SUPERIOR WELL SERVICES

SUPERIOR
Hays,
Kansas

DUAL INDUCTION LOG

Company MULL DRILLING COMPANY, INC.

Well #1-33 R - R UNIT

Field WILDCAT

County LANE State KANSAS

Location: API # : 15-101-22184-0000

2150' FNL & 2578' FEL

SEC 33 TWP 17S RGE 28W

Other Services
CDL/CNL
MEL/SONIC

Elevation
K.B. 2763
D.F. 2761
G.L. 2754

Permanent Datum GROUND LEVEL Elevation 2754
Log Measured From KELLY BUSHING 9' A.G.L.
Drilling Measured From KELLY BUSHING

Company MULL DRILLING COMPANY, INC.
Well #1-33 R - R UNIT
Field WILDCAT
County LANE
State KANSAS

Date	8/31/09		
Run Number	ONE		
Depth Driller	4680		
Depth Logger	4684		
Bottom Logged Interval	4682		
Top Log Interval	00		
Casing Driller	8 5/8"@223'		
Casing Logger	223		
Bit Size	7 7/8		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 3,000 PPM	
Density / Viscosity	9.4/55		
pH / Fluid Loss	10.0/7.2		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	1.40@85F		
Rmf @ Meas. Temp	1.05@85F		
Rmc @ Meas. Temp	1.68@85F		
Source of Rmf / Rmc	MEASUREMENT		
Rm @ BHT	.975@122F		
Time Circulation Stopped	2.5 HOURS		
Time Logger on Bottom	8:45 P.M.		
Maximum Recorded Temperature	122F		
Equipment Number	0836		
Location	HAYS, KANSAS		
Recorded By	JEFF LUEBBERS		
Witnessed By	KEVIN KESSLER		

