NABORS COMPLETION & PRODUCTION SERVICES CO.

COMPENSATED DENSITY / NEUTRON LOG

Company	RITCHIE EXPLORATION, INC.
Well	#1 BIERMANN 8D
Field	WILDCAT
County	WICHITA
State	KANSAS

Company RITCHIE EXPLORATION, INC.

Well #1 BIERMANN 8D

Field WILDCAT

County WICHITA State KANSAS

Location: API # : 15-203-20304-0000

391' FSL & 853' FEL

SEC 8 TWP 17S RGE 37W

Permanent Datum GROUND LEVEL Elevation 3355

Log Measured From KELLY BUSHING 5' A.G.L.

Drilling Measured From KELLY BUSHING

Other Services: DIL

Elevation: K.B. 3360 D.F. 3358 G.L. 3355

Date	5/4/15		
Run Number	ONE		
Depth Driller	5044		
Depth Logger	5041		
Bottom Logged Interval	5017		
Top Log Interval	3500		
Casing Driller	8 5/8"@256'		
Casing Logger	256		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 7,000 PPM	
Density / Viscosity	9.4/60		
pH / Fluid Loss	10.0/8.8		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.950@80F		
Rmf @ Meas. Temp	.713@80F		
Rmc @ Meas. Temp	1.14@80F		
Source of Rmf / Rmc	MEASUREMENT		
Rm @ BHT	.608@125F		
Time Circulation Stopped	2.5 HOURS		
Time Logger on Bottom	4:15 P.M.		
Maximum Recorded Temperature	125F		
Equipment Number	4854		
Location	HAYS, KANSAS		
Recorded By	JEFF LUEBBERS		
Witnessed By	JOHN GOLDSMITH		

<<< Fold Here >>>

Comments

THANK YOU FOR USING "NABORS" HAYS, KANSAS (785) 628-6395

DIRECTIONS

LEOTI, KS., 9N. ON HWY 25 TO "RD. G", 4W. TO "RD. 9", 2S. INTO ON TRAIL

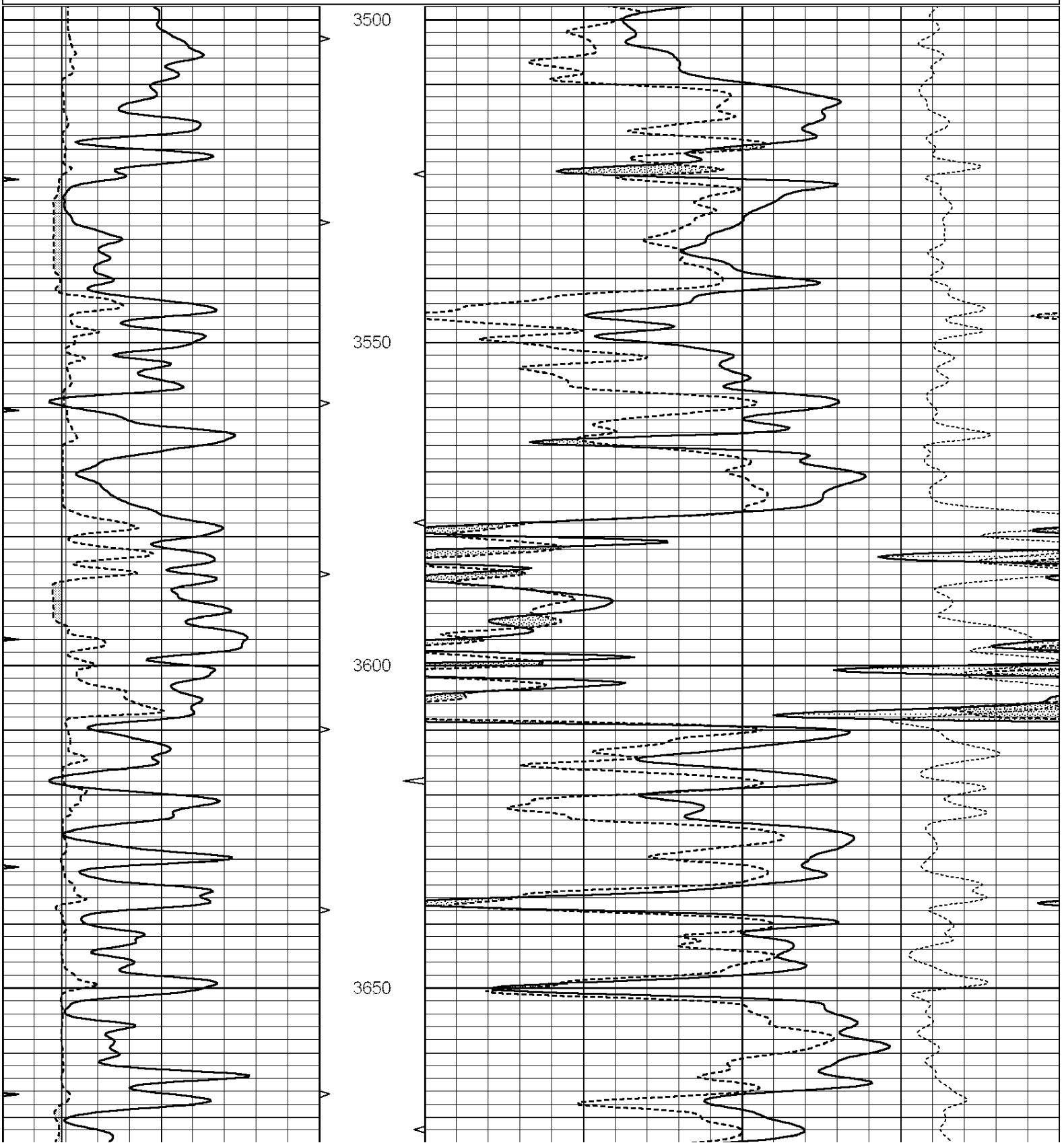
NABORS COMPLETION & PRODUCTION SERVICES CO.

