

Company VAUGHN GOOD OIL COMPANY
Well NUSSER #5-16
Field S.E. HARDTNER
County BARBER
State KANSAS

RECON

COMPENSATED NEUTRON
LITHOLOGY DENSITY
GAMMA RAY X-Y CALIPER
MICROLOG

OTHER SERVICES:			
SEC		TWP	RGE
16		03S	12W
Location. 1290' FNL & 1155' FWL			
SURF. SAME		AP#.	SE NW NW 015-007-24061-0000
Permanent Datum		Ground Level	Elev 1401
Log Measured From		Kelly Bushing	
Drilling Measured From		Kelly Bushing	
Date		15-SEP-2013	
Run No.		ONE	
TD Driller		5675	ft
TD RECON		5669	ft
Bot Logged Interval		5668	ft
Top Logged Interval		550	ft
Casing Depth Driller		8 5/8	in.
Casing Depth RECON		8 5/8	in.
Bit Size		7 7/8	in.
Drilling Fluid Type		CHEM/GEL	
Density		9.4 ppg	65 sec/qt
Fluid Loss		8.8 cm/30min	10.5 strip
Source Of Sample		Flowline	
RM @ Measured Temp		0.690	Ohmm @ 75
RMF @ Measured Temp		0.517	Ohmm @ 75
RMC @ Measured Temp		0.862	Ohmm @ 75
RM @ MRT		0.395	Ohmm @ 136
Max Recorded Temp		136	DegF
Time Drilling Stopped		15-SEP-2013	04:00
Time Circulation Stopped		15-SEP-2013	09:00
Time Logger On Bottom		15-SEP-2013	13:42
Unit Num		S409	OKLAHOMA CITY, OK
Recorded By		H. GARCIA	
Witnessed By		MR. V. GOOD	

interpretations made by any of our officers, agents or employees, except in the case of provable Gross Negligence or willfull damage. Interpretations are also subject to the terms and conditions of our Price Schedule and General Service Agreement.

All interpretations are based on inferences from electrical or other readings, and therefore, RECON cannot and will not guarantee the accuracy of any interpretations of log data. RECON shall not be liable for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from

RIG INFORMATION

Drill Contr/Rig#	MENDENHALL DRLG. #3

GENERAL REMARKS SECTION

FIRST RUN IN THE HOLE
CNL AND LDT LOGGED IN A LIMESTONE MATRIX
TOP MARK - 246.7, BOTTOM MARK - 5550.6
CNL/LDT LOGGED MATRIX: 2.71 g/cc.

CHLORIDES: 6000 mg/l
LCM: 8 lb/bbl

AHV CALCULATED ON 5.5" PROD. CASING

THANK YOU FOR USING RECON PETROTECHNOLOGIES LTD.

CREW: M. CALLENTINE

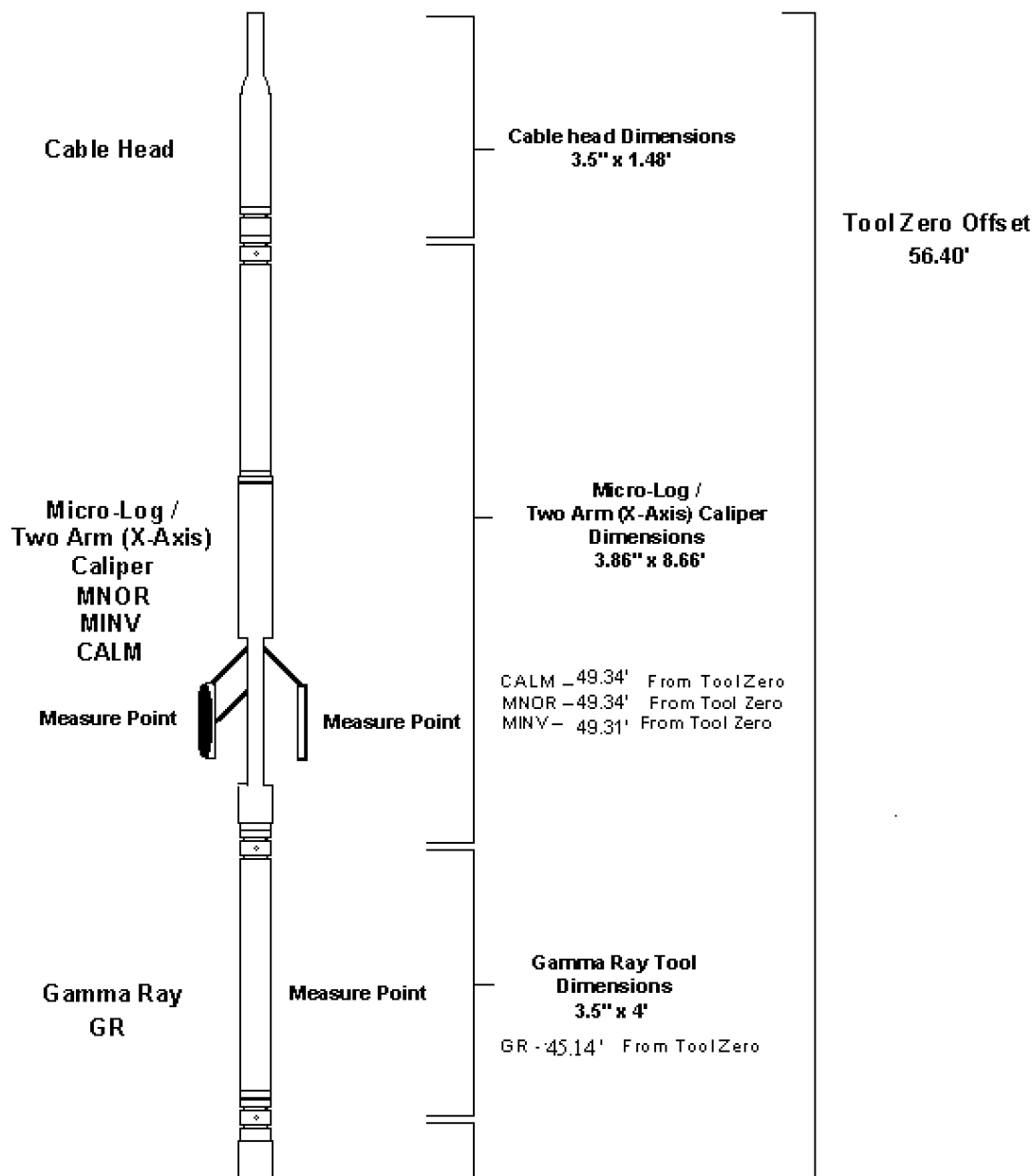
CEMENT VOLUME CALCULATIONS SUMMARY

Tool Type	LDT-CNT	Caliper TypeX-Y CALIPERS		
Tool Serial #	RN2016 / RL4106			
	Borehole Total	Annular Volume with Casing	From Depth (MKb)	To Depth (MKb)
VOLUMES	572.877 Cubic Feet	295.994 Cubic Feet	4000	TD 5669

CASING INFORMATION

	SIZE (in)	GRADE	WEIGHT (lbs/ft)	ID (in)	TOP DEPTH	BOT DEPTH
SURFACE CASING	8 5/8	J-55	24	8.097	Surface	388
INTERMEDIATE CASING	N/A	N/A	N/A	N/A	N/A	N/A
PRODUCTION CASING	5 1/2	J-55	15.5	4.950	Surface	TD

DUAL INDUCTION - SP / GAMMA RAY /
COMPENSATED LITHO-DENSITY / X-CALIPER
COMPENSATED NEUTRON / Y-CALIPER
MICRO - LOG / M-CALIPER



Compensated Neutron
Y – Axis Caliper
NP (SS,LS,DL)
CALY

Compensated Neutron
Y-Axis Caliper
Dimensions
3.98" x 10.25'

CALY - 37.14' From ToolZero
CNL LS - 36.32' From ToolZero
CNL SS - 35.73' From ToolZero

Measure Point

Digital Telemetry

Digital Telemetry Section
Dimensions
3.5" x 3.15'

Tool String
Length Total
57.89'

Compensated
Litho-Density (Pe)
X – Axis Caliper

DP(SS,LS,DL)
RHOB
DRHO
PE
CALX

Measure Point

Compensated Litho-Density
X-Axis Caliper
Dimensions
3.98" x 9.35'

CALX - 23.20' From ToolZero
LDT w1 -
LDT w2 -
LDT w3 - 22.93' From ToolZero
LDT w4 -
LDT SS - 22.44' From ToolZero

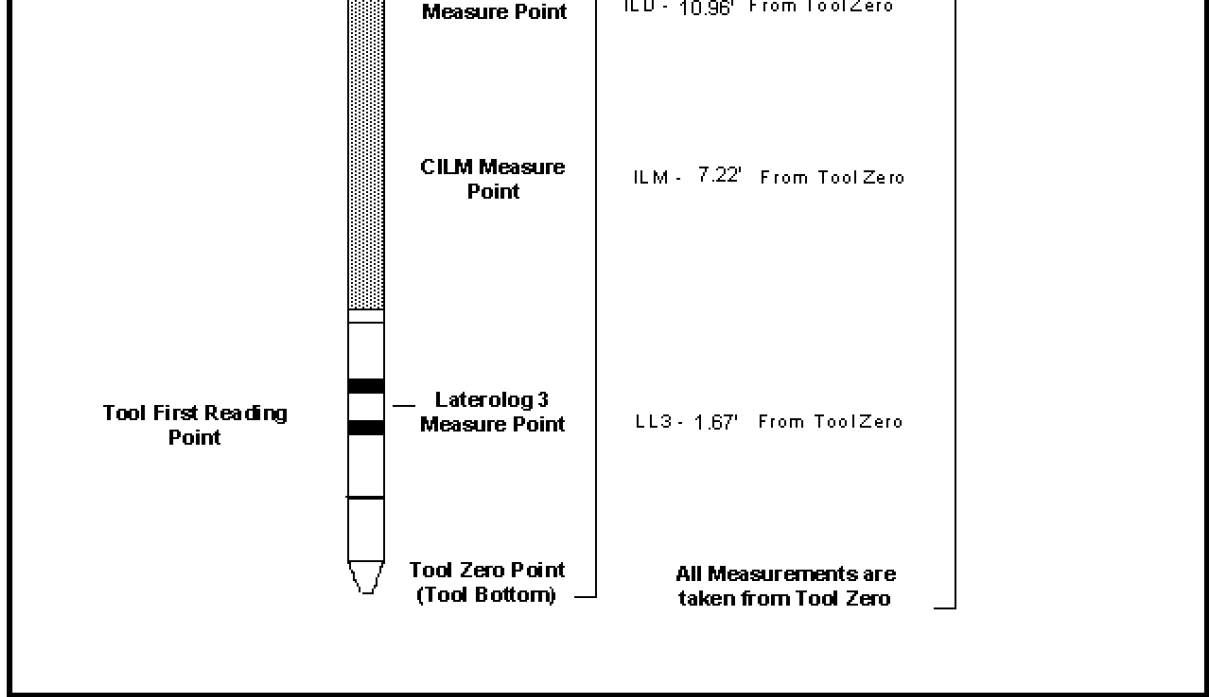
Dual Induction

SP
ILD
ILM
LL3

Dual Induction Tool
Dimensions
3.62" x 21'

