



**SUPERIOR
Hays,
Kansas**

**DUAL
INDUCTION
LOG**

Company	MULL DRILLING COMPANY, INC.		
Well	THOR UNIT #1-27		
Field	WILDCAT		
County	KIOWA	State	COLORADO
Location:	API # : 05-061-06841-0000	Other Services CDL/CNL/PE MEL/SON	
SEC 27 TWP 18S RGE 45W		Elevation	
Permanent Datum	GROUND LEVEL	Elevation	3913
Log Measured From	KELLY BUSHING 13' A.G.L.		
Drilling Measured From	KELLY BUSHING		
Date	4-30-10		
Run Number	CNE		
Depth Driller	4990		
Depth Logger	4990		
Bottom Logged Interval	4988		
Top Log Interval	0		
Casing Driller	8 5/8" @ 315		
Casing Logger	314		
Bit Size	7 7/8		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 3800 PPM	
Density / Viscosity	9.0/65		
pH / Fluid Loss	10.0/9.6		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.65 @ 87F		
Rmf @ Meas. Temp	.48 @ 87F		
Rmc @ Meas. Temp	.76 @ 87F		
Source of Rmf / Rmc	MEASURED		
Rm @ BHT	.45 @ 125F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	125F		
Equipment Number	680		
Location	HAYS, KS.		
Recorded By	JASON CAPPELLUCCI		
Witnessed By	PHIL ASKEY		

<<< Fold Here >>>

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.

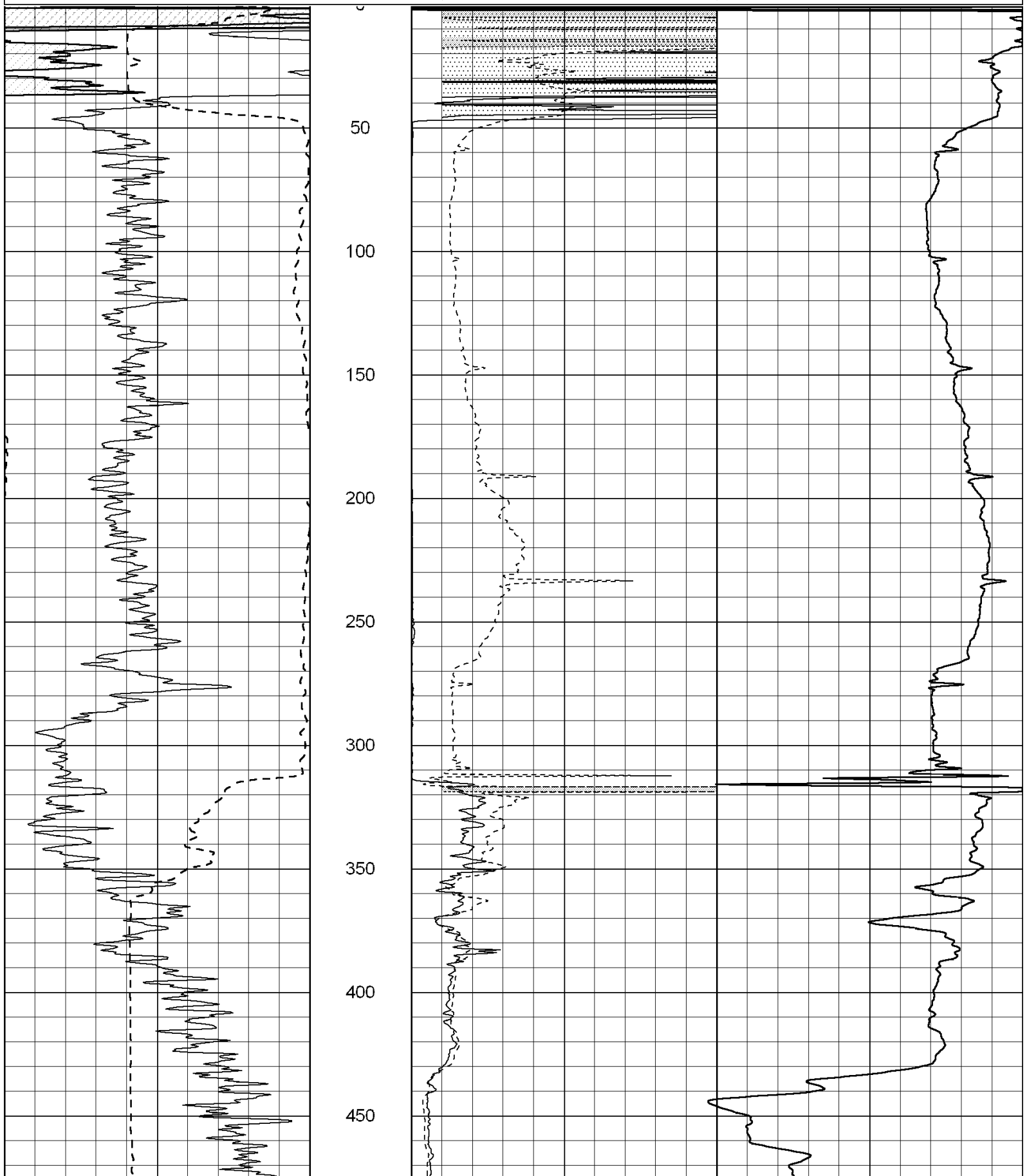
Comments

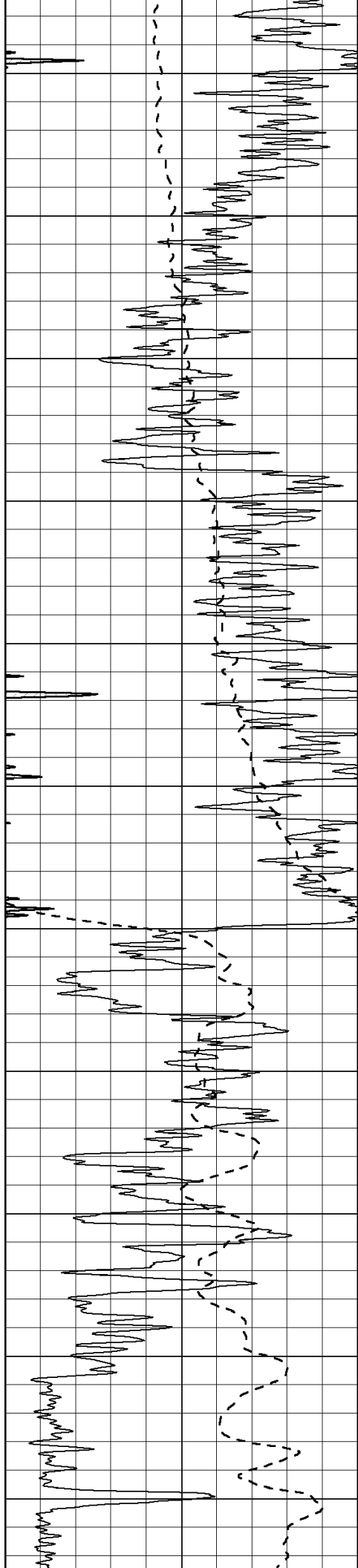
THANK YOU FOR USING SUPERIOR WELL SERVICE (785) 628-6395
DIRECTIONS
EAST EDGE OF BRANDON CO. - 1 1/2 N. - 1/2 W. INTO

Charted by:

Depth in Feet scaled 1:600

0	Gamma Ray (GAPI)	150	0	RLL3 (Ohm-m)	50	
-100	SP (mV)	100	0	Deep Induction (Ohm-m)	50	
-----			-----			
			1000	CILD (mmho/m)	0	
			50	RILD X10 (Ohm-m)	500	
			50	RLL3 X10 (Ohm-m)	500	
-----			-----			





