



**SUPERIOR  
Hays,  
Kansas**

**COMPENSATED  
DENSITY/NEUTRON  
LOG**

Company RITCHIE EXPLORATION, INC.  
Well PHILLIPS 20C #2  
Field ANTELOPE RIDGE  
County GOVE  
State KANSAS

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Field ANTELOPE RIDGE  
County GOVE State KANSAS

Location: 1350' FSL & 2210' FWL  
API #: 15-063-21822-00-00  
Other Services  
DIL  
SEC 20 TWP 13S RGE 31W  
Permanent Datum GROUND LEVEL Elevation 2874  
Log Measured From KELLY BUSHING 5' A.G.L.  
Drilling Measured From KELLY BUSHING  
Elevation  
K.B. 2879  
D.F. 2877  
G.L. 2874

Date	1-5-10
Run Number	ONE
Depth Driller	4620
Depth Logger	4622
Bottom Logged Interval	4598
Top Log Interval	3400
Casing Driller	8 5/8" @ 218
Casing Logger	218
Bit Size	7 7/8
Type Fluid In Hole	CHEMICAL MUD
Density / Viscosity	9.2/54
pH / Fluid Loss	11.0/8.0
Source of Sample	FLOWLINE
Rm @ Meas. Temp	1.4 @ 67F
Rmf @ Meas. Temp	1.05 @ 67F
Rmc @ Meas. Temp	2.24 @ 67F
Source of Rmf / Rmc	MEASURED
Rm @ BHT	.775 @ 121F
Time Circulation Stopped	2 HOURS
Time Logger on Bottom	
Maximum Recorded Temperature	121F
Equipment Number	680
Location	HAYS, KANSAS
Recorded By	JASON CAPPELLUCCI
Witnessed By	JEFF CHRISTIAN
	JEFF GRONWEG

