



**SUPERIOR
Hays,
Kansas**

**COMPENSATED
DENSITY / NEUTRON
PE LOG**

Company MULL DRILLING COMPANY, INC.
Well BERNBECK #1-20
Field
County TREGO **State** KANSAS

Company MULL DRILLING CO., INC.
Well BERNBECK #1-20
Field
County TREGO
State KANSAS

Location: API #: 15-195-22723
1350' FSL & 1075' FWL
SEC 20 TWP 15S RGE 23W
Permanent Datum GROUND LEVEL Elevation 2379
Log Measured From KELLY BUSHING 5' A.G.L.
Drilling Measured From KELLY BUSHING
Other Services
DIL
SONIC/MEL
Elevation
K.B. 2384
D.F.
G.L. 2379

Date	8-22-11
Run Number	ONE
Depth Driller	4473
Depth Logger	4474
Bottom Logged Interval	4450
Top Log Interval	3600
Casing Driller	215
Casing Logger	215
Bit Size	7.875
Type Fluid in Hole	CHEMICAL MUD
Density / Viscosity	9.3 / 55
pH / Fluid Loss	10.5 / 7.2
Source of Sample	FLOWLINE
Rm @ Meas. Temp	0.80 @ 94F
Rmf @ Meas. Temp	0.60 @ 94F
Rmc @ Meas. Temp	0.96 @ 94F
Source of Rmf / Rmc	MEASURED
Rm @ BHT	.630 @ 119F
Time Circulation Stopped	2 HOURS
Time Logger on Bottom	4:15 A.M.
Maximum Recorded Temperature	119F
Equipment Number	860
Location	HAYS, KS.
Recorded By	RUPP
Witnessed By	LARRY FRIEND

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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

SUPERIOR WELL SERVICES
785-628-6395
THANK YOU FOR YOUR BUSINESS
DIRECTIONS: RANSOM JCT. OF #4 & #283, 5N, 1/8W, N INTO.