500

550

600

650

700

750

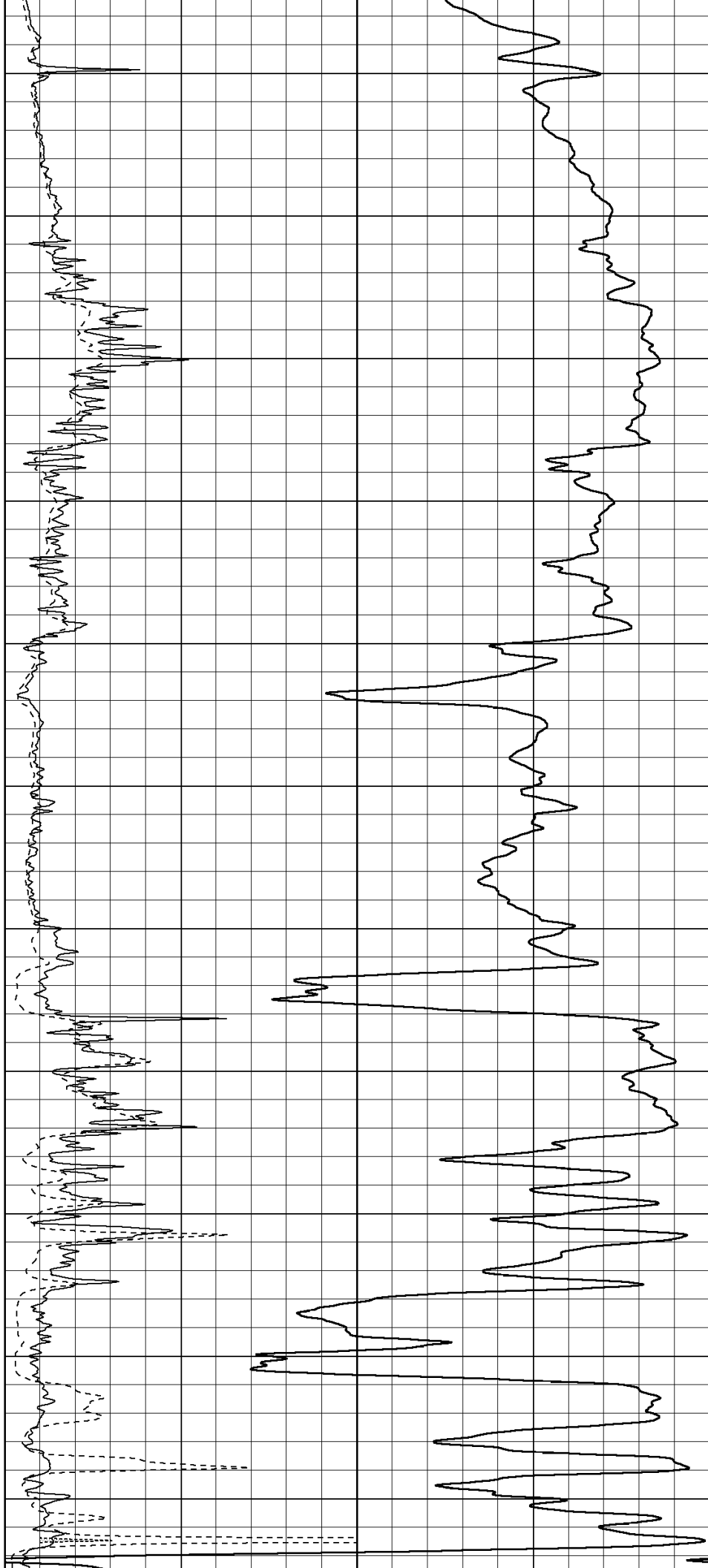
800

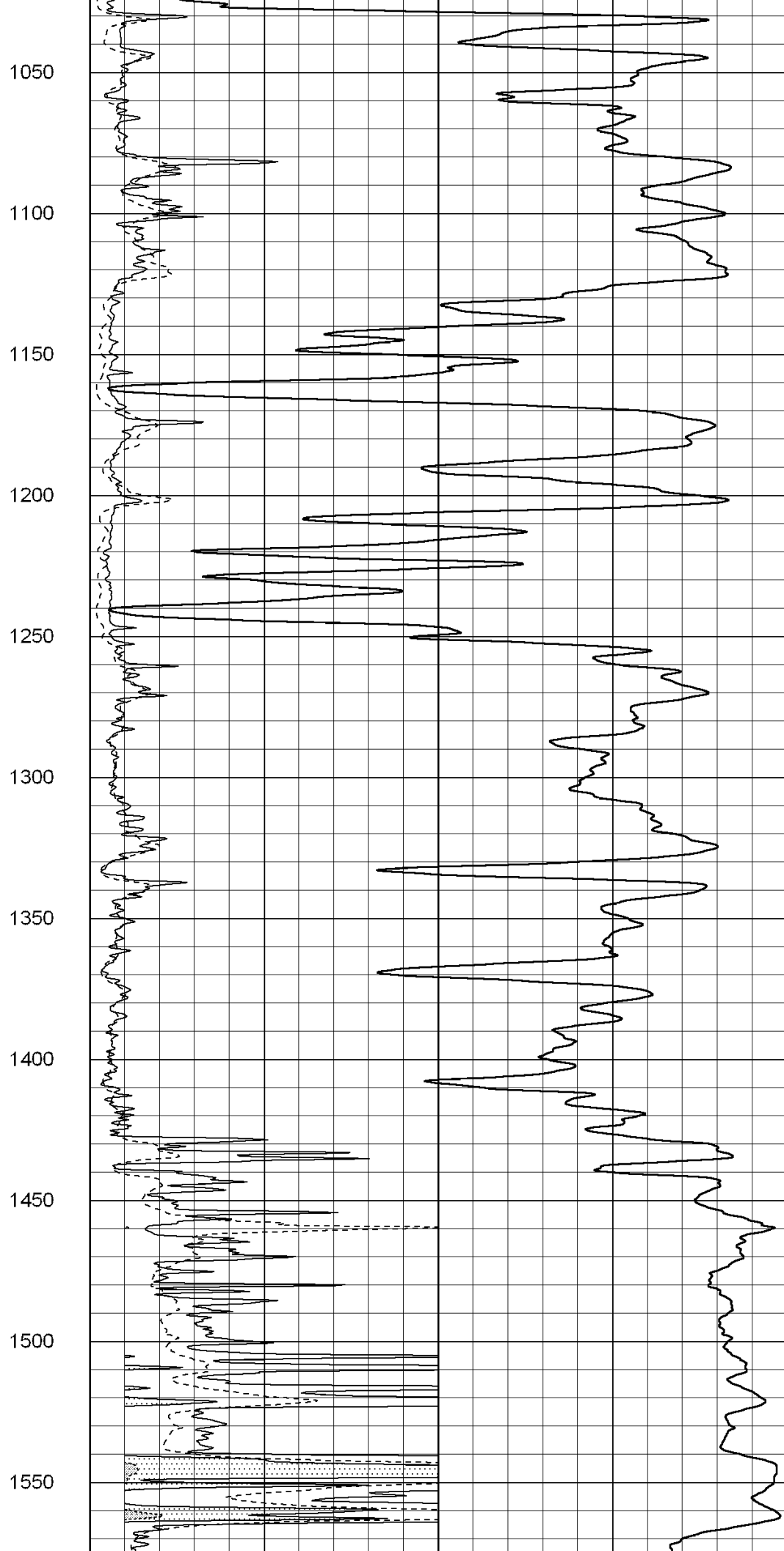
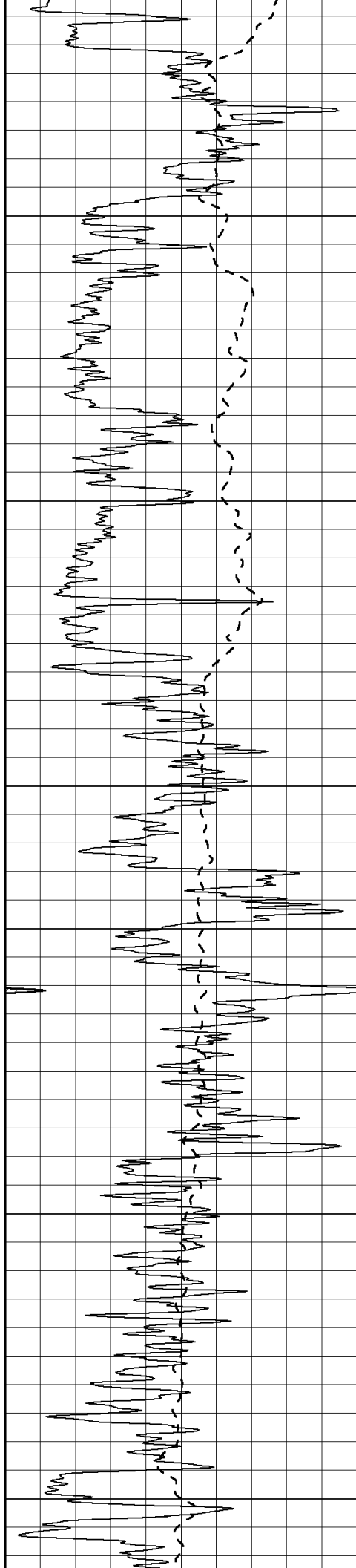
850

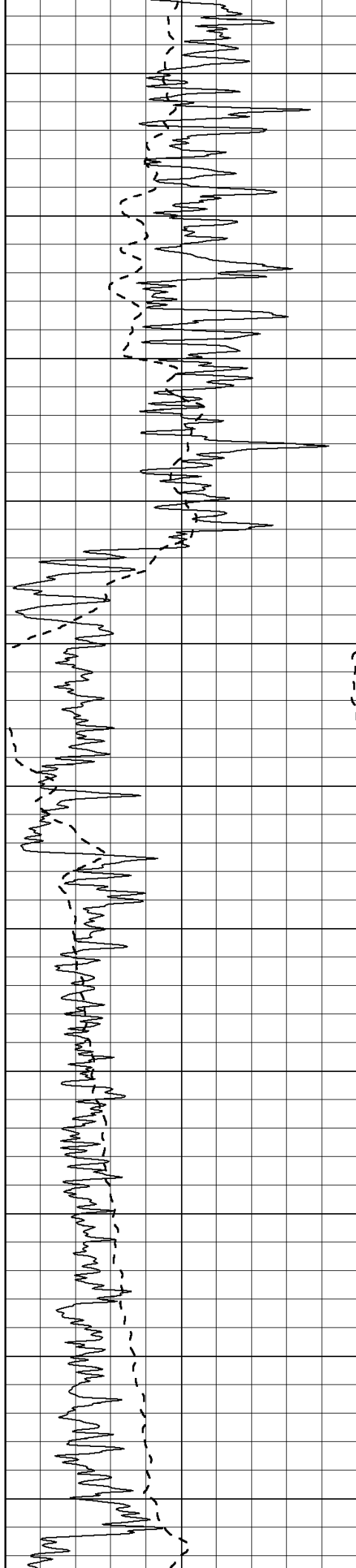
900

950

1000







1600

1650

1700

1750

1800

1850

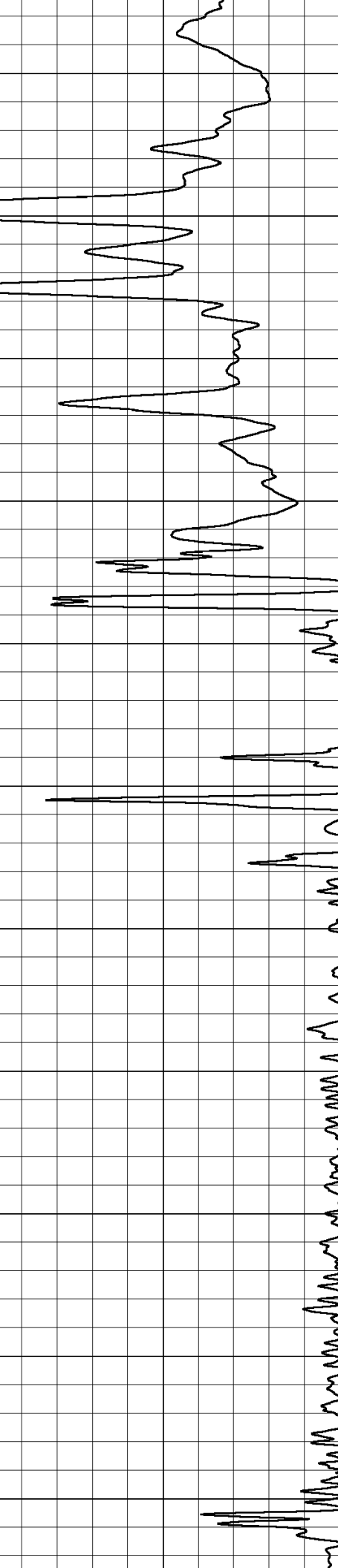
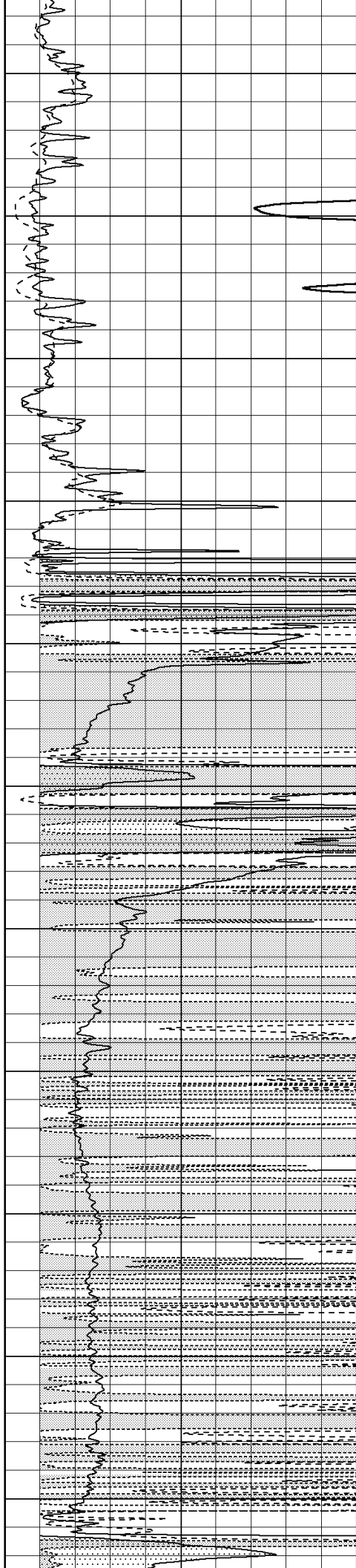
1900

1950

2000

2050

2100



2150

2200

2250

2300

2350

2400

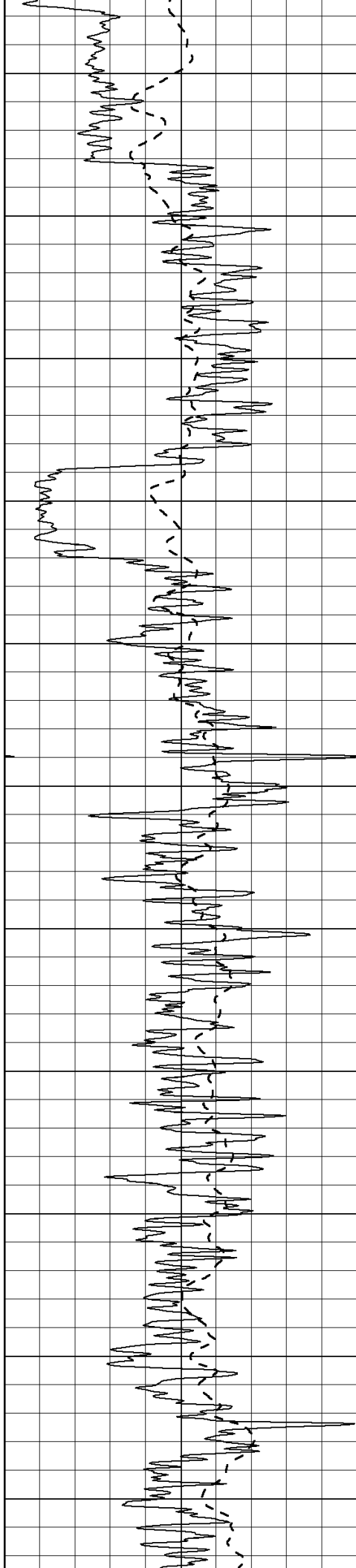
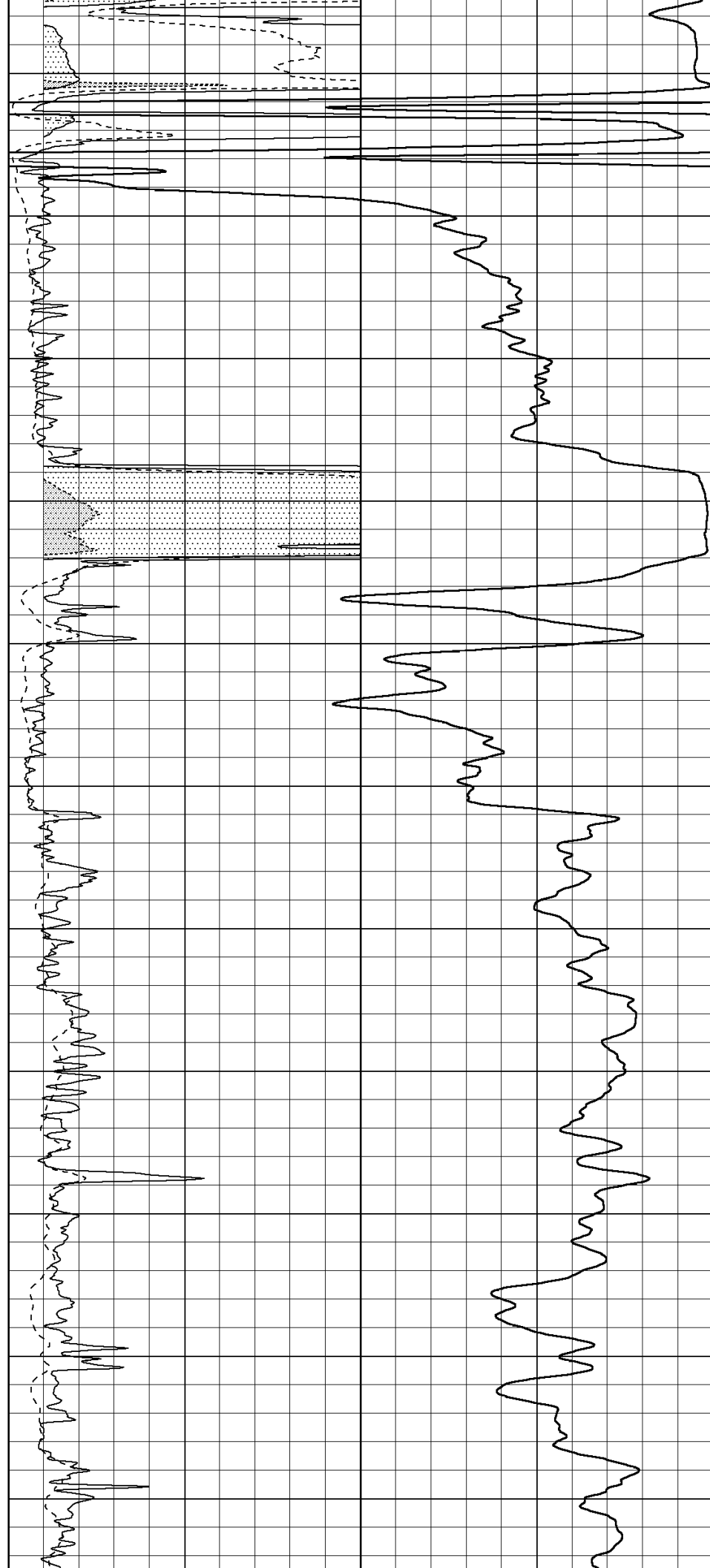
2450

