



SUPERIOR
Hays,
Kansas

COMPENSATED
DENSITY / NEUTRON
PE LOG

Company		EDISON OPERATING CO., LLC.	
Well		STERLING #1-31	
Field		HARDTNER	
County		BARBER	
State		KANSAS	
Company		EDISON OPERATING COMPANY, LLC	
Well		STERLING #1-31	
Field		HARDTNER	
County		BARBER	
State		KANSAS	
Location:		API # : 15-007-23765-0000	
Permanent Datum		GROUND LEVEL	
Log Measured From		KELLY BUSHING 10' A.G.L.	
Drilling Measured From		KELLY BUSHING	
SEC 31 TWP 34S RGE 12W		Elevation	
1320' FNL & 330' FWL		DIL	
		MEL/SON	
		Elevation	
		K.B. 1471	
		D.F. 1469	
		G.L. 1461	
Date	9/24/11		
Run Number	ONE		
Depth Driller	5476		
Depth Logger	5477		
Bottom Logged Interval	5453		
Top Log Interval	3500		
Casing Driller	8 5/8"@331'		
Casing Logger	332'		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 4,000 PPM	
Density / Viscosity	9.1/48		
pH / Fluid Loss	11.0/8.8		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.85@88F		
Rmt @ Meas. Temp	.64@88F		
Rmc @ Meas. Temp	1.02@88F		
Source of Rmt / Rmc	MEASUREMENT		
Rm @ BHT	.58@129F		
Time Circulation Stopped	5 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	129F		
Equipment Number	4010		
Location	HAYS, KANSAS		
Recorded By	JEFF GRONEWEG		
Witnessed By	DEREK PATTERSON		

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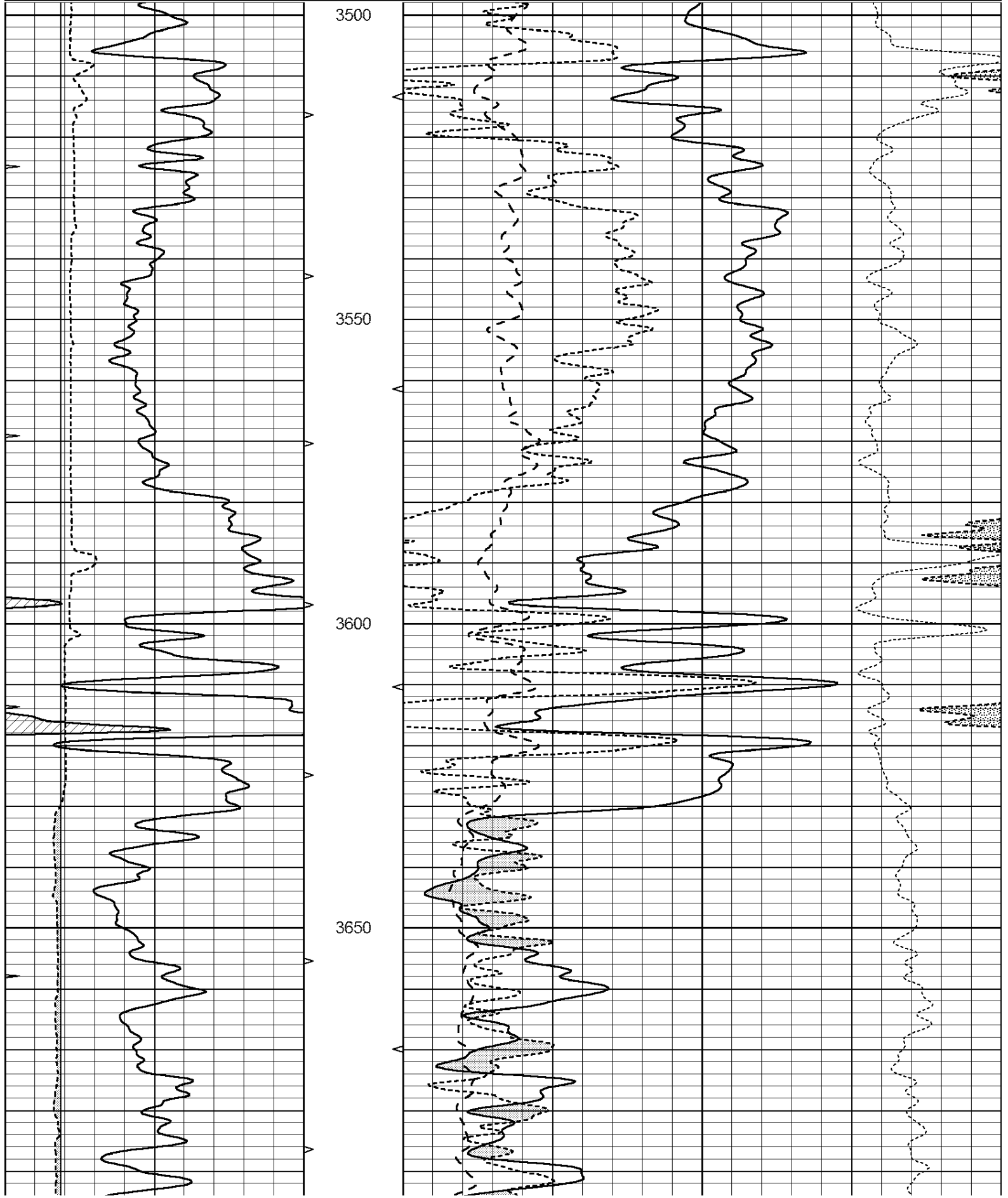
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs,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

