



DUAL INDUCTION LOG

Company	WOOLSEY OPERATING COMPANY, LLC.		
Well	McCLAREN #1		
Field	ALFORD		
County	KIOWA	State	KANSAS
Location:	AP1 # : 15-097-21833-00-00		Other Services CBL/CNL SONIC ML
	400' FSL & 400' FWL		
	SEC 33 TWP 30S RGE 18W		
Permanent Datum	GROUND LEVEL	Elevation	2139'
Log Measured From	KELLY BUSHING 12' A.G.L.		
Drilling Measured From	KELLY BUSHING		
Elevation			KB. 2151' D.F. 2149 G.L. 2139
Date	02/10/18		
Run Number	ONE		
Depth Driller	5540		
Depth Logger	5543		
Bottom Logged Interval	5541		
Top Log Interval	250		
Casing Driller	13 3/8" @ 289		
Casing Logger	8 5/8" @ 1491		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD		
Density / Viscosity	9.2/60		
pH / Fluid Loss	9.5/8.4		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.80@66		
Rmt @ Meas. Temp	.60@66		
Rmc @ Meas. Temp	.96@66		
Source of Rmt / Rmc	MEASURED		
Rm @ BHT	.40@130		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom	///		
Maximum Recorded Temperature	130F		
Equipment Number	4010		
Location	HAYS, KANSAS		
Recorded By	GUS PFANENSTIEL		
Witnessed By	BILLY KLAVER		

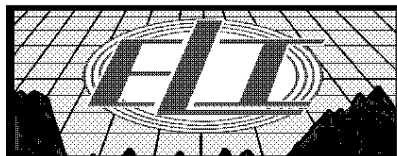
<<< Fold Here >>>

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 ELI WIRELINE, HAYS, KS. (785) 628-6395

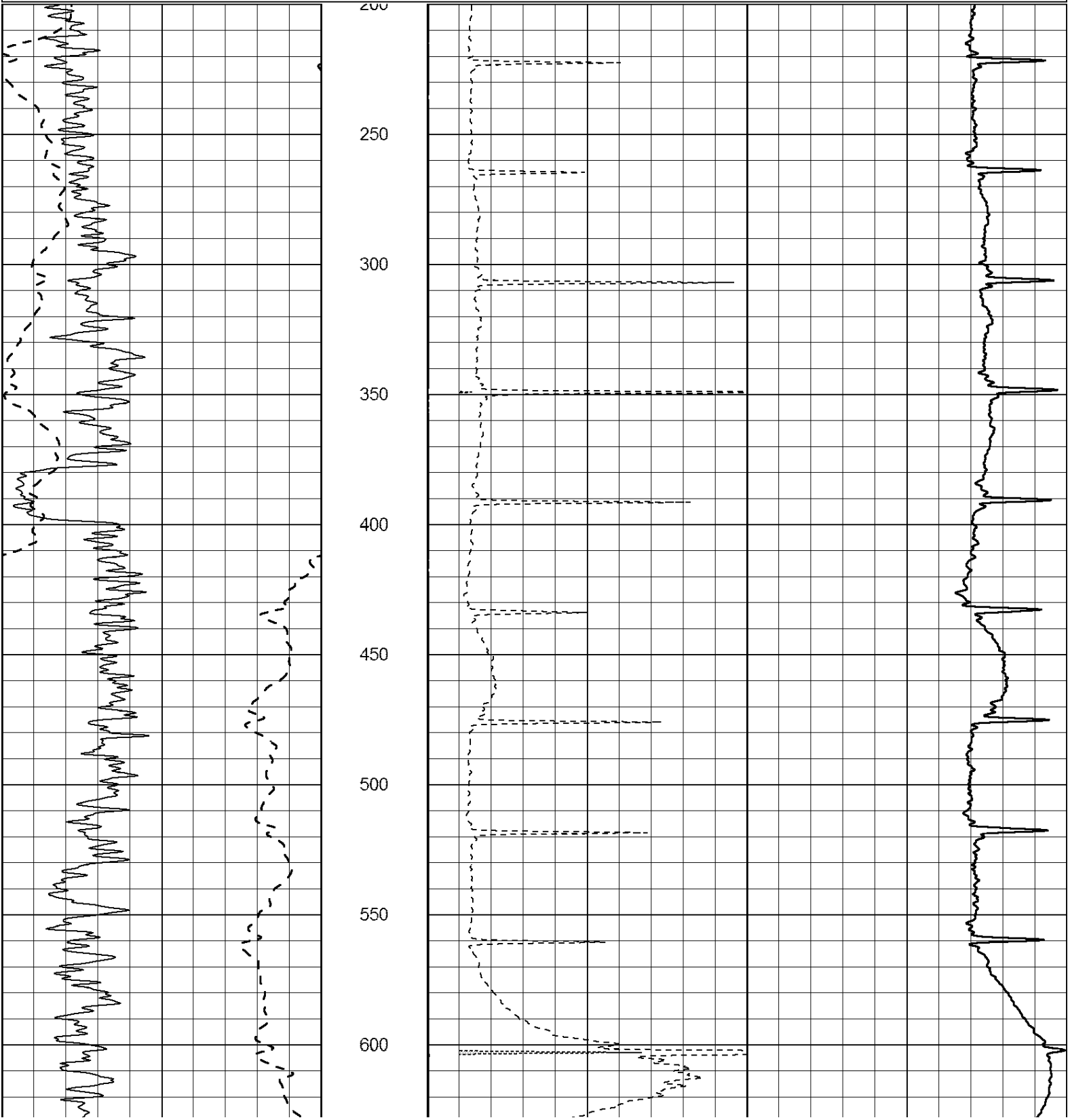
DIRECTIONS
INTERSECTION OF HIGHWAY 183 AND HIGHWAY 54,
SOUTH TO COUNTY LINE, EAST 1 1/8 MILE,
NORTH INTO.

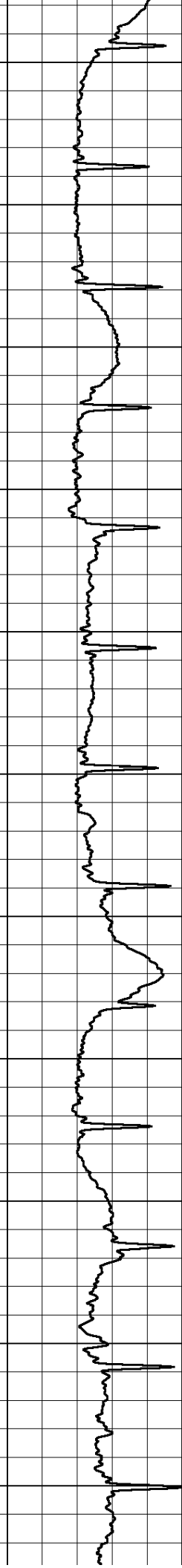
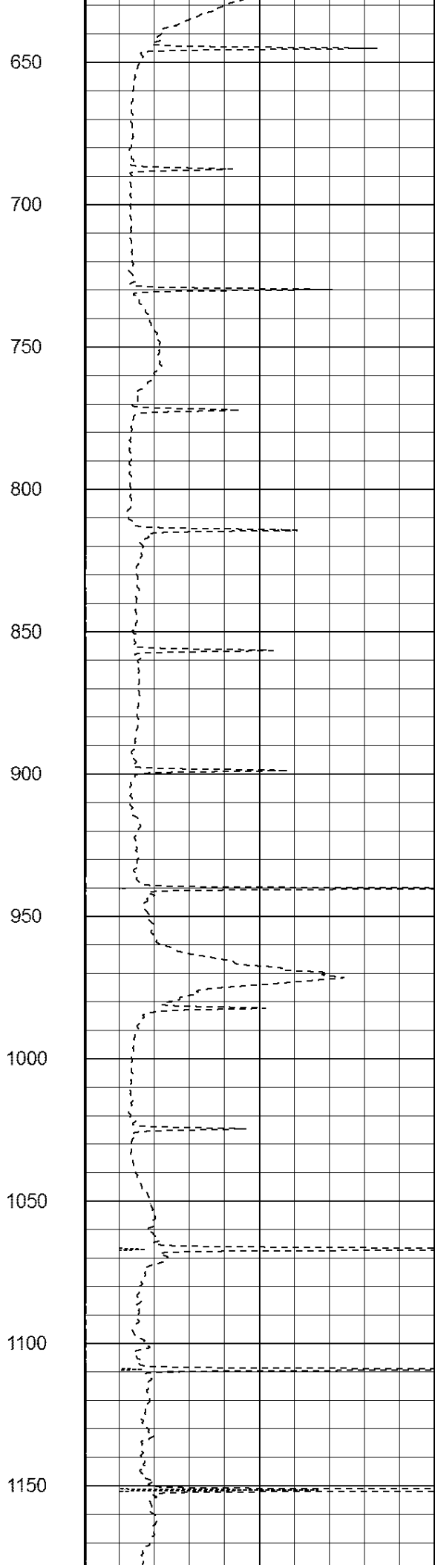
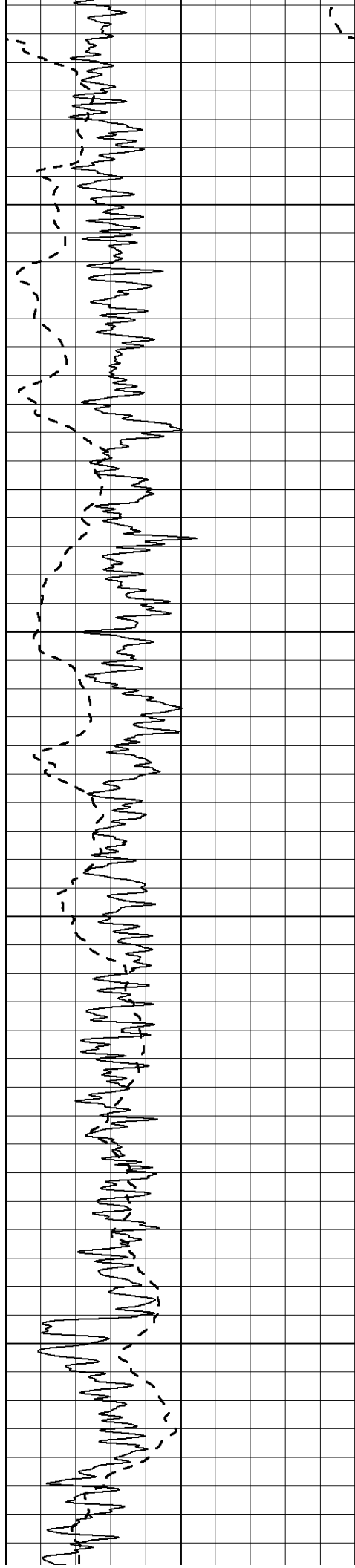


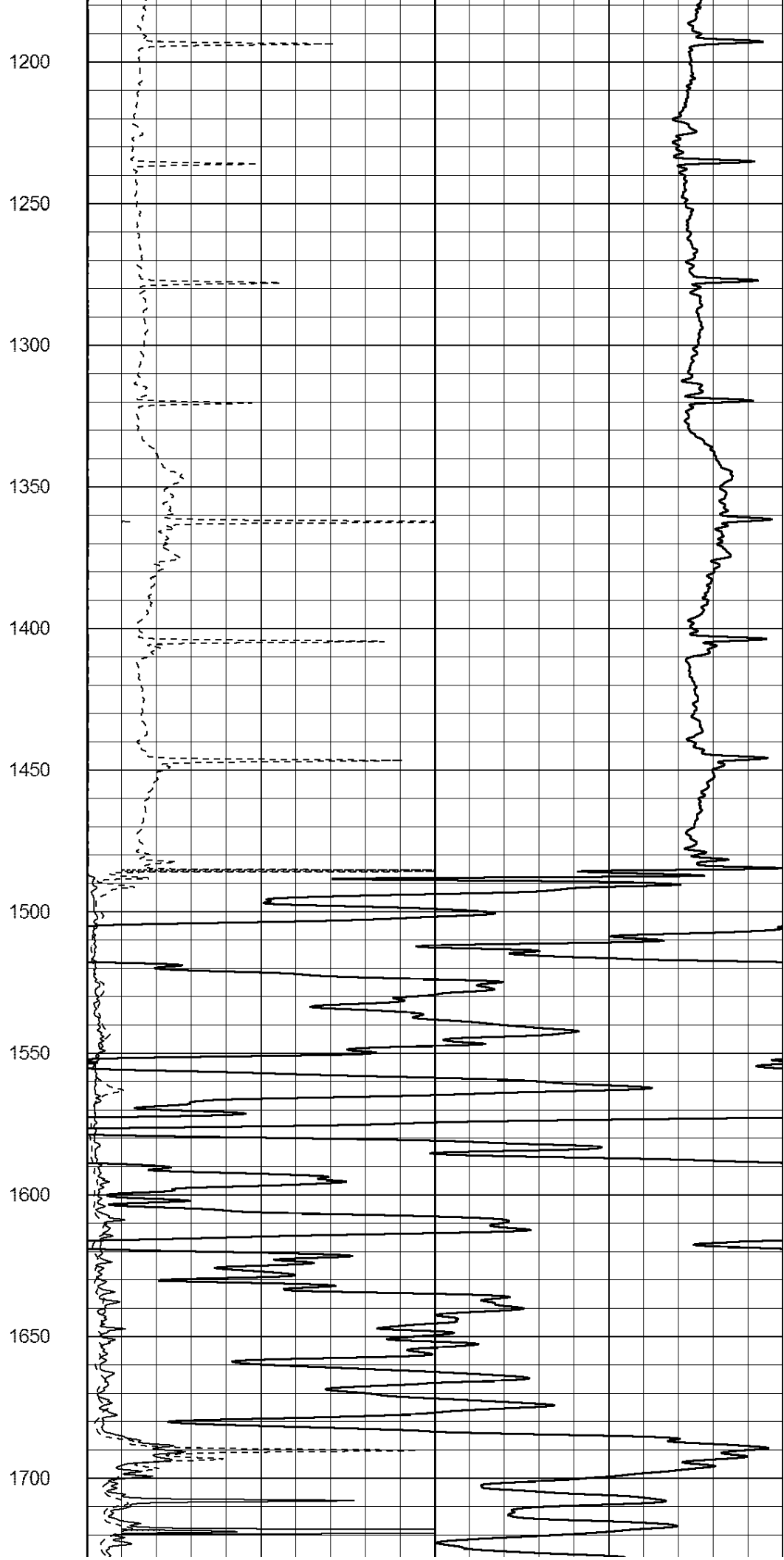
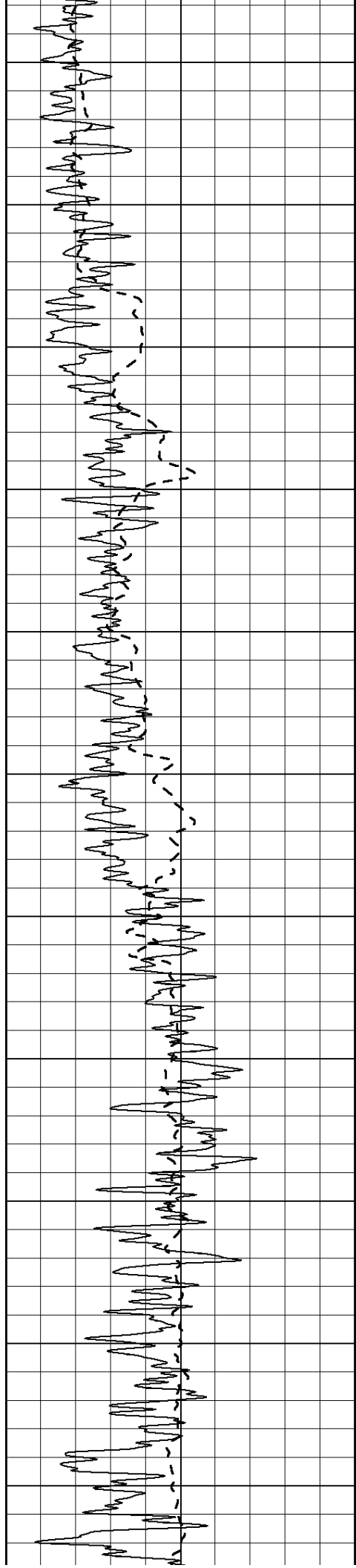
MAIN PASS

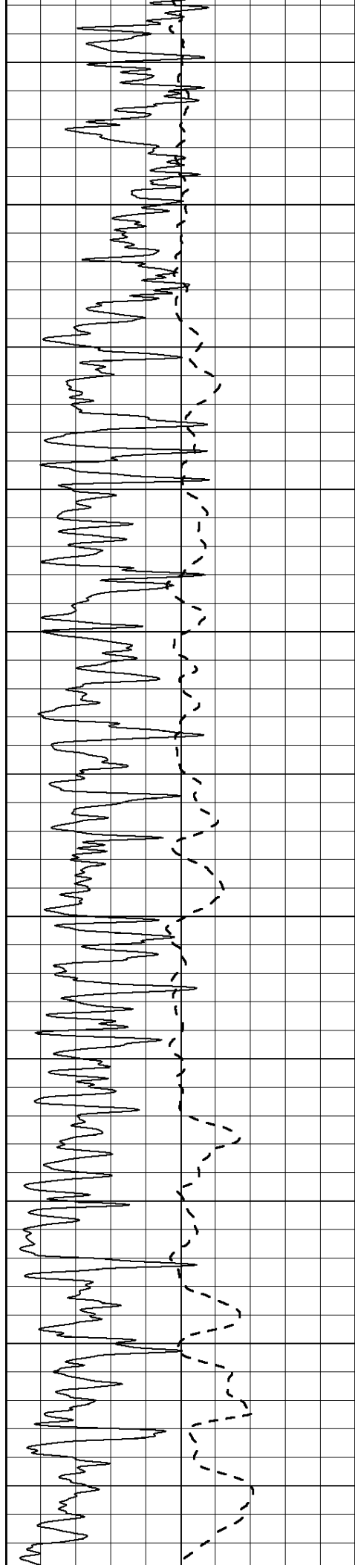
Database File: 2124pe.db
Dataset Pathname: pass3.1
Presentation Format: _dil2
Dataset Creation: Thu Jan 11 03:15:45 2018 by Calc Open-Cased 090629
Charted by: Depth in Feet scaled 1:600

