SUPERIOR
Hays,
Kansas

DUAL INDUCTION LOG

Company MULL DRILLING COMPANY, INC.

Well WF-MICHEL #1-30

Field

County KIOWA State COLORADO

Location: API # : 05-061-06848

1004' FSL & 2100' FEL

SEC 30 TWP 18S RGE 45W

Other Services
CDL/CNL/PE
SONIC/MEL

Elevation
K.B. 3933
D.F.
G.L. 3922

Permanent Datum GROUND LEVEL Elevation 3922
Log Measured From KELLY BUSHING 11' A.G.L.
Drilling Measured From KELLY BUSHING

Company MULL DRILLING CO., INC.
Well WF-MICHEL #1-30
Field
County KIOWA
State COLORADO

Date	11-9-10		
Run Number	ONE		
Depth Driller	4870		
Depth Logger	4872		
Bottom Logged Interval	4870		
Top Log Interval	00		
Casing Driller	327		
Casing Logger	347		
Bit Size	7.875		
Type Fluid in Hole	CHEMICAL MUD		
Density / Viscosity	9.2 / 51		
pH / Fluid Loss	9.5 / 8.8		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.90 @ 76F		
Rmf @ Meas. Temp	0.68 @ 76F		
Rmc @ Meas. Temp	1.08 @ 76F		
Source of Rmf / Rmc	MEASURED		
Rm @ BHT	.550 @ 124F		
Time Circulation Stopped	3 HOURS		
Time Logger on Bottom	2:20 P.M.		
Maximum Recorded Temperature	124F		
Equipment Number	860		
Location	HAYS, KS.		
Recorded By	RUPP		
Witnessed By	PHIL ASKEY		

<<< Fold Here >>>

Comments

SUPERIOR WELL SERVICES
785-628-6395
THANK YOU FOR YOUR BUSINESS
DIRECTIONS: BRANDON, CO., 4E TO CR #54, 1/10N, E INTO.