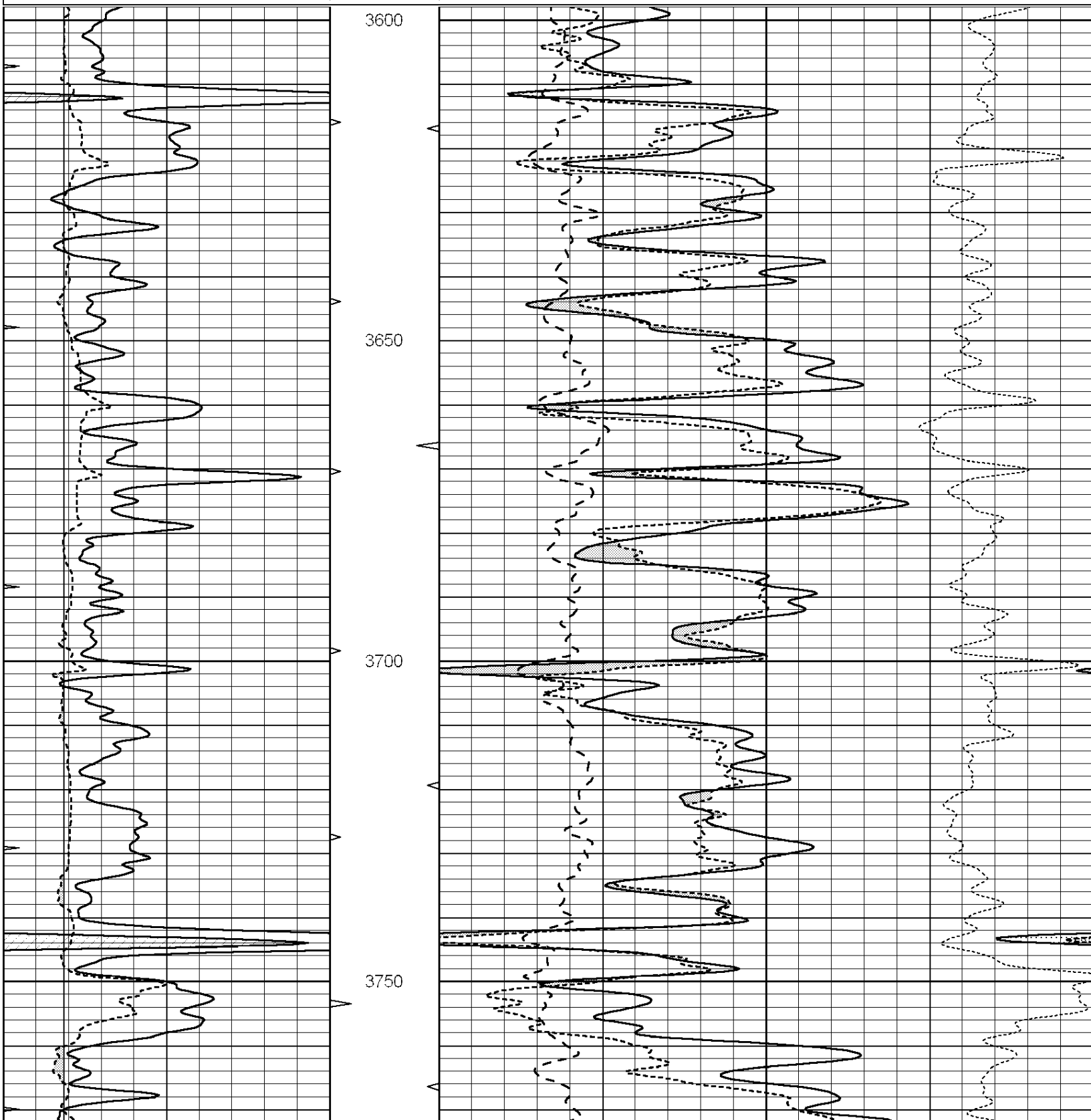


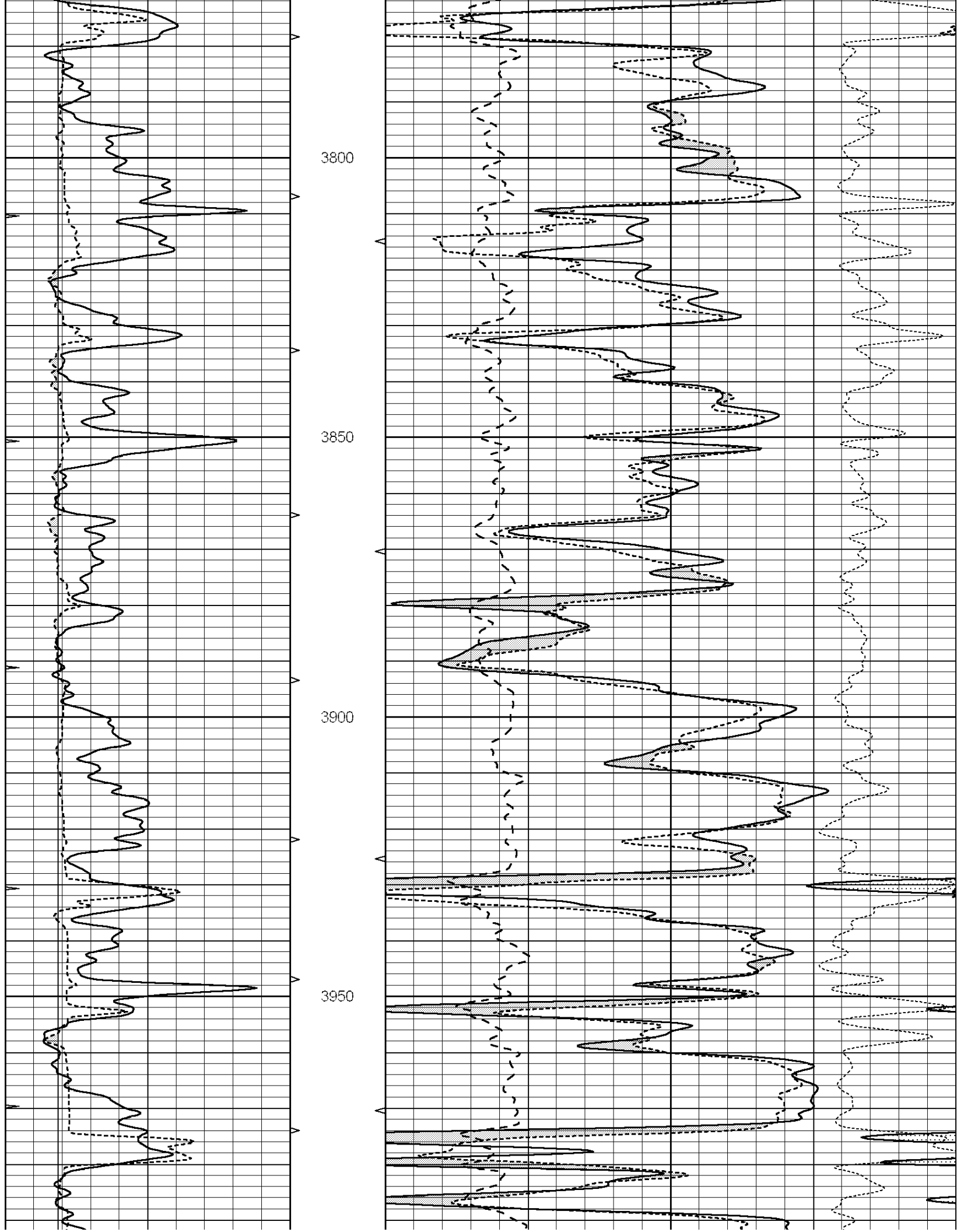
