



**COMPLETION  
& PRODUCTION  
SERVICES CO.**

**COMPENSATED  
DENSITY/NEUTRON  
PE LOG**

Company LIBERTY OPERATIONS & COMPLETIONS  
Well GREEN #1  
Field LYND POOL  
County ROOKS  
State KANSAS

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Location: 1365' FNL & 1380' FWL  
API # : 15-163-24078-0000  
Other Services DIL/MEL  
SEC 33 TWP 9S RGE 19W  
Permanent Datum GROUND LEVEL Elevation 2225  
Log Measured From KELLY BUSHING 5' A.G.L.  
Drilling Measured From KELLY BUSHING  
Elevation  
K.B. 2230  
D.F. 2228  
G.L. 2225

Date	10/8/12		
Run Number	TWO		
Depth Driller	3780		
Depth Logger	3790		
Bottom Logged Interval	3788		
Top Log Interval	3100		
Casing Driller	8 5/8" @ 210		
Casing Logger	210		
Bit Size	7 7/8		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 15000 PPM	
Density / Viscosity	8.6/84		
pH / Fluid Loss	8.0/16.0		
Source of Sample	FLOWLINE		
Rin @ Meas. Temp	.44 @ 67F		
Rmf @ Meas. Temp	.33 @ 67F		
Rmc @ Meas. Temp	.52 @ 67F		
Source of Rmf / Rmc	MEASURED		
Rin @ BHT	.25 @ 114F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	114F		
Equipment Number	680		
Location	HAYS, KS.		
Recorded By	JASON CAPPELLUCCI		
Witnessed By	TONY RICHARDSON		

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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

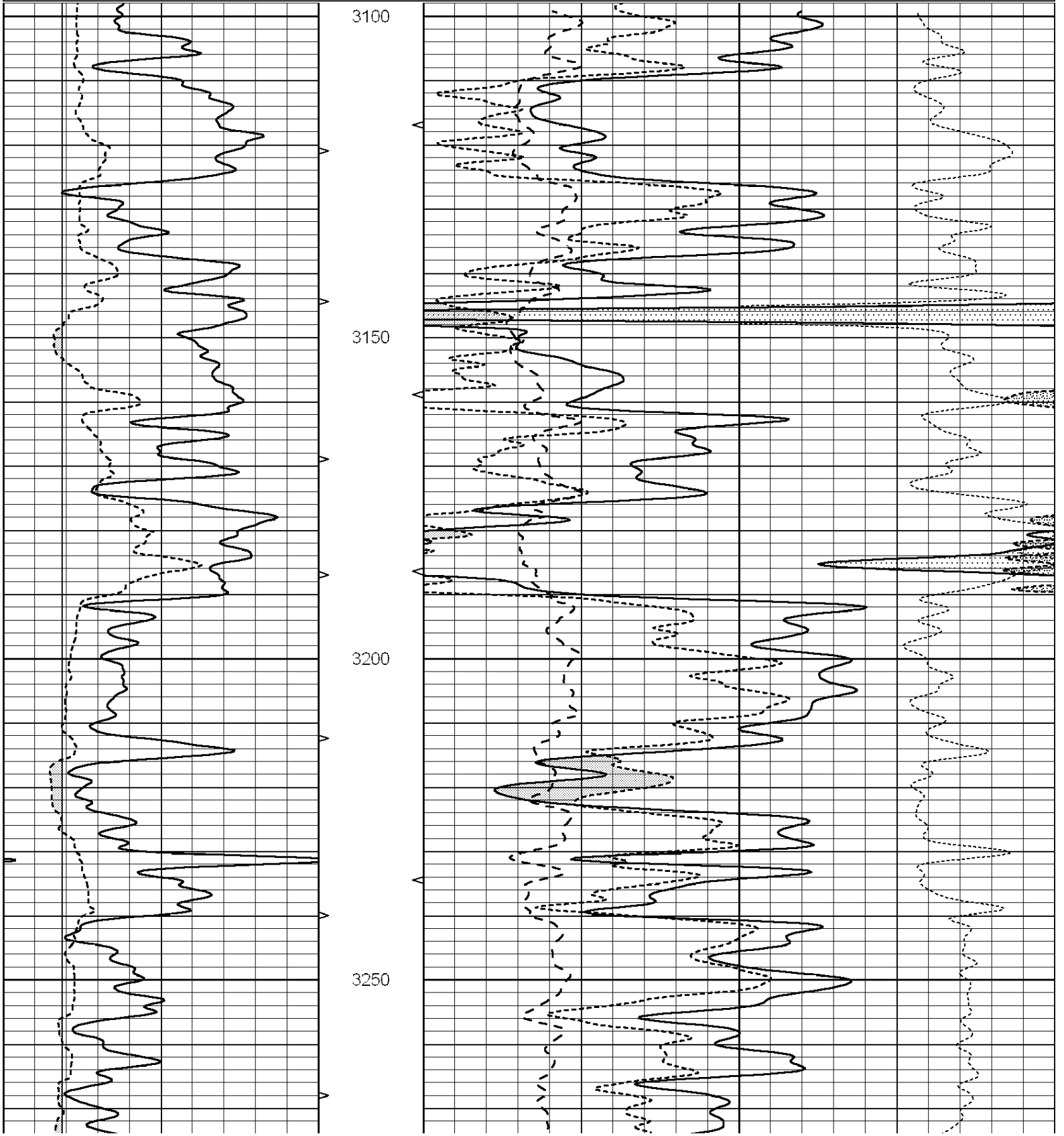
THANK YOU FOR USING SUPERIOR WELL SERVICE (785) 628-6395  
DIRECTIONS  
ZURICH, KS. - 1 W. - 1/4 S. - E. INTO