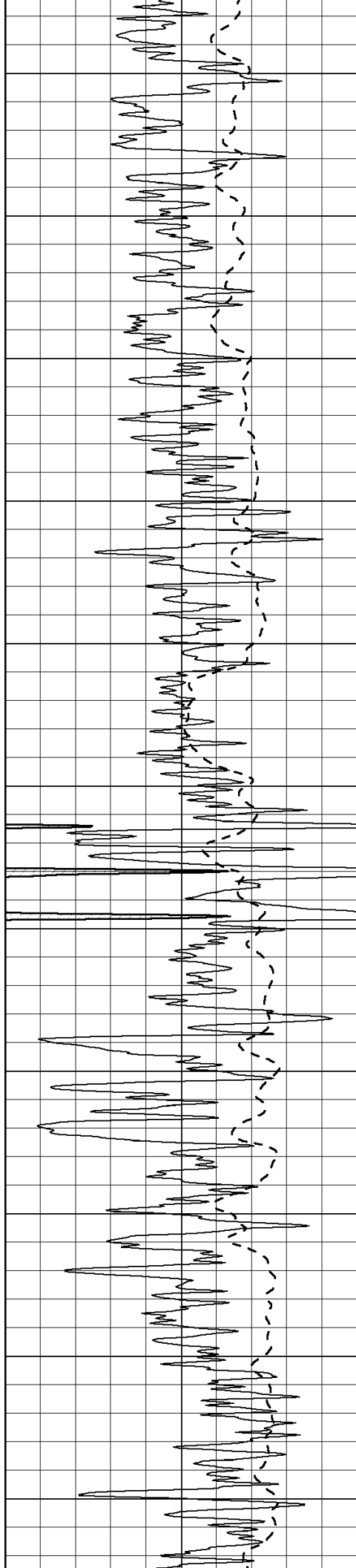
2500

2550

2600

2650





2700

2750

2800

2850

2900

2950

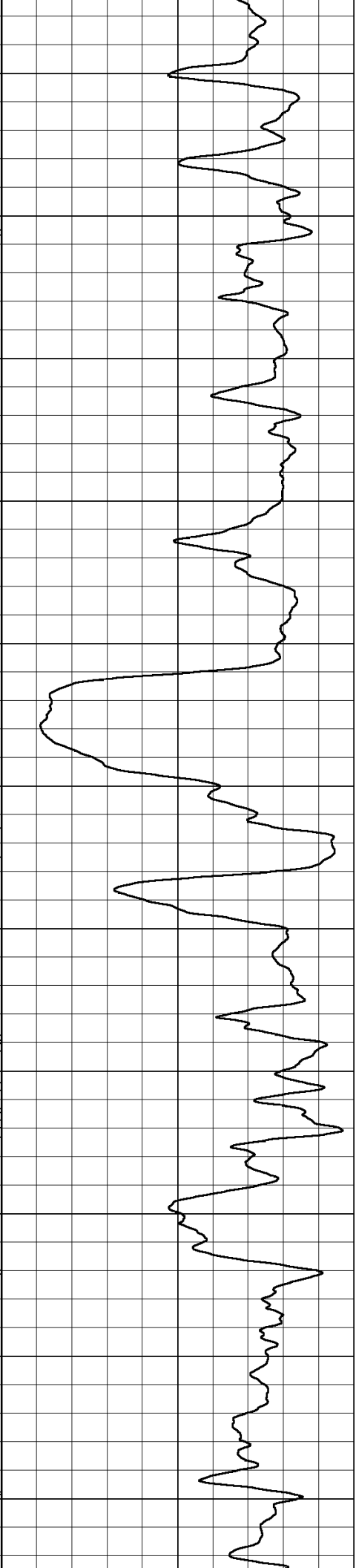
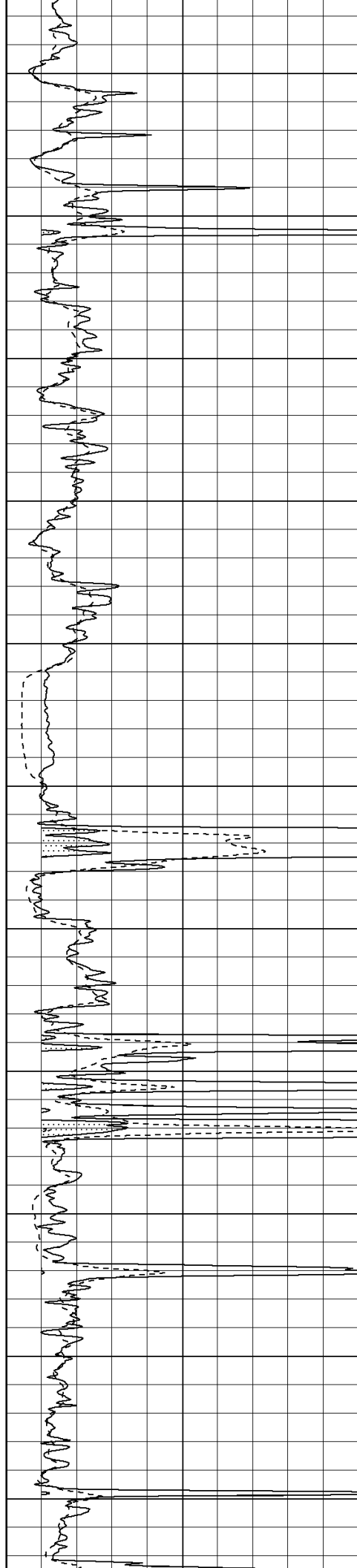
3000

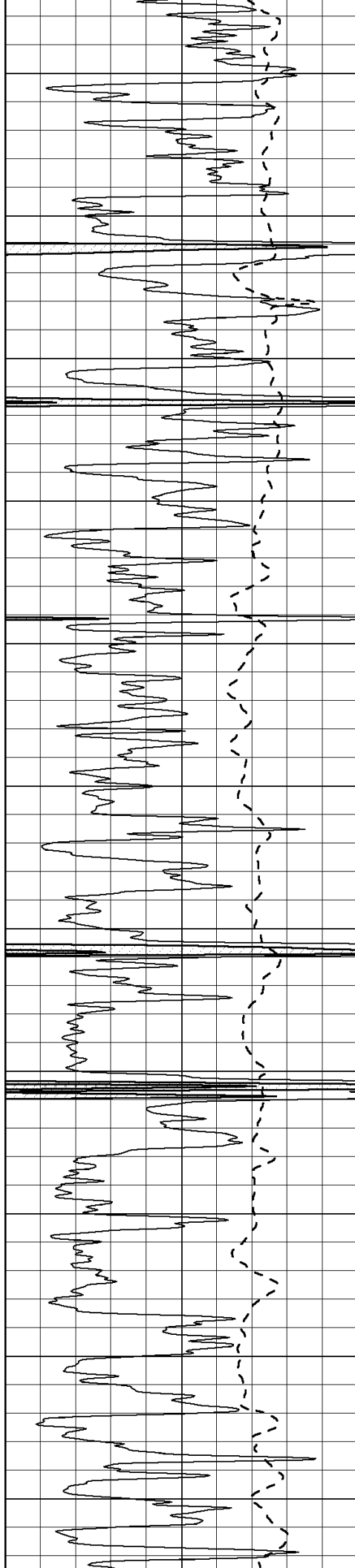
3050

3100

3150

3200





3250

3300

3350

3400

3450

3500

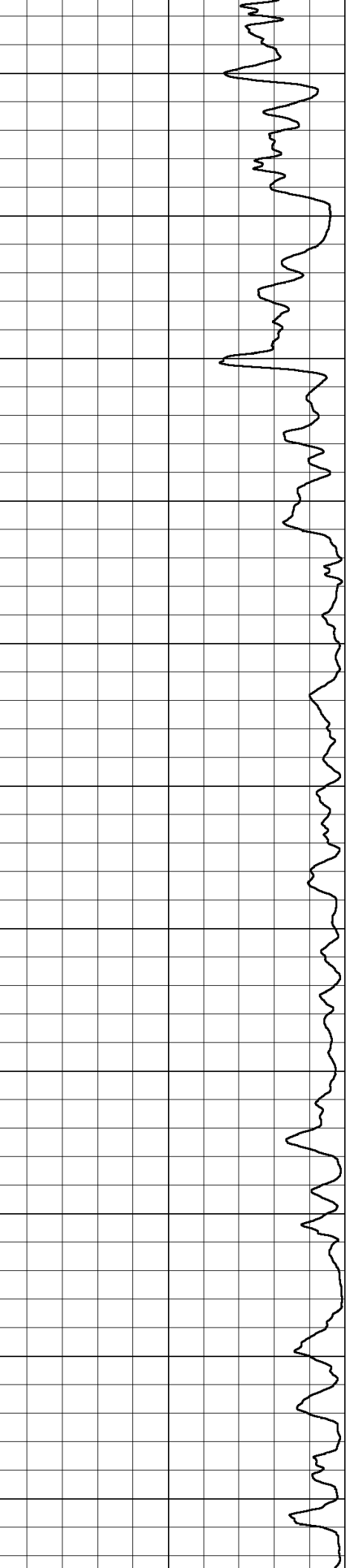
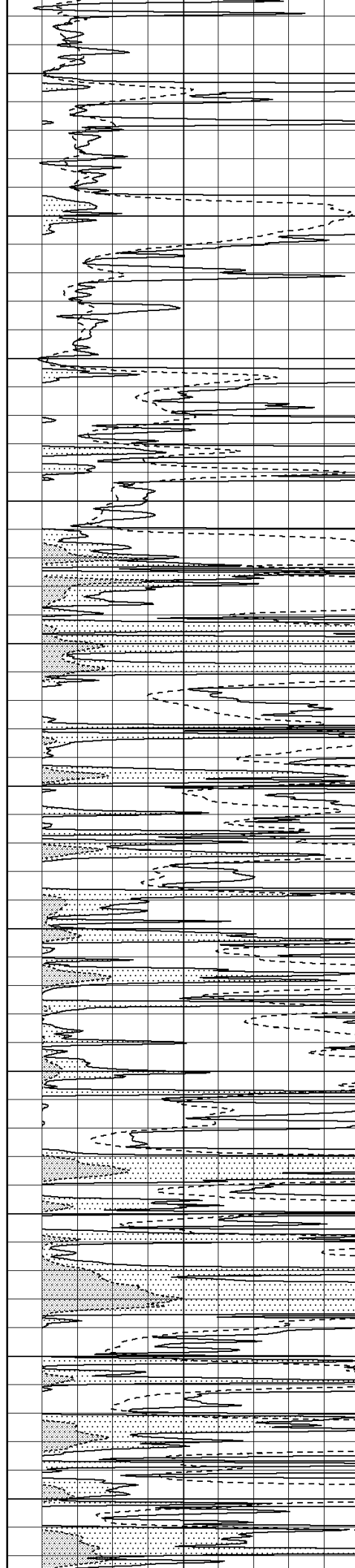
3550