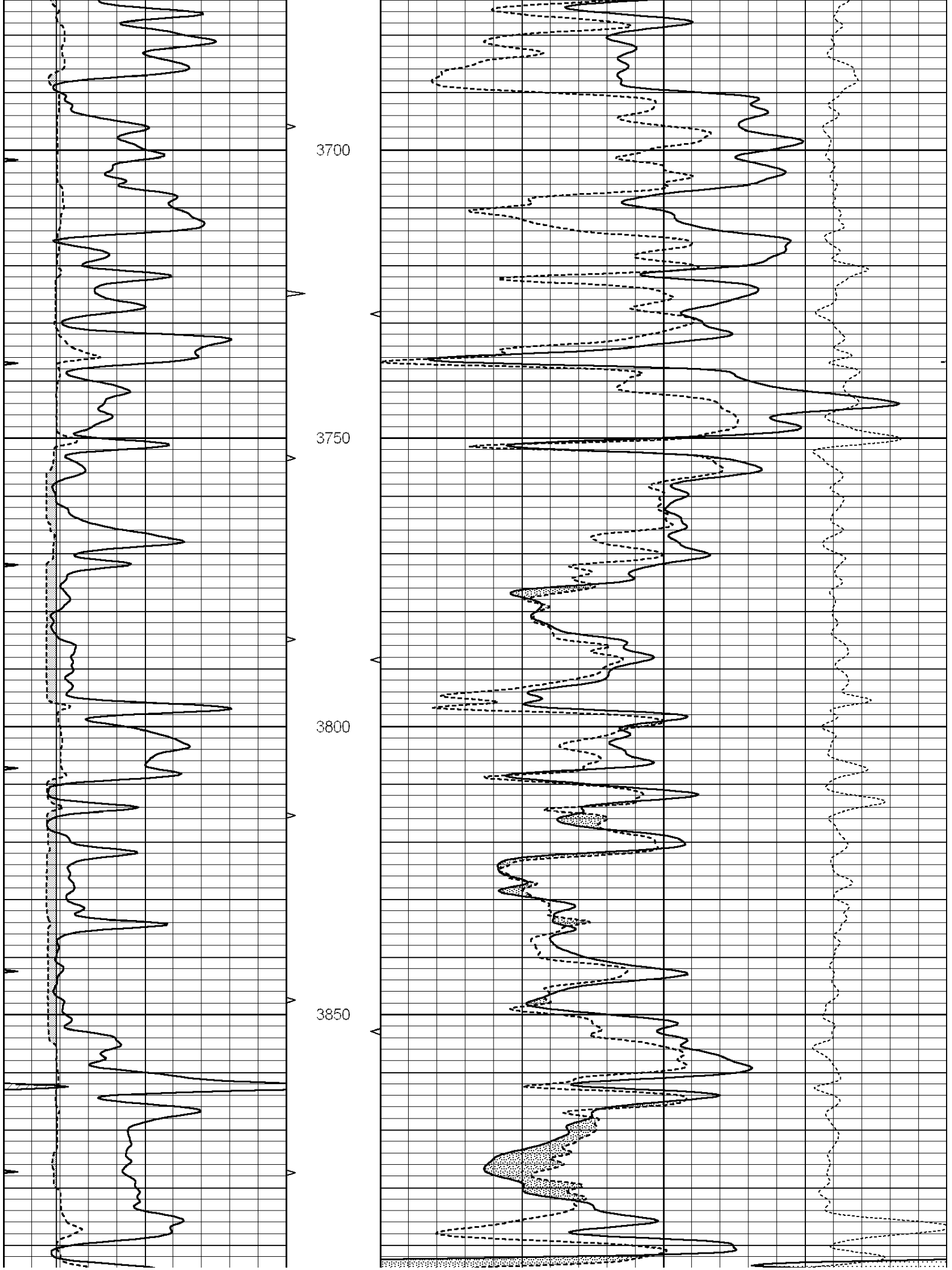
MAIN SECTION

SERVICES CO.

Database File: 26513ddn.db
Dataset Pathname: pass3.6
Presentation Format: den_neu
Dataset Creation: Mon May 04 19:16:23 2015
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	

