



**SUPERIOR**  
Black Lick, Pa.  
Mercer, Pa.  
Wooster, Oh.  
Cleveland, Ok.  
Trinidad, Co.

## COMPENSATED DENSITY NEUTRON LOG

Company	XTO Energy Inc.	Company	XTO Energy Inc.
Well	Apache Canyon 18-16	Well	Apache Canyon 18-16
Field	Purgatoire River	Field	Purgatoire River
County	Las Animas	County	Las Animas
State	Colorado	State	Colorado
Location:	API # : 05 071 08928 00	Other Services	DIL
SEC 18 TWP 34S RGE 67W	9' FSL & 228' FEL		
Permanent Datum	Ground Level	Elevation	7898'
Log Measured From	Ground Level		
Drilling Measured From	Ground Level		
Date	2-02-07		
Run Number	Two		
Depth Driller	2455'		
Depth Logger	2456'		
Bottom Logged Interval	2454'		
Top Log Interval	Surface Casing		
Casing Driller	8 5/8" @ 586'		
Casing Logger	587'		
Bit Size	7 7/8"		
Type Fluid in Hole	Water		
Density / Viscosity	///		
pH / Fluid Loss	///		
Source of Sample	///		
Rm @ Meas. Temp	///		
Rmf @ Meas. Temp	///		
Rmc @ Meas. Temp	///		
Source of Rmf / Rmc	///		
Rm @ BHT	///		
Time Circulation Stopped	9:30 A.M.		
Time Logger on Bottom	1:30 P.M.		
Maximum Recorded Temperature	104 DEG F		
Equipment Number	T0697		
Location	Trinidad		
Recorded By	M. Norton		
Witnessed By	Mr. Don Johnson		

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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

Neutron Density Porosity Presented On Sandstone Matrix.

ABHV Calculated For 5 1/2" Casing.

Well Directions:

First Bosque entrance just before Weston, turn right at Big Bingham, stay on main road for one mile turn left thru double green gates, one and half miles turn left, stay on main road for 1.4 miles to location.



**SUPERIOR**

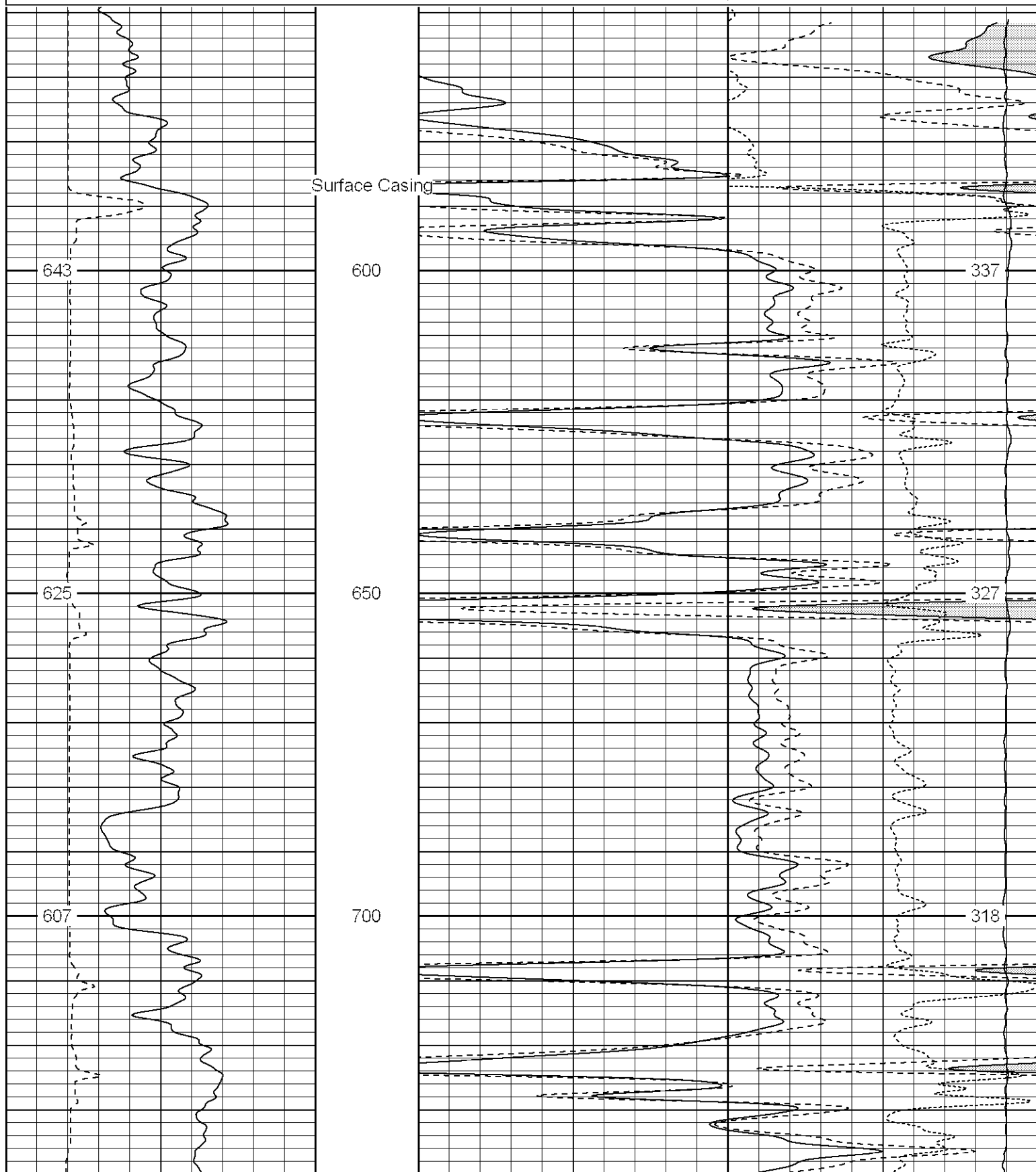
Black Lick, Pa.  
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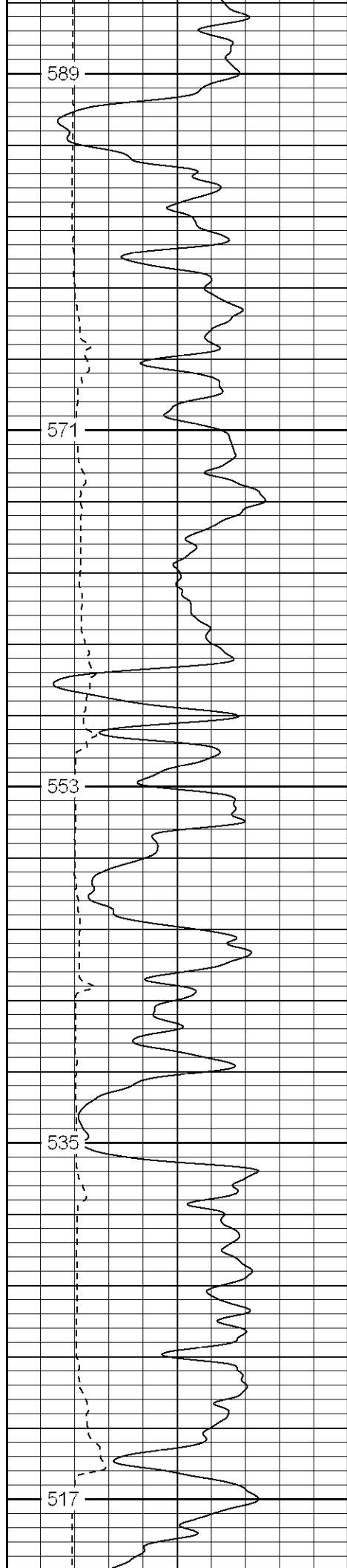
# Main Pass

Database File: xtoac1816.db  
Dataset Pathname: pass4.1  
Presentation Format: cdl  
Dataset Creation: Fri Feb 02 15:04:41 2007 by Calc Open-Cased 060407  
Charted by: Depth in Feet scaled 1:240

0	GR (GAPI)	200
6	DCAL (in)	16

1	RHOB (g/cc)	2
30	DPOR (pu)	-10
-0.5	RHOC (g/cc)	0.5
4000	LTEN (lb)	0





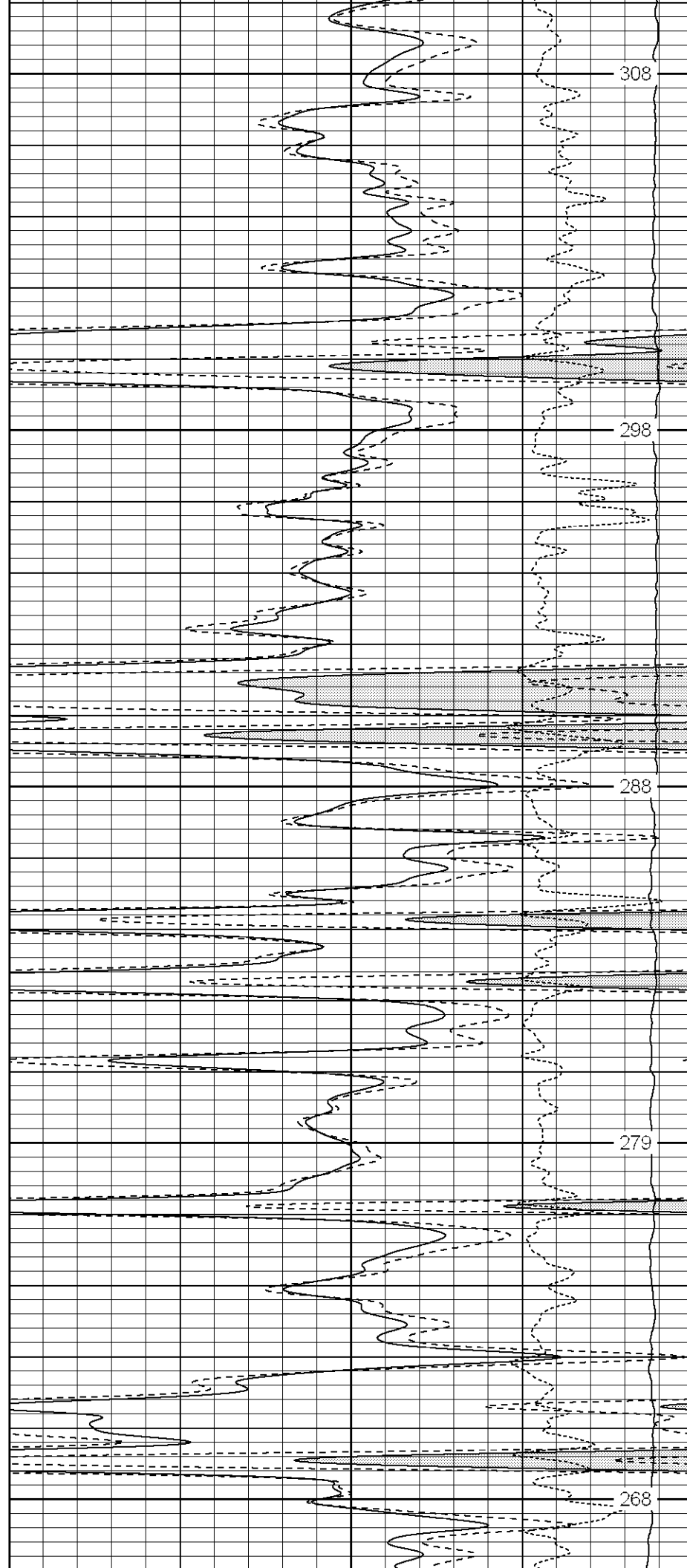
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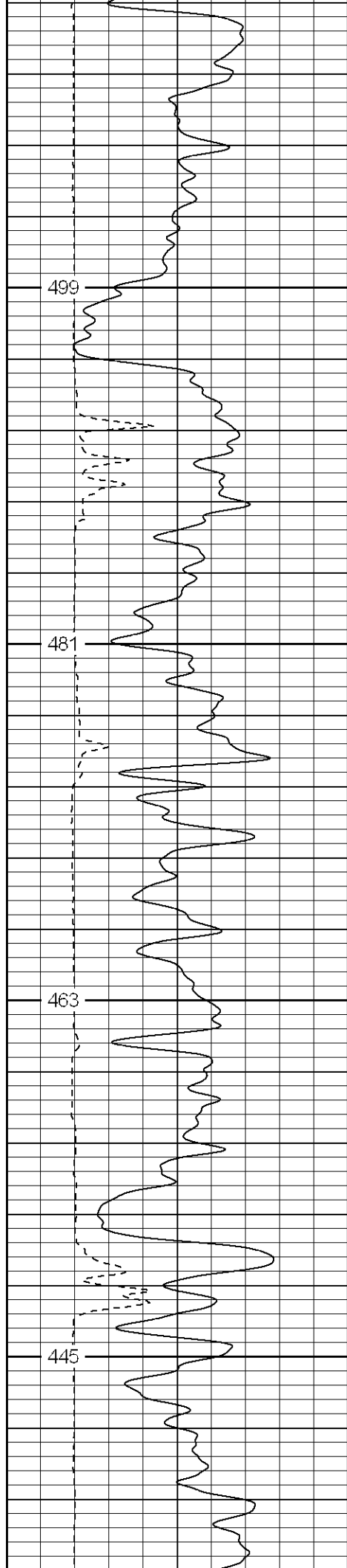
800

850

900

950



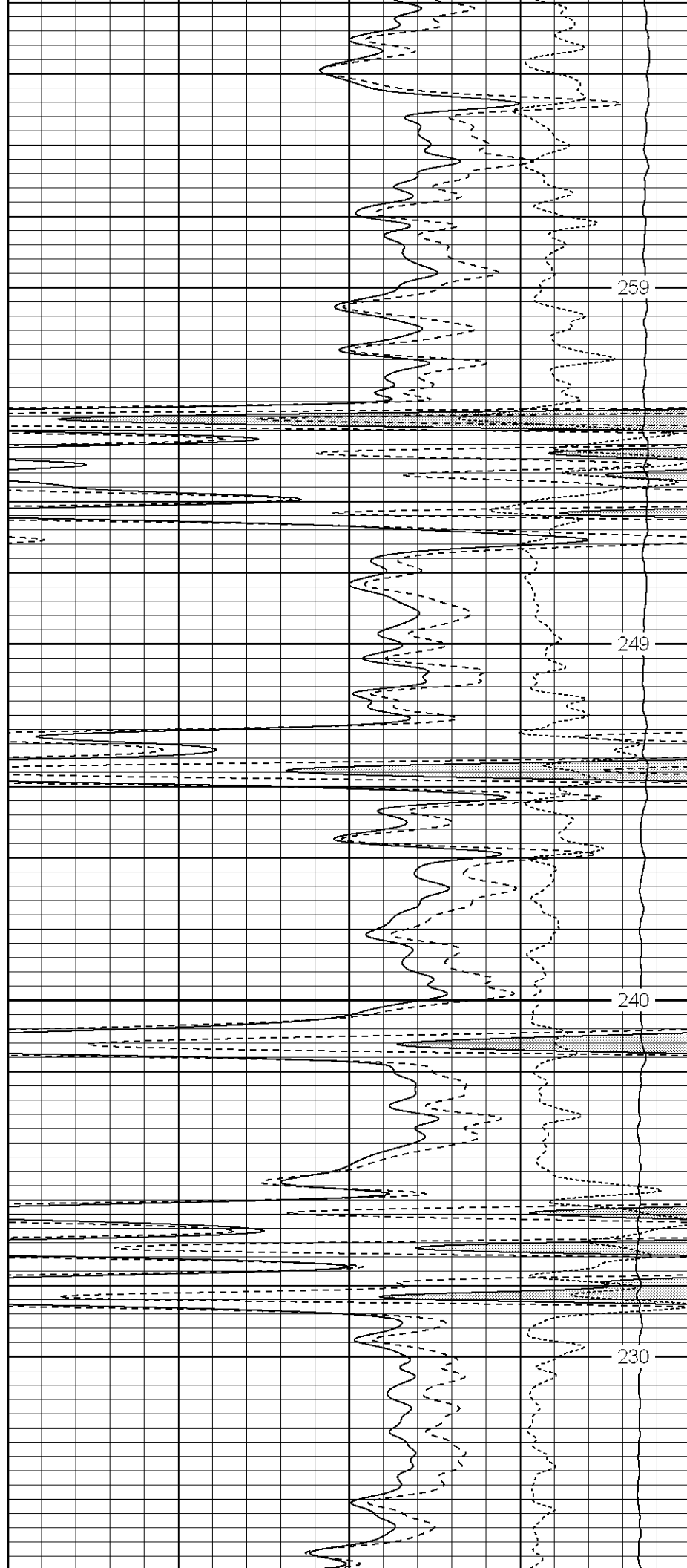


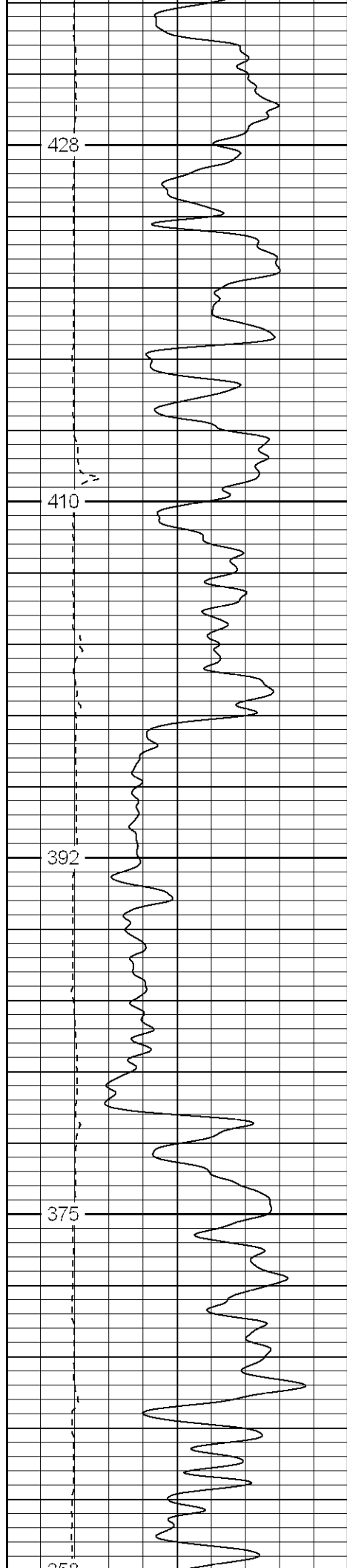
1000

1050

1100

1150





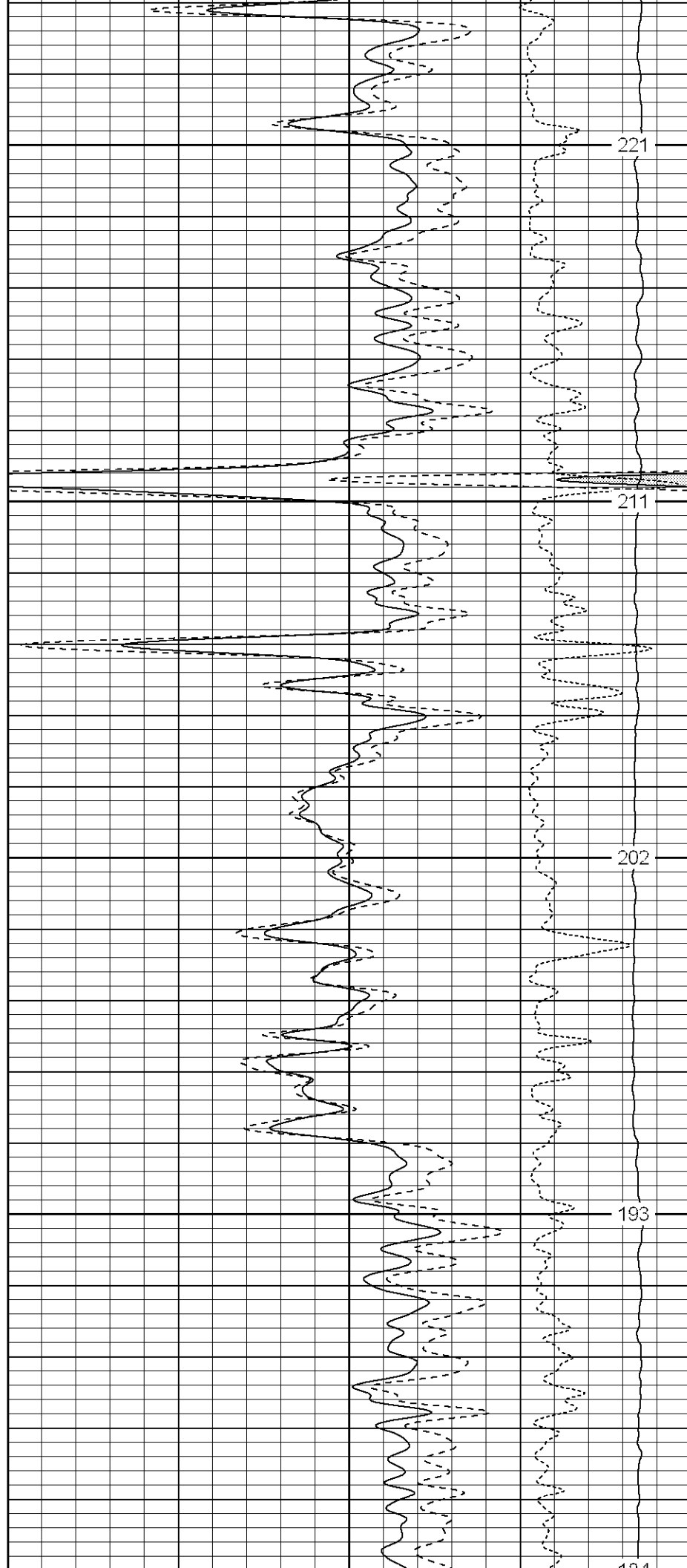
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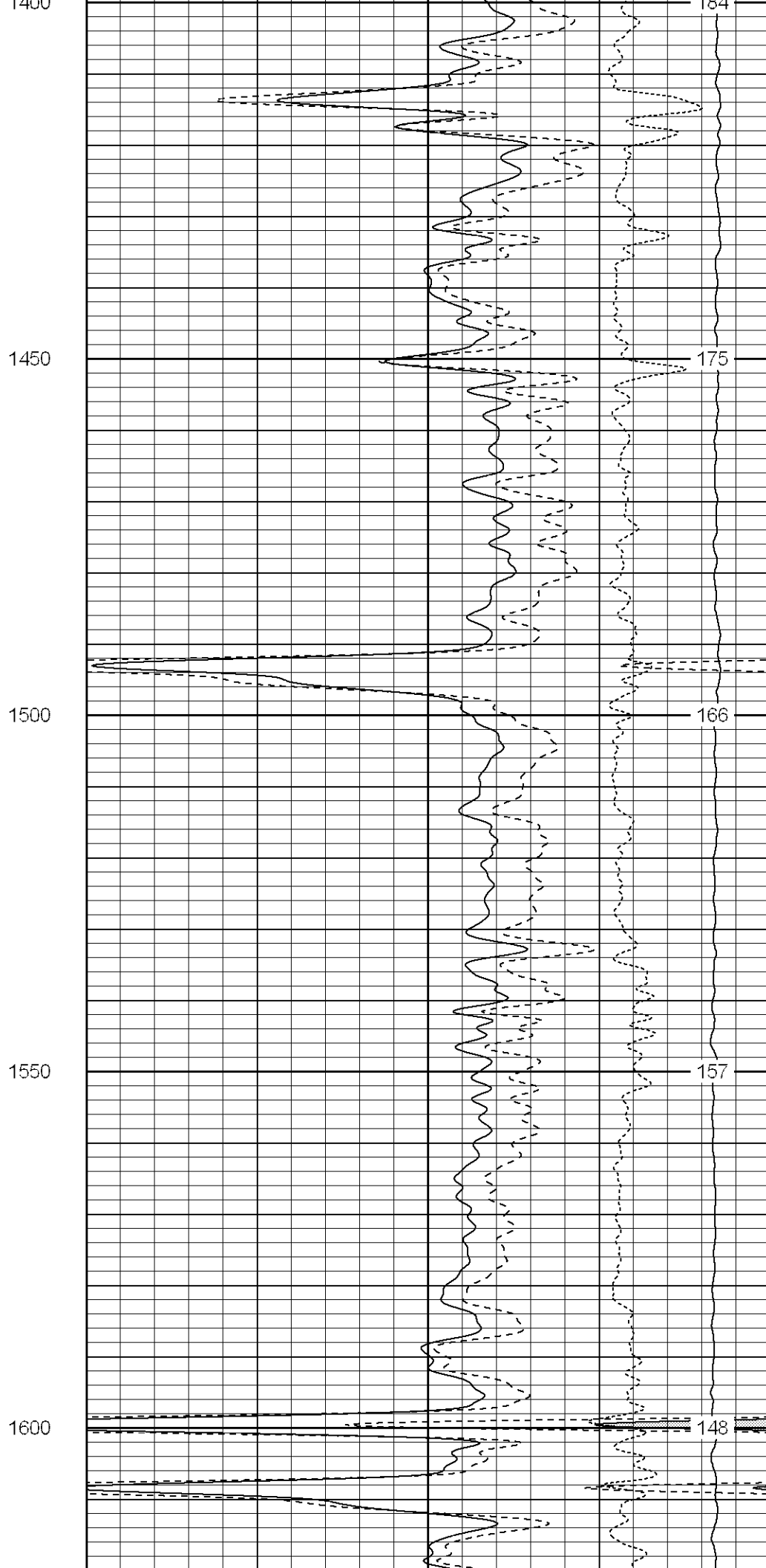
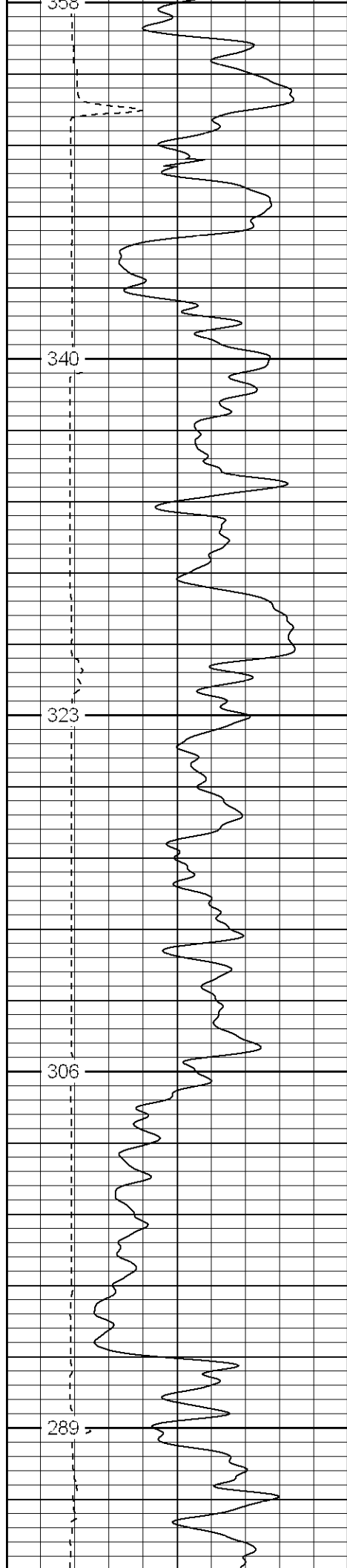
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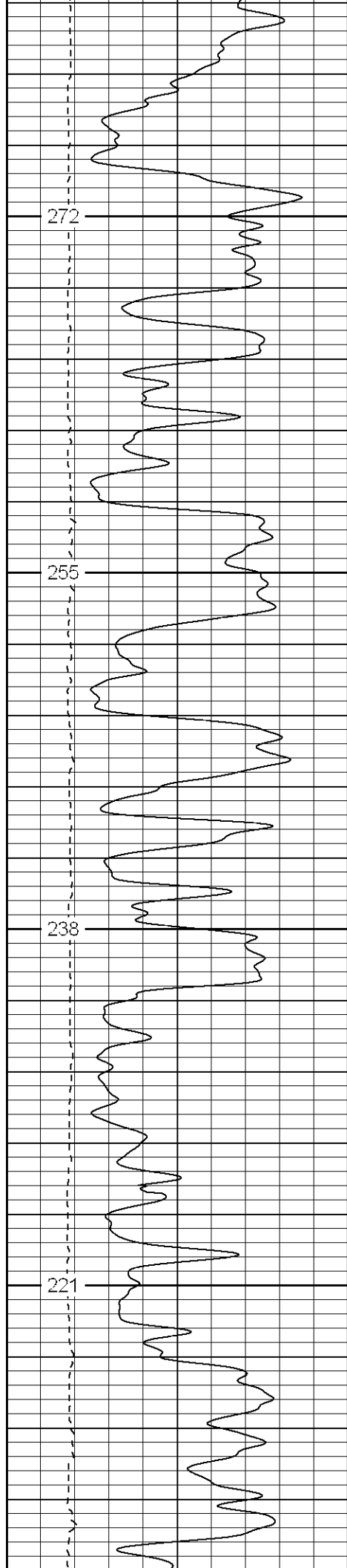
1300