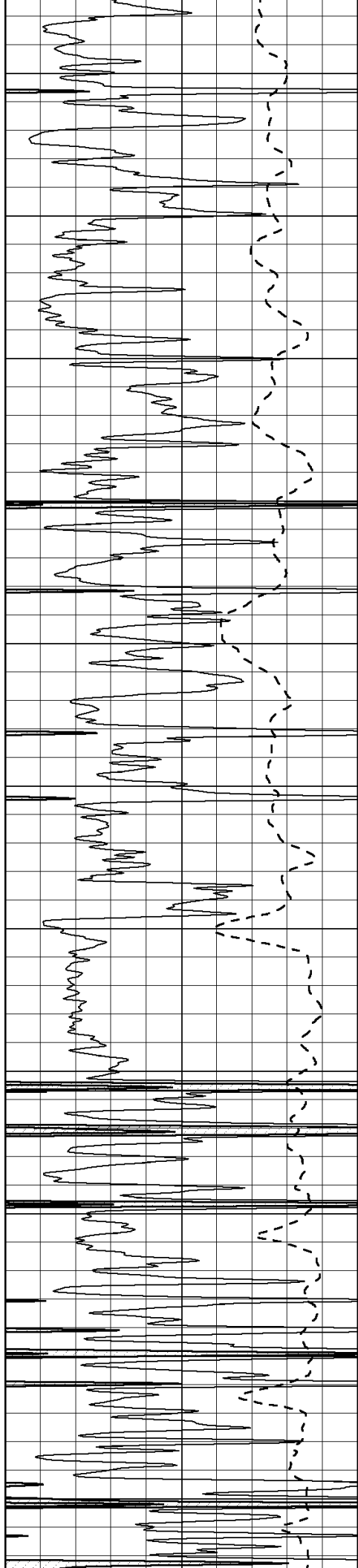
3600

3650

3700

3750





3800

3850

3900

3950

4000

4050

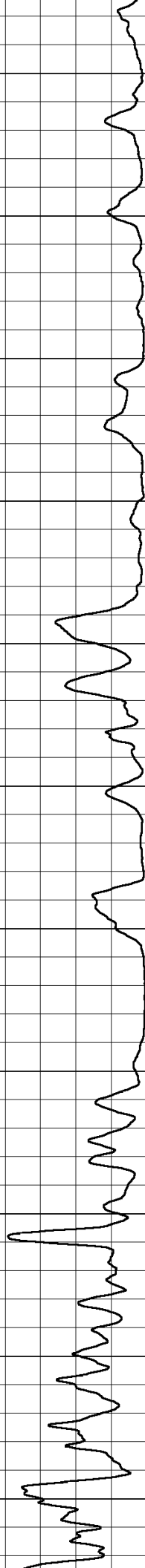
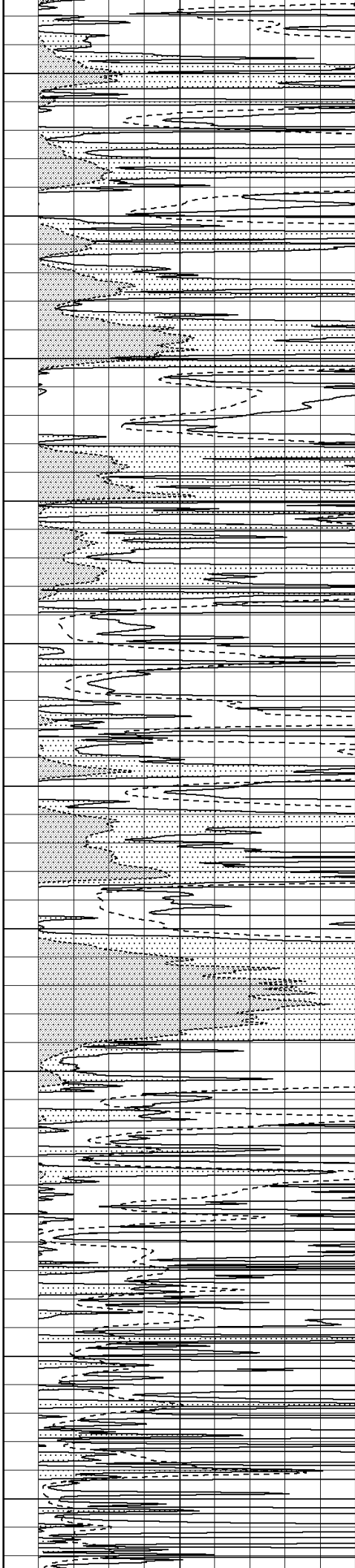
4100

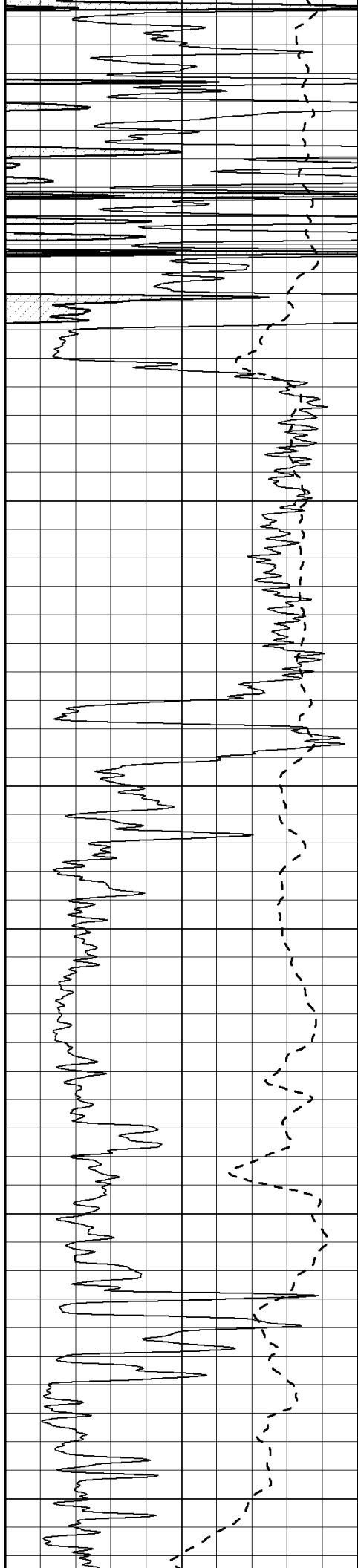
4150

4200

4250

4300





4350

4400

4450

4500

4550

4600

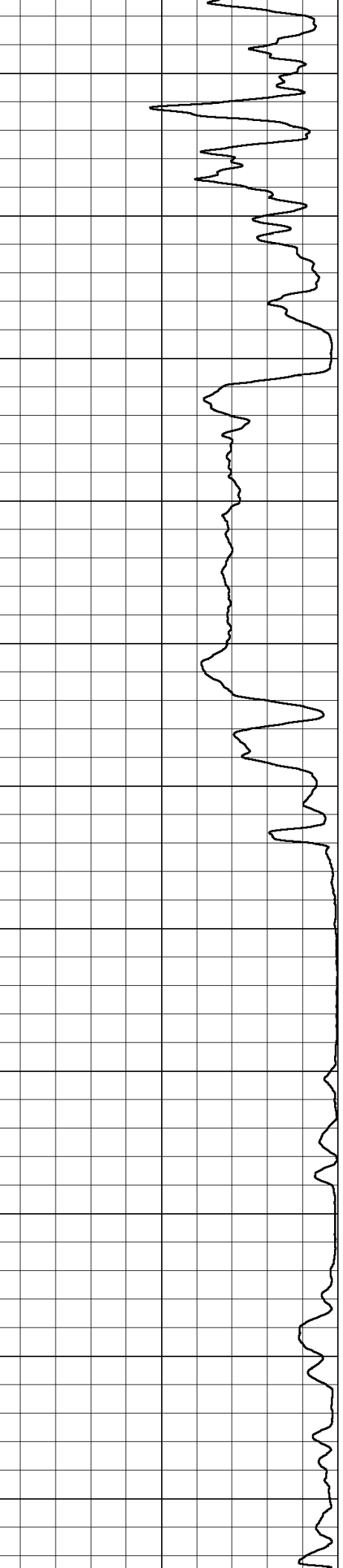
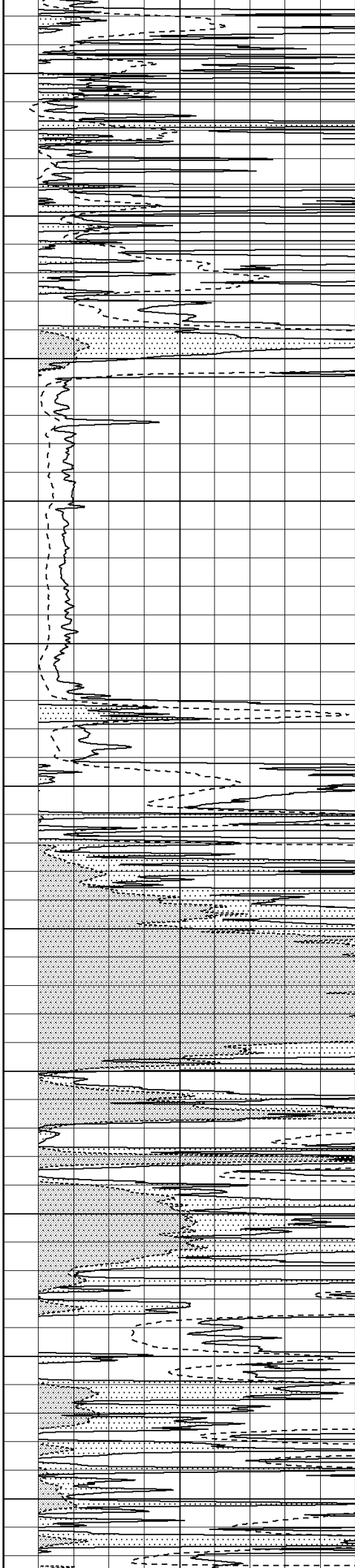
4650

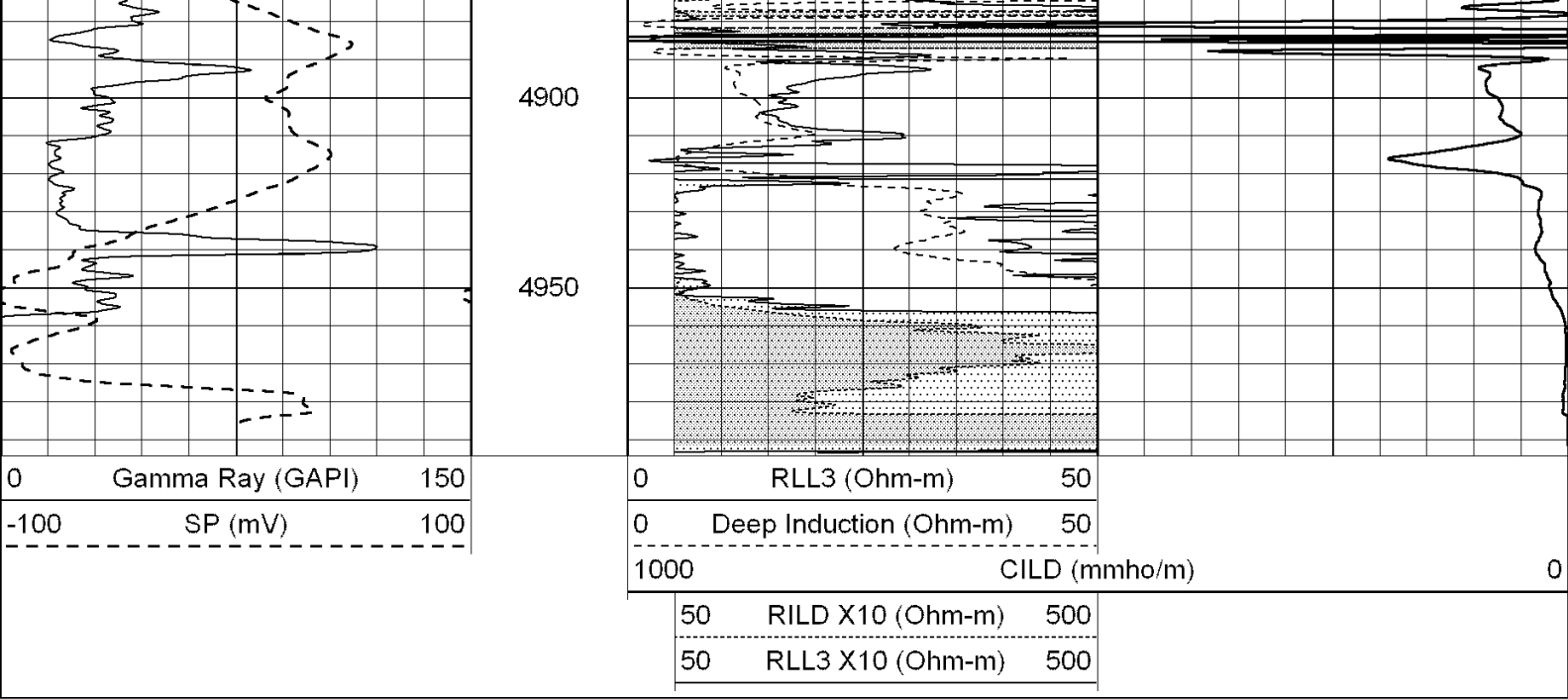
4700

4750

4800

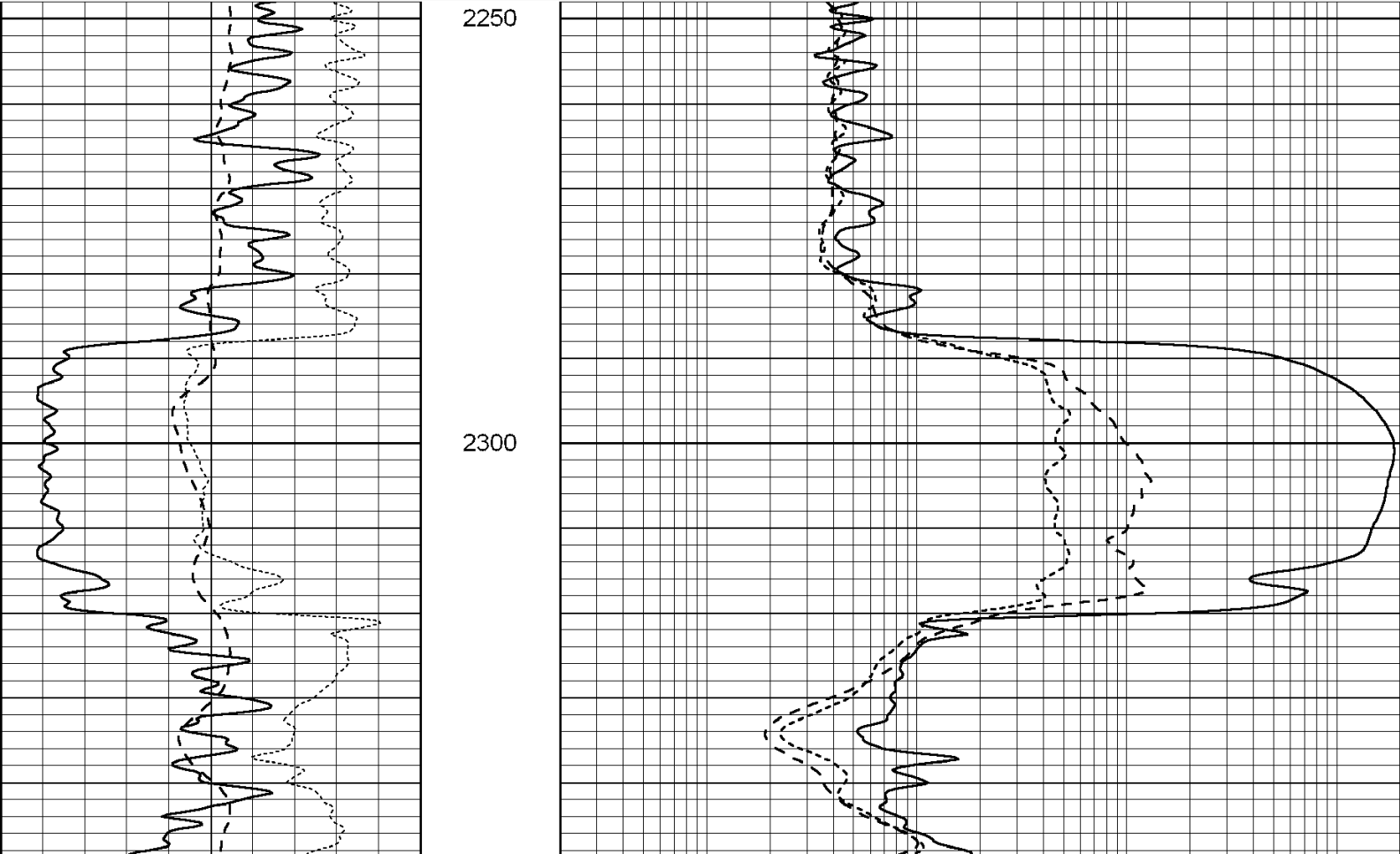
4850





Database File:		005122pe.db	
Dataset Pathname:		pass3.2	
Presentation Format:		_dil	
Dataset Creation:		Sat May 01 00:09:33 2010 by Calc Open-Cased 090629	
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	MEDIUM INDUCTION (Ohm-m)	2000
-250	Rxo/Rt	50		0.2	DEEP INDUCTION (Ohm-m)	2000