SP - 10.96' From ToolZero

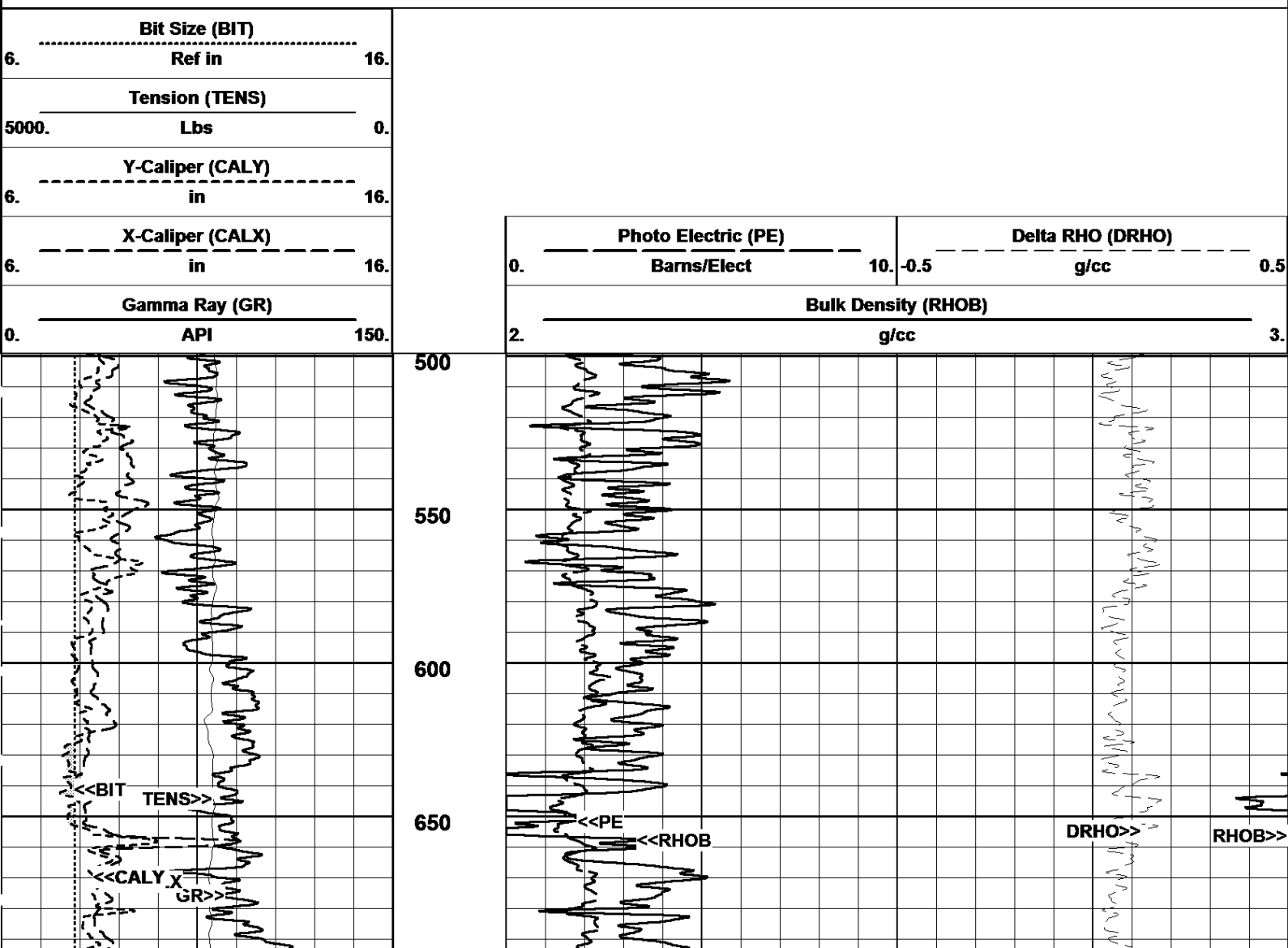
S.P. / CILD

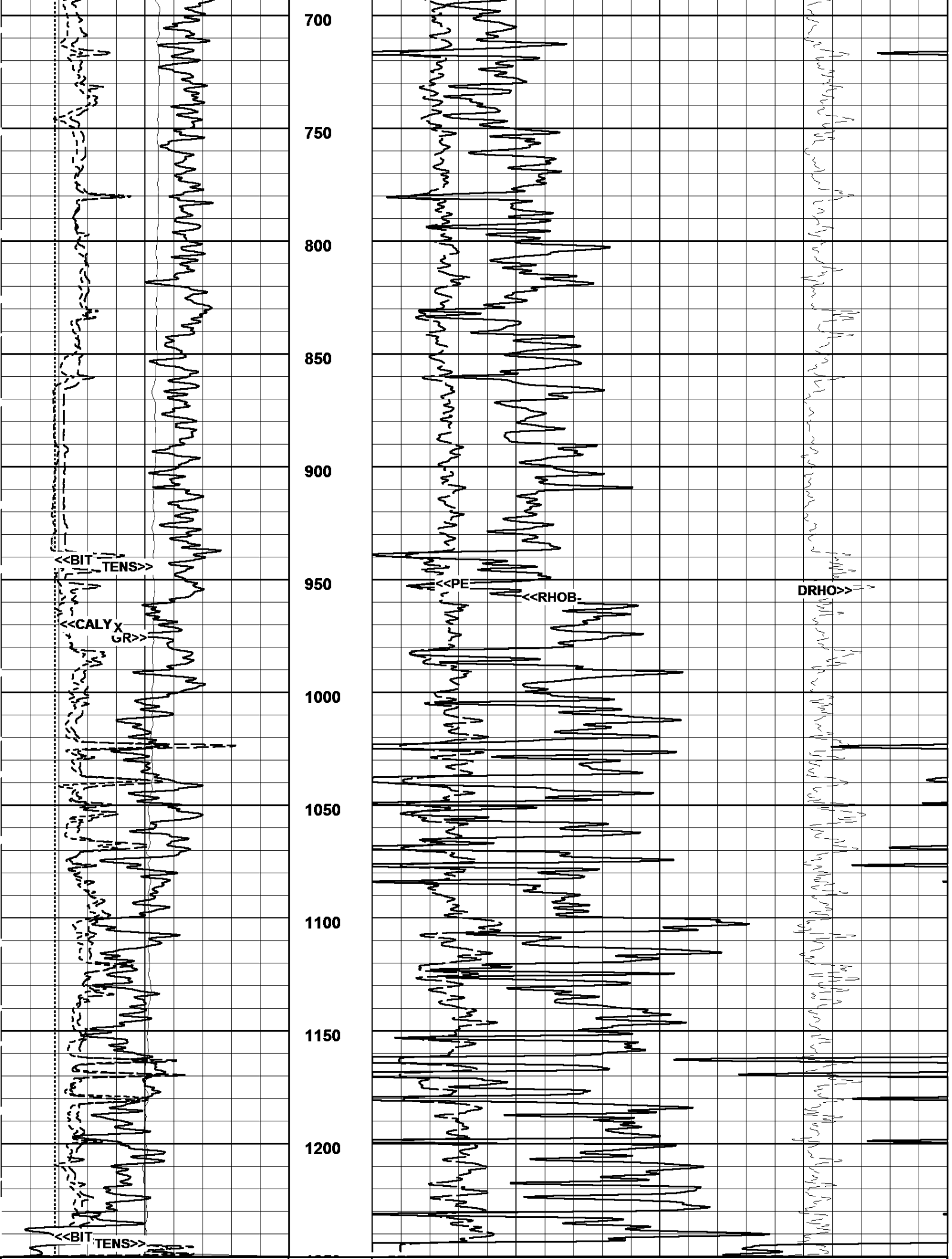


09/15/2013
16:01:11 ⇒ End Time

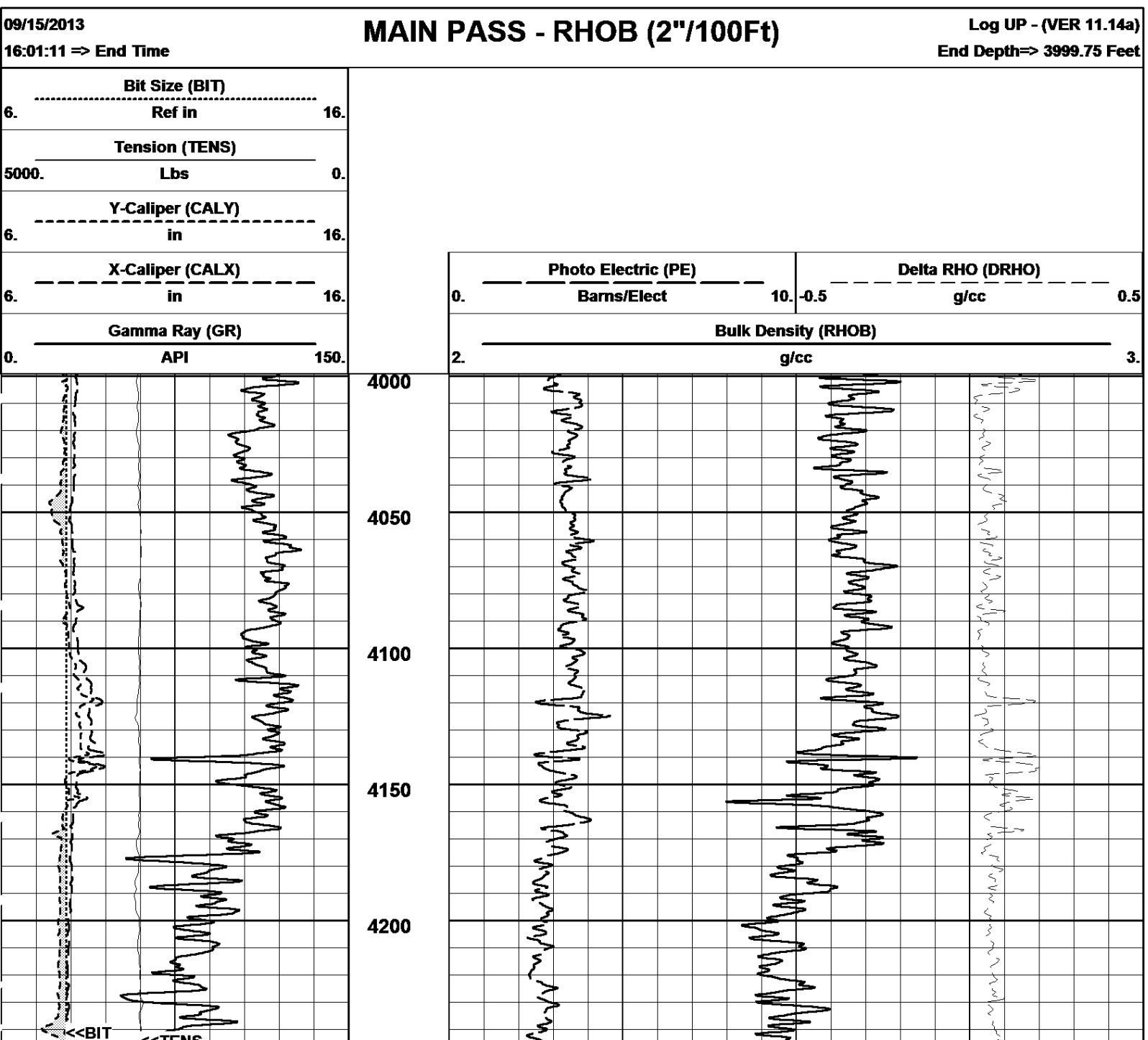
MAIN PASS - RHOB (2"/100Ft)

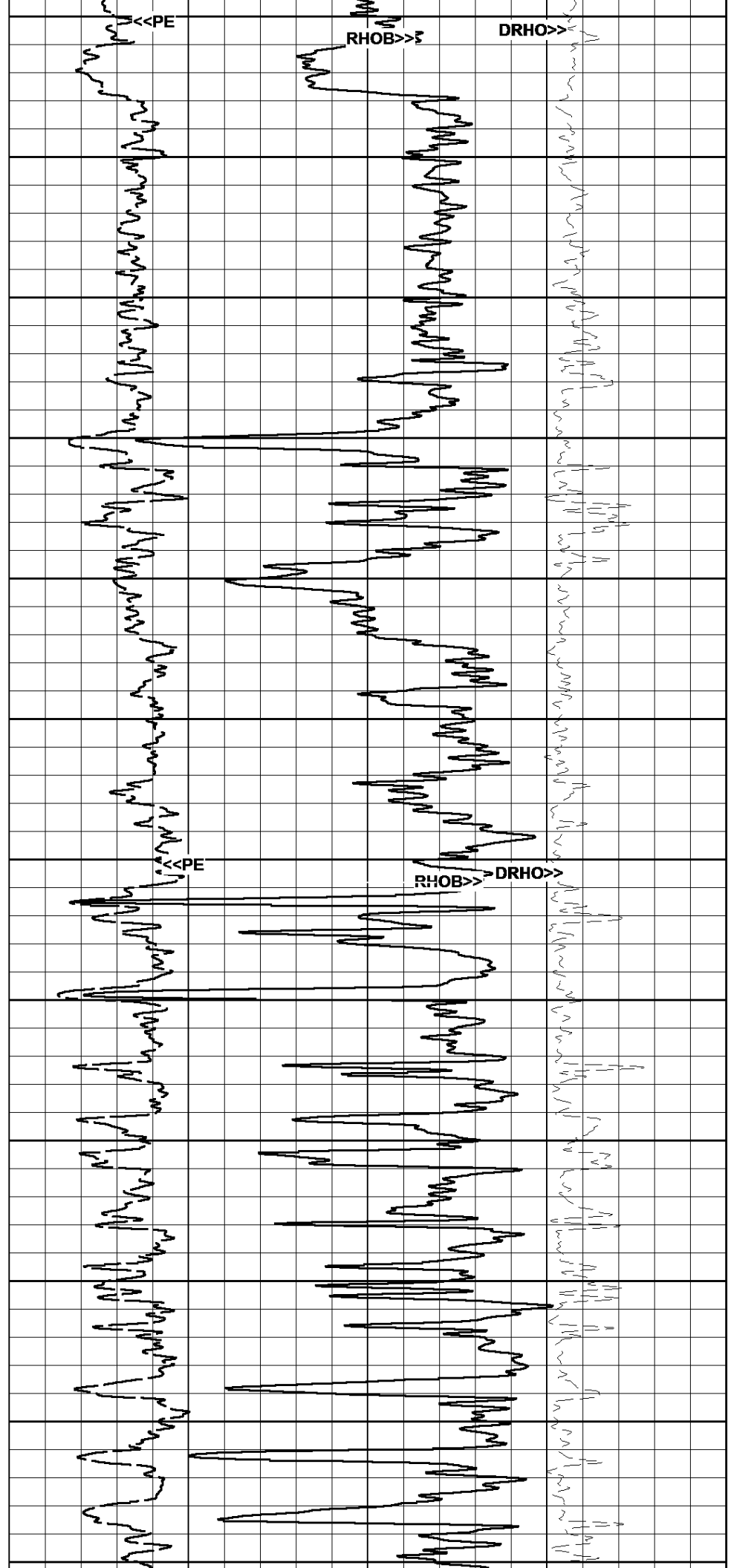
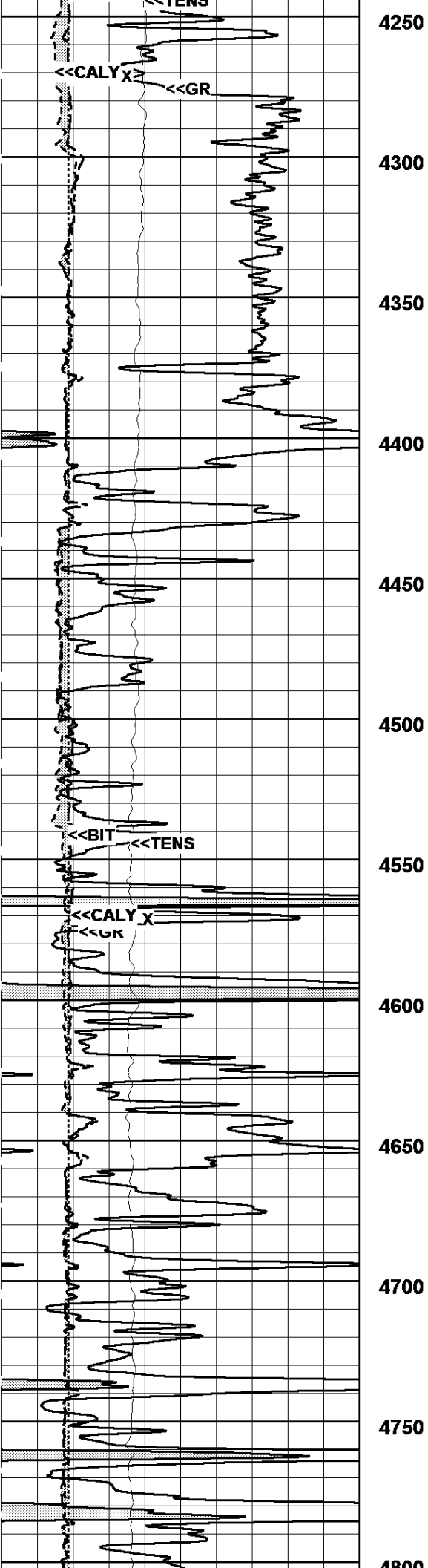
Log UP - (VER 11.14a)
End Depth⇒ 499.75 Feet