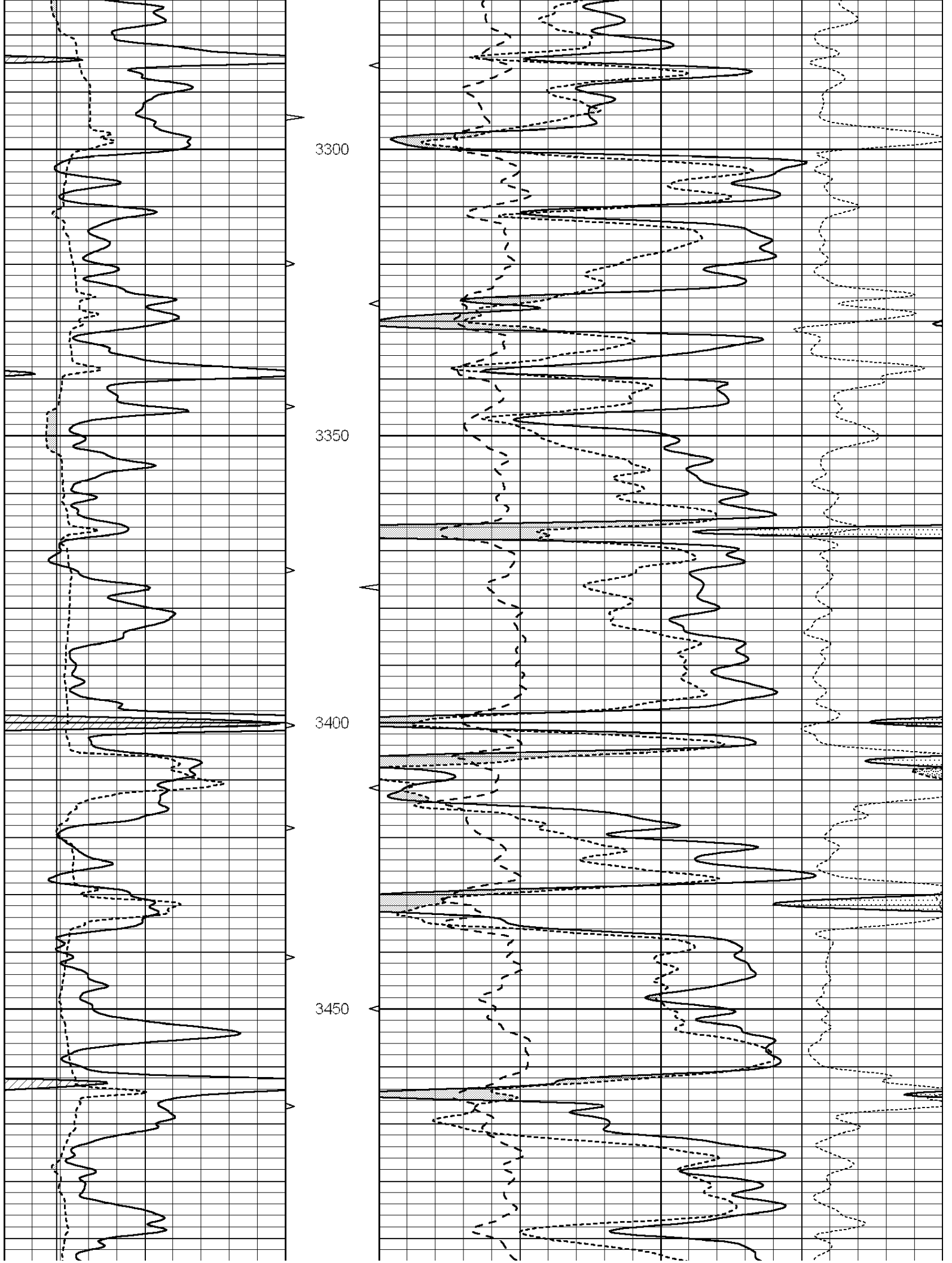


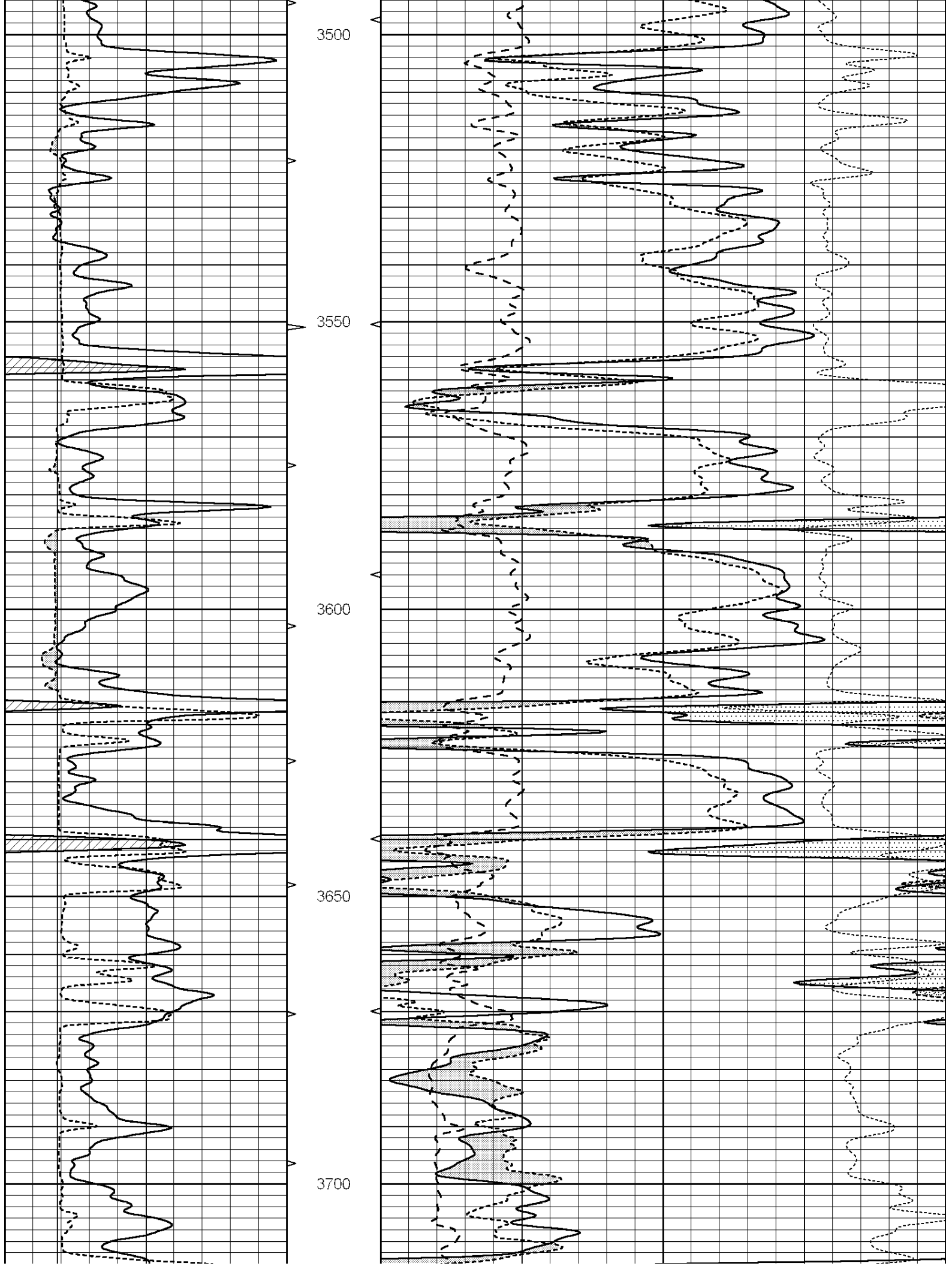
MAIN SECTION