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

2350

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



SUPERIOR

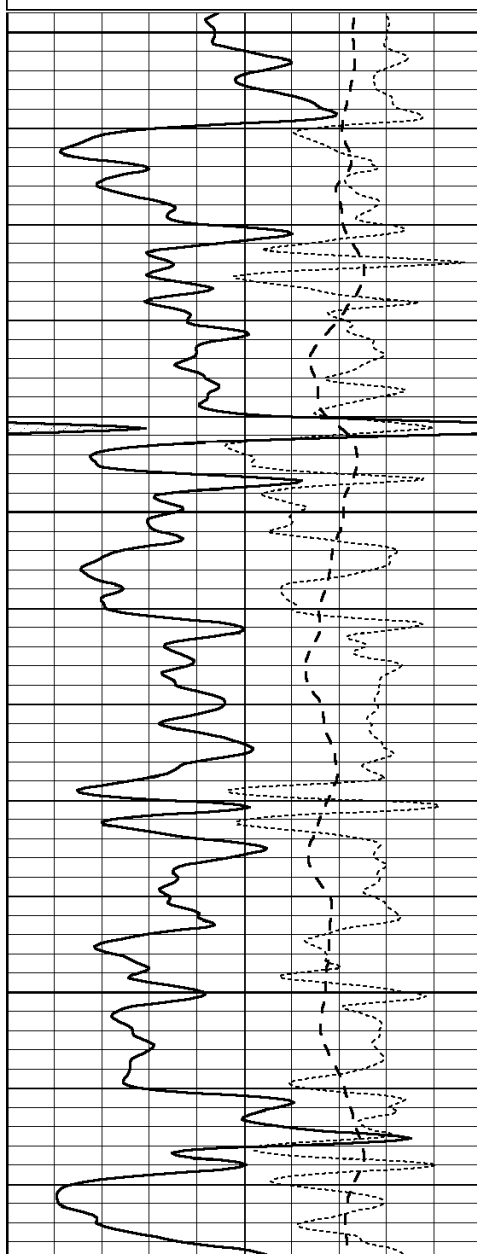
Hays,
Kansas

MAIN SECTION

Database File: 005122pe.db
 Dataset Pathname: pass3.1
 Presentation Format: _dil
 Dataset Creation: Fri Apr 30 23:15:53 2010 by Calc Open-Cased 090629
 Charted by: Depth in Feet scaled 1:240

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

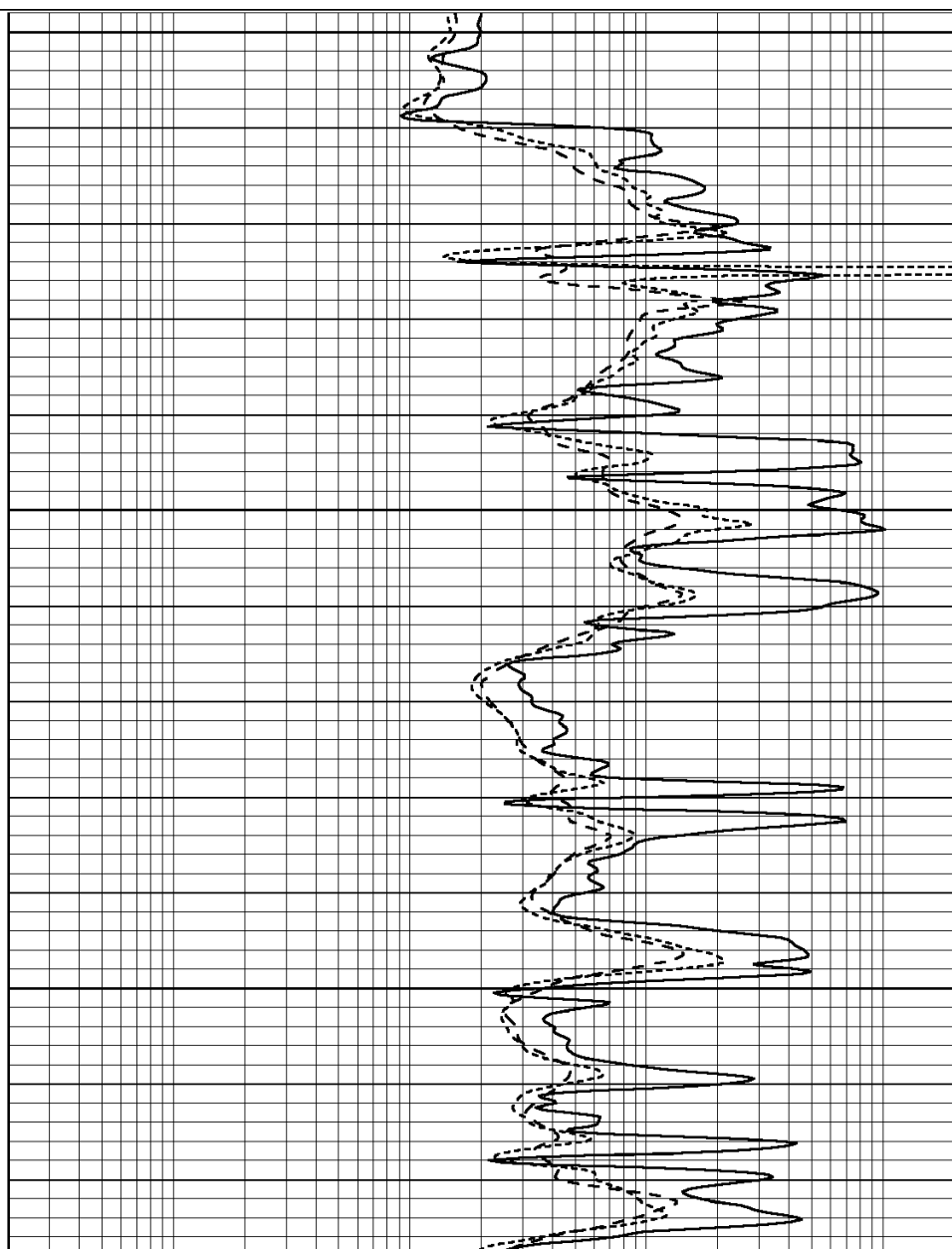
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000