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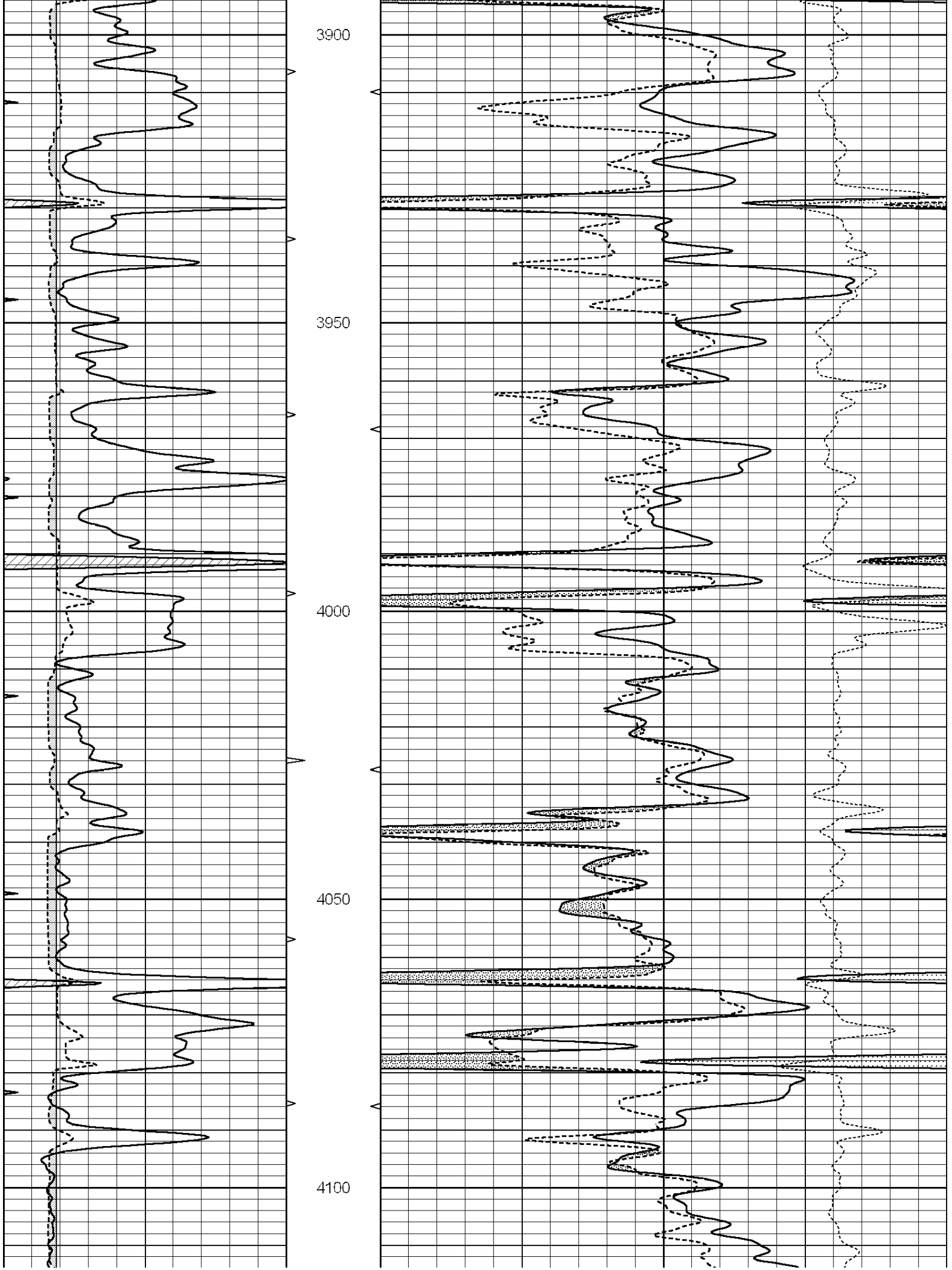