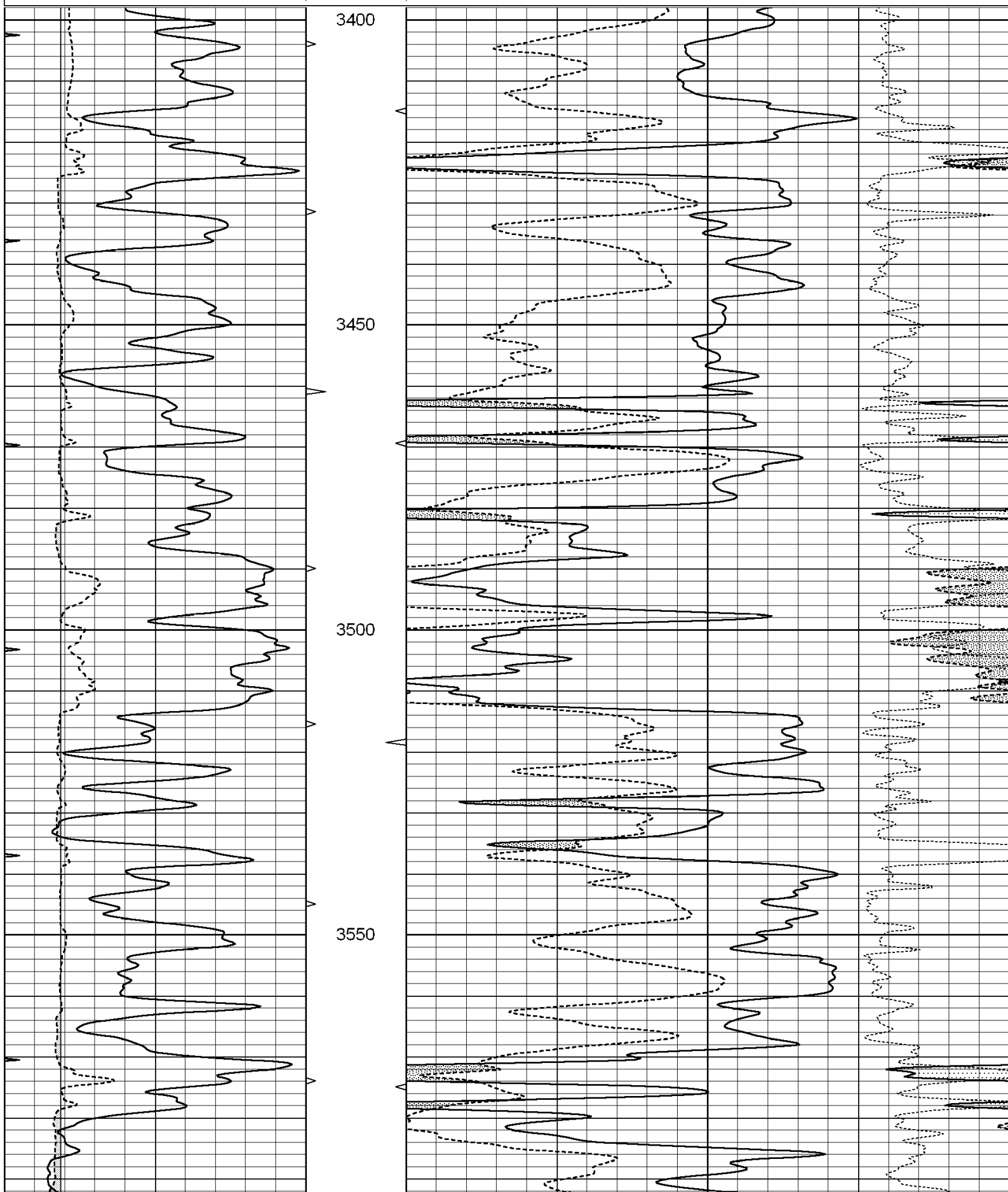
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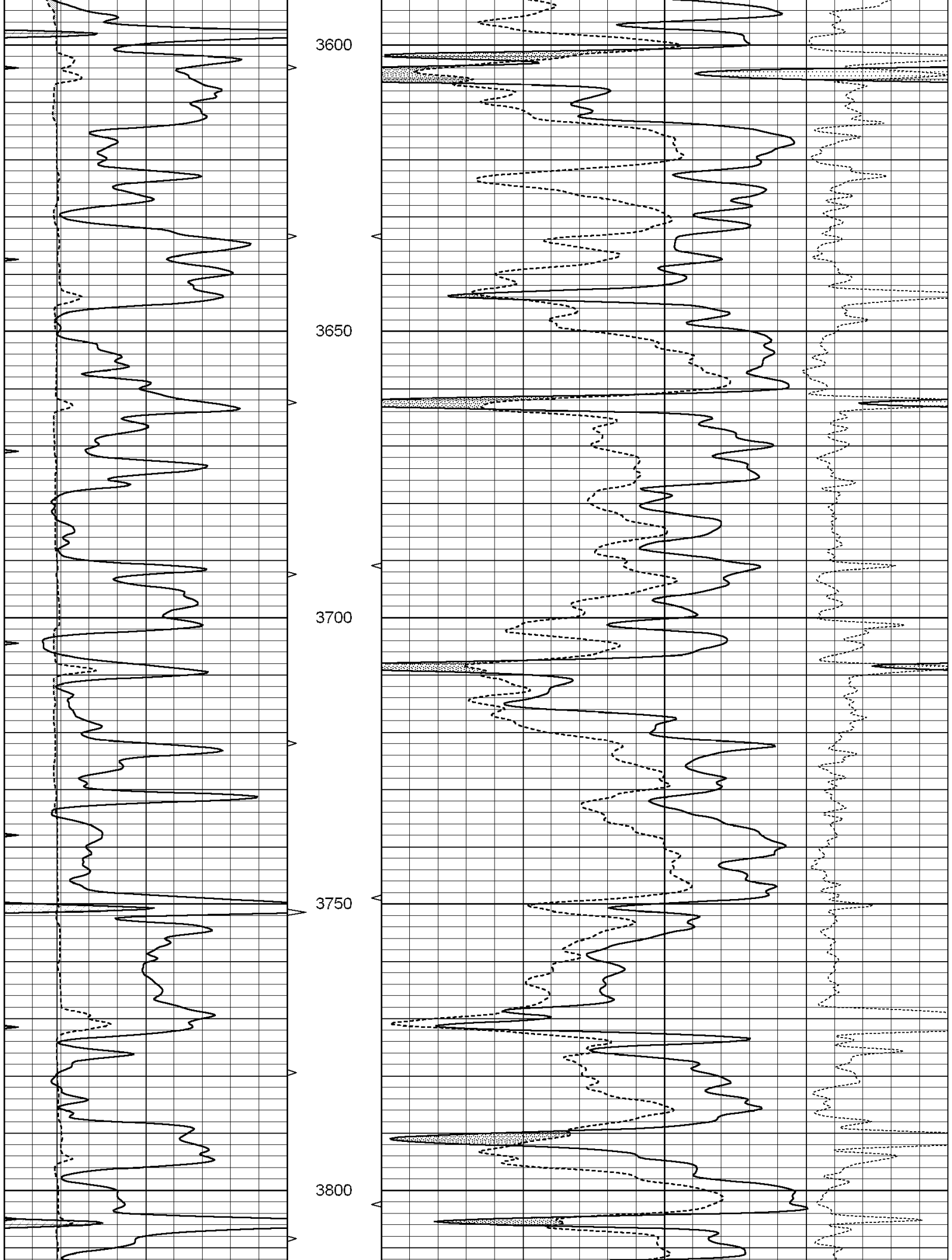
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs,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