<<< Fold Here >>>

Comments

THANK YOU FOR USING SUPERIOR WELL SERVICE HAYS, KANSAS (785) 628-6395

DIRECTIONS

DIGHTON, KS. 4 N. ON HWY 23 TO RD. "190", 2 1/2 E., S. INTO

MAIN SECTION

SUPERIOR
Hays,
Kansas

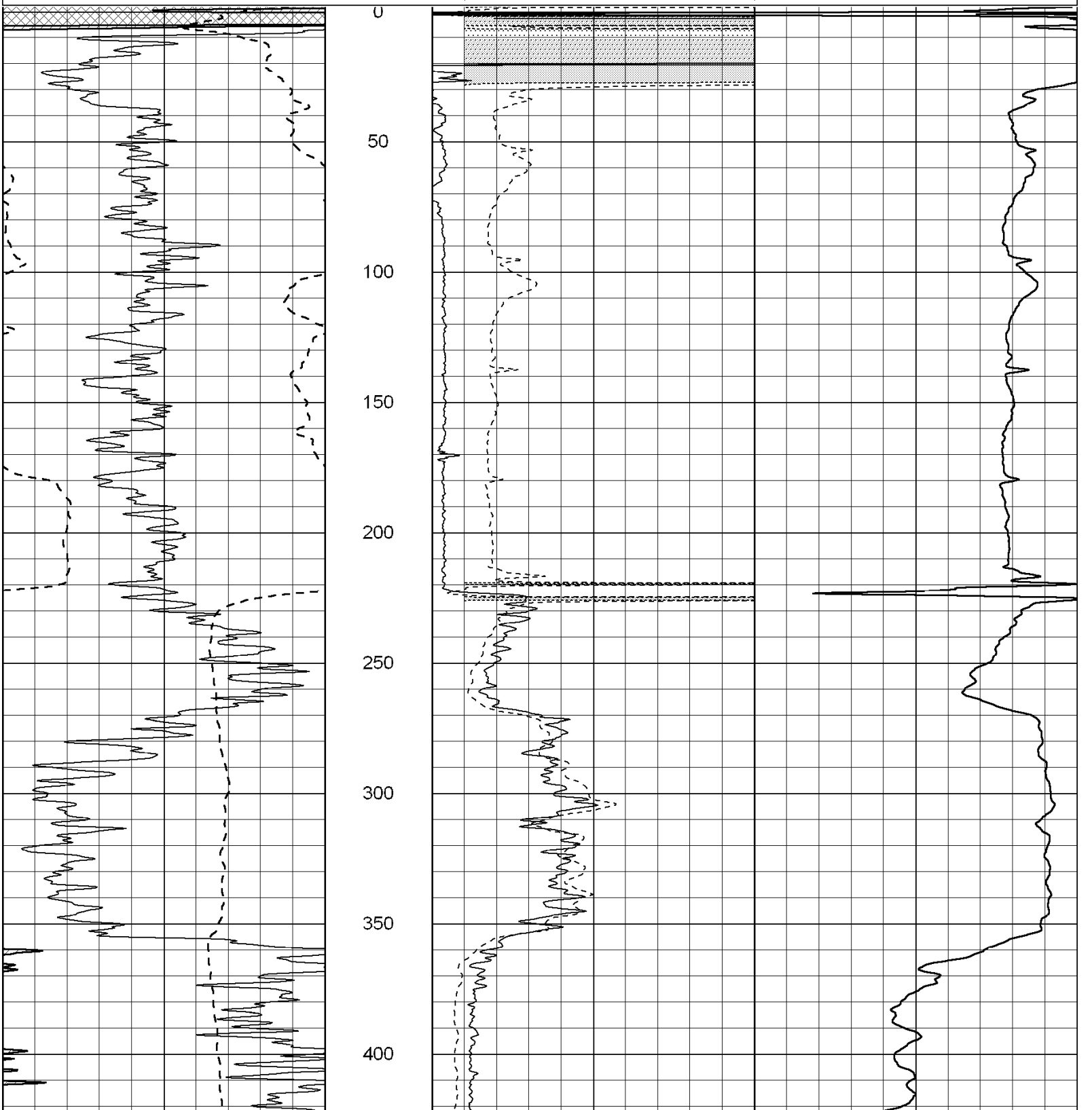
SUPERIOR WELL SERVICES

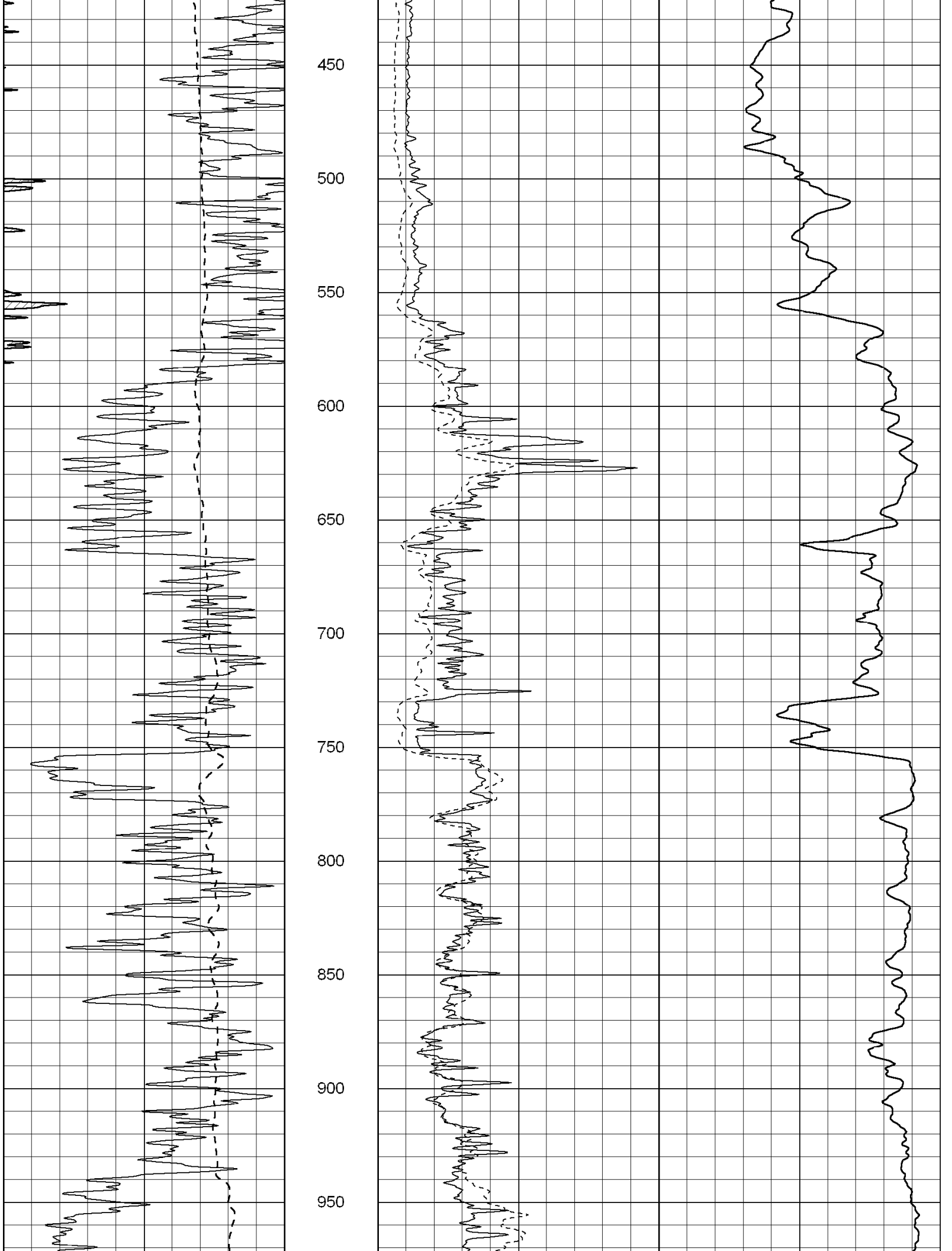
Kansas

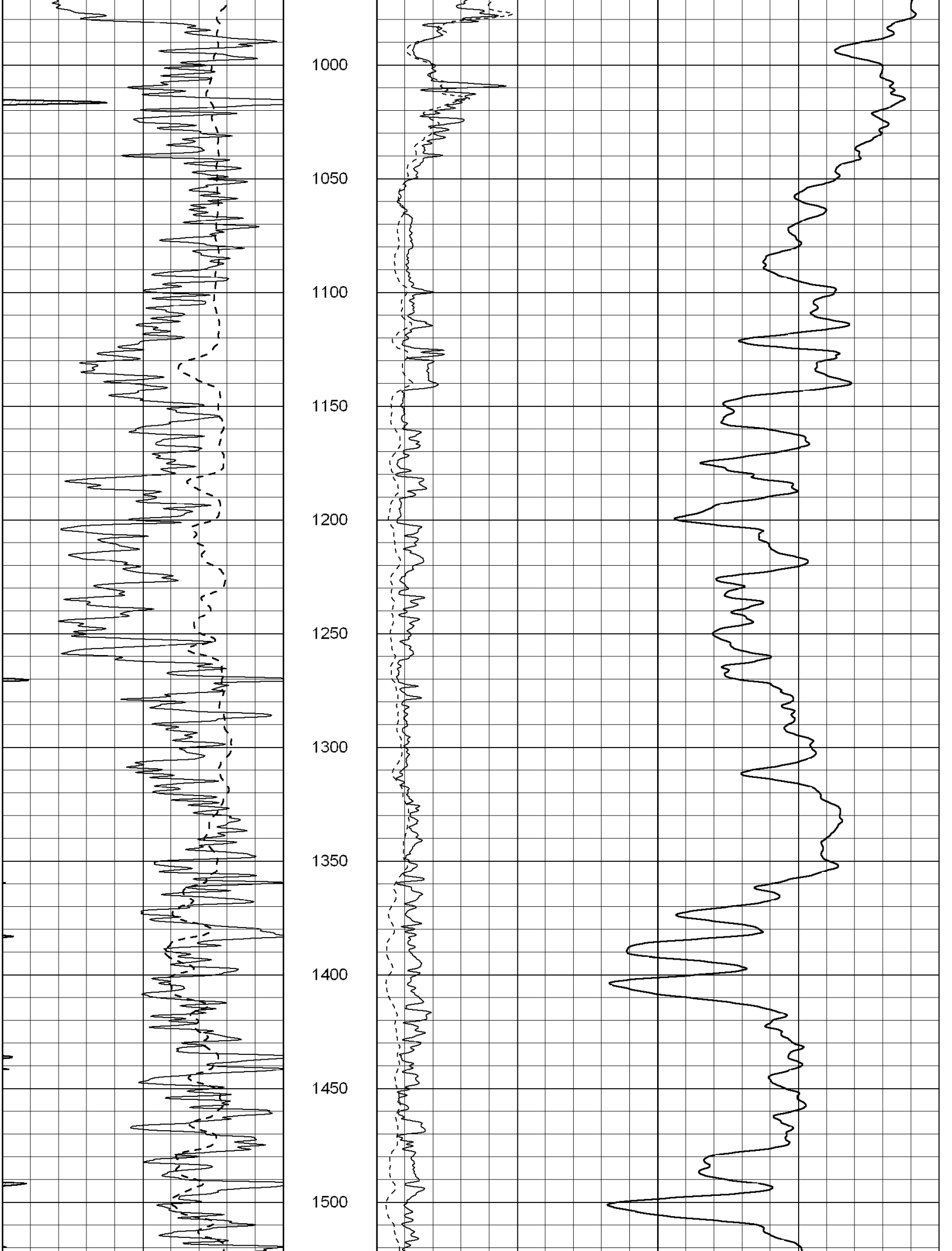
Database File:	004062pe.db
Dataset Pathname:	pass4.6
Presentation Format:	dil2
Dataset Creation:	Mon Aug 31 22:08:44 2009 by Calc Open-Cased 060407
Charted by:	Depth in Feet scaled 1:600