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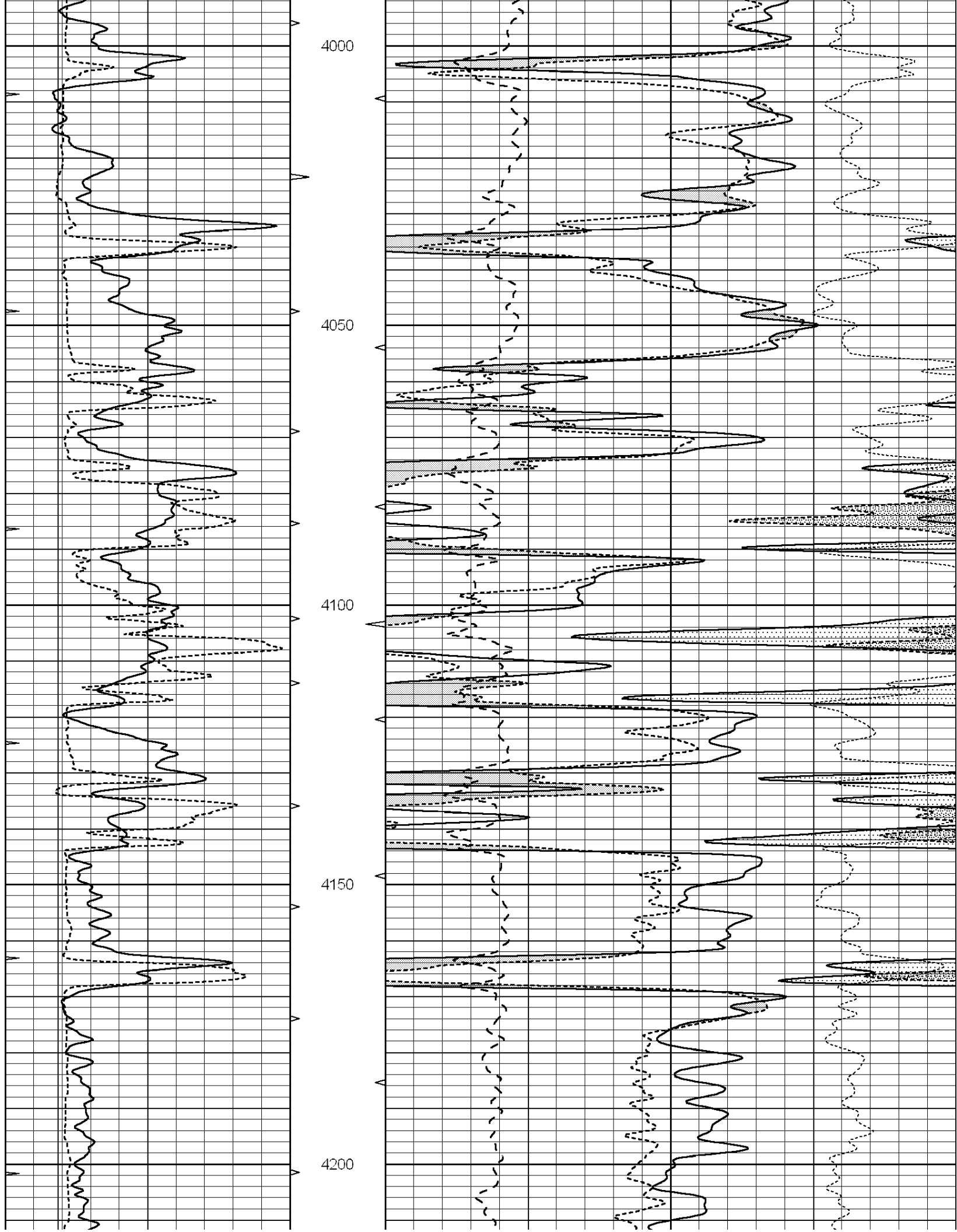
MAIN SECTION