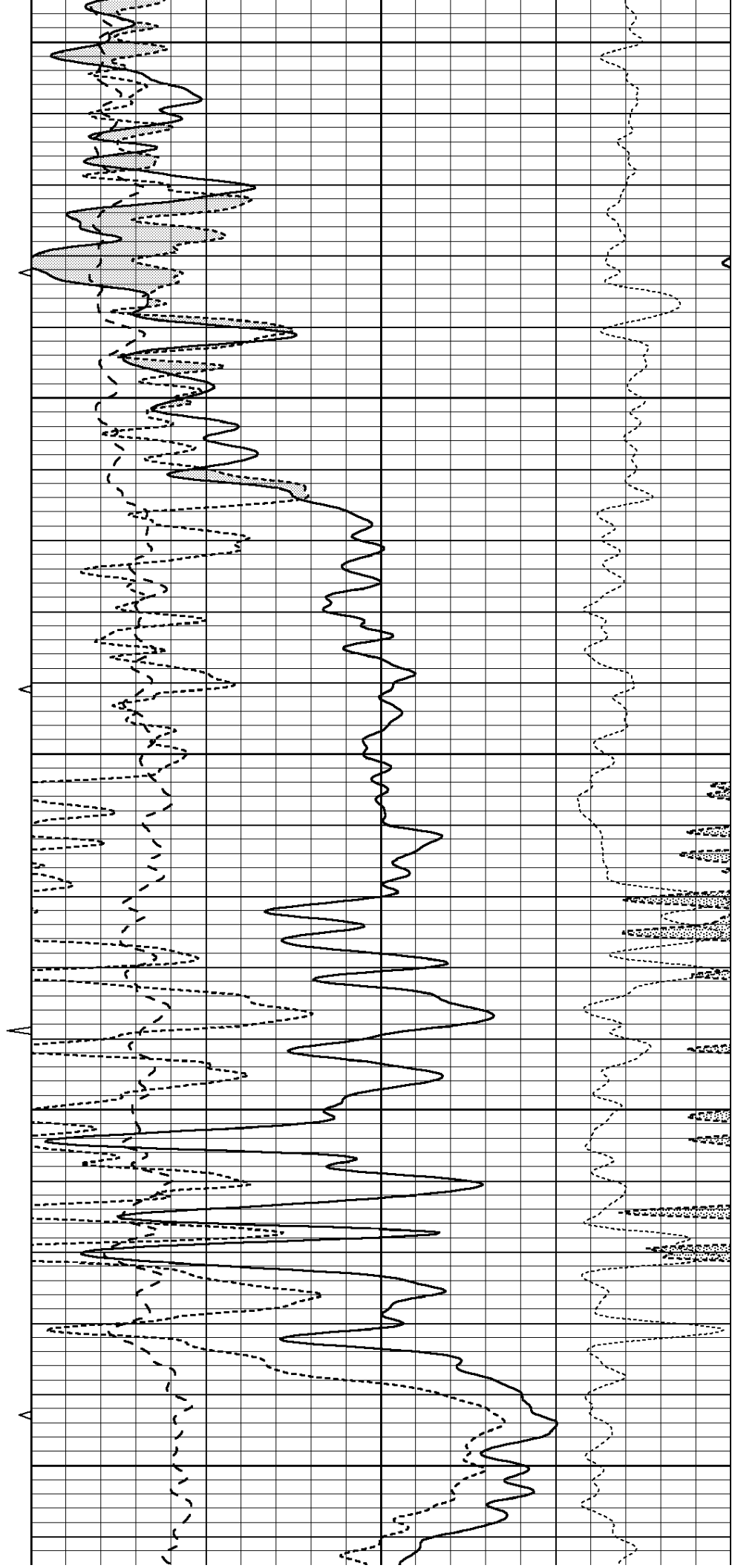
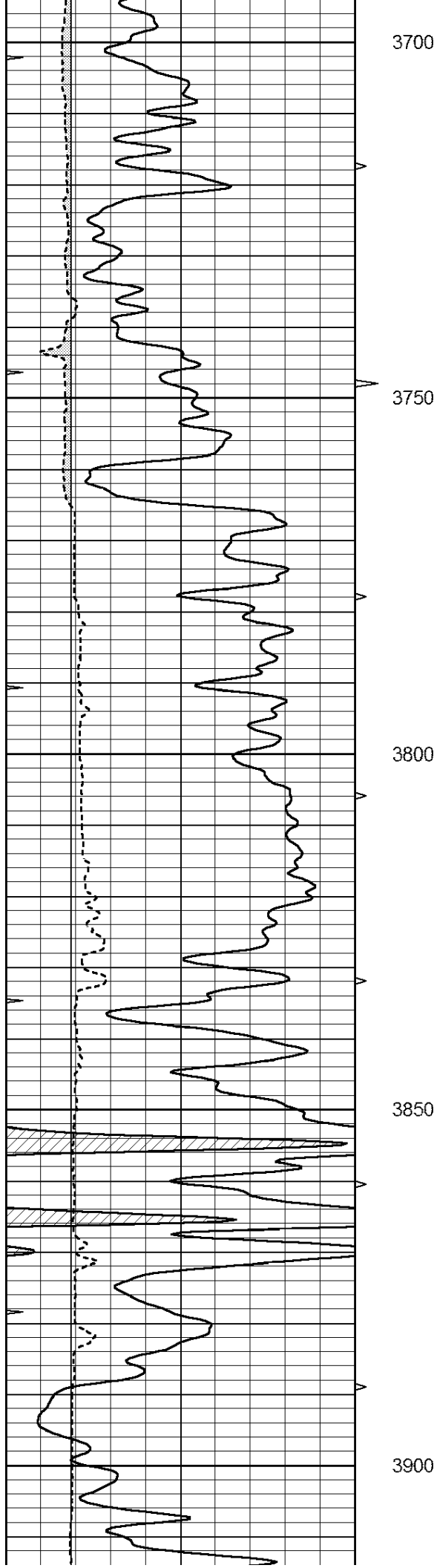
Comments

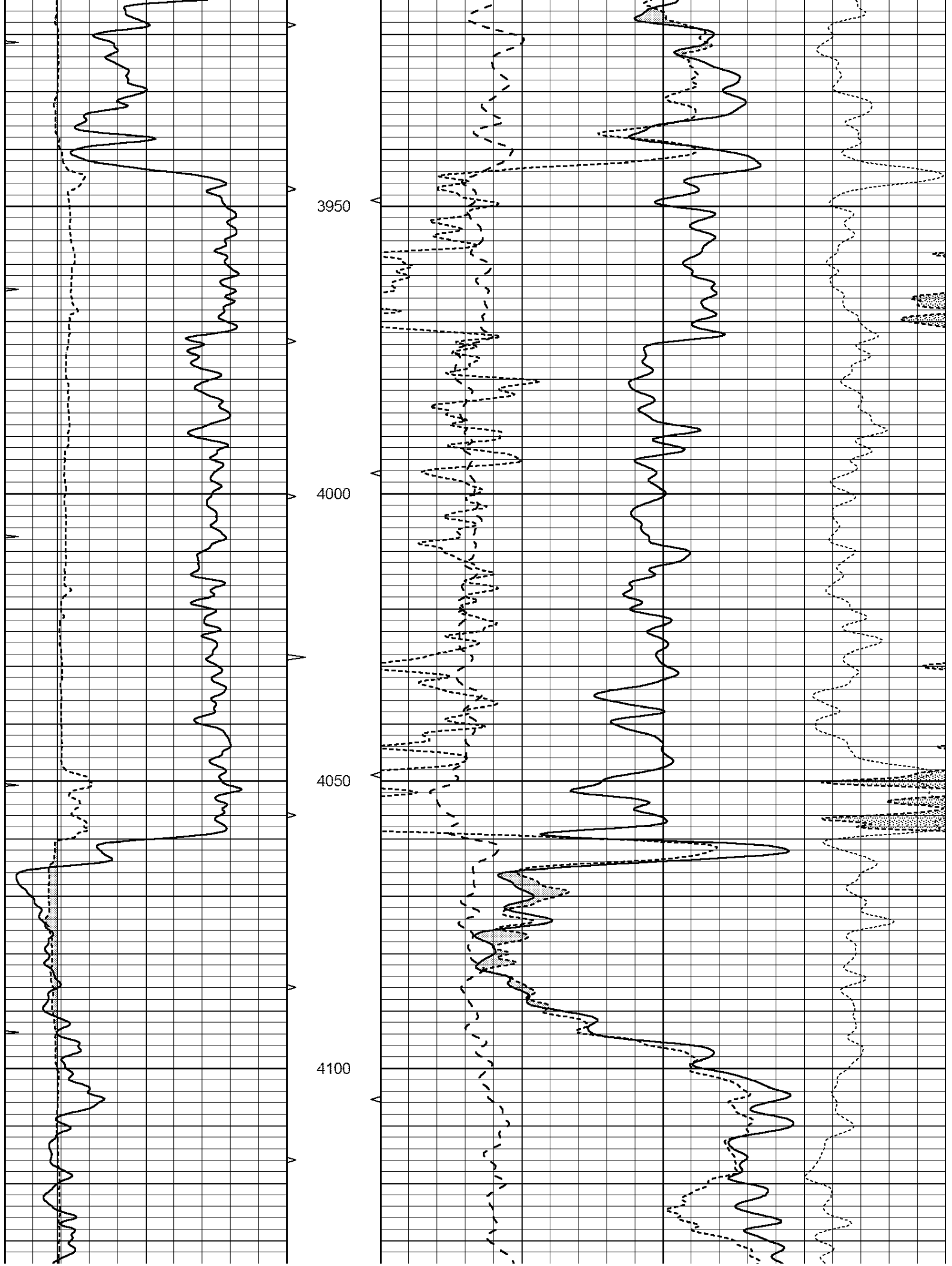
THANK YOU FOR USING SUPERIOR WELL SERVICE HAYS, KANSAS (785) 628-6395
DIRECTIONS
HARDTNER, KS - NORTH ON BLACKTOP 2 1/2 MILES TO RATTLESNAKE TRAIL
2 1/2 MILES WEST - SOUTH INTO

