



**COMPLETION  
& PRODUCTION  
SERVICES CO.**

**COMPENSATED  
DENSITY / NEUTRON  
PE LOG**

Company WOOLSEY OPERATING COMPANY, LLC  
Well STERNBERGER B #2  
Field STRANATHAN  
County BARBER  
State KANSAS

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Well STERNBERGER B #2  
Field STRANATHAN  
County BARBER State KANSAS

Location: API # : 15-007-24218-00-00  
500' FSL & 2210' FWL  
NW - SE - SE - SW  
SEC 12 TWP 35S RGE 12W  
Permanent Datum GROUND LEVEL Elevation 1352  
Log Measured From KELLY BUSHING 12' A.G.L.  
Drilling Measured From KELLY BUSHING  
Other Services  
DIL  
Elevation  
K.B. 1364  
D.F. 1362  
G.L. 1352

Date	9/14/14		
Run Number	ONE		
Depth Driller	5356		
Depth Logger	5356		
Bottom Logged Interval	5332		
Top Log Interval	1800		
Casing Driller	13 3/8" @ 217'		
Casing Logger	210'		
Bit Size	7.875		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 9,000 PPM	
Density / Viscosity	9.0/46		
pH / Fluid Loss	9.5/10.8		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.30 @ 85F		
Rmt @ Meas. Temp	.23 @ 85F		
Rmc @ Meas. Temp	.36 @ 85F		
Source of Rmf / Rmc	MEASURED		
Rm @ BHT	.12 @ 128F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	128F		
Equipment Number	4010		
Location	HAYS, KS.		
Recorded By	IAN MABB		
Witnessed By	BILL KLAVER		

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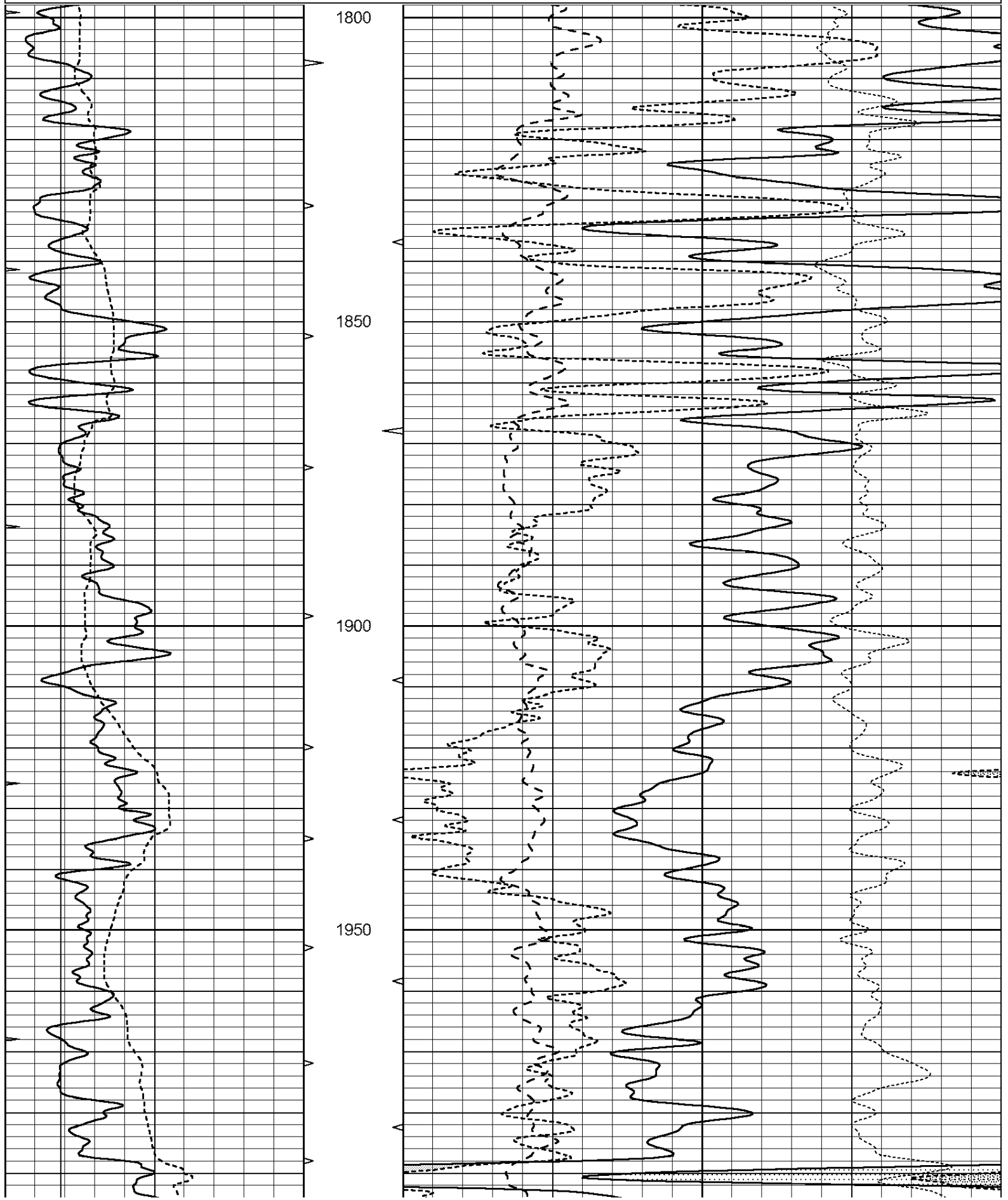
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs,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