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









1750

1800

1850

1900

1950

2000

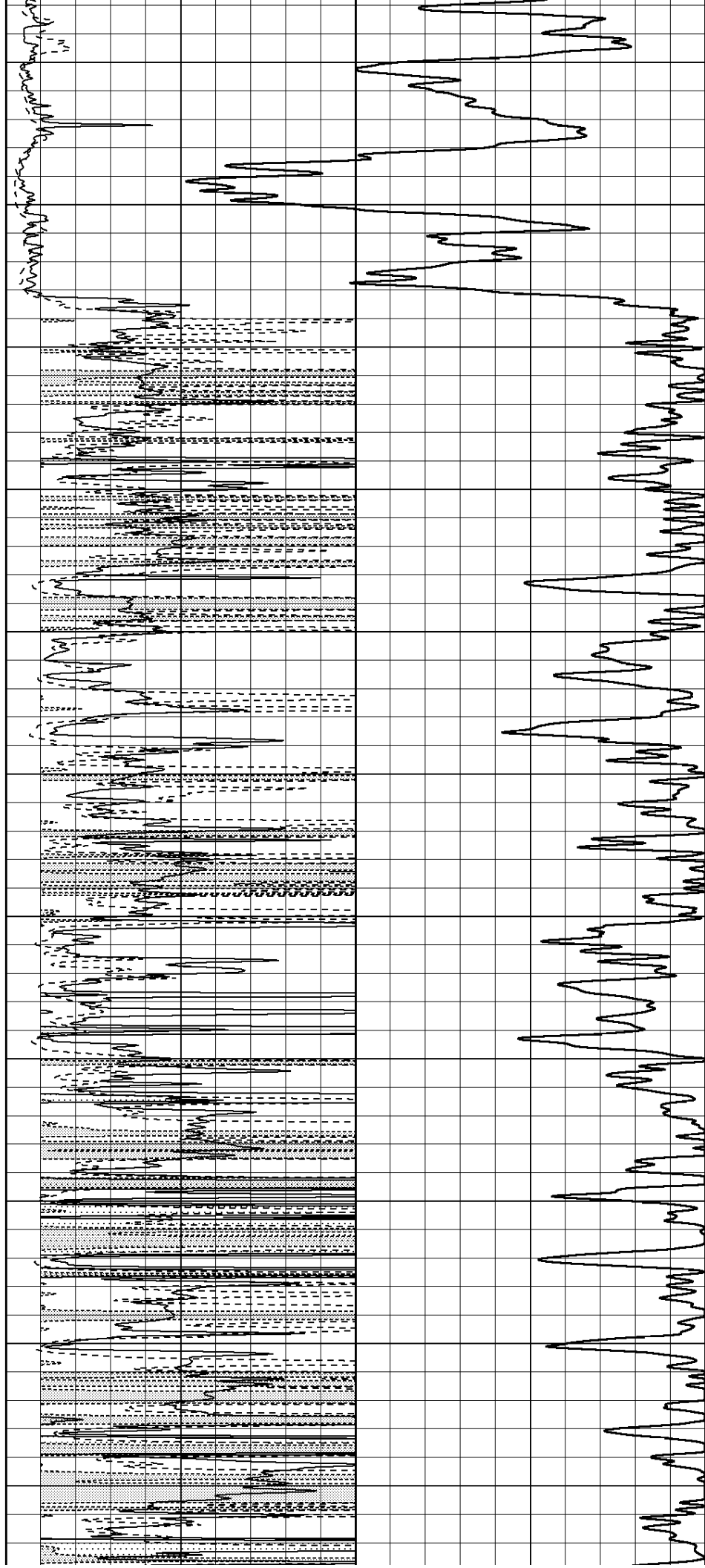
2050

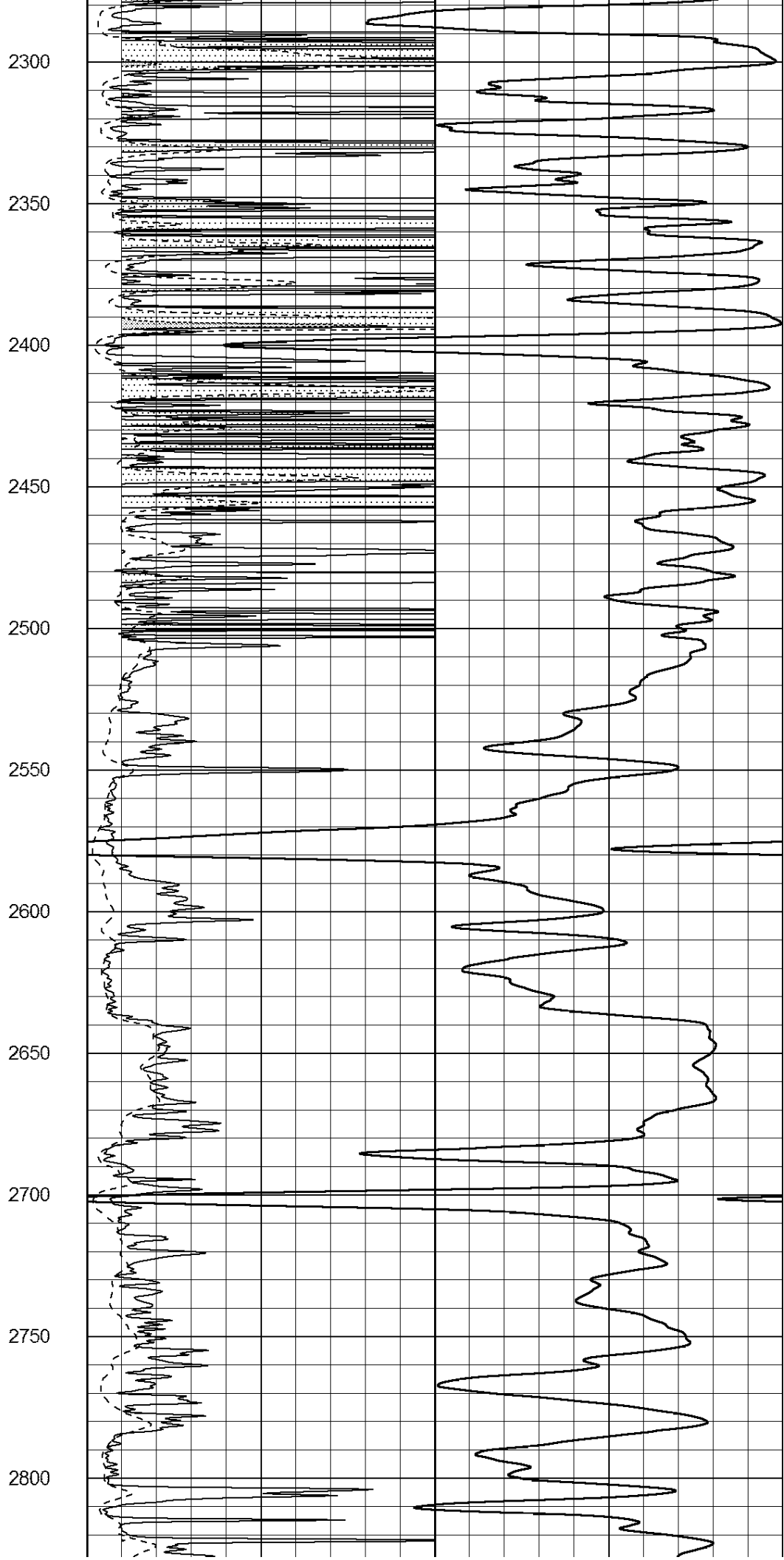
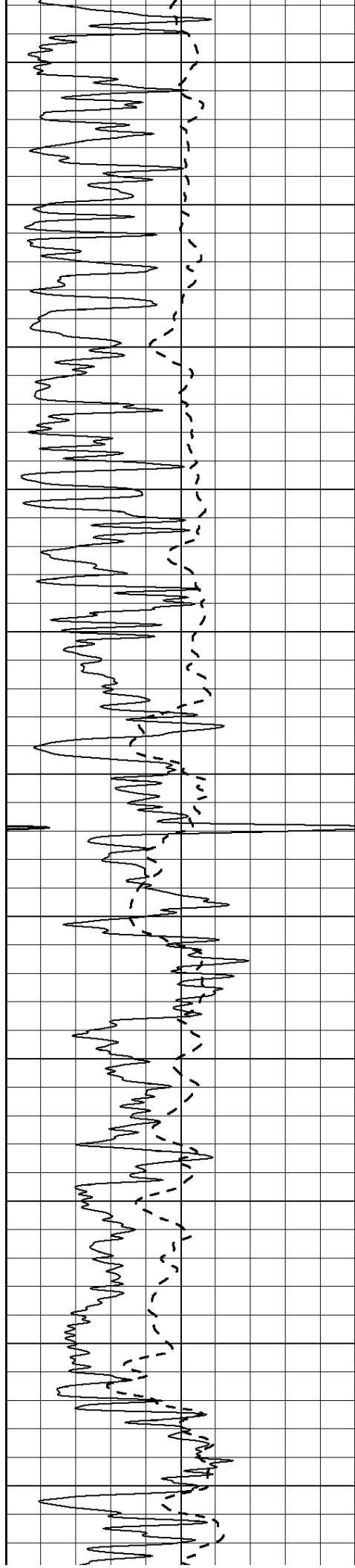
2100

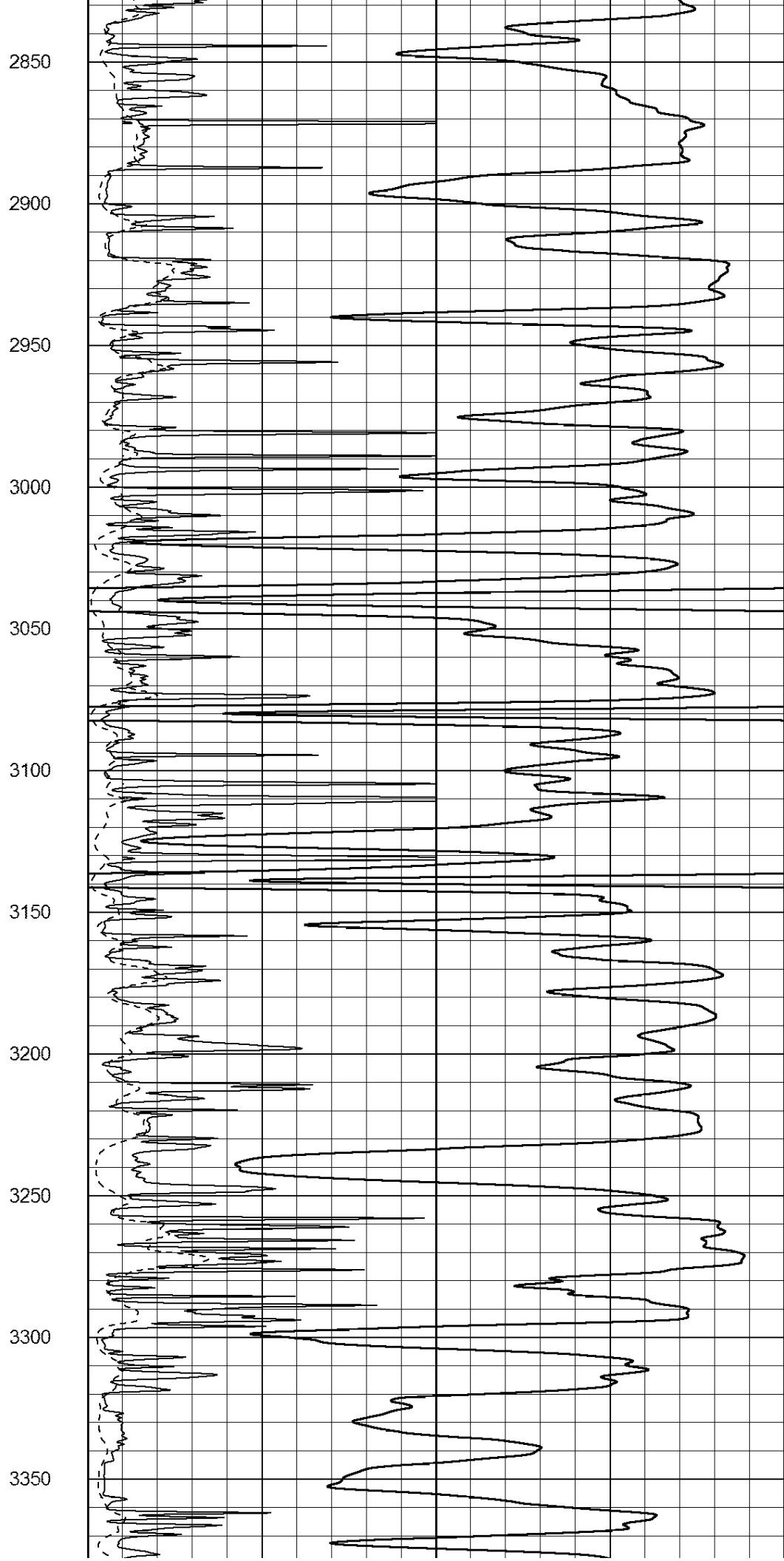
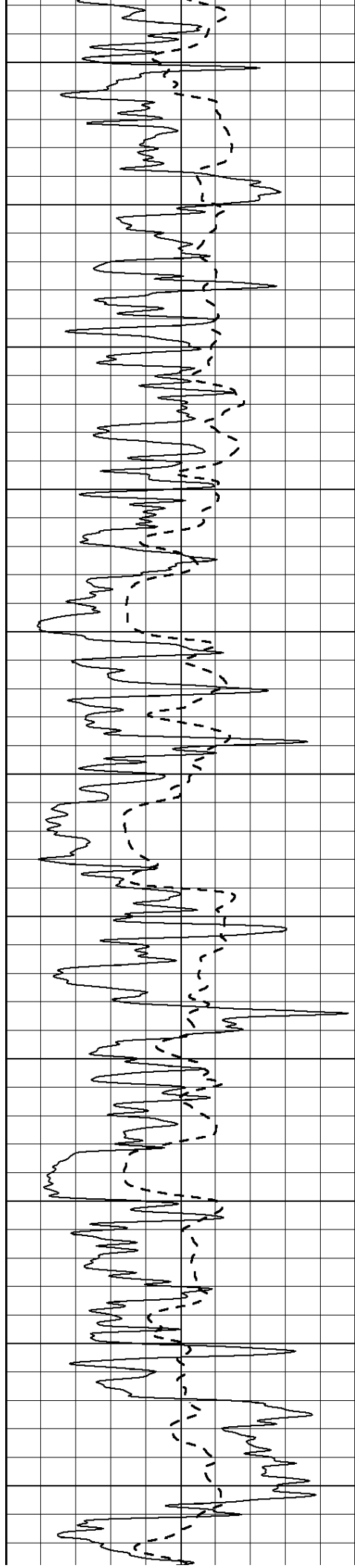
2150

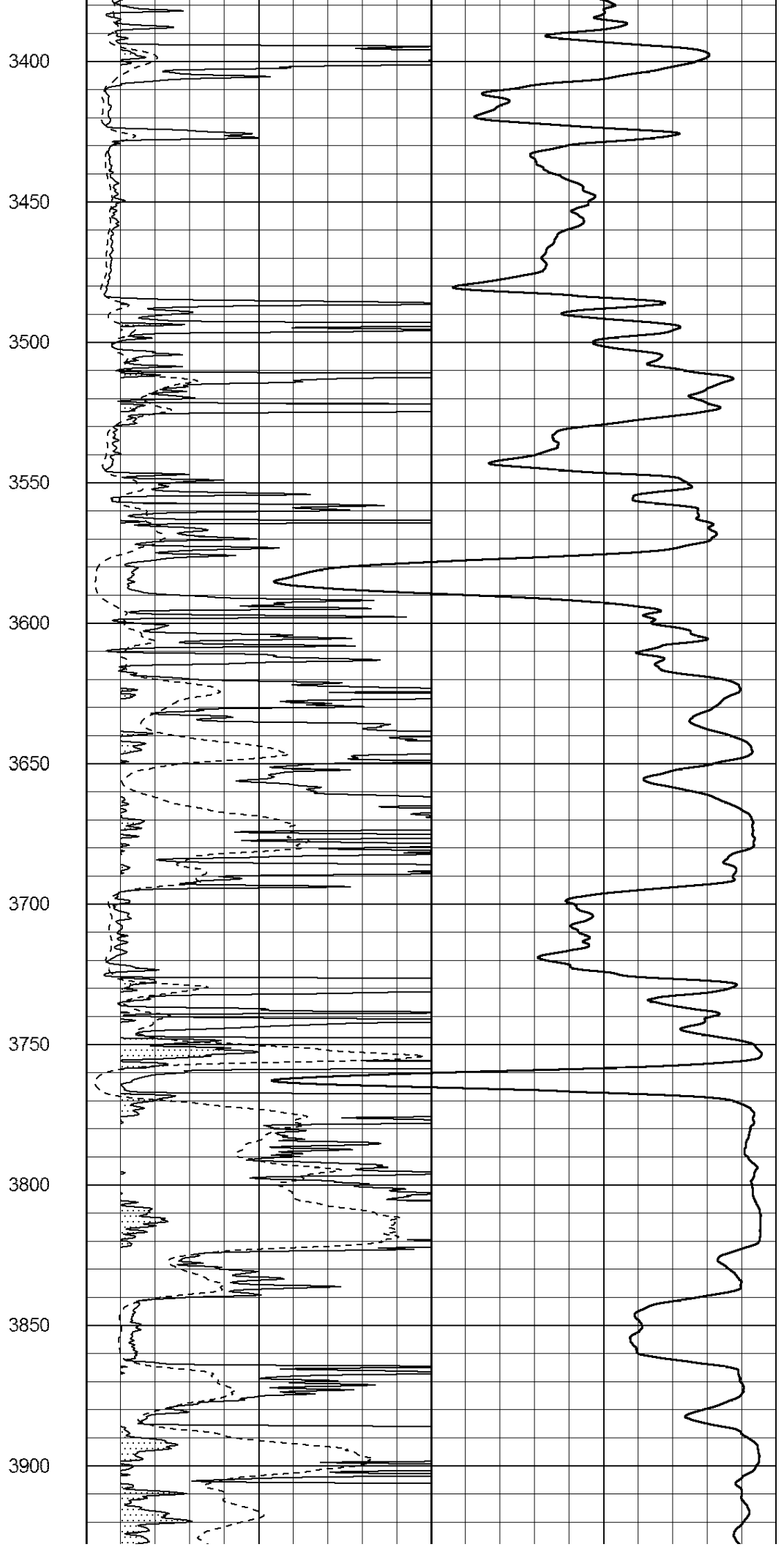
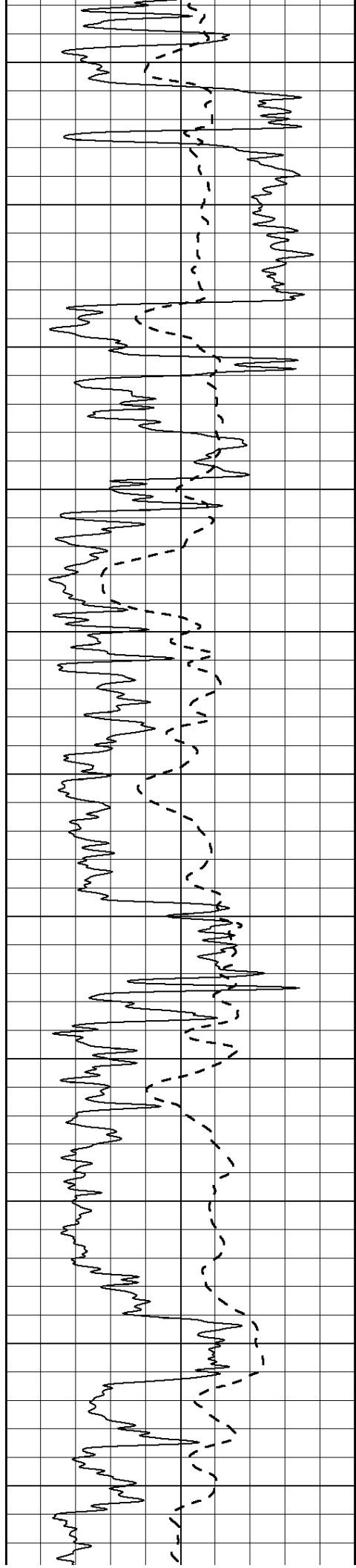
2200