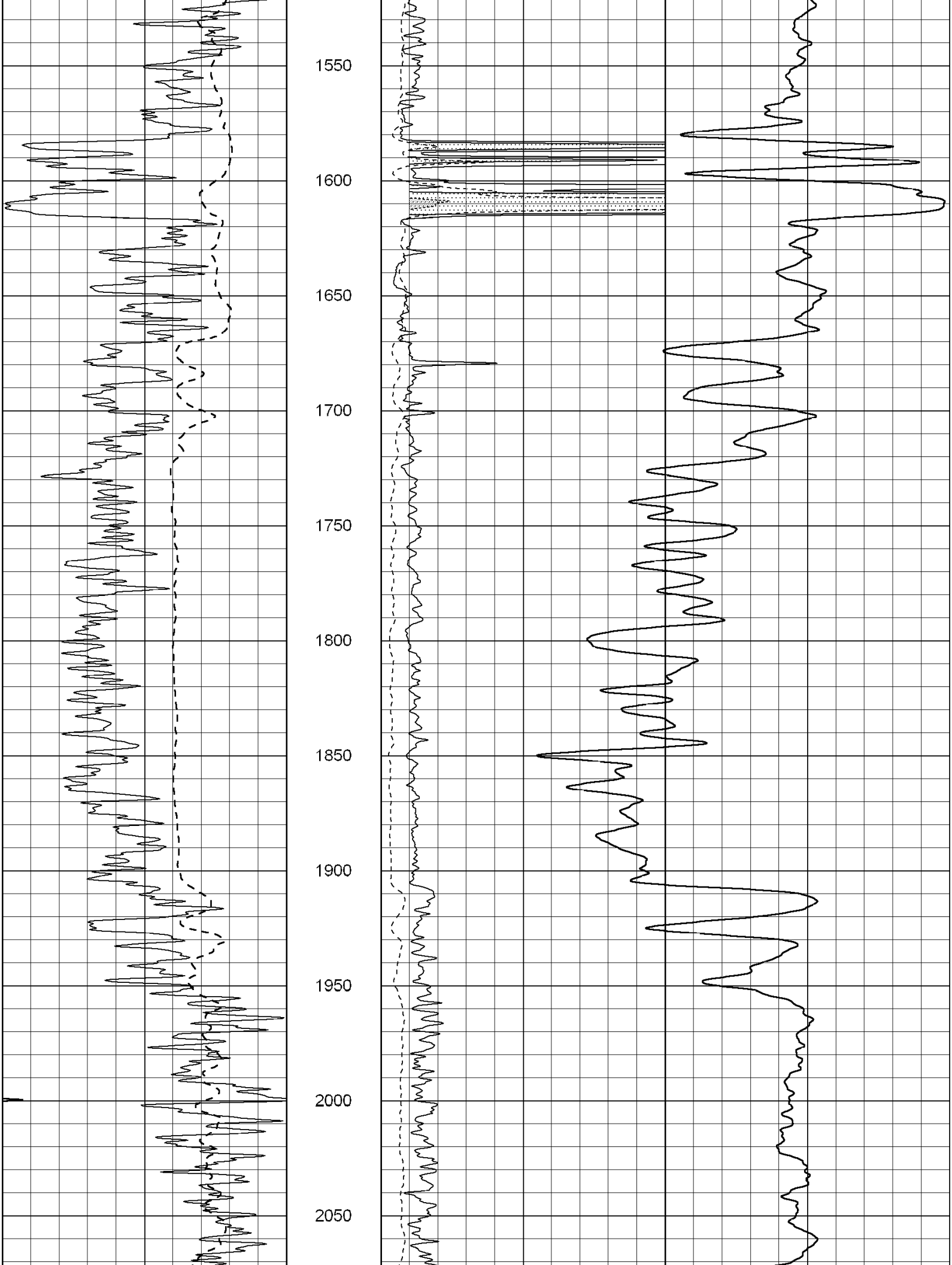
0	Gamma Ray (GAPI)	150
-100	SP (mV)	100

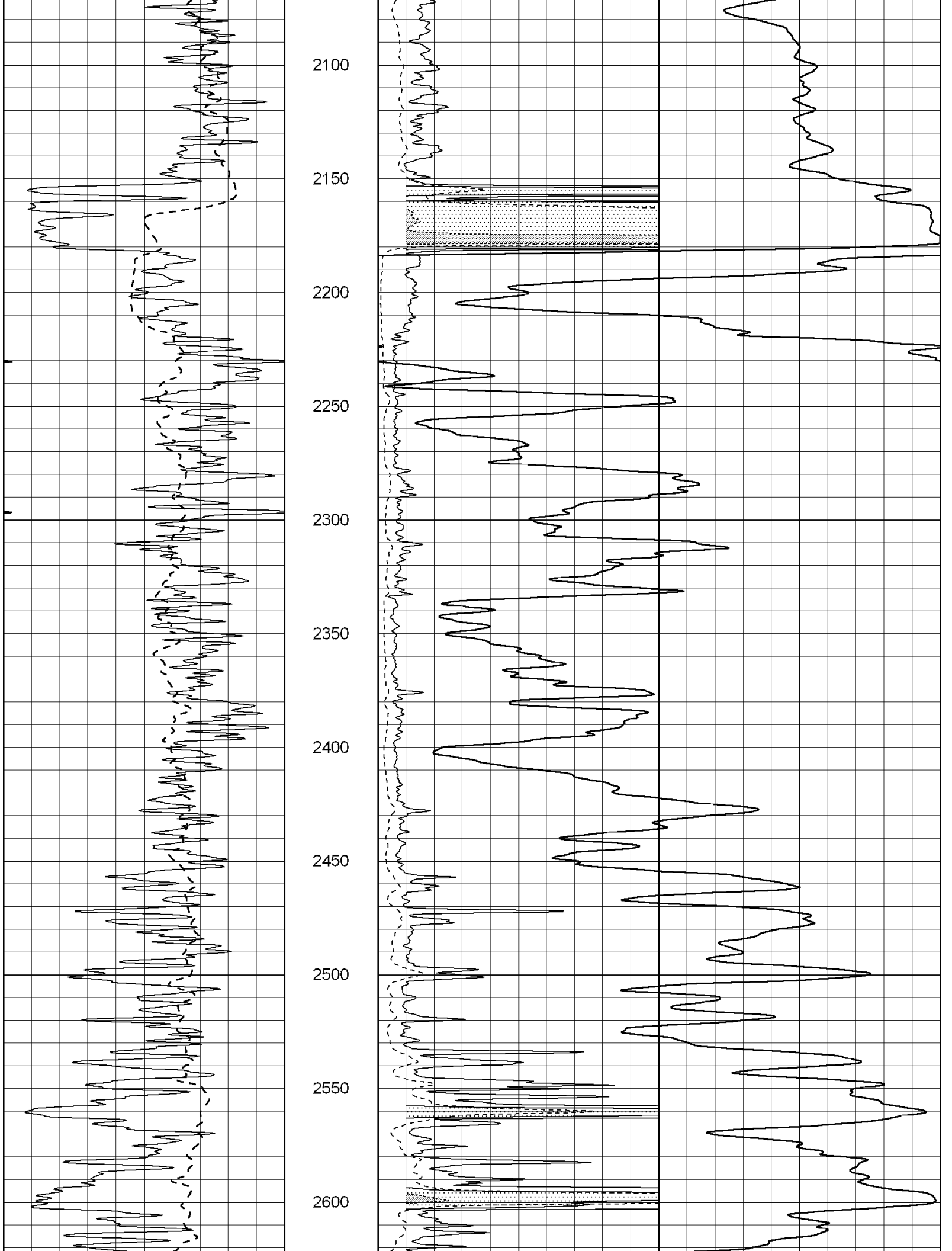
0	RLL3 (Ohm-m)	50
0	RILD (Ohm-m)	50
1000	CILD (mmho-m)	0
50	RILD X10 (Ohm-m)	500
50	RLL3 X10 (Ohm-m)	500

