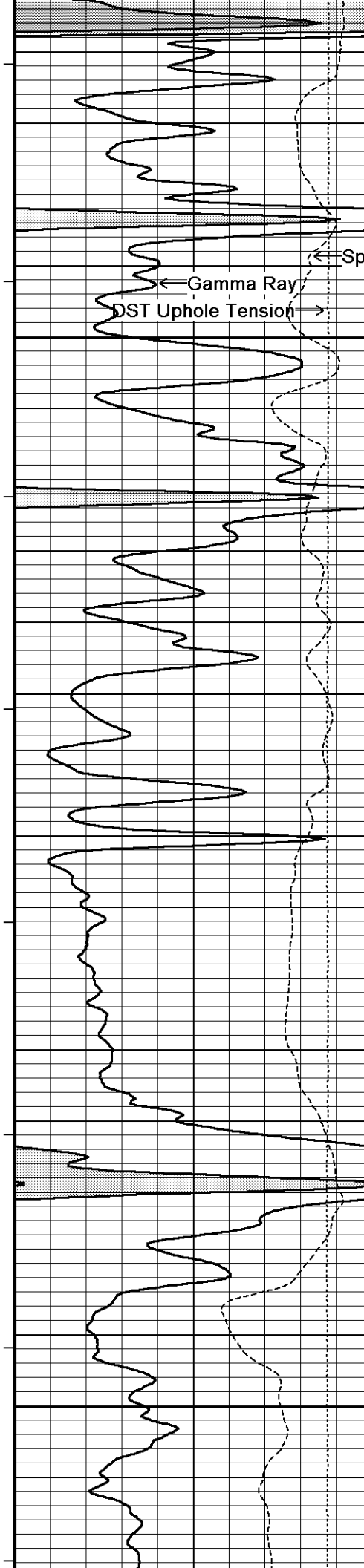
4550

109°

4600

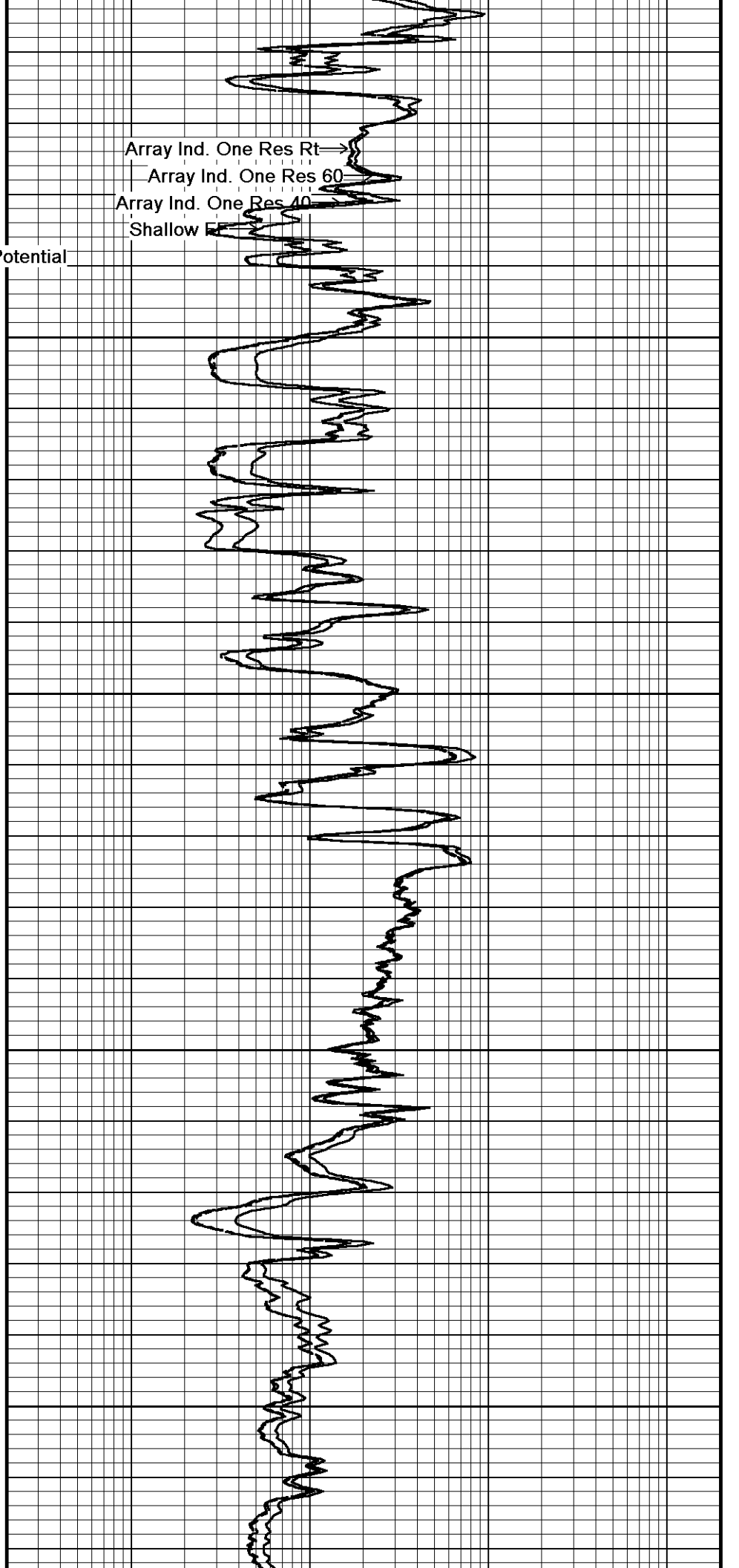


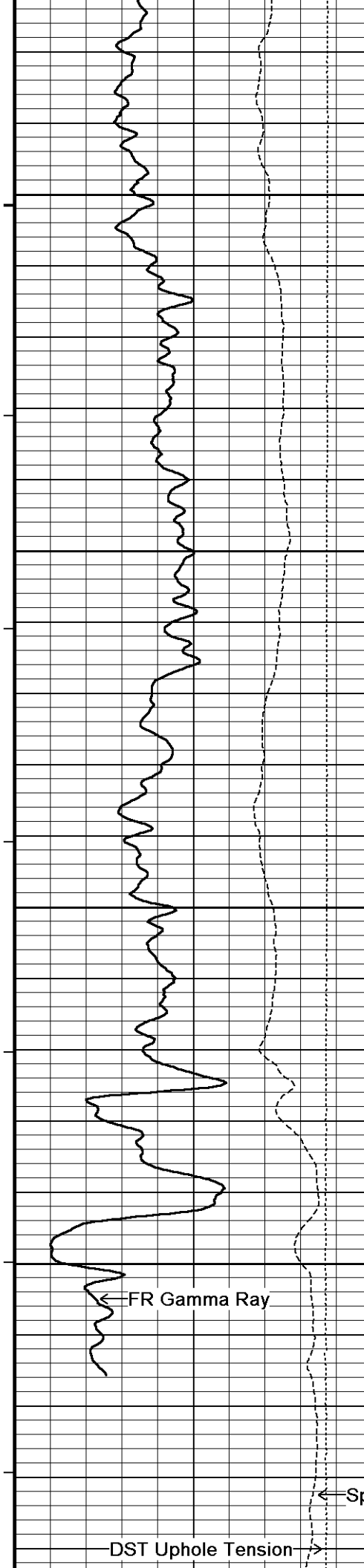




109°  
Spontaneous Potential  
4650  
109°  
4700  
109°  
4750  
110°  
4800

Array Ind. One Res Rt  
Array Ind. One Res 60  
Array Ind. One Res 40  
Shallow FF





111°

4850

111°

4900

111°

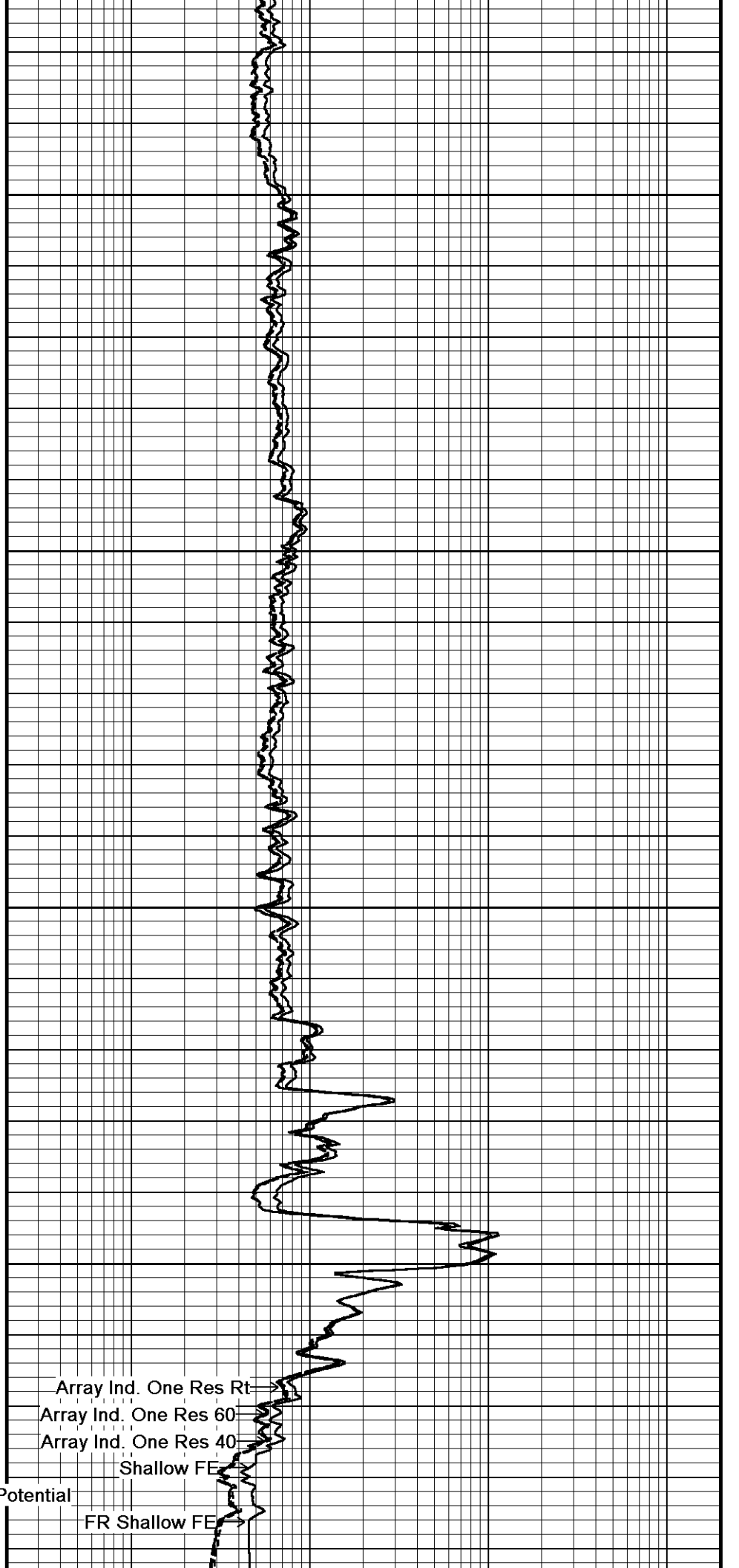
4950

111°

5000

FR Gamma Ray

DST Uphole Tension



Array Ind. One Res Rt

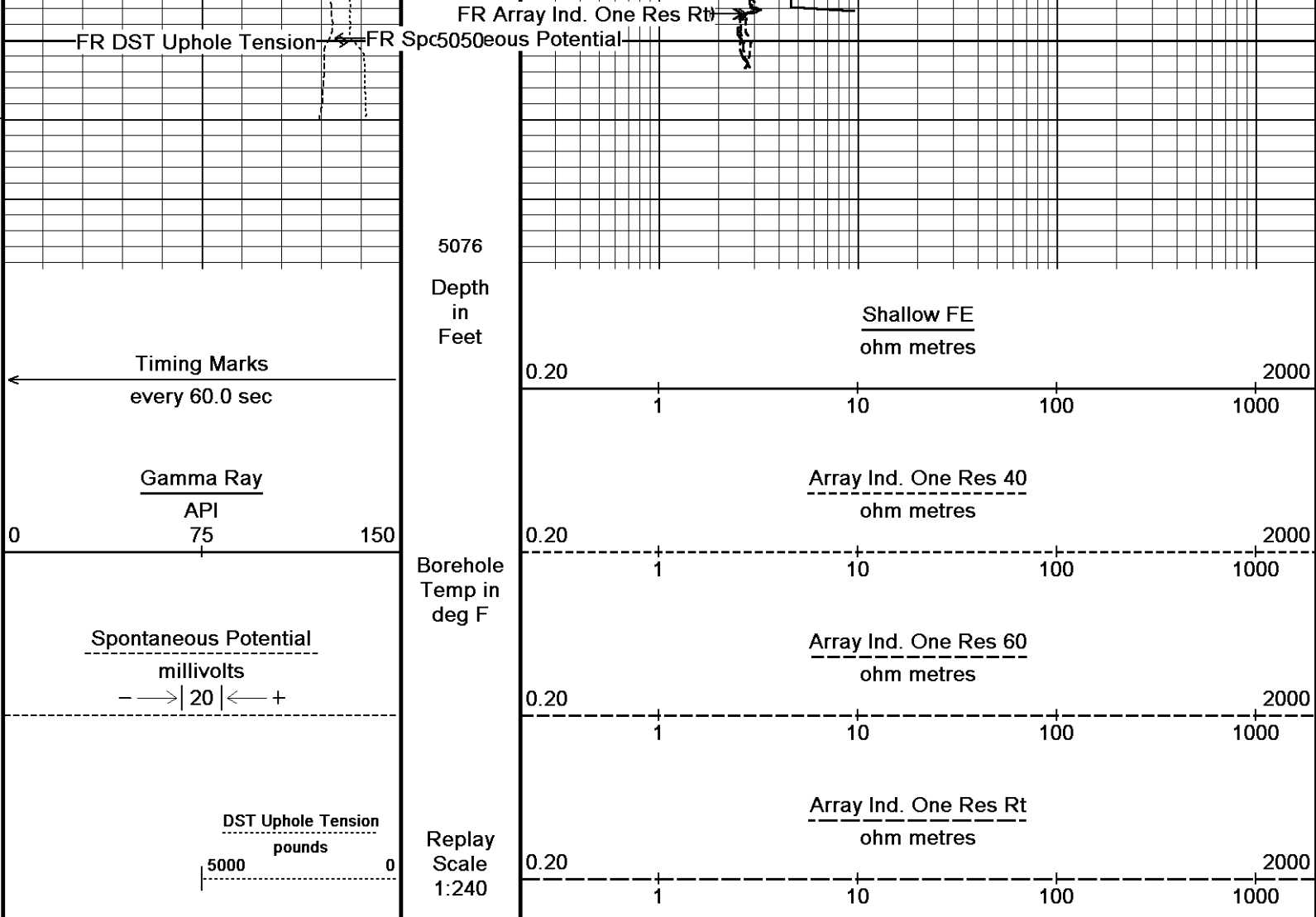
Array Ind. One Res 60

Array Ind. One Res 40

Shallow FE

FR Shallow FE

Spontaneous Potential

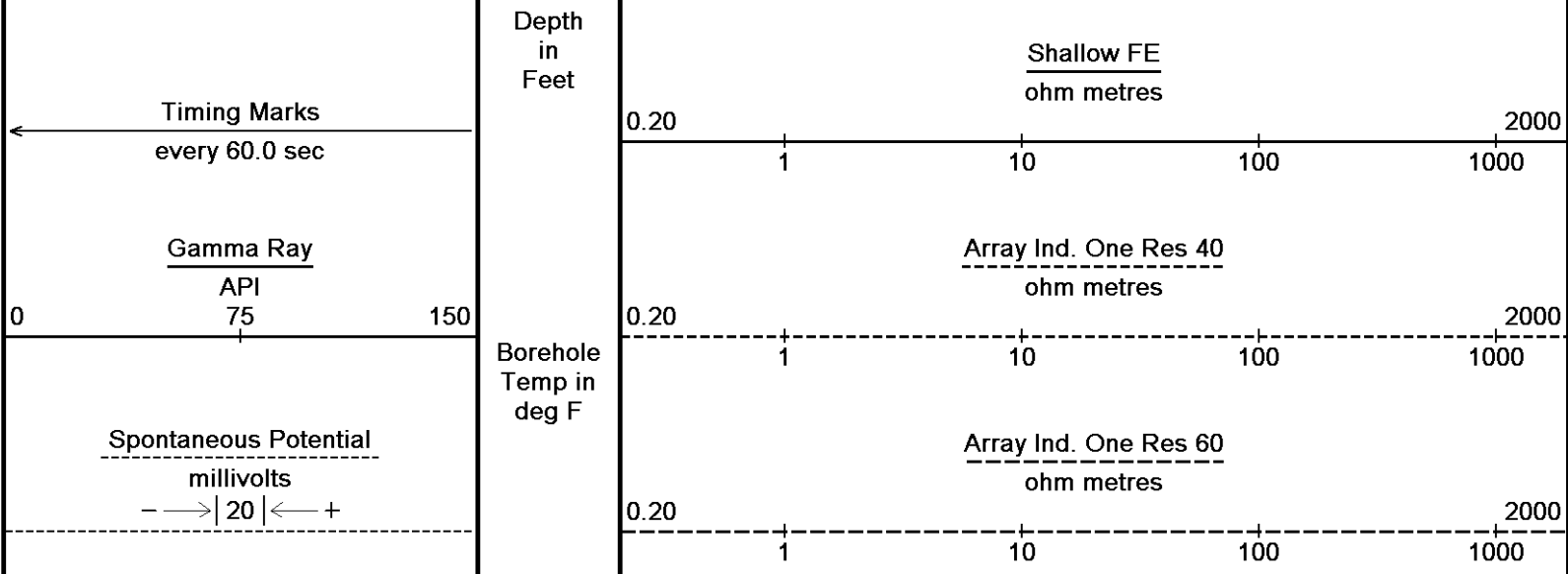


Depth Based Data - Maximum Sampling Increment 10.0cm  
 Plotted on 22-NOV-2011 16:52  
 Filename: C:\Minimus 11.03.4044\Data\M&M Z-Bar 17-6\M&M Z-Bar 17-6\_002.dta  
 Recorded on 22-NOV-2011 14:38  
 System Versions: Logged with 11.03.4044 Plotted with 11.03.4044

↑ 5 INCH MAIN ↑

↓ REPEAT SECTION ↓

Depth Based Data - Maximum Sampling Increment 10.0cm  
 Plotted on 22-NOV-2011 16:52  
 Filename: C:\Minimus 11.03.4044\Data\M&M Z-Bar 17-6\M&M Z-Bar 17-6\_001.dta  
 Recorded on 22-NOV-2011 14:15  
 System Versions: Logged with 11.03.4044 Plotted with 11.03.4044





DST Uphole Tension  
pounds

5000 0

Replay  
Scale  
1:240

Array Ind. One Res Rt  
ohm metres

0.20

2000

1

10

100

1000

4750

110°

4800

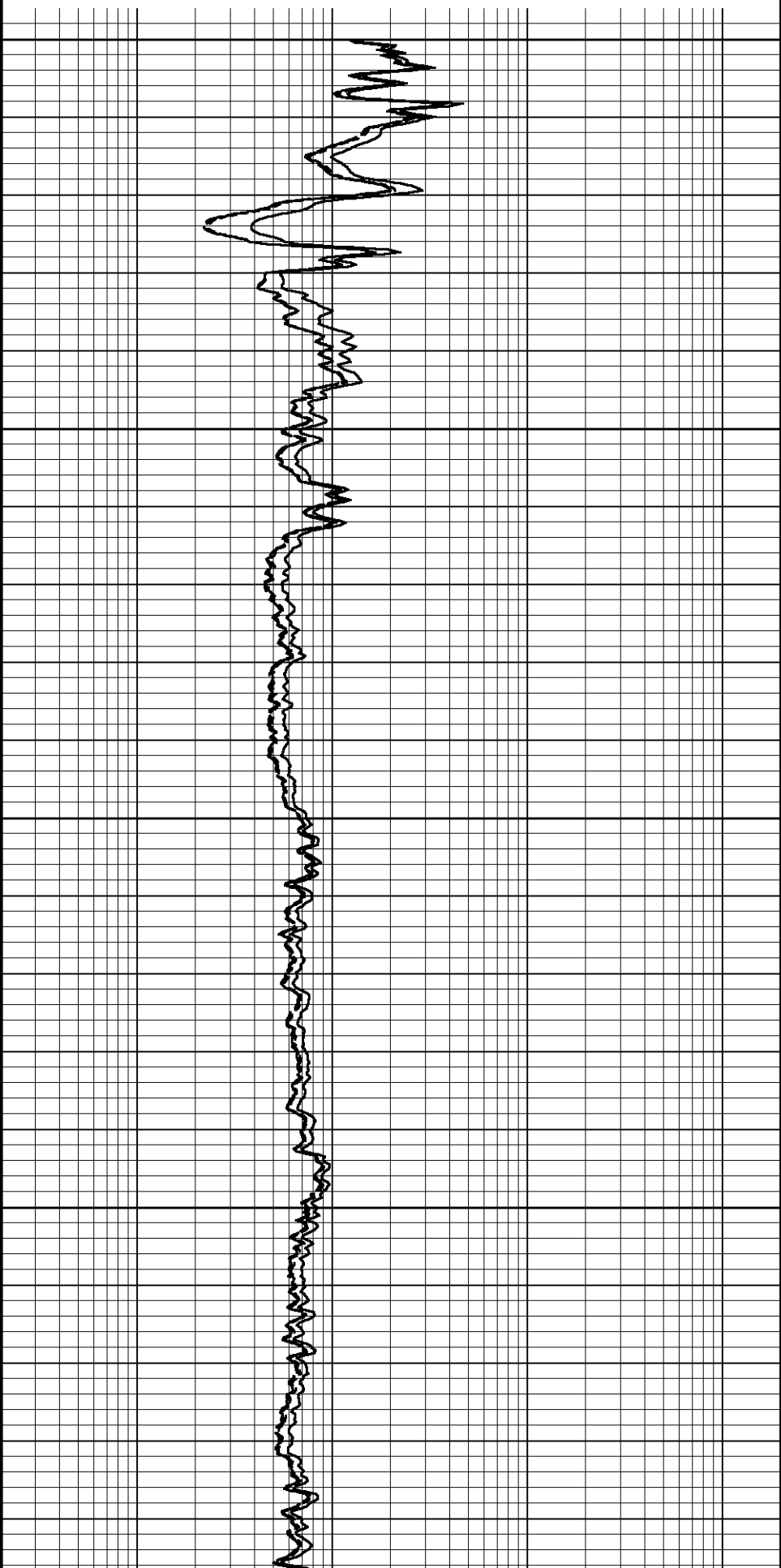
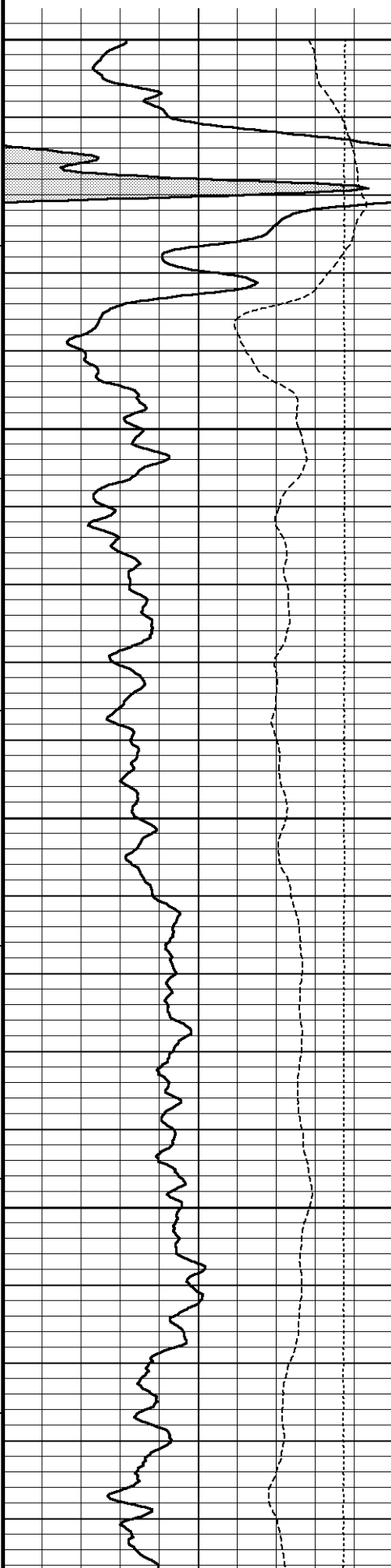
111°