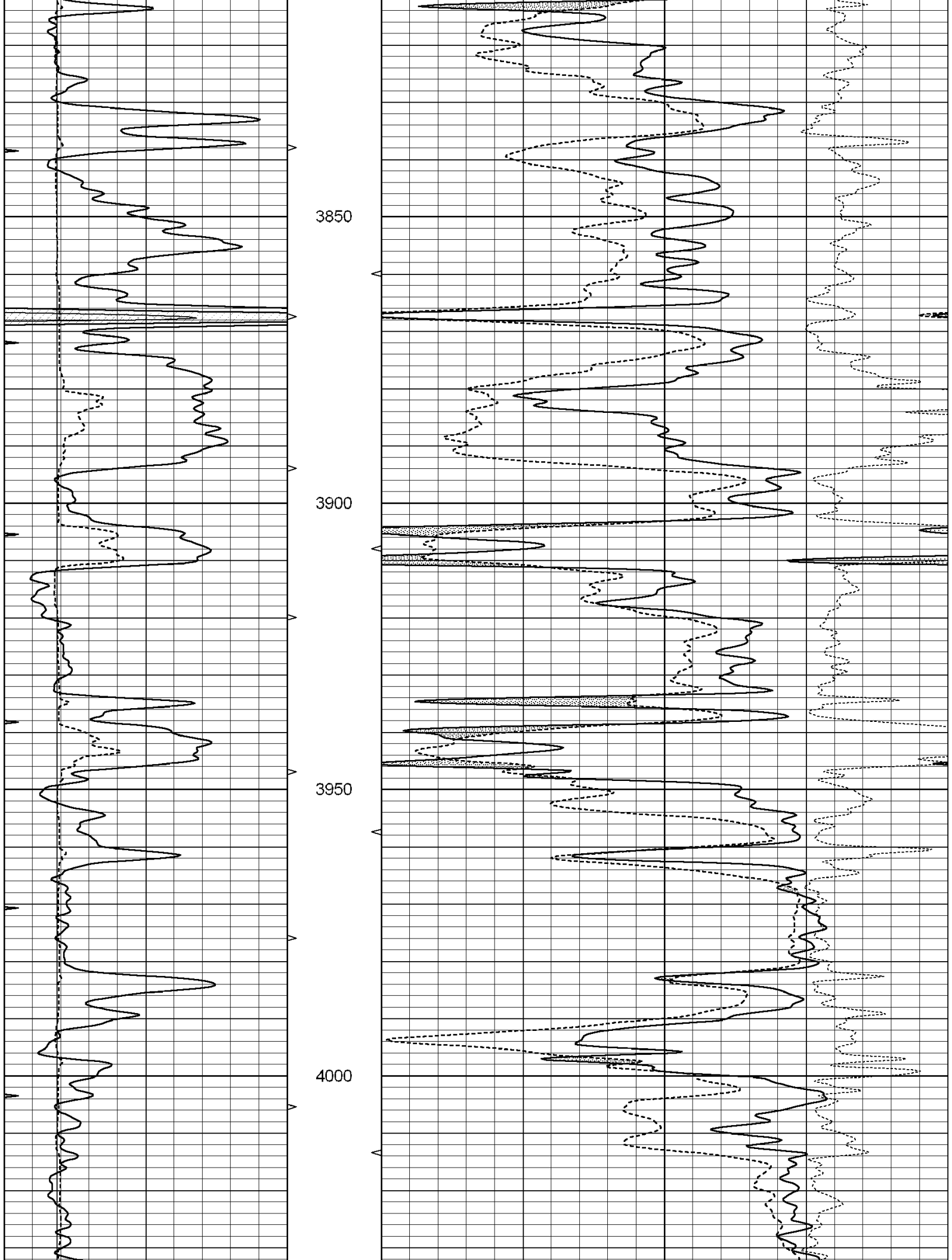
**Comments**

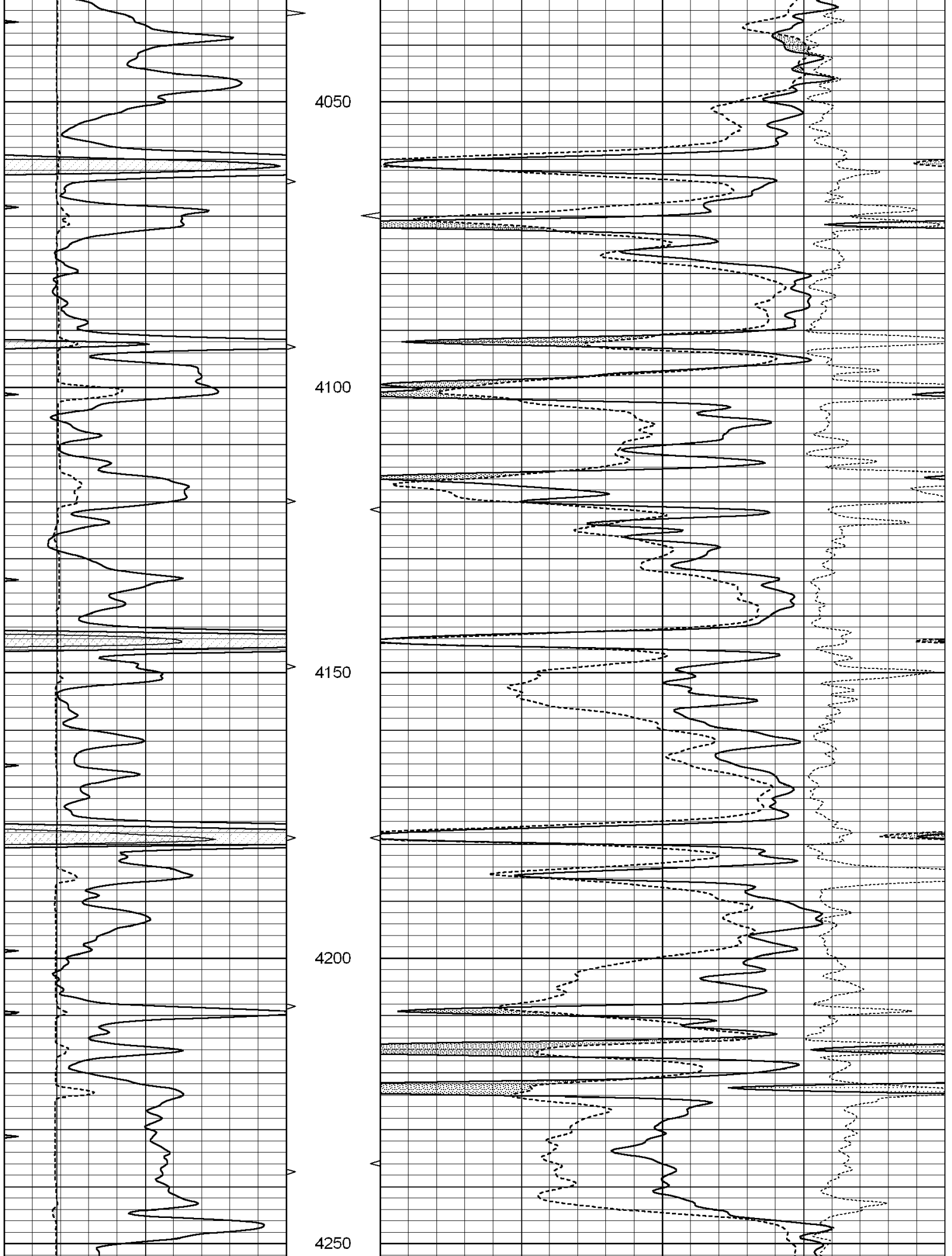
THANK YOU FOR USING SUPERIOR WELL SERVICES HAYS, KANSAS (785)628-6395  
DIRECTIONS  
OAKLEY KS., 11S. ON HWY 83 TO GOVE RD. - 3E - 4S - 1/2E - N INTO

