



**COMPLETION  
& PRODUCTION  
SERVICES CO.**

**COMPENSATED  
DENSITY / NEUTRON  
LOG**

Company RITCHIE EXPLORATION, INC.  
Well WRAY 18A #1  
Field ANTELOPE RIDGE NORTHWEST  
County GOVE State KANSAS

Location: API #: 15-063-22078-00-00

SW - SE - NE  
2140' FNL & 1100' FEL  
SEC 18 TWP 13S RGE 31W

Other Services  
DIL

Permanent Datum GROUND LEVEL Elevation 2930  
Log Measured From KELLY BUSHING 5' A.G.L.  
Drilling Measured From KELLY BUSHING

Elevation  
K.B. 2935  
D.F. 2933  
G.L. 2930

Date	1/20/13		
Run Number	ONE		
Depth Driller	4720		
Depth Logger	4725		
Bottom Logged Interval	4701		
Top Log Interval	3500		
Casing Driller	219		
Casing Logger	222		
Bit Size	7.875		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 8,000	
Density / Viscosity	9.6 / 56		
pH / Fluid Loss	9.0 / 6.4		
Source of Sample	FLOWLINE		
Rim @ Meas. Temp	0.85 @ 60F		
Rmf @ Meas. Temp	0.63 @ 60F		
Rmc @ Meas. Temp	1.02 @ 60F		
Source of Rmf / Rmc	MEASURED		
Rim @ BHT	0.43 @ 122F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	125F		
Equipment Number	860		
Location	HAYS, KS.		
Recorded By	IAN MABB		
Witnessed By	MAX LOVELLY		

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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.