1350

1400





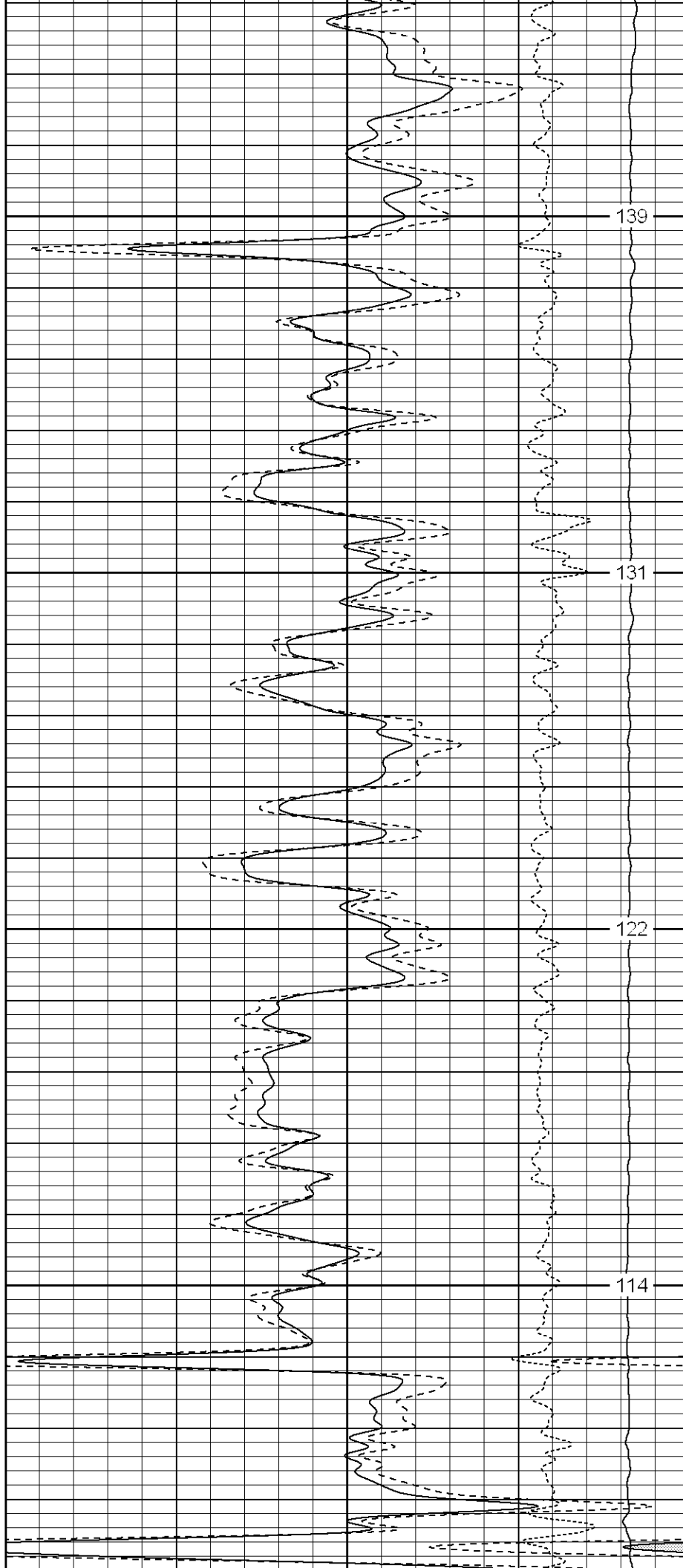


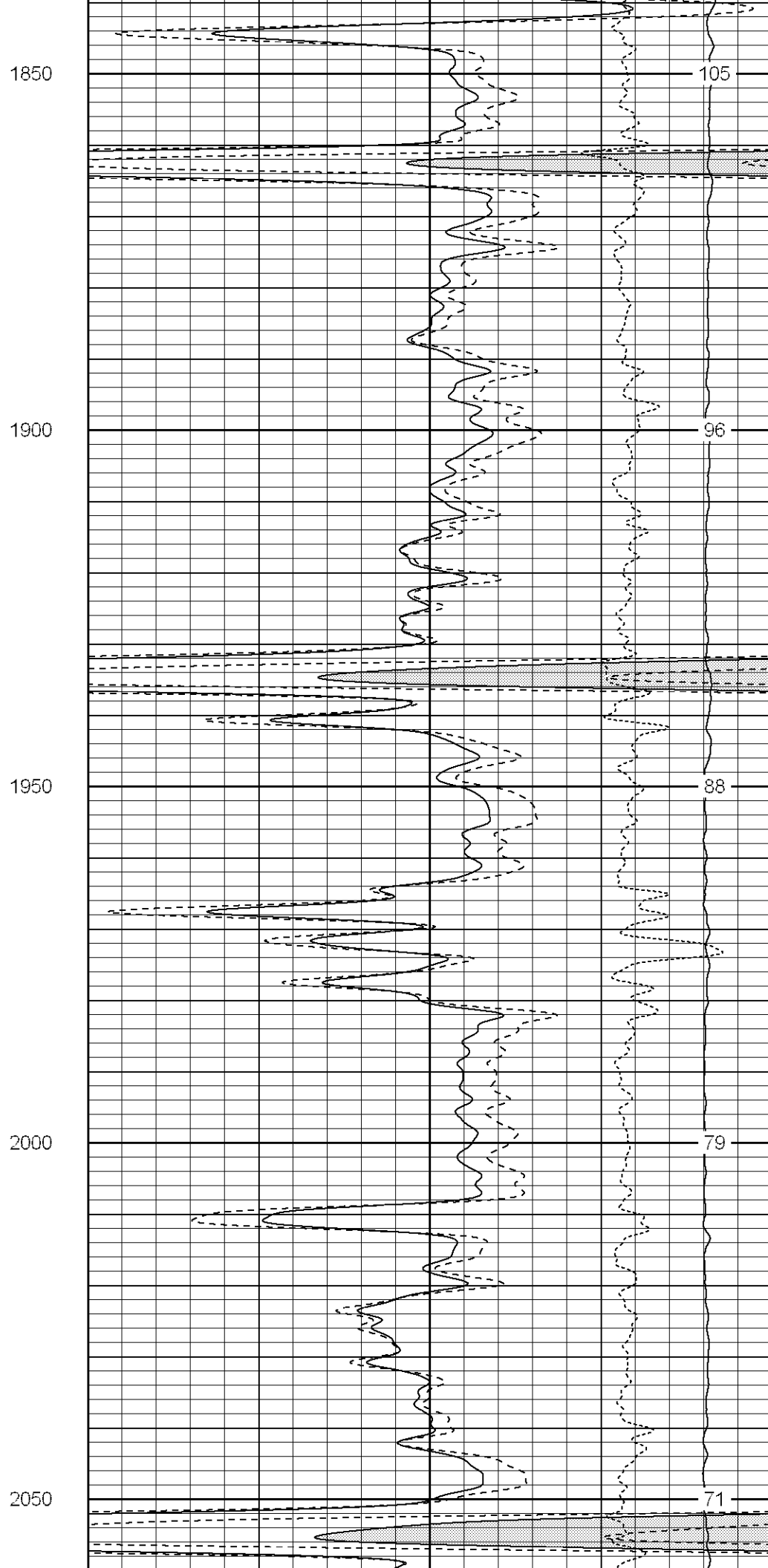
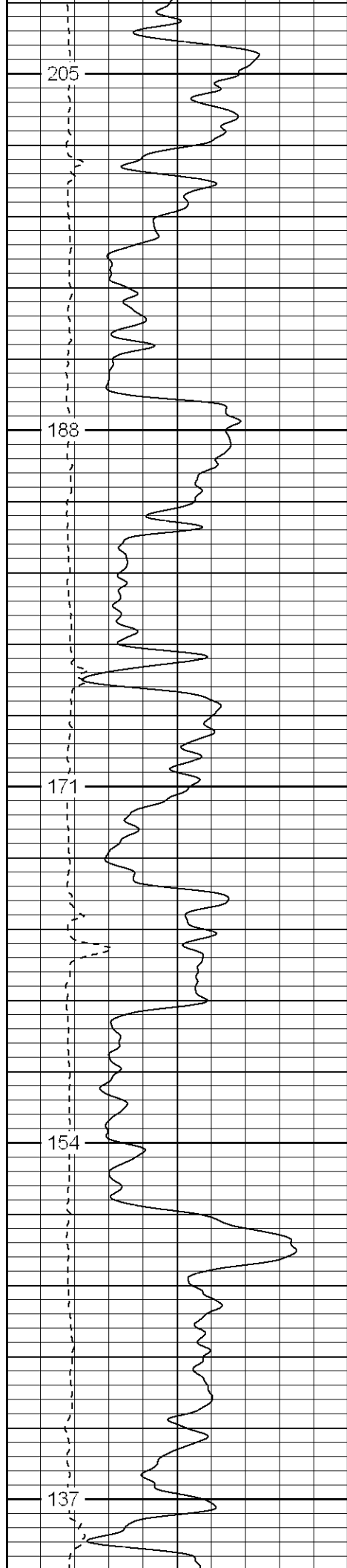
1650