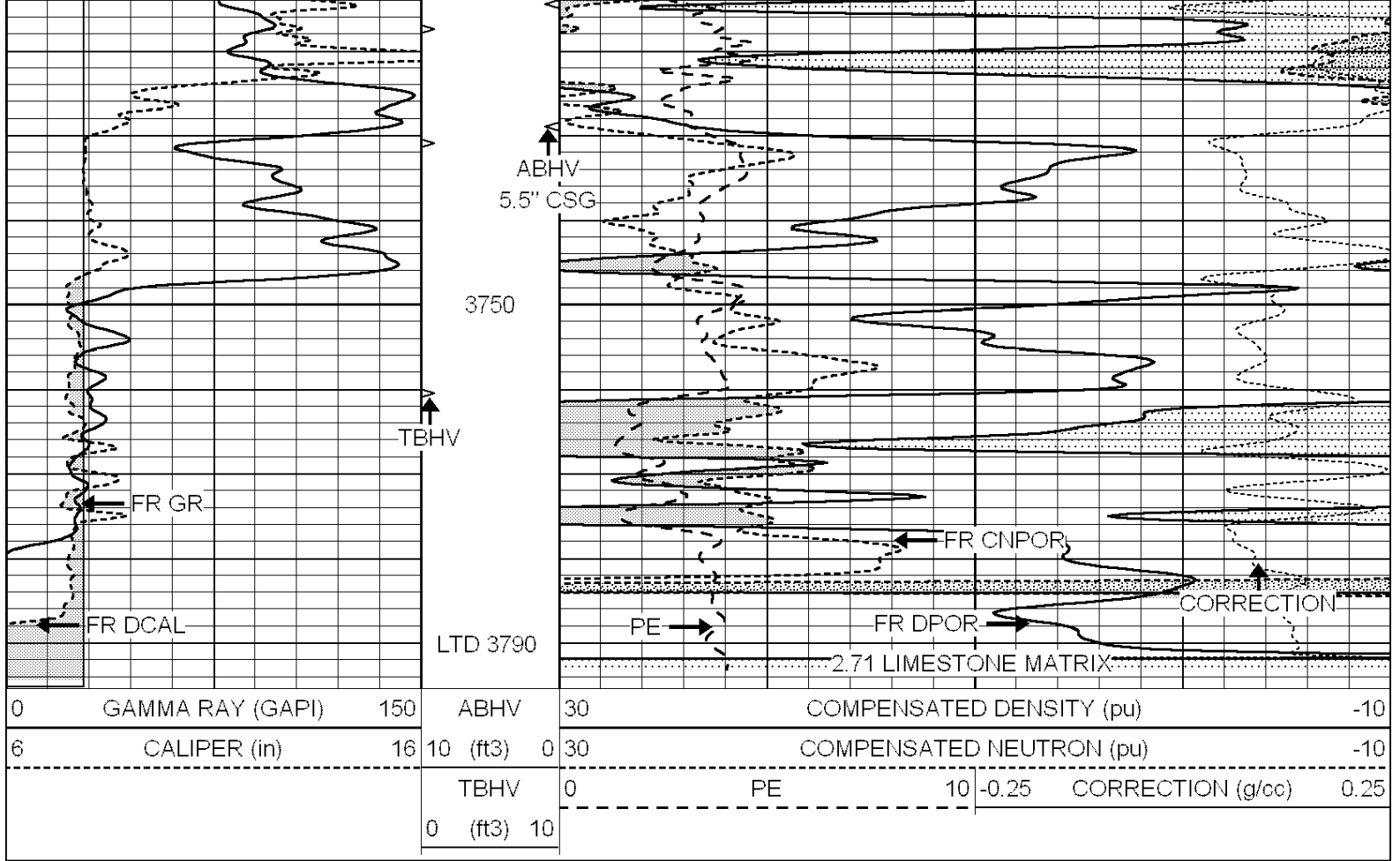
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 Dataset Pathname: pass6.2  
 Presentation Format: \_ldt\_neu  
 Dataset Creation: Mon Oct 08 08:35:07 2012  
 Charted by: Depth in Feet scaled 1:240

