SUPERIOR WELL SERVICES

SUPERIOR
Hays,
Kansas

COMPENSATED NEUTRON / DENSITY PE LOG

Company MULL DRILLING COMPANY, INC.
Well #1-3 MARLENE
Field
County NESS State KANSAS
Location: API # : 15-135-25377-0000
525' FSL & 660' FWL
SEC 3 TWP 20S RGE 23W
Permanent Datum GROUND LEVEL Elevation 2261
Log Measured From KELLY BUSHING 5' A.G.L.
Drilling Measured From KELLY BUSHING

Other Services
DIL
MEL/SON

Elevation
K.B. 2266
D.F. 2264
G.L. 2261

Company	MULL DRILLING COMPANY, INC.		
Well	#1-3 MARLENE		
Field			
County	NESS		
State	KANSAS		
Date	4/26/12		
Run Number	ONE		
Depth Driller	4450		
Depth Logger	4452		
Bottom Logged Interval	4428		
Top Log Interval	3600		
Casing Driller	8 5/8" @ 211		
Casing Logger	212		
Bit Size	7 7/8		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 5000 PPM	
Density / Viscosity	9.3/49		
pH / Fluid Loss	10.0/8.0		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.65 @ 85F		
Rmf @ Meas. Temp	.48 @ 85F		
Rmc @ Meas. Temp	.78 @ 85F		
Source of Rmf / Rmc	MEASURED		
Rm @ BHT	.46 @ 120F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	120F		
Equipment Number	680		
Location	HAYS, KS.		
Recorded By	JASON CAPPELLUCCI		
Witnessed By	KEVIN KESSLER		