1700

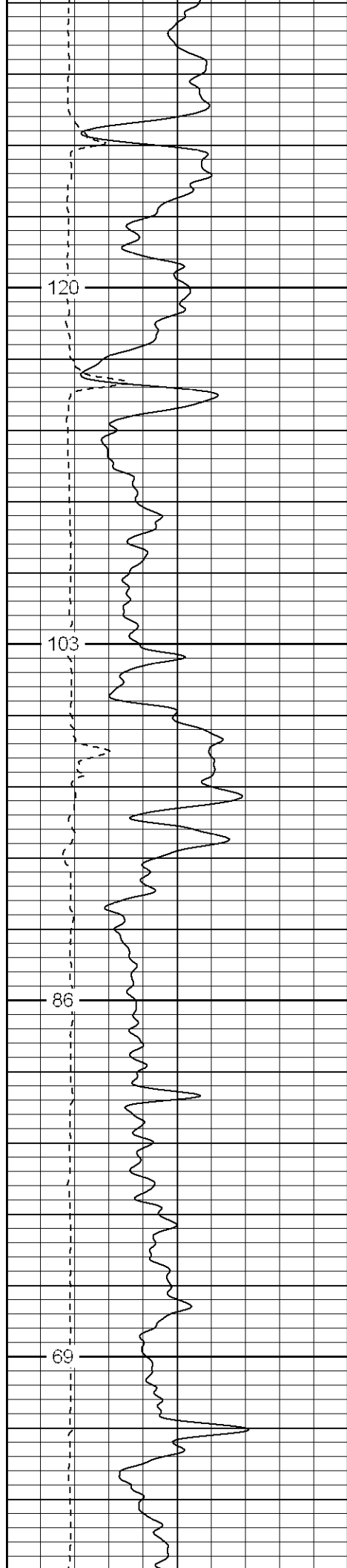
1750

1800







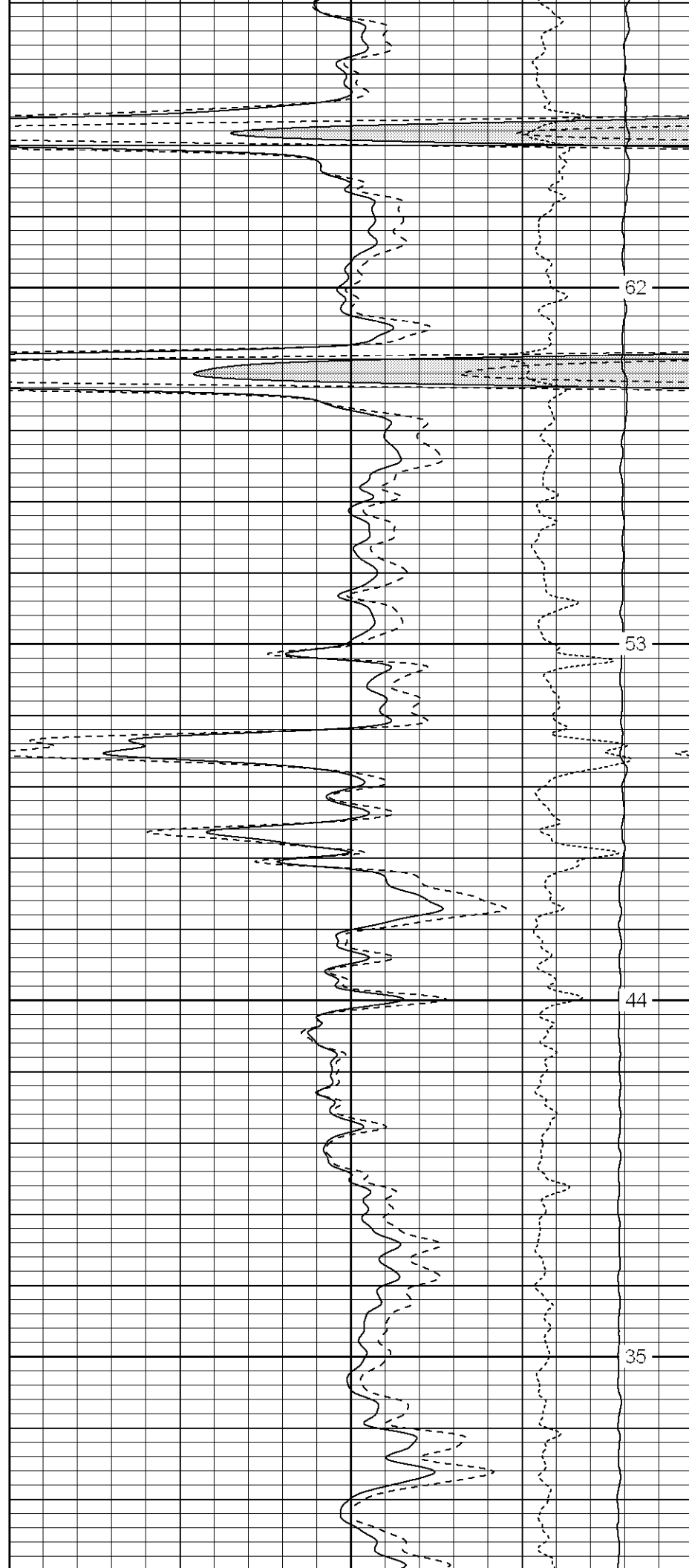


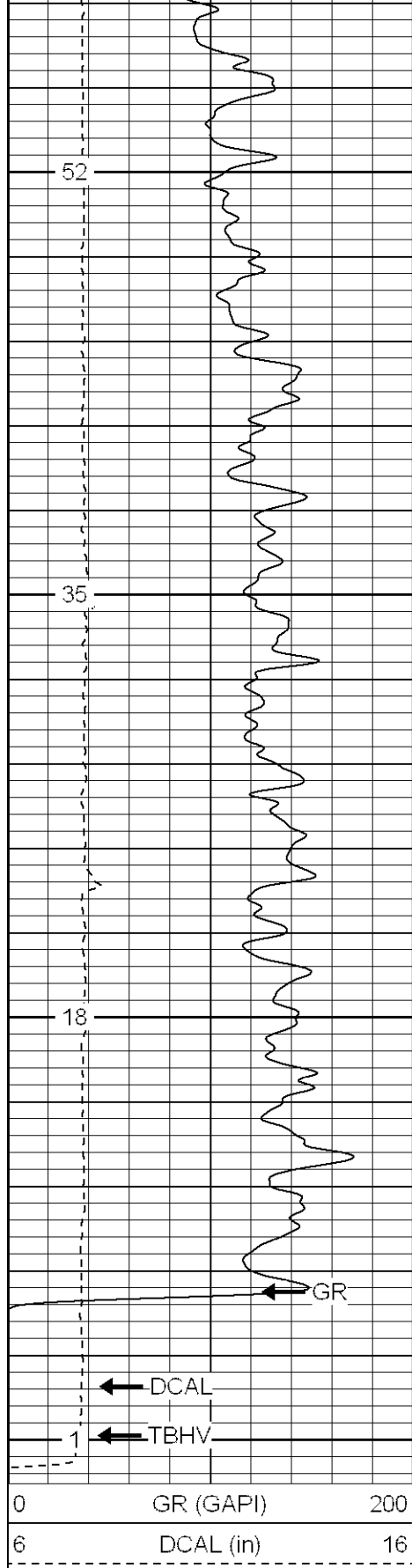
2100

2150

2200

2250



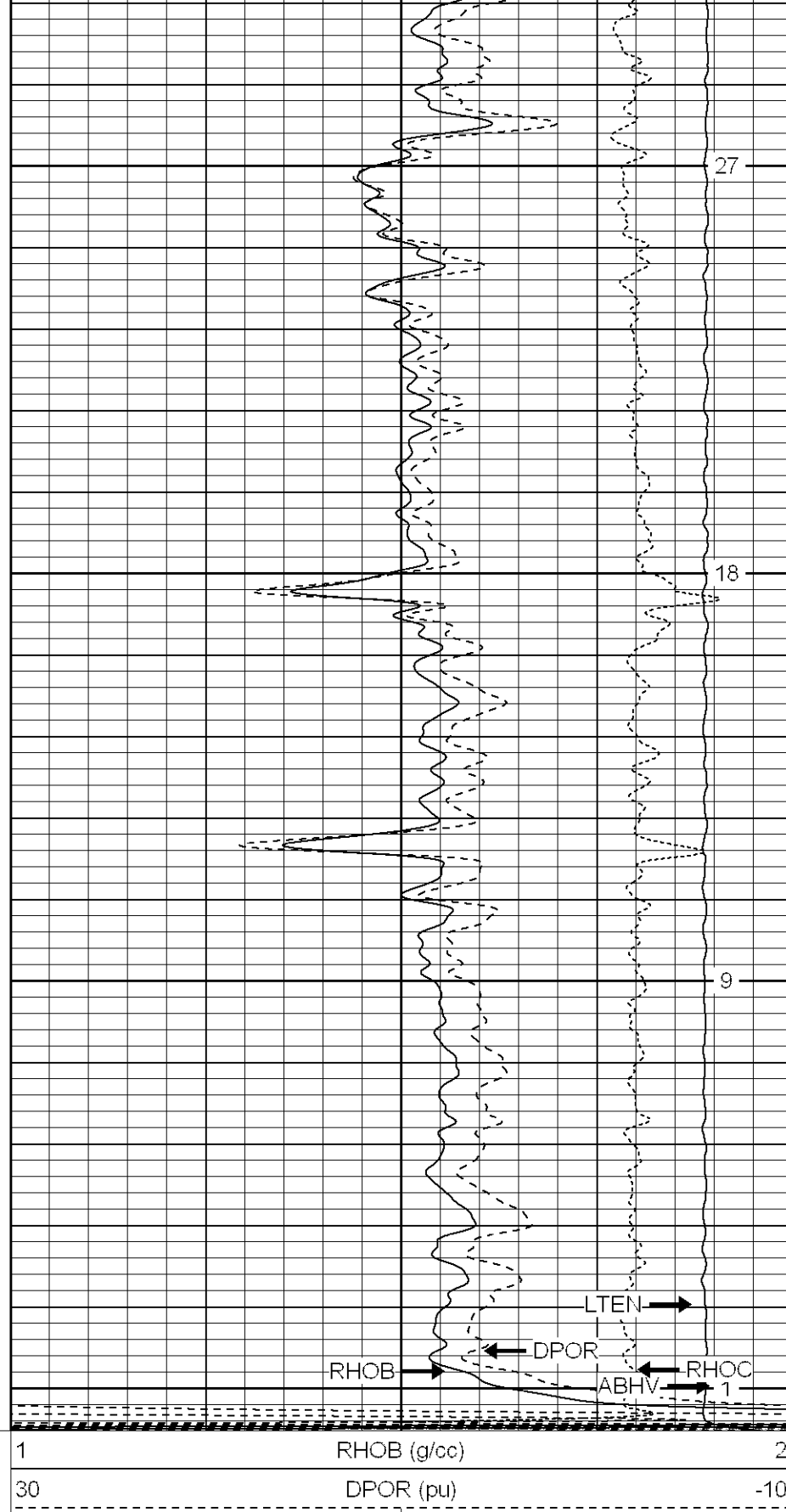


2300

2350

2400

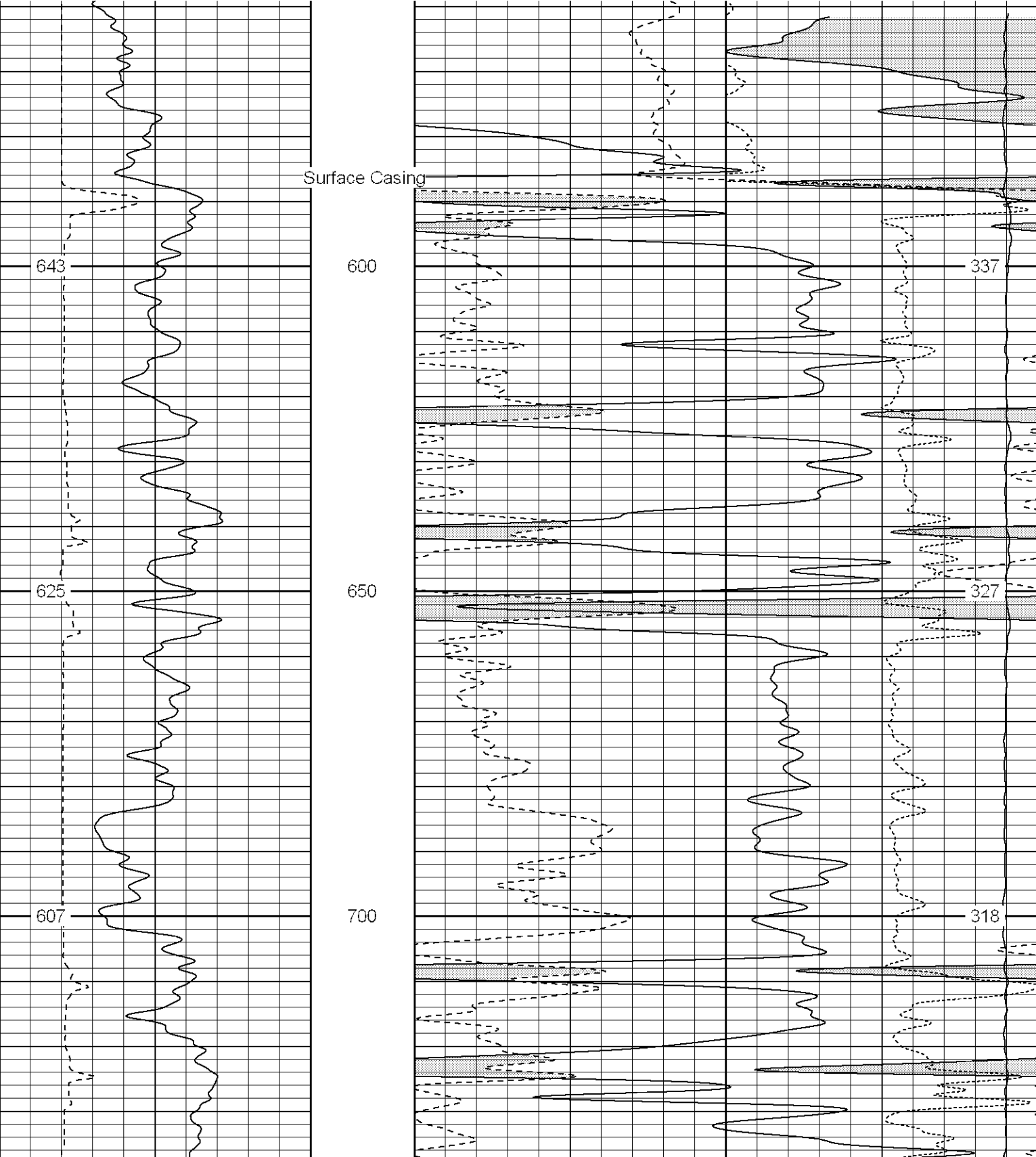
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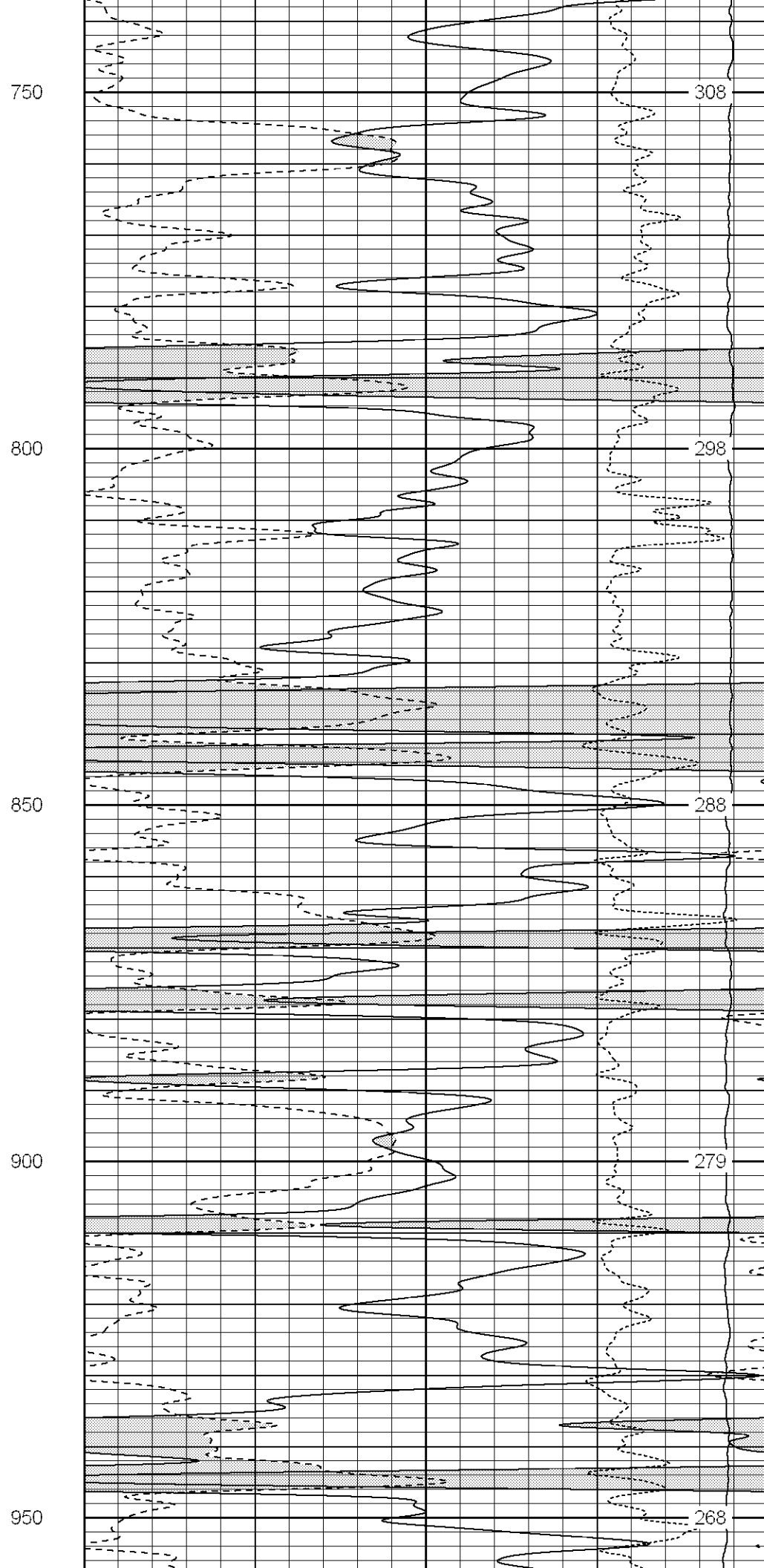
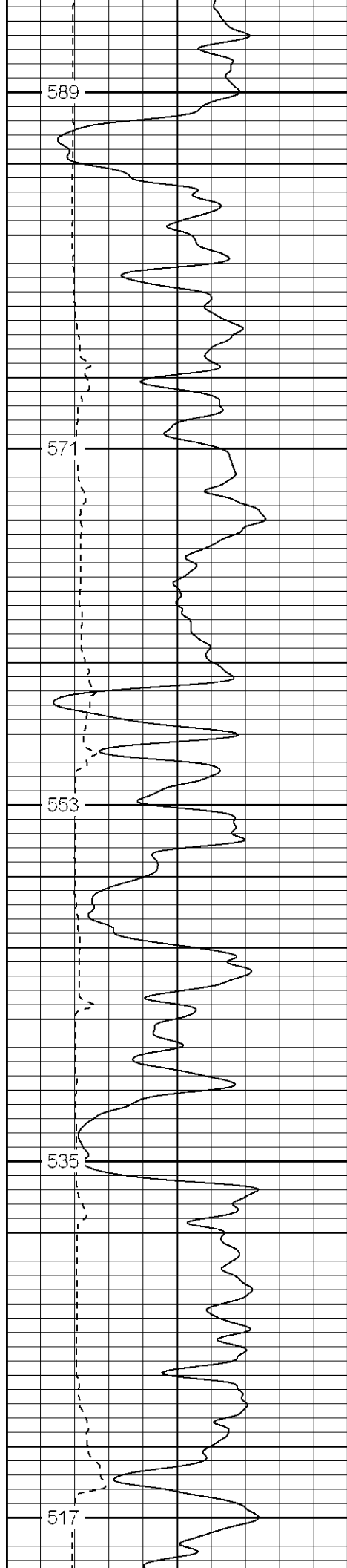


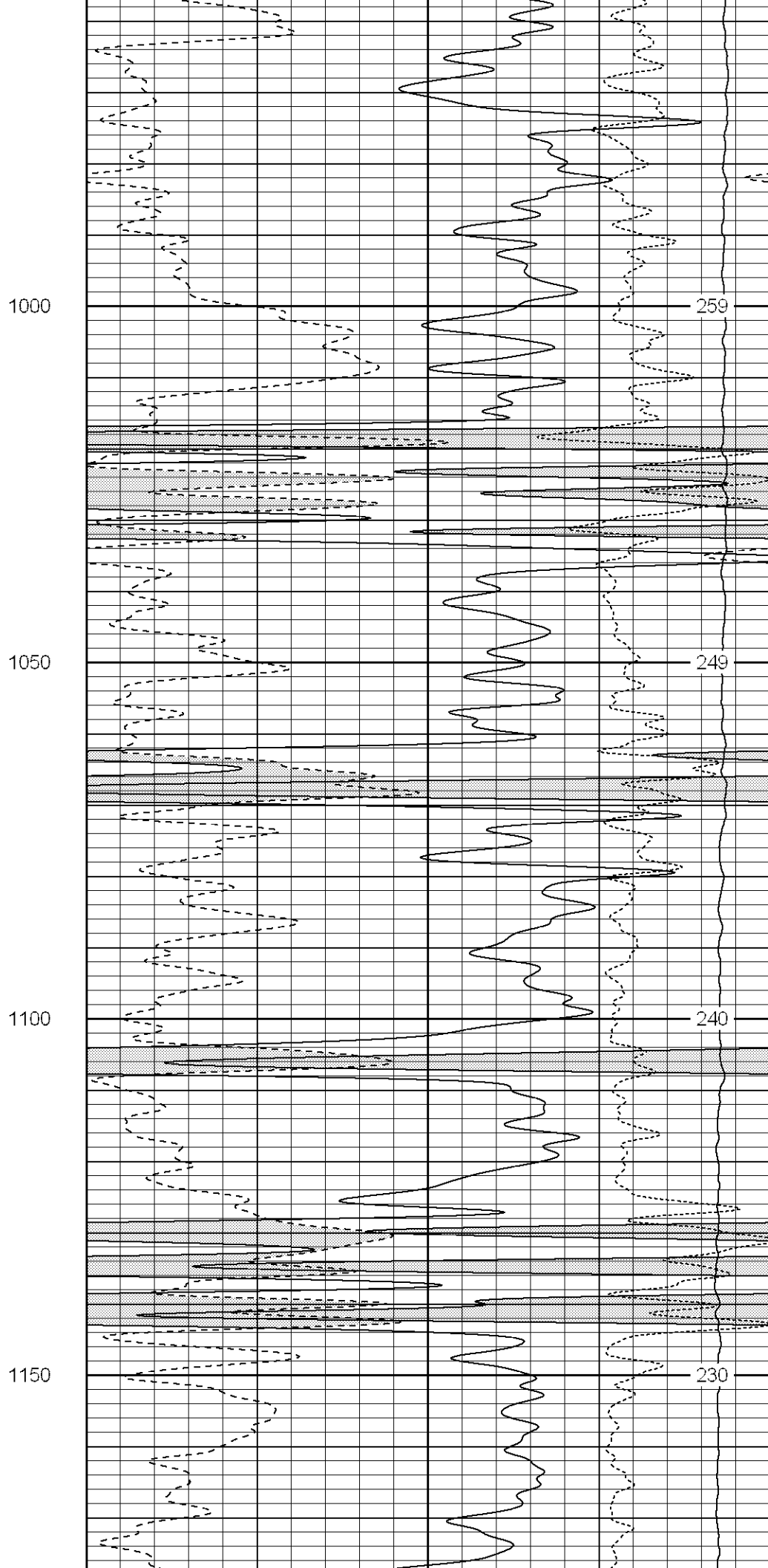
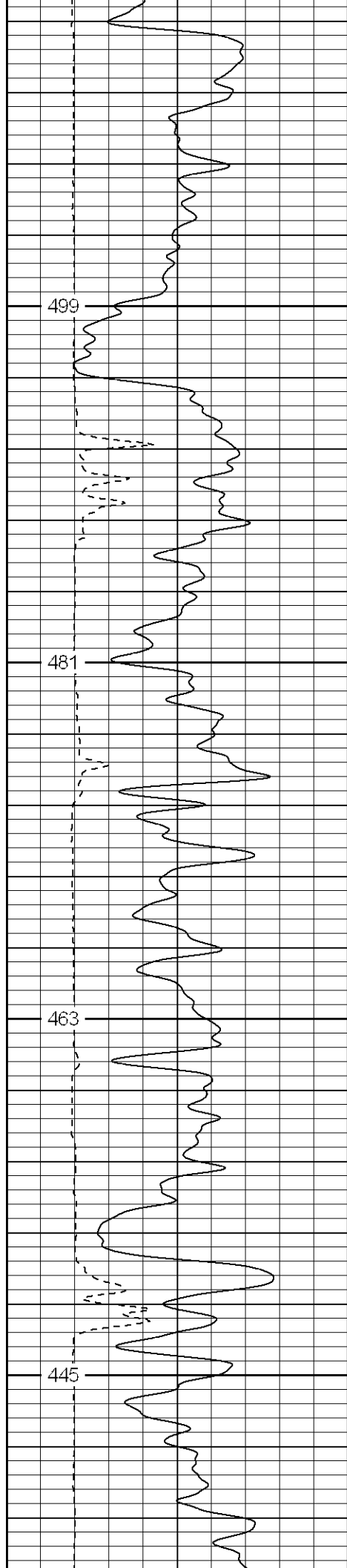
**SUPERIOR**  
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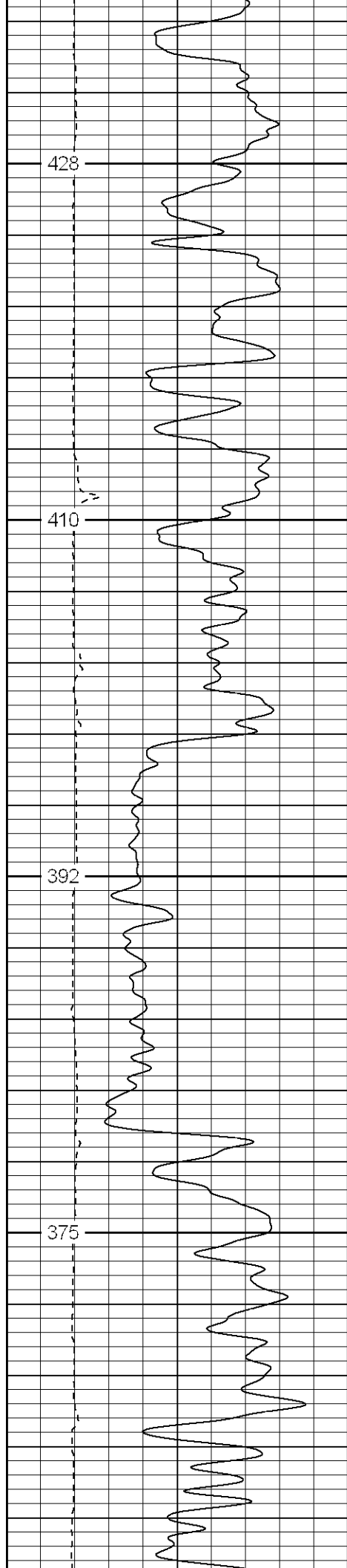
**Main Pass**

0	GR (GAPI)	200	30	NPOR (pu)	-10
6	DCAL (in)	16	30	DPOR (pu)	-10
			-0.5	RHOC (g/cc)	0.5
			4000	LTEN (lb)	0









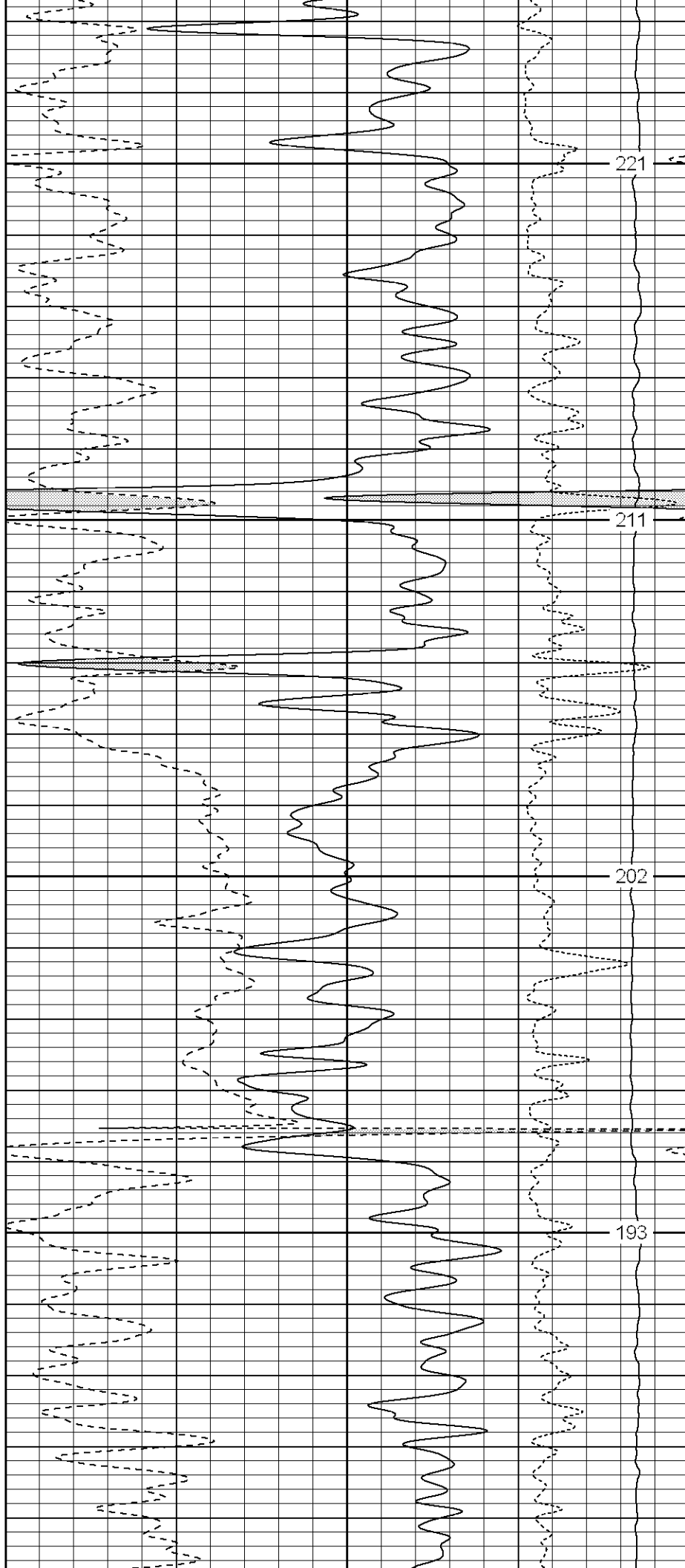
1200

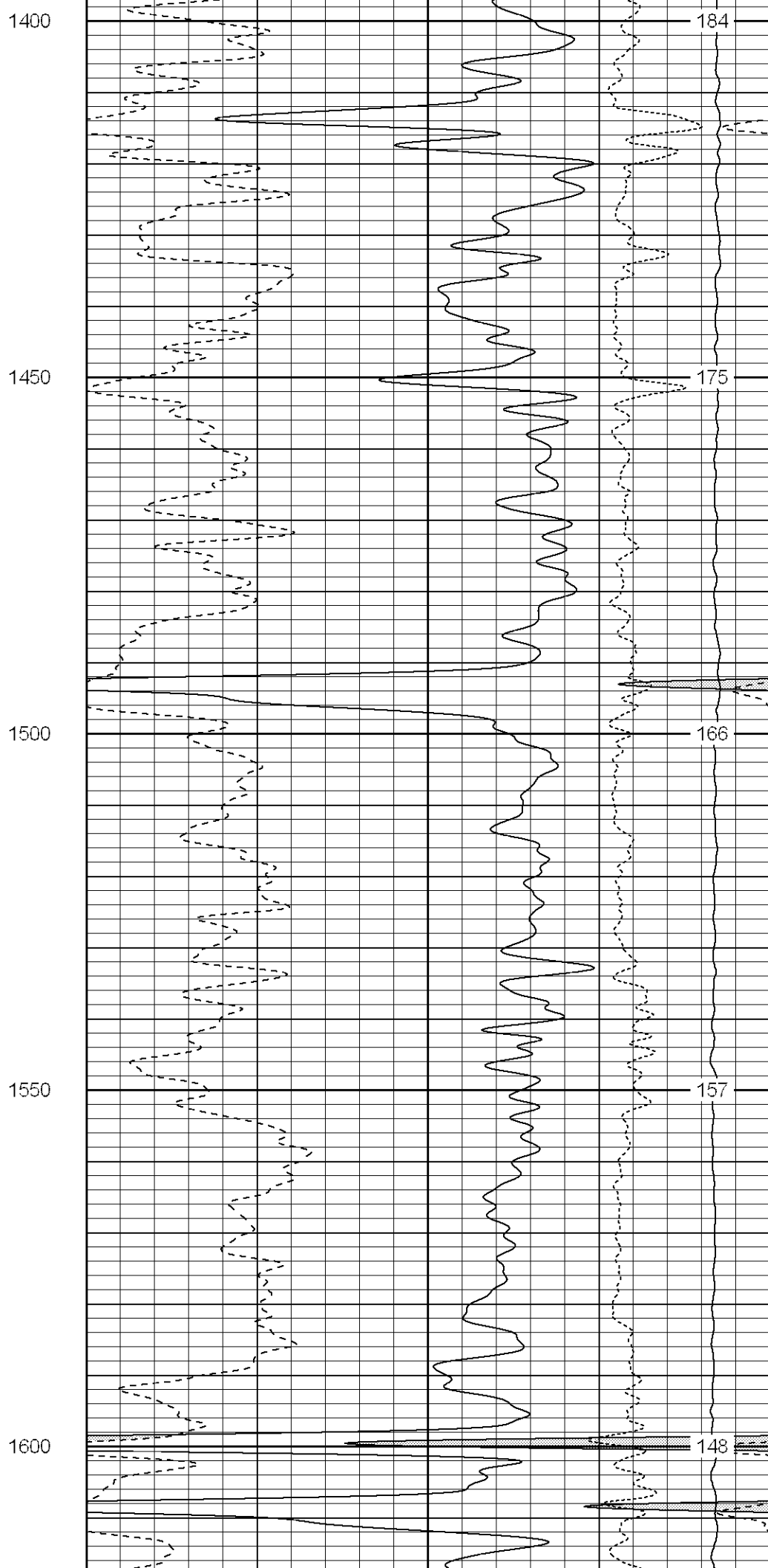
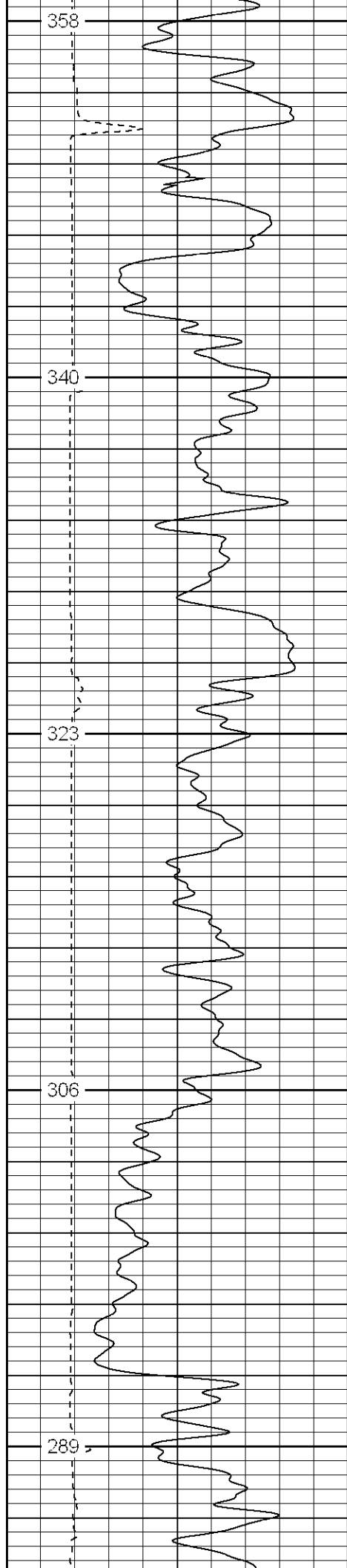
1250

