



**SUPERIOR**  
Hays,  
Kansas

**COMPENSATED**  
DENSITY / NEUTRON  
PE LOG

Company LARIO OIL & GAS COMPANY  
Well KNAPP #1-31  
Field WILDCAT  
County GOVE  
State KANSAS

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Well KNAPP #1-31  
Field WILDCAT  
County GOVE State KANSAS

Location: 1061' FNL & 1668' FWL  
API #: 15-063-21823-0000  
Other Services  
DIL/MEL  
SONIC  
Elevation  
SEC 31 TWP 13S RGE 31W  
Permanent Datum GROUND LEVEL Elevation 2932  
Log Measured From KELLY BUSHING 5' A.G.L.  
Drilling Measured From KELLY BUSHING  
K.B. 2937  
D.F. 2935  
G.L. 2932

Date	2/25/10
Run Number	ONE
Depth Driller	4717
Depth Logger	4718
Bottom Logged Interval	4694
Top Log Interval	3400
Casing Driller	8 5/8" @ 263'
Casing Logger	263
Bit Size	7 7/8"
Type Fluid In Hole	CHEMICAL MUD
Density / Viscosity	9.0/52
pH / Fluid Loss	10.0/8.8
Source of Sample	FLOWLINE
Rm @ Meas. Temp	.500 @ 80F
Rmf @ Meas. Temp	.375 @ 80F
Rmc @ Meas. Temp	.600 @ 80F
Source of Rmf / Rmc	MEASUREMENT
Rm @ BHT	.325 @ 123F
Time Circulation Stopped	3 HOURS
Time Logger on Bottom	12:15 P.M.
Maximum Recorded Temperature	123F
Equipment Number	0836
Location	HAYS, KANSAS
Recorded By	JEFF LUEBBERS
Witnessed By	VERN SCHRAG

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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 HAYS, KANSAS (785) 628-6395  
DIRECTIONS  
OAKLEY, KS. (JUNCTION OF OLD 40 & HWY 83) 20S. ON HWY 83 TO "JAYHAWK RD." (MONUMENT  
ROCK SIGN) 2E. TO "RD. 10", 4N., E. INTO

