



**COMPLETION  
& PRODUCTION  
SERVICES CO.**

**DUAL  
INDUCTION  
LOG**

Company RITCHIE EXPLORATION, INC.  
Well HAMMEKE UNIT #1  
Field WILDCAT  
County LANE State KANSAS

Company RITCHIE EXPLORATION, INC.  
Well HAMMEKE UNIT #1  
Field WILDCAT  
County LANE  
State KANSAS

Location: API #: 15-101-22485-00-00  
335' FSL & 2470' FWL  
SE - SE - SW  
Other Services  
CNL/CDL

SEC 13 TWP 18S RGE 28W

Permanent Datum GROUND LEVEL Elevation 2717  
Log Measured From KELLY BUSHING 5' A.G.L.  
Drilling Measured From KELLY BUSHING

Elevation  
K.B. 2722  
D.F. 2720  
G.L. 2717

Date	1-23-14		
Run Number	ONE		
Depth Driller	4717		
Depth Logger	4722		
Bottom Logged Interval	4720		
Top Log Interval	00		
Casing Driller	8 5/8" @ 239		
Casing Logger	238		
Bit Size	7 7/8		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 3,000 PPM	
Density / Viscosity	9.3/54		
pH / Fluid Loss	5.6/11.0		
Source of Sample	FLOWLINE		
Rim @ Meas. Temp	1.20 @ 65F		
Rmf @ Meas. Temp	0.90 @ 65F		
Rmc @ Meas. Temp	1.44 @ 65F		
Source of Rmf / Rmc	MEASURED		
Rim @ BHT	0.64 @ 122F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	122F		
Equipment Number	680		
Location	HAYS, KS.		
Recorded By	IAN MABB		
Witnessed By	MIKE ENGELBRECHT		

<<< 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

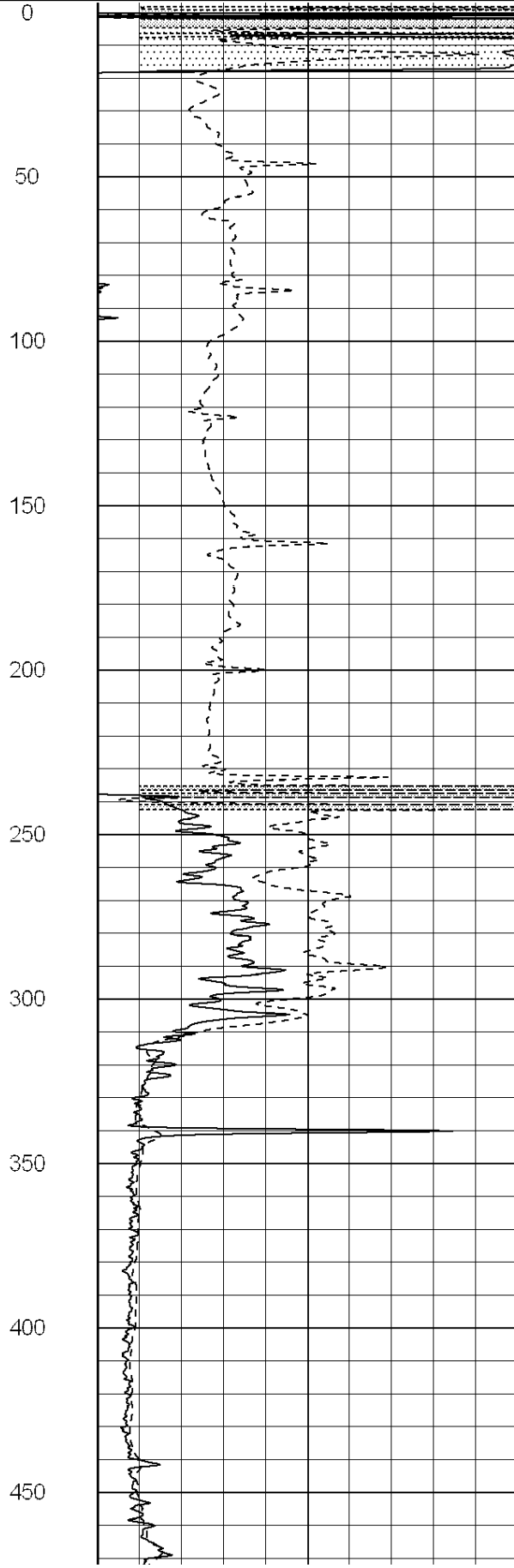
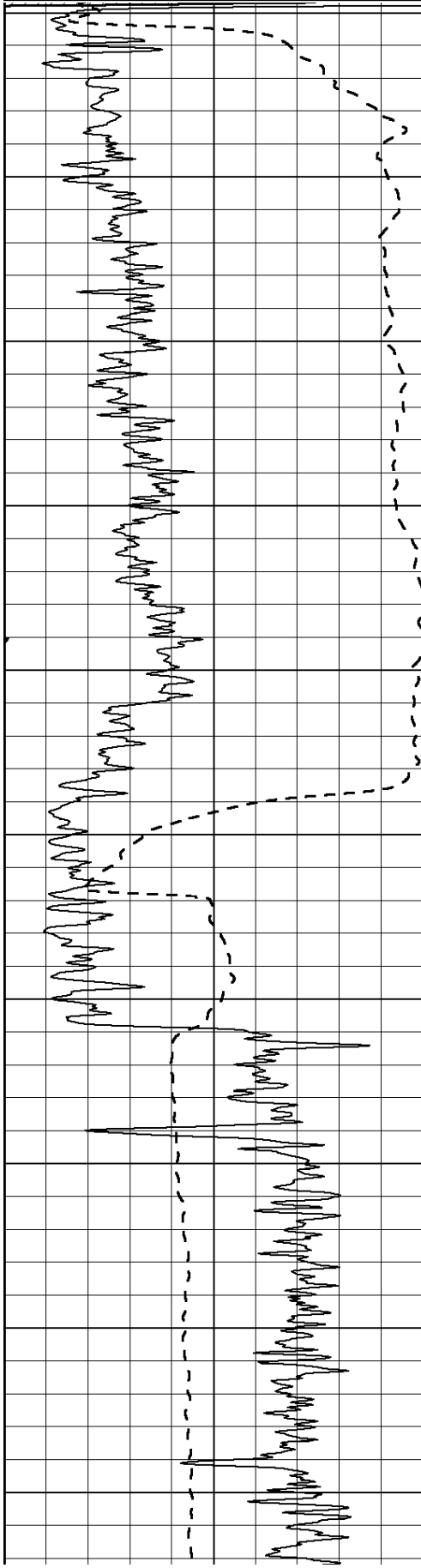
THANK YOU FOR USING NABORS COMPLETION & PRODUCTION SVCS. (785) 628-6395

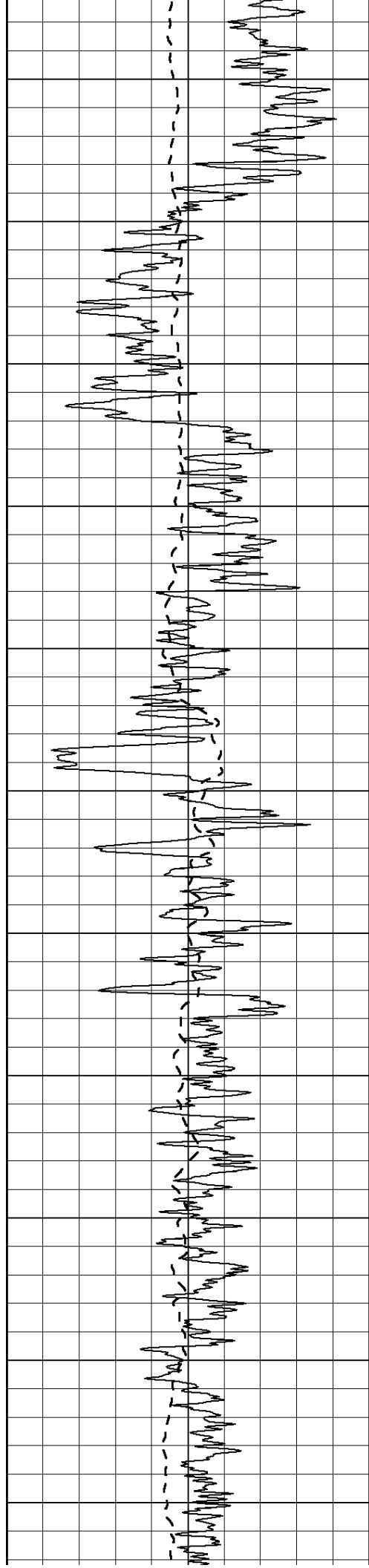
DIRECTIONS:  
DIGHTON, KS. - 3 MILES EAST NORTH INTO

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

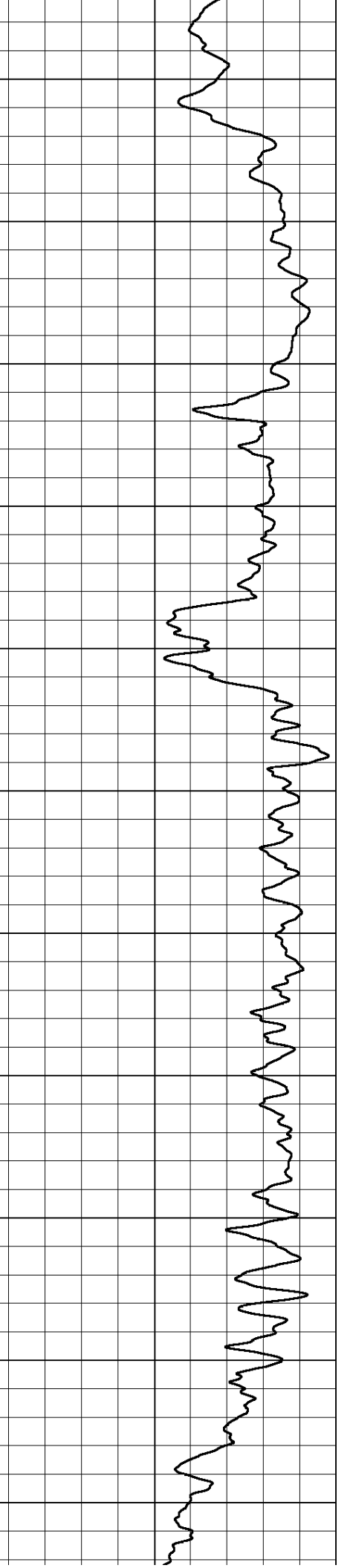
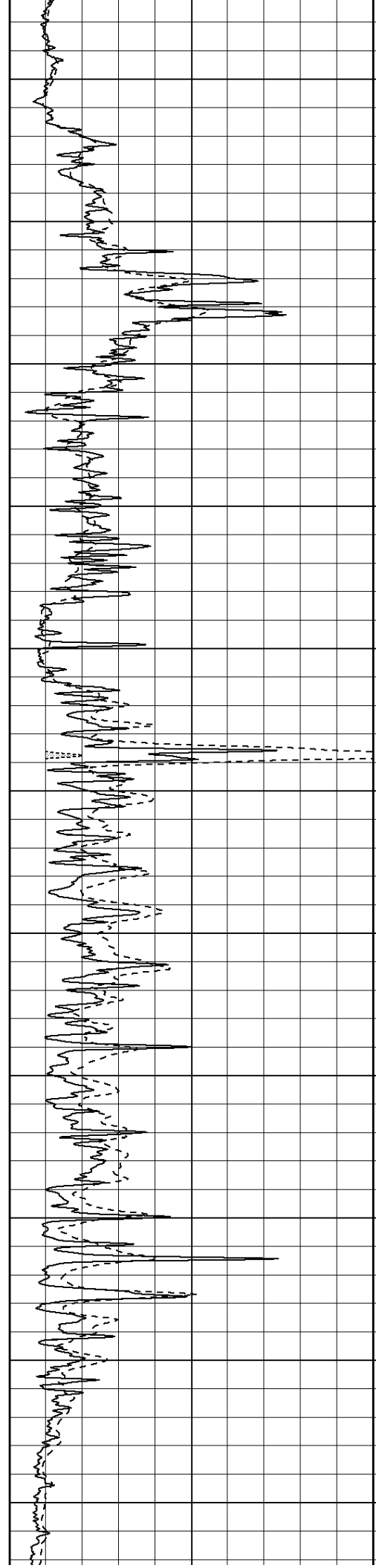
0	RLL3 (Ohm-m)	50
0	Deep Induction (Ohm-m)	50