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Comments

THANK YOU FOR USING SUPERIOR WELL SERVICE (785) 628-6395
DIRECTIONS
NESS CITY, KS. - 8 S. TO RD 50 - 2 E. - N. INTO

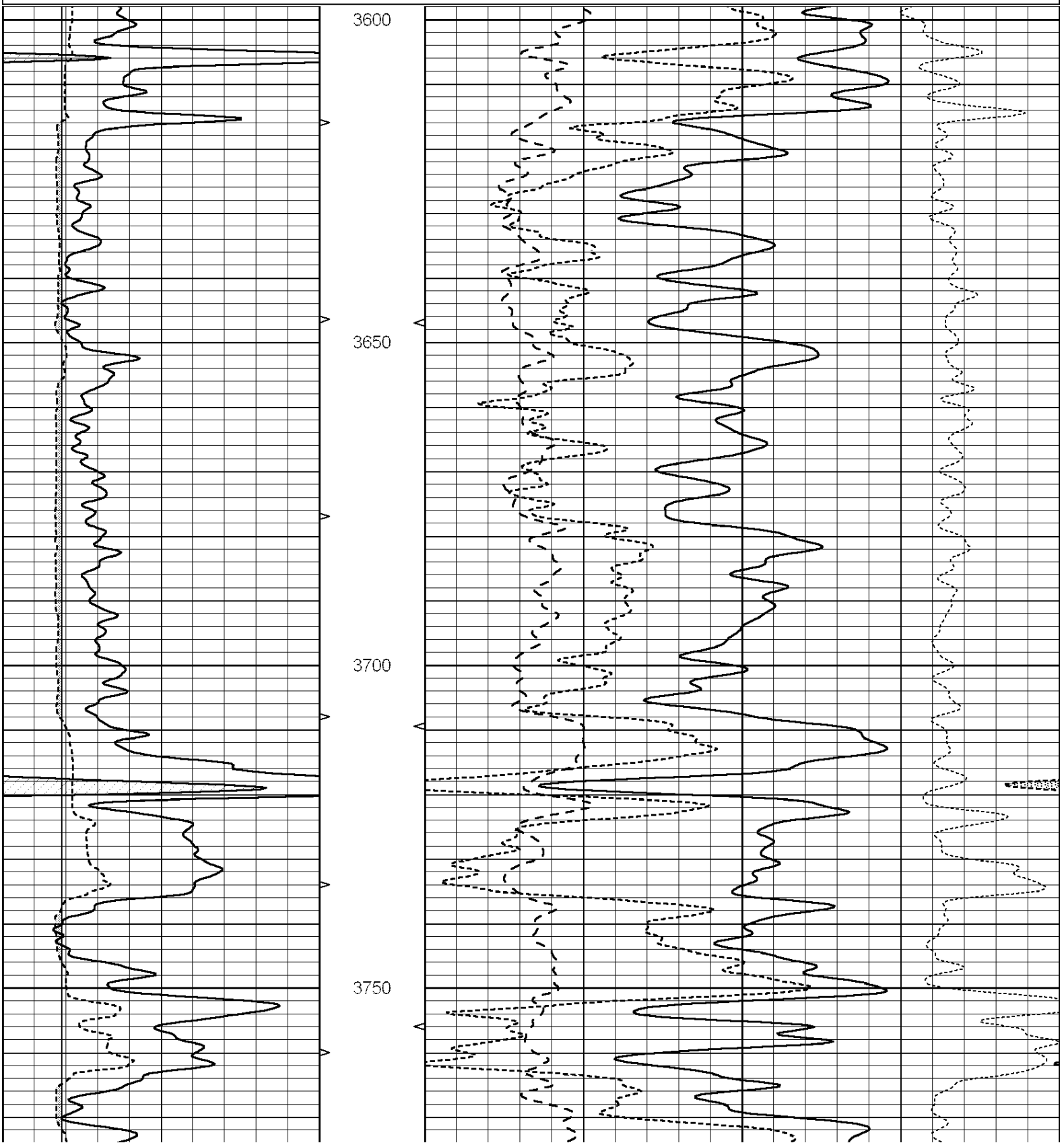
SUPERIOR WELL SERVICES

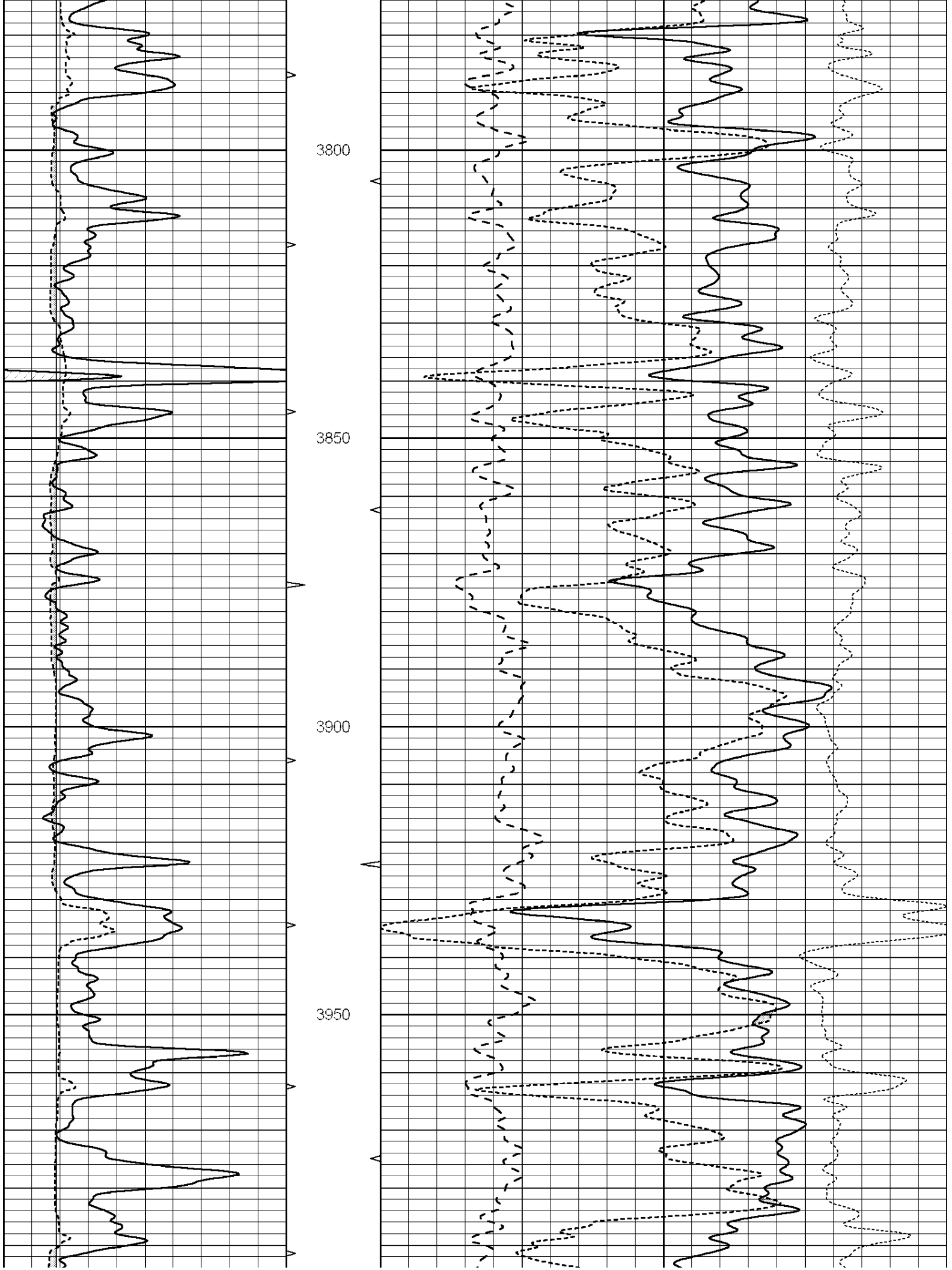
SUPERIOR
Hays,
Kansas

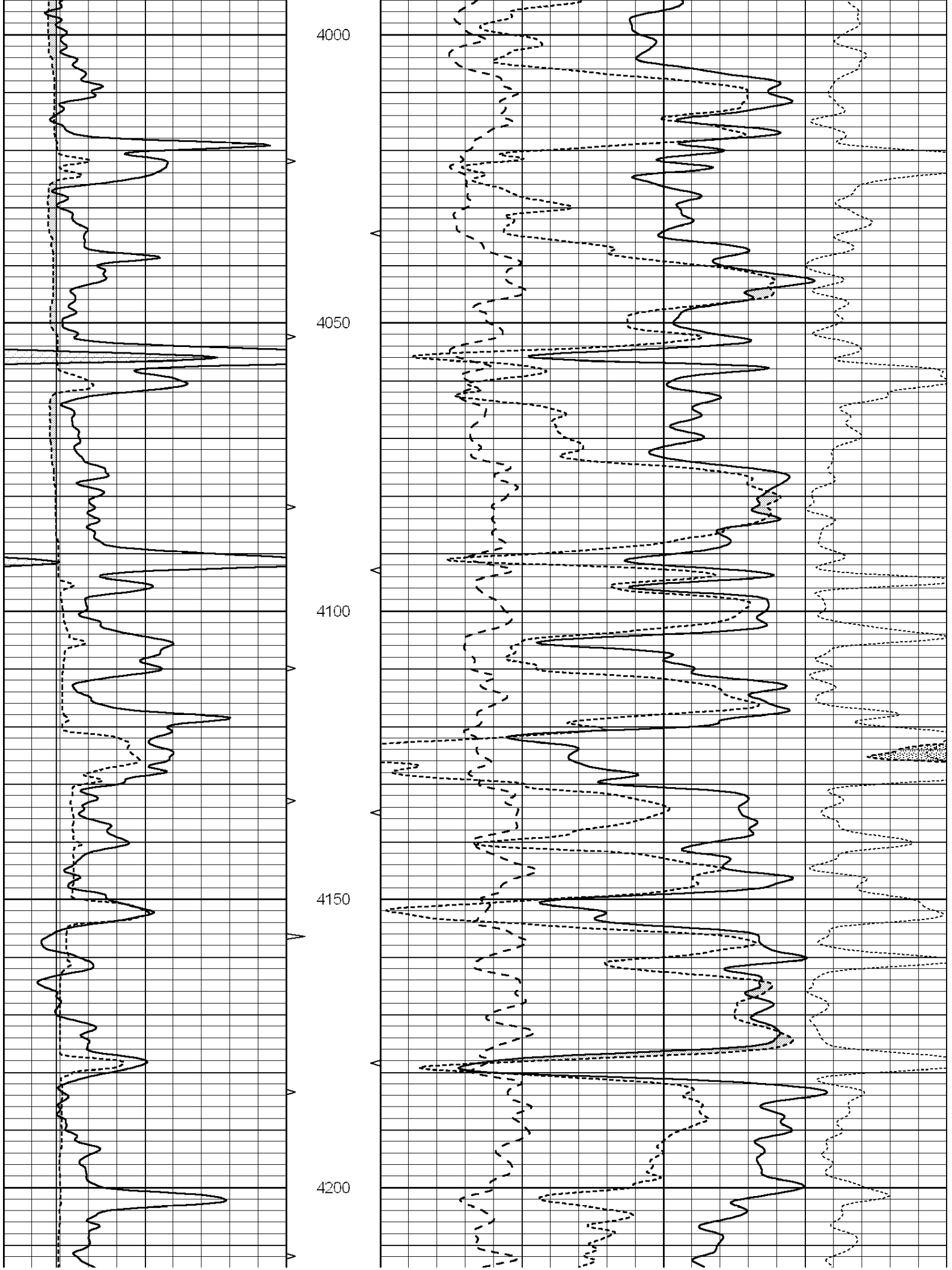
MAIN SECTION

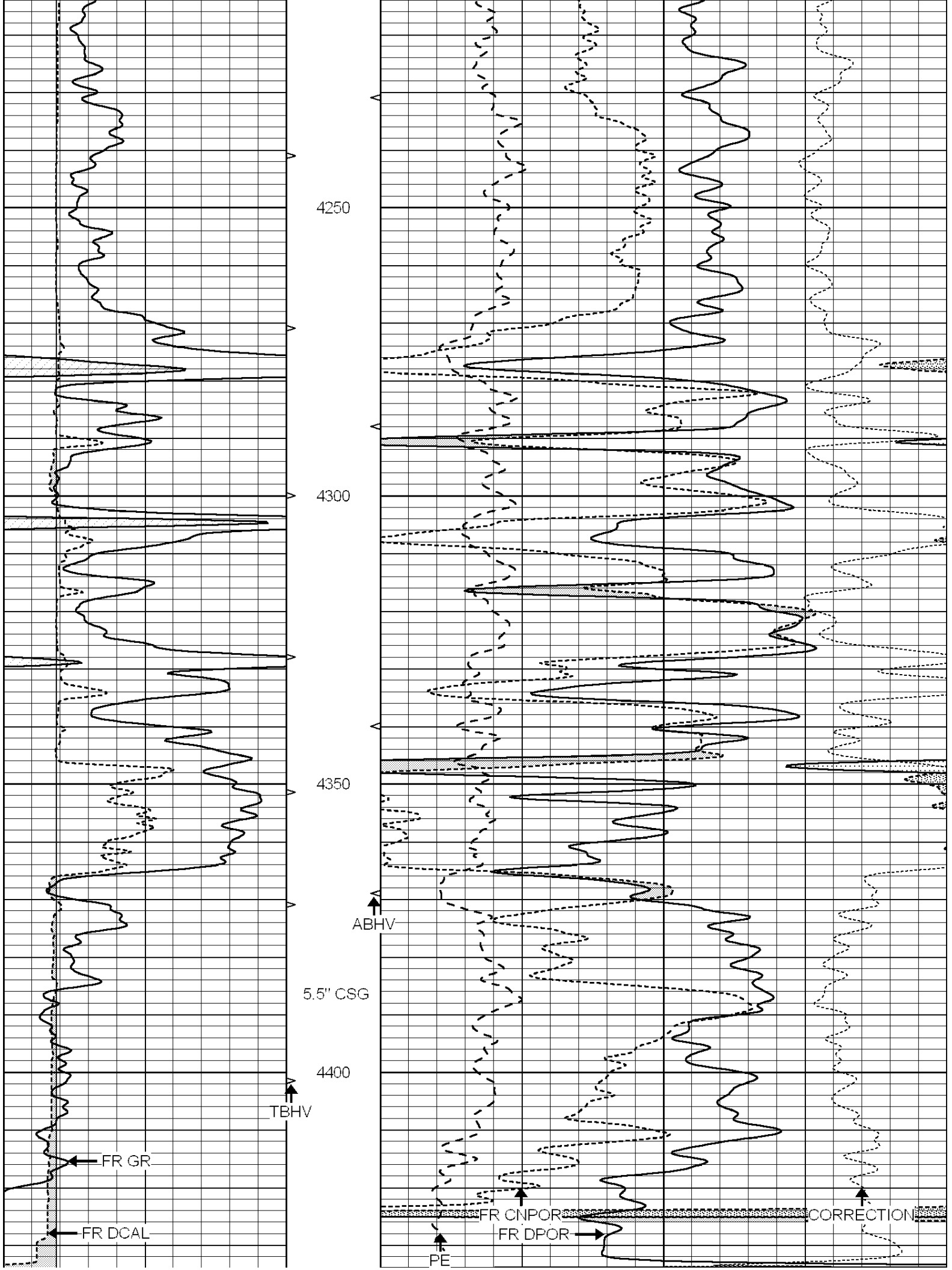
Database File:	008850pe.db
Dataset Pathname:	pass3.1
Presentation Format:	_ldt_neu
Dataset Creation:	Thu Apr 26 11:01:41 2012 by Calc Open-Cased 090629
Charted by:	Depth in Feet scaled 1:240