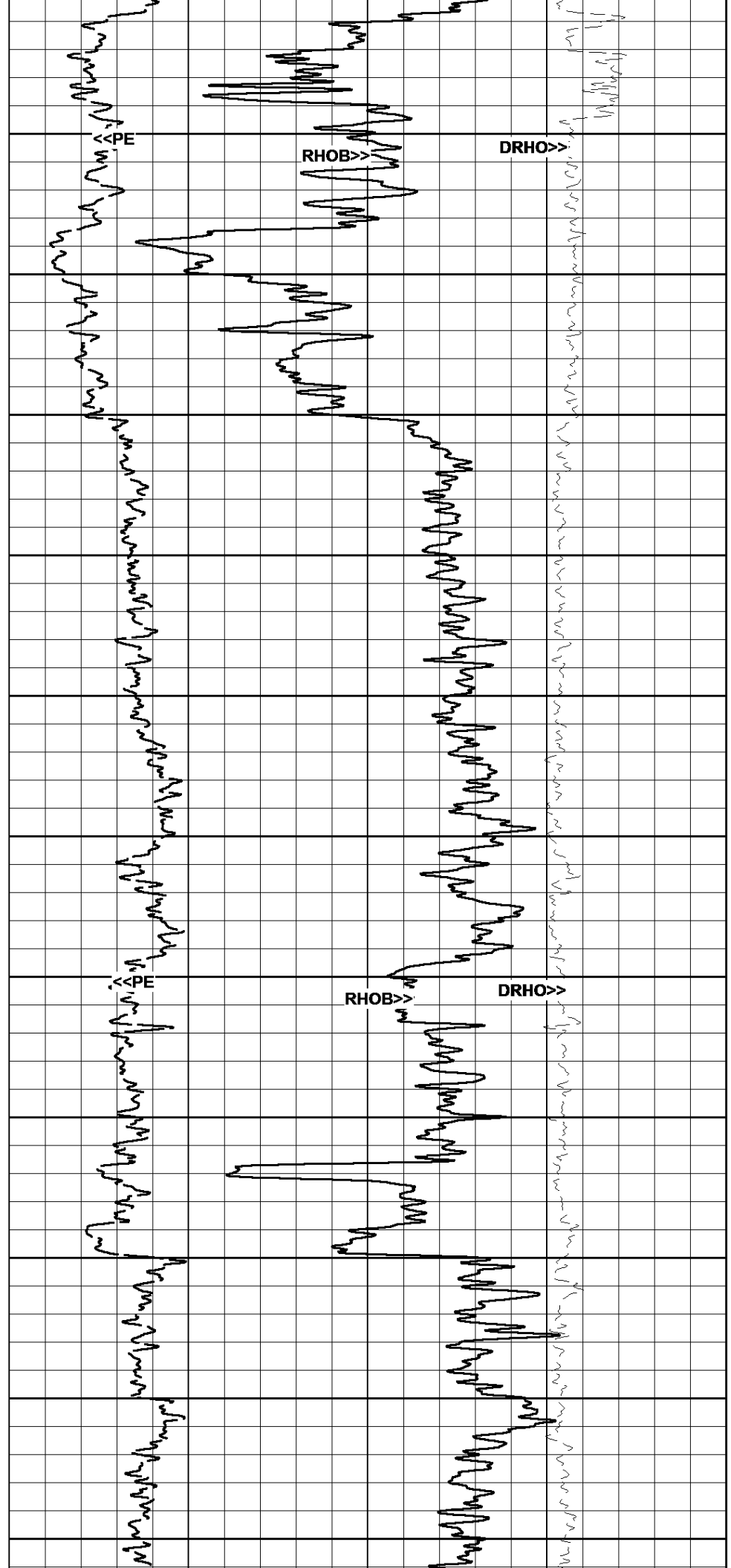
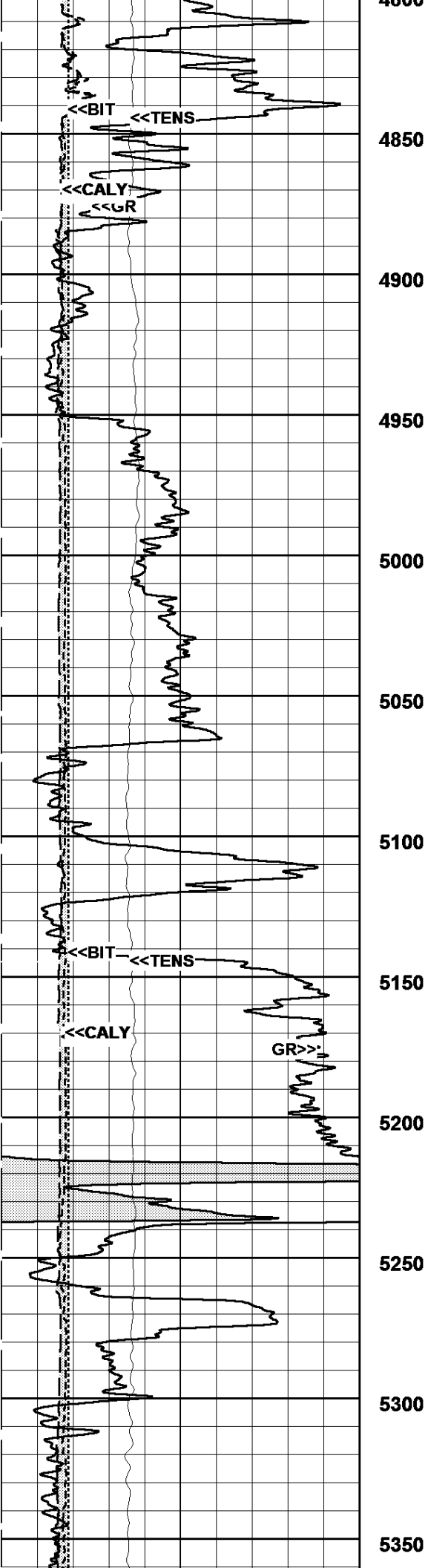


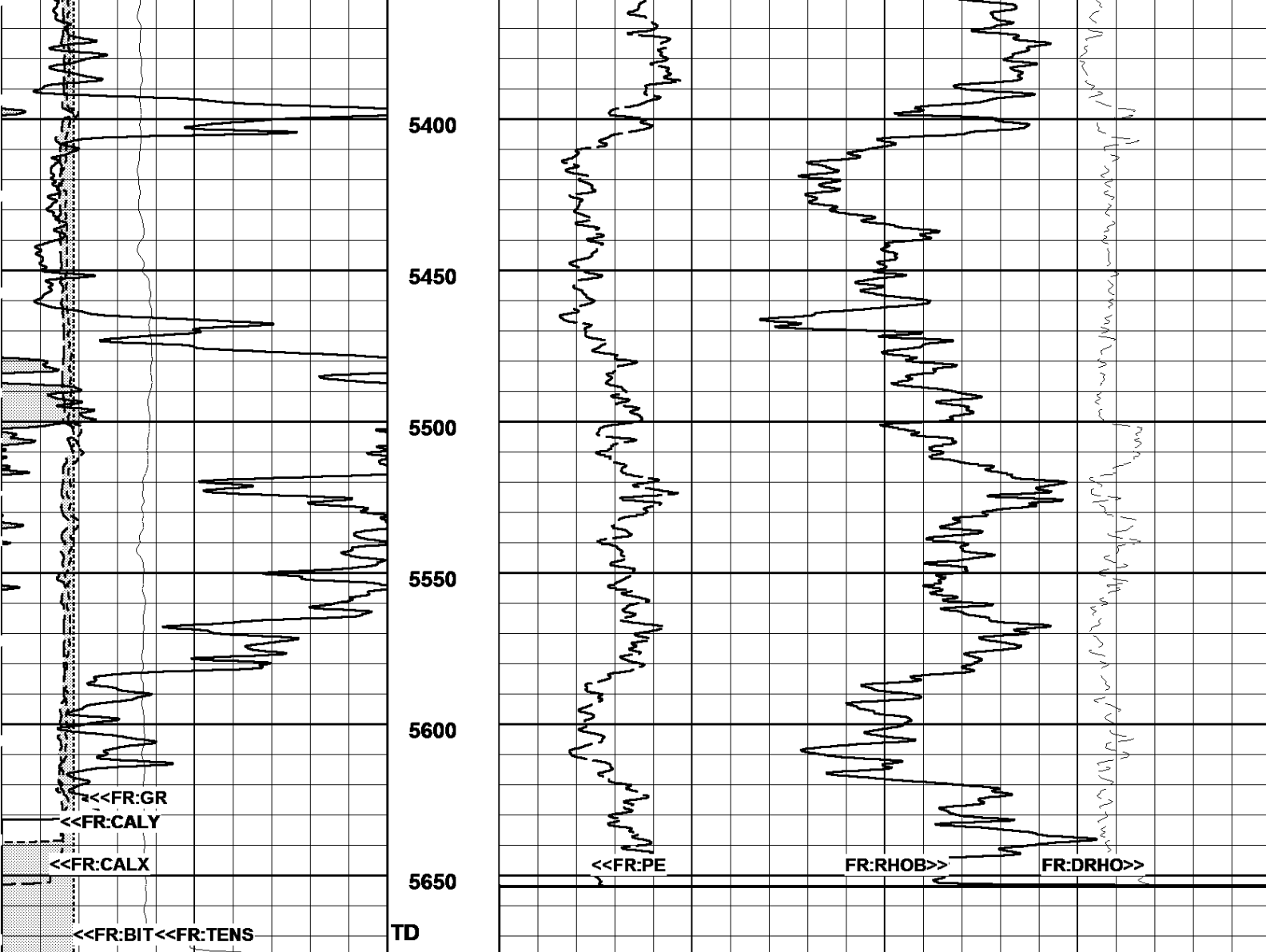


Gamma Ray (GR) 0. API 150.			Bulk Density (RHOB) 2. g/cc 3.					
X-Caliper (CALX) 6. in 16.			Photo Electric (PE) 0. Barns/Elect 10.			Delta RHO (DRHO) -0.5 g/cc 0.5		
Y-Caliper (CALY) 6. in 16.								
Tension (TENS) 5000. Lbs 0.								
Bit Size (BIT) 6. Ref in 16.								
09/15/2013			MAIN PASS - RHOB (2"/100Ft)			Log UP - (VER 11.14a)		
14:04:48 => Start Time						Start Depth=> 1249.75 Feet		









Gamma Ray (GR)		Bulk Density (RHOB)	
0.	150.	2.	3.
API		g/cc	
X-Caliper (CALX)		Photo Electric (PE)	
6.	16.	0.	10.
in		Barns/Elect	
Y-Caliper (CALY)		Delta RHO (DRHO)	
6.	16.	-0.5 0.5	
in		g/cc	
Tension (TENS)			
5000.	0.		
Lbs			
Bit Size (BIT)			
6.	16.		
Ref in			

09/15/2013
14:04:48 ⇒ Start Time

MAIN PASS - RHOB (2"/100Ft)