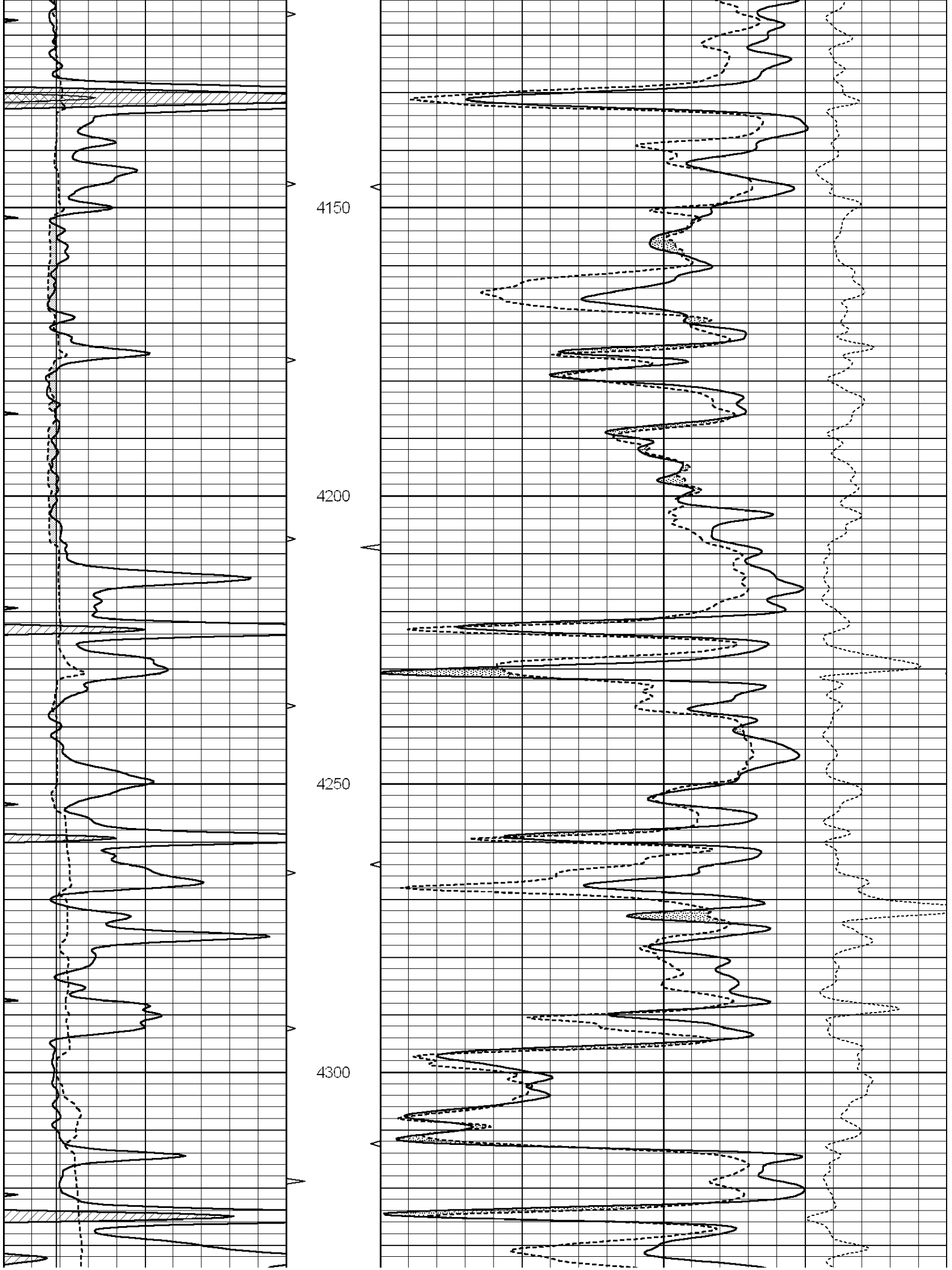
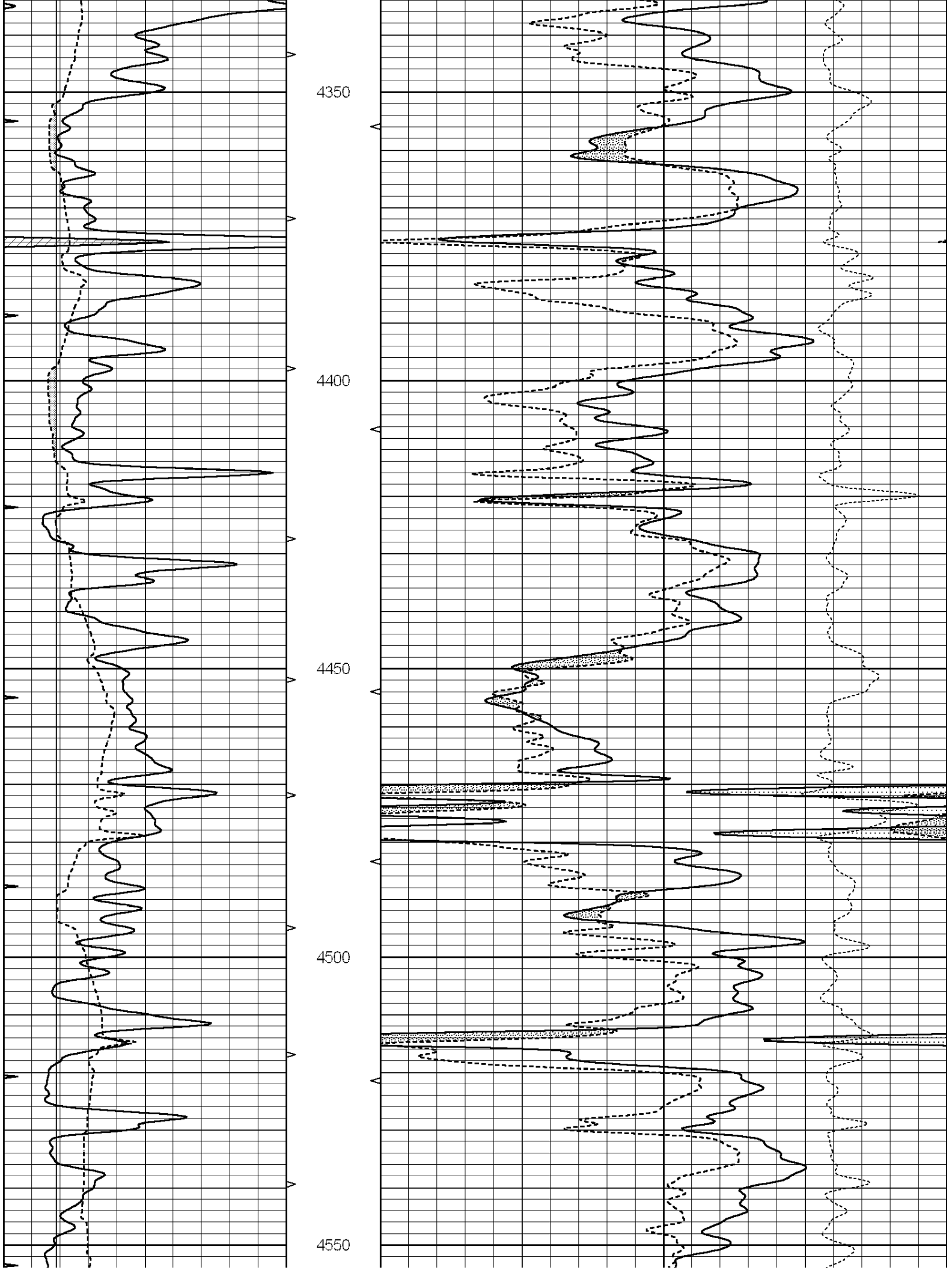
3750
3800
3850