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	




3800
3850
3900
3950


4000
4050
4100
4150
4200


4250
4300
4350
4400
ABHV
5.5" CSG
TBHV
FR GR
FR DCAL
FR CNPOR
FR DPOR
CORRECTION
PE

2.71 LIMESTONE MATRIX

4450
LTD 4452

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			

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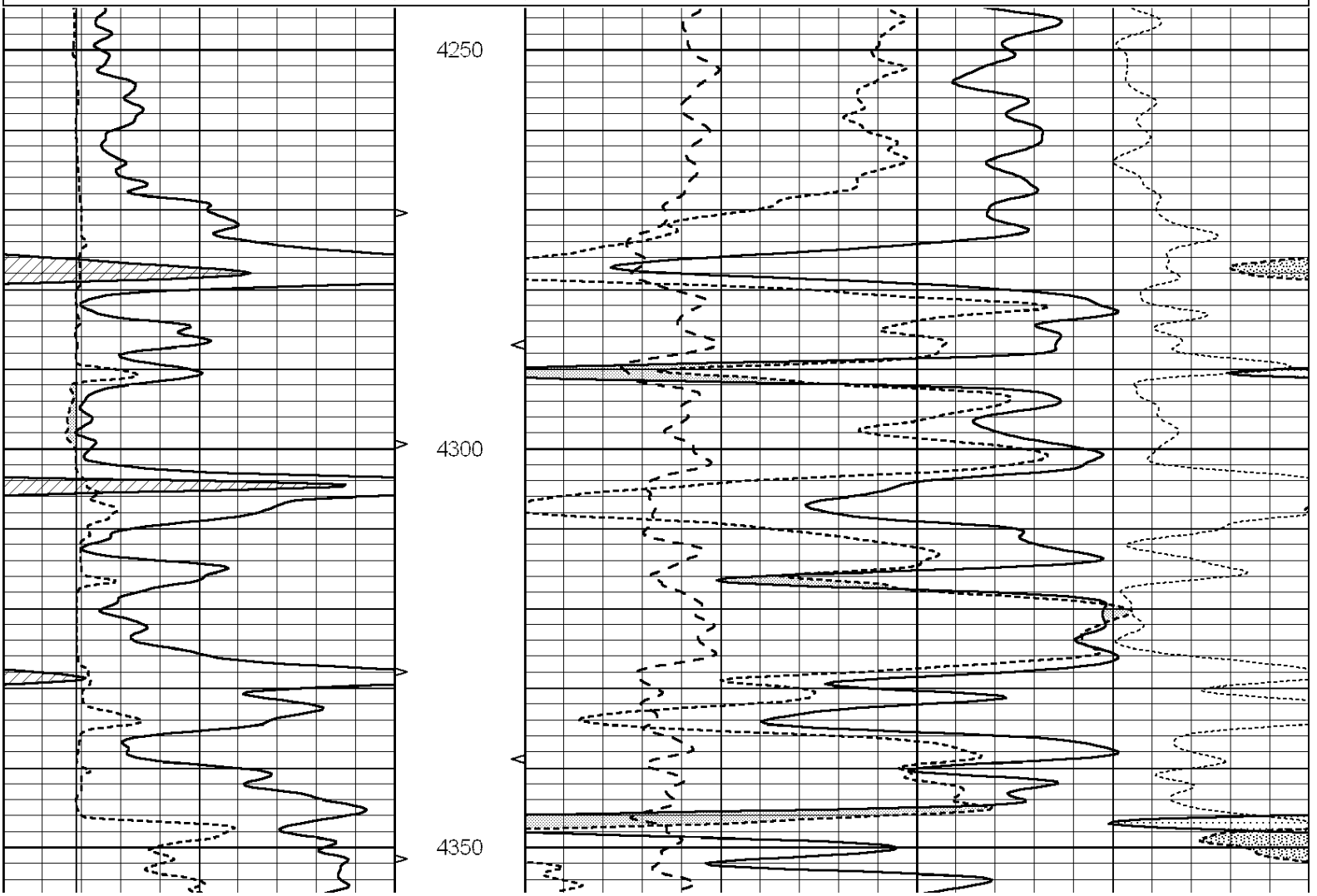
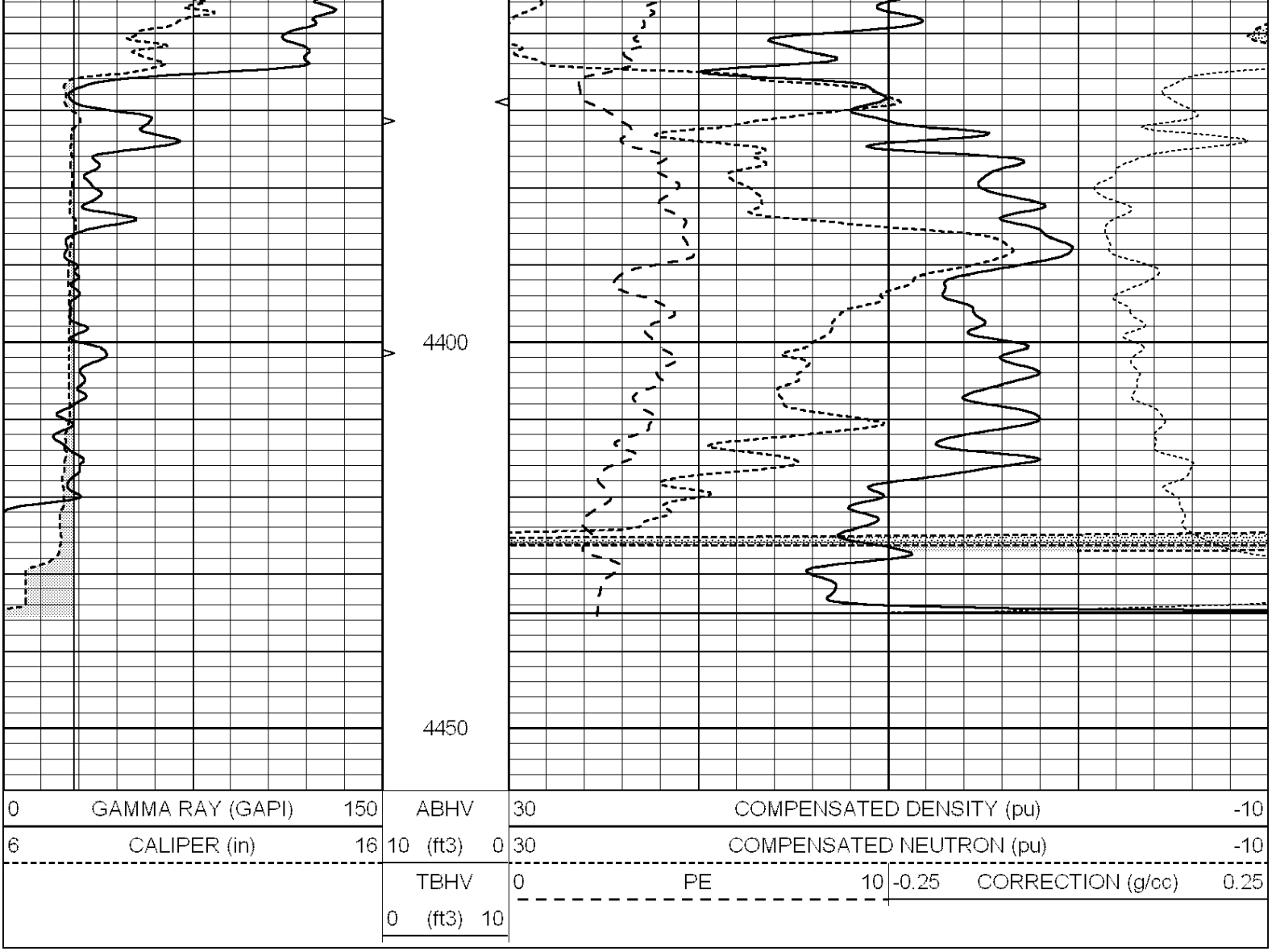
REPEAT SECTION

