



**SUPERIOR**  
Hays,  
Kansas

**COMPENSATED**  
NEUTRON / DENSITY  
PE LOG

Company HERMAN L. LOEB, LLC  
Well REDETZKE #5-22  
Field HALLET  
County HODGEMAN  
State KANSAS

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Well REDETZKE #5-22  
Field HALLET  
County HODGEMAN State KANSAS

Location: API # : 15-083-21826-0000  
1070' FNL & 1520' FEL  
SE - SE - NW - NE  
SEC 22 TWP 22S RGE 25W  
Permanent Datum GROUND LEVEL Elevation 2519  
Log Measured From KELLY BUSHING 11' A.G.L.  
Drilling Measured From KELLY BUSHING  
Elevation  
K.B. 2530  
D.F. 2528  
G.L. 2519

Date	8/16/12		
Run Number	ONE		
Depth Driller	4720		
Depth Logger	4720		
Bottom Logged Interval	4696		
Top Log Interval	3850		
Casing Driller	8 5/8" @ 583		
Casing Logger	581		
Bit Size	7 7/8		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 2600 PPM	
Density / Viscosity	9.4/52		
pH / Fluid Loss	10.5/8.8		
Source of Sample	FLOWLINE		
Rin @ Meas. Temp	0.80 @ 81F		
Rmf @ Meas. Temp	0.60 @ 81F		
Rmc @ Meas. Temp	0.96 @ 81F		
Source of Rmf / Rmc	MEASURED		
Rin @ BHT	0.52 @ 122F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	122F		
Equipment Number	680		
Location	HAYS, KS.		
Recorded By	JEFF GRONEMEG		
Witnessed By	JON CHRISTENSEN		

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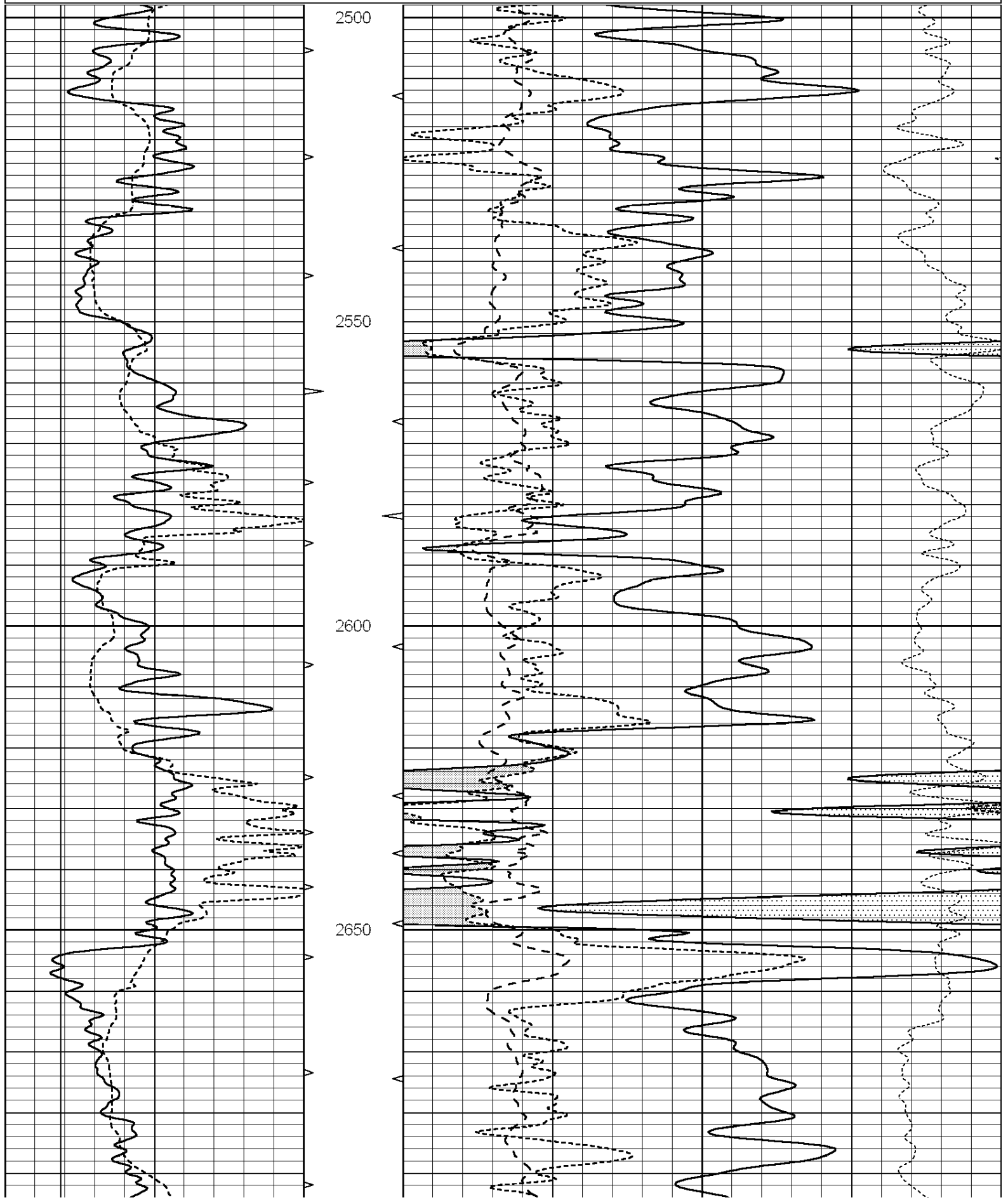
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs,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