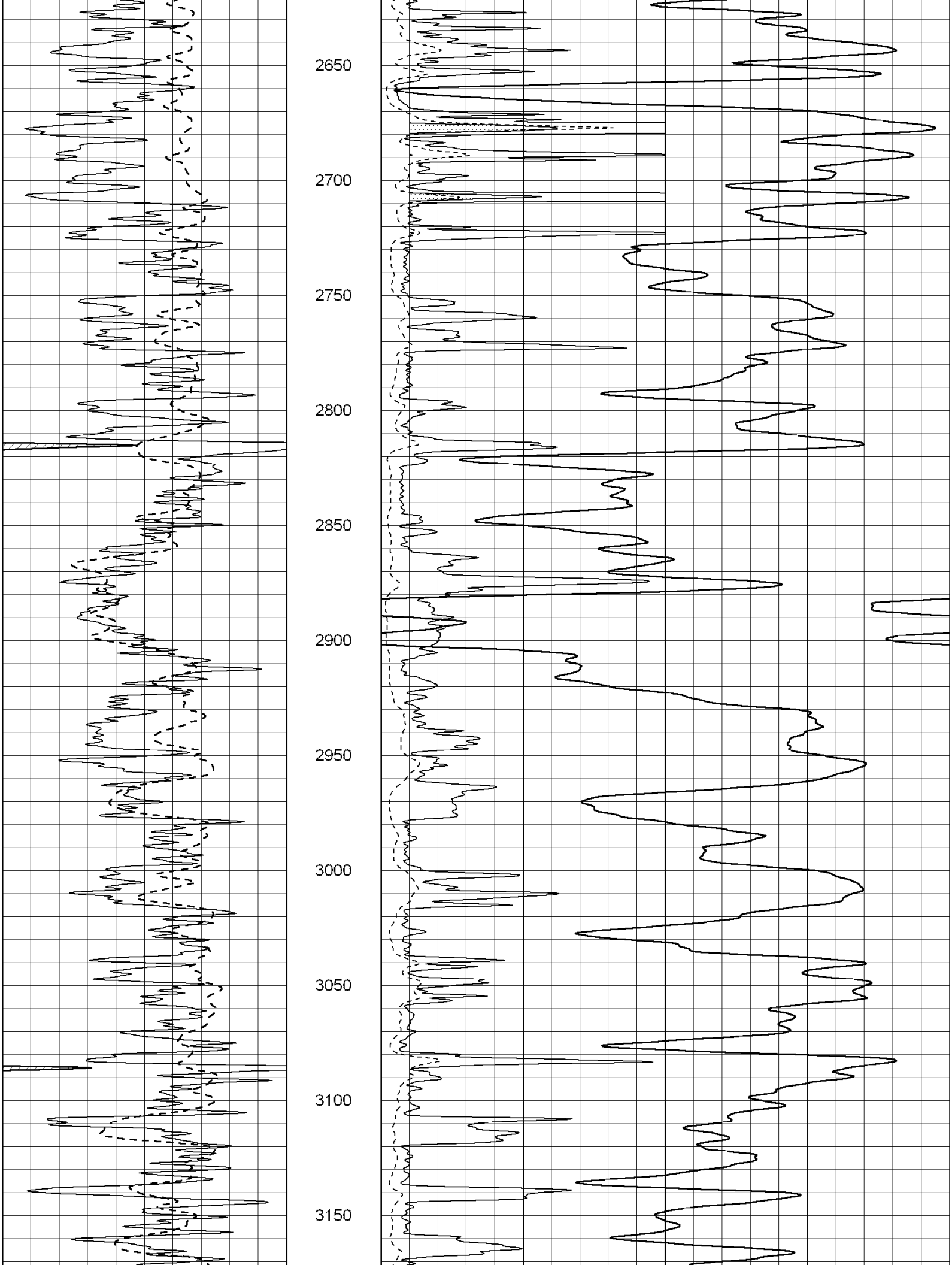


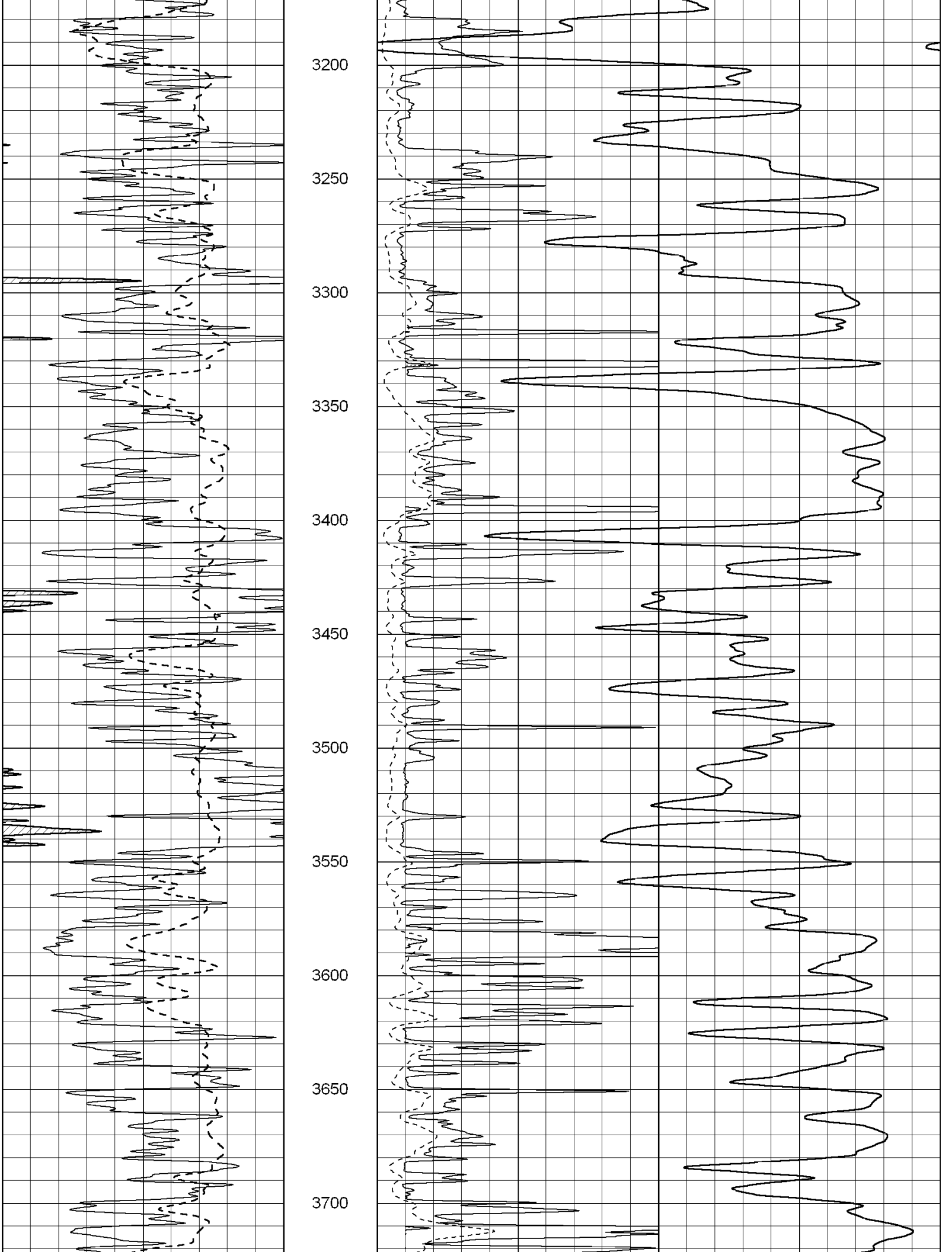

450
500
550
600
650
700
750
800
850
900
950

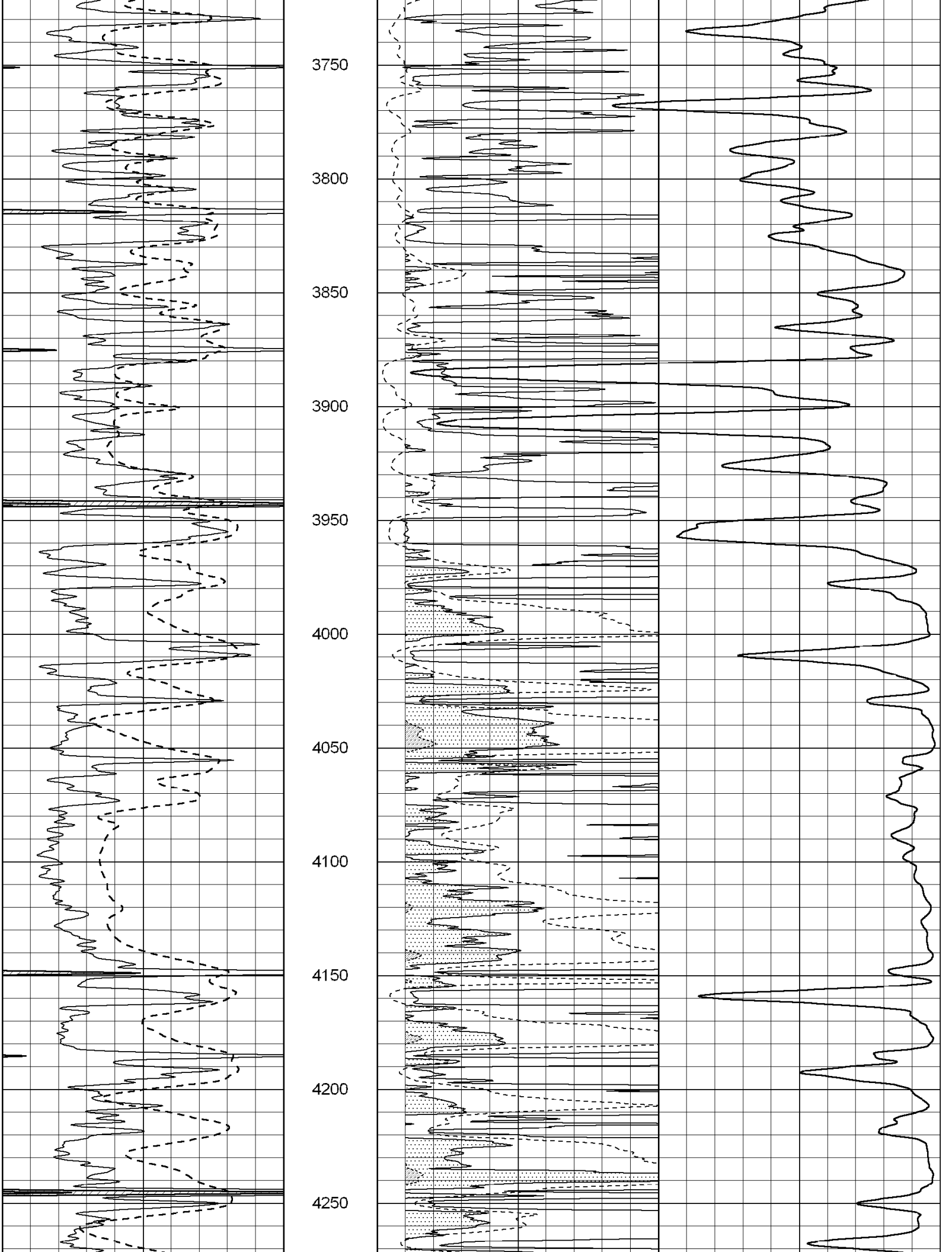

1000
1050
1100
1150
1200
1250
1300
1350
1400
1450
1500

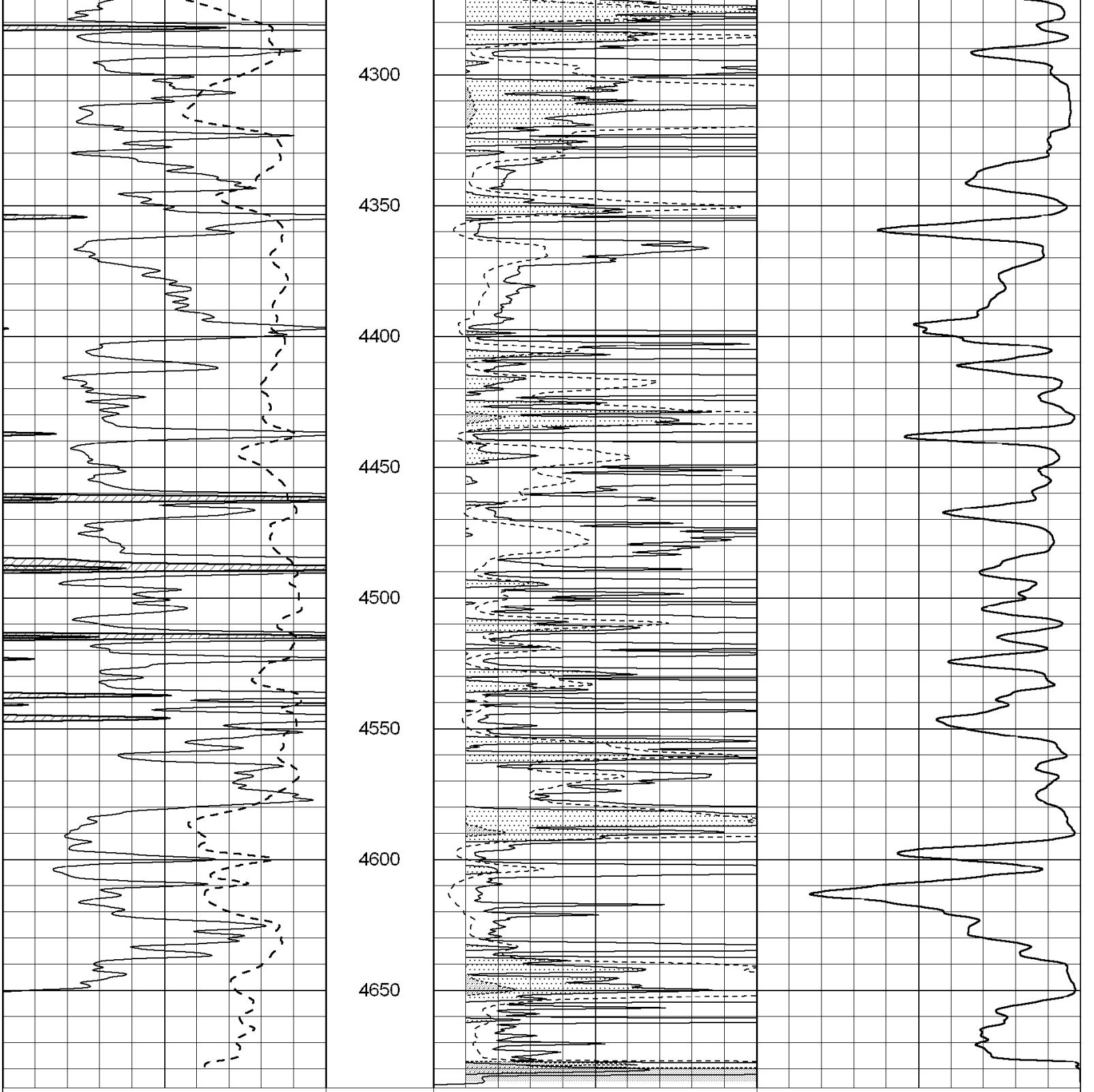

1550
1600
1650
1700
1750
1800
1850
1900
1950
2000
2050


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



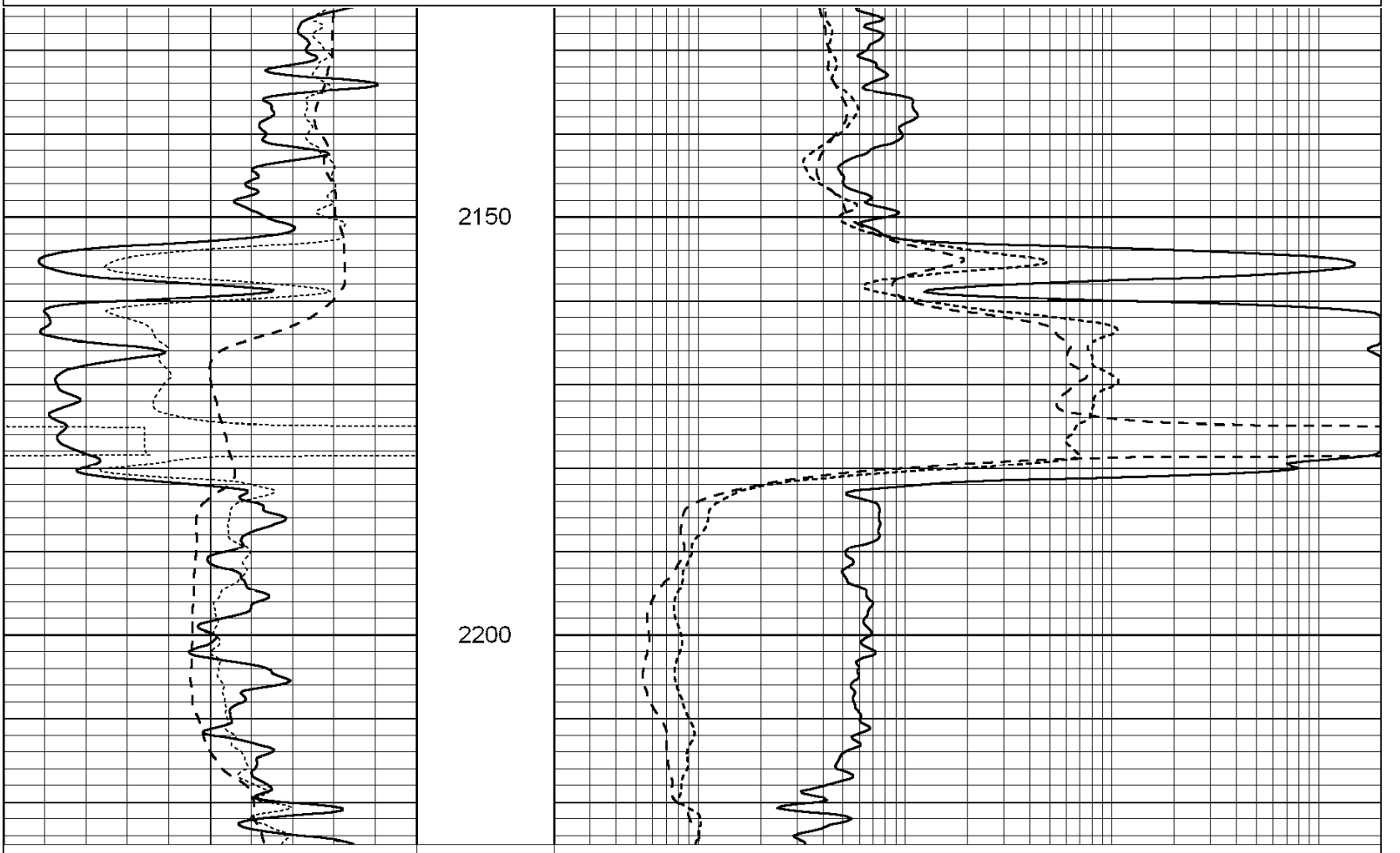
SUPERIOR WELL SERVICES

SUPERIOR
Hays, Kansas

ANHYDRITE

Database File: 004062pe.db
Dataset Pathname: pass4.7
Presentation Format: dil
Dataset Creation: Mon Aug 31 22:10:03 2009 by Calc Open-Cased 060407
Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	0.2	SHALLOW GUARD (Ohm-m)	2000
-100	SP (mV)	100	0.2	DEEP INDUCTION (Ohm-m)	2000
-250	Rxo/Rt	50	0.2	MEDIUM INDUCTION (Ohm-m)	2000