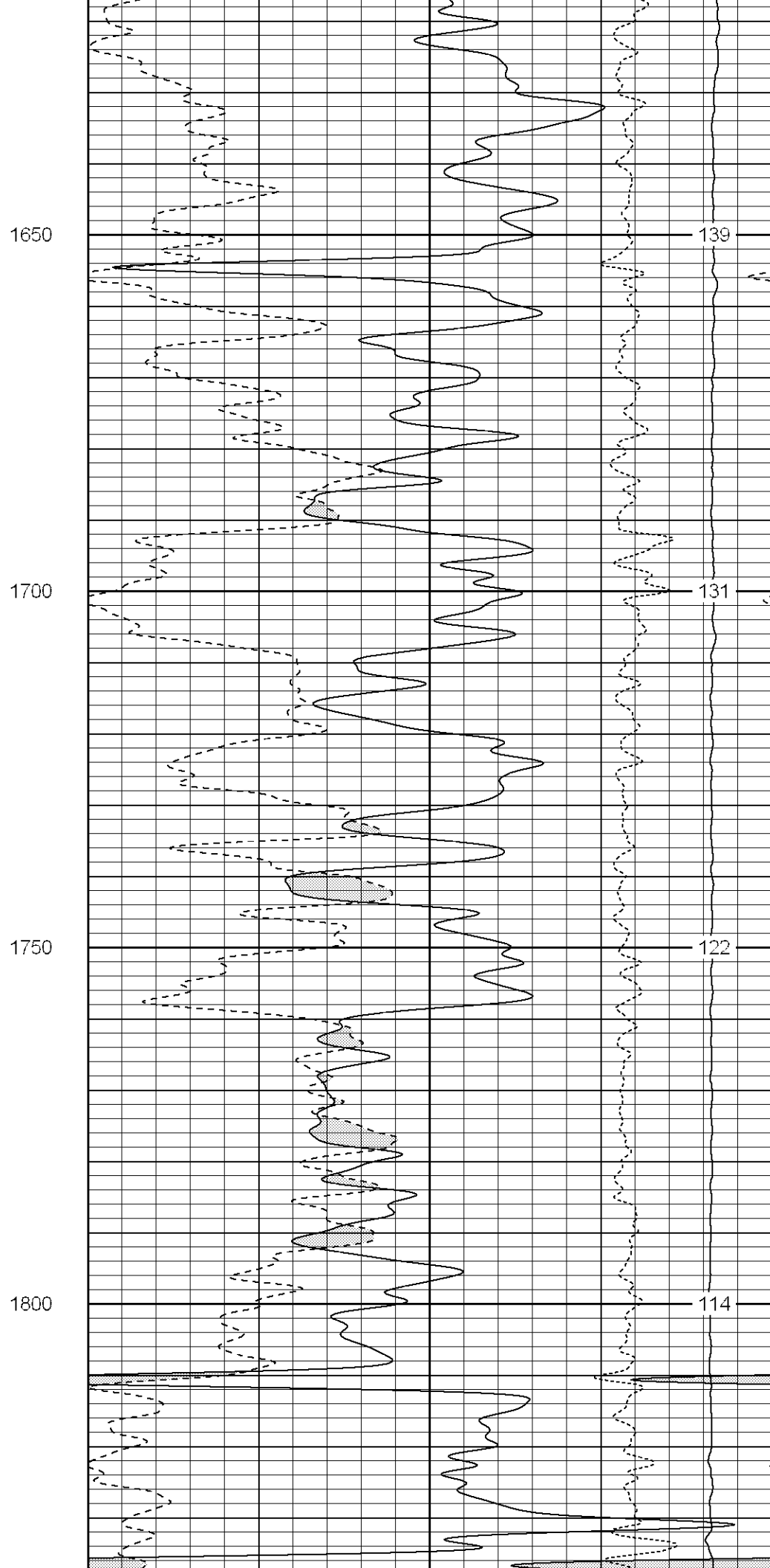
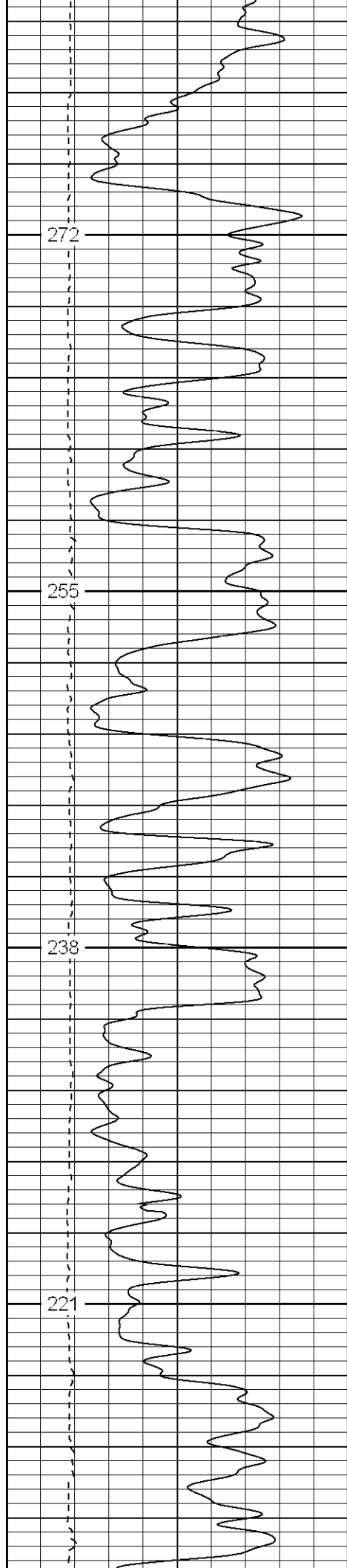
1300

Fluid Level

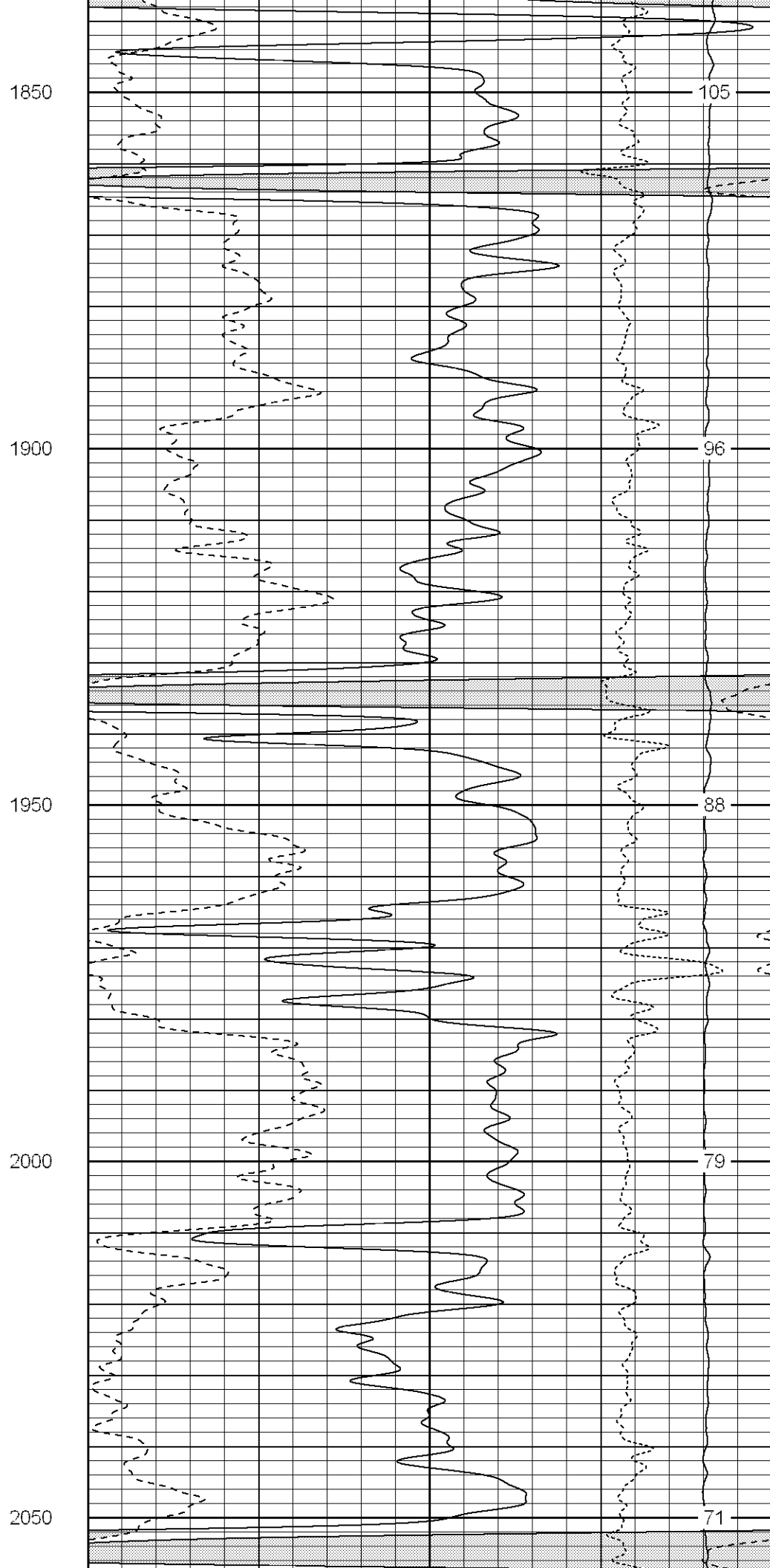
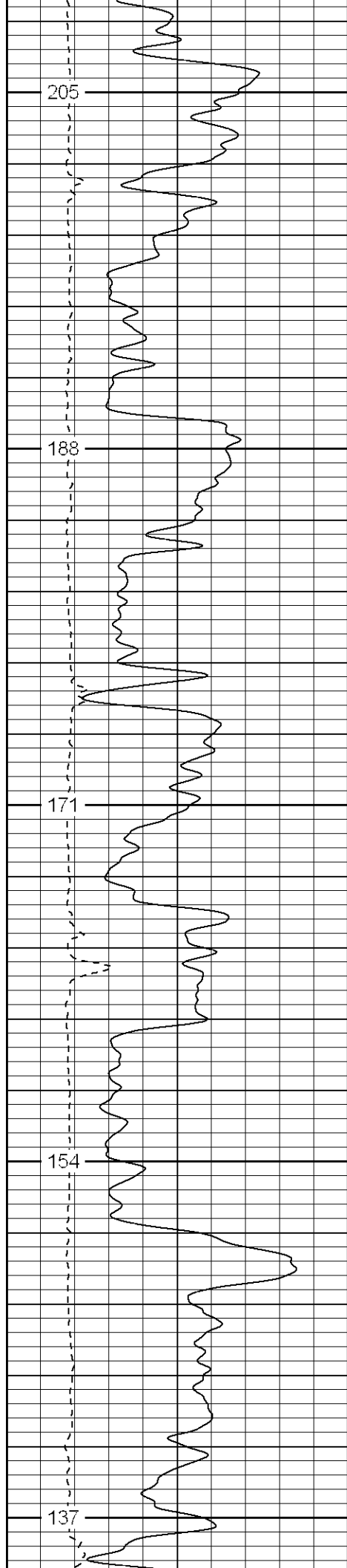
1350

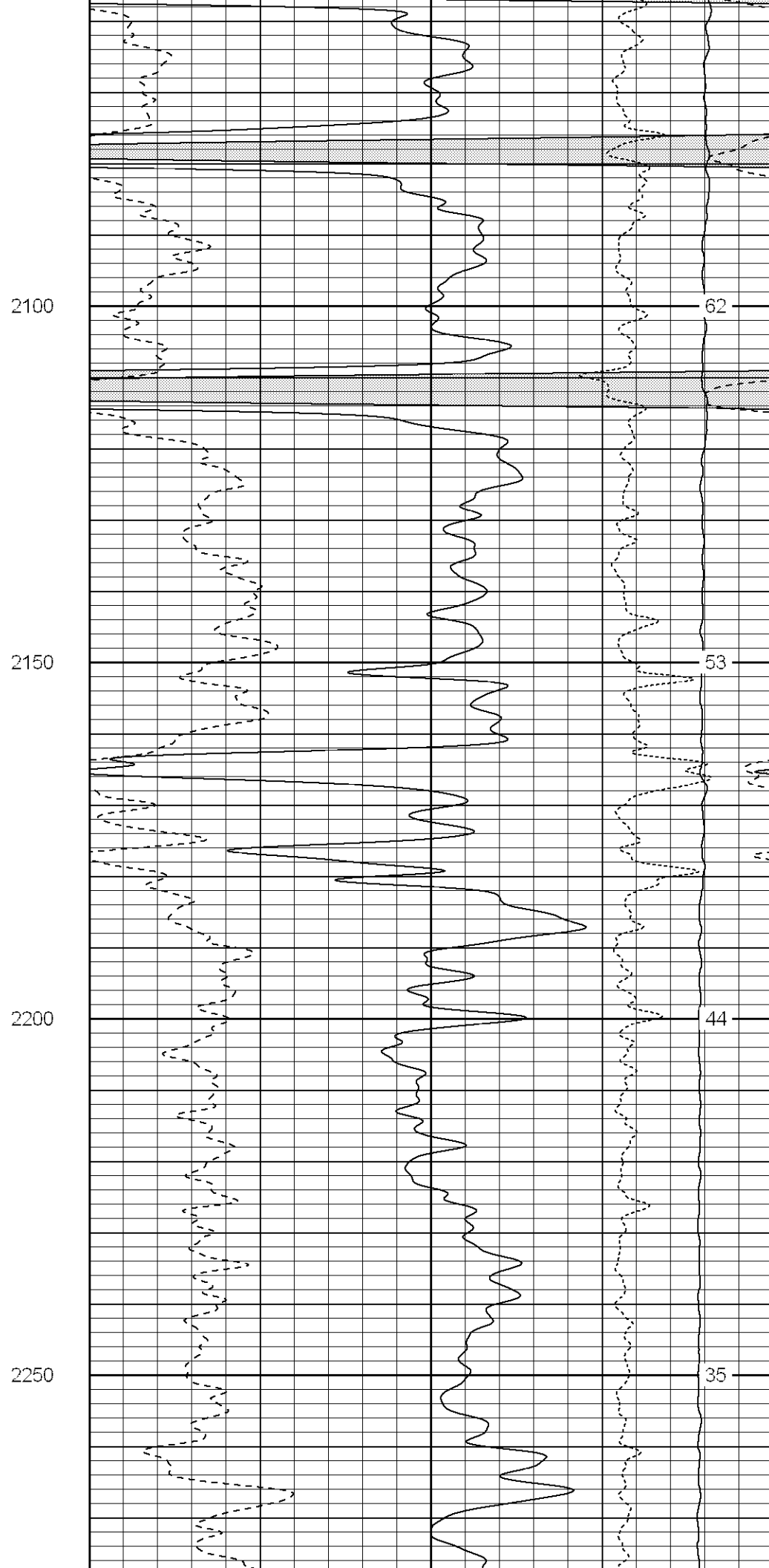
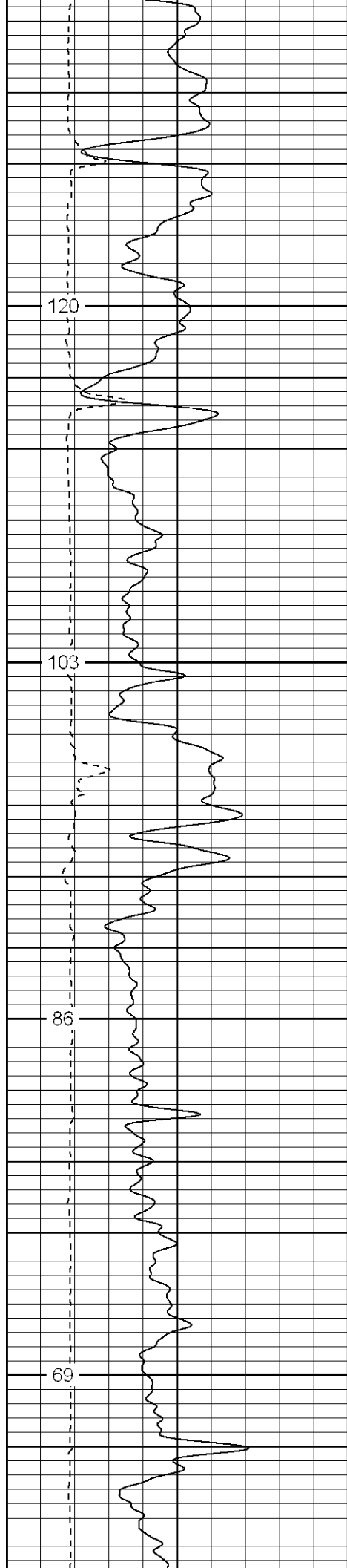


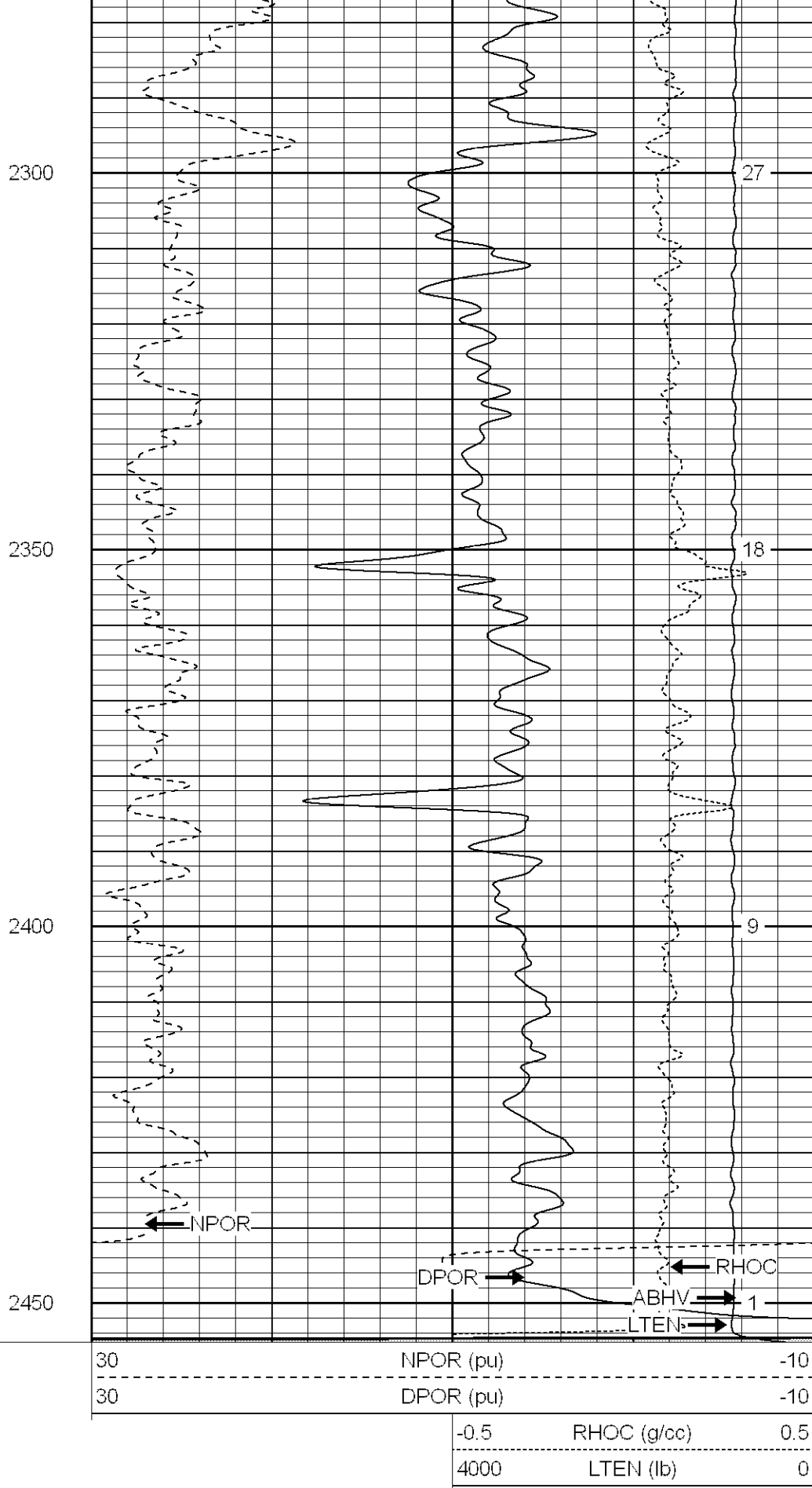
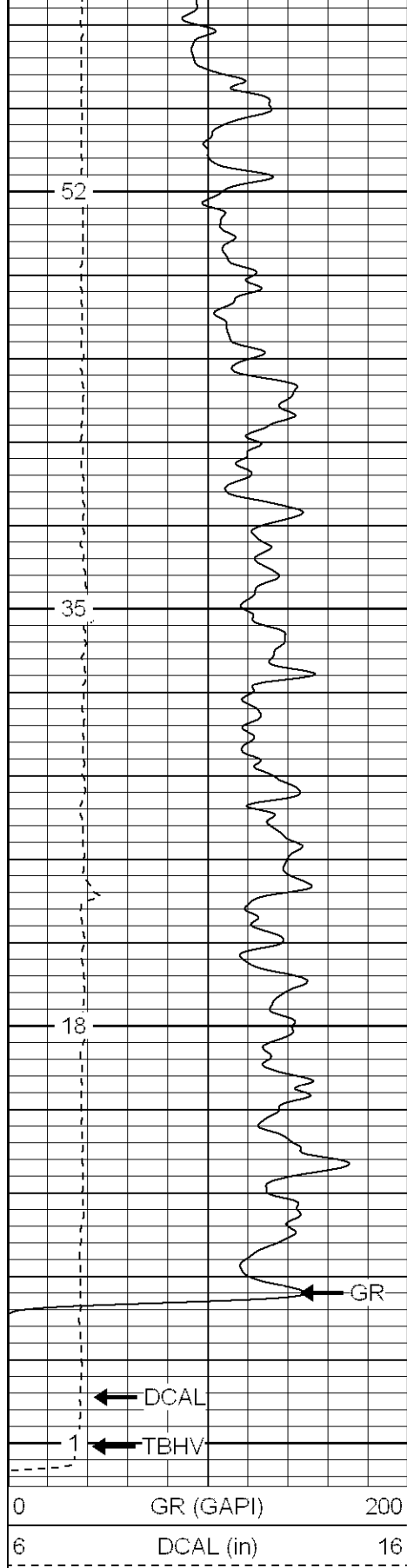












