



**COMPLETION  
& PRODUCTION  
SERVICES CO.**

**COMPENSATED  
DENSITY / NEUTRON  
PE LOG**

Company CITATION OIL & GAS CORP.  
Well PUTNAM INV #8  
Field MOREL  
County GRAHAM State KANSAS

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Well PUTNAM INV #8  
Field MOREL  
County GRAHAM  
State KANSAS

Location: API #: 15-065-23936-00-00  
2310' FNL & 886' FWL  
W/2 - SE - SW - NW  
SEC 23 TWP 9S RGE 21W  
Permanent Datum GROUND LEVEL Elevation 2294  
Log Measured From KELLY BUSHING 11' A.G.L.  
Drilling Measured From KELLY BUSHING  
Other Services  
DIL/MEL  
Elevation  
K.B. 2305  
D.F. 2303  
G.L. 2294

Date	6/6/13		
Run Number	ONE		
Depth Driller	3880		
Depth Logger	3874		
Bottom Logged Interval	3850		
Top Log Interval	3000		
Casing Driller	1754		
Casing Logger	1740		
Bit Size	7.875		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 1500	
Density / Viscosity	9.2 / 46		
pH / Fluid Loss	9.5 / 8.0		
Source of Sample	FLOWLINE		
Rim @ Meas. Temp	1.10 @ 90F		
Rmf @ Meas. Temp	0.83 @ 90F		
Rmc @ Meas. Temp	1.32 @ 90F		
Source of Rmf / Rmc	MEASURED		
Rim @ BHT	0.87 @ 115F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	115F		
Equipment Number	860		
Location	HAYS, KS.		
Recorded By	JEFF GRONEWEG		
Witnessed By	ED GLASSMAN		