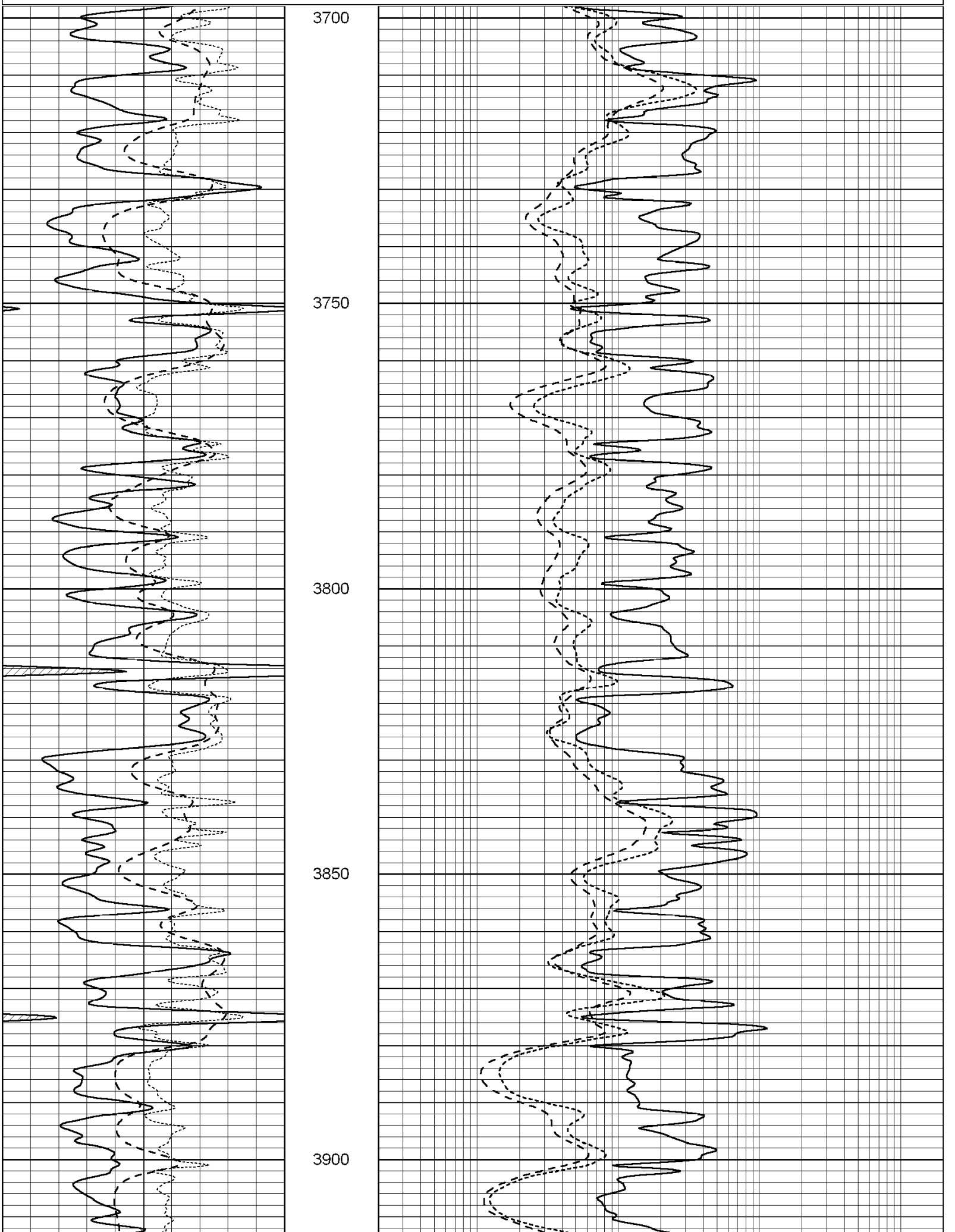
0	GAMMA RAY (GAPI)	150	0.2	SHALLOW GUARD (Ohm-m)	2000
-100	SP (mV)	100	0.2	DEEP INDUCTION (Ohm-m)	2000
-250	Rxo/Rt	50	0.2	MEDIUM INDUCTION (Ohm-m)	2000

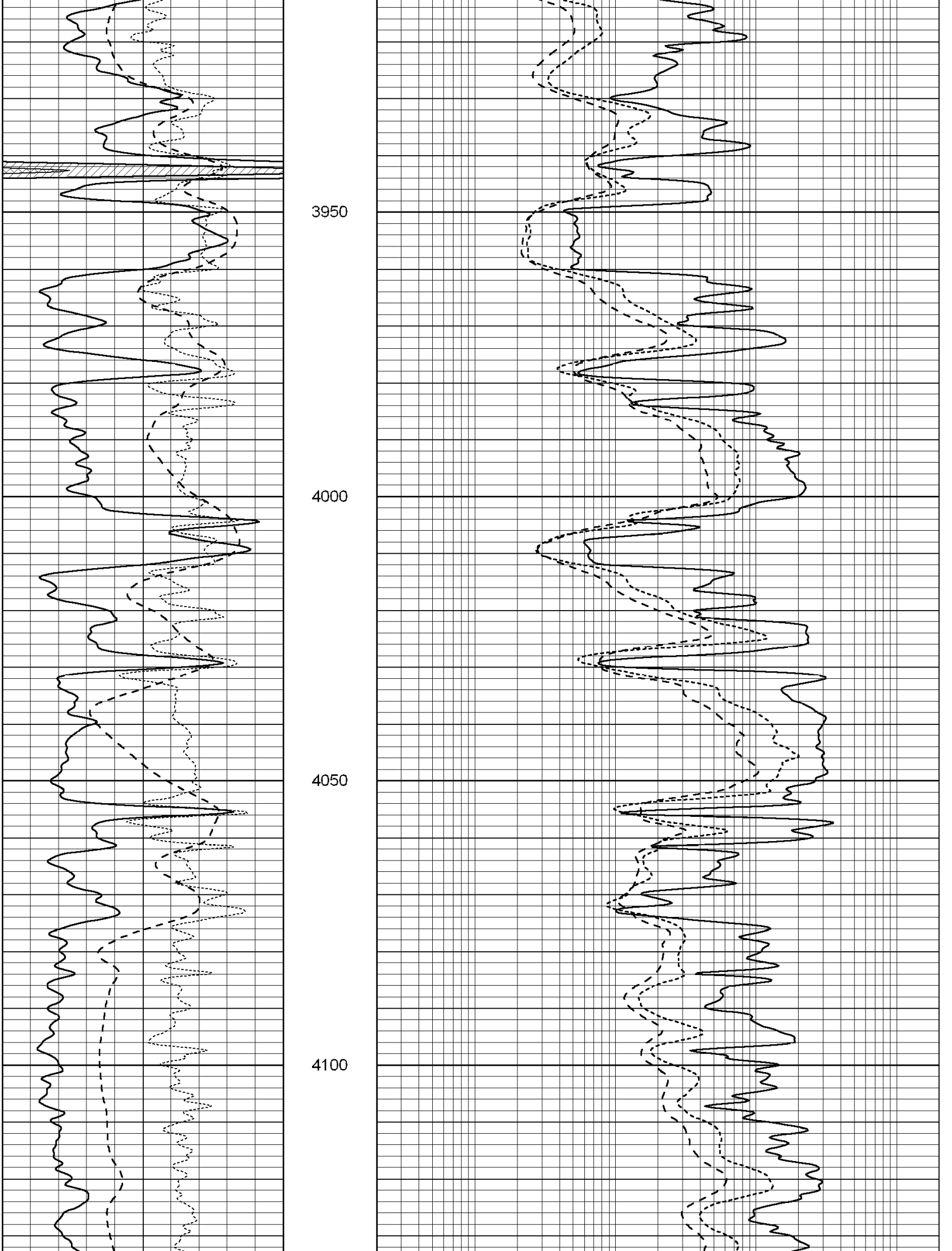
SUPERIOR WELL SERVICES
SUPERIOR
Hays, Kansas