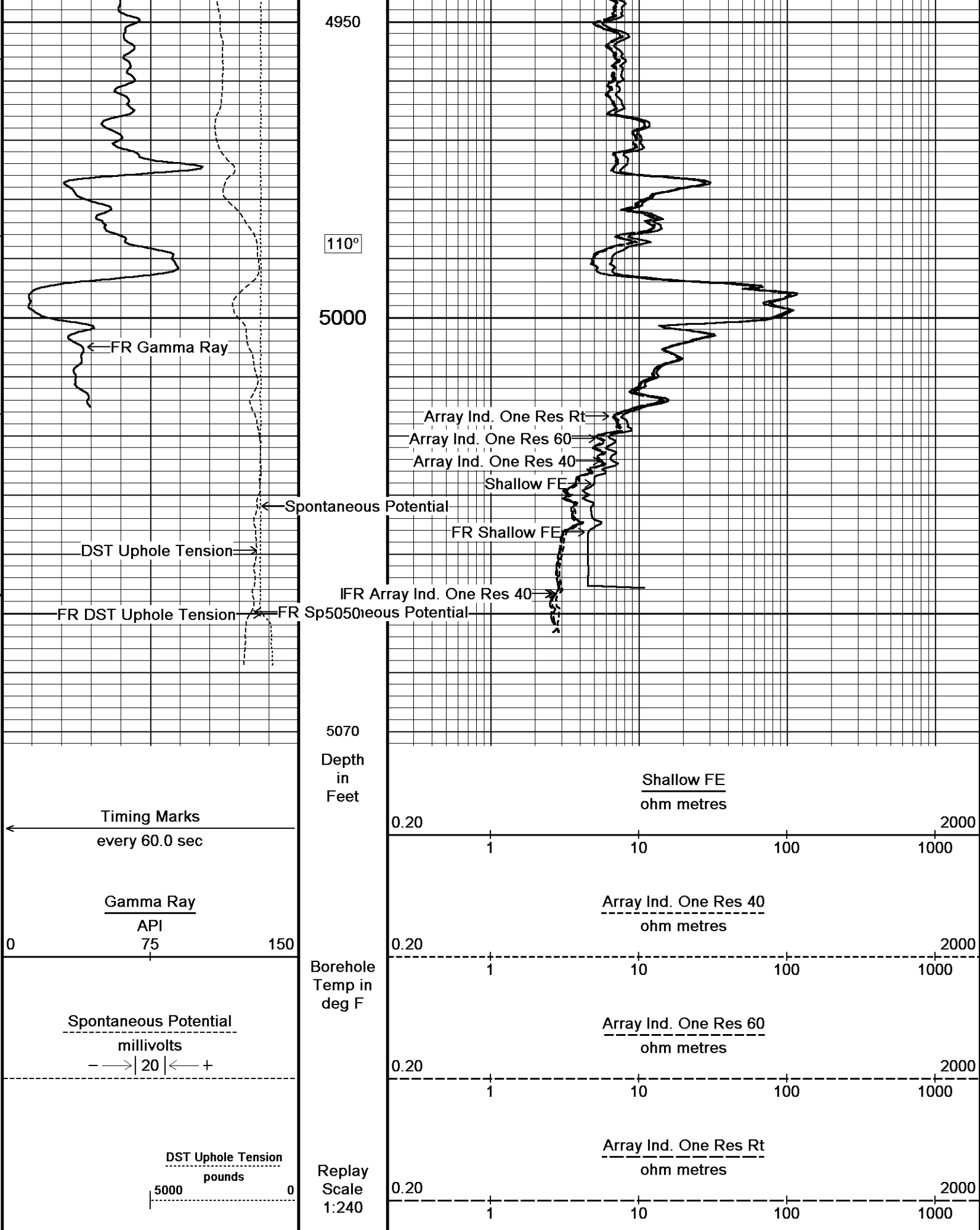
4850

110°

4900

110°







## BEFORE SURVEY CALIBRATION

C:\Minimus 11.03.4044\Data\M&amp;M Z-Bar 17-6\M&amp;M Z-Bar 17-6.dta

## Down-hole Tension Calibration All 000

Field Calibration on 30-JUN-2010

Reading No	Measured	Calibrated (lbs)
1	14112.01	10.00
2	15164.79	427.00

## General Constants All 000

Last Edited on 22-NOV-2011,10:58

## General Parameters

Mud Resistivity	0.850	ohm-metres
Mud Resistivity Temperature	76.000	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	4.500	inches
Caliper for Differential Caliper	Density Caliper	

## Rwa Parameters

Porosity used	Base Density Porosity	
Resistivity used	Array Ind. One Res Rt	
RWA Constant A	1.000	
RWA Constant M	2.000	

## Down-hole Tension Calibration SMS 0

Field Calibration on 10-SEP-2011 04:32

Reading No	Measured	Calibrated (lbs)
1	-2243.52	0.00
2	-2203.03	480.60

## High Resolution Temperature Calibration MCG-C 139

Field Calibration on 02-AUG-2011,17:13

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

## High Resolution Temperature Constants MCG-C 139

Last Edited on

Pre-filter Length	11
-------------------	----

## SP Calibration MCG-C 139

Field Calibration on 29-AUG-2011 09:25

	Measured	Calibrated (mV)
Reference 1	103.7	100.0
Reference 2	-96.7	-100.0

## Gamma Calibration MCG-C 139

Field Calibration on 22-NOV-2011 03:21

	Measured	Calibrated (API)
Background	77	52
Calibrator (Gross)	1148	777
Calibrator (Net)	1071	725

## Gamma Constants MCG-C 139

Last Edited on 22-NOV-2011,08:25

Gamma Calibrator Number	grc38	
Mud Density	1.08	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm

## Micro Normal and Micro Inverse Calibration MML-A 16

Base Calibration on 15-NOV-2011 08:45

Field Check on 22-NOV-2011 03:13

Base Calibration

Channel	Measured		Calibrated (ohm-m)	
	Resistor 1	Resistor 2	Resistor 1	Resistor 2
Micro Normal	12.1	60.2	2.6	12.8
Micro Inverse	15.7	78.4	1.7	8.4

Channel	Base Check (ohm-m)		Field Check (ohm-m)	
	Micro Normal		32.1	
Micro Inverse		16.3		16.3

**Micro Normal and Micro Inverse Constants MML-A 16**

Last Edited on 15-NOV-2011,15:23

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 16**

Base Calibration on 15-NOV-2011 08:38  
Field Calibration on 22-NOV-2011 03:14

Base Calibration			
Reading No	Measured	Calibrator Size (in)	
1	14184	5.98	
2	17582	7.97	
3	20836	9.86	
4	24886	11.92	
5	0	0.00	
6	N/A	N/A	

Field Calibration		
	Measured Caliper (in)	Actual Caliper (in)
	6.02	5.98

**Neutron Calibration MDN-A.B 66**

Base Calibration on 17-OCT-2011 14:32  
Field Check on 22-NOV-2011 03:26

Base Calibration					
	Measured		Calibrated (cps)		
	Near	Far	Near	Far	
Ratio	3086	97	3714	110	
	31.796		33.764		

Field Calibrator at Base		
	Calibrated (cps)	
Ratio	1659	2358
	0.704	

Field Check		
	Calibrated (cps)	
Ratio	1647	2359
	0.698	

**Neutron Constants MDN-A.B 66**

Last Edited on 22-NOV-2011,03:21

Neutron Source Id	P58125B		
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	
Formation Fluid Salinity Source	Constant Value		
Formation Fluid Salinity	0.00	kppm	
Barite Mud Correction	Not Applied		

**FE Calibration MFE-A.A 52**

Base Calibration on 15-NOV-2011 08:59  
Field Check on 22-NOV-2011 03:03

Base Calibration		
	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0



Reference 2	965.0	126.8
Base Check		280.1
Field Check		280.0

FE Constants MFE-A.A 52		Last Edited on 22-NOV-2011,03:02	
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	

High Resolution Temperature Calibration MAI-A.A 167			Field Calibration on 28-OCT-2011,10:01
	Measured	Calibrated(Deg F)	
Lower	1.00	33.80	
Upper	11.00	51.80	

High Resolution Temperature Constants MAI-A.A 167		Last Edited on
Pre-filter Length	11	

Induction Calibration MAI-A.A 167		Base Calibration on 11-MAR-2011,09:58	
		Field Check on 22-NOV-2011 03:01	
Base Calibration			
Test Loop Calibration			
	Measured	Calibrated (mmho/m)	
Channel	Low High	Low	High
1	17.3 474.2	9.3	966.2
2	6.3 388.4	7.6	821.4
3	3.3 259.4	5.2	566.0
4	1.9 133.0	2.6	279.2
Array Temperature	76.8	Deg F	
Channel			
	Base Check (mmho/m)	Field Check (mmho/m)	
	Low High	Low	High
1	0.0 0.0	12.9	3840.0
2	0.0 0.0	29.5	3477.3
3	0.0 0.0	29.0	3053.1
4	0.0 0.0	19.7	2081.6
Deep	0.0 0.0	18.5	2048.8
Medium	0.0 0.0	42.2	3991.3
Shallow	0.0 0.0	43.0	5055.0
Array Temperature	0.0	70.8	Deg F

Induction Constants MAI-A.A 167		Last Edited on 22-NOV-2011,02:59	
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	

Caliper Calibration MPD-B 35

Base Calibration on 15-NOV-2011 10:23  
Field Calibration on 22-NOV-2011 03:04

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	20351	3.99
2	30291	5.98
3	40582	7.97
4	50158	9.86
5	60743	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
5.94	5.98

Photo Density Calibration MPD-B 35

Base Calibration on 15-NOV-2011 10:46  
Field Check on 22-NOV-2011 03:12

Density Calibration

Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	57280	27020	59556	30836
Reference 2	23374	2567	24941	2541

Field Check at Base

1159.9	1374.4
--------	--------

Field Check

1152.3	1369.5
--------	--------

PE Calibration

Base Calibration	WS	Measured		Calibrated Ratio
		WH	Ratio	
Background	207	1024		
Reference 1	21400	57084	0.378	0.371
Reference 2	6184	23227	0.269	0.272

Field Check at Base

206.8	1023.7
-------	--------

Field Check

206.6	1018.1
-------	--------

Density Constants MPD-B 35

Last Edited on 22-NOV-2011,08:25

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

DNC1	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

C:\Minimus 11.03.4044\Data\M&M Z-Bar 17-6\M&M Z-Bar 17-6.dta

Compact Comms Gamma  
MCG-C 139 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Micro-log  
MML-A 16 LG: 7.97 ft WT: 81.6 lb OD: 2.24 in

Compact Neutron  
MDN-A.B 66 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

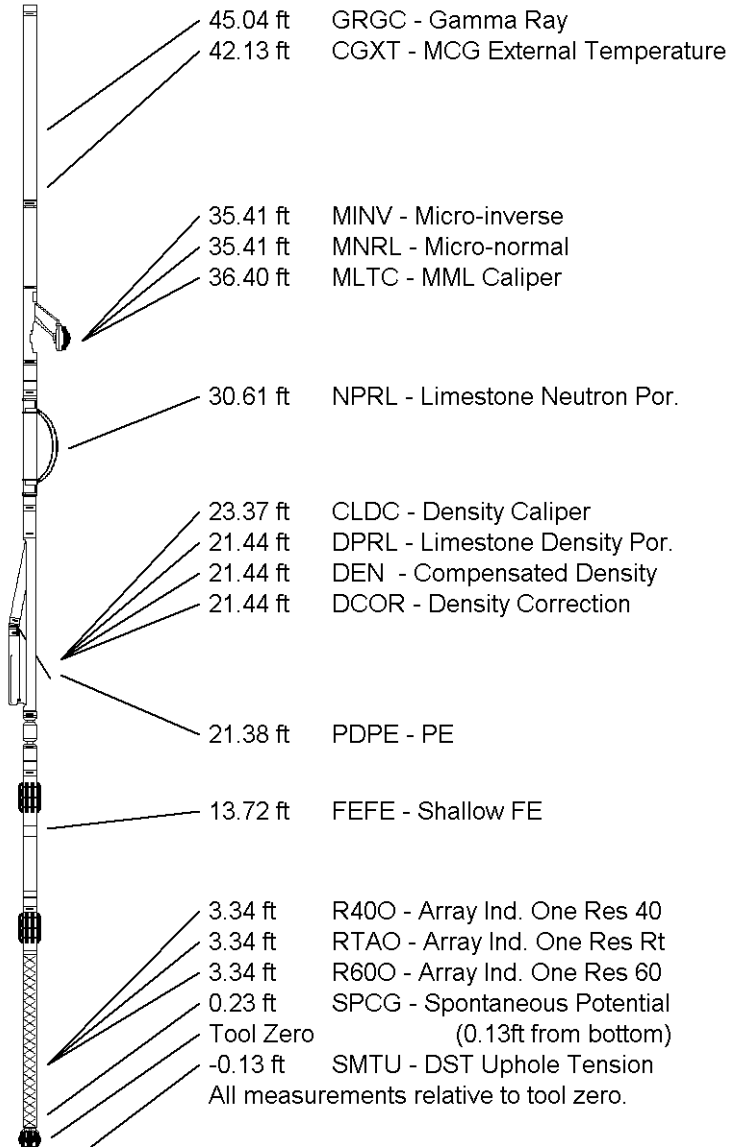
Compact Density/Caliper  
MPD-B 35 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

SKJ-D.A Compact Knuckle Joint  
SKJ-D.A 36 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

Compact Focussed Electric  
MFE-A.A 52 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

Compact Induction  
MAI-A.A 167 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 50.32 ft Weight: 407.9 lb



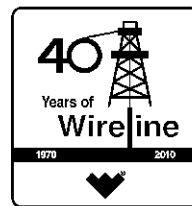
COMPANY	M&M EXPLORATION, INC.
WELL	Z-BAR #17-6
FIELD	AETNA NE
PROVINCE/COUNTY	BARBER
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	1657.00	feet	First Reading	5047.00	feet
Elevation Drill Floor	1655.00	feet	Depth Driller	5050.00	feet



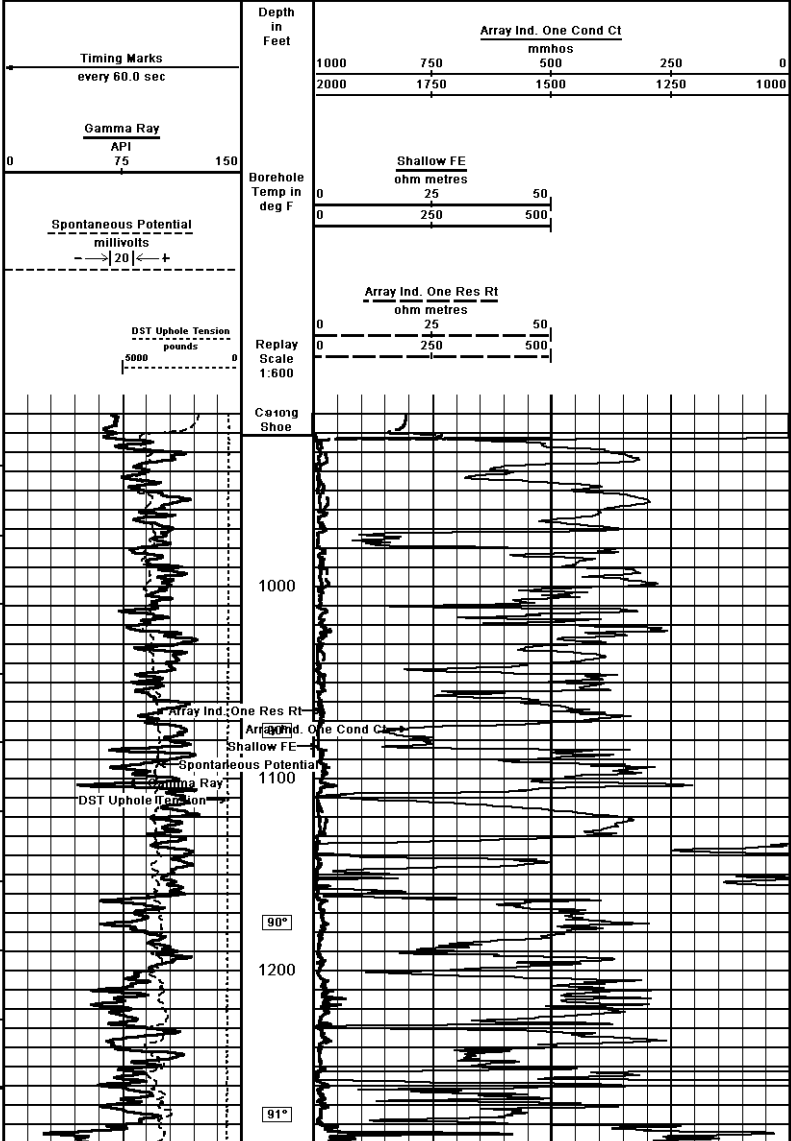
# Weatherford®

## ARRAY INDUCTION SHALLOW FOCUSED ELECTRIC LOG

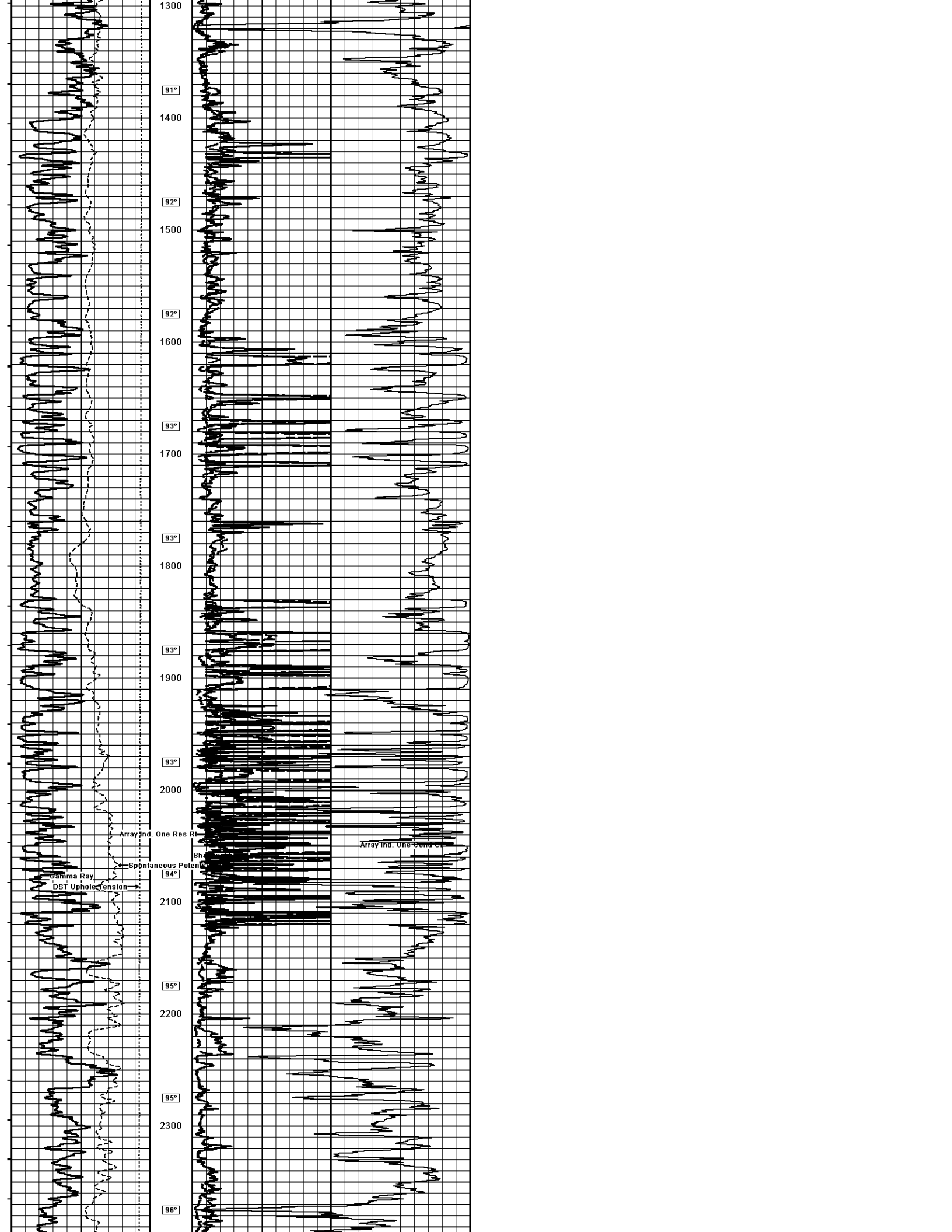


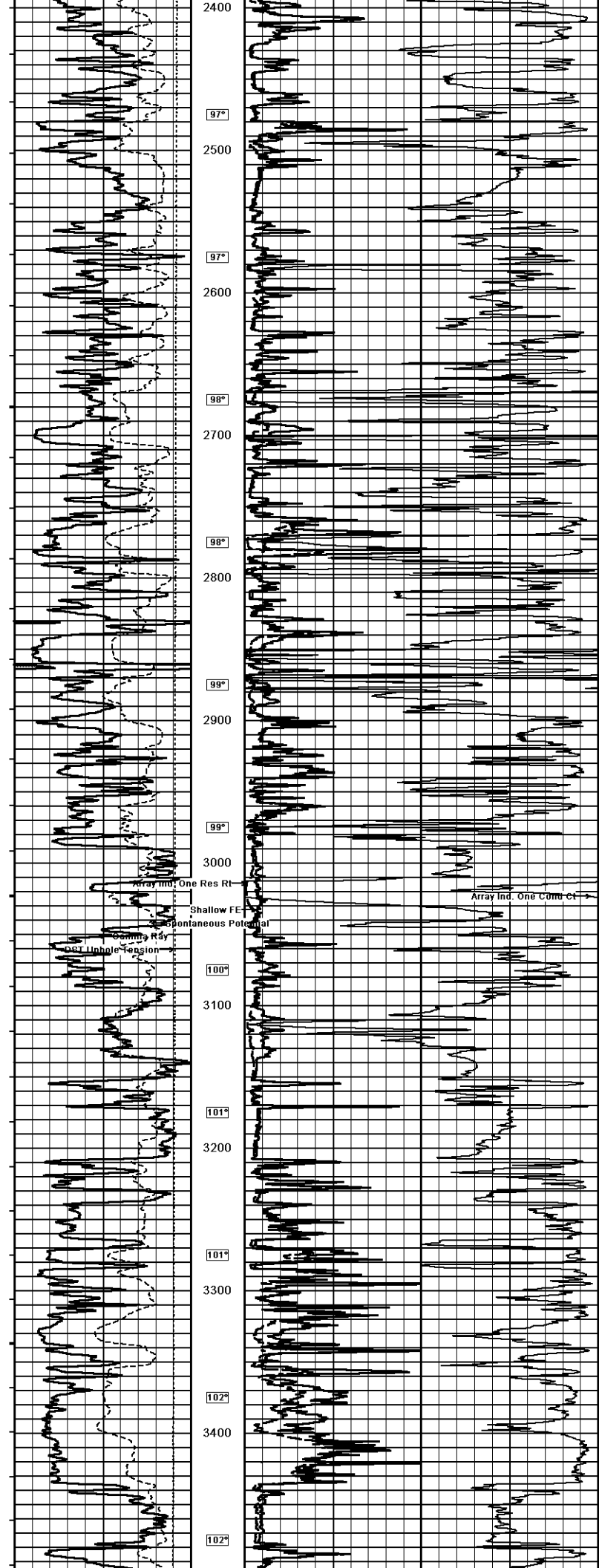
<b>Weatherford</b>		<b>ARRAY INDUCTION SHALLOW FOCUSED ELECTRIC LOG</b>	
COMPANY: M&M EXPLORATION, INC. WELL: Z-BAR #17-6 FIELD: AETNA NE PROVINCE/COUNTY: BARBER COUNTRY/STATE: U.S.A. / KANSAS LOCATION: 1955' FNL & 1895' FWL NW/4		Other Services: MML Log Measured From: KB Drilling Measured From: KB Permanent Datum: 0 L., Elevation: 1645 feet Log Measured From: KB Drilling Measured From: KB	
SEC	Type	ISG	Other Services
17	3/S	14W	M/D/MLN
Log Number:	154007-23791		
Date:	22-NOV-2011		
Run Number:	ONE		
Depth Driller:	5050.00	feet	
Depth Logger:	5050.00	feet	
First Reading:	5047.00	feet	
Last Reading:	921.00	feet	
Casing Driller:	920.00	feet	
Casing Logger:	921.00	feet	
Bit Size:	7.875	inches	
Flow Fluid Type:	CHEMICAL		
Density/Viscosity:	9.00 lb/0.99	45.00 CP	
PH/Fluid Loss:	10.50	8.00 m3/30min	
Sample Source:	FLOWLINE		
Rm @ Measured Temp:	0.85 @ 76.0	ohm-m	
Rm @ Measured Temp:	0.88 @ 76.0	ohm-m	
Rm @ Measured Temp:	1.02 @ 76.0	ohm-m	
Source RmT/Fmc:	CALC		
Rm @ BHT:	0.88 @ 111.0	ohm-m	
Time Since Circulation:	4 HOURS		
Max Recorded Temp:	111.00	deg F	
Equipment Name:	COMPACT		
Equipment Base:	13026	LB	
Recorded by:	LESCOTT		
Witnessed by:	BETH BROCK		
SO# / JOB#:	3531207		LB11-298