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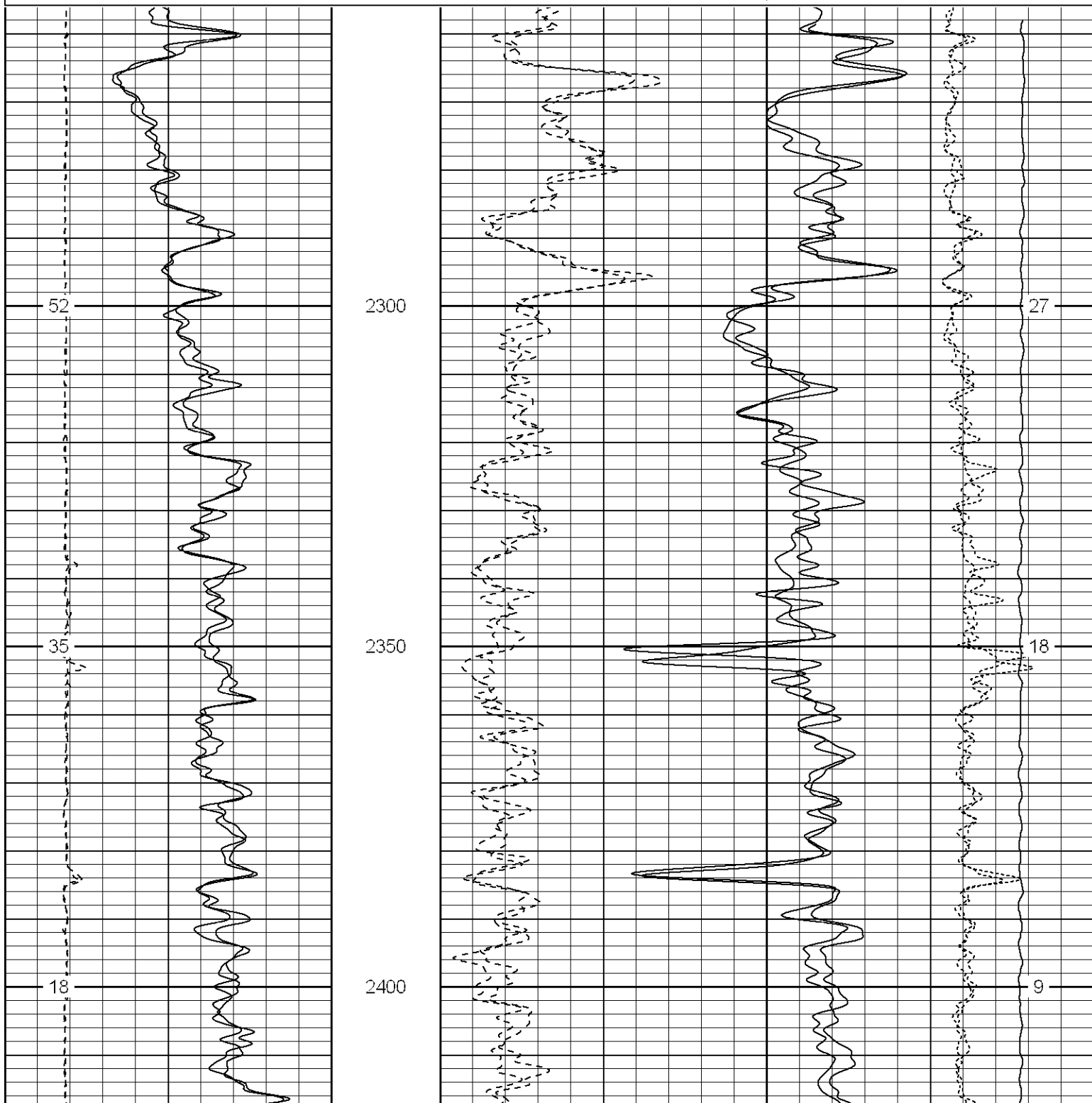
# Repeat Section

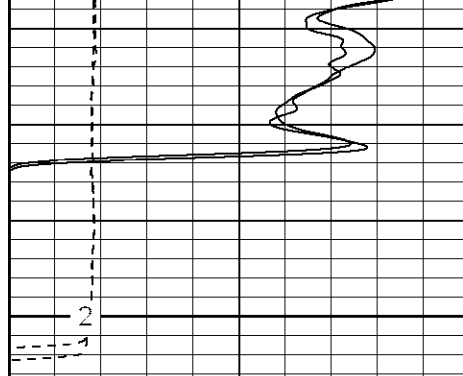
Database File: xtoac1816.db  
Dataset Pathname: pass3.1  
Presentation Format: cdnl  
Dataset Creation: Fri Feb 02 15:04:11 2007 by Calc Open-Cased 060407  
Charted by: Depth in Feet scaled 1:240

0	GR (GAPI)	200
6	DCAL (in)	16
6	DCAL-repeat (in)	16
0	GR-repeat (GAPI)	200

30	NPOR (pu)	-10
30	DPOR (pu)	-10
30	NPOR-repeat (pu)	-10
30	DPOR-repeat (pu)	-10

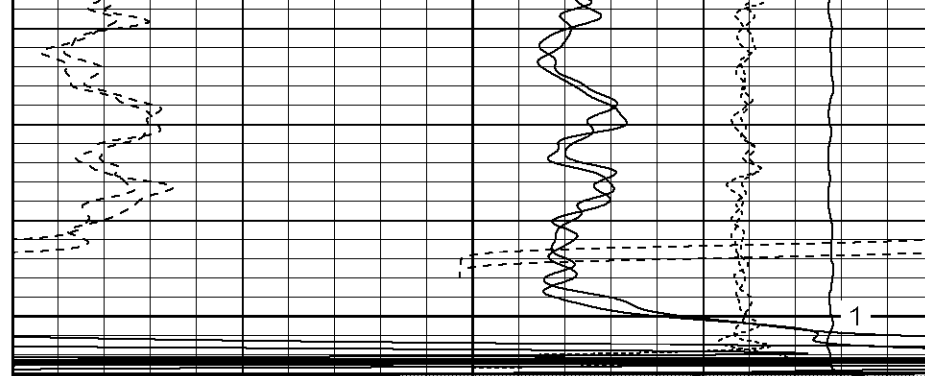
-0.5	RHOC (g/cc)	0.5
4000	LTEN (lb)	0
-0.5	RHOC-repeat (g/cc)	0.5





0	GR (GAPI)	200
6	DCAL (in)	16
6	DCAL-repeat (in)	16
0	GR-repeat (GAPI)	200

2450



30	NPOR (pu)	-10
30	DPOR (pu)	-10
30	NPOR-repeat (pu)	-10
30	DPOR-repeat (pu)	-10

-0.5	RHOC (g/cc)	0.5
4000	LTEN (lb)	0
-0.5	RHOC-repeat (g/cc)	0.5



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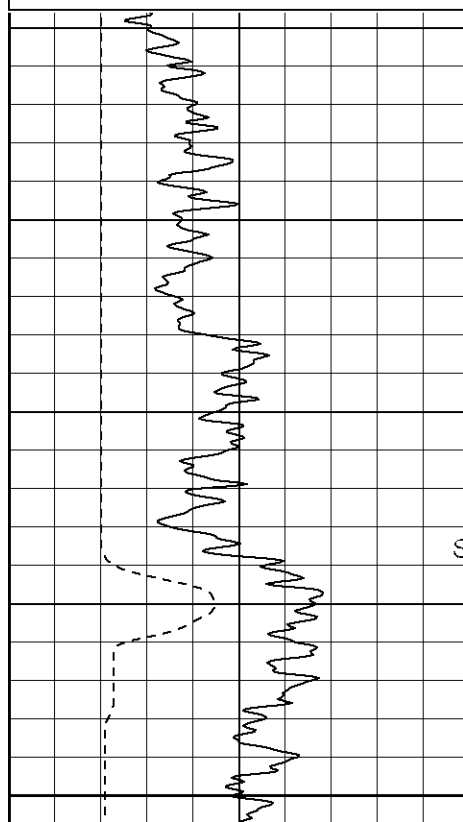
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# High Resolution Pass

Database File: xtoac1816.db  
Dataset Pathname: pass4.2  
Presentation Format: cdlhr  
Dataset Creation: Mon Feb 05 07:08:08 2007 by Calc Open-Cased 060407  
Charted by: Depth in Feet scaled 1:120