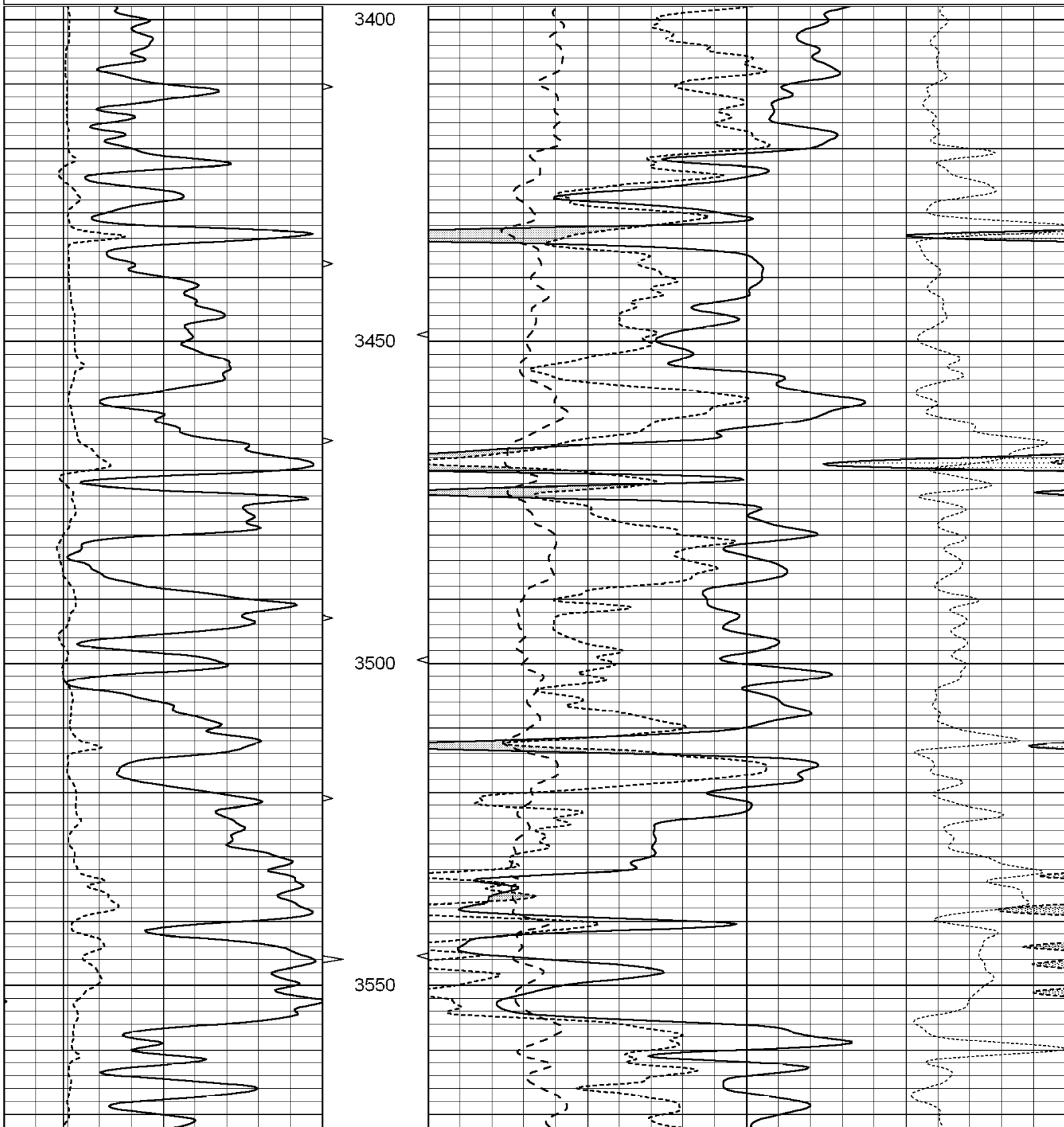


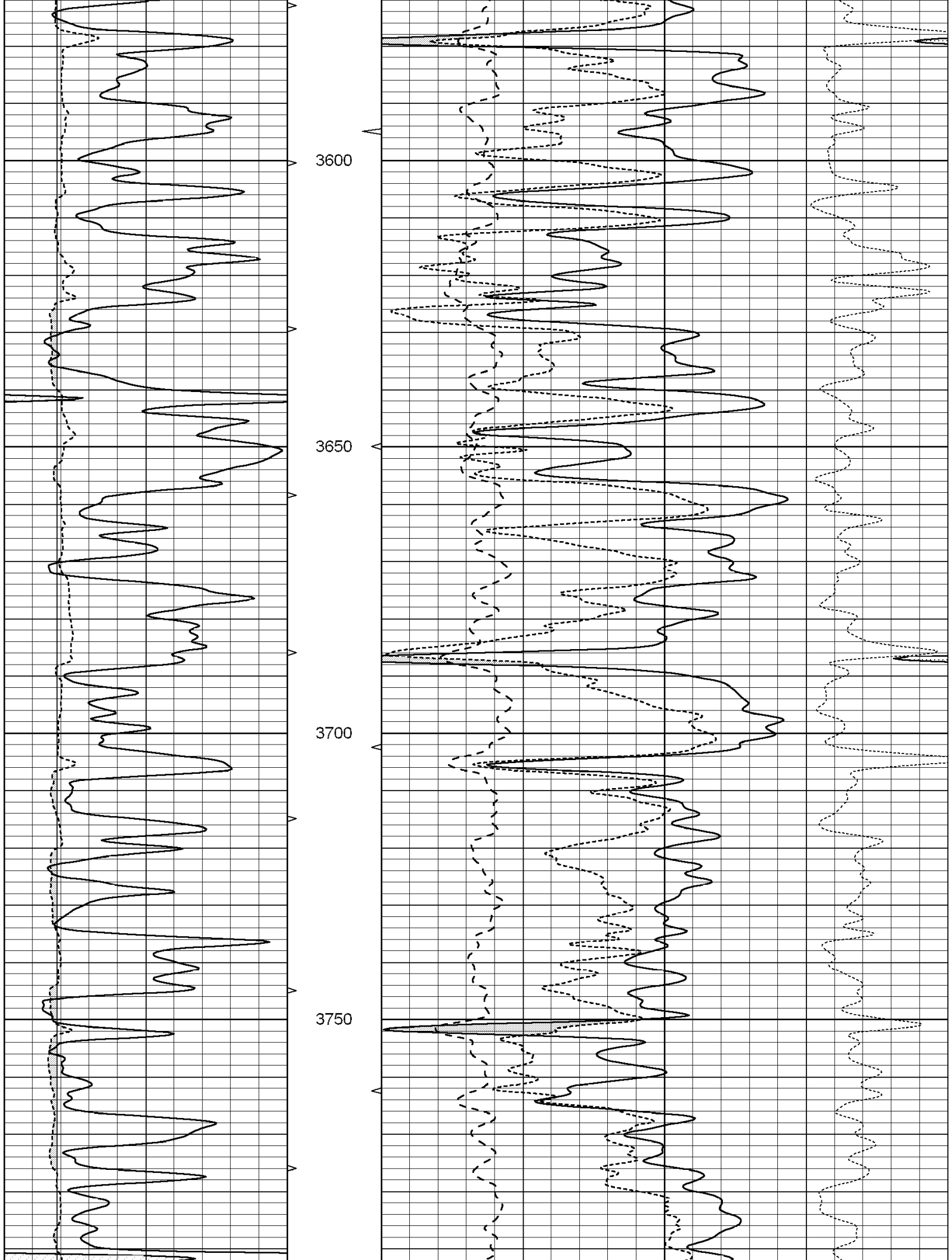