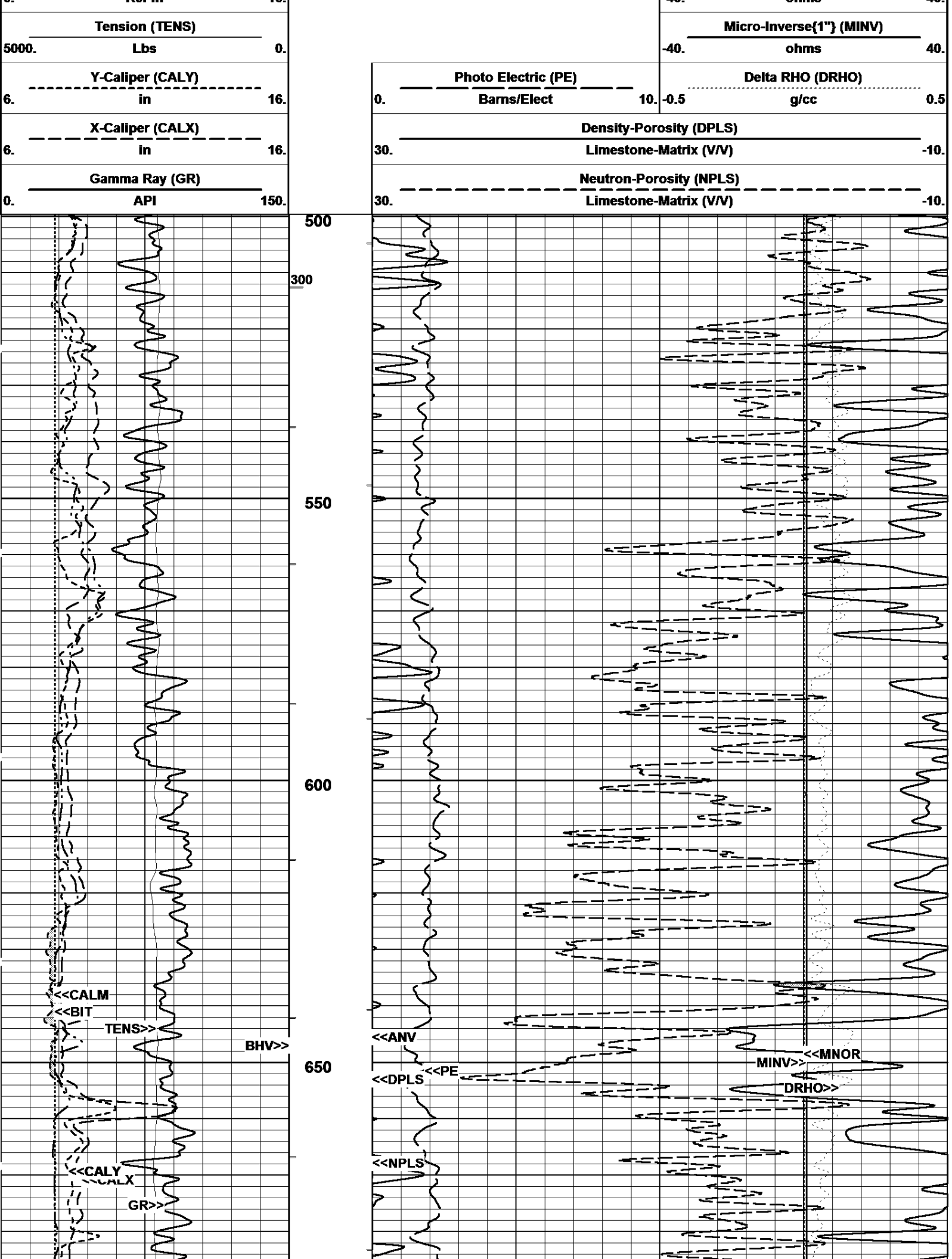
Log UP - (VER 11.14a)
Start Depth⇒ 5676.50 Feet

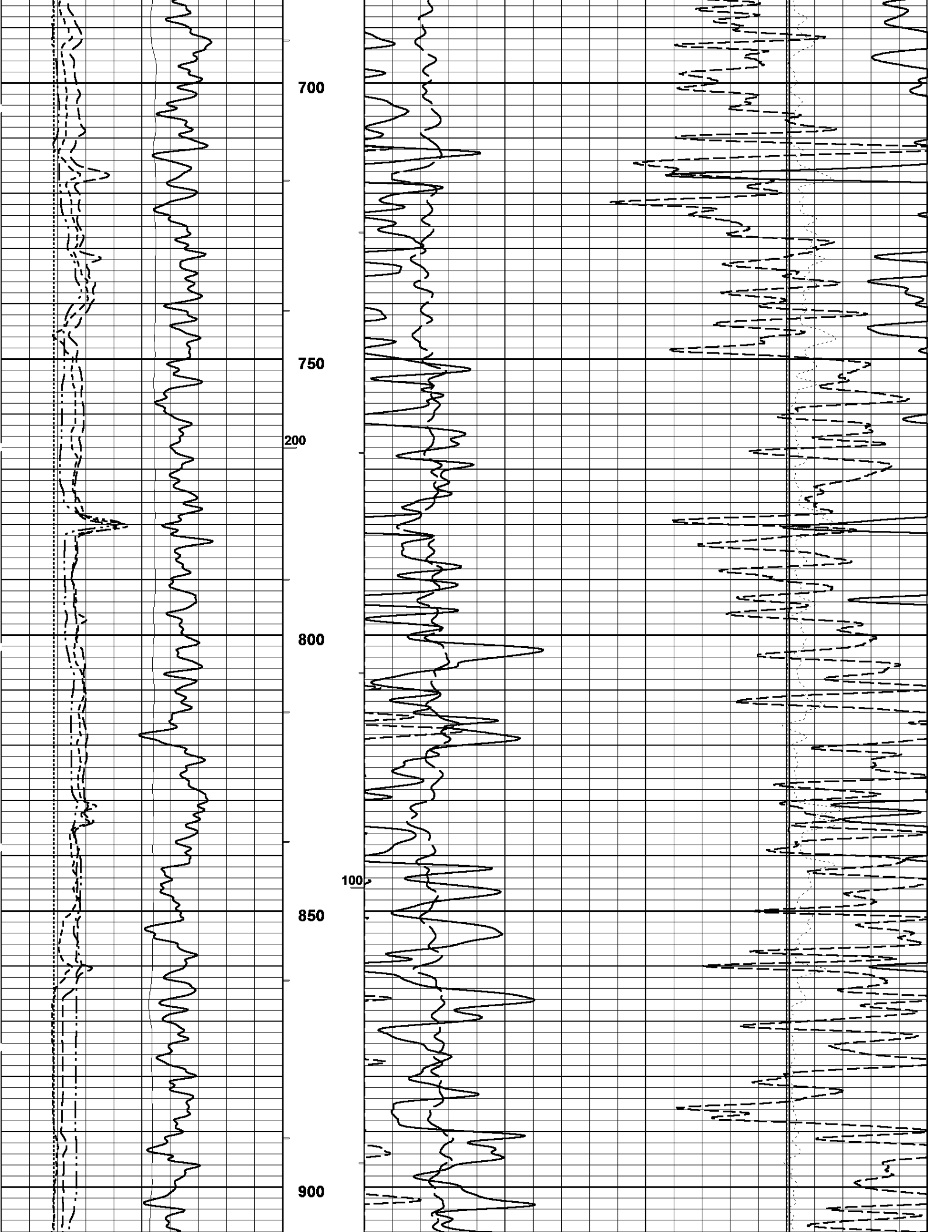
09/15/2013
16:01:11 ⇒ End Time

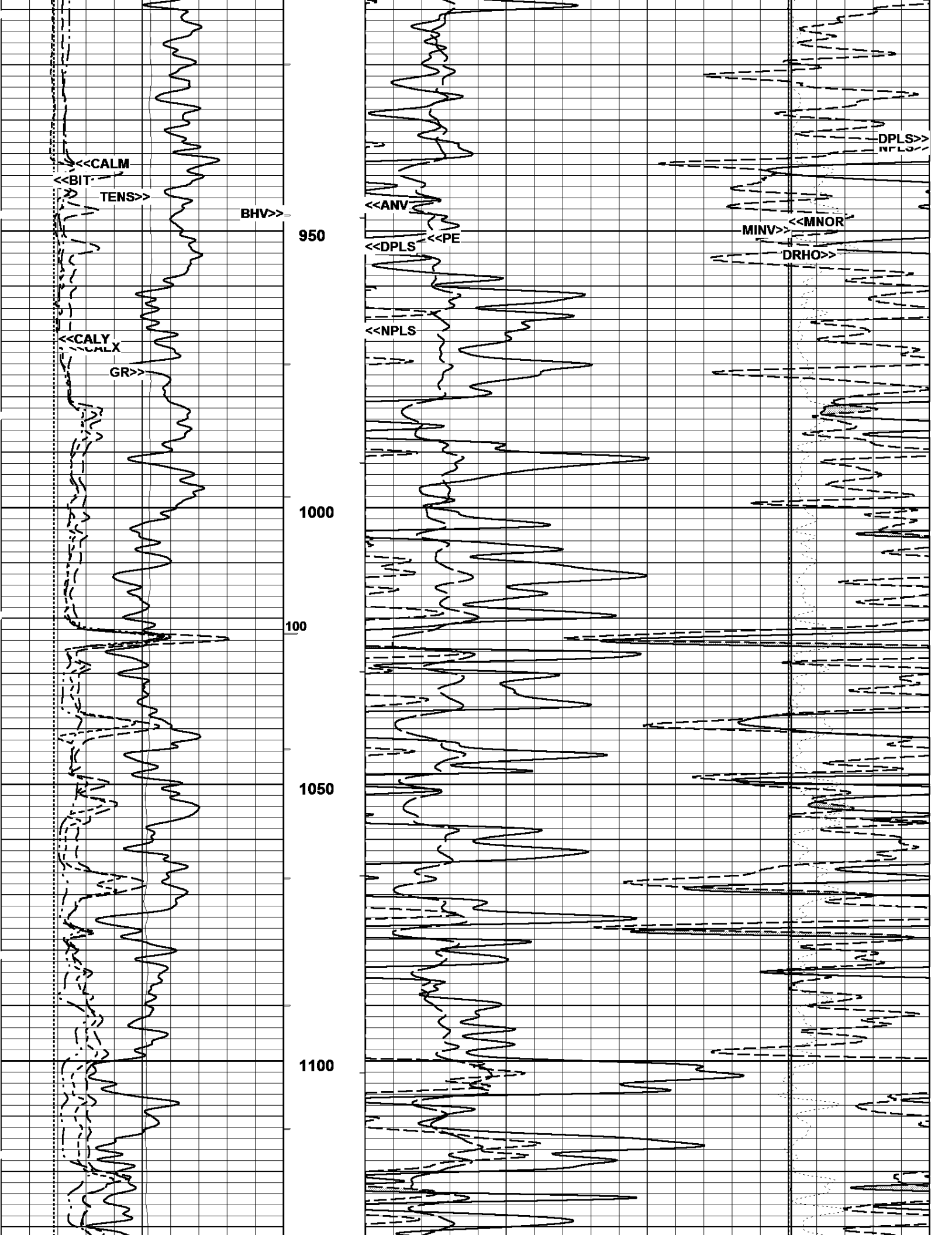
MAIN PASS - LIMESTONE (5"/100Ft)

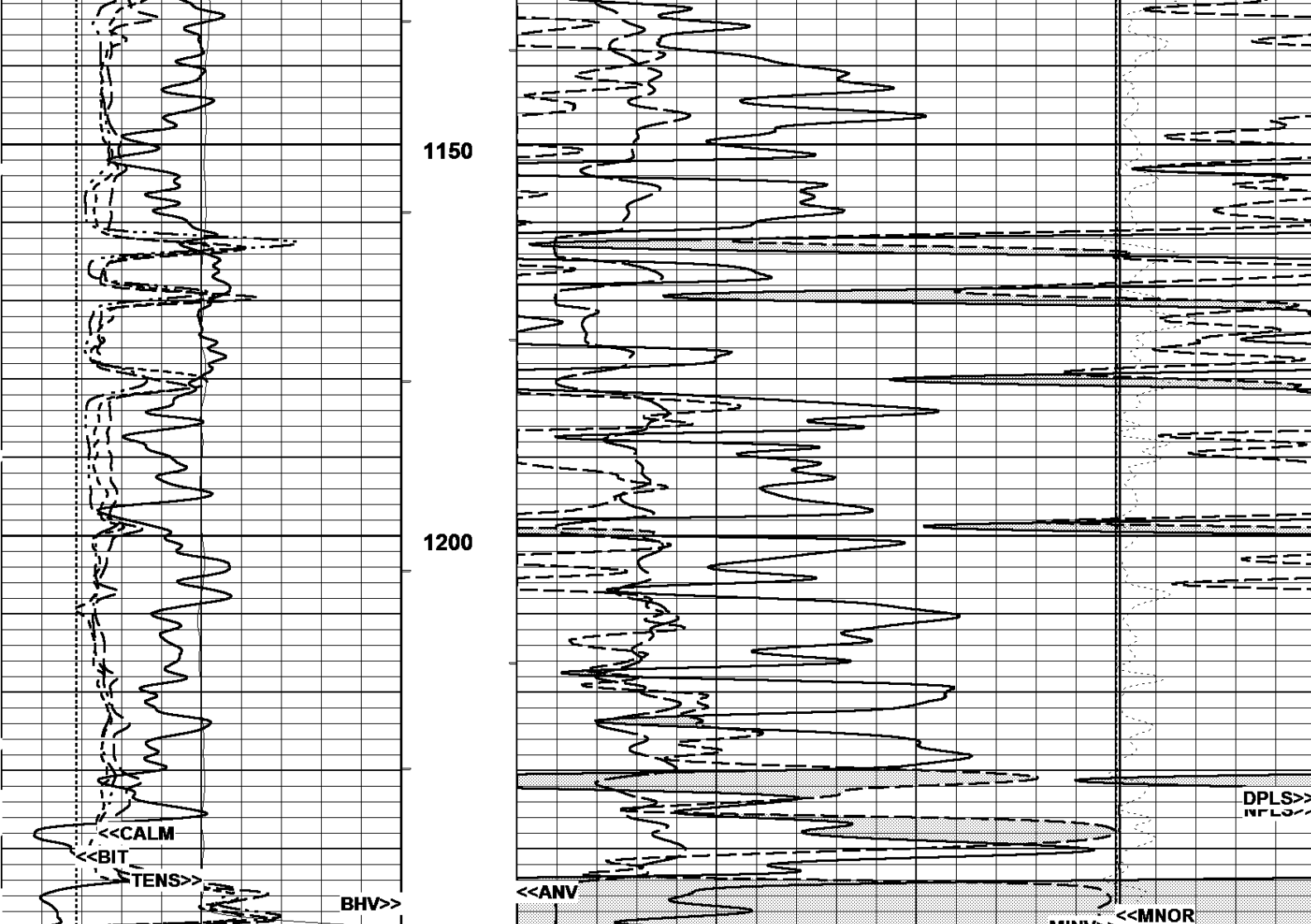
Log UP - (VER 11.14a)
End Depth⇒ 499.90 Feet

Microlog-Caliper		Micro-Normal(2") (MNOR)	
6.	16.		
in		ohms	
Bit Size (BIT)			
6.	16.		
Ref in			









Gamma Ray (GR)		
0.	API	150.
X-Caliper (CALX)		
6.	in	16.
Y-Caliper (CALY)		
6.	in	16.
Tension (TENS)		
5000.	Lbs	0.
Bit Size (BIT)		
6.	Ref in	16.
Microlog-Caliper		
6.	in	16.