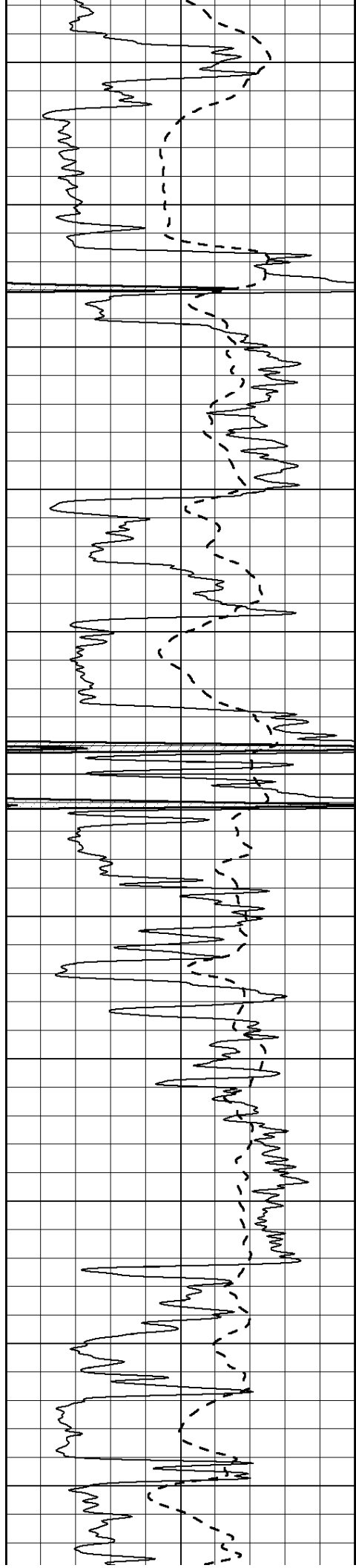
2250











3950

4000

4050

4100

4150

4200

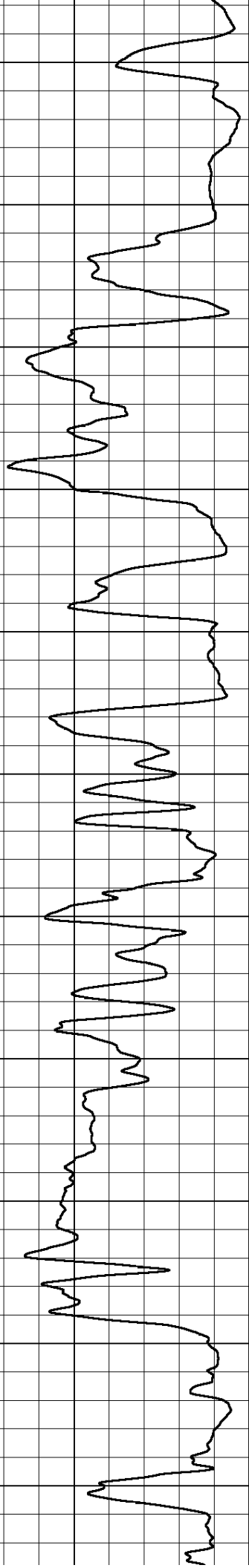
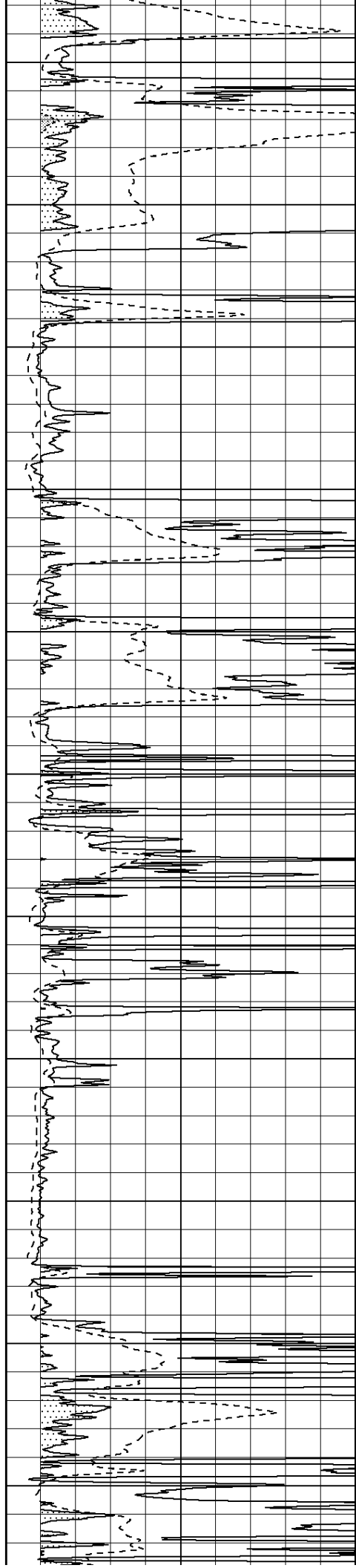
4250

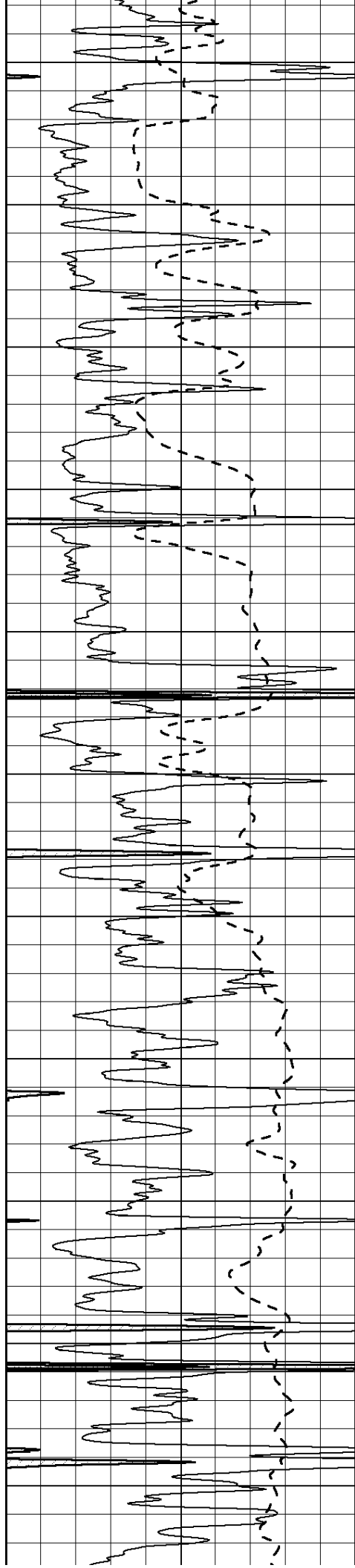
4300

4350

4400

4450





4500

4550

4600

4650

4700

4750

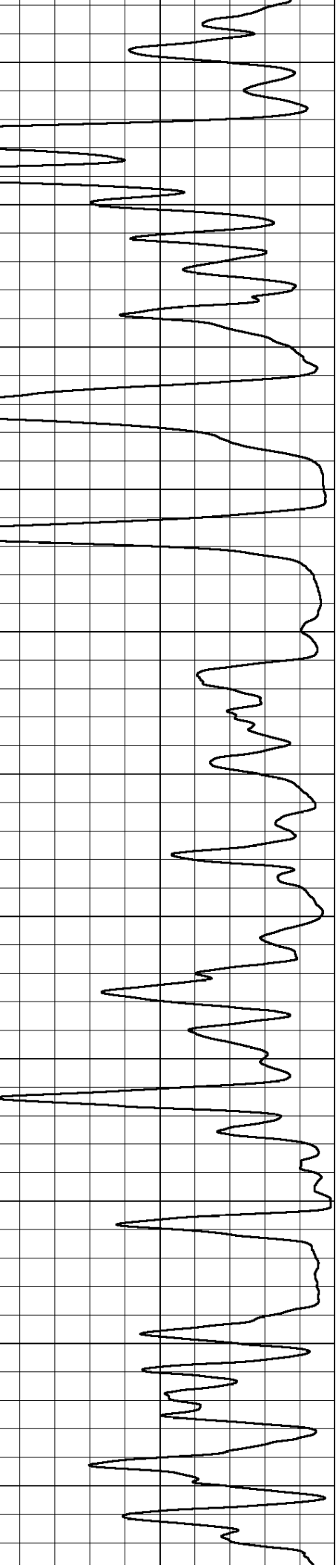
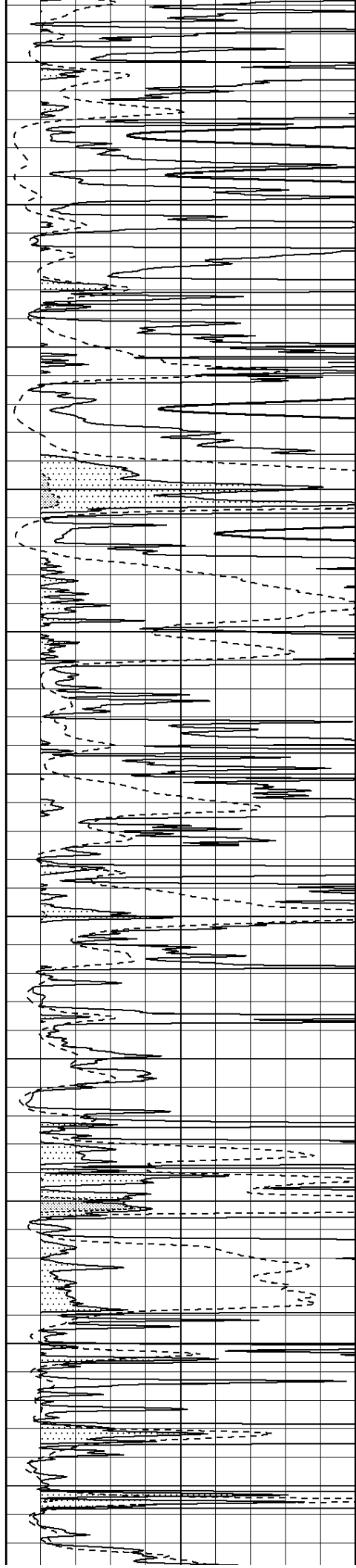
4800

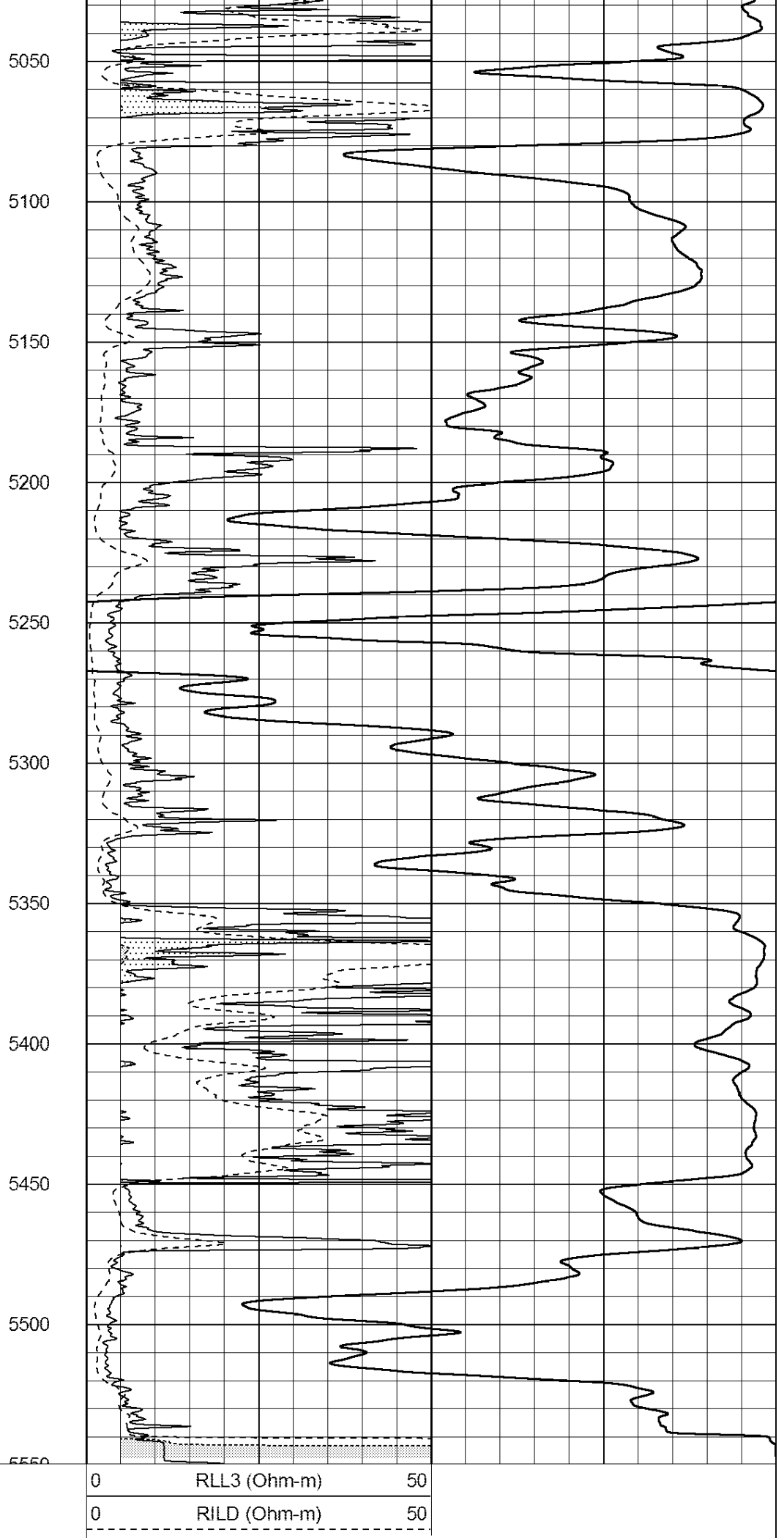
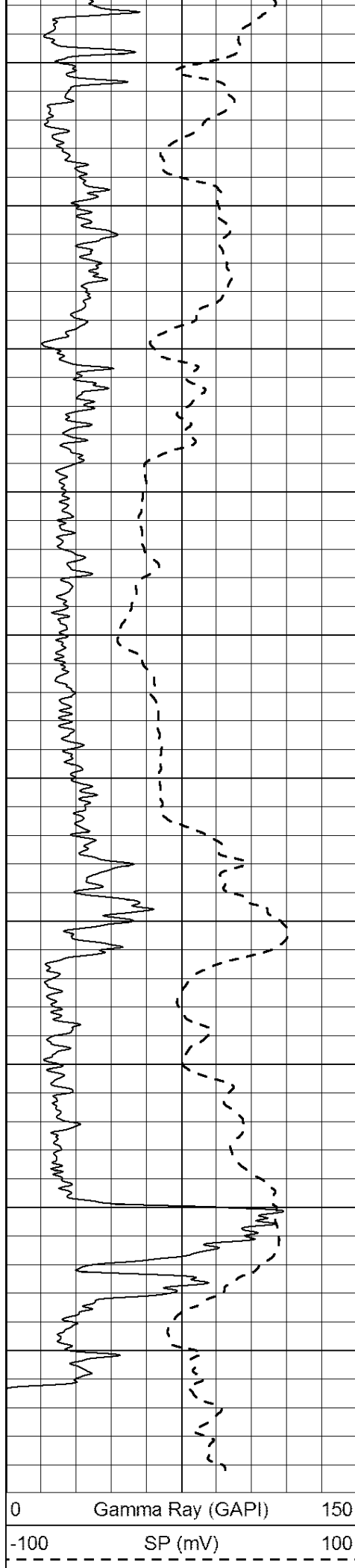
4850