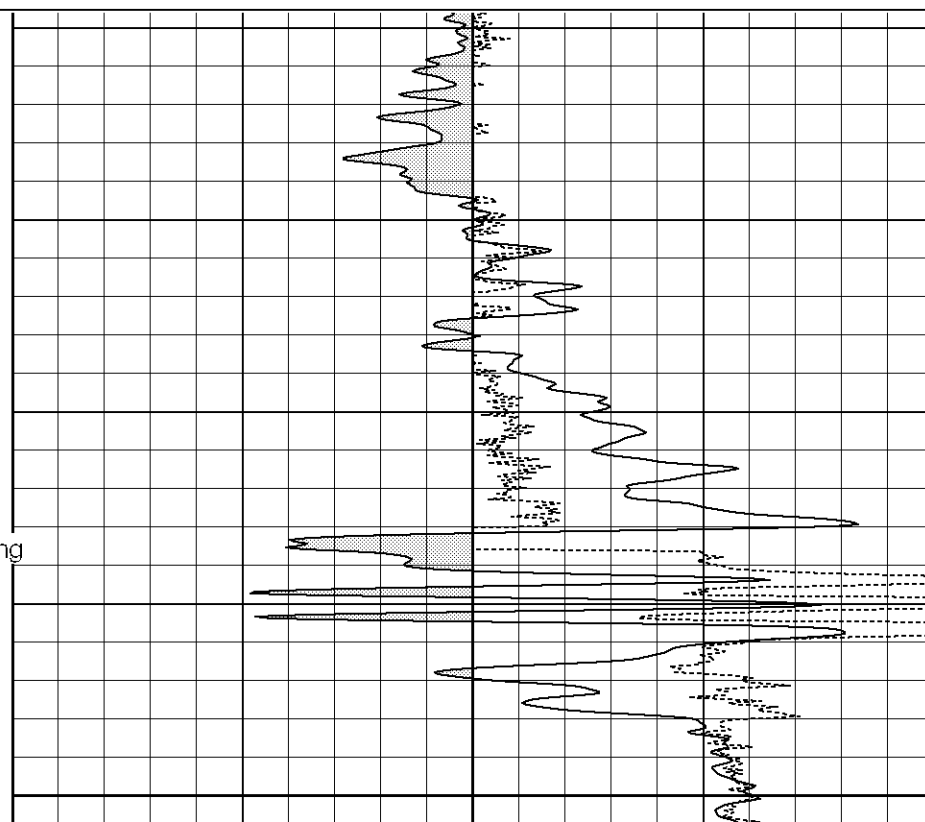
0	GR (GAPI)	200
6	DCAL (in)	16

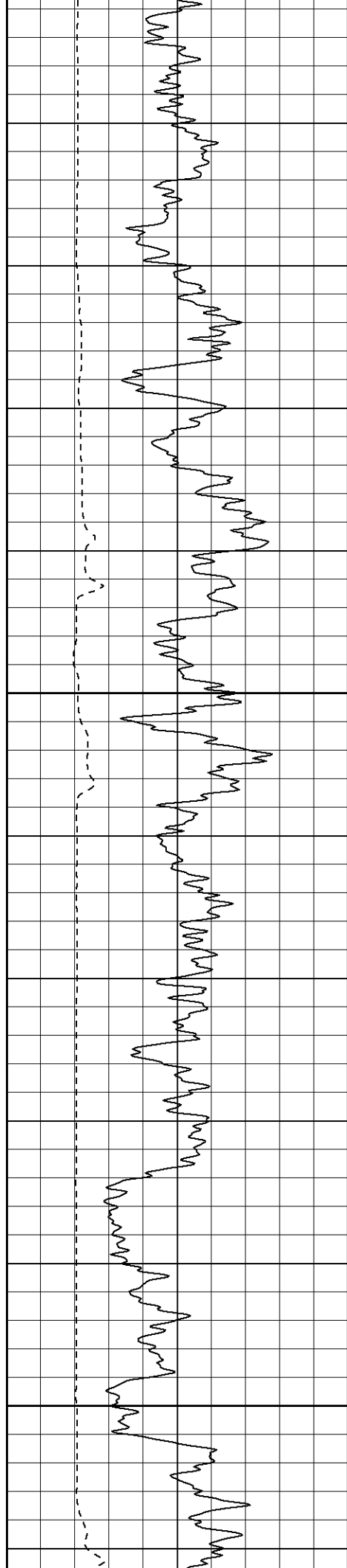
1	RHOB (g/cc)	3
-0.5	RHOC (g/cc)	0.5



Surface Casing

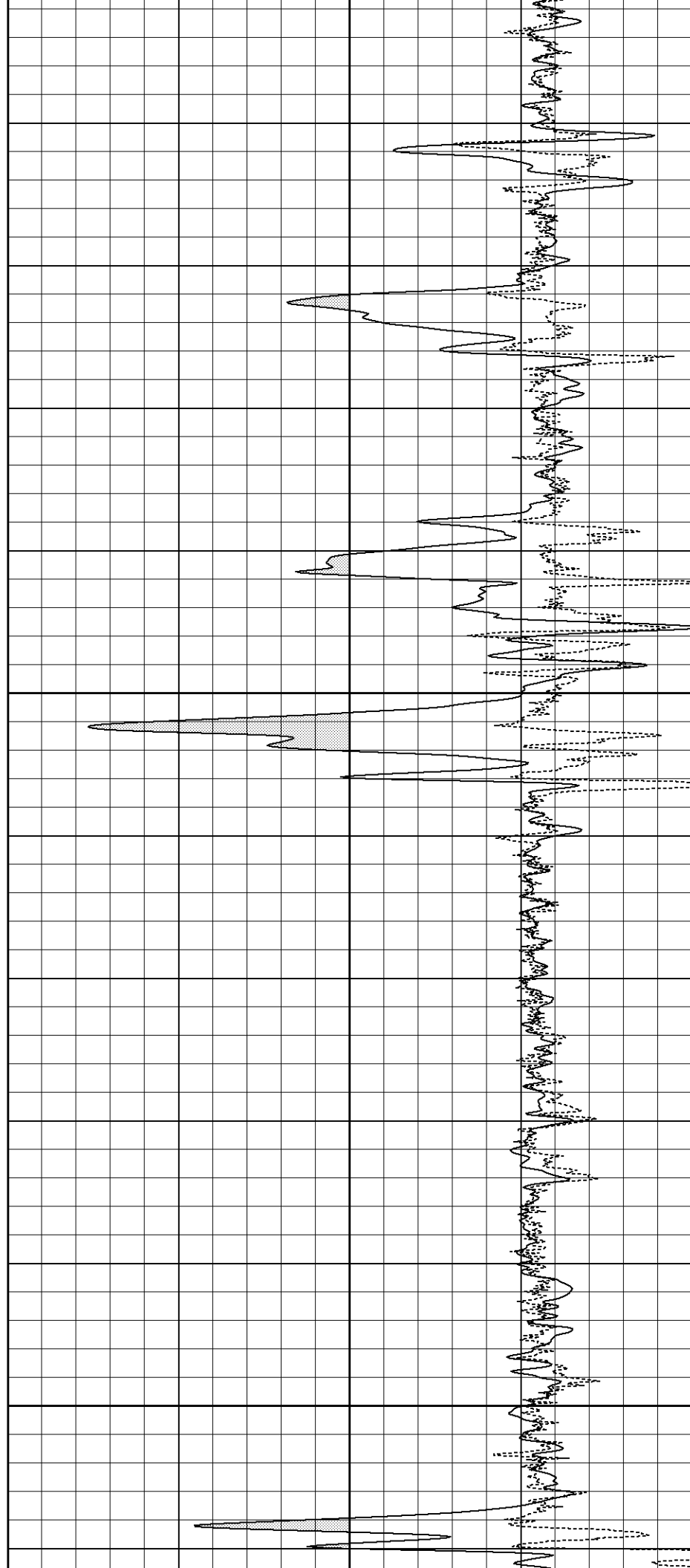
600

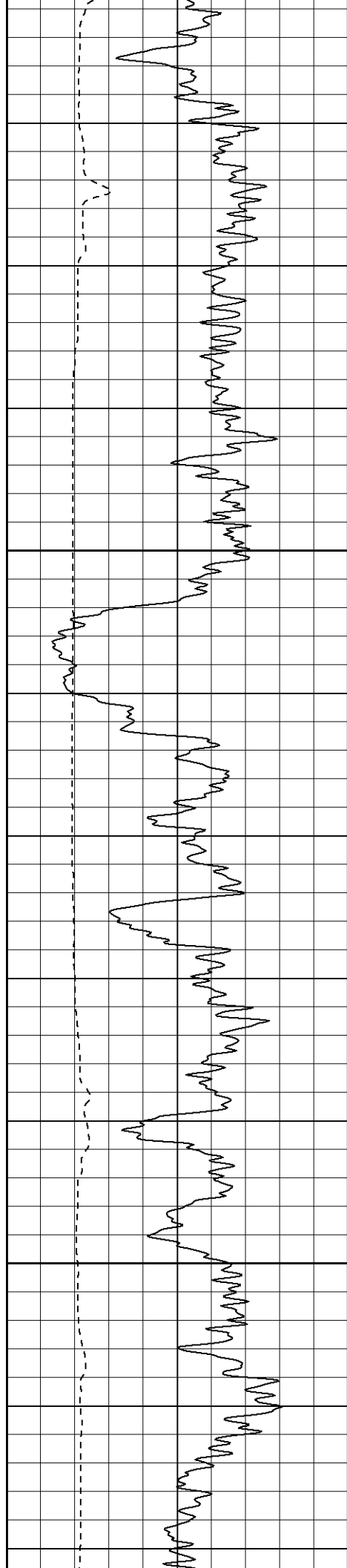




650

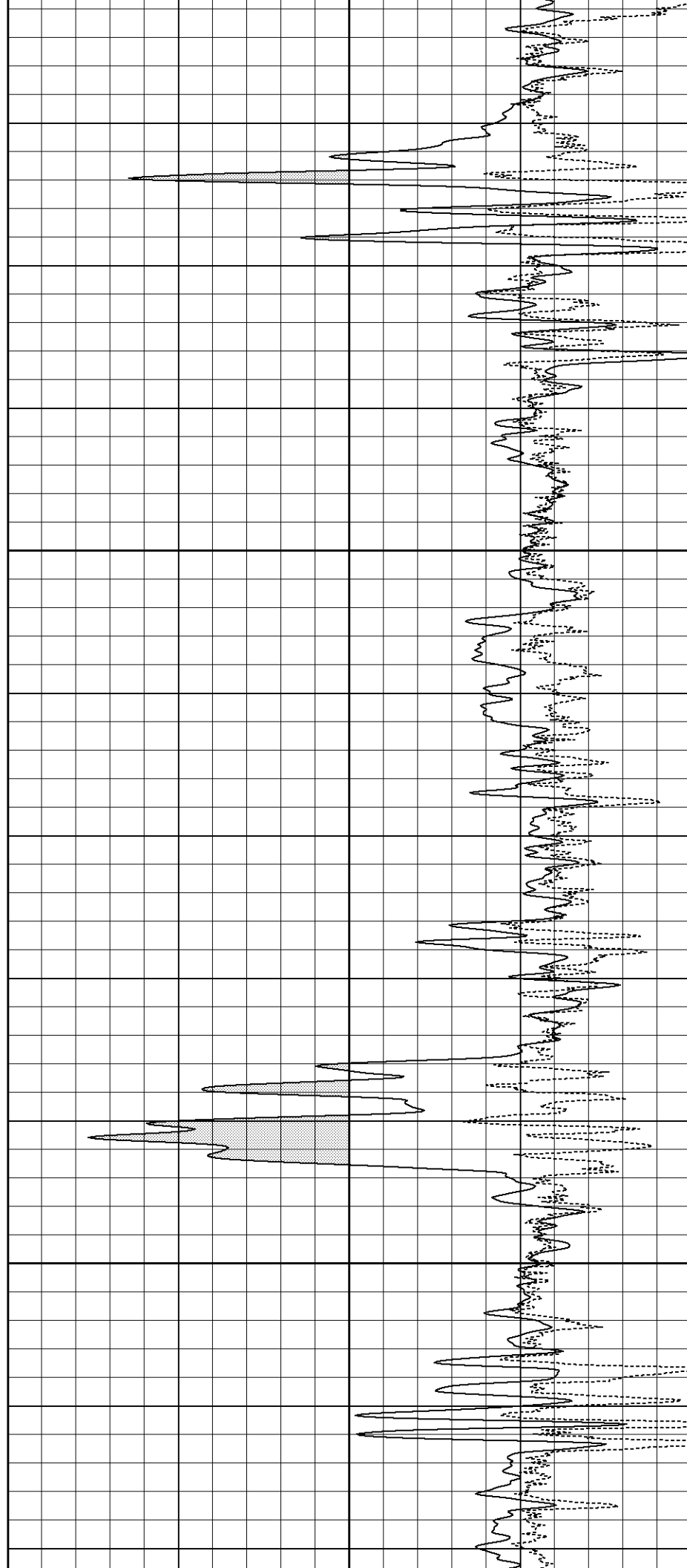
700

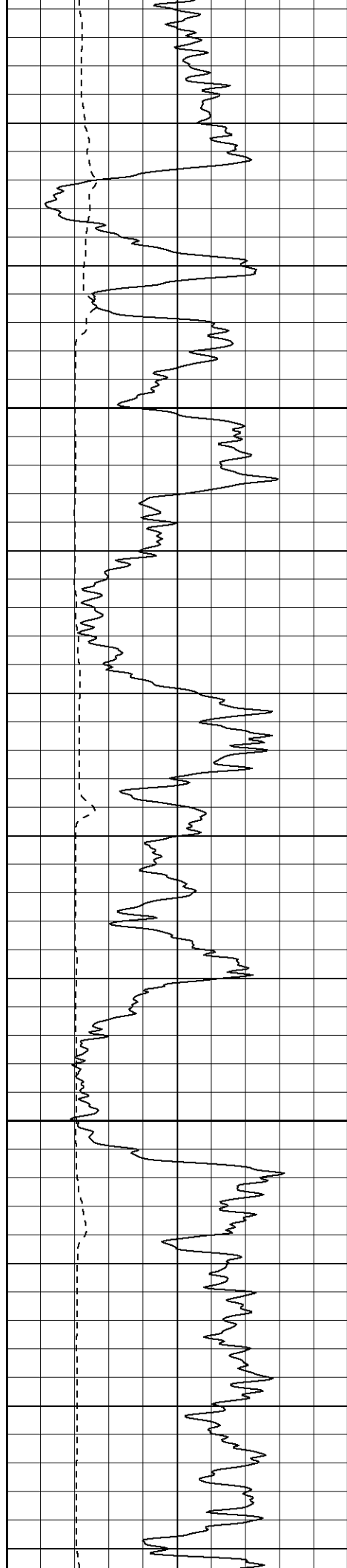




750

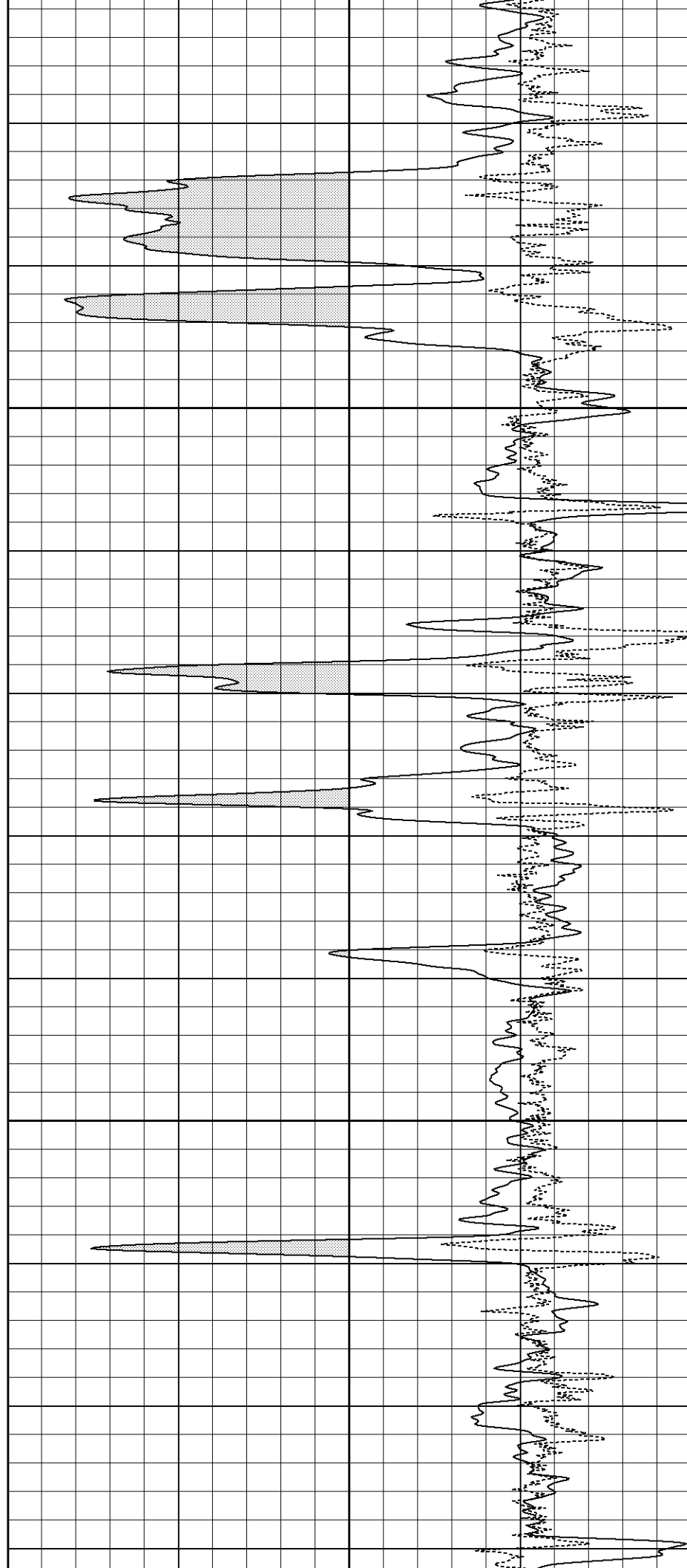
800



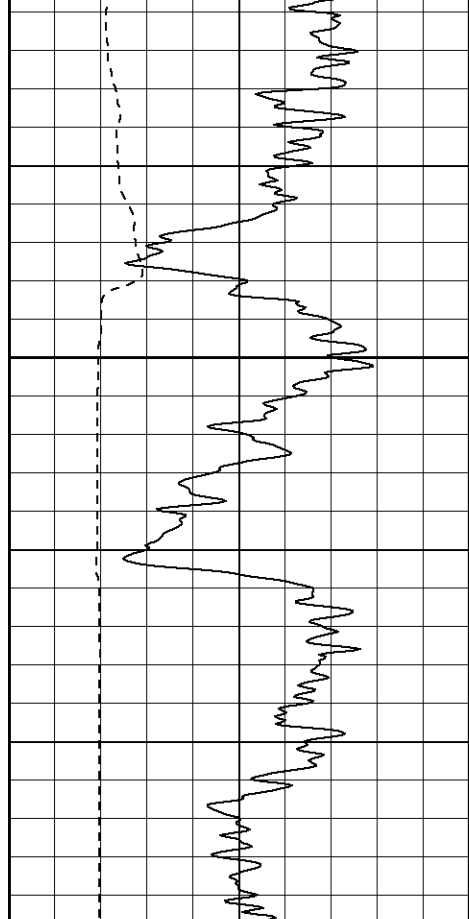


850

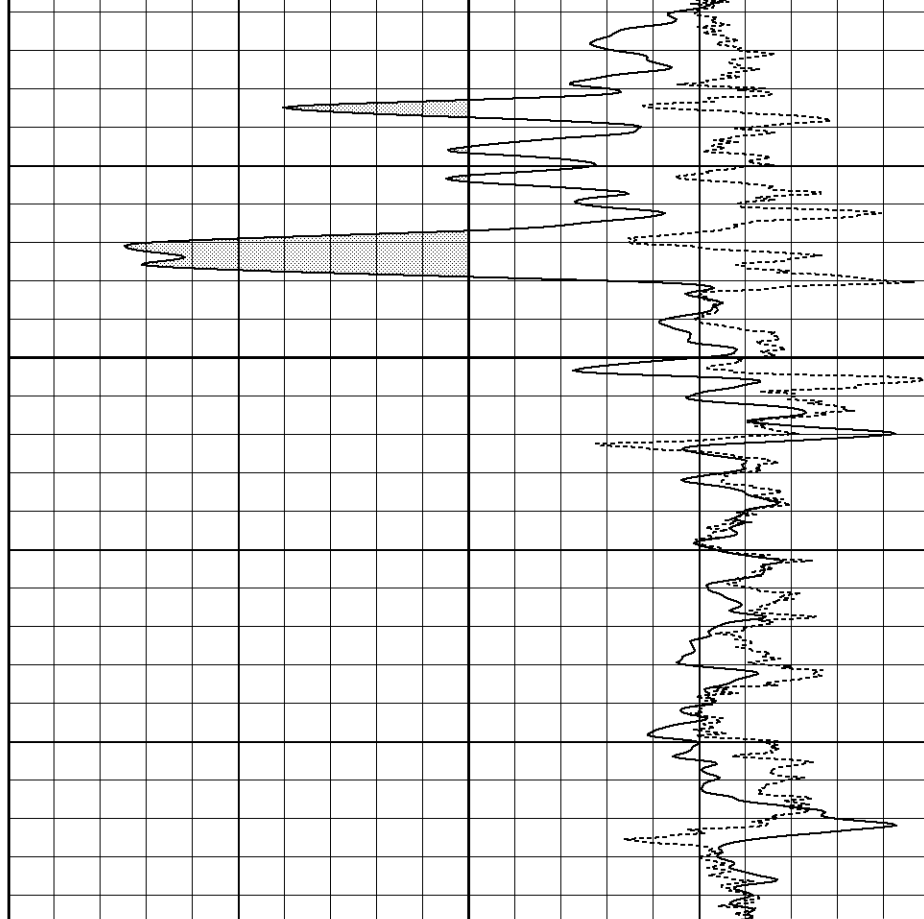
900

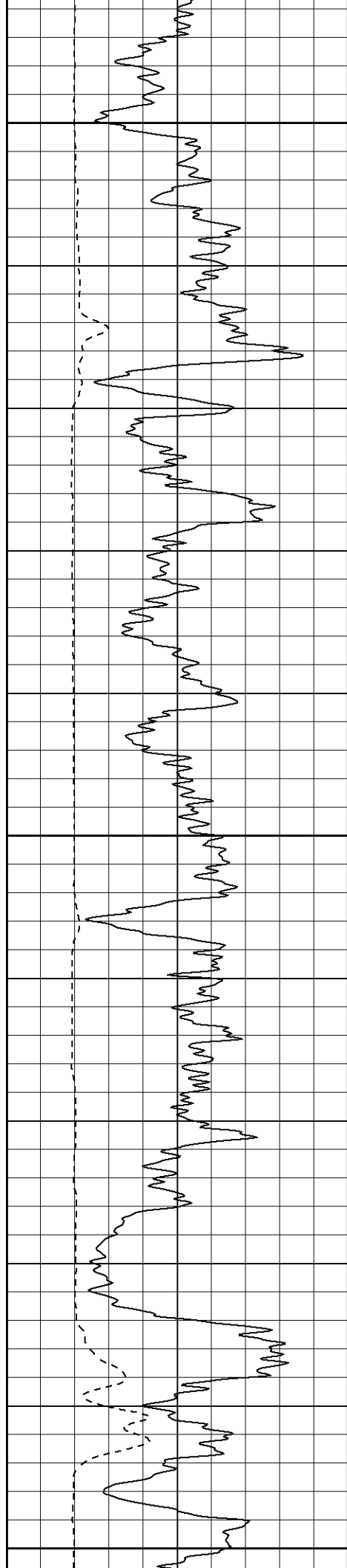






950

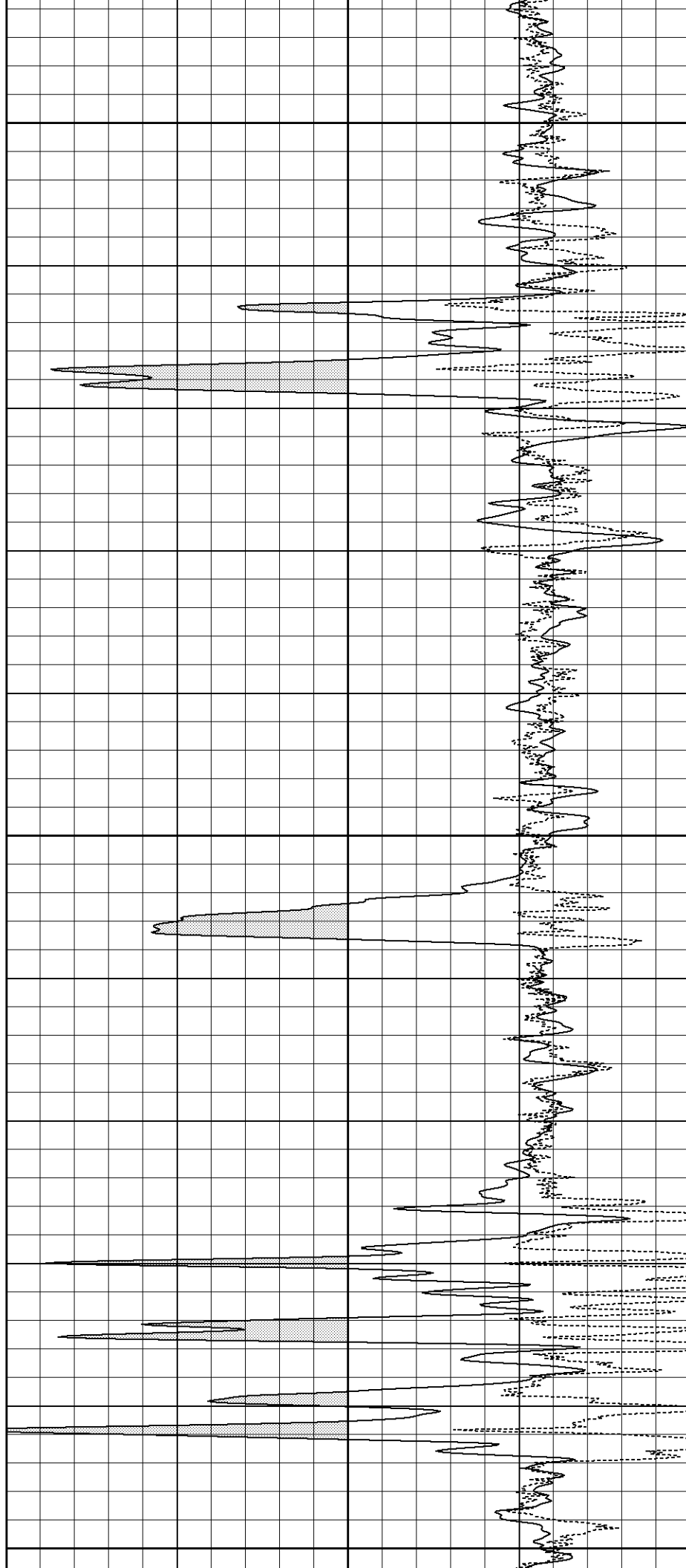


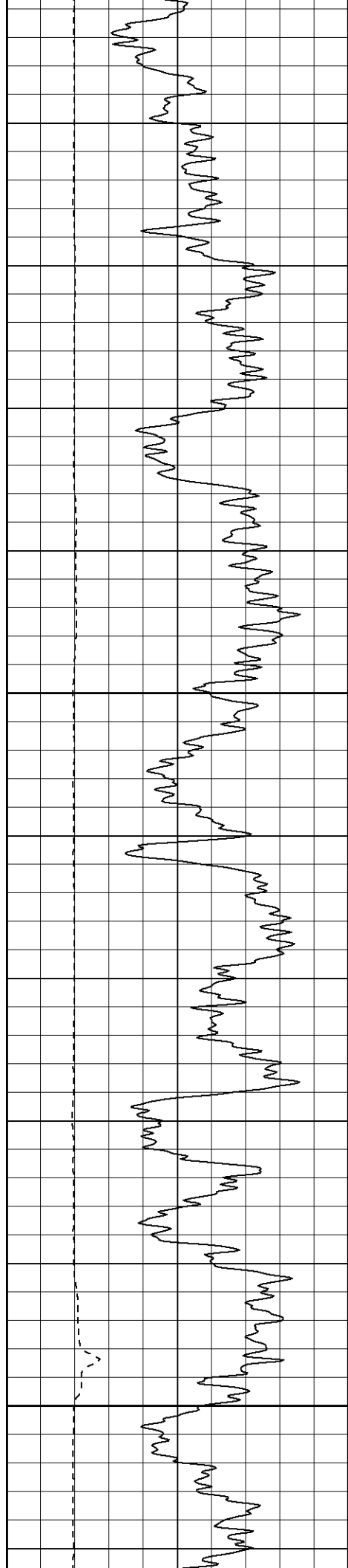


1050

1100

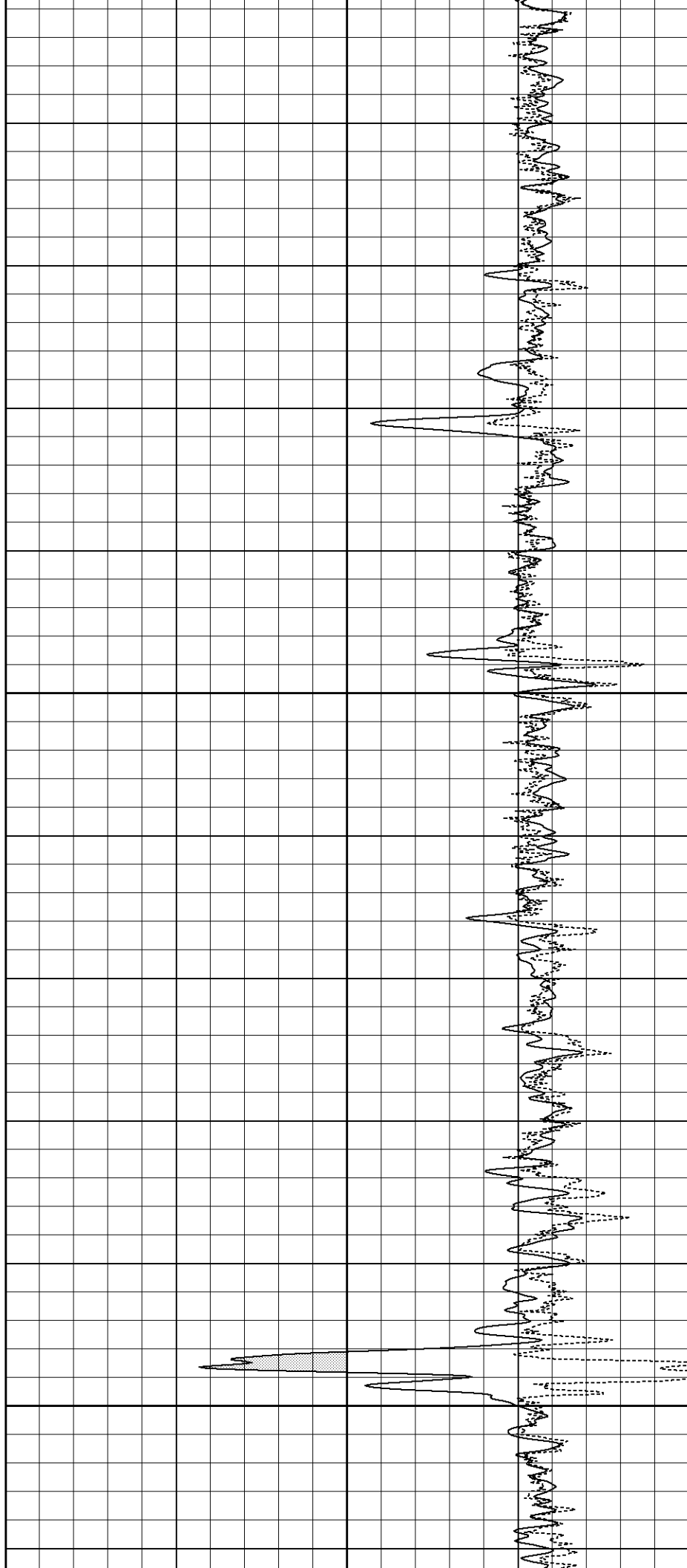
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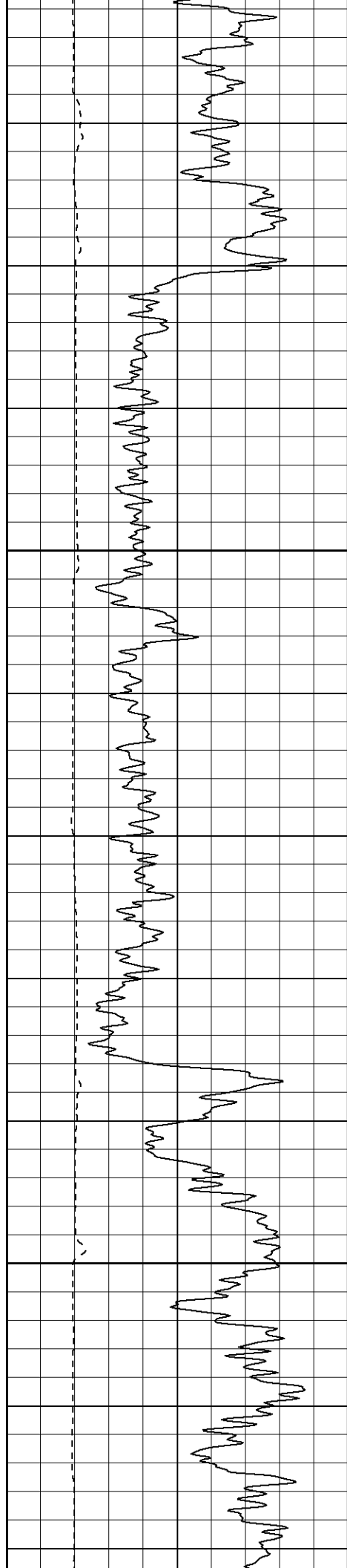




1200

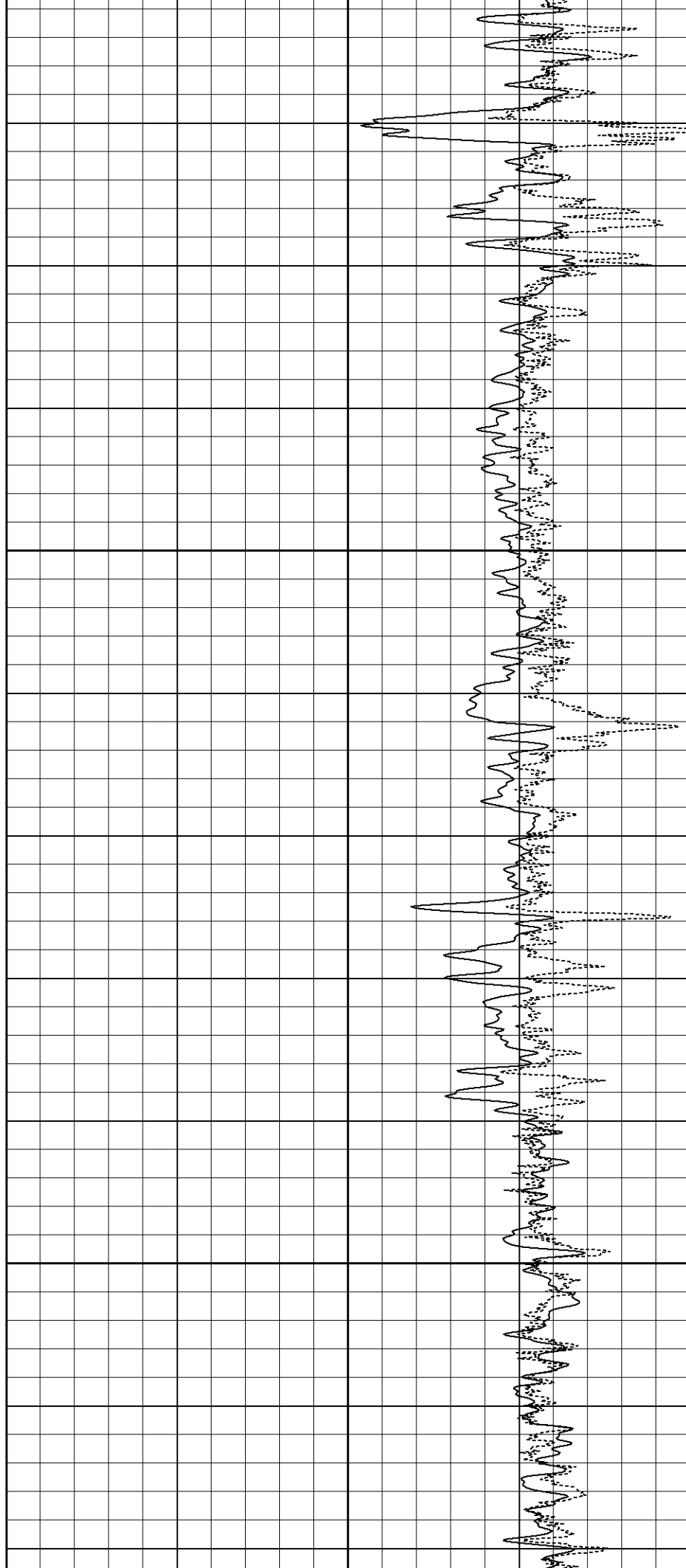
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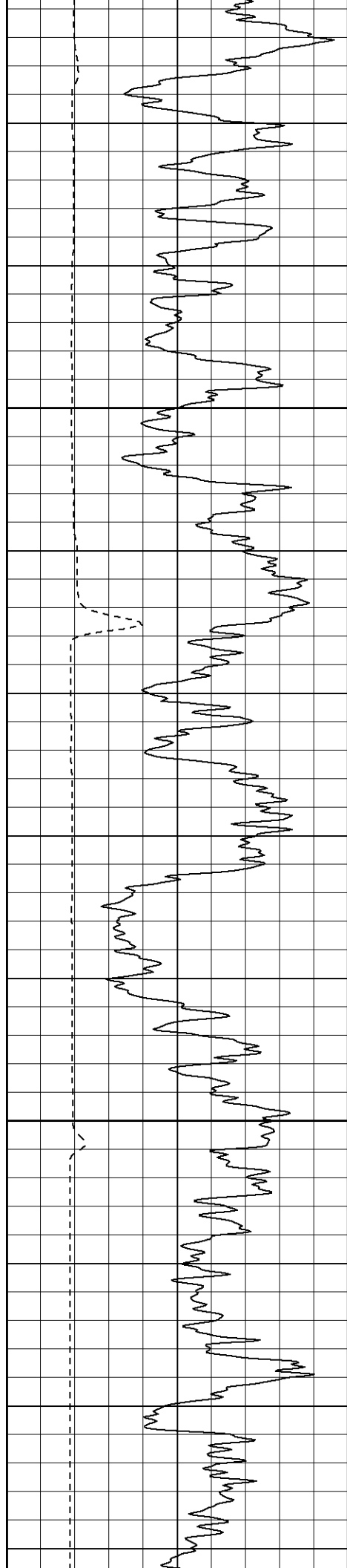