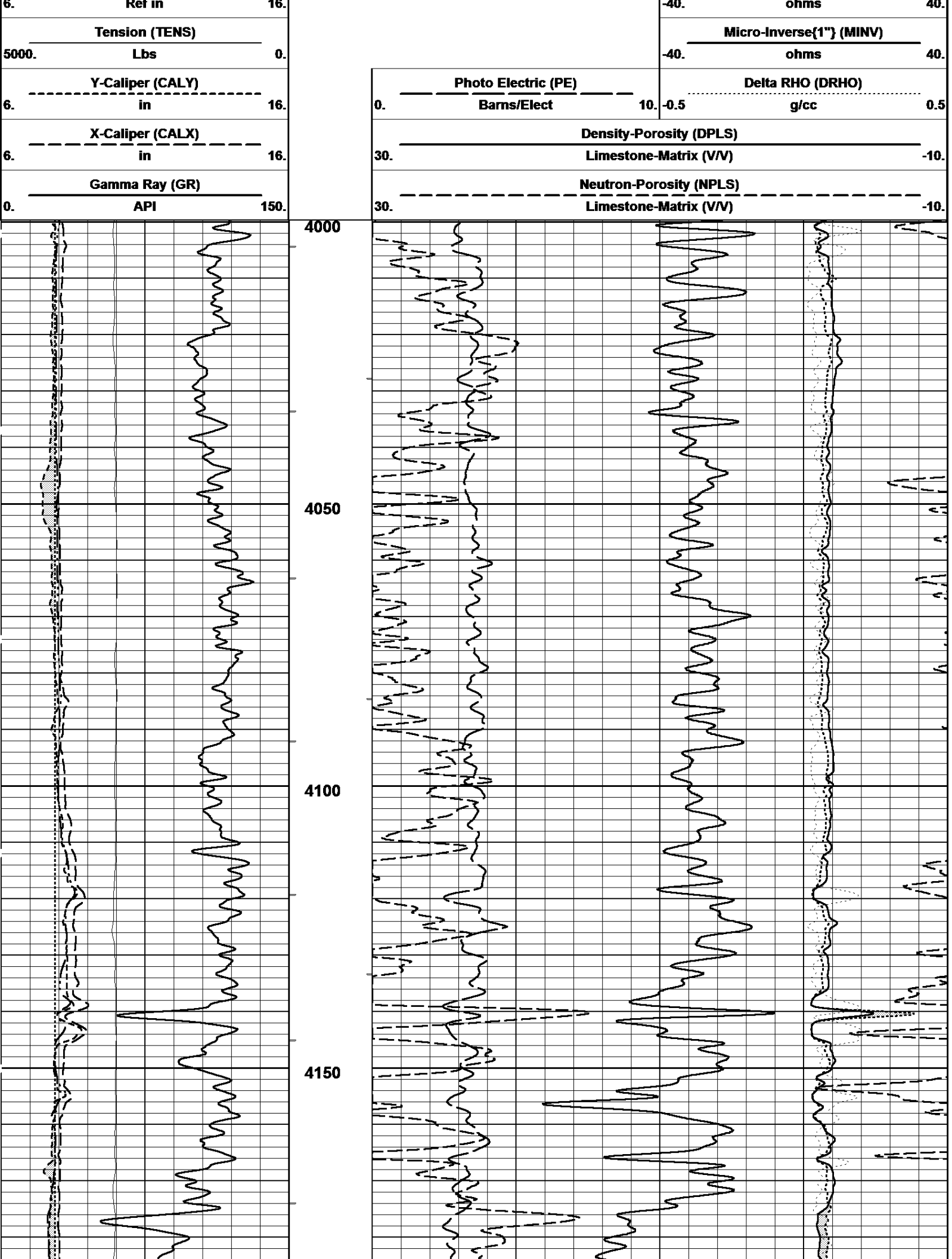
Neutron-Porosity (NPLS)		
30.	Limestone-Matrix (V/V)	-10.
Density-Porosity (DPLS)		
30.	Limestone-Matrix (V/V)	-10.
Photo Electric (PE)		Delta RHO (DRHO)
0.	Barns/Elect	
10.		g/cc
-0.5		0.5
Micro-Inverse{1"} (MINV)		
-40.	ohms	40.
Micro-Normal{2"} (MNOR)		
-40.	ohms	40.

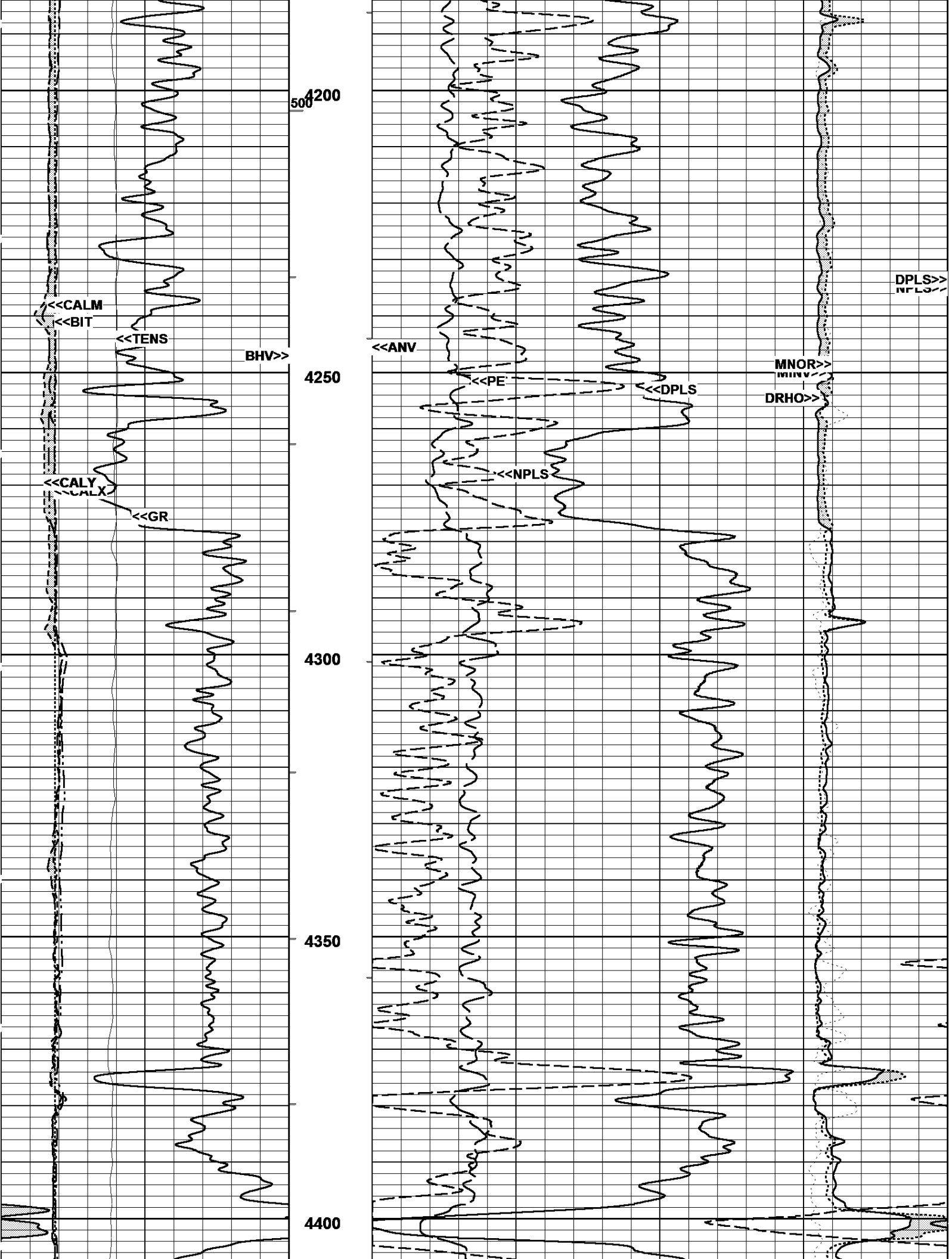
09/15/2013	MAIN PASS - LIMESTONE (5"/100Ft)	Log UP - (VER 11.14a)
14:04:48 ⇒ Start Time		Start Depth⇒ 1249.90 Feet

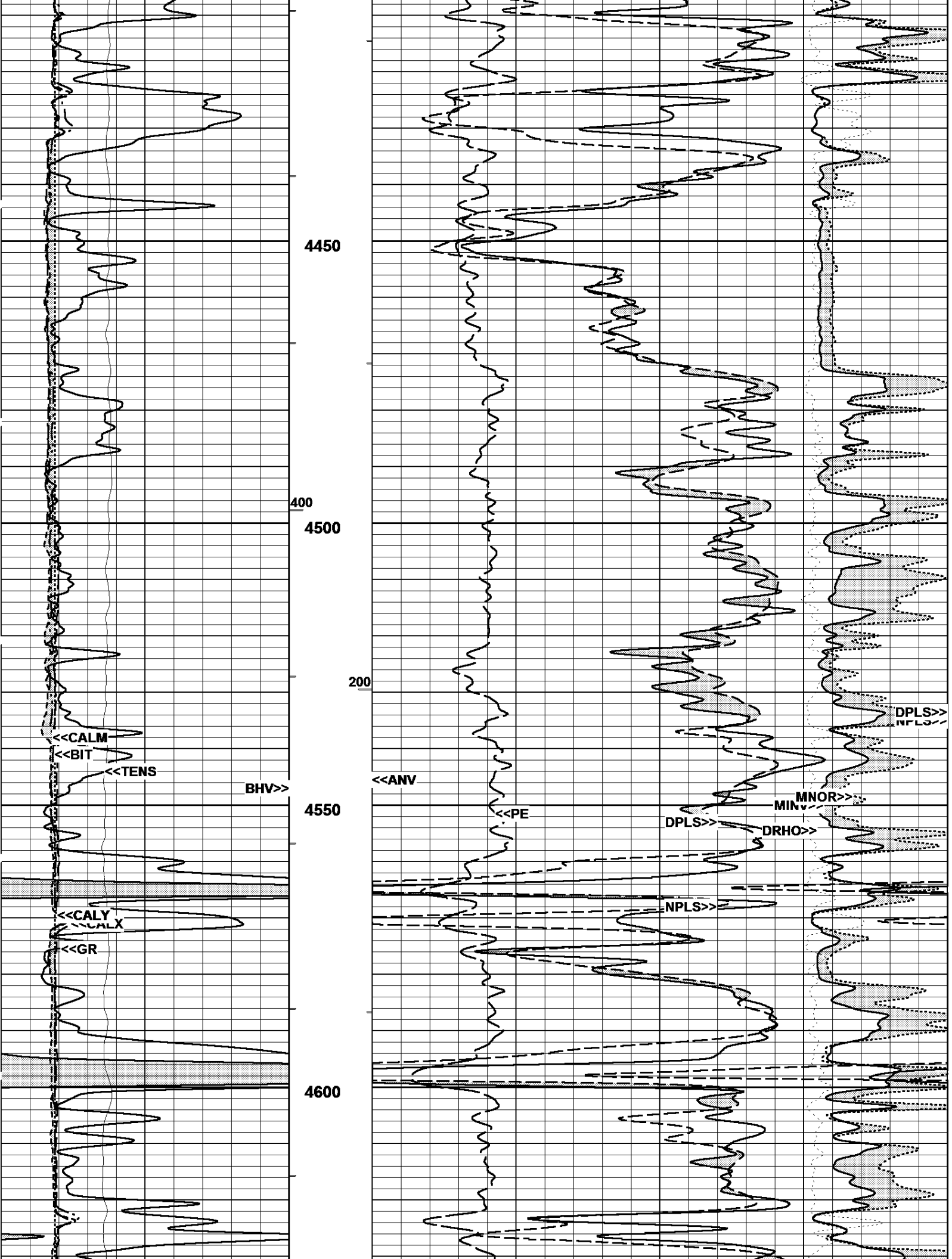
09/15/2013	MAIN PASS - LIMESTONE (5"/100Ft)	Log UP - (VER 11.14a)
16:01:11 ⇒ End Time		End Depth⇒ 3999.90 Feet