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



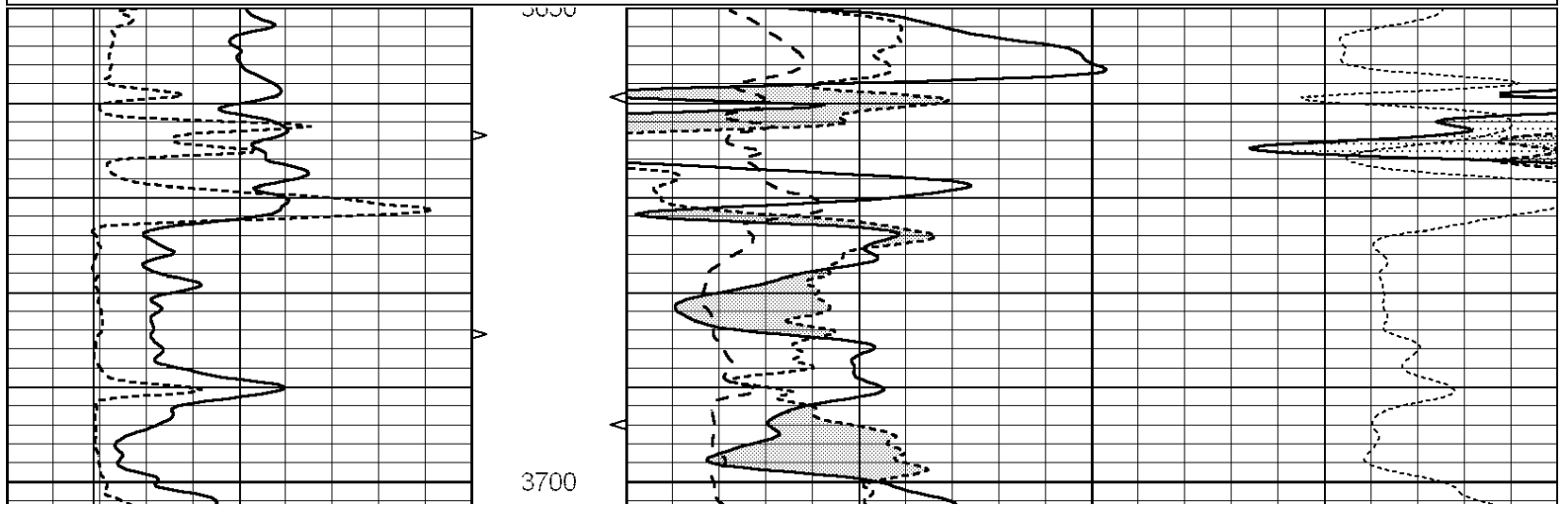
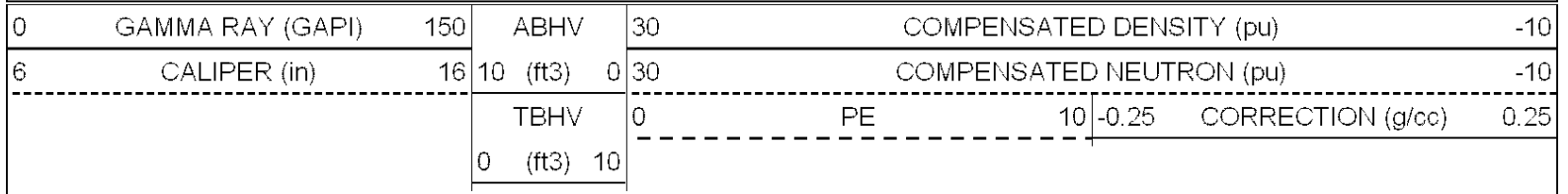