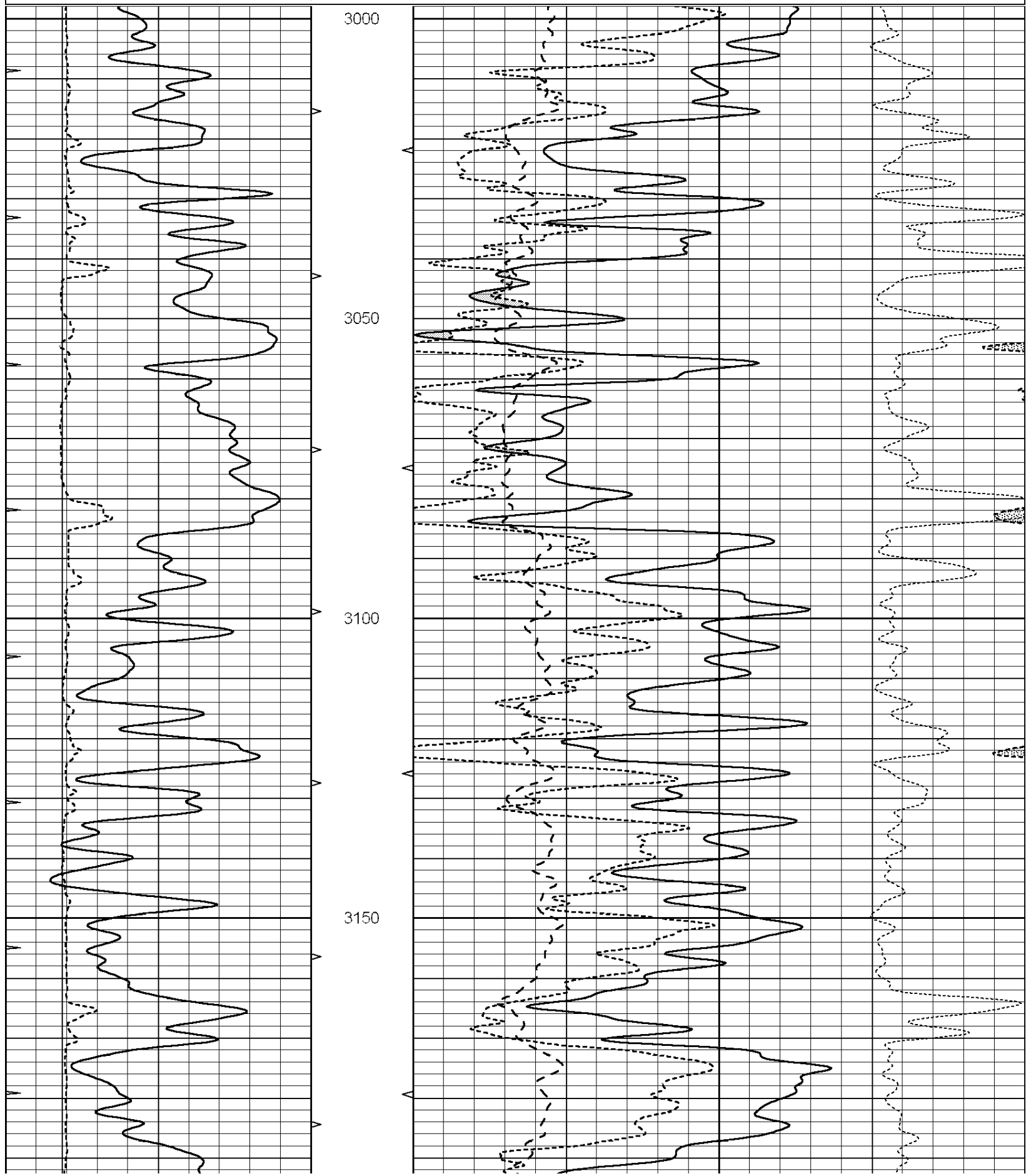
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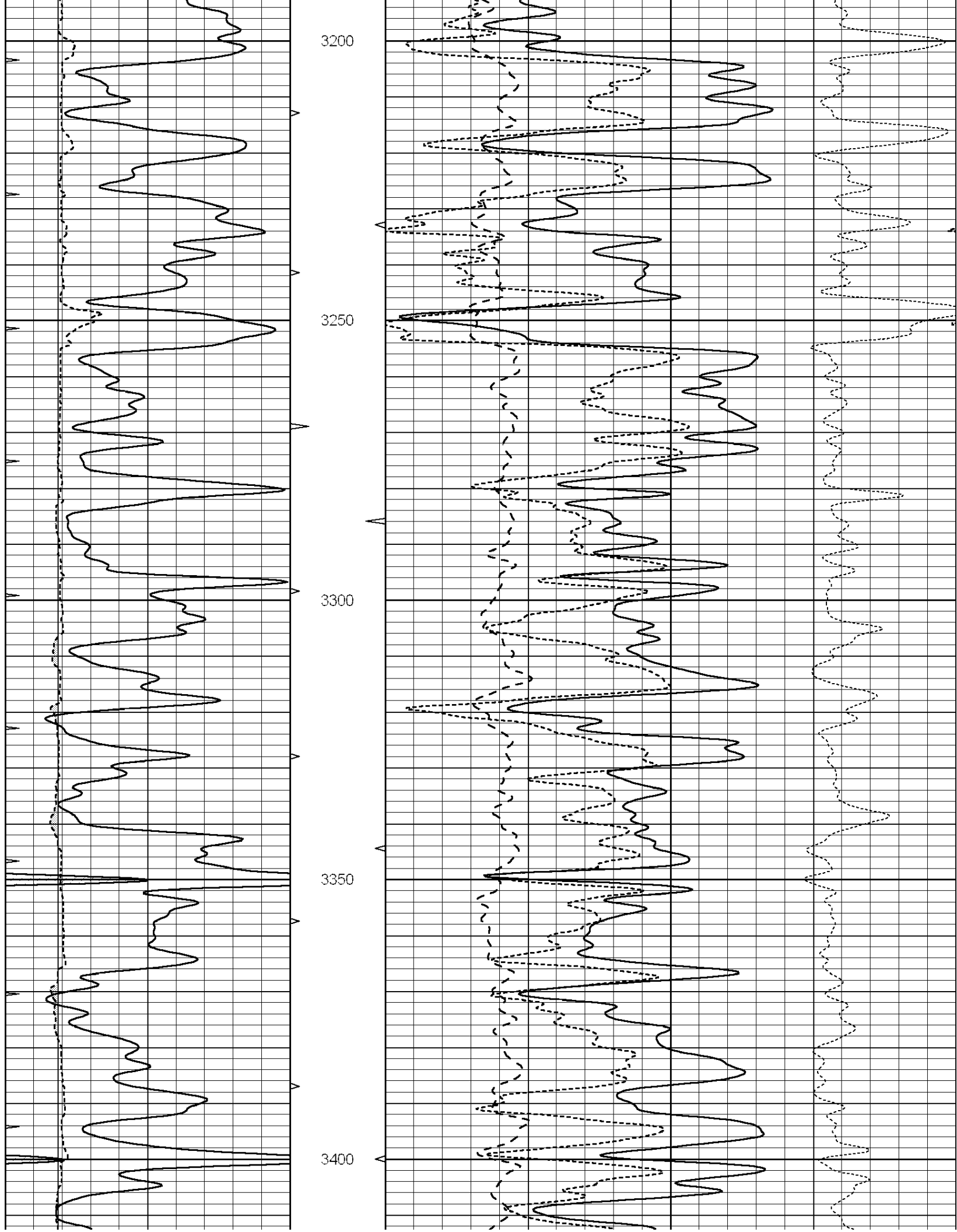
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs,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