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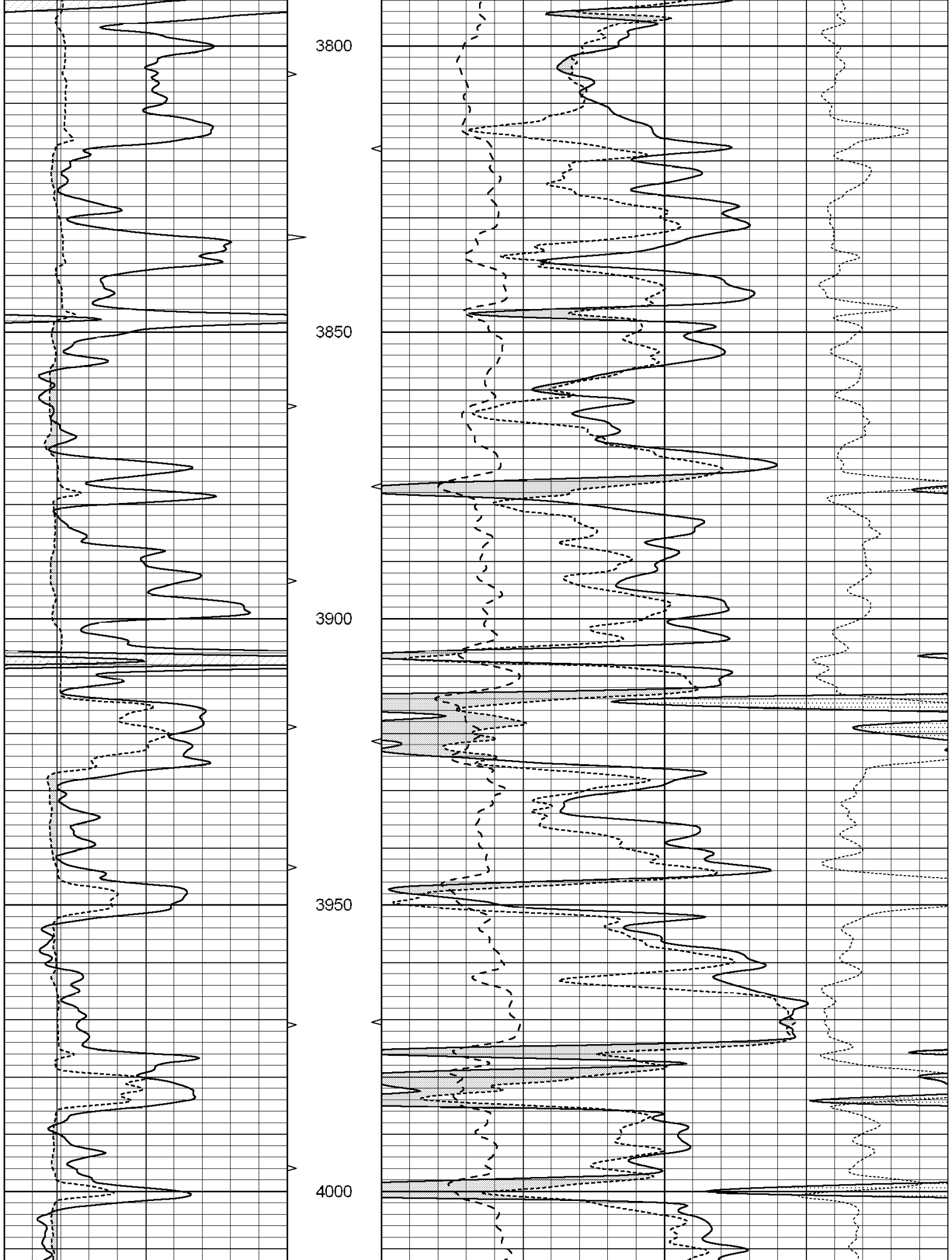
**MAIN SECTION**