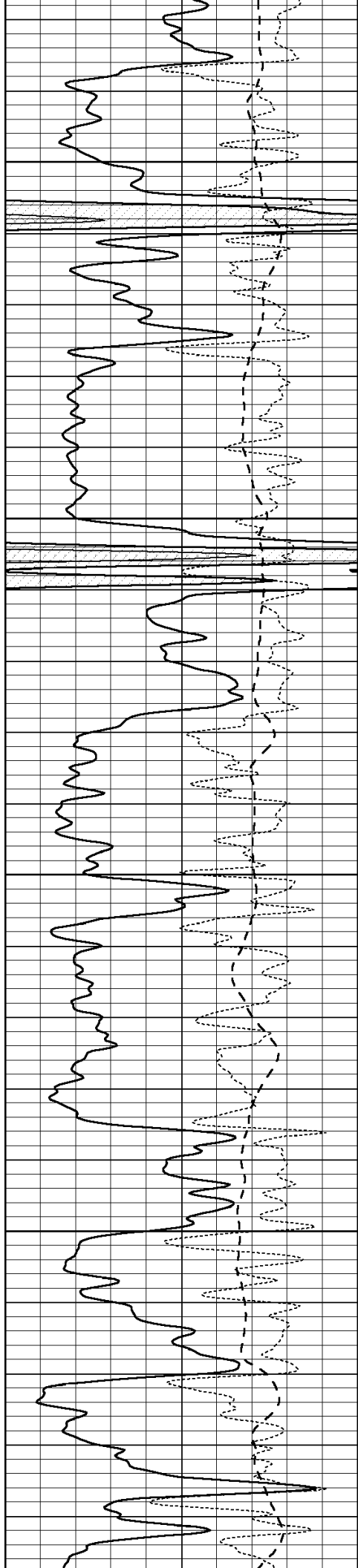


3400

3450

3500



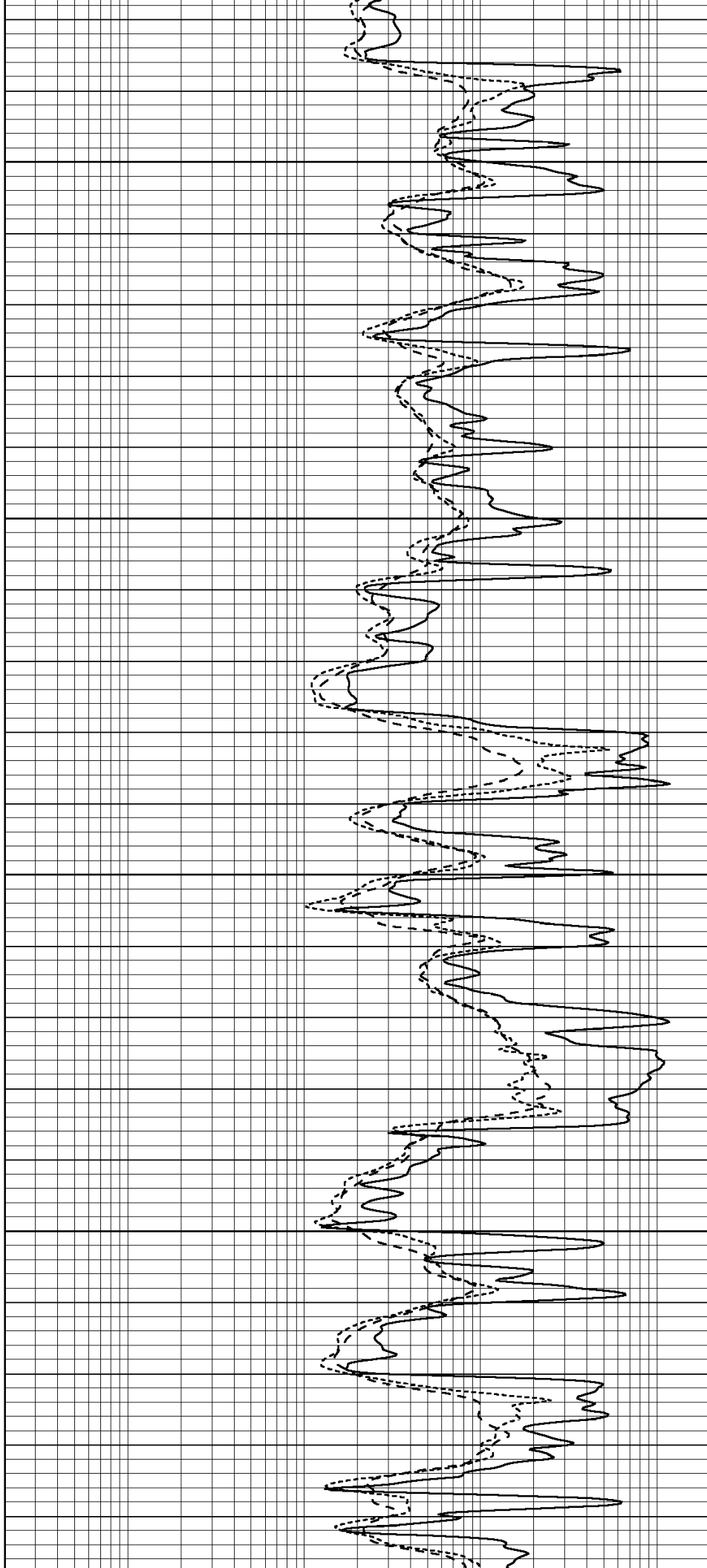


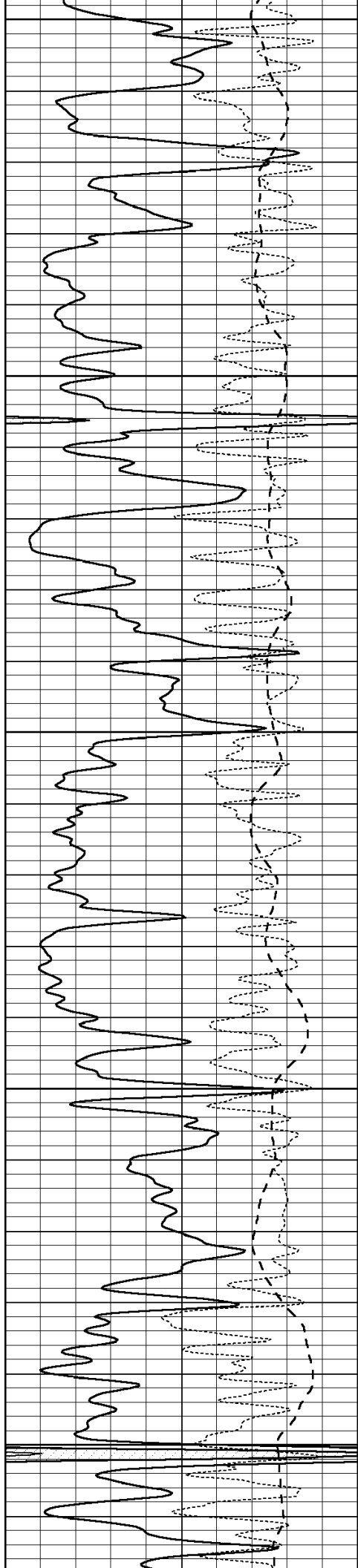
3550

3600

3650

3700





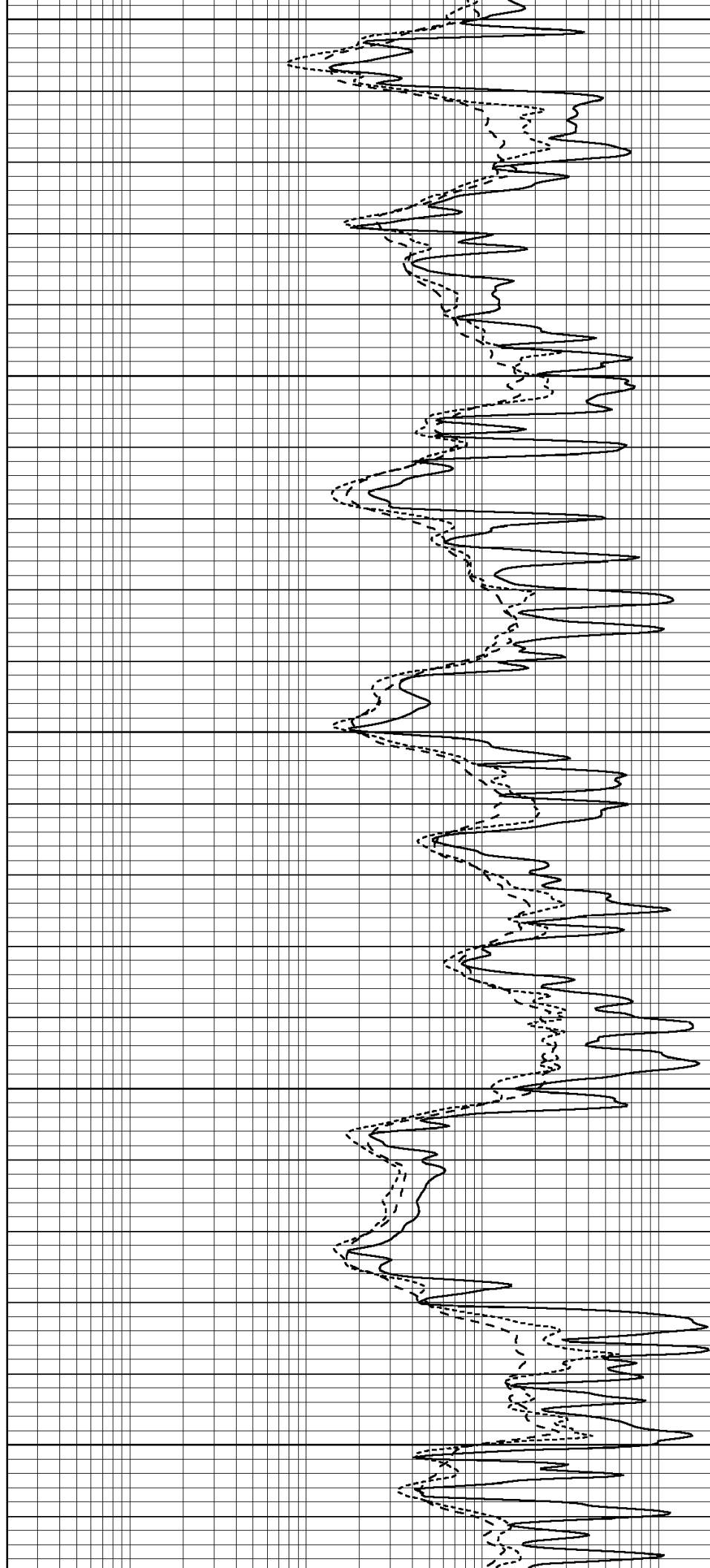
3750

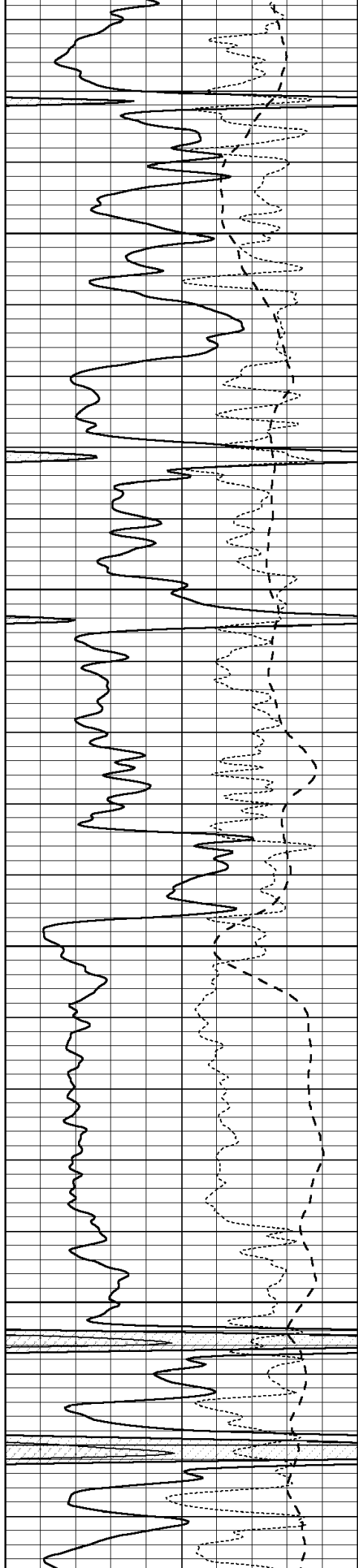
3800

3850

3900

3950



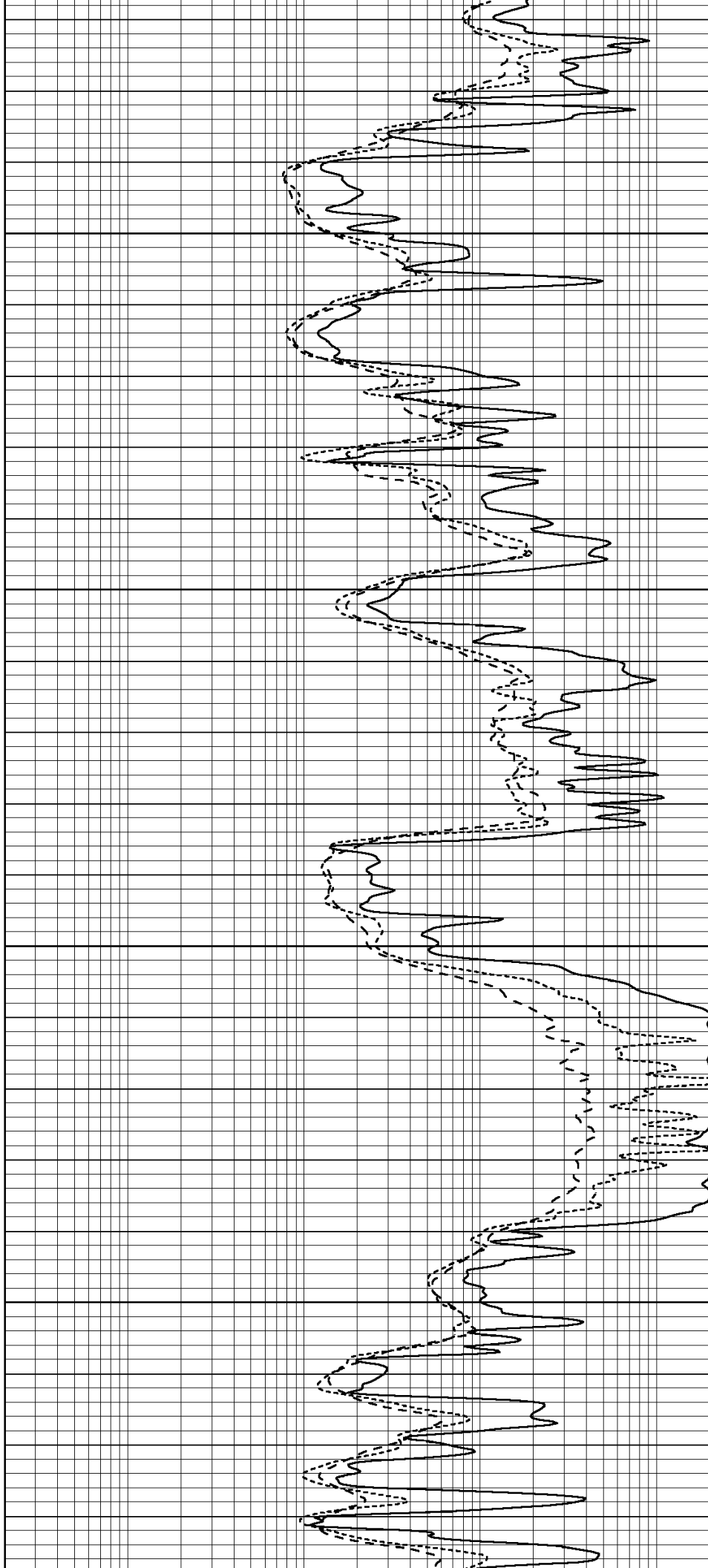


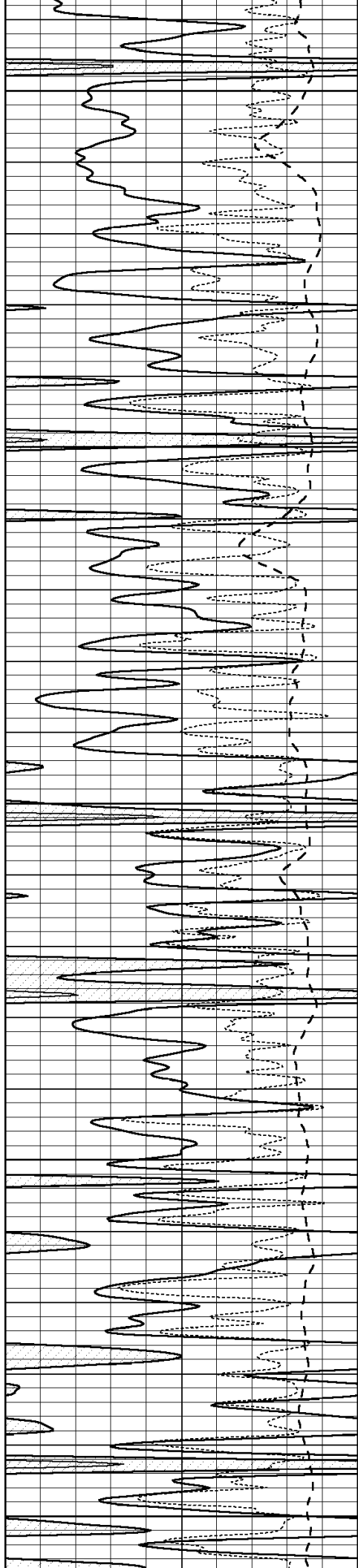
4000

4050

4100

4150





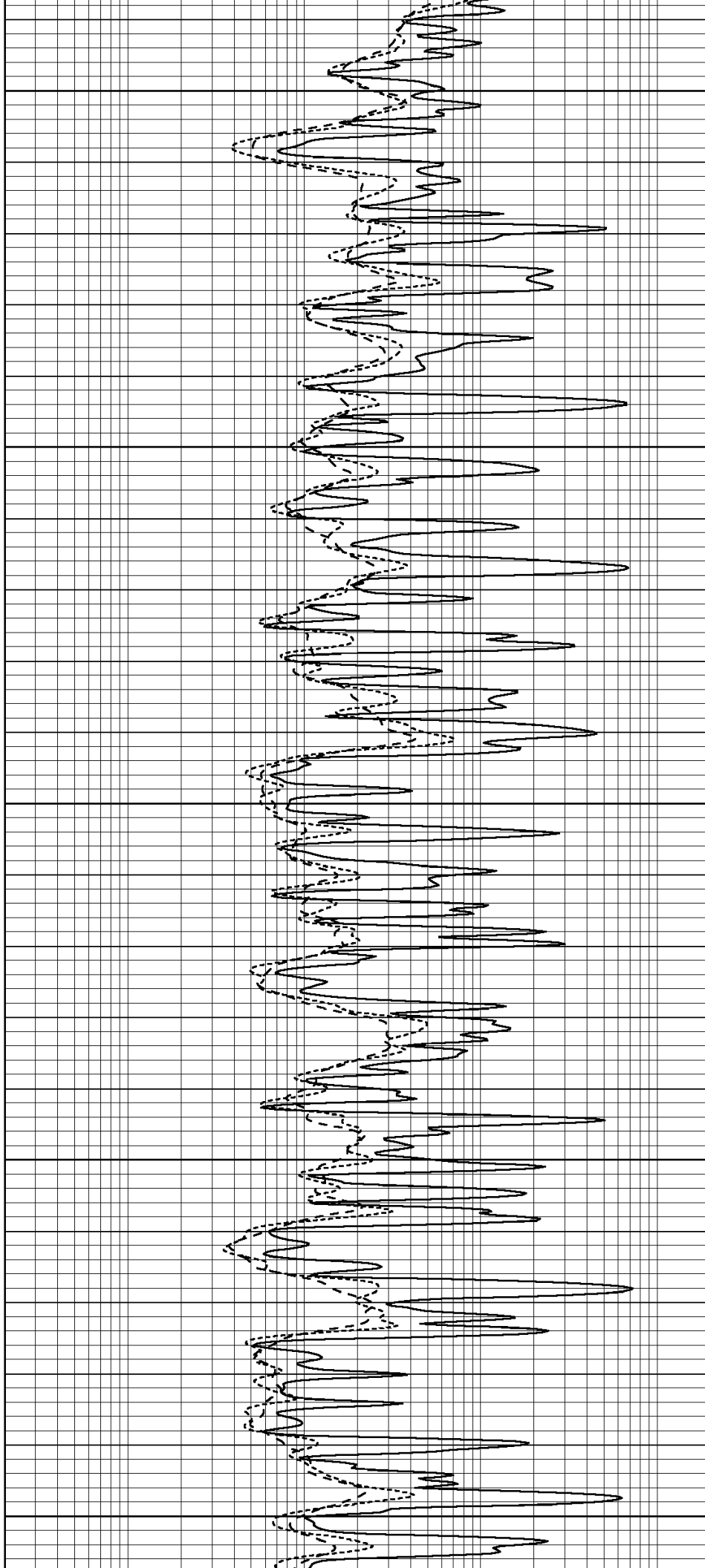
4200

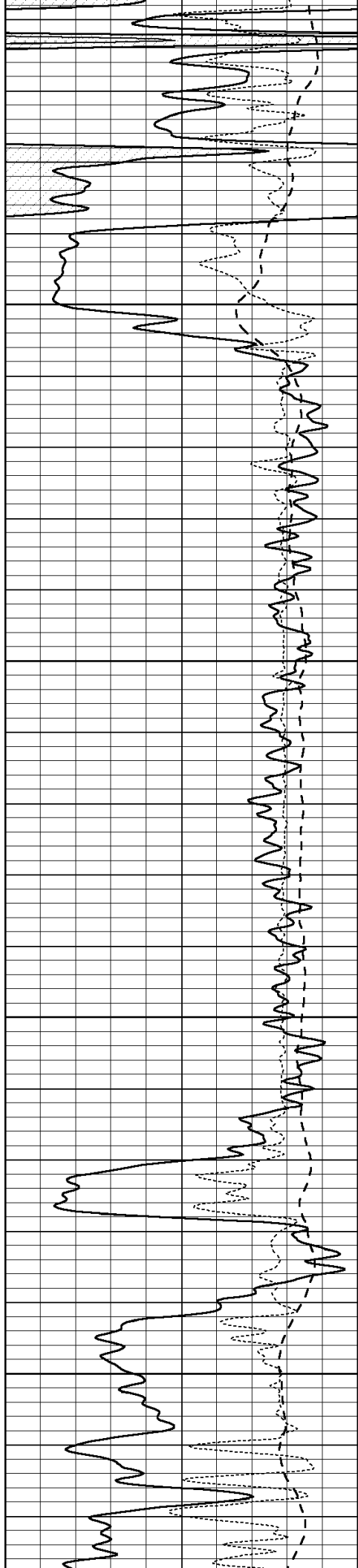
4250

4300

4350

4400



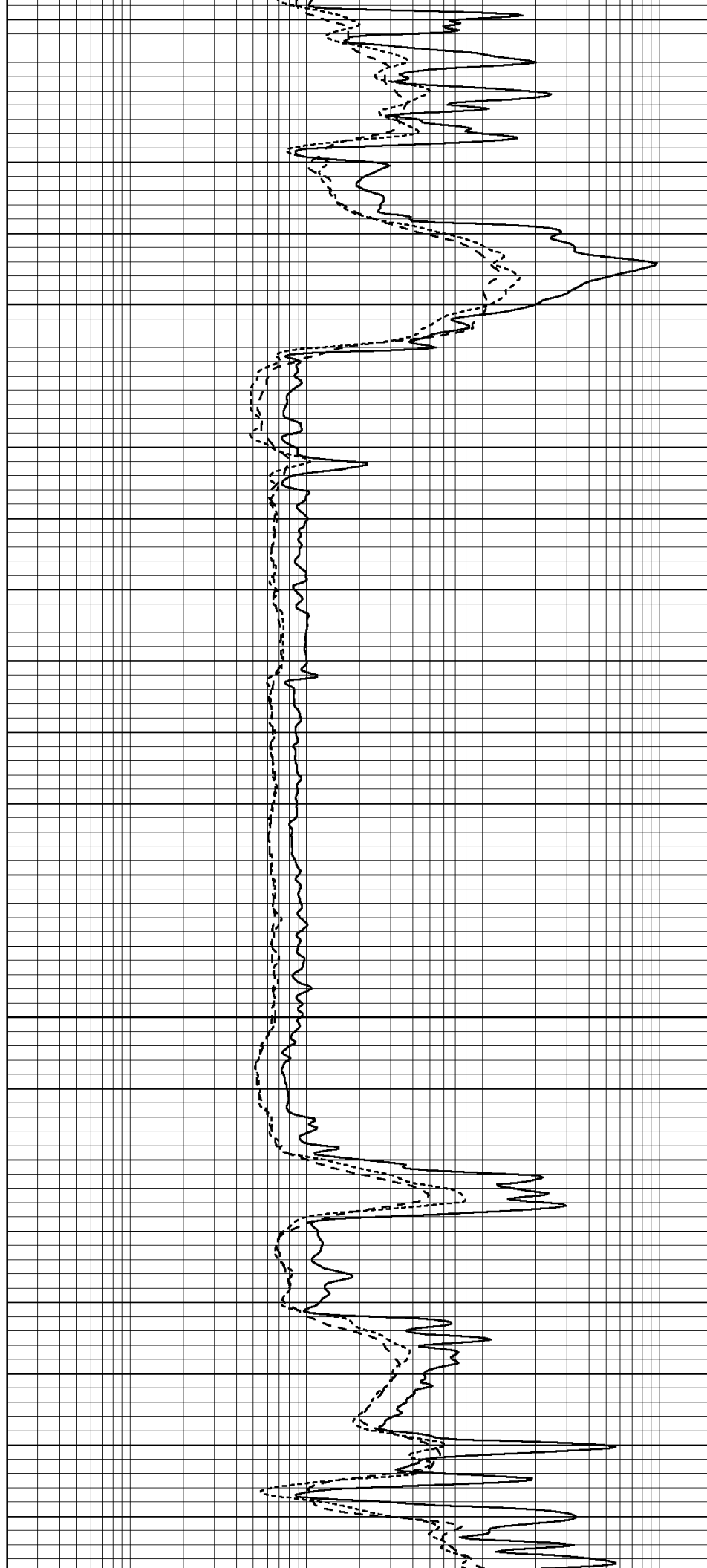


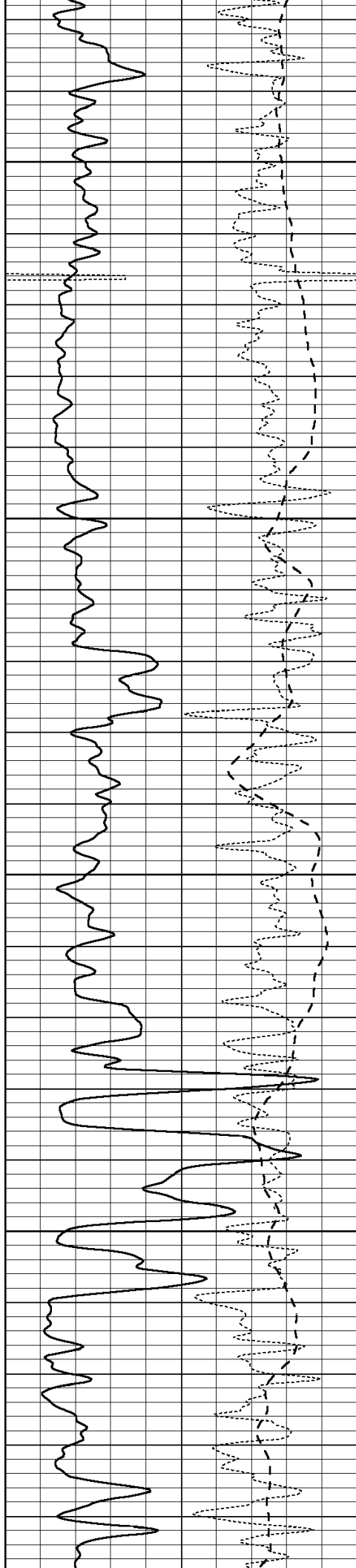
4450

4500

4550

4600



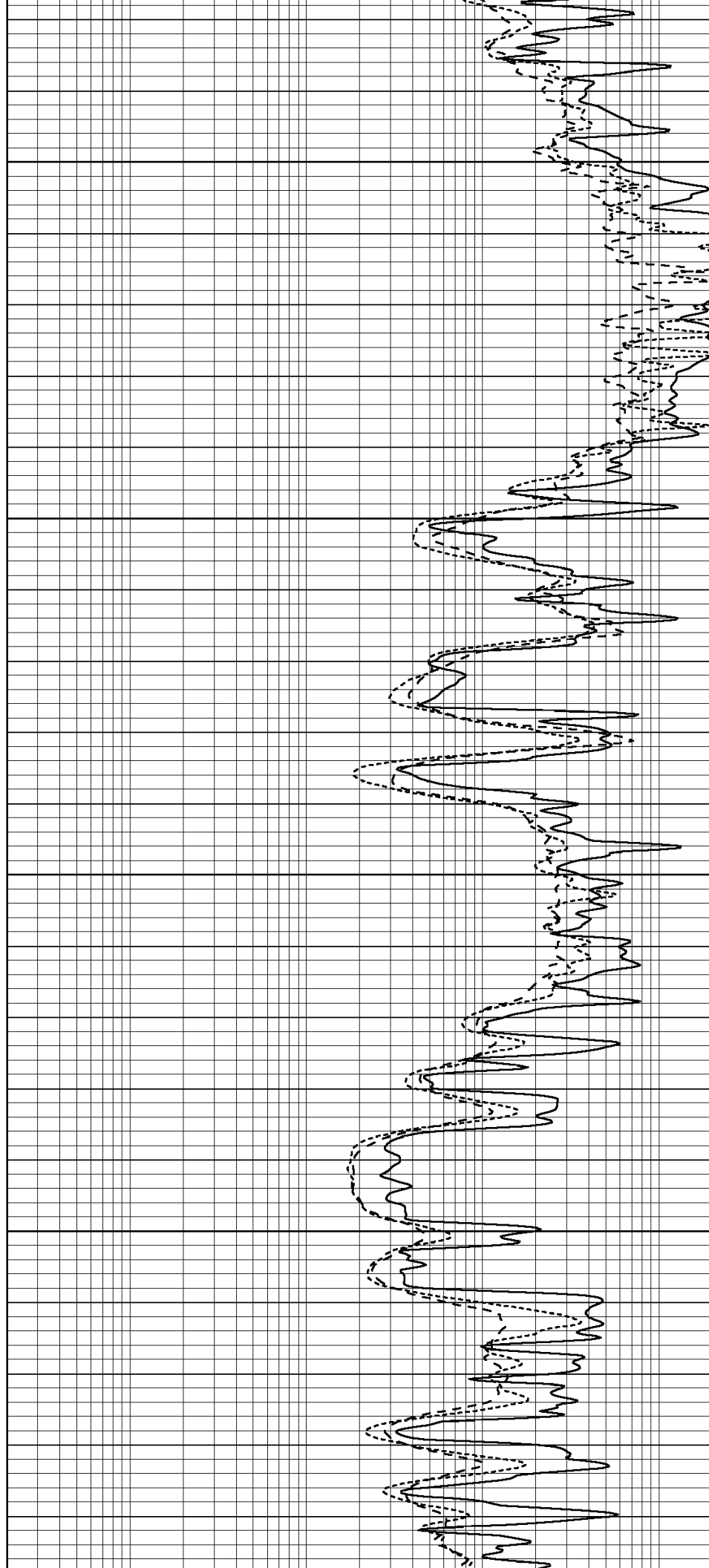


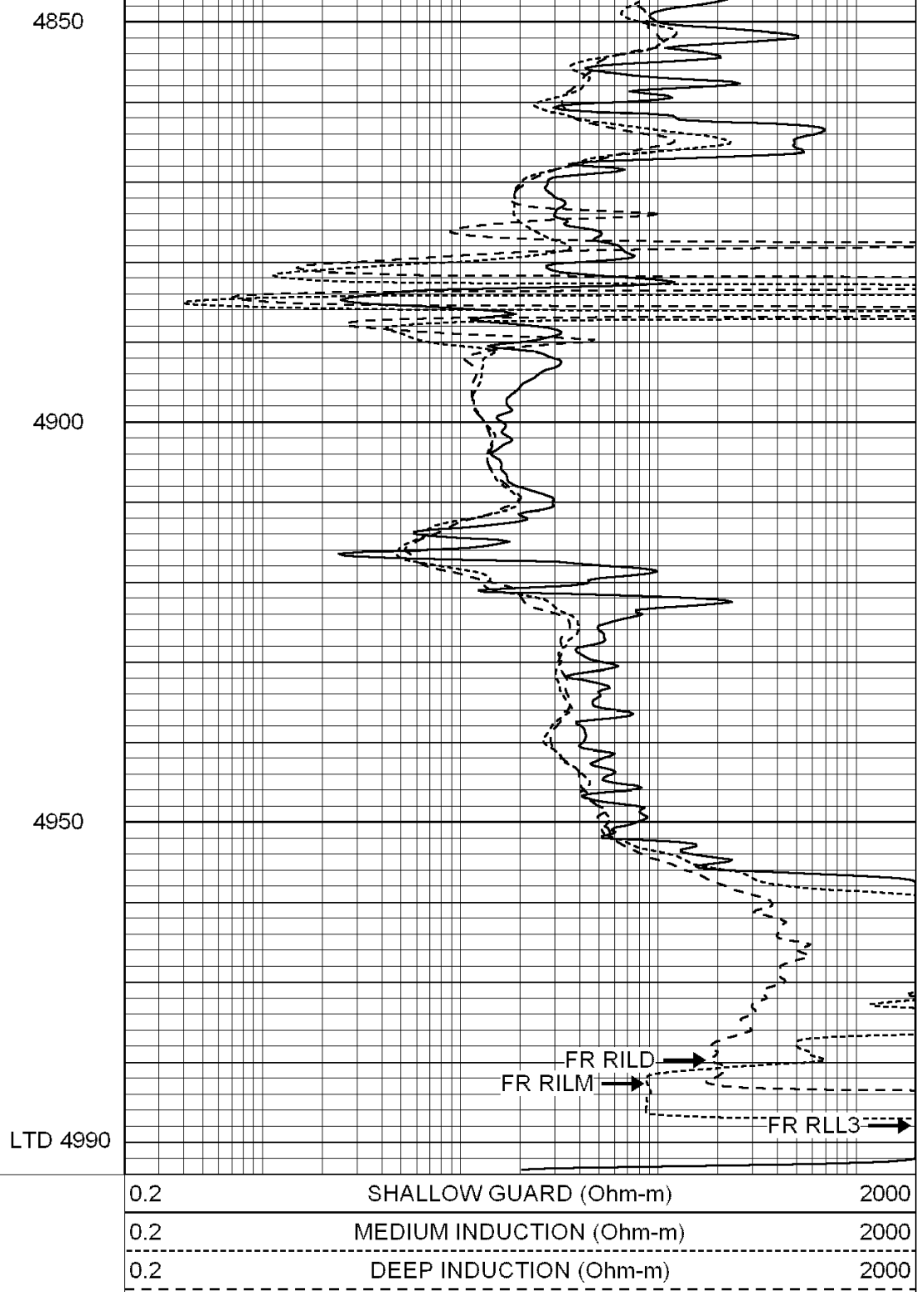
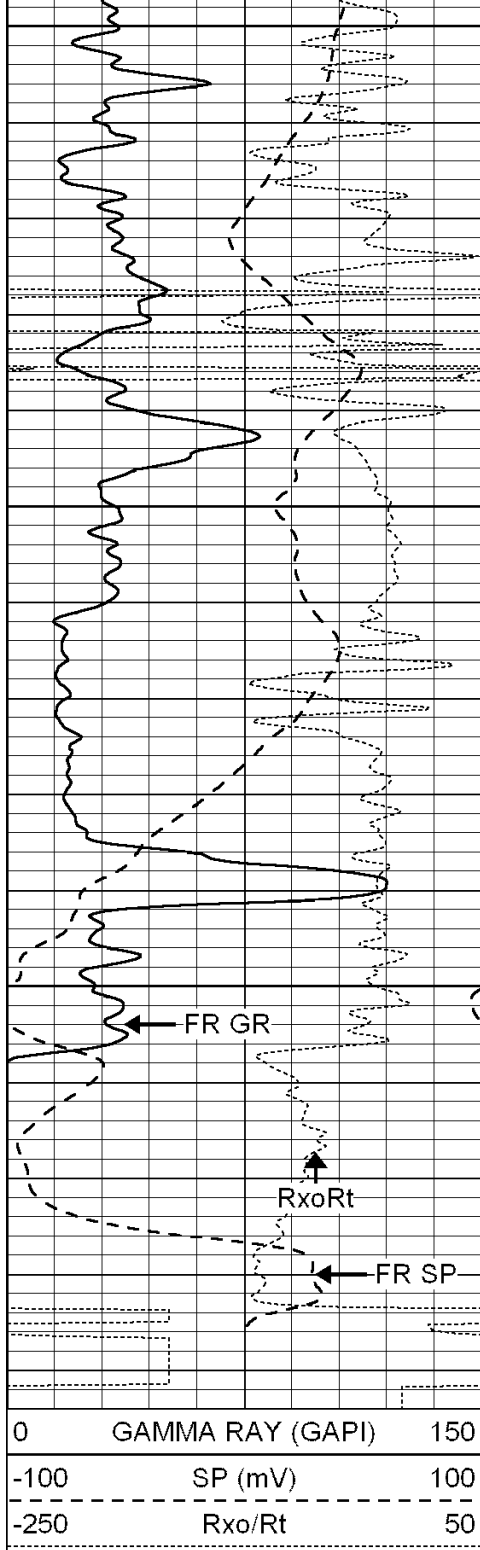
4650

4700

4750

4800

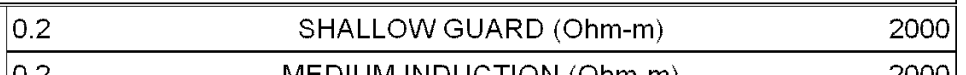
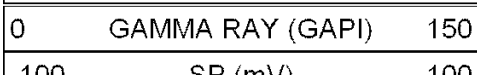




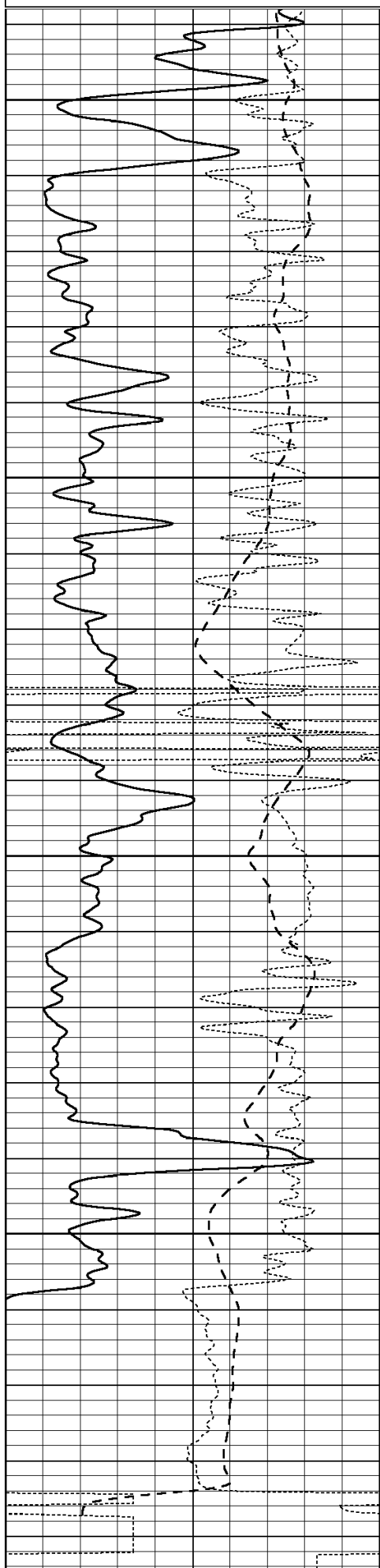
SUPERIOR
Hays,
Kansas

REPEAT SECTION