4900

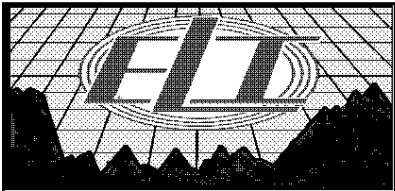
4950

5000





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

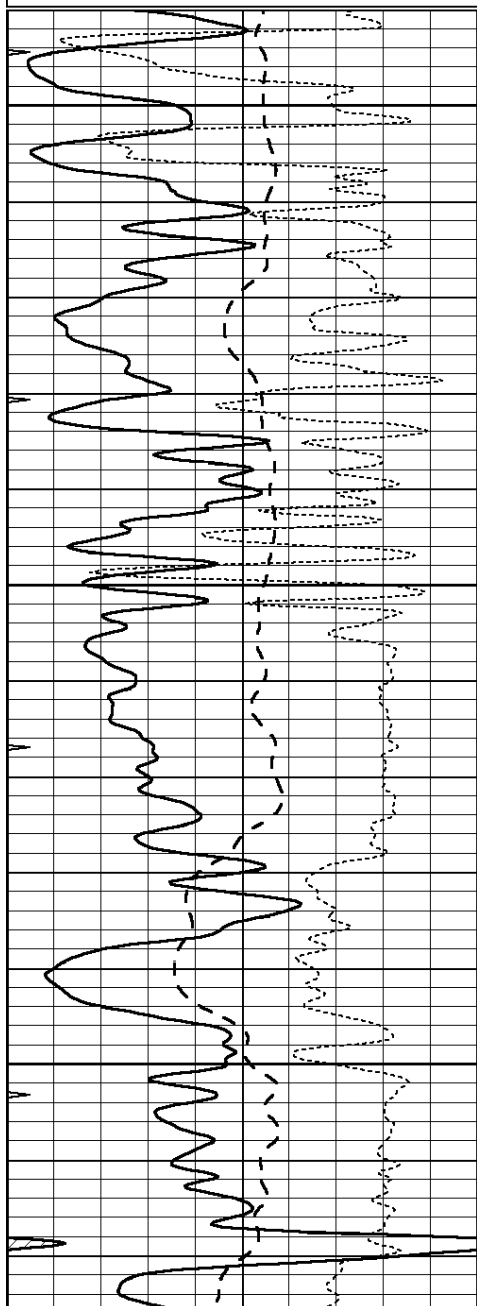


MAIN PASS

Database File: 2124pe.db
 Dataset Pathname: pass3.1
 Presentation Format: _dil
 Dataset Creation: Thu Jan 11 03:15:45 2018 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	MINMK	20

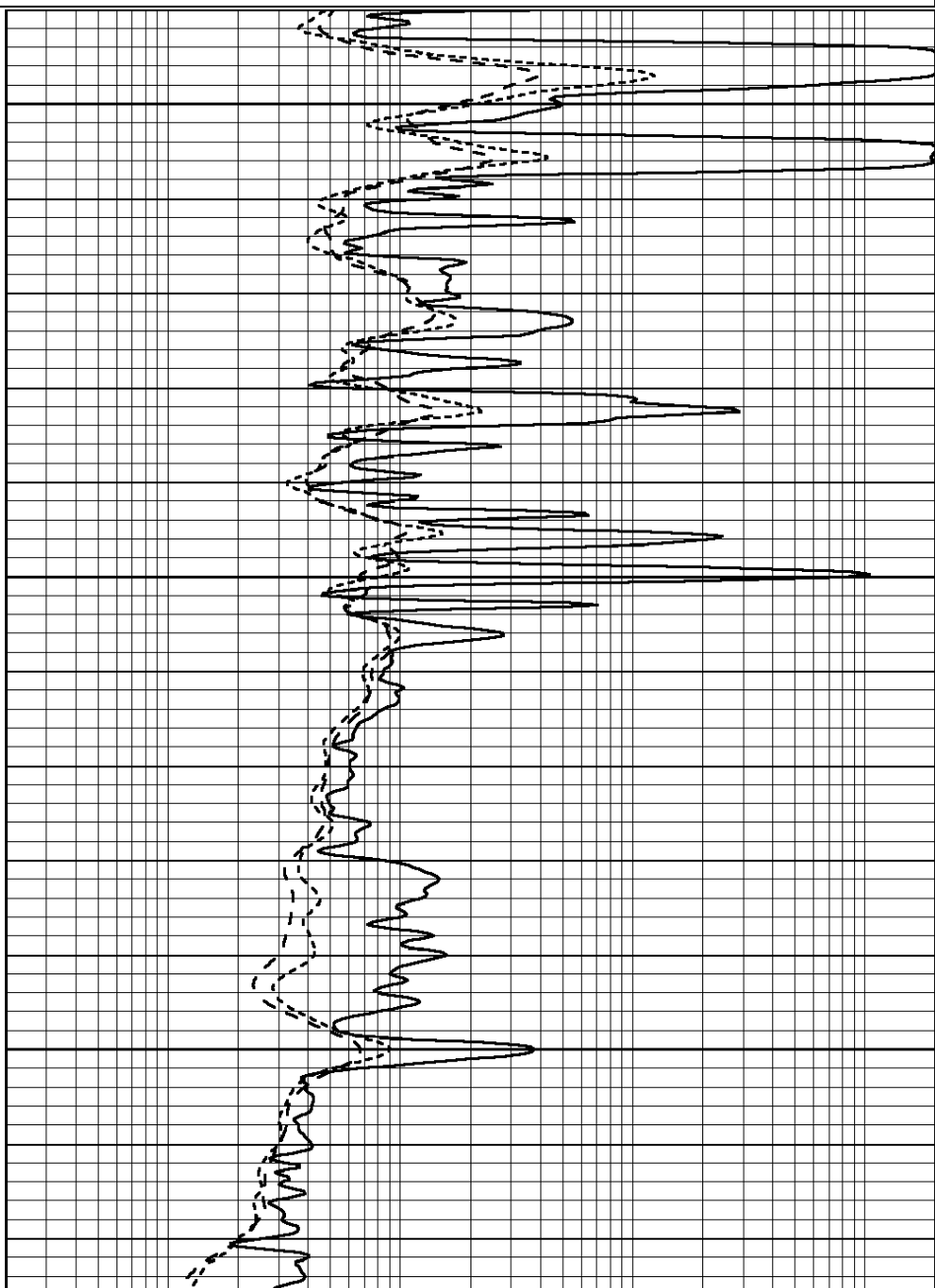
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