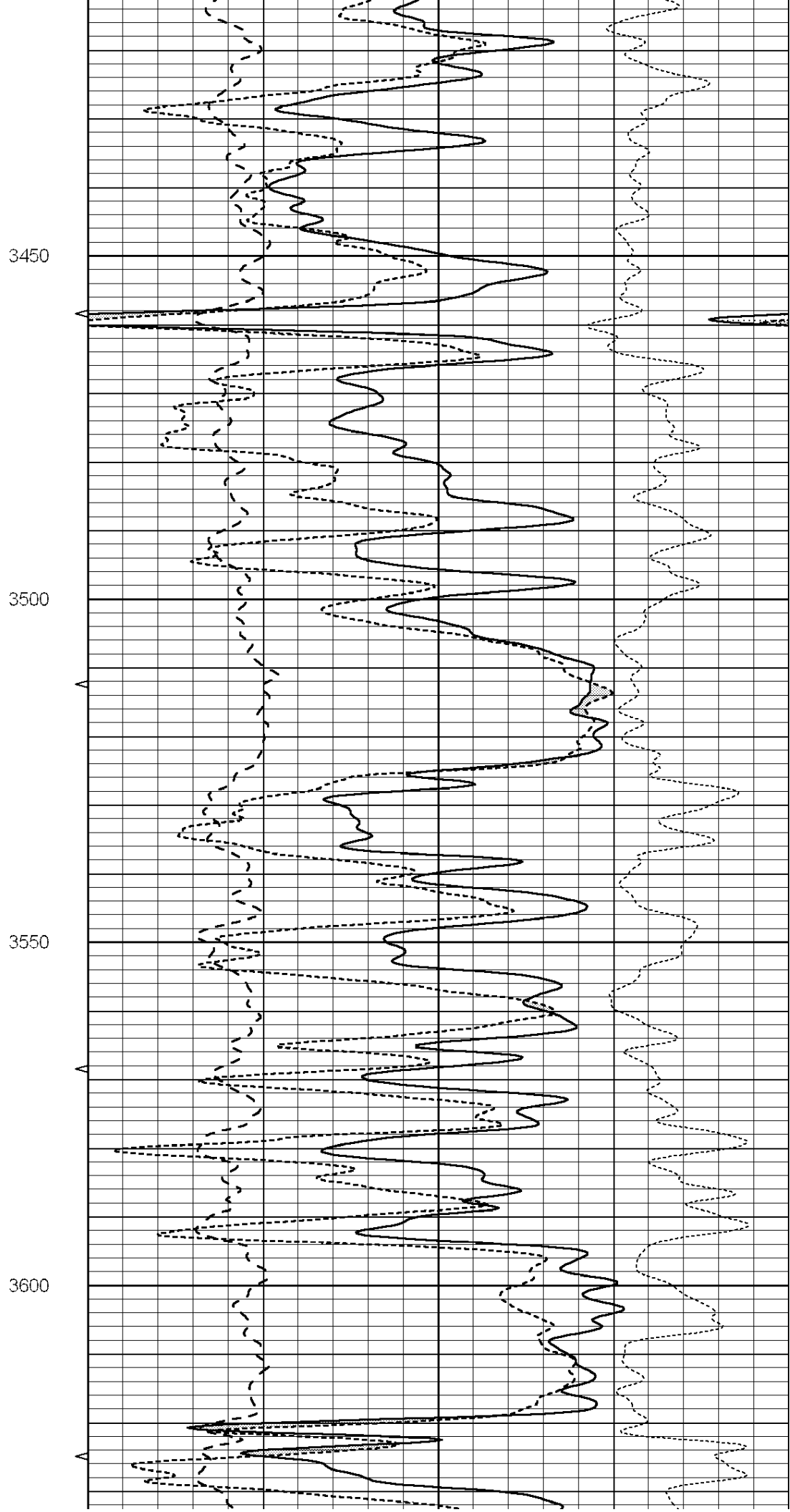
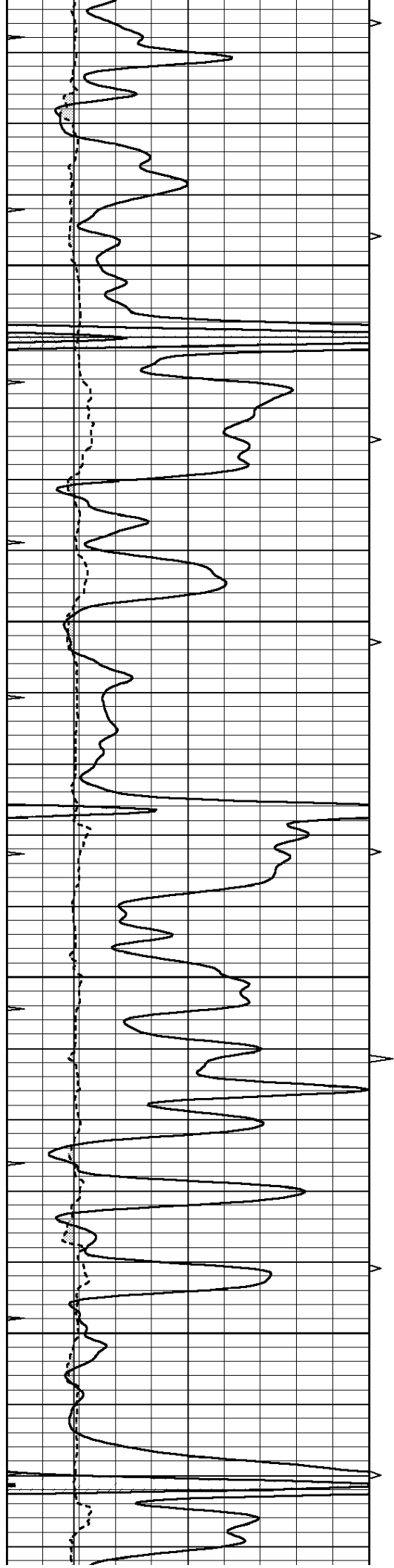
**Comments**