3900
3950
4000
4050
4100


4150
4200
4250
4300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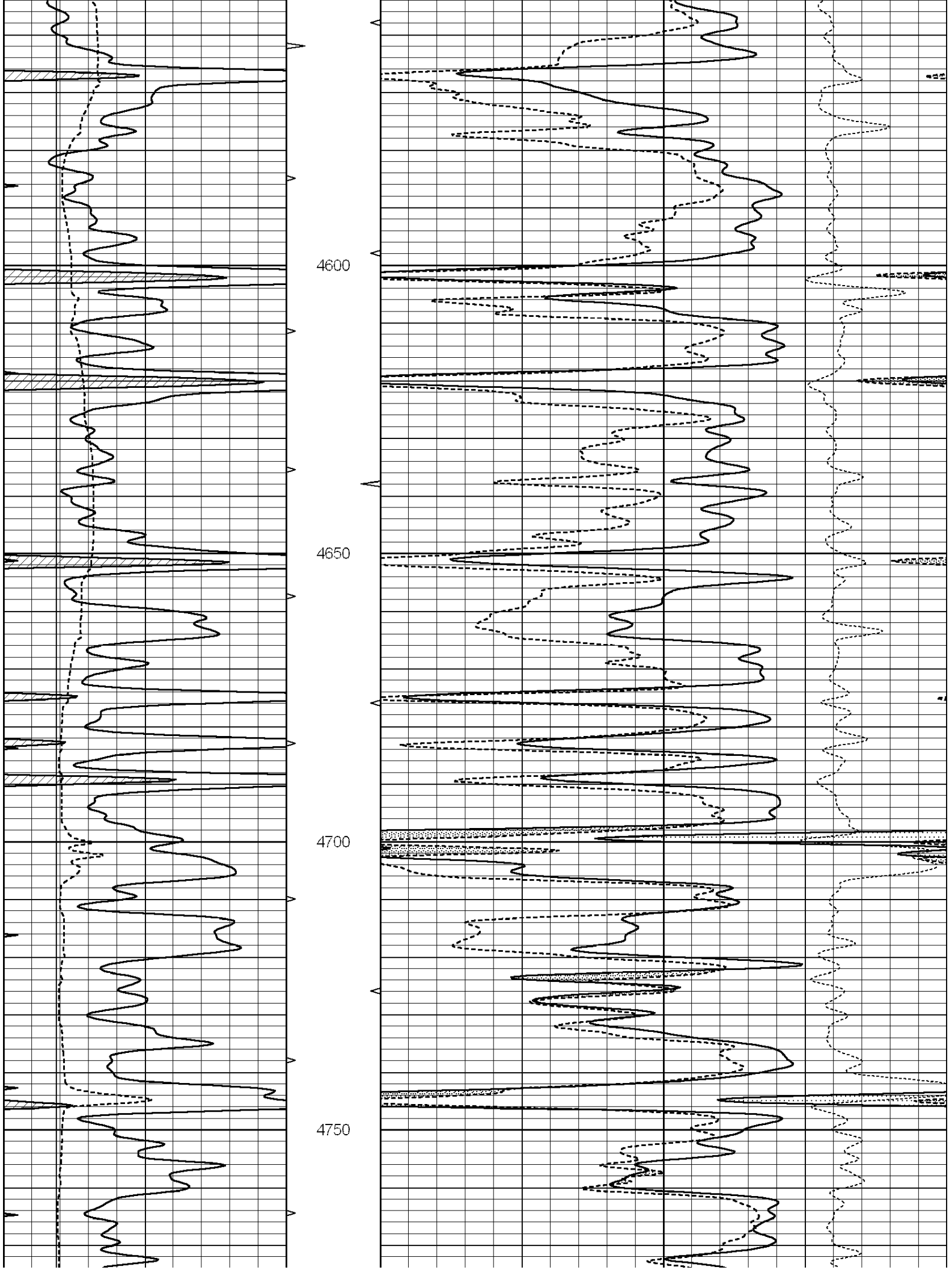