Database File: 005122pe.db
 Dataset Pathname: pass2.1
 Presentation Format: _dil
 Dataset Creation: Fri Apr 30 22:53:30 2010 by Calc Open-Cased 090629
 Charted by: Depth in Feet scaled 1:240



-100 SP (mV) 100
-250 Rxo/Rt 50



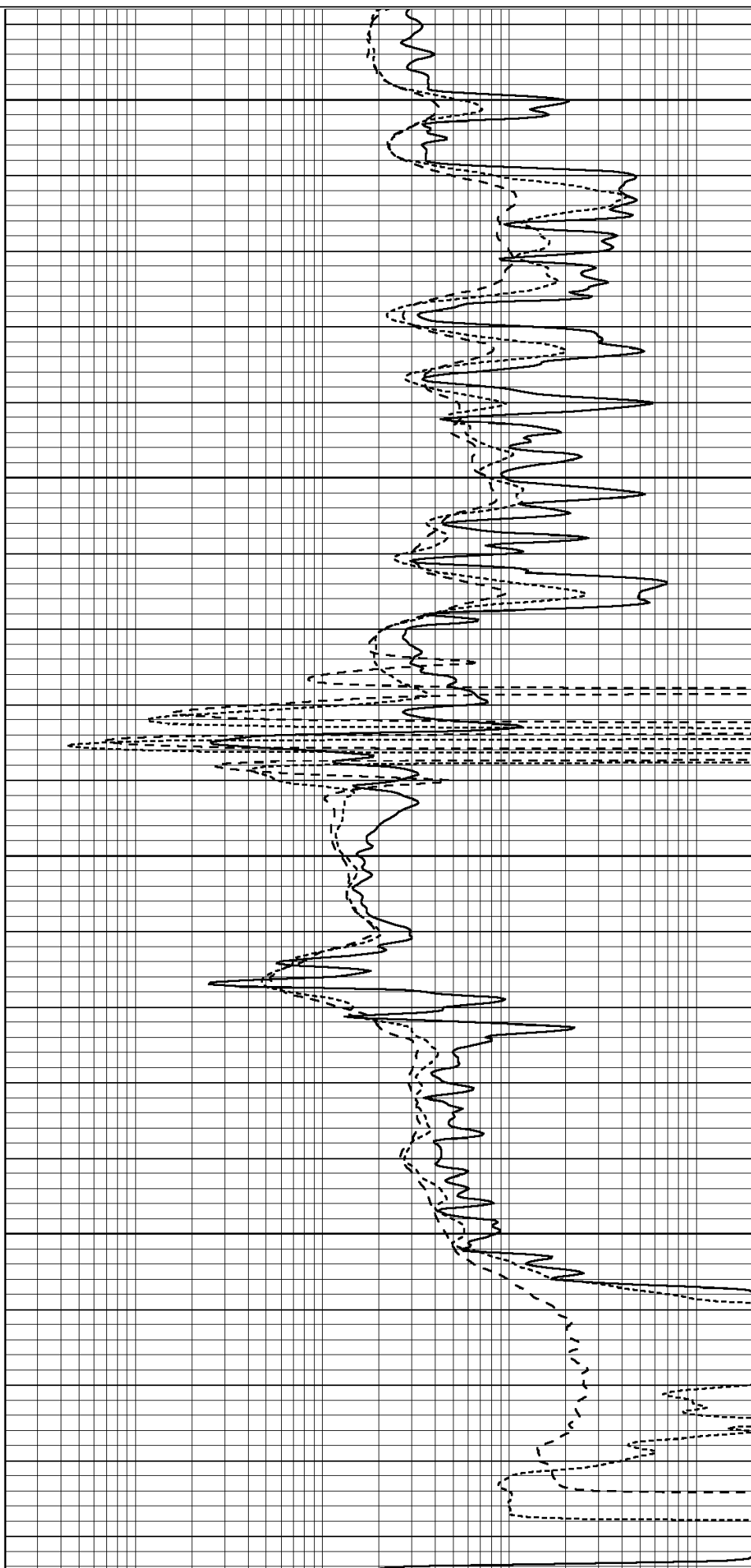
4800

4850

4900

4950

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



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

Calibration Report								
Database File:		005122pe.db						
Dataset Pathname:		pass3.1						
Dataset Creation:		Fri Apr 30 23:15:53 2010 by Calc Open-Cased 090629						
Dual Induction Calibration Report								
Serial-Model:			PROBE8-DILG					
Surface Cal Performed:			Fri Aug 01 06:33:19 2008					
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	632.616	-9.730
Medium	0.029	0.796	V	0.000	464.000	mmho/m	605.049	-17.680
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		
		-6.500	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			