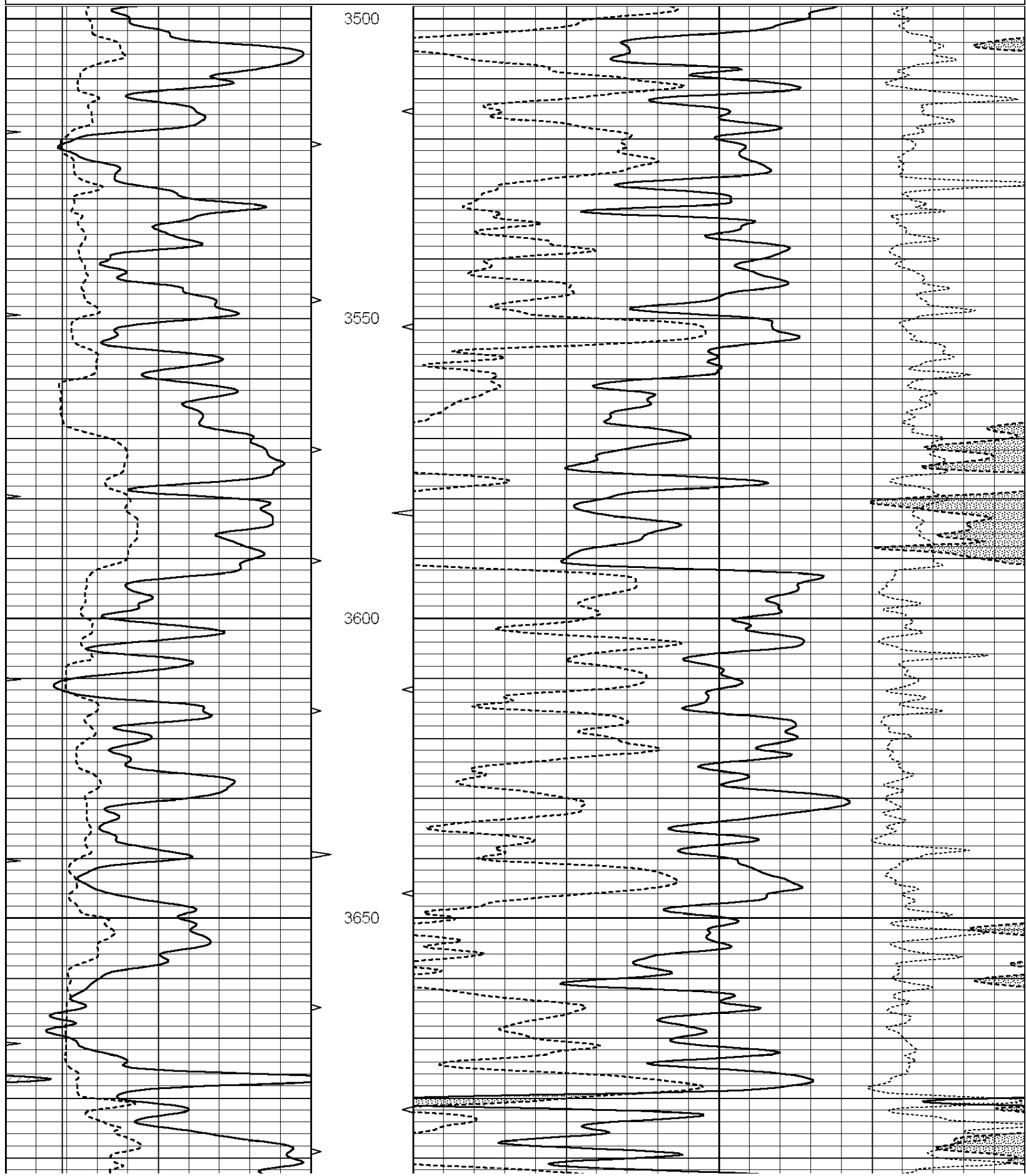
Comments

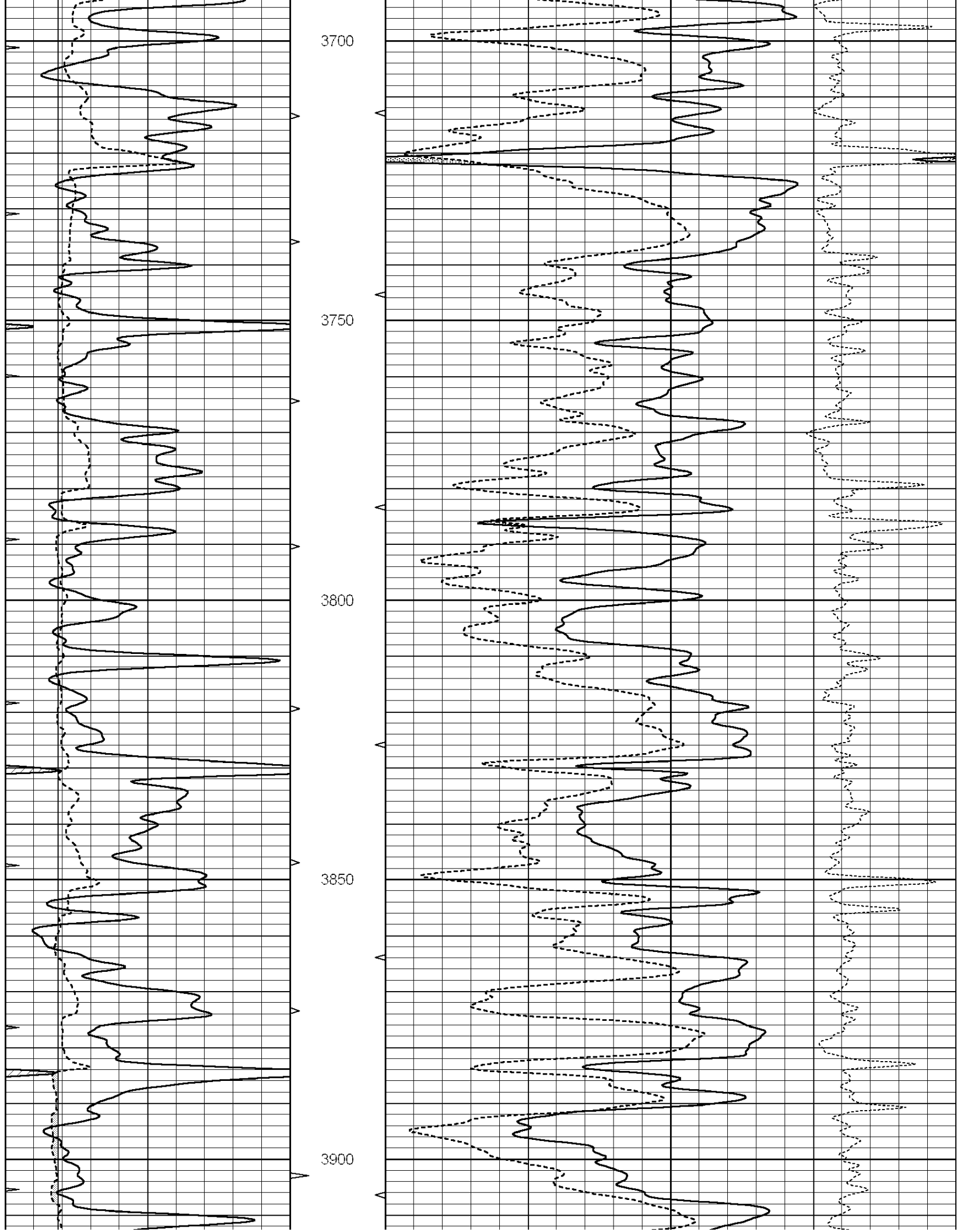
NABORS COMPLETION & PRODUCTION CO.  
785-628-6395