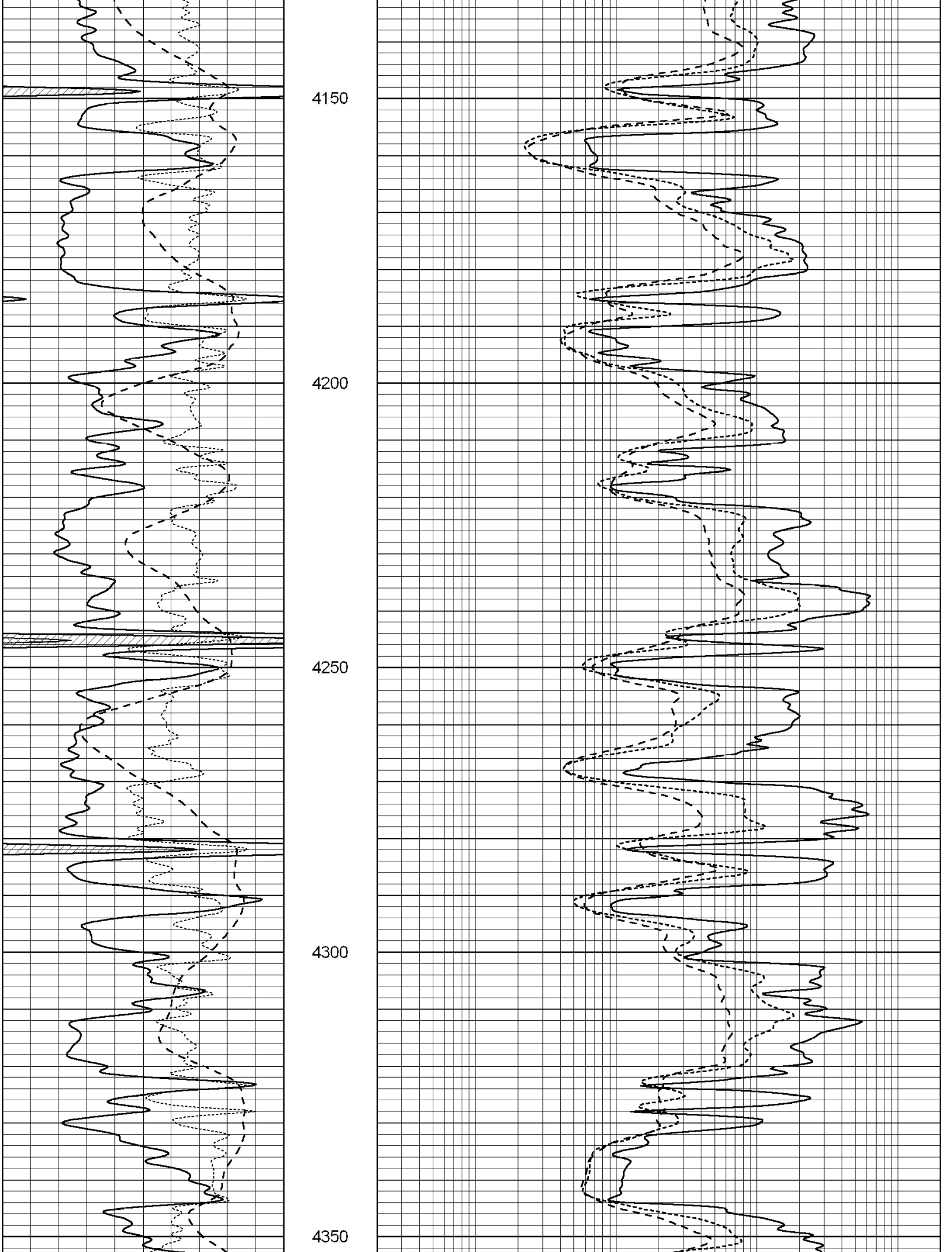
MAIN SECTION

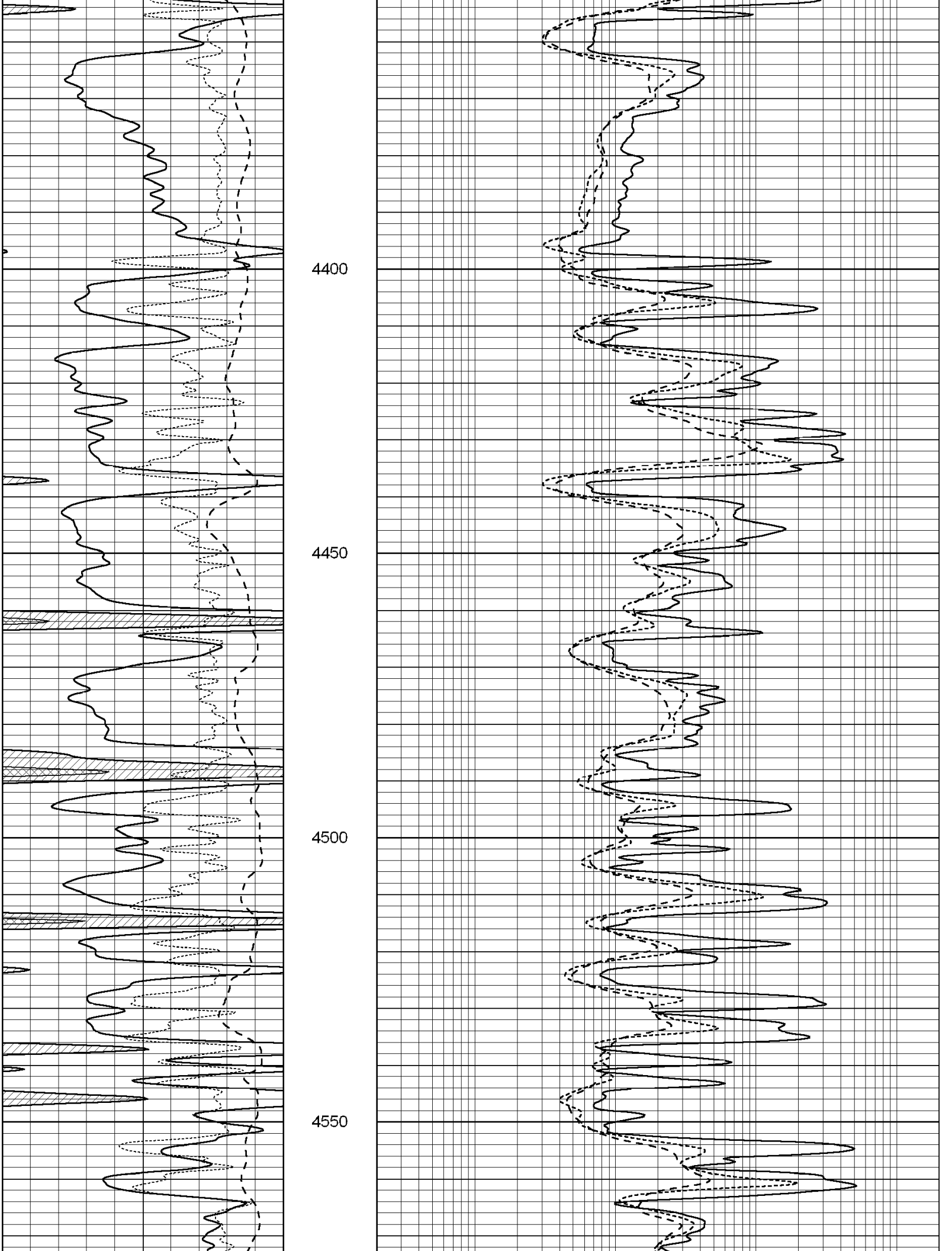
Database File: 004062pe.db
Dataset Pathname: pass4.6
Presentation Format: dil
Dataset Creation: Mon Aug 31 22:08:44 2009 by Calc Open-Cased 060407
Charted by: Depth in Feet scaled 1:240

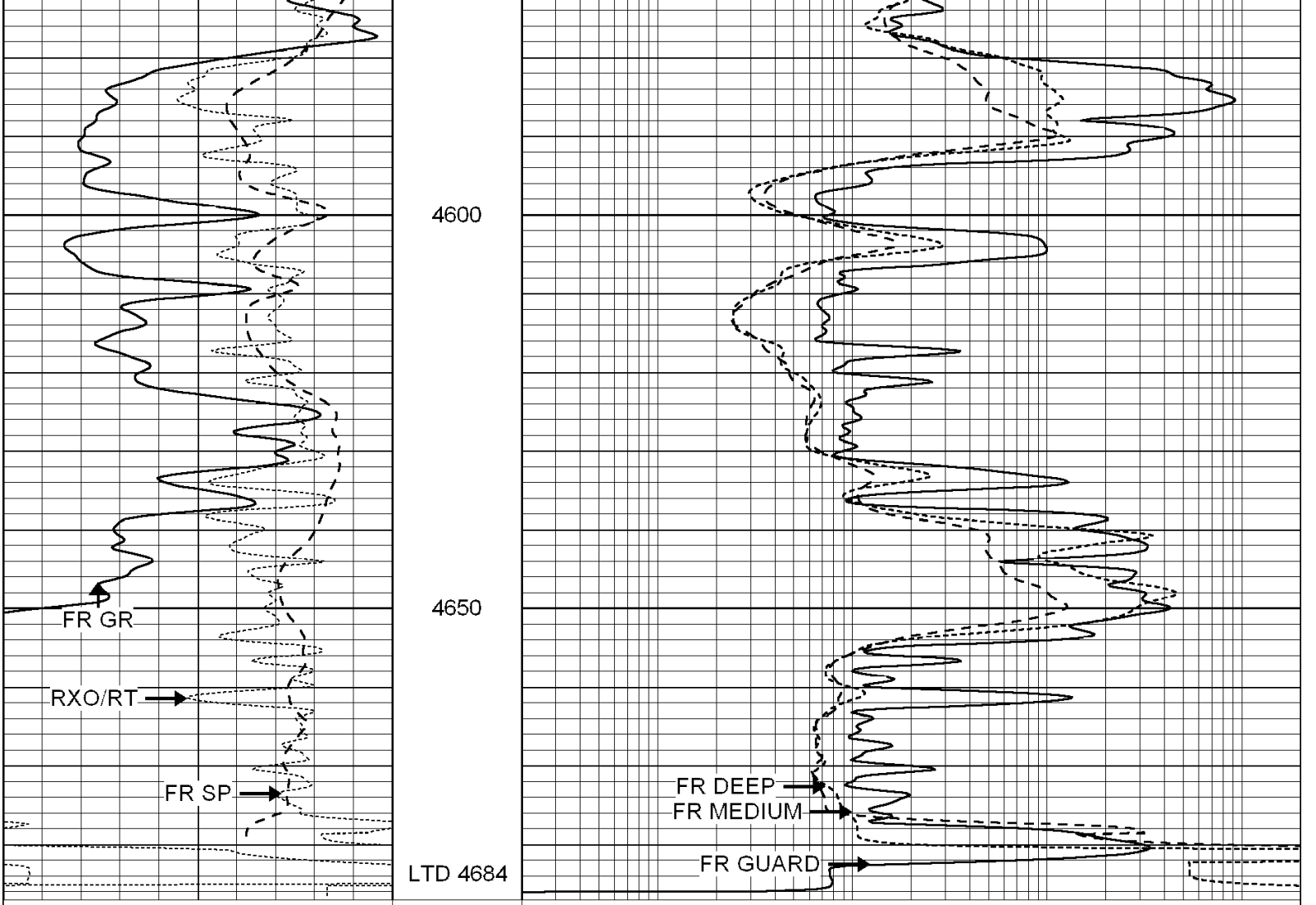
0	GAMMA RAY (GAPI)	150	0.2	SHALLOW GUARD (Ohm-m)	2000
-100	SP (mV)	100	0.2	DEEP INDUCTION (Ohm-m)	2000
-250	Rxo/Rt	50	0.2	MEDIUM INDUCTION (Ohm-m)	2000