4450
4500
4550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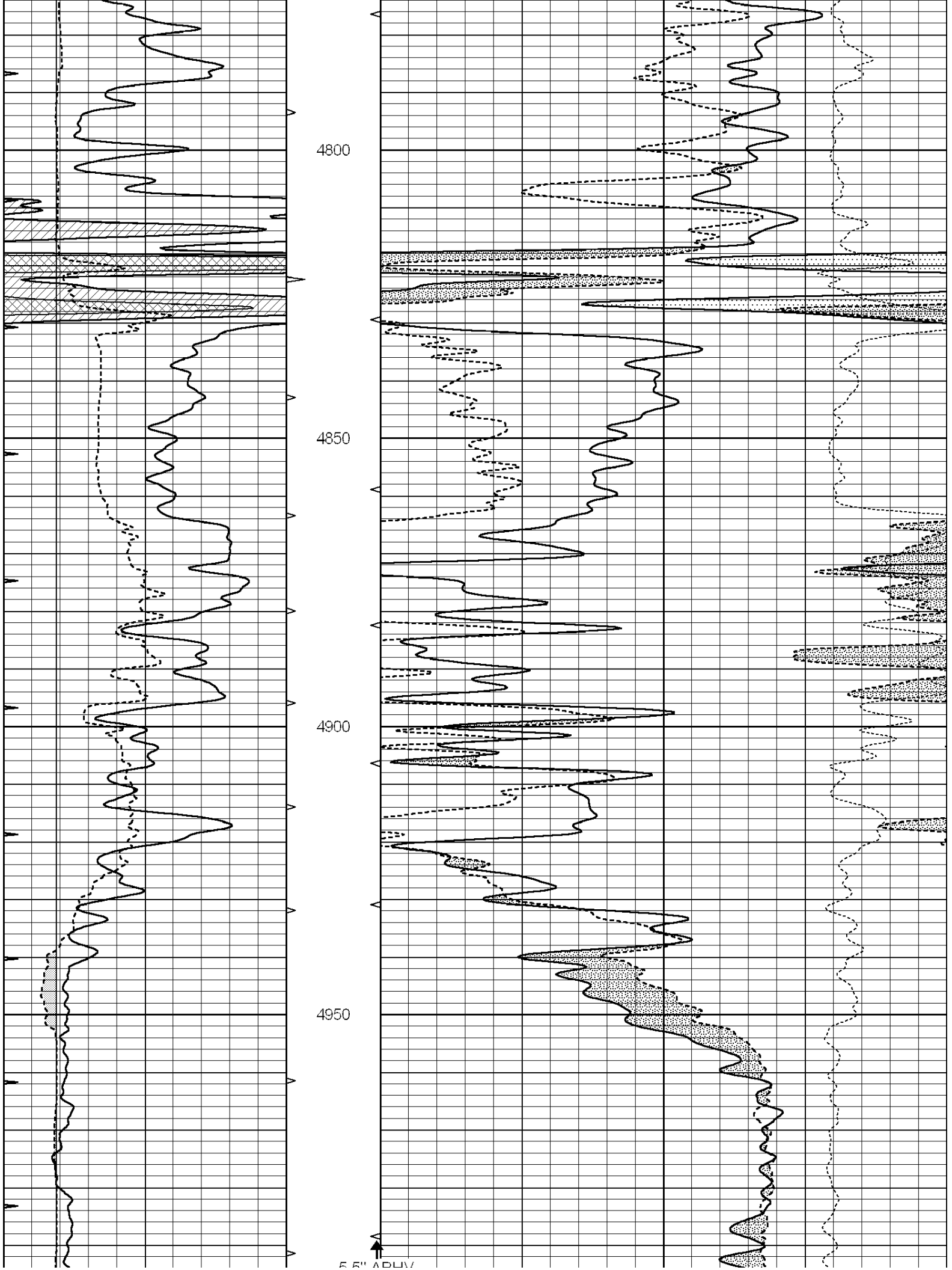
4700
4750