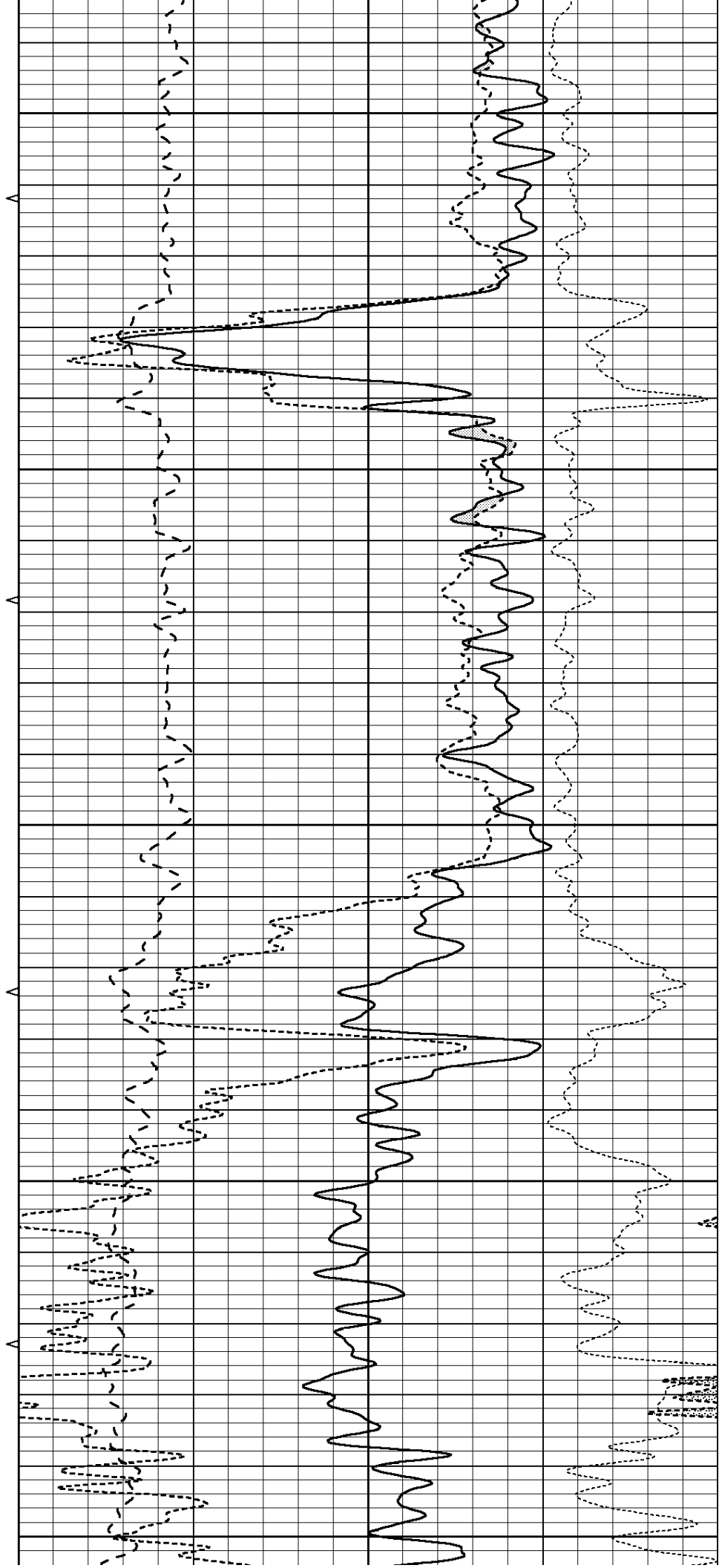
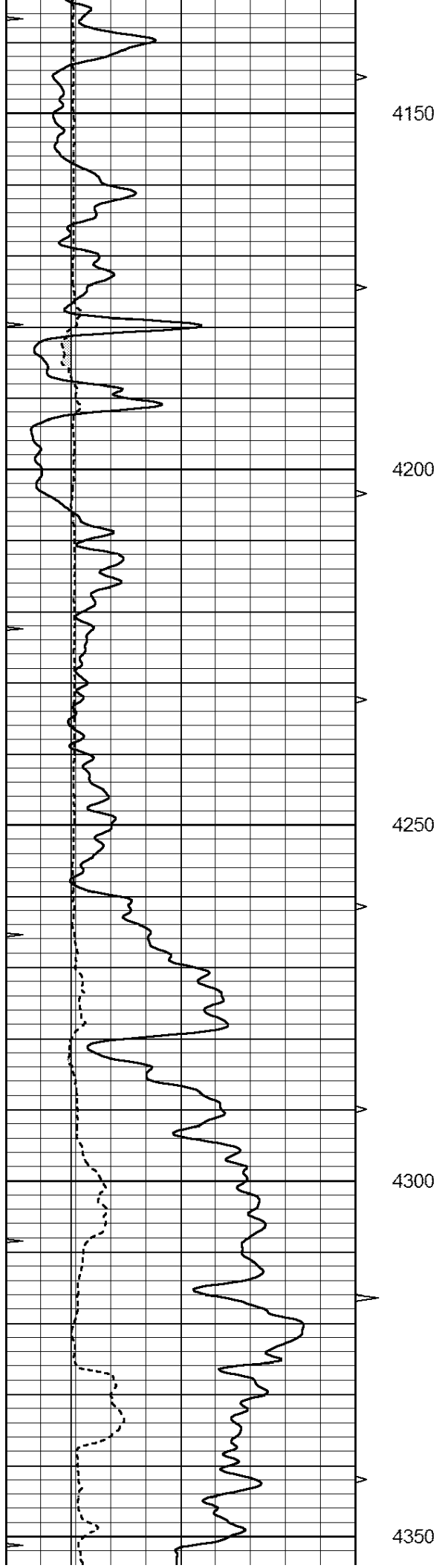
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Dataset Pathname: pass3.1
Presentation Format: ldt_neu
Dataset Creation: Sat Sep 24 14:53:11 2011 by Calc Open-Cased 110302
Charted by: Depth in Feet scaled 1:240