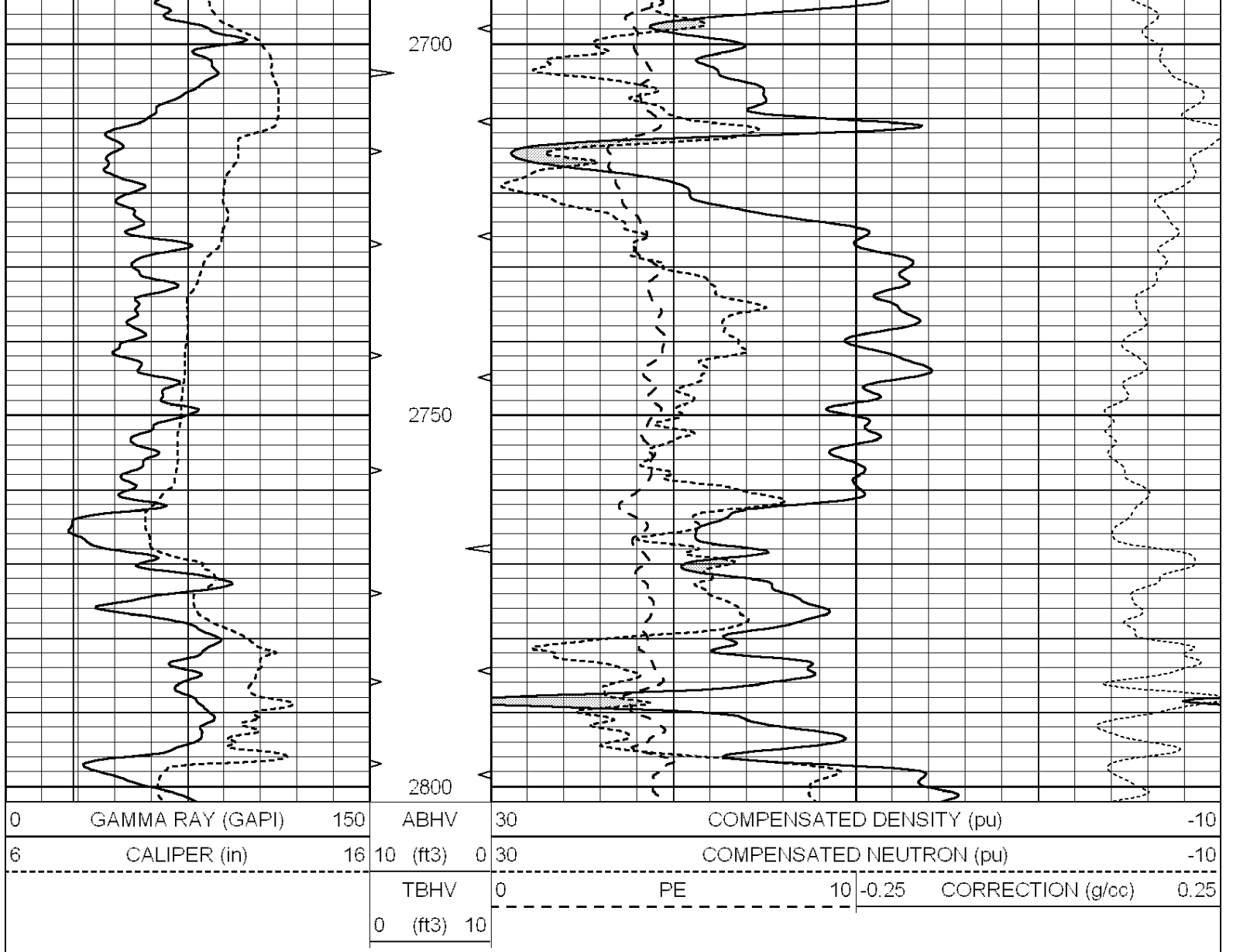
Comments

THANK YOU FOR USING SUPERIOR WELL SERVICE (785) 628-6395  
DIRECTIONS  
JETMORE, KS - 8 MILES WEST TO RD 210 - 3 1/2 MILES NORTH  
WEST INTO

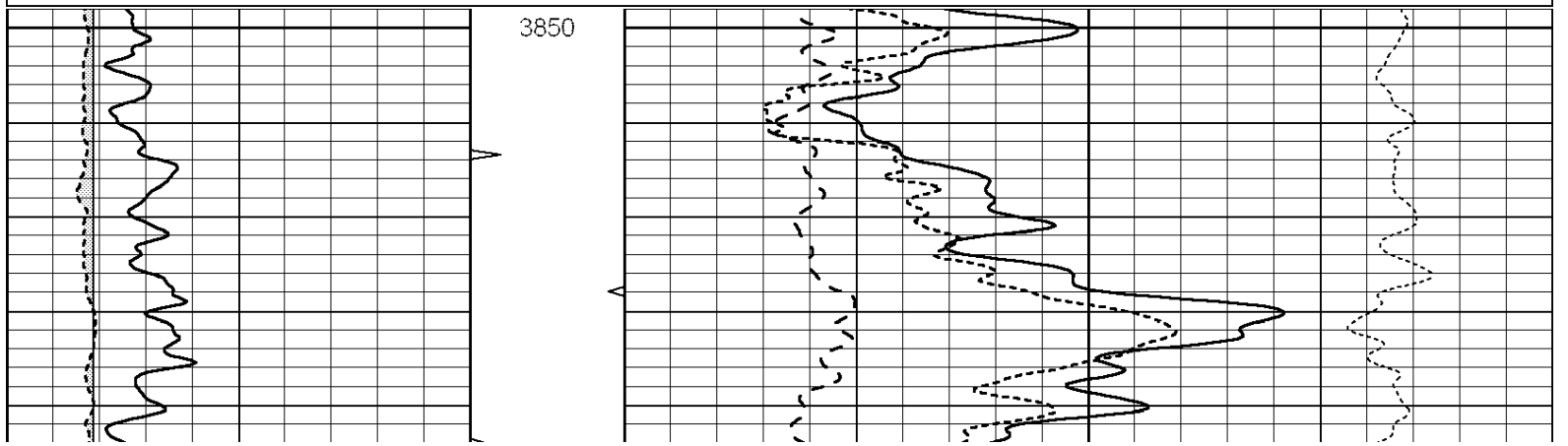
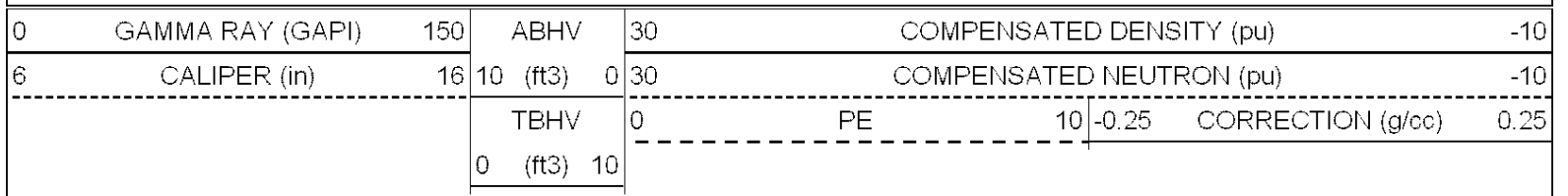
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Dataset Pathname: pass3.2  
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Dataset Creation: Thu Aug 16 02:51:03 2012 by Calc Open-Cased 090629  
Charted by: Depth in Feet scaled 1:240