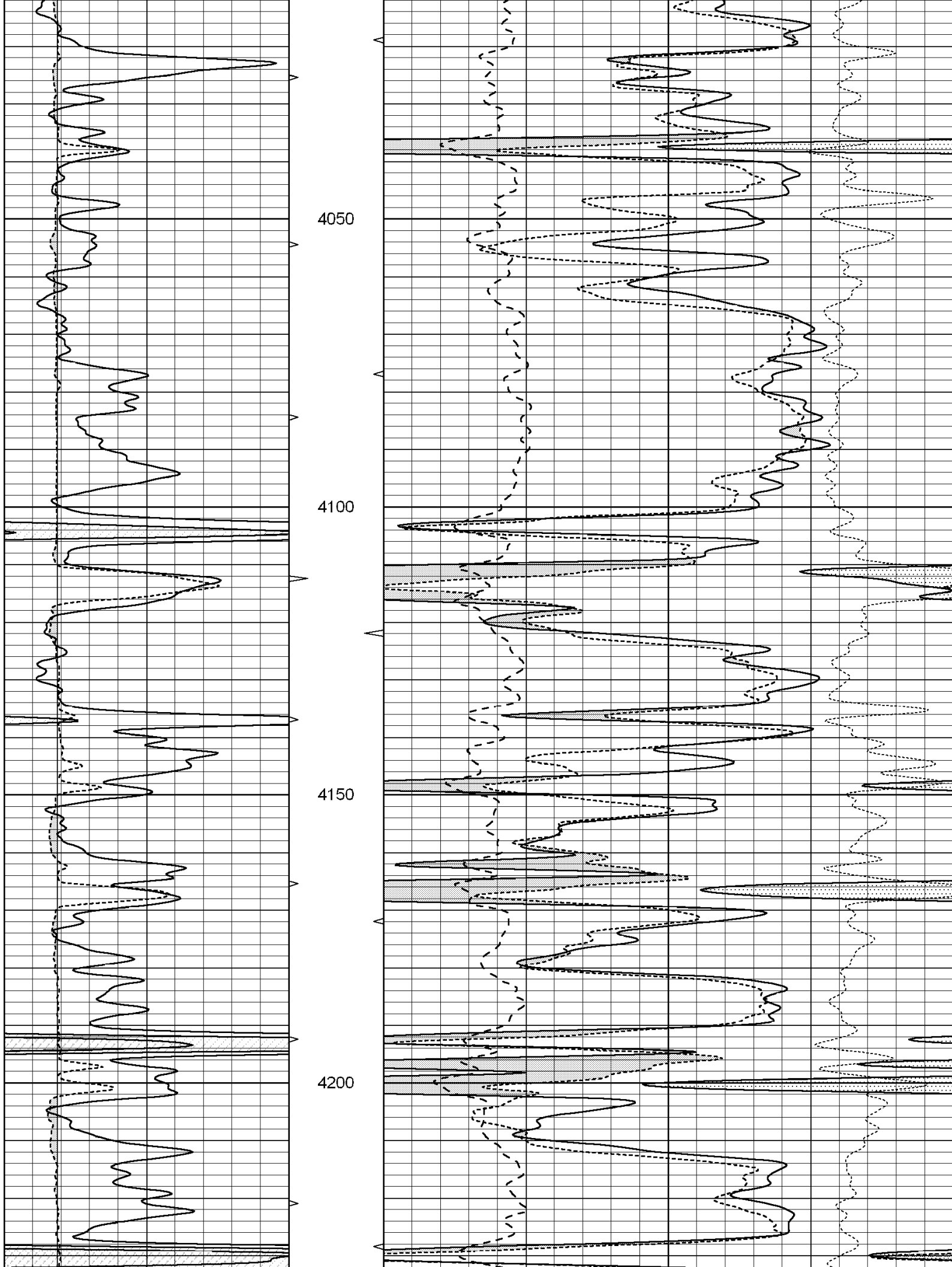
Database File: 004724pe.db  
 Dataset Pathname: pass3.4  
 Presentation Format: ldt\_neu  
 Dataset Creation: Thu Feb 25 13:19:06 2010  
 Charted by: Depth in Feet scaled 1:240