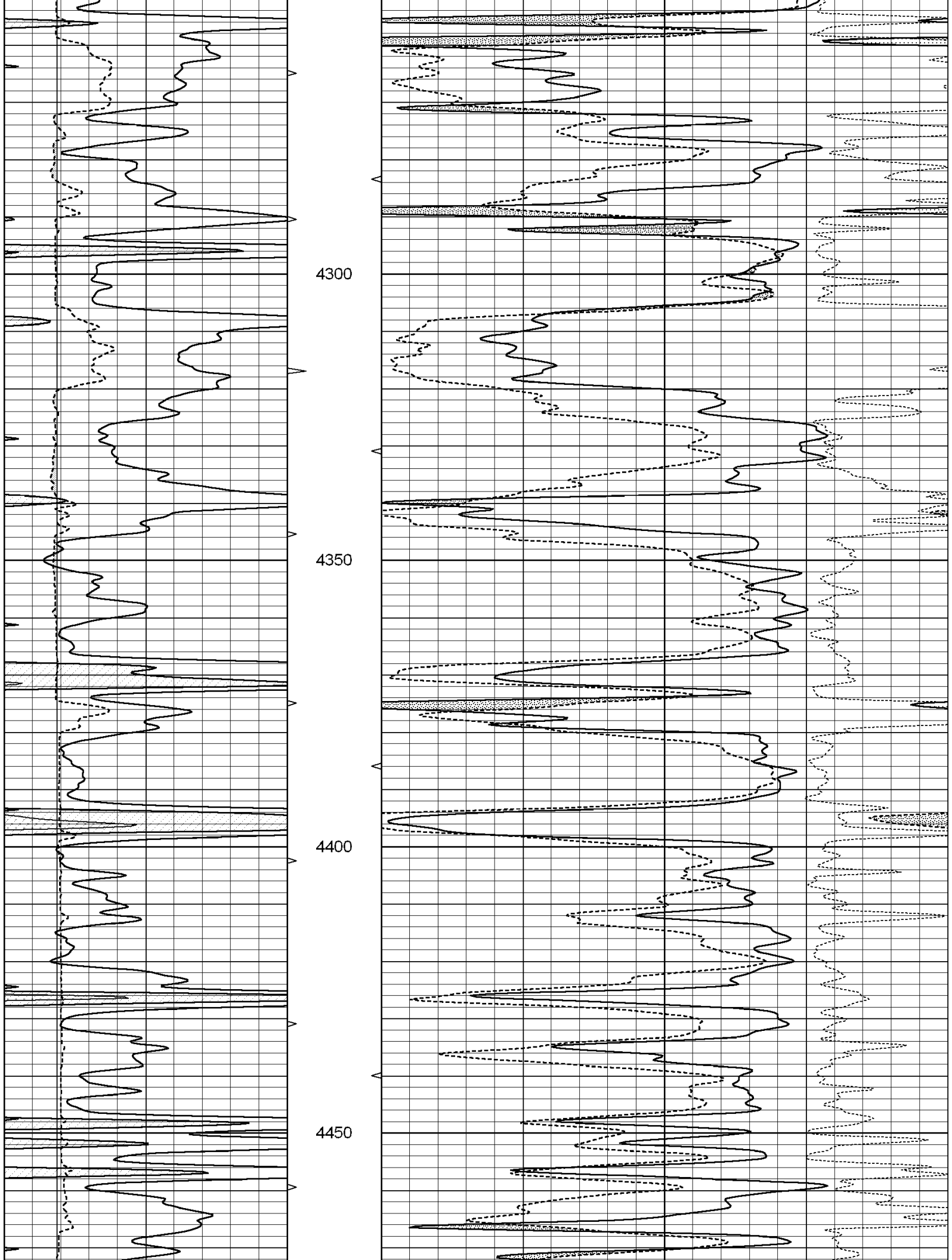
0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)	-10
6	CALIPER (in)	16	10 (ft3)	0 30	COMPENSATED NEUTRON (pu)	-10
0	MINMK	20	TBHV		-0.25 CORRECTION (g/cc)	0.25
			0 (ft3)	10		