1300

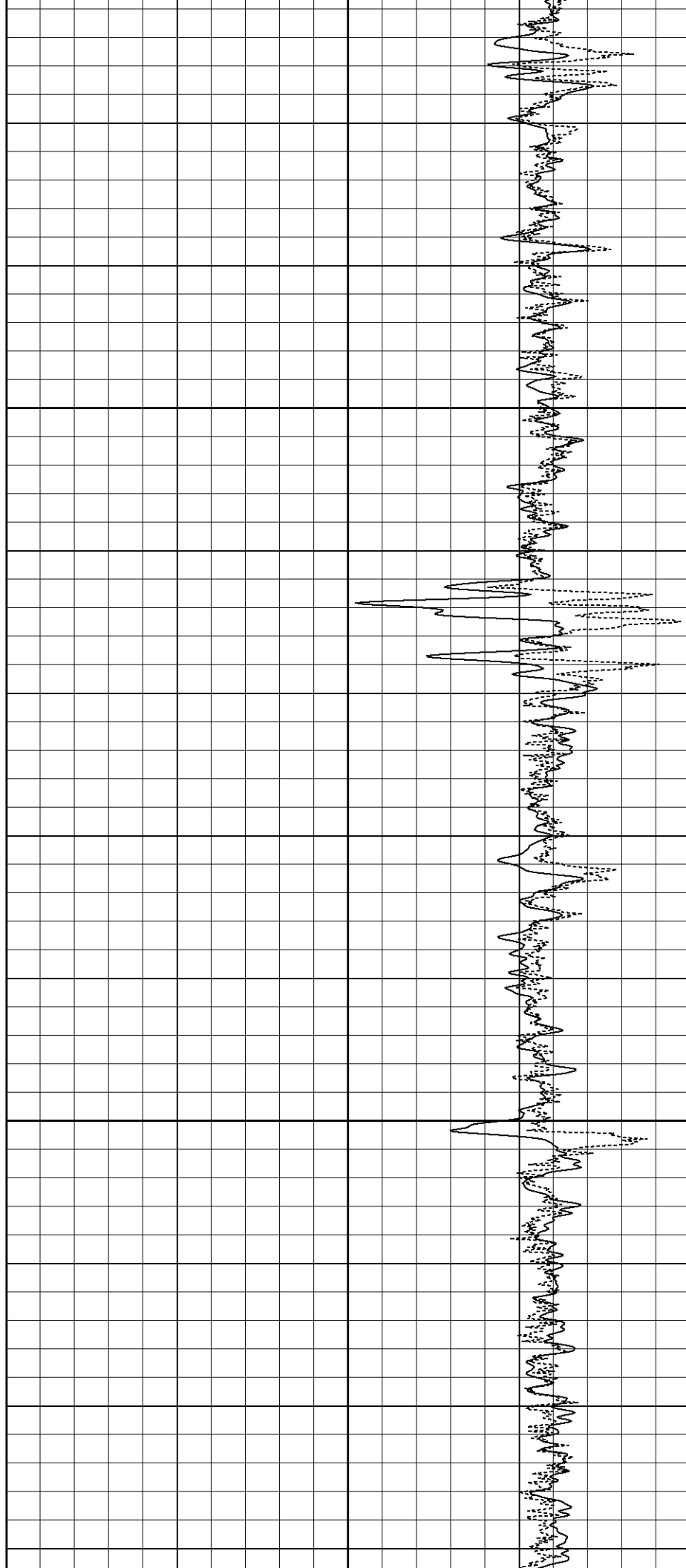
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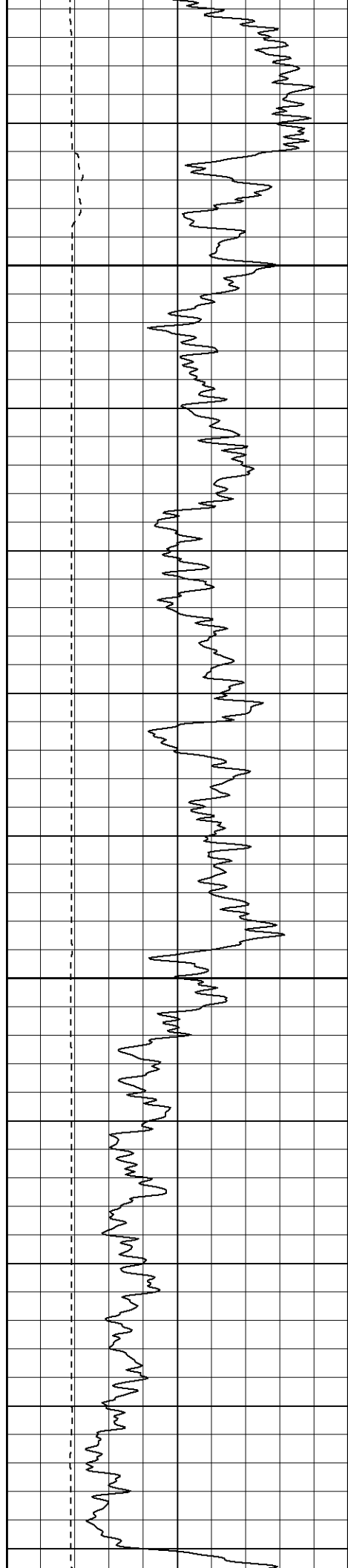




1400

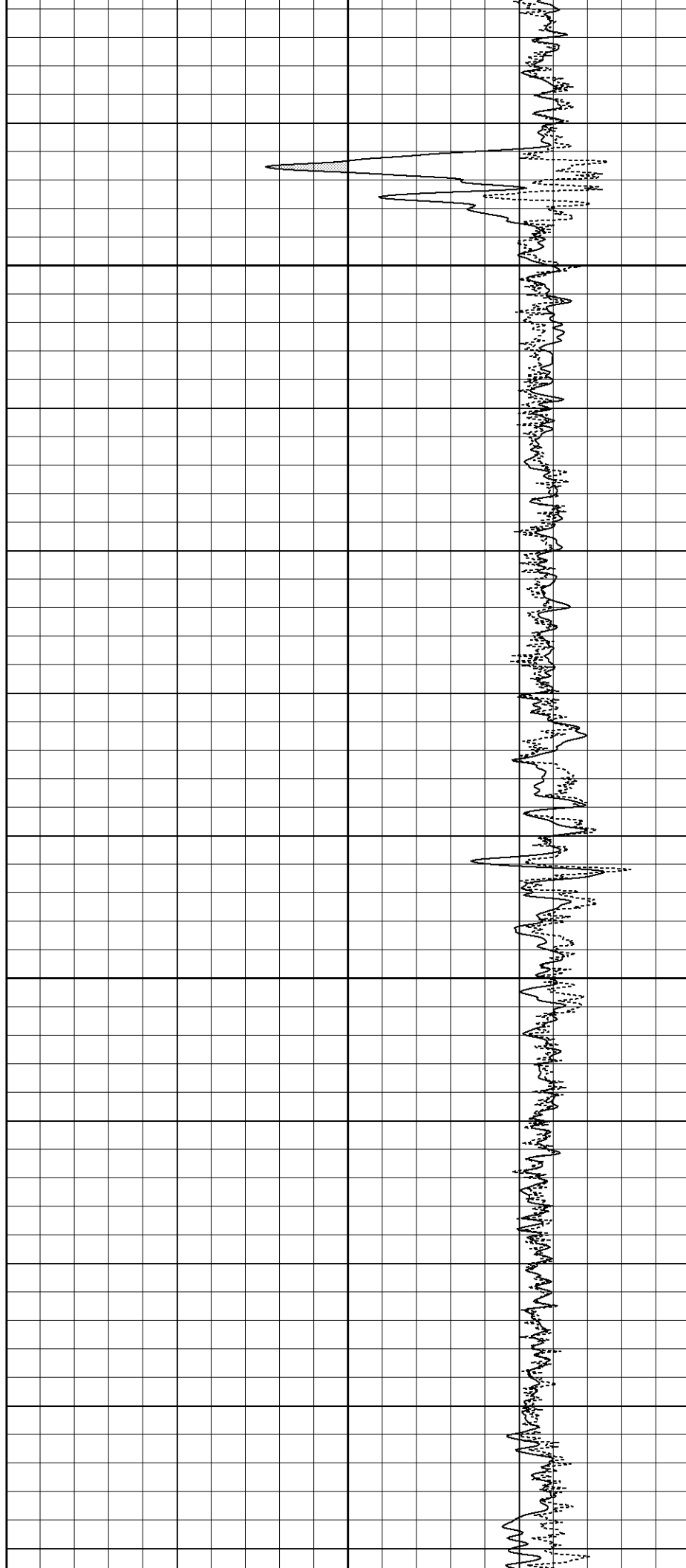
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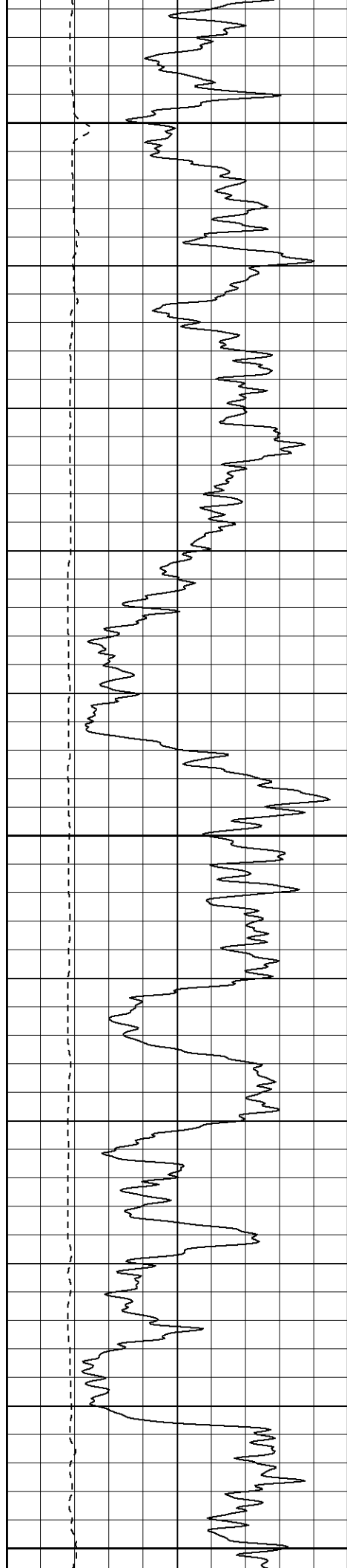




1500

1550

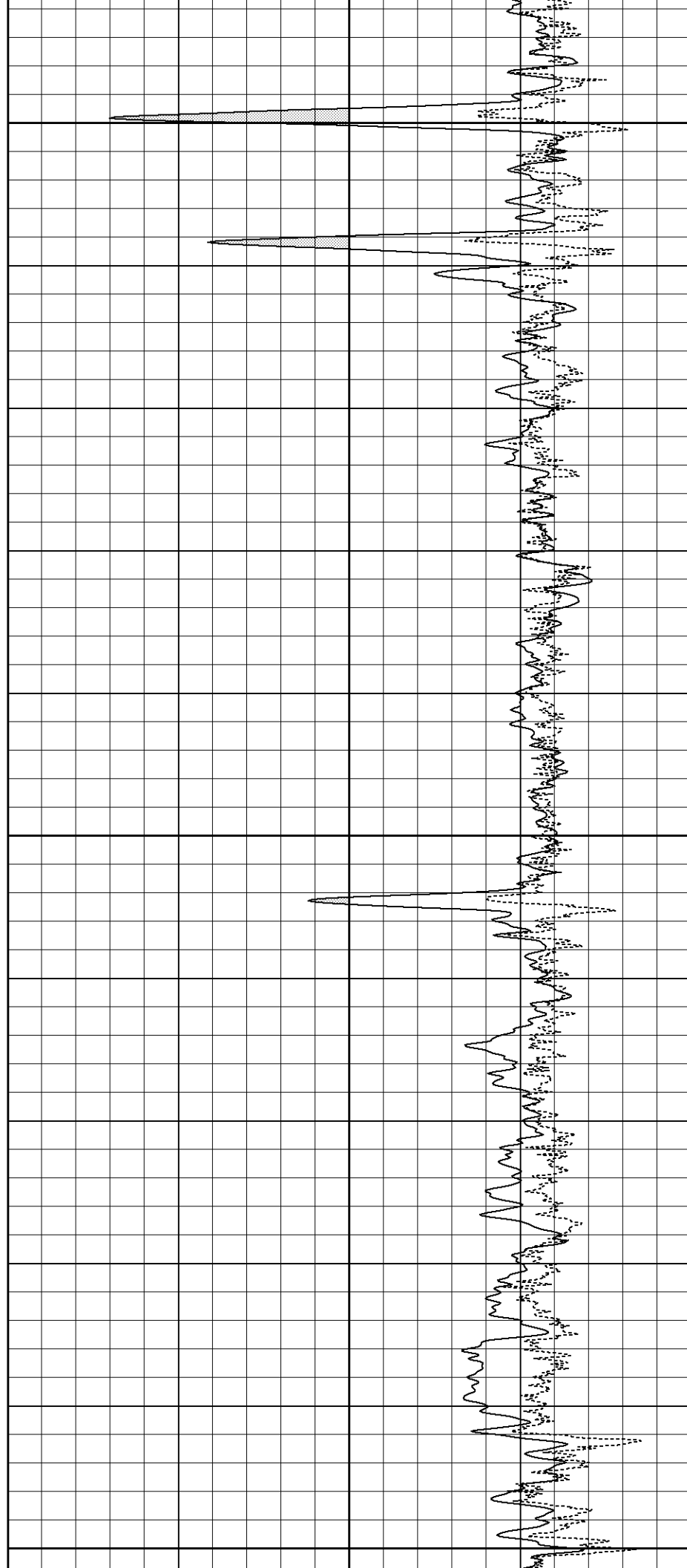


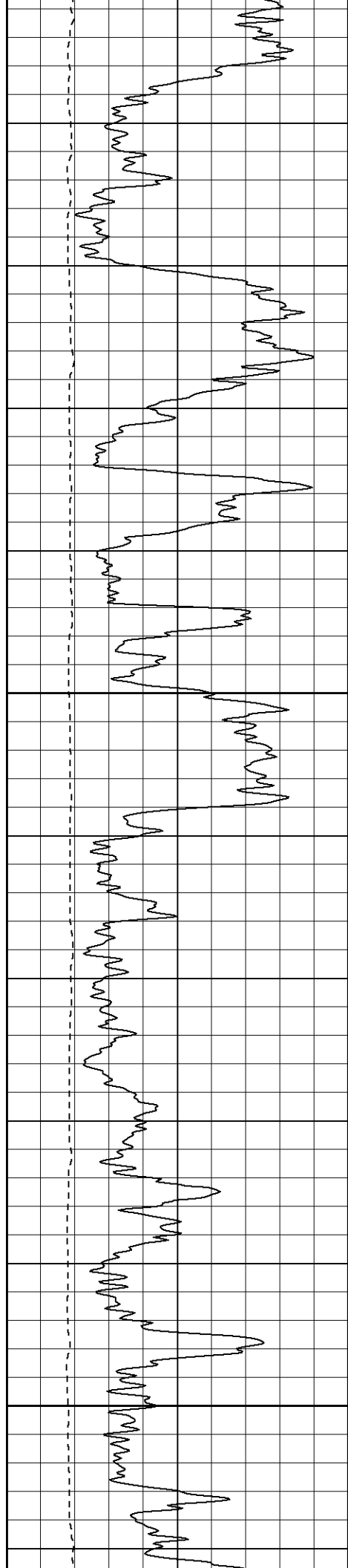


1600

1650

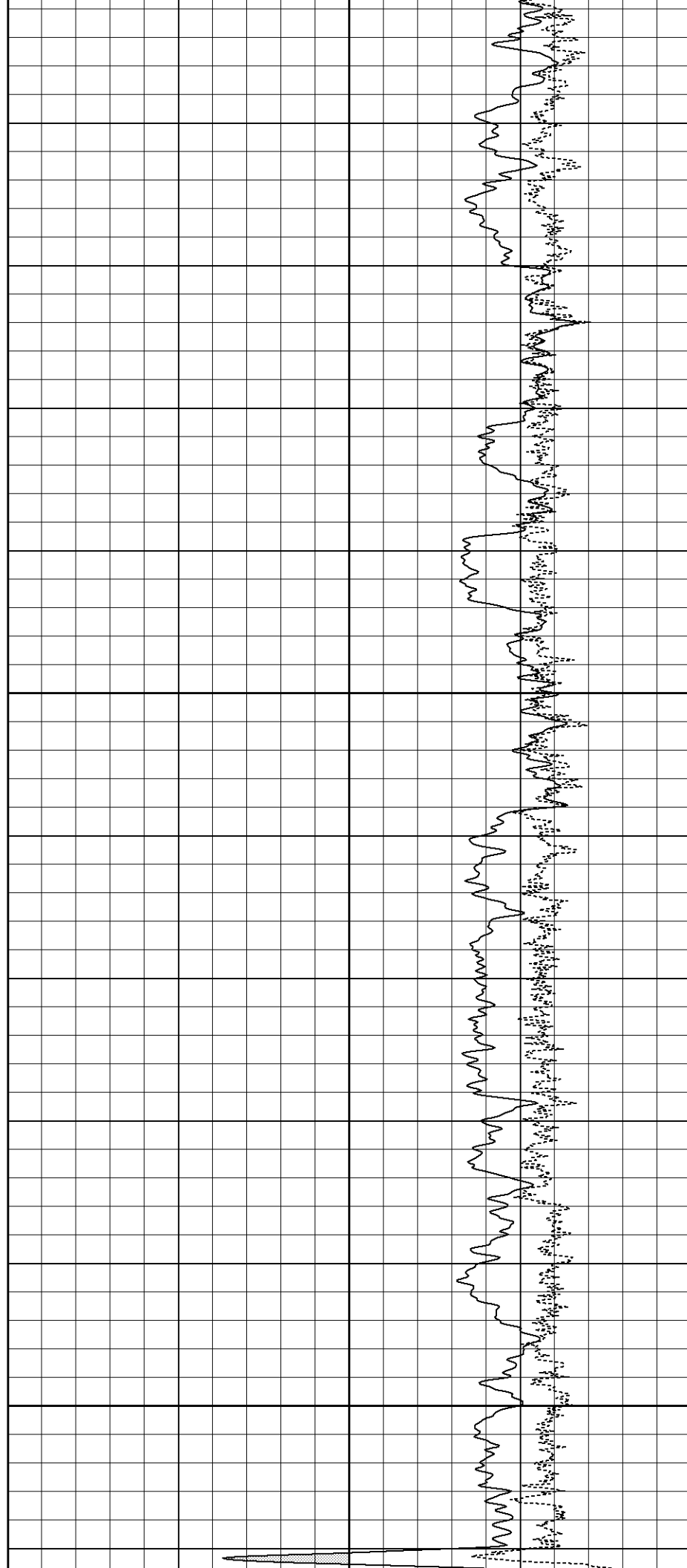
1700



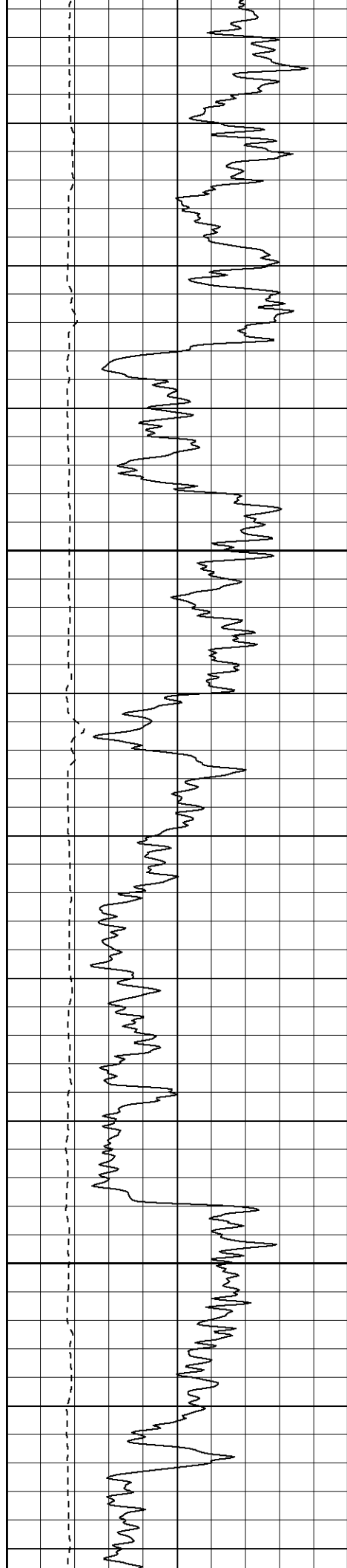


1750

1800

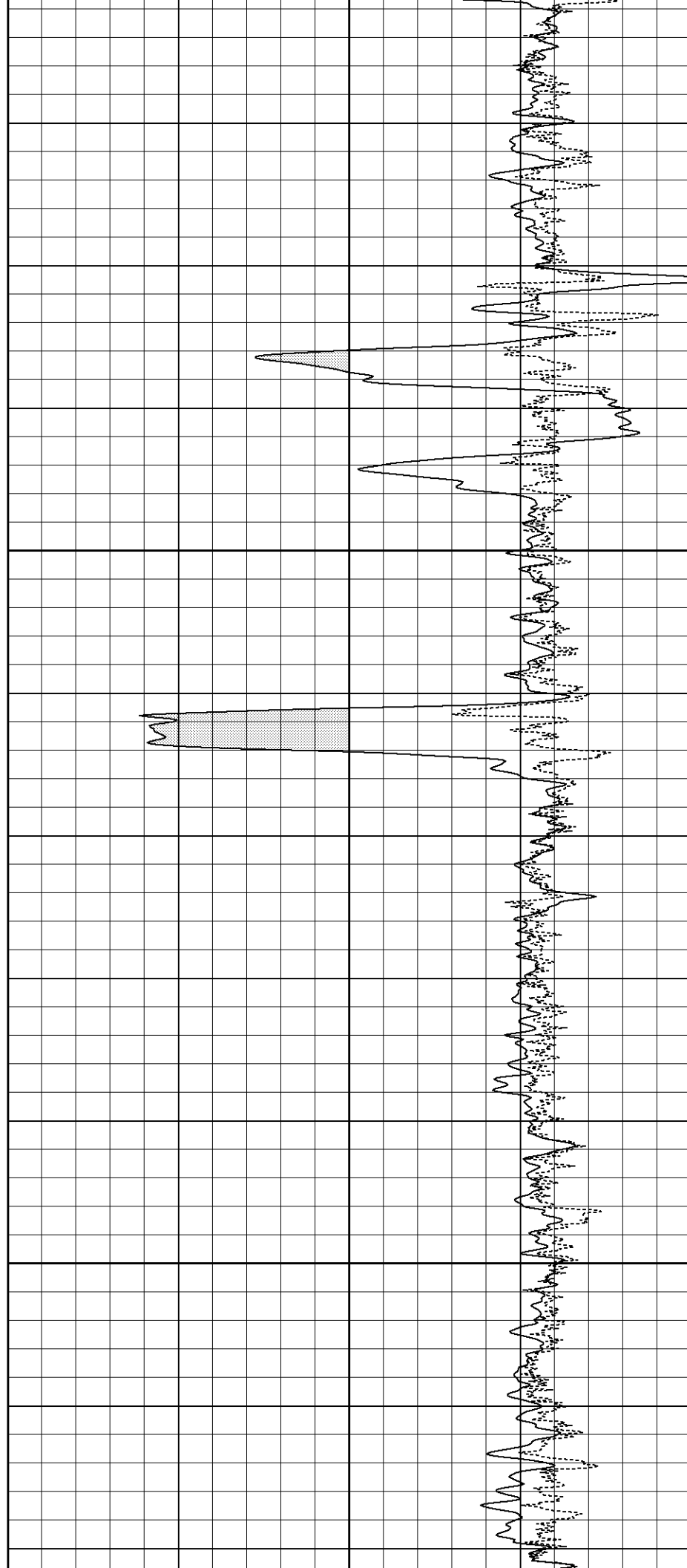


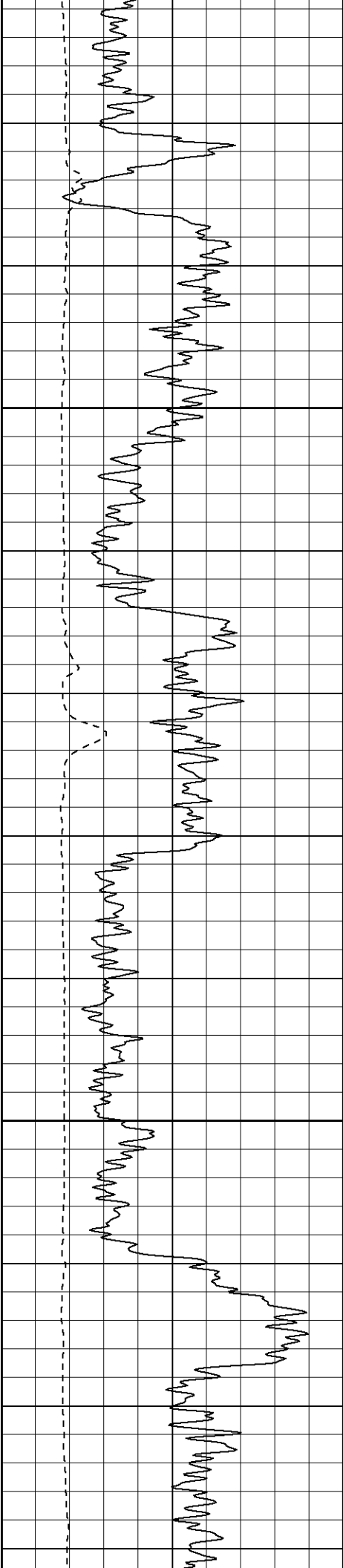




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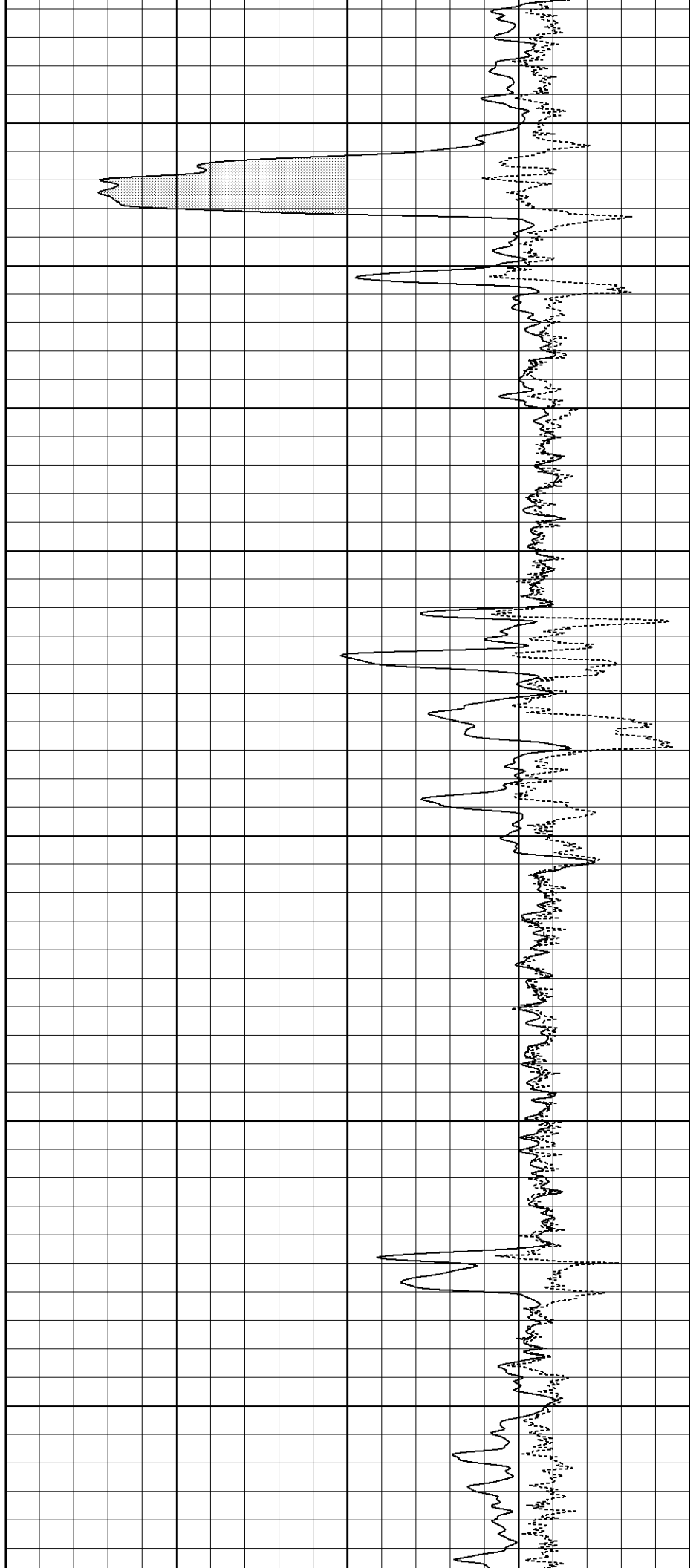
1900