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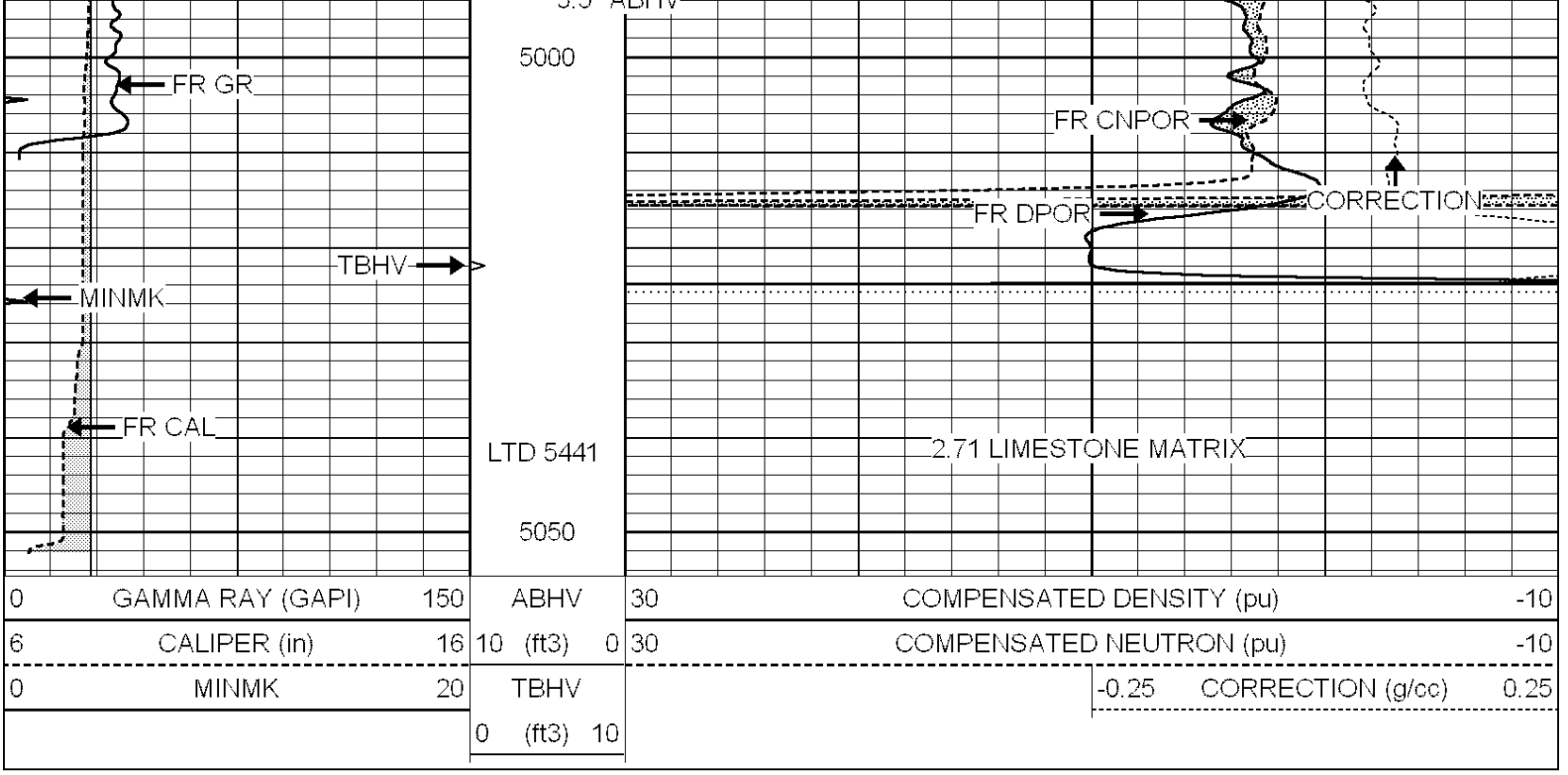
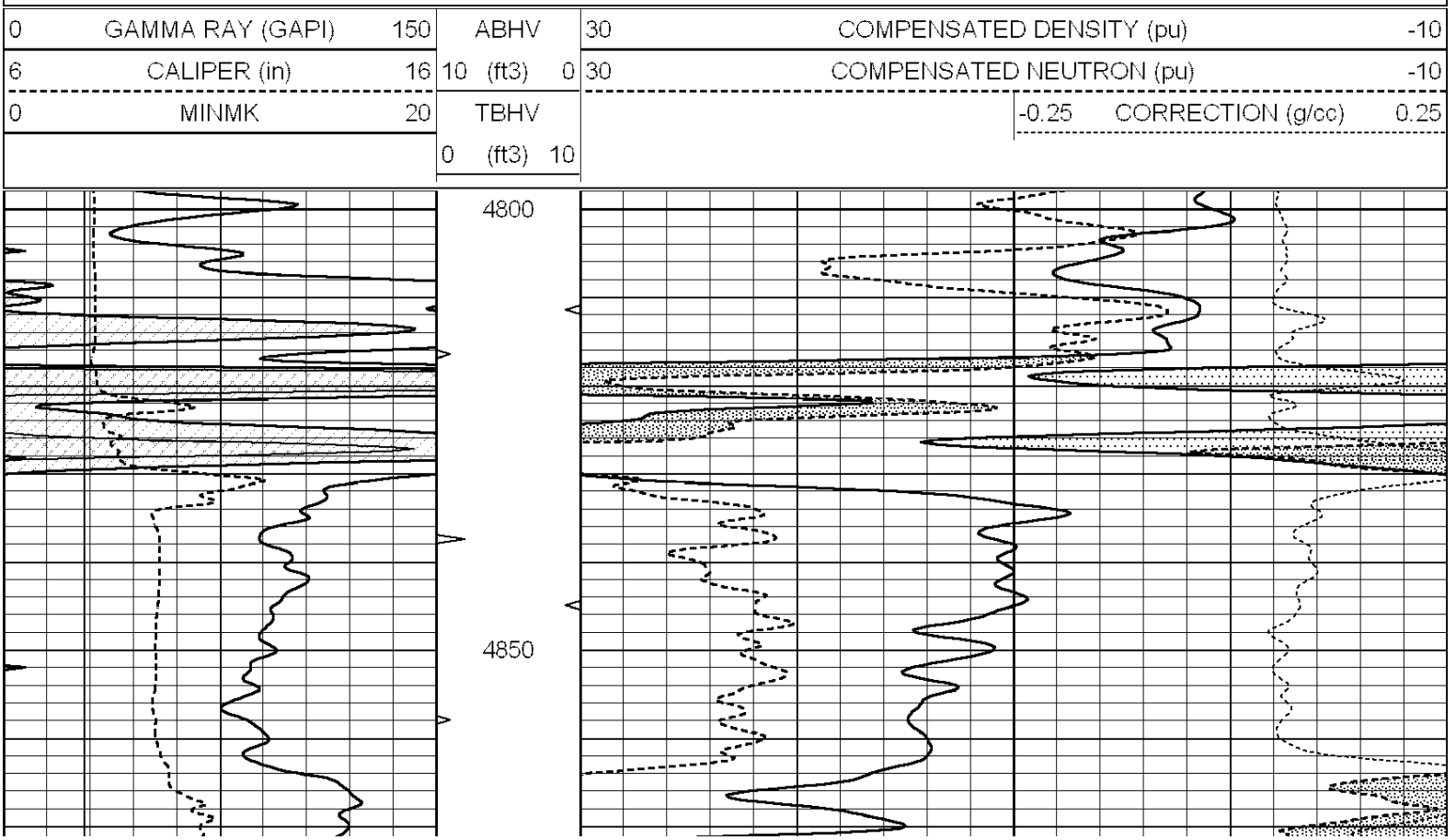
4850
4900
4950
5.5" ARHV