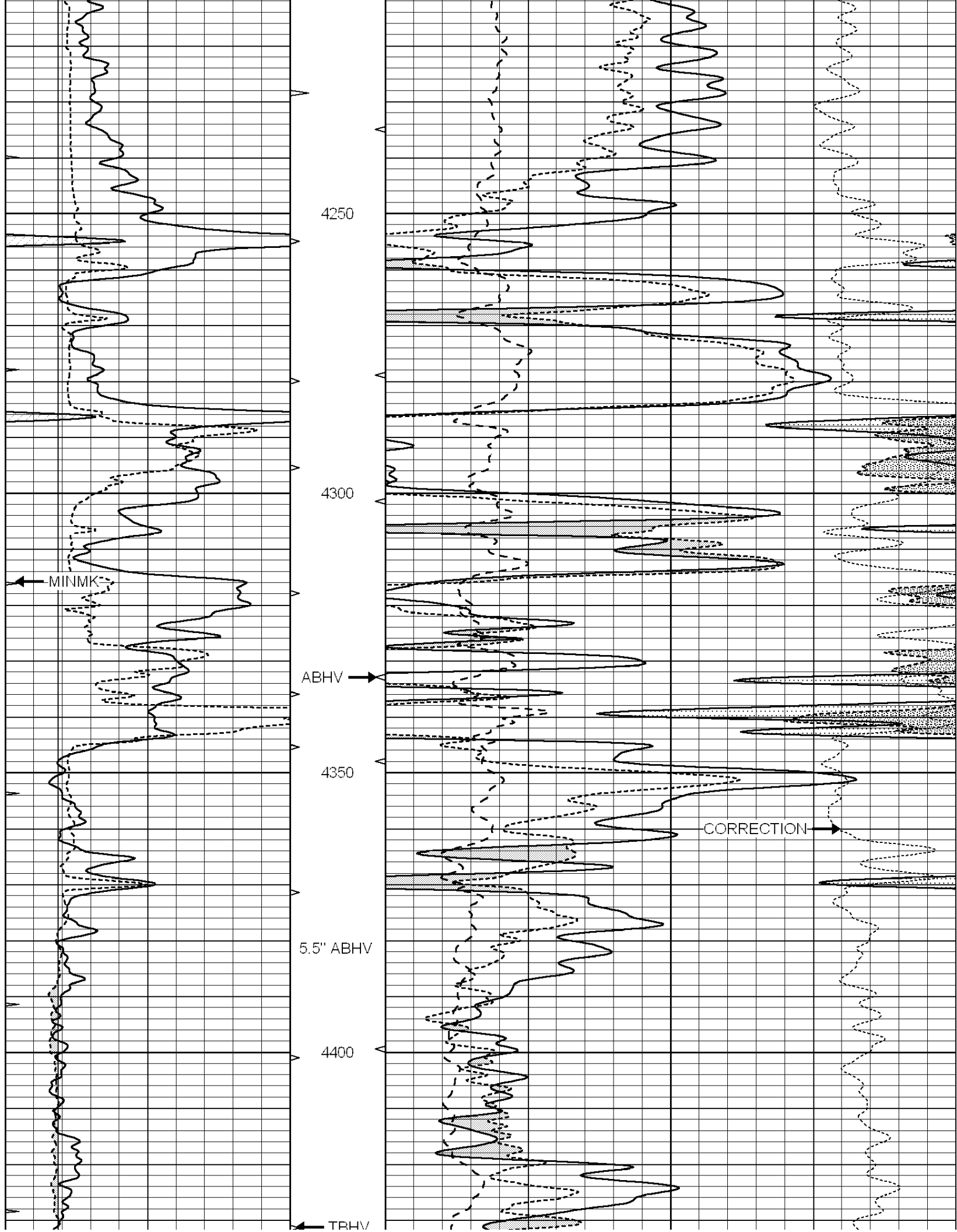
Database File: 007350pdm.db
 Dataset Pathname: pass3.1A
 Presentation Format: ldt_neu
 Dataset Creation: Mon Aug 22 06:29:22 2011
 Charted by: Depth in Feet scaled 1:240