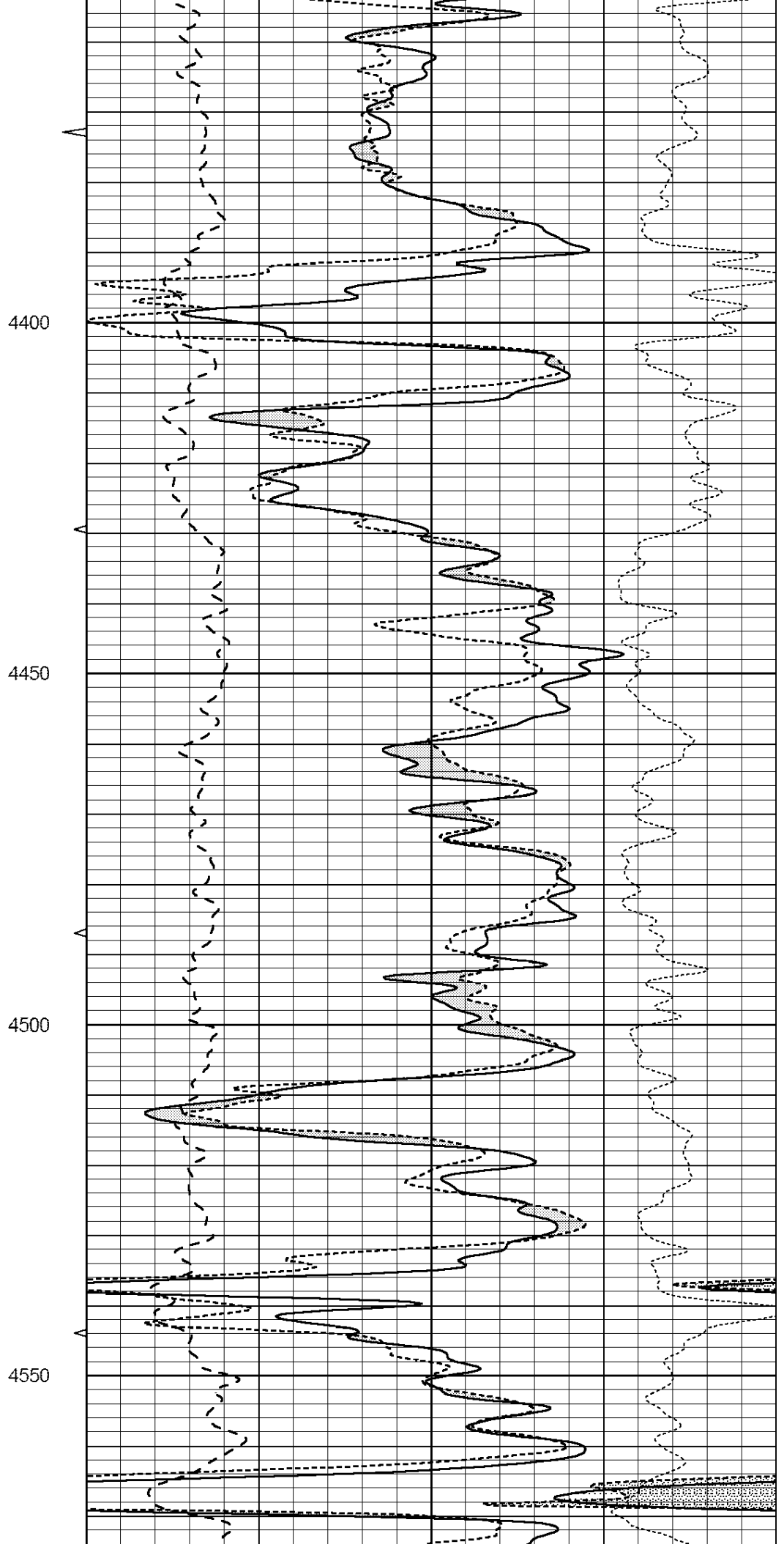
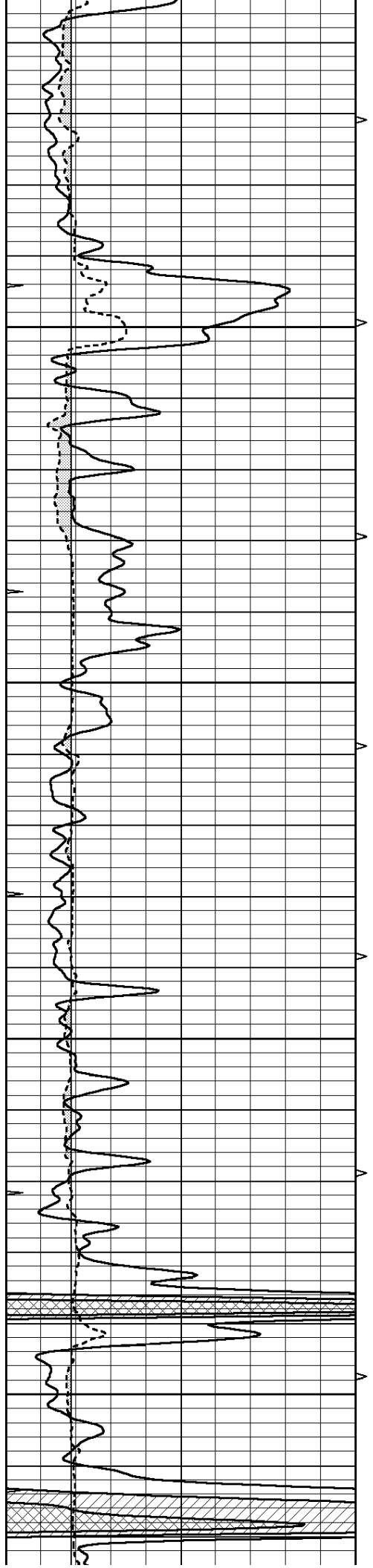
Charted by:		Depth in Feet scaled 1:2.10							
0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)			-10	
6	CALIPER (in)	16		10 (ft3) 0	30	COMPENSATED NEUTRON (pu)			-10
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0	MINMK	20	TBHV	0	PE	10	-0.25	CORRECTION (g/cc)	0.25
			0 (ft3) 10	-----					