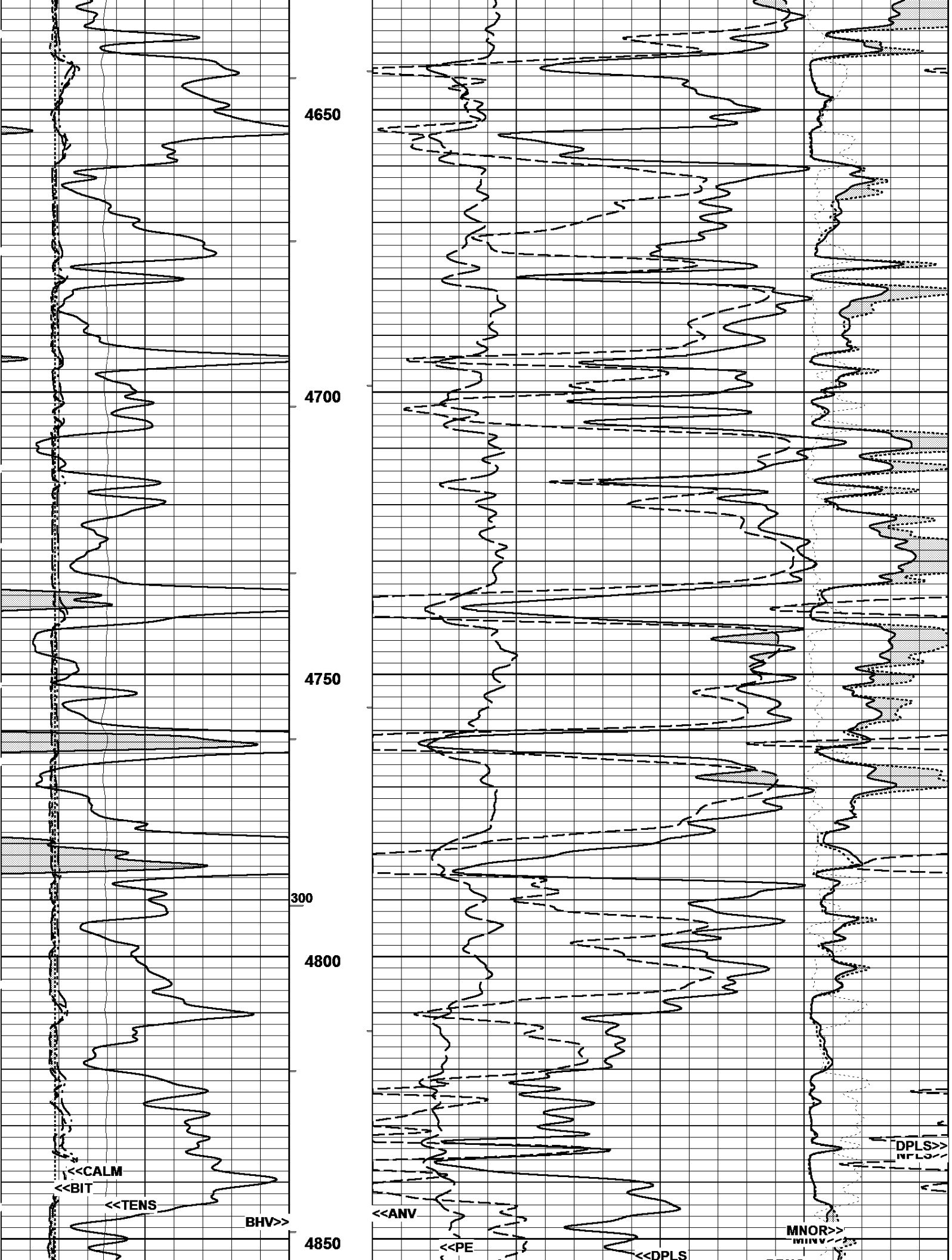
Microlog-Caliper		
6.	in	16.
Bit Size (BIT)		
6.	Ref in	16.

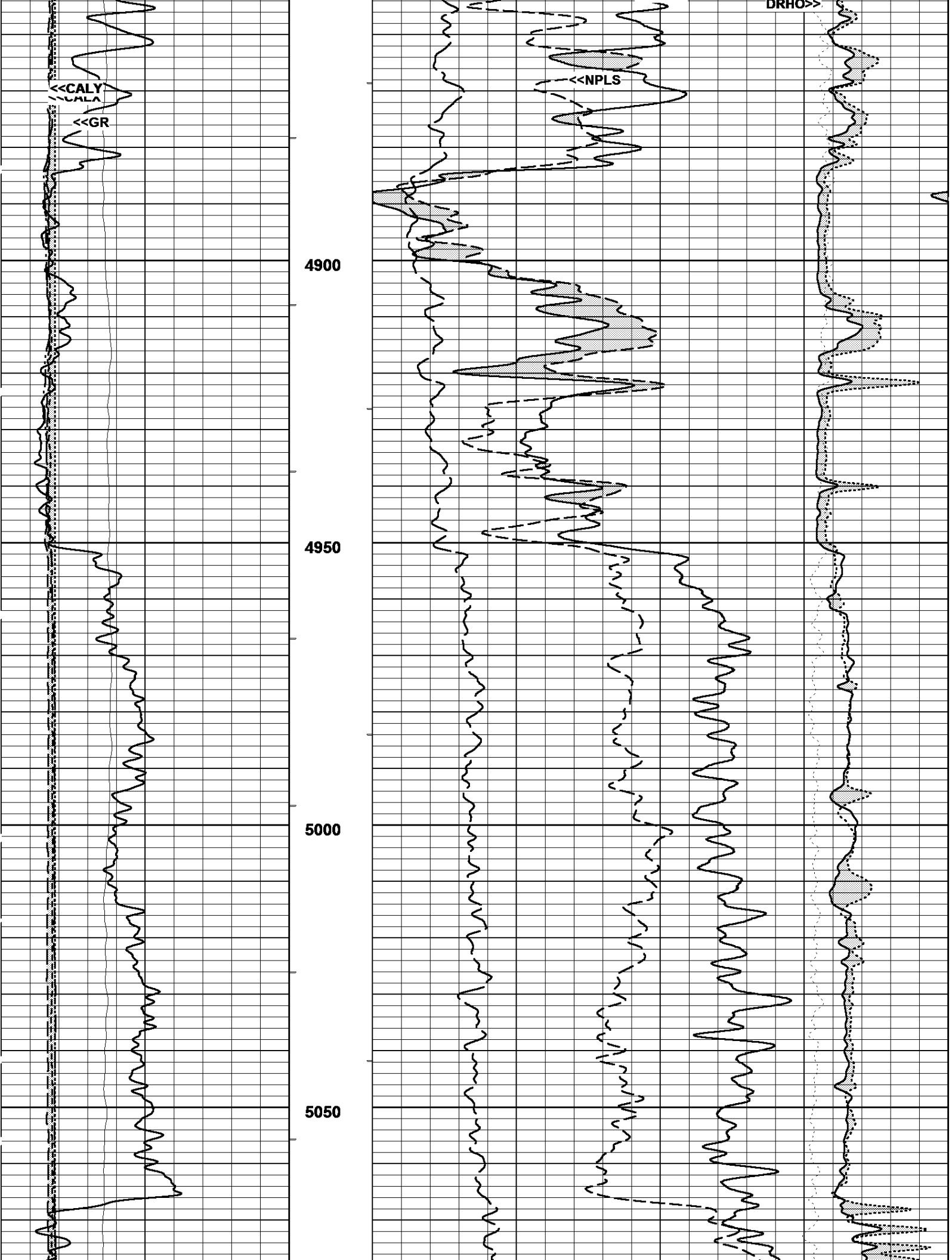
Micro-Normal{2"} (MNOR)		
-40.	ohms	40.