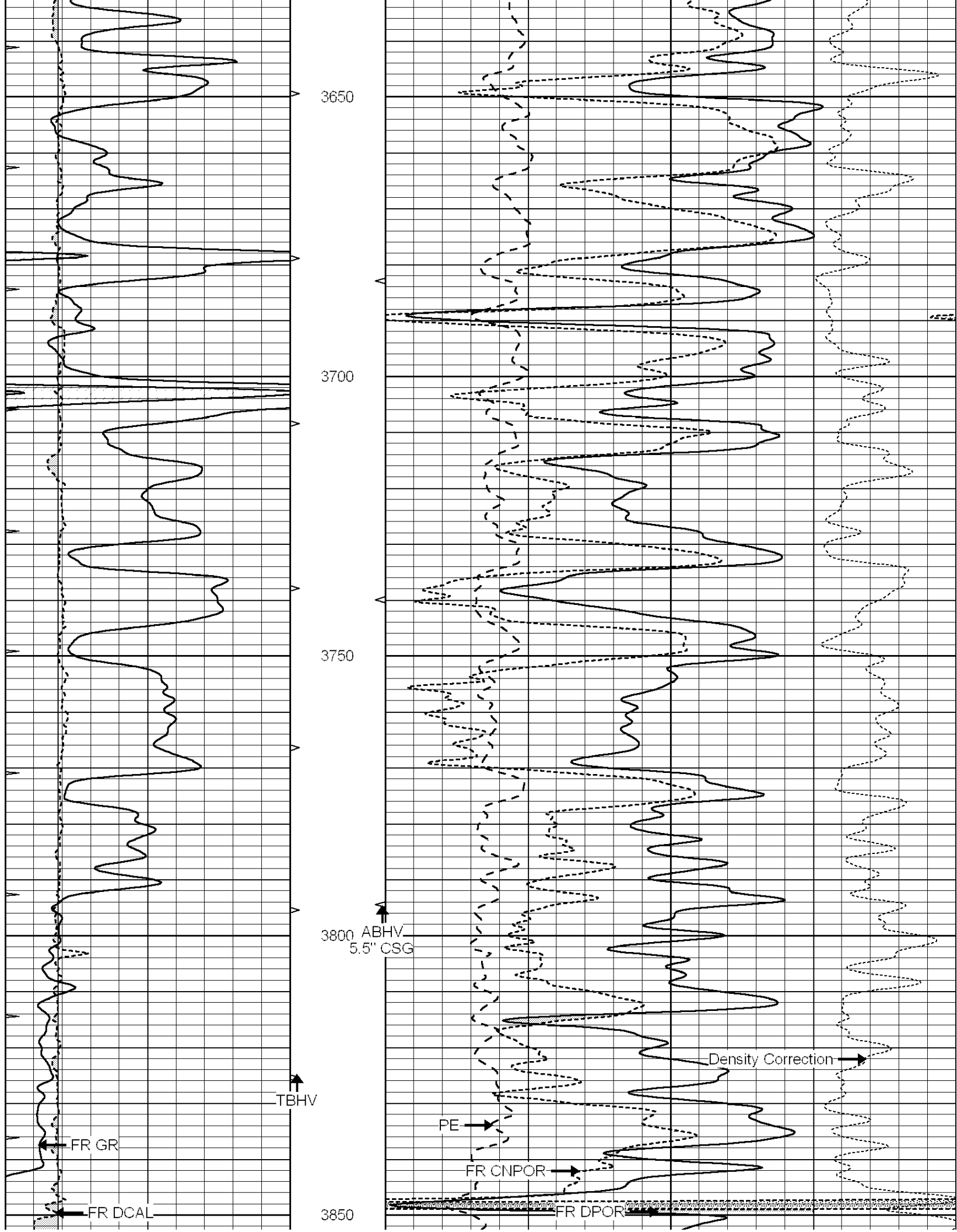
**NABORS COMPLETION & PRODUCTION SERVICES**  
785-628-6395  
THANK YOU FOR YOUR BUSINESS  
DIRECTIONS: PALCO, KS - SOUTH TO REDLINE RD (RD X) - WEST TO CHURCH OF GOD  
1 1/2 MILES NORTH - EAST & SOUTH INTO