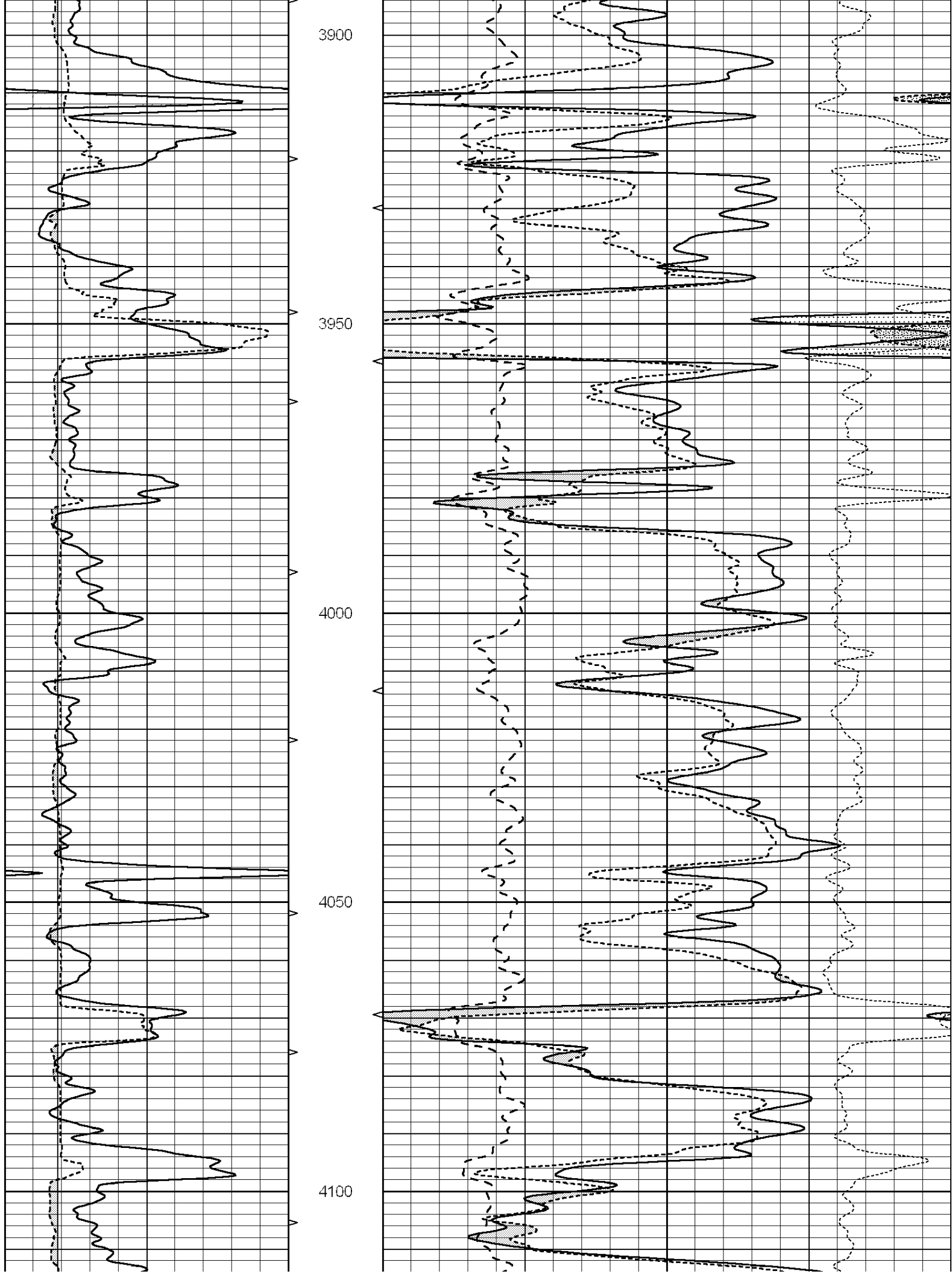
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6	CALIPER (in)	16	10 (ft3)	0	30	COMPENSATED NEUTRON (pu)		-10	
			TBHV	0	PE	10	-0.25	CORRECTION (g/cc)	0.25
			0 (ft3)	10					