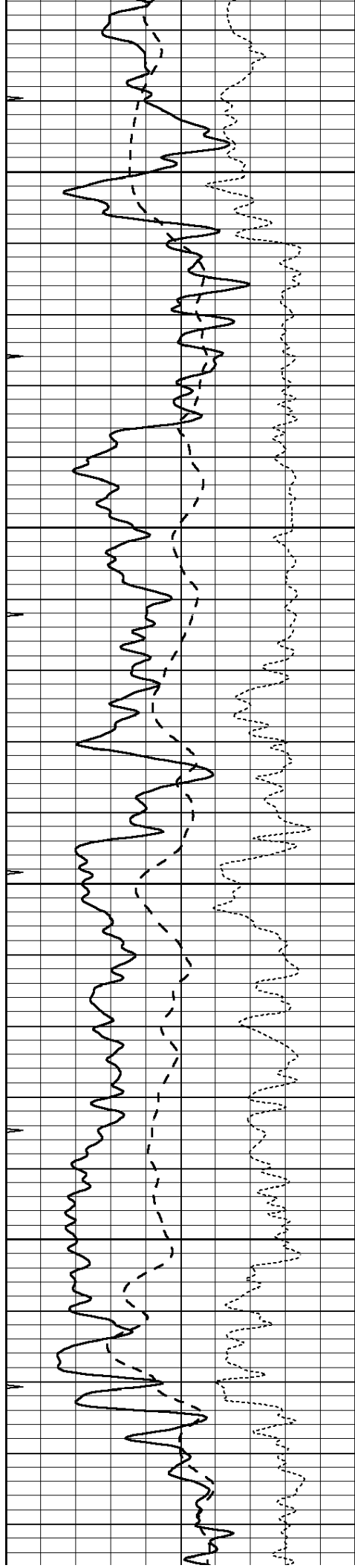


2450

2500

2550



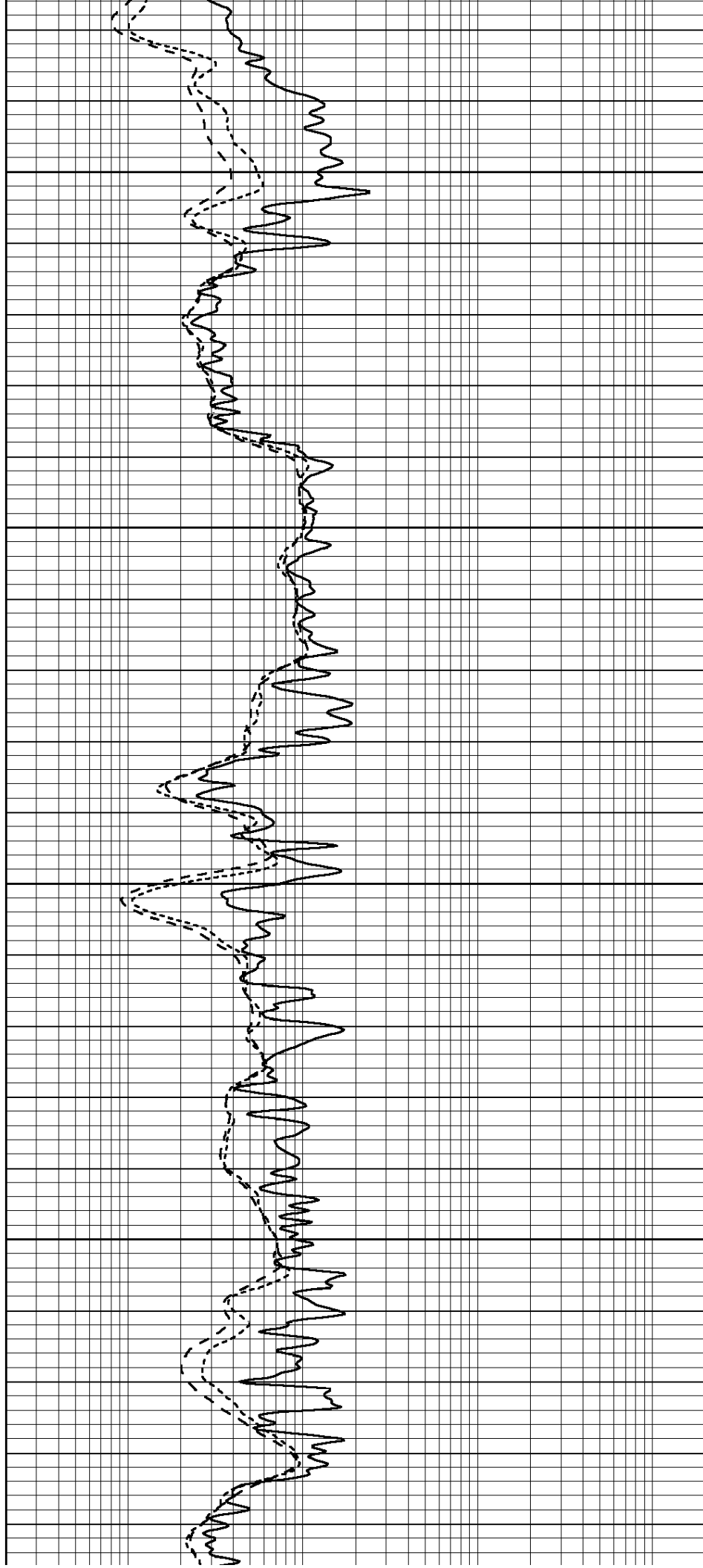


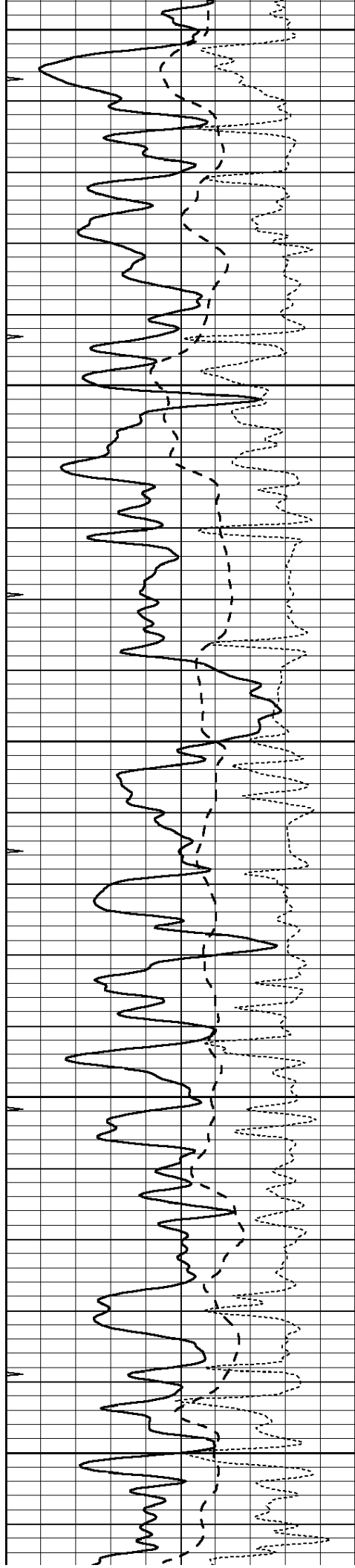
2600

2650

2700

2750





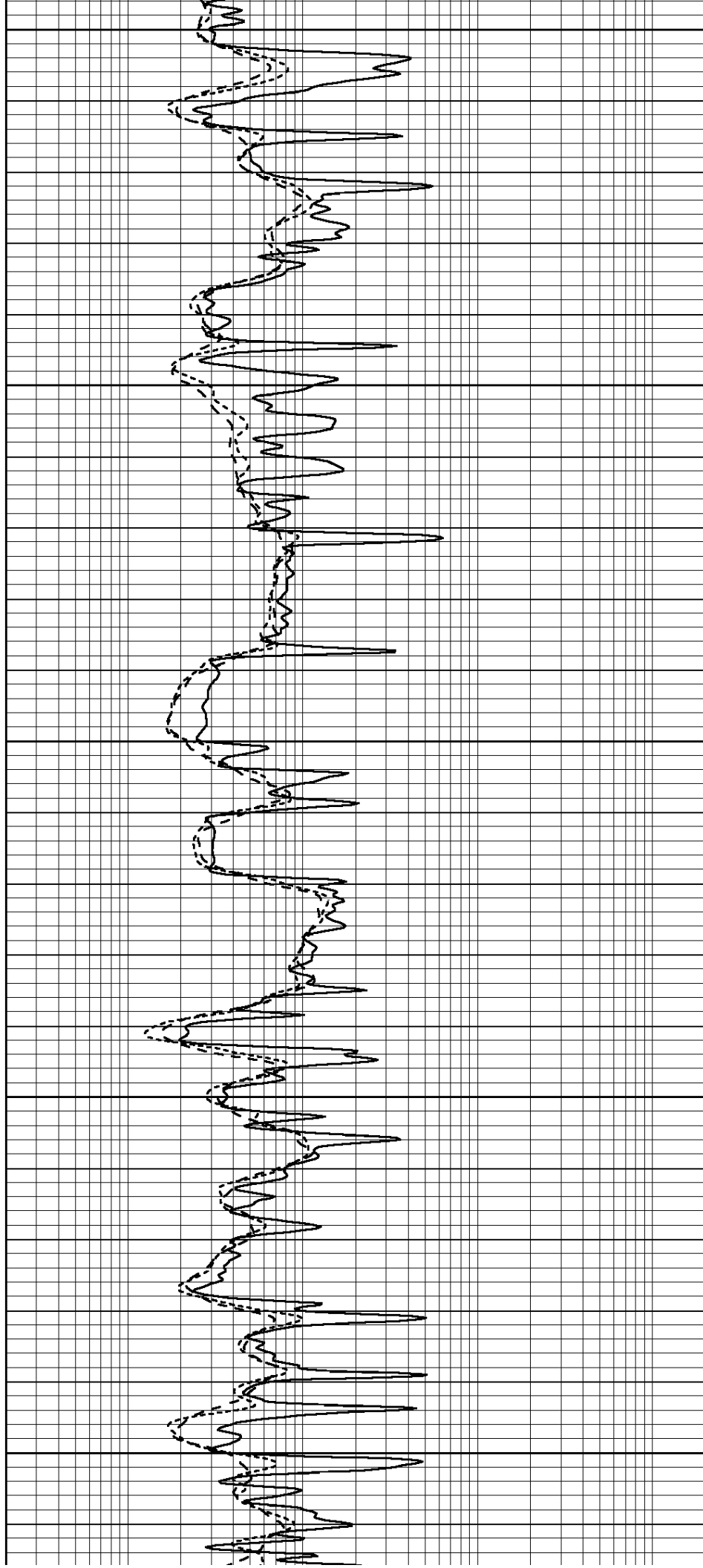
2800

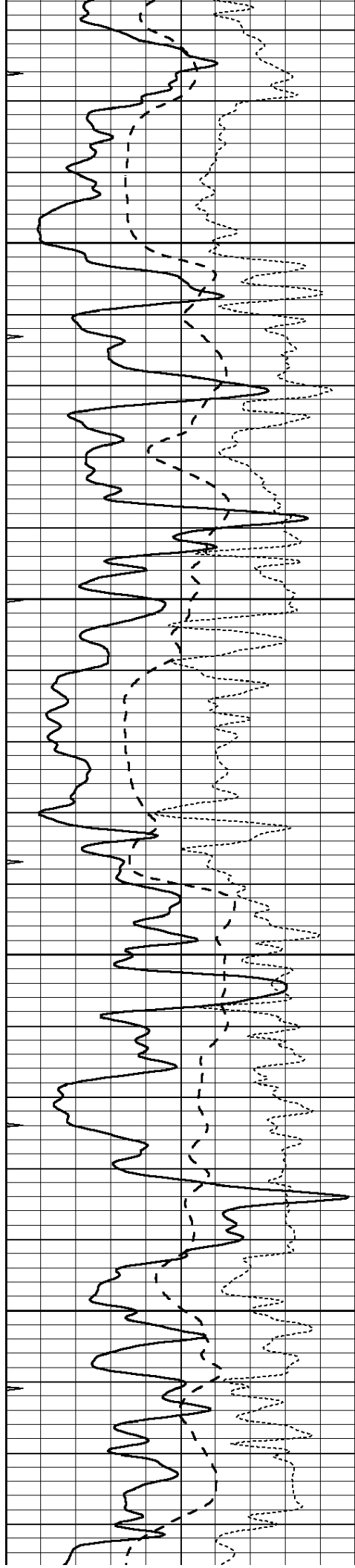
2850

2900

2950

3000



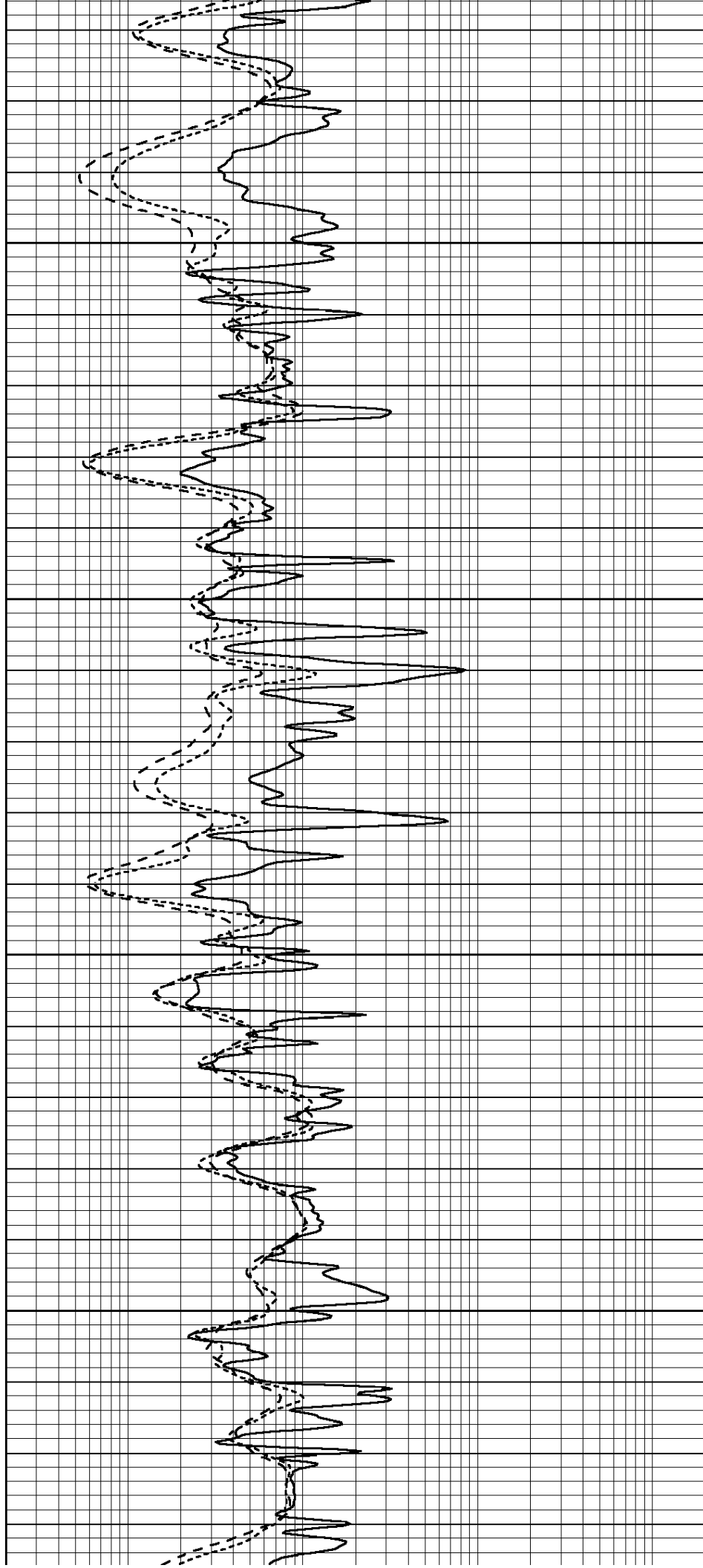


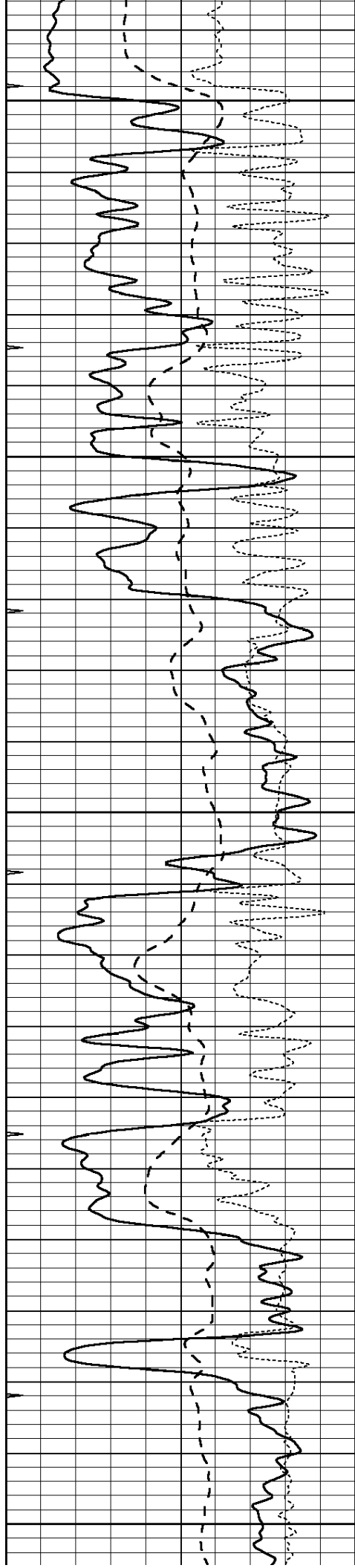
3050

3100

3150

3200





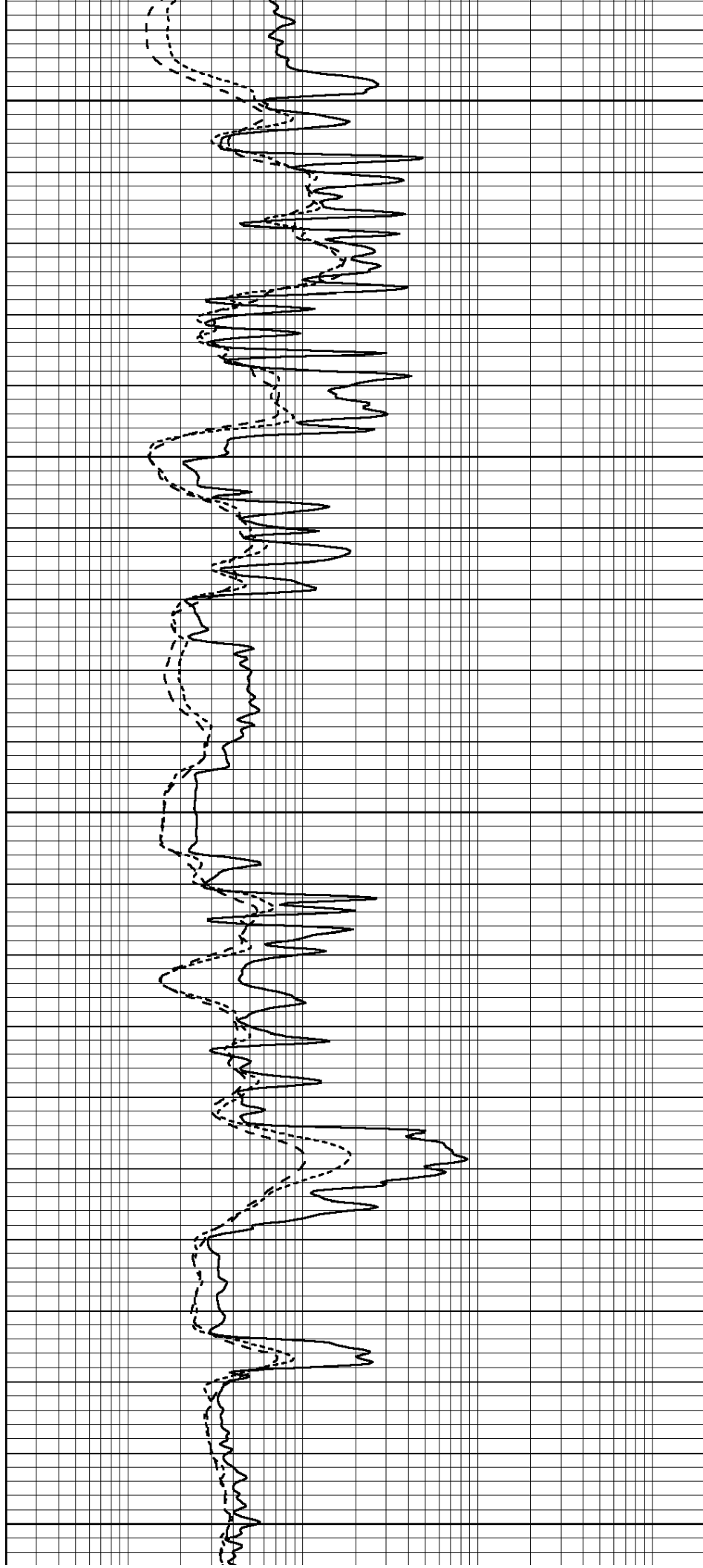
3250

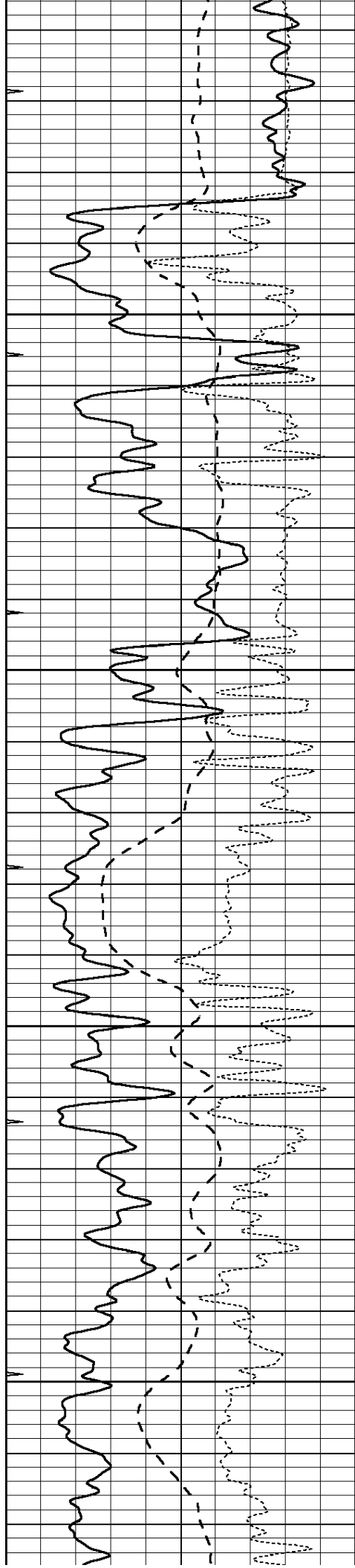
3300

3350

3400

3450



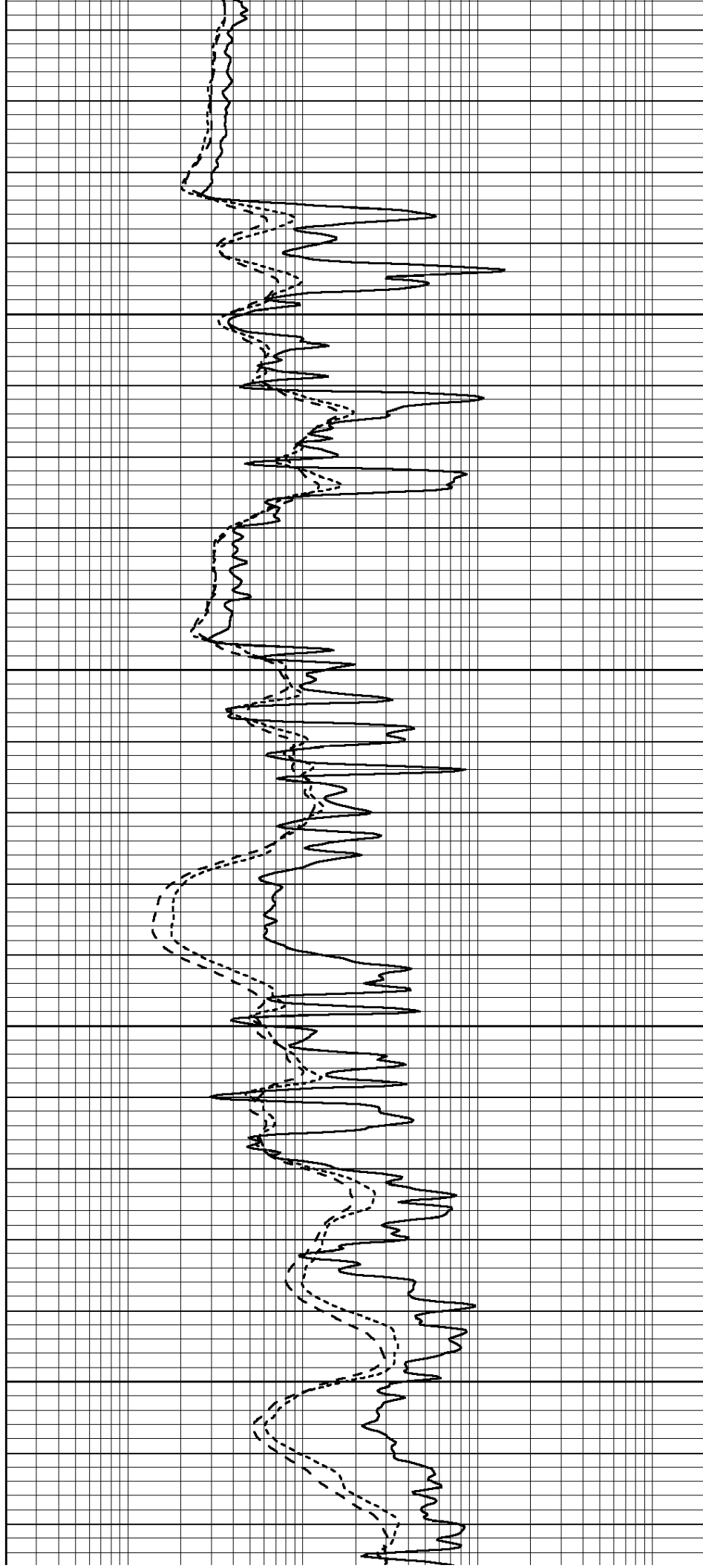


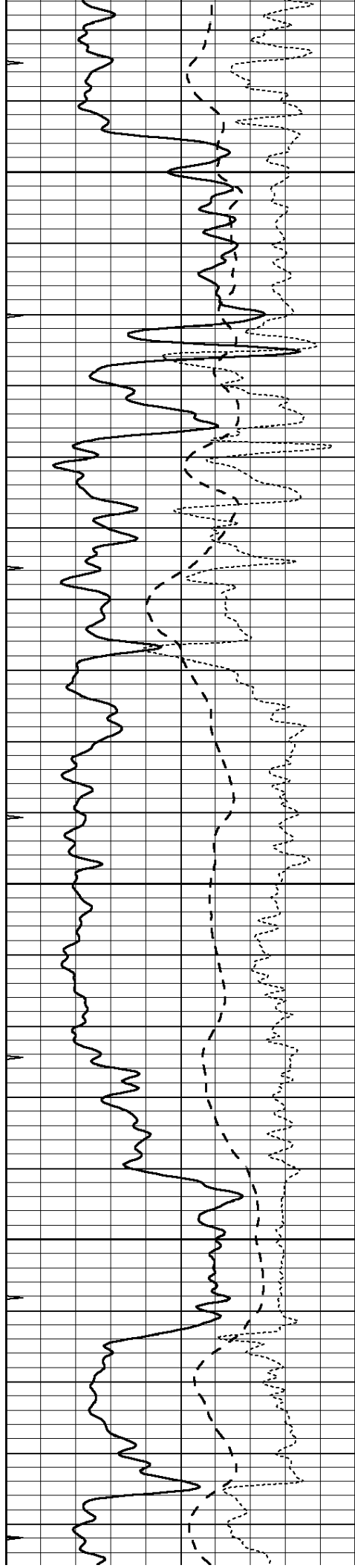
3500

3550

3600

3650



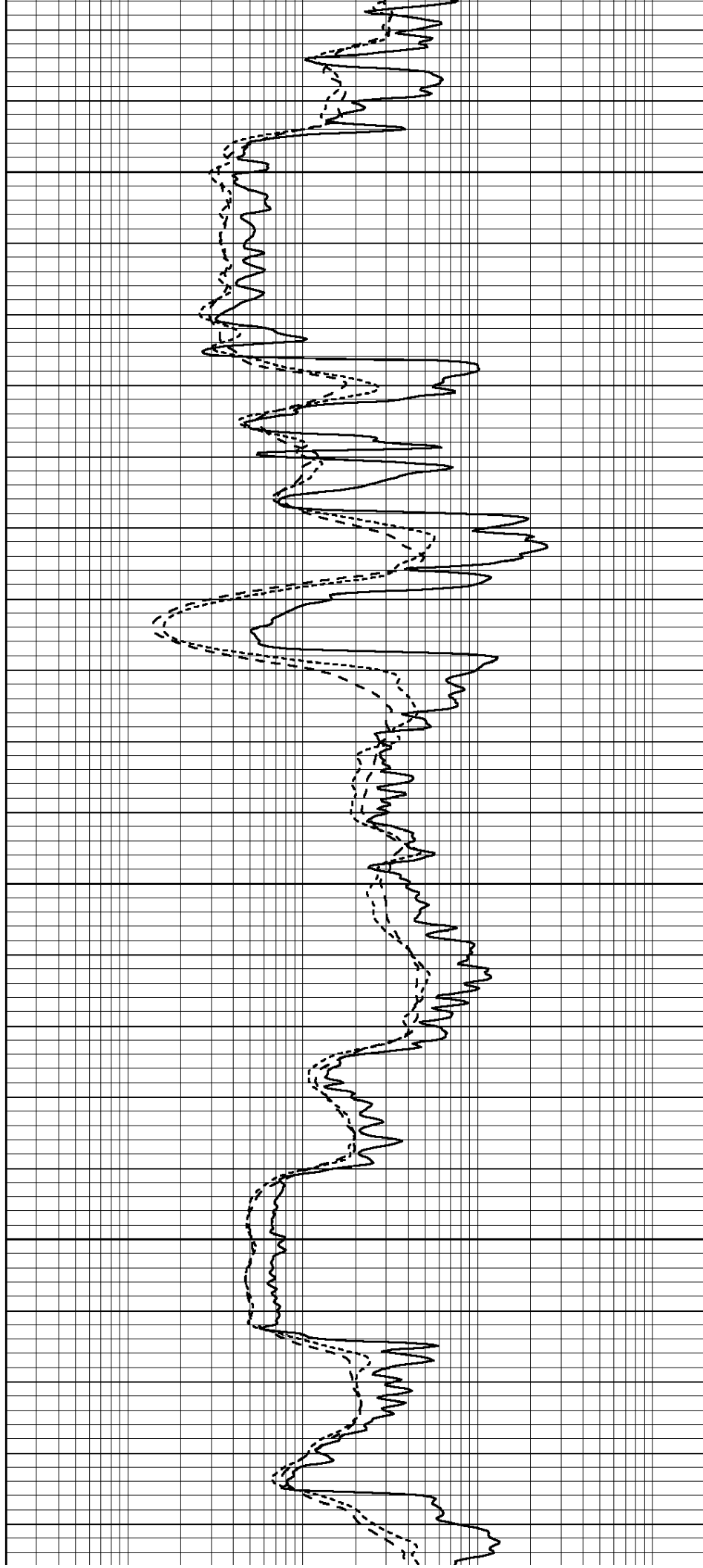


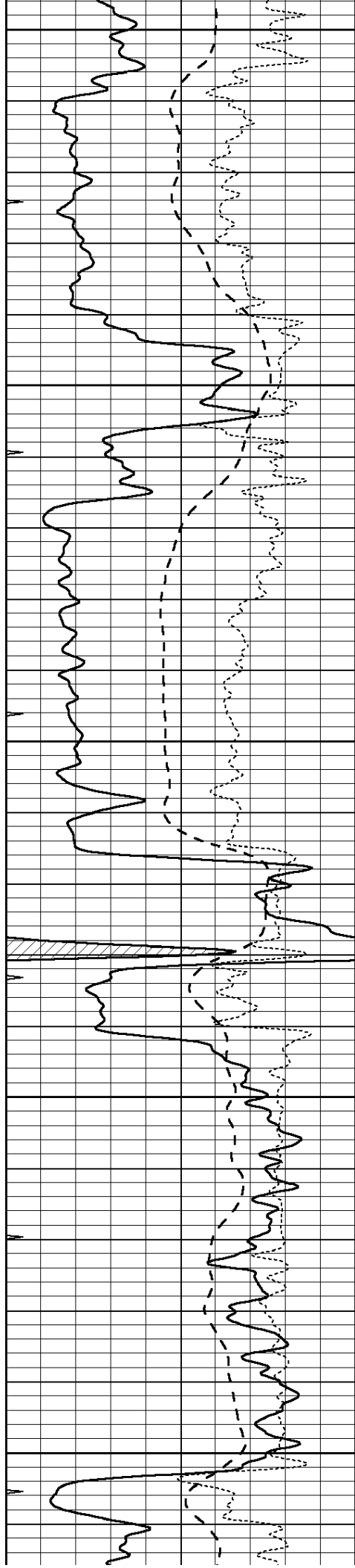
3700

3750

3800

3850





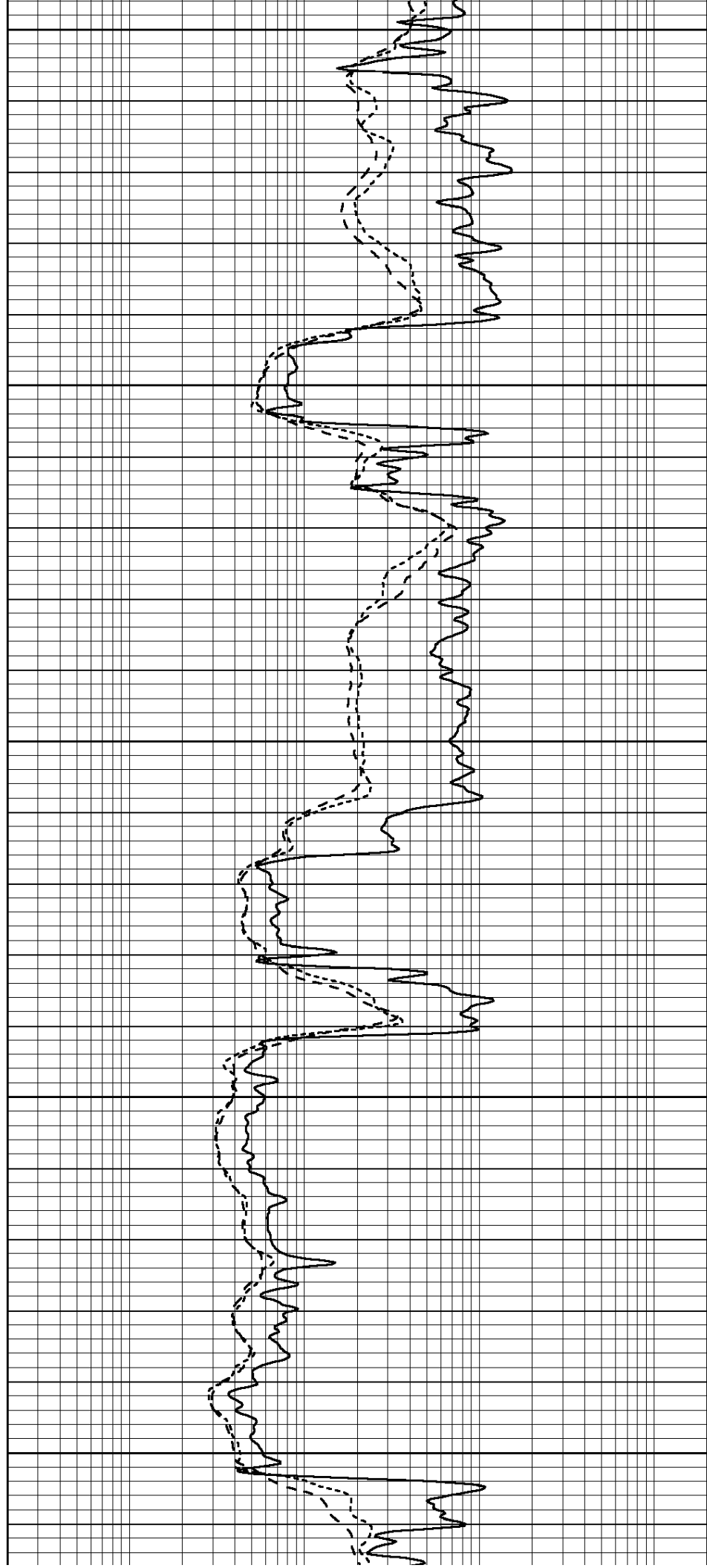
3900

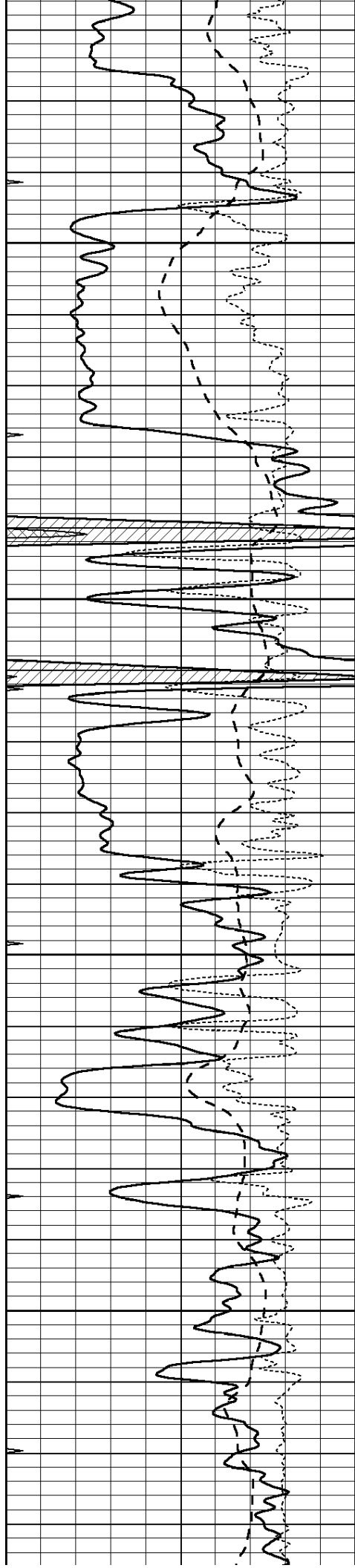
3950

4000

4050

4100



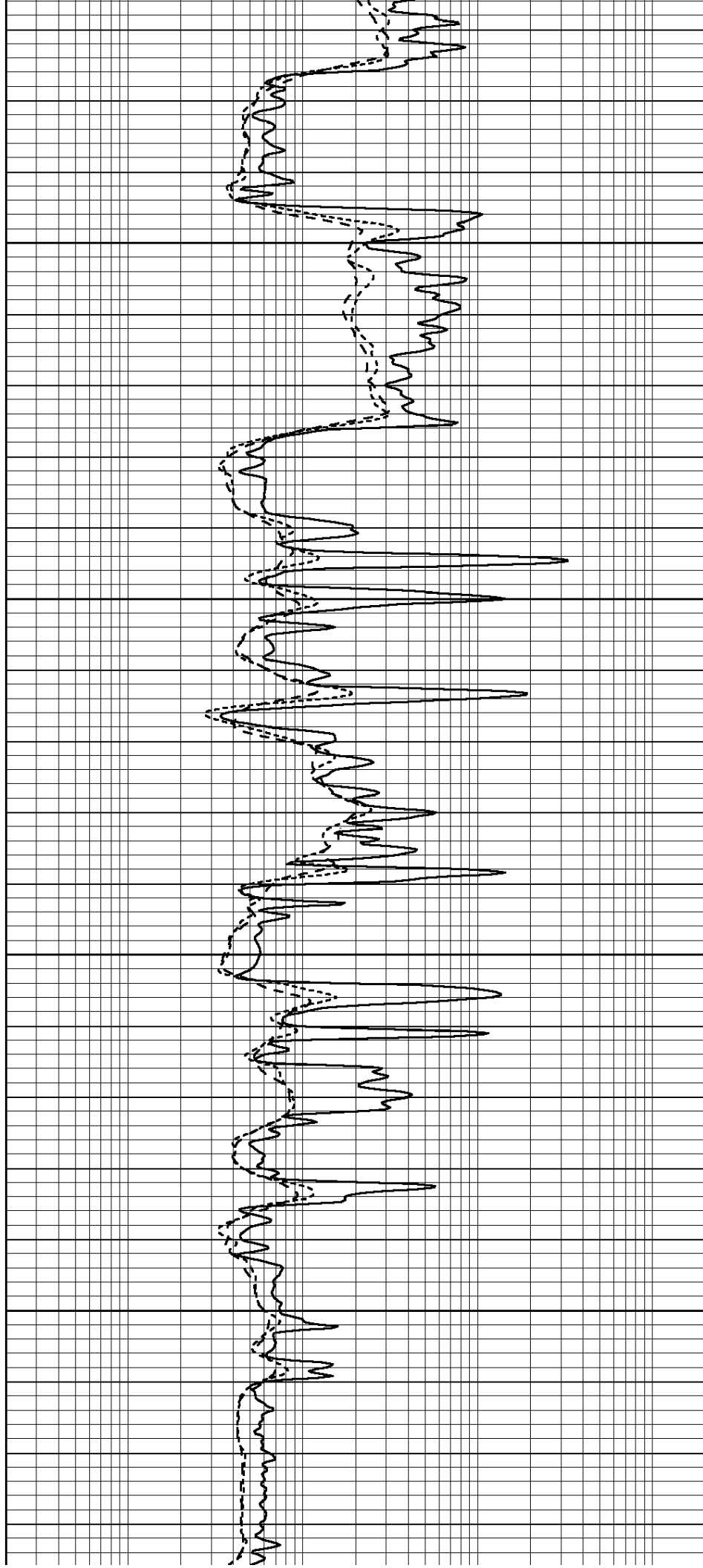


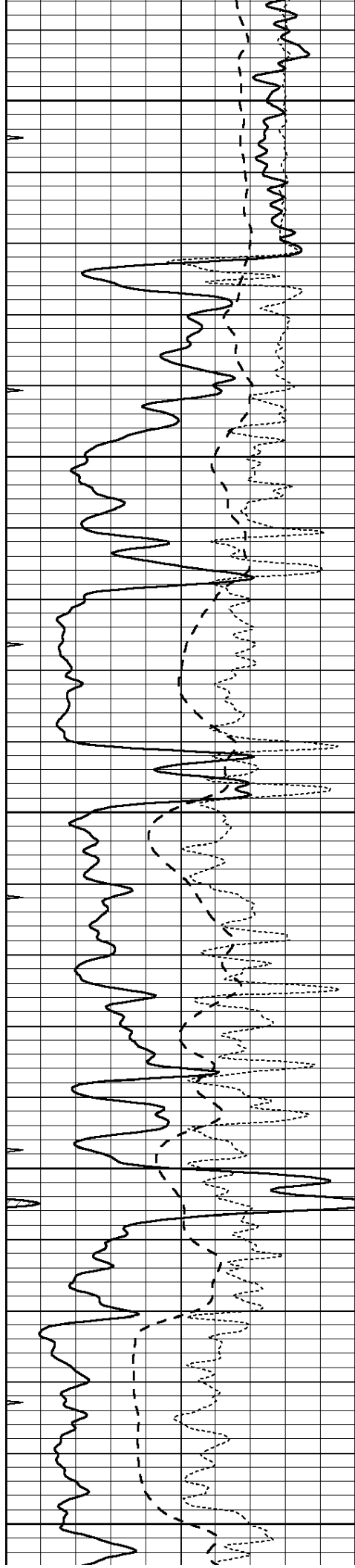
4150

4200

4250

4300





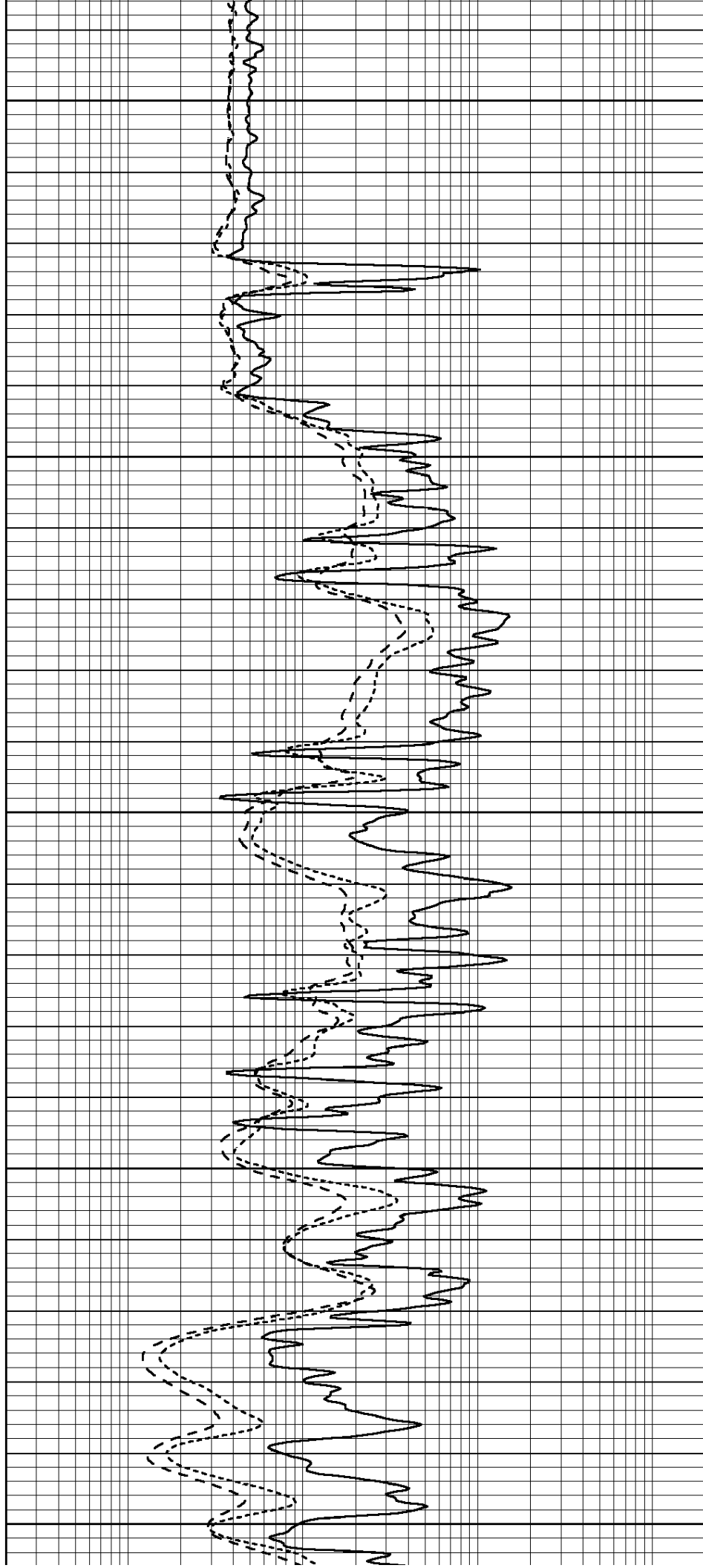
4350

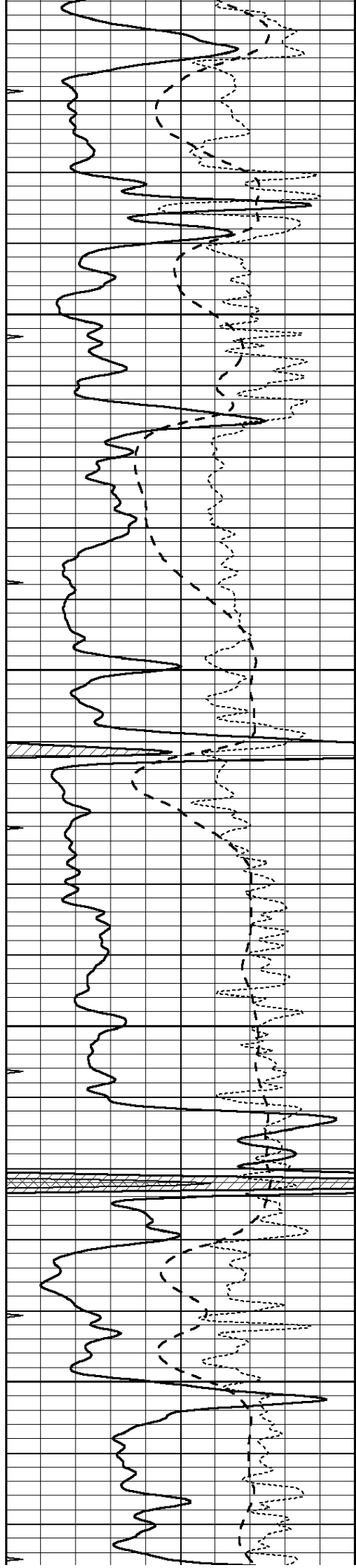
4400

4450

4500

4550