MAIN SECTION

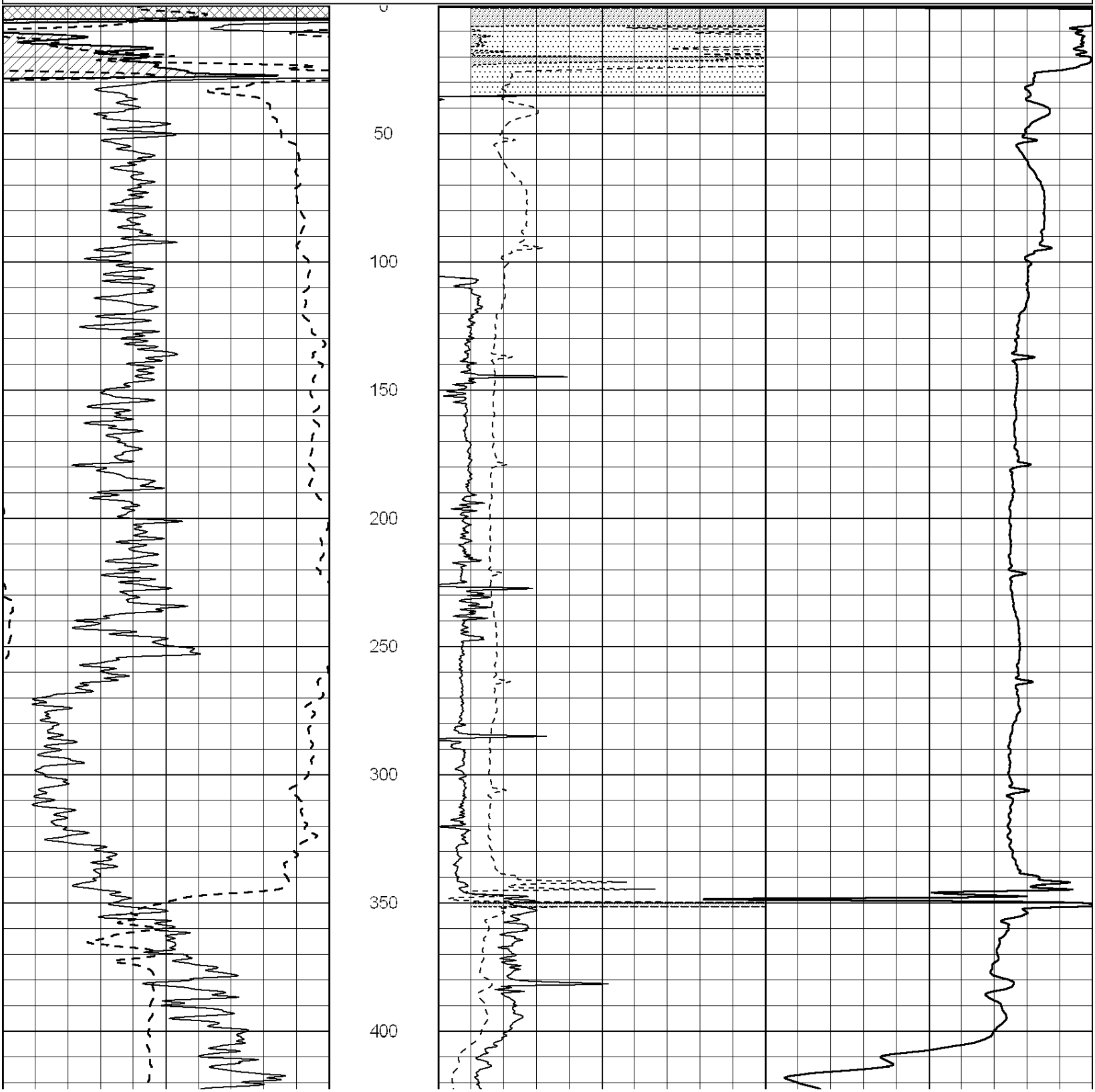
SUPERIOR
Hays,

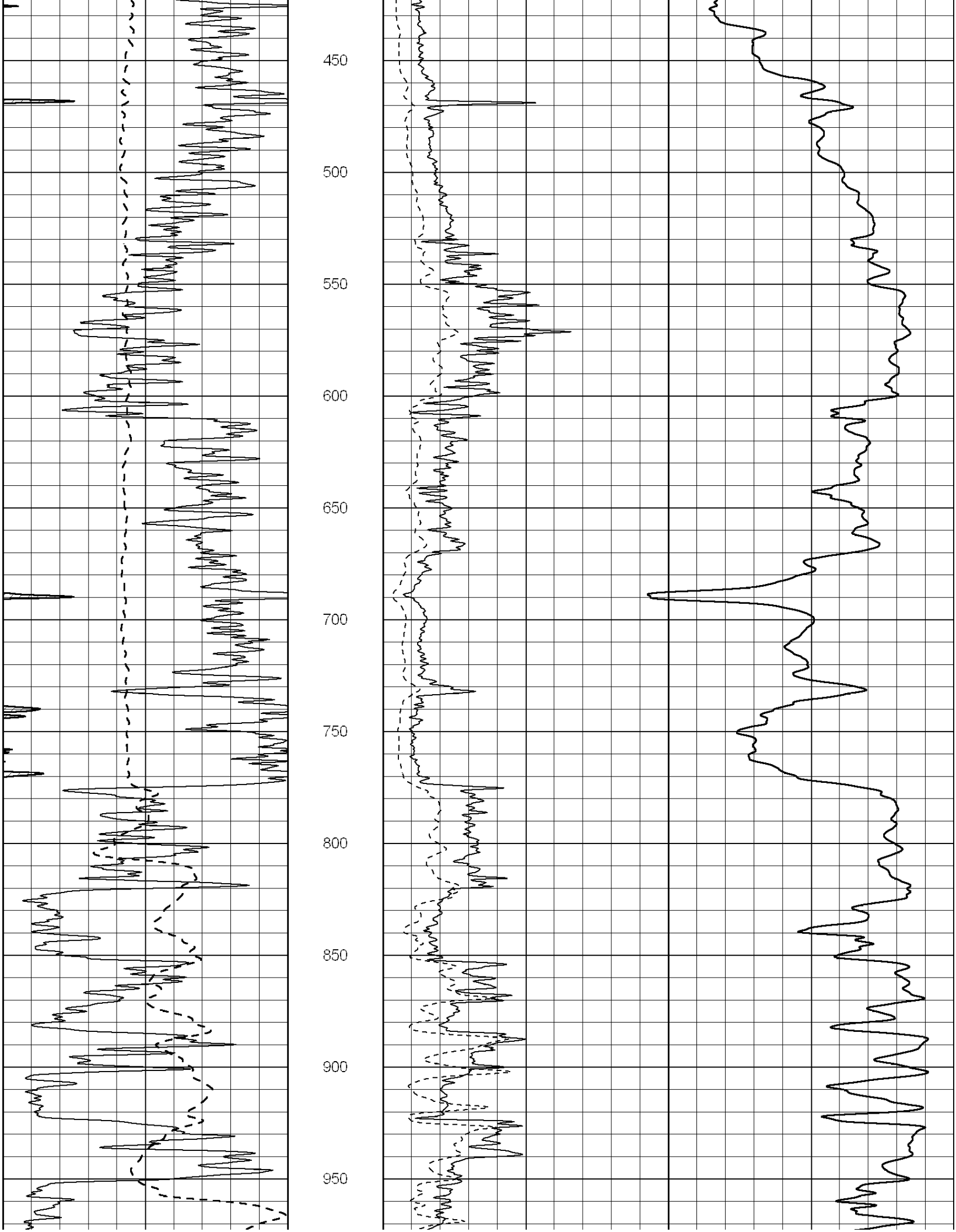
Kansas

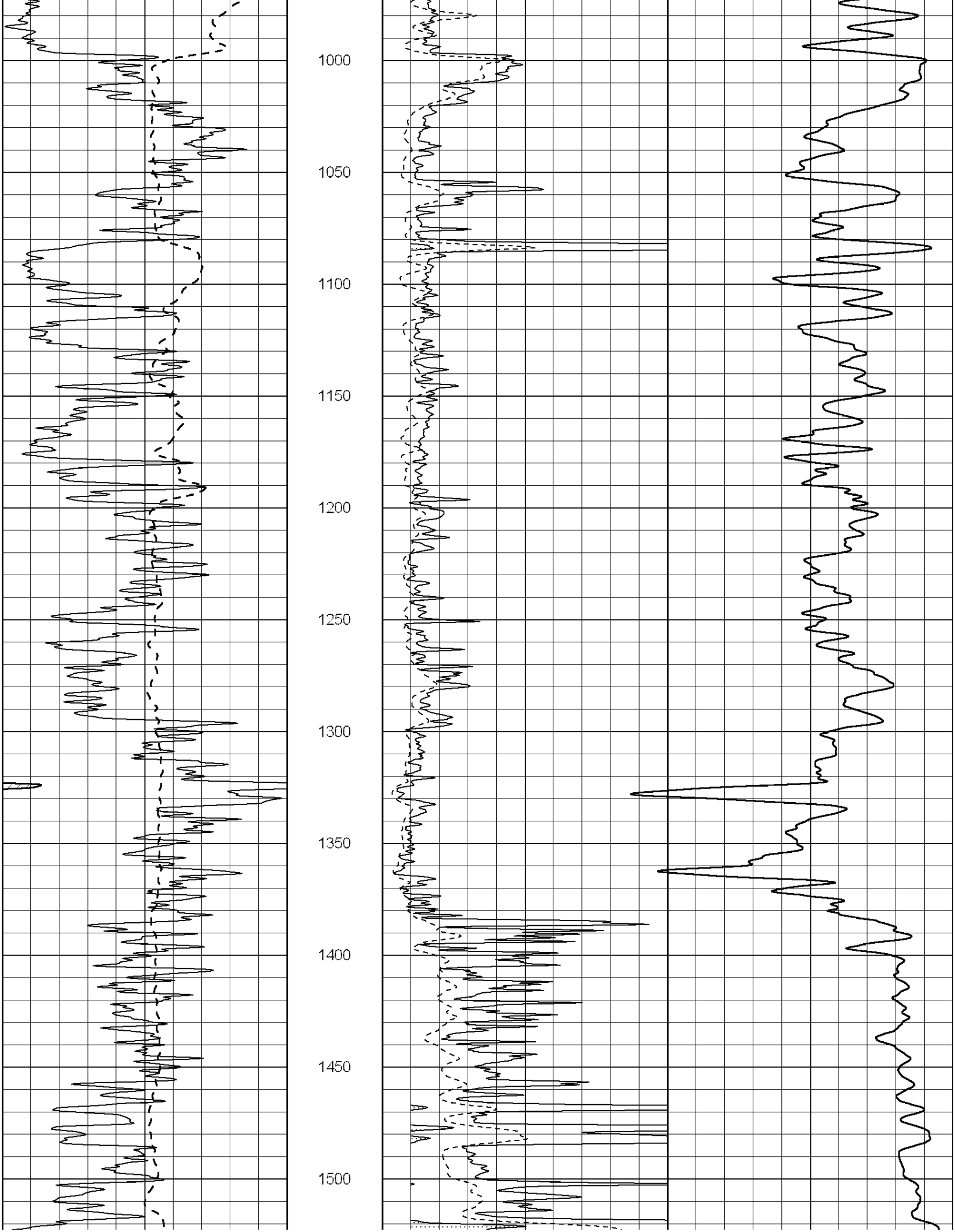
Database File:	005915pdn.db
Dataset Pathname:	pass4A
Presentation Format:	dil2
Dataset Creation:	Tue Nov 09 17:07:10 2010