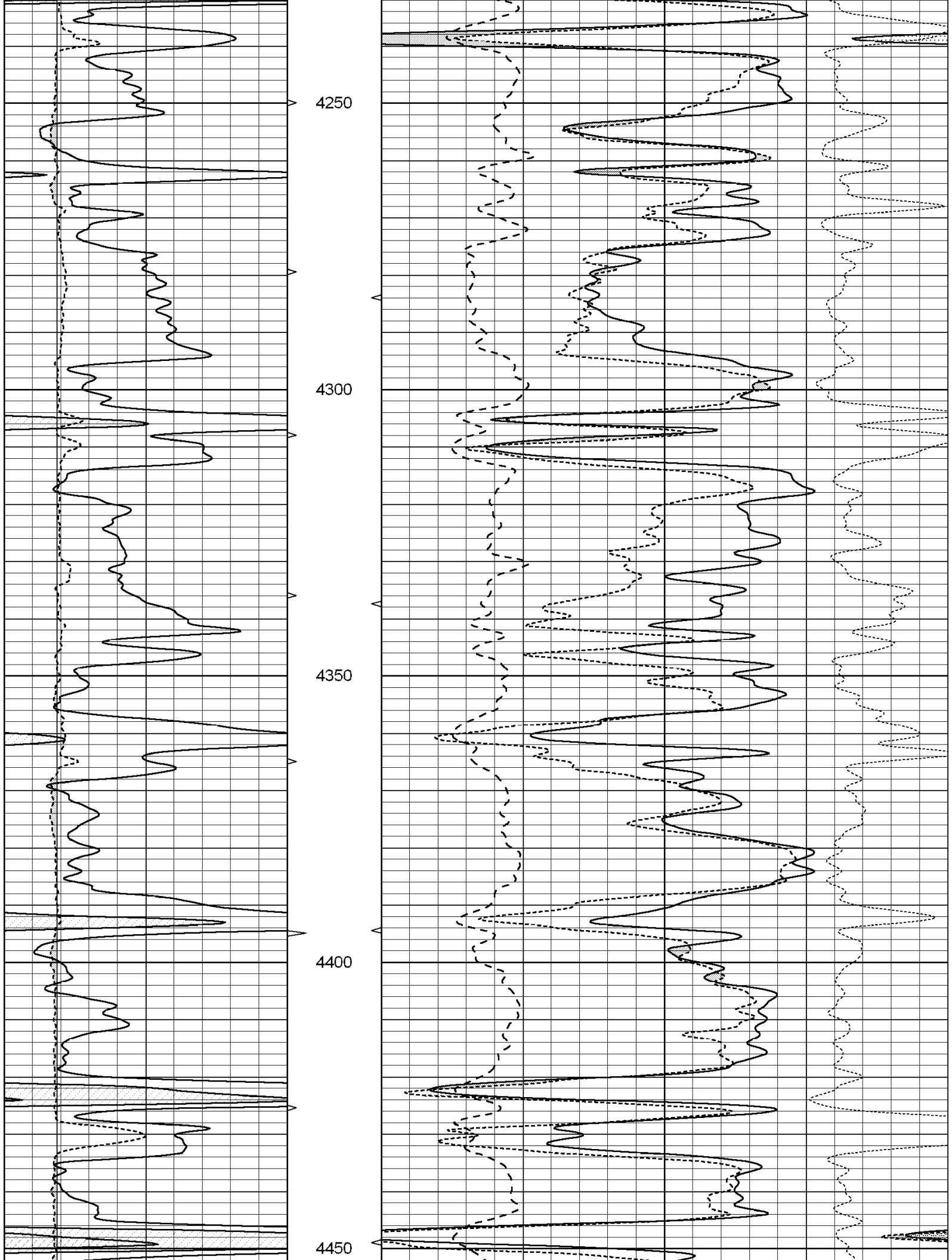
0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)	-10
6	CALIPER (in)	16	10 (ft3) 0	30	COMPENSATED NEUTRON (pu)	-10
			0	PE	10 -0.25	CORRECTION (g/cc) 0.25
			0 (ft3) 10			