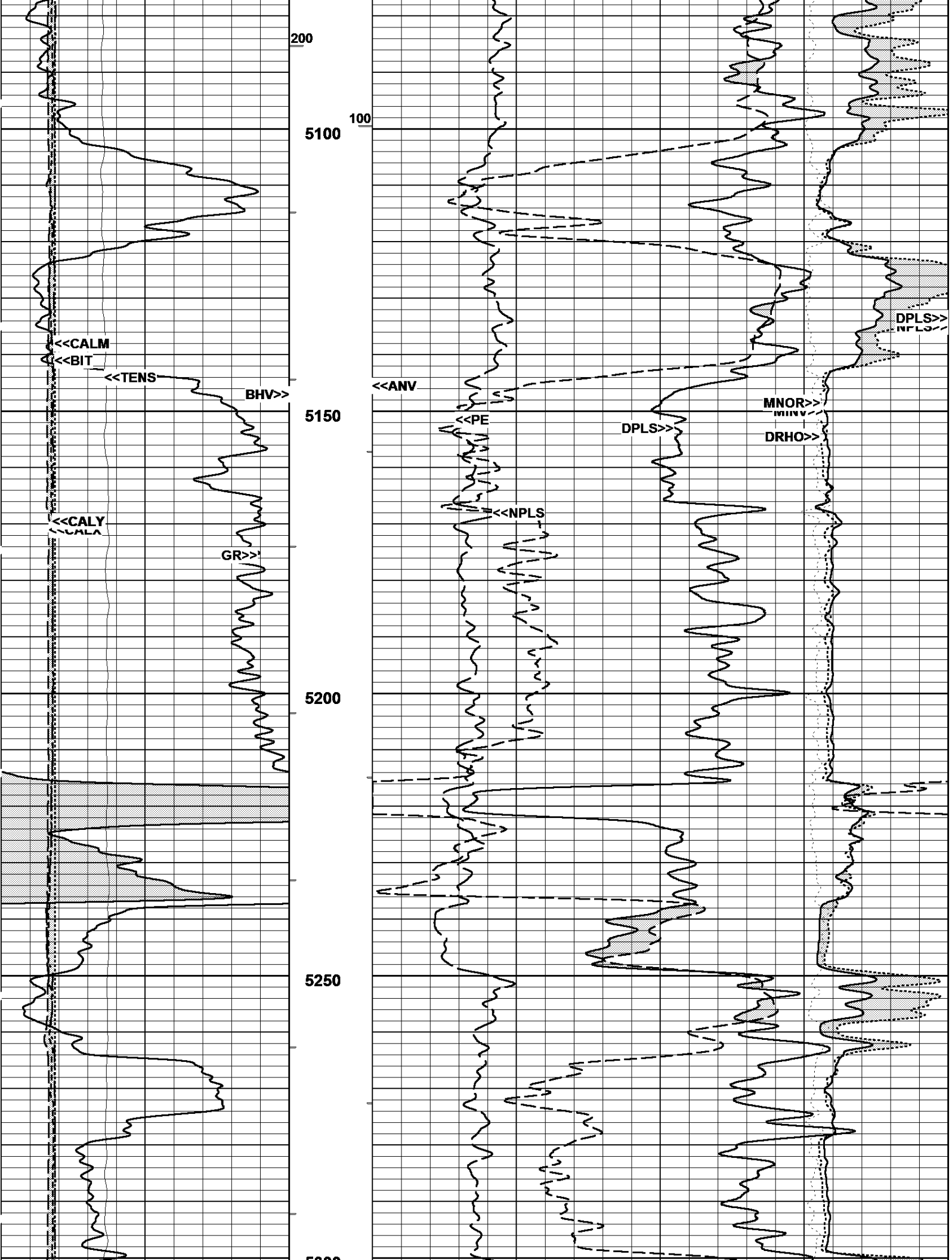


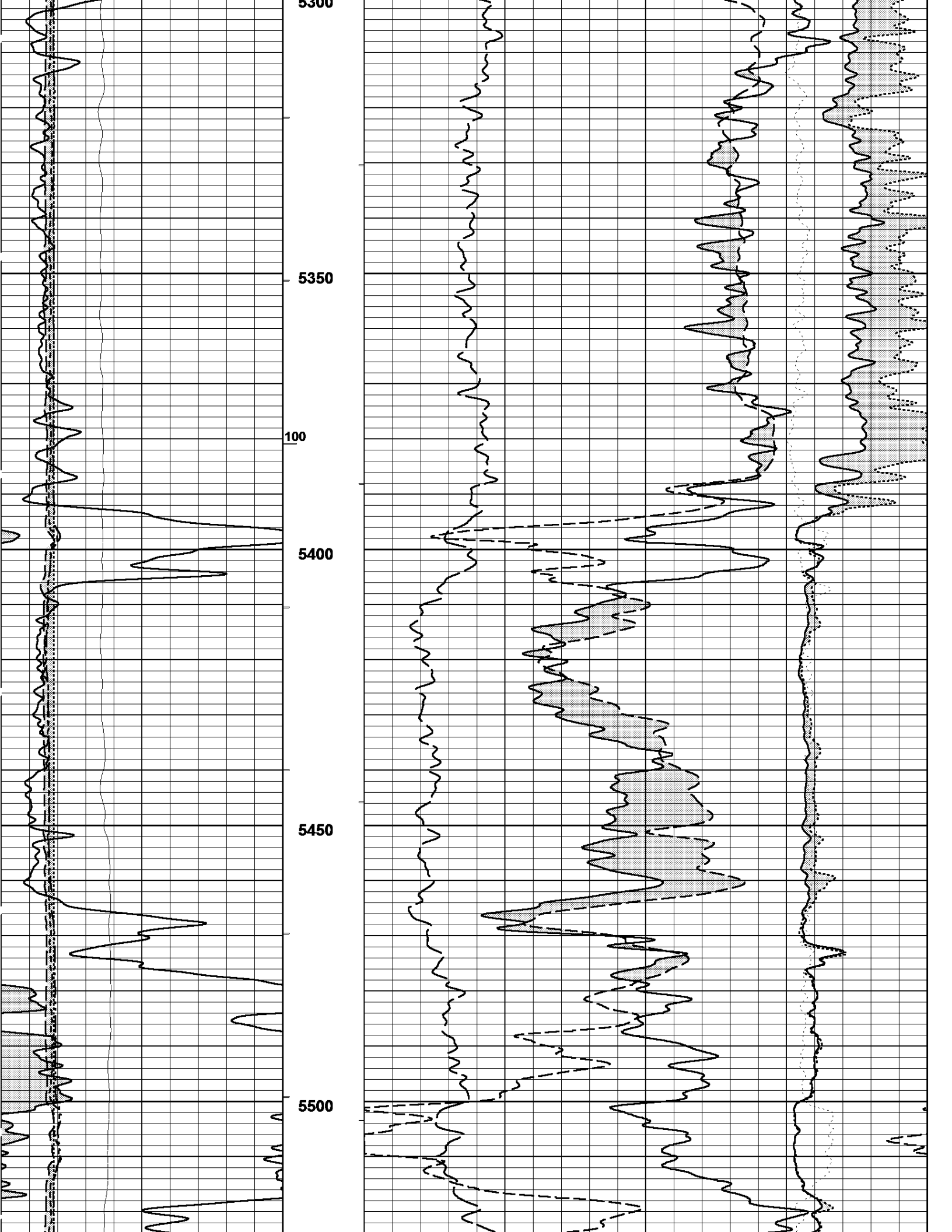


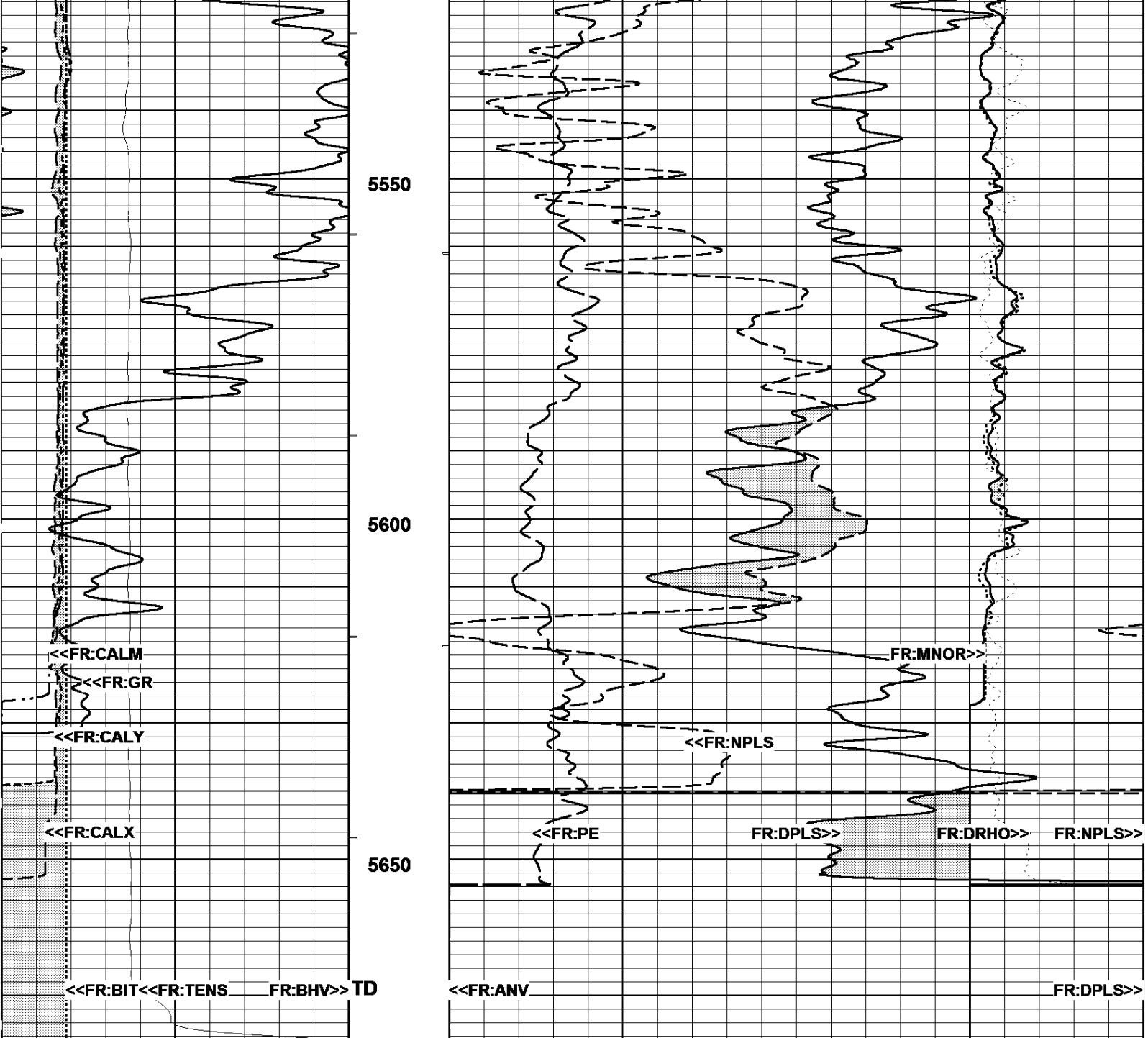










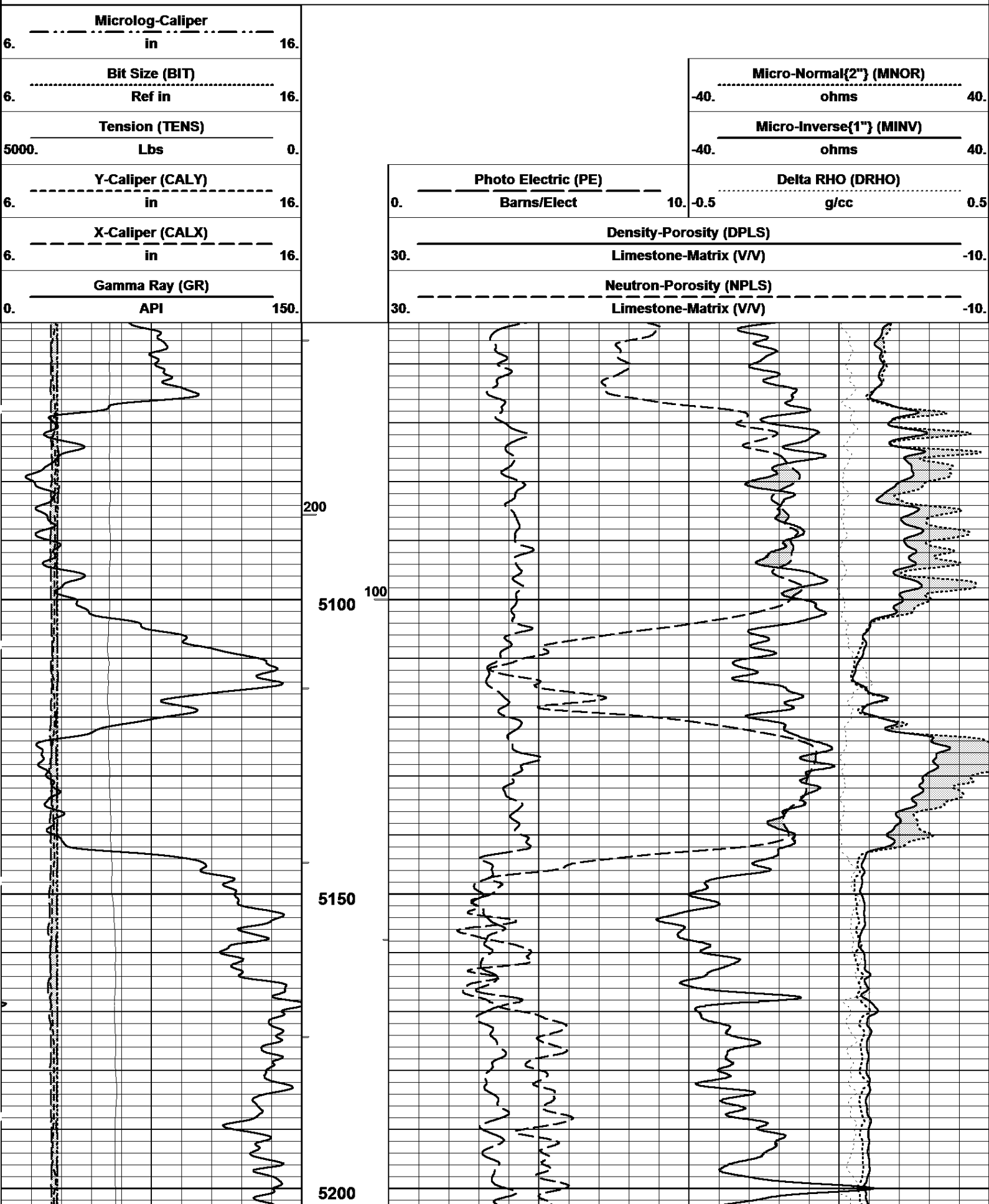


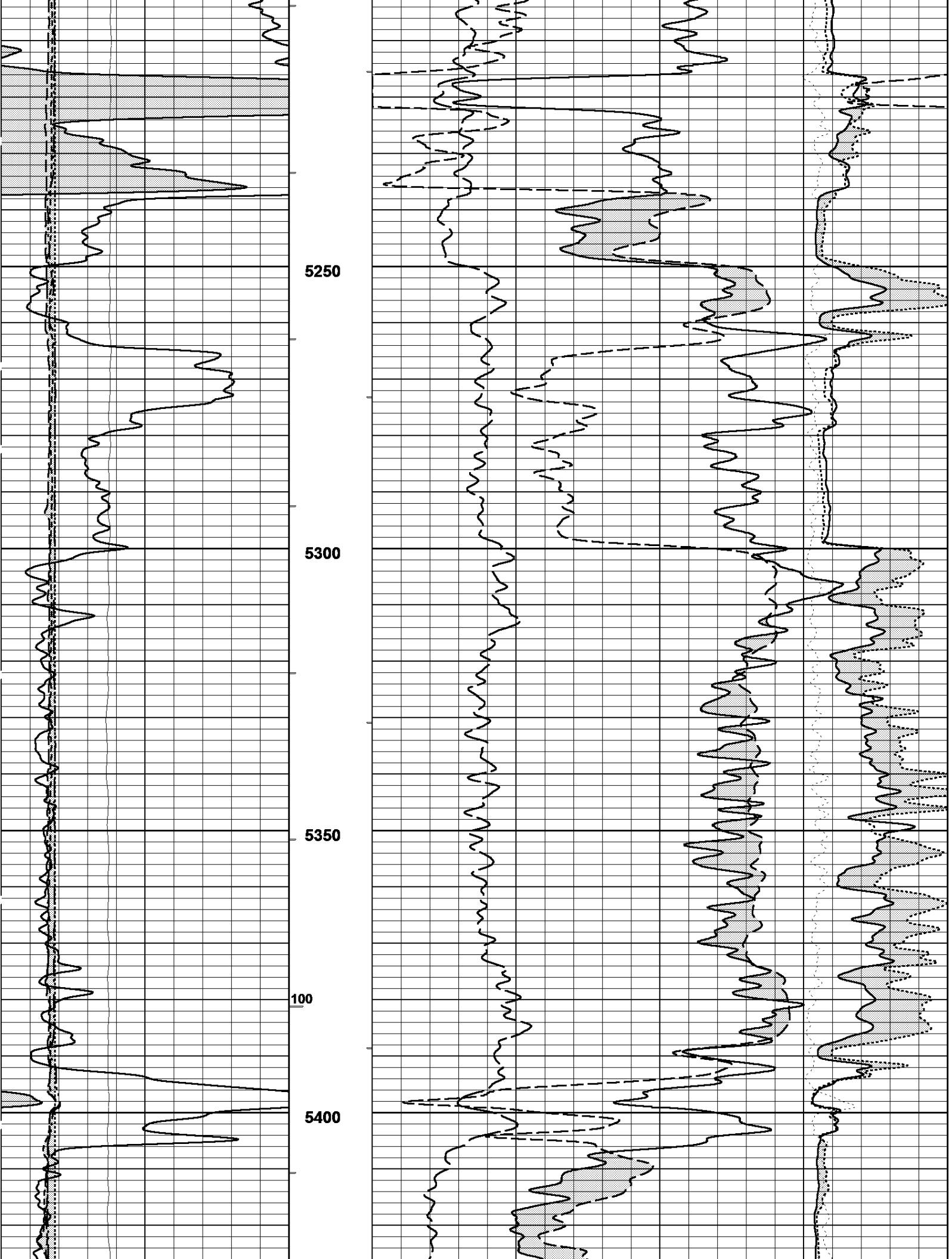
Gamma Ray (GR)		Neutron-Porosity (NPLS)	
0.	API	30.	Limestone-Matrix (V/V)
150.		-10.	
X-Caliper (CALX)		Density-Porosity (DPLS)	
6.	in	30.	Limestone-Matrix (V/V)
16.		-10.	
Y-Caliper (CALY)		Photo Electric (PE)	
6.	in	0.	Barns/Elect
16.		10.	
Tension (TENS)		Delta RHO (DRHO)	
5000.	Lbs	-0.5	g/cc
0.		0.5	
Bit Size (BIT)		Micro-Inverse{1"} (MINV)	
6.	Ref in	-40.	ohms
16.		40.	
Microlog-Caliper		Micro-Normal{2"} (MNOR)	
6.	in	-40.	ohms
16.		40.	