Charted by:	Depth in Feet scaled 1:600

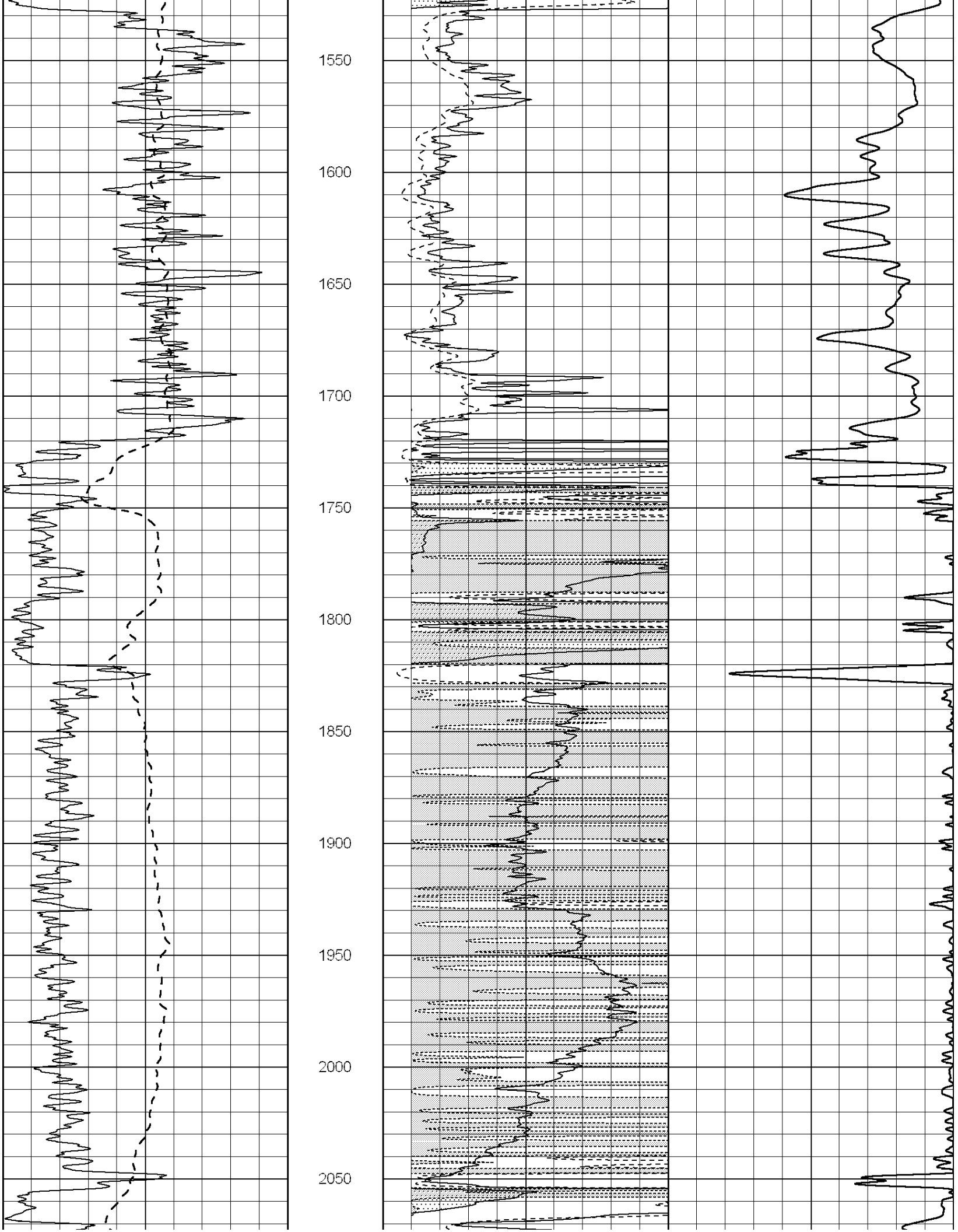
0	Gamma Ray (GAPI)	150
-100	SP (mV)	100

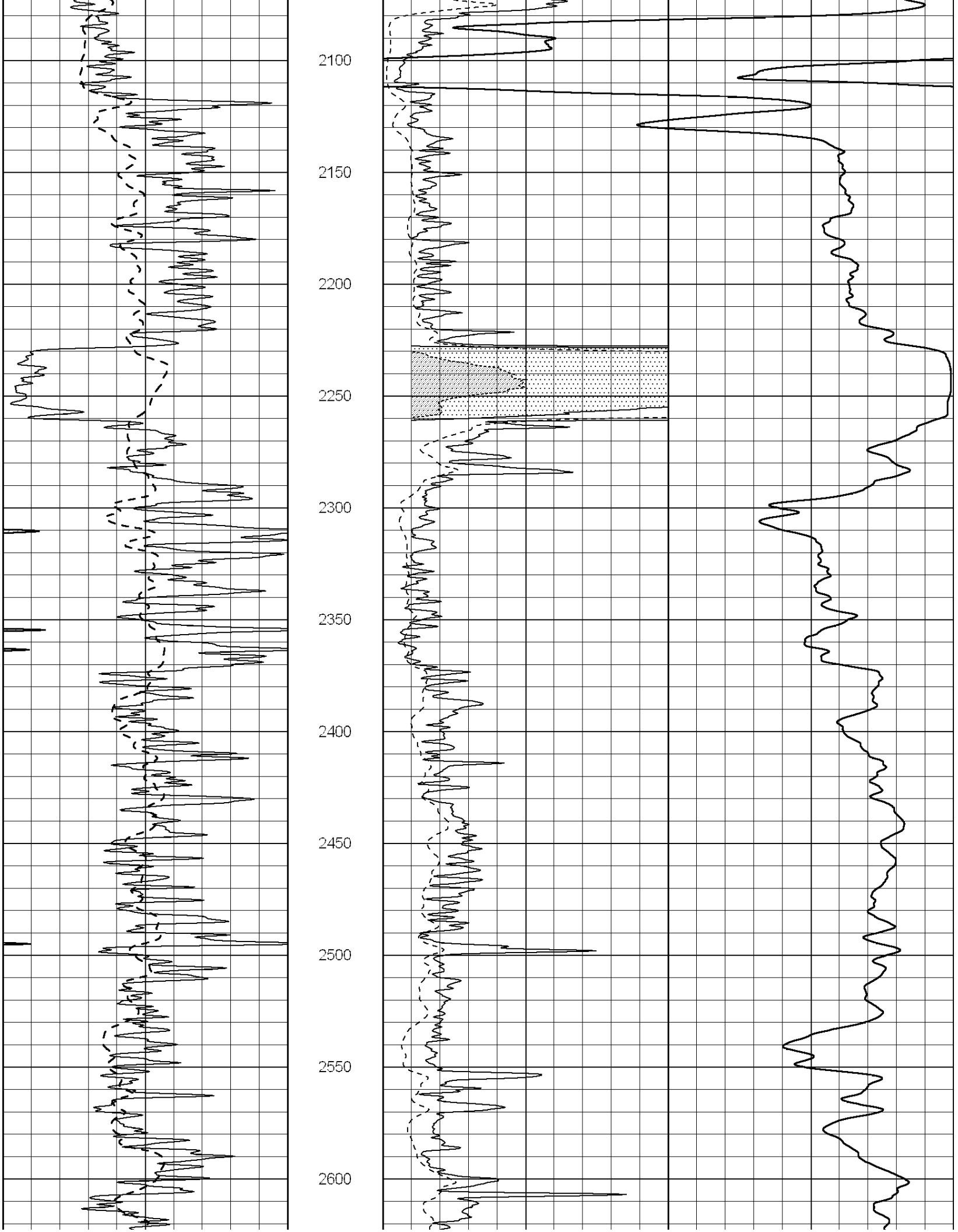
0	RLL3 (Ohm-m)	50
0	Deep Induction (Ohm-m)	50
1000	CILD (mmho/m)	0
50	RILD X10 (Ohm-m)	500
50	RLL3 X10 (Ohm-m)	500