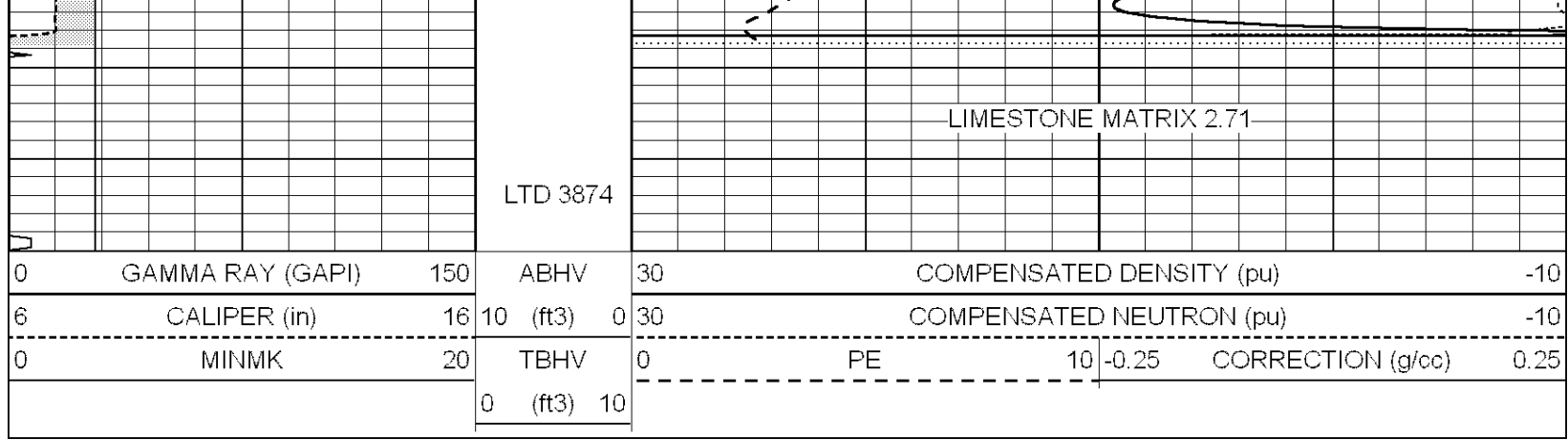
0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)			-10	
6	CALIPER (in)	16	10 (ft3)	0	30	COMPENSATED NEUTRON (pu)			-10
0	MINMK	20	TBHV	0	PE	10	-0.25	CORRECTION (g/cc)	0.25
			0 (ft3)	10					