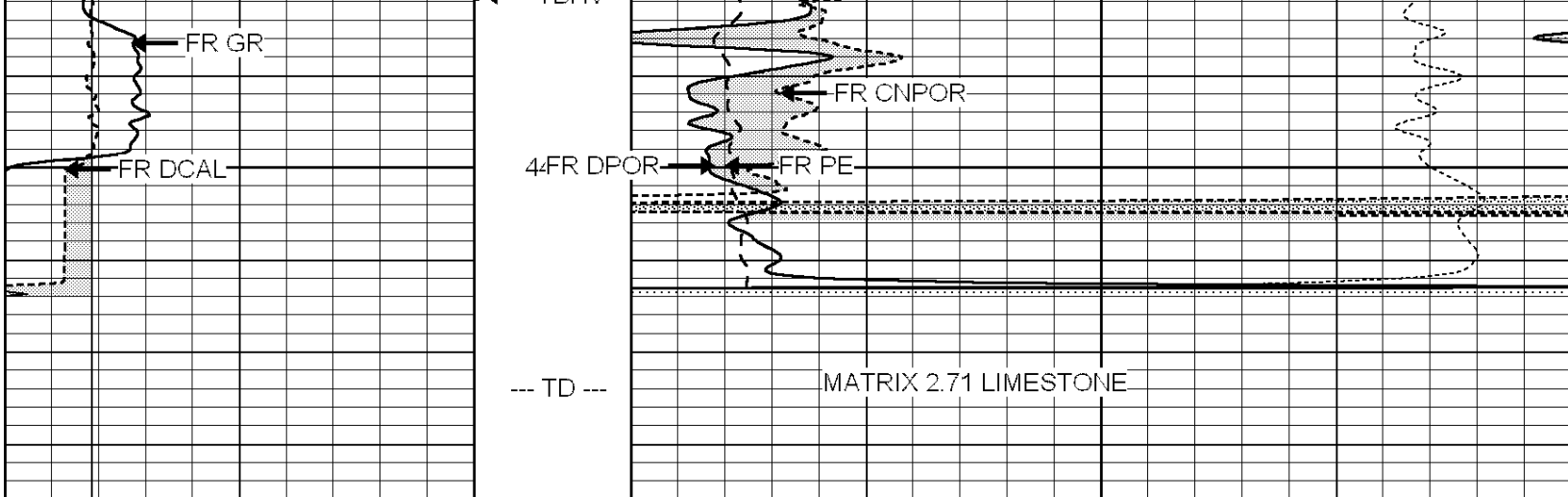
0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)		-10
6	CALIPER (in)	16	10 (ft3)	0	COMPENSATED NEUTRON (pu)		-10
0	MINMK	20	TBHV	0	PE	10	-0.25 CORRECTION (g/cc) 0.25
			0 (ft3)	10			