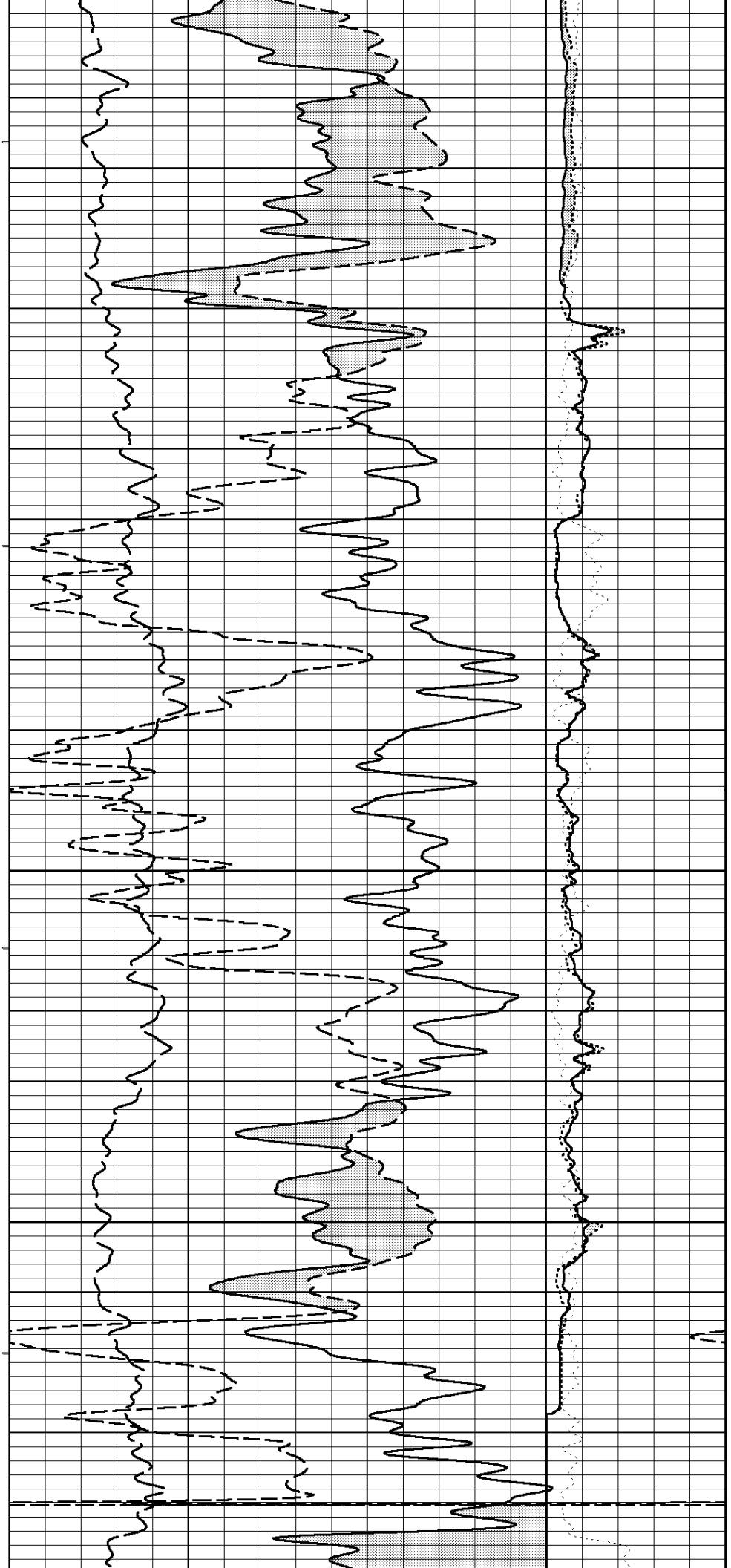
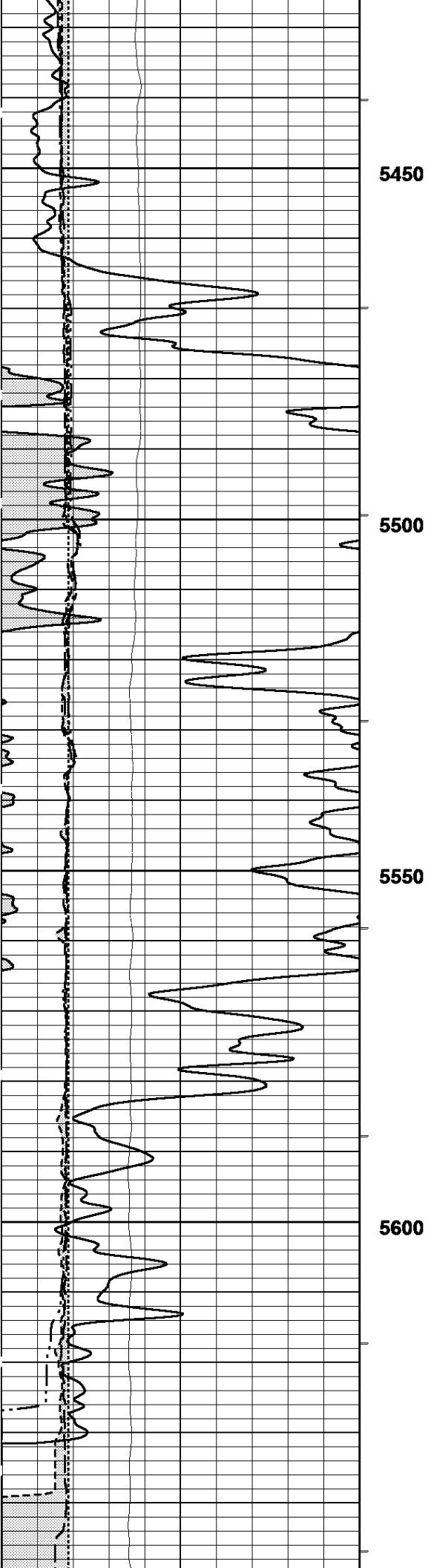
09/15/2013
14:00:31 => End Time

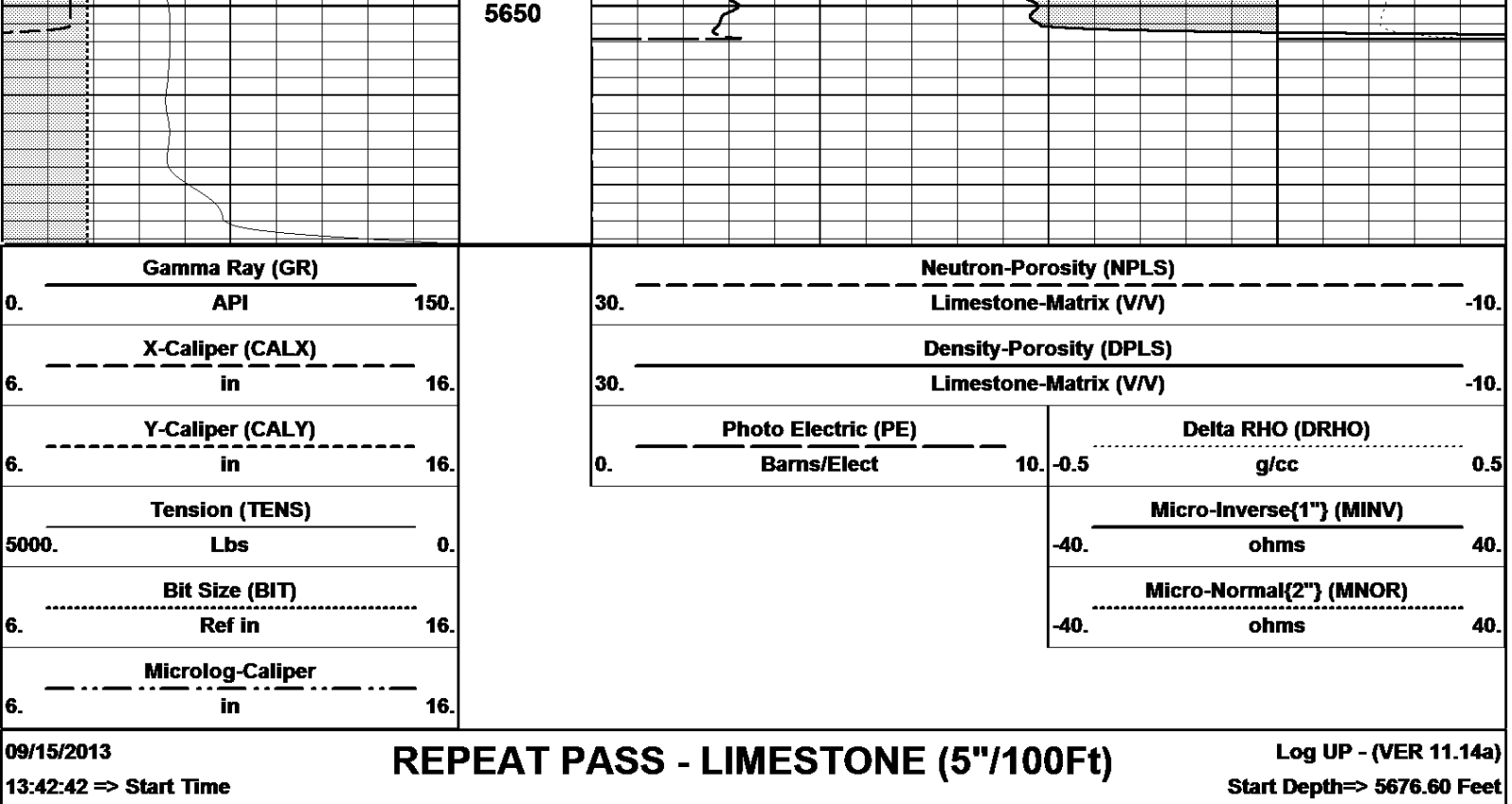
REPEAT PASS - LIMESTONE (5"/100Ft)

Log UP - (VER 11.14a)
End Depth=> 5053.20 Feet









Litho-Density/PE Calibrations

TOOL TYPE
SERIAL NUM

LFDC/Pe
RL4106

SOURCE TYPE
SOURCE NUM

CESIUM 137

SOURCE STRGTH 2 CURIE

MASTER BLOCK CALIBRATIONS

	W1(cps)	W2(cps)	W3(cps)	W4(cps)	SS	UNITS	CALIBRATION DATE	CALIBRATION TIME
ALUMINUM	5036.044	4234.320	2211.796	5.111	4382.7911	2.523(g/cc)	M/D/Y> 8/27/2013	H:M:S> 10:19:1
MAGNESIUM	13469.724	10966.178	4984.018	5.733	6348.2311	1.679(g/cc)		
BACKGROUND	2039.876	1793.502	1209.387	4.960	5.8311			
SAND	11791.418	9808.666	4570.713	5.125		1.739(PE)		
IRON	4597.256	3916.353	2100.916	4.974		4.529(PE)		
FIELD VERIFIER(cps)								
VER NUM LDP-4102	1614.960	1433.200	973.680	4.560	5.1200			

WELL SITE CALIBRATIONS

VER NUM	LDP-4102	W1(cps)	W2(cps)	W3(cps)	W4(cps)	SS		CALIBRATION DATE	CALIBRATION TIME

Compensated Neutron Calibrations

TOOL TYPE
SERIAL NUM

CNT-B
RN2016

SOURCE TYPE
SOURCE NUM

AM241BE

SOURCE STRGTH 20 CURIE

MASTER TANK CALIBRATIONS

		NEAR(cps)	FAR(cps)	RATIO	K VALUE	CALIBRATION DATE	CALIBRATION TIME
LOW PHI	3.150			0.6173	0.9395	M/D/Y> 8/27/2013	H:M:S> 14:5:44
MED PHI	19.130			1.0575	0.9395		
HIGH PHI	31.300			1.2677	0.9396		
FIELD VERIFIER(cps)		279.844	209.056	1.3386			
VER NUM	7430						

WELL SITE CALIBRATIONS

VER NUM	7430	NEAR(cps)	FAR(cps)	RATIO	CALIBRATION DATE	CALIBRATION TIME

GAMMA RAY CALIBRATION

SERIAL NUM
BLANKET NUM

RG3011
1A

MASTER CALIBRATIONS

	BackGrnd	CalVal: 135.000 API	Gain/Offset	CALIBRATION DATE	CALIBRATION TIME
BASE CALS	63.747 - raw	438.653 - raw	0.360 - gain 0.000 - off	M/D/Y> 8/27/2013	H:M:S> 15:31:34

WELL SITE CALIBRATIONS

	BackGrnd	CalVal: 100.000 Mknts	Gain/Offset	CALIBRATION DATE	CALIBRATION TIME
PRE CAL	-0.059 - raw	26.967 - raw	3.700 - gain	M/D/Y> 11/12/2004	H:M:S> 12:40:27

X CALIPER

SERIAL NUM

RL4106

MASTER CALIBRATIONS

	ZeroVal: 6.500 mm	CalVal: 9.000 mm	Gain/Offset	CALIBRATION DATE	CALIBRATION TIME
BASE CALS	3760.790 - raw	4981.730 - raw	0.002 - gain -1.201 - off	M/D/Y> 8/27/2013	H:M:S> 10:34:6

Y CALIPER CALIBRATIONS

SERIAL NUM

RN2016

MASTER CALIBRATIONS

	ZeroVal: 6.500 IN	CalVal: 9.000 IN	Gain/Offset	CALIBRATION DATE	CALIBRATION TIME
BASE CALS	1007.959 - raw	1479.160 - raw	0.005 - gain 1.152 - off	M/D/Y> 8/27/2013	H:M:S> 14:16:8

MICRO NORMAL CALIBRATION

SERIAL NUM

RM8008

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MASTER CALIBRATIONS

	ZeroVal: 0.010 CPS	CalVal: 10.000 CPS	Gain/Offset	CALIBRATION DATE	CALIBRATION TIME
BASE CALS	29.076 - raw	331.187 - raw	0.033 - gain -0.951 - off	M/D/Y> 9/11/2013	H:M:S> 11:13:15

MICRO INVERSE CALIBRATION

SERIAL NUM

RM8008

MASTER CALIBRATIONS

	ZeroVal: 0.010 CPS	CalVal: 10.000 CPS	Gain/Offset	CALIBRATION DATE	CALIBRATION TIME
BASE CALS	16.658 - raw	254.160 - raw	0.042 - gain -0.691 - off	M/D/Y> 9/11/2013	H:M:S> 11:5:9

Company

VAUGHN GOOD OIL COMPANY

Well

NUSSER #5-16

Field

S.E. HARDTNER

County

BARBER

State

KANSAS

RECON

COMPENSATED NEUTRON
LITHOLOGY DENSITY
GAMMA RAY X-Y CALIPER
MICROLOG

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