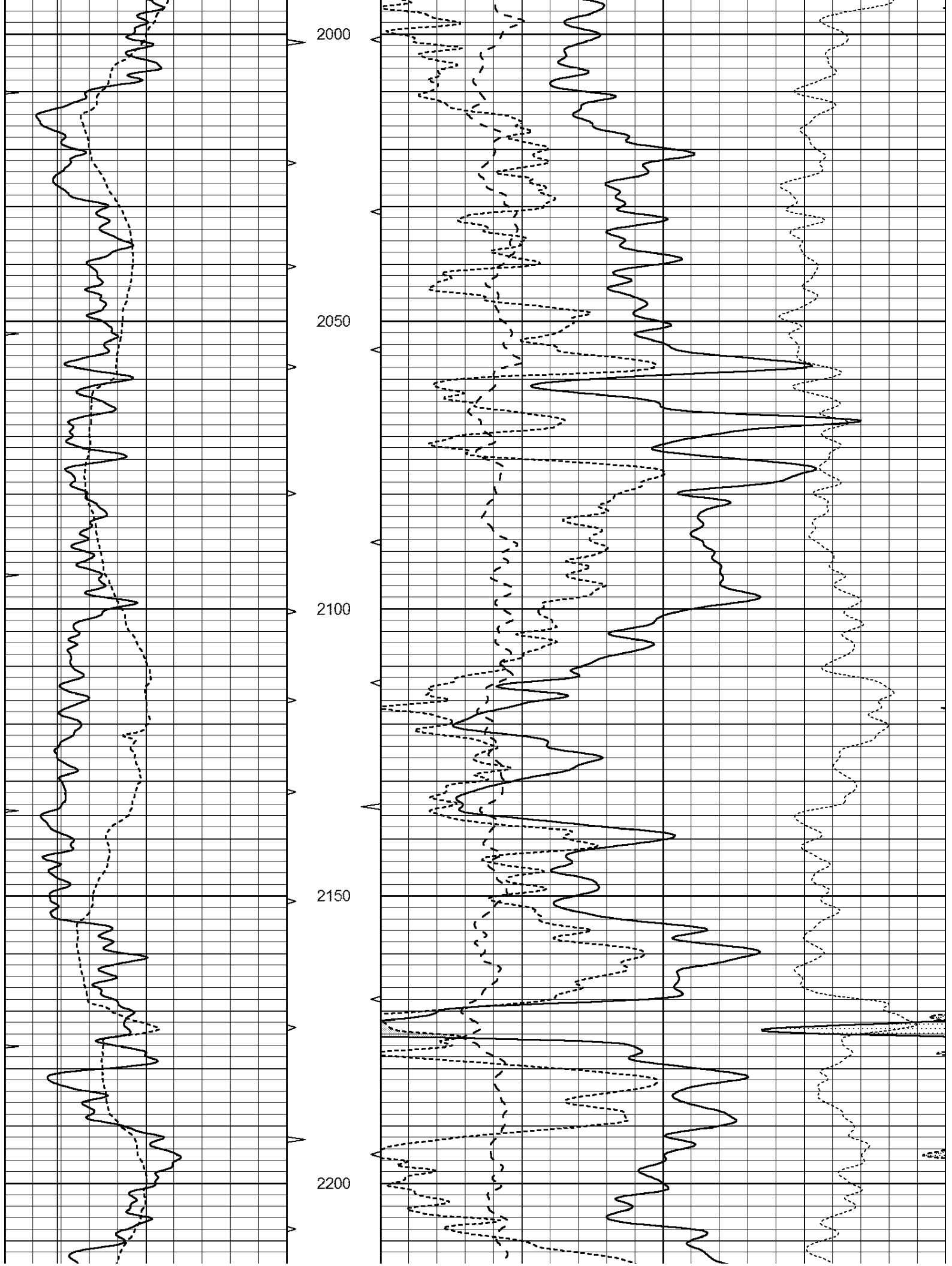
**Comments**

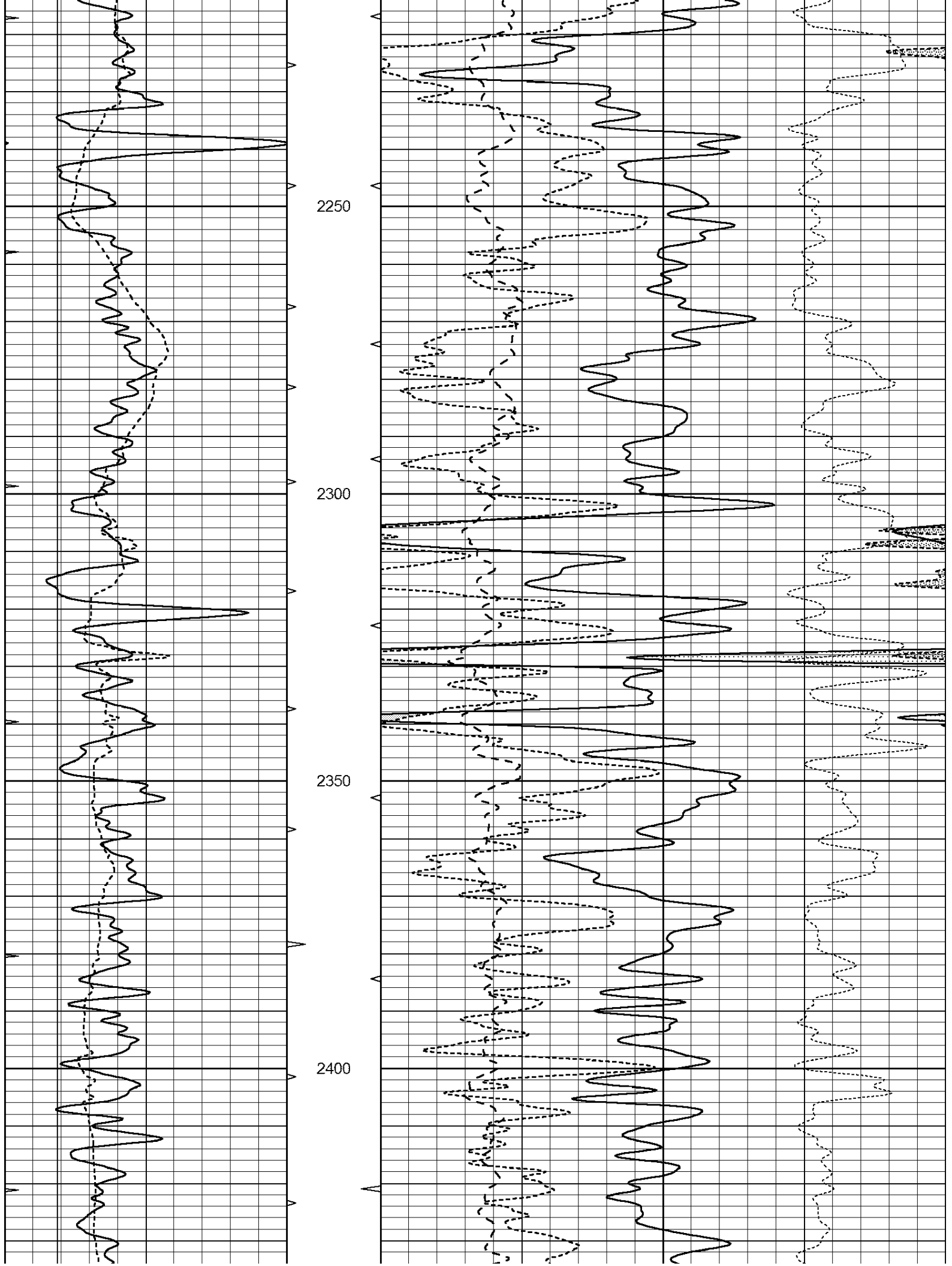
**NABORS COMPLETION & PRODUCTION SERVICES**  
785-628-6395  
**THANK YOU FOR YOUR BUSINESS**  
DIRECTIONS: HARTNER, KS. - 3 MILES EAST - SOUTH INTO

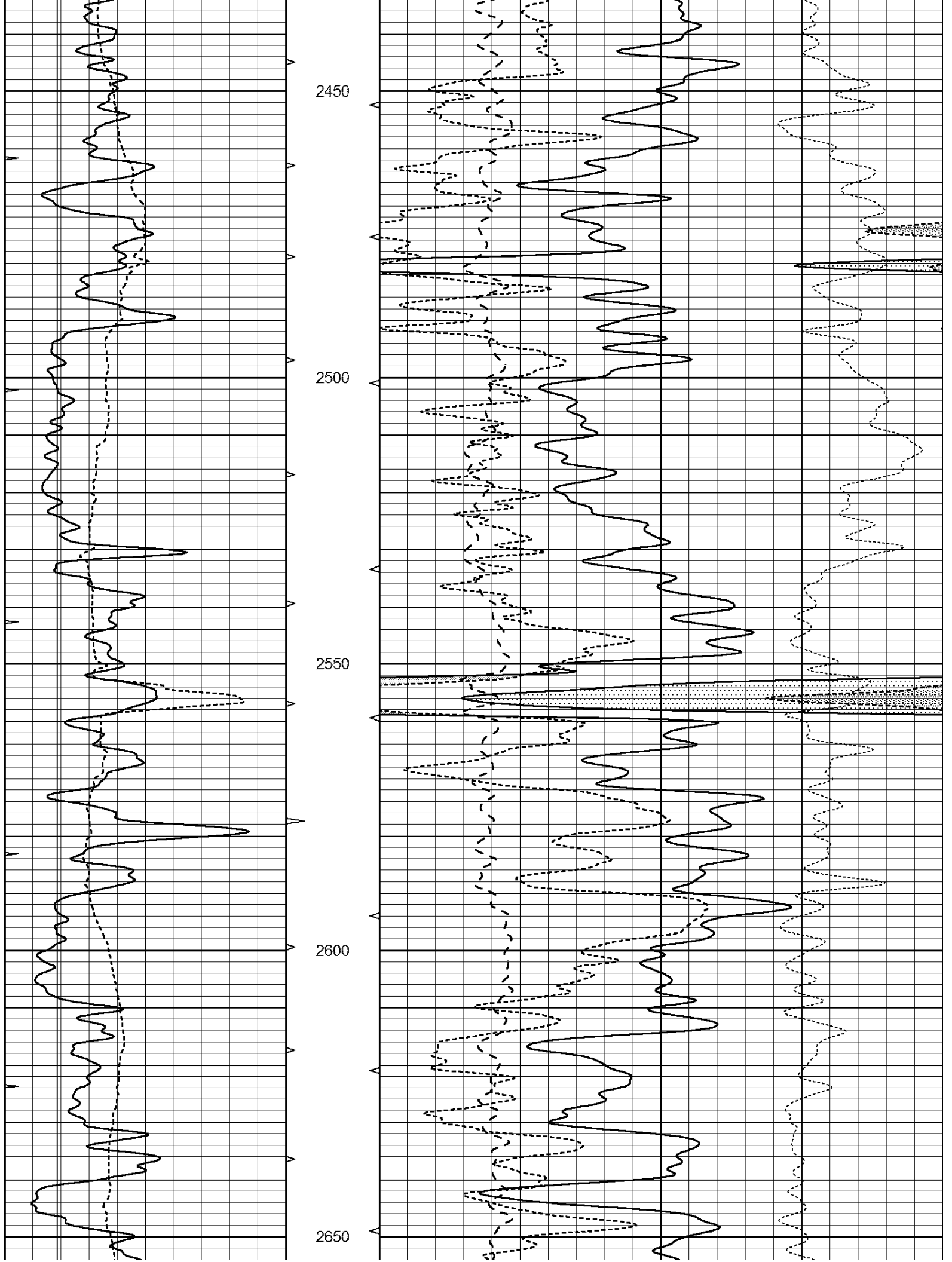
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Presentation Format: \_ldt\_neu  
Dataset Creation: Wed Sep 17 15:34:10 2014 by Calc Open-Cased 090629  
Charted by: Depth in Feet scaled 1:240

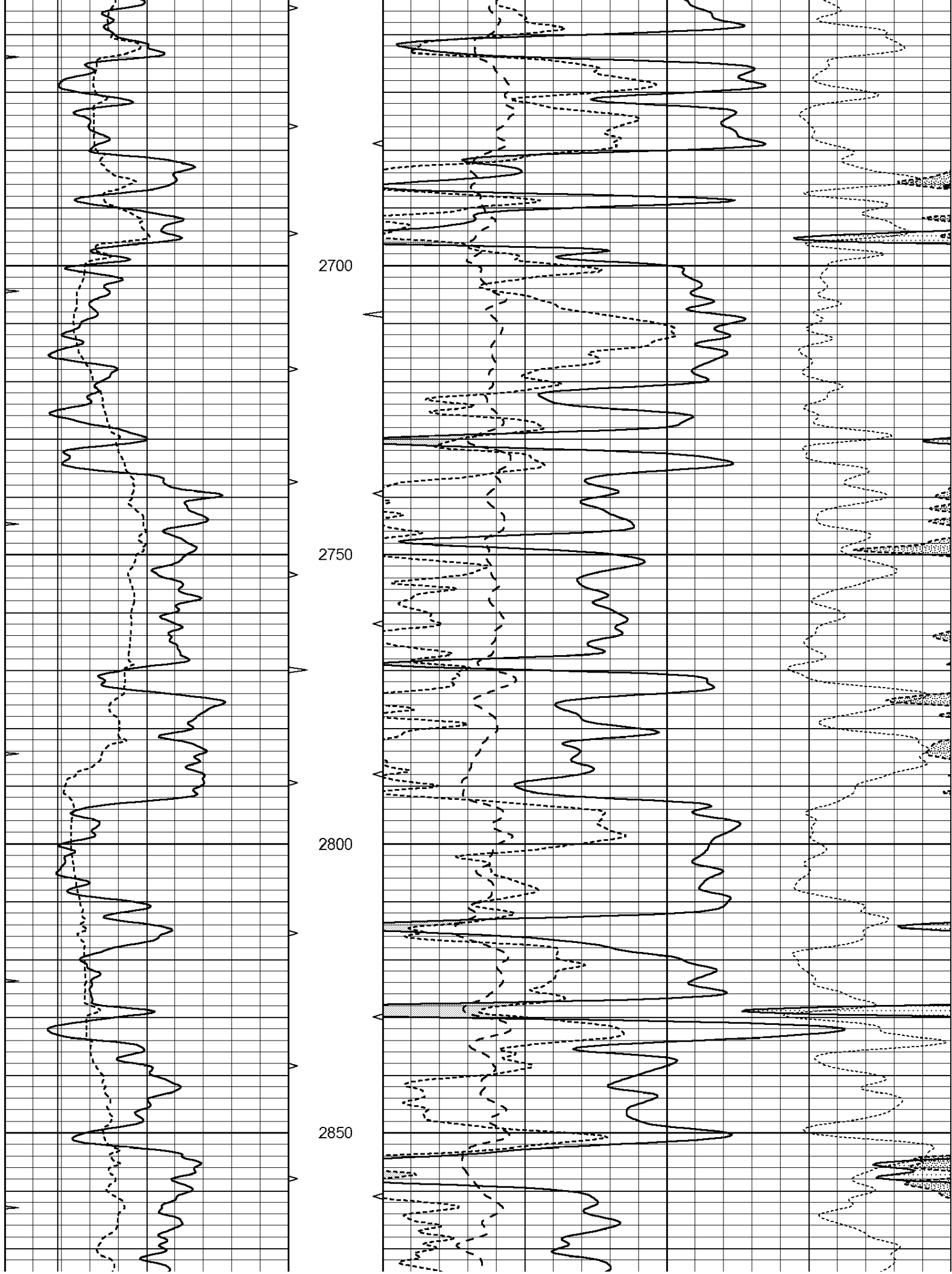
0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)		-10		
6	CALIPER (in)	16	10 (ft3)	0	30	COMPENSATED NEUTRON (pu)		-10	
0	MINMK	20	TBHV	0	PE	10	-0.25	CORRECTION (g/cc)	0.25
			0 (ft3)	10					