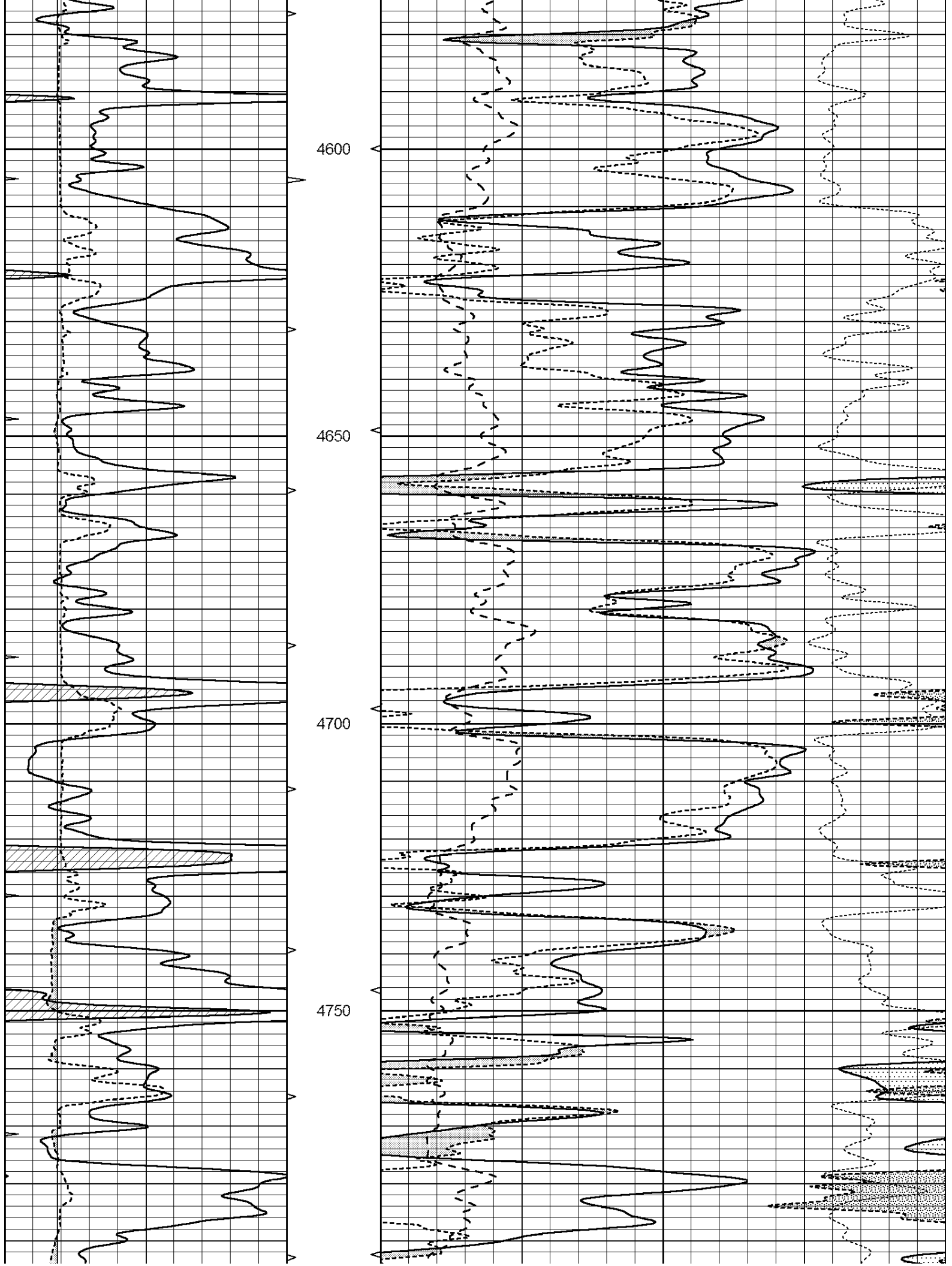


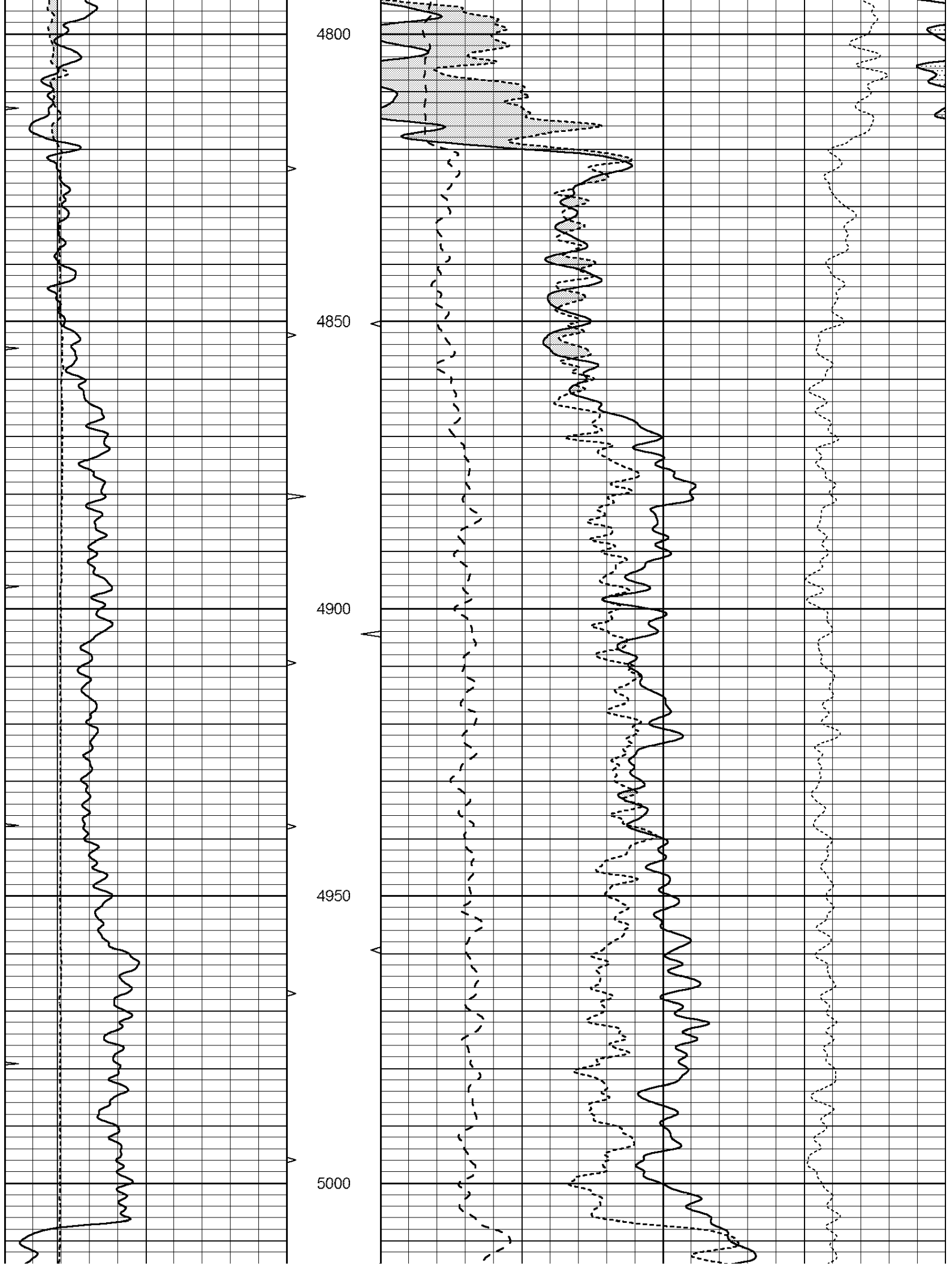