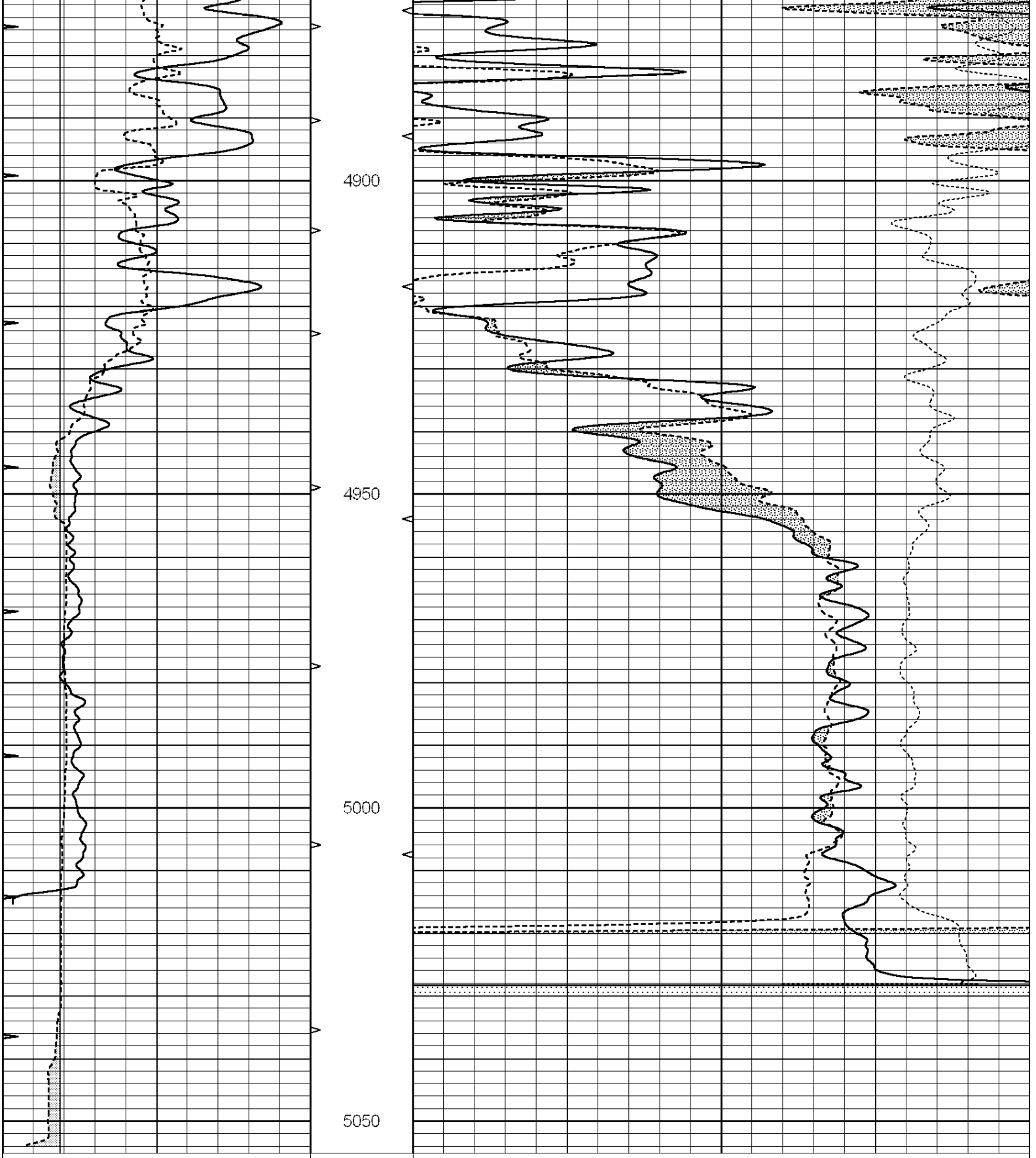


NABORS
COMPLETION & PRODUCTION SERVICES CO.

REPEAT SECTION

Database File:	26513ddn.db
Dataset Pathname:	pass2.4
Presentation Format:	den_neu
Dataset Creation:	Mon May 04 19:03:38 2015
Charted by:	Depth in Feet scaled 1:240





Calibration Report

Database File: 26513ddn.db
Dataset Pathname: pass3 4

Dataset Creation: Mon May 04 17:51:28 2015 by Calc SOC 120430

Dual Induction Calibration Report

Serial-Model:	PROBE9-DILG
Surface Cal Performed:	Mon May 04 16:08:03 2015
Downhole Cal Performed:	Mon Jul 28 12:02:56 2008
After Survey Verification Performed:	Mon Jul 28 12:02:56 2008

Surface Calibration

	Readings			References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	-0.014	0.629	V	0.000	400.000	mmho/m	670.000	-14.000
Medium	0.039	0.728	V	0.000	464.000	mmho/m	670.000	-27.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.011	0.610	V	0.000	400.000	mmho/m	667.135	-7.256
Medium	0.005	0.712	V	0.000	464.000	mmho/m	655.677	-3.102

Downhole Calibration

	Readings			References			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	14.508	388.384	mmho/m	1.000	0.000
Medium	0.000	0.000	mmho/m	166.367	504.400	mmho/m	1.000	0.000
LL3		7.500	V		1400.000	Ohm-m		
		0.000	V		20.000	Ohm-m		
		-7.200	V		4000.000	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: 003N Model: PRB

Master Calibration

Performed Tue Sep 08 14:14:44 2009

	Background	Magnesium	Aluminum	Sandstone	
Window 1	2042.6	12312.8	4225.8	13758.4	cps
Window 2	1855.8	10134.7	3624.2	11113.1	cps
Window 3	1639.4	6760.2	2716.3	7260.3	cps
Window 4	466.4	469.2	466.1	476.5	cps
Long Space	0.0	8278.9	1768.4	9257.4	cps
Short Space	2.2	2377.3	1544.1	2574.2	cps
Rho		1.7100	2.5900	1.3800	g/cc
Pe		0.0000	2.5700	1.5500	

Rib Angle	: 44.4	Rib Slope	: 0.979	Density/Spine Ratio	: 0.549
Spine Angle	: 74.4	Spine Slope	: 3.577	Spine Intercept	: -18.8

Before Survey Verification

Performed Wed Dec 31 18:00:00 1969

Window 1	0.0	0.0	0.0	0.0	cps

Window 2	0.0	0.0	0.0	0.0	cps
Window 3	0.0	0.0	0.0	0.0	cps
Window 4	0.0	0.0	0.0	0.0	cps
Long Space	0.0	0.0	0.0	0.0	cps
Short Space	0.0	0.0	0.0	0.0	cps
Measured Rho		0.0000	0.0000	0.0000	g/cc
Measured Correction		0.0000	0.0000	0.0000	g/cc
Measured Pe			0.0000	0.0000	

After Survey Verification Performed Wed Dec 31 18:00:00 1969

Window 1	0.0	0.0	0.0	0.0	cps
Window 2	0.0	0.0	0.0	0.0	cps
Window 3	0.0	0.0	0.0	0.0	cps
Window 4	0.0	0.0	0.0	0.0	cps
Long Space	0.0	0.0	0.0	0.0	cps
Short Space	0.0	0.0	0.0	0.0	cps
Measured Rho		0.0000	0.0000	0.0000	g/cc
Measured Correction		0.0000	0.0000	0.0000	g/cc
Measured Pe			0.0000	0.0000	

Compensated Neutron Calibration Report

Serial Number: 070808
Tool Model: Probe

PRE-SURVEY VERIFICATION

Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu

POST-SURVEY VERIFICATION

Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu

Gamma Ray Calibration Report

Serial Number: 070558
Tool Model: OPEN_GR
Performed: Sat Mar 21 17:40:37 2015

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Sensitivity: 0.2600 GAPI/cps