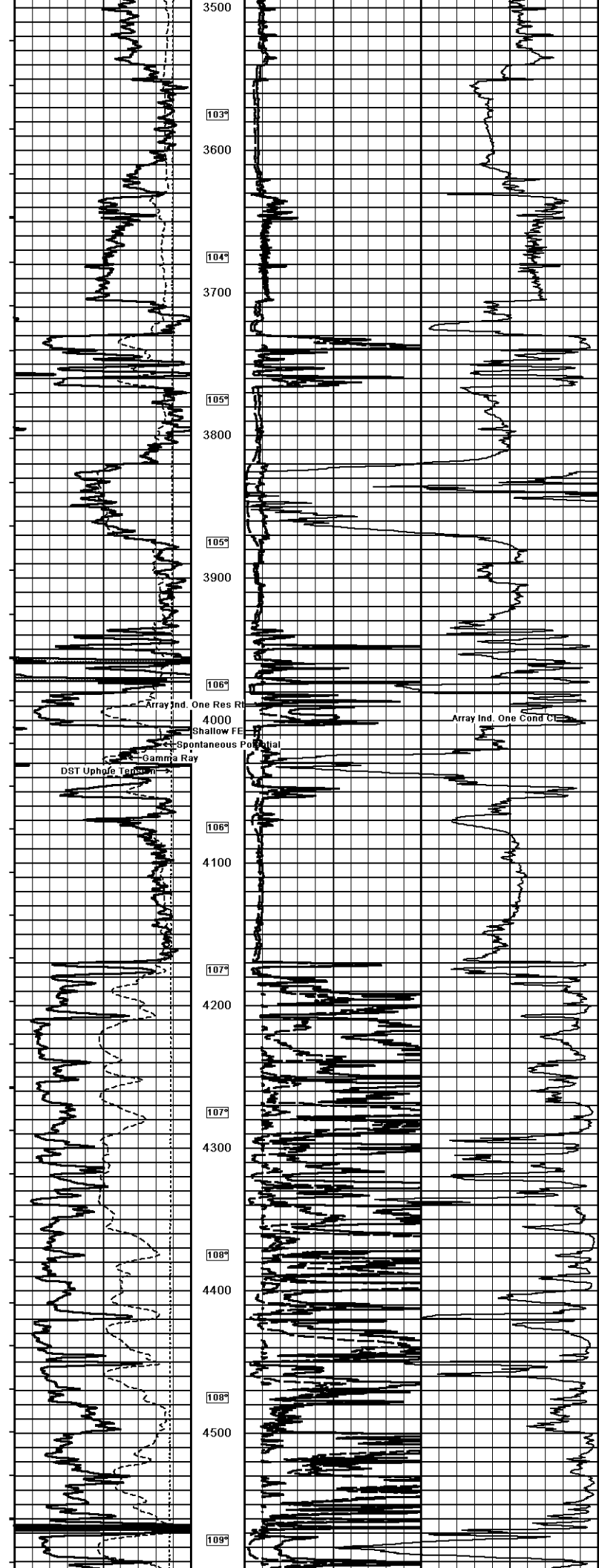
1 INCH MAIN  
 Depth Based Data - Maximum Sampling Increment: 10.0cm  
 Plotted on 22-NOV-2011 16:52  
 Filename: C:\Minimus 11.03.4044\Data\M&M Z-Bar 17-6\M&M Z-Bar 17-6\_002.dta  
 Recorded on 22-NOV-2011 14:38  
 System Versions: Logged with 11.03.4044 Plotted with 11.03.4044

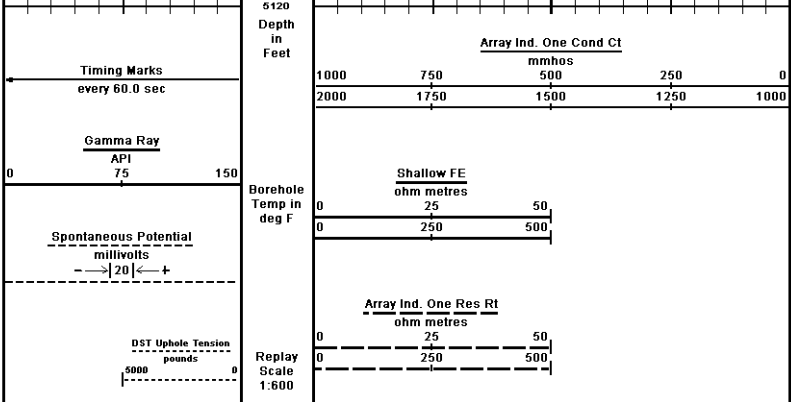
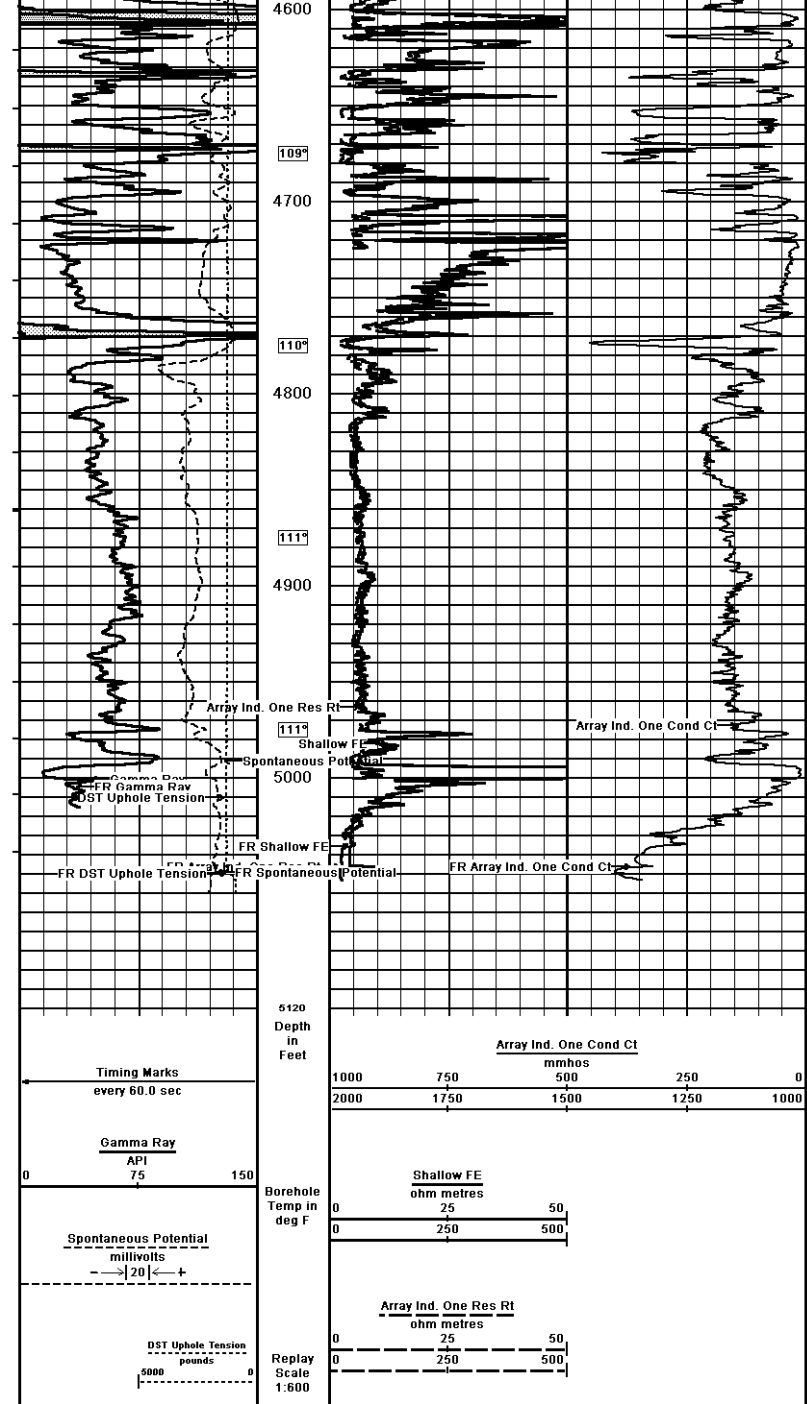












Depth Based Data - Maximum Sampling Increment 10.0cm  
 Plotted on 22-NOV-2011 16:52  
 Filename: C:\Minimus 11.03.4044\Data\M&M Z-Bar 17-6\M&M Z-Bar 17-6\_002.dta  
 Recorded on 22-NOV-2011 14:38  
 System Versions: Logged with 11.03.4044 Plotted with 11.03.4044

1 INCH MAIN

COMPANY M&M EXPLORATION, INC.  
 WELL Z-BAR #17-6  
 FIELD AETNA NE  
 PROVINCE/COUNTY BARBER  
 COUNTRY/STATE U.S.A. / KANSAS

Elevation Kelly Bushing	1657.00	feet	First Reading	5047.00	feet
Elevation Drill Floor	1655.00	feet	Depth Driller	5050.00	feet
Elevation Ground Level	1645.00	feet	Depth Logger	5050.00	feet

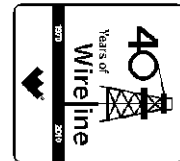
**Weatherford** ARRAY INDUCTION  
 SHALLOW FOCUSED  
 ELECTRIC LOG



**Weatherford**<sup>®</sup>

**COMPACT PHOTO DENSITY  
COMPENSATED NEUTRON  
MICRORESISTIVITY LOG**

**COMPANY** M&M EXPLORATION, INC.  
**WELL** Z-BAR #17-6  
**FIELD** AETNA NE  
**PROVINCE/COUNTY** BARBER  
**COUNTRY/STATE** U.S.A. / KANSAS  
**LOCATION** 1955' FNL & 1895' FWL  
NW/4



SEC	TWP	RGE	Other Services
17	34S	14W	MA/MI/FE
API Number	15-007-23791		
Permit Number			
Permanent Datum G.L., Elevation 1645 feet			
Log Measured From KB			
Drilling Measured From K.B.			
Date	22-NOV-2011		
Run Number	ONE		
Depth Driller	5050.00 feet		
Depth Logger	5050.00 feet		
First Reading	5028.00 feet		
Last Reading	3950.00 feet		
Casing Driller	920.00 feet		
Casing Logger	921.00 feet		
Bit Size	7.875 inches		
Hole Fluid Type	CHEMICAL		
Density / Viscosity	9.00 lb/USg	45.00 CP	
PH / Fluid Loss	10.50	8.00 ml/30Min	
Sample Source	FLOWLINE		
Rm @ Measured Temp	0.85 @ 76.0 ohm-m		
Rmf @ Measured Temp	0.68 @ 76.0 ohm-m		
Rmc @ Measured Temp	1.02 @ 76.0 ohm-m		
Source Rmf / Rmc	CALC	CALC	
Rm @ BHT	0.58 @ 111.0 ohm-m		
Time Since Circulation	4 HOURS		
Max Recorded Temp	111.00	deg F	
Equipment Name	COMPACT		
Equipment / Base	13025	LIB	
Recorded By	L. SCOTT		
Witnessed By	BETH BROCK		
S.O.# / JOB#	3531207		LB11-298

Elevations:	feet
KB	1657.00
DF	1655.00
GL	1645.00

**BOREHOLE RECORD**

Last Edited: 22-NOV-2011 14:21

Bit Size inches	Depth From feet	Depth To feet
7.875	921.00	5050.00

**CASING RECORD**

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	921.00	24.00

**REMARKS**

Tools Used: MPD, MCG, MDN, MFE, MAI, MML  
 Hardware: MPD: 8 inch profile plate used. MAI and MFE: 0.5 Inch standoffs used. MDN: Dual Bowspring used.  
 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.  
 Annular volume with 4.5 inch production casing = 280 cu. ft.  
 Service order #3531207  
 Rig: Southwind #70  
 Engineer(s): L. Scott  
 Operator(s): M. Stegman

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

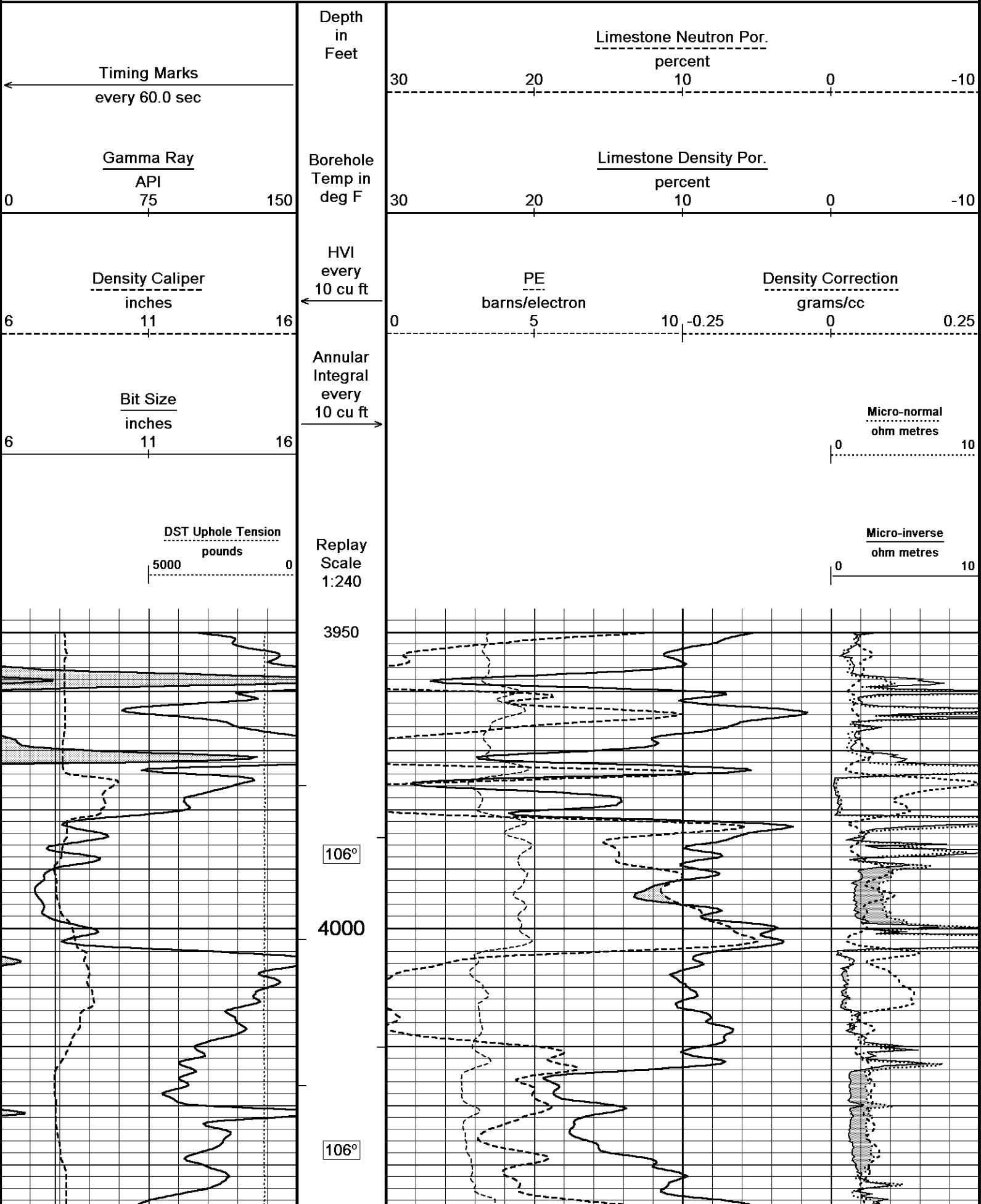
Depth Based Data - Maximum Sampling Increment 10.0cm

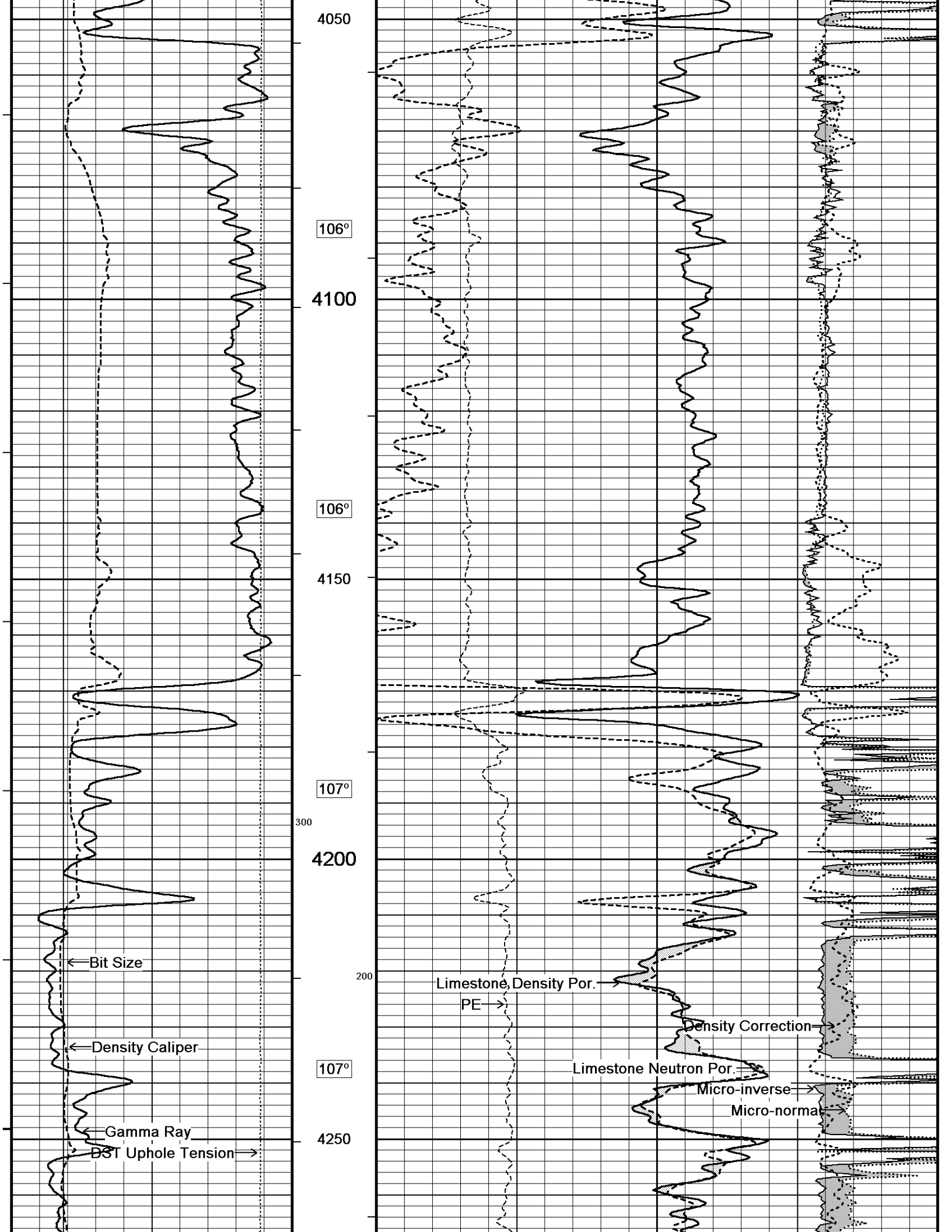
Plotted on 22-NOV-2011 16:53

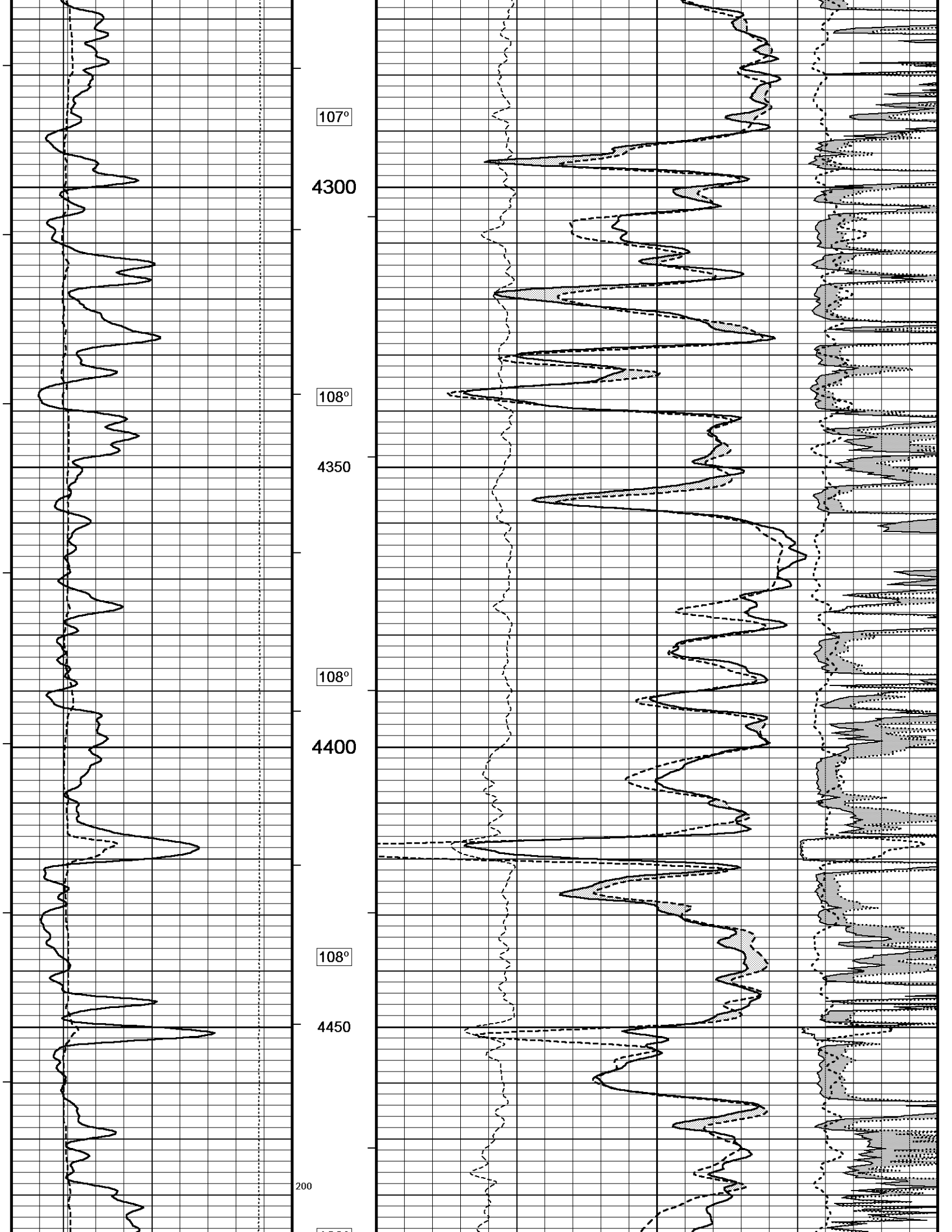
Filename: C:\Minimus 11.03.4044\Data\M&M Z-Bar 17-6\M&M Z-Bar 17-6\_002.dta