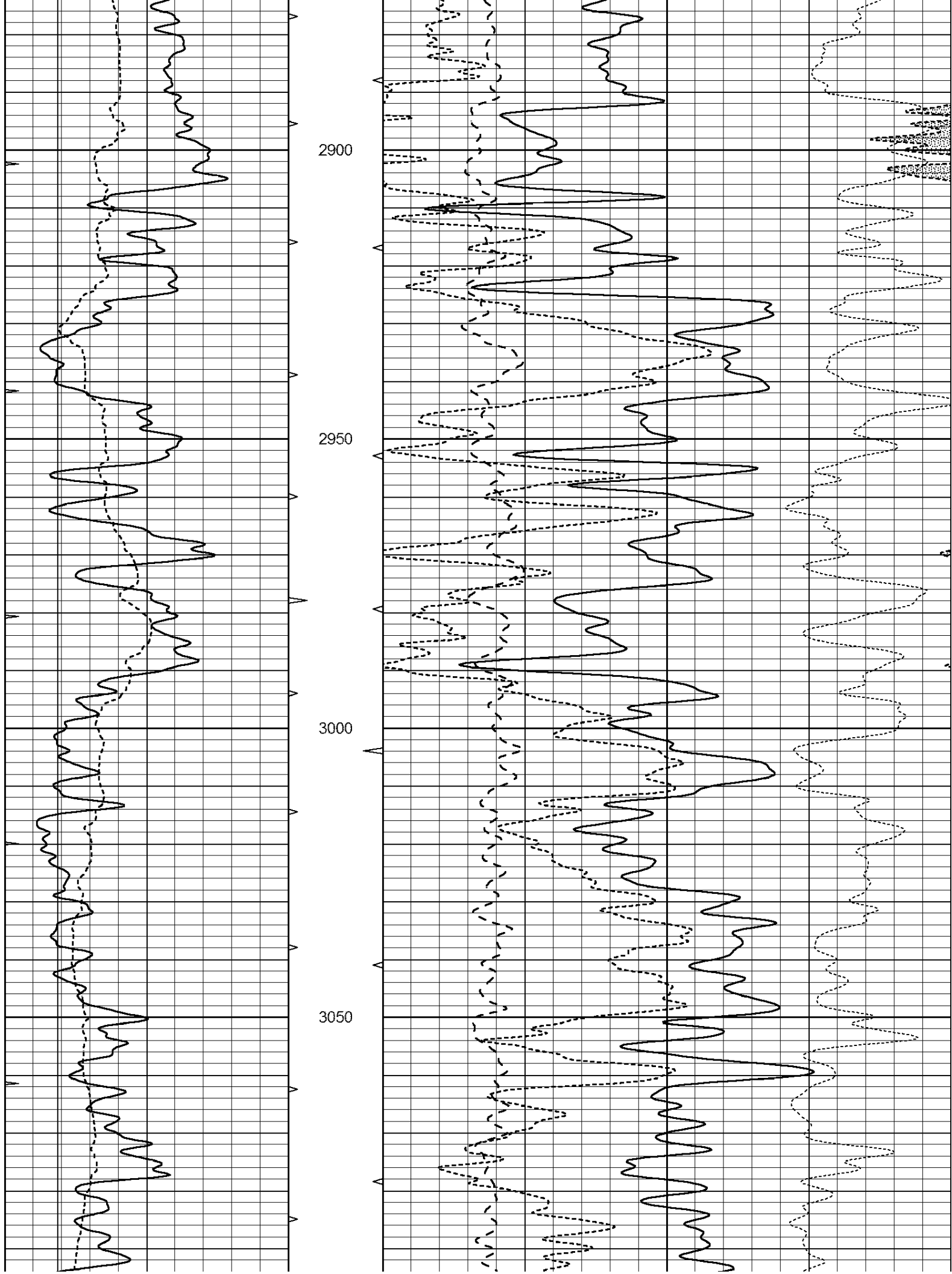


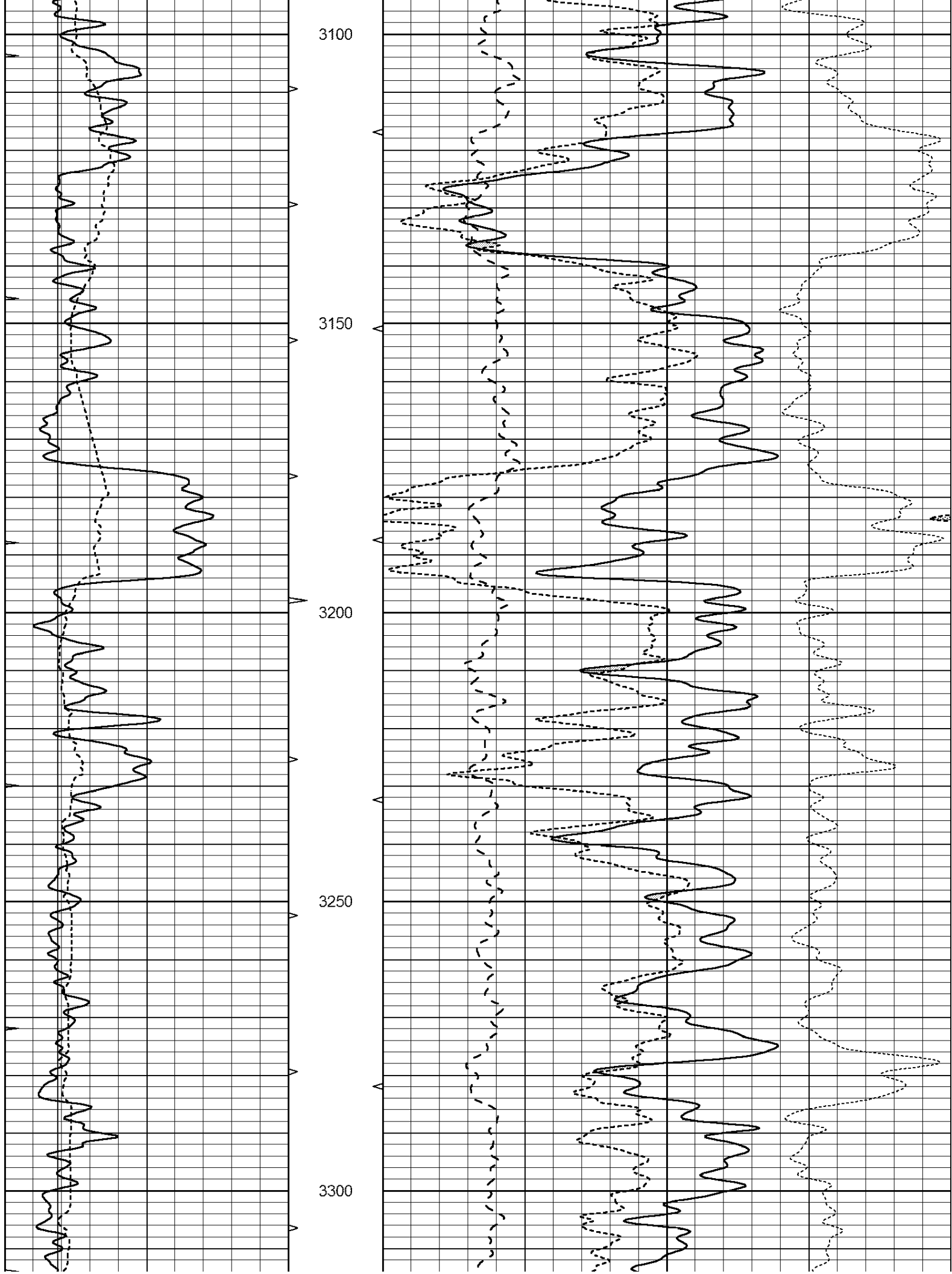




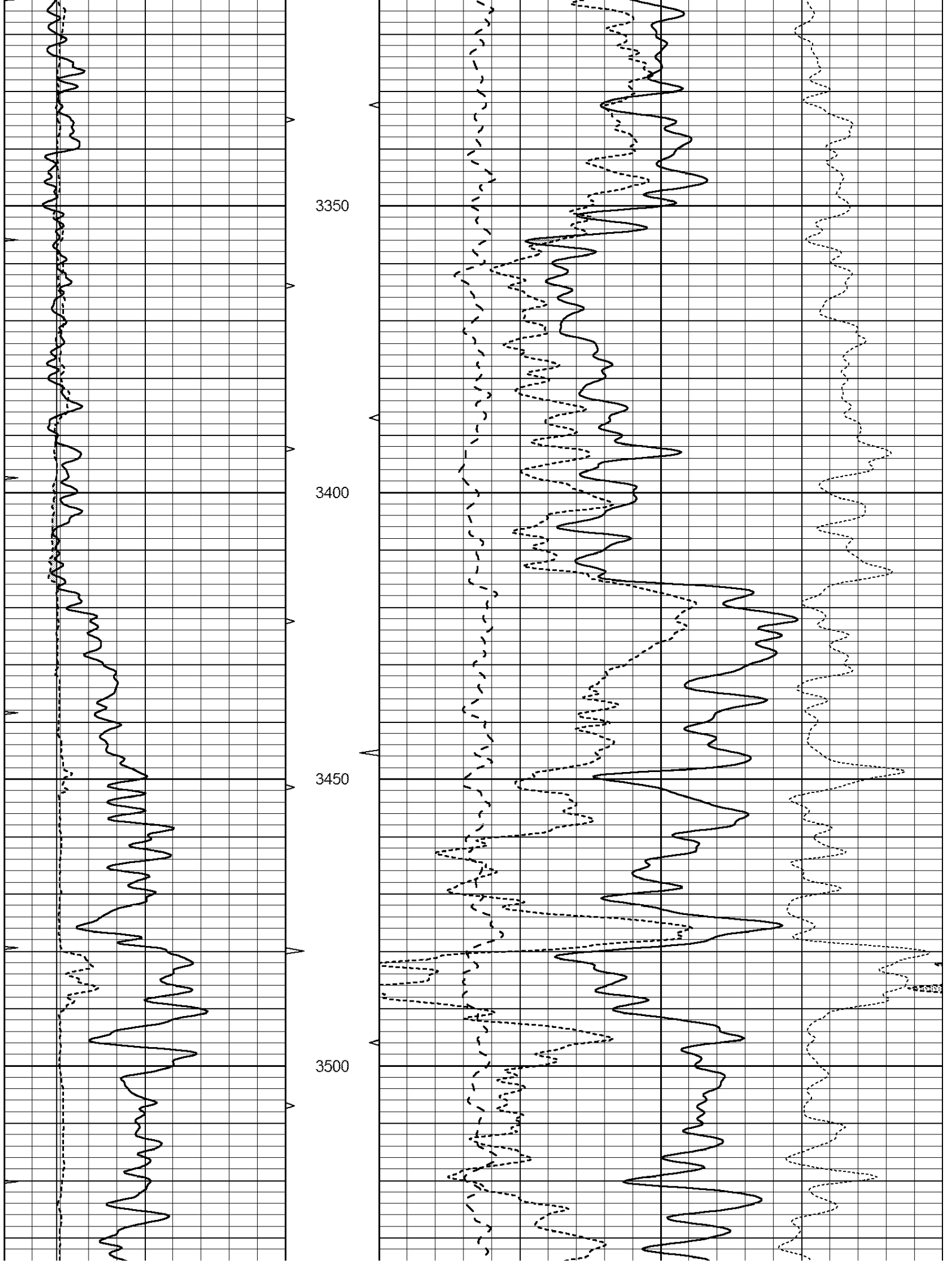