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			

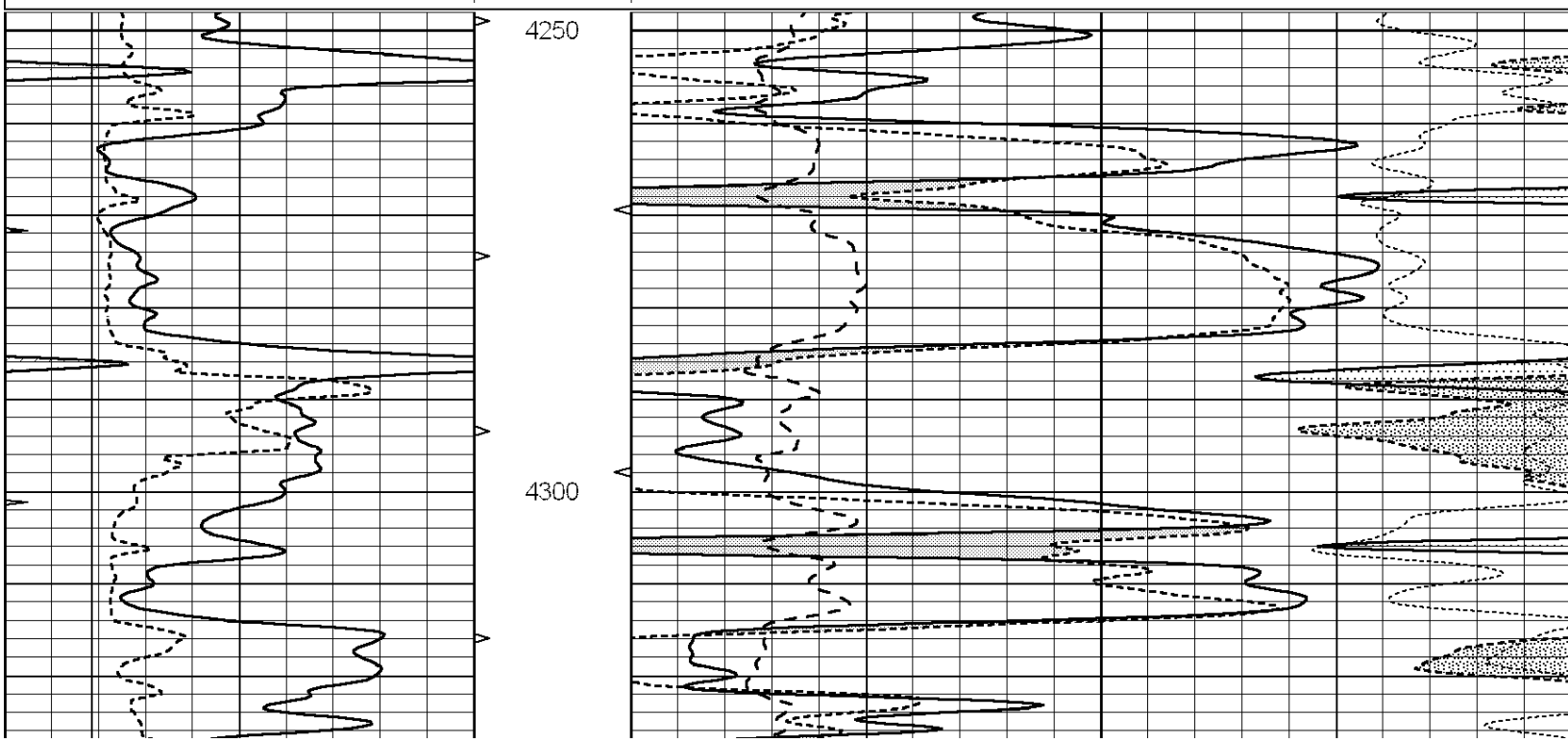


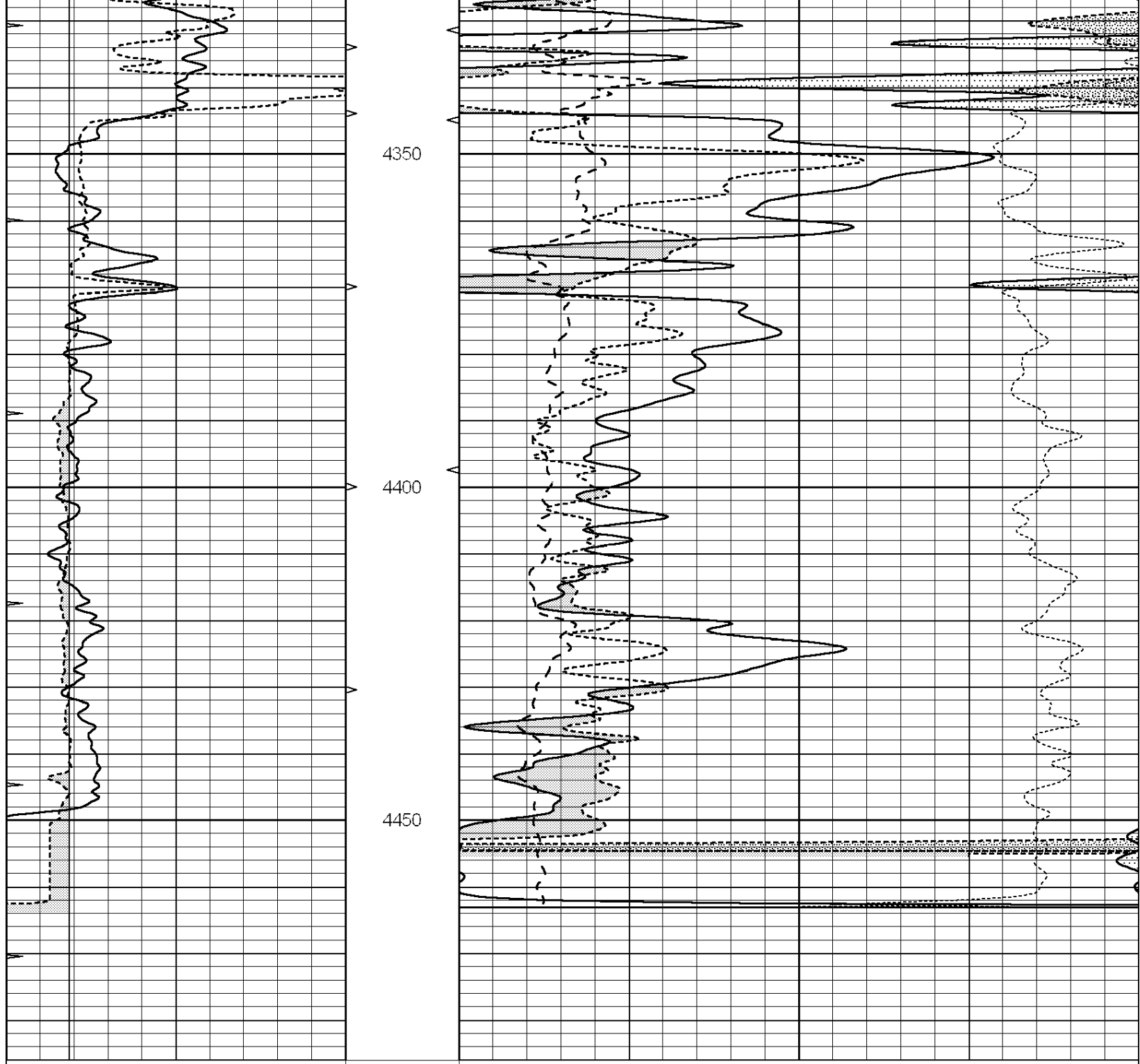
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REPEAT SECTION

Database File: 007350pdm.db
 Dataset Pathname: pass2.A
 Presentation Format: ldt_neu
 Dataset Creation: Mon Aug 22 06:35:00 2011 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
0	MINMK	20	TBHV	0	PE	10 -0.25 CORRECTION (g/cc) 0.25
			0 (ft3) 10			





0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)	-10
6	CALIPER (in)	16	10 (ft3)	0	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: 007350pdn.db
 Dataset Pathname: pass3.1A
 Dataset Creation: Mon Aug 22 06:29:22 2011

Dual Induction Calibration Report

Serial-Model: DIL5-GEAR
 Performed: Mon Aug 22 04:57:07 2011

Readings

References

Results

Loop:	Air	Loop		Air	Loop		m	b
Deep	0.004	0.654	V	0.000	400.000	mmho/m	540.000	-18.000
Medium	-0.005	0.737	V	0.000	462.500	mmho/m	560.000	-16.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.006	0.655	V	0.000	400.000	mmho/m	615.668	-3.483