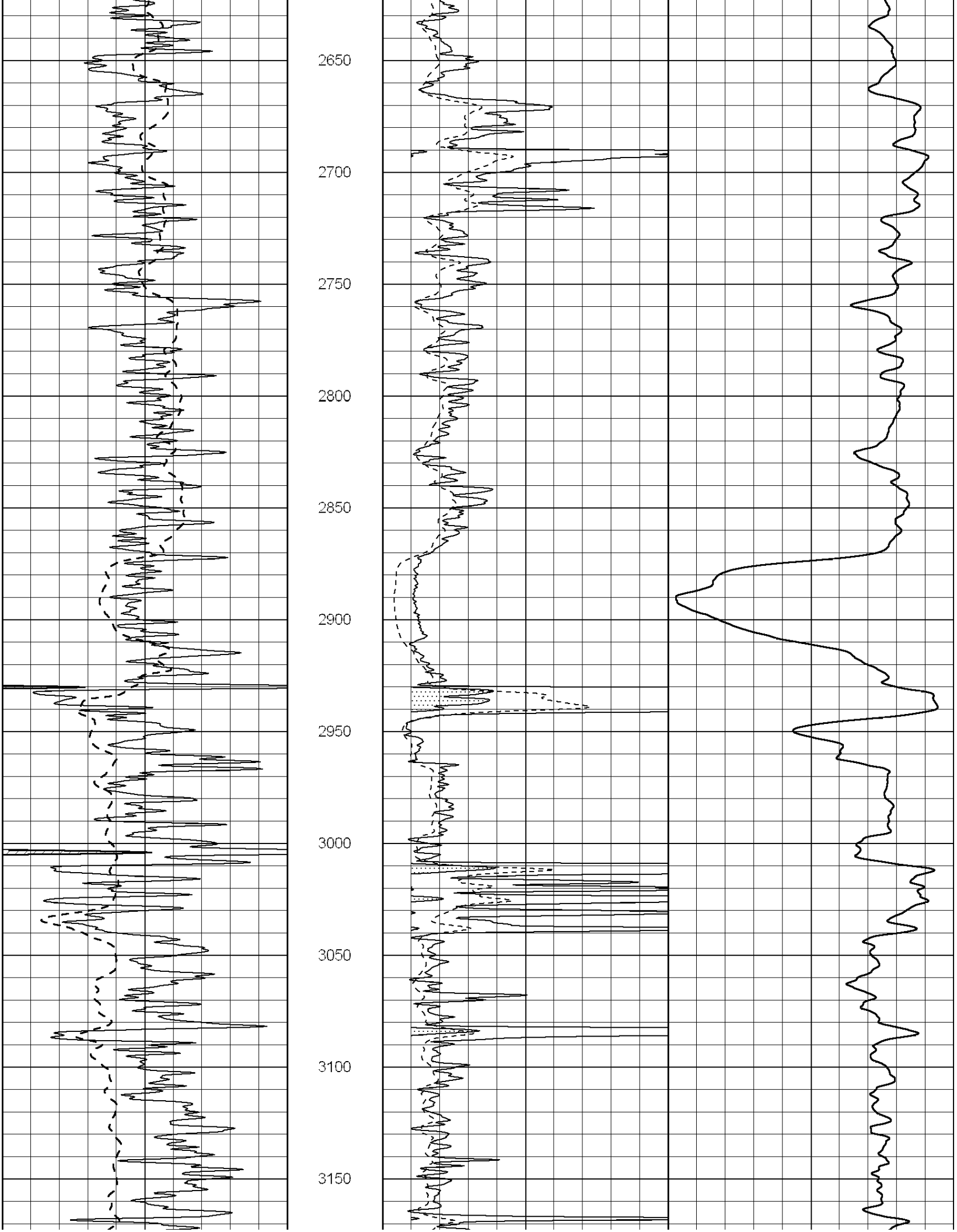


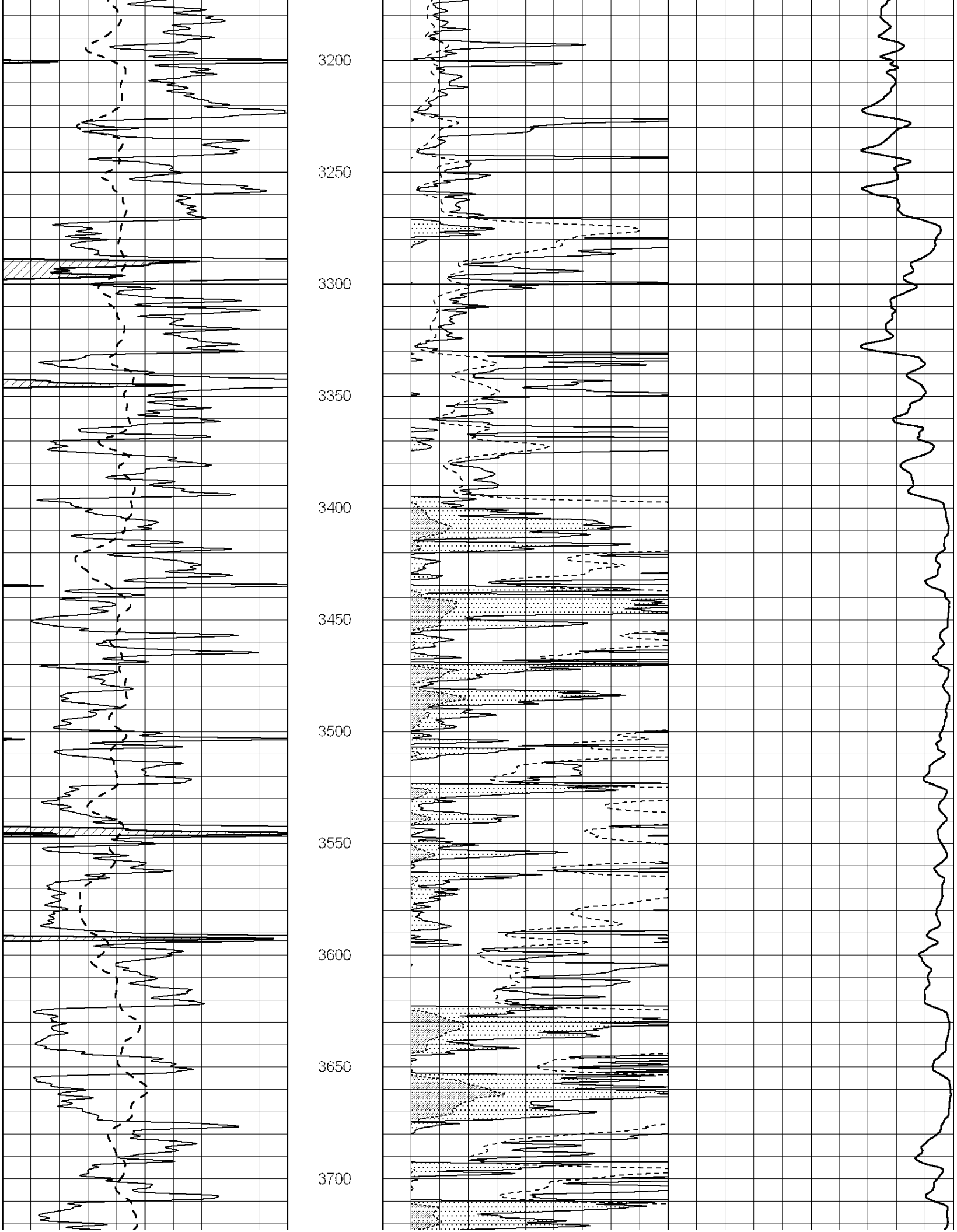

450
500
550
600
650
700
750
800
850
900
950

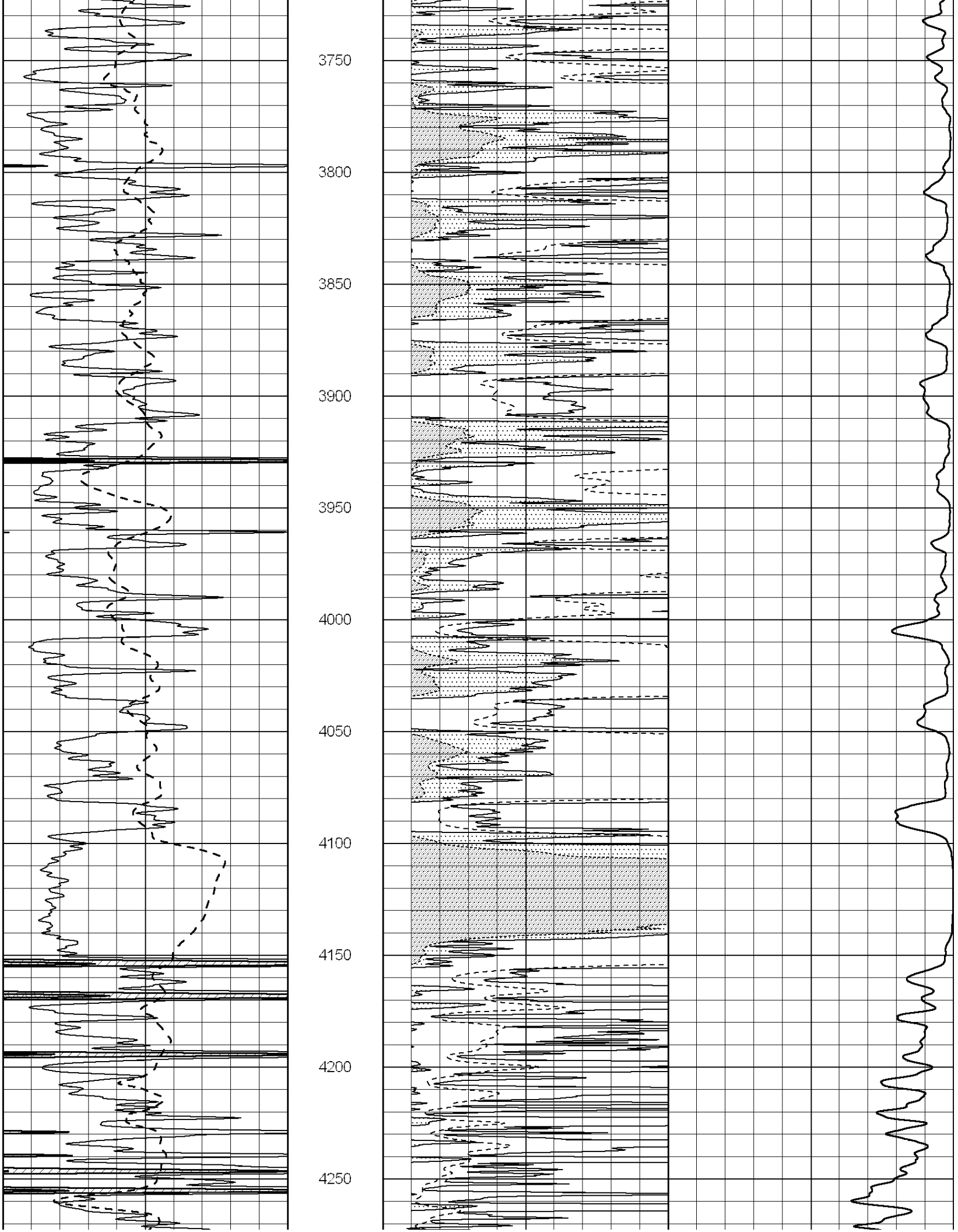

1000
1050
1100
1150
1200
1250
1300
1350
1400
1450
1500

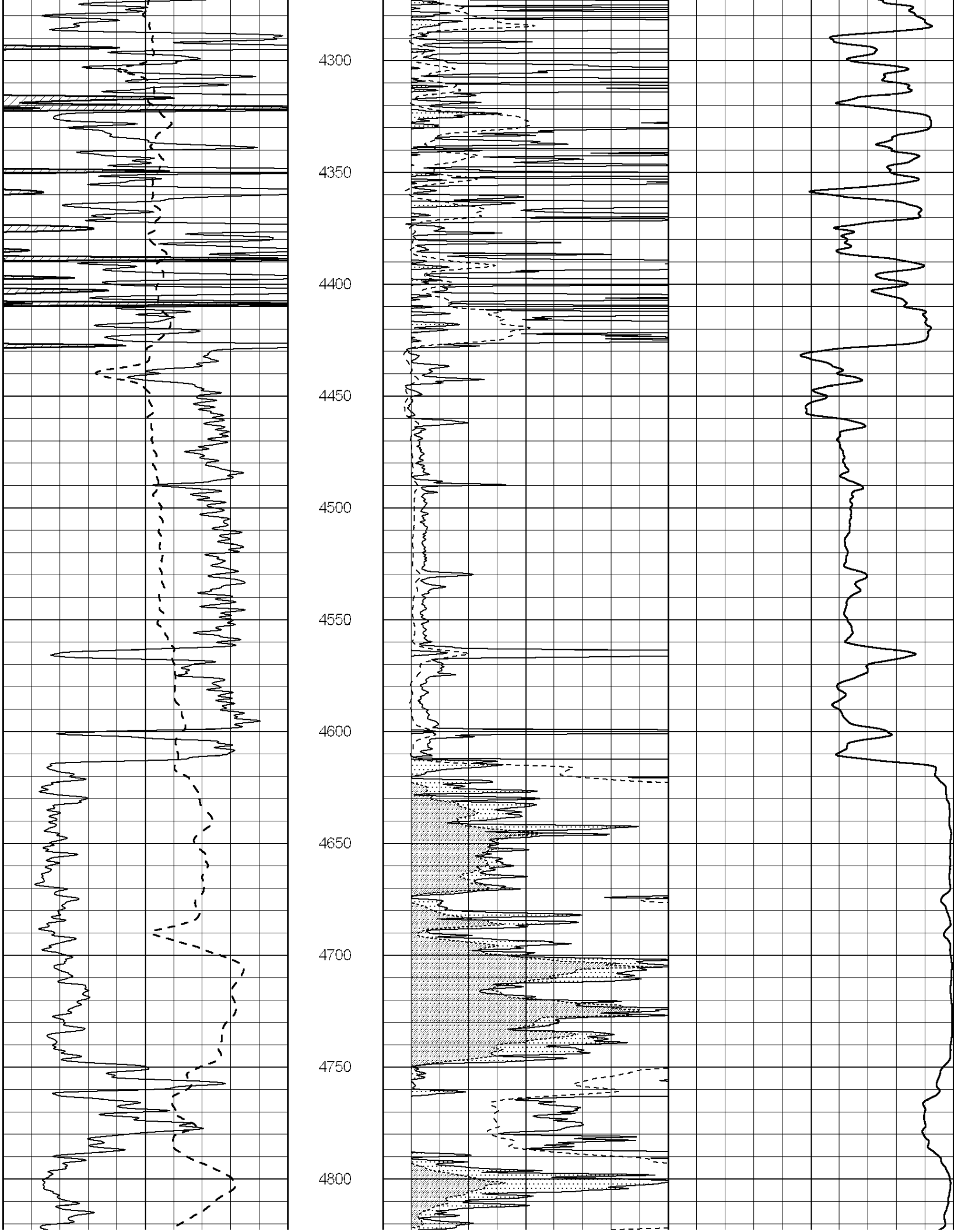

1550
1600
1650
1700
1750
1800
1850
1900
1950
2000
2050

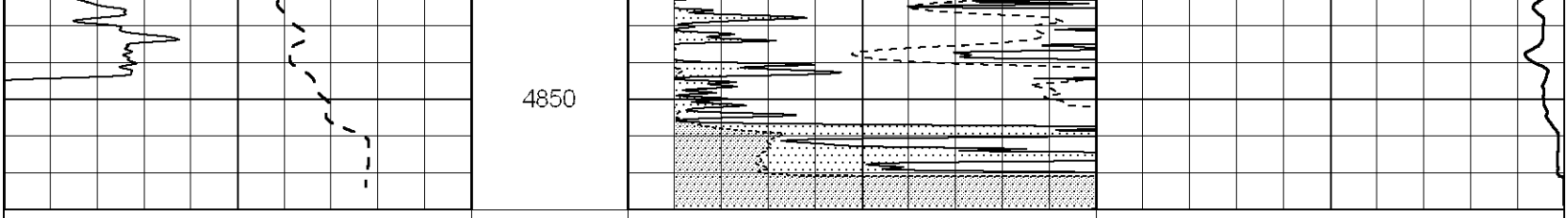

2100
2150
2200
2250
2300
2350
2400
2450
2500
2550
2600


2650
2700
2750
2800
2850
2900
2950
3000
3050
3100
3150


3200
3250
3300
3350
3400
3450
3500
3550
3600
3650
3700


3750
3800
3850
3900
3950
4000
4050
4100
4150
4200
4250


4300
4350
4400
4450
4500
4550
4600
4650
4700
4750
4800



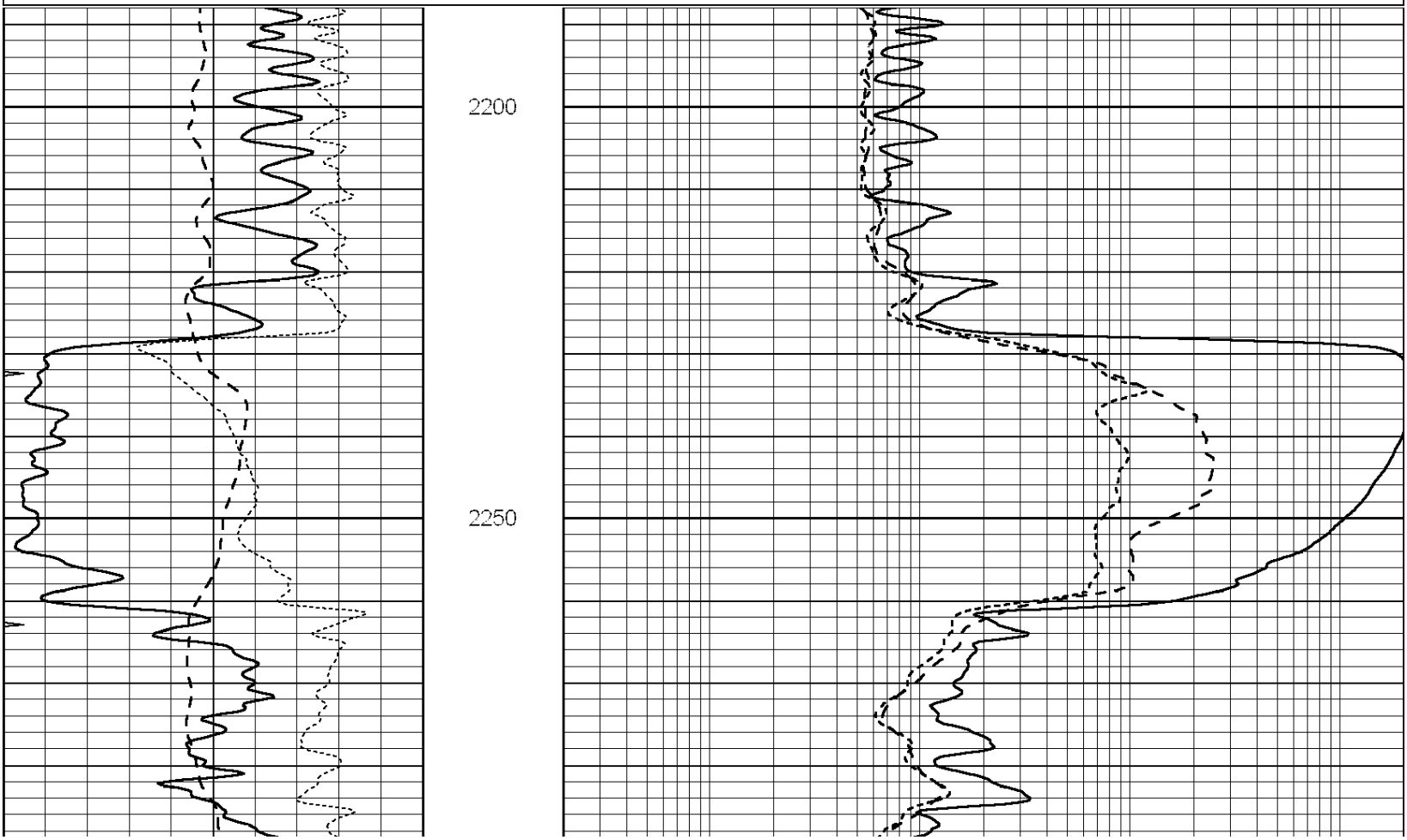
SUPERIOR
Hays,
Kansas

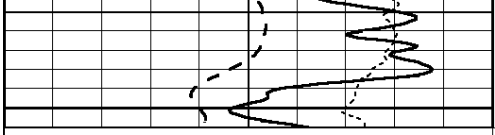
MAIN SECTION

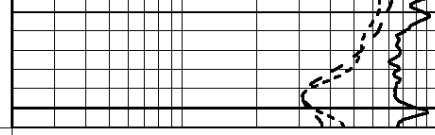
Database File:	005915pdn.db