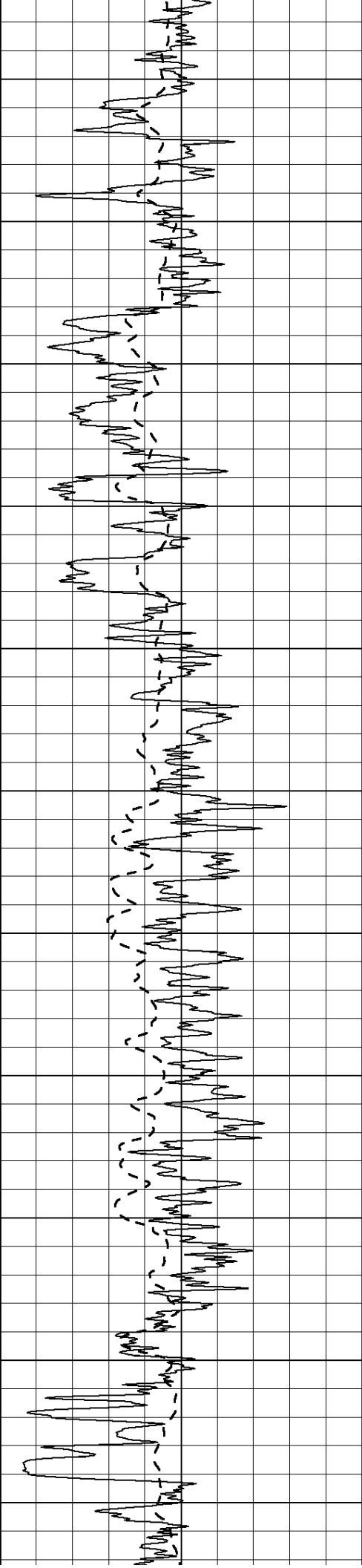
1000	CILD (mmho/m)	0
50	RILD X10 (Ohm-m)	500
50	RLL3 X10 (Ohm-m)	500



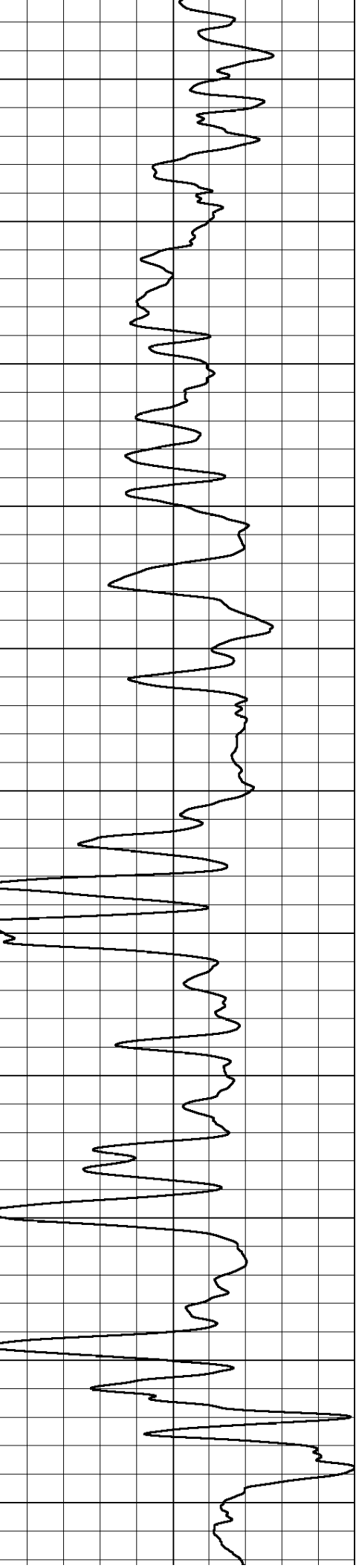
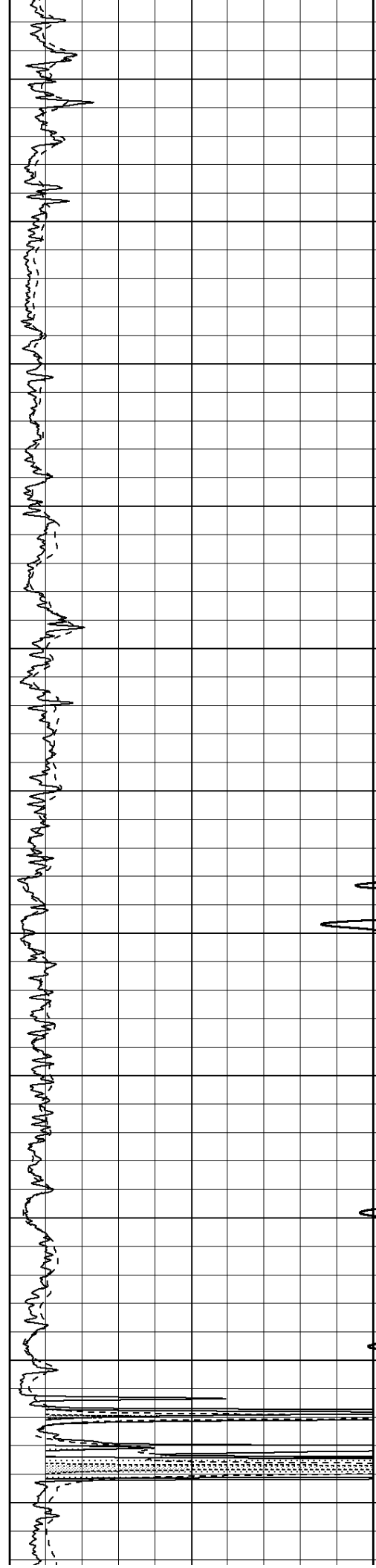


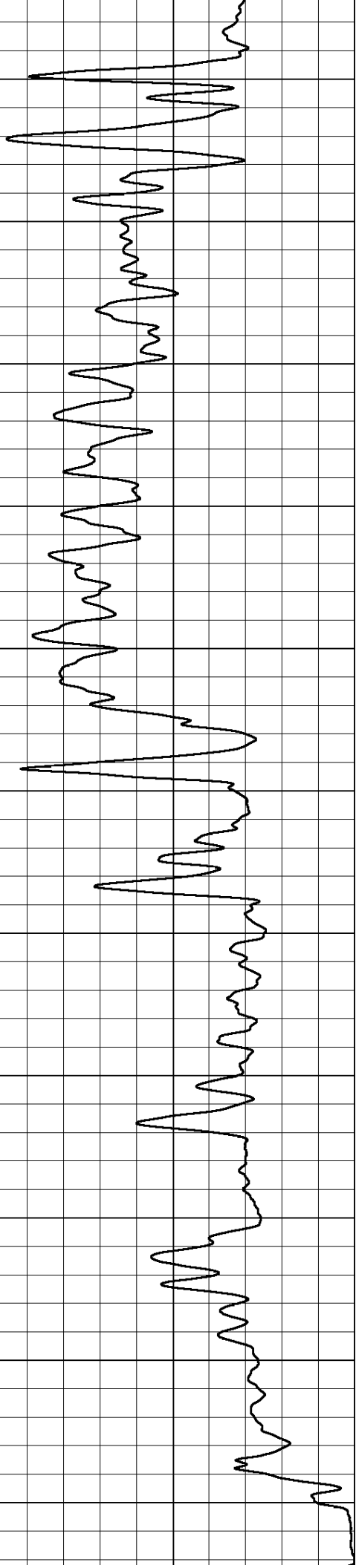
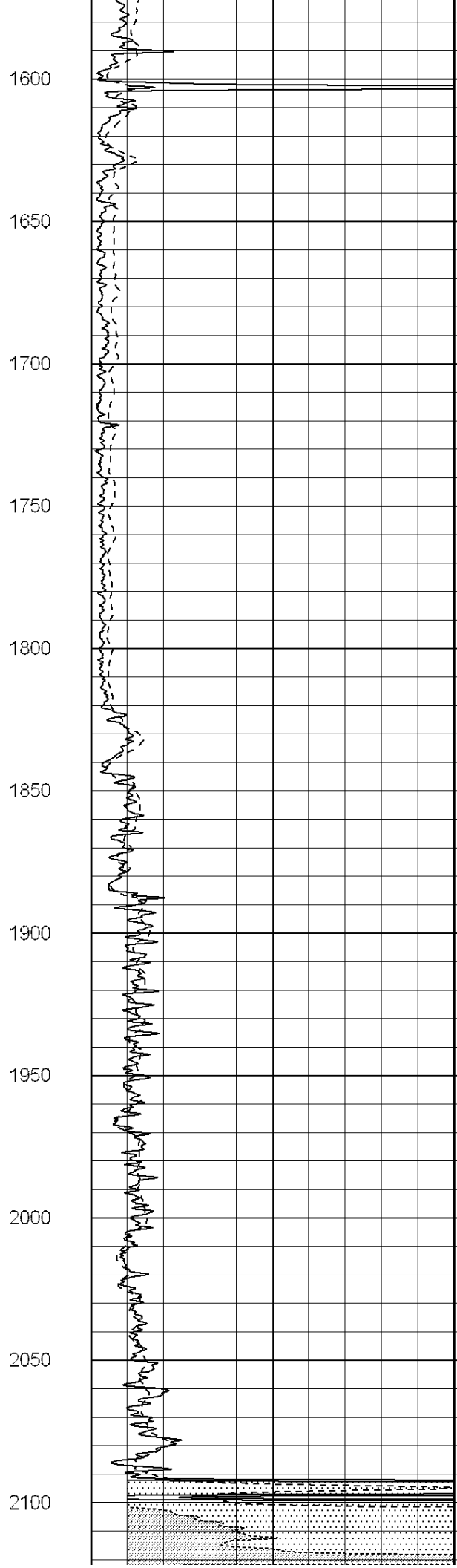
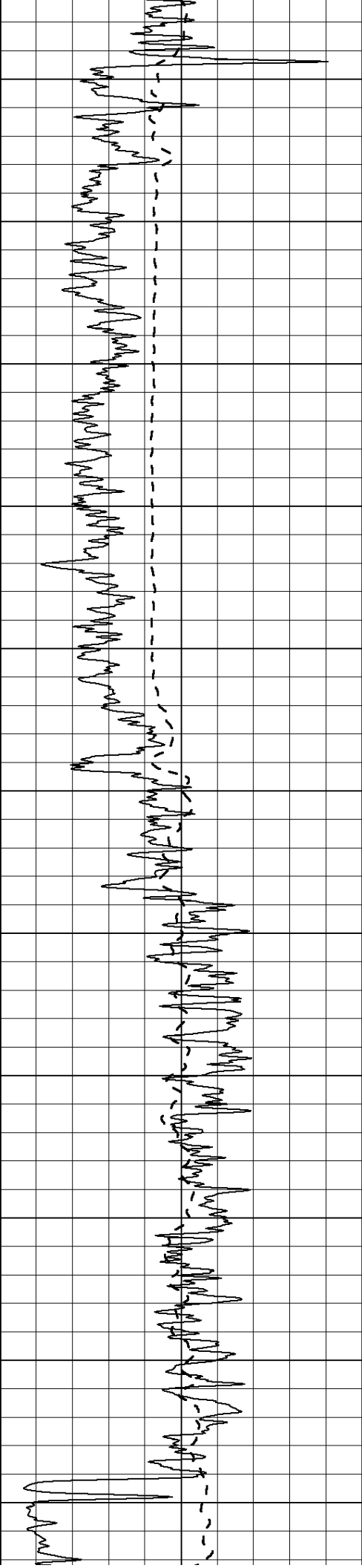
500  
550  
600  
650  
700  
750  
800  
850  
900  
950  
1000