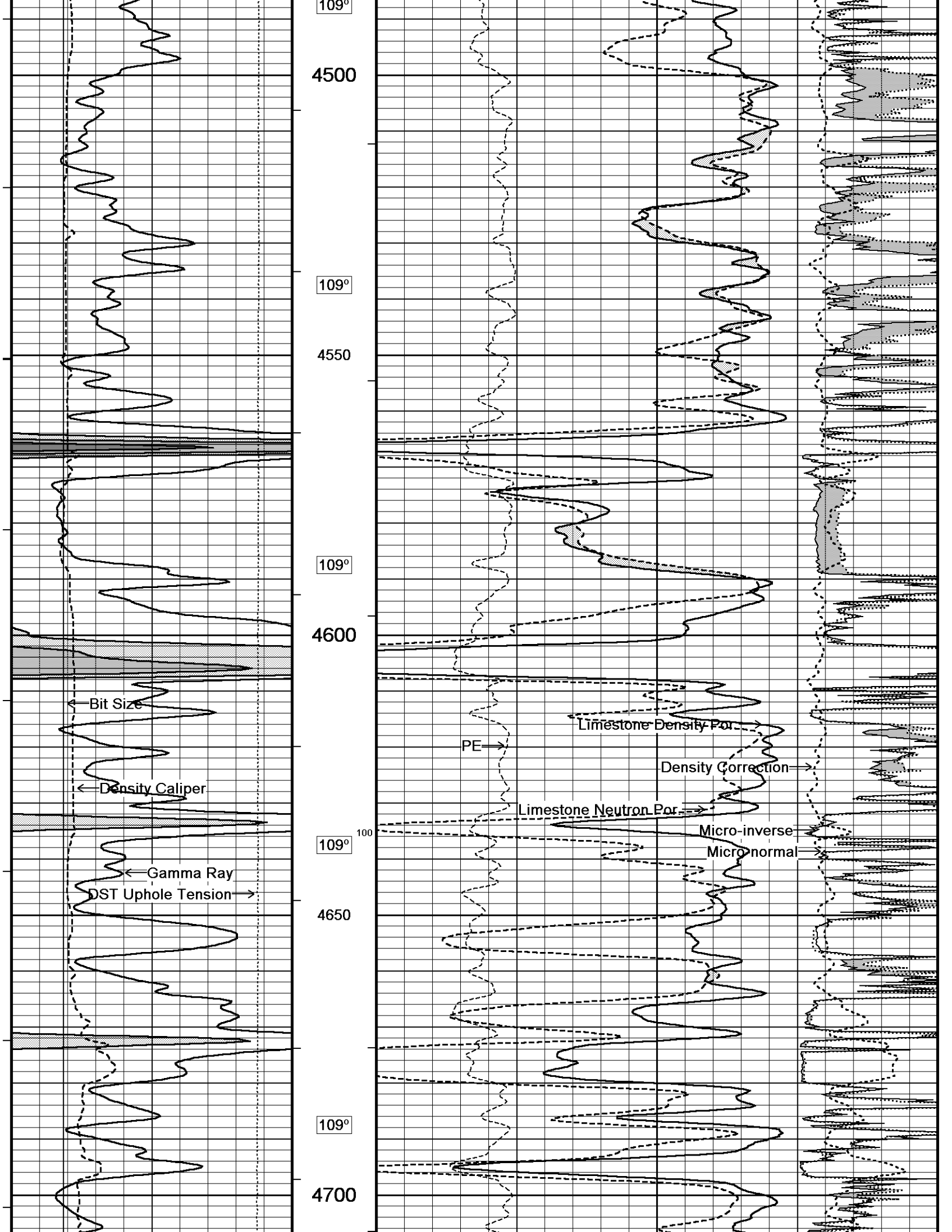
Recorded on 22-NOV-2011 14:38

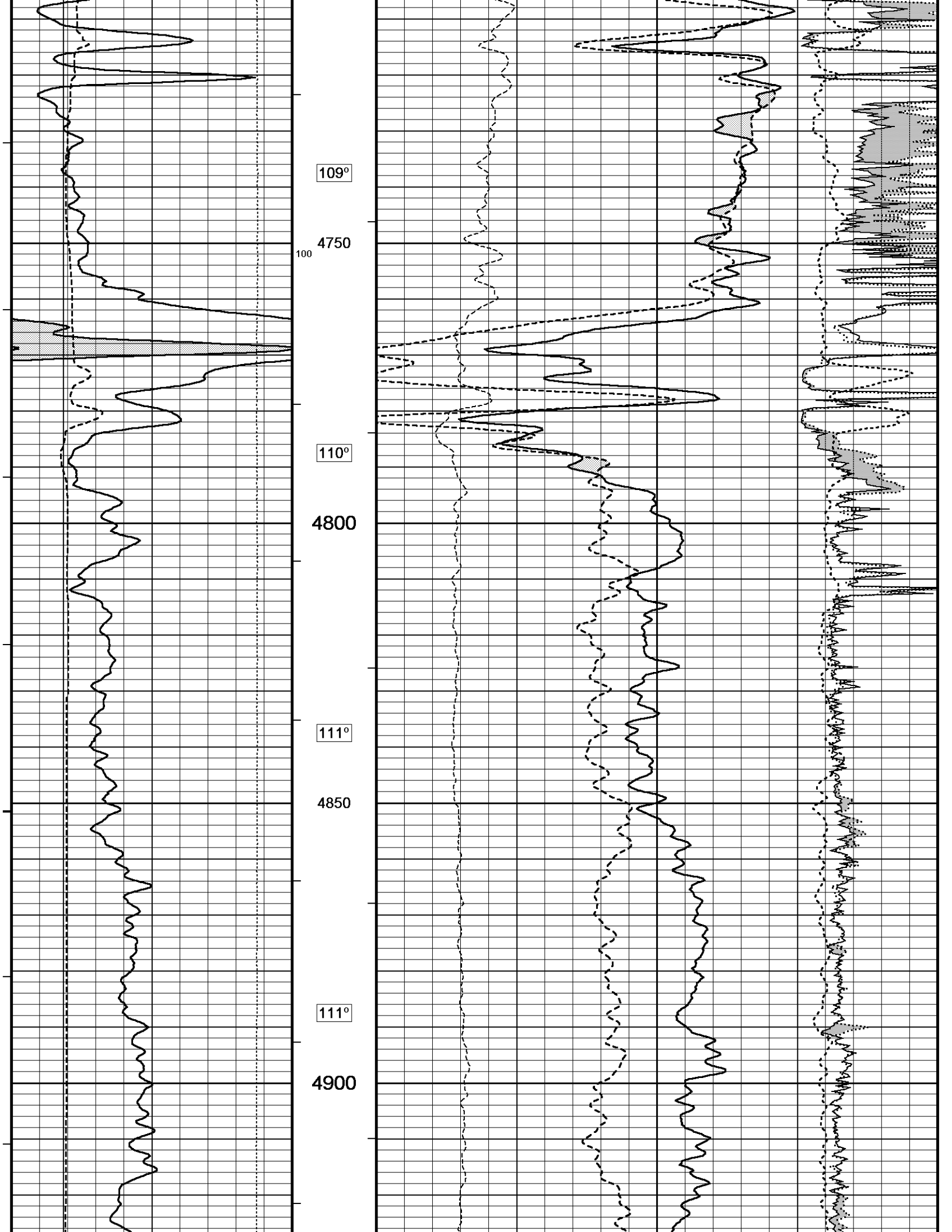
System Versions: Logged with 11.03.4044 Plotted with 11.03.4044



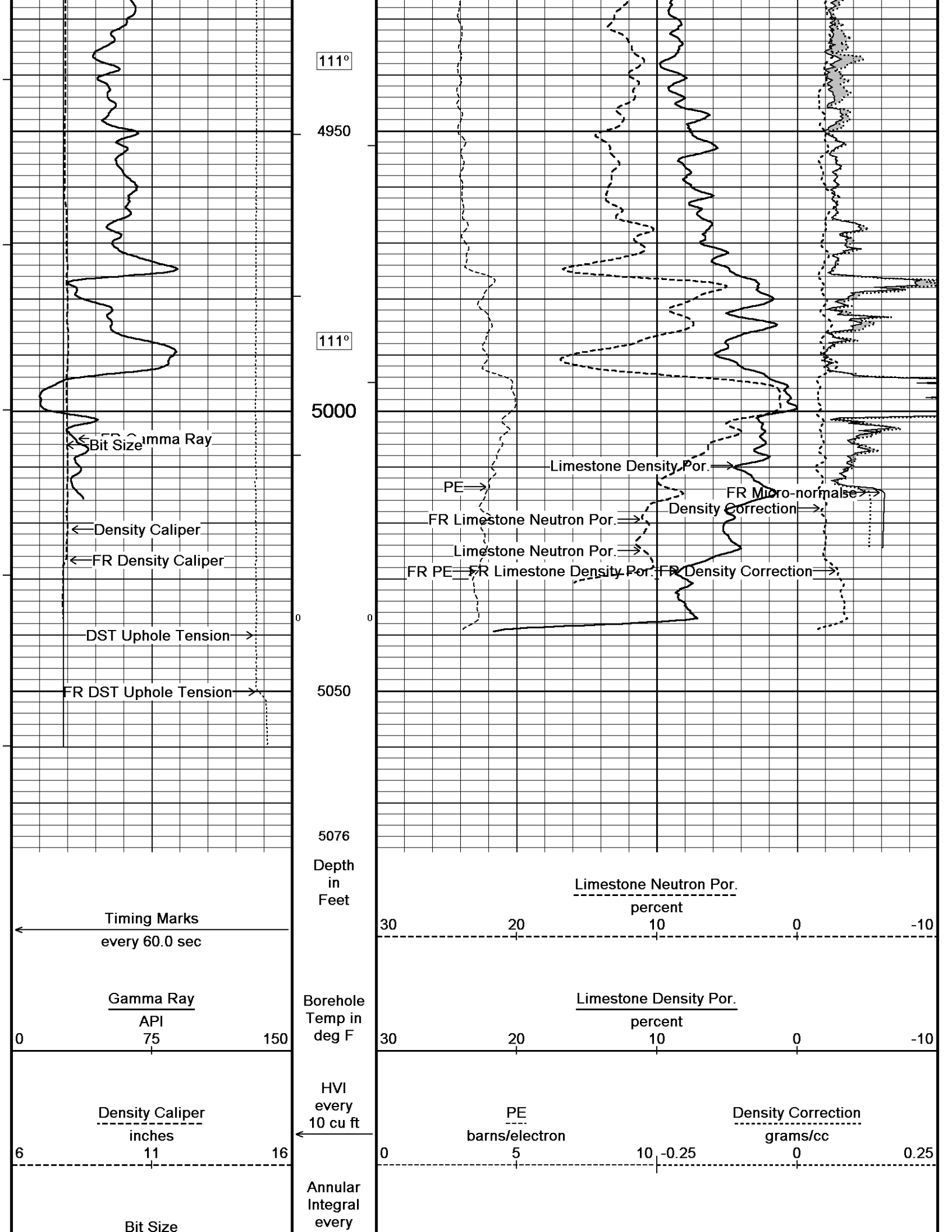


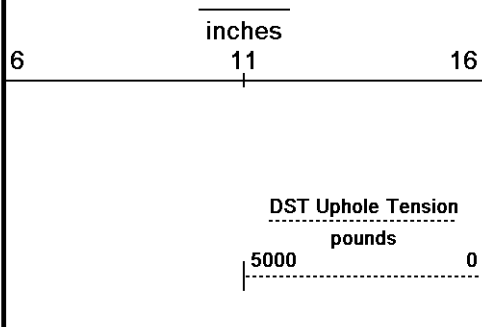












10 cu ft

Replay  
Scale  
1:240

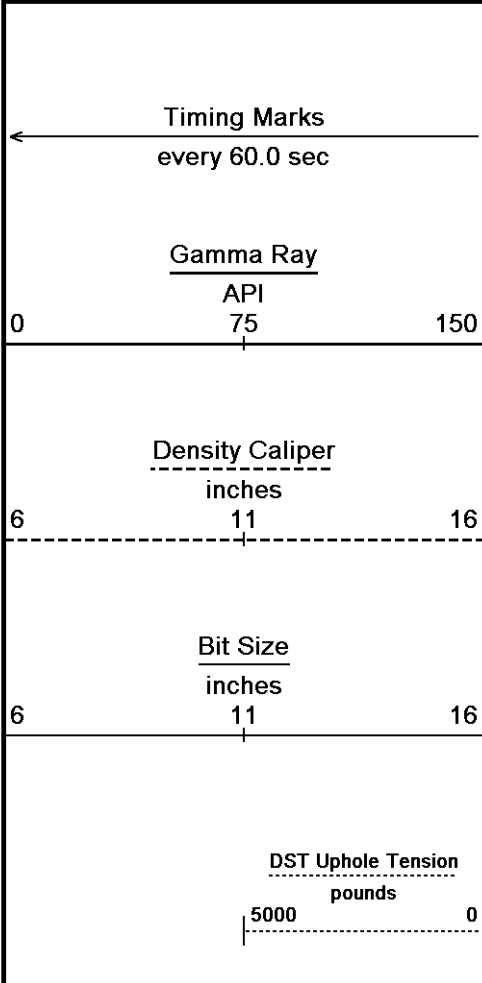


Depth Based Data - Maximum Sampling Increment 10.0cm  
 Filename: C:\Minimus 11.03.4044\Data\M&M Z-Bar 17-6\M&M Z-Bar 17-6\_002.dta  
 System Versions: Logged with 11.03.4044 Plotted with 11.03.4044  
 Plotted on 22-NOV-2011 16:53  
 Recorded on 22-NOV-2011 14:38

↑ 5 INCH MAIN ↑

↓ REPEAT SECTION ↓

Depth Based Data - Maximum Sampling Increment 10.0cm  
 Filename: C:\Minimus 11.03.4044\Data\M&M Z-Bar 17-6\M&M Z-Bar 17-6\_001.dta  
 System Versions: Logged with 11.03.4044 Plotted with 11.03.4044  
 Plotted on 22-NOV-2011 16:53  
 Recorded on 22-NOV-2011 14:15



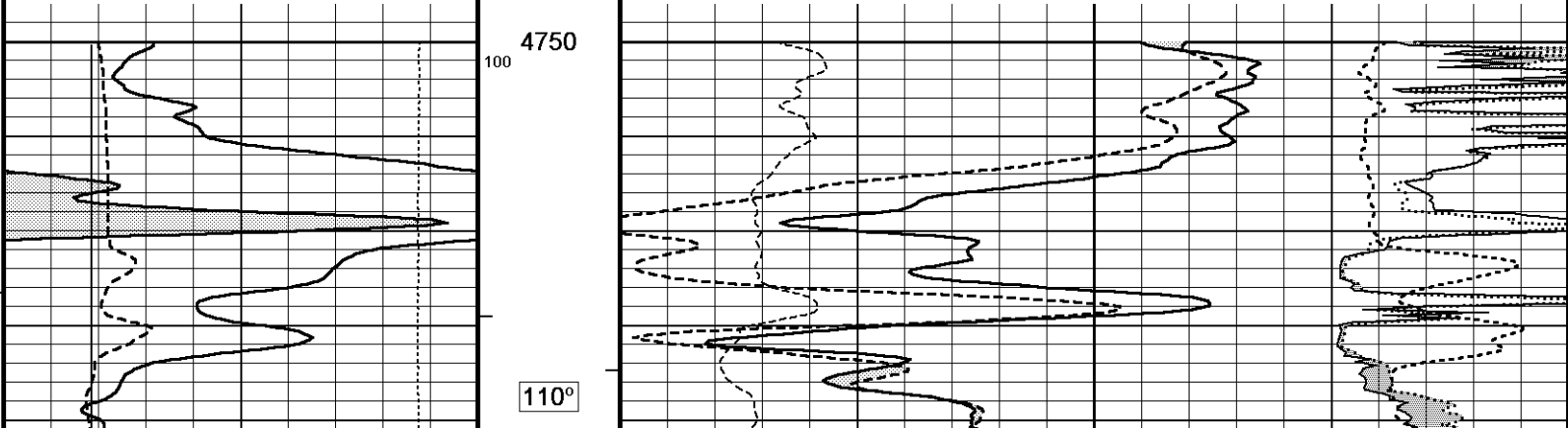
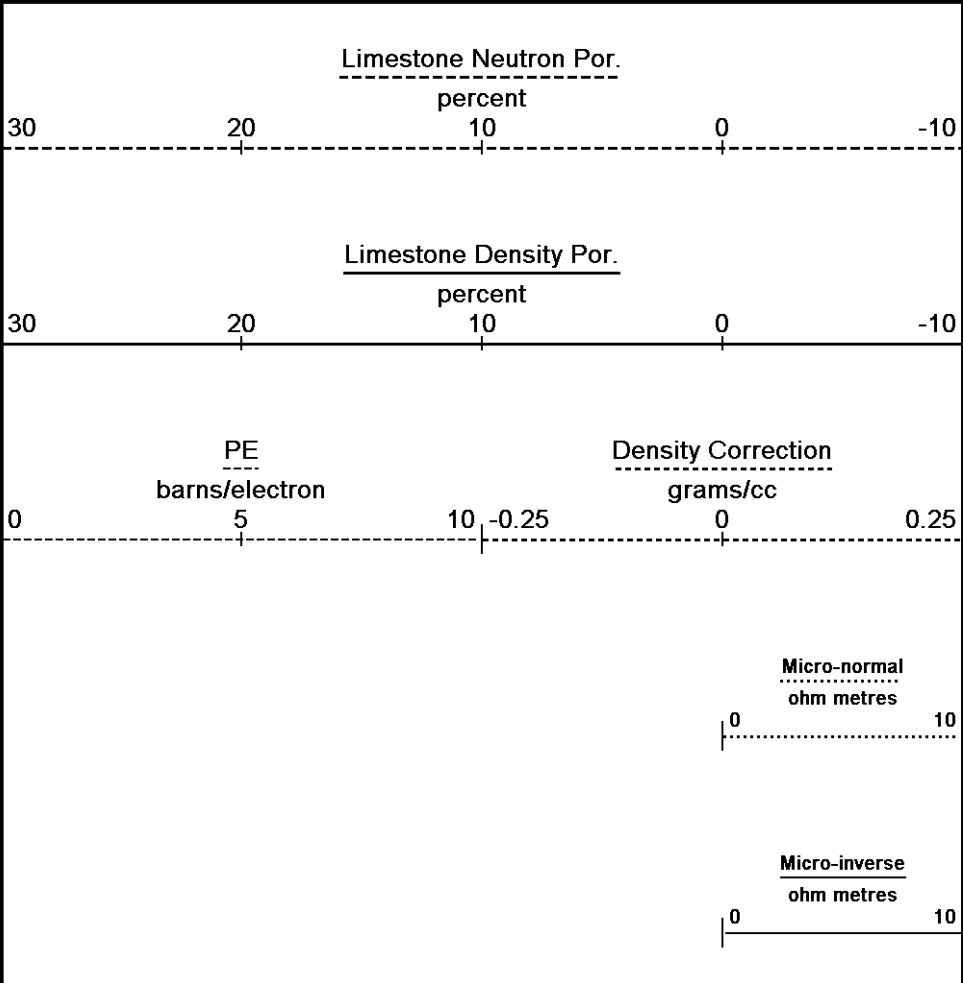
Depth  
in  
Feet

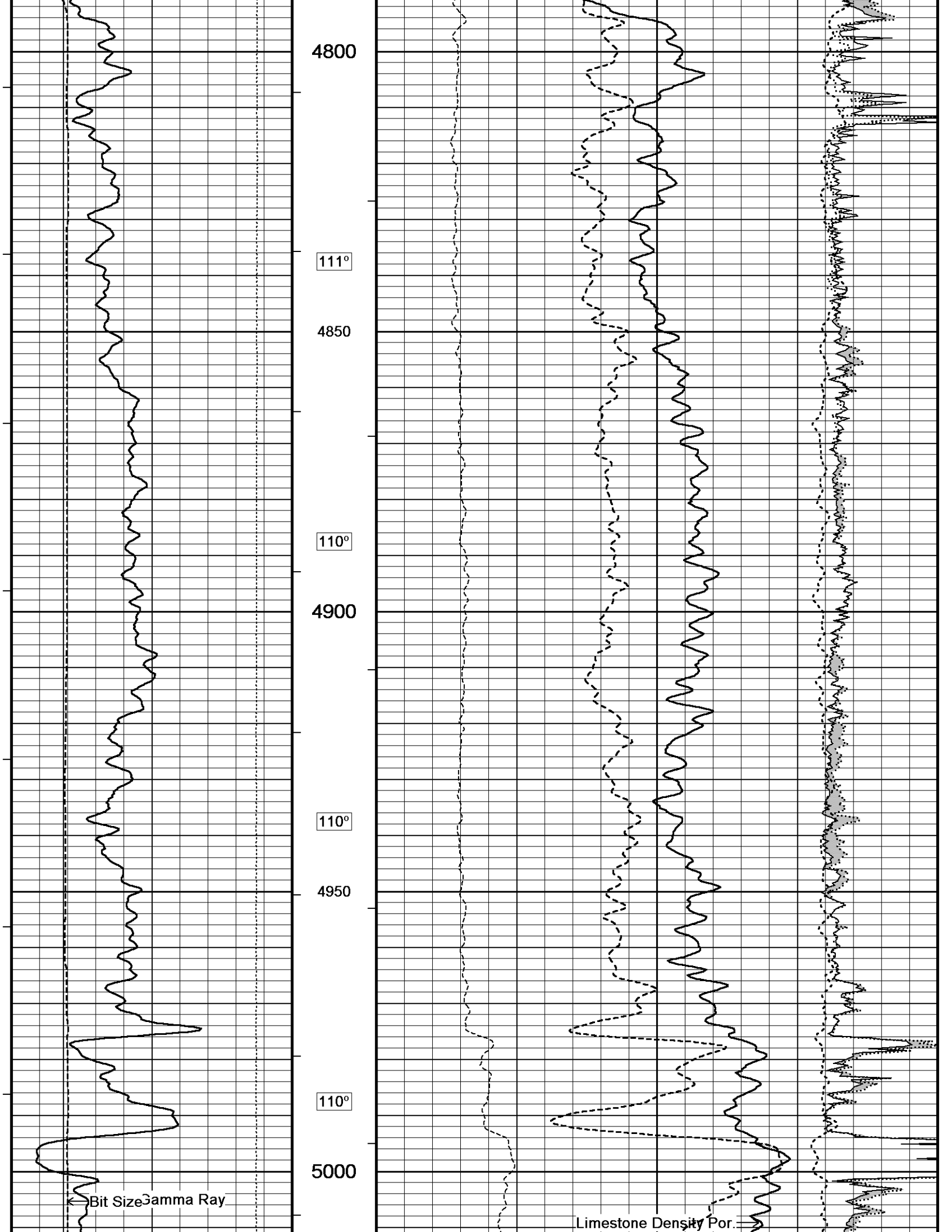
Borehole  
Temp in  
deg F

HVI  
every  
10 cu ft

Annular  
Integral  
every  
10 cu ft

Replay  
Scale  
1:240





4800

111°

4850

110°

4900

110°

4950

110°

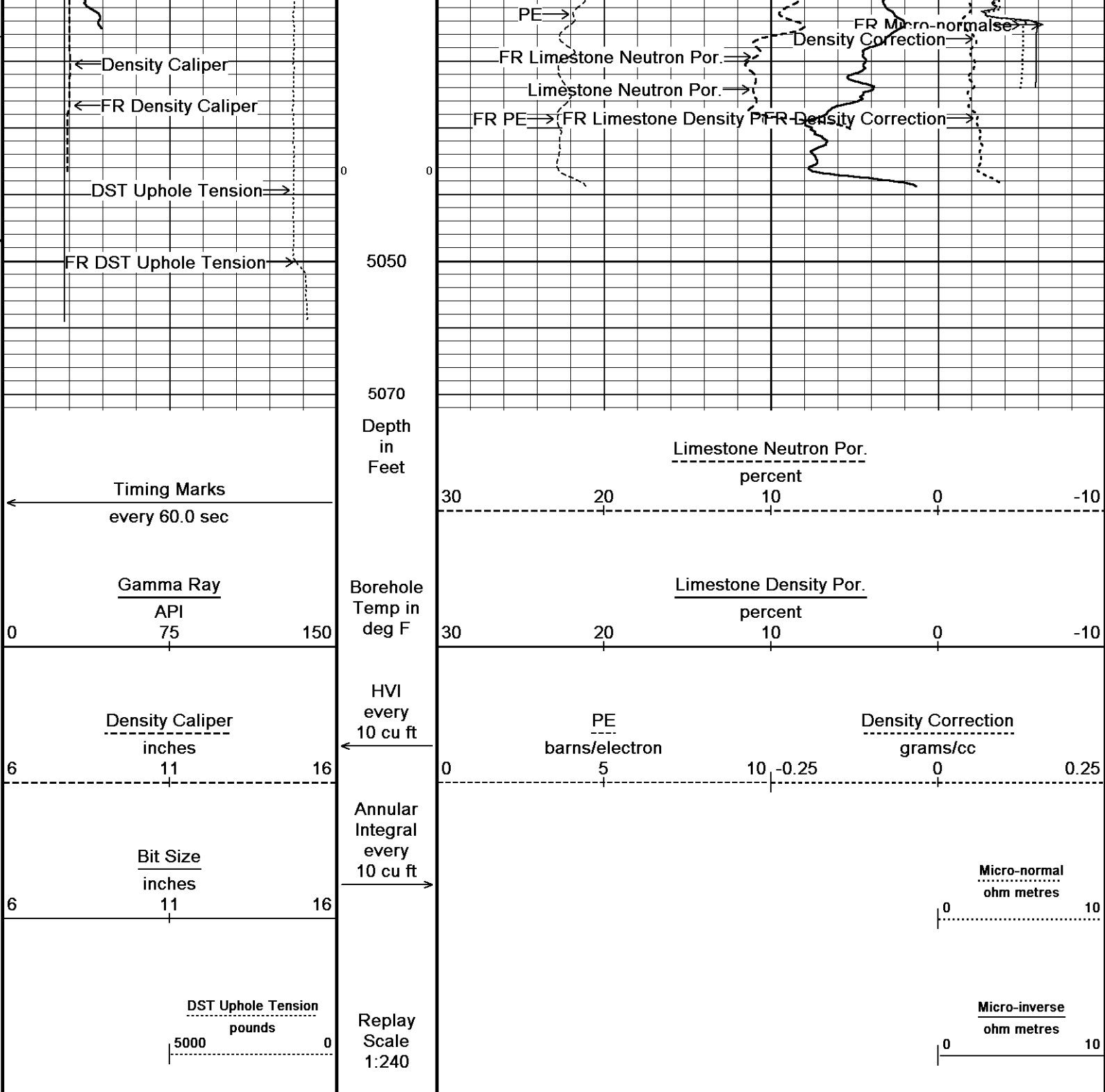
5000

Bit Size

Gamma Ray

Limestone Density

Por.