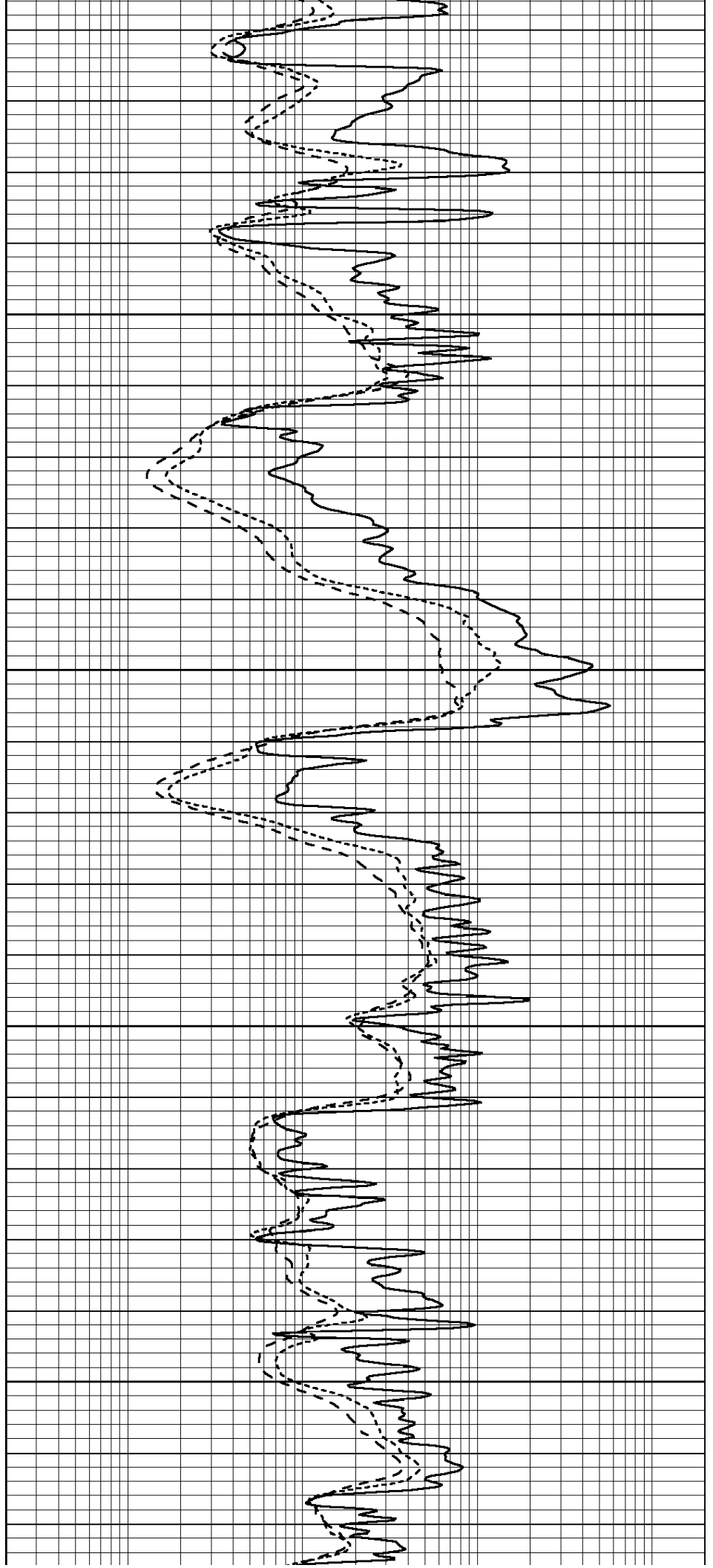


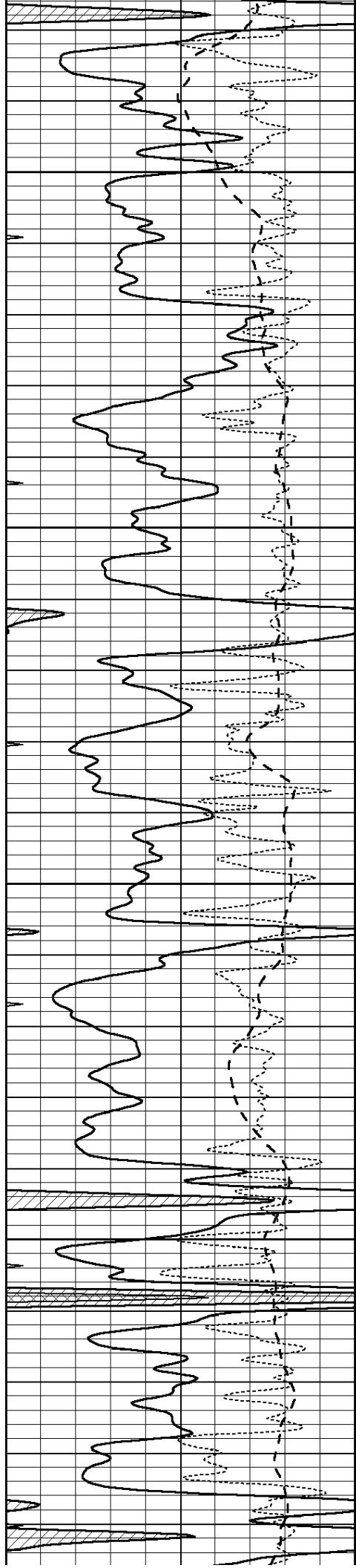
4600

4650

4700

4750



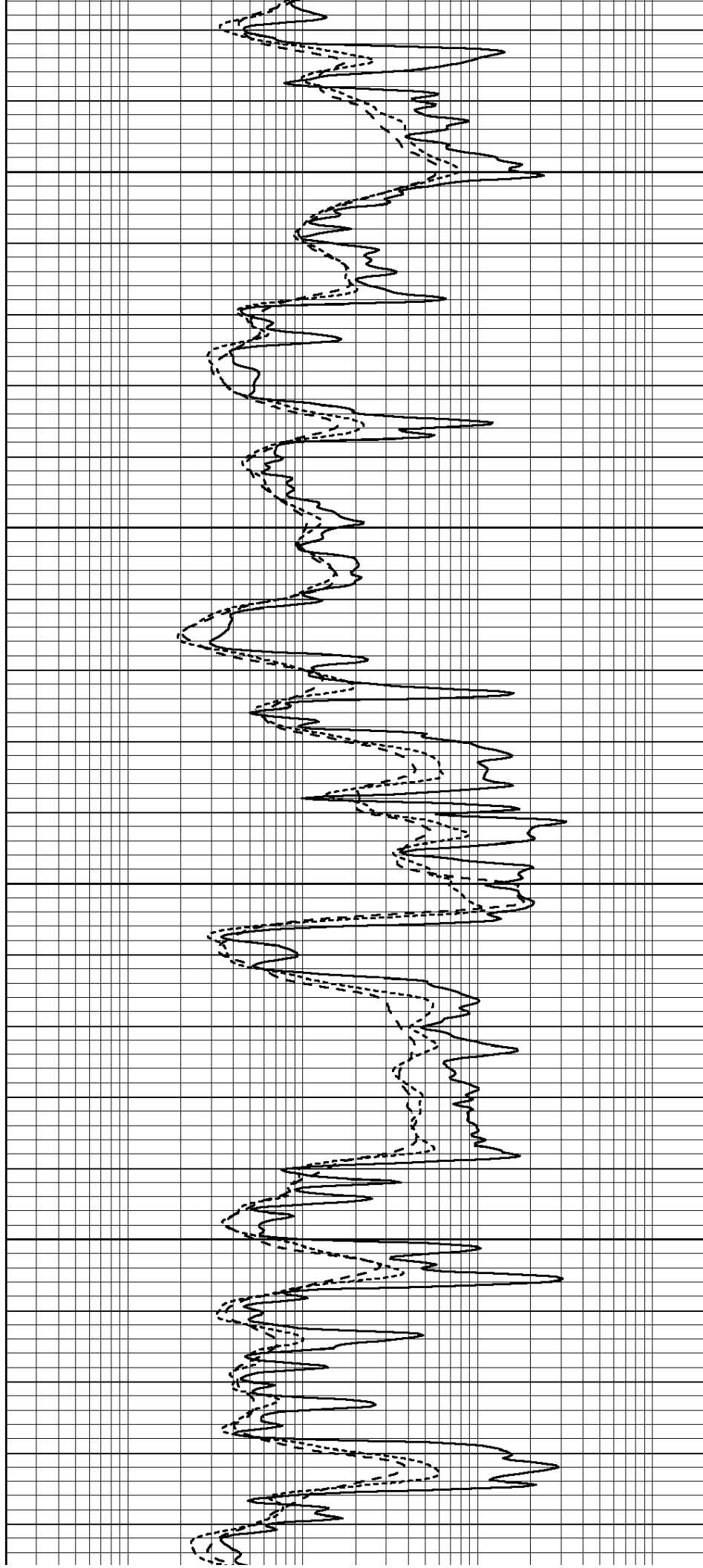


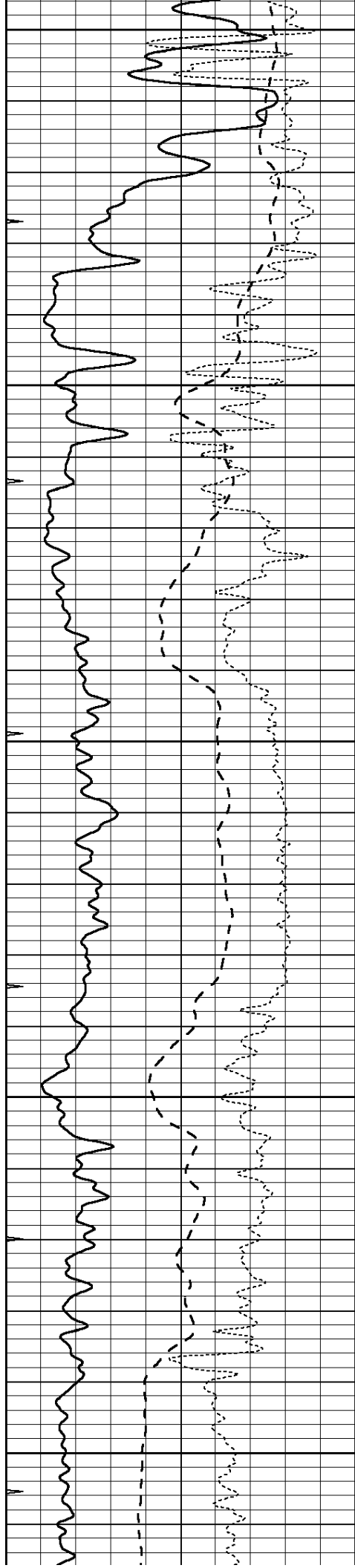
4800

4850

4900

4950





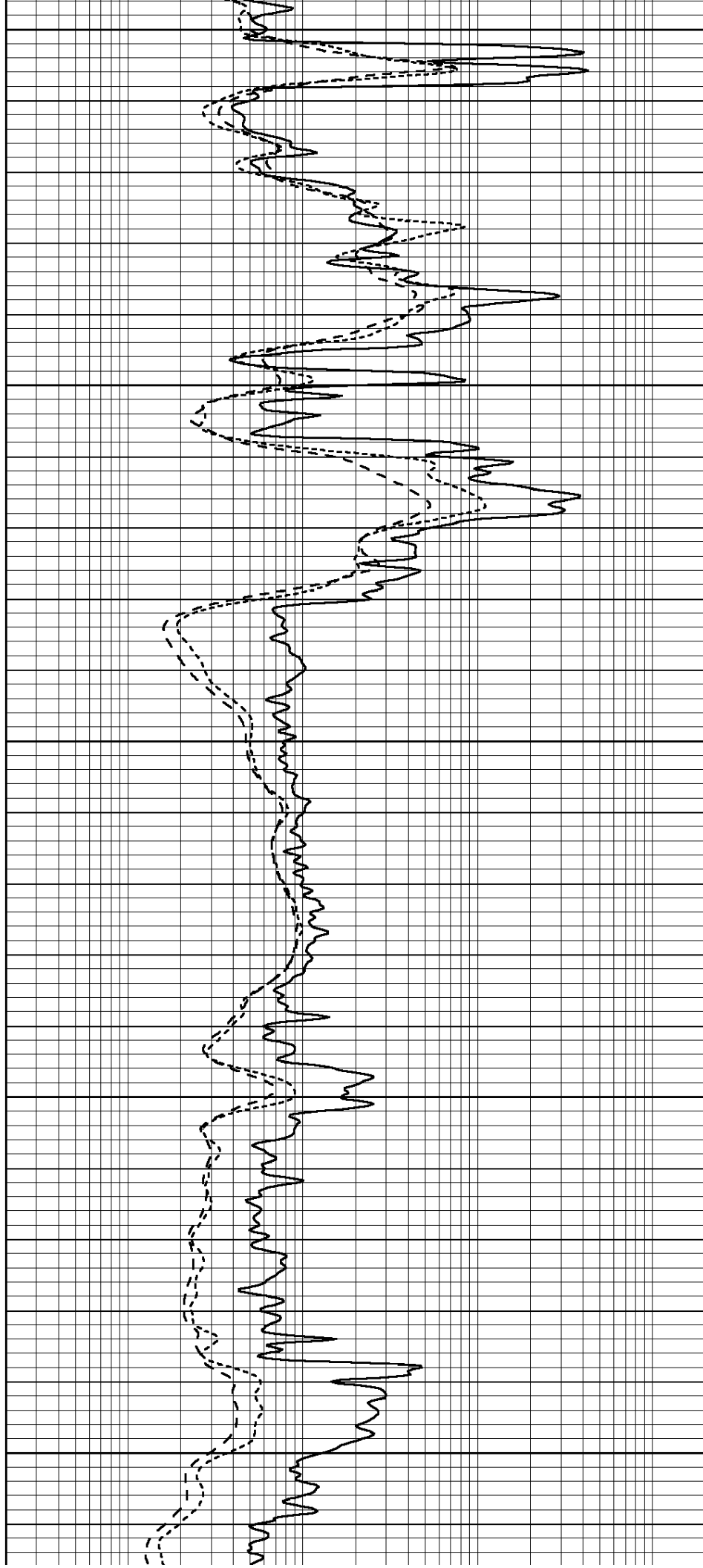
5000

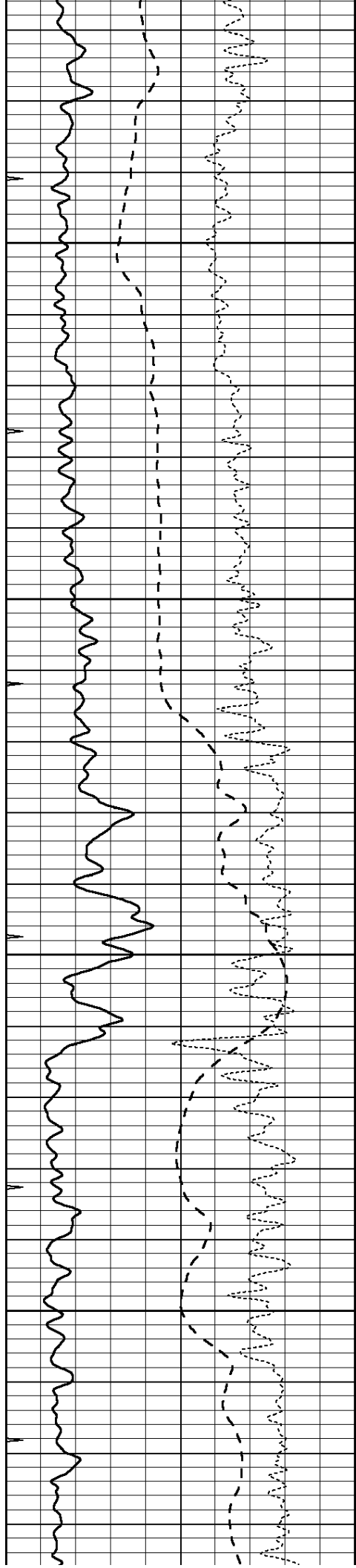
5050

5100

5150

5200



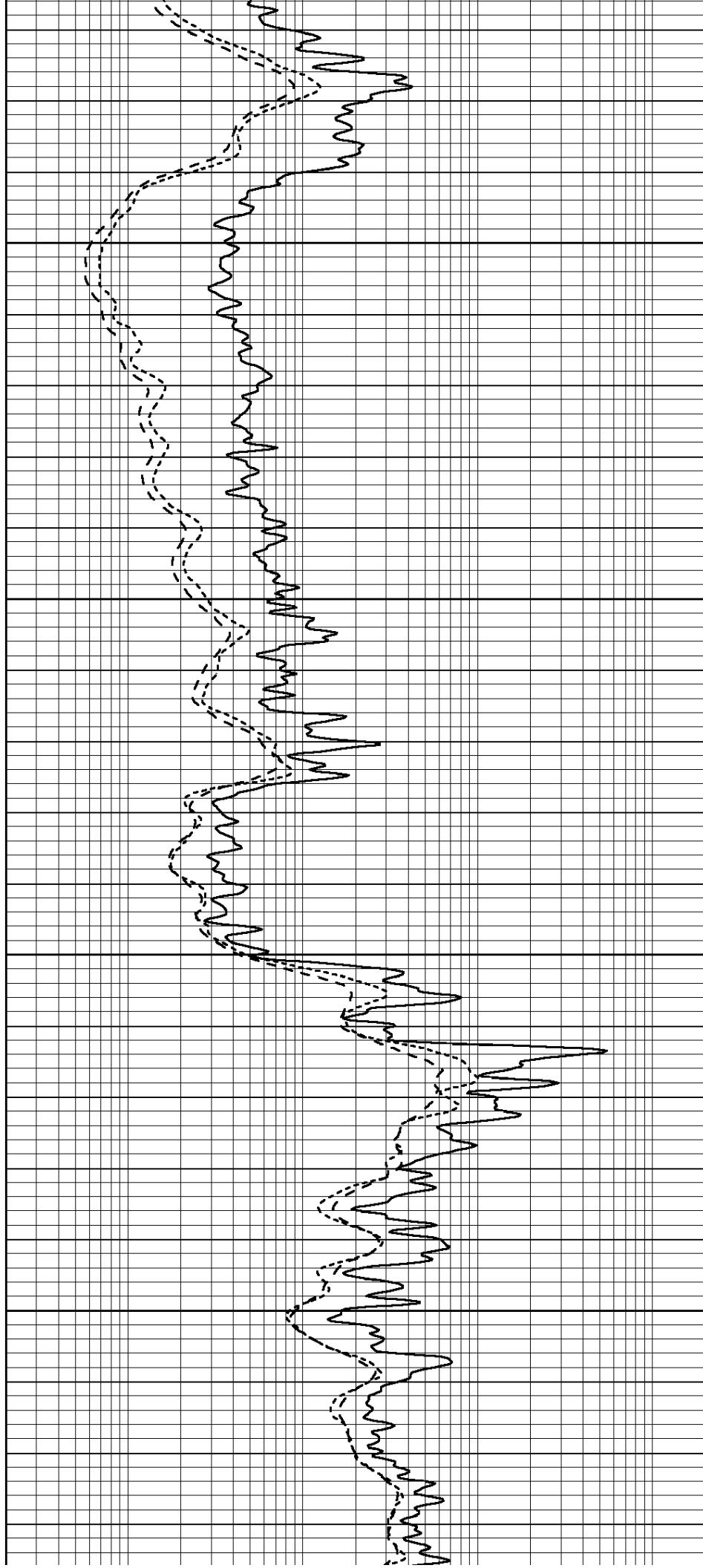


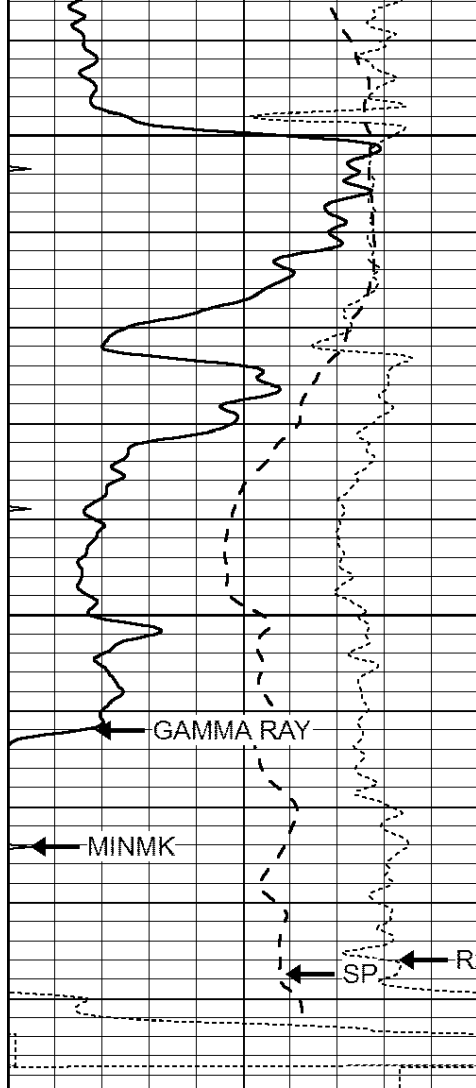
5250

5300

5350

5400





5450

5500

GAMMA RAY

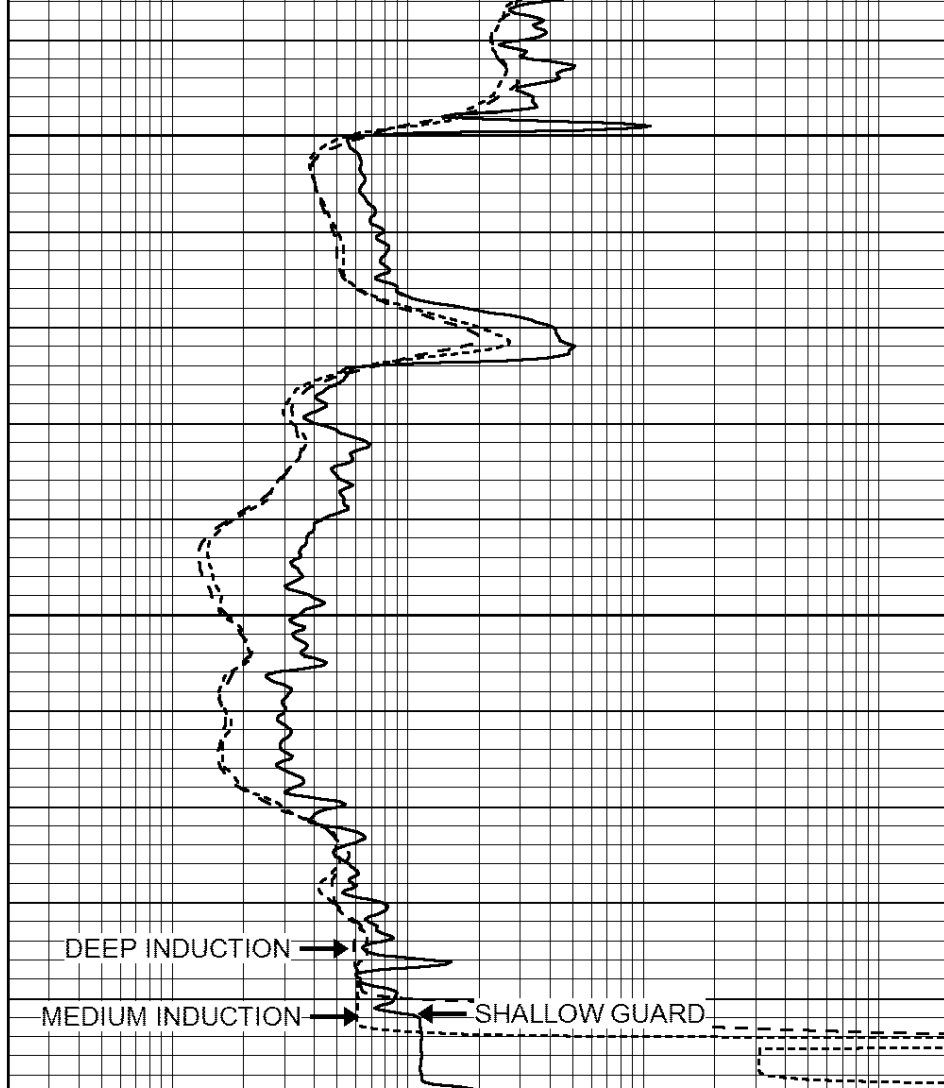
MINMK

SP

Rxo/Rt

LTD 5543

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

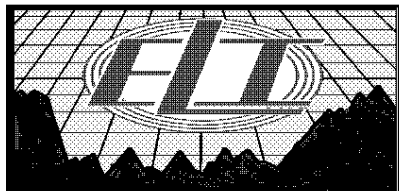


DEEP INDUCTION

MEDIUM INDUCTION

SHALLOW GUARD

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



REPEAT SECTION

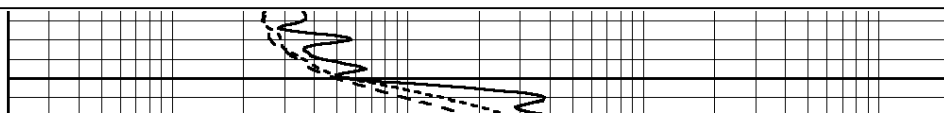
Database File: 2124pe.db
 Dataset Pathname: pass2.1
 Presentation Format: _dil
 Dataset Creation: Thu Jan 11 03:49:19 2018
 Charted by: Depth in Feet scaled 1:240

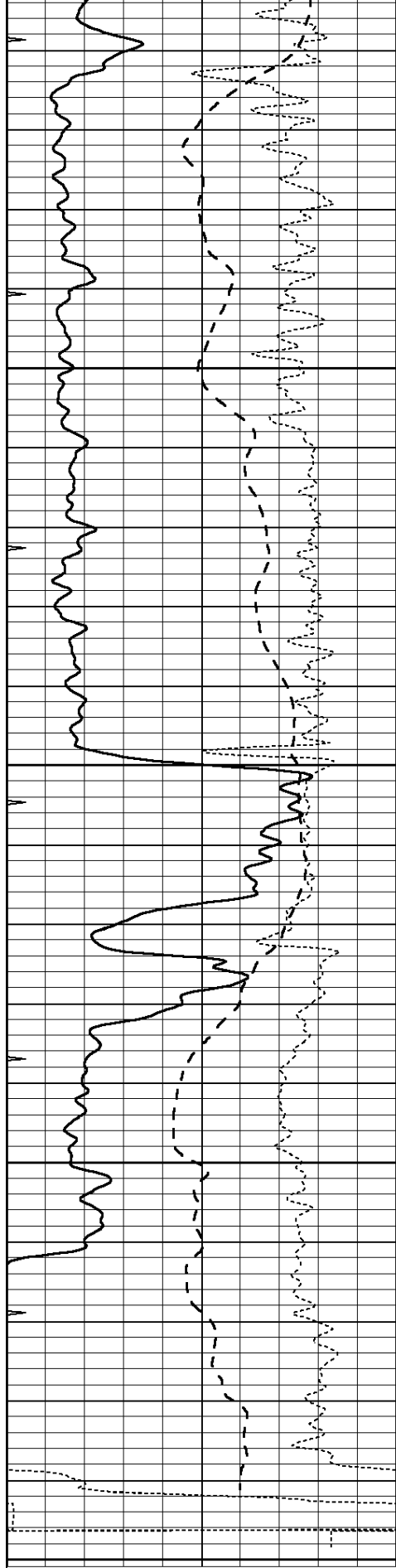
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

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