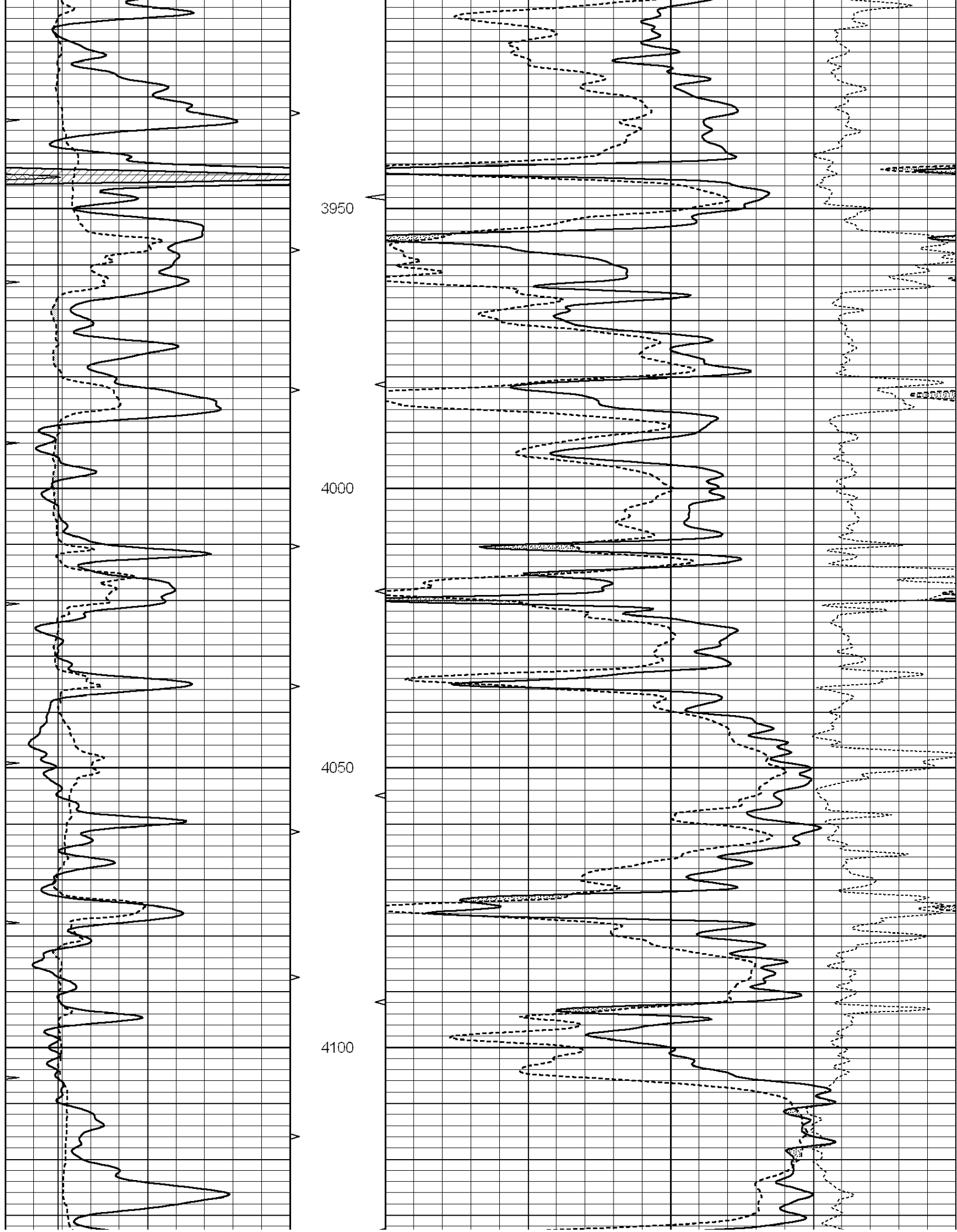
THANK YOU FOR YOUR BUSINESS

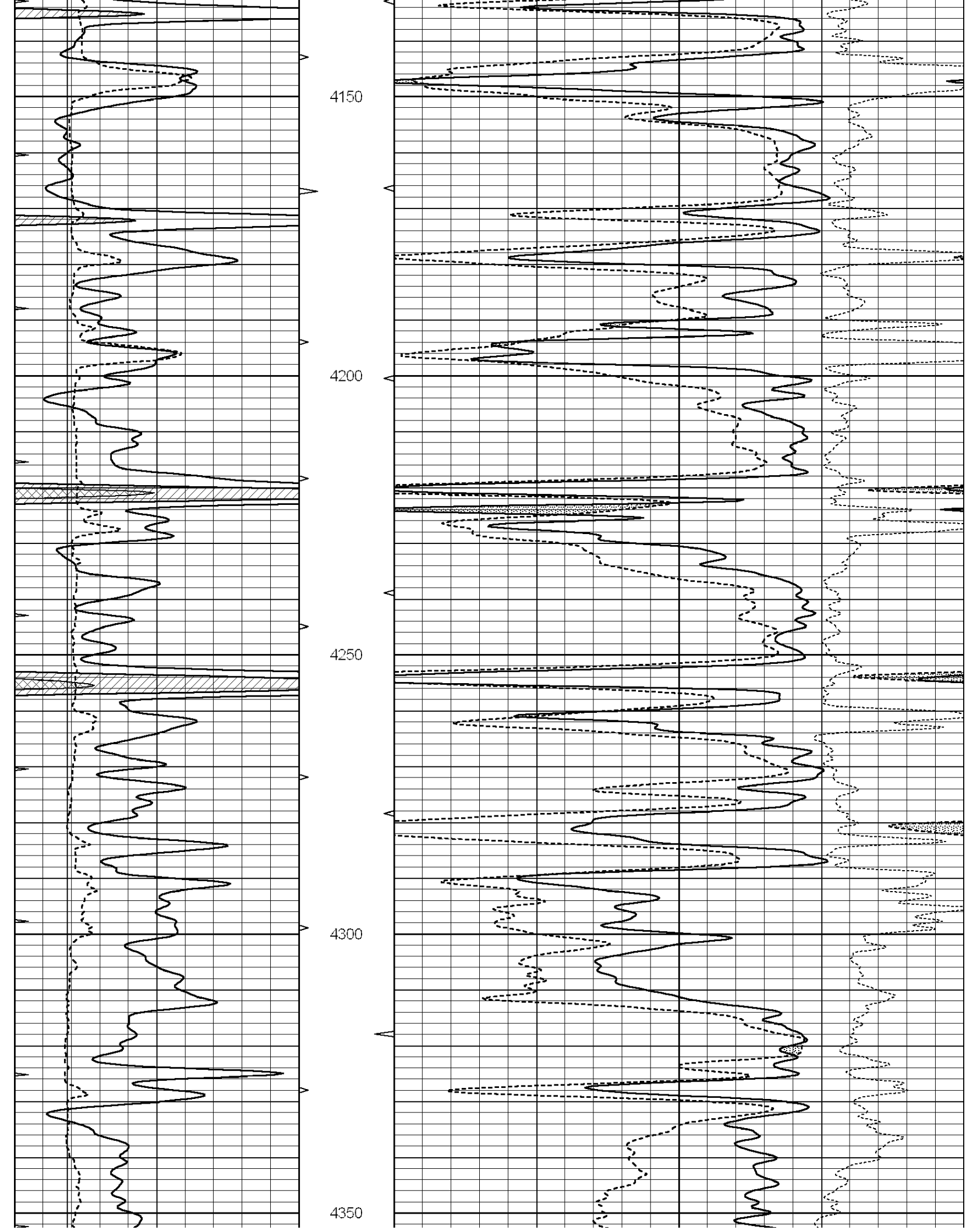
DIRECTIONS: OAKLEY, KS. - 13 MILES SOUTH TO QUAIL RD. - 3 EAST TO RD 12 - 1/2 SOUTH WEST INTO