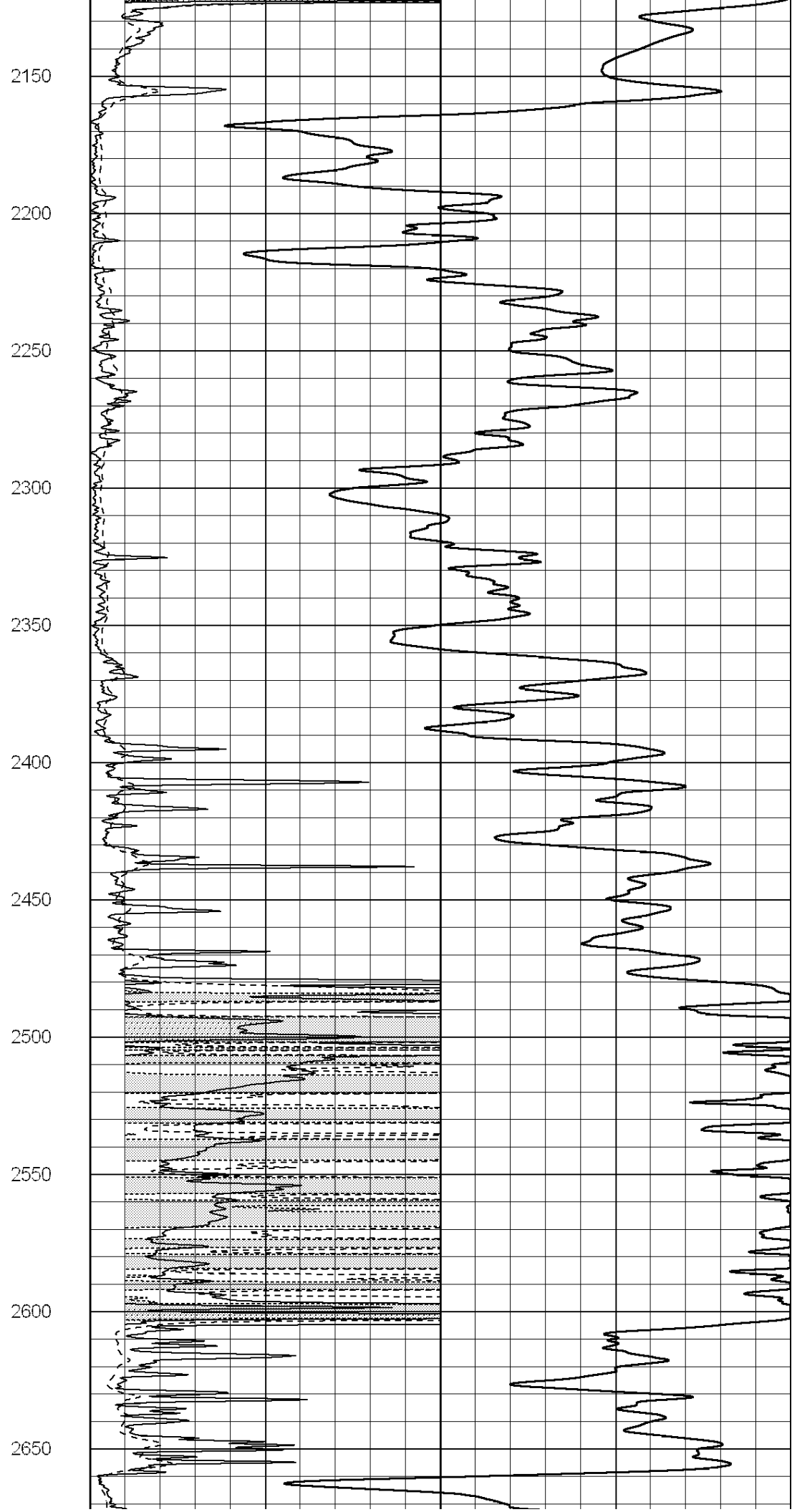
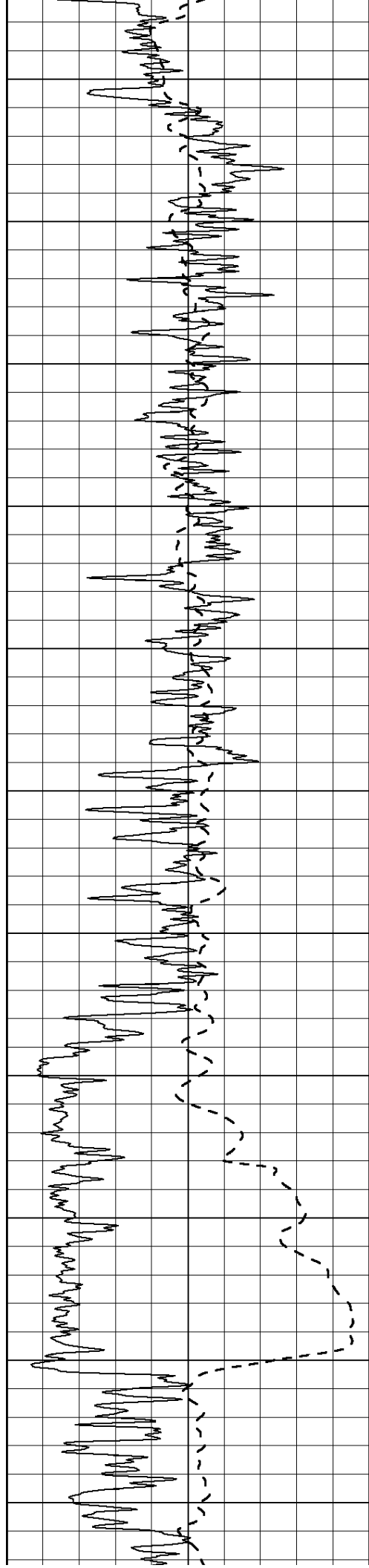