5350





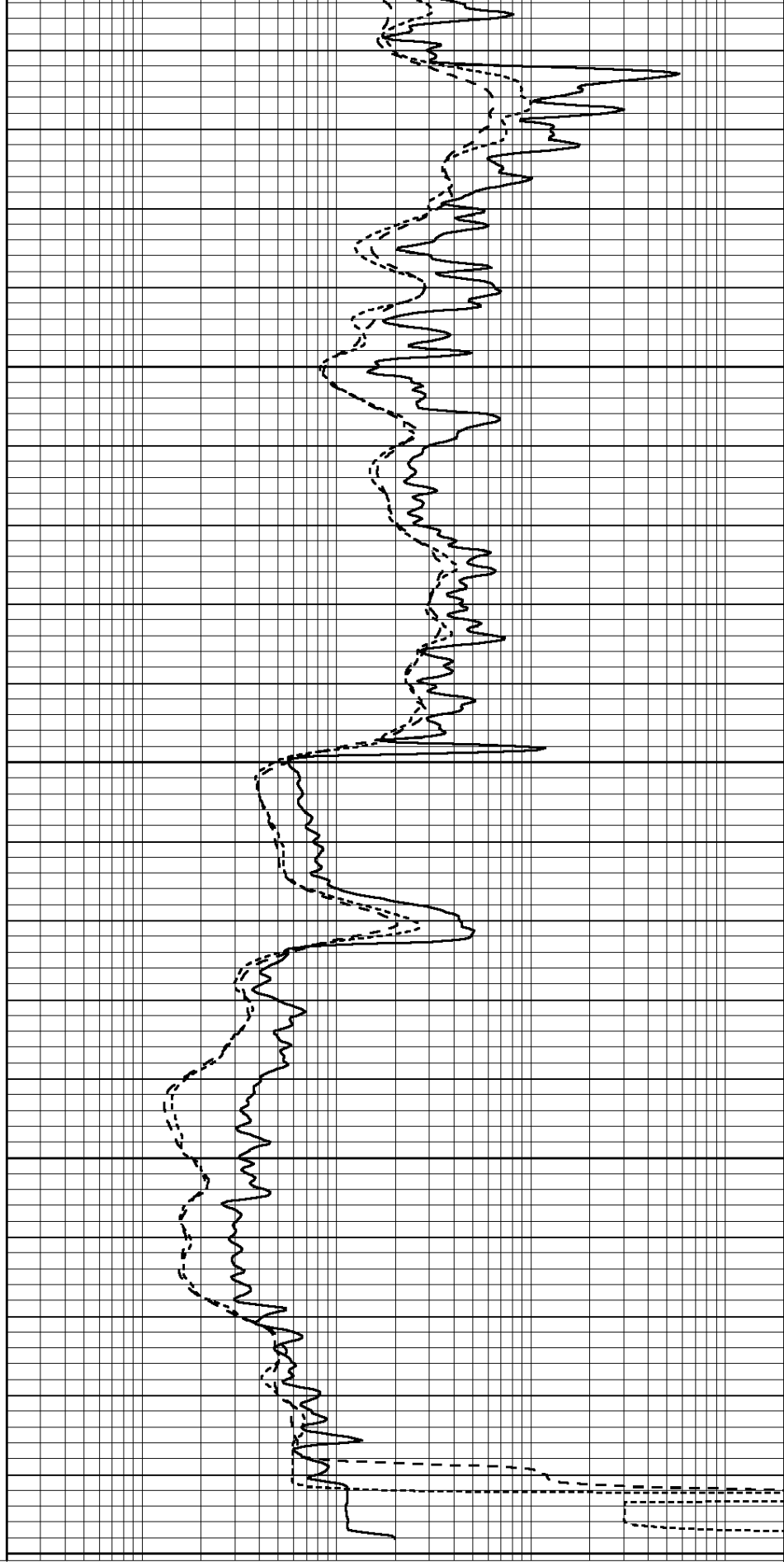
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

5400

5450

5500

5550



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

Database File: pe2.db		Calibration Report
Dataset Pathname: pass2		
Dataset Creation: Mon Aug 21 11:58:02 2017 by Log Open-Cased 090629		

Dual Induction Calibration Report

Serial-Model:	PROBE8-DILG
Surface Cal Performed:	Mon Aug 21 11:58:18 2017
Downhole Cal Performed:	Mon Aug 21 11:58:21 2017
After Survey Verification Performed:	Mon Aug 21 11:58:23 2017

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	0.000
Medium	0.029	0.796	V	0.000	464.000	mmho/m	590.000	-12.000
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 Mon Aug 21 11:56:41 2017			
	Background	Magnesium	Aluminum	Sandstone	
Window 1	833.6	7394.2	2287.3	8111.8	cps
Window 2	768.9	6322.3	1995.6	6800.0	cps
Window 3	621.5	3261.9	1186.4	3380.9	cps
Window 4	184.2	185.7	184.9	184.8	cps
Long Space	0.0	5553.4	1226.6	6031.1	cps
Short Space	1.2	1307.5	903.9	1387.7	cps
Rho		1.7100	2.5900	1.3800	g/cc
Pe		0.0000	2.5700	1.5500	