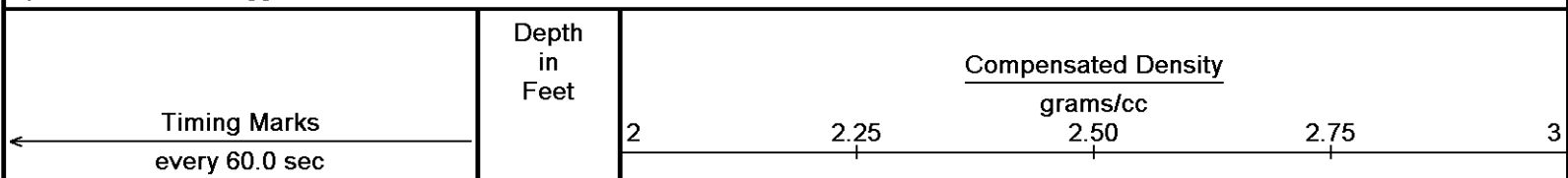


Depth Based Data - Maximum Sampling Increment 10.0cm  
 Plotted on 22-NOV-2011 16:53  
 Filename: C:\Minimus 11.03.4044\Data\M&M Z-Bar 17-6\M&M Z-Bar 17-6\_001.dta  
 Recorded on 22-NOV-2011 14:15  
 System Versions: Logged with 11.03.4044 Plotted with 11.03.4044

REPEAT SECTION

5 INCH MAIN

Depth Based Data - Maximum Sampling Increment 10.0cm  
 Plotted on 22-NOV-2011 16:53  
 Filename: C:\Minimus 11.03.4044\Data\M&M Z-Bar 17-6\M&M Z-Bar 17-6\_002.dta  
 Recorded on 22-NOV-2011 14:38  
 System Versions: Logged with 11.03.4044 Plotted with 11.03.4044



Gamma Ray  
API  
75  
0 150

Density Caliper  
inches  
6 11 16

Bit Size  
inches  
6 11 16

DST Uphole Tension  
pounds  
5000 0

Borehole  
Temp in  
deg F

HVI  
every  
10 cu ft

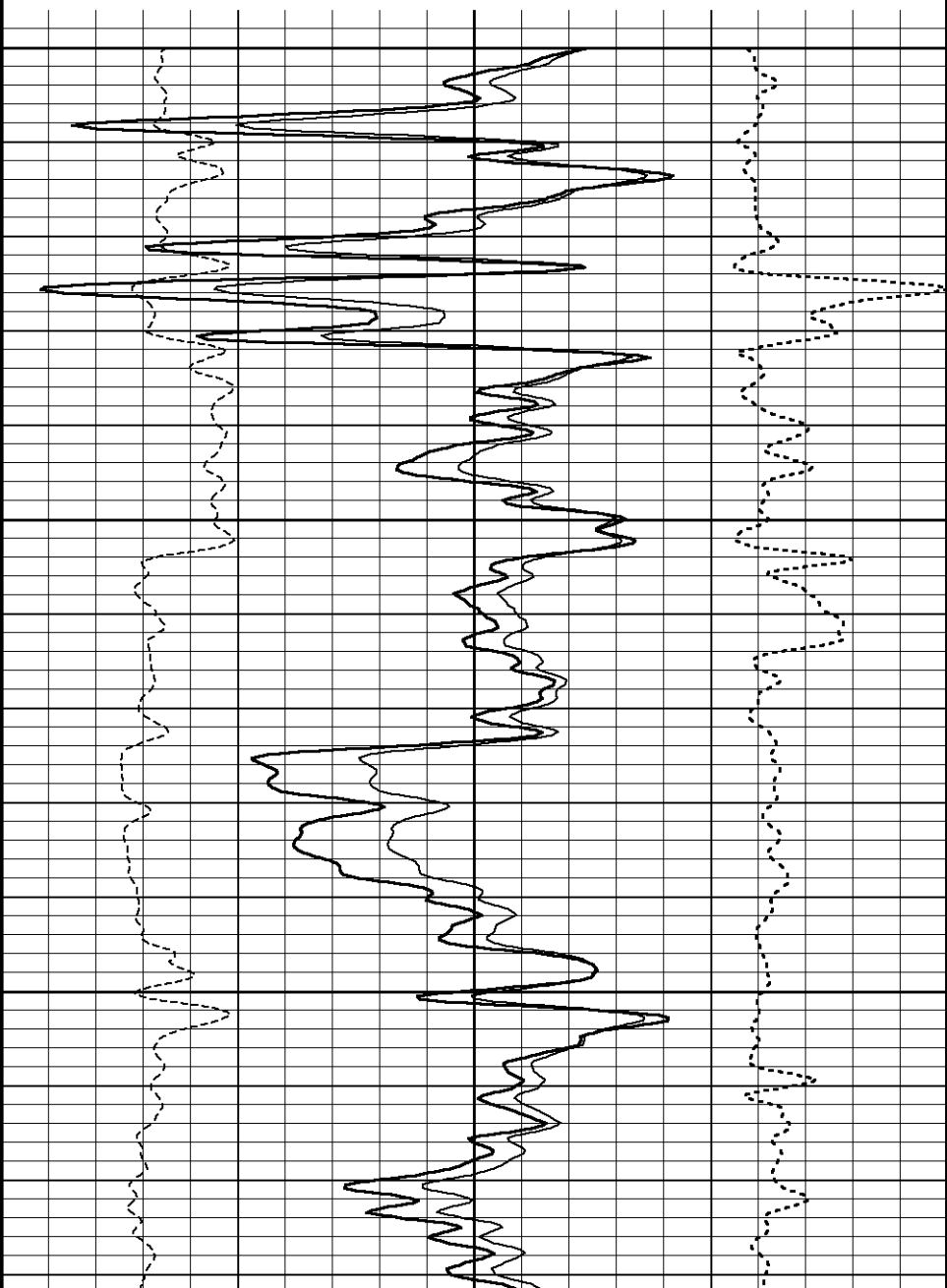
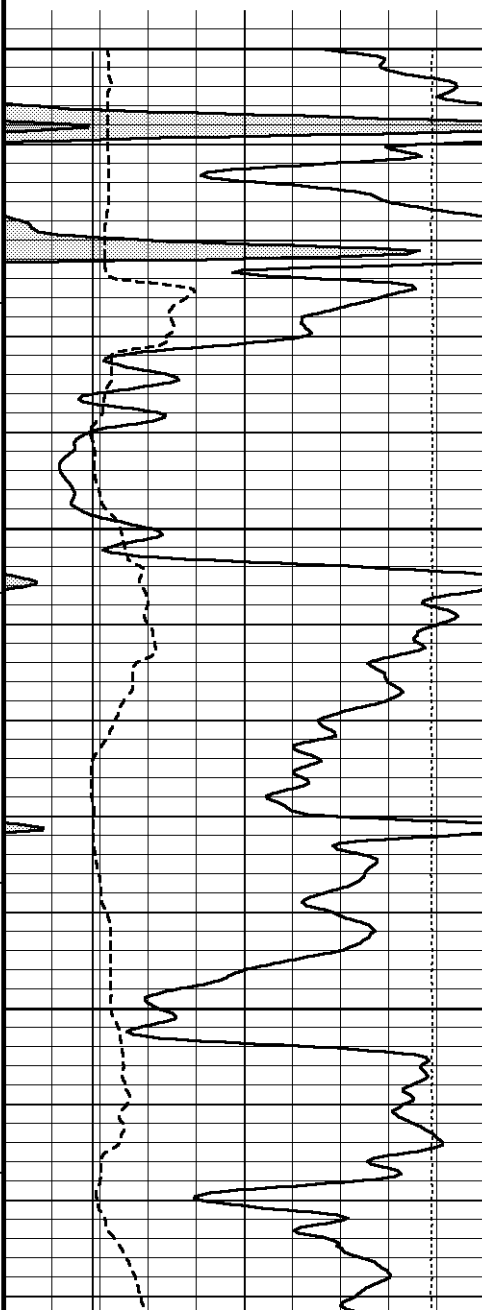
Annular  
Integral  
every  
10 cu ft

Replay  
Scale  
1:240

Limestone Density Por.  
percent  
30 20 10 0 -10

PE  
barns/electron  
0 5 10

Density Correction  
grams/cc  
-0.25 0 0.25



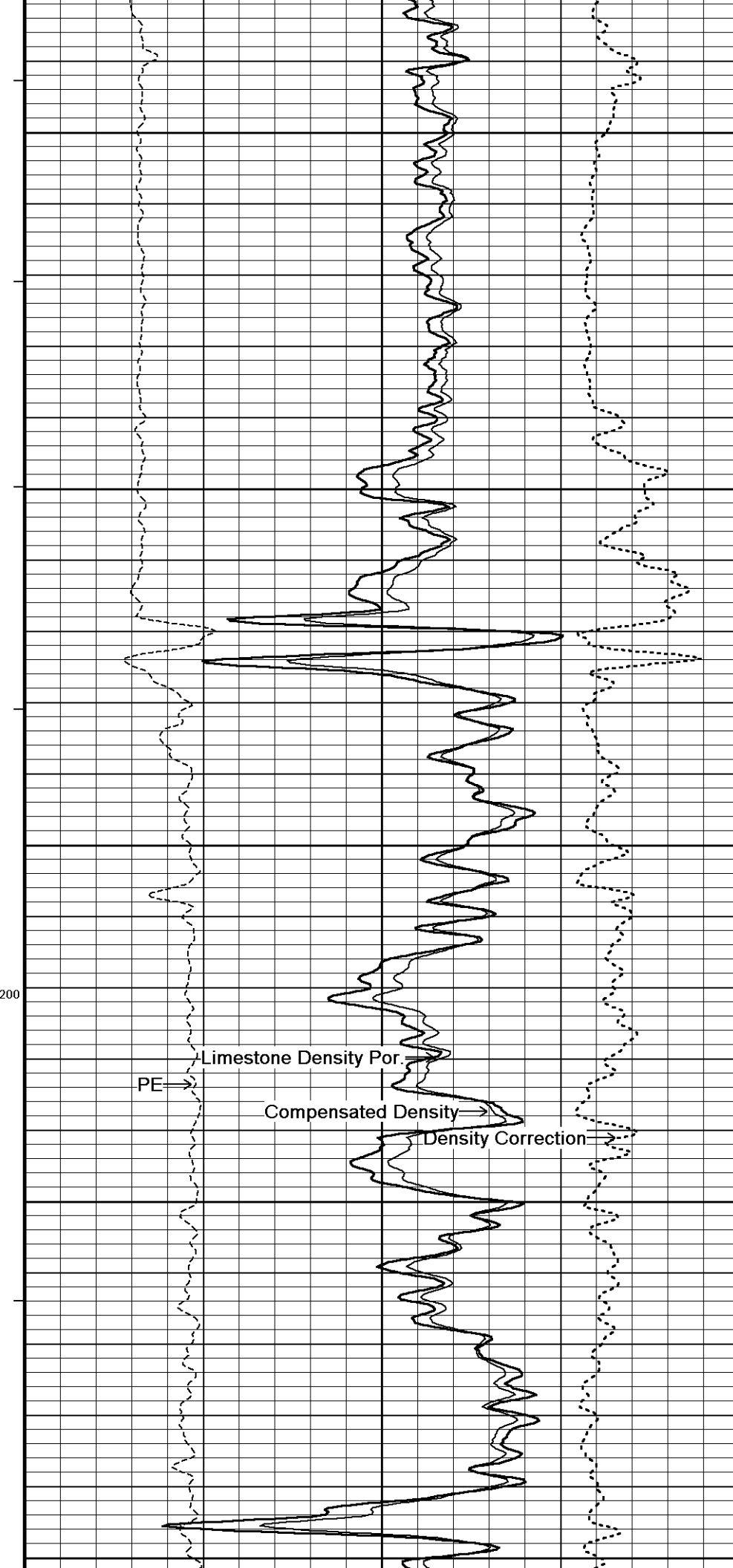
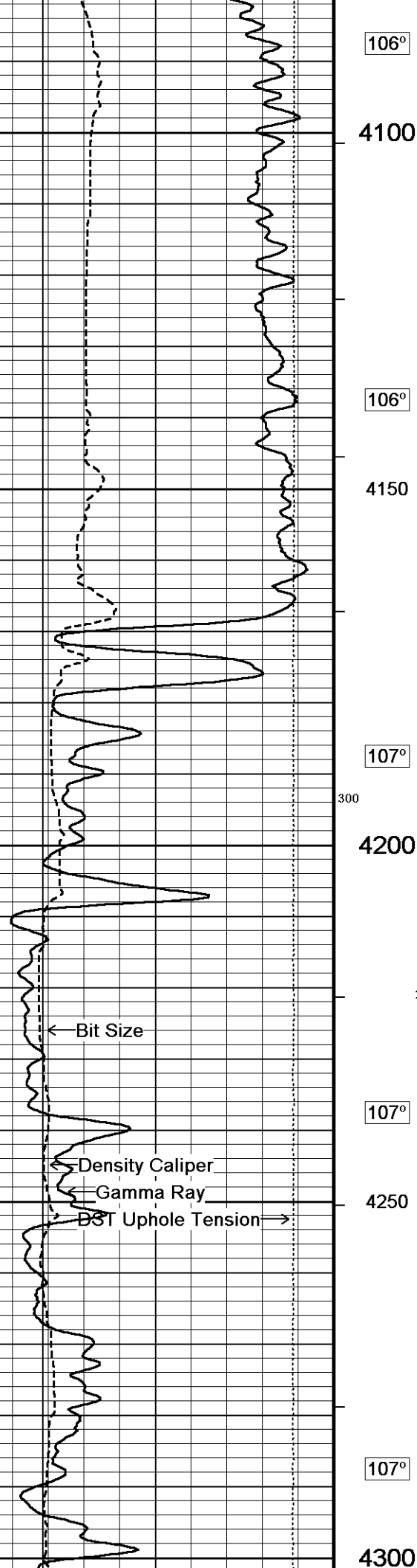
3950