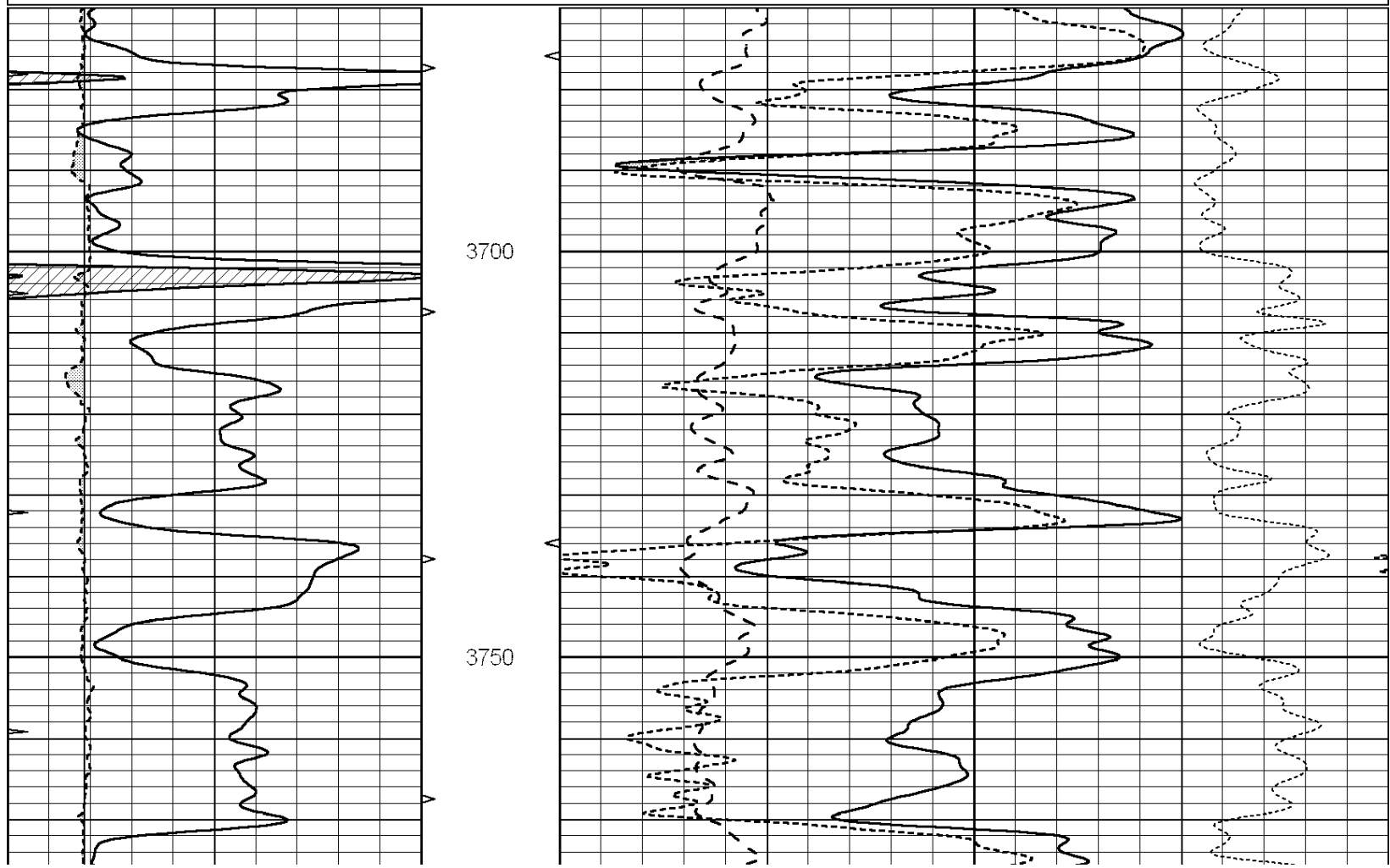


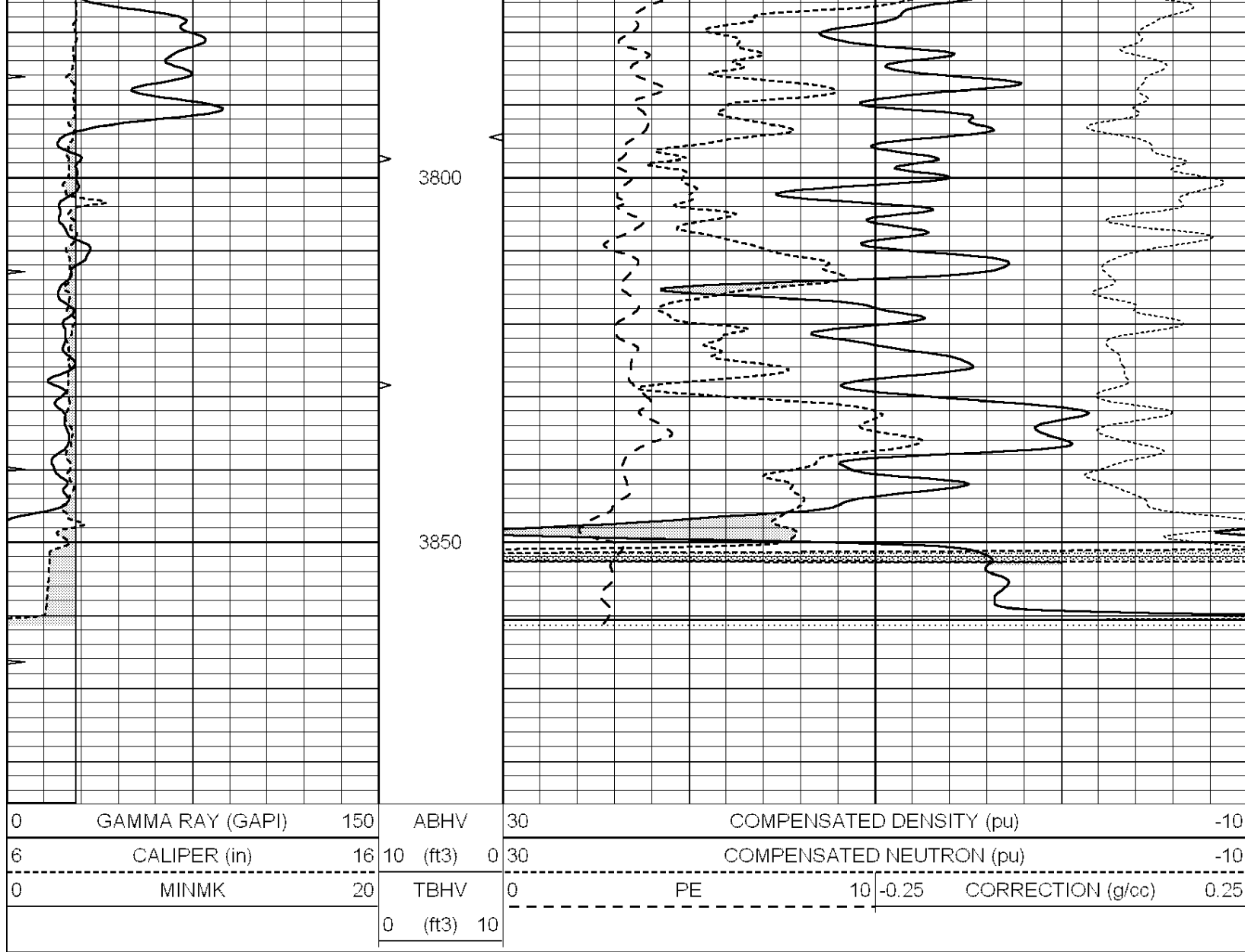


# REPEAT SECTION

Database File: 010187pe.db  
 Dataset Pathname: pass2.5.1  
 Presentation Format: \_ldt\_neu  
 Dataset Creation: Thu Jun 06 07:07:04 2013  
 Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)	-10
6	CALIPER (in)	16	10 (ft3) 0	30	COMPENSATED NEUTRON (pu)	-10
0	MINMK	20	TBHV	0	PE	10 -0.25 CORRECTION (g/cc) 0.25
			0 (ft3) 10			





### Calibration Report

Database File: 010187pe.db  
 Dataset Pathname: pass3.3  
 Dataset Creation: Thu Jun 06 07:34:08 2013 by Calc Open-Cased 090629

### Dual Induction Calibration Report

Serial-Model: PROBE7-DILG  
 Surface Cal Performed: Sun May 19 13:30:40 2013  
 Downhole Cal Performed: Sat Jan 19 19:51:38 2013  
 After Survey Verification Performed: Sat Jan 19 19:51:38 2013

#### Surface Calibration

Loop:	Readings			References			Results	
	Air	Loop	V	Air	Loop	mmho/m	m	b
Deep	0.793	0.790	V	0.000	400.000	mmho/m	620.000	7.000
Medium	0.992	1.002	V	0.000	464.000	mmho/m	660.000	-38.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.041	0.642	V	0.000	400.000	mmho/m	664.874	-27.011
Medium	0.035	0.802	V	0.000	464.000	mmho/m	604.936	-21.367

#### Downhole Calibration

	Readings			References			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	135384.000	27094.500	mmho/m	135400.000	27082.400	mmho/m	1.000	-19.259
Medium	-47330.100	-9381.740	mmho/m	-47327.100	-9389.280	mmho/m	1.000	-10.154
LL3		7.322	V		1400.000	Ohm-m		
		0.038	V		20.000	Ohm-m		