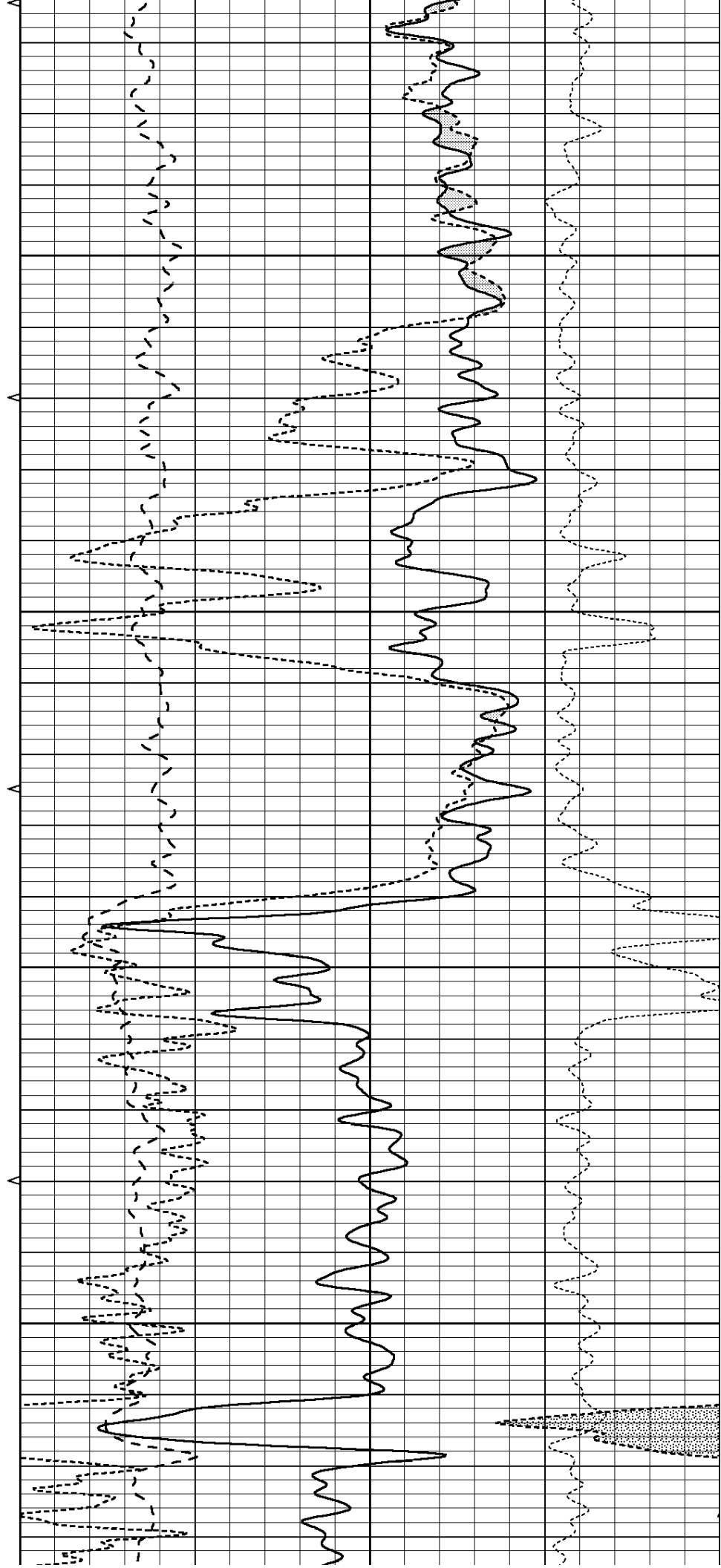
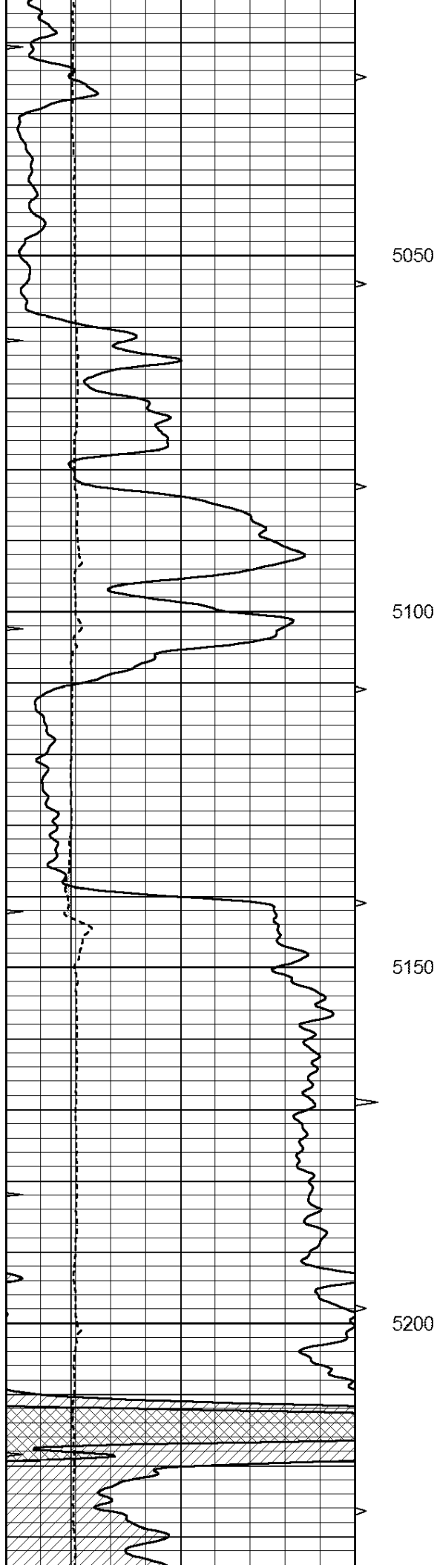