Dataset Pathname:	pass4A
Presentation Format:	dil
Dataset Creation:	Tue Nov 09 17:07:10 2010
Charted by:	Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	RxoRt	50
0	MINMK	20

0.2	RLL3 (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000







2300

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	RxoRt	50
0	MINMK	20

0.2	RLL3 (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

SUPERIOR WELL SERVICES

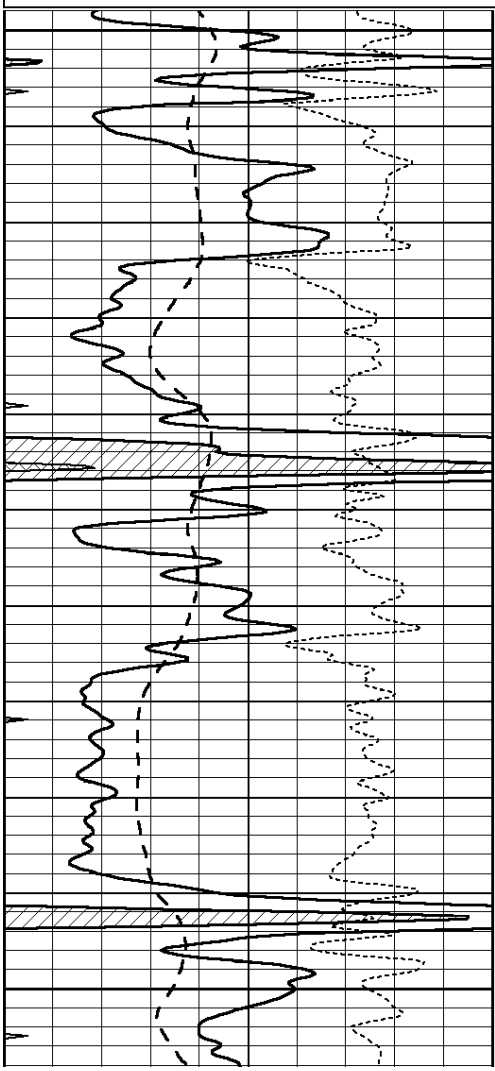
SUPERIOR
Hays,
Kansas

MAIN SECTION

Database File:	005915pdn.db
Dataset Pathname:	pass4A
Presentation Format:	dil
Dataset Creation:	Tue Nov 09 17:07:10 2010
Charted by:	Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	RxoRt	50
0	MINMK	20

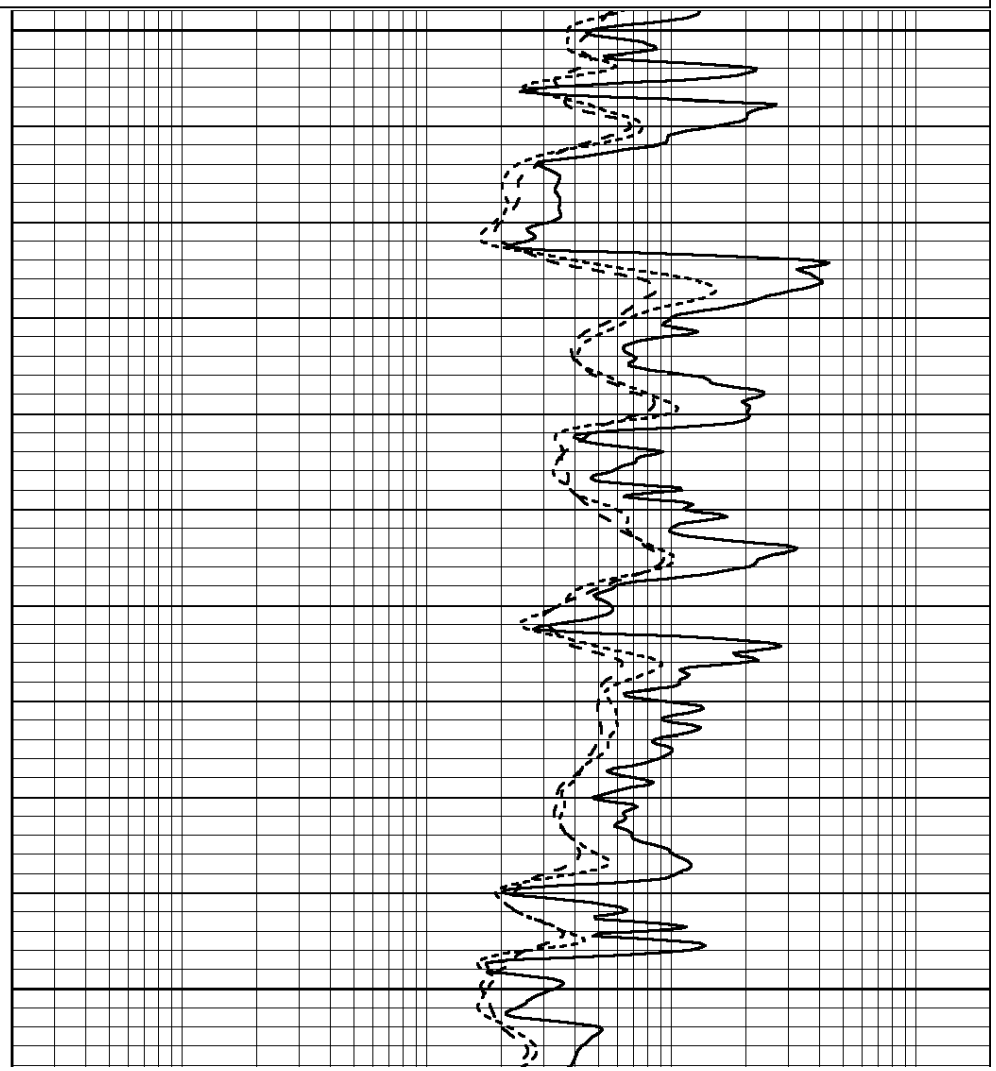
0.2	RLL3 (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