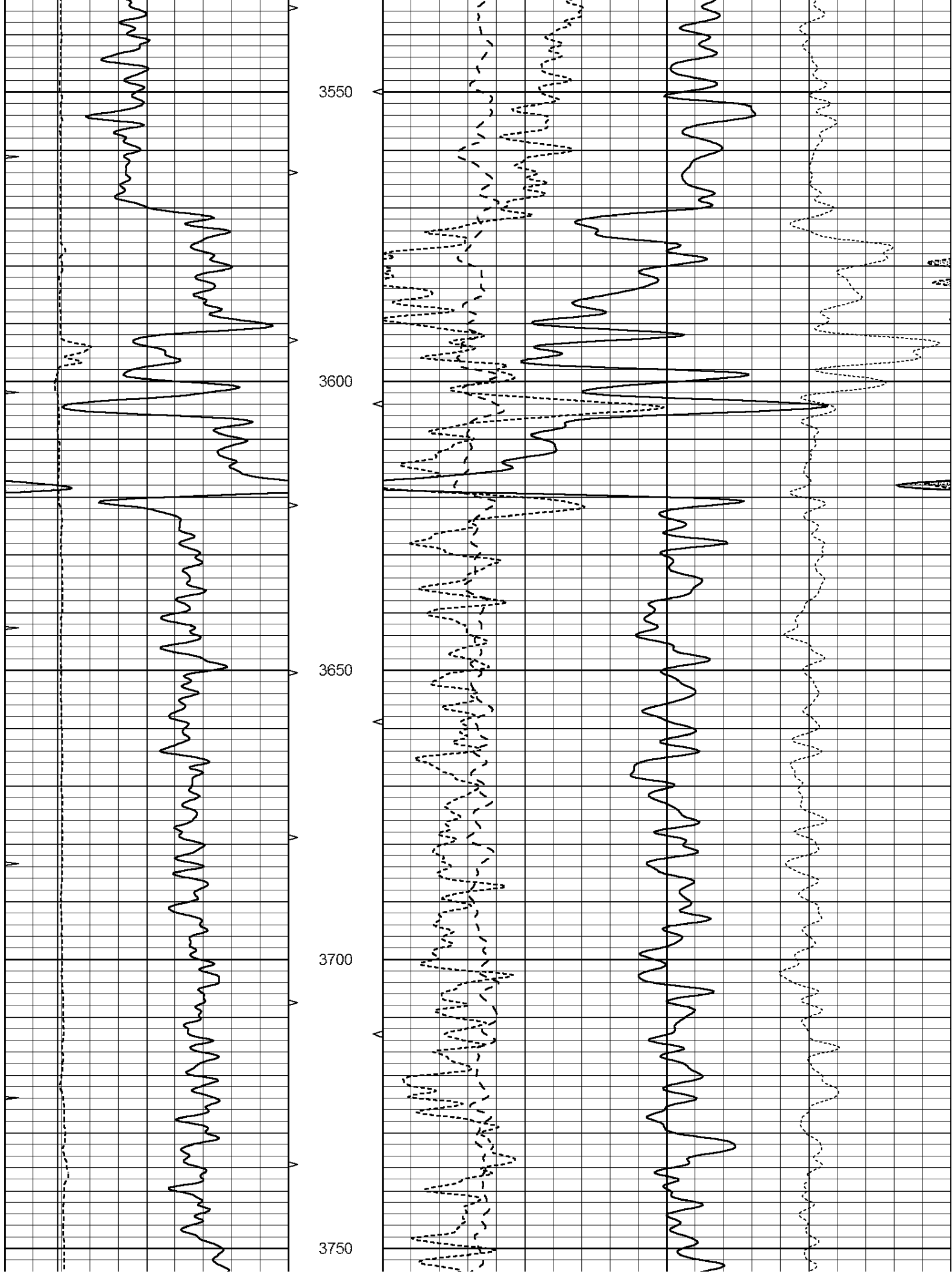


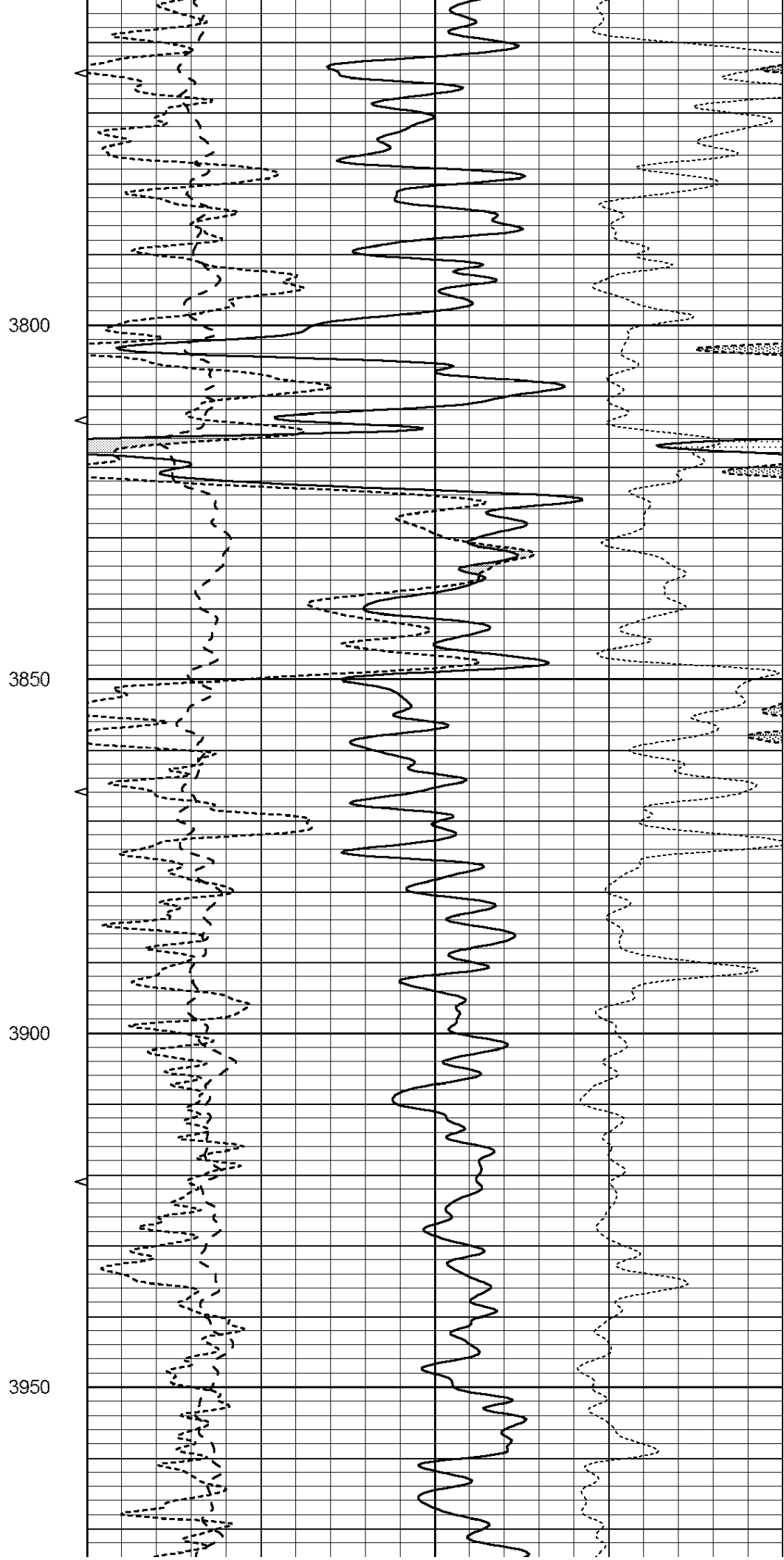
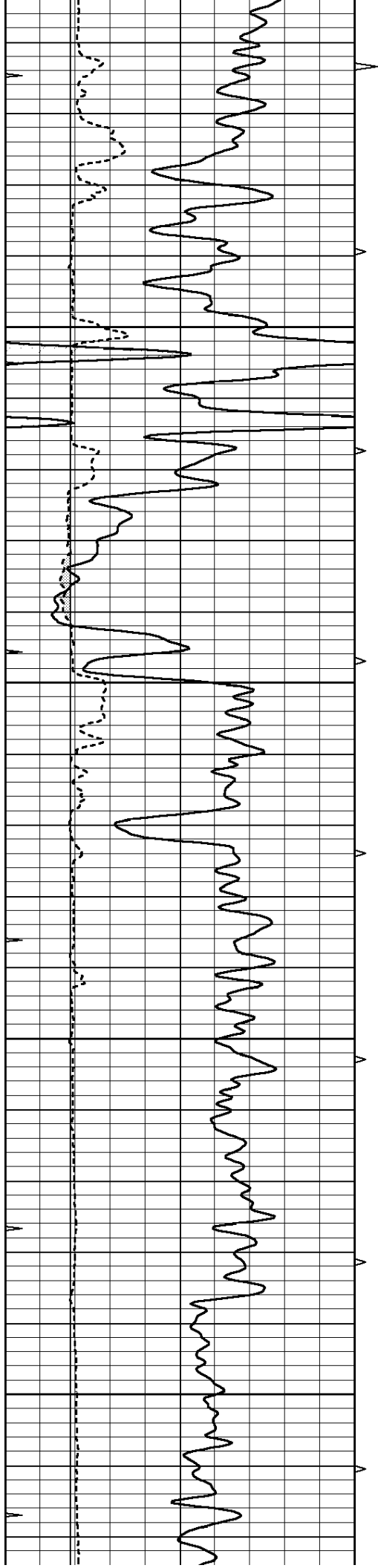