106°

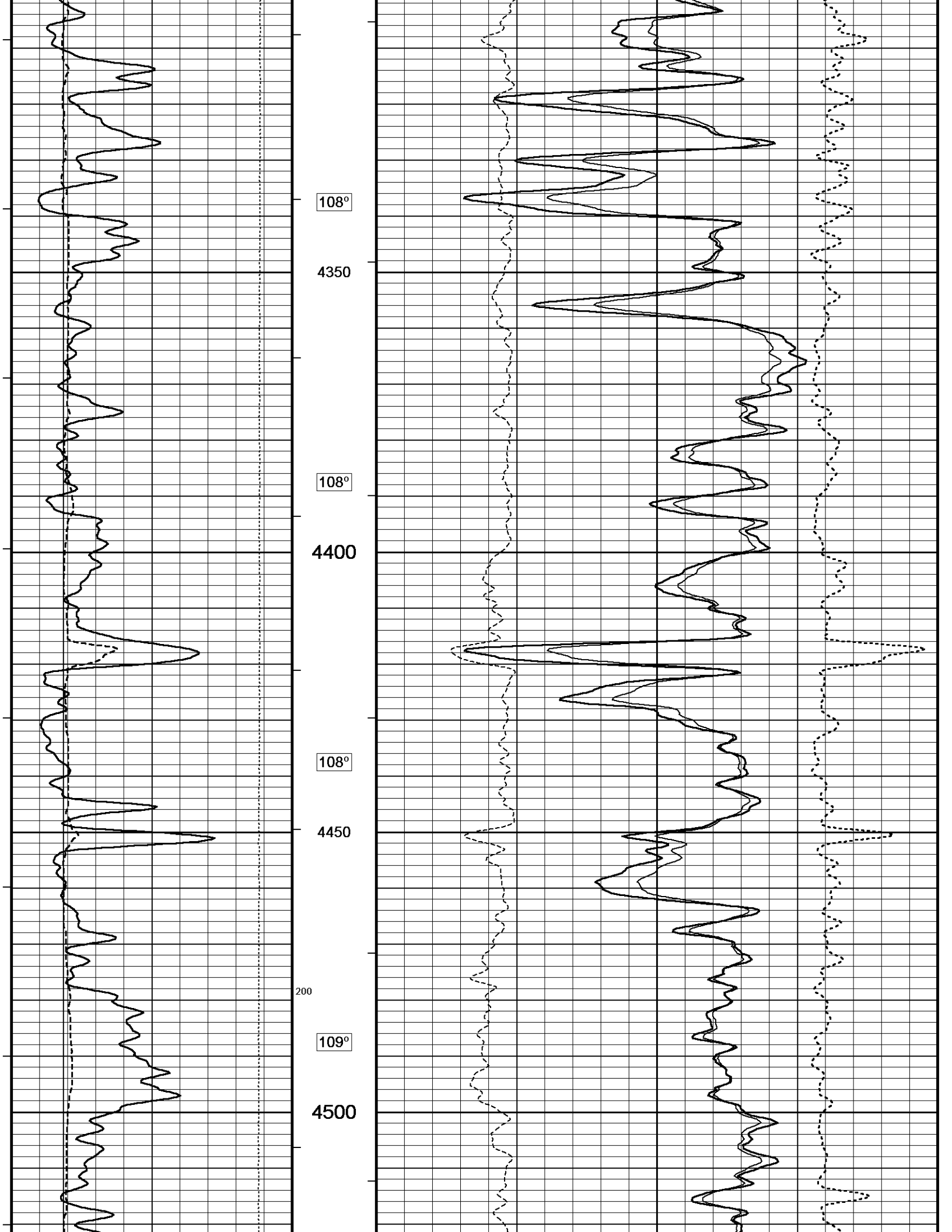
4000

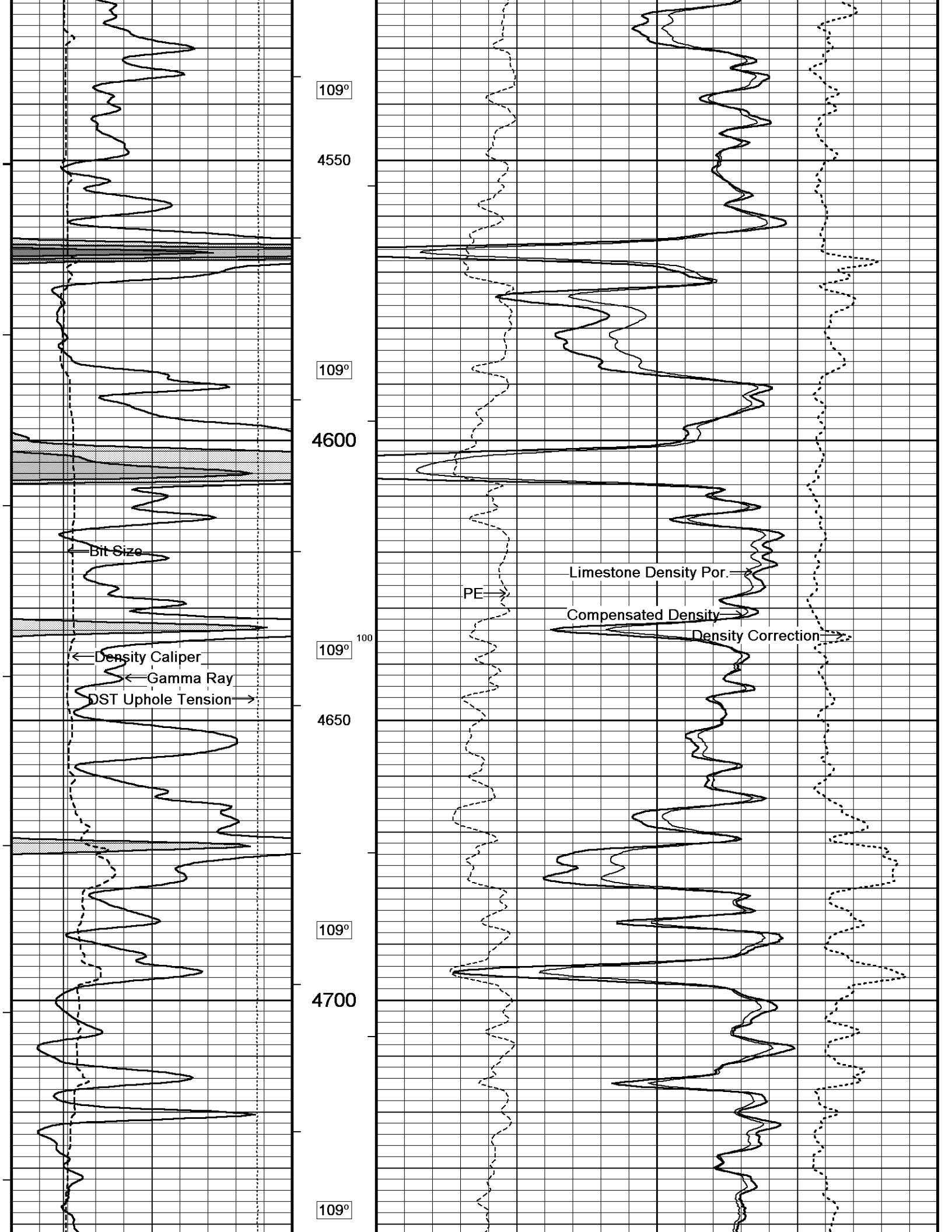
106°

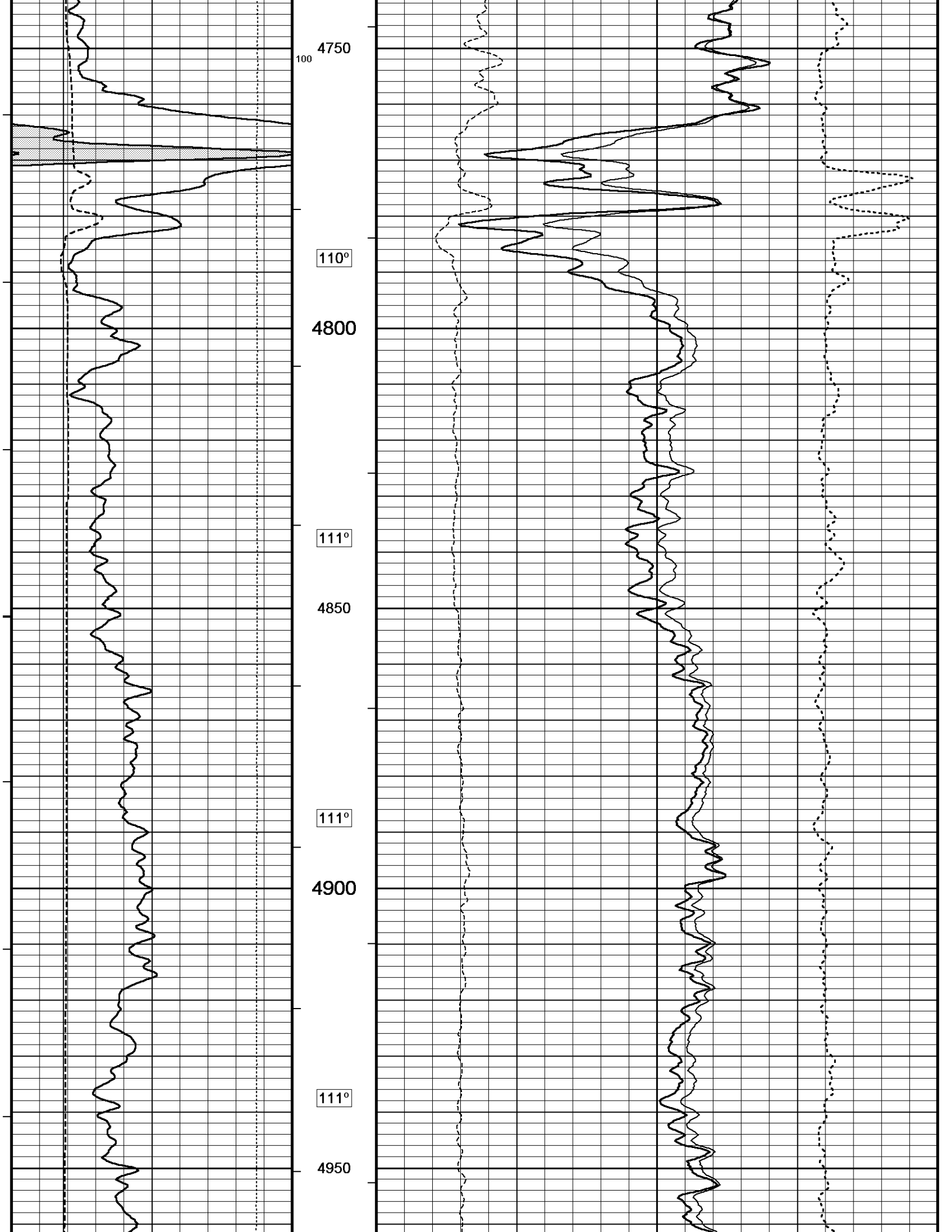
4050

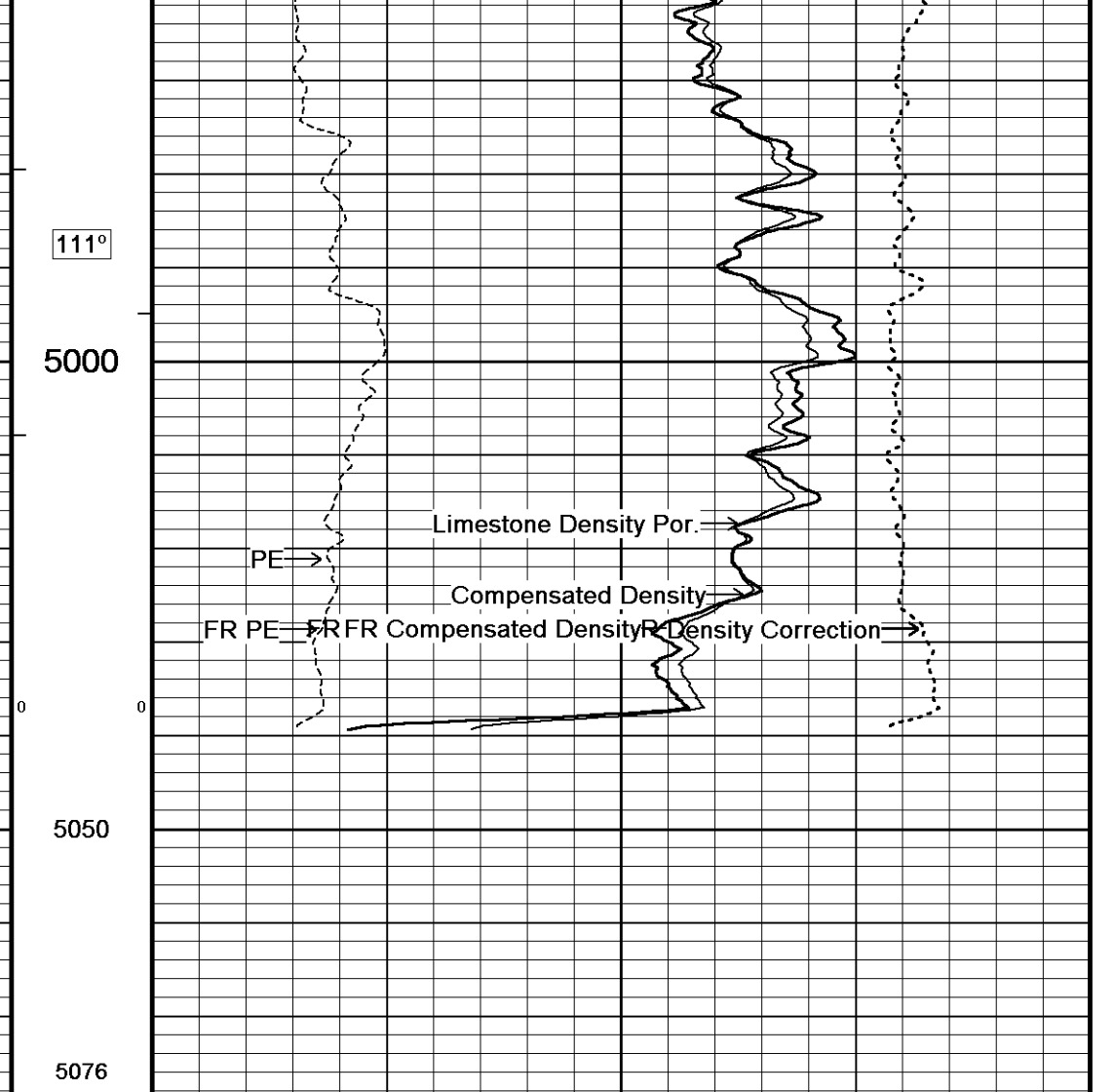
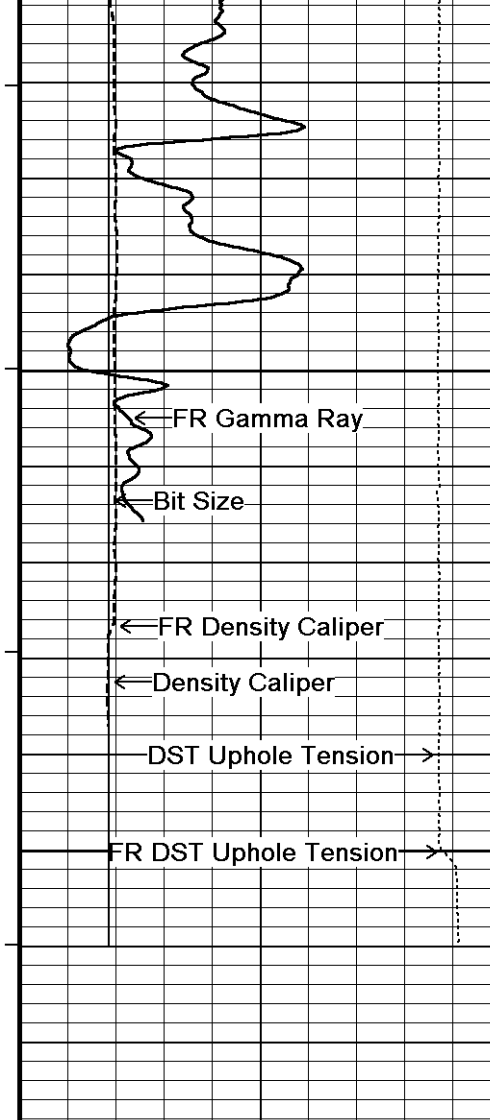










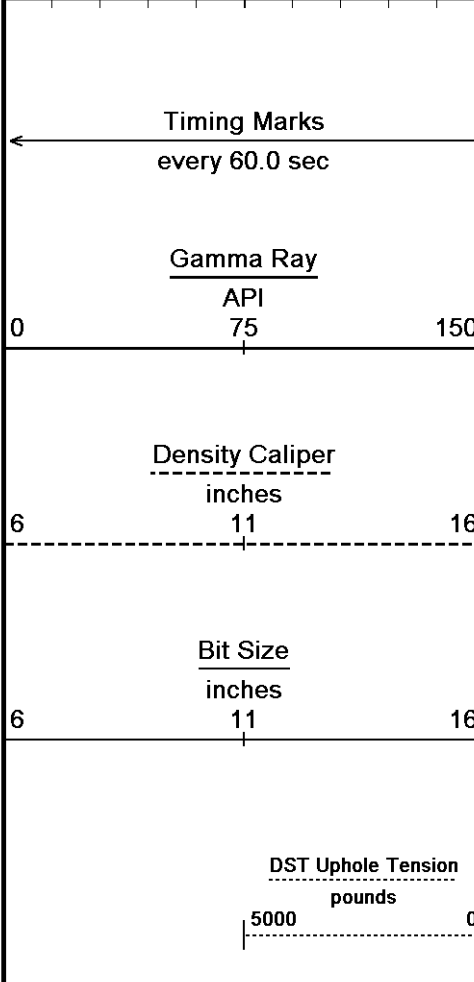


111°

5000

0

5050



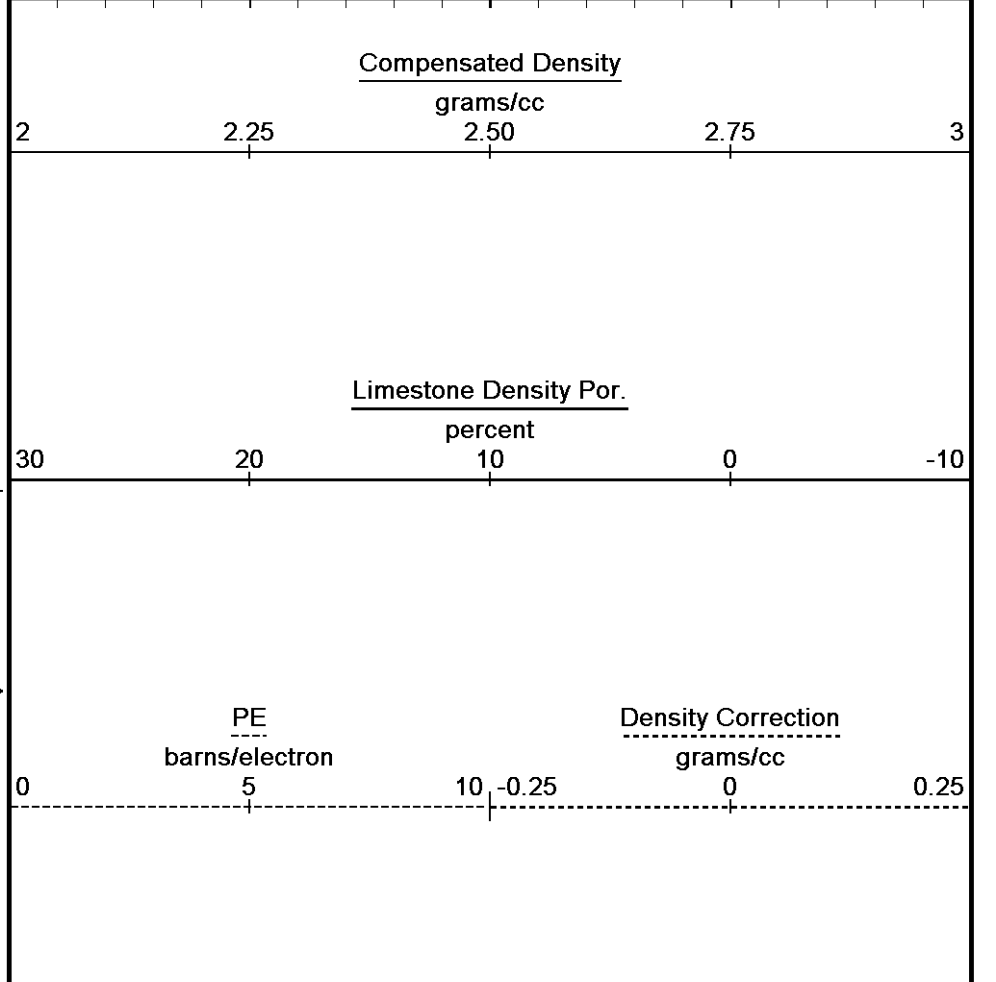
Depth in Feet

Borehole Temp in deg F

HVI every 10 cu ft

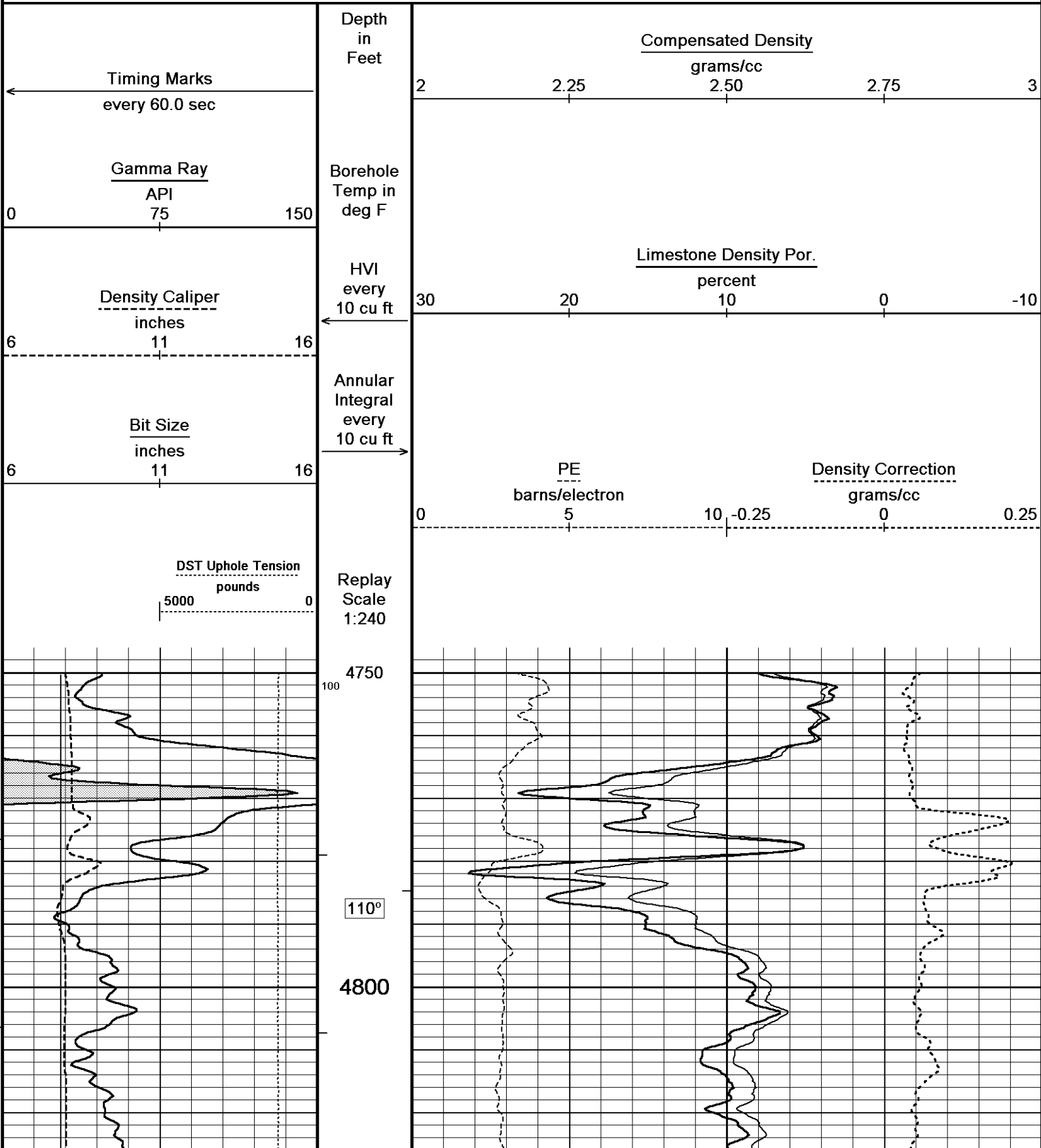
Annular Integral every 10 cu ft

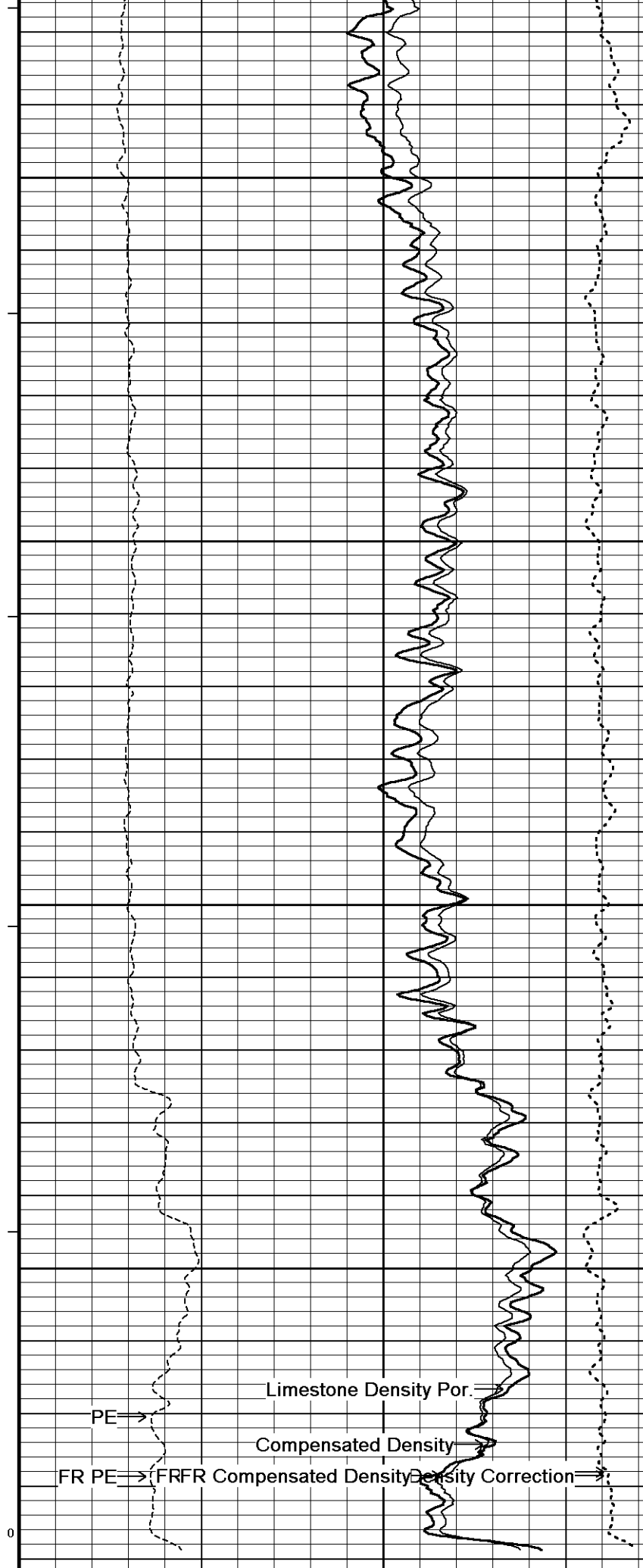
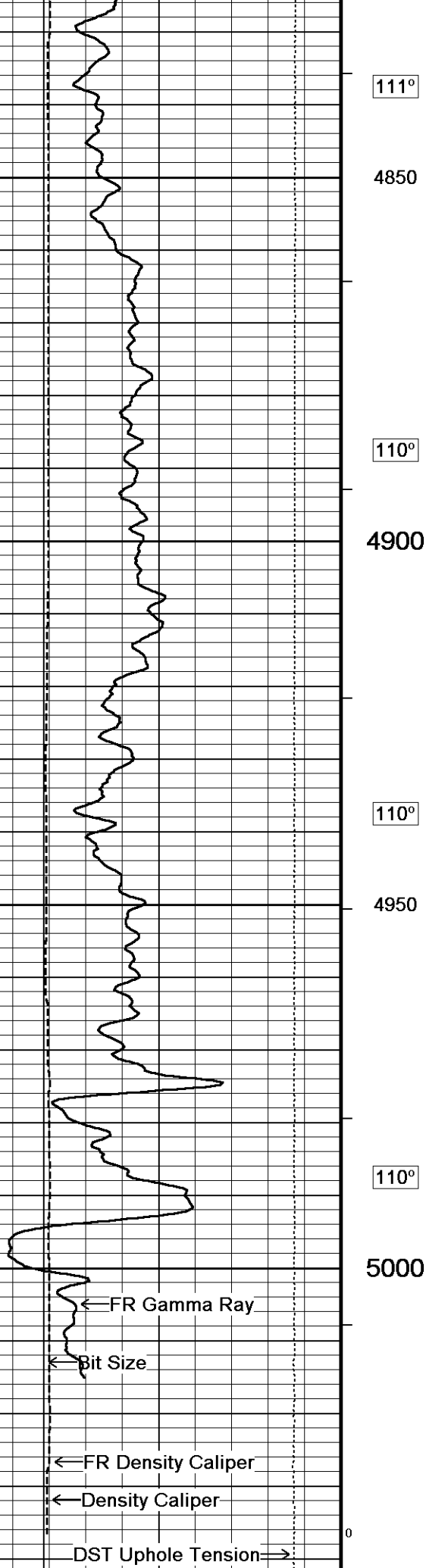
Replay Scale 1:240