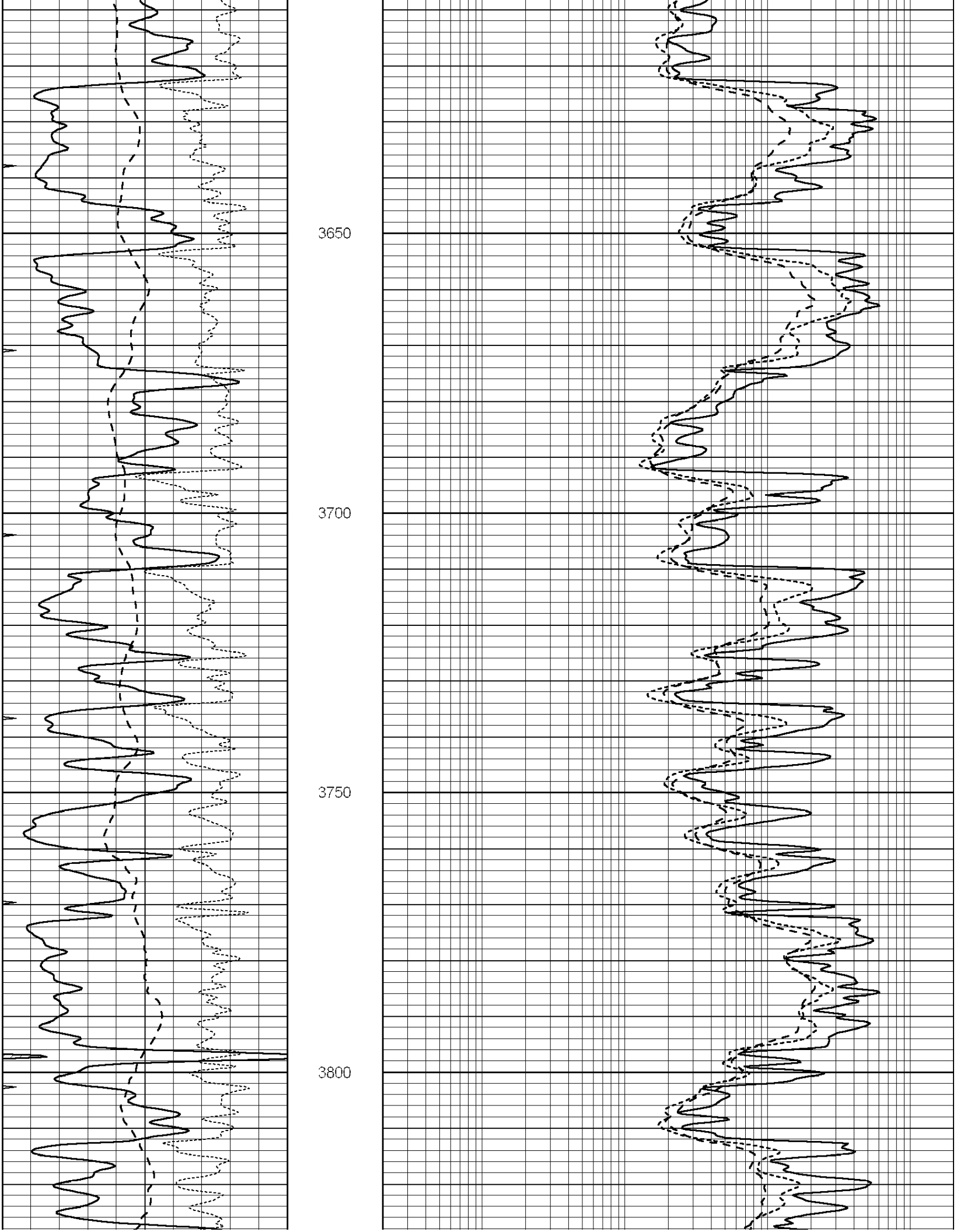


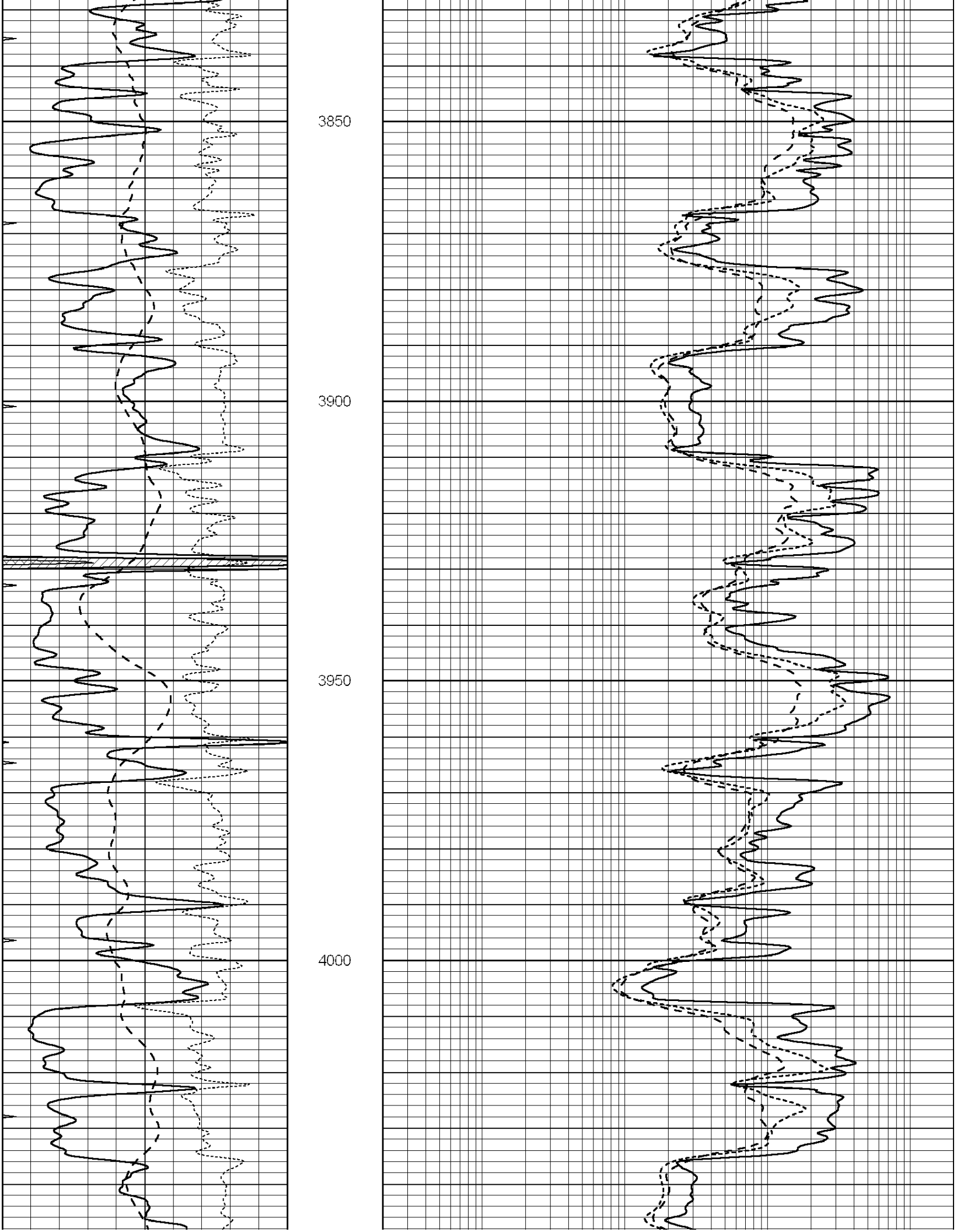
3500

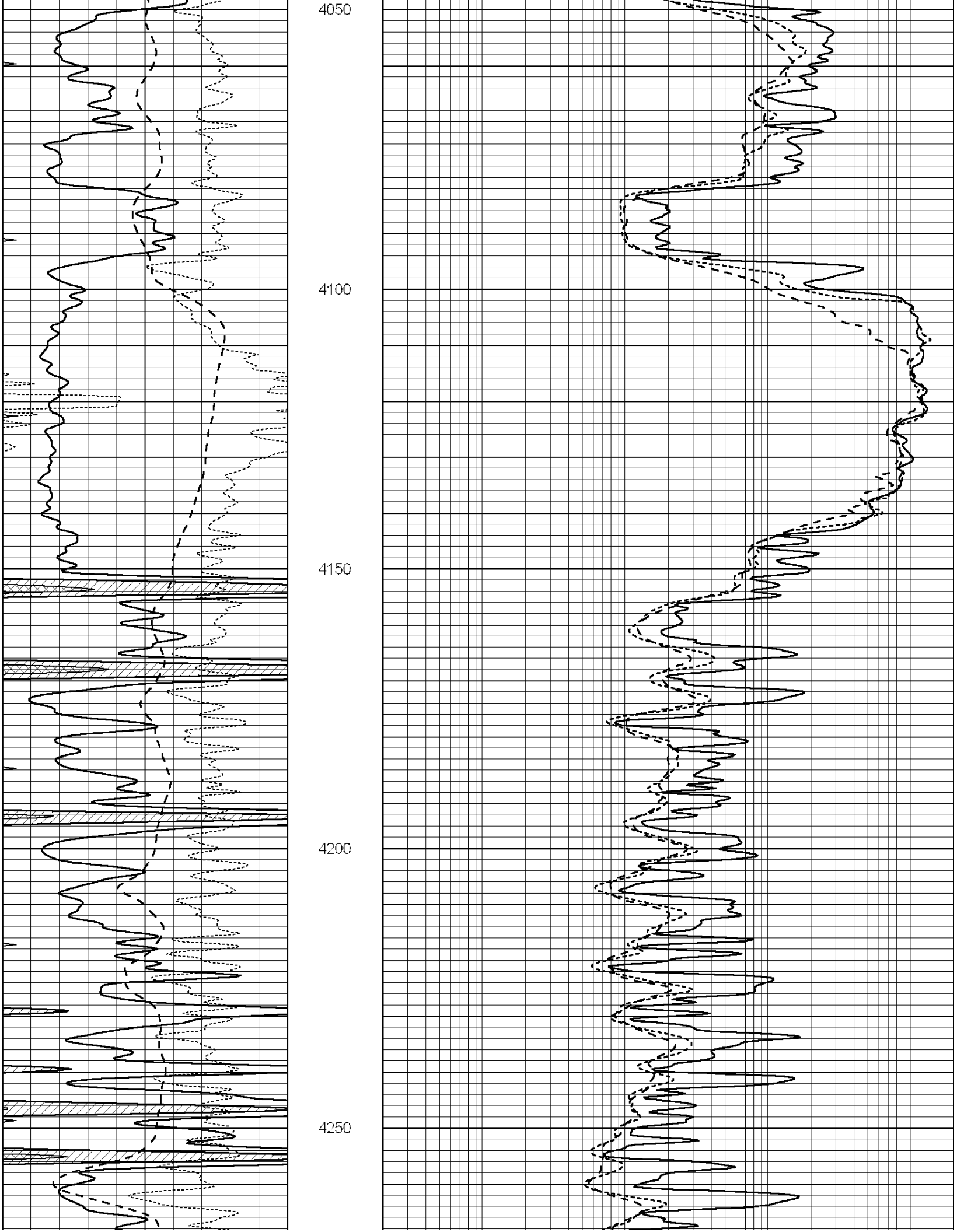
3550

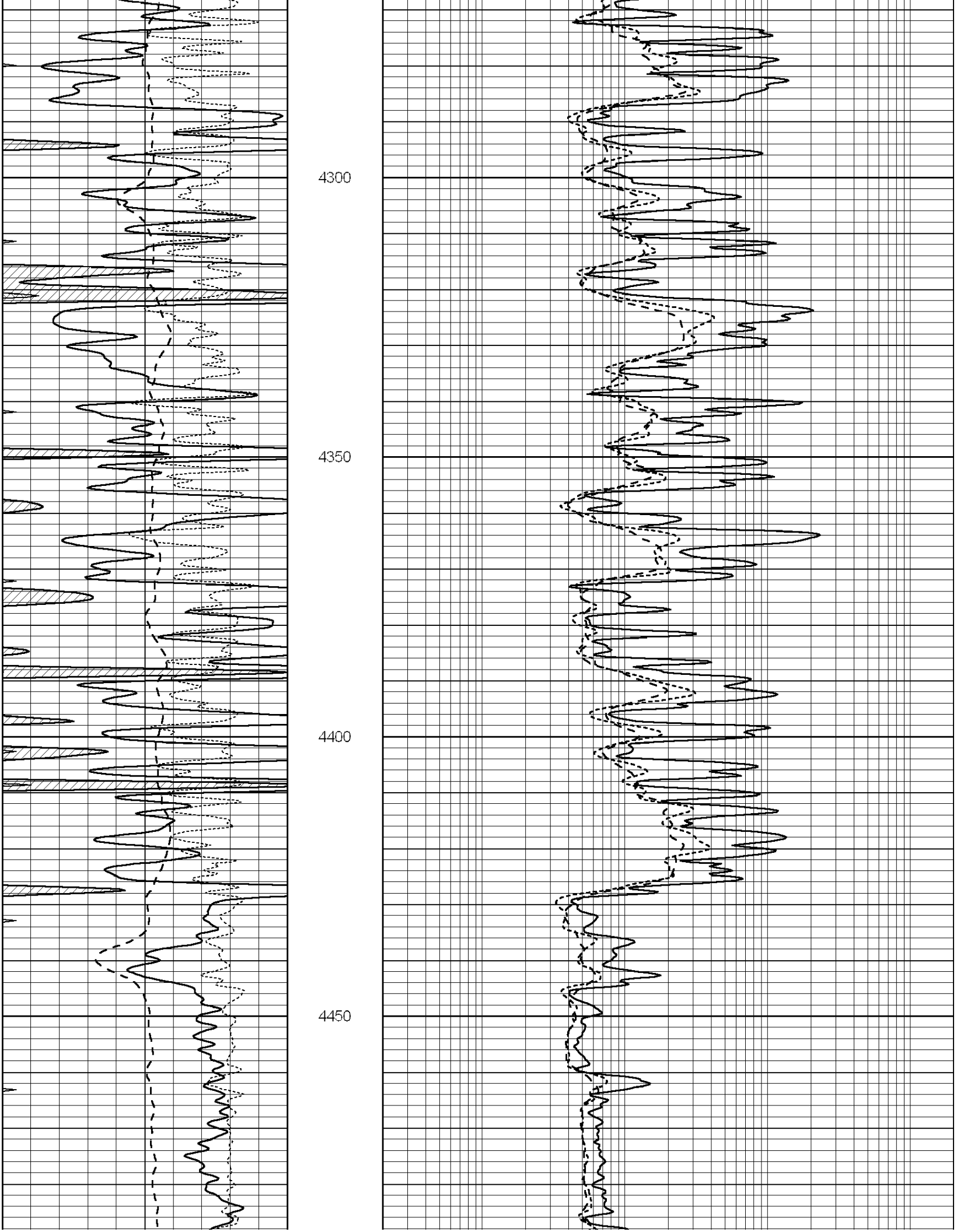
3600

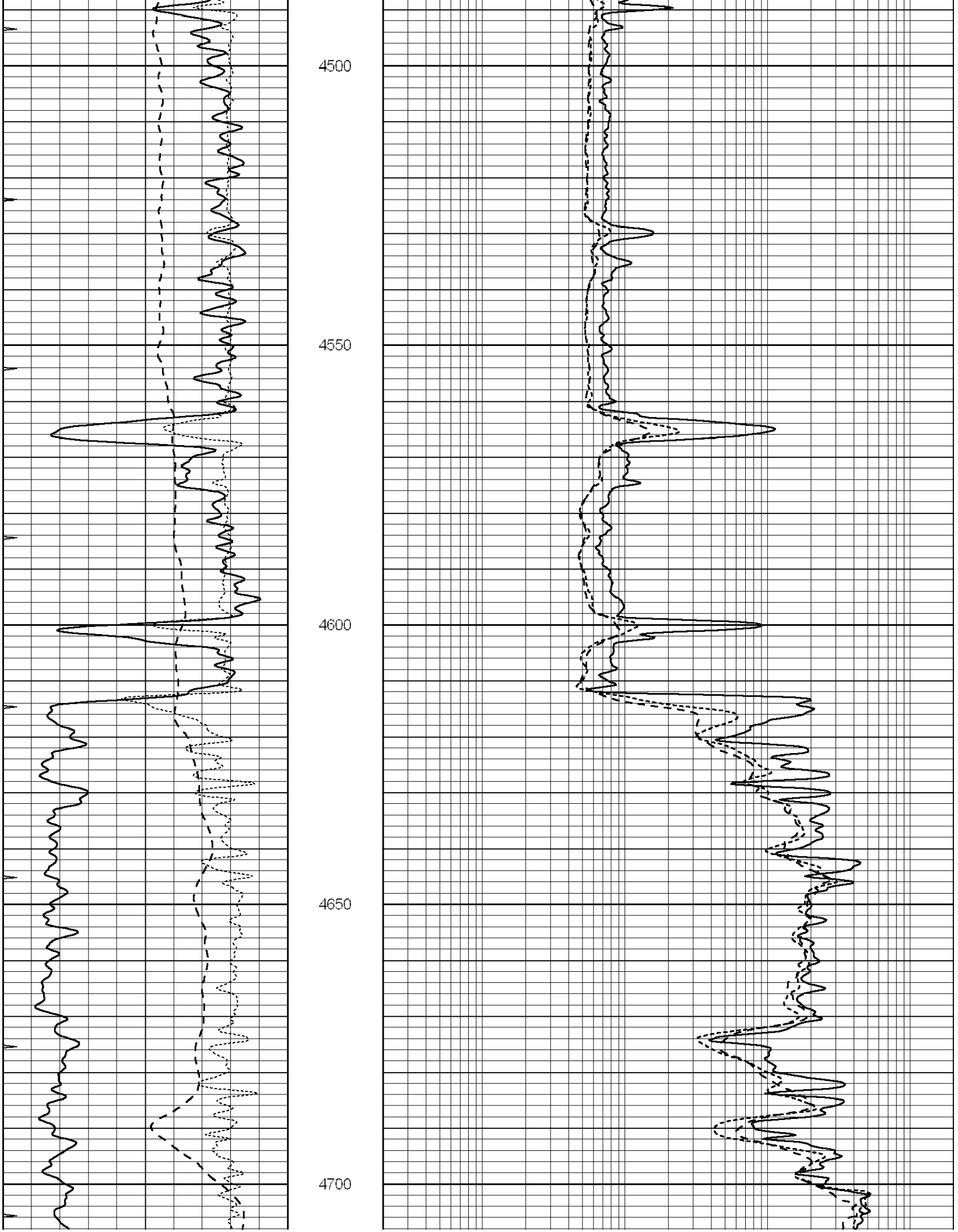


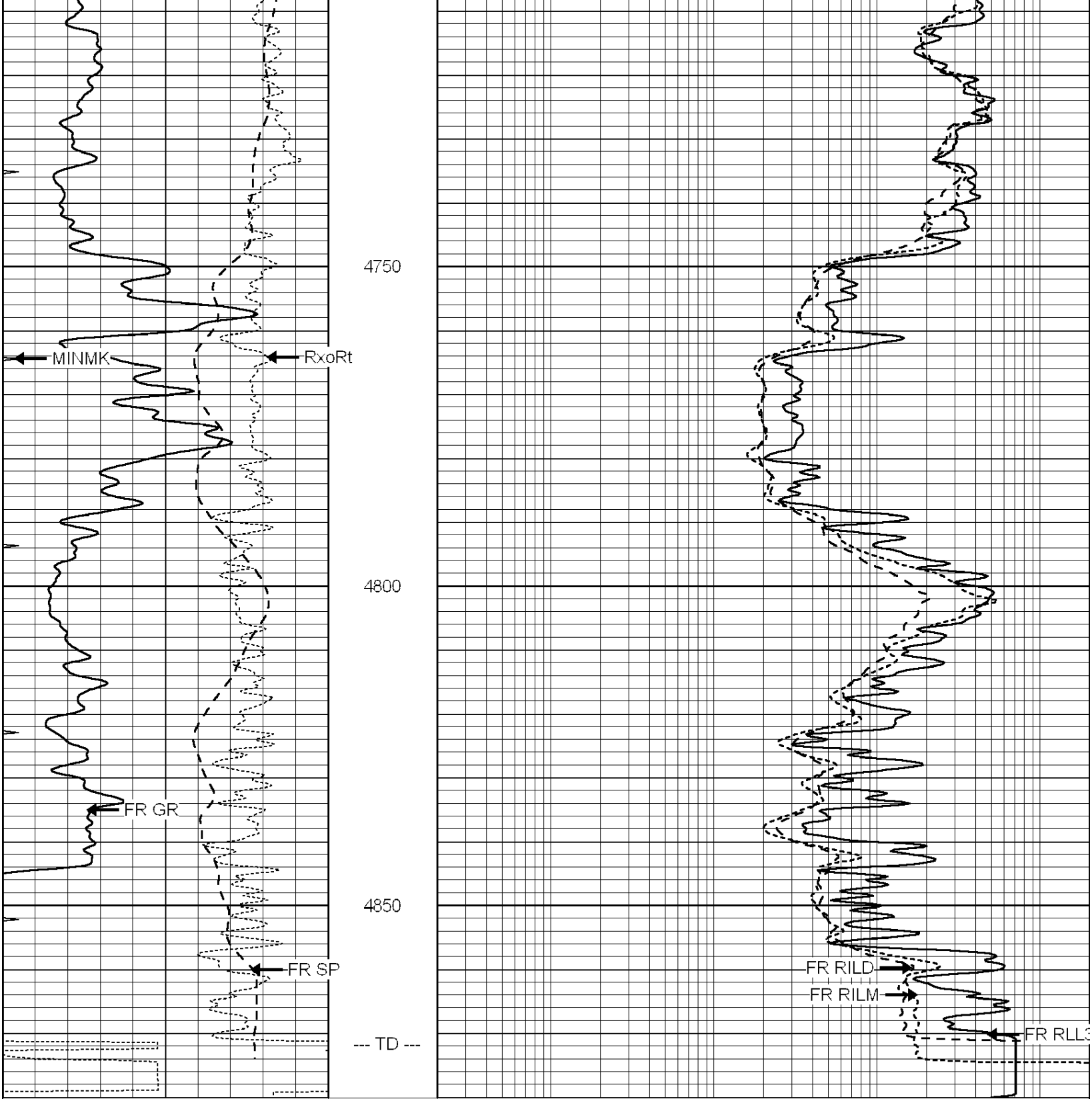

3650
3700
3750
3800


3850
3900
3950
4000


4050
4100
4150
4200
4250


4300
4350
4400
4450


4500
4550
4600
4650
4700



SUPERIOR WELL SERVICES

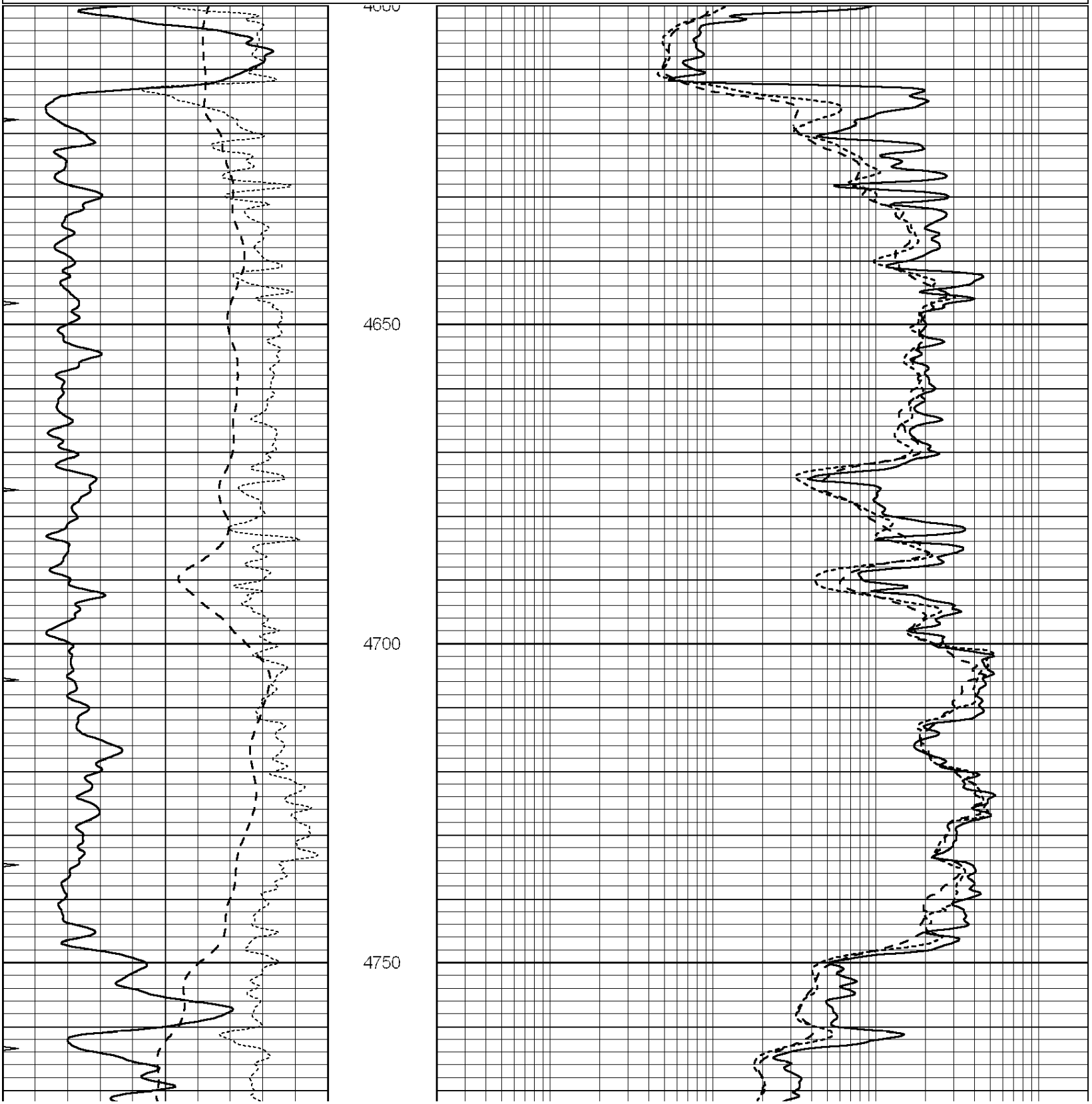
SUPERIOR
Hays,
Kansas

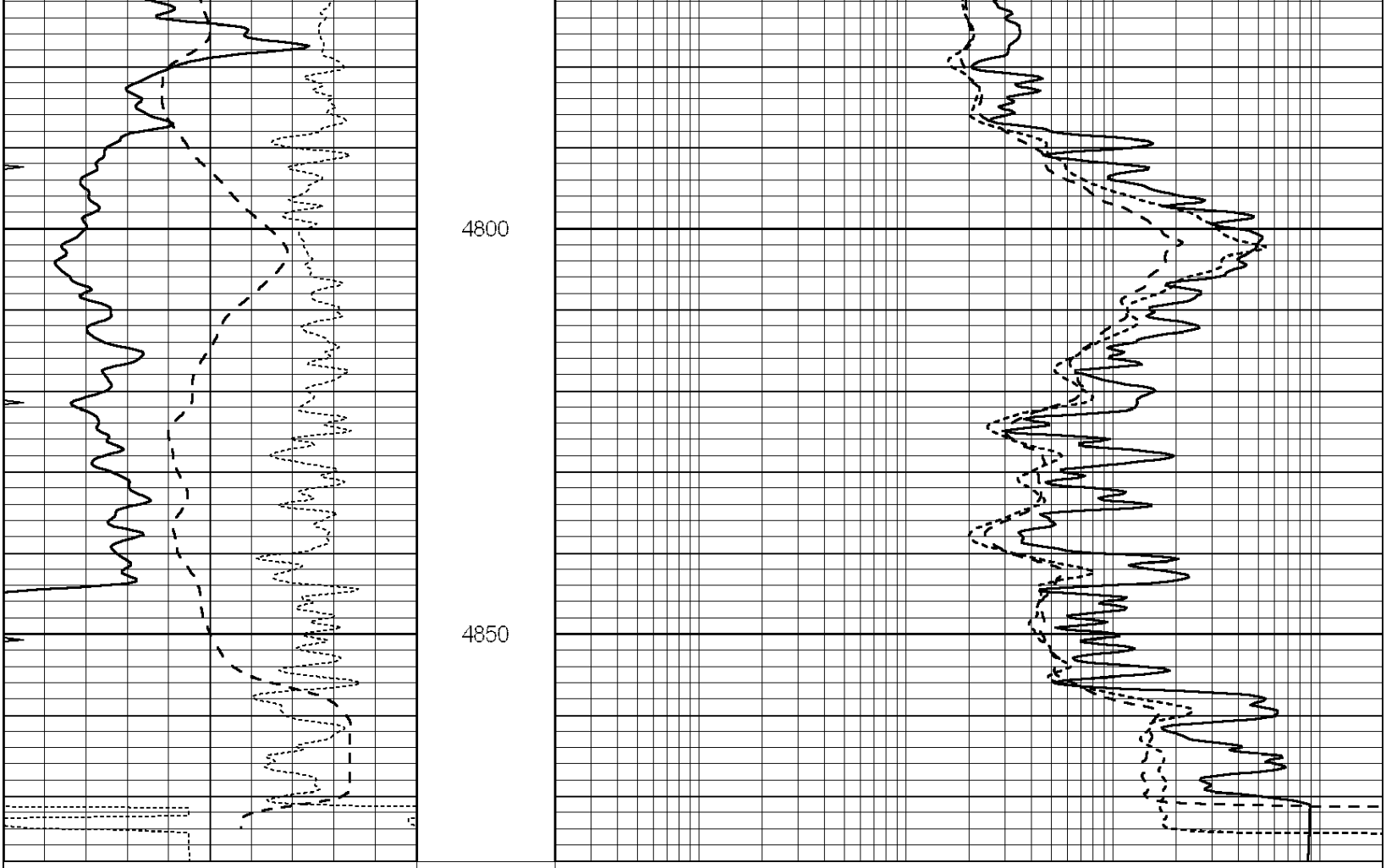
REPEAT SECTION

Database File:	005915pdn.db
Dataset Pathname:	pass2.A
Presentation Format:	dil
Dataset Creation:	Tue Nov 09 16:54:53 2010
Charted by:	Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	RxoRt	50
0	MINMK	20