Medium	0.010	0.747	V	0.000	462.500	mmho/m	627.607	-6.064

Litho Density Calibration Report
 Serial: 002 Model: PRB
 Performed Tue Jul 03 11:12:28 2007

Litho Density Calibration

	Background	Magnesium	Aluminum	Sandstone	
Window 1	1059.5	9172.0	2859.6	10210.6	cps
Window 2	976.0	7793.2	2486.1	8515.6	cps
Window 3	689.8	2930.5	1159.0	3096.2	cps
Window 4	231.9	237.2	231.1	234.0	cps
Long Space	0.0	6817.1	1510.1	7539.6	cps
Short Space	1.6	1758.1	1188.6	1898.8	cps
Rho		1.7100	2.5960	1.3800	g/cc
Pe			2.5700	1.5500	
Rib Angle	: 45.4	Rib Slope	: 1.015	Density/Spine Ratio	: 0.569
Spine Angle	: 75.4	Spine Slope	: 3.850	Spine Intercept	: -19.9

Caliper

	Readings	Reference	
Low Ref	2.5	6.0	
High Ref	3.9	11.6	
	Gain: 3.9		Offset: -3.9

Compensated Neutron Calibration Report

Serial Number: NUE_2I
 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 Aug 22 04:57:22 2011

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
 Calibrator Reading: 1.0 cps

Sensitivity: 0.6500 GAPI/cps