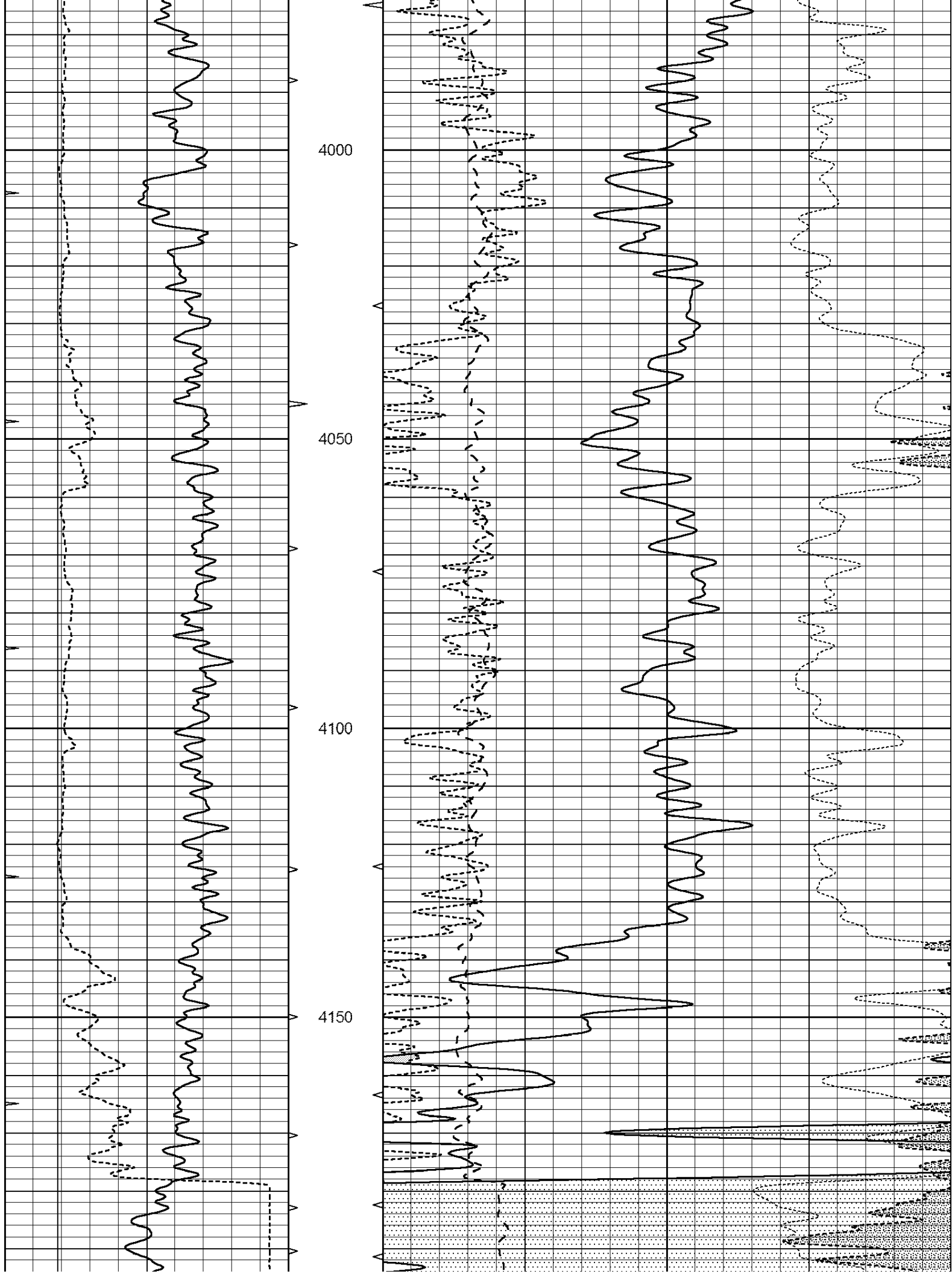


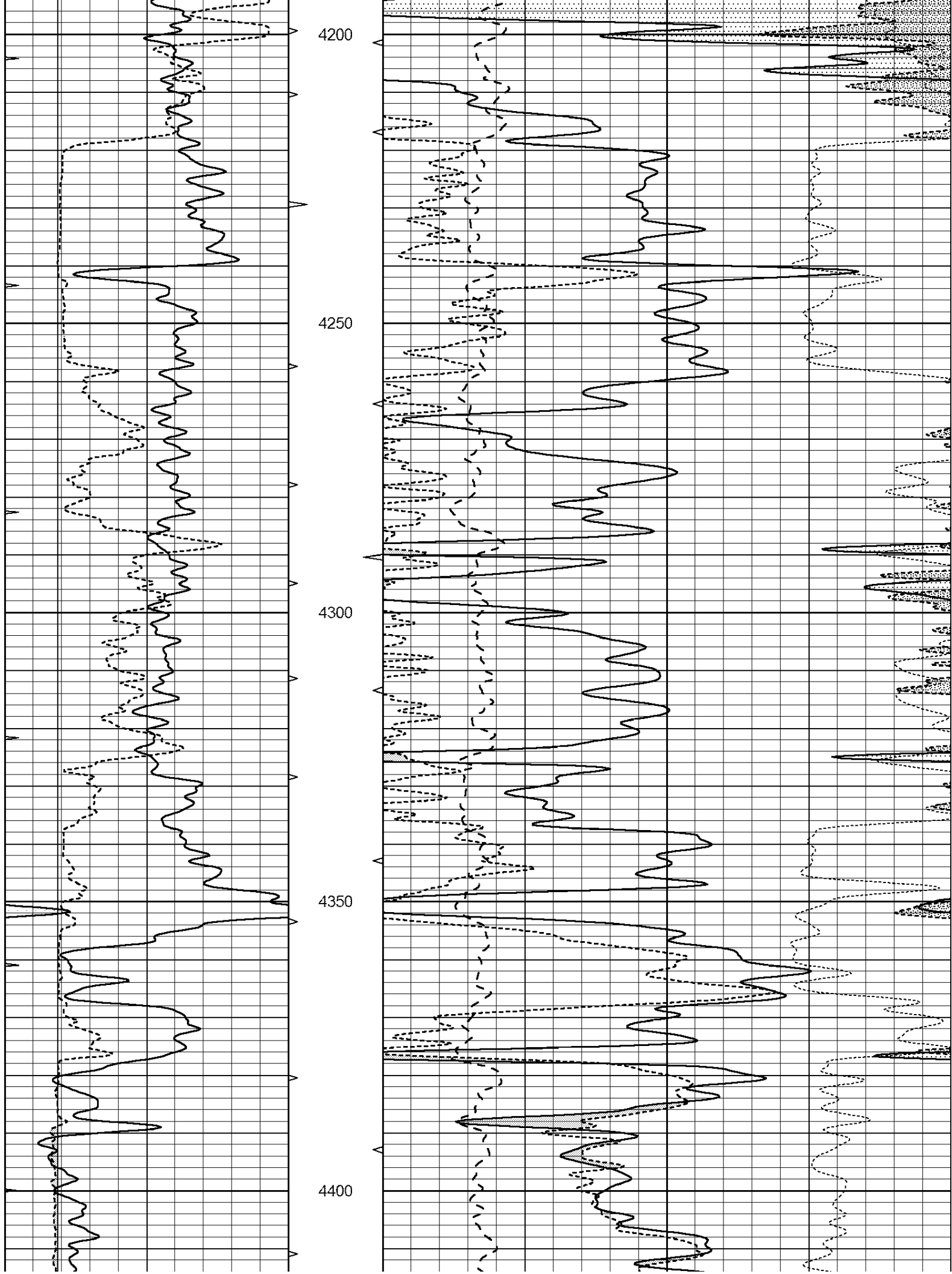


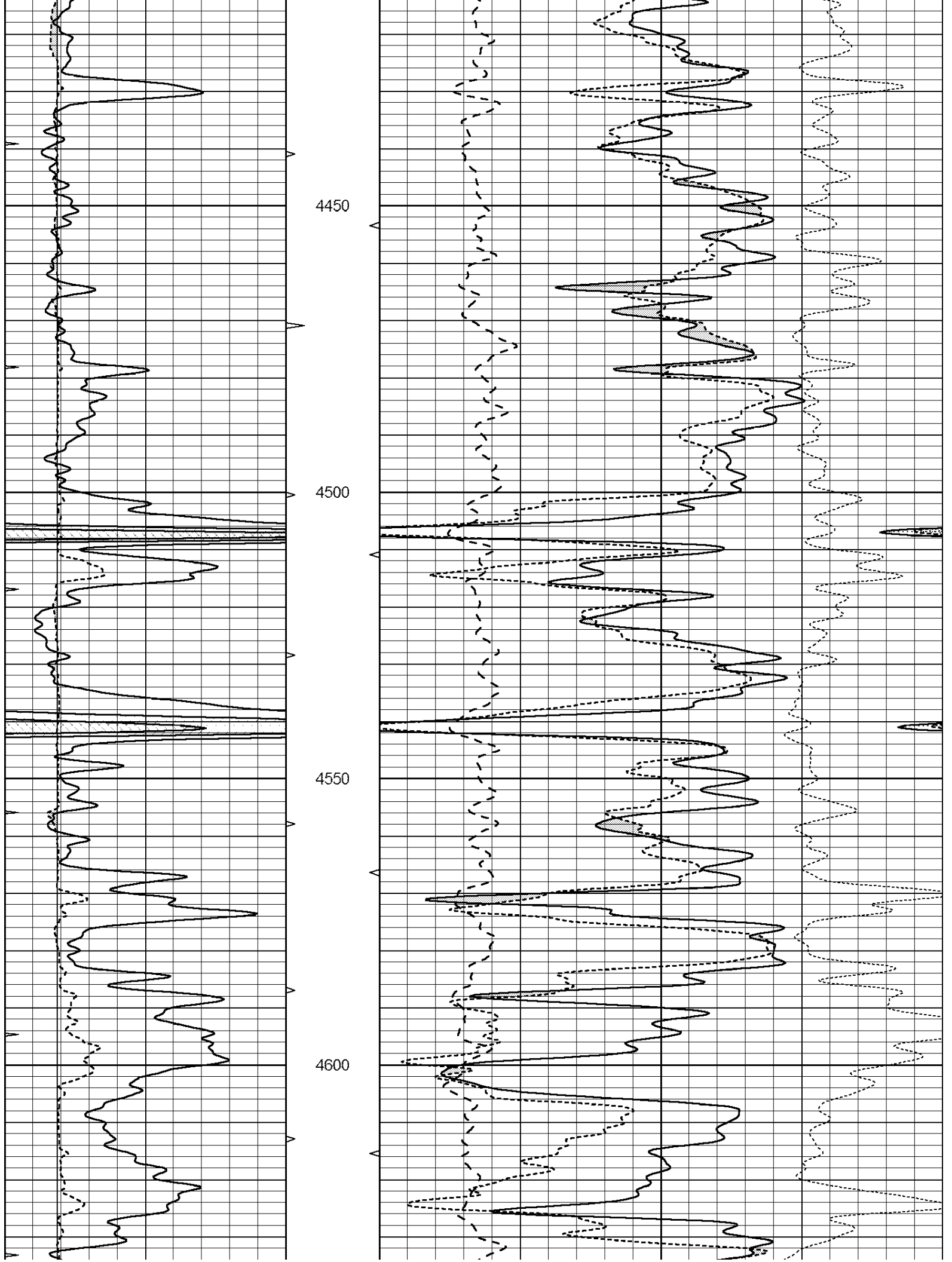