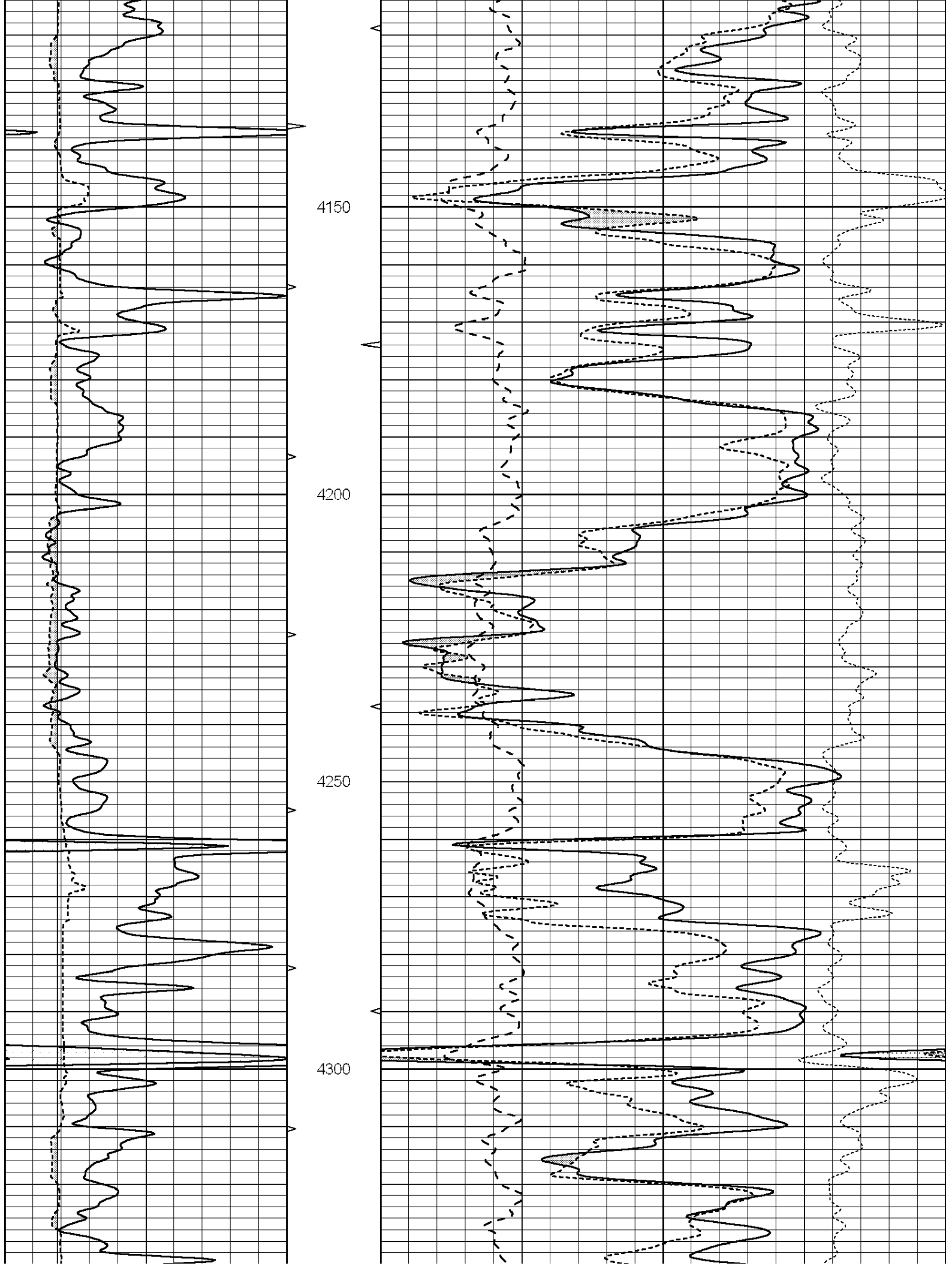


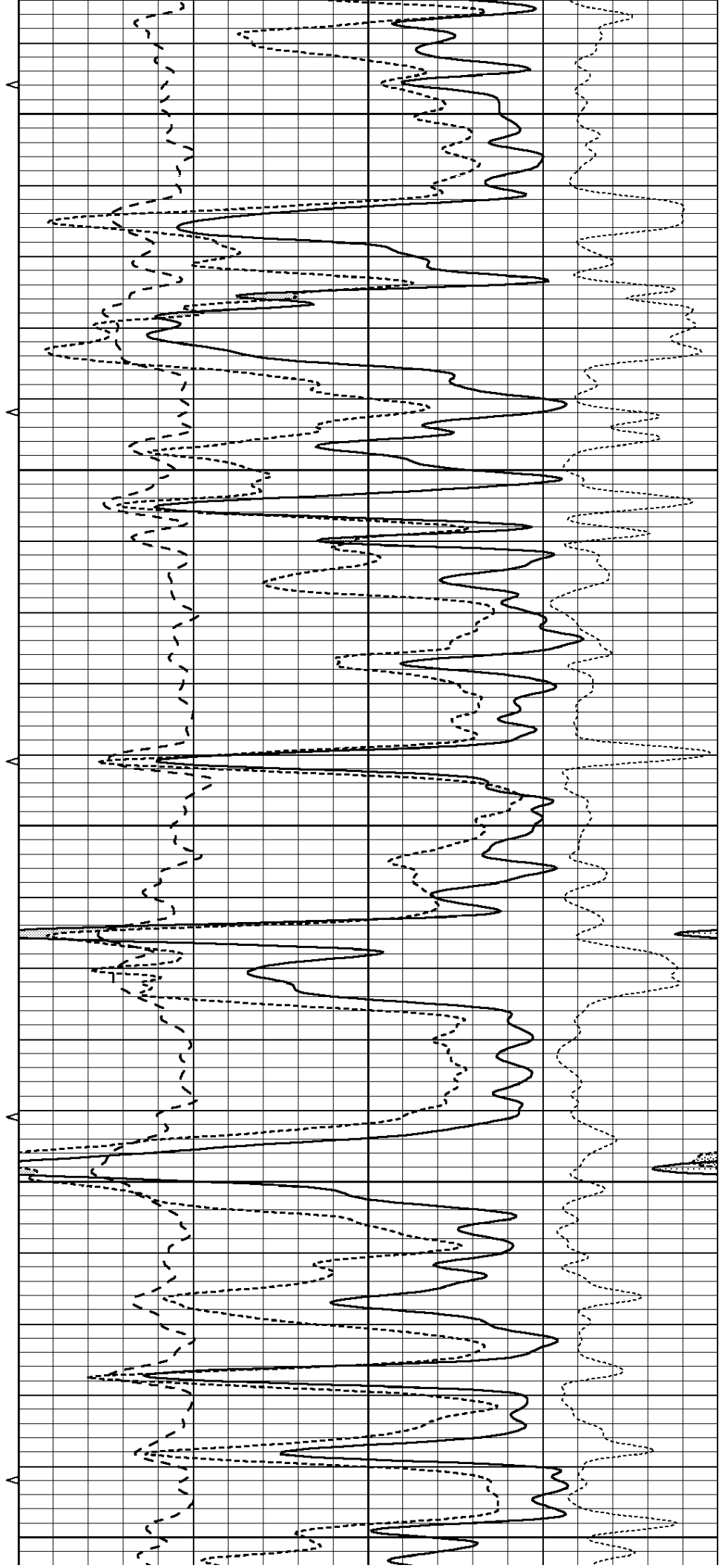