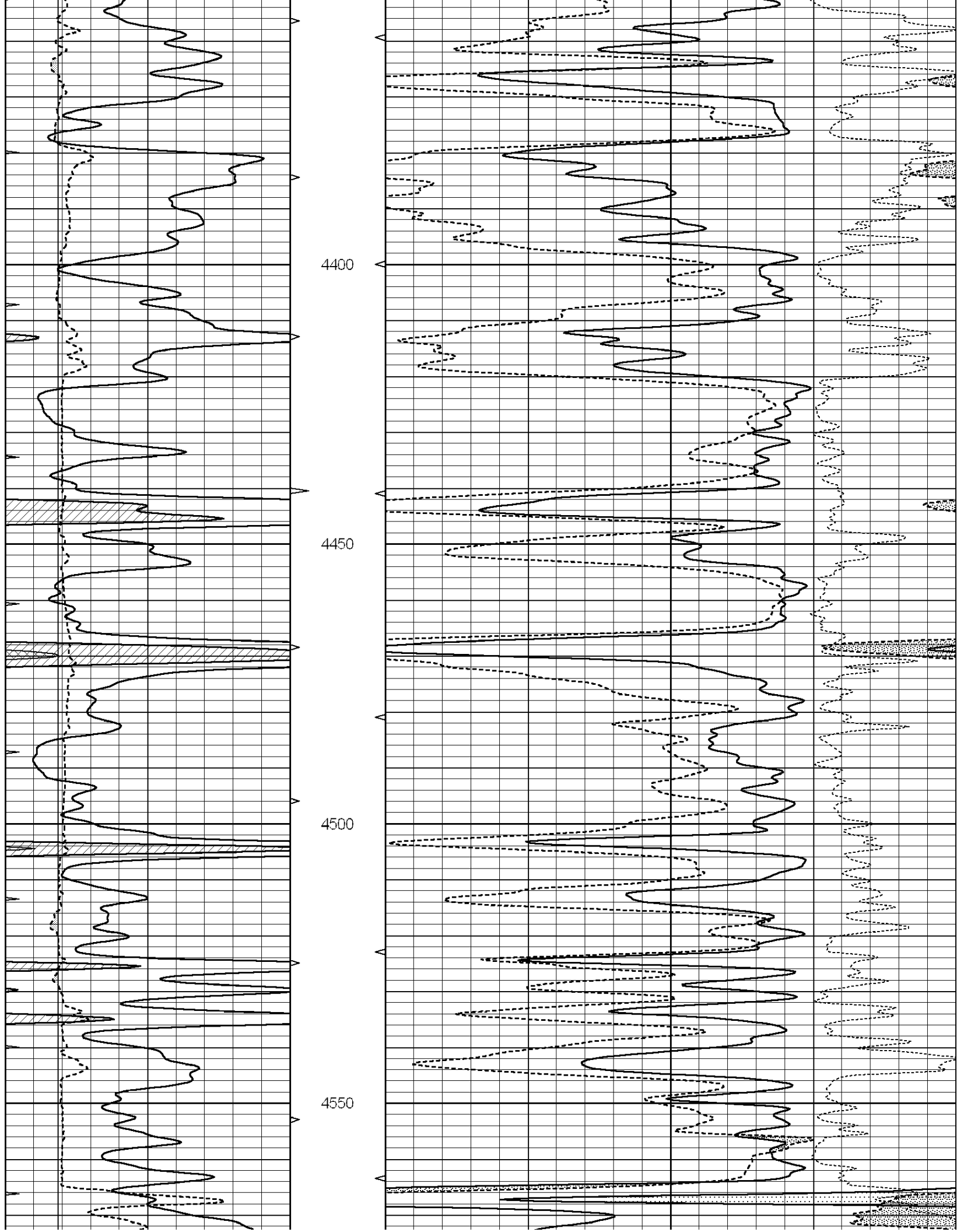
0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)	-10
6	CALIPER (in)	16	10 (ft3)	0 30	COMPENSATED NEUTRON (pu)	-10
0	MINMK	20	TBHV		-0.25 CORRECTION (g/cc)	0.25
			0 (ft3)	10		