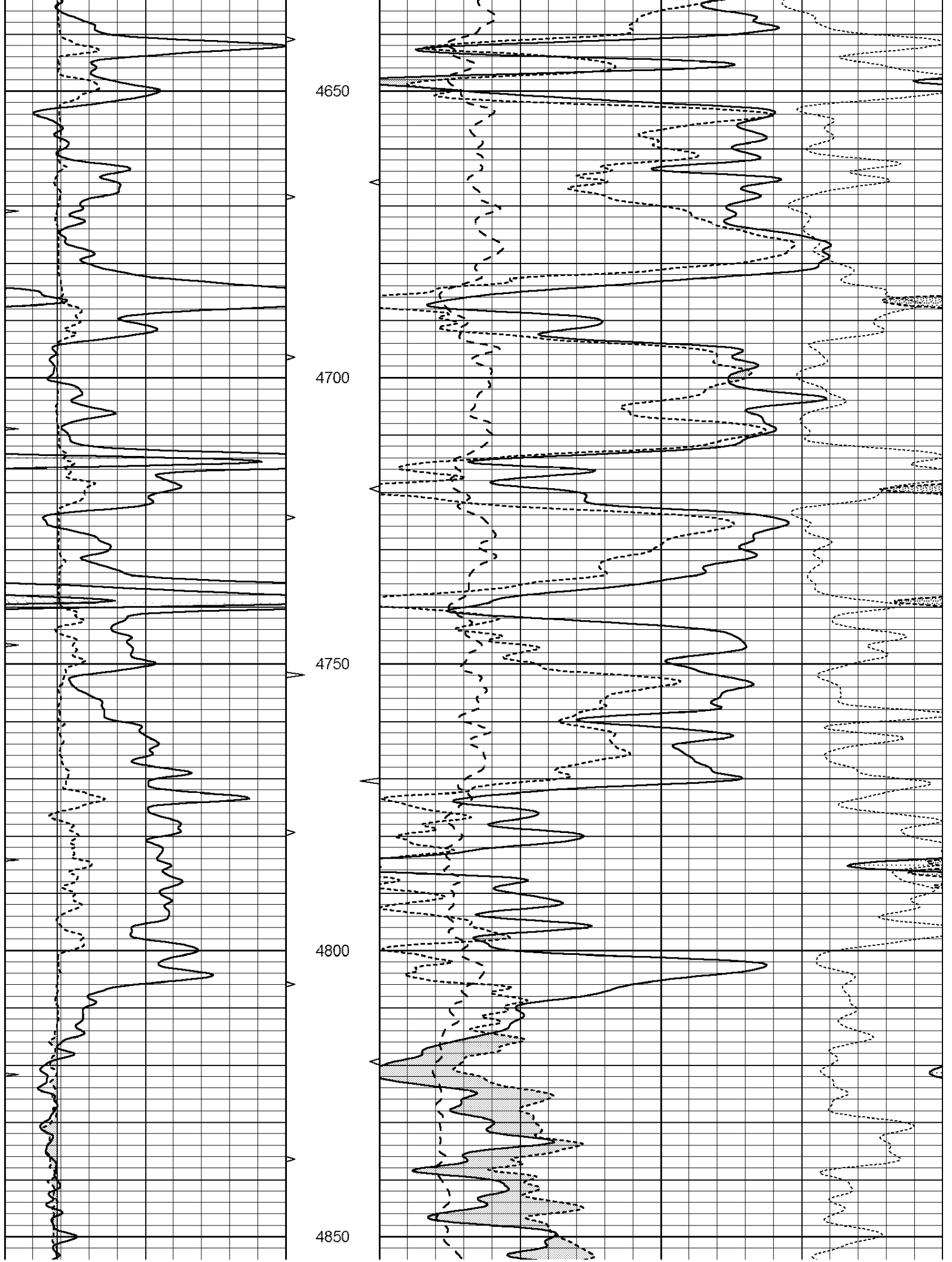


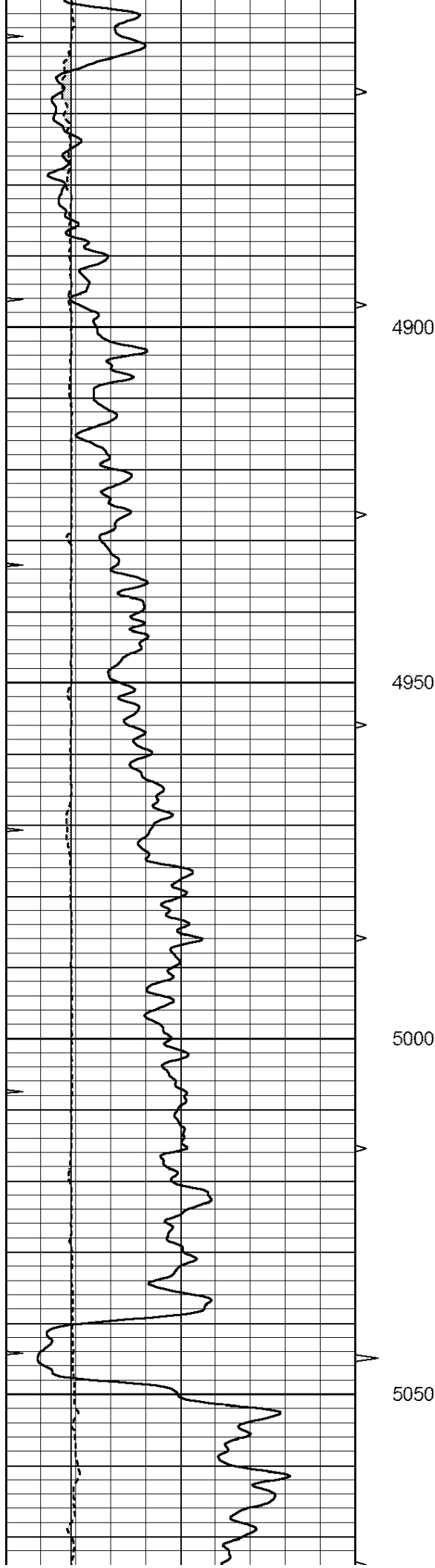
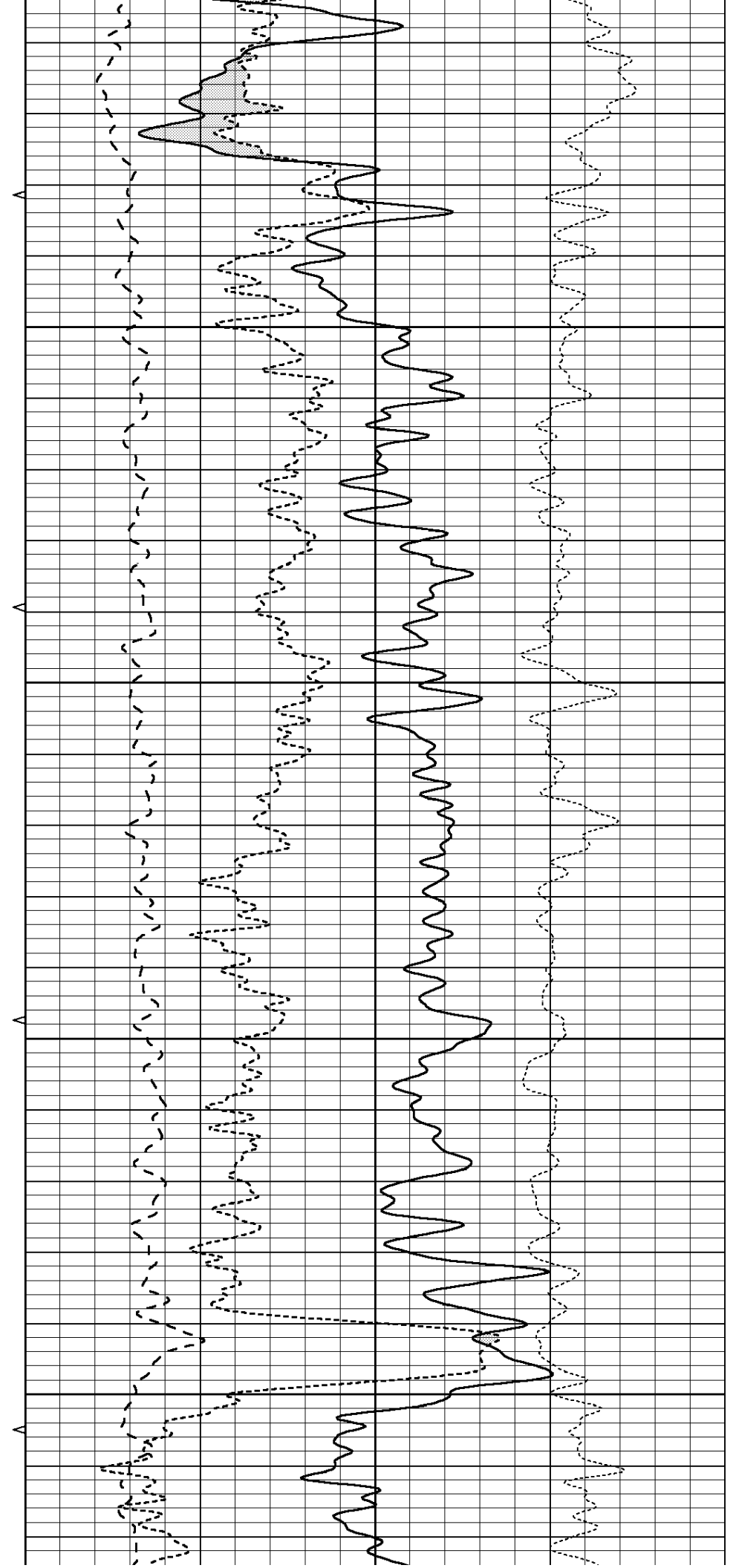
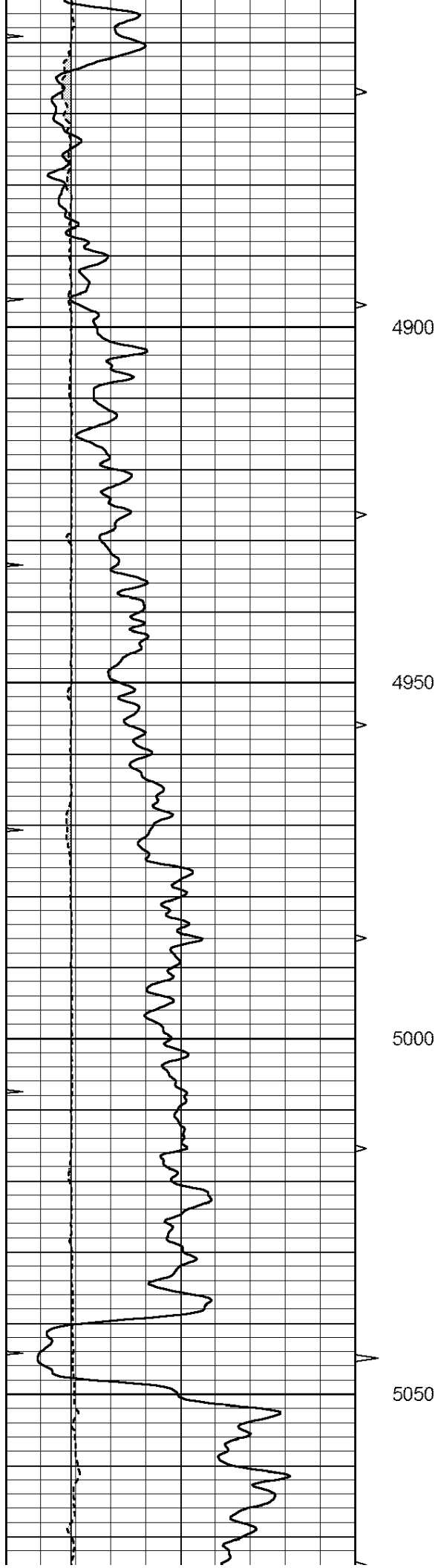