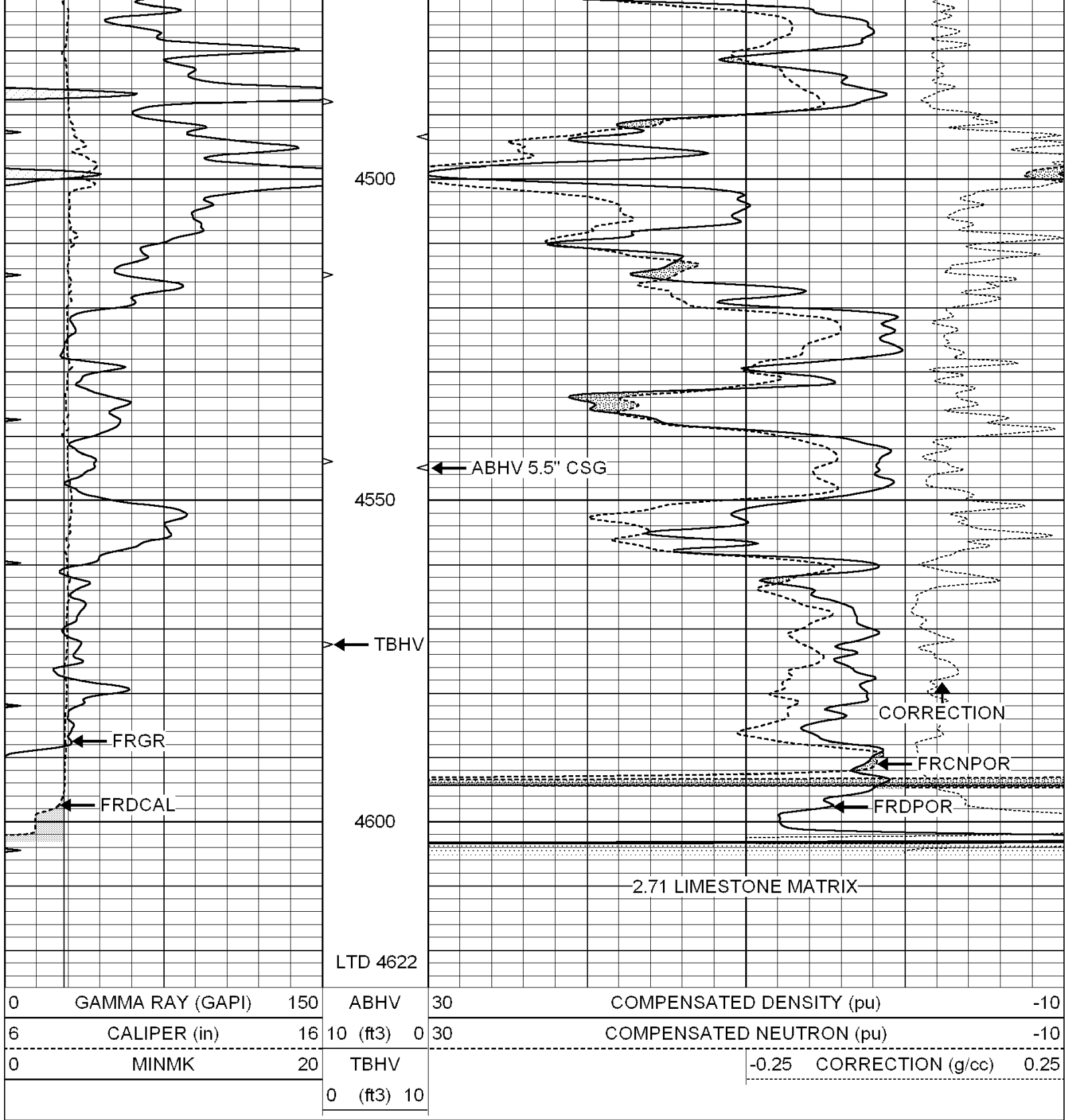










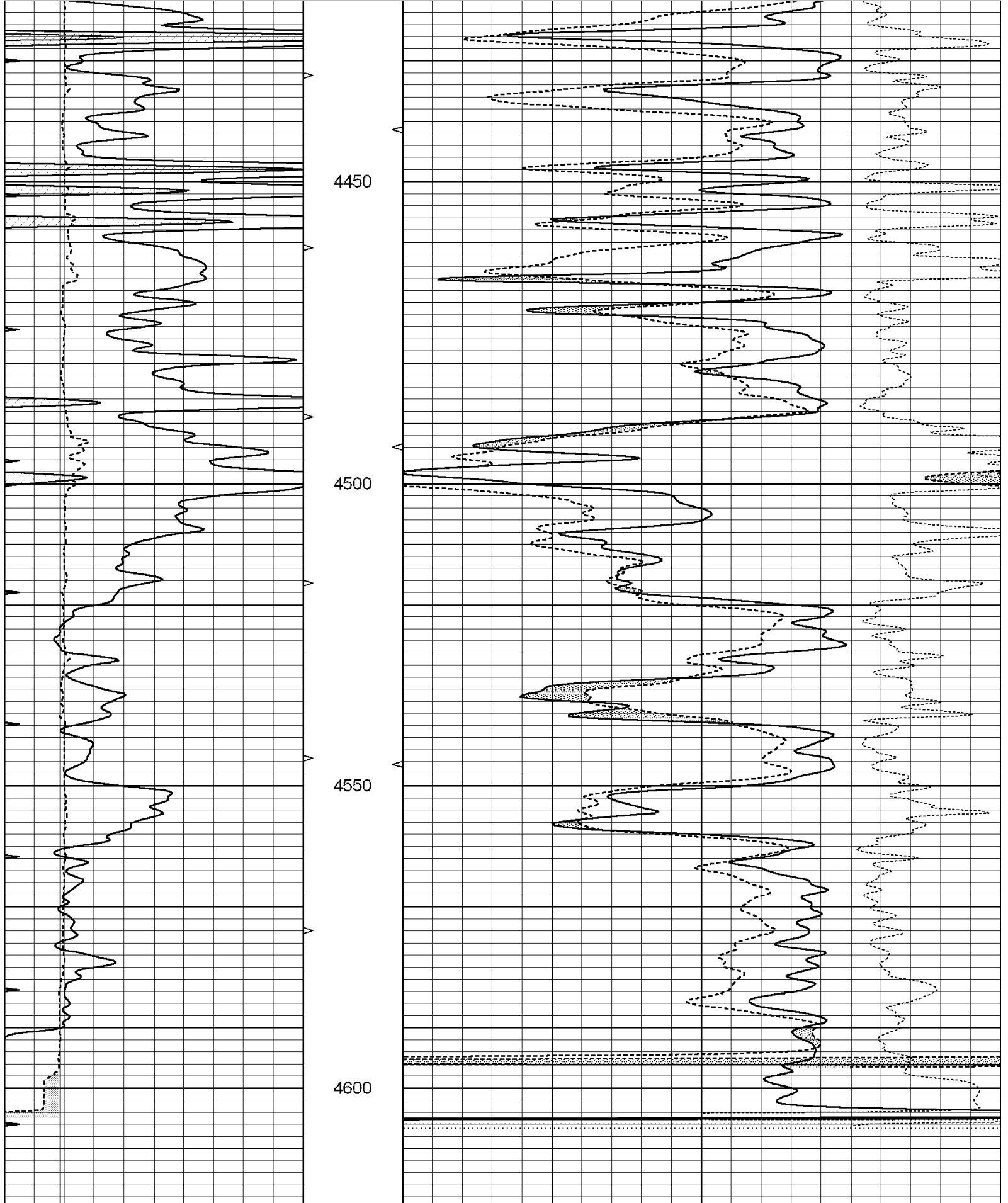


SUPERIOR  
Hays,  
Kansas

# REPEAT SECTION

Database File: 004668ddn.db  
 Dataset Pathname: pass2.1  
 Presentation Format: \_den\_neu  
 Dataset Creation: Tue Jan 05 13:36:12 2010 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		-0.25 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			-0.25	CORRECTION (g/cc)	0.25	
			0 (ft3) 10						

### Calibration Report

Database File: 004668ddn.db  
Dataset Pathname: pass2.1  
Dataset Creation: Tue Jan 05 13:36:12 2010 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		
		-6.500	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		

### Compensated Density Calibration Report

Serial-Model: GEAR4-GEARHART  
Source / Verifier: 143 / 143  
Master Calibration Performed: Fri Jan 16 10:06:35 2009

#### Master Calibration

	Density		Far Detector	Near Detector
Magnesium	1.710	g/cc	1358.55	640.03

Magnesium	1.710	g/cc	1338.55	849.93	cps
Aluminum	2.580	g/cc	325.11	479.52	cps

Spine Angle = 78.00

Density/Spine Ratio = 0.595

	Size		Reading	
Small Ring	8.00	in	3.56	V
Large Ring	14.00	in	6.65	V

Compensated Neutron Calibration Report

Serial Number:	5I
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:	GR6
Tool Model:	OPEN
Performed:	Tue Nov 10 08:32:36 2009
Calibrator Value:	150.0 GAPI
Background Reading:	0.0 cps
Calibrator Reading:	276.0 cps
Sensitivity:	0.5535 GAPI/cps