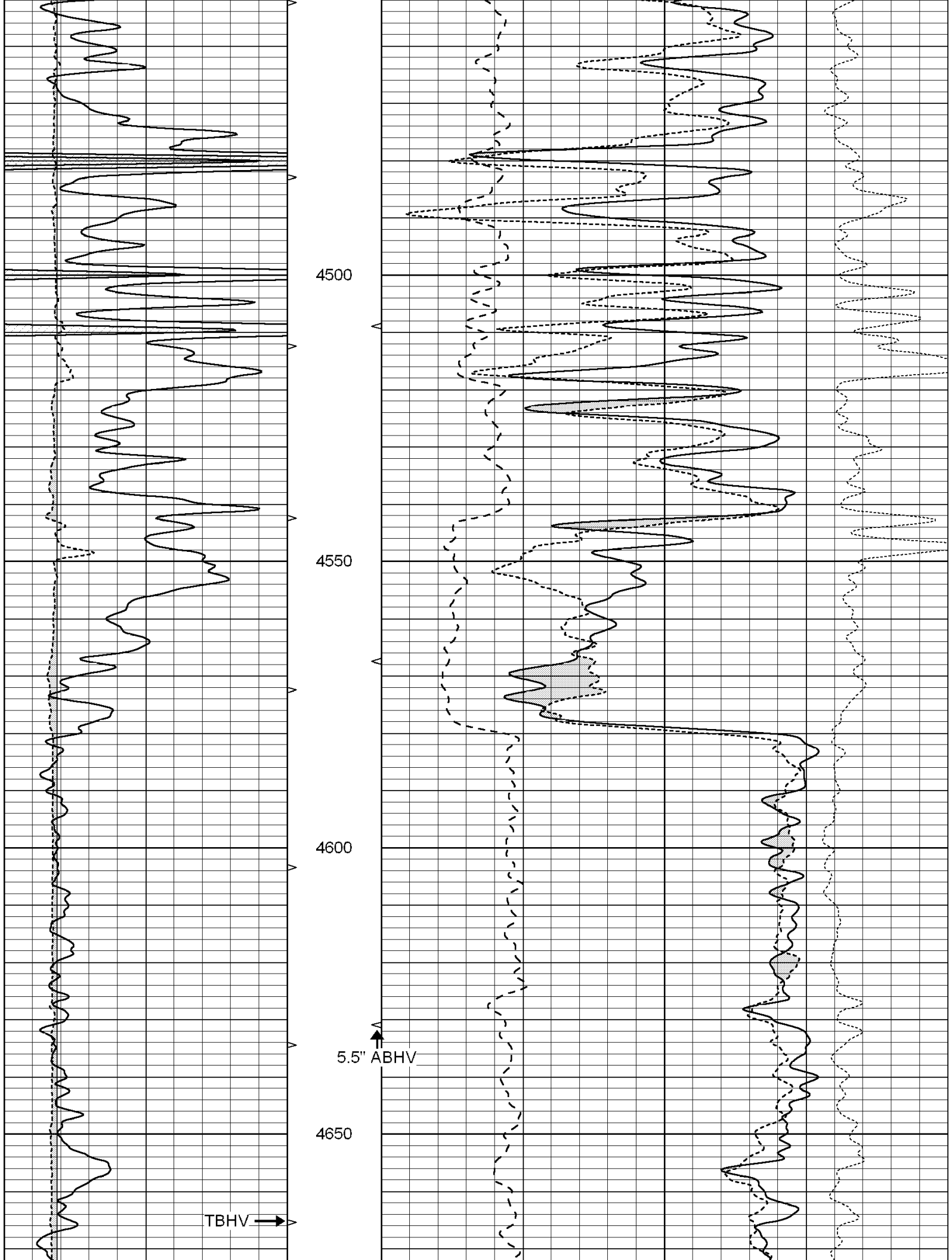


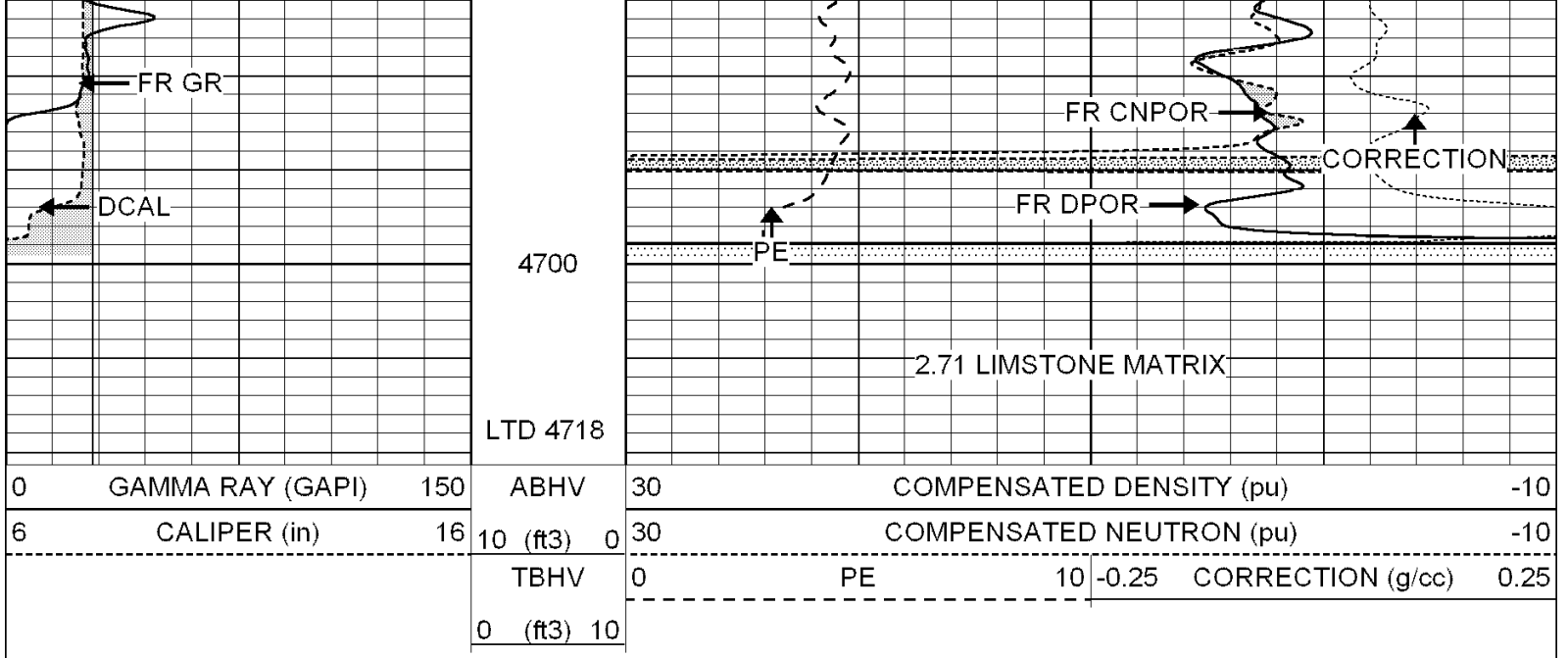










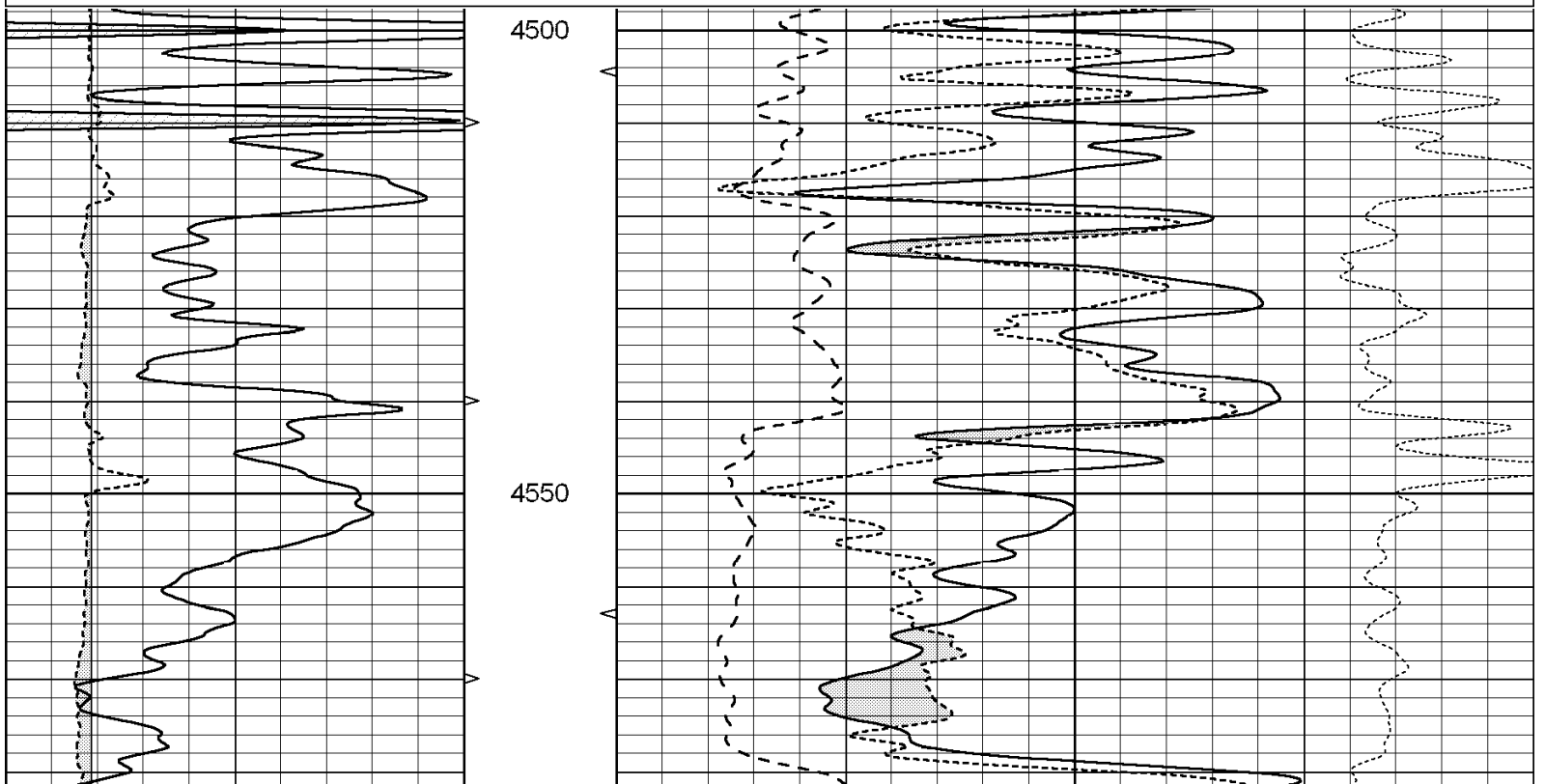


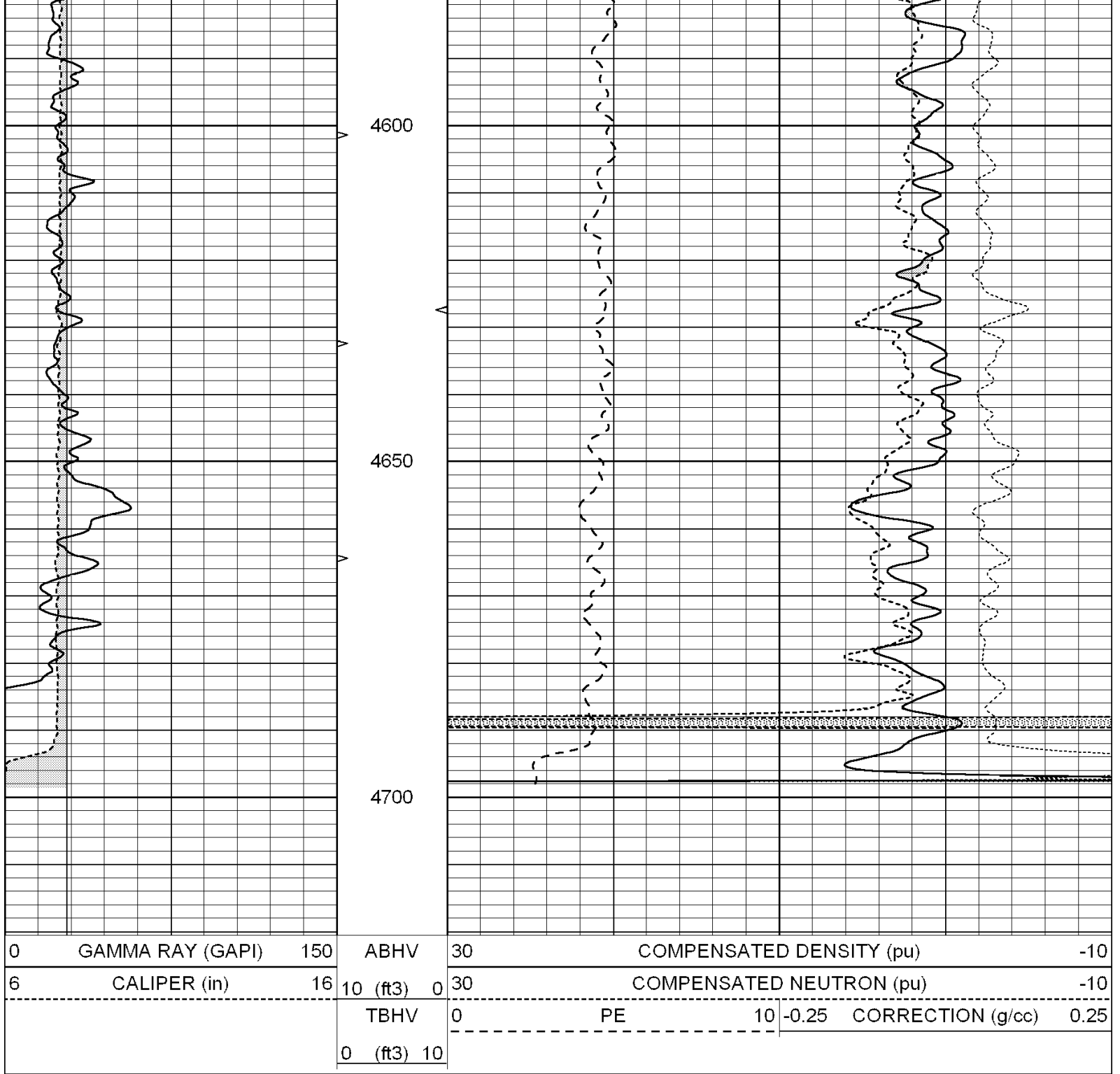
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# REPEAT SECTION

Database File: 004724pe.db  
 Dataset Pathname: pass2.8  
 Presentation Format: ldt\_neu  
 Dataset Creation: Thu Feb 25 12:53:15 2010 by Calc Open-Cased 060407  
 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			





### Calibration Report

Database File: 004724pe.db  
 Dataset Pathname: pass3.4  
 Dataset Creation: Thu Feb 25 13:19:06 2010

### Dual Induction Calibration Report

Serial-Model: DIL6-GEAR  
 Performed: Thu Feb 25 12:21:24 2010

Loop:	Readings				References			Results	