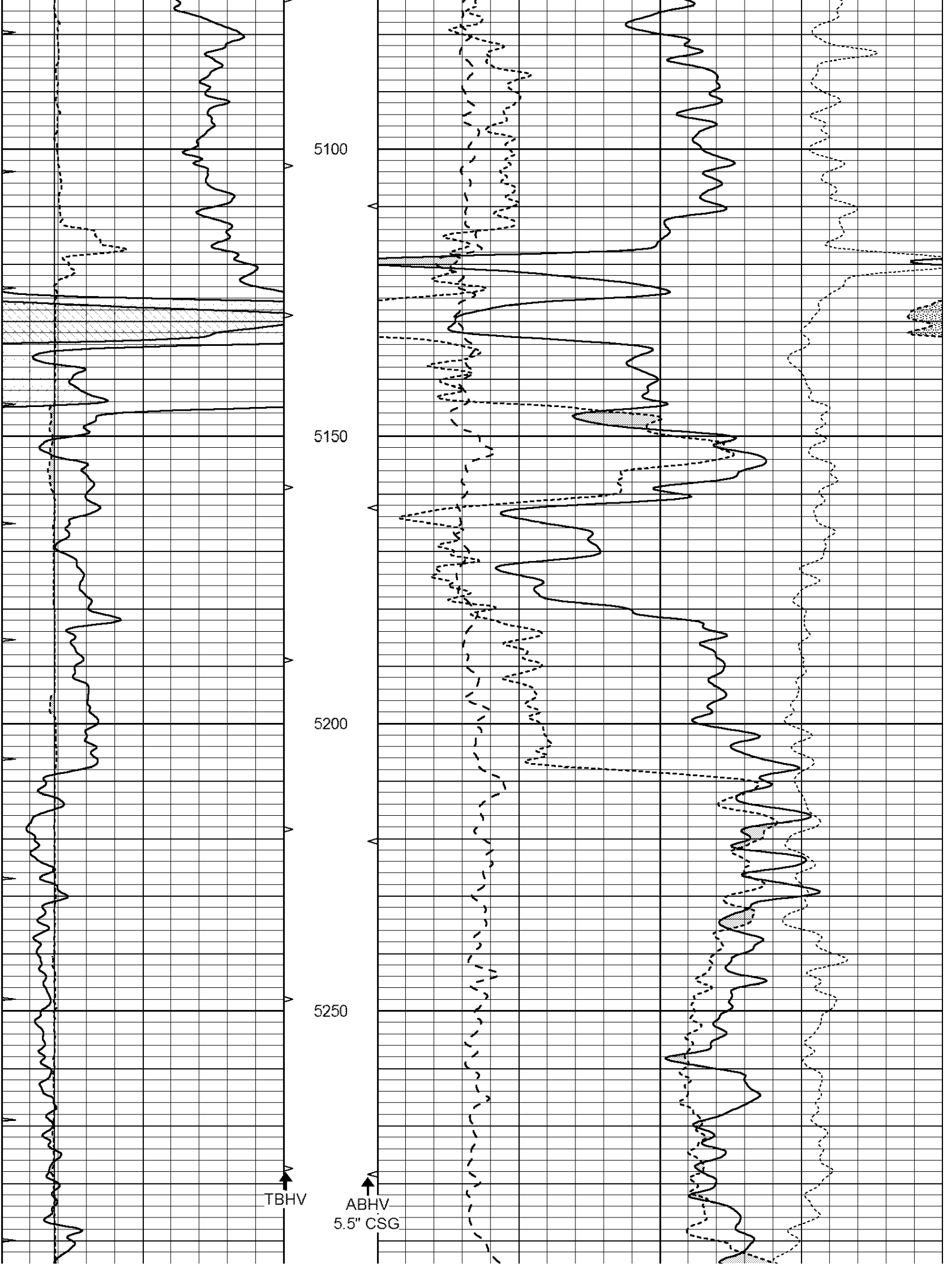












5100

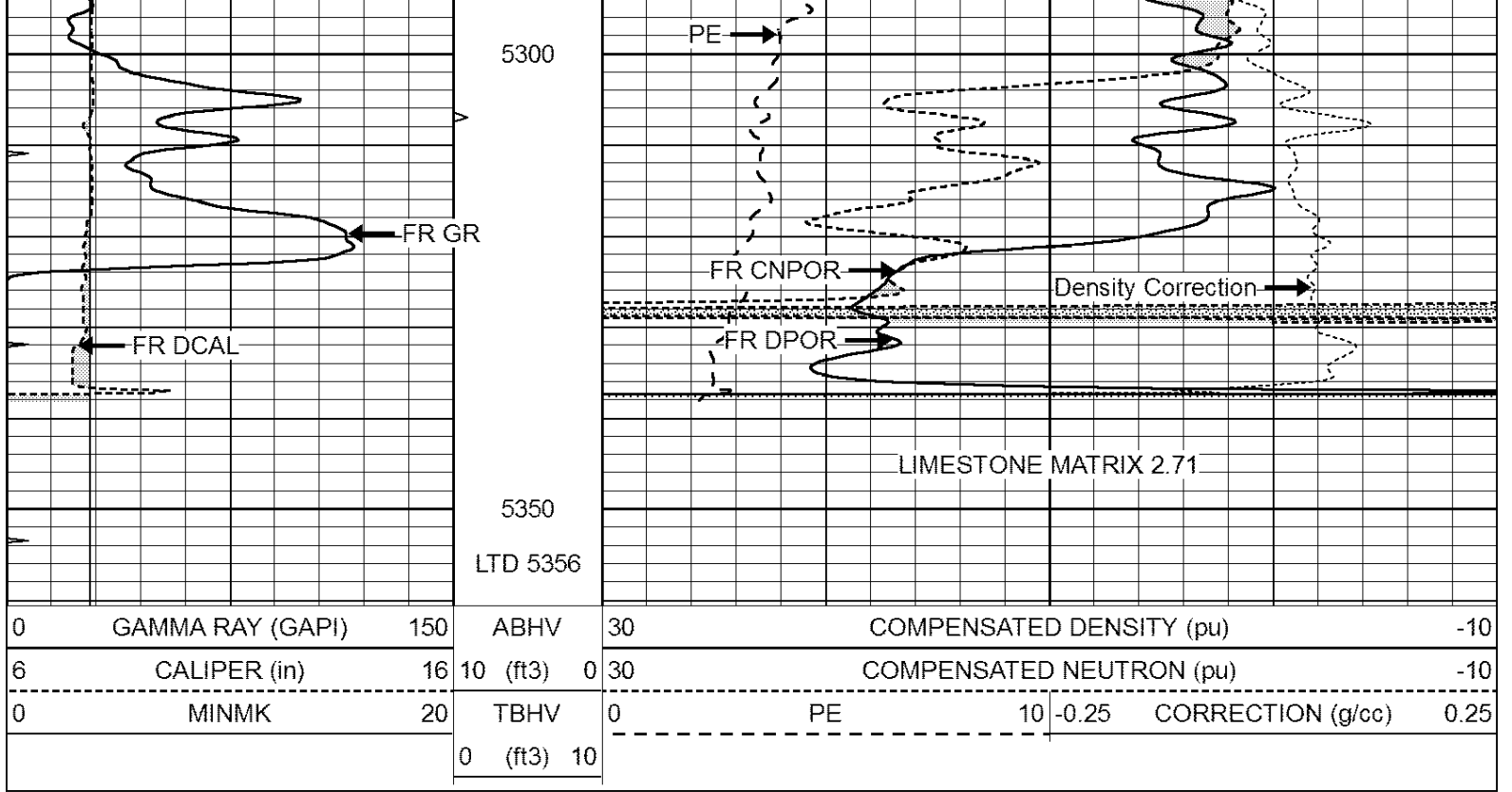
5150

5200

5250

TBHV

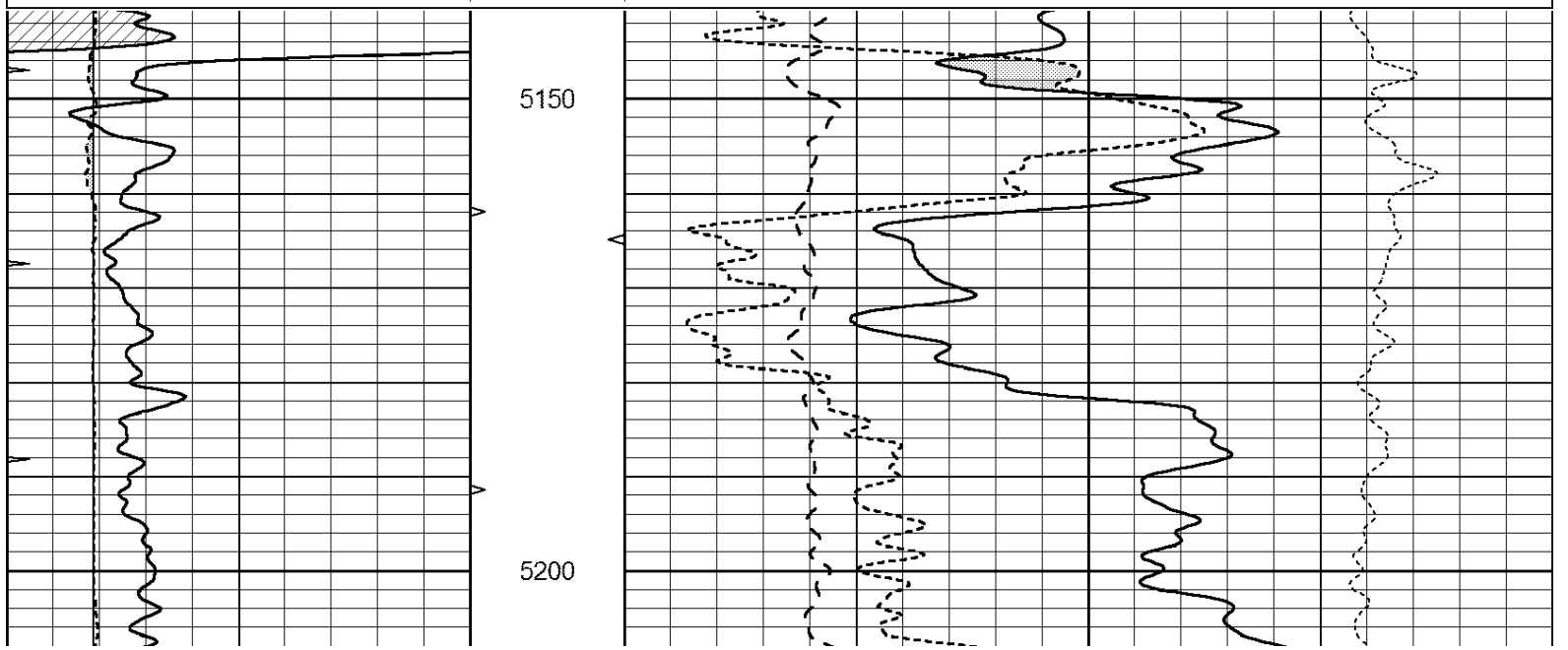
ABHV  
5.5" CSG

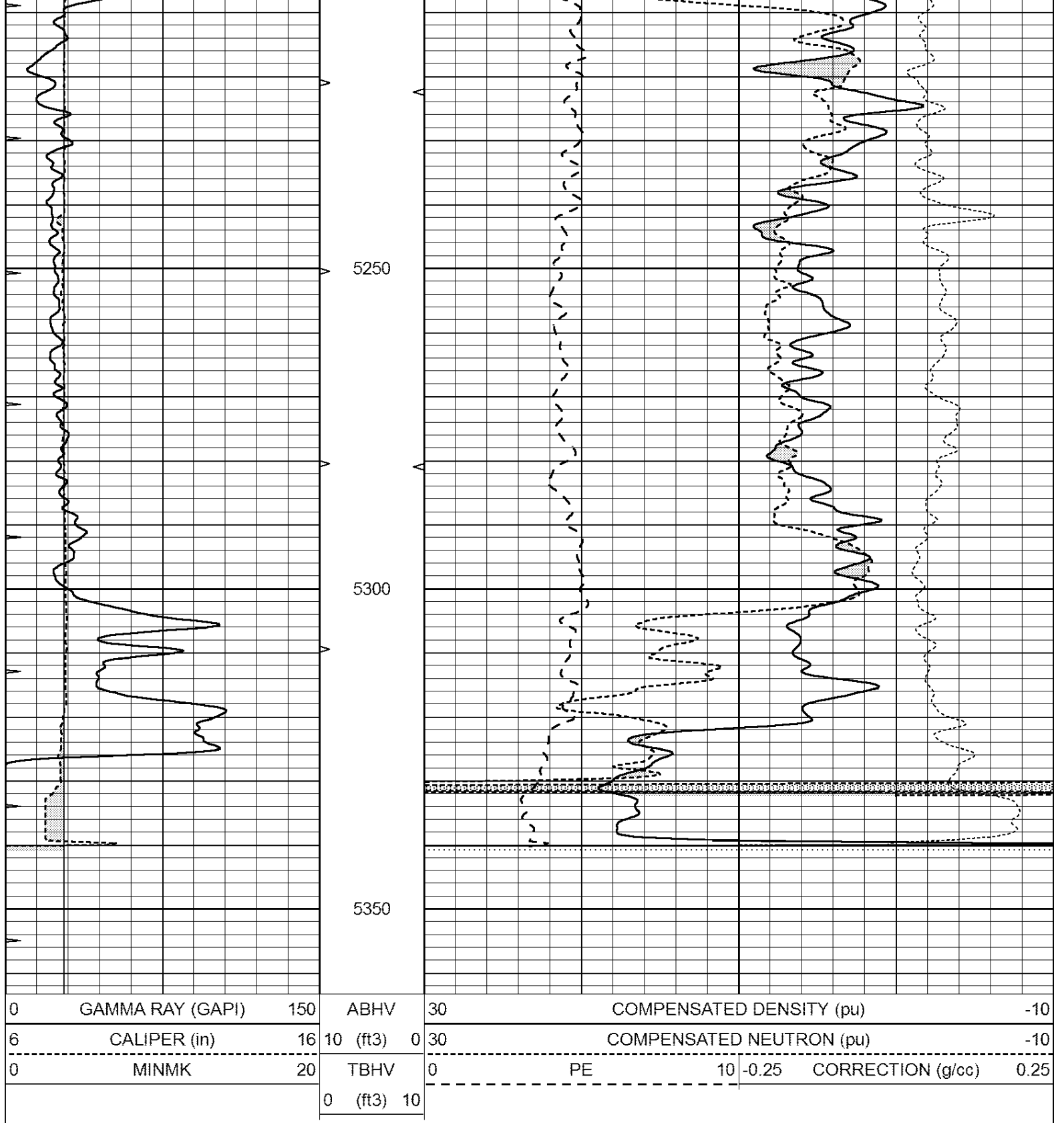


# REPEAT SECTION

Database File: 25869pe.db  
 Dataset Pathname: pass2.5  
 Presentation Format: \_ldt\_neu  
 Dataset Creation: Wed Sep 17 15:41:54 2014 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	PE	10	-0.25	CORRECTION (g/cc)	0.25
			0 (ft3)	10					





Calibration Report

Database File: 25869pe.db  
 Dataset Pathname: pass2.5  
 Dataset Creation: Wed Sep 17 15:41:54 2014 by Calc Open-Cased 090629

Dual Induction Calibration Report

Serial-Model: PROBE8-DILG  
 Surface Cal Performed: Sun Aug 17 08:09:53 2014  
 Downhole Cal Performed: Mon Jul 28 11:08:27 2008  
 After Survey Verification Performed: Mon Jul 28 11:08:27 2008

Surface Calibration			Readings		References		Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	0.015	0.648	V	0.000	400.000	mmho/m	620.000	-2.000
Medium	0.029	0.796	V	0.000	464.000	mmho/m	590.000	-16.000
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: 002      Model: PRB

Master Calibration		Performed Wed Feb 26 14:40:29 2014			