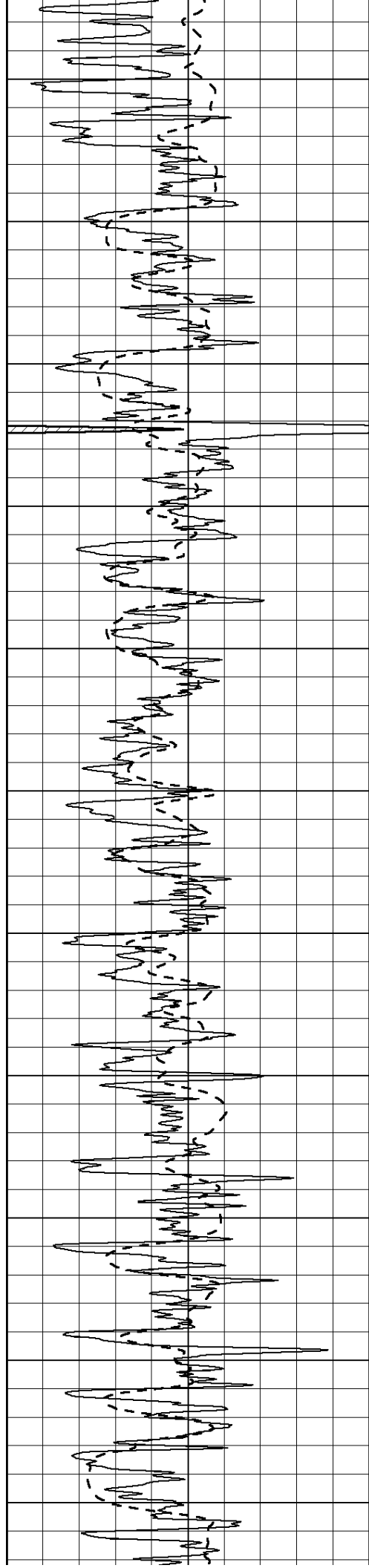


1050  
1100  
1150  
1200  
1250  
1300  
1350  
1400  
1450  
1500  
1550









2700

2750

2800

2850

2900

2950

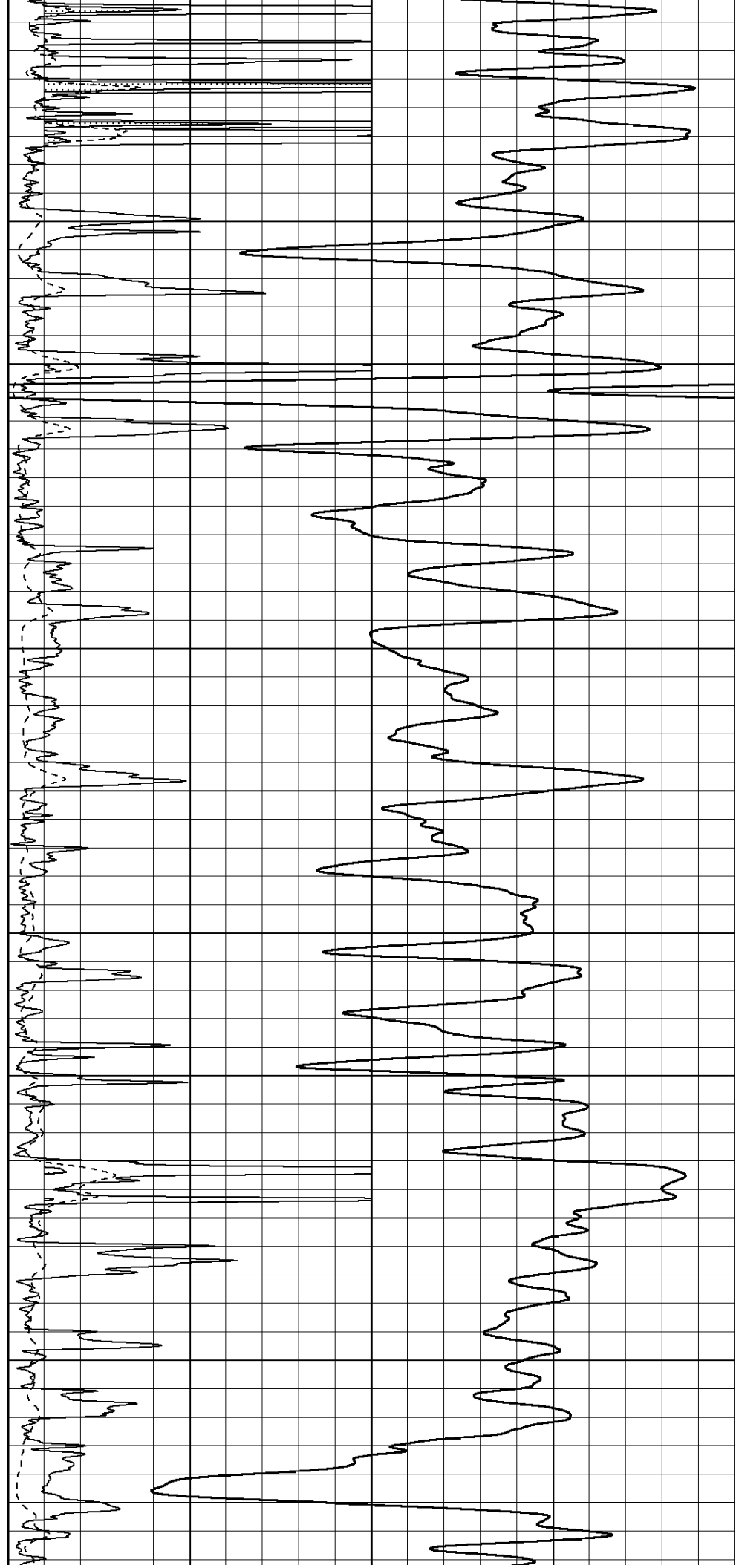
3000

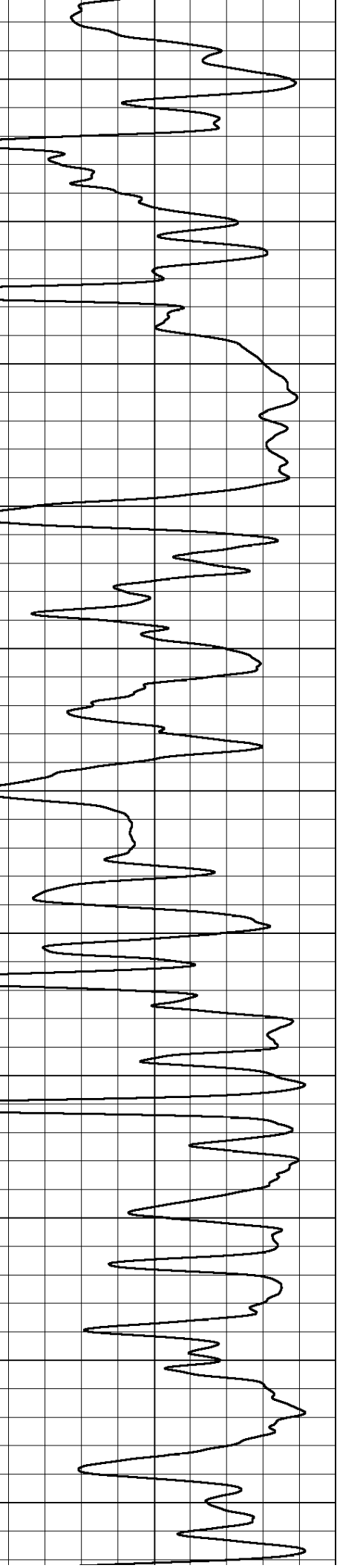
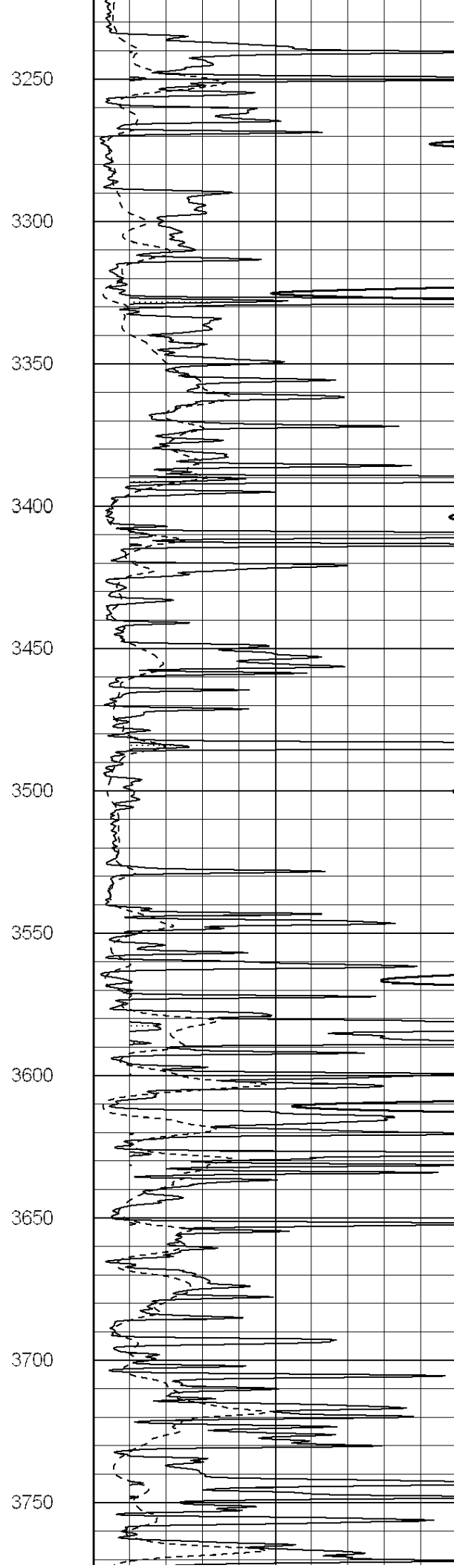
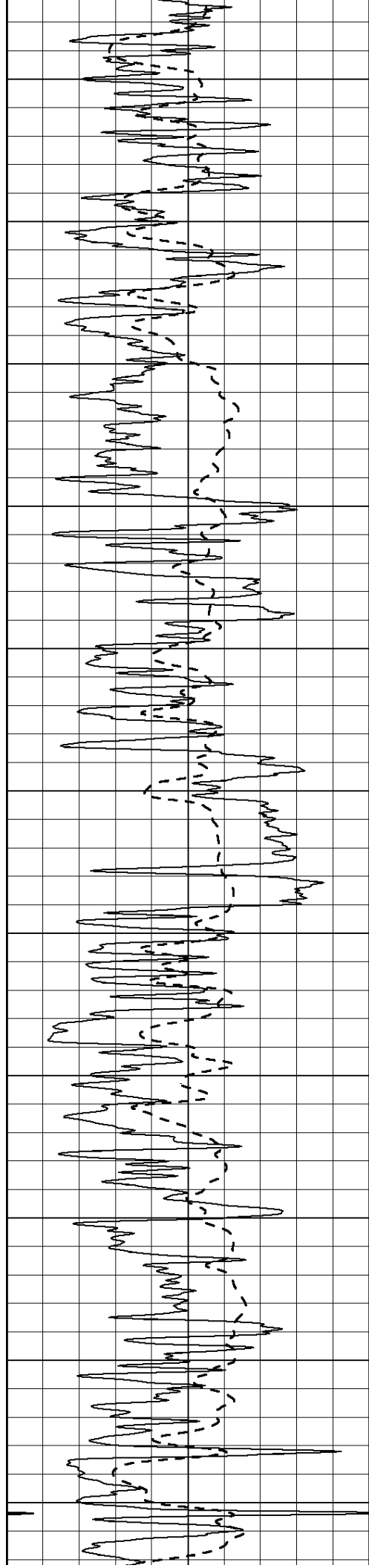
3050

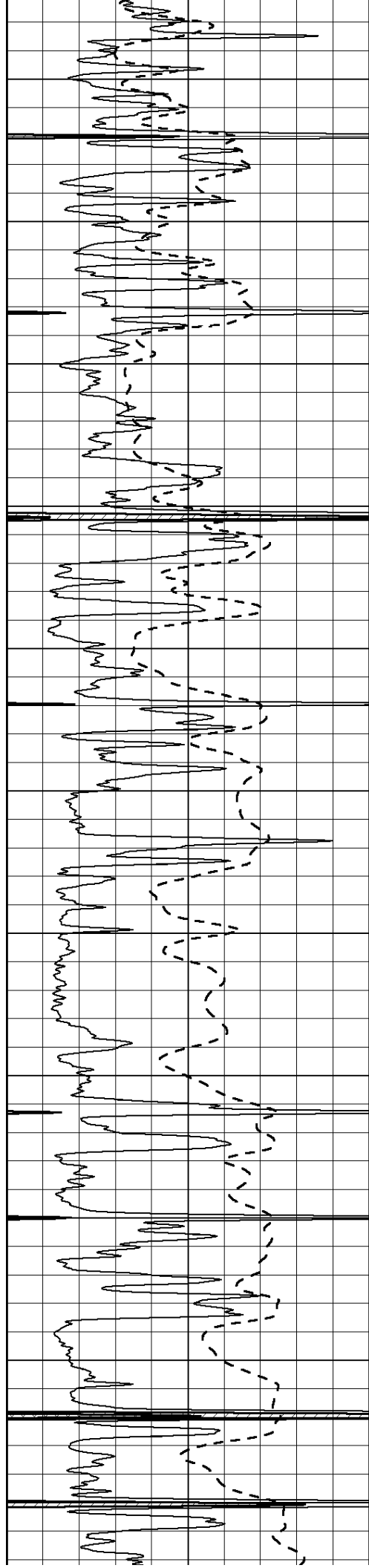
3100

3150

3200







3800

3850

3900

3950

4000

4050

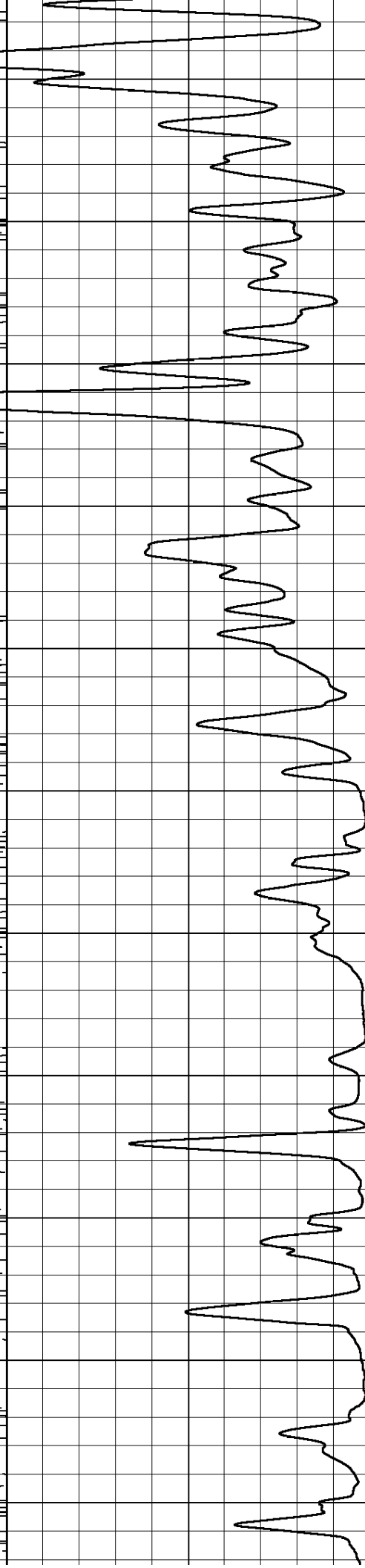
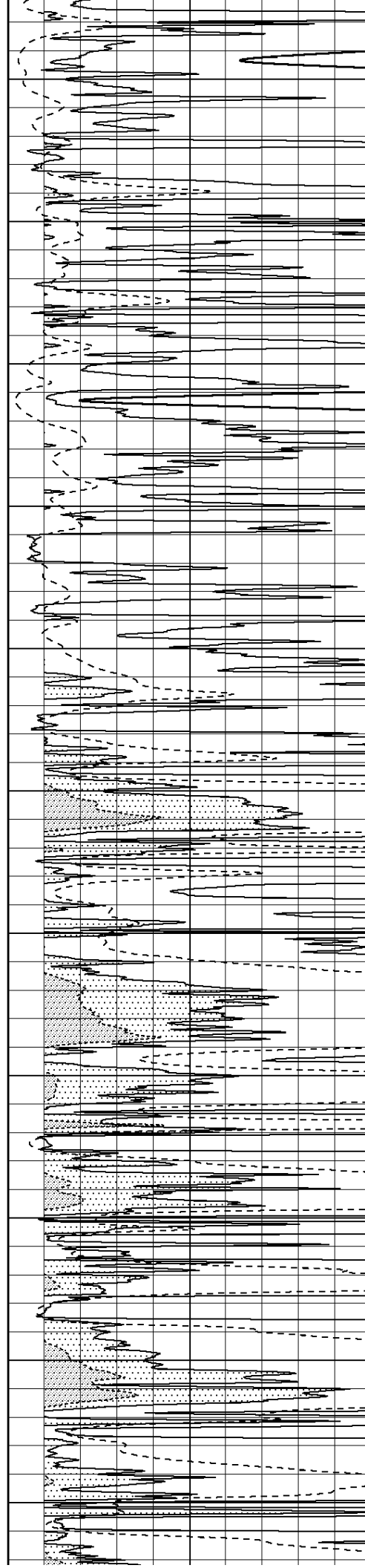
4100