Database File: 008850pe.db
Dataset Pathname: pass2.1
Presentation Format: _ldt_neu
Dataset Creation: Thu Apr 26 10:52:59 2012 by Calc Open-Cased 090629
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: 008850pe.db
Dataset Pathname: pass3.1
Dataset Creation: Thu Apr 26 11:01:41 2012 by Calc Open-Cased 090629

Dual Induction Calibration Report

Serial-Model:	PROBE8-DILG
Surface Cal Performed:	Fri Aug 01 06:33:19 2008
Downhole Cal Performed:	Mon Jul 28 11:08:27 2008
After Survey Verification Performed:	Mon Jul 28 11:08:27 2008

Surface Calibration

	Readings			References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	0.015	0.648	V	0.000	400.000	mmho/m	632.616	-9.730
Medium	0.029	0.796	V	0.000	464.000	mmho/m	605.049	-17.680
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.017	0.657	V	0.000	400.000	mmho/m	625.153	-10.619
Medium	0.016	0.757	V	0.000	464.000	mmho/m	625.992	-9.739

Downhole Calibration

	Readings		References		Results	
	Zero	Cal	Zero	Cal	m'	b'

	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	2.011	405.777	mmho/m	1.000	0.000
Medium	0.000	0.000	mmho/m	7.590	503.393	mmho/m	1.000	0.000
LL3		7.500	V		1500.000	Ohm-m		
		0.000	V		20.000	Ohm-m		
		-7.200	V		3800.000	mmho-m		

After Survey Verification

	Readings			Targets			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	0.000	0.000	mmho/m	0.000	0.000
Medium	0.000	0.000	mmho/m	0.000	0.000	mmho/m	0.000	0.000
LL3		1.000	Ohm-m		1.000	Ohm-m		
		0.000	Ohm-m		0.000	Ohm-m		
		1.000	mmho-m		1.000	mmho-m		

Litho Density Calibration Report

Serial: 002 Model: PRB
Performed Mon Apr 02 18:34:45 2012

Litho Density Calibration

	Background	Magnesium	Aluminum	Sandstone	
Window 1	870.3	7347.3	2308.1	8190.4	cps
Window 2	820.7	6010.4	1961.8	6596.5	cps
Window 3	670.4	3295.4	1229.9	3546.4	cps
Window 4	200.2	200.9	202.7	203.6	cps
Long Space	0.0	5189.7	1141.2	5775.9	cps
Short Space	1.1	1012.5	681.4	1078.9	cps
Rho		1.7100	2.5900	1.3800	g/cc
Pe			2.5700	1.5500	

Rib Angle	: 45.3	Rib Slope	: 1.012	Density/Spine Ratio	: 0.562
Spine Angle	: 75.3	Spine Slope	: 3.825	Spine Intercept	: -17.9

Caliper

	Readings	Reference
Low Ref	3.7	8.0
High Ref	6.1	14.0
	Gain: 2.5	Offset: -1.3

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