3700
3750
3800
3850
3900


3950
4000
4050
4100


4150
4200
4250
4300
4350


4400
4450
4500
4550



0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50

0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

SUPERIOR WELL SERVICES

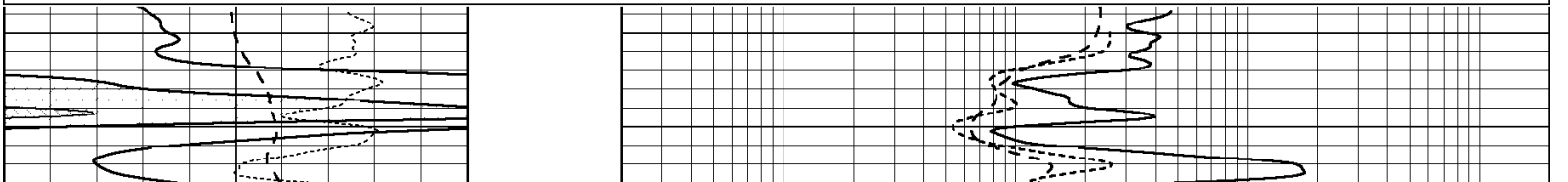
SUPERIOR
Hays,
Kansas

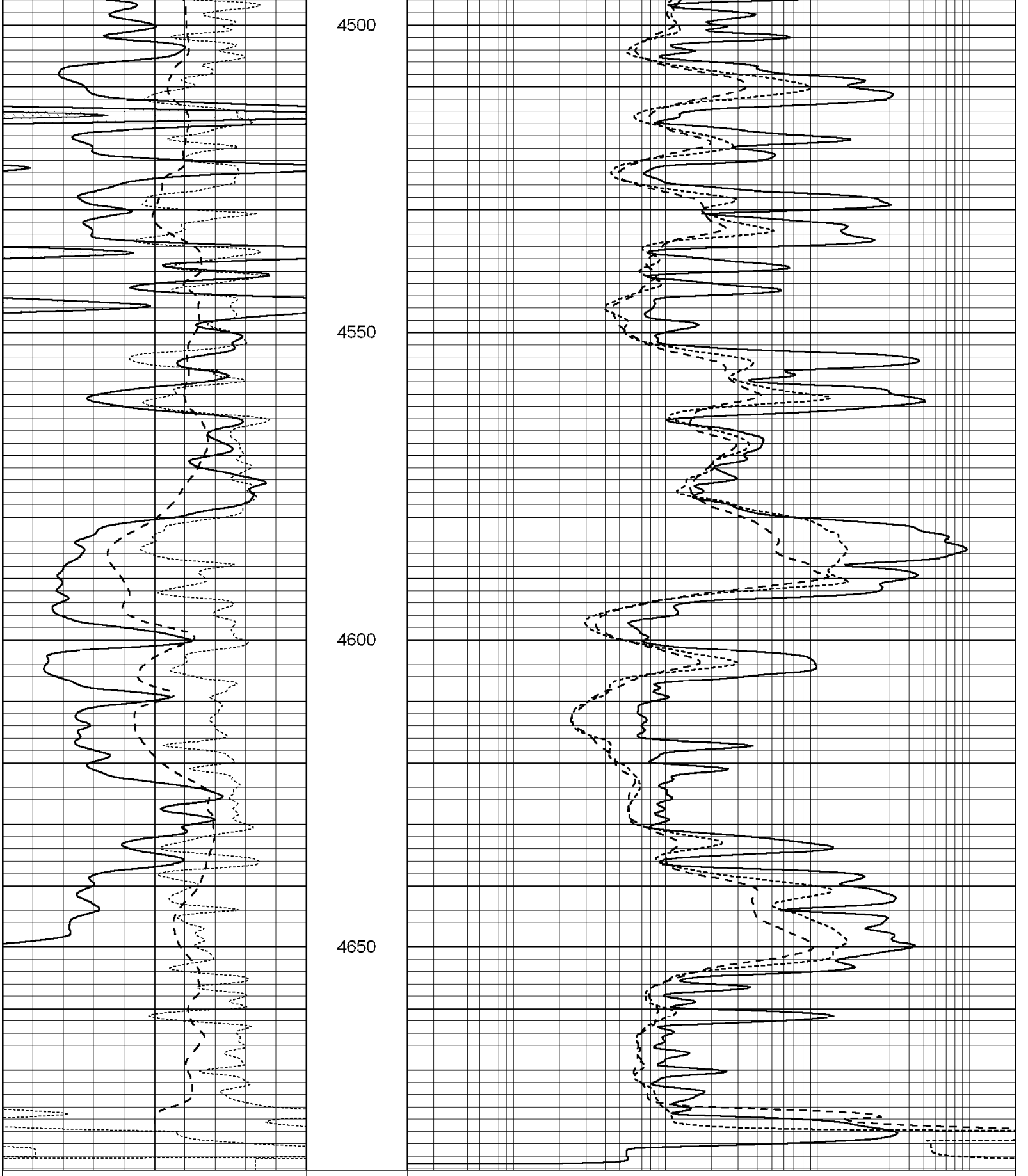
REPEAT SECTION

Database File:	004062pe.db
Dataset Pathname:	pass3.7
Presentation Format:	dil
Dataset Creation:	Mon Aug 31 21:48:08 2009 by Calc Open-Cased 060407
Charted by:	Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50

0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000





0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50

0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

Calibration Report

Calibration Report

Database File: 004062pe.db
Dataset Pathname: pass4.6
Dataset Creation: Mon Aug 31 22:08:44 2009 by Calc Open-Cased 060407

Dual Induction Calibration Report

Serial-Model: DIL2-GEAR
Performed: Mon Aug 31 19:46:43 2009

	Readings			References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	0.002	0.667	V	0.000	400.000	mmho-m	650.000	-4.000
Medium	-0.003	0.739	V	0.000	462.500	mmho-m	720.000	-23.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.001	0.658	V	0.000	400.000	mmho-m	609.010	-0.700
Medium	0.015	0.761	V	0.000	462.500	mmho-m	620.392	-9.326

Litho Density Calibration Report

Serial: 003N Model: PRB
Performed Mon Jun 08 10:53:05 2009

Litho Density Calibration

	Background	Magnesium	Aluminum	Sandstone	
Window 1	2028.8	12047.1	4181.3	13199.9	cps
Window 2	1822.8	9337.8	3431.4	10000.3	cps
Window 3	1564.8	5811.2	2442.8	6095.5	cps
Window 4	469.1	474.6	468.9	469.9	cps
Long Space	0.0	7514.9	1608.6	8177.4	cps
Short Space	1.9	2397.2	1539.5	2522.0	cps
Rho		1.7100	2.5900	1.3800	g/cc
Pe			2.5700	1.5500	

Rib Angle	: 44.0	Rib Slope	: 0.965	Density/Spine Ratio	: 0.549
Spine Angle	: 74.0	Spine Slope	: 3.481	Spine Intercept	: -18.2

Caliper

	Readings	Reference
Low Ref	1.8	6.2
High Ref	4.2	14.0

Gain: 3.3 Offset: 0.2

Compensated Neutron Calibration Report

Serial Number: NEU_3I
Tool Model: G

CALIBRATION

Detector	Readings		Target		Normalization
Short Space	997.00	cps	1000.00	cps	1.0000
Long Space	986.00	cps	1000.00	cps	1.0000

Gamma Ray Calibration Report

Serial Number: GR3
Tool Model: OPEN
Performed: Mon Aug 31 20:56:19 2009

Calibrator Value: 200.0 GAPI

Background Reading:	3.0	cps
Calibrator Reading:	186.0	cps
Sensitivity:	0.5000	GAPI/cps