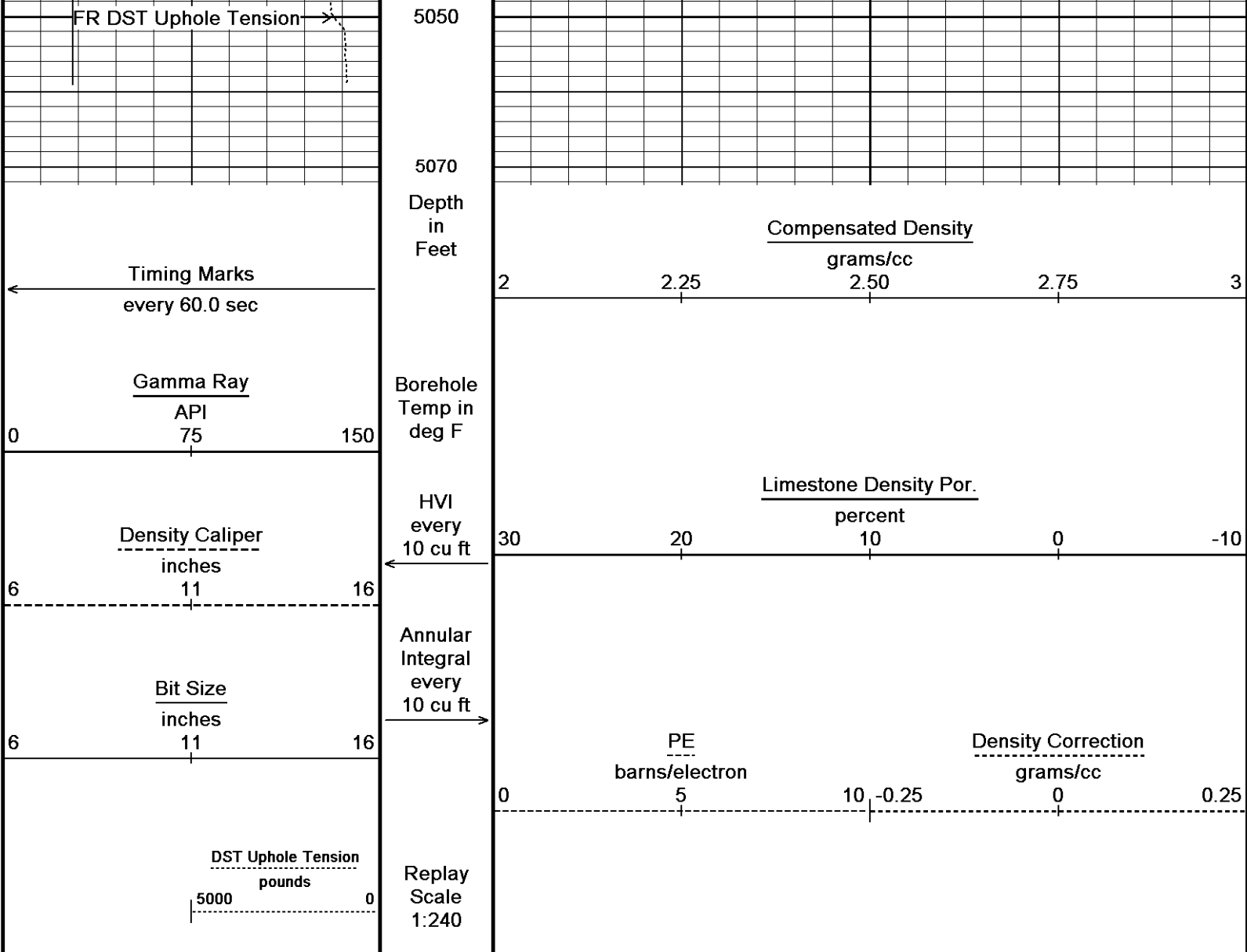


5 INCH MAIN

REPEAT SECTION







Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 22-NOV-2011 16:53  
 Filename: C:\Minimus 11.03.4044\Data\M&M Z-Bar 17-6\M&M Z-Bar 17-6\_001.dta Recorded on 22-NOV-2011 14:15  
 System Versions: Logged with 11.03.4044 Plotted with 11.03.4044

↑ REPEAT SECTION ↑

### BEFORE SURVEY CALIBRATION

C:\Minimus 11.03.4044\Data\M&M Z-Bar 17-6\M&M Z-Bar 17-6.dta

Down-hole Tension Calibration All 000 Field Calibration on 30-JUN-2010

Reading No	Measured	Calibrated (lbs)
1	14112.01	10.00
2	15164.79	427.00

General Constants All 000 Last Edited on 22-NOV-2011,10:58

General Parameters

Mud Resistivity	0.850	ohm-metres
Mud Resistivity Temperature	76.000	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	4.500	inches



Caliper for Differential Caliper Density Caliper

Rwa Parameters  
 Porosity used Base Density Porosity  
 Resistivity used Array Ind. One Res Rt  
 RWA Constant A 1.000  
 RWA Constant M 2.000

Down-hole Tension Calibration SMS 0

Field Calibration on 10-SEP-2011 04:32

Reading No	Measured	Calibrated (lbs)
1	-2243.52	0.00
2	-2203.03	480.60

High Resolution Temperature Calibration MCG-C 139

Field Calibration on 02-AUG-2011,17:13

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

High Resolution Temperature Constants MCG-C 139

Last Edited on

Pre-filter Length 11

SP Calibration MCG-C 139

Field Calibration on 29-AUG-2011 09:25

	Measured	Calibrated (mV)
Reference 1	103.7	100.0
Reference 2	-96.7	-100.0

Gamma Calibration MCG-C 139

Field Calibration on 22-NOV-2011 03:21

	Measured	Calibrated (API)
Background	77	52
Calibrator (Gross)	1148	777
Calibrator (Net)	1071	725

Gamma Constants MCG-C 139

Last Edited on 22-NOV-2011,08:25

Gamma Calibrator Number grc38  
 Mud Density 1.08 gm/cc  
 Caliper Source for Processing Density Caliper  
 Tool Position Eccentred  
 Concentration of KCl 0.00 kppm

Micro Normal and Micro Inverse Calibration MML-A 16

Base Calibration on 15-NOV-2011 08:45  
 Field Check on 22-NOV-2011 03:13

Base Calibration

Channel	Measured		Calibrated (ohm-m)	
	Resistor 1	Resistor 2	Resistor 1	Resistor 2
Micro Normal	12.1	60.2	2.6	12.8
Micro Inverse	15.7	78.4	1.7	8.4

Channel	Base Check (ohm-m)	Field Check (ohm-m)
Micro Normal	32.1	32.1
Micro Inverse	16.3	16.3

Micro Normal and Micro Inverse Constants MML-A 16

Last Edited on 15-NOV-2011,15:23

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 16

Base Calibration on 15-NOV-2011 08:38  
 Field Calibration on 22-NOV-2011 03:14

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	14184	5.98
2	17582	7.97
3	20836	9.86
4	24886	11.92
5	0	0.00
6	N/A	N/A

Field Calibration	Measured Caliper (in) 6.02	Actual Caliper (in) 5.98
-------------------	-------------------------------	-----------------------------

Neutron Calibration MDN-A.B 66		Base Calibration on 17-OCT-2011 14:32 Field Check on 22-NOV-2011 03:26	
Base Calibration			
	Measured	Calibrated (cps)	
	Near Far	Near	Far
	3086 97	3714	110
Ratio	31.796	33.764	
Field Calibrator at Base		Calibrated (cps)	
		1659	2358
Ratio		0.704	
Field Check		Calibrated (cps)	
		1647	2359
Ratio		0.698	

Neutron Constants MDN-A.B 66		Last Edited on 22-NOV-2011,03:21	
Neutron Source Id	P58125B		
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	
Formation Fluid Salinity Source	Constant Value		
Formation Fluid Salinity	0.00	kppm	
Barite Mud Correction	Not Applied		

FE Calibration MFE-A.A 52		Base Calibration on 15-NOV-2011 08:59 Field Check on 22-NOV-2011 03:03	
Base Calibration			
	Measured	Calibrated (ohm-m)	
Reference 1	0.0	0.0	
Reference 2	965.0	126.8	
Base Check		280.1	
Field Check		280.0	

FE Constants MFE-A.A 52		Last Edited on 22-NOV-2011,03:02	
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	

High Resolution Temperature Calibration MAI-A.A 167		Field Calibration on 28-OCT-2011,10:01	
	Measured	Calibrated(Deg F)	
Lower	1.00	33.80	
Upper	11.00	51.80	

High Resolution Temperature Constants MAI-A.A 167		Last Edited on	
Pre-filter Length	11		

Induction Calibration MAI-A.A 167		Base Calibration on 11-MAR-2011,09:58 Field Check on 22-NOV-2011,03:01	
-----------------------------------	--	---	--

## Base Calibration

## Test Loop Calibration

Channel	Measured		Calibrated (mmho/m)	
	Low	High	Low	High
1	17.3	474.2	9.3	966.2
2	6.3	388.4	7.6	821.4
3	3.3	259.4	5.2	566.0
4	1.9	133.0	2.6	279.2

Array Temperature 76.8 Deg F

Channel	Base Check (mmho/m)		Field Check (mmho/m)	
	Low	High	Low	High
1	0.0	0.0	12.9	3840.0
2	0.0	0.0	29.5	3477.3
3	0.0	0.0	29.0	3053.1
4	0.0	0.0	19.7	2081.6
Deep	0.0	0.0	18.5	2048.8
Medium	0.0	0.0	42.2	3991.3
Shallow	0.0	0.0	43.0	5055.0

Array Temperature 0.0 70.8 Deg F

## Induction Constants MAI-A.A 167

Last Edited on 22-NOV-2011,02:59

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	

## Caliper Calibration MPD-B 35

Base Calibration on 15-NOV-2011 10:23

Field Calibration on 22-NOV-2011 03:04

## Base Calibration

Reading No	Measured	Calibrator Size (in)
1	20351	3.99
2	30291	5.98
3	40582	7.97
4	50158	9.86
5	60743	11.92

## Field Calibration

Measured Caliper (in)	Actual Caliper (in)
5.94	5.98

## Photo Density Calibration MPD-B 35

Base Calibration on 15-NOV-2011 10:46  
Field Check on 22-NOV-2011 03:12

## Density Calibration

## Base Calibration

	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	57280	27020	59556	30836
Reference 2	23374	2567	24941	2541

## Field Check at Base

1159.9	1374.4
--------	--------

## Field Check

1152.3	1369.5
--------	--------

## PE Calibration

## Base Calibration

	WS	Measured		Calibrated
		WH	Ratio	Ratio
Background	207	1024		
Reference 1	21400	57084	0.378	0.371
Reference 2	6184	23227	0.269	0.272

## Field Check at Base

206.8	1023.7
-------	--------

## Field Check

206.6	1018.1
-------	--------

## Density Constants MPD-B 35

Last Edited on 22-NOV-2011,08:25

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	

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

## DOWNHOLE EQUIPMENT

C:\Minimus 11.03.4044\Data\M&amp;M Z-Bar 17-6\M&amp;M Z-Bar 17-6.dta

Compact Comms Gamma  
MCG-C 139 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in



45.04 ft  
42.13 ft

GRGC - Gamma Ray  
CGXT - MCG External Temperature

Compact Micro-log  
MML-A 16 LG: 7.97 ft WT: 81.6 lb OD: 2.24 in

Compact Neutron  
MDN-A.B 66 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

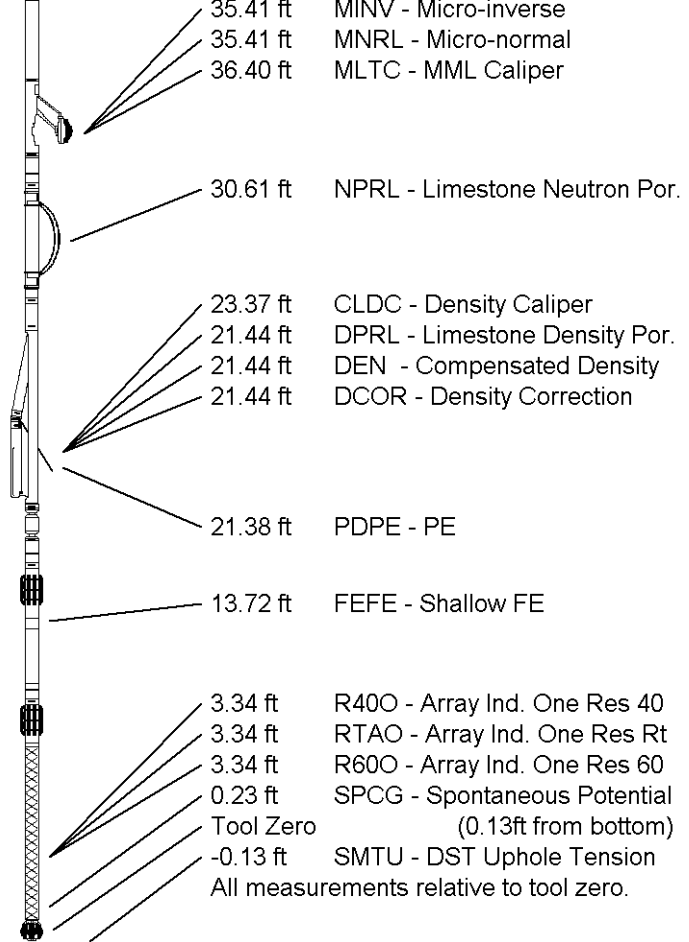
Compact Density/Caliper  
MPD-B 35 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

SKJ-D.A Compact Knuckle Joint  
SKJ-D.A 36 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

Compact Focussed Electric  
MFE-A.A 52 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

Compact Induction  
MAI-A.A 167 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 50.32 ft Weight: 407.9 lb

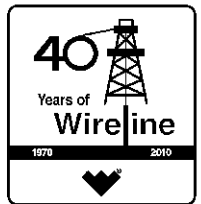


COMPANY M&M EXPLORATION, INC.  
WELL Z-BAR #17-6  
FIELD AETNA NE  
PROVINCE/COUNTY BARBER  
COUNTRY/STATE U.S.A. / KANSAS

Elevation Kelly Bushing	1657.00	feet	First Reading	5028.00	feet
Elevation Drill Floor	1655.00	feet	Depth Driller	5050.00	feet
Elevation Ground Level	1645.00	feet	Depth Logger	5050.00	feet



COMPACT PHOTO DENSITY  
COMPENSATED NEUTRON  
MICRORESISTIVITY LOG





Scale 1:240 (5"=100') Imperial  
Measured Depth Log

Well Name: M & M Exploration  
Location: 17-T34S-R14W  
License Number: 15-00-72391  
Spud Date: 11/14/2011  
Surface Coordinates: 1955' FNL & 1895' FWL, NW/4

Z-Bar 17-6  
Barber County, KS  
Region: Aetna NE  
Drilling Completed: 11/22/2011

Bottom Hole Coordinates: As Above  
Ground Elevation (ft): 1645' K.B. Elevation (ft): 1657'  
Logged Interval (ft): 3900' To: 5050' Total Depth (ft): 5050'  
Formation: Pennsylvanian & Mississippian  
Type of Drilling Fluid: Chemical Mud

Printed by WellSight Log Viewer from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: M & M Exploration, Inc.  
Address: Attn: Mike Austin  
4257 Main Stree, Suite 230  
Westminster, Co. 80031

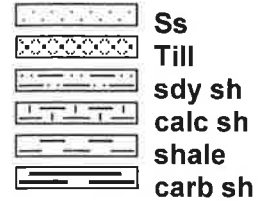
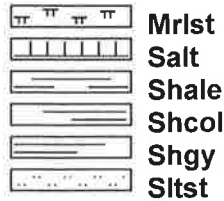
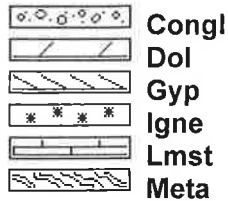
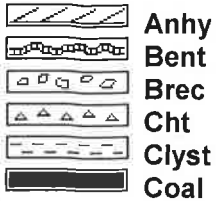
GEOLOGIST

Name: Mike Pollok  
Company: Map Exploration, Inc.  
Address: P.O. Box 106  
Purcell, Ok 73080

Comments

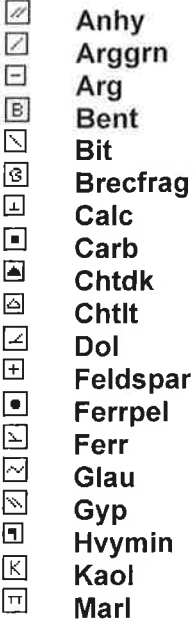
Southwind Rig #70  
Mudlogging Unit #5  
Mudlogger: Beth Brock

### ROCK TYPES

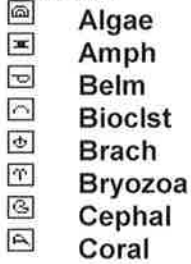


### ACCESSORIES

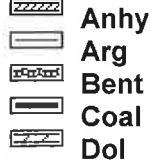
#### MINERAL



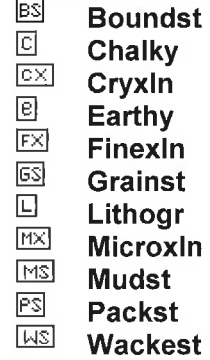
#### FOSSIL



#### STRINGER

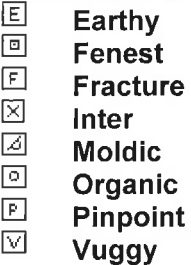


#### TEXTURE



### OTHER SYMBOLS

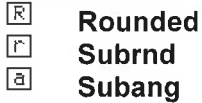
#### POROSITY TYPE



#### SORTING



#### ROUNDING



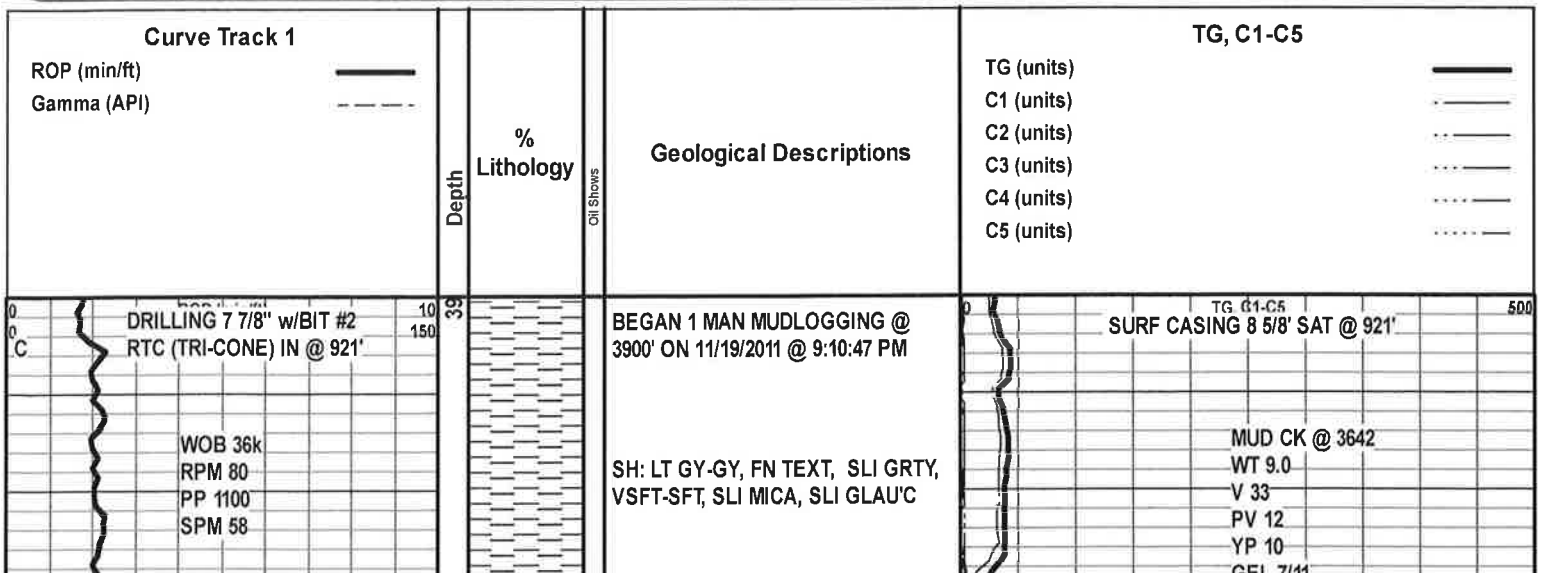
#### OIL SHOWS

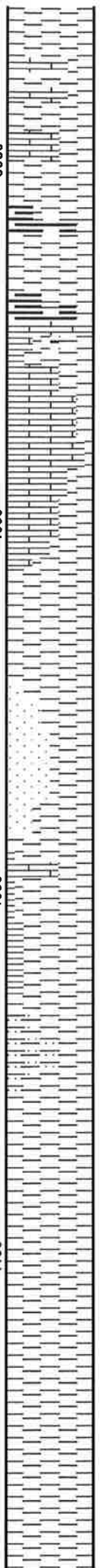
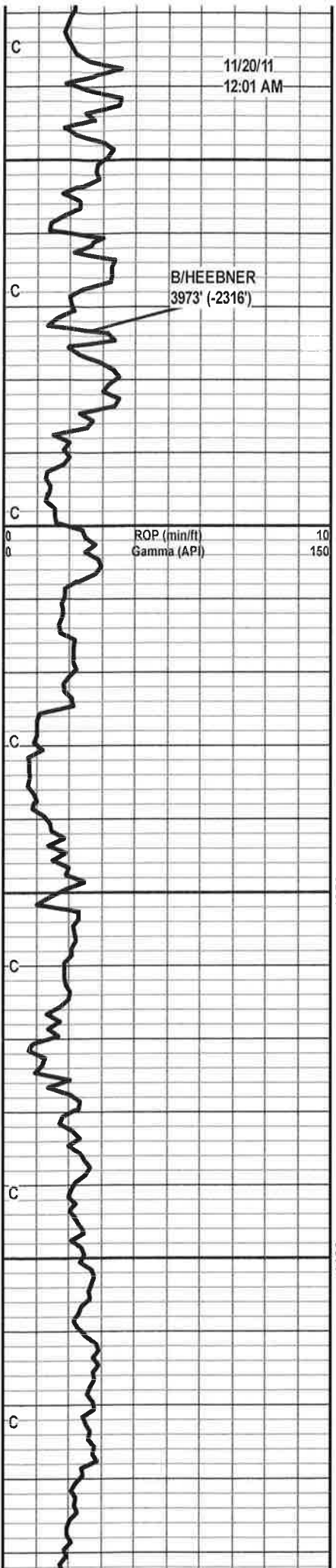


#### INTERVALS



#### EVENTS





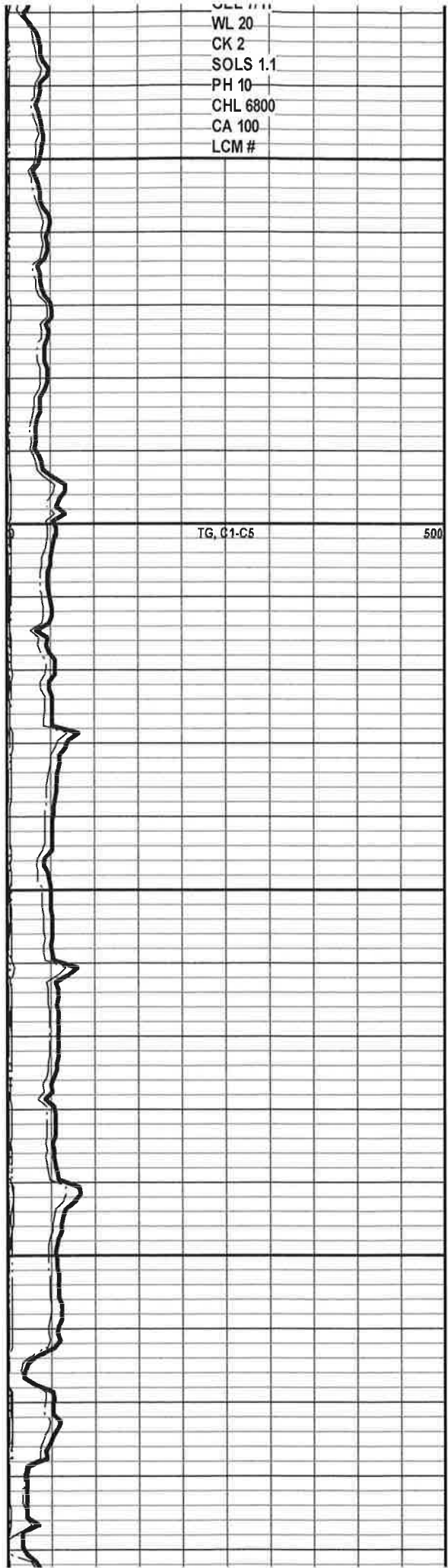
SH: GY-DK GY-BRN- BLK, V/FN WXY  
TEXT, MD FM-HD, SLI CALC, CARB

LS: TN-BRN, FN MICRO-XLN, V/GD  
P.P. POR AND SM VUG, ARG, SLI  
SUC, OOL'C I.P. GRDING INTO LS:  
WT-OFF WT-TN-GY, V/FN  
MICRO-XLN, HD DNS, SHLY, ARG,  
FOSS W/SM P.P.POR, ABT YEL FLU,  
NO VIS STN, CUT, OR ODOR