0.2	RLL3 (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000





Calibration Report

Database File: 005915pdn.db
Dataset Pathname: pass4A
Dataset Creation: Tue Nov 09 17:07:10 2010

Dual Induction Calibration Report

Serial-Model: DIL5-GEAR
Performed: Tue Nov 09 15:27:58 2010

	Readings			References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	0.004	0.654	V	0.000	400.000	mmho/m	540.000	-3.000
Medium	-0.005	0.737	V	0.000	462.500	mmho/m	520.000	-4.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.006	0.655	V	0.000	400.000	mmho/m	615.668	-3.483
Medium	0.010	0.747	V	0.000	462.500	mmho/m	627.607	-6.064

Litho Density Calibration Report

Serial: 002 Model: PRB
Performed Tue Jul 03 11:12:28 2007

Litho Density Calibration

	Background	Magnesium	Aluminum	Sandstone	
Window 1	1059.5	9172.0	2859.6	10210.6	cps
Window 2	976.0	7793.2	2486.1	8515.6	cps
Window 3	689.8	2930.5	1159.0	3096.2	cps
Window 4	231.9	237.2	231.1	234.0	cps
Long Space	0.0	6817.1	1510.1	7539.6	cps
Short Space	1.6	1758.1	1188.6	1898.8	cps
Rho		1.7100	2.5960	1.3800	g/cc
Pe			2.5700	1.5500	

Rib Angle	: 45.4	Rib Slope	: 1.015	Density/Spine Ratio	: 0.569
Spine Angle	: 75.4	Spine Slope	: 3.850	Spine Intercept	: -19.9

Caliper

	Readings	Reference
Low Ref	2.8	7.9
High Ref	4.8	14.0
	Gain: 3.0	Offset: -0.5

Compensated Neutron Calibration Report

Serial Number: NEU_1I
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: Tue Nov 09 14:42:17 2010

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Sensitivity: 0.6500 GAPI/cps