	Background	Magnesium	Aluminum	Sandstone	
Window 1	844.3	7247.0	2284.1	7908.3	cps
Window 2	800.5	6081.1	1985.0	6521.4	cps
Window 3	688.8	3783.7	1363.3	3972.6	cps
Window 4	191.6	192.1	191.7	191.4	cps
Long Space	0.0	5280.6	1184.5	5720.9	cps
Short Space	1.1	1287.1	882.6	1385.1	cps
Rho		1.7100	2.5900	1.3800	g/cc
Pe		0.0000	2.5700	1.5500	
Rib Angle	: 45.8	Rib Slope	: 1.030	Density/Spine Ratio	: 0.571
Spine Angle	: 75.8	Spine Slope	: 3.962	Spine Intercept	: -19.8

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	

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: 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

PRE-SURVEY VERIFICATION

	Detector	Readings	Measured	Target
1)	Short Space	cps		
	Long Space	cps	pu	pu
2)	Short Space	cps		
	Long Space	cps	pu	
3)	Short Space	cps		
	Long Space	cps	pu	

POST-SURVEY VERIFICATION

	Detector	Readings	Measured	Target
1)	Short Space	cps		
	Long Space	cps	pu	pu
2)	Short Space	cps		
	Long Space	cps	pu	pu
3)	Short Space	cps		
	Long Space	cps	pu	pu

Gamma Ray Calibration Report

Serial Number: GR6  
 Tool Model: OPEN  
 Performed: Sun Aug 17 15:23:09 2014

Calibrator Value: 150.0 GAPI

Background Reading: 0.0 cps  
 Calibrator Reading: 276.0 cps

Sensitivity: 0.7000 GAPI/cps