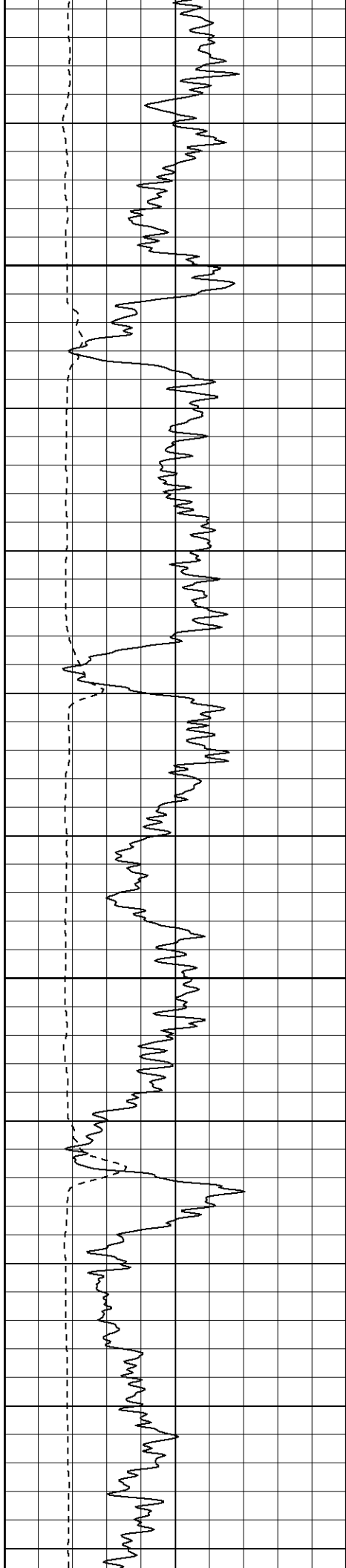
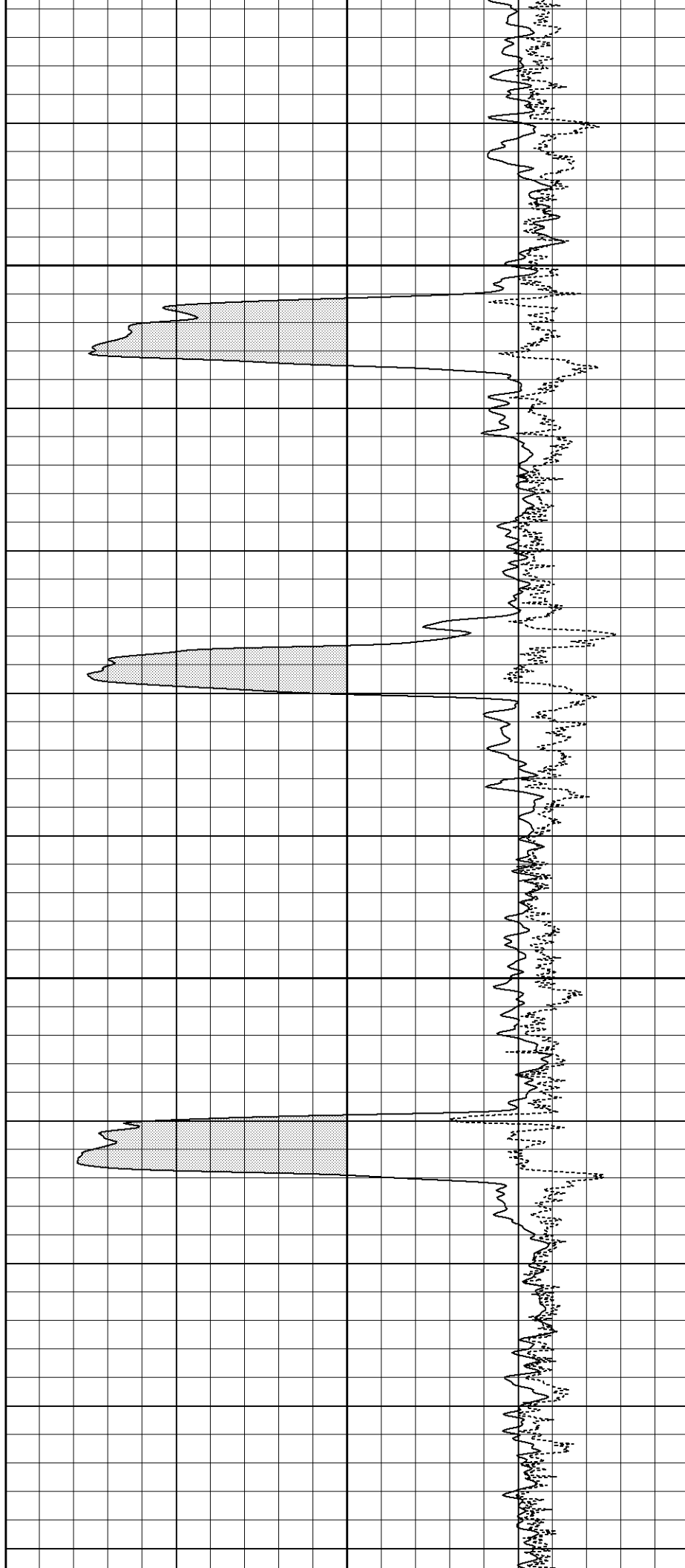
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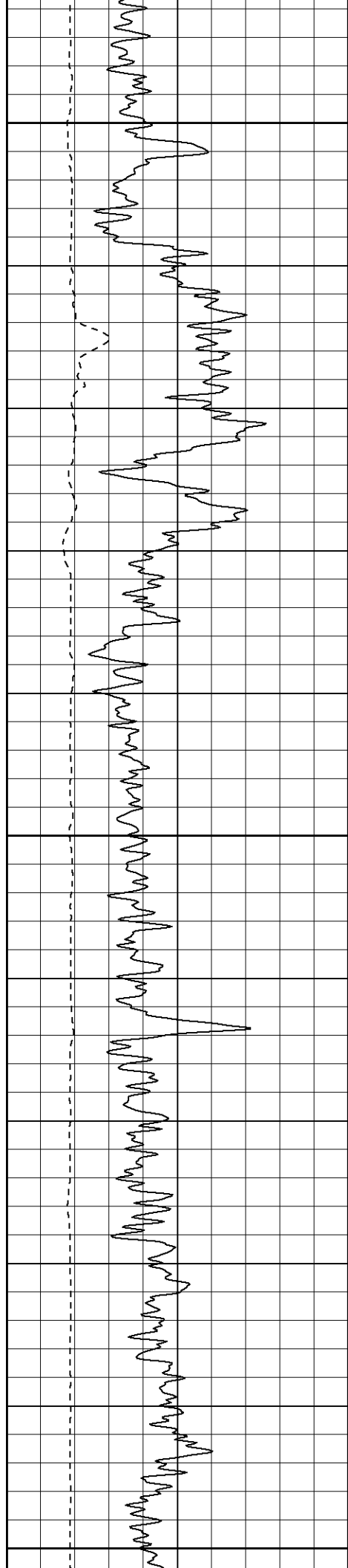
2000



2050

2100

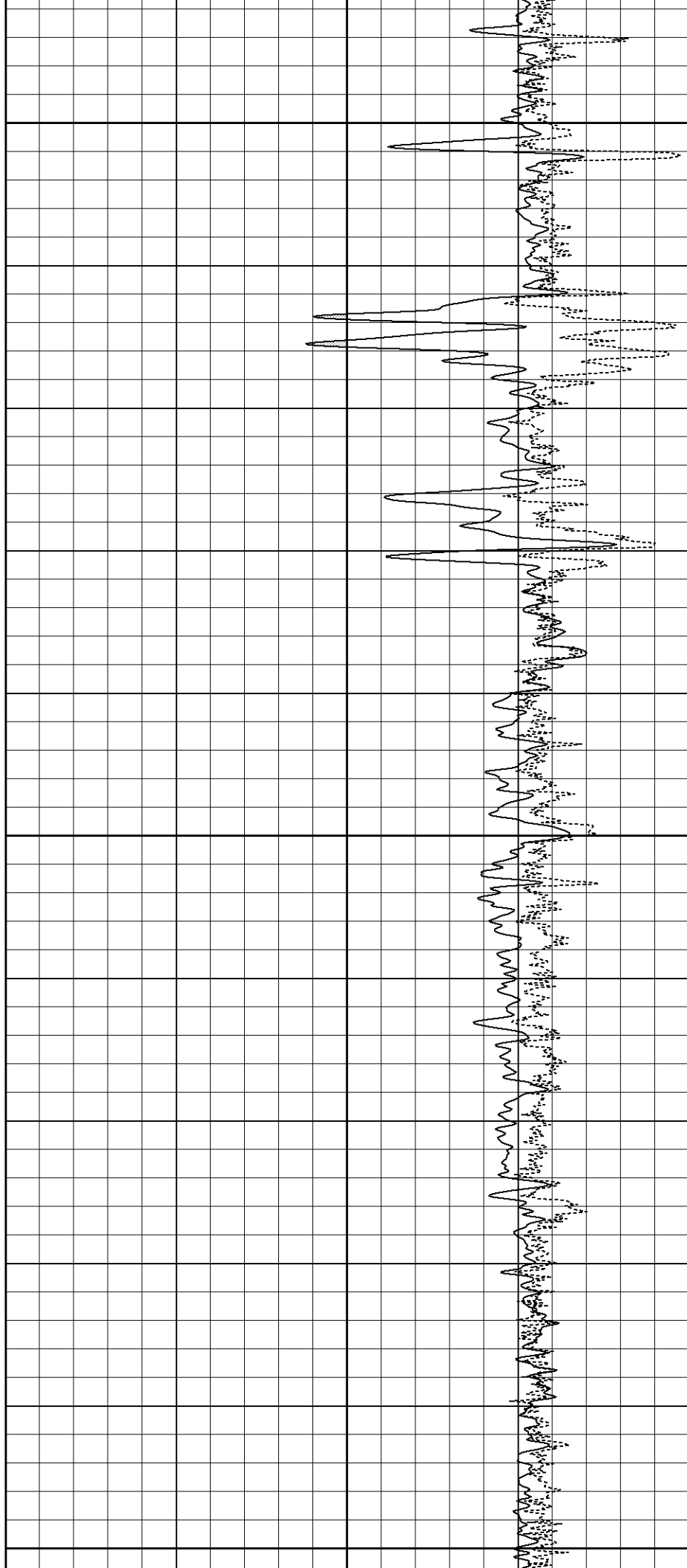


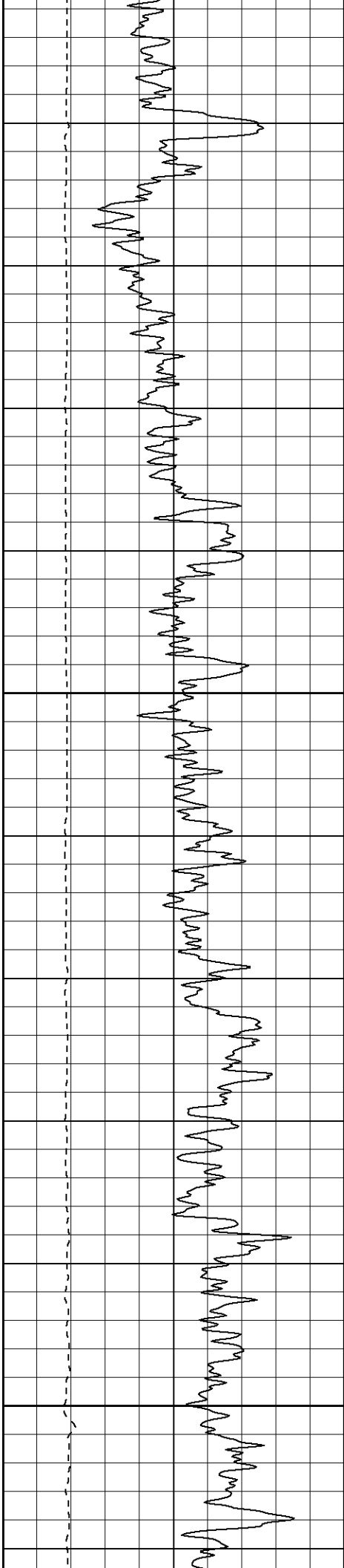


2150

2200

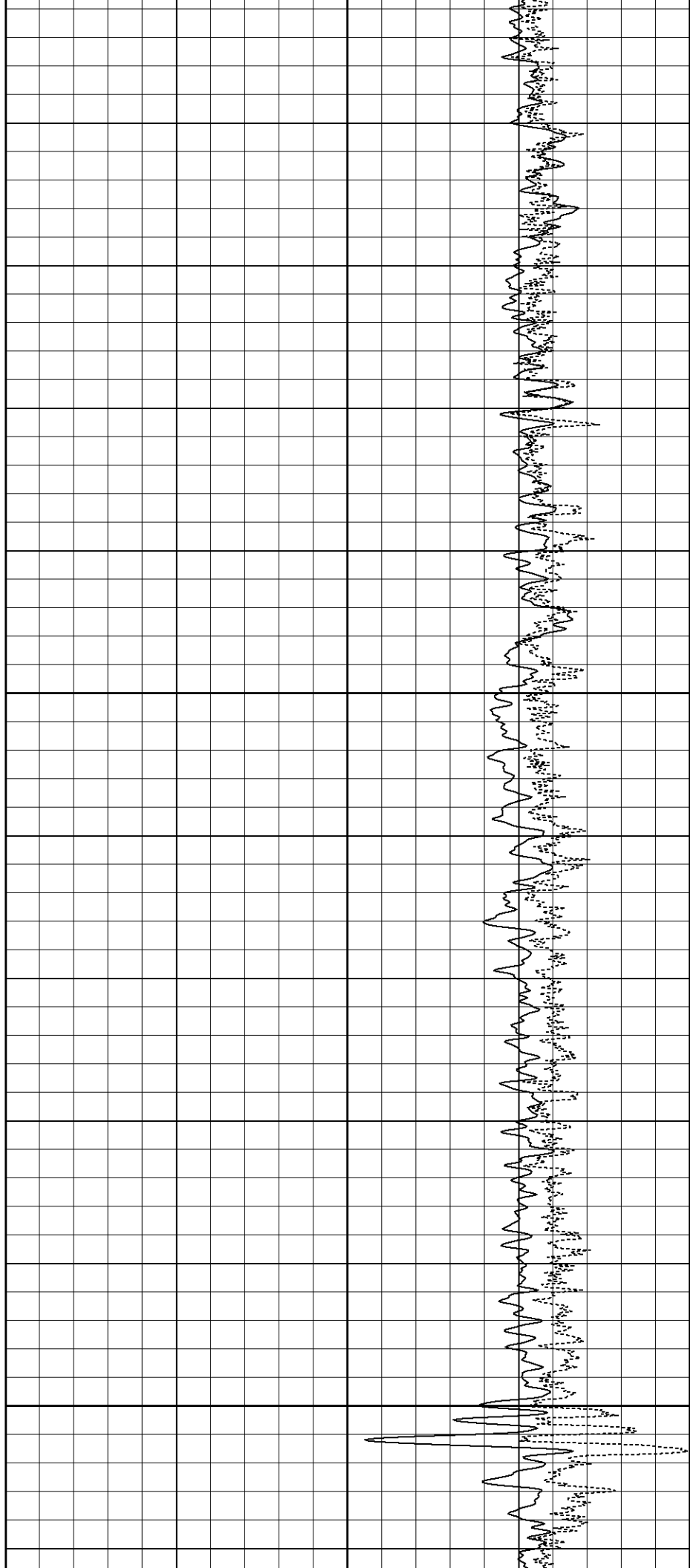
2250

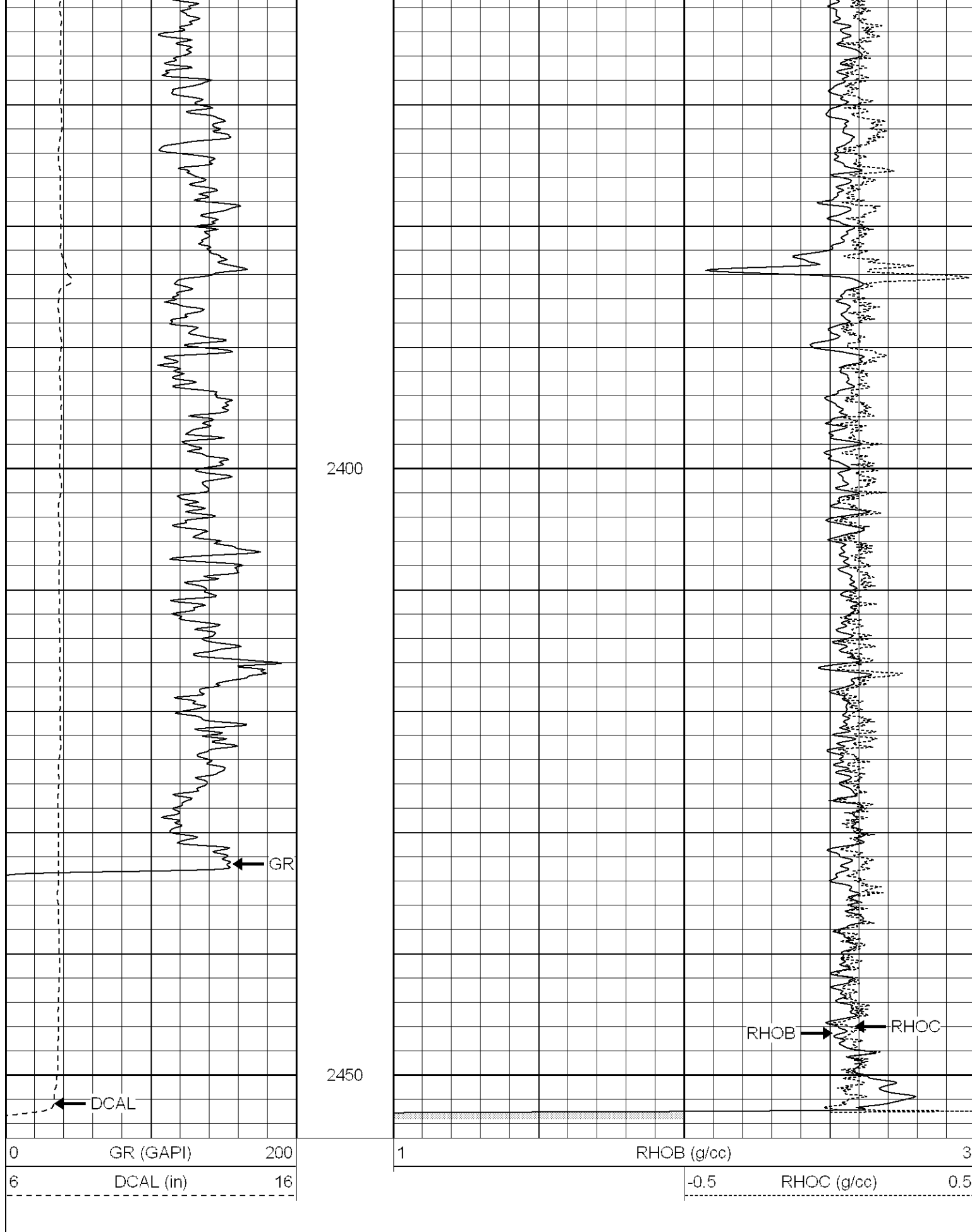




2300

2350





### Calibration Report

Database File: xtoac1816.db  
Dataset Pathname: pass4

## Compensated Density Calibration Report

Serial-Model: 2119-O  
Source / Verifier: csv-j12 / blks  
Master Calibration Performed: Tue Jan 09 13:59:23 2007

## Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.710	g/cc	986.57	607.78	cps
Aluminum	2.590	g/cc	221.07	405.01	cps
Spine Angle = 74.82			Density/Spine Ratio = 0.568		
	Size		Reading		
Small Ring	7.85	in	2.90	V	
Large Ring	14.00	in	8.81	V	

## Gamma Ray Calibration Report

Serial Number: 2119  
Tool Model: O  
Performed: Mon Jan 15 08:35:20 2007

Calibrator Value: 170.0 GAPI

Background Reading: 42.6 cps  
Calibrator Reading: 139.0 cps

Sensitivity: 0.7000 GAPI/cps


## Neutron Calibration Report

Serial Number: 5145  
Tool Model: G  
Performed: Thu Jan 25 22:38:45 2007

Calibrator Value: 1200 NAPI

Calibrator Reading: 1700 cps

Sensitivity: 1 NAPI/cps

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
NEU	12.44		NEU-G (5145) Gearhart Epithermal	5.75	3.50	85.00
GR	7.64		GR-O (2119) Oilex	2.60	3.63	74.00
LSD DCAL	2.13 1.79		CDL-O (2119) Oilex	5.77	4.00	201.00

Total Length:	14.12 ft
Total Weight:	360.00 lb
O.D.	4.00 in