	Air	Loop			Air	Loop		m	b
Deep	0.001	0.644	V	0.000	400.000	mmho-m	660.000	-4.000	
Medium	0.020	0.738	V	0.000	462.500	mmho-m	740.000	-25.000	

Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.000	1.000	V	0.000	1.000	mmho-m	1.000	0.000
Medium	0.000	1.000	V	0.000	1.000	mmho-m	1.000	0.000

Litho Density Calibration Report  
Serial: 004N    Model: PRB  
Performed Tue Sep 08 13:49:55 2009

Litho Density Calibration

	Background	Magnesium	Aluminum	Sandstone	
Window 1	1535.8	11161.3	3721.6	12498.8	cps
Window 2	1402.6	9435.7	3219.7	10417.7	cps
Window 3	1077.6	4422.0	1779.2	4753.4	cps
Window 4	337.3	342.8	337.4	343.7	cps
Long Space	0.0	8033.1	1817.0	9015.1	cps
Short Space	1.2	1671.8	1138.1	1813.0	cps
Rho		1.7100	2.5900	1.3800	g/cc
Pe			2.5700	1.5500	
Rib Angle	: 45.5	Rib Slope	: 1.017	Density/Spine Ratio	: 0.573
Spine Angle	: 75.5	Spine Slope	: 3.865	Spine Intercept	: -19.7

Caliper

	Readings	Reference	
Low Ref	1.1	6.9	
High Ref	3.0	14.0	
	Gain: 3.7		Offset: 2.8

Compensated Neutron Calibration Report

Serial Number:    NEU\_4I  
Tool Model:        G

CALIBRATION

Detector	Readings	Target	Normalization
Short Space	996.00 cps	1000.00 cps	1.0000
Long Space	977.00 cps	1000.00 cps	1.0000

Gamma Ray Calibration Report

Serial Number:    GR4  
Tool Model:        OPEN  
Performed:        Thu Feb 25 11:22:05 2010

Calibrator Value:    200.0            GAPI

Background Reading:    0.0                cps  
Calibrator Reading:    189.0            cps

Sensitivity:            0.7500            GAPI/cps