Performed Mon Oct 29 15:40:49 2007					
Litho Density Calibration					
	Background	Magnesium	Aluminum	Sandstone	
Window 1	1056.3	9118.0	2809.7	10378.4	cps
Window 2	969.9	7671.9	2431.6	8565.8	cps
Window 3	683.8	2939.8	1161.0	3161.8	cps
Window 4	231.4	231.6	226.7	230.8	cps
Long Space	0.0	6702.0	1461.7	7595.9	cps

Short Space	1.2	1433.6	959.4	1568.6	cps
Rho		1.7100	2.5900	1.3800	g/cc
Pe			2.5700	1.5500	
Rib Angle	: 45.2	Rib Slope	: 1.008	Density/Spine Ratio	: 0.559
Spine Angle	: 75.2	Spine Slope	: 3.791	Spine Intercept	: -18.7
Caliper					
Low Ref	Readings	Reference			
High Ref	3.1	8.0			
	5.4	14.0			
	Gain: 2.5		Offset: 1.1		
Compensated Neutron Calibration Report					
		Serial Number:	5I		
		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:	GR6				
Tool Model:	OPEN				
Performed:	Tue Nov 10 08:32:36 2009				
Calibrator Value:	150.0	GAPI			
Background Reading:	0.0	cps			
Calibrator Reading:	276.0	cps			
Sensitivity:	0.5535	GAPI/cps			