		-7.273	V		4000.000	mmho-m		

After Survey Verification								
	Readings			Targets			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	135384.000	27094.500	mmho/m	1.000	0.000
Medium	0.000	0.000	mmho/m	-47330.100	-9381.740	mmho/m	1.000	0.000
LL3		0.000	Ohm-m		1400.000	Ohm-m		
		0.000	Ohm-m		20.000	Ohm-m		
		0.000	mmho-m		4000.000	mmho-m		

Litho Density Calibration Report  
Serial: 004 Model: PRB  
Performed Mon Jun 03 10:24:18 2013

Litho Density Calibration						
	Background	Magnesium	Aluminum	Sandstone		
Window 1	1409.0	7846.4	2797.9	8972.6		cps
Window 2	1287.9	6800.2	2477.8	7699.9		cps
Window 3	1100.8	4248.0	1752.5	4716.1		cps
Window 4	313.2	317.4	312.8	317.0		cps
Long Space	0.0	5512.4	1190.0	6412.1		cps
Short Space	1.5	1109.3	719.3	1155.3		cps
Rho		1.7100	2.5960	1.3800		g/cc
Pe			2.5700	1.5500		
Rib Angle	: 44.2	Rib Slope	: 0.973	Density/Spine Ratio		: 0.556
Spine Angle	: 74.2	Spine Slope	: 3.539	Spine Intercept		: -16.2

Caliper		
	Readings	Reference
Low Ref	2.2	8.6
High Ref	4.2	14.0
	Gain: 2.7	Offset: 1.9

Compensated Neutron Calibration Report

Serial Number: NEU\_4I  
Tool Model: G

CALIBRATION						
	Detector	Readings		Target		Normalization
	Short Space	1.00	cps	1.00	cps	1.0000
	Long Space	1.00	cps	1.00	cps	1.0000

Gamma Ray Calibration Report

Serial Number: GR5  
Tool Model: OPEN  
Performed: Mon May 27 02:27:50 2013

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps  
Calibrator Reading: 1.0 cps

Calibrator Reading:

1.0

cps

Sensitivity:

1.0500

GAPI/cps