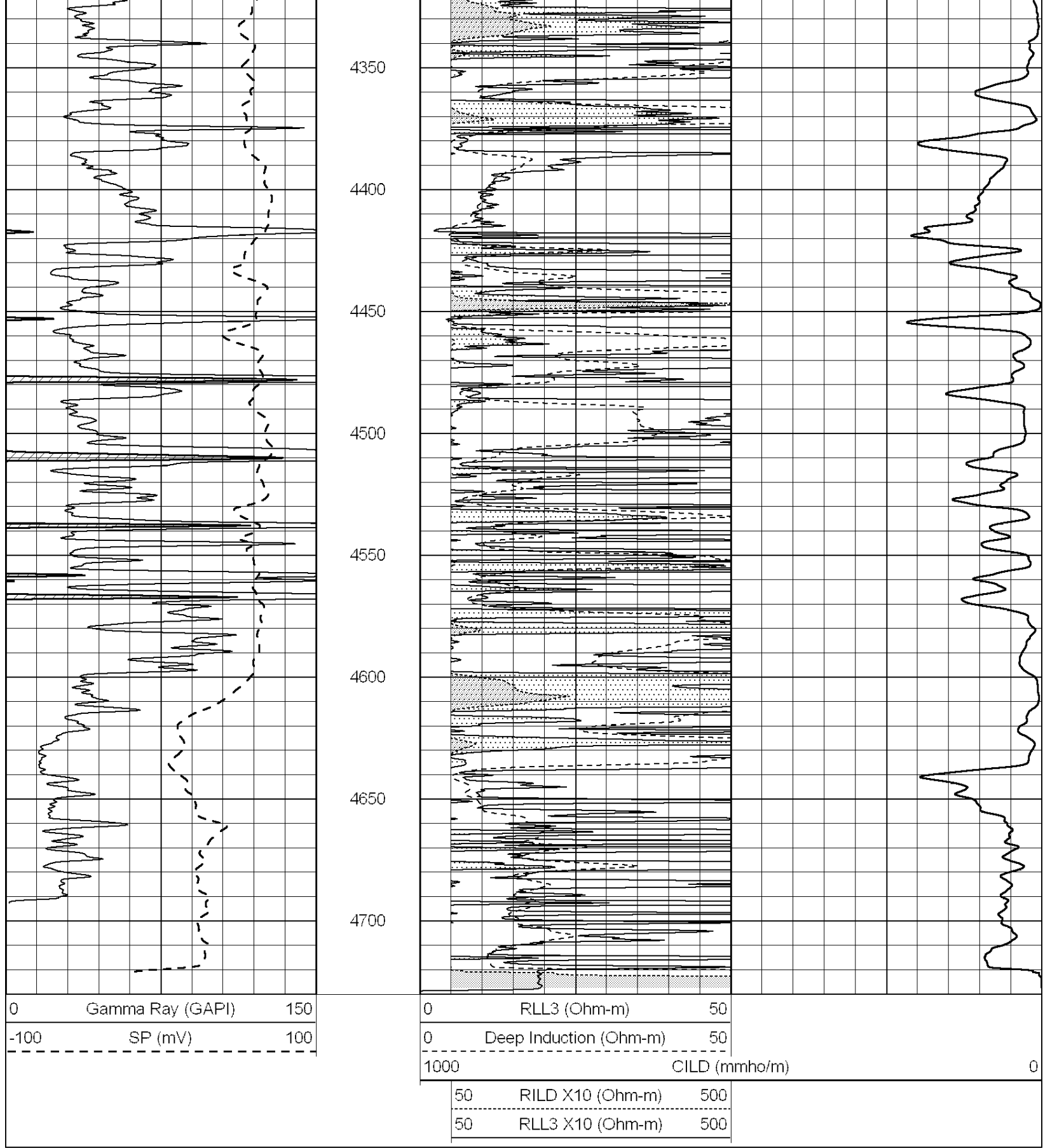
4150

4200

4250

4300



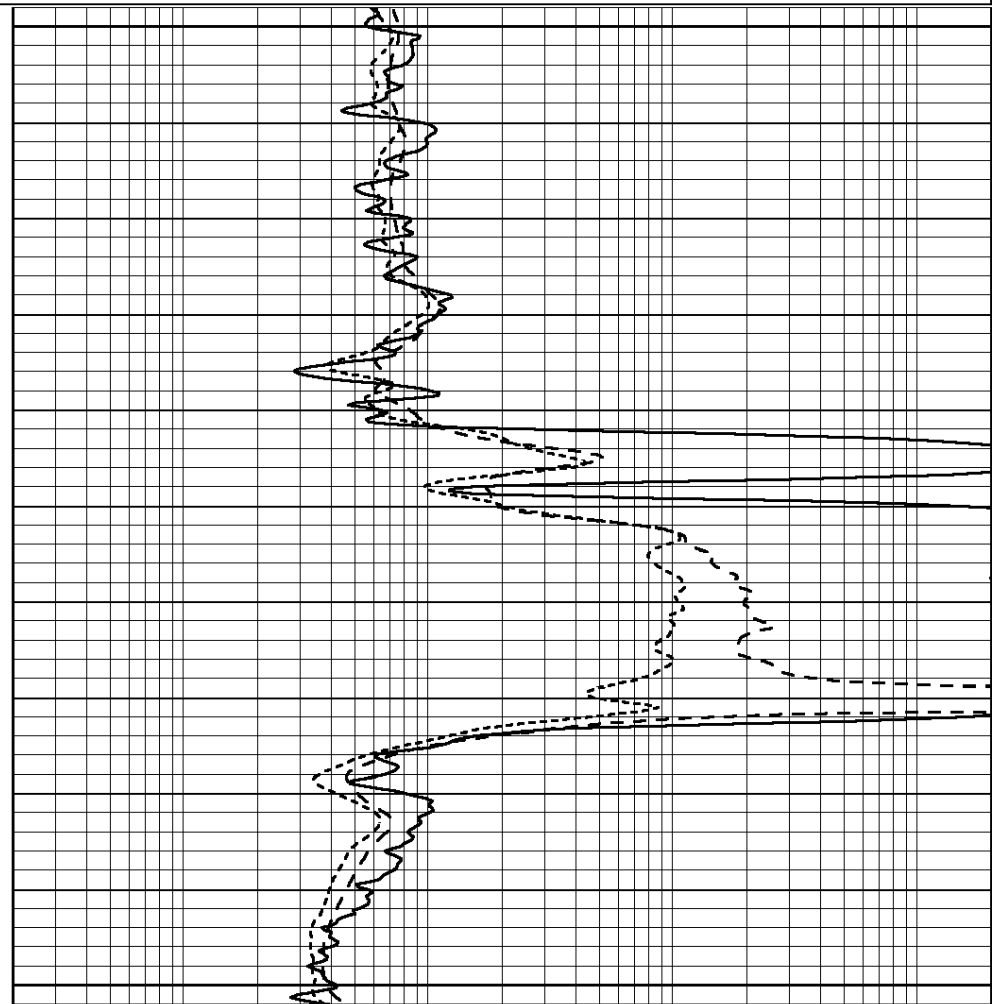
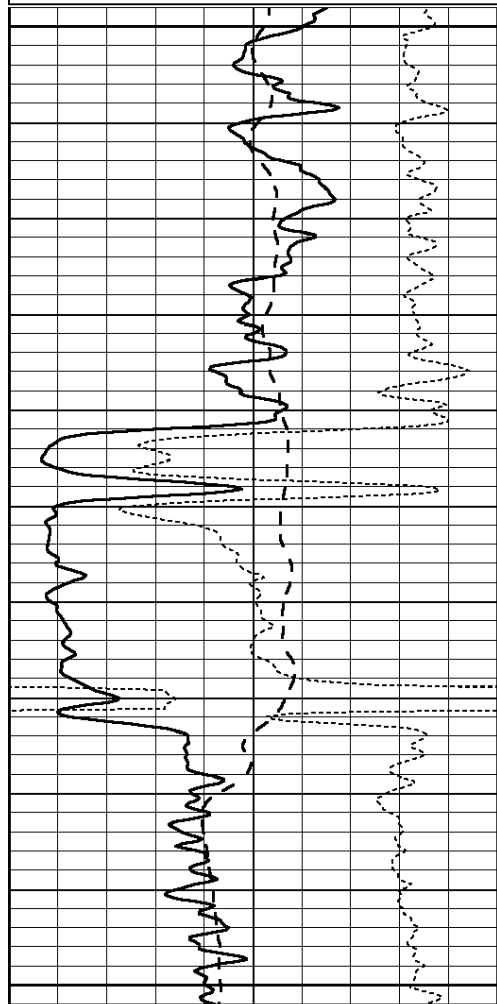


Database File: 22222ddn.db  
 Dataset Pathname: pass7.4  
 Presentation Format: \_dil  
 Dataset Creation: Thu Jan 23 22:47:39 2014 by Calc Open-Cased 090629  
 Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	0.2	SHALLOW GUARD (Ohm-m)	2000
100	SP (mV)	100	0.2	MEDIUM INDUCTION (Ohm-m)	2000

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

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



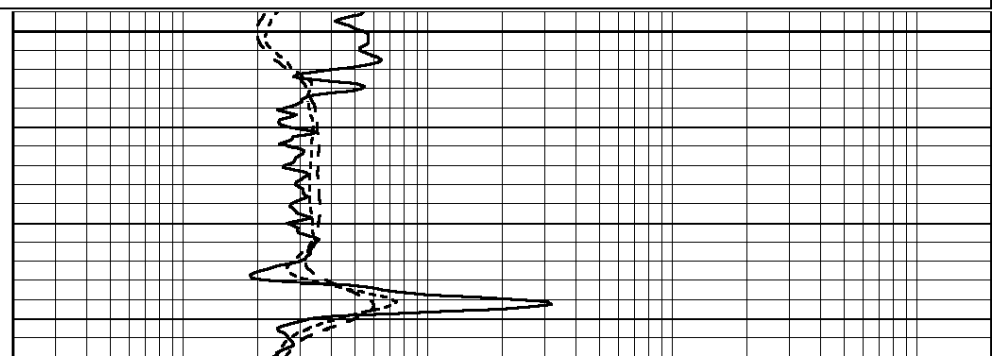
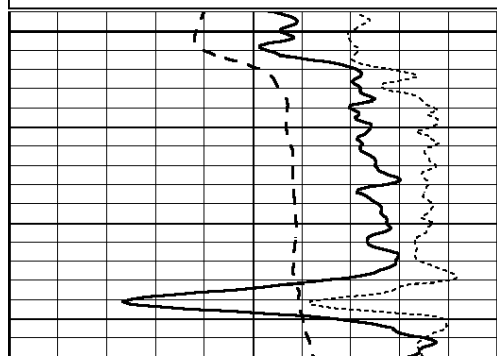
0 GAMMA RAY (GAPI) 150  
 -100 SP (mV) 100  
 -250 Rxo/Rt 50

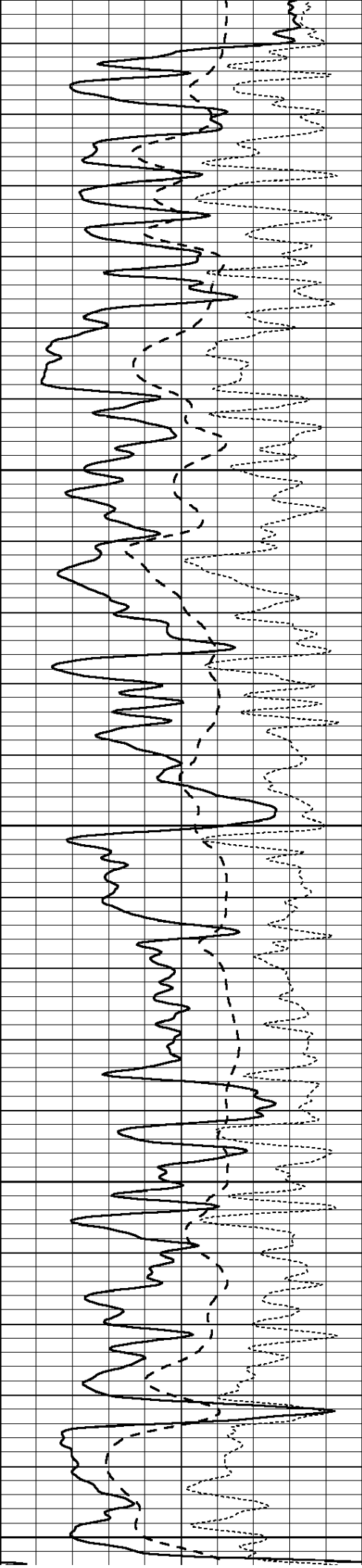
0.2 SHALLOW GUARD (Ohm-m) 2000  
 0.2 MEDIUM INDUCTION (Ohm-m) 2000  
 0.2 DEEP INDUCTION (Ohm-m) 2000

Database File: 22222ddn.db  
 Dataset Pathname: pass7.3  
 Presentation Format: \_dil  
 Dataset Creation: Thu Jan 23 22:06:18 2014 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