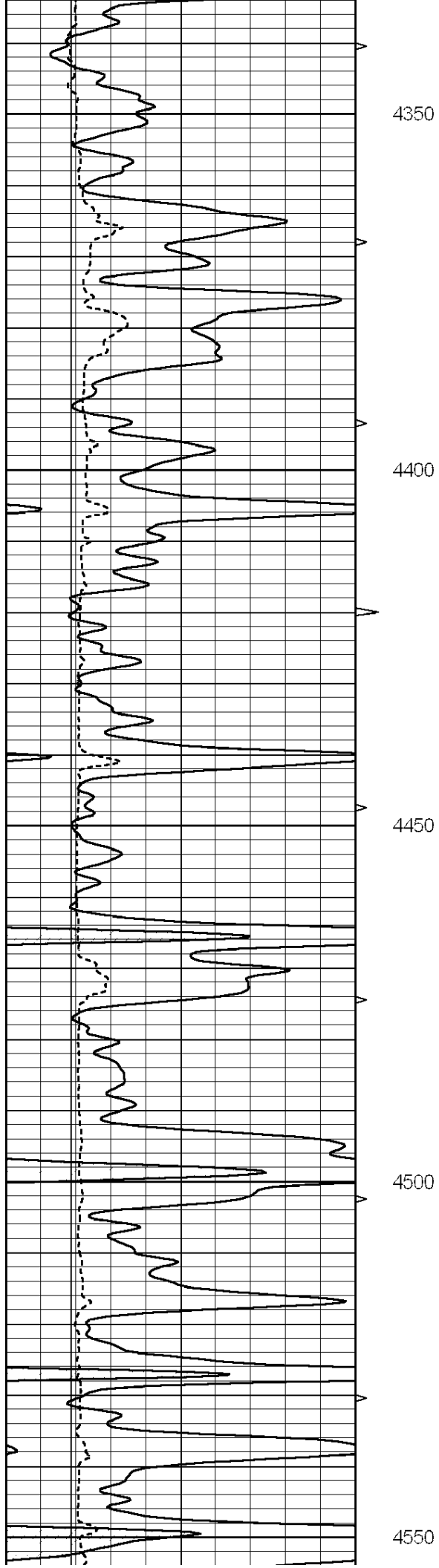