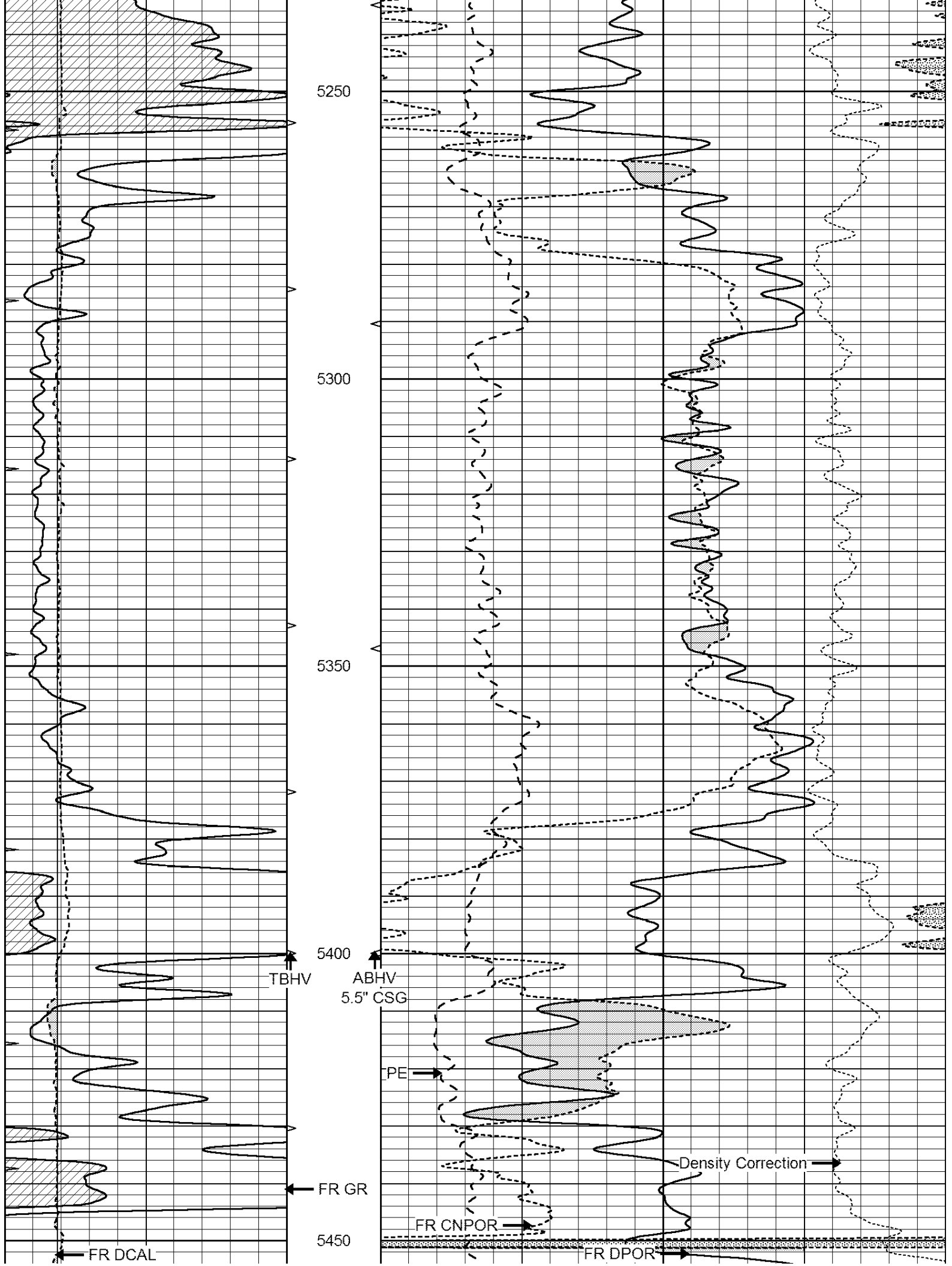


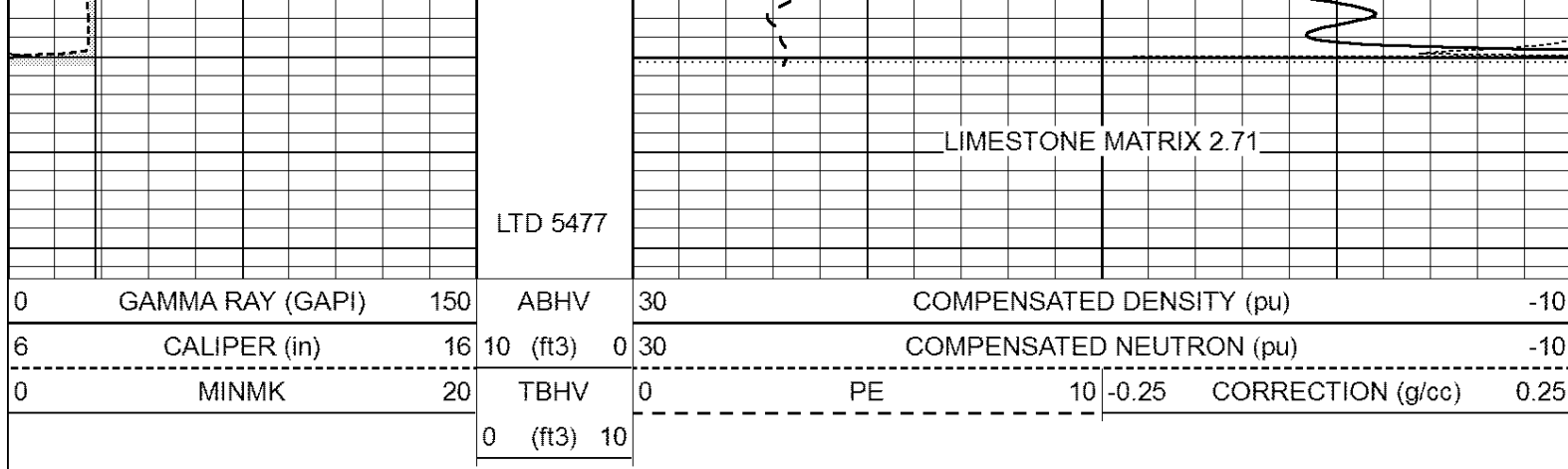










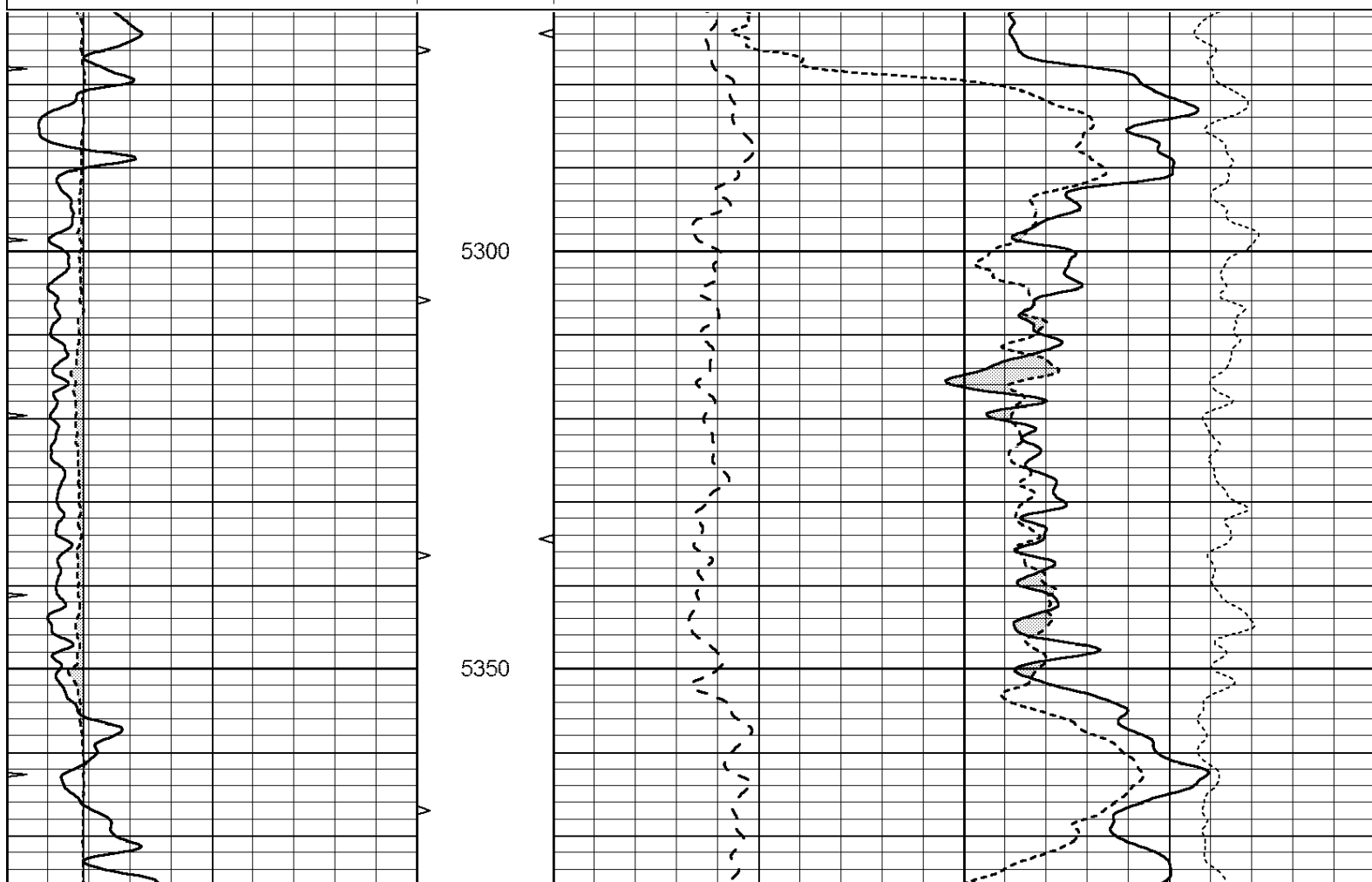


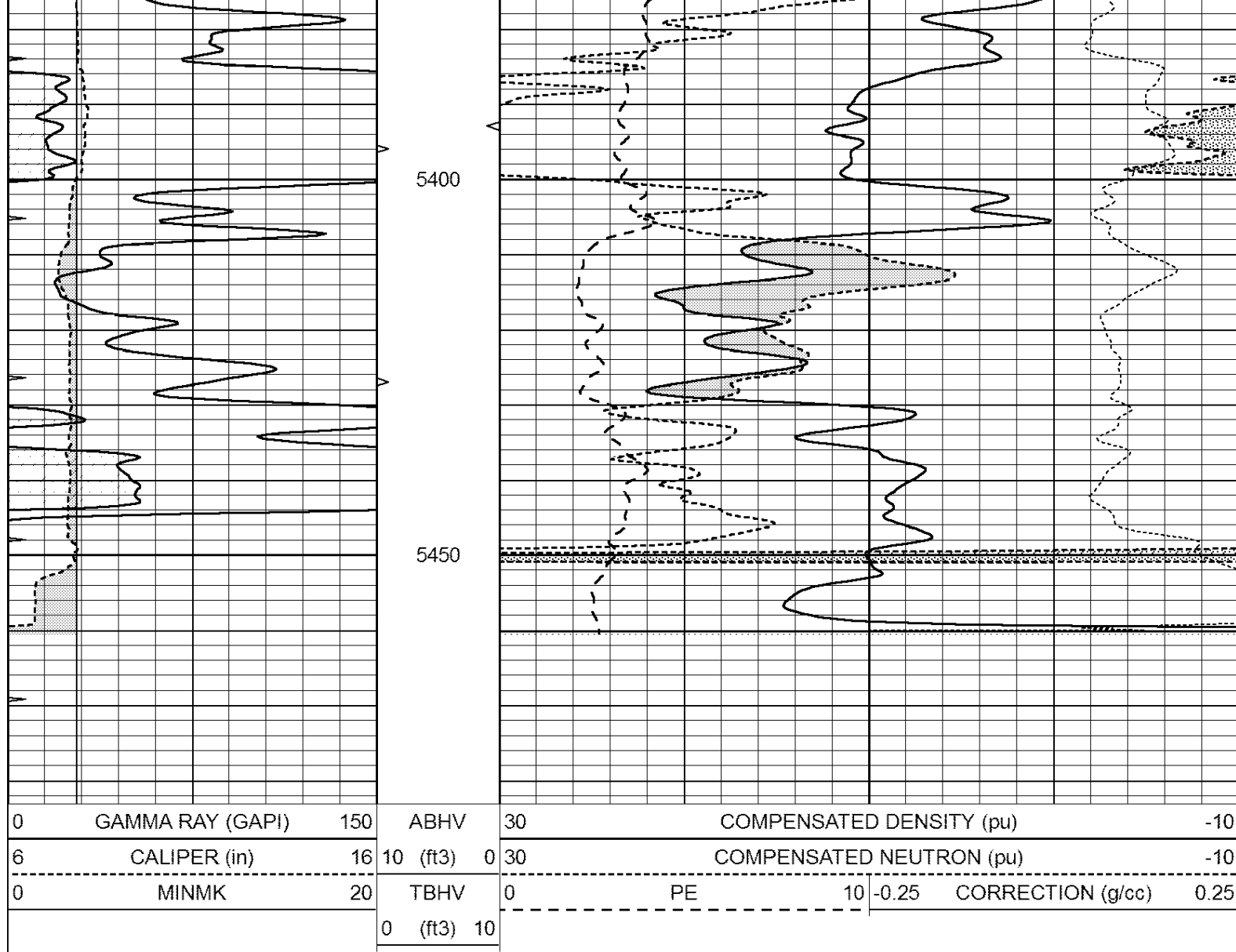
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REPEAT SECTION

Database File: 007453pe.db
 Dataset Pathname: pass2.1
 Presentation Format: ldt_neu
 Dataset Creation: Sat Sep 24 14:00:00 2011 by Calc Open-Cased 110302
 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: 007453pe.db
Dataset Pathname: pass3.1
Dataset Creation: Sat Sep 24 14:53:11 2011 by Calc Open-Cased 110302

Dual Induction Calibration Report

Serial-Model: DIL3-GEAR
Performed: Wed Sep 21 06:07:29 2011

Readings				References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	0.011	0.656	V	0.000	400.000	mmho/m	640.000	7.000
Medium	0.013	0.740	V	0.000	462.500	mmho/m	700.000	-8.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.002	0.645	V	0.000	400.000	mmho/m	622.059	-1.071
Medium	0.007	0.740	V	0.000	462.500	mmho/m	631.393	-4.555

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

	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	2.8	7.8			
High Ref	4.6	15.0			
	Gain: 3.9		Offset: -2.9		

Compensated Neutron Calibration Report					
		Serial Number:	NEU_1I		
		Tool Model:	G		

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

Gamma Ray Calibration Report					
Serial Number:		GR1			
Tool Model:		OPEN			
Performed:		Wed Sep 21 07:17:06 2011			
Calibrator Value:		200.0	GAPI		
Background Reading:		3.0	cps		
Calibrator Reading:		186.0	cps		
Sensitivity:		0.2500	GAPI/cps		