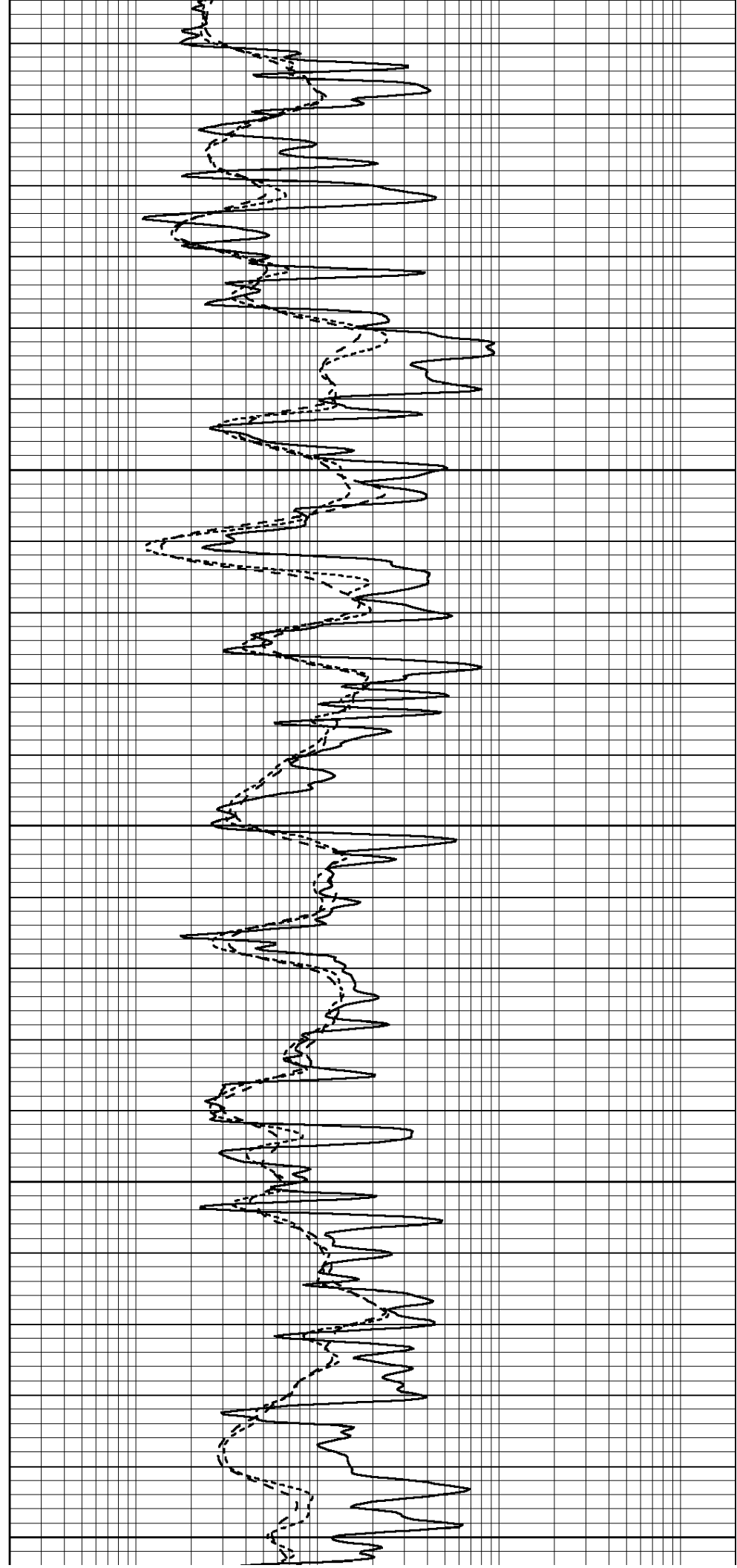
3550

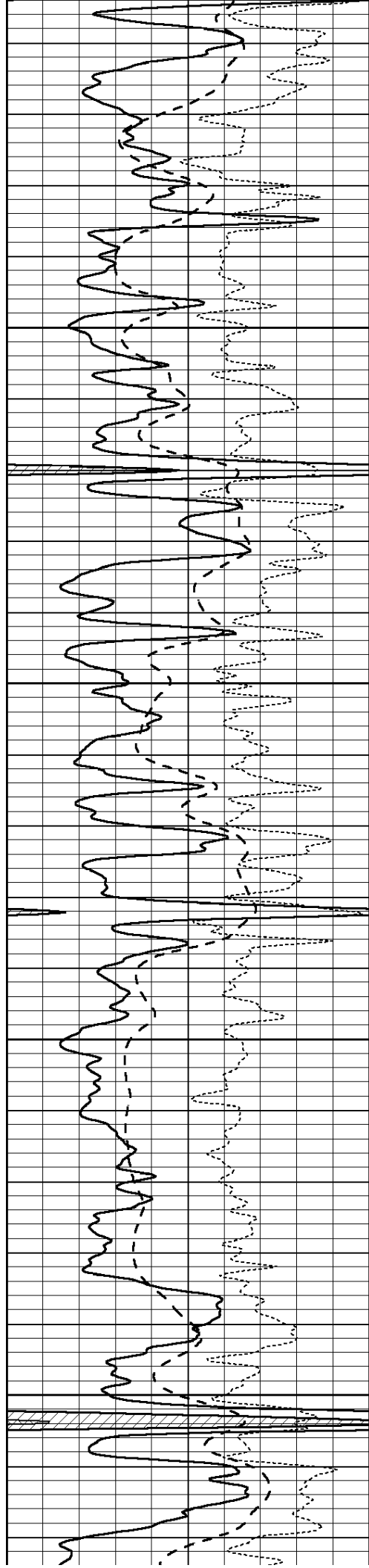
3600

3650

3700

3750



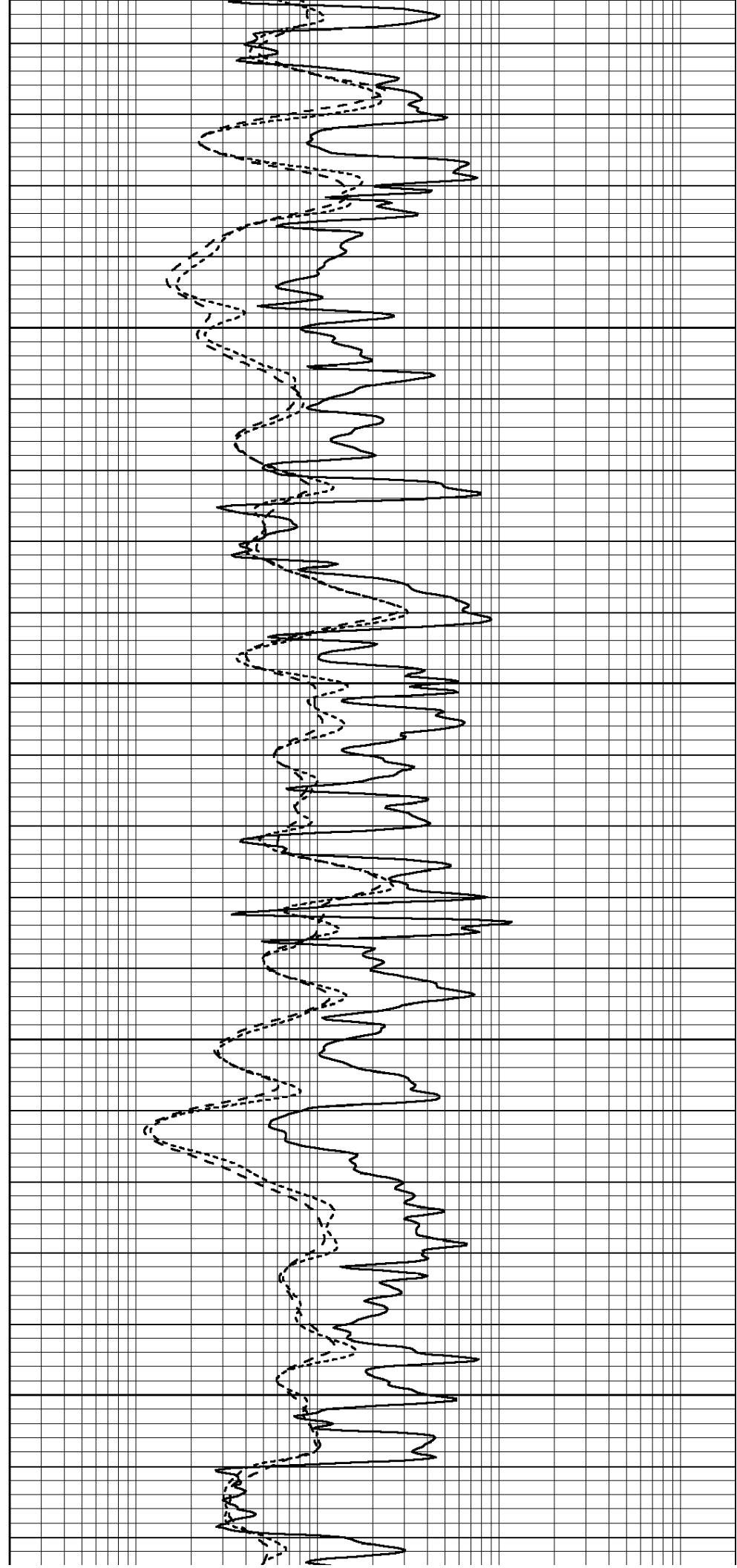


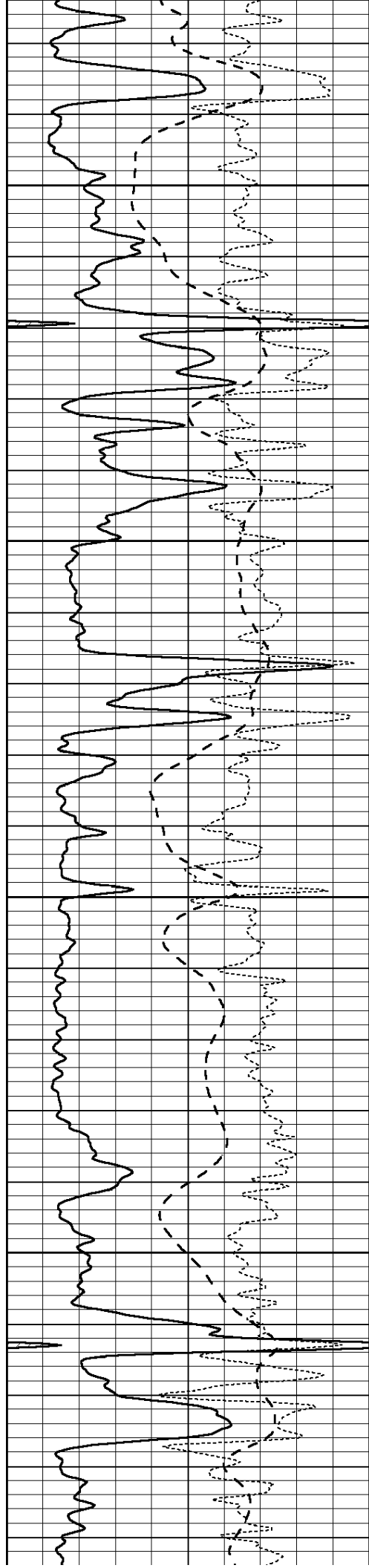
3800

3850

3900

3950



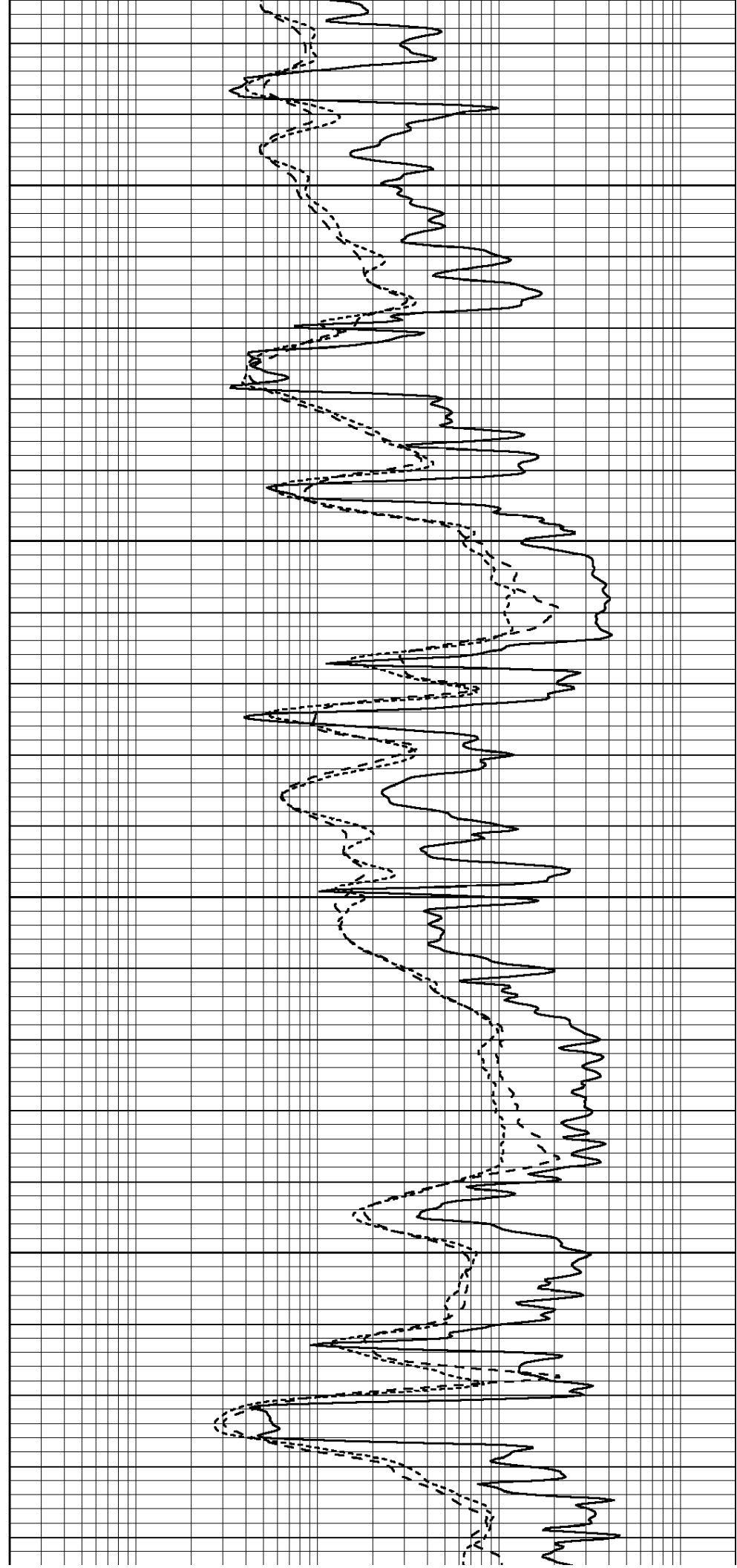


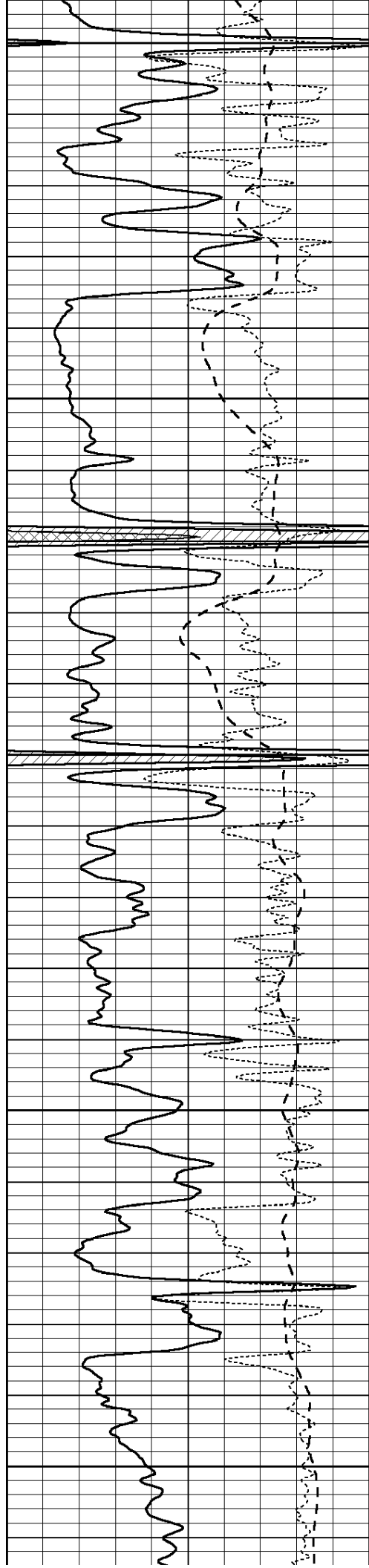
4000

4050

4100

4150





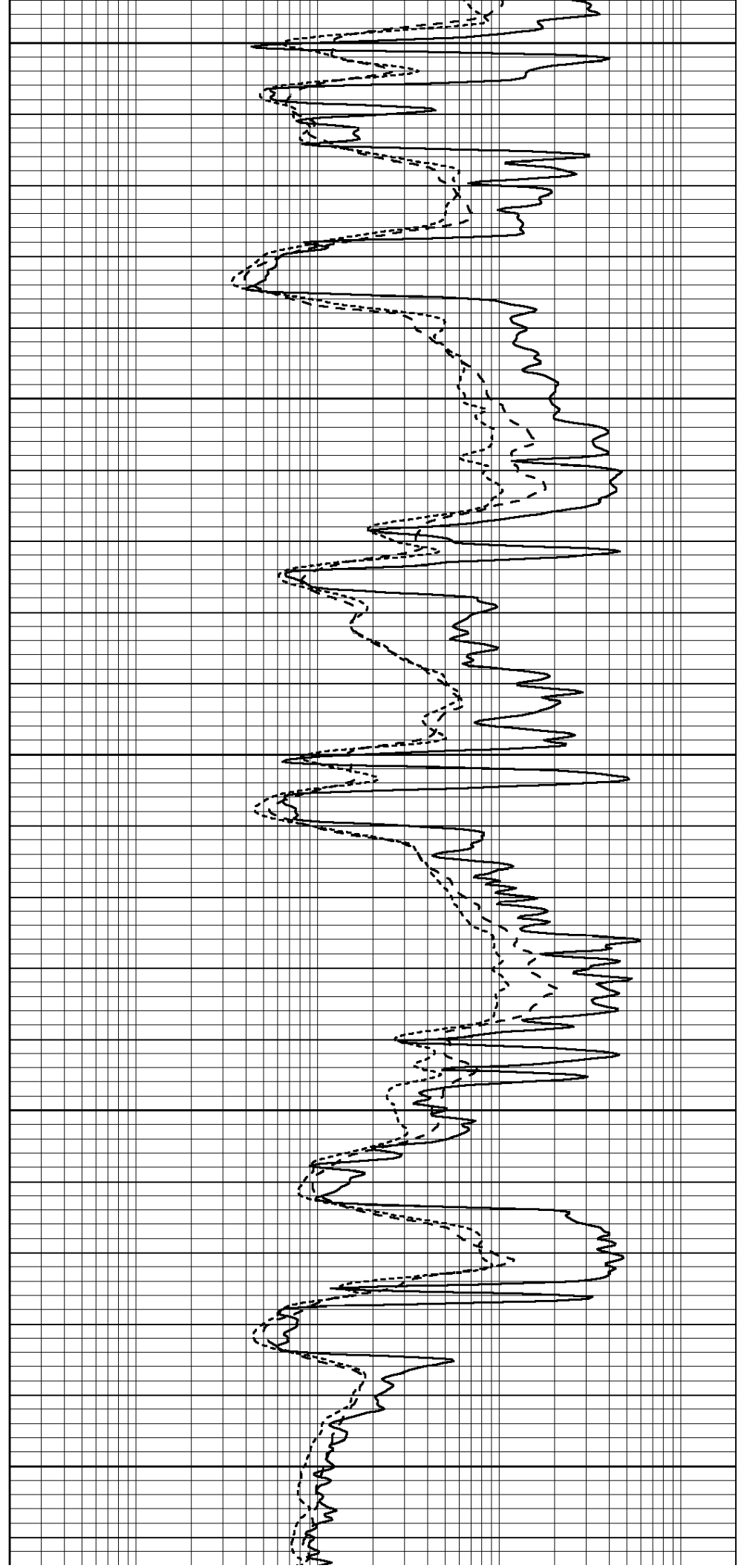
4200

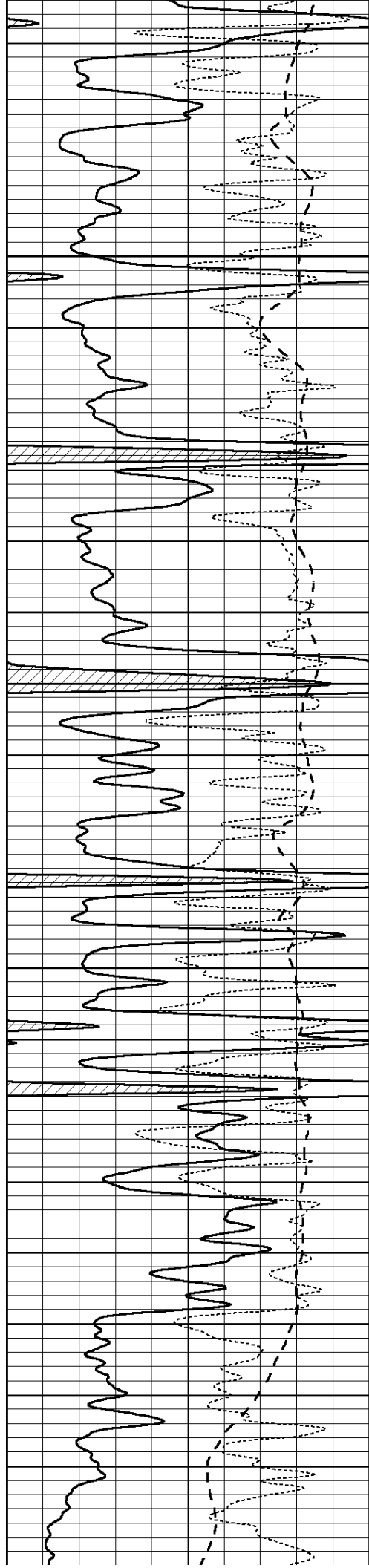
4250

4300

4350

4400



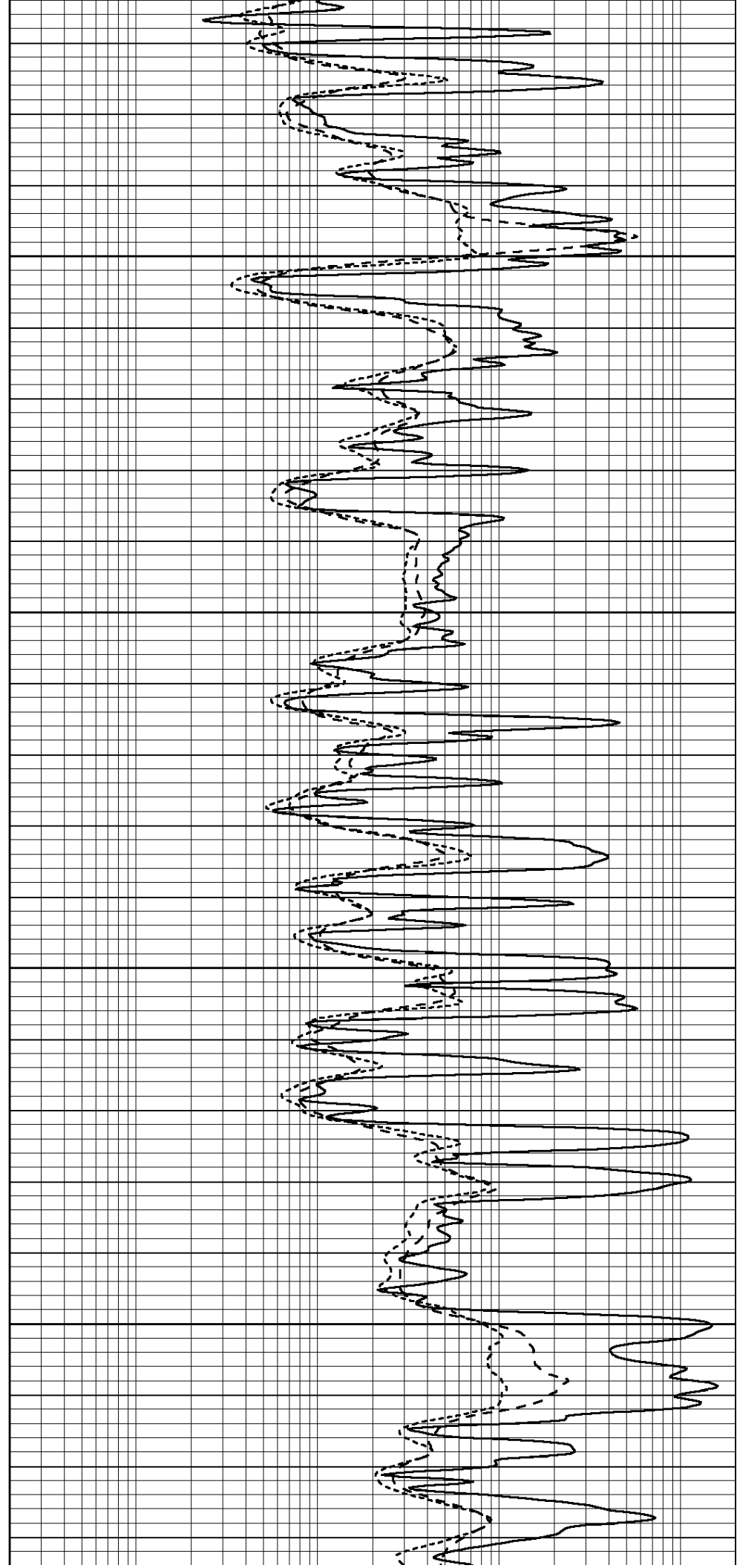


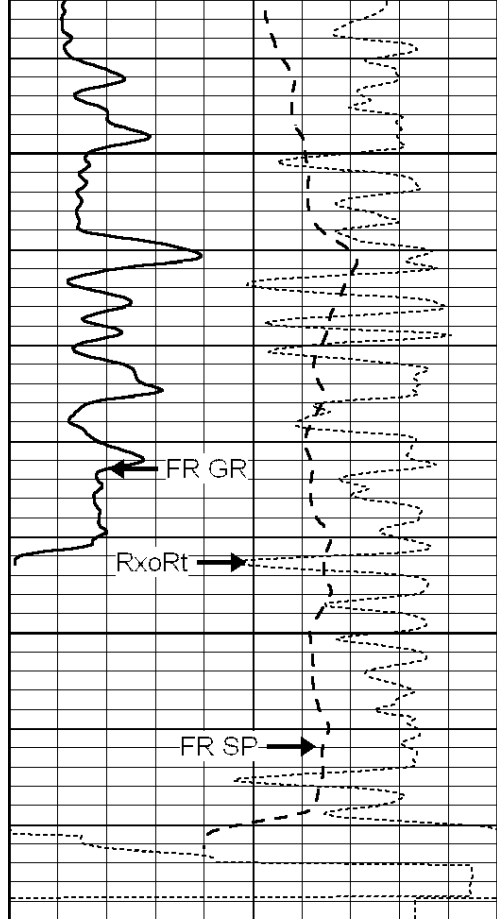
4450

4500

4550

4600





4650

FR GR

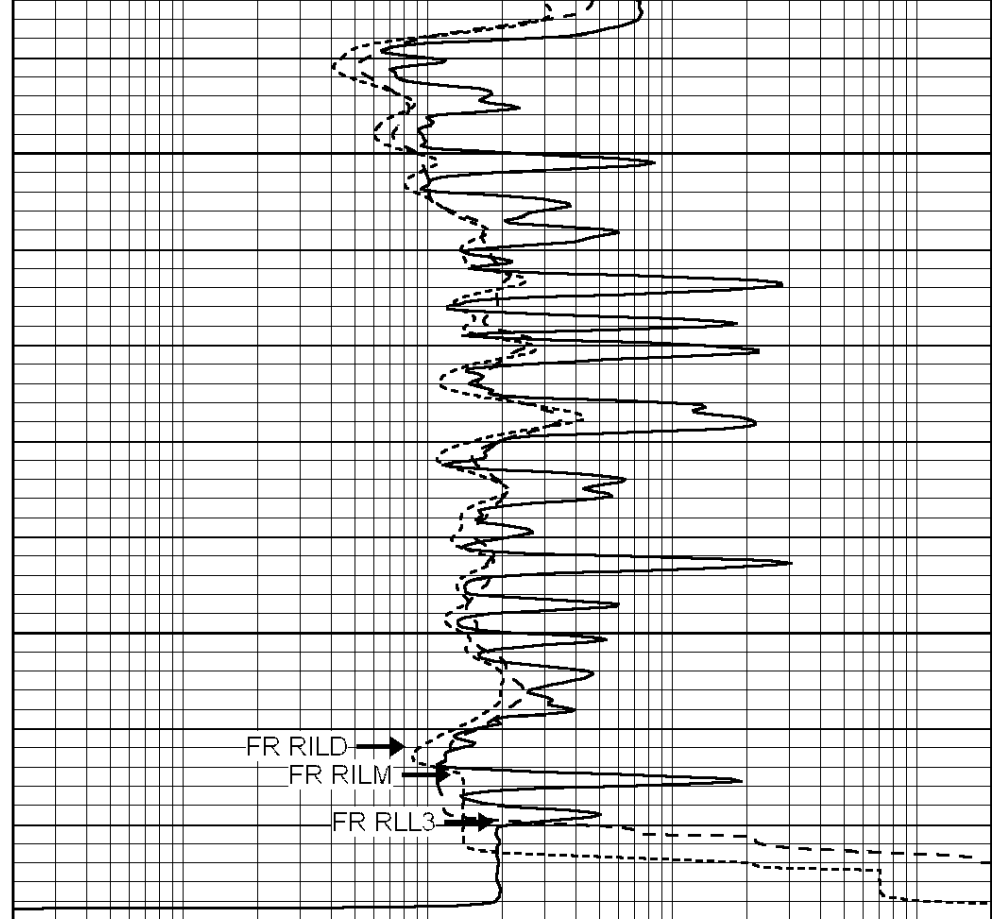
Rxo/Rt

FR SP

4700

LTD 4722

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



FR RILD

FR RILM

FR RLL3

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

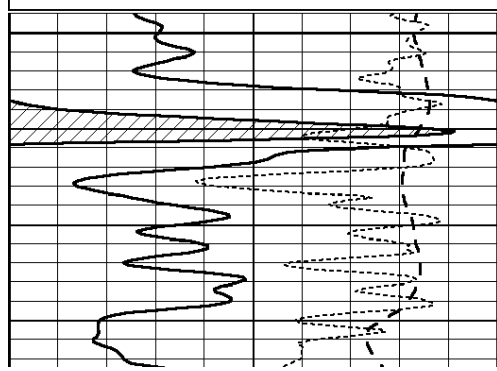


# REPEAT SECTION

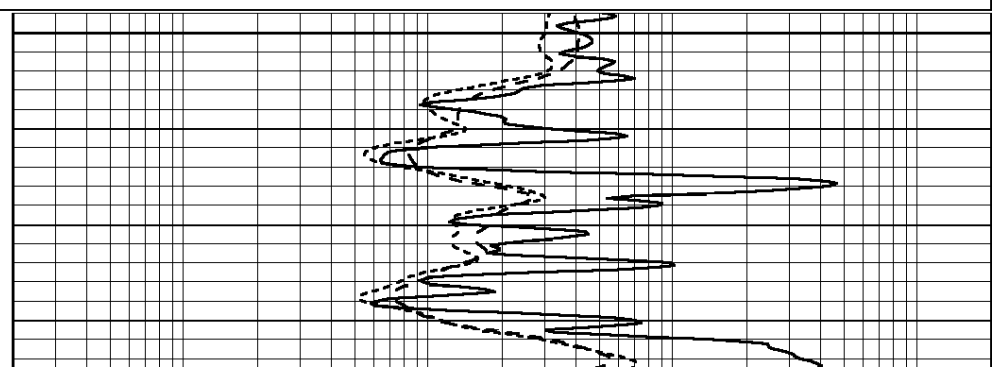
Database File: 22222ddn.db  
 Dataset Pathname: pass6.3  