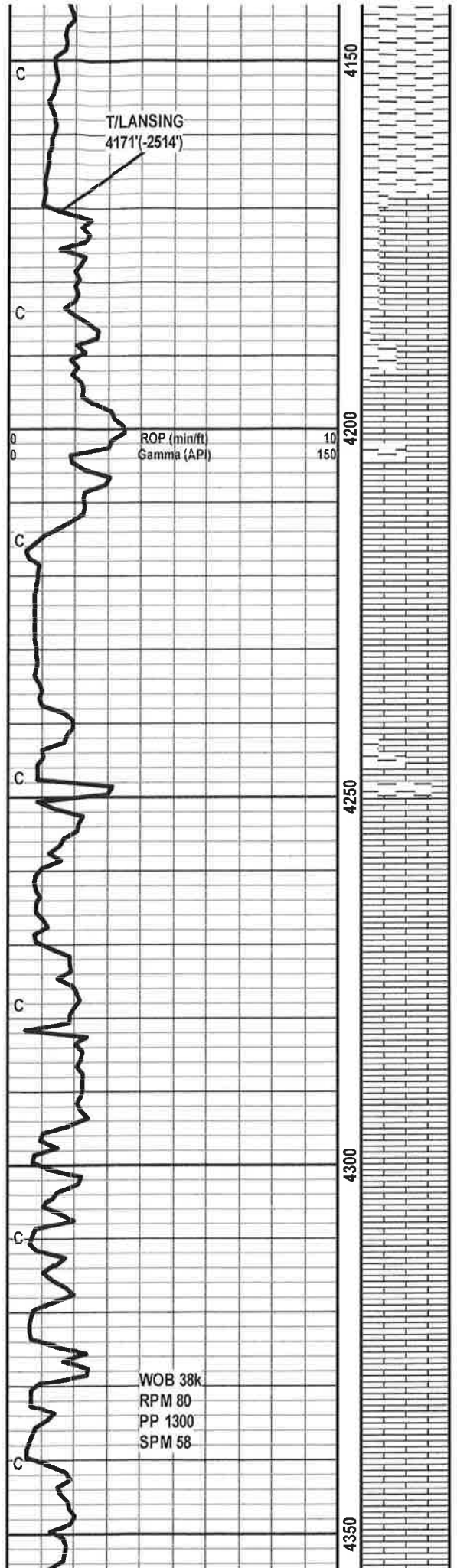
SS: LT GY-GY, FN-MD GRN, WELL  
SORT, SUB RND-RND, CONS, CEM,  
TRNLS, MICA, SLI SHLY, NO VIS  
FLU, STN, CUT, OR ODOR

SH: LT-GY, GY, FN TEXT, GRTY, MD  
SFT, SLI FISS, MICA, PYR'C, SNDY,  
FR PYR THRU OUT

SH: LT GY-GY-DK GY, FN TEXT,  
V/SFT-SFT,PLTY, PYR'C SPKS, SLI  
MICA, SM FR PYR







SH: AAB

LS: WT-OFF WT-TN- LT GY,  
MICRO-XLN, HD, DNS, ARG, SHLY,  
SM WTSH YEL FLU, NO VIS STN,  
CUT, OR ODOR

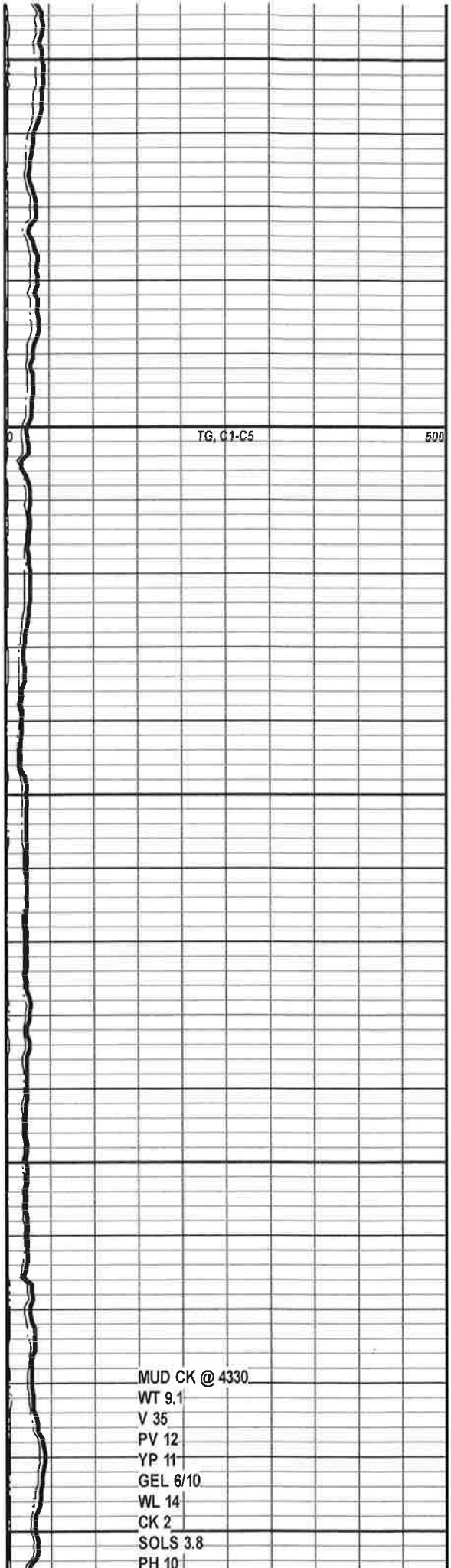
LS: OFF WT-TN-BRN, MICRO-XLN,  
SLI DNS, SM P.P.POR, ARG, CALC,  
FLI FOSS, ABT BRT YEL FLU, NO  
VIS STN, CUT ,OR ODOR

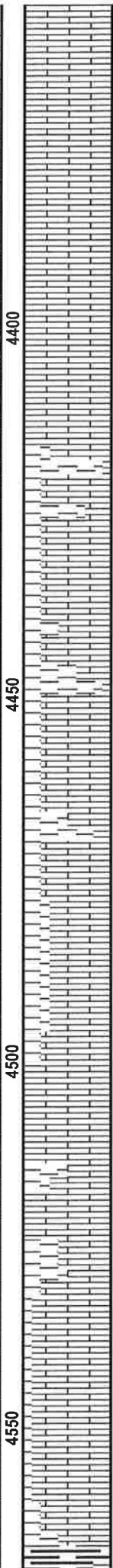
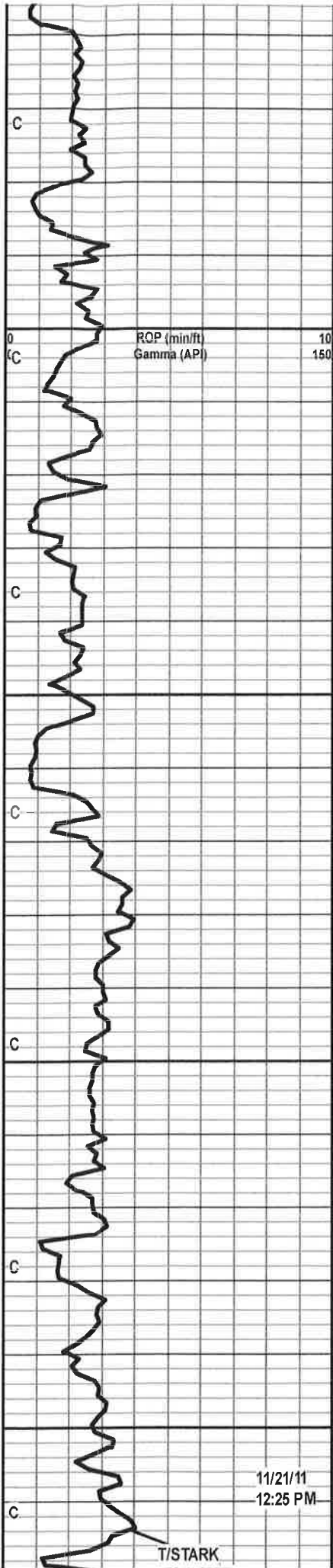
LS: AAB

LS: WT-OFF WT-TN, MICRO-XLN, SLI  
DNS, SLI SUC, V/GD P.P.POR, SLI  
OOL'C, ARG, ABT BRT YEL FLU, NO  
VIS STN, CUT, OR ODOR

LS: AAB

WOB 38k  
RPM 80  
PP 1300  
SPM 58





LS: OFF WT-TN-BRN, V/FN  
 MICRO-XLN, HD DNS, TR P.POR,  
 CALC, FOSS, ARG, V/DUL YEL FLU,  
 NO VIS STN, CUT, OR ODOR

DEVIATION@ 4371'=1\*

LS: AAB

LS: WT-OFF WT-TN-GY, MICRO-XLN,  
 SLI DNS, V/ARG, FOSS, CALC,  
 SHLY, BRNSH YEL FLU, NO VIS  
 STN, CUT, OR ODOR

LS: AAB W/ ABT LT GY-GY-DK GY  
 LIMEY SHALE

LS: OFF WT-TN-BRN, MICRO-XLN,  
 DNS, W/THRED, TR P.POR, V/ARG,  
 SLI MOTT, FOSS, SHLY, YEL FLU,  
 NO VIS STN, CUT, OR ODOR

SH: DK GY- BRN-BLK, V/ WXY SHNY  
 TEXT MD FM.HD V/PITY CAL C

CHL 3000  
 CA 100  
 LCM #

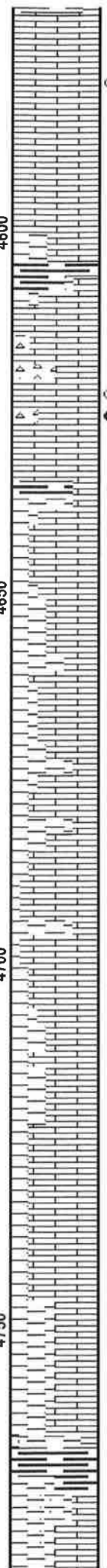
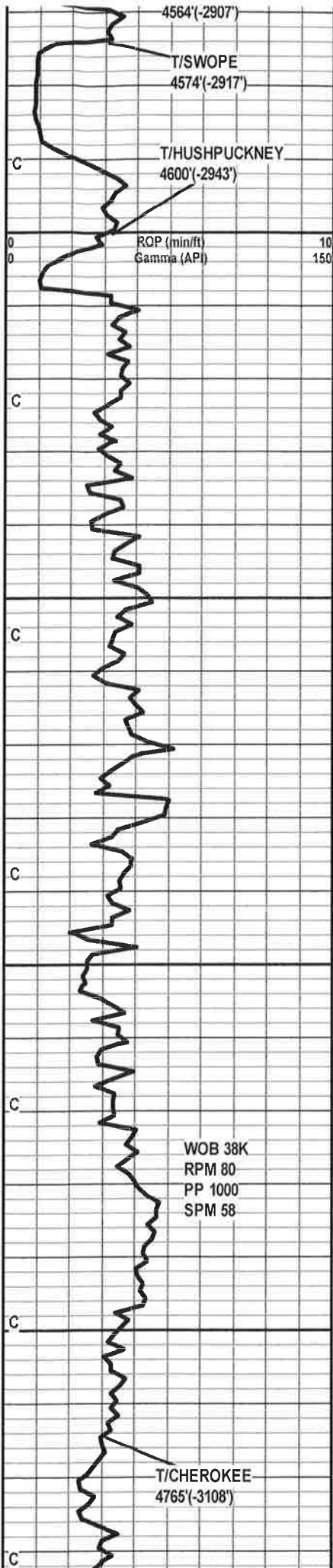
TG, G1-C5 500

SUCTION HOSE  
 PULLED FROM  
 AGITATOR

SHALE GAS 387u

11/21/11  
 12:25 PM

T/STARK



V/CARB

LS: TN-BRN-DK BRN,  
INTER-XLN,V/SUC, FRI, V/GD  
INTER-XLN POR W/SM P.P.POR,  
V/MOTT, DUL YEL FLU, SM DOS, SLI  
ODOR, NO VIS CUT

SH: DK GY-BLK V/CARB, GSSY BUB

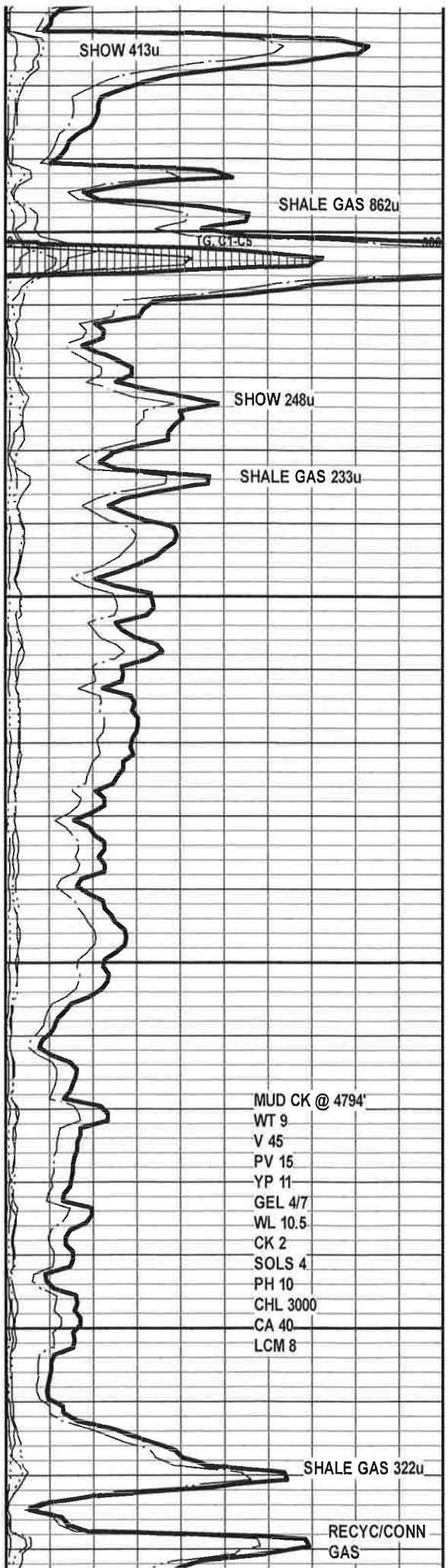
LS: OFF WT-TN-BRN, MICRO-XLN,  
HD, SUC, GD P.P.POR, ARG, SLI  
MOTT, W/ SM FRSH OPA AND WHT  
CHT, ABT YEL FLU, NO VIS STN,  
V/STRNG ODOR, NO VIS CUT, RES  
RNG LEFT

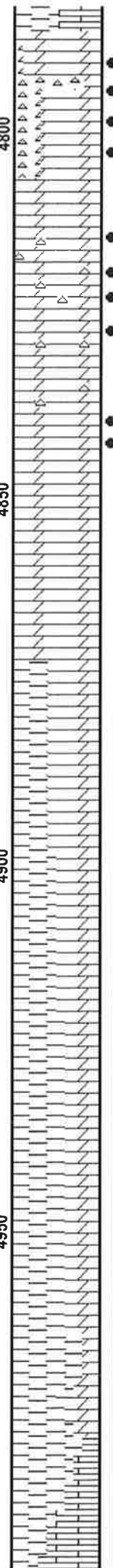
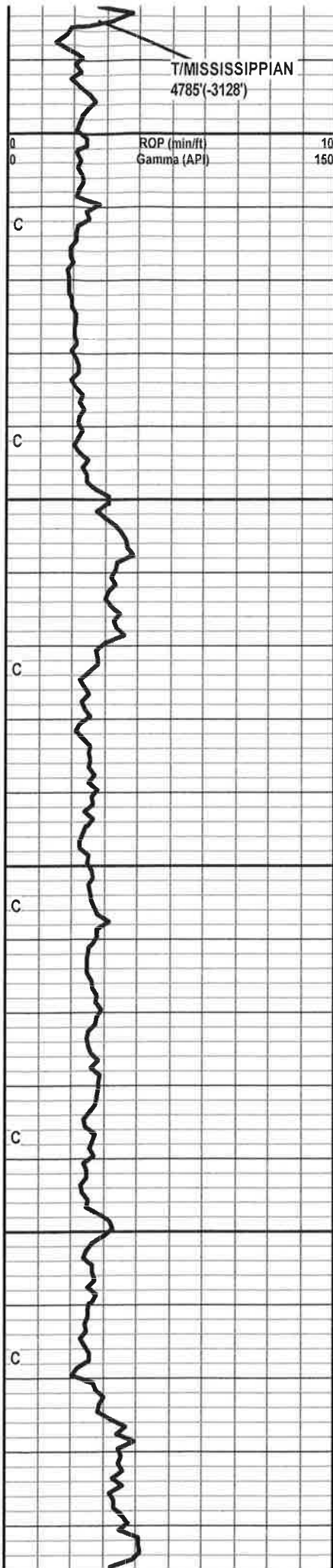
LS: OFF WT-TN-BRN-GY,  
MICRO-XLN, HD, SLI DNS, SM GD  
P.P.POR, SHLY I.P., ARG, MOTT, W/  
ABT GY-DK GY LMY SH, SM BRT  
YEL FLU, NO VIS STN, CUT, OR  
ODOR

LS: AAB

LS: WT-OFF WT-GY, V/MICR-XLN, HD  
DNS, SM P.P.POR, V/ARG, V/SHLY,  
CALC, ABT DK YEL FLU, NO VIS  
STN, CUT, OR ODOR

SH: DK GY-BRN-BLK, V/FN WXY  
SHNY TEXT, HD, PLTY, PYR'C SPKS,  
CALC, V/CARB, VIS GSY BUBBLES





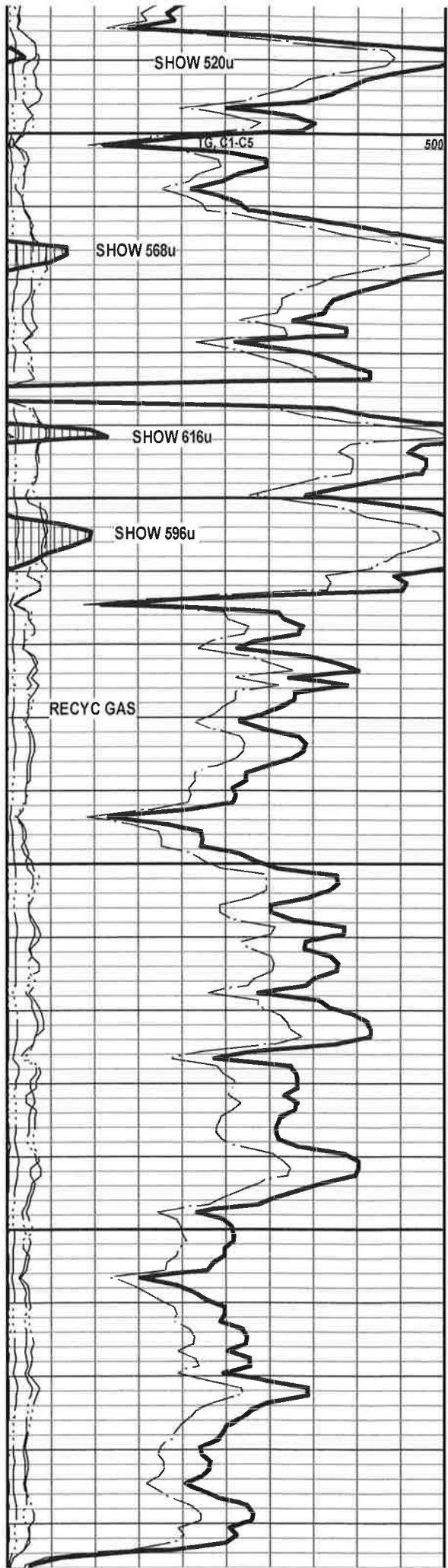
DOLO: TN-BRN-DK BRN, INTER-XLN,  
V/SUC, BRIT, EXC INTER-XLN POR  
W/SM P.P.POR, MOTT, V/CHTY I.P.  
W/ ABT FRSH OPA, TN, GRN, FRSH  
CHT, ABT DUL GRNSH YEL FLU, DK  
STNING, V/FAST STRM CUT, AND  
V/STRNG ODOR

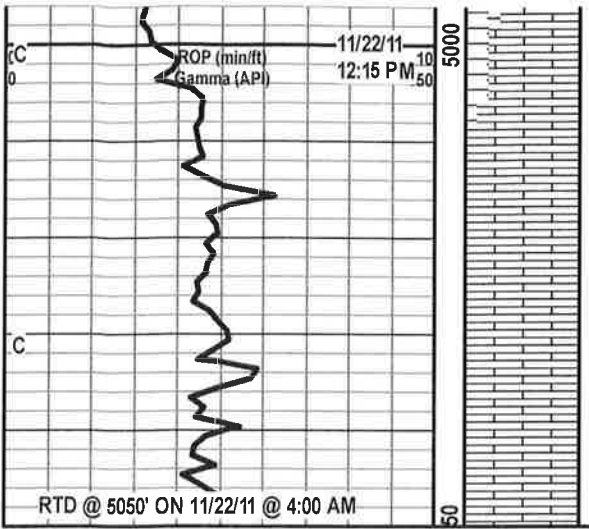
DOLO: TN-BRN-GRN, INTER-XLN  
W/SM MICRO-XLN, V/SUC, FRI, V.GD  
INTER-XLN AND P.P.POR, SLI CHTY,  
V/GLAU'C, DUL YEL FLU, DK BRN  
STNING, GD STRMING CUT, AND  
V/STRONG ODOR

DOLO: LT GY-GY-BRN, V/FN  
MICRO-XLN, HD DNS, TR P.P.POR,  
PYR'C SPKS, V/SHLY, NO VIS FLU,  
STN, CUT OR ODOR

DOLO: AAB

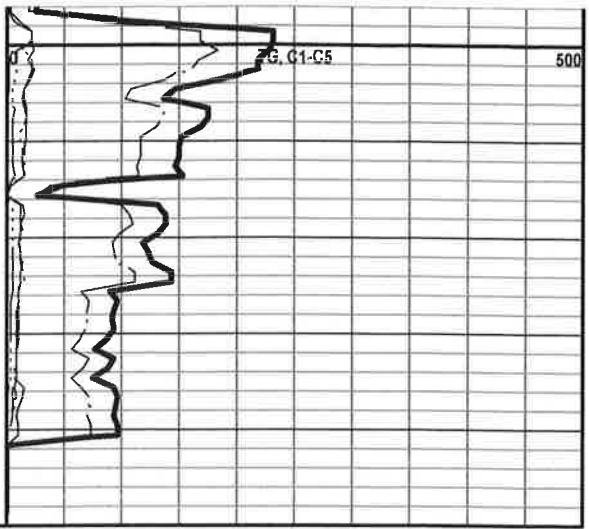
DOLO: AAB GRDING INTO LT  
GY-GY-GRN LMY SHALE, GLAU'C,  
MD FM





LS: WT-OFF WT-TN, V/FN  
 MICRO-XLN, DNS, SLI CHLKY, ARG,  
 SM YEL FLU, NO VIS STN, CUT, OR  
 ODOR

SHORT TRIP UP TO COLLARS, RIH,  
 CIRC 1 1/2 HR, DROP SURVEY, TOH  
 FOR ELOGS



Conservation Division  
Finney State Office Building  
130 S. Market, Rm. 2078  
Wichita, KS 67202-3802



Phone: 316-337-6200  
Fax: 316-337-6211  
<http://kcc.ks.gov/>

Mark Sievers, Chairman  
Ward Loyd, Commissioner  
Thomas E. Wright, Commissioner

Sam Brownback, Governor

March 08, 2012

Mike Austin  
M & M Exploration, Inc.  
4257 MAIN ST., #230  
WESTMINSTER, CO 80031

Re: ACO1  
API 15-007-23791-00-00  
Z Bar 17-6  
NW/4 Sec.17-34S-14W  
Barber County, Kansas

Dear Production Department:

We are herewith requesting that the Well Completion Form ACO-1 and attached information for the subject well be held confidential for a period of two years.

Should you have any questions or need additional information regarding subject well, please contact our office.

Respectfully,  
Mike Austin