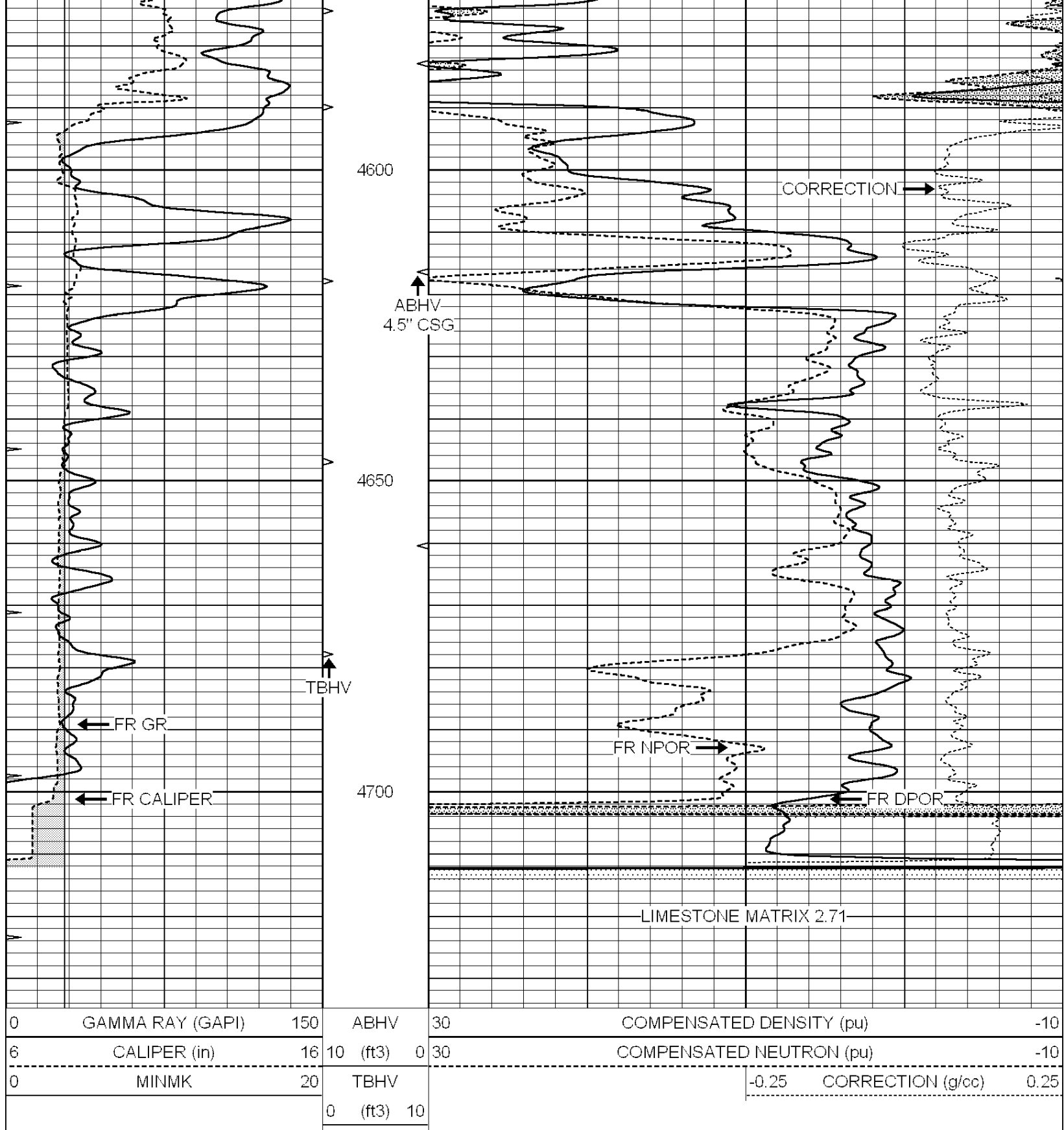










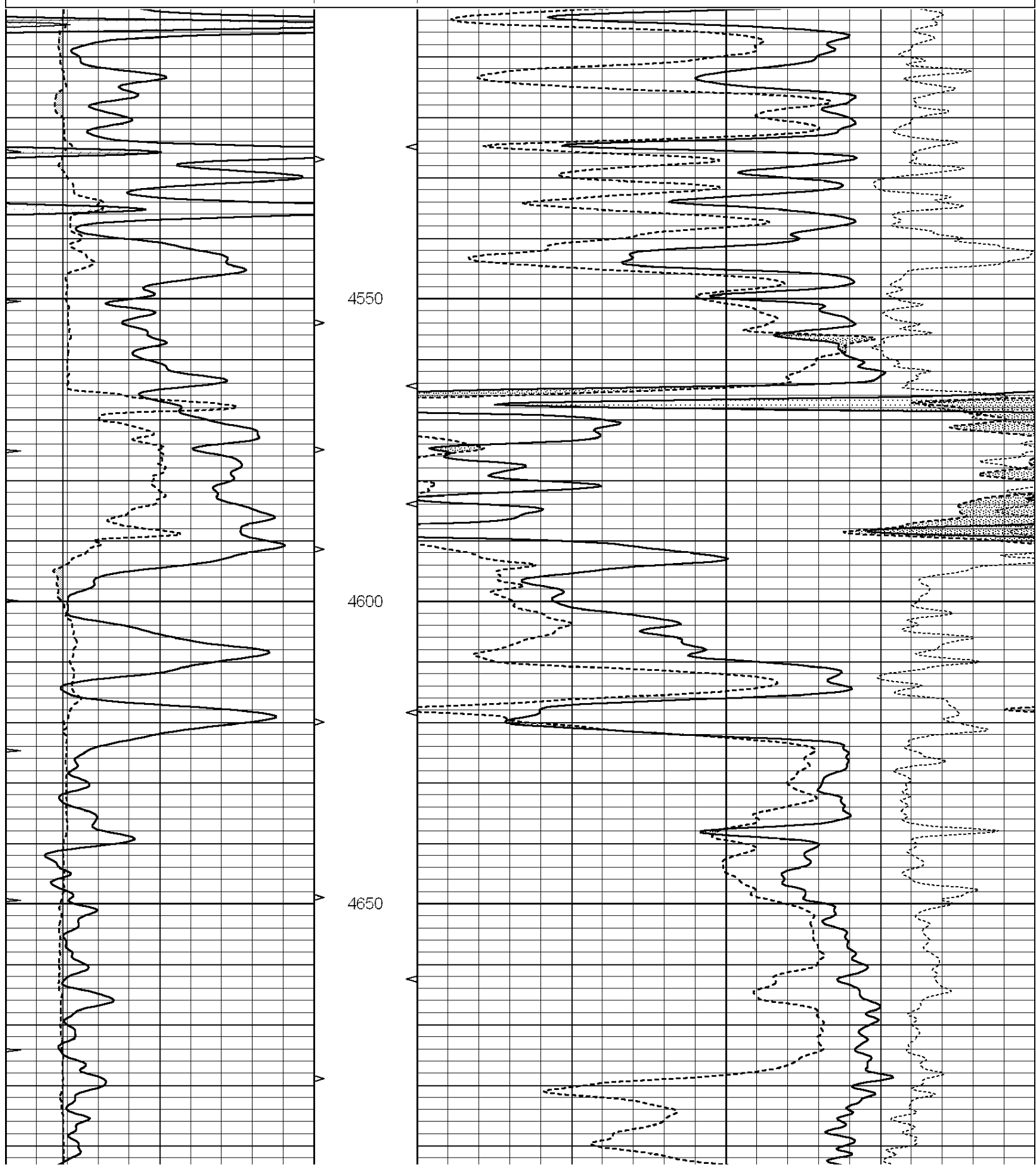


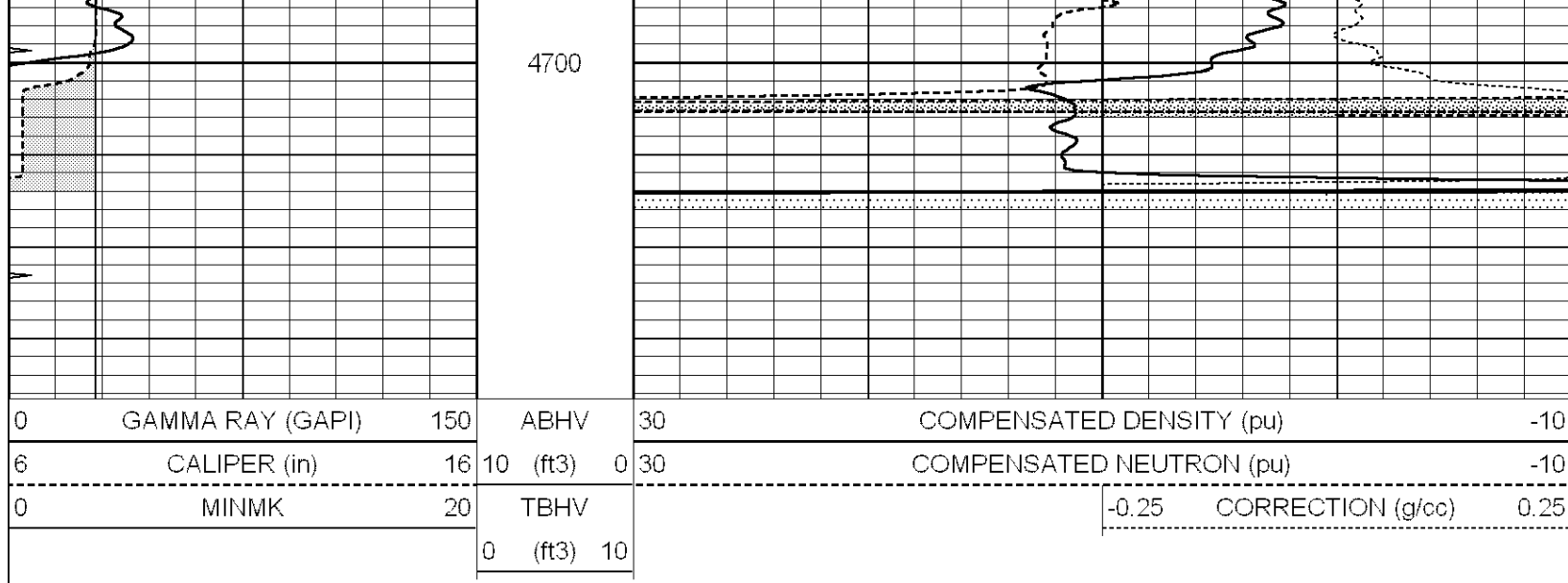
0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)	-10
6	CALIPER (in)	16	10 (ft3)	0 30	COMPENSATED NEUTRON (pu)	-10
0	MINMK	20	TBHV		-0.25	CORRECTION (g/cc)
			0 (ft3)	10		0.25



# REPEAT SECTION

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: 010655ddn.db  
 Dataset Pathname: pass4.2  
 Dataset Creation: Sun Jan 20 20:17:12 2013 by Calc Open-Cased 090629

### Dual Induction Calibration Report

Serial-Model: PROBE7-DILG  
 Surface Cal Performed: Sat Jan 19 20:58:30 2013  
 Downhole Cal Performed: Sat Jan 19 19:51:38 2013  
 After Survey Verification Performed: Sat Jan 19 19:51:38 2013

#### Surface Calibration

Loop:	Readings			References			Results	