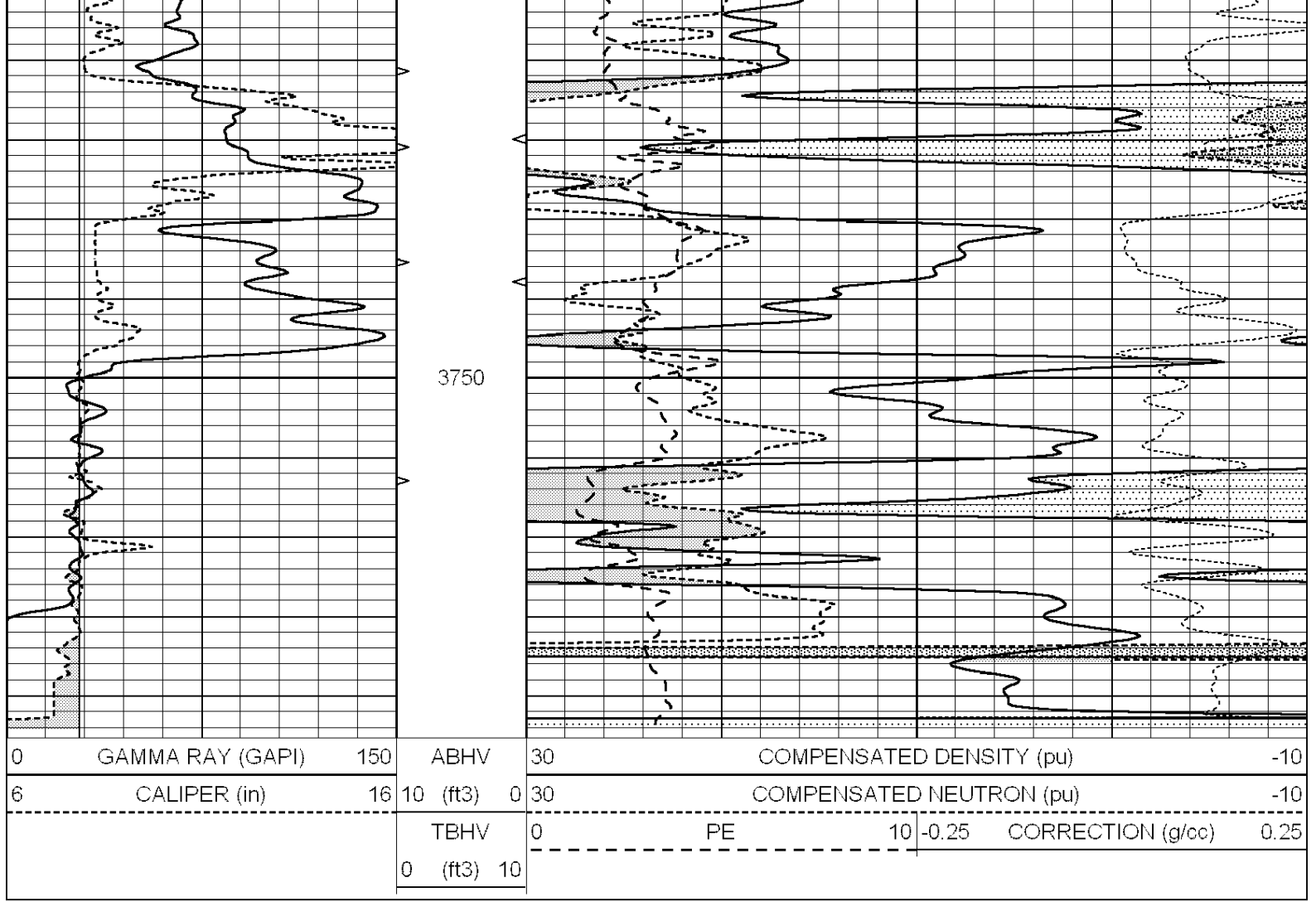




# REPEAT SECTION

Database File: 009745pe.db  
 Dataset Pathname: pass5.1  
 Presentation Format: \_ldt\_neu  
 Dataset Creation: Mon Oct 08 08:38:26 2012 by Calc Open-Cased 090629  
 Charted by: Depth in Feet scaled 1:240





### Calibration Report

Database File: 009745pe.db  
 Dataset Pathname: pass5.1  
 Dataset Creation: Mon Oct 08 08:38:26 2012 by Calc Open-Cased 090629

Litho Density Calibration Report  
 Serial: 001 Model: PRB  
 Performed Thu Sep 17 09:57:21 2009

#### Litho Density Calibration

	Background	Magnesium	Aluminum	Sandstone	
Window 1	2056.0	9796.8	3673.1	10821.3	cps
Window 2	1920.0	8541.1	3303.5	9307.2	cps
Window 3	1563.1	4735.7	2212.8	5017.5	cps
Window 4	466.0	466.1	465.6	471.5	cps
Long Space	0.0	6621.1	1383.5	7387.2	cps
Short Space	2.5	2361.7	1523.2	2534.0	cps
Rho		1.7100	2.5900	1.3800	g/cc
Pe			2.5700	1.5500	

Rib Angle	: 44.4	Rib Slope	: 0.978	Density/Spine Ratio	: 0.541
Spine Angle	: 74.4	Spine Slope	: 3.570	Spine Intercept	: -18.9

#### Caliper

	Readings	Reference
Low Ref	3.1	8.4
High Ref	4.3	14.3
	Gain: 4.6	

Offset: -7.7

Compensated Neutron Calibration Report

Serial Number: 6I  
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: #8  
Tool Model: OPEN  
Performed: Mon Jun 13 16:56:43 2011

Calibrator Value: 150.0 GAPI

Background Reading: 0.0 cps  
Calibrator Reading: 175.0 cps

Sensitivity: 0.8371 GAPI/cps