Rib Angle	: 46.3	Rib Slope	: 1.045	Density/Spine Ratio	: 0.566
Spine Angle	: 76.3	Spine Slope	: 4.090	Spine Intercept	: -20.7

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:		6I	
		Tool Model:		G	
CALIBRATION					
Detector		Readings		Target	
Short Space		1.00	cps	1.00	cps
Long Space		1.00	cps	1.00	cps
				Normalization	
				1.0000	
				1.0000	

PRE-SURVEY VERIFICATION					
Detector		Readings		Measured	
Short Space		cps			
Long Space		cps		pu	
				pu	
1)					
Short Space		cps			
Long Space		cps		pu	
2)					
Short Space		cps			
Long Space		cps		pu	
3)					
Short Space		cps			
Long Space		cps		pu	

POST-SURVEY VERIFICATION					
Detector		Readings		Measured	
Short Space		cps			
Long Space		cps		pu	
				pu	
1)					
Short Space		cps			
Long Space		cps		pu	
2)					
Short Space		cps			
Long Space		cps		pu	
3)					
Short Space		cps			
Long Space		cps		pu	

Gamma Ray Calibration Report

Serial Number:	GR6	
Tool Model:	OPEN	
Performed:	Mon Aug 21 11:59:01 2017	
Calibrator Value:	150.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	276.0	cps
Sensitivity:	0.5500	GAPI/cps