 Presentation Format: \_dil  
 Dataset Creation: Thu Jan 23 21:28:46 2014 by Calc Open-Cased 090629  
 Charted by: Depth in Feet scaled 1:240

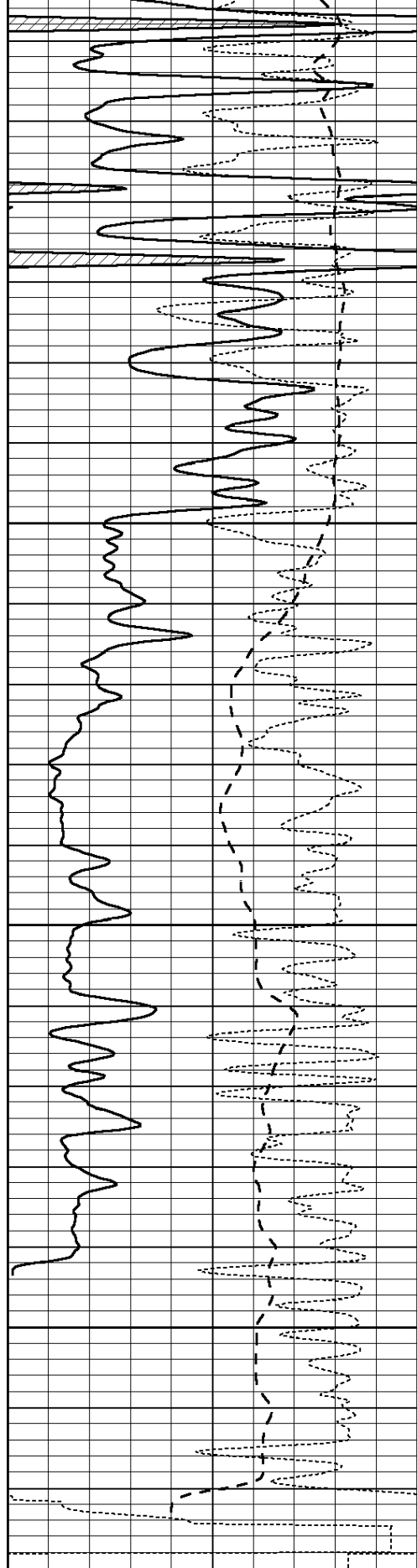
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50

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



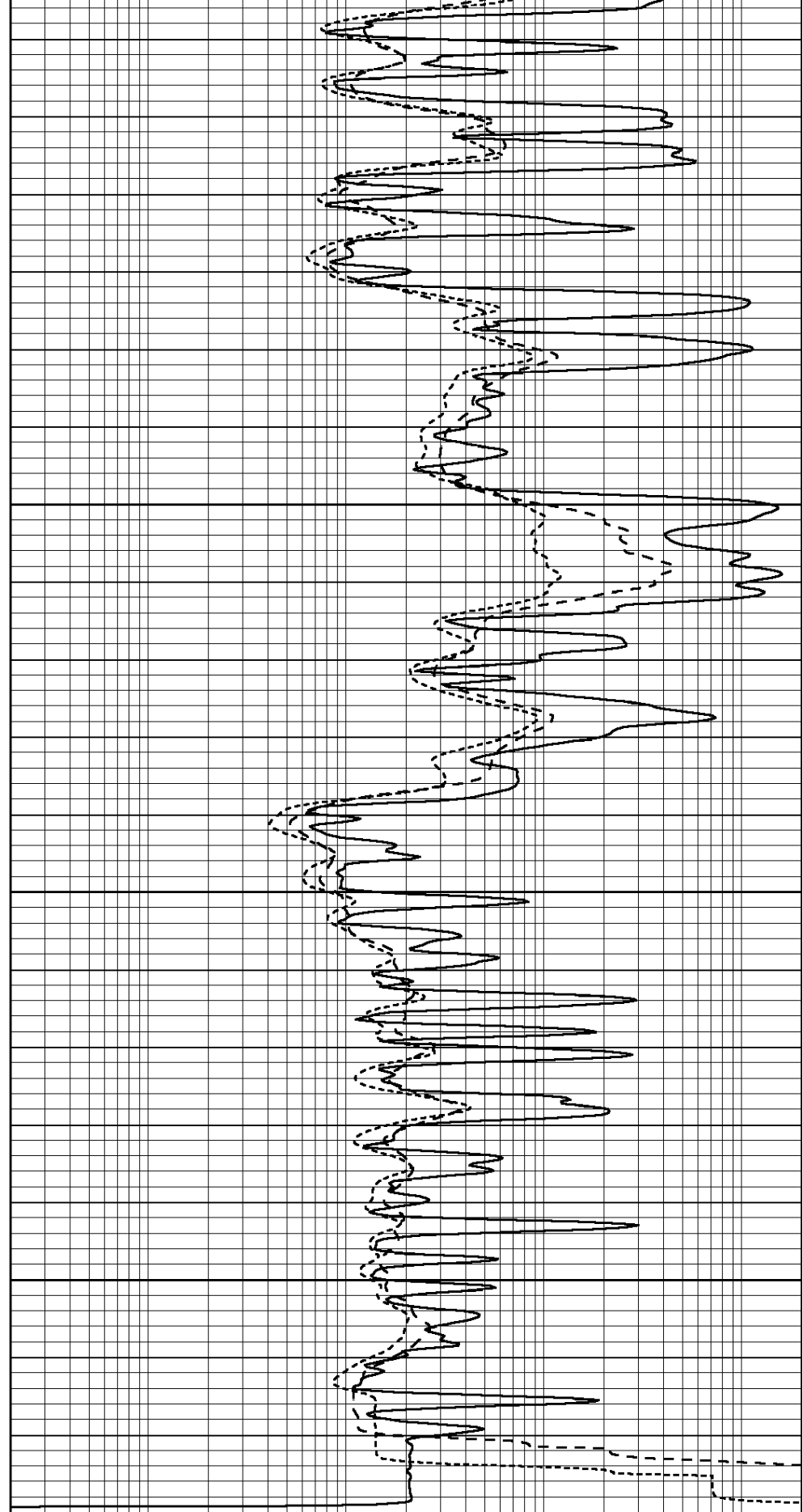
4500





4550  
4600  
4650  
4700

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

Calibration Report

Database File: 22222ddn.db  
 Dataset Pathname: pass7.4  
 Dataset Creation: Thu Jan 23 22:47:39 2014 by Calc Open-Cased 090629

Dual Induction Calibration Report

Serial-Model: DIL3-GEAR  
 Performed: Sat Jan 04 10:54:27 2014

Loop:	Readings			References			Results	
	Air	Loop		Air	Loop		m	b
Deep	0.011	0.656	V	0.000	400.000	mmho/m	500.000	2.000
Medium	0.013	0.740	V	0.000	462.500	mmho/m	580.000	3.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.002	0.645	V	0.000	400.000	mmho/m	560.000	-1.071
Medium	0.007	0.740	V	0.000	462.500	mmho/m	540.000	-4.000

Compensated Density Calibration Report

Serial-Model: GEAR2-GEARHART  
 Source / Verifier: 147 / 147  
 Master Calibration Performed: Fri Nov 08 12:50:12 2013

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.710	g/cc	923.76	475.45	cps
Aluminum	2.580	g/cc	205.31	331.69	cps
Spine Angle = 76.54			Density/Spine Ratio = 0.563		
	Size		Reading		
Small Ring	8.40	in	3.59	V	
Large Ring	14.00	in	5.47	V	

Compensated Neutron Calibration Report

Serial Number: 080620  
 Tool Model: Probe

PRE-SURVEY VERIFICATION

Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu

POST-SURVEY VERIFICATION

Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu

Gamma Ray Calibration Report

Serial Number: 7  
 Tool Model: Probe1  
 Performed: Sat Jan 04 10:53:32 2014

Calibrator Value: 1.0 GAPI

Background Reading:

0.0

cps

Calibrator Reading:

1.0

cps

Sensitivity:

0.4600

GAPI/cps