	Air	Loop		Air	Loop		m	b
Deep	0.793	0.790	V	0.000	400.000	mmho/m	670.000	-6.000
Medium	0.992	1.002	V	0.000	464.000	mmho/m	700.000	-55.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.041	0.642	V	0.000	400.000	mmho/m	664.874	-27.011
Medium	0.035	0.802	V	0.000	464.000	mmho/m	604.936	-21.367

#### Downhole Calibration

	Readings			References			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	135384.000	27094.500	mmho/m	135400.000	27082.400	mmho/m	1.000	-19.259
Medium	-47330.100	-9381.740	mmho/m	-47327.100	-9389.280	mmho/m	1.000	-10.154
LL3		7.322	V		1400.000	Ohm-m		
		0.038	V		20.000	Ohm-m		
		-7.273	V		4000.000	mmho-m		

#### After Survey Verification

	Readings			Targets			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	135384.000	27094.500	mmho/m	1.000	0.000
Medium	0.000	0.000	mmho/m	-47330.100	-9381.740	mmho/m	1.000	0.000
LL3		0.000	Ohm-m		1400.000	Ohm-m		
		0.000	Ohm-m		20.000	Ohm-m		
		0.000	mmho-m		4000.000	mmho-m		

Compensated Density Calibration Report

Serial-Model:	GEAR1-GEARHART
Source / Verifier:	147 / 147
Master Calibration Performed:	Sat Jan 19 20:58:11 2013

Master Calibration

	<u>Density</u>		<u>Far Detector</u>	<u>Near Detector</u>	
Magnesium	1.710	g/cc	1205.77	610.74	cps
Aluminum	2.590	g/cc	271.21	419.72	cps
	Spine Angle = 75.89		Density/Spine Ratio = 0.572		
	<u>Size</u>		<u>Reading</u>		
Small Ring	7.70	in	4.69	V	
Large Ring	14.00	in	6.52	V	

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:	Sat Jan 19 20:57:48 2013
Calibrator Value:	1.0 GAPI
Background Reading:	0.0 cps
Calibrator Reading:	1.0 cps
Sensitivity:	2.0000 GAPI/cps