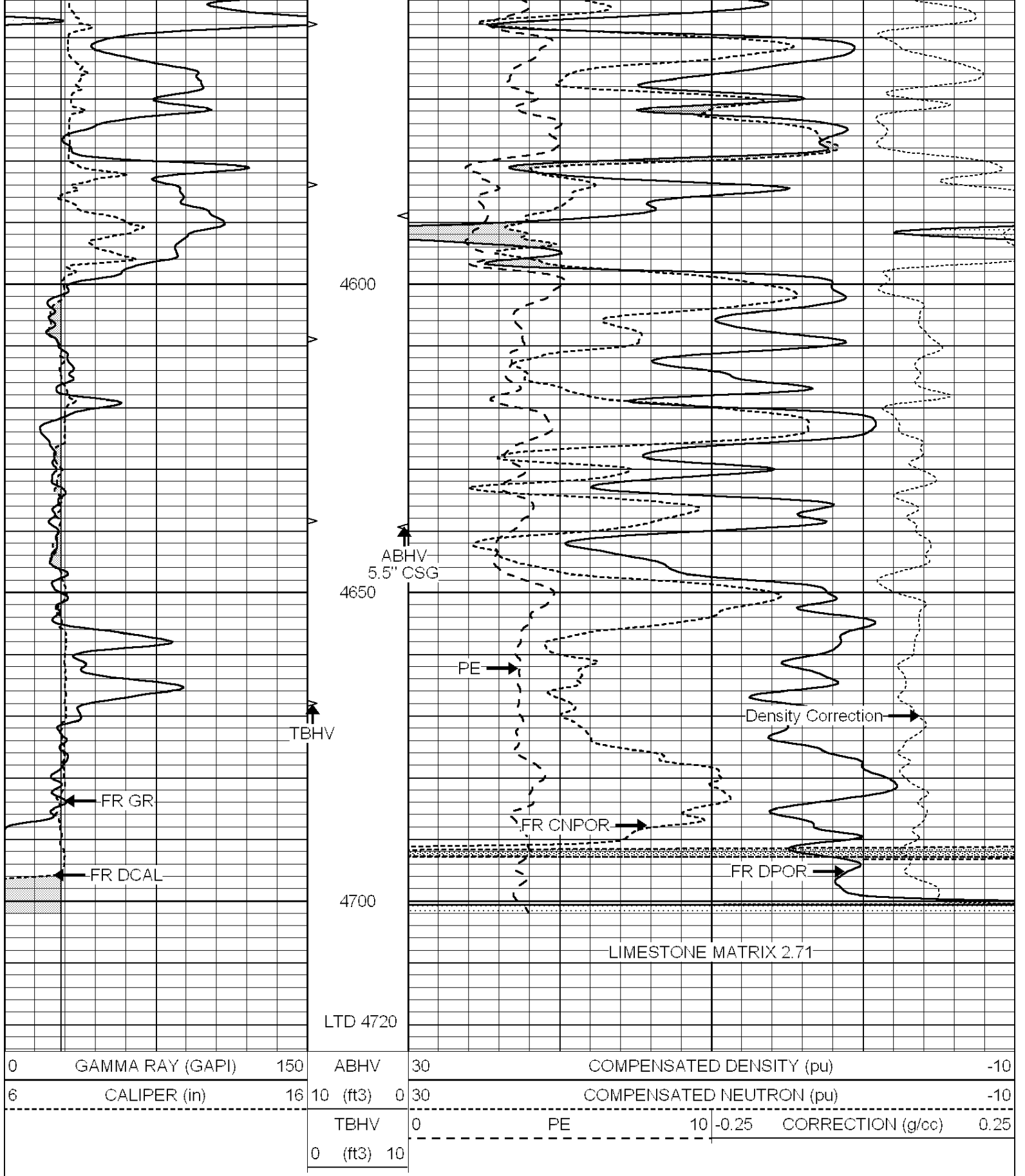
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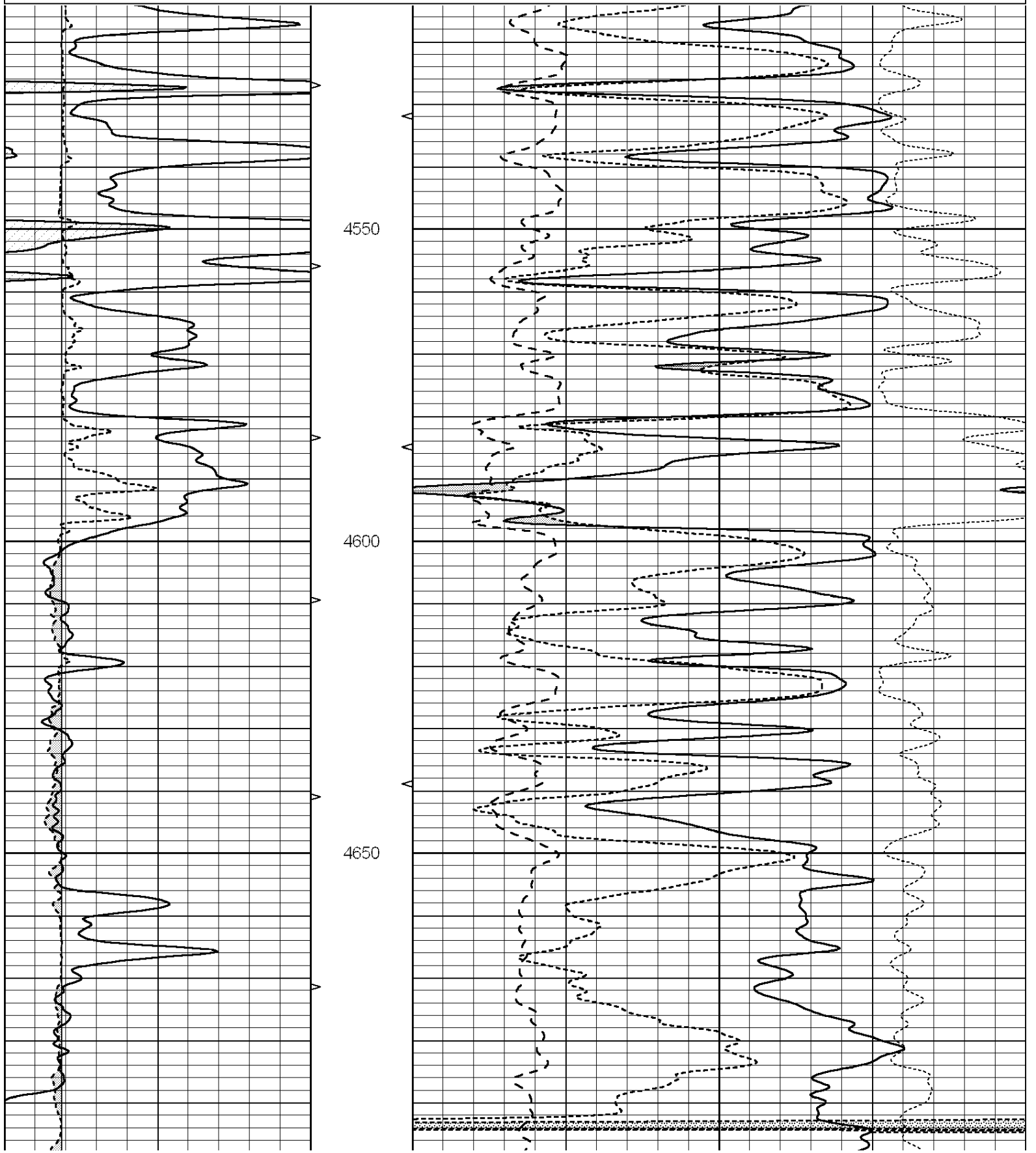


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# REPEAT SECTION

Database File: 00001.pu.db  
 Dataset Pathname: pass2.4  
 Presentation Format: \_ldt\_neu  
 Dataset Creation: Thu Aug 16 02:25:59 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	COMPENSATED NEUTRON (pu)	-10
			TBHV	0	PE	10 -0.25
			0 (ft3)	10	CORRECTION (g/cc)	0.25





			4700										
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: 009581pe.db  
 Dataset Pathname: pass3.2  
 Dataset Creation: Thu Aug 16 02:51:03 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

Loop:	Readings				References			Results	
	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'
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: 001 Model: PRB  
 Performed Thu Sep 17 09:57:21 2009

	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